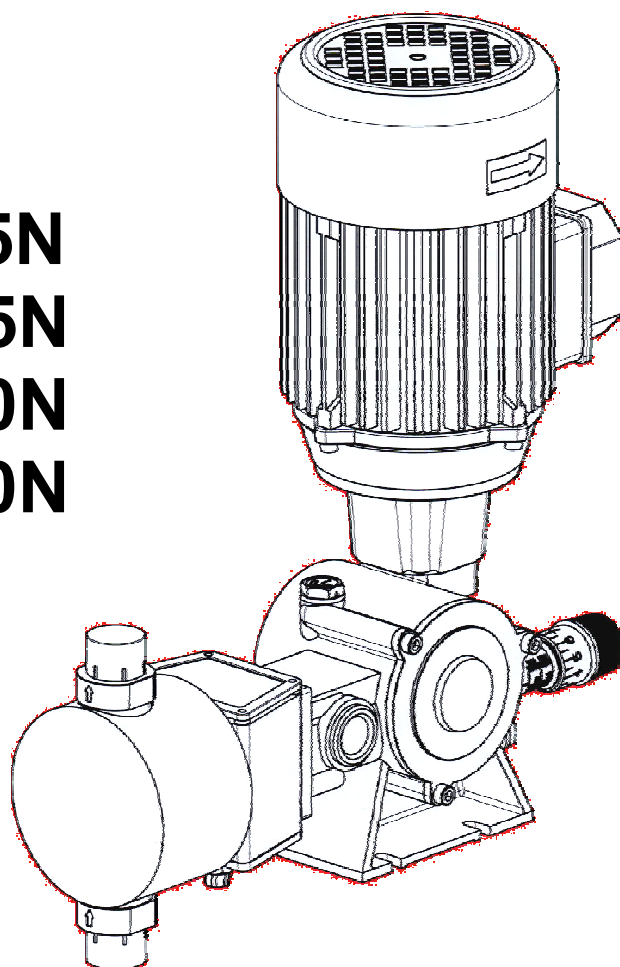


USE AND MAINTENANCE MANUAL



Series A
Type A 125N
A 175N
A 250N
A 350N



**ALTERNATIVE DOSING PUMP WITH PISTON
AND SPRING RETURN**



DOSEURO[®] S.R.L.

INTRODUCTION

Dear **Customer**

We thank you for choosing this product and recommend you read this manual carefully before starting installing the dosing pump. Please abide by the technical indications and safety rules herein specified.

ATTENTION!

Installing the dosing pump in an environment with fumes and high humidity is not recommended as the alum alloy reducer body and motor, even though they have a finish coat, may be affected, unlike the head made of stainless steel or plastic, which ensures full compability. Therefore we highly recommend installing the dosing pump in a well protected and ventilated environment.

DOSEURO[®] S.R.L. *is not responsible for any damage or injury due to incorrect or improper use of the product.*

TECHNICAL SUPPORT AND MAINTENANCE

The companies authorised to provide technical support and maintenance to pumps within the European Union and worldwide are not listed.
For more detailed information, call our headquarters on the following number:

Sales Office Ph. +39 0227301324

TECHNICAL DATA AND CHARACTERISTICS CAN BE CHANGED WITHOUT NOTICE



Via G. Carducci, 141
20093 Cologno Monzese (Mi)
Ph. +39 0227301324
Fax +39 0226700883
<http://www.doseuro.com>

DECLARATION OF COMPLIANCE



DOSEURO S.R.L. with headquarters in Via Carducci, 141 - Cologno Monzese (Mi) Italy
DECLARES THAT:

The products, **DOSING PUMPS WITH SPRING RETURN**
Type A 125N - A 175N - A 250N - A350N

comply with the Machinery Directive and any subsequent modifications

- Machinery Directive 98/37 EC and any subsequent modifications;
- Directive 89/336 EEC, Electromagnetic Compatibility.
- Directive 93/465 EEC, CE marking.

as well as with the following harmonised rules for Safety:

- UNI EN 292/1 - 11/92 – Machinery safety.
- UNI EN 292/2 - 11/92 – Design principles.
- CEI EN 60204-1 - 98 – Electrical equipment of machinery.

Signed by: MICCICHE' TULLIO
Title: Quality manager

DOSEURO S.R.L.


INDEX

Ref.	Title	Page
1	PUMP PRESENTATION	6
1.1	INTENDED USE	6
2	PUMP CODE INTERPRETATION	6
3	PUMP'S TECHNICAL DATA	6
4	OPERATING CONDITIONS	8
5	INTENDED AND NON-INTENDED USE OF THE PUMP	8
5.1	RESIDUAL RISKS	8
6	TRANSPORT, HANDLING, STORAGE	8
6.1	CHECKING ANY DAMAGE OCCURRED DURING SHIPPING	8
7	BLOCK REMOVAL	9
8	PUMP INSTALLATION	9
9	PUMP POSITIONING	9
10	CONNECTING THE PUMP TO THE SYSTEM PIPES	9
10.1	CONNECTION TO THE SUCTION PIPE	9
10.2	CONNECTION TO THE DELIVERY PIPE	11
11	INSTALLING THE PULSATION DAMPER	12
11.1	INSTALLATION EXAMPLE	12
12	TOPPING UP LUBRICATING OIL	12
13	ACOUSTIC VIBRATION FROM THE PUMP	13
14	CONNECTING THE PUMP TO THE POWER SUPPLY	13
15	ACTIVATING THE PUMP	14
15.1	OPERATION DESCRIPTION	14
16	PUMP REGULATION	14
16.1	STROKE VARIATION WITH MANUAL SYSTEM	14
17	OPTIONAL EQUIPMENT	14
17.1	STROKE VARIATION WITH SERVO CONTROL	14
17.2	PUMP CONTROL WITH A PROXIMITY INDUCTIVE SENSOR	15
18	ADDITIONAL EQUIPMENT CALIBRATION	15
18.1	OVERFLOW OR OVERPRESSURE VALVE	15
19	MAINTENANCE AND REPAIR	15
19.1	SCHEDULED MAINTENANCE	15
20	FINDING FAULTS	16
20.1	INCONVENIENCES AND CURES	16
21	"PTFE" GASKET PACK REPLACEMENT AND ADJUSTMENT	17
21.1	GASKET PACK REPLACEMENT (HEAD WITH EXECUTION 21)	17
21.2	"PTFE" GASKET PACK ADJUSTMENT AND COMPRESSION	17
22	HEAD WITH SEAL GASKET CLEANING	17
22.1	SEAL GASKET CLEANING	17
22.2	PUMPING HEAD CLEANING.	18
23	REPAIRS AT THE FACTORY	18
24	DISABLING THE PUMP	18
25	DISPOSAL OF HARMFUL SUBSTANCES	18

1 PUMP PRESENTATION

1.1 INTENDED USE

Dosing pumps are used whenever you need to change the pump capacity.

THE ARE COMPOSED OF:

Motion:	Reduces the number of revolutions as needed for dosing, turning the rotary motion into reciprocating rectilinear motion through the cam, with slide and recall spring.
Motion transmission:	Die-cast aluminium and Eastover flexible coupling.
Adjustment:	Changes the stroke from "0%" to "100%" through a screw which chokes the return of the slide, whether the pump is idle or in motion.
Hydraulic parts:	Suck the liquid to be dosed from the suction valve and push it through the delivery valve.
Electric motor:	Three-phase or single phase CVE or ADPE
Construction form:	V18 –Class F – Protection IP 55
Three-phase voltage:	220/240 V – 380/415 V - 50 Hz or 220/280 - 380/480V - 60 Hz.
Single-phase voltage:	230V - 50 Hz.
☐	Different voltages and frequencies are available on request
Casing components:	Die-cast aluminium.
External motion parts:	The slide is made of AISI 420, protection components and other accessories are made of plastics.

2 PUMP CODE INTERPRETATION

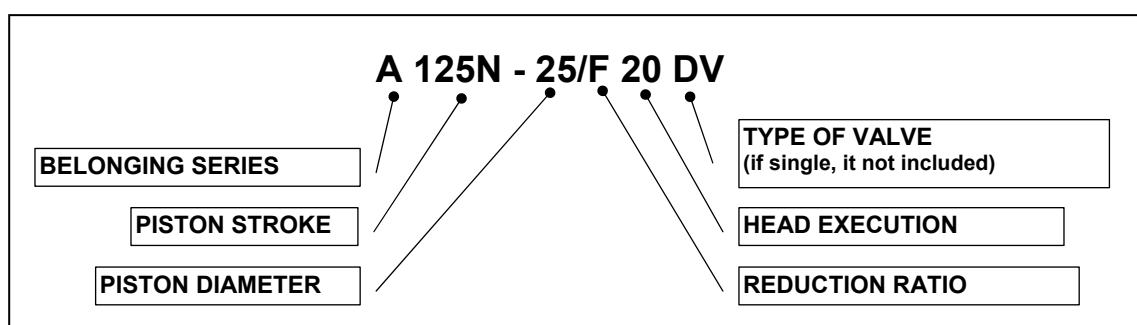


DOSEURO S.R.L.
Tipo - Type
A 125N - 25/F 20 DV
 Portata Capacity l/h
 Press. max bar Anno Year
 Matricola Serial n°
 ITEM
 Via G. Carducci, 141
 20093 Cologno Monzese (MI) Italy
 Tel. +39 0227391324 r. a.

The pump label indicates the main data useful for a quick reading of the code. Follow the example below.

▲ **ATTENTION!**

Technical data and types of materials making up the pump's "head execution" are contained in the technical data sheet attached to this manual.



3 PUMP'S TECHNICAL DATA

The following tables show the technical data for each pump series. The user must refer to these data to avoid damaging the pump and cause danger to the maintenance staff.

A 125N type data

FREQUENCY Hz		50	60	50	60	50	60	50	60	HEAD		VALVE		
REDUCTION RATIO		I (1/40)		F (1/24)		C (1/14.5)		B (1/12)		Max pres. bars (Kg/cm ²)		S.S.	PVC	Ø G.m.
STROKES min/1'		35	42	58	70	96	116	116	/	S.S.	PVC	Type	Type	
CAPACITY l/h	A 125N - 6	/	/	0.8	1	1.3	1.6	1.6	/	20	10	AB 3	AC 3	1/2"
	A 125N - 11	2.4	2.8	4	4.8	6	8	8	/	20	10	AB 3	AC 3	1/2"
	A 125N - 18	6	7.2	10	12	16	20	20	/	20	10	AB 5	AC 4	1/2"
	A 125N - 25	13	16	22	27	36	44	44	/	20	10	AB 5	AC 5	1/2"
	A 125N - 30	18.7	22.4	31	37.2	51	62	62	/	14	10	AB 6	AC 8	1/2"
	A 125N - 38	30	36	50	60	82	100	100	/	9	9	AB 8	AC 8	1/2"
	A 125N - 47	47	56	78	94	129	156	156	/	5,5	5,5	AB 8	AC 8	1/2"

A 175N type data

FREQUENCY Hz		50	60	50	60	50	60	HEAD		VALVE		
REDUCTION RATIO		F (1/20)		C (1/14.5)		B (1/11)		Max pres. bars (kg/cm ²)		S.S.	PVC	Ø G.m.
STROKES min/1'		70	84	96	116	120	/	S.S.	PVC	Type	Type	
CAPACITY l/h	A 175N - 6	1.3	1.56	1.7	2.11	2.2	/	10	20	AB 3	AC 3	1/2"
	A 175N - 11	6	7.2	8	9.6	10	/	10	20	AB 3	AC 3	1/2"
	A 175N - 18	17	21	24	28	30	/	10	20	AB 4	AC 4	1/2"
	A 175N - 25	37	45	51	62	64	/	10	20	AB 5	AC 5	1/2"
	A 175N - 30	52	63	72	86	90	/	10	20	AB 8	AC 8	1/2"
	A 175N - 38	83	100	115	138	144	/	10	13	AB 8	AC 8	1/2"
	A 175N - 47	130	156	180	216	226	/	8.5	8.5	AB 8	AC 8	1/2"
	A 175N - 54	168	202	232	278	290	/	6.5	6.5	AB 13	AC 13	3/4"
	A 175N - 64	236	283	326	391	408	/	4.5	4.5	AB 13	AC 13	3/4"

A 250N type data

FREQUENCY Hz		50	60	50	60	50	60	HEAD		Valve		
REDUCTION RATIO		F (1/25)		C (1/14.5)		B (1/12.5)		Max pres. bars (kg/cm ²)		AISI	PVC	Ø G.m.
Strokes min/1'		56	67	96	116	112	/	S.S.	PVC	TYPE	TYPE	
CAPACITY l/h	A 250N - 25	43	52	73	88	86	/	20	/	AB 6	AC 6	1/2"
	A 250N - 38	96	115	164	197	192	/	20	/	AB 8	AC 8	1/2"
	A 250N - 47	150	180	257	308	300	/	17	10	AB 13	AC 13	3/4"
	A 250N - 54	192	231	329	395	384	/	13	10	AB 13	AC 13	3/4"
	A 250N - 64	266	319	456	547	532	/	9.5	9.5	AB 17	AC 17	1"
	A 250N - 76	383	460	656	788	766	/	6.5	6.5	AB 22	AC 22	1"
	A 250N - 89	521	625	893	1072	1042	/	4.8	4.8	AB 22	AC 22	1"

A 350N type data

FREQUENCY Hz		50	60	50	60	50	60	Head		Valve		
REDUCTION RATIO		F (1/25)		C (1/14.5)		B (1/12.5)		Max pres. bars (kg/cm ²)		AISI	PVC	Ø G.m.
STROKES min/1'		56	67	96	116	112	/	S.S.	PVC	Type	Type	
CAPACITY l/h	A 350N - 54	268	322	460	553	537	/	10	13	AB 13	AC 13	3/4"
	A 350N - 64	372	446	638	766	744	/	9,5	9,5	AB 17	AC 17	1"
	A 350N - 76	536	769	918	1103	1072	/	6,5	6,5	AB 22	AC 22	1"
	A 350N - 89	730	875	1250	1500	1458	/	4	4	AB 27	AC 27	1 1/2"

4 OPERATING CONDITIONS

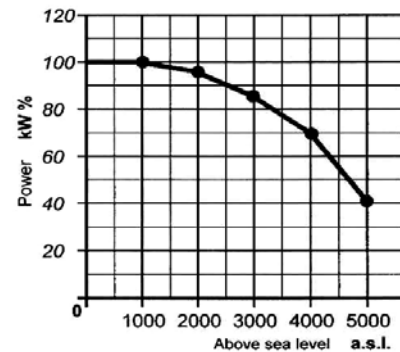
Actual capacity depends on viscosity, specific weight of pumped liquid and plant's load loss.

Capacity and pressure values reported in the tables are obtained under operating conditions with steady pressure, water at 15°C and pump installed at 30 cm above water level.

Actual capacity depends on viscosity, specific weight of pumped liquid and plant's load loss. Pay attention not to exceed the project conditions to avoid inconveniences of different kinds.

The power of the motor installed on the pump is suitable for use at a max altitude of 1,000 m ASL and operating temperature of +5°C to +40°C.

For operating conditions other than those described, coefficients vary according to the diagram data. A motor with higher capacity than the listed type can be installed, if necessary.



5 INTENDED AND NON-INTENDED USE OF THE PUMP

The range of applications the pump is intended for includes dosing liquid substances compatible with the project materials to be used.

Before purchasing the pump, the customer must indicate the type of liquid to be dosed so our technical office can execute the pumping head according to the data provided.

Should the pump have been used in other processes, the customer must contact our technical office before use it again to get all information necessary for proper use.

5.1 RESIDUAL RISKS

- A type of risk may result from leakage in the gasket gland due to wear of the sealing gaskets. Any such liquid must be drained for proper disposal or collection.
- In case of breakage, after emptying the system, depressurise the pump head and do thorough cleaning using suitable tools (hose) and detergents. Then you can disassemble the pump. Please note that the operator should always wear suitable protective devices (gloves, goggles, boots, overall, etc.)

6 TRANSPORT, HANDLING, STORAGE

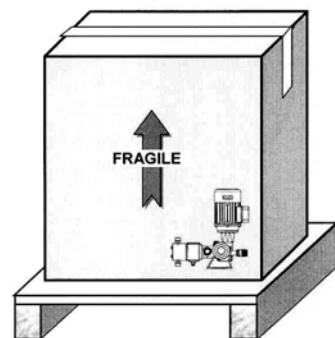
Usually the customer chooses the carrier and they (customer and carrier) shall be responsible for transportation.

The pump must be transported or handled in an upright position, do not lay it down.

This type of pump comes in a single package; custom packages can be provided on demand.

If the pump is to be kept out of use for a long time, fill the reducer with **SAE 85W-140** oil to avoid oxidation of components. This is particularly necessary before starting the pump again.

The equipment should be stored in a dry, well-ventilated place away from heat and at a temperature between +5°C and +40°C.



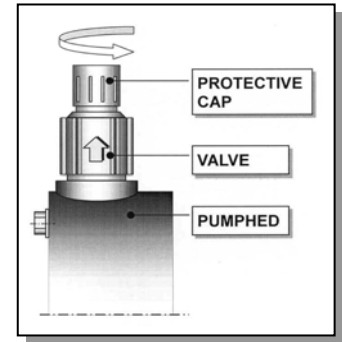
6.1 CHECKING ANY DAMAGE OCCURRED DURING SHIPPING

Before opening the package, check its condition; in case it is damaged, immediately report the incident to the carrier.

Then thoroughly check the contents to find and readily report any damage due to transportation or handling.

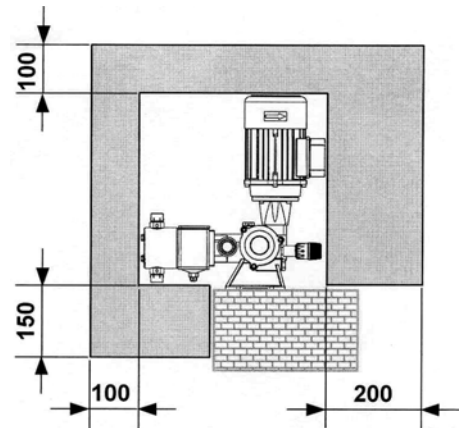
7 BLOCK REMOVAL

Before installing the pump, make sure to remove all protective caps located on the suction inlets and the valve delivery system.



8 PUMP INSTALLATION

- ✓ Allow enough room (operation areas) to check and disassemble the pump, particularly on the hydraulic side (pumping head) and next to the adjustment knob.
- ✓ We recommend you install outlets along the delivery pipe and near the pumping head to empty the liquid from the plant.
- ✓ If the pump is installed outdoor, a suitable shed is required, particularly if it is equipped with a plastic head, servo controls or other delicate instruments.
- ✓ Beyond standard caution, we recommend the installer and/or construction engineer to install the pump in a well-ventilated environment or on board of machinery to allow any liquid that may come out to drain off, thus preserving facilities and ensuring good maintenance.



9 PUMP POSITIONING

- ✓ The pump must be installed on a strong base (made of metal, cement, etc.) which ensures stability and levelling of mount and has a suitable grade, preventing any strain on the axis.
- ✓ The pump should be placed downstream and the suction pipe should be as short as possible and provided with wide-angle bends for easy pumping of fluid.
- Manually check the motor fan for loose rotation of the pump. If the fan is stuck, check pump positioning and pipe alignment.

10 CONNECTING THE PUMP TO THE SYSTEM PIPES

10.1 CONNECTION TO THE SUCTION PIPE

Following are some recommendations installers should follow for proper installation.

- ✓ The suction pipe should be as short as possible. On each angle place a wide-angle bend.
- ✓ Before connecting the pipes to the pump connections, wash the pipes of any stray fragments, welding drops, pieces of gaskets, etc.
- ✓ Avoid creating a reverse grade to let air bubbles out and make sure the suction system is air-tight for easy activation of the pump.
- ✓ The diameter of suction pipes must be larger than the pump valves.
- ✓ Speed of fluid in pipe cannot exceed 0.7 m/s for liquids with viscosity up to 100 mPa - (cPs).

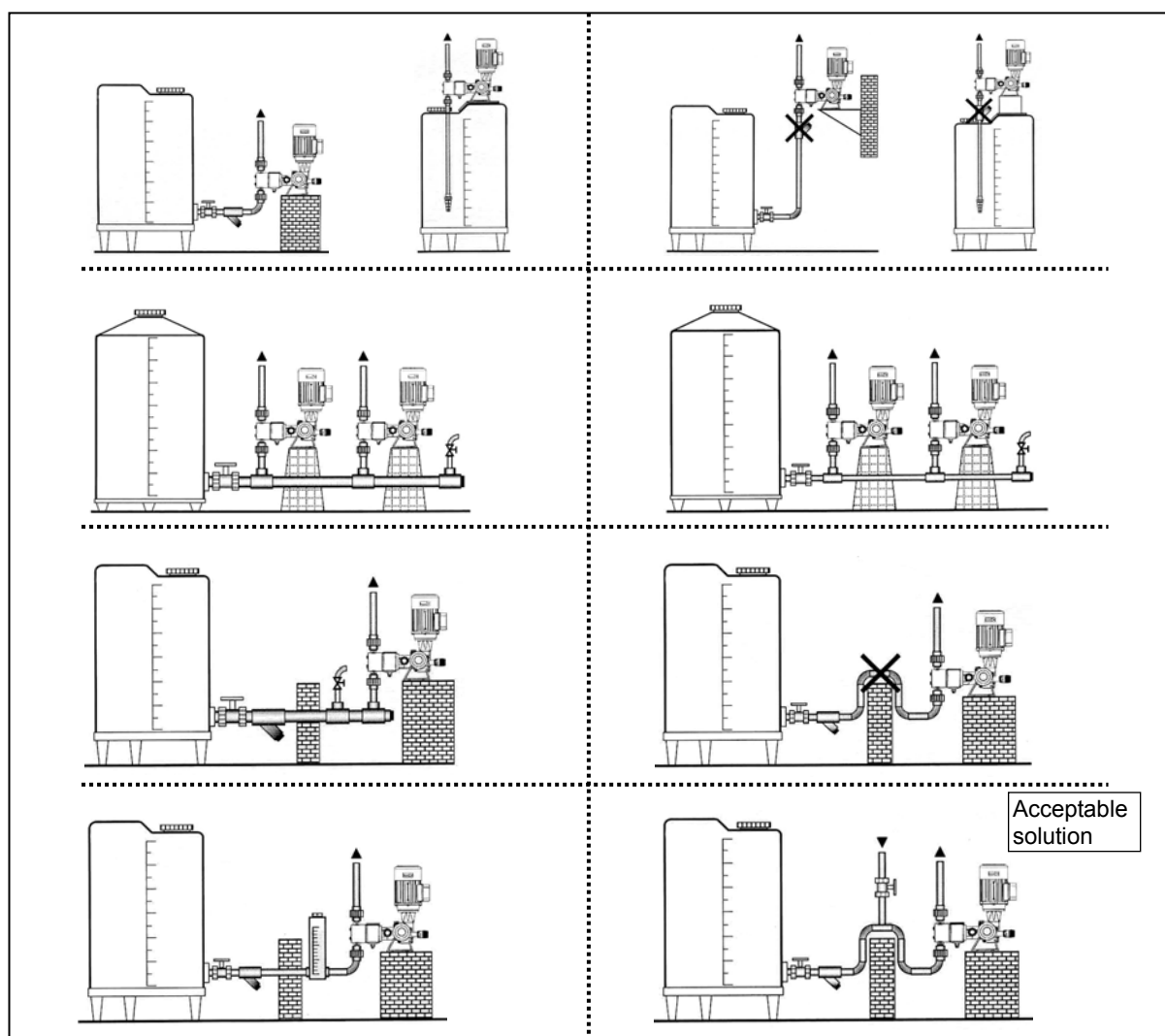
The table below shows pipe internal diameters to be selected according to product viscosity and number of strokes of the pump.

Fluids equivalent to		Fluid viscosity equivalent to	
Water +15°C		0 / 100 mPa (CP) - 20°E	100 / 300 mPa (CP) - 20 / 45°E
STROKES <i>min/1'</i>	112 to 120	50 to 70	30 to 50
Pipe internal diameter Capacity l/h	Ø 4	0 – 12	0 – 3
	Ø 6	0 – 45	0 – 11
	Ø 8	0 – 96	0 – 23
	Ø 10	0 – 220	0 – 53
	Ø 13	0 – 380	0 – 93
	Ø 16	0 – 500	0 – 120
	Ø 20	0 – 700	0 – 170
	Ø 25	0 – 1050	0 – 250
	Ø 32	0 – 1200	0 – 290
	Ø 40	0 – 1450	0 – 350

CONNECTION EXAMPLES

CORRECT APPLICATION

WRONG APPLICATION



11 INSTALLING THE PULSATION DAMPER

11.1 INSTALLATION EXAMPLE

Using a damper on the delivery system after the pump is highly recommended.

Benefits include: more steady flow rate, no vibrations along the entire line and protection against pressure peaks.

Diagram of pulsing flow without damper

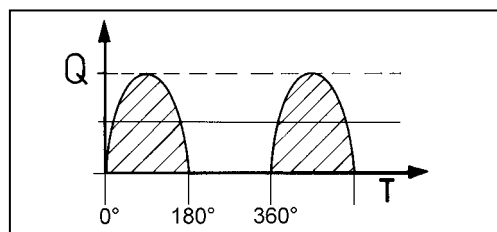
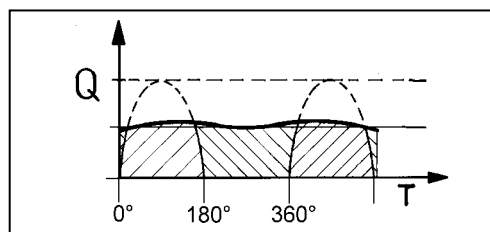


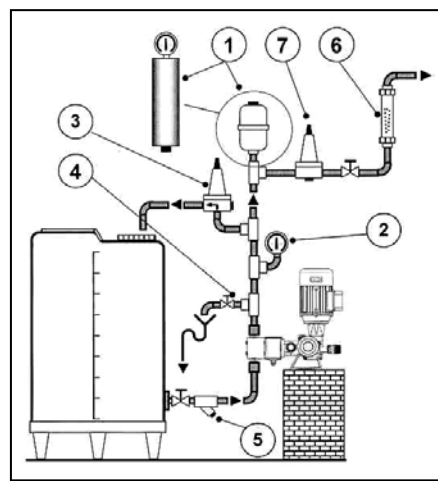
Diagram of pulsing flow with damper



RECOMMENDED INSTALLATION EXAMPLE

LEGEND

- 1) Pulsation damper
- 2) Pressure gauge
- 3) Overflow or overpressure valve
- 4) Sample taking or drainage
- 5) 45° Y-filter
- 6) Capacity meter
- 7) Counterpressure valve



12 TOPPING UP LUBRICATING OIL

All the pumps are supplied without lubricating oil, so the operator must fill the pump body or gear box with oil before starting the pump.

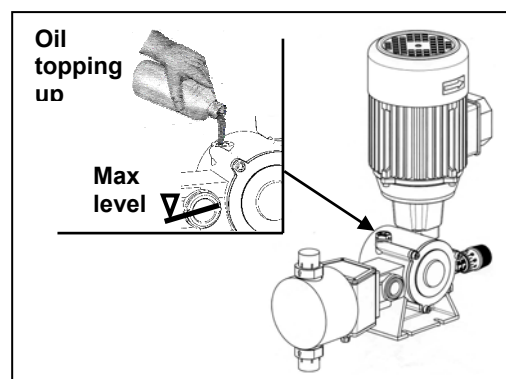
The pump does not require lubrication of any additional parts, therefore the oil quantity indicated in the table is enough to guarantee good lubrication of mechanical parts; the light on the side of the pump indicates that the dose is correct.

For technical reasons, replace lubricant after 500 hours from startup, then every 3,000 hours of operation or once a year.

The user should dispose of waste oil according to the existing laws and regulations.

Oil quantity to put in the pump body

Type	Oil q.ty ml	1 st replacmt h	2 nd replacmt h
A 125N	150	500	3,000
A 175N	300	500	3,000
A 250N	650	500	3,000
A 350N	650	500	3,000



The type of oil recommended for the pump body or gear box should have the following requirements:
high viscosity index and cold flow rate.

Internationally defined as:
SAE 140 with 23° E viscosity (about 160 mPa/s)

This type of oil is available from different manufacturers:

Esso - Gear Oil GX 85W 140

Shell - Spirax HD 85W 140

IP - Pontiax HD 85W 140

Mobil - Mobilube HD 85W 140

BP - Nypogear EP 85W 140

Agip - Rofra MP 85W 140

13 ACOUSTIC VIBRATION FROM THE PUMP

Hereunder follow the results of sound-level measurements carried out on a pump like the one supplied to you.

The tables show the resulting data according to the general prescription in European Directive 89/392 EEC1989. Sound levels and vibrations have been checked for all pump types.

Control methods comply with ISO 3744 "Acoustics - Determination of sound power level of noise source" - Engineering methods for free-field conditions over a reflecting plane" and with Directive ISO 2631 "Guide for evaluation of human exposure to whole-body vibration".

Sound level pressure measurements tables

Type A 125N		
Pump under pressure		
<i>Max sound emission at surface</i>	<i>Average pressure level at surface</i>	<i>Sound power level</i>
dB(A) 71.7	dB(A) 67.9	dB(A) 71.4

Type A 175N		
Pump under pressure		
<i>Max sound emission at surface</i>	<i>Average pressure level at surface</i>	<i>Sound power level</i>
dB(A) 76.7	dB(A) 73.2	dB(A) 76.7

Type A 250N		
Pump under pressure		
<i>Max sound emission at surface</i>	<i>Average pressure level at surface</i>	<i>Sound power level</i>
dB(A) 79.3	dB(A) 75.6	dB(A) 79.1

Type A 350N		
Pump under pressure		
<i>Max sound emission at surface</i>	<i>Average pressure level at surface</i>	<i>Sound power level</i>
dB(A) 79.3	dB(A) 75.6	dB(A) 79.1

14 CONNECTING THE PUMP TO THE POWER SUPPLY



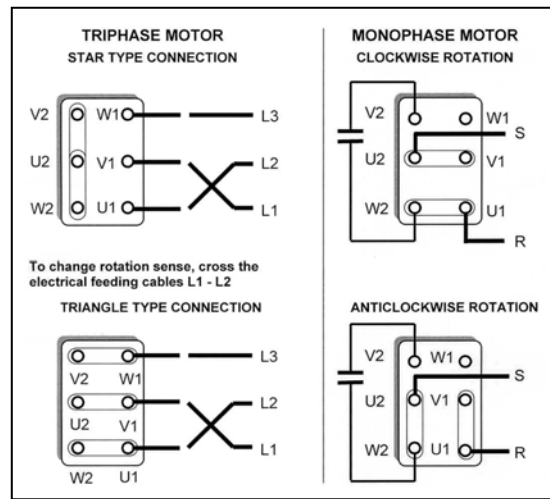
ATTENTION!

Before activating the pump, check that the data on the motor plate are suitable for the power line.

Verify no nearby obstacles hinder inspection and maintenance operations, as well as proper ventilation of the installed pump.

Check the motor rotates counterclockwise as indicated by the arrow on the fan cover.

MOTOR TO POWER SUPPLY CONNECTION DIAGRAM



15 ACTIVATING THE PUMP

15.1 OPERATION DESCRIPTION

The operations required before activating the pump include:

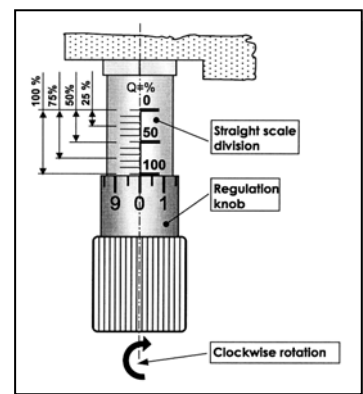
- ✓ Check the oil indicator detects the oil in the pump body.
- ✓ Check the motor rotates as indicated by the arrow on the fan cover.
- ✓ Verify dosed liquid is not solidified or frozen in the pipes.
- ✓ Check all on-off valves on the pipes are fully open, and flexible hoses, if any, are not bent or choked.
- ✓ Perform first startup with min pressure and 0 (zero) capacity, then increase it slowly through the adjusting handle till max pump capacity is reached to let air go out quickly and safely.

16 PUMP REGULATION

16.1 STROKE VARIATION WITH MANUAL SYSTEM

To vary the pump capacity from 100% to 0% (zero), turn the adjustment knob clockwise. Each turn is 1/10 the piston stroke. Actual value can be checked on the nonius.

The knob features 10 units, numbered from 0 (zero) to 9 (nine), each corresponding to 1/100 of the piston stroke.



17 OPTIONAL EQUIPMENT

17.1 STROKE VARIATION WITH SERVO CONTROL

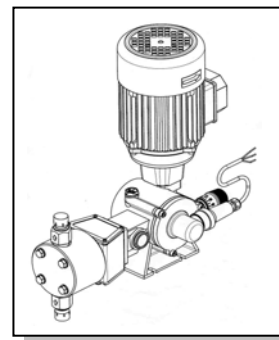
If the pump is equipped with a servo control, the adjustment process described above is not applicable.

Please read the manual supplied with the servo control.

17.2 PUMP CONTROL WITH A PROXIMITY INDUCTIVE SENSOR

The proximity inductive sensor can be installed on the dosing pump to check the number of pumping cycles. Every pumping cycle – i.e. one turn of the cam shaft – is matched with an impulse transmitted by the proximity inductive sensor.

Per more information, please read the included technical sheet.

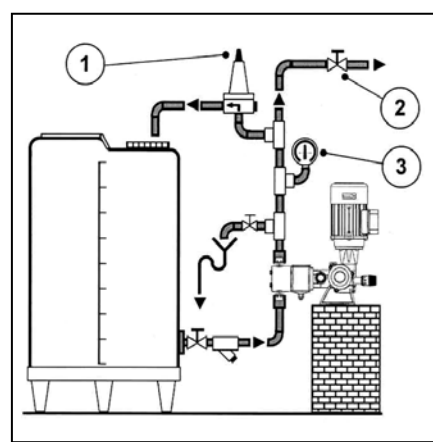


18 ADDITIONAL EQUIPMENT CALIBRATION

18.1 OVERFLOW OR OVERPRESSURE VALVE

The scheme shows the correct installation. The order to be followed for the adjustment of the **overflow** or **overpressure** valve is described below.

- ✓ Loosen the adjusting screw on top of the **overflow** or **overpressure** valve (Pos. 1).
- ✓ Start the pump and let air out of the pipe.
- ✓ Close the on-off valve (Pos. 2).
- ✓ Slowly tighten the adjusting screw of the **overflow** or **overpressure** valve on top (Pos. 1), until the pressure gauge (Pos. 3) shows the adjusted pressure you want for the valve.
- ✓ Slowly open the on-off valve (Pos. 2).
- ✓ To check if adjustment is correct, close the on-off valve again (Pos. 2). The pressure shown on the pressure gauge will be the same as before.



Note: Valves are not calibrated. Calibration percentages are merely indicative and are left to the installer's choice.

For **OVERPRESSURE** or **OVERFLOW** operation – **System pressure + 15%**.

19 MAINTENANCE AND REPAIR

19.1 SCHEDULED MAINTENANCE

- To ensure security and high performance of the pump over the time, it should undergo maintenance operations that consist of visual checks.
- Check that components inside and outside the pump are not affected by corrosion or degradation (cracking, tearing, breaking.) If any of these problems occur, damaged parts must be replaced.
- If the pumping head is made of plastics, pay particular attention as it is more sensitive to temperature change and settling.
- The user should check the pump shortly after first startup and record data in a suitable log book (Maintenance Book). The user will then be able to schedule operations more accurately based on the obtained results.

The following table indicates the parts that require ordinary maintenance in one year of operation.

Components to be checked						
Maintenance interval	Drive	Head		Valve assembly		Motor
	Oil	Gaskets	Piston	Plastic	Metal	Absorptions
Hours	500					
Biannual	X	X	X	X	X	X
Yearly	Replacement					

The "**DRAWINGS AND TABLES**" manual indicates the symbols corresponding to the parts subject to wear which require frequent maintenance.

▲ **ATTENTION!**

BEFORE PERFORMING ANY MAINTENANCE ON THE PUMP, CHECK THAT:

- Pump is idle and disconnected from the power line.
- **Pump head and plant are depressurised and the liquid has been emptied from the pump.**
- The maintenance staff should wear all suitable protective devices, i.e.: gloves, masks, goggles, boots and anything else necessary to avoid pumped liquid comes in contact with skin.

20 FINDING FAULTS

20.1 INCONVENIENCES AND CURES

Neglect can cause damage or malfunctioning which requires extra maintenance just to check proper operation of the following accessories.

☐ **Dosed liquid leakage from the hole under the lantern:**

- ✓ Gaskets are worn or piston is scored.
- After depressurising and emptying the system, disassemble the head, remove damaged gaskets, and check piston. Replace it if scored.

☐ **Reduced capacity:**

- ✓ Make sure filter is not clogged.
- ✓ Make sure suction pipe is not clogged due to stray fragments or sediments.
- ✓ Make sure valves are not clogged or worn.
- ✓ After depressurising and emptying the system, check all parts. Replace worn parts if necessary.

☐ **Air in the delivery pipe:**

Air bubbles in the delivery pipe not only reduce pump's performance and capacity, but they also show installation and pump connection are not correct.

Some possible reasons include:

- ✓ Wear of piston gaskets.
- ✓ Infiltration along the suction pipe.
- ✓ The suction pipe causes heavy load loss as its section is not suitable for pump capacity and valve diameter.
- ✓ Elbows have been installed.
- ✓ The pump has been installed upstream.

☐ **If any of such problems occur, intervene promptly to avoid safety issues, as well as reduced capacity and efficiency of the pump.**

The following remedies are necessary:

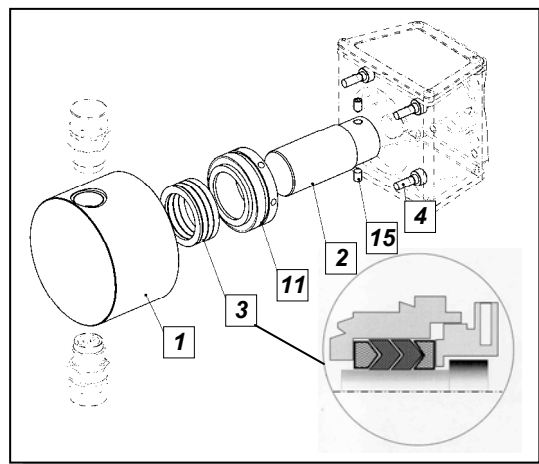
- ✓ Replace the gaskets.
- ✓ Check the pipe connections.
- ✓ Increase the suction pipe diameter so it is larger than the valve.
- ✓ Mount wide-angle bends.
- ✓ Place the pump downstream.

21 “PTFE” GASKET PACK REPLACEMENT AND ADJUSTMENT

21.1 GASKET PACK REPLACEMENT (head with execution 21)

After the maintenance procedure is complete, proceed as follows:

- ✓ Disconnect the pumping head **1** from the system and lantern of the dosing pump.
- ✓ Clean the pumping head to ensure the operator can safely handle the component.
- ✓ Loosen the ring nut **11** and remove it.
- ✓ Check if piston **2** is worn out. If it is scored or cut, replacement is recommended. In this case, loosen the dowels **15**.
- ✓ Remove the damaged gasket pack **3** and place the new pack into the pumping head paying attention to the gasket direction.
- ✓ Tighten the clamping ring nut **11** till it touches the gaskets. Do not overtighten.
- ✓ Place the pumping head **1** on the piston **2**, push it against the lantern, then fix it with screws **4**.



21.2 “PTFE” GASKET PACK ADJUSTMENT AND COMPRESSION

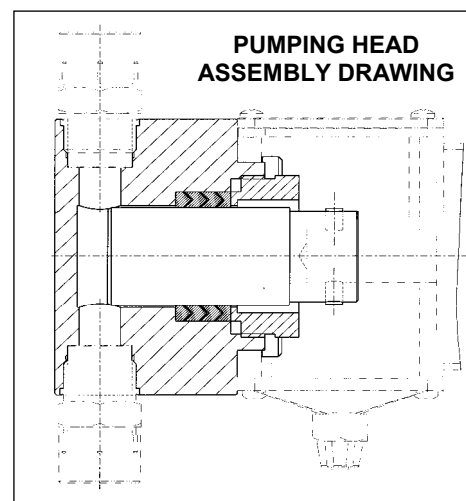
▲ **ATTENTION!**

To ensure this type of gaskets is water-tight, it needs adjusting before it can be used inside the head. To carry out the procedure, follow the steps described below.

- ✓ Connect the dosing pump to separate pipes that suck water, and tighten the ring nut one-fourth of a turn to apply light pressure on the gaskets.
- ✓ The upper part of the head will drip.
- ✓ Let the pump run for 4/5 hours before tightening the ring nut again.
- ✓ After this time has elapsed, tighten another fourth of a turn.
- ✓ Let the pump run 2 to 3 hours before tightening the ring nut again; verify if it drips less.
- ✓ This tightening and checking procedure must be carried out till the dripping stops.
- ✓ After making sure that the gaskets are fully tight, connect the dosing pump to the system.

▲ **ATTENTION!**

The gasket pack must be checked and adjusted regularly. While carrying out the adjustment operations, make sure not to tighten the ring nut too strongly to avoid damaging the gaskets.



22 HEAD WITH SEAL GASKET CLEANING

This type of head is mainly used with products that may **SEDIMENT** or **CRYSTALLISE**, which requires internal parts to be cleaned to avoid sedimentation and cause abrasion to the piston and gasket pack.

22.1 SEAL GASKET CLEANING

Continuously washing the gaskets helps remove deposits, and prevents the product from hardening and causing damage to the sealing profile.

Let water flow through the seal gasket area, at a rate of 40/50 l/h, and pressure of 0.5/1 bar.

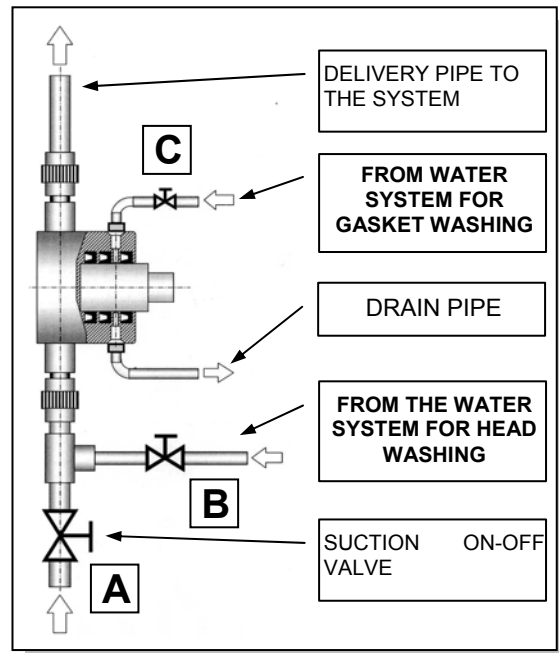
Connect the pipe from the water system including the needle valve “C” to the top of the head. At the bottom, the pipe must be connected to the draining system for disposal according to the existing law.

22.2 PUMPING HEAD CLEANING.

Standard diagram to build the system and washing procedure.

- As shown in the diagram, washing requires an on-off valve “A” to be installed on the suction pipe of the head.
- An on-off valve “B” must be installed on the branch pipe connected to the water system.
- Once dosing is complete, before stopping the pump close the “A” valve, simultaneously open the “B” valve and the “C” valve in the gasket area, and let washing water circulate for about 3/4 minutes.
- After this time has elapsed, stop the pump and let water flow till it becomes clear.
- Once washing is complete, close the valves “B” and “C”, and open the valve “A” to pump the product.

Note: This procedure should be also carried out after a work process if the pump is being stopped for a long time.



23 REPAIRS AT THE FACTORY

In most cases, replacing damaged parts does not involve any difficult operations. Before starting, the operator must refer to the drawings in the manual (***Drawings and tables***) and follow the instructions. If the failure is difficult to deal with on site, we recommend you send the pump to our factory.

▲ **ATTENTION!**

ITEMS ARE ACCEPTED FOR FACTORY REPAIR ONLY AT THE FOLLOWING CONDITIONS:

- ☐ *The carter must be emptied of oil and any other liquid or any deposit must be removed from the pump, with particular regard to hydraulic parts (head and valves), so the equipment can be handle without danger to the operator even without wearing gloves.*
- ☐ *Customer shall state that the parts have been cleaned to ensure safe handling.*
- ☐ *If parts are sent to us without complying with these instructions, they will be returned unrepaired and relevant expenses shall be charged to the sender.*

24 DISABLING THE PUMP

▲ **ATTENTION!**

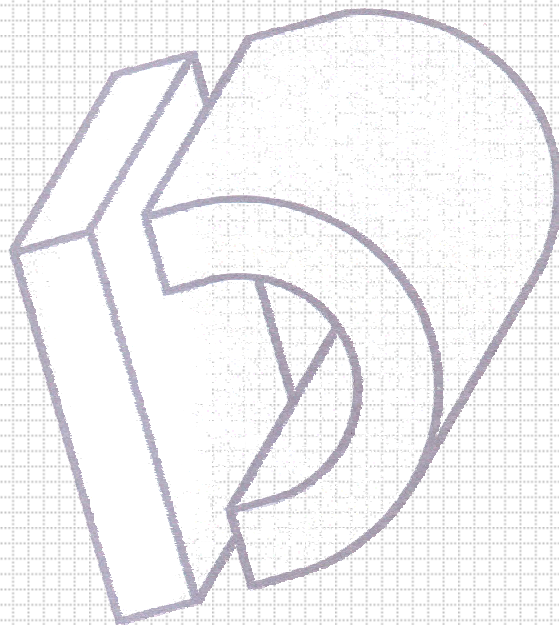
Before disabling the pump, clean it thoroughly with detergents which are compatible with the liquid pumped in the hydraulic parts, as residual toxic, caustic or acid liquid can easily deposit.

- Before removing the pump from the plant, verify no liquid is under pressure and intercept the pipe next to the pump.
- Comply with the existing laws for recycling raw materials and disposing of metallic materials in the pump.

25 DISPOSAL OF HARMFUL SUBSTANCES

All toxic substances, be them liquid, solid or harmful in any way, must be disposed of by the operator according to the law in force.

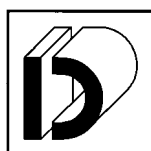
NOTE:



For a best service of our pumps use

ACCESSORIES DOSEURO[®] S.R.L.

Request them to our Commercial office



DOSEURO[®] S.R.L.

I-20093 Cologno Monzese (Mi) Italy Via G Carducci, 141
Phone +39 0227301324 r.a. - Fax. +39 0226700883
<http://www.doseuro.com>

