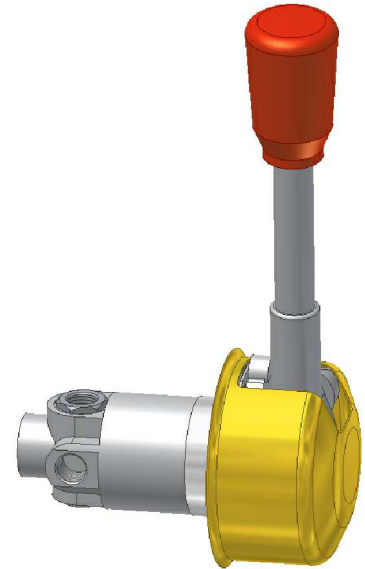
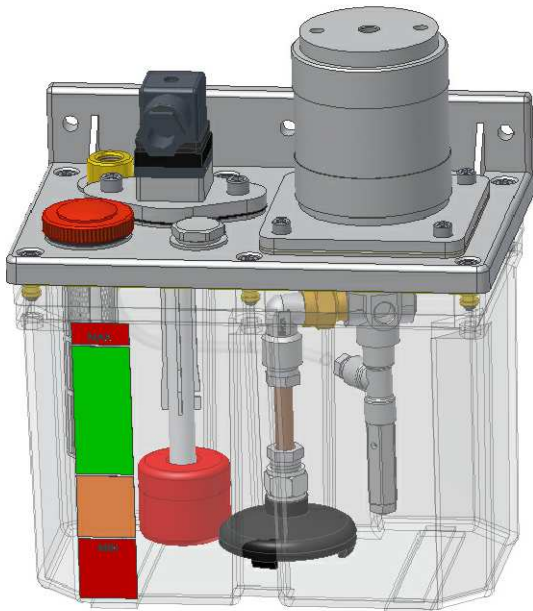


Piston pumps for single line central lubrication systems

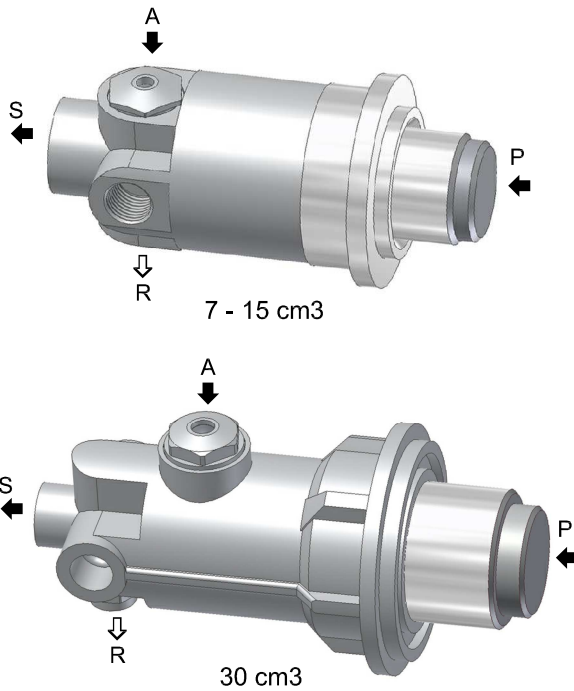


Drive is carried out via

- manual control
- pneumatic control
- hydraulic control

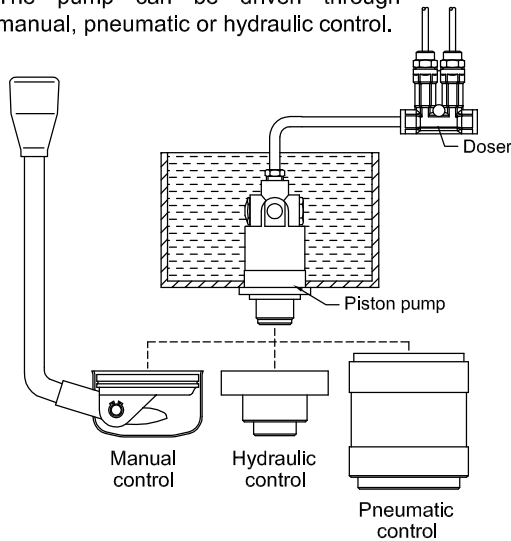


With and without tank



Control system

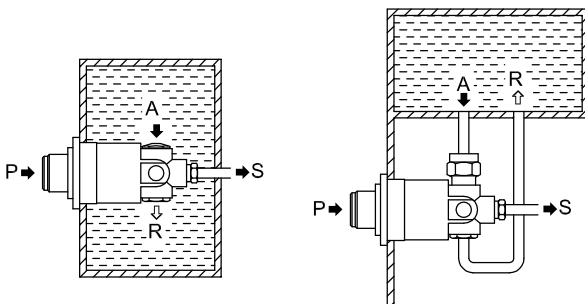
The pump can be driven through manual, pneumatic or hydraulic control.



Suction system

-Direct suction valve for submerged pump.

-Remote suction valve for pump separate from the tank.



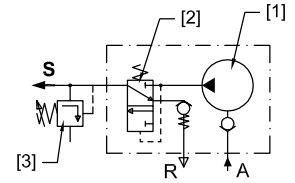
In case of separate assembly of tank foresee return pipe from relief (R) as well as from pressure limiting valve in case this has been installed.

PE01

100.000.000

Piston pumps without control for OIL single line installations

- 1 - Piston pump
- 2 - Relief valve
- 3 - Pressure limiting valve
- S - Lubricant outlet
- A - Suction
- R - Return (relief)



Application

As intermittent operation pump to feed volumetric dosing meters in single line systems.

Flow rate selection

Design the installation by estimating the number of lubrication points as well as the flow rate dispensed to each point.

The nominal flow rate can be calculated from the sum of all dosages + 25% from this value + 1cm3 per metre of pipeline on the main pressure line.

The nominal flow rate will never be higher than the 2/3 of the flow provided by the pump.

Suction system

Depending on whether the pump is installed submerged or outside the tank it is supplied with the following:

- Direct suction valve for submerged pump.
- Remote suction for pump separate from the tank.

Pressure limiting valve (rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

Technical characteristics

- Lubricant mineral or synthetic oil
- Viscosity..... 20 ÷ 3000 cSt
- Flow rate 7-15-30 cm3/pulse
- Max. pressure 30 bar
- Relief..... 0,5 ÷ 1 bar
- Working temperature..... -10°C ÷ +80°C
- Maximum suction height..... 1 m

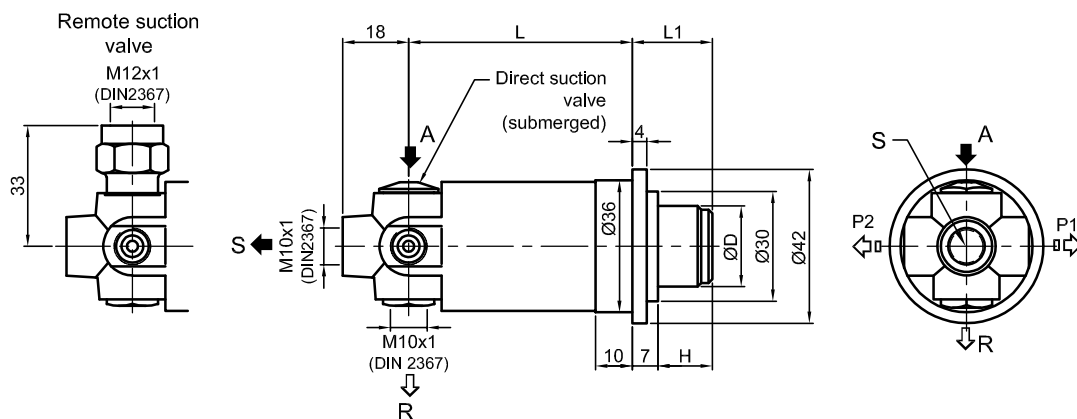
PE01 / X - 1 / X X

Flow rate cm3/pulse	Suction system	Press. limiting valve (rated to 25 bar)	
(B) 7 cm3	(1) Direct (2) Distance	(0) Without	
(E) 7 cm3		(5) With	
(C) 15 cm3		(3) Direct (4) Distance	(0) Without
(F) 15 cm3			(5) With
(D) 30 cm3			
(G) 30 cm3			

Models B-C-D are pumps with standard piston to be used with manual or hydraulic control.

Models E-F-G have long piston to be used with pneumatic control. See dimensions in page 3.

7 and 15 cm³ pump dimensions

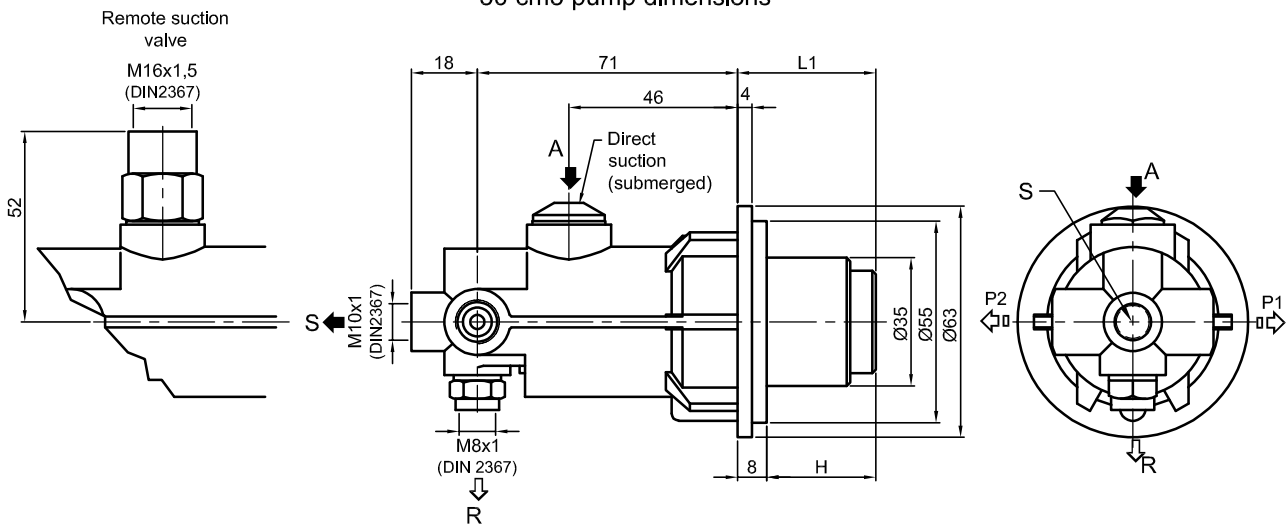


Dimensions

Model	Flow	ØD	H	L	L1
PE01/B	7 cm ³	22	18,5	45	25
PE01/E	7 cm ³	22	43,5	45	50
PE01/C	15 cm ³	28	24,5	61	25
PE01/F	15 cm ³	28	51,5	61	58

A = suction
 S = pressure outlet
 R = return (relief)
 P1-P2 = optional pressure outlets
 The standard pressure outlet is through hole S
 The optional pressure outlets P1-P2 will be provided with plugged holes.

30 cm³ pump dimensions



Dimensions

Model	Flow	H	L1
PE01/D	30 cm ³	25	35
PE01/G	30 cm ³	52	60

A = suction
 S = Pressure outlet
 R = return (relief)
 P1-P2 = optional pressure outlets
 The standard pressure outlet is through hole S
 The optional pressure outlets P1-P2 will be provided with capped holes.

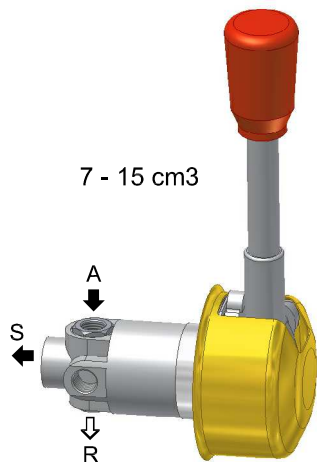
To assemble pumps with remote suction valve:

- Disassemble the valve and insert the pump in its location screwing the valve back again
- Foresee returns for relief (R) and pressure limiting valve if there is one

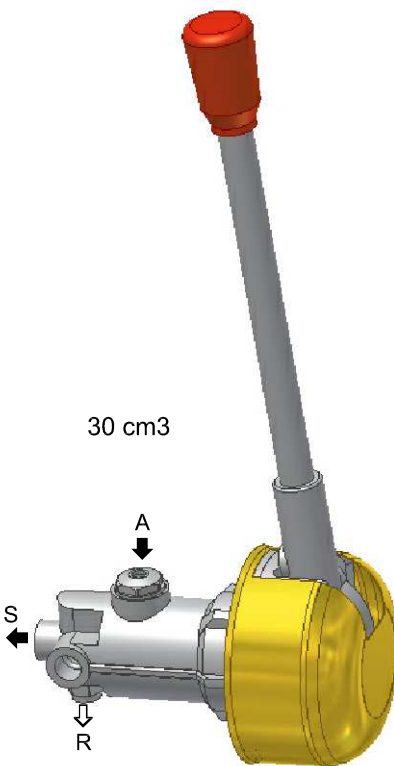
PME02

100.100.000

Piston pumps with **MANUAL** control for single line installations with **OIL**

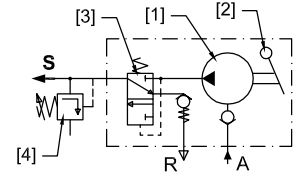


7 - 15 cm³



30 cm³

- 1 - Piston pump
- 2 - Manual control
- 3 - Relief valve
- 4 - Pressure limiting valve
- S - Lubricant outlet
- A - Suction
- R - Return (relief)



Application

As intermittent operation pump to feed volumetric dosing meters in single line systems.

Flow rate selection

Design the installation by estimating the number of lubrication points as well as the flow rate dispensed to each point.

The nominal flow rate can be calculated from the sum of all dosages + 25% from this value + 1cm³ per metre of pipeline on the main pressure line.

The nominal flow rate will never be higher than the 2/3 of the flow provided by the pump.

Suction system

Depending on whether the pump is installed submerged or outside the tank it is supplied with the following:

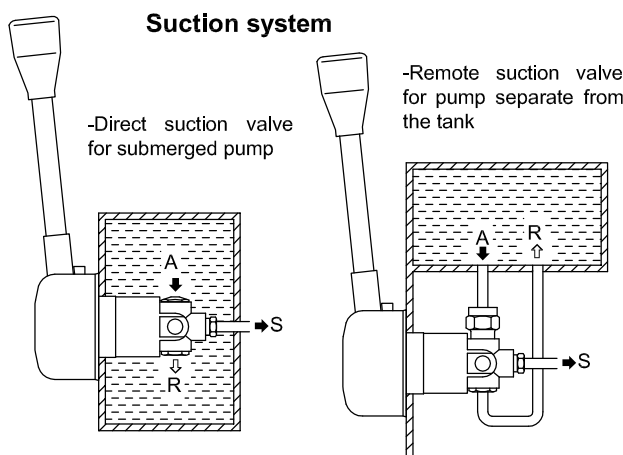
- Direct suction valve for submerged pump.
- Remote suction for pump separate from the tank.

Pressure limiting valve (rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

Technical characteristics

Lubricant	mineral or synthetic oil
Viscosity	20 ÷ 3000 cSt
Flow rate	7-15-30 cm ³ /pulse
Max. pressure	30 bar
Relief	0,5 ÷ 1 bar
Working temperature	-10°C ÷ +80°C
Max. suction height	1 m

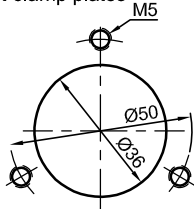


In case of separate assembly of tank foresee return pipe from relief (R) as well as from pressure limiting valve in case this has been installed.

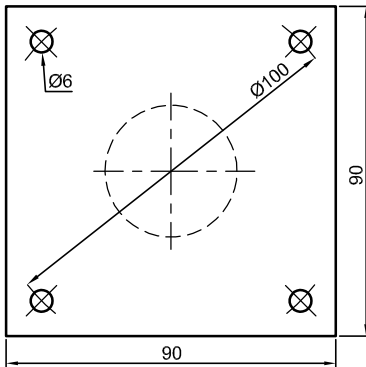
PME02 / (X) - 1 / (X) (X) (X)

Flow rate cm ³ /pulse	Suction system	Press. limit. valve (rated to 25 bar)	Clamp plate
(B) 7 cm ³	(1) Direct	(0) Without	(0) Without
(C) 15 cm ³	(2) Distance	(5) With	(1) With
(D) 30 cm ³	(3) Direct	(0) Without	(0) Without
	(4) Distance	(5) With	(2) With

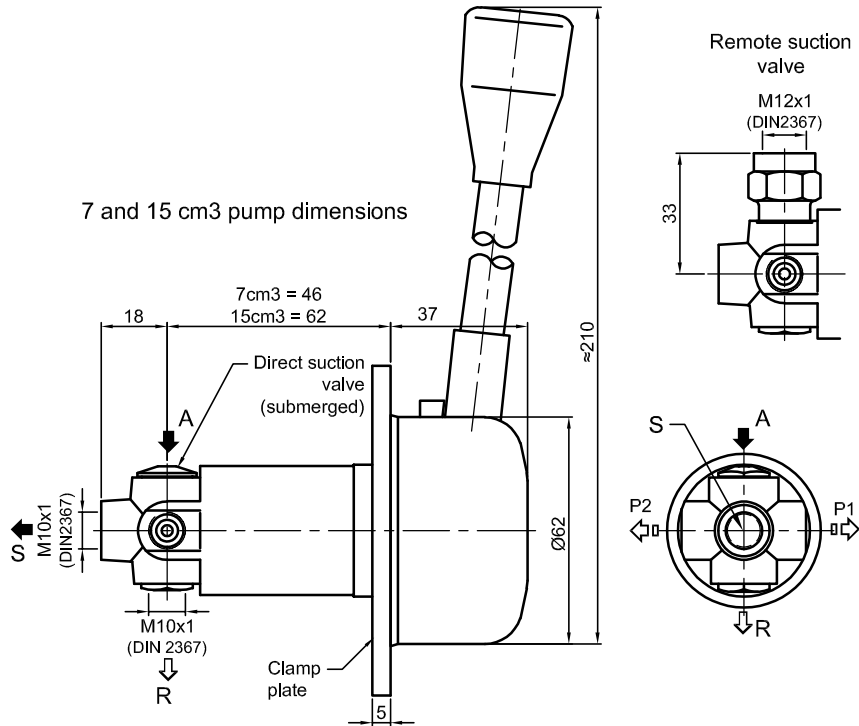
Accommodation dimensions
 for 7 and 15 cm³ pumps
 without clamp plates



Clamp plate dimensions



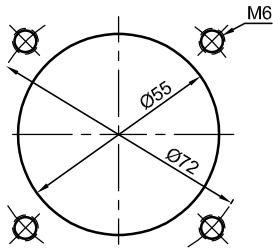
7 and 15 cm³ pump dimensions



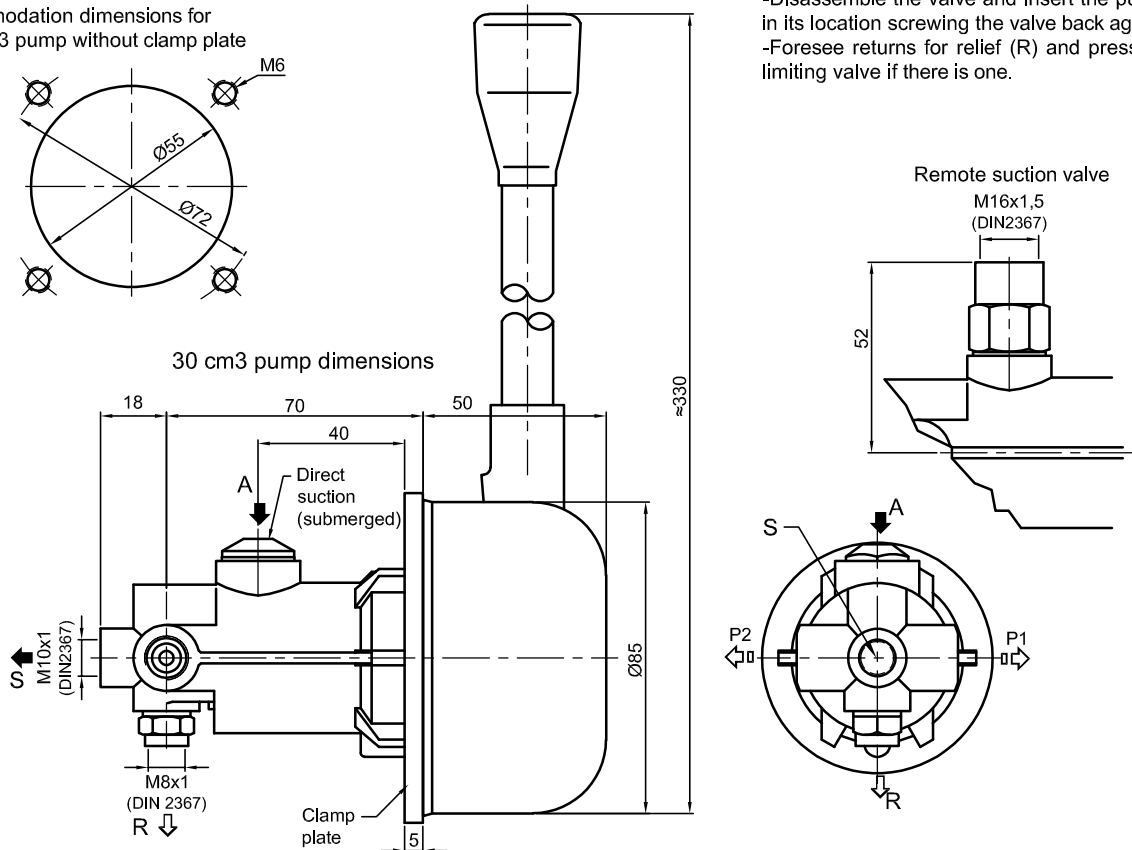
A = suction
 S = pressure outlet
 R = return (relief)
 P1-P2 = optional pressure outlets
 Standard pressure outlet through hole S
 Optional pressure outlets P1-P2 are provided
 with plugged holes.

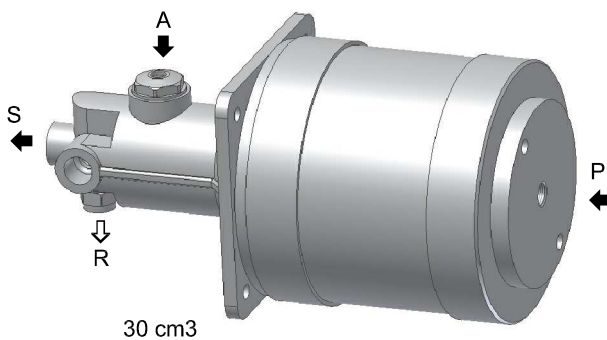
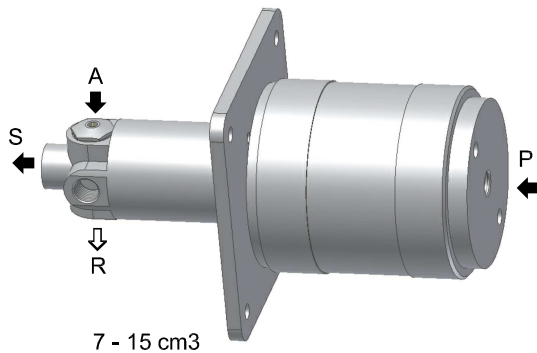
To assemble pumps with remote suction
 valve:
 -Disassemble the valve and insert the pump
 in its location screwing the valve back again.
 -Foresee returns for relief (R) and pressure
 limiting valve if there is one.

Accommodation dimensions for
 30 cm³ pump without clamp plate



30 cm³ pump dimensions

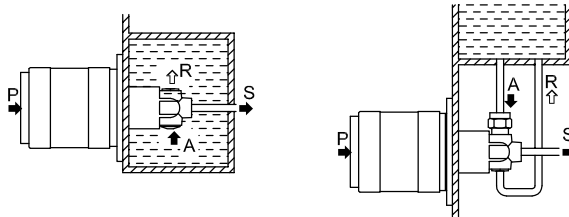




Suction system

-Direct suction valve for submerged pump.

-Remote suction valve for pump separate from the tank.

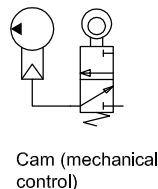
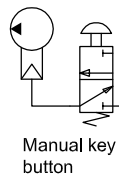
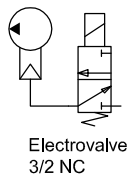


Note: in case of separate assembly of tank foresee return pipe from relief (R) as well as from pressure limiting valve in case this has been installed.

Pneumatic drive system

Time pulse control..... $\geq 3''$
Time pause..... $\geq 10'$
Air pressure through P..... $4 \div 10$ bar
Ratio P/S: -7 cm³/stroke 1/7
 -15 cm³/stroke..... 1/4,5
 -30 cm³/stroke..... 1/5

Control drive system:

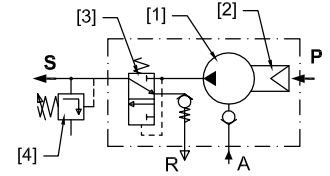


PNE03

100.200.000

Piston pumps with PNEUMATIC control for single line installations with OIL

- 1 - Piston pump
- 2 - Pneumatic control
- 3 - Relief valve
- 4 - Pressure limiting valve
- S - Lubricant outlet
- A - Suction
- R - Return (relief)
- P - Air inlet control



Application

As intermittent operation pump to feed volumetric dosing meters in single line systems.

Flow rate selection

Design the installation by estimating the number of lubrication points as well as the flow rate dispensed to each point.

The nominal flow rate can be calculated from the sum of all dosages + 25% from this value + 1cm³ per metre of pipeline on the main pressure line.

The nominal flow rate will never be higher than the 2/3 of the flow provided by the pump.

Suction system

Depending on whether the pump is installed submerged or outside the tank it is supplied with the following:

- Direct suction valve for submerged pump.
- Remote suction for pump separate from the tank.

Pressure limiting valve (rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

Technical characteristics

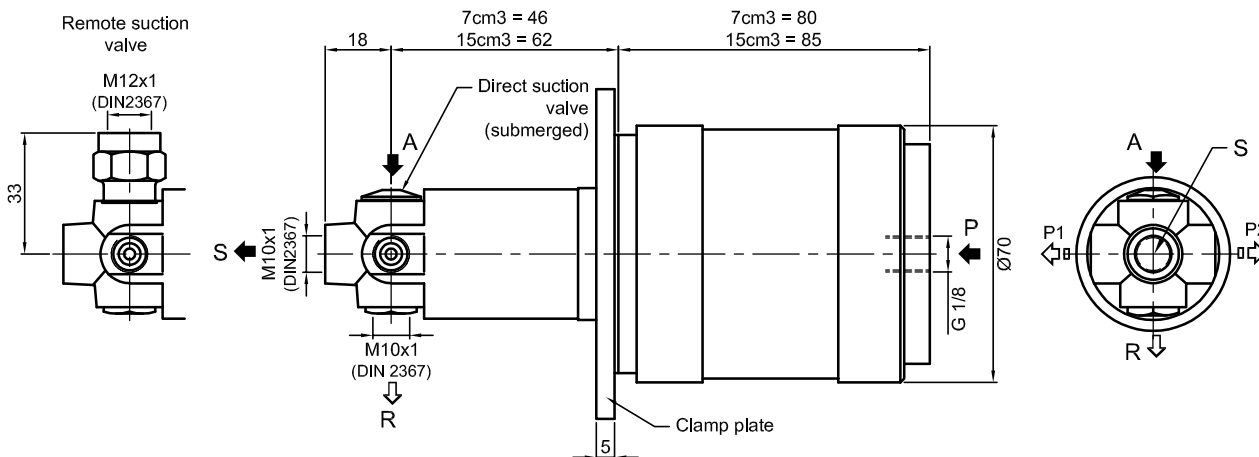
Piston pump

Lubricant mineral or synthetic
Viscosity..... 20 ÷ 3000 cSt
Flow rate 7-15-30 cm³/pulse
Max. pressure 30 bar
Relief..... 0,5 ÷ 1 bar
Working temperature..... -10°C ÷ +80°C
Max. suction height..... 1 m

PNE03 / (X) - 1 / (X) (X) (X)

Flow rate cm ³ /pulse	Suction system	Press. limit. valve (rated to 25 bar)	Clamp plate
(E) 7 cm ³	(1) Direct	(0) Without	(0) Without
(F) 15 cm ³	(2) Distance	(5) With	(1) With
(G) 30 cm ³	(3) Direct	(0) Without	(0) Without
	(4) Distance	(5) With	(2) With

7 and 15 cm³ pump dimensions

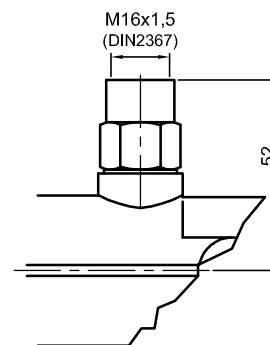


- A = suction
- S = pressure outlet
- R = return (relief)
- P = air inlet control
- P1-P2 = optional pressure outlets

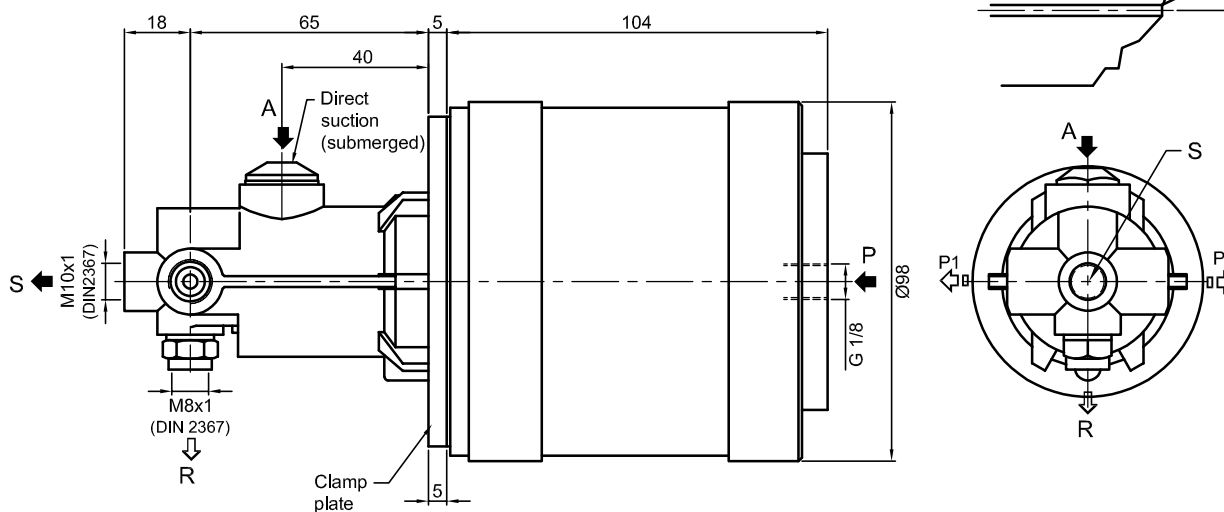
Standard pressure outlet through hole S.
 Optional pressure outlets P1-P2 are provided with plugged holes.

To assemble pumps with remote suction valve:
 -Disassemble the valve and insert the pump in its location screwing the valve back again.
 -Foresee returns for relief (R) and pressure limiting valve if there is one.

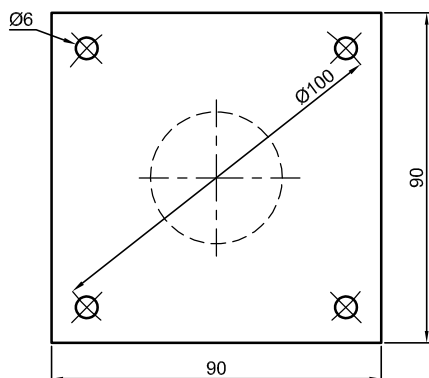
Remote suction valve
 30 cm³ pump



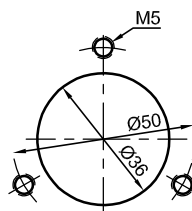
30 cm³ pump dimensions



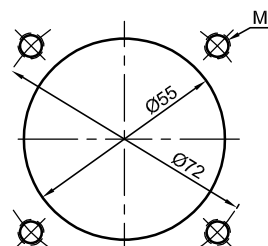
Clamp plate dimensions

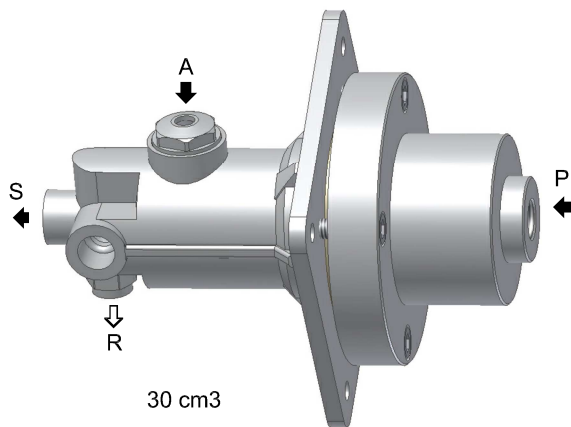
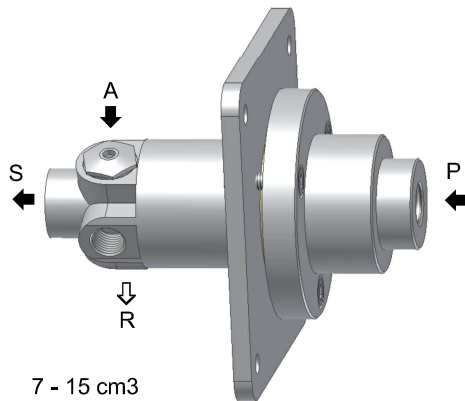


Accommodation dimensions for 7 and 15 cm³ pumps without clamp plate



Accommodation dimensions for 30 cm³ pumps without clamp plate

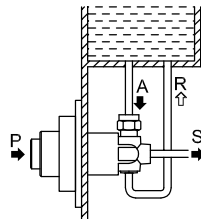
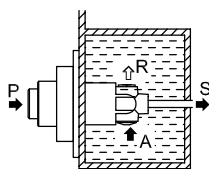




Suction system

-Direct suction valve for submerged pump.

-Remote suction valve for pump separate from the tank.

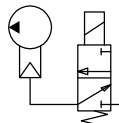


Note: in case of separate assembly of tank foresee return pipe from relief (R) as well as from pressure limiting valve in case this has been installed.

Hydraulic drive system

Time pulse control..... $\geq 30''$
Time pause..... $\geq 10'$
Pressure through P..... max. 25 bar
Ratio P/S..... 1/1

Control drive:
manual, electric, mechanical...

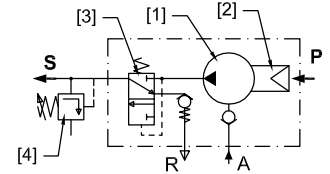


PHE04

100.300.000

Piston pumps with HYDRAULIC control for single line installations with OIL

- 1 - Piston pump
- 2 - Hydraulic control
- 3 - Relief valve
- 4 - Pressure limiting valve
- S - Lubricant outlet
- A - Suction
- R - Return (relief)
- P - Air inlet control



Application

As intermittent operation pump to feed volumetric dosing meters in single line systems.

Flow rate selection

Design the installation by estimating the number of lubrication points as well as the flow rate dispensed to each point.

The nominal flow rate can be calculated from the sum of all dosages + 25% from this value + 1cm3 per metre of pipeline on the main pressure line.

The nominal flow rate will never be higher than the 2/3 of the flow provided by the pump.

Suction system

Depending on whether the pump is installed submerged or outside the tank it is supplied with the following:

- Direct suction valve for submerged pump.
- Remote suction for pump separate from the tank.

Pressure limiting valve (rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

Technical characteristics

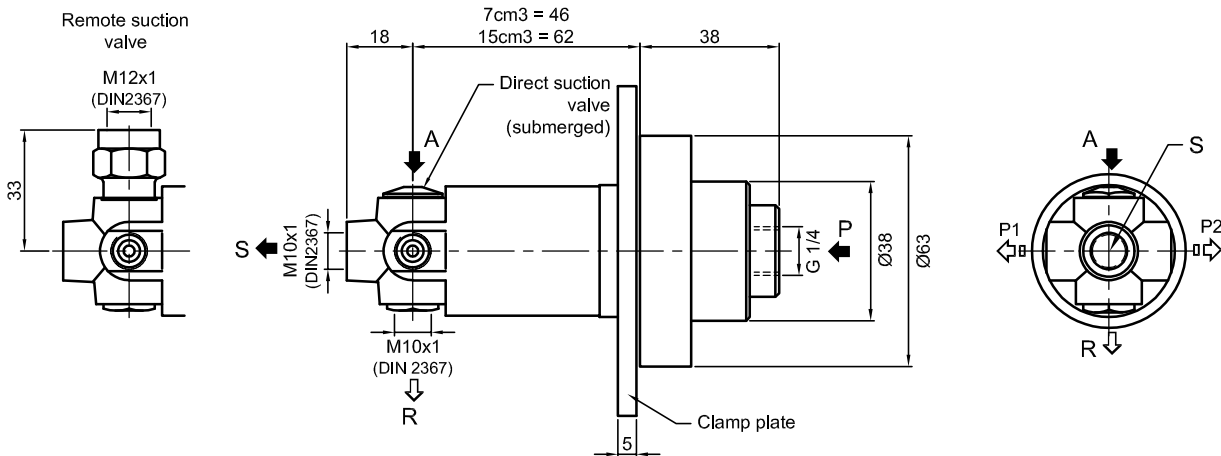
Piston pump

Lubricant mineral or synthetic oil
Viscosity..... 20 ÷ 3000 cSt
Flow rate 7-15-30 cm3/pulse
Max. pressure 25 bar
Relief..... 0,5 ÷ 1 bar
Working temperature..... -10°C ÷ +80°C
Max. suction height..... 1 m

PHE04 / (X) - 1 / (X) (X) (X)

Flow rate cm3/pulse	Suction system	Press. limit. valve (rated to 25 bar)	Clamp plate
(B) 7 cm3	(1) Direct	(0) Without	(0) Without
(C) 15 cm3	(2) Distance	(5) With	(1) With
(D) 30 cm3	(3) Direct	(0) Without	(0) Without
	(4) Distance	(5) With	(2) With

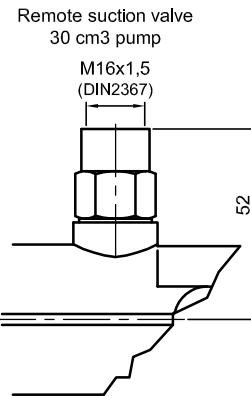
7 and 15 cm³ pump dimensions



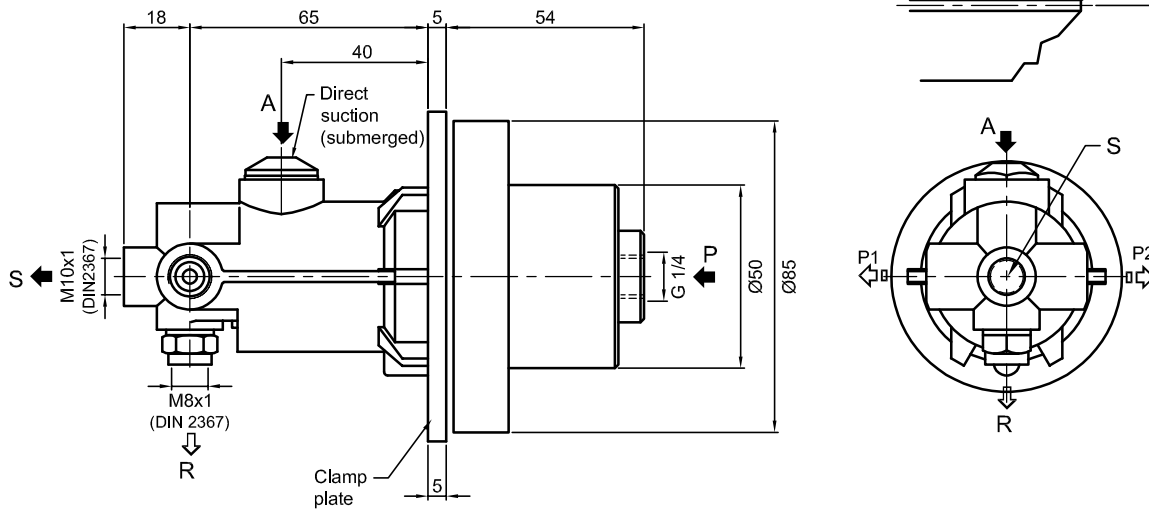
- A = suction
- S = pressure outlet
- R = return (relief)
- P = pressure inlet control
- P1-P2 = optional pressure outlets

Standard pressure outlet through hole S.
 Optional pressure outlets P1-P2 are provided with plugged holes.

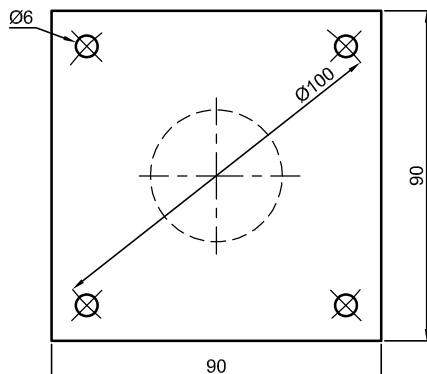
To assemble pumps with remote suction valve:
 -Disassemble the valve and insert the pump in its location screwing the valve back again.
 -Foresee returns for relief (R) and pressure limiting valve if there is one.



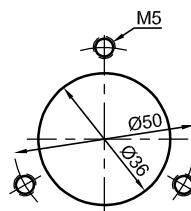
30 cm³ pump dimensions



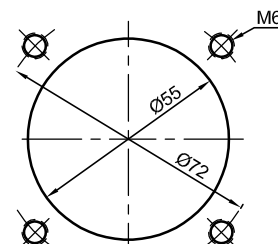
Clamp plate dimensions

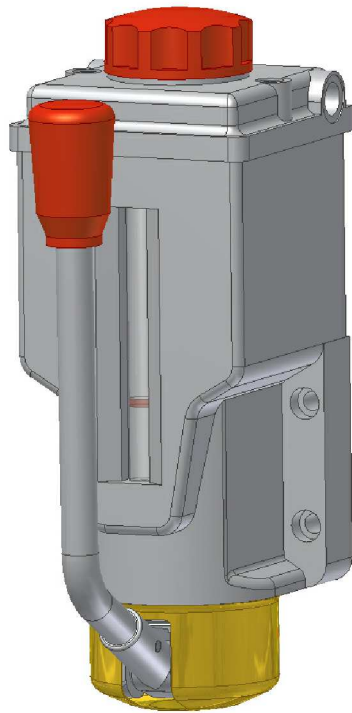


Accommodation dimensions for 7 and 15 cm³ pumps without clamp plate

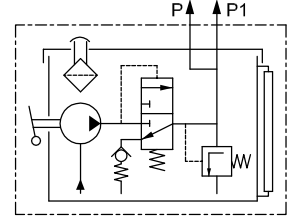


Accommodation dimensions for 30 cm³ pumps without clamp plate





Piston pump with manual control for single line systems



Technical data

Flow.....7-15-30 cm³/stroke
Max. pressure..... 30 bar
Relief..... 0,5 ÷ 1 bar
Temperature..... -10°C ÷ +80°C
Viscosity..... 20 ÷ 3000 cSt
Tank capacity.....0,5-1,25 L
Material.....cast aluminium

- Visual level in full capacity
- Nylon refill plug-filter

Pressure limiting valve

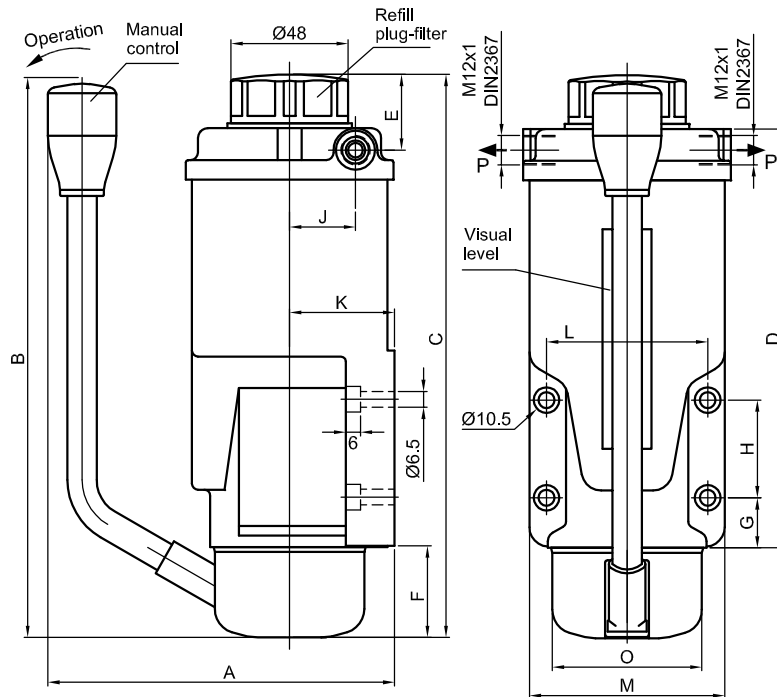
Optional (rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

Never force the hand lever

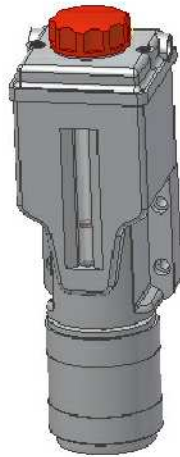
1 1 1 1 X X X 0 0

Flow pump cm ³ /stroke	Press. limit. valve (rated to 25 bar)	Tank capacity
① 7 cm ³	① Without	① 0,5 L
② 15 cm ³	⑤ With	⑤ 1,25 L
③ 30 cm ³	① Without	② 1,25 L
	⑤ With	

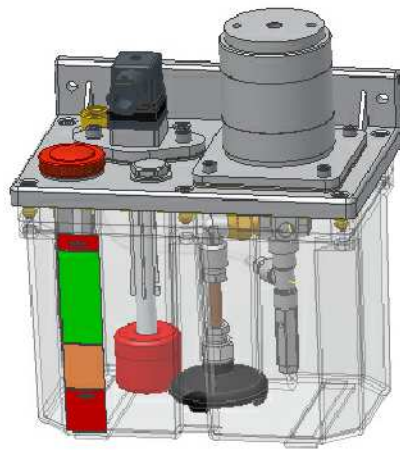


Dimensions

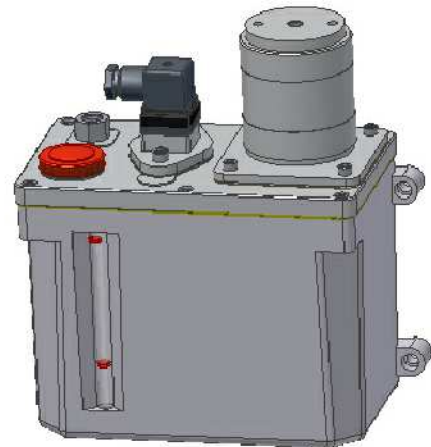
Tank capacity	Flow cm ³ /stroke	A	B	C	D	E	F	G	H	J	K	L	M	ØO
0,5 L	7-15 cm ³	130	240	232	173	33	37	20	40	27	43	66	80	62
	15 cm ³	156	235	285	215	33	37	22	50	30	53	85	100	62
1,25 L	7-15 cm ³	156	235	285	215	33	50	22	50	30	53	85	100	85
	30 cm ³	156	235	285	215	33	50	22	50	30	53	85	100	85



Aluminium tank
0,5 - 1,25 liters



Plastic tank 3 liters
-transparent (SAN)
-opaque (Nylon)



Aluminium tank 3 liters

Group with PNEUMATIC drive control for OIL

Single line system

Application

As intermittent operation group to feed volumetric dosing meters in single line systems.

This includes a pneumatic drive piston pump as well as the necessary valves to control the pressure and relief cycles within the circuit.

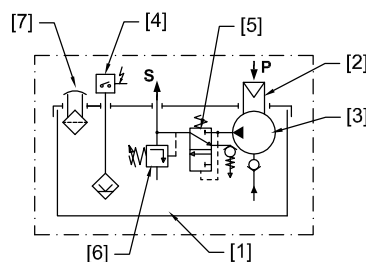
Container capacity and material

- 3 liters in plastic (transparent SAN and opaque NYLON)
- aluminium in 0,5 - 1,25 - 3 liters

All containers are suitable for use with mineral and synthetic oils. In the case of plastic containers and for polyglycol-based oils it is recommended the use of NYLON material.

Hydraulic diagram

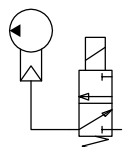
- 1 - Tank
- 2 - Pneumatic control
- 3 - Piston pump
- 4 - Level switch
- 5 - Relief valve
- 6 - Pressure limiting valve
- 7 - Refill plug-filter
- P - Air inlet control
- S - Lubricant outlet



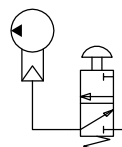
Pneumatic drive system

- Time pulse control..... $\geq 3''$
- Time pause..... $\geq 10'$
- Air pressure through P..... 4 ÷ 10 bar
- Ratio P/S: -7 cm³/stroke 1/7
- 15 cm³/stroke..... 1/4,5
- 30 cm³/stroke..... 1/5

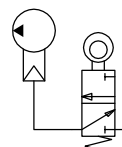
Control drive:



Electrovalve
3/2 NC



Manual key
button



Cam (mechanical
control)

Technical characteristics

Submerged hydraulic piston pump

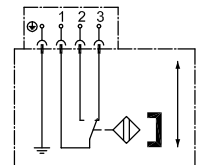
- Lubricant mineral or synthetic oil
- Viscosity..... 20 ÷ 3000 cSt
- Flow 7-15-30 cm³/pulse
- Max. pressure 30 bar
- Relief..... 0,5 ÷ 1 bar
- Working temperature..... -10°C ÷ +80°C

Pressure limiting valve (optional, rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

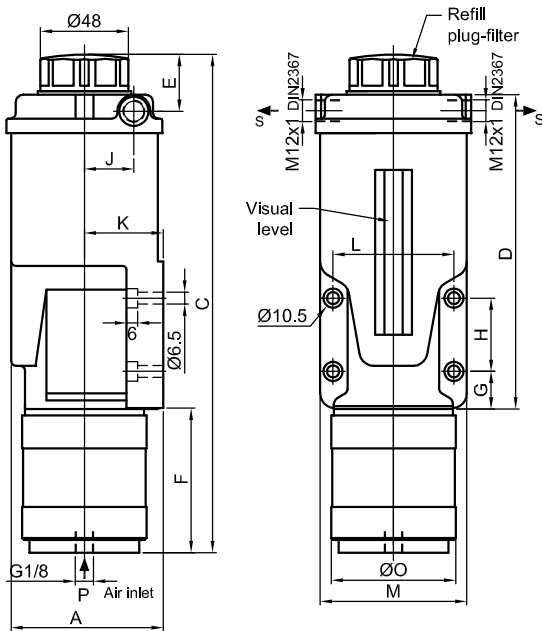
Interruptor de nivel

- Contact..... min. level as per diagram
- Connector..... DIN EN 175301-803
- Temperature range..... -20°C...+80°C
- Maximum switching voltage..... 230 VUC
- Maximum switching consumption..... 0,5 A
- Power breakdown..... 30 W



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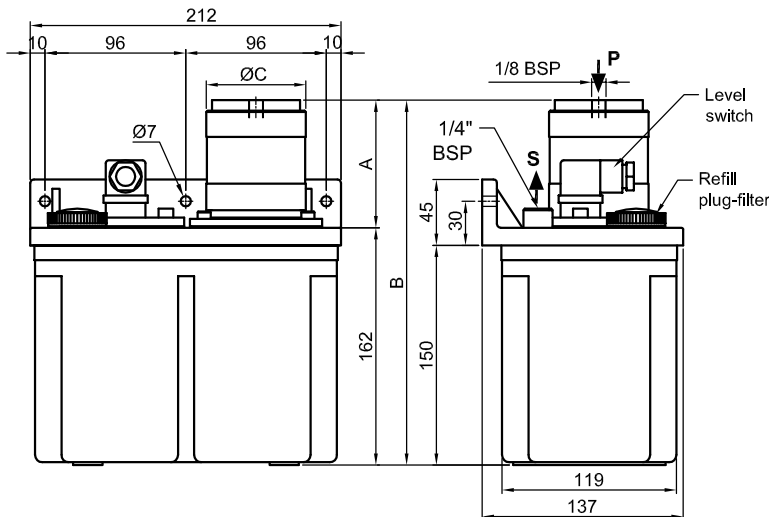
Flow rate cm ³ /pulse	Press. limit. valve (rated to 25bar)	Tank capacity	Level switch
5 7 cm ³	0 Without	1 0,5 Liters aluminium	0 Without level
6 15 cm ³	5 With	5 1,25 Liters aluminium	0 Without level
7 30 cm ³	0 Without 5 With	2 1,25 Liters aluminium	0 Without level
5 7 cm ³	0 Without	3 3 Liters aluminium	0 Without level
6 15 cm ³	5 With	4 3 Liters SAN	1 Minimum level
7 30 cm ³		9 3 Liters NYLON	



0.5 and 1.25 liter tanks
 -Aluminium container and cover.
 -Visual level in full capacity.

Dimensions

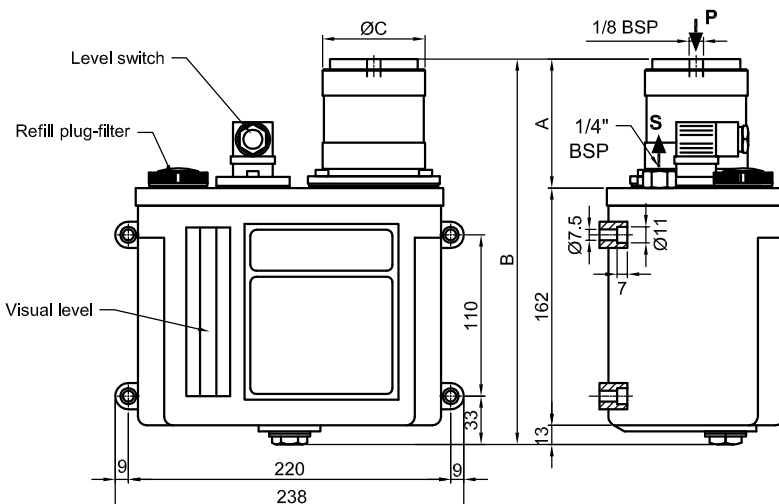
Tank capacity	Flow cm ³ /stroke	A	C	D	E	F	G	H	J	K	L	M	$\varnothing O$
0,5 L	7-15 cm ³	83	272	173	33	79	20	40	27	43	66	80	68
1,25 L	7-15 cm ³	103	295	215	33	79	22	50	30	53	85	100	98
1,25 L	30 cm ³	103	335	215	33	103	22	50	30	53	85	100	98



3 liter tank
 -Optional container in
 • SAN (transparent)
 • nylon (opaque)
 -Nylon cover
 -Optional electrical level

Dimensions

Flow cm ³ /stroke	A	B	$\varnothing C$
7 cm ³	85	247	70
15 cm ³	90	252	70
30 cm ³	108	270	98

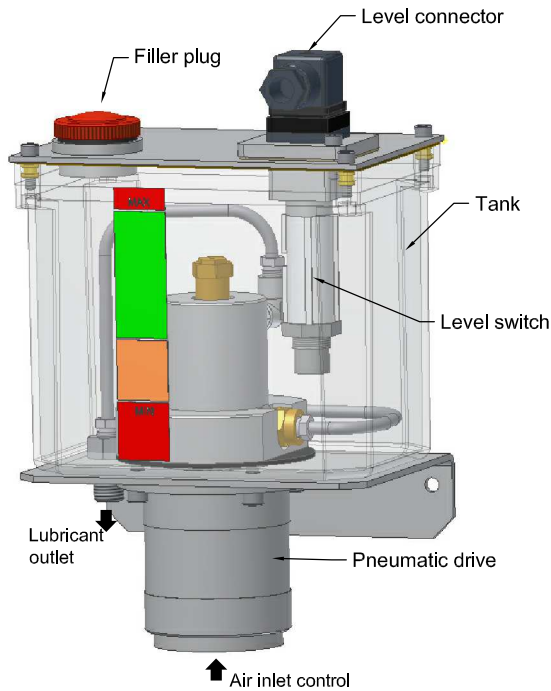


3 liter tank
 -Aluminium container and cover
 -Visual level in full capacity
 -Optional electrical level

Dimensions

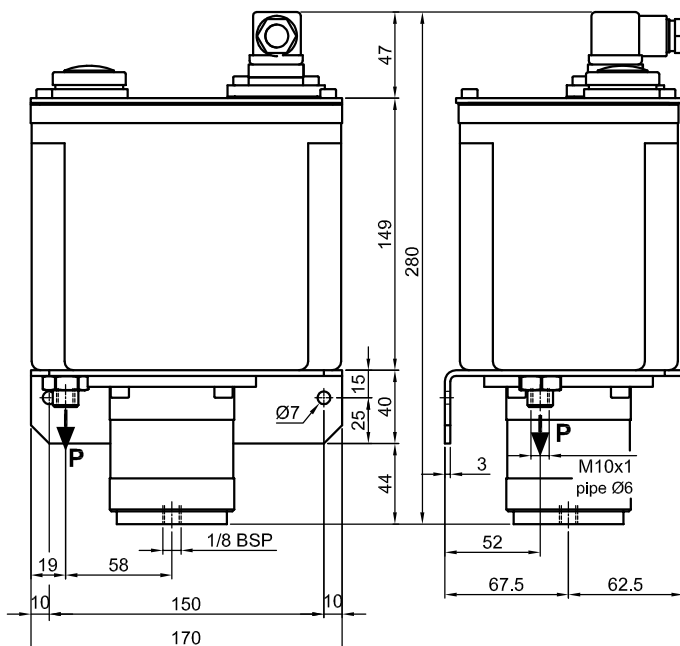
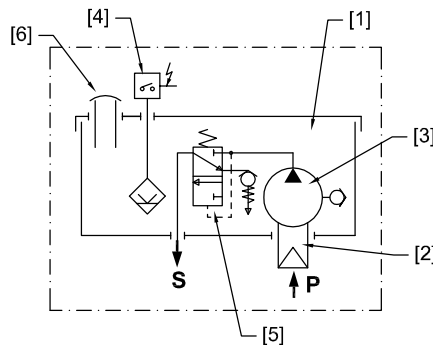
Flow cm ³ /stroke	A	B	$\varnothing C$
7 cm ³	85	265	70
15 cm ³	90	270	70
30 cm ³	108	288	98

PNE50/A
Group with pneumatic drive control for
FLUID GREASE
NLGI 00-000
Single line system



Hydraulic diagram

- 1 - Tank
- 2 - Pneumatic drive
- 3 - Piston pump
- 4 - Level switch
- 5 - Relief valve
- 6 - Filler plug
- P - Air inlet control
- S - Lubricant outlet



Application

As intermittent operation group to feed volumetric dosing meters in single line systems. This includes a pneumatic drive piston pump as well as the necessary valves to control the pressure and decompression cycles within the circuit.

Operation

The control drive system of this group is external (without control): programming by means of the machine automatism or external control (cnc, automatic device, etc...). If required they can be equipped with a level switch to control the minimum level in the tank.

Technical characteristics

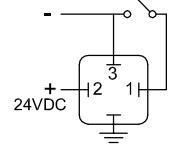
Tank.....2 liters plastic SAN (nylon optional)

Submerged hydraulic piston pump

LubricantFluid grease NLGI 00-000
 Flow 10cm³/pulse
 Max. pressure 40 bar
 Working temperature..... -10°C ÷ +80°C

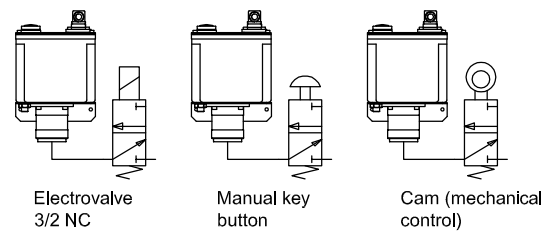
Electrical level switch

Contact type.....capacitive sensor
 Voltage..... 10 ÷ 30VDC
 Connection..... 1 A
 Max. power..... max 220mA
 Functionopens with low level lubricant (PNP)



Pneumatic drive system

Air volume through P..... 53cm³/impulso
 Air pressure through P.....4÷10 bar
 Ratio P/S..... 1/7
 Control drive:

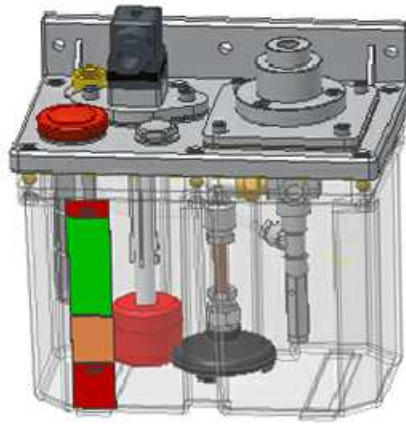


PNE50 / (X) - 1 / (X) (X)

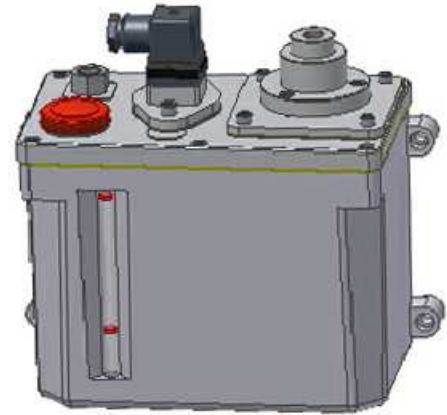
Tank capacity	Flow rate cm ³ /pulse	Level switch
(A) 2 Liters	(5) 10	(0) Without level (5) Minimum level



Aluminium tank
0,5 - 1,25 liters



Plastic tank 3 liters
-Transparent (SAN)
-Opaque (Nylon)



Aluminium tank 3 liters

Group with HYDRAULIC drive control for OIL

Single line system

Application

As intermittent operation group to feed volumetric dosing meters in single line systems. This includes a hydraulic drive piston pump as well as the necessary valves to control the pressure and relief cycles within the circuit.

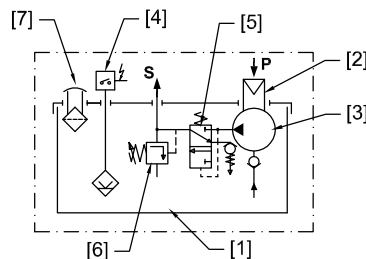
Container capacity and material

-3 liters in plastic (transparent SAN and opaque NYLON)
-aluminium in 0,5 - 1,25 - 3 liters

All containers are suitable for use with mineral and synthetic oils. In the case of plastic containers and for polyglycol-based oils it is recommended the use of NYLON material.

Hydraulic diagram

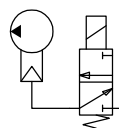
- 1 - Tank
- 2 - Hydraulic control
- 3 - Piston pump
- 4 - Level switch
- 5 - Relief valve
- 6 - Pressure limiting valve
- 7 - Refill plug-filter
- P - Air inlet control
- S - Lubricant outlet



Hydraulic drive system

Time pulse control..... $\geq 30''$
Time pause..... $\geq 10'$
Pressure through P..... max. 25 bar
Ratio P/S..... 1/1

Control drive:
manual, electrical, mechanical...



Technical characteristics

Submerged hydraulic piston pump

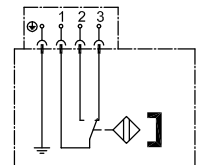
Lubricant mineral or synthetic oil
Viscosity..... $20 \div 3000$ cSt
Flow $7-15-30$ cm³/pulse
Max. pressure 30 bar
Relief..... $0,5 \div 1$ bar
Working temperature..... $-10^{\circ}\text{C} \div +80^{\circ}\text{C}$

Pressure limiting valve (optional, rated to 25 bar)

This is not indispensable. It is necessary when the nominal consumption of the installation is relatively low therefore the piston has a limited route to build up pressure.

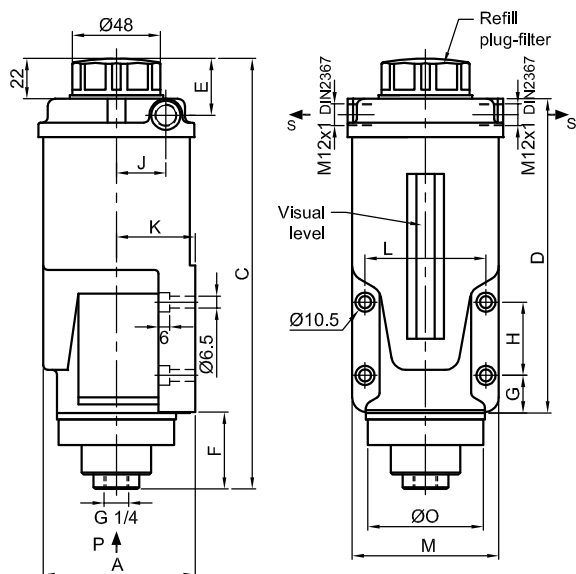
Level switch

Contact..... min. level as per diagram
Connector..... DIN EN 175301-803
Temperature range..... $-20^{\circ}\text{C}..+80^{\circ}\text{C}$
Max. switching voltage..... 230 VUC
Max. switching consumption..... 0,5 A
Max. power..... 30 W



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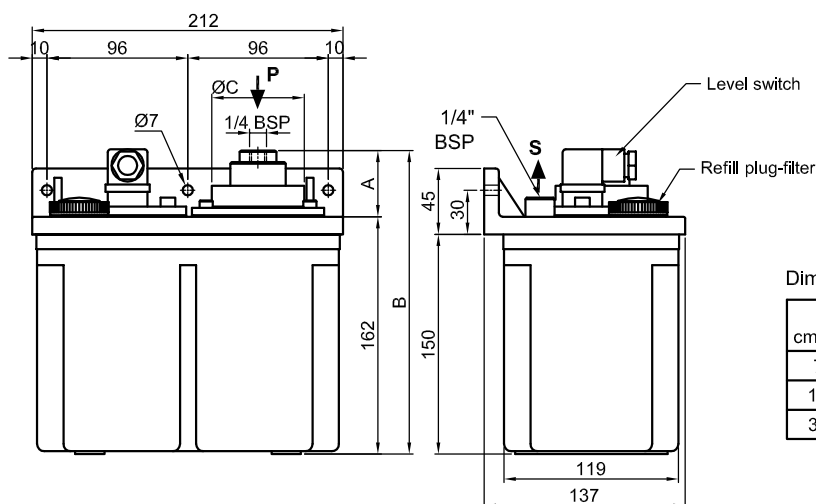
Flow cm ³ /pulse	Press. limit valve (rated to 25bar)	Tank capacity	Level switch
1 7 cm ³	0 Without	1 0,5 Liters aluminium	0 Without level
2 15 cm ³	5 With	5 1,25 Liters aluminium	0 Without level
3 30 cm ³	0 Without 5 With	2 1,25 Liters aluminium	0 Without level
1 7 cm ³	0 Without	3 3 Liters aluminium	0 Without level
2 15 cm ³	5 With	4 3 Liters SAN	1 Minimum level
3 30 cm ³		9 3 Liters NYLON	



0,5 y 1,25 liter tanks
-Aluminium container and cover
-Visual level in full capacity

Dimensions

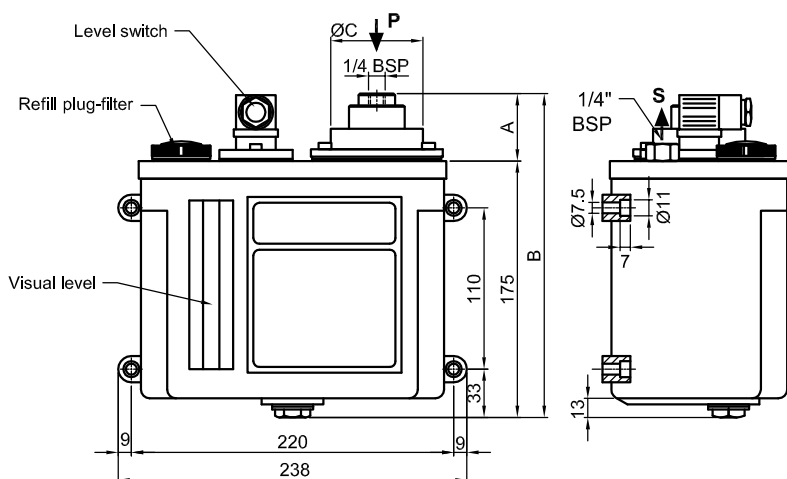
Tank capacity	Flow cm ³ /stroke	A	C	D	E	F	G	H	J	K	L	M	ØO
0,5 L	7-15 cm ³	83	235	173	33	40	20	40	27	43	66	80	63
1,25 L	7-15 cm ³	103	277	215	33	40	22	50	30	53	85	100	63
1,25 L	30 cm ³	103	277	215	33	55	22	50	30	53	85	100	85



3 liter tank
-Optional container in
• SAN (transparent)
• nylon (opaque)
-Nylon cover
-Optional electrical level

Dimensions

Flow cm ³ /stroke	A	B	ØC
7 cm ³	45	207	63
15 cm ³	45	207	63
30 cm ³	57	219	85



3 liter tank
-Aluminium container and cover.
-Visual level in full capacity.
-Optional electrical level.

Dimensions

Flow cm ³ /stroke	A	B	ØC
7 cm ³	45	220	63
15 cm ³	45	220	63
30 cm ³	57	232	85