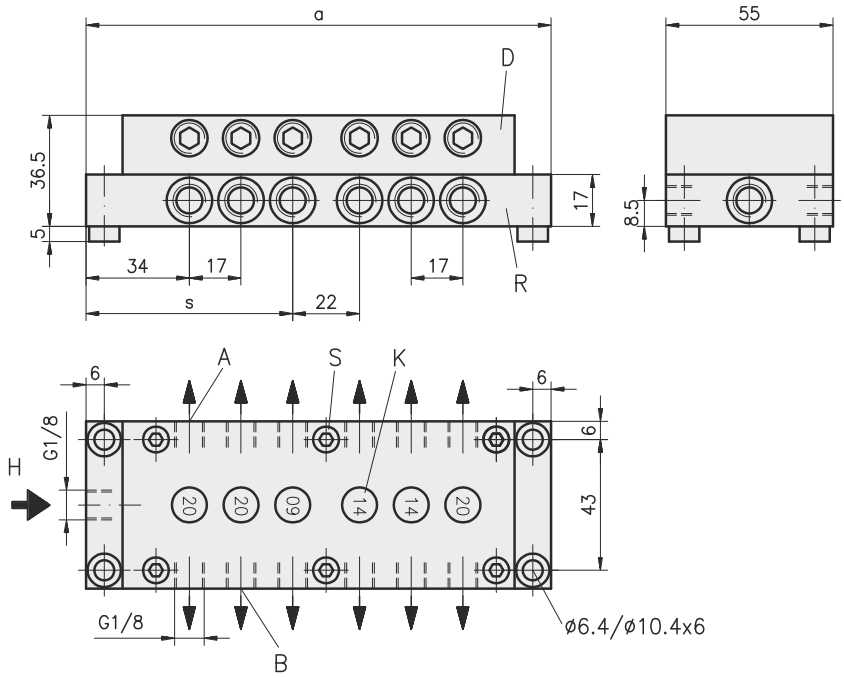
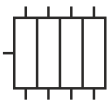
Illustration shows example




A = Mounting point at distributor (for viewing indicator and electrical function monitoring)
B = Mounting point for viewing indicator at distributor (if point A is occupied)
D = Proportioning block DPA-B
H = Main line
K = Proportioning volume distinctive number
R = Connecting plate APA-B
S = mid fastening screw

| Number of outlets | Length "a" | Length "s" | Weight kg |
|---|---|---|---|
| 6 | 97 | - | 0,50 |
| 8 | 114 | - | 0,65 |
| 10 | 131 | - | 0,80 |
| 12 | 153 | 68 | 0,95 |
| 14 | 170 | 85 | 1,10 |
| 16 | 187 | 85 | 1,25 |
| 18 | 204 | 102 | 1,40 |
| 20 | 221 | 102 | 1,55 |

**Progressive distributor**
**VPA-B**



**Use:**

In progressive mode based central lubrication systems.

The main features of **WOERNER**-progressive distributors are as follows:

- **Accurate proportioning volumes.**
- Clear and precise arrangement of control channels **in spite of small-size construction.**
- **Modular system construction.** Quick fault remedy possible without having to loosen the pipeline.
- **3 different proportioning volumes** selectable in accordance with the lubricant required.
- **Extremely long service life** due to refined sliding surfaces.
- **Pluggable monitoring elements** can be replaced during operation.
- **No proportioning decrease at the piston monitored.**
- **Various options for monitoring.**

**Technical data:**

| | |
|---|---|
| Proportioning volume per cycle: | 0,09 ... 0,2 cm³ |
| Lubrication point connections: | max. 20 |
| Operating pressure: | max. 150 bar |
| Throughput volume | |
| Oil: | max. 700 cm³/min |
| Grease: | max. 70 cm³/min |
| Delivery medium | |
| Oil-viscosity: | >7 mm²/s |
| Grease: | up to NLGI-category 2 |
| Material | |
| Proportioning block: | Aluminium |
| Internal parts: | Steel |
| Connecting plate: | Aluminium |
| Gasket material: | FPM |
| Temperature range: | -20 ... +80 °C |
| Mounting position: | usually as needed |

Note: In case of heavy vibration or shock load, install the distributor such that piston axes are situated vertically to the main direction of shock impact.
An optimum ventilation of the whole lubrication system is the precondition for its functionally safe operation.
For quicker ventilation, the flow direction from bottom to top in the distributor is of advantage (inlet on bottom side).
The distributor must not be "distorted". Therefore when mounting it, always be careful that the supporting surface is level.

- Subject to modifications -



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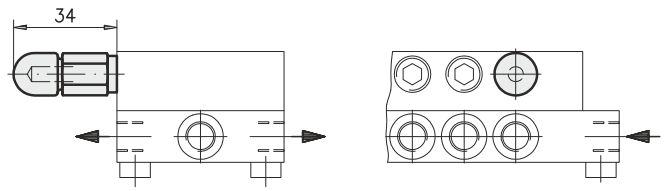
**Visual control "S"**



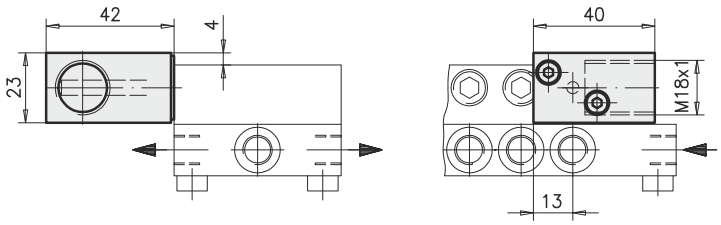

**Function monitorings:**

**Visual control "S":**

In a translucent polyamide casing, a red pin being fixed to the piston shows the piston's movement.

Casing material: Polyamide, translucent
Ambient temperature: -10 ... +80 °C
Weight: 0,35 kg
Mounting point at distributor: A or B

**Casing for proximity switch**




**Electrical control with proximity switch:**

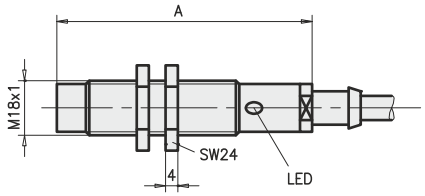
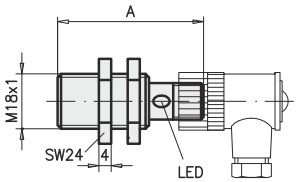
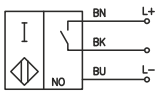
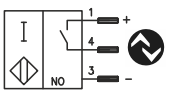
**Casing for proximity switch:**

A pin being connected with the piston attenuates an proximity switch once per cycle.

Version "W":
Casing material: Polyamide, black
for proximity switch
with a switching distance of: ≥5 mm

Use proximity switch with M18x1 thread!
(When using other proximity switches than those depicted below, such proximity switches must be checked for suitability).

**Choice of proximity switches:**

| **Designation / Order no.** | **Proximity switch "C" 913.900-03** | **Proximity switch "N" 913.901-14** |
|---|---|---|
| Dimension drawing: |   |   |
| Connection diagram: |   |   |
| Switching distance: | 8 mm | 8 mm |
| Operating voltage: | 10 ... 30 VDC | 10 ... 30 VDC |
| Switching hysteresis: | ≤10% | ≤10% |
| Switching current: | max. 250 mA | max. 150 mA |
| Protection class: | DIN EN 60529 IP67 | DIN EN 60529 IP67 |
| Power connection: | Cable 3 m | Male M12x1, 4-pin (see accessoires page 3) |
| Length "A": | 76,5 mm | 65 mm |

- Subject to modifications -



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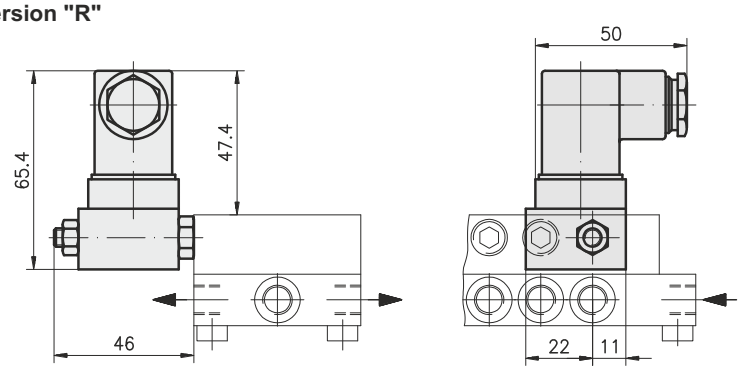
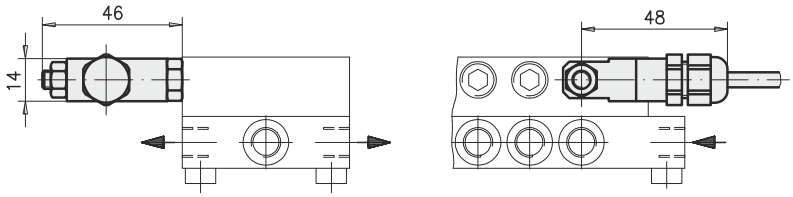
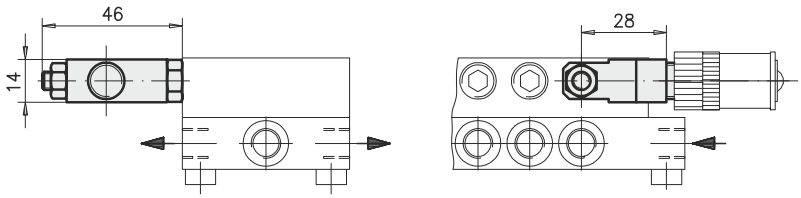
**Version "R"**




**Version "RK"**




**Version "RS"**




**Electrical control with reed contact:**

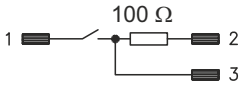
A magnet connected with the piston switches the reed contact once per cycle.

| | |
|---|---|
| Switching voltage: | 10 ... 36 VUC |
| Switching current: | max. 25 mA |
| Switching power: | max. 0,9 VA |
| Ambient temperature: | -5 ... +80 °C |
| Mounting point at distributor: | A |

**Version "R" with male DIN EN 175301-803, shape A:**

| | |
|---|---|
| Material (casing): | Al or 1.4305 |
| Protection class: | DIN EN 60529 IP65 |

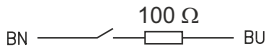
Connection diagram:




**Version "RK" with cable:**

| | |
|---|---|
| Material (casing): | PA or 1.4305 |
| Protection class: | DIN EN 60529 IP65 |
| Cable | |
| Length: | 10 m |
| Cross section: | 2x0,75 mm² |
| Material: | Oilflex |

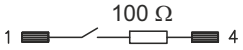
Connection diagram:




**Version "RS" with male M12x1, 4-pin:**
(for matching connecting cable see accessories)

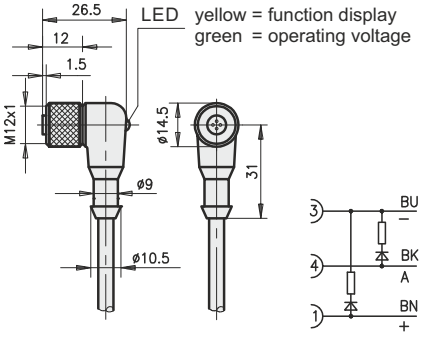
| | |
|---|---|
| Material (casing): | PA or 1.4305 |

Connection diagram:

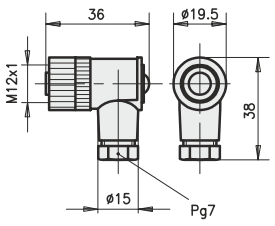



**Accessories:**
Connecting cable for function monitoring "RS" and proximity switch
**(please order no. specify)**

**Connecting cable with LED**




**Cable jack with terminal clamps**




**Connecting cable with LED:**

| | |
|---|---|
| Order no.: | **913.404-19** |
| Operating voltage: | 10 ... 30 VDC |
| Cable | |
| Cross section: | 3x0,34 mm² |
| Length: | 5 m / 90° |
| Protection class: | DIN EN 60529 IP68 |

**Cable jack with terminal clamps: (without LED)**

| | |
|---|---|
| Order no.: | **913.404-24** |
| Connection type: | Screws |
| Connection cross section: | max. 0,75 mm² |
| Cable diameter: | 4 ... 6 mm |
| Protection class: | DIN EN 60529 IP67 |





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**Order designation:**


| Number of outlets | Function monitoring: Visual control | Function monitoring: electrical control | Function monitoring: Proximity switch | Proportioning volume per piston stroke and outlet in cm³ |
|---|---|---|---|---|
| 6 ... 20 increasing by 2 outlets each | without (0) | without (0) | without (0) | 0,05 [1] (05) |
| | | Reed contact (R) (RK) (RS) | | 0,09 (09) |
| | with (S) | reinforced proximity switch casing Switching distance ≥5 mm (W) | (N) | 0,14 (14) |
| | | | (C) | 0,20 (20) |

**Order designation:** Proportioning block

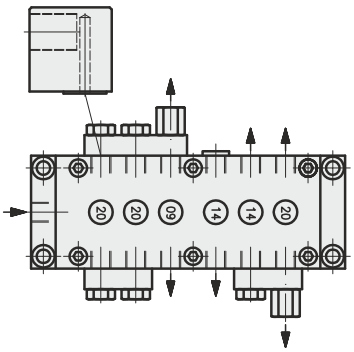

**Order designation:** Connecting plate


**ATTENTION!**

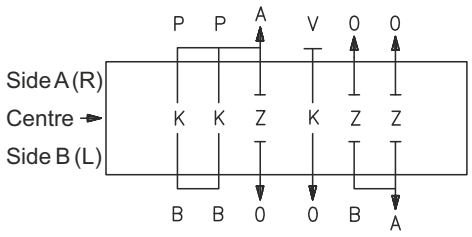
[1] The proportioning volume 0,05 cm³ is not possible at the last point. For safe dosing, complete distributor venting is necessary, see operating instructions B0336.

**Note: When a function monitoring is to be added on, the proportioning volume must be 0,20 cm³ at least at the last point!**

**Distributor view**




**Scheme**




**Order example:**
(for the distributor as depicted here)

Progressive distributor with 12 outlets, without visual control "0", with casing for proximity switch "W" and proximity switch "C", proportioning distinctive numbers "20", "20", "09", "14", "14", "20".

**Order designation:**

**VPA-B / 00 / 12 / 0 / W / C / 20 / 20 / 09 / 14 / 14 / 20**
**Side A (R): P / P / A / V / 0 / 0**
**Centre: K / K / Z / K / Z / Z**
**Side B (L): B / B / 0 / 0 / B / A**





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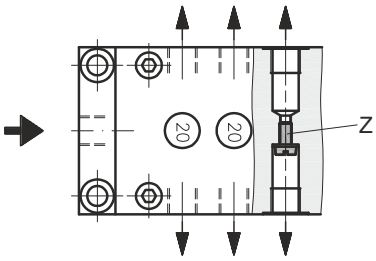
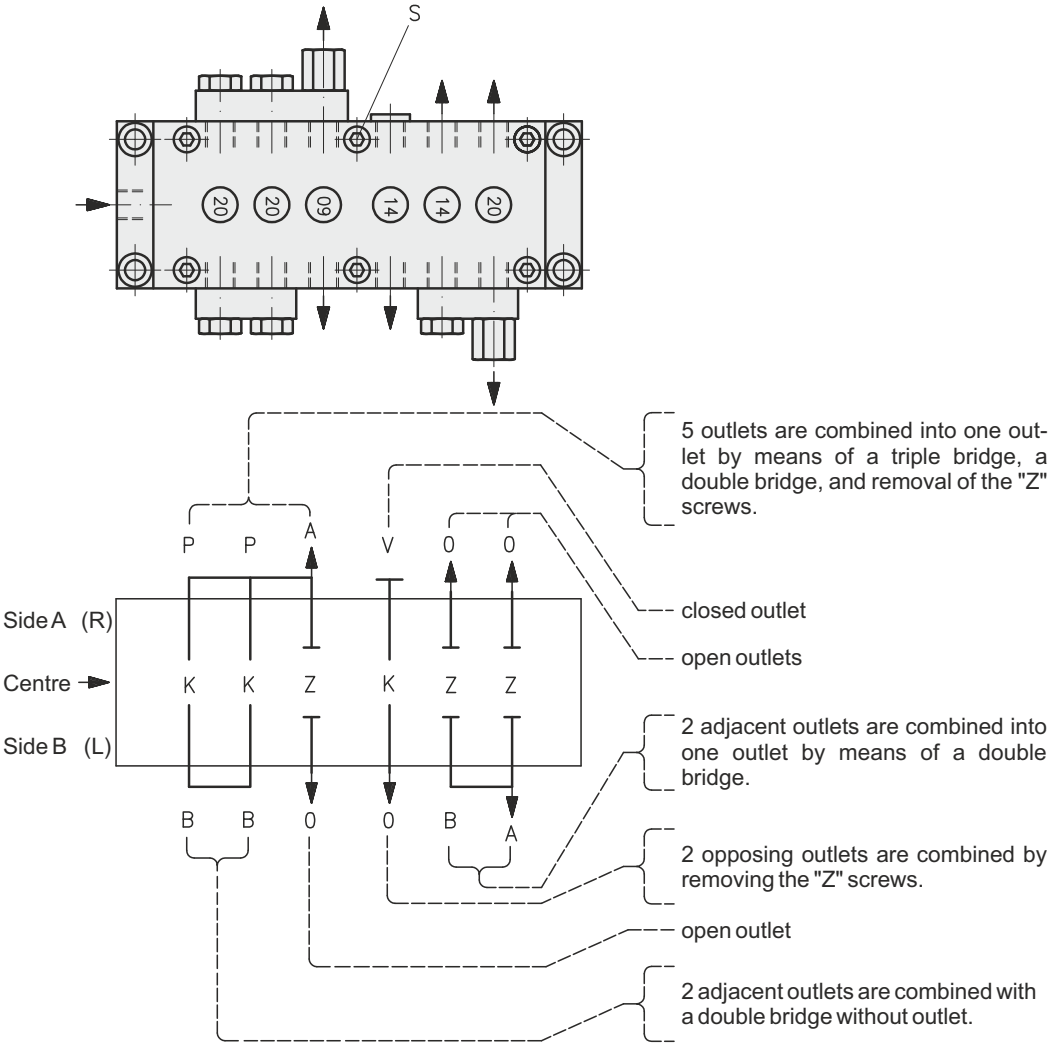
**Combination of outlets,
doubling the proportioning volume at an outlet:**

Connect opposing outlets by removing the "Z" screw.
Close any of the outlets by means of a screwed sealing plug.
Without removal of the "Z" screw, no outlet must be locked.




**Bridges and lock screw**

**Add-on elements and combination of outlets:**




Distinctive letters:
B = double bridge
P = triple bridge
A = Outlet at the bridge
Z = opposing outlets separated
K = opposing outlets connected
0 = open outlet
V = Lock screw

**Accessories:** Only in conjunction with progressive distributor.
**Pipe screw fittings DIN 2353:** (please order no. specify)

| Connection thread | Pipe screw fitting with pipe-outerø | | | | | Check valve with pipe-outerø | | |
|---|---|---|---|---|---|---|---|---|
| | 4 | 6 | 8 | 10 | 12 | 4 | 6 | 8 |
| G 1/8 | **951.100-04** | **951.100-05** | **951.100-06** | **951.102-23** | – | **501.060-65** | **501.065-65** | **501.070-65** |

**Technical documents also valid for this product:**

**E0117 EN Spare parts VPA-B, -C, -D**
**B0336 EN Operating instruction VP**





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Fig. 1

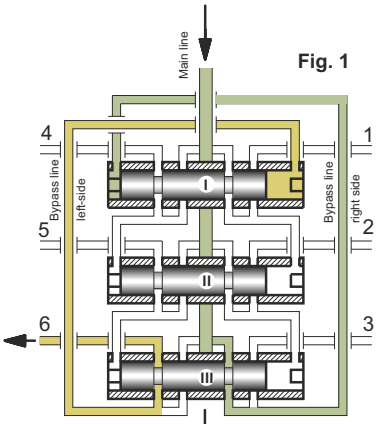



Fig. 2

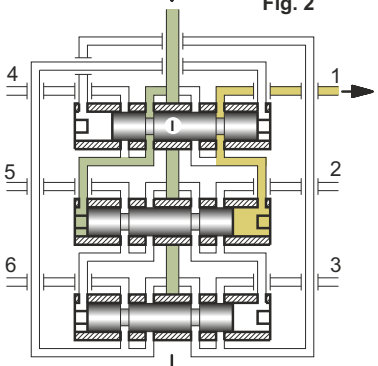



Fig. 3

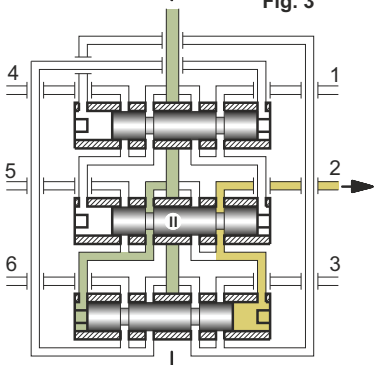
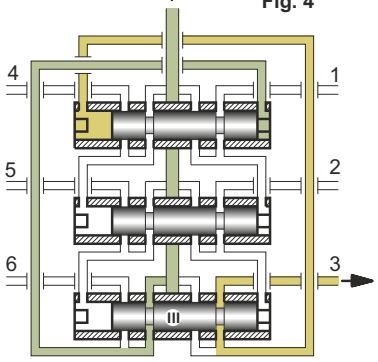



Fig. 4




**Functional process fig. 1 ... 4:**

The lubricant flows from the main line through the right-side ring groove of piston III as well as the bypass line (right) and to the left side of piston I and moves it into its home position. The lubricant displaced by piston I is ejected via the left bypass line through outlet no. 6.

After shifting of piston I, lubricant flows to the left side of piston II and pushes it into its right-side home position. The displaced lubricant is ejected via outlet no. 1.

After shifting of piston II, lubricant flows to the left side of piston III and pushes it into its right-side home position. The displaced lubricant is ejected via outlet no. 2.

After shifting of piston III, lubricant flows to the right side of piston I and pushes it into its left-side home position. The displaced lubricant is ejected via outlet no. 3. The continuation of that process is evidenced in the scheme depicted.

**Monitoring of progressive distributors:**

As for instance due to soiling, the flow through a lubricant point line may be prevented. This will cause a piston to get blocked. By virtue of the forced control as depicted in figures 1 up to 4, the other pistons will be stopped as well.
Due to this configuration, the proportioning at all outlets of the distributor can be monitored by means of a sensor at one piston only.

**Setting of the proximity switch:**

1. Switching on the pump (distributor circulates).
2. Screwing the proximity switch in as far as a permanent occurs, then turning back the proximity switch as far as an alternating signal occurs.
3. Turning back the proximity switch until no signal is released.
4. Setting the proximity switch between the limit values "2 (alternating)" and "3 (no signal)".
5. Secure the proximity switch with a counter nut.

**Mounting note:**

The pistons are provided with an extremely small fitting clearance. Therefore, the pistons, after the dismantling of a distributor, must never be interchanged.

**Formula for calculating the lubricant available per lubrication point:**

A progressive distributor allocates the delivered lubricant to the individual lubrication points in forced order. Due to the functional process as described herein, a safe proportioning is ensured.

The lubricant $q_i$ delivered to a lubrication point i can be calculated as follows

$$q_i = \frac{K_i}{2 * (K_1+K_2+K_3...)} * Q$$

Q = lubricant delivered to the distributor,

$K_i$ = distinctive number of the outlet i





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## Important information about this data sheet



All the information in this data sheet has been examined for correctness with great care. Nevertheless, WOERNER cannot assume any liability for losses or damage resulting directly or indirectly from the application of the information contained in this data sheet.

All products from WOERNER may only be used as intended and corresponding to the information in this data sheet.
For products supplied with operating instructions, the additional directives and information contained in them are to be complied with.

Materials deviating from those mentioned in this data sheet and the technical documents which further apply may only be poured into and processed in the appliances and systems manufactured and supplied by WOERNER by following agreement with and written approval by WOERNER.
The safety and danger information stated in the safety data sheets of the substances used must be taken into account at all costs.

Transportation of gases, liquefied gases, gases under pressure, vapours and liquids, the vapour pressure of which is more than 0,5 bar above normal atmospheric pressure (1013 mbar) at the maximum admissible temperature, of easy inflammable or explosive media as well as transportation of foodstuffs is forbidden.



## Information on EU Directive 2011/65/EU (RoHS)

In its controls and switching devices, WOERNER only uses materials which fulfil the criteria of EU Directive 2011/65/EU. To the extent that hexavalent chromium has been used as corrosion protection in the parts which we produce ourselves, it has already been replaced by other environmentally tolerable protective measures.

The mechanical devices supplied by WOERNER are not affected by EU Directive 2011/65/EU.

But as WOERNER is conscious of its responsibility towards the environment, we shall also use materials fulfilling the requirements of the Directive for devices not covered by EU Directive 2011/65/EU as soon as they are generally available and their use is technically possible.



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