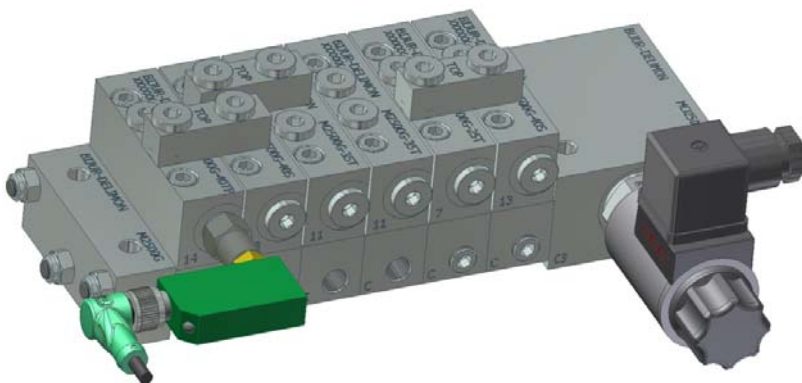


Operating instructions

Modular progressive distributor M2500G

BA_2015_2_M2500G (35699)



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1. GENERAL

Prior to start up, we recommend to read these operating instructions carefully as we do not assume any liability for damages and operating troubles which result from the nonobservance of these operating instructions!

Any use beyond the applications described in these operating instructions is considered to be not in accordance with the product's intended purposes. The manufacturer is not to be held responsible for any damages resulting from this: the user alone bears the corresponding risk. As to figures and indications in these operating instructions we reserve the right to make technical changes which might become necessary for improvements.

The copyright on these operating instructions is kept reserved to the company DELIMON. These operating instructions are intended for the erecting, the operating and supervising personnel. They contain regulations and drawings of technical nature which must not - completely or partially - be distributed nor used nor communicated to others without authorization for competition purposes.

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2. SAFETY

These operating instructions contain fundamental instructions which are to be observed during erection, operation and maintenance. Therefore it is absolutely necessary for the fitter and the competent qualified staff/user to read these operating instructions before installation and start-up. The operating instructions must be available at all times at the place of use of the machine/system. Not only the general safety instructions stated under this main point "safety" are to be observed, but also the other specific safety instructions stated under the other main points.

2.1 Identification of safety warnings in the operating instructions

The safety warnings contained in these operating instructions which, if not observed, may cause dangers to people, are specially marked with general danger symbols



safety sign according to DIN 4844, warning about a danger spot, in case of warning about electric voltage with



safety sign according to DIN 4844, warning about dangerous electric voltage.

In case of safety instructions which, if not observed, may cause damage to the machine and its function, the word

ATTENTION

is inserted.

Instructions that are directly attached to the machine, as for example

- rotational direction arrow
- identifications for fluid connections must be observed at all events and maintained in a fully legible condition.
- Note: There is an increased skid risk in case of spilled/leaked out lubricants. They are to be removed at once properly.



Safety sign according to DIN 4844, warning about skid risk.

2. SAFETY

2.2 Personnel qualification and training

The operating, maintaining, inspecting and erecting personnel must have the appropriate qualification for such work. Area of responsibility, competence and supervision of the personnel have to be regulated by the user. If the personnel do not have the necessary knowledge, they have to be trained and given instructions. This can be effected, if necessary, by the manufacturer/supplier on behalf of the user of the machine. Furthermore, the user has to make sure that the contents of the operating instructions are fully understood by the personnel.

2.3 Dangers in case of nonobservance of the safety instructions

The nonobservance of the safety instructions may result in hazards to persons, to the environment and to the machine. The non-observance of the safety instructions may lead to the loss of any claims for damages. In detail, the nonobservance may for instance lead to the following hazards:

- Failure of important functions of the machine/system
- Failure of prescribed methods for maintenance and repair
- Hazard to persons by electrical, mechanical and chemical influences
- Hazard to the environment by the leakage of dangerous substances

2.4 Safety conscious working

The safety instructions stated in these operating instructions, the existing national regulations as to the accident prevention as well as possible internal working, operating and safety rules of the user are to be observed.

2.5 Safety instructions for the user/operator

- If hot or cold machine parts lead to dangers, these parts have to be protected against touch.
- Protection against touch for moving parts (e. g. coupling) must not be removed when the machine is in operation.
- Leakages (e. g. from the shaft seal) of hazardous goods to be delivered (e. g. explosive, toxic, hot) are to be removed in such a way that there is no danger to persons and environment. Legal rules are to be observed.

- Hazards caused by electrical power are to be excluded (for details please refer for instance to the rules of the VDE and the local power supply companies).

2.6 Safety instructions for maintenance, inspection and installation work

The user has to take care that all the maintenance, inspection and installation work is executed by authorized and qualified skilled personnel who have informed themselves adequately by thoroughly studying the operating instructions. Basically, work on the machine is only to be carried out during shut-down. It is obligatory to observe the shut-down procedure described in the operating instructions.

Pumps or pump aggregates that deliver media being hazardous to health have to be decontaminated. Immediately after completion of the work, all safety and protective equipments have to be reinstalled and/or reactivated.

- Advice: When working with compressed air, do wear glasses.



(DIN 4844 - Use breathing mask)

- Advice: Observe EC-Safety Data Sheet for materials of consumption and additives used and use personal protective equipment.

Before recommissioning, observe the points stated in section "initial start-up".

2.7 Unauthorized conversion and manufacture of spare parts

Conversion or modifications to the machine are only permitted when agreed with the manufacturer. Original spare parts and accessories authorized by the manufacturer serve to ensure safety. The use of other parts may render the liability for consequential losses null and void.

2.8 Unacceptable modes of operation

The operational reliability of the machine supplied is only guaranteed if the machine is used in accordance with its intended purposes as per section 1 - General - of the operating instructions. The limiting values specified in the data sheet must on no account be exceeded.

2.9 Guidelines & standards

1., 2. and 3. guideline (see data sheet: R&N_2009_X_GB)

3.0 Notes on environmental protection and waste disposal

In correct operation with lubricants, the components are subject to the special requirements set by environmental legislation.

The general requirements for lubricants are specified in the respective safety data sheets.

Used lubricants are hazardous forms of waste and therefore require special supervision in the sense of § 41 paragraph 1 sentence 1 and paragraph 3 no. 1 of KrW-/AbfG (Closed-Loop Waste Management Act).

Used oils must be handled in compliance with AltöIV (Waste Oil Ordinance).

The devices or components contaminated with lubricant must be disposed of by a certified waste management company. Records of proper waste management must be filed in conformance to NachwV (Ordinance on Waste Recovery and Disposal Records).

GENERAL PRODUCT CHARACTERISTICS

- Valve distributor plates
- Valve, modular construction
- Can be used as group lubrication distributor
- Wide range of accessories and monitoring options
- Cylindrical standard threads to SAE, NPSF or BSPP
- Integral group lubricating valve for area control
- Operating pressure max.: with oil 300 bar and with grease 400 bar
- Delivery quantity 0.08 to 1.31 cm³
- Zinc-nickel plating (free of Chromium-VI)
- Valve distributors with three to ten segments
- Ideal for combining with dual-pipe systems
- Possible to connect pipes with maximum 10 mm diameter
- Easy to modify/remove distributor later using exchange module

A. DISTRIBUTOR TYPE M2500G	Code
M2500G	M25

B. NUMBER OF SEGMENTS	Code
3 segments	03
4 segments	04
5 segments	05
6 segments	06
7 segments	07
8 segments	08
9 segments	09
10 segments	10

C. REVISION	Code
Status A	A

D. MONITORING	Code
without electrical monitoring	00
with motion indicator(s) right hand	01
with motion indicator(s) left hand	02
optical cycle indicator "colour- change" right hand (without motion indicator)	03
optical cycle indicator "colour- change" left hand (without motion indicator)	04
monitoring switch 10 - 30 V DC, PNP right hand (with cable box angled)	05
monitoring switch 10 - 30 V DC, PNP left hand (with cable box angled)	06
monitoring switch 10 - 30 V DC, NPN right hand (with cable box angled)	07
monitoring switch 10 - 30 V DC, NPN left hand (with cable box angled)	08
limit switch 240 V AC right hand	09
limit switch 240 V AC left hand	10
limit switch USA version right hand	11
limit switch USA version left hand	12
Magnetic switch with reed contact right	13
Magnetic switch with reed contact left	14
Magnetic switch with reed contact (ATEX design) right	15
Magnetic switch with reed contact (ATEX design) left	16

E. THREAD TYPE Code

BSPP thread (inch thread) for screw-in connection with tapered thread	C
UNF thread	A
NPSF thread	B

F. VERSION OF VALVE BLOCK Code

without valve block	00
with valve block 230 V AC	01
with valve block 115 V AC	02
with valve block 24 V DC	03

G. CODING OF THE SEGMENTS / OUTLETS

see item no. 6.2.

H. ACCESSORIES OUTLETS Code

without	00
Overpressure indicator, non-relieving type, 42 bar (for selected number of outlets)	01
Overpressure indicator, non-relieving type, 83 bar (for selected number of outlets)	02
Overpressure indicator, non-relieving type, 111 bar (for selected number of outlets)	03
Overpressure indicator, non-relieving type, 152 bar (for selected number of outlets)	04
Overpressure indicator, relieving type, 69 bar (for selected number of outlets)	07
Overpressure indicator, relieving type, 104 bar (for selected number of outlets)	08
Burst disc indicator, colour black, burst pressure 62 bar (for selected number of outlets)	13
Burst disc indicator, colour yellow, burst pressure 100 bar (for selected number of outlets)	10
Burst disc indicator, colour red, burst pressure 121 bar (for selected number of outlets)	11
Burst disc indicator, colour orange, burst pressure 141 bar (for selected number of outlets)	14
Burst disc indicator, colour pink, burst pressure 183 bar (for selected number of outlets)	15
Burst disc indicator, colour purple, burst pressure 224 bar (for selected number of outlets)	12

3. CONFIGURATION AND FUNCTION

3.1 Description

M2500G modular progressive distributors have the following basic configuration (see also Fig. 1):

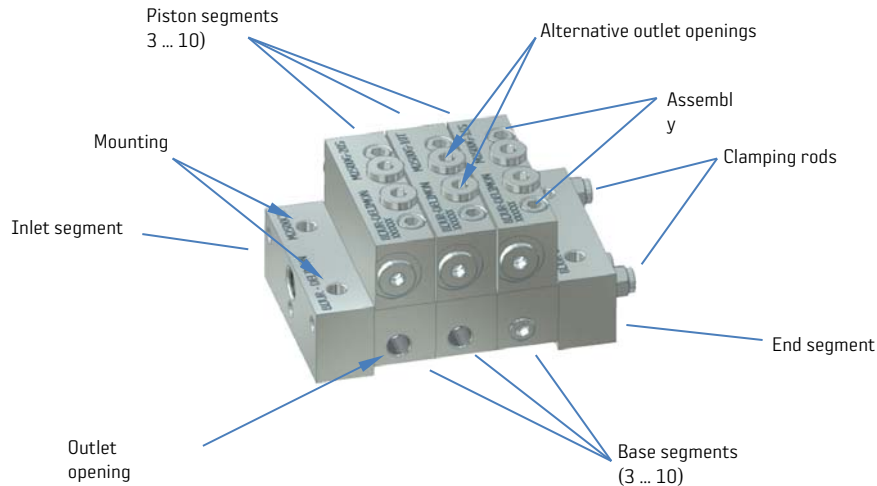


Fig. 1

Depending on the desired number of outlets and metering quantities, attach from 1 to 10 "functional twin segments" to the inlet segment with the lubricant inlet opening (with selectable thread options). These each consist of a base segment (which has 2 outlet openings) and a piston segment mounted above it. The metering quantity displaced into the piston segment is normally fed through to the outlet openings of this associated base segment (outlets may not be located alongside each other). The end of the block is formed by the end segment, which is identical for all distributor variants.

The inlet segment, base segment and end segment are clamped together with 3 clamping rods. The clamping rods are round rods with the same thread at each end. They are screwed into the inlet segment. During assembly the base segment and end segment, which contain through holes, are assembled to each other and self-locking nuts attached to the ends to secure them. The functionally necessary connection holes between these segments are sealed (against leakage to the outside) by O-rings in the contact faces (see Fig. 2).

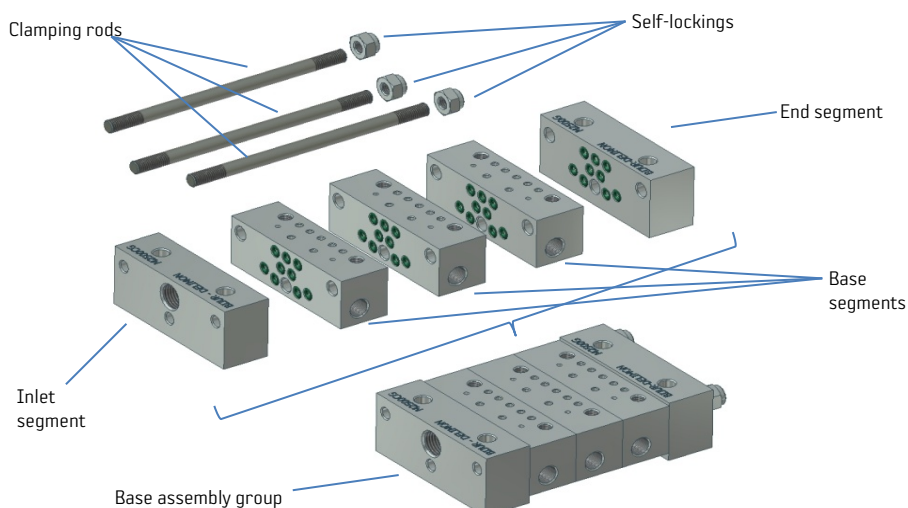


Fig. 2

The base assembly group (see Figs. 2 and 3) can be regarded as an assembly unit in its own right. It remains a constant element which generally remains unchanged even if changes in metering quantities are required.

Each selected piston segment is bolted to the base segment with 2 hexagon socket-head screws ("assembly screws"; see Fig. 3). The connection holes between these two segments are also sealed with O-rings.

3. CONFIGURATION AND FUNCTION

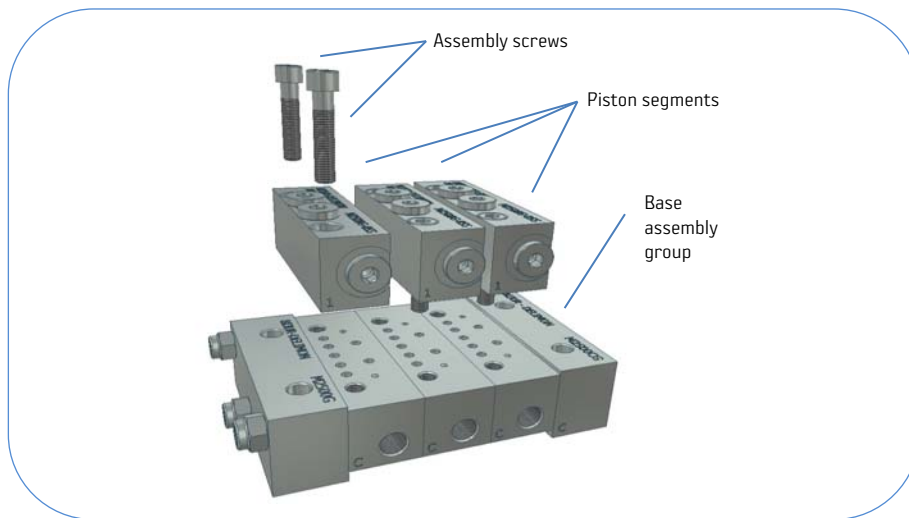


Fig. 3

There is no connection between the individual piston segments (air gap). This is a great advantage of the M2500G, it means that any piston segment can be exchanged without major assembly work (just undo the assembly screws then tighten them again) if for instance the metering quantity of an existing distributor subsequently needs to be changed (see Fig. 4).

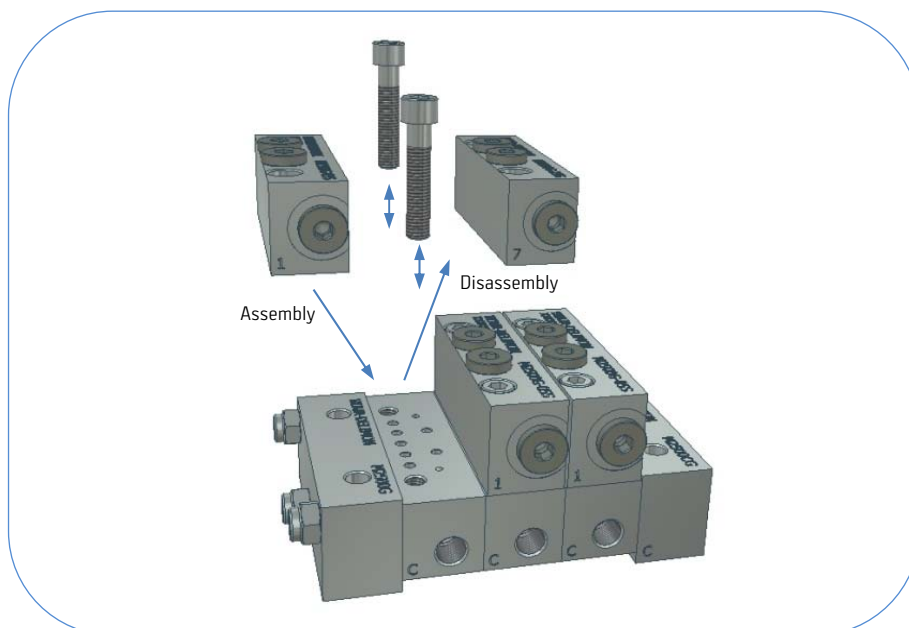


Fig. 4

3.2 Variation in the metering quantities / number of outlets

So as to be able to cater for a very wide range of applications and provide the greatest possible number of metering quantity variants in conjunction with the specified number of outlets (to match the existing lubrication points), the M2500G has been designed with the following design features:

Configurable number of segments

This means the "functional twin segments", see Fig. 5.

The number of these ranges from a minimum of 3 to a maximum of 10. Selection of the number depends on the desired number of lubrication points in conjunction with the required metering quantities.

3. CONFIGURATION AND FUNCTION

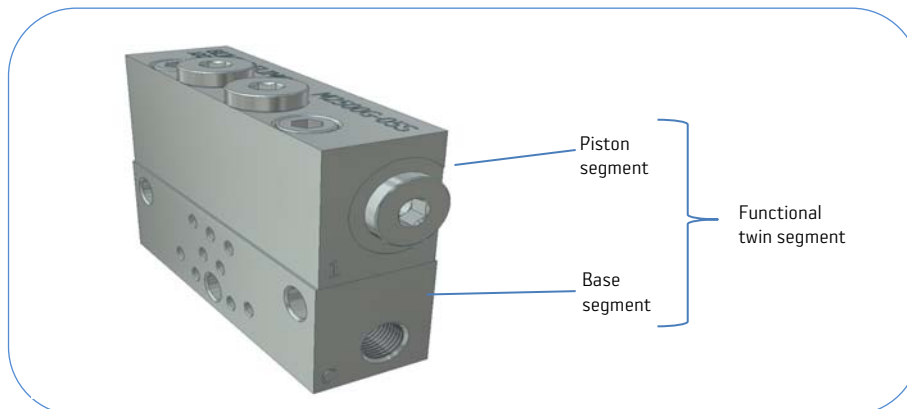


Fig. 5

Piston dimensions

Piston segments with various different piston diameters (4, 5, 7 and 9 mm) and different axial strokes allow selection of the required quantities of lubricant. These are used to generate the various different metering categories (see Table 1).

Piston segments in "S" and "T" versions

The piston segments are available either as S (= Single outlet) or as T (Twin outlet) versions. This is also shown in the legend on the top face of the segment (see Fig. 6).

During a lubricating cycle (lubricating cycle: all the pistons of the distributor perform a back and forth movement in a positively actuated cycle) a "T" piston segment delivers the same quantity of lubricant in the direction of each of the two outlet openings. It has an internal grub screw which blocks the connection between the two outlets.

An "S" piston segment lacks this grub screw. It delivers the entire quantity (i.e. a double quantity) in the direction of only one of the outlet openings. As a rule one of the outlet openings in the respective base segment is then blocked with a plug screw (except in the case where an "alternative outlet opening", optionally right-hand or left-hand, is open. Then both the outlet openings of the base segment must be blocked).

A listing of the available metering quantities for the various piston segments is shown in Table 1:

Metering category	Delivery quantity [cm ³]		Piston segment			
	T Twin outlet	S Single outlet	T = Twin outlet segment		S = Single outlet segment	
			Standard (without pin)	with indicator pin	Standard (without pin)	with indicator pin
05	0.08	0.16	X	–	X	–
10	0.16	0.33	X	–	X	–
15	0.25	0.49	X	–	X	–
20	0.33	0.66	X	X	X	X
25	0.41	0.82	X	X	X	X
30	0.49	0.98	X	X	X	X
35	0.57	1.15	X	X	X	X
40	0.66	1.31	X	X	X	X

Table 1

The function of the piston segments shown in this table is explained under Point 3.4 ("Monitoring"). These are piston segments with indicator pins (their design restricts the range of metering quantities they can deliver).

3. CONFIGURATION AND FUNCTION

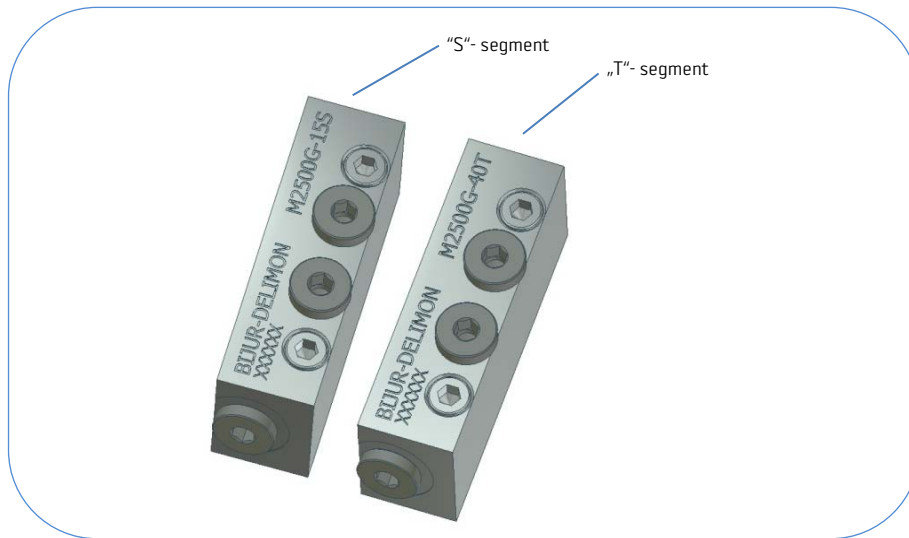
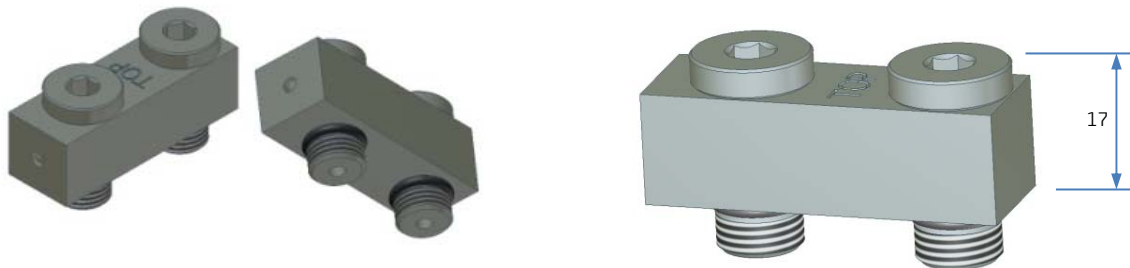


Fig 6

Cross-port version



In order to achieve outputs of large amounts of lubricant, adjoining piston segments can optionally be connected by means of cross-ports (lubricant bridging pieces, bolted on). These direct the lubricant towards the end segment.

Note that in this case the "normal" outlet openings (the outlet openings of the respective base segment used without a cross-port fitted) must be closed off, because now the "alternative outlet opening" (see Fig. 1) is being used as the lubricant transport opening.

Furthermore it should be noted that an "S" piston segment can accept a maximum of one bolted-on cross-port, a "T" piston segment can accept a maximum of 2 bolted-on cross-ports. In addition, cross-ports cannot be chained together in sequence (without a gap), otherwise a collision would occur.

In this connection see also Fig. 7. This shows the arrangement on alternate sides.

A theoretical extreme variant, which certainly would not be encountered in practice, is described below to provide the user with an understanding of the arrangement of cross-ports:

Requirement: Within the range of available selections for the product code of an M2500G distributor as a standard product, a variant with only a single outlet and the maximal available metering quantity for an M2500G distributor is specified.

Solution:

- 1.) The distributor may have only "S" piston segments (even just 1 "T" segment would result in the number of outlets being greater than 1).
- 2.) The distributor must be fitted with 10 functional twin segments, otherwise the maximum metering quantity will not be achieved
- 3.) Selection of piston segments rated for the maximum metering quantity (1.31 cm³ per lubricating cycle). The distributor could then appear as follows (see Fig. 7):

3. CONFIGURATION AND FUNCTION

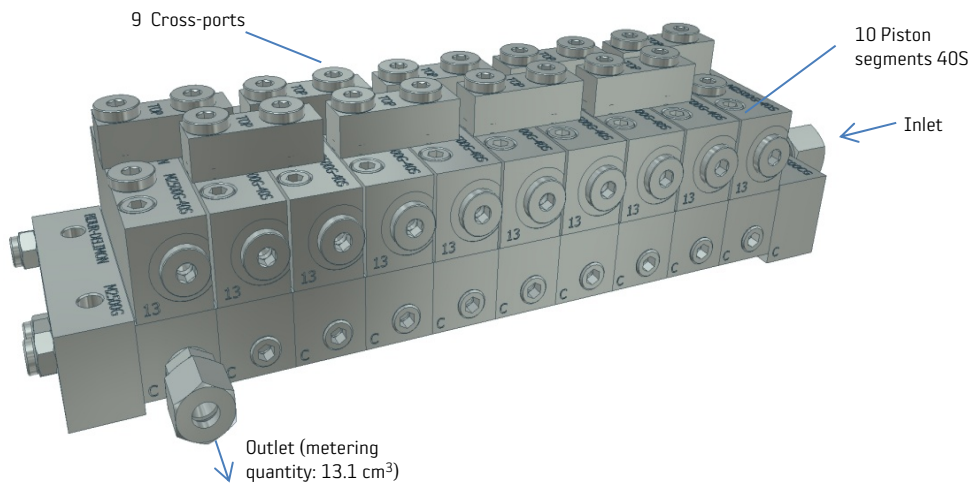


Fig 7

Bypass segment

The bypass segment (see Fig. 8) can be bolted on to the existing distributor in place of a piston segment.



Fig. 8

Its external dimensions are the same as those of a piston segment, but it does not contain a piston and has merely a bridging function. When it is fitted as an exchange item, the open outlet holes on the respective base should be blocked (see also Fig. 9).

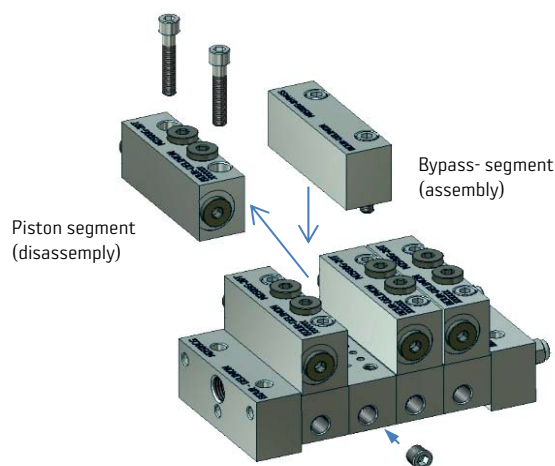


Fig. 9

3. CONFIGURATION AND FUNCTION

The practical use of this element arises when for instance the number of lubrication points in an existing system has to be reduced but it is not desired to change the basic configuration of the distributor (the basic group remains the same / no change to the attachment of the distributor).

The bypass segment is seldom required for a newly installed distributor, unless it is desired to configure it for the option of subsequently adding further lubrication points (or metered quantities).

3.3 M2500G as a group lubrication distributor with solenoid valve

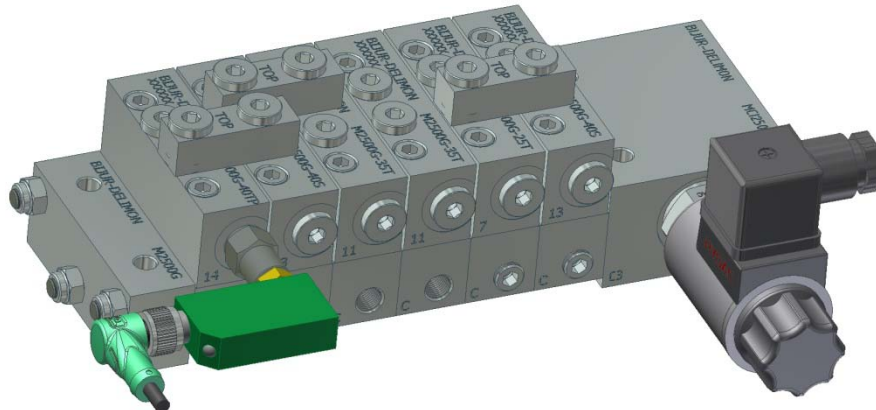


Fig. 10

In contrast to the normal version, the M2500G as a group lubrication distributor requires a special inlet segment which is dimensionally larger (designated the "valve block" in the code), which can accept a solenoid valve (see "Dimensions").

The 3 solenoid valves are suitable both for grease and also for oil. The codes allow selection of the 24 V DC, 110 V and 230 V AC versions. They are for use in group lubrication systems.

The following 2/2 solenoid valves are available:

1. 2/2-way solenoid valve, NC, PN350, 24 V DC / Art. no.: 38152M115
(Cable connection box GDML 2011-LED24GB / Art. no.: 769289233)
2. 2/2-way solenoid valve, NC, PN350, 115 V AC / Art. no.: 38152M116
(Cable connection box DIN 43650 - AF3 - PG11 / Art. no.: 769282923)
3. 2/2-way solenoid valve, NC, PN350, 230 V AC / Art. no.: 38152M117
(Cable connection box DIN 43650 - AF3 - PG11 / Art. no.: 769282923)

3.4 Monitoring

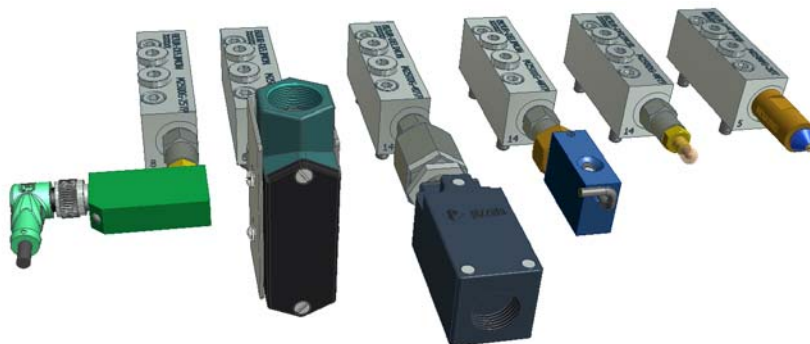


Fig. 11

Special piston segments can be fitted with visual indicators or electrical switches for functional monitoring of the distributor and for controlling the system. These can be selected by the appropriate item in the distributor code. The visual indication or electrical switching operation is actuated by the movement of the piston (stop). Right-hand and left-hand versions are available. If necessary, multiple indicators / switches can be fitted to a distributor at any desired piston segment positions. Note that a switch or optical indicator that requires a movement pin can be fitted only to metering categories 20 (piston diameter 7 mm) and above (see Table 1). The various monitoring elements are described in more detail below:

3. CONFIGURATION AND FUNCTION

3.4.1 Monitoring switch (with elbow plug)

Attachment of this switch requires a piston segment with a movement indicator pin. There is a choice between the PNP and NPN versions.

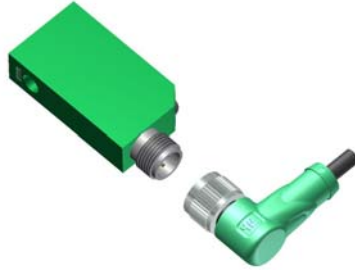
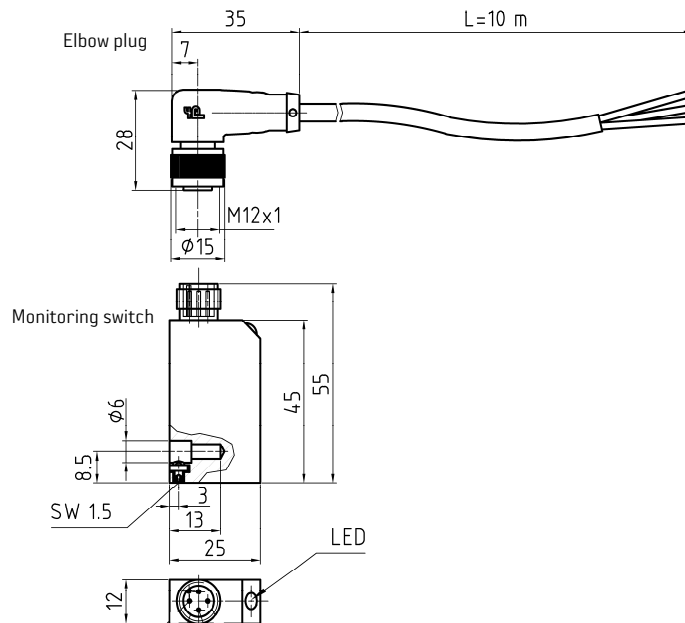


Fig. 12



Technical Data:	NPN	PNP
Connection diagrams:		
Index of protection:	IP 65	
Operating voltage:	10 V to 30 V DC	
Output current:	max. 100 mA	max. 200 mA
Switching function:	NO (— —)	
Switching frequency:	max. 800 Hz	max. 1000 Hz
Temperature range:	- 25°C to + 70°C	
Power supply cable protected against polarity reversal:	yes	
Power supply cable short-circuit proof:	no	

3. CONFIGURATION AND FUNCTION

3.4.2 Limit switches

Attachment of this switch requires a piston segment with a movement indicator pin.

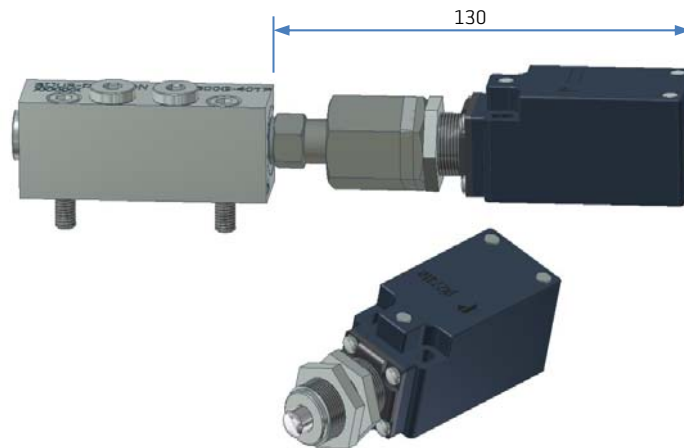
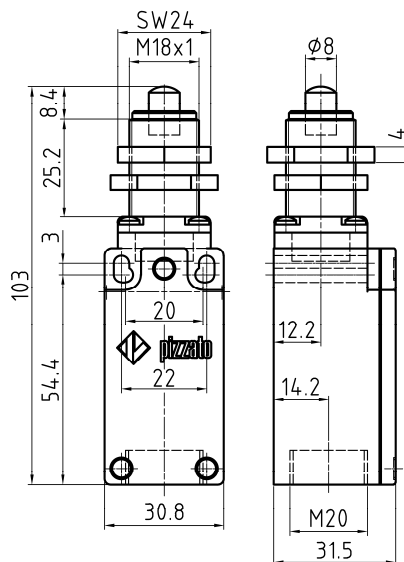


Fig. 13

Dimensions (mm) and Technical Data



Casing:	Metal enclosure (M20 for cable gland) IP67 to IEC 60529 with cable gland that has the same or higher with degree of protection
Operating category:	AC: AC 15 (50 ... 60 Hz) Ue (V) 250 400 500 Ie (A) 6 3 1 DC: DC 13 Ue (V) 24 125 250 Ie (A) 6 1.1 0.4
Ambient temperature:	- 25°C to + 80°C
Switching function:	normally open
Switching frequency:	max. 3600 operations/h
Mechanical working life:	20 million operations
Cable cross-section:	min. 1 x 0.5 cm ² (1 x AWG 20) max. 2 x 2.5 cm ² (2 x AWG 14)
Contact unit:	1 NO + 1 NC sprung contact
Directives:	Low voltage directive 2006/95/CE Machinery directive 2006/42/CE Electromagnetic compatibility 2004/108/CE,
Conformity:	IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 60529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113
Identification and certification marks:	CE, cUL US, CCC (others on request)
Electrical characteristics:	Thermal rated current (I _{th}): 10 A Insulation withstand voltage (U _i): 500 V AC, 600 V DC Impulse voltage withstand level (U _{imP}): 6 kV Conditional short-circuit current: 1000 A to EN 60947-5-1 Short-circuit protection: Fuse 10 A, 500 V, type aM Degree of contamination: 3

3. CONFIGURATION AND FUNCTION

3.4.3 Magnetic switch with reed contact and LED (also available in "Atex" design)

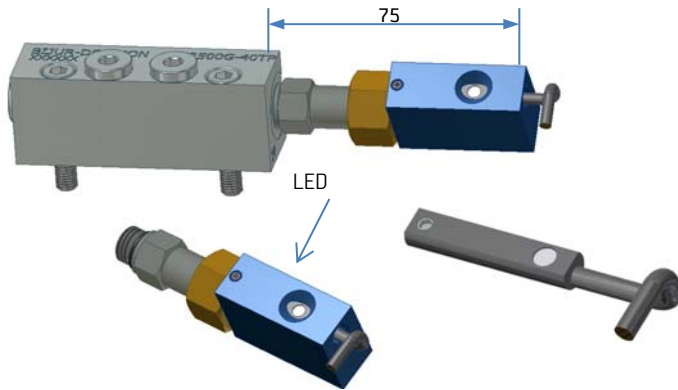
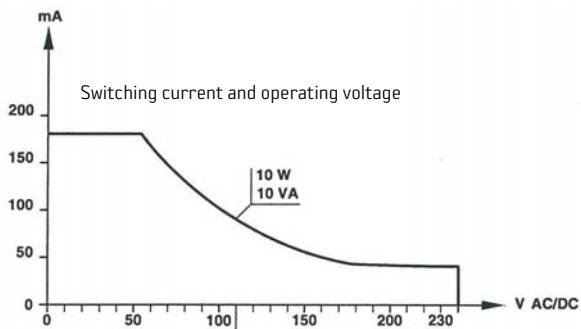


Fig. 14

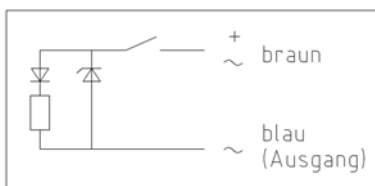
Attaching this switch requires a piston section with movement indicator (pin).

Technical Data



Operation:	Normally open with LED
Operating voltage (U _b):	10 to 240 V AC / 170 V DC
Voltage drop:	U _b - 2.7 V
Switching current (see diagram):	0.18 A max.
Switch rating:	10 W / 10 VA max.
Contact resistance:	150 mΩ
Switching time:	1.8 ms
Equipment temperature:	- 20 °C to + 80 °C
Protection type:	IP 66 (DIN 40050)
Impact strength:	50 g (during 11 ms)
Fatigue strength:	35 g (at 2000 Hz)
Connecting cable:	PVC, 2 x 0.25
Cable length:	5 m
Material:	Plastic housing

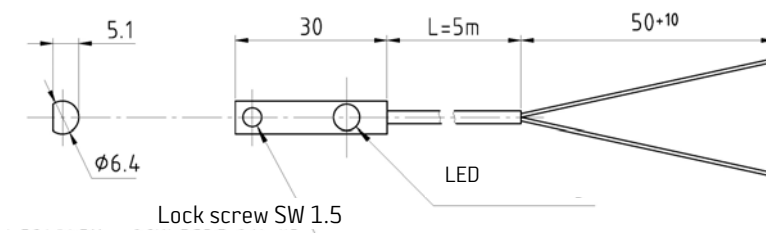
Circuit diagram



Warning:
Exceeding the specified maximum values for contact load, switching current and switching voltage will reduce serviceable life!

"Atex" design:	Details as above with the following variations:
Ex marking:	II 3G Ex nc IIC T5 Gc X
	II 3D Ex tc IIIC T120°C Dc IP67 X
Protection type:	IP 67 (EN60529)
Atmospheric temperature:	- 20 °C to + 50 °C

Basic dimensions



3. CONFIGURATION AND FUNCTION

3.4.4 Limit switch (version USA) 125/250V AC; Art. no. MC13974B

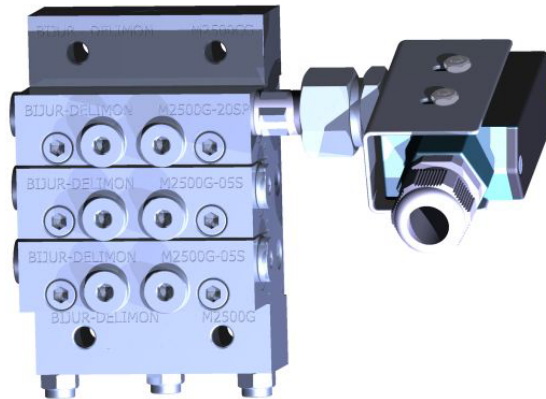


Fig. 15

This switch is used primarily by customers in the USA. It requires a piston element with a movement indicator pin for activation. (further details on request)

3.4.5 Monitoring with movement indicator



Fig. 16

This visual indicator is intended for the base version, where it performs the equivalent function to the monitoring switch. Instead of the switch (see under "Monitoring switch") it contains a transparent protective cap. The pin is visible at each lubricating action.

If necessary this version can easily be exchanged for the version with the monitoring switch.

3.4.6 Visual "colour-change" cycle indicator

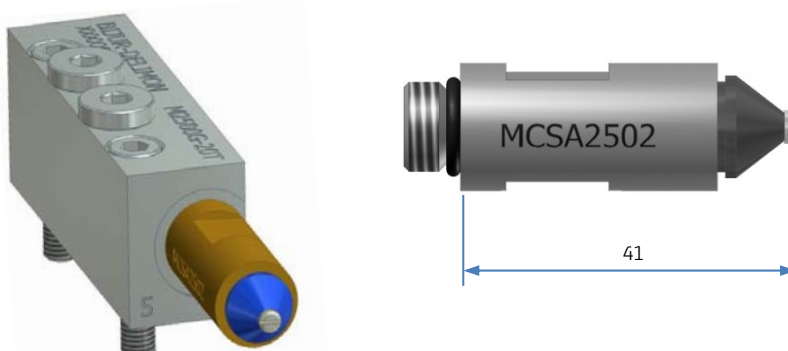


Fig. 17

These visual indicators can be fitted to each piston segment (without pin) instead of the piston stop screw. They contain a magnet which alternates as the piston moves. This causes a coloured liquid to be displaced, leading to an alternating light/dark effect.

3. CONFIGURATION AND FUNCTION

3.4.7 Pressure indicators

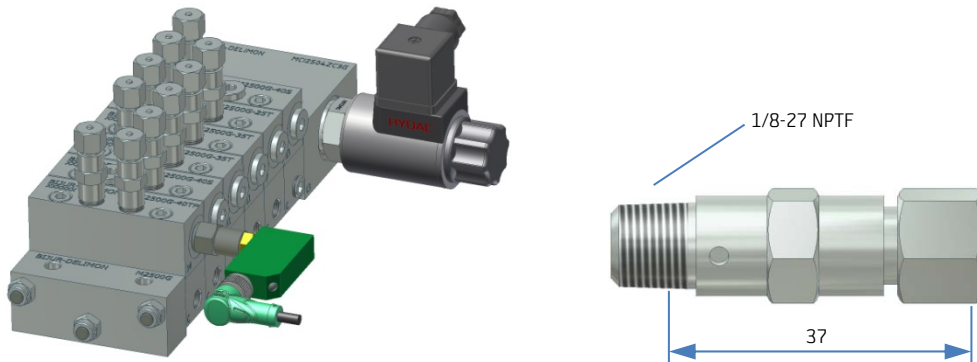


Fig. 18

These indicators are spring-loaded and can be set for specific pressures. The indicator pin on the pressure indicator visibly protrudes outwards when the trigger pressure is reached. When the pressure falls back again the pin returns to its original position.

The following "excess pressure indicators" are available:

Description	Article number
Pressure indicator, non-relieving, 42 bar	20356
Pressure indicator, non-relieving, 83 bar	203512
Pressure indicator, non-relieving, 111 bar	203516
Pressure indicator, non-relieving, 152 bar	203522
Pressure indicator, relieving, 69 bar	213510
Pressure indicator, relieving, 104 bar	213515

Table 2

This can be selected in the product code (see 6.) under "Accessories" (see "H"). Depending on the number of outlets the indicator for a specific pressure can be fitted in the alternative outlet opening. Note that the indicators cannot be fitted in conjunction with a cross-port.

3.4.8 Bursting disc indicators

A bursting disc indicator can be screwed into the alternative outlet opening of the desired valve segment instead of the sealing screw. It incorporates a disc which bursts when the pressure in the system is too high. Bursting disc indicators cannot be combined with a cross-port.

The following variants are available:

Article no.	Bursting pressure	Colour of the disc	Exchange disc kit*
10412BK	62 bar	yellow	FT15423BKK
10412YW	100 bar	yellow	FT15423YWK
10412RD	121 bar	red	FT15423RDK
10412OG	141 bar	orange	FT15423OGK
10412PK	183 bar	pink	FT15423PKK
10412PR	224 bar	lilac	FT12323PRK

* The discs will be supplied in packs of 10.

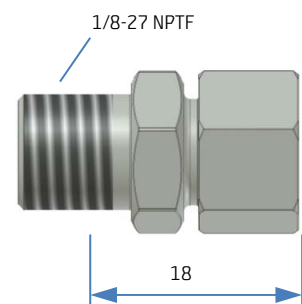
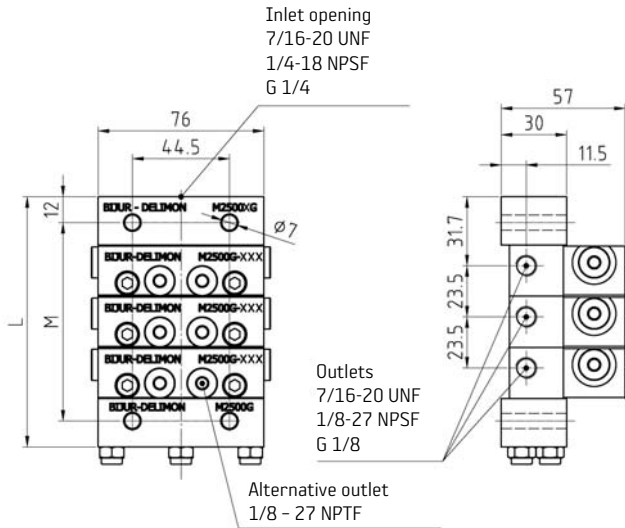


Table 3

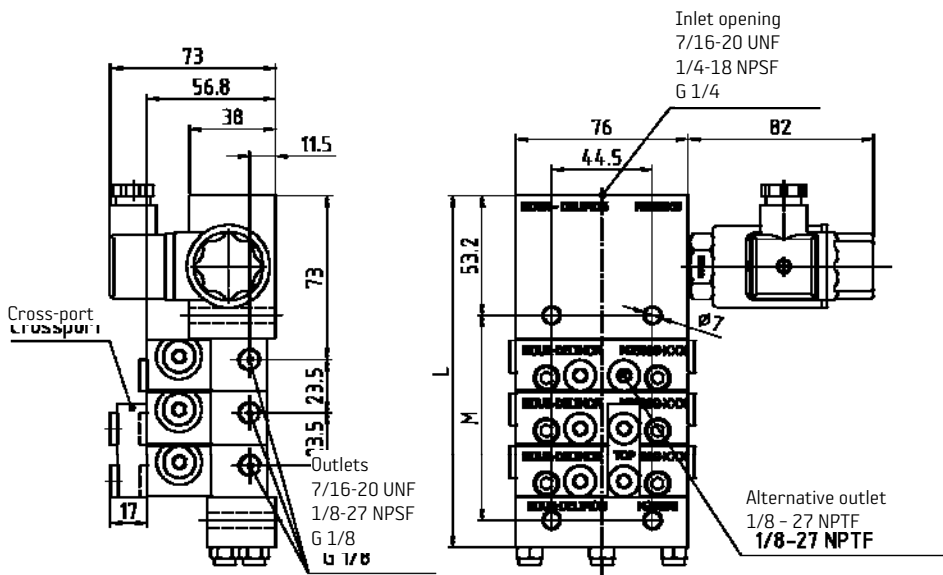
4. DIMENSIONS (mm)

Standard distributor with standard inlet segment



Number of segments	M	L
3	91.0	115.0
4	114.5	138.5
5	138.0	162.0
6	161.5	185.5
7	185.0	209.0
8	208.5	232.5
9	232.0	256.0
10	255.5	279.5

Group lubrication distributor with 2/2-way-solenoid valve



Number of segments	M	L
3	91.0	156.0
4	114.5	179.5
5	138.0	203.0
6	161.5	226.5
7	185.0	250.0
8	208.5	273.5
9	232.0	297.0
10	255.5	320.5

5. SPECIFICATION

Max. operating pressure:	
Oil:	300 bar
Grease:	400 bar
2/2-way solenoid valves:	350 bar
Response pressure :	20 bar
Delivery quantity / cycle (1 segment):	0.08 to 1.31 cm ³
Ambient temperature:	-20°C to 120°C
Monitoring switch:	-25°C to 70°C
Limit switch:	-25°C to 80°C
2/2-way solenoid valves:	-20°C to 60°C
Lubricants, consistency / viscosity:	
Mineral oil:	SAE 10
Grease class:	NLGI 2
Seal material:	Viton
Segment material:	Steel, Zn-Ni plated (free of Cr-VI)

6. CODING

6.1 Explanation

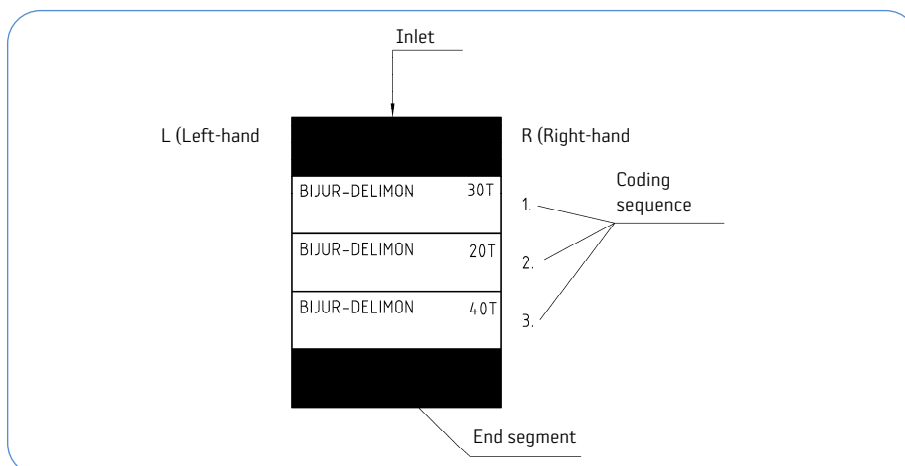
The M2500G should be coded according to the summary from "A." to "H." (see pages 5 - 6).

Note especially here that:

- For "D." (monitoring): for the distributor several monitoring variants are available for selection. Since the number of coding characters is limited to 2, the largest number should be selected here, e.g. the "09" for the selected monitoring switch "05" and limit switch "09". For this special case, the code "X01" (according to "H. Accessories") should be appended and the additional monitoring variant (here "05") described verbally (e.g.: Segment 3 with monitoring switch 05).
- For "E." (thread): The choice "C", "A" or "B" allows only one type of thread to be selected. This applies both to the inlet and also to the outlet openings. A combination such as "UNF" for inlet, "G" for outlet is not permitted. see also under 6. (Dimensions).

6.2 Coding the segments / outlets

The desired functional twin segments (base segment with its associated piston segment) are coded from the inlet segment towards the end segment:



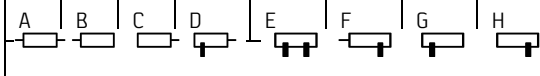
6. CODING

This establishes the link between metering quantity and the position / number of the outlets.
 Each twin segment is described 1. by a code number and 2. by a code letter (e.g.: "3A").
 The selection is made according to Table 4:

Code number ↓	Metering category	Metering quantity [cm ³]	
		T - segment	S - segment
1	05	0.08	0.16
2	10	0.16	0.32
3	15	0.25	0.50
4	20	0.33	0.66
5	25	0.41	0.82
6	30	0.49	0.98
7	35	0.57	1.14
8	40	0.66	1.32

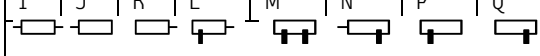
Piston segment without movement indicator pin

Coding letter →	Standard			with cross-port				
	T	SL	SR	TCL	T2C	TCR	SCL	SCR
Symbol:	A	B	C	D	E	F	G	H



Kolben-Segment mit Bewegungszeiger (Pin)

Coding letter →	Standard			with cross-port				
	T	SL	SR	TCL	T2C	TCR	SCL	SCR
Symbol:	I	J	K	L	M	N	P	Q



- T : piston T segment; base segment with 2 outlets
- SL : piston S segment; base segment with 1 left-hand outlet
- SR : piston S segment; base segment with 1 right-hand outlet
- TCL : piston T segment; with left-hand cross-port (= base segment: 1 right-hand outlet)
- T2C : piston T segment; with right-hand and left-hand cross-ports (= base segment: 0 outlets)
- TCR : piston T segment; with right-hand cross-port (= base segment: 1 left-hand outlet)
- SCL : piston T segment; with left-hand cross-port (= base segment: 0 outlets)
- SCR : piston T segment; with right-hand cross-port (= base segment: 0 outlets)

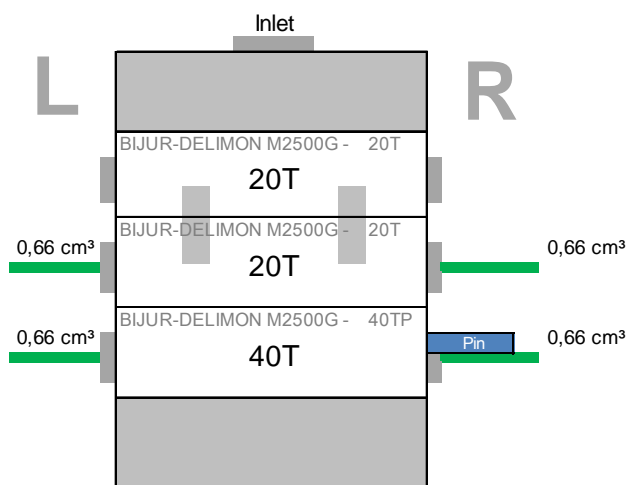
Table 4

6. CODING

Here is an example of coding for a distributor with 3 functional twin segments:

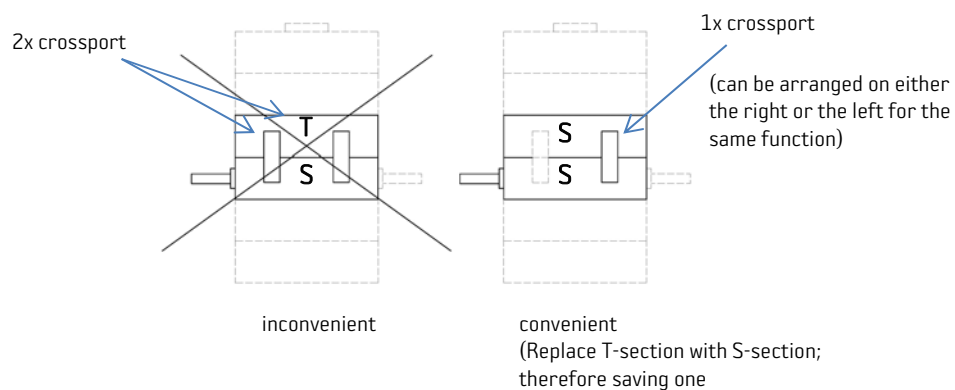
Coding: **M2503A01C004E4A8I00**

Number of segments	:	03 (3 segments)
Monitoring	:	01 (with movement indicator / right-hand);
Thread	:	C (BSPP/G);
Valve block	:	00 (without);
Segment / outlet coding	:	1.) 4E = 20T segment with left-hand and right-hand cross-ports 2.) 4A = 20T segment (2 outlets) 3.) 8I = 40T segment + pin (2 outlets)
Accessories	:	00 (without)



An inconvenient coding constellation should be shown in this position.

It occurs frequently in practical coding and can be replaced by a cheaper option:



7. WEIGHT DETAILS FOR COMPLETE DISTRIBUTOR M2500G

The following table includes details of weights for the basic distributor options. Fitted switches and locking screws may increase the overall mass slightly. With the magnetic valves currently used, a maximum extra weight of approx. 0.5 kg should be assumed. One crossport has a full weight of 0.066 kg.

Number (function double) sections	Mass [kg] Design excluding valve block	Mass [kg] Design including valve block (excluding magnetic valve)
3	2.8	3.8
4	3.5	4.5
5	4.2	5.2
6	4.9	5.9
7	5.6	6.6
8	6.3	7.3
9	6.9	8.0
10	7.6	8.7

Table 5

8. MODIFICATION OF A DISTRIBUTOR - EXCHANGE COMPONENTS

One major advantage of the M2500G distributor is the option to dismantle or modify existing module components at a later stage.

Without the need to dismantle piping already installed, it is easy to modify dosage quantities or outlet figures easily. A selection of relevant full exchange components is detailed below. These are piston sections (with and without pin) used in European areas. As a special case, the "bypass" section which does not have a piston and is only used as a bridging piece is also described. It can be used to reduce existing outlets or to reserve planned outlets, or for changing dosage quantities. See Table 6.

8. MODIFICATION OF A DISTRIBUTOR – EXCHANGE COMPONENTS






		Piston segment (imprinting)	Item no.	Dosage quantity per lubrication cycle (cm ³)	
	segment without piston	M2500G-Bypass	MCVA2501BPG	----	----
	segments without pin	M2500G-40T	MCVA250140TG	0,66	Use of these segments is normally "without monitoring". A visual indicator may be fitted instead of the piston stop screw, however. This does not require a pin. "Visual indicator"; item no.: MCSA2502 (see under point 3.4.6)
		M2500G-35T	MCVA250135TG	0,57	
		M2500G-30T	MCVA250130TG	0,49	
		M2500G-25T	MCVA250125TG	0,41	
		M2500G-20T	MCVA250120TG	0,33	
		M2500G-15T	MCVA250115TG	0,25	
		M2500G-10T	MCVA250110TG	0,16	
		M2500G-05T	MCVA250105TG	0,08	
		M2500G-40S	MCVA250140SG	1,31	
		M2500G-35S	MCVA250135SG	1,15	
		M2500G-30S	MCVA250130SG	0,98	
		M2500G-25S	MCVA250125SG	0,82	
		M2500G-20S	MCVA250120SG	0,66	
		M2500G-15S	MCVA250115SG	0,49	
M2500G-10S	MCVA250110SG	0,33			
M2500G-05S	MCVA250105SG	0,16			
	segments with pin	M2500G-40TP	M25U40TPG	0,66	These segments are used in conjunction with a "protective silicon cap", item no. 736491811 for visual monitoring. A monitoring switch with angle plug can also be fitted (see also under point 3.4.1). Monitoring switch ZP/ZV 10-30V DC, PNP; item no. 669251311 Monitoring switch ZP/ZV 10-30V DC, NPN; item no. 66925S003; 3-way angled cable connector with 10 m cable 3x0.34 mm ² ; item no. 769282833
		M2500G-35TP	M25U35TPG	0,57	
		M2500G-30TP	M25U30TPG	0,49	
		M2500G-25TP	M25U25TPG	0,41	
		M2500G-20TP	M25U20TPG	0,33	
		M2500G-40SP	M25U40SPG	1,31	
		M2500G-35SP	M25U35SPG	1,15	
		M2500G-30SP	M25U30SPG	0,98	
		M2500G-25SP	M25U25SPG	0,82	
		M2500G-20SP	M25U20SPG	0,66	
	segments with pin	M2500G-40TP	M25R40TPG	0,66	These segments are used in conjunction with: - "Magnetic switch with reed contact and LED", item no. 66925S005 (see under point 3.4.3) - "Magnetic switch with reed contact and LED, ATEX", item no. 66925S006 (see under point 3.4.3)
		M2500G-35TP	M25R35TPG	0,57	
		M2500G-30TP	M25R30TPG	0,49	
		M2500G-25TP	M25R25TPG	0,41	
		M2500G-20TP	M25R20TPG	0,33	
		M2500G-40SP	M25R40SPG	1,31	
		M2500G-35SP	M25R35SPG	1,15	
		M2500G-30SP	M25R30SPG	0,98	
M2500G-25SP	M25R25SPG	0,82			
	segments with pin	M2500G-40TP	M25G40TPG	0,66	These segments are used in conjunction with a "Limit switch 3A - 400V-IP 67-UL 508", item no. 76925G002 (see under point 3.4.2)
		M2500G-35TP	M25G35TPG	0,57	
		M2500G-30TP	M25G30TPG	0,49	
		M2500G-25TP	M25G25TPG	0,41	
		M2500G-20TP	M25G20TPG	0,33	
		M2500G-40SP	M25G40SPG	1,31	
		M2500G-35SP	M25G35SPG	1,15	
		M2500G-30SP	M25G30SPG	0,98	
M2500G-25SP	M25G25SPG	0,82			
M2500G-20SP	M25G20SPG	0,66			

Table 6

NB: Piston segmentstions with "right-hand" monitoring arrangement are shown. If "left-handed" is required, the piston segment can be modified as follows: unscrew piston contact screw and monitoring screw connection from the segment and screw back in facing the opposite way; the piston must be pulled and inserted the opposite way.

9. ACCESSORIES

Finally, items which are in some cases not included in the distributor coding (e.g. inlet and outlet screw connections, weld-on plates), but which may be important in installing and modifying the distributor are shown in table form (see Table 7):

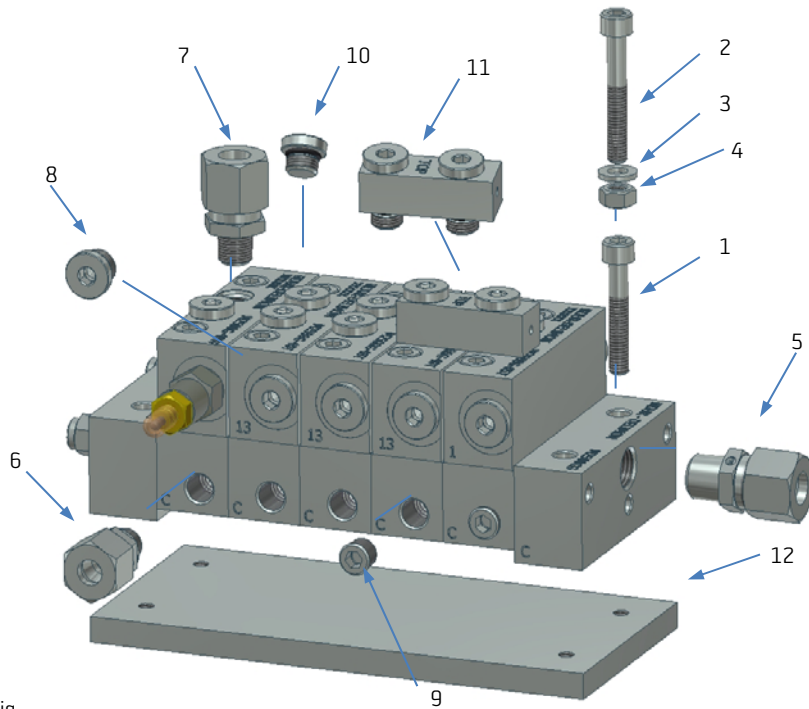


Fig. 13

9. ACCESSORIES

No.	Use	Name	Item no.	Comments
1	Distributor fastening	Cylindrical screw ISO 4762 - M6x35 - 8.8 - A2K	741022228	Galvanised; 4 pcs.; for screw fitting
		Cylindrical screw ISO 4762 - M6x35 - A4 - 70	74102N023	Stainless steel; 4 pcs.; for screw fitting
2	Distributor fastening	Cylindrical screw ISO 4762 - M6x40 - 8.8 - A2K	741022314	Galvanised; 4 pcs.; plate mounting
		Cylindrical screw ISO 4762 - M6x40 - A4 - 70	741021833	Stainless steel; 4 pcs.; plate mounting
3	Distributor fastening	Disc ISO 7089 - 6 - 200 HV - ZNNI8	741851064	Galvanised; 4 pcs.; plate mounting
		Disc ISO 7090 - 6 - 200 HV - A4	741850123	Stainless steel; 4 pcs.; plate mounting
4	Distributor fastening	Hexagonal nut ISO 4032 - M6 - 8 ZNNI5	741751254	Galvanised; 4 pcs.; plate mounting
		Hexagonal nut ISO 4032 - M6 - A4 - 80	741751933	Stainless steel; 4 pcs.; plate mounting
5	Inlet screw connection	GE screw connection GE 06 LR1/4KEG CF	73442V251	Galvanised; for pipe diameter 6 mm
		GE screw connection GE 06 LR1/4KEG 71	73446V173	Stainless steel; for pipe diameter 6 mm
		GE screw connection GE 08 LR1/4KEG CF	734420764	Galvanised; for pipe diameter 8 mm
		GE screw connection GE 08 LR1/4KEG 71	734460827	Stainless steel; for pipe diameter 8mm
		GE screw connection GE 10 LR1/4KEG CF	734420423	Galvanised; for pipe diameter 10 mm
		GE screw connection GE 10 LR1/4 KEG 71	73446V018	Stainless steel; for pipe diameter 10 mm
6	Outlet screw connection	GE screw connection GE 06 LR CF	734421214	Galvanised; for pipe diameter 6 mm
		GE screw connection GE 06 LR 71	734461214	Stainless steel; for pipe diameter 6 mm
		GE screw connection GE 08 LR1/8 CF	734420853	Galvanised; for pipe diameter 8 mm
		GE screw connection GE 08 LR1/8 71	73446V078	Stainless steel; for pipe diameter 8mm
		GE screw connection GE 10 LR1/8 CF	734421633	Galvanised; for pipe diameter 10 mm
		GE screw connection GE 10 LR1/8 71	734460323	Stainless steel; for pipe diameter 10 mm
7	Outlet screw connection "top"	GE screw connection GE 06-L 1/8 NPT CF	73442V255	Galvanised; for pipe diameter 6 mm
		GE screw connection GE 08-L 1/8 NPT CF	73442V254	Galvanised; for pipe diameter 8 mm
		GE screw connection GE 10-L 1/8 NPT CF	73442V037	Galvanised; for pipe diameter 10 mm
8	Piston stop	Stop screw M2500G, complete	64161S001	(with O-ring)
9	Closing device	Screw plug DIN 906 - R1/8 - 5.8 - A2K	741061124	Closes side outlet opening; conical
10		Screw plug 1'8-NPSF, complete	64161S002	Closes top outlet opening; (with O-ring)
11	Bridge	Kit Crossport M2500G	37083G	
12	Distributor fastening	Weld-on plate M2500G - 3 sections	74362A009	St 37 (weldable); 4x M6 thread to attach distributor using screw item 1
		Weld-on plate M2500G - 4 sections	74362A010	
		Weld-on plate M2500G - 5 sections	74362A011	
		Weld-on plate M2500G - 6 sections	74362A012	

Table 7