

- A = Mounting point at distributor (for viewing indicator and electrical functionality check)
- 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
- 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.

Technical data:

Proportioning volume

per cycle: 0,09 ... 0,2 cm³

Lubrication point

connections at max.: 20
Operating pressure at max.: 150 bar

Throughput volume in case of:

Oil at max.: 700 cm³/min Grease at max.: 70 cm³/min

Delivery medium:

Oil-viscosity: >6 cP Grease up to: NLGI-category 2

Material:

Proportioning block: Aluminium Internal parts: Steel Connecting plate: Aluminium

Temperature range: -20 ... +80 °C

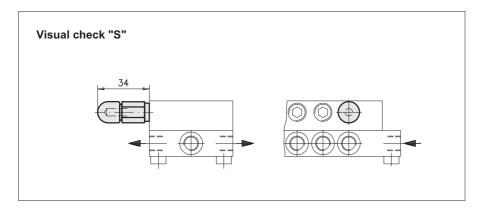
Mounting position: usually as needed Note: In case of heavy vibration or shock load, install the distributor such that piston axes are situated vertically to the main direction of shock impact.

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.



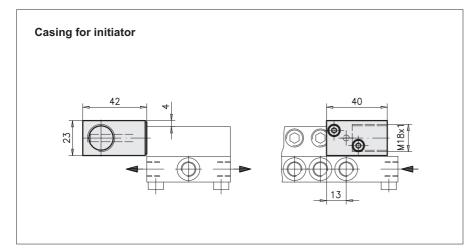


Functional checks:

Visual check "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



Electrical check with initiator:

Casing for initiator:

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

Version "D":

Casing material: Polyamide, translucent

(Piston movement is visible)

for initiators with a switching

distance of: ≥8 mm

Version "W":

Casing material: Polyamide, black

for initiators with a switching

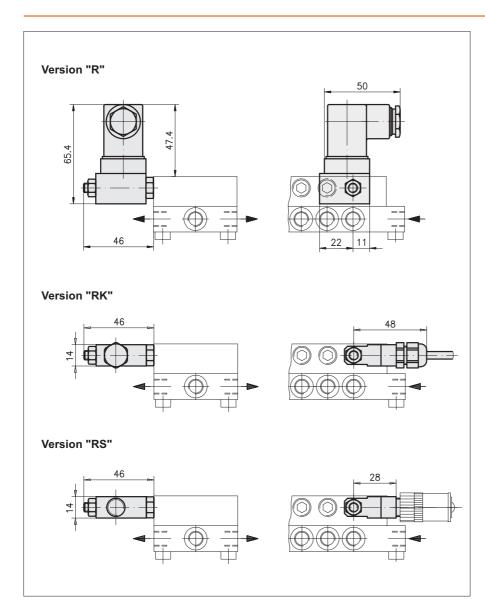
distance of: ≥5 mm

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

Choice of initiators:

Designation / Purchase-no.	Initiator "C" 913.900-03	Initiator "N" 913.900-21			
Dimension drawing:	A SW24 LED	SW24 4			
Connection diagram:	BN	I 4 +			
Switching distance:	8 mm	8 mm			
Operating voltage:	10 30 VDC	10 30 VDC			
Residual ripple:	≤10%	≤15%			
Load current at max.:	250 mA	130 mA			
Protection system:	IP67	IP67			
Power connection:	Cable 3 m	Unit plug (see accessoires page 3)			
Length "A":	76,5 mm	45 mm			





Electrical check with reed contact:

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

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

Version "R" with plug-in connection EN 175301-803, shape A:

Material (casing): Al or 1.4305 System of protection: **IP65**



Version "RK" with cable:

Material (casing): PA or 1.4305 System of protection: **IP65**

Cable

10 m Length: Cross section: 2x0,75 mm² Material: Oilflex

Connection

 100Ω diagram:

Version "RS" with unit plug 4 pin (M12):

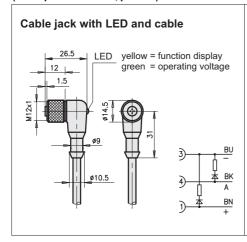
(for matching cable jack see accessories)

Material (casing): PA or 1.4305

Connection 100 Ω diagram:

Accessories:

Cable jack for functionality check "RS" and initiator (state purchase-no., please)



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Cable jack with terminal clamps

Cable jack with LED and cable:

913.404-19 Purchase-no.: 10 ... 30 VDC Operating voltage:

Cable

3x0,34 mm² Cross section: Length: 5 m IP68 System of protection:

Cable jack with terminal clamps: (without LED)

913.404-24 Purchase-no.: Connection type: Screws Connection cross section: at max. 0,75 mm² 4 ... 6 mm Cable diameter: System of protection: IP67

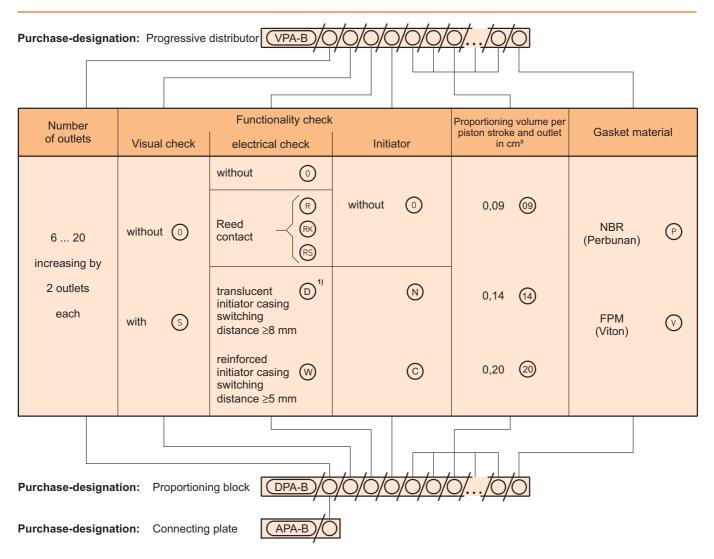
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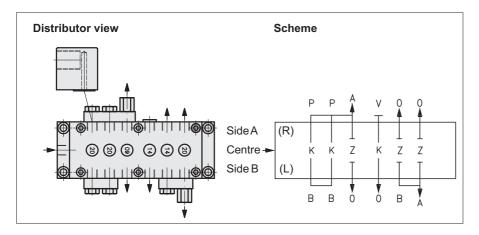




Note:

When a functionality checking device is to be added on, the proportioning volume must be 0,20 cm³ at least at the last point!

¹⁾ Resistance of the transparent case of the proximity switch "D" to synthetic lubricants and additives as well as to other consumables cannot be assured. The application under the planned conditions of operation, as fundamental rule, has to be checked. If required, the reinforced case "W" is to be used. If additional sight check is wanted, then the visual indicator "S" can be installed.



Purchase-example:

(for the distributor as depicted here)

Progressive distributor with 12 outlets, without visual check "0", with receptacle for initiator "W" and initiator "C", proportioning distinctive numbers "20", "20", "09", "14", "14", "20", gasket material "P".

Purchase-designation:

VPA-B / 12 / 0 / W / C / 20 / 20 / 09 / 14 / 14 / 20 / P

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

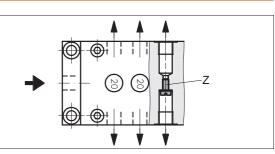
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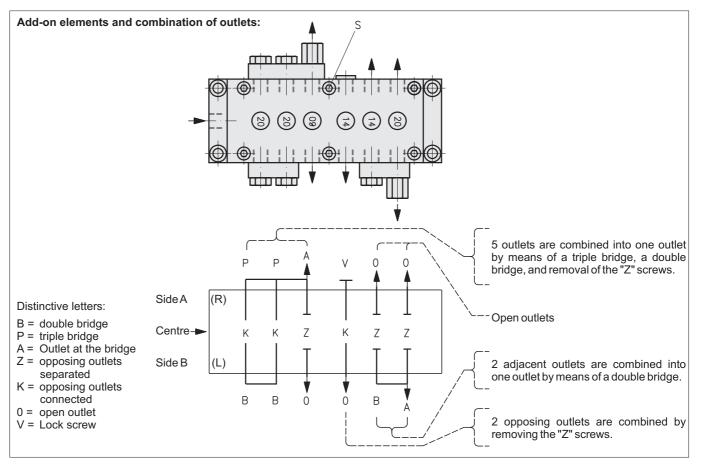
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Combination of outlets, doubling the proportioning volume at an outlet:

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.





Accessories:

Only in conjunction with progressive distributor. For spare parts see spare part list E0117.

Pipe screw fittings DIN 2353: (please state purchase-no.)

Connection		Pipe screw fitting with pipe-outerø					neck valve with pipe-outerø		
thread	4	6	8	10	12	4	6	8	
G 1/8	951.100-04	951.103-63E	951.100-06	-	-	501.060-65	501.065-65	501.070-65	

Bridges and lock screw: (please state purchase-no.)

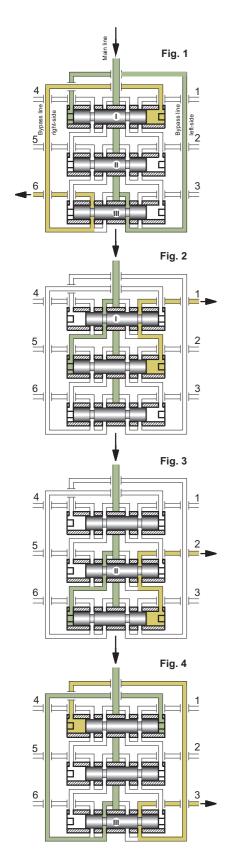
Bridges				Bridges (location of the mid fastening screw "S")				Lock screw
double without outlet (B-B)	triple without outlet (P-P-P)	double with outlet (B-A)	triple with outlet (P-P-A)	double without outlet (B-B)	triple without outlet (P-P-P)	double with outlet (B-A)	triple with outlet (P-P-A)	"V"
205.280-65	205.285-65	205.290-65	205.295-65	205.240-65	205.287-65	205.250-65	205.296-65	179.015-65
Position of the mid fastening screw "S"								

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Functional process figures 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 initiator:

- Switching on the pump (distributor circulates)
- Screwing the initiator completely in. In the case of a permanent signal, turning back the initiator as far as an alternating signal occurs
- 3. Turning back the initiator until no signal is released
- Setting the initiator between the limit values "2 (alternating) and "3 (no signal)"
- 5. Secure the initiator 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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With Directive 2002/95/EC of January 27, 2003, for the limitation of the use of certain hazardous substances in electrical and electronic devices (RoHS) material bans come into effect from July 2006 for electrical and electronic devices newly placed on the market for lead, cadmium, hexavalent chromium, mercury and brominated flame retardants.

In its controls and switching devices, WOERNER only uses materials which fulfil the criteria of EU Directive 2002/95/EC.

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.

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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 2002/95/EC as soon as they are generally available and their use is technically possible.

Technical documents also valid for this product:

B0336 Operating instructions VP