Signieren und Markieren Punkt- und Strichcodes mit Farbspritztechnik
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## Article Numbers / Ordering Information

The article number must be specified when ordering. The wildcard symbol — e.g. **WPS 20 000 001 0** — stands for optional nozzle diameters and needs to be supplemented by 2 numbers. For example, nozzle size 0.3 is represented by the numbers 03. Please refer to the catalogue for an overview of possible diameters.
MARKING SYSTEMS – FOR FORWARD-LOOKING MARKING TECHNOLOGY

WE OFFER:
- CUSTOM-MADE SYSTEMS
- HIGH-QUALITY COMPONENTS
- FROM PAINT SELECTION TO APPLICATION AND CONTROL TECHNOLOGY

Colour markings for highlighting quality standards or for process control are an essential component in modern production plants. That is why WALther PILOT offers custom-made systems and high-quality components that you can rely on for future-oriented marking technology.

As a rule, small quantities of paint and high precision are used, so only automatic spray guns with extremely short switching times can be used. The repeat accuracy of these guns ensures that even at high throughput speeds, every marking is in the right place.

From paint selection to application and control technology, we offer you the best possible result!
YOUR BENEFITS AT A GLANCE

☑️ NON-CONTACTING MARKING SYSTEMS

WALther PILOT offers a range of non-contact marking systems for applications in a variety of industries. System applications include defect marking, product identification or special marking throughout the entire manufacturing process. The markings can take a series of shapes, dots, lines or alphanumeric characters. These are high-precision spray marking systems that work with tiny amounts of paint and are very cost effective.

☑️ ADHESIVE APPLICATION SYSTEMS

WALther PILOT offers a comprehensive range of adhesive application systems. These include solvent-based spray systems, water-based spray systems and spray systems for 2-component adhesives. Systems include a material pressure tank, spray gun and dispensing system. Special configurations of adhesive application systems are available on request.

☑️ APPLICATION SYSTEMS

The application systems from WALther PILOT have been specially developed to meet the requirements of the material used and to achieve high-quality processing. The spray guns supplied with the system, as well as the material handling system, are adapted to the coating requirements. In order to meet customer-specific requirements, we can design the application system to fit into an existing control process or a customer-specific design. The application systems can be operated automatically or manually with one or more spray guns.

☑️ DOT OR LINE MARKING WITH PAINT SPRAYING TECHNOLOGY

The applications of dot or line markings are extremely diverse. The special advantage of the paint spraying process is that the marking is applied without surface contact. For this reason, the process is mainly used for objects in the metal and plastics processing industries. Marking can be carried out in any position. Special gun arrangements are also possible, so that different colours can be used to classify the parts in order to enable coding according to different criteria.

☑️ MARKING WITH MARKING BLOCKS

Pneumatically or electromagnetically controlled marking blocks are available for the application of alphanumeric characters. These large character printers are usually equipped with 4 to 9 spray nozzles. Special solutions can be created for each requirement profile.

☑️ APPLICATIONS AND INTENDED USES

The spray marking technique is not only suitable for marking and signing, but also for the finest, sharp-edged paintwork and a wide range of other applications such as precision gluing. For example, markings on gear wheels facilitate error-free assembly. In steel production, thanks to the use of parallel marking guns, batch numbers can be applied to steel coils that can be easily deciphered even from great heights. In saw mills, on the other hand, the absorbent surface of logs is marked for further processing — but smooth, non-absorbent surfaces such as ceramic or metal catalytic converters can also be marked beforehand by the PILOT GA 9010 Marking for exact assembly in engines. The spray gun is also ideally suited for applications such as machine-readable line markings on tubes and profiles or the colour marking of banknotes that are to be voided.

☑️ COMPONENTS, PAINTS AND INKS

While WALther PILOT previously had three spray guns and a complete system for line and dot marking in its product range, one gun now reliably covers the wide range of possible applications. For dot and line marking with the GA 9010 Marking spray gun, high-quality milled marking inks are used, which have less tendency to settle and clog in and at the nozzle than conventional coating materials. The inks are distributed by WALther PILOT and are available in all common colours. Custom colours are available on request.
DOT AND LINE MARKING WITH PAINT SPRAYING TECHNOLOGY

SYSTEM SELECT 1 / TYPE V 20

- Small spraying system with miniature material pressure tank for approx. 3,500 dot markings (at a dot size of 5 mm Ø)
- Simple operation, low-maintenance
- For dot sizes from 3 to 30 mm Ø
- The spray gun is triggered via the solenoid valve. The control is supplied by WALTHER PILOT if requested.
- We will be glad to provide planning and assembly services for the integration of the system into your production line.
- Available on short notice

EQUIPMENT OPTIONS

- The miniature material pressure tank is fastened directly to the gun, without hose connection
- Brackets for signing guns
- Spray mist extraction: Air on demand. Extraction is mandatory also for smallest amounts of paint. We offer economically priced solutions.
- Paint sensors / measuring transducers for function monitoring
- Integration of the system into your production line

Model system, delivery without display

WPS 10 000 001 0

For detailed ordering information, see p. 3
Dot and line marking with paint spraying technology

Marking Systems

SYSTEM SELECT 2 / TYPE V 750
- Small spray system with pressure cup for approx. 55,000 dot markings (at a dot size of 5 mm ø) or 3,300 metres line markings (width 5 mm)
- Compact design for easy process integration
- Simple operation, low-maintenance
- For dot sizes from 3 to 30 mm ø
- The spray gun is triggered via the solenoid valve. The control is supplied by WALTHER PILOT if requested.
- We will be glad to provide planning and assembly services for the integration of the system into your production line.
- Available on short notice

EQUIPMENT

<table>
<thead>
<tr>
<th>1</th>
<th>Marking spray gun PILOT GA 9010 Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>© body: material-carrying parts completely from stainless steel</td>
</tr>
<tr>
<td></td>
<td>© nozzle and needle: stainless steel</td>
</tr>
<tr>
<td></td>
<td>© nozzle sizes: 0.3 / 0.5 / 0.8 / 1.0 / 1.2 / 1.5 mm ø</td>
</tr>
<tr>
<td>2</td>
<td>Miniature material pressure tank 750 ml</td>
</tr>
<tr>
<td></td>
<td>© light metal, max. 3 bar / 43.5 PSI</td>
</tr>
<tr>
<td>3</td>
<td>Solenoid valve 3/2-way</td>
</tr>
<tr>
<td></td>
<td>© 24 VDC – other voltages available</td>
</tr>
<tr>
<td>4</td>
<td>Compressed air fitting with pressure gauges and safety valve</td>
</tr>
<tr>
<td></td>
<td>© summary of the compressed air control functions for simple signing systems (control and spraying air of signing gun, tank air)</td>
</tr>
<tr>
<td>5</td>
<td>Hose package (2 metres) incl. connections</td>
</tr>
<tr>
<td></td>
<td>© for air and material side</td>
</tr>
</tbody>
</table>

EQUIPMENT OPTIONS
- Brackets for signing guns
- Spray mist extraction: Air on demand. Extraction is mandatory also for smallest amounts of paint. We offer economically priced solutions.
- Paint sensors / measuring transducers for function monitoring
- Control cabinets
- Integration of the system into your production line

Small marking demo system with integrated pressure cup 750 ml for manual operation. These compact devices are also available for external control.

Dimensions H x W x D: 380 x 300 x 150 mm
DOT AND LINE MARKING WITH PAINT SPRAYING TECHNOLOGY

**SYSTEM SELECT 3 / TYPE V 3000**

- Small spray system with material pressure tank for approx. 70,000 dot markings (at a dot size of 5 mm ø) or 4,500 metres line markings (width 5 mm)
- Compact design for easy process integration
- Simple operation, low-maintenance
- For dot sizes from 3 to 30 mm ø
- Triggered via the solenoid valve. The control is supplied by WALTHER PILOT if requested.
- We will be glad to provide planning and assembly services for the integration of the system into your production line.
- Available on short notice

**EQUIPMENT OPTIONS**

- Brackets for signing spray guns (p.19)
- Wall bracket for pressure tank
- Easy integration of paint return
- Spray mist extraction: Air on demand
- Paint sensors / measuring transducers for function monitoring
- Control cabinets / pneumatic cabinets
- Integration of the system into your production line

**EQUIPMENT**

1. **Marking spray gun PILOT GA 9010 Marking**
   - Body: material-wetted parts completely from stainless steel
   - Nozzle and needle: stainless steel
   - Nozzle sizes: 0.3 / 0.5 / 0.8 / 1.0 / 1.2 / 1.5 mm ø

2. **Material pressure tank MDG 3 KLA, 2,500 ml**
   - Stainless steel, max. 3 bar / 43.5 PSI
   - Without agitator (fits 1-litre bottles)

3. **Solenoid valve 3/2-way**
   - 24 VDC – other voltages available

4. **Compressed air fitting with pressure gauges and safety valve**
   - Summary of the compressed air control functions for simple signing systems (control and spraying air of signing gun, tank air)

5. **Hose package incl. connections**
   - Air and material side

**CONFIGURATOR MDG 3 KLA**

Wall mount

Return for circulation system

Special pressure tank fitting for media containing solvents

Upper material removal

For detailed information, see p. 26 and p. 30-32

**SYSTEM VERSIONS**

- Type V 1000: same as V 3000, but with tank MDG 1 KLA, capacity 1,100 ml
- MDG 1 KLA can be fitted with agitators and filling level measuring equipment and is also suitable for material circulation. See also p. 21.
- Other possible tank sizes: MDG 2, MDG 4, MDG 8

**MARKING SYSTEMS**

Dot and line marking with paint spraying technology
This system is used in particular for settling or fast-drying materials. These materials are therefore circulated. A dual diaphragm pump is used for this purpose.

This is a small spray system with material pressure tank for approx. 70,000 dot markings (at a dot size of 5 mm ø) or 4,500 metres line markings (width approx. 5 mm)

Simple operation, low-maintenance

For dot sizes from 3 to 30 mm ø

The spray gun is triggered via the solenoid valve. The control is supplied by WALTHER PILOT if requested.

We will be glad to provide planning and assembly services for the integration of the system into your production line.

Available on short notice

SYSTEM VERSIONS

Depending on production requirements, the material supply of a signing system can include several material pressure tanks and diaphragm pumps. We develop custom-made concepts for your operation.

Instead of material pressure tank MDG 1, MDG 2 (1,800 ml), MDG 3 (2,500 ml), MDG 4 (3,100 ml) can be used. Tanks of the LDG series are another option.

EQUIPMENT OPTIONS

- Brackets for signing spray guns (p.19)
- Wall bracket for pressure tank
- Agitators / filling level measuring equipment
- Paint sensors / measuring transducers for function monitoring
- Control cabinets
- Integration of the system into your production line
- Compressed air fitting instead of pneumatics cabinet
Such systems are used whenever the nozzle and air cap are exposed to heavy soiling. This system is therefore equipped with an additional flushing valve. After spraying, an air/flushing agent mixture is pressed into the annular gap between nozzle and air cap.

This is a small spray system with material pressure tank for approx. 210,000 dot markings (at a dot size of 5 mm ø) or 13,500 metres line markings (width approx. 5 mm).

- Simple operation, low-maintenance
- For dot sizes from 3 to 30 mm ø
- The spray gun is triggered via the solenoid valve. The control is supplied by WALTHER PILOT if requested.
- We will be glad to provide planning and assembly services for the integration of the system into your production line.

**SYSTEM VERSIONS**

- Type V 1001: same as V 3003, but with tank MDG 1, capacity 1,100 ml
- Type V 2002: same as V 3003, but with tank MDG 2, capacity 1,800 ml
- Type V 4004: same as V 3003, but with tank MDG 4, capacity 3,100 ml
- Option: Fitted with compressed air agitator

**EQUIPMENT OPTIONS**

- Brackets for marking spray guns
- Agitators and filling level measuring equipment
- Spray mist extraction: Air on demand
- Paint sensors / measuring transducers for function monitoring
- Control cabinets
- Integration of the system into your production line

**FLUSHING PROCESS PROCEDURE**

- After completion of the marking process, close the signing gun via the solenoid valve.
- Open the flushing valve for approx. 3-5 seconds via the solenoid valve. An air/solvent mixture cleans the area between nozzle and air cap.
- Close flushing valve via solenoid valve after completion of the cleaning process.
- Open the solenoid valve for drying the nozzle/air cap area for approx. 5 seconds.
- Close solenoid valve, cleaning process is finished.
**SYSTEM SELECT 6 CIRCULATION FLUSHABLE / TYPE V 8008**

- **Design for processing settling or fast drying materials with dual diaphragm pump for material circulation.** An additional flushing device prevents interference through contamination of nozzle and air cap.

- **Spraying system for larger quantities of material with material pressure tank for approx. 37,000 metres of line markings (with a line width of 5 mm) and additional material pressure tank for the detergent.**

- **With flushing valve for cleaning the nozzles of the signing gun.**

- The spray gun is triggered via the solenoid valve. The control is supplied by WALther PILOT if requested.

- **Simple operation, low-maintenance.**

- We will be glad to provide planning and assembly services for the integration of the system into your production line.

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**SYSTEM VERSIONS**

- **Type V 12,012:** same as V 8,008, but with tank MDG 12, capacity 11,800 ml

- **Type V 22,022:** same as V 8,008, but with tank MDG 22, capacity 19,500 ml

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**EQUIPMENT**

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marking spray gun PILOT GA 9010 Marking</td>
<td>Design for circulation mode – flushable&lt;br&gt;Body: material-wetted parts completely from stainless steel&lt;br&gt;Nozzle and needle: stainless steel&lt;br&gt;Nozzle sizes: 0.3 / 0.5 / 0.8 / 1.0 / 1.2 / 1.5 mm ø</td>
</tr>
<tr>
<td>2</td>
<td>Flushing valve</td>
<td>Body: Brass, nickel-coated</td>
</tr>
<tr>
<td>3</td>
<td>Material pressure tank MDG 8, 6,400 ml</td>
<td>Stainless steel, max. 4 bar / 56 PSI&lt;br&gt;without agitator, for paint, circulation version</td>
</tr>
<tr>
<td>4</td>
<td>Material pressure tank MDG 8, 6,400 ml</td>
<td>Stainless steel, max. 4 bar / 56 PSI&lt;br&gt;without agitator, for detergent</td>
</tr>
<tr>
<td>5</td>
<td>Diaphragm pump MBP 2812</td>
<td>Acetal (other designs possible)</td>
</tr>
<tr>
<td>6</td>
<td>Solenoid valves 3/2-way</td>
<td>24 VDC – other voltages available, 1 x flushing valve, 1 x signing gun</td>
</tr>
<tr>
<td>7</td>
<td>Solenoid valves 2/2-way</td>
<td>24 VDC – other voltages available, 2 x pressure tank, 1 x signing spray gun, 1 x flushing valve</td>
</tr>
<tr>
<td>8</td>
<td>Pneumatics cabinet with pressure gauge</td>
<td>for the connection 2 x pressure tank, 1 x signing spray gun, 1 x flushing valve</td>
</tr>
<tr>
<td>9</td>
<td>Hose package incl. connections</td>
<td>Air and material side</td>
</tr>
</tbody>
</table>

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Options: same as Select 5, see page 10
COMPLEX SYSTEM COMPOSITIONS ARE REQUIRED? WE HAVE THE SOLUTION!

CONNECTION DIAGRAM FOR SPECIAL SIGNING SYSTEM:
1. Electrical/pneumatic switch cabinet
2. Filling level measuring equipment
3. Material pressure tank with agitator

SWITCH CABINETS / CONTROL EQUIPMENT

We design the right product solution for your special production requirements.
- Pneumatics cabinets
- Electrical/pneumatic switch cabinets
- Electrical switch cabinets

We are your single-source provider of all components, such as mounting racks or frames, required for the system integration of these control elements.

- Electrical switch cabinet
- Pneumatics cabinet
- Mounting frame

Touch panel for convenient setting of the parameters (PLC)
APPLICATION TECHNOLOGY, MATERIAL TRANSFER SYSTEMS, SPRAY MIST EXTRACTION TECHNOLOGY, FUNCTION MONITORING

☑ MATERIAL SUPPLY SYSTEMS ACCORDING TO DEMAND:
Pressure tank with agitator and filling level measuring sensors, diaphragm pumps for material circulation, complete hose assembly

☑ CABINETS FOR MATERIAL SUPPLY SYSTEM:
If necessary, with exhaust control for the extraction of harmful gases or vapours that may escape when opening the pressure tanks; drip pans for fluid handling of hazardous substances

☑ SIGNING SPRAY GUNS WITH FLUSHING SYSTEM FOR OUTSIDE NOZZLE CLEANING AFTER EACH SPRAYING OPERATION

☑ SPRAY BOOTH:
with extraction system for solvent vapours and paint mists

FILTER SYSTEM:
Multilayer paper mats with high absorption capacity

☑ PAINT SENSORS AND MEASURING TRANSDUCERS FOR FUNCTION MONITORING:
This gives you certainty as to whether the dot or bar code has really been applied and avoids faulty coatings and rejects

☑ CONTROL EQUIPMENT:
Switch cabinets (pneumatic, electrical/pneumatic, electrical) exactly matching your demand

☑ SPACE-SAVING INTEGRATION OF THE SIGNING SYSTEM
into your existing or planned production line, competent engineering from a single source

The complete assembly includes:
- Sensor
- Sensor housing
- Housing bracket
VCZ H 32 000 00

Top:
Enjoy 100 % process reliability when using paint sensors.

Left:
Cabinet with material supply (pressure tank with cover rest, dual diaphragm pumps, drip pans and filling level measuring sensor)
MARKING BLOCKS

MATRIX FOR MARKING BLOCKS
The character height lies between 40 and 200 mm. The main customers are steel plants marking their products with respective batch numbers. These signs can be read from a large distance.

APPLICATIONS
- For example, signing of slabs, tales, sheets, pipes, profiles, coils, containers
- Colour coding

BENEFITS
In contrast to other marking systems, signing systems allow the application of heat-resistant paints.

During cleaning and maintenance work, the individual guns can be easily and quickly removed from the block.

In the event that quick-drying paints are used or longer pauses occur between signings, we recommend using signing blocks with flushing device. This special WALTHER PILOT development ensures that paint residues are removed from the nozzle and air cap after the last signing process. In this way, the guns on the block remain fully functional.

The synchronisation of the part throughput speed and the alphanumeric marking to be generated is carried out via the control computer provided by the customer.
Marking blocks

Marking Systems

PNEUMATICALLY SELECTED SIGNING BLOCKS

COMPACT, SPACE-SAVING DESIGN

Low-wear diaphragm guns are used. The service life is many times longer than that of spray guns with needle seals. It also makes sense to work with diaphragm guns with regard to the paints used for hot-signing, which contain sharp-edged pigments.

- The character heights lie between 40 and 200 mm.
- The dot size can be adjusted by means of a fine click adjustment.
- The writing speed is max. 54 m / min.
- The block is optionally available with flushing device.
- Pneumatic signing blocks can be equipped with any number of guns.

1 signing block faster than previous unit:
10 milliseconds number of cycles

Equipment:

- Air cap 2.3
- Nozzle needle 0.3
- Circulation diaphragm

ELECTROMAGNETICALLY SELECTED SIGNING BLOCKS (ES SERIES)

HIGH SPEED WITH PAINT JET

The new “Paint Jet” is small, light and unsurpassed fast. The direct selection of the nozzles via special magnets enables cycle times of 3 milliseconds from dot to dot.

- The character heights lie between 40 and 200 mm.
- The dot size can be adjusted by means of a fine click adjustment.
- The writing speed is max. 360 m / min.
- The block is equipped with a flushing device as standard.
- Systems with 7 or 9 nozzles are available as standard. Special solutions with a different number of nozzles are easily feasible.
A WIDE RANGE OF APPLICATIONS

PRECISE AND EDGE-SHARP PAINT APPLICATION

Marking and block guns can be used for a wide range of applications. These often have to do with paint, but also with other materials, e.g. adhesives, release agents, lubricants, casting compounds or cosmetics. The material is best fed using WALther PILOT material pressure tanks or pumps. WALther PILOT is your specialist, especially when it comes to demanding tasks. So get in touch with us. There are generally no off-the-shelf spraying systems for fine materials.

APPLICATION EXAMPLES

- Application of screw lock
- Lubricant application, e.g. for drill bits and milling cutters
- Release agent application for rubber profiles
- End position gluing of paper rolls
- Collar painting for gas cylinders
- Targeted application of adhesives (edge gluing)
- Adding of hardeners and adhesives
- Sealing of printed circuit boards with protective lacquer
- Casting of circuit board components
- Painting of small parts with complex geometries
- Precise and sharp-edged lacquer application

These paint application systems are suitable for a wide range of the finest painting and gluing work - right up to colouring artificial flowers.
A wide range of applications
Marking Systems

IMPLEMENTING INNOVATIVE PAINT CONCEPTS
The marking gun is ideally suited for overspray-free coating of small parts because its sharp-edged paint application. This example shows the thread painting of a bolt. Due to the sharp-edged painting and the associated avoidance of overspray to a large extent, it is possible to use the robot to pick up the spray objects — instead of picking up the spray gun as usual. Do you also need innovative coating solutions? We will be pleased to advise you.

If necessary, we carry out tests with your workpieces and the coating material at our pilot plant. This way you can be sure that the optimum application technology is used.

PAINTING IN HARD-TO-REACH AREAS
Particularly compact spray guns, which can be controlled externally, are installed in such a way that isolated coatings can also be applied in cavities and recesses.
Example: Repair coating inside a can packaging. Two automatic spray guns in miniature design for the isolated paint application in the area of the handle loops. Even if the amount of paint is very small, paint mist extraction must be provided.

SPRAY-ON MIRROR APPLICATION
In order to improve the legibility of printing by inkjet printers, primarily white lacquer is first applied with the spray gun. The objective: the writing or coding stands out clearly against this background and can be better captured by the reader. Example: Spray-on mirror on catalytic converter.
PILOT GA 9010 MARKING

With the PILOT GA 9010 Marking, sharp-edged markings are possible. The extremely short switching times (opening, spraying, closing) make it ideal for use in productions with short cycle times. The PILOT GA 9010 Marking guarantees a smooth production process even under the most difficult conditions thanks to specially suitable flushing equipment and a robust design.

- Dimensions (H x W x D): 29 x 22 x 128 mm
- Atomiser air connection: 2 x M 7 - 6 x 4
- Control air connection: 2 x M 5 - 4 x 3
- Material feed: 1 x M 5 - 6 x 4
- Atomiser air pressure: 0-6 bar / 0-87 PSI
- Control air pressure: min. 4 bar / 58 PSI - max. 6 bar / 87 PSI
- Material pressure: 0-6 bar / 0-87 PSI
- Operating temperature: max. 80 °C
- Sound level: 1 bar / 14.5 PSI = 64 dB (A) 6 bar / 87 PSI = 83 dB (A)

APPLICATIONS

- Markings due to weld seam inspections for sheets and tubes
- Marking of rejects
- NOK part marking
- Machine-detectable marking after leak test
- Marking as orientation guide
- Marking of different construction types with the same appearance
- Production line marking (e.g. cutting and bending lines)

FULLY AUTOMATIC SPRAY GUN FOR DOT AND LINE MARKING

PILOT GA 9010 MARKING

AVAILABLE JET NOZZLE INSERTS

<table>
<thead>
<tr>
<th>Jet nozzle insert</th>
<th>0.3</th>
<th>0.5</th>
<th>0.8</th>
<th>1.0</th>
<th>1.2</th>
<th>1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>03</td>
<td>05</td>
<td>08</td>
<td>10</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>
PILOT GA 9010 MARKING DIAPHRAGM

Robust, fully automatic marking gun with diaphragm instead of needle seal. Particularly suitable for processing abrasive or moisture-curing materials and quick-drying paints.

- Dimensions (H x W x D): 29 x 22 x 128 mm
- Atomiser air connection: 2 x M 7 - 6 x 4
- Control air connection: 2 x M 5 - 4 x 3
- Material feed: 1 x M 5 - 6 x 4
- Atomiser air pressure: 0-6 bar / 0-87 PSI
- Control air pressure: min. 4 bar / 58 PSI - max. 6 bar / 87 PSI
- Material pressure: 0.3-4 bar / 4.4-58 PSI
- Operating temperature: max. 50°C
- Sound level: 1 bar / 14.5 PSI = 64 dB (A) 6 bar / 87 PSI = 83 dB (A)

### AVAILABLE JET NOZZLE INSERTS

Jet nozzle insert | mm ø | 0.3 | 0.5 | 0.8 | 1.0 | 1.2 | 1.5
--- | --- | --- | --- | --- | --- | --- | ---
No. | 03 | 05 | 08 | 10 | 12 | 15

SPECIAL SPRAY GUNS WITH REDUCED SPACE REQUIREMENTS

PILOT WA 51 WITH NEEDLE STROKE LIMIT

Miniature spray gun for external control of the atomization parameters.

- All wetted parts: stainless steel
- Also available with material volume regulation

### SPECIAL SPRAY GUN PILOT WA 51

| With round-jet nozzle insert | V 20 306 70 | 3 |
| With wide-jet nozzle insert | V 20 306 71 | 3 |

### AVAILABLE JET NOZZLE INSERTS

Jet nozzle insert | mm ø | 0.3 | 0.5 | 0.8 | 1.0 | 1.2 | 1.5
--- | --- | --- | --- | --- | --- | --- | ---
No. | 03 | 05 | 08 | 10 | 12 | 15

PILOT WA 81 – “THE PIPE CRAWLER”

The best option for internally coating longer pipes is the “Pipe Crawler”, i.e. the PILOT WA 81 automatic spray gun. Its axial connections make it possible to draw it through the pipe on a special carriage, enabling 360° circular spraying.

- Maximum viscosity of Material 40 sec. (depending on material) / DIN 4 (140mPa•s)
- Minimum diameter of lacquering object, interior 21 mm (measured at material with viscosity of 10 sec. /10 mPa•s)
- Maximum diameter of lacquering object, interior 800 mm (measured at material with viscosity of 10 sec. /10 mPa•s)

| V 20 381 51 | 3 |

### AVAILABLE JET NOZZLE INSERTS

Jet nozzle insert | mm ø | 0.3 | 0.5 | 0.8 | 1.0 | 1.2 | 1.5
--- | --- | --- | --- | --- | --- | --- | ---
No. | 03 | 05 | 08 | 10 | 12 | 15

Materials connection: 6 x 4
- Control air connection: 4 x 2.5
- Atomiser air connection: 2 tubes x 6 x 4
NOZZLE EXTENSIONS

The new generation of nozzle extensions is based on a modular system. Threaded connectors are used throughout. The modular system allows custom configurations for different usage requirements.

- Wetted parts: Stainless steel
- Standard pipe lengths: 100 - 1,000 mm, other lengths available on request
- Special flyer available on request or on www.walther-pilot.de

Using pressure tanks or pump systems is recommended to achieve good coverage per milliliter.

Air pipe also available in stainless steel.

Subject to the material viscosity nozzle extensions of 300 mm maximum can be used with Gravity-feed-cup-guns. There are no limitations with material connection.

<table>
<thead>
<tr>
<th>NOZZLE EXTENSIONS</th>
<th>RV 67A</th>
<th>RV 67B</th>
<th>RV 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprays straight ahead / min.</td>
<td>Sprays sideways 45° / min.</td>
<td>Internal mixing system 360° / min.</td>
<td></td>
</tr>
<tr>
<td>Inlet opening: 8 mm Ø</td>
<td>Inlet opening: 8 mm Ø</td>
<td>Inlet opening: 8 mm Ø</td>
<td></td>
</tr>
<tr>
<td>Nozzle sizes from 0.3 mm - 1.5 mm Ø</td>
<td>Nozzle sizes from 0.3 mm - 1.5 mm Ø</td>
<td>Nozzle sizes: 1.0 mm und 1.5 mm Ø (suitable only for spray guns with material connection)</td>
<td></td>
</tr>
</tbody>
</table>

SURVEY OF SPRAY GUN LINE

<table>
<thead>
<tr>
<th>SPRAY GUNS</th>
<th>PILOT 9010 MARKING</th>
<th>PILOT GA 9010 MARKING DIAPHRAGM</th>
<th>PILOT WA 51 with needle stroke limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable for abrasive and other problem media</td>
<td>—</td>
<td>✓</td>
<td>—</td>
</tr>
<tr>
<td>Stainless steel for parts contacting the material</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hard-coated nozzle and needle</td>
<td>○</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Available nozzle sizes 0.2, 0.3, 0.5, 0.8, 1.0, 1.2, 1.5 Ø</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Atomiser air pressure / control air pressure / material pressure</td>
<td>0-6.0 bar / min. 4.0 bar-max. 6.0 bar / 0-6.0 bar / 0-87 PSI / min. 58 PSI-max. 87 PSI / 0-87 PSI</td>
<td>0-6.0 bar / min. 4.0 bar-max. 6.0 bar / (0.3-4.0 bar MB) 0-87 PSI / min. 58 PSI-max. 87 PSI / (4.35-58 PSI)</td>
<td>0.1-8.0 bar / 6.0 bar / 1.0-6.0 bar 1.45-116 PSI / 87 PSI / 14.5-87 PSI</td>
</tr>
<tr>
<td>Length x width x height, weight</td>
<td>128 X 22 X 29, 440 g</td>
<td>128 X 22 X 29 mm, 440 g</td>
<td>67 x 20 ø, 94 g</td>
</tr>
<tr>
<td>Switching speed</td>
<td>13 ms (milliseconds)</td>
<td>13 ms (milliseconds)</td>
<td>25 ms (milliseconds)</td>
</tr>
<tr>
<td>Adapter plate</td>
<td>○</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive accessories*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Pressure tanks, pumps, agitators, filling level indicators, valves, hoses, compressed air fittings

✓ in order, ○ Optional, — not applicable
# AIR CAPS PILOT SIGNIER / WA 51 / WA 200

<table>
<thead>
<tr>
<th>TYPE</th>
<th>INFORMATION</th>
<th>MATERIAL</th>
<th>DOT Ø</th>
<th>LINE Ø</th>
<th>SURFACE Ø</th>
<th>JET NOZZLE INSERTS</th>
<th>ARTICLE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1*</td>
<td>Round spray with impact edge</td>
<td>Stainless Steel</td>
<td>2-30 mm</td>
<td>2-30 mm</td>
<td>–</td>
<td>0.3 - 0.5 mm</td>
<td>V 20 339 13 033</td>
</tr>
<tr>
<td>3.2*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8 - 1.0 mm</td>
<td>V 20 339 13 083</td>
</tr>
<tr>
<td>3.3*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2 - 1.5 mm</td>
<td>V 20 339 13 123</td>
</tr>
<tr>
<td>4.1</td>
<td>Wide jet with horns, 2 holes</td>
<td>Stainless Steel</td>
<td>–</td>
<td>–</td>
<td>15-30 mm</td>
<td>0.3 - 0.5 mm</td>
<td>V 20 339 14 032</td>
</tr>
<tr>
<td>4.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8 - 1.0 mm</td>
<td>V 20 339 14 082</td>
</tr>
<tr>
<td>4.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2 - 1.5 mm</td>
<td>V 20 339 14 122</td>
</tr>
<tr>
<td>5.1</td>
<td>Round spray with impact edge</td>
<td>Stainless Steel</td>
<td>–</td>
<td>–</td>
<td>15-25 mm</td>
<td>0.3 - 0.5 mm</td>
<td>V 20 339 14 033</td>
</tr>
<tr>
<td>5.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8 - 1.0 mm</td>
<td>V 20 339 14 083</td>
</tr>
<tr>
<td>5.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2 - 1.5 mm</td>
<td>V 20 339 14 123</td>
</tr>
<tr>
<td>6.1</td>
<td>Wide jet with horns, 4 holes</td>
<td>Stainless Steel</td>
<td>–</td>
<td>–</td>
<td>20-60 mm</td>
<td>0.3 - 0.5 mm</td>
<td>V 20 339 17 034</td>
</tr>
<tr>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8 - 1.0 mm</td>
<td>V 20 339 17 084</td>
</tr>
<tr>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2 - 1.5 mm</td>
<td>V 20 339 17 124</td>
</tr>
<tr>
<td>7.1</td>
<td>Round spray with impact edge</td>
<td>Stainless Steel</td>
<td>2-30 mm</td>
<td>2-30 mm</td>
<td>–</td>
<td>0.3 - 0.5 mm</td>
<td>V 20 339 13 030</td>
</tr>
<tr>
<td>7.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8 - 1.0 mm</td>
<td>V 20 339 13 080</td>
</tr>
<tr>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2 - 1.5 mm</td>
<td>V 20 339 13 120</td>
</tr>
</tbody>
</table>

* When marking with dots, choose an air cap one number larger.

## MATERIAL NOZZLES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>INFORMATION</th>
<th>MATERIAL</th>
<th>JET NOZZLE INSERTS</th>
<th>ARTICLE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>009</td>
<td>Water based</td>
<td>Stainless Steel</td>
<td>0.3 mm</td>
<td>V 20 336 25 033</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.4 mm</td>
<td>V 20 336 25 043</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.5 mm</td>
<td>V 20 336 25 053</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.8 mm</td>
<td>V 20 336 25 083</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.0 mm</td>
<td>V 20 336 25 103</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.2 mm</td>
<td>V 20 336 25 123</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.5 mm</td>
<td>V 20 336 25 153</td>
</tr>
<tr>
<td>009</td>
<td>Standard</td>
<td>Stainless Steel</td>
<td>0.2 mm</td>
<td>V 20 336 23 023</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.3 mm</td>
<td>V 20 336 23 033</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.4 mm</td>
<td>V 20 336 23 043</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.5 mm</td>
<td>V 20 336 23 053</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.8 mm</td>
<td>V 20 336 23 083</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.0 mm</td>
<td>V 20 336 23 103</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.2 mm</td>
<td>V 20 336 23 123</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.5 mm</td>
<td>V 20 336 23 153</td>
</tr>
<tr>
<td>009</td>
<td>Adhesives / fast-drying paints</td>
<td>Stainless Steel</td>
<td>0.2 mm</td>
<td>V 20 336 23 028</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.3 mm</td>
<td>V 20 336 23 038</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.5 mm</td>
<td>V 20 336 23 058</td>
</tr>
</tbody>
</table>
CUSTOM-MADE SOLUTIONS

We can also supply you with holders, e.g. for aligning the signing guns for multiple coding. In addition, we offer custom-made complete solutions, e.g. signing bridges.

MOUNTING FLANGE FOR SIGNING SPRAY GUNS
- Pipe diameter: 12 mm
  - V 21 300 25 000

CROSS CLAMP
- Diameter: 18 X 12
  - 23 251 72
- Diameter: 18 X 18
  - 23 251 62

FLANGE CLAMP
- Diameter: 18 mm
  - 23 335 081

FOOT CLAMP
- Diameter: 18 mm
  - 23 335 081

ANKLE CLAMP
- Diameter: 18 mm
  - 23 210 27

REDUCING SLEEVES
- Diameter: 18 mm to ø 12 mm
  - 23 336 22
MATERIAL AND DETERGENT DELIVERY

PRESSURE TANK MDG KLA
Stainless steel pressure tanks of the type MDG or LDG are often used for signing and marking. They ensure pulsation-free delivery of the material. The tanks are suitable for holding original containers. Consumables (paints, inks, cleaning agents) are also available from us. Agitator and filling level measurement equipment can also be easily integrated into small tanks. The modular design of the small stainless steel tanks MDG 1, MDG 3 and MDG 8 enables our plant construction department to implement custom-made material conveying concepts flexibly and promptly. The tanks are prefabricated so that agitators, filling level sensors etc. can be installed immediately.

MATERIAL PRESSURE TANKS, STAINLESS STEEL

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MAX. PRESSURE</th>
<th>CAPACITY APPROX.</th>
<th>VERSION</th>
<th>NO. / STAINLESS STEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDG 1</td>
<td>3 bar / 43.5 PSI</td>
<td>1.1 liters</td>
<td>Without agitator</td>
<td>V 40 121 30 013</td>
</tr>
<tr>
<td>MDG 3</td>
<td>3 bar / 43.5 PSI</td>
<td>2.5 liters</td>
<td>Without agitator, also suitable for 1 litre hazardous material bottles</td>
<td>V 44 131 30 013</td>
</tr>
<tr>
<td>MDG 8</td>
<td>4 bar / 58 PSI</td>
<td>6.4 liters</td>
<td>Without agitator</td>
<td>V 44 221 40 013</td>
</tr>
<tr>
<td>MDG 22</td>
<td>6 bar / 87 PSI</td>
<td>19.5 liters</td>
<td>Without agitator</td>
<td>V 44 321 60 013</td>
</tr>
<tr>
<td>MDG 45</td>
<td>6 bar / 87 PSI</td>
<td>42.5 liters</td>
<td>Without agitator</td>
<td>V 44 241 60 013</td>
</tr>
</tbody>
</table>

1 For use with 10/15-liter containers – Please check container sizes!
2 For use with 30-liter containers

OTHER SIZES ON REQUEST

EXAMPLES

MDG 1 KLA, see p. 24
MDG 3 KLA, specially made for 1 litre bottles, see page 26
MDG 8 KLA with air-driven type 46-810 agitator, capacitive fill level sensor as well as bottom valve for filling and two additional upper valves for material recirculation.
MDG 22 KLA with air-driven type 46-810 agitator along with tuning fork sensor to protect against overfilling. Fill at the bottom valve. The two upper valves for material recirculation - feed and return.

MDG 45 KLA without attachments

Fast opening and closing with hinged cross-grip lock.
OVERVIEW MDG 1 KLA

Wall bracket

Compressed air inlet valve

Upper material removal

Min. limit switch

Agitator

Bottom drain

A: ø 13.5 mm
B: ø 12.5 mm
C: 1/4” thread
D: ø 34.5 mm
E: 1/4” thread
F: ø 8.5 mm

Effective volume: 1.1 L
Gas volume: 1.96 L
Height: 140 mm
Diameter dia.: 125 mm
<table>
<thead>
<tr>
<th>CONNECTIONS / EQUIPMENT</th>
<th>PART NO.</th>
<th>DESIGNATION</th>
<th>FIGURE</th>
<th>APPLICATION</th>
</tr>
</thead>
</table>
| MDG 1                  | V 40 123 300 13 | Material pressure tank 1 | | • For material supply  
  • Max. operating pressure 3 bar / 43.5 PSI  
  • Max. permitted operating temperature of 50 °C |
| Compressed air regulation | A | 23 649 38 | DEA0 MDG-KLA | • Compressed air inlet fitting for the tank  
  • Max. connection cross-section is dia. 4 mm  
  • Without regulator |
| | A | 23 559 51 | DEA1 MDG-KLA | • Compressed air inlet fitting for the tank  
  • Control range 0.5 – 3.0 bar / 7.2 – 43.5 PSI |
| | A | 23 559 52 | DEA precision regulator | • Precision pressure regulator for the tank  
  • Control range 0.05 – 3.0 bar / 0.7 – 43.5 PSI |
| Material withdrawal | B | 23 649 39 | Conversion kit with 2-way distributor and a shut-off valve | • To expand an existing riser pipe to supply two consumers  
  • Suitable for materials with a viscosity of up to 1000 mPa.s |
| | C | 23 626 72 | 1/4” shut-off valve for the lower outlet | • To supply one consumer |
| Agitator | D | V 46 200 400 13 | Pneumatic agitator, DRW 0.16 kW 46-200 ex VA, max. 400 rpm operating pressure 1 – 6 bar / 14.5 – 87 PSI (2) | • For the brief stirring of low-viscosity materials  
  • Can be used in explosion hazard areas (Zone 0+1)< 1000 mPa.s |
| Min. limit detection | E | 23 189 82 | Vibrating tuning fork probe 230 V, AC, not Ex-protected | • To detect the minimum fill level in the tank |
| | E | 23 186 23 | Vibrating tuning fork probe 24 V, DC, not Ex-protected | • Only in combination with 23 651 98 |
| | E | 23 177 24 | Vibrating tuning fork probe 24 V, DC, not Ex-protected | • To detect the minimum fill level in the tank |
| F | 23 459 43 | Wall mount | | • For mounting on a wall |

(1) : not in combination with the agitator  
(2) : not in combination with the DEW Precision
OVERVIEW MDG 3 KLA

Wall mount

Riser pipe

Upper material removal

Compressed air inlet valve

For use with 1 liters bottle

A: ø 13.5 mm
B: ø 12.5 mm
C: ø 12.5 mm
D: M8

Effective volume: 2.5 L
Gas volume: 3.2 L
Height: 260 mm
Diameter dia.: 125 mm
<table>
<thead>
<tr>
<th>CONNECTIONS / EQUIPMENT</th>
<th>PART NO.</th>
<th>DESIGNATION</th>
<th>FIGURE</th>
<th>APPLICATION</th>
</tr>
</thead>
</table>
| MDG 3                   | V441330013 | Material pressure tank 3 | ![Image](image1.png) | • For material supply  
• Max. operating pressure 3 bar / 43.5 PSI  
• Max. permitted operating temperature of 50 °C |
| Compressed air regulation | A | DEA0 MDG-KLA 3 bar / 43.5 PSI | ![Image](image2.png) | • Compressed air inlet fitting for the tank  
• Max. connection cross-section is dia. 4 mm  
• Without regulator |
| | | DEA1 MDG-KLA 3 bar / 43.5 PSI | ![Image](image3.png) | • Compressed air inlet fitting for the tank  
• Control range 0.5 – 3.0 bar / 7.2 – 43.5 PSI |
| | | DEA precision regulator 3 bar / 43.5 PSI | ![Image](image4.png) | • Precision pressure regulator for the tank  
• Control range 0.05 – 3.0 bar / 0.7 – 43.5 PSI |
| Material withdrawal | B/C | Conversion kit with 2-way distributor and a shut-off valve | ![Image](image5.png) | • To expand an existing riser pipe to supply two consumers  
• Suitable for materials with a viscosity of up to 1000 mPa.s  
• Return flow KH + PTFE hose (adapter) |
| On request | | | | |
| Handling | D | Wall mount | ![Image](image6.png) | • For mounting on a wall |
SMALL PRESSURE TANK AND LIGHT WEIGHT TANK LDG

LDG 20 with electrical geared agitator 0.12 kW
LDG 10 with compressed air geared agitator 0.36 kW
LDG 5 without agitator

Stainless steel pressure tank
Type LDG 20, 5 and 10 (lightweight construction). Max. positive operating pressure each: 6 bar / 87 PSI.

LIGHTWEIGHT MATERIAL PRESSURE TANKS, STAINLESS STEEL

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MAX. PRESSURE</th>
<th>CAPACITY APPROX.</th>
<th>VERSION</th>
<th>NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDG 5</td>
<td>6 bar / 87 PSI</td>
<td>3.5 liters</td>
<td>Without agitator</td>
<td>V 44 051 60 013</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>3.5 liters</td>
<td>With manual agitator</td>
<td>V 44 051 60 113</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>3.5 liters</td>
<td>With air-powered agitator (0.16 kW, 400 rpm)</td>
<td>V 44 051 60 213</td>
</tr>
<tr>
<td>LDG 10</td>
<td>6 bar / 87 PSI</td>
<td>9.0 liters</td>
<td>Without agitator</td>
<td>V 44 101 60 013</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>9.0 liters</td>
<td>With manual agitator</td>
<td>V 44 101 60 113</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>9.0 liters</td>
<td>With air-powered agitator (0.36 kW, 200 rpm)</td>
<td>V 44 101 60 213</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>9.0 liters</td>
<td>With electric agitator (0.12 kW, 60 rpm)</td>
<td>V 44 101 60 313</td>
</tr>
<tr>
<td>LDG 20</td>
<td>6 bar / 87 PSI</td>
<td>15 liters</td>
<td>Without agitator</td>
<td>V 44 201 60 013</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>15 liters</td>
<td>With manual agitator</td>
<td>V 44 201 60 113</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>15 liters</td>
<td>With air-powered agitator (0.36 kW, 200 rpm)</td>
<td>V 44 201 60 213</td>
</tr>
<tr>
<td></td>
<td>6 bar / 87 PSI</td>
<td>15 liters</td>
<td>With electric agitator (0.12 kW, 60 rpm)</td>
<td>V 44 201 60 313</td>
</tr>
</tbody>
</table>

Only for LDG 5 and 10: Inliners made of thin-layer, hard-wearing polypropylene protect against contamination. Only the riser pipe, agitator shaft or agitator blade need to be cleaned.

ATEX suitable.

Inliner LDG 5
V 43 000 50 000
Inliner LDG 10
V 43 001 000 00

Light metal pressure tank 750 ml, 3 bar / 43.5 PSI, for System Select 2, p. 7
Signing pressure tank
V 11 352 91 100
Optional: Wall mount
V 11 352 91 200
consisting of
console
V 11 352 91 300
clamp
V 11 352 91 400

Miniature material pressure tank 20 ml, 3 bar / 43.5 PSI from stainless steel. The tank is docked directly to the gun. For System Select 1, p. 6

Diaphragm pump MBP 2812 for use with circulating systems. For System Select 4 and 6, p. 9 and p. 11

Micro diaphragm pumps are also available. We are pleased to advise you regarding possible applications. For System Select 4, p. 9
MARKING PAINTS, INKS AND CLEANING AGENTS

WALTHER PILOT sells a range of inks, paints, solvents and cleaning agents for a variety of marking applications. Chemical compatibility and perfect interaction with all components ensure trouble-free operation.

Inks have an extremely diverse chemical composition. They must comply with product specifications. Drying time (<1 sec. or 15 sec.), UV resistance, durability, material compatibility, printing accuracy, degree of coverage and many other parameters must be adapted to the actual conditions on site based on their specific requirements.

For dot and line marking with the GA 9010 Marking spray gun, high-quality milled marking inks are used, which have less tendency to settle and clog in and at the nozzle than conventional coating materials. The inks are distributed by WALTHER PILOT and are available in all common colours. Custom colours are available on request.

The signing inks can be used on wet, hot (up to 800 °C), smooth, porous or even greasy surfaces. This makes them ideal for marking sheet metal, pipes, plastics, textiles, glass, but also wood, paper, ceramics and rubber. Signing inks (e.g.: WPF 1922, WPF0232) are fast-drying, well covering, oil-resistant, light-fast and waterproof. For clean and sharp-edged marking on bright background, we recommend signing ink, e.g. type WPT 1800.

BENEFITS

- PACKAGE SIZES AS REQUIRED
- COST-EFFECTIVE DUE TO LOW CONSUMPTION
- CLEANER SUITABLE FOR THE SIGNING PAINT
- STANDARD COLOURS IN STOCK
- SPECIAL COLOURS AVAILABLE ON SHORT NOTICE

WHICH REQUIREMENTS MUST THE MARKING INK MEET?

- slow or fast drying
- good adhesion or washable
- light-fast and weatherproof
- solvent-free or solvent-containing
- fluorescent visible or invisible
- pigmented or strongly pigmented
- waterproof and temperature-resistant
- high-contrast and machine-readable
- highly viscous for absorbent surfaces
- for hot and cold surfaces
- annealing and abrasion resistant
- food grade and water-based
STANDARD MARKING PAINT TYPE WPF 1922
- Characteristics: alcohol-based, eco-friendly product, quick drying, clear marking points, weatherproof
- Application: marking dry surfaces e.g. sheet metal, pipes
- WPF 1922: different shades available on request
- WPF 1922: white, red, fluorescent green
- WPV 0218: Corresponding thinner

STANDARD MARKING INK TYPE WPT 1800
- Application: for marking dry or slightly damp surfaces
- WPT 1800: RGB Black color range, further shades available on request
- WPV 0166: Corresponding thinner

SPECIAL MARKING INK TYPE WPF 0232
- Characteristics: dichloromethane-based product. Quick drying, dries within one second
- Application: for marking dry and oily surfaces
- WPF 0232: various paint shades as needed
- WPF 0232: fluorescent magenta, white, red, green
- WPV 0222: Corresponding thinner

OVERVIEW PAINTS AND INKS

<table>
<thead>
<tr>
<th>TYPE</th>
<th>PAINT BASE</th>
<th>SHADES</th>
<th>DRYING TIME IN SEC.</th>
<th>USE ON SUBSTRATE</th>
<th>COMMENT</th>
<th>SUITABLE THINNERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPF1922</td>
<td>alcohol</td>
<td>yellow, red, green, blue, black, white, orange, pink, signal red, signal yellow, gentian blue</td>
<td>min. 15 sec.</td>
<td>dry surfaces</td>
<td>weather-resistant, clear dots, fast drying e.g. on tubes (signing block)</td>
<td>WPV0218</td>
</tr>
<tr>
<td>WFF1922</td>
<td>alcohol</td>
<td>fluorescent white, red, green</td>
<td></td>
<td>dry surfaces</td>
<td>clear dots, fast drying e.g. on pipes</td>
<td>WPV0218</td>
</tr>
<tr>
<td>WFF0974</td>
<td>acetone</td>
<td>fluorescent clear</td>
<td>&lt;1 sec.</td>
<td></td>
<td></td>
<td>WPV200</td>
</tr>
<tr>
<td>WFT1642</td>
<td>water</td>
<td>blue fluorescent clear</td>
<td></td>
<td></td>
<td>visible in open air and under black light (UV), only absorbent substrates</td>
<td>warm water</td>
</tr>
<tr>
<td>WPT0974</td>
<td>acetone</td>
<td>red, green, black, blue</td>
<td>&lt;1 sec.</td>
<td></td>
<td></td>
<td>WPV200</td>
</tr>
<tr>
<td>WPT0376</td>
<td>dichloromethane, glycolic acid</td>
<td>red, green, black, blue</td>
<td>&lt;1 sec.</td>
<td></td>
<td></td>
<td>WPV0222</td>
</tr>
<tr>
<td>WPT0442 (SIMACO)</td>
<td>organic solvents</td>
<td>yellow</td>
<td>30-40s</td>
<td>rubber, and on non-absorbent surfaces</td>
<td>nozzle size: 0.2-0.3</td>
<td>WPV0111</td>
</tr>
<tr>
<td>WPT0808</td>
<td>water-based</td>
<td>red, green, black, blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPT0950</td>
<td>black</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WPV0202</td>
</tr>
<tr>
<td>WPT0974</td>
<td>acetone</td>
<td>black</td>
<td>&lt;1 sec.</td>
<td>additionally with adhesive resin</td>
<td></td>
<td>WPV200</td>
</tr>
<tr>
<td>WPT0980</td>
<td>black</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WPV0202</td>
</tr>
<tr>
<td>WPT1800</td>
<td>alcohol, acetone</td>
<td>yellow, blue, red, black</td>
<td>&lt;1 sec.</td>
<td>dry, slightly moist surfaces</td>
<td>defect marking for light surfaces – slightly oily/greasy</td>
<td>WPV0166</td>
</tr>
<tr>
<td>WPF1374</td>
<td>acetone</td>
<td>yellow, red, green, blue, black, white, orange, pink, signal red, signal yellow, gentian blue</td>
<td>&lt;2 sec.</td>
<td></td>
<td></td>
<td>WPV0102</td>
</tr>
<tr>
<td>WFT1374</td>
<td>fluorescent blue clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WPV0200</td>
</tr>
<tr>
<td>WPT1394</td>
<td>alcohol, acetone</td>
<td>blue, green, black, pink</td>
<td>5-10 sec.</td>
<td></td>
<td>fast drying, like WPT1800 only less hard parts</td>
<td>WPV0166</td>
</tr>
</tbody>
</table>

WPV: WALTHER PILOT thinner, WPF: WALTHER PILOT paints, WPV: WALTHER PILOT thinner, WSF: WALTHER Special Paint, WSV: WALTHER Special Thinner

Exhaust equipment required when using dichloromethane.
<table>
<thead>
<tr>
<th>TYPE</th>
<th>PAINT BASE</th>
<th>SHADES</th>
<th>DRYING TIME IN SEC.</th>
<th>USE ON SUBSTRATE</th>
<th>COMMENT</th>
<th>SUITABLE THINNERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPF 1228</td>
<td>alcohol, water</td>
<td>grey, red, black</td>
<td>&lt;10 sec., only for NOK marking</td>
<td>glass</td>
<td>water, distilled or if necessary WPV0102</td>
<td></td>
</tr>
<tr>
<td>WPF 1280</td>
<td>alcohol</td>
<td>fluorescent green</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPT 1476</td>
<td>alcohol</td>
<td>green, red, blue, black</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPF 1532</td>
<td>ethyl alcohol, isopropyl alcohol, propanone</td>
<td>yellow, red, purple, green, blue, grey, brown, white</td>
<td>dry surfaces</td>
<td>oven bricks</td>
<td>WPV0102</td>
<td></td>
</tr>
<tr>
<td>WPF 1552</td>
<td>ethyl alcohol, isopropyl alcohol, propanone</td>
<td>white</td>
<td></td>
<td></td>
<td>especially for pipe marking WPV0218</td>
<td></td>
</tr>
<tr>
<td>WPF 1478</td>
<td>alcohol</td>
<td>black, white, red</td>
<td></td>
<td></td>
<td>like WPF1922 only more abrasion-resistant WPV0218</td>
<td></td>
</tr>
<tr>
<td>WPF 1600</td>
<td>alcohol</td>
<td>yellow, red</td>
<td></td>
<td></td>
<td>slightly oily/greasy max. 100 °C WPV0166</td>
<td></td>
</tr>
<tr>
<td>WPF 1620</td>
<td>acetic acid, xylene, glycolic acid</td>
<td>black</td>
<td></td>
<td>up to 600 °C</td>
<td>WPV0198</td>
<td></td>
</tr>
<tr>
<td>WPF 1622</td>
<td></td>
<td>white</td>
<td></td>
<td></td>
<td>WPV0222</td>
<td></td>
</tr>
<tr>
<td>WPF 1624</td>
<td>Xylol</td>
<td>Schwarz, Grün, Weiß</td>
<td></td>
<td></td>
<td>WPV0300 UN1263 Farzbuehstoff, III, ADR</td>
<td></td>
</tr>
<tr>
<td>CE440 / WPT0440</td>
<td>xylene</td>
<td>fluorescent blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPF 232</td>
<td>dichloromethane 65-75 %, xylene 4-10 %</td>
<td>red, yellow, blue, clear, white, green, black</td>
<td>&lt;1 sec.</td>
<td>wet surfaces, container with FEP lid seals WPV0222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPF 232</td>
<td>dichloromethane 65-75 %, xylene 4-10 %</td>
<td>fluorescent magenta, clear, white, red, green</td>
<td>&lt;1 sec.</td>
<td>wet surfaces, container with FEP lid seals WPV0222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPF 232</td>
<td>dichloromethane 65-75 %, xylene 4-10 %</td>
<td>black</td>
<td></td>
<td></td>
<td>faster than WPF0232 but only suitable for light-coloured substrates WPV0222</td>
<td></td>
</tr>
<tr>
<td>WPF 418</td>
<td>oil</td>
<td></td>
<td></td>
<td></td>
<td>high temperatures &gt; 900 °C, use in steel market WPV0222</td>
<td></td>
</tr>
<tr>
<td>VP3009-1</td>
<td>water-based pigment</td>
<td>yellow</td>
<td>5-10s</td>
<td>dry, clean, porous, smooth not for rubber</td>
<td>good covering power</td>
<td>water, distilled</td>
</tr>
<tr>
<td>VP3009-2</td>
<td>water-based pigment</td>
<td>yellow</td>
<td>5-10s</td>
<td>dry, clean, porous, smooth not for rubber</td>
<td></td>
<td>water, distilled</td>
</tr>
<tr>
<td>WPF 994</td>
<td>white, black</td>
<td></td>
<td></td>
<td></td>
<td>hot signing up to 800° WPV0102</td>
<td></td>
</tr>
<tr>
<td>WPV 0102</td>
<td>clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>WPV 0166</td>
<td>clear</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>WPV 0198</td>
<td>clear</td>
<td></td>
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<tr>
<td>WPV 0200</td>
<td>acetone</td>
<td>clear</td>
<td></td>
<td></td>
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<tr>
<td>WPV 0202</td>
<td>clear</td>
<td></td>
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</tr>
<tr>
<td>WPV 0222</td>
<td>clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPV 0218</td>
<td>clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WPV 0996</td>
<td>clear</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>WSF 1898</td>
<td>yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSV1898</td>
</tr>
<tr>
<td>WSV 1898</td>
<td>clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WPT**: WALTHER PILOT inks, **WPF**: WALTHER PILOT paints, **WPV**: WALTHER PILOT thinner, **WSF**: WALTHER Special Paint, **WSV**: WALTHER Special Thinner
5 NOTES ON HANDLING MARKING SYSTEMS

1. BASIC SETTINGS

**SPRAY GUN:**
- Control air: 5.0-6.0 bar / 72.5-87 PSI
- Atomizer air: 2.0-4.0 bar / 29-58 PSI
- Material pressure: 0.8-1.5 bar (min. 0.5 bar) / 11.6-21.7 PSI (min. 7.3 PSI)

Note: Do not throttle the amount of material too much. The needle stroke setting should be screwed out at least two turns. Otherwise, select a smaller nozzle size.

**FLUSHING GUN:**
- Control air: 5.0-6.0 bar / 72.5-87 PSI
- Atomizer air: 2.0-3.0 bar / 29-43.5 PSI
- Dry blowing air: 4.0-6.0 bar / 58-87 PSI (selected via 2/2-way valve)
- Material pressure: 2.0 - 3.0 bar / 29-43.5 PSI

Note: Atomiser air and material pressure must be operated at approximately the same pressure for the flushing gun. The atomiser air pressure should be slightly higher.

**MATERIAL PRESSURE TANK:**
- Pressurisation: 4.0-6.0 bar / 58-87 PSI

**COMPRESSED AIR:**
- Use compressed air free from oil and condensate

2. HANDLING THE PAINT SYSTEM

- Performing a leak test: Fill the system with water (attention, in special cases use a different medium) and check for leaks for approx. 1 hour at max. tank pressure and closed gun. Now use water-soluble solvent (e.g. alcohol). Only then can solvents such as nitro be used.
- Press solvent out of the paint system until only residual solvent remains in the hose and gun.
- Fill with paint and press out residual solvent
- Always leave the filled system under pressure, max. 2 weeks if paint is used. Otherwise the paint must be emptied and replaced with solvent.

Note: Never leave the system unfilled (danger of drying in hoses and equipment). Always leave the material under low pressure - approx. 0.5 bar / 7.3 PSI — and close the ball valve to the compressed air.

Regularly check the needle seals of the spray gun. Start immediately after the first use and adjustment of the system. At intervals of 12 weeks the needle seals must be tightened by 3 - 5°.
3. HANDLING THE FLUSHING SYSTEM

- The minimum material pressure should be 0.5 bar / 7.3 PSI.
- Replace the flushing lines regularly (frequency depends on material)

Note: Regularly check the needle seals of the flushing gun. Start immediately after the first use and adjustment of the system. At intervals of 12 weeks the needle seals must be tightened by 3 - 5°.

4. SYSTEM CONTROL

DOT MARKING:
- If the frequency of markings is low, multiple test shots are recommended to ensure that the desired dot is also sprayed.
- Produce test shots regularly (frequency depends on the drying time)
- Generate multiple test shots after a longer period of inactivity
- Replace the paint lines regularly (frequency depends on material). We recommend a PTFE (Teflon) hose.

LINE MARKING:
- In order to ensure optimum process reliability for line markings, it is advisable to avoid endless lines by short spraying interruptions.
- Produce test shots regularly (frequency depends on the drying time of the paint, temperature and humidity)
- Generate multiple test shots after a longer period of inactivity
- Replace the paint lines regularly (frequency depends on material). We recommend a PTFE (Teflon) hose.

5. FLUSHING THE SYSTEM

- After completion of the marking process, close the spraying gun via the solenoid valve 1.1.
- Open the flushing gun for approx. 3-5 seconds via the solenoid valve 2.1. An air/solvent mixture cleans the area between nozzle and air cap.
- Close flushing gun via solenoid valve 2.1 after completion of the cleaning process.
- Open the air valve 2.2 for drying the nozzle/air cap area for approx. 5 - 10 seconds.
- Close the air valve 2.2, cleaning process is finished.

Note: The flushing process (consisting of cleaning and drying) should be carried out several times in succession with short pulses for better cleaning. After flushing, check the cleaning result on the spray gun. This will help you to determine how much time the flushing process should take. In any case a drying process at high air pressure (4-6 bar / 58-87 PSI) is indispensable.
QUESTIONNAIRE FOR THE CONFIGURATION OF A MARKING SYSTEM

COMPANY
ADDRESS
POSTCODE / CITY
INDUSTRY
SALES REGION

CONTACT
OFFICE TEL. NO.
MOBILE TEL. NO.
E-MAIL
FAX

PROPOSED PROCESS

SUBSTRATE TO BE MARKED
☐ steel  ☐ wood  ☐ glass  ☐ aluminium  ☐ plastic
☐ other

SURFACE CONDITION OF THE SUBSTRATE TO BE MARKED
☐ wet  ☐ dry  ☐ oily  ☐ light colour  ☐ dark colour  ☐ scaly
☐ other

Temperature of the object during marking ___________________________ Room temp. __________

TYPE OF MARKING TO BE PERFORMED
☐ alphanumerical  font size ___________________________ belt speed ___________________________
☐ code  ☐ EAN 8  ☐ EAN 13  ☐ EAN 128  ☐ data matrix
☐ dots  dot size ___________________________
☐ lines  line width ___________________________
☐ other

Estimated number of markings per hour ___________________________

Number of production hours per day ___________________________ Working days per week ___________________________

Desired drying time ___________________________ Desired colour ___________________________

Other requirements (e.g. marking must be weather-proof) ___________________________

Send  ☐ quotation  ☐ appointment with sales rep  ☐ brochures

Author ___________________________ Date ___________________________

OR SIMPLY COMPLETE ONLY AT: WWW.WALTHER-PILOT.DE