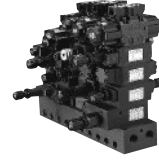


### Modular Valve Series

20 to 300 l /min  
21,25,35MPa



#### Overview

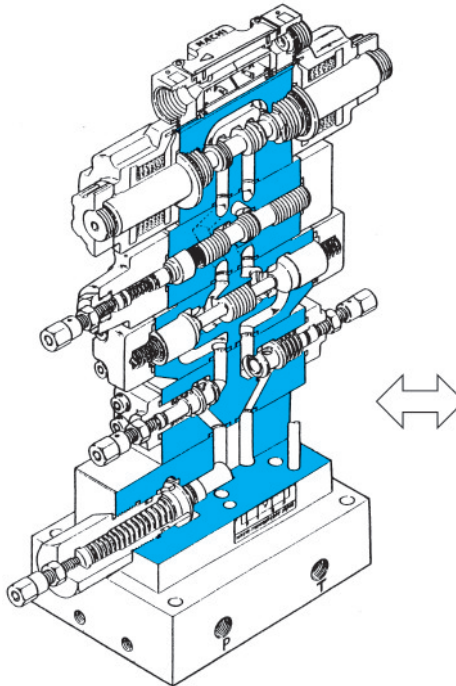
The modular valve is designed and engineered to integrate multiple hydraulic valve operations into a single unit, which eliminates the need for piping between valves and

enables configuration of a circuit using a single modular valve. The result is an innovative valve system whose energy and materials efficiency pro-

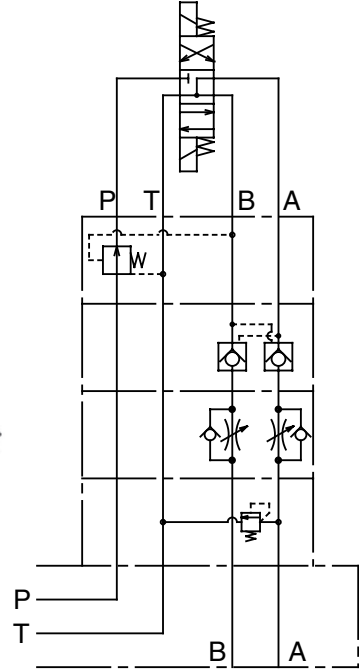
vide advantages in terms of compact configuration, reliability, and more. The illustrations below show one example of a circuit configuration using this system.

#### 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 50 l /min, G03 100 l /min, G04 300 l /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 4401-03-02-0-94	1 to 4
03 Series	3/8	25{255}(Note 1)	100	ISO 4401-05-04-0-94	1 to 4
04 Series	1/2	35{357}	300	ISO 4401-07-06-0-94	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.

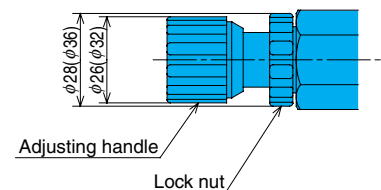
#### K Series Modular Valve

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

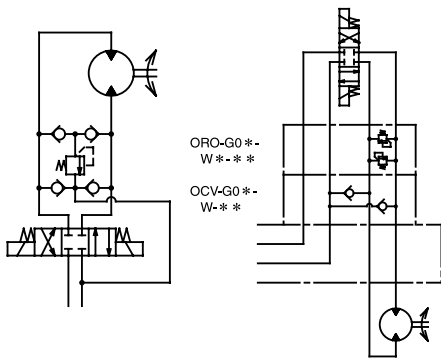
Note the following precautions when ganging modular valves together in the applicable example circuits.

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 01  
03

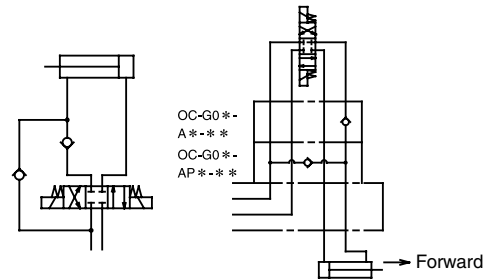


ORO-G0\*-  
W\*-\*\*  
OCV-G0\*-  
W\*-\*\*

- 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 01  
03



OC-G0\*-  
A\*-\*\*  
OC-G0\*-  
AP\*-\*\*

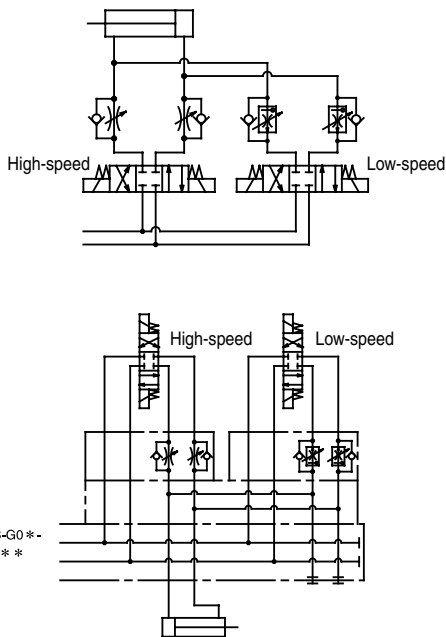
- When the cylinder advances, the rod side return fluid returns to the P port and the pump discharge rate and confluence are advanced at high speed (differential).
- Example Valve Model Numbers (G03)  
Check valve ————— OC-G03-A\*-J50  
Differential check valve ——— OC-G03-AP\*-J50

Important:

Cylinder effective output is the rod surface area portion only.

## 2-speed Circuit

G 01  
03



OB-G0\*-  
W\*-\*\*

- 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