PSG3 Modular Feeder

for use in oil or grease lubrication systems







Application

Modular feeders of the PSG3 series are used in oil and grease lubrication systems. Fields of application include, for example, paper machinery, tunnel driving machinery, metalforming machinery (presses) and general engineering.

Advantages

- Easily servicable modular feeder technology through baseplate design
- Outlet quantities are especially easy to allocate, because the lubricant outlets are located directly below the metering piston.

- Flexible system design due to metering sections with volumes per cycle and outlets of 800, 1200, 1600, 2400 and 3200 mm³
- High operational reliability due to check valves installed standard
- High metering accuracy; the integrated check valves are located directly after the metering pistons.
- Flow limiters, flow regulators, gear-type flow indicator and directional solenoid valves can be attached.
- Up to 20 outlets

- Measurement connectors for system pressure and feeder outlets
- Retrofitting with piston detectors for monitoring is possible at any time
- The metering volume of opposite outlets can be connected internally, that of neighboring outlets externally using bridges.
- Also available in corrosion-resistant design (chemically nickel-plated).

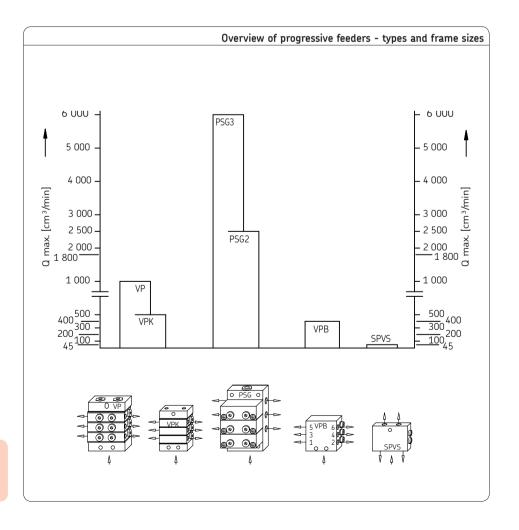


PSG3 Modular Feeder

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Order Form



See important product usage information on the back cover.

General information

The PSG3 Modular Feeder (Progressive Feeder) can be used for an inlet volume flow of up to 6 l/min. The inlet and all outlets of the feeder are located in the baseplate. The functional sections are attached to the baseplate and can be replaced without loosening.

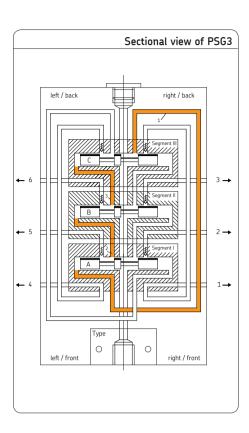
The volumetric flow which is sent via a tube is forcibly distributed in a predetermined ratio to the outlets, i.e. to the lubrication points or the downstream progressive feeders. Pistons, which are aligned in series, meter the lubricant for two opposite outlets each and control the function of the neighboring piston. This way, the function of the modular feeder can be checked by monitoring **any** piston (with a cycle indicator or piston detector) or the inlet volume flow (with gear-type flow indicator) can be monitored.

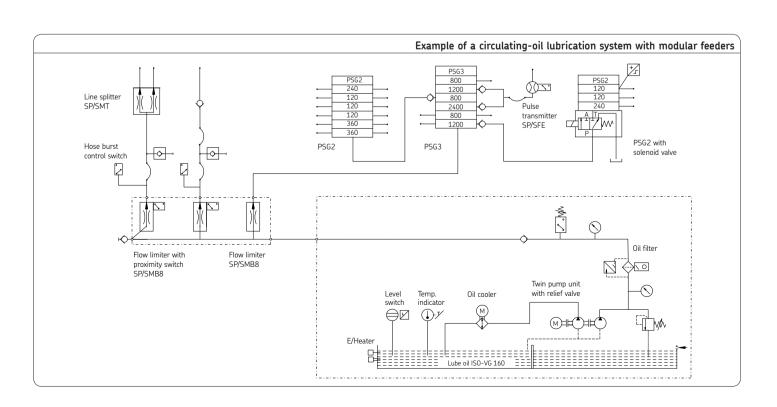
High operational reliability (at high or different back pressures) offered by the check valves installed standard. They also guarantee an accurate and safe blocking behavior, even for internal and external combinations.

Mode of operation

Observation of the movements beginning with the moment that all three pistons (A, B, C) on the left end stop shows that the lubricant and operating pressure reach from the inlet through the through-duct to the pistons C-right, B-right and A-left; that is, while pistons C and B retain their positions, the A piston is pushed right. The lubricant volume specified by the piston diameter and stroke is pressed into a duct on whose end (outlet 4) the same quantity exits. This stroke movement of piston A opens or closes multiple control ducts. Control duct 2. through which the lubricant reaches piston **B**-left and shifts it right, is now open. The corresponding metering volume is pressed into the outlet duct and exits at outlet 2. The stroke movement of piston **B** has now closed or opened control ducts. Control duct 3 is now open. The lubricant pressure moves piston C to the right, pushing the corresponding metering volume into the duct to outlet 3. This movement of piston **C** opens, among others, the reversing duct that reconnects the through-duct with piston A-right.

Analogous to the piston movement just described, pistons $\bf A, B$ and $\bf C$ now move consecutively back to the left.





Operating pressure

The maximum permissible operating pressure of the modular feeder depends on the monitoring type or the upstream attachments and is between 85 and 200 bar.

Operating temperature

The respective operating temperature range specified under the parameters has to be maintained.

Consolidation of outlets

The volumetric flow of an outlet can be doubled by internal combination of two opposite outlets. To do this, the threaded pin ${\bf G}$ in the baseplate -- the right input as seen from the feeder inlet -- must be screwed out. The outlet in the baseplate that is no longer needed is to be closed using a washer ${\bf D}$ and a screw plug ${\bf V}$.

Adjacent outlets can be combined using external bridges (crossporting). One bridge can connect either two or three outlets.

Dummy section

Dummy and functional sections can be varied as desired within the frame size (a minimum of three functional sections are required per feeder). If dummy sections are installed, two lubricant outlets each must be closed in the baseplate (under the dummy section). Increased pressure loss must be expected if two dummy sections are installed side-by-side or if dummy sections are used as the start or end section.

Attachment of bridges (crossporting)

Bridges with or without an outlet (G 1/4") can be utilized to allow combinations between an internal crossporting and a bridge. It is still possible to use bridges with (a) check valve(s) (see page 16).

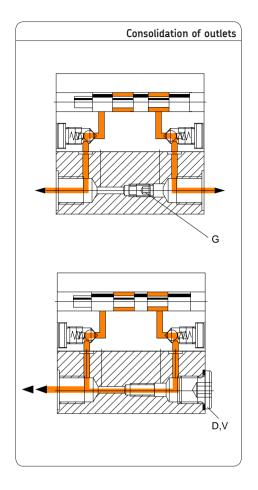
Information on the design

The general criteria for the design of progressive feeders also apply without restrictions to the PSG3 modular feeder. The stroke rate is the most important criterion. It should be held as low as possible by selecting high-volume sections. This reduces pressure losses and noise levels. In case of an installation on movable machine parts or in case of strong vibrations (e.g. on carbody presses), the piston position of the feeder **must not** correspond with the direction of movement of the machine part.

Tightening torque of the sections

When installing PSG3 sections on the baseplate, the following tightening torque must be complied with:

Damping torque: 23 Nm



Monitoring

All standard sections can be directly monitored by means of a piston detector (compare parameters for piston detector, monitoring type P3) and can be retrofitted. If piston movement is recorded using a cycle indicator (visual stroke monitoring, monitoring type ZY) with proxmity switch (monitoring type ZS), the sections intended for this purposes are to be used.

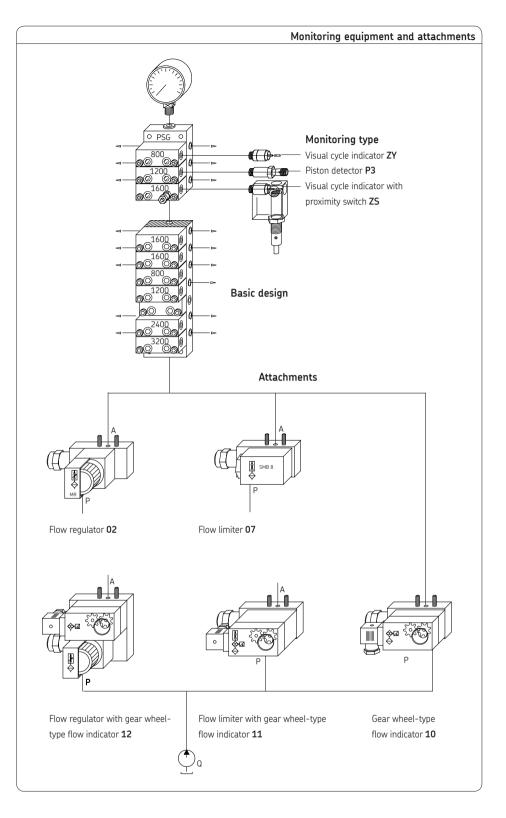
Attachments

The modular structure of the modular feeder becomes particularly apparent in the range of attachments. It can be equipped with an upstream:

- Flow limiter (attachment **07**)
- Flow regulator (attachment **02**)

The attachments can be supplied with or without a gear wheel-type flow indicator. Further designs with directional solenoid valve available on request.

If the inlet volume flow should be visually and electrically controlled, an upstream gear wheel-type flow indicator (attachments **10**, **11** and **12**) can be used.



PSG3 modular feeder, basic design

for oil and grease, without attachments, without monitoring



PSG3 modular feeder, basic design Dummy section Feeder section Baseplate Outlet 43 (33)G 1/4" Screw plug G 3/8" G 1/8" (e.g. for overpressure indication) 09(Measurement connector) Inlet G 3/8" mm³ per outlet and cycle [800, 1200, 1600, 2400, 3200]

1	Technical Data
General information Type hydrauli Mounting position Ambient temperature range Baseplate with 6, 8, 10, 12, 14, 16, working outlets without bridges working outlets with bridges	discretionary ¹) 15 to + 110 °C 18, 20 outlets 3 to 20
Material Baseplate Al (Sections	
Hydraulic Operating pressure max. Einlassvolumenstrom Volume per outlet and cycle 800-, 1200-, 1600-, 240 Dividing ratio	. up to 6 l/min 00-, 3200 mm ³ 1 : 1 to 1 : 4 ³) .5 to 15 bar ⁴) on mineral oil, ils and greases > 12 mm ² /s

- In case of attachments on movable machine parts or in case of strong vibrations (e.g. on pressing machines), the piston position of the feeder must not correspond with the direction of movement of the machine part.
- 2) Also available in corrosion-resistant design (chemically nickel-plated).
- 3) Larger dividing ratios are possible when consolidated.
- 4) Depending on volume index and viscosity or penetration and volumetric flow.

				Dimensions
Number of Sections	Dim. A	Dim. B [mm]	Dim. C [mm]	Complete weight [kg]
3	165	147	2 x 43 = 86	6.83
4	208	190	3 x 43 = 129	8.55
5	251	233	4 x 43 = 112	10.27
6	294	276	5 x 43 = 140	11.99
7	337	319	6 x 43 = 168	13.71
8	380	362	7 x 43 = 196	15.43
9	423	405	8 x 43 = 224	17.15
10	466	448	9 x 43 = 252	18.87

PSG3 modular feeder with piston detector

for oil and grease, monitoring type P3



Technical Data General information For further technical data, see "PSG3 basic design", page 7 Type hydraulically controlled Ambient temperature range - 15 to + 80 °C Piston detector weight 0.12 kg Hydraulic Inlet volume flow up to 6 l/min Lubricant Mineral oils, greases based on mineral oil, environmentally friendly and synthetic oils and greases Worked penetration $\dots \ge 265 \times 0.1 \text{ mm}$ (up to NLGI Grade 2) **Electrical** Piston detector design with 4-point LED Residual ripple≤10% Load current max. 100 mA Protection class IP 67

	Accessories
Designation	Order no.
Cable socket M12 x 1, 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

	Spare parts
Designation	Order no.
Piston detector M22 x 1,5 with gasket	24-1884-2469
O-ring for piston detector	44-0411-2046

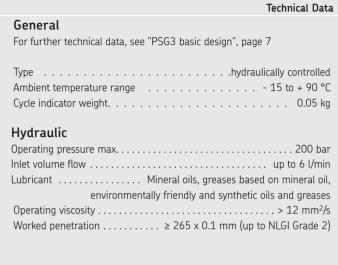
Note

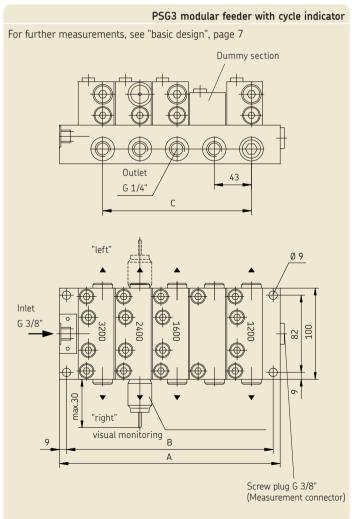
The cable socket of the piston detector must be ordered separately! For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

PSG3 modular feeder with cycle indicator

for oil and grease, monitoring type ZY







PSG3 modular feeder with proximity switch

for oil and grease, monitoring type ZS



PSG3 modular feeder with proximity switch For further measurements, see "basic design", page 7 Attachment is made on left or right from the second to second-to-last section Dummy section Feeder section Baseplate G 1/4' C. optional: Attachment of 2nd section, left side (YS-2L) Inlet 100 ø9 optional: Attachment of 2nd section, right side В (YS-2R)

Technical Data General For further technical data, see "PSG3 basic design", page 7 Type hydraulically controlled Ambient temperature range - 15 to + 70 °C Proximity switch weight 0.17 kg Hydraulic Inlet volume flow up to 6 l/min Lubricant Mineral oils, greases based on mineral oil, environmentally friendly and synthetic oils and greases Operating viscosity > 12 mm²/s Worked penetration ≥ 265 x 0.1 mm (up to NLGI Grade 2) **Electrical** Proximity switch 1) Load current max. 130 mA Outlet function NO-contact (electricity flows if switch damped) 1) Further designs available on request

	Accessories
Designation	Order no.
Cable socket M12 x 1, 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

	Spare parts
Designation	Order no.
Proximity switch	24-1884-2316
Housing proximity switch	44-0711-2593

Note

The cable socket of the proximity switch must be ordered separately! For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

PSG3 modular feeder with gear-type flow indicator

for oil, Attachment 10



PSG3 modular feeder with gear-type flow indicator For further measurements, see "basic design", page 7 electronic sensor (IP 65) PG 11 Outlet G 1/4" Interchangeable strainer Outlet G 3/8" Interchangeable strainer

Technical Data

	Accessories
Designation	Order no.
Cable socket, DIN 43 650 type A (ISO 4400)	
without cable and LED	179-990-034

	Spare parts
Designation	Order no.
Gear-type flow indicator with baseplate G 3/8"	24-1883-2234

Note

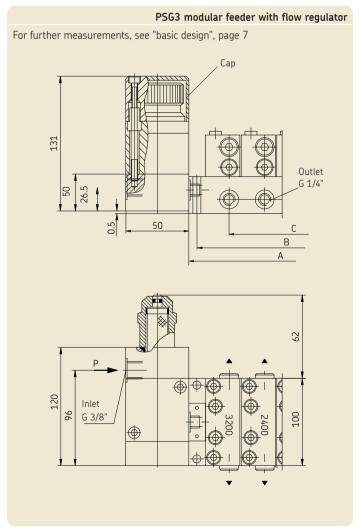
The cable socket of the gear-type flow indicator must be ordered separately! For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

PSG3 modular feeder with flow regulator

for oil, attachment 02



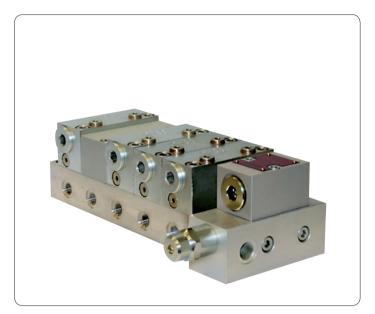
General For further technical data, see "PSG3 basic design", page 7 Type ... 2-way flow control valve Ambient temperature range ... 15 to + 75 °C Flow regulator weight ... 1.3 kg Hydraulic Operating pressure max. ... 200 bar Inlet volume flow ... 0.1 to 6 l/min Lubricant ... Mineral oils, environmentally friendly and synthetic oils Operating viscosity ... 12 - 350 mm²/s Filtering unit/interchangeable strainer ... 0.3 mm Scale graduation ... 1 - 10



	Spare parts
Designation	Order no.
Baseplate G 3/8" for flow regulator	24-1883-2238
Flow regulator up to 0.6 l/min	24-1883-2211
Flow regulator up to 1.6 l/min	24-1883-2201
Flow regulator up to 2.5 l/min	24-1883-2024
Flow regulator up to 4.0 l/min	24-1883-2025
Flow regulator up to 6.0 l/min	24-1883-2083

PSG3 modular feeder with SP/SMB8 flow limiter

for oil, attachment 07



PSG3 modular feeder with SP/SMB8 flow limiter
For further measurements, see "basic design", page 7
Flow limiter
0utlet G 1/4"
50 C
O
A
Plug-in nozzle
D ₁ : 1.50 2.75 mm
for
Q: 1.83 6.08 l/min
P A A
021 8 Inlet 08 08 08 08 08 08 08 08 08 08 08 08 08
•

Spare pa	rts
Designation Order no.	
Flow limiter with baseplate G3/8" 24-1883-2230	
Flow limiter with baseplate UNF 24-1883-2244	

	See plug-in	nozzle tablo	e for SP/SMB8 flow limiter
Nominal volumetric flow ¹) [I/min]	Nozzle [Ø mm]	Nozzle index	Spare part complete plug-in nozzle D ₁ Order no.
1.83	1.50	150	24-0455-2594
1.96	1.55	155	24-0455-2595
2.09	1.60	160	24-0455-2596
2.22	1.65	165	24-0455-2597
2.36	1.70	170	24-0455-2598
2.50	1.75	175	24-0455-2599
2.64	1.80	180	24-0455-2600
2.79	1.85	185	24-0455-2601
2.94	1.90	190	24-0455-2602
3.10	1.95	195	24-0455-2603
3.25	2.00	200	24-0455-2604
3.42	2.05	205	24-0455-2605
3.58	2.10	210	24-0455-2606
3.75	2.15	215	24-0455-2607
3.93	2.20	220	24-0455-2608
4.10	2.25	225	24-0455-2609
4.29	2.30	230	24-0455-2610
4.47	2.35	235	24-0455-2611
4.66	2.40	240	24-0455-2612
4.85	2.45	245	24-0455-2613
5.05	2.50	250	24-0455-2614
5.25	2.55	255	24-0455-2615
5.45	2.60	260	24-0455-2616
5.66	2.65	265	24-0455-2617
5.87	2.70	270	24-0455-2618
6.08	2.75	270	24-0455-2619
1) at a service viscosity	of 300 mm ² /s		

Accessories and spare parts, PSG3 modular feeder

				Accessorie
Designation	Number of sections	Volume per cycle and outlet [mm³]	Order no.	Weight [kg]
Baseplate complete	3	•	24-0714-3310	1.60
Inlet thread G 3/8"	4		24-0714-3311	2.02
Outlet thread G 1/4"	5		24-0714-3312	2.42
	6		24-0714-3313	2.83
	7		24-0714-3314	3.24
	8		24-0714-3315	3.64
	9		24-0714-3316	4.08
	10		24-0714-3317	4.54
Baseplate complete	3		24-0714-2290	1.60
nlet thread 3/4-16 UNF	4		24-0714-2291	2.02
Outlet thread 9/16-18 UNF	5		24-0714-2292	2.42
	6		24-0714-2293	2.83
	7		24-0714-2294	3.24
	8		24-0714-2295	3.64
	9		24-0714-2296	4.08
	10		24-0714-2297	4.54
Feeder section complete		800	24-2151-4240	1.31
prepared for the		1200	24-2151-4244	1.31
Piston detector assembly		1600	24-2151-4244	1.31
Monitoring type P3		2400	24-2151-4241	1.31
Monitoring type (3		3200	24-2151-4243	1.31
Complete feeder cycle indicator right 1)		800	24-2151-4250	1.43
Monitoring type ZY (not on the first		1.200	24-2151-4258	1.43
or the last section)		1600	24-2151-4251	1.43
,		2400	24-2151-4252	1.43
		3200	24-2151-4253	1.43
Complete dummy section without				
screw plug for baseplate			24-2151-4211	0.50
Feeder section with cycle indicator is supplied in a Retrofitting to the "plunger rod left" design is des				

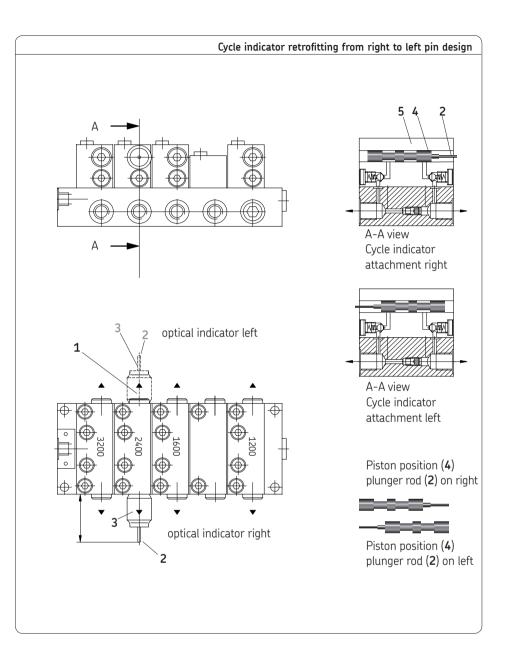
Spare parts
Order no.
4-1855-2106
IN 908-R1-4-5.8
IN 7603-A14x18-CU
4-1855-2027
4-1855-2028
5-0812-0915
6-9026-0062

Retrofitting instructions Cycle indicator

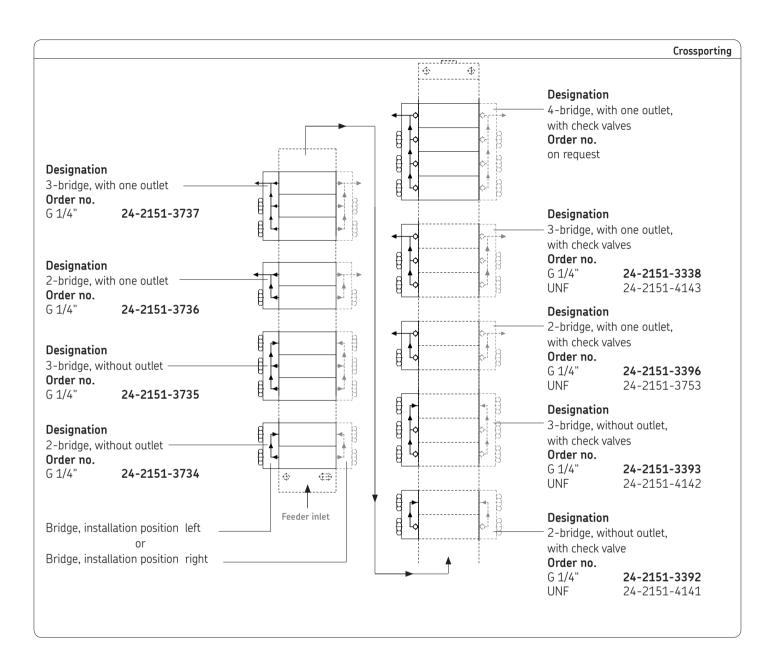
Note!

Pressure must not be applied to the feeder section during the retrofitting described below. Retofitting the feeder section from a right cycle indicator design to a left cycle indicator design should therefore be performed before mounting the feeder section on the baseplate.

- Loosen up and remove screw plug (1) (left)
- Push plunger rod (2) of of the cycle indicator (right) into cycle indicator housing (3) (using finger)
- Carefully remove piston (4) with plunger rod (2) from left side of section housing (5)
- Loosen up and remove cycle indicator (3) (hexagon socket screw SW4) and install in left side
- Do not bend during subsequent installation piston (4) and plunger rod, do not shear off O-rings!
- Turn piston (4) with plunger rod (2) 180° and carefully install on the right side of section housing (5)
- Carefully insert the plunger rod (2) into the cycle indicator (3)
- Install the screw plug (1) on the right side



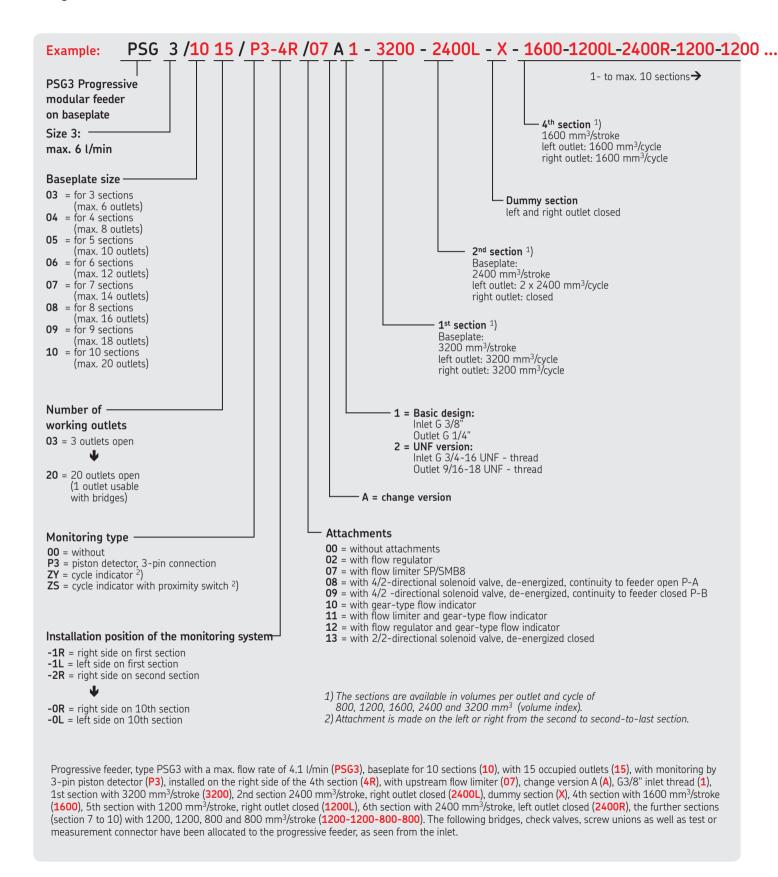
Bridge design for PSG3 modular feeder



Notes

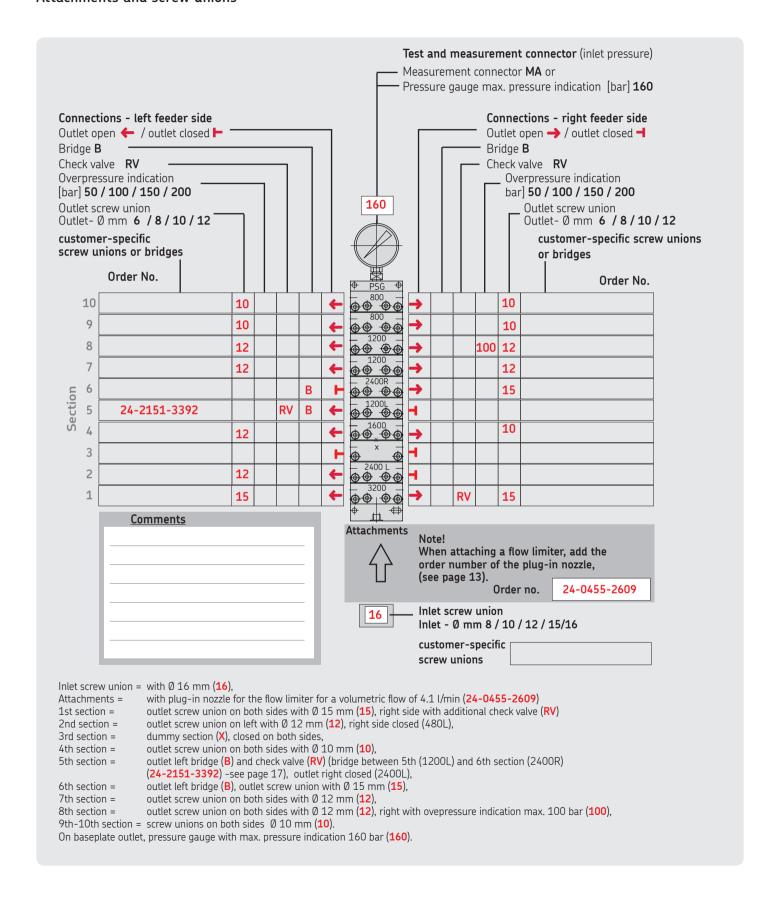
Key to order codes

Design



Key to order codes

Attachments and screw unions



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 PSG3

PSG 3 /10 15 / P3-4R /07 A 1 - 3200 - 2400L - X -1600-1200L-2400R-1200-800-800...

PSG3 / / ... - ... / ... A .. - - - - - - - - -

	Test and measurement connector (inlet pressure) Measurement connector MA or Pressure gauge max. pressure indication [bar] 160
Connections - left feeder side Outlet open outlet closed Bridge B Check valve RV Overpressure indication [bar] 50 / 100 / 150 / 200 Outlet screw union Outlet- Ø mm 6 / 8 / 10 / 12 customer-specific screw unions or bridges Order No. 10 9 8 7 Logical Screw union Comments Comments	Connections - right feeder side Outlet open → / outlet closed - Bridge B Check valve RV Overpressure indication [bar] 50 / 100 / 150 / 200 Outlet screw union Outlet - Ø mm 6 / 8 / 10 / 12 customer-specific screw unions or bridges Order No. Order No. Attachments Note! When attaching a flow limiter add the
	When attaching a flow limiter, add the order number of the plug-in nozzle, (see page 13). Order no. Inlet screw union
	Inlet - Ø mm 8 / 10 / 12 / 15 / 16 customer-specific screw unions
Company: Address: Reference:	Name: Function/dept.: Phone: Fax/E-Mail:

PSG3 Modular Feeder

The configuration of a PSG3 progressive feeder is customer-specific. The most important data for the generation of an order number are summarized on pages 18 to 19. 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 PSG3/... (configuration) must be completed according to the sample on page 18 and the graphic below according to the sample on page 19.

Note!

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

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

SKF Lubrication Systems Germany AG

2. Industriestrasse 4 68766 Hockenheim Germany

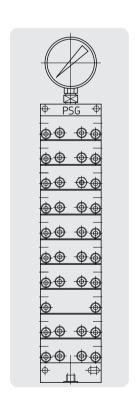
Tel. +49 (0)62 05 27-0 Fax +49 (0)62 05 27-101

www.skf.com/lubrication

	_
Company:	_
	_
Address:	_
	_
Reference:	_
	_
Name:	_
	_
Function/dept.:	-
	_
Phone:	_
Fax:	_
E-mail:	

Please complete your address here:

Additional amendments or remarks:



Order No. 1-3014-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

- 1-3011-EN Progressive modular feeder PSG3(PM)
- 1-3013-EN Progressive modular feeder PSG2
- 1-3015-EN Progressive sectional feeder VP
- 1-3016-EN Progressive sectional feeder VPK
- 1-3017-EN Progressive block feeder VPB
- 1-3029-EN Progressive block feeder SPVS

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

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