

lubrication systems



ILC-MAX

ELECTRIC GREASE AND OIL PUMPS



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REV22062023

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All ILC products must only be used for their intended purposes, as specified in this brochure and in all instructions. If the product is supplied together with user instructions, the user is required to read them and comply with them. Not all lubricants are suitable for centralised lubrication systems. ILC lubrication systems or their components may not be used in combination with gases, gas liquids, pressurised gases in solution and liquids whose vapour pressure exceeds the normal atmospheric pressure (1013 mbar) by more than 0.5 bar, maximum permissible temperature +60°C. Any type of dangerous materials, namely those classified as such by European Community Directive (EC) 67/548/EEC, Article 2 (2), can only be used in ILC centralised lubrication systems or relative components upon consultation with ILC and after having received written approval from the company.

Applications

Ideal for automatic grease or oil lubrication of all types of industrial machinery, as a lubrication pump for trucks, trailers, buses, earth moving vehicles.

In combination with ILC DPX, DMX or DPL progressive distributors, more than three hundred lubrication points can be centralised automatically from a single pump.



Movement
Earth



Industry



Agriculture



Machinery
Construction



Automotive

General technical data

Number of pumps	from 1 to 3
Fixed pumping flow rate (revolution)	0.16 cc
Variable pumping flow rate (revolution)	0.01 - 0.16 cc
RPM (min)	22 rpm (12/24 V DC) 30 rpm (24/115/230 V AC)
Fixed pumping flow rate (at 0 bar / min)	3,52 cc (12/24 V DC) 4.80 cc (24/115/230 V AC)
Variable pumping flow rate range (at 0 bar / min)	0.22 - 3.52 cc (12/24 V DC) 0.30 - 4.80 cc (24/115/230 V AC)
Maximum back pressure	300 bar (4351 psi) ±10%
Operating temperature	from -40 °C to +80 °C (depending on the grease, below -20 suitable greases are required)
Output connection	1/4" Gas
Tank	Grease 2/4/8 Kg (plastic) - 5 Kg (metal) Oil 2/4/8 L (plastic) - 5 L (metal)
Permitted lubricants	Grease up to NLGI2 maximum consistency Mineral Oils 50 to 1500 cSt (at 40° C)
Minimum level switch	1 to 140 V AC - 200 V DC 10 W NO (Grease 2/4/8 L)* 1 to 140 V AC - 200 V DC 10 W NO (Oil 2/4/8 L)** 5A - 250 V AC / 0.4 A - 125 V DC - NC or NO contact (Grease 5 Kg) 1.5 A 250 V AC - 200 V DC 50 W - NC or NO contact (Oil 5 L)
RPM control	1 to 140 V AC - 200 V DC 10 W NO*** (2/4/8 KG Grease)

* a closed/open/closed pulse (1-0-1) is generated at each revolution when the tank is empty.

** the contact opens when the tank is empty.

***a closed/open/closed pulse (1-0-1) is generated with each rotation.

ILC-MAX

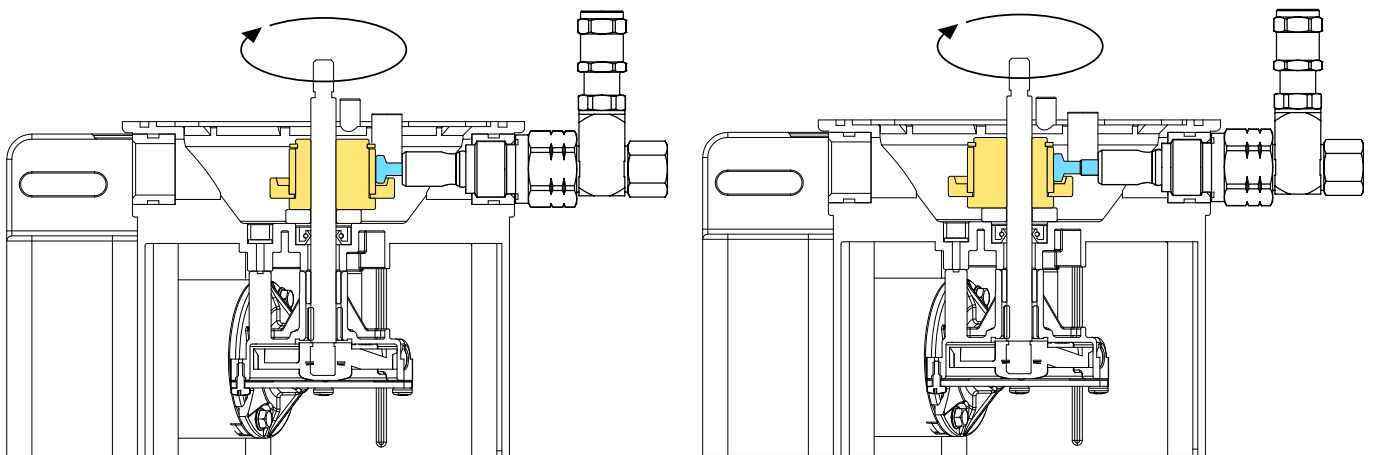
ILC-MAX is available in grease, oil and soft grease versions, with **12/24 V DC** or **24/115/230 V AC** motors: the grease version is equipped with a spatulator and minimum level flap; the oil version is equipped with a float level; the soft grease version with a spatulator and capacitive sensor. The transparent plastic tank has a capacity of **2/4/8 KG** for grease and **2/4/8 L** for oil, the metal tank has a capacity of **5 kg** for grease and **5 L** for oil.

A control timer can be integrated in order to programme automatic pump operation.

Assembly

All pumps must be secured in a vertical position with two bolts, nuts and washers through the assembly bracket integrated in the pump body.

Operation



ILC-MAX pumps are designed for intermittent or continuous operation to provide regular lubrication cycles.

An electric gearmotor turns an **internal eccentric** that can drive **up to three pumping elements**. For a higher flow rate, the three outlets of the pumping elements can be combined into a single outlet.

Each pumping element has a safety valve to protect the system when it goes into overpressure.

The gearmotor also drives a spatulator inside the pump tank to stir the grease and ensure that it is never missing at the pump suction point. The system is guaranteed for greases with a consistency up to NLGI 2 at a minimum temperature of -40°C, above -20°C suitable greases are required.

Order code configurator

| 40 | . | 2 | . | 24AC | . | FST | . | G |

A
B
C
D
E

A (Tank)		B (Voltage)		C (Pumping element)	
2 kg transparent	2	12 V DC	12DC	Fixed Flow Rate	F
4 kg transparent	4	24 V DC	24DC	Adjustable Flow Rate	R
8 kg transparent	8	24 V AC	24AC		
5 kg metal	5	115 V AC	115V		
		230 V AC	230V		
D (Timer)		E (Lubricant)			
With timer	CT	Grease consistency NGLI 1 and 2			G
Without timer	ST	Oil consistency 50-1500 cSt			O
		Soft grease consistency 0, 00 and 000			SG

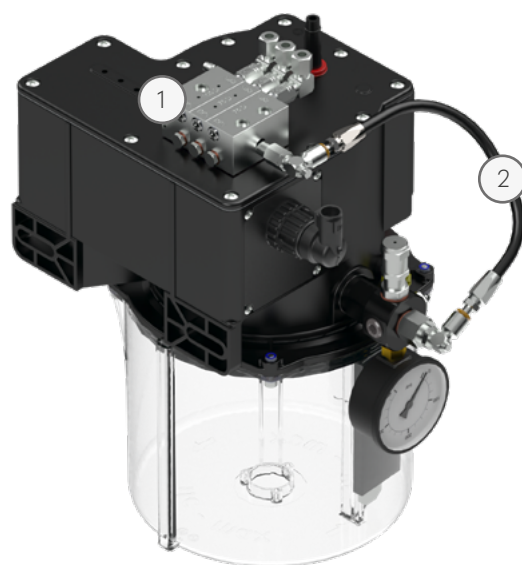
All pumps are supplied complete with minimum lubricant level control. The 2, 4 and 8 kg grease pumps are supplied complete with motor rotation control. The models with timer include the TYCO 7-pole connector and M12x1 4-contact connector; models without timer include only the TYCO 7-pole connector.

DPX preparation

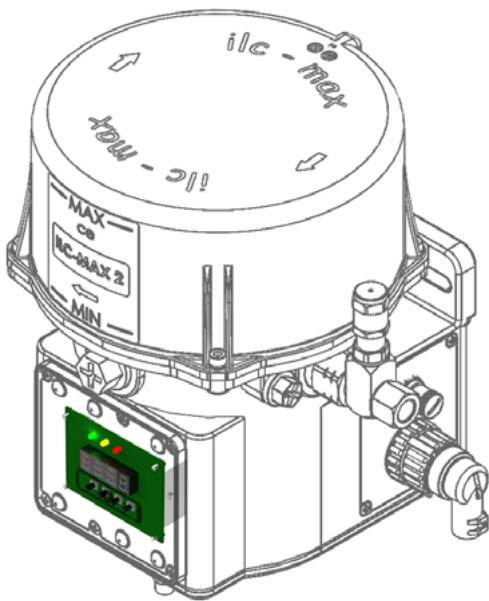
ILC-MAX is set up to be assembled with a 3 to 9 element DPX mounted directly below the body of the pump (1). This must be agreed with ILC S.r.l., which will provide the customer with a special code.

To assemble a DPX progressive distributor yourself, order kit **40.KRT.001** (2) (connection pipe complete with fittings).

To order DPX progressive distributors, please refer to the relevant catalogue on the ILC s.r.l. website at www.ilclube.com/progressive-lubrication-ilc.



Internal timer



The **ILC-MAX** pump **timer** is housed inside the structure near the gearmotor and can be accessed by removing the transparent protective cap.

Its transparency makes it is possible to view the two LEDs indicating pump running and any alarms. Once the protection has been removed, the necessary adjustments can be made.

Supply voltage

12 V DC - 24 V DC

Working methods

Stand-by	Hours
	Minutes
	External Pulses
Work	Minutes
	Seconds
	Internal Pulses
	External Pulses
Prelube	On/Off
Quick grease dispensing change	Standard
Controls	Minimum electric level
	Motor rotation
	Extra-cycle reset button
	Dry contact for remote alarm
	Progressive distributor cycle

External Timer

On request, the **ILC-MAX** pump **timer** can be supplied separately from the pump.

40.BCT.400 (three-phase)



Supply voltage 400 V AC Three-phase

40.BCT.AT.AC (single-phase)



Supply voltage 115/230 V AC (single-phase)

40.BCT.BT.AC



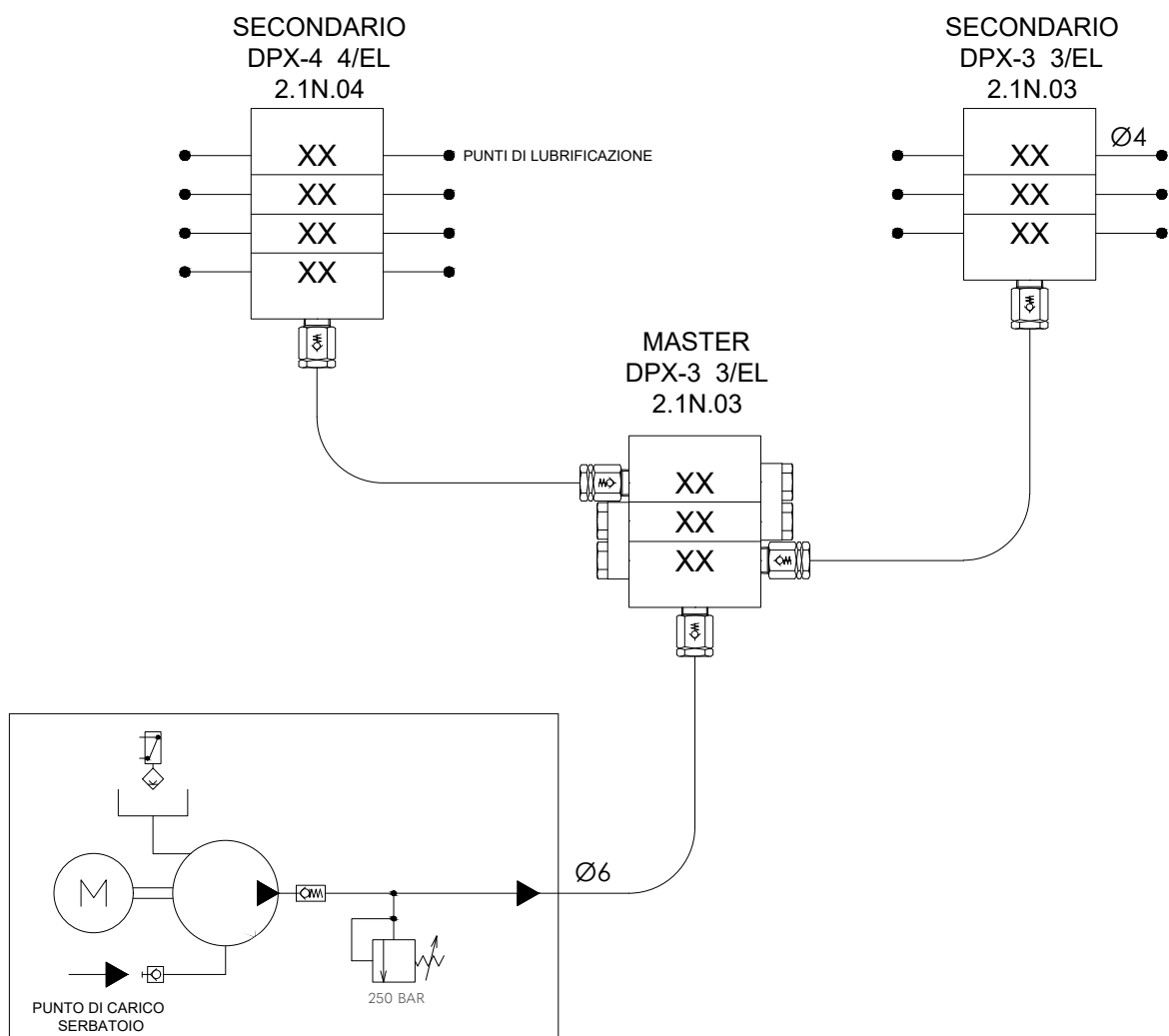
Supply voltage 24 V AC

40.BCT.BT.DC

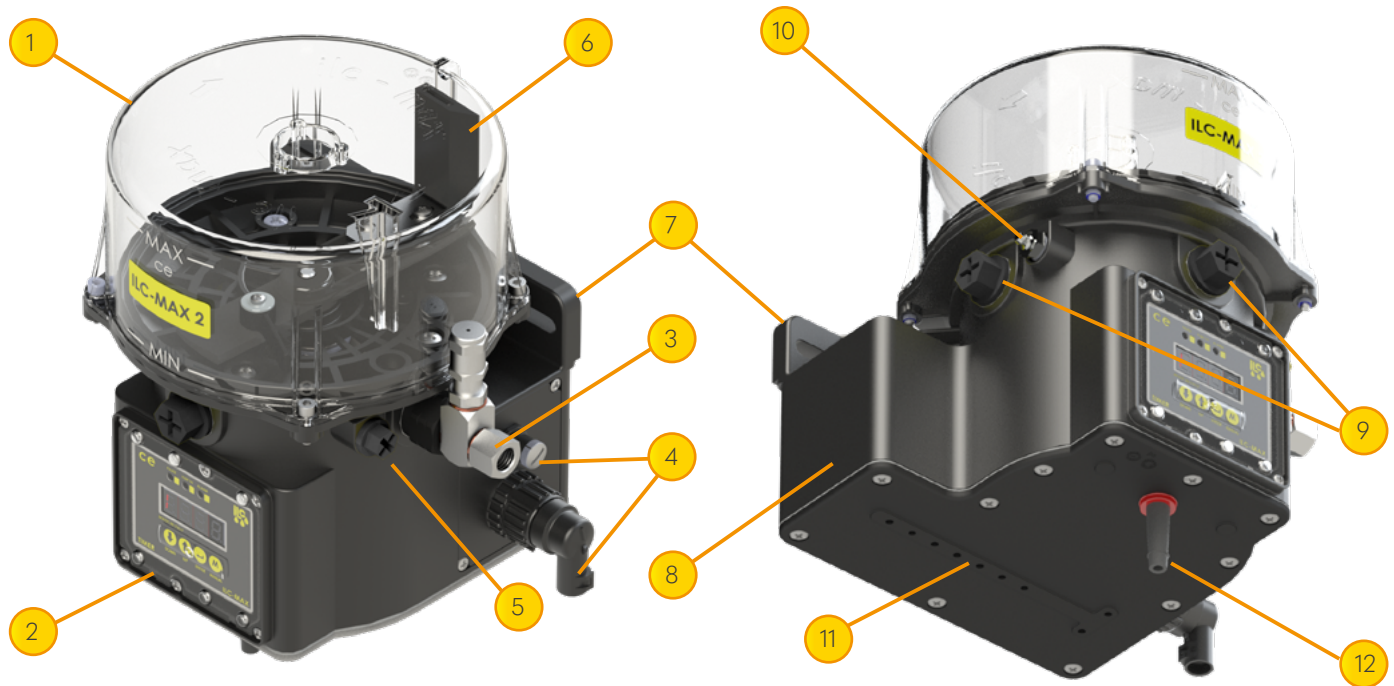


Supply voltage 24 V DC

Hydraulic Diagram



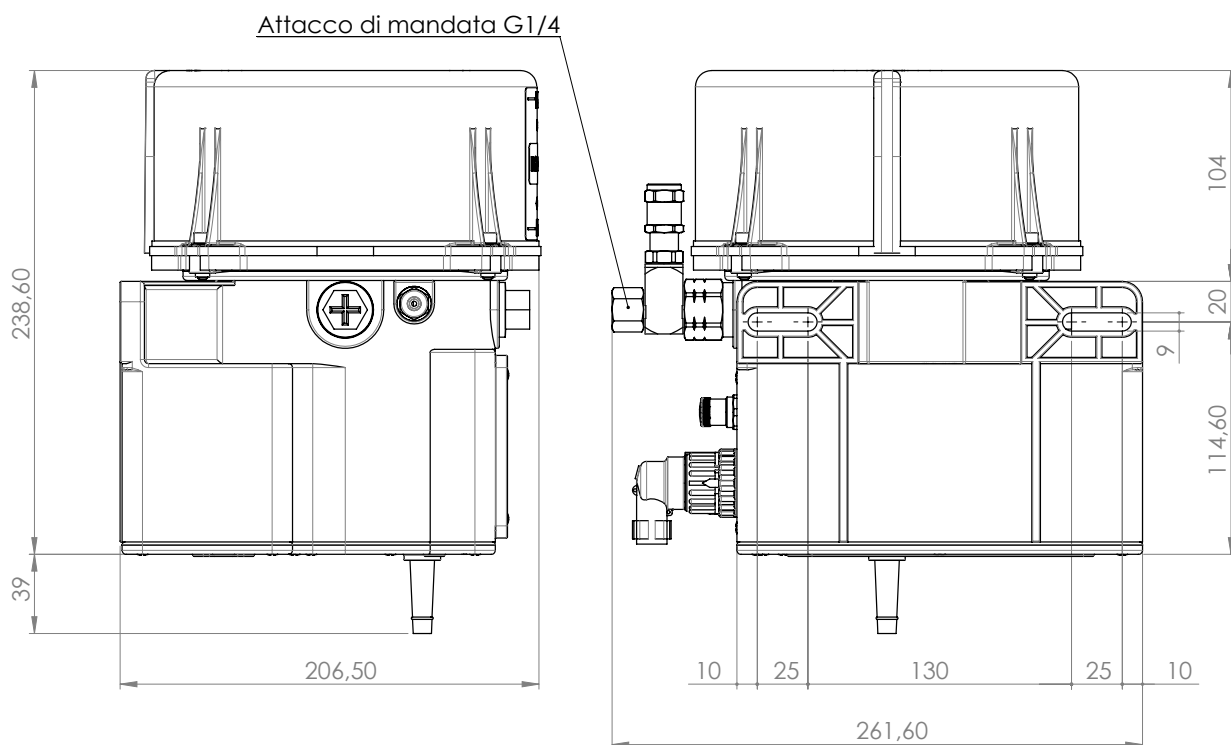
ILC-MAX components



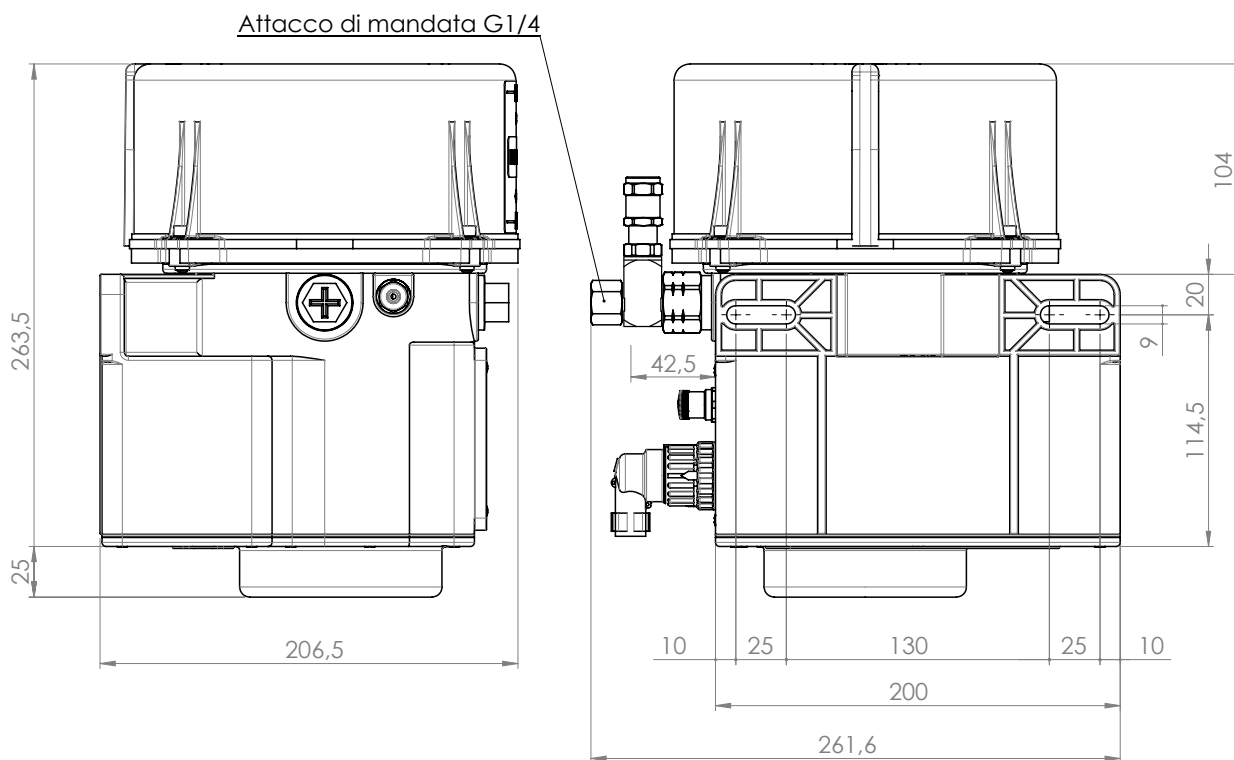
- | | | | |
|---|--------------------------------------|----|------------------------------|
| 1 | Tank | 7 | Assembly bracket |
| 2 | Integrated timer | 8 | Pump body |
| 3 | Fixed flow rate pumping element | 9 | Pumping element housing caps |
| 4 | Power supply connection (TYCO+M12x1) | 10 | Tank inlet grease nipple |
| 5 | Cap 1/4" G | 11 | Preparing DPX Progressives |
| 6 | Spatulator | 12 | Condensate drain |

ILC-MAX dimensions

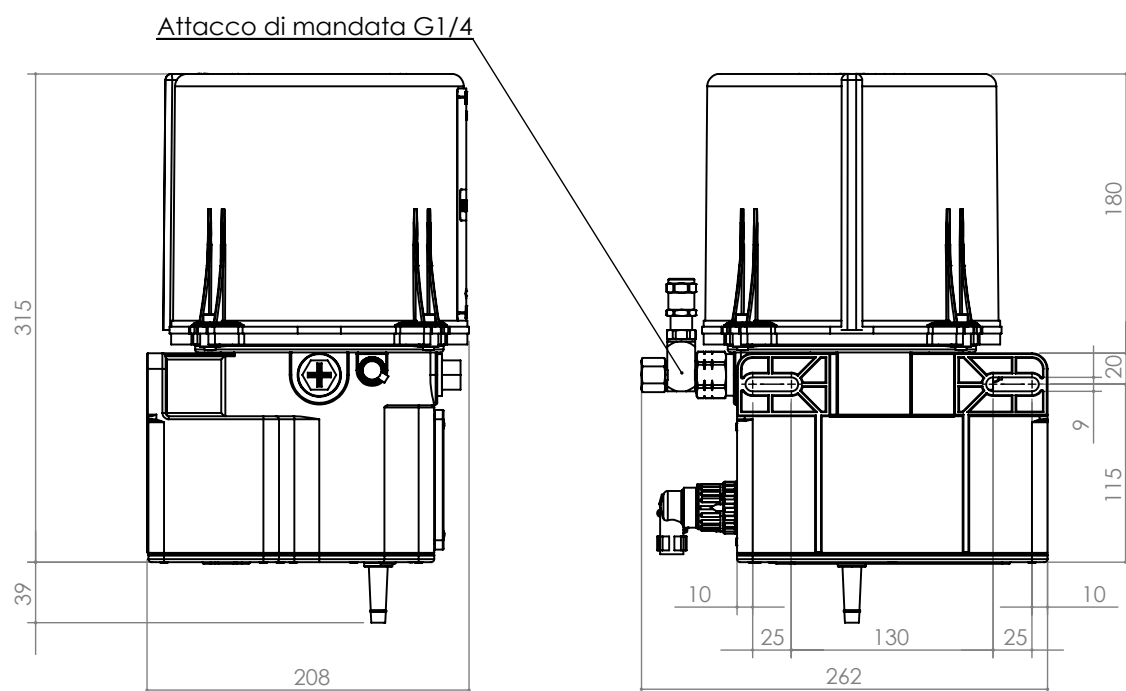
Grease 2 Kg (12/24 V AC/DC)



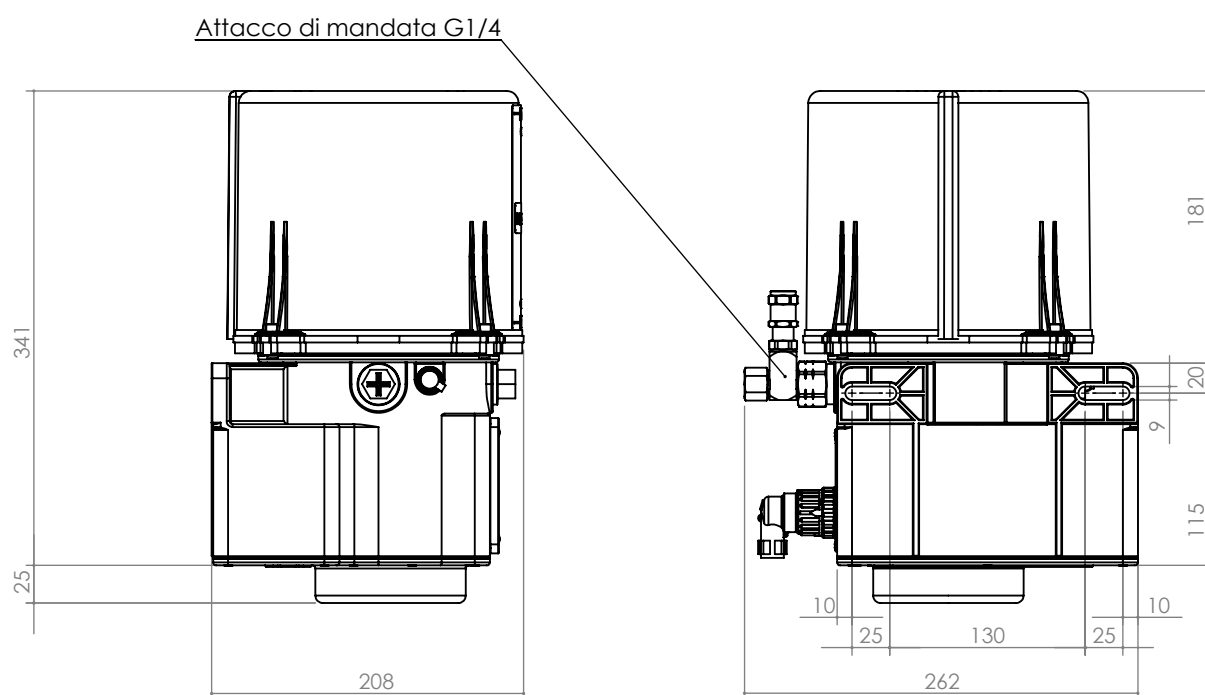
Grease 2 Kg (115/230 V AC)



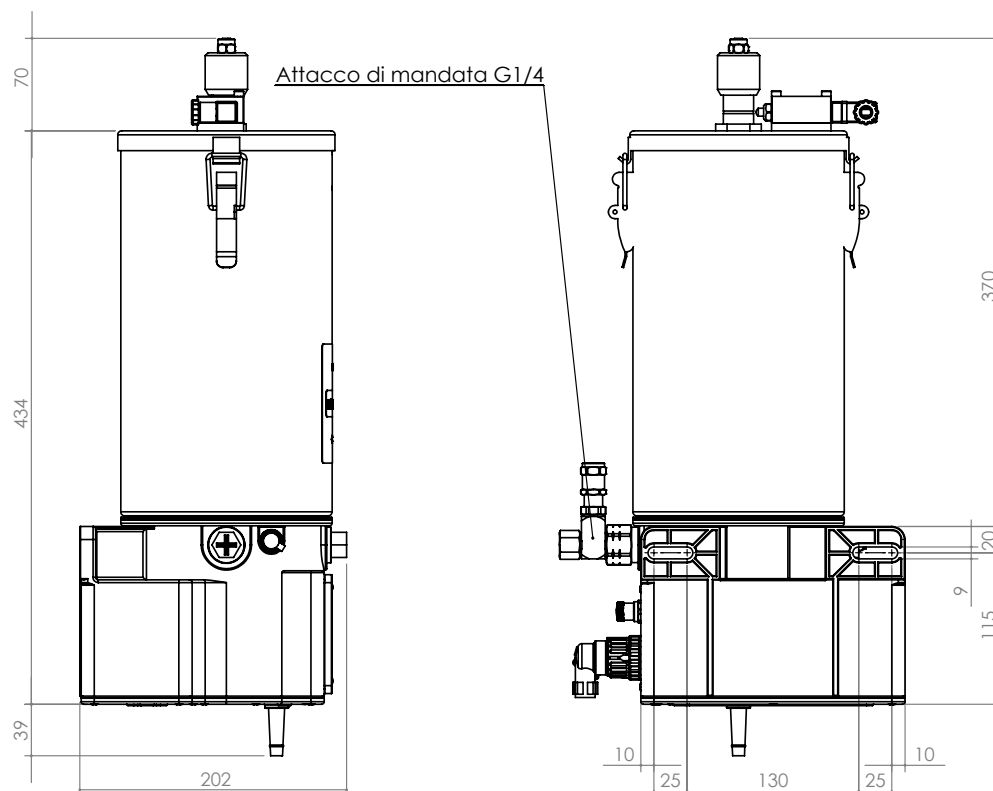
Grease 4 Kg (12/24 V AC/DC)



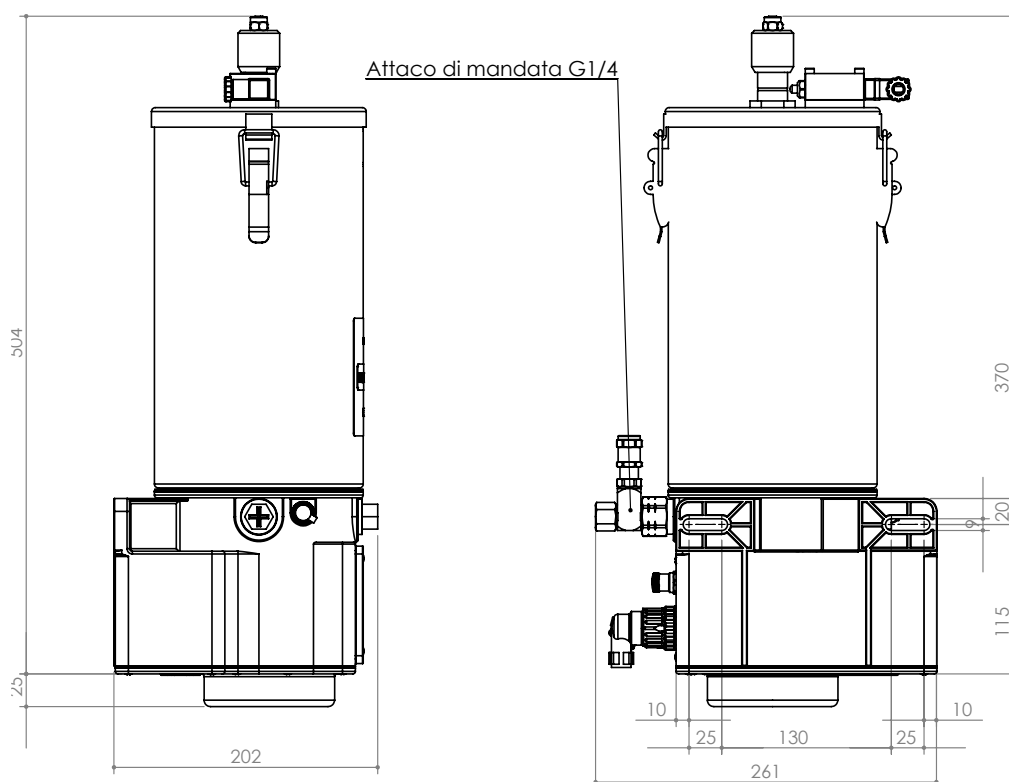
Grease 4 Kg (115/230 V AC)



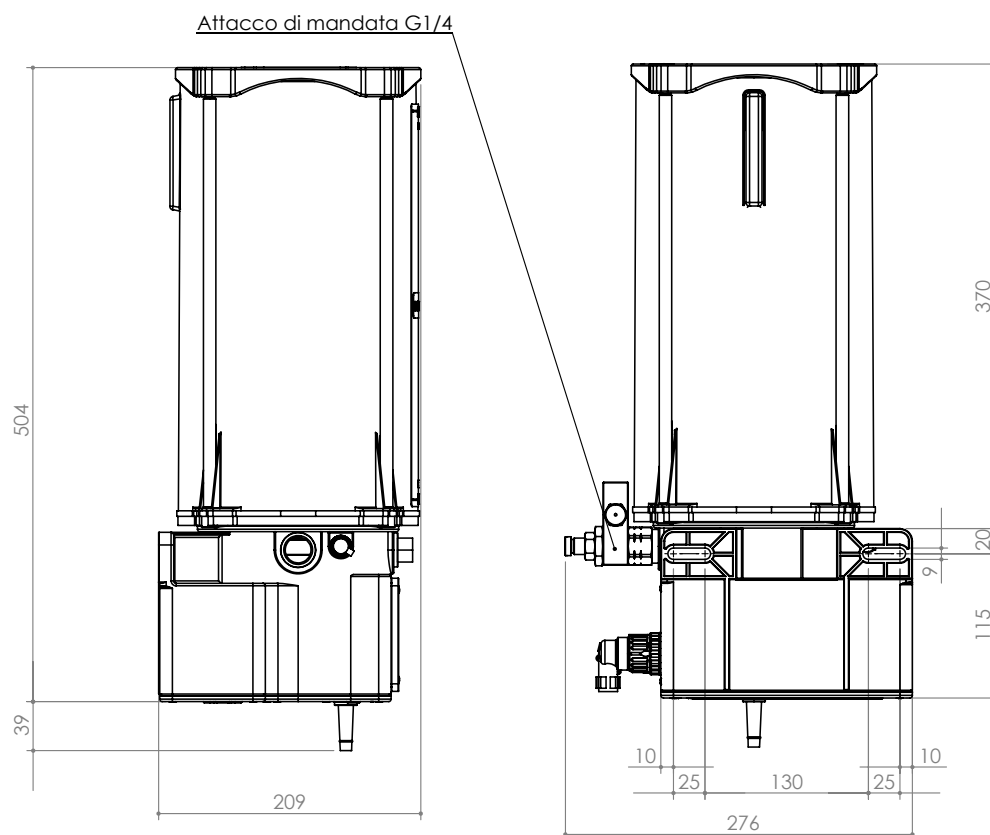
Grease 5 Kg (12/24 V AC/DC)



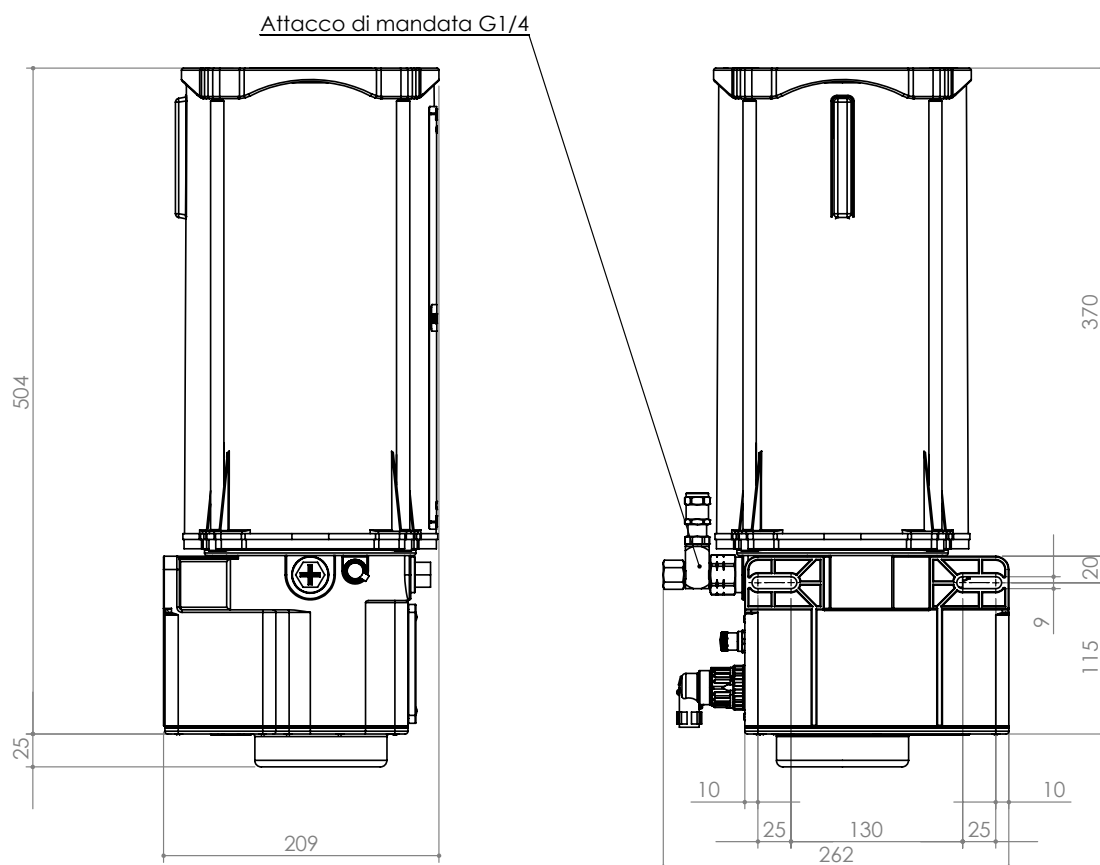
Grease 5 Kg (115/230 V AC)



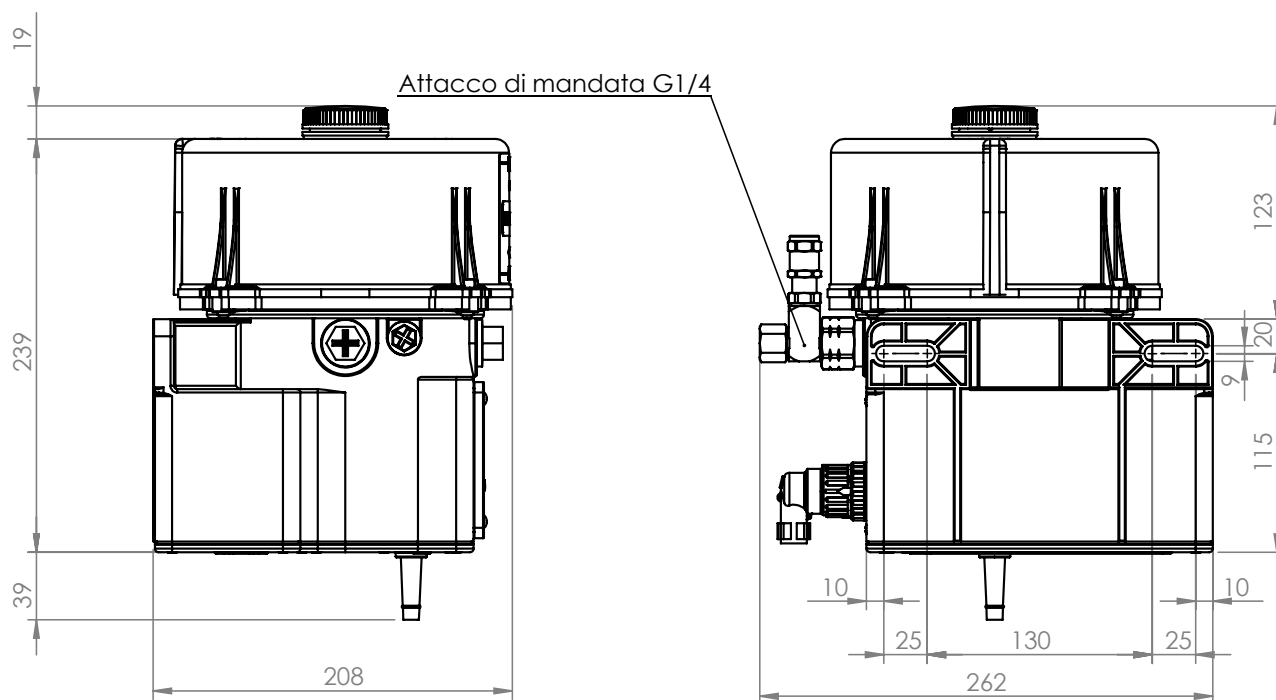
Grease 8 Kg (12/24 V AC/DC)



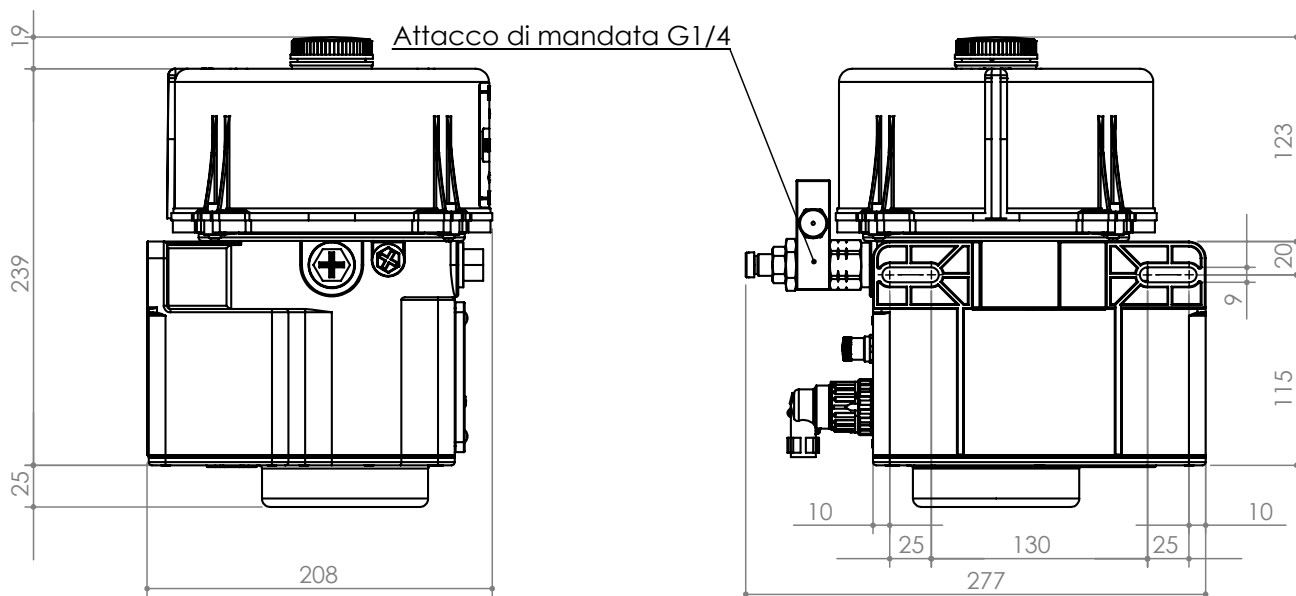
Grease 8 Kg (115/230 V AC)



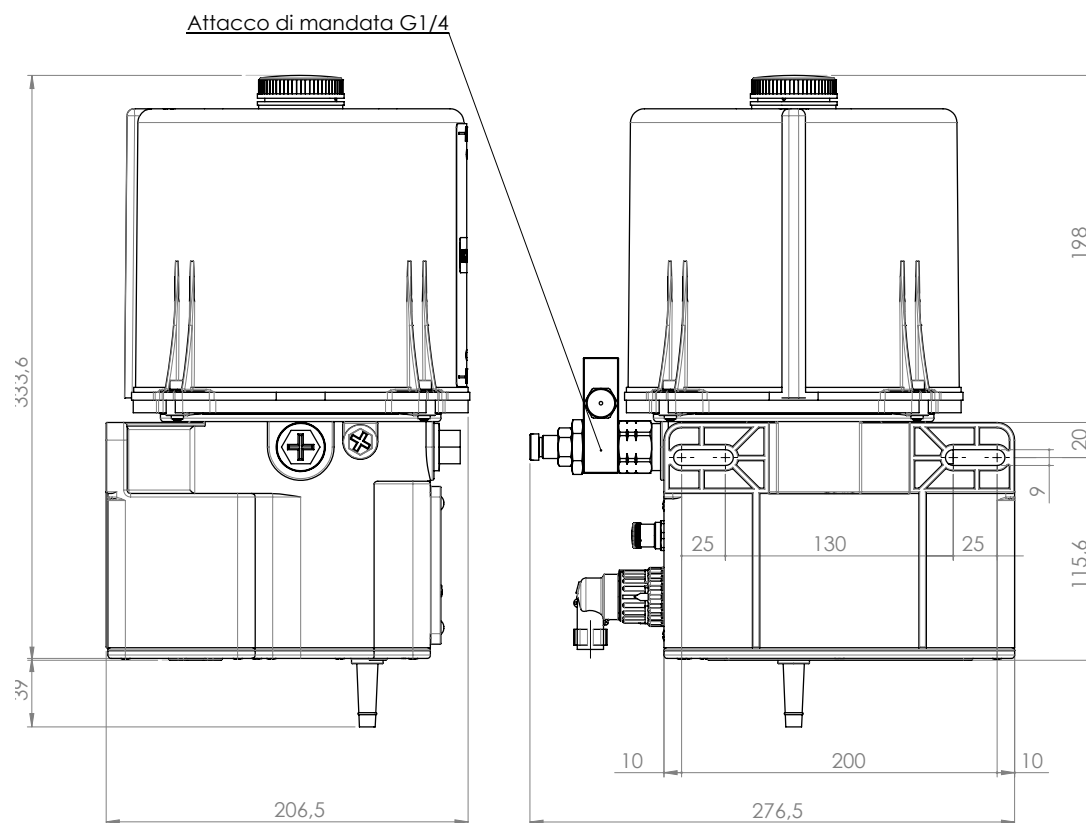
Oil 2 L (12/24 V AC/DC)



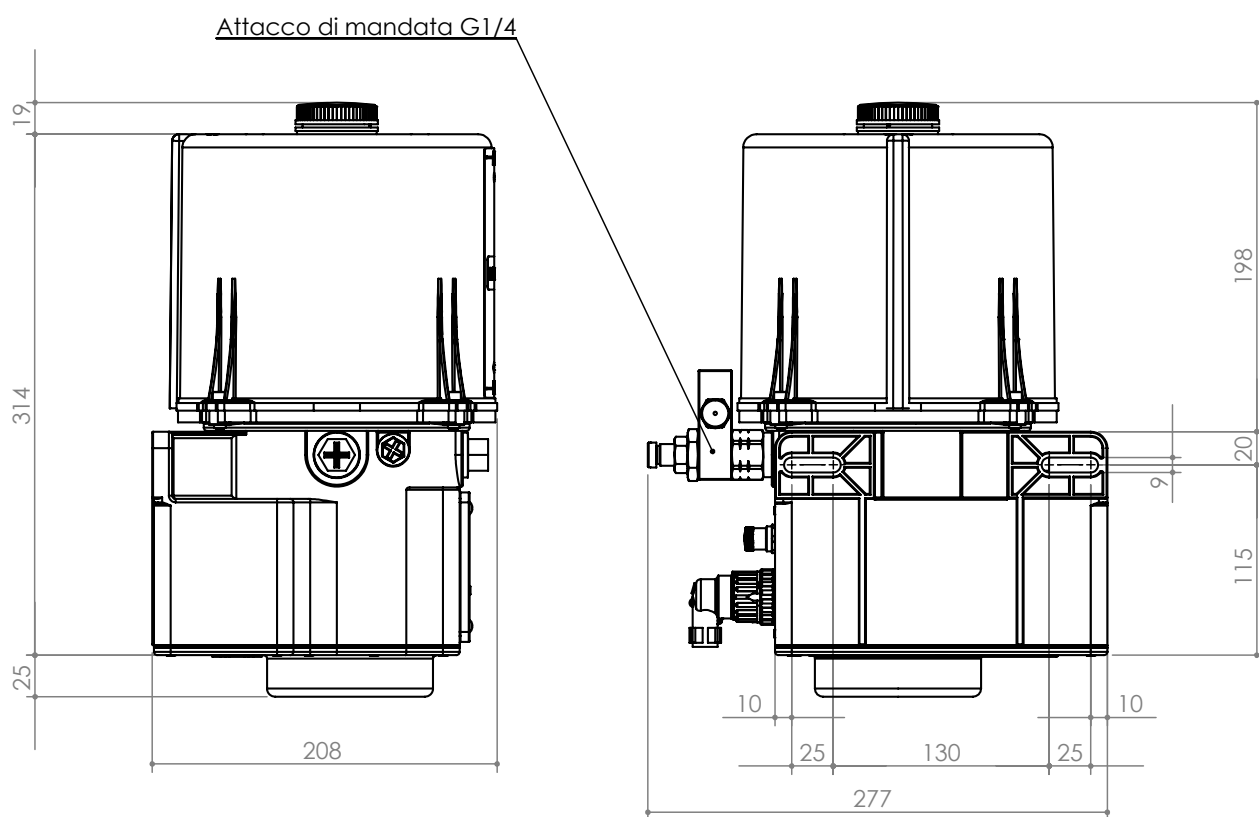
Oil 2 L (115/230 V AC)



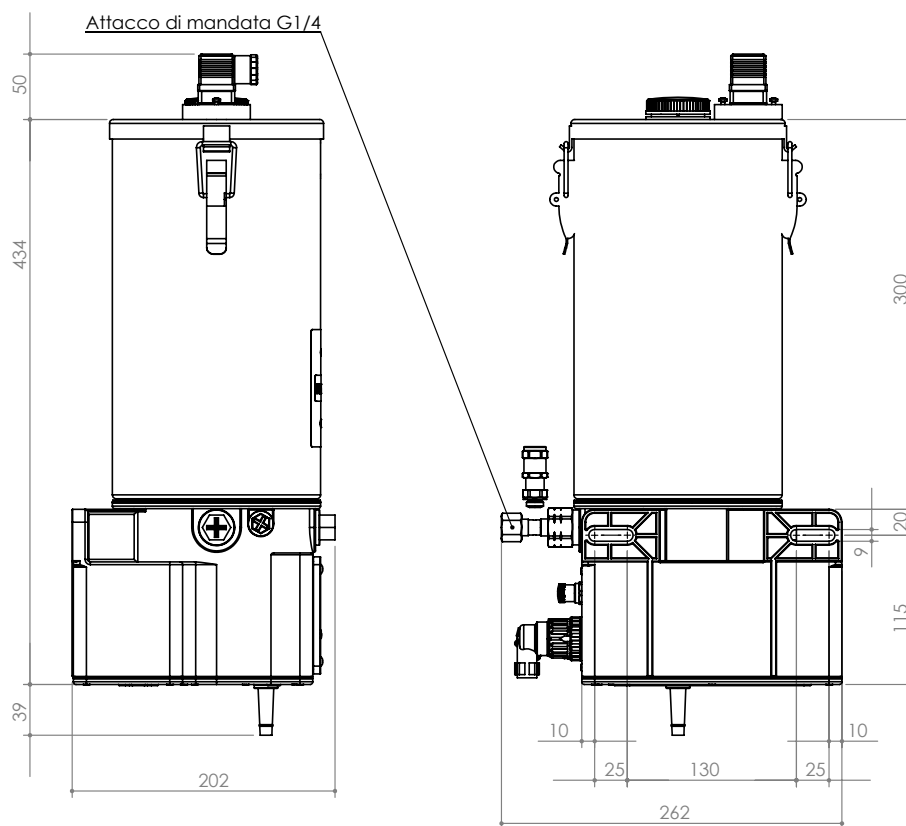
Oil 4 L (12/24 V AC/DC)



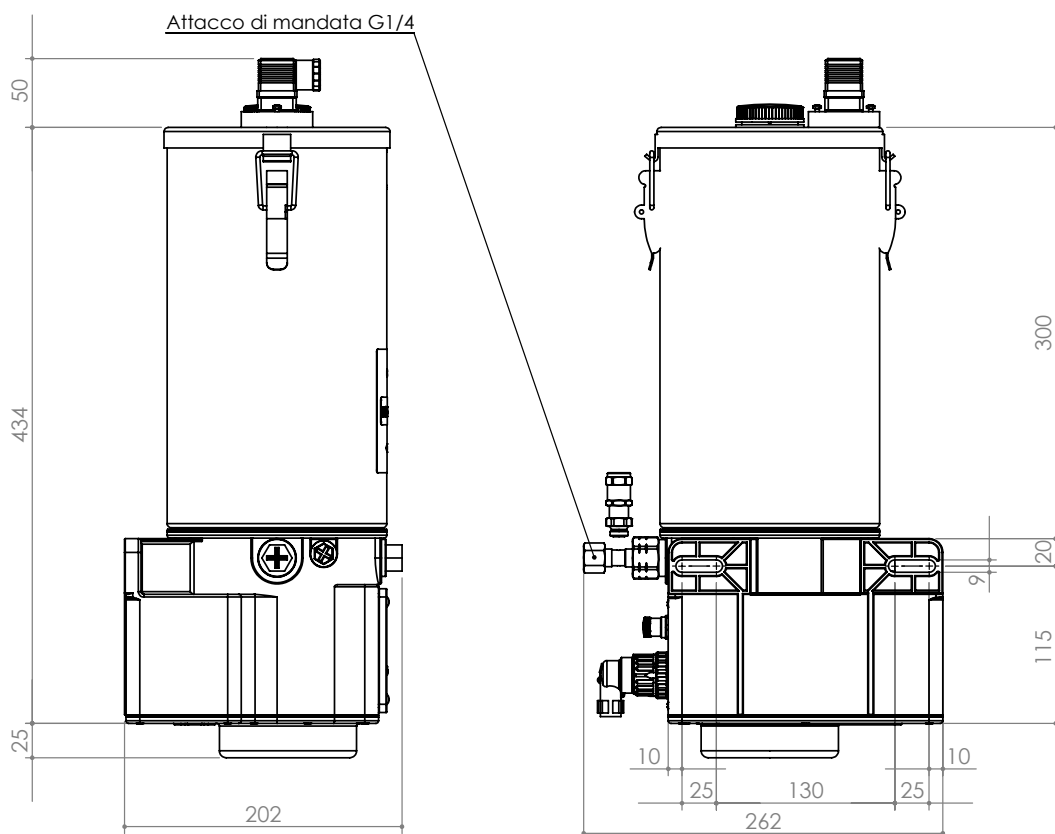
Oil 4 L (115/230 V AC)



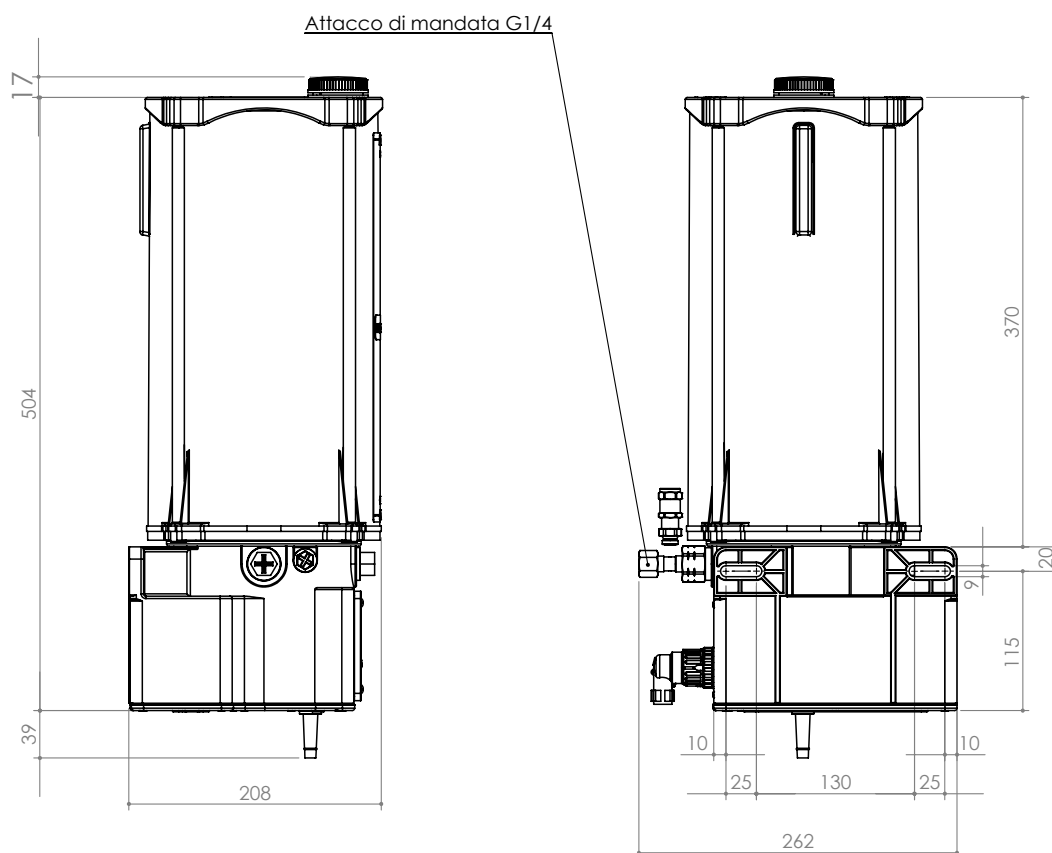
Oil 5 L (12/24 V AC/DC)



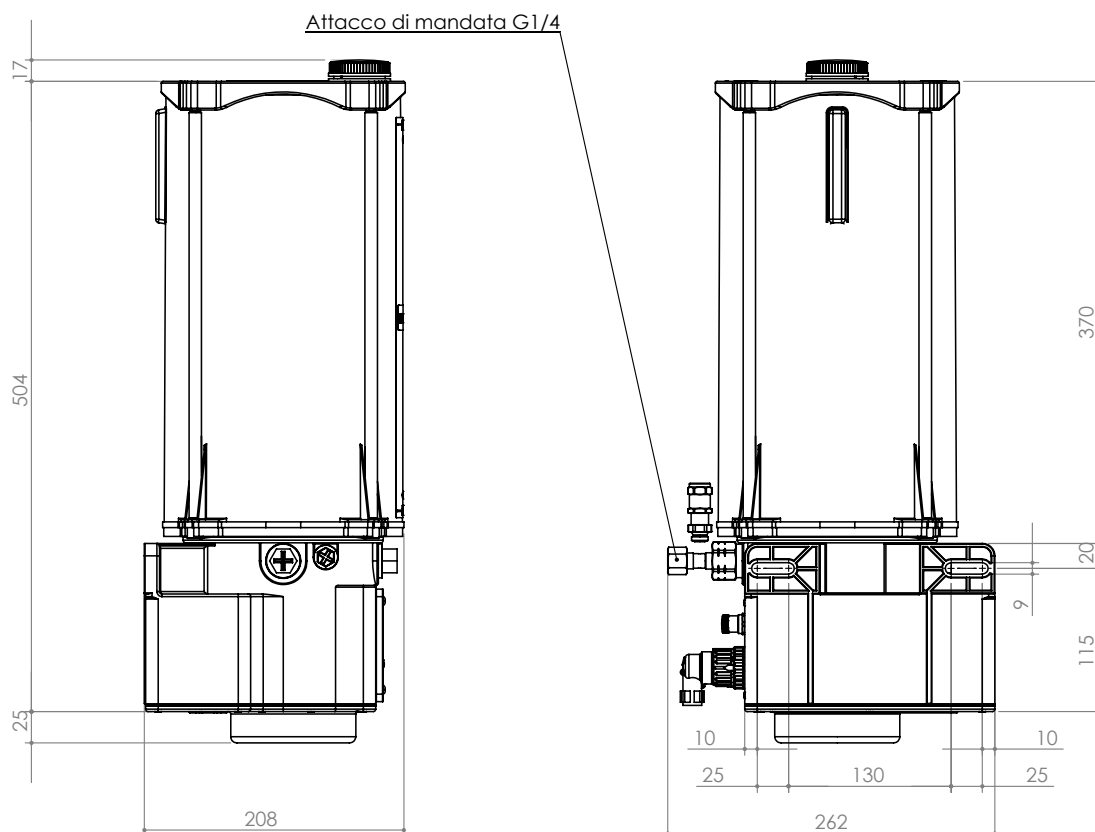
Oil 5 L (115/230 V AC)



Grease 8 Kg / Oil 8 L (12/24 V AC/DC)



Grease 8 Kg / Oil 8 L (115/230 V AC)

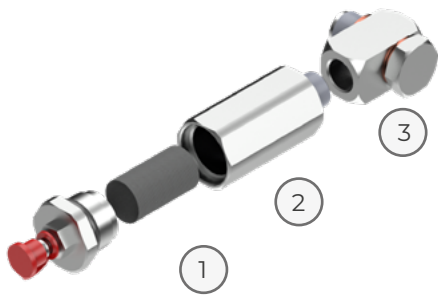


Grease inlet filters

To prevent impurities from entering while the tank is being filled, we recommend applying inlet filters directly on the pump body.

A70.093526 (300 μ - 1/4 "G seat)

07.270.7 (250 μ - pumping element seat)

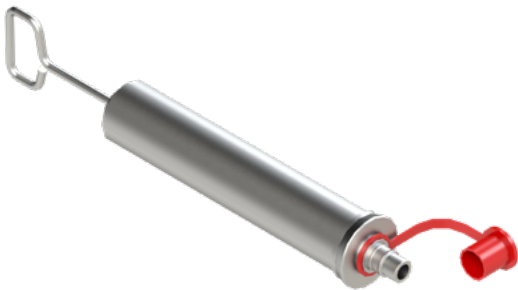


ID	Complete filter unit	A70.093526
1	Replacement Cartridge	A93.086020
2	Filter	07.270.0
3	Banjo	A70.093596

ID	Complete filter unit	07.270.7
1	Replacement Cartridge	A93.086020

Manual loading pump and adapter (Grease)

In order to load the pump through a cartridge (400g), it is necessary to purchase the manual pump and its M22x1.5 loading adapter.



Manual pump	Adapter with check valve
ZZZ100-201	07.270.9

Fixed flow rate pumping element

90.900.0



All the electric pumps of the ILC-MAX series can be equipped, even subsequently, with a 2nd and 3rd pump capable of feeding other main lines or of conveying the supplied lubricant in the same pipe.

For ease of use, the safety valve can be rotated 360°. The delivery connection is 1/4" G.

ID	Complete unit	90.900.0
1	Pumping element only	A70.093245
2	Safety valve	A68.075011
3	1/4" G joint	A70.093186

Blocks

The block is mounted on the delivery line to control the system’s operating pressure by means of a pressure gauge and to fill the line through a grease nipple with a manual or pneumatic pump. The installation of a safety valve protects the system from overpressure and the electromagnetic sensor is triggered in case of high pressure on the main line.

Unused outlets are closed with cap **A92.087057** (R1/4 with Precote 80 sealant).

40.BMI.01

40.BMI.02



	Complete unit	40.BMI.01
1	1/4" grease nipple	A70.078452
2	Pressure gauge 0-400 bar	46.600.0
3	Cap	A92.087057



	Complete unit	40.BMI.02
1	1/4" grease nipple	A70.078452
2	Max pressure valve	A68.075011
3	Pressure gauge 0-400 bar	46.600.0
4	Cap	A92.087057

40.BMI.03



40.BMI.04



	Complete unit	40.BMI.03
1	1/4" grease nipple	A70.078452
2	Pressure gauge 0-400 bar	46.600.0
3	Max pressure valve	A68.075011
4	Overpressure sensor 250 bar	09.713.7

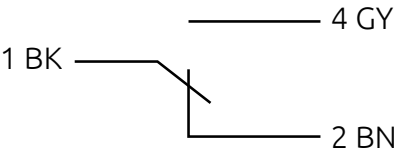
	Complete unit	40.BMI.04
1	1/4" grease nipple	A70.078452
2	Pressure gauge 0-400 bar	46.600.0
3	Max pressure valve	A68.075011
4	Proximity overpressure sensor (250 bar)	09.712.7

Sensor data	
Voltage	230 V AC - 250 DC
Power	40 W
Absorption	1 A

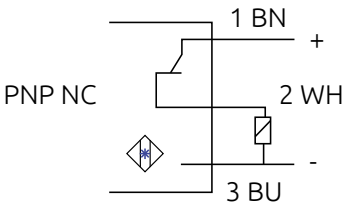
Sensor data	
Voltage	6 - 30 V DC
Output current	Max 200 mA
Current	< 12 mA

Temperature	-25° C +70° C
Protection	IP67
Sensor body	Stainless steel

wiring diagram

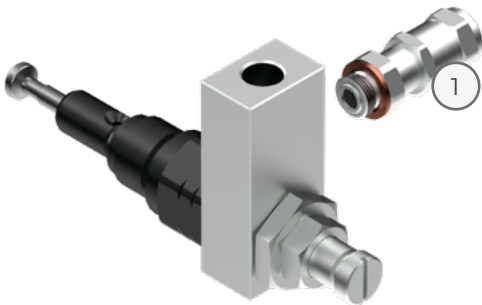


wiring diagram



Adjustable flow rate pumping element

90.900.3



90.900.3

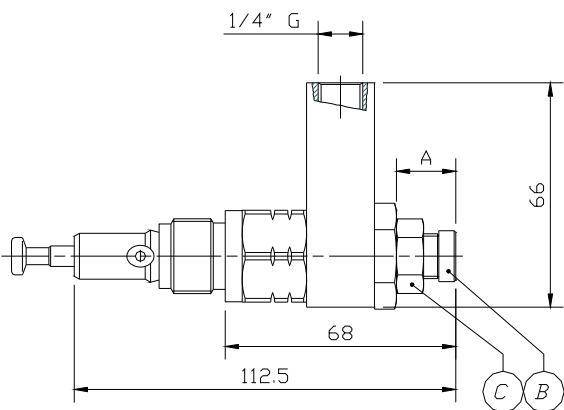


90.900.4

The pumping element has a 1/4" G outlet. The code for the pumping element complete with safety valve is (90.900.3). The code for the pumping element without safety valve is (90.900.4).

To add an external safety valve, order code (A68.075011).

	Complete unit	90.900.3
-	Pumping element only	90.900.4
1	Safety valve	A68.075011
2	Cap	A92.087057



A	Flow rate/cycle	Percentage
23.6	0.16 CC	100%
22.5	0.12 CC	75%
21	0.08 cc	50%
19.5	0.04 cc	25%
18.5	0.01 cc	6%
17.5	0.00 cc	0%

Important! 'A' must not exceed 23.6 mm

To change the nominal flow rate of the pump, the lock nut (C) must be loosened and the adjusting screw (B) turned clockwise and anticlockwise respectively to reduce or increase the amount of lubricant supplied.

Once you have set the desired value, it is extremely important to tighten the lock nut again (C).

Blocks (adjustable flow rate pumping element)

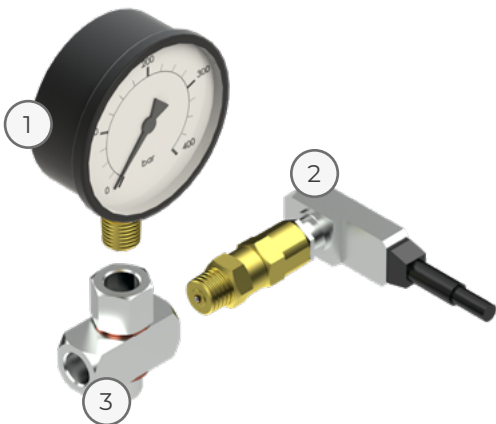
The block is mounted on the delivery line to control the system’s operating pressure by means of a pressure gauge and to fill the line through a grease nipple with a manual or pneumatic pump. The electromagnetic sensor intervenes in the event of high pressure in the main line.

Unused outlets are closed with cap **A92.087057** (R1/4 with Precote 80 sealant).

A70.093523

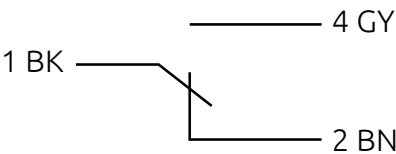


A70.093525



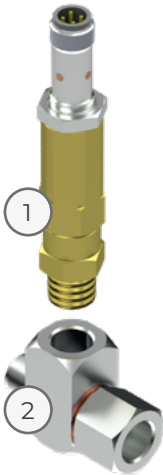
	Complete unit	A70.093523
1	Pressure gauge	46.600.0
2	1/4"G joint	A70.093186

	Complete unit	A70.093525
1	Pressure gauge	46.600.0
2	Overpressure sensor (250 bar)	09.713.7
3	2-way 1/4"G joint	A70.093457

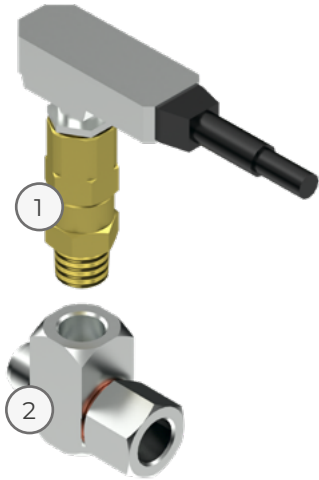


1 A 230 V AC – 250 V DC 40 W
wiring diagram

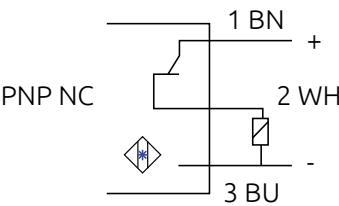
A70.093543



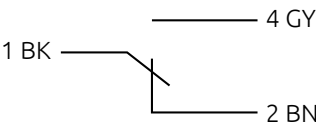
A70.093544



	Complete unit	A70.093543		Complete unit	A70.093544
1	Proximity sensor 250 bar	09.712.7	1	Electromechanical sensor	09.713.7
2	1/4"G joint	A70.093186	2	1/4"G joint	A70.093186



wiring diagram



1 A 230 V AC – 250 V DC 40 W
wiring diagram

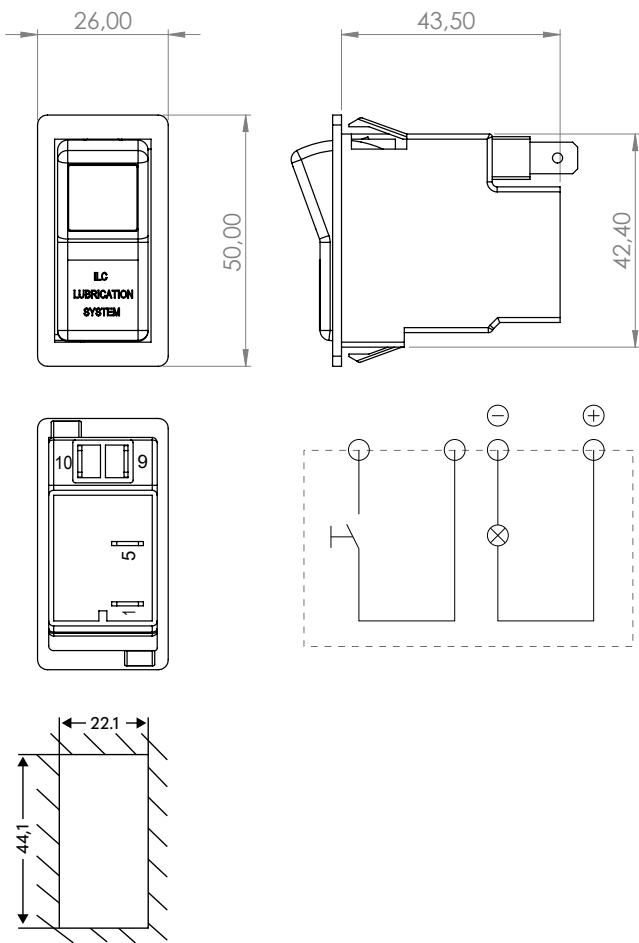
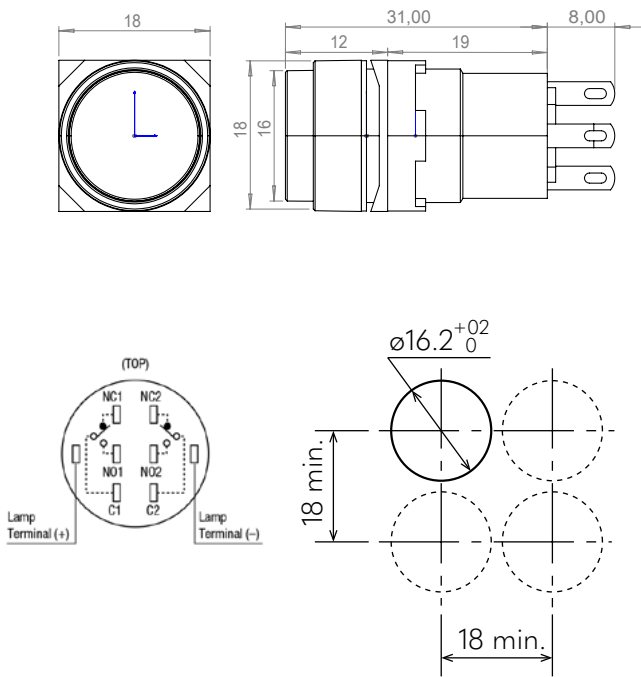
Luminous button

Reset button with lamp

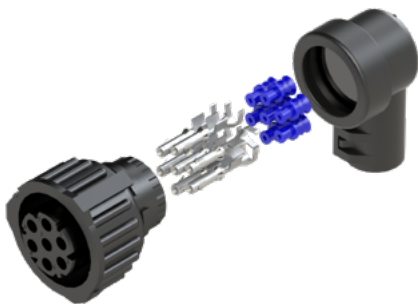


Code	Volts	Colour	Material
40.PBG.12	12	Green	Plastic
40.PBG.24	24	Green	Plastic

Code	Volts	Colour
40.PSG.12	12	Green
40.PSG.24	24	Green
40.PSR.12	12	Red
40.PSR.24	24	Red



Electrical connections



The ILC-MAX pump is supplied complete with a seven-pin electrical connector A91.111327, which powers the pump and manages any alarm signals (rotation and level). A total of twenty-one rubbers are included, seven per type, for different cable diameters and/or unused contacts.

On request, the connector can be ordered complete with a 3-wire or 7-wire cable (1 mm²) in 3 different lengths (5, 10, 15 m).

Electrical power connector

A91.111327

Power connector with cable

3 wires	7 wires	Length
40.CBL.3.05	40.CBL.7.05	5 m
40.CBL.3.10	40.CBL.7.10	10 m
40.CBL.3.15	40.CBL.7.15	15 m

Part No. Rubbers

A91.111315	For 1,2 to 2,1 mm ² cable (white)
A91.111314	For 2,2 to 3 mm ² cable (blue)
A91.111310	Closing cap (brown)

Connecting Control Elements

A second connector (**M12x1**), for the management of a progressive feeder cycle control (if foreseen in the system), can be installed in versions equipped with an internal timer. Also for this connector, the connector complete with cable can be ordered on request.

Optional connector with cable (M12x1 / M12x1)

Part No.	Length
40.CDC.4.05	5 m
40.CDC.4.10	10 m
40.CDC.4.15	15 m

only for version with internal timer.