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Excellence in Science

# DNP22 Series

C621-E021A

## ◆Model number

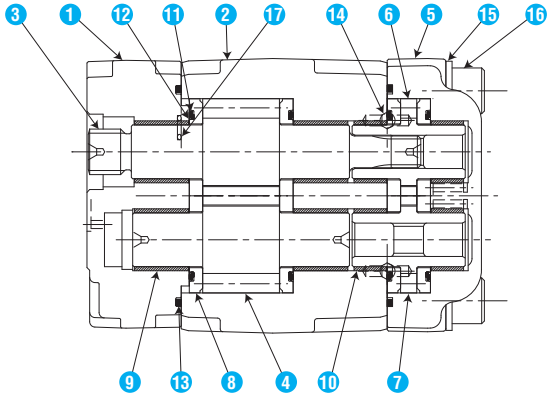
DNP22 - 21 4.5 A 9 H 9 - R XXX
1 2 3 4 5 6 7 8 9

1. Series number
   DNP22 series
2. No.1 Pump Size
3. No.2 Pump Size
4. Position of outlet ports
   A : side ports
5. Outlet port configuration
   9 : G screw thread
6. Mounting
   H : horizontal 2 bolts
7. Shaft end
   9 : SAE Spline 10 teeth
8. Rotation viewing from shaft end
   R = clockwise
9. Code number in 3 figures

## ◆Specifications

| | Size | Displacement | | Rated pressure | | | Max. peak pressure | | | Speed min$^{-1}$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | cm$^3$ | in$^3$ | MPa | bar | psi | MPa | bar | psi | MIN. | MAX. |
| No.1 Pump | 10.5 | 10.4 | 0.634 | 25.0 | 250 | 3625 | 27.5 | 275 | 3988 | 900 | 3000 |
| | 12 | 12.2 | 0.744 | | | | | | | | |
| | 14 | 14.1 | 0.860 | | | | | | | | |
| | 16 | 16.0 | 0.976 | | | | | | | | |
| | 18 | 17.7 | 1.080 | | | | | | | | |
| | 21 | 21.0 | 1.281 | | | | | | | | |
| No.2 Pump | 2.7 | 2.67 | 0.163 | 9.8 | 98 | 1421 | — | — | — | | |
| | 4.5 | 4.46 | 0.272 | | | | | | | | |
| | 6.5 | 6.68 | 0.407 | 3.9 | 39 | 566 | 9.8 | 98 | 1421 | | |
| | 9 | 9.06 | 0.553 | | | | | | | | |

## ◆Typical assembly




| Item No. | Name | QTY | Material |
|---|---|---|---|
| 1 | Front cover | 1 | Aluminum alloy |
| 2 | No.1 body | 1 | Cast iron |
| 3 | No.1 drive gear | 1 | Alloy steel |
| 4 | No.1 driven gear | 1 | Alloy steel |
| 5 | No.2 body | 1 | Aluminum alloy |
| 6 | No.2 driven gear | 1 | Alloy steel |
| 7 | No.2 driven gear | 1 | Alloy steel |
| 8 | Side plate | 4 | Special alloy steel |
| 9 | Bush | 4 | Special alloy steel |
| 10 | Bush | 4 | Special alloy steel |
| 11 | Gasket | 4 | Nitrile rubber |
| 12 | Back-up | 4 | Synthetic resin |
| 13 | Gasket | 2 | Nitrile rubber |
| 14 | Steel ball | 2 | Alloy steel |
| 15 | Washer | 4 | Carbon steel |
| 16 | Bolt | 4 | Alloy steel |
| 17 | O-ring | 1 | Nitrile rubber |

NOTES : “QTY” shows the amount per one

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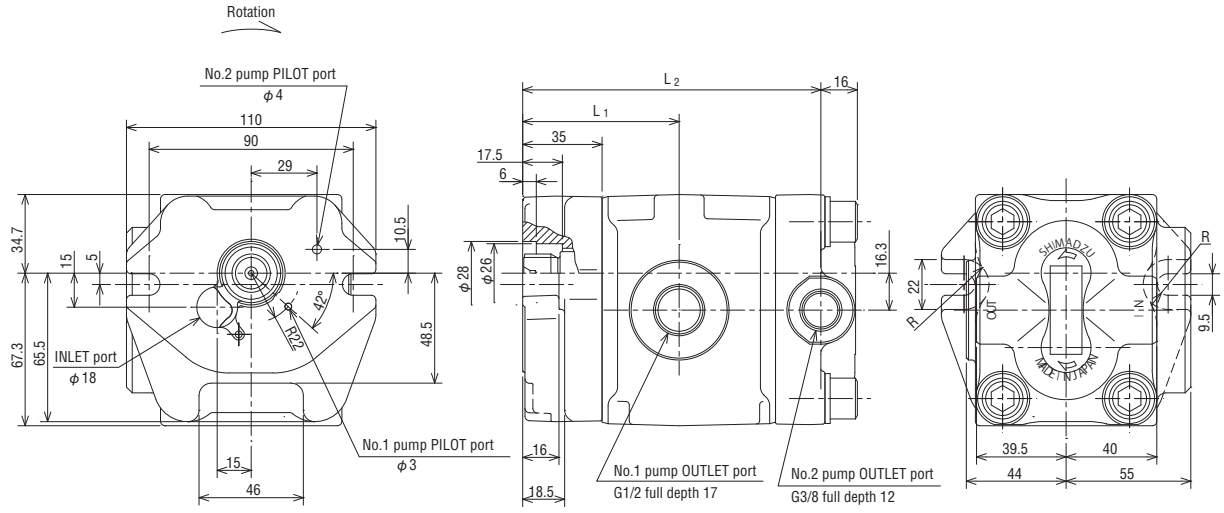
## ◆Outline dimensions

dimensions in mm

### DNP22-□□A9H9-RXXX (Side ports)




NOTE 1. Figure shown indicated clockwise rotation "R" viewing from shaft end.
2. Unless otherwise specified, tolerance on dimension are ±1.0 mm.

| No.1 pump size | $L_1$ | $L_2$ | |
|---|---|---|---|
| | | No.2 pump 2.7・4.5 | No.2 pump 6.5・9 |
| 10.5 | 64.0 | 117.0 | 123.8 |
| 12 | 66.5 | 119.5 | 126.3 |
| 14 | 64.0 | 122.0 | 128.8 |
| 16 | 66.5 | 124.5 | 131.3 |
| 18 | 64.5 | 127.0 | 133.8 |
| 21 | 69.0 | 131.5 | 138.3 |

## ◆Combination of double pump

**1. 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-1.
Table-1 Limitation in maximum rotating speed

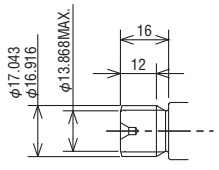
| |
|---|
| For single suction port (front) |
| φ18 : N×(Q1+Q2)÷1000<61.5 (L/min) |
| For double suction port (front and side) |
| Max. speed. |

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

## ●Shaft end

SAE Spline (Some dimensions are different form SAE standard.)

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