D100 Progressive Metering Device

Lubricants | 30MPa | 0.2mL/cycle | NLGI 000～2

MESOLUBE

Safety Instructions

Application

♦ D100 series metering device is suitable for progressive centralized lubrication system.

Precautions

♦ Progressive centralized lubrication system using P100 pump must be equipped with safety valve for protection.
♦ D100 metering valve represents our advanced processing level.
♦ Improper use will cause under-lubrication or over-lubrication, which will lead to bearing damage.
♦ A check valve must be installed at each outlet.
♦ For D100 distributor, outlet 1 and/or 2 cannot be blocked.
♦ If you need to make changes, please consult the manufacturer in advance.

Maintenance

♦ The local regulations on accident prevention of the equipment must be observed
♦ Equipment maintenance can only be carried out by authorized personnel and trained professionals who are familiar with the centralized lubrication system.

Mounting

♦ Install the metering device at the appropriate place according to the lubrication diagram.
♦ It is recommended that when mounting the metering device, do not allow the outlet to be too close to the installation bottom plate, otherwise it will not be easy to troubleshoot when the system is blocked.
♦ When mounting a metering valve with pointer, it must be ensured that its pointer is easy to observe visually.
♦ When using quick connectors, please pay attention to the following issues:
The inlet of metering device, only quick connector with reinforced buckles and sealing rings can be used.
For high-pressure hoses (Φ8.6×2.3mm), quick connector with reinforced buckles and sealing rings should be used; for plastic hoses (Φ6×1.5mm), quick couplings with oil threaded buckles should be used .
♦ Note: For construction machinery and agricultural machinery, high-pressure hoses should be used for the lubrication line. In this case, both the second-level metering device and the pipe joints at the lubrication point can adopt quick joints with reinforced sealing rings.
♦ Only use the lubrication pipeline designated by our company and meet the specified system pressure requirements.

Technical Data

Specifications

Metering quantity	0.2mL/cycle	Lubricant	NLGI 000~2
Connection outlet	Φ4 Φ6	Monitor	Indicator pin
Inlet thread	G1/8	Material	aluminum
Max operating pressure	35MPa	Max pressure difference at outlet	10MPa
Min operating pressure	2MPa	Operating temperature	-25°C to 70°C

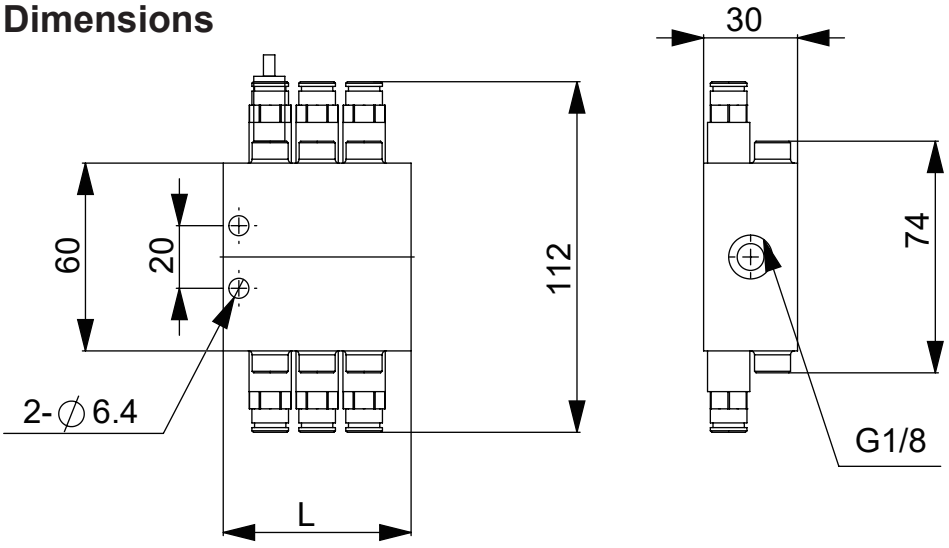
Quick & Screw Connector

High pressure zone max pressure	35MPa
Main distributor inlet & outlet	Φ8 Φ6
Low pressure area max pressure	25MPa
Second-stage distributor outlet	Φ6
Lubrication point connector	Φ4

Lubrication Line

Main-line	Min rupture pressure	60Mpa
	Min bending radius	35mm
	Min temperature	-40℃
Branch-line	20°C burst pressure	50mm
	Min bending radius	~21MPa
	Mini temperature	-40℃

Dimensions



Mark	06	08	10	12	14	16	18	20	22
Outlet number	6	8	10	12	14	16	18	20	22
L	60	75	90	105	120	135	150	165	180

Ordercode

D100 - □ □ □ □ □

Lubricant metering device

D100 series lubrication distributor

Number of outlets

6 = 6 outlets

...

20 = 20 outlets

Intlet connection

6 = Φ6 outlet

8 = Φ8 outlet

Outlet connection

4 = Φ4 outlet

6 = Φ6 outlet

Outlet blockage monitor

01 = without monitor

02 = electronic monitor

03 = mechanical monitor

Connector type

P = push-in type

S = screw-type

Characteristics

D100 series metering device is plunger type.

It automatically distributes the lubricant from the pump to the connected lubrication points.

The metering quantity of each outlet is 0.2mL per cycle.

When one or more outlets are closed, the metered quantity of each outlet changes in multiples.

A metering device with 6-12 outlets can be selected, up to 22 outlets.

Lubricant used: Mineral grease above −40mm²/s(cS), or grease below NLGI2.

Max Length of Lubrication Line

Note: The distribution of lubricant consists of two steps, the main metering devices→the second level metering devices→Lubrication points

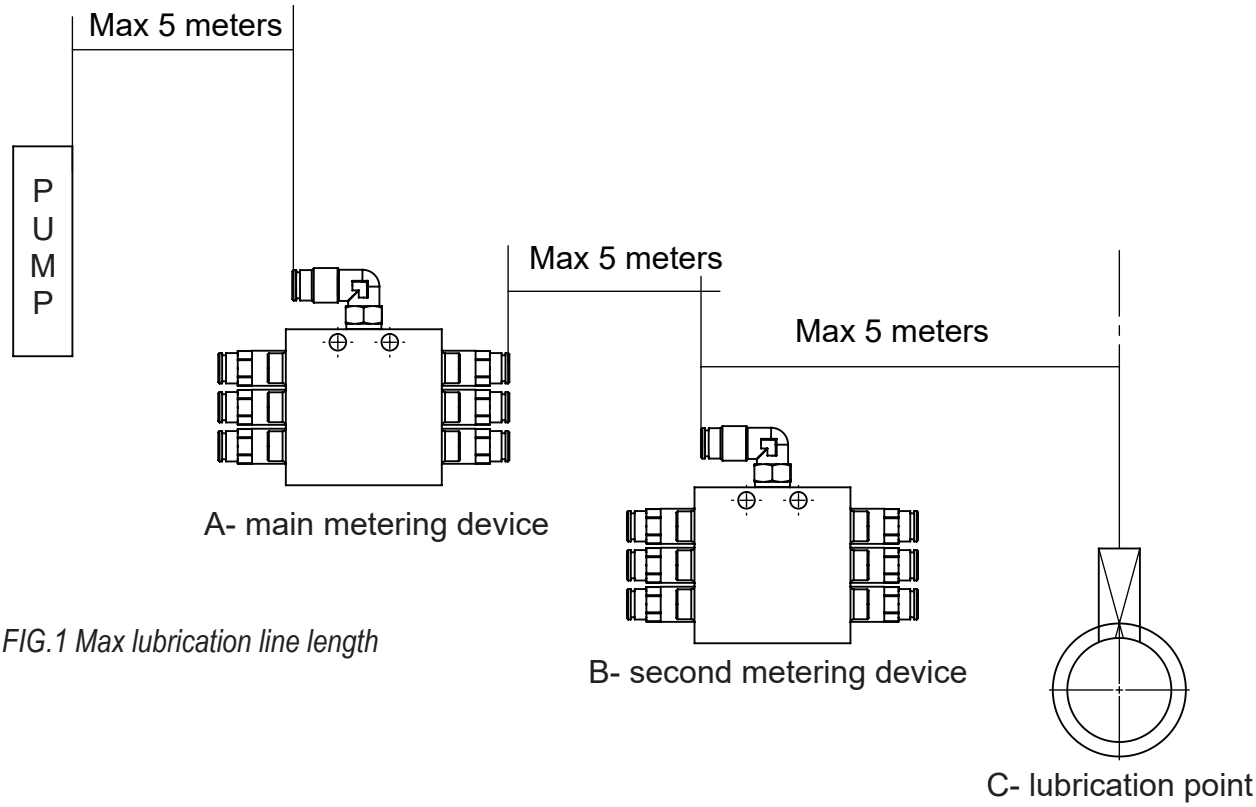
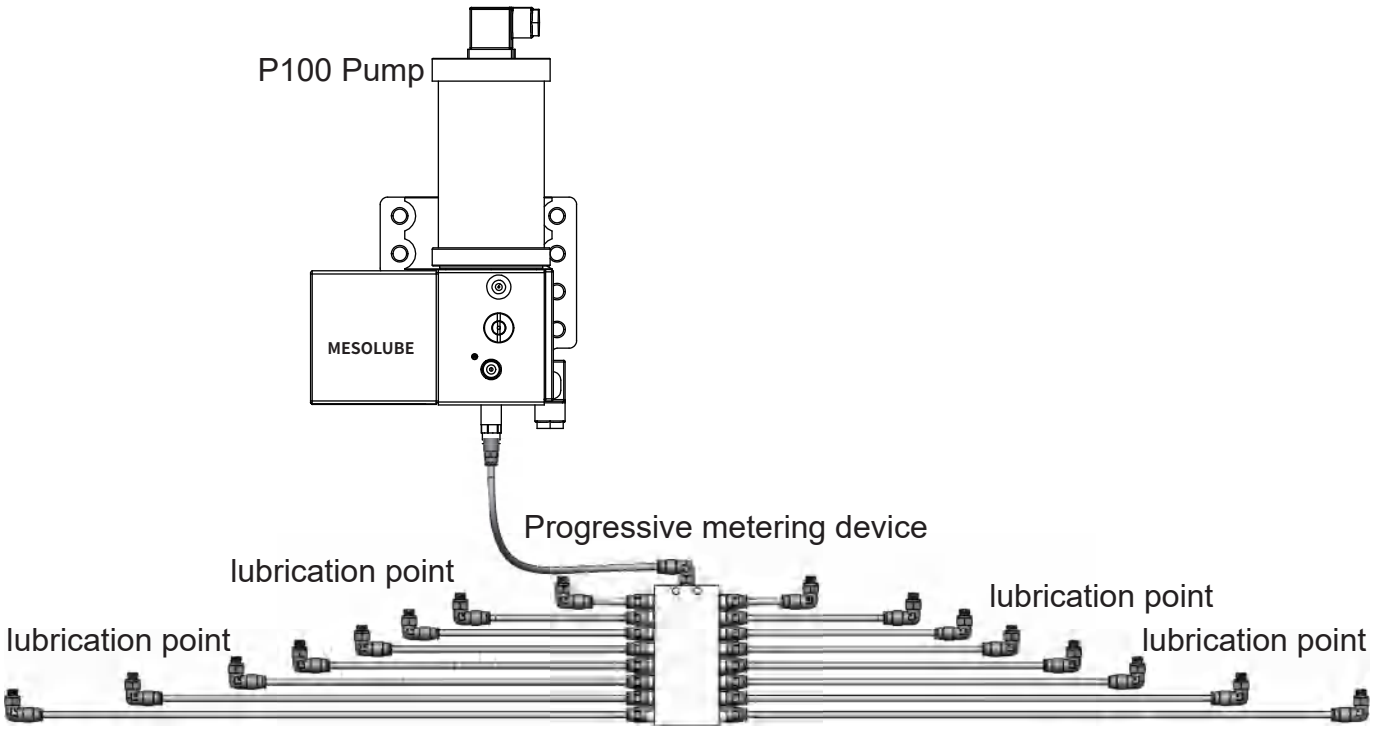


FIG.1 Max lubrication line length

Layout of Progressive Metering Devices in Lubrication System

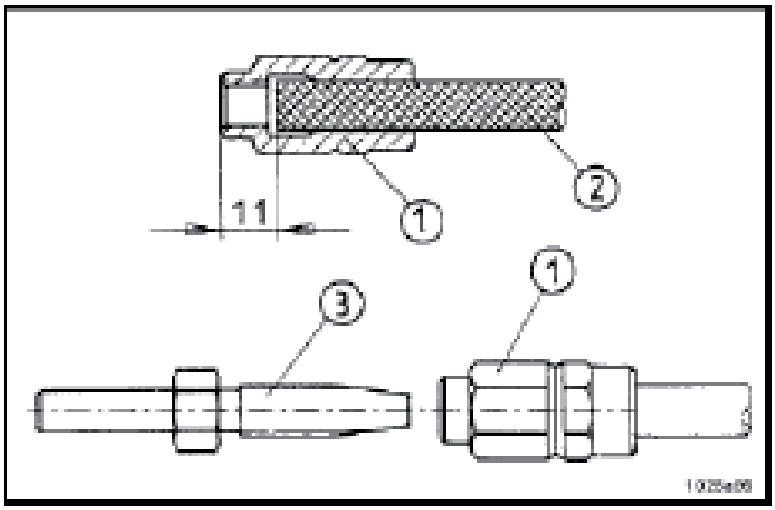


Plastic Tubbing and Hoses

Φ 6×1.5mm plastic hose

♦ Pressure plastic hoses are only suitable for low pressure areas, such as the area between the second-stage distributor and the lubrication point.

Φ8.6×2.3mm high pressure plastic hose



♦ High-pressure plastic hoses are suitable for high-pressure areas, such as the area between the pump, the main distributor and the second-stage distributor, where pressure and bending radius are required.

1- Threaded hoop
2- Φ8.6×2.3mm high pressure plastic hose
3- Hose bolt

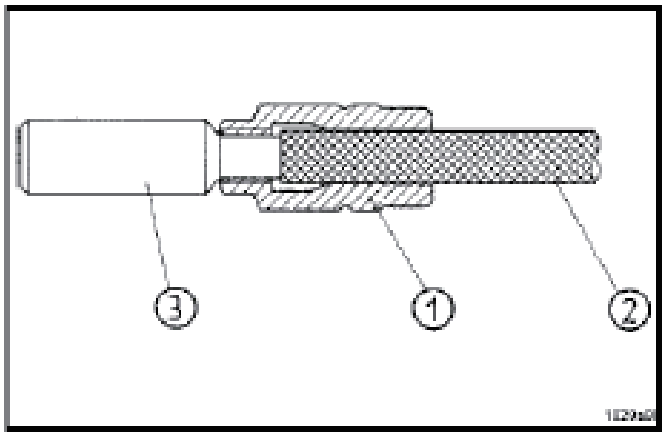
FIG.2 Pre-assembly of high-pressure plastic hose connector

Assembly of high pressure plastic hose connector

Accession Screw the threaded sleeve (as shown in FIG.2, Part 1) into the high-pressure plastic hose (Part 2) anticlockwise until it is 11mm as shown in FIG.2, and then screw the hose stud (Part 3) into the collar to complete the assembly of the high-pressure hose connector.

Note: Before assembling parts 1 and 3, apply some oil or grease on them. The outer diameter of the high-pressure hose may have slight deviations. In this case, the high-pressure hose to be screwed into one end of the threaded sleeve can be pressed into an oval shape (1 to 2mm).

When screwing the threaded sleeve into the high-pressure plastic hose



1- Thread sleeve
2- ∅8.6×2.3mm high pressure plastic hose
3- Caliper

FIG.3 Use of rails when pre-installing threaded sleeves

Connection Of Joint and Hose

High pressure area (main distributor)
Note: The main lubrication line (Φ8.6×2.3mm) must be equipped with a special connector (threaded sleeve and hose stud) before it can be connected to the distributor inlet and the outlet connector with a reinforced snap ring (check valve).

FIG.4 Distributor outlet connector and hose stud with reinforced snap ring

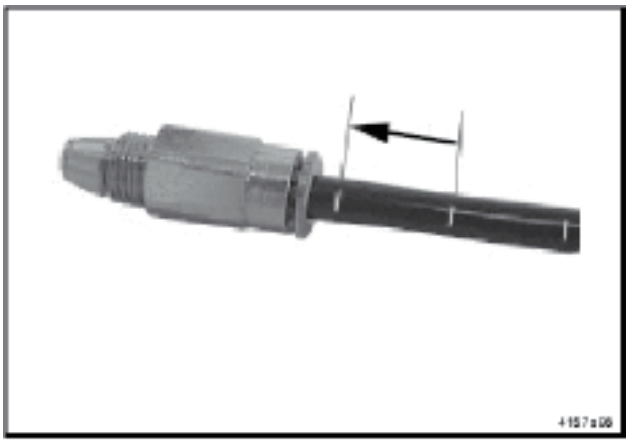


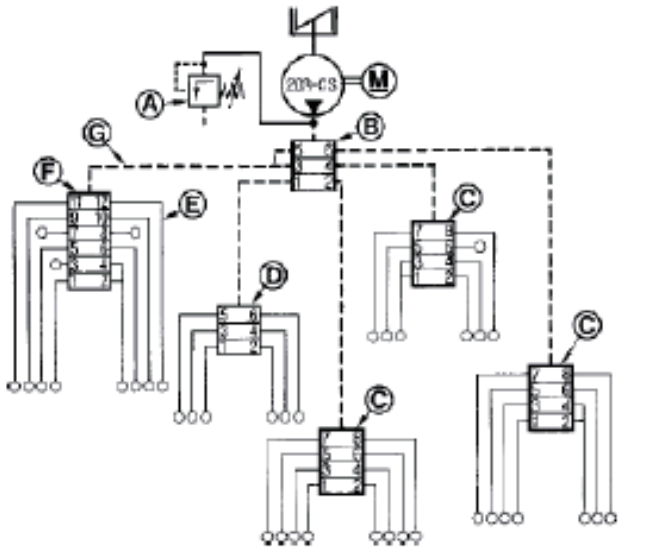
FIG.5 Distributor outlet joint and plastic hose with threaded snap ring

Low pressure area (second-level distributor)
♦ Connect the plastic hose (Φ6×1.5mm) to the distributor outlet joint (check valve) with threaded snap ring and the pipe joint of the lubrication point.
♦ In construction machinery and agricultural machinery, it is required that the distributor outlet pipe joints and lubrication point joints used in low-pressure areas must be equipped with reinforced snap rings.
♦ As shown in FIG.5, there is a white line mark on the plastic hose for easy reference during assembly.
♦ Cut off the plastic hose at the white line before installation, and insert the end into the pipe joint to the second white line position. This ensures the correct installation of the plastic hose.

FIG.6 Quick pipe joint protective sleeve

Protective sleeve of quick tube joint
In order to prevent dust from entering the system, protective sleeves can be installed on quick connectors, check valves and safety valves.

Fault Diagnosis

♦ Failure: The progressive system is blocked	
♦ Cause	Check the cause and troubleshoot:
♦ The bearing, lubrication line or distributor is blocked ♦ Distributor outlet No.1 and/or No.2 is closed. If any of the following phenomena occurs, the system is blocked: a) Grease leakage occurs at the safety valve; b) Indicator rod on distributor doesn't move; c) The signal light sends a fault signal.  *FIG.7 Example diagram of lubrication system* A-safety valve B- main distributor C- second stage distributor D100-8 D- The second stage distributor D100-6 E- pressure plastic hose F- second stage distributor D100-12 G- high pressure plastic hose	♦ Start the pump ♦ Unscrew the high-pressure hose connection between the main distribution valve (FIG.7, B) and the second-stage distributor. If there is grease flowing out of the outlet of the main distributor, such as the No. 1 outlet of distributor B, it means that the line behind the outlet is blocked, that is, the second-stage distributor D is blocked. Note: If the subsequent system is blocked, there will be pressure in the main line. At this time, the plug or emergency nozzle of the quick-plug safety valve can be removed to relieve the pressure of the system to facilitate the removal of the high-pressure hose. ♦ Let the pump run. ♦ Disconnect the second-level distributor and branch line in turn. If there is grease flowing from the outlet of the second stage distributor, such as from the outlet No.3 of the distributor D, it means that the lubrication point connected to the outlet No. 3 is blocked. ♦ The blocked bearing or line can be opened through the manual pump. Note: When inspecting the outlet of the distributor, the outlet connector needs to be loosened and kept for a period of time, because the pump needs to run for a while to make all the distributors complete a cycle. ♦ Replace the safety valve A if necessary.

♦ Failure: The system is blocked (continued)	
♦ Cause	♦ Troubleshoot
♦ The distributor is blocked	Replace or clean the distributor as follows: ♦ Remove all connectors; ♦ Unscrew the plug of the distributor plunger; ♦ Use a smooth punch to push out the plunger; ♦ When disassembling, mounting position and direction of plunger should be marked to prevent confusion. ♦ Thoroughly clean the dispenser with solvent and blow with compressed air; ♦ Connect the hole (Φ1.5) at the end of the plunger hole with an iron wire; ♦ Clean the distributor again and blow through with compressed air; ♦ Reassemble the distributor; ♦ Replace copper washer; ♦ Before reconnecting tube, using a hand pump to drive the distributors for several cycles. ♦I f pressure is too high, distributor must be replaced.
♦ Fault: The amount of grease at the lubrication point is different	
♦ Cause	♦ Troubleshoot
♦I mproper oil distribution ♦ Distributor outlet connector without compression ring ♦ Incorrect setting of interval time or running time	♦Check the oil distribution according to the lubrication chart. ♦Remove the connector and install the compression ring.
♦ Failure: too much or too little oil at the lubrication point	
♦ Cause	♦ Troubleshoot
♦ Incorrect interval time or running time	♦ Check various time settings.