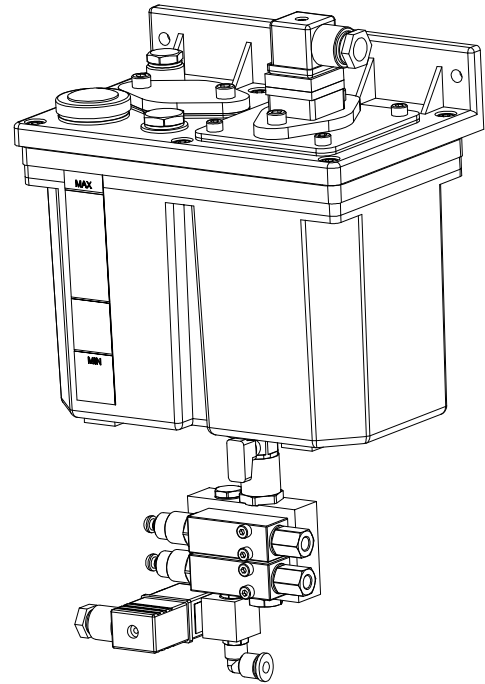
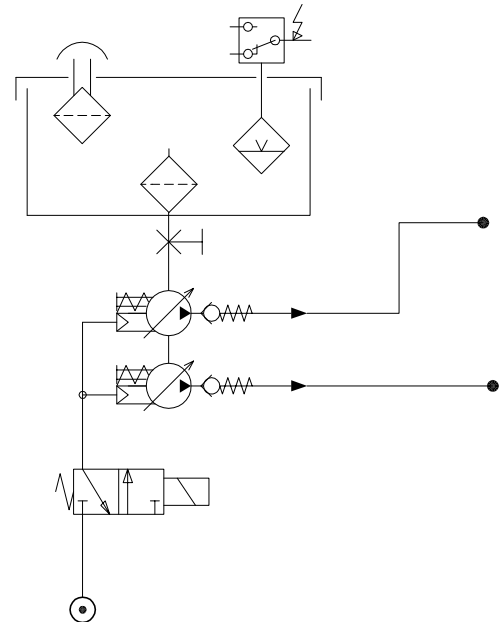
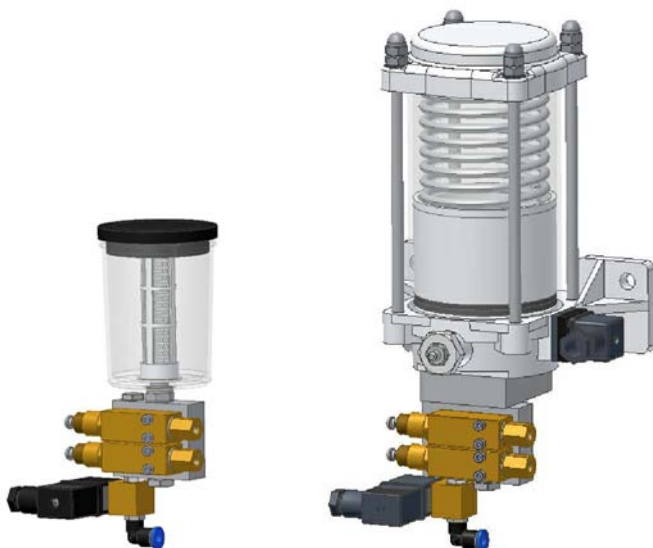
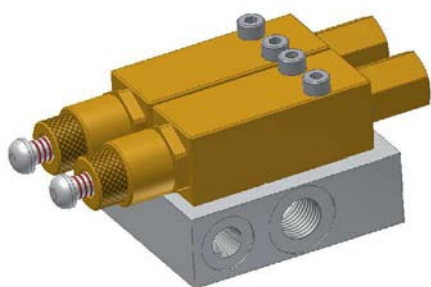


## Pneumatic drive micropump units for small volume dosings of OIL and GREASE

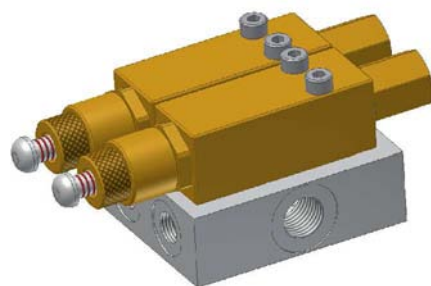
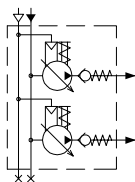


### PN03





**PN03/A-1** 210.300.000  
Joint control  
(Joint driving-air inlet)



**PN03/A-2** 210.350.000  
Single control  
(Single driving-air inlet)

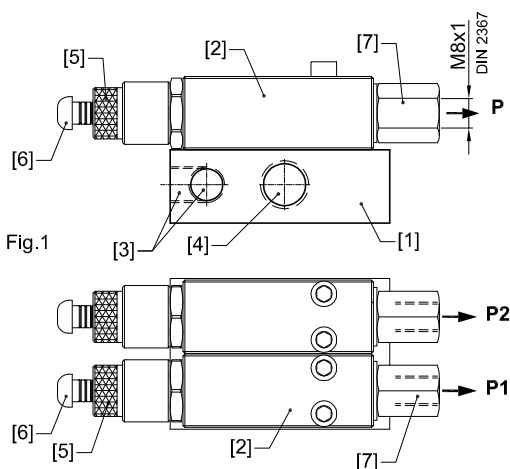
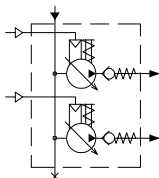
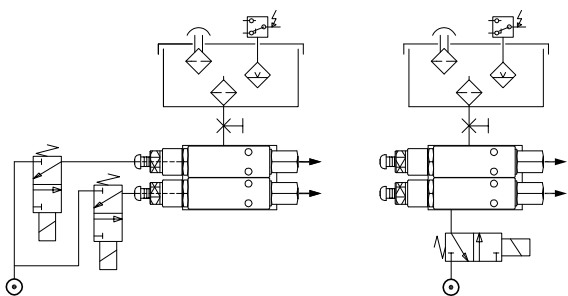
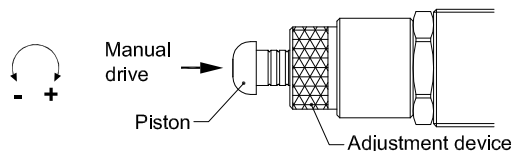


Fig. 1



## Pneumatic drive micropumps PN03/A for OIL and GREASE

210.300.000  
210.350.000

### Direct output from dosing head

- Two control options: joint or single
- Variable flow
- Mounting on base plate
- Single-acting (spring return)
- Optional solenoid valve 3/2
- Optional electrical surveillance

### Application

The micropumps carry measured small quantities of lubricant to the lubrication points which makes them suitable for a wide variety of applications especially for chain lubrication with oil injection.

### Main components

The unit comprises a variable number of dosing heads (1 to 6) mounted on a base plate.

The base plate can be made in two different versions:

- Joint control for all dosing heads.
- Single control for each dosing head.

The choice depends on the consumption need at each outlet.

### Description

- [1] Base plate
- [2] Metering element
- [3] Air input 1/8 BSP (single or joint inlet)
- [4] Oil input 1/4 BSP
- [5] Flow rate regulator
- [6] Manual control and visual control
- [7] Pressure output M8x1

### Características técnicas

Flow rate mm <sup>3</sup> /pulse.....	3 ÷ 35	6 ÷ 60
Maximum pressure.....	20 bar	15 bar
Ratio P/P1.....	1/17	1/10
Air control pressure.....	4 ÷ 8 bar	
Ambient temperature.....	-10°C...+80°C	
Maximum frequency.....	Oil : 3 Hz .....Grease : 1 pulse per 2 seconds	

### Lubricant

Mineral oil without additives up to 400cSt gravity-fed from tank. Higher viscosity or grease up to NLGI 2 preloading the suction (maximum 2bar).

### Flow rate control and regulation

The control is carried out through solenoid valve or pneumatic distributor 3/2. They can also operate through manual control, without air, by pressing strongly on the pushbutton.

The piston stroke determines the amount of lubricant supplied within each cycle. The flow rate is regulated through the adjustment device.

### Mounting position

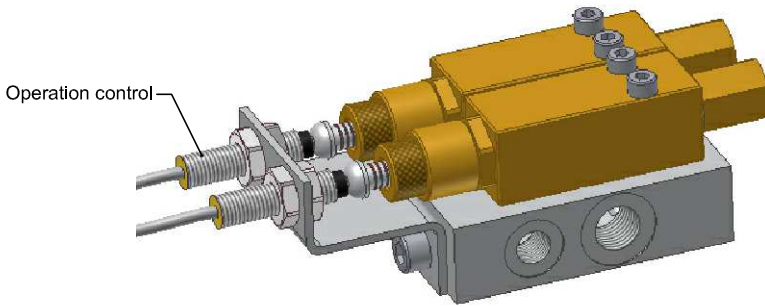
Horizontal or vertical with pressure outlet facing upwards.

### Installation and start up

- Connect the tank to the supply inlet at the base plate [4].
- Connect compressed air through [3] with a solenoid valve 3/2.
- Purge the pumps acting several times on the manual control [6] all along its length.

**Pneumatic drive  
 micropumps for  
 OIL and GREASE**

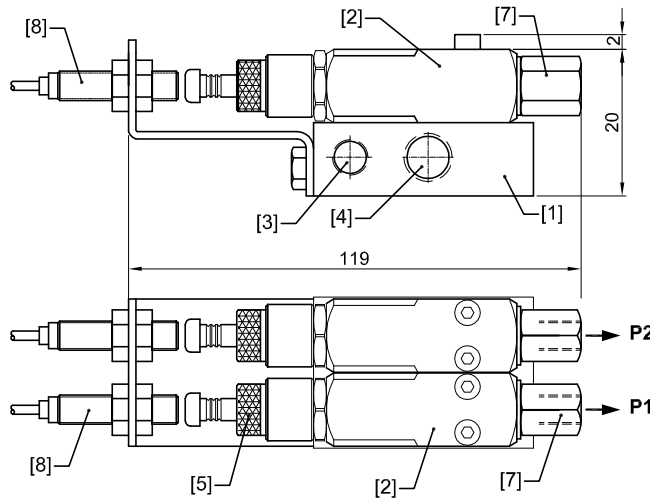
**PN03/A**  
 210.300.000  
 210.350.000



**Operation surveillance**  
 Available only in joint air input units

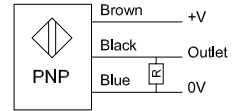
The operation of pistons can be controlled through proximity detectors upon request.  
 The pumps cannot be operated manually with this complement.

- [1] Base plate
- [2] Metering element
- [3] Air input G1/8
- [4] Oil input G1/4
- [5] Flow rate regulator
- [7] Pressure output
- [8] Proximity detector



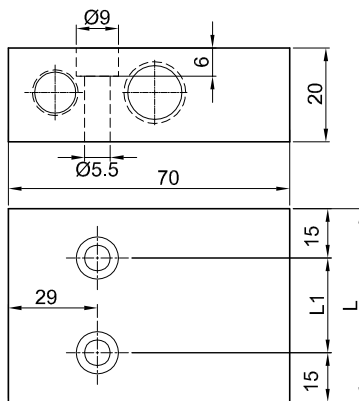
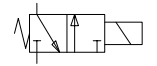
**Inductive sensor characteristics:**

Function..... NO  
 Voltage..... 10 ÷ 30V  
 Maximum load..... 200 mA  
 Protection..... IP67



**Solenoid valve 3/2 characteristics:**

Function..... NC  
 Input pressure..... 7 ÷ 8 bar  
 Ambient temperature..... -10°C...+80°C  
 Standard voltage..... (~) AC: (24-115-230)V-50/60Hz  
 (=) DC: 24V  
 Voltage tolerance..... (~) AC (+10%/-15%)  
 (=) DC (+/-10%)  
 Consumption..... AC 13VA - DC 8W  
 Service type..... 100% ED  
 Protection..... IP65



**Dimensions**

No outlets	L	L1
1	21	
2	51	21
3	72	42
4	93	63
5	114	84
6	135	105

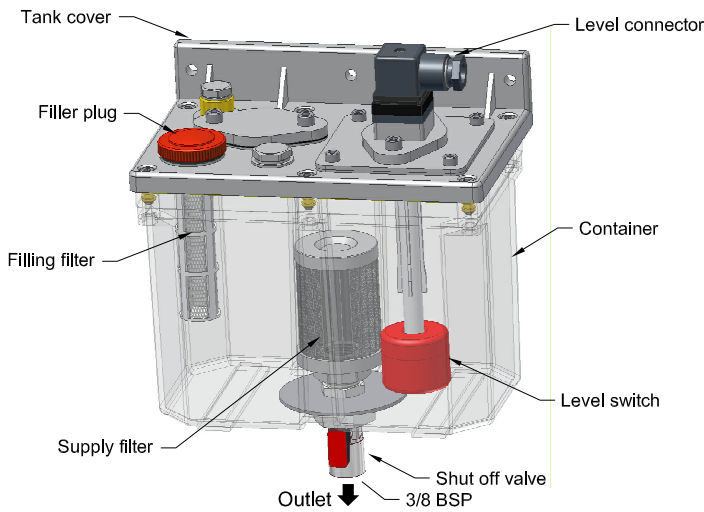
The clamping holes on the base plate can be reached by releasing the dosing heads at the end points (Ø5.5)

**PN03 / A - X / X X - X X - X**

Air input	Metering elements Quantity	mm3/pulse	Dosing meter control	Solenoid valve voltage	Operation surveillance
① Joint	① 1	(A) 3 + 35	① Without	① Sin	① Without
	② 2	(B) 6 ÷ 60	⑥ With Solenoid valve (3/2)	① 24VDC	① With bracket, without detector
	③ 3		② 24VAC		
	④ 4		⑤ 115VAC	② With bracket and detector	
	⑤ 5		⑥ 230VAC		
	⑥ 6		Consultar otros voltajes		
② Single			① Without	① Sin	① Without

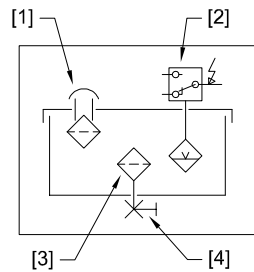
**DN02 / X**

Reference metering element



**Hydraulic diagram**

- [1] Filling cap-filter
- [2] Level switch
- [3] Supply filter
- [4] Shut off valve 3/8 BSP



Tank

**BF2 / X - X / X X**

Tank capacity	Cover material	Container material	Level switch
(J) 0.25 Litres	(1) Plastic	(6) Nylon	(0) Without level
(A) 2 Litres	(2) Metal	(4) Transparent plastic	(0) Without level
(B) 3 Litres	(1) Plastic		(5) Minimum level
(C) 6 Litres		(6) Nylon	(6) Minimum + prealarm
(H) 4.5 Litres		(5) Aluminium	(3) Aluminium
(B) 3 Litres	(2) Metal		
(C) 6 Litres			
(D) 10 Litres			
(E) 16 Litres			

Cover **TF2 / X - X**

Tank **CF2 / X - X / X**

**Liquid tanks**

**BF2**

558.000.000

- Containers made of plastic, aluminium or metal sheet.
- Outlet filter.
- Optional level surveillance.
- For MQL systems and others.

**Application**

Gravity-fed lubricant systems (pneumatic drive plunger pumps...).

**Description**

They incorporate a filter plug for filling and a lower hole for emptying where various accessories are assembled: supply filter, shut-off valve. They also have a visual level with indication for maximum and minimum level. Optionally an electrical level switch can be assembled.

**Container capacity and material**

- 0,25 litres in nylon.
- 2-3-4.5-6 litres in transparent plastic and nylon.
- 3 litres in aluminium.
- 6-10-16 litres in metal

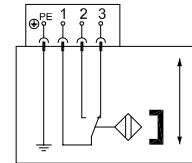
All containers are suitable for use with mineral and synthetic oils. In the case of plastic containers for polyglycol based oils it is recommended the use of NYLON material.

**Level switch**

- Contacts..... See figures
- Connector..... DIN EN 175301-803
- Maximum switching voltage..... 230 VUC
- Maximum switching consumption..... 0.5 A
- Maximum power..... 30 W

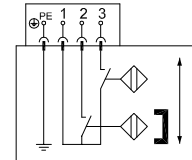
**Minimum level**

- 2 litres : KF02/C-1/110
- 3 litres : KF10/C-1/120
- 4.5 litres : KF01/C-1/215
- 6-10 litres : KF10/C-1/170
- 16 litres : KF01/C-1/250



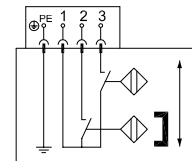
**Minimum + prealarm**

- 2 litres : KF02/H-1/110
- 3 litres : KF01/H-1/120
- 4.5 litres : KF01/H-1/215
- 6-10 litres : KF01/H-1/170
- 16 litres : KF01/H-1/250



**Maximum + minimum**

- 2 litres : KF02/E-1/110/50
- 3 litres : KF01/E-1/120/50
- 4.5 litres : KF01/E-1/215/50
- 6-10 litres : KF01/E-1/170/50
- 16 litres : KF01/E-1/255/50



See page 11 for tank dimensions.

Metal tanks with other capacities and shapes are available if required.

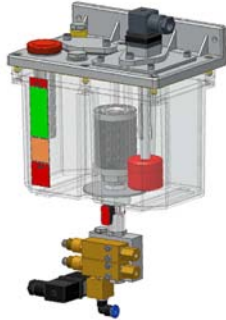
Please contact us for further details.

## Compact dosing units

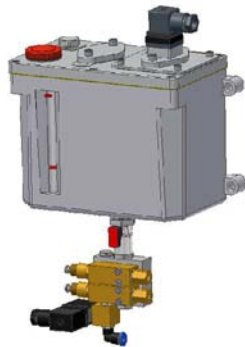
## PN03/B



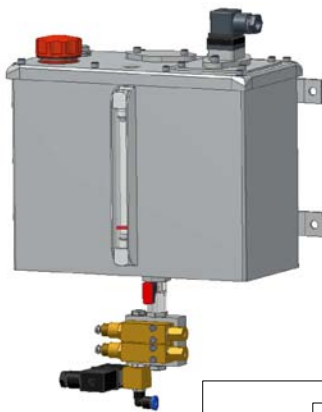
Nylon tank 0,25L



Nylon and polyamide tanks  
2L-3L-4L-6L

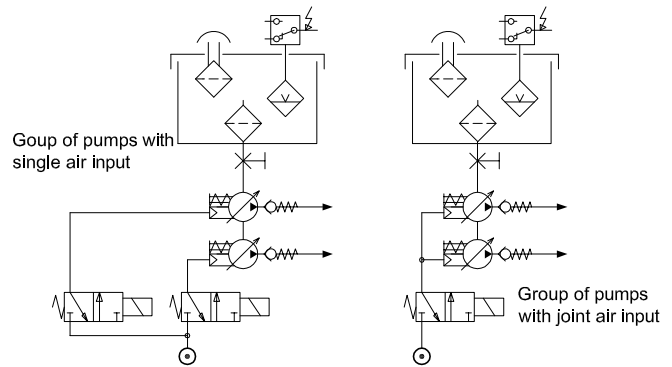


Aluminium tank  
3L



Metal tanks  
6L-10L-16L  
25L-50L

- Tanks in different materials and capacities.
- Variable oil flow rate per outlet.
- Optional solenoid valve.
- Optional electrical surveillance for units with joint air input.



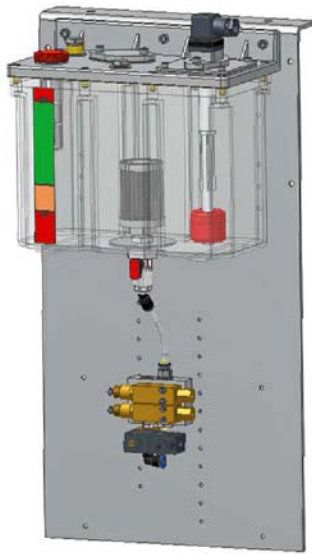
### Technical characteristics

Flow rate mm <sup>3</sup> /pulse.....	3 ÷ 35	6 ÷ 60
Maximum pressure.....	20 bar	15 bar
Ratio P/P1.....	1/17	1/10
Air pressure control.....	4 ÷ 8 bar	
Ambient temperature.....	-10°C...+80°C	
Maximum frequency.....	3 Hz	
Air consumption per outlet.....	50 NI/min	
Lubricant maximum viscosity.....	400 cSt	

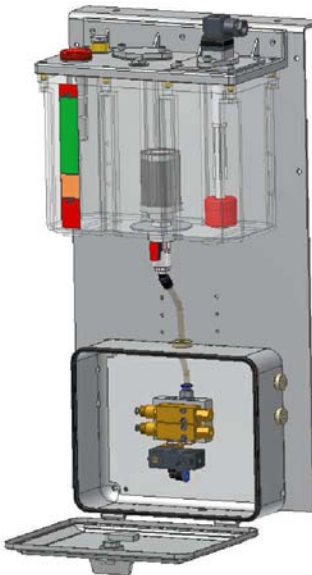
- It is recommended the use of biodegradable lubricants particularly suited to MQL applications.
- Characteristics of components: see pages 2-3-4
- Magnetic bracket available to clamp 0,25L tank referenc HF03/A-1
- **A solenoid valve for each dosing head is required in units with single air inlet.**

PN03/B-1/ X X X - X X X - X - X

Tank capacity	Tank material	Electrical level	Air input	No. outlets	Flow rate mm <sup>3</sup> /pulse	Dosing meter control	Operation control
(J) 0,25L	(6) Nylon	(0) Without	(1) Joint (2) Single	(1) (2) (3) (4) (5) (6)	(A) 3 + 35 (B) 6 + 60	(0) Without (1) Solenoid valve 24VDC (2) Solenoid valve 24VAC (5) Solenoid valve 110VAC (6) Solenoid valve 220VAC  Please contact us for other voltages	(0) Without (1) With bracket, without detector (2) With bracket and detector  Only available in units with joint air input
(A) 2 L (B) 3 L (H) 4 L (C) 6 L	(4) Transp. plastic (6) Nylon	(0) Without (5) Minimum (6) Minimum + maximum					
(B) 3 L (C) 6 L (D) 10 L (E) 16 L	(3) Aluminium (5) Metal	(7) Minimum + prealarm					



**PN03/C**  
Unit assembled on bracket plate

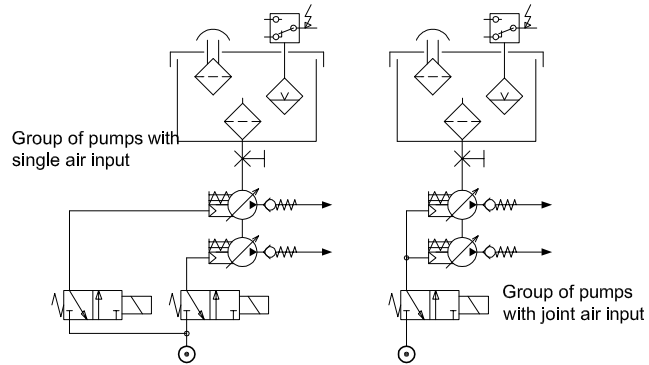


**PN03/D**  
Unit assembled on bracket plate. Pumps protected by cabinet (IP65).

**Compact dosing units**

**PN03/C  
PN03/D**

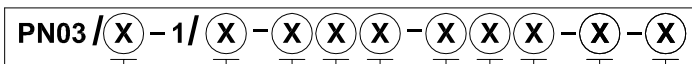
- Units mounted on bracket plate.
- Tanks in different materials and capacities.
- No. outlets:  
PN03/C.... maximum 6 outlets  
PN03/D.... maximum 4 outlets
- Variable oil flow rate per outlet.
- Optional solenoid valve.
- Optional electrical surveillance for units with joint air input.



**Technical characteristics**

Flow rate mm3/pulse.....	3 + 35	6 + 60
Maximum pressure.....	20 bar	15 bar
Ratio P/P1.....	1/17	1/10
Air pressure control.....	4 + 8 bar	
Ambient temperature.....	-10°C...+80°C	
Maximum frequency.....	3 Hz	
Air consumption per outlet.....	50 NI/min	
Lubricant maximum viscosity.....	400 cSt	

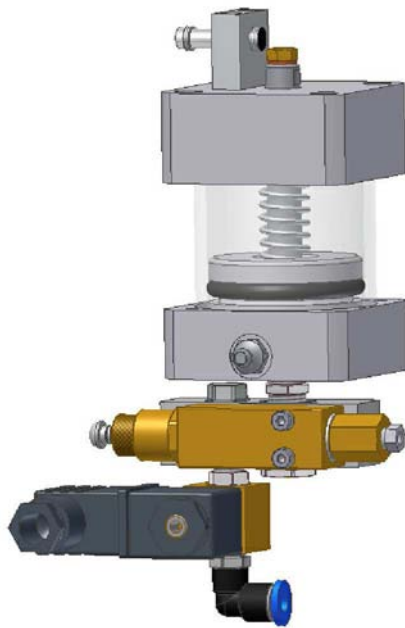
- It is recommended the use of biodegradable lubricants particularly suited to MQL applications
- Characteristics of components: see pages 2-3-4
- **It is required a solenoid valve per dosing head in units with single air input.**



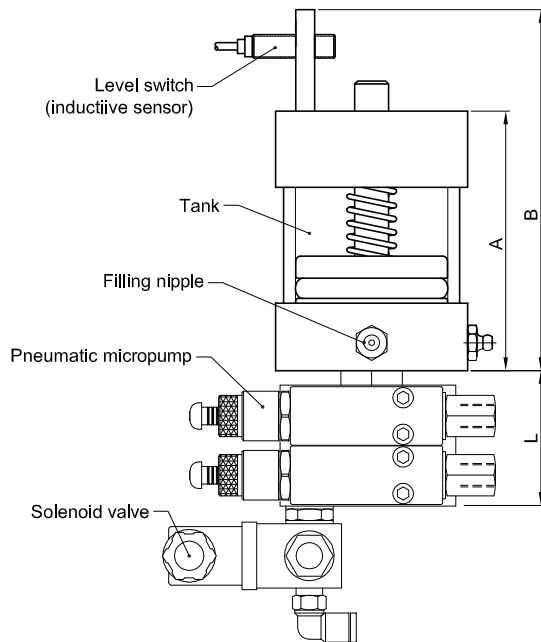
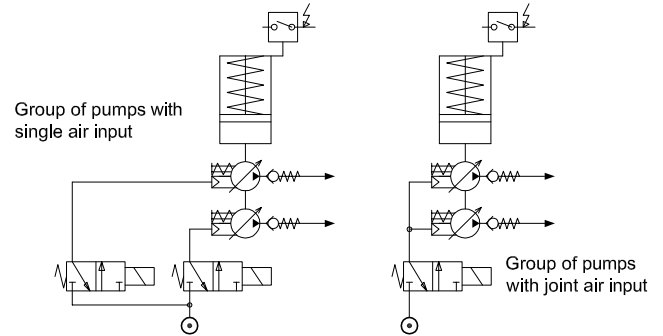
Model	Sheet bracket	Tank capacity	Tank material	Electrical level	Air input	No. outlets	Flow rate mm3/pulse	Dosing meter control	Operation control
(C) PN02/C Maximum 6 outlets  (D) PN02/D Maximum 4 outlets	(1) "L"  (2) Smooth	(A) 2 L	(4) Transp. plastic  (6) Nylon	(0) Without  (5) Minimum  (6) Minimum + maximum  (7) Minimum + prealarm	(1) Joint  (2) Single	(1)  (2)  (3)  (4)  (5)  (6)	(A) 3 + 35  (B) 6 + 60	(0) Without  (1) Solenoid valve 24VDC  (2) Solenoid valve 24VAC  (5) Solenoid valve 110VAC  (6) Solenoid valve 220VAC  Please contact us for other voltages	(0) Without  (1) With bracket, without detector  (2) With bracket and detector  Only available in units with joint air input
		(B) 3 L							
		(C) 6 L	(5) Metal						
		(D) 10 L							
		(E) 16 L							

## Grease dosing compact units

PN03/B



- Variable flow rate
- Optional solenoid valve 3/2
- Optional electrical surveillance
- Mounted with tank
- Optional electrical level (inductive sensor)

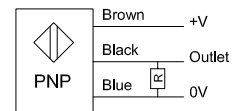


### Technical characteristics

Flow rate mm <sup>3</sup> /pulse.....	3 ÷ 35	6 ÷ 60
Maximum pressure.....	20 bar	15 bar
Ratio P/P1.....	1/17	1/10
Air pressure control.....	4 ÷ 8 bar	
Ambient temperature.....	-10°C...+80°C	
Maximum frequency.....	3 Hz	
Air consumption per outlet.....	50 NI/min	
Lubricant.....	grease up to NLGI 2	

### Level switch characteristics (inductive sensor):

Function.....	NO
Voltage.....	10 ÷ 30V
Maximum load... ..	200 mA
Protection.....	IP67



- Characteristics of components: see pages 2-3-4
- **It is required a solenoid valve per dosing meter in units with single air input.**

### Dimensions

N° dosing metr.	1	2	3	4	5	6
L	26	56	77	98	119	140

Tank	A	B
70cm <sup>3</sup>	95	122
160cm <sup>3</sup>	143	168

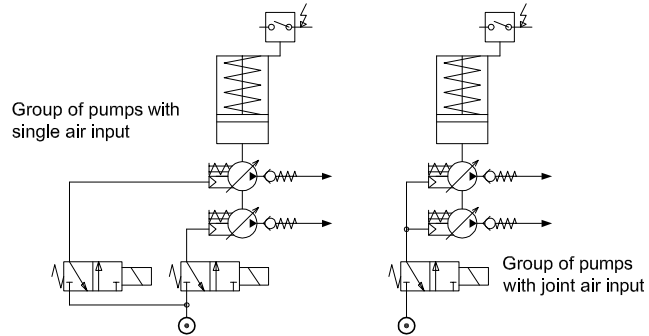
PN03/B-1/ X X X - X X X - X - X

Tank capacity	Tank material	Electrical level	Air input	No. outlets	Flow rate mm <sup>3</sup> /pulse	Metering control	Operation control
(K) 70cm <sup>3</sup> (L) 160cm <sup>3</sup>	(4) Transp. plastic	(0) Without (5) Minimum	(1) Joint (2) Single	(1) (2) (3) (4) (5) (6)	(A) 3 ÷ 35 (B) 6 ÷ 60	(0) Without (1) Solenoid valve 24VDC (2) Solenoid valve 24VAC (5) Solenoid valve 110VAC (6) Solenoid valve 220VAC Please contact us for other voltages	(0) Without (1) With bracket, without detector (2) With bracket and detector Available only for units with joint air input

## Grease dosing compact unit

PN03/B

- Variable flow rate
- Optional solenoid valve 3/2
- Optional individual surveillance
- Mounted with tank
- Optional electrical level (inductive sensor)

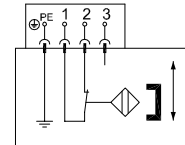


### Technical characteristics

Flow rate mm <sup>3</sup> /pulse.....	3 ÷ 35	6 ÷ 60
Maximum pressure.....	20 bar	15 bar
Ratio P/P1.....	1/17	1/10
Air pressure control.....	4 ÷ 8 bar	
Ambient temperature.....	-10°C...+80°C	
Maximum frequency.....	3 Hz	
Air consumption per outlet.....	50 NI/min	
Lubricant.....	grease up to NLGI 2	

### Level switch characteristics:

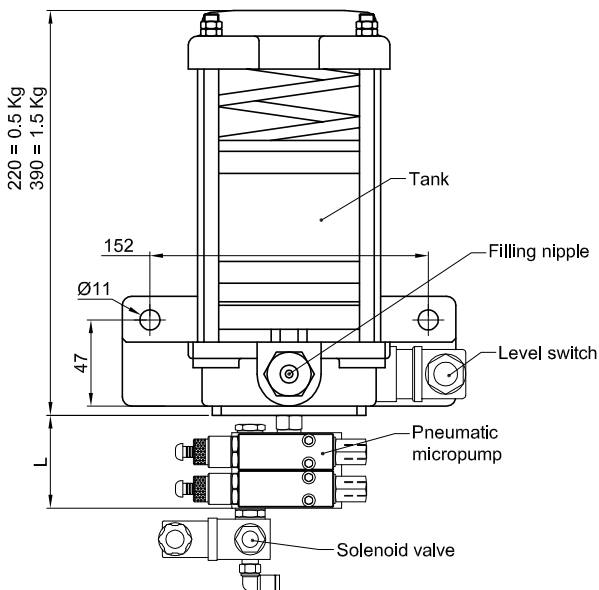
- Contact..... see figure
- Connector..... DIN EN 175301-803
- Maximum switching voltage..... 230 VUC
- Maximum switching consumption..... 0.5 A
- Maximum power..... 30 W



- Characteristics of components: pages 2-3-4.
- **It is required a solenoid valve per dosing meter in units with single air input.**

### Dimensions

No. dosing meters	1	2	3	4	5	6
L	26	56	77	98	119	140



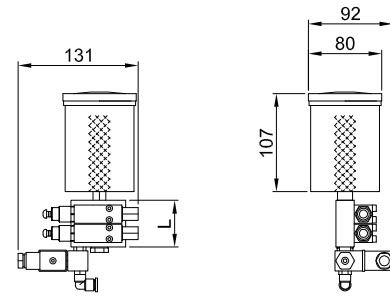
PN03/B-1/ X X X - X X X - X - X

Tank capacity	Tank material	Electrical level	Air input	No. outlets	Flow rate mm <sup>3</sup> /pulse	Dosing meter control	Operation control
(M) 0.5 L (N) 1.5 L	(4) Transp. plastic	(0) Without (5) Minimum	(1) Joint (2) Single	(1) (2) (3) (4) (5) (6)	(A) 3 ÷ 35 (B) 6 ÷ 60	(0) Without (1) Solenoid valve 24VDC (2) Solenoid valve 24VAC (5) Solenoid valve 110VAC (6) Solenoid valve 220VAC Please contact us for other voltages	(0) Without (1) With bracket, without detector (2) With bracket and detector Available only for units with joint air input

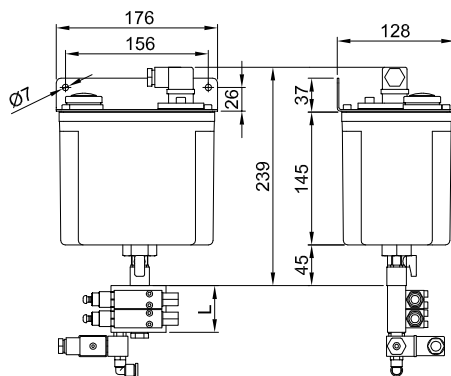


Dimensions:

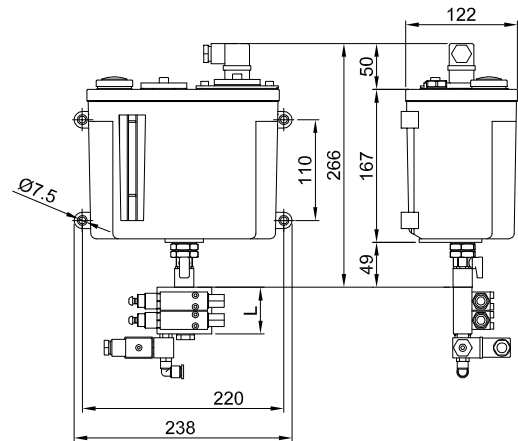
No. pumps	1	2	3	4	5	6
L	21	51	72	93	114	135



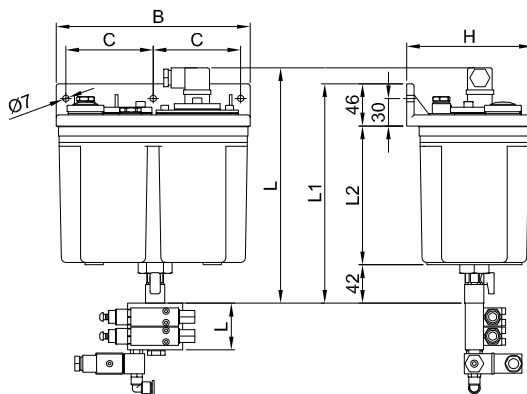
0.25 l nylon tank



2 l plastic tank

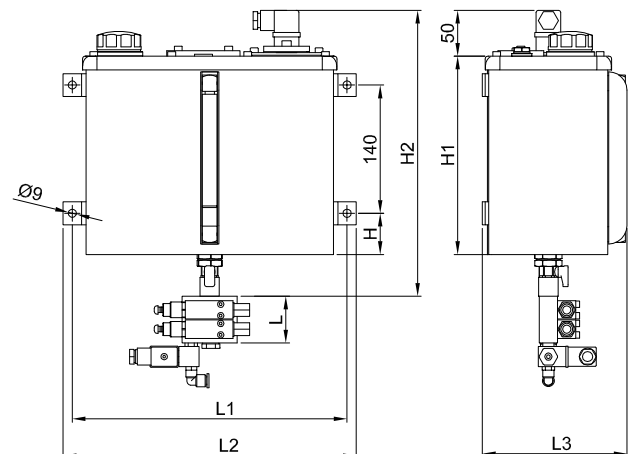


3 l aluminium tank



Plastic tanks 3-4.5-6 l

Capacity	B	C	H	L	L1	L2
3 L	212	96	137	252	239	148
4.5 L	212	96	137	354	341	250
6 L	275	122	145	301	288	200

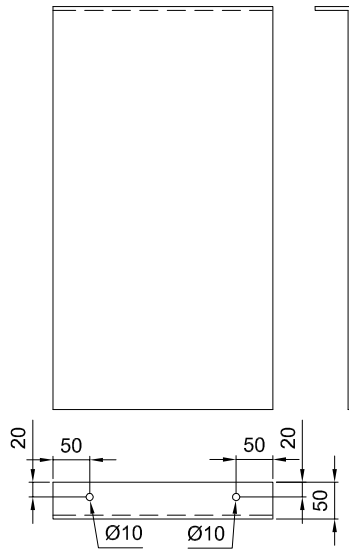


Metal tanks 6-10-16 l

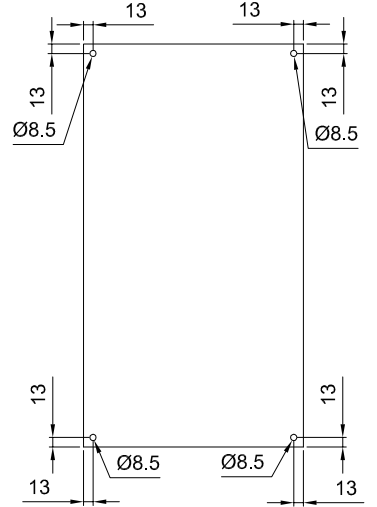
Capacity	L1	L2	L3	H	H1	H2
6 L	300	320	158	45	217	321
10 L	405	425	183	45	217	321
16 L	405	425	183	130	301	405

Bracket plate  
 clamping  
 dimensions:

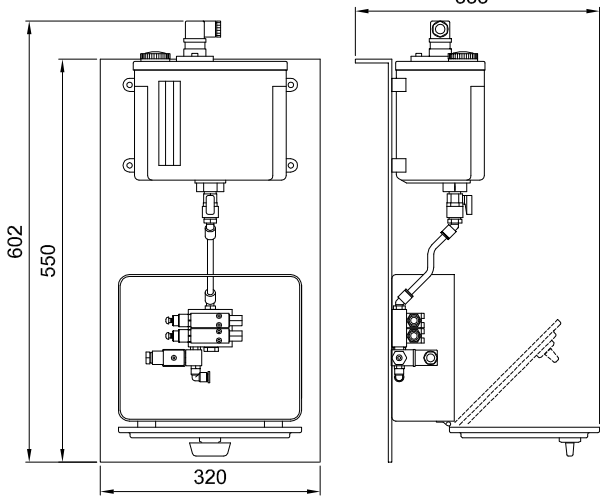
L shaped bracket plate



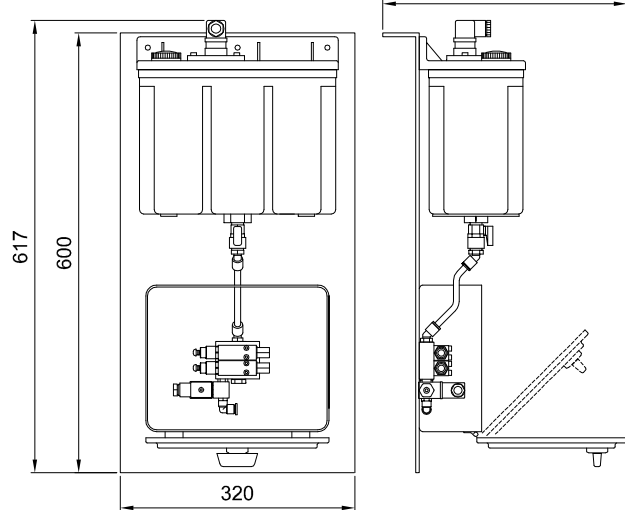
Smooth bracket plate



2 & 3 l tanks



4 & 6 l tanks



10 l tank

