SHIMADZU
Excellence in Science

# DDG05 Series

C621-E016A

## ◆Model number

More than minimum order 30 units. (300 units a year)

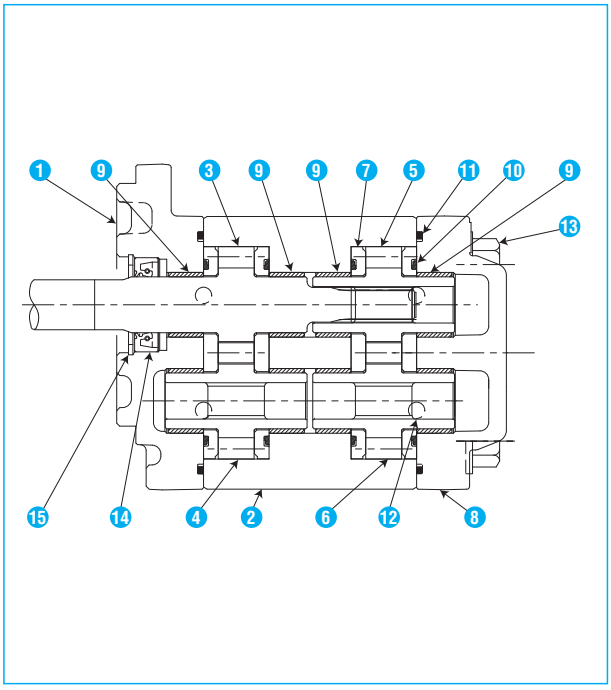
| DDG05 | - | 9.5 | 9.5 | F | 2 | H | 1 | - | L | XXX |
|---|---|---|---|---|---|---|---|---|---|---|
| ❶ | ❷ | ❸ | ❹ | ❺ | ❻ | ❼ | ❽ | | ❾ | ❿ |

❶ Series number
DDG05 series
❷ Mounting spigot diameter
- : $\phi 82^{-0.036}_{-0.090}$
A : $\phi 82.55^{0}_{-0.05}$
❸ No.1 Pump Size
❹ No.2 Pump Size
❺ Position of ports
F : side ports (single suction port)
❻ Port configuration
2 : G screw thread
❼ Mounting
H : horizontal 2 bolts
❽ Shaft end
1 : SAE Spline 10 teeth
❾ Rotation viewing from shaft end
L = counterclockwise
R = clockwise
❿ Code number in 3 figures

## ◆Specifications

| Size | Displacement | | No.1 Pump | No.2 Pump | Rated pressure | | | Max. peak pressure | | | Speed $min^{-1}$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $cm^3$ | $in^3$ | | | MPa | bar | psi | MPa | bar | psi | MIN. | MAX. |
| 4 | 4.08 | 0.249 | ○ | ○ | 20.6 | 206 | 2987 | 22.6 | 226 | 3277 | 700 | 3000 |
| 4.5 | 4.46 | 0.272 | ○ | ○ | | | | | | | | |
| 5 | 5.05 | 0.308 | ○ | ○ | | | | | | | | |
| 5.5 | 5.57 | 0.340 | ○ | ○ | | | | | | | | |
| 6.5 | 6.68 | 0.407 | ○ | ○ | | | | | | | | |
| 9 | 9.06 | 0.553 | ○ | ○ | | | | | | | | |
| 9.5 | 9.50 | 0.580 | ○ | ○ | | | | | | | | |
| 13 | 12.6 | 0.769 | ○ | | | | | | | | | |
| 14 | 14.1 | 0.860 | ○ | | | | | | | | | |
| 16 | 16.3 | 0.994 | ○ | | | | | | | | | |

## ◆Typical assembly




| Item No. | Name | QTY | Material |
|---|---|---|---|
| ❶ | Front cover | 1 | Aluminum alloy |
| ❷ | Body | 1 | Cast iron |
| ❸ | No.1 Drive gear | 1 | Alloy steel |
| ❹ | No.1 Driven gear | 1 | Alloy steel |
| ❺ | No.2 Drive gear | 1 | Alloy steel |
| ❻ | No.2 Driven gear | 1 | Alloy steel |
| ❼ | Side plate | 4 | Special alloy steel |
| ❽ | Rear cover | 1 | Aluminum alloy |
| ❾ | Bush | 8 | Special alloy steel |
| ❿ | Gasket | 4 | Nitrile rubber |
| ⓫ | Gasket | 2 | Nitrile rubber |
| ⓬ | Steel ball | 4 | Alloy steel |
| ⓭ | Bolt | 4 | Alloy steel |
| ⓮ | Oil seal | 1 | Nitrile rubber |
| ⓯ | Retainer ring | 1 | Carbon steel |

NOTES : “QTY” shows the amount per one

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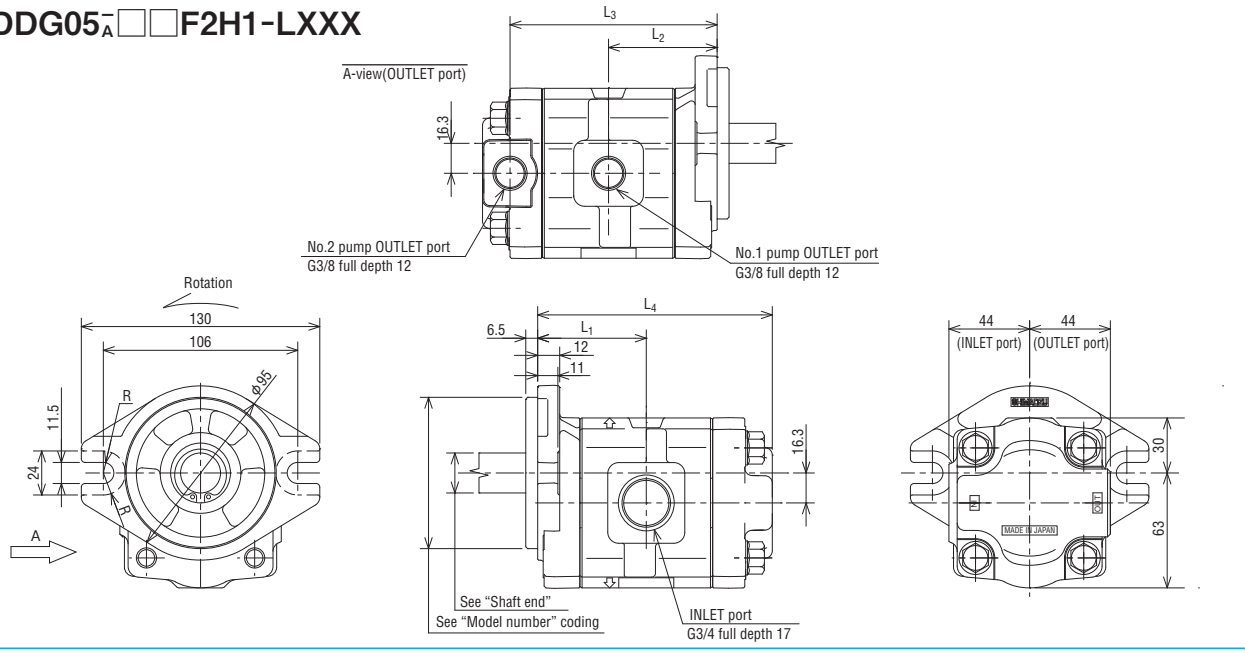
## ◆Outline dimensions

dimensions in mm

**DDG05$^{-}_{A}$□□F2H1-LXXX**




NOTE 1. Figure shown indicated counterclockwise rotation "L" viewing from shaft end. Clockwise rotation "R" is mirror image of this.
2. Unless otherwise specified, tolerance on dimension are ±1.0 mm.

| Size | | $L_1$ | $L_2$ | $L_3$ | $L_4$ |
|---|---|---|---|---|---|
| No.1 Pump | No.2 Pump | | | | |
| 4 | 4 | 52.4 | 50.4 | 99.3 | 114.3 |
| 4.5 | 4.5 | 52.9 | 50.9 | 100.3 | 115.3 |
| 5 | 5 | 53.8 | 51.8 | 102.1 | 117.1 |
| 5.5 | 5.5 | 54.4 | 52.4 | 103.3 | 118.3 |
| 9 | 9 | 59.2 | 57.2 | 112.9 | 127.9 |
| 9.5 | 9.5 | 59.8 | 57.8 | 114.1 | 129.1 |

NOTES : Please contact us for the combination not mentioned in this table.

## ◆Combination of double pump

**1. Limitation in maximum delivery pressure due to PQ value.**
Calculate the PQ value, using the following equation, and use the pump at the pressure range lower than the value shown in Table-1.

| | |
|---|---|
| Input shaft | PQ1 > P1×Q1+P2×Q2 |
| Intermediate joint | PQ2 > P2×Q2 |

P1,P2 : Delivery pressure (MPa) of No.1, No.2 pump.
Pr1,Pr2 : Rated pressure(MPa) of No.1, No.2 pump.
Q1,Q2 : Displacement volume(cm³) of No.1, No.2 pump.
・P1 < Pr1 ・P2 < Pr2

Table-1 Allowable PQ value

| | PQ1 Input shaft | PQ2 Intermediate joint |
|---|---|---|
| SAE spline 10T | 638 | 226 |
| Straight key | 520 | 226 |

**2. Limitation in maximum rotating speed due to suction flow.**
It is advised to use the pump at the rotating speed lower than the value, which is satisfied with the equation in Table-2.

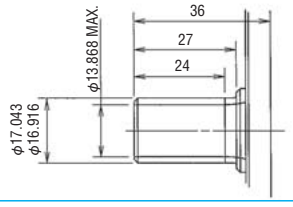
Table-2 Limitation in maximum rotating speed

| For single suction port | |
|---|---|
| G3/4 | : N×(Q1+Q2)÷1000<50 (L/min) |
| G1 | : N×(Q1+Q2)÷1000<91 (L/min) |

N: Maximum allowable rotating speed ($min^{-1}$).

## ●Shaft end

SAE Spline 10 teeth




No. of tooth : 10
D.P. : 16/32
Pressure angle : 30°
Over pin dia. : 20.263～20.193
Pin dia. : ϕ3.048