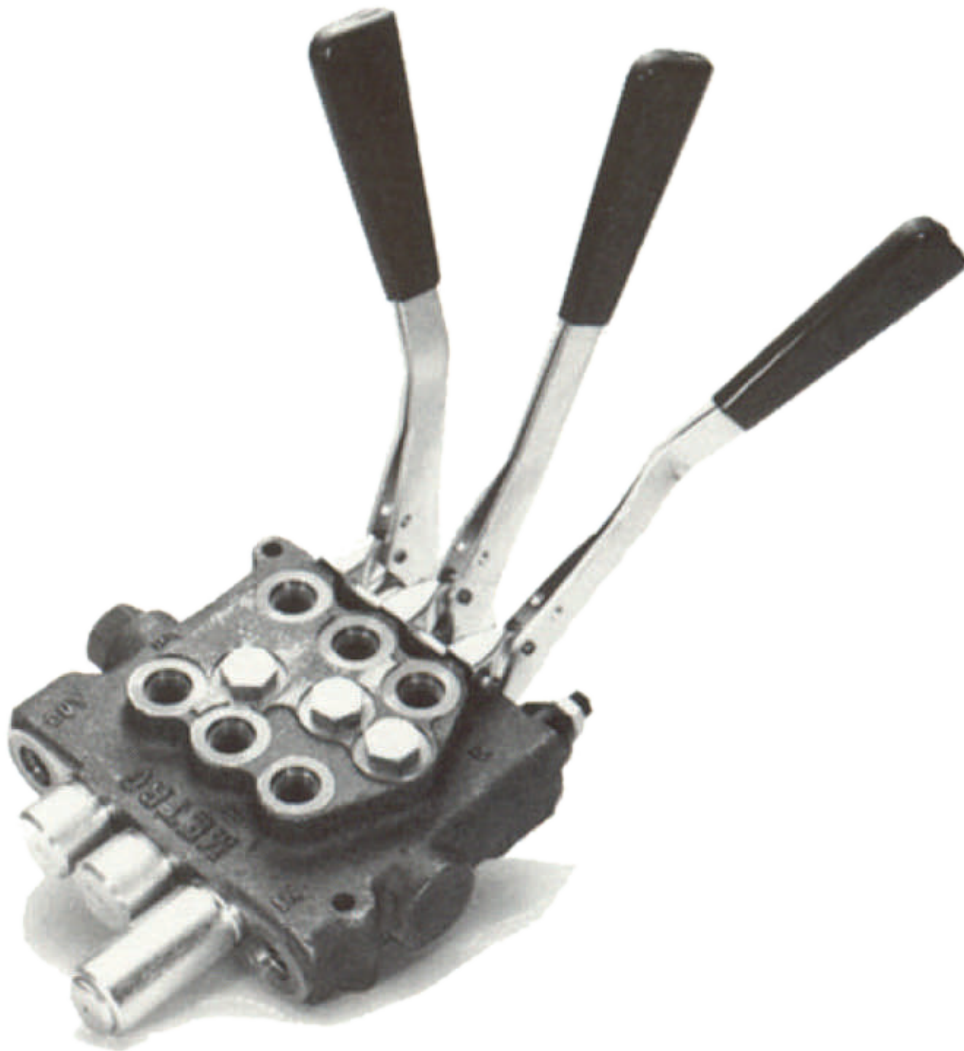


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# METRO

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***“When The Pressure’s On...”***



***Our High Quality Components  
Make the Difference!***

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METRO MACHINE & ENGINEERING 952-259-3623

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# Kits for Directional Control Valves

METRO MACHINE & ENGINEERING 952-259-3623

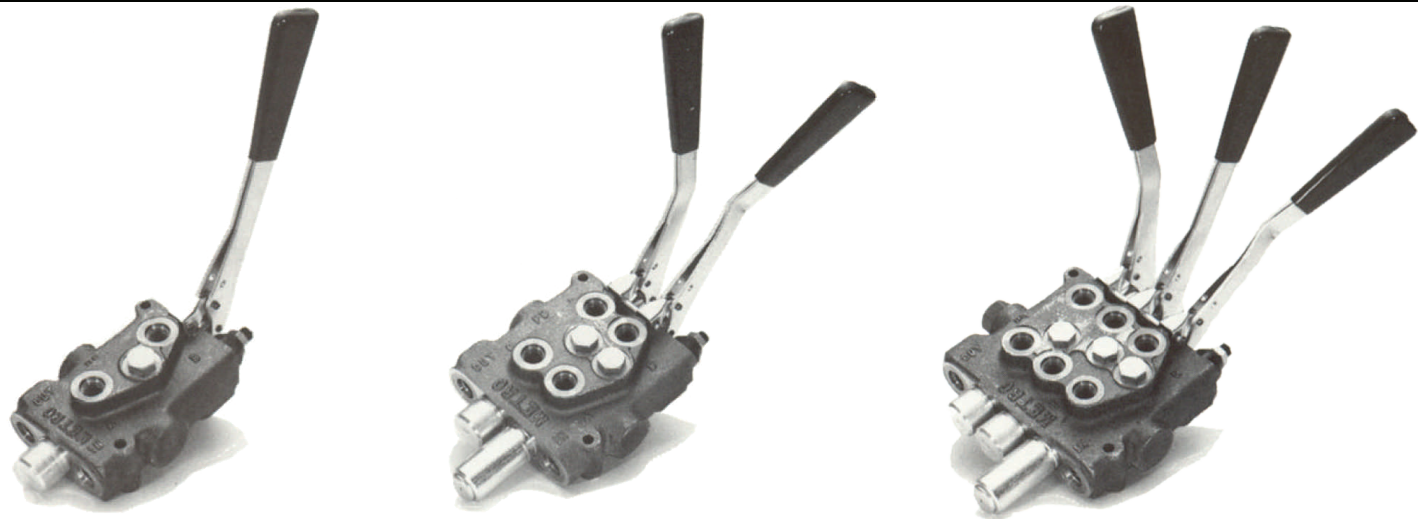
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| (CODE)       | DESCRIPTION                   |
|--------------|-------------------------------|
| 830-00-001   | Seal Kit (1 Spool Valve)      |
| 830-00-002   | Seal Kit (2 Spool Valve)      |
| 830-00-003   | Seal Kit (3 Spool Valve)      |
| 830-00-004   | Handle Linkage Kit            |
| 830-00-005   | Handle Kit, 1 Straight Handle |
| 830-00-006   | Float Spool Kit               |
| 830-00-007   | Spring Center Kit             |
| 830-00-008   | 3 Position Detent Kit         |
| 830-00-009   | Load Check Kit                |
| 830-00-010   | Closed Center Kit             |
| 830-00-019   | Relief Kit, 500 PSI           |
| 830-00-013   | Relief Kit, 1000 - 1499 PSI   |
| 830-00-014   | Relief Kit, 1500 - 1999 PSI   |
| 830-00-015   | Relief Kit 2000 - 2499 PSI    |
| 830-00-016   | Relief Kit 2500 - 3000 PSI    |
| 830-00-017   | NO Relief Kit                 |
| 830-00-023   | 2-Position Detent - Spool In  |
| 830-00-024   | 2-Position Detent - Spool Out |
| 830-00-121-S | Power Beyond Plug, w/seals    |
| H Handle Kit | 1-Spool Valve                 |
| J Handle Kit | 2-Spool Valve                 |
| K Handle Kit | 3-Spool Valve                 |

**Other parts available upon request.**

D SERIES 6 GPM  
DIRECTIONAL CONTROL VALVES  
1, 2 & 3 SPOOL

METRO MACHINE & ENGINEERING 952-259-3623



FEATURES

- One piece mono-block body construction using high tensile cast iron.
- Hard chrome plated and precision fitted spools.
- Easy installation with inlet and outlet ports on same end.
- Load check for each spool prevents accidental load drop (omitted with motor spool).
- Standard open center valving.

OPTIONS

- Variety of spool configurations.
- Spring centered or detented.
- Power beyond or closed center adapter plugs.
- Handle assemblies.
- **“MULTI” VALVE**, special 1 spool 4 way to 3 way conversion valve.

SPECIFICATIONS

| Pressure Rating       | Temperature Range                   |
|-----------------------|-------------------------------------|
| 3000 PSI<br>(207 Bar) | -22° to + 194° F<br>-30° to + 90° C |

| ORDER EXAMPLE FOR D2DF1T2J                                              |                                                                |                                                                 |                                                                                                                                |                        |                                                    |
|-------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------|
| D2                                                                      | D                                                              | SPOOL 1                                                         | F 1                                                                                                                            |                        |                                                    |
|                                                                         |                                                                | SPOOL 2                                                         | T 2                                                                                                                            |                        |                                                    |
|                                                                         |                                                                | SPOOL 3                                                         |                                                                                                                                |                        | J                                                  |
| Basic Valve Function<br>(With Load Checks)                              | Relief Setting<br>(Cracking Pressure)                          | Spool                                                           | Spring Return                                                                                                                  | Power Beyond Option    | Handle Option                                      |
| Repeat For Each Spool                                                   |                                                                |                                                                 |                                                                                                                                |                        |                                                    |
| D1<br>1 Spool Valve                                                     | 0 = No Relief                                                  | M = MOTOR<br>(Load Check Omitted)                               | 1 = Spring Centered with One Position Detent<br>2 = Standard Spring Centered Type                                              | Omit if Not Required   | Omit if No Handle Assembly Required                |
| D2<br>2 Spool Valve                                                     | RELIEF SETTING<br>A = 1000 PSI<br>B = 1500 PSI<br>C = 2000 PSI | T = TANDEM                                                      | 3 = 3 Position Detent (no spring)<br>4 = Micro Switch (incorporates spring centering)                                          | P = Power Beyond       | H = (1)<br>Complete Handle Assy.<br>(not attached) |
| D3<br>3 Spool Valve                                                     | D = 2500 PSI<br>E = 3000 PSI                                   | Y = 3 WAY                                                       | 5 = 2 Position Detent (neutral/spool in)<br>6 = 2 Position Detent (neutral/spool out)<br>7 = 2 Position Detent (spring offset) | S = Closed Center Plug | J = (2)<br>Complete Handle Assy.<br>(not attached) |
| CDI<br>“Multi” Valve<br>special 1 spool 4 way to 3 way conversion valve |                                                                | F = FLOAT<br>(specify spring return option “1” with this spool) | 8 = Special, Detent Spool In, Spring Return Out<br>9 = Special, Detent Spool Out, Spring Return In                             |                        | K = (3)<br>Complete Handle Assy. (not attached)    |

ORDER PROCEDURES

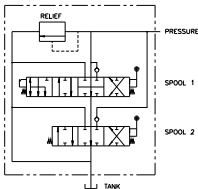
When developing the complete part number, copy all codes required.

**Note:** Other relief pressure settings, spool configuration, or port sizes available upon special order. Please consult factory.

ORDER EXAMPLE

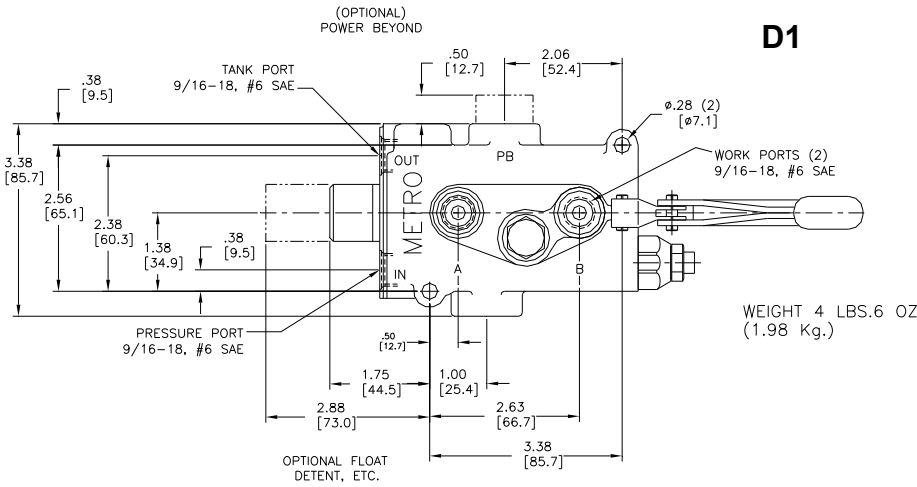
Complete part number of example  
**D2DF1T2J**

Float spool must always be in first or third position.

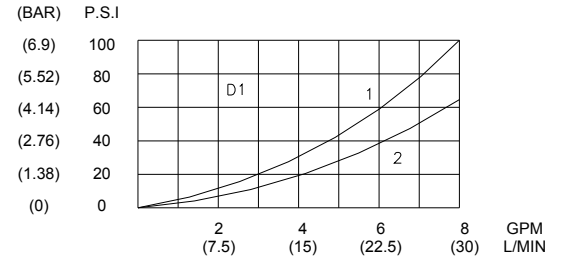


# DIMENSIONAL INFORMATION

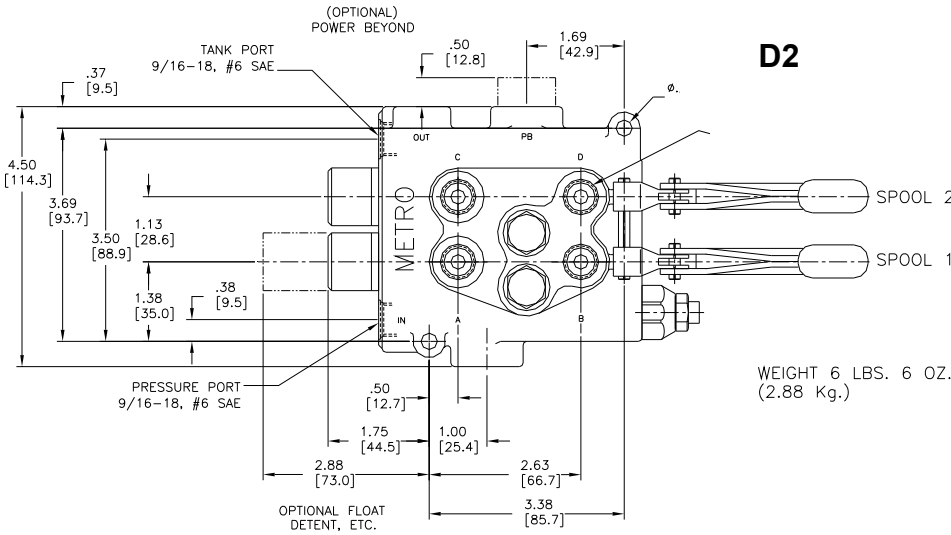
## D1



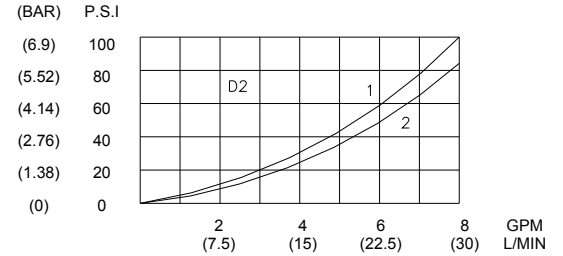
### PRESSURE DROP CHARACTERISTICS



## D2

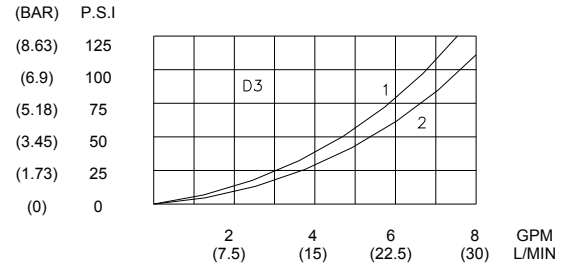
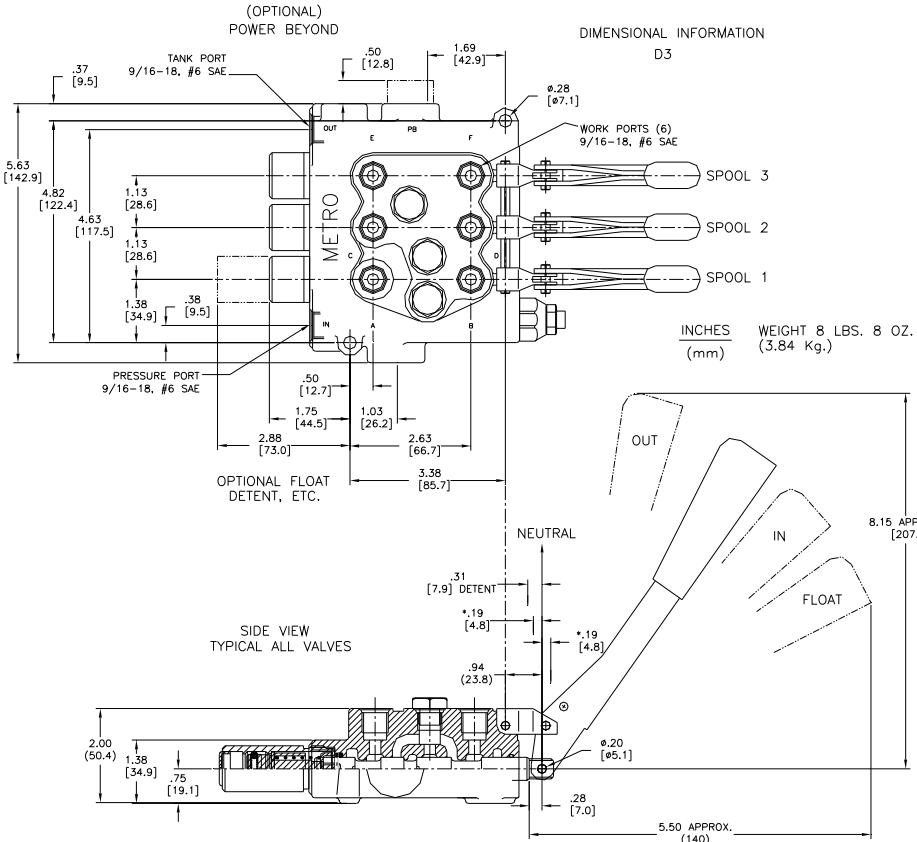


### PRESSURE DROP CHARACTERISTICS



## D3

### PRESSURE DROP CHARACTERISTICS



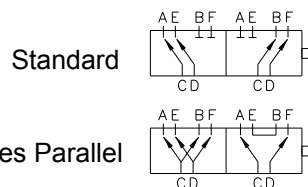
1—PRESSURE TO WORK PORT  
2—PRESSURE TO TANK

MAXIMUM INTERNAL LEAKAGE  
1 cubic inch/minute at 1000 psi  
16.4 milliliters/minute at 69 bar

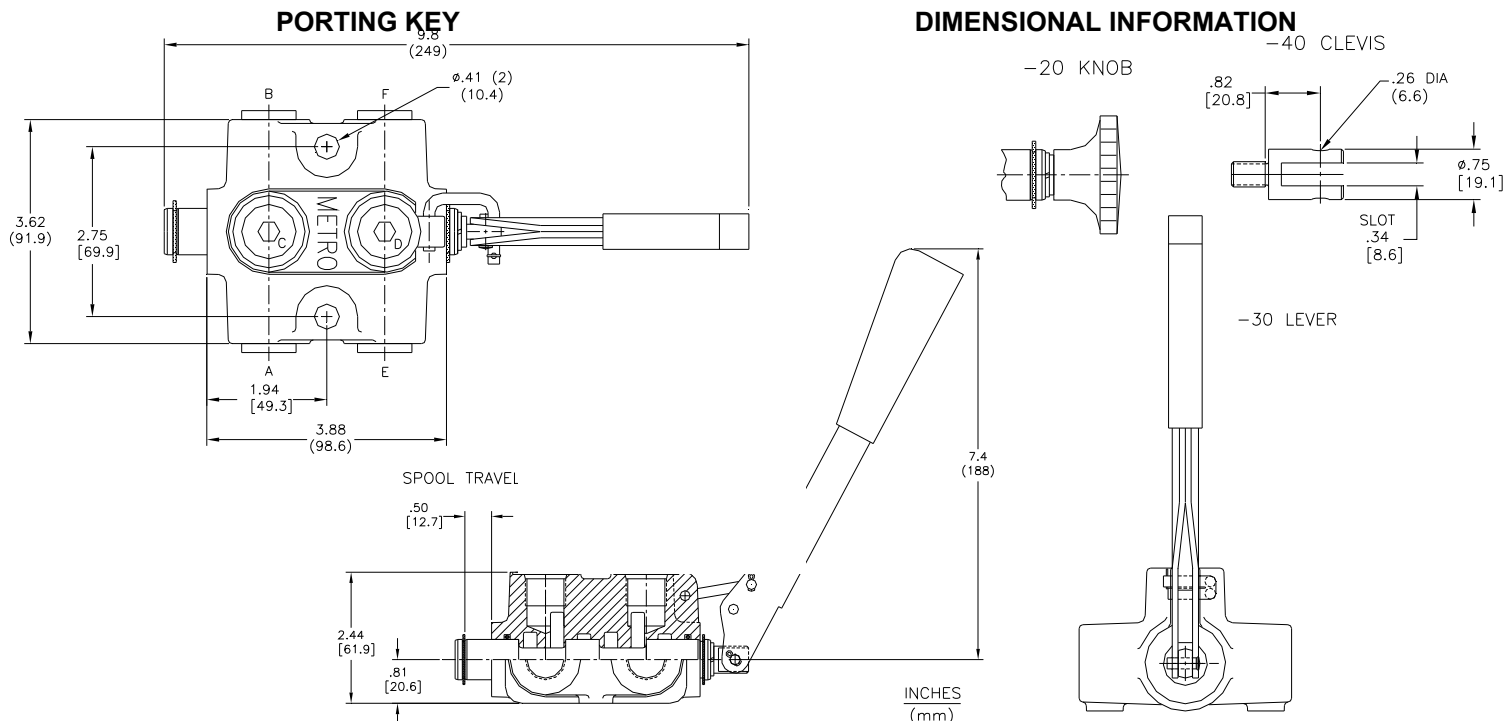
\*THIS DIMENSION CHANGES TO .12/(3.2) WHEN OPTIONAL FLOAT POSITION SPOOL IS USED.

NOTE: HANDLE ASSEMBLY NOT ATTACHED TO VALVE FOR SHIPPING. DESIGNED FOR STANDARD 90° AS SHOWN, MAY ALSO BE USED REVERSED FROM STANDARD.

# DS SIX PORT—TWO POSITION DOUBLE SELECTOR VALVES



METRO MACHINE & ENGINEERING 952-259-3623



## DESCRIPTION

The DS is a two position, double selector valve which directs the flow of hydraulic fluid to two separate hydraulic circuits. This allows operation of two double acting cylinders with one four-way control valve or four single-acting cylinders with two-three-way control valves.

The Metro DS two position double selector valve is of the open-crossover type. When the spool is moved and one pair of outlet ports start to close, the other pair of outlet ports start to open.

## PORTING KEY (Viewed from Handle End)

Standard Open Crossover: (See drawing upper right)

- With spool pushed into housing, port D and E are connected to each other, port C and A are connected to each other.
- With spool pulled out of housing, port D and F are connected to each other, port C and B are connected to each other.

## SERIES PARALLEL (Available on Special Order)

- With spool pushed into housing, port C is connected to port A and B, port D is connected to E and F.
- With spool pulled out of housing, port C is connected to port A and port D is connected to port F, port B is connected to port E.

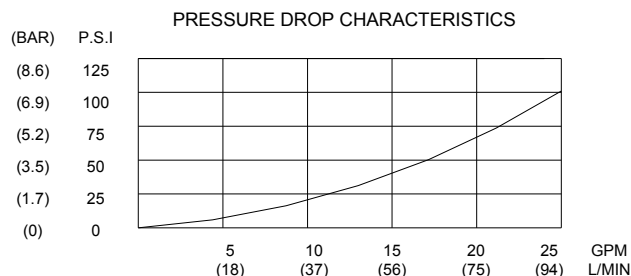
## ORDERING INSTRUCTIONS

| DS                       | 04                                                                                                 | -                                                                                                                                                    | 20                                                      | DR                                        |
|--------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------|
| Valve Model Number       | Port Size                                                                                          | Spool Type Options                                                                                                                                   | Spool Actuator Options                                  | Spool Return Options                      |
| DS Double Selector Valve | 02= 1/4 -18 NPT<br>03= 3/8 -18 NPT<br>04= 1/2 -14 NPT<br>06= 9/16 -18 #6 SAE<br>08= 3/4 -16 #8 SAE | = Standard Crossover Type<br><br>P = Optional Parallel Type (available on special order)<br><br>Other Special Spool Types Available on Special Order | 10= No Actuator<br>20= Knob<br>30= Lever*<br>40= Clevis | Omit if Not Required<br>DR= Spring Return |

\*LEVER ASSEMBLY NOT ATTACHED TO VALVE FOR SHIPPING

## SPECIFICATIONS

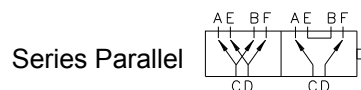
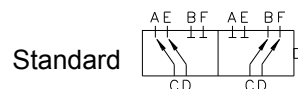
| Flow Capacity        | Pressure Rating       | Temperature Range                   | Weight                  |
|----------------------|-----------------------|-------------------------------------|-------------------------|
| 20 GPM<br>75 (L/MIN) | 3000 PSI<br>(207 Bar) | -22° to + 194° F<br>-30° to + 90° C | 4 lbs 4 oz<br>(1.92 kg) |



# MDS

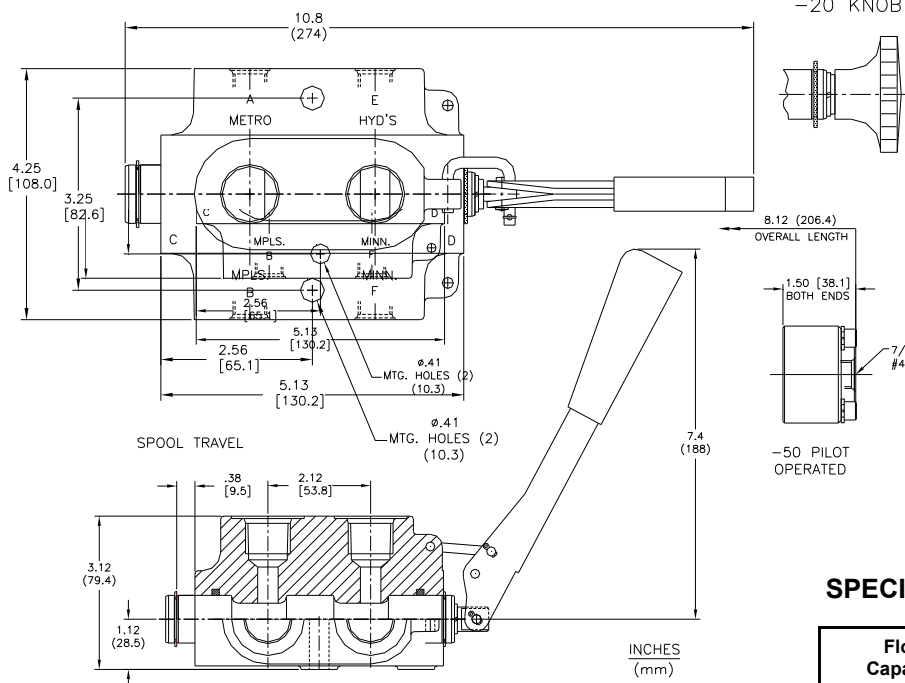
## SIX PORT—TWO POSITION

## DOUBLE SELECTOR VALVES

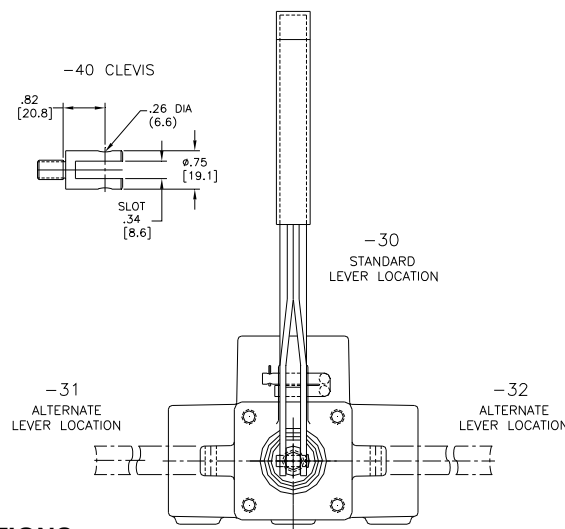


METRO MACHINE & ENGINEERING 952-259-3623

### PORTING KEY



### DIMENSIONAL INFORMATION



### SPECIFICATIONS

| Flow Capacity         | Pressure Rating       | Temperature Range                   | Weight             |
|-----------------------|-----------------------|-------------------------------------|--------------------|
| 30 GPM<br>114 (L/MIN) | 3000 PSI<br>(207 Bar) | -22° to + 194° F<br>-30° to + 90° C | 10 lbs<br>(4.5 kg) |

### DESCRIPTION

The MDS is a two position, double selector valve which directs the flow of hydraulic fluid to two separate hydraulic circuits. This allows operation of two double acting cylinders with one four-way control valve or four-single acting cylinders with two-three-way control valves.

The Metro MDS two position double selector valve is of the open-crossover type. When the spool is moved and one pair of outlet ports start to close, the other pair of outlet ports start to open.

### ORDERING INSTRUCTIONS

| MDS                       | 08                                                                                                                                                                                           | -                                                                 | 50                                                                                            | SR                                                                                                      |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Valve Model Number        | Port Size                                                                                                                                                                                    | Spool Type Options                                                | Spool Actuator Options                                                                        | Spool Return Options                                                                                    |
| MDS Double Selector Valve | 04= 1/2 -14 NPT<br>05= 3/4 -14 NPT<br>06= 1 -14 NPT<br>08= 3/4 -16<br>#8 SAE<br>10= 7/8 -14<br>#10 SAE<br>12= 1-1/16 -12<br>#12 SA<br>14= 1-3/16 -12<br>#14 SAE<br>16= 1-5/16 -12<br>#16 SAE | (-) Standard Crossover Type<br><br>P = Optional Parallel Type<br> | 10= No Actuator<br>20= Knob<br>30= Lever*<br>40= Clevis<br>50= Pilot Operated (hydraulically) | Omit if Spring Return Not Required<br><br>SR= Spring Return (casted)<br><br>RD= Spring Return (stamped) |

### PORTING KEY (Viewed from Handle End)

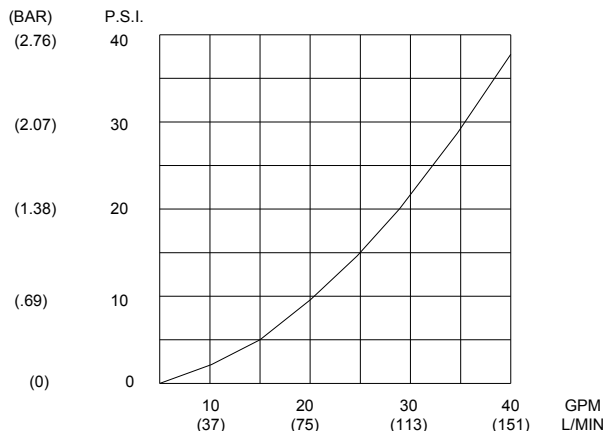
Standard Open Crossover: (See drawing upper right)

- With spool pushed into housing, port D and E are connected to each other, port C and A are connected to each other.
- With spool pulled out of housing, port D and F are connected to each other, port C and B are connected to each other.

### SERIES PARALLEL (Available on Special Order)

- With spool pushed into housing, port C is connected to port A and B, port D is connected to E and F.
- With spool pulled out of housing, port C is connected to port A and port D is connected to port F, port B is connected to port E

### PRESSURE DROP CHARACTERISTICS



\*LEVER ASSEMBLY NOT ATTACHED TO VALVE FOR SHIPPING

# MV, SV AND MSL SELECTOR VALVES



METRO MACHINE & ENGINEERING 952-259-3623

## DESCRIPTION

The Metro MV, SV and MSL Selector Valves with the standard spool may be used as an open or closed three way valve where flow is directed to an actuator i.e., single-acting cylinder in one position or flow from the actuator is allowed to return to tank, in the other position.

This valve may also be used as a three way diverter valve where inlet flow is directed to either of the two ports.

The standard spool has an open crossover so, as the spool is being shifted, one outlet port begins to close and the other outlet port begins to open.

## OPTIONS

A closed crossover spool is available upon special order for the MV and SV selector valves. Here, as the spool is being shifted, flow is not allowed to crossover between outlet ports because flow is closed to the outlet ports for a moment while shifting.

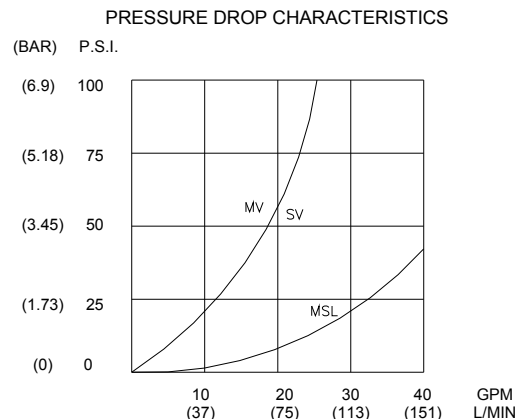
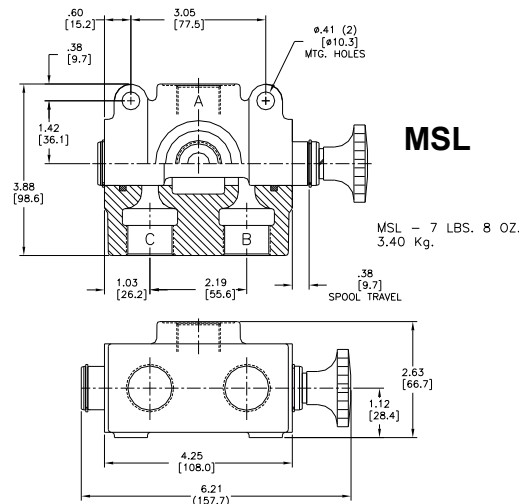
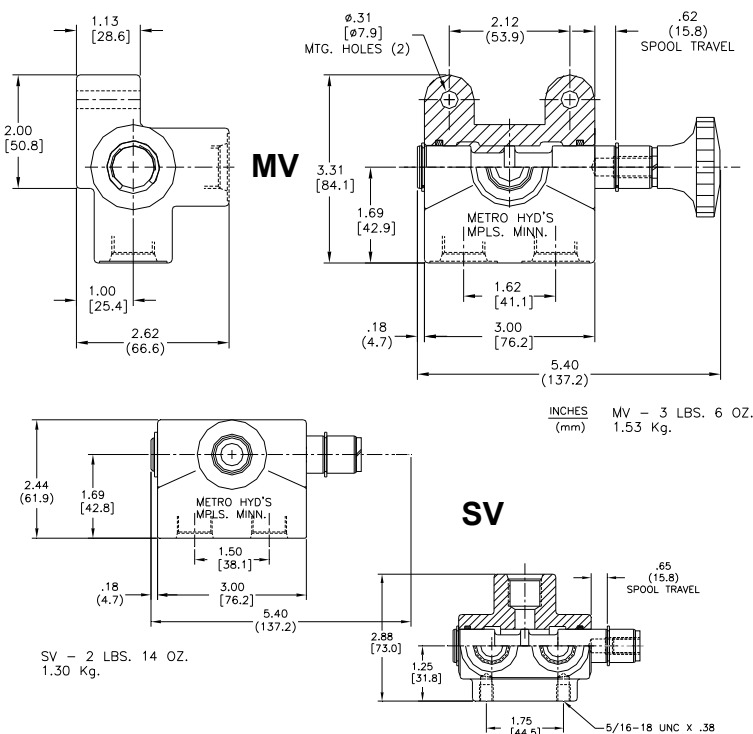
An optional float spool is available for the selector valves where all ports are either open to each other or closed to each other. This option is designed to allow cylinders to float or motors to free-wheel in such equipment as snowplows, combine headers, mower attachments, etc.

## SPECIFICATIONS

| Pressure Rating       | Temperature Range                   |
|-----------------------|-------------------------------------|
| 3000 PSI<br>(207 Bar) | -22° to + 194° F<br>-30° to + 90° C |

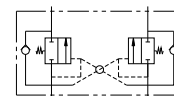
## ORDERING INSTRUCTIONS

| MV                                              | 04                                                                                                                                                |                                                                                                                                                                                                                       |                                                                             |                   |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|
| Model Number                                    | Port Size                                                                                                                                         | Options Other Than Standard Spool With Knob                                                                                                                                                                           | Spool Actuator Location Options                                             | Return Options    |
| <b>MV or SV</b><br>Up to 20 GPM<br>(75.8 L/MIN) | 03= 3/8 -18 NPT<br>04= 1/2 -14 NPT<br>06= 9/16 -18 #6 SAE<br>08= 3/4 -16 #8 SAE                                                                   | 10= No Knob<br>80= Float Spool w/Knob<br>81= Standard Spool w/Clevis<br>82= Standard Spool w/Spring Return<br>83= Float Spool w/Clevis<br>85= Float Spool w/Spring Return<br>89= Closed Center w/Knob & Spring Return | R= Reverse Spool<br><br>*Lever assembly for MV model available upon request | See spool options |
| <b>MSL</b><br>Up to 40 GPM<br>(151.6 L/MIN)     | 04= 1/2 -14 NPT<br>05= 3/4 -14 NPT<br>06= 1 -NPT<br>08= 3/4 -16 #8 SAE<br>10= 7/8 -14 #10 SAE<br>12= 1-1/16 -12 #12 SAE<br>16= 1-5/16 -12 #16 SAE | F= Float w/Knob<br>30= Handle<br>40= Standard w/Clevis<br>50= Pilot Operated                                                                                                                                          | R= Reverse Spool                                                            | SR= Spring Return |

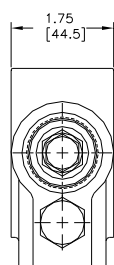


# D-601

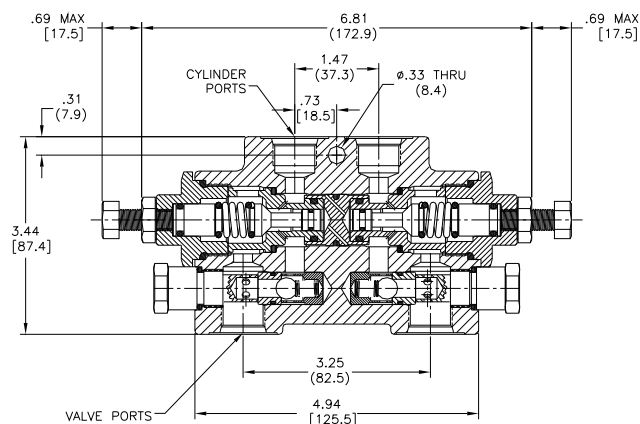
## DOUBLE PILOT OPERATED LOCK VALVES



METRO MACHINE & ENGINEERING 952-259-3623



INCHES  
(mm)



The D-601 Lock Valve is designed to lock a cylinder or part of a circuit while a directional control valve is in the neutral position, specifically for applications where directional control valve leakage could adversely affect the performance of the system. In addition, this lock valve also has built in integral reliefs for thermal or excess pressure shocks on the locked part of a circuit.

With the directional control valve in the neutral position, flow from both ends of a cylinder is locked by the D-601 Lock Valve. When the directional control valve is activated, flow is directed to one side of the valve unseating the ball check on that side. This allows pilot pressure to open the poppet on the opposite side of the valve and allow flow to return to tank. The pilot pressure required to unlock the load is approximately 20% of the difference between the internal relief setting and the load induced pressure.

### SPECIFICATIONS

| Flow Capacity         | Pressure Rating | Temperature Range                   | Weight                  |
|-----------------------|-----------------|-------------------------------------|-------------------------|
| See Performance Graph | 2500 PSI        | -22° to + 194° F<br>-30° to + 90° C | 3 lbs 4 oz<br>(1.47 kg) |

### APPLICATION

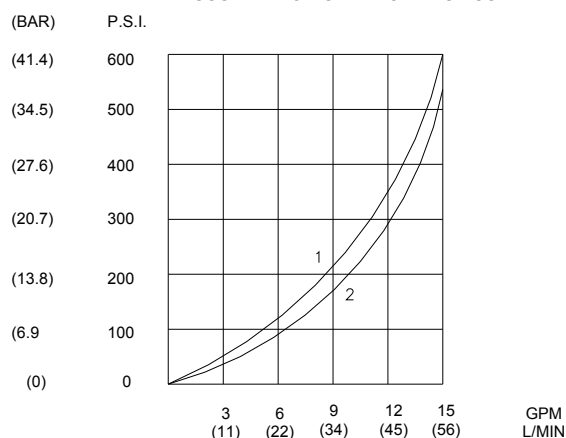
A pilot operated check valve (lock valve) should be incorporated in every loader, outrigger, back-hoe, work platforms.

### ORDERING INSTRUCTIONS

|              |                    |
|--------------|--------------------|
| D-601        | 08                 |
| Model Number | Port Size          |
| D-601        | 08 - 3/4 16 #8 SAE |

1. Prevents load from dropping faster than fluid is supplied to the actuator by the pump.
2. Locks actuator in selected position when no motion is desired.
3. Relieves excess pressure on system caused by load or thermal expansion.
4. Provides an emergency manual release for lowering load in case of power failure.
5. Requires less power when load is being raised or lowered.
6. Permits smooth movement and eliminates actuator chatter or cavitations.
7. Prevents load drifting due to directional valve leakage.

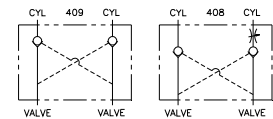
PRESSURE DROP CHARACTERISTICS



1. Valve Port to Cylinder Port
2. Cylinder Port to Valve Port

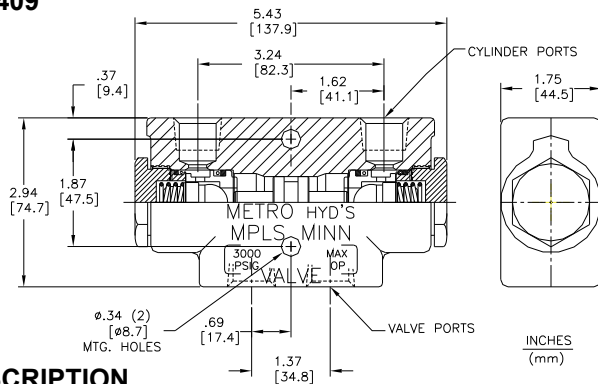
# 407, 408, 409— DOUBLE LOCK VALVE

# 411, 412— SINGLE LOCK VALVE

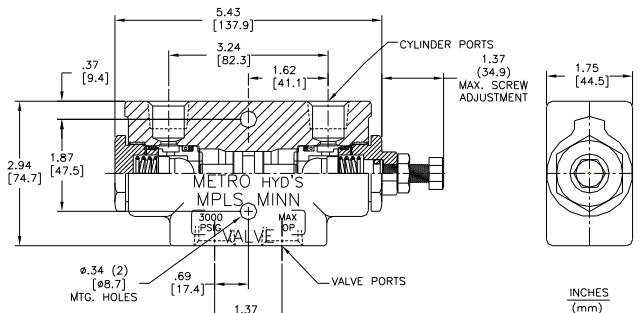


METRO MACHINE & ENGINEERING 952-259-3623

## 409



## 408



## DESCRIPTION

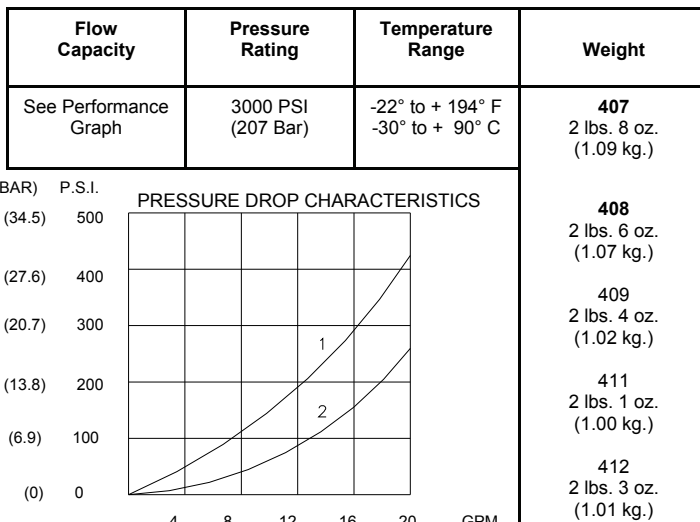
The Double Lock valves are designed to lock a cylinder or part of a circuit while a directional control valve is in the neutral position. Designed for applications where directional control valve leakage could adversely affect the performance of the system.

## OPERATION

With the directional control valve in the neutral position, flow from both ends of a cylinder is blocked, locking the cylinder piston in position by the Double Lock Valve. When the directional control valve is shifted to direct flow to one side of the cylinder, pressure opens the check ball and simultaneously moves the piston over to the opposite side of the valve opening this check ball allowing free flow return to the directional control valve. The 407 lock valve has two adjustable flow controls, and the 408 has one adjustable flow control which, by adjusting in or out, changes the pressure drop in the valves. This in most cases, smoothes our pulsations and eliminates valve chatter.

Single Lock Valves are also available. The 411 single lock is non-adjustable and the 412 single lock is adjustable.

## SPECIFICATIONS



## APPLICATION

Typical applications are loaders, outriggers, back hoes, cranes, fork lifts, work platforms, hydraulic winches, land planes, wing lifts, gauge wheels or any application where loads must be held in neutral position.

A 4-way control valve is required for all lock valve circuits, including single-acting cylinders, in order to apply unlocking pressure to the pilot circuit. The position pilot ratio is 3:1.

The amount of pressure required in the pilot circuit of the valve to unlock a single-acting cylinder is 30% of the locked pressure.

The amount of pressure required in the pilot circuit of the valve to unlock a single-acting cylinder is a function of cylinder areas and trapped pressure.

When the base end of the cylinder is locked use this formula for calculating the unlocking pressure.

$$\text{Unlocking pressure} = 3 - \frac{\text{Pressure on the rod end}}{\frac{\text{Cylinder area} - \text{Rod area}}{\text{Cylinder area}}}$$

When the rod end of the cylinder is locked use this formula.

$$\text{Unlocking pressure} = 3 - \frac{\text{Pressure on the base end}}{\text{Cylinder area}}$$

**CAUTION:** Note that when the rod end of a double-acting cylinder is locked, if the rod diameter exceeds approximately .75 times the cylinder diameter, unlocking pressure becomes excessive.

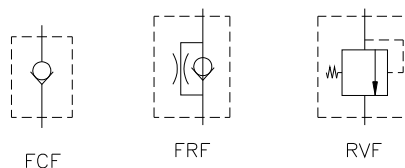
## ORDERING INSTRUCTIONS

| Model Number | Port Size           |
|--------------|---------------------|
| 407 Double   | 02= 1/4 -18 NPT     |
| 408 Double   | 03= 3/8 -18 NPT     |
| 409 Double   | 04= 1/2 -14 NPT     |
| 411 Single   | 05= 3/4 -14 NPT     |
| 412 Single   | 06= 9/16 -18 #6 SAE |
|              | 08= 3/4 -16 #8 SAE  |
|              | 10= 7/8 -14 #10 SAE |

# FC, FCF— CHECK VALVE

# FR, FRF— RESTRICTOR

# RV, RVF— RELIEF VALVE



METRO MACHINE & ENGINEERING 952-259-3623

## DESCRIPTION

The model FC-FCF Check Valve, FR-FRF Restrictor (Throttle) Valve, RV-RVF Relief Valve series of inline valves are available in a variety of sizes. These valves will operate satisfactorily when mounted inline in any position.

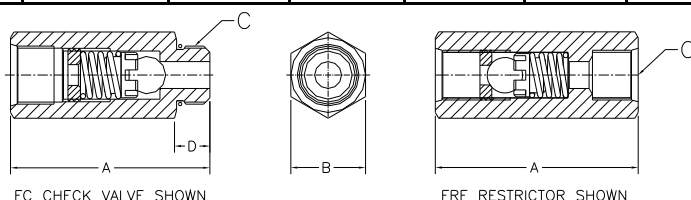
The FC,FR and RV are male/female design whereas the FCF, FRF and RVF are female/female design.

## ORDERING INSTRUCTIONS

| FR           | 50        | -062                                                                                |
|--------------|-----------|-------------------------------------------------------------------------------------|
| Model Number | Port Size | Orifice Size or Relief Setting                                                      |
| FC           | 08        | Orifice size for restrictor valves only<br><br>Relief setting for relief valve only |
| FR           | 38        |                                                                                     |
| RV           | 40        |                                                                                     |
| FCF          | 50        |                                                                                     |
| FRF          | 60        |                                                                                     |
| RVF          |           |                                                                                     |

## SPECIFICATIONS

| Pressure Rating    | Temperature Range                   | Restrictor Valve Orifice Sizes |      |        |      | Relief Valve Pressure Settings                               |
|--------------------|-------------------------------------|--------------------------------|------|--------|------|--------------------------------------------------------------|
|                    |                                     | Number                         | Size | Number | Size |                                                              |
| 3000 PSI (207 Bar) | -22° to + 194° F<br>-30° to + 90° C | -046                           | 3/64 | -125   | 1/8  | 1 -500 PSI (standard)<br><br>501 -1200 PSI<br>1201 -2500 PSI |
|                    |                                     | -062                           | 1/16 | -140   | 9/64 |                                                              |
|                    |                                     | -078                           | 5/64 | -156   | 5/32 |                                                              |
|                    |                                     | -093                           | 3/32 | -187   | 3/16 |                                                              |
|                    |                                     | -109                           | 7/64 | -250   | 1/4  |                                                              |

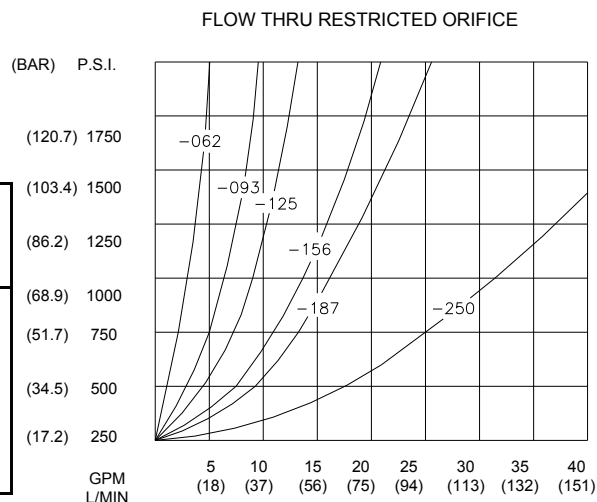


## APPLICATION DATA

The FC-FCF Check Valves allow free flow in one direction and checked flow in the opposite direction. Cracking pressure is 1 psi (.07 bar).

The FR-FRF Restrictor (throttle) Valve allows free flow in one direction and restricted flow in the opposite direction. Applications include accurate control of a double acting cylinder by pressurizing both sides of the piston, reducing cavitations of cylinders and motors or speed control of cylinders and motors.

The RV-RVF Relief Valves provide an inexpensive, but reliable fast acting relief protection in a hydraulic circuit.



| Port Sizes                               | A Length Inches (mm) | B Hex Size Inches (mm) | C Thread (Both Ends)  | D Thread Length Inches (mm) | E Weight              |
|------------------------------------------|----------------------|------------------------|-----------------------|-----------------------------|-----------------------|
| All dimensions common for: FCF, FRF & RV |                      |                        |                       |                             |                       |
| 08                                       | 3.0 (76.2)           | 1.12 (28.6)            | 3/4 -16 SAE #8        | .44 (11.2)                  | 8 oz. (.23 kg.)       |
| 38                                       | 3.0 (76.2)           | 1.00 (25.4)            | 3/8 -18 NPT           | .75 (19.1)                  | 8 oz. (.23 kg.)       |
| 40                                       | 3.0 (76.2)           | 1.06 (26.9)            | 3/8 -18 NPT male      | .75 (19.1)                  | 9 oz. (.26 kg.)       |
|                                          |                      |                        | To 1/2 -14 NPT female |                             |                       |
| 50                                       | 3.0 (76.2)           | 1.06 (26.9)            | 1/2 -14 NPT           | .81 (20.6)                  | 9 oz. (.26 kg.)       |
| 60                                       | 3.38 (85.7)          | 1.38 (34.9)            | 3/4 -14 NPT           | .81 (20.6)                  | 1 lb. (.45 kg.)       |
| All dimensions common for: FC, FR & RVF  |                      |                        |                       |                             |                       |
| 08                                       | 3.0 (76.2)           | 1.12 (28.6)            | 3/4 -16 SAE #8        |                             | 9 oz. (.26 kg.)       |
| 38                                       | 3.0 (76.2)           | 1.00 (25.4)            | 3/8 -18 NPT           |                             | 9 oz. (.26 kg.)       |
| 40                                       | 3.0 (76.2)           | 1.06 (26.9)            | 3/8 -18 NPT one end   |                             | 10 oz. (.28 kg.)      |
|                                          |                      |                        | 1/2 -14 NPT other     |                             |                       |
| 50                                       | 3.0 (76.2)           | 1.06 (26.9)            | 1/2 -14 NPT           |                             | 10 oz. (.28 kg.)      |
| 60                                       | 3.63 (92.2)          | 1.38 (34.9)            | 3/4 -14 NPT           |                             | 1 lb. 3 oz. (.54 kg.) |



Metro has over five decades of engineering excellence in the design, manufacture and marketing of hydraulic components for industrial, mobile and agricultural markets.

Special requirements in valve design, manifolds or modification to Metro's standard product to meet your specific needs will gladly be quoted upon request.



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#### **LIMITED WARRANTY**

The Company, warrants the products it manufactures against defective workmanship and/or materials for a period of one year from the date of sale to the original customer, provided written notice of the defect is received by the Company during said period. The warranty is limited to repair or exchange of the product at the sellers option. No obligation is assumed for the repair or exchange of any product rendered defective or damaged through normal wear or improper application, handling or use. No other liability, expressed or implied, is assumed by the Company. This warranty is in lieu of all other warranties, expressed or implied.