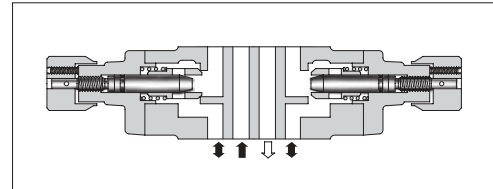


## Throttle and Check Modular Valves

### Specifications

| Model Numbers                                | Max. Operating Pressure<br>MPa (PSI) | Max. Flow<br>L/min (U.S.GPM) |
|----------------------------------------------|--------------------------------------|------------------------------|
| MSA-01-**-50<br>MSB-01-**-50<br>MSW-01-**-50 | 31.5 (4570)                          | 60 (15.9) ★                  |

★ At the low differential pressure, maximum flow is limited. See "Pressure Drop at Throttle Fully Open" of the next page.



### Model Number Designation

| F-                                                                         | MSW                                          | -01        | -X                           | Y                            | -50           | *               |
|----------------------------------------------------------------------------|----------------------------------------------|------------|------------------------------|------------------------------|---------------|-----------------|
| Special Seals                                                              | Series Number                                | Valve Size | Direction of Flow ("A" Line) | Direction of Flow ("B" Line) | Design Number | Design Standard |
| F:<br>Special Seals for Phosphate Ester Type Fluids (Omit if not required) | MSA : Throttle and Check Valve for A-Line    | 01         | X: Metre-out<br>Y: Metre-in  | —                            | 50            | Refer to ★      |
|                                                                            | MSB : Throttle and Check Valve for B-Line    |            | —                            | X: Metre-out<br>Y: Metre-in  |               |                 |
|                                                                            | MSW : Throttle and Check Valve for A&B-Lines |            | X: Metre-out<br>Y: Metre-in  |                              |               |                 |
|                                                                            |                                              |            | X: Metre-out                 | Y: Metre-in                  |               |                 |
|                                                                            |                                              |            | Y: Metre-in                  | X: Metre-out                 |               |                 |

★ Design Standards: None ..... Japanese Standard "JIS", European Design Standard and N. American Design Standard

### Instructions

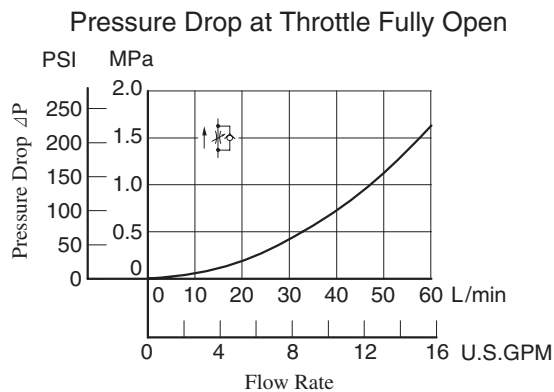
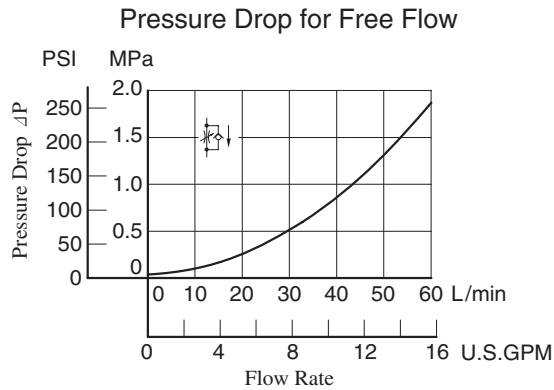
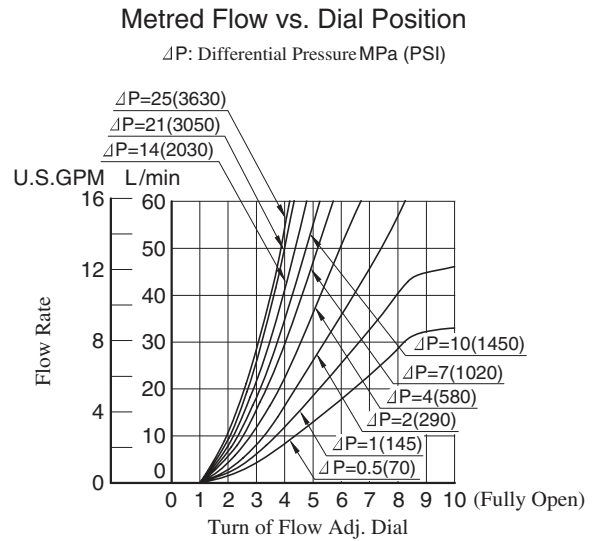
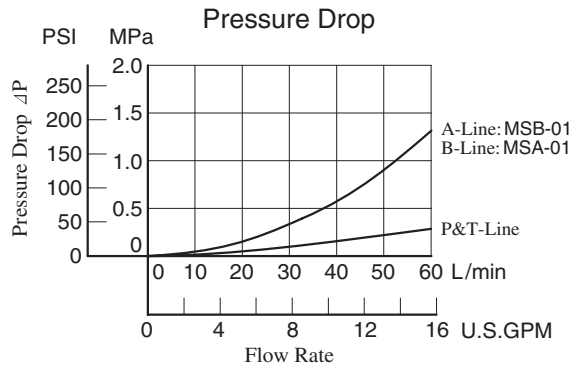
- To make flow rate adjustment, loosen locking screw for the dial and turn the flow adjustment dial clockwise or anti-clockwise. For a decrease of flow, turn the dial clockwise. Be sure to re-tighten the locking screw firmly after the adjustment of the flow rate.

### Graphic Symbols

| Metre-out            | Metre-in             |
|----------------------|----------------------|
| <p>MSA-01-X</p>      | <p>MSA-01-Y</p>      |
| <p>MSB-01-X</p>      | <p>MSB-01-Y</p>      |
| <p>MSW-01-X</p>      | <p>MSW-01-Y</p>      |
| Metre-out • Metre-in | Metre-in • Metre-out |
| <p>MSW-01-XY</p>     | <p>MSW-01-YX</p>     |

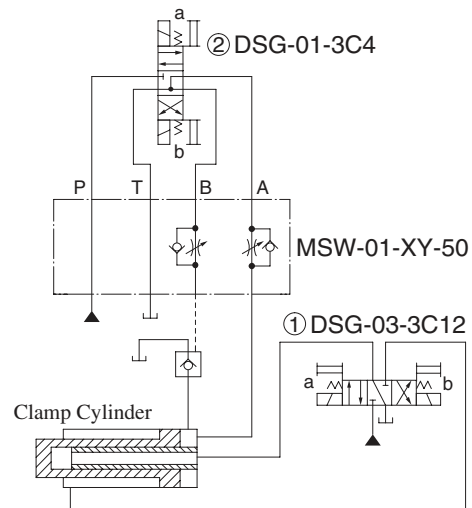
## Typical Performance Characteristics

Hydraulic Fluid: Viscosity 35 mm<sup>2</sup>/s (164 SSU), Specific Gravity 0.850



## Application

### Circuit of Clamp Cylinder for Injection Molding Machine

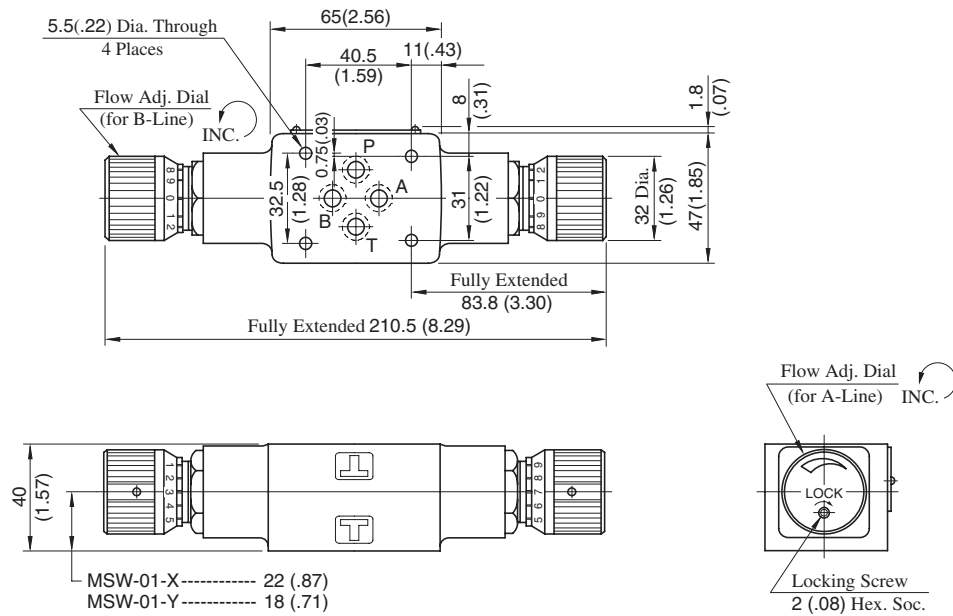


### Operation Sequence

| Clamp Cylinder                           | Advance     | End Point Pressurisation | Decompression   | Retreat     |
|------------------------------------------|-------------|--------------------------|-----------------|-------------|
| Solenoid Operated Directional Valve<br>① | Sol.a<br>ON | →                        | Centre Position | Sol.b<br>ON |
| Solenoid Operated Directional Valve<br>② | Sol.b<br>ON | Sol.a<br>ON              | Sol.b<br>ON     | →           |

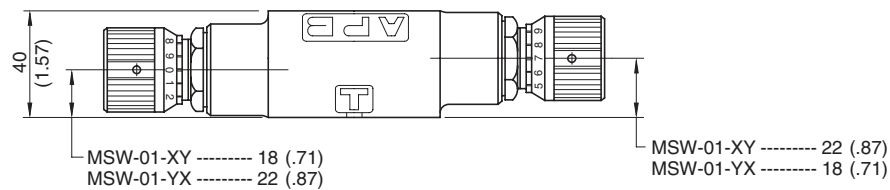
## MSW-01-X<sub>Y</sub>-50

DIMENSIONS IN  
MILLIMETRES (INCHES)



Approx. Mass..... 1.5 kg (3.3 lbs.)

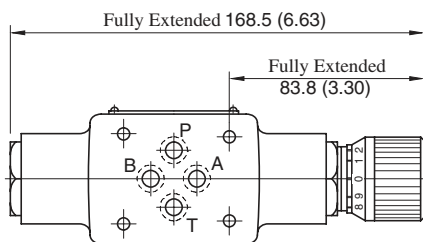
## MSW-01-XY<sub>YX</sub>-50



Approx. Mass..... 1.5 kg (3.3 lbs.)

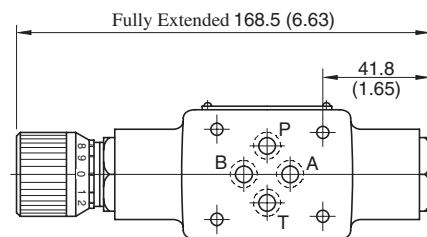
- For other dimensions, refer to "MSW-01-X<sub>Y</sub>" drawing above.

## MSA-01-X<sub>Y</sub>-50



Approx. Mass..... 1.3 kg (2.9 lbs.)

## MSB-01-X<sub>Y</sub>-50



Approx. Mass..... 1.3 kg (2.9 lbs.)

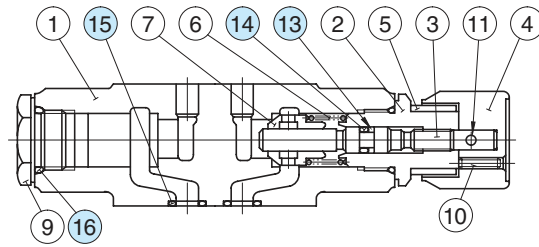
- For other dimensions, refer to "MSW-01" drawing above.

F

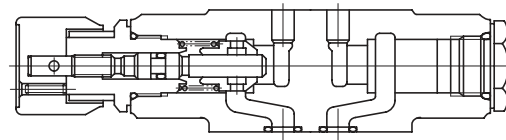
01 Series Modular Valves

■ Spare Parts List

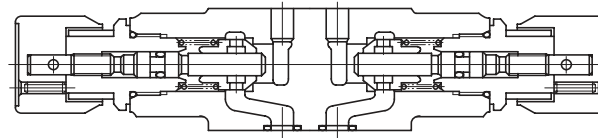
MSA-01-X<sub>Y</sub>-50



MSB-01-X<sub>Y</sub>-50



MSW-01-\*\*-50



● List of Seals

| Item | Name of Parts | Part Numbers | Quantity |     |
|------|---------------|--------------|----------|-----|
|      |               |              | MSA,MSB  | MSW |
| 13   | Back Up Ring  | SO-BB-P6     | 1        | 2   |
| 14   | O-Ring        | SO-NA-P6     | 1        | 2   |
| 15   | O-Ring        | SO-NB-P9     | 4        | 4   |
| 16   | O-Ring        | SO-NB-P18    | 2        | 2   |

Note: When ordering seals, please specify the seal kit number from the table right.

● List of Seal Kits

| Valve Model Numbers | Seal Kit Numbers |
|---------------------|------------------|
| MSA-01              | KS-MSA-01-30     |
| MSB-01              |                  |
| MSW-01              | KS-MSW-01-30     |