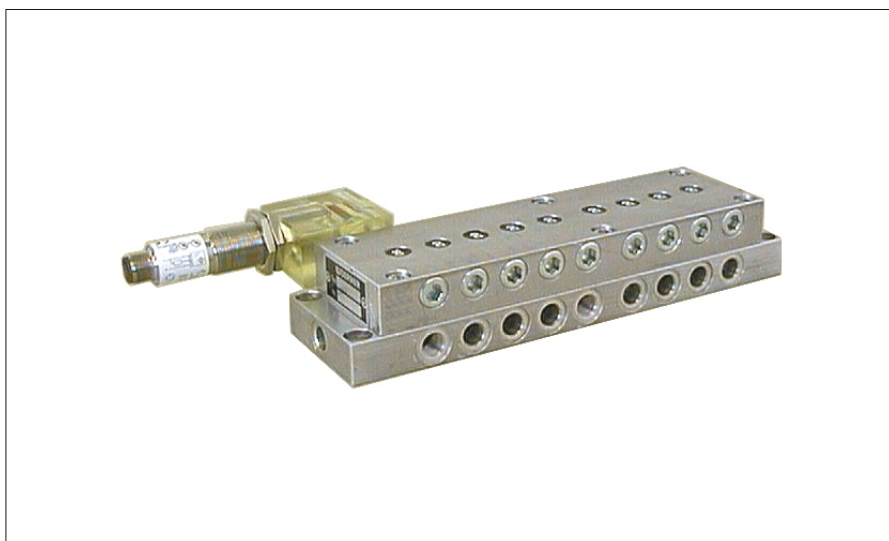
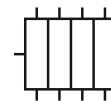




Progressive distributor VPA-B



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:

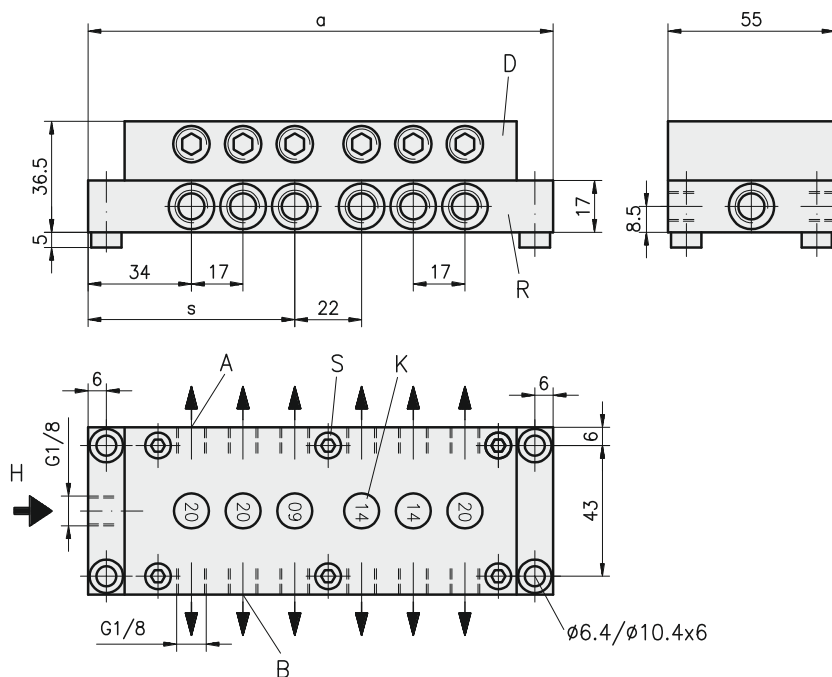
Proportioning volume per cycle:	0,09 ... 0,2 cm ³
Lubrication point connections:	max. 20
Operating pressure:	max. 150 bar
Throughput volume Oil:	max. 700 cm ³ /min
Grease:	max. 70 cm ³ /min
Delivery medium Oil-viscosity:	>6 cP
Grease:	up to NLGI-category 2
Material	
Proportioning block:	Aluminium
Internal 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).

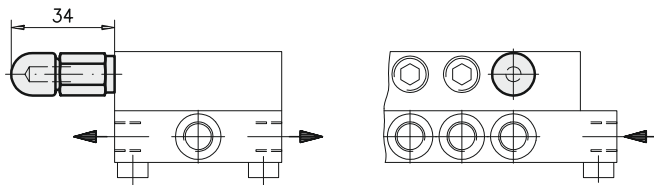
The distributor must not be "distorted". Therefore when mounting it, always be careful that the supporting surface is level.



- 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 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

Visual check "S"



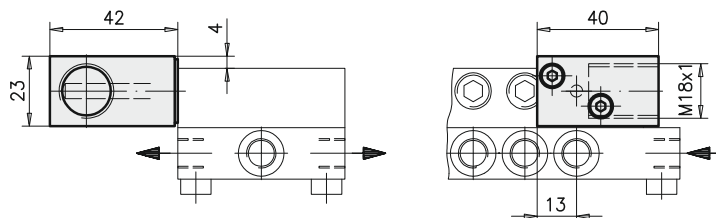
Functional checks:

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

Casing for proximity switch



Electrical check with proximity switch:

Casing for proximity switch:

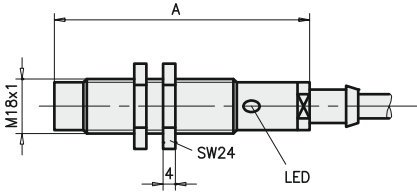
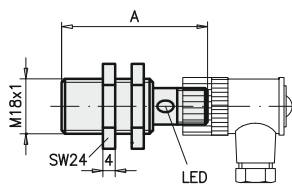
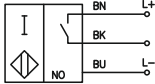
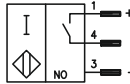
A pin being connected with the piston attenuates an proximity switch once per cycle.

Version "D":
Casing material: Polyamide, translucent
(Piston movement is visible)
for proximity switch
with a switching distance of: ≥ 8 mm

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

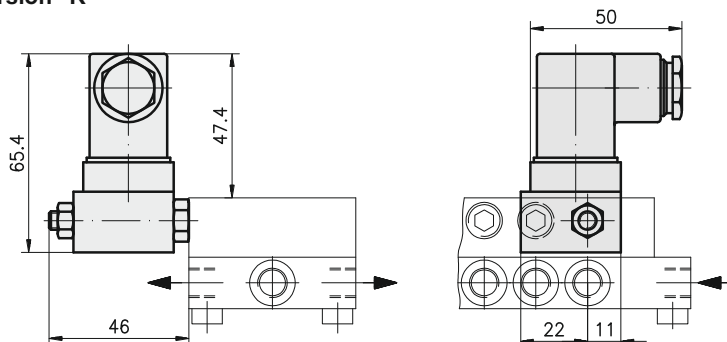
Use proximity switch with M18x1 thread!
(When using other proximity switches than those depicted below, such proximity switches must be checked for suitability).

Choice of proximity switches:

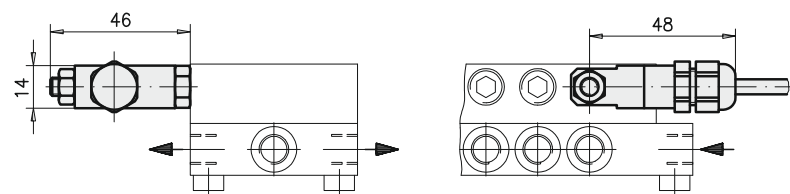
Designation / Order no.	Proximity switch "C" 913.900-03	Proximity switch "N" 913.900-40
Dimension drawing:		
Connection diagram:		
Switching distance:	8 mm	8 mm
Operating voltage:	10 ... 30 VDC	10 ... 30 VDC
Residual ripple:	$\leq 10\%$	$\leq 15\%$
Load current:	max. 250 mA	max. 130 mA
Protection system:	DIN EN 60529 IP67	DIN EN 60529 IP67
Power connection:	Cable 3 m	Unit plug (see accessoires page 3)
Length "A":	76,5 mm	45 mm



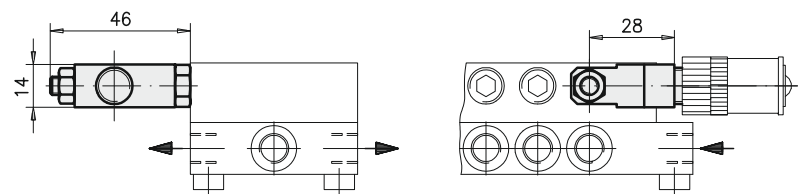
Version "R"



Version "RK"



Version "RS"



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

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

Material (casing): Al or 1.4305
System of protection: DIN EN 60529 IP65

Connection diagram: 1 — 100 Ω — 2
3

Version "RK" with cable:

Material (casing): PA or 1.4305
System of protection: DIN EN 60529 IP65
Cable
Length: 10 m
Cross section: 2x0,75 mm²
Material: Oilflex

Connection diagram: BN — 100 Ω — BU

Version "RS" with unit plug M12x1, 4-pin: (for matching cable jack see accessories)

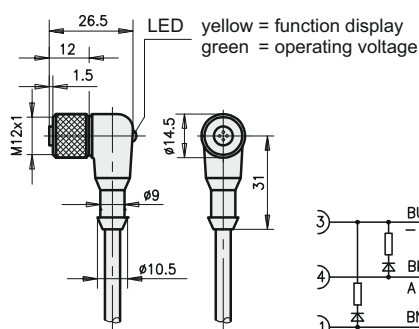
Material (casing): PA or 1.4305

Connection diagram: 1 — 100 Ω — 4

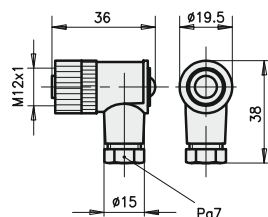
Accessories:

Cable jack for functionality check "RS" and proximity switch
(please order no. specify)

Cable jack with LED and cable



Cable jack with terminal clamps



Cable jack with LED and cable:

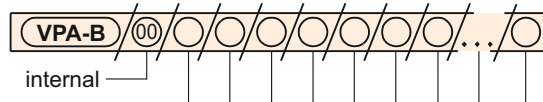
Order no.: 913.404-19
Operating voltage: 10 ... 30 VDC
Cable
Cross section: 3x0,34 mm²
Length: 5 m
System of protection: DIN EN 60529 IP68

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
System of protection: DIN EN 60529 IP67



Order designation:



Number of outlets	Functionality check			Proportioning volume per piston stroke and outlet in cm³
	Visual check	electrical check	Proximity switch	
6 ... 20 increasing by 2 outlets each	without ①	without ①	without ①	0,09 ⑨
		Reed contact { ① R ① RK ① RS		
	with ③	translucent proximity switch casing switching distance ≥ 8 mm ① D ¹⁾	① N	0,14 ① 14
		reinforced proximity switch casing switching distance ≥ 5 mm ① W	① C	0,20 ① 20

Order designation: Proportioning block

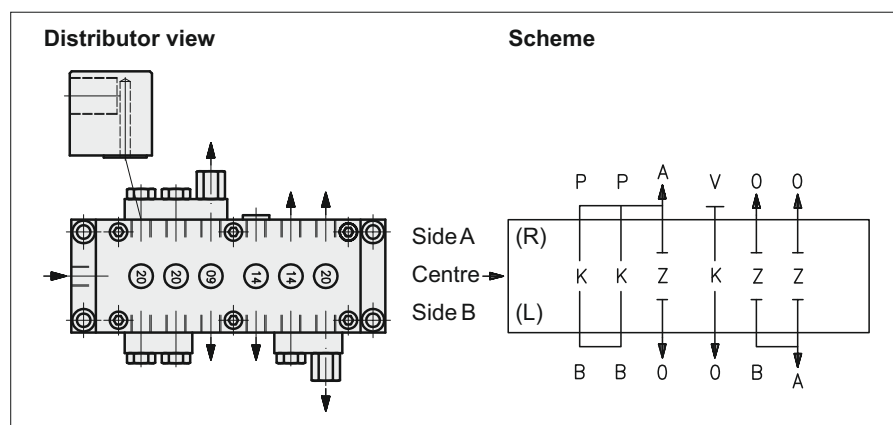


Order designation: Connecting plate



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 proximity switch casing "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 proximity switch casing "W" is to be used. If additional sight check is wanted, then the visual indicator "S" can be installed.



Order example:

(for the distributor as depicted here)

Progressive distributor with 12 outlets, without visual check "0", with receptacle 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

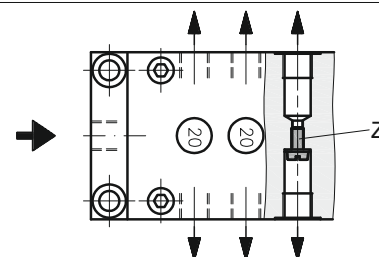
Centre : K / K / Z / K / Z / Z

Side B (L) : B / B / 0 / 0 / B / A



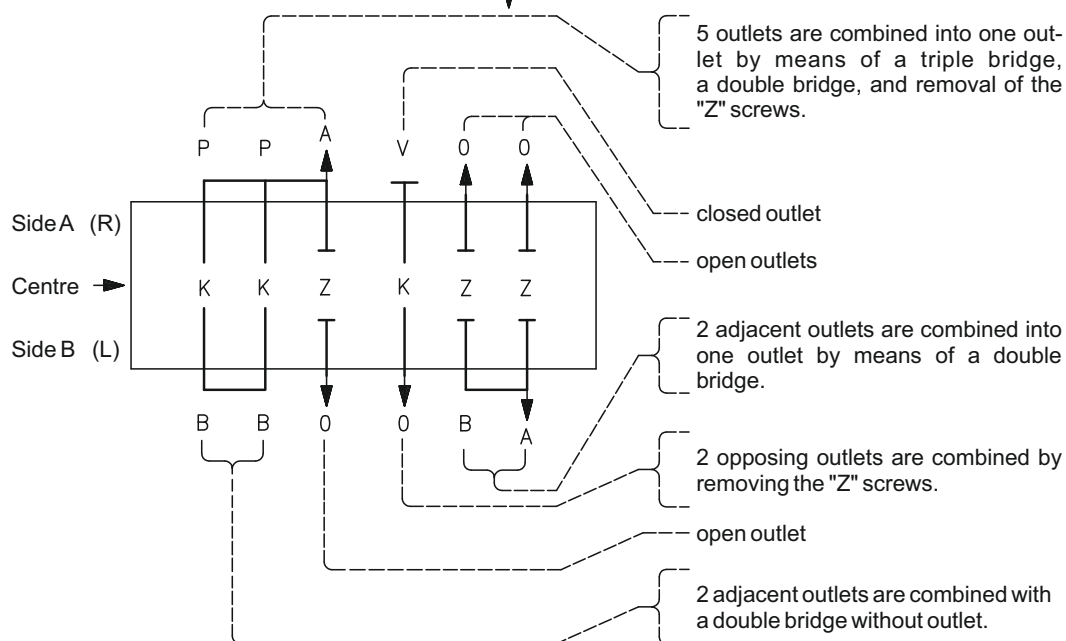
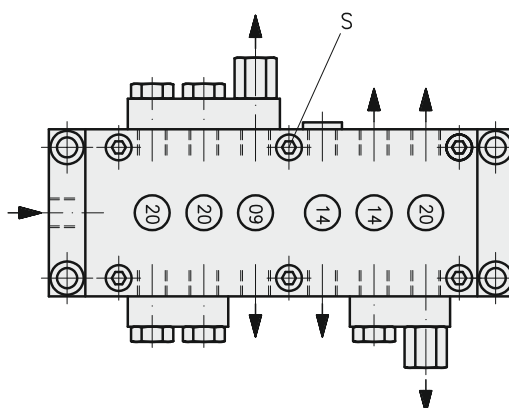
Combination of outlets, doubling the proportioning volume at an outlet:

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
O = 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:

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

Progressive distributor VPA-B

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Data sheet

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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 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 completely in. In the case of a permanent signal, 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

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

Q = lubricant delivered to the distributor,

K_i = distinctive number of the outlet i



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