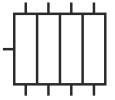




Illustration shows example

Progressive distributor

VPA-B



Use:

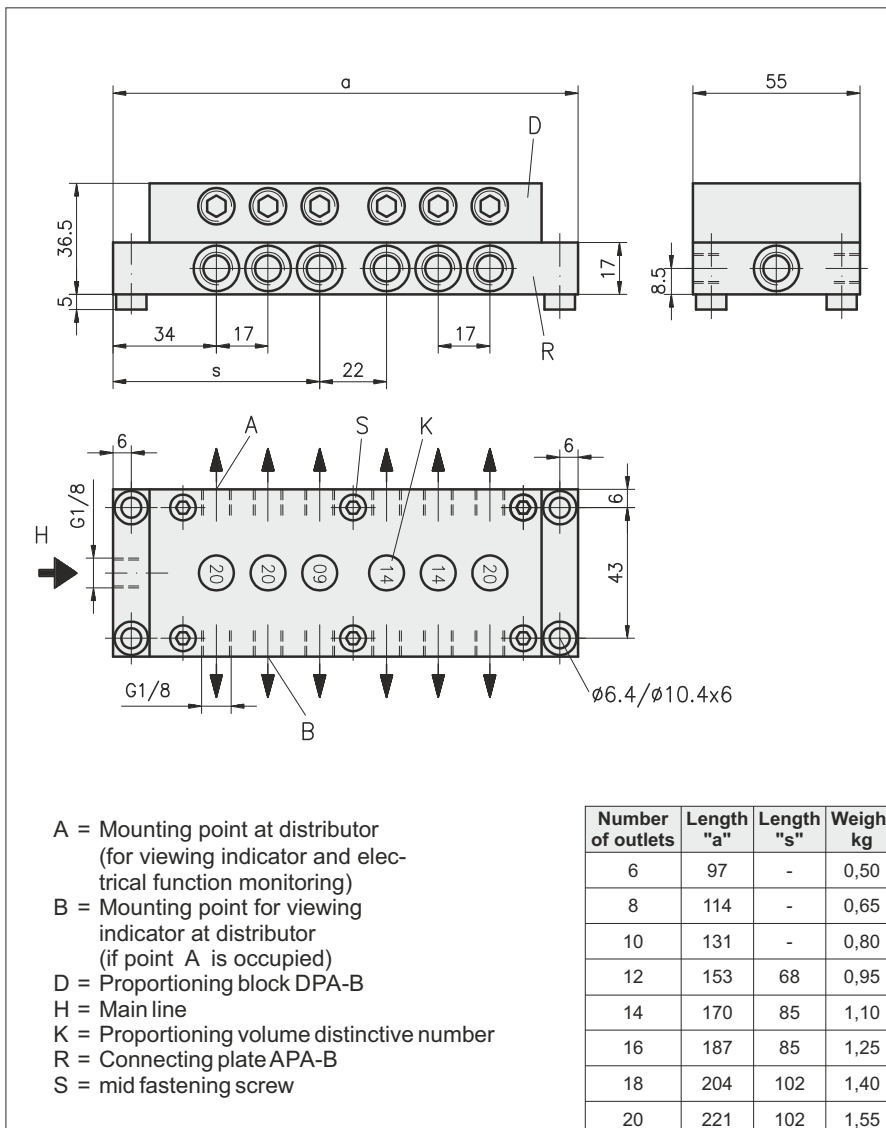
In progressive mode based central lubrication systems.

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.**

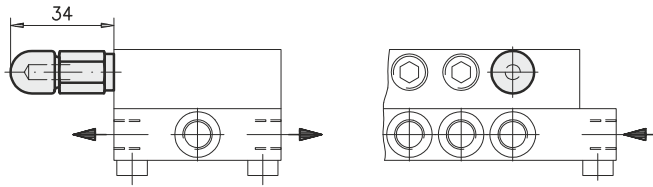
Technical data:

Proportioning volume per cycle:	0,09 ... 0,2 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:	>7 mm ² /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





Visual control "S"



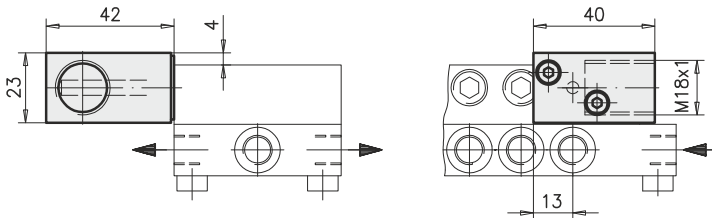
Function monitorings:

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).

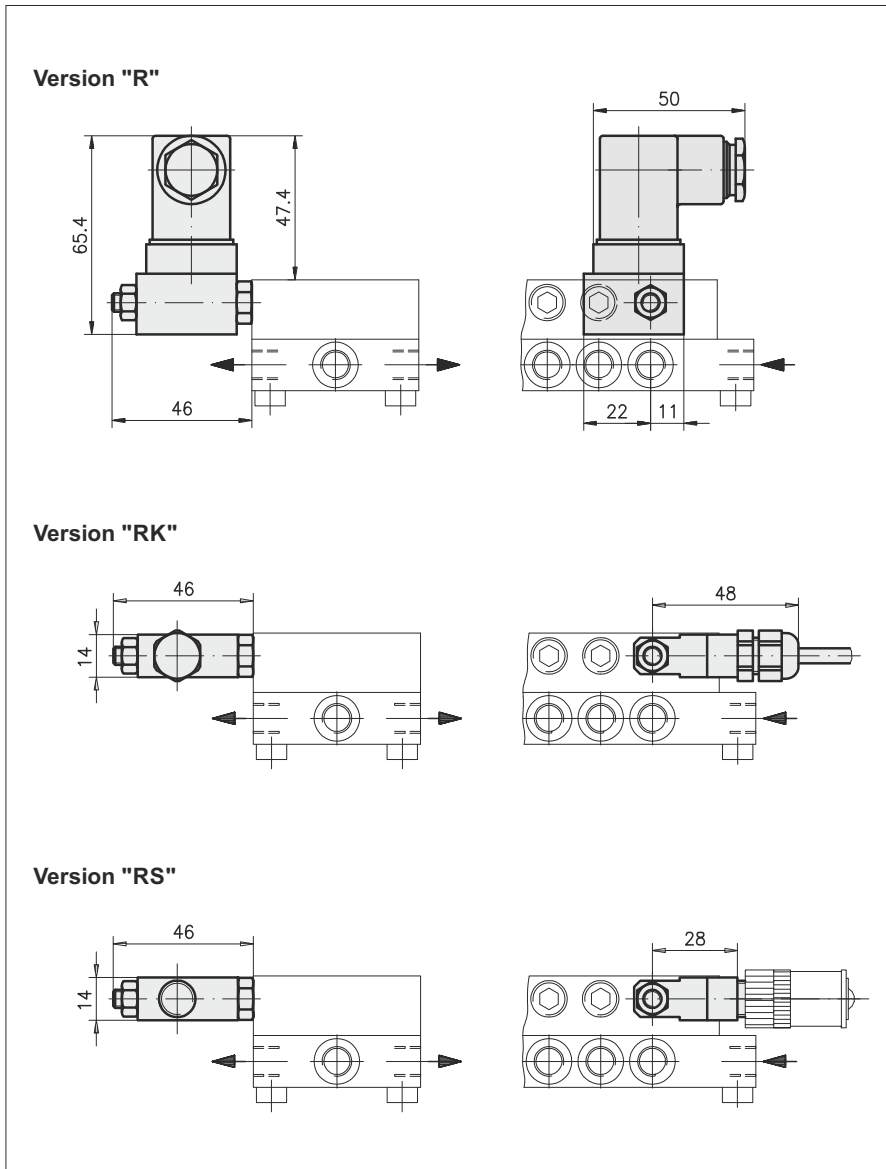
Choice of proximity switches:

Designation / Order no.	Proximity switch "C" 913.901-27	Proximity switch "N" 913.901-14
Dimension drawing:		
Circuit diagram:		
Switching distance:	8 mm	8 mm
Operating voltage:	10 ... 30 VDC	10 ... 30 VDC
Switching hysteresis:	$\leq 10\%$	$\leq 10\%$
Switching current:	max. 150 mA	max. 150 mA
Protection class:	DIN EN 60529 IP67	DIN EN 60529 IP67
Power connection:	Cable 2 m	Male M12x1, 4-pin (see accessoires page 3)
Length "A":	53,5 mm	65 mm

- Subject to modifications -



- Subject to modifications -



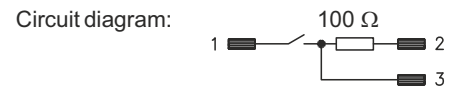
Electrical control with reed contact:

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



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



Version "RS" with male M12x1, 4-pin:

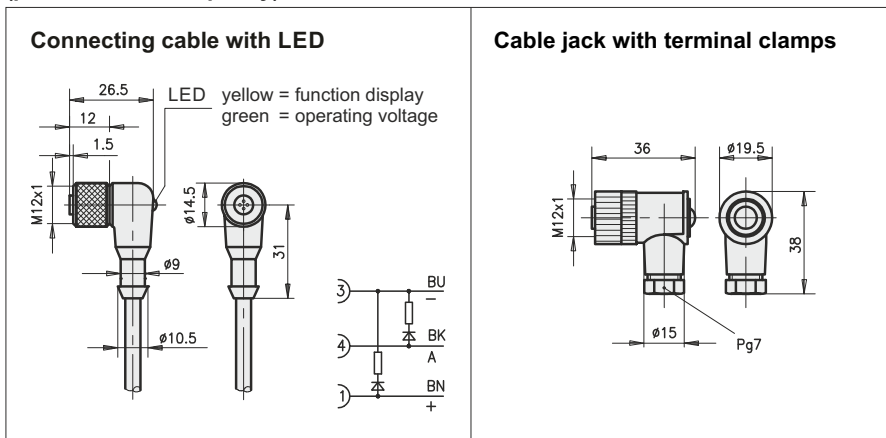
(for matching connecting cable see accessories)

Material (casing): PA or 1.4305



Accessories:

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



Connecting cable with LED:

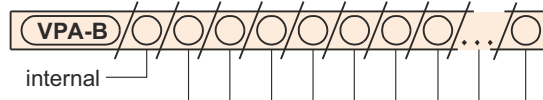
Order no.: **913.404-19**
 Operating voltage: 10 ... 30 VDC
 Cable
 Cross section: 3x0,34 mm²
 Length: 5 m / 90°
 Protection class: DIN EN 60529 IP68

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



Order designation:

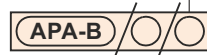


Number of outlets	Function monitoring			Proportioning volume per piston stroke and outlet in cm ³		
	Visual control	electrical control	Proximity switch			
6 ... 20 increasing by 2 outlets each	without 0	without 0	without 0	0,05 ¹⁾	05	
		Reed contact				R RK RS
	with S	reinforced proximity switch casing Switching distance ≥ 5 mm	W	N C	0,14	14
					0,20	20

Order designation: Proportioning block



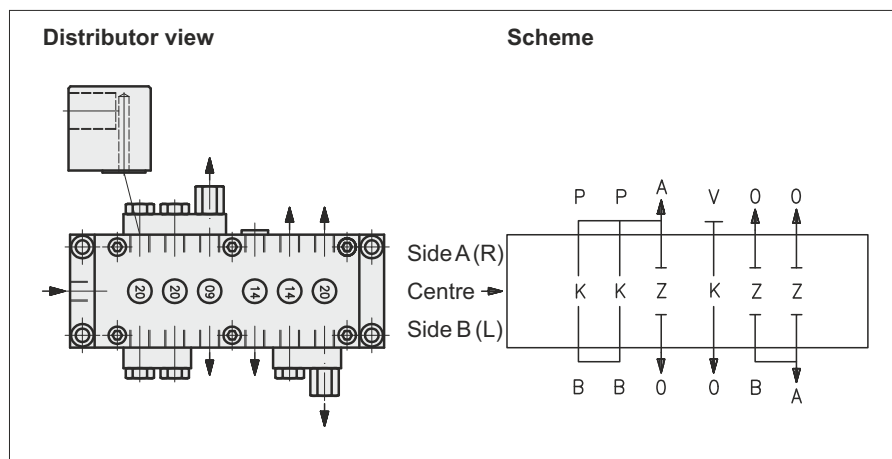
Order designation: Connecting plate



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!



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".

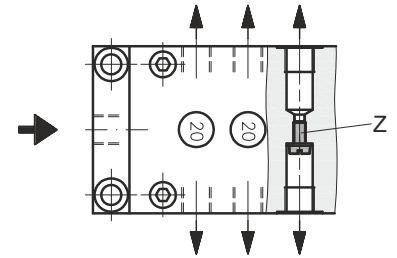
Order designation:

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



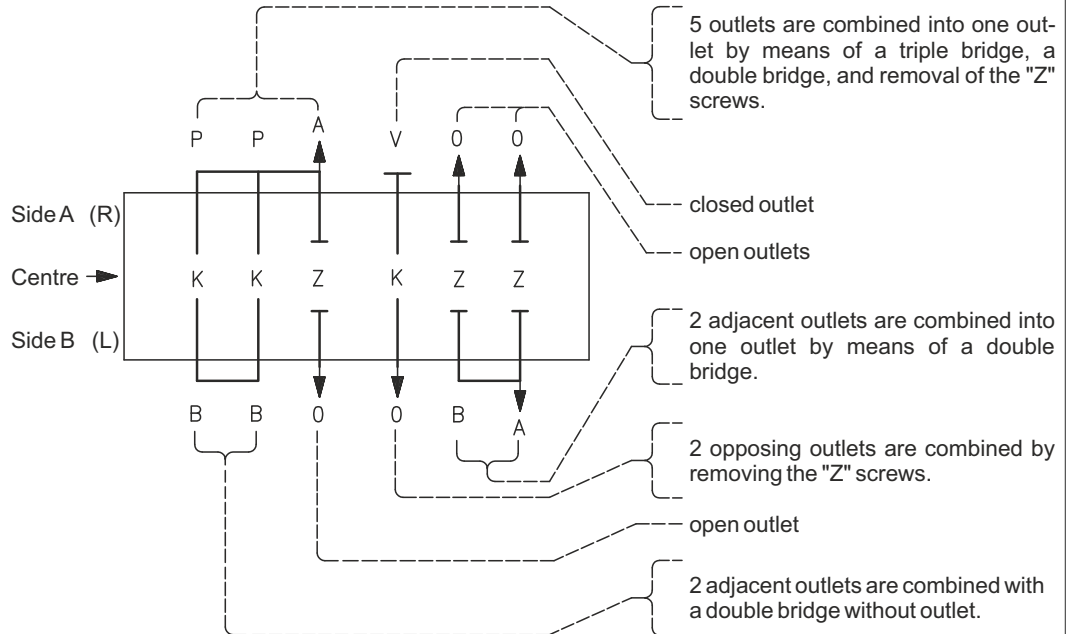
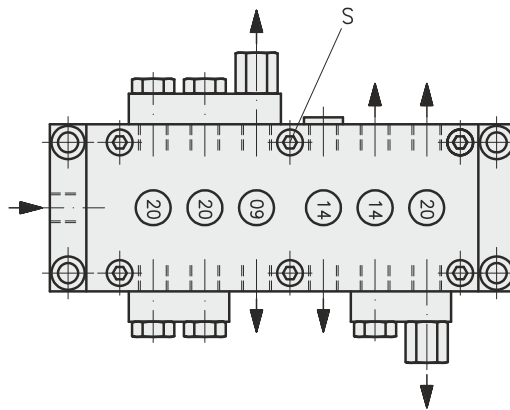
Combination of outlets, doubling the proportioning volume at an outlet:

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

- Subject to modifications -

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

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 continued 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.

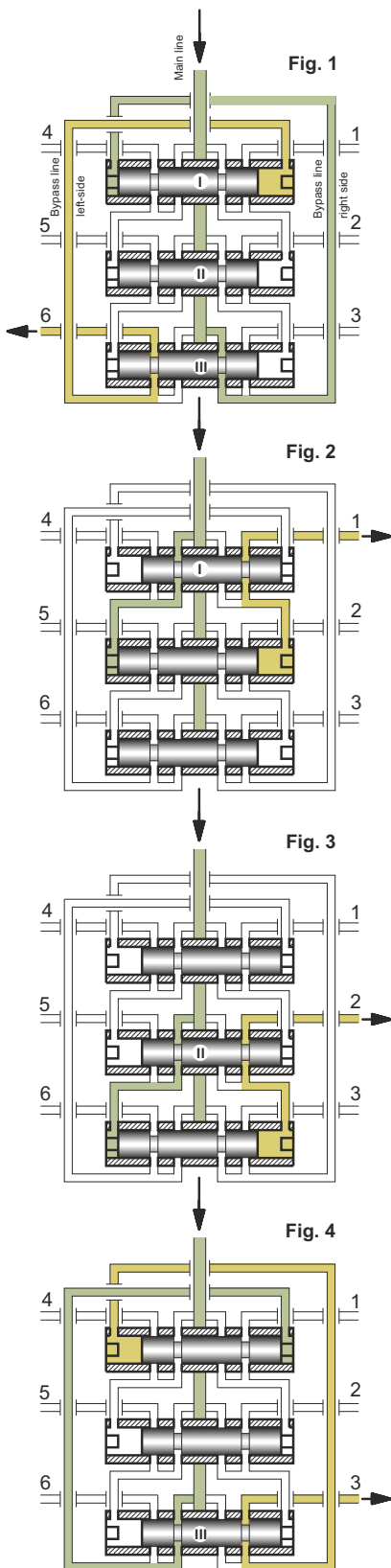
Formula for calculating the lubricant available per lubrication point:

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

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

Q = lubricant delivered to the distributor,
 K_i = distinctive number of the outlet i



- Subject to modifications -



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