



Repair Manual

Amarok 2011 ➤ , Beetle 2012 ➤ ,
CC 2012 ➤ , Caddy 2004 ➤ ,
Caddy 2011 ➤ , Crafter 2006 ➤ ,
Eos 2006 ➤ , Golf 2004 ➤ , Golf 2009 ➤ ,
Golf 2013 ➤ , Golf 2015 ➤ ,
Golf Cabriolet 2012 ➤ ,
Golf Plus 2005 ➤ , Golf Plus 2009 ➤ ,
Golf Sportsvan 2015 ➤ ,
Golf Variant 2007 ➤ ,
Golf Variant 2010 ➤ ,
Golf Variant 2014 ➤ , Jetta 1999 ➤ ,
Jetta 2005 ➤ , Jetta 2011 ➤ ,
Jetta 2015 ➤ , New Beetle 1999 ➤ ,
New Beetle Cabrio 2003 ➤ ,
Passat 2006 ➤ , Passat 2011 ➤ ,
Passat 2015 ➤ ,
Passat (NMS - US) 2012 ➤ ,
Passat CC 2009 ➤ ,
Passat Variant 2006 ➤ ,
Passat Variant 2011 ➤ ,
Passat Variant 2015 ➤ , Phaeton 2003 ➤ ,
Polo 2002 ➤ , Polo 2010 ➤ ,
Polo 2014 ➤ , Polo KH IN 2010 ➤ ,
Polo KH IN 2015 ➤ ,
Polo KH MY 2014 ➤ ,
Polo KH MY 2015 ➤ ,
Polo Lim IN 2011 ➤ ,
Polo Lim MY 2014 ➤ ,
Polo Lim RUS 2011 ➤ , Scirocco 2009 ➤ ,
Scirocco 2015 ➤ , Sharan 1996 ➤ ,



**Sharan 2011 ➤ ,
The Beetle Cabriolet 2012 ➤ ,
Tiguan 2008 ➤ , Touareg 2003 ➤ ,
Touareg 2010 ➤ , Touareg 2015 ➤ ,
Touran 2003 ➤ , Transporter 2004 ➤ ,
Transporter 2010 ➤ , e-Golf 2014 ➤ ,
e-up! 2014 ➤ , up! 2012 ➤**

General Paint Information

Edition 11.2014





List of Workshop Manual Repair Groups

Repair Group

00 - General, Technical Data

Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.





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00 – General, Technical Data

1 Safety Precautions

(Edition 11.2014)

⇒ ["1.2 Safety Precautions when Painting Vehicles with Electric Drive", page 2](#)

1.1 Safety Precautions when Painting Vehicles with Natural Gas



DANGER!

Risk of death at too high of drying temperatures! High temperatures increase the pressure in the natural gas- or liquid petroleum gas (LPG) fuel tank. Too much pressure can cause a natural gas- or liquid petroleum gas (LPG) fuel tank to burst and can therefore result in death or severe body injuries.

High temperatures activate the shut-off valve circuit breaker on natural gas fuel tanks. For LPG fuel tanks, the pressure relief valve is activated due to the pressure increase caused by the high temperature. Gas escapes from the natural gas- or LPG fuel tank and may in particular ignite by sparks, causing flash fires. Death and severe body injuries are the result.

- ◆ *Never expose gas-carrying components to a temperature over +60 °C (140 °F).*
- ◆ *When drying at over +60 °C (140 °F) in a drying oven, remove the entire natural gas- or LPG fuel tank and flush out all natural gas lines.*
- ◆ *When IR drying, never expose gas-carrying components of the high pressure reservoir system to a temperature over +60 °C (140 °F).*

Observe the Safety Precautions and Additional Information When Working on »LPG« or »CNG« Vehicles:

Pay attention to the safety precautions, refer to ⇒ Fuel Supply - Natural Gas Engines; Rep. Gr. 00 ; Safety Precautions

Fuel tank, removing, refer to ⇒ Fuel Supply - Natural Gas Engines; Rep. Gr. 20 ; Fuel Tank; Fuel Tank, Removing and Installing .

Additional notes:

- ◆ Self-Study Program Number 262; Natural Gas - an Alternative Fuel for Vehicles
- ◆ Self-Study Program Number 373; The EcoFuel Natural Gas Drive in Touran and Caddy
- ◆ Self-Study Program Number 425; The EcoFuel Natural Gas Drive with 1.4L 110 kW TSI Engine
- ◆ Self-Study Program Number 427; The BiFuel Autogas System
- ◆ Self-Study Program Number 528; The Natural Gas Drive Golf/Golf Wagon TGI Blue Motion



1.2 Safety Precautions when Painting Vehicles with Electric Drive



Caution

Risk of damaging the battery cells at too high of drying temperatures!

- ◆ ***Observe the maximum drying time of 30 minutes at a drying temperature of +80 °C (176 °F).***
- ◆ ***Observe the maximum drying time of 45 minutes at a drying temperature of +60 °C (140 °F).***
- ◆ ***Protect all high voltage components from direct infrared radiation when IR drying.***

Observe the Safety Precautions When Working on the Electric Drive:

Refer to ⇒ Rep. Gr. 00 ; Safety Precautions

Golf 2009 blue-e-motion

The above named drying information applies only to the Golf MY 2009 blue-e-motion. For this vehicle the high voltage battery must be removed before heated drying.



2 General Information

⇒ [“2.1 Factory Paint Paint Structure”, page 3](#)

⇒ [“2.2 Customer Service Paint Paint Structure”, page 4](#)

⇒ [“2.3 Reduced Paint Structure in Engine Compartment and Inner Hood”, page 7](#)

⇒ [“2.4 Repair Instructions for the Underbody and Stone Chip Protection”, page 7](#) .

⇒ [“2.5 Pretreatment of the Adhesive Surface with Two-Part Epoxy Primer Filler when Replacing Laser-Welded Roofs”, page 9](#)

⇒ [“2.6 Fender Corrosion Repair Measures, in Wheel Housing Liner Contact Area”, page 10](#)

⇒ [“2.7 Fold Corrosion Servicing Notes”, page 11](#)

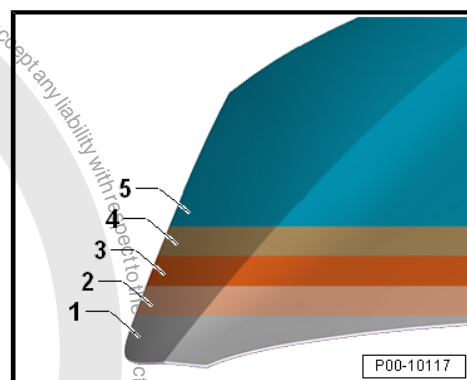
⇒ [“2.8 Corrosion Protection for Body, Attached and Welded Parts”, page 13](#)

2.1 Factory Paint Paint Structure

Structure of a Solid-Color Paint System, Conventional

Approximately 80-120 µm thick

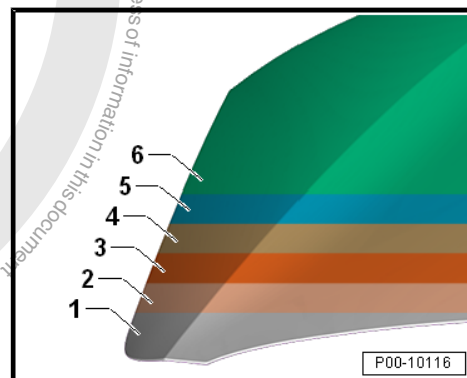
- 1 - Steel Panel
- 2 - Zinc Phosphate Coating
- 3 - Electrophoretic dip primer
- 4 - Intermediate filler
- 5 - Two-part solid top coat



Structure of a Solid-Color Paint System, Water-Based Paint

Approximately 80-130 µm thick

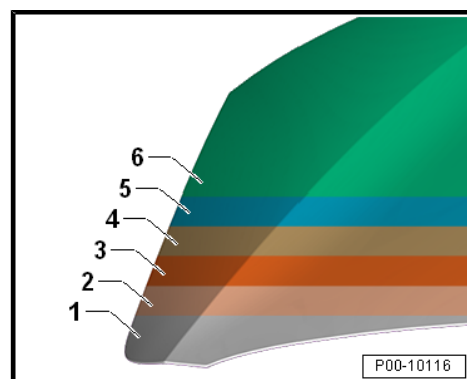
- 1 - Steel Panel
- 2 - Zinc Phosphate Coating
- 3 - Cathodic electrophoretic painting
- 4 - Water-based filler
- 5 - Water-based paint
- 6 - Two-Part Clear Coat



Structure of a Metallic and Pearl Color Paint System, Water-Based Paint

Approximately 80-130 µm thick

- 1 - Steel Panel
- 2 - Zinc Phosphate Coating
- 3 - Cathodic electrophoretic painting
- 4 - Water-based filler
- 5 - Water-based metallic/pearl color base coat
- 6 - Two-Part Clear Coat

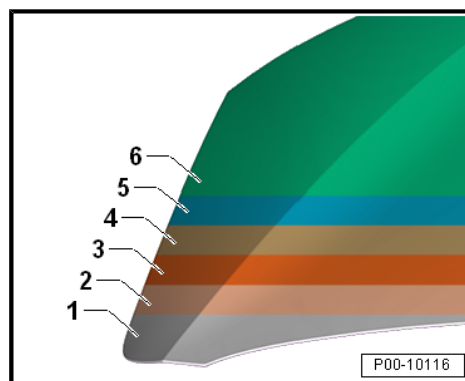




Structure of a Two-Coat Paint System, Conventional

Approximately 100 µm thick

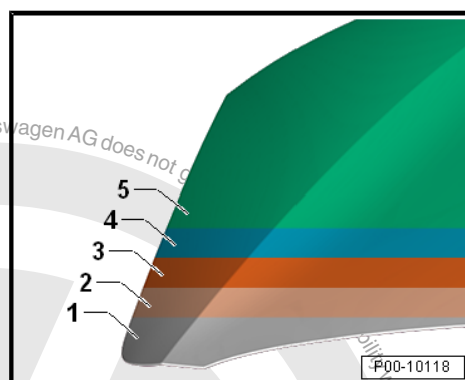
- 1 - Steel Panel
- 2 - Zinc Phosphate Coating
- 3 - Cathodic electrophoretic painting
- 4 - Intermediate filler
- 5 - Solid top coat
- 6 - Two-Part Clear Coat



Structure of a 2010 Paint Process Paint System, Water-Based Paint

Approximately 80-120 µm thick

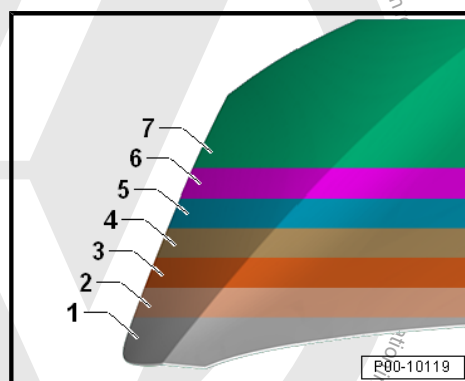
- 1 - Steel Panel
- 2 - Zinc Phosphate Coating
- 3 - Cathodic electrophoretic painting
- 4 - Water-based paint (functional coating)
- 5 - Two-Part Clear Coat



Structure of a Three-Coat Paint System, Water-Based Paint

Approximately 80-140 µm thick

- 1 - Steel Panel
- 2 - Zinc Phosphate Coating
- 3 - Cathodic electrophoretic painting
- 4 - Water-based filler
- 5 - Water-based paint (pigmented basic color)
- 6 - Water-based paint (effect coating)
- 7 - Two-Part Clear Coat



Note

- ◆ The approximate specification for the layer thickness can vary depending on the color and illustrates the differences in vertical and horizontal surfaces.
- ◆ The specifications can be exceeded on individual vehicles when painting a second or multiple times. This however does not have to be mentioned.

2.2 Customer Service Paint Paint Structure

Galvanized Sheet Metal on Both Sides

Previous attempts to match flanges have led to the use of only galvanized sheet metal on both sides. Only here do the cathodic protection and the zinc coating barrier effect work optimally together. The cut edges that are poorly protected with paint (thin edges) are additionally protected.



Note

- ◆ *Make sure that*
- ◆ *all metal edges are properly deburred when performing a body collision repair*
- ◆ *the zinc and cathophoretic layer is completely present on the interior surfaces that are not painted.*
- ◆ *the inner weld flange and sanded-through areas are reworked with Inox Spray - D 007 600 A1- .*

Smoothing Work

To reestablish the contour of the body surfaces, the smoothing materials today in car body construction and in the paint finishing system are considered to be essential. Pay attention to the different preparations for the base surface.

Product Information:

- ◆ Refer to ➔ [“3.2 Filling Paste”, page 51](#) .

Primer

The primer is the most important component of the corrosion protection system, because it prevents water and oxygen from accessing the metal surface. Original replacement parts are normally coated with a black cathophoretic primer. The primer type is dependent on the area of application.



Note

- ◆ *Sanded-through areas or weld seams are to be recoated as quickly as possible with a corrosion protection primer.*
- ◆ *The cathophoretic primer is not UV and acid resistant. Therefore replacement parts must also be painted from the inside.*
- ◆ *After a corrosion repair, insulate the bare metallic base surface with Two-Part Wash Primer - LHV 043 000 A2- and then fill with Two-Part HS Performance Filler .*

Product Information:

- ◆ Refer to ➔ [“3.3 Primer Metal”, page 70](#) .
- ◆ Refer to ➔ [“3.4 Plastic Primer”, page 81](#) .

Filler

The filler contributes to corrosion protection to a lesser extent. A suitable filler is, however, essential in service.

Tasks:

- ◆ Filler protects the body from stone impact. Therefore pay attention to the appropriate layer thickness in the stone chip protection area.
- ◆ Filler serves as surface preparation. Sanding scratches can be smoothed out.
- ◆ Colored filler improves the coverage of colors with poor covering properties.

Product Information:

- ◆ Refer to ➔ [“3.5 Filler”, page 85](#) .



PVC Sealed Seams and Underbody Protection



Note

- ◆ *When repairing, the seam sealant is to be returned to replicate stock visual appearance and layer thickness.*
- ◆ *In order to avoid damage and malfunctions, sealing seams in the area of attached components must be applied smoothly.*
- ◆ *Water drain holes must remain free.*
- ◆ *All threaded pins and weld nuts with M-threads, as well as all other pins and contact surfaces for the assembly must be functional after the sealant application.*
- ◆ *The sealing material cannot be applied on blank sheet metal, but rather on filled surfaces.*

To prevent any water from entering the flange, the notch is sealed with paste-like, solvent-free PVC in critical areas on the body. A PVC coating of different thickness is sprayed on specified areas on the underbody and in the wheel housings to protect against stone impact and engine humming.



Note

- ◆ *Before sealing/applying underbody protection, always insulate the surface with primer and filler.*
- ◆ *After a corrosion repair, insulate the bare metallic base surface with Two-Part Wash Primer - LHV 043 000 A2- and then fill with Two-Part HS Performance Filler .*
- ◆ *For the underbody protection, pay attention to the specified layer thickness.*

Product Information:

- ◆ Refer to ⇒ [“3.11 Underbody Protection”, page 230](#) .
- ◆ Refer to ⇒ [“3.12 Stone Chip Protection”, page 239](#) .
- ◆ Refer to ⇒ [“3.14 Sealing Materials”, page 251](#) .

Top Coat/Base Paint

For the top coat/base paint, the decorative application is the prime consideration. This contributes to corrosion protection to a lesser extent.

Depending on the pigment content, the colors have different coverage. Observe the manufacturer's instructions.

Product Information:

- ◆ Refer to ⇒ [“3.6 Top Coats”, page 127](#) .

Clear Lacquer

For the clear lacquer, the decorative application is the prime consideration. The clear lacquer also contributes to corrosion protection to a lesser extent. The clear lacquer protects the top coat/base paint against UV radiation and environmental pollution such as acidic bird droppings.

Product Information:

- ◆ Refer to ⇒ [“3.7 Clear Coats”, page 172](#) .



Conservation Wax/Cavity Sealant

The conservation wax/cavity sealants play a decisive role for corrosion protection. Depending on the area of application, different materials are available in customer service. The exceptional protective effects of these materials is based on the following characteristics:

- ◆ hydrophobic (water repellent)
- ◆ good adhesion
- ◆ no rust formation
- ◆ water vapor permeability approximately 1,500 times lower than with a paint coating of the same thickness

Product Information:

- ◆ Refer to ⇒ [“3.10 Preservation”, page 225](#) .
- ◆ Refer to ⇒ [“3.13 Wax Underbody Protection”, page 246](#) .

2.3 Reduced Paint Structure in Engine Compartment and Inner Hood



Note

The paintwork in the “engine compartment and the inner hood” may differ from the paint structure and color on the exterior paintwork. This variation is production-related and should not be deemed defective.

2.4 Repair Instructions for the Underbody and Stone Chip Protection



Note

- ◆ *The underbody and stone chip protection structure must be restored back to its original layer strength and appearance during a repair.*
- ◆ *Water drain holes must remain free.*
- ◆ *All threaded pins and weld nuts with M-threads, as well as all other pins and contact surfaces for the assembly must be functional after the sealant application.*

Damage Caused By An Accident (Part Replacement)

- Clean the new part with Silicone Remover, Long .
- Sand the factory primer (sanding pad).
- Clean again using Silicone Remover, Long .
- Apply Two-Part Wash Primer - LHV 043 000 A2- to sanded through areas.
- Dry (note drying time).
- Then fill with Two-Part HS Performance Filler .
- Dry (note drying time).
- Dry-sand the filler with sandpaper (P400-P500), making sure not to sand through.
- Clean the surface with Silicone Remover, Long .



- Apply a suitable Stone Chip Protection , refer to
⇒ ["3.12 Stone Chip Protection", page 239](#) .
- Dry (note drying time).
- If necessary, smoothen the texture.
- Clean the base surface with Silicone Remover, Water-Based .
- Apply the paint structure with top, base and clear coats.

Damage Caused By An Accident (Repair)

- Always clean damaged components/surfaces.
- Remove the underbody protection using Pneumatic Brush Grinder Set - VAS6446- .
- Remove the damaged area and sand down to the bare metal.
- Remove the existing corrosion using the Pneumatic Brush Grinder Set - VAS6446- while doing so finely sand the overlapping areas.
- Clean the base surface with Silicone Remover, Long .
- Apply Two-Part Wash Primer - LHV 043 000 A2- 
- Dry (note drying time).
- Then fill with Two-Part HS Performance Filler .
- Dry (note drying time).
- Sand the filler.
- Clean the base surface with Silicone Remover, Long .
- Apply suitable filling paste.
- Sand the filling paste with sandpaper (P80-P240) while liberally sanding the transition areas.
- Clean the base surface with Silicone Remover, Long .
- Apply Two-Part Wash Primer .
- Then fill with Two-Part HS Performance Filler .
- Dry (note drying time).
- Dry-sand the filler in the stone chip protection area with sandpaper (P400-P500), making sure not to sand through.
- Clean the surface with Silicone Remover, Long .
- Apply a suitable Stone Chip Protection , refer to
⇒ ["3.12 Stone Chip Protection", page 239](#) .
- Dry (note drying time).
- If necessary, smoothen the texture.
- Sand the complete filler surface with sand paper (P400-P500).
- Clean the base surface with Silicone Remover, Water-Based .
- Prepare the paint structure with top, base and clear coats.

Cracks in the Stone Chip Protection



Note

Repairs should be performed according to description "damage caused by an accident (repair)".



Damage Caused By Stone Impact (Gravel, Grit, Etc.)

- Clean the damaged areas thoroughly.
- Sand the damaged surfaces with sandpaper. If damage is deep, dry-sand with P120-P240 sandpaper.
- Clean the base surface with Silicone Remover, Long .
- Apply Two-Part Wash Primer - LHV 043 000 A2- to sanded through areas.
- Dry (note drying time).
- Then fill with Two-Part HS Performance Filler .
- Dry (note drying time).
- Dry-sand the filler with sandpaper (P400-P500), making sure not to sand through.
- Clean the base surface with Silicone Remover, Long .
- Apply a Suitable Stone Chip Protection , (refer to [⇒ "3.12 Stone Chip Protection", page 239](#)) to the damaged areas If damage is extensive, refinish the entire surface.
- Dry (note drying time).
- If necessary, smoothen the texture.
- Clean the surface with Silicone Remover, Water-Based .
- Apply the paint structure with top, base and clear coats.

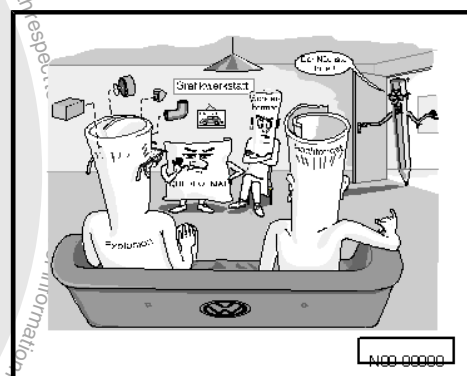
2.5 Pretreatment of the Adhesive Surface with Two-Part Epoxy Primer Filler when Replacing Laser-Welded Roofs



Note

- ◆ Use the Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2- for the following VW painting instructions.
- ◆ Refer to the technical information regarding the described materials in chapter, refer to [⇒ "3.16.9 Two-Part Epoxy Primer Filler", page 297](#) .

Dry-sand the cathodic primer on the roof adhesive surface (marked red) lightly (do not sand through) with red 3M sandpaper or P360 sandpaper.



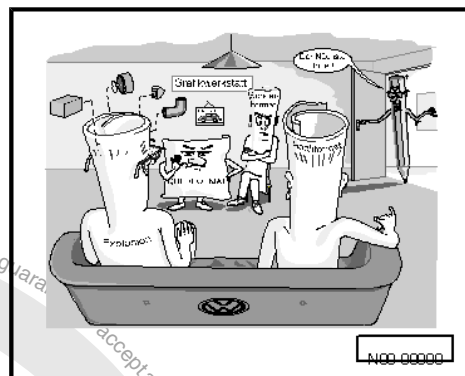


- Remove loose paint residue from the adhesive surface on the roof pillar (marked red) using red 3M sandpaper or P360 sandpaper.
- Clean the surface with Silicone Remover .
- Insulate the adhesive surfaces using the Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2- .



Note

When insulating, make sure that all exposed metal body areas are covered.



- Dry-sand Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2- with sandpaper (P400-P500) while making sure not to sand through.
- Clean the adhesion areas with Silicone Remover again.
- Apply body adhesive, refer to ➔ Body Center, Roof, Frame; Rep. Gr. 51 ; Roof, Replacing .

2.6 Fender Corrosion Repair Measures, in Wheel Housing Liner Contact Area



Note

- ♦ *The corrosion protection in the fender seam must be applied on all replacement parts, on which the attached seal is not already present.*
- ♦ *The additional corrosion protection seal will prevent "chafe marks" in the fender wheel housing liner.*
- Apply filler to the interior and exterior areas of the fender.
- Once the filler has dried, apply and spread the Sealing Material - D 511 500 A2- in the wheel housing liner contact area (fender seam).



Maß a - 20 mm

- ☐ Height of the seal

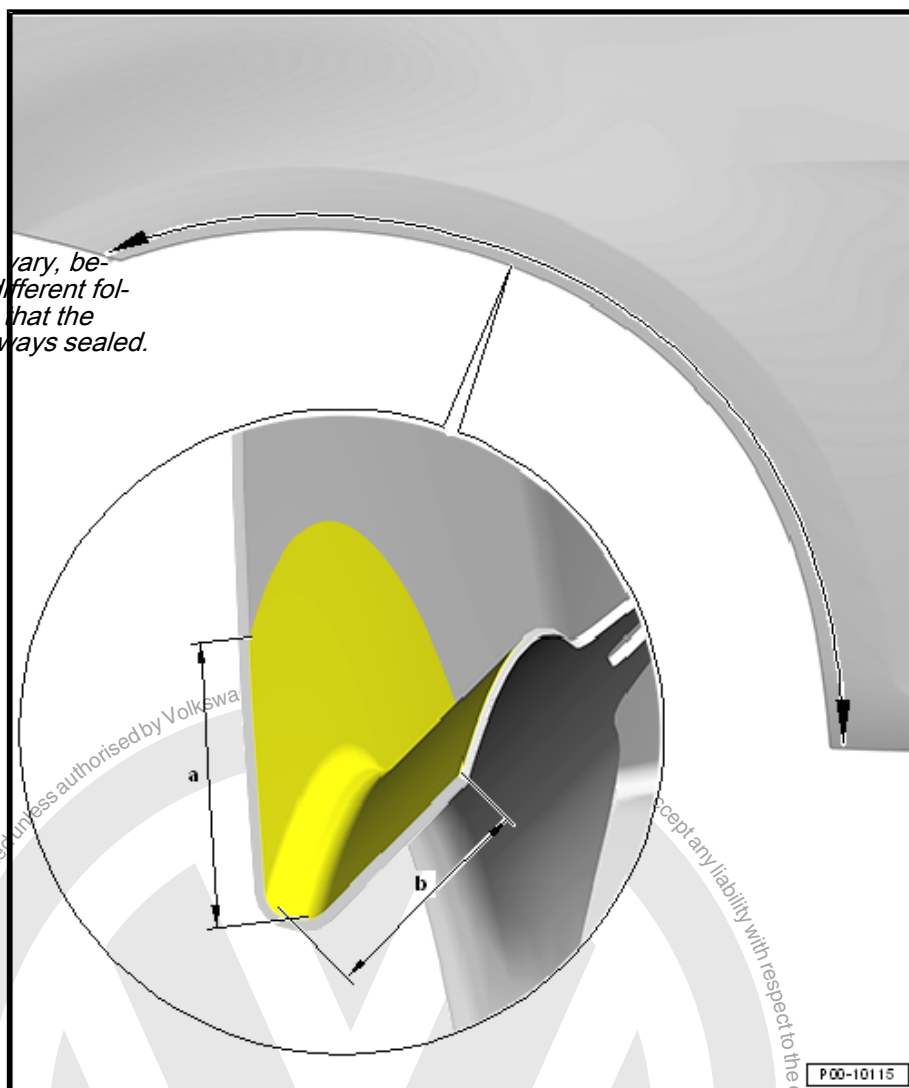
Maß b - 10 mm

- ☐ Width of the seal



Note

The -dimension b- can vary, because the fender has different folded edge widths. Note that the entire folded edge is always sealed.



Before installing, the inner sides of the wheel housing and the fillet plate are to be sealed with cavity sealant.

Product Information:

- ◆ Refer to ➔ ["3.10 Preservation", page 225](#).

2.7 Fold Corrosion Servicing Notes

Corrosion on the Fold Edges, For Instance on the Hood, Door or Also the Rear Lid

- Remove the corroded areas with, refer to
➔ ["4.1.6 Pneumatic Brush Grinder Set VAS6446", page 335](#) or
➔ ["4.1.7 Brush Grinder Set VAS6776", page 336](#).
- Sand the overlapping areas with P360 - P400 sandpaper.
- Clean the base surface with Silicone Remover .
- After a corrosion repair and before sealing, insulate the base surface with Two-Part Wash Primer - LHV 043 000 A2- and then fill with Two-Part HS Performance Filler .
- After the filler has dried, the filled area must be dry sanded with P400- P500. While doing so, make sure to avoid "sanding through". Then clean the sanded areas with Silicone Remover .



- After the filler has dried and has been sanded, the metal edges in the fold area must be thinly sealed with a fine seam sealant, refer to ➤ [“3.14 Sealing Materials”, page 251](#) . The fine seam sealant must match the original state, refer to the Vehicle-Specific Paint Information.



Note

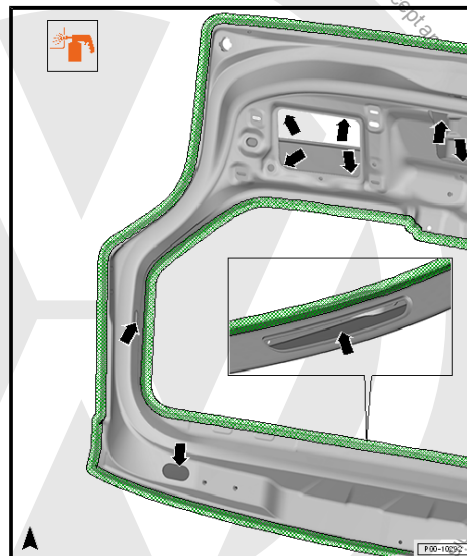
- ◆ *When repairing, the seam sealant is to be returned to replicate stock visual appearance and layer thickness.*
 - ◆ *In order to avoid damage and malfunctions, sealing seams in the area of attached components must be applied smoothly.*
 - ◆ *Water drain holes must remain free.*
 - ◆ *All threaded pins and weld nuts with M-threads, as well as all other pins and contact surfaces for the assembly must be functional after the sealant application.*
 - ◆ *The sealing material cannot be applied on blank sheet metal, but rather on filled surfaces.*
- Recreate the subsequent paint system according to the manufacturer's specifications.
 - Seal the cavities around the fold area with, refer to ➤ [“4.1.8 Suction Feed Spray Gun VAG1538”, page 337](#) , refer to ➤ [“3.10 Preservation”, page 225](#) .



Note

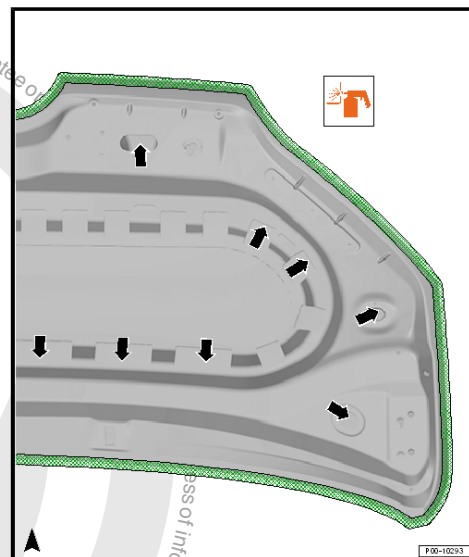
Service work is effective only when the fold area can be sealed airtight from the inside (so that no moisture can get in).

Cavity Sealant Area Example On Rear Lid

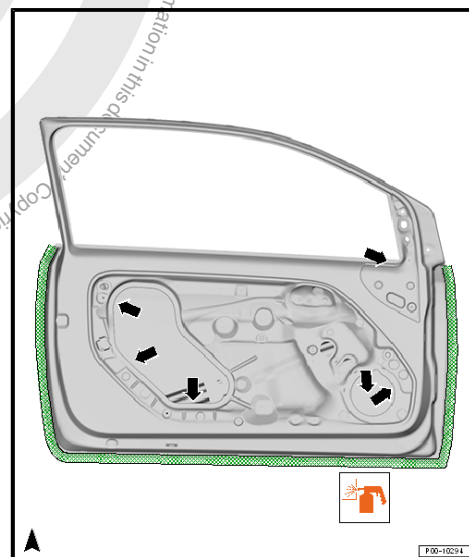




Cavity Sealant Area Example On Hood



Cavity Sealant Area Example On a Door



2.8 Corrosion Protection for Body, Attached and Welded Parts

Attachments

- ◆ Coat the insides of the fenders, doors, covers and lids completely. A spray application wet in wet procedure is sufficient.
- ◆ Before assembly, the seal the inside of the attachments with cavity sealant (refer to ⇒ ["3.10 Preservation", page 225](#)) so as to recreate the original state, refer to »Vehicle-Specific Paint Information«.
- ◆ Vehicles with wheel housing liners must have an additional chafe protection on the wheel housing, refer to ⇒ ["2.6 Fender Corrosion Repair Measures, in Wheel Housing Liner Contact Area", page 10](#) .

Welded Parts

- ◆ All welded parts except the roof are to be completely primed and filled on the inside. The visible inner surfaces must be coated with a spray application of base paint and clear coat. If necessary perform this before welding. In case of doubt, the production status applies.



- ◆ If sealing is required this is to take place after the specified paint structure.
- ◆ Coat all parts that form cavities, such as pillars, braces, side panels, etc., with cavity sealant, refer to [⇒ "3.10 Preservation", page 225](#) .

All parts in the series production that are coated with noise-dampening or stone chip protection material (for example wheel housing, floor panel, front/rear cross panels or outer sill panel) need to be coated as follows:

- ◆ Wheel housings and underbody with sprayable weld sealant, refer to [⇒ "3.14 Sealing Materials", page 251](#) .
- ◆ Even out large creases or thick layers with base material Adhesive Sealant - D 511 500 A2- .
- ◆ Sill panel region, lower side panel, rear cross panel corners with stone chip protection, refer to [⇒ "3.12 Stone Chip Protection", page 239](#) .



3 Original Products

⇒ [“3.1 General Application Instructions for Repair and Painting Systems”, page 15](#)

⇒ [“3.2 Filling Paste”, page 51](#)

⇒ [“3.3 Primer Metal”, page 70](#)

⇒ [“3.4 Plastic Primer”, page 81](#)

⇒ [“3.5 Filler”, page 85](#)

⇒ [“3.6 Top Coats”, page 127](#)

⇒ [“3.7 Clear Coats”, page 172](#)

⇒ [“3.8 Hardener”, page 211](#)

⇒ [“3.9 Thinners”, page 219](#)

⇒ [“3.10 Preservation”, page 225](#)

⇒ [“3.11 Underbody Protection”, page 230](#)

⇒ [“3.12 Stone Chip Protection”, page 239](#)

⇒ [“3.13 Wax Underbody Protection”, page 246](#)

⇒ [“3.14 Sealing Materials”, page 251](#)

⇒ [“3.15 Cleaning Agent”, page 259](#)

⇒ [“3.16 SprayMax System”, page 263](#)

⇒ [“3.17 Additional Materials”, page 315](#)

3.1 General Application Instructions for Repair and Painting Systems

⇒ [“3.1.1 Aqua Premium Application Instructions for Water-Soluble Products”, page 15](#)

⇒ [“3.1.2 Gloss Level Adjustment of HS Clear Lacquer and HS Top Coat”, page 18](#)

⇒ [“3.1.3 Repair Paint System for Matte Painted Vehicles”, page 26](#)

⇒ [“3.1.4 Paint System for Plastic Parts”, page 31](#)

⇒ [“3.1.5 Aqua Premium System, Touch-Up System for Two Layer Colors”, page 37](#)

⇒ [“3.1.6 Aqua Premium System, Touch-Up System for Three Layer Colors”, page 42](#)

⇒ [“3.1.7 Aquaplus Design and Multi-Color Paintwork”, page 47](#)

3.1.1 Aqua Premium Application Instructions for Water-Soluble Products

Edition 06/2013

When working with water-soluble products, pretreat the base surface very carefully and only with water-soluble products and the recommended processing materials.

Base Surface

Pre-treatment of base surfaces:

- ◆ Clean the metallic base surfaces preferably with Nitro Thinner - LVE 856 000 A3- .



- ◆ The sanded filler surfaces and old paint must be cleaned with Silicon Remover - LSW 019 000 A2- .
- ◆ Plastic surfaces must first be thoroughly pretreated according to the, refer to
⇒ ["3.1.4 Paint System for Plastic Parts", page 31](#) and before they are further processed, cleaned again with the Silicon Remover - LSW 019 000 A2- .

Masking Work

Use only commercially available water-resistant masking tape and water-resistant, adhesive masking paper or plastic masking films.

Sprayguns/Spraying systems

Suitable spray guns are compliant spray guns.



Note

Processing water-soluble and conventional products alternately with a single spraygun/spraying system is not advisable. Sprayguns/spraying systems for processing water-soluble products must be constructed of corrosion resistant materials (stainless steel, plastic).

Mixing/Adjusting Vessels

Only plastic containers or inner-coated tin containers may be used for mixing or viscosity adjustment of water-soluble products.

Material Temperature

Since the viscosity and the processing characteristics of water-soluble products are dependent on the material temperature, you must ensure that the water-soluble products have a temperature of +18 to +35 °C (64.4 to 95 °F) at the time they are processed/adjusted.

Processing

Processing water-soluble products is extensively influenced through temperature and humidity. The influence can vary from a restriction to a suspension of the application when the certain requirements are not given or met. In the processing window for water-soluble products the cornerstones/corner points are determined.

For optimal use for different climatic conditions and object sizes the following climate chart gives a recommendations to the use of Additive for Aqua Premium - LVM 035 200 A3- or Additive for Aqua Premium - LVM 035 301 A3- .

Climate Chart

Climate connections in the spray booth	Temperature range	Relative humidity area	LVM 035 200		LVM 035 301	
			Partial re-sprays	Complete re-sprays	Partial re-sprays	Complete re-sprays
Cold and dry climate	20 °C (68 °F)	15-30 %	Partially suitable	Not suitable	Suitable	Suitable



Climate connections in the spray booth	Temperature range	Relative humidity area	LVM 035 200		LVM 035 301	
Average climate	20-30 °C (68-86 °F)	less than 30 %	Suitable	Not suitable	Suitable	Suitable + 10 % Purified Water - LVW 010 000-
		30-60 %	Suitable	Suitable	Partially suitable	Suitable
		greater than 60 %	Suitable	Suitable	Partially suitable	Partially suitable
Hot Climate	30- >35 °C (86- >95 °F)	30-60 %	Suitable	Partially suitable	Partially suitable	Suitable
Hot and wet climate	30- >35 °C (86- >95 °F)	greater than 60 %	Suitable	Suitable	Not suitable	Partially suitable
Hot and dry climate	30- >35 °C (86- >95 °F)	15-30 %	Partially suitable	Not suitable	Suitable	Suitable + 10 % Purified Water - LVW 010 000-
	30- >35 °C (86- >95 °F)	less than 15 %	Not suitable	Not suitable	Partially suitable	Partially suitable + 10 % Purified Water - LVW 010 000-

The temperature and humidity ranges given in the table are reference values and always depend on the local circumstances. The air flow volume in the booth as well as the paint spray guns (type and/or nozzle size) and the application itself can have a large influence on the film build up and the quality of the application.

Assuming that a processing temperature of + 20 °C (68 °F) and above is ensured in a modern-equipped paint shop, other measures regarding the humidity are still necessary if the humidity is outside of the processing range.

Procedures for to High Relative Air Humidity.

As a result of too high humidity color shade deviations cloudiness of metallic colors and insufficient stability on vertical surfaces can occur. As a corrective measure the temperature in the spray



booth can be increased as long as it is acceptable for the processor. Only insert the Additive for Aqua Premium - LVM 035 200- .

Procedures For to Low Relative Air Humidity.

Results of too low of humidity are raised spray mist formation and worsening spray mist characteristics. As a corrective measure if possible lower the processing temperature, however it must not fall below + 18 °C (64.4 °F). Only insert the Additive for Aqua Premium - LVM 035 301- .

Drying Times and Reworking Times

The ventilation times for water-soluble products are negatively affected by low temperatures and high humidity between the painting applications and the final evaporating or reworking times. The drying process between the individual spray applications or prior to reworking can be accelerated by:

- ◆ Increasing the amount of moisture-laden air that is discharged by blowing with variable and stationary air blower with and without dryer.
- ◆ Heated drying
- ◆ Infrared drying

3.1.2 Gloss Level Adjustment of HS Clear Lacquer and HS Top Coat

Edition 04/2013

Adjusting of varying gloss grades of HS clear lacquer and HS top coat by mixing Matting Component - LVM 769 810 A2- for plastic and metal surfaces

The reference material that addresses the factors that affect gloss grade in these instructions, will help the processor to achieve the desired gloss grade, even with differing operating conditions.

Area of Application

- ◆ Small- and attachment parts

Applicable Products

- ◆ Matting Component - LVM 769 810 A2-
- ◆ Two-Part HS Clear Coat - L2K 769 500 A5-
- ◆ Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5-
- ◆ Two-Part HS Vario Clear Coat - L2K 769 K01 A2-
- ◆ Two-Part HS Performance Clear Coat - LZK K06 A5-
- ◆ Two-Part HS Optimum Plus Clear Coat - LZK 769 K07 A5-
- ◆ Two-Part HS Mixed Paint/Top Coat - L2K 074/073...-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052...-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 ...-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Clear Coat Additive - LVM 007 000 A2-



Gloss Level Adjustment/Matting

System information, refer to
⇒ [“3.1.3 Repair Paint System for Matte Painted Vehicles”, page 26](#) .

Technical application information, refer to
⇒ [“3.17.2 Matting Component LVM 769 810 A2 ”, page 321](#) .

Apart from color-dependent differences, the actual gloss level is influenced by different factors.

The addition of other hardeners not mentioned in these instructions is generally possible, but can result in different application types, drying conditions and layer thicknesses which leads to different gloss levels (up to 20%).

Higher Gloss Level	Lower Gloss Level
shorter hardener	longer hardener
shorter thinner	longer thinner
higher processing viscosity	lower processing viscosity
higher dry layer thickness	lower dry layer thickness
shorter ventilation time	longer ventilation time
forced drying	Air drying



Note

It is absolutely necessary to test on sheet metal in order to achieve the appropriate gloss level for the vehicle. Gloss level measurements (60° angle) at the adjacent parts can also be helpful.

HS Clear Lacquer Mixing Table

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	73 g	65 g	59 g	56 g
Two-Part HS Clear Coat - L2K 769 500-	27 g	35 g	41 g	44 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.



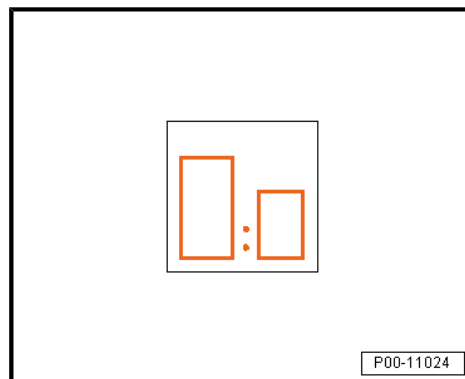
Mixture with HS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture in a 2:1 ratio with HS hardener. Spray ready without the addition of thinner.

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	68 g	59 g	54 g	52 g
Two-Part HS Clear Coat - L2K 769 500-	32 g	41 g	46 g	48 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.



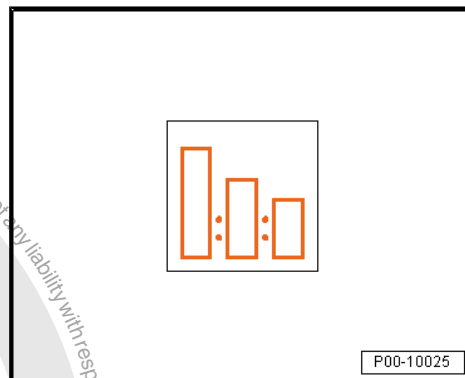
Mixture with VHS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture 4:1 by volume with VHS hardener. Spray ready after the addition of 15 % thinner.

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	72 g	66 g	59 g	53 g
Two-Part HS Brilliant Plus Clear Coat - L2K 769 K05-	28 g	34 g	41 g	47 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.





Mixture with VHS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture 4:1 by volume with VHS hardener. Spray ready after adding 5 % Clear Lacquer Additive - LVM 007 000 A2- .

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	70 g	61 g	56 g	51 g
Two-Part HS Vario Clear Coat - L2K 769 K01-	30 g	39 g	44 g	49 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.

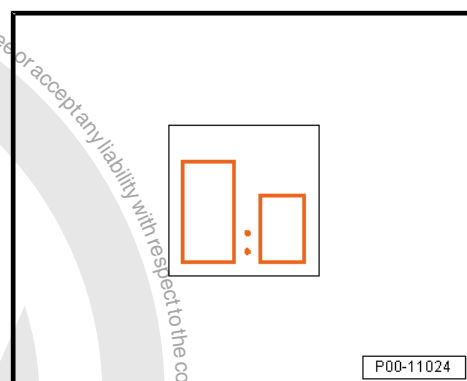
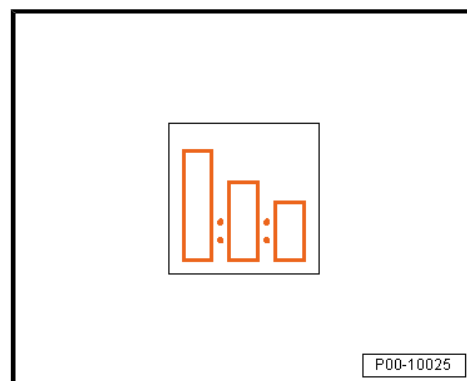
Mixture with HS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture 2:1 by volume with VHS hardener. Spray ready without the addition of thinner.

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	68 g	60 g	55 g	51 g
Two-Part HS Vario Clear Coat - L2K 769 K01-	32 g	40 g	45 g	49 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.





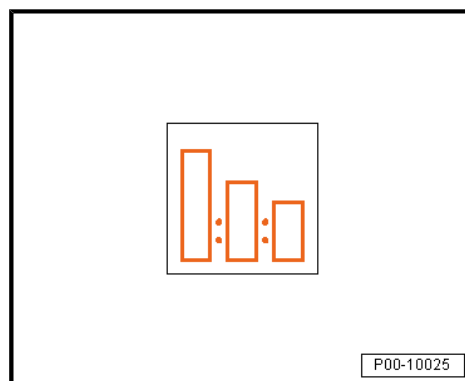
Mixture with VHS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture 4:1 by volume with VHS hardener. Spray ready after the addition of 15 % thinner.

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	71 g	64 g	52 g	44 g
Two-Part HS Per- formance Clear Coat - L2K 769 K06-	29 g	36 g	48 g	56 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.



Mixture with VHS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture 4:1 by volume with VHS hardener. Spray ready after adding 5 % Clear Lacquer Additive - LVM 007 000 A2- .

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	71 g	65 g	58 g	41 g
Two-Part HS Opti- mum Plus Clear Coat - L2K 769 K07-	29 g	35 g	42 g	59 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.





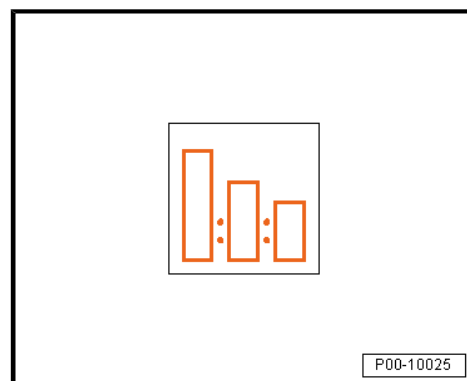
Mixture with VHS Hardener

- After mixing the clear lacquer with Matting Component - LVM 769 810- mix this mixture 4:1 by volume with VHS hardener. Spray ready after the addition of 10 % thinner.

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	65 g	57 g	50 g	44 g
Two-Part HS Mixed Filler White - L2K 074 ...-	35 g	43 g	50 g	56 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.



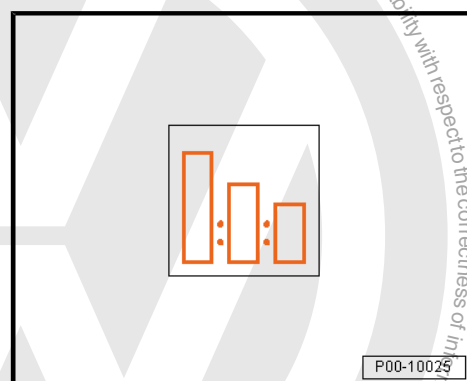
Mixture with VHS Hardener

- After mixing Matting Component - LVM 769 810- with HS top coat mix this mixture 4:1 by volume with VHS hardener. Spray ready after the addition of 15 % thinner.

Gloss Grades

	Mat less than 20 % *	Satin matte less than 40 % *	Satin gloss less than 60 % *	Gloss less than 80 % *
Matting Component - LVM 769 810-	71 g	58 g	51 g	31 g
Two-Part HS Mixed Filler Black - L2K 074 ...-	29 g	42 g	49 g	69 g

* Because these designations are not subject to a standard, the gloss grade values are not binding and can be understood as reference values or market based values.



Mixture with VHS Hardener

- After mixing Matting Component - LVM 769 810- with HS top coat mix this mixture 4:1 by volume with VHS hardener. Spray ready after the addition of 15 % thinner.





Processing

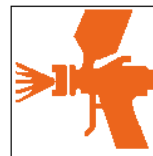
Application type "coat"

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP"

DIN 4 mm: 16-20 seconds

- Adding thinner at +20 °C (68 °F) material temperature: depending on the product used.



P00-11029



P00-11032



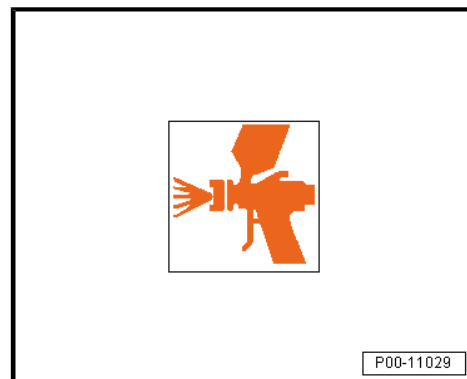
P00-11036



P00-11023



- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



- Apply in two spray applications with a 5 to 10 minute intermediate ventilation time. The first spray application is applied lightly, but completely. (Follow the processing instructions).

The recommended dry layer thickness is between 60 and 80 µm.

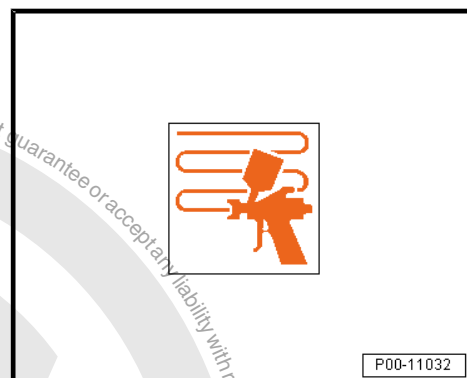
Application Instructions

To achieve the best possible and homogenous mat effect pay attention to the following notes for the application:



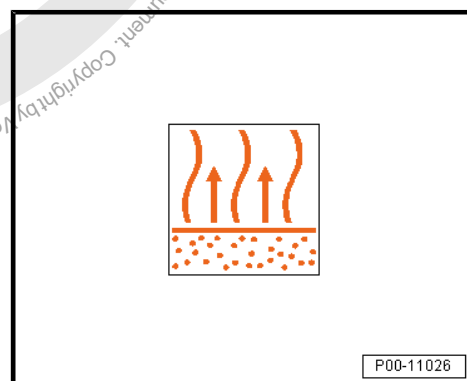
Note

- ◆ *The spraying distance to the object is larger than the standard application, to use the full the atomization of the spray pattern. (To prevent streaking)*
- ◆ *Pay attention that there is even overlap of the "spray passes" and that enough wet spray film is applied. There is a risk or cloudiness from too dry of application due to uneven drying or due to unabsorbed spray mist.*
- ◆ *For less opaque colors, it may be necessary to apply another spray application after the corresponding ventilation time.*
- ◆ *A touch-up/repair of the matted clear coat within the surface (for example, side part or clever repair) is not possible.*



Drying

- Final drying time with forced drying is 15 to 20 minutes.



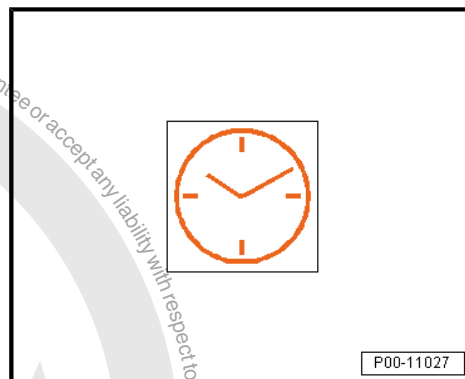


- Forced drying at +60 to 65 °C (140 to 149 °F) object temperature is 45 minutes.



Note

- ◆ *The addition of Two-Part Elastic Additive - ALZ 011 001- is omitted.*
- ◆ *Stir or shake the Matting Component - LVM 769 810 A2- in the can well. Mix with HS clear coat and HS top coat according to specification and infuse with hardener and thinner just before processing.*
- ◆ *The processing of the ready-to spray mixture should immediately follow. If the mixture remains in the mixing- or spray gun receptacle for a longer period of time (15 minutes), it should be stirred again before continuing to use (separation).*
- ◆ *The application of the Matting Component - LVM 769 810 A2- can influence the covering capacity.*
- ◆ *Dust inclusions cannot be polished out, so therefore ensure that absolute cleanliness is maintained during the entire painting process.*



3.1.3 Repair Paint System for Matte Painted Vehicles

Edition 04/2013

The following describes the repair paint system for matte painted vehicles. Area of application: large surfaces/complete painting

Application

- ◆ Metal Surfaces
- ◆ Plastics
- ◆ partial painting/gloss surfaces
- ◆ Painting of mat paned vehicles

Base Surface

Suitable base surfaces:

- ◆ Steel Panel
- ◆ Cleaned and sanded, galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Sanded factory primer
- ◆ Thoroughly sanded old primer or factory primers (excluding thermoplastic coating)
- ◆ Surfaces prepared with two-part polyester products and then sanded with very fine grit



Pretreating/Cleaning

- Clean carefully using Silicone Remover, Long - LVM 020 100 A5- or Silicone Remover - LVM 020 000 A5- .



P00-11038

- Sand the base surface.



P00-11037





- Use a suitable cleaning agents before reworking to ensure a clean and residue-free surface.

Approved Products

Filling Paste:

- ◆ Two-Part Spray Filling Paste - ALN 788 007-
- ◆ Two-Part IR Premium Filling Paste - LSP 787 220-
- ◆ Fine Filling Paste - LSP 784 002 A2-

Primer/primer filler

- ◆ Two-Part Plastic Adhesion Filler, White/Black - LKF 696 009/040 A2-
- ◆ Glazing Adhesion Promoter - ALO 822 000 10-
- ◆ Two-Part Wash Primer - LHV 043 000 A2-
- ◆ One-Part Wash Prime Light Gray/Dark Gray - LVM 044 007/171 A2-

Filler:

- ◆ Two-Part HS Premium Filler - LGF/LVM 013 ...A4-
- ◆ Two-Part HS Vario Filler - LGF 786 004 A4-

Elastification:

- ◆ Elastic Additive - ALZ 011 001- (for all Two-Part HS Filler for plastic parts)

Top coat:

- ◆ Two-Part HS Clear Coat - L2K 769 500 A5-

Matting

- ◆ Matting Component - LVM 769 810 A2-

Pay attention to the application instructions of the individual original products, refer to ⇒ ["3 Original Products", page 15](#) .

Mixture/Matting and Clear Coat

- Mix component A + component B Matting Component - LVM 769 810 A2- + Two-Part HS Clear Coat - L2K 769 500 A5- .

Mixture ratio:

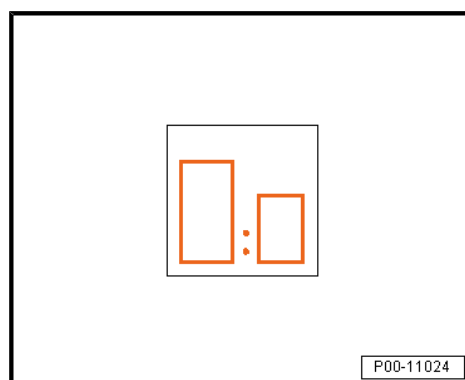
Depending on the desired degree of gloss the Matting Component - LVM 769 810 A2- and Two-Part HS Clear Coat - L2K 769 500 A5- can be mixed in a weight ratio of 75/25 % or 70/30 %.



Note

Stir or shake the Matting Component - LVM 769 810 A2- in the can well. Always mix component A and component B and infuse with hardener and thinner just before processing. The processing of the ready-to spray mixture should immediately follow. If the mixture remains in the mixing or in the spray gun receptacle for a longer period of time (15 minutes), it should be stirred again before continuing to use (separation).

Adding hardener to component A + B





- 4:1 by volume with Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-

Thinner:

- ◆ Two-Part Thinner, Long - LVM 009 300 A2-

Curing Time:

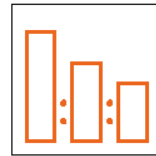
Ready for spraying 60-75 minutes at +20 °C (68 °F).

Application type "coat"

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP"

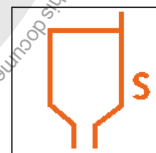
DIN 4 mm: 16-20 seconds



P00-10025



P00-11032



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- Add 10 % thinner at +20 °C (68 °F) material temperature.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- In two spray applications with 10-15 minute intermediate drying time.

The recommended dry layer thickness is 70 - 90 µm.

Processing:

To achieve the best possible and homogenous mat effect pay attention to the following notes for the application:

The spraying distance to the object is larger than the standard application, to use the full the atomization of the spray pattern.
(To prevent streaking)

If possible, it is also advisable to apply both spray applications in cross coats on horizontal replacement parts, for example the hood.

When applying to large objects for example the hood, the vehicle roof etc., the overlap area of the second spray application must not lay in the overlap zone of the first spray application and should instead be moved.

Pay attention that there is even overlap of the »spray passes« and that enough wet spray film is applied.

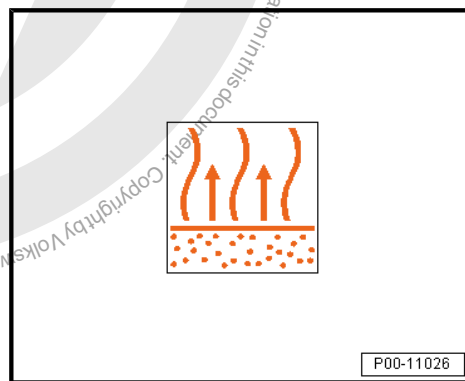
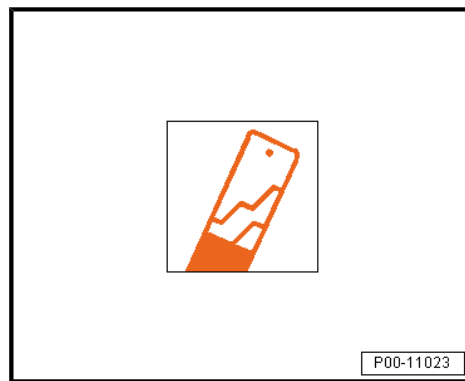
There is a risk of cloudiness from too dry of application due to uneven drying or due to unabsorbed spray mist.

If possible, an entire painting process should be divided up in sections, meaning the vehicle body is separated into attachments, for example the hood, doors etc., and painted in order to prevent overlapping zones and spray mist.

Drying:

Forced drying:

- Final drying time 15 to 20 minutes.





- Drying time 45 minutes at an object temperature of +60 °C (140 °F).

Air Drying is Not Recommended.



Note

- ◆ *The actual gloss level is influenced by different factors hardener, thinner, application types, drying conditions and layer thicknesses.*
- ◆ *Always follow the recommended material quantities.*
- ◆ *It is absolutely necessary to test the mixtures 75 %/25 % or 70 %/30 % on sheet metal in order to achieve the appropriate gloss level for the vehicle. Intermediate steps are possible.*
- ◆ *Gloss level measurements (60° angle) at adjacent parts can also be helpful.*
- ◆ *A touch-up/repair of the matted clear coat within the surface (for example, side part or clever repair) is not possible.*
- ◆ *Painting large areas (complete painting, roof, hood, sidewall etc.) should not take place at high temperatures (maximum 20 °C (68 °F)).*
- ◆ *Dust inclusions cannot be polish out, so therefore ensure that absolute cleanliness is maintained during the entire painting process.*



P00-11027

3.1.4 Paint System for Plastic Parts

Edition 03/2010

This universal painting system enables you to safely and simply paint all plastic parts which can be usually found on the exterior. (Plastic types: PP, EPDM, ABS, PC, PPO, PBTP, UP-GF, PA, PVC, R-TPU, PUR) This technical reference material does not apply to factory primed plastic parts.

Base Surface

Pretreatment of base surfaces:

- The base surface must be free of separating agents. Before cleaning plastic parts, temper them for 60 minutes at +60 °C to sweat out the separating agents.
- Clean with the Antistatic Plastic Cleaner - LKR 001 001 A3- or a milder Silicone Remover, Long - LSE 20 100 A3- .

The effort needed for cleaning depends on the type and quantity of the separating agent used. It is recommend to use a sanding pad to help cleaning Let the thinner evaporate (for example, air-drying overnight at room temperature or 30-40 minutes at +60 °C).



P00-11038



- Before priming, lightly clean again using Antistatic Plastic Cleaner - LKR 001 001 A3- or Silicone Remover, Long - LSE 20 100 A3- .

The Paint Structure is Not for Primed Plastic Parts.

Primer:

To attain secure adhesion, plastics must be primed after they have been thoroughly cleaned. Here the user has two choices:

1. - Prime with Two-Part Synthetic Adhesion Filler, White - LKF 696 009- or Two-Part Synthetic Adhesion Filler, Black - LKF 696 040- . The Two-Part Synthetic Adhesion Filler, White - LKF 696 009- and the Two-Part Synthetic Adhesion Filler, Black - LKF 696 040- are primer/fillers which can be directly painted over with top coat.

2. - Prime with Glazing Adhesion Promoter - ALO 822 000 10- and rework with elastified Two-part HS filler. Further processing with top coat and clear coat.

Notes for Damages:

- Small scratches can be filled after priming with Two-Part Fine Filling Paste - LSP 784 002 A2- .
- After sanding the filled patches insulate them:
 1. - With Two-Part Synthetic Adhesion Filler, White - LKF 696 009- or Two-Part Synthetic Adhesion Filler, Black - LKF 696 040- .
 2. - Prime with Glazing Adhesion Promoter - ALO 822 000 10- and rework with elastified Two-part HS. Further processing with top coat and clear coat.

For the application instructions, evaporating and drying times refer to the respective technical application information.

- ◆ Refer to [⇒ "3.5.5 Two-Part Synthetic Adhesion Filler", page 118](#) .
- ◆ Refer to [⇒ "3.4.1 Adhesion Promoter \(Glazing\)", page 81](#) .
- ◆ Refer to [⇒ "3.6 Top Coats", page 127](#) .
- ◆ Refer to [⇒ "3.7 Clear Coats", page 172](#) .

The Addition of Two-Part Elastic Additive - ALZ 011 001- in Two-Part HS Filler.

- ◆ 15 % for rigid and semi-rigid plastics
- ◆ 30 % for highly flexible plastics.

For the application refer to the technical application information of the respective filler, refer to [⇒ "3.5 Filler", page 85](#) .

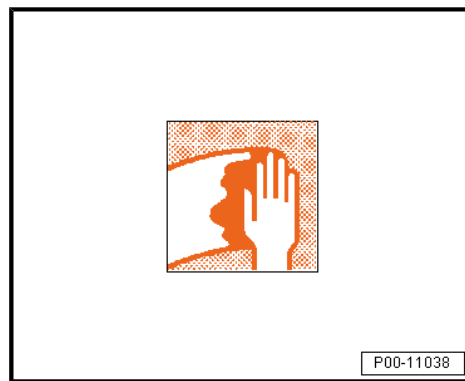


Note

Painted plastic parts may not be cleaned with a high-pressure cleaner before 6 weeks have passed. The minimum distance between the nozzle and the object is 30 cm.

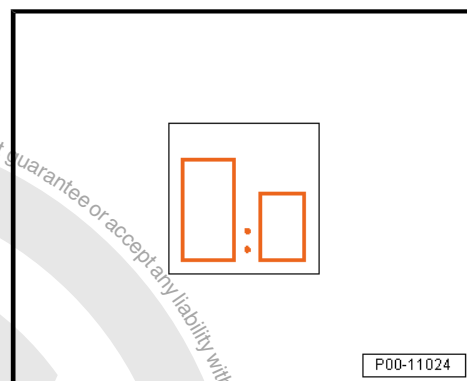
One-Coat Painting

Top Coat:



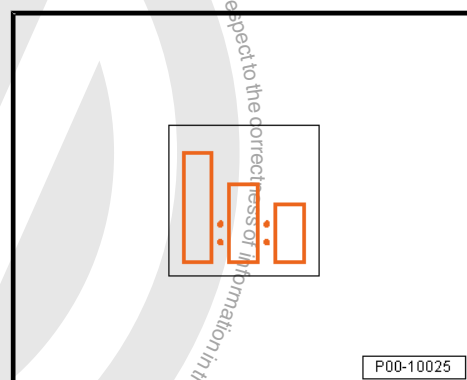


- Mix two-part HS top coat with 15 % Two-Part Elastic Additive - ALZ 011 001- then combine this mixture.

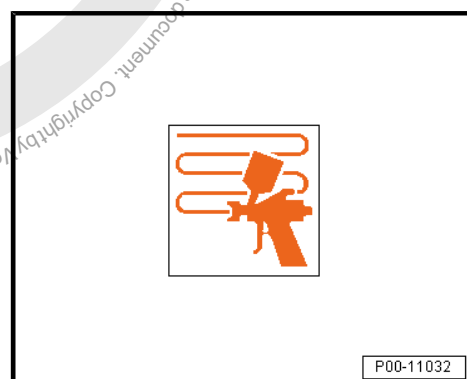


- Mixture ratio 3:1 with two-part VHS hardener and 15 % Two-Part Thinner Special - LVM 009 200 A2- .

Processing:



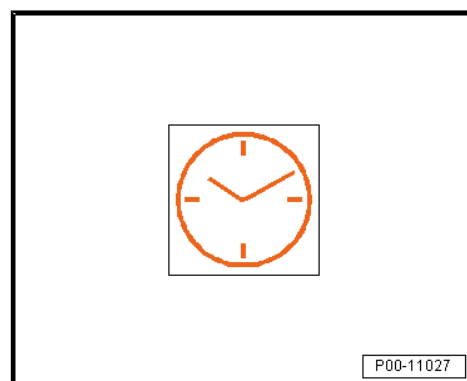
- Apply 1.5 coats.



- Let air dry overnight at +20 °C (68 °F) or after 5 to 10 minute final drying time, 30 to 40 minutes at +60 °C (140 °F). When using Two-Part Elastic Additive - ALZ 011 001- use longer drying times.

Two-Coat Painting Solid, Metallic, Pearls

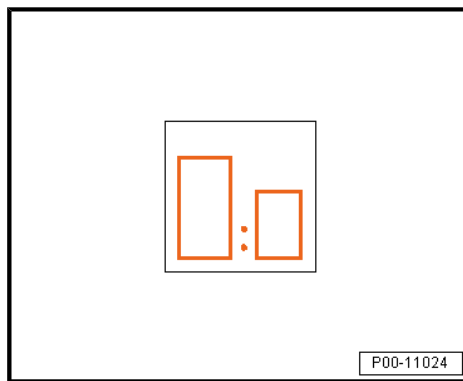
Base Paint:





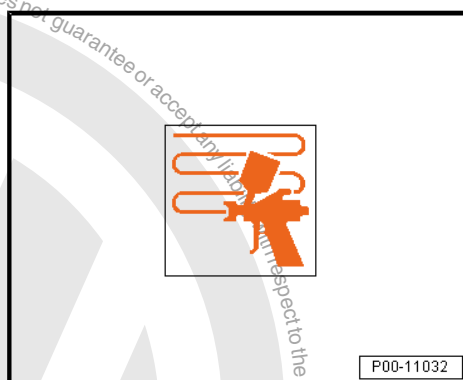
- Water-based base paint with 10 % Purified Water - LVW 010 000 A5- .

Processing:



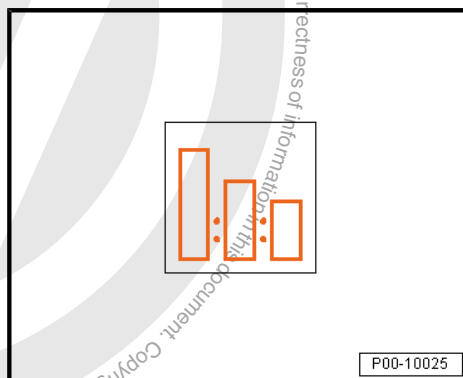
- Apply 1.5 coats.

Clear Coats:



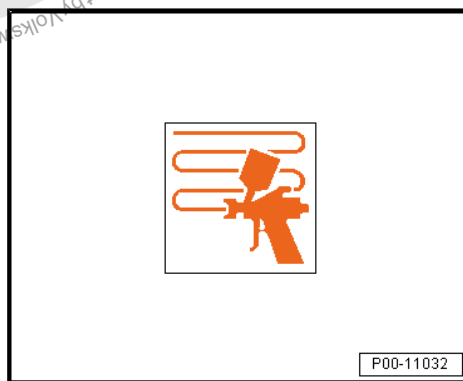
- Mix the two-part HS clear coat with Two-Part Elastic Additive
- ALZ 011 001-

Processing:



- According to the respective technical application instructions of the clear coat, refer to [⇒ "3.7 Clear Coats", page 172](#) .

Drying:





- Let air dry overnight at +20 °C (68 °F) or after 10 minute final drying time, 40 to 45 minutes at +60 °C (140 °F). When using Two-Part Elastic Additive - ALZ 011 001- use longer drying times.

Painting with Satin Finish Paint Shades

One-Coat Painting, Top Coat:

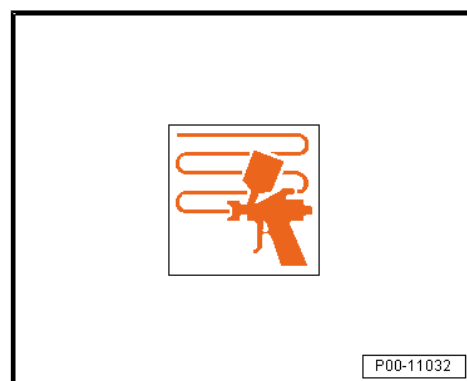
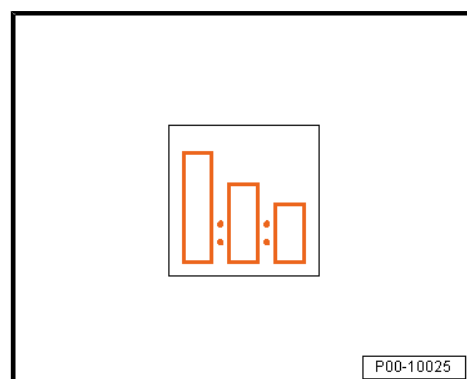
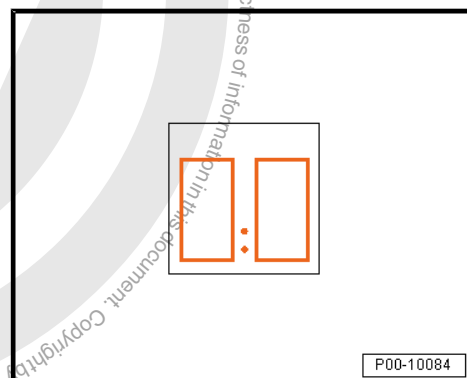
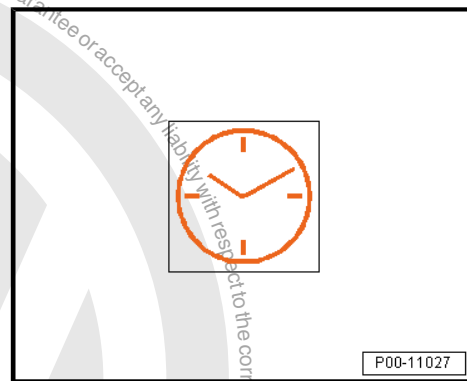
- Mix two-part top coat in a 1:1 ratio with Two-Part Matting Component - ALN 775 106- then combine this mixture.

- Mixture ratio 4:1 with two-part VHS hardener and 15 % Two-Part Thinner, Special - LVM 009 200 A2- .

Processing:

- Apply with two spray applications with 5 to 10 minutes' intermediate drying time for an even paint film surface.

Drying:





- Let air dry overnight at +20 °C (68 °F) or after 5 to 10 minutes final drying time 30 to 40 minutes at +60 °C (140 °F).

Painting In Color Shades With Texture

One-Coat Painting, Top Coat:

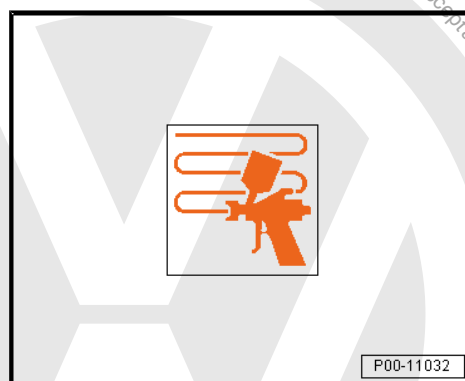
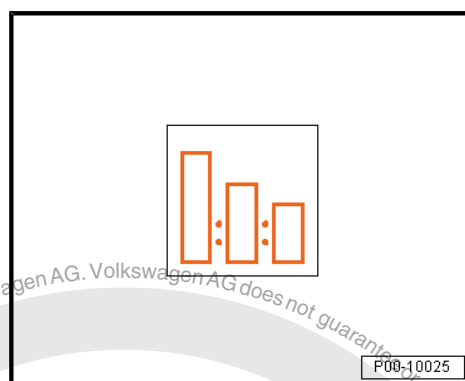
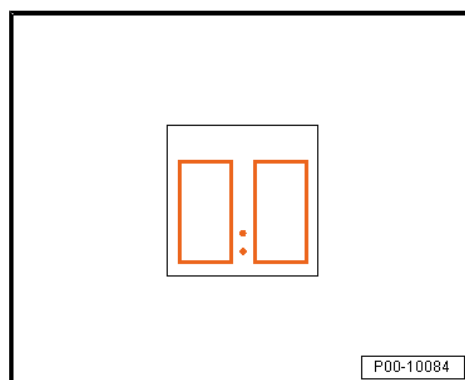
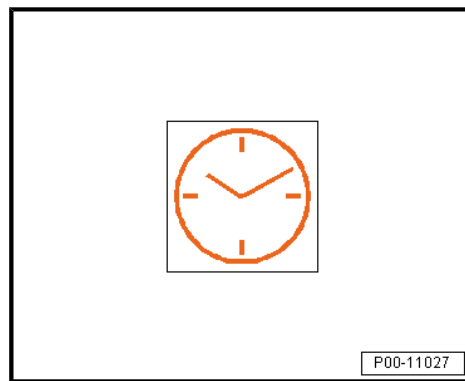
- Mix two-part HS top coat in a 1:1 ration with Structuring Component, Rough/Fine - ALN 775 107/108- then combine this mixture.

- Mixture ratio 4:1 with two-part VHS hardener and 15 % Two-Part Thinner, Special - LVM 009 200 A2- .

Processing:

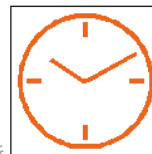
- Two spray applications:
 1. Apply normal spray application, 5 to 10 minutes with intermediate ventilation.

2. Apply the spray application according to the desired texture.





- Let air dry overnight at +20 °C (68 °F) or after 5 to 10 minutes final drying time 30 to 40 minutes at +60 °C (140 °F).



P00-11027

3.1.5 Aqua Premium System, Touch-Up System for Two Layer Colors

Edition 04/2013

Product Description/Objective

To achieve an optically flawless color shade transition in the blended area or adjacent parts, for example fender/door.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Two-Part HS Filler
- ◆ Intact old paint
- ◆ For plastic surfaces prime with Glazing Adhesion Promoter - ALO 822 000 10- and rework with elastified Two-part HS.

Pre-treatment of base surfaces:

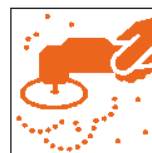
- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

Preparation

- Sand the repair area with P500-P600 grit sandpaper or wet-sand with water-resistant P800-1000 sandpaper.



P00-11040



- Sand the adjacent area (around the vehicle parts and the repair area) thoroughly with P1000-3000 sandpaper, only wet sand.



Note

If beading, edges or grip recesses are present, use a sanding pad beforehand.



P00-11041

Cleaning

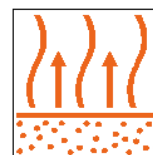
- Clean the entire surface thoroughly with Silicone Remover - LVM 020 000 A5- to remove dust, sanding residue and other dirt.
- Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.



P00-11038

- Allow wet-sanded surfaces and cleaned surfaces to dry completely.

When using a dust extraction, use next generation towels with an effective light adhesive formula to minimize the risk of chemical or adhesive residue (for example, Dust Cloth - VAS6177-), refer to ["4.2.1 Dust Cloth VAS6177", page 343](#).



P00-11026

Special Instructions

- ◆ Sanded-through areas must be insulated with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- . The sanded-through areas should not be larger than 5.0 cm in diameter.
- ◆ When using the two-part HS filler, any bare areas must be insulated with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .

Method 1:

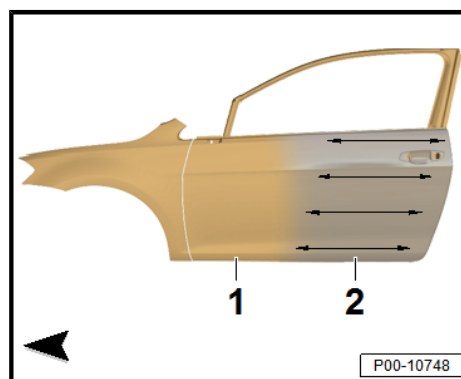
Repair Process, Touch-Up the Neighboring Surfaces (for Example Color Matching Fender/Door)

- Apply 1-2 preliminary spray applications of the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- -2- in the blended area with normal spray pressure on the old paint/filled surface -1-.



Note

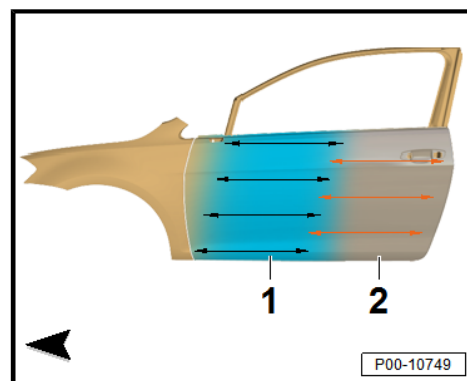
Pay attention that the blended area is large enough.



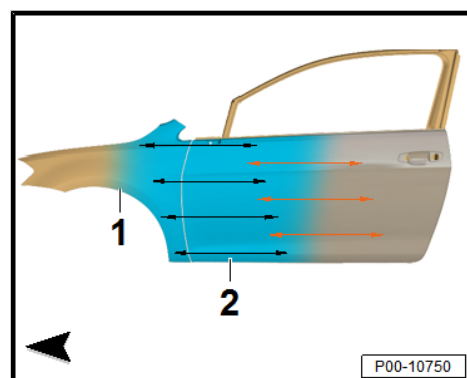
P00-10748



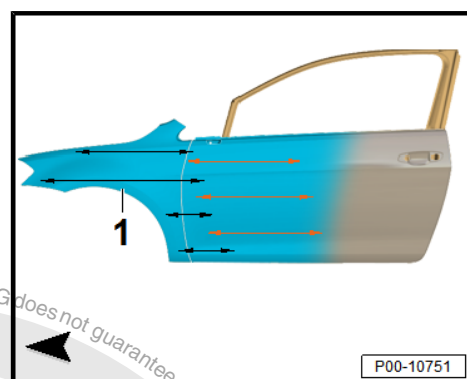
- Then the first base paint spray application -1- is lightly applied from the blended area into the wet touch-up additive -2-.



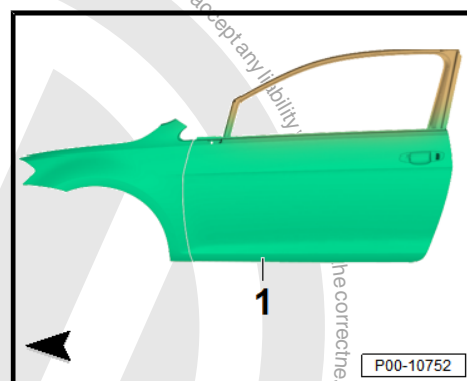
- In the second step a further reduced spray application -2- follows without a drying time. Pay attention that the spray application is applied in the area previously shifted forward -1- to archive an even effect.



- After the touch-up painting the connection area and the remaining surfaces (starting from the new part) -1- in 1.5 spray applications (standard process) are painted.



- After ventilating, apply a two-part HS clear coat -1- over the entire repair surface.





Method 2:

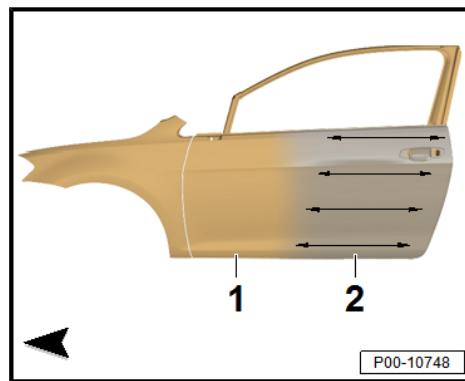
Repair Process, Touch-Up the Neighboring Surfaces (for Example Color Matching Fender/Door, Alternative Method for Solid and Dark Effect Color Shades).

- Apply 1-2 preliminary spray applications of the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- -2- in the blended area with normal spray pressure on the old paint/filled surface -1-.

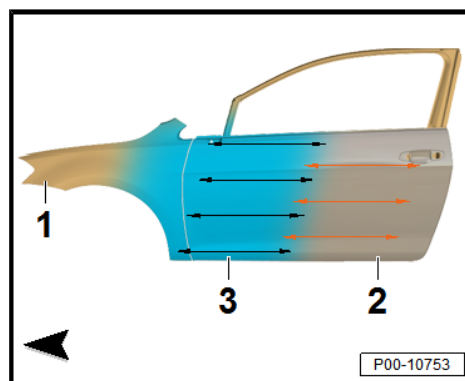


Note

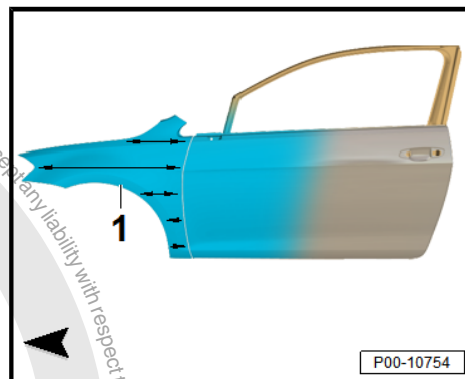
Pay attention that the blended area is large enough.



- Then apply the first base paint spray application -3- from the blended area (starting from the new part) to the edge of the wet touch-up additive -2-. Immediately after that, apply the half effect/finish spray application onto the wet touch-up additive -2- and to the new part -1-, from a distance.



- After touch-up painting the base paint application -1- takes place on the remaining surfaces in 1.5 spray applications (standard process).

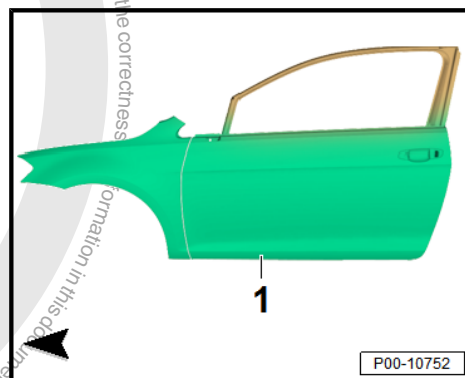


- After ventilating, apply a two-part HS clear coat -1- over the entire repair surface.



Note

- ◆ Starting with the first spray application, it is recommended to even out the subsequent repair area spray applications starting from the touch-up area that is farthest out. For that reason, the subsequent spray applications should always remain inside the previous spray application in order to archive an even effect.
- ◆ While processing the Aqua premium water-based base paint, the spray gun material flow/trigger remains completely open.
- ◆ The spraying pressure for the effect spray application can vary between 1.5 and 2.0 bar (21.7 to 29 psi) depending on the size of the object.





Method 3:

Repair Process, Touching-Up Minimal Damage for Example Clever Repair.



Note

The repair/filler area should be kept as small as possible.

Possibility 1

- ◆ For most colors, use the adjusted water-based base paint.

Possibility 2

- ◆ It is recommended for colors with a high percentage of metal to adjust the Aqua premium water-based base paint in a 1:1 ratio with Touch-Up Additive for Aqua Premium - LVM 035 100 A3- + 10 % Flop Control - LWM 085 386 A2- (Additive For Aqua Premium - LVM 035 200/301- is not required). Use the Aqua Premium dipstick for clever repair.
- ◆ Depending on the color and covering capacity, apply 3-5 spray applications of this mixture with reduced pressure (0.8-1.5 bar (11.6 to 21.7 psi)) to the repair area/run-off area. Make sure that each spray application is performed a little bit further and allowed to ventilate and matt. The ventilation time can be accelerated by blowing.
- After an appropriate final ventilation time, the clear coat can be applied.



Note

- ◆ *While processing the Aqua premium water-based base paint, the spray gun material flow/trigger remains completely open.*
- ◆ *For efficient ventilating and drying, stationary blowing devices or forced drying (for example heated drying) are recommended.*

Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The Aqua Premium mixing paints can only be used within the color tone formulas.
- ◆ When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.

Cleaning the Tools

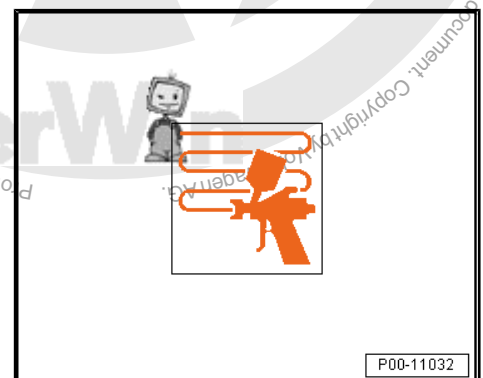
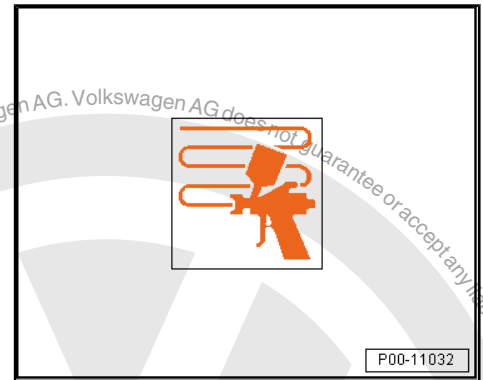
- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5- . Then rinse with Nitrocellulose Thinner - LVE 856 000 A3- .

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

- ◆ Wear a breathing mask when using water-soluble products.





3.1.6 Aqua Premium System, Touch-Up System for Three Layer Colors

Edition 04/2013

Product Description/Objective

To achieve an optically flawless color shade transition in the blended area or adjacent parts, for example fender/door.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Two-Part HS Filler
- ◆ Intact old paint
- ◆ For plastic surfaces prime with Glazing Adhesion Promoter - ALO 822 000 10- and rework with elastified Two-part HS filler (Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2-).

Pre-treatment of base surfaces:

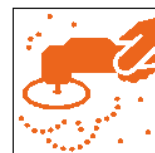
- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

Preparation

- Sand the repair area with P500-P600 grit sandpaper or wet-sand with water-resistant P800-1000 sandpaper.



P00-11040

- Sand the adjacent area (around the vehicle parts and the repair area) thoroughly with P1000-3000 sandpaper, only wet sand.



P00-11041



Note

If beading, edges or grip recesses are present, use a sanding pad beforehand.



Cleaning

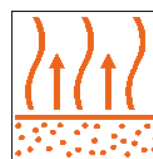
- Clean the entire surface thoroughly with Silicone Remover - LVM 020 000 A5- to remove dust, sanding residue and other dirt.
- Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.



P00-11038

- Allow wet-sanded surfaces and cleaned surfaces to dry completely.

When using a dust extraction, use next generation towels with an effective light adhesive formula to minimize the risk of chemical or adhesive residue (for example, Dust Cloth - VAS6177-), refer to ➔ ["4.2.1 Dust Cloth VAS6177", page 343](#) .



P00-11026

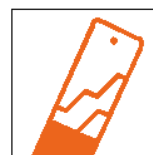
Special Instructions

- ◆ Sanded-through areas must be insulated with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- . The sanded-through areas should not be larger than 5.0 cm in diameter.
- ◆ When using the two-part HS filler, any bare areas must be insulated with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .
- ◆ Test spraying on sheet metal is strongly recommended.

Touching-Up Three Layer Colors:

Adjusting the touch-up additives:

- Adjust the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- with 10 % Aqua Premium Hardener - LVM 045 000 A1- .



P00-11023

Repair Process, Touch-Up the Neighboring Surfaces (for Example Color Matching Fender/Door)



P00-11032

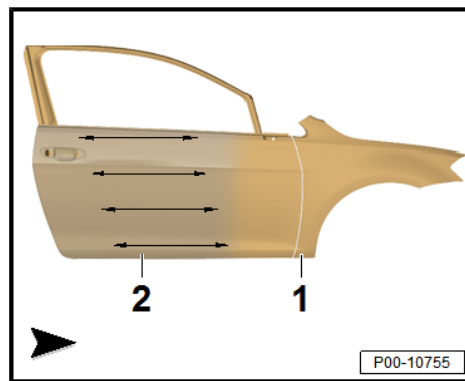


- Apply 1-2 preliminary spray applications of the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- -2- in the blended area with normal spray pressure on the old paint/filled surface -1-.

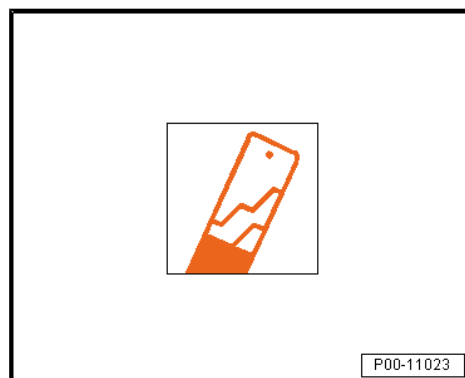


Note

Pay attention that the blended area is large enough.



Adjusting the base color:

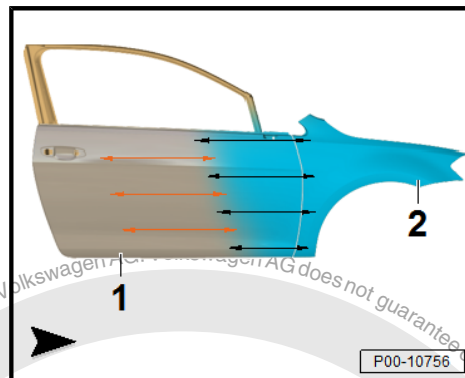


- Apply the primary color shade, adjusted for the 5 % Aqua Premium Hardener - LVM 045 000 A1- and 10 % Additive For Aqua Premium - LVM 035 301 A3- for solid colors or 20 % Additive For Aqua Premium - LVM 035 301 A3- for effect colors and adjusted base colors -2-, onto the repair area and on the bordering touch-up area up to the covering capacity.
- While doing so the place the run-out area in the wet Touch-Up Additive For Aqua Premium - LVM 035 100 A3- -1-.



Note

For large surfaces, at high temperatures as well as low humidity an addition of up to 10 % Aquaplast Purified Water - LVW 010 000 A5- is possible.



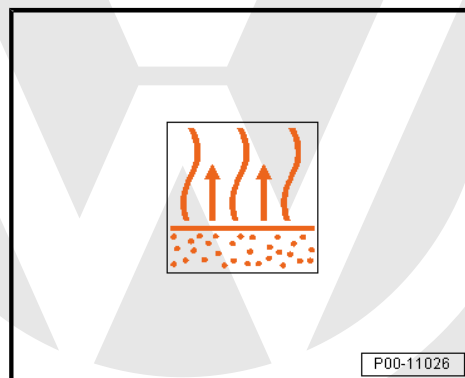
Curing Time:

- ◆ Effect color, 45 to 60 minutes at +20 °C (68 °F)
- ◆ Solid colors, 90 to 120 minutes at +20 °C (68 °F)

Ventilating/Drying

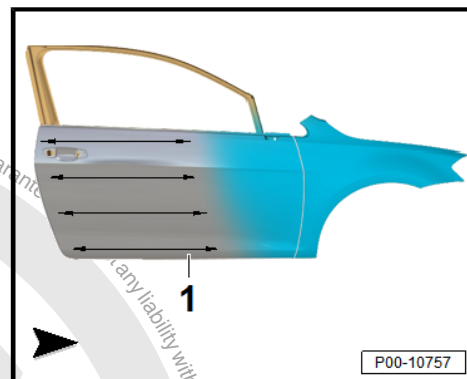
Choices:

- ◆ The ventilation time should take place assisted with blowing devices at 20 to 40 °C (68 to 104 °F) until the surface becomes completely matted.
- ◆ Allow 5 to 10 minute intermediate ventilation time then 10 to 15 minute final ventilation time at 60 to 65 °C (140 to 149 °F). Let the foundation cool off before applying the effect.
- ◆ Ventilate until the surface becomes completely matted, without blowing.





- After ventilating apply 1 to 2 preliminary spray applications of the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- -1- in the blended area without hardener.



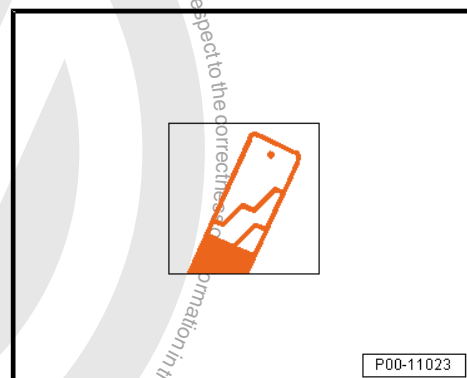
Adjusting the effect color:

- The effect color is adjusted with 20 % Additive for Aqua Premium - LVM 035 301 A3- .



Note

For large surfaces, at high temperatures as well as low humidity an addition of up to 10 % Aquaplast Purified Water - LVW 010 000 A5- is possible.



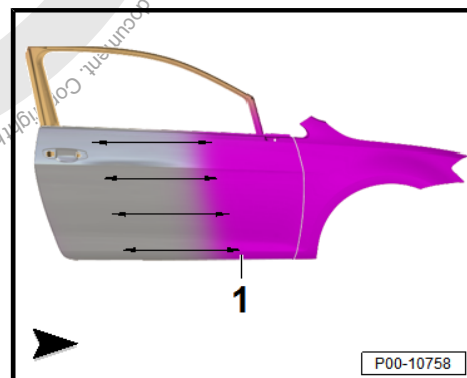
Step 1, Painting the Effect Color (from the Outside Inward)

- Apply the effect color from run-out area to the to the new part -1-. This means it is applied from the outside toward the inside (wet in wet) in the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- .
- Then if necessary apply the next effect color layer in the direction of the new part.

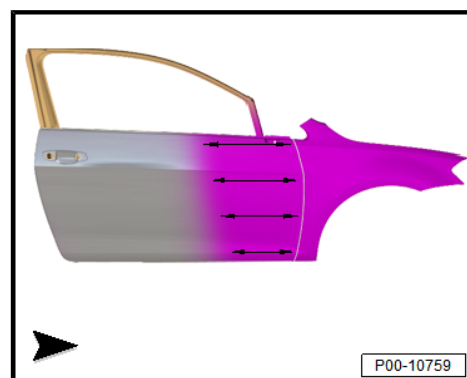


Note

For some effect colors 2 to 3 additional spray applications are necessary to match the effect.

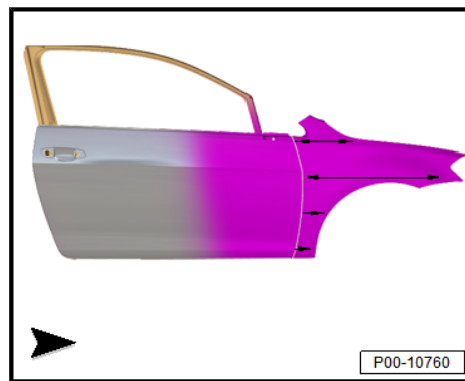


Step 2, Painting the Effect Color (from the Outside Inward)





Step 3, Painting the Effect Color (from the Outside Inward)



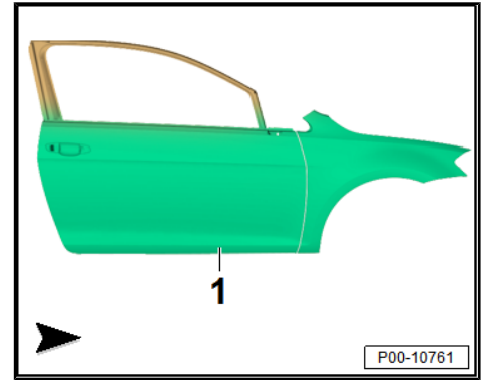


- After ventilating, apply a two-part HS clear coat -1- over the entire repair surface.



Note

- ◆ *Starting with the first spray application, it is recommended to even out the subsequent repair area/base color spray applications starting from the touch-up area that is farthest out. For that reason, the subsequent spray applications should always remain inside the previous spray application, in order to avoid visible contours/shadows.*
- ◆ *While processing the Aqua premium water-based base paint, the material flow (spray gun trigger) remains completely open.*
- ◆ *The spraying pressure for the effect spray application can vary between 1.5 and 2.0 bar (21.7 to 29 psi) depending on the size of the object.*
- ◆ *For additional notes to the drying times refer to the technical application information.*



Notes for Large Area Applications:

- ◆ Use the Additive for Aqua Premium - LVM 035 301 A3- when applying 3 coat effect colors.
- ◆ The addition of up to 10 % Aquaplast Purified Water - LVW 010 000 A5- is recommended for large surfaces, high temperatures and low humidity.
- ◆ For efficient ventilating and drying, stationary blowing devices or forced drying (for example heated drying) are recommended.

Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The Aqua Premium mixing paints can only be used within the color tone formulas.
- ◆ When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.

Cleaning the Tools

- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5- . Then rinse with Nitrocellulose Thinner - LVE 856 000 A3- .

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

- ◆ Wear a breathing mask when using water-soluble products.

3.1.7 Aquaplast Design and Multi-Color Paint-work

Edition 05/2014

In order to achieve error-free design and multi-colored paint applications using Aquaplast solid, metallic, pearlescent base paint,



pay attention to the important notes and in some cases use special tools.

Preparation:

If the design is sketched out on the base surface (filler, paint) do not use any market pens with water soluble colors, to prevent bleeding through the base paints. If it is not possible the markings must be carefully removed using Silicone Remover - LSW 019 000 A5- after covering the design.

Covering the Base Surfaces (Two-Part HS Top Coat)

For work on two-part HS top coats commercially available outline/decorative tape and masking tape are used.

Covering the Aqua Plus Solid, Metallic, Pearlescent Base Paint

Use commercially available outline/decorative tape and masking tape.

- ◆ Carefully apply outline and masking tape.
- ◆ If surfaces are to be covered, use cover sheeting (To avoid marks)
- ◆ Do not leave outline and masking tape on the surfaces longer than necessary.

Dry the Individual Water Based Paint Layers.

Heated drying is not recommended, because there is a risk that the glue from the outline and masking tape will transfer to the water-based paint.

The individual water based paint layers can be dried with an air nozzle or slightly raised temperature. These are the most effective drying methods.

For the individual colors the application of a layer of more than 40 µm thick must be prevented. As a result, problems may arise, such as the film debonding when exposing, during drying or with covering ability.

Multi-Color Coats with Insulating Layer

To prevent bleeding through or discoloring of the individual coats for multi-color coats it is recommended to apply insulation to the individual applies coats with HS clear coat.

For this kind of insulation layer the Two-Part HS Vario Clear Coat - L2K 769 K01 A5- mixed with Two-Part HS Hardener, Short - LHA 021 004 A3- is especially suitable.

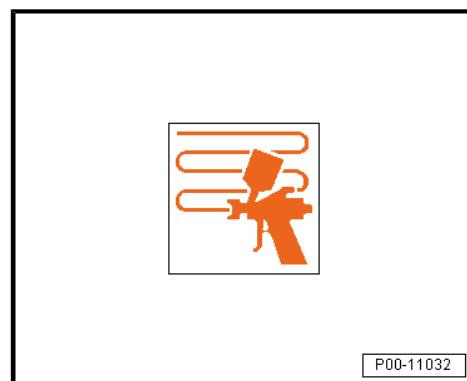
To achieve an acceptable drying or covering ability the user or longer hardener is not recommended.

The insulation layer is applied exclusively on the Aquaplast water-based base paint.

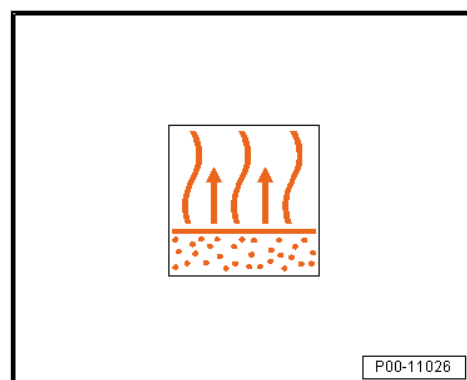
Then carry out the required steps as an example for a multi-color paintwork of three color shades.



- Apply the first color shade with Aquaplast water-based base paint.



- Let the base paint dry a minimum of five hours at +20 °C (68 °F).

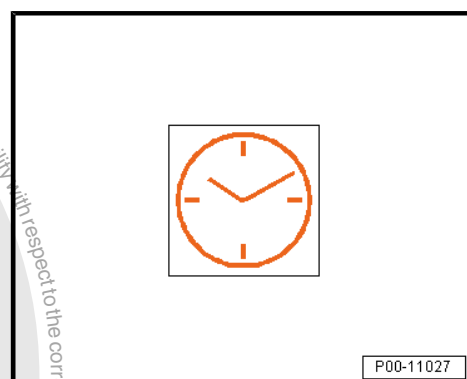


Forced drying:

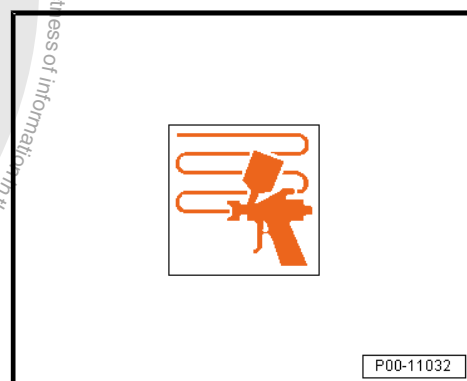
20 minutes at +20 °C (68 °F) and 30 minutes at +60 °C (140 °F)

After drying allow it to cool.

- Tape off the contours with commercially available tape or foil.

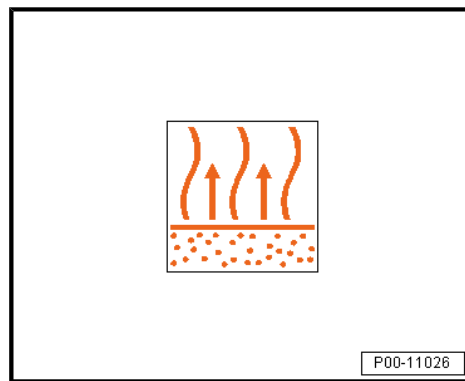


- Apply a thin preliminary spray application of Touch-Up Additive for Aquaplast - LVM 030 000 A2- .





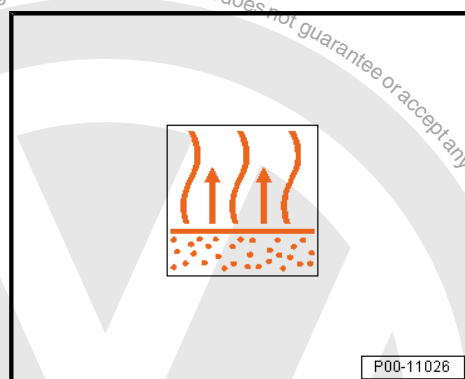
- Allow the spray application to dry for 20 minutes at +20 °C (68 °F).



- Apply the second color shade with Aquaplus water-based base paint.



- Let the base paint dry a minimum of five hours at +20 °C (68 °F).

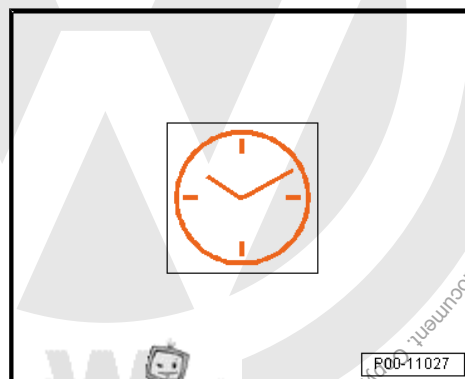


Forced drying:

20 minutes at +20 °C (68 °F) and 30 minutes at +60 °C (140 °F)

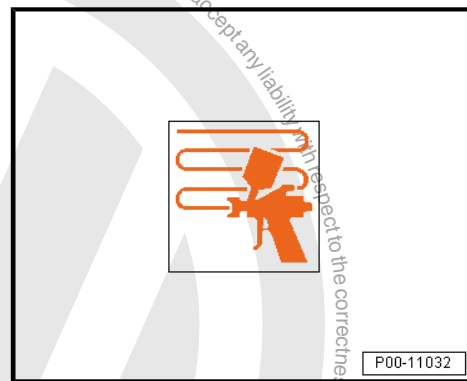
After drying allow it to cool.

- Tape off the contours with commercially available tape or foil.

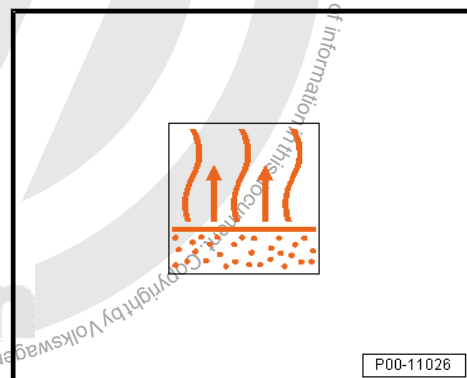




- Apply the third color shade with Aquaplast water-based base paint.



- Let the matt base color dry.
- Remove the masking.

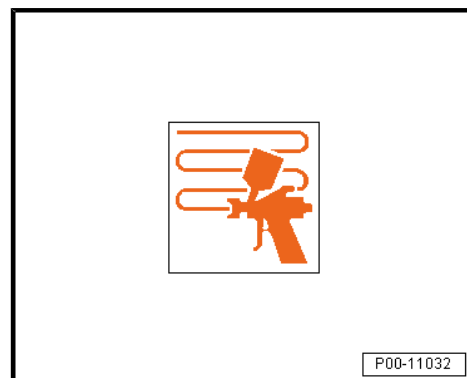


- Apply the top layer with two-part HS clear coat.



Note

- ◆ For the required neighboring surfaces only use plastic film, to prevent dissolving of the paint coats already applied.
- ◆ By covering the markings they will disappear due to the following clear coat application.
- ◆ For all additional parameters for the application of the respective relevant products refer to the respective technical application information.



3.2 Filling Paste

⇒ [“3.2.1 Two-Part Steel Filling Paste Set”, page 51](#)

⇒ [“3.2.2 Two-Part Fine Filling Paste”, page 54](#)

⇒ [“3.2.3 Two-Part Fine Filling Paste, Flexible”, page 57](#)

⇒ [“3.2.4 Two-Part Spray Filling Paste”, page 60](#)

⇒ [“3.2.5 Two-Part IR Premium Filling Paste”, page 64](#)

⇒ [“3.2.6 Two-Part Diamond Aluminum Filling Paste”, page 68](#)

3.2.1 Two-Part Steel Filling Paste Set

Definition:

- ◆ Two-Part Steel Filling Paste Set - DA 787 300 A2-

Edition 09/2012

Product Description

This filling paste is made of polyester and a metal powder mixture and is used to produce true-to-contour surfaces on highly



stressed body surfaces. This filling paste works especially well as a replacement for lead-coated alluvial tin.

This filling paste is pliable and sandable while maintaining a high degree of firmness and temperature stability, which makes it especially suitable to be painted over.



Note

The Two-Part Hardener, Long - LVM 018 100 A2- must be used at temperatures over 30 °C (86 °F) and/or with a relative humidity over 80 %.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Steel
- ◆ General metallic base surfaces
- ◆ Galvanized sheet steel

Pre-treatment of base surfaces:

- Carefully remove any grease and sand the base surface. The base surfaces must be prepared, refer to ["4.1.6 Pneumatic Brush Grinder Set VAS6446 "](#), [page 335](#) . This means down to the bare metal with P40 grit sandpaper. If necessary, clean the dirty surface once again and then remove any cleaning residue again using the brush grinder.

- Clean once more using silicone remover before reworking.

Processing

Application type: Filling



P00-11037



P00-11038



P00-11031



Mixture ratio:

- Both components are mixed in a ratio of 1 part by volume of hardener liquid and 2.5-3 parts by volume of powder or 10 grams of hardener liquid and 58 grams of powder to create a product that can be spread.



Note

Avoid using too much hardener liquid, since this can negatively affect the final strength and adhesion of the filling paste.

Curing Time:

- The pot life is approximately four to six minutes at +20 °C (68 °F).

Reaction Temperature:

- The reaction temperature requires at least +5 °C (41 °F).

Drying

Air Drying:

- Cure using the Short-Wave IR heater.
- ◆ Ventilate approximately 10 minutes at +20 °C (68 °F).
- ◆ Pre-hardening: 10 minutes at approximately 50 °C (122 °F)
- ◆ Hardening 1st step: 10 minutes at 75 °C (167 °F)
- ◆ Hardening 2nd step: 10 minutes at 85 °C (185 °F)

Sanding Compatibility

- Use the body planer to remove excess material before the thermal final curing process.
- Then use P80 grit dry sandpaper to sand the contours.

Reworking:

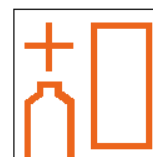
No restriction

Characteristics

Air Drying:	Powder + Hardener Liquid	
Flashpoint:	Hardener	33 °C (91.4 °F)
	Powder	not applicable

Storage

The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-11022



P00-11027



P00-11042



Storage Conditions

- Store in a cool and dry place. Storage temperature +20 °C (68 °F).



Note

- ◆ *Use only in well ventilated spaces.*
- ◆ *The wearing of protective gloves and dust masks is recommended.*
- ◆ *The use of a grinding dust extractor is recommended.*



P00-10050

3.2.2 Two-Part Fine Filling Paste

Definition:

- ◆ Two-Part Fine Filling Paste - LSP 784 002 A2-

Edition 06/2011

Product Description

The two-part fine filling paste is a very fine thixotropic polyester filling paste.

This filling paste is suitable for small repairs.

Application Instructions

Properties

- ◆ fine and non-porous
- ◆ removes easily
- ◆ sands easily
- ◆ high elasticity for touching up synthetic surfaces

Base Surface

Suitable base surfaces:

- ◆ Steel
- ◆ Aluminum
- ◆ glass fiber reinforced plastics
- ◆ old paint and factory paint
- ◆ hardened two-part filler/two-part primers
- ◆ plastic parts glaze-primed with Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2- or Adhesion Promoter - ALO 822 000 10-
- ◆ primed surfaces with two-part polyester filling paste.



Caution

This filling paste may not be applied to PVB (acid-hardening) adhesive primers or one-part primers (for example, synthetic resin).

Application on thermoplastic or elastic coatings is also not possible. In these cases, only apply filler paste to bare steel.



Pre-treatment of base surfaces:

- Remove any grease and sand the surface.
- Bare metallic base surfaces are to be insulated with Two-Part Wash Primer - LHV 043 000 A2- and then filled with Two-Part HS Performance Filler . Sand the filler after drying.
- With UP-GF underbodies, clean components of any residual agents and sand the surface.

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

Processing

Application type:

- Apply filling paste.

Mixture ratio:

- Add 2 to 3 % by weight Two-Part Hardener - LVM 018 000 A1/ A2- or, especially when dealing with high temperatures, Two-Part Hardener, Long - LVM 018 100 A2- .



Note

Avoid using excessive hardener paste, to prevent it from bleeding through, especially on daylight colors and light metallic colors.

Curing Time:

- At +20 °C (68 °F) room temperature for about three to five minutes.

Reaction Temperature:

- Minimum +5 °C (+ 41 °F)



P00-11037



P00-11038



P00-11031



P00-11022



Drying

Air Drying:

- At +20 °C (68 °F) room temperature for about 20 to 30 minutes.



P00-11027

Infrared drying:

- ◆ Short-wave heaters for three minutes (at 50 % power)
- ◆ Medium-wave heaters for five minutes.



P00-11028

Sanding Compatibility

In connection with the aforementioned drying time:

- Dry-sand the pre-sanding with P180-240 grit sandpaper
- Dry-sand the final sanding with P240-320 grit sandpaper



P00-11042

- While wet, sand the pre-sanding with P240-320 sandpaper
- While wet, sand the final sanding with P600-800 sandpaper



P00-11041



Note

- ◆ When wet-sanding, make sure to wipe and dry off the surface.
- ◆ Temperature resistance up to +80 °C (176 °F).



Reworking

Recommended structure:

- ◆ One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-
- ◆ Two-Part Wash Primer - LHV 043 000 A2- and Two-Part HS Vario Filler
- ◆ Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2-
- ◆ Unelasticized Adhesion Promoter - ALO 822 000 10- and Two-Part HS Filler (for plastic parts)
- Then paint over with the top coat.

Characteristics

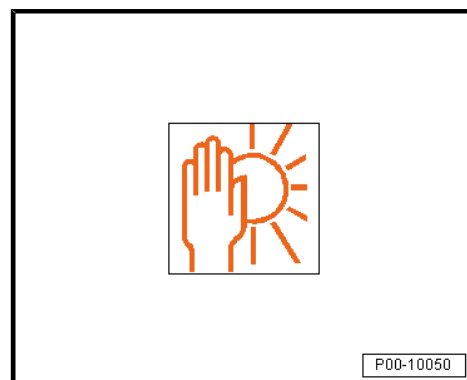
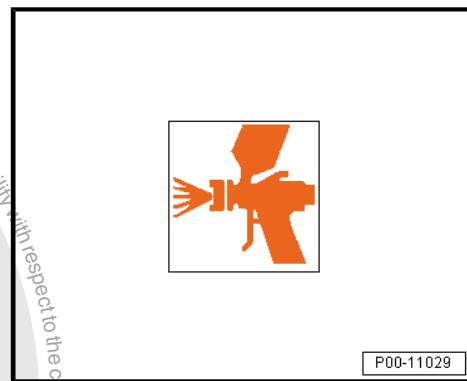
Delivery Viscosity	pasty
Flashpoint:	Filling paste over 23 °C (73.4 °F)
VOC value: 2004/42/IIB (b)(250)170	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 250 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 170 g/L.

Storage

The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +20 °C (73.4 °F).

Storage Conditions

- Storage Temperature +20 °C (68 °F) (temperature should not exceed +30 °C (86 °F)).



3.2.3 Two-Part Fine Filling Paste, Flexible

Definition:

- ◆ Two-Part Fine Filling Paste, Flexible - LSP 787 100 A1-

Edition 07/2010

Product Description

The Two-Part Fine Filling Paste, Flexible - LSP 787 100 A1- is a two component filler paste with high filling characteristics.

The product does not collapse and has excellent adhesion on a multiple base surfaces.

This filling paste is used especially for plastics:

Other Application Areas:

- ◆ For repair of plastic exterior body components where surface is damaged with material removed (scratches, holes, rips), without being broken through



- ◆ For filling of KU-plastics, that were previously repaired with the Plastic Repair Set - D 007 700- .
- ◆ For filling over a repair area to eliminate a mark

Application Instructions

Properties

- ◆ constant, fine, creamy consistency
- ◆ high filling characteristics - no collapsing
- ◆ hardens quickly
- ◆ sands well
- ◆ good adhesion on metal and plastic

Base Surface

Suitable base surfaces:

- ◆ Steel
- ◆ Galvanized sheet steel
- ◆ Aluminum
- ◆ On all cleaned and sanded plastics in vehicle area
- ◆ Fiberglass-reinforced plastics (UP-GF)
- ◆ Well-sanded old paint or factory paint
- ◆ hardened two-part filler/two-part primers

Pre-treatment of base surfaces:

- Remove any grease and sand the surface.
 - Bare metallic base surfaces are to be insulated with Two-Part Wash Primer - LHV 043 000 A2- and then filled with Two-Part HS Performance Filler . Sand the filler after drying.
 - With UP-GF underbodies, clean components of any residual agents and sand the surface.
-
- Clean once more using the Silicone Remover, Long - LVM 020 100 A5- or Silicone Remover - LVM 020 000 A5- before re-working.



P00-11037



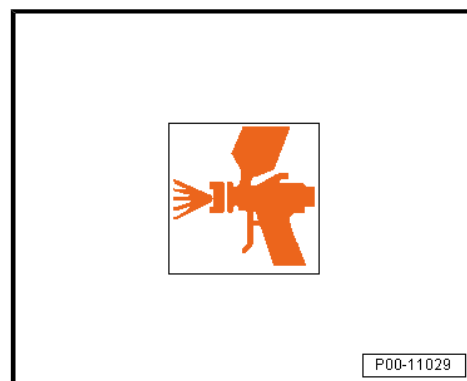
P00-11038



Reworking

Recommended structure:

- ◆ Fine filling paste by itself.
- ◆ Rework fine filling paste with Two-Part Fine Filling Paste - LSP 784 002 A2- or with Two-Part Spray Filling Paste - ALN 788 007- (except on galvanized steel).
- ◆ Prime bare spots and filled areas with Two-Part Wash Primer - LHV 043 000 A2- and then fill with Two-Part HS Performance Filler .
- Then paint over with the top coat.



Note

Before filling, dry-sand the entire surface with P280-400 sandpaper.

Application Table

Mixing ratio	2 to 3 % by weight		
Add hardener	Two-Part Hardener LVM 018 00 A1-		
Pot life	2 to 4 minutes at +20 °C (68 °F)		
Drying time (air drying at +20 °C (68 °F) room temperature)	20 to 30 minutes		
Infrared drying:			
	short-wave	approximately three minutes (at 50 % output)	
	middle-wave	approximately five minutes	
Sanding compatibility		Preliminary sanding	Final sanding
	Wet	as fine filling paste P180 grit	as fine filling paste P320-P360 grit
	Dry	as filling paste P80 grit, as filling paste P120 grit	as filling paste P120-P240 grit, as fine filling paste P280 grit



Caution

This filling paste may not be applied to PVB, (acid-hardening) adhesive primers or one-part primers (for example, synthetic resin).

Application on thermoplastic or elastic coatings is also not possible. In these cases, only apply filler paste to bare steel.





Note

- ◆ *Before filling, dry-sand the entire surface with P280-320 sandpaper.*
- ◆ *Avoid using excessive hardener paste, to prevent it from bleeding through, especially on daylight colors and light metallic colors.*
- ◆ *Reaction temperature at least +5 °C (+ 41 °F).*

3.2.4 Two-Part Spray Filling Paste

Definition:

- ◆ Two-Part Spray Filling Paste - ALN 788 007-

Edition 06/2011

Product Description

The Two-Part Spray Filling Paste - ALN 788 007- is a two-part spray filling paste used to level gross irregularities for vehicle repair work.

Other Application Areas:

- ◆ Is especially suitable for use on large surfaces.
- ◆ Sprays on well.
- ◆ Easy to process and maintains good stability under load.
- ◆ Flows well
- ◆ VOC value less than 250 g/L

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Cleaned and sanded with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 ... A2- grundierte und anschließend mit 2K-HS-Füller Insulated steel panels, galvanic/electrolytic galvanized steel panels or aluminum
- ◆ Hardened, solvent-resistant, well-preserved and sanded old paint or factory paints.
- ◆ Areas filled with two-part polyester filling paste
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents



Caution

This filling paste may not be applied to PVB (acid-hardening) adhesive primers or one-part primers (for example, synthetic resin).

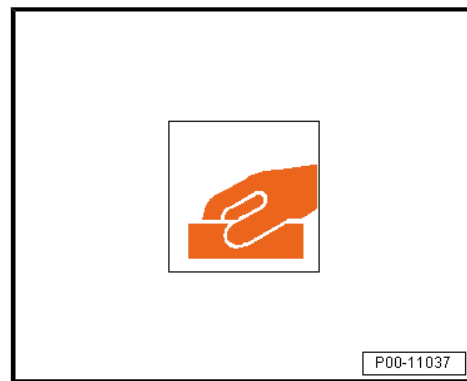
Application on thermoplastic or elastic coatings is also not possible.

In order to achieve the best possible protection against corrosion, we recommend pre-priming residual rust spots on corners and edges, as well as bare-sanded areas with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 ... A2- and then insulating with Two-Part HS Filler .

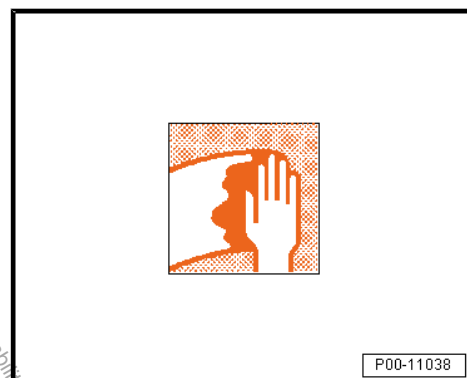


Pre-treatment of base surfaces:

- Remove any grease and sand the surface.
- With UP-GF underbodies, clean components of any residual agents and sand the surface.



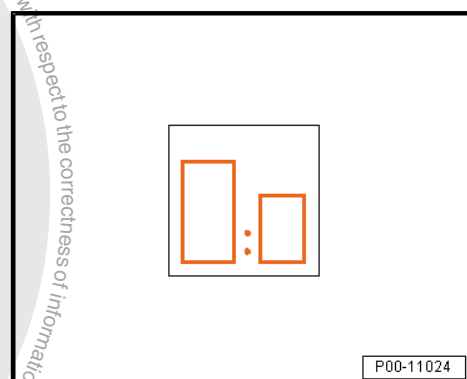
- Before reworking, apply a suitable cleaning agent to all base surfaces to ensure a clean and residue-free surface.



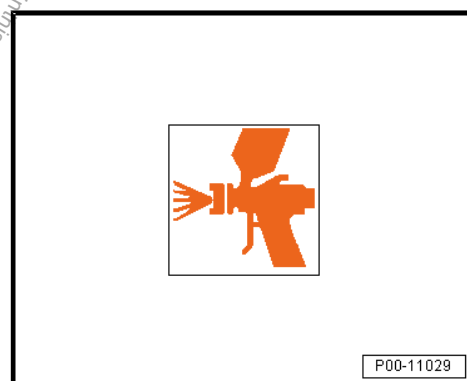
Processing

Mixture ratio:

- Add 5% Two-Part Hardener - LHA 841 000 A2- by volume.
- Processing time 20 to 30 minutes at +20 °C (68 °F)
- The reaction temperature must be at least +15 °C (59 °F)



Application type "coat"





- Set processing viscosity to +20 °C (68 °F) material temperature.
- Set spray nozzle to 2 to 2.5 mm (see manufacturer's information).
- Set spray pressure to 2 to 3 bar (29 to 43.5 psi) (see manufacturer's information).



P00-11036

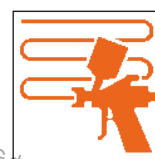
- Five spray applications result in a coating density of 500-600 µm (coating densities of up to 1000 µm are possible).

Application Type "Painting"



Note

For application type "painting", apply the material all at one time.



P00-11032

Drying

Air dry at +20 °C (68 °F) room temperature:

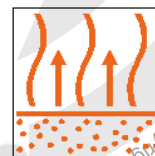
- Can be sanded after 2 hours



P00-11027

Forced drying:

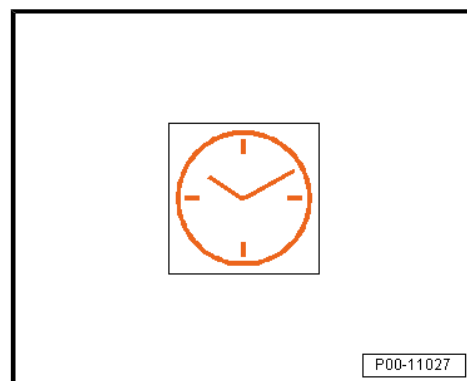
- Drying time is at least 10 minutes



P00-11026

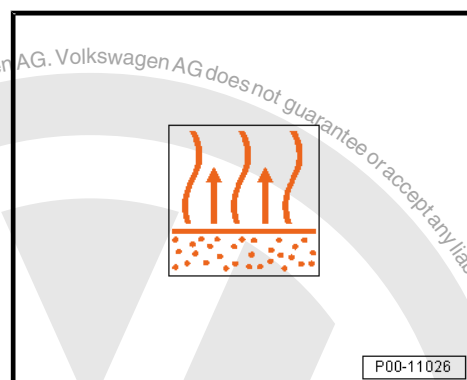


- Drying time 30 minutes at an object temperature of +60 °C (140 °F)



Infrared drying:

- Drying time is at least 5 minutes

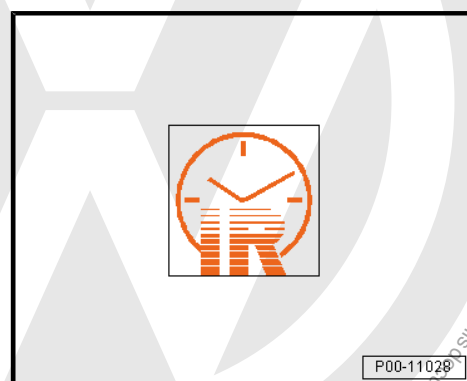


- Drying time 10 to 12 minutes, short-wave heater at 50 % power
- Drying time 15 to 20 minutes, medium-wave heater



Note

Temperature resistance up to +80 °C (176 °F).



Further Processing

Dry-sanding:





- Dry-sand the pre-sanding with P120 - 220 grit sandpaper
- Dry-sand the final sanding with P240 - 400 grit sandpaper



Note

Use a suitable sanding machine and dust extraction to dry-sand.

Reworking

- Rework with One-Part Wash Primer - LVM 044 ... A2- (only on sanded-through areas).
- Apply water-based base paint, Two-Part HS Clear Lacquer and Two-Part HS Top Coat to top coat finish.

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	above 23 °C (73.4 °F)
VOC value: 2004/42/IIIB (b)(250)250	The EU limit for this product (product category II B.b) in ready-to-use form is a maximum of 250 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 250 g/L.

Storage

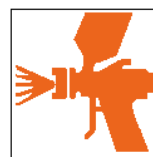
The guaranteed shelf life is 12 months from the production date.
Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

- Storage Temperature +20 °C (68 °F) (temperature should not exceed +30 °C (86 °F)).



P00-10083



P00-11029



P00-10050

3.2.5 Two-Part IR Premium Filling Paste

Part Names:

- ◆ Two-Part IR Premium Filling Paste - LSP 787 220 A1-
- ◆ Two-Part IR Premium Filling Paste - LSP 787 220 A2-
- ◆ Two-Part IR Premium Filling Paste - LSP 787 220 A3-



Edition 06/2011

Product Description

The Two-Part IR Premium Filling Paste - LSP 787 220 A1/A2/A3- is a high-quality polyester filling paste used for vehicle paintwork repairs.

Other Application Areas:

- ◆ All conventional metallic base surfaces
- ◆ Also adheres very well to galvanized base surfaces.
- ◆ Sands well
- ◆ Non-porous and easily-shapeable.
- ◆ Well-suited for IR drying

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Steel Panel
- ◆ Galvanized sheet steel
- ◆ Aluminum
- ◆ Well-sanded factory or old paint
- ◆ Hardened and sealed two-part filler/two-part primers
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents



Caution

This filling paste may not be applied to PVB (acid-hardening) adhesive primers or one-part primers (for example, synthetic resin).

Application on thermoplastic or elastic coatings is also not possible.

Pre-treatment of base surfaces:

- Remove any grease and sand the surface.
- Bare metallic base surfaces are to be insulated with Two-Part Wash Primer - LHV 043 000 A2- and then filled with Two-Part HS Performance Filler . Sand the filler after drying.
- With UP-GF underbodies, clean components of any residual agents and sand the surface.
- Before reworking, apply a suitable cleaning agent to all base surfaces to ensure a clean and residue-free surface.



P00-11037



Processing

Application type:

- Apply filling paste.

Mixture ratio:

- Add 2 to 3 % by weight Two-Part Hardener - LVM 018 000 A1/A2- or, especially when dealing with high temperatures, Two-Part Hardener, Long - LVM 018 100 A2- .



Note

Avoid using excessive hardener paste, to prevent it from bleeding through, especially on daylight colors and light metallic colors.

Curing Time:

- At +20 °C (68 °F) room temperature for approximately two to four minutes.

Reaction Temperature:

- Minimum +5 °C (41 °F)

Drying

Air Drying:

- At +20 °C (68 °F) room temperature for about 20 to 30 minutes.

Infrared drying:

- ♦ Short-wave heaters for three minutes (at 50 % power)
- ♦ Medium-wave heaters for five minutes.



P00-11031



P00-11022



P00-11027



P00-11028



Sanding Compatibility

In connection with the aforementioned drying time:

- Dry-sand the pre-sanding with P80-240 grit sandpaper
- Dry-sand the final sanding with P240-400 grit sandpaper



Note

Temperature resistance up to +80 °C (176 °F).

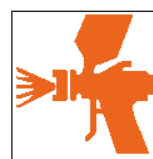


P00-11042

Reworking

Recommended structure:

- ◆ Fine filling paste by itself.
- ◆ Rework fine filling paste with Two-Part Fine Filling Paste - LSP 784 002 A2- or with Two-Part Spray Filling Paste - ALN 788 007- (except on galvanized steel).
- ◆ Prime sanded-through areas and filled areas again with Two-Part Wash Primer - LHV 043 000 A2- and then fill with Two-Part HS Performance Filler .
- Then paint over with the top coat.



P00-11029



Note

Before filling, dry-sand the entire surface with P280-400 sandpaper.

Characteristics

Delivery Viscosity	Pasty
Flashpoint:	Filling paste over 23 °C (73.4 °F)
VOC value: 2004/42/IIB (b)(250)150	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 250 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 150 g/L.

Storage

The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

- Storage Temperature +20 °C (68 °F) (temperature should not exceed +30 °C (86 °F)).



P00-10050



3.2.6 Two-Part Diamond Aluminum Filling Paste

Definition:

- ◆ Two-Part Diamond Aluminum Filling Paste, Powder - DA 004 200 A2-
- ◆ Two-Part Diamond Aluminum Filling Paste, Hardener - DA 004 201 A1-
- ◆ Two-Part Diamond Aluminum Filling Paste, Hardener - DA 004 211 A1-

Edition 09/2014

Product Description

This filling paste is a polyester filling paste suitable for all types of applications and especially for use in repairing aluminum panels.

It is designed for use in automobile repairs.

This filling paste is pliable and sandable while maintaining a high degree of firmness and temperature stability, which makes it especially suitable to be painted over.



Note

The Hardener - DA 004 211 A1- must be used at temperatures over 30 °C (86 °F) and/or with a relative humidity over 80 %.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Aluminum

Pre-treatment of base surfaces:

- Carefully remove any grease and sand the base surface. The base surfaces must be prepared, refer to ["4.1.6 Pneumatic Brush Grinder Set VAS6446"](#), [page 335](#). This means down to the bare metal with P40 grit sandpaper. If necessary, clean the dirty surface once again and then remove any cleaning residue again using the brush grinder.



P00-11037



P00-11038



Processing

Application type:

- Apply filling paste.

Mixture ratio:

- Both components are mixed in a ratio of 1 part by volume of hardener liquid and 2.5-3 parts by volume of powder or 10 grams of hardener liquid to 25 grams of powder to create a product that can be spread.



Note

Avoid using too much hardener liquid, since this can negatively affect the final strength and adhesion of the filling paste.

Curing Time:

- Pot life at +20 °C (68 °F) room temperature for approximately four to six minutes

Reaction Temperature:

- Minimum +5 °C (41 °F)

Drying

Air Drying:

- Dry for approximately ten minutes.
- Cure using the short-wave IR heater.
- ◆ Pre-hardening: 10 minutes at 50 °C (122 °F)
- ◆ Hardening 1st step: 10 minutes at 75 °C (167 °F)
- ◆ Hardening 2nd step: 10 minutes at 85 °C (185 °F)



P00-11031



P00-11022



P00-11027



P00-11028



Sanding Compatibility

- Use the body plane to remove any visible excess material before the thermal final curing process. Then use P80 grit dry sandpaper to sand the contours.

Reworking:

No restriction



Note

- ◆ *Use only in well ventilated spaces.*
- ◆ *The wearing of protective gloves and dust masks is recommended.*
- ◆ *The use of a grinding dust extractor is recommended.*

Characteristics

Delivery Vis- cosity	Powder + Hardener Liquid
Flashpoint:	Hardener 33 °C (91.4 °F)
	Powder is not applicable

Storage

The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

- Store in a cool and dry place.
- Storage temperature +20 °C (68 °F).



P00-11042



P00-10050

3.3 Primer Metal

⇒ [“3.3.1 One-Part Anti-Corrosion Wash Primer”, page 70](#)

⇒ [“3.3.2 One-Part Wash Primer”, page 74](#)

⇒ [“3.3.3 Two-Part Wash Primer”, page 78](#)

3.3.1 One-Part Anti-Corrosion Wash Primer

Definition:

- ◆ One-Part Anti-Corrosion Wash Primer - ALN 002 003 10-

Edition 06/2011

Product Description

One-part anti-corrosion primer is a zinc chromate-free, polyvinyl-butylal-based, single-component product for vehicle repairs.

With its special pigment and binder composition it provides excellent protection against corrosion, outstanding adhesion and is



also certified for welding. Nevertheless, this product non-conductive and therefore not suitable for spot-welding.

For residual rust spots on corners and edges as well as bare-sanded areas, we recommend recoating using One-Part Anti-Corrosion Wash Primer - ALN 002 003 10- with a Two-Part HS Filler .

Application Instructions

Base Surface

Suitable base surfaces:

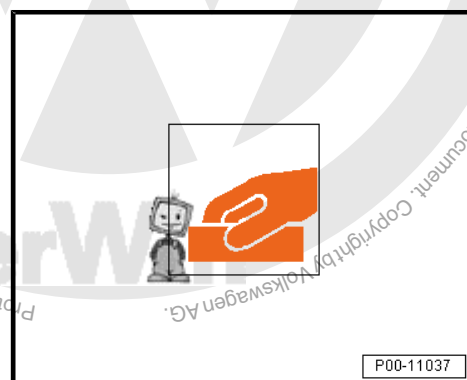
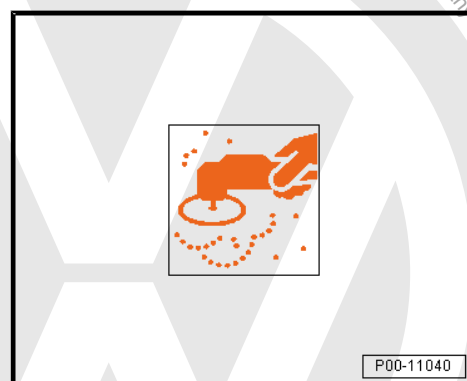
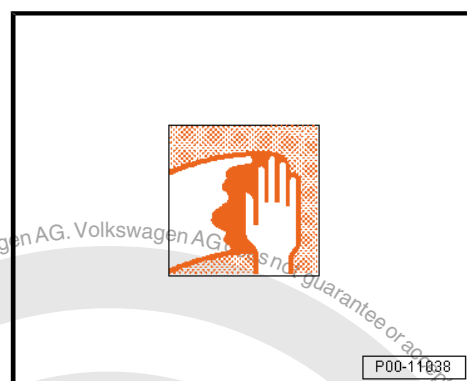
- ◆ Cleaned and sanded, galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Sanded factory primer
- ◆ Hardened, solvent-resistant, well-preserved and sanded old paint or factory paint (with the exception of thermoplastic paint)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.

Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .

- Dry-sand with rotary sander and dust extraction, P400-500 grit.

- Wet-sand with P800-1000 grit sandpaper. Thoroughly remove any potential rust spots and sand any transitions to old paint.





Processing

Dilutable with:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

Application type "coat"

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Adding 40 % thinner at +20 °C (68 °F) material temperature.

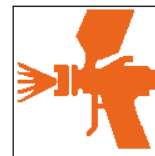
- Use a measuring stick to mix when pouring in the thinner.

Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP":

DIN 4 mm: 18 to 20 seconds

ISO 4 mm: 44 to 53 seconds

- Set spray nozzle (see manufacturer's information): "Compliant" and "HVLP" to 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 1.5 to 3.0 bar (21.7 to 43.5 psi).



P00-11029



P00-11036



P00-11023



P00-11029



- Apply two coats.
- The prescribed layer thickness is 15 to 20 µm.

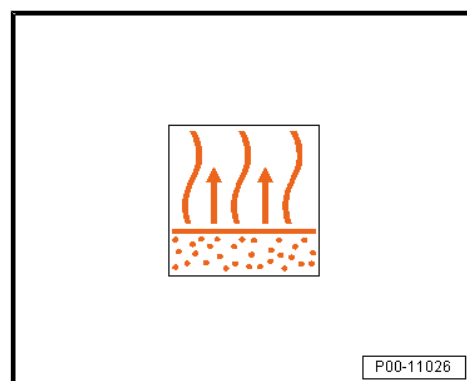
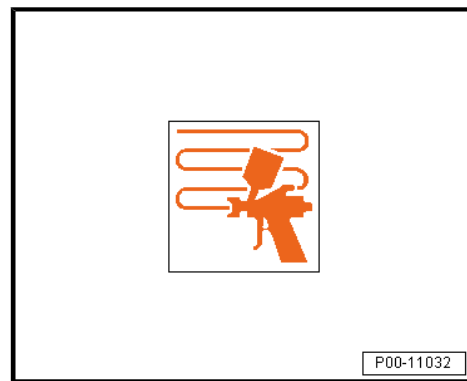
Application type "painting"



Note

- ◆ For application type "painting", apply the material all at one time and do this 1 to 2 times.
- ◆ This ensures that the delivery viscosity will be the same as the processing viscosity.

Drying time: at +20 °C (68 °F) room temperature for 15 to 25 minutes.



Reworking

Recommended structure:

- ◆ Fill with Two-Part HS Filler , refer to ["3.5 Filler", page 85](#) .



Caution

Do not rework with polyester products.

Do not rework with epoxy products.

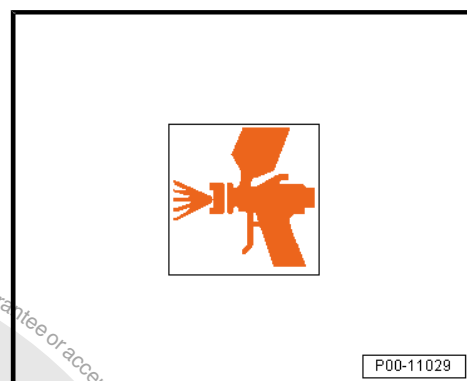
Do not directly rework with water-based base paint.

Do not apply to thermoplastic coatings.

We recommend the following three-layer structure:

- ◆ Prime with One-Part Anti-Corrosion Wash Primer - ALN 002 003 10-
- ◆ Insulate with Two-Part HS Filler
- ◆ Top coat finish

The three-layer structure is essential for galvanized base surfaces.



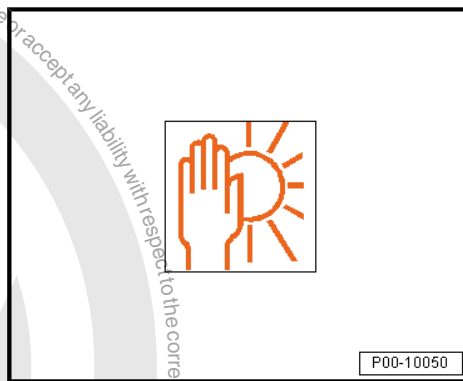
Characteristics

Delivery Viscosity	90 to 100 seconds
Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB(c) (780)780	The EU limit for this product (product category IIB,c) in ready-to-use form is a maximum of 780 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 780 g/L.



Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.3.2 One-Part Wash Primer

Definition:

- ◆ One-Part Wash Primer - LVM 044 007 A2- , light gray
- ◆ One-Part Wash Primer - LVM 044 171 A2- , dark gray

Edition 08/2013

Product Description

The one-part wash primer is a zinc chromate-free single-compound wash primer for all conventional metallic base surfaces.

- ◆ Suitable for all conventional metallic base surfaces
- ◆ VOC compliant and protects well against corrosion
- ◆ Easy handling (one-part material)
- ◆ Certified for welding.
- ◆ Available in light gray and dark gray

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Steel
- ◆ Cleaned and sanded, galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Sanded factory primer (not on large areas of new parts that have been sanded and coated with KTL primer)
- ◆ Thoroughly sanded old primer or factory primer (excluding thermoplastic coating)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



Note

Because of the wide variety of alloys and manufacturing processes for metals, the base surface must first be tested to ensure that the pre-treatment provides sufficient adhesion.



Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

- Clean and sand factory or old paint, eliminate any potential rust areas, and sand transitions to old paint.



P00-11037

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



P00-11038

Processing

Dilutable with:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2- (for large objects and high temperatures)

Application type "coat"



P00-11029



- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211 is the mixed viscosity.

Adding 50 % thinner at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the thinner.

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP”:

DIN 4 mm: 18 to 20 seconds

ISO 4 mm: 36 to 45 seconds

- Set spray nozzle (see manufacturer's information): “Compliant” and “HVLP” to 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 to 2.5 bar (29 to 36 psi).

- Apply a coat when using as wash primer.
- The prescribed layer thickness is 10 to 15 µm.

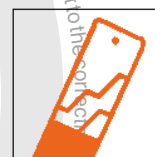


Note

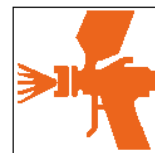
When insulating small, sanded through areas, use only water-based base paint or two-part HS top coat for the wet-in-wet and intermediate sanding processes on the One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- . Do not perform this action if the sanded-through area is not larger than 5.0 cm in diameter.



P00-11036



P00-11023



P00-11029

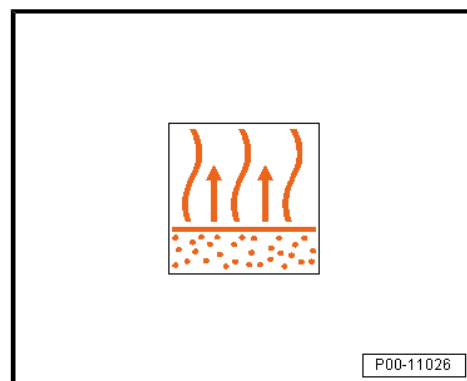


P00-11032



Ventilate at +20 °C (68 °F) room temperature, rework again after:

- ◆ 10 to 15 minutes with Two-Part HS Filler .
- ◆ 20 to 30 minutes with Water-Based Base Paint (for small sanded-through areas only)
- ◆ 10 to 15 minutes with Two-Part HS Top Coat (for small sanded-through areas only)
- ◆ 45 to 60 minutes to start sanding

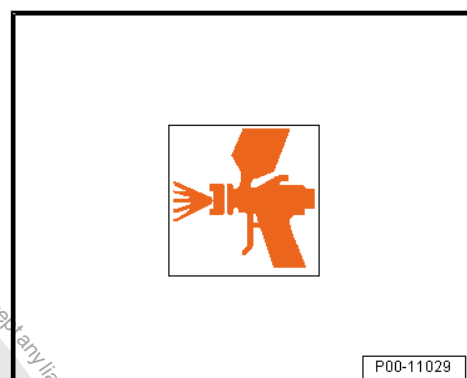


Reworking

Use	Rework with
as wash primer	Two-Part HS Filler
as wash primer with intermediate sanding	Wet-sand with P 800-1000 grit sandpaper

Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat (for small sanded-through areas only)
- ◆ Two-part HS top coat (for small sanded-through areas only)



Caution

Do not rework with polyester products.

Do not apply to thermoplastic coatings.

Do not rework with epoxy products.

Do not rework with water-soluble products.

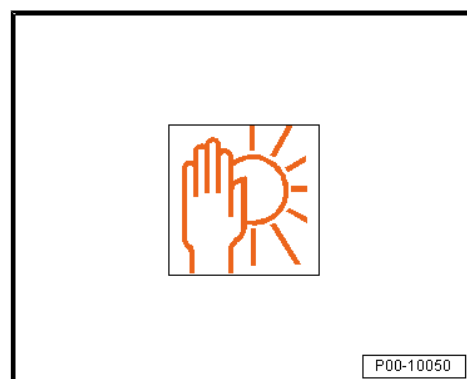
Do not dry-sand.

Characteristics

Delivery Viscosity	at least 60 seconds
Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIIB(c) (780)760	The EU limit for this product (product category IIIB.c) in ready-to-use form is a maximum of 780 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 760 g/L.

Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).





3.3.3 Two-Part Wash Primer

Definition:

- ◆ Two-Part Wash Primer - LHV 043 000 A2-

Edition 10/2010

Product Description

The two-part wash primer is a zinc chromate-free, phenol-free and acid-free two-component wash primer from our PVB system.

- ◆ Passivating properties provide excellent protection against corrosion.
- ◆ For metallic base surfaces, especially for aluminum and galvanized sheet steel
- ◆ Simple processing properties
- ◆ Olive gray

Application Instructions

Base Surface

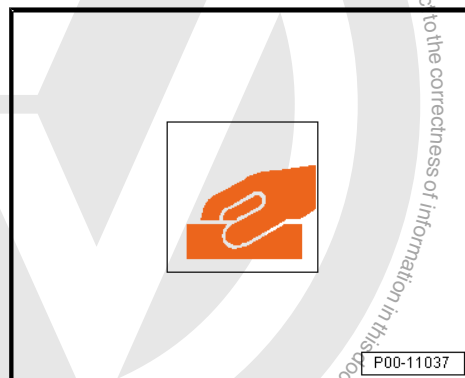
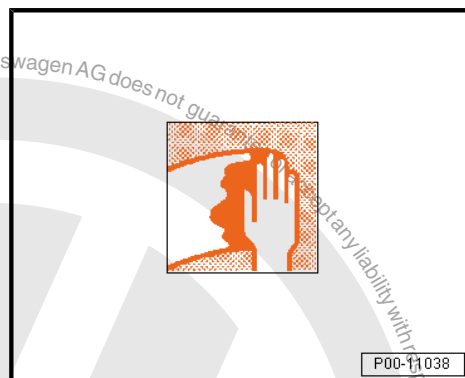
Suitable base surfaces:

- ◆ Bare sheet steel, cleaned and sanded
- ◆ Cleaned and sanded, galvanized/electrolytically zincd sheet steel or soft aluminum
- ◆ Sanded factory primer
- ◆ Thoroughly sanded old primer or factory primer (excluding thermoplastic coating)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.

Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .

- Clean and sand factory or old paint, eliminate any potential rust areas, and sand transitions to old paint.





- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

Processing

Mixture ratio:

- 1:1 by volume with Two-Part Additional Solution - LHA 004 000 A2-

Curing Time:

- Adjustment for spraying 8 to 10 hours at +20 °C (68 °F)



Note

Set material must be processed on the same day.

Application type “coat”

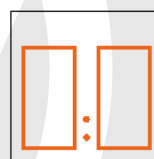
- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP”:

DIN 4 mm: 16 to 18 seconds



P00-11038



P00-10084



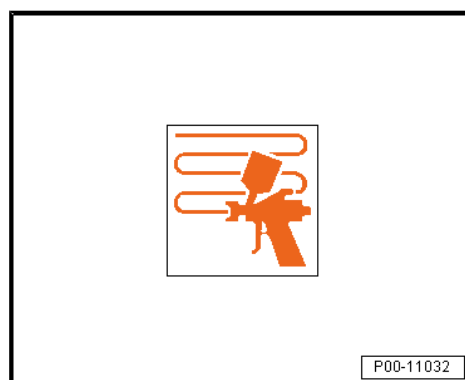
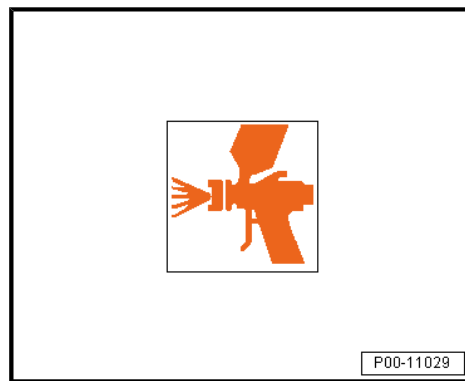
P00-11029



P00-11036



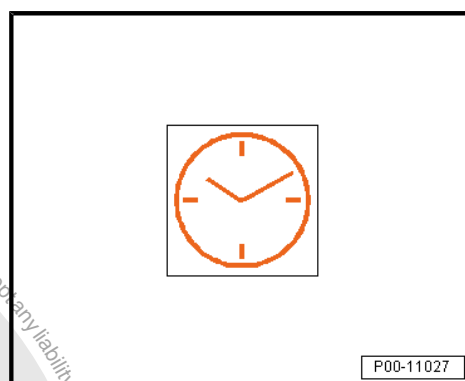
- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.4 mm.
 - Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
 - Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
 - Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
-
- The prescribed layer thickness is 8 to 12 µm.



Drying

Air dry at +20 °C (68 °F) room temperature, can be sprayed over after 30 minutes.

**WARNING**
Due to possible adhesion impairment, forced drying and IR drying are not possible.






Reworking

Can be sprayed over with two-part HS filler at +20 °C (68 °F) after ventilation time.

Afterwards, can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

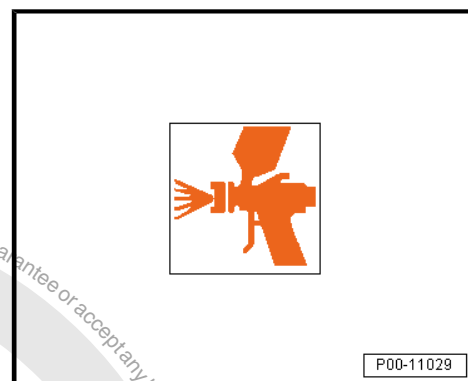


Caution

Do not rework with polyester products, epoxy products or water soluble products.

Do not apply to thermoplastic coatings.

Do not rework directly with water-based base paint or two-part top coat.



Characteristics

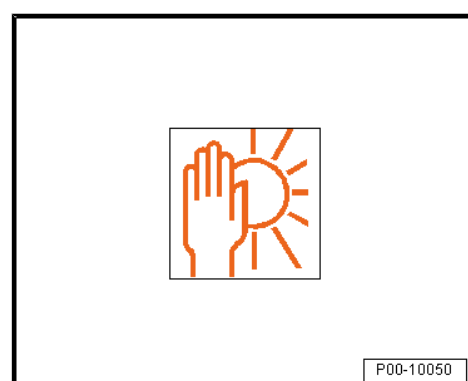
Delivery Viscosity	at least 60 seconds
Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIIB(c) (780)780	The EU limit for this product (product category IIB.c) in ready-to-use form is a maximum of 780 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 780 g/L.

Note

The yield was calculated taking into account the recommended layer thickness and the procentual proportion of solid material (without thinner). The corresponding processing losses were not taken into account.

Storage

Guaranteed shelf life of 24 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.4 Plastic Primer

⇒ ["3.4.1 Adhesion Promoter \(Glazing\)", page 81](#)

3.4.1 Adhesion Promoter (Glazing)

Definition:

- ◆ Adhesion Promoter - ALO 822 000 10- (glazing)



Edition 06/2011

Product Description

The glazing adhesion promoter is a universal single-component adhesion promoter for all standard exterior plastic car parts.

This adhesion promoter is characterized by its reliable adhesion, high elasticity and the ease with which it can be used.

Application Instructions

Base Surface

Suitable base surfaces:

All standard plastic parts used on car exteriors.

- ◆ PP, EPDM, ABS, PC, PPO, PA, R-TPU, PBTP, PVC
- ◆ PUR, PUR soft foam
- ◆ UP-GF

Pre-treatment of base surfaces:

The base surface must be free of separating agents.

Before cleaning the plastic parts, temper them for 60 minutes at +60 °C to "sweat out" the separating agents.

- Clean using Antistatic Plastic Cleaner - LVM 001 001 A2- or a milder Silicone Remover, Long - LVM 020 100 A5- .



Note

- ◆ *The effort needed for cleaning depends on the type and quantity of the separating agent used. We recommend using a sanding pad to help cleaning*
- ◆ *Let the thinner evaporate (for example, air-drying overnight at room temperature or 30-40 minutes at +60 °C).*
- Before priming, lightly clean again using Antistatic Plastic Cleaner - LVM 001 001 A2- or Silicone Remover, Long - LVM 020 100 A5- (antistatic effect).



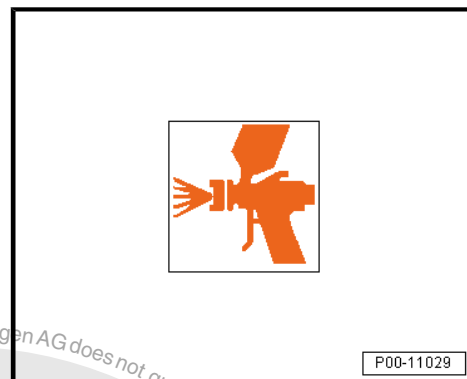


Processing

Thinner:

- Do not add any thinner!

Application type “coat”



- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211



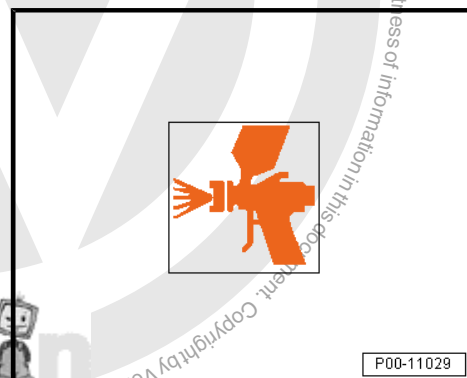
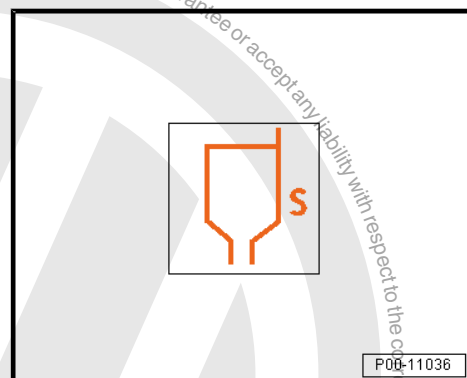
Note

Do not add any thinner! The delivery viscosity is the same as the processing viscosity.

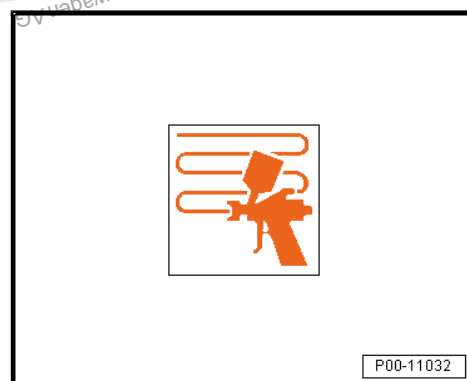
Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP”:

DIN 4 mm: 11 seconds

- Set spray nozzle (see manufacturer's information): “Compliant” 1.2 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): “HVLP” 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): “HVLP” 0.7 bar (10.15 psi).



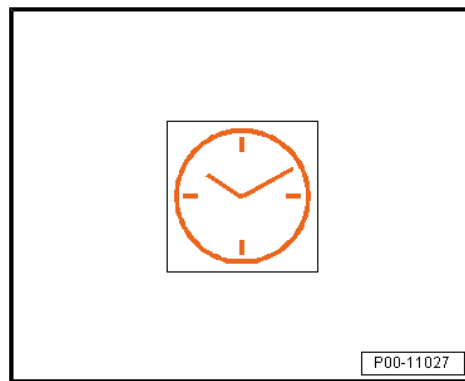
- A preliminary spray application is 1 to 2 µm.



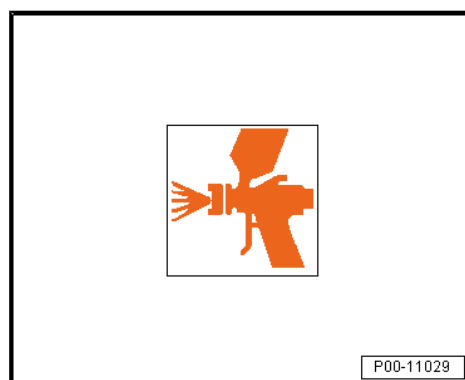


Drying

Air dry at +20 °C (68 °F) room temperature, can be sprayed over after 15 minutes.



Reworking



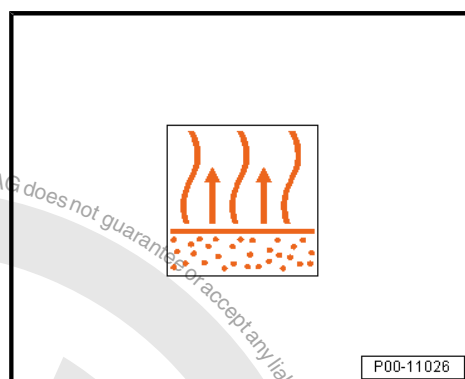
Can be sprayed over with two-part HS filler elasticized with Elastic Additive - ALZ 011 001- after drying time at +20 °C (68 °F).

Afterwards, can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

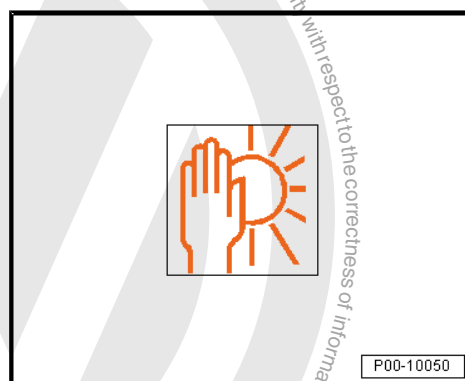
Characteristics

Delivery Viscosity	11 seconds
Flashpoint:	above +23 °C (73.4 °F)



Storage

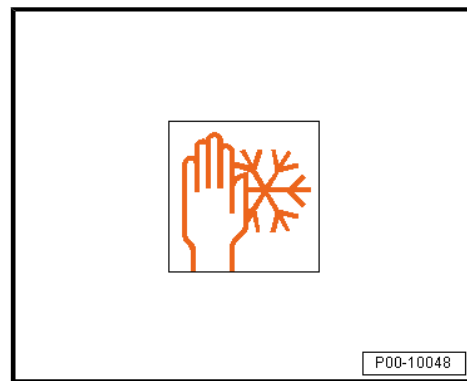
The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F) .





Storage Conditions

The prescribed storage temperature is +20 °C (68 °F) (not to fall below +5 °C (41 °F)).



3.5 Filler

⇒ [“3.5.1 Two-Part HS Vario Filler”, page 85](#)

⇒ [“3.5.2 Two-Part HS Premium Filler”, page 93](#)

⇒ [“3.5.3 Two-Part HS Mixed Filler”, page 100](#)

⇒ [“3.5.4 Two-Part HS Performance Filler”, page 112](#)

⇒ [“3.5.5 Two-Part Synthetic Adhesion Filler”, page 118](#)

⇒ [“3.5.6 Two-Part HS Wet-in-Wet Filler”, page 123](#)

3.5.1 Two-Part HS Vario Filler

Definition:

- ◆ Two-Part HS Vario Filler - LGF 786 004 A4- , gray

Edition 04/2013

Product Description

The two-part vario filler is a high-quality, variable VOC compliant, acrylic-based two-part HS filler.

Properties:

- ◆ Can be used as sanding filler and as wet-in-wet filler
- ◆ Use with HS and VHS hardeners
- ◆ Has good insulation properties, even with thermoplastic old plastic
- ◆ Very nice paint finish

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ sheet steel that has been cleaned, sanded and primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007/171 A2- , galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Fine or non-sanded, thoroughly cleaned, original factory primer.
- ◆ Cleaned and sanded, galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Sanded factory paint or old paint (including thermoplastic coatings)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



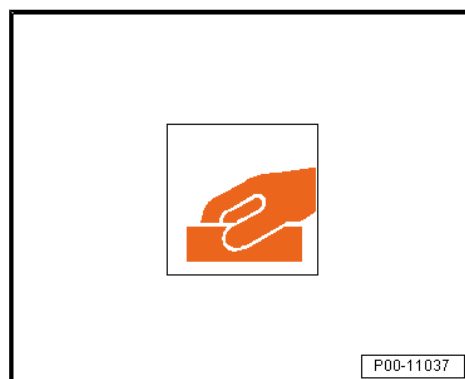
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents

Pre-treatment of base surfaces:

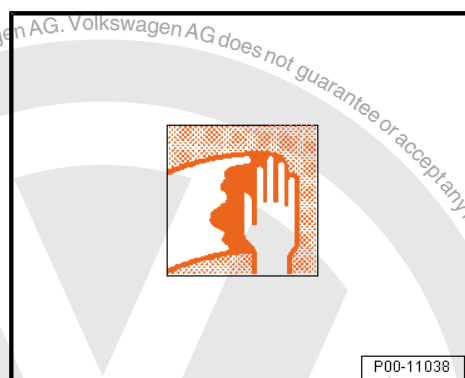
- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



- Then, sand.



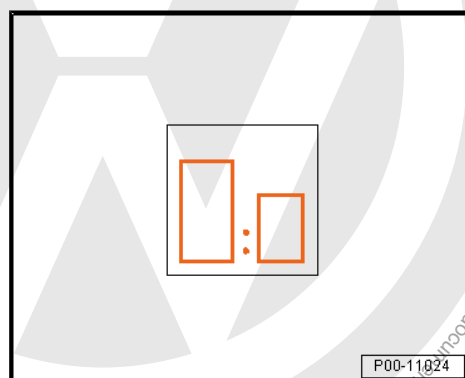
- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Use With Intermediate Sanding

Mixture ratio:

- 5:1 by volume with:
 - ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
 - ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
 - ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-





Mixture ratio:

– 3:1 by volume with:

- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-

For Elastification, Refer to ➔ page 93 .

Processing time/pot life:

- Ready to spray 30 to 60 minutes at +20 °C (68 °F) (depending on the hardener used)

Thinner:

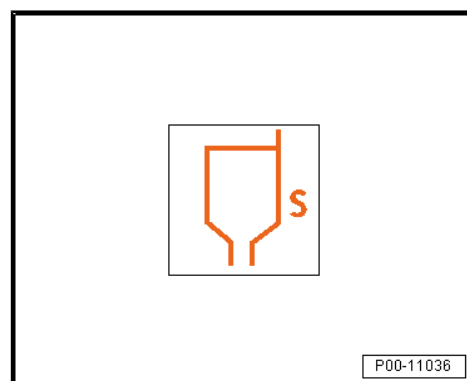
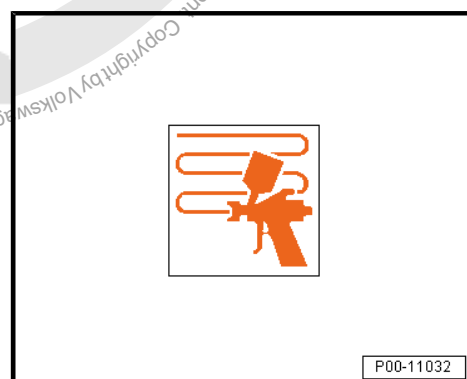
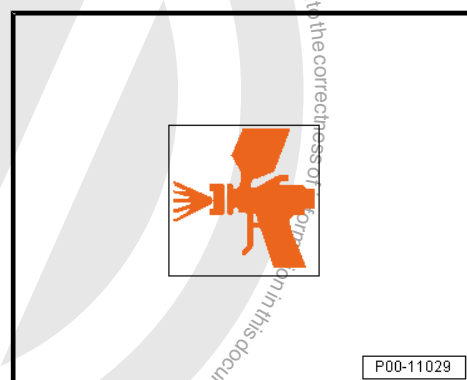
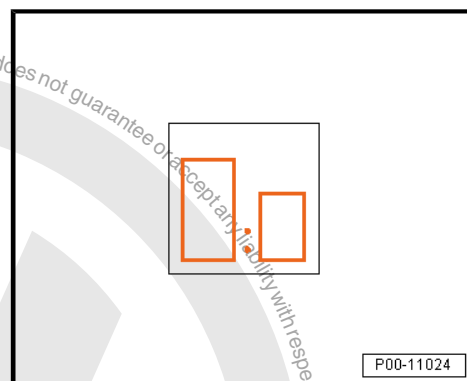
- ◆ Two-Part Thinner, LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

Application type “coat”

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP”:

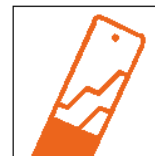
DIN 4 mm: 20 to 25 seconds





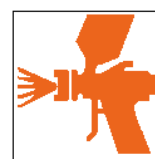
Adding 10 to 15 % HS hardener or 10 to 20 % VHS hardener at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the hardener.



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" 1.4 to 1.8 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.6 to 1.9 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 1.5 to 3.0 bar (21.7 to 43.5 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- Two spray applications are required to get a dry layer thickness of between 50 and 80 µm.
- Three spray applications are required to get a dry layer thickness of between 100 and 120 µm.
- The recommended dry layer thickness is between 50 and 120 µm.



P00-11029

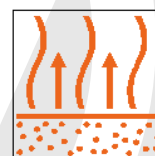
Drying With Intermediate Sanding

Air dry at +20 °C (68 °F) room temperature, can be sanded overnight



P00-11027

Final drying time with forced drying is a minimum of 5 to 10 minutes.



P00-11026

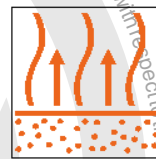


Forced drying at +60 °C (140 °F) object temperature to 80 µm for 20 to 30 minutes and over 80 µm for 40 to 45 minutes



P00-11027

Final drying time for IR drying is a minimum of 5 to 10 minutes.



P00-11026

IR drying (depending on layer thickness) with medium-wave heater for 10 to 20 minutes and short-wave heater for 10 minutes



P00-11028

Further Processing

- Dry-sand with rotary sander and dust extraction. P400-500 grit sandpaper



P00-11040



- Wet-sand with P800-1000 grit sandpaper

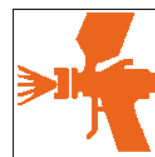


P00-11041

Rework for Intermediate Sanding

Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

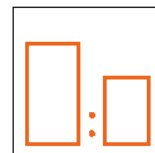


P00-11029

Use as "Wet-In-Wet" Filler

Mixture ratio:

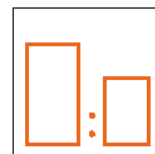
- 5:1 by volume with:
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-



P00-11024

Mixture ratio:

- 3:1 by volume with:
- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-



P00-11024

Processing time/pot life:

- Ready to spray 30 to 60 minutes at +20 °C (68 °F) (depending on the hardener used)

Thinner:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-



Application type "coat"

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP":

DIN 4 mm: 16 to 18 seconds

Adding 20 to 25 % HS hardener or 30 % VHS hardener at +20 °C (68 °F) material temperature

- Use a measuring stick to mix when pouring in the hardener.



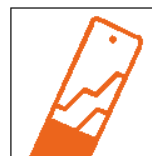
P00-11032



P00-11036



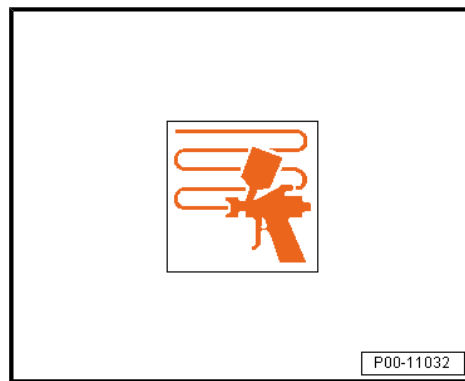
P00-11029



P00-11023



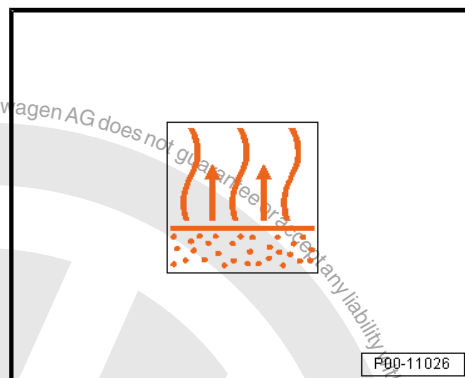
- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- The recommended dry layer thickness is between 25 and 30 µm. 1 to 2 spray applications are required to get this dry layer thickness.



"Wet-in-wet" Use

Ventilation time before applying top coat at +20 °C (68 °F) room temperature:

- ◆ 15 to 20 minutes up to a maximum of 90 minutes for two-part HS top coat
- ◆ 25 to 30 minutes up to a maximum of 90 minutes for water-based base paint
- ◆ 30 to 35 minutes up to a maximum of 90 minutes for Aqua premium water-based base paint





Reworking as "Wet-In-Wet" Filler

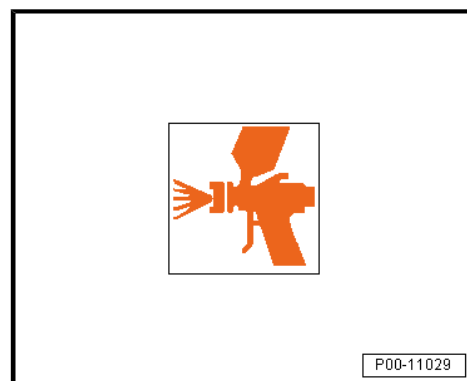
Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- . 3:1 mixing ratio for VHS hardener and 20% thinner, 2:1 mixing ratio for HS hardener with 20 % thinner.
- ◆ Any faults in the base surface can be filled with two-part polyester filling paste. After drying and intermediate sanding, insulate the filler patches with two-part HS vario filler.
- ◆ In order to achieve the best surface finish for vehicle painting, we recommend the filler be sanded after it dries over night.
- ◆ Do not use the wet-in-wet process on thermoplastic factory paint, and if possible let the filler air-dry overnight before sanding it.
- ◆ When air drying, a minimum of +15 °C (59 °F) is recommended.



Caution

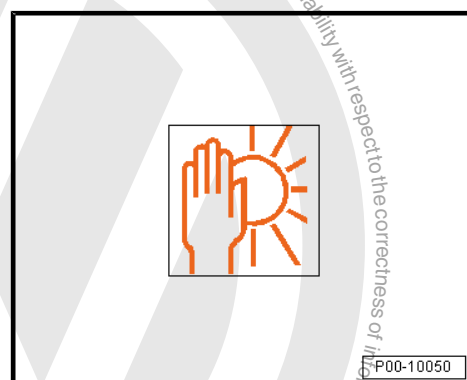
Allow for a ventilation time of 30 to 40 minutes before applying the base paint/two-part top coat series.

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	above 23 °C (73.4 °F)
VOC value: 2004/42/II B(c) (540)540	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 540 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 540 g/L.

Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (73.4 °F).



3.5.2 Two-Part HS Premium Filler

Definition:

- ◆ Two-Part HS Premium Filler - LYM 013 171 A4- , dark gray
- ◆ Two-Part HS Premium Filler - LGF 013 007 A4- , light gray





- ◆ Two-Part HS Premium Filler - LGF 013 100 A4- , white
- ◆ Two-Part HS Premium Filler - LGF 013 190 A4- , anthracite

Edition 04/2013

Product Description

These two-part premium fillers are high-quality two-part HS acrylic-resin-based fillers.

Properties:

- ◆ Very long processing time
- ◆ Optimal and stable processing properties
- ◆ Sands well
- ◆ Great stability under load
- ◆ High yield
- ◆ Excellent high-build characteristics
- ◆ Excellent paint finish

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ sheet steel that has been cleaned, sanded and primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007/171 A2- , galvanized/electrolytically zinc-coated sheet steel or soft aluminum
- ◆ Fine or non-sanded, thoroughly cleaned, original factory primer.
- ◆ Sanded factory paint or old paint (including thermoplastic coatings)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents

Pre-treatment of base surfaces:

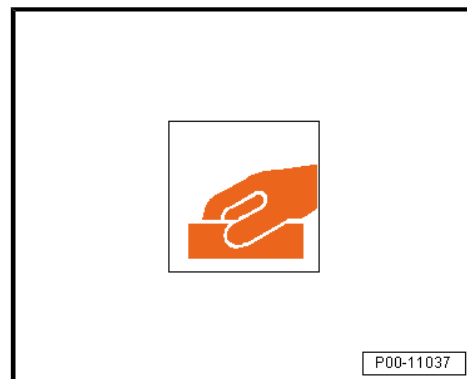
- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038



- Then, sand.



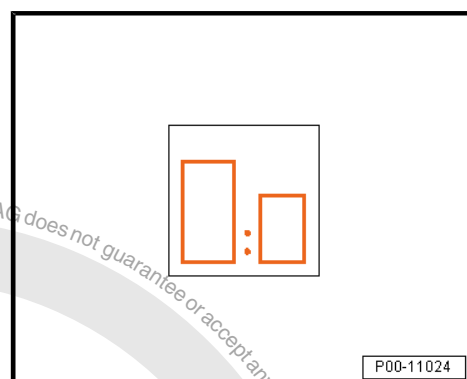
- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Processing

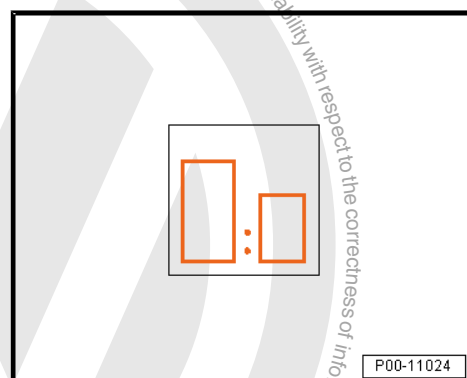
Mixture ratio:

- 4:1 by volume with:
 - ◆ Two-Part HS Hardener - LHA 009 041 A3-
 - ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
 - ◆ Two-Part HS Hardener, Extra Short - LHA 009 046 A2-
 - ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
 - ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-



Mixture ratio:

- 7:1 by volume with:
 - ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
 - ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
 - ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
 - ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-



For Elastification, Refer to ⇒ [page 99](#) .



Processing time/pot life:

- Ready to spray 90 to 120 minutes at +20 °C (68 °F) (depending on the hardener used).

Thinner:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

Application type “coat”

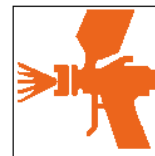
- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP” is the mixed viscosity.

Adding 10 % VHS hardener at +20 °C (68 °F) material temperature

Adding HS hardener is not required, but up to 10 % is possible.

- Use a measuring stick to mix when pouring in the hardener.



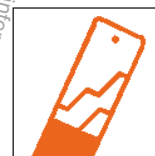
P00-11029



P00-11032



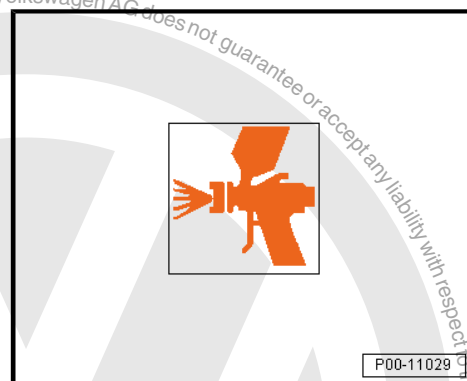
P00-11036



P00-11023



- Set spray nozzle (see manufacturer's information): "Compliant" 1.6 to 1.8 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.5 to 1.9 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 1.5 to 3.0 bar (21.7 to 43.5 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



- Three spray applications are required to get a dry layer thickness of between 80 and 300 µm.

When air drying, the maximum dry layer thickness is 300 µm.

When forced drying, the maximum dry layer thickness is 250 µm.

When IR drying (white and light gray), the maximum dry layer thickness is 200 µm.

When IR drying (black), the maximum dry layer thickness is 180 µm.

The recommended dry layer thickness is between 80 and 200 µm.



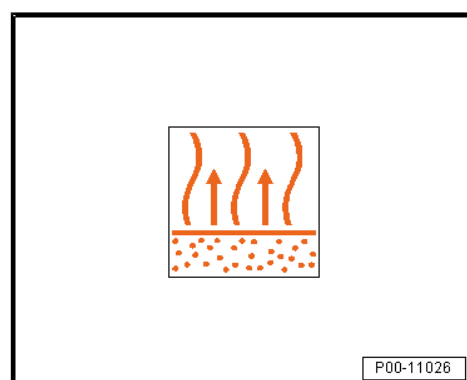
Drying

The material can be sanded after 3 to 4 hours (layer thickness of 80 to 150 µm after air drying at +20 °C (68 °F) room temperature).

If the applied layer thickness is between 150 and 300 µm, the material should be allowed to dry over night and then sanded.



Final drying time with forced drying is a minimum of 5 to 15 minutes.



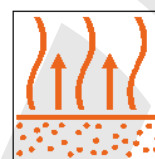


Forced drying at +60 °C (140 °F) object temperature for 25 to 30 minutes for a layer thickness of between 80 and 150 µm; 35 to 45 minutes for a layer thickness of between 150 and 250 µm



P00-11027

Final drying time for IR drying is a minimum of 5 to 15 minutes.



P00-11026

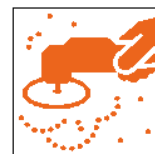
IR drying (depending on layer thickness) with medium-wave heater for 15 to 20 minutes and short-wave heater for 10 to 15 minutes



P00-11028

Further Processing

- Dry-sand with rotary sander and dust extraction. P400-500 grit sandpaper



P00-11040



- Wet-sand with P800-1000 grit sandpaper



P00-11041

Reworking

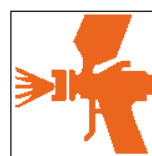
Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- . 3:1 mixing ratio for HS hardener without thinner, 4:1 mixing ratio for VHS hardener with 5 % thinner.
- ◆ Any faults in the base surface can be filled with two-part polyester filling paste. After drying and intermediate sanding, insulate the filler patches with two-part HS premium filler.
- ◆ The best insulating effect, even with critical surfaces, is achieved with a medium layer of 80 to 120 µm in 2 spray passes, with air-drying overnight, or oven or IR drying. With critical surfaces, fine preparation is required and the parts must be evenly filled.
- ◆ The Two-Part HS Vario Filler - LGF 786 004 A4- (gray) is recommended for insulating thermoplastic coatings.



P00-11029

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	above 23 °C (73.4 °F)
VOC value: 2004/42/IIB(c) (540)540	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 540 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 540 g/L.

Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050



3.5.3 Two-Part HS Mixed Filler

Definition:

- ◆ Two-Part HS Mixed Filler - LGF 810 150 A4- , white
- ◆ Two-Part HS Mixed Filler - LGF 810 151 A4- , black
- ◆ Two-Part HS Mixed Filler - LGF 810 152 A4- , red
- ◆ Two-Part HS Mixed Filler - LGF 810 153 A2- , yellow
- ◆ Two-Part HS Mixed Filler - LGF 810 154 A2- , blue
- ◆ Two-Part HS Mixed Filler - LGF 810 155 A2- , green

Edition 04/2013

Product Description

The two-part HS mixed filler system is part of the latest generation of innovative color two-part acrylic-resin-based HS filler systems.

The system consists of 6 colored fillers (white, black, yellow, red, green, blue). These fillers can also be mixed together with the aid of simple formulas.

All settings of this product are VOC compliant.

Properties:

1 - can be used as an interior color and as a “wet-in-wet” filler

- ◆ Excellent, simple and variable processing options
- ◆ Flows well
- ◆ Very quick drying performance
- ◆ Very nice paint finish
- ◆ Great stability under load
- ◆ High yield

2 - can be used as sanding filler

- ◆ Sands well
- ◆ Excellent high-build characteristics
- ◆ Very good drying properties
- ◆ Long curing time

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ sheet steel that has been cleaned, sanded and primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007/171 A2-; galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Fine or non-sanded, thoroughly cleaned, original factory primer.
- ◆ Sanded factory paint or old paint (except TPA)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents



Pre-treatment of base surfaces:

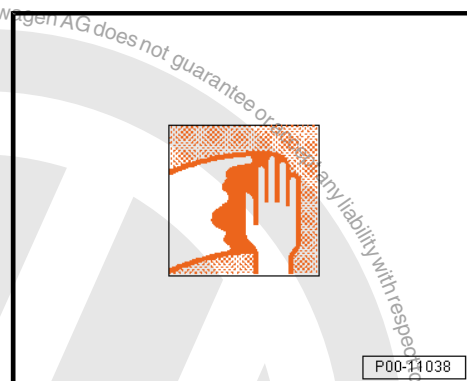
- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



- Then, sand.



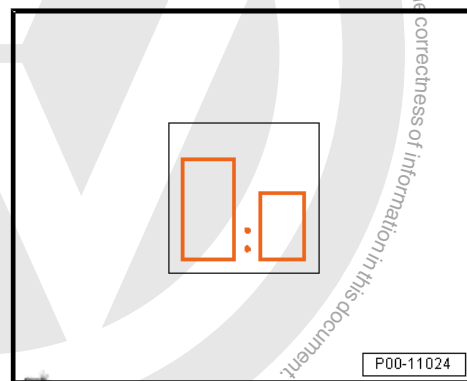
- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Use as Interior Color.

Mixture ratio:

- 2:1 by volume with:
- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener, Extra Short - LHA 009 046 A2-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-
- ◆ Two-Part HS Hardener, Special - LHA 009 049 A3-





Mixture ratio:

- 3:1 by volume with:
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-

Processing time/pot life:

- Ready to spray 50 to 60 minutes at +20 °C (68 °F) (depending on the hardener used)

Additive:

- ◆ Mixed Filler Additive - LZS 811 000 A2-

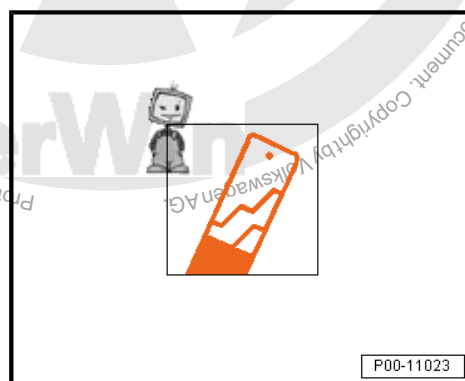
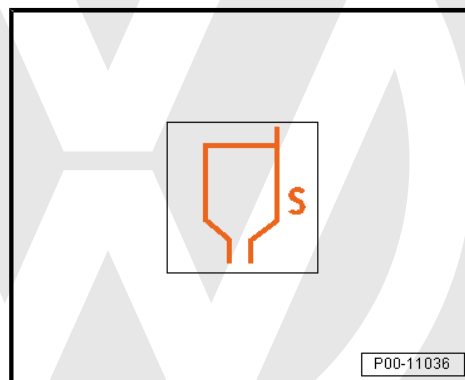
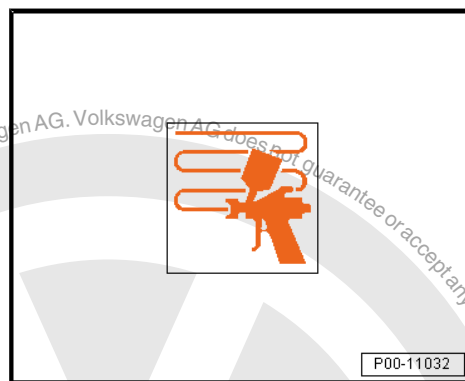
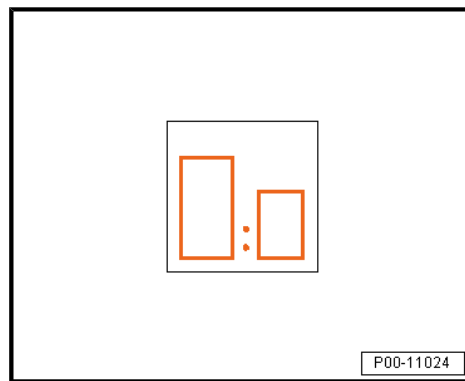
Application type “coat”

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVL” 16 to 19 seconds

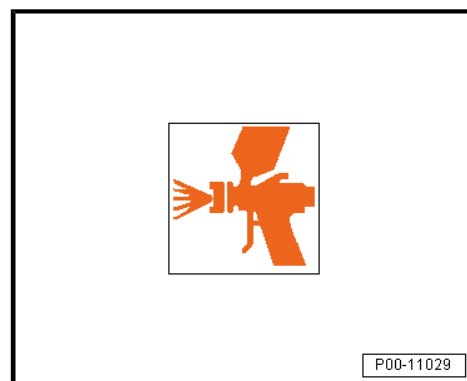
Adding 20 % HS hardener and 40 % VHS hardener at +20 °C (68 °F) material temperature

- Use a measuring stick to mix when pouring in the hardener.





- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 1.5 to 3.0 bar (21.7 to 43.5 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



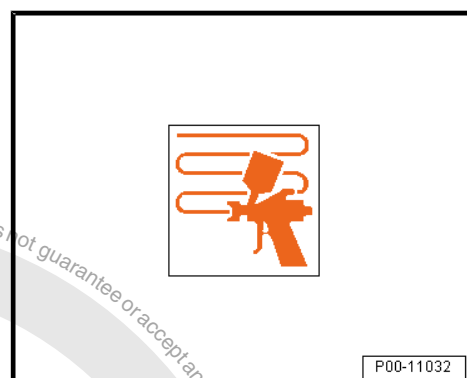
- Three spray applications are required to get a dry layer thickness of between 30 and 70 µm.

More coats may be required, depending upon the color.



Note

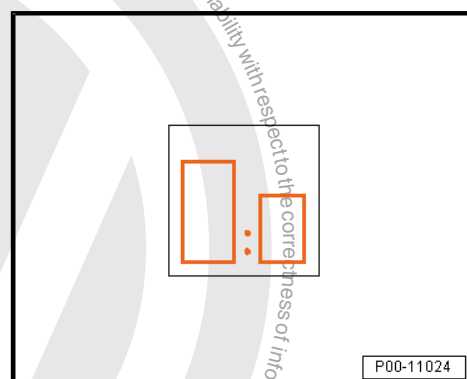
When using as an interior color, overpainting the top coats does not apply.



Use as "Wet-In-Wet" Filler

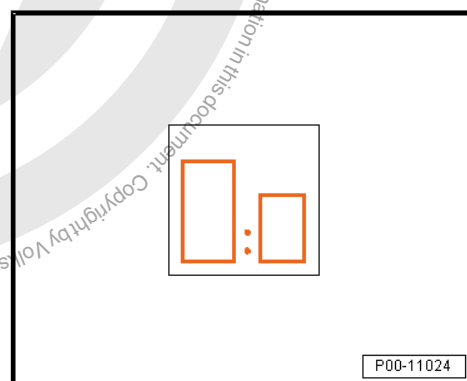
Mixture ratio:

- 2:1 by volume with:
 - ◆ Two-Part HS Hardener - LHA 009 041 A3-
 - ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
 - ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
 - ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-



Mixture ratio:

- 3:1 by volume with:
 - ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
 - ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
 - ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-



For Elastification, Refer to ➔ [page 110](#) .



Processing time/pot life:

- Ready to spray for 60 minutes at +20 °C (68 °F) (depending on the hardener used)

Additive:

- ◆ Mixed Filler Additive - LZS 811 000 A2-

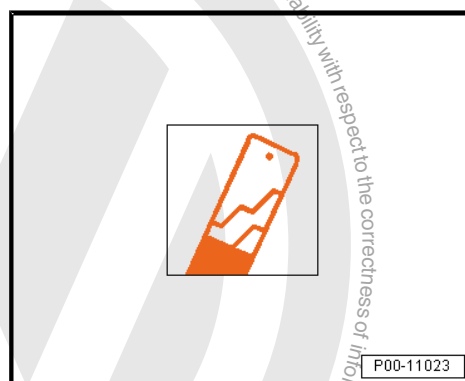
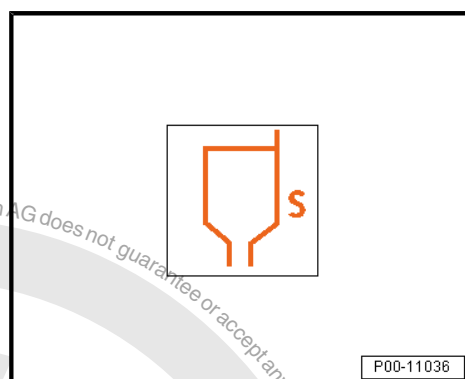
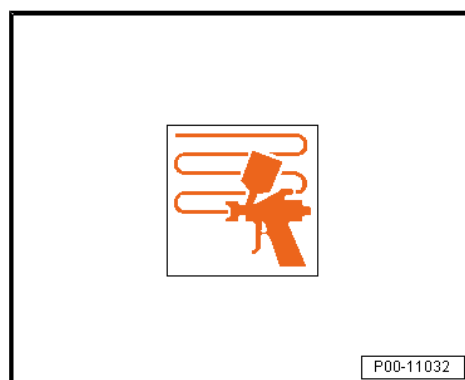
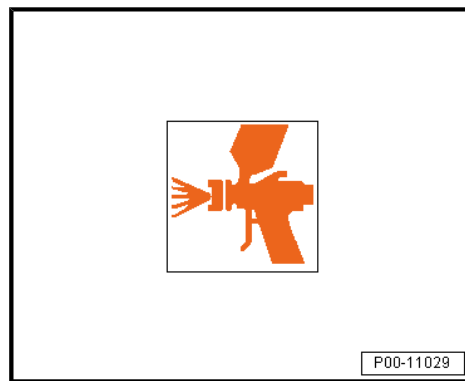
Application type “coat”

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP” 16 to 19 seconds

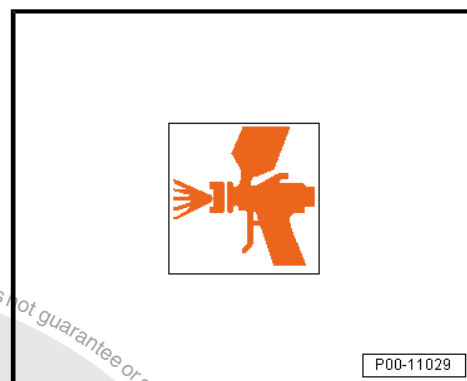
Adding 20 to 30 % HS hardener and 40 to 50 % VHS hardener at +20 °C (68 °F) material temperature

- Use a measuring stick to mix when pouring in the hardener.

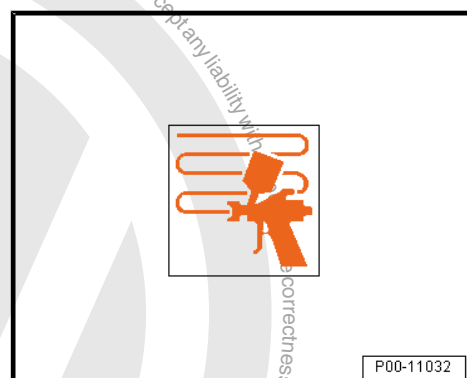




- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).

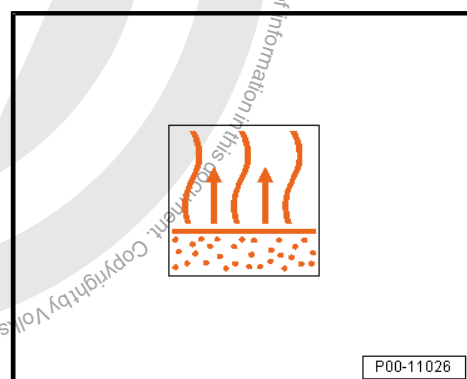


- One to two spray applications are required to get a dry layer thickness of 30 µm.



Drying time for "wet-in-wet" processing at +20 °C (68 °F) room temperature before applying the top coat:

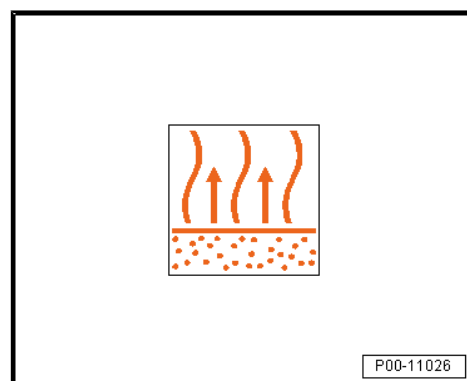
- ◆ with water-based base paint for 30 to 120 minutes
- ◆ with two-part HS top coat for 15 to 120 minutes



Fast Point Repair System

Drying time for "wet-in-wet" processing at +20 °C (68 °F) room temperature before applying the top coat:

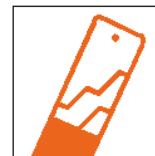
- ◆ with Two-Part HS Hardener, Extra Short - LHA 009 046 A2- for 15 minutes
- ◆ with Two-Part VHS Hardener, Short - LHA 009 050 A2- for 15 minutes





Adding Mixed Filler Additive - LZS 811 000 A2- 20 to 30 % HS hardener and 40 to 50 % VHS hardener at +20 °C (68 °F) material temperature.

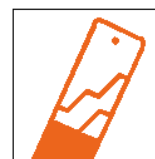
- Use a measuring stick to mix when pouring in the additive.



P00-11023

Adding thinner 10 % Two-Part Thinner, Plus - LHA 014 000 A5- at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the thinner.

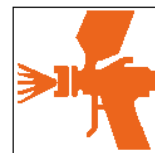


P00-11023

Reworking

Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

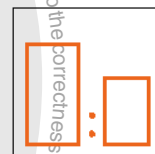


P00-11029

Use as Sanding Filler

Mixture ratio:

- 4:1 by volume with:
 - ◆ Two-Part HS Hardener - LHA 009 041 A3-
 - ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
 - ◆ Two-Part HS Hardener, Extra Short - LHA 009 046 A2-
 - ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
 - ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-



P00-11024



Mixture ratio:

– 7:1 by volume with:

- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-

For Elastification, Refer to ➔ [page 110](#) .

Processing time/pot life

- Ready to spray 90 to 120 minutes at +20 °C (68 °F) (depending on the hardener used).

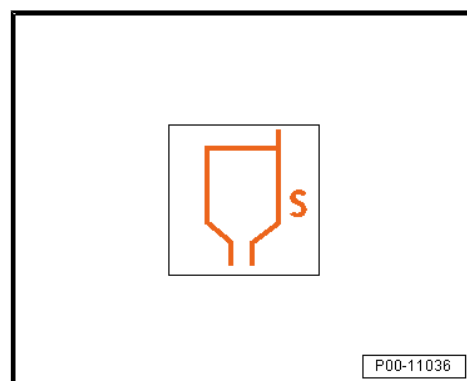
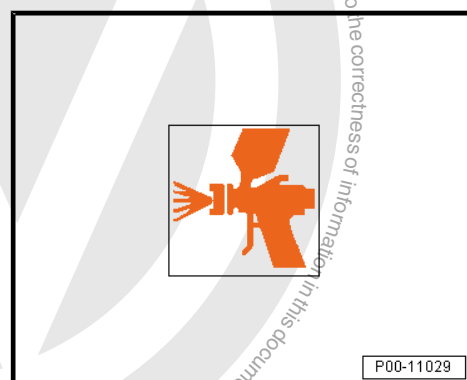
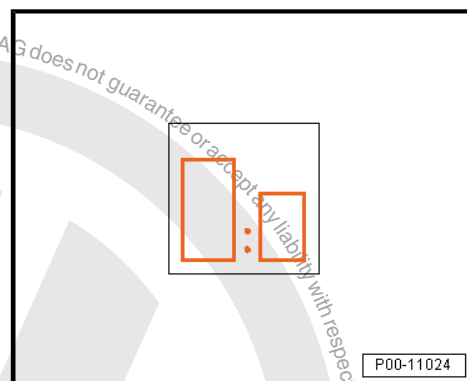
Thinner:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

Application type “coat”

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

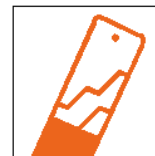
Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP” 18 to 20 seconds





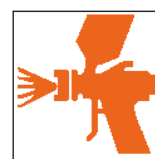
Adding 15 % HS hardener and 25 % VHS hardener at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the hardener.



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.7 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



P00-11029

- Two to four spray applications are required (depending on spray nozzle used) to get a dry layer thickness of 200 µm.

When air drying, the maximum dry layer thickness is 200 µm.

When forced drying, the maximum dry layer thickness is 150 µm.

When IR drying (bright colors), the maximum dry layer thickness is 150 µm.

When IR drying (dark colors), the maximum dry layer thickness is 120 µm.



P00-11032

Drying

The material can be sanded after 3 to 4 hours (layer thickness of 60 to 150 µm after air drying at +20 °C (68 °F) room temperature).

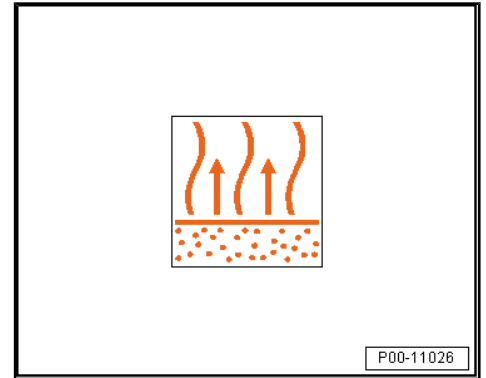
If the applied layer thickness is between 150 and 200 µm, the material should be allowed to dry over night and then sanded.



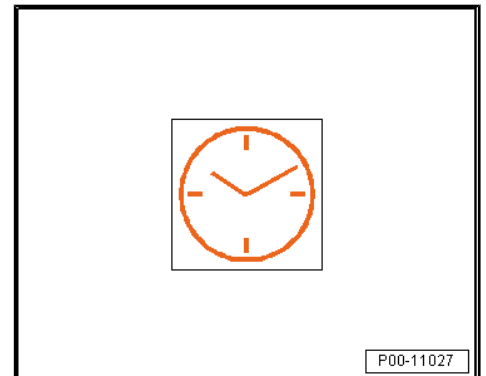
P00-11027



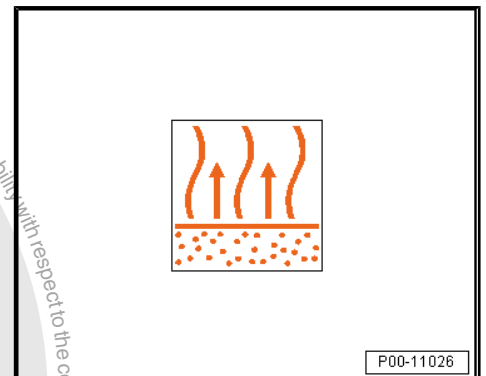
Final drying time with forced drying is a minimum of 5 to 15 minutes.



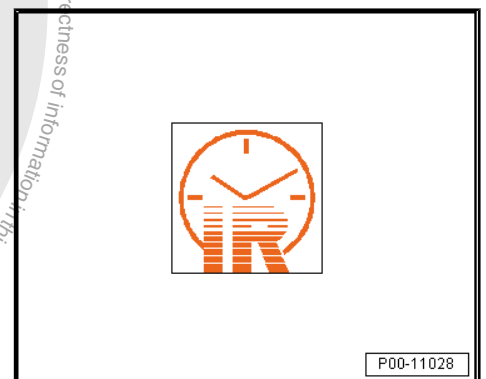
Forced drying at +60 °C (68 °F) object temperature for 30 to 35 minutes to 60 to 150 µm



Final drying time for IR drying is a minimum of 5 to 10 minutes.



When IR drying (depending on layer thickness), use the medium-wave radiator for 15 minutes and the short-wave radiator for 10 minutes (of these, dry for 2 minutes at 50 % power and 8 minutes at 100 % power)





Further Processing

- Dry-sand with rotary sander and dust extraction. P400-500 grit sandpaper



P00-11040

- Wet-sand with P800-1000 grit sandpaper

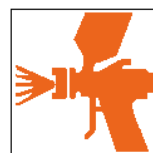


P00-11041

Reworking

Can be painted over with:

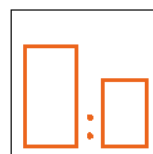
- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat



P00-11029

Special Instructions

Elastification for rigid and semi-rigid plastics:



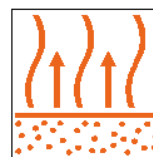
P00-11024



- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ When engaged in "wet-in-wet" processing, use 2:1 two-part HS hardener and 30 % Mixed Filler Additive - LZS 811 000 A2-
- ◆ When engaged in "wet-in-wet" processing, use 3:1 two-part VHS hardener and 40 % Mixed Filler Additive - LZS 811 000 A2-
- ◆ When processing "as sanding filler", use 3:1 two-part HS hardener and 10 % thinner
- ◆ When processing "as sanding filler", use 4:1 two-part VHS hardener and 20 % thinner
- ◆ Before applying the water-based base paint, allow for 45 minutes of ventilation time at +20 °C (68 °F) room temperature.
- ◆ When using "sanding filler", the oven drying time is 45 minutes.
- ◆ Any faults in the base surface can be filled with two-part polyester filling paste. After drying and intermediate sanding, insulate the filler patches with two-part HS mixed filler.
- ◆ The best insulating effect, even with critical surfaces, is achieved with a medium layer of 60 to 120 µm in 2 spray passes, with air-drying overnight, or oven/IR drying. With critical surfaces, fine preparation is required and the parts must be evenly filled.
- ◆ The Two-Part HS Vario Filler - LGF 786 004 A4- (gray) is recommended for insulating thermoplastic coatings.
- ◆ When air drying, maintaining a minimum temperature of +8 to 15 °C (46.4 to 59 °F) while using Two-Part HS Hardener, Extra Short - LHA 009 046 A2- is recommended.

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	above 23 °C (73.4 °F)
VOC value: 2004/42/IIB(c) (540)540	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 540 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 540 g/L.



P00-11026

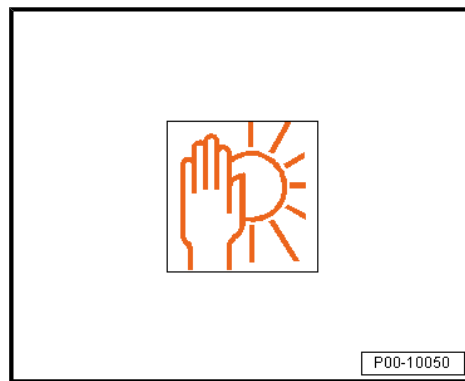


P00-11027



Storage

The guaranteed shelf life of 24 months (48 months for mixed filler additive) from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.5.4 Two-Part HS Performance Filler

Definition:

- ◆ Two-Part HS Performance Filler - LVM 014 100 A4- , white
- ◆ Two-Part HS Performance Filler - LVM 014 173 A4- , dark gray
- ◆ Two-Part HS Performance Filler - LVM 014 190 A4- , anthracite

Edition 07/2013

Product Description

These two-part performance fillers are high-quality two-part HS acrylic-resin-based fillers.

Properties:

- ◆ Dries quickly
- ◆ Very good spray mist characteristics
- ◆ Great stability under load
- ◆ Sands very well
- ◆ High solid content provides a high yield

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ sheet steel that has been cleaned, sanded and primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007/171 A2- , galvanized/electrolytically zinc coated sheet steel or soft aluminum
- ◆ Fine or non-sanded, thoroughly cleaned, original factory primer.
- ◆ Sanded factory paint or old paint (except TPA)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents



Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

- Then, sand.



P00-11037

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Note

Stirring the Two-Part HS Performance Filler - LVM 014 ...- in the mixer is recommended.

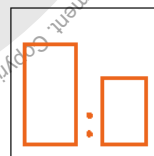


P00-11038

Processing

Mixture ratio:

- 5:1 by volume with:
- ◆ Two-Part VHS Performance Hardener - LVM 009 038 A2-
- ◆ Two-Part VHS Performance Hardener, Long - LVM 009 039 A2-
- ◆ (for very high technological resistance)



P00-11024



Note

- ◆ *Measuring by weight is possible with the Wizard Plus.*
- ◆ *Please observe the country-specific explosion protection regulations.*

For Elastification, Refer to ➤ [page 117](#) .



Processing time/pot life:

- Ready to spray 45 to 75 minutes at +20 °C (68 °F) (depending on the hardener and thinner used)

Thinner:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

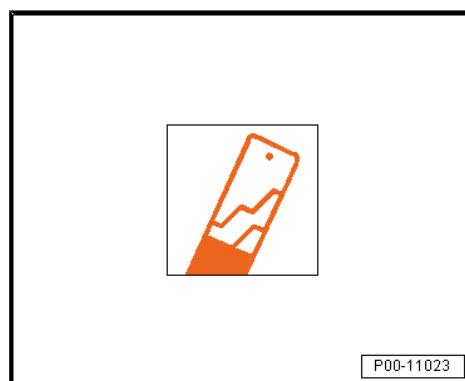
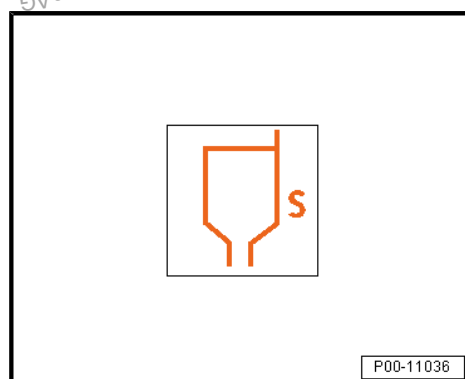
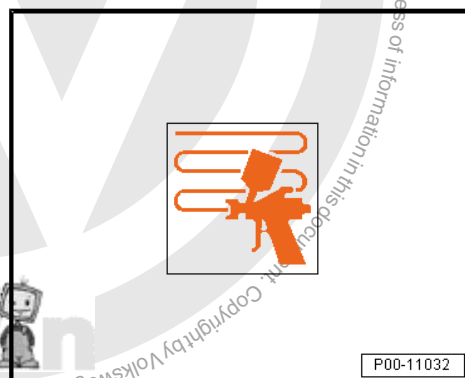
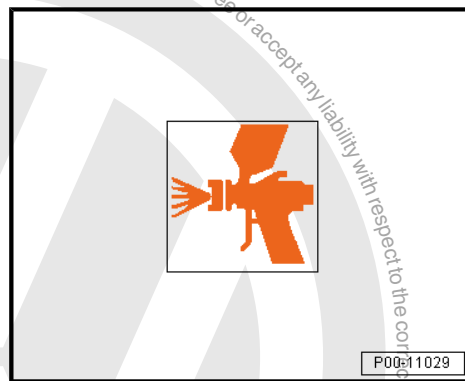
Application type “coat”

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP” is the mixed viscosity.

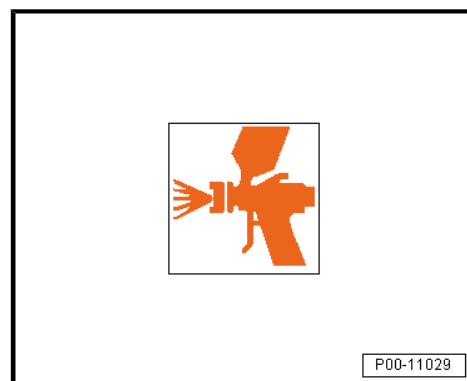
Adding 10 to 15 % VHS performance hardener at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the hardener.

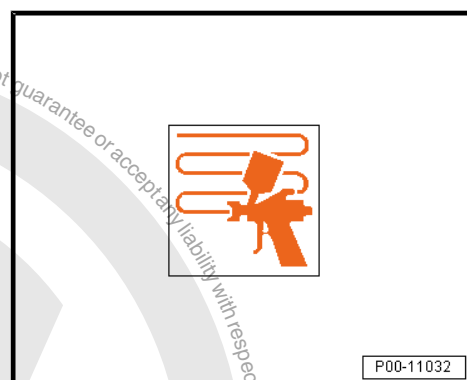




- Set spray nozzle (see manufacturer's information): "Compliant" 1.4 to 1.8 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.7 to 1.9 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 1.5 to 2.0 bar (21.7 to 29 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



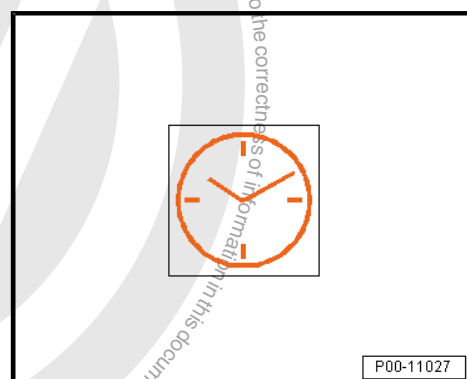
- One to three spray applications (with intermediate drying time) are required to get the recommended dry layer thickness of between 60 and 250 µm.



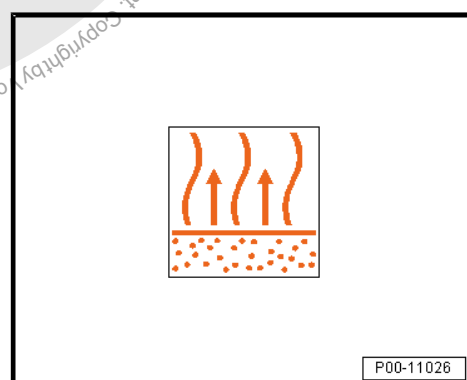
Drying

The material can be sanded after 2 to 3 hours (layer thickness of 60 to 150 µm after air drying at +20 °C (68 °F) room temperature).

If the applied layer thickness is between 150 and 250 µm, the material should be allowed to dry over night and then sanded.



Final drying time with forced drying is a minimum of 5 to 15 minutes.



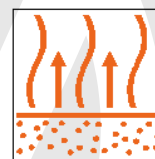


Forced drying at +60 °C (140 °F) object temperature for 15 to 20 minutes for a layer thickness of between 60 and 150 µm; 20 to 25 minutes for a layer thickness of between 150 and 250 µm



P00-11027

Final drying time for IR drying is a minimum of 5 to 10 minutes.



P00-11026

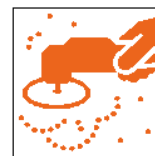
When IR drying (depending on layer thickness), use the short-wave radiator for 10 minutes (of these, dry for 2 minutes at 50 % power and 8 minutes at 100 % power)



P00-11028

Further Processing

- Dry-sand with rotary sander and dust extraction. P500-600 grit sandpaper



P00-11040



- Wet-sand with P800-1000 grit sandpaper

Reworking

Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

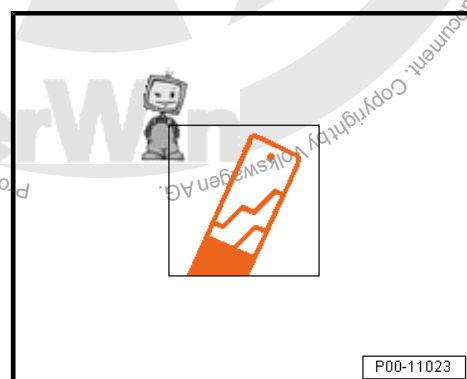
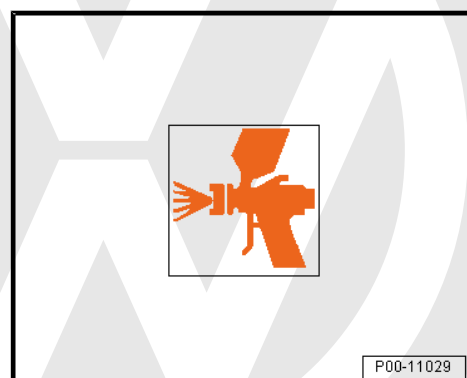
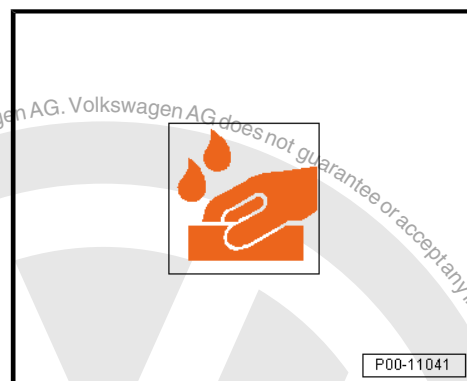
Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- . 4:1 mixing ratio for VHS performance hardeners and 10 % thinner.
- ◆ Any faults in the base surface can be filled with two-part polyester filling paste. After drying and intermediate sanding, insulate the filler patches with two-part VHS performance filler.
- ◆ The best insulating effect, even with critical surfaces, is achieved with a medium layer of 80 to 120 µm in 2 spray passes, with air-drying overnight, or oven or IR drying. With critical surfaces, fine preparation is required and the parts must be evenly filled.
- ◆ The Two-Part HS Vario Filler - LGF 786 004 A4- (gray) is recommended for insulating thermoplastic coatings.
- ◆ When air drying, a minimum of +15 °C (59 °F) is recommended.

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	above 23 °C (73.4 °F)
VOC value: 2004/42/IIB(c) (540)540	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 540 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 540 g/L.



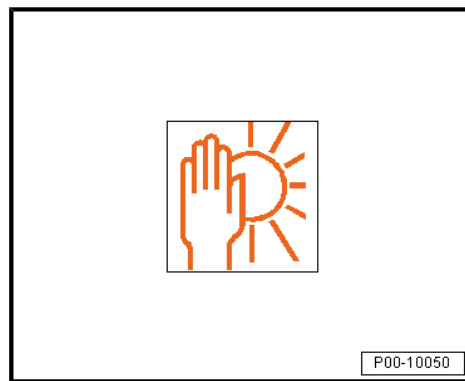


Storage

The guaranteed shelf life is:

- ◆ 24 months from date of manufacture for Two-Part HS Performance Filler - LVM 014 ...- .
- ◆ 12 months from date of manufacture for Two-Part VHS Performance Hardener - LVM 009 038 A2- .
- ◆ 36 months from date of manufacture for Two-Part VHS Performance Hardener, Long - LVM 009 039 A2- .

Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.5.5 Two-Part Synthetic Adhesion Filler

Definition:

- ◆ Two-Part Synthetic Adhesion Filler - LKF 696 009 A2- , white
- ◆ Two-Part Synthetic Adhesion Filler - LKF 696 040 A2- , black

Edition 08/2013

Product Description

The two-part synthetic adhesion filler is a high-quality two-part primer filler for plastic parts.

Properties:

- ◆ Adhesion on all standard vehicle plastic parts
- ◆ Can be used wet-in-wet
- ◆ Efficient coating system
- ◆ Easy to handle
- ◆ Very long processing time

Application Instructions

Base surface

Suitable base surfaces:

- ◆ All standard plastic parts used on car exteriors
- ◆ PP, PP/EPDM, ABS, SAN, PC, PA, PUR-RIM, R-TPU, TPO, PBTP, PVC
- ◆ PUR, PUR soft foam
- ◆ UP-GF





Pre-treatment of base surfaces:

The base surface must be free of separating agents.

Before cleaning the plastic parts, temper them for 60 minutes at +60 °C to "sweat out" the separating agents.

- Clean using Antistatic Plastic Cleaner - LVM 001 001 A2- or a milder Silicone Remover, Long - LVM 020 100 A5- .



Note

- ◆ *The effort needed for cleaning depends on the type and quantity of the separating agent used. We recommend using a sanding pad to help cleaning*
- ◆ *Let the thinner evaporate (for example, air-drying overnight at room temperature or 30-40 minutes at +60 °C).*
- Before applying the adhesive filler, lightly clean again using Antistatic Plastic Cleaner - LVM 001 001 A2- or Silicone Remover, Long - LVM 020 100 A5- (antistatic effect).



P00-11038



P00-11038

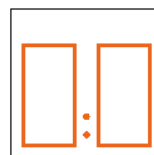
Processing

Thinner:

- Do not add any thinner!

Mixture ratio:

- 1:1 by volume with Two-Part Adhesive Filler Hardener - LHA 005 000 A2- .



P00-10084

Processing time/pot life:

- Adjustment for spraying 7 to 9 hours at +20 °C (68 °F)



Note

Do not add any thinner! The material can be sprayed after adding the hardener.



P00-11029



Application type "coat"

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP":

DIN 4 mm: 16 to 18 seconds

ISO 4 mm: 37 to 45 seconds.

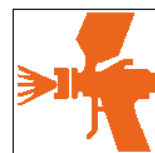
- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.4 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- Apply an application (apply a thin application and then a normal application after that).
- The recommended dry layer thickness is between 25 and 30 µm.



P00-11032



P00-11036



P00-11029



P00-11032



Drying

Air dry at +20 °C (68 °F) room temperature, can be sprayed over after 15 to 20 minutes



P00-11027

Reworking



P00-11029





After a ventilation time of 15 to 20 minutes (up to a maximum of 24 hours), spray on a suitable top coat wet-in-wet at +20 °C (68 °F).



Note

- ♦ If needed, the two-part plastic adhesive filler can be lightly sanded with P 800-1000 grit wet sandpaper after drying for 30 minutes (at +60 °C (140 °F) object temperature) or after two hours (+20 °C (68 °F) room temperature).
- ♦ Any faults in the base surface can be filled in with Two-Part Fine Filling Paste - LSP 784 002 A2- after the two-part plastic adhesive filler has dried.
- ♦ Filler patches must be insulated with two-part synthetic adhesion filler before applying the top coat.

Afterwards, can be painted over with:

- ♦ Water-based base paint and two-part HS clear coat
- ♦ Two-Part HS Top Coat



WARNING

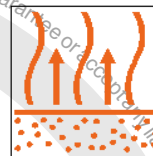
Painted plastic parts may not be cleaned with a high-pressure cleaner before 6 weeks have passed. The minimum distance between the nozzle and the object is 30 cm.

Characteristics

Delivery Vis- cosity	Two-Part Adhesive Filler Hardener	11 seconds
	Two-Part Synthetic Adhe- sion Filler	100 seconds
Flash- point:	above +23 °C (73.4 °F)	

Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-11026



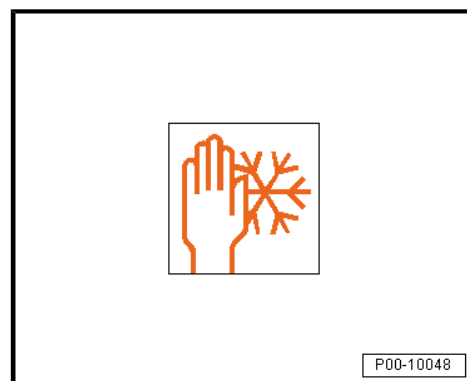
P00-10050



Storage Conditions

The prescribed storage temperature for the two-part synthetic adhesion filler is +20 °C (68 °F).

The prescribed storage temperature for the two-part adhesive filler hardener is +20 °C (68 °F) (not to fall below +5 °C (41 °F)). If exposed to frost, the hardener should be rewarmed to +20 °C (68 °F). Now it is suitable for use.



3.5.6 Two-Part HS Wet-in-Wet Filler

Definition:

- ◆ Two-Part HS Wet-in-Wet Filler - LVM 013 008 A4- , light gray

Edition 07/2013

Product Description

The two-part HS wet-in-wet filler (light gray) is a high-quality two-part HS wet-in-wet acrylic-resin-based filler.

Properties:

- ◆ Excellent processing properties
- ◆ Long pot life
- ◆ Flows well
- ◆ Quick processing and reworking
- ◆ For economical application in wet-in-wet processes, especially use with water-based paint.
- ◆ Very good stability under load

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ sheet steel that has been cleaned, sanded and primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007/171 A2- , galvanized/electrolytically zinc sheet steel or soft aluminum
- ◆ Fine or non-sanded, thoroughly cleaned, original factory primer.
- ◆ Sanded factory paint or old paint (including thermoplastic coatings)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents



Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

- Then, sand.



P00-11037

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

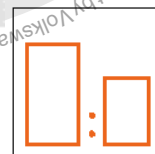


P00-11038

Wet-In-Wet Process

Mixture ratio:

- 5:1 by volume with:
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-



P00-11024



Mixture ratio:

- 3:1 by volume with:
- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-

For Elastification, Refer to ➔ [page 127](#) .

Processing time/pot life:

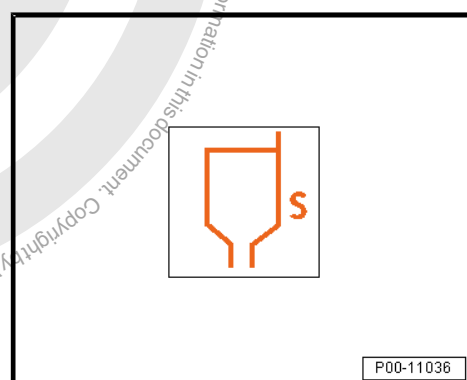
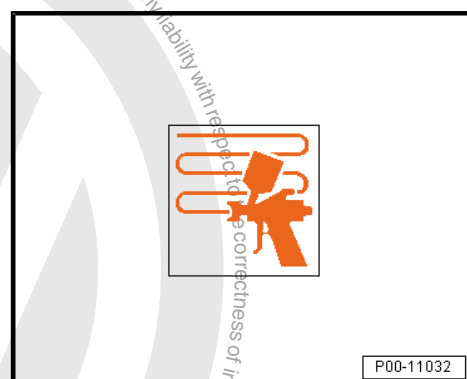
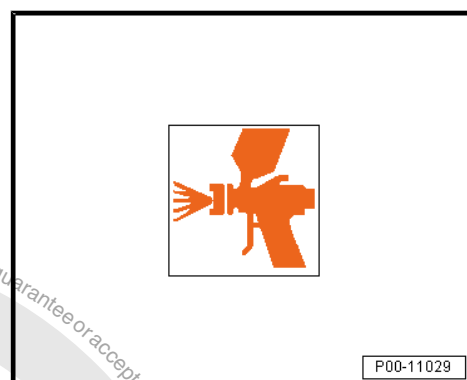
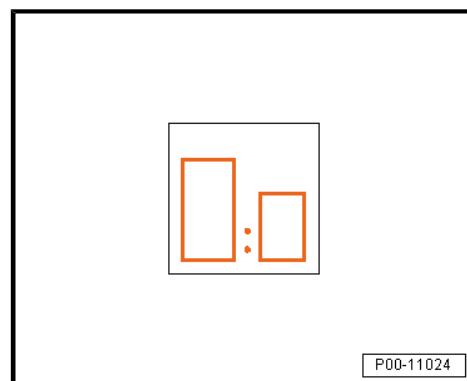
- Ready to spray 90 to 120 minutes at +20 °C (68 °F) (depending on the hardener used).

Thinner:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

Application type “coat”

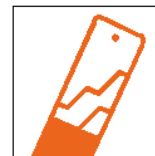
- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211





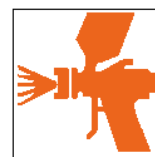
Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP" is the mixed viscosity.

- Use a measuring stick to mix when pouring in the hardener.



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.4 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



P00-11029

- 1 to 2 spray applications are required to get the recommended dry layer thickness of 25 to 30 µm.



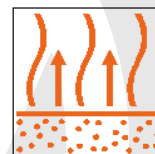
P00-11032

The drying time before processing further at +20 °C (68 °F) room temperature is 15 to 20 minutes.



Note

- ♦ The material can be painted over up to maximum of 120 minutes using only Aquaplus water-based base paint or Aqua premium base paint.
- ♦ The material can be painted over up to maximum of 90 minutes using two-part HS top coat.



P00-11026



Reworking

Can be painted over with:

- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 30 % Elastic Additive - ALZ 011 001- . 3:1 mixing ratio for VHS hardener with 20% thinner, 2:1 mixing ratio for HS hardener with 20 % thinner.



Note

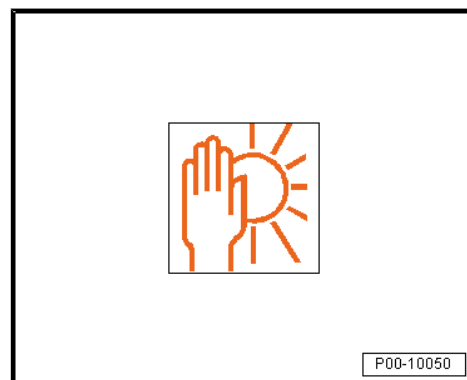
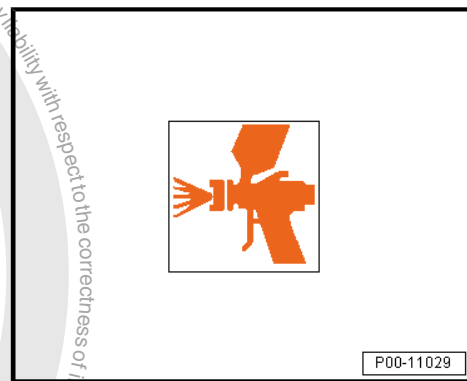
The drying time before applying the base paint or two-part top coat increases to 30 to 45 minutes.

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB(c) (540)540	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 540 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 540 g/L.

Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.6 Top Coats

⇒ ["3.6.1 Two-Part HS Top Coat", page 127](#)

⇒ ["3.6.2 Aquaplast System \(Solid and Metallic\)", page 133](#)

⇒ ["3.6.3 Aquaplast System \(Pearl Effect and Heliochrome\)", page 140](#)

⇒ ["3.6.4 Aquaplast Touch-Up System", page 146](#)

⇒ ["3.6.5 Aqua Premium System", page 150](#)

⇒ ["3.6.6 Aqua Premium Touch-Up System", page 160](#)

⇒ ["3.6.7 Aqua Premium System \(Rim Paintwork\)", page 165](#)

3.6.1 Two-Part HS Top Coat

Definition:

- ◆ Two-Part HS Solid Top Coat - L2K 073 ... -
- ◆ Two-Part HS Mixed Paint - L2K 074 ... -



Edition 04/2013

Product Description

The two-part HS top coat series is a high solid top coat system. It is used for vehicle painting.

The color program is extensively coordinated through an assortment of paint mixtures.

Properties:

- ◆ Easy to process
- ◆ Dries quickly
- ◆ Excellent top coat gloss
- ◆ VOC compliant below 420 g/L

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Hardened, solvent-resistant, well-preserved and sanded old paint or factory paints
- ◆ Surfaces treated with primer or filler

Suitable pre-treatment materials:

- Dependent on the object and base surface, according to our structure recommendations.

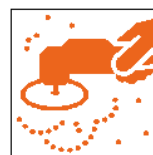
Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5-

- Dry-sand with rotary sander and dust extraction, P400-500 grit.



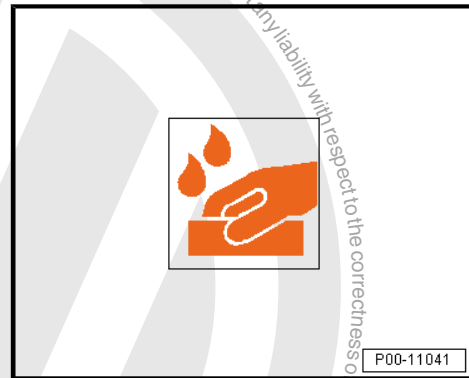
P00-11038



P00-11040



- Or “wet”-sand with P800-1000 sandpaper.



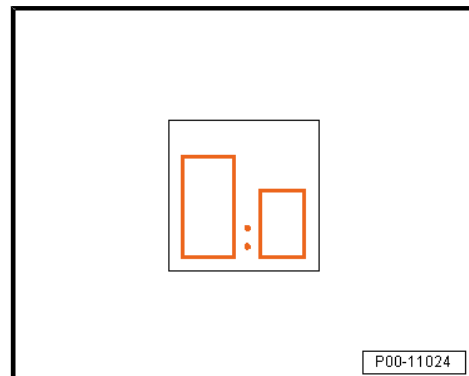
- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Processing

Mixture ratio:

- 3:1 by volume with:
 - ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2- (for small surfaces, spot repair)
 - ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- (for small to medium-sized surfaces, at moderate temperatures)
 - ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3- (for larger surfaces at moderate temperatures)
 - ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2- (for large surfaces and high temperatures)
 - ◆ See technical application information for the two-part VHS hardener, refer to [“3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener”, page 215](#) .



Note

The mixture ratio for Black Matt - L2K 073 3FZ A2- and Gray Matt - L2K 073 7DL A2- is 4:1 with Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- .



Processing time/pot life:

- Ready to spray in 60 to 90 minutes at +20 °C (68 °F)

Can be thinned using Two-Part Thinner, Special - LVM 009 200 A2- , HS Spot Thinner - LVM 006 000 A2- or Two-Part Thinner, Long - LVM 009 300 A2- .



Note

When using the HS Spot Thinner - LVM 006 000 A2- , observe the technical application information, refer to [⇒ "3.9.2 HS Spot Thinner", page 223](#) .

Application type "coat"

- Processing viscosity at +20 °C (68 °F) material temperature

Processing viscosity "Compliant" and "HVLP":

18-20 Seconds

18 to 25 seconds for Black Matt - L2K 073 3FZ A2- and Gray Matt - L2K 073 7DL A2-

- Adding 12.5 % thinner at +20 °C (68 °F) material temperature



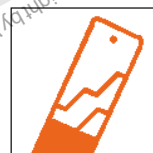
P00-11029



P00-11032



P00-11036



P00-11023



- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- 1.5 spray applications are required to get the recommended dry layer thickness of 50 to 60 µm.



Note

- ◆ When using for minimal damage repairs (clever repair procedure), the 12.5% Two-Part Thinner, Special - LVM 009 200 A2- can be replaced with 12.5 % HS Spot Thinner - LVM 006 000 A2- .
- ◆ Do not apply on slanted surfaces.
- ◆ During the spray application process, the first half spray application should form a thin, preliminary film upon which a fully-completed spray application can be applied.
- ◆ For less opaque colors, it may be necessary to apply another spray application after the corresponding ventilation time. Painting over the two-part HS top coat with same is possible to do without »intermediate sanding« when done within 24 hours.
- ◆ The mixing paint in this mixing paint series can only be used within the color tone formulas. When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.

Drying

Air dry at +20 °C (68 °F) room temperature:

- ◆ Dust dry after 20 to 30 minutes
- ◆ Ready for assembly after 5 to 6 hours
- ◆ Dry overnight



P00-11029



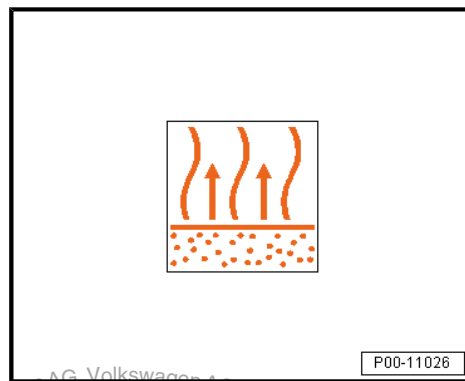
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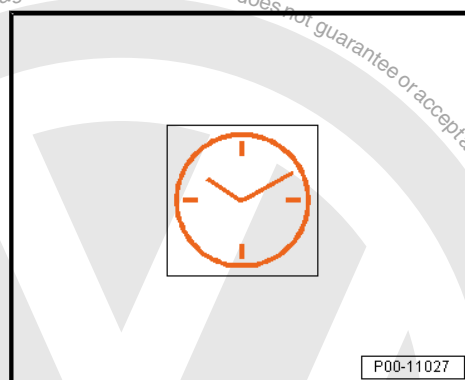
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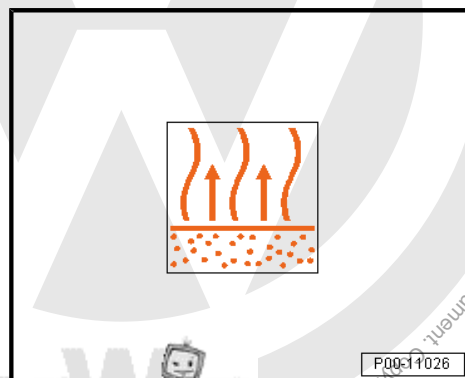
Final drying time with forced drying is a minimum of 5 to 10 minutes.



Forced dry at +60 °C (140 °F) object temperature for 15 to 20 minutes



Final drying time for IR drying is at least 5 minutes.



IR drying of bright colors with short-wave radiators for 5 minutes at 50 % power and then for 10 minutes at 100 % power.

IR drying of bright colors with medium-wave radiators for 15 minutes

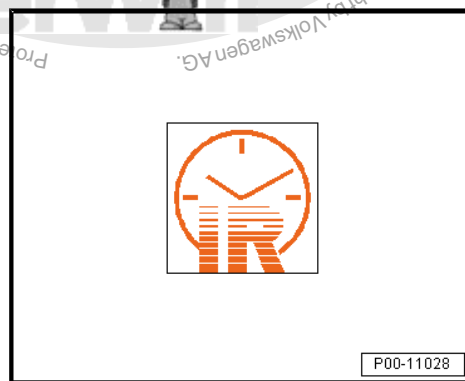
IR drying of dark colors with medium-wave radiators for 12 minutes

IR drying of dark colors with short-wave radiators for 12 minutes at 50% power



Note

When using a short-wave radiator at 100% power, bubbles or solvent popping marks could form when reworking dark colors.





Special Instructions:

Elastification:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part VHS hardeners, 3:1 with 15 % thinner

Matting effect/structuring

- ◆ The base material must first be mixed with 100 % Matting Component - ALN 775 106- / Structuring Component, Fine - ALN 775 108- .



Note

- ◆ *The Black Matt - L2K 073 3FZ A2- and Gray Matt - L2K 073 7DL A2- two-part solid top coats do not require additional Matting Component - ALN 775 106- , since they are already matted.*
- ◆ *Mixture ratio for Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- is 4:1 with 15 % thinner.*
- ◆ *Two spray applications (with 5 to 10 minutes intermediate drying time) are needed for an even paint film surface.*

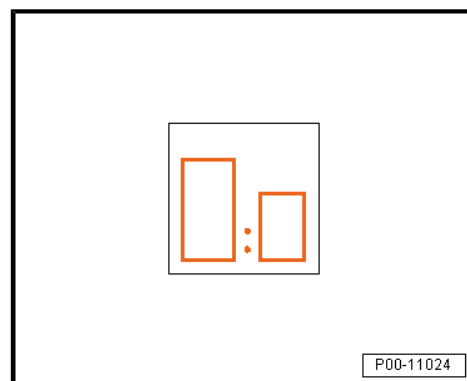
Characteristics

Delivery Viscosity	Depends on the color.
Flashpoint:	+23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

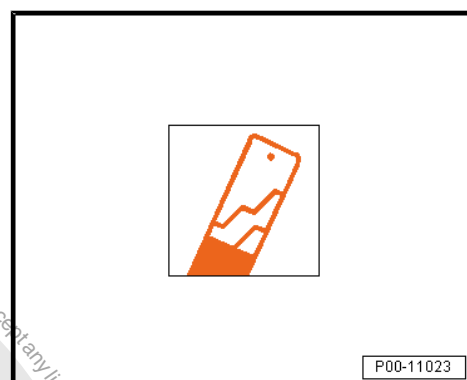
Storage

The Two-Part HS Solid Top Coat - L2K 073 ... - has a guaranteed shelf life of 24 months from date of manufacture.

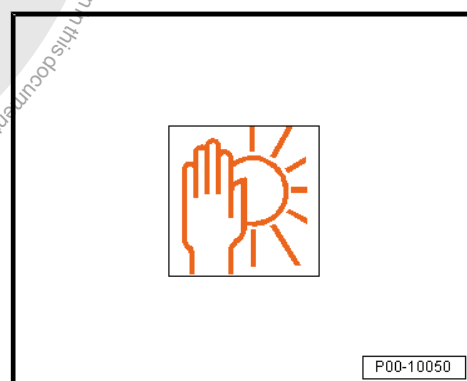
The guaranteed shelf life of Two-Part HS Mixed Paint - L2K 074 ... - is 36 months from the production date. Both products can be used no later than up to the date indicated on the label when stored in original containers at +20 °C (68 °F).



P00-11024



P00-11023



P00-10050

3.6.2 Aquaplus System (Solid and Metallic)

Definition:

- ◆ Water-Based Solid Mixed Paint - LWM 075 ...-
- ◆ Water-Based Metallic Mixed Paint - LWM 076 ...-
- ◆ Water-Based Solid Base Paint - LUW/LWG 038 ...-



◆ Water-Based Metallic Base Paint - LMW/LWG 039 ...-

Edition 11/2012

Product Description

The Aquaplast system is a high-quality water-soluble basepaint system. It is based upon special PU dispersion technology for high-quality solid and metallic two-coat vehicle paintwork.

Properties:

- ◆ Easy to process
- ◆ Good stability under load
- ◆ High covering capacity
- ◆ Can be painted over with two-part HS clear coat
- ◆ VOC compliant



Note

After painting over with two-part HS clear coat it produces a high-gloss, weatherproof top coat.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Intact old paint
- ◆ Primed and filled surfaces (two-part HS filler)
- ◆ with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- insulated base surfaces
- ◆ with Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2- insulated base surfaces on plastic surfaces
- ◆ See special instructions, refer to ➔ [page 136](#) .

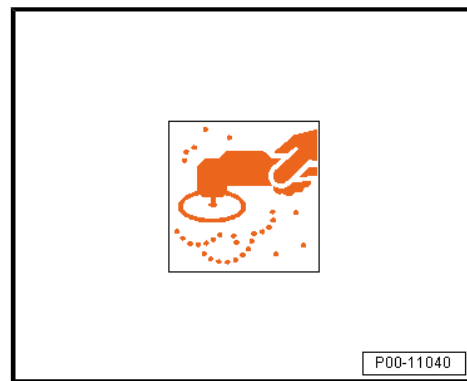
Pre-treatment of base surfaces:

- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .





- Dry-sand with rotary sander and dust extraction, P400-500 grit.



- Or “wet”-sand with P800-1000 sandpaper.





- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.
- Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.

Special Instructions

- ◆ Sanded-through areas must be insulated with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-. The sanded-through areas should not be larger than 5.0 cm in diameter.
- ◆ When using the two-part HS filler, any bare areas must be insulated with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-.

Processing

Mixing vessels:

- Plastic containers or tin-coated cans painted on the inside

Strainers:

- Filter watery base paint through water-tight, 125 µm strainers before working with cup systems.

Thinner:

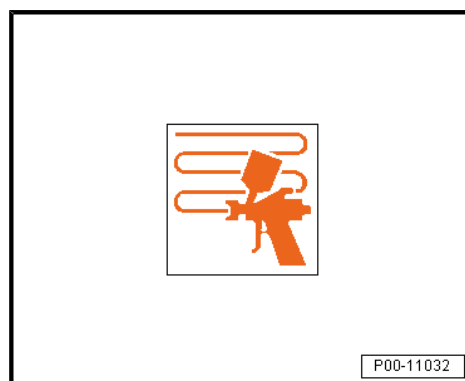
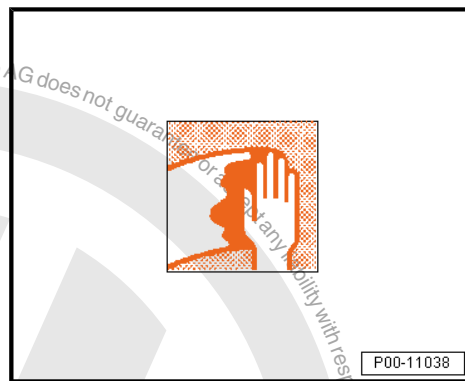
- Aquaplus Purified Water - LVW 010 000 A5- (according to ISO 3696)
- Use an Aquaplus measuring stick.
- An addition of 0 to 5 % Purified Water - LVW 010 000 A5- is sufficient at higher temperatures (>+25 °C (77 °F)) and a high relative humidity (> 60 %).



Note

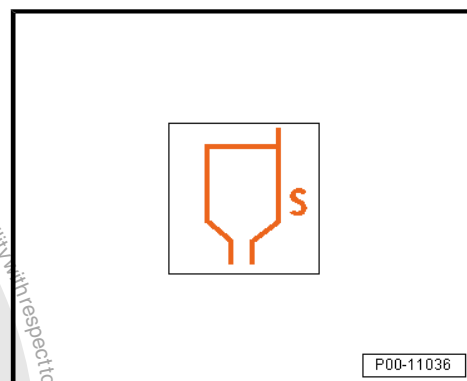
- ◆ *For reasons of safety, do not store mixtures that contain both Microsilver, Extra - LWM 076 817 A2/A4- and Oxide Glaze - LWM 075 831 A1-. Pressure can build up in sealed containers!*
- ◆ *Accumulated residue should be immediately disposed of properly, refer to ⇒ [page 139](#).*

Application type “coat”

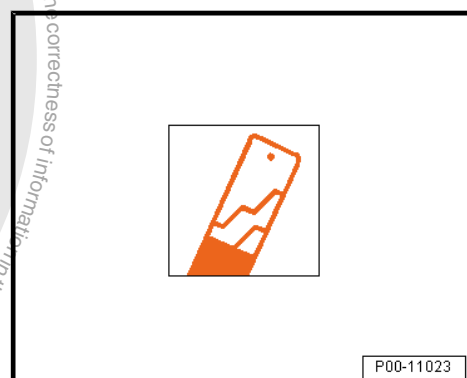




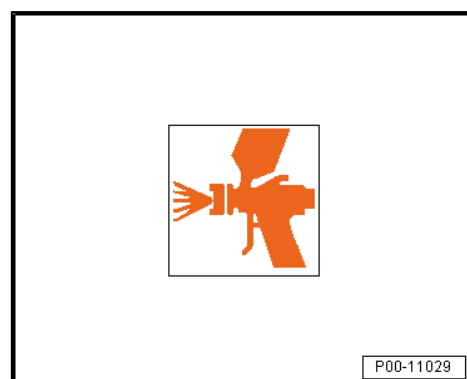
- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for “Compliant” and “HVLP”.



- Add 10 % thinner at +20 °C (68 °F) material temperature.



- Set spray nozzle (see manufacturer's information): “Compliant” 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): “HVLP” WSB/1.3 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): “HVLP” 0.7 bar (10.15 psi).

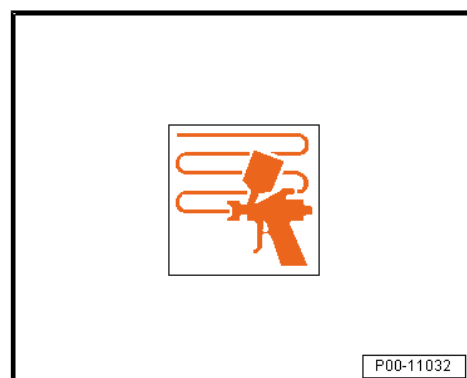


- An application includes: applying a thin spray application and then a normal spray application. For color shades with special effects, we recommend a “finishing application”.



Note

For less opaque colors, it may be necessary to apply additional spray applications after the corresponding ventilation time.





Drying

The ventilation time for clear coat application is at +20 °C (68 °F) room temperature for 20 minutes.

For smaller surfaces, the following make it possible to reduce the ventilation time:

- ◆ The painted surfaces can be applied more quickly by blowing them with blower nozzles (hand blowers or with stationary devices)
- ◆ Blowing with a spray gun is also possible after waiting at least five minutes.

For larger surfaces, the following make it possible to reduce the ventilation time:

- ◆ The painted surfaces can be applied more quickly by using stationary blowing devices (such as ceiling systems), infrared radiators or oven drying.
- ◆ Ceiling system 10 to 15 minutes
- ◆ IR drying 3 to 5 minutes
- ◆ Cooling time a minimum of 5 minutes

Heated Drying at +60 °C (140 °F)

- ◆ Combination booth at least 10 minutes including heating time
- ◆ Drying oven at least 5 minutes.
- ◆ Cooling time a minimum of 5 minutes

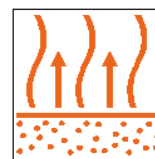


Note

The evaporating and drying times specified here depend on the temperature, humidity, air sink speed in the spray booth and the number of spray applications. However, you must wait for painted surface to be applied completely.



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Reworking

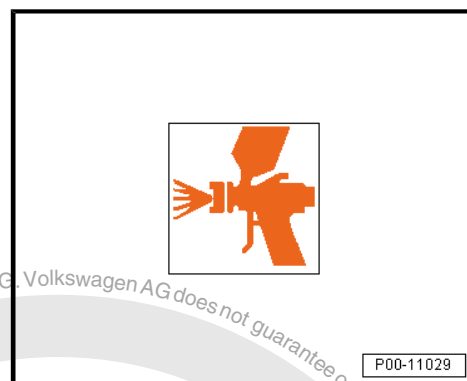
Can be painted over with:

- ◆ Two-part HS clear coat from the Volkswagen original paint product line

Special Instructions

Touch-up system (for attaining an optically perfect color shade transition to the adjacent parts)

- Preparation:
 - Sand the filled areas (dry with P400-500 or with water-proof P800-1000 paper).
 - Thoroughly sand the adjacent surfaces with a fine sanding pad.
 - Clean the entire surface thoroughly with Silicone Remover - LVM 020 000 A5- to remove dust, sanding residue and other dirt.
 - Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.
 - Allow wet-sanded surfaces and cleaned surfaces to dry completely.
- Touch-up system for metallic and solid color shades:
 - Thoroughly cover the filled areas with water-based paint which has been prepared for spraying.
 - Expand the scope of each subsequent spray application. This overlapping results in only one misted zone.
 - Expand the run-off area and touch-up with reduced pressure.
 - After an appropriate final ventilation time, paint over with two-part HS clear coat.



Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The mixing paints in this top coat series can only be used within the color tone formulas. When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.

Cleaning the Tools

- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5-. Then rinse with Nitrocellulose Thinner - LVE 856 000 A3-.

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

- ◆ Wear a breathing mask when using water-soluble products.



Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

Storage

The guaranteed shelf life for each product is:

- ◆ 24 months from date of manufacture for Water-Based Solid Mixed Paint - LWM 075 ...-
- ◆ 24 months from date of manufacture for Water-Based Solid Base Paint - LUW/LWG 038 ...-
- ◆ 24 months from date of manufacture for Water-Based Metallic Mixed Paint - LWM 076 ...-
- ◆ 18/24 months from date of manufacture for Water-Based Metallic Base Paint - LMW/LWG 039 ...-

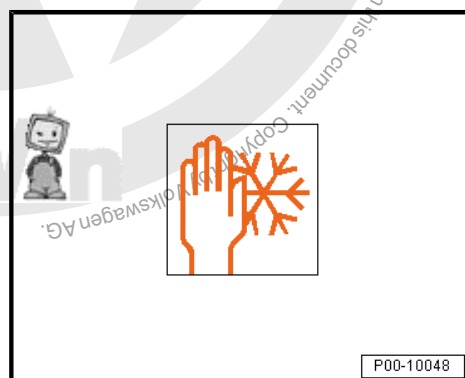
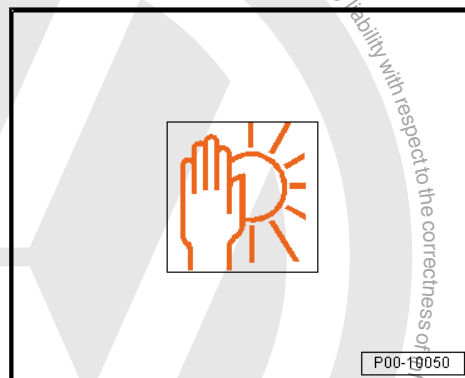
Use all of the products no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

The optimal storage temperature is +20 °C (68 °F) (not to fall below +5 °C (41 °F)).

The preferred temperature is between +15 °C (59 °F) and +25 °C (77 °F).

For short-term storage (approximately 4 weeks), between +5 °C (41 °F) and +35 °C (95 °F) is acceptable.



3.6.3 Aquaplus System (Pearl Effect and Heliochrome)

Definition:

- ◆ Water-Based Pearl Effect Base Paint - LPW 040 ...-
- ◆ Water-Based Heliochrome Base Paint - LHW 046 ...-
- ◆ Water-Based Pearl Effect Mixed Paint - LWM 076 ...-

Edition 11/2012

Product Description

The Aquaplus System is a high-quality water-soluble basepaint system based on special PU dispersions

The basepaint for pearl effect/heliochrome two-coat paintwork or pearlescent three-coat paintwork can be used on passenger and work vehicles.

Properties:

- ◆ Easy to process
- ◆ Good stability under load
- ◆ High covering capacity



- ◆ Can be painted over with two-part HS clear coat
- ◆ VOC compliant



Note

After painting over with two-part HS clear coat it produces a high-gloss, weatherproof top coat.

Application Instructions

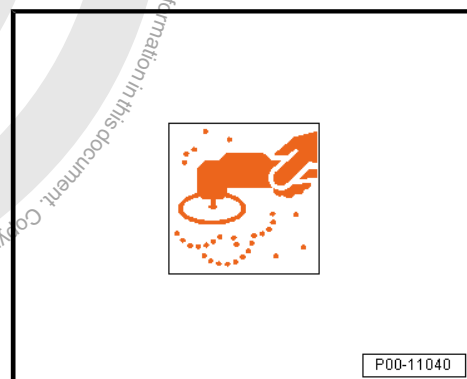
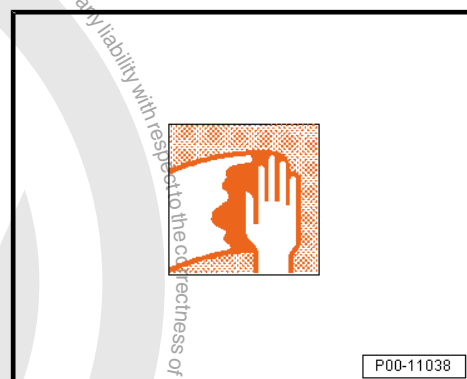
Base Surface

Suitable base surfaces:

- ◆ Intact old paint
- ◆ Primed and filled surfaces (two-part HS filler)
- ◆ with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- insulated base surfaces
- ◆ with Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2- insulated base surfaces on plastic surfaces
- ◆ See special instructions, refer to ➔ [page 142](#) .

Pre-treatment of base surfaces:

- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .
- Dry-sand with rotary sander and dust extraction, P400-500 grit.





- Or “wet”-sand with P800-1000 sandpaper.

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.
- Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.

Special Instructions

- ◆ Sanded-through areas must be insulated with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- . The sanded-through areas should not be larger than 50 cm in diameter.
- ◆ When using the two-part HS filler, any bare areas must be insulated with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .

Processing

Mixing vessels:

- Plastic containers or tin-coated cans painted on the inside

Strainers:

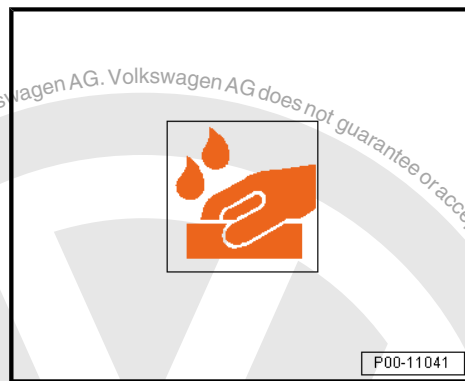
- Filter watery base paint through water-tight, 125 µm strainers before working with cup systems

Thinner:

- Aquaplast Purified Water - LVW 010 000 A5- (according to ISO 3696)
- Use an Aquaplast measuring stick.
- An addition of 0 to 5 % Purified Water - LVW 010 000 A5- is sufficient at higher temperatures (>+25 °C (>+77 °F)) and a high relative humidity (> 60 %).

Pre-painting:

- With three-coat pearlescent color shades, a special base surface color is required (for applying solid water-based base paint). Each color shade should be determined using the formula information system.
- For pearlescent paints, apply pearl effect water-based base paint.





Application type "coat"

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".

- Add 10 % thinner at +20 °C (68 °F) material temperature.

- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" WSB/1.3 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



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P00-11023



P00-11029



- An application includes: applying a thin spray application and then a normal spray application. For color shades with special effects, we recommend a "finishing application".



Note

- ◆ For less opaque colors, it may be necessary to apply additional spray applications after the corresponding ventilation time.
- ◆ The layer thickness (including base surface color shade solid water-based base paint) should not exceed 45 µm.

Drying

The ventilation time for clear coat application is at +20 °C (68 °F) room temperature for 20 minutes.

For smaller surfaces, the following make it possible to reduce the ventilation time:

- ◆ The painted surfaces can be applied more quickly by blowing them with blower nozzles (hand blowers or with stationary devices).
- ◆ Blowing with a spray gun is also possible after waiting at least five minutes.

For larger surfaces, the following make it possible to reduce the ventilation time:

- ◆ The painted surfaces can be applied more quickly by using stationary blowing devices (such as ceiling systems), infrared radiators or oven drying.
- ◆ Ceiling system 10 to 15 minutes
- ◆ IR drying 3 to 5 minutes
- ◆ Cooling time a minimum of 5 minutes

Heated Drying at +60 °C (140 °F)

- ◆ Combination booth at least 10 minutes including heating time
- ◆ Drying-oven at least 5 minutes.
- ◆ Cooling time a minimum of 5 minutes



Note

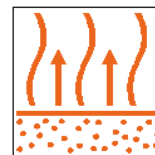
The evaporating and drying times specified here depend on the temperature, humidity, air sink speed in the spray booth and the number of spray applications. However, you must wait for painted surface to be applied completely.



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Reworking

Can be painted over with:

- ◆ Two-part HS clear coat from the Volkswagen original paint product line

Special Instructions



Note

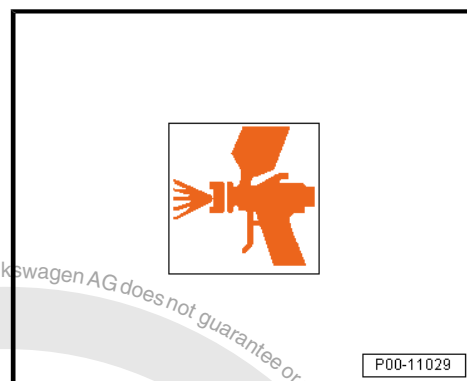
- ◆ *The decision to use two or three coats (with a special base surface color shade), depends on the factory paint.*
- ◆ *Each base surface color tone is indicated in the formula information system.*

Touch-up system (for attaining an optically perfect color shade transition to the adjacent parts)

- Preparation:
 - Sand the filled areas (dry with P400-500 or with water-proof P800-1000 paper).
 - Thoroughly sand the adjacent surfaces with a fine sanding pad.
 - Clean the entire surface thoroughly with Silicone Remover - LVM 020 000 A5- to remove dust, sanding residue and other dirt.
 - Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.
 - Allow wet-sanded surfaces and cleaned surfaces to dry completely.
- Two-coat pearl effect/heliochrome color shades:
 - Thoroughly cover the filled areas with pearlescent/heliochrome water-based paint which has been prepared for spraying.
 - Expand the scope of each subsequent spray application. This overlapping results in only one misted zone.
 - Expand the run-off area and touch-up with reduced pressure.
 - After an appropriate final ventilation time, paint over with two-part HS clear coat.
- Three-coat pearlescent color shades:
 - Thoroughly cover the filled areas with solid water-based paint (see using base surface color shade) and touch-up with reduced pressure (keep track of the drying time).
 - Using pearlescent water-based paint which has been prepared for spraying, spray the same area again (with reduced pressure) and match it with the original.
 - Blow dry with the pistol after each spray application.

Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The mixing paints in this top coat series can only be used within the color tone formulas. When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.





Cleaning the Tools

- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5- . Then rinse with Nitrocellulose Thinner - LVE 856 000 A3- .

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

- ◆ Wear a breathing mask when using water-soluble products

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)420420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

Storage

The guaranteed shelf life for each product is:

- ◆ 24 months from date of manufacture for Water-Based Pearl Effect Mixed Paint - LWM 076 ...- .
- ◆ 18 to 24 months from date of manufacture for Water-Based Pearl Effect Base Paint - LPW 040 ...- .
- ◆ 18 months from date of manufacture for Water-Based Heliochrome Base Paint - LHW 046 ...- .

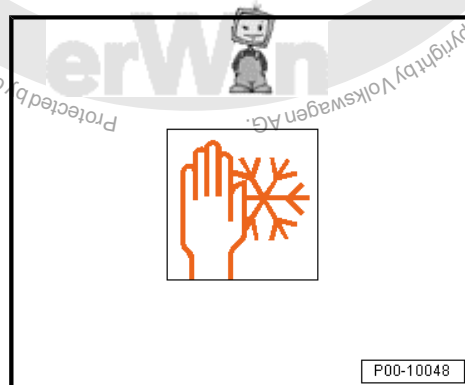
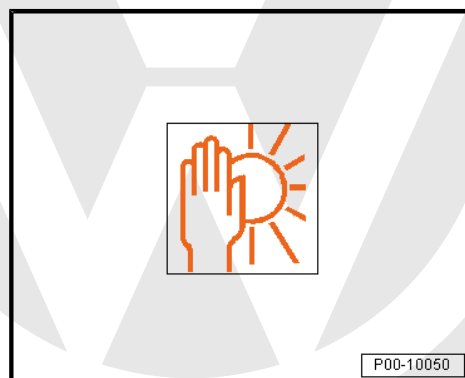
Use all of the products no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

The optimal storage temperature is +20 °C (68 °F) (not to fall below +5 °C (41 °F)).

The preferred temperature is between +15 °C (59 °F) and +25 °C (77 °F).

For short-term storage (approximately 4 weeks), between +5 °C (41 °F) and +35 °C (95 °F) is acceptable.



3.6.4 Aquaplast Touch-Up System

Definition:

- ◆ Touch-Up Additive for Aquaplast - LVM 030 000 A2-

Edition 06/2011

Product Description

The touch-up Additive for Aquaplast is especially suited for painting Aquaplast water-based base paint. This serves to simplify the touch-up process.



Application Instructions

Base Surface

Suitable base surfaces:

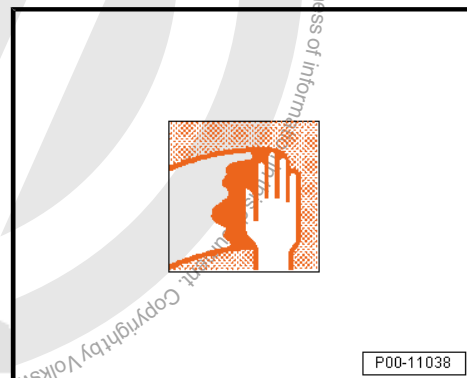
- ◆ Primed and filled surfaces (two-part HS filler)
- ◆ Hardened, solvent-resistant, well-preserved and sanded old paint or factory paints

Suitable pre-treatment materials:

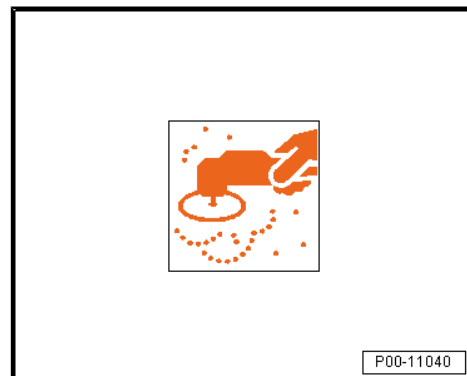
- Dependent on the object and base surface, according to our structure recommendations.

Pre-treatment of base surfaces:

- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



- Dry-sand with rotary sander with P400-500 grit and dust extraction or wet-sand with water-resistant P800-1000 grit sandpaper.



- Sand the painted area of the undamaged original paint with P1000-1200 grit sandpaper.



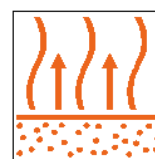


- Use a suitable cleaning agent before again reworking to ensure a clean and residue-free surface.



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- Allow wet-sanded surfaces and cleaned surfaces to dry completely.



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Processing

Dilution is not required.

Application type “coat”



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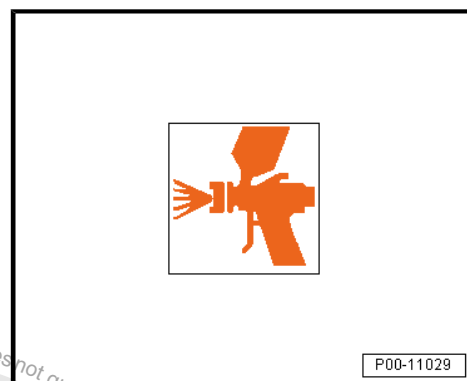
- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211
- The processing viscosity of the product is ready for immediate application.



P00-11036



- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" WSB/1.3 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).

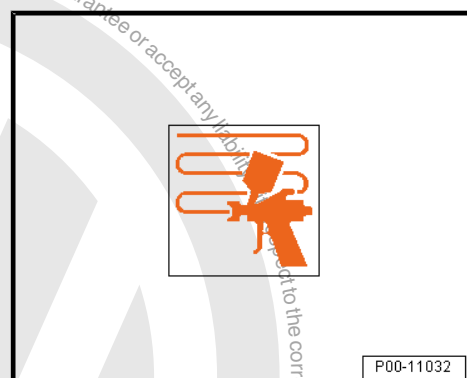


- Depending on the color and covering capacity, apply 3 to 5 spray applications of the adjusted Aquaplast water-based base paint using reduced pressure (0.8-1.5 bar (11.6 to 21.7 psi)) to the damaged areas.

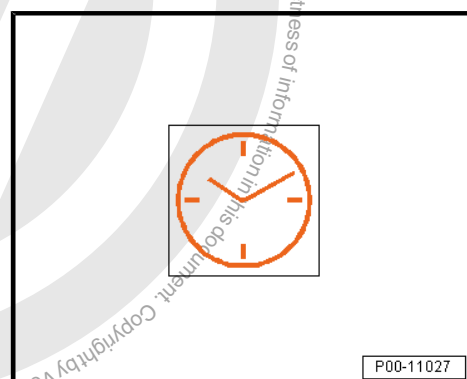


Note

The inlet pressure for this touch-up system should be reduced as described here. Disregard the the instructions provided by the manufacturer.



Drying

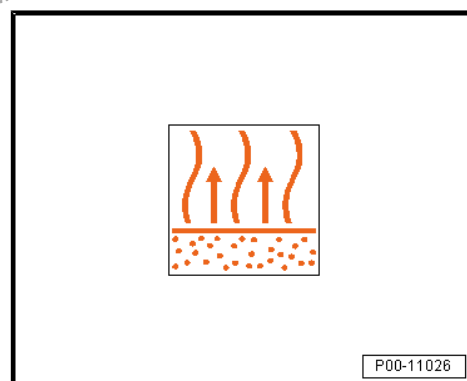


Evaporating time before clear lacquer application

Let ventilate at +20 °C (68 °F) room temperature for 15 to 20 minutes.

The following make it possible to reduce the ventilation time:

- ◆ Applying matt to a painted surface can be accelerated by blowing with a spray gun, forced, IR or oven drying.
- ◆ Blowing with a spray gun is also possible after waiting at least five minutes.
- ◆ The drying time is at least 5 minutes.





Reworking

Can be painted over with:

- ◆ Two-Part HS Clear Coat



Note

The product should not be used "pure".

Characteristics

Flashpoint:	above +23 °C (68 °F)
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Storage

The guaranteed shelf life of Touch-Up Additive for Aquaplast - LVM 030 000 A2- is 24 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).

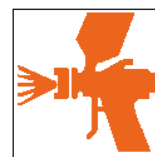
Storage Conditions

The optimal storage temperature is between +5 °C (41 °F) and +35 °C (95 °F).

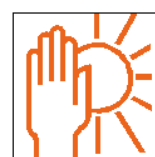


Note

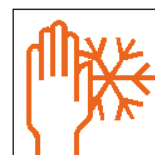
Temperatures that do not fall within this range can cause damage to the product.



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P00-10050



P00-10048

3.6.5 Aqua Premium System

Definition:

- ◆ Water-Based Solid Mixed Paint - LWM 083 ...-
- ◆ Water-Based Metallic/Pearl Effect/Special Effect Mixed Paint - LWM 084/ 086...-
- ◆ Water-Based Solid Base Paint - LWG 055 ...-
- ◆ Water-Based Metallic Base Paint - LWG 056 ...-
- ◆ Water-Based Pearl Effect Base Paint - LWG 057 ...-
- ◆ Flop Control - LWM 085 386 A2-
- ◆ System Components A - LWM 083 385 A3-
- ◆ System Components B - LWM 085 387 A3-



Edition 01/2014

Product Description

The Aqua premium system is an innovative water-soluble base-paint system. The mixing system contains all solid and effect color shades for vehicle repair paintwork.

Properties:

- ◆ Easy and to quick process
- ◆ Even impact alignment ensures high certainty of outcome
- ◆ Short process times
- ◆ Easy and safe painting
- ◆ Various application possibilities (interior, multiple-coat and multi-color coats)

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Primed and filled surfaces (two-part HS filler)
- ◆ Intact old paint
- ◆ For plastic surfaces, Glazing Adhesion Promoter - ALO 822 000 10- + two-part HS filler (elasticized)
- ◆ with Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2- insulated base surfaces on plastic surfaces
- ◆ See special instructions, refer to ➔ [page 152](#) .

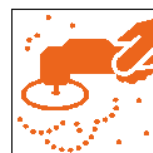
Pre-treatment of base surfaces:

- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .

- Dry-sand with rotary sander and dust extraction, P500-600 grit.



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- Or “wet”-sand with P800-1000 sandpaper.



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- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.
- Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.

Special Instructions

- ◆ Sanded-through areas must be insulated with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-. The sanded-through areas should not be larger than 5.0 cm in diameter.
- ◆ When using the two-part HS filler, any bare areas must be insulated with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .



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Standard Application Processing

Mixing vessels:

- Plastic containers or tin-coated cans painted on the inside

Strainers:

- Filter watery base paint through water-tight, 125 µm strainers before working with cup systems.

Additives:

(at a normal/high temperature and low humidity depending on the respective object size)

- Additive for Aqua Premium - LVM 035 200 A3-
- Additive for Aqua Premium - LVM 035 301 A3-
- Use Aqua premium standard measuring stick.



Note

After adding additive, use the material within 24 hours.

Application type “coat”



P00-11032

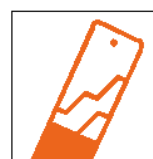


- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for “Compliant” and “HVLP”.



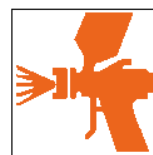
P00-11036

- For solid colors, add 10 % Additive for Aqua Premium - LVM 035 200 A3/LVM 035 301 A3- at +20 °C (68 °F) material temperature.
- For metallic/pearl effect colors, add 20 % Additive for Aqua Premium - LVM 035 200 A3/LVM 035 301 A3- at +20 °C (68 °F) material temperature.



P00-11023

- Set spray nozzle (see manufacturer's information): “Compliant” 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): “HVLP” WSB/1.3 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 bar (29 psi).
- Set atomizing pressure (see manufacturer's information): “HVLP” 0.7 bar (10.15 psi).



P00-11029

- One application consists of 1.5 spray applications. Apply a normal spray application, then apply a “finish spray application”/effect spray application.



Note

For colors with poor covering properties, after allowing for ventilation it may be necessary to apply another spray application (“wet” in “wet”).



P00-11032



Drying

The ventilation time for a clear coat application should be long enough for the surface to become completely matted.

Recommended layer thicknesses:

- ◆ 12-25 µm for solid colors
- ◆ 10-15 µm for metallic colors
- ◆ 15-20 µm for pearl effect colors

For smaller surfaces, the following make it possible to reduce the ventilation time:

- ◆ The painted surfaces can be applied more quickly by blowing them with blower nozzles (hand blowers or with stationary devices).
- ◆ Blowing with a spray gun is also possible after waiting at least five minutes.

For larger surfaces, the following make it possible to reduce the ventilation time:

- ◆ The painted surfaces can be applied more quickly by using stationary blowing devices (such as ceiling systems), infrared radiators or oven drying.

Three Layer Color Processing and Multi-Color Paintwork

Hardener:

- Aqua Premium Hardener - LVM 045 000 A1-

Additives:

(at high temperature and low humidity)

- Additive for Aqua Premium - LVM 035 301 A3-
- Use Aqua premium measuring stick for 3 coat colors.



Note

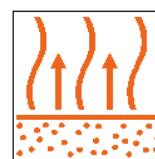
After adding additive, use the material within 24 hours.

Curing Time:

- Solids colors at +20 °C (68 °F) room temperature for 90 to 120 minutes.
- Effect colors at +20 °C (68 °F) room temperature for 45 to 60 minutes.



P00-11027



P00-11026



P00-11027

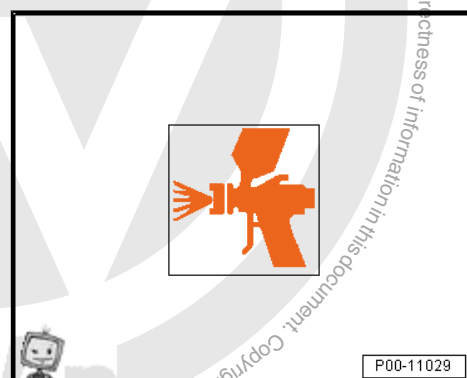
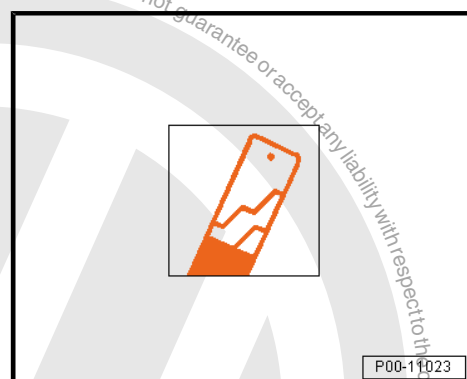
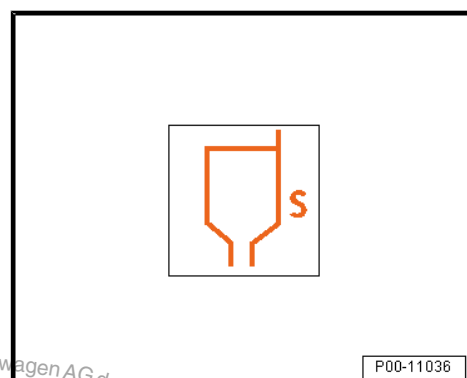
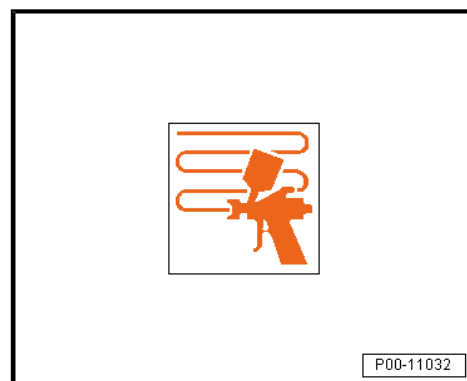


Application type "coat"

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".
- For three layer colors in primary shade only, add 5 % Aqua Premium Hardener - LVM 045 000 A1- .

- For solid colors, add 10 % Additive for Aqua Premium - LVM 035 301 A3- at +20 °C (68 °F) material temperature.
- For metallic/pearl effect colors, add 20 % Additive for Aqua Premium - LVM 035 301 A3- at +20 °C (68 °F) material temperature.

- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" WSB/1.3 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 bar (29 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).





- One application consists of 1.5 spray applications. Apply a normal spray application, then apply a “finish spray application”/effect spray application.



Note

For colors with poor covering properties, after allowing for ventilation it may be necessary to apply another spray application (“wet” in “wet”).

Drying

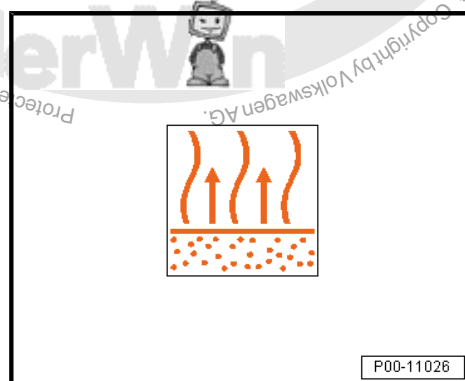
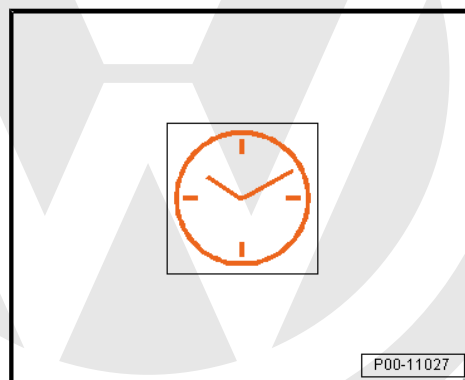
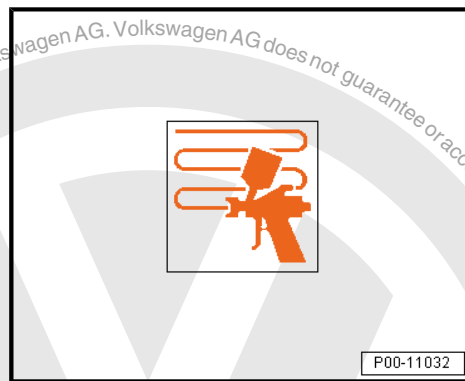
The ventilation time for a clear coat application should be long enough for the surface to become completely matted (without blowing).

- ◆ The ventilation time should take place assisted with blowing devices at 20-40 °C (68 to 104 °F) for 5 to 10 minutes until the surface becomes completely matted.
- ◆ The final ventilation time is at 60-65 °C (140 to 149 °F) for 10 to 15 minutes. Let the foundation cool off before applying the effect.



Note

For multi-color paintwork, the recommended tape is the »blue contour tape«.





Reworking

Can be painted over with:

- ◆ Effect color
- ◆ Two-part HS clear coat up to maximum of 72 hours after applying the base paint

Processing Interior Paintwork Without Applying Clear Coat

Application:

- ◆ Application areas are the vehicle interior, e.g. engine compartment and luggage compartment inner sides, where satin finish and resistant surface without additional clear coating is desired.

Hardener:

- Aqua Premium Hardener - LVM 045 000 A1-

Additives:

(at a normal/high temperature and low humidity depending on the respective object size)

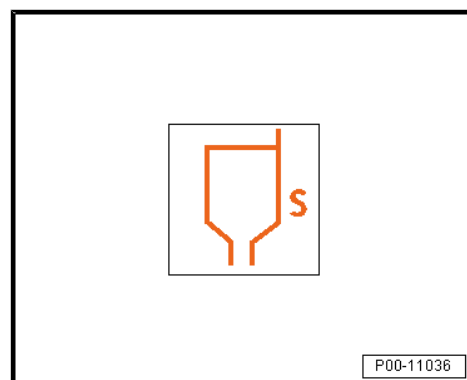
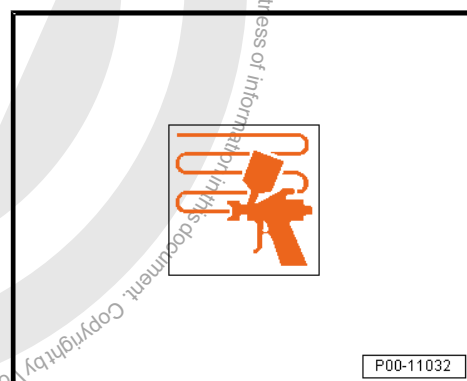
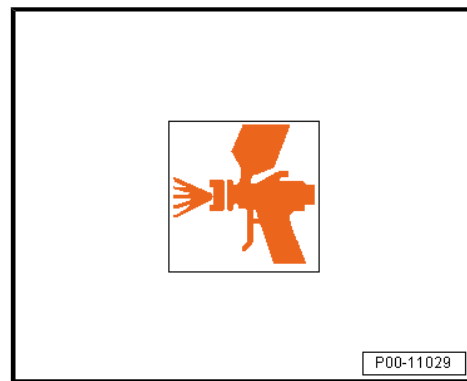
- Additive for Aqua Premium - LVM 035 200 A3-
- Additive for Aqua Premium - LVM 035 301 A3-
- Use an Aqua premium measuring stick for the interior paintwork.

Curing Time:

- Solid colors at +20 °C (68 °F) room temperature for 45 to 60 minutes
- Effect colors at +20 °C (68 °F) room temperature for 30 to 60 minutes.

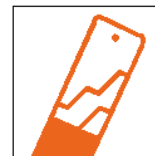
Application type "coat"

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".
- Add 10 % Aqua Premium Hardener - LVM 045 000 A1- to the color.



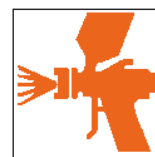


- For solid colors, add 10 % Additive for Aqua Premium - LVM 035 200 A3/LVM 035 301 A3- at +20 °C (68 °F) material temperature.
- For metallic/pearl effect colors, add 20 % Additive for Aqua Premium - LVM 035 200 A3/LVM 035 301 A3- at +20 °C (68 °F) material temperature.



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" WSB/1.3 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 bar (29 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



P00-11029

- One application consists of 1.5 spray applications. Apply a normal spray application, then apply a "finish spray application"/effect spray application.



P00-11032



Note

For colors with poor covering properties, after allowing for ventilation it may be necessary to apply another spray application ("wet" in "wet").





Drying

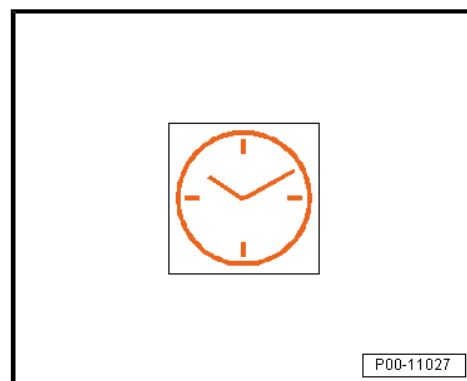
Let air dry overnight at +20 °C (68 °F) room temperature

Alternatively, the drying can take place at 60-65 °C (140 to 149 °F) for 15 to 20 minutes (oven drying).

Special Instructions

Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The mixing paints in this top coat series can only be used within the color tone formulas. When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.



Cleaning the Tools

- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5- . Then rinse with Nitrocellulose Thinner - LVE 856 000 A3- .

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

- ◆ Wear a breathing mask when using water-soluble products.

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

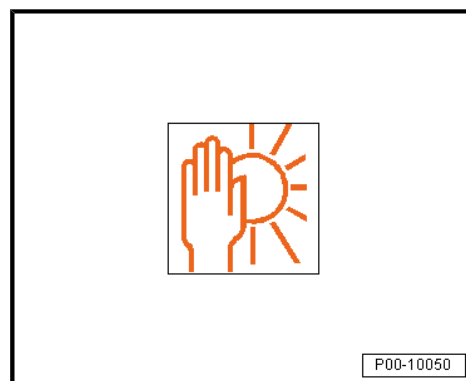


Storage

The guaranteed shelf life for each product is:

- ◆ 36 months from date of manufacture for Water-Based Solid Mixed Paint - LWM 083 ...- (exception: 24 to 36 months from date of manufacture for: Ocher - LWM 083 328- , Oxide Glaze - LWM 083 331- and Chestnut - LWM 083 332-), (exception: 48 months from date of manufacture for: Super-Deep Black - LWM 083 388 A2-).
- ◆ 24 months from date of manufacture for Water-Based Metallic/Pearl Effect/Special Effect Mixed Paint - LWM 084 ...- .
- ◆ 24 months from date of manufacture for Aqua Premium Solid Color/Base Paint - LWG 055 ...- .
- ◆ 18 to 24 months from date of manufacture for Water-Based Metallic Base Paint - LWG 056 ...-
- ◆ 18 to 24 months from date of manufacture for Water-Based Pearl Effect Base Paint - LWG 057 ...-
- ◆ 24 months from date of manufacture for Additive for Aqua Premium - LVM 035 200 A3/LVM 035 301 A3-
- ◆ 24 months from date of manufacture for Flop Control - LWM 085 386 A2- .
- ◆ 24 months from date of manufacture for System Component A - LWM 083 385 A3- .
- ◆ 24 months from date of manufacture for System Component B - LWM 085 387 A3- .

Use all of the products no later than the date indicated on the label and store in original container at +20 °C (68 °F).

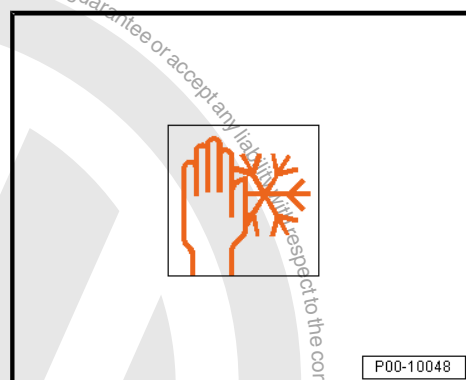


Storage Conditions

The optimal storage temperature is +20 °C (68 °F).

The preferred temperature is between +15 °C and +25 °C.

For short-term storage (a few days), between +5 °C and +35 °C (41 °F and 95 °F) is acceptable.



3.6.6 Aqua Premium Touch-Up System

Definition:

- ◆ Touch-Up Additive For Aqua Premium - LVM 035 100 A3-

Edition 10/2012

Product Description

To achieve an optically flawless color shade transition in the blended area or adjacent parts, e.g. fender or door.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Primed and filled surfaces (two-part HS filler)
- ◆ Intact old paint

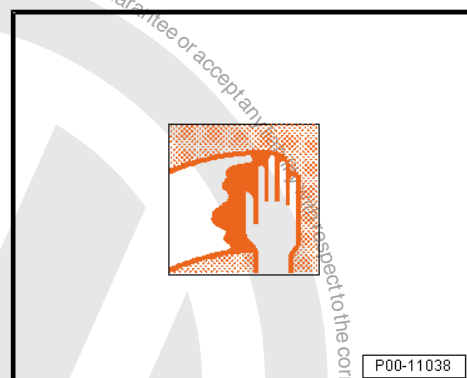


- ◆ with Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2- insulated base surfaces on plastic surfaces

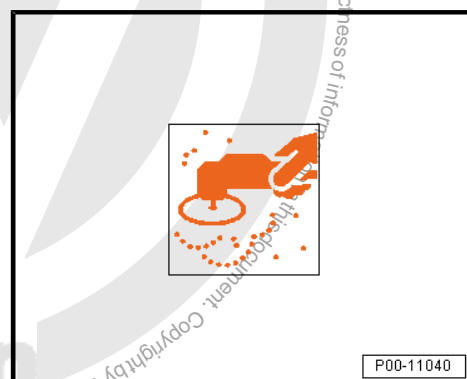
- ◆ See special instructions, refer to ➔ [page 162](#) .

Pre-treatment of base surfaces:

- Clean the factory or old paint or two-part HS filler thoroughly with Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



- Dry-sand with rotary sander with 500 grit and dust extraction or wet-sand with water-resistant P800-1000 grit sandpaper.

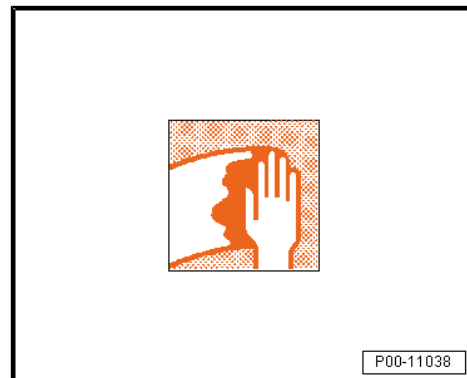


- Sand the bordering area/part around the repair area thoroughly with an ultrafine P1000-3000 sanding pad. If beading, edges or grip recesses are present, use a sanding pad beforehand.



- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

- Wipe off any residual silicone remover with a lint-free cloth, leaving no streaks.





- Allow wet-sanded surfaces and cleaned surfaces to dry completely.

When using a dust extraction, use next generation towels with an effective light adhesive formula to minimize the risk of chemical or adhesive residue (for example, Dust Cloth - VAS6177-), refer to ⇒ [“4.2.1 Dust Cloth VAS6177”, page 343](#) .

Special Instructions

- ◆ Sanded-through areas must be insulated with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- . The sanded-through areas should not be larger than 5.0 cm in diameter.
- ◆ When using the two-part HS filler, any bare areas must be insulated with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .

Processing/Repair Process

Touch-up painting inside surface, e.g. side component:

- Pre-treating the base surface, refer to ⇒ [page 161](#) .

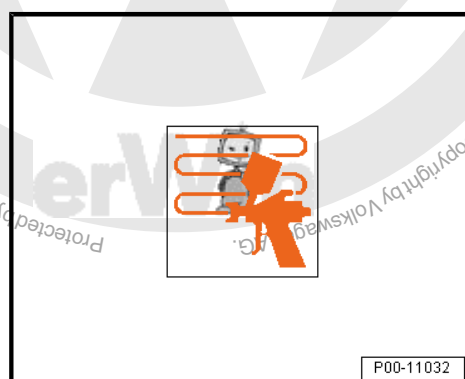
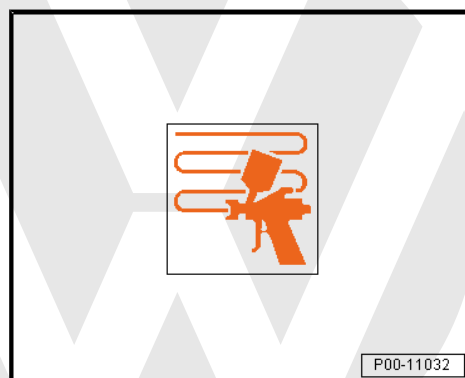
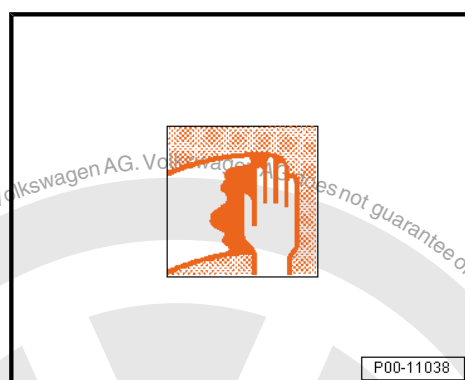
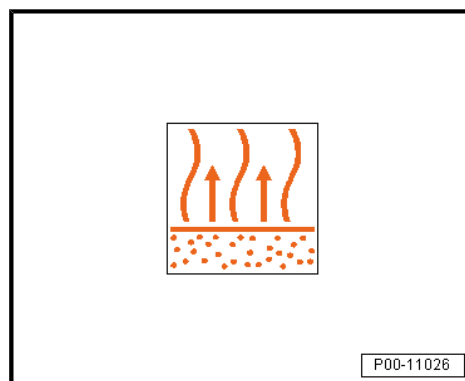
- Apply 1 to 2 complete spray applications of the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- with normal pressure in each touch-up area around the repair area.

- Apply the first spray application of the adjusted water-based base paint to the repair area up to the edge of the wet touch-up additive. Immediately after that, apply the half effect/finish spray application onto the wet touch-up additive from a distance.



Note

When doing so, make sure that the touch-up area is larger/wider than the repair area and that it lies on the wet Touch-Up Additive For Aqua Premium - LVM 035 100 A3- .

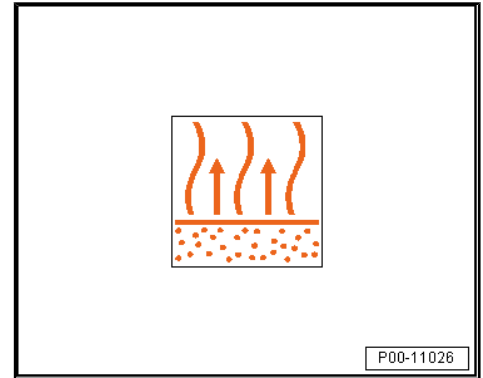




- After ventilating, apply a two-part HS clear coat over the entire repair surface.

i Note

- ◆ While processing the Aqua premium water-based base paint, the spray gun material flow/trigger remains completely open.
- ◆ The spraying pressure for the effect spray application can vary between 1.5 and 2.0 bar (21.7 to 29 psi) depending on the size of the object.



Touching-up minimal damage for example clever repair.

- Pre-treating the base surface, refer to ➔ [page 161](#) .

i Note

The repair/filler area should be kept as small as possible.

Possibility »a«:

- ◆ For most colors, use the adjusted water-based base paint.

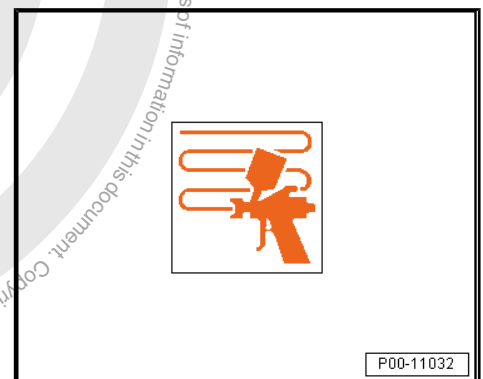
Possibility »b« (recommended for colors with a high percentage of metal):

- ◆ Adjust the Aqua premium water-based base paint in a 1:1 ratio with Touch-Up Additive for Aqua Premium - LVM 035 100 A3- + 10 % Flop Control - LWM 085 386 A2- (Additive For Aqua Premium - LVM 035 200/301 ...- is not required).
- ◆ Use the Aqua premium measuring stick for clever repair to adjust the mixing ratio.
- Depending on the color and covering capacity, apply 3-5 spray applications of this mixture with reduced pressure (0.8-1.5 bar (11.6 to 21.7 psi)) to the repair area/run-off area.

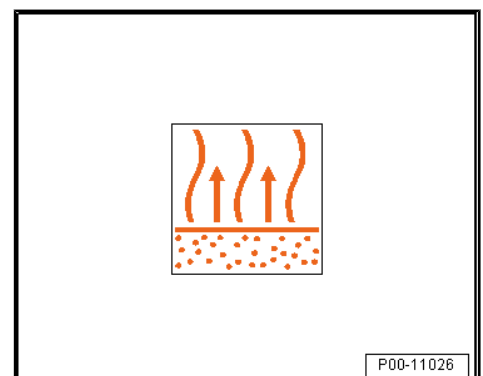


i Note

Make sure that each spray application is performed a little bit further and allowed to ventilate and matt. The ventilation time can be accelerated by blowing.



- After an appropriate final ventilation time, paint over with two-part HS clear coat.





Touching-up three layer colors:

- Pre-treating the base surface, refer to ➤ [page 161](#) .



P00-11038

- Apply the primary color shade, adjusted for the 5 % Aqua Premium Hardener - LVM 045 000 A1- and 10 % Additive For Aqua Premium - LVM 035 200 A3/LVM 035 300 ...- for solid colors or 20 % Additive For Aqua Premium - LVM 035 200 A3/LVM 035 300 ...- for effect colors, onto the repair area and on the bordering touch-up area up to the covering capacity.



P00-11032



Note

- ◆ *Test spraying on sheet metal is recommended.*
- ◆ *Use the Aqua premium measuring stick for 3 coat colors to adjust the mixing ratio.*
- ◆ *Observe the drying times.*
- Apply 1 to 2 complete spray applications of the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- with normal pressure to each base color run-out area or bordering component.
- Apply going from the run-out area to the repair area. This means, apply the first effect color spray application in the run-out area to the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- ("wet in wet").
- Then paint the next effect color layer near the repair area.
- For some effect color, it is necessary to apply 2-3 more spray application to achieve the desired optical effect. Normally, apply spray applications "wet-in-wet" and without intermediate ventilation.



P00-11032



Note

- ◆ *Starting with the first spray application, it is recommended to even out the subsequent repair area/base color spray applications starting from the touch-up area that is farthest out. For that reason, the subsequent spray applications should always be remain inside the previous spray application, in order to avoid visible contours/shadows.*
- ◆ *For a better assessment, it is recommended to test spray on sheet metal before every spray application.*



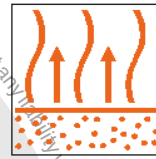
P00-11032



- After ventilating, apply a two-part HS clear coat over the entire repair surface.

i Note

- ◆ While processing the Aqua premium water-based base paint, the spray gun material flow/trigger remains completely open.
- ◆ The spraying pressure for the effect spray application can vary between 1.5 and 2.0 bar (21.7 to 29 psi) depending on the size of the object.
- ◆ For efficient ventilating and drying, stationary blowing devices or forced drying (e.g. oven drying) are recommended.



P00-11026

Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The mixing paints in this top coat series can only be used within the color tone formulas. When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.

Cleaning the Tools

- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5- . Then rinse with Nitrocellulose Thinner - LVE 856 000 A3- .

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

- ◆ Wear a breathing mask when using water-soluble products.

3.6.7 Aqua Premium System (Rim Paintwork)

Definition:

- ◆ Water-Based Metallic Base Paint - LWG 056 1H7 A1-

Edition 04/2013

Product Description

Description of rim paintwork using Water-Based Metallic Base Paint - LWG 056 1H7 A1- .

Properties:

- ◆ High stability under load
- ◆ High covering capacity
- ◆ Can be painted over with two-part HS clear coat
- ◆ VOC compliant

i Note

After painting over with two-part HS clear coat it produces a high-gloss, weatherproof top coat.



Application Instructions

Base Surface

Suitable base surfaces:

- ◆ primed or filled surfaces with Two-Part HS Vario Filler - LGF 786 004 A4- , gray
- ◆ Factory or old paint (excluding thermoplastic coatings)

Pre-treatment of base surfaces:

- Thoroughly clean factory- or old paint using Silicone Remover - LSW 019 000 A5- , or beforehand with Silicone Remover, Long - LVM 020 100 A5- if very dirty.

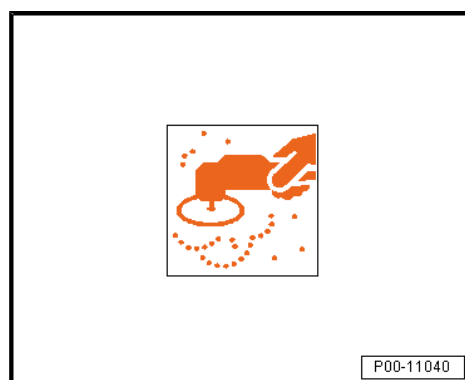
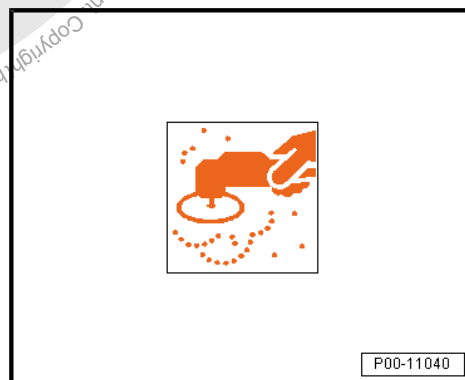
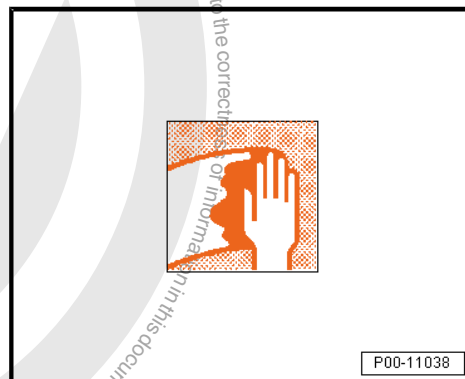
- Dry-sand with rotary sander and dust extraction, P1000-1500 grit.
- Sand spokes, corners and edges by hand with an UltraFine/ P3000 sanding pad.

- Before reworking, carefully clean the sanded base surfaces of dust, sanding residue and other dirt with Silicone Remover - LSW 019 000 A5- If very dirty, clean beforehand using Silicone Remover, Long - LVM 020 100 A5- .

Processing

Pretreatment of base surfaces (filler leveling):

- Bare areas must be primed with Two-Part Wash Primer - LHV 043 000 A2- when using Two-Part HS Vario Filler - LGF 786 004 A4- .
- It is essential to have even base surfaces that are free of sanded-through areas.
- Dry-sand with rotary sander and dust extraction, P500 grit.





- Wet-sand with P800-1000 grit sandpaper.

Clear coat on the filler:

- Apply two-part HS clear coat on the sanded filler. Depending on the size of the repair area or if there are many repair areas, it is recommended to apply two-part HS clear coat to the entire rim.



P00-11041

- Apply a preliminary spray application (approximately 20 µm).



P00-11032

Forced dry at +60 °C (140 °F) object temperature for 20 to 25 minutes



P00-11027

Clear coat sanding:

- Dry-sand with rotary sander and dust extraction, P1000-1500 grit.
- Sand spokes, corners and edges by hand with an UltraFine/ P3000 sanding pad.



P00-11040



Cleaning:

- Before reworking the sanded base surfaces, carefully clean them of dust, sanding residue and other dirt with Silicone Remover - LVM 020 000 A5-



P00-11038

Base paint application "spray application"

The following materials can be used as additives:

- ◆ Additive for Aqua Premium - LVM 035 301-



P00-11029

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211
- Processing viscosity 4 mm at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".



P00-11036

- Add 50 % Additive for Aqua Premium - LVM 035 301- at +20 °C (68 °F) material temperature.



P00-11023



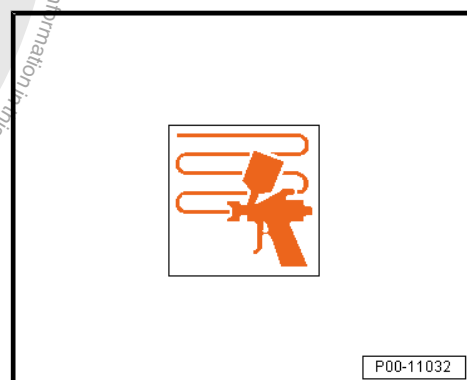
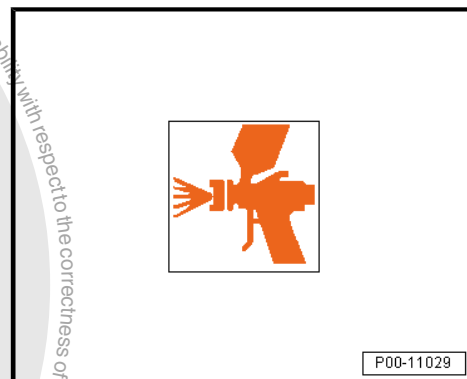
- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.2 to 1.3 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 bar (29 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).

One work procedure contains 1.5 spray applications (one normal, preliminary spray application followed by a light spray application while standing back from the object).



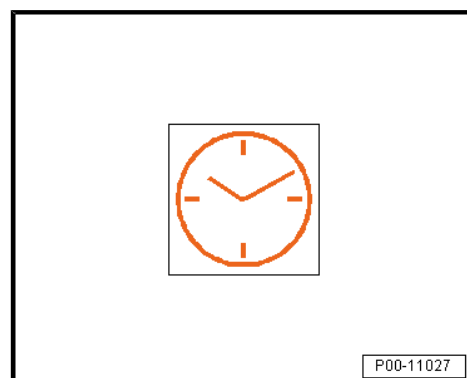
Note

- ◆ *The best results are achieved when using a 1.3 mm SATA NR 3000 HVLP spray gun.*
- ◆ *Additive for Aqua Premium - LVM 035 200 A3- /- LVM 035 301 A3- should be added immediately before applying the Water-Based Metallic Base Paint - LWG 056 1H7 A1-. The best result is achieved when the mixture is used within a working day.*



Drying

Evaporating time before clear lacquer application



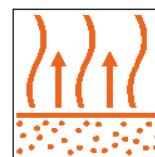


Ventilate at +20 °C (68 °F) room temperature until matted.



Note

- ◆ The best results are achieved when using a 1.3 mm HVLP spray gun.
- ◆ Additive for Aqua Premium - LVM 035 301- should be added immediately before applying the Water-Based Metallic Base Paint - LWG 056 1H7 A1 silber-. The best result is achieved when the mixture is used within a working day.



P00-11026

The following make it possible to reduce the ventilation time:

- ◆ Applying matt to a painted surface can be accelerated by blowing with a spray gun, forced, IR or oven drying.
- ◆ Blowing with a spray gun is also possible after waiting at least five minutes.
- ◆ The drying time is at least 5 minutes.



Note

The evaporating and drying times specified here depend on the temperature, humidity, air sink speed in the spray booth and the number of spray applications. However, you must wait for painted surface to be applied completely.





Reworking

Can be painted over with:

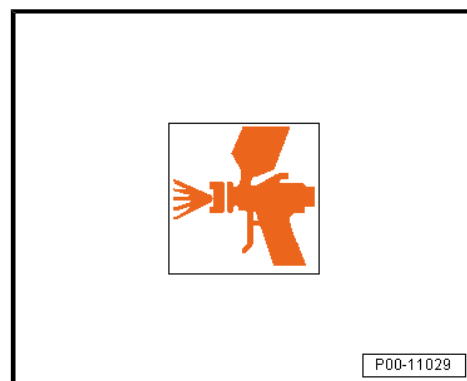
- ◆ Two-part HS clear coat (elasticized)

Special Instructions



Note

Touch-up with Water-Based Metallic Base Paint - LWG 056 1H7 A1- in 1 to 2 normal spray applications. Apply the Touch-Up Additive For Aqua Premium - LVM 035 100 A3- to the run-out area.



Using the Products

- ◆ The spray devices should be suitable for use with water-soluble products; see manufacturer's information.
- ◆ The mixing paints in this top coat series can only be used within the color tone formulas. When processing individual mixing paints on their own, major deviations from the information given in the application instructions are possible.

Cleaning the Tools

- ◆ Rinse before and after using with Aquaplast Purified Water - LVW 010 000 A5- . Then rinse with Nitrocellulose Thinner - LVE 856 000 A3- .

Disposal

- ◆ Collect liquid waste from water-soluble products and separate from liquid waste from conventional products. When mixing materials, disposal may no longer be possible, which is difficult and costly.

Health Protection

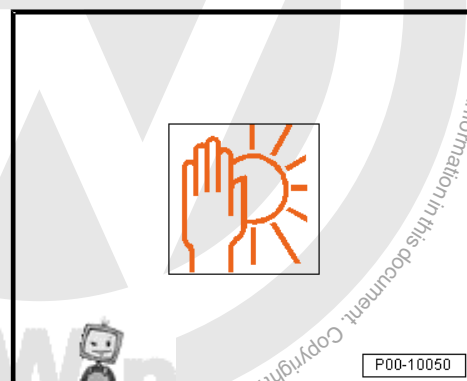
- ◆ Wear a breathing mask when using water-soluble products.

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

Storage

The guaranteed shelf life of Water-Based Metallic Base Paint - LWG 056 1H7 A1- is 24 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).





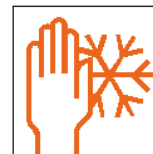
Storage Conditions

The optimal storage temperature is between +5 and +35 °C (41 and 95 °F).



Note

Temperatures that do not fall within this range can cause damage to the product.



P00-10048

3.7 Clear Coats

- ⇒ ["3.7.1 Two-Part HS Clear Coat", page 172](#)
- ⇒ ["3.7.2 Two-Part MS Matt Clear Coat", page 178](#)
- ⇒ ["3.7.3 Two-Part HS Vario Clear Coat", page 181](#)
- ⇒ ["3.7.4 Two-Part HS Optimum Clear Coat", page 187](#)
- ⇒ ["3.7.5 Two-Part HS Optimum Plus Clear Coat", page 190](#)
- ⇒ ["3.7.6 Two-Part Brilliant Clear Coat", page 194](#)
- ⇒ ["3.7.7 Two-Part HS Brilliant Plus Clear Coat", page 198](#)
- ⇒ ["3.7.8 Two-Part HS Performance Clear Coat", page 203](#)
- ⇒ ["3.7.9 Blender", page 207](#)

3.7.1 Two-Part HS Clear Coat

Definition:

- ◆ Two-Part HS Clear Coat - L2K 769 500 A5-

Edition 10/2012

Product Description

Two-part HS clear coat is a VOC compliant, high-quality high solid clear coat.

Properties:

- ◆ Easy to process
- ◆ Variable uses for two-part HS and two-part VHS hardeners
- ◆ Good spreading properties
- ◆ Brilliant surface finish

Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints

Suitable pre-treatment materials:

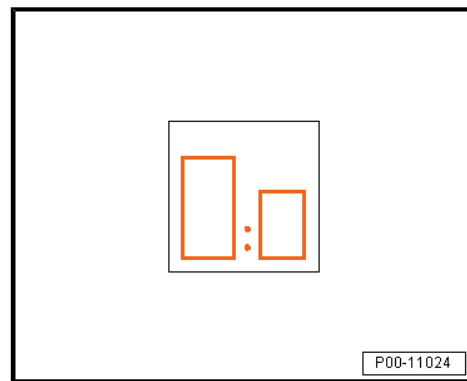
- Dependent on the object and base surface, according to our structure recommendations.



Processing With Two-Part HS Hardeners

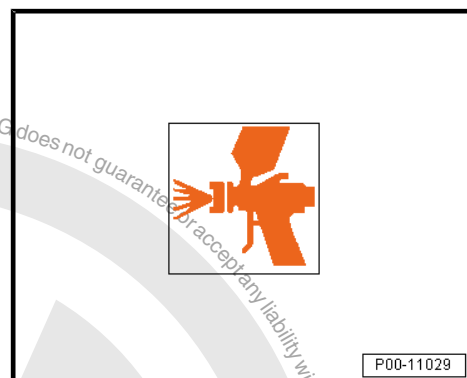
Mixture ratio:

- 2:1 by volume with:
- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener, Extra Short - LHA 009 046 A2-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-
- ◆ See technical application information two-part HS hardener, refer to ➤ [“3.8.1 Two-Part HS Hardener”, page 211](#) .

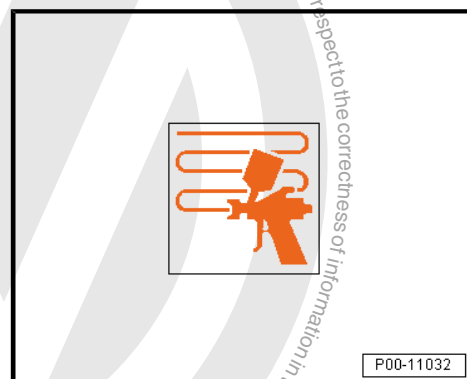


Processing time/pot life:

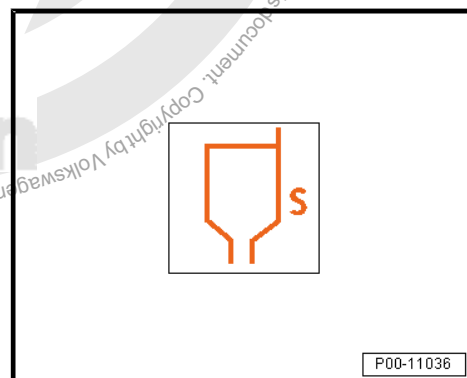
- Ready for spraying in 90 minutes at +20 °C (68 °F)



Application type “coat”

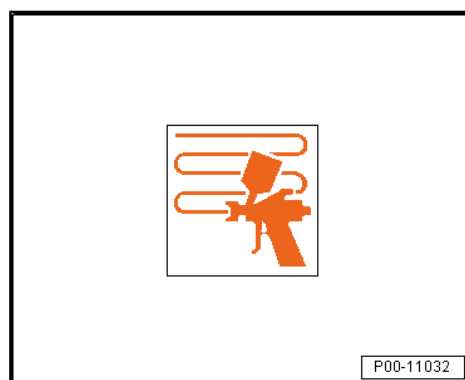
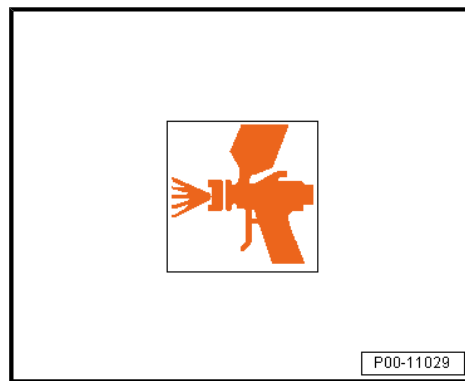


- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for “Compliant” and “HVLP”.





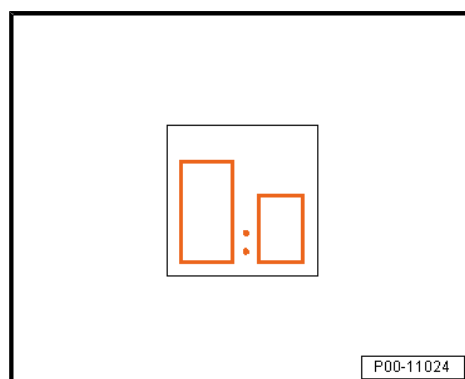
- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- The recommended dry layer thickness is between 50 and 60 µm.



Processing with Two-Part VHS Hardeners

Mixture ratio:

- 3:1 by volume with:
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ See technical application information for the two-part VHS hardener, refer to
⇒ ["3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#).

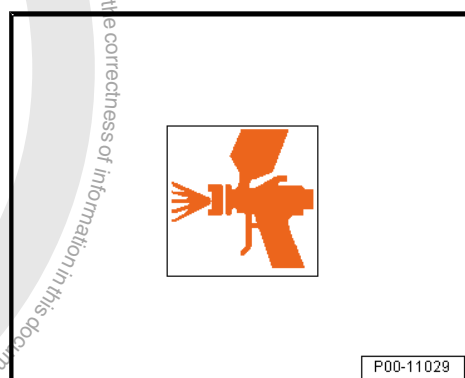


Thinner:

- ◆ Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-

Processing time/pot life:

- Ready to spray in 60 to 90 minutes at +20 °C (68 °F)





Application type "coat"



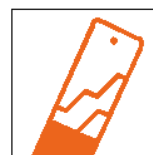
P00-11032

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".



P00-11036

- Add 12.5 to 15 % Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5- .



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



P00-11029



- 1.5 spray applications are required to get the recommended dry layer thickness of between 50 and 60 µm.



P00-11032

Drying

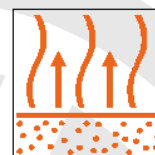
Air dry at +20 °C (68 °F) room temperature:

- ◆ Dust dry after 40 to 50 minutes
- ◆ Ready for assembly after 4 to 6 hours
- ◆ Dry overnight



P00-11027

The drying time with forced drying is at least 5 to 10 minutes.



P00-11026

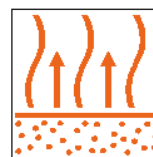
Forced dry at +60 °C (140 °F) object temperature for 30 to 40 minutes



P00-11027



Final drying time for IR drying is at least 5 minutes.



P00-11026

IR dry with a short-wave heater for 10 to 15 minutes and with a medium-wave heater for 15 to 20 minutes



P00-11028

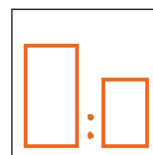
Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part HS hardeners, 2:1
- ◆ Mixture with two-part VHS hardeners, 3:1 with 15 % thinner (drying period is lengthened).

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.



P00-11024

Storage

The guaranteed shelf life of Two-Part HS Clear Coat - L2K 769 500 A5- is 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050



3.7.2 Two-Part MS Matt Clear Coat

Definition:

- ◆ Two-Part MS Matt Clear Coat - L2K 769 020 A2-

Edition 08/2013

Product Description

Two-part MS matt clear coat is a clear coat from the two-part acrylic system.

Properties:

- ◆ High elasticity
- ◆ Matted adjustment
- ◆ Can be cured with HS and VHS products
- ◆ Gloss grade adjustments with two-part HS clear coats are possible.
- ◆ Ideally suited for painting plastic



Note

The use of Two-Part MS Matt Clear Coat - L2K 769 020 A2- should be limited to small surfaces (passenger vehicle attachments).

Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints

Processing

Mixture ratio:

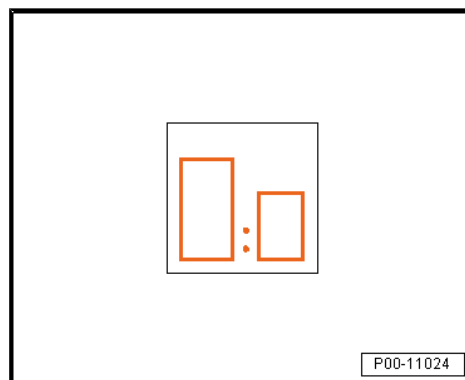
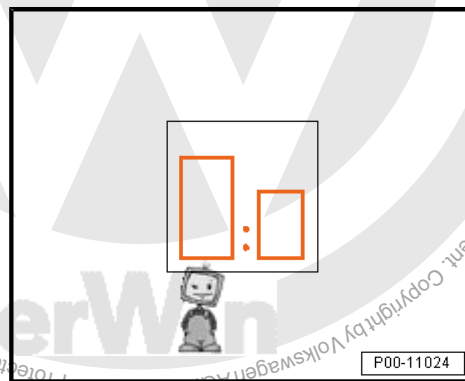
– 3:1 by volume with:

- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-

Mixture ratio:

– 5:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-





Note

- ◆ Using varying HS/VHS hardeners and thinners results in different gloss grades.
- ◆ The clear coat should be carefully agitated before removing the material.

Thinner:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-

Processing time/pot life:

- Ready to spray in 4 hours at +20 °C (68 °F).

Application type "coat"

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".

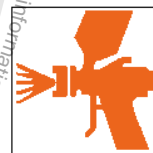
Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP":

DIN 4 mm: 14 to 16 seconds

ISO 4 mm: 28 to 33 seconds.



P00-10045



P00-11029



P00-11032

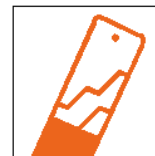


P00-11036



Add 25 % HS hardener (3:1) and 30 % VHS hardener (5:1) at +20 °C (68 °F) material temperature

- Use a measuring stick to mix when pouring in the thinner.



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" and "HVLP" to 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- Apply two coats.



P00-11029

- Apply one complete preliminary spray application, allow to ventilate for 15 to 20 minutes and then finish painting.
- The prescribed layer thickness is 50 to 60 µm.



P00-11032



Note

Using varying application types results in different gloss grades.

Drying

Air dry at +20 °C (68 °F) room temperature:

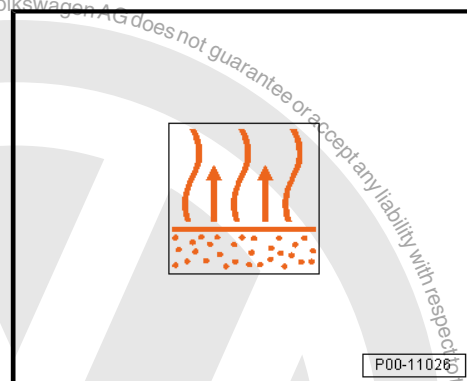
- ◆ Dust dry after 2 to 2.5 hours
- ◆ Ready for assembly after 5 to 6 hours
- ◆ Dry overnight



P00-11027



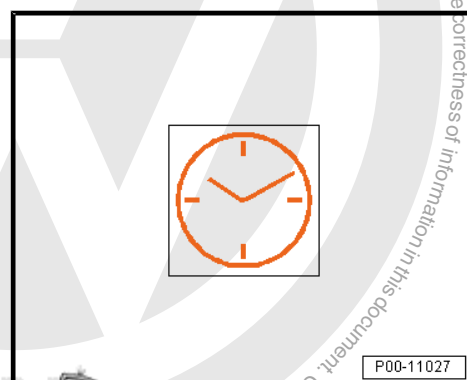
Final drying time with forced drying is a minimum of 15 to 20 minutes



Forced dry at +60 °C (140 °F) object temperature for 40 to 45 minutes

Characteristics

Flashpoint:	above +23 °C (73,4 °F)
VOC value: 2004/42/IIB (e)(840)580	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 580 g/L.



Storage

The guaranteed shelf life of Two-Part MS Matt Clear Coat L2K 769 020 A2- is 24 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.7.3 Two-Part HS Vario Clear Coat

Definition:

- ◆ Two-Part HS Vario Clear Coat - L2K 769 K01 A5-

Edition 06/2013

Product Description

Two-part HS vario clear coat is a VOC compliant (VOC value less than 420 g/L), high-quality and productive high solid clear coat.

Properties:

- ◆ Easy and quick to process
- ◆ Variable uses for two-part HS and two-part VHS hardeners
- ◆ Good spreading properties
- ◆ Dries quickly
- ◆ Easy to polish



Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints

Processing With Two-Part HS Hardeners

Mixture ratio:

- 2:1 by volume with:
- ◆ Two-Part HS Hardener, LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-

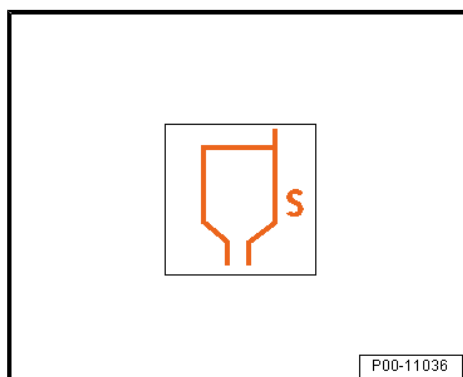
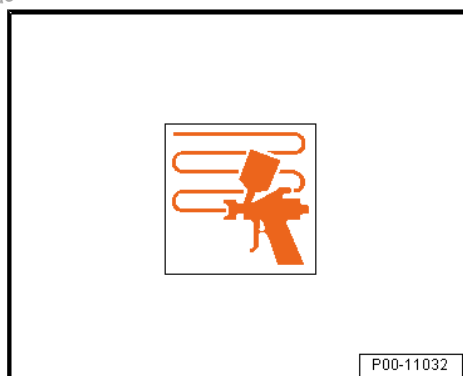
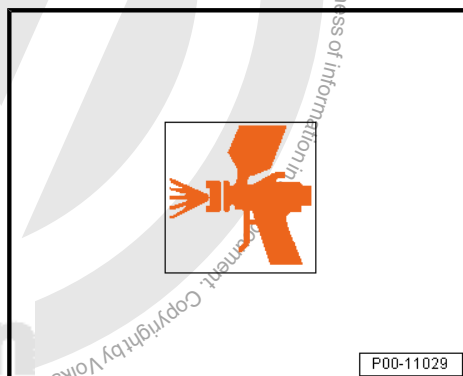
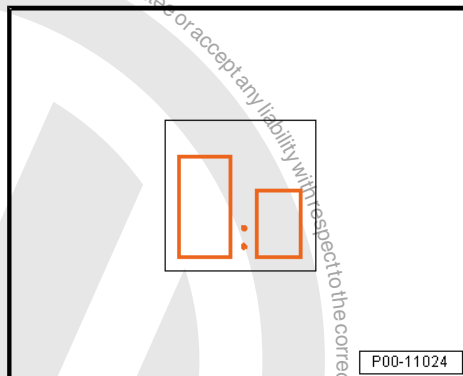
For Elastification, Refer to ➔ [page 186](#) .

Processing time/pot life:

- Ready to spray in 60 to 90 minutes at +20 °C (68 °F) (depending on the hardener used)

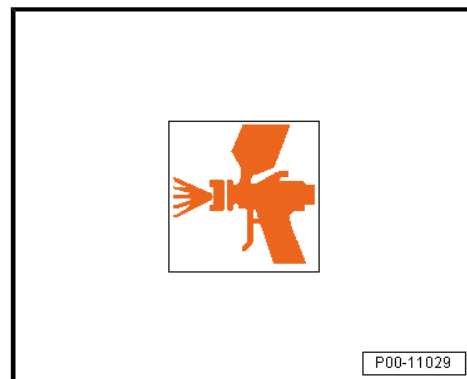
Application type “coat”

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for “Compliant” and “HVLP”.





- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



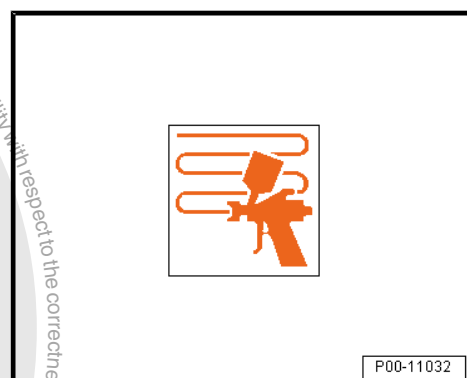
- Apply 1.5 coats.



Note

During the spray application process, the first half spray application should form a thin, nearly complete film upon which a fully-completed spray application can be applied.

- The recommended dry layer thickness is between 50 and 60 µm.



Processing with Two-Part VHS Hardeners

Mixture ratio:

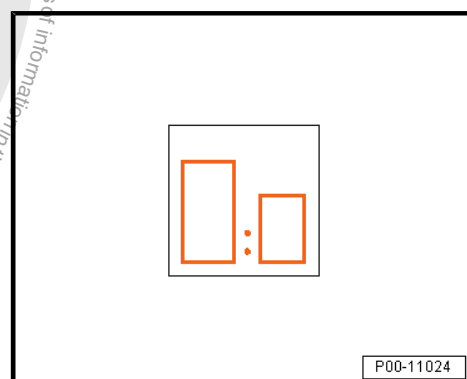
- 3:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ See technical application information for the two-part VHS hardener, refer to
⇒ ["3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#) .

Thinner:

- ◆ Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ HS Spot Thinner - LVM 006 000 A2- . Observe the technical application information, refer to
⇒ ["3.9.2 HS Spot Thinner", page 223](#) .

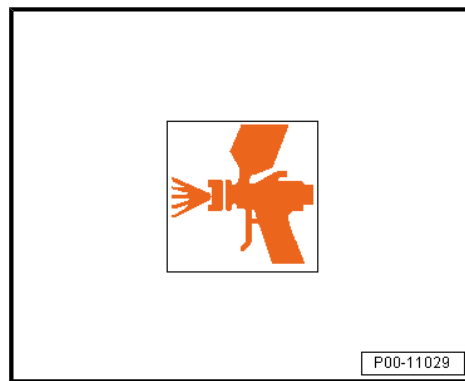
For Elastification, Refer to ⇒ [page 186](#) .



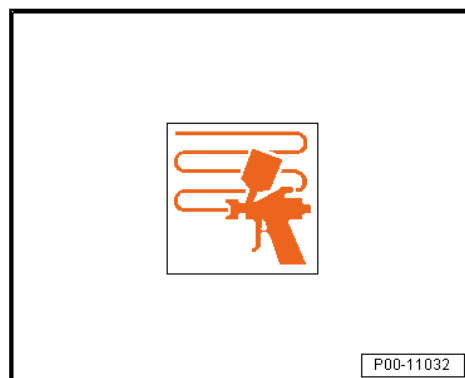


Processing time/pot life:

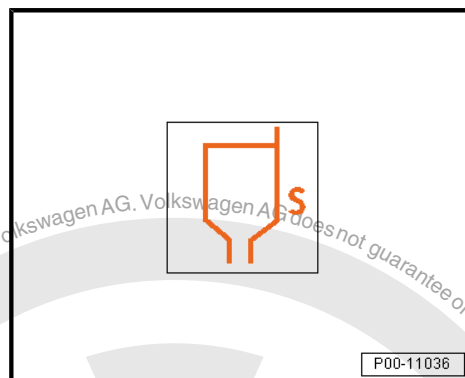
- Ready to spray in 60 to 90 minutes at +20 °C (68 °F) (depending on the hardener used)



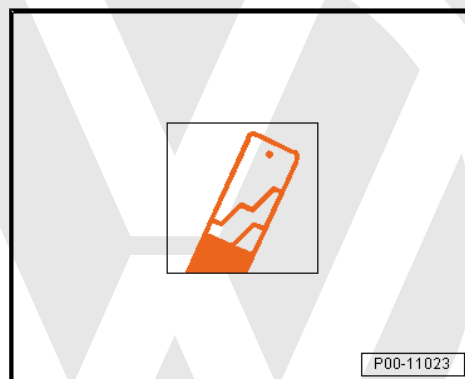
Application type "coat"



- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".

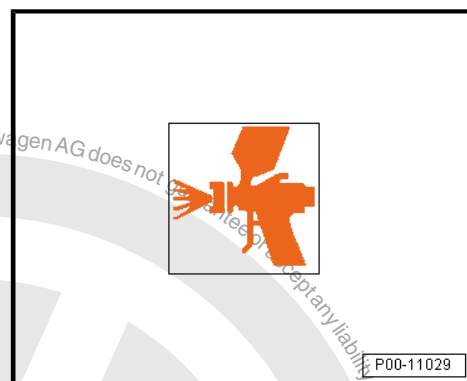


- Add 12.5 % Two-Part Thinner, Special - LVM 009 200 A2- / - LVM 009 200 A5- / Two-Part Thinner, Long - LVM 009 300 A2- at + 20 °C (68 °F) material temperature.





- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).

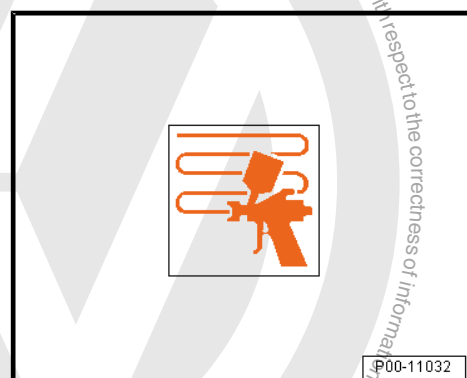


- Apply 1.5 coats.



Note

- ◆ *During the spray application process, the first half spray application should form a thin, nearly complete film upon which a fully-completed spray application can be applied.*
- ◆ *When using as a clear coat for minimal damage repairs (clever repair procedure), 12.4 % Two-Part Thinner, Special - LVM 009 200 A2- can be replaced with 12.5 % HS Spot Thinner - LVM 006 000 A2- . Do not apply on slanted surfaces.*

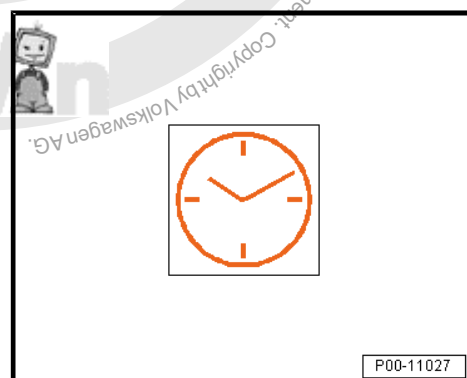


- The recommended dry layer thickness is between 50 and 60 µm.

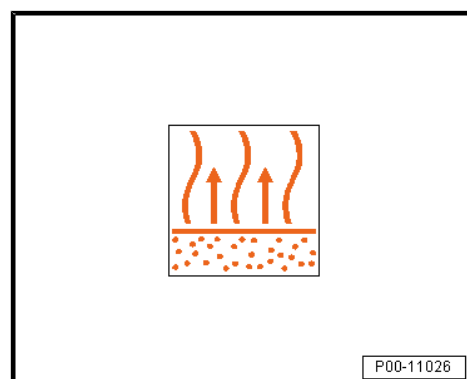
Drying

Air dry at +20 °C (68 °F) room temperature:

- ◆ Dust dry after 20 to 30 minutes
- ◆ Ready for assembly after 4 to 5 hours
- ◆ Dry overnight

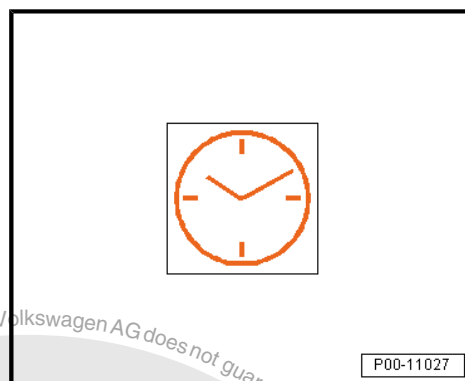


Final drying time with forced drying is a minimum of 5 to 10 minutes.

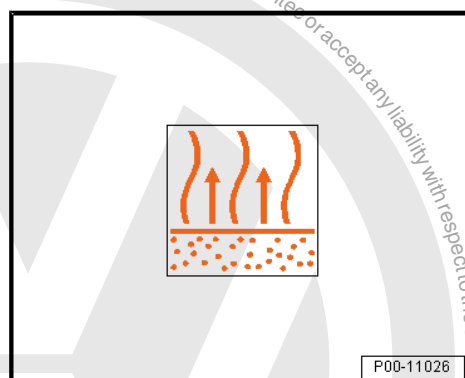




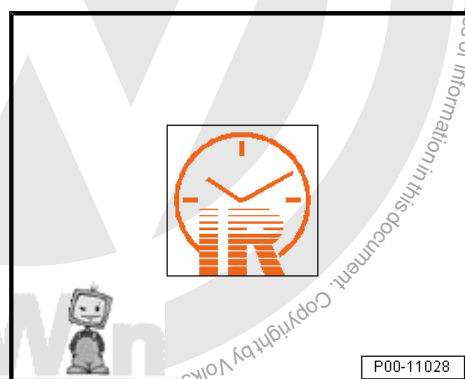
Forced dry at +60 °C (140 °F) object temperature for 20 to 30 minutes



Final drying time for IR drying is at least 5 minutes.



IR dry with a short-wave heater for 10 to 15 minutes and with a medium-wave heater for 15 to 20 minutes



Special Instructions

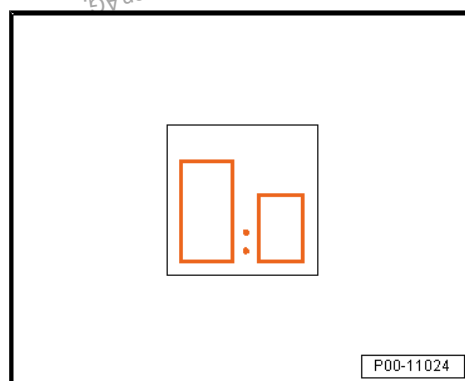
Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part HS hardeners, 2:1
- ◆ Mixing two-part VHS hardeners, 3:1 with 20 % thinner (drying extends this).

When using as a clear coat for minimal damage repairs (clever repair procedure), 12.5 % Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5- can be replaced with 12.5 % HS Spot Thinner - LVM 006 000 A2- . Do not apply on slanted surfaces.

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.





Storage

The guaranteed shelf life of Two-Part HS Vario Clear Coat - L2K 769 K01 A5- is 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.7.4 Two-Part HS Optimum Clear Coat

Definition:

- ◆ Two-Part HS Optimum Clear Coat - LZK 769 K02 A5-

Edition 10/2012

Product Description

Two-part HS optimum clear coat is a VOC compliant (VOC value less than 420 g/L), high-quality and productive high solid clear coat.

Properties:

- ◆ Easy and economical processing
- ◆ Very good spreading properties
- ◆ Dries very quickly
- ◆ Very good IR drying
- ◆ Quick and easy to polish
- ◆ High-gloss result

Application Instructions

Base Surface

Suitable preliminary coatings:

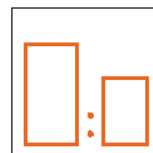
- ◆ Water-based base paints

Processing

Mixture ratio:

– 3:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ See technical application information for the two-part VHS hardener, refer to
⇒ [“3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener”, page 215](#) .



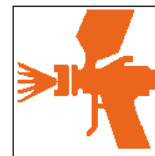
P00-11024

For Elastification, Refer to ⇒ [page 190](#) .



Processing time/pot life:

- Ready to spray in 80-100 minutes at +20 °C (68 °F)



P00-11029

Application type “coat”



P00-11032

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for “Compliant” and “HVLP”.



P00-11036

- Set spray nozzle (see manufacturer's information): “Compliant” 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): “HVLP” 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): “HVLP” 0.7 bar (10.15 psi).



P00-11029



- Apply 1.5 coats.



Note

During the spray application process, the first half spray application should form a thin, nearly complete film upon which a fully-completed spray application can be applied.

- The recommended dry layer thickness is between 45 and 55 µm.

Drying

Air dry at +20 °C (68 °F) room temperature:

- ◆ Dust dry after 40 to 50 minutes
- ◆ Ready for assembly after 4 to 6 hours
- ◆ Dry overnight

Final drying time with forced drying is a minimum of 5 to 10 minutes.

Forced drying at +60 °C (140 °F) object temperature with:

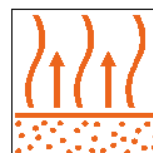
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- for 20 to 25 minutes.
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2- for 15 to 20 minutes.
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3- for 20 to 30 minutes.
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2- for 25 to 35 minutes.



P00-11032



P00-11027



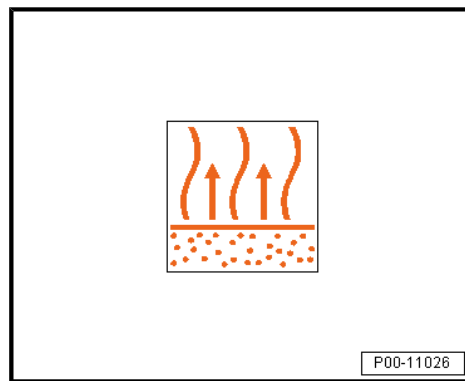
P00-11026



P00-11027



Final drying time for IR drying is a minimum of 5 to 10 minutes.



IR dry with short-wave heater for 8 to 12 minutes



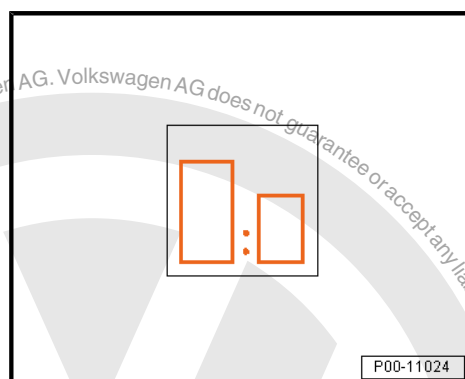
Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixing two-part VHS hardeners, 3:1 with 5 % thinner (drying extends this).

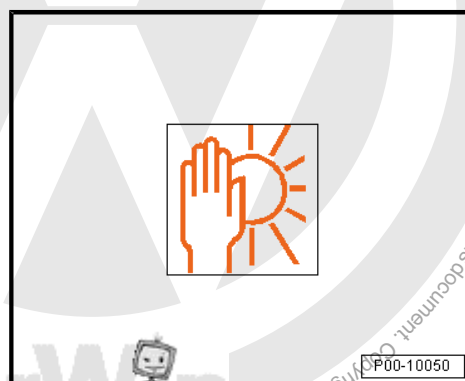
Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.



Storage

The guaranteed shelf life of Two-Part HS Optimum Clear Coat - LZK 769 K02 A5- is 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.7.5 Two-Part HS Optimum Plus Clear Coat

Definition:

- ◆ Two-Part HS Optimum Plus Clear Coat - LZK 769 K07 A5-



Edition 04/2013

Product Description

The two-part HS optimum plus clear coat is a VOC compliant high solid clear coat. Optimal application even under unfavorable booth conditions, for example low drying temperature.

Properties:

- ◆ Flexible and efficient application possible
- ◆ Dries very quickly
- ◆ Quick and easy to polish
- ◆ It is possible to use HS Spot Thinner - LVM 006 000 A2-

Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints

Processing

Mixture ratio:

– 3:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ See technical application information for the two-part VHS hardener, refer to
⇒ [“3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener”, page 215](#) .

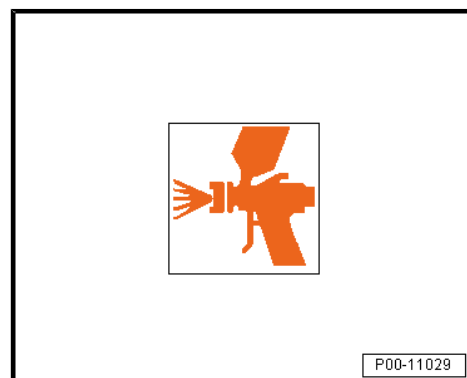
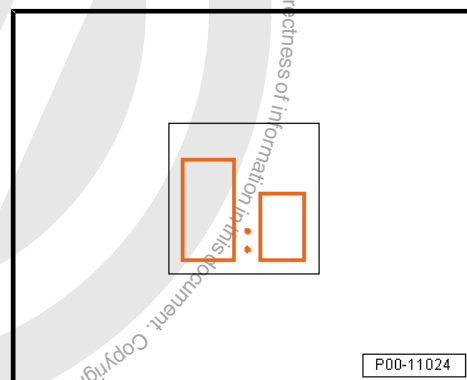
Thinner:

- ◆ Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ HS Spot Thinner - LVM 006 000 A2-
- ◆ See the technical application information on the LVM 006 000 A2 HS spot thinner, refer to
⇒ [“3.9.2 HS Spot Thinner”, page 223](#) .

For Elastification, Refer to ⇒ [page 194](#) .

Processing time/pot life:

- Ready to spray in 45 to 60 minutes at +20 °C (68 °F) (depending on the hardener used)





Application type "coat"

- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for "Compliant" and "HVLP".

- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).

- Apply 1.5 coats.



Note

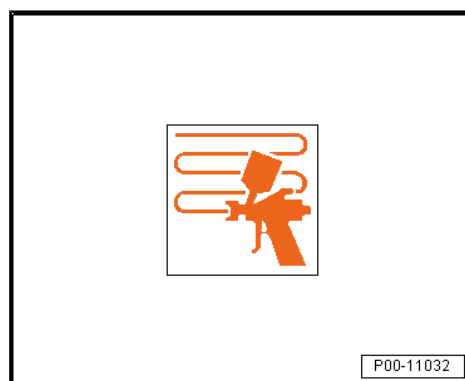
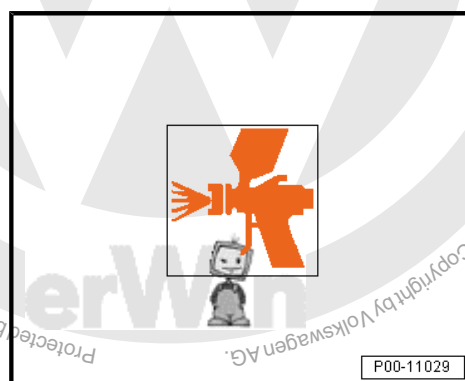
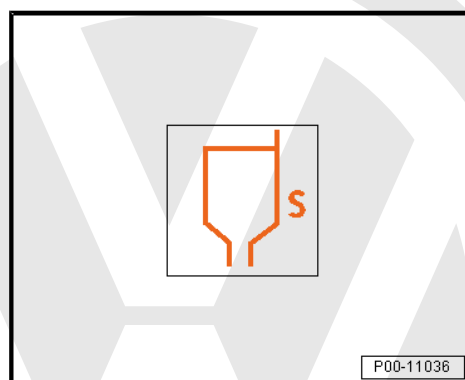
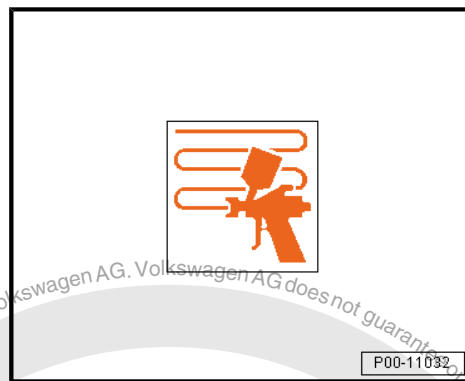
During the spray application process, the first half spray application should form a thin, nearly complete film upon which a fully-completed spray application can be applied.

- The recommended dry layer thickness is between 40 and 60 µm.



Note

When using as a clear coat for minimal damage repairs (clever repair procedure), 10 % Two-Part Thinner, Special - LVM 0009 200 A2- and Two-Part Thinner, Special - LVM 009 200 A5- can be replaced with 10 % HS Spot Thinner - LVM 006 000 A2 HS-. Do not apply on slanted surfaces.

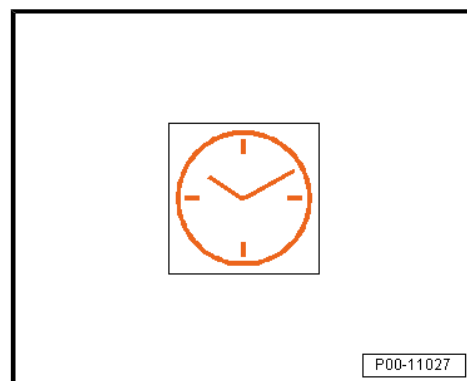




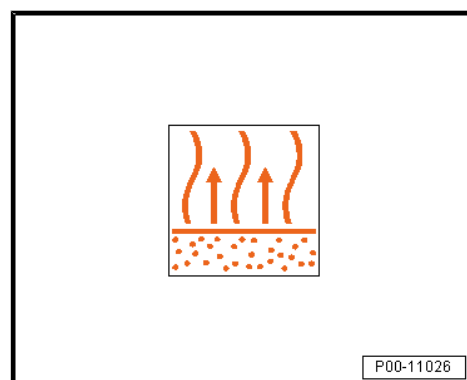
Drying

Air dry at +20 °C (68 °F) room temperature:

- ◆ Dust dry after 15 to 30 minutes
- ◆ Ready for assembly after 2 to 5 hours
- ◆ Dry overnight

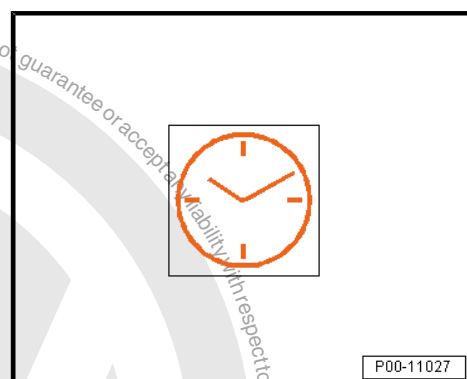


Final drying time with forced drying is 5 minutes.

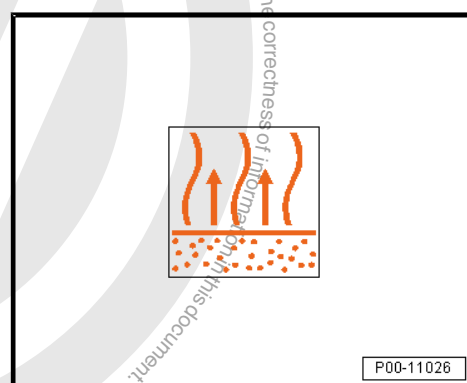


Forced drying at +60 °C (68 °F) object temperature with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- for 15 to 25 minutes.
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2- for 10 to 15 minutes.
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3- for 20 to 30 minutes.
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2- for 25 to 35 minutes.

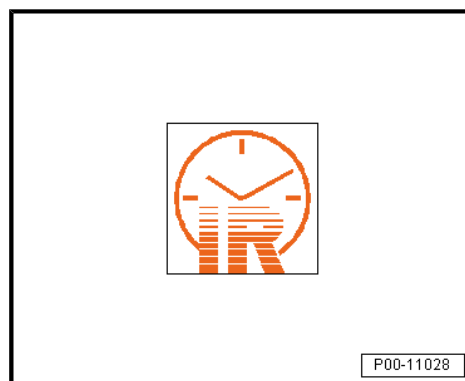


Final drying time for IR drying is 5 minutes.





IR dry with short-wave heater for 8 to 12 minutes



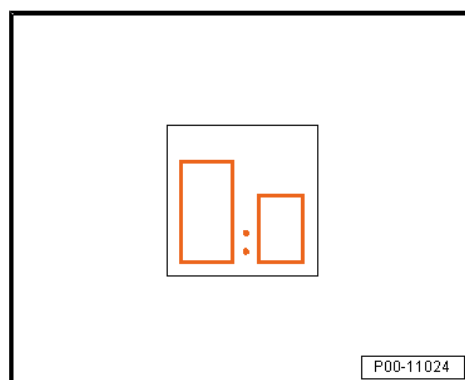
Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part VHS hardeners, 3:1 with 10 % Two-Part Thinner, Special - LVM 009 200 A2- or Two-Part Thinner, Special - LVM 009 200 A5- (drying period is lengthened).

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.



Storage

The guaranteed shelf life of Two-Part HS Optimum Plus Clear Coat - LZK 769 K07 A5- is 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F)



3.7.6 Two-Part Brilliant Clear Coat

Definition:

- ◆ Two-Part Brilliant Clear Coat - L2K 769 K04 A5-

Edition 10/2010

Product Description

Two-part HS brilliant clear coat is a high-gloss, VOC compliant high solid clear coat from the two-part acrylic system

Properties:

- ◆ Very high stability under load
- ◆ Reliable application
- ◆ Very good gloss and depth
- ◆ Can be used in a number of ways by adding thinner



- ◆ Processing in two spray applications

Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints

Processing

Mixture ratio:

- 3:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ The choice of hardener depends on the temperature and the size of the surface. See technical application information two-part VHS hardener, refer to [⇒ "3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#) .

For Elastification, Refer to [⇒ page 198](#) .

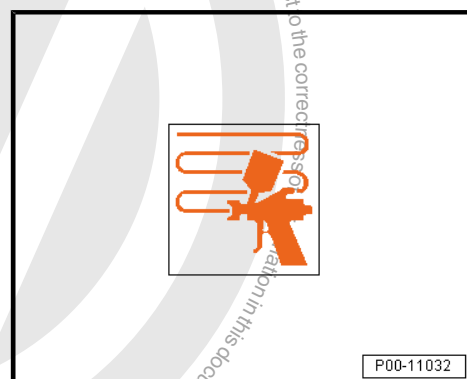
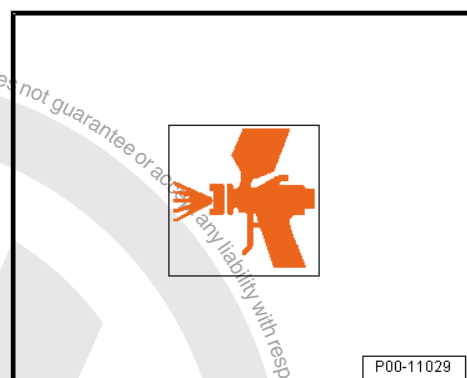
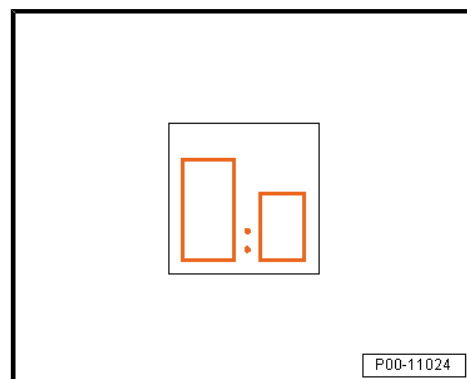
Dilutable with:

- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-

Processing time/pot life:

- Ready for spraying 60-75 minutes at +20 °C (68 °F).

Application type "coat"





- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

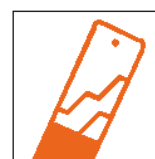


P00-11036

Adding 10 % thinner at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the thinner.

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP”:



P00-11023

DIN 4 mm: 18 to 21 seconds



P00-11029

- Set spray nozzle (see manufacturer's information): “Compliant” 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): “HVLP” 1.2 to 1.3 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): “HVLP” 0.7 bar (10.15 psi).
- Apply in two spray applications with a 5 to 10 minute intermediate ventilation time. The first spray application is applied lightly, but completely.
- The recommended dry layer thickness is between 50 and 70 µm.



P00-11032

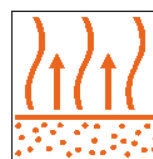


Drying



P00-11027

Final drying time with forced drying is at least 10 minutes.



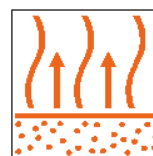
P00-11026

Forced drying is at +60 to 65 °C (140 to 149 °F) for 35 to 40 minutes.



P00-11027

Final drying time for IR drying is a minimum of 5 to 10 minutes.



P00-11026



IR dry with a short-wave heater for 15 to 20 minutes and with a medium-wave heater for 10 to 15 minutes



P00-11028

Special Instructions

Elastification for rigid and semi-rigid plastics:

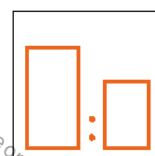
- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part VHS hardeners, 3:1, with 10 % Two-Part Thinner, Special - LVM 009 200 A2/A5- (drying period is lengthened).

Characteristics

Delivery Viscosity	DIN 4 mm, +20 °C (68 °F): 24 to 28 seconds
Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

Storage

The guaranteed shelf life of Two-Part Brilliant Clear Coat - L2K 769 K04 A5- is 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-11024



P00-10050

3.7.7 Two-Part HS Brilliant Plus Clear Coat

Definition:

- ◆ Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5-

Edition 02/2012

Product Description

Two-part HS brilliant clear coat is a high-gloss, VOC compliant high solid clear coat from the two-part acrylic system.

Properties:

- ◆ Can be used in a number of ways
- ◆ High stability



- ◆ Polishes very well
- ◆ Good spreading properties
- ◆ Good gloss and depth.
- ◆ Processing in two spray applications (preferred), (1.5 spray applications possible)

Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints

Processing

Mixture ratio:

- 3:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ The choice of hardener depends on the temperature and the size of the surface. See technical application information two-part VHS hardener, refer to [⇒ "3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#).

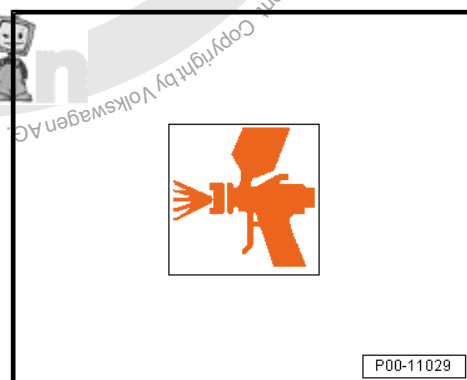
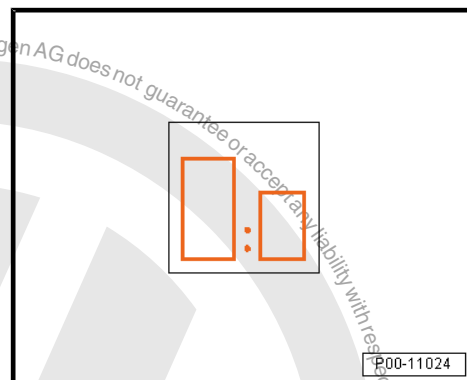
For Elastification, Refer to [⇒ page 202](#).

Dilutable with:

- ◆ Clear Coat Additive - LVM 007 000 A2-
- ◆ HS Spot Thinner - LVM 006 000 A2-
- ◆ See the HS spot thinner technical application information, refer to [⇒ "3.9.2 HS Spot Thinner", page 223](#).

Processing time/pot life:

- Ready to spray in 75 to 90 minutes at +20 °C (68 °F)





Application type "coat"

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun "Compliant" and "HVLP" is the mixed viscosity.

Adding 5 % Clear Coat Additive - LVM 007 000 A2- at +20 °C (68 °F) material temperature



Note

- ◆ *When using as a clear coat for minimal damage repairs (clever repair procedure), 5 % Clear Coat Additive - LVM 007 000 A2- can be replaced with 5 % HS Spot Thinner - LVM 006 000 A2-.*
- ◆ *The mixture for the clever repair procedure described above should not be used on reclined surfaces.*
- Use a measuring stick to mix when pouring in the thinner.



P00-11032



P00-11036



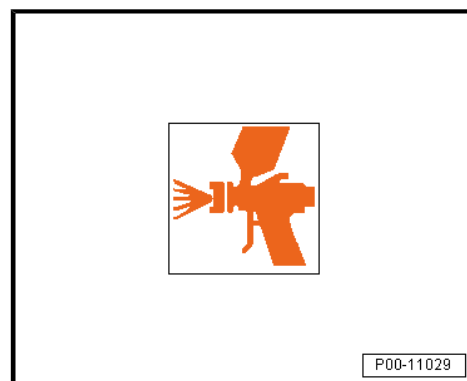
P00-11029



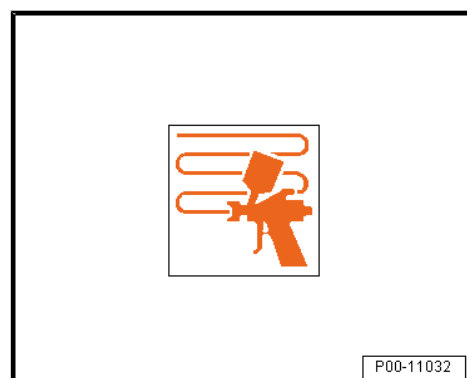
P00-11023



- Set spray nozzle (see manufacturer's information): "Compliant" 1.2 to 1.3 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.2 to 1.3 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).



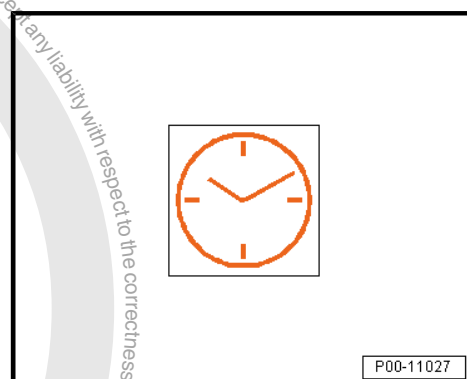
- Can be applied in two spray applications with a 5 to 10 minute intermediate ventilation time. The first spray application is applied lightly, but completely.
- Apply 1.5 spray applications. The first half spray application should form a thin, nearly complete film upon which a fully-completed spray application can be applied.
- The recommended dry layer thickness is between 50 and 70 µm.



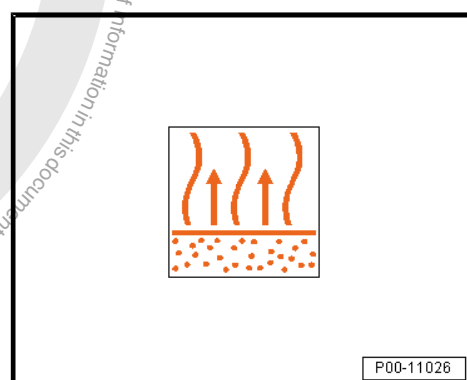
Drying

Air dry at 18 to 22 °C (64.4 to 71.6 °F) room temperature:

- ◆ Dry overnight



Final drying time with forced drying is a minimum of 5 to 10 minutes.



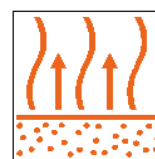


Forced drying is at between +60 and 65 °C (140 to 149 °F) for 30 to 35 minutes.



P00-11027

Final drying time for IR drying is a minimum of 5 to 10 minutes.



P00-11026

IR dry with short-wave heater for 10 to 15 minutes



P00-11028

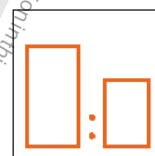
Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part VHS hardeners, 3:1 with 5 % Clear Coat Additive - LVM 007 000 A2- (drying period is lengthened).

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.



P00-11024

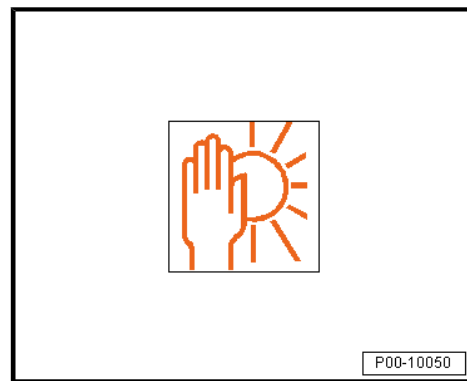


Storage

The guaranteed shelf life is:

- ◆ 48 months from date of manufacture for Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5- .
- ◆ 24 months from date of manufacture for Clear Coat Additive - LVM 007 000 A2- .

Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.7.8 Two-Part HS Performance Clear Coat

Definition:

- ◆ Two-Part HS Performance Clear Coat - LZK 769 K06 A5-

Edition 08/2012

Product Description

The two-part HS performance clear coat is a high-gloss, VOC compliant high solid clear coat.

Properties:

- ◆ Can be used in a number of ways for all areas of repair
- ◆ Flexible application in 1:5 spray applications (preferred), or possible in two spray applications
- ◆ Good stability
- ◆ Good gloss and depth.
- ◆ Dries quickly

Application Instructions

Base Surface

Suitable preliminary coatings:

- ◆ Water-based base paints



Processing

Mixture ratio:

- 3:1 by volume with:
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ The choice of hardener depends on the temperature and the size of the surface. See technical application information two-part VHS hardener, refer to
⇒ ["3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#) .

For Elastification, Refer to ⇒ [page 207](#) .

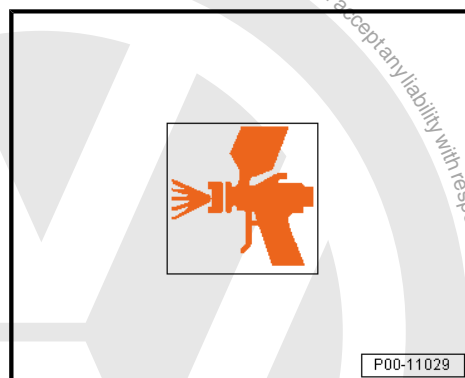
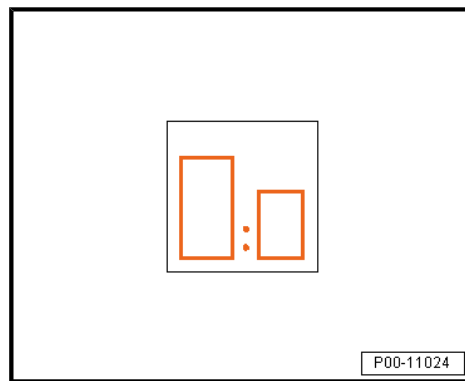
Dilutable with:

- ◆ Clear Coat Additive - LVM 007 000 A2-
- ◆ HS Spot Thinner - LVM 006 000 A2-
- ◆ See the HS spot thinner technical application information, refer to ⇒ ["3.9.2 HS Spot Thinner", page 223](#) .

Processing time/pot life:

- Ready to spray in 60 to 120 minutes at +20 °C (68 °F)

Application type "coat"





- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211

Processing viscosity 4 mm gravity feed spraygun “Compliant” and “HVLP” is the mixed viscosity.

Adding 5 % Clear Coat Additive - LVM 007 000 A2- at +20 °C (68 °F) material temperature

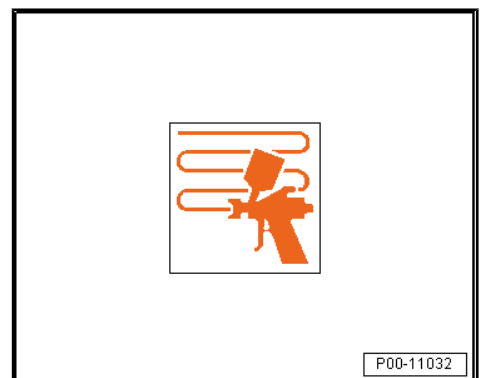
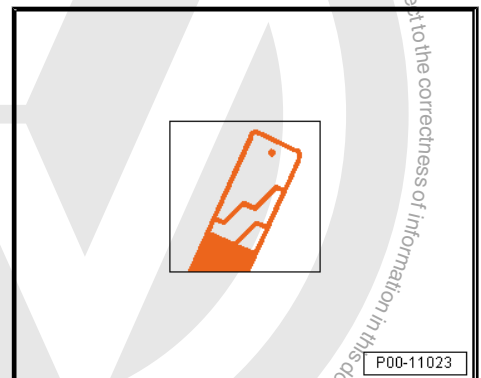
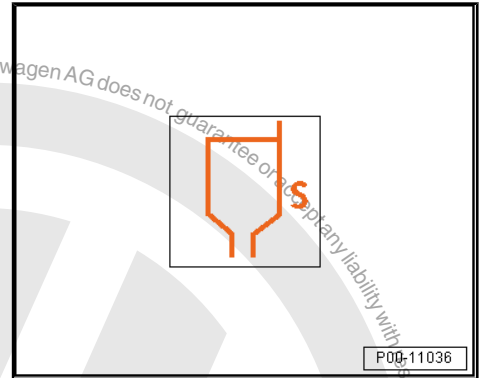


Note

- ◆ *When using as a clear coat for minimal damage repairs (clever repair procedure), 5 % Clear Coat Additive - LVM 007 000 A2- can be replaced with 5 % HS Spot Thinner - LVM 006 000 A2-.*
- ◆ *The mixture for the clever repair procedure described above should not be used on reclined surfaces.*

- Use a measuring stick to mix when pouring in the thinner.
- Set spray nozzle (see manufacturer's information): “Compliant” 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): “HVLP” 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): “Compliant” to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): “HVLP” 0.7 bar (10.15 psi).

- Apply 1.5 spray applications. The first half spray application should form a thin, nearly complete film upon which a fully-completed spray application can be applied.
- Can be applied in two spray applications with a 5 to 10 minute intermediate ventilation time. The first spray application is applied lightly, but completely.
- The recommended dry layer thickness is between 50 and 70 µm.





Drying

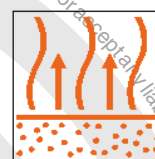
Air dry at between +18 and 22 °C (64.4 to 71.6 °F) room temperature:

- ◆ Dry overnight



P00-11027

Final drying time with forced drying is a minimum of 5 to 10 minutes.



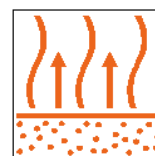
P00-11026

Forced drying is at between +60 and 65 °C (140 to 149 °F) for 25 to 35 minutes.



P00-11027

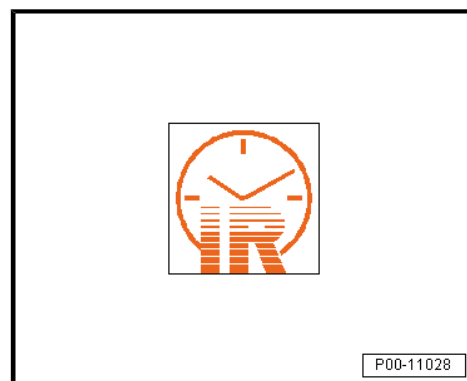
Final drying time for IR drying is a minimum of 5 to 10 minutes.



P00-11026



IR dry with short-wave heater for 10 to 15 minutes



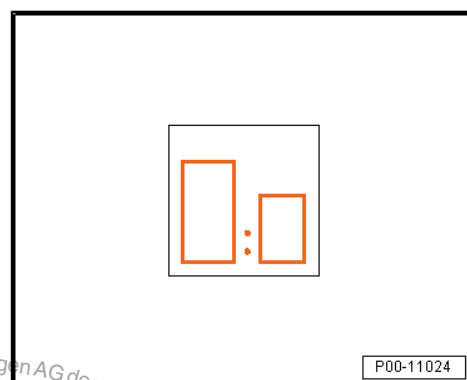
Special Instructions

Elastification for rigid and semi-rigid plastics:

- ◆ The base material must first be mixed with 15 % Elastic Additive - ALZ 011 001- .
- ◆ Mixture with two-part VHS hardeners, 3:1 with 5 % Clear Coat Additive - LVM 007 000 A2- (drying period is lengthened).

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (d)(420)420	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 420 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 420 g/L.

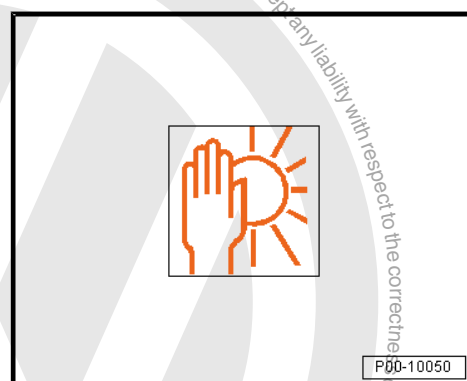


Storage

The guaranteed shelf life is:

- ◆ 48 months from date of manufacture for Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5- .
- ◆ 24 months from date of manufacture for Clear Coat Additive - LVM 007 000 A2- .

Use no later than the date indicated on the label and store in original container at +20 °C (73.4 °F).



3.7.9 Blender

Definition:

- ◆ Blender - LVE 013 100 A2-

Edition 10/2012

Product Description

Blender was developed for hassle-free two-part clear coat and top coat touch-up.

Properties:

- ◆ Easy to use (pure)
- ◆ Applies well to all base surfaces
- ◆ Blends well with the old paint



Application Instructions

Preparation

Applying base paint:

- ◆ Keep the filler surface as small as possible.
- ◆ Paint filler spot thoroughly with water-based base paint (overlapping spray applications)

Touch-Up System for Two-Part Clear Lacquers

Mixing ratio for two-part clear coat:

- Adjust the two-part clear coat according to technical application information, refer to ⇒ ["3.7 Clear Coats", page 172](#) .

Painting:

- Paint over the water-based base paint with adjusted clear coat (overlapping spray applications).

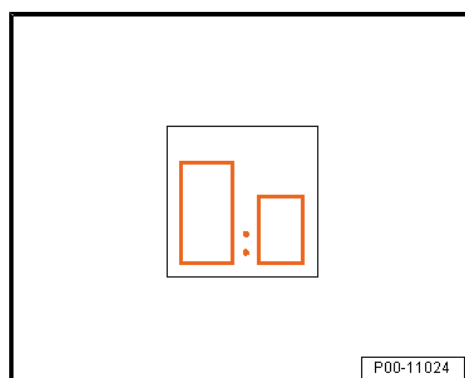
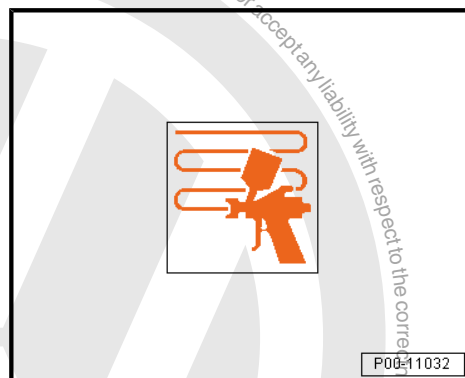
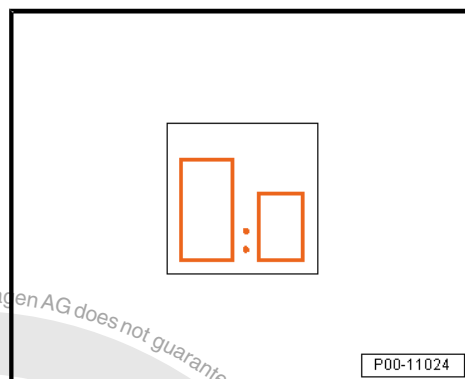
Touch-up process:

- Apply pure Blender - LVE 013 100 A2- onto the touch-up area inside the sanded surface.

Touch-Up System for Two-Part Top Coats

Mixing ratio for two-part top coat:

- Adjust the two-part top coat according to technical application information, refer to ⇒ ["3.6 Top Coats", page 127](#) .





Painting:

- Paint over filler area thoroughly (overlapping spray applications).

Touch-up process:

- Apply pure Blender - LVE 013 100 A2- onto the touch-up area inside the sanded surface.



P00-11032



P00-11032

Polishing the Touch-Up Zones

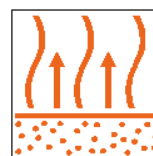
Air dry at +20 °C (73.4 °F) room temperature:

- ◆ Polish the touch-up areas after they have dried overnight



P00-11027

Final drying time with forced drying is a minimum of 5 to 10 minutes.

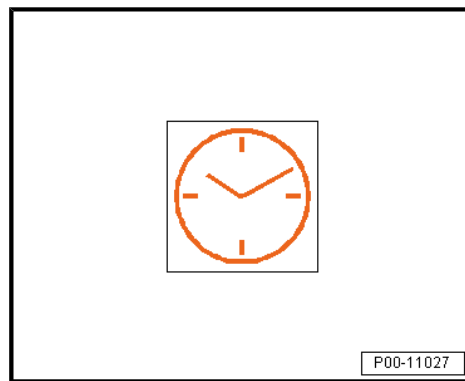


P00-11026

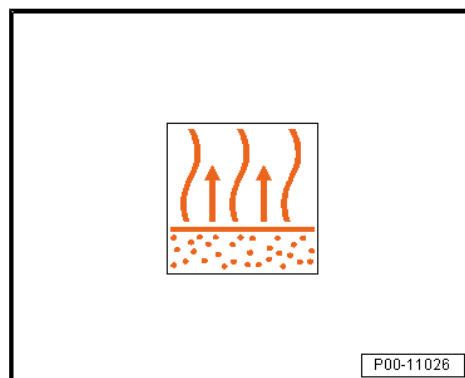


Forced drying is at +60 °C (140 °F) object temperature for 30 minutes.

- After that, allow the touch-up areas to cool off for an hour and polish at +20 °C (68 °F) room temperature.



Final drying time for IR drying is a minimum of 5 to 10 minutes.



IR dry with a short-wave radiator for 10 minutes

- After that, allow the touch-up areas to cool off for an hour and polish at +20 °C (68 °F) room temperature.



Note

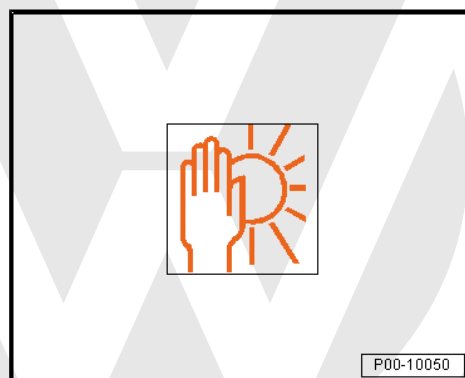
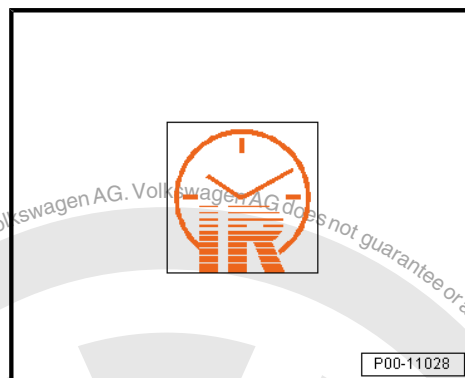
- ◆ *Polish the touch-up area with fine polishing paste by hand or with a polishing machine.*
- ◆ *To finish, treat the surface with high-gloss sealant.*

Characteristics

Flashpoint:	+20 °C (68 °F)
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Storage

The guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).





3.8 Hardener

⇒ [“3.8.1 Two-Part HS Hardener”, page 211](#)

⇒ [“3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener”, page 215](#)

⇒ [“3.8.3 Two-Part Adhesive Filler Hardener”, page 219](#)

⇒ [“3.8.4 Aqua Premium Hardener”, page 219](#)

3.8.1 Two-Part HS Hardener

Definition:

- ◆ Two-Part HS Hardener - LHA 009 041 A3-
- ◆ Two-Part HS Hardener, Short - LHA 021 004 A3-
- ◆ Two-Part HS Hardener, Extra Short - LHA 009 046 A2-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-

Edition 08/2013

Product Description

These are high solid hardeners for several HS fillers and clear coats.

Properties:

- ◆ It has a high solid content for economical and environmentally friendly application.
- ◆ The choice of five versions means it can adapt well to all painting conditions and ensure reliable application.

Application Instructions

Processing

Possible base components:

- ◆ Two-Part HS Vario Filler, refer to
⇒ [“3.5.1 Two-Part HS Vario Filler”, page 85](#) .
- ◆ Two-Part HS Premium Filler, refer to
⇒ [“3.5.2 Two-Part HS Premium Filler”, page 93](#) .
- ◆ Two-Part HS Mixed Filler, refer to
⇒ [“3.5.3 Two-Part HS Mixed Filler”, page 100](#) .
- ◆ Two-Part HS Wet-in-Wet Filler, refer to
⇒ [“3.5.6 Two-Part HS Wet-in-Wet Filler”, page 123](#) .
- ◆ Two-Part HS Clear Coat, refer to
⇒ [“3.7.1 Two-Part HS Clear Coat”, page 172](#) .
- ◆ Two-Part HS Vario Clear Coat, refer to
⇒ [“3.7.3 Two-Part HS Vario Clear Coat”, page 181](#) .

Area of Application

- 1 - The Two-Part HS Hardener - LHA 009 041 A3- is suitable for all complete and partial painting at normal temperatures.
- 2 - The Two-Part HS Hardener, Short - LHA 021 004 A3- is suitable for partial painting at low temperatures and low spray booth ventilation volumes.
- 3 - The Two-Part HS Hardener, Extra Short - LHA 009 046 A2- is suitable for spot repairs and partial painting at low temperatures.



- 4 - The Two-Part HS Hardener, Long - LHA 009 047 A3- is suitable for all complete and partial painting at high temperatures.
- 5 - The Two-Part HS Hardener, Long - LHA 009 048 A3- is suitable for all complete and partial painting at very high temperatures and is characterized by its good flow properties.



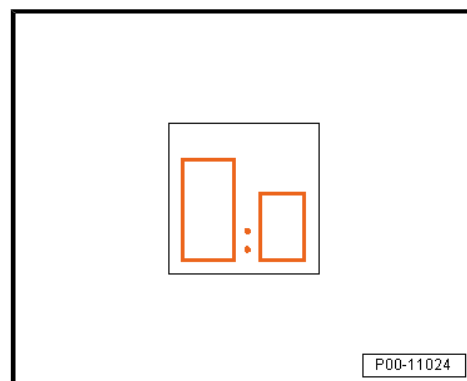


Mixture ratio:

- Refer to the technical application instructions for the respective base components

Hardener Selection Guide

- + + - Optimum
- + - Suitable
- - Partially suitable
- - - Not suitable



Hardener selection	Two-Part HS Hardener - LHA 009 041 A3-	Two-Part HS Hardener, Short - LHA 021 004 A3-	Two-Part HS Hardener, Extra Short - LHA 009 046 A2-
Partial or complete painting (large areas)	+	-	- -
Partial painting (minor repairs)	+	+ +	+ +
High temperatures above +25 °C (77 °F)	+	- -	- -
Very high temperatures: +30 °C to +35 °C (86 °F to 95 °F)	-	- -	- -
Normal temperature +20 °C to +25 °C (68 to 77 °F)	+ +	-	- -
Low temperature +15 °C to +20 °C (59 to 68 °F)	-	+	+ +
Oven drying	+ +	+	+
Air drying	+ +	+ +	+ +



Hardener selection	Two-Part HS Hardener, Long - LHA 009 047 A3-	Two-Part HS Hardener, Extra Long - LHA 009 048 A3-
Partial or complete painting (large areas)	++	++
Partial painting (minor repairs)	+	--
High temperatures above +25 °C (77 °F)	+	++
Very high temperatures: +30 °C to +35 °C (86 °F to 95 °F)	+	++
Normal temperature +20 °C to +25 °C (68 to 77 °F)	++	+
Low temperature +15 °C to +20 °C (59 to 68 °F)	-	--
Oven drying	++	++
Air drying	+	+

Characteristics

	Two-Part HS Hardener, Extra Short - LHA 009 046 A2-	All other two-part HS hardeners
Flash-point:	under +21 °C (69.8 °F)	above +23 °C (73.4 °F)

Storage

All two-part HS hardeners have a guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

- Protect against moisture.



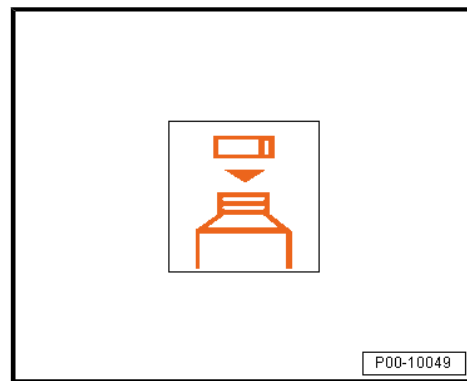
P00-10050



P00-10052



- Seal the container airtight immediately after removing the hardener.



3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener

Definition:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ Two-Part VHS Performance Hardener - LVM 009 038 A2-
- ◆ Two-Part VHS Performance Hardener, Long - LVM 009 039 A2-

Edition 07/2013

Product Description

Two-part VHS hardeners and two-part VHS performance hardeners are suitable for use with high solid products.

Properties:

- ◆ It has a high solid content for economical and environmentally friendly application.
- ◆ Due to the variety of VHS and performance hardeners, they can adapt well to all painting conditions and ensure reliable application.

Application Instructions

Processing

Possible base components:



Note

The two-part HS performance filler can only be processed with two-part VHS performance hardener.

- ◆ Two-Part HS Vario Filler, refer to
⇒ [“3.5.1 Two-Part HS Vario Filler”, page 85](#) .
- ◆ Two-Part HS Premium Filler, refer to
⇒ [“3.5.2 Two-Part HS Premium Filler”, page 93](#) .
- ◆ Two-Part HS Mixed Filler, refer to
⇒ [“3.5.3 Two-Part HS Mixed Filler”, page 100](#) .



- ◆ Two-Part HS Performance Filler, refer to
⇒ [“3.5.4 Two-Part HS Performance Filler”, page 112](#) .
- ◆ Two-Part HS Top Coat, refer to
⇒ [“3.6.1 Two-Part HS Top Coat”, page 127](#) .
- ◆ Two-Part HS Clear Coat, refer to
⇒ [“3.7.1 Two-Part HS Clear Coat”, page 172](#) .
- ◆ Two-Part HS Vario Clear Coat, refer to
⇒ [“3.7.3 Two-Part HS Vario Clear Coat”, page 181](#) .
- ◆ Two-Part HS Optimum Clear Coat, refer to
⇒ [“3.7.4 Two-Part HS Optimum Clear Coat”, page 187](#) .
- ◆ Two-Part HS Optimum Plus Clear Coat, refer to
⇒ [“3.7.5 Two-Part HS Optimum Plus Clear Coat”, page 190](#) .
- ◆ Two-Part HS Brilliant Plus Clear Coat, refer to
⇒ [“3.7.7 Two-Part HS Brilliant Plus Clear Coat”, page 198](#) .
- ◆ Two-Part HS Performance Clear Coat, refer to
⇒ [“3.7.8 Two-Part HS Performance Clear Coat”, page 203](#) .

Area of Application



Note

The two-part VHS performance hardeners are only to be used in the two-part HS performance filler.

- 1 - The Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- is suitable for all complete and partial painting at normal temperatures.
- 2 - The Two-Part VHS Hardener, Short - LHA 009 050 A2- is suitable for partial painting and low spray booth ventilation volumes.
- 3 - The Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3- is suitable for all complete and partial painting at high temperatures.
- 4 - The Two-Part VHS Hardener, Extra Long - LHA 009 053 A2- is suitable for all complete and partial painting at very high temperatures.
- 5 - The Two-Part VHS Performance Hardener - LVM 009 038 A2- is suitable for all complete and partial painting at normal temperatures.
- 6 - The Two-Part VHS Performance Hardener, Long - LVM 009 039 A2- is suitable for all complete and partial painting at very high temperatures.

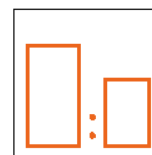


Mixture ratio:

- Refer to the technical application instructions for the respective base components

Hardener Selection Guide

- ++ - Optimum
- + - Suitable
- Partially suitable
- Not suitable



P00-11024

Hardener selection	Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-	Two-Part VHS Hardener, Short - LHA 009 050 A2-
Partial or complete painting (large areas)	+	--
Partial painting (minor repairs)	+	++
High temperatures above +25 °C (77 °F)	+	--
Very high temperatures: +30 to +35 °C (86 to 95 °F)	-	--
Normal temperature +20 to +25 °C (68 to 77 °F)	++	--
Low temperature +15 °C to +20 °C (59 to 68 °F)	-	++
Oven drying	++	+
Air drying	++	++

Hardener selection	Two-Part VHS Hardener, Long - LHA 009 052 A2- / - LHA 009 052 A3-	Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
Partial or complete painting (large areas)	+	++
Partial painting (minor repairs)	+	+
High temperatures above +25 °C (77 °F)	+	++
Very high temperatures: +30 to +35 °C (86 to 95 °F)	-	++
Normal temperature +20 to +25 °C (68 to 77 °F)	++	++
Low temperature +15 to +20 °C (59 to 68 °F)	-	-
Oven drying	++	++
Air drying	++	+



Hardener selection	Two-Part VHS Performance Hardener - LVM 009 038 A2-	Two-Part VHS Performance Hardener, Long - LVM 009 039 A2-
Partial or complete painting (large areas)	+	++
Partial painting (minor repairs)	+	+
High temperatures above +25 °C (77 °F)	+	++
Very high temperatures: +30 to +35 °C (86 to 95 °F)	-	++
Normal temperature +20 to +25 °C (68 to 77 °F)	++	++
Low temperature +15 to +20 °C (59 to 68 °F)	-	-
Oven drying	++	++
Air drying	++	+

Characteristics

	All VHS hardeners
Flashpoint:	+24 °C (75.2 °F)

Storage

The guaranteed shelf life of VHS hardeners is 36 months from date of manufacture. The guaranteed shelf life of VHS performance hardeners is 12 months. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

Storage Conditions

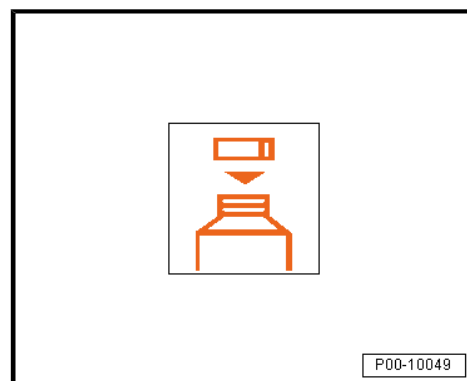
- Protect against moisture.



P00-10052



- Seal the container airtight immediately after removing the hardener.



3.8.3 Two-Part Adhesive Filler Hardener

Definition:

- ◆ Two-Part Adhesive Filler Hardener - LHA 005 000 A2-



Note

The usage and application instructions for the two-part adhesive filler hardener are described in the appropriate base component, refer to ⇒ [“3.5.5 Two-Part Synthetic Adhesion Filler”, page 118](#).

3.8.4 Aqua Premium Hardener

Definition:

- ◆ Aqua Premium Hardener - LVM 045 000 A1-



Note

The usage and application instructions for the two-part adhesive filler hardener are described in the appropriate base component, refer to ⇒ [“3.6.5 Aqua Premium System”, page 150](#).

3.9 Thinners

⇒ [“3.9.1 Two-Part Thinner”, page 219](#)

⇒ [“3.9.2 HS Spot Thinner”, page 223](#)

⇒ [“3.9.3 Purified Water”, page 225](#)

3.9.1 Two-Part Thinner

Definition:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Plus - LHA 014 000 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/-LVM 009 200 A5-
- ◆ Nitrocellulose Thinner - LVE 856 000 A3-

Edition 04/2013

Product Description

The following section describes the VW thinners that are optimally suited to vehicle paint repairs.



These thinners can be used to alter the viscosity of the base products to achieve the best application under all conditions.



Note

They may not be used for thinning water-based base paints.



Application Instructions

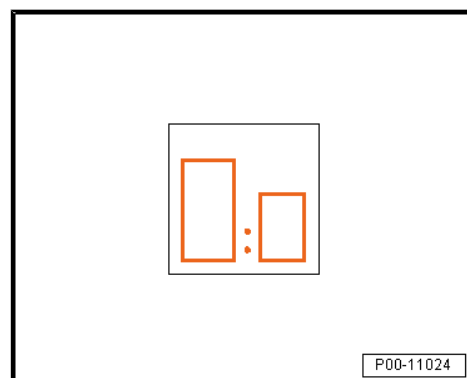
Area of Application

Mixture ratio:

- Refer to the technical application instructions for the respective base components

Thinner Selection

- + + - Optimum
- + - Suitable
- - Partially suitable
- - - Not suitable



Note

This table gives a general overview of the options for using the thinners listed here. Any additional information in the technical application information for the respective base component should take precedence.

Two-Part Thinner	Two-Part Thinner - LVE 009 001 A5-	Two-Part Thinner, Long - LVM 009 300 A2-	Two-Part Thinner, Plus - LHA 014 000 A5-	Two-Part Thinner, Special - LVM 009 200 A2- / - LVM 009 200 A5-
Two-Part HS Top Coat	+	++*	+	++
Two-Part HS Clear Coat**	- -	- -	- -	++
Two-Part Acrylic Primer/Filler	++	++	++	++
Wash Primer	++	-*	++	++
* only for temperatures above +25 °C (77 °F)				
** Two-part HS clear coat which is used in a 3:1 mixing ratio with two-part VHS hardeners plus thinner.				



Main Areas of Application and Thinner Uses

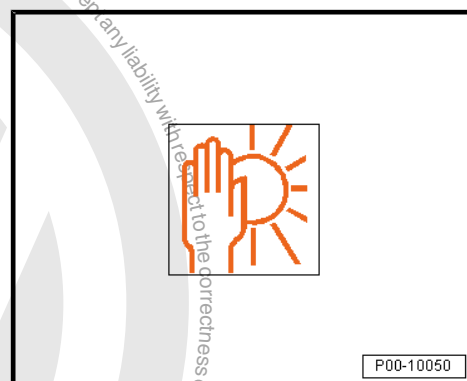
Two-Part Thinner	Two-Part Thinner - LVE 009 001 A5-	Two-Part Thinner, Long - LVM 009 300 A2-	Two-Part Thinner, Plus - LHA 014 000 A5-	Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-	Nitrocel-lulose Thinner - LVE 856 000 A3-
Main area of application	Universally usable thinner for all two-part acrylic products	The specially designed thinner with viscosity-reducing properties is especially suitable for the two-part HS top coat, two-part acrylic filler.	Usable thinner for all two-part acrylic products with drying accelerator	A specially designed thinner with viscosity-reducing properties is especially suitable for the two-part HS top coat, two-part acrylic filler and two-part HS clear coat, which are used in a 3:1 ratio with two-part VHS hardeners plus thinner.	Equipment cleaner and degreaser
Use	For adjusting viscosity of base materials and top coats at low and moderate temperatures	For optimizing and improving the paint mist adhesion at spray booth temperatures above +25 °C (77 °F) and the presence of large surfaced objects at the same time.	For adjusting viscosity of base materials and top coats at low and moderate temperatures	For adjusting viscosity of base materials and top coats at low and moderate temperatures	The EU limit for this product (product category IIB.a) in its ready-to-use form is a maximum of 850 g/L volatile organic compounds. VOC value: 2004/42/ IIB(a) (850)840



Two-Part Thinner	Two-Part Thinner - LVE 009 001 A5-	Two-Part Thinner, Long - LVM 009 300 A2-	Two-Part Thinner, Plus - LHA 014 000 A5-	Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-	Nitrocel-lulose Thinner - LVE 856 000 A3-
Charac-teristics	Flash-point above +23 °C (73.4 °F)	Flash-point above +23 °C (73.4 °F)	Flash-point above +23 °C (73.4 °F)	Flash-point above +23 °C (73.4 °F)	Flash-point above +23 °C (73.4 °F)

Storage

All thinners have a guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F)



3.9.2 HS Spot Thinner

Definition:

- ◆ HS Spot Thinner - LVM 006 000 A2-

Edition 06/2013

Product Description

HS Spot Thinner - LVM 006 000 A2- is a special drying accelerator for minor repairs in certain Two-Part HS Clear Coats and Two-Part HS Top Coats . The clear coat and top coat remain VOC compliant at the specified mixture.

Use:

- ◆ Clever repair area of application
- ◆ Only for small surfaces
- ◆ Do not apply to horizontal surfaces

Application Instructions

Base Surface

See the technical application instructions for the respective base component

Suitable preliminary coatings:

- ◆ Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5-
- ◆ HS Vario Clear Coat - L2K 769 K01 A5-
- ◆ Two-Part HS Performance Clear Coat - LZK 769 K06 A5-
- ◆ Two-Part HS Optimum Plus Clear Coat - LZK 769 K07 A5-
- ◆ Two-Part HS Solid Top Coat - L2K 073 ... -
- ◆ Two-Part HS Mixed Paint - L2K 074 ... -



Processing

Mixture ratio:

- 3:1 by volume with:
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Short - LHA 009 050 A2-

Dilutable with:

- ◆ HS Spot Thinner - LVM 006 000 A2- (HS spot thinner is added instead of Two-Part Thinner, Special - LVM 009 200 A2- / - LVM 009 200 A5-)
- ◆ +5 % for Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5-
- ◆ + 12.5 % for HS Vario Clear Coat - L2K 769 K01 A5-
- ◆ +5 % for Two-Part HS Performance Clear Coat - LZK 769 K06 A5-
- ◆ + 10 % for Two-Part HS Optimum Plus Clear Coat - LZK 769 K07 A5-
- ◆ +12.5 % for Two-Part HS Solid Top Coat - L2K 073 ... - / Two-Part HS Mixed Paint - L2K 074 ... -

Processing time/pot life:

- Ready to spray in 35 to 45 minutes at +20 °C (68 °F) (clear coat with Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-)
- Ready to spray in 50 to 60 minutes at +20 °C (68 °F) (clear coat with Two-Part HS Solid Top Coat - L2K 073 ... - / Two-Part HS Mixed Paint - L2K 074 ... -)

Application:

- For the application of the clear coat and the two-part HS mixed/top coat, refer to the respective technical application information.

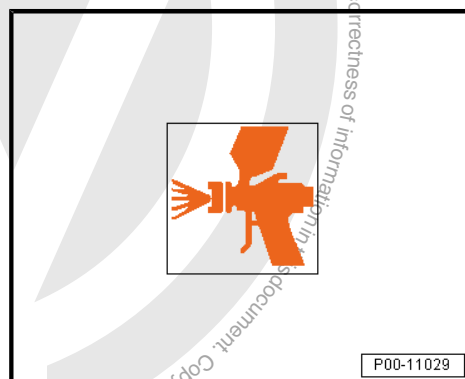
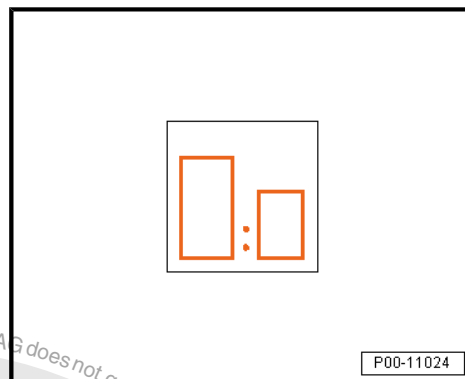


Note

- ◆ *Technological disadvantages can occur with large surface applications and horizontal surfaces (the hood, for example).*
- ◆ *A "short" hardening system is preferred when using inside the clever repair system.*

Characteristics

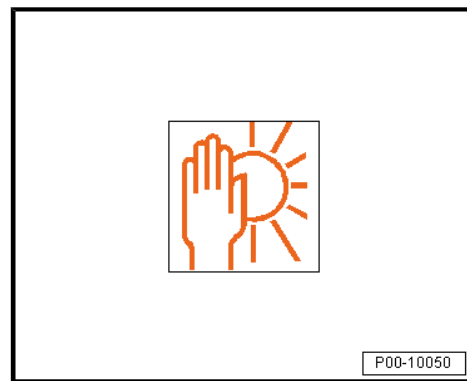
Flashpoint:	+21 °C (69.8 °F)
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Storage

The HS spot thinner has a guaranteed shelf life of 24 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.9.3 Purified Water

Definition:

- ◆ Aquaplast Purified Water - LVW 010 000 A5-



Note

The technical application information for this product is not required.

3.10 Preservation

⇒ ["3.10.1 Preserving Wax", page 225](#)

⇒ ["3.10.2 Cavity Sealant", page 226](#)

⇒ ["3.10.3 Preserving Wax \(Spray Can\)", page 229](#)

3.10.1 Preserving Wax

Definition:

- ◆ Preserving Wax - AKR 321 M15 4-
- ◆ Preserving Wax - AKR 321 M16 10-

Edition 04/2009

Product Description

Preserving Wax - AKR 321 M15 4- and Preserving Wax - AKR 321 M16 10- are spray-on wax-based rust-protection agents.

After drying, a strongly adhesive, viscous plastic-like and water-proof film which is more or less colorless.

The flow point of the dry substance is over +100 °C (212 °F), meaning that running or dripping is unlikely even in the engine compartment.

The dry film adheres well to bare and painted surfaces.

Application Instructions

Application

- ◆ Is used for the preservation of seams, surfaces and cavities in vehicles.
- ◆ Its bright color makes it especially suitable for protecting the seams of the hood and in the luggage compartment.
- ◆ The material is also preferred for treating the cleaned engine compartment.



Processing



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*
- Thoroughly clean and dry the parts that are to be treated with preserving wax. Remove any rust.
- Shake the can well before use. Spray on the preserving wax and let it dry. It should not be sprayed on visible exterior parts as the dry film has a matt appearance.



Caution

When preserving the engine compartment of vehicles and motors of other equipment, the engines or motors should only be switched on after the protective wax film has been allowed to ventilate thoroughly. There is a danger of explosions due to evaporated solvents!

Technical Data

Color	Transparent in thin coats
Odor	Mild odor
Viscosity (DIN 53211, 4 mm)	12 to 14 seconds
Dropping point	approximately 100 °C (212 °F)
Cleaning	With turpentine, cold cleaner or kerosene
Processing temperature	+15 to 30 °C (59 and 86 °F)

3.10.2 Cavity Sealant

Definition:

- ◆ Cavity Sealant - D 330 KD1 A2-
- ◆ Cavity Sealant - D 330 KD2 A1-

Edition 04/2010

Product Description

Cavity Sealant - D 330 KD1 A2- and Cavity Sealant - D 330 KD2 A1- are anti-corrosion agents containing solvents for sealing cavities with a high solid matter content.

As a thixotrope it has a well atomized solution and is therefore ideal for protecting areas that are difficult to access and narrow gaps between sheets of metal.

The cavity sealant infiltrates and pushes out moisture, it contains a high proportion of anti-rusting agent.

The cavity sealant atomizes very finely when sprayed, spreads very well, and penetrates all of the gaps to be protected (for example, welded joints), however, does not run too strongly out of the lower side of the weld.



The material can also be used at low temperatures above 10 °C (50 °F), and its flow characteristics are improved when the product and the bodywork are at room temperatures.

After drying, the material forms a plastic-like, waterproof film in a transparent beige color.

Application Instructions

Application

- ◆ Is mostly used in garages for spraying the interior of cavities to supplement the cavity sealing for new vehicles and to treat cavity sealing after two to three years and in accident repair.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Cavity Sealant - D 330 KD1 A2- Processing

- ◆ The Cavity Sealant - D 330 KD1 A2- can be easily applied with the pressure feed spray gun and the appropriate probes.
- ◆ The application pressure for the pressure feed spray gun is 5 to 6 bar (72.5 to 87 psi). The material pressure reducer should be set to 5 bar (72.5 psi).
- ◆ If it is stored for a long time or if the temperature falls below +10 °C (50 °F) the material becomes more thixotropic. This is broken however during spraying at the application temperature. The product shows its usual characteristics after spraying.



Note

Depending on the type of the cavity to be treated, the drying phase can last several days. Ensure that the vehicle is well ventilated during the drying process.

Cavity Sealant - D 330 KD2 A1- Processing

- ◆ Trim panels and trim should be removed. Any rust should be removed as far as possible.
- ◆ For surfaces that are difficult to reach (such as semi-hollow spaces in doors) should be sprayed with the spraying hose from the lid instead of the spraying head.
- ◆ The material should be at room temperature during application.
- ◆ If it is stored for a long time or if the temperature falls below +10 °C (50 °F) the material becomes more thixotropic. Shake the can thoroughly before use until the rattling of the balls becomes audible.
- ◆ The body parts should be cleaned of dust and grease and then sprayed evenly. The can should be held in a vertical position when spraying.
- ◆ When working with the "spraying hose", it can be slowly guided in circles in all directions.



- ◆ The spraying head with the round spraying nozzle enables the operator to apply a fine even coat on surfaces such as the underbody, giving these a perfect appearance.



Note

The Cavity Sealant - D 330 KD2 A1- is a product with a flammable propellant gas. Make sure that the cavities are well ventilated before closing again (for example, door trim panels) and that the vehicle is well ventilated during drying. Depending on the type of the cavity to be treated, the drying phase can last several days.



Caution

Do not spray functional parts such as the brake and exhaust systems.

Rubber and plastic parts should also not be sprayed.

Cleaning

- ◆ Dripping cavity sealant can be easily wiped away.
- ◆ The Plastic Cleaner - D 195 850 A1- is suitable for cleaning dried material.
- ◆ Larger surfaces can be cleaned with a steam cleaner.
Splashes on painted surfaces should be removed immediately.

Cavity Sealant - D 330 KD1 A2- Technical Data

Color	Beige transparent
Odor	Typical smell of its own
Solid matter content	Approximately 60% (active ingredients)
Consistency	Thixotropic
Stability	at least 100 µm
Top coat compatibility	No permanent change to the paint
Removability after 24 hours	Dry material can be easily removed
Characteristics in drying oven (1.5 hours at 90 °C (194 °F))	Does not drip
Frost resistance	Does not crack
Corrosion resistance	Does not corrode
Processing temperature	+10 °C to +25 °C (50 to 77 °F)
Application temperature	-40 to +90 °C (-40 to 194 °F)

Cavity Sealant - D 330 KD2 A1- Technical Data

Color	Beige transparent (almost transparent)
Odor	Typical smell of its own



Solid matter content	Approximately 60% (active ingredients)
Dropping point of the solid matter	approximately 150 °C (302 °F)
Consistency	Thixotropic
Stability	at least 100 µm
Penetration	greater than 16 cm
Top coat compatibility	No permanent change to the paint
Removability after 24 hours	Dry material can be easily removed
Characteristics in drying oven (1.5 hours at 90 °C (194 °F))	Does not drip
Frost resistance	Does not crack
Corrosion resistance	Does not corrode
Processing temperature	+10 °C to +25 °C (50 to 77 °F)
Application temperature	-40 °C to +90 °C (-40 to 194 °F) (+120 °C (248 °F) short-term, up to one hour)

3.10.3 Preserving Wax (Spray Can)

Definition:

- ◆ Preserving Wax - D 308 SP5 A1-

Edition 04/2009

Product Description

The Preserving Wax - D 308 SP5 A1- provides optimal corrosion protection for areas in the body that are most at risk for corrosion, such as steel trim (folded edges, gaps, flanges), edges and surfaces.

This long-term corrosion protection is established through sufficient penetration as well as exceptional adhesion to the metallic surface.

The top coat compatibility and removability as well as the compatibility with the rubber and plastic attachments is created.

Application Instructions

Application

- ◆ The recommended dry layer thickness is approximately 30 µm.

Technical Data

Propane-butane content	45 to 49 %
Active ingredient content	22 to 26 %
Solvent content	27 to 31 %
Viscosity (DIN 53211, 4 mm)	16 to 22 seconds



Dropping point (of solid matter)	greater than 150 °C (302 °F)
Cleaning	with mineral spirits
Processing temperature	+18 to +25 °C
Flashpoint PM (DIN EN 22719)	+27 to +33 °C (64.4 to 77 °F)
Color	light beige
Application temperature	+10 to +30 °C (50 to 86 °F)
Frost resistance	through -30 °C (-22 °F)

3.11 Underbody Protection

⇒ ["3.11.1 Long-Term Underbody Protection D 314 D36 M2 , Gray", page 230](#)

⇒ ["3.11.2 Long-Term Underbody Protection D 314 D37 M2 , Black", page 233](#)

⇒ ["3.11.3 Long-Term Underbody Protection D 314 D38 M2 , Bright Color", page 236](#)

3.11.1 Long-Term Underbody Protection - D 314 D36 M2- , Gray

Definition:

- ◆ Long-Term Underbody Protection - D 314 D36 M2- , Gray

Edition 02/2010

Product Description of Long-Term Underbody Protection - D 314 D36 M2- , gray

Long-Term Underbody Protection - D 314 D36 M2- is a gray coating compound with a watery synthetic dispersion base that is sprayed with a UBS gun.

The drying time depends on the layer thickness, ambient temperature and the surrounding humidity. Good ventilation and higher temperatures quicken the drying time.

The dried film shows good adhesion to galvanized and cathodic primed steel panels, as well as painted base surfaces. Due to the high resistance to abrasion and low-temperature flexibility, the long-term underbody protection is characterized by its quality stone chip protection characteristics.

The long-term underbody protection can be quickly painted over with water-based paints.

After air drying (approximately two to three hours), the material can also be painted over with conventional painting systems (contains solvents).

The dried coat sands easily after hardening.

The long-term underbody protection is used to reestablish the original structure after a repair.

The material is only temporarily resistant to gasoline and cold cleaners.

Application

- ◆ Long-Term Underbody Protection - D 314 D36 M2- is suited for repair work on the underbody, wheel housing, front and



rear areas. It is used on visible components, such as on the sill panel, as paintable protection against stone impact, road salt and moisture corrosion.

- ◆ The material is used to reestablish different surface structures on vehicles of all types after a repair.
- ◆ The long-term underbody protection is suitable for dampening the sound of luggage compartments, hoods, wheel housings, and side panels as well as covering and sealing repaired surfaces, welded joints and overlaps.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ Clean the surfaces to be treated well beforehand and remove any rust.
- ◆ The surfaces must be free from dirt and dust, dry and grease-free.
- ◆ Surfaces which are not to be coated should be covered with paper.
- ◆ Bare steel surfaces are to be primed before applying the long-term underbody protection.
- ◆ The long-term underbody protection is applied from the 1 L can using the UBS spray gun. The application pressure is 4 to 5 bar (58 to 72.5 psi).
- ◆ Shake the can contents vigorously for one minute before using.



Caution

Do not spray onto the steering, engine, driveshaft, exhaust, catalytic converter and brake systems.

Blow out the spraygun immediately after use and then rinse it with Plastic Cleaner - D 195 850 A1- .

If the spray gun becomes blocked the can may burst!

Observe the operating instructions of the UBS spray gun!

Painting Over



Note

The long-term underbody protection can be painted over with water-based and solvent-containing paints. Due to the large number of available systems on the market, testing is necessary.

1 - Painting Over with Water-Soluble Paints:

- After a short drying period (matte surface), the long-term underbody protection can be painted over up to 72 hours after applying with water-soluble paints.



2 - Painting Over With Conventional (Solvent-Containing) Paints:

- After drying, the long-term underbody protection can be painted over up to 72 hours after applying with conventional (solvent-containing) paints. The material has a quick-drying thick layer system. If accelerating the drying period in an airflow, then make sure that the rapidly forming film is not being actively blown onto the material that is still drying. This could lead to crack formation.

Cleaning

- Splashes on painted surfaces should be removed immediately using Plastic Cleaner - D 195 850 A1- .
- Equipment or the dirty parts of the equipment should be cleaned after applying water, and if necessary, adding of a watery cleaner. Do not use any solvent-containing cleaners (clotting). After drying, the long-term underbody protection can only be removed using a tool.

Technical Data

Technical Data:	
Color	grey
Odor	slightly like ammonia
Density	approximately 1.22 g/cm ³
Solid matter content	approximately 67 %
Viscosity:	0.5 Pas
Measuring instrument	Physica
Measuring system	Z 4
Wet application thickness	1 mm
Thinner/cleaner	distilled water
Processing temperature	+10 to +25 °C (50 to 77 °F)
Application temperature	-25 to +80 °C (-13 °F to 176 °F) (short-term, up to one hour at +100 °C (212 °F))
Acoustic data:	
Dissipation factor DIN 53440	approximately 0.10
Temperature	20 °C (68 °F)
Frequency	200 Hz
Material	1 mm steel panel
Coating to panel thickness ratio	2:1



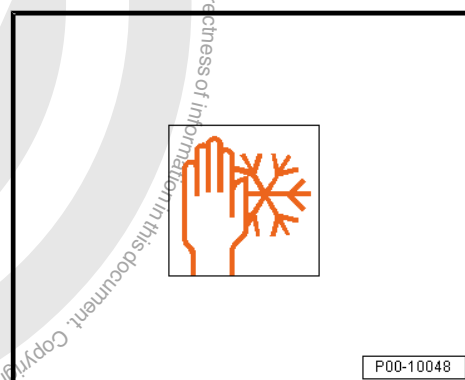
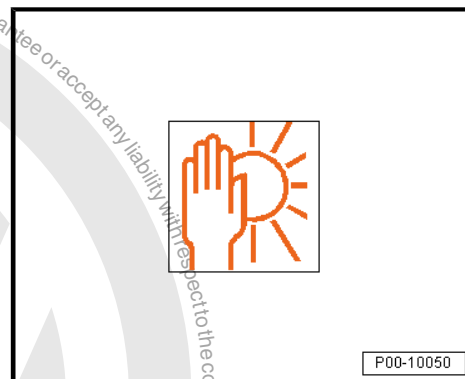
Storage

The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F)

Storage Conditions

The recommended storage temperature for the long-term underbody protection is +10 to 25 °C (50 to 77 °F).

The long-term underbody protection is vulnerable to frost. It must not fall below +5 °C (41 °F).



3.11.2 Long-Term Underbody Protection - D 314 D37 M2- , Black

Definition:

- ◆ Long-Term Underbody Protection - D 314 D37 M2- , Black

Edition 02/2010

Product Description of Long-Term Underbody Protection - D 314 D37 M2- , Black

Long-Term Underbody Protection - D 314 D367 M2- is a black coating compound with a watery synthetic dispersion base that is sprayed with a UBS gun.

The drying time depends on the layer thickness, ambient temperature and the surrounding humidity. Good ventilation and higher temperatures quicken the drying time.

The dried film shows good adhesion to galvanized and cathodic primed steel panels, as well as painted base surfaces. Due to the high resistance to abrasion and low-temperature flexibility, the long-term underbody protection is characterized by its quality stone chip protection characteristics.

The long-term underbody protection can be quickly painted over with water-based paints.

After air drying (approximately two to three hours), the material can also be painted over with conventional painting systems (contains solvents).

The dried coat sands easily after hardening.

The long-term underbody protection is used to reestablish the original structure after a repair.

The material is only temporarily resistant to gasoline and cold cleaners.



Application

- ◆ Long-Term Underbody Protection - D 314 D37 M2- is suited for repair work on the underbody, wheel housing, front and rear areas. It is used on visible components, such as on the sill panel, as paintable protection against stone impact, road salt and moisture corrosion.
- ◆ The material is used to reestablish different surface structures on vehicles of all types after a repair.
- ◆ The long-term underbody protection is suitable for dampening the sound of luggage compartments, hoods, wheel housings, and side panels as well as covering and sealing repaired surfaces, welded joints and overlaps.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ Clean the surfaces to be treated well beforehand and remove any rust.
- ◆ The surfaces must be free from dirt and dust, dry and grease-free.
- ◆ Surfaces which are not to be coated should be covered with paper.
- ◆ Bare steel surfaces are to be primed before applying the long-term underbody protection.
- ◆ The long-term underbody protection is applied from the 1 L can using the UBS spray gun. The application pressure is 4 to 5 bar (58 to 72.5 psi).
- ◆ Shake the can contents vigorously for one minute before using.



Caution

Do not spray onto the steering, engine, driveshaft, exhaust, catalytic converter and brake systems.

Blow out the spraygun immediately after use and then rinse it with Plastic Cleaner - D 195 850 A1- .

If the spray gun becomes blocked the can may burst!

Observe the operating instructions of the UBS spray gun!

Painting Over



Note

The long-term underbody protection can be painted over with water-based and solvent-containing paints. Due to the large number of available systems on the market, testing is necessary.

1 - Painting Over With Water-Soluble Paints:



- After a short drying period (matte surface), the long-term underbody protection can be painted over up to 72 hours after applying with water-soluble paints.

2 - Painting Over With Conventional (Solvent-Containing) Paints:

- After drying, the long-term underbody protection can be painted over up to 72 hours after applying with conventional (solvent-containing) paints. The material has a quick-drying thick layer system. If accelerating the drying period in an airflow, then make sure that the rapidly forming film is not being actively blown onto the material that is still drying. This could lead to crack formation.

Cleaning

- ◆ Splashes on painted surfaces should be removed immediately using Plastic Cleaner - D 195 850 A1- .
- ◆ Equipment or the dirty parts of the equipment should be cleaned after applying water, and if necessary, adding of a watery cleaner. Do not use any solvent-containing cleaners (clotting). After drying, the long-term underbody protection can only be removed using a tool.

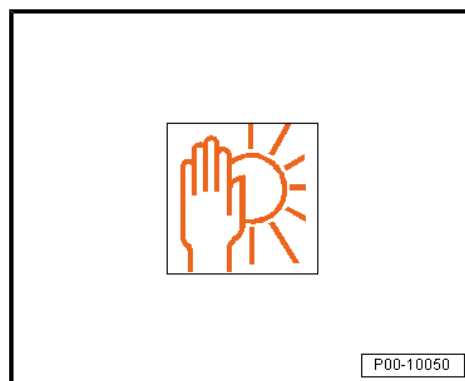
Technical Data

Technical Data:	
Color	Black
Odor	slightly like ammonia
Density	approximately 1.22 g/cm ³
Solid matter content	approximately 67 %
Viscosity:	0.5 Pas
Measuring instrument	Physica
Measuring system	Z 4
Wet application thickness	1 mm
Thinner/cleaner	distilled water
Processing temperature	+10 to +25 °C (50 to 77 °F)
Application temperature	-25 °C to +80 °C (-13 °F to 176 °F) (short-term, up to one hour at +100 °C (212 °F))
Acoustic data:	
Dissipation factor DIN 53440	approximately 0.10
Temperature	20 °C (68 °F)
Frequency	200 Hz
Material	1 mm steel panel
Coating to panel thickness ratio	2:1



Storage

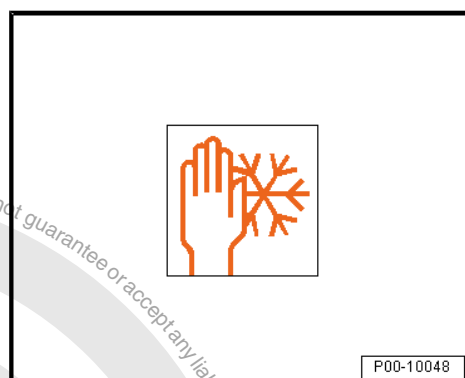
The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



Storage Conditions

The recommended storage temperature for the long-term underbody protection is +10 to 25 °C (50 to 77 °F).

The long-term underbody protection is vulnerable to frost. It must not fall below +5 °C (41 °F).



3.11.3 Long-Term Underbody Protection - D 314 D38 M2- , Bright Color

Definition:

- ◆ Long-Term Underbody Protection - D 314 D38 M2- , Bright Color

Edition 02/2010

Product Description

Long-Term Underbody Protection - D 314 D38 M2- is a bright, transparent coating compound (not opaque) with a watery synthetic dispersion base that is sprayed with a UBS-, paint- or filler spray gun.

The drying time depends on the layer thickness, ambient temperature and the surrounding humidity. Good ventilation and higher temperatures quicken the drying time.

The dried film shows good adhesion to galvanized and cathodic primed steel panels, as well as painted base surfaces. Due to the high resistance to abrasion and low-temperature flexibility, the long-term underbody protection is characterized by its quality stone chip protection characteristics.

The long-term underbody protection can be quickly applied/painted over with water-based paints.

After air drying (approximately two to three hours), the material can also be painted over with conventional painting systems (contains solvents).

The long-term underbody protection can be colored, mixed with water-based paints and diluted with demineralized water. To color, an addition of up to 30 % volume of ready to spray water-based paint is possible.

Due to the variations of mixture ratios, application pressures and intervals, smooth surfaces and fine to coarse structures can be produced.



The material is only temporarily resistant to gasoline and cold cleaners.

Application

- ◆ Long-Term Underbody Protection - D 314 D38 M2- is suited for repair work on the underbody, wheel housing, front and rear areas. It is used on visible components, such as on the sill panel, as paintable protection against stone impact, road salt and moisture corrosion.
- ◆ The material is used to reestablish different surface structures on vehicles of all types after a repair.
- ◆ The variable pigmentability is of a particular advantage. Any possible scratches or stone impacts become almost invisible.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ Clean the surfaces to be treated well beforehand and remove any rust.
- ◆ The surfaces must be free from dirt and dust, dry and grease-free.
- ◆ Surfaces which are not to be coated should be covered with paper.
- ◆ Bare steel surfaces are to be primed before applying the long-term underbody protection.
- ◆ The long-term underbody protection can be applied to all conventional sealants (except silicone) and is characterized by its good adhesion.
- ◆ The long-term underbody protection surface can become weaker with plasticized sealants and also have a certain tackiness. However the material does not lose its adhesiveness.
- ◆ Shake the can contents thoroughly before using.
- ◆ The long-term underbody protection is applied using rustproof filler- or paint spray guns. The material can be diluted with distilled or demineralized water (purified water) for adjustment (maximum 10% of volume addition).
- ◆ The first layer should not be applied too thickly (12 spray application).
- ◆ The long-term underbody protection is mixable with spray-ready water-based paints (maximum 30% of volume addition).
- ◆ To replicate the conventional structures, the best results are achieved using a 10-15 % spray-ready painting technique.
- ◆ The material should be filtered using a paint strainer before applying.



Caution

Do not spray onto the steering, engine, driveshaft, exhaust, catalytic converter and brake systems.

Blow out the spraygun immediately after use and then rinse it with Plastic Cleaner - D 195 850 A1- .

If the spray gun becomes blocked the can may burst!

Observe the operating instructions of the UBS spray gun!

Painting Over



Note

The long-term underbody protection can be painted over with water-based and solvent-containing paints. Due to the large number of available systems on the market, testing is necessary.

- 1 - Painting over with water-soluble paints:
 - After a short drying period (matte surface), the long-term underbody protection can be painted over up to 72 hours after applying with water-soluble paints.
- 2 - Painting over with conventional (solvent-containing) paints:
 - After drying, the long-term underbody protection can be painted over up to 72 hours after applying with conventional (solvent-containing) paints. The material has a quick-drying thick layer system. If accelerating the drying period in an airflow, then make sure that the rapidly forming film is not being actively blown onto the material that is still drying. This could lead to crack formation.

Cleaning

- ◆ Splashes on painted surfaces should be removed immediately using Plastic Cleaner - D 195 850 A1- .
- ◆ Equipment or the dirty parts of the equipment should be cleaned after applying water, and if necessary, adding of a watery cleaner. Do not use any solvent-containing cleaners (clotting). After drying, the long-term underbody protection can only be removed using a tool.

Technical Data

Technical Data:	
Color	whitish, not opaque
Odor	slightly like ammonia
Density	approximately 1.25 g/cm ³
Solid matter content	approximately 70 %
Viscosity:	1 Pas
Measuring instrument	Rheomat STV
Measuring system	Rotor 30
Speed	200 UpM
Stability	up to 1 mm wet
Processing temperature	+10 to +25 °C (50 to 77 °F)



Application temperature	-25 °C to +80 °C (-13 °F to 176 °F) (short-term, up to one hour at +100 °C (212 °F))
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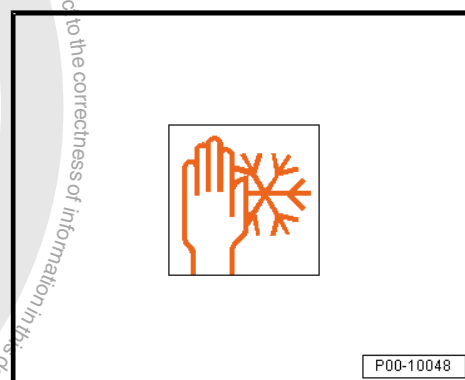
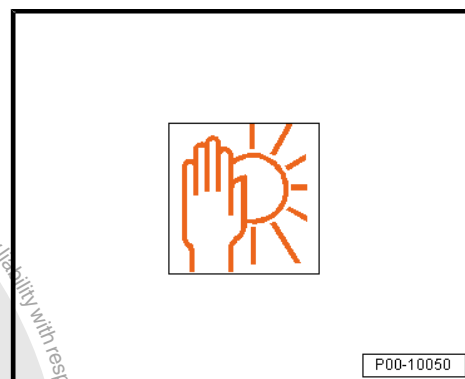
Storage

Guaranteed shelf life of 12 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).

Storage Conditions

The recommended storage temperature for the long-term underbody protection is +10 to 25 °C (50 to 77 °F).

The long-term underbody protection is vulnerable to frost. It must not fall below +5 °C (+ 41 °F).



3.12 Stone Chip Protection

⇒ ["3.12.1 Stone Chip Protection AKR 311 KD1 05", page 239](#)

⇒ ["3.12.2 Stone Chip Protection AKR 311 KD1 10", page 241](#)

3.12.1 Stone Chip Protection - AKR 311 KD1 05-

Definition:

◆ Stone Chip Protection - AKR 311 KD1 05- , black

Edition 04/2009

Product Description

Stone Chip Protection - AKR 311 KD1 05- is a finely atomizing coating material with a synthetic resin basis.

The dried film adheres very well to cleaned base surfaces as well as to an bare and painted panel.

It is characterized by a high covering capacity, good protection against corrosion, high resistance to abrasion and therefore good protection against stone impacts.

After approximately seven minutes the quick-drying stone chip protection spray can be painted over using commercially available vehicle paint systems.

Oven drying at approximately 60 °C (140 °F) is possible without any problems.

Extraordinary mechanical stress (for example, automatic car washes) should be avoided in the first few weeks.

The mechanical load-bearing capacity of the painted surfaces can be found in the manufacturer's product specifications.



Application Instructions

Application

- ◆ Stone Chip Protection - AKR 311 KD1 05- is used on visible components, such as front and rear aprons and door sills to protect against stone impact, grit, and moisture corrosion. It can be quickly painted over.
- ◆ The material is also used to supplement stone chip protection linings, for work on particular points of a vehicle and during accident repair work.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ Clean the surfaces to be treated with Stone Chip Protection well beforehand and remove any rust.
- ◆ The surfaces must be dry, free of grease, dirt and as much dust as possible.
- ◆ The material should be at room temperature during application.
- ◆ Shake the can thoroughly; when the ball bearings start to rattle, continue shaking for approximately one minute.
- ◆ Hold the can vertically when spraying and spray from a distance of 20 to 30 cm.
- ◆ If parts of the vehicle were covered before spraying, the covers should be removed before drying.
- ◆ Abrasion and corrosion protection increases with the layer thickness. For this reason one or two additional coats should be applied after a short ventilation time.
- ◆ To prevent spraying shadows the material is sprayed on in cross patterns.
- ◆ After use, the can and the valve should be held down and the valve sprayed until only propellant gas emerges.



Caution

Do not spray onto moving or high-temperature components such as the steering, engine, transmission, driveshaft, exhaust, catalytic converter and brake system.

Cleaning

- ◆ Splashes and paint mist can be removed immediately with gasoline.
- ◆ Dried material can only be removed with D or R thinner. Be careful with fresh paint!

Technical Data

Color	Bright/black
Odor	Solvent



Thickness after 2 to 3 cross spray applications	250-300 µm dry film
Drying time	Dust dry after approximately two hours
Processing temperature	+15 to +25 °C (59 and 77 °F)
Application temperature	-29 °C to +70 °C (-20.92 to 158 °F) (short-term, up to one hour at +100 °C (212 °F))

3.12.2 Stone Chip Protection - AKR 311 KD1 10-

Definition:

- ◆ Stone Chip Protection - AKR 311 KD1 10- , black

Edition 02/2014

Product Description

Stone Chip Protection - AKR 311 KD1 10- (black) is a water-soluble stone chip protection.

Properties:

- ◆ High elasticity
- ◆ Can be painted over with all top coats
- ◆ Particularly suitable for parts of passenger and work vehicles which are subject to gravel impact, such as front sections and door sill panels.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Well sanded factory paint or old paint (including thermoplastic coatings)
- ◆ Surfaces treated with primer or filler



Caution

The Stone Chip Protection - AKR 311 KD1 10- may not be applied to PVB (acid-hardening) adhesive primers.

Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038



- Then, sand.

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

Processing

Spray device:

- Underbody spray gun with thread for disposable cans.

- If a finer surface is desired, the Stone Chip Protection - AKR 311 KD1 10- can be applied with a pressure feed spray gun according to the appropriate thinning.

Thinner:

- Thinnable with Purified Water - LVW 010 000 A5-



P00-11037



P00-11038



P00-10035



P00-11029



"High-Pressure Spraying" application type

- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211
- Set spray nozzle (see manufacturer's information) to 3 to 4 bar (43.5 to 58 psi).



Note

Do not dilute during the high-pressure spraying procedure. The delivery viscosity is the same as the application viscosity.

Application type "coat"

Application viscosity 4 mm gravity feed spray gun "Compliant":

- Depending on the addition of Purified Water - LVW 010 000 A5-



P00-10035



P00-11036



P00-11032

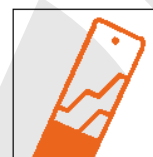


P00-11036



Adding 10 % thinner at +20 °C (68 °F) material temperature.

- Use a measuring stick to mix when pouring in the thinner.



P00-11023

- Set spray nozzle (see manufacturer's information): "Compliant" 1.5 to 2.0 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).



P00-11029

- Apply two to three spray applications.
- The recommended dry layer thickness is between 150 and 300 µm.



P00-11032

Drying

Air dry at +20 °C (68 °F) room temperature for 2 to 2.5 hours to 150 µm and overnight to 300 µm



P00-11027



Final drying time with forced drying is a minimum of 35 to 40 minutes.

Forced drying at +60 °C (140 °F) object temperature for 30 minutes to 150 and 300 µm

Reworking

Can be painted over with:

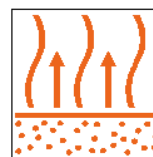
- ◆ Water-based base paint and two-part HS clear coat
- ◆ Two-Part HS Top Coat

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	flame-resistant
VOC value: 2004/42/IIB (e)(840)130	The EU limit for this product (product category IIB.e) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 130 g/L.

Storage

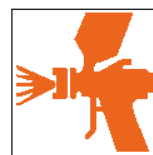
The guaranteed shelf life of 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-11026



P00-11027



P00-11029

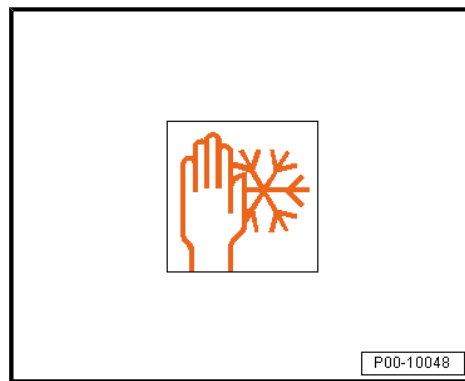


P00-10050



Storage Conditions

The prescribed storage temperature is +20 °C (68 °F) (not to fall below +5 °C (41 °F)).



3.13 Wax Underbody Protection

⇒ ["3.13.1 Wax Underbody Protection D 316 D38 A2", page 246](#)

⇒ ["3.13.2 Wax Underbody Protection D 316 000 A1", page 248](#)

⇒ ["3.13.3 Wax Spray D 322 100 M2", page 249](#)

3.13.1 Wax Underbody Protection - D 316 D38 A2-

Definition:

- ◆ Wax Underbody Protection - D 316 D38 A2-

Edition 04/2009

Product Description

Wax Underbody Protection - D 316 D38 A2- is an solvent-containing anti-corrosion agent based on wax and lanolin with polymer and rust-protection additives.

This results in a high viscosity and a relatively high abrasion resistance for wax.

The material seeps into the pores of the PVC coating, pushing out moisture and closing the pores to produce a waterproof, highly adhesive and firm coating

After drying, it forms a light beige, transparent, non-sticking, waterproof film.

Its transparency enables the product to conform to German technical standards (TÜV)(the underbody can be monitored).

The dry film has good adhesion and corrosion protection properties and is very durable due to its toughness and resistancy.



Wax Underbody Protection - D 316 D38 A2- Technical Application Information

Application

- ◆ The material is primarily used on the underbody and especially for treatment and maintenance of all protective coats such as PVC, PVC/wax/bitumen/rubber/resin based materials.
- ◆ It can also be used to treat chassis parts such as axles, wheel suspensions and springs. These parts become grey with age and are often the first to be affected by rust. The treatment refreshes the color which considerably improves the optical appearance. At the same time the parts are protected against corrosion.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ Clean the surfaces to be treated with Wax Underbody Protection well beforehand and remove any rust.
- ◆ The surfaces must be dry, free of grease, dirt and as much dust as possible.
- ◆ The Wax Underbody Protection must only be applied to dry surfaces. Rust must be taken into account for older vehicles.
- ◆ Rust should be removed with a wire brush.
- ◆ Before work can start the vehicle should be covered, especially the door windows.
- ◆ The Wax Underbody Protection can be applied to a vertical surfaces in one step. To prevent a spraying shadow, it is advisable to spray with cross coats.
- ◆ After drying over night the vehicle can be used again. Between 24 and 48 hours are required for final drying.
- ◆ An underbody protection spray gun is used when applying with the 1 L can. The can should be shaken before use.
- ◆ Recommended wet film thickness 200 µm, processing air pressure approximately 3 to 5 bar (43.5 to 72.5 psi).
- ◆ The Wax Underbody Protection can also be used with a pressure feed spray gun if the Venturi hooked probe (16139 SATA) is used. The application pressure is approximately 3 to 4 bar (43.5 to 58 psi) A 750 mm flexible guide hose enables the operator to guide the hook with the 7 mm Venturi nozzle with ease.



Caution

Do not spray onto the steering, engine, driveshaft, exhaust, catalytic converter and brake systems.

Blow out the spraygun immediately after use and then rinse it with Plastic Cleaner - D 195 850 A1- .

If the spray gun becomes blocked the can may burst!

Observe the operating instructions of the UBS spray gun!

Cleaning

- ◆ Splashes and spray mist on painted surfaces should be removed immediately using Plastic Cleaner - D 195 850 A1- . Material residue can also be cleaned off easily with mineral spirits or kerosene.
- ◆ Larger surfaces can also be cleaned with a steam cleaner.
- ◆ For this reason an underbody that has been treated with Wax Underbody Protection cannot be cleaned with steam cleaning devices unless it is to remove the old layer before new treatment can begin.



Technical Data

Color	Transparent light beige
Odor	Mild odor
Solid matter content	approximately 47 %
Consistency	Fluid, lightly thixotropic
Heat resistance of the dry film	Greater than 100 °C (212 °F)
Complete drying	24 to 48 hours
Processing temperature	+10 to +25 °C (50 to 77 °F)
Application temperature	-25 °C to +80 °C (-13 °F to 176 °F) (short-term, up to one hour at +100 °C (212 °F))

3.13.2 Wax Underbody Protection - D 316 000 A1-

Definition:

- ◆ Wax Underbody Protection - D 316 000 A1-

Edition 01/2008

Product Description

Wax Underbody Protection - D 316 000 A1- is an exceptional long-term corrosion protection.

The Wax Underbody Protection is based on a solvent-free, oxidative drying system and provides optimal corrosion protection for the body underbody area.

This long-term corrosion protection is established by its excellent adhesion at both very low and high temperatures to the metallic surface.

The product forms a light brown, elastic and non-tacky coating.

It is not necessary to combine the film at an elevated temperature.

Wax Underbody Protection - D 316 000 A1- Technical Application Information

Application

- ◆ The material is primarily used in the vehicle area.
- ◆ Make sure that the base surfaces are dry.
- ◆ The ready-made product is applied using brushes at the material temperature of 20 to 35 °C (68 to 95 °F).
- ◆ The material can be carefully warmed up to 45 °C (113 °F) immediately before applying (< 5 minutes) if it is required by the application technique.
- ◆ The oxidative hardening product can form a film on the surface after a short time. This has no impact on the corrosion protection or other properties.

Properties

- ◆ Solvent-free
- ◆ 100 % active ingredient content
- ◆ Exceptional long-term corrosion protection



- ◆ Good adhesion properties
- ◆ Reduced tendency to drip
- ◆ Low-temperature flexibility
- ◆ Long shelf life



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ The surfaces that are to be treated must dry and be free of grease and dust.
- ◆ Bring the Wax Underbody Protection to the application temperature of 20 to 35 °C (68 to 95 °F).
- ◆ Apply the material to the body parts that are to be protected and spread using brushes.

Technical Data

Base	Mixture of corrosion protection additives with a sulfonate base, alkyd, mineral oil aromatic extracts, pigments, thickening agents, drying agents and fluorescent pigments.
Delivery form/color	Light brown, viscous fluid
Rheomat viscosity	1850 ± 350 mPas (System PP50, d= 760 1/s)
Density/15 °C DIN EN ISO 12185	0.995 ± 0.015 g/ml
Solid matter content	99 ± 1 %
Flashpoint DIN EN ISO 2719	approximately 150 °C (302 °F)
Recommended layer thickness	100-400 µm
Processing temperature	+20 to +35 °C (68 to 95 °F)
Storage	At temperatures of +10 °C to +30 °C (50 to 86 °F) for approximately 12 months
Container	310 ml (10.4 oz)

3.13.3 Wax Spray - D 322 100 M2-

Definition:

- ◆ Wax Spray - D 322 100 M2-

Edition 01/2011

Product Description

Wax Spray - D 322 100 M2- is a long-term anti-corrosion agent. After drying, the product forms a light brown, wax-like film. Be-



cause of its hardness, the Wax Spray provides good protection against mechanical stress.

Wax Spray - D 322 100 M2- Technical Application Information

Application

- ◆ The material is primarily used in the vehicle area, but it is also used as temporary corrosion protection for tools and machines.
- ◆ The Wax Spray does not corrode vehicle paint and adheres to almost all base surfaces.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing

- ◆ Bring the Wax Spray to room temperature (16 to 20 °C (60.8 to 86 °F)).
- ◆ Briefly shake the spray can before using.
- ◆ The surfaces that are to be treated (underbodies, wheel housings, insides of door) must dry and be free of grease and dust.
- ◆ The Wax Spray is sprayed on evenly in cross coats at a distance of 20 to 30 cm.



Caution

Do not spray onto the steering, engine, driveshaft, exhaust, catalytic converter and brake systems.

Technical Data

Base	Wax mixture
Color	Light brown/transparent
Film type	Hard and wax-like
Density	0.735 g/cm ³
Solids content	35.4 %
Flashpoint/ Active agent	29 °C (84.2 °F)
Flashpoint/ Spray	< -20
Recommended layer thickness	50 µm/wet
Drying time	approximately 30 min
Heat stability	105 °C (221 °F)
Removability	Mineral spirits
Processing temperature	+16 to +20 °C (60.8 to 68 °F)
Propellant gas (Aerosol)	Propane/Butane



Aerosol storage	Cool and dry, < 50 °C (122 °F)
Hazard warning	Highly flammable
Container	500 ml (16.9 oz)

3.14 Sealing Materials

⇒ [“3.14.1 Polyurethane Adhesive Sealant”, page 251](#)

⇒ [“3.14.2 Sprayable Sealant”, page 253](#)

⇒ [“3.14.3 Adhesive/Sealant”, page 256](#)

3.14.1 Polyurethane Adhesive Sealant

Definition:

- ◆ Polyurethane Adhesive Sealant - AKD 476 KD5 05-

Edition 04/2009

Product Description

Polyurethane Adhesive Sealant - AKD 476 KD5 05- is a paste-like, one-part adhesive sealing material with a polyurethane basis which forms a rubbery/elastic material when it hardens.

The film formation and hardening time depends on the humidity and temperature. The hardening time is also affected by the joint depth.

These times can be shortened by raising the temperature and humidity. Lower temperature and humidity levels delay the hardening.

Properties:

- ◆ Can be painted over, even “wet-in-wet”
- ◆ Very fast drying
- ◆ Levels out slightly on the surface
- ◆ Excellent elasticity
- ◆ High resistance to aging
- ◆ Can be sanded
- ◆ Can be spread

Application Instructions

Application

- ◆ Polyurethane Adhesive Sealant - AKD 476 KD5 05- is used for elastic sealing/adhesion, especially for sealing welds and sealing very narrow joints where its lack of stability is of no consequence in the following areas: body and vehicle assembly as well as vehicle add-ons, especially if the sealant is to be painted. To avoid yellowing or cracking, the material should always be painted over when used on the outside seams.
- ◆ The use of Polyurethane Adhesive Sealant - AKD 476 KD5 05- means that mechanical securing methods such as bolting, welding and clamping can be partially omitted. Until the sealing/adhesive has hardened, the parts should be temporarily fixed in position with adhesive tapes and spacers.
- ◆ The Polyurethane Adhesive Sealant - AKD 476 KD5 05- has the major advantage of being both an adhesive and a sealant.
- ◆ The material is suitable only to a limited extent for some adhesive purposes in vehicle construction.



Adhesive Characteristics

- ◆ The Polyurethane Adhesive Sealant - AKD 476 KD5 05- provides good adhesion without glass-/paint primer on primed and painted bodywork, on wood (untreated, glazed and painted), some plastics such as PBTP, polyurethane hard foam and GF polyester.
- ◆ Depending on the base surface it may be necessary to use a glass-/paint primer as an adhesion agent to achieve an optimum adhesion.
- ◆ On account of the large number of primers, paints and differing plastic surfaces etc., it is recommended to conduct an application-specific test beforehand.
- ◆ Careful cleaning on plastic and metal surfaces with a suitable solvent often results in significantly better adhesion.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing



Note

Body areas and adhesion surfaces that are to be sealed must be insulated with a Two-Part Filler before applying the material.

- ◆ The adhesion surfaces must be dry, free of oil, dust, grease and any other impurities. Cleaners A, D and Plastic Cleaner - D 195 850 A1- are suitable for cleaning.
- ◆ The application of Polyurethane Adhesive Sealant - AKD 476 KD5 05- from a 310 ml (10.48 oz) nozzle cartridge is done with a manual or compressed air guns. The 310 mL (10.48 oz) foil cartridges are used with the Cartridge Gun - VAG1628- or the Pneumatic Cartridge Gun - VAG1761/1- . A pressure of 2 to 5 bar (29 to 72.5 psi) is required for compressed air application.
- ◆ Low material temperatures of the sealant increase its viscosity. This results in a lower spraying rate. To prevent this the sealant should be brought to the correct temperature in the appropriate manner before processing begins.
- ◆ If the base surface is too cold, condensation can form if the temperature is lower than the dew point. This should be avoided by heating the base surface beforehand.
- ◆ After processing, the Polyurethane Adhesive Sealant - AKD 476 KD5 05- can be smoothed with a jointer or a spatula which have been moistened with low surface tension water. If the edges of the joint are masked with tape, simply pull off the tape with a spatula.
- ◆ It is recommended to use cleaner D to remove any unhardened adhesive sealing material from the tools.

Painting Procedure

- ◆ The Polyurethane Adhesive Sealant - AKD 476 KD5 05- can be painted over using the "wet-in-wet" process with one-part



and two-part repair paint with an alkyd resin-acrylic base as well as with all original repair paints.

- ◆ Nitro repair paints out of a spray can and paints, paint thinners and catalysts with alcohol content are not compatible with the adhesive sealing material (no hardening).
- ◆ Corrosion protection primers may only be applied to hardened material as they are strongly hindered in most cases by steam diffusion.
- ◆ If drying is accelerated by the use of a drying oven or an IR dryer radiator, a pre-reaction/waiting time of at least 30 minutes must be adhered to. Only then is the painted over adhesive sealing material to be warmed. The maximum permissible temperature for non-hardened material is +90 °C (194 °F) for one hour.

Incompatibility

- ◆ Polyurethane Adhesive Sealant - AKD 476 KD5 05- does not adhere to sealants that have a MS polymer and silane-modified polymer base.
- ◆ On the other hand, if the hardened Polyurethane Adhesive Sealant - AKD 476 KD5 05- is processed on MS-polymer and silane-modified polymer base, then there is good adhesion.

Technical Data

Color	White, grey, black
Odor	Classified by aroma (odorless in hardened condition)
Consistency	Paste-like, can be applied with brush or spatula
Stability	Levels out slightly on the surface
Film formation type (standard climate conditions DIN 50014)	15 to 45 minutes, at +23 °C (73.4 °F) and a relative humidity of 50 %
Hardening speed (standard climate conditions DIN 50014)	Approximately 5.5 mm/ 24 hours, at +23 °C (73.4 °F) and a relative humidity of 50 %
Volume change	approximately -6 %
Processing temperature	+5 °C to +35 °C (41 and 95 °F)
Application temperature	-40 °C to +70 °C (-40 to 158 °F) (limited: 24 hours at +80 °C (176 °F), short-term: 1 hour at +120 °C (248 °F))

3.14.2 Sprayable Sealant

Definition:

- ◆ Sprayable Sealant - D 476 KD1 M2- , gray
- ◆ Sprayable Sealant - D 476 KD2 M2- , black

Edition 08/2012

Product Description

Sprayable Sealant - D 476 KD1 M2- / - D 476 KD2 M2- is a spray-on sealant with a MS polymer base. It hardens into a rubber-



elastic material with good abrasion resistance by absorbing atmospheric moisture.

The film formation and hardening time depends on the humidity and temperature. The hardening time is also affected by the layer thickness.

These times can be shortened by raising the temperature and humidity. Lower temperature and humidity levels delay the hardening.

Properties

- ◆ Sealant and weld sealant in one product
- ◆ High stability
- ◆ Can be sprayed and brushed
- ◆ Can be painted over with conventional or water-based paints up to three days after applying
- ◆ Adheres to many materials without glass-/paint primer
- ◆ High initial strength
- ◆ Can be spot welded
- ◆ Silicone-free
- ◆ No strong odor
- ◆ Isocyanate-free
- ◆ Quick drying
- ◆ UV resistant
- ◆ High resistance to aging
- ◆ Sound-dampening properties

Application Instructions

Application

- ◆ Sprayable Sealant - D 476 KD1 M2- / -D 476 KD2 M2- is used to seal welds in vehicle repair which have been sprayed at the factory, for example in the engine, luggage, and passenger compartment areas. Application tools (telescope spray gun or Pneumatic Cartridge Gun - VAG1761/1-) can be used to reach every desired weld.
- ◆ The material is used as a surface coating to repair or supplement PVC underbody coating or stone chip protection.

Pretreatment

- ◆ The adhesion surfaces must be dry, free of oil, dust, grease and any other impurities. Cleaner FL is suitable to clean with.
- ◆ Adhesion is improved if the contact surfaces are roughened with a sanding pad.
- ◆ If the material is painted over after completely drying, then the painting preparatory work similar to the plastic preparatory work is to be followed.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing



Note

Body areas and adhesion surfaces that are to be sealed must be insulated with a Two-Part Filler before applying the material.

- ◆ Applying Sprayable Sealant - D 476 KD1 M2- / -D 476 KD2 M2- from 310 mL (10.48 oz) aluminum cartridges can only be performed with the telescope spray gun or Pneumatic Cartridge Gun - VAG1761/1- . These application devices make it possible to apply the material as a strip of material (sealant bead) or to spray it on by using the dual-circuit air system.
- ◆ The material can be both sprayed and brushed on. This means that it is possible to imitate textured bonds and brushed structures.
- ◆ The sealed seams can be painted over as early as 15 to 30 minutes.
- ◆ The corresponding settings on the application devices enable the operator to imitate all textures specified by the manufacturer quickly and conveniently. The spraying distance can be used to vary the width and limit of the bond, refer to the operating instructions for details on handling and setting the spray gun.
- ◆ It is recommended to remove any unhardened sealant from the tools using cleaner FL. Hardened material can only be removed mechanically.

Painting Procedure

- ◆ The Sprayable Sealant - D 476 KD1 M2- / -D 476 KD2 M2- can be painted over with one-part and two-part repair paint and even those containing alcohol as a solvent.
- ◆ Painting over quickly does not prevent complete hardening, it is, however, delayed. Do not wait longer than three days before painting.
- ◆ Before sealing or coating, phosphate and epoxy resin primers are particularly suitable for corrosion protection. It is imperative that the primers are dry before it is applied.
- ◆ If the body area to be painted after an accident repair is still to be coated with filler, filler primer or spray-on filler, these materials must be applied before sealing or coating with Sprayable Sealant - D 476 KD1 M2- / -D 476 KD2 M2- .
- ◆ If a filler still needs to be applied after sealing or coating with Sprayable Sealant - D 476 KD1 M2- / -D 476 KD2 M2- , then the sealant should be at least six hours old and a filler suitable for coating plastic is used.

Incompatibility

- ◆ The Sprayable Sealant - D 476 KD1 M2- / -D 476 KD2 M2- is not compatible with fresh one-part polyurethane material. Pol-



urethane products must be solidified before they are sprayed with the sealant.

- ◆ The material should not be treated with aromatic solvent systems. As a result, it can partially dissolve or swell the sealant.

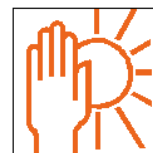
Technical Data

Color	Grey, black
Odor	Barely perceptible
Consistency	pasty
Density	approximately 1.6 g/cm ³
Stability	Excellent
Hardening type	Moist hardening
Film formation type (standard climate conditions DIN 50014)	8 to 20 minutes, at +23 °C (73.4 °F) and a relative humidity of 50 %
Drying (standard climate conditions DIN 50014)	Approximately 4 mm/ 24 hours and 6 mm/ 48 hours at +23 °C (73.4 °F) with a relative humidity of 50 %
Shore A hardness	approximately 65
Painting compatibility	Can be painted after 20 minutes with one-part and two-part paints
Adhesive properties	Bare sheet metal, galvanized metal, EC paint, top coat paint, metallic paint, PVC underbody protective agent, GFK, PP/EPDM (testing recommended)
Chemical resistance	Resistant to light and weather, PVC softening agents and fuel (short-term)
Processing temperature	+5 °C to +35 °C (41 and 95 °F)
Application temperature	-40 °C to +90 °C (-40 to 194 °F) (short-term, up to one hour at +130 °C (266 °F))

Storage

The material is not vulnerable to frost.

The guaranteed shelf life is 12 months from the production date. Use no later than the date indicated on the label and store in original container at +10 to +25 °C (50 to 77 °F).



P00-10050

3.14.3 Adhesive/Sealant

Definition:

- ◆ Adhesive/Sealant - D 511 500 A2- , gray
- ◆ Adhesive/Sealant - D 511 510 A2- , black



Edition 04/2009

Product Description

Adhesive/Sealant - D 511 500 A2- / -D 511 510 A2- is used in vehicle repair to protect the bodywork repairs against corrosion, as a quick-hardening sealant for all visible and invisible seams and dents and also to patch up PVC sealed welds.

The Adhesive/Sealant is highly suitable as a sealant in spot welding between spot welded flanges to prevent corrosion.

Properties:

- ◆ High adhesive properties on bare, primed and painted metal, galvanized surfaces, aluminum, wood, glass and all conventional plastics used in vehicles.
- ◆ Can be painted immediately
- ◆ Can be dried with an IR dryer
- ◆ Dries quickly under the paint
- ◆ Possible to weld and spot weld
- ◆ Does not form bubbles
- ◆ No contact-corrosion on zinc or aluminum
- ◆ Exceptional corrosion protection
- ◆ Solvent-free and contains no isocyanate and PVC
- ◆ Very good UV- and aging resistance

Application Instructions

Application

- ◆ Adhesive/Sealant - D 511 500 A2- / -D 511 510 A2- is used to seal welds in vehicle repair.

Pretreatment

- ◆ The adhesion surfaces must be dry, free of oil, dust, grease and any other impurities.
- ◆ Adhesion is improved if the contact surfaces are roughened with a sanding pad.



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Processing



Note

Body areas and adhesion surfaces that are to be sealed must be insulated with a Two-Part Filler before applying the material.

- ◆ Adhesive/Sealant - D 511 500 A2- / -D 511 510 A2- is applied to seal welds and impacts using the Pneumatic Cartridge Gun - VAG1761/1- , or the Cartridge Gun - VAG1628- . Then, depending on its appearance, it is to be left as a sealant bead or evened with a brush or spatula (observe the hardening time <



10 minutes). After a film has formed, the material can still be smoothed further with a moist spatula.

- ◆ The Adhesive/Sealant can be painted over with all repair paints. Painting must ensue within 48 hours of the sealant being applied. Drying the paint with an infra-red dryer does not hinder the hardening of the sealant.
- ◆ If the Adhesive/Sealant is used as a sealant during spot welding, then a sealant bead (2 to 3 mm diameter) is to be applied to the flange before the repair part is attached. The repair part should be spot-welded before a sealant film forms (< 10 minutes)
- ◆ The material can be spot-welded within 30 minutes. After welding, the sealant that has emerged can be smoothed.

Incompatibility

- ◆ Never apply any sealants with a MS polymer and silane-modified polymer base to an unhardened polyurethane adhesive sealant. The polyurethane adhesive/sealant will not adhere properly or only partially.
- ◆ However, a hardened polyurethane adhesive/sealant adheres well to fresh, spray-on sealants with a MS polymer and silane-modified polymer base.

Technical Data

Color	Grey, black
Base	Silane-modified polymer (SMP)
Volume difference after hardening	- 3 %
Film formation	± 20 minutes
Adhesion-free	Four hours at +20 °C (68 °F)
Hardening speed	3 to 4 mm/4 h at +20 °C (68 °F)
Solvent content	0 %
Isocyanate content	0 %
Temperature resistance	-40 °C to +120 °C (-40 to 248 °F) (short-term, up to maximum 30 minutes at +180 °C (356 °F))
Processing temperature	+5 °C to +35 °C (41 and 95 °F)
UV and weather resistance	Excellent

Storage

The guaranteed shelf life of 18 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +5 to +30 °C (41 to 86 °F).



P00-10050



3.15 Cleaning Agent

⇒ [“3.15.1 Silicone Remover”, page 259](#)

⇒ [“3.15.2 Plastic Cleaner”, page 260](#)

⇒ [“3.15.3 Antistatic Plastic Cleaner”, page 261](#)

⇒ [“3.15.4 Industrial Dirt Remover”, page 262](#)

3.15.1 Silicone Remover

Definition:

- ◆ Silicone Remover - LSW 019 000 A5- , watery
- ◆ Silicone Remover - LVM 020 000 A5-
- ◆ Silicone Remover, Long - LVM 020 100 A5-

Edition 02/2012

Silicone Remover - LSW 019 000 A5- Product Description

Silicone Remover - LSW 019 000 A5- is an unlabeled, watery cleaning agent that has a low concentration of organic solvents and special cleaning additives.

Silicone Remover - LVM 020 000 A5- and Silicone Remover, Long - LVM 020 100 A5- Product Description

Silicone Remover - LVM 020 000 A5- is a fast-evaporating mixture. Silicone Remover, Long - LVM 020 100 A5- is a mixture made of slow-evaporating organic solvents. Both are primarily used to remove any oil and grease residue.

Application Instructions

Application

- ◆ Before reworking the area of application further, clean sanded old- or factory paint, primed, filled and sanded areas.

Processing

- ◆ Apply Silicone Remover with a spray bottle or a clean fleece cloth.
- ◆ Dry the surface with a dry fleece cloth before the Silicone Remover evaporates.
- ◆ Let all cleaned surfaces dry before further processing or allow them to dry.



Note

- ◆ *Allow the cleaned surface to dry completely before further processing.*
- ◆ *Do not allow the sprayed-on Silicone Remover to dry on the surface.*
- ◆ *This product is not suitable for cleaning spray guns and equipment.*
- ◆ *Replace a used or dirty fleece cloth when appropriate (always use a clean fleece cloth).*
- ◆ *Repeat the cleaning procedure if the surface is very dirty.*
- ◆ *Silicone Remover - LSW 019 000 A5- is not suitable for removing separating agent residue on UP-GF or other plastic surfaces.*



Silicone Remover - LSW 019 000 A5- Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIB (a)(200)200	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 200 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 200 g/L.

Silicone Remover - LVM 020 000 A5- Characteristics

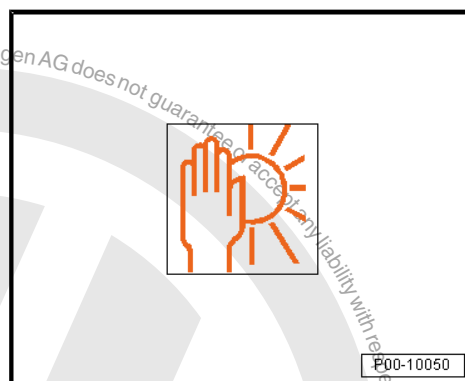
Flashpoint:	above +4 °C (39.2 °F)
VOC value: 2004/42/IIB (a)(850)770	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 850 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 750 g/L.

Silicone Remover, Long - LVM 020 100 A5- Characteristics

Flashpoint:	above +26 °C (78.8 °F)
VOC value: 2004/42/IIB (a)(850)770	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 850 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 770 g/L.

Storage

The guaranteed shelf life of 60 months from date of manufacture.
Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.15.2 Plastic Cleaner

Definition:

- ◆ Plastic Cleaner - D 195 850 A1-

Edition 04/2009

Product Description

Plastic Cleaner - D 195 850 A1- is a liquid universal cleaner and thinner with an non-aromatic, low n-hexane content gasoline base. The product contains no chlorinated hydrocarbons, and does not corrode the paint if briefly contacted.

Application Instructions

Application

- ◆ The Plastic Cleaner - D 195 850 A1- is mostly used to degrease and clean base surfaces before the application of adhesives or sealants.
- ◆ Careful cleaning of the adhesion surfaces is essential for proper adhesion and includes the removal of dust, oil and grease.
- ◆ Depending on the composition of the products listed above, the cleaner can also be used to remove impurities and surplus



amounts of these materials as well as being used on various base surface protection materials.

- ◆ In some cases, the Plastic Cleaner - D 195 850 A1- is also suitable for use as a thinner for certain adhesives/sealants as coating compounds. It should be remembered that these products are normally used undiluted. Thinning is only suitable in some special processes or if a thinner consistency is desired.

Processing



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*
- ◆ Depending on the level of dirt present, the shape and size of the parts to be cleaned, the Plastic Cleaner - D 195 850 A1- can be applied and wiped off with either a brush or a cleaning cloth.
- ◆ To avoid contaminating the content of the original canister, the cleaner should either be poured onto the cloth (do not press the cloth onto the opening and tip the canister) or it should be poured into a separate container (tin can etc.).
- ◆ Only the amount needed for cleaning should be poured out and the original canister should be closed again immediately.
- ◆ The cleaned surfaces should be allowed to dry completely (depending on circumstances 2- 10 minutes) before the adhesive or sealant is applied.
- ◆ Blowing with compressed air can reduce the drying time but in some cases the effect of cleaning can be negated by compressed air with an oil content.
- ◆ Base surfaces with open pores should be allowed to dry for at least 30 minutes before cleaning. When cleaning cut material (for example, when inserting permanently glazed vehicle windows) the processing guidelines of these products must be observed.

Characteristics

Color	Water-bright, transparent
Odor	Gasoline

3.15.3 Antistatic Plastic Cleaner

Definition:

- ◆ Antistatic Plastic Cleaner - LVM 001 001 A2-



Note

The usage and application instructions for the Antistatic Plastic Cleaner - LVM 001 001 A2- are described in the appropriate base components.

Possible Base Components Are:

- ◆ Refer to ➔ [“3.4.1 Adhesion Promoter \(Glazing\)”, page 81](#) .



- ◆ Refer to
⇒ ["3.5.5 Two-Part Synthetic Adhesion Filler", page 118](#) .

3.15.4 Industrial Dirt Remover

Definition:

- ◆ Industrial Dirt Remover - ABS 600 000 10-

Edition 05/2004

Product Description

Industrial Dirt Remover - ABS 600 000 10- is used to remove surface rust (metal dust) from the vehicle body. The product is used undiluted.



Caution

The product contains organic and inorganic acids.

Protective gloves and glasses must be worn when handling this product!

Application Instructions



Note

- ◆ *Before starting to apply, it is necessary to read the safety measures and advice in the safety data sheet.*
- ◆ *Even for products which are not required to be labeled by law, the usual safety measures must be observed for chemical emissions.*

Application/Processing

During application, observe the following:

- ◆ The temperature of the cleaner and vehicle body must not exceed 25 °C (77 °F) (do not expose the vehicle and product to direct sunlight).
- ◆ After washing the vehicle, the product is applied to the vehicle body using a brush or sponge. Let the product work for approximately 10 minutes (do not increase the exposure time, otherwise the paint or plastic parts may corrode). Do not dry the product.
- ◆ Rinse and wash the body/vehicle with plenty of water.
- ◆ If the vehicle is still not clean after one use, repeat the cleaning procedure.

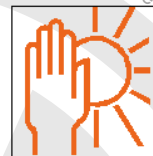
Characteristics

Chemical composition	Highly-effective cleaning combination out of organic and inorganic acids, surface-active agents and water.
Color	Water-clear, transparent/clear, colorless fluid
pH value	1
Density at 15 °C (59 °F)	EN ISO 12185 1.076 ± 0.015 g/ml



Storage

The guaranteed shelf life of 36 months from date of manufacture.
Use no later than the date indicated on the label and store in original container at +15 to +30 °C (59 and 86 °F).



P00-10050

3.16 SprayMax System

⇒ [“3.16.1 One-Part Anti-Corrosion Primer”, page 263](#)

⇒ [“3.16.2 One-Part Test Paint”, page 266](#)

⇒ [“3.16.3 One-Part Clear Coat”, page 268](#)

⇒ [“3.16.4 One-Part Wash Primer”, page 271](#)

⇒ [“3.16.5 One-Part Clean Spray Can LLS MAX 099 , LLS MAX 100 , Aquaplus System”, page 274](#)

⇒ [“3.16.6 One-Part Clean Spray Can LLS MAX 112 , Aqua Premium System”, page 280](#)

⇒ [“3.16.7 Two-Part Filler”, page 287](#)

⇒ [“3.16.8 Two-Part Clear Coat”, page 293](#)

⇒ [“3.16.9 Two-Part Epoxy Primer Filler”, page 297](#)

⇒ [“3.16.10 Two-Part Wash Primer”, page 302](#)

⇒ [“3.16.11 Silicone Remover LLS MAX 007 ”, page 306](#)

⇒ [“3.16.12 Silicone Remover, Long LLS MAX 008 ”, page 309](#)

⇒ [“3.16.13 Blender”, page 310](#)

⇒ [“3.16.14 Bonding Agent”, page 312](#)

3.16.1 One-Part Anti-Corrosion Primer

Definition:

- ◆ One-Part Anti-Corrosion Primer - LLS MAX 003 M2- , reddish brown

Edition 03/2013

Product Description

The One-Part Anti-Corrosion Primer - LLS MAX 003 M2- is a zinc chromate-free single-compound product from the PVB system.

It can be used as a wash primer for all conventional metallic base surfaces.

For work safety, wear appropriate, personal protective equipment.

Properties:

- ◆ Good corrosion protection properties
- ◆ Easy handling (one-part material)



Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Bare sheet steel, sanded
- ◆ Cleaned and sanded, galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Thoroughly sanded old primer or factory primer (excluding thermoplastic coating)
- ◆ Original replacement primer, sanded
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



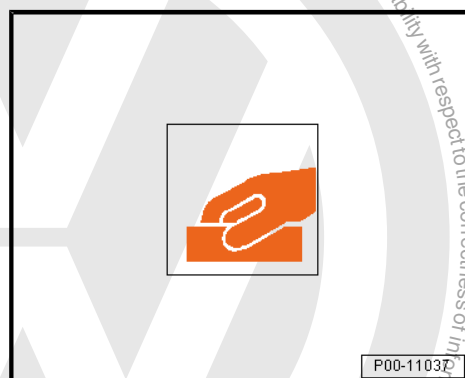
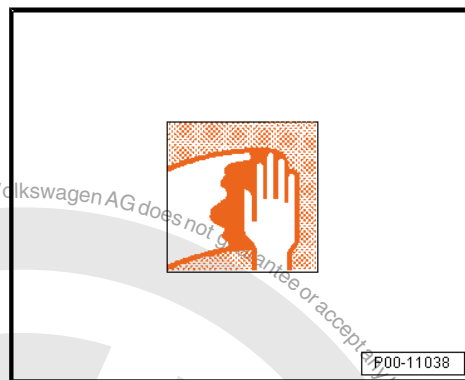
Note

Because of the wide variety of alloys and manufacturing processes for metals, the base surface must first be tested to ensure that the pre-treatment provides sufficient adhesion.

Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .

- Sand the factory- or old paint.
- Thoroughly remove any potential rust spots and sand any transitions to old paint.
- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

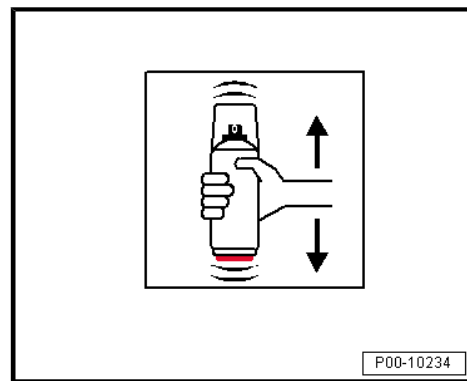




Processing

Application:

- Shake the can thoroughly for two minutes.

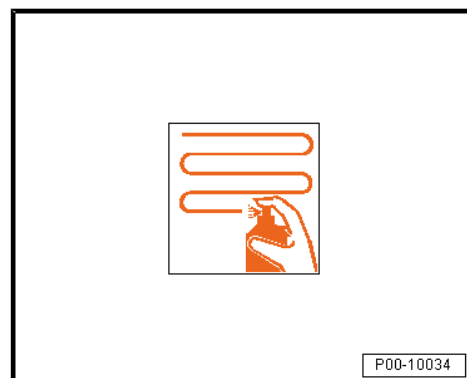


Application type "coat"

- Apply two spray applications with a 5 to 10 minute intermediate ventilation time.

Spraying distance:

- Maintain a distance of 20 to 25 cm.
- The recommended dry layer thickness is between 15 and 20 µm.

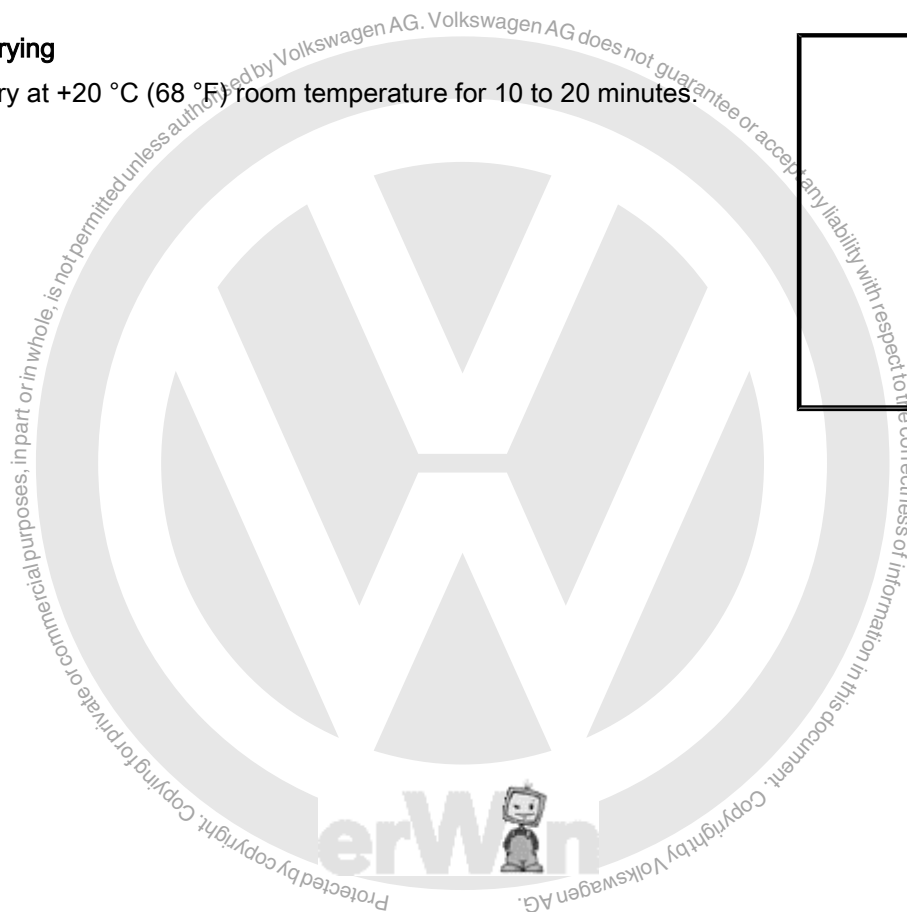
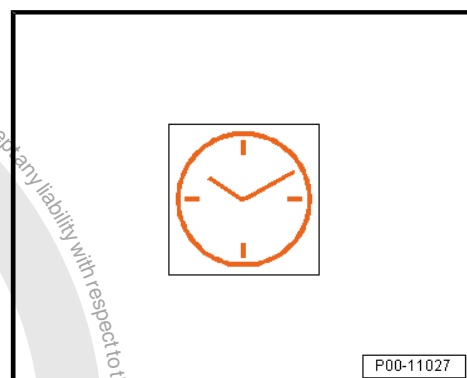


Note

If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.

Drying

Dry at +20 °C (68 °F) room temperature for 10 to 20 minutes.





Reworking

Can be painted over with:

- ◆ Two-part HS filler (for application, see the respective ATI)
- ◆ Two-part HS top coats
- ◆ Water-based base paint and two-part HS clear coat



Note

- ◆ Do not rework with polyester products and epoxy products.
- ◆ Do not apply to thermoplastic coatings.
- ◆ Do not directly rework with water-based base paint.



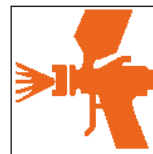
Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.



P00-11029

Characteristics

VOC value: 2004/42/IIIB (e)(840)690	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 690 g/L.
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Storage

The guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.16.2 One-Part Test Paint

Definition:

- ◆ One-Part Test Paint - LLS MAX 005- , black

Edition 10/2008

Product Description

The One-Part Test Paint - LLS MAX 005- is a single-compound product from the NC resin combinations.

Properties:



- ◆ Easy application (one-part material)
- ◆ Dries quickly
- ◆ High yield
- ◆ High covering capacity
- ◆ Even application
- ◆ Easy to sand

Application Instructions

Application

Detecting uneven surfaces in primer- and filler base surfaces

Base Surface

Suitable base surfaces:

- ◆ All primers unsanded
- ◆ All applied fillers unsanded

Pre-treatment of base surfaces:

- Carefully clean using the Silicone Remover - LLS MAX 007- or Silicone Remover, Long - LLS MAX 0008- .



P00-11038

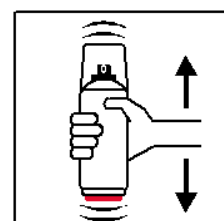
Processing

For work safety, wear appropriate, personal protective equipment.

- ◆ Latex or nitrile protective gloves, for example
- ◆ Breathing mask, for example type A2/P2

Application:

- Thoroughly shake the can for at least two minutes and perform a short "spray test".



P00-10234

Application type "coat"

- Apply one misty, thin and even spray application.
- The recommended dry layer thickness is 15 µm.

Spraying distance:

- Maintain a distance of 20 to 25 cm.



Note

If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.



P00-10034



Drying

Dry at +20 °C (68 °F) room temperature for 10 minutes. IR drying is possible with this product.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.



P00-11027

Characteristics

Solid matter content	approximately 16 %
Yield	Approximately 0.5 m ² /spray can with 30 to 40 µm dry layer thickness
Note	Used only by a professional
VOC value	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 650 to 693 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 260 to 277 g/can.

Storage

The guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.16.3 One-Part Clear Coat

Definition:

- ◆ One-Part Clear Coat - LLS MAX 010-

Edition 10/2008

Product Description

The One-Part Clear Coat - LLS MAX 010- is a single-compound product. The raw material base is acrylic resin.

Properties:

- ◆ Easy application (one-part material)
- ◆ Dries quickly
- ◆ High gloss
- ◆ Universal usage



- ◆ Easy polishing

Application Instructions

Application

Repair work and partial painting

Base Surface

Suitable base surfaces:

- ◆ Solvent or water-based base paints
- ◆ The base paint can be painted over with One-Part Clear Coat - LLS MAX 010- after 30 minutes.

Pre-treatment of base surfaces:

- The base surface must be free of dust and grease.

Processing

For work safety, wear appropriate, personal protective equipment.

- ◆ Latex or nitrile protective gloves, for example
- ◆ Breathing mask, for example type A2/P2

Application:

- Thoroughly shake the can for at least two minutes and perform a short "spray test".

Application type "coat"

- Apply two to three spray applications with a 5 to 10 minute intermediate ventilation time.
- The recommended dry layer thickness is between 30 and 40 µm.

Spraying distance:

- Maintain a distance of 20 to 25 cm.

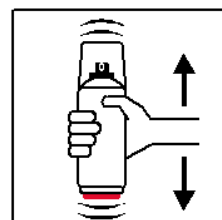


Note

If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.



P00-11038



P00-10234



P00-10034



Drying

Air drying at +20 °C (68 °F) room temperature is:

- ◆ Dust dry after 10 minutes
- ◆ Firm coating after 20 minutes
- ◆ Polishable after 12 hours

IR drying is possible with this product. With short-wave heater, the IR drying is seven minutes.

Further Processing

- The One-Part Clear Coat - LLS MAX 010- can be polished after 12 hours of air drying at +20 °C (68 °F) room temperature using a commercially available polish.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.

Characteristics

Solid matter content	20% by weight
Yield	Approximately 0.5 m ² to 075 m ² /spray can with 30 - 40 µm dry layer thickness
Gloss level	90 units (60° measurement geometry)
Note	Used only by a professional
VOC value:	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 629 g/L volatile organic compounds. The VOC value of this product in ready-to-use form is a maximum of 252 g/can.

Storage

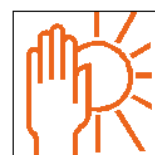
The guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-11027



P00-11028



P00-10050



3.16.4 One-Part Wash Primer

Definition:

- ◆ One-Part Wash Primer - LLS MAX 106 M2- , light gray
- ◆ One-Part Wash Primer - LLS MAX 107 M2- , dark gray

Edition 03/2013

Product Description

The One-Part Wash Primer - LLS MAX 106/107 M2- are zinc chromate-free single-compound products from the PVB system.

It can be used as a wash primer for all conventional metallic base surfaces.

For work safety, wear appropriate, personal protective equipment.

Properties:

- ◆ Good corrosion protection properties
- ◆ Easy handling (one-part material)
- ◆ Available in two shades of gray

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Bare sheet steel, sanded
- ◆ Cleaned and sanded, galvanized/electrolytically zincd sheet steel or soft aluminum
- ◆ Thoroughly sanded old primer or factory primer (excluding thermoplastic coating)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



Note

Because of the wide variety of alloys and manufacturing processes for metals, the base surface must first be tested to ensure that the pre-treatment provides sufficient adhesion.

Pre-treatment of base surfaces:

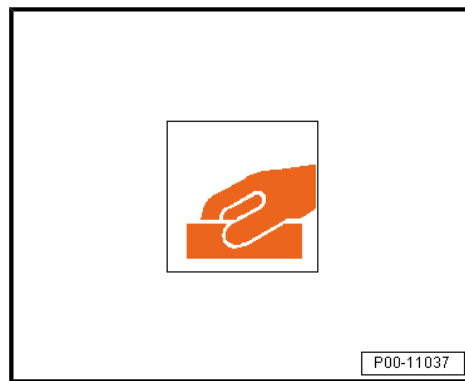
- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover Long - LVM 020 100 A5- .



P00-11038



- Sand the factory- or old paint.
- Thoroughly remove any potential rust spots and sand any transitions to old paint.



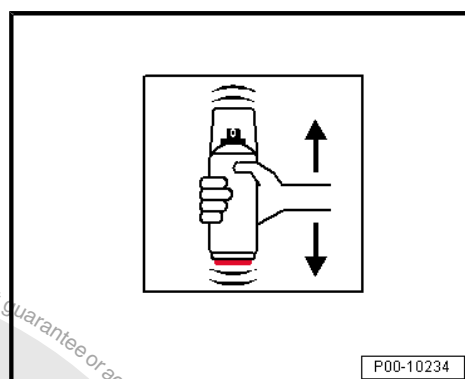
- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Processing

Application:

- Shake the can thoroughly for two minutes.





Application type "coat"

- Apply one to three spray applications with a 5 to 10 minute intermediate ventilation time.

When using as wash primer:

- Apply one to two spray applications with a 5 to 10 minute intermediate ventilation time.

Spraying distance:

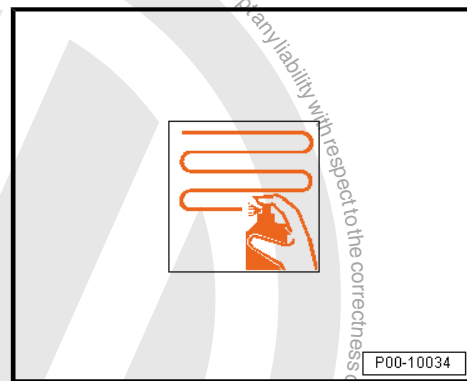
- Maintain a distance of 20 to 25 cm.
- The recommended dry layer thickness is between 10 and 20 µm.

Insulating Small, Sanded-Through Areas (No Larger Than 5.0 cm):



Note

- ◆ *Water-based base paints or two-part HS top coats may only be applied using wet-in-wet and intermediate sanding processes on the one-part wash primer if the sanded-through area is not larger than 5.0 cm. Application occurs in one to three spray applications with a 10-40 µm dry layer thickness.*
- ◆ *If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.*

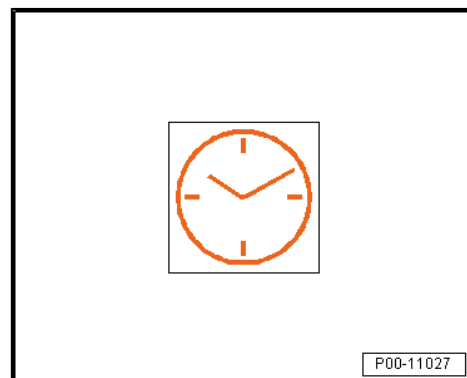


Drying

Dry at +20 °C (68 °F) room temperature for 10 to 20 minutes. The material can be sanded after 45 to 60 minutes.

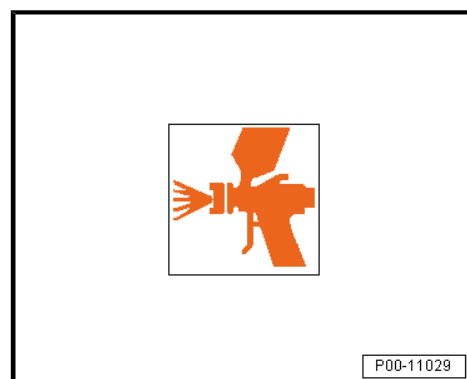
Can be painted over with:

- ◆ Two-part acrylic filler after 10 to 15 minutes.
- ◆ Two-part HS top coat after 10 to 15 minutes (only for small, sanded-through areas).
- ◆ Water-based base paint after 20 to 30 minutes (only for small, sanded-through areas).



Reworking

1. - Using as a wash primer to be able to paint over with two-part HS filler.
2. - Using as a wash primer to insulate small, sanded-through areas:





- Wet-sand with P 800-1000 grit sandpaper

Can be painted over with:

- ◆ Two-part HS top coat (for small sanded-through areas only)
- ◆ Water-based base paint and two-part HS clear coat (for small sanded-through areas only)



Note

- ◆ Do not rework with polyester products and epoxy products.
- ◆ Do not apply to thermoplastic coatings.
- ◆ Do not dry-sand.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.



P00-11041

Characteristics

VOC value: 2004/42/IIIB (e)(840)690	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 690 g/L.
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Storage

The guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.16.5 One-Part Clean Spray Can - LLS MAX 099- , -LLS MAX 100- , Aquaplus System

Definition:

- ◆ One-Part Clean Spray Can - LLS MAX 099- , 250 ml (8.45 oz) for Water-Based Mixed Paint "Aquaplus System"
- ◆ One-Part Clean Spray Can - LLS MAX 100- , 400 ml (13.5 oz) for Water-Based Mixed Paint "Aquaplus System"



Edition 09/2013

Product Description

These products include a paint spray nozzle prefilled with a propellant gas- and solvent combination which is particularly compatible with the "Aquaplus System" and "Aqua Premium System".

Only use the Fill-Clean Filling Device for filling.

Application area: exclusively clever repair

Handling Instructions

This product includes a paint spray nozzle prefilled with propellant gas- and solvent combination which is particularly compatible with the "Aquaplus System" and "Aqua Premium System".

This can contains no paint material. It is a half-finished product.

The processible end product is formed by adding in 100mL of undiluted Aquaplus or Aqua Premium base paint using the Fill-Clean Filling Device designed for this purpose.

When using ready-made and paint-filled spray cans, re-label it before using. This can be carried out, for example, by using a color label that is produced by the mixing bench formula range and printed out.

Make sure that, the information indicated in the following example is present on the label.

- ◆ The contents of 316 mL (0.32 L) (10.6 oz) on the label correspond to a filled spray can.
- ◆ It is pre-filled with 216 mL (7.3 oz) propellant gas and solvent, as well as 100 mL (3.38 oz) of subsequently added Aquaplus or Aqua-Premium base paint including Additive for Aqua Premium - LVM 035 200- or Additive for Aqua Premium - LVM 035 301-



Note

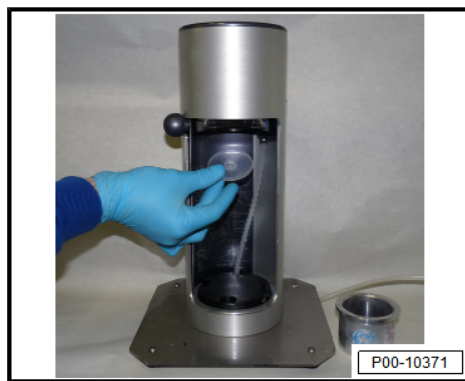
- ◆ *For work safety, wear appropriate, personal protective equipment.*
- ◆ *Set up the device in a well-ventilated room.*
- ◆ *Do not fill the filling cans above their maximum capacity. There is a risk of explosion!*
- ◆ *Never use poisonous, carcinogenic materials or halogenated hydrocarbons to fill the spray can.*
- ◆ *Caution: electrostatic charge Only clean the plastic parts with a moist cloth.*
- ◆ *All repair work must be performed by a qualified professional.*
- ◆ *Paint residue should be removed from the device regularly with a cloth and appropriate cleaning solution.*
- ◆ *Routinely check the condition of the compressed air supply line.*

Clean Filling Procedure

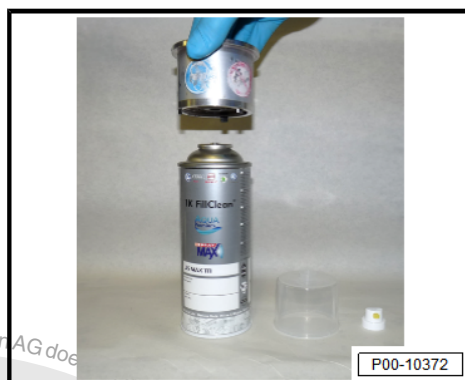
Observe the operating instructions for the filling device.



- Set the filling pad on the pressing stamp.



- Set the Fill-Clean Filling cylinder on the spray can.



- Position/press the Fill-Clean cap.



- Fill with paint



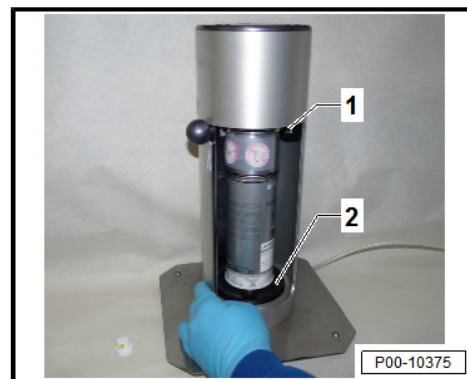


- Insert the Fill Clean can with the loaded filling cylinder into the upper groove -1- of the Fill Clean device.

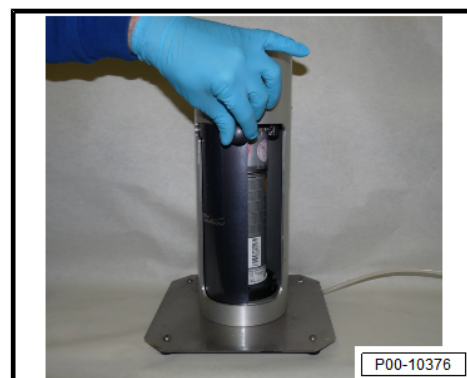


Note

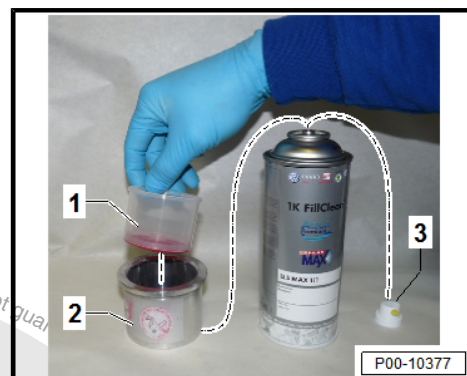
When inserting the Fill Clean can into the upper groove -1-, the lower turntable -2- must first be at the very bottom. If the Fill Clean can is in the upper groove -1-, turn the turntable -2- as a counterhold upward.



- Slide the cover with the button to the right to release the contents. Duration: approximately 10 seconds.



- Remove the filling cylinder -2- from the Fill-Clean can after filling.
- Remove the Fill-Clean cap -1- from the filling cylinder -2-.
- Position the spray head -3- on the Fill Clean can.



- The pad remains in the Fill Clean cap for color orientation.
- The Fill Clean can is now ready for use.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Two-Part HS Filler
- ◆ Intact old paint
- ◆ One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-
- ◆ Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2-
- ◆ For plastic surfaces, refer to ¹⁾





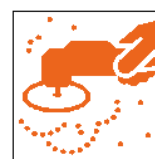
Pre-treatment of base surfaces:

- Thoroughly clean the factory- or old paint or two-part HS filler using Silicone Remover - LSW 019 000 A5- , or beforehand with Silicone Remover, Long - LVM 020 100 A5- if very dirty.



P00-11038

- Dry-sand with rotary sander and dust extraction (P 400 to 500 grit).



P00-11040

- Or wet-sand with P 800-1000 grit sandpaper



P00-11041

- Before reworking the sanded base surfaces, thoroughly clean them of dust, sanding residue and other dirt with Silicone Remover - LSW 019 000 A5-

1) Special Instructions:

- ◆ Wipe off any excess silicone remover with a lint-free cloth, leaving no streaks, refer to the technical application information here, refer to ⇒ [“3.15.1 Silicone Remover”, page 259](#) .
- ◆ Sanded-through areas must be primed with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .
- ◆ The sanded-through areas must not be larger than 5.0 cm.
- ◆ When using the two-part HS filler, any bare areas must be primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .
- ◆ It is recommended to create a spray test sample before processing.



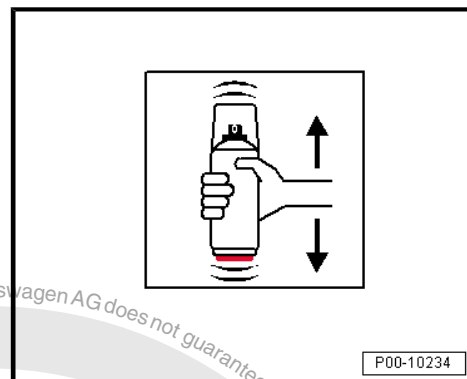
P00-11038



Processing

Application:

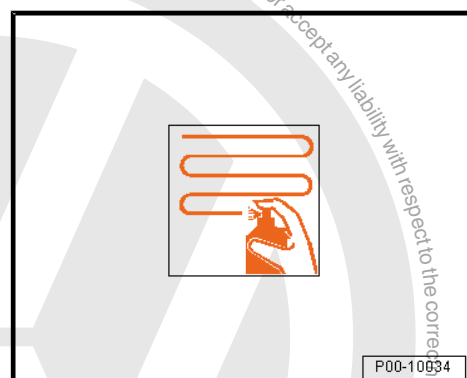
- Shake the can thoroughly for at least two minutes to ensure a proper mixing.



Application type "coat"

Spraying distance:

- Maintain a distance of 20 to 25 cm.
- The recommended dry layer thickness is between 15 and 20 µm.

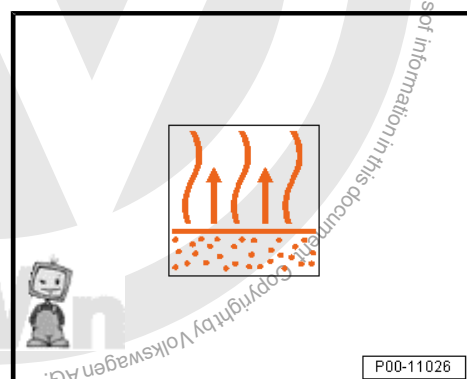


- Apply two spray applications (one normal application + one finish/effect spray application) with 5 to 10 minutes intermediate ventilation time.



Note

- ◆ For colors with poor covering properties, it may be necessary to apply another spray application (wet in wet).
- ◆ Alternatively, it can be ventilated to form a matte finish in-between spray applications.
- ◆ Make sure after ending or interrupting a spray application that the valve above the spray head is empty to prevent any nozzle blockage.





Drying

Dry at +20 °C (68 °F) room temperature for 15 to 30 minutes.
Important: allow to ventilate until matted.

Can be painted over with:

- ◆ Two-part HS clear coat (see data sheet of the respective product).
- ◆ Two-Part Clear Coat - LLS MAX 210- (reworking with other two-part HS clear coats is possible)



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

After filling shake the can for approximately two minutes.

Before applying shake the can for approximately two minutes.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.



P00-11027

Characteristics

VOC value: 2004/42/IIIB (e)(840)690	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 690 g/L.
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Storage

The guaranteed shelf life for pre-filled spray cans only is 24 months.

The guaranteed shelf life for spray cans filled with paint is four weeks.



P00-10050

3.16.6 One-Part Clean Spray Can - LLS MAX 112- , Aqua Premium System

- ◆ One-Part Clean Spray Can - LLS MAX 112- , 400 ml (13.52 oz) for Water-Based Mixed Paint "Aqua Premium System"

Edition 05/2014

Product Description

These products include a paint spray nozzle prefilled with a propellant gas- and solvent combination which is particularly compatible with the "AquaPlus System" and "Aqua Premium System".

Only use the Fill-Clean Filling Device for filling.

Application area: exclusively clever repair



Handling Instructions

This product includes a paint spray nozzle prefilled with propellant gas- and solvent combination which is particularly compatible with the "Aquaplus System" and "Aqua Premium System".

This can contains no paint material. It is a half-finished product.

The processible end product is formed by adding in 100mL of undiluted Aquaplus or Aqua Premium base paint using the Fill-Clean Filling Device designed for this purpose.

When using ready-made and paint-filled spray cans, re-label it before using. This can be carried out, for example, by using a color label that is produced by the mixing bench formula range and printed out.

Make sure that, the information indicated in the following example is present on the label.

Contents and Prefilling

- ◆ The contents of 316 mL (0.32 L) (10.68 oz) on the label correspond to a filled spray can.
- ◆ It is pre-filled with 294 mL (9.94 oz) propellant gas and solvent, as well as 100 mL (3.38 oz) of subsequently added spray ready Aqua-Premium base paint including Additive for Aqua Premium - LVM 035 200- or Additive for Aqua Premium - LVM 035 301-



Note

- ◆ *For work safety, wear appropriate, personal protective equipment.*
- ◆ *Set up the device in a well-ventilated room.*
- ◆ *Do not fill the filling cans above their maximum capacity. There is a risk of explosion!*
- ◆ *Never use poisonous, carcinogenic materials or halogenated hydrocarbons to fill the spray can.*
- ◆ *Caution: electrostatic charge Only clean the plastic parts with a moist cloth.*
- ◆ *All repair work must be performed by a qualified professional.*
- ◆ *Paint residue should be removed from the device regularly with a cloth and appropriate cleaning solution.*
- ◆ *Routinely check the condition of the compressed air supply line.*

Mixing Instructions for "Aqua Premium System"

Mixing vessels:	Plastic containers or tin-coated cans painted on the inside
Strainers:	Waterproof-glued or waterproof 125 µm strainer
Additive:	Additive for Aqua Premium - LVM 035 200/300/301- (at a normal/high temperature and low humidity depending on the respective object size)
Curing Time:	Process within 24 hours if possible after adding LVM 035 200/301 additive for Aqua Premium.

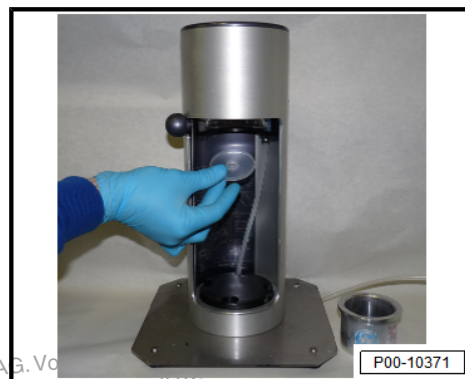


Additive at 20 °C (68 °F) material temperature:	20 % Additive for Aqua Premium - LVM 035 200/300/301-
Special instructions for:	Recommendations for solid colors: For the best possible reliable application it is recommendation to always use Additive for Aqua Premium - LVM 035 301- .

Clean Filling Procedure

Observe the operating instructions for the filling device.

- Set the filling pad on the pressing stamp.



- Set the Fill-Clean Filling cylinder on the spray can.



- Position/press the Fill-Clean cap.





- Fill with paint.

Insert the Fill Clean can with the loaded filling cylinder into the upper groove -1- of the Fill Clean device.

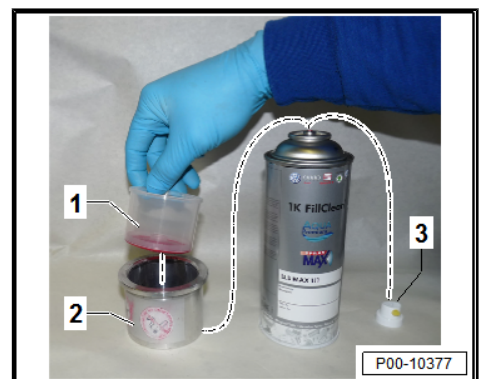
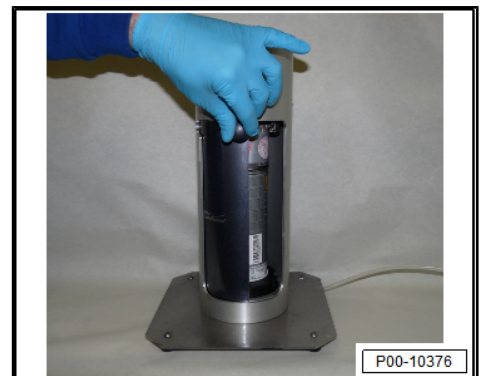
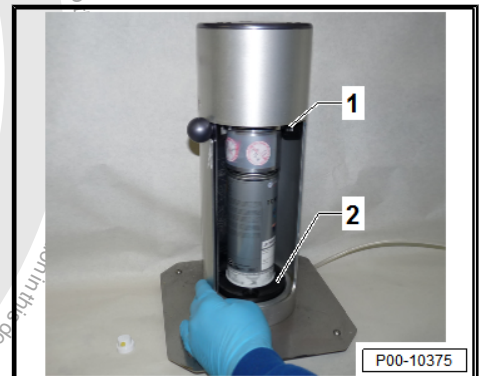
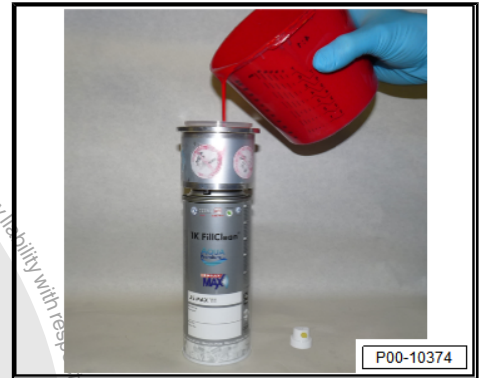


Note

When inserting the Fill Clean can into the upper groove -1-, the lower turntable -2- must first be at the very bottom. If the Fill Clean can is in the upper groove -1-, turn the turntable -2- as a counterhold upward.

- Slide the cover with the button to the right to release the contents. Duration: approximately 10 seconds.

- Remove the filling cylinder -2- from the Fill-Clean can after filling.
- Remove the Fill-Clean cap -1- from the filling cylinder -2-.
- Position the spray head -3- on the Fill Clean can.





- The pad remains in the Fill Clean cap for color orientation.
- The Fill Clean can is now ready for use.

Application Instructions

Base Surface

Suitable base surfaces:

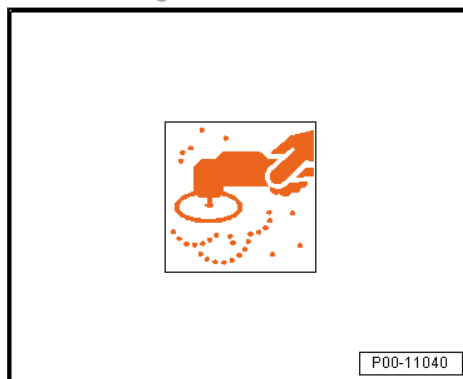
- ◆ Two-Part HS Filler
- ◆ Intact old paint
- ◆ One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-
- ◆ Two-Part Plastic Adhesive Filler - LKF 696 009 A2- / -LKF 696 040 A2-
- ◆ For plastic surfaces, refer to ²⁾

Pre-treatment of base surfaces:

- Thoroughly clean the factory- or old paint or two-part HS filler using Silicone Remover - LSW 019 000 A5- , or beforehand with Silicone Remover, Long - LVM 020 100 A5- if very dirty.

- Dry-sand with rotary sander and dust extraction (P 500 grit).

- Or wet-sand with P 800-1000 grit sandpaper





- Before reworking the sanded base surfaces, thoroughly clean them of dust, sanding residue and other dirt with Silicone Remover - LSW 019 000 A5-

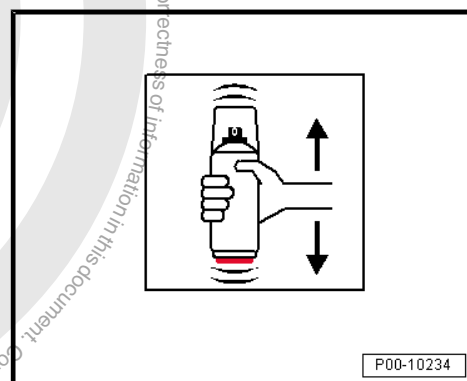
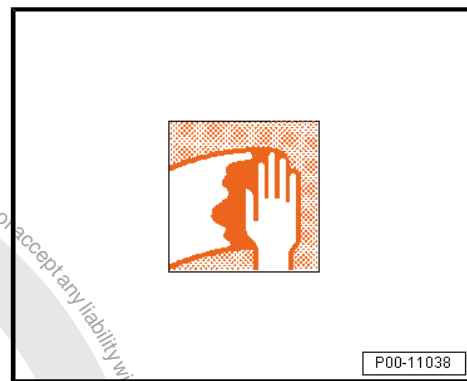
2) Special Instructions:

- ◆ Wipe off any excess silicone remover with a lint-free cloth, leaving no streaks, refer to the technical application information here, refer to ⇒ ["3.15.1 Silicone Remover", page 259](#) .
- ◆ Sanded-through areas must be primed with One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .
- ◆ The sanded-through areas must not be larger than 5.0 cm.
- ◆ When using the two-part HS filler, any bare areas must be primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2- .
- ◆ It is recommended to create a spray test sample before processing.

Processing

Application:

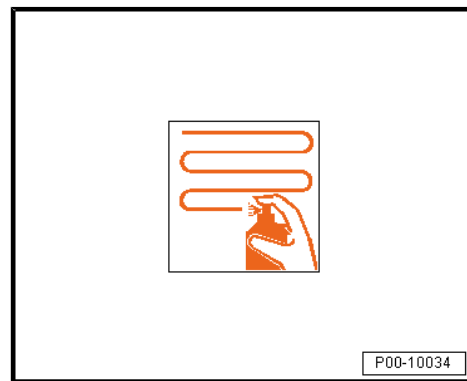
- Shake the can thoroughly for at least two minutes to ensure a proper mixing.



Application type "coat"

Spraying distance:

- Maintain a distance of 20 to 25 cm.
- The recommended dry layer thickness is between 15 and 20 µm.



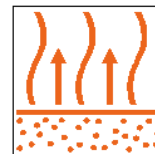


- Apply two spray applications (one normal application + one finish/effect spray application) with 5 to 10 minutes intermediate ventilation time.
- The recommended dry layer thickness is approximately 15 to 20 µm.



Note

- ◆ For colors with poor covering properties, it may be necessary to apply another spray application (wet in wet).
- ◆ Alternatively, it can be ventilated to form a matte finish in-between spray applications.
- ◆ Make sure after ending or interrupting a spray application that the valve above the spray head is empty to prevent any nozzle blockage.



P00-11026

Drying/Reworking

The drying/ventilation time for clear coat application is at +20 °C (68 °F) room temperature for 15 to 30 minutes. Important: allow to ventilate until matted.

Can be painted over with:

- ◆ Two-part HS clear coat (see data sheet of the respective product).
- ◆ Two-Part Clear Coat - LLS MAX 210- (reworking with other two-part HS clear coats is possible)



P00-11027



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

After filling shake the can for approximately two minutes.

Before applying shake the can for approximately two minutes.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.

Characteristics

VOC value: 2004/42/IIB (e)(840)690	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 690 g/L.
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Storage

The guaranteed shelf life for pre-filled spray cans only is 24 months.

The guaranteed shelf life for spray cans filled with paint is one week.



P00-10050

3.16.7 Two-Part Filler

Definition:

- ◆ Two-Part Filler - LLS MAX 202 M2-, medium gray

Edition 03/2013

Product Description

The Two-Part Filler - LLS MAX 202 M2-, (medium gray) is a high-quality two-part HS sanding filler. The raw material base is acrylic resin.

Properties:

- ◆ Constant atomizing pressure
- ◆ Aerosol distribution
- ◆ Long curing time
- ◆ Optimal and stable processing properties
- ◆ Great stability under load
- ◆ Sands well
- ◆ High yield
- ◆ Excellent high-build characteristics
- ◆ Application area: clever repair
- ◆ Professional painting result



Note

For work safety, wear appropriate, personal protective equipment.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Sheet steel that has been cleaned, sanded and primed with Two-Part Wash Primer - LHV 043 000 A2- or One-Part Wash Primer - LVM 044 007 A2- / -LVM 044 171 A2-, galvanized/ electrolytically zined sheet steel or soft aluminum.
- ◆ Finely sanded, thoroughly cleaned, original factory primer.
- ◆ Sanded factory paint or old paint (except TPA).
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



- ◆ Cleaned and sanded UP-GF base surfaces, free of separating agents.

Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

- Sand the factory- or old paint.
- Thoroughly remove any potential rust spots and sand any transitions to old paint.



P00-11037

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

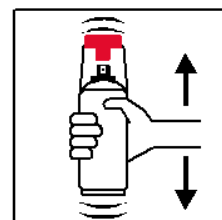


P00-11038

Processing

Activating the Two-Part Spray Can:

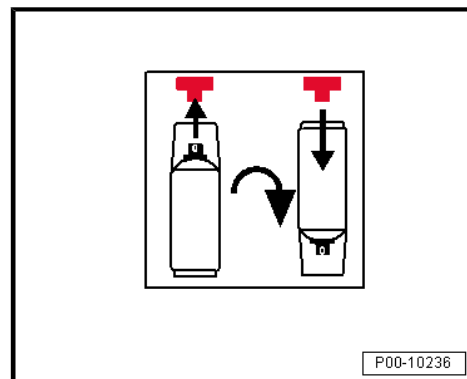
- Shake before using.



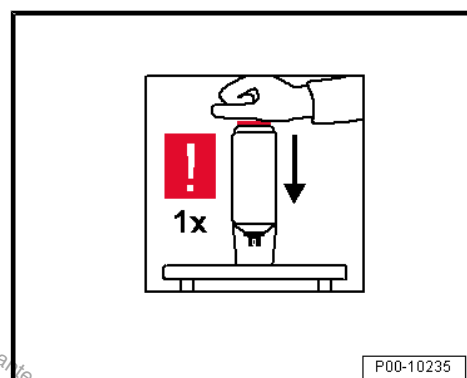
P00-10237



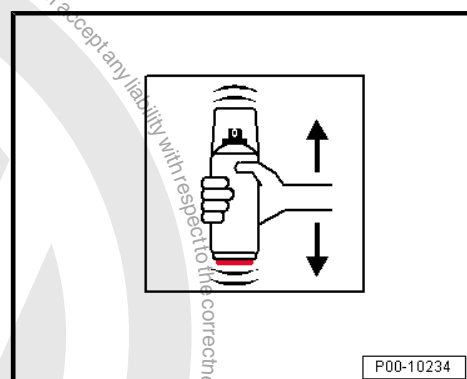
- Remove the red push button of the cap and set it on the valve for the hardener mixture on the bottom of the can.



- Press in the valve for the hardener mixture. Make sure when pressing down the valve for the hardener mixture that the can is upside down.

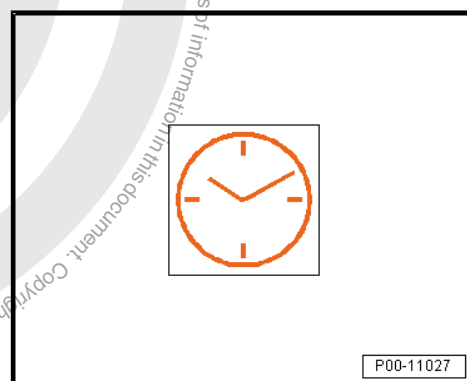


- Shake the can thoroughly for two minutes.



Processing time/pot life:

- Eight hours at +20 °C (68 °F)





Application type "coat"

- Apply two to three spray applications to cover with a 5 to 10 minute intermediate ventilation time.

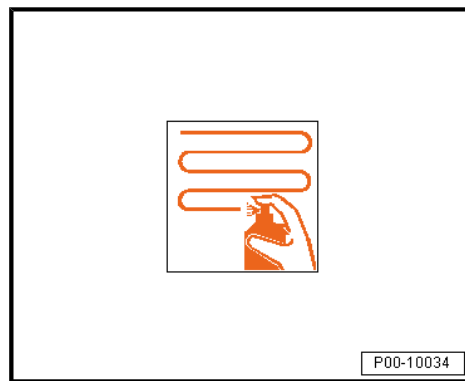
Spraying distance:

- Maintain a distance of 20 to 25 cm.
- The recommended dry layer thickness is approximately 80 to 120 µm.



Note

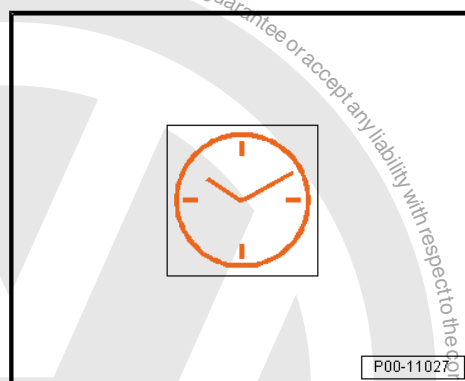
If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.



Drying

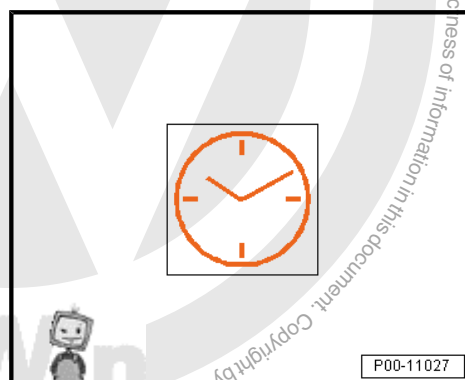
Air drying at +20 °C (68 °F) room temperature is:

- ◆ Three to four hours for a dry layer thickness of 80 to 120 µm.

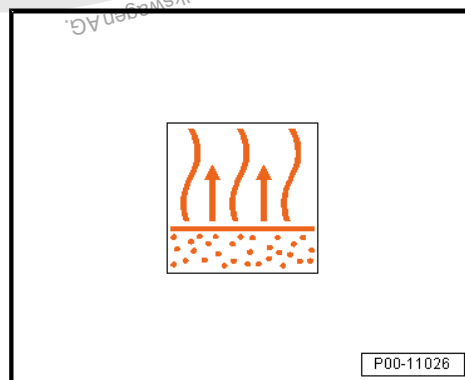


The drying time with forced drying is at least 5 to 15 minutes.

Forced drying at +60 °C (68 °F) object temperature is 30 to 40 minutes for a layer thickness of 80 to 120 µm.



The drying time for IR drying is a minimum of 5 to 10 minutes.





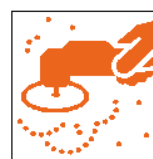
IR drying for a layer thickness of 80 to 120 µm is 10 minutes with a short-wave heater and 15 minutes with a medium-wave heater.



P00-11028

Further Processing

- Dry-sand with rotary sander and dust extraction. P400-500 grit sandpaper.

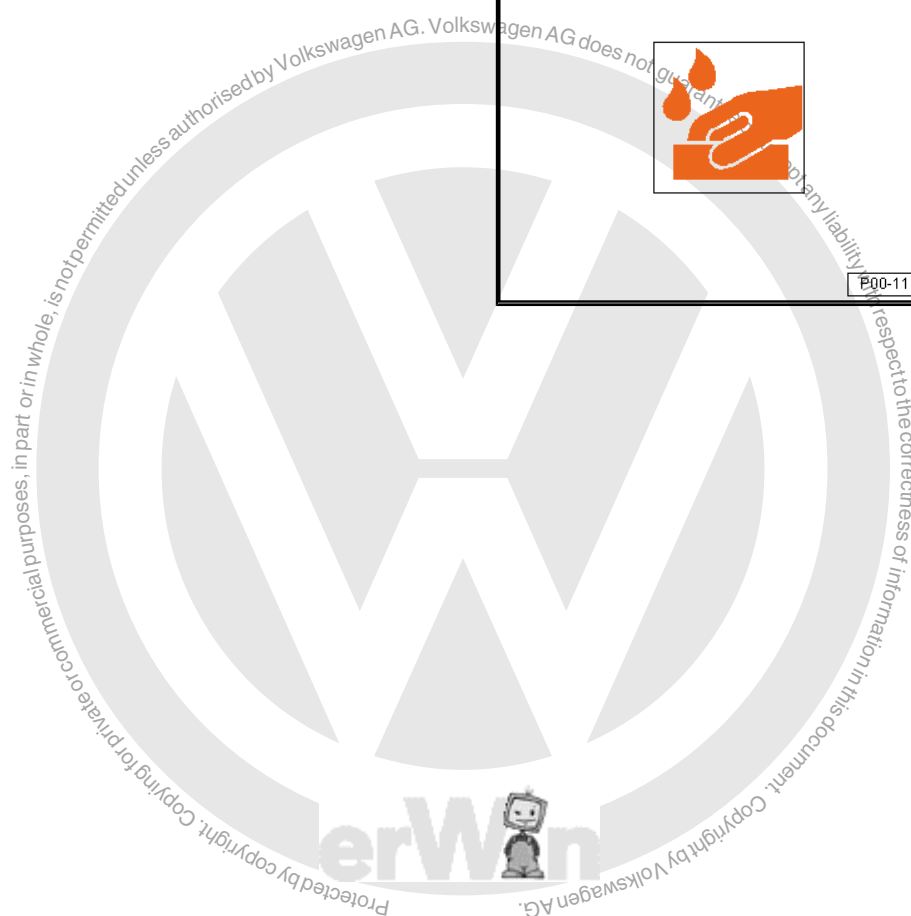


P00-11040

- Wet-sand with P800-1000 grit sandpaper



P00-11041





Reworking

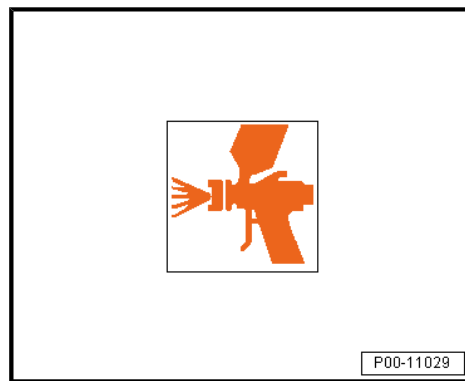
Can be painted over with:

- ◆ Two-part HS top coats
- ◆ Water-based base paint and two-part HS clear coat



Note

- ◆ Any faults in the base surface can be "filled" with two-part polyester filler.
- ◆ After drying and intermediate sanding, the filled patches can be re-insulated using Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2- or a two-part HS premium filler.
- ◆ The best insulation, even with critical surfaces, is achieved with a medium layer of 80 to 120 µm is applied in two to three spray applications, with air-drying overnight, or oven/IR drying. With critical surfaces, fine preparation is required and the parts must be evenly filled.
- ◆ The Two-Part HS Vario Filler - LGF 786 004 A4- (gray) is recommended for insulating thermoplastic coatings.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.



WARNING

- ◆ Coating materials ready for application which contain isocyanate may cause irritation to mucous membranes (especially the respiratory organs) and cause hypersensitive reactions.
- ◆ Sensitization may occur if vapors and spray mist are inhaled.
- ◆ Carefully observe all rules for working with coating materials containing solvents when working with coating materials containing isocyanate. Particular care must be taken to prevent inhalation of spray mist and vapor.
- ◆ Persons suffering from allergies, asthma or other respiratory problems should not work with coating products containing isocyanate.

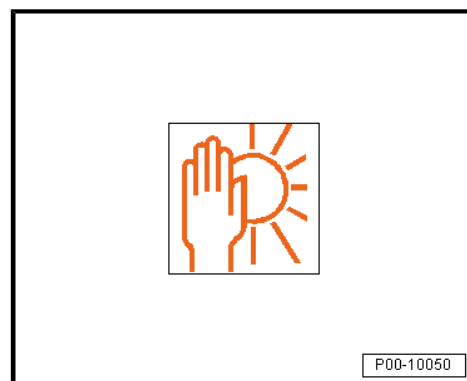
Characteristics

VOC value: 2004/42/IIB (e)(840)690	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 690 g/L.
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Storage

The guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.16.8 Two-Part Clear Coat

Definition:

- ◆ Two-Part Clear Coat - LLS MAX 210-

Edition 12/2010

Product Description

The Two-Part Clear Coat - LLS MAX 210- is a high-gloss two-component clear coat for long-lasting sealing of painted surfaces. It is specially developed for part- and repair paint jobs. This product is characterized by its resistance to weather and chemicals, an exceptional gasoline resistance and good polishability. The two-part clear coat has good flow properties and tends to be used for larger surfaces (one to two vehicle body parts). The raw material base is acrylic resin. The hardener contains isocyanate.

Properties:

- ◆ Constant atomizing pressure
- ◆ Aerosol distribution
- ◆ Excellent filling ability
- ◆ Application area: touch up in part- and repair paint job area
- ◆ Professional painting result



Note

- ◆ For work safety, wear appropriate, personal protective equipment:
- ◆ Breathing mask type: A2/P2
- ◆ Latex or nitrile protective gloves, for example

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Solvent- and water-soluble base paint systems
- ◆ Old paints, cleaned and sanded

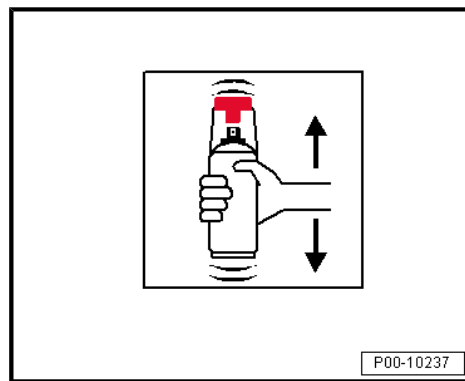
Base surface	Suitability
One-part base paint	+++
One-part water-based paint	+++
Two-part top coat	++
Old paints	+++



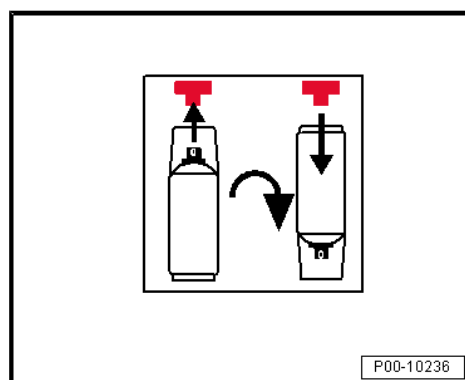
Processing

Activating the Two-Part Spray Can:

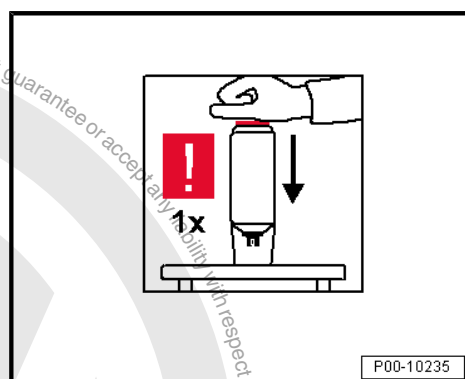
- Before activating, thoroughly shake the can for two minutes.



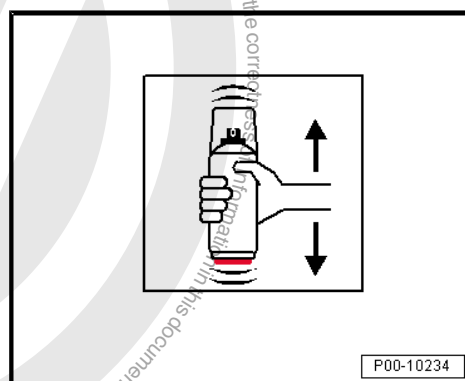
- Remove the red push button of the cap and set it on the valve for the hardener mixture on the bottom of the can.



- Press in the valve for the hardener mixture. Make sure when pressing down the valve for the hardener mixture that the can (with the cap) is upside down.



- After activating, thoroughly shake the can again for at least two minutes.





Processing time/pot life:

- 48 hours at +20 °C (68 °F)



Note

The processing time depends on the ambient temperature. Higher temperatures lead to a shortened pot life. Lower temperatures lead to a longer pot life.



P00-11027

Application type "coat"

- Apply one to two spray applications to cover (each application 30 µm) with a 10 to 15 minute intermediate ventilation time, depending on temperature.

Spraying distance:

- Maintain a distance of 20 to 25 cm.



Note

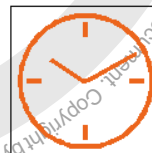
If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.



P00-10034

Drying

Air drying at +20 °C (68 °F) room temperature is 12 hours.



P00-11027

The drying time with forced drying is at least 10 to 15 minutes.

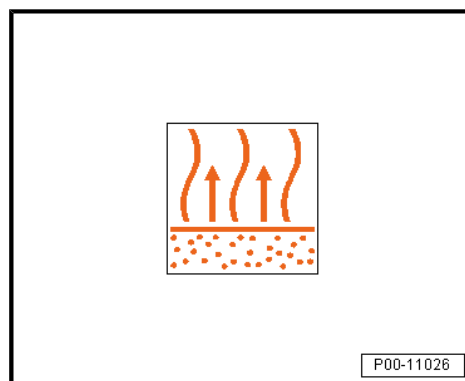
Forced drying is at +60 °C (68 °F) object temperature for 35 to 40 minutes.



P00-11027



The drying time for IR drying is a minimum of 10 to 15 minutes.



IR drying is recommended.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every subsequent spray application.

Dispose of the empty spray cans as recyclable material.



WARNING

- ◆ *Coating materials ready for application which contain isocyanate may cause irritation to mucous membranes (especially the respiratory organs) and cause hypersensitive reactions.*
- ◆ *Sensitization may occur if vapors and spray mist are inhaled.*
- ◆ *Carefully observe all rules for working with coating materials containing solvents when working with coating materials containing isocyanate. Particular care must be taken to prevent inhalation of spray mist and vapor.*
- ◆ *Persons suffering from allergies, asthma or other respiratory problems should not work with coating products containing isocyanate.*

Characteristics

Solid content:	33.8 % in relation to thinned paint
Yield:	Approximately 0.5 to 0.75 m ² /spray can with approximately 30-50 µm dry layer thickness
Gloss level:	High-gloss
VOC value:	668 g/L, 258 g/can



Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.16.9 Two-Part Epoxy Primer Filler

Definition:

- ◆ Two-Part Epoxy Primer Filler - LLS MAX 220 M1- , beige (250 ml (8.4 oz))
- ◆ Two-Part Epoxy Primer Filler - LLS MAX 220 M2- , beige (400 ml (13.5 oz))

Edition 03/2013

Product Description

The Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2- is a two-component epoxy spray can for use with small damaged areas. Do not use in areas vulnerable to stone impact.

The EP primer filler must be protected by the trim panels, body covers, wheel housing liners and UBS material in the underbody area. All difficult to reach areas must be sealed with wax underbody protection.

For work safety, wear appropriate, personal protective equipment.

Properties:

- ◆ Can be used in a number of ways
- ◆ Good corrosion protection

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Bare sheet steel, sanded
- ◆ Cleaned and sanded, galvanized/electrolytically zincd sheet steel or soft aluminum
- ◆ Well-sanded old paint or factory paint
- ◆ Original replacement primer, sanded
- ◆ Cleaned and sanded UP-GF surfaces, free of separating agents
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

- Then, sand.



P00-11037

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.



Caution

The Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2- may not be applied to PVB (acid-hardening) adhesive primers or one-part primers (for example, synthetic resin).

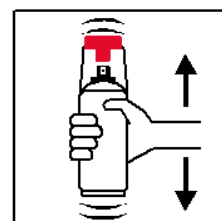


P00-11038

Processing

Application:

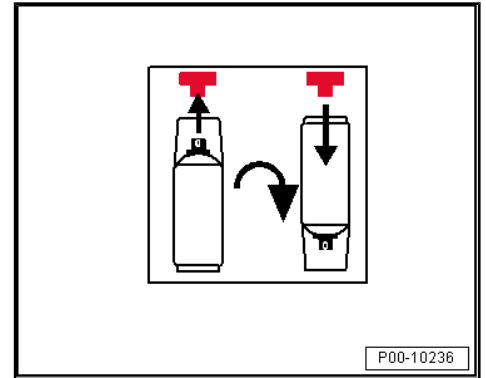
- Shake before using.



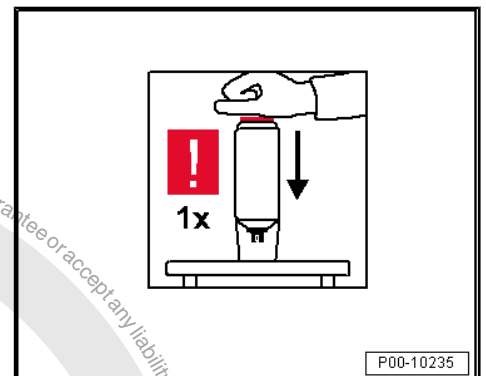
P00-10237



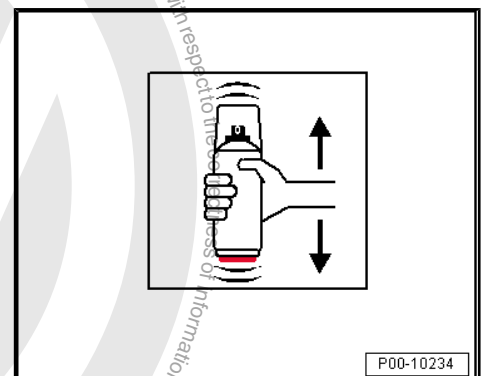
- Remove the red push button of the cap and set it on the valve for the hardener mixture on the bottom of the can.



- Press in the valve for the hardener mixture. Make sure when pressing down the valve for the hardener mixture that the can is upside down.



- Shake the can thoroughly for two minutes.



Processing time/pot life:

- Eight hours at +20 °C (68 °F)





Application type "coat"

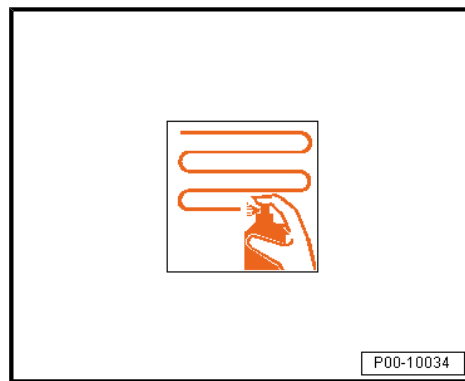
- Apply two to three spray applications with a 5 to 10 minute intermediate ventilation time.

Spraying distance:

- Maintain a distance of 20 to 25 cm.

Reaction Temperature:

- Minimum +15 °C (68 °F).
- The recommended dry layer thickness is between 50 and 70 µm.

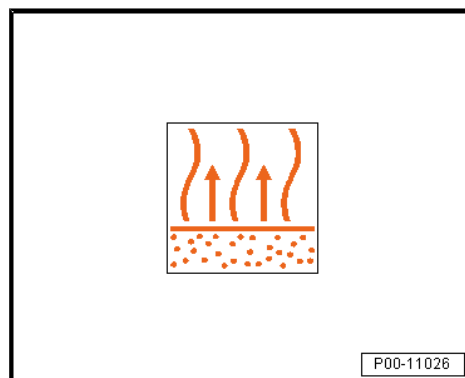


Note

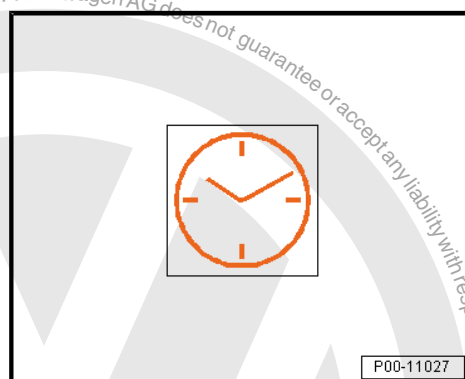
If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.

Drying

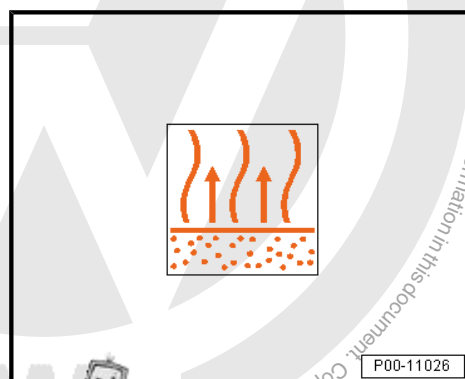
The drying time with forced drying is at least 5 to 15 minutes.



Forced drying at +60 to 65 °C (68 °F) object temperature is 40 to 45 minutes for a layer thickness of 50 to 70 µm.



The drying time for IR drying is a minimum of 10 to 20 minutes.





IR drying with a 50 to 70 µm layer thickness is 3 to 5 minutes with a short-wave heater at 50% power and then 15 to 20 minutes at 100% power.



P00-11028

Further Processing

- Dry-sand with rotary sander and dust extraction. P400-500 grit sandpaper



P00-11040

- Wet-sand with P800-1000 grit sandpaper



P00-11041



Reworking

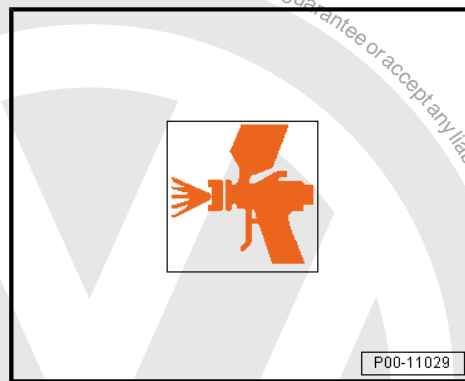
Can be painted over with:

- ◆ Two-part HS top coats
- ◆ Water-based base paint and two-part HS clear coat



Note

- ◆ Any faults in the base surface can be "filled" with two-part polyester filler.
- ◆ After drying and intermediate sanding, the filled patches can be re-insulated using Two-Part Epoxy Primer Filler - LLS MAX 220 M1/M2-.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Before processing and activating the hardener cartridge, the can must be shaken for approximately two minutes. Shake briefly again before every subsequent spray application.

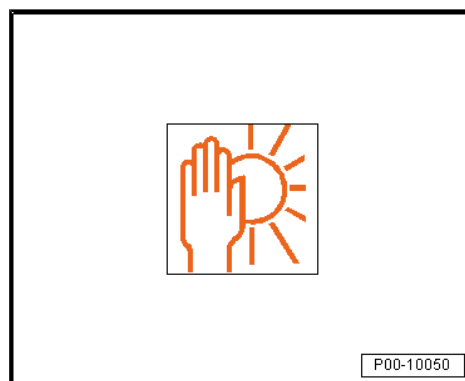
Dispose of the empty spray cans as recyclable material.

Characteristics

VOC value: 2004/42/IIIB (e)(840)650	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 650 g/L.
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Storage

The guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.16.10 Two-Part Wash Primer

Definition:

- ◆ Two-Part Wash Primer - LLS MAX 230 M1- , olive green (250 ml (8.45 oz))

Edition 12/2013

Product Description

The Two-Part Wash Primer - LLS MAX 230 M1- is a zinc chromate-free, phenol-free acid-hardening two-component wash primer.



For work safety, wear appropriate, personal protective equipment.

Properties:

- ◆ Simple processing properties
- ◆ Passivating properties provide excellent protection against corrosion.
- ◆ for metallic base surfaces
- ◆ short waiting period before recoating
- ◆ Long curing time
- ◆ Application area: exclusively for clever repair and minor repairs

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Bare sheet steel, sanded
- ◆ Cleaned and sanded, galvanized/electrolytically zined sheet steel or soft aluminum
- ◆ Thoroughly sanded old primer or factory primer (excluding thermoplastic coating)
- ◆ Surfaces prepared with two-part polyester products and then sanded very fine.



Note

Because of the wide variety of alloys and manufacturing processes for metals, the base surface must first be tested to ensure that the pre-treatment provides sufficient adhesion.

Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .

- Clean and sand factory or old paint, eliminate any potential rust areas, and sand transitions to old paint.



P00-11038



P00-11037



- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

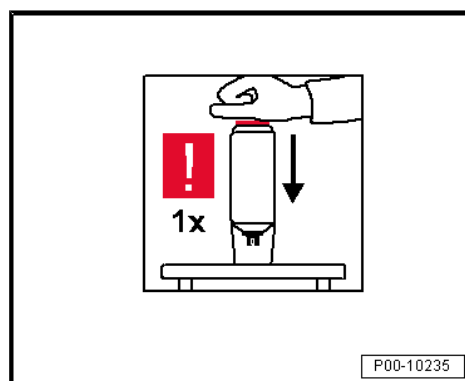
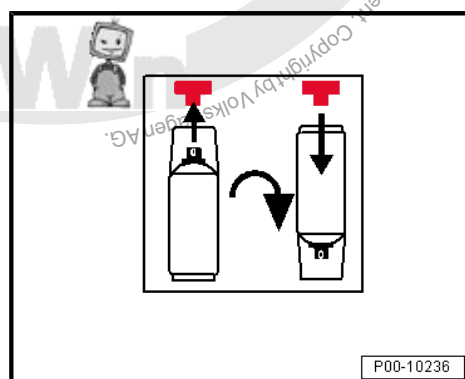
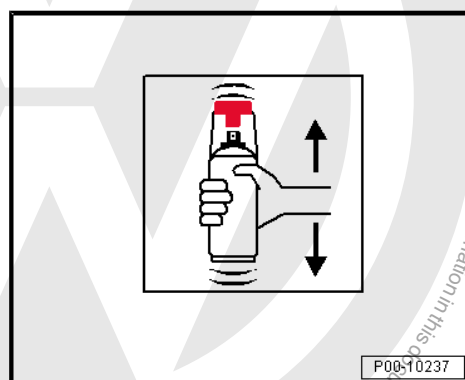
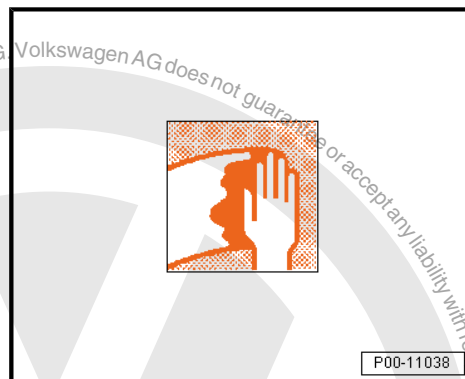
Processing

Application:

- Shake the spray can thoroughly before activating the hardener in order to ensure proper mixing.

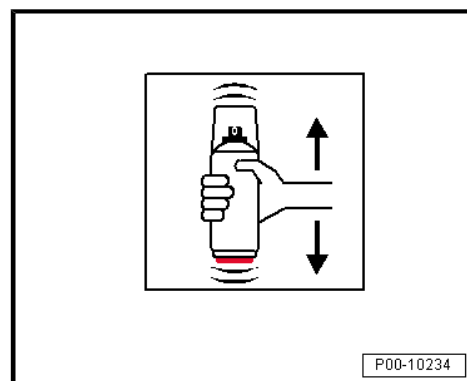
- Remove the red push button of the cap and set it on the valve for the hardener mixture on the bottom of the can.

- Press in the valve for the hardener mixture. Make sure when pressing down the valve for the hardener mixture that the can is upside down.



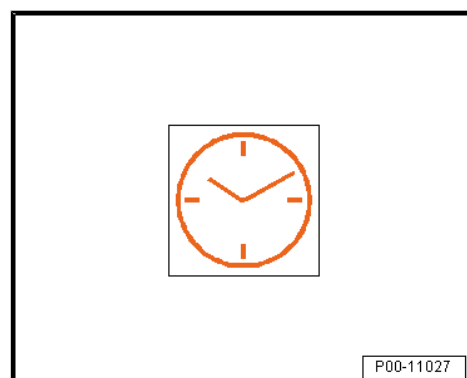


- Shake the can thoroughly for two minutes.



Processing time/pot life:

- Four days at +20 °C (68 °F).



Application type "coat"

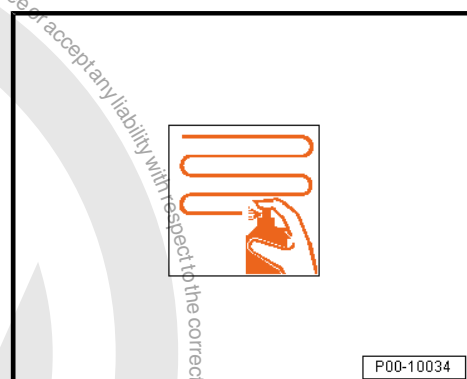
- Apply two spray applications with a 5 to 10 minute intermediate ventilation time.

Spraying distance:

- Maintain a distance of 15 to 20 cm.

Reaction Temperature:

- Minimum +15 °C (68 °F).
- The recommended dry layer thickness is 8 to 12 µm.



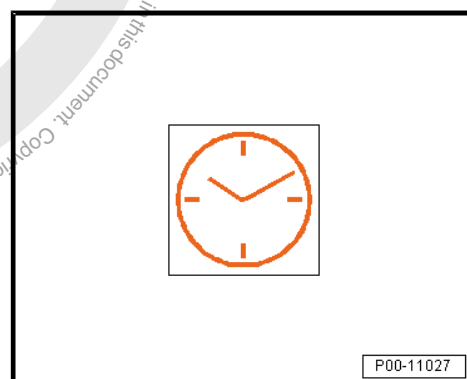
Note

If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.

Drying

Air dry at +20 °C (68 °F) room temperature:

- ◆ can be painted over after 20 to 30 minutes





Reworking

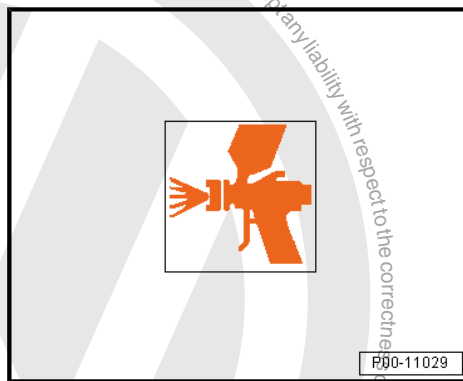
Can be painted over with:

- ◆ Two-Part HS Filler



Note

- ◆ *The product can only be used underneath two-part HS filler in the three-layer structure.*
- ◆ *Do not rework with polyester products, epoxy products or water soluble products.*
- ◆ *Do not apply to thermoplastic coatings.*
- ◆ *Do not rework directly with water-based base paint or two-part top coat.*



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Before processing and activating the hardener cartridge, the can must be shaken for approximately two minutes. Shake briefly again before every subsequent spray application.

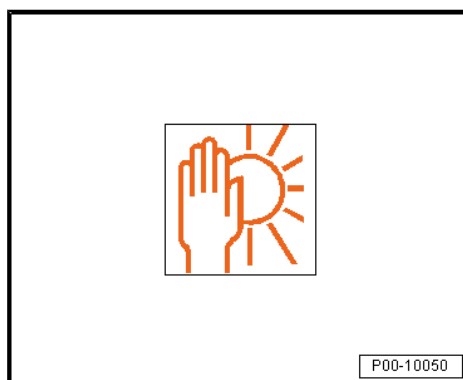
Dispose of the empty spray cans as recyclable material.

Characteristics

VOC value: 2004/42/IIIB (e)(840)703	The EU limit for this product (product category IIB.b) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 703 g/L.
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Storage

The guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.16.11 Silicone Remover - LLS MAX 007-

Definition:

- ◆ Silicone Remover - LLS MAX 007-



Edition 10/2008

Product Description

The Silicone Remover - LLS MAX 007- is a water-based, reduced-solvent cleaning agent that is rich in active ingredients. The raw material base has specific solvent combinations.

Properties:

- ◆ Application-oriented product-specific aerosol formulation
- ◆ Constant atomizing pressure
- ◆ Aerosol distribution
- ◆ Highest yield
- ◆ Professional painting result
- ◆ Highly effective cleaning- and degreasing agent
- ◆ Strengthens the adhesion
- ◆ Highest yield
- ◆ Even distribution

Application Instructions

Application

Recommended for:

- ◆ Parts painting and spot repair aid
- ◆ Best suited for use during the subsequent painting of Aqua Plus water-based paints

Suitable base surfaces:

- ◆ Primed, filled metal, plastic, glass, old- and factory paint surfaces, painted and unpainted base surfaces

Base surface	Suitability
Primed, filled surfaces	+++
Factory and old paint	+++
Plastic parts	+++
Metal/glass	+++

Properties:

- ◆ Painted surfaces do not become corroded
- ◆ Removes all types of silicone, an ideal dirt and soot cleaner
- ◆ Removes cavity sealant or wax
- ◆ Removes gummy, dried-on grease residue, for example door hinges
- ◆ Removes oil and grease residue
- ◆ Ideal solvent for tar marks
- ◆ Removes adhesive residue, for example stickers



Processing



Note

- ◆ *For work safety, wear appropriate, personal protective equipment:*
- ◆ *Breathing mask type: A2/P2*
- ◆ *Latex or nitrile protective gloves, for example*

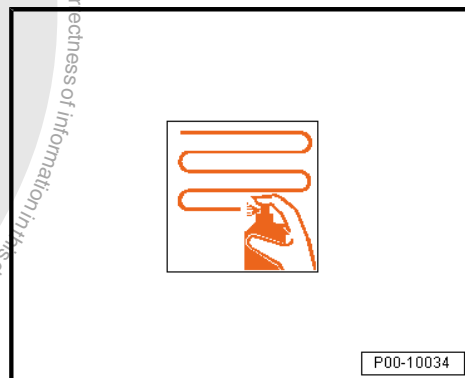
Application type "coat"

- Apply a light coating immediately before applying the subsequent paint layer and right away wipe dry with a clean and dry cloth.
- Do not allow the silicone remover to evaporate off the surface. Only work on small areas at the same time.
 - Repeat the cleaning procedure if the surface is very dirty.
 - Replace the cloths a few times. Do not use any dirty cloths.



Note

If the spray application is interrupted, make sure that the valve above the spray head is empty.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

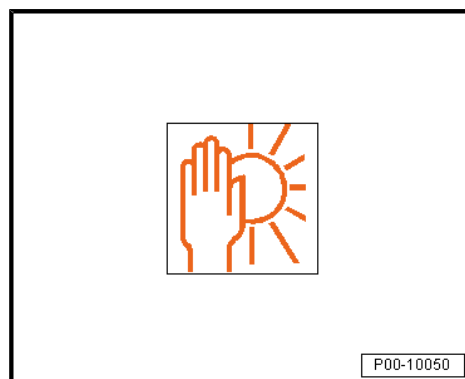
Dispose of the empty spray cans as recyclable material.

Characteristics

Solid content:	0 %
Yield:	approximately 0.75-1.0 m ² /spray can
Gloss level:	not applicable
VOC value:	620 g/L, 248 g/can

Storage

The guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).





3.16.12 Silicone Remover, Long - LLS MAX 008-

Definition:

- ◆ Silicone Remover, Long - LLS MAX 008-

Edition 10/2008

Product Description

The Silicone Remover, Long - LLS MAX 008- is a cleaning agent that is rich in active ingredients, is easy to apply and evaporates leaving no residue. The raw material base has specific solvent combinations.

Properties:

- ◆ Application-oriented product-specific aerosol formulation
- ◆ Constant atomizing pressure
- ◆ Aerosol distribution
- ◆ Highest yield
- ◆ Professional painting result
- ◆ Easy to process
- ◆ Evaporates leaving no residue
- ◆ Removes silicone, grease, oil, wax, dirt, tar and soot
- ◆ Contains a mild, nonaggressive cleaning solution

Application Instructions

Application

Recommended for:

- ◆ Parts painting and spot repair aid

Suitable base surfaces:

- ◆ Primed, filled metal, plastic, glass, old- and factory paint surfaces, painted and unpainted base surfaces

Base surface	Suitability
Primed, filled surfaces	+++
Factory and old paint	+++
Plastic parts	+++
Metal/glass	+++

Properties:

- ◆ Painted surfaces do not become corroded
- ◆ Removes all types of silicone, an ideal dirt and soot cleaner
- ◆ Removes cavity sealant or wax
- ◆ Removes gummy, dried-on grease residue, for example door hinges
- ◆ Removes oil and grease residue
- ◆ Ideal solvent for tar marks
- ◆ Removes adhesive residue, for example stickers



Processing



Note

- ♦ For work safety, wear appropriate, personal protective equipment:
- ♦ Breathing mask type: A2/P2
- ♦ Latex or nitrile protective gloves, for example

Application type "coat"

- Apply a light coat and wipe with a clean, dry fleece cloth.
- Allow to evaporate from the cleaned surfaces fully.
- Repeat the cleaning procedure if the surface is very dirty.
- Replace the cloths a few times. Do not use any dirty cloths.



Note

If the spray application is interrupted, make sure that the valve above the spray head is empty.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

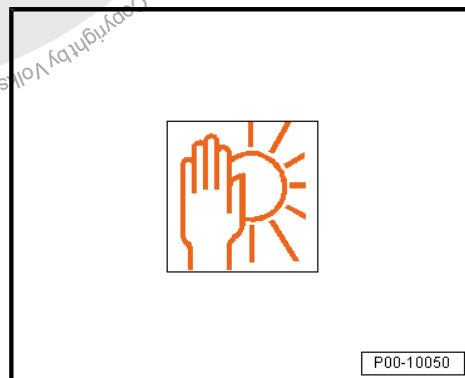
Dispose of the empty spray cans as recyclable material.

Characteristics

Solid content:	0 %
Yield:	approximately 0.75-1.0 m ² /spray can
Gloss level:	not applicable
VOC value:	620 g/L, 248 g/can

Storage

The guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.16.13 Blender

Definition:

- ♦ Blender - LLS MAX 009-



Edition 10/2008

Product Description

The Blender - LLS MAX 009- matches the overlapping areas or the edges from the existing paint to the new paint for proper vehicle spot painting. The raw material base has specific resin and solvent combinations.

Properties:

- ◆ Application-oriented product-specific aerosol formulation
- ◆ Constant atomizing pressure
- ◆ Aerosol distribution
- ◆ Professional painting result
- ◆ Ideal for spot repair
- ◆ Easy, time-saving processing
- ◆ Especially suitable for touch-up repairs with two layer finishes and two-part one-coat finishes
- ◆ Exceptional etching ability
- ◆ Polishes well
- ◆ Produces seamless edges on touch-up surfaces

Application Instructions

Application

Recommended for:

- ◆ Spot repairs and touch-ups

Suitable base surfaces:

- ◆ Immediately apply after spraying the Two-Part Clear Coat - LLS MAX 210- or two-part top coat onto the overlapping areas on the touch-up surface.
- ◆ The base surface in the tapering off/overlapping areas should be sufficiently matted with a sanding pad (P2000-P4000).

Pretreatment:

- ◆ No special tasks are necessary immediately before apply the blender.

Processing



Note

- ◆ *For work safety, wear appropriate, personal protective equipment:*
- ◆ *Breathing mask type: A2/P2*
- ◆ *Latex or nitrile protective gloves, for example*



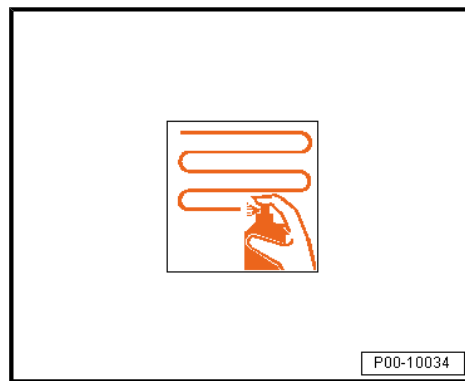
Application type "coat"

- In several spray applications, spray onto the spray mist of either the two-part clear coat or two-part top coat until a uniform transition forms.
- The two-part clear coat or two-part top coat do not require drying.



Note

If the spray application is interrupted, make sure that the valve above the spray head is empty.



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

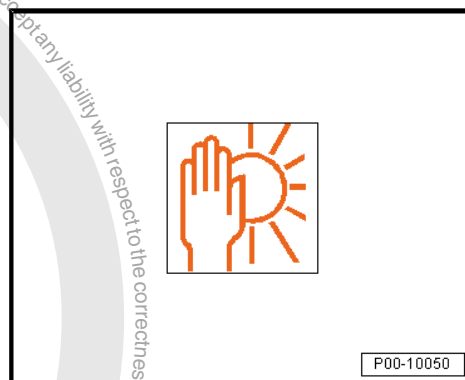
Dispose of the empty spray cans as recyclable material.

Characteristics

Solid content:	4.8 %
Yield:	approximately 0.5 m ² /spray can
Gloss level:	not applicable
VOC value:	766 g/L, 306 g/can

Storage

The guaranteed shelf life of 36 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



3.16.14 Bonding Agent

Definition:

- ◆ Bonding Agent - LLS MAX 015- , plastic

Edition 10/2012

Product Description

The Bonding Agent - LLS MAX 015- is a universal single-component bonding agent for all standard exterior plastic vehicle parts.

Properties:

- ◆ Easy processing
- ◆ Good adhesion properties



- ◆ High elasticity

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ All standard plastic parts used on car exteriors (PP, EPDM, ABS, PC, PPO, PA, R-TPU, PBTP, PVC, PUR, PUR soft foam, UP-GF).

Pre-treatment of base surfaces:

The base surface must be free of separating agents.

Before cleaning the plastic parts, temper them for 60 minutes at +60 °C to "sweat out" the separating agents.

- Clean using Antistatic Plastic Cleaner - LVM 001 001 A2- or a milder Silicone Remover, Long - LVM 020 100 A5- .



Note

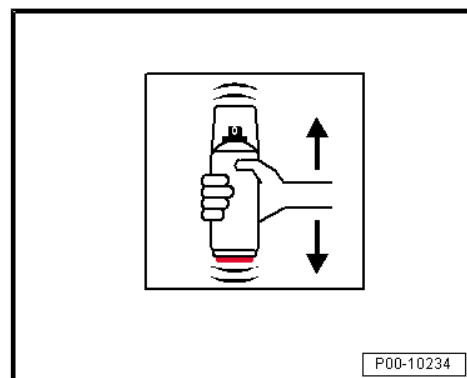
- ◆ *The effort needed for cleaning depends on the type and quantity of the separating agent used. We recommend using a sanding pad to help cleaning*
- ◆ *Let the thinner evaporate (for example, air-drying overnight at room temperature or 30-40 minutes at +60 °C).*
- Before priming, lightly clean again using Antistatic Plastic Cleaner - LVM 001 001 A2- or Silicone Remover, Long - LVM 020 100 A5- (antistatic effect).



Processing

Application:

- Shake the can thoroughly for two minutes.





Application type "coat"

- Apply one preliminary sealed spray application (1-2 µm).

Spraying distance:

- Maintain a distance of 20 to 25 cm.



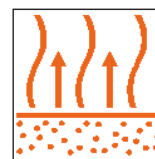
P00-10034

Ventilate: at +20 °C (68 °F) room temperature for 10 to 15 minutes.



Note

- ◆ If the spraying procedure is interrupted, make sure that the valve above the spray head is empty to prevent any nozzle blockage.
- ◆ Sanded-through areas that are not larger than 5.0 cm can be reworked using Bonding Agent - LLS MAX 015- directly with top coat.



P00-11026

Further Processing

Fill with:

- ◆ Elasticized two-part HS filler (for elastification, refer to the technical application instructions for the respective filler).

Can be painted over with:

- ◆ Two-Part HS Top Coat
- ◆ Water-based base paint and two-part HS clear coats



Caution

For work safety, wear appropriate, personal protective equipment.

Note the safety data sheets as well as the warnings on the label of the spray nozzle.

Shake briefly again before every spray application.

Dispose of the empty spray cans as recyclable material.

Characteristics

VOC value: 2004/42/IIIB (e)(840)730	The EU limit for this product (product category IIB.e) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 730 g/L.
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Storage

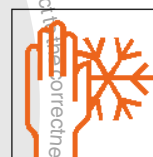
The guaranteed shelf life of 60 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

Storage Conditions

The prescribed storage temperature is +20 to +25 °C (68 to 77 °F) (do not to fall below +5 °C (41 °F)).



P00-10048

3.17 Additional Materials

⇒ ["3.17.1 Matting Component ALN 775 106", page 315](#)

⇒ ["3.17.2 Matting Component LVM 769 810 A2", page 321](#)

⇒ ["3.17.3 Structuring Component", page 324](#)

⇒ ["3.17.4 Aquaplast Touch-Up Additive", page 329](#)

⇒ ["3.17.5 Aqua Premium System Additive", page 329](#)



3.17.1 Matting Component - ALN 775 106-

Definition:

◆ Matting Component - ALN 775 106-

Edition 04/2013

Product Description

With the two-part HS top coat, the Matting Component - ALN 775 106- produce a matted top coat coating for plastic finishes.

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Hardened, well-preserved and sanded old paint or factory paints
- ◆ Plastic parts treated with primer or filler



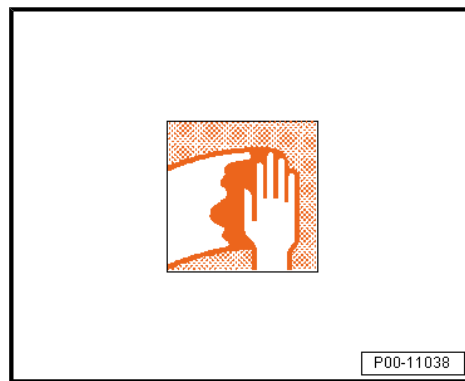
Note

For information about plastic parts, refer to "The VW/Audi Coating System for Plastic Parts" (Data Sheet 5.74).

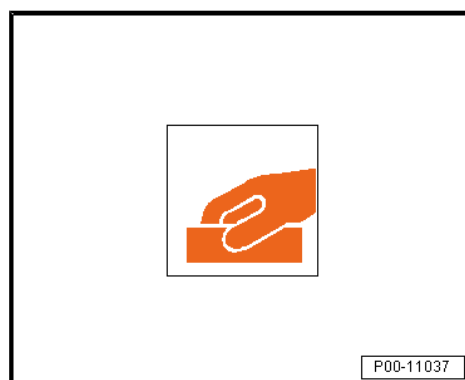


Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



- Then, sand.





- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

Processing

Applicable products:

- ◆ Two-part HS top coat
- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ See technical application information for the two-part VHS hardener, refer to
⇒ ["3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#) .



Matting Table:

Mixing Ratio (in % by Weight)		Gloss Units (GU) According to DIN 67530
Matting Component - ALN 775 106-	Two-Part HS Top Coat	60° angle
10	90	85-95 GU*
20	80	80-90 GU*
30	70	75-90 GU*
40	60	60-90 GU*
50	50	25-65 GU*

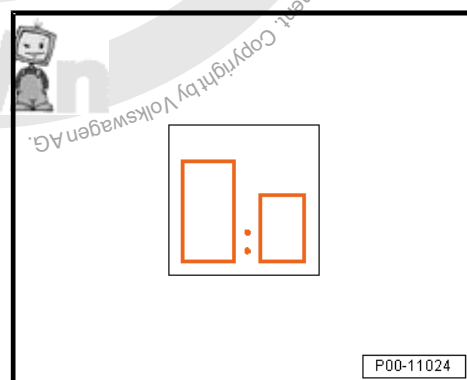
* Depending on color; bright colors usually tend to lose more gloss than darker colors when adding Matting Component - ALN 775 106- . Other factors influence the gloss level, refer to the gloss level influencing factors table.

Mixing Ratio

Combining the Matting Mixture:

Mixing ratio 4:1 by volume with:

- ◆ Two-Part VHS Hardener - LHA 009 051 A2- / -LVM 009 051 A5- (for small to medium-sized surfaces, at moderate temperatures)
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3- (for larger surfaces at moderate temperatures)
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2- (for large surfaces and high temperatures)
- ◆ See technical application information for the two-part VHS hardener, refer to
⇒ ["3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener", page 215](#) .



Dilutable with:

- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-



Processing time/pot life:

- Ready to spray in 60 to 90 minutes at +20 °C (68 °F)



P00-11029

Application type “coat”



P00-11032

- Processing viscosity at +20 °C (68 °F) material temperature

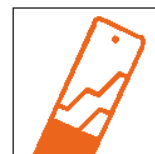
Processing viscosity “Compliant” and “HVLP”:

18-20 Seconds



P00-11036

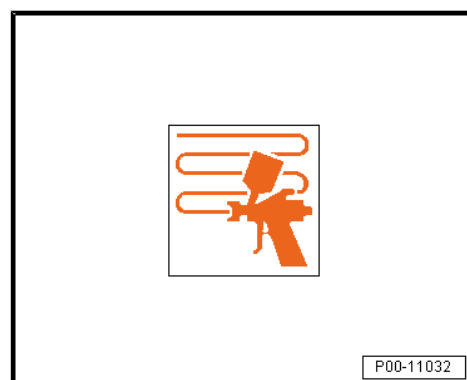
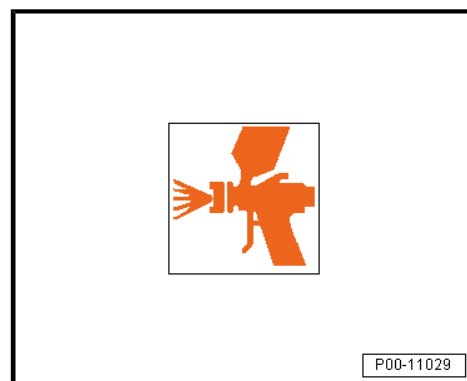
- Adding 15 % thinner at +20 °C (68 °F) material temperature



P00-11023



- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.4 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).
- Two spray applications are required with drying time to get a dry layer thickness of between 50 and 60 µm.



Note

- ◆ The addition of Elastic Additive - ALZ 011 001- is omitted.
- ◆ The Matting Component - ALN 775 106- is not suitable for matting clear coats.
- ◆ Matting Component - ALN 775 106- is thixotropically mixed, which means it becomes fluid when strongly stirred. If necessary, it is recommended to use an agitator or manually shake the can. It should also be mixed in the mixer 15 minutes before using.
- ◆ Adding the matting compound can influence the covering capacity.
- ◆ Apart from color-dependent differences, the actual gloss level is influenced by different factors. In the following comparison, various additional parameters and their effect on the gloss levels are represented.

Higher Gloss Level	Lower Gloss Level
longer hardener	shorter hardener
longer thinner	shorter thinner
higher processing viscosity	lower processing viscosity
higher dry layer thickness	lower dry layer thickness
shorter ventilation time	longer ventilation time
forced drying	Air drying

Influencing Factors on the Gloss Level:

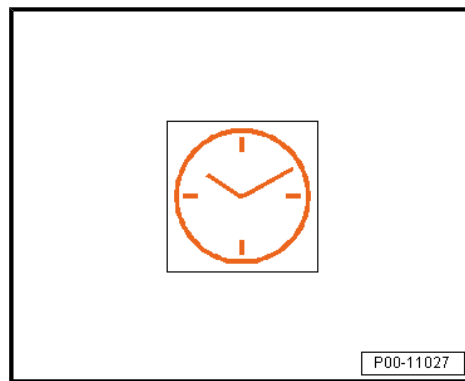
- ◆ Using different hardeners, thinners, application types, drying conditions and layer thicknesses lead to different gloss levels (up to 20%).



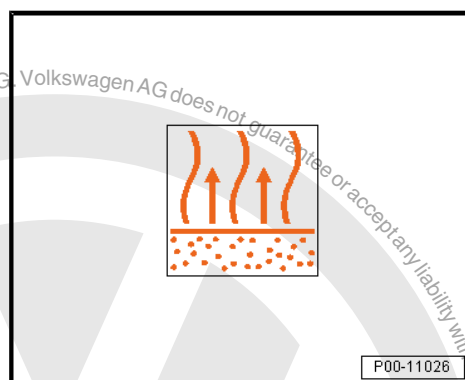
Drying

Air dry at +20 °C (68 °F) room temperature:

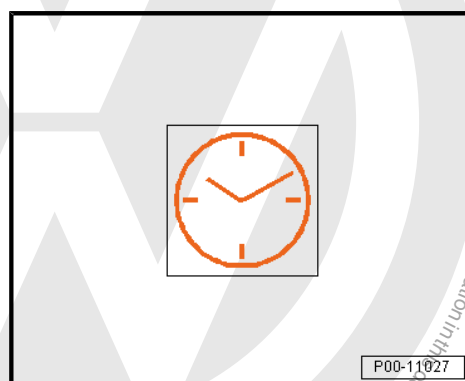
- ◆ Dust dry after 30 to 50 minutes
- ◆ Ready for assembly after 5 to 6 hours
- ◆ Dry overnight



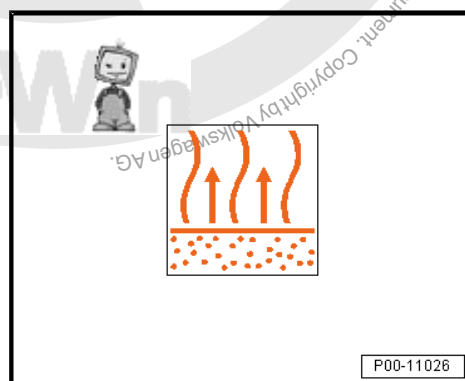
Final drying time with forced drying is a minimum of 5 to 10 minutes.



Forced dry at +60 °C (140 °F) object temperature for 30 to 40 minutes



Final drying time for IR drying is a minimum of 5 to 10 minutes.





IR dry with short-wave radiator for 5 minutes at 50 % power and for 10 minutes at 100 % power

Characteristics

Delivery Viscosity	pasty
Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IIIB (e)(840)600	The EU limit for this product (product category II B.e) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 600 g/L.



P00-11028

Storage

The guaranteed shelf life of 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F)



P00-10050

3.17.2 Matting Component - LVM 769 810 A2-

Definition:

- ◆ Matting Component - LVM 769 810 A2-

Edition 05/2013

Product Description

With two-part HS clear coats and two-part HS top coat, the Matting Component - LVM 769 810 A2- creates a matted top coat coating for metal and plastic finishes.

Areas of application include large surfaces/complete painting as well as small- and attachment parts

Application Instructions

Base Surface

Suitable base surfaces:

- ◆ Hardened, well-preserved and sanded old paint or factory paints
- ◆ Primed and filled metal- and plastic parts



Note

For information about plastic parts, refer to "The VW/Audi Coating System for Plastic Parts" (Data Sheet 5.74).

Processing

Applicable products:

- ◆ Two-Part HS Clear Coat - L2K 769 500 A5-
- ◆ Two-Part HS Vario Clear Coat - L2K 769 K01 A2-



- ◆ Two-Part HS Optimum Clear Coat - LZK 769 K02 A5-
- ◆ Two-Part HS Optimum Plus Clear Coat - LZK 769 K07 A5-
- ◆ Two-Part HS Brilliant Plus Clear Coat - LZK 769 K05 A5-
- ◆ Two-Part HS Performance Clear Coat - LZK 769 K06 A5-
- ◆ Two-Part HS Mixed Paint/Top Coat - L2K 074/073...-
- ◆ Two-Part HS Hardener, Long - LHA 009 047 A3-
- ◆ Two-Part HS Hardener, Extra Long - LHA 009 048 A3-
- ◆ Two-Part VHS Hardener, Long - LHA 009 052 A2- / -LHA 009 052 A3-
- ◆ Two-Part VHS Hardener, Extra Long - LHA 009 053 A2-
- ◆ For hardener, refer to the technical application instructions here, refer to ⇒ ["3.8 Hardener", page 211](#).
- ◆ Two-Part Thinner - LVE 009 001 A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-
- ◆ Two-Part Thinner, Special - LVM 009 200 A2- / -LVM 009 200 A5-
- ◆ Clear Coat Additive - LVM 007 000 A2-

Gloss Level Adjustment/Matting and Application Instructions



Note

Refer to "Gloss Level Adjustment" (5.75) and "Repair Paint Systems For Matte Painted Vehicles" (5.76).



Application Instructions



Note

- ◆ The addition of Elastic Additive - ALZ 011 001- is omitted.
- ◆ Stir or shake the Matting Component - LVM 769 810 A2- in the can well.
- ◆ With the two-part HS clear coat and two-part HS top coat, mix the Matting Component - LVM 769 810 A2- according to specification and infuse with hardener and thinner just before processing. The processing of the ready-to spray mixture should immediately follow. If the mixture remains in the mixing- or spray gun receptacle for a longer period of time (15 minutes), it should be stirred again before continuing to use (separation).
- ◆ Adding the matting compound can influence the covering capacity.
- ◆ It is absolutely necessary to test the respective mixture on sheet metal to achieve the appropriate gloss level for the vehicle. Gloss level measurements (60° angle) at adjacent parts can also be helpful.
- ◆ A touch-up/repair of the matted clear coat within the surface (for example, side part or clever repair) is not possible.
- ◆ Dust inclusions cannot be polish out, so therefore ensure that absolute cleanliness is maintained during the entire painting process.
- ◆ Apart from color-dependent differences, the actual gloss level is influenced by different factors. In the following comparison, various additional parameters and their effect on the gloss levels are represented.

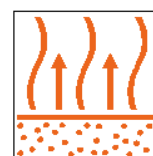
Higher Gloss Level	Lower Gloss Level
shorter hardener	longer hardener
shorter thinner	longer thinner
higher processing viscosity	lower processing viscosity
higher dry layer thickness	lower dry layer thickness
shorter ventilation time	longer ventilation time
forced drying	Air drying

Influencing Factors on the Gloss Level:

- ◆ Using different hardeners, thinners, application types, drying conditions and layer thicknesses lead to different gloss levels (up to 20%).

Drying

Final drying time with forced drying is a minimum of 15 to 20 minutes



P00-11026



Forced drying at +60 to 65 °C (140 to 149 °F) object temperature for 45 minutes

Characteristics

Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/II B (e)(840)600	The EU limit for this product (product category IIB.e) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 600 g/L.



P00-11027

Storage

The guaranteed shelf life of 48 months from date of manufacture. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.17.3 Structuring Component

Definition:

- ♦ Structuring Component, Fine - ALN 775 108-

Edition 04/2013

Product Description

The Structuring Component, Fine - ALN 775 108- is a component for the two-part HS top coat and changes it into a textured paint.

The top coat can be used for plastic finishes on vehicles.

Application Instructions

Base Surface

Suitable base surfaces:

- ♦ Hardened, well-preserved and sanded old paint or factory paints
- ♦ Plastic parts treated with primer or filler



Note

For information about plastic parts, refer to "The VW/Audi Coating System for Plastic Parts" (Data Sheet 5.74).



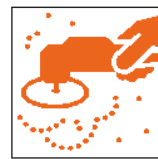
Pre-treatment of base surfaces:

- Carefully clean using Silicone Remover - LVM 020 000 A5- or Silicone Remover, Long - LVM 020 100 A5- .



P00-11038

- Dry-sand with rotary sander and dust extraction (P 400 to 500 grit).



P00-11040

- Or wet-sand with P 800 grit sandpaper



P00-11041

- Use a suitable cleaning agent before reworking to ensure a clean and residue-free surface.

Processing



P00-11038



Mixing ratio

Mixing ratio 1:1 by volume with two-part HS top coat:

- Afterwards combine this mixture 4:1 by volume with a suitable two-part VHS hardener.

See technical application information two-part VHS hardener, refer to

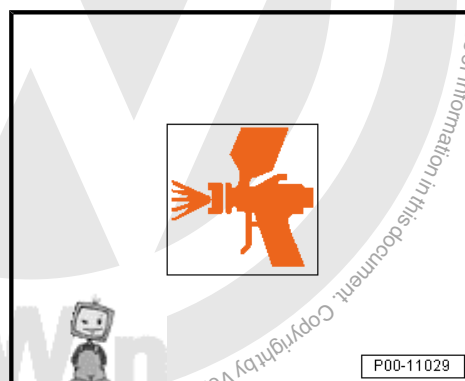
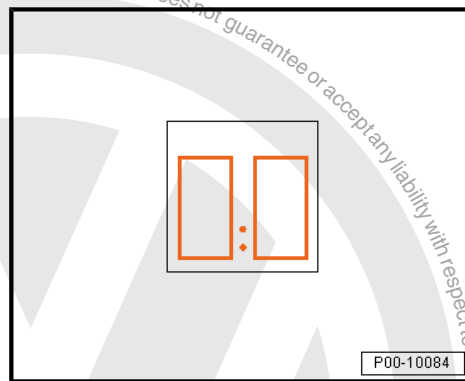
⇒ [“3.8.2 Two-Part VHS Hardener and Two-Part VHS Performance Hardener”, page 215](#) .

Dilutable with:

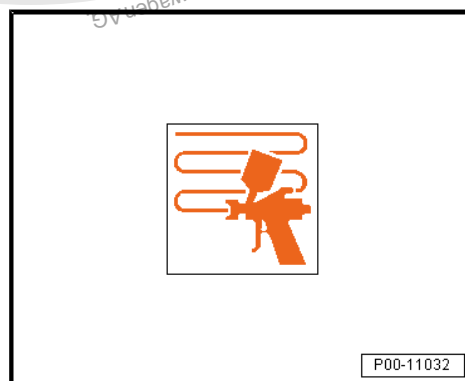
- ◆ Two-Part Thinner, Special - LVM 009 200 A2/A5-
- ◆ Two-Part Thinner, Long - LVM 009 300 A2-

Processing time/pot life:

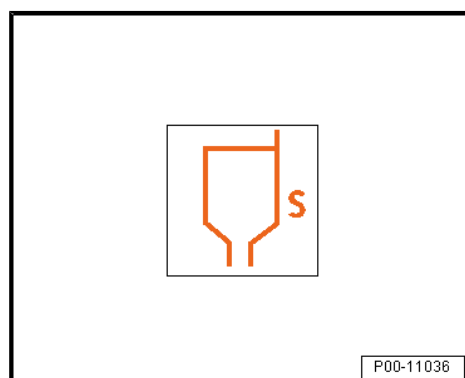
- Ready to spray in 90-100 minutes at +20 °C (68 °F)



Application type “coat”

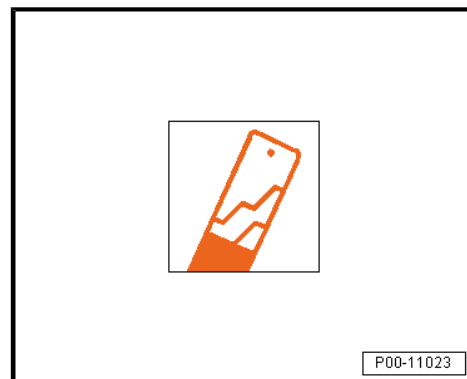


- Processing viscosity 4 mm for +20 °C (68 °F), German Industry Standardization 53211
- Processing viscosity at +20 °C (68 °F) material temperature is the mixing viscosity for “Compliant” and “HVLP”.

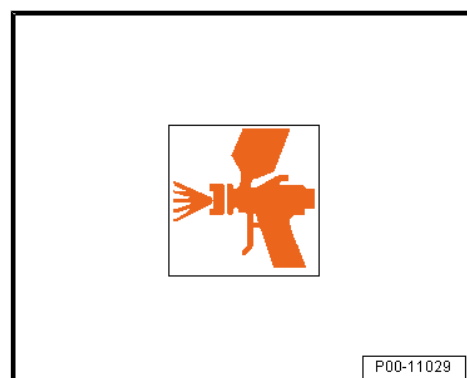




- Adding 15 % thinner at +20 °C (68 °F) material temperature



- Set spray nozzle (see manufacturer's information): "Compliant" 1.3 to 1.4 mm.
- Set spray nozzle (see manufacturer's information): "HVLP" 1.3 to 1.5 mm.
- Set spray pressure (see manufacturer's information): "Compliant" to 2.0 to 2.5 bar (29 to 36 psi).
- Set atomizing pressure (see manufacturer's information): "HVLP" 0.7 bar (10.15 psi).

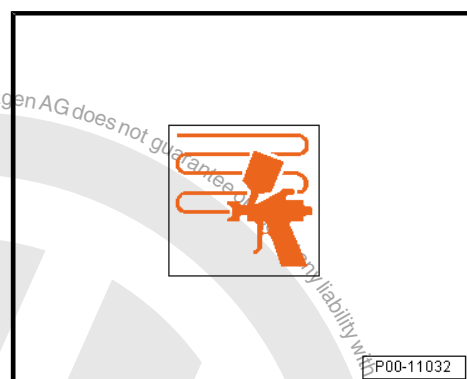


- Two spray applications are required with drying time (5 to 10 minutes) to get a dry layer thickness of between 50 and 60 µm.



Note

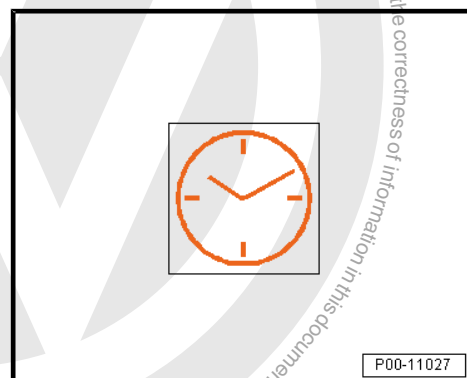
- ◆ The addition of Elastic Additive - ALZ 011 001- is omitted.
- ◆ Structuring Component, Fine - ALN 775 108- is only suitable for use on attachments (for example, bumpers, spoilers).
- ◆ Various effects can be created using different spraying techniques and layer thicknesses.
- ◆ Structuring Component, Fine - ALN 775 108- is thixotropically mixed, which means it becomes fluid when stirred.



Drying

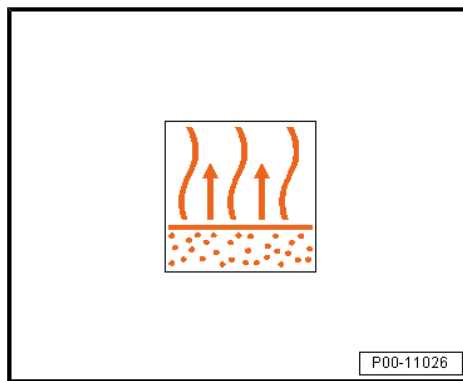
Air dry at +20 °C (68 °F) room temperature:

- ◆ Dust dry after 30 to 50 minutes
- ◆ Ready for assembly after 4 to 6 hours
- ◆ Dry overnight

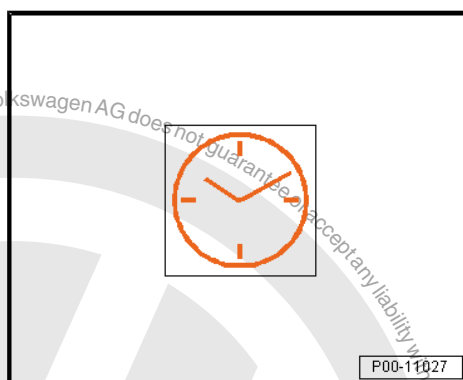




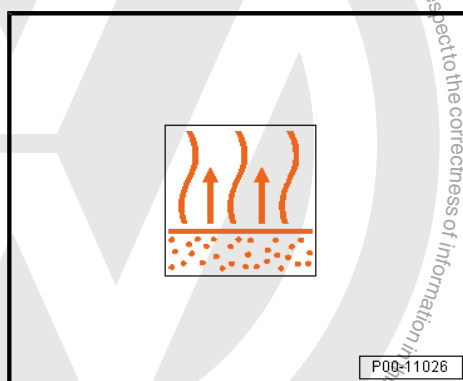
Final drying time with forced drying is a minimum of 5 to 10 minutes.



Forced dry at +60 °C (68 °F) object temperature for 30 to 40 minutes



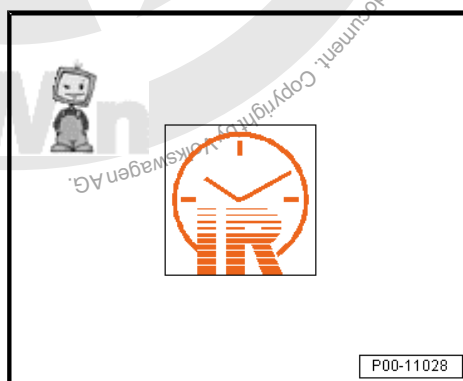
Final drying time for IR drying is 5 minutes.



IR dry with a short-wave radiator for 10 to 15 minutes and with a medium-wave radiator for 15 to 20 minutes

Characteristics

Delivery Viscosity	Thixotropic
Flashpoint:	above +23 °C (73.4 °F)
VOC value: 2004/42/IB (e)(840)600	The EU limit for this product (product category IIB.e) in ready-to-use form is a maximum of 840 g/L volatile organic compounds. The VOC-value of this product in ready-to-use form is a maximum of 600 g/L.





Storage

The guaranteed shelf life is 24 months from production date. Use no later than the date indicated on the label and store in original container at +20 °C (68 °F).



P00-10050

3.17.4 Aquaplus Touch-Up Additive

Definition:

- ◆ Touch-Up Additive for Aquaplus - LVM 030 000 A2-



Note

The usage and application instructions for the Touch-Up Additive for Aquaplus - LVM 030 000 A2- is described here, refer to ⇒ ["3.6.4 Aquaplus Touch-Up System", page 146](#)

3.17.5 Aqua Premium System Additive

Definition:

- ◆ Additive for Aqua Premium - LVM 035 200 A2/A3-
- ◆ Additive for Aqua Premium - LVM 035 300 A1-
- ◆ Additive for Aqua Premium - LVM 035 300 A1/A3- / -LVM 035 301 A3-



Note

The use and application instructions for the additives for aqua premium are described in the appropriate base component, refer to ⇒ ["3.6.5 Aqua Premium System", page 150](#) .





4 Workshop Equipment

⇒ ["4.1 Tools", page 331](#)

⇒ ["4.2 Dust Cloths", page 343](#)

4.1 Tools

⇒ ["4.1.1 Spray Can Filling Device VAS6425", page 331](#)

⇒ ["4.1.2 Paint Thickness Tester VAS6272", page 332](#)

⇒ ["4.1.3 Paint Thickness Tester VAS6197", page 332](#)

⇒ ["4.1.4 Paint Thickness Test VAS5278", page 332](#)

⇒ ["4.1.5 Stone Chip Tester VAS5102A", page 334](#)

⇒ ["4.1.6 Pneumatic Brush Grinder Set VAS6446", page 335](#)

⇒ ["4.1.7 Brush Grinder Set VAS6776", page 336](#)

⇒ ["4.1.8 Suction Feed Spray Gun VAG1538", page 337](#)

⇒ ["4.1.9 Infrared Dryer VAS6873", page 338](#)

⇒ ["4.1.10 Stand VAS6873/1", page 338](#)

⇒ ["4.1.11 Infrared Dryer VAS6874", page 339](#)

⇒ ["4.1.12 Infrared Dryer VAS6875", page 339](#)

⇒ ["4.1.13 Infrared Dryer VAS6876", page 340](#)

⇒ ["4.1.14 Infrared Dryer VAS6877", page 341](#)

⇒ ["4.1.15 Infrared Dryer VAS6878", page 342](#)

⇒ ["4.1.16 Infrared Dryer VAS6879", page 343](#)

4.1.1 Spray Can Filling Device - VAS6425-

Definition:

- ◆ Spray Can Filling Device - VAS6425-

Product Description

The spray can filling device is a pneumatic, maintenance-free dispensing device for filling spray cans with mixed base paint and top coats. The device is suited for filling One-Part Fill-Clean Spray Cans - LLS MAX 100-, which can be ordered via the Parts Catalog.

Size

- ◆ Diameter: 132 mm
- ◆ Height: 366 mm
- ◆ Door height: 123 mm
- ◆ Filling cylinder: diameter 135 mm, height 65 mm, maximum filling volume 100 ml (3.38 oz)
- ◆ Attachment plate dimensions: 250 x 250 x 2 mm

Technical Data

- ◆ Pneumatic filling principle
- ◆ Filling pressure: 8-10 bar/100-130 psi
- ◆ Rupture point: approximately 60 bar/ca. 870 psi
- ◆ Operating temperature: +5 to +50 °C (41 to 122 °F)
- ◆ Gross weight: 4.23 kg





- ◆ Net weight: 4.00 kg

Delivery Contents:

- ◆ Spray can filling device and metal cylinder
- ◆ Compressed air hose and attachment coupling
- ◆ Fastening screw and washer
- ◆ Base plate
- ◆ Adapter for 250 mL (8.45 oz) cans

4.1.2 Paint Thickness Tester - VAS6272-

Definition:

- ◆ Paint Thickness Tester - VAS6272-

Product Description

The paint layer thickness measuring instrument VAS6272 is a combination measuring instrument used for interference-free measuring of paint coats on steel, iron and non-metallic surfaces. The menu navigation and easy-to-use parameter adjustments ensure a quality outcome and make this the perfect instrument for the workshop. This ergonomically-designed instrument has integrated measuring probes and is easy to operate, allowing for pinpoint accurate measurements.

Technical Data

Measuring range: progressive 0-3500 μm

Delivery Contents

1 measuring device



4.1.3 Paint Thickness Tester - VAS6197-

Definition:

- ◆ Paint Thickness Tester - VAS6197-

Product Description

Fully-electronic layer thickness measuring instrument with 2 independently operating sensors and LCD screens. Measurements on different metallic base materials are possible. All non-magnetic layers on steel or iron on the one part, all isolating layers on non-ferrous metals (for example, aluminum or copper) on the other part. Due to the Hall sensor technology used, calibration is not required.

Technical Data

Measuring range: 0-5000 μm for both sensors

Delivery Contents

- ◆ Paint Layer Thickness Measuring Instrument
- ◆ Case
- ◆ Alignment plates
- ◆ Battery



4.1.4 Paint Thickness Test - VAS5278-

Definition:

- ◆ Paint Thickness Test - VAS5278-



Product Description

The paint thickness test allows for exact and interference-free layer thickness measuring of paint coats on steel, iron or non-ferrous metals. The electronic instrument with digital LCD display shows the measurement via a menu.

Technical Data

- ◆ Progressive measuring range: 0-5000 µm or 0-200 mils
- ◆ Base tolerance: $\pm 1 \mu\text{m}$ or $\pm 0.06 \text{ mils}$
- ◆ Temperature range: 0 - 60 °C (32 to 140 °F)
- ◆ Power supply: 9 volt block
- ◆ 4-digit liquid crystal display (LCD)

Delivery Contents

- ◆ 1 measuring instrument for steel/iron
- ◆ 1 measuring instrument for non-magnetic metals
- ◆ 1 service bag
- ◆ 2 zero test plates
- ◆ Operating instructions





4.1.5 Stone Chip Tester - VAS5102A-

Definition:

- ◆ Stone Chip Tester - VAS5102A-

Product Description

The Stone Chip Tester - VAS5102A- is a proprietary tool of Volkswagen AG. It can identify whether chipped paint is the result of a material flaw/workmanship fault or whether it is the result of excess mechanical stress such as stone impacts or scratches. The test is based upon a simulation of the average amount of stress caused by objects (high-speed, low-mass sand/gravel) during a traffic collision.



Note

- ◆ *The test procedure is described at length in the catalog "Analyzing Vehicle Paintwork".*
- ◆ *The instrument is subject to a yearly maintenance check by the manufacturer at the owner's expense.*

Delivery Contents

- ◆ 1 stone impact tester and battery-powered metering device, pressure regulator and hose
- ◆ 1 power supply
- ◆ Calibration frame and check weigher
- ◆ Illuminated magnifier
- ◆ Foil with angle markings
- ◆ Adhesive tape 25 mm wide
- ◆ Filler-paste and scissors
- ◆ Granulate filling chute 10 x 100g granulate
- ◆ Hard shell case with rollers
- ◆ 100 test seals each of VW and Audi
- ◆ Instruction manual, rating scale, test certificate, test plan



4.1.6 Pneumatic Brush Grinder Set - VAS6446-

Definition:

- ◆ Pneumatic Brush Grinder Set - VAS6446-

Product Definition:

The Pneumatic Brush Grinder Set - VAS6446- serves to prepare the surface.

For example: removes underbody protection, sealant, and other adhesive materials. Removes corrosion and strips paint in the vehicle body area. Deep cleaning and has a sand-blasting effect; protects the material and has a material compressing effect. Low RPM.

Delivery Contents:

- ◆ 1 pneumatic brush grinder set
- ◆ 1 holder for brush grinder strap 23/28mm
- ◆ 1 holder for brush grinder strap 11/28mm
- ◆ 1 brush grinder strap 23/28 mm
- ◆ 2 brush grinder straps 11/28 mm
- ◆ 3 special brush grinder straps 11/28/17 mm





4.1.7 Brush Grinder Set - VAS6776-

Definition:

- ◆ Brush Grinder Set - VAS6776-

Product Definition:

The device is used to clean surfaces and remove corrosion in hard to reach areas. For example, it is suitable for joints, grooves, wheel housings, flange edges and door folds. It is operated pneumatically.

Design and Technology

- ◆ A polyamide strap fitted with wires rotates in an adapter system.
- ◆ The adapter system is powered by a pneumatic drive unit.
- ◆ The impact force of the brushes is quadrupled via the accelerator bar.
- ◆ Thoroughly removes corrosion and coatings.

Technical Data:

- ◆ Weight: 1.1 kg
- ◆ Air pressure connection thread: 1/4" PT (delivered G 1/4")
- ◆ Hose diameter: 3/8" ID (9.5 mm)
- ◆ Rotation speed: 0-2600 U/minute
- ◆ Flow pressure: 7.5 bar/110 psi
- ◆ Air consumption: 14.2 CFM (400 l/minute)
- ◆ Vibration: 1.45 m/sec² (EN ISO 8662-1; 8662-4)
- ◆ Sound pressure level: 84 dB (DIN 45635-21; ISO 3744)

Delivery Contents:

- ◆ 1 Blaster drive unit
- ◆ 1 Pneumatic Brush Grinder Set - Holder - 11/28mm VAS6446/2
- ◆ 1 Brush Grinder Set - Swivel Joint VAS6446/9
- ◆ 1 Brush Grinder Set - Air Pressure Regulator VAS6446/8
- ◆ 2 Brush Grinder Belts VAS6776/1
- ◆ 2 Brush Grinder Belts, Left VAS6776/2
- ◆ 2 Brush Grinder Belts, Right VAS6776/3
- ◆ 2 Brush Grinder Belts, Stainless Steel VAS6776/4
- ◆ 2 Accelerator bars including arm for use with the stainless steel belts
- ◆ 1 Hard shell case

Replacement Parts:

- ◆ Brush Grinder Belt - VAS6776/1- ASE 36308300000
- ◆ Brush Grinder Belt - VAS6776/2- ASE 36308400000
- ◆ Brush Grinder Belt - VAS6776/3- ASE 36308500000
- ◆ Brush Grinder Belt - VAS6776/4- ASE 36308600000
- ◆ Accelerator Rod - VAS6776/5- ASE 46308700000





- ◆ Accelerator Rod - VAS6776/6- ASE 46308800000

4.1.8 Suction Feed Spray Gun - VAG1538-

Definition:

- ◆ Suction Feed Spray Gun - VAG1538-

Product Definition:

For the retroactive sealing of cavities in all new and used cars, as well as for applying underbody protection materials.

Design and Technology

Special spray gun with safety check valve and quick release coupling for probe holder.

- ◆ Maximum spray pressure: 10 bar (145 psi)
- ◆ Air connection thread: R 1/4
- ◆ Air consumption: approximately 100l/minute
- ◆ Weight: 1300 g

Delivery Contents:

- ◆ Spray gun
- ◆ 1 liter steel can, painted
- ◆ Flexible Hook Probe - VAG1538/1-
- ◆ Suction Feed Spray Gun - Nylon Probe - VAG1538/2-

Replacement Parts:

- ◆ Suction Feed Spray Gun - Hooked Probe - VAG1538/1-
- ◆ Suction Feed Spray Gun - Nylon Probe - VAG1538/2-



Note

Recommended accessories can be found in the Workshop Equipment.





4.1.9 Infrared Dryer - VAS6873-

Definition:

- ◆ Infrared Dryer - VAS6873-

Product Definition:

The short-wave infrared dryer is used to quickly dry paste, filler, base paint, top coats and clear coats for minor repairs.

Technical Data:

- ◆ 220-240 V, 1 PH+PE
- ◆ 4 A

Delivery Contents:

Complete hand-held dryer with connector and operating instructions

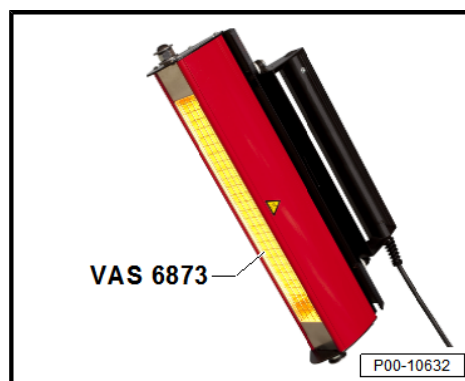
Replacement Parts:

Stand - VAS6873/1- ASE 434 392 00 000



Note

Observe the manufacturer operating instructions.



4.1.10 Stand - VAS6873/1-

Definition:

- ◆ Stand - VAS6873/1-

Product Definition:

Stand - VAS6873/1- with clock timer

Technical Data:

- ◆ 220-240 V, 1 OH+PE

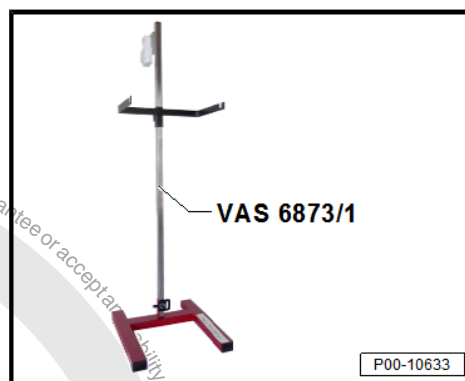
Delivery Contents:

Complete stand with clock timer and installation instructions



Note

Observe the manufacturer installation instructions.





4.1.11 Infrared Dryer - VAS6874-

Definition:

- ◆ Infrared Dryer - VAS6874-

Product Definition:

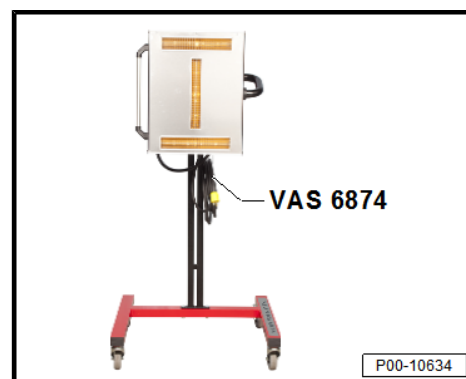
The infrared dryer is used to dry paste, filler, base paint, top coats and clear coats on vertical surfaces using two clock timers for evaporation and hardening.

Technical Data:

- ◆ 230 V, 1 PH+PE
- ◆ 3 KW
- ◆ 13 A

Delivery Contents:

Complete strand dryer with assembly instructions and operating instructions



Note

Observe the manufacturer assembly instructions and operating instructions.

4.1.12 Infrared Dryer - VAS6875-

Definition:

- ◆ Infrared Dryer - VAS6875-

Product Definition:

The infrared dryer is used to dry paste, filler, base paint, top coats and clear coats on vertical and horizontal surfaces using two clock timers for evaporation and hardening.

Technical Data:

- ◆ 230 V, 1 PH +PE
- ◆ 3 KW
- ◆ 13 A

Delivery Contents:

Complete strand dryer with assembly instructions and operating instructions



Note

Observe the manufacturer assembly instructions and operating instructions.



4.1.13 Infrared Dryer - VAS6876-

Definition:

- ◆ Infrared Dryer - VAS6876-

Product Definition:

The infrared dryer is used to dry paste, filler, base paint, top coats and clear coats on vertical and horizontal surfaces.

- ◆ Short-wave infrared dryer with a cassette
- ◆ 2 power stages with 12 pre-set programs and 3 free programs with automatic time control
- ◆ Automatic distance measuring

Technical Data:

- ◆ 400 V, 3 PH+PE
- ◆ 3 KW
- ◆ 5 A
- ◆ 16 A slow-blow fuse

Delivery Contents:

Complete strand dryer with assembly instructions and operating instructions



Note

Observe the manufacturer assembly instructions and operating instructions.





4.1.14 Infrared Dryer - VAS6877-

Definition:

- ◆ Infrared Dryer - VAS6877-

Product Definition:

The infrared dryer is used to dry paste, filler, base paint, top coats and clear coats on vertical and horizontal surfaces.

- ◆ Short-wave infrared dryer with a cassette
- ◆ 2 power stages with 12 pre-set programs and 3 free programs with automatic time control
- ◆ Automatic distance measuring

Technical Data:

- ◆ 400 V, 3 PH+PE
- ◆ 6 KW
- ◆ 9 A
- ◆ 16 A slow-blow fuse

Delivery Contents:

Complete strand dryer with assembly instructions and operating instructions



Note

Observe the manufacturer assembly instructions and operating instructions.





4.1.15 Infrared Dryer - VAS6878-

Definition:

- ◆ Infrared Dryer - VAS6878-

Product Definition:

The infrared dryer is used to dry paste, filler, base paint, top coats and clear coats on vertical and horizontal surfaces.

- ◆ Short-wave infrared dryer with a cassette
- ◆ 12 pre-set programs with 3 free programs
- ◆ Fully automatic drying process with pyrometer for temperature control, laser pointer and automatic distance measurement

Technical Data:

- ◆ 400 V, 3 PH+PE
- ◆ 6 KW
- ◆ 9 A
- ◆ 16 A slow-blow fuse

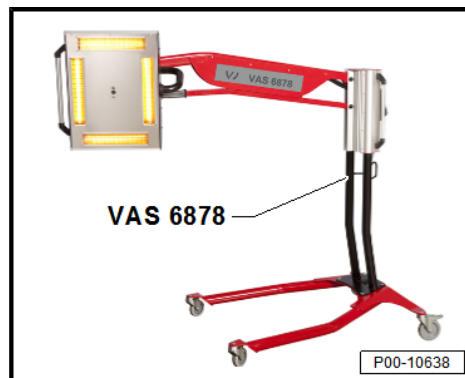
Delivery Contents:

Complete strand dryer with assembly instructions and operating instructions



Note

Observe the manufacturer assembly instructions and operating instructions.





4.1.16 Infrared Dryer - VAS6879-

Definition:

- ◆ Infrared Dryer - VAS6879-

Product Definition:

The infrared dryer is used to dry paste, filler, base paint, top coats and clear coats on vertical and horizontal surfaces.

- ◆ Short-wave infrared dryer with two cassettes
- ◆ 12 pre-set programs with 3 free programs
- ◆ Fully automatic drying process with pyrometer for temperature control, laser pointer and automatic distance measurement

Technical Data:

- ◆ 400 V, 3 PH+PE
- ◆ 12 KW
- ◆ 9 A
- ◆ 16 A slow-blow fuse

Delivery Contents:

Complete strand dryer with assembly instructions and operating instructions



Note

Observe the manufacturer assembly instructions and operating instructions.



4.2 Dust Cloths

⇒ ["4.2.1 Dust Cloth VAS6177 ", page 343](#)

⇒ ["4.2.2 White Polishing Cloth VAS6176 ", page 344](#)

⇒ ["4.2.3 Primary Duster VAS5542 ", page 344](#)

⇒ ["4.2.4 Professional Cleaning Cloth VAS6006 ", page 345](#)

4.2.1 Dust Cloth - VAS6177-

Definition:

- ◆ Dust Cloth - VAS6177-

Product Definition:

Dust cloth with extremely effective light adhesive formula for critical cleaning tasks. Unlike traditional dust cloths, this cloth does not leave any chemical residue on the surface or on the hands. This ensures that the surface in question is free of adhesive residue and fingerprints. This reduces the risk of streaking noticeably when processing water-based base paint. By using modern spun-bound technology, the cloth is extremely low-linting and does not fray. At the same time, it is wonderfully suited for repairs on plastic, since it reduces the static charge from the plastic parts.

Size: 380 x 430 mm

Application Areas:

- ◆ Intermediate cleanings before applying additional layers
- ◆ Removing dry particles before applying the top coat



- ◆ Cleaning plastic parts

Delivery Contents:

6 cloths per bag, 30 bags per carton

Folded 4-times in a sealed bag with a zip closure

4.2.2 White Polishing Cloth - VAS6176-

Definition:

- ◆ White Polishing Cloth - VAS6176-

Product Definition:

Extremely soft cloth for sensitive, exacting polishing. A combination of rayon and polyester fibers make it especially fluffy. The special spunbound construction prevents fraying and lint build-up. Since it contains no streak-causing additives, the buffing cloth is ideal for preparing chrome, glass and interior components.

Size: 400 x 365 mm per cloth

Application Areas:

- ◆ Hand polishing
- ◆ Finishing work on exterior surfaces
- ◆ Interior cleaning

Delivery Contents:

275 fleece cloths, rolled up in a dispenser box (tear-off)

4.2.3 Primary Duster - VAS5542-

Definition:

- ◆ Primary Duster - VAS5542-

Product Definition:

Universal duster with effective bonding formula for all cleaning tasks before applying base materials and conventional top coat products. By using modern spunbound technology, the cloth is extremely low-linting and does not fray.

Size: 305 x 460 mm

Application Areas:

- ◆ Removing dust and threads before applying base materials (glass-/paint primer, filler).
- ◆ Removing dry particles before applying top coats systems containing solvents

Delivery Contents:

12 individually-packed cloths, folded four times, per small box

12 small boxes per carton



4.2.4 Professional Cleaning Cloth - VAS6006-

Definition:

- ◆ Professional Cleaning Cloth - VAS6006-

Product Definition:

The cloth is suitable for dry cleaning surfaces (dust and micro-dust). It has anti-static properties when used to clean plastics, glass, paintwork and monitor screens. The cloth works even better when wet. Every smooth surface is deep-cleaned with just one motion. The cloth is chemical-free and abrasion-resistant and achieves a maximal cleaning effect without the need for chemical cleaning solutions. When needed, it can be used in combination with any cleaning agent. By splitting the processing fibers, the surface structure increases by 1400x. The fibers have a capillary effect, which binds the dirt deep inside the cloth. This way, the surface of the cloth remains clean and effective and can be used and reused many times. Rubbing the surface causes the dust, dirt, grease and liquid molecules to become polarized, such that these can be removed from the pad without the use of added chemicals.

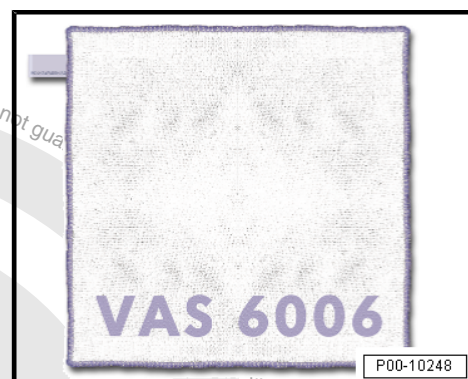
Size: 320 x 320 mm

Application Areas:

- ◆ Cleaning body surfaces for paintwork preparation
- ◆ Removing wax residue due to conservation considerations
- ◆ Removing dirt from textile and leather materials in the vehicle interior
- ◆ Cleaning windows and mirrors
- ◆ Cockpit cleaning
- ◆ Degreasing metal parts e.g. tools
- ◆ Many other application areas at home or in the office

Delivery Contents:

1 cloth 320 x 320 mm in a polyester sleeve



Edition: K0059211721 - FU - 11/19/2014 – TMP



5 Revision History

Re- vi- sion	Date	Job Type	Feedback #	Notes	Editor
2	11/ 19/ 201 4	Factory Up- date			Tom Perry
1	10/ 31/ 201 4	Factory Up- date	N/A		Eric Puter- baugh

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.
- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.