

**SYSTEM
LUBRICATION
SINGLE LINE**

CATALOG N° 803/15

15



**ADVANCED FLUID
MANAGEMENT SOLUTIONS**

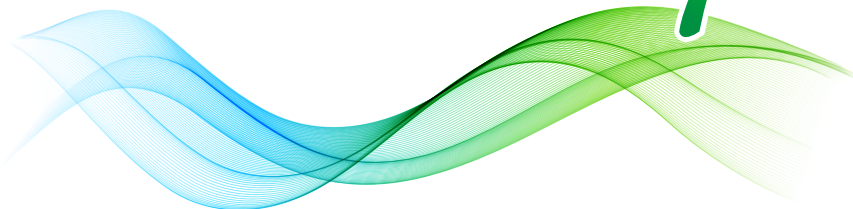




HELP THE NATURE

Packaging contains, depending on the articles, one or more of the following materials; they must be recycled in accordance with current regulations in the country of use.

cardboard • polyethylene sack • polystyrene
paper • wood • nails • plastic strap
cellophane • clips • gummed paper





**ADVANCED FLUID
MANAGEMENT SOLUTIONS**



DESIGN IS AN

Art





founded in 1975



*the human side
of Quality*



STUDY, RESEARCH AND DESIGN

The real strength of a firm starts with the ability of its study and research departments to always find the most suitable solutions to address market demands.



TESTING AND INSPECTIONS

A sophisticated test room enables careful testing of the quality of new products before they are put on the market.

ASSEMBLY LINES

Dedicated equipment specially designed to facilitate assembly operations, at the same time allowing an effective and automatic control of quality.



STORAGE OF COMPONENTS

Our vertical stores enable quick and careful preparation of the components and spare parts intended for assembly and sale.



TECHNOLOGY
INNOVATION
QUALITY
SAFETY
RELIABILITY



TECHNICAL ASSISTANCE

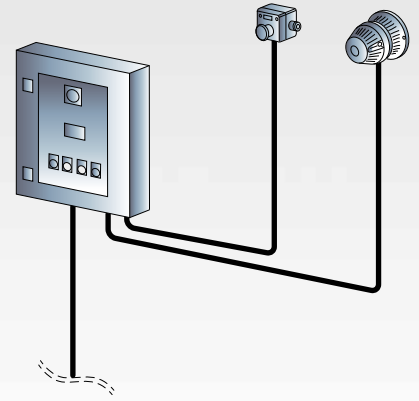
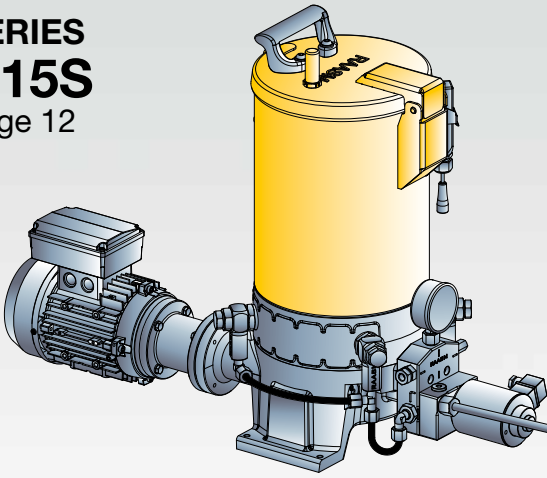
RAASM has the most complete range of products for lubrication and the dispensing of fluids. The aim is to always respond fully to the questions of our customers and meet all their needs.



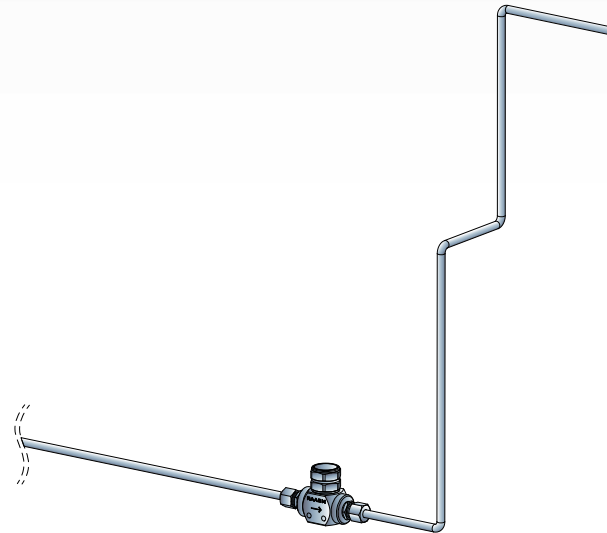
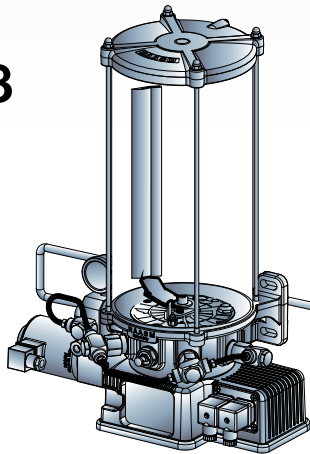


SYSTEM 15 SINGLE LINE

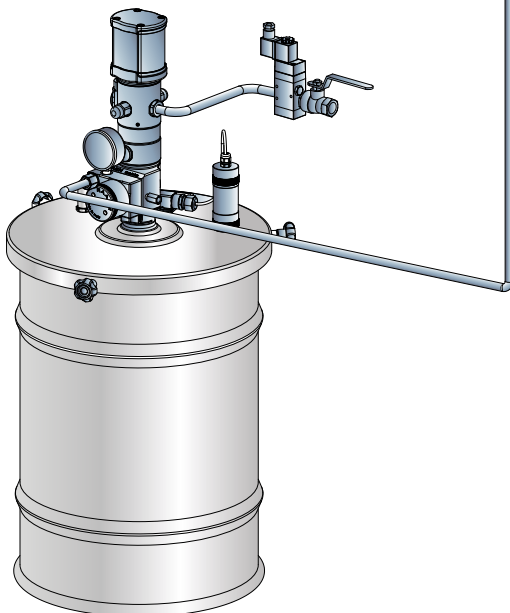
■ **SERIES C15S**
page 12



■ **SERIES C15B18**
page 18



■ **SERIES C15F**
page 24



The single-line decompression lubrication system consists of an independent pump assembly which delivers the lubricant (oil or grease) to direct response volumetric distributors (injectors) through a main line.

System operation occurs through two phases:

- 1 - Injector filling (the system is not under pressure)
- 2 - Dispensing of the lubricant (the system is under pressure)

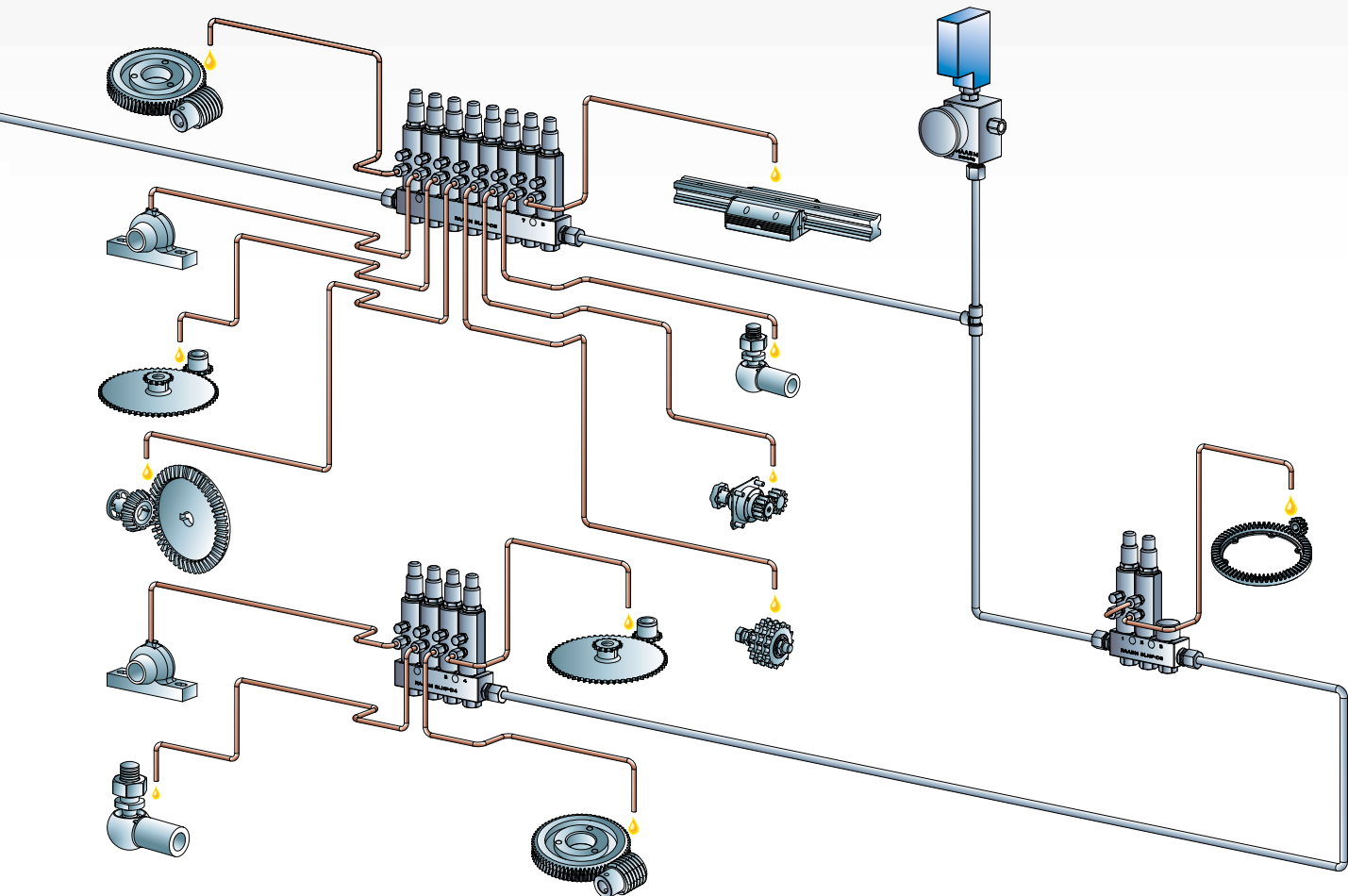
Each injector can be adjusted to deliver different amounts of lubricant. The pump assembly is equipped with a device (discharge valve) which enables rapid decompression of the system immediately after the action of the injectors. The system pressure and the configuration of the injectors in parallel enable the feeding of even very large centralized systems and with a

high number of user points. Verification of operation for each cycle is possible through control of the pressure. Lubricating oils from 40 cSt and greases up to NLGI 2 can be used.

The pumps feeding these systems can be:

- air-operated pumps C15F for standard and rechargeable drums
- air-operated pumps C15F with 10 litres tank
- electric pumps C15S (with radial pistons - max. 4)
- electric pumps C15B18 (with radial pistons - max. 4)

Management and control of the system occurs through the application of modern electrical and electronic equipment (PLC, level sensors, microswitches, pressure switches).



ADVANTAGES

- Longer life of lubricated components.
- Reduced lubricant consumption and operating costs.
- Programmed and precise dosing of the lubricant at each point to be lubricated.
- System easily extended without the need to be redesigned.
- System suitable for particularly demanding environments.
- System easy to create (pump plus number of user points).
- Injector delivery adjustable directly at installation or after.
- There are no lubrication stops/interruptions if an injector sticks.
- Injectors with visual control of operation.
- Pumping unit offering easy maintenance and very safe operation, working with oil or grease.



**ADVANCED FLUID
MANAGEMENT SOLUTIONS**



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SERIES C15S MOTOR-OPERATED PUMP

230/400 V AC - 275/480 V AC

Compact electric motor-operated pump, equipped with an electromagnetic solenoid discharge valve that unloads the grease directly into the tank at cycle end.

It has a sturdy and compact base in nickel-plated aluminium alloy fitted with pumping elements in galvanized hardened steel. The epoxy powder painted lubricant tank is available in 3 different sizes: 10, 30 or 70 litres. Two electric motors (three-phase) are available with 4 poles or 6 poles, to which gearmotors with ratios of 35:1 and 70:1 are coupled. These all specifics allow a wide combination of tanks, motors and gear motors to meet all end-users' needs.



TECHNICAL CHARACTERISTICS

| | | |
|------------------------------------|---|---|
| Max flow rate | * | 108 cm ³ /min |
| Max working pressure | | 300 bar adjustable |
| Reservoir capacity | | 10-30-70 litres |
| Pump reducer ratio | | 35:1 - 70:1 |
| Lubricant inlet connection | | F 1/2" G |
| Lubricant outlet connection | | F 3/8" G |
| Piston flow rate | | P/N 2081100 - 1 cm ³ /cycle |
| Working temperature | | -25 °C / +60 °C |
| Compatible fluids | | Oil > 40 cSt - Greases max NLGI 2 |
| Min level electric control | | Standard |
| Max level electric control | | On request |
| Motor | | Power: 0,25 kW |
| | | 230/400 V AC - 50 Hz - 275/480 V AC - 60 Hz * |
| | | speed 6 poles: 870 ÷ 1100 rpm |
| | | speed 4 poles: 1370 ÷ 1660 rpm |
| Materials | | Protection: IP 55 |
| | | Base: aluminum alloy |
| | | Moving parts: steel |
| | | Pumping piston: hardened steel |
| | | Reservoir: painted steel |

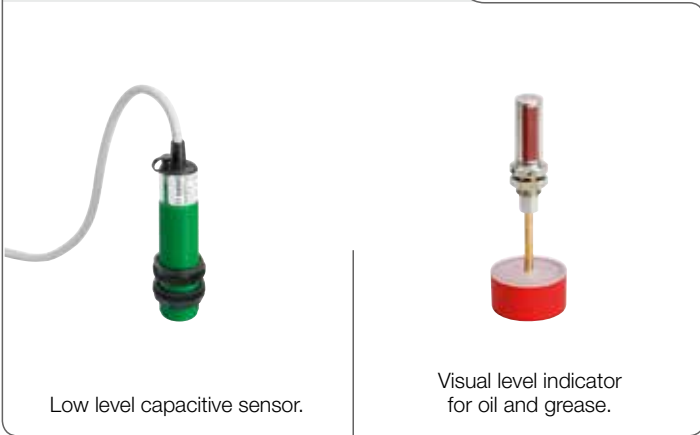
* Approx. delivery with grease NLGI 2 at 18 °C. (The lubricant must have technical characteristics in compliance with working temperature).

* Supply voltages different from the standard have to be specified during the purchase order.

GUIDE TO CHOOSING PUMP

| P/N | | Reservoir Capacity (litres) | No. of pistons | Reducer | Motor | Flow rate (cm ³ /min) |
|---------|---------|-----------------------------|----------------|---------|--------|----------------------------------|
| Grease | Oil | | | | | |
| 1570080 | 1570440 | 10 | 2 | 70:1 | 6 poli | 28 |
| 1570200 | 1570560 | 30 | 2 | 70:1 | 6 poli | 28 |
| 1570022 | 1570380 | 10 | 2 | 70:1 | 4 poli | 40 |
| 1570140 | 1570500 | 30 | 2 | 70:1 | 4 poli | 40 |
| 1570110 | 1570470 | 10 | 4 | 70:1 | 6 poli | 56 |
| 1570230 | 1570590 | 30 | 4 | 70:1 | 6 poli | 56 |
| 1570350 | 1570710 | 70 | 4 | 70:1 | 6 poli | 56 |
| 1570050 | 1570410 | 10 | 4 | 70:1 | 4 poli | 80 |
| 1570170 | 1570530 | 30 | 4 | 70:1 | 4 poli | 80 |
| 1570290 | 1570650 | 70 | 4 | 70:1 | 4 poli | 80 |
| 1570065 | 1570425 | 10 | 2 | 35:1 | 6 poli | 54 |
| 1570185 | 1570545 | 30 | 2 | 35:1 | 6 poli | 54 |
| 1570095 | 1570455 | 10 | 4 | 35:1 | 6 poli | 108 |
| 1570215 | 1570575 | 30 | 4 | 35:1 | 6 poli | 108 |
| 1570335 | 1570695 | 70 | 4 | 35:1 | 6 poli | 108 |

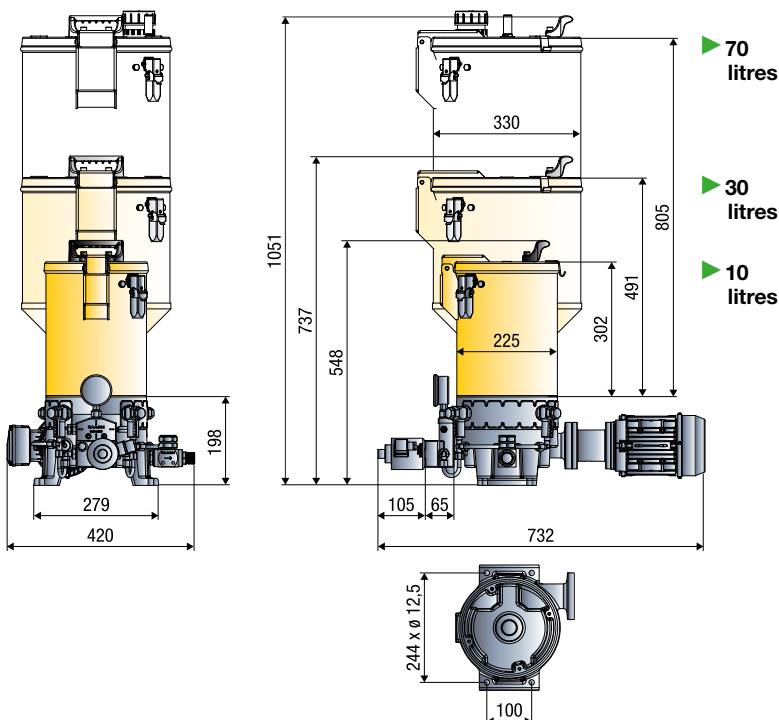
STANDARD EQUIPMENT



ON REQUEST



OVERALL DIMENSIONS (mm)



| | 10 litres | |
|------------------------|-----------|---------|
| | Grease | Oil |
| Packing-m ³ | 1-0,175 | 1-0,175 |
| Net weight Kg | 31,7 | 31,5 |
| Gross weight Kg | 44,5 | 44,3 |

| | 30 litres | |
|------------------------|-----------|---------|
| | Grease | Oil |
| Packing-m ³ | 1-0,235 | 1-0,235 |
| Net weight Kg | 36,9 | 36,6 |
| Gross weight Kg | 50,1 | 49,8 |

| | 70 litres | |
|------------------------|-----------|---------|
| | Grease | Oil |
| Packing-m ³ | 1-0,334 | 1-0,334 |
| Net weight Kg | 41,5 | 40,7 |
| Gross weight Kg | 55,4 | 54,6 |

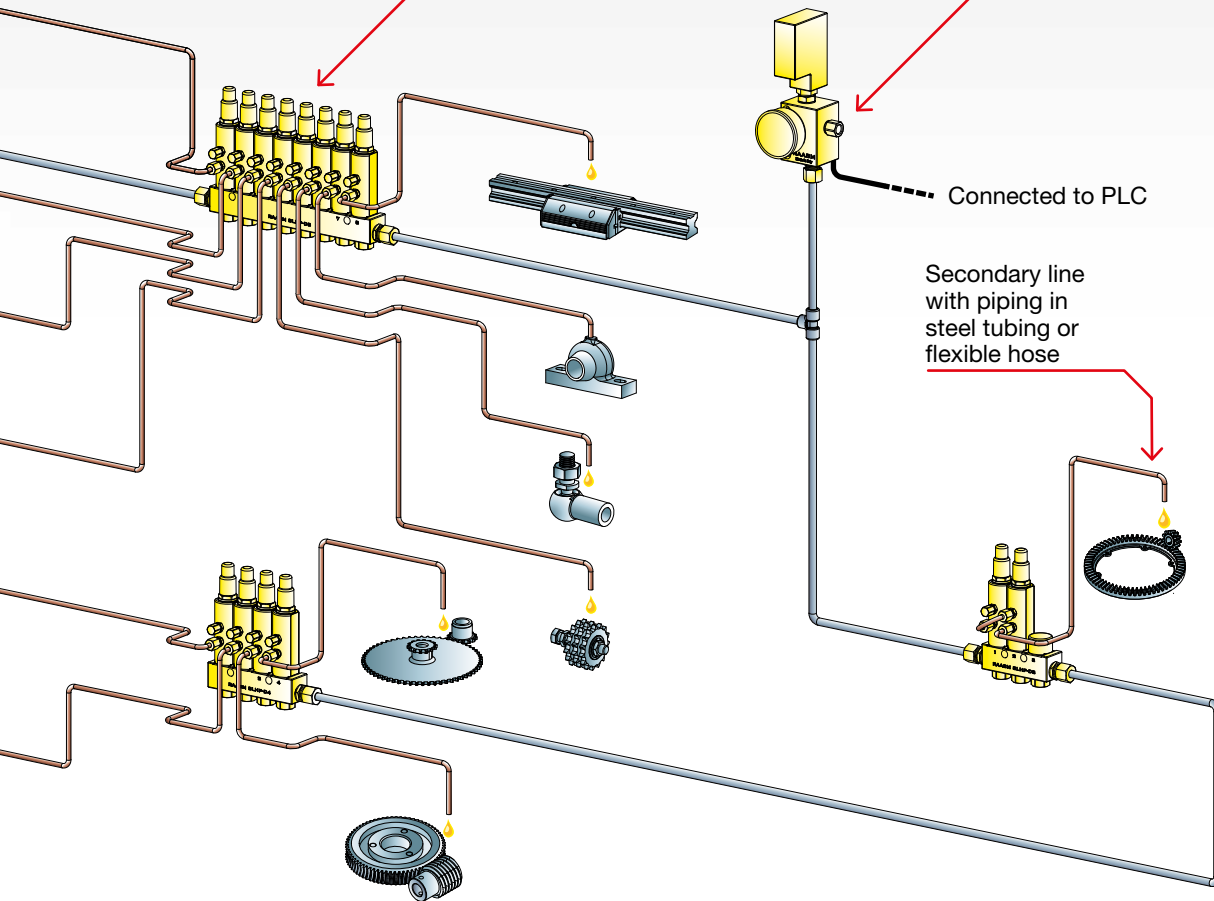
MOTOR-OPERATED PUMPS SERIES C15S



Volumetric injectors
SLHP-D (page 28-29)



Line end pressure switch
(page 32)



Connected to PLC

Secondary line
with piping in
steel tubing or
flexible hose

Lube point: In the plant are represented some types of moving parts that need to be lubricated



**ADVANCED FLUID
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SERIES C15B18 MOTOR-OPERATED PUMP

24 V DC - ø 180 mm

It can be used in heavy conditions thanks to IP55 protection rating, and is equipped with radially fitted pumping elements controlled by an eccentric wheel driven by a gearmotor.

The lubricant is contained in a transparent tank of 8 - 10 litres capacity. A rotating blade, in conjunction with the eccentric wheel or a follower plate, facilitate suction of the lubricant even with high viscosity greases (NLGI 2). The support on the central body in aluminium enables wall mounting of the unit. Located on the central body is a grease filter (150 µm), dedicated to filling of grease in the tank. The electrical parts are in the bottom of the unit, protected by a strong plastic cover.



Colours:

 STANDARD  RAL 7035

to order the article in grey colour
Ral 7035 it is necessary to add the suffix /C1

TECHNICAL CHARACTERISTICS

| | |
|---------------------------------|-----------------------------------|
| Max working pressure | 300 bar |
| Number of piston | 2 - 4 |
| Piston | P/N 3081100 - piston ø 6,5 mm |
| Flow rate for 1 piston | 0,122 cm ³ /cycle |
| Flow rate for 2-4 pistons * | 8,54 - 17,08 cm ³ /min |
| Outlet connection | F 3/8" G |
| Reservoir capacity | 5 - 8 - 10 litres |
| Working temperature | -25 °C / +60 °C |
| Lubricant | Oil > 40 cst - Grease max NLGI 2 |
| Reservoir refilling | By grease coupler |
| Motor reducer * | 24 V DC |
| Power | 36 W |
| Power (starting point) | 72 W |
| Current | 1,5 A |
| Current (starting point) | 3 A |
| Working torque (starting point) | 12 Nm |
| Rotation per min | 35 |
| Protection degree | IP55 |

* Approx. delivery with grease NLGI 2 at 18 °C. (The lubricant must have technical characteristics in compliance with working temperature).

* Testing done at 250 bar at 20 °C.

GUIDE TO CHOOSING PUMP

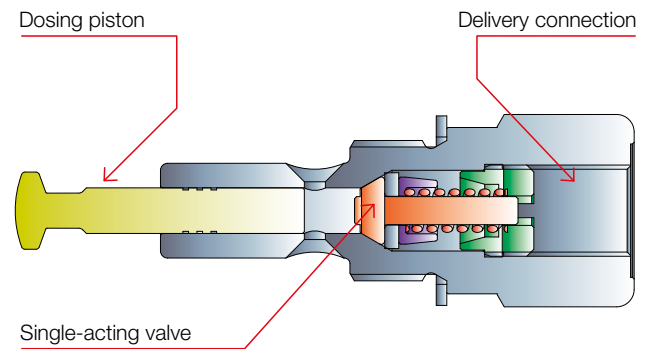
| P/N | | Reservoir capacity (litres) | Number of pistons | Flow rate (cm ³ /min) |
|---------|---------|-----------------------------|-------------------|----------------------------------|
| Grease | Oil | | | |
| 1524565 | 1554235 | 5 | 2 | 8,54 |
| 1527805 | 1558015 | 8 | 2 | 8,54 |
| 1560645 | 1561005 | 10 | 2 | 8,54 |
| 1524835 | 1554505 | 5 | 4 | 17,08 |
| 1528075 | 1558285 | 8 | 4 | 17,08 |
| 1560825 | 1561185 | 10 | 4 | 17,08 |

STANDARD EQUIPMENT

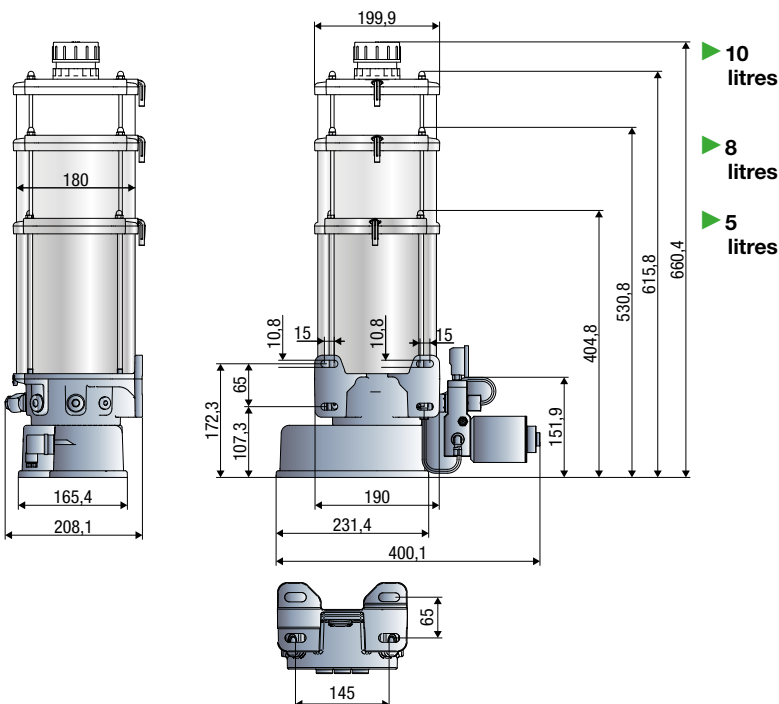


Magnetic low level indicator for grease.
Capacitive low level indicator for oil.

PUMPING UNIT



OVERALL DIMENSIONS (mm)



| | 5 litres | |
|------------------------|----------|--------|
| | Grease | Oil |
| Packing-m ³ | 1-0,11 | 1-0,11 |
| Net weight Kg | 6,2 | 6 |
| Gross weight Kg | 7,1 | 7 |

| | 8 litres | |
|------------------------|----------|--------|
| | Grease | Oil |
| Packing-m ³ | 1-0,11 | 1-0,11 |
| Net weight Kg | 6,4 | 6,2 |
| Gross weight Kg | 11,9 | 11,7 |

| | 10 litres | |
|------------------------|-----------|--------|
| | Grease | Oil |
| Packing-m ³ | 1-0,11 | 1-0,11 |
| Net weight Kg | 6,7 | 6,4 |
| Gross weight Kg | 12,2 | 12 |



Type of lubrication system with



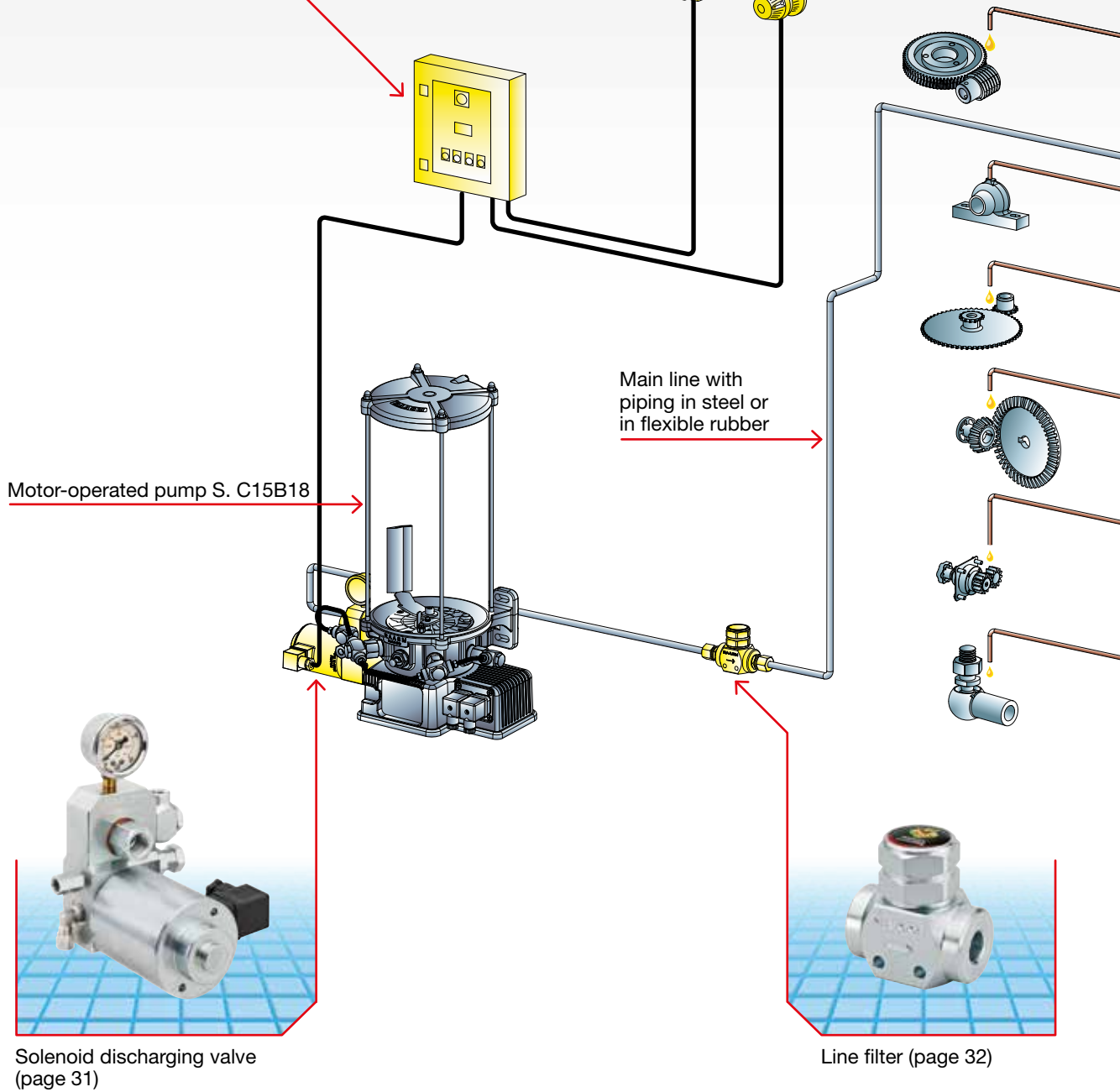
Control equipment
(page 34)



P/N 39290
Emergency stop
button (optional)



P/N 39289
Acoustic and
flashing alarm
(optional)



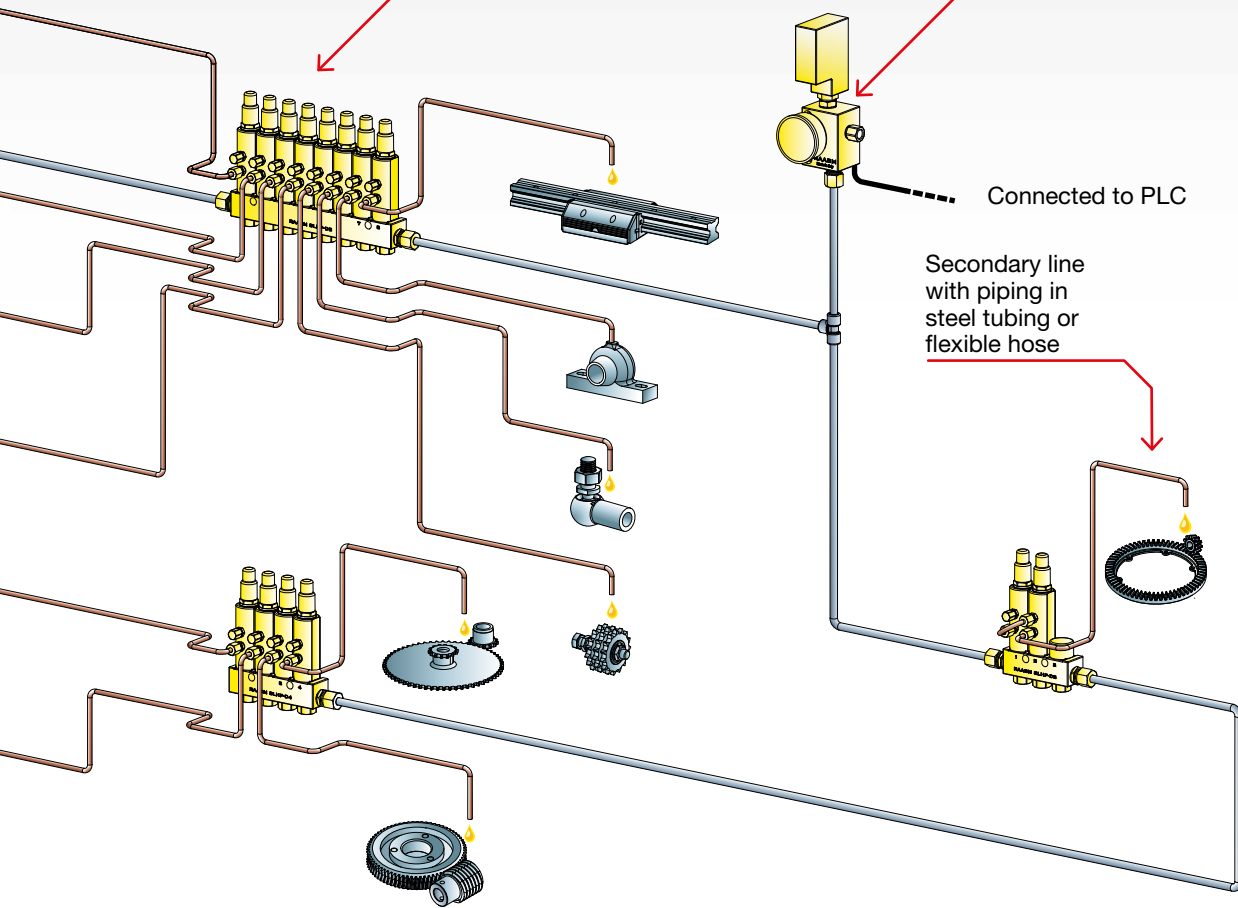
MOTOR-OPERATED PUMP SERIES C15B18



Volumetric injectors
SLHP-D (page 28-29)



Line end pressure switch
(page 32)



Connected to PLC

Secondary line
with piping in
steel tubing or
flexible hose

Lube point: In the plant are represented some types of moving parts that need to be lubricated



**ADVANCED FLUID
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SERIES C15F AIR-OPERATED PUMP

10 litres

DRUM

Depending on available feed type, on system's specifics or on required dispense, an air-operated pump may be preferred to an electric one.

Various solutions are available for great versatility: with 10 liters tank or suitable for 20, 50 or 200 Kg drums, provided with drum cover and grease follower plate (if necessary).

If commercial drums are used, once the lubricant is finished the end user can replace the drum or fill it up again through the specific inlet, on request with a special kit. Oil pumps are provided with drum cover for open drums (up to 50 kg) or with ring nut for closed drums (usually from 50 kg to 200 kg). High compression ratio (50:1) and adjustable feeding pressure allow to set system's pressure to its specific requirements (from 100 to 350 bar).



TECHNICAL CHARACTERISTICS

| | | |
|-----------------------------|---|----------------------------------|
| Max flow rate | * | 1330 cm ³ /min |
| Max working pressure | | 8 bar |
| Pressure ratio | | 50:1 |
| Air inlet connection | | F 1/4" G |
| Lubricant outlet connection | | F 3/8" G |
| Overpressure valve | | adjustable from 100 to 350 bar |
| Working temperature | | -25 °C / +60 °C |
| Lubricant | | Oil > 40 cSt - Grease max NLGI 2 |

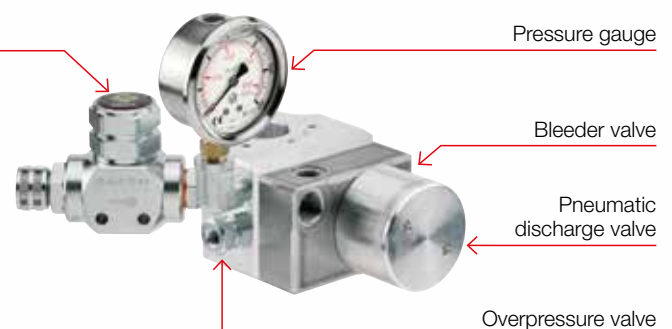
* Approx. delivery with grease NLGI 2 at 18 °C.

DELIVERY DISCHARGE AND CONTROL ASSEMBLY

This group is composed by:

- **Pressure gauge:** to check the line pressure.
- **Overpressure valve:** allows to check the system pressure and to discharge the lubricant in case of overpressure 100-350 bar.
- **Filling filter:** for filling the lubricant in the tank.
- **Bleeder valve:** during the filling phase, it allows to remove the air inside.

Filling filter 300 µm



Pressure gauge

Bleeder valve

Pneumatic discharge valve

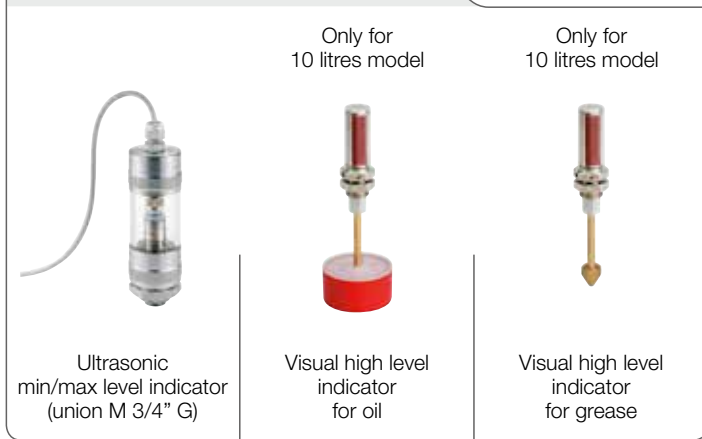
Overpressure valve

GUIDE TO CHOOSING PUMP

| P/N | Reservoir capacity | Drum internal ø (mm) | Pump (R 50:1) | Drum cover | Follower plate | Discharging valve |
|---------|--------------------|----------------------|---------------|------------|----------------|-------------------|
| Grease | | | | | | |
| 150020 | 10 litres | 220 | 62541 | - | 10/617 | 1581200 |
| 1500200 | 20 Kg | 255/300 | 62548 | 10/507 | 10/63 | 1581200 |
| 1500380 | 50 Kg | 335/360 | 62574 | 10/503 | 10/62 | 1581200 |
| 1500470 | 60 Kg | 360/400 | 62574 | 10/502 | 10/61 | 1581200 |
| 1500560 | 200 Kg | 540/580 | 62595 | 10/501 | 10/60 | 1581200 |

| P/N | Reservoir capacity | Drum external ø (mm) | Pump (R 50:1) | Drum cover | Bung adaptor | Discharging valve |
|---------|--------------------|----------------------|---------------|-------------|--------------|-------------------|
| Oil | | | | | | |
| 1500650 | 10 litres | 240 | 62541 | - | - | 1581200 |
| 1500830 | 20 Kg | 260/330 | 62548 | 10/507 | - | 1581200 |
| 1501010 | 50 - 60 Kg | 340/385 | 62574 | 10/503 | - | 1581200 |
| 1501100 | 50 - 60 Kg | closed - thread 2" | 62574 | level 39650 | 10/14 | 1581200 |
| 1501190 | 200 Kg | closed - thread 2" | 62595 | level 39650 | 10/14 | 1581200 |

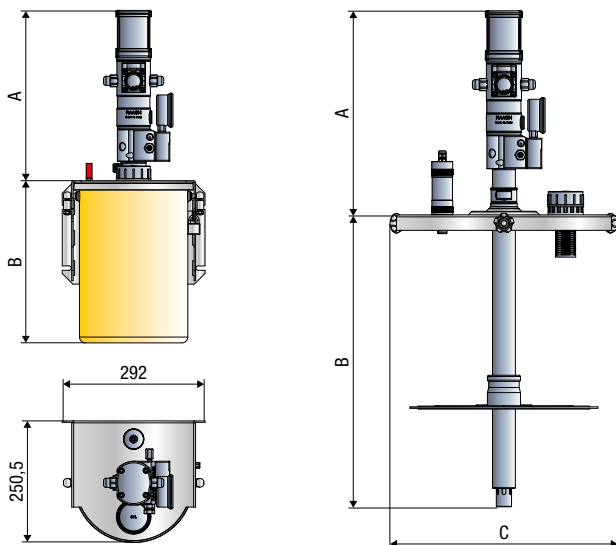
STANDARD EQUIPMENT



ON REQUEST



OVERALL DIMENSIONS (mm)



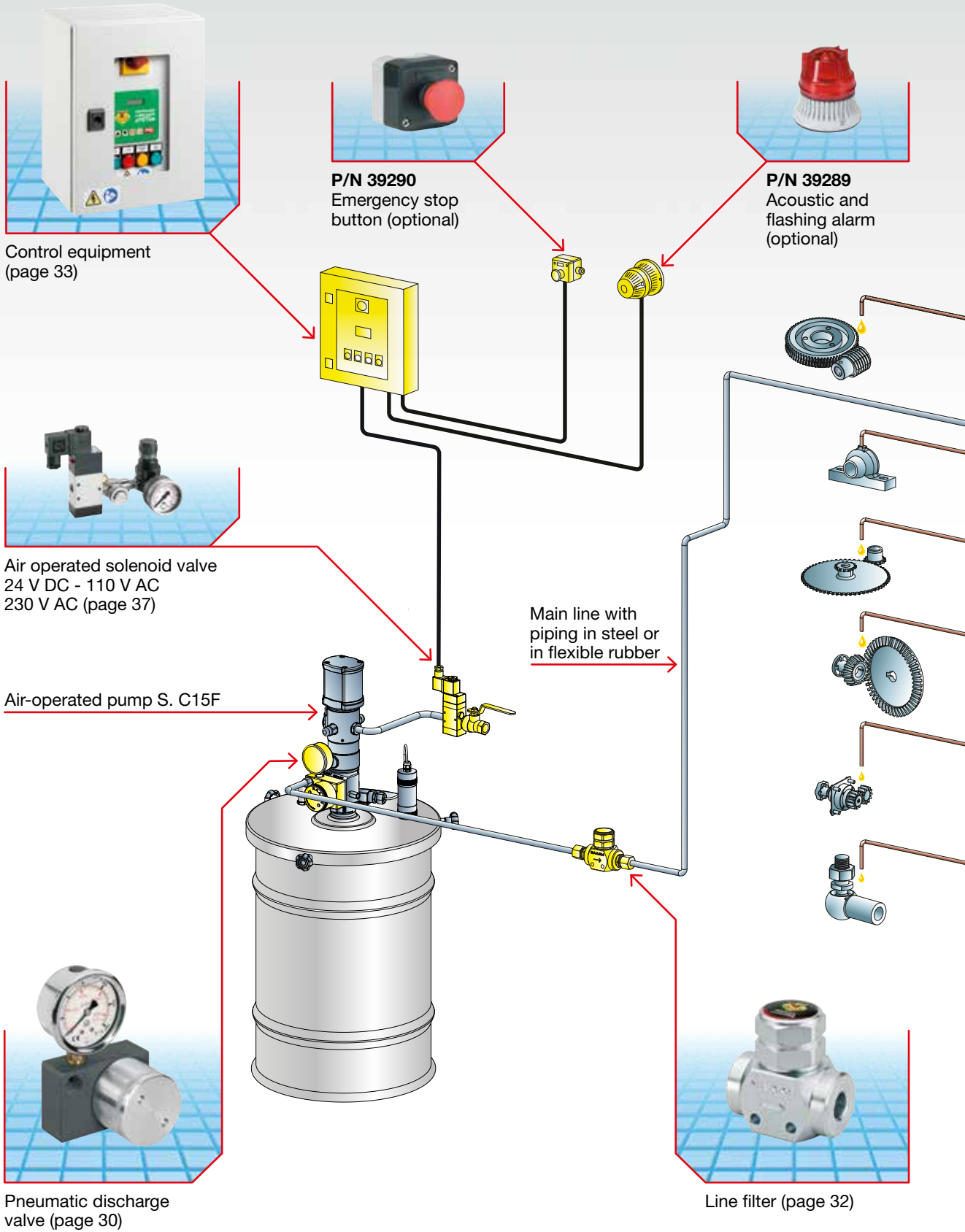
| P/N Grease | A | B | C |
|------------|-----|-----|-----|
| 1500020 | 351 | 335 | 292 |
| 1500200 | 355 | 361 | 341 |
| 1500380 | 355 | 621 | 389 |
| 1500470 | 355 | 621 | 424 |
| 1500560 | 355 | 835 | 604 |

| P/N Oil | A | B | C |
|---------|-----|-----|-----|
| 1500650 | 351 | 335 | 292 |
| 1500830 | 355 | 361 | 341 |
| 1501010 | 355 | 621 | 389 |
| 1501100 | 355 | 621 | 424 |
| 1501190 | 355 | 835 | 604 |

| | 10 litres | | 20 Kg | | 50 Kg | | 60 Kg | | 220 Kg | |
|------------------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Grease | Oil | Grease | Oil | Grease | Oil | Grease | Oil | Grease | Oil |
| Packing-m ³ | 1-0,056 | 1-0,056 | 2-0,089 | 2-0,089 | 2-0,080 | 2-0,080 | 2-0,080 | 2-0,040 | 2-0,116 | 2-0,050 |
| Net weight Kg | 17,9 | 17,1 | 13,2 | 12 | 14,9 | 13,1 | 15,4 | 11,2 | 23 | 12,9 |
| Gross weight Kg | 18,2 | 17,4 | 13,9 | 12,7 | 15,5 | 13,7 | 16 | 11,8 | 23,9 | 13,7 |



Type of lubrication system with



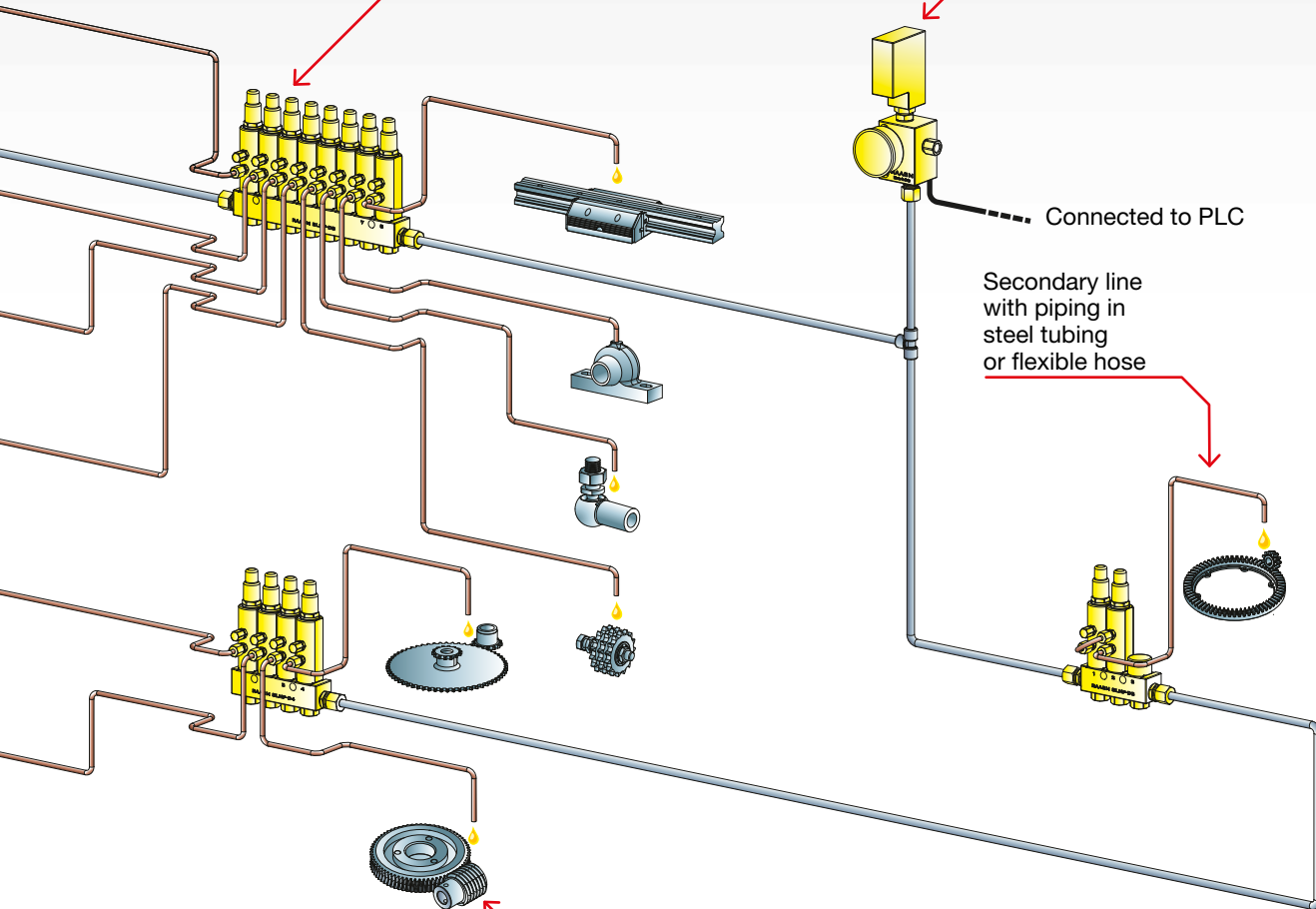
AIR-OPERATED PUMP SERIES C15F



Volumetric injectors
SLHP-D (page 28-29)



Line end pressure switch
(page 32)



Connected to PLC

Secondary line
with piping in
steel tubing
or flexible hose

Lube point: In this plant are represented some types of moving parts that need to be lubricated



SLHP-D VOLUMETRIC INJECTOR

The volumetric injectors are entirely in steel with white galvanizing, and equipped with Viton seals.

Their operating pressure varies from 40 - 150 bar for oil to 70 - 300 bar for grease. In the upper part there is an adjusting screw used to adjust the amount of lubricant delivered by the injector (from 0 to 1,7 cm³/cycle). In the upper part there's also a visual indicator which allows to check correct injector operations. The size the SLHP-D injectors enables easily replacement (if necessary) of models already existing on the market. Their design lets possible expansion of the system and its maintenance. Viscosity from oil 40 Cst oil to grease NLGI 2 max.

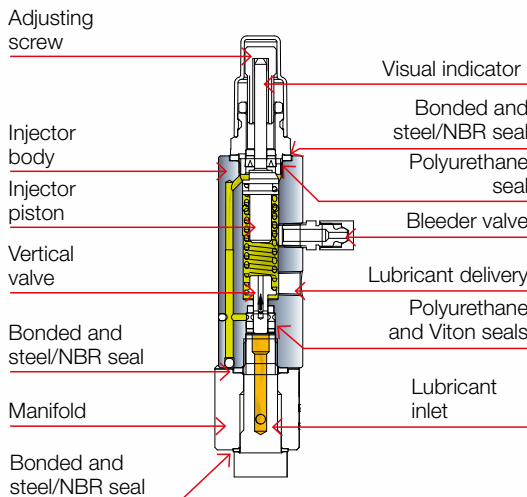


TECHNICAL CHARACTERISTICS

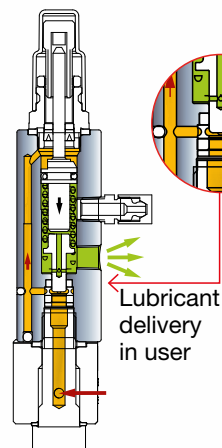
| | |
|--------------------------------------|---|
| Injector flow rate | adjustable from 0 to 1,7 cm ³ /ciclo |
| Working pressure | 40 - 150 bar (Oil) 70 - 300 bar (Grease) |
| Lubrificant inlet connection | F 3/8" NPTF |
| Lubrificant outlet connection | F 1/8" NPTF |
| Material | Galvanized Steel |
| Lubrificant | Oil > 40 cSt - Grease max NLGI 2 |

HOW IT WORKS

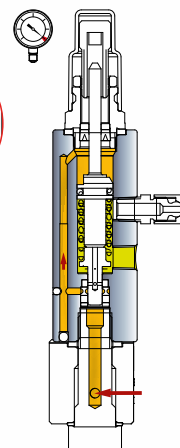
PRESSURISED LUBRICANT INLET



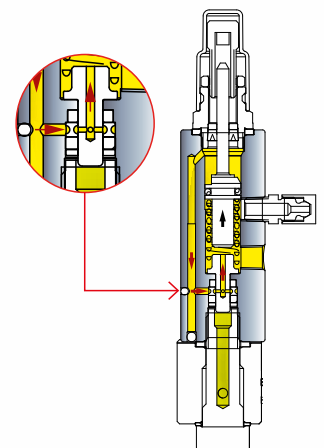
LUBRICANT DELIVERY TO USER



LUBRICATION END AND MAX PRESSURE SIGNAL



DECOMPRESSION AND DISTRIBUTOR REFILL

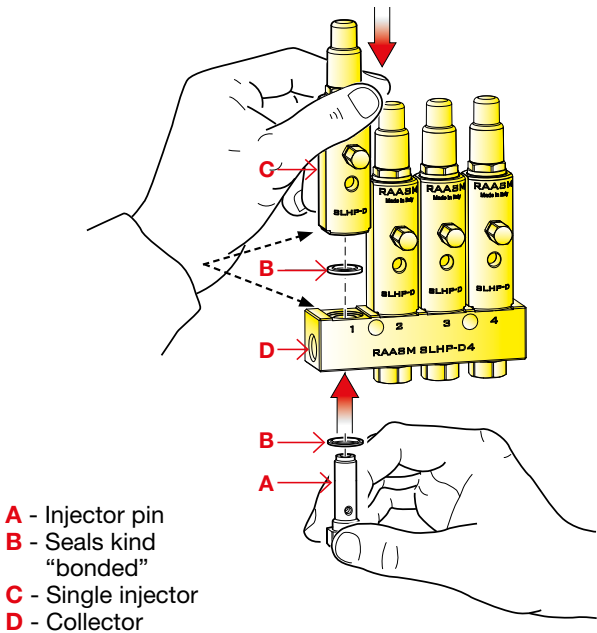


- Lubricant under pressure
- Lubricant without pressure
- Lubricant in delivery
- Lubricant in circulation for refill

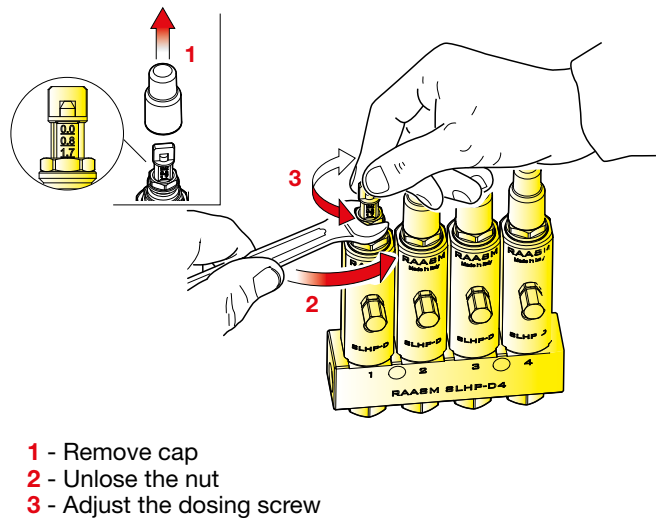
| Grease | P/N | Abbreviation | Outlets | Inlet Outlet | Working pressure | Materials |
|--------------------|---------|--------------|---------|----------------------------|------------------|-------------------|
| Single injector | 1532541 | - | 1 | F 1/8" NPTF | 70-300 bar | Zinc plated steel |
| Injector+ manifold | 1532540 | SLHPGD1/1N | 1 | F 3/8" NPTF F 1/8" NPTF | 70-300 bar | Zinc plated steel |
| | 1532580 | SLHPGD1/2N | 2 | | | |
| | 1532620 | SLHPGD1/3N | 3 | | | |
| | 1532660 | SLHPGD1/4N | 4 | | | |
| | 1532700 | SLHPGD1/5N | 5 | | | |
| | 1532740 | SLHPGD1/6N | 6 | | | |
| | 1532780 | SLHPGD1/8N | 8 | | | |

| Oil | P/N | Abbreviation | Outlets | Inlet Outlet | Working pressure | Materials |
|--------------------|---------|--------------|---------|----------------------------|------------------|-------------------|
| Single injector | 1538421 | - | 1 | F 1/8" NPTF | 40-150 bar | Zinc plated steel |
| Injector+ manifold | 1538420 | SLHPOD1/1N | 1 | F 3/8" NPTF F 1/8" NPTF | 40-150 bar | Zinc plated steel |
| | 1538460 | SLHPOD1/2N | 2 | | | |
| | 1538500 | SLHPOD1/3N | 3 | | | |
| | 1538540 | SLHPOD1/4N | 4 | | | |
| | 1538580 | SLHPOD1/5N | 5 | | | |
| | 1538620 | SLHPOD1/6N | 6 | | | |
| | 1538660 | SLHPOD1/8N | 8 | | | |

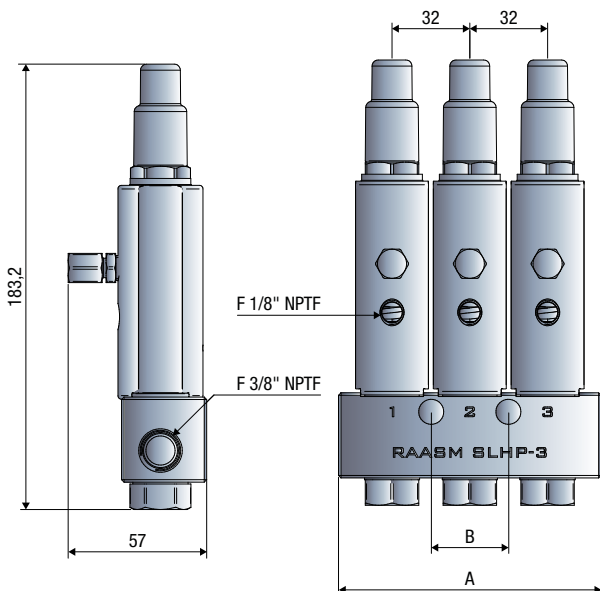
APPLICATION OF THE SINGLE INJECTOR ON THE COLLECTOR



ADJUSTING OF DELIVERY INJECTOR



OVERALL DIMENSIONS (mm)



| Abbreviation | | A | B |
|--------------|------------|-------|-------|
| SLHPGD1/1N | SLHPOD1/1N | 63,5 | 31,75 |
| SLHPGD1/2N | SLHPOD1/2N | 76,2 | 31,75 |
| SLHPGD1/3N | SLHPOD1/3N | 108 | 31,75 |
| SLHPGD1/4N | SLHPOD1/4N | 139,7 | 63,5 |
| SLHPGD1/5N | SLHPOD1/5N | 171,5 | 95,25 |
| SLHPGD1/6N | SLHPOD1/6N | 203,2 | 127 |
| SLHPGD1/8N | SLHPOD1/8N | 266,7 | 190,5 |



PRESSURE DISCHARGING PNEUMATIC VALVE

FOR C15F

This pneumatic valve it's normally closed during feeding in the compression stage, and opens when the feed is turned off, discharging the system pressure.



TECHNICAL CHARACTERISTICS

| | |
|---------------------------------|----------------------------------|
| P/N | 1581200 |
| Air max working pressure | 8 bar |
| Air min working pressure | 2 bar |
| Lubricant max pressure | 300 bar |
| Assembly | On pump body |
| Material | Hardened steel and aluminum |
| Lubricant | Oil > 40 cSt - Grease max NLGI 2 |

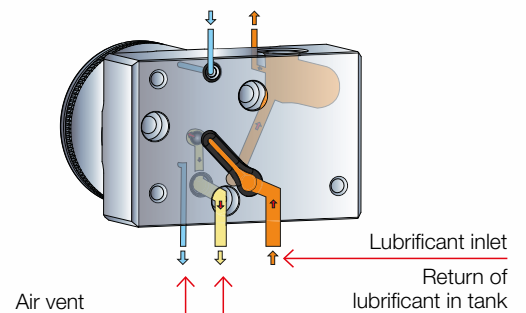
HOW IT WORKS

PHASE 1

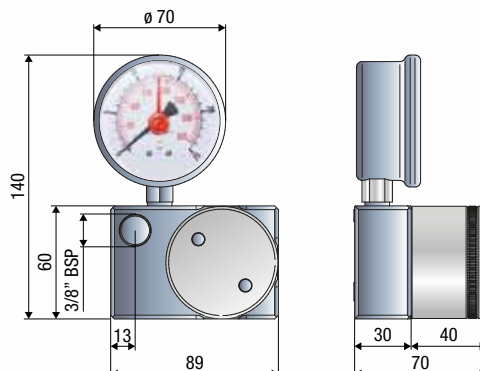
During the system pressurization stage, the valve (normally-open) is fed in order to close the drain hole.

PHASE 2

After the maximum pressure is reached in the system, the line end pressure switch stops the pumps, closing the supply also at the valve which, on opening, discharges (decompression) the lubrication system.



OVERALL DIMENSIONS (mm)





PRESSURE DISCHARGE SOLENOID VALVE

FOR C15S

FOR C15B18

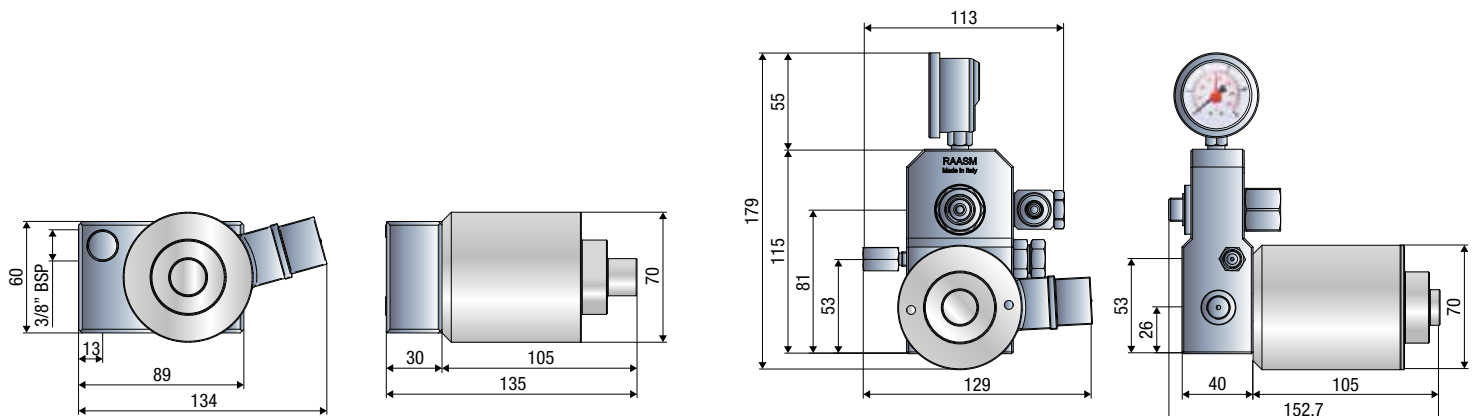
This valve is fed by 24 V DC. Like the pneumatic valve, it closes when fed, during the compression stage, and opens when the feed is turned off, discharging the system pressure. Both models allow volumetric distributors to charge itself for a new cycle. Solenoid valve (P/N 1581300), according with the flow rate and the number of pumping elements required, is linked with specific kit to 2 or 4 pumping elements (page 36).



TECHNICAL CHARACTERISTICS

| P/N | 1581250 | 1581300 |
|---|--|--|
| Lubricant max pressure | 300 bar | 300 bar |
| Assembly | On pump body | On pump body |
| Material | Hardened steel | Hardened steel |
| Lubricant | Oil > 40 cSt - Grease max NLGI 2 | Oil > 40 cSt - Grease max NLGI 2 |
| Power | 24 V DC - 6A | 24 V DC - 6A |
| Electrical input a 20° C | 3,1 Amp | 3,1 Amp |
| Electric power 20°C | 75,8 Watt | 75,8 Watt |
| Working temperature (with environment temperature 20°C) | 65°C | 65°C |
| Protection rating | IP55 | IP55 |
| On/Off time ratio | 1/8 (1 min working time and 8 min pause) | 1/8 (1 min working time and 8 min pause) |

OVERALL DIMENSIONS (mm)





PRESSURE SWITCH AND FILTER

PRESSURE SWITCH

End line pressure switches

The end line pressure switches are used to control and check the correct operation of the centralized system, to confirm reaching of maximum pressure and cycle end command.

Filter

In order to ensure proper functioning of the system and that the lubricant intended for user points is totally free of impurities, the installation of appropriate filters at the control unit inlet (for filling) and outlet is recommended. The sturdy steel structure of filters ensures a sure sealing and also allows their use in centralized lubrication systems where high operating pressures (500 bar).

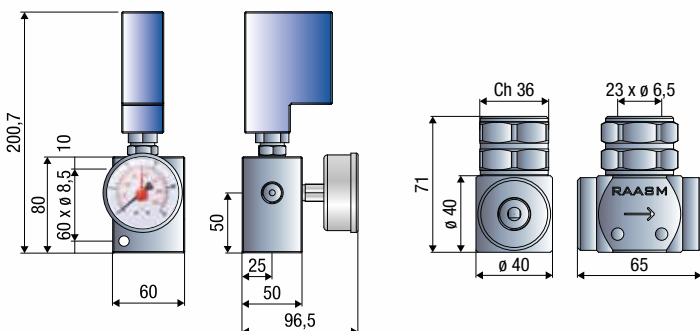
FILTER



TECHNICAL CHARACTERISTICS

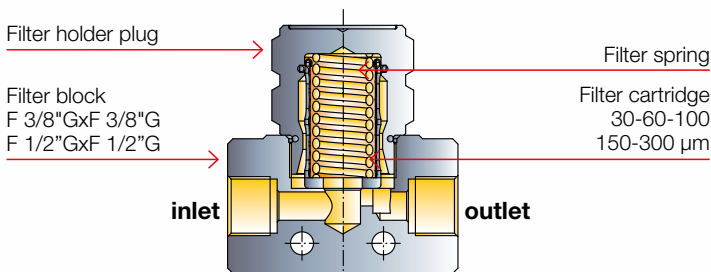
| Type | Oil and Grease | Oil and Grease |
|-----------------------------|----------------------------------|----------------------------------|
| Work pressure | 400 bar | 500 bar |
| Filtration degree | - | 30 - 60 - 100 - 150 - 300 µm |
| Lubricant inlet connection | F 3/8" G | F 3/8" G - F 1/2" G |
| Lubricant outlet connection | - | F 3/8" G - F 1/2" G |
| Electric contact | On clamps | - |
| Working temperature | -25 °C / +60 °C | -25 °C / +60 °C |
| Lubricant | Oil > 40 cSt - Grease max NLGI 2 | Oil > 40 cSt - Grease max NLGI 2 |

OVERALL DIMENSIONS (mm)



| Technical characteristics | P/N | Working pressure (bar) | Protection degree | Type |
|------------------------------|---------|------------------------|-------------------|-------------|
| press. switch with manometer | 2080600 | from 30 to 400 | IP55 | without box |
| | 2080605 | | IP65 | with box |

DELIVERY-FILLING FILTER



| Lubricant | P/N | Connection | Filtration degree (µm) |
|----------------|---------|------------|------------------------|
| Oil and Grease | 2080900 | F 3/8" G | 30 |
| | 2080930 | | 60 |
| | 2080950 | | 100 |
| | 2080800 | F 3/8" G | 150 |
| | 2080801 | | 300 |
| | 2080901 | | 30 |
| | 2080931 | F 1/2" G | 60 |
| | 2080951 | | 100 |
| | 2080850 | F 1/2" G | 150 |
| | 2080851 | | 300 |



CONTROL EQUIPMENT

200÷500 V AC 50/60 Hz

System control board

The control equipment is dedicated to the management and control of centralized single-line lubrication. The dedicated card installed inside controls the inlet and outlet signals of the whole system.



TECHNICAL CHARACTERISTICS

| P/N | 1670011 | 2170033 | 1670017 | 2170037 | 1670016 |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Suitable for pump model | C15S - C15P | C15F - C15B18 | C15S - C15P | C15F - C15B18 | C15S - C15P |
| Voltage | 200÷500 V AC | 200÷500 V AC | 200÷500 V AC | 200÷500 V AC | 200÷500 V AC |
| Power consumed | * 1500 W max | 1500 W max | 1500 W max | 1500 W max | 1500 W max |
| Button start /stop | NO | NO | YES | YES | YES |
| Light allarm | NO | NO | YES | YES | YES |
| Light filling | NO | NO | YES | YES | NO |
| Tank full light | NO | NO | YES | YES | NO |
| Trasparent window | NO | NO | YES | YES | YES |
| Filling control | NO | YES | YES | YES | NO |
| Protection rating | IP54 | IP54 | IP55 | IP55 | IP55 |
| Working temperature | - 25°C / +60 °C | - 25°C / +60 °C | - 25°C / +60 °C | - 25°C / +60 °C | - 25°C / +60 °C |

* Depends on the type of motor applied to the pump.

The card is installed in a metal box provided with or without transparent window and communicates with a display integrated into an easy to use flexible membrane keyboard. Within the enclosure all the components (connections, remote control switches, fuses, etc.) are easy accesable.

- Display integrated into the flexible membrane keyboard
- Simple user interface based on a menu, easy to start configure and programme
- Rugged and waterproof cover, meets the requirements of IP55
- Ability to customize the lubrication intervals, pause and the cycle count
- Programming of the operating parameters protected by password
- Call system filling tank (on request) with high level light indicator.



INPUT AND OUTPUT SIGNALS

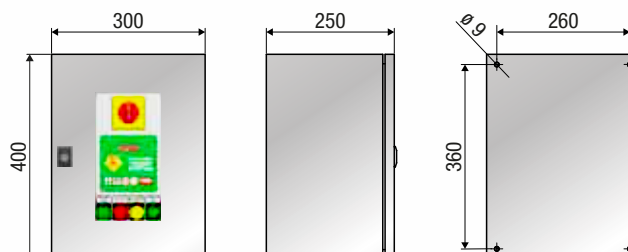
Input signals

| |
|---|
| Start/Stop remote |
| Cycle-counter/Pressure switch L1 |
| Cycle-counter/Pressure switch L2 |
| Low level tank |
| Safety pressure switch maximum pressure |
| Thermal protection three-phase motors |
| Remote stand by cycle |
| Micro-inverter L1 |
| Micro-inverter L2 |
| Remote emergency button |

Output signals

| |
|---------------------------------|
| Power motor pump |
| Power |
| - motor inverter |
| - pressure discharge valve |
| - solenoid inverter 1 |
| Power relay solenoid inverter 2 |
| Remote operation lamp |
| Remote warning lamp |

OVERALL DIMENSIONS (mm)



| | | |
|------------------------|--|-----------|
| Packing-m ³ | | 1-0,03 |
| Net weight Kg | | 15,2-15,4 |
| Gross weight Kg | | 15,5-15,7 |



CONTROL EQUIPMENT

12-24 V DC

120-230 V AC 50/60 Hz

This control system is minimized in sizes, constructed out of polycarbonate.

Inside is connected an electronic card that communicates with a display that is integrated in an easy to use flexible membrane keypad.



TECHNICAL CHARACTERISTICS

| P/N | 1670035 | 1670036 |
|-------------------------|-----------------|-----------------------|
| Suitable for pump model | C15F - C15B18 | C15F |
| Voltage | 12/24 V DC | 120-230 V AC 60/50 Hz |
| Power consumed | 200 W max | 600 W max |
| Inlet | 9 | 9 |
| Outlet | 5 | 5 |
| Protection rating | IP64 | IP64 |
| Working temperature | - 25°C / +60 °C | - 25°C / +60 °C |

The dedicated card installed inside controls the inlet and outlet signals of the whole system.

The hardware part is composed of the removable terminal blocks located inside of the unit to facilitate removal of the card in case of maintenance

- Display integrated into the flexible membrane keyboard
- Simple user interface based on a menu, easy to start, and use configure and programme
- Rugged and waterproof cover, meets the requirements of IP64
- Ability to customize the lubrication intervals, pause and the cycle count
- Programming of the operating parameters protected by password



INPUT AND OUTPUT SIGNALS

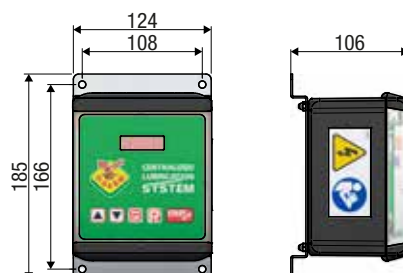
Input signals

| |
|---|
| Start/Stop remote |
| Cycle-counter/Pressure switch L1 |
| Cycle-counter/Pressure switch L2 |
| Low level tank |
| Safety pressure switch maximum pressure |
| Thermal protection three-phase motors |
| Remote stand by cycle |
| Micro-inverter L1 |
| Micro-inverter L2 |

Output signals

| |
|--|
| Power motor pump |
| Power - pressure discharge valve - solenoid inverter 1 |
| Power relay solenoid inverter 2 |
| Remote operation lamp |
| Remote warning lamp |

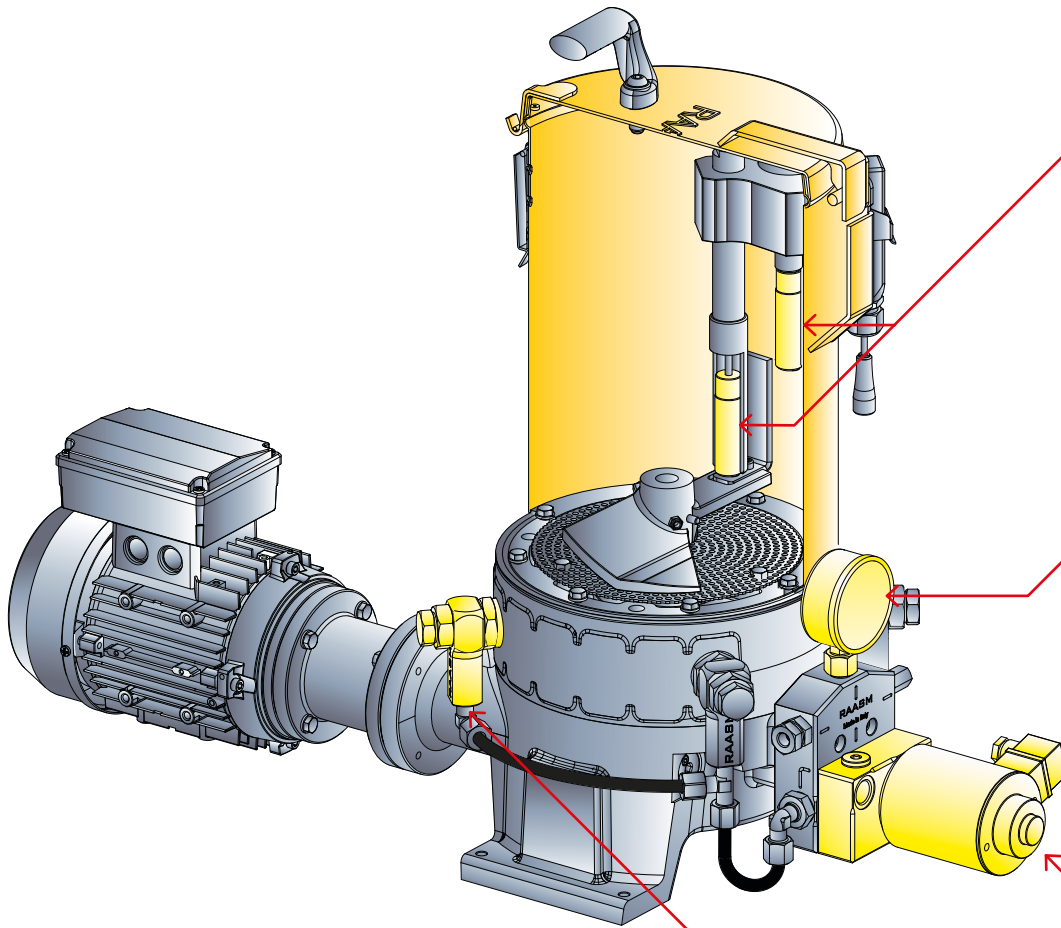
OVERALL DIMENSIONS (mm)



| | | |
|------------------------|--|---------|
| Packing-m ³ | | 1-0,005 |
| Net weight Kg | | 1,2-1,4 |
| Gross weight Kg | | 1,1-1,3 |



PUMP ACCESSORIES SERIES C15S



P/N 1581800
High or low level
capacitive sensor



P/N 2081030
Pressure gauge



P/N 1581250
Solenoid discharge valve

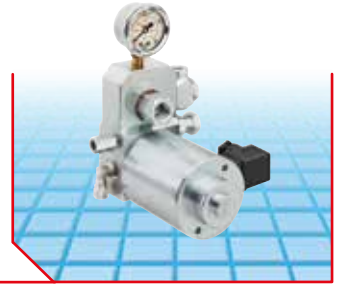
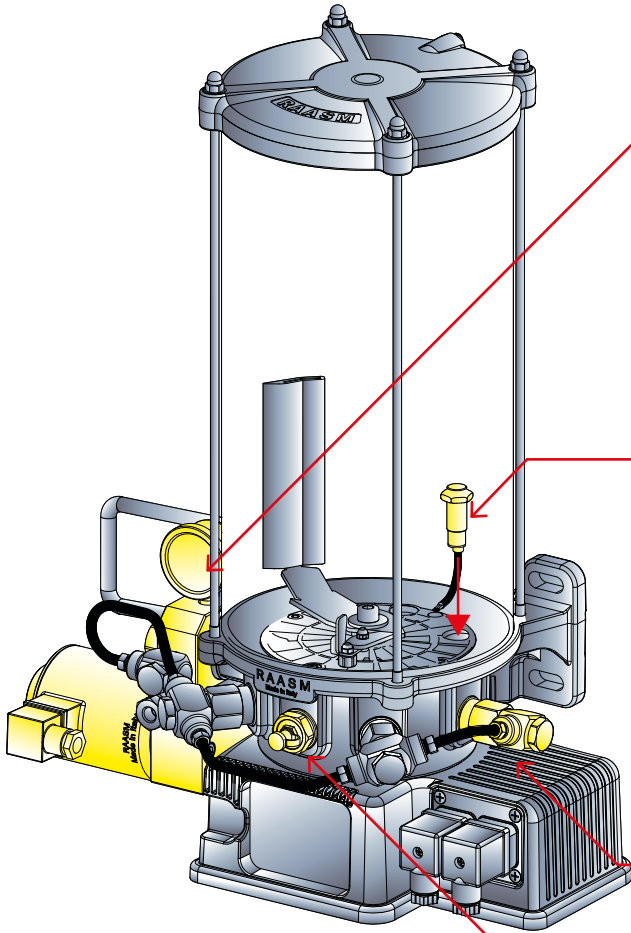


P/N 2081100 Pumping
element

| P/N | Description | Connection | Flow rate/Pression |
|----------------|-------------------------------------|-----------------------|--------------------------|
| 1581800 | High or low level capacitive sensor | M 18 x 1 | - |
| 2081030 | Pressure gauge ø 63 mm 600 bar | M 1/4" G | 600 bar |
| 1581250 | Solenoid discharge valve | F 3/8" G on pump body | 300 bar |
| 2081100 | Pumping element ø 12 mm | M27 x 1,5 | 1 cm ³ /cycle |



PUMP ACCESSORIES SERIE C15B18



P/N 1581300 - 1581301
P/N 1581302
Solenoid discharge valve



P/N 3081900
Low level capacitive
sensor for oil
P/N 3081950
Low level magnetic sensor
for grease



P/N 3081100
Pumping element

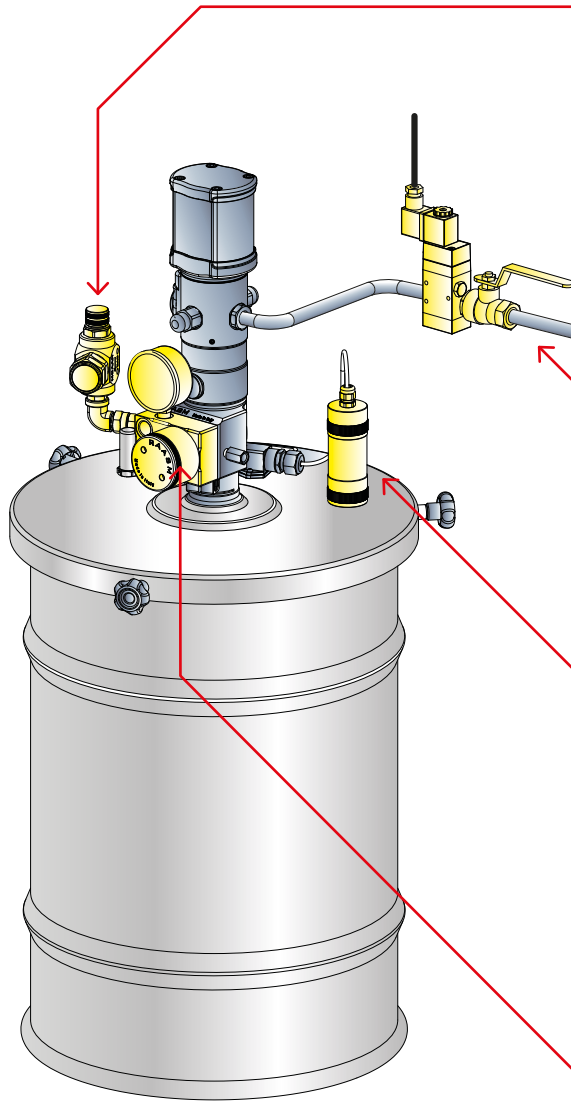


P/N 3081150
150 µm charging filter

| P/N | Description | Connection | Flow rate/Pression |
|----------------|--|--|------------------------------|
| 1581300 | Solenoid discharge valve | F 3/8" G on pump body | 300 bar |
| 1581301 | Solenoid discharge valve + 2 pumping element union kit | F 3/8" G on pump body | 300 bar |
| 1581302 | Solenoid discharge valve + 4 pumping element union kit | F 3/8" G on pump body | 300 bar |
| 3081100 | Pumping element ø 6,5 mm | on pump body M20 x 1,5 outlet F 1/4" G | 0,122 cm ³ /cycle |
| 3081150 | 150 µm charging filter | M 20 x 1,5 | - |



PUMP ACCESSORIES SERIES C15F



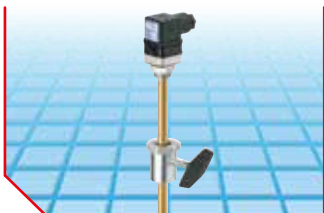
P/N 1581150
300 µm charging filter



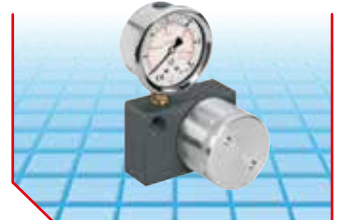
P/N 1582000 - 1582001
Air operated solenoid valve 24 V DC
P/N 1582002 - 1582003
Air operated solenoid valve 110 V AC
P/N 1582004 - 1582005
Air operated solenoid valve 230 V AC



P/N 1581850
Minimum and maximum ultrasonic level



P/N 39650
Low level indicator
(optional only for oil)



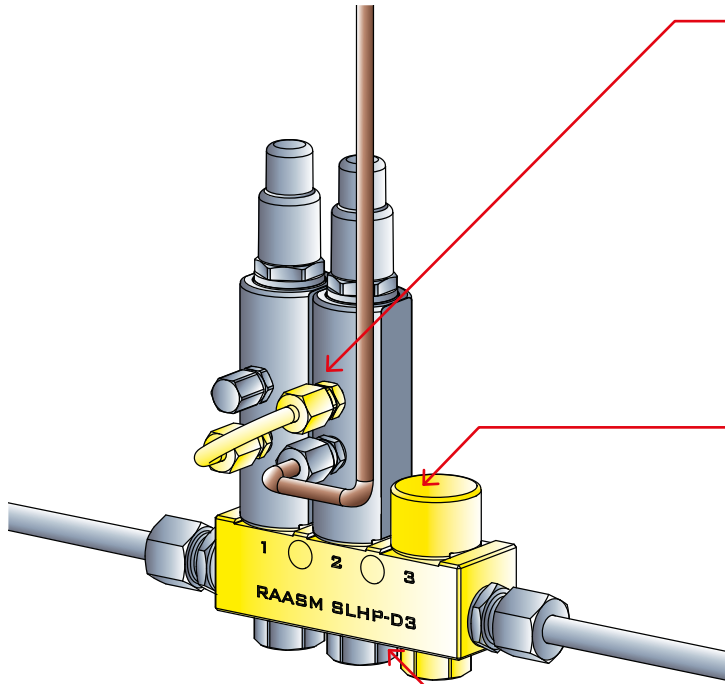
P/N 1581200
Pneumatic discharge valve

| P/N | Description | Connection | Pression |
|----------------|--------------------------------------|---------------------|-----------|
| 1581150 | 300 µm charging filter | M 3/8" G | - |
| 1582000 | Air operated solenoid valve 24 V DC | F 1/4" G x F 1/4" G | 2,5-8 bar |
| 1582001 | Air operated solenoid valve 24 V DC | F 1/2" G x F 1/2" G | 2,5-8 bar |
| 1582002 | Air operated solenoid valve 110 V AC | F 1/4" G x F 1/4" G | 2,5-8 bar |
| 1582003 | Air operated solenoid valve 110 V AC | F 1/2" G x F 1/2" G | 2,5-8 bar |

| P/N | Description | Connection | Pression |
|----------------|---|-------------------------------|-----------|
| 1582004 | Air operated solenoid valve 230 V AC | F 1/4" G x F 1/4" G | 2,5-8 bar |
| 1582005 | Air operated solenoid valve 230 V AC | F 1/2" G x F 1/2" G | 2,5-8 bar |
| 1581850 | Minimum and maximum ultrasonic level | wole on drum cover ø 31 mm | - |
| 1581200 | Pneumatic discharge valve | F 3/8" G on pump body | 400 bar |
| 39650 | Low level indicator (optional only for oil) | Oil | - |



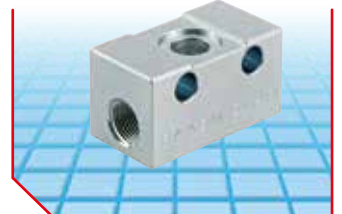
ACCESSORIES DISTRIBUTOR VOLUMETRIC SERIES SLHP-D



P/N 1580000
Injectors junction



P/N 1532539
Plug for
injector replacing



P/N 1532542 - 1532581
P/N 1532621 - 1532661
P/N 1532701 - 1532741
P/N 1532781
Manifold

| P/N | Description | Connection | Flow rate/Pression |
|----------------|-----------------------------|-------------|--------------------|
| 1580000 | Injectors junction | M 1/8" NPTF | - |
| 1532539 | Plug for injector replacing | M 14 x 1,5 | - |
| 1532542 | Manifold for 1 injector | F 3/8" NPTF | Max 300 bar |
| 1532581 | Manifold for 2 injector | F 3/8" NPTF | Max 300 bar |
| 1532621 | Manifold for 3 injector | F 3/8" NPTF | Max 300 bar |
| 1532661 | Manifold for 4 injector | F 3/8" NPTF | Max 300 bar |
| 1532701 | Manifold for 5 injector | F 3/8" NPTF | Max 300 bar |
| 1532741 | Manifold for 6 injector | F 3/8" NPTF | Max 300 bar |
| 1532781 | Manifold for 8 injector | F 3/8" NPTF | Max 300 bar |



Customized pumps selection guide

Should the specific requirements be different from the ones of standard pumps, follow this model to customize your own pump.

SERIES C15S

| Series | Lubricant type | | Tank capacity | | | Poles | | No. Pumping elements | | Ratio | | Level control | | |
|-----------------------|---------------------|----------------|---------------|-----------|-----------|---------|---------|----------------------|--------------------|--------|--------|-----------------------|--------------------|--------------------------------|
| | G | O | 10 | 30 | 70 | 4 | 6 | 2 | 4 | 3 | 7 | O | L | Y |
| System 15 single line | Grease (max NLGI 2) | Oil (> 40 cSt) | 10 litres | 30 litres | 70 litres | 4 poles | 6 poles | 2 pumping elements | 4 pumping elements | R 35:1 | R 70:1 | without minimum level | with minimum level | with minimum and maximum level |

Example of pump code

| | | | | | | | |
|------|---|----|---|---|---|---|---|
| C15S | G | 10 | 6 | / | 2 | 7 | L |
|------|---|----|---|---|---|---|---|

SERIES C15B18

| Series | Lubricant type | | ø cylinder | Tank capacity | | | Rated voltages | No. Pumping elements | | Control type | Tank attachment | | | Level control | |
|-----------------------|---------------------|----------------|------------|---------------|----------|-----------|--------------------------------|----------------------|---|----------------|--------------------------|-----------------------|---------------------|----------------|-------------------|
| | G | O | | 5 | 8 | 10 | | 2 | 4 | | P | R | M | L | O |
| System 15 single line | Grease (max NLGI 2) | Oil (> 40 cSt) | 180 mm | 5 litres | 8 litres | 10 litres | 24 V DC low power applications | 2 | 4 | remote version | without fix grease blade | with fix grease blade | with follower plate | with low level | without low level |

Example of pump code

| | | | | | | | | | |
|-----|---|-----|---|---|---|---|---|---|---|
| C15 | G | 180 | 8 | 3 | / | 4 | R | R | L |
|-----|---|-----|---|---|---|---|---|---|---|

SERIES C15F

| Series | Lubricant type | | Tank capacity | Tank external ø (mm) | | | | | | Ratio | | | Level control | | |
|-----------------------|---------------------|----------------|---------------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|--------|--------|----------------------------------|-------------------------------|---|
| | G | O | | 10 | 28 | 35 | 37 | 38 | 42 | 60 | 5 | 6 | 7 | 0 | 1 |
| System 15 single line | Grease (max NLGI 2) | Oil (> 40 cSt) | 10 Kg | from 240 to 280 | from 300 to 350 | from 260 to 330 | from 340 to 385 | from 370 to 420 | from 550 to 600 | R 50:1 | R 65:1 | R 75:1 | without minimum level ultrasonic | with minimum level ultrasonic | with minimum and maximum level ultrasonic + visual maximum level + filling filter |

Example of pump code

| | | | | | |
|------|---|----|---|---|---|
| C15F | G | 10 | / | 5 | 1 |
|------|---|----|---|---|---|



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MANAGEMENT SOLUTIONS**

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FOR FOREIGN MARKETS



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Each order cannot be for less than € 1,500.00, net of fees, taxes, customs duties, discounts and rebates and any other charges not included in the price of the goods. If, at the option of RAASM S.p.A., orders for lower amounts are accepted, an extra charge of € 155,00 shall be applied for order management administrative expenses.

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All the accessories given in the price list (plugs, oil bar taps, oil guns, grease guns, probes, protection caps, clutches, swivelling supports, etc.) are supplied exclusively for fitting to or combining with the items RAASM S.p.A. produces

P/N 4 COMPLAINTS

Any defects immediately noticed after a brief inspection of the goods (damage, shortages or different product from that ordered) must be notified in writing to our company within 8 (eight) days of receipt the goods. Any defects in the product noticeable only during its use must be notified in writing to RAASM S.p.A. within 8 (eight) days of being detected. Any returns of goods must be authorized in advance by RAASM S.p.A. and freight charges are at the customer's expenses.

P/N 5 DELIVERY TIMES/TERMS

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The current Price list cancels and replaces the previous price list. In the event of changes to our price list and/or individual items, the goods shall be forwarded at the price in force on the day of the order confirmation. The price list and/or the prices of individual items can be changed even without notice, according to the changes in market conditions or technical innovations/modifications made to the product. The prices are understood to be ex works RAASM S.p.A.

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1 (one) year warranty is valid also for the following products:

- digital litre counters and FCS system;
- cable reels;
- electric, pneumatic or hydraulic motor supplied with our industrial hose reels S. 600 and 700.

Incorrect installation, use or maintenance of the product shall void the warranty. Upon written notice, the articles must be returned free to our Factory for checking and acceptance. In any case, the guarantee expires in the 10th year from the date of manufacture (indicated by the serial number), if the stated expiry takes place before the expiration terms indicated above (1 or 5 years from delivery to the first user).

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RAASM

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P/N 13 INFORMATION ON THE PROCESSING OF DATA PURSUANT TO ITALIAN LEGISLATIVE DECREE 196/2003

In accordance with article 13 of Italian Legislative Decree 196/2003 - Personal Data Protection Code - you are hereby advised that the processing of the personal data, provided with the purchase of goods or services and/or the supply of goods or services is solely for the purposes of carrying out the contract-based obligations and to comply with the specific requests from customers/ suppliers, as well as adhering to legislative obligations, in particular accounting and tax obligations or to respect orders issued by public authorities or to exercise a right in court. The data shall also be used for commercial statistics for corporate use and to obtain commercial information on our products and services if expressly authorised by the applicant. The processing of data shall be done using hard-copy and computerised procedures, in the manner and within the limits necessary to achieve the aforementioned purposes. Data may be communicated and processed by other companies in the Group for the same specified purposes, and may be made known to employees of our company, consultants and other suppliers, always and exclusively within the limits of the aforementioned purposes. The provision of data is mandatory for the correct execution of the contract and pre-contract based obligations, and failure to do so could result in it being impossible to fully comply with contractual obligations, and make it impossible to provide updates on the new products and services offered by our company. Data shall be processed for the duration of the contract relationship in place and subsequently to fulfil any legal formalities.

P/N 14 RIGHTS OF DATA SUBJECTS

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P/N 15 DATA CONTROLLER

The Data Controller is RAASM S.p.A. with registered office at Via Marangoni 33, Cassola (VI) – Italy, and this is where the data processing shall take place.

P/N 16 COMPETENT LAW COURT

Any disputes shall be settled by the Law Court of Vicenza, Italy.

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