

### Modular Valve Series

20 to 300ℓ/min  
21,25,35MPa

#### Overview

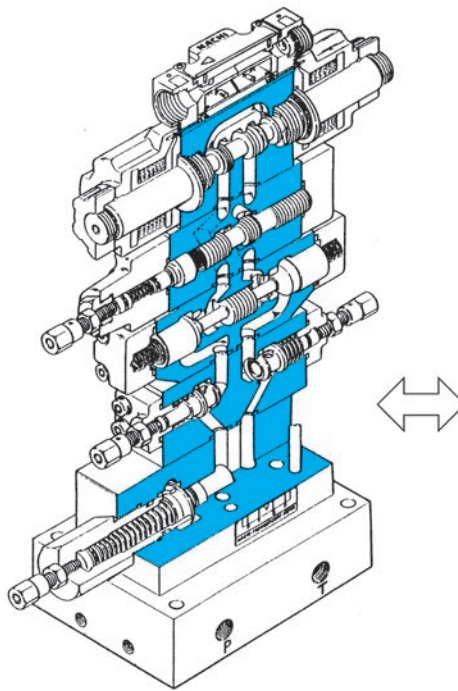
The modular valve is designed and engineered to integrate multiple hydraulic valve operations into a single unit, which eliminates the need for piping between valves and enables configuration

of a circuit using a single modular valve. The result is an innovative valve system whose energy and materials efficiency provide advantages in terms of compact configuration, reliability, and more.

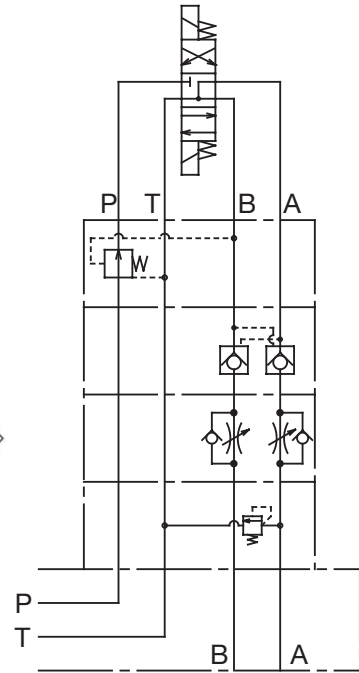
The illustrations below show one example of a circuit configuration using this system.

#### Features

- ① High pressure and high volume. Available maximum operating pressure operations are 21, 25, and 35MPa {214, 255, 357kgf/cm<sup>2</sup>}, while maximum control flow rates are G01 50ℓ/min, G03 100ℓ/min, G04 300ℓ/min.
- ② Ganging and bolting format allows for quick and easy circuit configuration as well as circuit changes and additions.
- ③ Compact module configurations greatly reduce space requirements.
- ④ Maintenance costs are also reduced because less piping and fewer couplings mean less need for acid rinsing and flushing of pipes.
- ⑤ Fewer fluid leak problems due to pipe resonance, noise, and loose couplings.
- ⑥ Circuit configuration is simple yet exact. Nameplates on the side of the valve show JIS codes that make it quick and easy to determine its performance.
- ⑦ A full lineup of models is available to meet a wide range of needs and circuit configurations: Model G01 58 Type 131, G03 52 Type 96, G04 30 Type 68.



Integrated Structural Diagram



Integrated Circuit Diagram

#### Specifications

Name	Nominal Diameter (Size)	Maximum Working Pressure MPa{kgf/cm <sup>2</sup> }	Maximum Flow Rate ℓ/min	Gasket Surface Dimensions	Possible Number of Ganged Valves (Note 2)
01 Series	1/8	25{255}(Note 1)	50	ISO 4401-03-02-0-05	1 to 4
03 Series	3/8	25{255}(Note 1)	100	ISO 4401-05-04-0-05	1 to 4
04 Series	1/2	35{357}	300	ISO 4401-07-06-0-05	1 to 3(Note 3)

- Note) 1. The M35 Series is available as a 35MPa {357kgf/cm<sup>2</sup>} maximum operating pressure version of the 01 and 03 Series. For details, see pages D-98 and D-99.  
 2. The number of ganged valves does not include solenoid valves.  
 3. Up to four valves can be ganged together if the maximum operating pressure is less than 21 MPa.

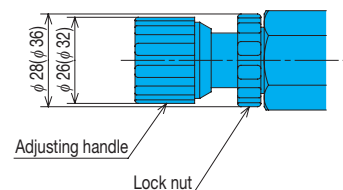
#### K Series Modular Valve

The valve shown in the photograph is available with nominal diameter 01 and 03 size adjusting bolts. Use the following format for specification.



**Example: OCY-G01-W-Y-K-20**

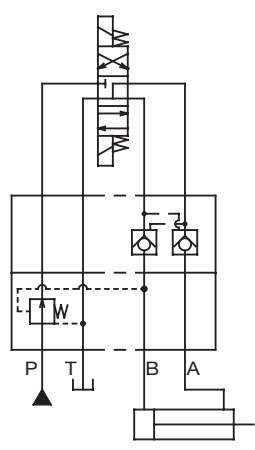
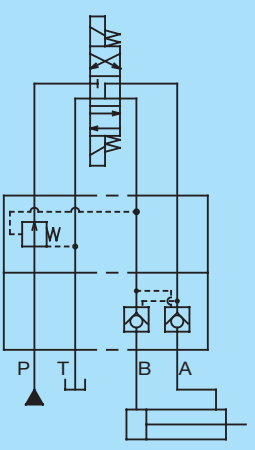
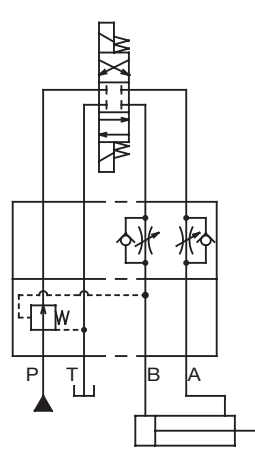
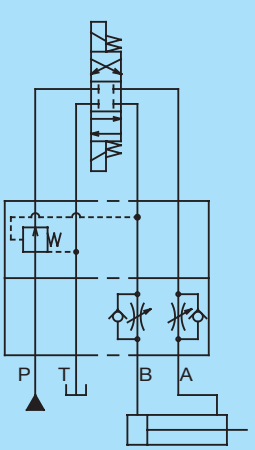
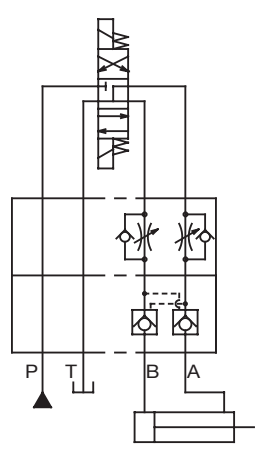
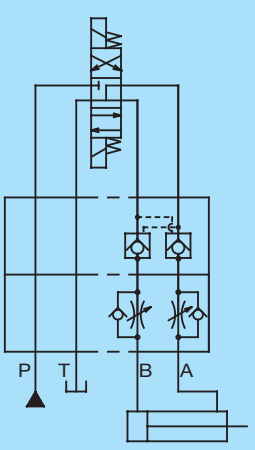
Auxiliary symbol  
K: With handle



Dimensions in parentheses indicate nominal diameter 03.

# Precautions when Ganging Modular Valves

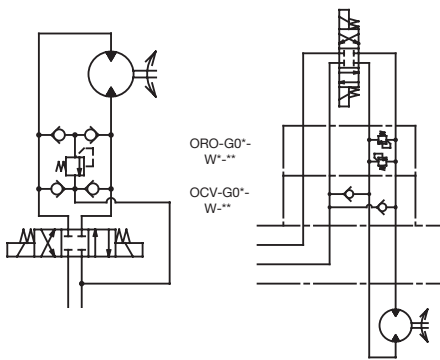
Note the following precautions when ganging modular valves together in the applicable example circuits.

Circuit Diagram	Description	Incorrect	Correct
<p>Locking Circuit and Pressure Reducing Circuit</p>	<ul style="list-style-type: none"> <li>●Cylinder position not maintained</li> <li>○Leaks occur because, during the pilot check, the line being maintained flows into the pilot line of the reducing valve.</li> </ul>	<p>Solenoid</p> <p>Pilot Operate Check Modular Valve (AB Line)</p> <p>Pressure Reducing Modular Valve (B Line)</p> 	
<p>Pressure Reduction Circuit with Speed Control</p>	<ul style="list-style-type: none"> <li>● Insufficient cylinder output and drop in speed</li> <li>○ Pressure increases due to the restrictor effect of the flow regulator. Since the pilot runs from that line, pressure reduction makes smooth operation impossible.</li> </ul>	<p>Solenoid</p> <p>Flow Regulator Modular Valve (A, B Line, Meter Out)</p> <p>Pressure Reducing Modular Valve (B Line)</p> 	
<p>Locking Circuit and Speed Control Circuit</p>	<ul style="list-style-type: none"> <li>●Cylinder knocking</li> <li>○ Pressure is increased by the restrictor effect of the flow regulator. That pressure moves the pilot check in the closed direction, which causes the valve to repeatedly open and close.</li> </ul>	<p>Solenoid</p> <p>Flow Regulator Modular Valve (A, B Line, Meter Out)</p> <p>Pilot Operate Check Modular Valve (AB Line)</p> 	

## Valve Ganging Circuit Configuration Examples

Anti-cavitation Circuit

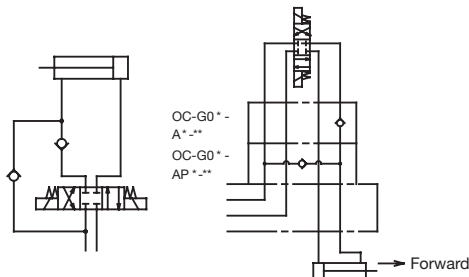
G<sup>01</sup>  
03



- Surge pressure is prevented by the inertia of the actuator, and cavitation by fluid being sucked in through the opposite port, which is in negative pressure, is prevented.
- Example Valve Model Numbers (G03)  
Relief Valve — ORO-G03-W\*-J50  
Vacuum Check Valve — OCV-G03-W-J50

Differential Circuit

G<sup>01</sup>  
03



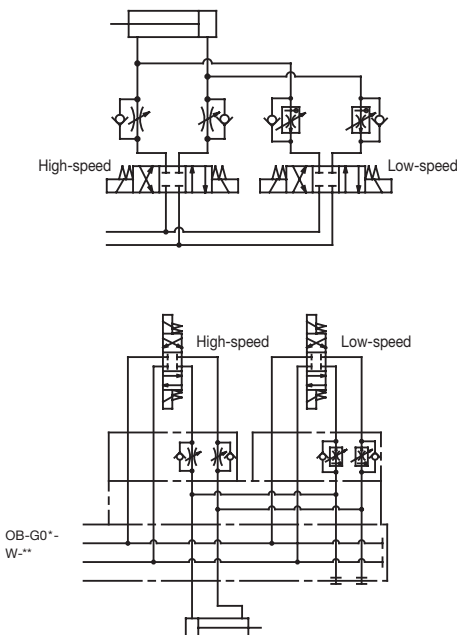
- When the cylinder advances, the rod side return fluid returns to the P port and the pump discharge rate and confluence are advanced at high speed (differential).
- Example Valve Model Numbers (G03)  
Check valve — OC-G03-A\*-J50  
Differential check valve — OC-G03-AP\*-J50

Important:

Cylinder effective output is the rod surface area portion only.

2-speed Circuit

G<sup>01</sup>  
03



- This type of circuit allows variation between two actuator speeds. It prevents low-speed shock when the actuator starts up or stops, and it used when the intermediate stroke is operated at high speed.
- Example Valve Model Numbers (G03)  
2-speed Plate — OB-G03-W-(H)-J30  
High-speed Flow Regulator Valve — OCY-G-03-W-Y-J51  
Low-speed Flow Control Valve — OCF-G03-W60-Y-J50