

SINGLE LINE LUBRICATION SYSTEM

N° 807-15



ADVANCED FLUID
MANAGEMENT SOLUTIONS

15





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SINGLE LINE LUBRICATION SYSTEM

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The single line system is a simple and versatile system that can be used on fixed plant of medium/small size and on mobile machines like excavators, earth moving machines and wind turbines.

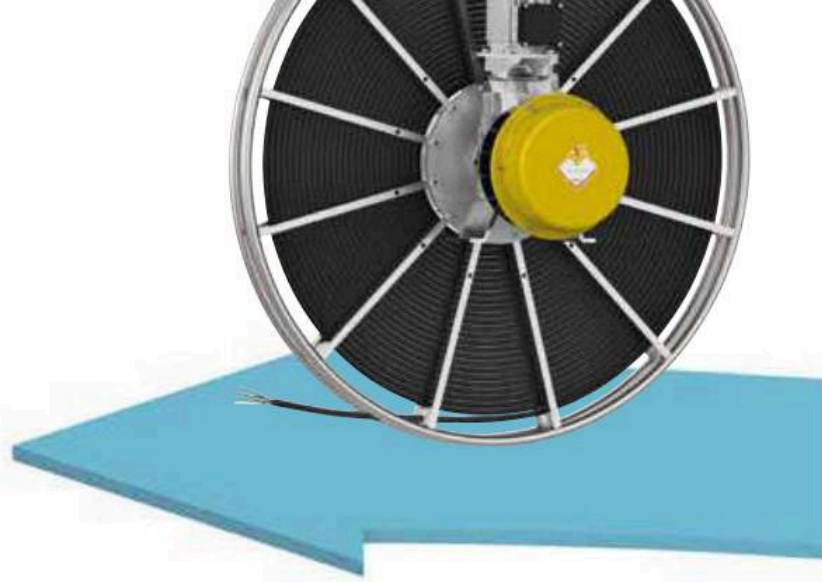
Easy to install it allows to adjust the flow rate on each greasing point even after the installation.

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VISION

DESIGN

TECHNOLOGY

QUALITY

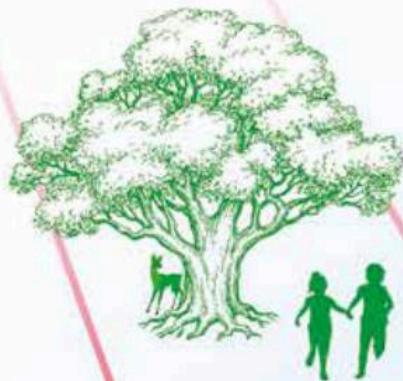
EFFICIENCY

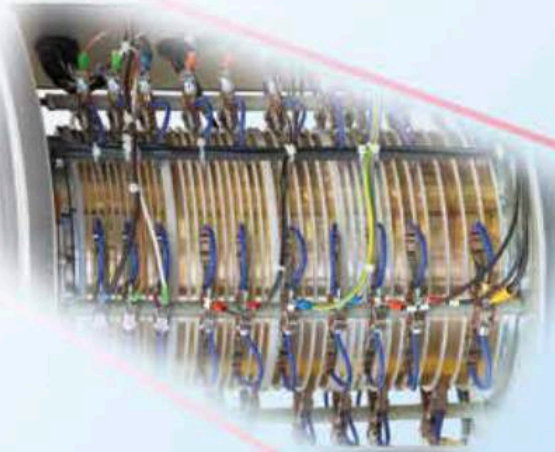
ASSISTANCE

ENVIRONMENT

PACKAGING

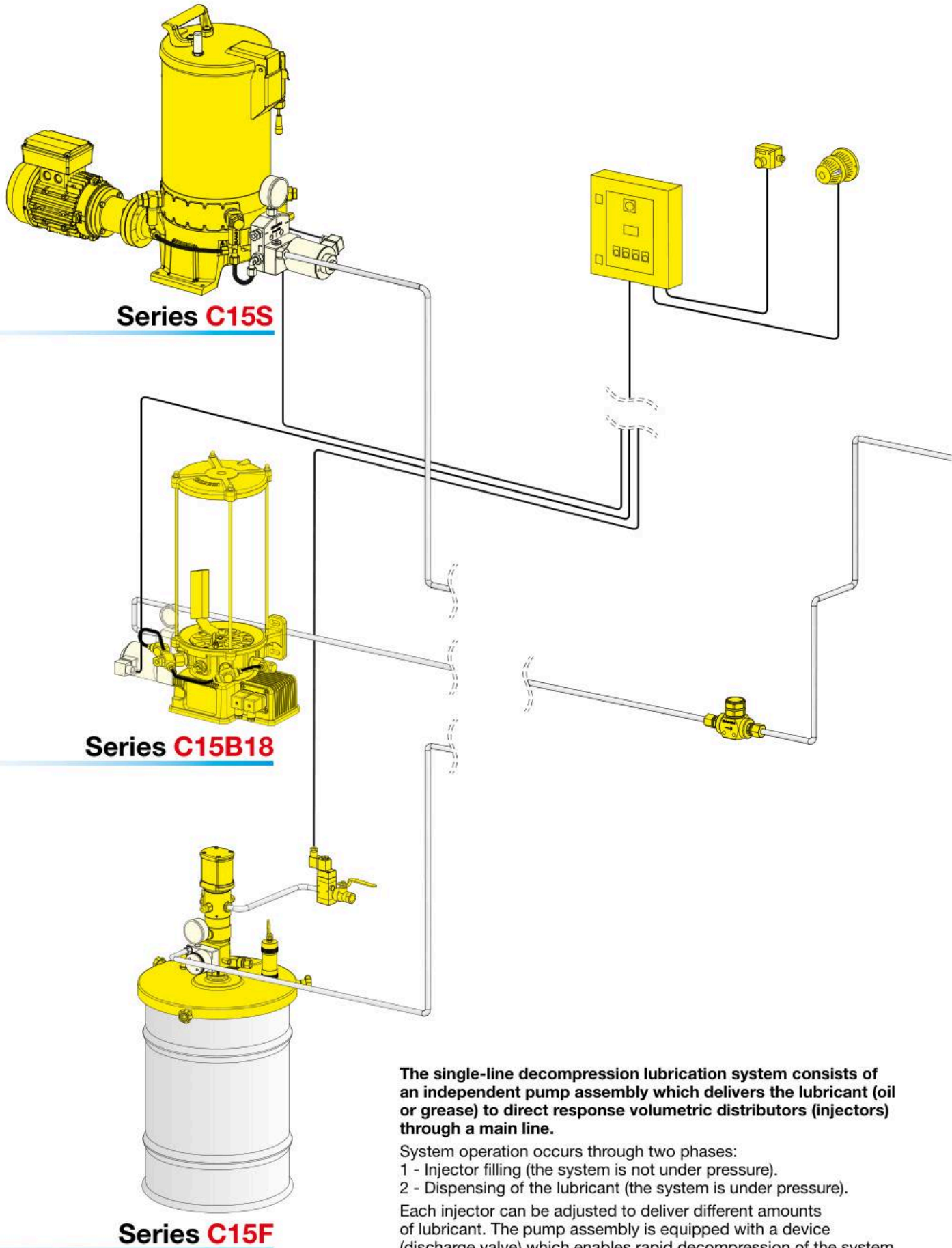
SHARING







SYSTEM 15 SINGLE LINE



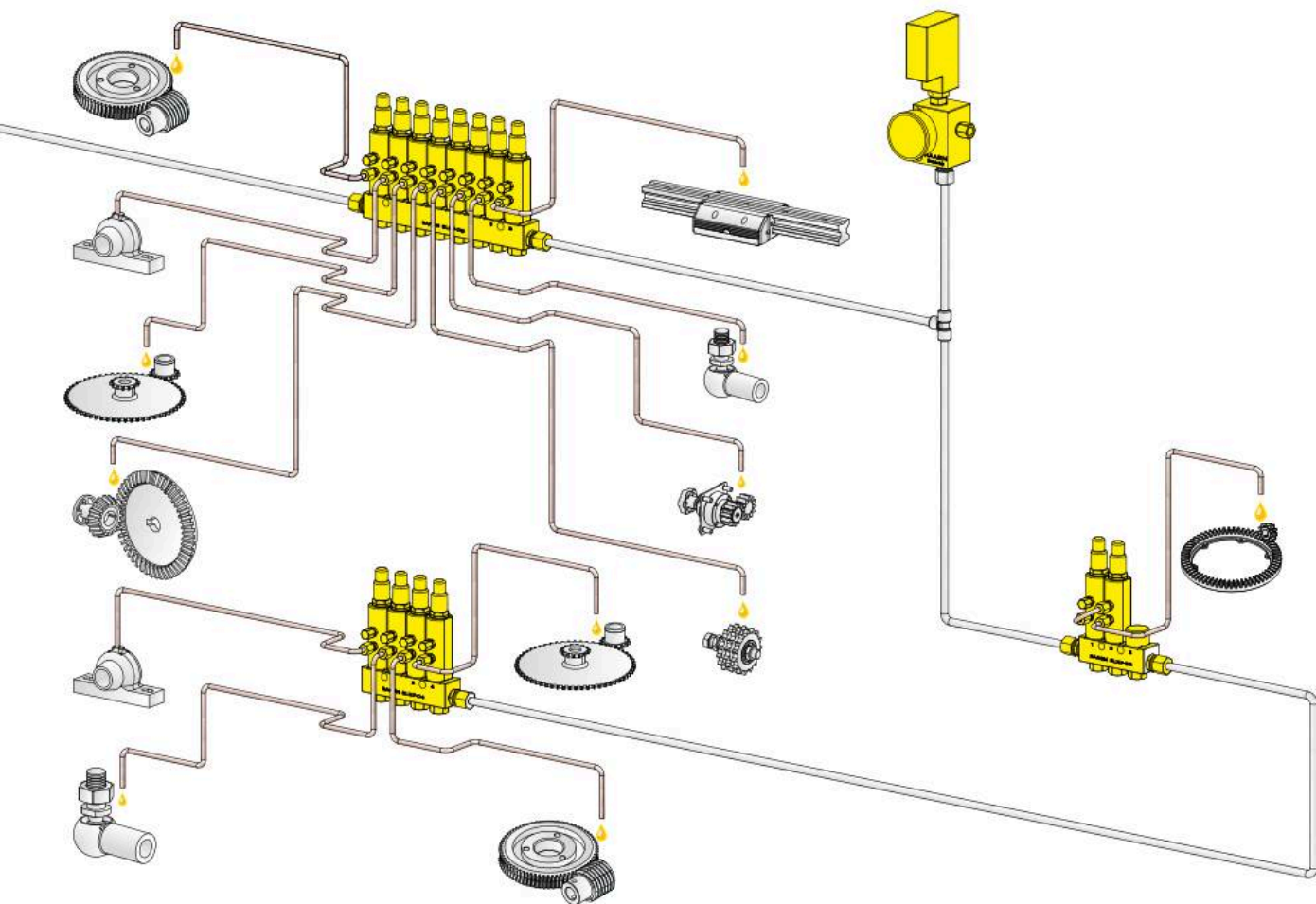
The single-line decompression lubrication system consists of an independent pump assembly which delivers the lubricant (oil or grease) to direct response volumetric distributors (injectors) through a main line.

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 loading of the injectors.

CHARACTERISTICS

- + 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.



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).



Series C15S MOTOR-OPERATED PUMP

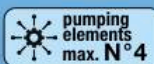
supply by **230/400 V AC - 275/480 V AC**

Electric pump equipped with an electromagnetic solenoid discharge valve that allows the grease under pressure in the system to be discharged directly into the tank at the end of each cycle.

It has a 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 versions: 10, 30 or 70 litres.

Two electric motors (three-phase) are available with 4 poles or 6 poles, to which gear motors with ratios of 35:1 and 70:1 are coupled. These specifics allow a wide combination that can satisfy the most varied needs of end users.



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	G 1/2" (f)
Lubricant outlet connection	G 3/8" (f)
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: IP55
	Base: aluminum alloy
	Moving parts: steel
	Pumping piston: hardened steel
	Reservoir: painted steel

* Approx. flow rate 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 (cm³/min)
Grease	Oil					
1570080	1570440	10	2	70:1	6 poles	28
1570200	1570560	30	2	70:1	6 poles	28
1570022	1570380	10	2	70:1	4 poles	40
1570140	1570500	30	2	70:1	4 poles	40
1570110	1570470	10	4	70:1	6 poles	56
1570230	1570590	30	4	70:1	6 poles	56
1570350	1570710	70	4	70:1	6 poles	56
1570050	1570410	10	4	70:1	4 poles	80
1570170	1570530	30	4	70:1	4 poles	80
1570290	1570650	70	4	70:1	4 poles	80
1570065	1570425	10	2	35:1	6 poles	54
1570185	1570545	30	2	35:1	6 poles	54
1570095	1570455	10	4	35:1	6 poles	108
1570215	1570575	30	4	35:1	6 poles	108
1570335	1570695	70	4	35:1	6 poles	108

ACCESSORIES

STANDARD EQUIPMENT



Low level capacitive sensor



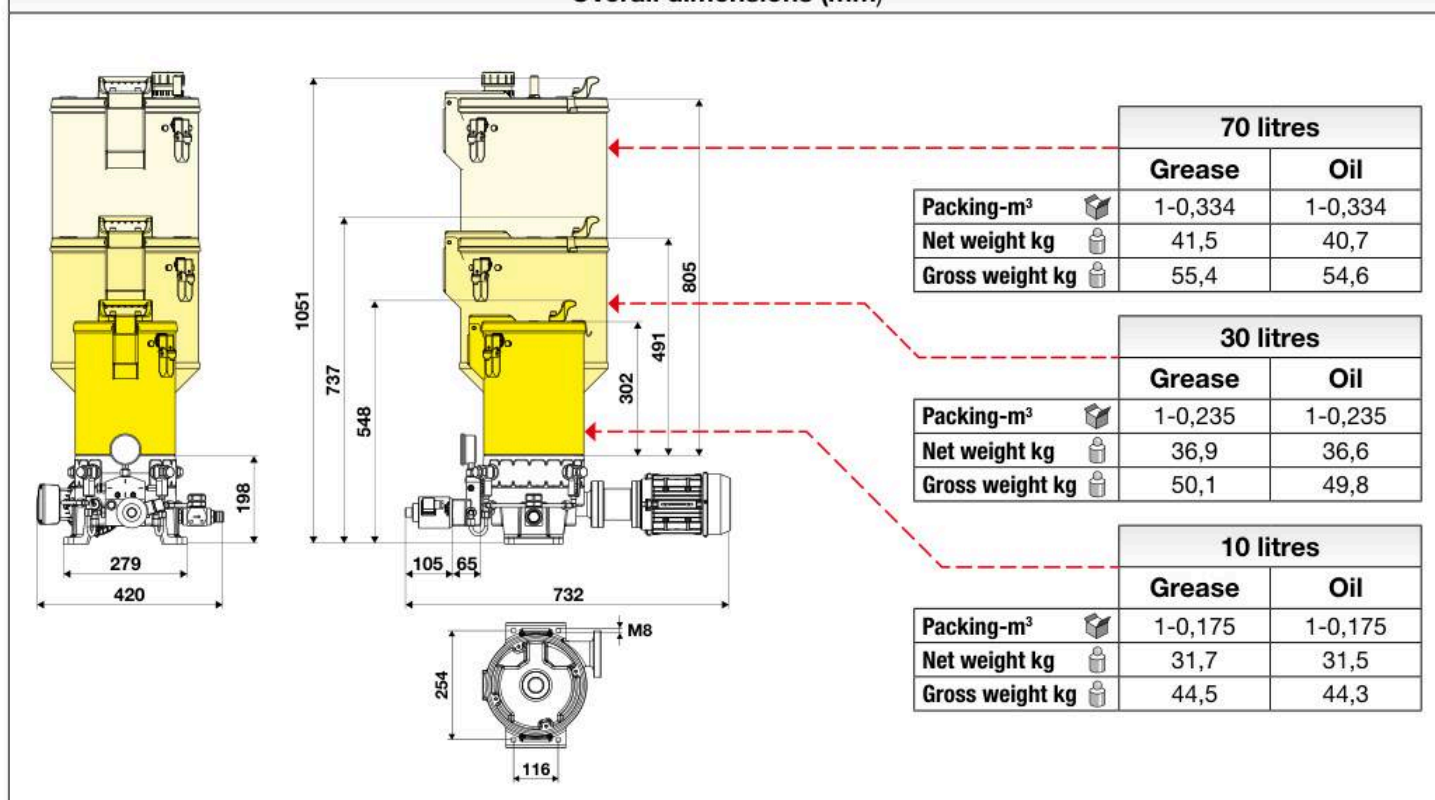
Visual level indicator for oil and grease

ON REQUEST



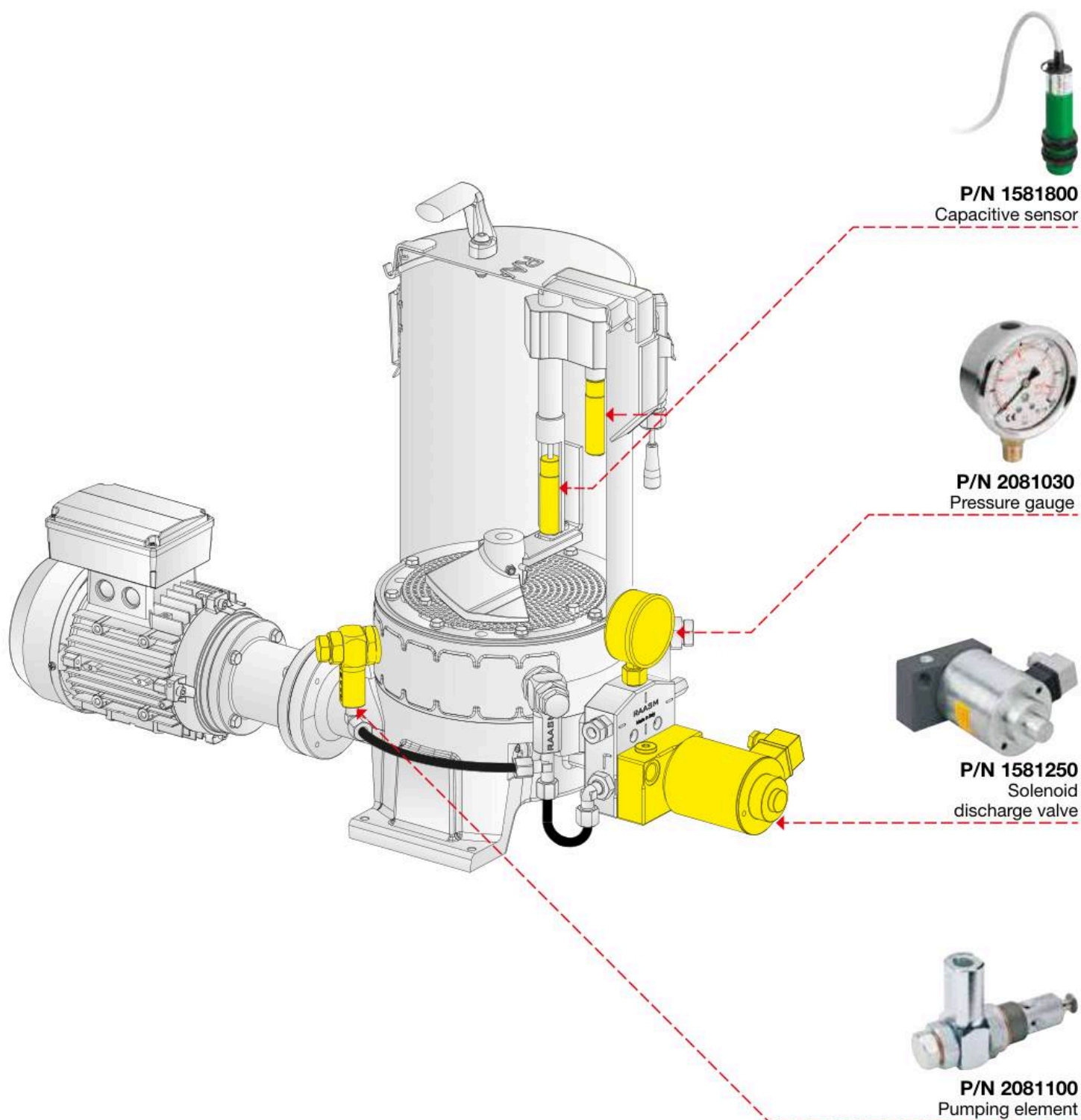
High level capacitive sensor

Overall dimensions (mm)





PUMP ACCESSORIES SERIES C15S



P/N	Description	Connection	Flow rate/Pressure
1581800	High or low level capacitive sensor	M18 x 1	-
2081030	Pressure gauge ø 63 mm 600 bar	G 1/4" (m)	600 bar
1581250	Solenoid discharge valve	G 3/8" (f) on pump body	300 bar
2081100	Pumping element ø 12 mm	M27 x 1,5	1 cm ³ /cycle





Control equipment
(PLC) (page 35-36)



P/N 39290
Emergency stop
button (optional)

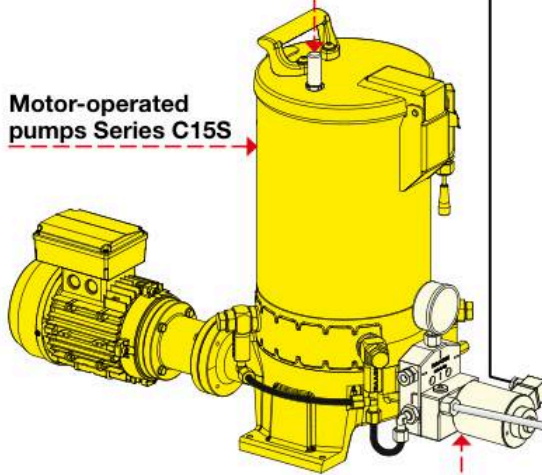


P/N 39289
Acoustic and flashing
alarm (optional)

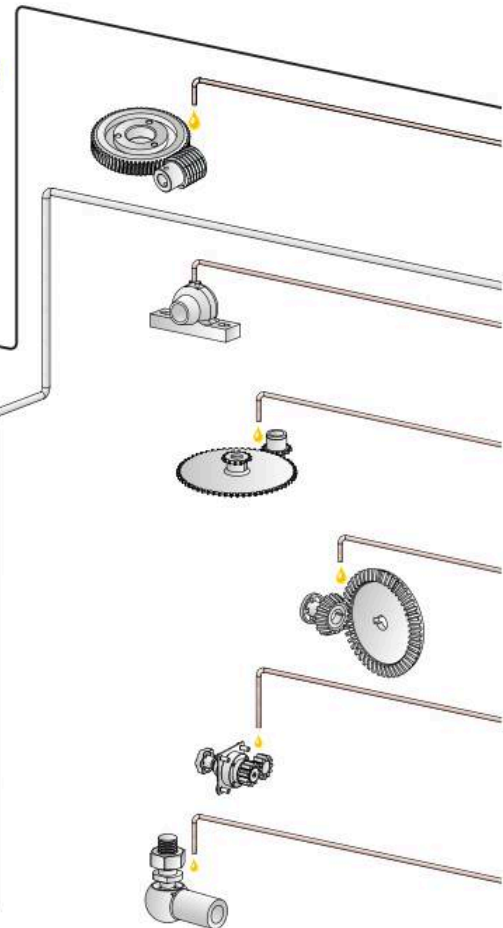


Visual high
level indicator

Motor-operated
pumps Series C15S



Main line with
piping in steel or
in flexible rubber

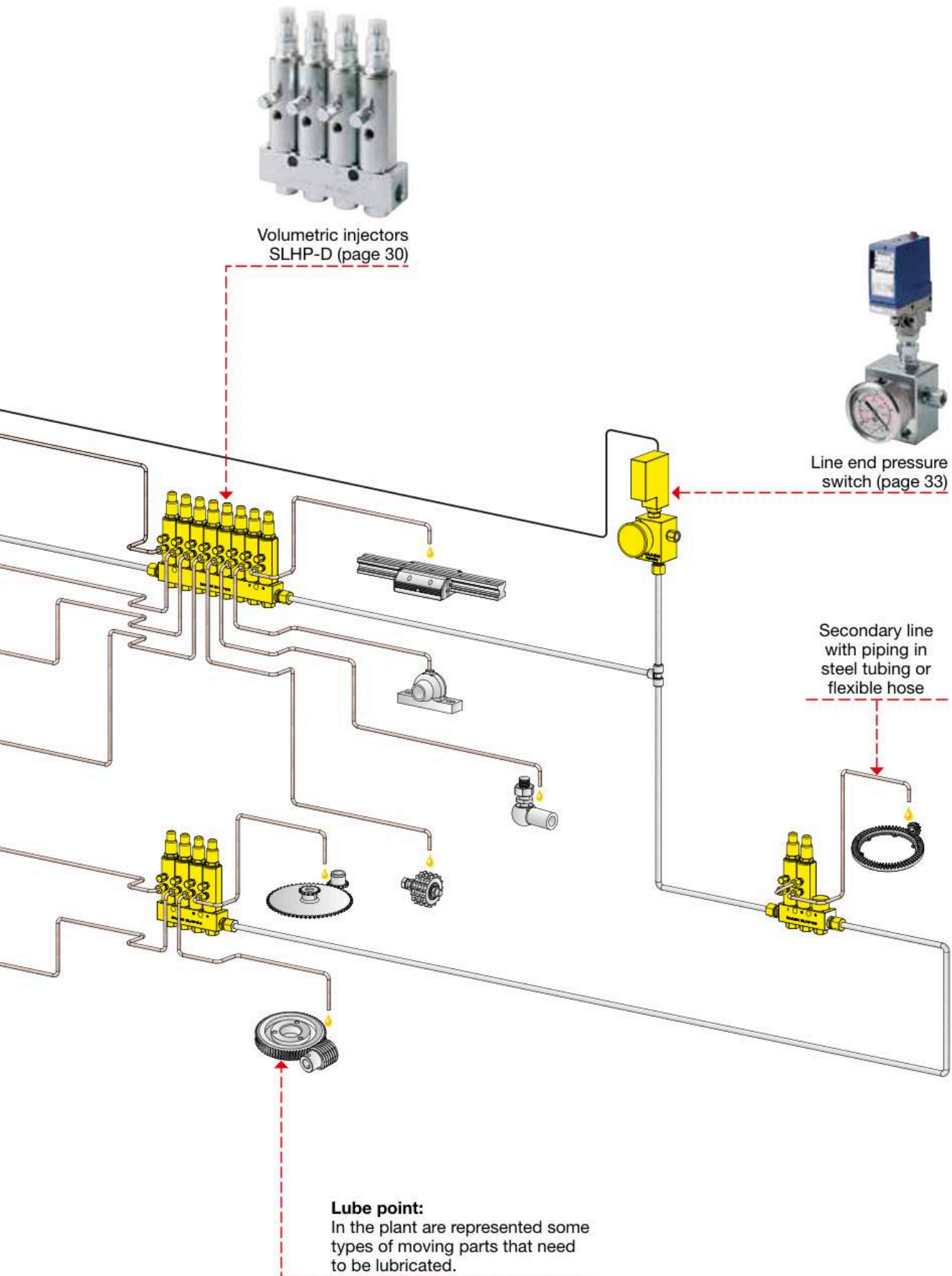


Solenoid
discharging valve



Line and delivery
filter (page 34)

Type of lubrication system with motor-operated pump **Series C15S**





Series C15B18 MOTOR-OPERATED PUMP supply by 24 V DC

Designed and built respecting specific parameters of resistance and solidity, it can be used in harsh environmental conditions thanks to the IP66 degree of protection.

It 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 5 - 8 - 10 litres capacity.

The tank includes a rotating follower blade that facilitates the suction of the lubricant even in the presence of greases with high viscosity (NLGI 2).

The support on the central body in aluminium enables wall mounting of the unit. The grease loading into the tank is possible thanks to a dedicated grease nipple, placed on the central body and equipped with a 150 µm filter. The electrical parts are in the bottom of the unit, enclosed in a protective shell made of strong plastic material.



Technical characteristics

Max working pressure	300 bar
Number of pistons	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	G 3/8" (f)
Reservoir capacity	5 - 8 - 10 litres
Working temperature	-25 °C / +60 °C
Lubricant	Oil > 40 cst - Greases 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	IP66
Drum colours **	RAL 1004 (Standard)  RAL 7035 

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

* Tests performed at 250 bar pressure and temperature + 20 °C.

** To order the article in grey colour RAL 7035 it is necessary to add the suffix /C1

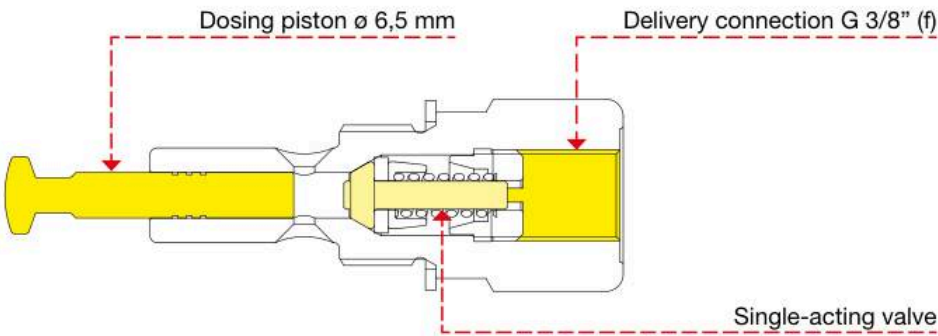
GUIDE TO CHOOSING PUMP

P/N		Reservoir capacity (litres)	No. of pistons	Flow rate (cm³/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

PUMPING UNIT

P/N 3081100

- Dosing piston ø 6,5 mm
- Flow rate 0,122 cm³/cycle



ACCESSORIES

STANDARD EQUIPMENT



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

Overall dimensions (mm)

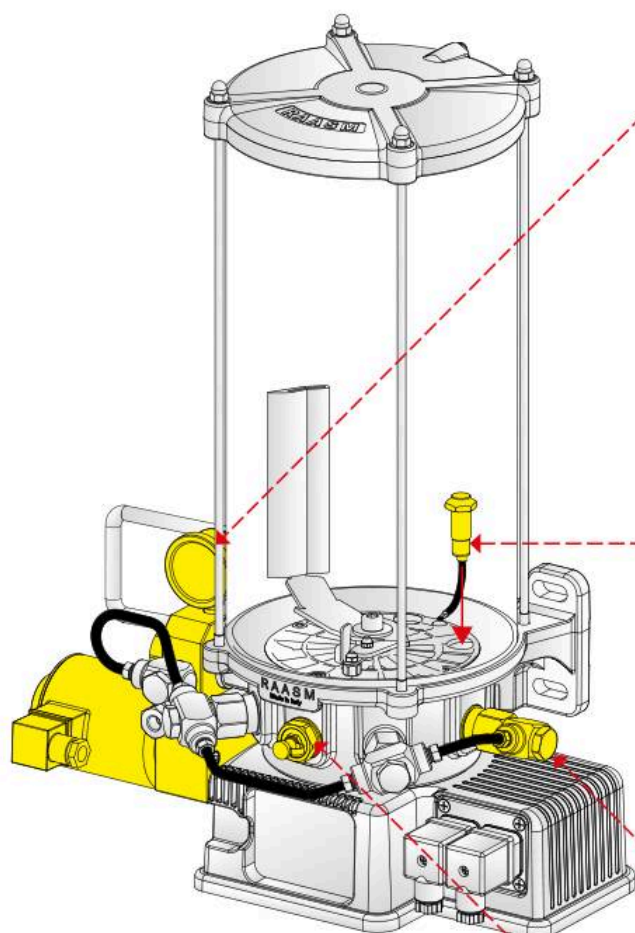
	10 litres	
	Grease	Oil
Packing-m³	1-0,11	1-0,11
Net weight kg	6,7	6,4
Gross weight kg	12,2	12

	8 litres	
	Grease	Oil
Packing-m³	1-0,11	1-0,11
Net weight kg	6,4	6,2
Gross weight kg	11,9	11,7

	5 litres	
	Grease	Oil
Packing-m³	1-0,11	1-0,11
Net weight kg	6,2	6
Gross weight kg	7,1	7



PUMP ACCESSORIES SERIES C15B18



P/N 1581300 - 1581301 - 1581302
Solenoid discharge valve



P/N 3081900
Low level capacitive sensor for oil

P/N 3081950
Low level magnetic sensor for grease

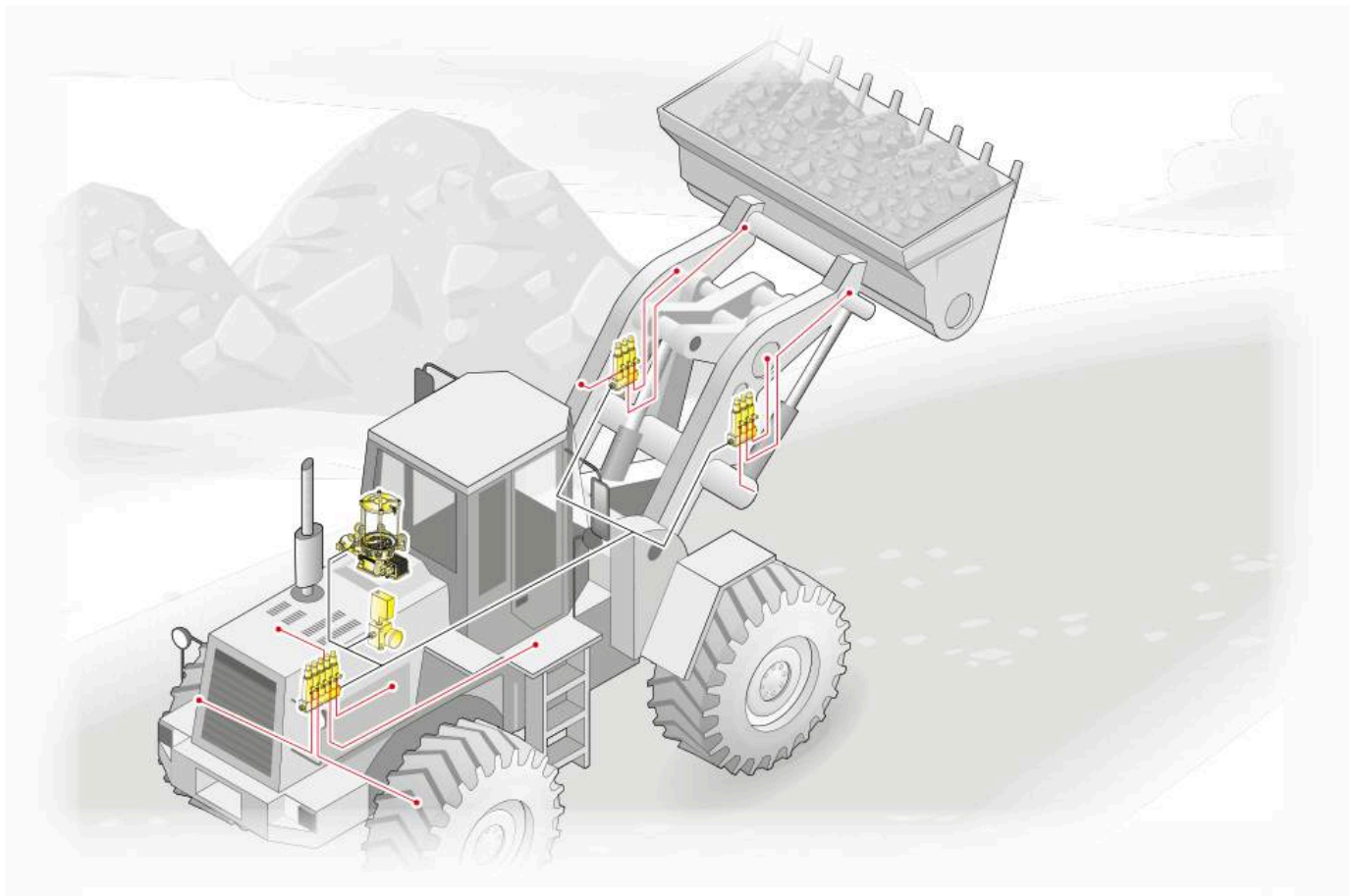


P/N 3081100
Pumping element



P/N 3081150
150 µm charging filter

P/N	Description	Connection	Flow rate/Pressure
1581300	Solenoid discharge valve	G 3/8" (f) on pump body	300 bar
1581301	Solenoid discharge valve + 2 pumping element connection kit	G 3/8" (f) on pump body	300 bar
1581302	Solenoid discharge valve + 4 pumping element connection kit	G 3/8" (f) on pump body	300 bar
3081100	Pumping element ø 6,5 mm	On pump body M20 x 1,5 outlet G 1/4" (f)	0,122 cm³/cycle
3081150	150 µm charging filter	M20 x 1,5	-
3081900	Low level capacitive sensor for oil	M12 x 1	-
3081950	Low level magnetic sensor for grease	M12 x 1	-





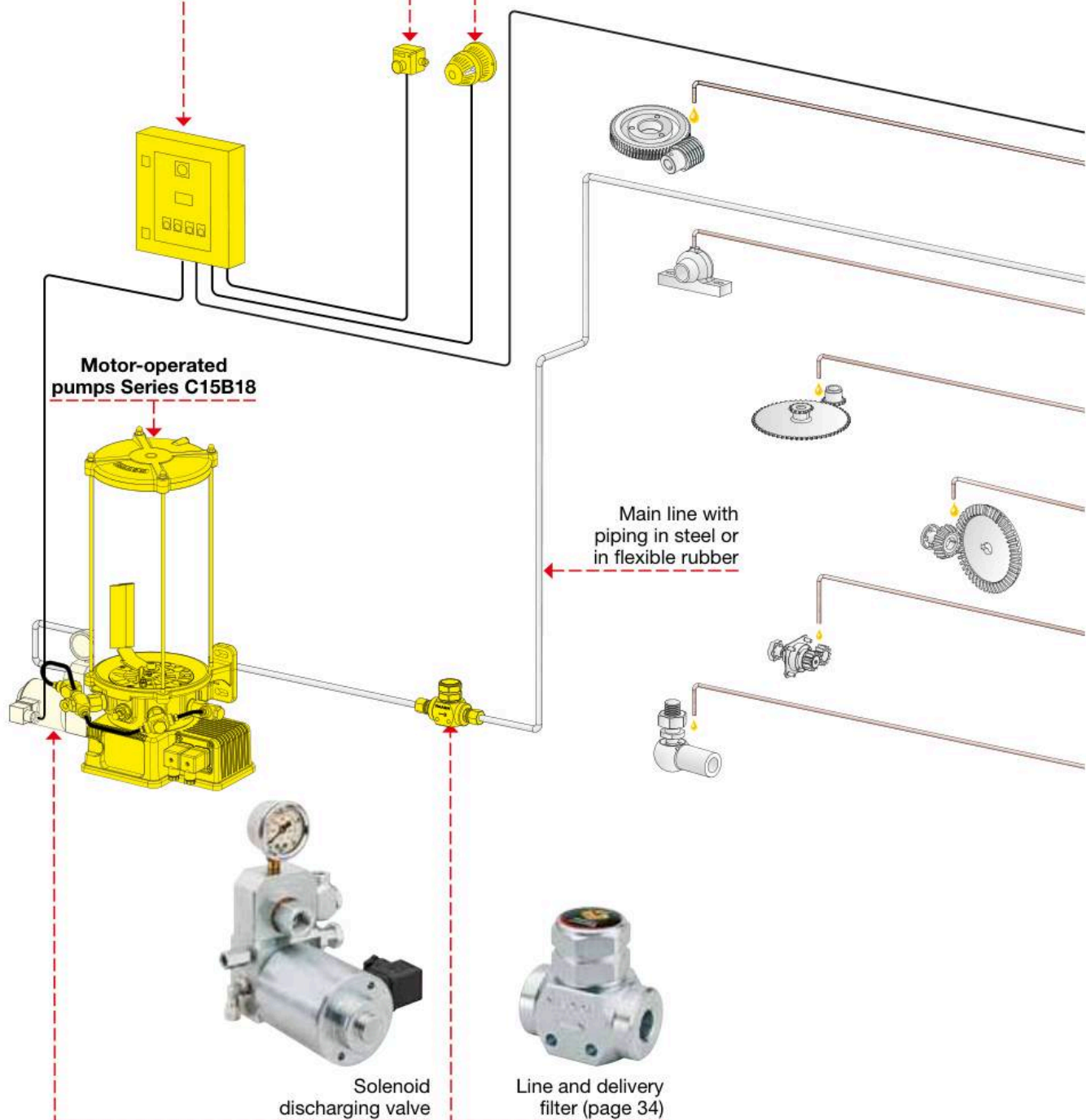
Control equipment (PLC) (page 35-36)



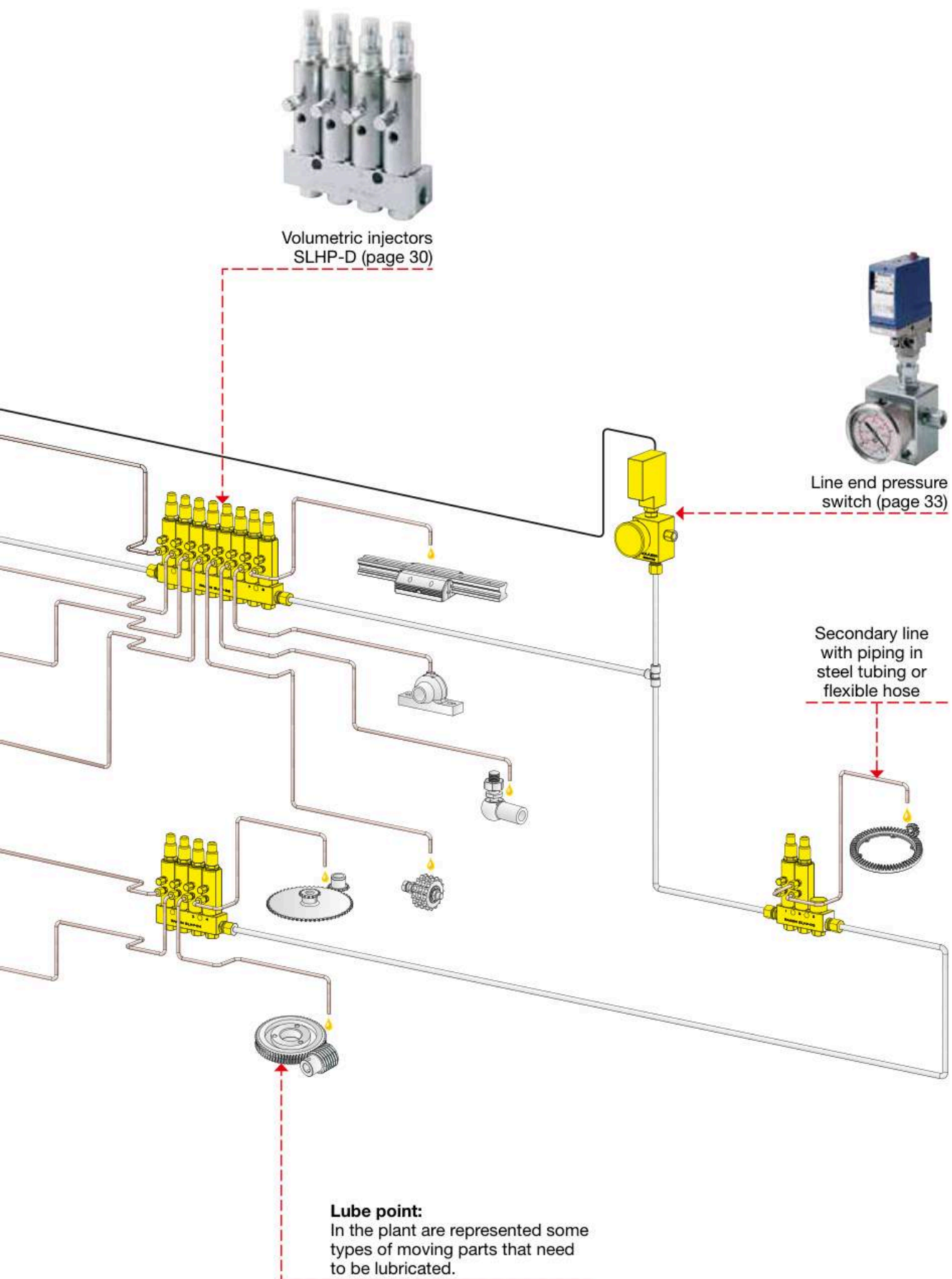
P/N 39290
Emergency stop button (optional)



P/N 39289
Acoustic and flashing alarm (optional)



Type of lubrication system with motor-operated pump **Series C15B18**





Series C15F AIR-OPERATED PUMP

The choice of a pneumatic pump is indicated if the available power supply, the characteristics of the system and the required dispense do not allow the use of electrically powered solutions.

They are available with 10 liters tank or suitable for 20, 50 or 200 kg drums, provided with drum cover and grease follower plate.

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. High compression ratio (50:1) and adjustable feeding pressure allow to set system's pressure to its specific requirements (from 100 to 350 bar).

with tank 10 kg



DRUM



Technical characteristics

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

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

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:** allows to remove the residual air from system during the first filling phase.

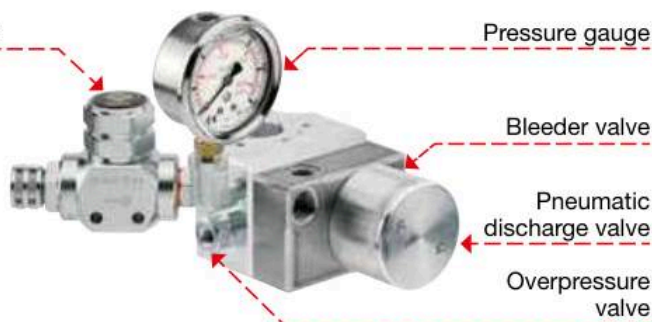
Filling filter 300 µm

Pressure gauge

Bleeder valve

Pneumatic discharge valve

Overpressure valve



GUIDE TO CHOOSING PUMP

P/N full Grease	Tank capacity (kg)	For drums with capacity (kg)	Ø drum internal (mm)	P/N pump (R 50:1)	P/N drum cover	P/N follower plate	P/N discharging valve
1500020	10	-	220	62541	-	10/617	1581200
1500200	-	20	255/300	62548	10/507	10/63	1581200
1500380	-	50	335/360	62574	10/503	10/62	1581200
1500470	-	60	360/400	62574	10/502	10/61	1581200
1500560	-	200	540/580	62595	10/501	10/60	1581200

P/N full Oil	Tank capacity (kg)	For drums with capacity (kg)	Ø drum external (mm)	P/N pump (R 50:1)	P/N drum cover (for open drums)	P/N bung adaptor (for closed drums - 2" hole)	P/N minimum level indicator	P/N discharging valve
1500650	10	-	240	62541	-	-	-	1581200
1500830	-	20	260/330	62548	10/507	-	-	1581200
1501010	-	50 - 60	340/385	62574	10/503	-	-	1581200
1501100	-	50 - 60	-	62574	-	10/14	39650	1581200
1501190	-	200	-	62595	-	10/14	39650	1581200

ACCESSORIES

STANDARD EQUIPMENT

 Ultrasonic min/max level indicator - coupling G 3/4 (m)	Only for P/N 1500650  Visual high level indicator for oil	Only for P/N 1500020  Visual high level indicator for grease
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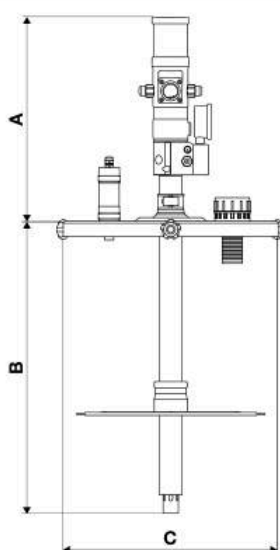
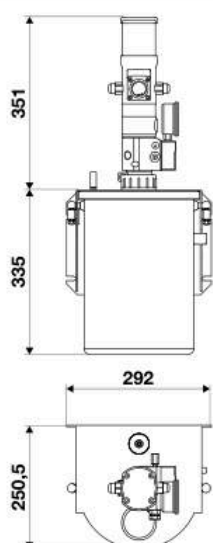
ON REQUEST



Overall dimensions (mm)

P/N 1500020
for Grease

P/N 1500650
for Oil



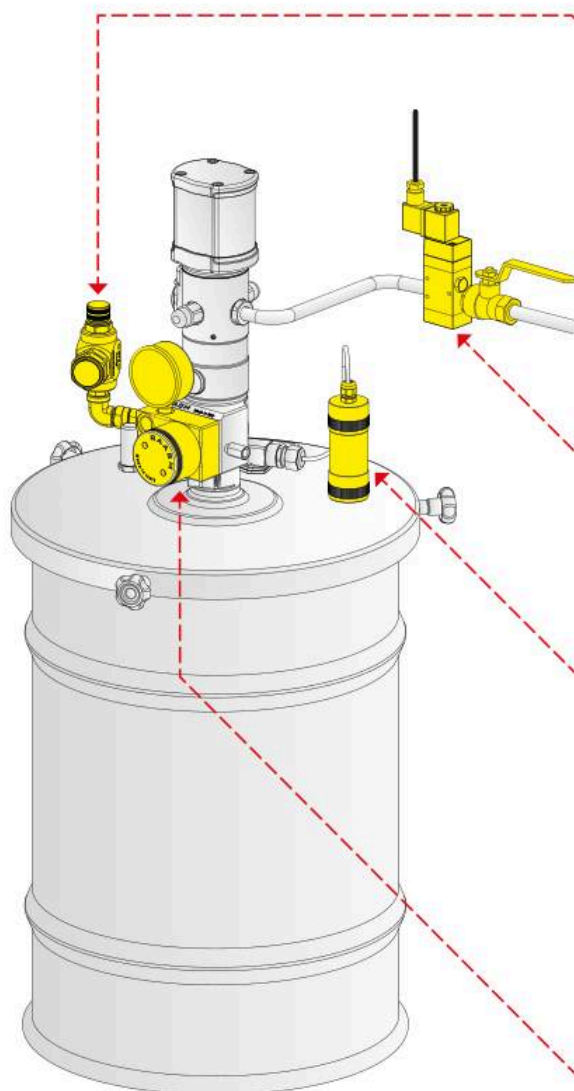
P/N Grease	A	B	C
1500200	355	361	341
1500380	355	621	389
1500470	355	621	424
1500560	355	835	604

P/N Oil	A	B	C
1500830	355	361	341
1501010	355	621	389
1501100	355	621	424
1501190	355	835	604

	10 kg		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



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 sensor

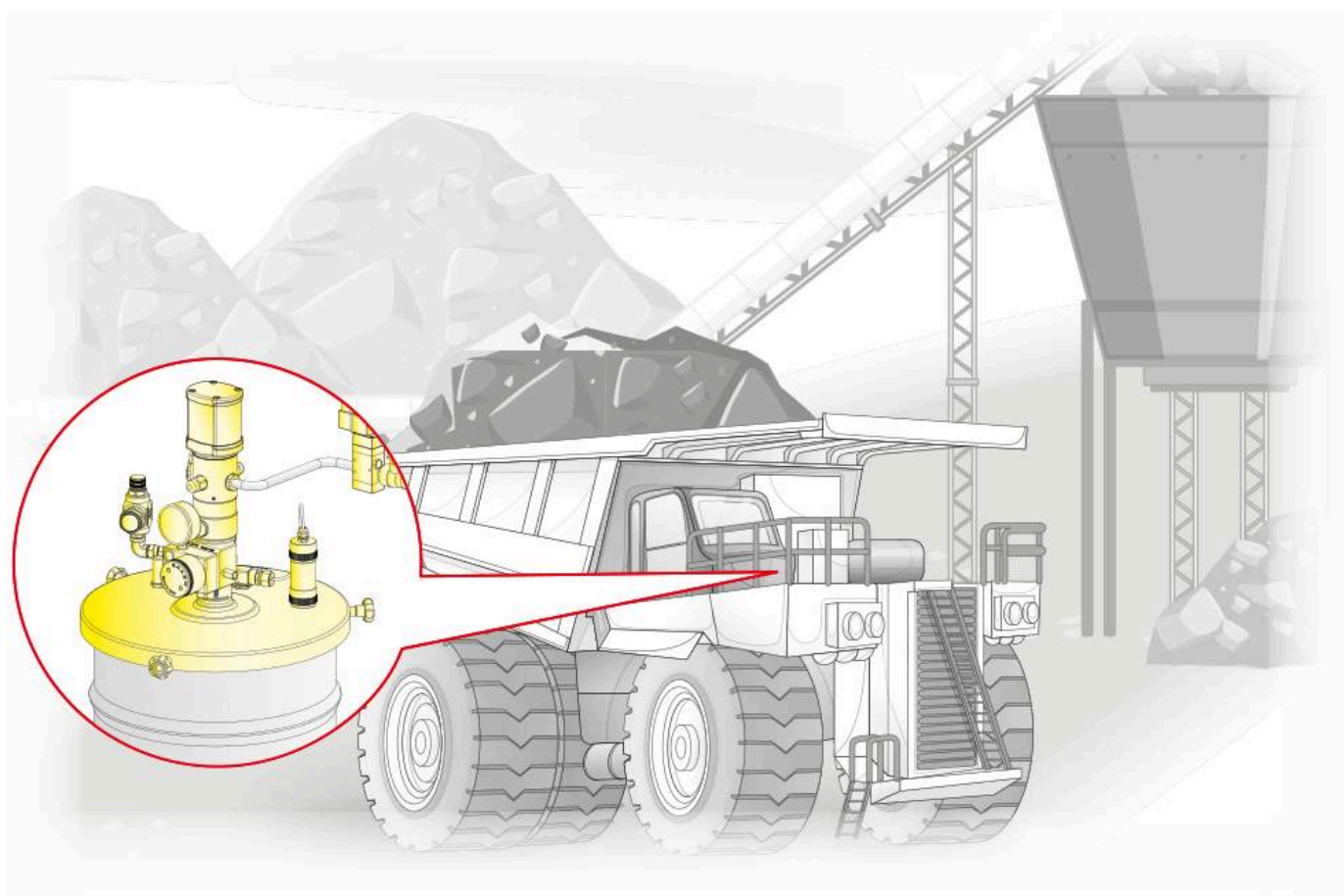


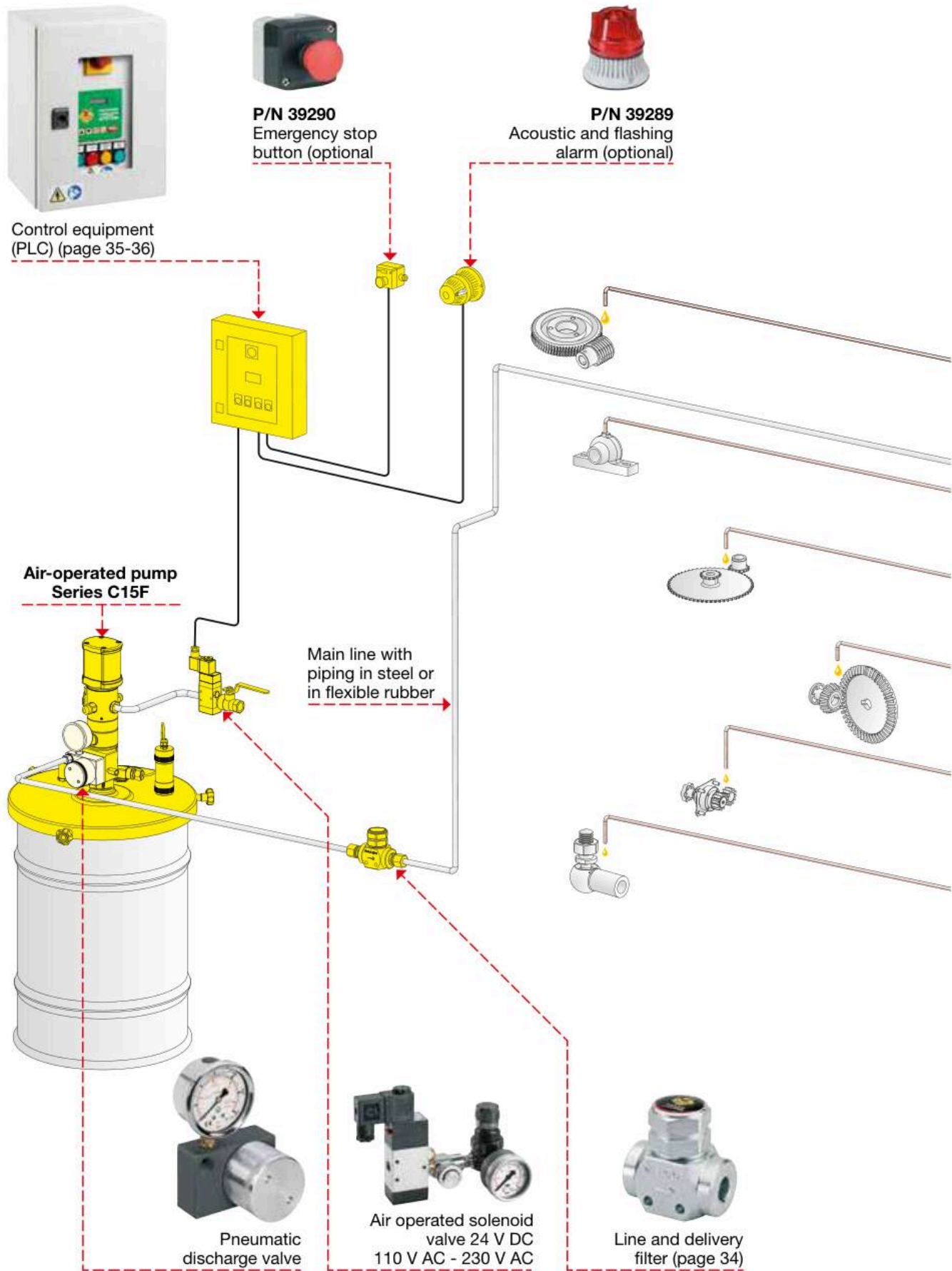
P/N 39650
Low level indicator
(optional only for oil)



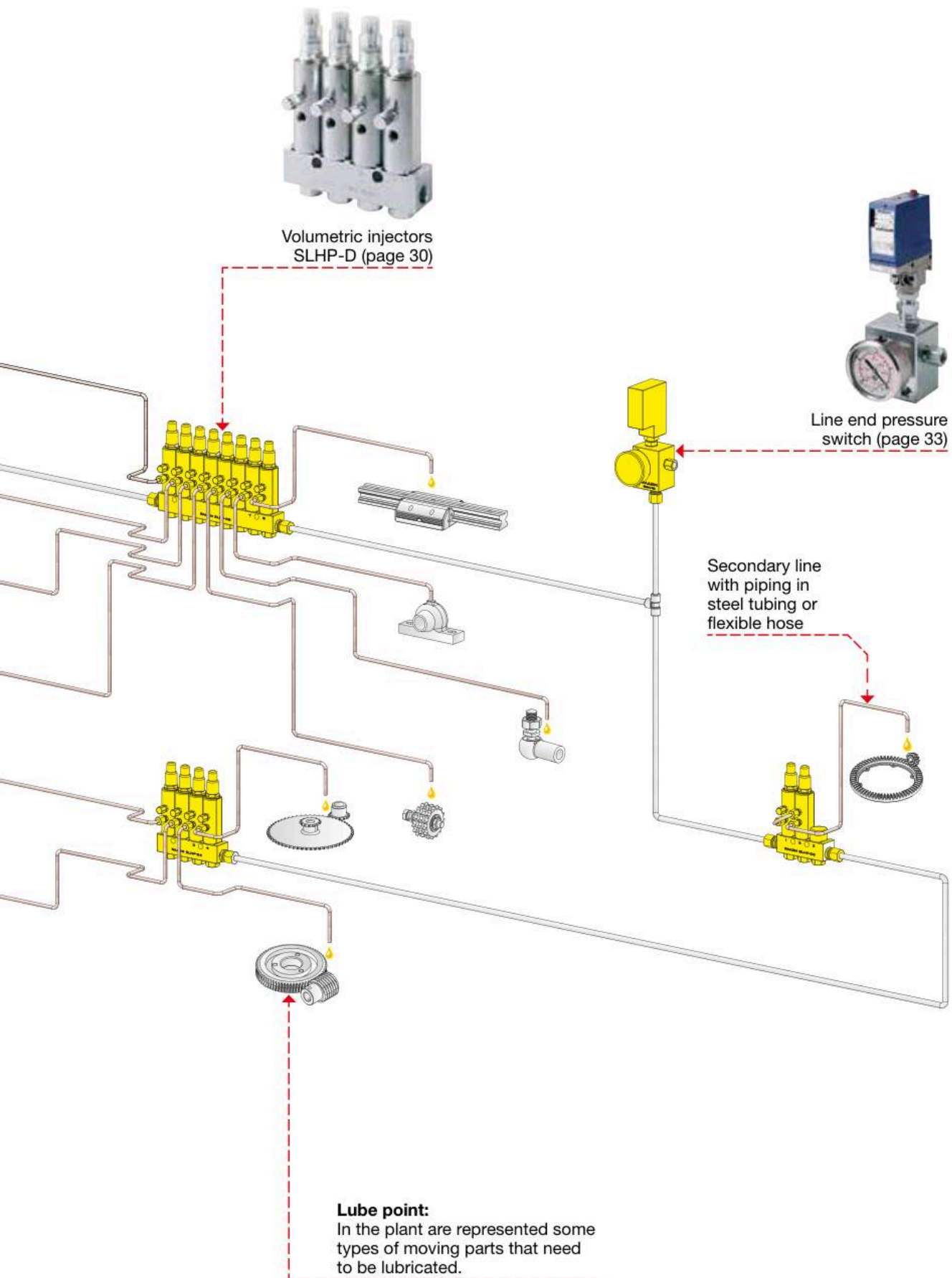
P/N 1581200
Pneumatic
discharge valve

P/N	Description	Connection	Pressure
1581150	300 µm charging filter	G 3/8" (m)	-
1582000	Air operated solenoid valve 24 V DC	G 1/4" (f) x G 1/4" (f)	2,5-8 bar
1582001	Air operated solenoid valve 24 V DC	G 1/2" (f) x G 1/2" (f)	2,5-8 bar
1582002	Air operated solenoid valve 110 V AC	G 1/4" (f) x G 1/4" (f)	2,5-8 bar
1582003	Air operated solenoid valve 110 V AC	G 1/2" (f) x G 1/2" (f)	2,5-8 bar
1582004	Air operated solenoid valve 230 V AC	G 1/4" (f) x G 1/4" (f)	2,5-8 bar
1582005	Air operated solenoid valve 230 V AC	G 1/2" (f) x G 1/2" (f)	2,5-8 bar
1581850	Minimum and maximum ultrasonic level sensor	Hole on drum cover ø 31 mm	-
1581200	Pneumatic discharge valve	G 3/8" (f) on pump body	400 bar
39650	Low level indicator (optional only for oil)	Oil	-





Type of lubrication system with motor-operated pump **Series C15F**





SLHP-D VOLUMETRIC INJECTOR

The **volumetric injectors** are made in steel with white galvanizing and equipped with Viton® seals.

Their operating pressure is between 40 - 150 bar for oil and 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).

The correct functioning of the injector is guaranteed by a dedicated visual indicator. The SLHP-D injectors have been studied in order to easily replace most of the models already existing on the market.

Their design lets possible expansion of the system and its maintenance.



Technical characteristics

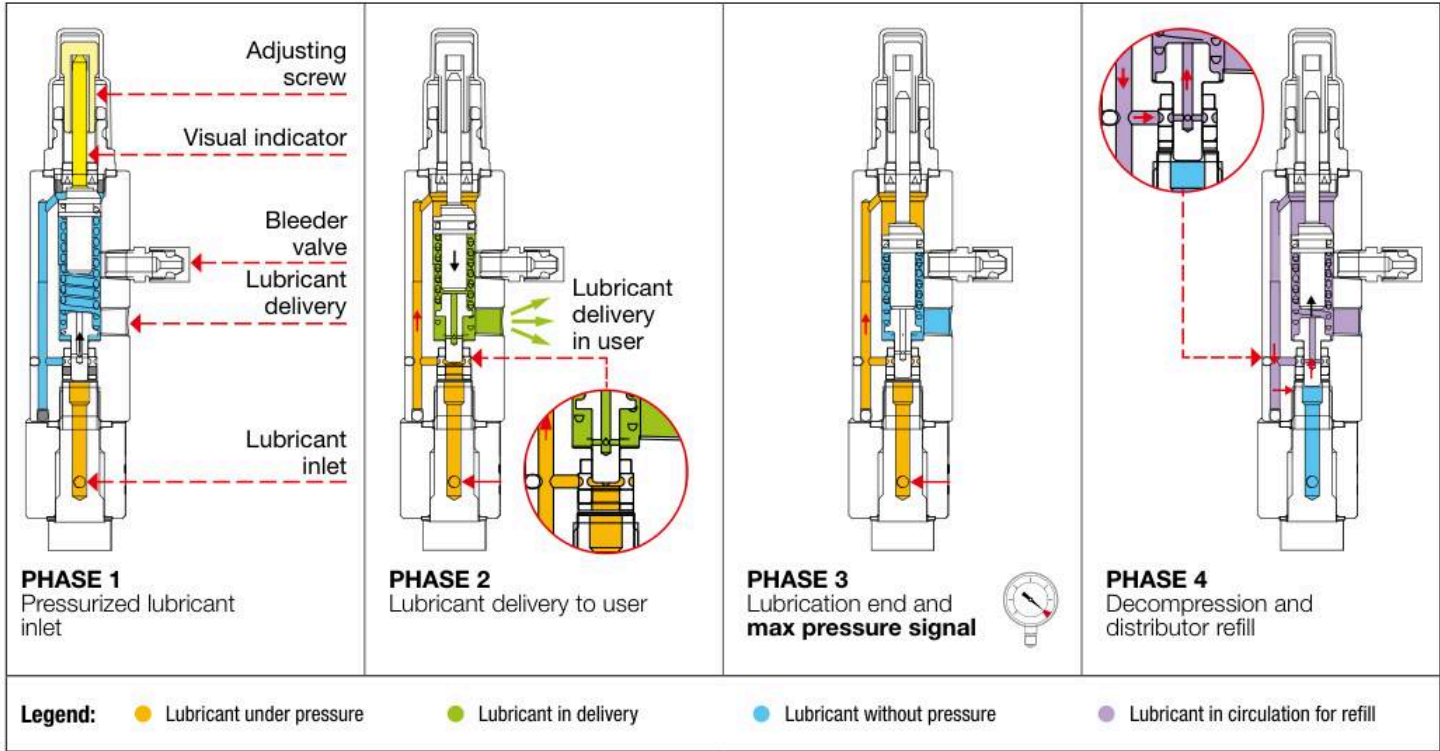
Injector flow rate	Adjustable from 0 to 1,7 cm³/cycle
Working pressure	40-150 bar oil / 70-300 bar grease
Lubricant inlet connection	NPTF 3/8" (f)
Lubricant outlet connection	NPTF 1/8" (f)
Material	Galvanized steel
Lubricant	Oil > 40 cSt - Greases max NLGI 2

GUIDE TO CHOOSING INJECTOR

Grease	P/N	Abbreviation	Deliveries	Inlet-outlet	Working pressure	Materials
Single injector	1532541	-	1	NPTF 1/8" (f)	70-300 bar	Zinc plated steel
Injector Manifold (Full)	1532540	SLHPGD1/1N	1	NPTF 3/8" (f) NPTF 1/8" (f)	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	Deliveries	Inlet-outlet	Working pressure	Materials
Single injector	1538421	-	1	NPTF 1/8" (f)	40-150 bar	Zinc plated steel
Injector Manifold (Full)	1538420	SLHPOD1/1N	1	NPTF 3/8" (f) NPTF 1/8" (f)	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			

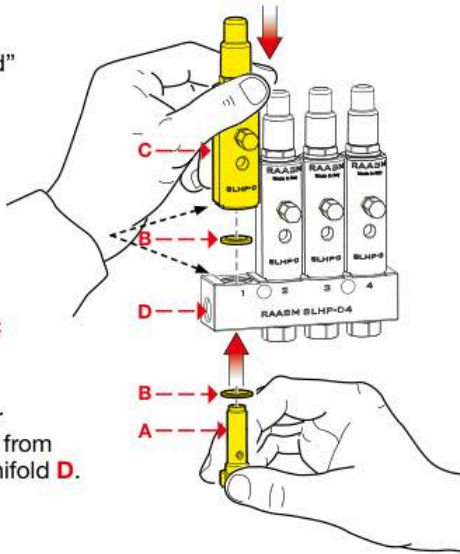
HOW IT WORKS



APPLICATION OF THE SINGLE INJECTOR ON THE MANIFOLD

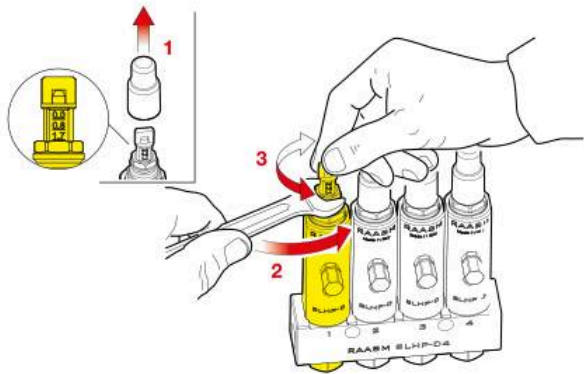
- A - Injector pin
- B - Seals kind "bonded"
- C - Single injector
- D - Manifold

- 1 - Place the injector C on the upper part of the manifold D.
- 2 - Position the injector pin A by inserting it from the base of the manifold D.
- 3 - Screw the pin A to the injector C.



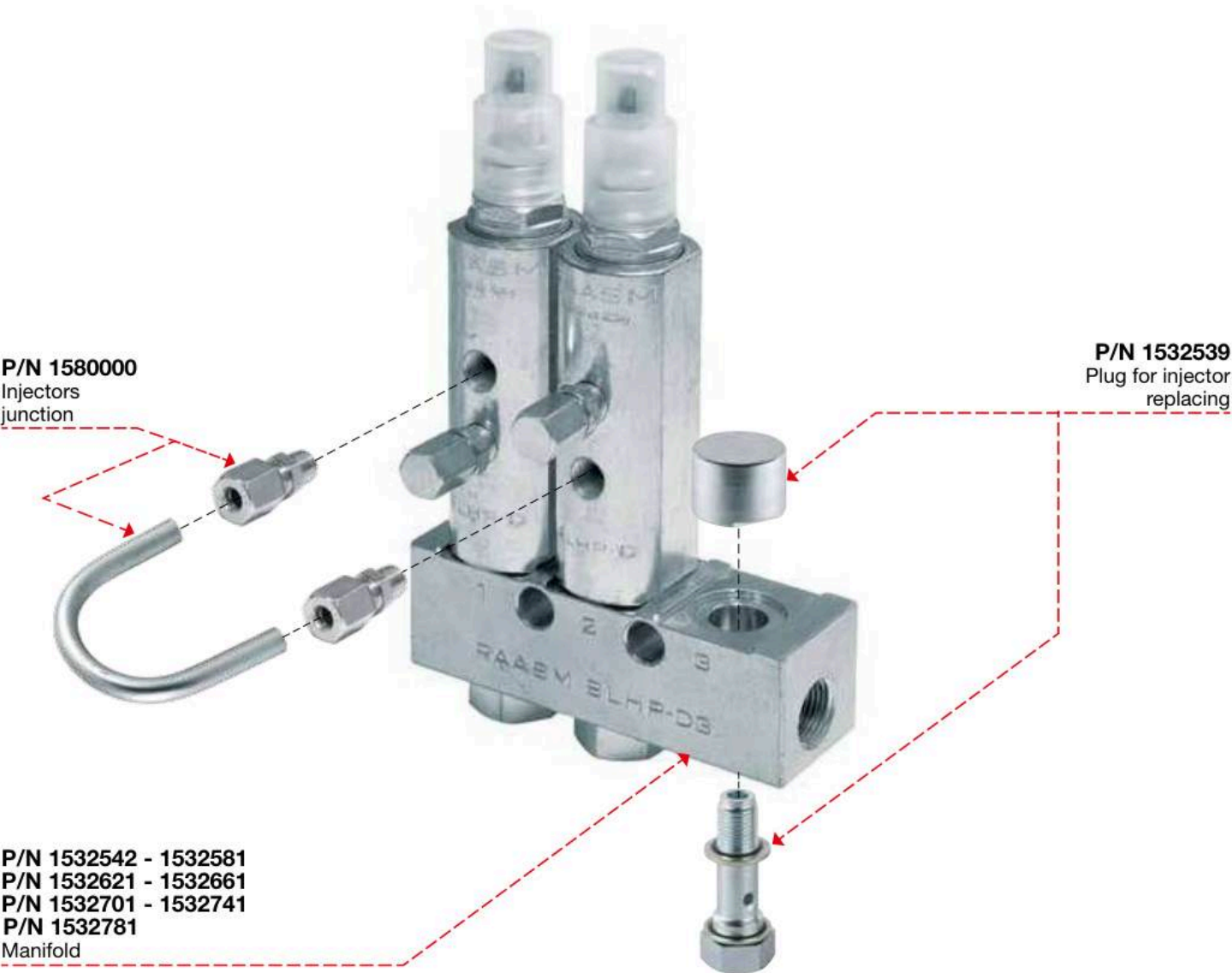
ADJUSTING OF DELIVERY INJECTOR

- 1 - Remove cap.
- 2 - Loosen the nut.
- 3 - Adjust the dosing screw.



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

ACCESSORIES SLHP-D



	P/N	Description	Connection	Pressure
	1580000	Injectors junction	NPTF 1/8" (m)	-
	1532539	Plug for injector replacing	M14 x 1,5	-
	1532542	Manifold for 1 injector	NPTF 3/8" (f)	Max 300 bar
	1532581	Manifold for 2 injectors	NPTF 3/8" (f)	Max 300 bar
	1532621	Manifold for 3 injectors	NPTF 3/8" (f)	Max 300 bar
	1532661	Manifold for 4 injectors	NPTF 3/8" (f)	Max 300 bar
	1532701	Manifold for 5 injectors	NPTF 3/8" (f)	Max 300 bar
	1532741	Manifold for 6 injectors	NPTF 3/8" (f)	Max 300 bar
	1532781	Manifold for 8 injectors	NPTF 3/8" (f)	Max 300 bar

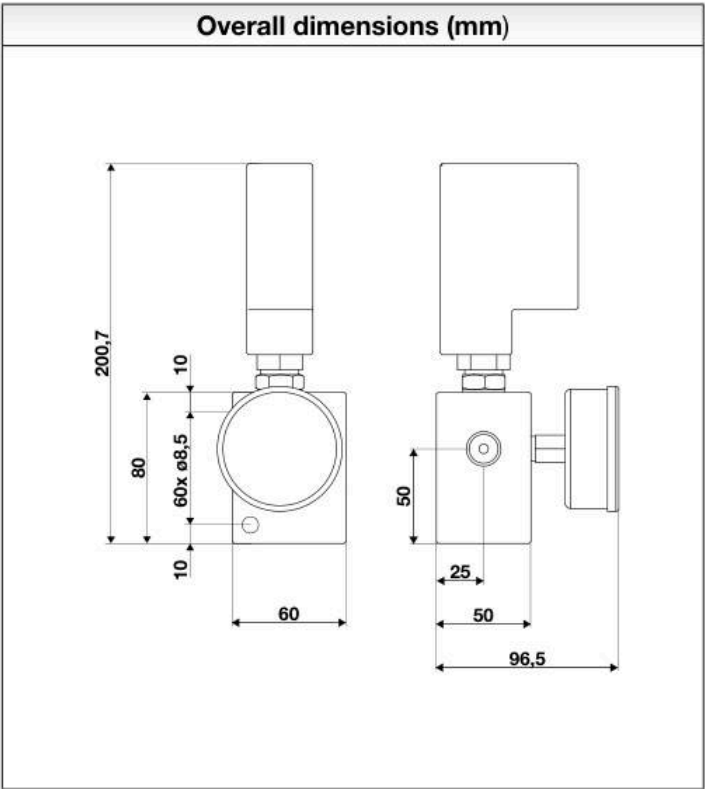


PRESSURE SWITCH

End line pressure switch.
Used for the control and functionality of the operation of the centralized system. It reports when maximum pressure is reached and confirms that the lubricant dispensing cycle has been completed at all lubrication points of the system.



Technical characteristics	
Type	Oil and grease
Max working pressure	400 bar
Lubricant inlet connection	G 3/8" (f)
Electric contact	On clamps
Working temperature	-25 °C / +60 °C
Lubricants	Oil > 40 cSt - Greases max NLGI 2



P/N	Working pressure (bar)	Protection degree	Type
2080600	From 30 to 400	IP55	Without box
2080605		IP65	With box



FILTER

Filter. In order to ensure the proper functioning of the system and avoid any lubricant external contamination, it is advisable to install a filter at the pump outlet (delivery).

The sturdy steel structure of filters ensures a sure sealing and also allows their use in centralized lubrication systems where there are high operating pressures (up to 500 bar).

Operating with both oils and greases, it is placed both at the pump outlet and along the system line.

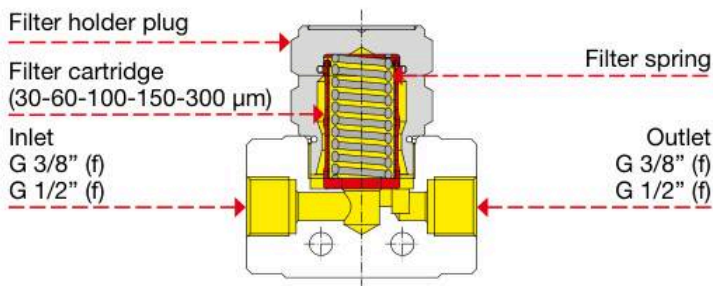


Technical characteristics

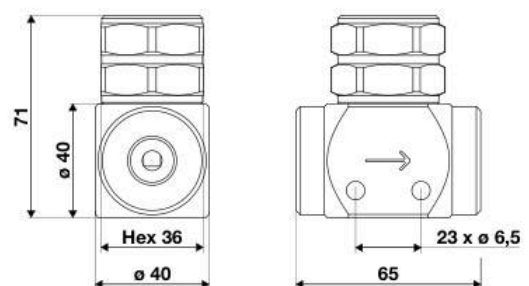
Type	Oil and grease
Working temperature	-25 °C / +60 °C
Lubricants	Oil > 40 cSt - Greases max NLGI 2

P/N	Inlet connection	Outlet connection	Max pressure (bar)	Filtration degree (µm)
2080900	G 3/8" (f)	G 3/8" (f)	500	30
2080930				60
2080950				100
2080800	G 3/8" (f)	G 3/8" (f)	500	150
2080801				300
2080901				30
2080931	G 1/2" (f)	G 1/2" (f)	500	60
2080951				100
2080850				150
2080851	G 1/2" (f)	G 1/2" (f)	500	300

DELIVERY-FILLING FILTER



Overall dimensions (mm)





CONTROL EQUIPMENT

Equipment dedicated to the management and control of centralized lubrication systems.

Equipped with an electronic programming card and interface, they manage the input and output signals of the whole system.

200 ÷ 500 V AC 50/60 Hz



Technical characteristics

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

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



- Button start /stop
- Light alarm
- Display integrated into the keyboard.
- Simple and intuitive user interface.
- Rugged and waterproof cover, meets the requirements of IP55.
- Ability to customize the lubrication intervals, pause and the cycle count.
- Programming of the parameters protected by password.
- Call system filling tank (on request) with high level light indicator.

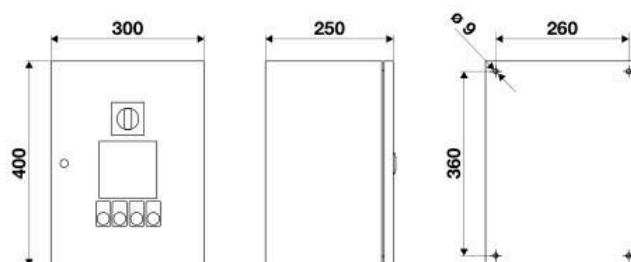
Input signals

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

This **management and control equipment** consists of an electronic programming card placed in a small-sized panel. The card allows to manage the input and output signals of the entire system.

12-24 V DC

120-230 V AC 50/60 Hz



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



- Display integrated into keyboard.
- Simple and intuitive user interface.
- Rugged and waterproof cover, meets the requirements of IP64.
- Ability to customize the lubrication intervals, pause and the cycle count.
- Programming of the parameters protected by password.

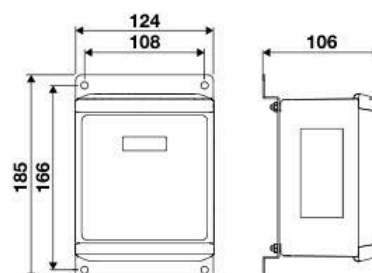
Input signals

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



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	180	5	8	10	3	2	4	R	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	Ø tank external						Ratio			Level control		
	G	O	10	28	35	37	38	42	60	5	6	7	0	1	2
System 15 single line	Grease (max NLGI 2)	Oil (> 40 cSt)	10 kg	From 240 to 280 mm	From 300 to 350 mm	From 260 to 330 mm	From 340 to 385 mm	From 370 to 420 mm	From 550 to 600 mm	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

GENERAL SALES CONDITIONS



FOR FOREIGN MARKETS

The following general sales conditions regulate the sale of goods and services by the company RAASM S.p.A. for customers residing outside the territory of the Italian State.

Art. 1 GOODS DELIVERY TERMS

The goods are delivered ex works RAASM S.p.A. The subsequent transport/shipment must occur by, in the name and at the expense of the purchasing customer, even by means of a carrier appointed and designated by the same. All risks arising from loading, subsequent custody and transport are borne entirely by the purchasing customer.

Art. 2 MINIMUM ORDERS

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.

Art. 3 ACCESSORIES

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.

Art. 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 of 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.

Art. 5 DELIVERY TIMES/TERMS

Delivery times and dates are only approximate and are subject to change. Any delays in delivery do not entitle the customer to cancel the order or claim compensation for damages caused by delay of delivery. Delivery times for urgent orders must be agreed directly with RAASM S.p.A.

RAASM S.p.A. has the right not to carry out the order and/or totally or partially carry it out, without this giving rise to reimbursement or claims for compensation for damage.

Art. 6 PACKS AND PACKAGING

Packaging costs are included in the price, except for special packing, which shall be charged at cost.

Art. 7 PRICES

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.

Art. 8 PAYMENTS

Payments must be made exclusively to RAASM S.p.A. at the agreed conditions. Under no circumstances will deductions or roundings be accepted. In case of late payment with respect to the agreed conditions, RAASM S.p.A. reserves the right to charge interest at the current rate, effective from the day after that agreed for payment, plus any additional expenses. Discounts conditional on the payment term and already credited shall be recharged.

Art. 9 WARRANTY

RAASM S.p.A. provides each product with the communication of particular instructions for the installation, use and maintenance requirements and the need to carry out possible checks on the product. All the technical information and data mentioned in the catalogue and in the price-list in force are not binding and can be changed without prior notice for the purpose of improving the quality of the products.

All products manufactured by RAASM S.p.A. are guaranteed for a period of 5 (five) years from the date of delivery to the first user. The user must keep and show the sales invoice - or an equivalent document - together with the item's serial number in order to make a claim under the RAASM S.p.A. guarantee. The 5 (five) year guarantee does not apply to components which are subject to normal wear and tear (such as gaskets, diaphragms, O-rings, hoses, etc.), electronic components and items that are sold but not manufactured by RAASM S.p.A. (marked with a red asterisk in the current product catalogue) which are guaranteed for 1 (one) year from the date of delivery to the first user.

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

- digital litre counters and FCS system;
- cable reels;
- electric, pneumatic or hydraulic motor;
- slip rings;
- centralized lubrication systems.

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 manufacturer declines any responsibility for possible inaccuracies contained in this catalogue, due to printing or transcription errors. The manufacturer reserves the right to make any changes or improvements of a functional, technical or aesthetic nature without prior notice.

RAASM

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).

Art. 10 RESPONSIBILITY

RAASM S.p.A. is exempt from any responsibility and liability for accidents that may occur to persons and property, as a result of or during the use of the equipment, due to or depending on the same whenever the products have been damaged during transport, tampered with or modified, or improperly used, or stored, installed, protected and preserved without complying with the instructions of RAASM S.p.A. as given in the installation, use and maintenance instruction manuals for each product.

RAASM S.p.A. is liable for the value for the supplied product and cannot be held responsible in any way for other possible costs or additional costs that the customer may bear.

Art. 11 CONFIDENTIALITY

Information not in the public domain that is exchanged in the execution of the contract is subject to the obligation of confidentiality, secrecy and security; said information is covered as an industrial secret and is of a confidential and reserved nature and may not be disseminated to third parties; its use is permitted exclusively and strictly to execute the supply contract.

Art. 12 INTELLECTUAL PROPERTY RIGHTS

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Art. 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.

Art. 14 RIGHTS OF DATA SUBJECTS

The information is aimed at defining the limits and methods for the processing of data, based on which individual customers and/or suppliers may freely authorise the collection and subsequent use of data. Data subjects are entitled to the rights pursuant to article 7 of the aforementioned Code and in particular, the right to access their personal data, ask for the amendment, update and cancellation thereof, if incomplete, incorrect or collected in violation of the law, and may object to the processing for legitimate reasons, addressing requests in this regard to RAASM S.p.A. Pursuant to the same article the data subject also has the right to request the complete and updated list of the Data Supervisors, and to ask for the cancellation, transformation into anonymous form or blocking of data processed in violation of the law, and to oppose in any case, for legitimate reasons, the processing thereof.

To exercise these rights, and in the case of problems or any requests for clarification regarding what has been explained herein, kindly address these to RAASM S.p.A. – Via Marangoni, 33, Cassola (VI) – Italy or to the following email address: info@raasm.com.

Art. 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.

Art. 16 COMPETENT LAW COURT

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

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Company with quality,
environment and safety system
according to ISO 9001:2015,
ISO 14001:2015 and
ISO 45001:2018 standards

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