

Contact Details

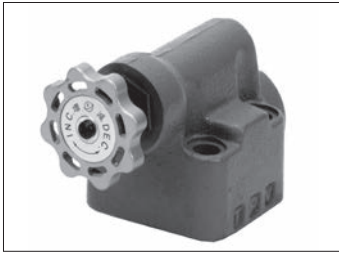
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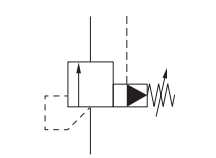
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Pilot Operated Relief Valve



JIS graphic symbols for hydraulic system



Features

- Achieves stable pressure control over a wide range of flow rates and also works as a safety valve.
- The main circuit pressure can be controlled remotely by connecting a relief valve for remote control to the vent port.
- The vent port can be used to provide the function of an unload valve.

Nomenclature

⊗ - **HDRI** - ⊗ **03** - ⊗ ⊗
 1 2 3 4 5 6

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid, water-glycol hydraulic fluid
 F: Phosphate ester hydraulic fluid

2 Model No.

HDRI: H series pilot operated relief valve

3 Connections

G: Gasket mount type T: Screw connection type

4 Nominal diameter 03: 3/8

Pressure adjustment range

5 1: 0.5 to 7 MPa { 5 to 70 kgf/cm² }
 3: 3.5 to 21 MPa {35 to 210 kgf/cm² }

6 Vent type code

No designation: Low-vent type
 V: High-vent type

Specifications

Model code	Nominal diameter	Pressure adjustment range MPa {kgf/cm ² }	Maximum flow rate L/min	Mass kg
HDRI-G03-1	3/8	0.5 to 7 { 5 to 70 }	30	3.5
HDRI-G03-3		3.5 to 21 {35 to 210 }		
HDRI-T03-1		0.5 to 7 { 5 to 70 }		2.9
HDRI-T03-3		3.5 to 21 {35 to 210 }		

Model code	Pressure change MPa {kgf/cm ² } per handle revolution
HDRI-⊗03-1	3.2 {32}/revolution
HDRI-⊗03-3	9.9 {99}/revolution

Sub-plate model code

- The sub-plate is not provided with the valve. Order it separately as required by specifying the model code given in the table below.

Model code	Nominal diameter	Connection port diameter	Mass kg
HDRI-03M	3/8	Rc3/8	1.5

Refer to Page S-6 for the dimensions of the sub-plate.

Accessories (gasket mount type)

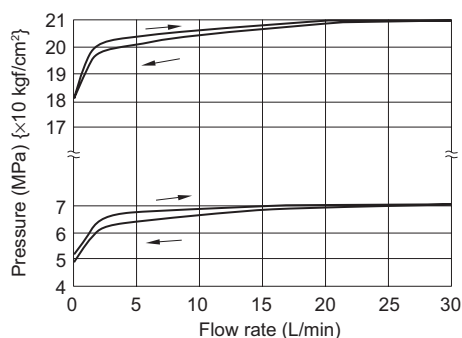
Hexagon socket head cap bolt	Quantity	Tightening torque N·m {kgf·cm}
M12 × 60	4	92 to 122 {920 to 1220}

Handling

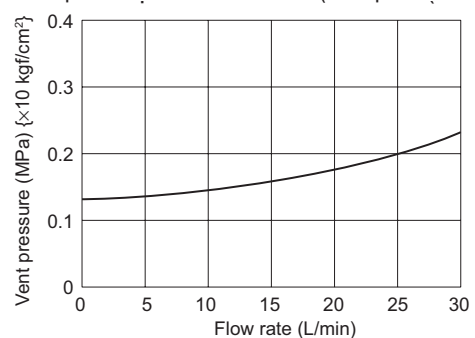
- Directly connect the tank piping of the valve to the tank without merging it with other tank piping and arrange it such that the back pressure of the tank port can be maintained at no greater than 0.5 MPa {5 kgf/cm²}.
- When using the valve in combination with a direct operated relief valve for remote control, connect the remote control valve to the vent port. Since excessive internal volume of the vent piping may lead to vibration, use steel pipes with an inner diameter of 4 mm maximum and thick walls for piping.
- When using the valve as a safety valve, set the pressure 1 to 1.5 MPa {10 to 15 kgf/cm²} higher than the pressure set for the hydraulic circuit.
- Use the valve with a flow rate of 3 L/min minimum since the pressure setting may be unstable if the flow rate is too low.
- The time required to switch from the unload to on-load state can be reduced by using the high-vent type.

Performance curves (viscosity: 32 mm²/s {cSt})

Flow rate - Pressure characteristics



Flow rate - Vent pressure characteristics (vent port: unload state)



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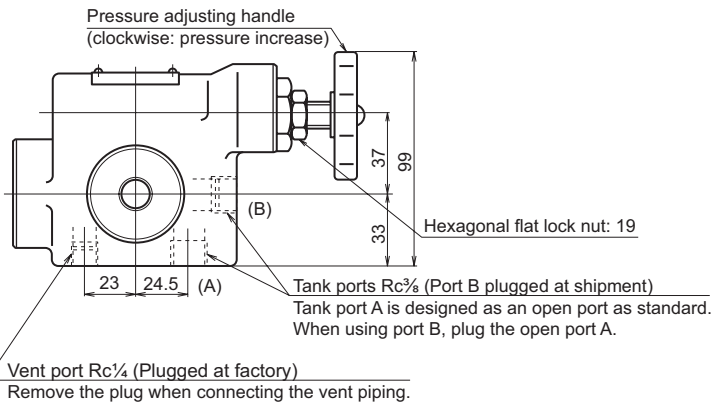
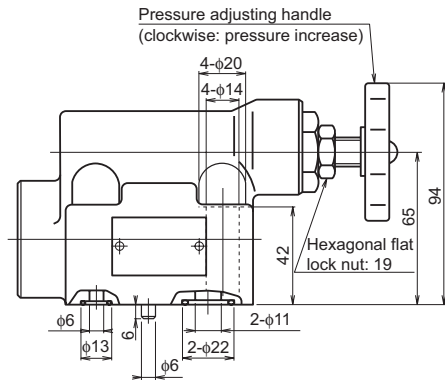
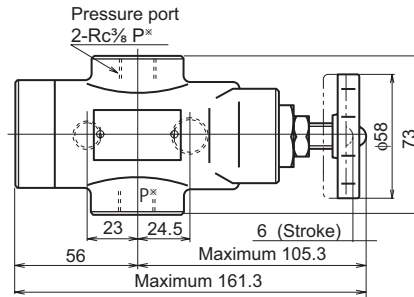
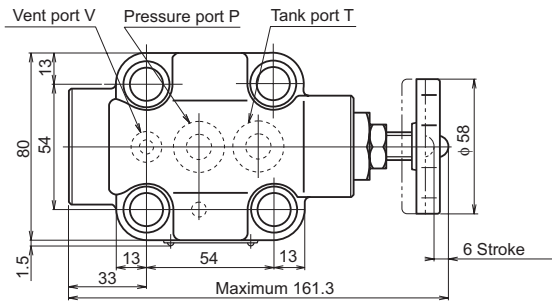
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External dimension diagram

HDRI-G03: Gasket mount type

HDRI-T03: Screw connection type

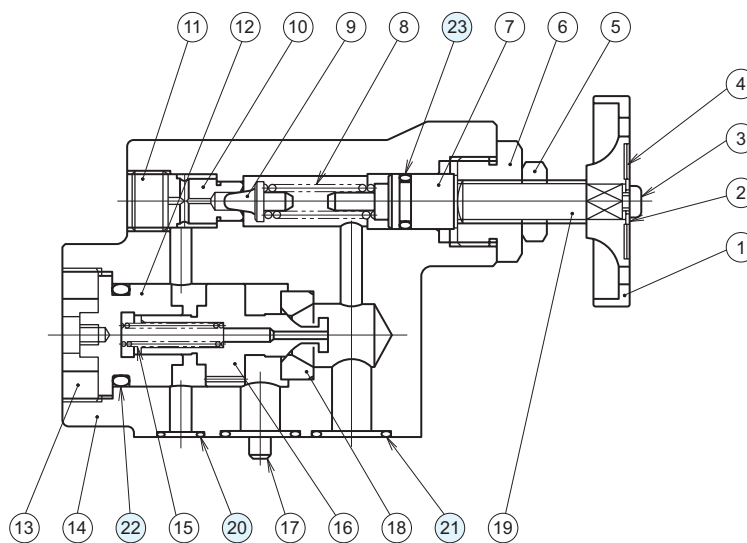


Mounting face (conforming standard)
ISO 6264-06-09-1-97

* The P ports at both sides connect with each other internally.
One can be used as a port for mounting a pressure gauge, for example.

Sectional structural diagram

HDRI-G03



Sealing part table

Part No.	Name	Quantity	Part specifications	
			HDRI-G03	HDRI-T03
20	O-ring	1	JIS B 2401 1BP10	-
21	O-ring	2	JIS B 2401 1BP18	-
22	O-ring	1	JIS B 2401 1BP22A	JIS B 2401 1BP22A
23	O-ring	1	JIS B 2401 1AP11	JIS B 2401 1AP11