



Injecto-Flo® II



PROVEN QUALITY. LEADING TECHNOLOGY.

PISTON DISTRIBUTOR FOR OIL AND FLUID GREASE

FUNCTION

Piston distributors meter out and distribute the lubricant delivered by an intermittently actuated pump.

The quantities of lubricant for the individual lube points are determined by exchangeable metering nipples. The metered amount is indicated on the individual nipples. The amount needed to cover the total oil demand can then be further regulated via the lubricating frequency.

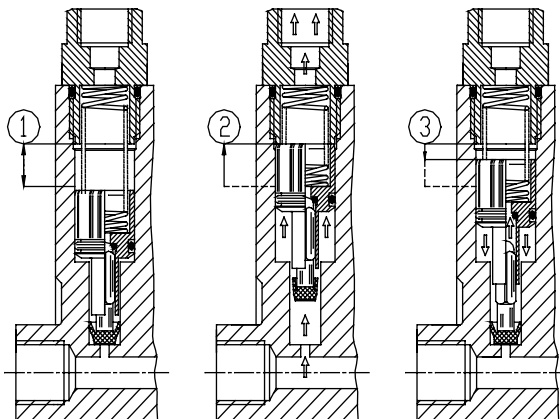
To meet the required quantities and comply with space constraints it is possible to choose among four distributor groups that differ in terms of their metering ranges and sizes.

The functional principle of the groups is the same, but there are differences in design. Different distributor groups can be used in one installation.

| Distributor for Oil group | Quantity cm ³ |
|------------------------------------|--------------------------|
| 3400 | 0.01 0.03 0.06 0.1 0.16 |
| 3500 | 0.1 0.2 0.4 0.6 |
| 3900 | 0.2 0.4 0.6 1.0 1.5 |
| Distributor for fluid grease group | Quantity cm ³ |
| 3410 | 0.01 0.03 0.06 0.1 |
| 3510 | 0.1 0.2 0.3 |
| 3910 | 0.1 0.2 0.3 |

FUNCTION

1. The amount of lubricant intended for the lube point is stored in front of the piston in the distributor.
2. When the central lubrication pump begins to deliver lubricant, the piston moves and the lubricant in front of it is fed to the lube point at a main line pressure of 10-45 bars.
3. When pump delivery stops and main line pressure is relieved, the distributor's piston returns to its initial position and transfers a measured quantity of lubricant into the space in front of it.



SINGLE-LINE LUBRICATION SYSTEM WITH PISTON DISTRIBUTOR FOR OIL OR FLUID GREASE

FUNCTION

A pump feeds the lubricant through the main line to the piston distributors. From there it is directed to the lube points in precisely metered quantities. This takes place in a time- or pulse-controlled sequence.

PLANNING

1. Determine the type of drive to be used for the lube pump (manual, electric, or pneumatic).
2. Select the lubricant. Then determine the pump unit and type of distributors.
3. Determine the number of lube points and define the amount of lubricant required to meet the needs of each point. Ascertain the total amount of lubricant needed per unit of time or clock pulse. Then determine the reservoir size based on total delivery volume and desired refill frequency.

CHOICE OF DISTRIBUTORS

Select the piston distributors on the basis of the metered quantity and spatial constraints.

The ratio of the metered quantities in respect to each other should be the same as the consumption of the individual lube points.

The total amount needed by the installation is then regulated by the number of lube cycles per unit of time.

INSTALLATION LAYOUT

When installing a central lubrication system, route the main lines and distributors in such a way that any air in the system can escape on its own via the lube points.

To do so, mount the distributors at appropriate places and at the end of the installation in such a way that the connections to the lube points point upward (Fig. 1).

The main lines from the pump to the distributors should, if possible, be installed with a rising gradient.

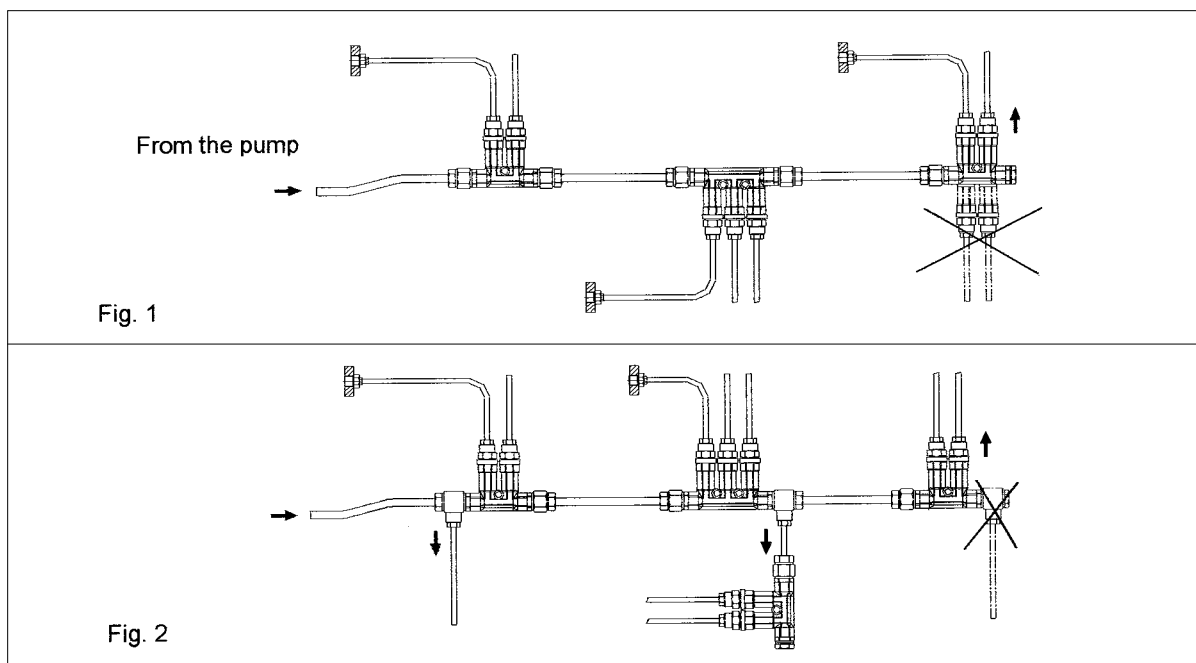
If lines have to be routed to distributors at lower locations, proceed in accordance with Fig. 2.

Check the main-line resistance values, especially in regard to the relief routine, with very large systems, ones with a large number of branches or when highly viscous lubricants are used.

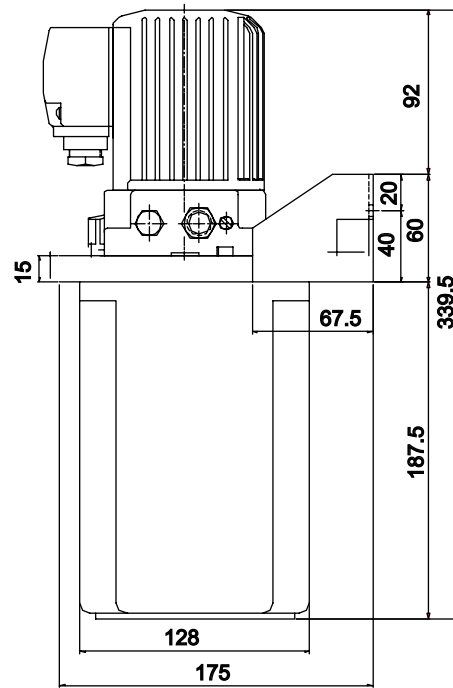
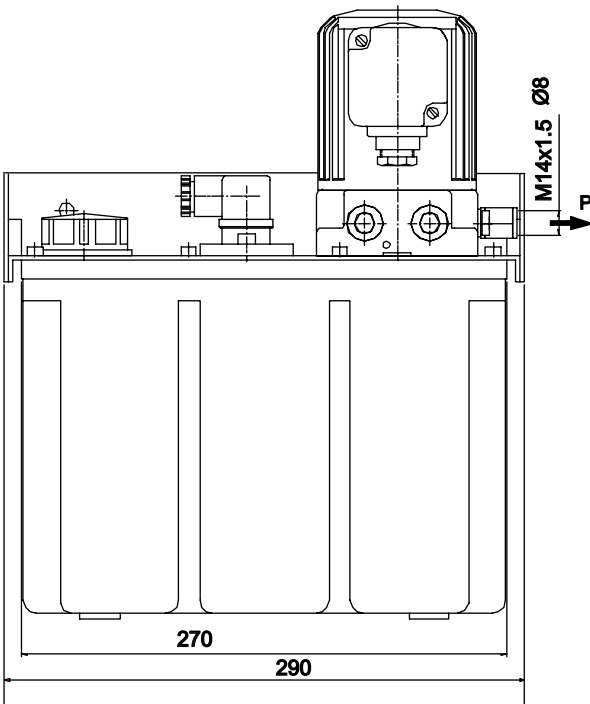
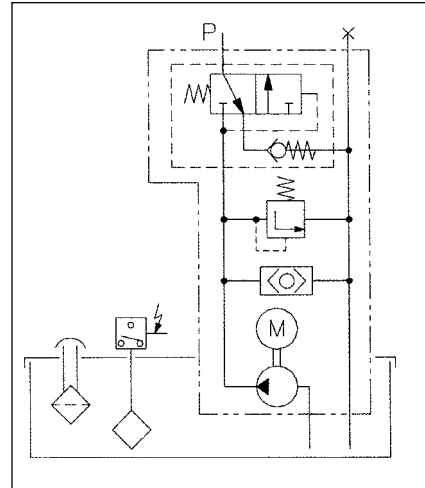
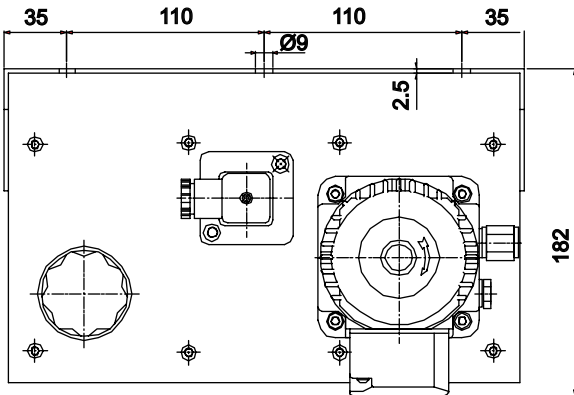
Each distributor port may be connected to only one lube point!

Do not connect the secondary line (distributor outlet connection) to the lube point until bubble-free lubricant emerges at the line end after repeated actuation of the pump. **NOTE:** It might be necessary to pre-fill long secondary lines with lubricant.

If a secondary line becomes blocked or broken, it will not effect the remaining lube points in the system.



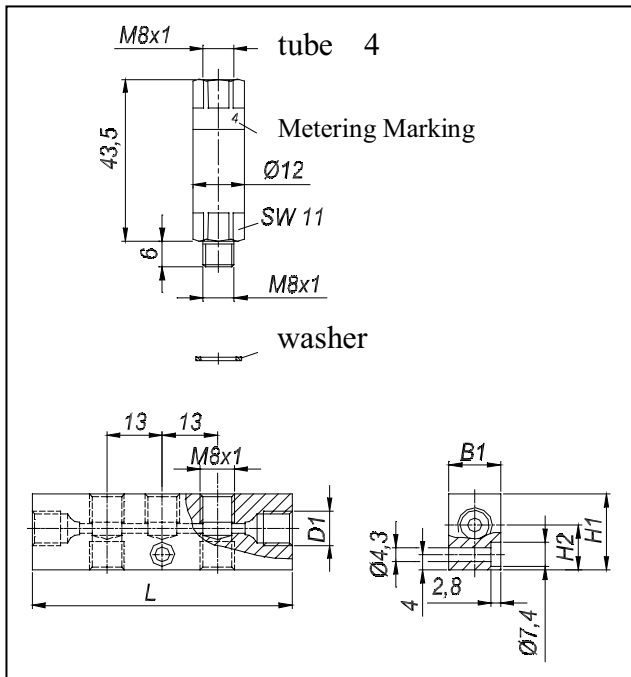
PUMP SPECIFICATIONS



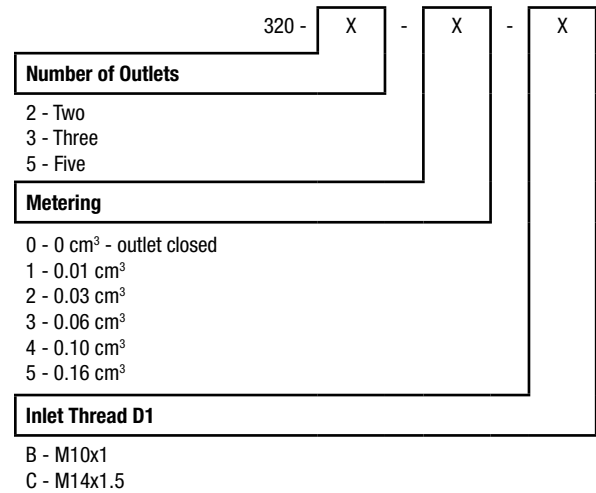
| Pump Specs | 564138 (513-001-200) | – (513-002-201) |
|--------------------|---|--------------------------|
| Lubricants | Oil 50-1000 cSt | Fluid Grease NLGI 000,00 |
| Output | 0.5 L/min (30 in3/min) | 0.2 L/min (12 in3/min) |
| Pressure | 25 bar (360 psi) | 40 bar (580 psi) |
| Reservoir Capacity | 6 Liter (1.6 gallon) plastic | |
| Voltage, Current | 230/400 VAC 50 Hz, 0.66 A /0.38A 276/480 VAC 60 Hz, 0.75A /0.43A | |
| Low Level Switch | Max. Voltage 250 VAC, 0.8A | |

Consult Graco factory for availability of electrical pumps for automotive specifications.

PISTON DISTRIBUTOR FOR OIL
GROUP 3200 0.01 – 0.16 CM³



ORDER KEY:



Order Example:

Distributor group: 3200
 with 3 outlets key: 3
 marking from the left to the right:
 0.06 - 0.10 - 0.03

Order Key:

3 4 2
 Inlet Thread of the Distributor Manifold (M10x1)
 Order Key: **B**

Order Key: 320 3-342-B

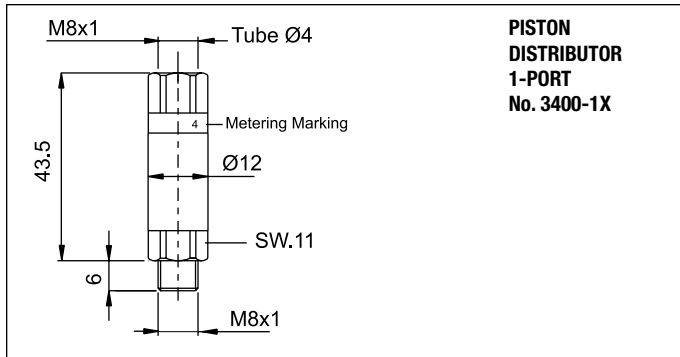
Specifications

Operating Pressure: 10 - 45 bar
 Medium: Oil
 Viscosity: 32 to 2000 cSt
 Temperature Range: +0°C to + 70°C
 Perm. Residual Pressure: Max. 1.5 bar

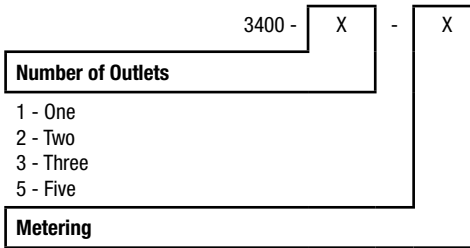
| Manifold Part No. | Manifold Old Part No. | Number of lubrication points | Thread D1 | Main line Ø | B1 | H1 | H2 | L |
|-------------------|-----------------------|------------------------------|-----------|-------------|----|----|------|----|
| 558333 | 513-000-100 | 2 | | | | | | 52 |
| 558335 | 513-000-102 | 3 | M10 x 1 | 6 | 13 | 17 | 10.5 | 65 |
| 558337 | 513-000-104 | 5 | | | | | | 65 |
| 558334 | 513-000-101 | 2 | | | | | | 61 |
| 558336 | 513-000-103 | 3 | M14 X 1.5 | 8 | 18 | 20 | 11 | 74 |
| 558338 | 513-000-105 | 5 | | | | | | 74 |

| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|-----------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 558153 (435-702-415) |
| M10 x 1 | 558192 (435-702-361) | 558154 (435-702-416) |
| M14 x 1.5 | 564139 (513-000-200) | 564140 (513-000-201) |

PISTON DISTRIBUTOR FOR OIL
GROUP 3400 0.01 – 0.16 CM³



ORDER KEY:



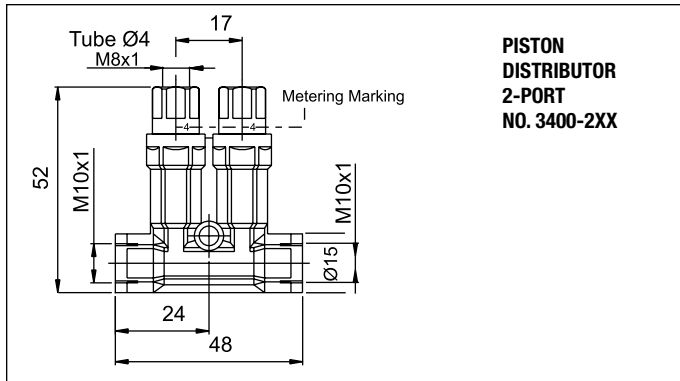
Number of Outlets

- 1 - One
- 2 - Two
- 3 - Three
- 5 - Five

Metering

- 0 - 0 cm³ - outlet closed
- 1 - 0.01 cm³
- 2 - 0.03 cm³
- 3 - 0.06 cm³
- 4 - 0.10 cm³
- 5 - 0.16 cm³

| Metering Nipple | Part No. | Old Part No. |
|-----------------|----------|--------------|
| .03 cc | 558311 | 513-000-021 |
| .06 cc | 558312 | 513-000-022 |
| .10 cc | 558313 | 513-000-023 |
| .16 cc | 558314 | 513-000-024 |



Order Example:

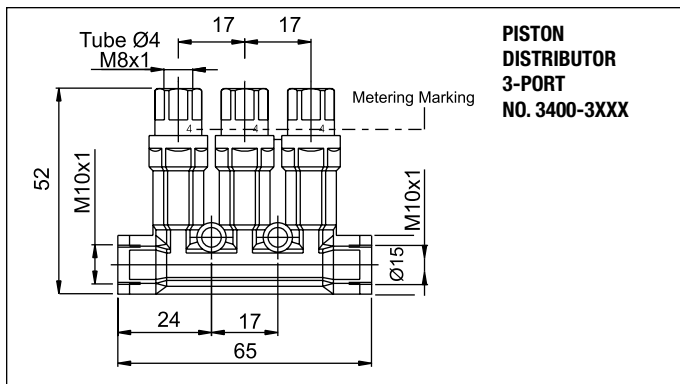
Distributor group: 3400
 with 3 outlets key: 3
 marking from the left to the right:
 0.06 - 0.10 - 0.03 cm³

Order Key: **3 4 2**

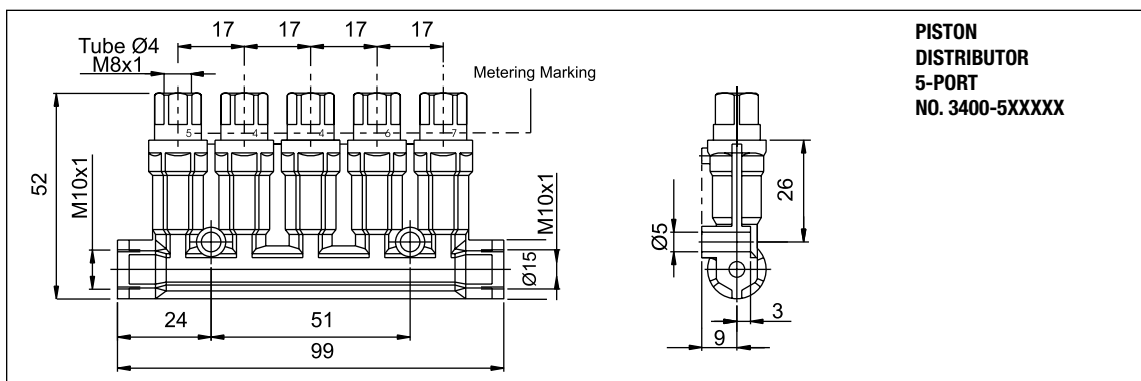
Order Key: 3400-3-342

Specifications

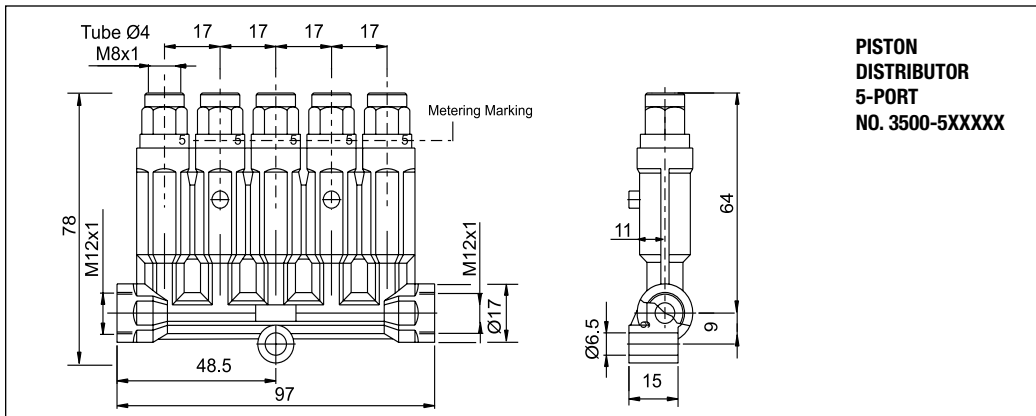
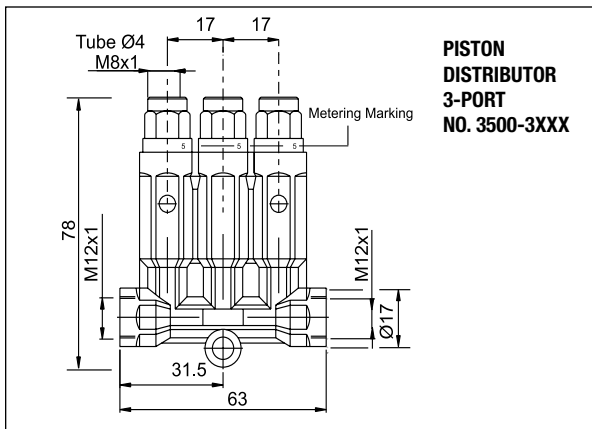
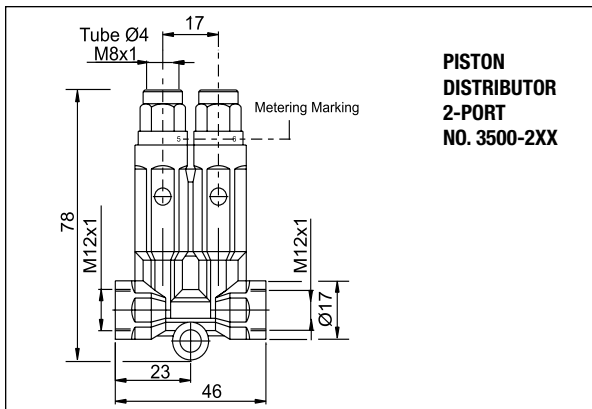
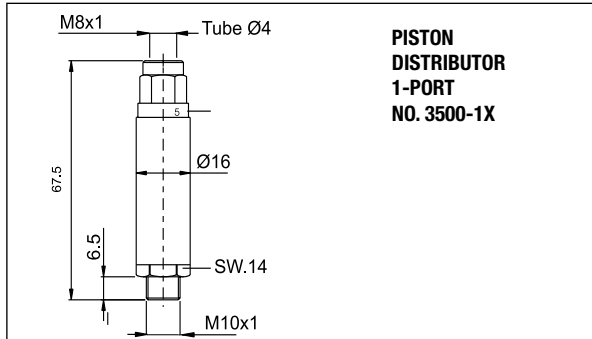
Operating Pressure: 10 - 45 bar
 Medium: Oil
 Viscosity: 32 to 2000 cSt
 Temperature Range: +0°C to + 70°C
 Perm. Residual Pressure: Max. 1.5 bar



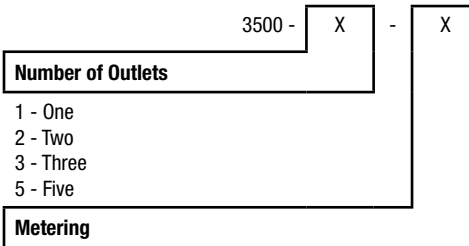
| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|---------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 588153 (435-702-415) |
| M10 x 1 | 558192 (435-702-361) | 558154 (435-702-416) |



PISTON DISTRIBUTOR FOR OIL
GROUP 3500 0.10 – 0.60 CM³



ORDER KEY:



| Metering Nipple | Part No. | Old Part No. |
|-----------------|----------|--------------|
| .10 cc | 558315 | 513-000-030 |
| .20 cc | 558316 | 513-000-031 |
| .40 cc | 558317 | 513-000-032 |
| .60 cc | 558318 | 513-000-033 |

Order Example:

Piston distributor group: 3500
 with 3 outlets key: 3
 marking from the left to the right:
 0.60 - 0.20 - 0.40 cm³

Order Key: 7 5 6

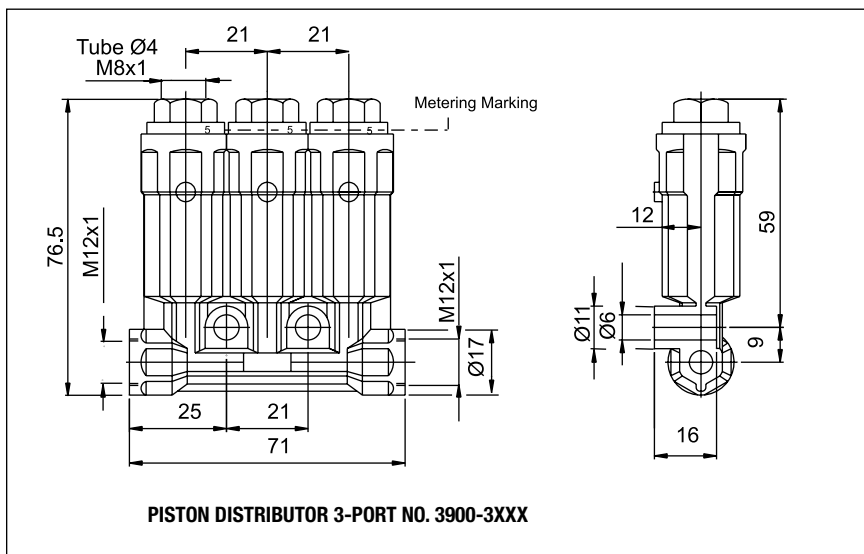
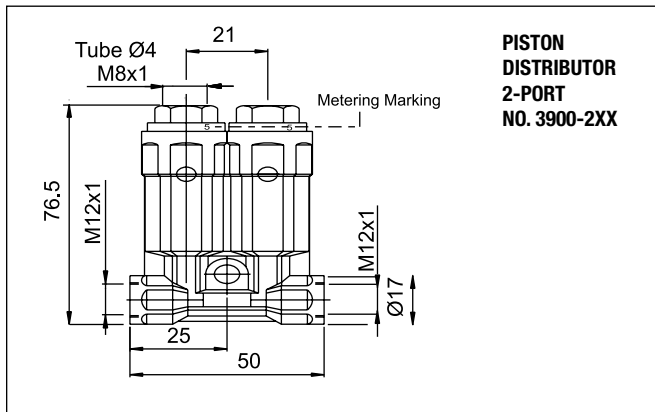
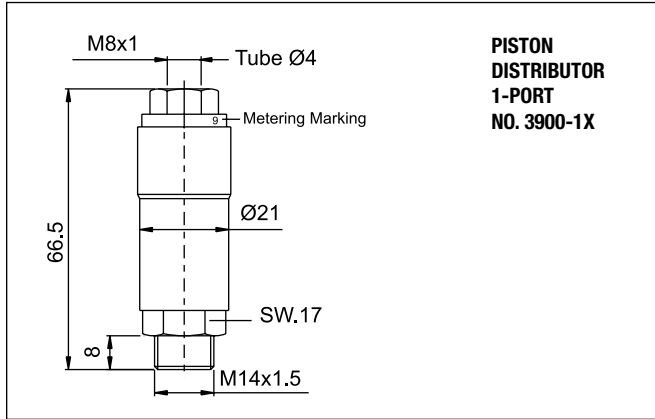
Order Key: 3500-3-756

Specifications

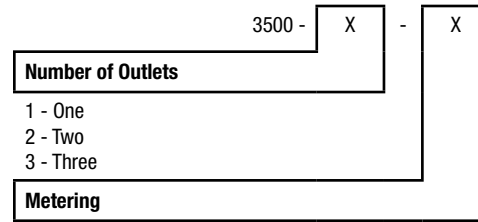
Operating Pressure: 10 - 45 bar
 Medium: Oil
 Viscosity: 32 to 2000 cSt
 Temperature Range: +0°C to + 70°C
 Perm. Residual Pressure: Max. 1.5 bar

| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|---------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 588153 (435-702-415) |
| M12 x 1 | 558152 (435-702-403) | 558155 (435-702-417) |

PISTON DISTRIBUTOR FOR OIL
GROUP 3900 0.20 – 1.50 CM³



ORDER KEY:



Number of Outlets

- 1 - One
- 2 - Two
- 3 - Three

Metering

- 0 - 0 cm³ - outlet closed
- 5 - 0.20 cm³
- 6 - 0.40 cm³
- 7 - 0.60 cm³
- 8 - 1.00 cm³
- 9 - 1.50 cm³

| Metering Nipple | Part No. | Old Part No. |
|-----------------|----------|--------------|
| .20 cc | 558319 | 513-000-040 |
| .40 cc | 558320 | 513-000-041 |
| .60 cc | 558321 | 513-000-042 |
| 1.00 cc | 558322 | 513-000-043 |
| 1.50 cc | 558323 | 513-000-044 |

Order Example:

Distributor group: 3900
 with 3 outlets key: 3
 marking from the left to the right:
 0.20 - 0.60 - 1.50 cm³

Order Key: 5 7 9

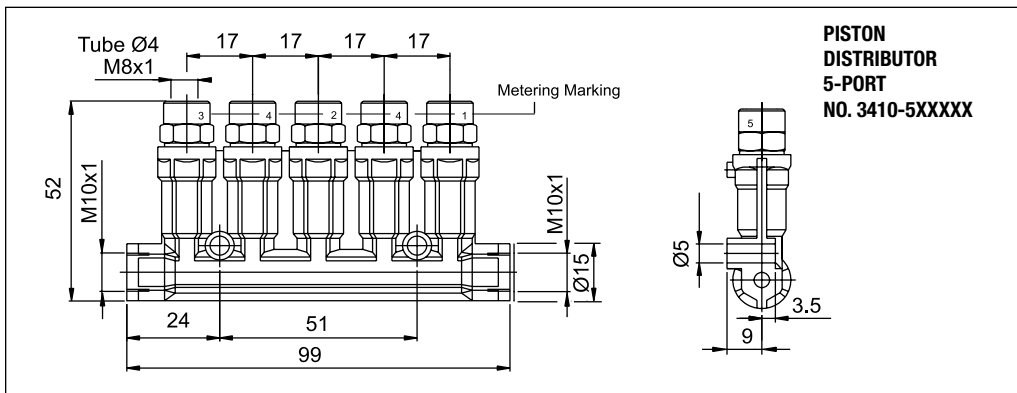
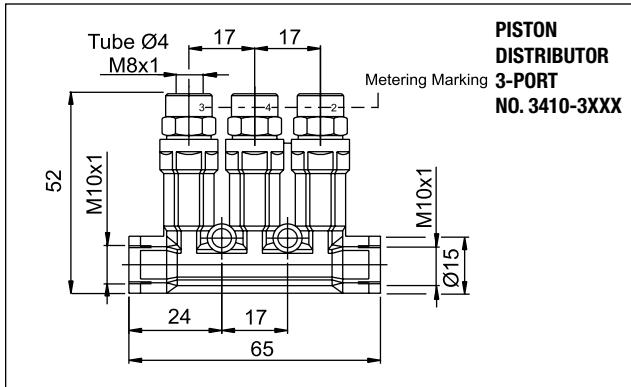
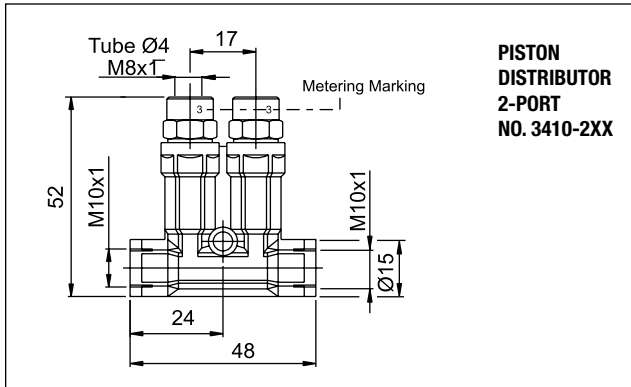
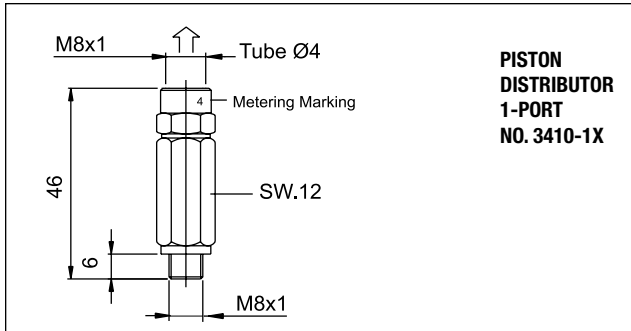
Order Key: 3900-3-579

Specifications

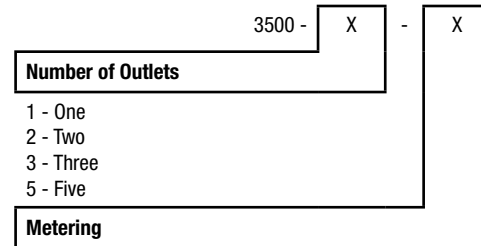
Operating Pressure: 10 – 45 bar
 Medium: Oil
 Viscosity: 32 to 2000 cSt
 Temperature Range: +0°C to +70°C
 Perm. Residual Pressure: Max. 1.5 bar

| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|---------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 588153 (435-702-415) |
| M12 x 1 | 558152 (435-702-403) | 558155 (435-702-417) |

**PISTON DISTRIBUTOR FOR
FLUID GREASE NLGI 000, 00
GROUP 3410 0.01 – 0.10 CM³**



ORDER KEY:



- Number of Outlets**
- 1 - One
 - 2 - Two
 - 3 - Three
 - 5 - Five

- Metering**
- 0 - 0 cm³ - outlet closed
 - 1 - 0.01 cm³
 - 2 - 0.03 cm³
 - 3 - 0.06 cm³
 - 4 - 0.10 cm³

| Metering Nipple | Part No. | Old Part No. |
|-----------------|----------|--------------|
| .03 cc | 558324 | 513-000-051 |
| .06 cc | 558325 | 513-000-052 |
| .10 cc | 558326 | 513-000-053 |

Order Example:

Piston distributor group: 3400
 with 3 outlets key: 3
 marking from the left to the right:
 0.06 - 0.10 - 0.03 cm³

Order Key: 3 4 2

Order Key: 3410-3-342

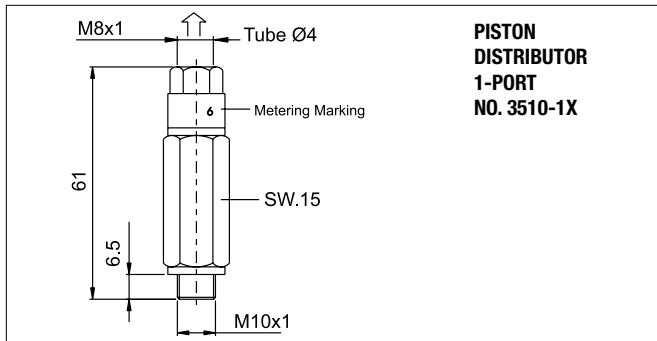
Specifications

Operating Pressure: 10 - 45 bar
 Medium: Grease NLGI 000, 00
 Temperature Range: +0°C to +60°C
 Perm. Residual Pressure: Max. 1.5 bar

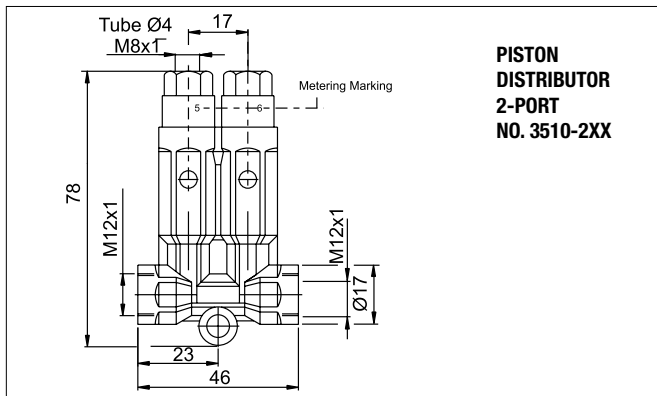
| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|---------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 588153 (435-702-415) |
| M10 x 1 | 558192 (435-702-361) | 558154 (435-702-416) |

**PISTON DISTRIBUTOR FOR
FLUID GREASE NLGI 000,00**

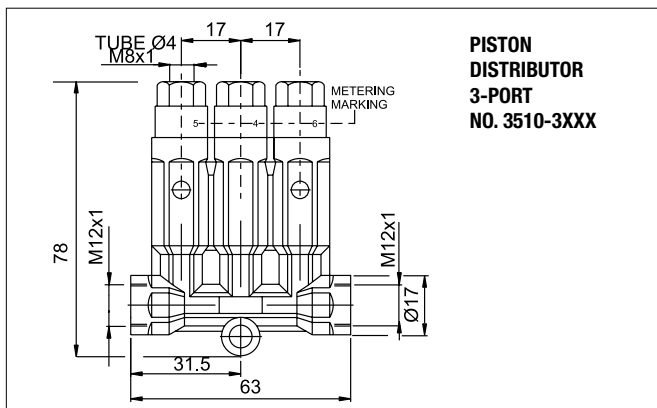
GROUP 3510 0.10 – 0.30 CM³



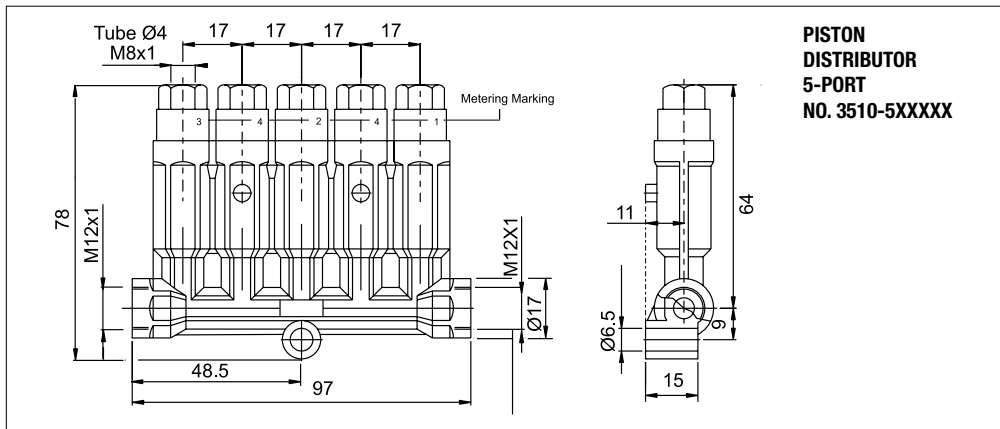
**PISTON
DISTRIBUTOR
1-PORT
NO. 3510-1X**



**PISTON
DISTRIBUTOR
2-PORT
NO. 3510-2XX**

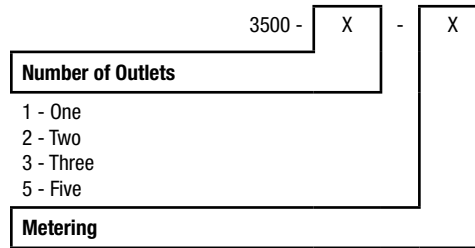


**PISTON
DISTRIBUTOR
3-PORT
NO. 3510-3XXX**



**PISTON
DISTRIBUTOR
5-PORT
NO. 3510-5XXXXX**

ORDER KEY:



| Metering Nipple | Part No. | Old Part No. |
|-----------------|----------|--------------|
| .10 cc | 558327 | 513-000-060 |
| .20 cc | 558328 | 513-000-061 |
| .30 cc | 558329 | 513-000-062 |

Order Example:

Piston distributor group: 3510
with 3 outlets key: 3
marking from the left to the right:
0.20 - 0.10 - 0.03 cm³

Order Key: 5 4 6

Order Key: 3510-3-546

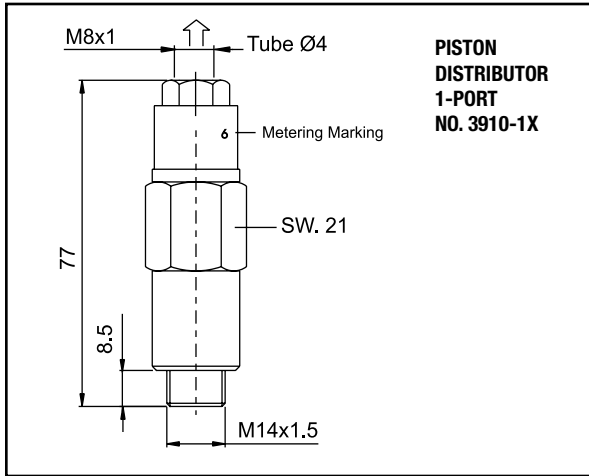
Specifications

Operating Pressure: 10 - 45 bar
Medium: Grease NLGI 000, 00
Temperature Range: +0°C to + 60°C
Perm. Residual Pressure: Max. 1.5 bar

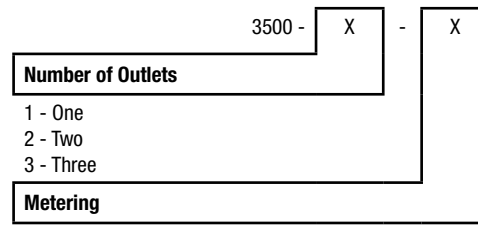
| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|---------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 588153 (435-702-415) |
| M12 x 1 | 558152 (435-702-403) | 558155 (435-702-417) |

**PISTON DISTRIBUTOR FOR
FLUID GREASE NLGI 000,00,0**

GROUP 3910 0.10 – 0.30 CM³



ORDER KEY:



- 1 - One
- 2 - Two
- 3 - Three

Metering

- 0 - 0 cm³ - outlet closed
- 4 - 0.10 cm³
- 5 - 0.20 cm³
- 6 - 0.30 cm³

| Metering Nipple | Part No. | Old Part No. |
|-----------------|----------|--------------|
| .10 cc | 558330 | 513-000-070 |
| .20 cc | 558331 | 513-000-071 |
| .30 cc | 558332 | 513-000-072 |

Order Example:

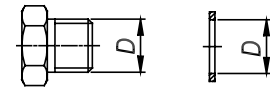
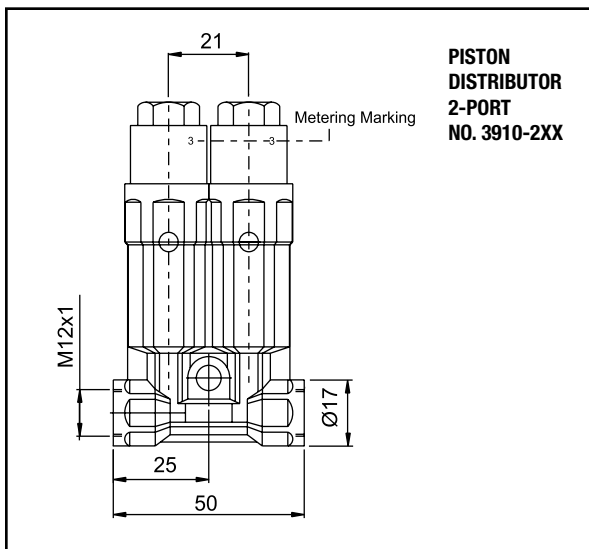
Piston distributor group: 3910
 with 3 outlets key: 3
 marking from the left to the right:
 0.20 - 0.30 cm³

Order Key: 5 6

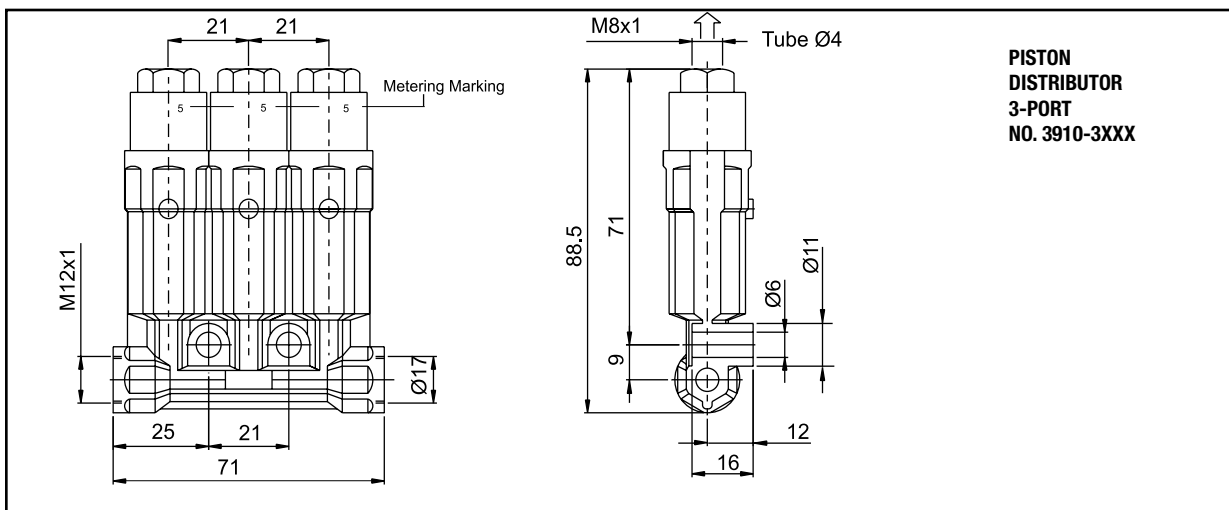
Order Key: 3910-3-56

Specifications

Operating Pressure: 10 - 45 bar
 Medium: Grease NLGI 000,00,0
 Temperature Range: +0°C to + 60°C
 Perm. Residual Pressure: Max. 1.5 bar



| Thread | Plug (Old Part No.) | Washer (Old Part No.) |
|---------|-------------------------|-------------------------|
| M8 x 1 | 558151 (435-702-261) | 588153 (435-702-415) |
| M12 x 1 | 558152 (435-702-403) | 558155 (435-702-417) |



**Look to Graco Inc. for all your
Centralized Lubrication System needs.**

Products include:

INJECTO-FLO OIL PUMPS:

Refer to bulletins: L12601 AO-1 Air Operated Pumps
L12605 EO-1 Electric Pumps
L12606 EO-3 Electric Pumps

**CONSULT GRACO FACTORY FOR AVAILABILITY OF
ELECTRICAL PUMPS FOR AUTOMOTIVE SPECIFICATIONS.**

LUBRISYSTEM PUMPS: LubriSystem pumps can also be used with oil or fluid
grease.

Refer to bulletin: L12100

ELECTRONIC CONTROLLERS:

Refer to bulletins:
L14521 Solid State Timer
L14530 TC-1000 Timer / Counter
L14540 LC-1000 Controllers
L14750 WMP III Maxi-Monitor

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