■ LEP Progressive Lubrication Pump Unit

✧ Product Description

LUBElite™ progressive pump unit is a kind of low-cost but high-quality pump unit which is being used in construction machinery, on-road machine, machine tool and general machinery widely.

This pump unit has a max. operating pressure of 350 bar. Hence, the applicable lubricant viscosity can be as high as NLGI 2 grease.

Each lubrication pump can have up to 6 pump elements installed simultaneously, forming 6 separate progressive lubrication systems.

✧ Product Features

1. Strong and stable power: BLDC motor or AC motor.
2. Suitable for harsh working conditions: maximum working pressure up to 350 bar.
3. Higher protection class: IP 66.
4. High-performance plastics plus die-cast aluminum alloy pump body: reduces overall weight but increases the pump strength.
5. The wider temperature tolerance range improves the pump's operating capability.

✧ Technical Data

Power Supply	DC 24 V	AC 230V/50 Hz	AC 380V/50 Hz
Rated Power	< 100 W		0.37 kW
Power Socket	DIN 43650 A		Wiring connection
IP Class	IP 66		IP 55
Pump Element Mounting Port	6 outlets, M20x1.5		
Working Pressure	Max. 350 bar		
Tank Capacity	2, 4, 6, 8, 10 L		
Refilling Port	DIN 71412 A and/or top lid		
Lubricant	NLGI 0, 1, 2		
Working Temperature	-41 °C ~ +70 °C		
Mounting	Vertical		
All Signal Interaction Socket	IEC 61076-2-101-A, 4 pins, Female		

■ LEP Progressive Lubrication Pump Part Number

LEP21 2 T GL CH A0 D24 - 000020 / 000010 R

LUBElite 21 series pump station

Tank capacity

1: 2L 2: 4L 2P: 6L 3: 8L 10: 10L

Top lid

Blank: No T: Yes

Low level sensor

GL: DC 24V, PNP NC GN: No

Controller type [1)]

C0: No controller integrated

CH: Controller integrated, unit of interval time is Hour

CM: Controller integrated, unit of interval time is Minute

Signal and cable code

Refer to following table

Power supply

D24: DC 24V, power socket (DIN 43650A)

D24V: DC 24V, power socket (DIN 43650A), with 5m cable

A23: AC 230V / 50Hz, power socket (DIN 43650A)

A23V: AC 230V / 50Hz, power socket (DIN 43650A), with 5m cable

A38: AC 380V / 50Hz, cable gland

A38V: AC 380V / 50Hz, cable gland, with 5m cable

Pump element [2) 3)]

0: No 1: 3.3 cm^3/min 2: 6.0 cm^3/min A: 1.3 ~ 6.2 cm^3/min adjustable

Safety valve [2)]

0: No

1: Safety valve installed with ferrule connector of Ø6

2: Safety valve installed with ferrule connector of Ø8

3: Safety valve installed with ferrule connector of Ø10

Safety valve with grease return function [4)]

Blank: No R: Yes

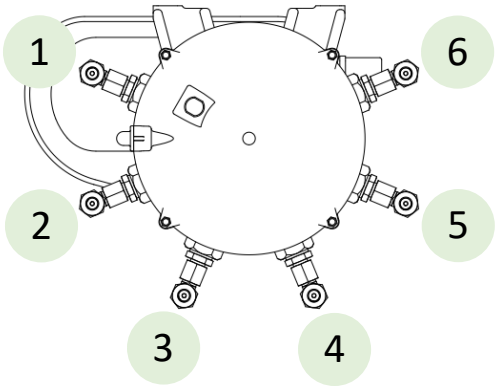
1) When selecting “A38” power supply, only “C0” is valid.

2) The sequence is counterclockwise based on the pump top view. Please refer to below picture.

3) When selecting “A” as pump element, then only “0” of safety valve is valid, since it has been integrated already.

4) When selecting “R” code, then only 5 pump elements can be installed at most.

Pump element and safety valve positioning



Signal and cable code explanation

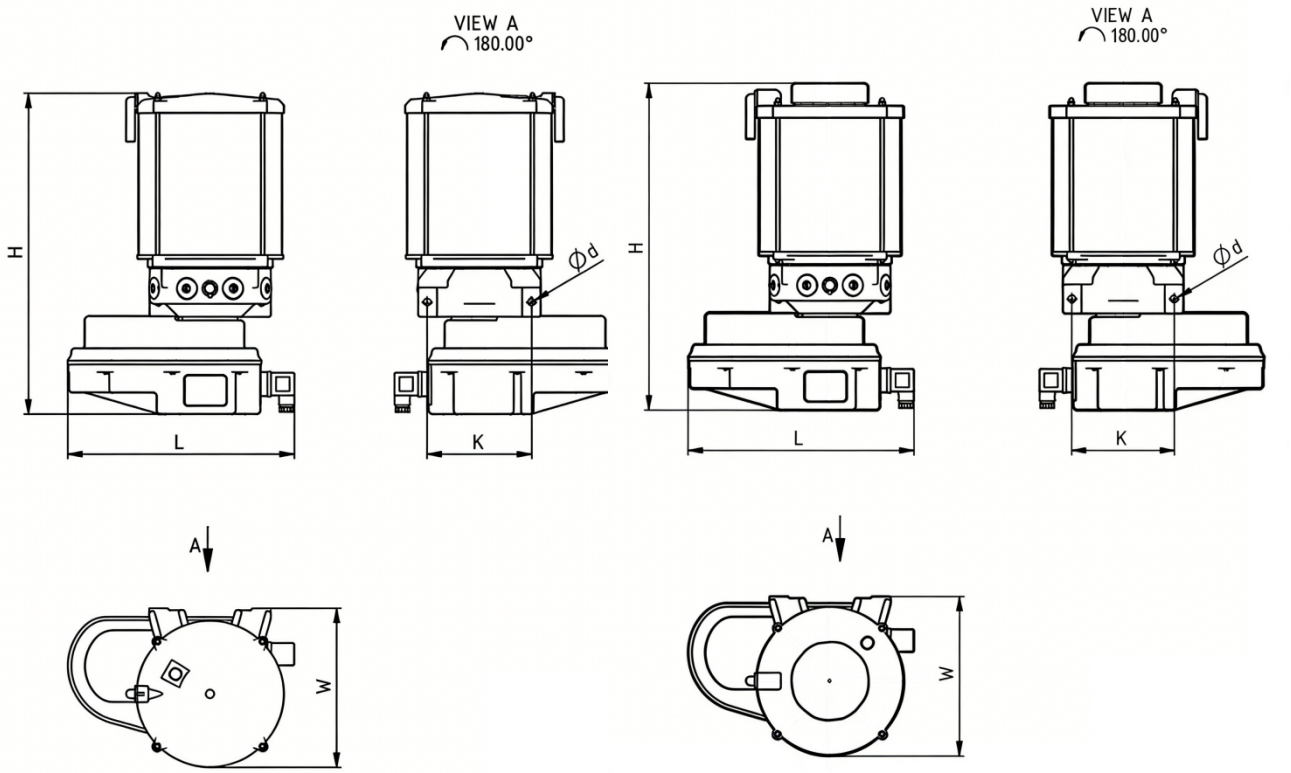
The external signal cable kit has two options and they are mutually exclusive. All external signal cables are 5m length

All signal sockets in pump unit are compliant with IEC 61076-2-101-A (M12x1, 4 pins, female).

Controller		*Low level sensor*			*External signal interaction*				*External signal cable kit*	
		No	*Yes*							
Integrated	***Signal Code***		*Signal to controller*	*Signal to customer*	*Remote alarm (NO)*	*Pulse*	*Remote startup*	*Modbus*	***No kit code***	***Kit code***
No (C0)	***0***	X							***0***	
				X					***1***	
Yes (CH/CM)	***A***	X							***0***	
			X						***A***	
	B	X			X				***0***	***B***
			X		X					
	C	X				X			***0***	***C***
			X			X				
	D	X					X		***0***	***D***
			X				X			
	E	X						X	***0***	***E***
			X					X		
	F	X			X	X			***0***	***F***
			X		X	X				
	G	X			X		X		***0***	***G***
			X		X		X			
	H	X				X	X		***0***	***H***
			X			X	X			
	J	X				X		X	***0***	***J***
			X			X		X		
	K	X			X	X	X		***0***	***K***
			X		X	X	X			

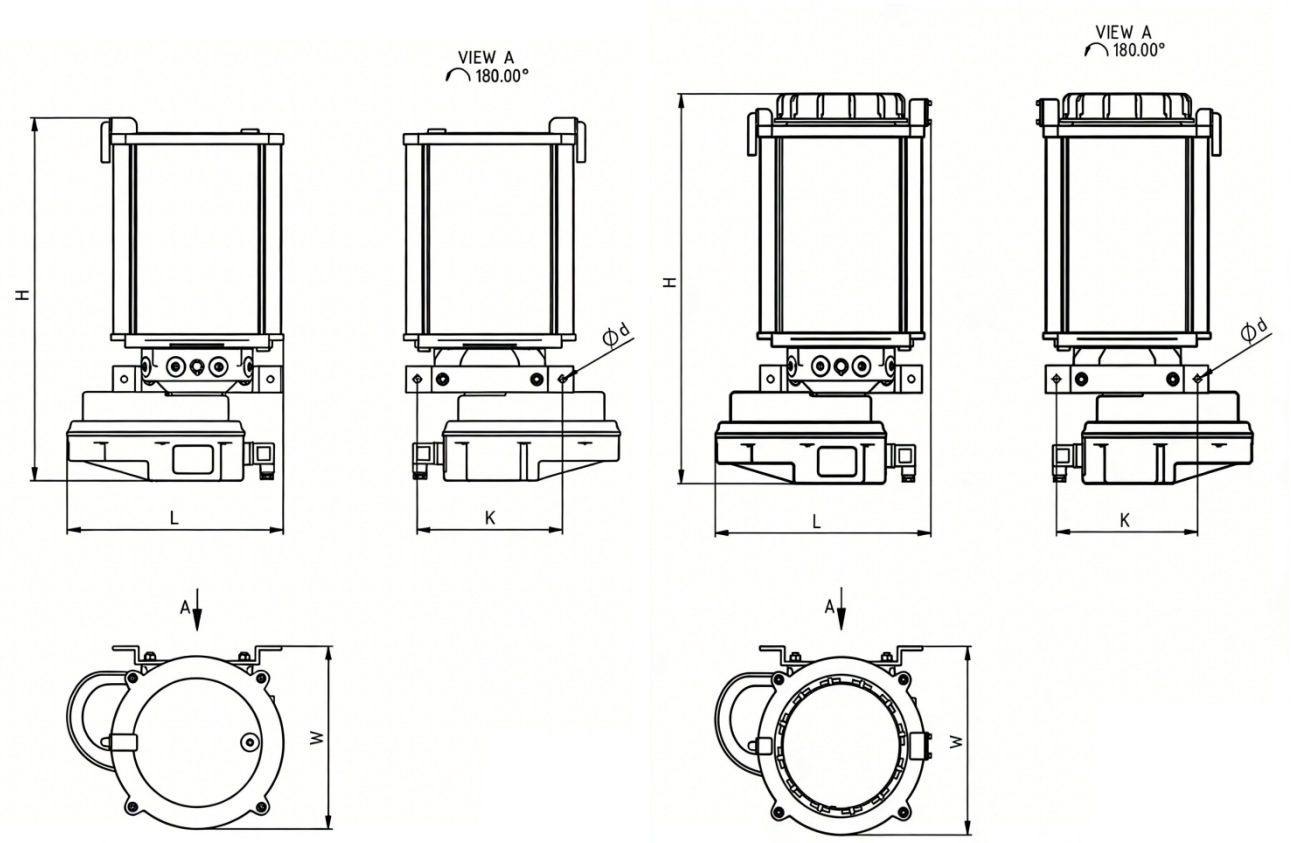
■ LEP Lubrication Pump Unit Dimension

✧ *DC 24V or AC 230V/50 Hz, 2/4/6 L tank*



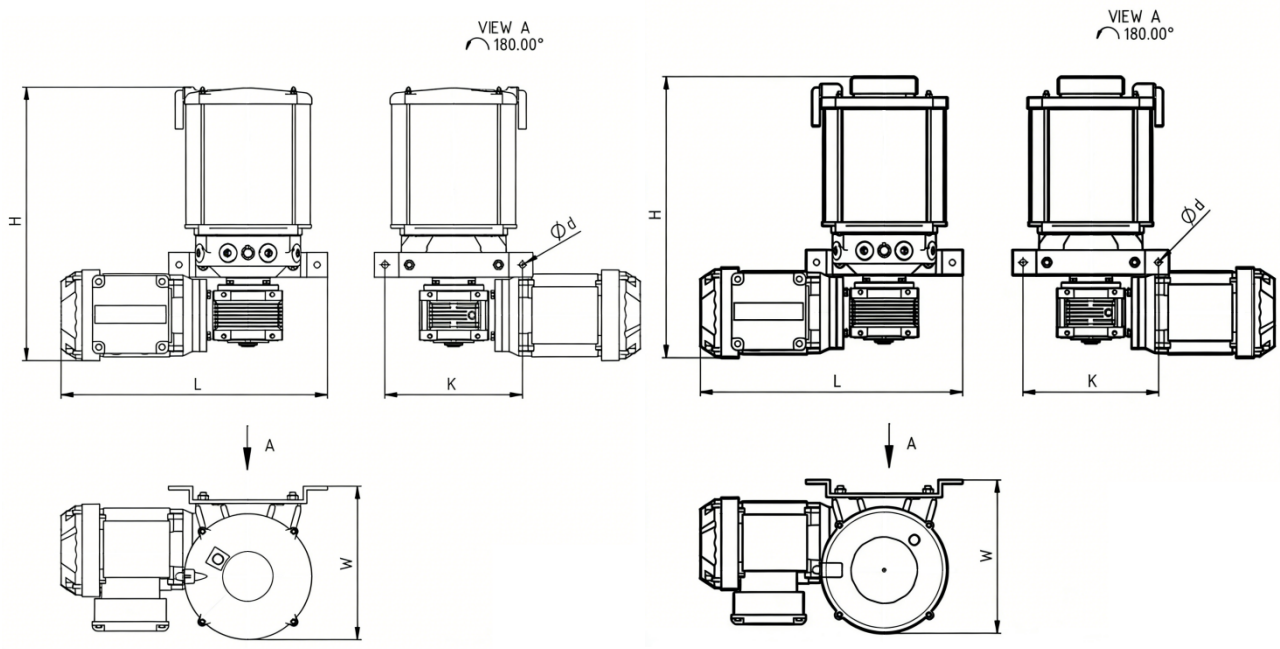
Model	*Tank Capacity (L)*	*Power Supply*	*Pump Element Mounting Port*	*H (mm)*	*W (mm)*	*L (mm)*	*K (mm)*	*Ød (mm)*
LEP211...	2	DC 24V or AC 230V/50Hz	6 - M20x1.5	353	197	283	130	9
LEP211T...				367				
LEP212...	4			393				
LEP212T...				406				
LEP212P...	6			485				
LEP212PT...				498				

✧ ***DC 24V or AC 230V/50 Hz, 8/10 L tank***



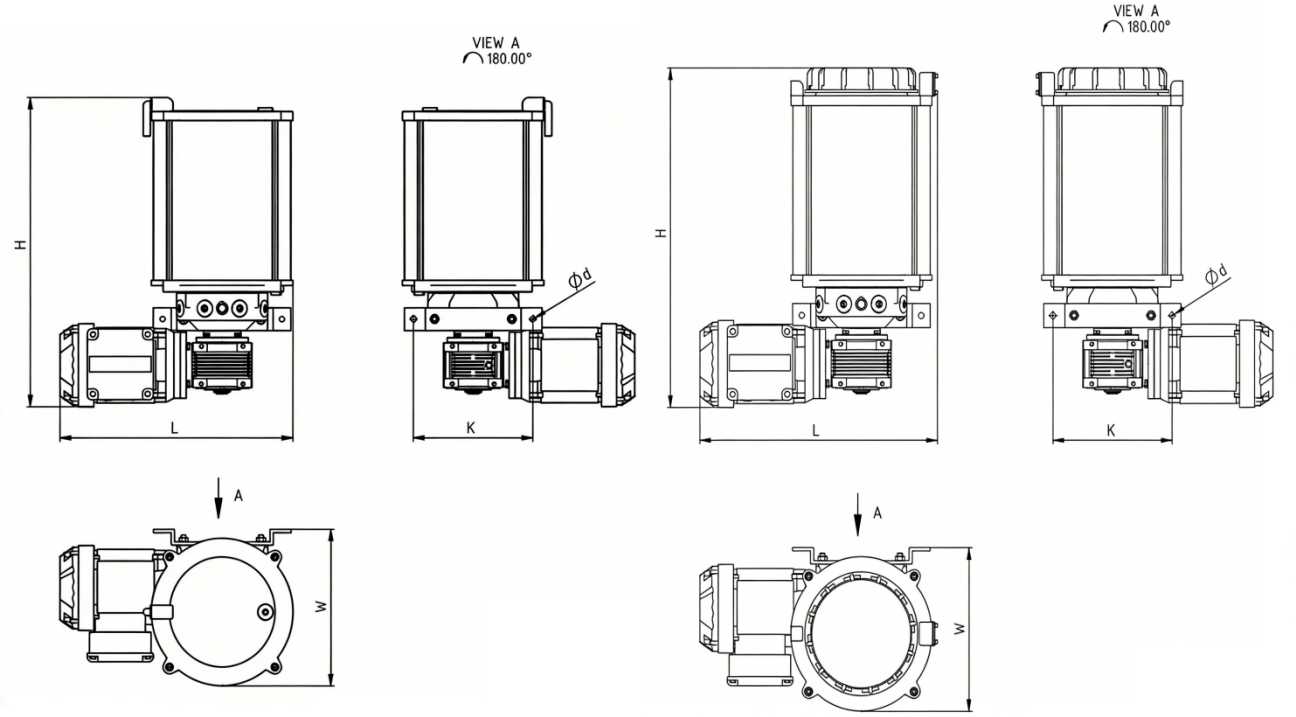
Model	*Tank Capacity (L)*	*Power Supply*	*Pump Element Mounting Port*	*H (mm)*	*W (mm)*	*L (mm)*	*K (mm)*	*Ød (mm)*
LEP213...	8	DC 24V or AC 230V/50Hz	6 - M20x1.5	495	250	296	200	9
LEP213T...				517		305		
LEP2110...	10			525	250	296	200	9
LEP2110T...				547		305		

✧ *AC 380V/50 Hz, 2/4/6 L tank*



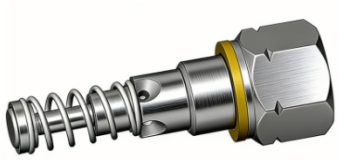
Model	*Tank Capacity (L)*	*Power Supply*	*Pump Element Mounting Port*	*H (mm)*	*W (mm)*	*L (mm)*	*K (mm)*	*Ød (mm)*
LEP211...	2	AC 380V/50Hz	6 - M20x1.5	356	224	386	200	9
LEP211T...				370				
LEP212...	4			396				
LEP212T...				410				
LEP212P...	6			488				
LEP212PT...				502				

✧ ***AC 380V/50 Hz, 8/10 L tank***



Model	*Tank Capacity (L)*	*Power Supply*	*Pump Element Mounting Port*	*H (mm)*	*W (mm)*	*L (mm)*	*K (mm)*	*Ød (mm)*
LEP213...	8	AC 380V/50Hz	6 - M20x1.5	495	250	389	200	9
LEP213T...				517		398		
LEP2110...	10			525	250	389	200	9
LEP2110T...				547		398		

■ IBX Pump Element

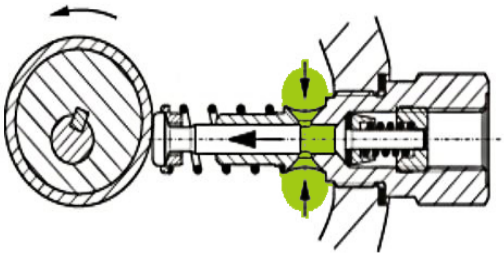


Product Description

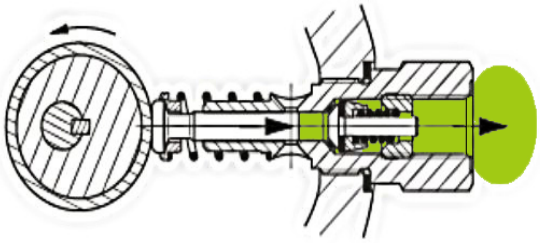
The IBX series pump elements are all plunger-type part which are driven by spring reset. The pump element has two kinds of available displacements. It's designed with a simple structure and easy to install and replace.

The adjustable pump element is a specially designed pump element that can adjust the grease output by adjusting the screw. It can conveniently adjust the grease output during the operation of the lubrication system to meet lubrication needs.

✧ Work Principle



Suction phase



Delivery phase

✧ Technical Data

Model	*Type*	*Reset Force*	*Displacement (cm^3/min)*	*Max. Working Pressure (bar)*	*Mounting Thread*	*Outlet*	*Miscellaneous*
IBX-3E	Normal	Spring	3.3	350	M20x1.5	G 1/4	/
IBX-4E	Normal	Spring	6.0	350	M20x1.5	G 1/4	/
IBX-4A	Adjustable	Spring	1.3 ~ 6.2	350	M20x1.5	Ferrule connector of Ø6	Safety valve integrated

■ SV Safety Valve

✧ Product Description

The safety valve is directly installed at the pump element outlet to protect the entire lubrication system from excessive pressure. The opening pressure of the safety valve is 350 bar, and the outlet pipe diameter is available in three specifications: Ø6, Ø8, and Ø10.

✧ Technical Data

Model	*Relief Pressure (bar)*	*Ferrule Connector (Outlet)*	*Mounting Thread (24^o cone nut)*	*Relief Port Thread*
SV-35-06	350	Ø6	M14x1.5	G 1/8
SV-35-08	350	Ø8	M14x1.5	G 1/8
SV-35-10	350	Ø10	M18x1.5	G 1/8

■ PFB Progressive Divider

✧ Product Description

The PFB series progressive divider has a block-type integrated structure. The displacement at each outlet of the divider is fixed and uniform, at 0.2 cm3/stroke, with a max. working pressure of 350 bar. Each divider block has a minimum of 6 outlets and a maximum of 22 outlets, allowing users to choose a divider with an appropriate number of outlets based on actual lubrication needs.

■ PFB Progressive Divider Part Number

PFB - 6 - E

PFB series progressive divider

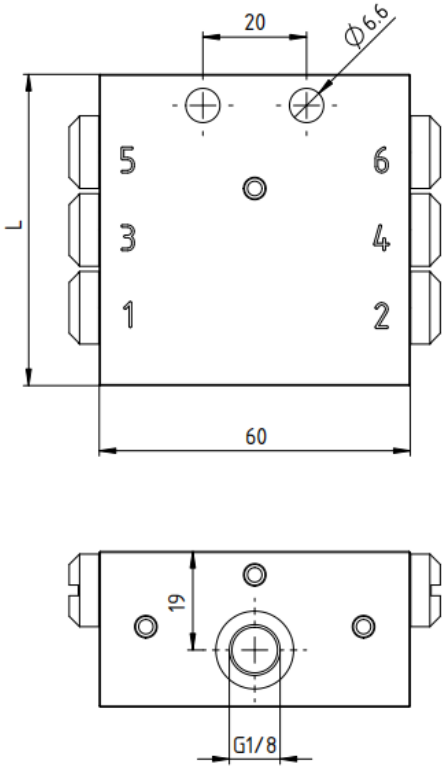
Quantity of outlet

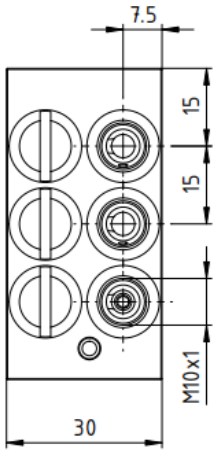
6: 6 outlets
8: 8 outlets
10: 10 outlets
12: 12 outlets
14: 14 outlets
16: 16 outlets
18: 18 outlets
20: 20 outlets
22: 22 outlets

Blockage monitor

Blank: No
M: Visual indicator
E: Piston detector, DC 24V, PNP NO
EV: Piston detector, DC 24V, PNP NO, with 5m cable

■ PFB Progressive Divider Dimension





Model	*L (mm)*
PFB-6-...	60
PFB-8-...	75
PFB-10-...	90
PFB-12-...	105
PFB-14-...	120
PFB-16-...	135
PFB-18-...	150
PFB-20-...	165
PFB-22-...	180

■ PFM Progressive Divider

✧ Product Description

The PFM series progressive divider has a modular structure, with each block locked together by fastening bolts. The PFM divider consists of three parts: a head block, several intermediate blocks and an end block. The head block and end block are standard configurations, while all intermediate blocks are metering blocks, which can be freely selected and combined as needed.

However, the total number of metering blocks must be at least 3 (for 6 outlets) and no more than 10 (for 20 outlets). The PFM divider is available in 8 displacements with a maximum operating pressure of 250 bar.

■ PFM Progressive Divider Part Number

PFM - 4/6 - 06S/12S/20T/24T - E

PFM series progressive divider

Quantity of metering blocks / outlet
X / Y: X metering blocks / Y outlets
X: Any number between 3 and 10
Y: Any number between 1 and 20

Metering blocks model [1)]

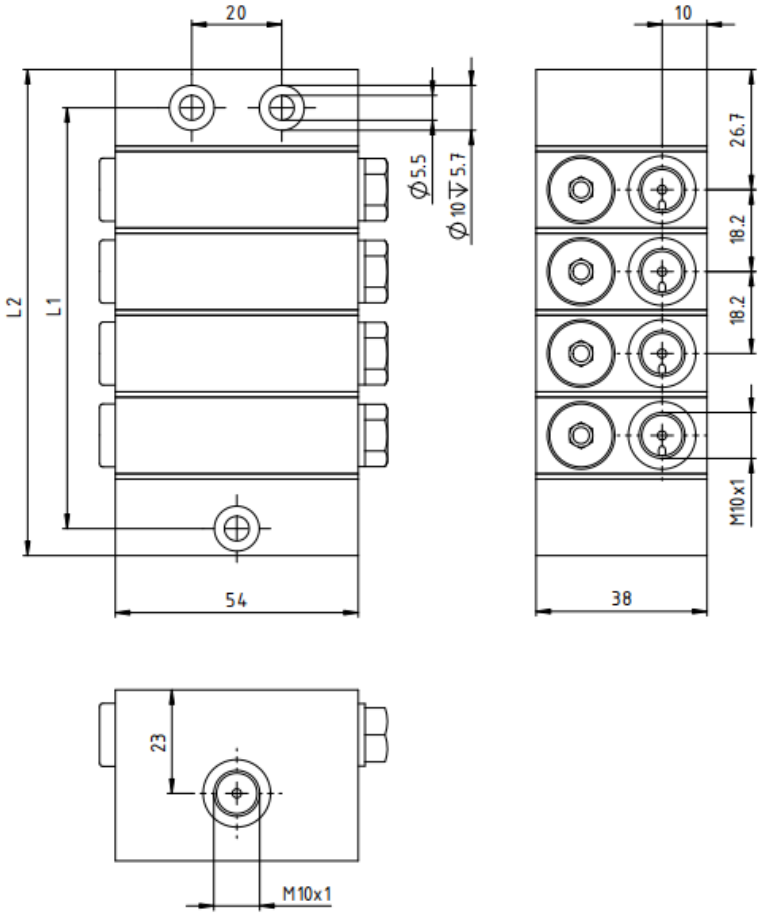
06T: 2 outlets and 0.06 cm^3/stroke/outlet	06S: 1 outlet and 0.12 cm^3/stroke/outlet
12T: 2 outlets and 0.12 cm^3/stroke/outlet	12S: 1 outlet and 0.24 cm^3/stroke/outlet
20T: 2 outlets and 0.20 cm^3/stroke/outlet	20S: 1 outlet and 0.40 cm^3/stroke/outlet
24T: 2 outlets and 0.24 cm^3/stroke/outlet	24S: 1 outlet and 0.48 cm^3/stroke/outlet

Blockage monitor [2)]
Blank: No
M: Visual indicator
E: Piston detector, DC 24V, PNP NO
EV: Piston detector, DC 24V, PNP NO, with 5m cable

1) When selecting the metering blocks, the first one is the one after head block and others are selected in sequence.

2) “M” is available only when selecting any one metering block of “20T”, “20S”, “24T” and “24S”.

■ PFM Progressive Divider Dimension



Model	*L1 (mm)*	*L2 (mm)*
PFM-3/ -...	75.3	89.8
PFM-4/ -...	93.5	108.0
PFM-5/ -...	111.7	126.2
PFM-6/ -...	129.9	144.4
PFM-7/ -...	148.1	162.6
PFM-8/ -...	166.3	180.8
PFM-9/ -...	184.5	199.0
PFM-10/ -...	202.7	217.2

■ PFMS Progressive Divider

✧ Product Description

The PFMS series progressive divider has a modular structure, with each block locked together by fastening bolts. Its dimensions are smaller than PFM dividers. The PFMS divider consists of three parts: a head block, several intermediate blocks and an end block. The head block is standard configurations, while all end block and intermediate blocks are metering blocks, which can be freely selected and combined as needed.

However, the total number of metering blocks must be at least 3 (for 6 outlets) and no more than 10 (for 20 outlets). The PFMS divider is available in 6 displacements with a maximum operating pressure of 250 bar.

■ PFMS Progressive Divider Part Number

PFMS - 4/7 - 45T/75T/105T/45S - E

PFMS series progressive divider

Quantity of metering blocks / outlet
X / Y: X metering blocks / Y outlets
X: Any number between 3 and 10
Y: Any number between 1 and 20

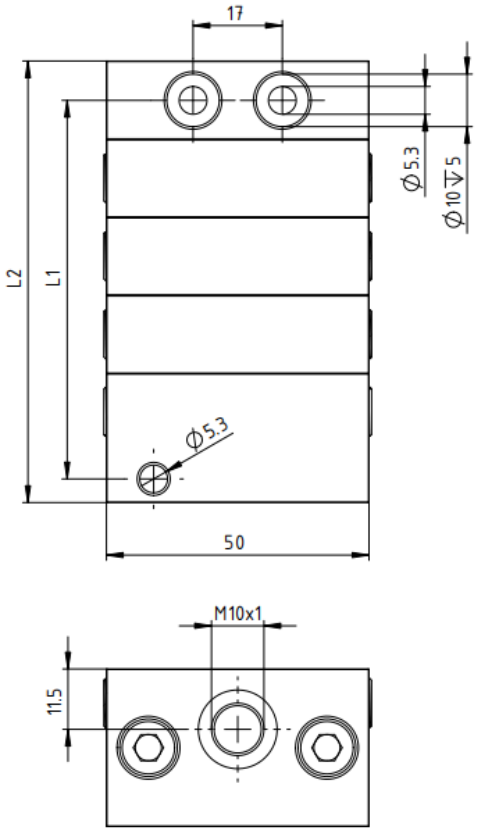
Metering blocks model [1)]
45T: 2 outlets and 0.045 cm^3/stroke/outlet
75T: 2 outlets and 0.075 cm^3/stroke/outlet
105T: 2 outlets and 0.105 cm^3/stroke/outlet
45S: 1 outlet and 0.09 cm^3/stroke/outlet
75S: 1 outlet and 0.15 cm^3/stroke/outlet
105S: 1 outlet and 0.21 cm^3/stroke/outlet

Blockage monitor [2)]
Blank: No
M: Visual indicator
E: Piston detector, DC 24V, PNP NO
EV: Piston detector, DC 24V, PNP NO, with 5m cable

1) When selecting the metering blocks, the first one is the one after head block and others are selected in sequence.

2) “M” is available only when selecting any one metering block of “75T”, “75S”, “105T” and “105S”.

■ PFMS Progressive Divider Dimension



Model	*L1* (mm)	*L2* (mm)
PFMS-3/ -...	57.2	69.20
PFMS-4/ -...	72.0	83.95
PFMS-5/ -...	86.7	98.70
PFMS-6/ -...	101.5	113.45
PFMS-7/ -...	116.2	128.20
PFMS-8/ -...	131.0	142.95
PFMS-9/ -...	145.7	157.70
PFMS-10/ -...	160.5	172.45

■ PFG Progressive Divider

✧ Product Description

The PFG series progressive divider has a modular structure, with each block locked together by fastening bolts. Its dimensions are much bigger than PFM & PFMS dividers. The PFG divider consists of four parts: a head block, several intermediate blocks, several metering blocks and an end block. The head block, intermediate block and end block are standard configurations, while selecting different metering blocks. It can be freely selected and combined as needed. However, the total number of metering blocks must be at least 3 (for 6 outlets) and no more than 10 (for 20 outlets). The PFG divider is available in 16 displacements with a maximum operating pressure of 250 bar.

■ PFG Progressive Divider Part Number

PFG - 3/4 - 625T/625T/155S - E

PFG series progressive divider

Quantity of metering blocks / outlet
X / Y: X metering blocks / Y outlets
X: Any number between 3 and 10
Y: Any number between 1 and 20

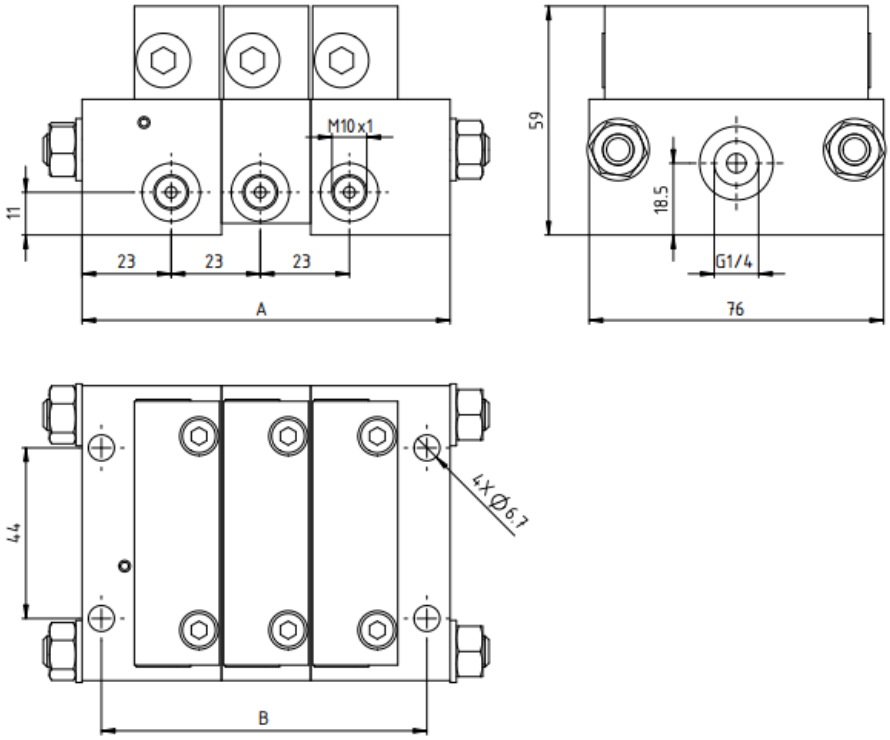
Metering blocks model [1)]

100T: 2 outlets and 0.100 cm^3/stroke/outlet	100S: 1 outlets and 0.200 cm^3/stroke/outlet
155T: 2 outlets and 0.155 cm^3/stroke/outlet	155S: 1 outlets and 0.310 cm^3/stroke/outlet
225T: 2 outlets and 0.225 cm^3/stroke/outlet	225S: 1 outlets and 0.450 cm^3/stroke/outlet
305T: 2 outlets and 0.305 cm^3/stroke/outlet	305S: 1 outlets and 0.610 cm^3/stroke/outlet
400T: 2 outlets and 0.400 cm^3/stroke/outlet	400S: 1 outlets and 0.800 cm^3/stroke/outlet
505T: 2 outlets and 0.505 cm^3/stroke/outlet	505S: 1 outlets and 1.010 cm^3/stroke/outlet
625T: 2 outlets and 0.625 cm^3/stroke/outlet	625S: 1 outlets and 1.250 cm^3/stroke/outlet
755T: 2 outlets and 0.755 cm^3/stroke/outlet	755S: 1 outlets and 1.510 cm^3/stroke/outlet

Blockage monitor
Blank: No
M: Visual indicator
E: Piston detector, DC 24V, PNP NO
EV: Piston detector, DC 24V, PNP NO, with 5m cable

1) When selecting the metering blocks, the first one is the one after head block and others are selected in sequence.

■ PFG Progressive Divider Dimension



Model	*L1 (mm)*	*L2 (mm)*
PFG-3/ -...	84	95
PFG-4/ -...	107	118
PFG-5/ -...	130	141
PFG-6/ -...	153	164
PFG-7/ -...	176	187
PFG-8/ -...	199	210
PFG-9/ -...	222	233
PFG-10/ -...	245	256

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