

SYSTEM LUBRICATION PROGRESSIVE

CATALOG No. 803/30

30



**ADVANCED FLUID
MANAGEMENT SOLUTIONS**

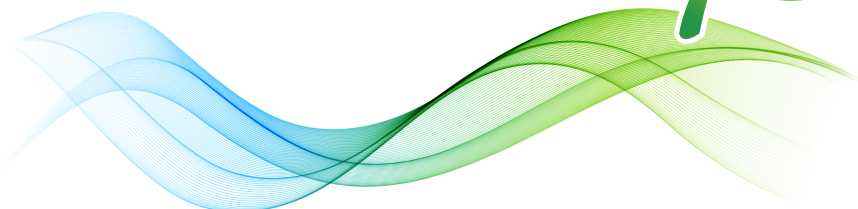




HELP THE NATURE

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

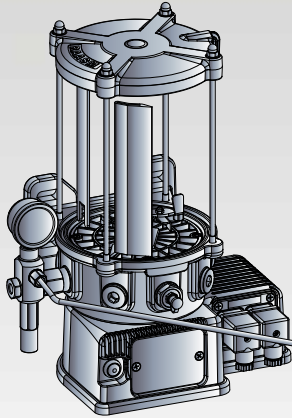
RAASM has the most complete range of products for lubrication and the dispensing of fluids. The aim is to always respond fully to the questions of our customers and meet all their needs.



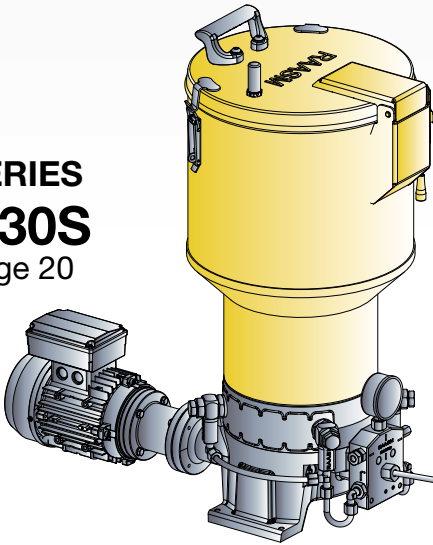


SYSTEM 30 PROGRESSIVE

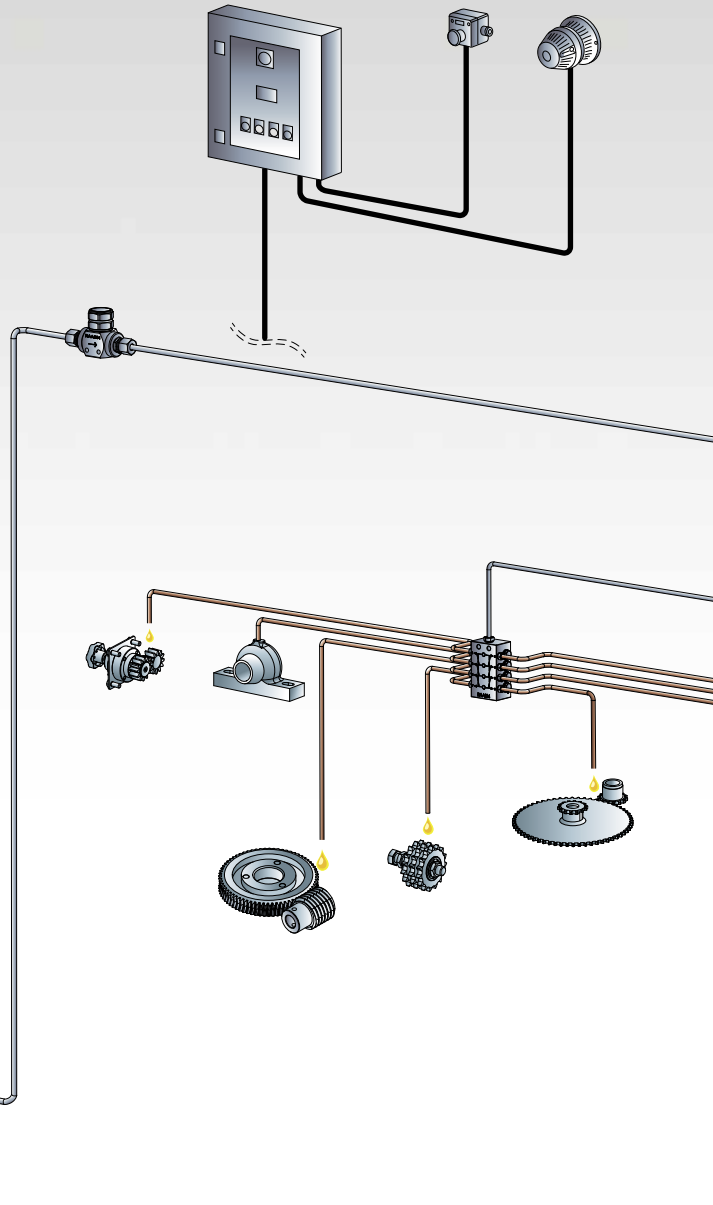
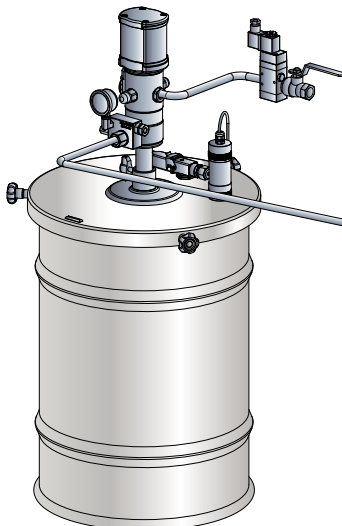
■ **SERIES**
C30B15
C30B18
page 12-14



■ **SERIES**
C30S
page 20



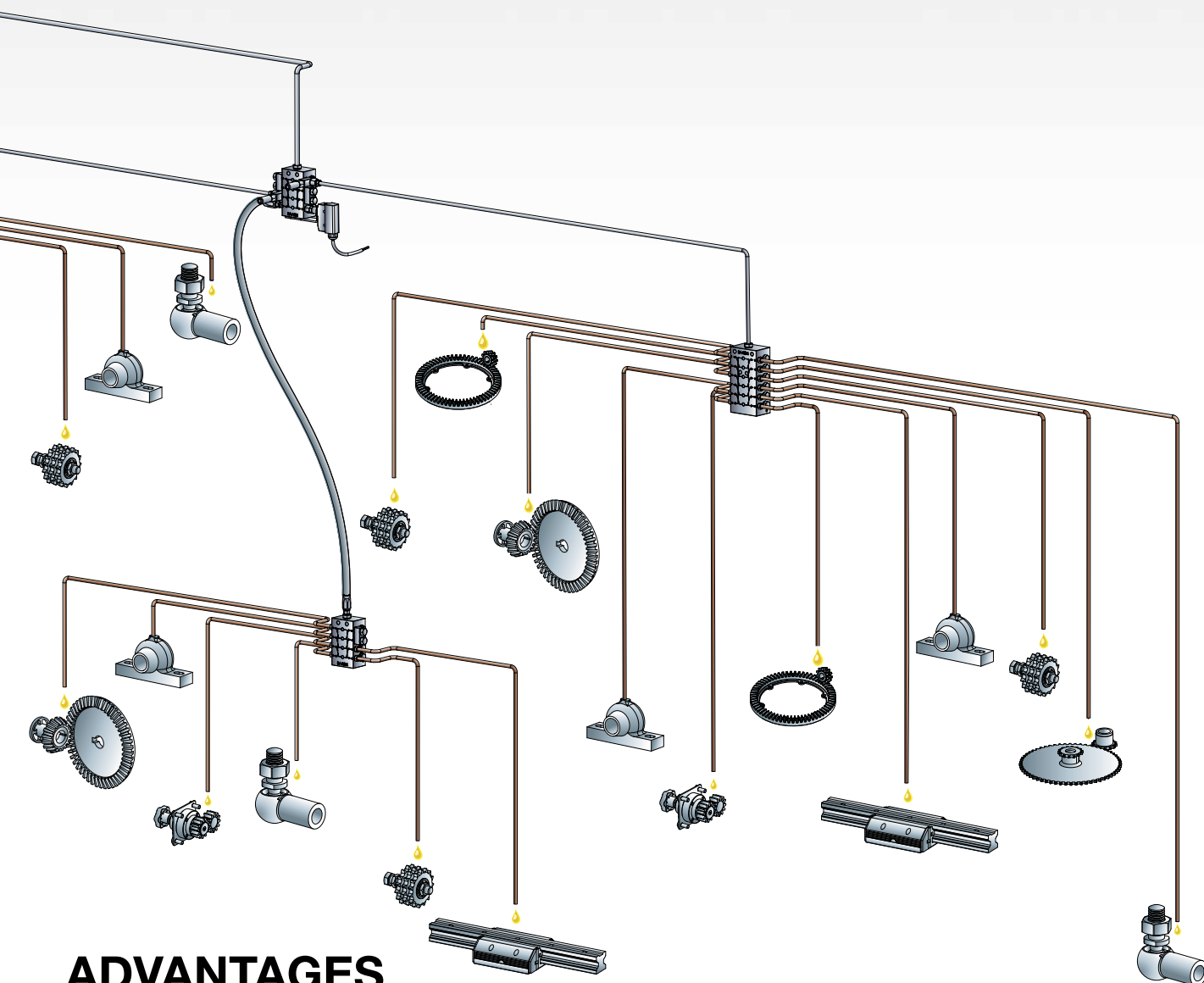
■ **SERIES**
C30F
page 26



The progressive lubrication system consists of a pumping unit connected to divider valves which, through the pumping action of a piston placed inside them, ensure the delivery of a predetermined quantity of lubricant to a corresponding number of users.

This system is defined such, since the action of each piston inside the divider valves, which allows the flow of lubricant to pass from one section to another of the divider valves, follows a progressive sequence of distribution to the various users.

Each divider valve is placed in series with all the others, therefore malfunctioning of just one causes blocking of all the others. Consequently the control of operation of a single divider valve allows the monitoring of the entire system. With this system, lubricating oils and greases up to grade NLGI 2 can be used.



ADVANTAGES

- The progressive system ensures that each individual point is properly lubricated just by controlling any of the divider valves making up the system.
- Possibility of implementing the control for each individual point, when it is all-important to know where a malfunction can occur.
- Possibility of installing visual or electric-type controls.
- Various divider valves models are available for the number of outlets and for deliveries.
- Careful choice of materials and treatments, ensuring the long life of all components.
- The progressive system is normally used for short work times that include long pause times, hence reduced wear of all parts of the system.
- Suitable for medium short systems with a high number of users.



**ADVANCED FLUID
MANAGEMENT SOLUTIONS**

Series C30B15-C30B18

www.raasm.com



SERIES C30B15

ELECTRIC MOTOR OPERATED PUMPS

12/24 V DC - ø 150 mm

Sturdy and compact electric pumps with shockproof plastic cover for IP55 protection, ideal for stress work environments. Pumping pistons are radially placed in the aluminum basement below the lubricant reservoir.

Available in 3 versions:

- Remote control with all the programmable functions (pause and working time) managed by the control unit, depending on system requirements.
 - Analog control with alarm signal, reset functions, and outside cycle operations management.
 - Digital control with alarm signal, reset functions, pause and work times and outside cycle operations all managed by the control unit integrated board.
- The central body aluminum support is suitable for wall-type applications. Centrally located on the device there's the lubricator with filter (150 micron) for tank grease filling. For oil working versions, tank filling occurs through the filter mounted on the tank's cover top.



remote control



analog control



digital control



Colours:



STANDARD



RAL 7035

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

TECHNICAL CHARACTERISTICS

Max. delivery 1 pumping element *	P/N 3081100 - 4,27 cm ³ /min - 35 rpm	
No. pumping elements	1 - 4	
Delivery union	F 1/4" G	
Max. pressure	300 bar	
Tank	1,5 - 3 litres	
Tank filling	by hydraulic greaser M20x1,5 with filter 150 µm	
Level control	minimum level (magnetic-capacitive sensor)	
Protection rating	IP55	
Operating temperature	- 25 °C / + 60 °C	
Lubricant	Oil > 40 cSt - Grease max NLGI 2	
Gearmotor *	12 V DC	24 V DC
Power input	36 W	36 W
Power input (max. starting)	78 W	72 W
Current absorbed	3 A	1,5 A
Current absorbed (max. starting)	6,5 A	3 A

* 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 ø 150 mm - 12 V DC

P/N		Tank capacity (litres)	No. pumping elements	Delivery (cm³/min)	Control type
Grease	Oil				
3000130	3030340	1,5	1	4,27	remote
3003910	3034120	3	1	4,27	remote
3000040	3030250	1,5	1	4,27	analog
3003820	3034030	3	1	4,27	analog
3000085	3030295	1,5	1	4,27	digital
3003865	3034075	3	1	4,27	digital

Attention: items listed above are for electric motor pumps without delivery control assembly (P/N 3081350).

GUIDE TO CHOOSING PUMP ø 150 mm - 24 V DC

P/N		Tank capacity (litres)	No. pumping elements	Delivery (cm³/min)	Control type
Grease	Oil				
3001210	3031420	1,5	1	4,27	remote
3004990	3035200	3	1	4,27	remote
3001120	3031330	1,5	1	4,27	analog
3004900	3035110	3	1	4,27	analog
3001165	3031375	1,5	1	4,27	digital
3004945	3035155	3	1	4,27	digital

Attention: items listed above are for electric motor pumps without delivery control assembly (P/N 3081350).

STANDARD EQUIPMENT



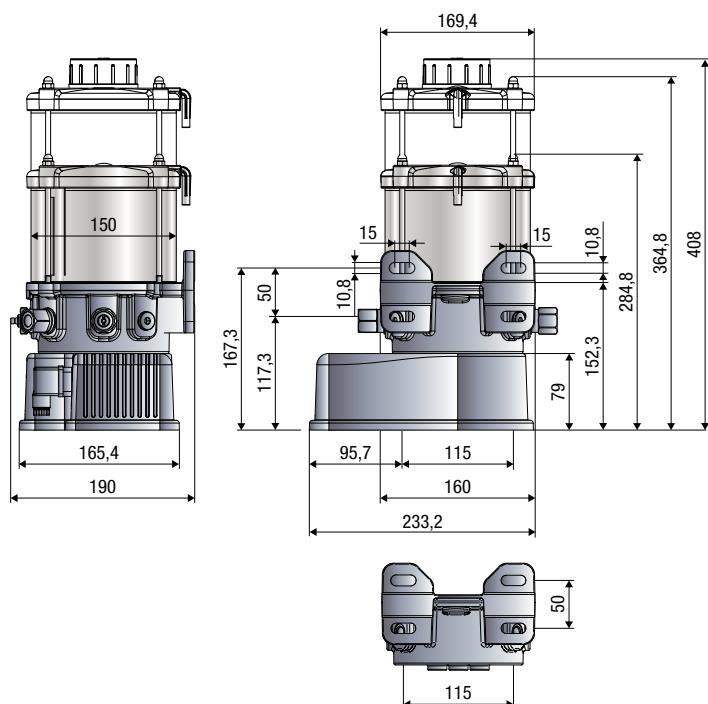
Magnetic low level indicator for grease.
Capacitive low level indicator for oil.

ON REQUEST



P/N 3081350 Delivery control assembly equipped with manometer and overpressure adjustable valve 100 - 300 bar

OVERALL DIMENSIONS (mm)



3 litres

1,5 litres

1,5 litres		
	Grease	Oil
Packing-m³	1-0,05	1-0,05
Net weight Kg	5,2	5,2
Gross weight Kg	6,2	6,2

3 litres		
	Grease	Oil
Packing-m³	1-0,05	1-0,05
Net weight Kg	5,5	5,4
Gross weight Kg	6,4	6,3



SERIES C30B18

ELECTRIC MOTOR OPERATED PUMPS

12/24 V DC - ø 180 mm

Sturdy and compact electric pumps with shockproof plastic cover for IP55 protection, with 3-5-8 liters tank capacity. Pumping pistons are radially placed in the aluminum basement below the lubricant reservoir.

Available in 3 versions:

- with remote control where the programmable functions (pause and working time) managed by the control unit, depending on system requirements;
- with analog control for alarm signal, reset functions and outside cycle operations management;
- with digital control for alarm signal, reset functions, pause and work times and outside cycle operations all managed by the control unit integrated board. Electrical parts are located in the bottom of the unit protected by a strong plastic cover.



remote control



analog control



digital control



Colours:



STANDARD



RAL 7035

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

TECHNICAL CHARACTERISTICS

Max. delivery 1 pumping element	P/N 3081100 - 4,27 cm ³ /min - 35 rpm	
No. pumping elements	1 - 4	
Delivery union	F 1/4" G	
Max. pressure	300 bar	
Tank	3 - 5 - 8 litres	
Tank filling	by hydraulic greaser M20x1,5 with filter 150 µm	
Level control	minimum level (magnetic-capacitive sensor)	
Protection rating	IP55	
Operating temperature	- 25 °C / + 60 °C	
Lubricant	Oil > 40 cSt - Grease max NLGI 2	
Gearmotor	12 V DC	24 V DC
Power input	36 W	36 W
Power input (max. starting)	78 W	72 W
Current absorbed	3 A	1,5 A
Current absorbed (max. starting)	6,5 A	3 A

* 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 ø 180 mm - 12 V DC

P/N		Tank capacity (litres)	No. pumping elements	Delivery (cm³/min)	Control type
Grease	Oil				
3019030	3049240	3	1	4,27	remote
3022810	3053020	5	1	4,27	remote
3026590	3056800	8	1	4,27	remote
3018940	3049150	3	1	4,27	analog
3022720	3052930	5	1	4,27	analog
3026500	3056710	8	1	4,27	analog
3018985	3049195	3	1	4,27	digital
3022765	3052975	5	1	4,27	digital
3026545	3056755	8	1	4,27	digital

Attention: items listed above are for electric motor pumps without delivery control assembly (P/N 3081350).

GUIDE TO CHOOSING PUMP ø 180 mm - 24 V DC

P/N		Tank capacity (litres)	No. pumping elements	Delivery (cm³/min)	Control type
Grease	Oil				
3020110	3050320	3	1	4,27	remote
3023890	3054100	5	1	4,27	remote
3027670	3057880	8	1	4,27	remote
3020020	3050230	3	1	4,27	analog
3023800	3054010	5	1	4,27	analog
3027580	3057790	8	1	4,27	analog
3020065	3050275	3	1	4,27	digital
3023845	3054055	5	1	4,27	digital
3027625	3057835	8	1	4,27	digital

Attention: items listed above are for electric motor pumps without delivery control assembly (P/N 3081350).

STANDARD EQUIPMENT

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

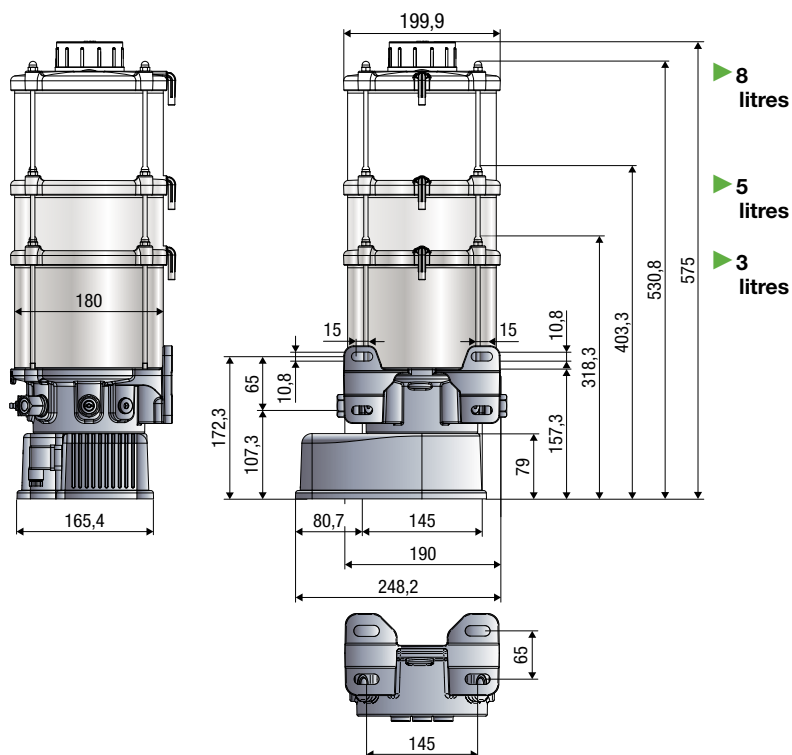


ON REQUEST

P/N 3081350
Delivery control assembly equipped with manometer and overpressure adjustable valve



OVERALL DIMENSIONS (mm)



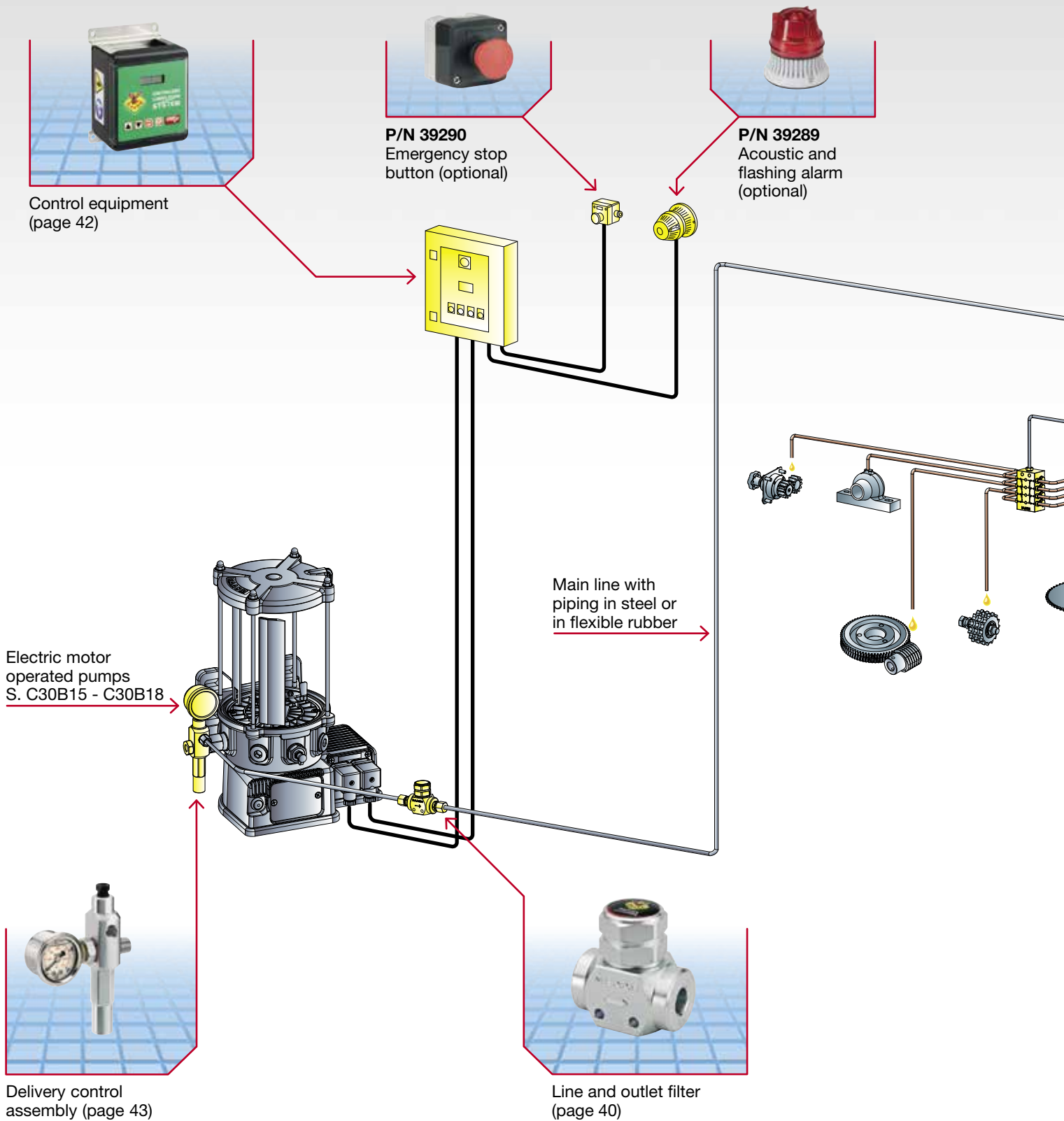
3 litres		
	Grease	Oil
Packing-m³	1-0,05	1-0,05
Net weight Kg	5,8	5,8
Gross weight Kg	6,8	6,7

5 litres		
	Grease	Oil
Packing-m³	1-0,07	1-0,07
Net weight Kg	6,2	6
Gross weight Kg	7,1	7

8 litres		
	Grease	Oil
Packing-m³	1-0,07	1-0,07
Net weight Kg	6,6	6,5
Gross weight Kg	7,4	7,3



Type of lubrication system with



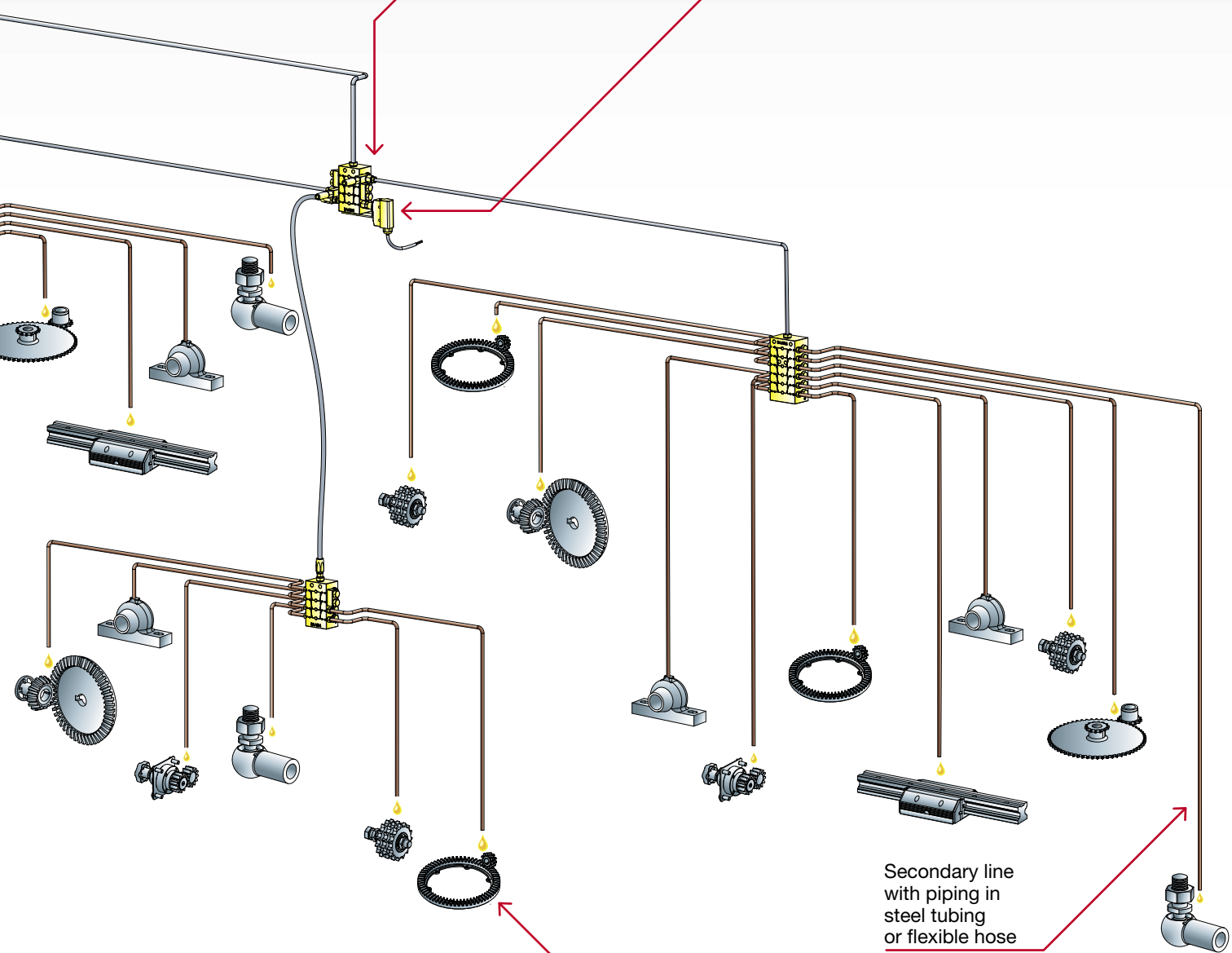
MOTOR-OPERATED PUMPS SERIES C30B15 - C30B18



Monobloc and modular
"Master" divider valves
MDV-M and MDV-L
(page 30-36)



Cycle indicator (page 34)



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
MANAGEMENT SOLUTIONS**



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SERIES C30S

ELECTRIC MOTOR OPERATED PUMPS

230/400 V AC - 275-480 V AC

Compact electric motor-operated pump, with dispense control group mounted on pump's body. Pumping pistons are radially placed in the aluminum basement below the lubricant reservoir.

The hardened galvanized steel pump works radially into the sturdy and compact nickel plated base. The epoxy powder painted lubricant tank is available in 3 different sizes: 10, 30 and 70 liters. Two electric motor (three-phase) are available with 4 or 6 poles, coupled with 35:1 or 70:1 ratio gear motor. These all specifics allow a wide combination of tanks, motors and gear motors to meet all end-users' needs.



TECHNICAL CHARACTERISTICS

Max. delivery	*	108 cm ³ /min	
Max. operating pressure		400 bar adjustable	
Tank capacity		10-30 litres	
Ratio of reducer in pump		35:1 - 70:1	
Filling union		F 1/2" G	
Lubricant outlet union		F 3/8" G	
Pumping unit delivery		P/N 2081100 - 1 cm ³ /cycle	
Temperature		- 25 °C / + 60 °C	
Compatible fluids		Oil > 40 cSt - Grease max NLGI 2	
Electric min. level control		supplied	
Electric min. max. level control		on request	
Motor		power: 0,25 kW	
		230/400 V AC-50 Hz - 275/480 V AC-60 Hz	*
		speed 6-pole: 870 ÷ 1100 rpm	
		speed 4-pole: 1370 ÷ 1660 rpm	
Materials		protection: IP 55	
		base: aluminium alloy	
		moving parts: steel	
		pumping elements: treated steel	
		tank: painted steel	


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

* Different rated voltages have to be indicated in the purchase order.

GUIDE TO CHOOSING PUMP


P/N		Tank capacity (litres)	No. pumping elements	Reducer ratio	Motor	Delivery (cm³/min)
Grease	Oil					
3070080	3070440	10	2	70:1	6 poles	28
3070200	3070560	30	2	70:1	6 poles	28
3070020	3070380	10	2	70:1	4 poles	40
3070140	3070500	30	2	70:1	4 poles	40
3070110	3070470	10	4	70:1	6 poles	56
3070230	3070590	30	4	70:1	6 poles	56
3070050	3070410	10	4	70:1	4 poles	80
3070170	3070530	30	4	70:1	4 poles	80
3070065	3070425	10	2	35:1	6 poles	54
3070185	3070545	30	2	35:1	6 poles	54
3070095	3070455	10	4	35:1	6 poles	108
3070215	3070575	30	4	35:1	6 poles	108

STANDARD EQUIPMENT



A green cylindrical sensor with a black top and a white cable extending from it.

Low level capacitive sensor.



A red cylindrical base with a gold-colored rod and a red cap on top.

Visual level indicator for oil and grease.




Low level capacitive sensor.



Visual level indicator
for oil and grease.

ON REQUEST

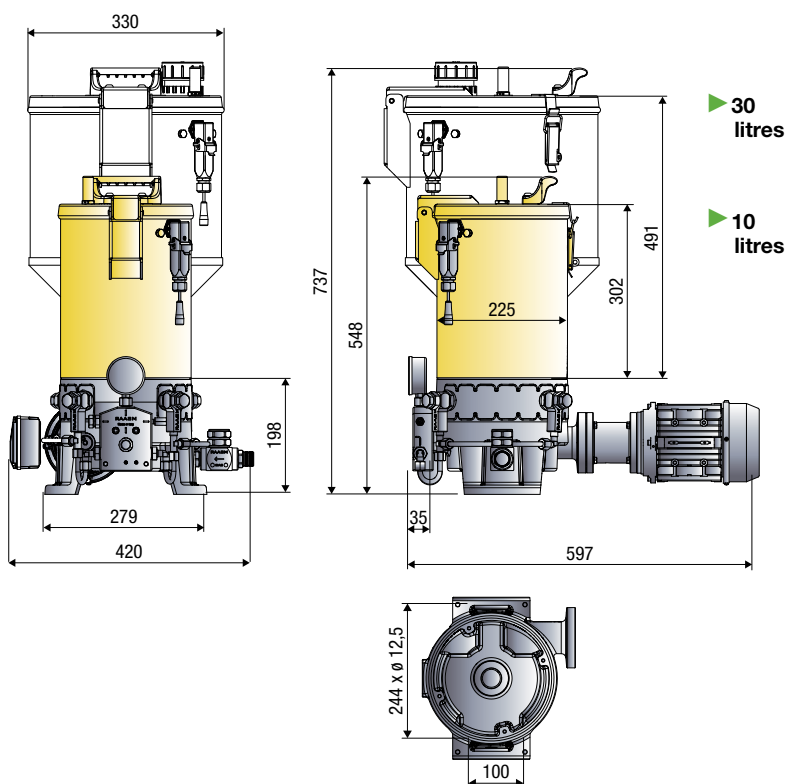





High level capacitive sensor.






High level capacitive sensor.

OVERALL DIMENSIONS (mm)

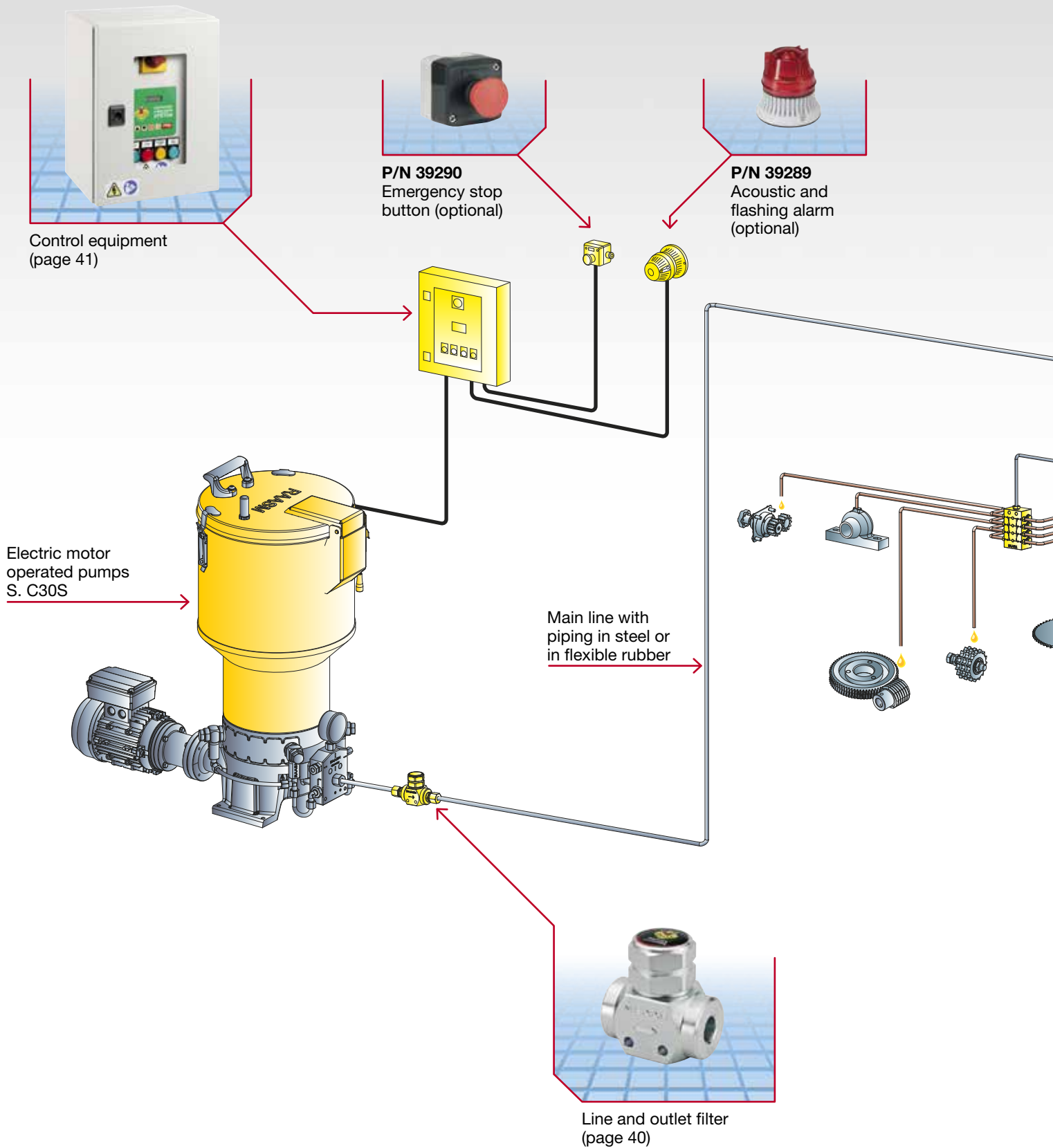


	10 litres	
	GREASE	OIL
Packing-m³ 	1-0,144	1-0,144
Net weight Kg 	27,8	27,7
Gross weight Kg 	39,6	39,5

	30 litres	
	GREASE	OIL
Packing-m³ 	1-0,208	1-0,208
Net weight Kg 	33	32,8
Gross weight Kg 	45,2	45



Type of lubrication system with



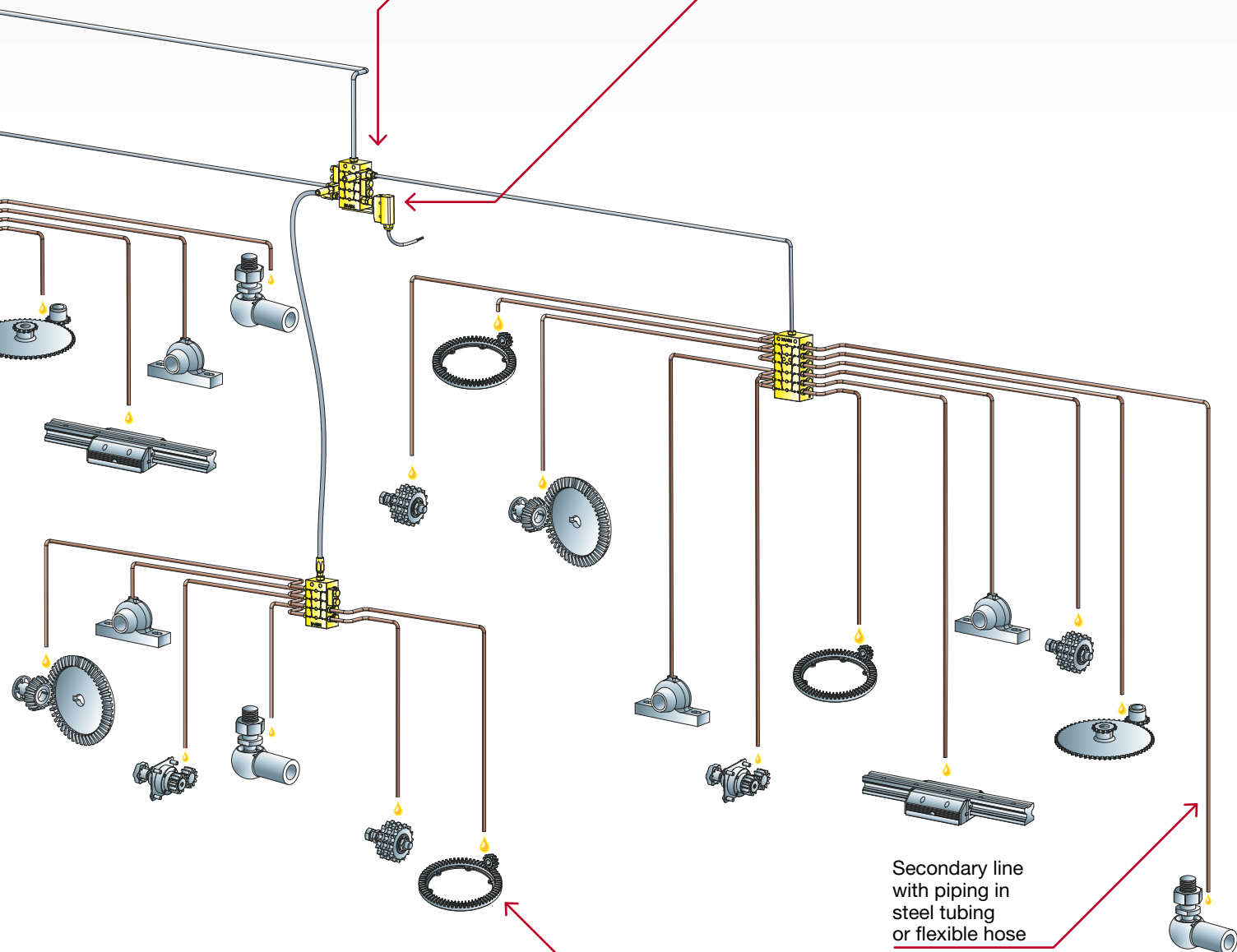
MOTOR-OPERATED PUMPS SERIES C30S



Monobloc and modular
"Master" divider valves
MDV-M and MDV-L
(page 30-36)



Cycle indicator (page 34)



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
MANAGEMENT SOLUTIONS**

Series C30F



www.raasm.com



SERIES C30F 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
Operating temperature	- 25 °C / + 60 °C
Lubricant	Oil > 40 cSt - Grease max NLGI 2

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

PUMP OUTLET ASSEMBLY

This group includes:

- **Manometer:** checks system's pressure.
- **Overpressure valve:** allows to monitor system's pressure and discharges lubricant when system is over pressurized 100 - 350 bar.
- **Inlet charging filter:** to filter the lubricant during drum's filling.
- **Bleeding valve:** discharges system's residual air during first filling operations.

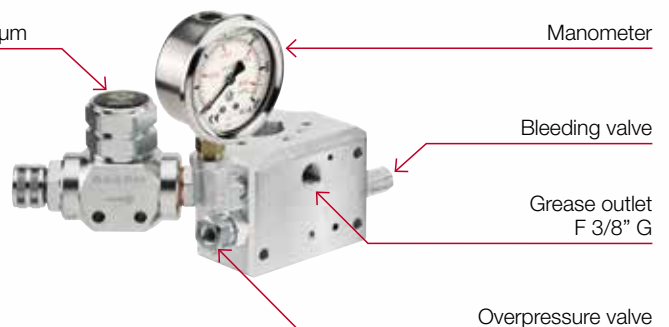
Inlet charging filter 300 µm

Manometer

Bleeding valve

Grease outlet
F 3/8" G

Overpressure valve



GUIDE TO CHOOSING GREASE PUMP

P/N Grease	Tank capacity	Drum internal ø (mm)	Pump (R 50:1)	Drum cover	Follower plate	Pump outlet assembly
3085005	10 litres	220	62741	-	10/617	-
3085275	20 Kg	255/300	62148	10/537	66310	3081710
3085545	50 Kg	335/360	62174	10/533	66370	3081710
3085680	60 Kg	360/400	62174	10/532	66400	3081710
3085815	200 Kg	540/580	62195	10/531	66590	3081710

GUIDE TO CHOOSING OIL PUMP

P/N Oil	Tank capacity	Drum external ø (mm)	Pump (R 50:1)	Drum cover	Drum ring	Pump outlet assembly
3085950	10 litres	240	62741	-	-	-
3086220	20 Kg	260/330	62148	10/537	-	3081710
3086490	50 - 60 Kg	340/385	62174	10/533	-	3081710
3086625	50 - 60 Kg	closed - thread 2"	62174	level 39650	38041	3081710
3086760	200 Kg	closed - thread 2"	62195	level 39650	38041	3081710

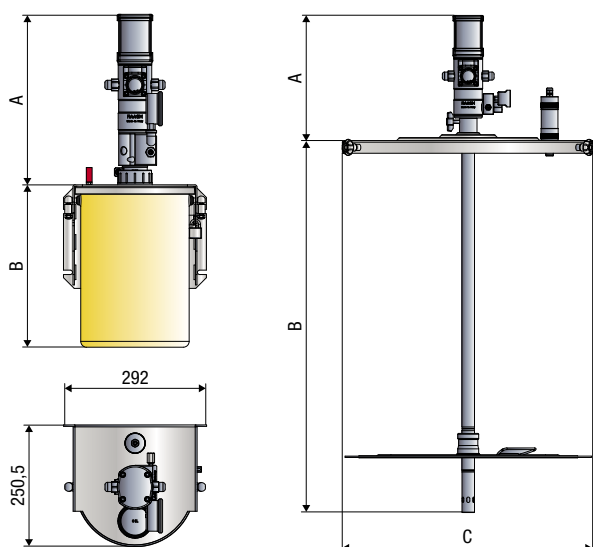
STANDARD EQUIPMENT



ON REQUEST



OVERALL DIMENSIONS (mm)



P/N Grease	A	B	C
3085005	351	335	292
3085275	355	361	341
3085545	355	621	389
3085680	355	621	424
3085815	355	835	604

P/N Oil	A	B	C
3085950	351	335	292
3086220	355	361	341
3086490	355	621	389
3086625	355	621	424
3086760	355	835	604

	10 litres		20 Kg		50 Kg		60 Kg		220 Kg	
	Grease	Oil	Grease	Oil	Grease	Oil	Grease	Oil	Grease	Oil
Packing-m³	1-0,056	1-0,056	2-0,087	2-0,087	2-0,076	2-0,076	2-0,076	2-0,036	2-0,100	2-0,040
Net weight Kg	16,5	15,5	9,6	8,7	10,7	9,1	11,2	6,9	16,3	7,6
Gross weight Kg	16,8	15,8	10,2	9,3	11,3	9,7	11,8	7,5	17,1	8,4



Type of lubrication system with



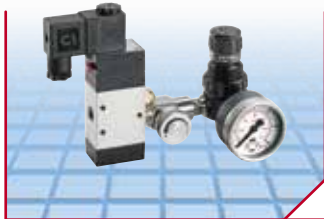
Control equipment
(page 41)



P/N 39290
Emergency stop
button (optional)

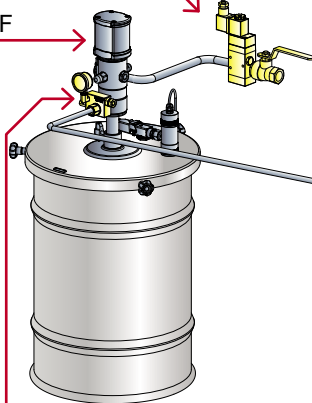


P/N 39289
Acoustic and
flashing alarm
(optional)

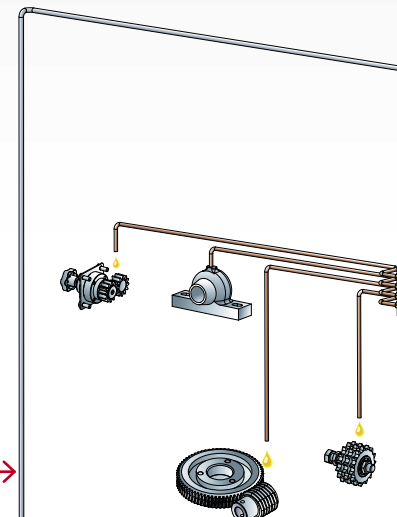


Air operated solenoid valve
24 V DC - 110 V AC
230 V AC (page 45)

Air operated pump S. C30F



Main line with
piping in steel or
in flexible rubber



Delivery pressure control
assembly (page 45)



Line and outlet filter
(page 40)

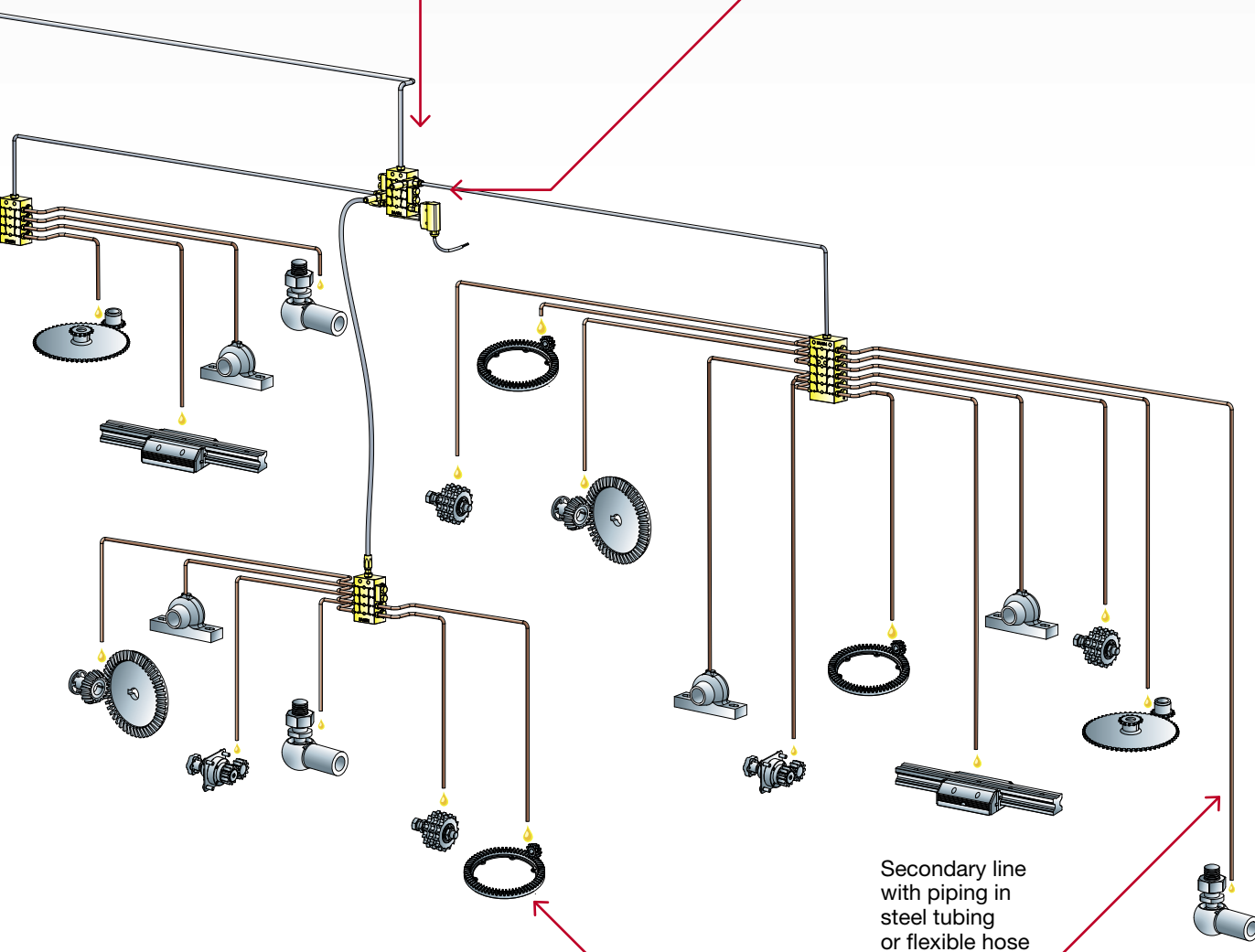
AIR-OPERATED PUMP C30F



Monobloc and modular
"Master" divider valves
MDV-M and MDV-L
(page 30-36)



Cycle indicator (page 34)



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



MDV-M MDV-L MONOBLOC DIVIDER VALVES

MDV-M MDV-L

Monobloc divider valves MDV-M and MDV-L are full made of iridescent white zinc steel: lapped holes and pistons are hardened and ground steel to guarantee a seals-less working.

Actuated pump pistons dispense a set lubricant quantity each working cycle. Due to piston's action lubricant flows to a delivering step to the next one, so the lubrication action goes on. Each divider valve is placed in series with the others, therefore malfunctioning of just one causes blocking of all the others. Dispensed lubricant quantity is set by the adjusting screws of each piston. Lubricant oils with up to 40cSt viscosity and greases with up to NLGI 2 viscosity may be used.



TECHNICAL CHARACTERISTICS

Min.pressure	20 bar oil - 20 bar grease
Max. pressure	150 bar oil - 250 bar grease
Delivery MDV-M	0,025 - 0,050 - 0,075 cm³/cycle
Delivery MDV-L	0,1 - 0,2 - 0,4 cm³/cycle
Material	Galvanized steel
Working temperature	- 25 °C / + 60 °C

Divider valves only	Divider valves with cycle indicator		Abbr.	Delivery	Inlet	Outlet
	visual (A)	visual (B)				
3141420	31414201	31414201/B	MDV-M6	6	1/8" G	5/16" UNF
3141500	31415001	31415001/B	MDV-M8	8	1/8" G	5/16" UNF
3141580	31415801	31415801/B	MDV-M10	10	1/8" G	5/16" UNF
3141660	31416601	31416601/B	MDV-M12	12	1/8" G	5/16" UNF
3141740	31417401	31417401/B	MDV-M14	14	1/8" G	5/16" UNF

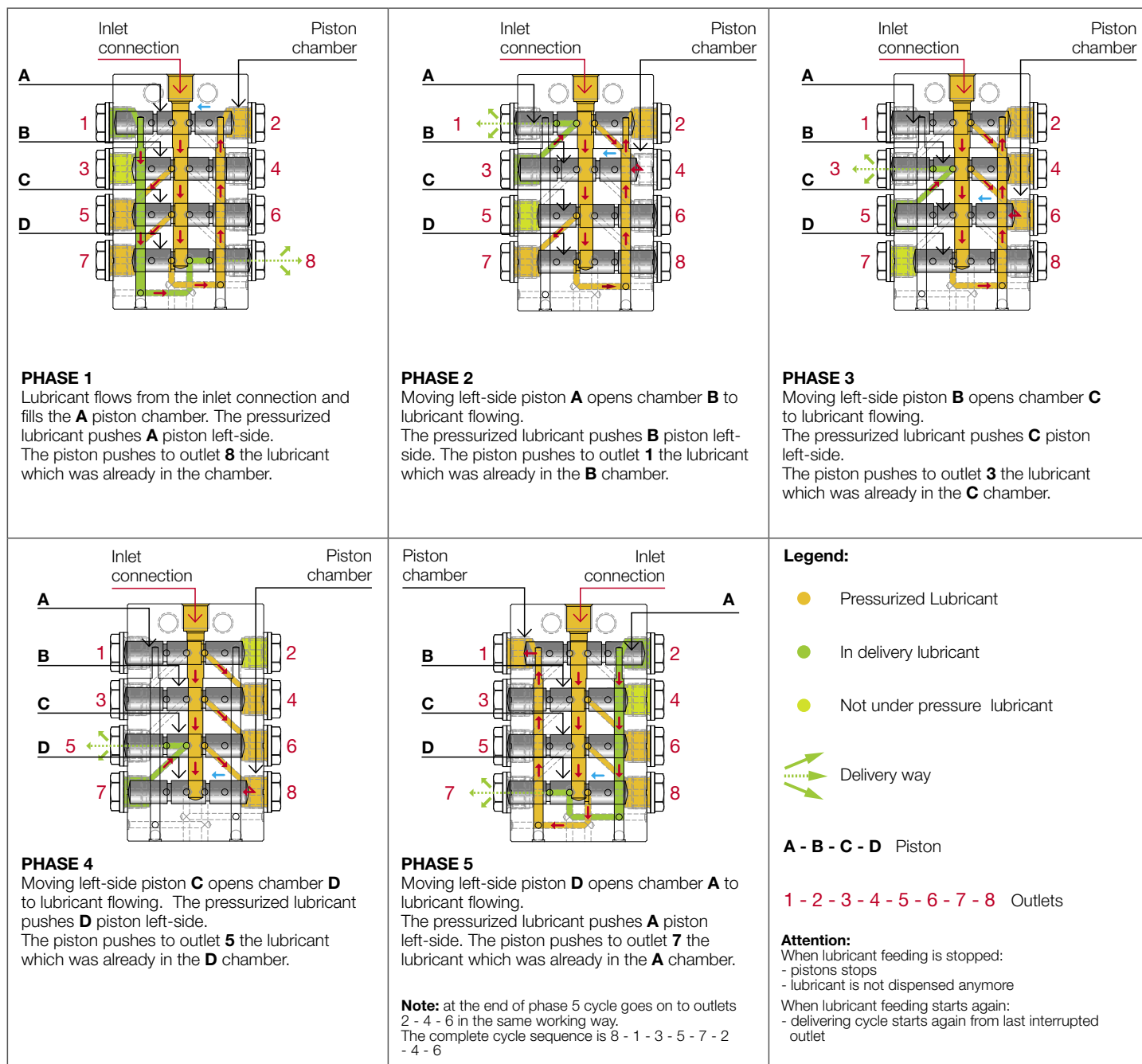
Standard dispensing plugs MDV-M 0,050 cm³/cycle

Divider valves only	Divider valves with cycle indicator				Abbr.	Delivery	Inlet	Outlet
	visual (A)	visual (B)	micro	proximity				
3150380	31503801	31503801/B	31503802	31503803	MDV-L6	6	1/4" G	1/8" G
3150460	31504601	31504601/B	31504602	31504603	MDV-L8	8	1/4" G	1/8" G
3150540	31505401	31505401/B	31505402	31505403	MDV-L10	10	1/4" G	1/8" G
3150620	31506201	31506201/B	31506202	31506203	MDV-L12	12	1/4" G	1/8" G
3150700	31507001	31507001/B	31507002	31507003	MDV-L14	14	1/4" G	1/8" G

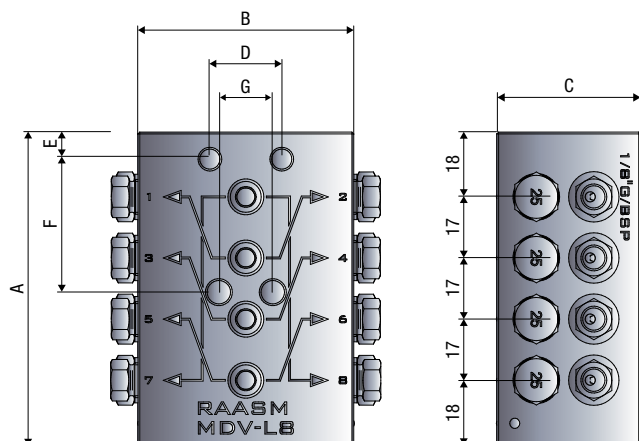
Standard dispensing plugs MDV-L 0,20 cm³/cycle

HOW IT WORKS

The following scheme shows how the monobloc divider valve works. In this example lubricant flows from outlets following the sequence **8 - 1 - 3 - 5 - 7**.



OVERALL DIMENSIONS (mm)



Abbr.	A	B	C	D	E	F	G
MDV-M6	70	40	30	20	5,5	38	12
MDV-M8	88	40	30	20	5,5	38	12
MDV-M10	104	40	30	20	5,5	38	12
MDV-M12	122	40	30	20	5,5	38	12
MDV-M14	138	40	30	20	5,5	38	12

Abbr.	A	B	C	D	E	F	G
MDV-L6	70	60	40	20	7,5	37	15
MDV-L8	88	60	40	20	7,5	37	15
MDV-L10	104	60	40	20	7,5	37	15
MDV-L12	122	60	40	20	7,5	37	15
MDV-L14	138	60	40	20	7,5	37	15



TECHNICAL CHARACTERISTICS

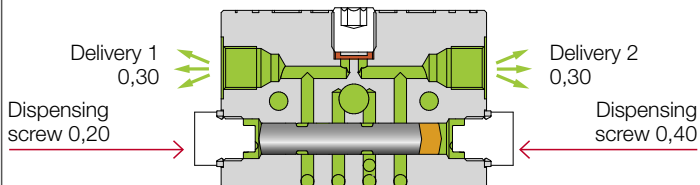
MDV-M and MDV-L

OUTLETS AND FLOW RATES

Lubricant outlets are side placed and can work independently or bined.

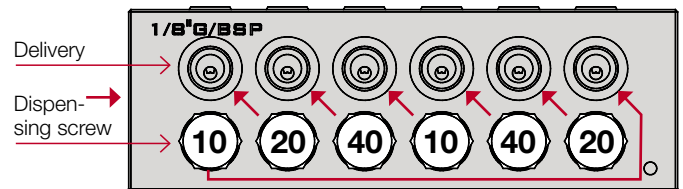
Flow rate may be set by adjusting screws from 0,025 - 0,050 - 0,075 cm³/cycle for MDV-M dividers to 0,1 - 0,2 - 0,4 cm³/cycle for MDV-L dividers.

DELIVERY EXAMPLE



Total lubricant flow rate is equal to the sum of the flow rate indicated on each adjusting screw ($0,20 + 0,40 = 0,60$), divided by 2 ($0,60/2=0,30$).

LUBRICANT PATH



This picture shows lubricant path depending on each adjusting screw's flow rate.

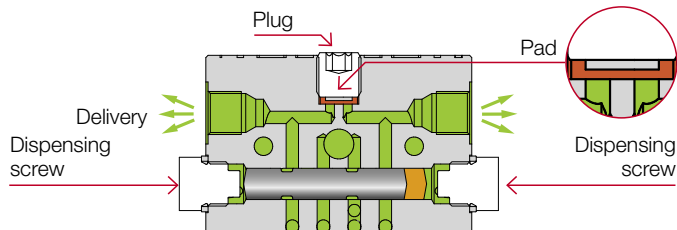
Dispensing sequence is represented on top side of the divider (see example in **BYPASS ELEMENTS** section).

SINGLE OR DOUBLE DELIVERY

Each section of the device can dispense lubricant through a single or double delivery.

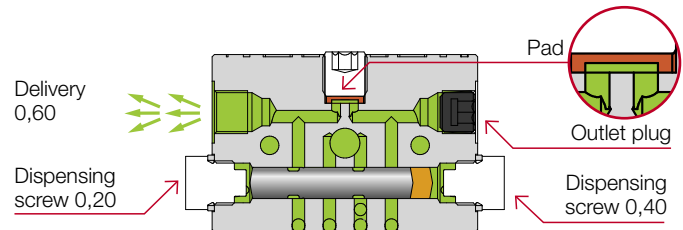
This is possible thanks to the screw plug's pin orientation, which is placed onto the frontal side of the divider.

SINGLE DELIVERY



The hollow of screw plug's pin is facing upwards: lubricant dispensing takes place from one side to the other progressively.

DOUBLE DELIVERY



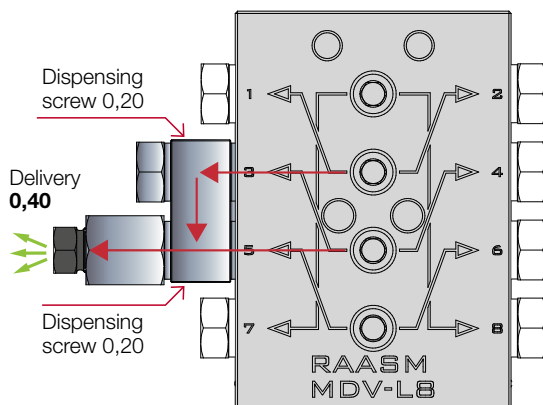
The hollow of screw plug's pin is facing downwards: lubricant dispensing takes place both sides at the same time. Placing the screw plug to an opposite outlet the lubricant flow rate will be the sum of each inlet quantity ($0,20 + 0,40 = 0,60$).

BYPASS ELEMENTS

Using a hollow screws bypass element, different flow rates may be available for each outlet (single, double, triple ecc.)

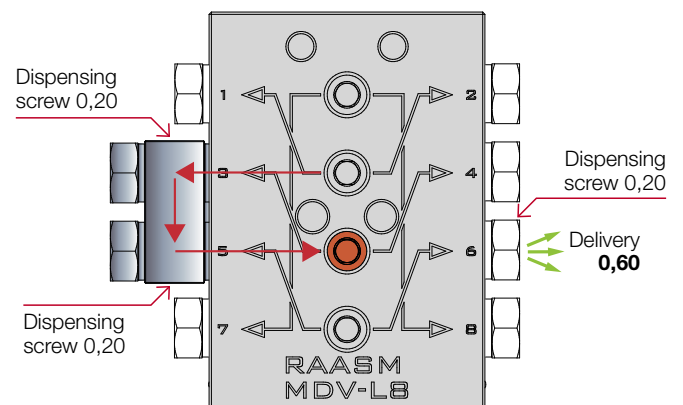
Double delivery

Delivery $0,20 + 0,20 = 0,40$

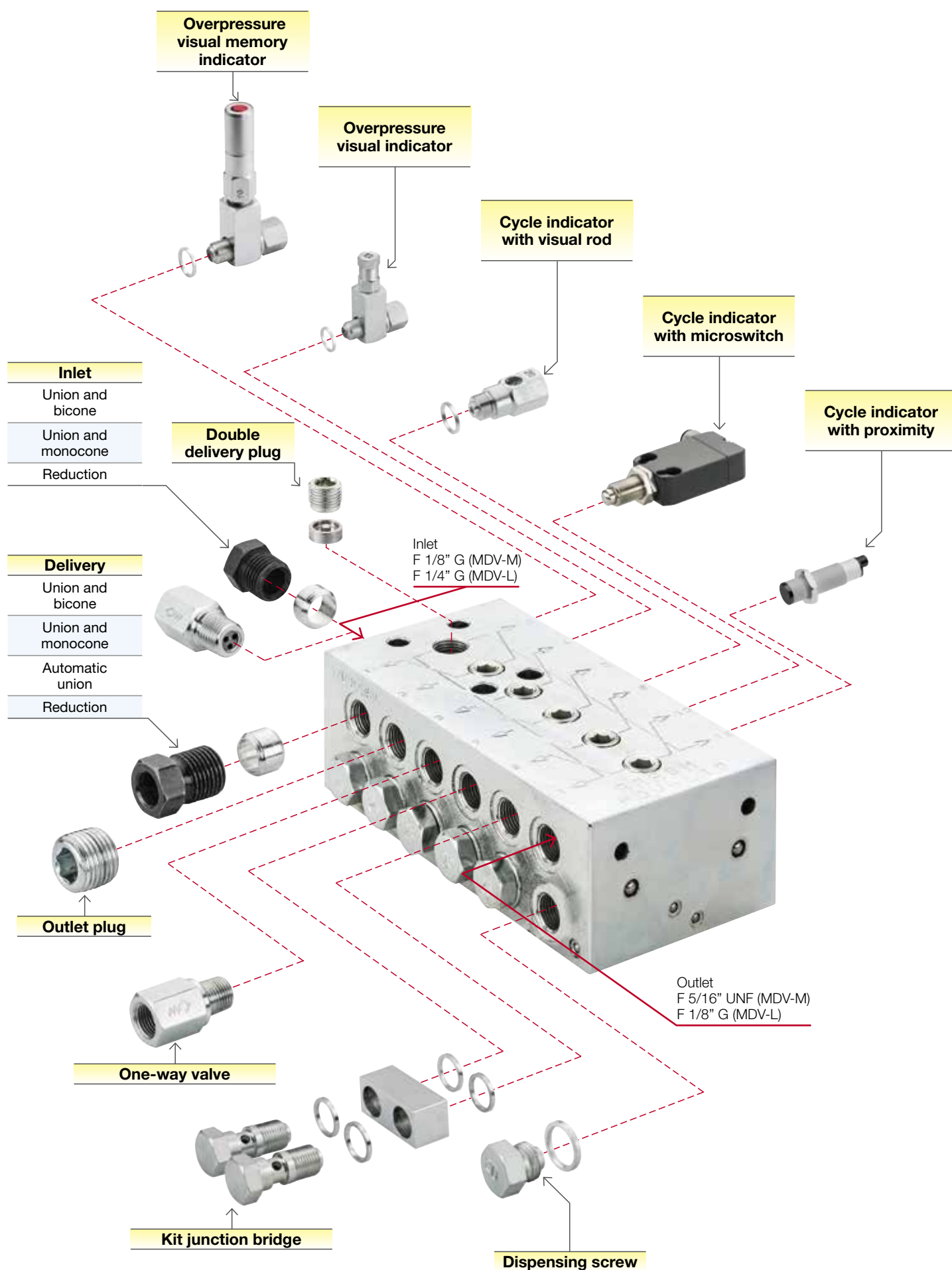


Triple delivery

Delivery $0,20 + 0,20 + 0,20 = 0,60$




ACCESSORIES MDV-M and MDV-L




OVERPRESSURE VISUAL MEMORY INDICATOR

This indicator has a colored rod that raises and remains in position when there is an abnormal pressure rise in the system. This allows* to locate the discharge involved.

	M 5/16" UNF outlet F 5/16" UNF		M 5/16" UNF outlet F 1/8" G		M 1/8" G outlet F 1/8" G		M 1/8" G outlet F 1/4" G		Pressure
	Divider valves	P/N	Divider valves	P/N	Divider valves	P/N	Divider valves	P/N	
	MDV-M	3081539	MDV-M	3081549	MDV-L	3081559	MDV-L	3081569	
		3081540		3081550		3081560		3081570	30 bar
		3081541		3081551		3081561		3081571	50 bar
		3081542		3081552		3081562		3081572	100 bar
		3081543		3081553		3081563		3081573	150 bar
		3081544		3081554		3081564		3081574	200 bar
		3081545		3081555		3081565		3081575	250 bar

OVERPRESSURE VISUAL INDICATOR

This indicator has a rod that is raised when it reaches the set pressure and falls when the pressure falls below this value. *

	M 5/16" UNF outlet F 5/16" UNF		M 5/16" UNF outlet F 1/8" G		M 1/8" G outlet F 1/8" G		M 1/8" G outlet F 1/4" G		Pressure
	Divider valves	P/N	Divider valves	P/N	Divider valves	P/N	Divider valves	P/N	
	MDV-M	3081579	MDV-M	3081586	MDV-L	3081593	MDV-L	3081532	20 bar
		3081580		3081587		3081594		3081533	30 bar
		3081581		3081588		3081595		3081534	50 bar
		3081582		3081589		3081596		3081535	100 bar
		3081583		3081590		3081597		3081536	150 bar
		3081584		3081591		3081598		3081537	200 bar
		3081585		3081592		3081599		3081538	250 bar


Attention: overpressure indicators have to be installed on lubricant outlets which need to be checked.

CYCLE INDICATOR

Three different cycle indicators may be installed on the "Master" divider to check system status:


Visual rod indicator type A

Provided with female thread M12X1 for the connection with microswitch indicator (P/N 3081480), proximity (P/N 3081490) or sensors available in the market.

	Divider valves	Dispensing screw	
		P/N (A) *	Delivery (cm ³ /cycle)
	MDV-M	3081401	0,025
	MDV-M	3081402	0,050
	MDV-M	3081403	0,075
	MDV-L	3081421	0,100
	MDV-L	3081422	0,200
	MDV-L	3081423	0,400


Visual rod indicator type B

Provided with a rod directly connected to divider's piston.
The 1 rod comes out when the piston is working.

	Divider valves	Dispensing screw	
		P/N (B)	Delivery (cm ³ /cycle)
	MDV-M	3081404 *	0,025
	MDV-M	3081405	0,050
	MDV-M	3081406	0,075
	MDV-L	3081424	0,100
	MDV-L	3081425	0,200
	MDV-L	3081426	0,400


Microswitch indicator *

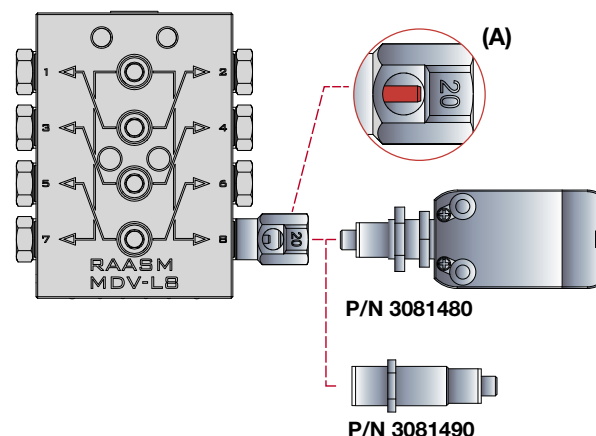
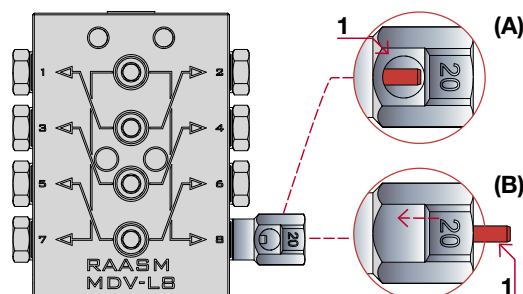
The rod of the visual indicator type A is directly connected to divider's piston and it activates a microswitch which produces an electrical signal each working cycle.

	Distributore		P/N
	MDV-M	MDV-L	3081480

"Proximity" sensor indicator *

A "proximity" capacity sensor detects if the rod of the visual indicator type A connected to divider's piston is working and it produces an electrical signal each working cycle.

	Distributore		P/N
	MDV-M	MDV-L	3081490




Attention:

The cycle indicators are installed in the standard version in correspondence of the pumping piston placed near the largest delivery of the distributor (bottom right). For non-standard installation please call the technical department.


MICROSWITCH CABLE

	Divider valves	P/N	Description
	MDV-M	3081524	With connector cable M12 - 5 poles - 5 m
	MDV-L	3081525	With connector cable M12 - 5 poles - 10 m

DISPENSING SCREW

	Divider valves	P/N	Delivery (cm³/cycle)	Union	Dispensing screw Abbr.
	MDV-M	3081650	0,025	M7 x 1	25
		3081651	0,050	M7 x 1	50
		3081652	0,075	M7 x 1	75
	MDV-L	3081600	0,100	M10 x 1	10
		3081601	0,200	M10 x 1	20
		3081602	0,400	M10 x 1	40


ONE-WAY VALVE

	Divider valves	P/N	For delivery	For inlet
			Union	Union
	MDV-M	3200081	M 5/16" UNF - outlet F 5/16" UNF	-
		3200082	M 5/16" UNF - outlet F 1/8" G	-
		3200085	-	M 1/8" G - inlet F 1/8" G
		3200087	-	M 1/8" G - inlet F 1/4" G
	MDV-L	3200083	M 1/8" G - outlet F 1/8" G	-
		3200084	M 1/8" G - outlet F 1/4" G	-
		3200086	-	M 1/4" G - inlet F 1/4" G

BYPASS ELEMENT KIT (without outlet)

	Divider valves	P/N	Union
	MDV-M	3080050	M 5/16" UNF
	MDV-L	3080070	M 1/8" G


BYPASS ELEMENT KIT (with outlet)

	Divider valves	P/N	Union
	MDV-M	3080051	M 5/16" UNF - outlet F 5/16" UNF
		3080052	M 5/16" UNF - outlet F 1/8" G
	MDV-L	3080071	M 1/8" G - outlet F 1/8" G
		3080072	M 1/8" G - outlet F 1/4" G


OUTLET PLUG

	Divider valves	P/N	Union
	MDV-M	3200091	M 5/16" UNF
	MDV-L	3200095	M 1/8" G

CLOSED HOLLOW SCREW

	Divider valves	P/N (without one-way valve)	P/N (with one-way valve)	Union
	MDV-M	3080055	3080054	M 5/16" UNF
	MDV-L	3080075	3080074	M 1/8" G

OPEN HOLLOW SCREW

	Divider valves	P/N (without one-way valve)	P/N (with one-way valve)	Union
	MDV-M	3080058	3080056	M 5/16" UNF - outlet F 5/16" UNF
	MDV-M	3080059	3080057	M 5/16" UNF - outlet F 1/8" G
	MDV-L	3080078	3080076	M 1/8" G - outlet F 1/8" G
	MDV-L	3080079	3080077	M 1/8" G - outlet F 1/4" G



MEDV-L

MODULAR DIVIDER VALVE

Modular Divider Valve MEDV-L is full made of iridescent white zinc steel: lapped holes and piston are hardened and ground steel to guarantee a seals-less working.

It consists of two main parts:

- a basement where inlets and outlet points are fixed on
- dosing elements which dose a predetermined amount of lubricant to the base



TECHNICAL CHARACTERISTICS

Max flow rate	20 bar oil - 20 bar grease
Max working pressure	150 bar oil - 250 bar grease
Delivery dosing elements MEDV-L	0,04-0,08-0,16-0,25-0,35-0,40-0,50-0,60-0,65 cm³/cycle
Material	Galvanized steel
Operating temperature	- 25 °C / + 60 °C

4 DOSING ELEMENTS

The dosing elements are fixed above the base by means of two screws. Thanks to the work of a series of piston progressively driven they dispense a predetermined quantity of lubricant to the base's elements. Each dosing element guarantees a specific delivery (indicated with a mark). They are available with microswitch, proximity or visual rod indicator.

1 INITIAL ELEMENT

Base's initial element is provided with a F 1/4"G input lubricant hole

2 INTERMEDIATE ELEMENT

The intermediate element has a F1/8"G outlet hole to dispense lubricant to using points.

Overpressure indicators' outlets F 1/8" G

6 BY PASS ELEMENT

7 BRIDGE DOSING ELEMENT

3 FINAL ELEMENT

The final element has an outlet hole to dispense lubricant to users points and an air discharge valve

Inlet F 1/4" G

Discharge valve

Outlet F 1/8" G

5 BASE

(composed by elements 1, 2, 3)

It consists in an initial and a final element, interposed by intermediate elements as many as needed, till an unlimited number. The base must be composed at least by three elements, initial final and intermediate ones.

Base's element type		P/N MEDV-L	Inlet	Outlet
1	Initial element	3200010	F 1/4" G	F 1/8" G
2	Intermediate element	3200012	-	F 1/8" G
3	Final element	3200013	-	F 1/8" G

DOSING'S element type	P/N MEDV-L
6 Bypass element	3200800

No. elements	5 Assembly base MEDV-L
	P/N
3	3200560
4	3200561
5	3200562
6	3200563
7	3200564
8	3200565

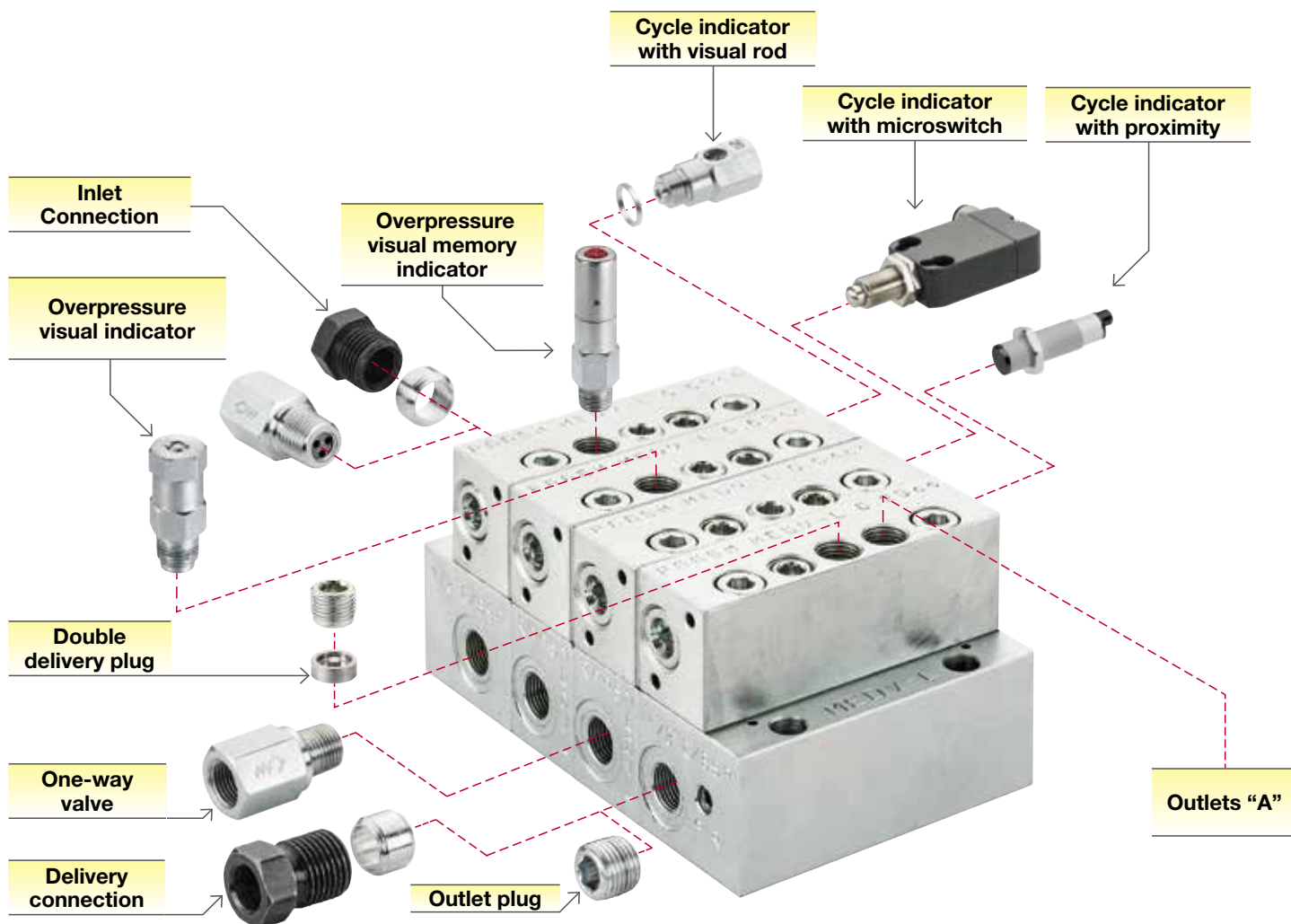
No. elements	5 Assembly base MEDV-L
	P/N
9	3200566
10	3200567
11	3200568
12	3200569
13	3200570
14	3200571

No. elements	5 Assembly base MEDV-L
	P/N
15	3200572
16	3200573
17	3200574
18	3200575
19	3200576
20	3200577

4 Metering element MEDV-L				
Delivery (cm³/cycle)	Only elements	Cycle indicator		
		Visual	Micro	Proximity
0,04	3200600	-	-	-
0,08	3200610	-	-	-
0,16	3200620	-	-	-
0,25	3200630	3200631	3200632	3200633
0,35	3200640	3200641	3200642	3200643
0,40	3200650	3200651	3200652	3200653
0,50	3200660	3200661	3200662	3200663
0,60	3200670	3200671	3200672	3200673
0,65	3200680	3200681	3200682	3200683

7 Bridge dosing element			
Delivery (cm³/cycle)	Left side	Right side	Right and left side
0,04	3200840	3200860	3200850
0,08	3200841	3200861	3200851
0,16	3200842	3200862	3200852
0,25	3200843	3200863	3200853
0,35	3200844	3200864	3200854
0,40	3200845	3200865	3200855
0,50	3200846	3200866	3200856
0,60	3200847	3200867	3200857
0,65	3200848	3200868	3200858

ACCESSORIES MEDV-L

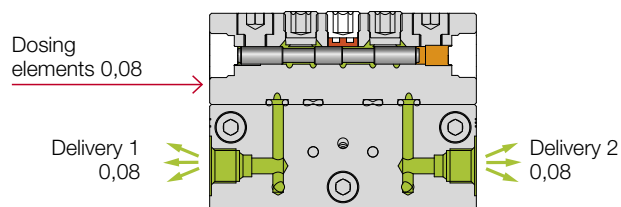


OUTLETS AND FLOW RATES

Lubricant outlets are side placed and can work independently or bined. Flow rate may be set by dosing elements, 0,04 - 0,08 - 0,16 - 0,25 - 0,35 - 0,40 - 0,50 - 0,60 - 0,65 cm³/cycle.

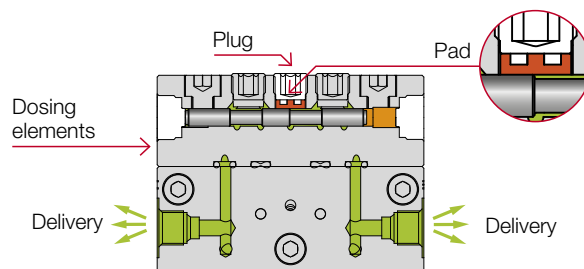
Each section of the divider can dispense lubricant by a single or double outlet, thanks to the screw plug's pin orientation, placed onto the frontal side of the divider.

DELIVERY EXAMPLE



Delivery of each outlet is the same indicated on the dosing element (0,08).

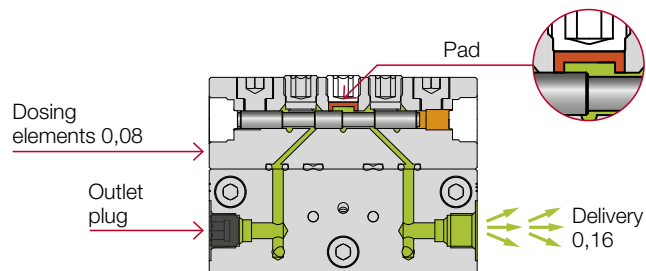
SINGLE DELIVERY



The hollow of screw plug's pin is facing upwards: lubricant dispensing takes place from one side to the other progressively.

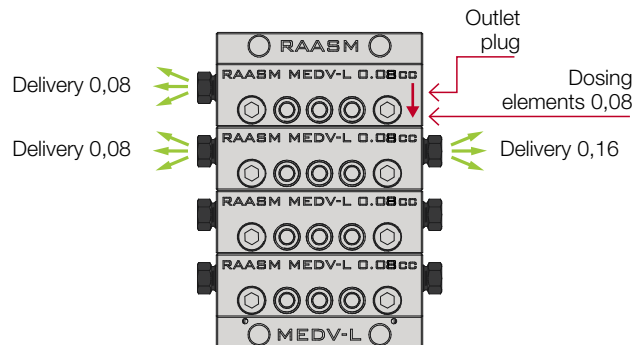
DOUBLE DELIVERY

WITH PAD



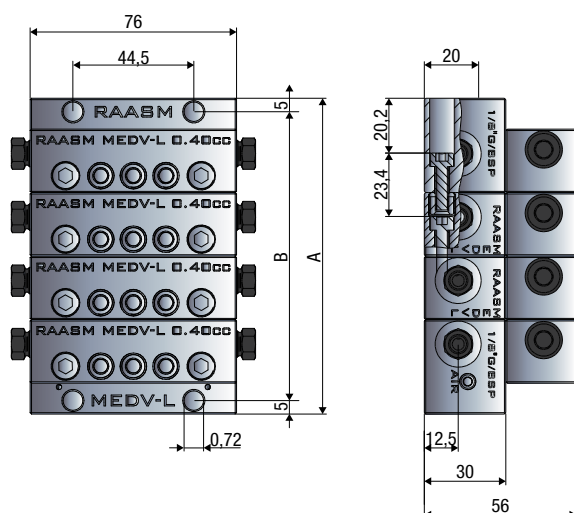
The hollow of screw plug's pin is facing downwards: lubricant dispensing takes place both sides at the same time.
Placing the screw plug to an opposite outlet the lubricant flow rate will be the sum of each inlet quantity ($0,08 + 0,08 = 0,16$).

BRIDGE DOSING ELEMENT



Using a bridge dosing element (right side, left side or both) and a tap on the outlet, a double delivery quantity is available for the next outlet ($0,08 + 0,08 = 0,16$).


OVERALL DIMENSIONS (mm)



No. elements	MEDV-L	
	A (mm)	B (mm)
3	93,0	83,0
4	116,4	106,4
5	139,8	129,8
6	163,2	153,2
7	186,6	176,6
8	210,0	200,0
9	233,4	223,4
10	256,8	246,8
11	280,2	270,2
12	303,6	293,6
13	327,0	317,0
14	350,4	340,4
15	373,8	363,8
16	397,2	387,2
17	420,6	410,6
18	444,0	434,0
19	467,4	457,4
20	490,8	480,8


OVERPRESSURE VISUAL INDICATOR

This indicator has a colored rod which comes out in case of anomalous pressure increase into the system. The involved outlet is so identifiable.

	Divider valves	P/N	Union	Pressure
	MEDV-L	3200034	M 1/8" G	20 bar
		3200035	M 1/8" G	30 bar
		3200036	M 1/8" G	50 bar
		3200037	M 1/8" G	100 bar
		3200038	M 1/8" G	150 bar
		3200039	M 1/8" G	200 bar
		3200040	M 1/8" G	250 bar

OVERPRESSURE INDICATOR WITH DISCHARGE VALVE

This indicator has a discharging valve which lets the lubricant flow out in case of anomalous pressure increase into the system.

	Divider valves	P/N	Union	Pressure
	MEDV-L	3200014	M 1/8" G	20 bar
		3200015	M 1/8" G	30 bar
		3200016	M 1/8" G	50 bar
		3200017	M 1/8" G	100 bar
		3200018	M 1/8" G	150 bar
		3200019	M 1/8" G	200 bar
		3200020	M 1/8" G	250 bar

Attention: overpressure indicators have to be installed on the top face of the dosing element.

CYCLE INDICATOR

Three different cycle indicators may be installed on the "Master" divider to check system status:


Visual rod indicator type A

Provided with female thread M12X1 for the connection with microswitch indicator (P/N 3081480), proximity (P/N 3081490) or sensors available in the market.

Attention: to order the metering element with visual indicator type A refer to the metering elements list on page 37.


Microswitch indicator *

The rod of the visual indicator type A is directly connected to divider's piston and it activates a microswitch which produces an electrical signal each working cycle.

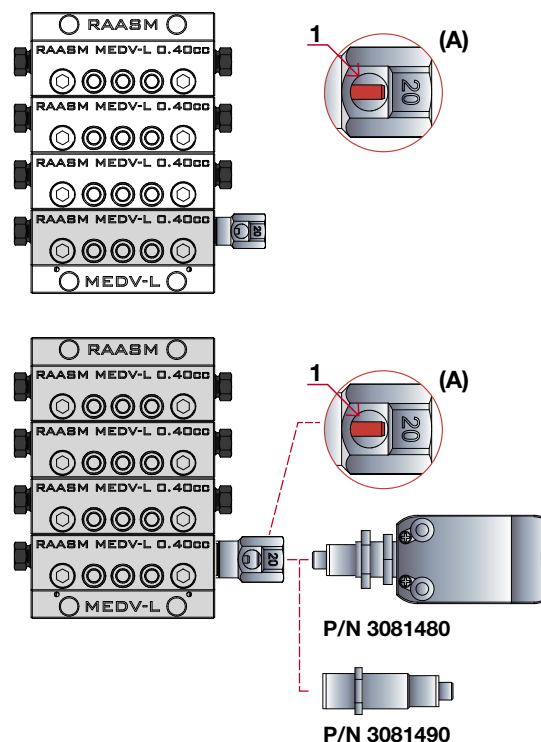
	Divider valves		P/N
	MDV-M	MDV-L	3081480

"Proximity" sensor indicator *


A "proximity" capacity sensor detects if the rod of the visual indicator type A connected to divider's piston is working and it produces an electrical signal each working cycle.

	Divider valves		P/N
	MDV-M	MDV-L	3081490


* Cable for microswitch and "proximity" non included (sold separately)



OUTLET PLUG

	Divider valves	P/N	Union
	MDV-L	3200095	M 1/8" G

ONE-WAY VALVE

	Divider valves	P/N	Delivery union	Inlet union
	MEDV-L	3200083	M 1/8" G - outlet F 1/8" G	-
		3200084	M 1/8" G - outlet F 1/4" G	-
		3200086	-	M 1/4" G - outlet F 1/4" G



FILTER

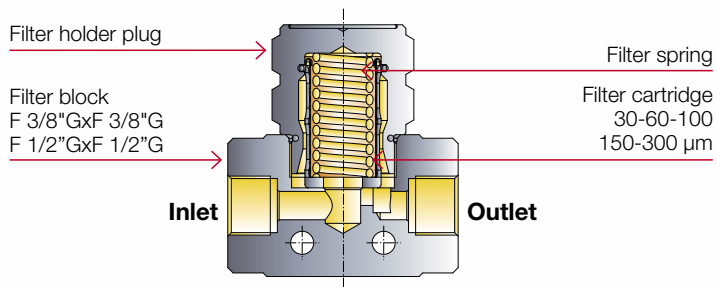
Filters for system's inlets and charging operations guarantee the good maintenance of the system. Also, they guarantee dispensed grease is clean and without any residuals. Their sturdy steel structure ensures a sure sealing and allows their use in centralized lubrication systems where high operating pressure (500 bar). Working with lubricating oils and greases, they are placed on pumping unit outlet and along the pipeline.



TECHNICAL CHARACTERISTICS

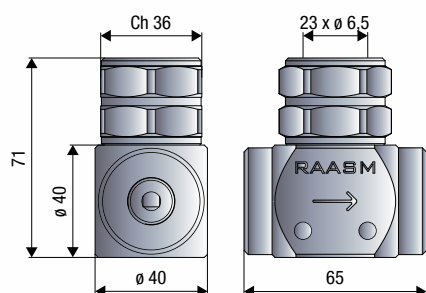
Typology	Oil and Grease
Max working pressure	500 bar
Filtration degree	30 - 60 - 100 - 150 - 300 µm
Lubricant inlet connection	F 3/8" G - F 1/2" G
Lubricant outlet connection	F 3/8" G - F 1/2" G
Working temperature	-25 °C / +60 °C
Lubricant	Grease max NLGI 2 - Oil > 40 cSt

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	F 1/2" G	30
	2080931		60
	2080951		100
	2080850	F 1/2" G	150
	2080851		300

OVERALL DIMENSIONS (mm)





CONTROL EQUIPMENT

200÷500 V AC 50/60 Hz

System control board

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



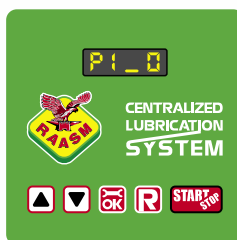
TECHNICAL CHARACTERISTICS

P/N	2170031	2170033	2170036	2170037	2170035
Proper for pump	C30S - C30P	C30F - C30B15 C30B18	C30S - C30P	C30F - C30B15 C30B18	C30S - C30P
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

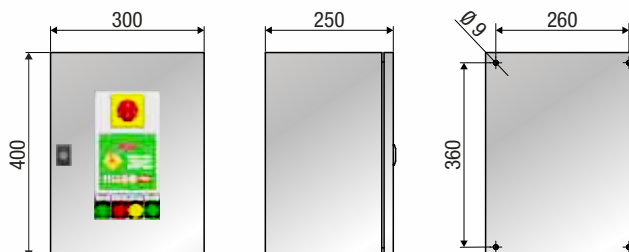
Input signals

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 unit of management and control is composed of an electrical panel in polycarbonate in reduced dimensions.

Inside is connected an electronic card that communicates with a display integrated in the practice flexible membrane keypad located on the front of the unit.



TECHNICAL CHARACTERISTICS

P/N	1670035	1670036
Proper for pump	C30F - C30B15 - C30B18	C30F
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

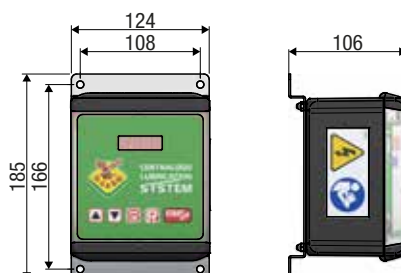
- Display integrated into the flexible membrane keyboard
- Simple user interface based on a menu, easy to start, and use configure and programme
- Rugged and waterproof cover, meets the requirements of IP64
- Ability to customize the lubrication intervals, pause and the cycle count
- Programming of the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



INPUT AND OUTPUT SIGNALS

Input signals	Output signals
Start/Stop remote	Power motor pump
Cycle-counter/Pressure switch L1	
Cycle-counter/Pressure switch L2	Power - pressure discharge valve - solenoid inverter 1
Low level tank	
Safety pressure switch maximum pressure	Power relay solenoid inverter 2
Thermal protection three-phase motors	
Remote stand by cycle	Remote operation lamp
Micro-inverter L1	
Micro-inverter L2	Remote warning lamp

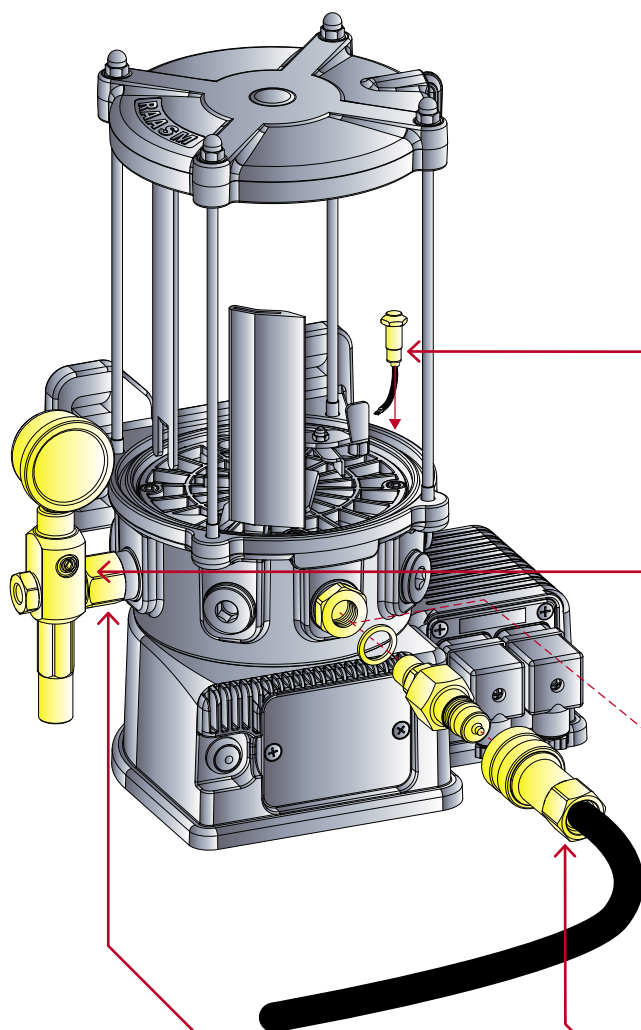
OVERALL DIMENSIONS (mm)



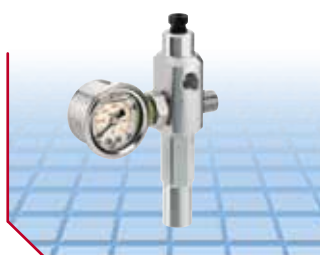
Packing-m ³		1-0,005
Net weight Kg		1,2-1,4
Gross weight Kg		1,1-1,3



ACCESSORIES PUMP SERIES C30B15 - C30B18



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



P/N 3081350-3081360
3081370-3081380
Delivery pressure control
assembly



P/N 3081150
Filling filter



P/N 3081100
Pumping element

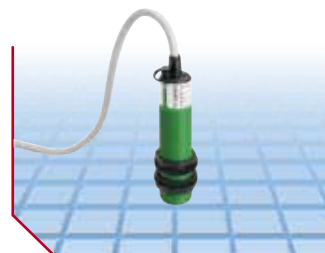
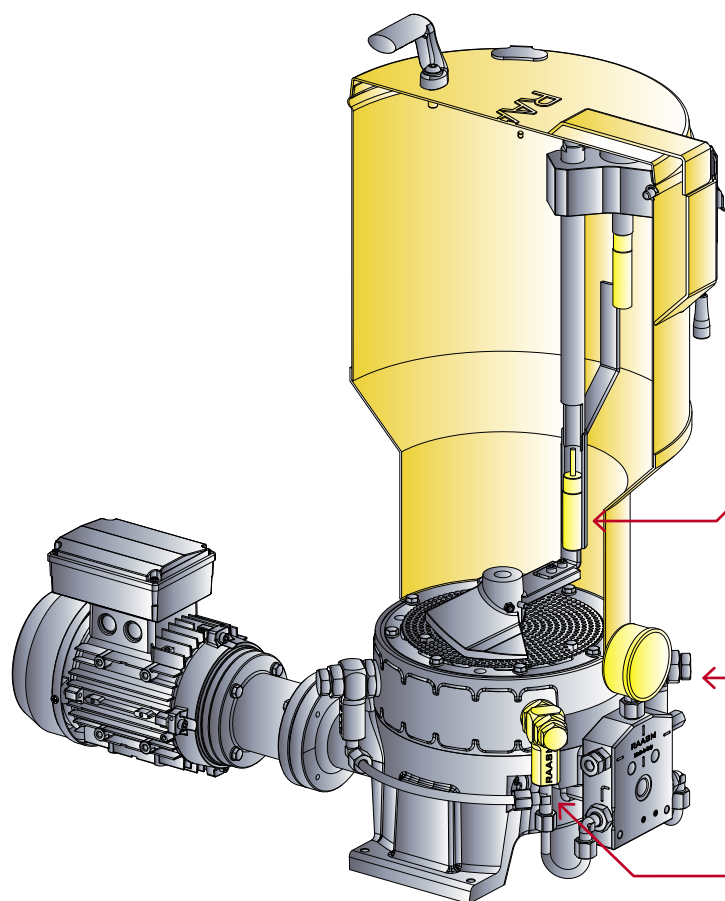


P/N 3089390
Quick coupling filling kit

P/N	Description	Connection	Pressure
3081350	Delivery pressure control assembly	on pumping element M 1/4"G	100 - 300 bar
3081360	Delivery pressure control and 2 pumping element kits	-	100 - 300 bar
3081370	Delivery pressure control and 3 pumping element kits	-	100 - 300 bar
3081380	Delivery pressure control and 4 pumping element kits	-	100 - 300 bar
3081150	Filling filter (for C15B15 - C15B18)	M 20 x 1,5	150 µm
3081100	Pumping element ø 6,5 mm	M 20 x 1,5	-
3089390	Quick coupling filling kit	M 1/4"	-



ACCESSORIES PUMP SERIES C30S



P/N 1581800
High or low level
capacitive sensor



P/N 2081030
Pressure gauge

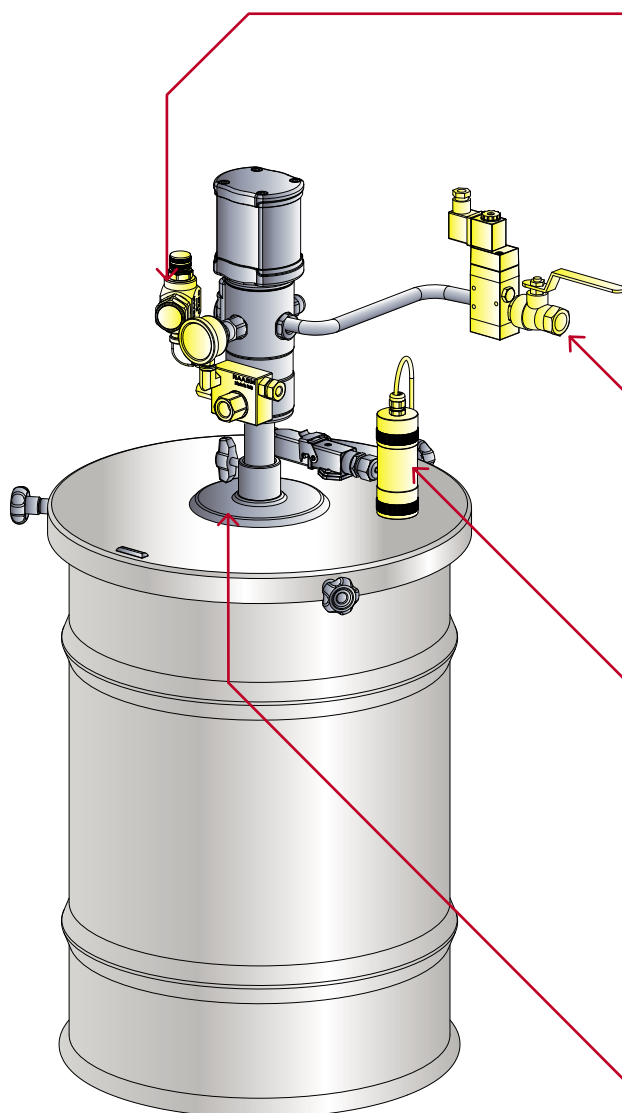


P/N 2081100
Pumping element

P/N	Description	Connection	Pressure
1581800	Level minimum and maximum capacitive	M 18 X 1	-
2081030	Pressure gauge ø 63 mm 600 bar	M 1/4" G	600 bar
2081100	Pumping element ø 12 mm (for C30S)	M 27 x 1,5	1 cm ³ /cycles



ACCESSORIES PUMP SERIES C30F



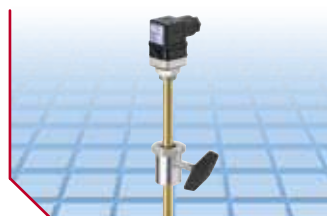
P/N 1581150
Filling filter
300 µm



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



P/N 1581850
Ultrasonic
minimum/maximum level



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



P/N 3081710
Delivery pressure
control assembly

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

P/N	Description	Connection	Pressure
1582004	Pneumatic solenoid valve 230 V AC	F 1/4"G x F 1/4"G	2,5-8 bar
1582005	Pneumatic solenoid valve 230 V AC	F 1/2"G x F 1/2"G	2,5-8 bar
1581850	Ultrasonic minimum/maximum level	wole on drum cover ø 31 mm	-
3081710	Delivery pressure control assembly	F 3/8" G on pump's body	100 - 350 bar
39650	Minimum level indicator (optional only for oil)	Oil	-



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 C30S

Series	Lubricant type		Tank capacity			Poles		No. Pumping elements		Ratio		Level control		
C30S	G	O	10	30	70	4	6	2	4	3	7	O	L	Y
System 30 progressive	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

C30S	G	10	6	/	2	7	L
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SERIES C30B15 - C30B18

Series	Lubricant type		ø cilinder		Tank capacity				Rated voltages		No. Pumping elements				Control type			Tank at-tachment			Level control		Accessories						
C30	G	O	150	180	1	3	5	8	1	3	1	2	3	4	R	A	D	P	R	M	L	0	1	2	3	4	5	6	7
System 30 progressive	Grease (max NLGI 2)	Oil (> 40 cSt)	150 mm	180 mm	1,5 litres	3 litres	5 litres	8 litres	12 V DC low power applications	24 V DC low power applications	1 pumping elements	2 pumping elements	3 pumping elements	4 pumping elements	remote version	analogic version	digital version	without fix grease blade	with fix grease blade	with follower plate	with minimum level	without minimum level	1 control delivery group + 3 plugs	2 control delivery group + 2 plugs	3 control delivery group + 1 plug	4 control delivery group + 0 plugs	1 control delivery group + 4 pumping elements	1 control delivery group + 3 pumping elements + 1 plug	1 control delivery group + 2 pumping elements + 2 plugs

Example of pump code

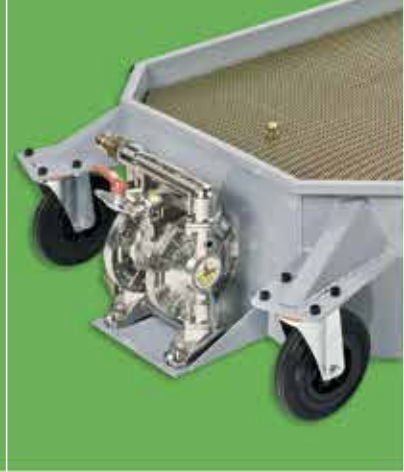
C30	G	150	1	1	/	1	R	R	L	1
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SERIES C30F

Series	Lubricant type		Tank capacity	Tank external ø (mm)						Ratio			Level control		
C30F	G	O	10	28	35	37	38	42	60	5	6	7	0	1	2
System 30 progressive	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

C30F	G	10	/	5	1
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1 (one) year warranty is valid also for the following products:

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- cable reels;
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