

Block feeder VPB

Block feeder for the use in oil or grease lubrication systems.



Block feeders of the VPBM/VPBG series are used in small circulating-oil lubrication systems as well as in grease and oil total loss

lubrication systems. Fields of application are, for example, metal-forming machines, vehicles, production systems in the auto-

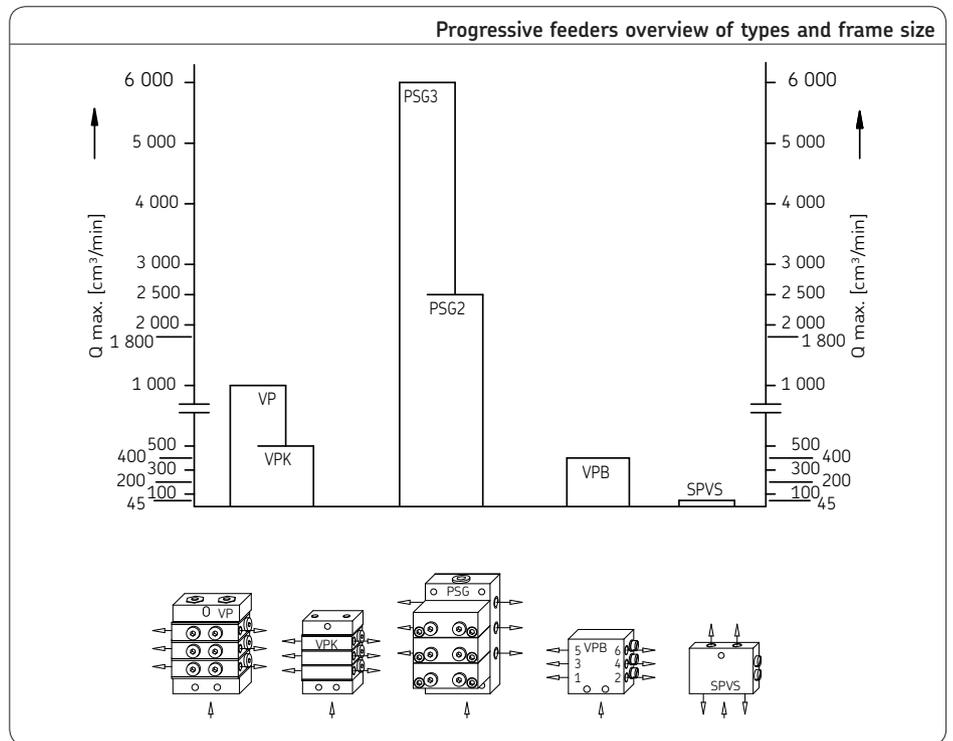
motive industry as well as packaging and printing machines.

Advantages

- Robust and of good value
- Usable for the widest possible range of applications with regards to mode of operation (continuous/intermittent) and lubricants.
- Central function monitoring of all feeder ports with a minimum of effort
- Number of cycles: max. 200/min
- Available in metric design as VPBM or in inch design as VPBG
- Defined volume portion per cycle and outlet of 0,20 cm³
- Accurate lubricant distribution, even with back pressure at the lubrication points, due to fitted pistons.
- The feeders are available with a maximum of 20 outlets
- Maximum number of lubrication points (per system) approximately 100; for ring-line systems with in-line metering pumps several hundred.
- Pressure range: 30 to 200 bar for circulating-oil lubrication systems; 300 bar for grease systems
- Basic design zinc coated, optionally of stainless steel, or in sea water proof design.

Table of contents

Advantages	1
General information	2
Operation sectional feeder	2
Information on the VPB design	3
Quantity distribution	3
Operating pressure and temperature	3
Tightening torques	3
Monitoring	3
Attachments	3
Block feeder VPB, basic design,	4
Block feeder VPB with piston detector	5
Block feeder VPB with cycle indicator	6
Block feeder VPB with 2/2 directional solenoid valve	7
Example of possible variations	8
Crossporting versions	8
Dimensions for Crossporting versions	9
External check valves for VPB	9
Explanation of the order codes	10
Explanation of the order codes	10
Attachments and screw unions	10
Brochure note	12
Order/Inquiry form progressive feeder	



Allgemein

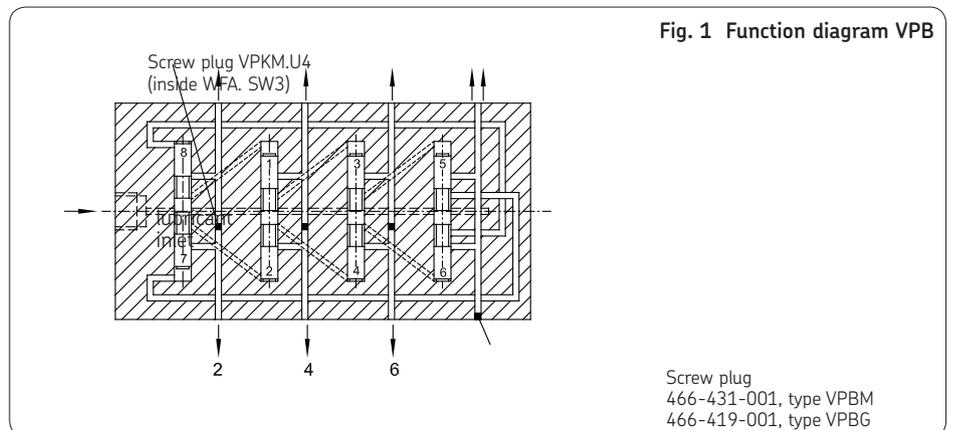
The block feeder VPB, which belongs to the progressive feeder range, is available in the designs VPBM (metric threaded connectors) and VPBG (inch threaded connectors). The block feeders VPBM and VPBG are pre-set to a fix dosing volume of 0.2 cm³ per exit and cycle.

The volumetric flow, which is sent via a tube, is forcibly distributed in a predetermined ratio to the outlets, i.e. to the lubrication points or the downstream progressive feeders. Pistons, which are aligned in series, meter the lubricant for two opposite outlets each and control the function of the neighboring piston. This way, the function of the sectional feeder can be checked by monitoring any piston with a cycle indicator or a piston detector. The optional add-on check valves offer high functional reliability (for high or different back pressures). They also guarantee an accurate feed and safe blocking behavior, even for internal or external combinations.

Operation block feeder VPB

The task of the progressive feeder is to distribute consecutively specified portions of the pressure-fed lubricant (grease or oil) to the connected lubricant points. The discharge of the lubricant continues as long as it is pressure-fed to the progressive feeder. The specified portions are generated through the piston movement. Two lubricant outlets on the two end positions of the piston travel are allocated to each piston. The number of pistons within a feeder is variable. If lubricant is pressure-fed, the pistons of a feeder move in turn to their end position. The piston movement displaces a portion of the lubricant that is upstream of the piston to the downstream outlet. The movement of a piston can only start after the upstream piston has been

moved to its end position. If all pistons are in their left or right end position, internal connecting bores in the feeder ensure a defined and continued running of the pistons. When all pistons have been moved once to the left as well as to the right end position, all connected lubricant points have been supplied once with the preset lubricant quantity. The portions for both outlets are determined by the diameter and the travel of the piston. The selection of the required portion is made during the design of the feeder. A subsequent change of the portions is only possible through a modification of the feeder.



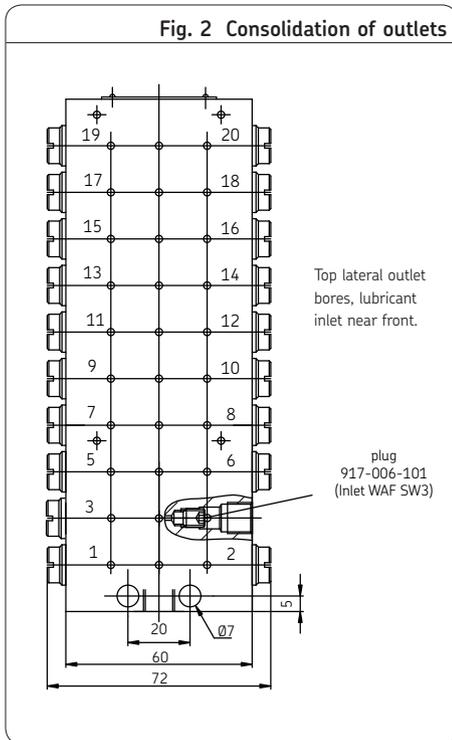
Block feeder VPB

Information on the VPB design

The general criteria for the design of progressive feeders also apply without restrictions to the sectional feeder VPB. In case of an installation on movable machine parts or in case of strong vibrations (e.g. on grease guns), the piston position of the feeder should not correspond with the direction of movement of the machine part.

Crossporting of outlets

Possibility of a subsequent internal connection of two opposing outlets by removing the screw in plug from the right outlet bore and blocking one of the two outlets.



Operating pressure and temperature

The maximal permissible operating pressure of the block distributor is 300 bar. If oil is delivered, a maximal operating pressure of 200 bar is recommended.

The operating temperature range given for the respective characteristic has to be met.

Volume flow

A maximum of 200 cycles/min is recommended.

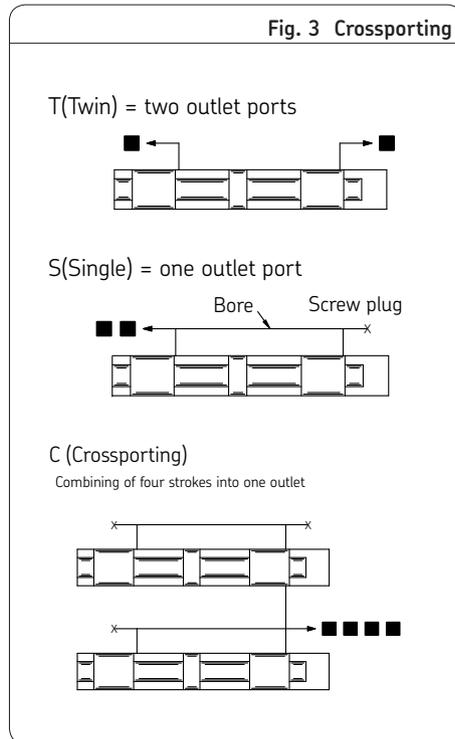
Quantity distribution

Block feeders distribute an amount delivered by a pump to several outlets while the feeder determines the volumetric ratio.

The different output quantities within a feeder are achieved by connecting two or more outlets. The indicated lubricant quantities result from the piston diameter and the maximum travel of the piston. Depending on the system design, these capacities may vary by minus 40%

By grease plants, with master feeder/secondary feeder systems, check valves must be used on the feeder outlets of the master feeder.

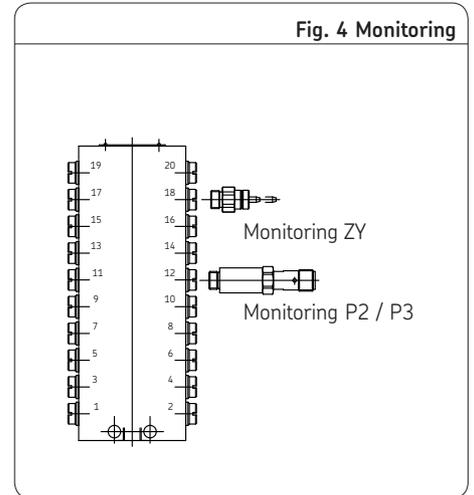
A connection of opposing outlets is possible by removing the blind screw. Furthermore, connecting neighboring outlets is possible by optionally applied couplings (crossporting).



Monitoring

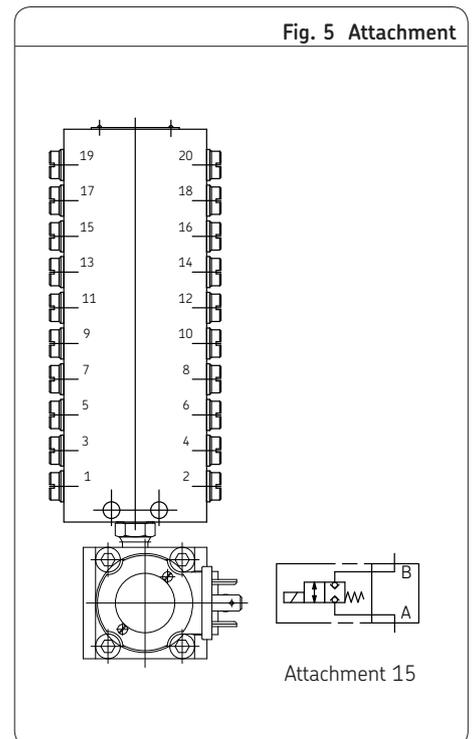
The block feeder can be monitored directly by means of a piston detector (compare parameters piston detector, monitoring type P2, P3) and can be retrofitted. Furthermore, the piston movement can be monitored by visual stroke monitoring, monitoring type ZY.

Both monitoring models can be used both for oil as well as for grease.



Attachments

The block feeder VPB can be equipped with upstream 2/2 directional solenoid valve, attachment 15.

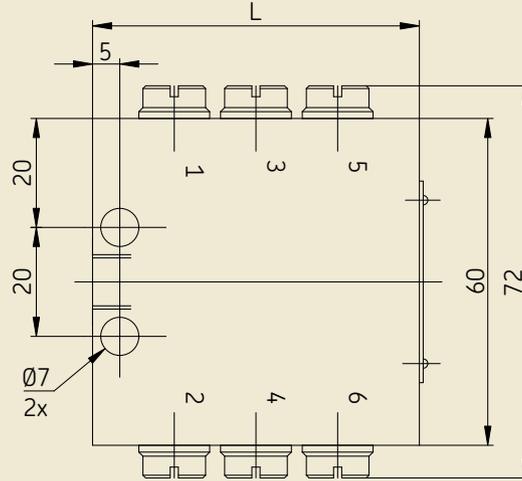


Block feeder VPB, basic design

for oil or grease, without attachments, without monitoring



Fig. 6 Block feeder VPB, basic design



Dimensions			
Type	Number of Feeder sections	Number of possible outlets	L [mm]
VPBM-3 1) / VPBG-3 1)	3	6	60
VPBM-4 / VPBG-4	4	8	75
VPBM-5 / VPBG-5	5	10	90
VPBM-6 / VPBG-6	6	12	105
VPBM-7 / VPBG-7	7	14	120
VPBM-8 / VPBG-8	8	16	135
VPBM-9 / VPBG-9	9	18	150
VPBM-10 / VPBG-10	10	20	165

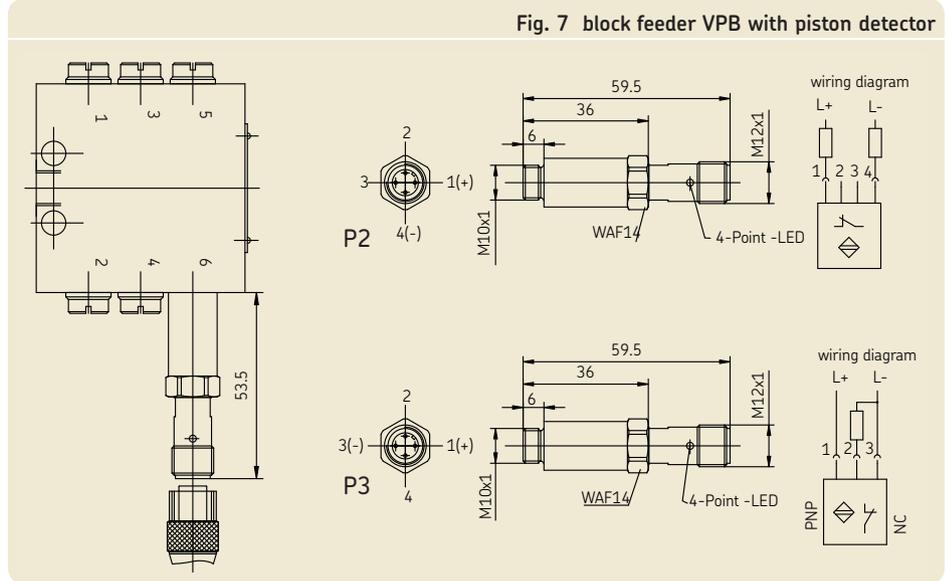
1) This progressive feeder must be installed with check valves

Technische Daten	
Style	hydraulically controlled
Mounting position	discretionary
Screw connection	I/O VPBM = M10x1 VPBG = G1/8"
Umgebungstemperaturbereich	-25 bis +110 °C
Quantity of outlets	3 to 20
Material	
Inlet plate/end plate	Steel, tinned/nitrile
Hydraulic	
Operating pressure max.:	Oil 200 bar, grease 300 bar
Volume per outlet and cycle	0,20 cm ³
Lubricant	Mineral oils, greases based on mineral oil, environmentally friendly and synthetic oils and greases
Operating viscosity	> 12 mm ² /s
Worked penetration	≥ 265 × 0.1 mm (up to NLGI grade 2)

Accessories		
Male couplings		
		
Designation		Order no.
Inlet	for tube ø 6,	406-423
M10x1:	for tube ø 8,	441-008-511
	for tube ø 10,	410-443
Inlet	for tube ø 6,	406-403W
G1/8":	for tube ø 8,	408-423W
	for tube ø 10,	410-443W
Outlets	for tube ø 4,	404-403
M10x1:	for tube ø 6,	406-403
	for tube ø 8,	441-008-511
Outlets	for tube ø 4,	404-403W
G1/8":	for tube ø 6,	406-403W
	for tube ø 8,	408-403W
Plug-in connector VPM for tube ø 6, M		451-006-518-VS
Plug-in connector VPM for tube ø 6, G		451-006-518W VS
Screw plug for unused outlets:		
	VPKM (M10x1)	466-431-001
	VPKG (G1/8")	466-419-001

Block feeder VPB with piston detector

for oil or grease, monitoring types P2 and P3 (elektrical)



Technical data	
Sectional feeder VPB	
For further technical data, see "VPB Basic Design", page 5	
Electric	
Piston detector	2-pin (P2)
(short-circuit protection, intermittent and protected against polarity reversal, NC contact)	
Internal thread	M10x1
Design	with 4-point LED, 2-pin connection
Ambient temperature range	-25 to +80 °C
Rated voltage	10 to 36 V DC
Residual ripple	3% to 15 %
Load current	max. 100 mA
Protection class	IP 67
Output function	NC contact
Minimum load current	4 mA
Piston detector, 3-pin (P3)	
(short-circuit protection, intermittent and protected against polarity reversal, NC contact PNP)	
Internal thread	M10x1
Design	with 4-point LED, 3-pin connection
Ambient temperature range	- 13 to + 176 °F
Rated voltage	10 to 36 V DC
Residual ripple	≤ 10%
Load current	max. 100 mA
Protection class	IP 67
Output function	PNP contact

Accessories	
Note: The cable socket of the piston detector must be ordered separately!	
Piston detector P2, 2-pin	
Designation	Order no.
Cable socket M12x1, 4-pin, without LED, without cable	179-990-371
with 5 m cable	179-990-381
with 10 m cable	179-990-603
angled, without cable	179-990-372
angled, with 5 m cable	179-990-382
Piston detector P3, 3-pin	
Designation	Order no.
Cable socket M12x1, 4-pin, without LED, without cable	179-990-371
with 5 m cable	179-990-600
with 10 m cable	179-990-603
angled, without cable	179-990-372
angled, with 5 m cable	179-990-601
Note!	
You will find additional technical data on the cable sockets in the leaflet "Electrical Plug-In Connections", leaflet no. 1-1730-US.	

Spare parts	
Designation	Order no.
Piston detector, 2-pin	177-300-096
Piston detector, 3-pin	177-300-097
O-ring for piston detector	WVN501-10x1.5

Block feeder VPB with cycle indicator for oil or grease, monitoring type ZY (optical control)

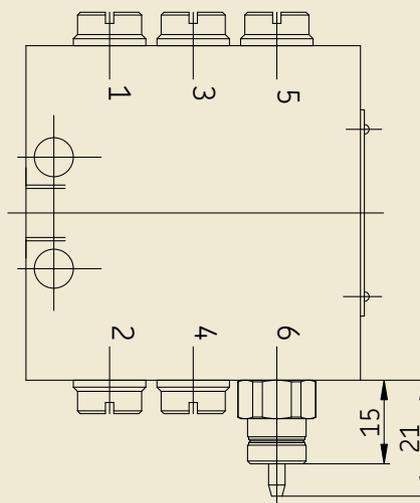


Technical data

Block feeder VPB

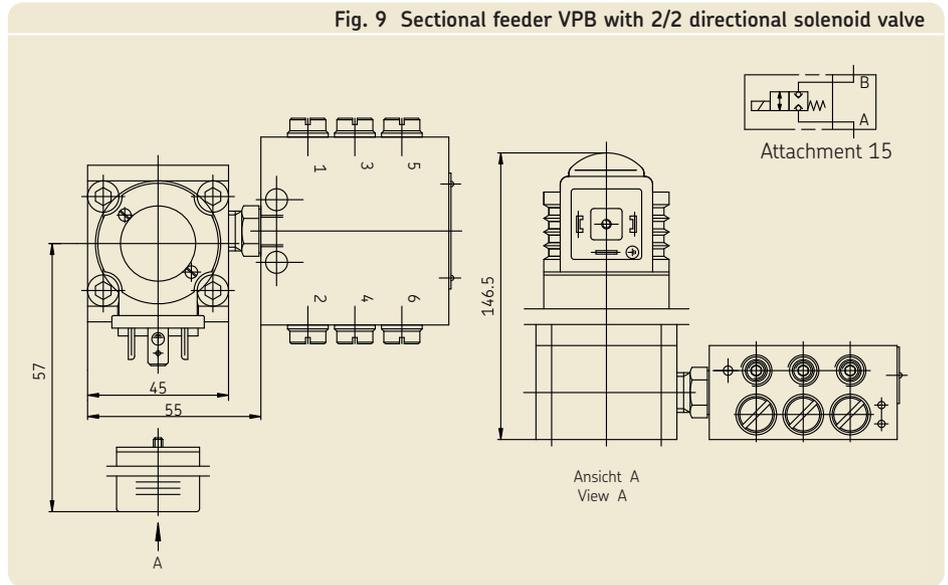
For further technical data,
see "VPB Basic Design", page 4

Fig. 8 Block feeder VPB with cycle indicator (ZY)



Block feeder VPB with 2/2 directional solenoid valve

for grease, attachment 15 with 2/2 directional control valve, de-energized, continuity to feeder closed



Note

Feeder and directional solenoid valve are delivered separately. The assembly with the help of the enclosed materials for the installation is carried out by the customer.

Technical data

Sectional feeder VPB

For further technical data, see "VPB Basic Design", page 4
 Thread connection: Inlet: G1/4"

Ambient temperature range -25 to +80 °C

Hydraulic

Operating pressure max. Grease 300 bar
 Lubricant Greases up to NLGI Grade 2

Electric

directional solenoid valve

General information

Valve function 2/2 directional solenoid valve
 Type/operation Spherical seat valve
 Basic position closed when de-energized,
 Manual actuation yes
 Electrics
 Voltages 24 V DC
 Rated current 0.67 A
 Nominal output 16 W
 ON-time 100% ED (at max. +35 °C)
 Protection class / IP 65
 Electrical connection Plug / DIN 43650 AF3

Accessories

Note: The cable socket of the directional solenoid valve must be ordered separately!

Designation	Order no.
Cable socket with protection device, 3 m PUR cable and LED	179-990-416

Note!

You will find additional cable sockets as well as technical data on the cable sockets in the leaflet "Electrical Plug-In Connections", leaflet no. 1-1730-EN

Spare parts

Designation	Order no.
2/2 directional control valve	161-110-031 +924
Cable socket - 2/2 directional control valve	24-1882-2029
VPBM	
Inter-screw connection R1/4" to M10x1	44-0159-2282
Sealing ring	504-019

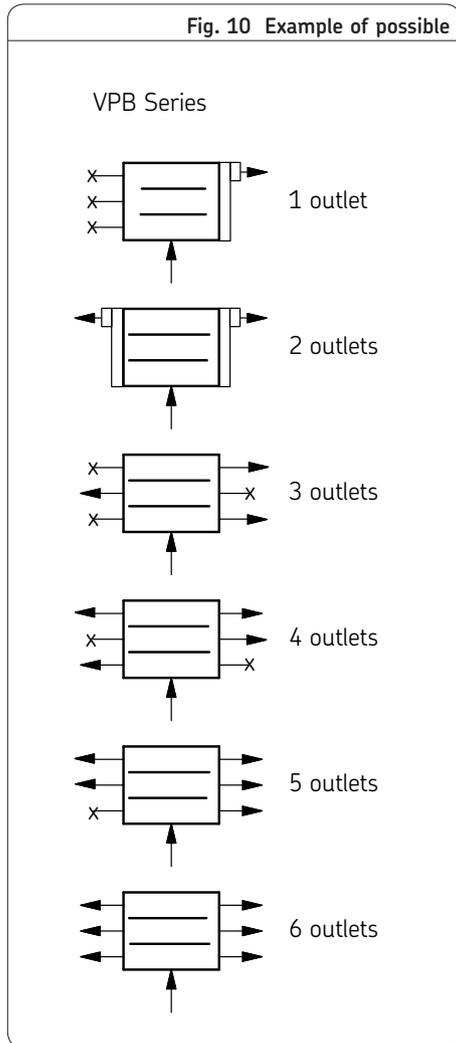
VPBG	
Inter-screw connection R1/4" to R1/8"	96-6013-0282

Note!

You will find additional technical data on the cable sockets in the leaflet "Electrical Plug-In Connections", leaflet no. 1-1730-EN

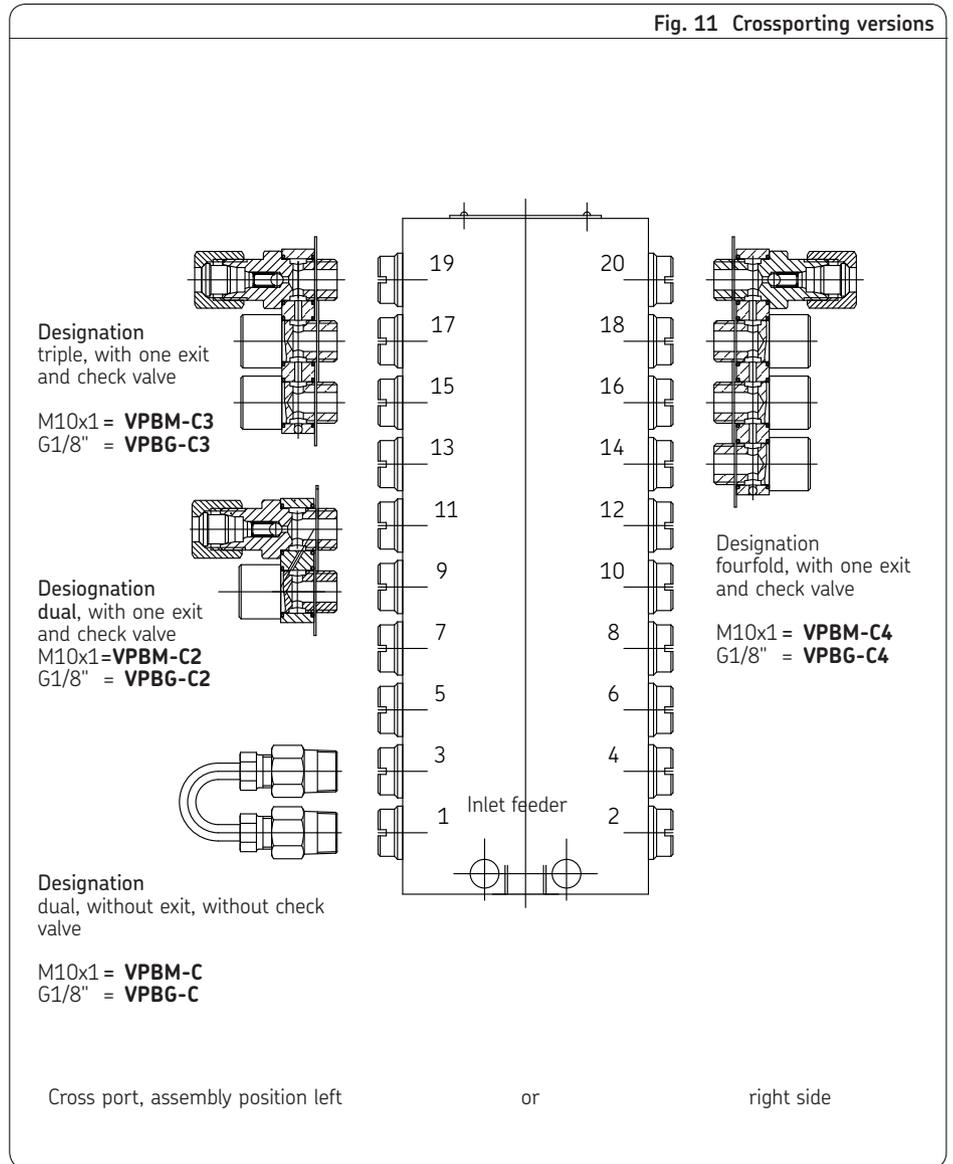
Example of possible variations

for 1 to 6 lube pointson
one 3-section feeder



Crossporting versions

Example VPBM/VPBG



Dimensions for Crosssporting versions

External check valves for VPB

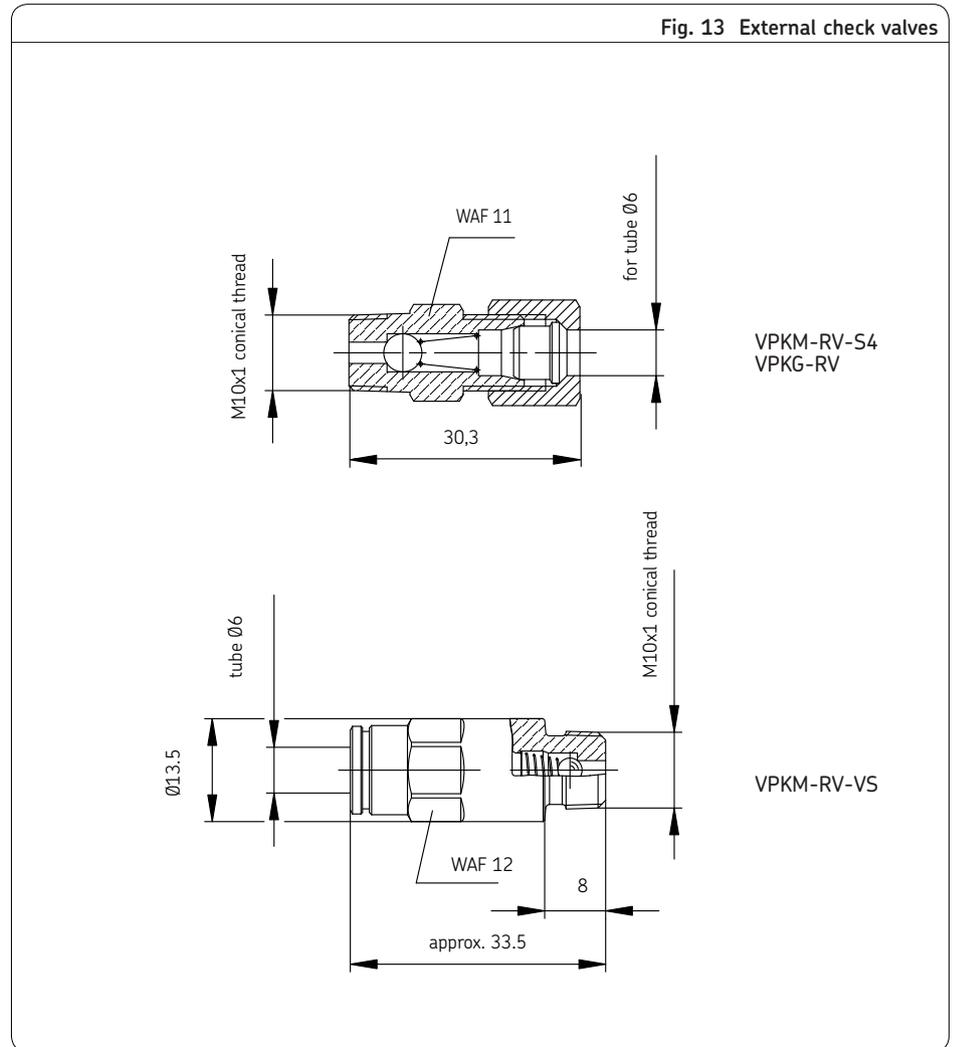
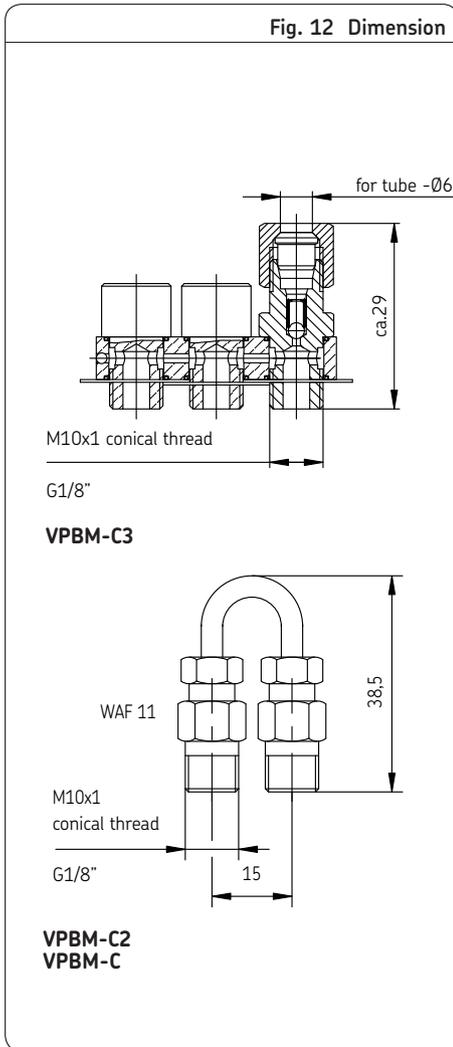


Table 2 Check valves and quick connectors for pipe connection Ø 6 mm

Designation	Order no.
Check valve for direct installation in a feeder outlet (2 bar)	VPKM-RV-S4
Check valve for VS (3 bar)	VPKM-RV-VS
Check valve for direct installation in a feeder outlet (3 bar)	VPKG-RV

Explanation of the order codes

Structure

Example: **VPB M / 10 16/ P3-9L /00 A1-3V-6V -8V** →

Progressive
block feeders

Thread inlet
and outlet screw connection
M = M10x1
G = G 1/8"

Number of feeder sections

03 = for 3 sections (max. 6 outlets)
04 = for 4 sections (max. 8 outlets)
05 = for 5 sections (max. 10 outlets)
06 = for 6 sections (max. 12 outlets)
07 = for 7 sections (max. 14 outlets)
08 = for 8 sections (max. 16 outlets)
09 = for 9 sections (max. 18 outlets)
10 = for 10 sections (max. 20 outlets)

Number of occupied outlets

03 = 3 outlets open
↓
20 = 20 outlets open

Monitoring type

00 = without
P2 = Piston detector, 2-pin connection
P3 = Piston detector, 3-pin connection
ZY = cycle indicator ¹⁾

Installation position of the monitoring system

-1R = right-hand side on the 1st section
-1L = left-hand side on the 1st section
-2R = right-hand side on the 2nd section
↓
-0R = right-hand side on the 10th section
-0L = left-hand side on the 10th section

Attachments

00 = without attachments
15 = with (grease) 2/2-directional solenoid valve, de-energized, continuity to feeder closed
A = Change version
1 = Basic design
3 = stainless steel design²⁾

-8V = 8.-feeder outlet blocked
lubricant discharge via
7.-feeder outlet (2 x 0.20 cm³/cycle)

-6V = 6.-feeder outlet blocked lubricant discharge
via crossporting element between
5.- and 3.-feeder outlet into
4.- feeder outlet (4 x 0.20 cm³/cycle)

-3V = 3.- feeder outlet blocked lubricant
discharge via
6.- feeder outlet into
5.- feeder outlet. From there via
crossporting element between
5.- and 3.- feeder outlet into
4.- outlet (4 x 0.20 cm³/cycle).

Note!

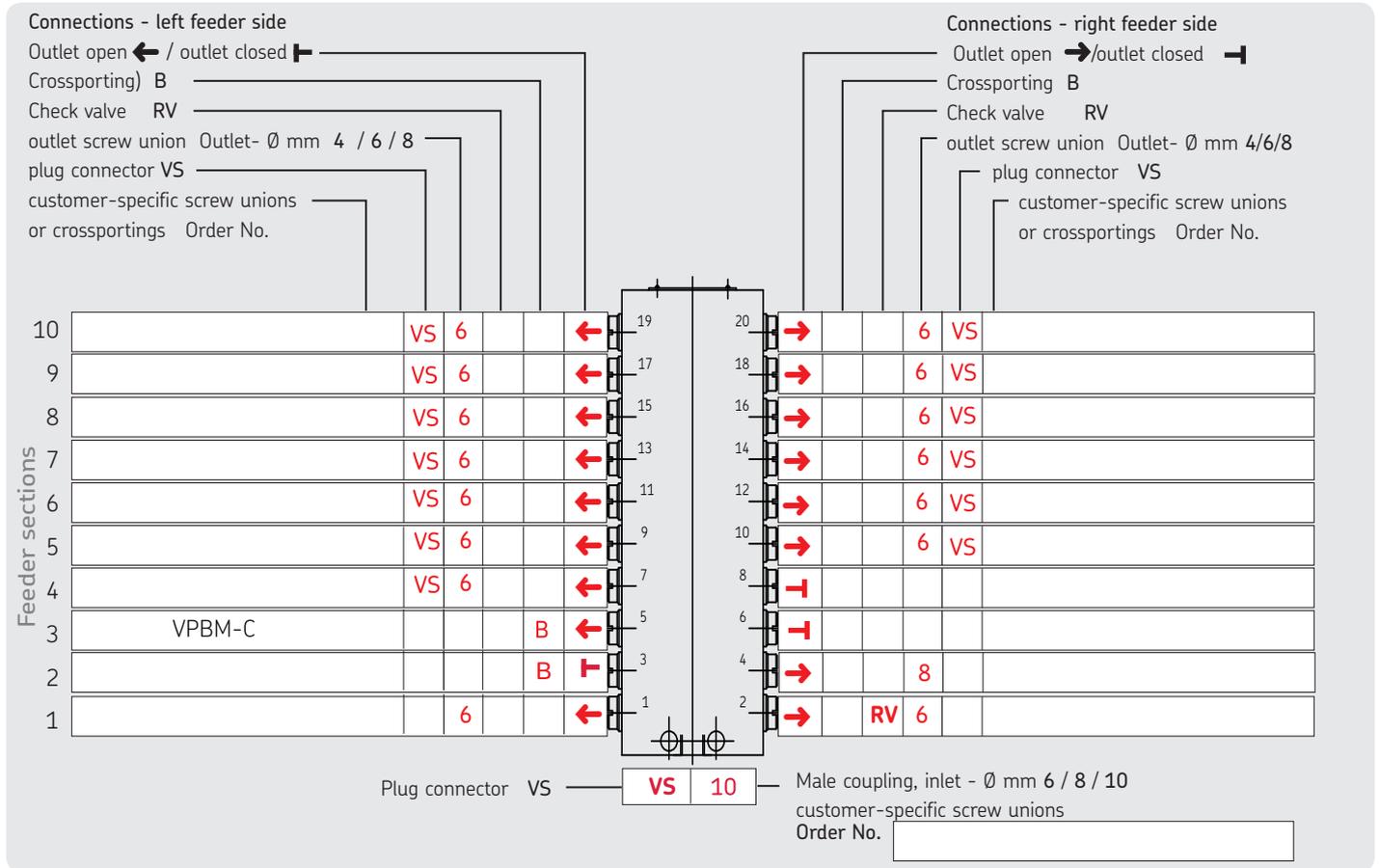
Subsequently, only blocked lubricant outlets have to be declared.
With a feeder outlet blocked, the internal plug has to be removed.
The double volume is discharged on the opposing side.

Order of lubricant outlets (1 to 20) - see attached feeder sketch.

1) Utilise these progressive feeders only with check valve VPKM-RV-S4!
2) Monitoring on stainless steel version only with cycle switch (ZY) possible!

Explanation of the order codes

Attachments and screw unions



How to order:

Progressive feeder, type VPB (VPB), with inlet- and outlet thread M10x1 (M), 10 feeder piston (10), with 16 occupied outlets (16), with monitoring via 3-pin piston detector (P3), installed on the left side of the 9th feeder piston (down feeder outlet 17) (9L), without attachments (00), change version A (A), basic design (1).

From the 20 existing lubricant-exits, following exits are locked:

3rd feeder outlet closed (-3V), lubricant-output takes place from the 6th feeder outlet to 5th feeder outlet. From there, over crossport 5rd and 3rd feeder-exit, to the 4rd feeder-exit (4 x 0,20 cm³/stroke)

6th feeder outlet closed (-6V), lubricant-output takes place over crossport 5rd and 3rd feeder-exit of the 4rd feeder-exit (4 x 0,20 cm³/stroke)

8th feeder outlet closed (-8V), lubricant-output takes place over 7rd feeder-exit (2 x 0,20 cm³/stroke).

Following Crossportings (B) are (from the entrance seen) the progressive-feeder (C, C2, C3, C4), Check valves (RV), outlet screw unions (4/6/8) or plug connectors (VS) been assigned:

Inlet screw union = Ø 6 mm (6),

1st feeder outlet and 2nd feeder outlet = outlet screw union with Ø 6 mm (6) right with additional check valve (RV),

3rd feeder outlet = crossport from 5nd feeder outlet (B) crossport version VPBM-C,

4nd feeder outlet = outlet screw union Ø 8 mm (8)

5nd feeder outlet = crossport to 3nd feeder outlet (B), crossport version VPBM-C

6nd feeder outlet = closed (┘)

7nd feeder outlet = outlet screw union with Ø 6 mm (6) and with plug connector (VS)

8nd feeder outlet = closed (┘)

9nd to 10nd feeder outlet = outlet ever Ø 6 mm (6) with plug connectors (VS).

Order Form

Inquiry Form

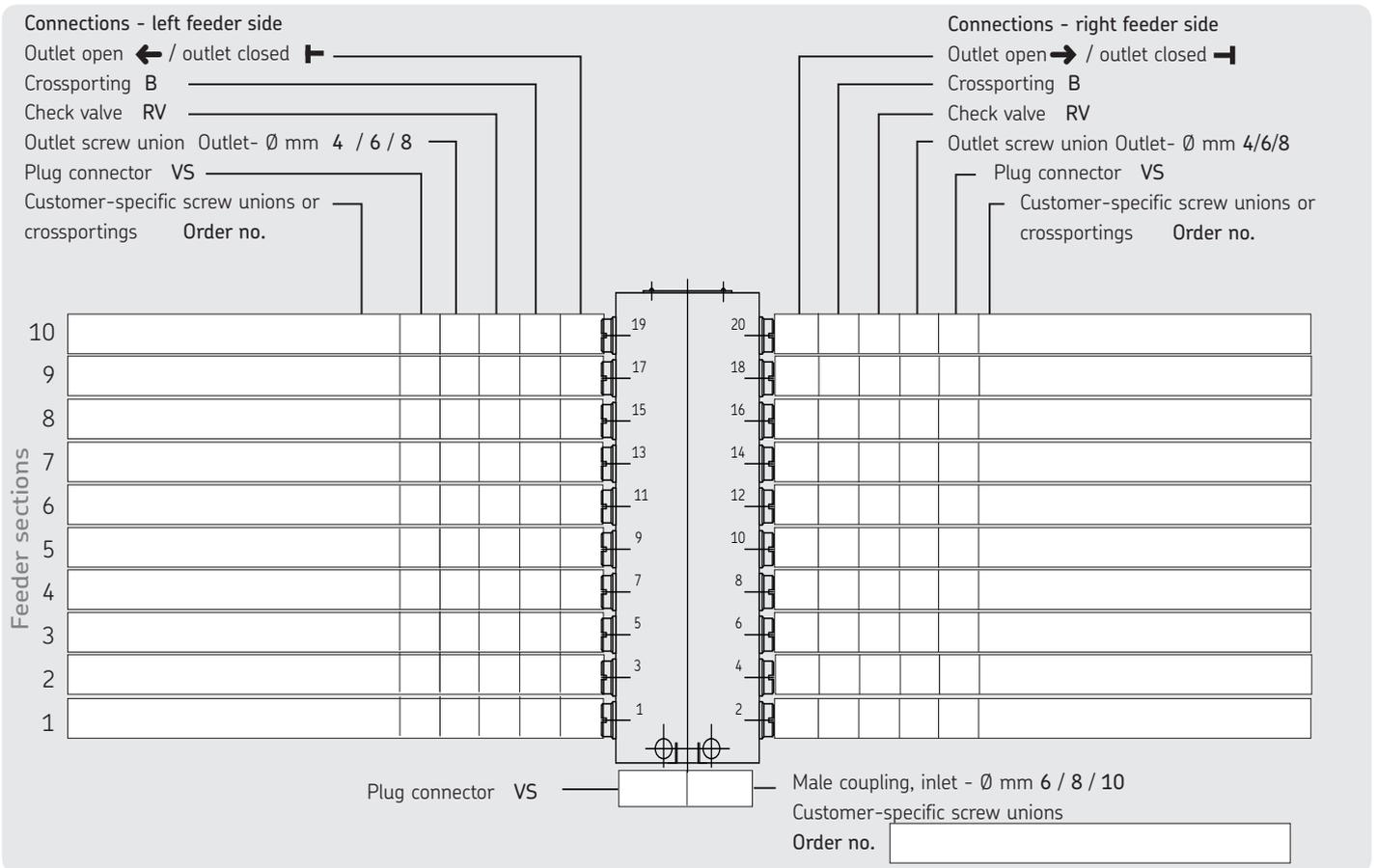
Please arrange the following order code according to the sample of the order code explanation!

Note! The actual order number will be allocated after the order has been placed.

Configuration order code VPB

VPB M / 10 16 / P3 -9L / 00 A 1 -3V -6V -8V

VPB / / -.... / 00 A -.... -.... -.... -....



Company:

Name:

Address:

Function/dept.:

Reference:

Phone: Fax/E-Mail:

Block feeder VPB

The configuration of a block feeder VPB is customer-specific. The most important data for the generation of an order number are summarized on the preceding pages. As an illustration, an example of an order has been added.

Please read the two pages thoroughly!

An order / inquiry form is located on the inside of this leaflet. Please fill this in according to the sample, whereby the blank line VPB... (configuration) must be completed according to the sample on page 10 and the graphic below according to the sample on page 11.

First, copy the order sheet, then complete the copy and send it to:

SKF Lubrication Systems Germany AG

2. Industriestrasse 4
68766 Hockenheim
Germany

Tel. +49 (0)62 05 27-0
Fax +49 (0)62 05 27-101

www.skf.com/lubrication

Please complete your address here:

Company:

Address:

Reference:

Name:

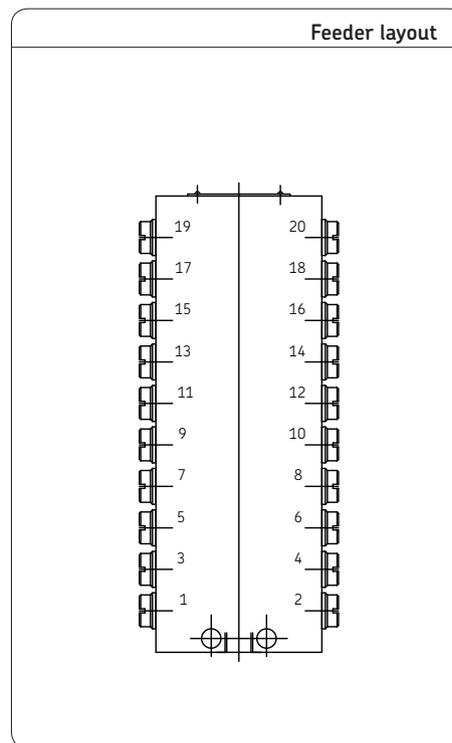
Function/dept.:

Phone:

Fax/E-Mail:

Note!!

The configuration of a block feeder (and thereby its order code) always starts at the inlet section.



Additional amendments or remarks:

Order No. 1-3017-EN

Subject to change without notice! (07/2009)

Important product usage information

All products from SKF may be used only for their intended purpose as described in this brochure and in any instructions. If operating instructions are supplied with the products, they must be read and followed.

Not all lubricants are suitable for use in centralized lubrication systems. SKF does offer an inspection service to test customer supplied lubricant to determine if it can be used in a centralized system. SKF lubrication systems or their components are not approved for use with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1013 mbars) by more than 0.5 bar at their maximum permissible temperature.

Hazardous materials of any kind, especially the materials classified as hazardous by European Community Directive EC 67/548/EEC, Article 2, Par. 2, may only be used to fill SKF centralized lubrication systems and components and delivered and/or distributed with the same after consulting with and receiving written approval from SKF.

Brochure note

- 1-3013-EN Progressive modular feeder PSG 2
- 1-3014-EN Progressive modular feeder PSG 3
- 1-3015-EN Progressive sectional feeder VPK
- 1-3016-EN Progressive sectional feeder VP
- 1-3029-EN Progressive block feeder SPVS

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