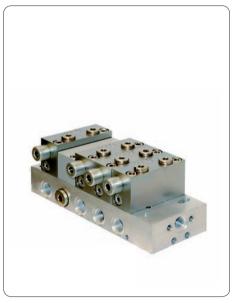
PSG2 Modular Feeder

for use in oil or grease lubrication systems







Application

Modular feeders of the PSG2 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 construction. The outlets are located in the baseplate.
- Outlet quantities are especially easy to allocate, because the lubricant outlets are located directly below the metering piston.

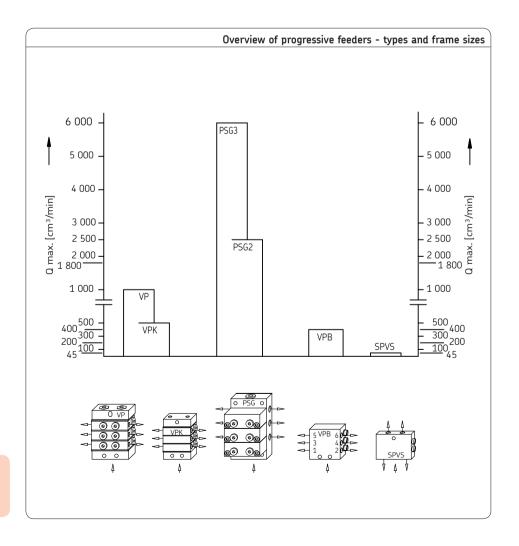
- Flexible system design due to metering sections with volumes per cycle and outlets of 60, 120, 240, 360, 480, 600, 720 and 840 mm³
- High operational reliability due to check valves installed standard
- High metering accuracy; the integrated check valves are located directly after the metering pistons.
- Flow limiters, flow regulators, gear-type flow indicator and directional solenoid valves can be attached.
- Low pressure loss due to generously sized control borings

- 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.
- Basic design in galvanized steel, optionally available in corrosion-resistant chemically nickel-plated design



Contents

Application General Mode of operation Operating pressure Operating temperature	3 3 4	Modular feeder - Basic design	7 8
- Consolidation of outlets		- with gear-type flow indicator	
- Dummy sections		- with flow regulator	
- Attachment of bridges (crossporting)	4	- with flow limiter	
- Information on the design	4	- with 4/2 directional solenoid valve	13
- Tightening torque of the sections	4	- with 2/2 directional solenoid valve	14
Monitoring	5	Accessories and spare parts	15
Attachments	5	Retrofitting instructions	
		for cycle indicator	16
		Bridge designs (crossporting)	17
		Explanation of order codes	18
		Attachments and screw unions	19
		Order Form	20



See important product usage information on the back cover.

General information

The PSG2 Modular Feeder (Progressive Feeder) can be used for an inlet volume flow of up to 2.5 I/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 tubing.

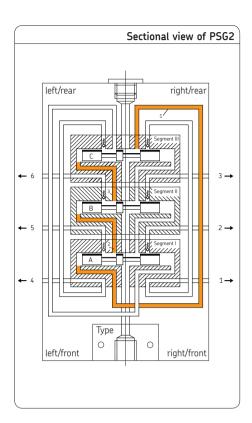
The volumetric flow which is sent via **a** tube is forcibly distributed in a predetermined ratio to the outlets, i.e. to the lubrication points or the downstream progressive feeders. Pistons, which are aligned in series, meter the lubricant for two opposite outlets each and control the function of the 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.

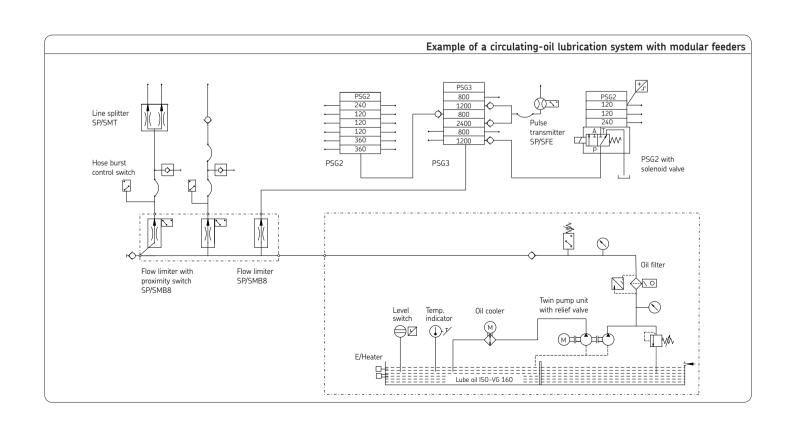
High operational reliability (at high or different back pressures) offered by the check valves installed standard. They also guarantee an accurate and safe blocking behavior, even for internal and external combinations.

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-leftt; 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 **A**, **B** and **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.

Internal crossporting

The volumetric flow of an outlet can be doubled by internal consolidation 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 consolidated using external bridges (crossporting). One bridge can consolidate 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-byside or if dummy sections are used as the start or end section.

External crossporting

Bridges with or without an outlet can be utilized to allow combinations between an internal consolidation and a bridge. It is still possible to use bridges with (a) check valve(s) (see page 17).

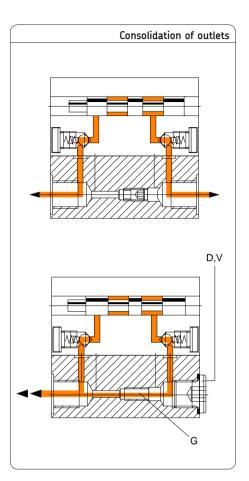
Information on the design

The general criteria for the design of progressive feeders also apply without restrictions to the PSG2 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. For the sake of self-venting, the 60 mm³/stroke section should not be placed in the first position (as viewed from the inlet). In case of an installation on movable machine parts or in case of strong vibrations (e.g. on 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 PSG2 sections on the baseplate, the following tightening torque must be complied with:

Damping torque: 23 Nm



Monitoring

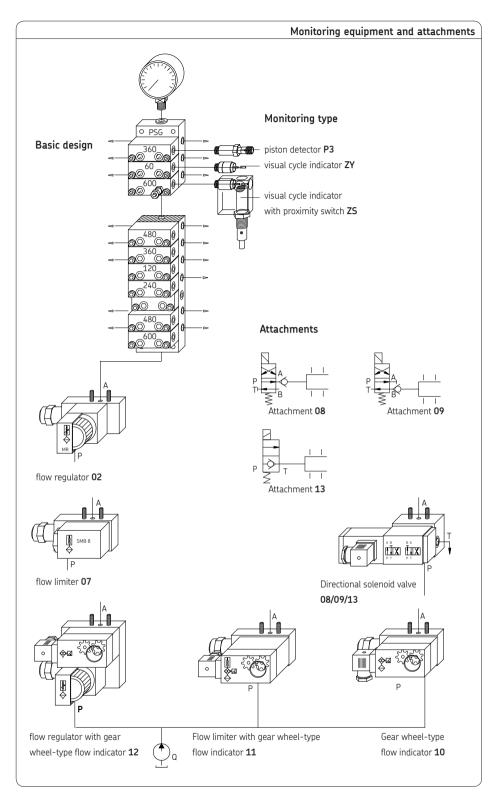
All standard sections can be directly monitored by means of a piston detector (compare parameters for piston detector, monitoring type P3) and can be retrofitted. If piston movement is recorded using a cycle indicator (visual stroke monitoring, monitoring type ZY) with proxmity switch (monitoring type ZS), the sections intended for this purposes are to be used. (Exception: section 60 mm³/stroke)

Attachments

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

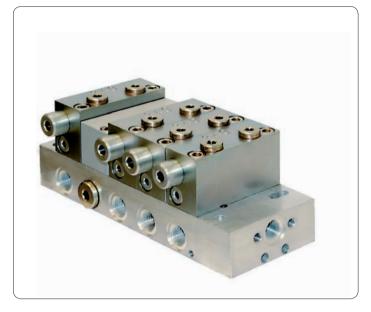
- flow regulator (attachment 02)
- flow limiter (attachment 07)
- 4/2-directional solenoid valve (attachment 08/09)
- 2/2-directional solenoid valve (attachment **13**)

The attachments can be supplied with or without a gear wheel-type flow indicator. 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.



PSG2 modular feeder, basic design

for oil and grease, without attachments, without monitoring



PSG2 modular feeder, basic design 27.50 19.0 28.50 Dummy section Feeder section Baseplate 49 Outlet 28 48 G 1/4" Screw plug G1/4" measurement connector (e.g. system pressure) G1/8" measurement connector (e.g. for overpressure indication) Inlet

	Technical Data
	recinicat Data
General information Type	discretionary ¹)15 to + 110 °C , 10, 12, 14, 16, 18, 20 outlets3 to 20
Material Baseplate Sections	
Hydraulic Operating pressure max Inlet volume flow Volume per outlet and cycle	up to 2.5 l/min
	max. 200/min
Operating viscosity ≥ 265	> 12 mm²/s
1) In case of attachments on movable ma vibrations (e.g. on pressing machines), feeder must not correspond with the d machine part. 2) Also available in corrosion-resistant des	the piston position of the irection of movement of the sign (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	dimension A [mm]	dimension B [mm]	dimension C [mm]	complete weight [kg]
3	131	103	2 x 28 = 56	2.24
4	159	131	3 x 28 = 84	2.85
5	187	159	4 x 28 = 112	3.49
6	215	187	5 x 28 = 140	4.10
7	243	215	6 x 28 = 168	4.78
8	271	243	7 x 28 = 196	5.42
9	299	271	8 x 28 = 224	6.06
10	327	299	9 x 28 = 252	6.73

PSG2 modular feeder with piston detector

for oil and grease, monitoring type P3



For further measurements, see "basic design", page 6 M12x1 4-point LED M12x1 L+ G 1/4" A A A

Technical Data

General information

For further measurements, see "basic design", page 6

Type	hydraulically controlled
Ambient temperature range	15 to + 75 °C
Piston detector weight	0.04 kg

Hydraulic

Operating pressure	max
Inlet volume flow .	up to 2.5 l/min
Lubricant	Mineral oils, greases based on mineral oil,
e	environmentally friendly and synthetic oils and greases
Operating viscosity	> 12 mm ² /s
Worked penetration	$1 \dots \ge 265 \times 0.1 \text{ mm (up to NLGI Grade 2)}$

Electric

Piston detector

Fiscoli detector
Design with 4-point LED, 3-pin connection
Rated votage
Residual ripple $\ldots \le 10\%$
Load current max. 100 mA
Protection class IP 67
Outlet function PNP contact

	Accessories
Designation	Order number
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

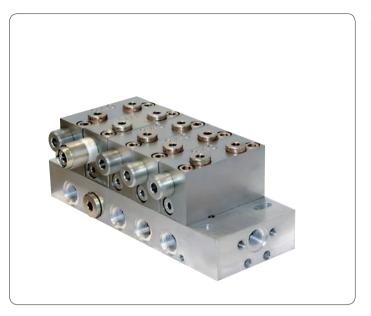
Spare parts
Order number
177-300-094
WVN532-12x1.5

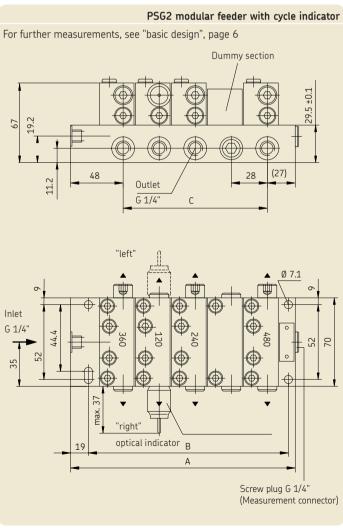
Note

The cable socket is ordered separately. For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

PSG2 modular feeder with cycle indicator

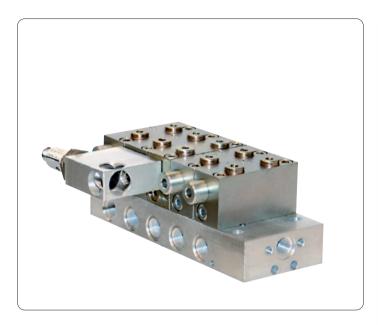
for oil and grease, monitoring type ZY

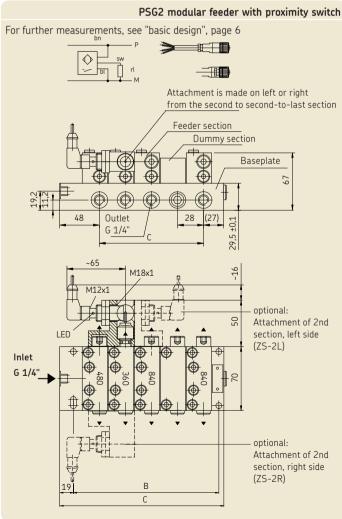




PSG2 modular feeder with proximity switch

for oil and grease, monitoring type ZS





Technical Data General For further measurements, see "basic design", page 6 Type hydraulically controlled Ambient temperature range - 15 to + 70 °C Proximity switch weight 0.17 kg Hvdraulic Inlet volume flow up to 2.5 l/min Lubricant Mineral oils, greases based on mineral oil, environmentally friendly and synthetic oils and greases Worked penetration ≥ 265 x 0.1 mm (up to NLGI Grade 2) Electrical Proximity switch 1) Load current max. 130 mA Outlet function . . . NO, NO-contact (electricity flows if switch damped) 1) Further designs available on request

	Accessories
Designation	Order number
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 number
Proximity switch	24-1884-2316
Housing proximity switch	44-0711-2592

Note

The cable socket is ordered separately. For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

PSG2 modular feeder with gear-type flow indicator

for oil, with gear-type flow indicator and interchangeable strainer, attachment 10



PSG2 modular feeder with gear-type flow indicator For further measurements, see "basic design", page 6 electronic sensor (IP 67) PG 11 Outlet G 1/4" Interchangeable strainer Specific volume: 4.6 cm³/R

Technical Data General For further measurements, see "basic design", page 6 Ambient temperature range - 15 to + 70 °C Hydraulic Inlet volume flow up to 2.5 l/min Lubricant Mineral oils, environmentally friendly and synthetic oils Operating viscosity 20 to 1000 mm²/s Filtering unit/interchangeable strainer 0.3 mm **Electrical** sensor Residual ripple ≤ 10%

Accessories
Order number
179-990-034

	Spare parts
Designation	Order number
Gear-type flow indicator with baseplate G 1/4"	24-1883-2224

Note

The cable socket is ordered separately. For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

PSG2 modular feeder with flow regulator

for oil, attachments 02



For further measurements, see "basic design", page 6	
Type 2-way flow control valve, pressure compen Ambient temperature range	75 °C
Hydraulic	0.1
Operating pressure max 20 Settings range 0.1 to 2.5	
Lubricant Mineral oils, environmentally friendly and syntheti	
Operating viscosity	
Filtering unit/interchangeable strainer 0.3	
Scale graduation	- 10
Spare	e parts

General

Technical Data

PSG2 modular feeder with flow regulator For further measurements, see "basic design", page 6 Cap Outlet G 1/4" G 1/4" Outlet G 1/4" Outlet G 1/4"

	Spare parts
Designation	Order number
Baseplate G 1/4" for flow	regulator 24-1883-2228
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

PSG2 modular feeder with SP/SMB8 flow limiter

for oil, attachment 07



General For further measurements, see "basic design", page 6 Type ... 2-way flow control valve, pressure compensated Ambient temperature range ... - 15 to + 90 °C Flow limiter weight ... 1.1 kg Hydraulic Operating pressure max. ... 200 bar Inlet volume flow ... 0.09 to 2.5 l/min Lubricant ... mineral oils, environmentally friendly and synthetic oils Operating viscosity ... 20 to 600 mm²/s Filtering unit/interchangeable strainer ... 0.3 mm

	Spare parts
Designation	Order number
Flow limiter with baseplate G1/4"	24-1883-2220
Flow limiter with baseplate 9/16-18UNF	24-1883-2245

Flow limiter regulating assembly Plug-in nozzle D₁: 0.40 ... 1.75 mm for O: 0.09 ... 2.5 I/min

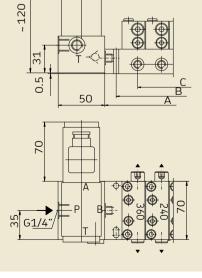
Nominal	Nozzle	Nozzle	Spare part
flow ¹⁾	fa 1	index	complete plug-in nozzle D
[l/min]	[Ø mm]		Order number
0.09	0.40	040	24-0455-2572
0.12	0.45	045	24-0455-2573
0.16	0.50	050	24-0455-2574
0.21	0.55	055	24-0455-2575
0.26	0.60	060	24-0455-2576
0.31	0.65	065	24-0455-2577
0.37	0.70	070	24-0455-2578
0.43	0.75	075	24-0455-2579
0.49	0.80	080	24-0455-2580
0.56	0.85	085	24-0455-2581
0.64	0.90	090	24-0455-2582
0.72	0.95	095	24-0455-2583
0.78	1.00	100	24-0455-2584
0.87	1.05	105	24-0455-2585
0.96	1.10	110	24-0455-2586
1.06	1.15	115	24-0455-2587
1.16	1.20	120	24-0455-2588
1.26	1.25	125	24-0455-2589
1.37	1.30	130	24-0455-2590
1.48	1.35	135	24-0455-2591
1.59	1.40	140	24-0455-2592
1.71	1.45	145	24-0455-2593
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

PSG2 modular feeder with 4/2-directional solenoid valve

for oil, attachments 08 and 09



PSG2 modular feeder, code 08 and 09 For further measurements, see "basic design", page 6 Code 08 Code 09 P T B A T B Code 19



General For further measurements, see "basic design", page 6 Type ... Directional solenoid valve Ambient temperature range ... - 15 to + 75 °C Directional solenoid valve weight ... 1.6 kg Hydraulic Operating pressure max ... 150 bar Inlet volume flow ... up to 2.5 l/min Lubricant ... mineral oils, environmentally friendly and synthetic oils Operating viscosity ... > 12 mm²/s Electric Ordering code 08 ... with 4/2-directional solenoid valve, de-energized, continuity to feeder closed Ordering code 09 ... with 4/2-directional solenoid valve, de-energized, continuity to feeder open

Technical Data

	Accessories
Designation	Order number
Cable socket, DIN 43 650 type A (ISO 4400)	
without cable and LED	179-990-034

Connection dimensions as per DIN 24 340

1) Other specification available on request

	Spare parts
Designation	Order number
Ordering code 08	
4/2-directional solenoid valve, (NC), 24 V DC	24-1254-2396
Base plate for 4/2-directional solenoid valve G 1/4"	24-1254-2223
Ordering code 09	
4/2-directional solenoid valve, (NO), 24 V DC	24-1254-2396
Base plate for 4/2-directional solenoid valve G 1/4"	24-1254-2222

Note

The cable socket is ordered separately. For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

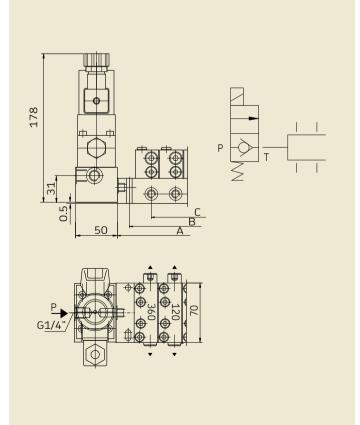
PSG2 modular feeder with 2/2-directional solenoid valve

for oil and grease, attachment 13



PSG2 modular feeder, code 13

For further measurements, see "basic design", page 6



Technical Data

General

For further measurements, see "basic design", page 6

Hydraulic

Electrical

ACC	cessories
Designation Order	number
Cable socket, DIN 43 650 type A (ISO 4400)	
without cable and LED 179-	990-034

	Spare parts
Designation	Order number
Ordering code 13	
2/2-directional solenoid valve, 24 V DC	24-1254-2500
Base plate for 2/2-directional solenoid valve G 1/4"	24-1883-2241
Base plate for 2/2-directional solenoid valve 9/16-18UNF	24-1883-2246

Note

The cable socket is ordered separately. For technical data, please refer to leaflet no. 1-1730-EN, "Electrical Plug-In Connections".

Accessories and spare parts, PSG2 modular feeder

				Accessori
Designation	Number of Sections	Volume per outlet and cycle [mm³]	Order number	Weight [kg]
Complete baseplate	3		24-0714-3300	0.67
Inlet thread G 1/4"	4		24-0714-3301	0.81
Outlet thread G 1/4"	5		24-0714-3302	0.94
	6		24-0714-3303	1.07
	7		24-0714-3304	1.21
	8		24-0714-3305	1.34
	9		24-0714-3306	1.47
	10		24-0714-3307	1.63
Complete baseplate	3		24-0714-2270	0.67
nlet thread 9/16-18 UNF	4		24-0714-2271	0.81
Outlet thread 9/16-18 UNF	5		24-0714-2272	0.94
	6		24-0714-2273	1.07
	7		24-0714-2274	1.21
	8		24-0714-2275	1.34
	9		24-0714-2276	1.47
	10		24-0714-2277	1.63
Complete feeder section		60	24-2151-4500	0.50
prepared for the		120	24-2151-4501	0.50
Piston detector assembly		240	24-2151-4502	0.50
Monitoring type P3		360	24-2151-4503	0.50
		480	24-2151-4504	0.50
		600	24-2151-4505	0.50
		720	24-2151-4506	0.50
		840	24-2151-4507	0.50
Complete feeder section cycle indicator right 1)		120	24-2151-4230	0.55
Monitoring type ZY (attachment from the		240	24-2151-4231	0.55
2nd to second-to-last section)		360	24-2151-4232	0.55
		480	24-2151-4233	0.55
		600	24-2151-4234	0.55
		720	24-2151-4300	0.55
		840	24-2151-4301	0.55
Complete dummy section without				
screw plug for baseplate			24-2151-4210	0.45

¹⁾ Feeder section with cycle indicator is supplied in the right design. Retrofitting to the cycle indicator left design is described on page 16.

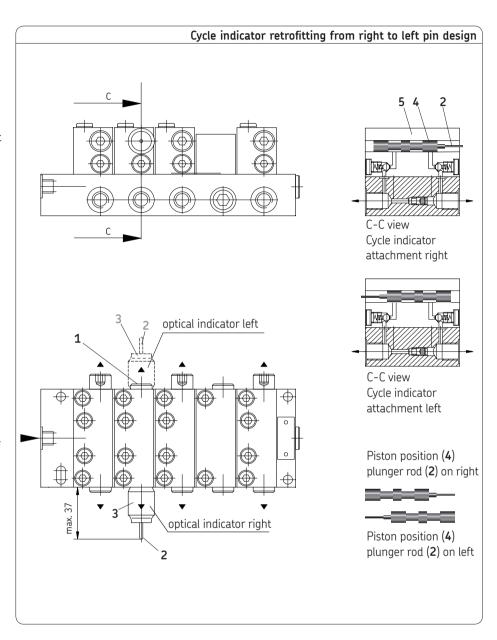
Spare parts
number
55-2142
55-2143
08-R1-4-5.8
603-A14x18-CU
55-2028
10-0915
532-4.5x1.5
5

Retrofitting instructions for cycle indicator

Note!

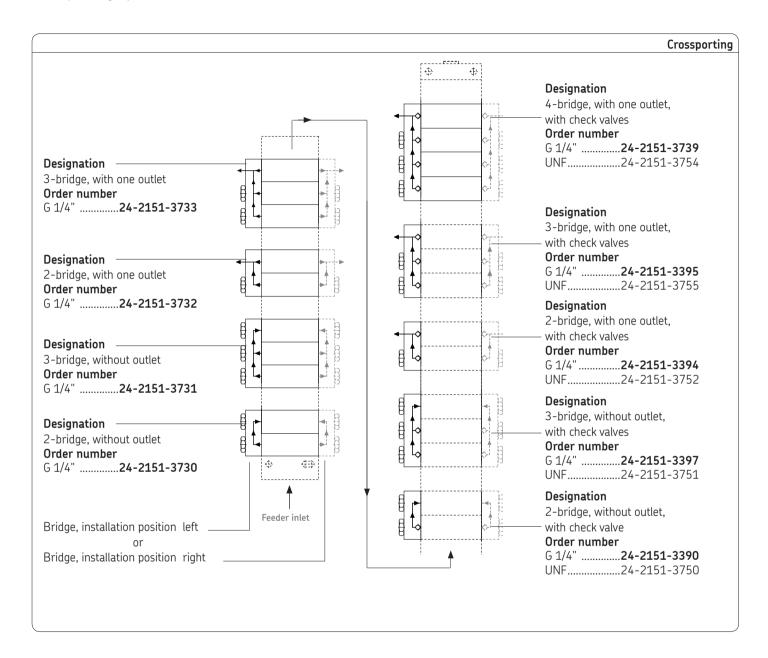
Pressure must not be applied to the feeder section during the retrofitting described below. Retofitting the feeder section from a right cycle indicator design to a left cycle indicator design should therefore be performed before mounting the feeder section on the baseplate.

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



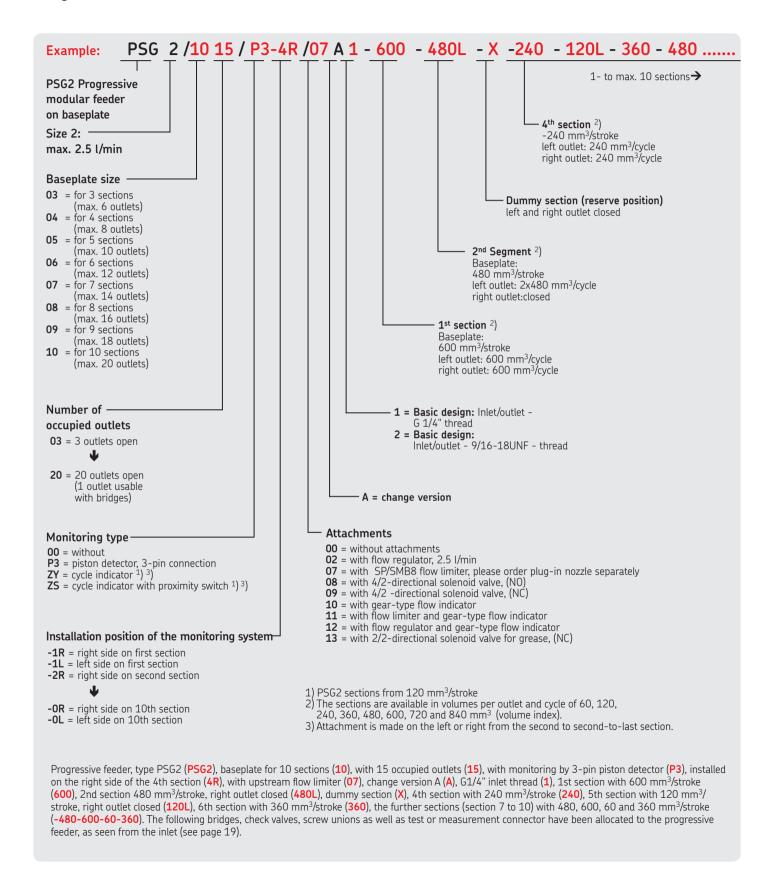
Bridge design for PSG2 modular feeder

Crossporting options



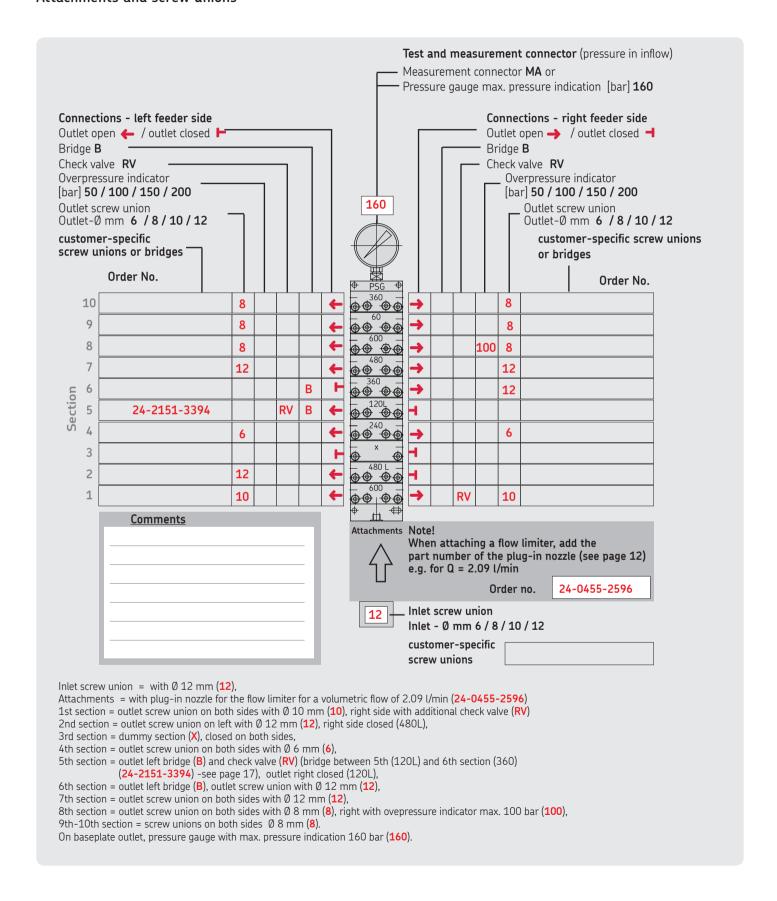
Key to order codes

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 PSG2

PSG2 /10 15 /P3- 4R/ 07A 1 - 600 - 480L - X - 240 - 120L - 360 - 480 - 600 - 60 - 360

PSG2 / / ... - ... / ... A .. - - - - - - - - -

	Test and measurement connector (pressure in inflow) Measurement connector MA or Pressure gauge max. pressure indication [bar] 160
Connections - left feeder side Outlet open	Connections - right feeder side Outlet open → / outlet closed ► Bridge B Check valve RV Overpressure indicator [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 Loi 5 5 4 3 2 1 Comments	
	Order number Inlet screw union Inlet - Ø mm 6 / 8 / 10 / 12 customer-specific screw unions
Company: Address: Reference:	Name: Function/dept.: Phone: Fax/E-Mail:

Modular Feeder PSG2

The configuration of a PSG2 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 PSG2/... (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

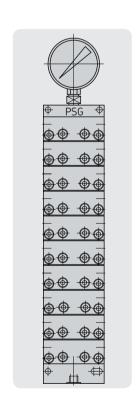
Tel. +49 (0)62 05 27-0 Fax +49 (0)62 05 27-101

www.skf.com/lubrication

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

Please complete your address here:

Additional amendments or remarks:



Order No. 1-3013-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)				
1-3014-EN	Progressive modular feeder	PSG3				
1-3015-EN	Progressive sectional feeder	VP				
1-3016-EN	Progressive sectional feeder	VPK				
1-3017-EN	Progressive block feeder	VPB				
1-3029-FN	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

This brochure was presented by:					

® SKF is a registered trademark of the SKF Group.

© SKF Group 2009

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

