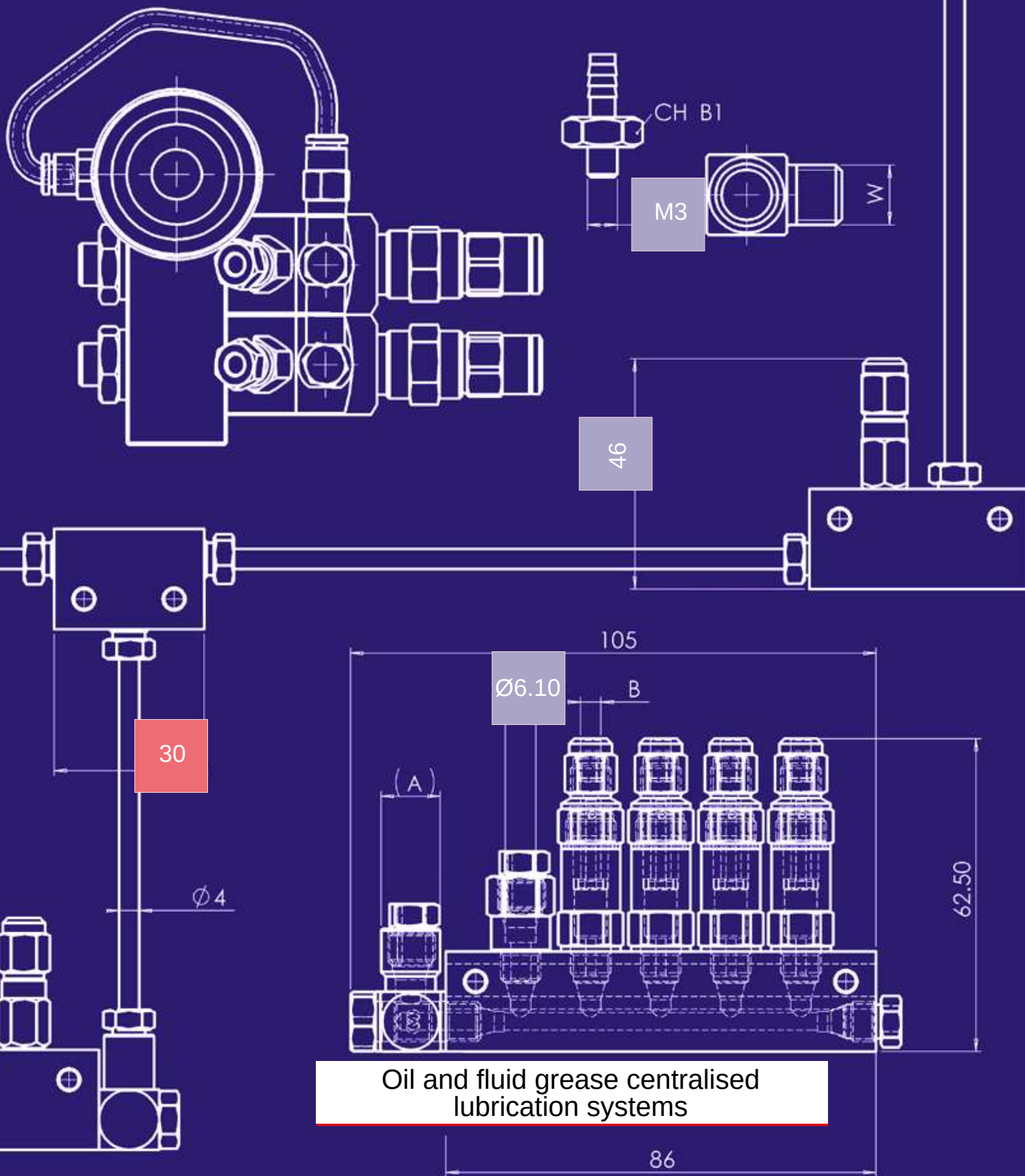
AMETA®
Zeo Asioli
IMPIANTI DI LUBRIFICAZIONE

TECHNICAL CATALOGUE



Oil and fluid grease centralised lubrication systems

Index

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This manual describes the **AZETA** line of products and we would firstly like to provide you with a short company profile.

AZETA came into being in 1972 as a manufacturer of precision turned mechanical parts and finished components for hydraulic and pneumatic applications, drawing on the experience accumulated since 1967 by its founder Zeo Asioli.
In 1976 production began of components for truck lubrication.
In 1986 took over Gi-Erre Impianti di Lubrificazione Autotrazione.
In 1994 began production of an innovative line of low and medium pressure centralised lubrication systems at its new premises in Fosdondo di Correggio (RE).
The current range comprises systems with manual, electric, pneumatic and gear pumps, ideal for satisfying a full variety of lubrication flow rate and pressure requirements.
"AZETA AIR MIX", a newly-developed product for minimal air-oil lubrication of bearings and guides, enjoyed a successful introduction at the BIMU '98 trade fair.
Great attention to quality of components and assembly, a typically Italian design, extremely simple conception, these are the strong points of the **AZETA** range.
Every component is produced directly on CNC machines of the latest generation, thus guaranteeing absolute precision, safety and quality.
AZETA LUBRICATION SYSTEMS is a young, dinamic company that aims at maintaining its growth and position in a market whose technical development continues to know no bounds.
AZETA is also service and technical advice prior to purchase; in fact, the correct choice of lubrication system and accessories is the best guarantee of success for both ourselves and the customer.

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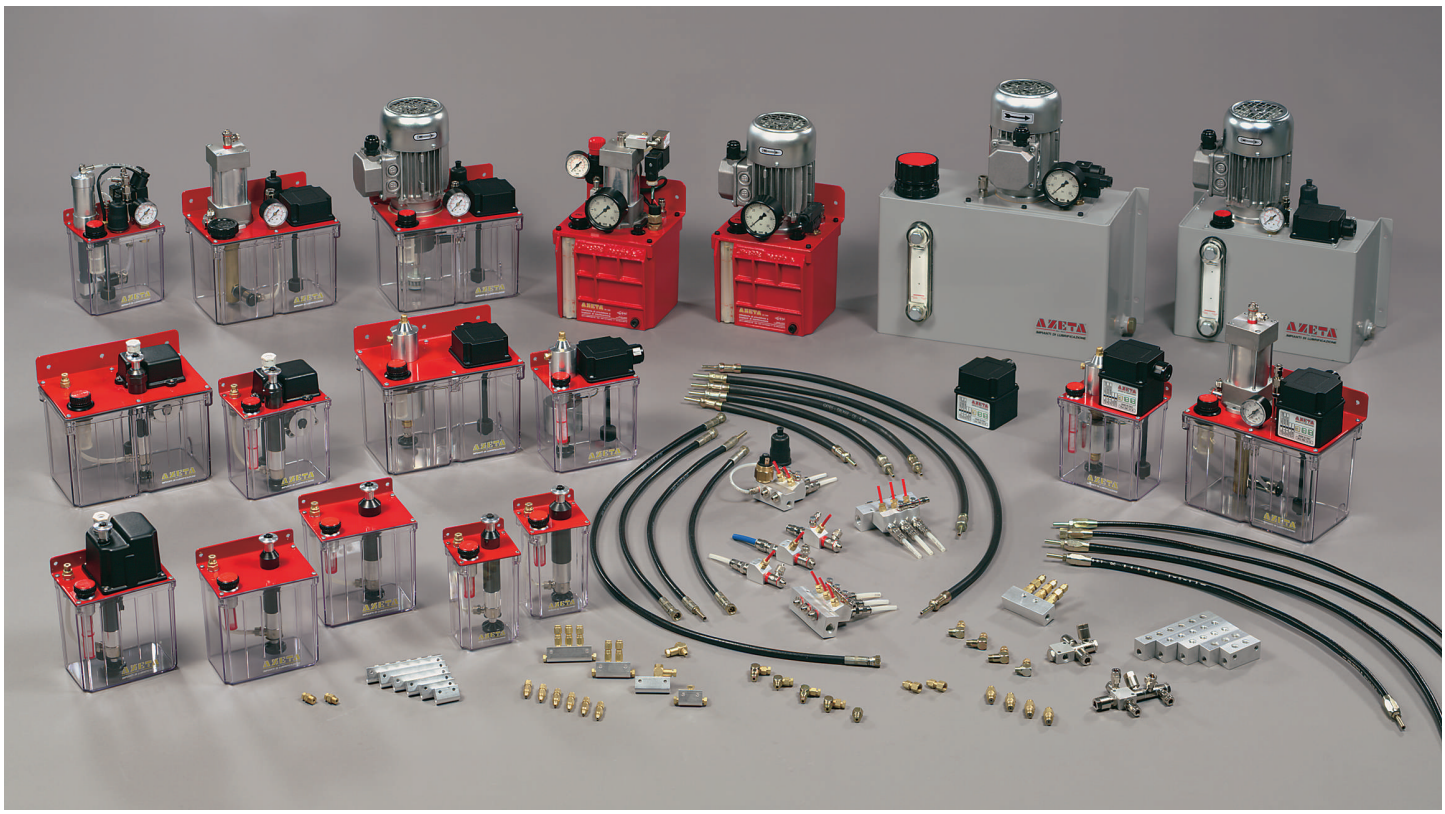
PRODUCT RANGE



LUBRICATION

Lubrication is one of the most important aspects of tribology (from the Greek tribos = rubbing), defined as "the science and technique of surfaces working between themselves with relative motion."

Lubricants are substances in different physical states and of different nature, from hydrocarbons to inorganic substances and they can act under different conditions by the sliding of fluid, semisolid or solid layers to cause the formation of thin surface films for physical adhesion or chemical reaction between additives contained in the lubricant and the surfaces to lubricate.

The reduction in the coefficient of friction, the decrease in the lubricant working temperature, the limitation on the noise generated by the equipment and the capacity to withstand high loads are elements that can underline these phenomena.

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Classifications

LOW PRESSURE LUBRICATION

These systems operate with working pressure of 2-3 bar and resistive dosing valves.

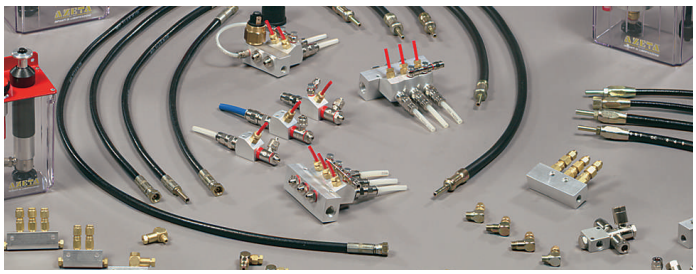
the lubricant to use is oil with viscosity max 158 cSt at 40°C

MEDIUM PRESSURE LUBRICATION

These systems operate with working pressure of 20-40 bar with volumetric dosing valves.

the lubricant to use is oil or fluid grease max grade NLGI 00.

AIR-OIL MINIMAL LUBRICATION AZETA AIR-MIX



A minimal lubrication system operating on ultra low oil consumption and compressed air is used as a carrier.

Metered oil, suitably mixed with air, is conveyed (in non atomised state) to the lubrication point.

AZETA AIR MIX is especially recommended for lubrication of high speed rolling contact bearings on spindles, electro-spindles and of rotating bushes of lathes with sliding headstock.

For linear guides, the continuous flow keeps clean the tracks and races of balls or slides, as well as the contact races of rolling contact bearings.

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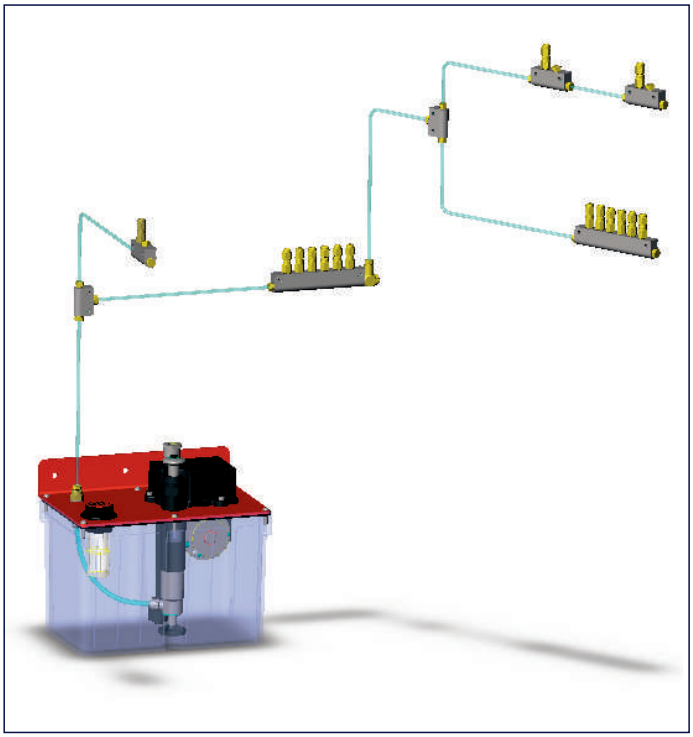
Low Pressure Lubrication



Lubrication is defined as low pressure when an operating pressure of 2-3 bar is sufficient to allow oil to reach the moving surfaces.
It is suitable for lubricating small and medium sized machines and is obtained with simple, compact, economic systems.

Low pressure lubrication is particularly recommended for high precision machine tools (such as grinding and boring machines, lathes, etc.) in which lubrication must not alter the stability of the machine's slides and screws.

The moving parts must be suitably prepared (see paragraph with diagrams and applications).

The **AZETA** line includes manual and electric-cyclic volumetric pumps as well as vibration pumps.
It is necessary to use resistive dosing valves as well as new and clean oil.

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CRITERIA OF CHOICE

When choosing the components necessary to make the lubrication system most suited to one's needs, it is wise to observe a few rules.

Firstly, it is important to define the total number of mechanical parts to lubricate and the necessary quantity of lubricant for each point. This quantity is calculated by multiplying the surface to lubricate by the required thickness of oil.

Afterwards it will be necessary to check the distances of the various parts to lubricate, in order to make a well-balanced lubrication line in the distances of the various sets of dosing valves from the pump.

Before choosing the type of pump it is necessary to check the sum of the relative flow rates of all the dosing valves and to compare it with the relative flow rate of the pump and the number of cycles/hour to be made. If the sum of the relative flow rates of the dosing valves is equal to the relative flow rate of the volumetric pump, delivery will take three minutes.

This time can be modified and customized with the following formula: *considering a pump regulated on 3 cm^3 for operating:*

$$\frac{Cm^3 = 3 \times 1000 = 3000\ mm^3}{33\ (33\ mm^3 = volume\ of\ the\ drop)} = 91\ \text{drops per minute}$$

91: (total relative flow rate of the dosing valves) = (delivery time in minutes)

$$\frac{91\ \text{(drops per minute)}}{60\ \text{(total relative flow rate of the dosing valves)}} = 1{,}5\ \text{delivery time in minutes}$$

RELATIVE FLOW RATE

It corresponds to the number of drops of oil delivered per minute. It is used to determine the necessary delivery time to obtain the required quantity of oil.
The greater the sum of the relative flow rates of the dosing valves, the shorter the pump delivery time.

TECHNICAL NOTE

When choosing a pump for continuous operation it is necessary to use, as a reference, the relative flow rate of the dosing valves and multiply it by the time the pump remains under pressure to obtain the necessary quantity of lubricant.
If there are also short bursts of operation, the sum of the active intermittences (work) will be the total time of lubrication. You must not take account of the passive intermittences (pause).

LIST OF PRODUCTS

- Volumetric manual pumps
- Volumetric electric-cyclic pumps
- Lubrication magnetic vibration pumps
- Resistive dosing valves
- Distributors and connections

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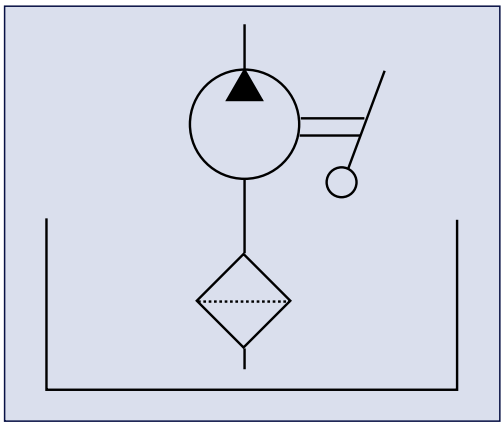
Lubrication Pumps PM 13 and PM 26

VOLUMETRIC MANUAL

HYDRAULIC DIAGRAM



DESCRIPTION

Volumetric manual pump; each activation tallies with the pre-set quantity of lubricant.

The lubricant is delivered by a plunger piston driven by a mechanical spring, suitably sized and preloaded.

The volumetric flow rate is adjustable by a Benzing at the end of the plunger piston (see **Part.1).**

OPERATION

Operation takes place by using the ball grip to manually lift the plunger piston that in its turn fills the volumetric chamber with oil.
On releasing the lifting ball grip the piston is freed and begins its descent pushed down by the compression spring.

The piston completes its travel to rest with the Benzing on the ball grip, delivering the volume of oil contained in the compression chamber.
When working properly, the plunger piston down speed is constant. This speed varies according to the sum of the installed dosing valves.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws. **Using resistive dosing valves.**

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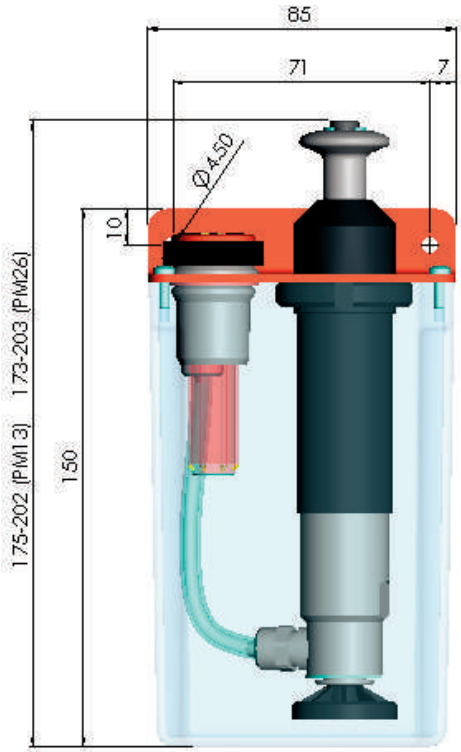
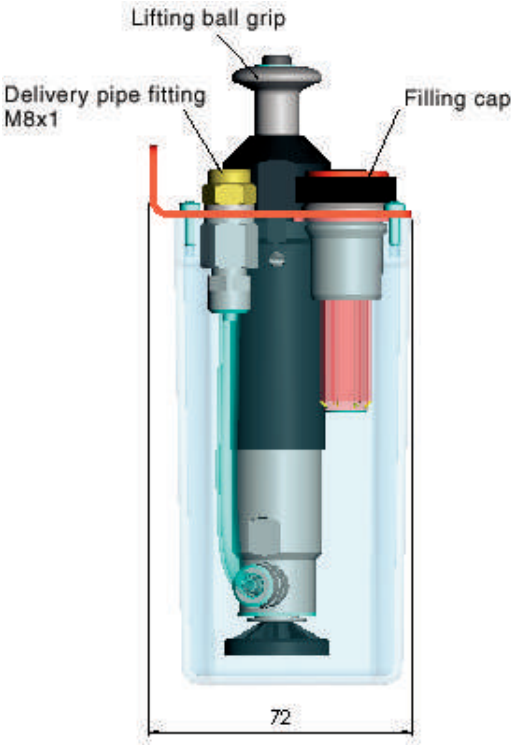
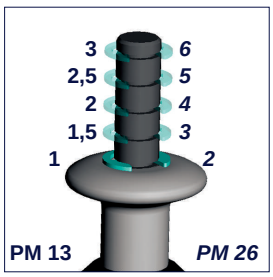




FLOW RATE REGULATION (PART.1)



TECHNICAL DATA:

Lubricant:	oil viscosity max 158 cSt at 40° C
Tank:	transparent resin
Tank capacity:	0,6 liters
Adjustable flow rate:	from 1 to 3 cm^3 (**PM 13**)
	from 2 to 6 cm^3 (**PM 26**)
Flow rate regulation:	0,5 cm^3 per notch (**PM 13**)
	1 cm^3 per notch (**PM 26**)
Pressure:	1,7 - 2,2 bar (**PM 13**)
	2,2 - 3,0 bar (**PM 26**)
Suction filter:	micro perforated inox sheet
Filling filter:	nylon small-basket
Pipe fitting:	for Ø 4 mm main line
Relative flow rate:	30 (**PM 13**); 60 (**PM 26**)
Sizes (mm):	85 x 72 x 175-202h (**PM 13**)
	85 x 72 x 173-203h (**PM 26**)

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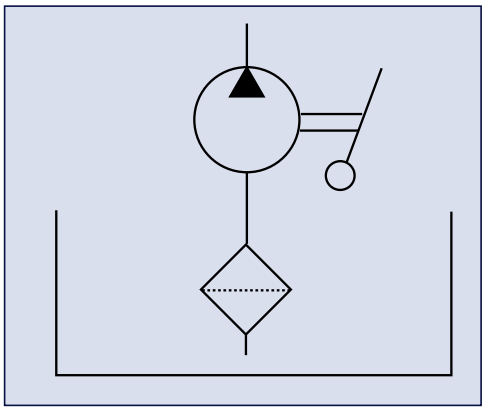
Lubrication Pumps PM 13.L and PM 26.L

VOLUMETRIC MANUAL

HYDRAULIC DIAGRAM



DESCRIPTION

Volumetric manual pump; each activation tallies with the pre-set quantity of lubricant.

The lubricant is delivered by a plunger piston driven by a mechanical spring, suitably sized and preloaded.

The volumetric flow rate is adjustable by a Benzing at the end of the plunger piston (see **Part.1).**

OPERATION

Operation takes place by using the ball grip to manually lift the plunger piston that in its turn fills the volumetric chamber with oil.
On releasing the lifting ball grip the piston is freed and begins its descent pushed down by the compression spring.

The piston completes its travel to rest with the Benzing on the ball grip, delivering the volume of oil contained in the compression chamber.
When working properly, the plunger piston down speed is constant. This speed varies according to the sum of the installed dosing valves.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws.
Using resistive dosing valves.

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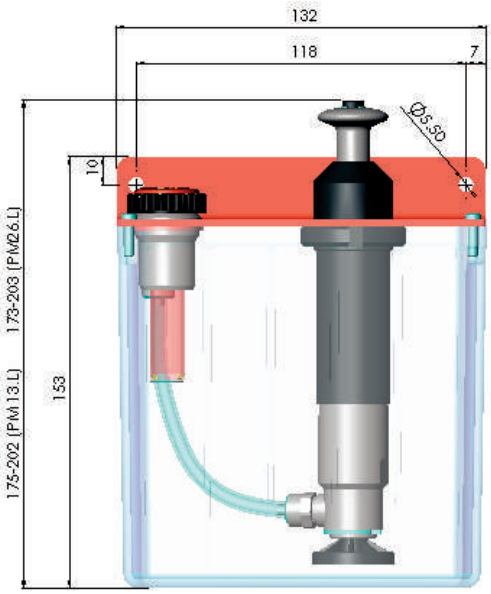
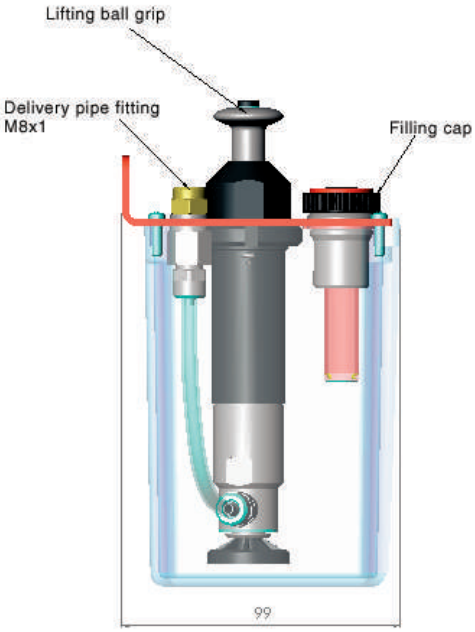
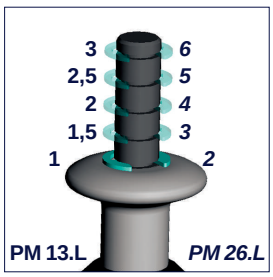
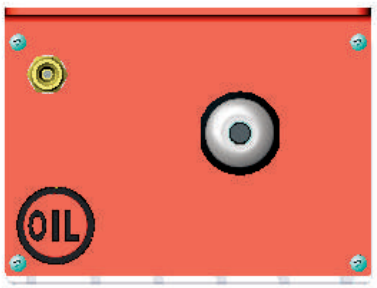




FLOW RATE REGULATION (PART.1)





TECHNICAL DATA:

Lubricant:	oil viscosity max 158 cSt at 40° C
Tank:	transparent resin
Tank capacity:	1,2 liters
Adjustable flow rate:	from 1 to 3 cm^3 (**PM 13.L**)
	from 2 to 6 cm^3 (**PM 26.L**)
Flow rate regulation:	0,5 cm^3 per notch (**PM 13.L**)
	1 cm^3 per notch (**PM 26.L**)
Pressure:	1,7 - 2,2 bar (**PM 13.L**)
	2,2 - 3,0 bar (**PM 26.L**)
Suction filter:	micro perforated inox sheet
Filling filter:	nylon small-basket
Pipe fitting:	for Ø 4 mm main line
Relative flow rate:	30 (**PM 13.L**); 60 (**PM 26.L**)
Sizes (mm):	132 x 99 x 175-202h (**PM 13.L**)
	132 x 99 x 173-203h (**PM 26.L**)

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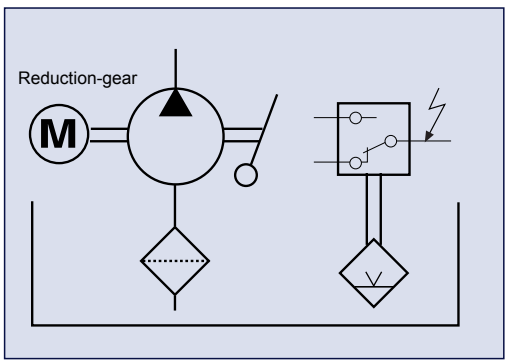
Lubrication Pump PE 13

VOLUMETRIC ELECTRIC-CYCLIC

HYDRAULIC DIAGRAM



DESCRIPTION

Electric-cyclic automatic (with reduction-gear) and manual (with ball grip) volumetric pump; each activation tallies with the pre-set quantity of lubricant. The lubricant is delivered by a plunger piston driven by a mechanical spring, suitably sized and preloaded.

The volumetric flow rate is adjustable by a Benzing at the end of the plunger piston (see **Part.1).**

OPERATION

On automatic operation the reduction-gear, during its continuous rotation and with the connecting rod carrier disc and the rotor, lifts the plunger piston that in its turn fills the volumetric chamber with oil.
When the piston reaches its greatest height, the rotor with the driving pin is at the top point of release, thereby freeing the piston that begins its descent pushed down by the compression spring.
The piston completes its travel to rest with the Benzing on the ball grip, delivering the volume of oil contained in the compression chamber.
Lifting the ball grip manually provides additional lubrication or for testing.

When working properly, the plunger piston down speed is constant. This speed varies according to the sum of the installed dosing valves.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws. **Using resistive dosing valves.**

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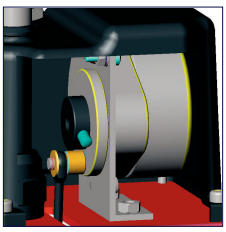
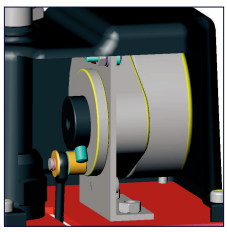
Technical Features

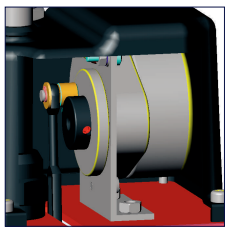
Lubrication Pump PE 13 *volumetric electric-cyclic*



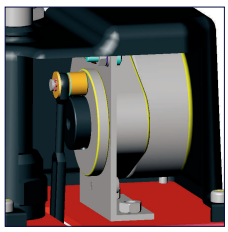
PAUSE



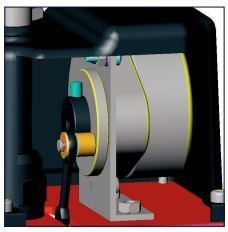
START OF LIFTING



LIFTING



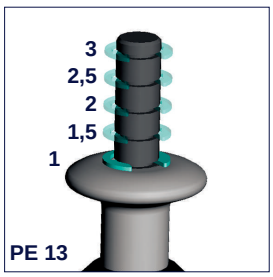
END OF PAUSE
START OF WORK

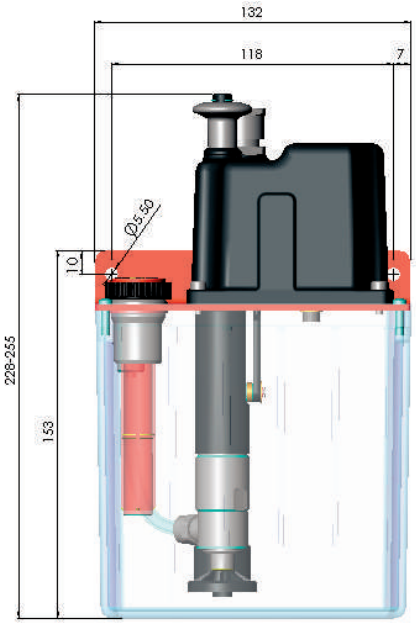


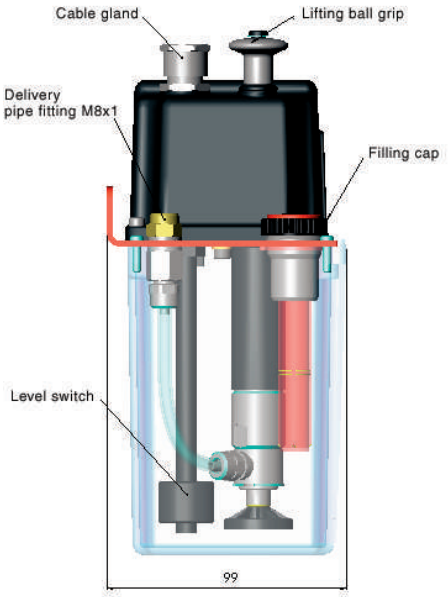
WORK

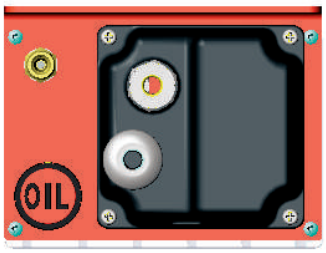
MECHANICAL/CYCLIC TIMING

FLOW RATE REGULATION (PART.1)









TECHNICAL DATA:

Lubricant:	oil viscosity max 158 cSt at 40° C
Tank:	transparent resin
Tank capacity:	1,2 liters
Adjustable flow rate:	from 1 to 3 cm^3
Flow rate regulation:	0,5 cm^3 per notch
Pressure:	1,7 - 2,2 bar
Voltage:	24/110V AC 50 Hz (60Hz)
Working cycles:	30/60 min at 50 Hz (25/50 min at 60Hz)
Electric level:	low oil level indicator
Suction filter:	micro perforated inox sheet
Filling filter:	nylon small-basket
Pipe fitting:	for Ø 4 mm main line
Relative flow rate:	30
Sizes (mm):	132 x 99 x 228-255h

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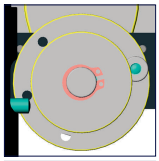
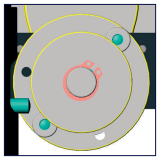
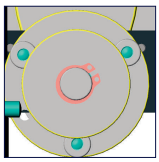
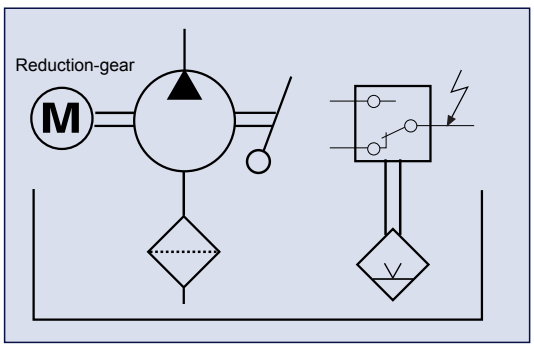
Lubrication Pump PE 26

VOLUMETRIC ELECTRIC-CYCLIC

WORKING CYCLES (PART.2)

	REDUCTION GEAR 60 min	REDUCTION GEAR 30 min
	1 Roller 60 min	1 Roller 30 min
	2 Rollers 30 min	2 Rollers 15 min
	3 Rollers 20 min	3 Rollers 10 min

HYDRAULIC DIAGRAM



DESCRIPTION

Electric-cyclical automatic (with reduction-gear) and manual (with ball grip) volumetric pump; each activation tallies with the pre-set quantity of lubricant. The lubricant is delivered by a plunger piston driven by a mechanical spring, suitably sized and preloaded. The volumetric flow rate is adjustable by a Benzing at the end of the plunger piston (see **Part.1).**
The pump's mechanical timing is determined by the time of one turn of the reduction-gear and by the number (1,2,3) of lift rollers on the rotor assembly (see **Part.2**).

OPERATION

On automatic operation the reduction-gear with the rotor assembly, during its continuous rotation with the relevant roller, lifts the plunger piston that in its turn fills the volumetric chamber with oil.
When the piston reaches its greatest height the roller is at the top point of release; the roller carrier disc, having 30° of freedom in relation to the rotor, therefore frees the piston that begins its descent pushed by the compression spring. The piston completes its travel to rest with the Benzing on the ball grip, delivering the volume of oil contained in the compression chamber.
Lifting the ball grip manually provides additional lubrication or for testing.

When working properly, the plunger piston down speed is constant. This speed varies according to the sum of the installed dosing valves.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws. **Using resistive dosing valves.**

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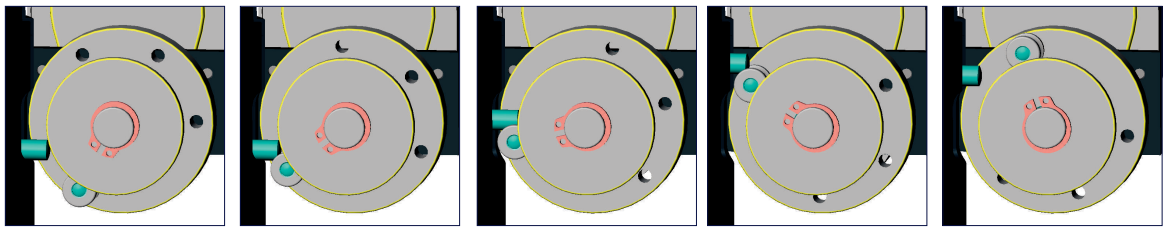
E-mail info@azetalub.com

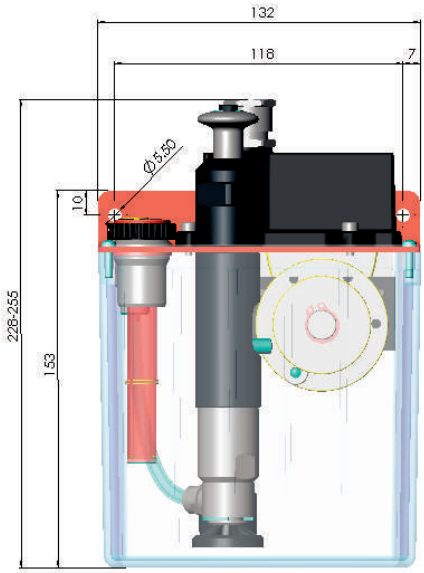
Technical Features

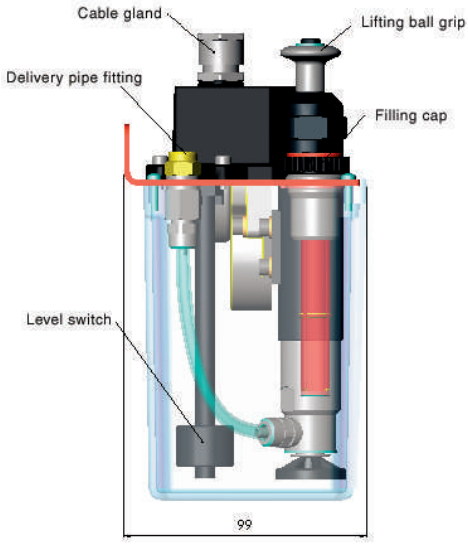
Lubrication Pump PE 26 *volumetric electric-cyclic*



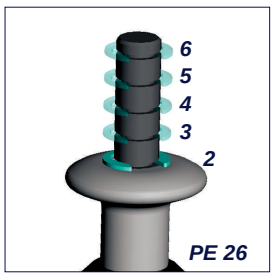
PAUSE | START OF LIFTING | LIFTING | END OF PAUSE START OF WORK | WORK

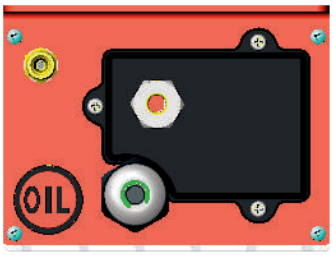
MECHANICAL/CYCLIC TIMING





FLOW RATE REGULATION (PART.1)





TECHNICAL DATA:

Lubricant: oil viscosity max 158 cSt at 40° C
Tank: transparent resin
Tank capacity: 1,2 liters
Adjustable flow rate: from 2 to 6 cm^3
Flow rate regulation: 1 cm^3 per notch
Pressure: 2,2 - 3,0 bar
Voltage: 24/110V AC 50 Hz (60Hz)
Cycles for reduction-gear revolution: 1-2-3 (to be established)
Working cycles: 50 Hz (*60 Hz*)
with 30 min reduction-gear = 10/15/30 min (*8,3/12,5/25*)
with 60 min reduction-gear = 20/30/60 min (*16,6/25/50*)
Suction filter: micro perforated inox sheet
Filling filter: nylon small-basket
Pipe fitting: for Ø 4 mm main line
Relative flow rate: 60
Electric level: low oil level indicator
Sizes (mm): 132 x 99 x 228-255h

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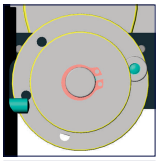
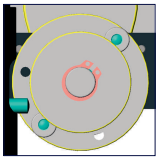
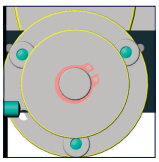
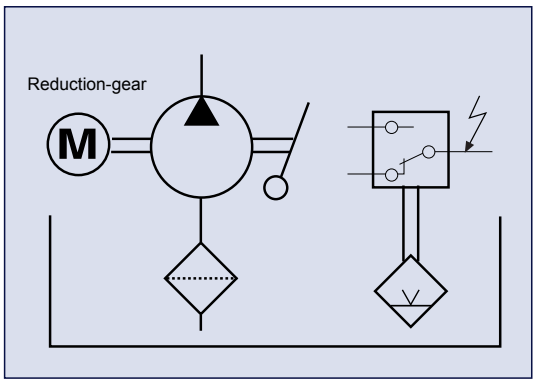
Lubrication Pump PE 26 R3

VOLUMETRIC ELECTRIC-CYCLIC PUMP

WORKING CYCLES (PART.2)

	REDUCTION GEAR 60 min	REDUCTION GEAR 30 min
	1 Roller 60 min	1 Roller 30 min
	2 Rollers 30 min	2 Rollers 15 min
	3 Rollers 20 min	3 Rollers 10 min

HYDRAULIC DIAGRAM



DESCRIPTION

Electric-cyclical automatic (with reduction-gear) and manual (with ball grip) volumetric pump; each activation tallies with the pre-set quantity of lubricant. The lubricant is delivered by a plunger piston driven by a mechanical spring, suitably sized and preloaded. The volumetric flow rate is adjustable by a Benzing at the end of the plunger piston (see **Part.1).**
The pump's mechanical timing is determined by the time of one turn of the reduction-gear and by the number (1,2,3) of lift rollers on the rotor assembly (see **Part.2**).

OPERATION

On automatic operation the reduction-gear with the rotor assembly, during its continuous rotation with the relevant roller, lifts the plunger piston that in its turn fills the volumetric chamber with oil.
When the piston reaches its greatest height the roller is at the top point of release; the roller carrier disc, having 30° of freedom in relation to the rotor, therefore frees the piston that begins its descent pushed by the compression spring. The piston completes its travel to rest with the Benzing on the ball grip, delivering the volume of oil contained in the compression chamber.
Lifting the ball grip manually provides additional lubrication or for testing.

When working properly, the plunger piston down speed is constant. This speed varies according to the sum of the installed dosing valves.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws. **Using resistive dosing valves.**

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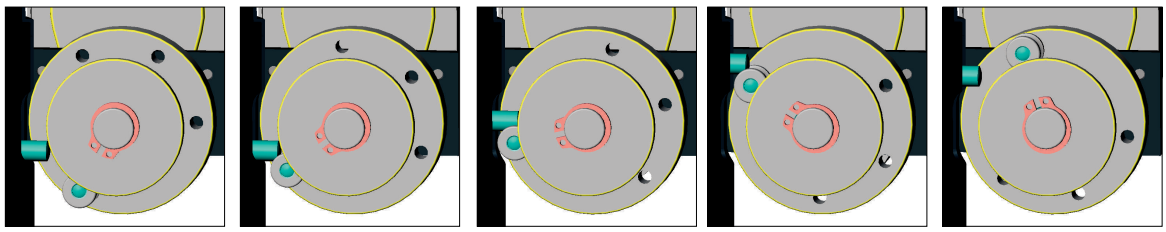
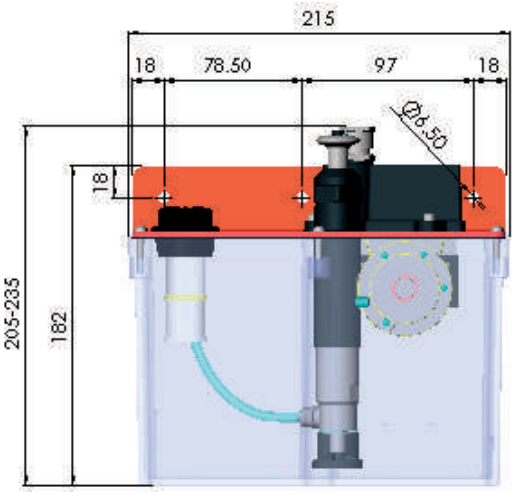
Technical Features

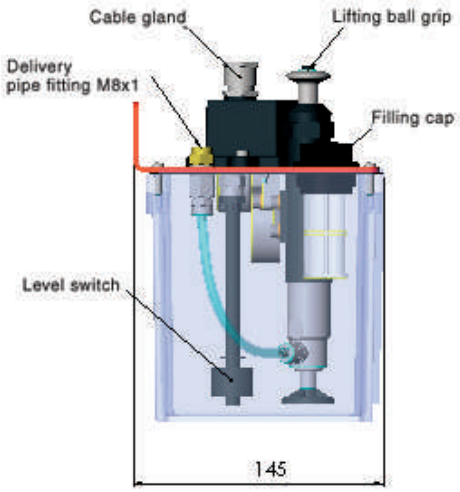
Lubrication Pump PE 26 R3 *volumetric electric-cyclic*



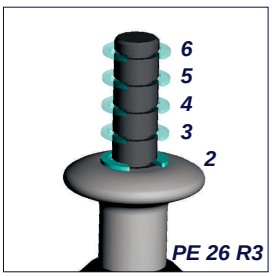
PAUSE | START OF LIFTING | LIFTING | END OF PAUSE START OF WORK | WORK

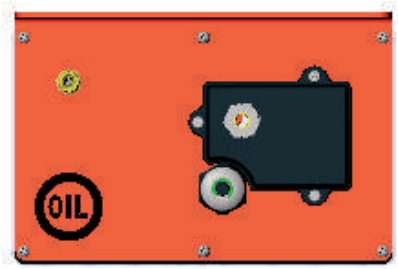
MECHANICAL/CYCLIC TIMING





FLOW RATE REGULATION (PART.1)





TECHNICAL DATA:

Lubricant: oil viscosity max 158 cSt at 40° C
Tank: transparent resin
Tank capacity: 3,0 liters
Adjustable flow rate: from 2 to 6 cm^3
Flow rate regulation: 1 cm^3 per notch
Pressure: 2,2 - 3,0 bar
Voltage: 24/110V AC 50 Hz (60Hz)
Cycles for reduction-gear revolution: 1-2-3 (to be established)
Working cycles: 50 Hz (*60 Hz*)
with 30 min reduction-gear = 10/15/30 min (*8,3/12,5/25*)
with 60 min reduction-gear = 20/30/60 min (*16,6/25/50*)
Suction filter: micro perforated inox sheet
Filling filter: nylon small-basket
Pipe fitting: for Ø 4 mm main line
Relative flow rate: 60
Electric level: low oil level indicator
Sizes (mm): 215 x 145 x 205-235h

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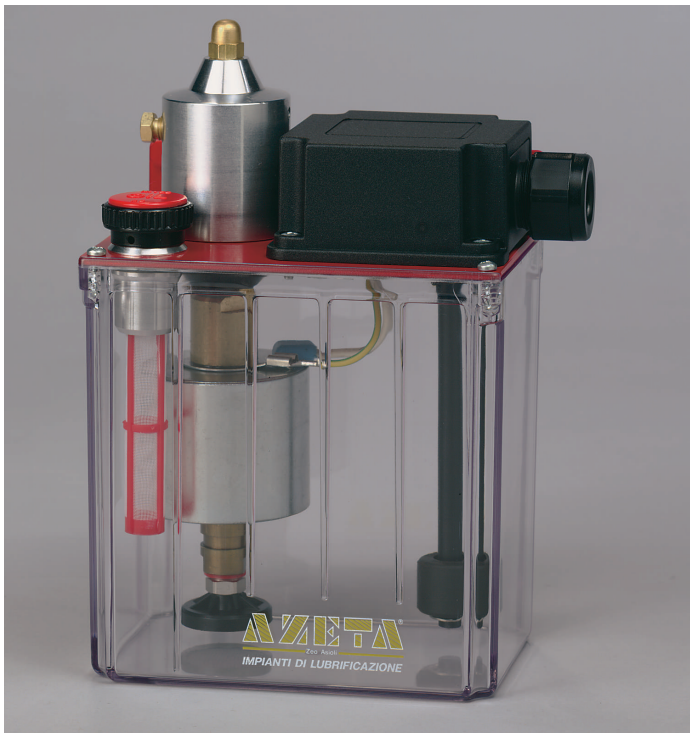
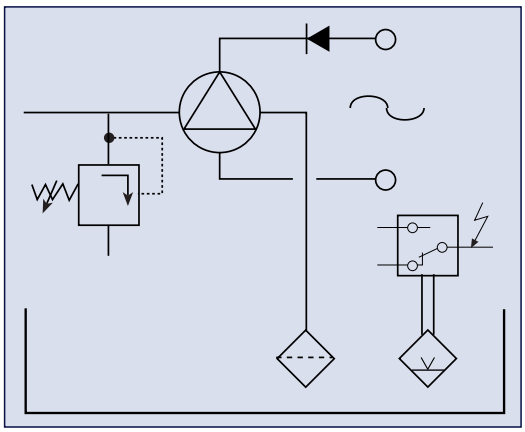
Lubrication Pump PV 140

VIBRATION MAGNETIC



HYDRAULIC DIAGRAM



DESCRIPTION

Continuous operation low-pressure vibration magnetic pump, whose speed is the same as the frequency of the electric mains (50/60 Hz).
The lubricant gets delivered by the magnetic core that acts as a piston; the working pressure, set to 3 bar is controlled by a By-pass valve to recover and return any excess lubricant to the reservoir.
This pump needs to be governed and timed electrically, in the two phases of pause and work.

OPERATION

The vibration magnetic system has a mobile core with a check valve in its inside channel, another two check valves are located at the ends of the channel housing it, constituting a piston pump with fixed sliding reciprocation equal to the electric frequency.
Electrically powered it works by continuously pumping oil until it is switched off, the lubrication will therefore be the timed intermittent type. The oil drawn from the reservoir passes through the pressure adjustment and By-pass valve, then fills the line to reach the set pressure without breaking the reciprocation of the magnetic core.
It works properly with continuous magnetic reciprocation, constant line pressure and continuous excess oil recovery, returning to the reservoir through the two holes in the cover, set under the pump casing.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws.
Using resistive dosing valves.

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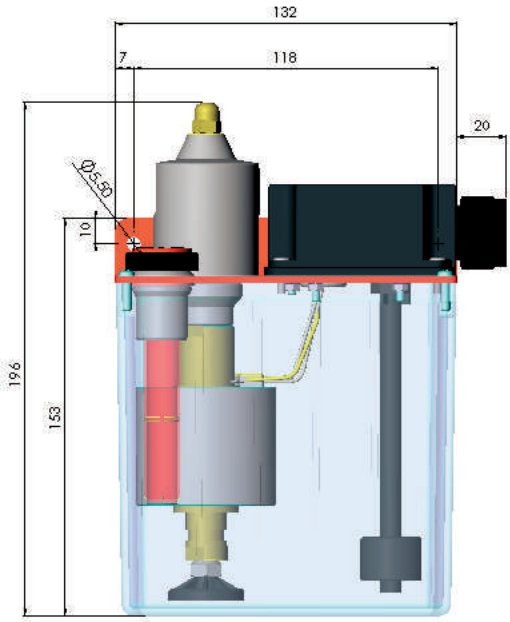
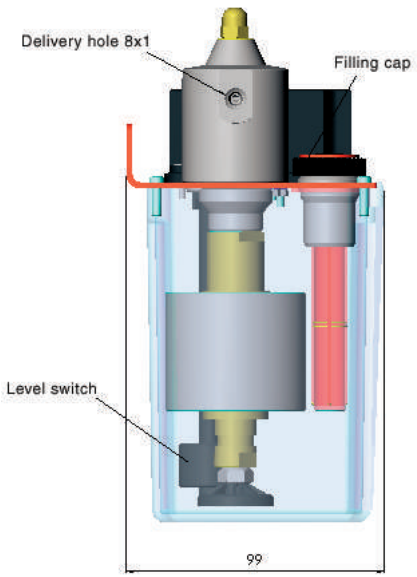
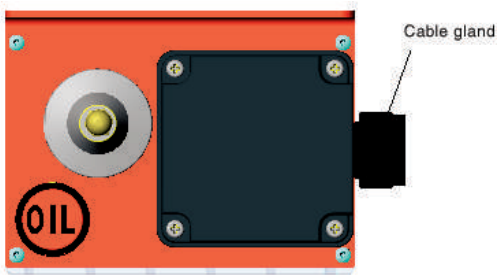
Technical Features

Lubrication Pump PV 140 *vibration magnetic*







TECHNICAL DATA:

Lubricant:	oil viscosity max 158 cSt at 40° C
Tank:	transparent resin
Tank capacity:	1,2 liters
Max flow rate:	from 70 to 140 cm^3/min according to the lubricant viscosity
Max pressure:	10 bar
Working pressure:	3 bar
Voltage:	24/110/220 V AC 50/60 Hz
Working cicles:	controlled by PLC or our equipments
Electric level:	low oil level indicator
Suction filter:	micro perforated inox sheet
Filling filter:	nylon small-basket
Pipe fitting:	for Ø 4 mm main line
Sizes (mm):	132 x 99 x 196h

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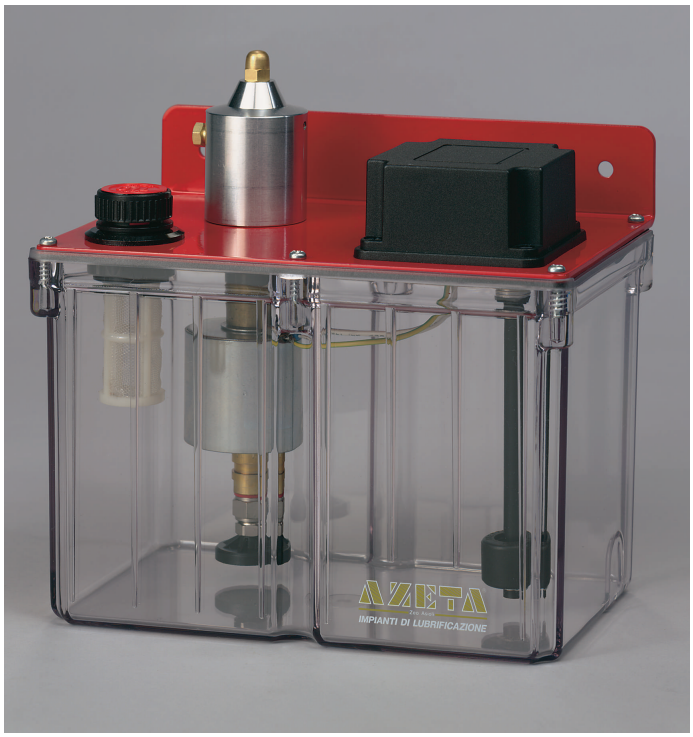
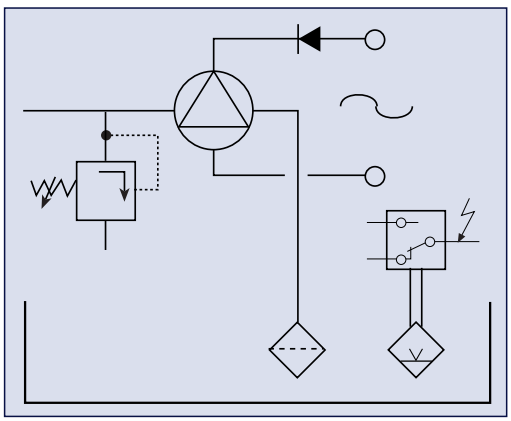
Lubrication Pump PV 140 R3

VIBRATION MAGNETIC



HYDRAULIC DIAGRAM



DESCRIPTION

Continuous operation low-pressure vibration magnetic pump, whose speed is the same as the frequency of the electric mains (50/60 Hz).
The lubricant gets delivered by the magnetic core that acts as a piston; the working pressure, set to 3 bar is controlled by a By-pass valve to recover and return any excess lubricant to the reservoir.
This pump needs to be governed and timed electrically, in the two phases of pause and work.

OPERATION

The vibration magnetic system has a mobile core with a check valve in its inside channel, another two one-way check valves are located at the ends of the channel housing it, constituting a piston pump with fixed sliding reciprocation equal to the electric frequency. Electrically powered it works by continuously pumping oil until it is switched off, the lubrication will therefore be the timed intermittent type. The oil drawn from the reservoir passes through the pressure adjustment and By-pass valve, then fills the line to reach the set pressure without breaking the reciprocation of the magnetic core.
It works properly with continuous magnetic reciprocation, constant line pressure and continuous excess oil recovery, returning to the reservoir through the two holes in the cover, set under the pump casing.

FIELD OF USE

These pumps are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws. **Using resistive dosing valves.**

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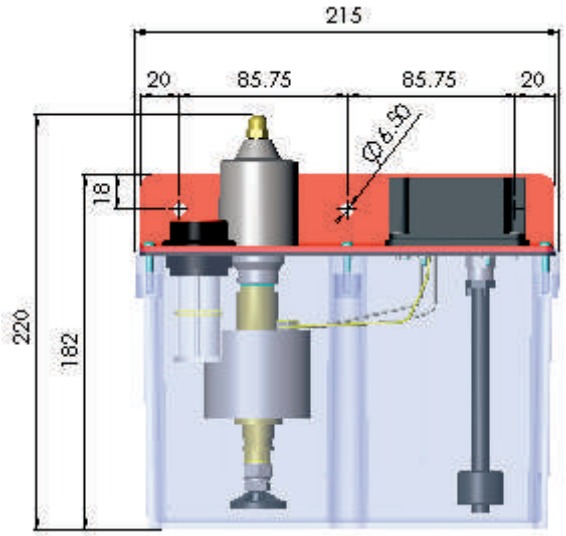
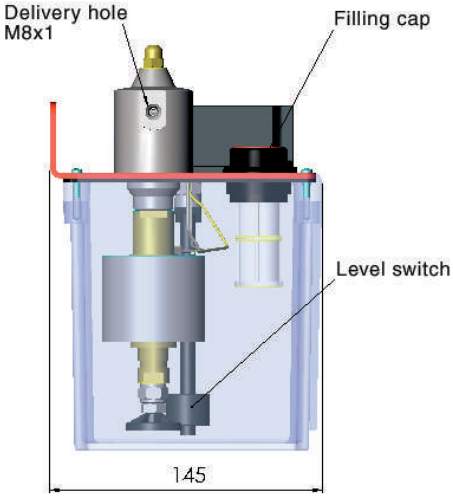
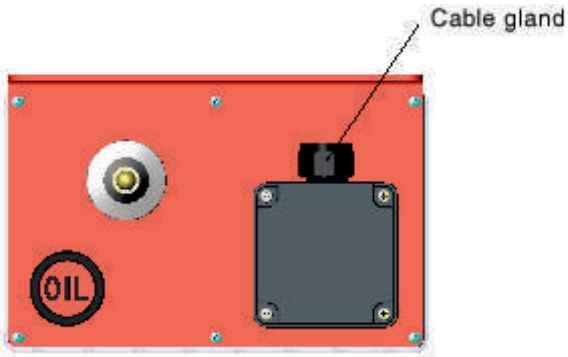
Technical Features

Lubrication Pump PV 140 R3 *vibration magnetic*







TECHNICAL DATA:

Lubricant:	oil viscosity max 158 cSt at 40° C
Tank:	transparent resin
Tank capacity:	3,0 liters
Max flow rate:	from 70 to 140 cm^3/min according to the lubricant viscosity
Max pressure:	10 bar
Working pressure:	3 bar
Voltage:	24/110/220 V AC 50/60 Hz
Working cicles:	controlled by PLC or our equipments
Electric level:	low oil level indicator
Suction filter:	micro perforated inox sheet
Filling filter:	nylon small-basket
Pipe fitting:	for Ø 4 mm main line
Sizes (mm):	215 x 145 x 220h

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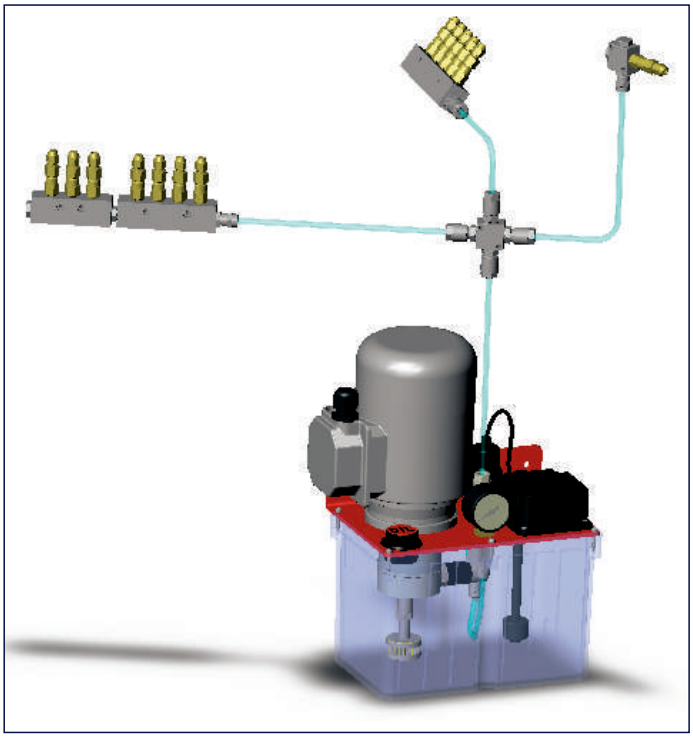
Medium Pressure Lubrication



Lubrication is defined as medium pressure when an operating pressure of 20-40 bar is used.
It is suitable for large machines with many lubrication points, which may be a long way from each other.

Medium pressure eliminates foreign matters and coolants from lubricated parts.

Medium pressure entails using volumetric dosing valves operating at a set, constant volume of oil or fluid grease.

The **AZETA** line includes volumetric pneumatic pumps and gear pumps.

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CRITERIA OF CHOICE

When choosing the components necessary to make the lubrication system most suited to one's needs, it is wise to observe a few rules.

Firstly, it is important to define the total number of mechanical parts to lubricate and the necessary quantity of lubricant for each point. This quantity is calculated by multiplying the surface to lubricate by the required thickness of oil.

In the medium pressure lubrication system, using volumetric dosing valves, compared to the low pressure, much greater distances can be reached between the dosing valves and pump, even though different to each other.

With a gear electropump and lubricant oil for guides, it is possible to power over 200 volumetric dosing valves of 0,15 cm^3.

The maximum recommended distance between the gear pump and volumetric dosing valves is 20/25 m in both RH and LH directions using the line pipe Ø 8x1.

Pneumatic- volumetric pumps can use oil or fluid grease NLGI 00.

With a volumetric pneumatic pump the total flow rate, of the volumetric dosing valves, must not exceed 2/3 of the flow rate of the pump for each single operation.

The maximum distance, depending on the viscosity of the lubricant too, can vary from 10 to 25 m.

If the ceiling of 2/3 and the maximum distance between the dosing valves and pump is exceeded, it is necessary to utilize several operations for each lubrication cycle, installing the multi-operation Kit, Code **KP 24ANC.18UD**

E.g.: 9 x 2/3 x (0,7 Coefficient) = Useful flow rate 4,2 cm^3
(0,7 Coefficient) corresponds to the output that varies in proportion to the number of dosing valves per single delivery.
Hypothesizing 4,2 / 0,15 cm^3 = 28 Dosing valves of 150 mm^3 each.

TECHNICAL NOTE

With the resistive dosing valves it is necessary to use lubricant oil only. With continuous operation pumps the quantity of lubricant per point is determined by multiplying the relative flow rate by the time the pump remains under pressure. With volumetric pneumatic pumps it is possible to deliver the entire volume or shut it off during the pumping phase.

Pump pressure greater than **3 bar** increases the relative flow rate of the dosing valves.
The intermittences must be considered added to each other, the active ones as **work** and the passive ones as **pause**.

LIST OF PRODUCTS

- Gear electropumps
- Volumetric pneumatic pumps
- Volumetric dosing valves
- Distributors and connections

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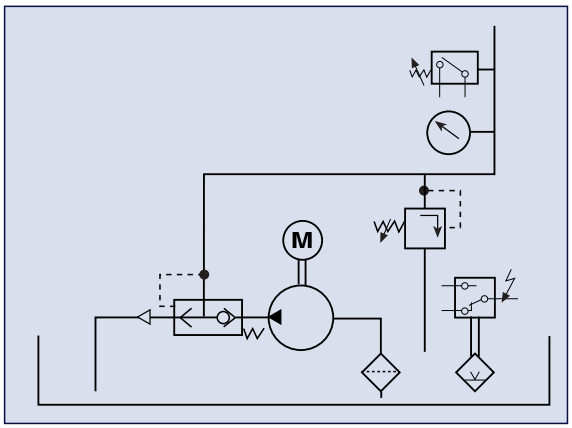
Lubrication Power Pack CT 380 02

GEAR ELECTROPUMP

HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure lubrication power pack with continuous operation comprising: electric motor, gear pump, a set of valves, line control pressure gauge and pressure switch.

The lubricant is delivered via rotation of the pump gears, operated by the motor, that supply and keep the lubricant at constant pressure, also in a very extensive distribution network.

The working pressure, set to 30 bar, is controlled by a By-pass valve to recover and return any excess lubricant to the reservoir.

This pump needs to be governed and timed electrically, in the two phases of pause and work.

OPERATION

Electrically powered, the power pack works by continuously pumping oil until it is switched off, the lubrication will therefore be the timed intermittent type. The oil drawn from the reservoir passes through the release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure, the By-pass valve and then fills the line to reach the set pressure without stopping delivery.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

It works properly with continuous pump rotation, constant line pressure and continuous excess oil recovery, returning to the reservoir through the hole in the middle of the adjustment screw of the By-pass valve.

FIELD OF USE

This lubrication power pack is designed to be used on every kind of machine, including machines with many lubrication points even set a great distance apart. **Usable dosing valves: volumetric and resistive** (See technical note on the "criteria of choice" page)

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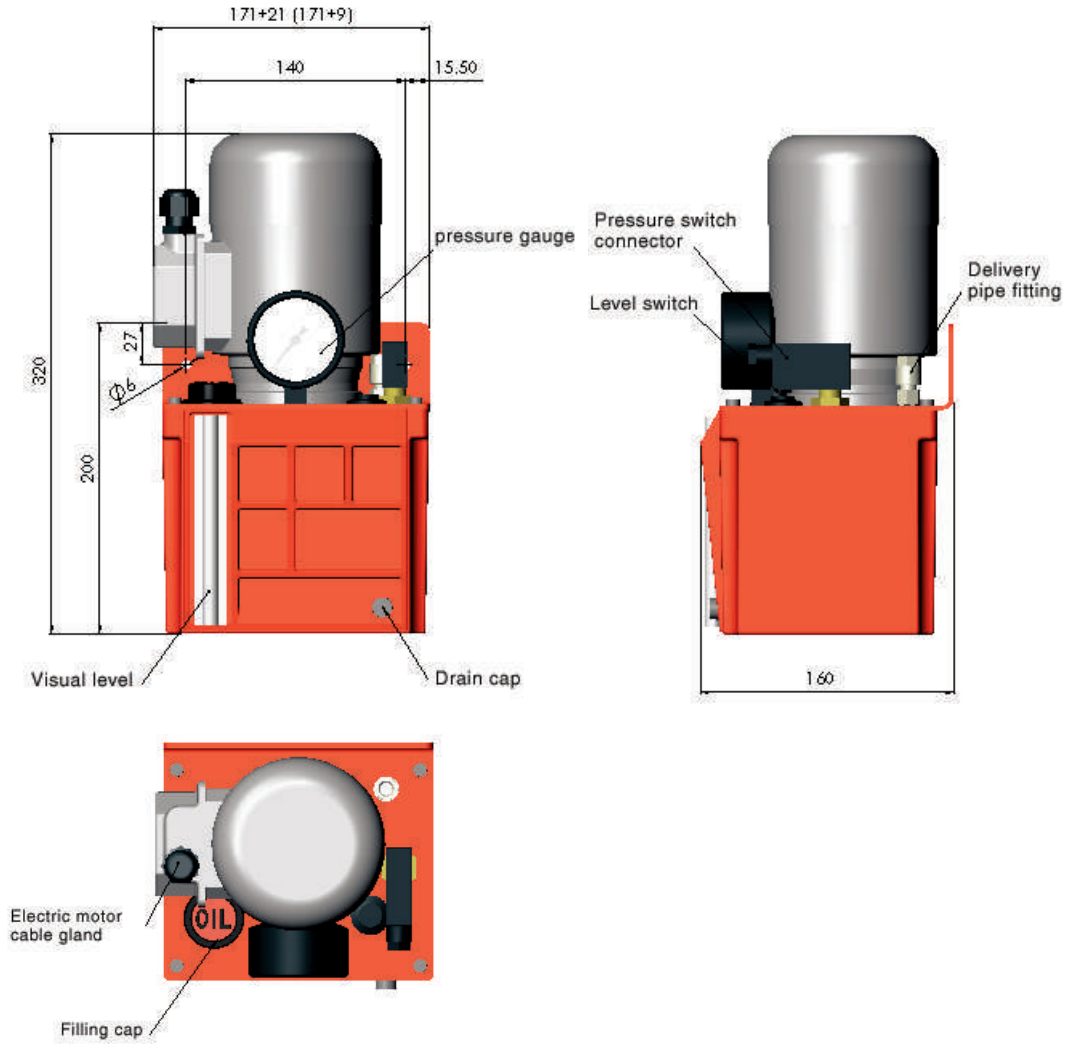
Technical Features

Lubrication Power Pack CT 380 02 *gear electropump*



TECHNICAL DATA:

Lubricant:	oil viscosity max 700 cSt at 40° C
Tank:	diecasting aluminium
Tank capacity:	2,7 liters
Flow rate:	350 cm³/min at 2800 revolutions/min
Max pressure:	50 bar
Working pressure:	30 bar
Three-phase motor:	M56(M50) B14 2 poles 230/400 V 50/60 Hz power 0,09 kW (0,06 kW) continuous service S 1 insulation class F protection IP 55
Working cycles:	controlled by PLC or our equipments
Electric level:	low oil level indicator
Visual level:	column
Pressure switch:	on line lubricant pressure control
Suction filter:	metallic type, with 60 µm metallic lath filtering component
Filling filter:	nylon small-basket
Pressure gauge:	Ø 63 mm (opanol) scale: 0-60 bar
Pipe fitting:	Ø 6 mm main line
Options:	• single-phase motor 2 poles 230V 50Hz • motors 12V or 24V DC • pipe fitting for Ø 8 mm main line
Sizes (mm):	171+21x160x320h (171+9x160x280h)

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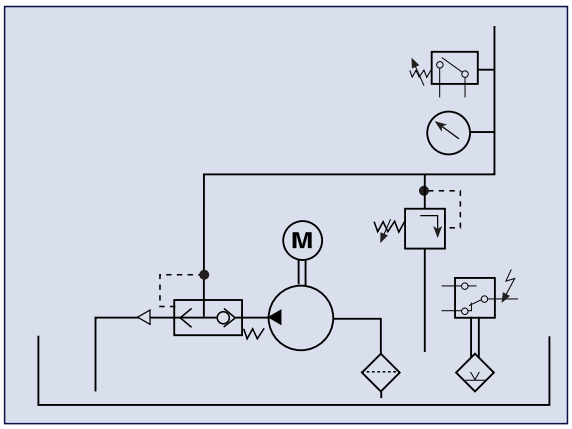
Lubrication Power Pack CT 380 R3

GEAR ELECTROPUMP

HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure lubrication power pack with continuous operation comprising: electric motor, gear pump, a set of valves, line control pressure gauge and pressure switch.

The lubricant is delivered via rotation of the pump gears, operated by the motor, that supply and keep the lubricant at constant pressure, also in a very extensive distribution network.

The working pressure, set to 30 bar, is controlled by a By-pass valve to recover and return any excess lubricant to the reservoir.

This pump needs to be governed and timed electrically, in the two phases of pause and work.

OPERATION

Electrically powered, the power pack works by continuously pumping oil until it is switched off, the lubrication will therefore be the timed intermittent type. The oil drawn from the reservoir passes through the release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure, the By-pass valve and then fills the line to reach the set pressure without stopping delivery.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

It works properly with continuous pump rotation, constant line pressure and continuous excess oil recovery, returning to the reservoir through the hole in the middle of the adjustment screw of the By-pass valve.

FIELD OF USE

This lubrication power pack is designed to be used on every kind of machine, including machines with many lubrication points even set a great distance apart. **Usable dosing valves: volumetric and resistive** (See technical note on the "criteria of choice" page)

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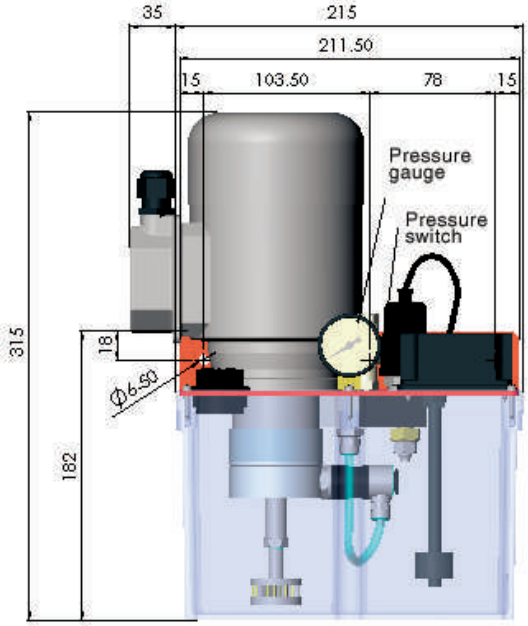
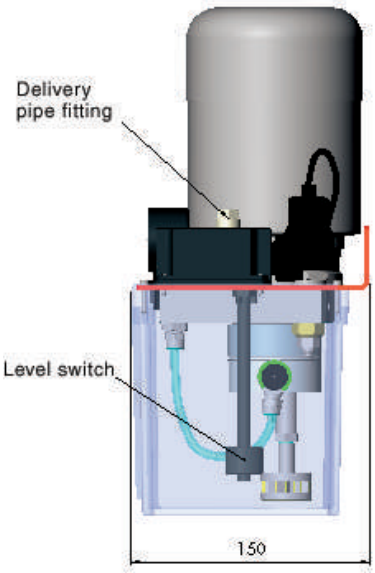
Technical Features

Lubrication Power Pack CT 380 R3 *gear electropump*





TECHNICAL DATA:

Lubricant:	oil viscosity max 700 cSt at 40° C
Tank:	transparent resin
Tank capacity:	3 liters
Flow rate:	350 cm³/min at 2800 revolutions/min
Max pressure:	50 bar
Working pressure:	30 bar
Three-phase motor:	M56(M50) B14 2 poles 230/400 V 50/60 Hz power 0,09 kW (0,06 kW) continuous service S 1 insulation class F protection IP 55
Working cycles:	controlled by PLC or our equipments
Electric level:	low oil level indicator
Visual level:	column
Pressure switch:	on line lubricant pressure control
Suction filter:	metallic type, with 60 µm metallic lath filtering component
Filling filter:	nylon small-basket
Pressure gauge:	Ø 40 mm (opanol) scale: 0-60 bar
Pipe fitting:	Ø 6 mm main line
Options:	• single-phase motor 2 poles 230V 50Hz • motors 12V or 24V DC • pipe fitting for Ø 8 mm main line
Sizes (mm):	215+35x150x315h (215+23x150x275h)

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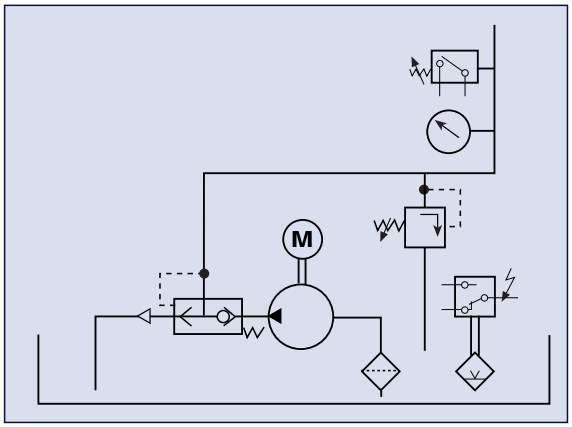
Lubrication Power Pack CT 380 L6

GEAR ELECTROPUMP

HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure lubrication power pack with continuous operation comprising: electric motor, gear pump, a set of valves, line control pressure gauge and pressure switch.

The lubricant is delivered via rotation of the pump gears, operated by the motor, that supply and keep the lubricant at constant pressure, also in a very extensive distribution network.

The working pressure, set to 30 bar, is controlled by a By-pass valve to recover and return any excess lubricant to the reservoir.

This pump needs to be governed and timed electrically, in the two phases of pause and work.

OPERATION

Electrically powered, the power pack works by continuously pumping oil until it is switched off, the lubrication will therefore be the timed intermittent type. The oil drawn from the reservoir passes through the release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure, the By-pass valve and then fills the line to reach the set pressure without stopping delivery.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

It works properly with continuous pump rotation, constant line pressure and continuous excess oil recovery, returning to the reservoir through the hole in the middle of the adjustment screw of the By-pass valve.

FIELD OF USE

This lubrication power pack is designed to be used on every kind of machine, including machines with many lubrication points even set a great distance apart. **Usable dosing valves: volumetric and resistive** (See technical note on the "criteria of choice" page)

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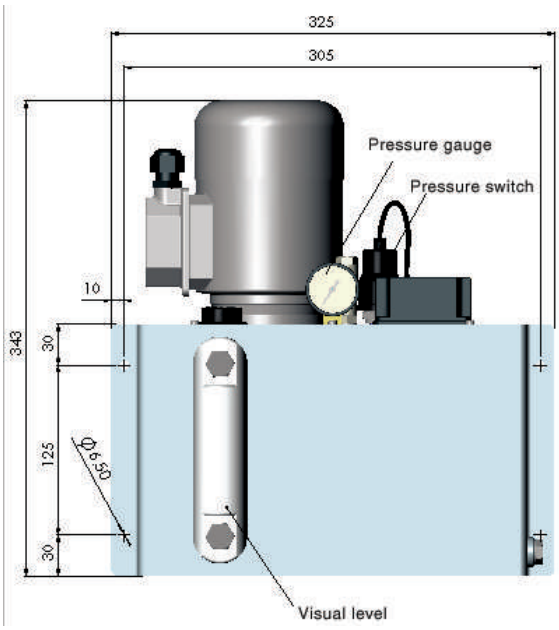
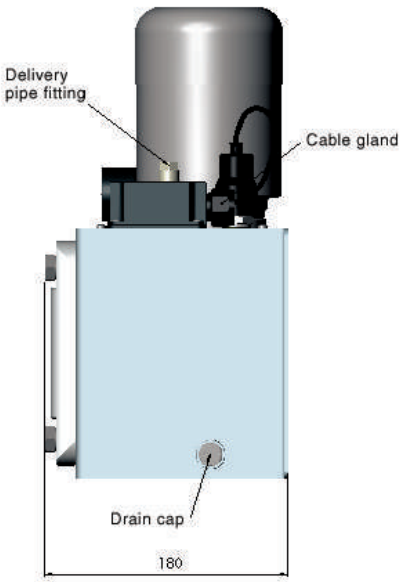
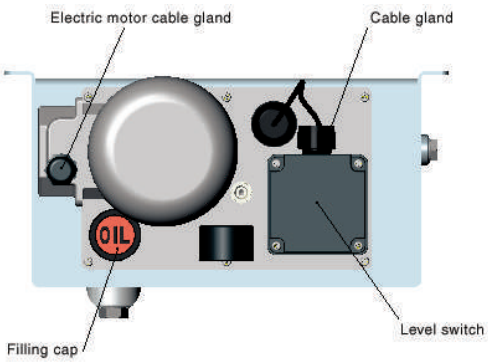
Technical Features

Lubrication Power Pack CT 380 L6 *gear electropump*







TECHNICAL DATA:

Lubricant:	oil viscosity max 700 cSt at 40° C
Tank:	electro-welded steel sheet
Tank capacity:	6 liters
Flow rate:	350 cm³/min at 2800 revolutions/min
Max pressure:	50 bar
Working pressure:	30 bar
Three-phase motor:	M56(M50) B14 2 poles 230/400 V 50/60 Hz power 0,09 kW (0,06 kW) continuous service S 1 insulation class F protection IP 55
Working cycles:	controlled by PLC or our equipments
Electric level:	low oil level indicator
Visual level:	column
Pressure switch:	on line lubricant pressure control
Suction filter:	metallic type, with 60 µm metallic lath filtering component
Filling filter:	nylon small-basket
Pressure gauge:	Ø 40 mm scale: 0-60 bar
Pipe fitting:	Ø 6 mm main line
Options:	• single-phase motor 2 poles 230V 50Hz • motors 12V or 24V DC • pipe fitting for Ø 8 mm main line
Sizes (mm):	325x180x343h (325x180x303h)

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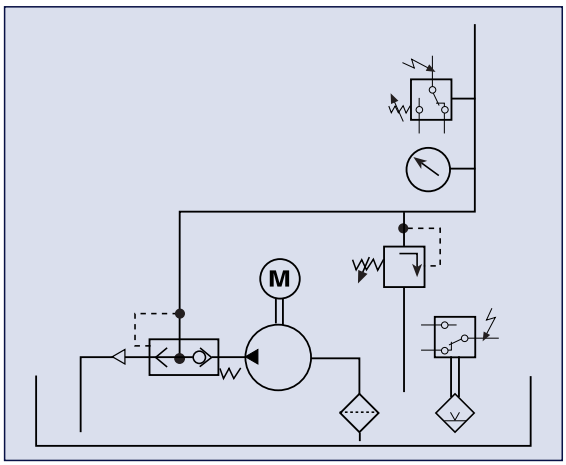
Lubrication Power Pack CT 380 L12

GEAR ELECTROPUMP

HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure lubrication power pack with continuous operation comprising: electric motor, gear pump, a set of valves, line control pressure gauge and pressure switch.

The lubricant is delivered via rotation of the pump gears, operated by the motor, that supply and keep the lubricant at constant pressure, also in a very extensive distribution network.

The working pressure, set to 30 bar, is controlled by a By-pass valve to recover and return any excess lubricant to the reservoir.

This pump needs to be governed and timed electrically, in the two phases of pause and work.

OPERATION

Electrically powered, the power pack works by continuously pumping oil until it is switched off, the lubrication will therefore be the timed intermittent type. The oil drawn from the reservoir passes through the release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure, the By-pass valve and then fills the line to reach the set pressure without stopping delivery.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

It works properly with continuous pump rotation, constant line pressure and continuous excess oil recovery, returning to the reservoir through the hole in the middle of the adjustment screw of the By-pass valve.

FIELD OF USE

This lubrication power pack is designed to be used on every kind of machine, including machines with many lubrication points even set a great distance apart.
Usable dosing valves: volumetric and resistive
(See technical note on the "criteria of choice" page)

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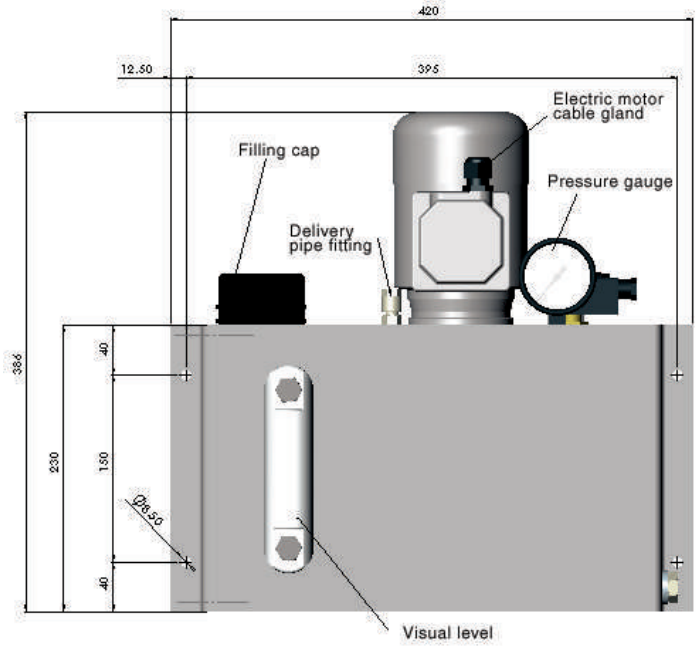
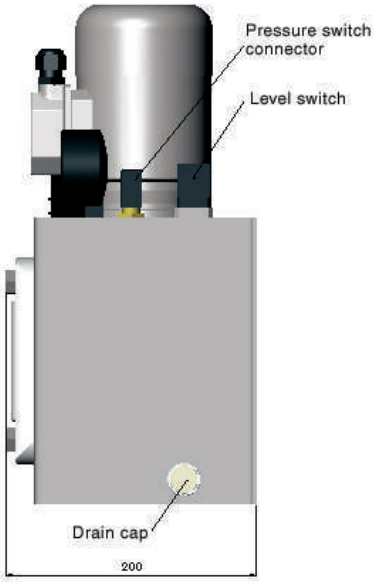
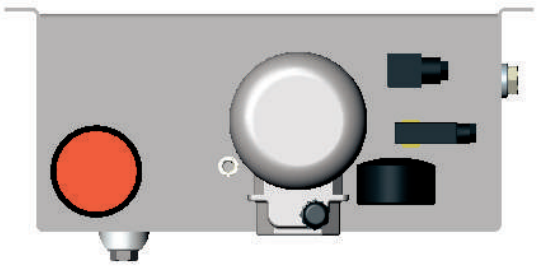
Technical Features

Lubrication Power Pack CT 380 L12 *gear electropump*







TECHNICAL DATA:

Lubricant:	oil viscosity max 700 cSt at 40° C
Tank:	electro-welded steel sheet
Tank capacity:	12 liters
Flow rate:	350 cm^3/min at 2800 revolutions/min
Max pressure:	50 bar
Working pressure:	30 bar
Three-phase motor:	M56 B14 2 poles 230/400 V 50/60 Hz power 0,09 kW continuous service S 1 insulation class F protection IP 55
Working cycles:	controlled by PLC or our equipments
Electric level:	reversible low oil level indicator ON/OFF
Visual level:	column
Pressure switch:	on line lubricant pressure control
Suction filter:	metallic type, with 60 µm metallic lath filtering component
Filling filter:	nylon small-basket
Pressure gauge:	Ø 63 mm (opanol) scale: 0-60 bar
Pipe fitting:	Ø 6 mm main line
Options:	• single-phase motor 2 poles 230V 50Hz • motors 12V or 24V DC • pipe fitting for Ø 8 mm main line
Sizes (mm):	420 x 200 x 386h

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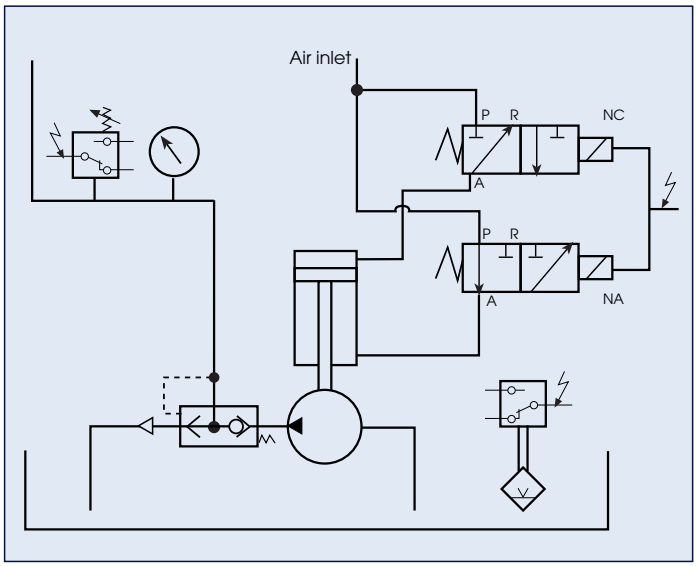
Lubrication Pump PN 9

VOLUMETRIC PNEUMATIC

HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure volumetric pneumatic pump comprising: pneumatic cylinder, volumetric pump, one-way release check valve, pair of 3/2 solenoid valves, pressure gauge and line control pressure switch, operating with compressed air and pre-arranged theoretic pressure ratio between air and oil; each operation corresponds to the pre-arranged quantity of lubricant.

The lubricant (oil or NLGI 00 fluid grease) is delivered by a plunger piston driven by the suitably sized pneumatic cylinder to obtain the theoretic pressure ratio.

The working pressure, measurable with the pressure gauge installed on the pump, is determined by the compressed air pressure multiplied by the theoretic ratio.

This pump needs to be governed and timed electrically in the two phases of pause and work.

OPERATION

Governing the two 3/2 solenoid valves in parallel, the pneumatic cylinder exerts its thrust on the plunger piston that in its turn compresses the lubricant in the volumetric chamber until it is switched off, then the lubrication will be the timed intermittent type.

The lubricant in the volumetric chamber passes through the one-way release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure and then fills the line to reach the pre-set pressure.

At the end the direction of thrust of the pneumatic cylinder is reversed, lifting the plunger piston that in its turn fills the volumetric chamber with lubricant.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

FIELD OF USE

This pump can be used on every type of machine, particularly when it is not possible to use electric motors or to create swirl and recirculation of the lubricant (oil or fluid grease).
Usable dosing valves: volumetric and resistive
(See technical note on the "criteria of choice" page)

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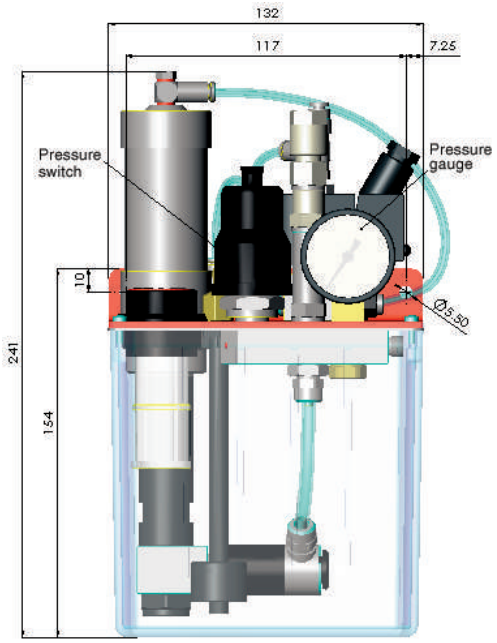

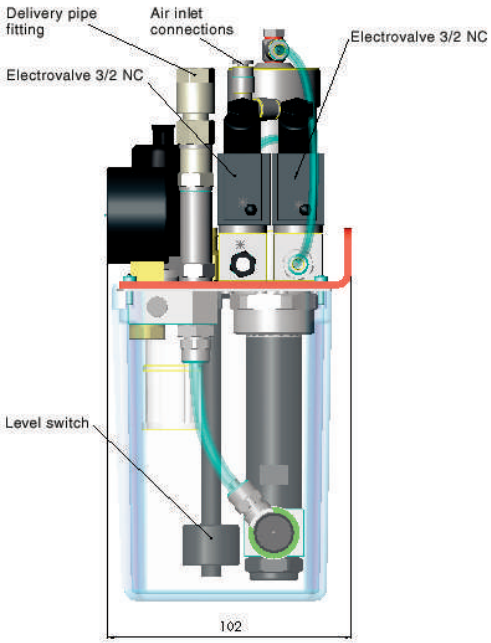

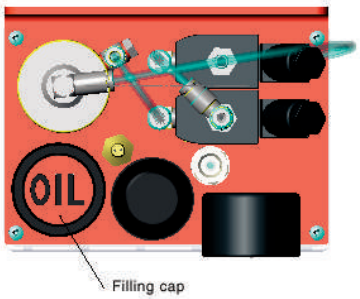

TECHNICAL DATA:

Lubricant: oil or fluid grease grade NLGI 00
Tank: transparent resin
Tank capacity: 1,2 liters
Max flow rate: 9 cm^3 per stroke
Max pressure: 45 bar
Working pressure: 30 bar
Sypply air pressure: max 9 bar
Theoretic pressure ratio: 5,2:1
Electrovalves voltage: 24/110/220 V AC 50 Hz; 24 V DC
Working cycles: controlled by PLC or our equipments
Electric level: low oil level indicator
Pressure switch: on line lubricant pressure control
Filling filter: nylon small-basket (oil only)
Pressure gauge: Ø 40 mm scale: 0-60 bar
Pipe fitting: Ø 6 mm main line
Sizes (mm): 132 x 102 x 241h

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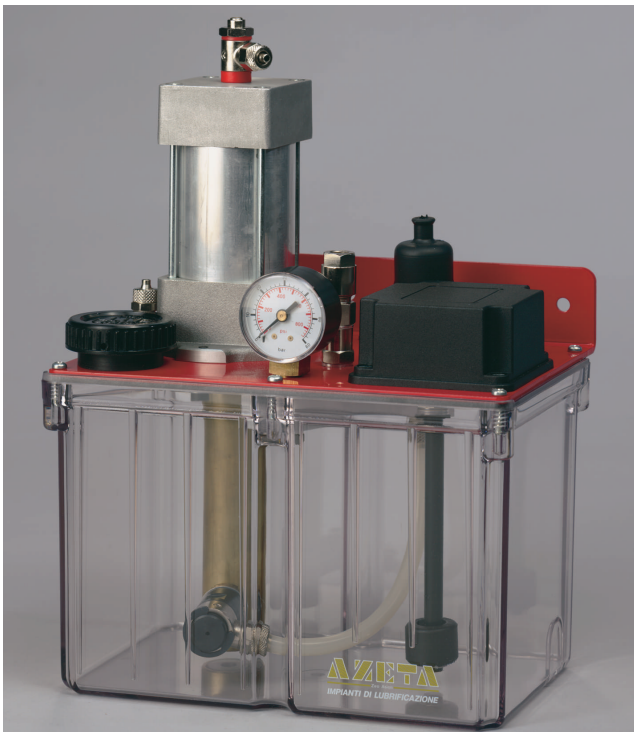
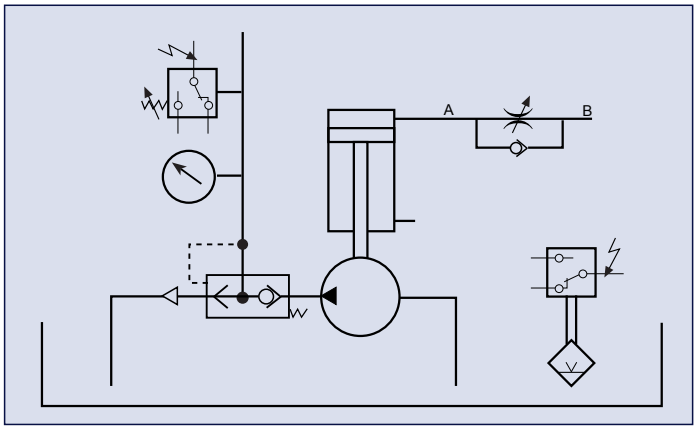
Lubrication Pump PN 25 R3

VOLUMETRIC PNEUMATIC



HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure volumetric pneumatic pump comprising: double-acting pneumatic cylinder, volumetric pump, one-way release check valve, pressure gauge and line control pressure switch, operating with compressed air and pre-arranged theoretic pressure ratio between air and oil; each operation corresponds to the pre-arranged quantity of lubricant.

The lubricant (oil or NLGI 00 fluid grease) is delivered by a piston, with a guiding sliding block and lip seals, driven by the suitably sized pneumatic cylinder to obtain the theoretic pressure ratio.

The working pressure, measurable with the pressure gauge installed on the pump, is determined by the compressed air pressure multiplied by the theoretic ratio.

This pump needs of a 5/2 solenoid valve and to be governed and timed electrically in the two phases of pause and work.

OPERATION

Governing the 5/2 solenoid valve, the pneumatic cylinder exerts its thrust on the piston with sliding block that in its turn compresses the lubricant in the volumetric chamber until it is switched off, then the lubrication will be the timed intermittent type.

The lubricant in the volumetric chamber passes through the one-way release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure and then fills the line to reach the pre-set pressure.

At the end the direction of thrust of the pneumatic cylinder is reversed, lifting the piston with sliding block that in its turn fills the volumetric chamber with lubricant.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

FIELD OF USE

This pump can be used on every type of machine, particularly when it is not possible to use electric motors or to create swirl and recirculation of the lubricant (oil or fluid grease).
Usable dosing valves: volumetric and resistive
(See technical note on the "criteria of choice" page)

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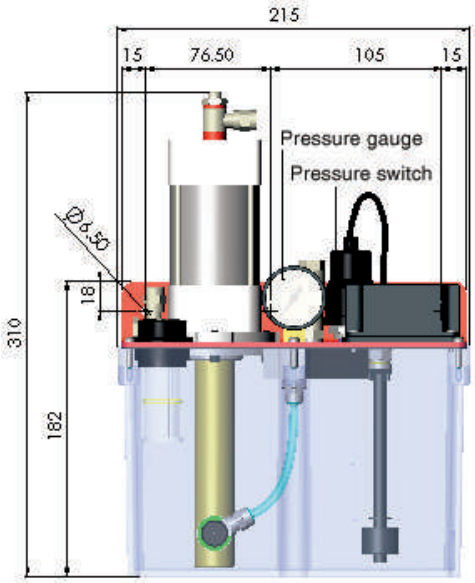
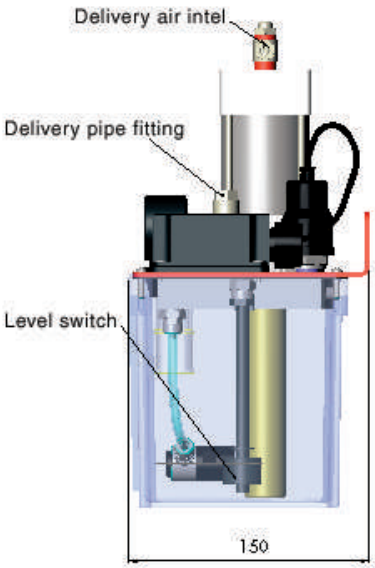
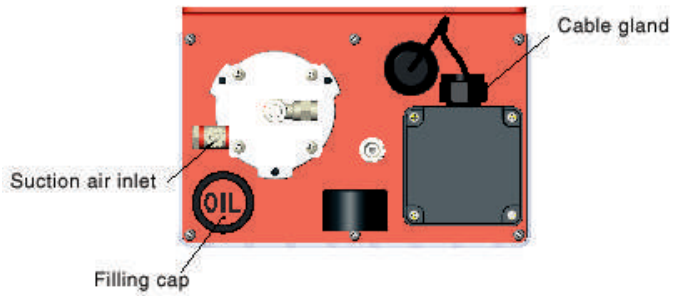
Technical Features

Lubrication Pump PN 25 R3 *pneumatic pump*







TECHNICAL DATA:

Lubricant: oil or fluid grease grade NLGI 00
Tank: transparent resin
Tank capacity: 3 liters
Max flow rate: 25 cm^3 per stroke
Max pressure: 50 bar
Working pressure: 30 bar
Supply air pressure: max 8 bar
Theoretic pressure ratio: 6,25:1
Working cycles: controlled by PLC or our equipments
Electric level: low oil level indicator
Pressure switch: on line lubricant pressure control
Filling filter: nylon small-basket (oil only)
Pressure gauge: Ø 40 mm scale: 0-60 bar
Pipe fitting: Ø 6 mm main line (oil only)
Options: Ø 8 mm pipe fitting (standard for grease)
Sizes (mm): 215 x 150 x 310h

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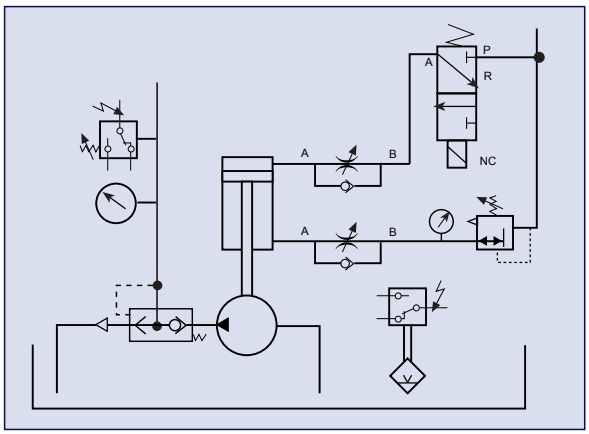
Lubrication Power Pack CT PN 25 02

VOLUMETRIC PNEUMATIC

HYDRAULIC DIAGRAM



DESCRIPTION

Medium pressure volumetric pneumatic pump comprising: double-acting pneumatic cylinder, pneumatic control assembly, volumetric pump, one-way release check valve, pressure gauge and line control pressure switch, operating with compressed air and pre-arranged theoretic pressure ratio between air and oil; each operation corresponds to the pre-arranged quantity of lubricant. The pneumatic control assembly comprises: pressure gauge and air pressure regulator with reliving, 3/2 solenoid valve and two air flow regulators.

The lubricant (oil or NLGI 00 fluid grease) is delivered by a piston, with a guiding sliding block and lip seals, driven by the suitably sized pneumatic cylinder to obtain the theoretic pressure ratio.

The working pressure, measurable with the pressure gauge installed on the pump, is determined by the compressed air pressure multiplied by the theoretic ratio.

This pump needs to be governed and timed electrically in the two phases of pause and work.

OPERATION

This lubrication power pack is designed to be supplied by a compressed air network with no pressure adjustment. The bottom chamber of the pneumatic cylinder is constantly under regulated pressure to compensate for the difference "Δp" of the network air compared to the theoretic ratio, performing the function of pneumatic return spring.

Governing the 3/2 solenoid valve, the pneumatic cylinder exerts its thrust on the piston with sliding block that in its turn compresses the lubricant in the volumetric chamber until it is switched off, then the bottom chamber of the cylinder discharges the difference in pressure via the reliving.
The lubrication will be the timed intermittent type.

The lubricant in the volumetric chamber passes through the one-way release check valve, then enters an initial circuit where it finds the pressure gauge, the pressure switch controlling drops in pressure and then fills the line to reach the pre-set pressure.

At the end the direction of thrust of the cylinder is reversed, via the pneumatic spring, lifting the piston with sliding block that in its turn fills the volumetric chamber with lubricant.

The one-way release check valve with discharge, located at the pump outlet, allows the pressure of the line to decompress down to 0,3 bar, the outflowing lubricant goes back into the reservoir thereby recharging the volumetric dosing valves for the next cycle.

FIELD OF USE

This pump can be used on every type of machine, particularly when it is not possible to use electric motors or to create swirl and recirculation of the lubricant (oil or fluid grease).
Usable dosing valves: volumetric and resistive
(See technical note on the "criteria of choice" page)

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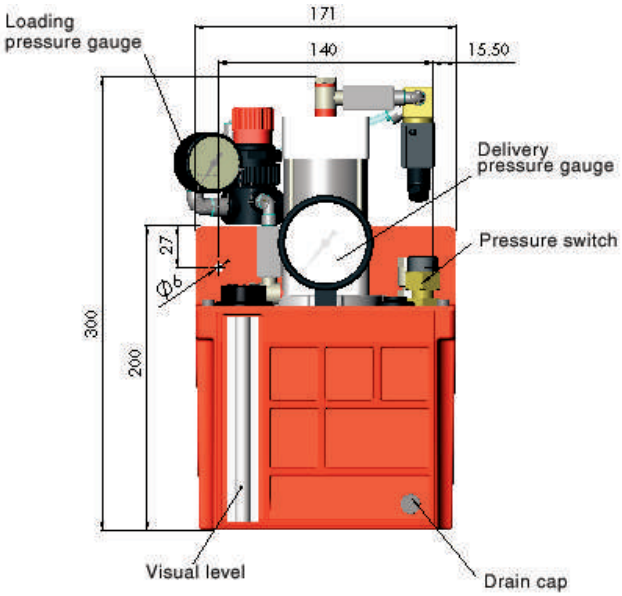
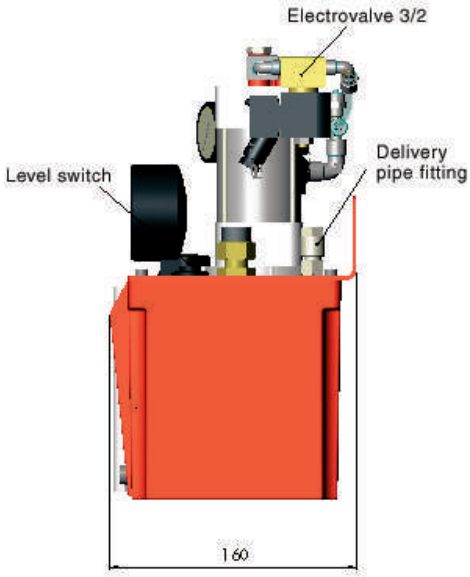
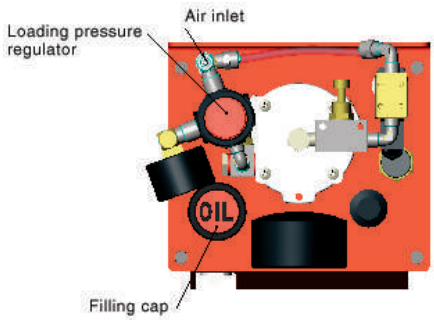
Technical Features

Lubrication power pack CT PN 25 02 *volumetric pneumatic pump*







TECHNICAL DATA:

Lubricant: oil or fluid grease grade NLGI 00
Tank: diecasting aluminium
Tank capacity: 2,7 liters
Max flow rate: 25 cm^3 per stroke
Max pressure: 50 bar
Working pressure: 30 bar
Supply air pressure: max 8 bar
Loading air pressure: adjustable 0,8-3 bar
Theoretic pressure ratio: 6,25:1
Electrovalve voltage: 24/110/220 V AC 50 Hz; 24 V DC
Working cycles: controlled by PLC or our equipments
Electric level: low oil level indicator
Visual level: column
Pressure switch: on line lubricant pressure control
Filling filter: nylon small basket (oil only)
Pressure gauge: Ø 63 mm (opanol) scale: 0-60 bar
Loading air pressure gauge: Ø 40 mm scale: 0-6 bar
Pipe fitting: Ø 6 mm main line (oil only)
Option pipe fitting: Ø 8 mm main line (standard for grease)
Sizes: 171 x 160 x 300h (mm)

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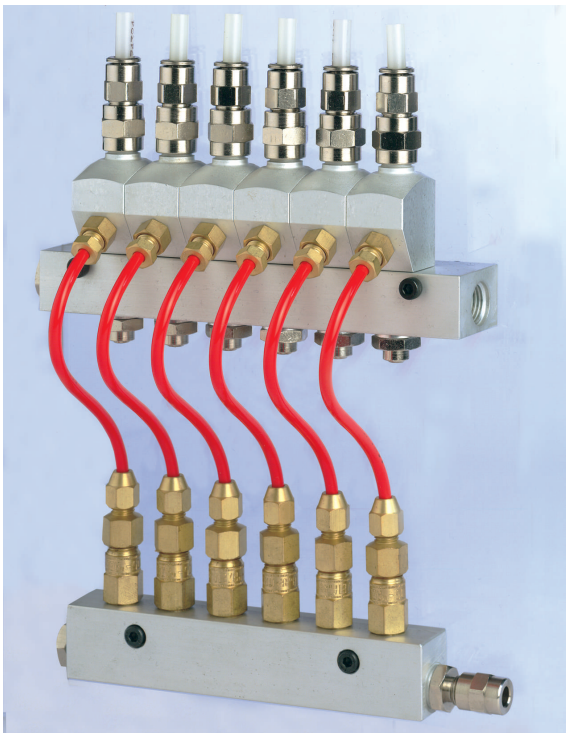
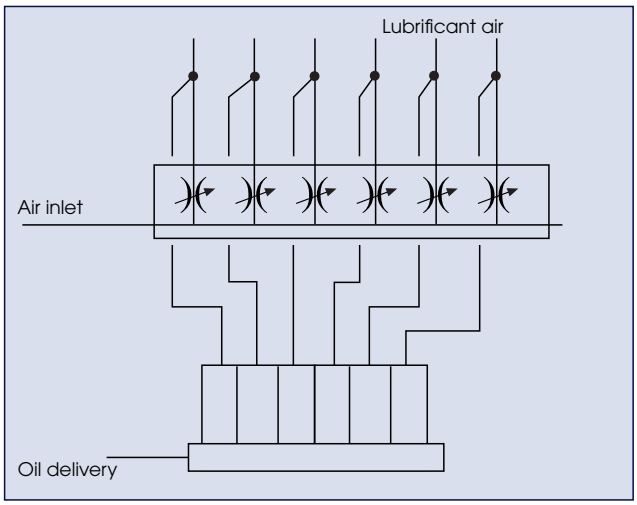
AZETA AIR MIX COMPATIBLE WITH REGULATIONS ON ENVIRONMENTAL POLLUTION

CLEAN LUBRICATION FOR PRECISION HIGH-SPEED ROTATING AND LINEAR APPLICATIONS



HYDRAULIC-PNEUMATIC DIAGRAM



The ultra high speed, powerful, precise movements of today's machine tools call for optimal, long-lasting and clean lubrication.

The **AZETA** new system ensures this after many years of tests on its own machine tools.

With the **AIR MIX** air-oil mixing system, all components requiring lubrication are supplied with a continuous flow of "lubricating air" which generates a thin film of oil on surfaces. Through its pressure, this flow eliminates all foreign matters (chips, dust, coolants, etc...) from sliding surfaces and generates light pressure which acts as a barrier by protecting components against dirt and humidity.
What's more, the air flow also cools the parts.
In this way, the possible sources of early damage to bearings, guides and spindles are eliminated.

All these advantages are obtained without any mist, as air and oil are mixed without any atomising.
AIR MIX is a minimal lubrication system, operating at low oil consumption. Oil is metered intermittently, while air flow is continuous.

The idea that you need a lot of oil for good lubrication is not necessarily true – on the contrary, it could be damaging at high speeds.

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OPERATION

The system makes use of a pump which sends pressurised oil to a distribution unit to which dosing valves, of the same quantity as the air channels, are connected.

Each dosing valve is connected via a small tube to the relevant mixer, in which the oil drops meet the continuous flow of compressed air delivered from the air supply line. Each mixer has its own, independent air flow adjusting screw.

A polyamide tube comes out from each mixer terminating in the vicinity of the lubrication point.
The tube must be at least 2 metres long. If this distance is insufficient, a spiral has to be installed.

The tube must terminate in a suitable conduit which reaches the lubrication point directly, and has a hole for guiding the air (e.g. on the balls) at its end.

The bearing or the part being lubricated **must be** supplied with an air vent.

SUGGESTIONS

The compressed air from the supply line must be dehumidified and filtered before reaching the mixer. As it is sufficient for air to reach the mixer at a pressure of 4 bar, we advise you to install a pressure reducer.

You should also install a solenoid-valve upstream of the system, the valve being energised when the machine is powered up.

Adjusting air flow with the mixer screws is useful to determine independently the correct value in each channel and to save on air consumption.

The diameters of the delivery and discharge channel terminating hole must be calculated to ensure the part is pressurised.

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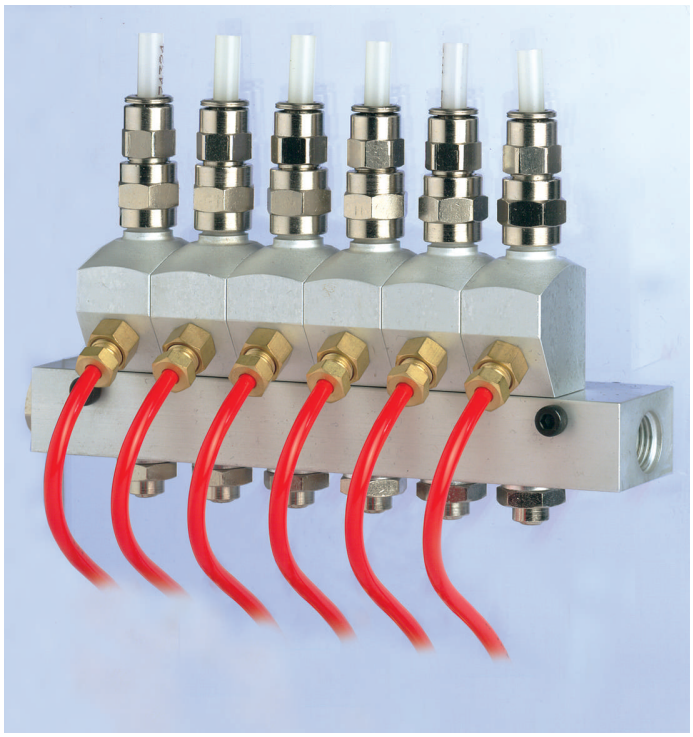
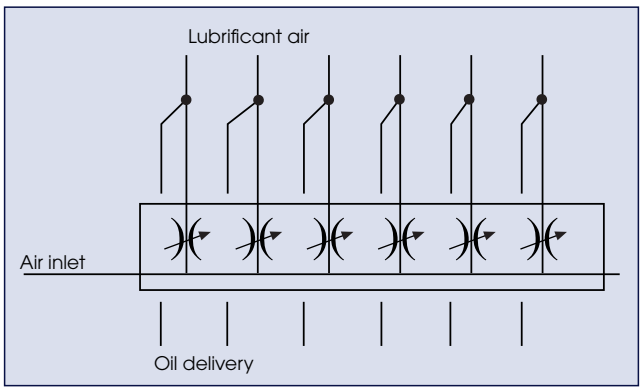
Combinable Mixers

AZETA AIR MIX air-oil lubrication system

AZETA AIR MIX COMPATIBLE WITH REGULATIONS ON ENVIRONMENTAL POLLUTION



OPERATING DIAGRAM



DESCRIPTION

The **AIR MIX** system is a minimal lubrication air-oil system, with low oil consumption. The oil is dosed intermittently, while the flow of air is continuous. These two elements produce a very fine lubricating mixture that uses air as a carrier. The quantity of oil comes within a value, in many cases even lower, of **10^{-7}** compared to the air, per unit of time.
This mixture can be modified with the flow rate of the dosing valve and the number of operations-hour according to the requirements of **lubrication** or **lube cooling**.

The system comprises: a mixing unit base that can have 2, 3, 4, 5, 6 holes for the same number of combinable mixer modules, each mixer is in its turn equipped with: air flow adjuster screw, inlet connection for oil coming from the dosing valve, quick-fit super connection for the pipe; forming an air and oil lubrication assembly with several "lubricant air" channels with independent adjustment.

A single mixing unit module without a base is used for a single point of lubrication.

If you require a higher lubricant air pressure than 1,5 bar, up to the network air pressure at the unit's inlet, it is necessary to apply a special check valve, under the inlet connection for the oil coming from the dosing valve.

The system needs: lubrication pump, distributor and dosing valves at the rate of one for each mixer and the adjustable timing on the pump control.

To obtain the greatest precision, the lubricant air mixture, it is recommended to use a medium pressure pump and volumetric dosing valves. This choice is important for the lubrication of linear and rolling-contact bearings and is essential for spindles, electro-spindles, especially if high speed (30.000/60.000 rpm), etc...

OPERATION

In this assembly, operation takes place without any mechanical moving parts in the following way: the compressed air, at the max pressure of 6 bar, enters the mixing unit base, crosses the flow regulators and enters the mixing duct; the oil, coming from the dosing valve, is injected in the same duct where the mixing takes place and transport along the channel, becoming lubricant air. This mixture is finely spread along the piping, creating a channel in its inside wall, to reach the point to lubricate.

The continuous blowing of lubricant air even at low pressure (0,5 bar) conveys the oil in homogeneous quantities also at the lower percentages already referred to in the description (**10^{-8}**).

Obviously, the best air-oil dosing, at the point of arrival, also depends on the length of the lubricant air pipe.

FIELD OF USE

This **AIR MIX** lubrication system finds widespread use in the lubrication of spindles, electro-spindles, even at high speeds, rolling-contact bearings, linear guides and screws, especially for woodworking machines.

PROTECTIVE LUBRICATION

The **AIR MIX** system moreover lends itself to protecting finished products for storage, also delicate zones of partially painted products, protection of parts in the assembly phase on production lines, etc...

LUBE COOLING

The system is equally functional in lube-cooling tools that remove material such as: tappers, candle cutters, facing cutters, circular cutters, centre punches, spot-facers, disc saws, belt saws, cutting punches, dies for coining cutlery, etc...

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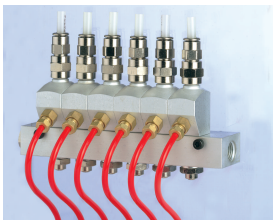
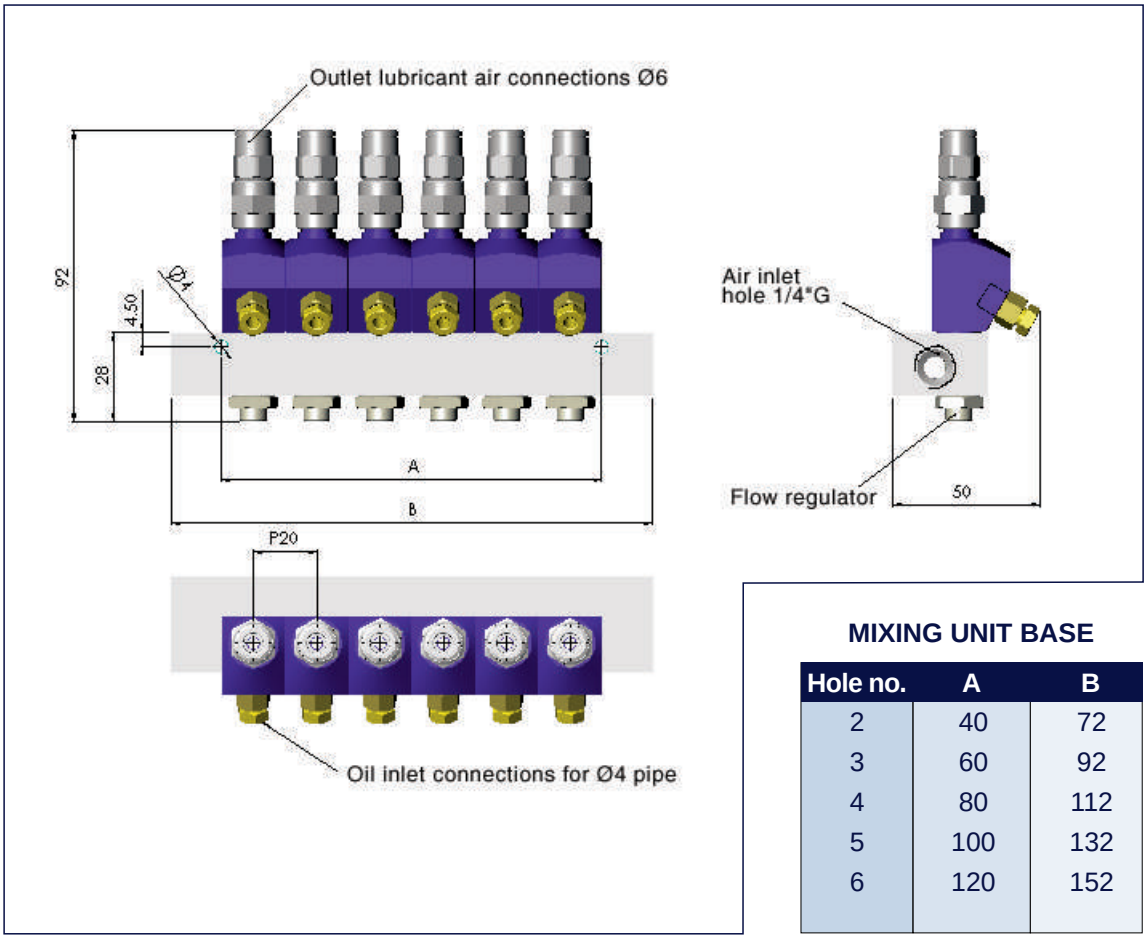
Technical Features





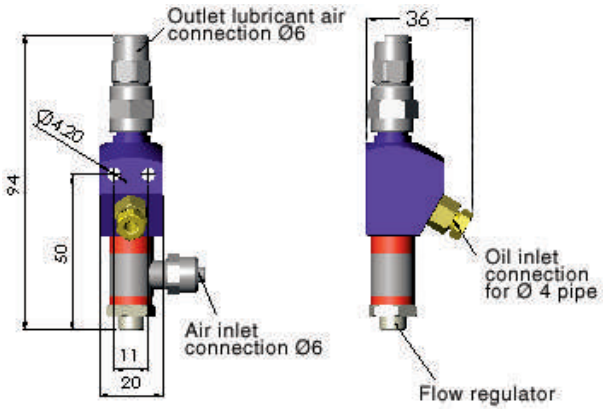
MIXING UNIT BASE

Hole no.	A	B
2	40	72
3	60	92
4	80	112
5	100	132
6	120	152

TECHNICAL DATA: MIXING UNIT

Lubricant: oil viscosity max 150 cSt at 40°C
Built for using: single or combinable
Lubricant air connection: for Ø 6 mm (8 or 4) pipe
Lubricant air adjustment: single, by screw
Lubricant air nominal flow rate:
from 0 up to 200 liters/min (nom. Ø 2)
Inlet air pressure: 6 bar
Network air connection: for Ø 6x4 pipe (8x4)
Lubricant air max pressure: from 0,5 up to 2 bar
N.B. for lubricant air pressure higher than 2 bar,
see the following options
Lubricant oil connection from dosing valve: for Ø 4 mm pipe
Wall fastening: for single version only

SINGLE MIXING UNIT MODULE



MIXING UNIT BASE

Built in 5 models for 2-3-4-5-6 mixing units
Network air connection: 1/4" G at the 2 ends
Wall fastening

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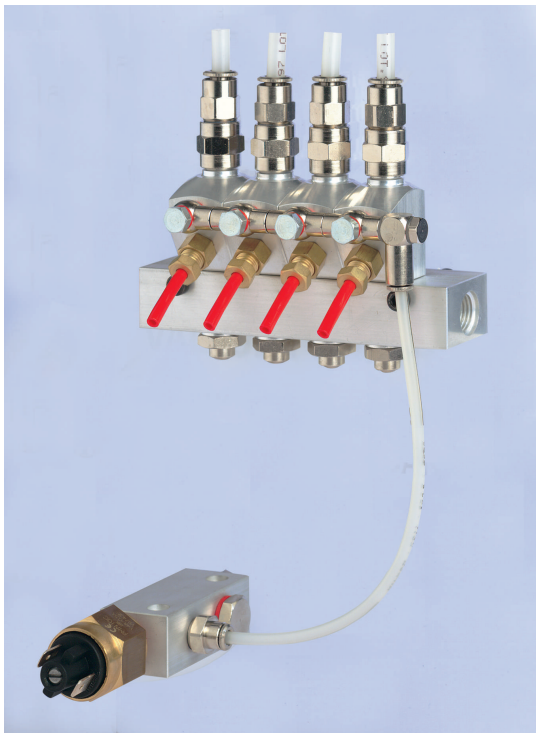
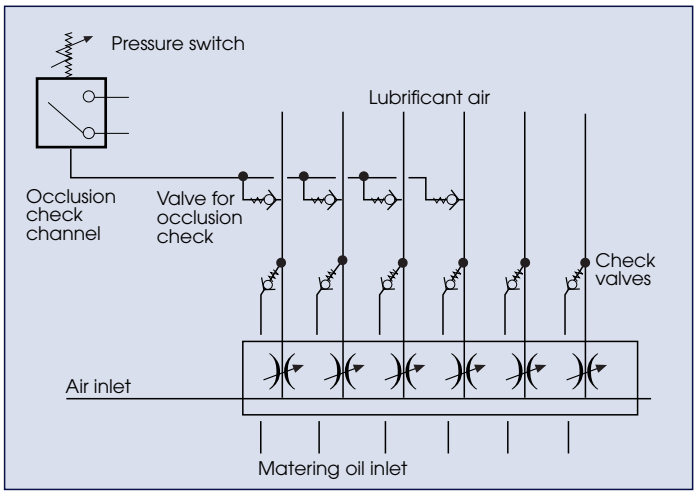
Combinable Mixers with Occlusion Check Valve

AZETA AIR MIX air-oil lubrication system

AZETA AIR MIX COMPATIBLE WITH REGULATIONS ON ENVIRONMENTAL POLLUTION



HYDRAULIC-PNEUMATIC DIAGRAM



DESCRIPTION

The **AIR MIX system with occlusion check** is different from the basic version in the mixer modules, which have the addition of a special valve in line with the lubricant air duct. The mixer module with the occlusion check valve can be used on its own or combinable, fitted on a mixing unit base.
Its being combinable also allows mixed use of mixers with or without occlusion check valves, following the rule of keeping the modules side by side with the valve for the combinable connection.

The system combinable for, even partial, occlusion of the lubricant air channel in applications where a lack of lubrication would create serious consequences for mechanical parts such as high-speed spindles and electro-spindles (30.000/60.000 rpm), etc...
The assembly is designed to use a suitably regulated pressure switch connected to the occlusion check valves, all the valves can be connected together with combinable connections. For the greatest sensitivity in testing the various mixer modules in a differentiated manner, it is necessary to apply several pressure switches with settings closer to the working pressures of the lubricant air.

OPERATION

In this assembly, operation takes place without any mechanical moving parts in the following way: the compressed air, at the max. pressure of 6 bar, enters the mixing unit base, crosses the flow regulators and enters the mixing duct, it then reaches the occlusion check valve; the oil, coming from the dosing valve, is injected in the same duct where the mixing takes place and transport along the channel, becoming lubricant air. This mixture is finely spread along the piping, creating a channel in its inside wall, to reach the point to lubricate. Continuous blowing of lubricant air even at very low pressure (0,5 bar) conveys the oil in homogeneous quantities at percentages (10^{-8}) below the ones already referred to in the description of the base unit. Obviously, the best air-oil dosing, at the point of arrival, also depends on the length of the lubricant air piping. The occlusion check valves in the modules, connected together and to an alarm pressure switch, work by the difference in pressure in their duct, but lower than the set pressure of the pressure switch. Just one valve will be open, pressurizing the pressure switch, while all the others will be closed.
Each valve is able to act on the pressure switch independently, signalling an increase in pressure, caused by even partial occlusion, activating the alarm signal. When the system is equipped with occlusion check valves, the maximum pressure of the lubricant air must be at least 1,5 bar under the network air pressure at the unit's inlet.

FIELD OF USE

This **AIR MIX** lubrication system finds widespread use in the lubrication of spindles, electro-spindles, even at high speeds, rolling-contact bearings, linear guides and screws, especially for woodworking machines.

PROTECTIVE LUBRICATION

The **AIR MIX** system moreover lends itself to protecting finished products for storage, also delicate zones of partially painted products, protection of parts in the assembly phase on production lines, etc...

LUBE COOLING

The system is equally functional in lube-cooling tools that remove material such as: tappers, candle cutters, facing cutters, circular cutters, centre punches, spot-facers, disc saws, belt saws, cutting punches, dies for coining cutlery, etc...

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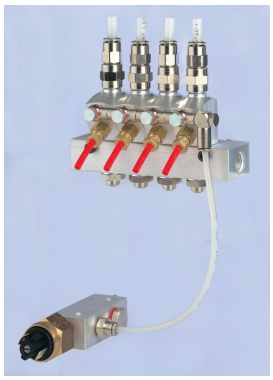
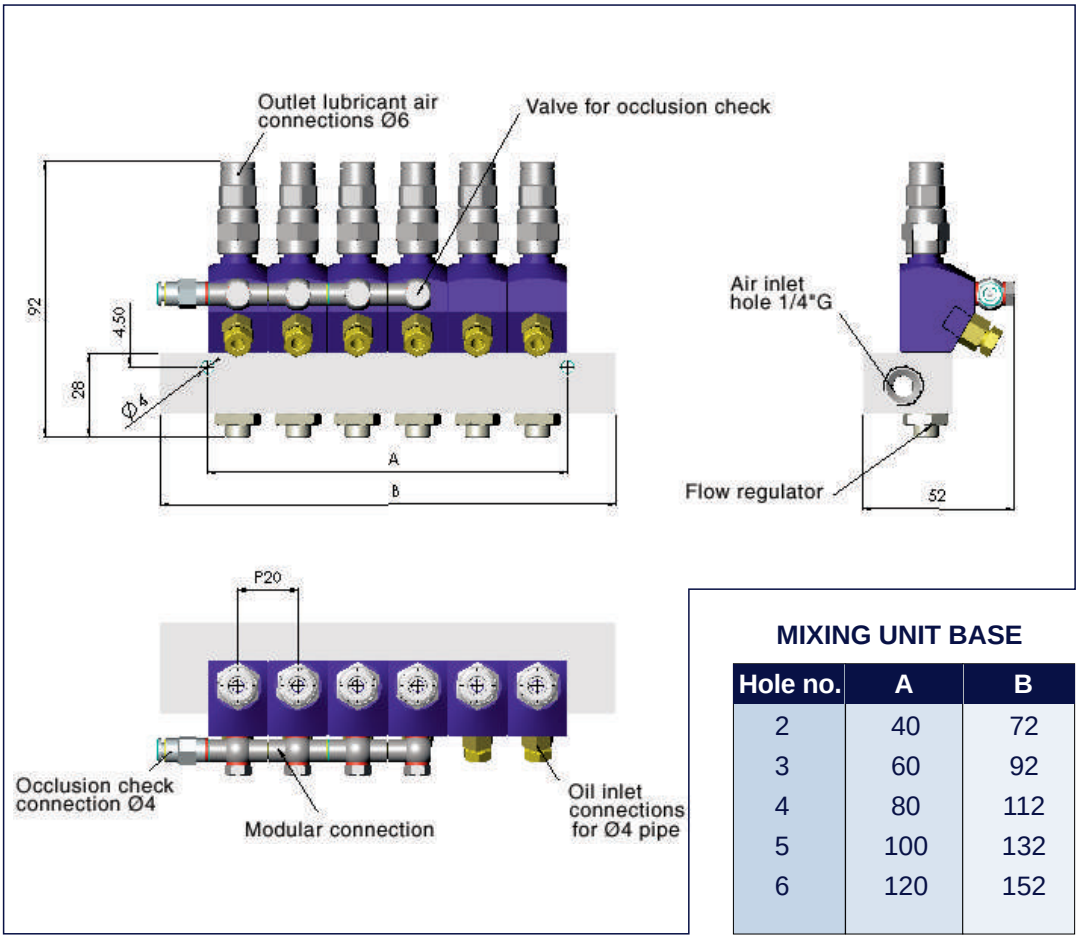
Technical Features





MIXING UNIT BASE

Hole no.	A	B
2	40	72
3	60	92
4	80	112
5	100	132
6	120	152

TECHNICAL DATA: MIXING UNIT

Lubricant: oil viscosity max 150 cSt at 40°C
Built for using: single or combinable
Lubricant air connection: for Ø 6 mm (8 or 4) pipe
Lubricant air adjustment: single, by screw
Lubricant air nominal flow rate:
from 0 up to 200 liters/min (nom. Ø 2)
Inlet air pressure: 6 bar
Network air connection: for Ø 6x4 pipe (8x4)
Lubricant air max pressure: from 0,5 up to 2 bar
N.B. for lubricant air pressure higher than 2 bar,
Lubricant oil connection from dosing valve : for Ø 4 mm pipe
Wall fastening: for single version only

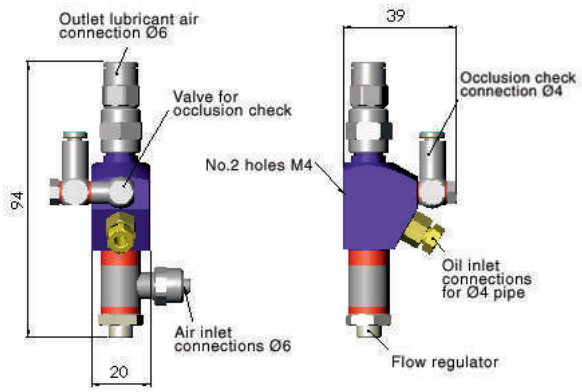
MIXING UNIT BASE

Built in 5 models for 2-3-4-5-6 mixing units
Network air connection: 1/4" G at the 2 ends
Wall fastening

OPTIONS

Valve for check of lubricant air channel occlusion:
single, for each mixing unit.
One-way combinable connection: for check of lubricant air occlusion from one point only.
Pressure switch: for channel/s occlusion alarm signal.
Check valve on lubricant oil connection:
for single mixing unit (necessary for lubricant air pressure higher than 1,5/2 bar).

SINGLE MIXING UNIT MODULE WITH VALVE FOR OCCLUSION CHECK



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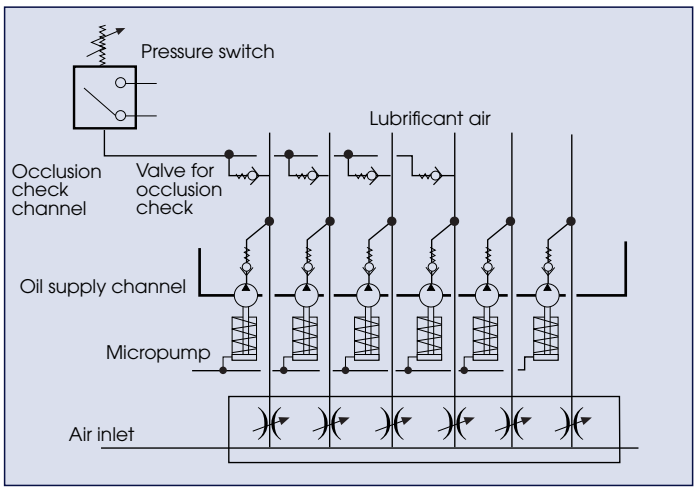
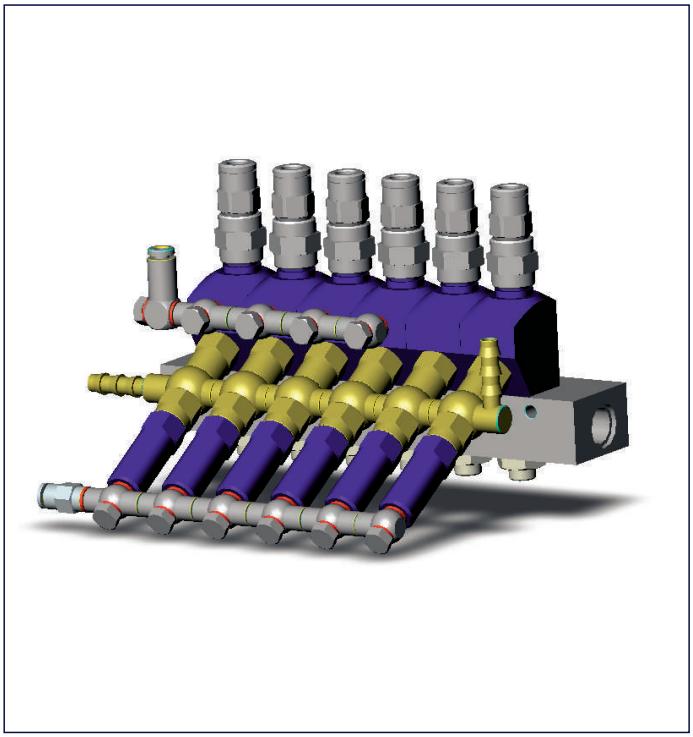
Combinable Mixers With Micropumps

AZETA AIR MIX air-oil lubrication system

AZETA AIR MIX COMPATIBLE WITH REGULATIONS ON ENVIRONMENTAL POLLUTION

HYDRAULIC-PNEUMATIC DIAGRAM





DESCRIPTION

The **AIR MIX with Micropump** system is different from the basic version as concerns the oil injection that takes place with a micropump, replacing the dosing valve, installed at the oil inlet of the mixer module. The mixer module with micropump can be used on its own or combinable, fitted on a mixing unit base.

The micropump is a true volumetric pneumatic plunger piston pump, governed by a single-acting pneumatic cylinder with spring return. The supply of oil to the micropumps takes place by gravity from a reservoir set at a greater height.

These micropumps, as the mixer modules, are combinable as concerns the connection of the oil supply duct between them and the fittings for the pneumatic control to the driving cylinder. The operation of the micropumps must be timed and adjustable, using a 3 /2 solenoid valves for control. The operating frequency can be 2 cycles/s.

For single or differentiated operations, with different intervals in the same assembly it is necessary to have one electrovalve for each control.

The combinable nature of the mixer modules with or without the occlusion check valve remains unchanged. This system needs no lubrication pump, distributors or dosing valves.

OPERATION

In this assembly, operation takes place in the following way: the compressed air, at the max pressure of 6 bar, enters the mixing unit base, crosses the flow regulators and enters the mixing duct; the oil, coming from the micropump, is injected in the same duct where the mixing takes place and transport along the channel, becoming lubricant air.

This mixture is finely spread along the piping, creating a channel in its inside wall, to reach the point to lubricate. Continuous blowing of lubricant air even at very low pressure (0,5 bar) conveys the oil in homogeneous quantities at the lower percentages already referred to in the description (10^{-8}).

Obviously, the best air-oil dosing, at the point of arrival, also depends on the length of the lubricant air pipe.

FIELD OF USE

This **AIR MIX** lubrication system finds widespread use in the lubrication of spindles, electro-spindles, even at high speeds, rolling-contact bearings, linear guides and screws, especially for woodworking machines.

PROTECTIVE LUBRICATION

The **AIR MIX** system moreover lends itself to protecting finished products for storage, also delicate zones of partially painted products, protection of parts in the assembly phase on production lines, etc...

LUBE COOLING

The system is equally functional in lube-cooling tools that remove material such as: tappers, candle cutters, facing cutters, circular cutters, centre punches, spot-facers, disc saws, belt saws, cutting punches, dies for coining cutlery, etc...

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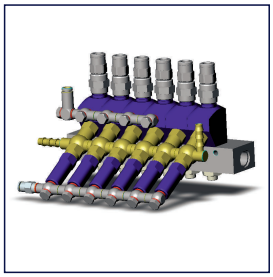
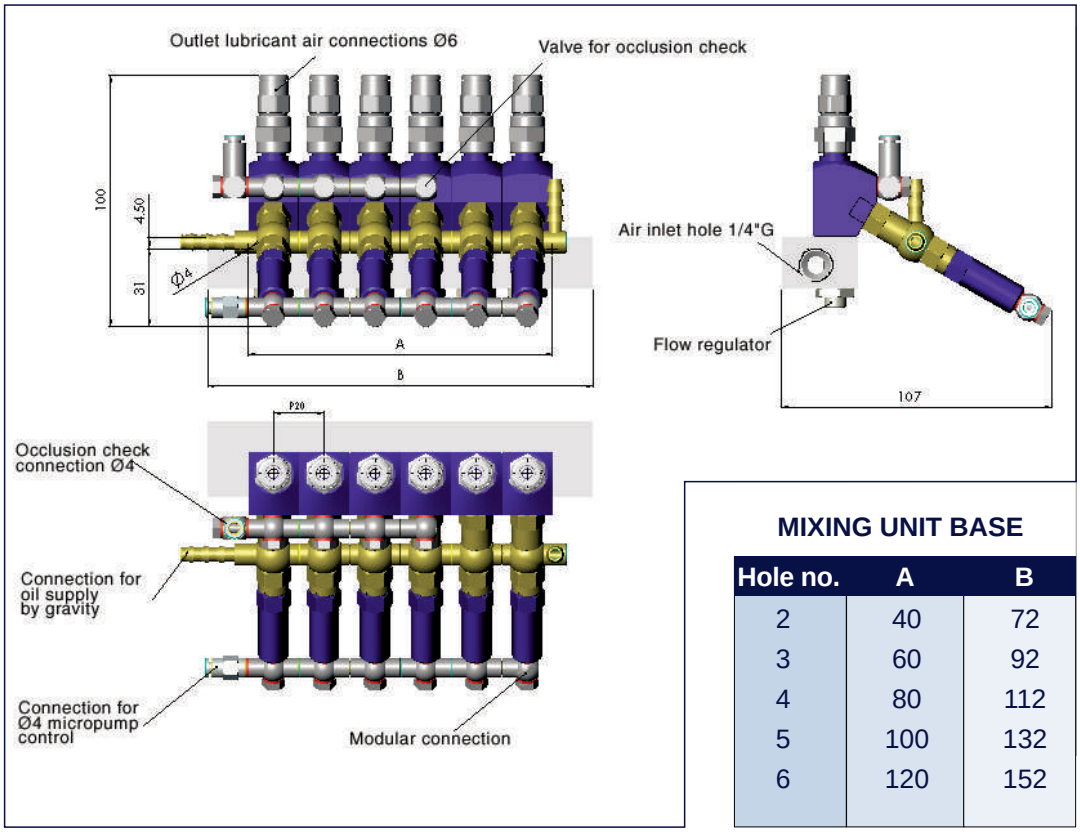
Technical Features





MIXING UNIT BASE

Hole no.	A	B
2	40	72
3	60	92
4	80	112
5	100	132
6	120	152

TECHNICAL DATA: MIXING UNIT

Lubricant: oil viscosity max 150 cSt at 40°C
Built for using: single or combinable
Lubricant air connection: for Ø 6 mm(8 or 4) pipe
Lubricant air adjustment: single, by screw
Lubricant air nominal flow rate:
from 0 up to 200 liters/min (nom. Ø 2)
Inlet air pressure: 6 bar
Network air connection: for Ø 6x4 pipe (8x4)
Lubricant air max pressure: from 0,5 up to 6 bar
Wall fastening: for single version only

MIXING UNIT BASE

Built in 5 models for 2-3-4-5-6 mixing units
Network air connection: 1/4" G at the 2 ends
Wall fastening

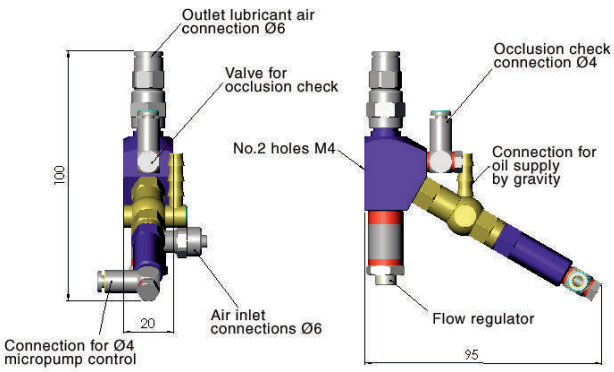
MICROPUMP

Flow rate: from 15 to 60 mm^3
Flow rate change: mechanical with stroke limiter spacer
Supply air pressure: max 6 bar
Theoretic pressure ratio: 11,11:1
Stroke frequency: max 2 cycles/s

OPTIONS

Valve for check of lubricant air channel occlusion:
single, for each mixing unit.
One-way combinable connection: for check of lubricant air occlusion from one point only.
Pressure switch: for channel/s occlusion alarm signal.
Check valve on lubricant oil connection: for single mixing unit (necessary for lubricant air pressure higher than 1,5/2 bar).

SINGLE MIXING UNIT MODULE WITH VALVE FOR OCCLUSION CHECK



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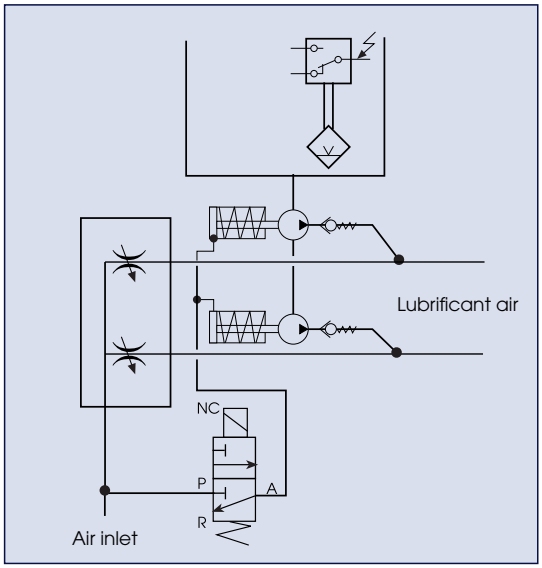
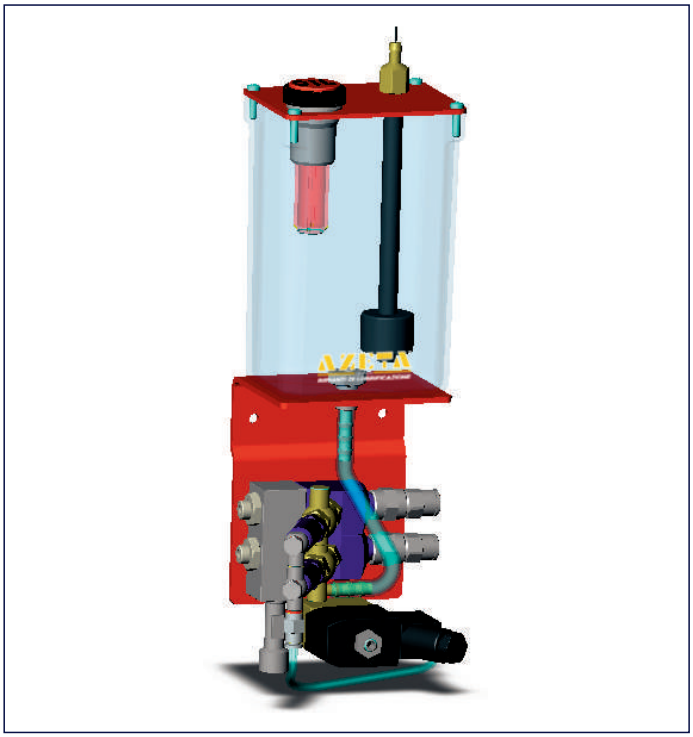
AZETA AIR MIX EVO2

AZETA AIR MIX air-oil lubrication system

AZETA AIR MIX COMPATIBLE WITH REGULATIONS ON ENVIRONMENTAL POLLUTION

HYDRAULIC-PNEUMATIC DIAGRAM





DESCRIPTION

AZETA AIR MIX EVO2 comprises an air-oil lubrication unit with two channels with mixer modules and micropumps, complete with all the accessories for the timed electric control, ready for use.

The **AIR MIX** system is a minimal lubrication air-oil system, with low oil consumption. The oil is dosed intermittently, while the flow of air is continuous. These two elements produce a very fine lubricating mixture that uses air as a carrier. The quantity of oil comes within a value, in many cases even lower, of 10^{-7} compared to the air, per unit of time. This mixture can be modified according to the requirements of **lubrication** or **lube cooling**.

The unit is composed of a 0,6 liters tank, level switch, bracket for fixing to a wall, two mixer modules, base with lubricant flow adjustment screws, two micropumps, a 3/2 solenoid valve for their electric control.

The unit can be set up with mixer modules equipped with occlusion check valves on the line to the lubricant air channel. The supply of oil to the micropumps takes place by gravity from the tank.

The micropump is a true volumetric pneumatic plunger piston pump, governed by a single-acting pneumatic cylinder with spring return.
The regulation of the flow of lubricant air is independent for each channel, while the unit inlet air command must come from the machine, whether continuous or intermittent, according to the needs of **lubrication** or **lube cooling**.

OPERATION

In this assembly, operation takes place in the following way: the compressed air, at the max pressure of 6 bar, enters the mixing unit base, crosses the flow regulators and enters the mixing duct; the oil, coming from the micropump, is injected in the same duct where the mixing takes place and transport along the channel, becoming lubricant air.

This mixture is finely spread along the piping, creating a channel in its inside wall, to reach the point to lubricate. Continuous blowing of lubricant air even at very low pressure (0,5 bar) conveys the oil in homogeneous quantities at the lower percentages already referred to in the description (10^{-8}).
Obviously, the best air-oil dosing, at the point of arrival, also depends on the length of the lubricant air pipe.

FIELD OF USE

This **AIR MIX** lubrication system finds widespread use in the lubrication of spindles, electro-spindles, even at high speeds, rolling-contact bearings, linear guides and screws, especially for woodworking machines.

PROTECTIVE LUBRICATION

The **AIR MIX** system moreover lends itself to protecting finished products for storage, also delicate zones of partially painted products, protection of parts in the assembly phase on production lines, etc...

LUBE COOLING

The system is equally functional in lube-cooling tools that remove material such as: tappers, candle cutters, facing cutters, circular cutters, centre punches, spot-facers, disc saws, belt saws, cutting punches, dies for coining cutlery, etc...

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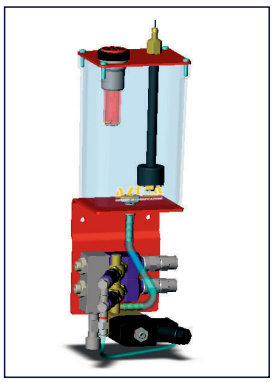
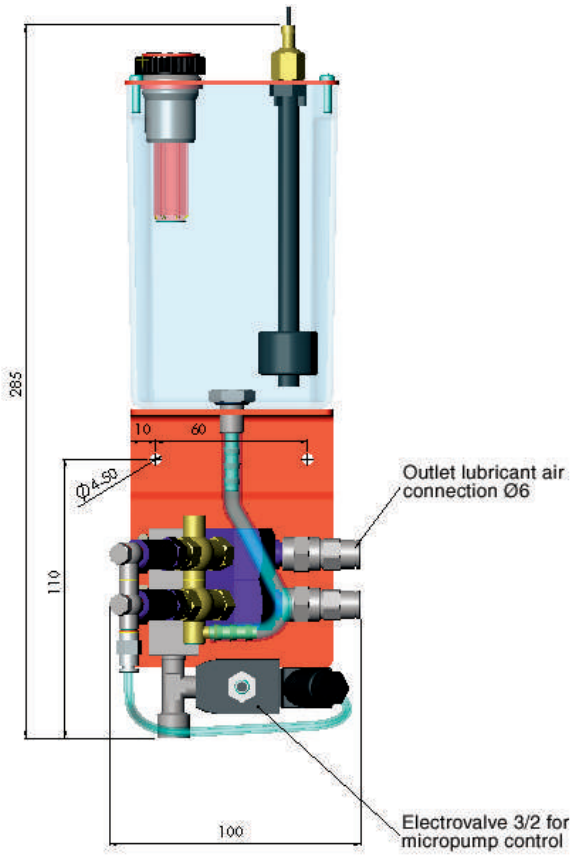
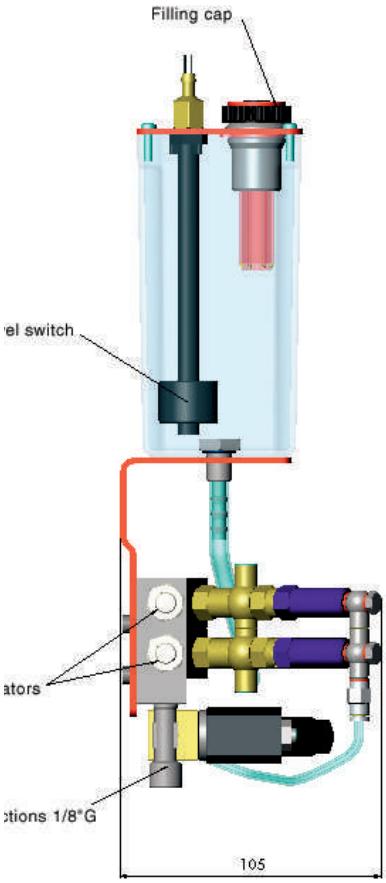
Technical Features







TECHNICAL DATA:

Lubricant:	oil viscosity max 150 cSt at 40°C
Tank:	transparent resin
Tank capacity:	0,6 liters
Lubricant air connection:	for Ø 6 mm (8 or 4) pipe
Lubricant air adjustment:	single, by screw
Lubricant air nominal flow rate:	from 0 up to 200 liters/min (nom.Ø 2)
Inlet air pressure:	max 6 bar
Network air connection:	1/8" G
Lubricant air max pressure:	from 0,5 up to 6 bar
Oil flow rate:	max 60 mm^3, min 15 mm^3
Flow rate change:	mechanical with stroke limiter spacer
Theoretic pressure ratio:	11,11:1
Electrovalve voltage:	24/110/220 V AC 50 Hz; 24 V DC
Stroke frequency:	max 2 cycles/s
Working cycles:	controlled by PLC or our equipments
Electric level:	Low oil indicator
Sizes (mm):	100x105x285h

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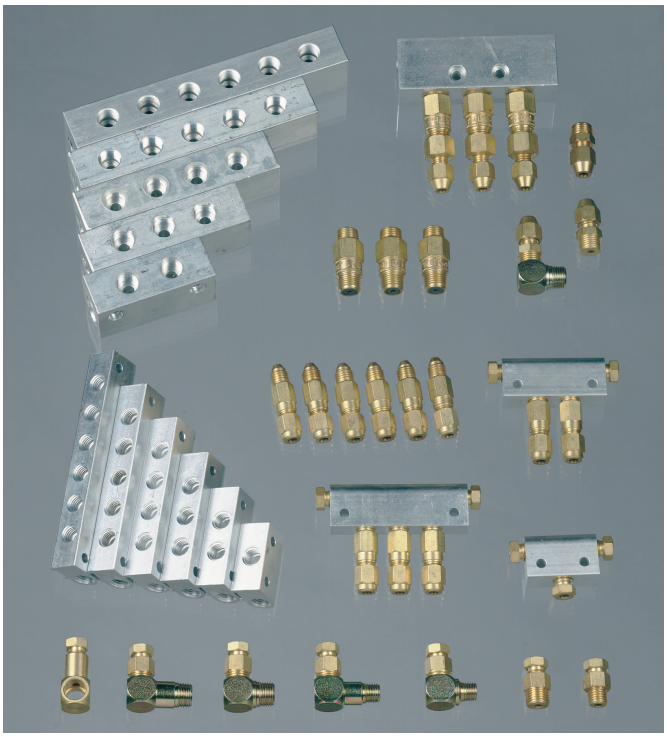
Distributors, Dosing Valves, Connections



Resistive dosing valves
for low pressure 0,75-1-2-4-8-16 drops per minute

2-3-4-5-6 ways **line distibutors/dividers**

3 ways **line divider**

Volumetric dosing valves
for medium pressure
0,03-0,05-0,07-0,10-0,15-0,20-0,25-0,30 cm^3

Straight terminal connection
M 3x0,5 M 6x1,0 M 8x1,0 M 10x1,0 and 1/8”G

90° terminal connection
M 3x0,5 M 6x1,0 M 8x1,0 M 10x1,0 and 1/8”G

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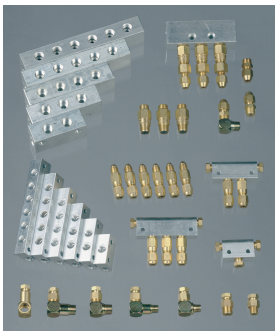
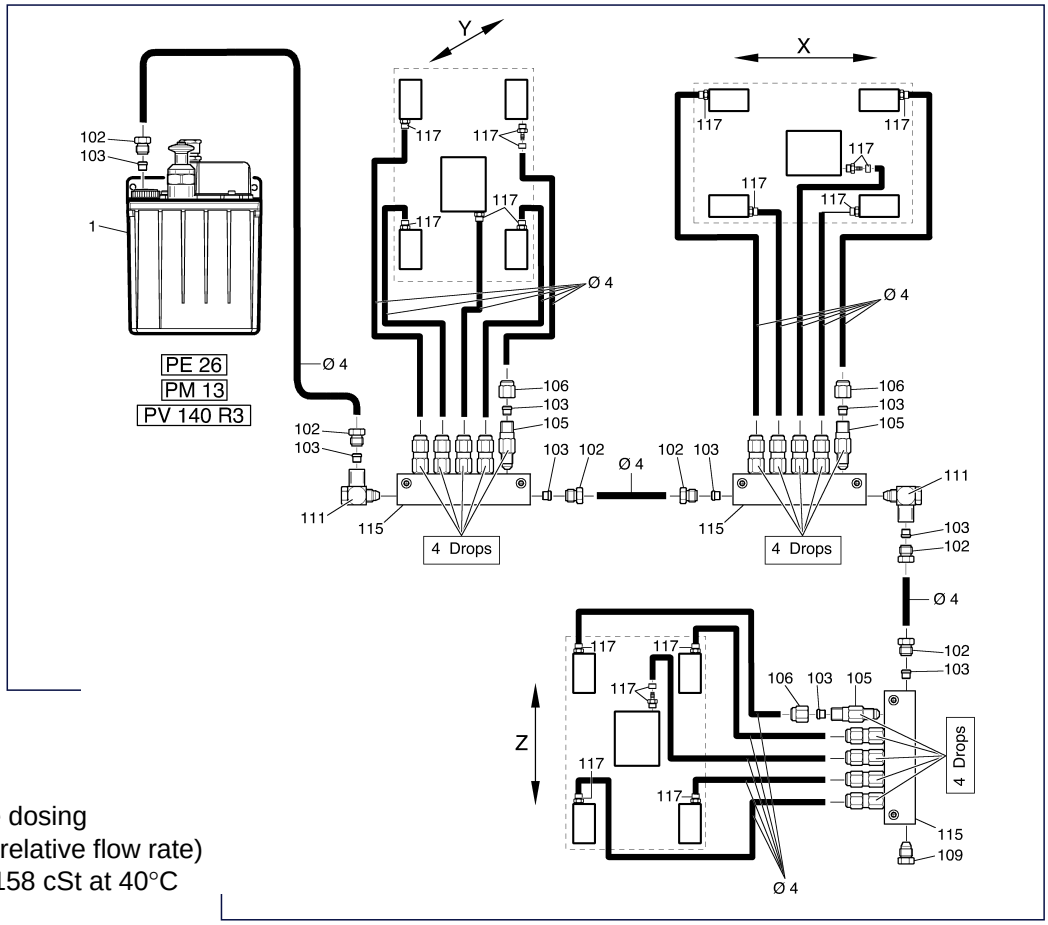
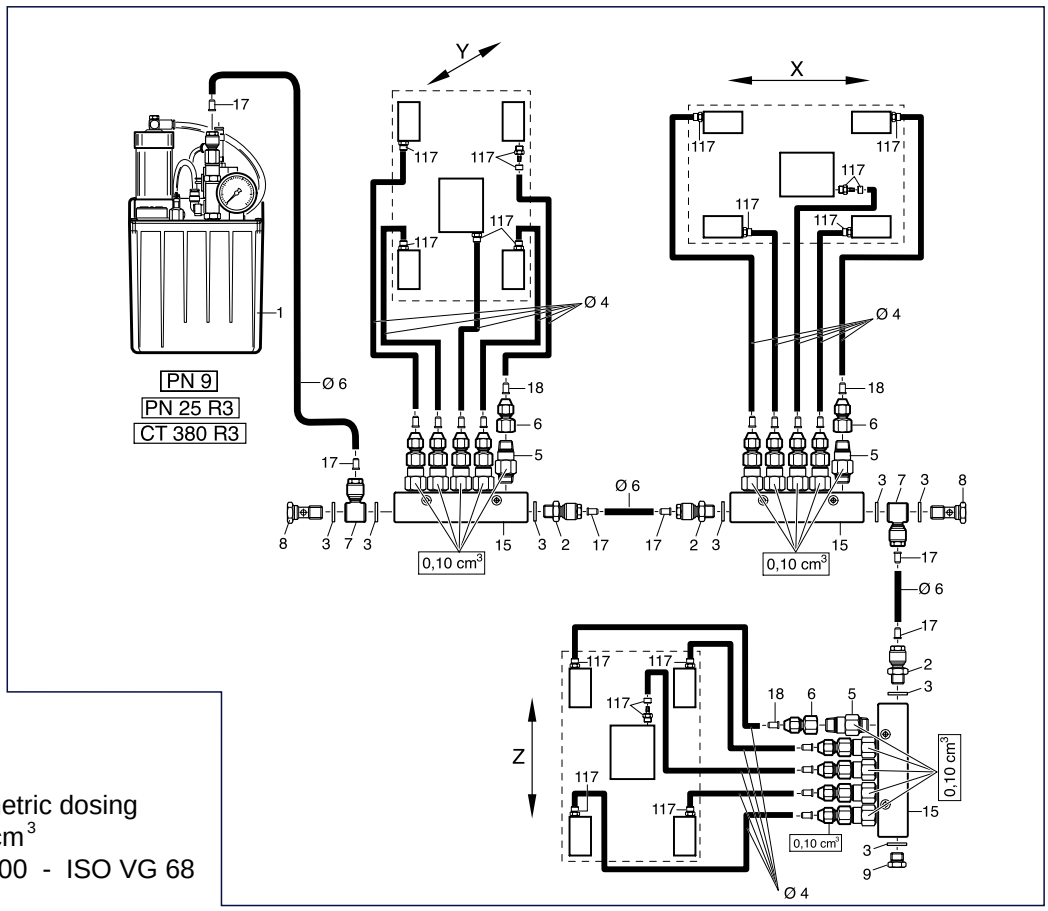
Application Examples





LOW PRESSURE

Lubrication points	N°15
Type of lubrication	Resistive dosing
Volume per point	4 drops (relative flow rate)
Viscosity class	Oil Max 158 cSt at 40°C



MEDIUM PRESSURE

Lubrication points	N°15
Type of lubrication	Volumetric dosing
Volume per point	0,10 cm^3
Viscosity class	NLGI 00 - ISO VG 68

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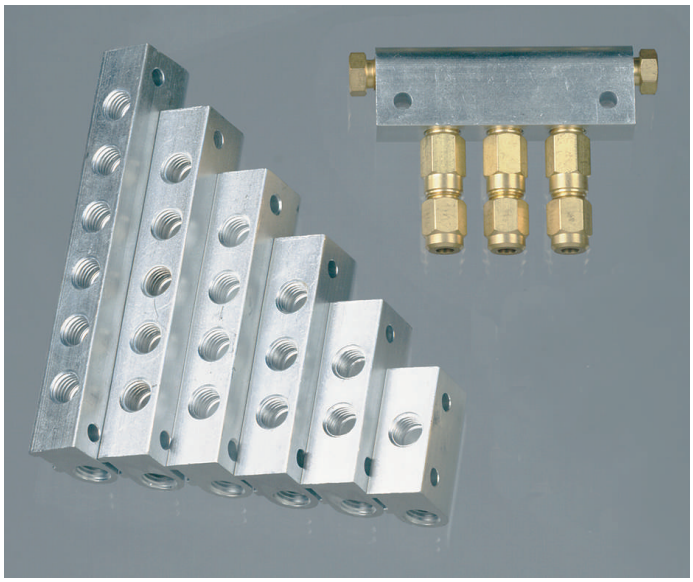
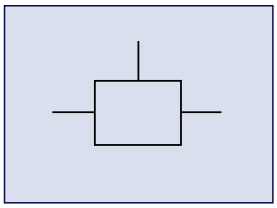
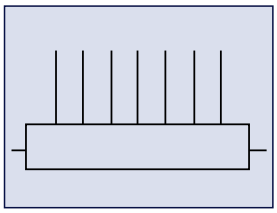
DISTRIBUTORS AND DIVIDERS



HYDRAULIC SYMBOLS

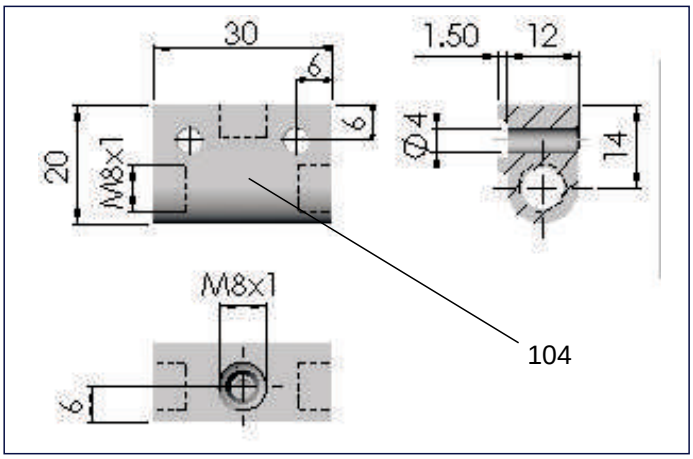


Divider



Distributor

104 - RL 81

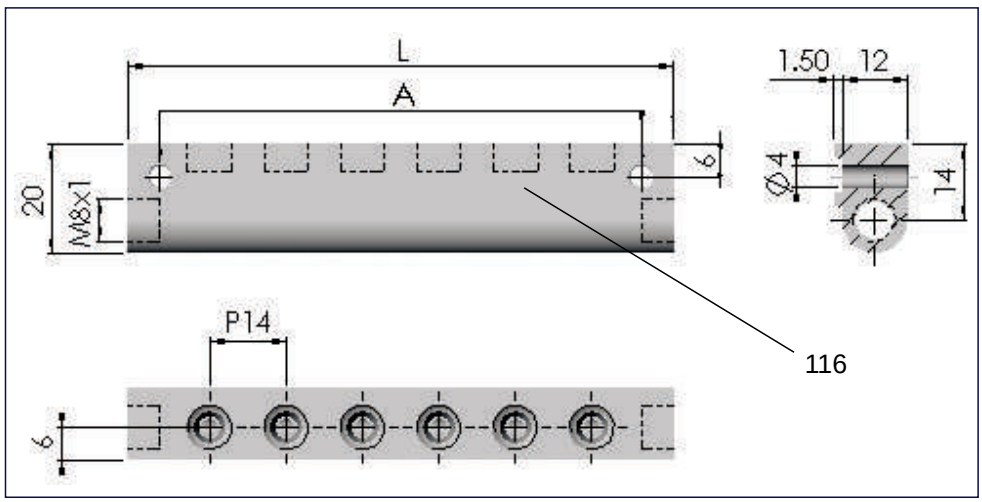


DESCRIPTION

Distributor obtained from coaxial perforated extruded aluminium bars.
Each model has the line inlet and outlet at the ends and two holes for fixing to a wall. They are available with from 2 to 6 radial ways with a pitch of 14 mm.
The identification code refers to the number of radial ways excluding the inlet and outlet.

All the utilization holes have a threaded internal tapered seat M8x1. The resistive dosing valves (on the radial holes) are fitted directly with no sealant. All the holes can be used for the rotating connection with no sealant and for deformation locking with bushing and connection for pipe Ø4.

The "L Series" volumetric dosing valves can be fitted on all the holes with seal washer on the surface. Using the line pipe Ø6 requires connections with a reduced shank M8x1 and seal washer.



Ref.	No Ways	Cod.	L	A
112	2	DRE 2V.81	44	32
113	3	DRE 3V.81	58	46
114	4	DRE 4V.81	72	60
115	5	DRE 5V.81	86	74
116	6	DRE 6V.81	100	88

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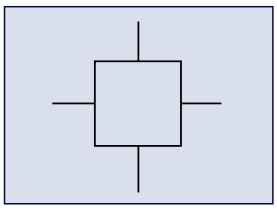
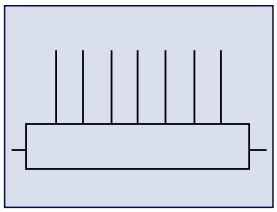
DISTRIBUTORS AND DIVIDERS

HYDRAULIC SYMBOLS

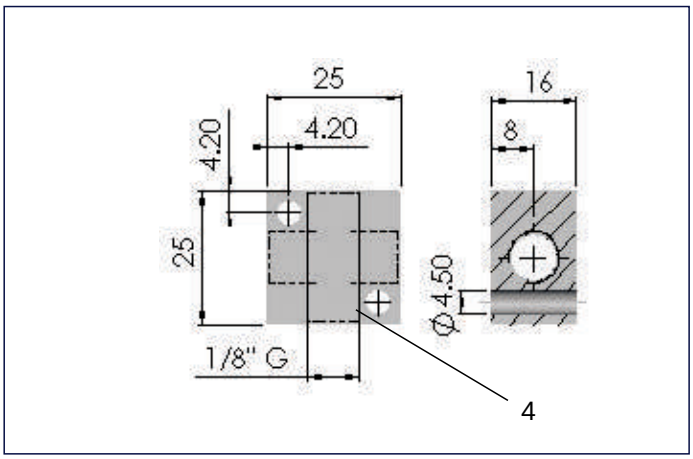


Cross divider



Distributor

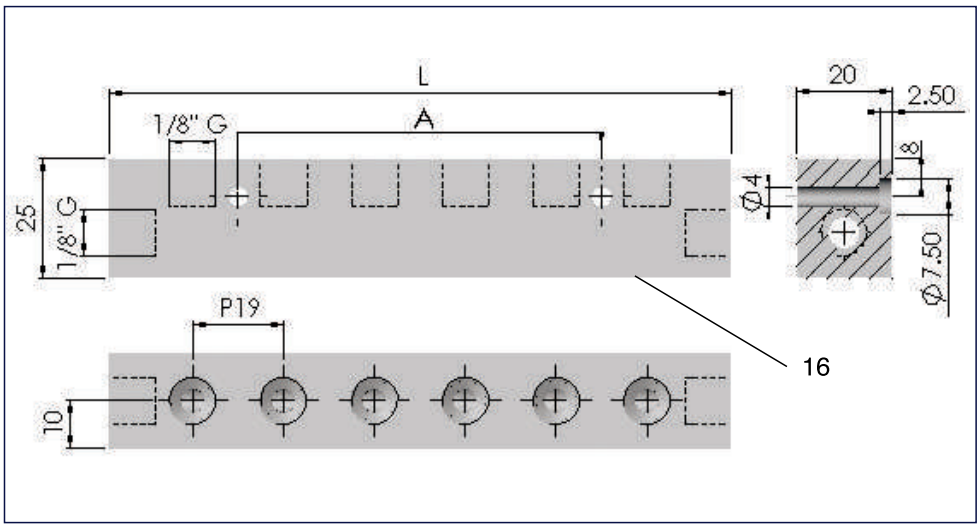
4 - R4 3033.18



DESCRIPTION

Distributor obtained from drawn aluminium bars. Each model has the line inlet and outlet at the ends and two holes for fixing to a wall. They are available with from 2 to 6 radial ways with a pitch of 19 mm.
The identification code refers to the number of radial ways excluding the inlet and outlet.

All the utilization holes are communicating and identical with 1/8" G thread. They are fitted directly on the "Z Series" dosing valves to use the connections with seal washer or conical thread connections by applying Teflon or sealant. The "Z Series" volumetric dosing valves have a 1/8" G conical end to be directly fitted with Teflon or sealant same as any other conical thread connection.



Ref.	No Ways	Cod.	L	A
12	2	DRT 2V.18	54	38
13	3	DRT 3V.18	73	19
14	4	DRT 4V.18	90	38
15	5	DRT 5V.18	111	57
16	6	DRT 6V.18	130	76

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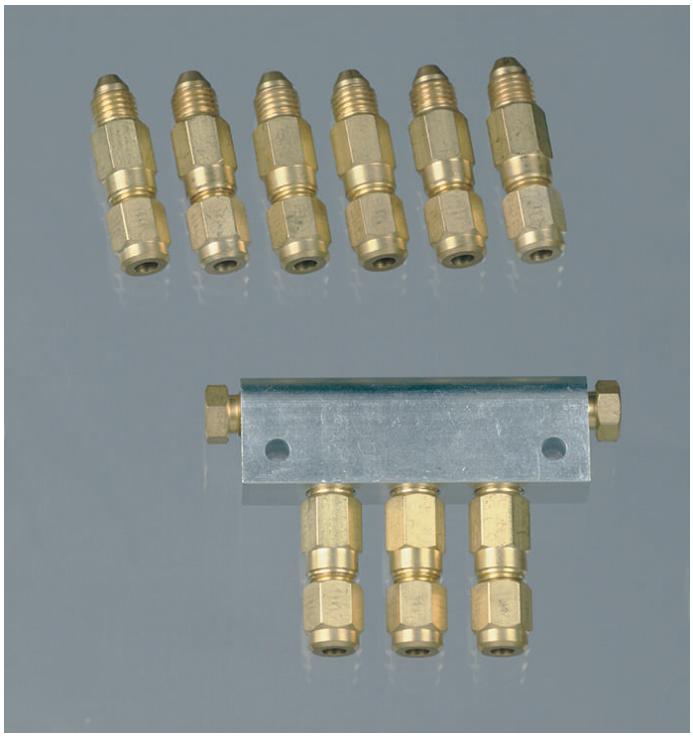
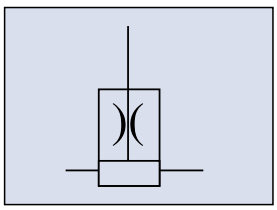
Resistive Dosing Valves



HYDRAULIC SYMBOLS



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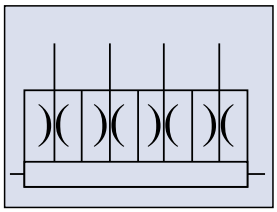

Multiple elements

DESCRIPTION

The resistive dosing valve, under low pressure, has its flow rate determined in drops per minute, the volume of a drop corresponds to 33 mm^3, the quantity of drops is defined as the **relative flow rate**. The range of relative flow rates is given in the table.

The relative flow rate is determined with the following parameters:
oil with a viscosity of 65,5 cSt at 40°C, test temperature 20°C, mean test pressure 2,7 bar. Modifying even just one of these parameters varies the **relative flow rate**.

This type of dosing valve can also be used with medium pressure pumps, naturally pressure over 2,7 bar modifies the relative flow rate.

The **DT 81** dosing valve with external tapered seat to be fitted on distributors in the DRE series with no sealant and at the other end, with internal tapered seat, for deformation locking of the pipe Ø4.

This dosing valve is composed of: an external casing threaded at the ends, containing an element known as the "precision diffuser" with a calibrated through hole, in its turn coupled with a calibrated dosing pin; at its ends, the diffuser has: a seat on one side for a plate valve, the plate valve is composed of a disc made of sealing material and a rigid metal supporting disc, in its turn pushed against this seat by a biconical spring; at the other end, there is a micro-perforated stainless steel disc to support the felt, which performs the function of mirror filtering, and on the same side a plug with an external tapered seat encloses it all.
Upward vertical positioning is recommended since with each cycle the dosing pin runs in the diffuser between the plate valve and the micro-perforated disc, creating a cleaning effect without sticking to the walls after prolonged stoppages, ensuring the good operation over time. Installation directly on the point to lubricate is not contemplated.

OPERATION

The lubricating oil from the pump enters the dosing valve from the end with the external tapered seat, it crosses the felt, then the micro-perforated stainless steel disc, it moves the dosing roller that rests on the plate valve, it passes between the roller and the calibrated hole of the diffuser, it lifts the plate valve and comes out dosed along the pipe to reach the point to lubricate.

Dosing takes place due to the difference between the diameter of the calibrated hole of the diffuser and the calibrated dosing pin inside it; the greater the clearance between the two, the greater the **relative flow rate**. As described, the **resistance** opposing the clearance between the pin and diffuser hole determines the quantity of oil **seepage** or its dosing that in its turn is determined by the pressure, temperature and density of the oil.

The plate valve closes maintaining a pressure of 0,4 bar in order to keep the pipes full even with differences in level no greater than 3,5 m.

FIELD OF USE

These dosing valves are particularly suited for high-precision machine tools (such as: grinding machines, boring machines, lathes, etc) since the low pressure does not alter the stability of machine's slides and screws.

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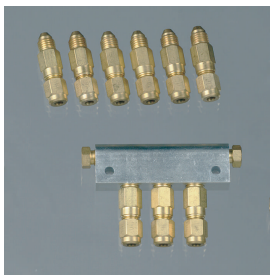
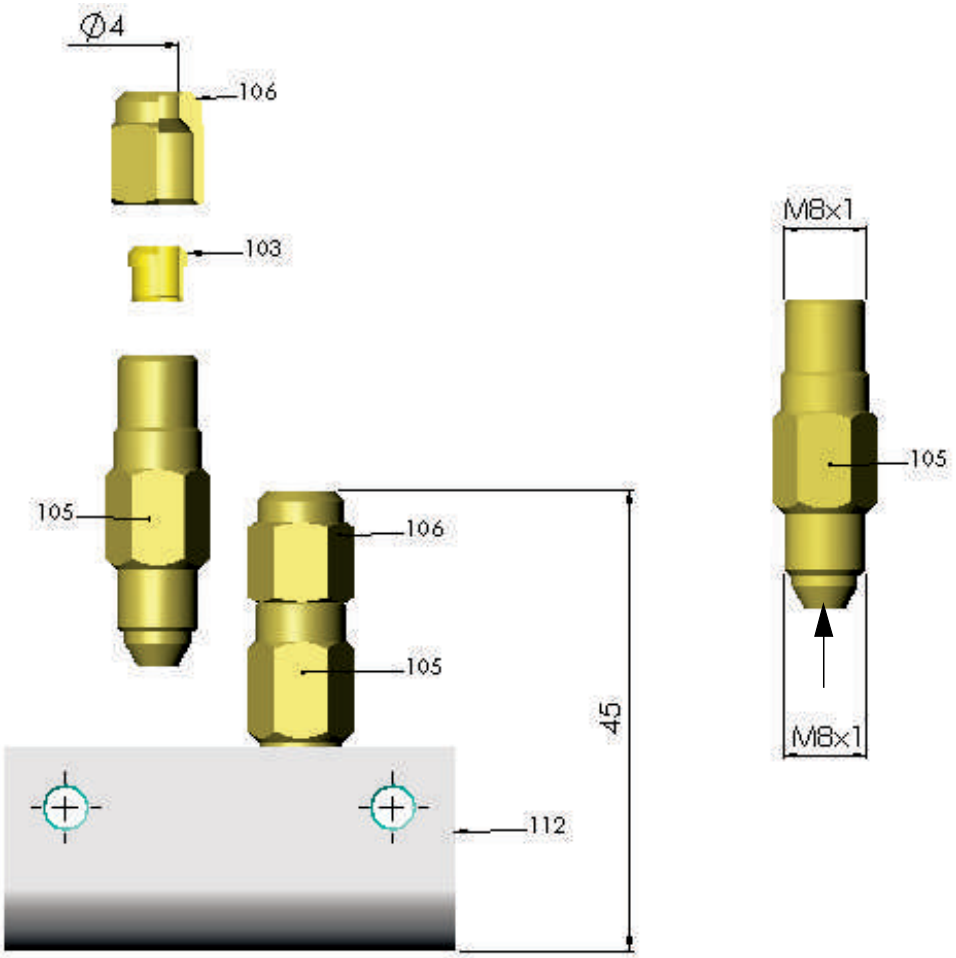
Technical Features





Ref.	Type	Cod.	Relative flow rate
105	00	DT81.00	0.75
105	0	DT81.0	1
105	1	DT81.1	2
105	2	DT81.2	4
105	3	DT81.3	8
105	4	DT81.4	16

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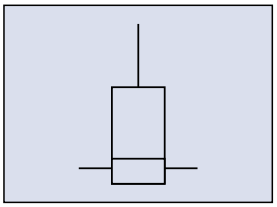
Volumetric Dosing Valves Z Series

HYDRAULIC SYMBOLS



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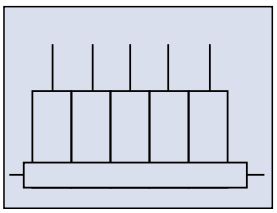

Multiple elements

DESCRIPTION

The "Z Series" fixed flow-rate volumetric dosing valve is characterized by the fact that at the lubricant inlet there is a special valve, patented for Italy, USA, Germany, Mexico, Canada and Saudi Arabia, and in the general construction context it is distinguished by having a double seal in the two phases of Work and Pause.

It can thus be defined a medium pressure fixed flow-rate "**Double Seal Volumetric Dosing valve**." The range of volumetric flow rates is stated in the table.

This system of dosing the lubricant does not suffer from changes in: working temperature, lubricant density or working pressure.
Its volumetric precision is almost unbelievable, just think that testing is performed using laboratory glass test-tubes and counting the number of cycles multiplied by the flow rate to highlight the possibility of error.

Its assembly and/or use, by means of the 1/8" G and M10x1 threaded ends, is on the DRT Series distributor or directly on the point to be lubricated. In this case it is possible to use a special set of multi-way connections, fitted directly on the dosing valve, to make a centralized system, with the main line crossing from one point to the other, with no breaks.

As there are connections with up to 3/4 ways, from one inlet on the dosing valve another 1,2,3 branches can go out to other dosing valves.

This dosing valve is composed of: an external casing with 1/8" G (inlet) and M10x1 (use) threaded ends. Inside there is a special valve with three functions:
1) OPEN-CLOSED lubricant passage for recharging,
2) one-way function,
3) function of balancing the minimum line pressure at 8/10 bar, external dynamic seal; a fixed stem with coaxial hole, dosing valve piston sliding on the stem, piston return and recharging spring, closing plug with centring for stem and spring.

The balancing function permits pressurizing (at 8/10 bar) all the dosing valves distant from each other including the line, before injection. This guarantees the maximum volumetric precision and the best operation.

OPERATION

ACTIVE PHASE

The pressurized lubricant enters the dosing valve and operates the triple valve that closes the passage on the stem for recharging, then the lubricant operates the sliding piston that in turn injects lubricant into the service, while filling the volumetric chamber.
The piston stroke determines the fixed flow rate.

RECHARGING PHASE

On resetting the pressure the spring moves the triple valve that opens the passage for recharging, the lubricant fills the injection chamber again while emptying the volumetric chamber that had filled in the active phase. The lubricant in this phase passes through the coaxial hole of the stem and does not return to the dosing valve inlet. Operation is the same even with NLGI 0 fluid grease.

FIELD OF USE

These dosing valves can be used on all types of machines, with pressure between 25 and 70 bar.
Machine tools, textile machines, plate machining, moulding plastics, woodworking, marble, cardboard, cereals, citrus fruits, packing, printing, packaging machines, etc...

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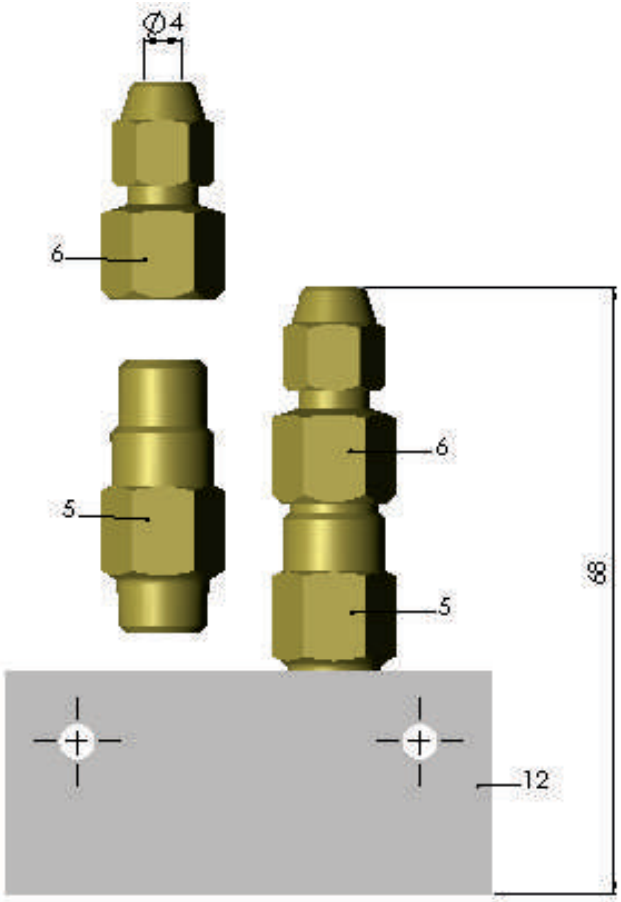
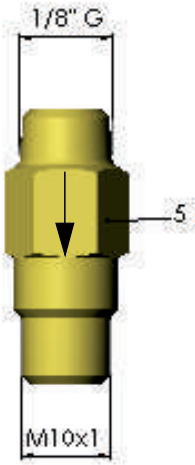
Technical Features





Ref.	Corresp. No.	Cod.	Flow rate Cm^3
5	3	ZA 108 C005.3	0,05
5	4	ZB 108 C010.4	0,10
5	5	ZC 108 C015.5	0,15

VOLUMETRIC DOSING VALVES GI-Erre SERIES

Ref.	Corresp. No.	Cod.	Flow rate Cm^3
5	4	ZB 108AC010.4	0,10
5	5	ZC 108AC015.5	0,15
5	7	ZD 108AC030.7	0,30

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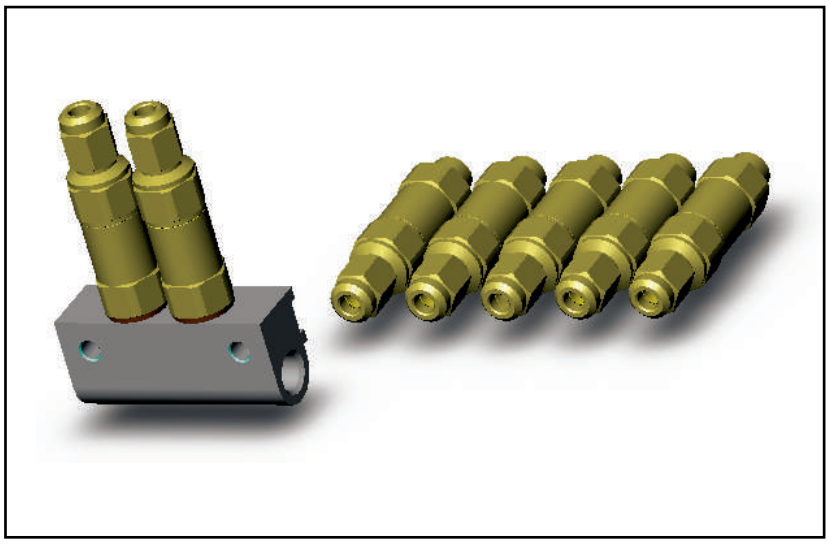
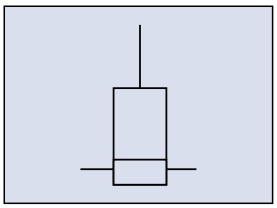
Volumetric Dosing Valves L Series



HYDRAULIC SYMBOLS



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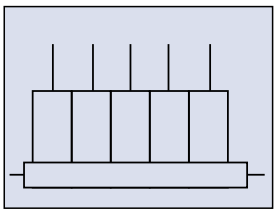

Multiple elements

DESCRIPTION

The "L Series" fixed flow-rate volumetric dosing valve differs from the "Z Series" volumetric dosing valve in its compactness, reduced sized, direct locking of the pipe Ø4 for the service. Like the "Z Series," it is characterized by the fact that at the lubricant inlet there is a special valve, patented for Italy, USA, Germany, Mexico, Canada and Saudi Arabia, and in the general construction context it is distinguished by having a double seal in the two phases of Work and Pause.

It can thus be defined a medium pressure fixed flow-rate "**Double Seal Volumetric Dosing valve**." The range of volumetric flow rates is stated in the table.

This system of dosing the lubricant does not suffer from changes in: working temperature, lubricant density or working pressure.
Its volumetric precision is almost unbelievable, just think that testing is performed using laboratory glass test-tubes and counting the number of cycles multiplied by the flow rate to highlight the possibility of error.

Its assembly and/or use, by means of the M8x1 threaded ends, is only on the 14 mm pitch DRE Series distributor.

This dosing valve is composed of: an external casing with M8x1 (inlet) threaded ends, M8x1 (use) with inside conical seat.
Inside there is a special valve with three functions:
1) OPEN-CLOSED lubricant passage for recharging,
2) one-way function,
3) function of balancing the minimum line pressure at 8/10 bar, external dynamic seal; a fixed stem with coaxial hole, dosing valve piston sliding on the stem, piston return and recharging spring, closing plug with centring for stem and spring.

The balancing function permits pressurizing (at 8/10 bar) all the dosing valves distant from each other including the line, before injection. This guarantees the maximum volumetric precision and the best operation.

OPERATION

ACTIVE PHASE

The pressurized lubricant enters the dosing valve and operates the triple valve that closes the passage on the stem for recharging, then the lubricant operates the sliding piston that in turn injects lubricant into the service, while filling the volumetric chamber.
The piston stroke determines the fixed flow rate.

RECHARGING PHASE

On resetting the pressure the spring moves the triple valve that opens the passage for recharging, the lubricant fills the injection chamber again while emptying the volumetric chamber that had filled in the active phase. The lubricant in this phase passes through the coaxial hole of the stem and does not return to the dosing valve inlet. Operation is the same even with NLGI 0 fluid grease.

FIELD OF USE

These dosing valves can be used on all types of machines, with pressure between 25 and 70 bar.
Machine tools, textile machines, plate machining, moulding plastics, woodworking, marble, cardboard, cereals, citrus fruits, packing, printing, packaging machines, etc...

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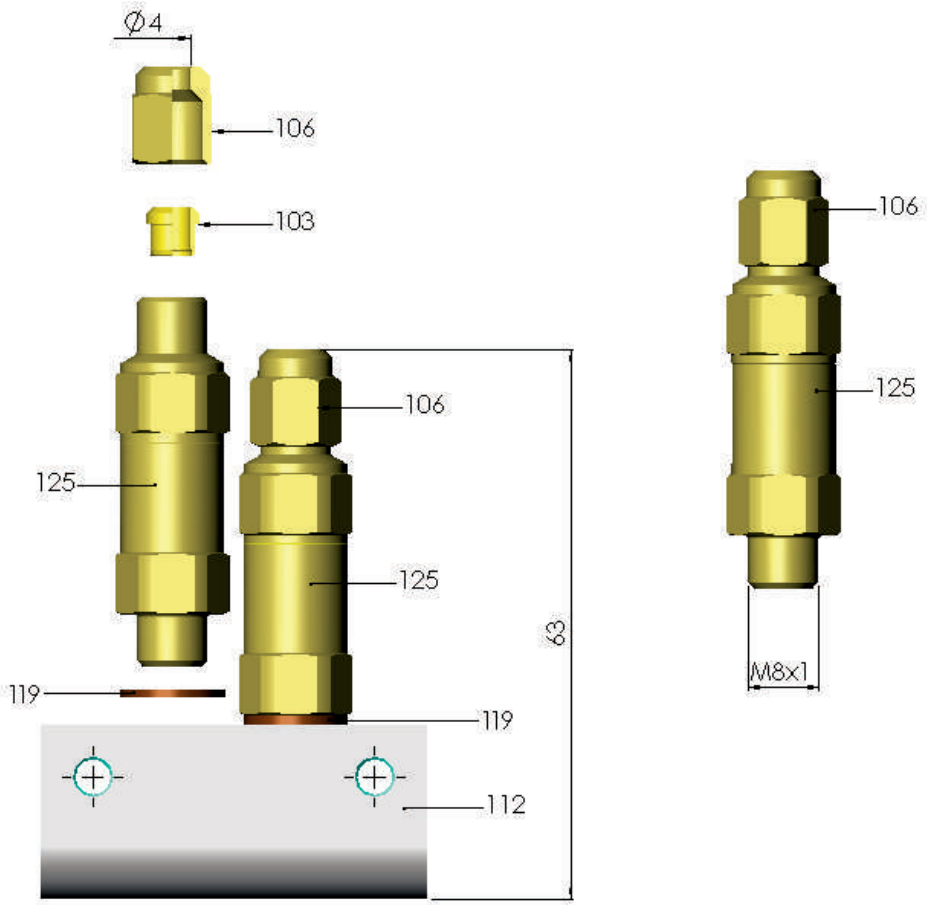
E-mail info@azetalub.com

Technical Features



Ref.	Cod.	Flow rate Cm^3
125	DV 003.81	0,03
125	DV 005.81	0,05
125	DV 007.81	0,07
125	DV 010.81	0,10
125	DV 015.81	0,15
125	DV 020.81	0,20
125	DV 025.81	0,25
125	DV 030.81	0,30

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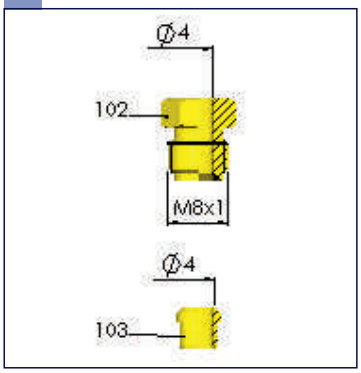
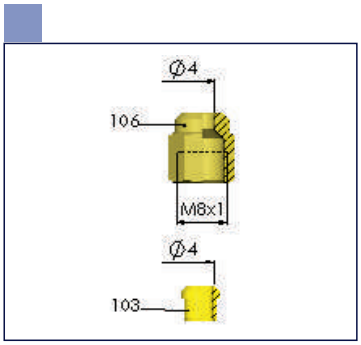


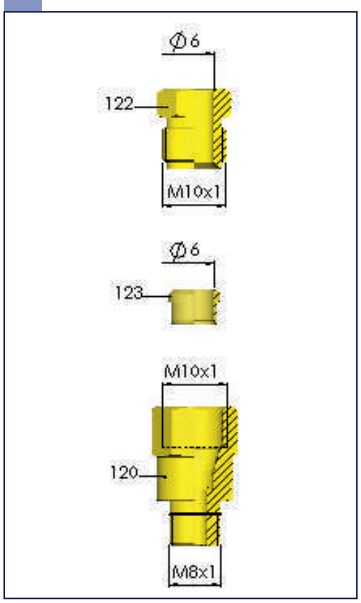
Pipe fitting
102 - RB4.81

Stop bushing
103 - BBE 4



Ring nut for dosing valves
106 - DDG.81

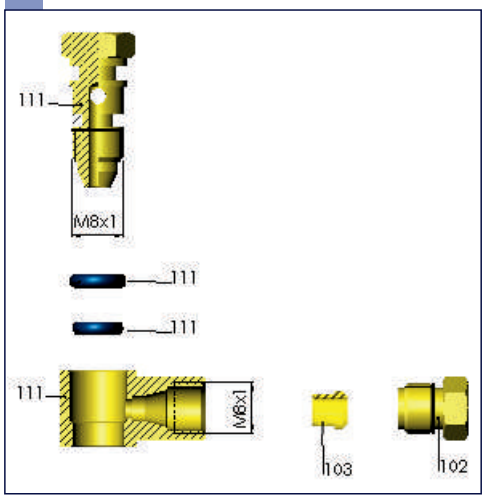
Stop bushing
103 - BBE 4



Pipe fitting
122 - RB6.101

Stop bushing
123 - BBE 6

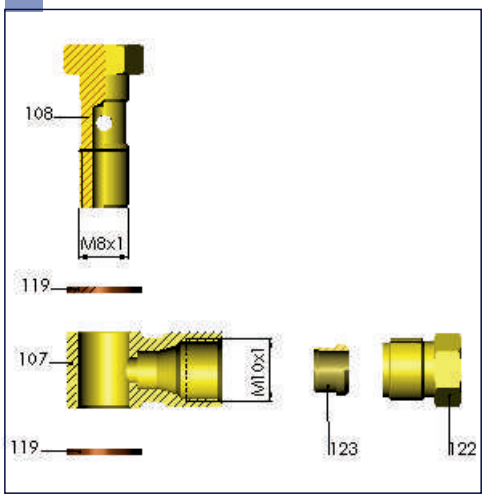
Line straight connection
120 - RD6 C12.81



Complete universal rotating 90° connection
111 - RG4.90.81

Stop bushing
103 - BBE 4

Pipe fitting
102 - RB4.81



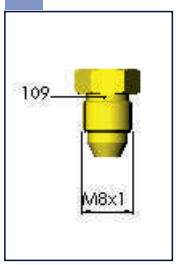
Single hollow screw
108 - VC1.81

Revolving connection
107 - RO16.81

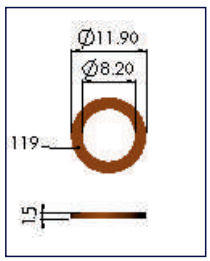
Copper washer
119 - RR 81

Stop bushing
123 - BBE 6

Pipe fitting
122 - RB6.101



Universal cap
109 - T81



Copper washer
119 - RR 81

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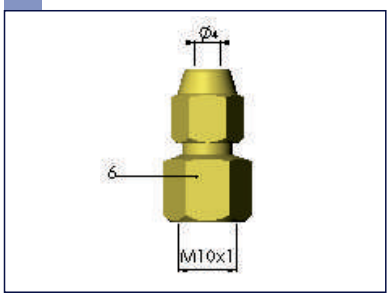
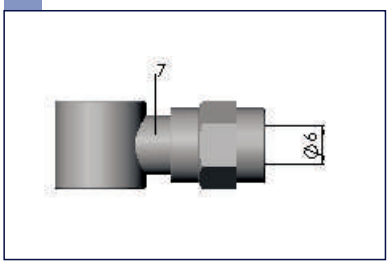
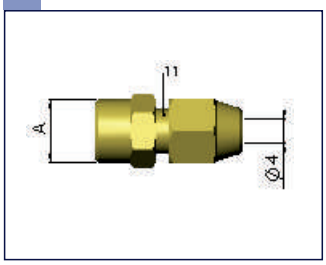
Line Connections



Female straight connection
6 - RF40.101



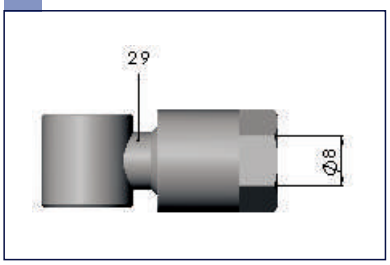
Banjo union
7 - RO16.18



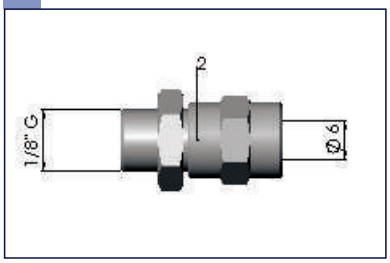
Straight connection
11 - NP4.101 A=M10x1,0

Straight connection
28 - NP4.18 A=1/8" G

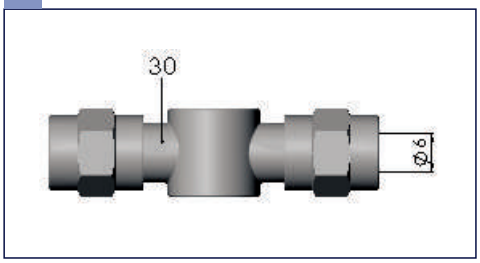
Special connection
with check valve
24 - NP41.101 A=M10x1,0



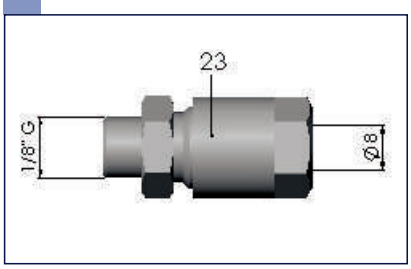
Banjo union
29 - RO18.18



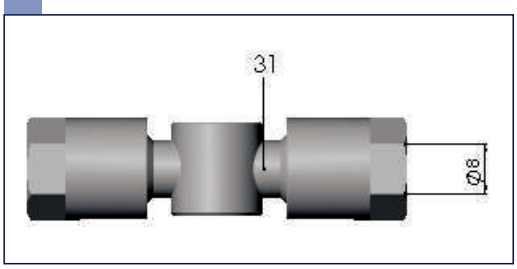
Male straight connection
2 - NP6.18



Banjo union
30 - RO26.18



Male straight connection
23 - NP8.18



Banjo union
31 - RO28.18

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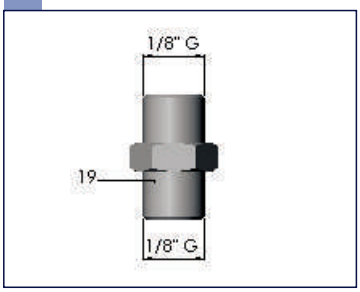
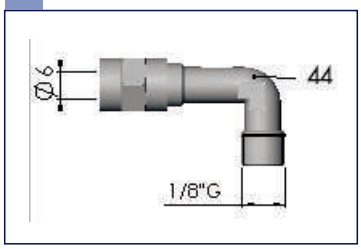
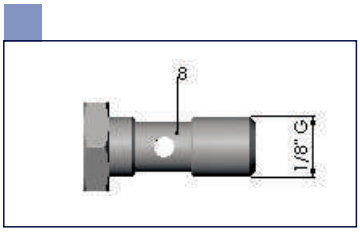
Line Connections



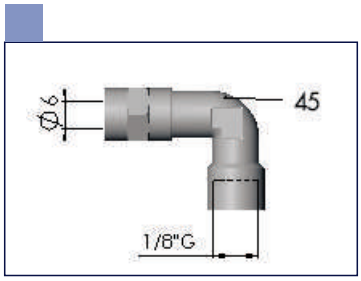
Cylindrical nipple
19 - NPG 2500.18



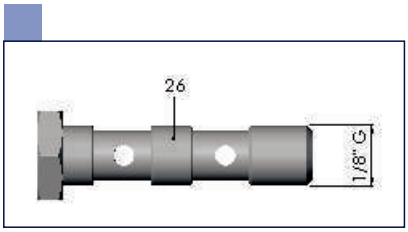
Curved male union
44 - RL80 1020.18



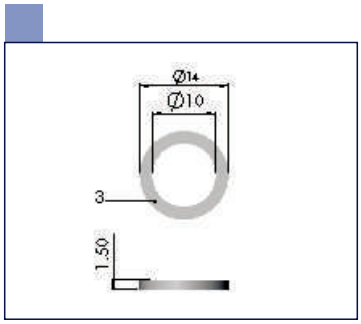
Single hollow screw
8 - VC1 1631.18



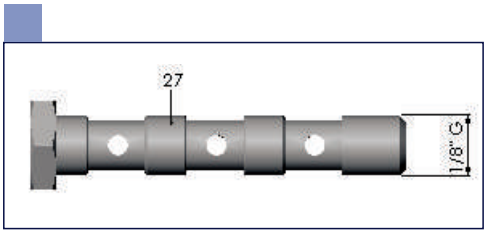
Curved female union
45 - RF906 1093.18



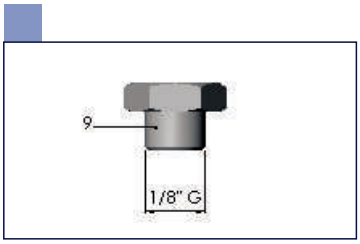
Double hollow screw
26 - VC2 1631.18



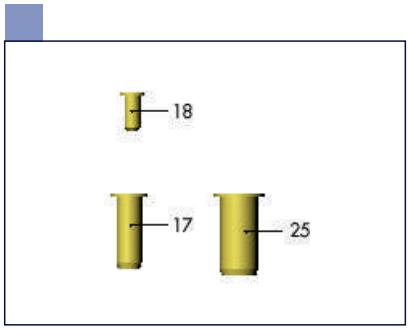
Aluminium washer
3 - RA 18



Triple hollow screw
27 - VC3 1631.18



Male cap
9 - T18 2611.18



Reinforcement bushing
18 - BR4.020
BR4.025

17 - BR6.040

25 - BR8.060

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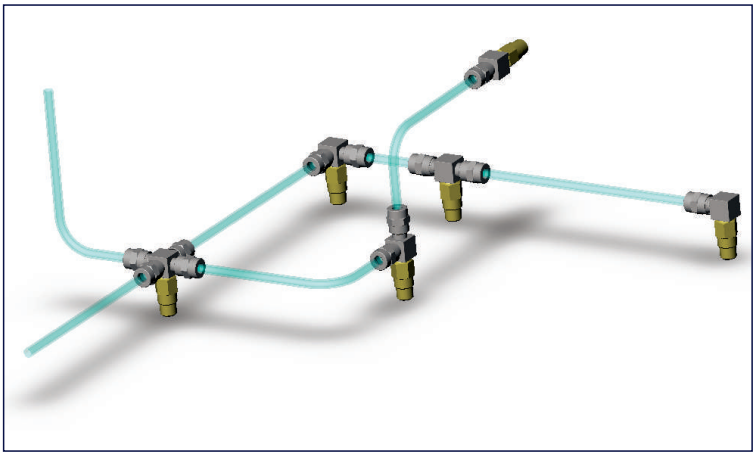
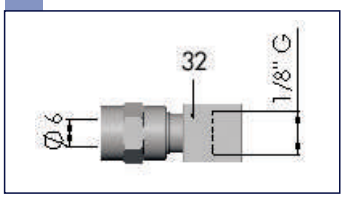
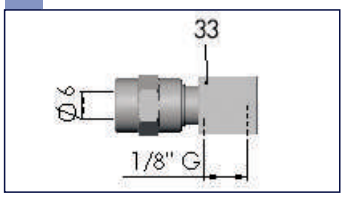
FOR DIRECT USE WITH VOLUMETRIC DOSING VALVES “Series Z”

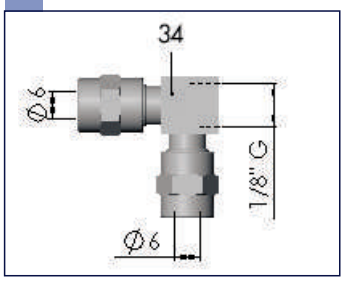




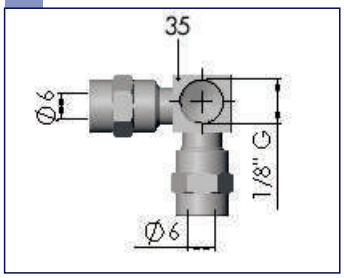
1-way straight
32 - BA1.18



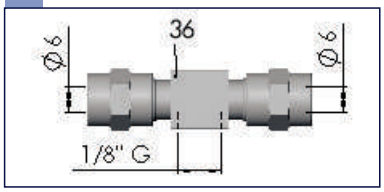
1-way 90°
33 - BB1.18



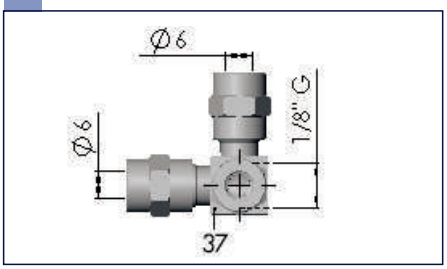
2-ways - one straight - one 90°
34 - BC1.18



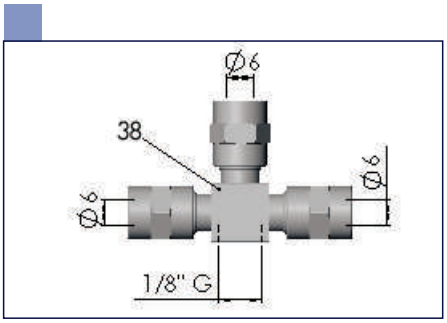
2-ways 90°
35 - BD1.18



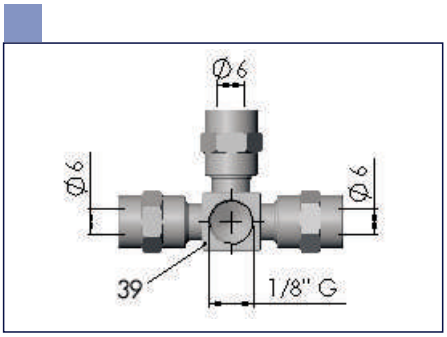
2-ways 180°
36 - BE1.18



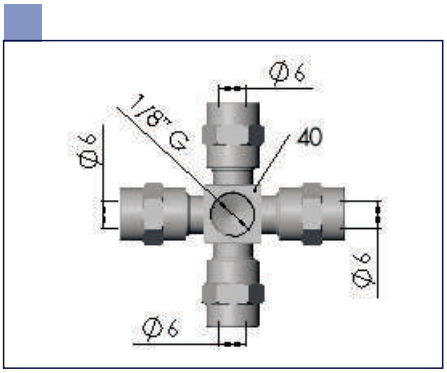
3-ways - one straight - two 90°
37 - BF1.18



3-ways - one 90°- two 180°
38 - BG1.18



3-ways - one straight - two 180°
39 - BG2.18



4-ways 90°
40 - BH1.18

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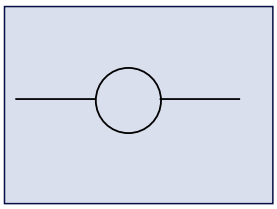
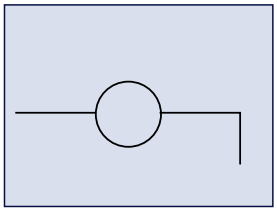
Terminal Connections

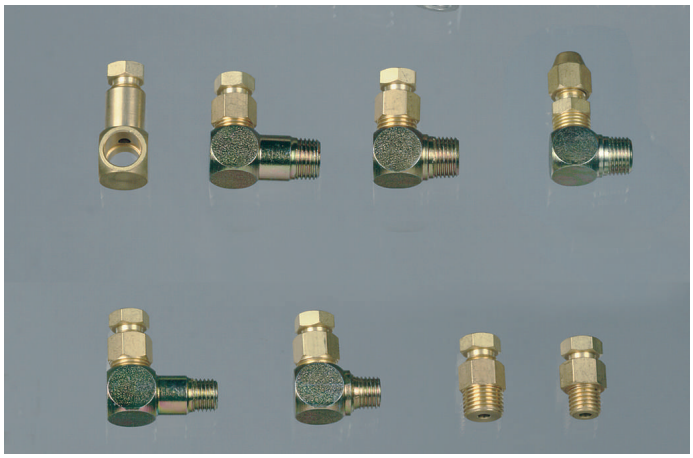
HYDRAULIC SYMBOLS

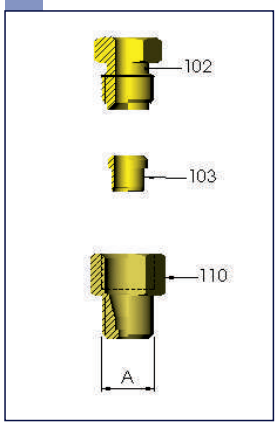


Straight terminal



90° curved terminal

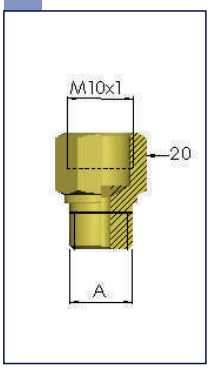




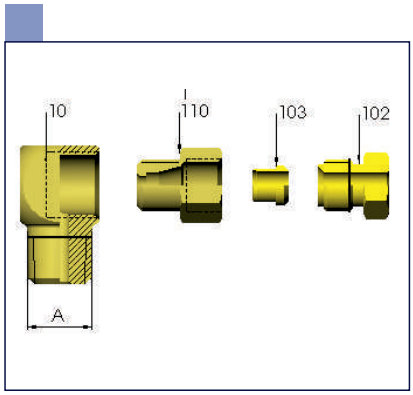
102 - RB4.81

103 - BBE 4

110 - RD 81.81 A=M8x1,0
RD 81.101 A=M10x1,0
RD 81.18 A=1/8" G



20 - RS 6 C14.61 A=M 6x1,0
RS 8 C14.81 A=M 8x1,0
RS 10 C12.101 A=M 10x1,0

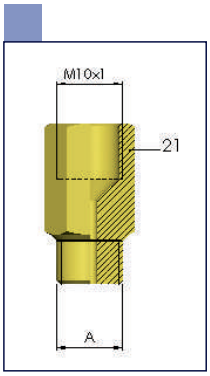


102 - RB4.81

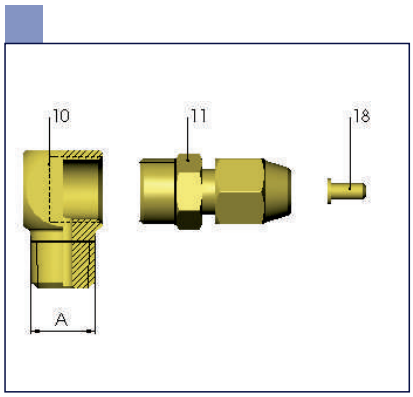
103 - BBE 4

110 - RD 81.101 A=M10x1,0

10 - RS 69C12.61 A=M 6x1,0
RS 69C12.6075 A=M 6x0,75
RS 89C12.81 A=M 8x1,0
RS 89C12.8125 A=M 8x1,25
RS 109C12.101 A=M 10x1,0
RS 109C12.18 A=1/8" G



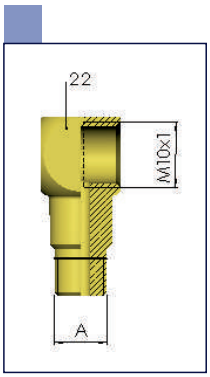
21 - RS 10LC12.101 A=M 10x1,0



18 - BR4.020
BR4.025

11 - NP4.101

10 - RS 69C12.61 A=M 6x1,0
RS 69C12.6075 A=M 6x0,75
RS 89C12.81 A=M 8x1,0
RS 89C12.8125 A=M 8x1,25
RS 109C12.101 A=M 10x1,0
RS 109C12.18 A=1/8" G



22 - RS 89LC12.81 A=M 8x1,0
RS 89LC12.8125 A=M 8x1,25
RS109LC12.101 A=M 10x1,0

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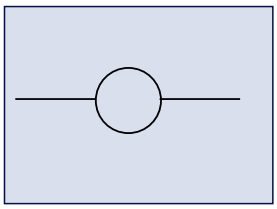
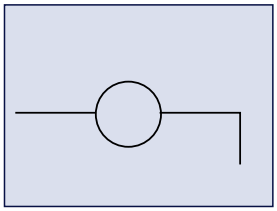
Mini-Block Terminal Connections

HYDRAULIC SYMBOLS



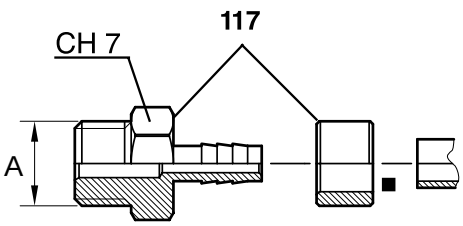
Straight terminal



90° curved terminal

Real sizes

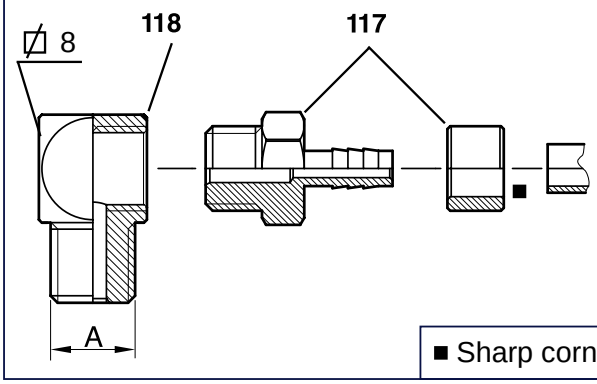
SAW-TOOTHED STRAIGHT CONNECTION WITH STOP RING



■ Sharp corner

117 - RRP 425.305 A=M3x0,5
RRP 425.61 A=M6x1,0
RRP 425.6075 A=M6x0,75

90° TERMINAL REDUCTION - M6 X 1,0

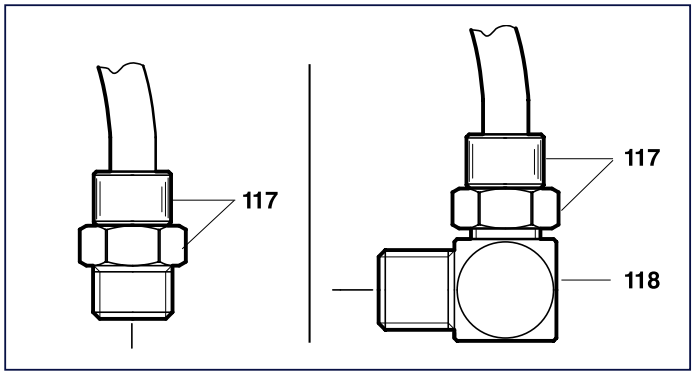


■ Sharp corner

117 - RRP 425.61 A=M6x1,0

118 - RS 39 C8.305 A=M3x0,5
RS 69 C8.61 A=M6x1,0
RS 69 C8.6075 A=M6x0,75

SLIDING BALL SCREWS



USABLE WITH PIPE Ø 4X0,75 NYLON - RILSAN

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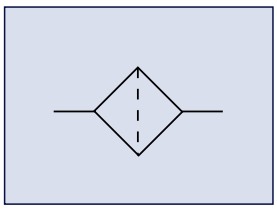
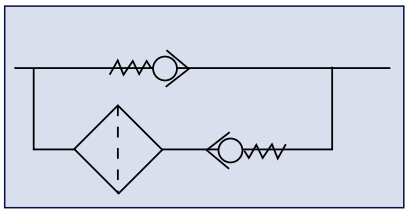
FILTERING ELEMENTS FOR LUBRICATION LINES

HYDRAULIC SYMBOLS



FL BP.81



FL MPBY.18

FL BP.81 LINE FILTER

The **FL BP.81** line filter is recommended in oil lubrication systems to ensure optimal operation of resistive dosing valves, precise and accurate lubrication for fragile mechanical parts or parts under strain that require the certainty of receiving clean oil. Especially if the low-pressure lubrication feeds an AZETA AIR MIX air-oil system. (see rolling-contact bearings, linear bearings, spindles, electro-spindles and other similar applications).

This filter must be installed by interrupting the line between the pump and the first distributor. The inlet and outlet connections are the type with a tapered seat with M8x1 thread for pipe Ø4.

The **FL BP.81** filter is composed of a body and an aluminium cap, screwed together and a wall bracket. On the inside there is a star cartridge with a seal and paper filtering element, with filtration **10-30 μm.**

The **FL BP.81** model is not fitted with a one-way check valve as all our low pressure pumps are equipped with this type of valve, **it must not be installed in systems with pumps with a line pressure release valve**.

FL MPBY.18 LINE FILTER

The **FL MPBY.18** medium pressure line filter is recommended in oil lubrication systems to ensure optimal operation of **volumetric or resistive dosing** valves, precise and accurate lubrication for fragile mechanical parts or parts under strain that require the certainty of receiving clean oil. Especially if the lubrication with volumetric dosing valves feeds an AZETA AIR MIX air-oil system. (see rolling-contact bearings, linear bearings, spindles, electro-spindles and other similar applications).

This filter must be installed by interrupting the line between the pump and the first distributor. The inlet and outlet connections are 1/8" G threaded.

The **FL MPBY.18** filter is composed of a top body with a By-pass valve on the outlet duct and an aluminium cap, screwed together. Wall fastening with bracket.

On the inside there is a star cartridge with a seal and paper filtering element, with filtration **10-30 μm**.
In the top cap there is a By-pass valve on the outlet/service duct with two opposing one-way check valves to prevent oil returning into the cartridge and particles of dirt separating from the filtering surface in the phase of decompression of the main line for recharging **volumetric dosing valves**.

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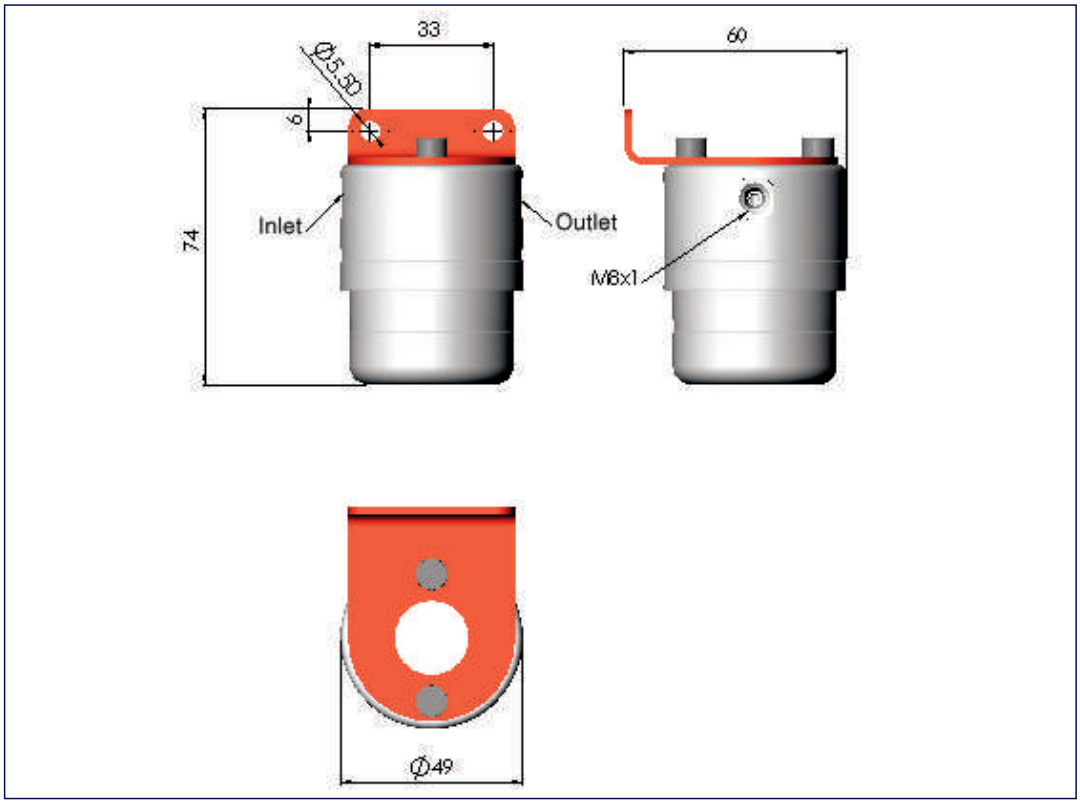
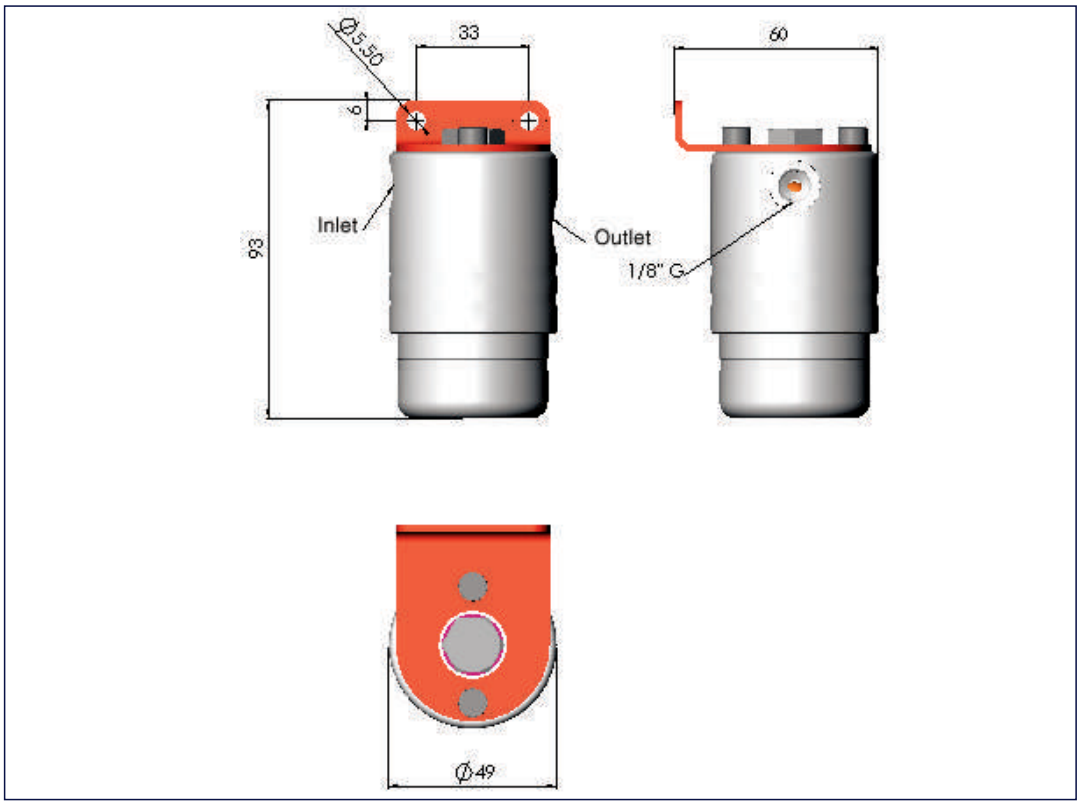
Technical Features

LOW PRESSURE FILTER
Cod. FL BP.81



MEDIUM PRESSURE FILTER
Cod. FL MPBY.18



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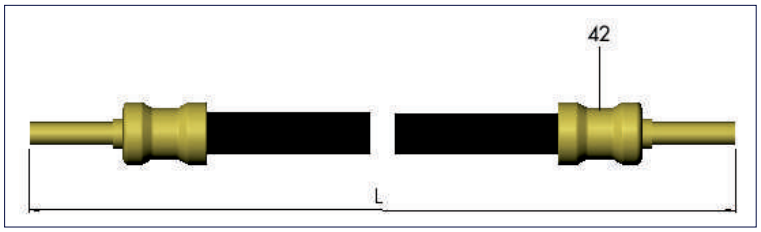
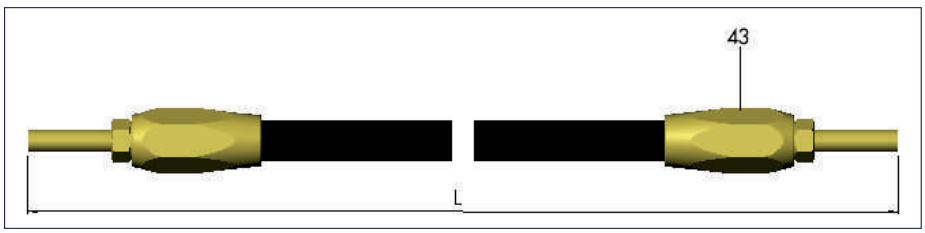
RUBBER HOSES JOINT WITH Ø 6 CYLINDRICAL SPIGOT AT THE TWO ENDS



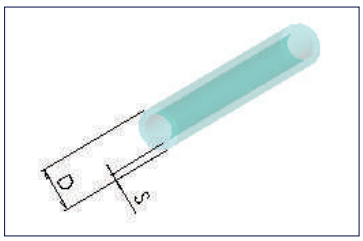
42 - TG CB5EA6.30 L=30
TG CB5EA6.40 L=40
TG CB5EA6.50 L=50
TG CB5EA6.70 L=70
TG CB5EA6.100 L=100

SAE 100 R7 NYLON HOSES JOINT WITH Ø 6 CYLINDRICAL SPIGOT AT THE TWO ENDS



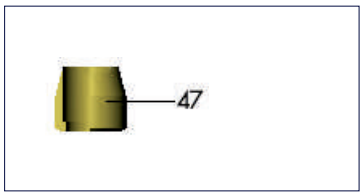
43 - TR7 5EA6R.60 L=60
TR7 5EA6R.100 L=100

NEUTRAL RILSAN PIPES



TR4.20 D=4 S=1
TR4.25 D=4 S=0,75
TR6.40 D=6 S=1
TR8.60 D=8 S=1

STOP BUSHINGS

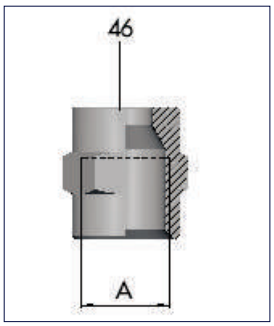


Stop bushing Ø4
47 - BBL4.040

Stop bushing Ø6
49 - BBL6.060

Stop bushing Ø8
51 - BBL8.080

STOP NUTS



Stop nut Ø4
46 - DB4.81 A=M8x1,0

Stop nut Ø6
48 - DB6.18 A=1/8" G

Stop nut Ø8
50 - DB8.14 A=1/4" G

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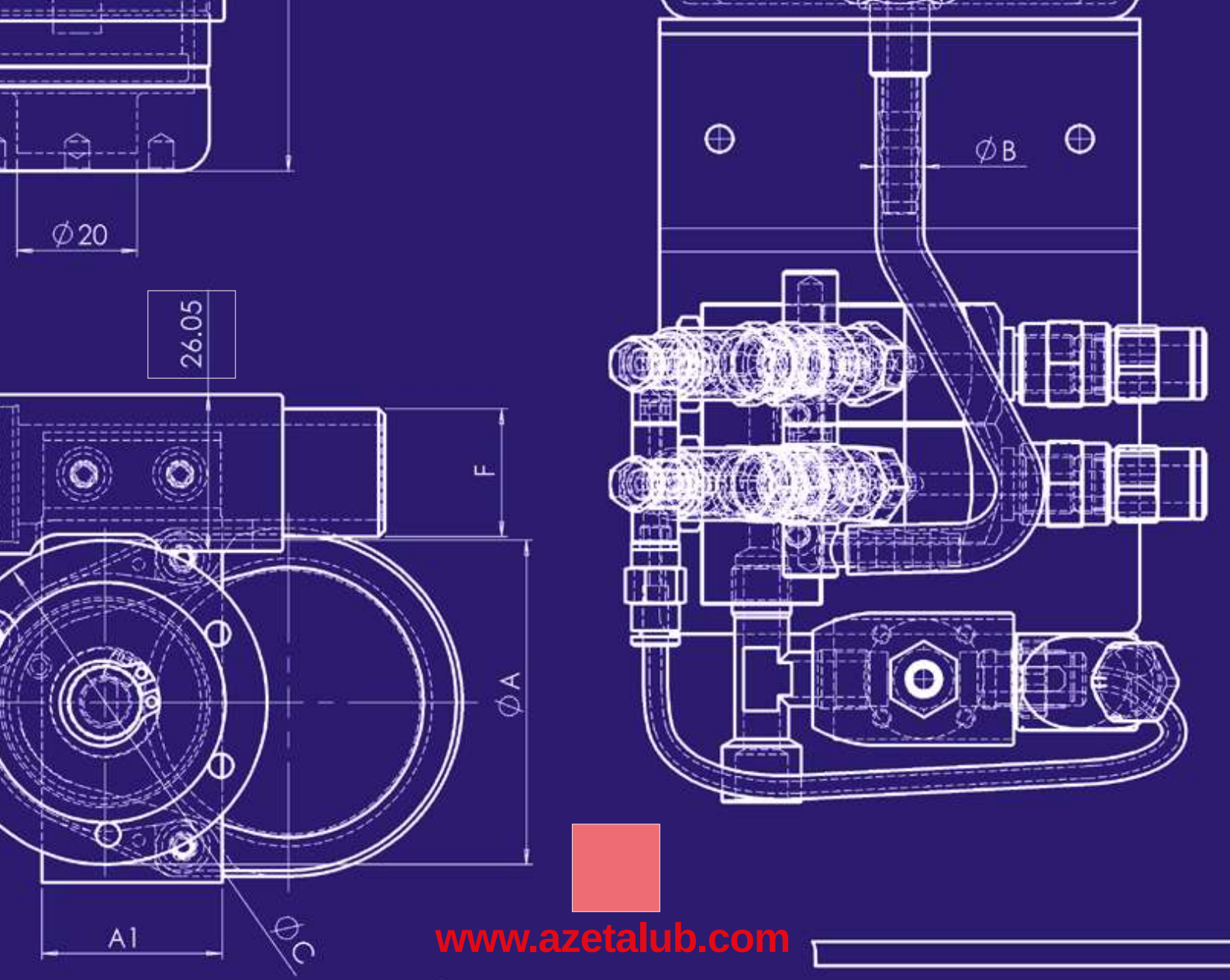

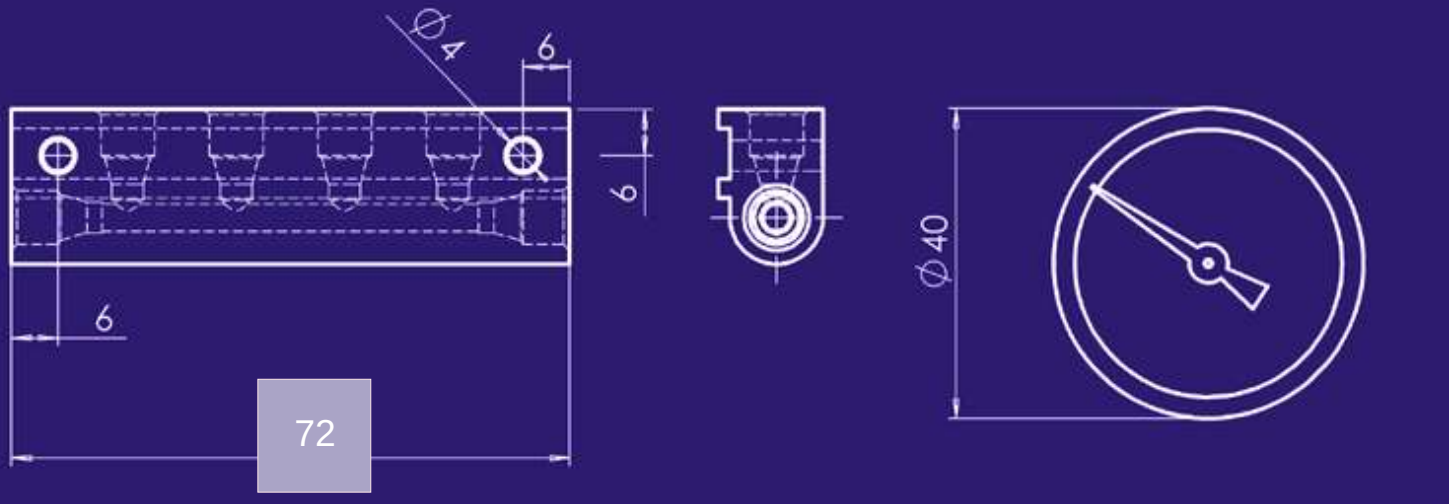

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