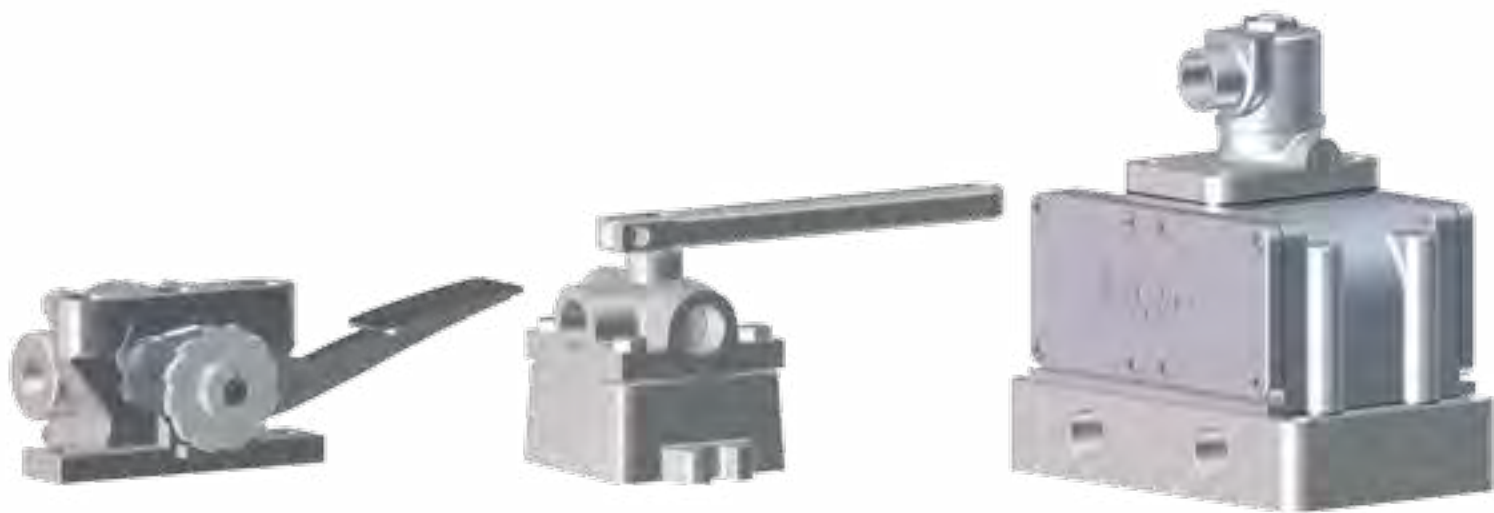


# Directional Control Valves

Hand, Foot and Solenoid

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**NOPAK**  
First in Manufacturing. Engineered to Last.

# FEATURES AND BENEFITS ORDERING INFORMATION

## FEATURES AND BENEFITS

NOPAK Disc-Type Valves have a well-earned reputation of being “practically indestructible.” They have established an enviable record for efficient, trouble-free operation, freedom from leakage and pressure loss, and long service life under extremely rugged operating conditions. These benefits are a direct result of the simplicity and ruggedness of the basic NOPAK Rotating Disc design. The flat, lapped disc, rotating at right angles to the stream flow, results in the following advantages:

### PRECISION CONTROL

Positive precision control through the complete cycle of valve operation, from slow gradual throttling action to instant full opening, without damaging shock, impact or pressure cutting.

### SEALING SURFACES IMPROVE WITH USE

The precision-lapped sealing surfaces of disc and seat actually improve with use because the “lapping-in” process continues while the valve is operated. The flat disc and seat have no interlocking contours; therefore, they cannot stick and always remain free for easy operation.

### PROTECTED AGAINST GRIT, ABRASION OR WIRE DRAWING

The valve seat is always covered by the rotating disc so that both sealing surfaces are always shielded from direct pressure flow and possible abrasion caused by grit, scale or other foreign matter usually present in air or hydraulic lines. An internal channel in the disc carries off such abrasive materials without damage to the sealing surfaces.

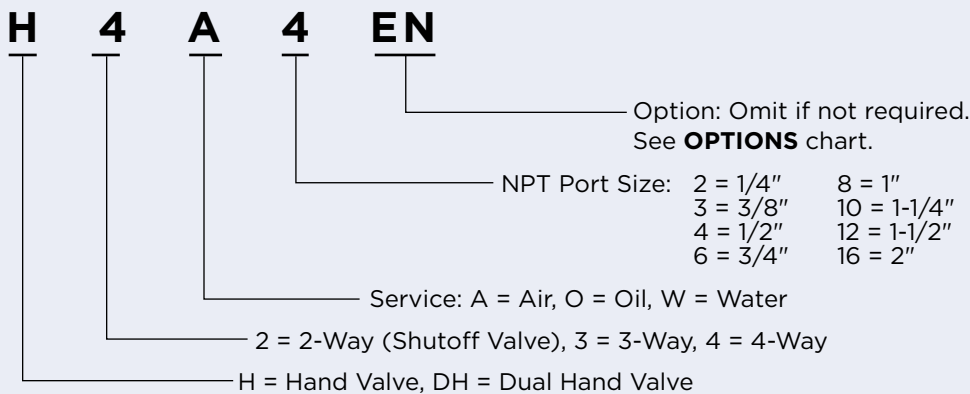
### PRESSURE SEALING

Line pressure is exerted against the valve disc at all times to keep the lapped surfaces of disc and seat positively sealed.

### PACKLESS CONSTRUCTION

NOPAK Valves depend entirely upon metal-to-metal, precision-lapped sealing surfaces for their leakproof construction. When used for hydraulic service (oil or water), additional protection against leakage past the valve stem has been provided by the use of an O-ring in the valve body and around the stem, just below the operating handle.

### ORDERING CODE EXAMPLE - HAND VALVES

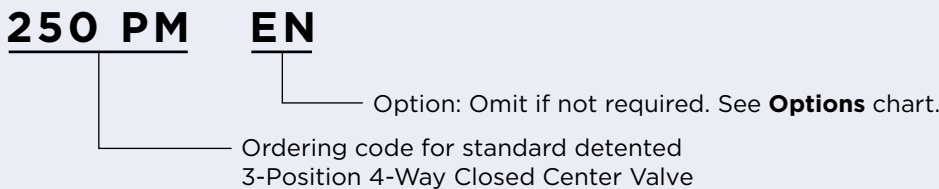


### OPTIONS

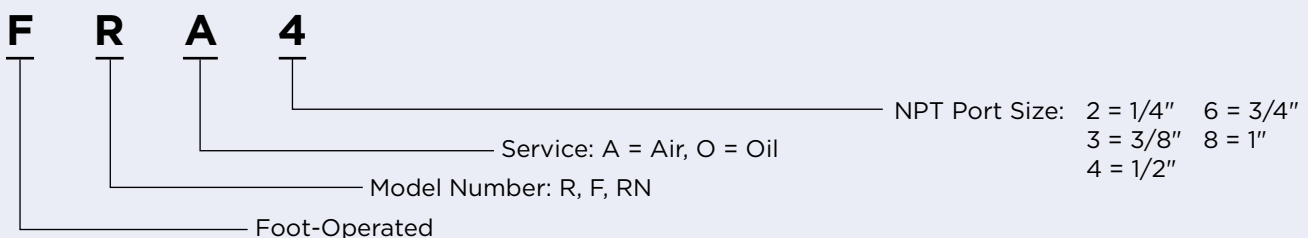
| CODE | DESCRIPTION                                |
|------|--|
| EN   | Exhaust In Neutral                         |
| SRN  | Spring Return To Neutral                   |
| ST   | Short Throw                                |
| STR  | Short Throw & Spring Return                |
| STNS | Short Throw No Spring                      |
| ENR  | Exhaust In Neutral & Spring Return Neutral |
| B    | Bleeder/Bleed Off                          |
| OC   | Open Center                                |
| CC   | Closed Center                              |

### ORDERING CODE EXAMPLE - HAND VALVES, PANEL MOUNT

One size available: 1/4" NPT. See page 148.



### ORDERING CODE EXAMPLE - FOOT VALVES

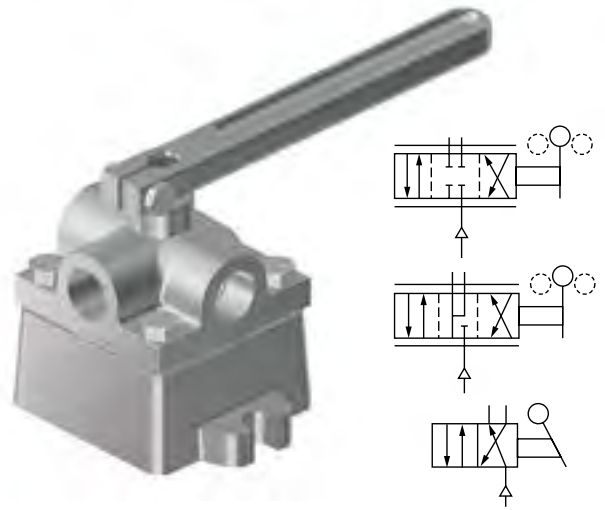


## 4-WAY, 3-POSITION AIR AND HYDRAULIC VALVES

The standard 4-way valve has two cycles of operation and is generally used to actuate double-acting cylinders. The construction and materials are identical to the 3-way valve. Both 3- and 4-way hand-operated air valves, 3/4" pipe size and larger, are fitted with grease cups to lubricate lapped surfaces.

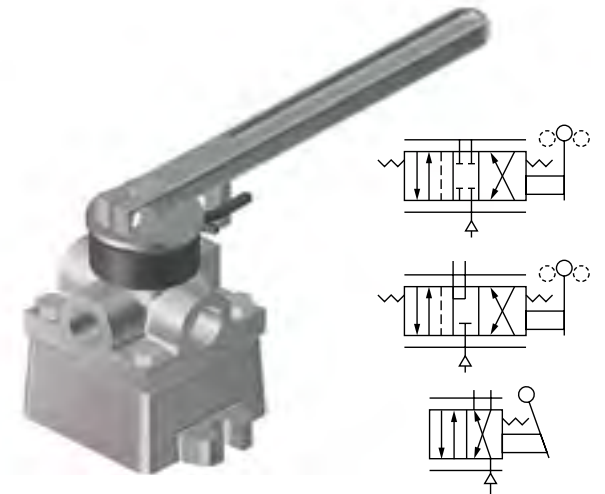
### 4-Way, 2-Position, Short Throw

This valve has no neutral and is available with a total lever throw of 45° in the 1/4", 3/8", 1/2", 3/4" and 1" pipe sizes. It is available with a total lever throw of 60° in the 1-1/4", 1-1/2" and 2" pipe sizes. It is dimensionally identical with the standard 4-way valve and identified by "2/P" stamped on the spindle end.



## 4-WAY SPRING RETURN TO NEUTRAL VALVES

Having the same basic construction and cycles of operation as the 4-way valves above, this valve is available in 1/4" through 1" pipe size for air, water and oil service at line pressures up to 100 PSI. Moving the lever to either extreme position pressurizes either cylinder port. A torsion spring located under the operating lever returns the lever to the neutral position when released. It is also available in the 2-position short throw valve.



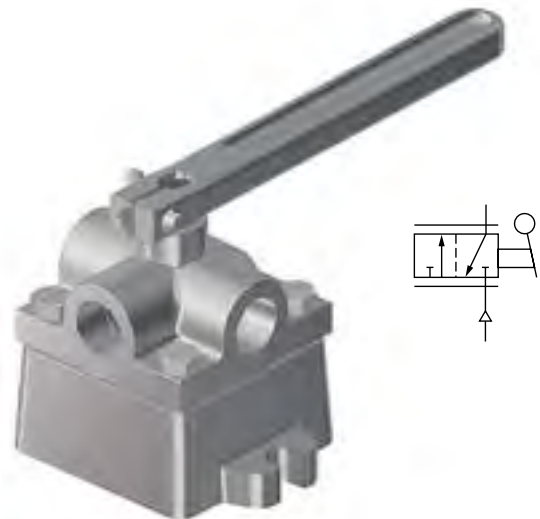
## 3-WAY AIR AND HYDRAULIC VALVES

The 3-way valve has two lever positions, pressure and exhaust, and is used to actuate single-acting cylinders.

The body and cap are made of semi-steel, the disc of hard bronze. This construction provides the best friction coefficient for air service and ensures easy operating and long wearing qualities.

These same materials are used for oil hydraulic service along with an O-ring in the body for extra precaution against stem leakage. For Water Service the valve body is constructed of cast bronze, uses a bronze spindle, a Nye-Koted cap, and the stem is equipped with an O-ring.

A 3-way, 3-position valve with a hold position can be had by using a standard 4-way valve and plugging one cylinder port.



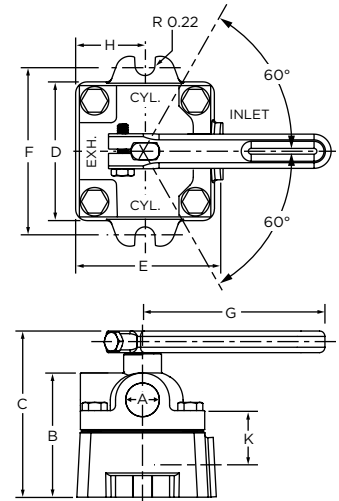
# “FOUNDRY TOUGH” HAND VALVES - DISC TYPE

## DATA AND DIMENSIONS

### 4-WAY VALVE, 250 PSI MAX. PRESSURE

| MODEL NUMBER | A<br>(PIPE SIZE) | B      | C       | D     | E      | F     | G     | H     | K       | WEIGHT IN POUNDS |
|--------------|------------------|--------|---------|-------|--------|-------|-------|-------|---------|------------------|
| H4( ) 2 ( )  | 1/4              | 1-7/8  | 3       | 2-1/2 | 2-1/2  | 2-3/4 | 4-1/4 | 5/16  | 1-3/16  | 2-1/4            |
| H4( ) 3 ( )  | 3/8              | 2-1/4  | 3-7/8   | 2-7/8 | 3-1/16 | 3-3/4 | 6-1/8 | 7/16  | 1-9/16  | 4-3/4            |
| H4( ) 4 ( )  | 1/2              | 2-1/4  | 3-7/8   | 2-7/8 | 3-1/16 | 3-3/4 | 6-1/8 | 7/16  | 1-9/16  | 4-3/4            |
| H4( ) 6 ( )  | 3/4              | 2-3/4  | 4-7/8   | 3-7/8 | 4      | 4-5/8 | 8     | 9/16  | 1-15/16 | 6                |
| H4( ) 8 ( )  | 1                | 3-1/2  | 5-5/8   | 4-1/4 | 4-1/4  | 5-3/8 | 9     | 9/16  | 2-1/2   | 16-7/8           |
| H4( ) 10 ( ) | 1-1/4            | 5-1/4  | 7-13/16 | 6     | 6-7/16 | 6-3/4 | 12    | 9/16  | 3-3/4   | 29               |
| H4( ) 12 ( ) | 1-1/2            | 5-1/4  | 7-13/16 | 6     | 6-7/16 | 6-3/4 | 12    | 9/16  | 3-3/4   | 29               |
| H4( ) 16 ( ) | 2                | 6-7/16 | 9-3/4   | 7-1/4 | 7-7/16 | 8-3/8 | 15    | 13/16 | 4-1/2   | 49-1/4           |

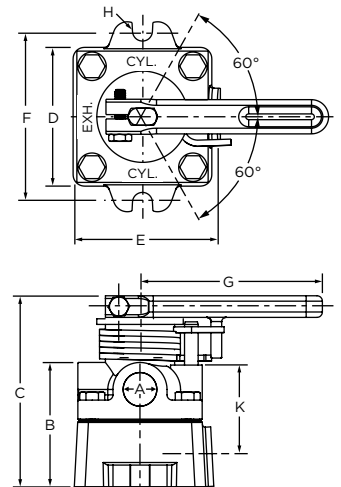
NOTE: 1-1/4" and 1-1/2" valves have 3 mounting lugs on cap.



## DATA AND DIMENSIONS

### 4-WAY SPRING RETURN TO NEUTRAL VALVE, 100 PSI MAX. PRESSURE

| MODEL NUMBER | A<br>(PIPE SIZE) | B     | C     | D     | E      | F     | G     | H    | K       | WEIGHT IN POUNDS |
|--------------|------------------|-------|-------|-------|--------|-------|-------|------|---------|------------------|
| H4( ) 2 ( )  | 1/4              | 1-7/8 | 3-5/8 | 2-1/2 | 2-1/2  | 2-3/4 | 5-1/2 | 5/16 | 1-3/16  | 2-3/4            |
| H4( ) 3 ( )  | 3/8              | 2-1/4 | 4-5/8 | 3-1/8 | 3-1/4  | 3-3/4 | 8     | 7/16 | 1-3/4   | 6-5/8            |
| H4( ) 4 ( )  | 1/2              | 2-1/4 | 4-5/8 | 3-1/8 | 3-1/4  | 3-3/4 | 8     | 7/16 | 1-3/4   | 6-5/8            |
| H4( ) 6 ( )  | 3/4              | 2-3/4 | 4-7/8 | 3-7/8 | 4      | 4-5/8 | 8     | 9/16 | 1-13/16 | 7                |
| H4( ) 8 ( )  | 1                | 3-1/2 | 6-3/8 | 4-1/4 | 4-9/16 | 5-3/8 | 9     | 9/16 | 2-1/2   | 16               |

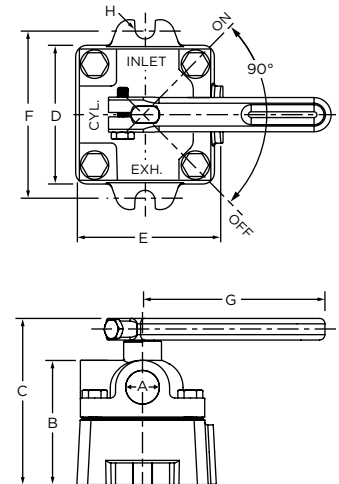


## DATA AND DIMENSIONS

### 3-WAY VALVE, 250 PSI MAX. PRESSURE

| MODEL NUMBER   | A<br>(PIPE SIZE) | B       | C       | D     | E      | F     | G     | H     | WEIGHT IN POUNDS |
|----------------|------------------|---------|---------|-------|--------|-------|-------|-------|------------------|
| H3( ) 2 ( )    | 1/4              | 1-7/8   | 3       | 2-1/2 | 2-5/16 | 2-3/4 | 4-1/4 | 5/16  | 2                |
| H3( ) 3 ( ) •  | 3/8              | 2-11/16 | 4-3/16  | 3-1/8 | 3-1/16 | 3-3/4 | 6     | 7/16  | 5-1/2            |
| H3( ) 4 ( ) •  | 1/2              | 2-11/16 | 4-3/16  | 3-1/8 | 3-1/16 | 3-3/4 | 6     | 7/16  | 5-1/2            |
| H3( ) 6 ( ) •  | 3/4              | 2-3/4   | 4-7/8   | 3-7/8 | 4      | 4-5/8 | 8     | 9/16  | 6                |
| H3( ) 8 ( ) •  | 1                | 3-1/2   | 5-5/8   | 4-1/4 | 4-1/4  | 5-3/8 | 9     | 9/16  | 16-7/8           |
| H3( ) 10 ( ) • | 1-1/4            | 5-1/4   | 7-13/16 | 6     | 6-7/16 | 6-3/4 | 12    | 9/16  | 29               |
| H3( ) 12 ( ) • | 1-1/2            | 5-1/4   | 7-13/16 | 6     | 6-7/16 | 6-3/4 | 12    | 9/16  | 29               |
| H3( ) 16 ( ) • | 2                | 6-7/16  | 9-3/4   | 7-1/4 | 7-7/16 | 8-3/8 | 15    | 13/16 | 49-1/4           |

• = This valve is the 4-way of the same pipe size described in the table at the top of this page, with one cylinder port plugged.



## NOPAK PANEL MOUNTED VALVE

The NOPAK Panel Mounted Valve, Model 250 PM, incorporates the same basic patented construction and sealing features of the reliable and rugged NOPAK Hand and Foot-Operated Valves, so well known throughout the industry for many years. The rotating lapped disc feature gives you precision control, sealing surfaces that improve with use, protection against grit, abrasion and wire drawing, pressure sealing, and packless construction.

The NOPAK Panel Mounted Valve is suitable for air and oil pressures to 250 PSI, and is presently offered in the 1/4" pipe size only. All-position detents are standard. An exhaust in neutral cycle is also available. The valve can also be furnished as 2-position short throw, which also includes detents as standard.

Panel mounting of the valve itself is easily accomplished by inserting the hand lever and pilot hub section through the panel and securing the valve by three cap screws. An optional detachable foot mounting plate is also available where panel mounting is not required or desired, NOPAK P/N 1097 NP.

TYPICAL  
INSTALLATION PLATE  
NOT INCLUDED WITH  
VALVE

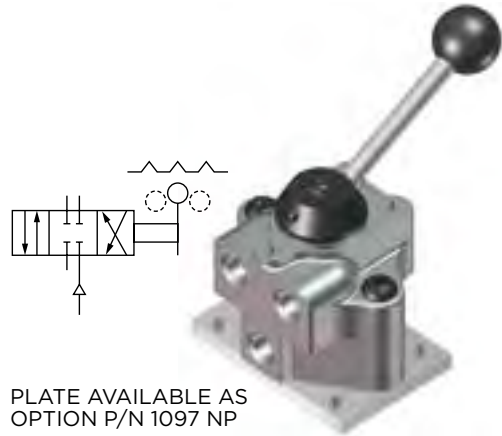
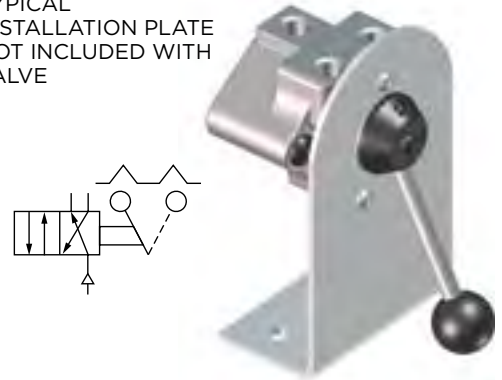
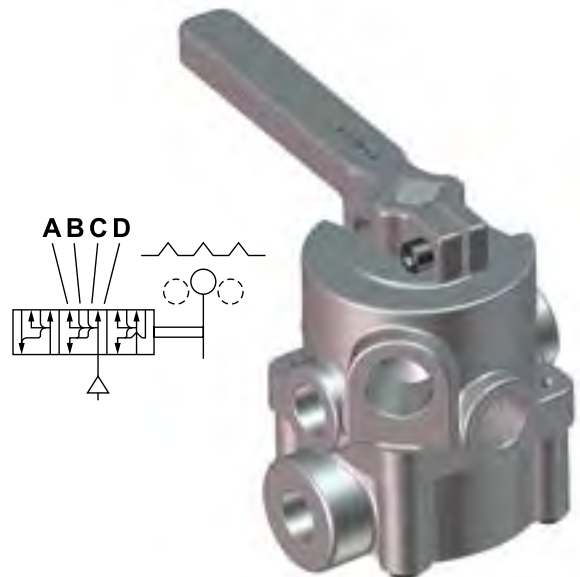


PLATE AVAILABLE AS  
OPTION P/N 1097 NP

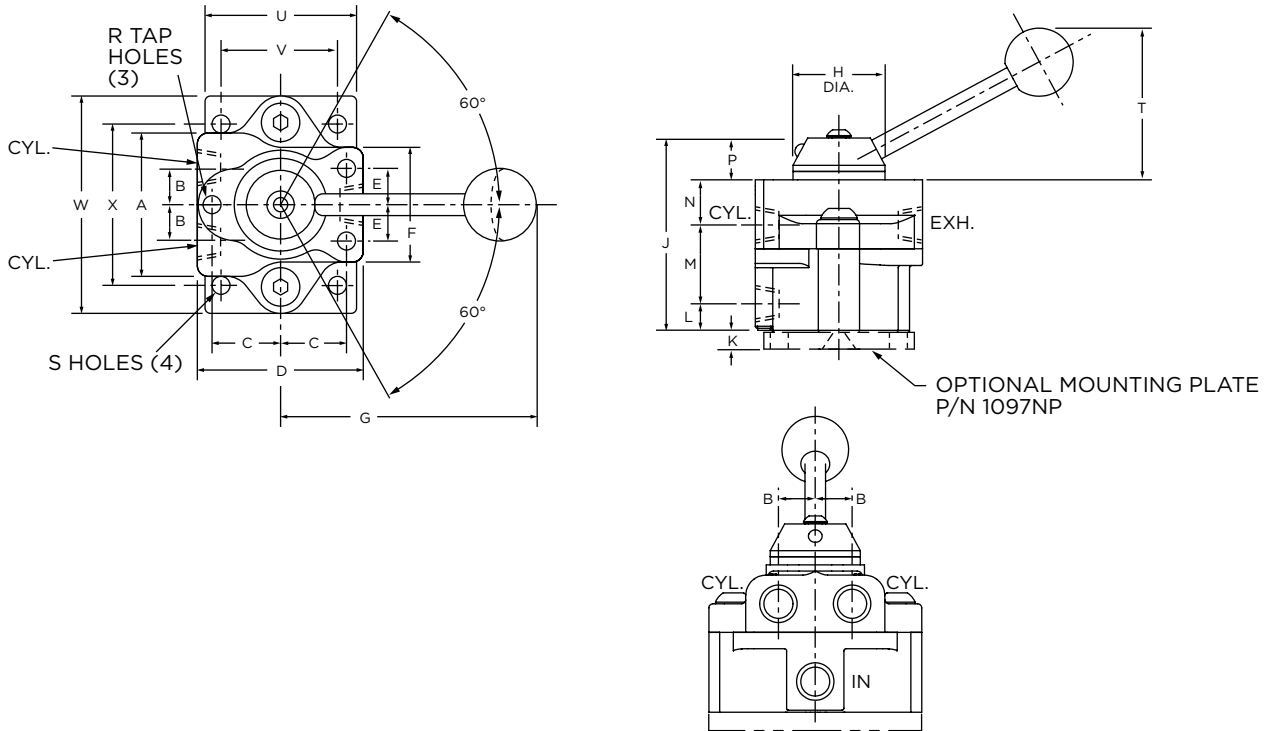
## NOPAK DUAL 4-WAY HAND VALVE

This valve is the equivalent of two 4-way valves in one; it makes it possible to control the action of two double-acting cylinders with a single operating lever. Available in 1/2" size only.



# “FOUNDRY TOUGH” HAND VALVES - DISC TYPE

## DATA AND DIMENSIONS



| MODEL NUMBER | PIPE SIZE | A     | B    | C | D     | E   | F     | G     | H     | J       | K   | L   | M      | N   | P   | R      | S    | T     | U     | V     | W     | X     |
|--------------|-----------|-------|------|---|-------|-----|-------|-------|-------|---------|-----|-----|--------|-----|-----|--------|------|-------|-------|-------|-------|-------|
| 250 PM ( )   | 1/4       | 2-1/8 | 9/16 | 1 | 2-1/2 | 1/2 | 1-3/4 | 3-7/8 | 1-3/8 | 2-15/16 | 1/4 | 1/2 | 1-3/16 | 5/8 | 1/8 | 1/4-20 | 9/32 | 2-1/2 | 2-1/4 | 1-3/4 | 3-1/4 | 2-1/2 |

## DATA AND DIMENSIONS

### DUAL 4-WAY VALVE, 250 PSI MAX. PRESSURE

| MODEL NUMBER | PIPE SIZE | A | B     | C | D   | E      | F      | G     | H | WEIGHT IN POUNDS |
|--------------|-----------|---|-------|---|-----|--------|--------|-------|---|------------------|
| HD4( ) 4 ( ) | 1/2       | 4 | 2-1/4 | 2 | 7/8 | 2-9/16 | 3-7/16 | 5-3/8 | 6 | 8                |

### VALVE FUNCTION

| LEVER POSITION | PRESSURE PORTS | EXHAUST PORTS |
|----------------|----------------|---------------|
| 1              | A-C            | B-D           |
| 2              | A-D            | B-C           |
| 3              | B-D            | A-C           |

