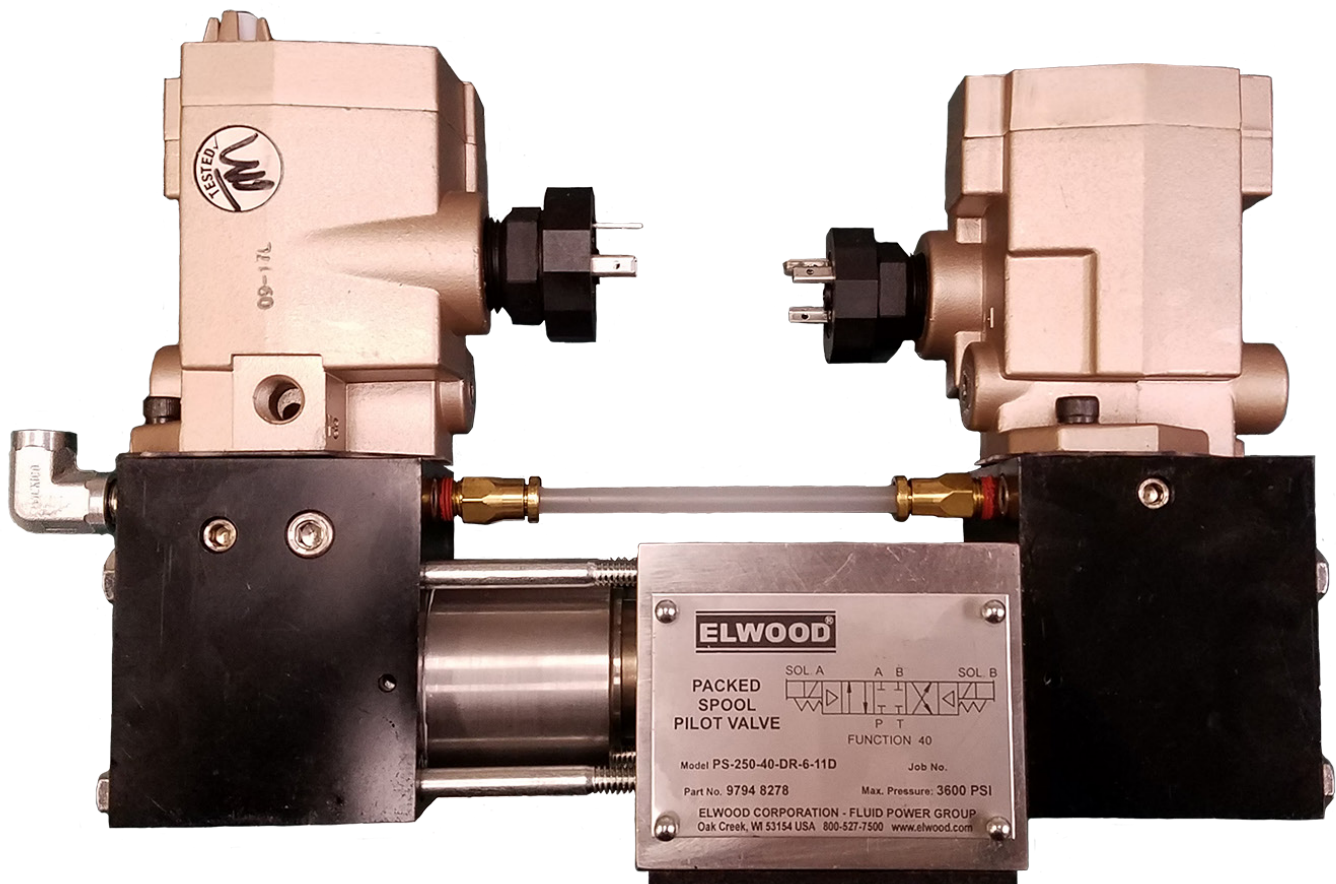


# PACKED SPOOL 4-WAY



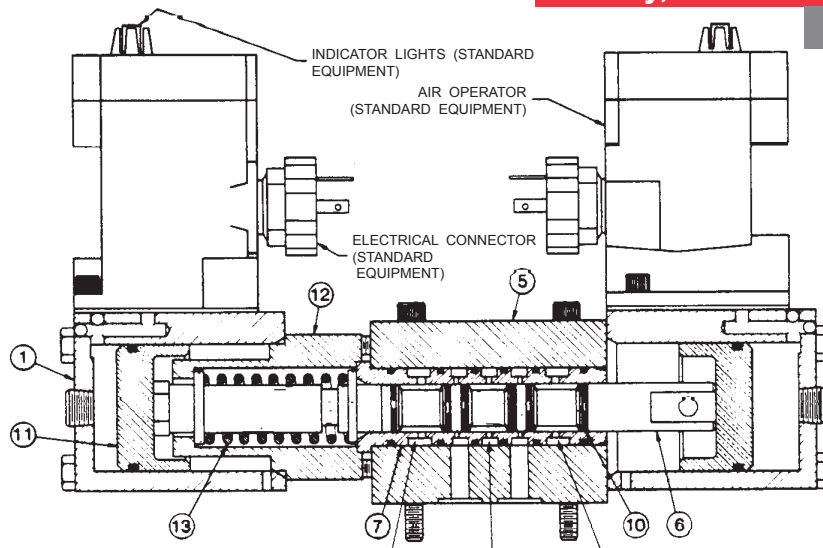
# DIRECTIONAL CONTROL VALVE

## 4-Way 3-Position Valve

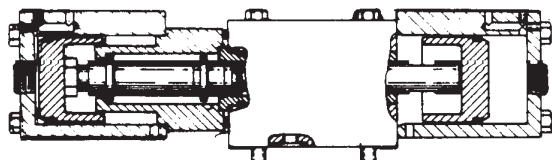
- |                            |  |
|----------------------------|--|
| 1. Air Cylinder Body       | 7. Sleeve (Heat Treated Stainless Steel) |
| 2. Detent Housing          | 9. Hand Lever                            |
| 3. Detent (3 Position)     | 10. Piston Seal Assembly                 |
| 4. Ball Plungers           | 11. Air Piston                           |
| 5. Body/Sleeve Assembly    | 12. Spring Housing                       |
| 6. Spool (Stainless Steel) | 13. Return Spring                        |

### 4-Way, 3-Position Directional Valve

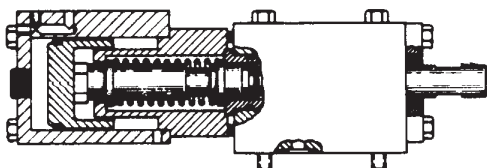
*Air Solenoid Operated*



**4-Way, 2-Position Valve**



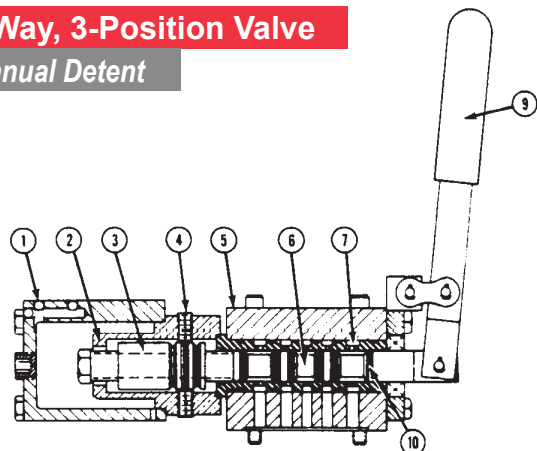
*Momentary Contact*



*Spring Offset*

### 4-Way, 3-Position Valve

*Manual Detent*



## Design Features

### Long Lasting Parts

- Spool is hydraulically balanced to assure uniform wear

### Interchangeability

- Same size seal rings throughout
- No lap fitted parts
- To change function, just change spool
- All functions achieved with 3 spool configurations

### Mounting Pattern

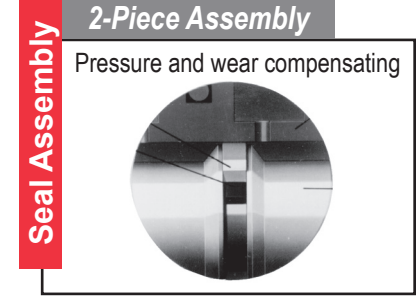
- NFPA D05 (CETOP05)

### Heavy Duty Design

- Corrosion resistant materials, self compensating seals

### Fluid Media

- Water/water soluble oil content of 3%
- Low viscosity fluid, kerosene, etc.
- Raw Water
- Nonflammable fluids
- Hydraulic oil
- For other fluid media, consult factory



## Air Actuator Specifications

### Recommended air pressure

- PS-250:  
72 psi (5 bar) minimum
- PS-415:  
81 psi (6 bar) minimum
- All Models:  
120 psi (8 bar) maximum

Air volume required to shift:  
1.25 cubic inch (20 mL)

### DM Operator

- 120 VAC 50/60 Hz
- 1VA inrush, 8VA holding
- 24 VDC - 13 to 2 watts nominal

Minimum air pressure to actuate: 61 psi (4 bar) for 98/2 HWCF

### DR Operator

- 120/240 VAC 50/60 Hz
- 87VA inrush, 30VA holding
- 24 VDC - 14 watts nominal

### Features

- Solenoid Actuator
- Manual Override
- Indicator Light

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## Dimensional Data

### Double Solenoid Valve

- Weight - 13.5 lbs
- Mounting Screws
  - PS-250: 1/4" or 6mm
  - PS-415: 5/16" or 8mm
- Ross Air Actuator shown below

### Single Solenoid Valve

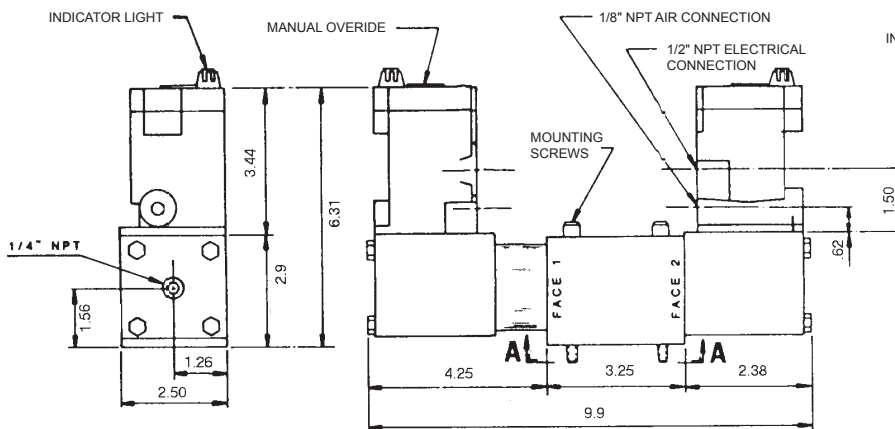
- Weight - 10.5 lbs
- Manual & Manual Detent Valve
  - Lockable version available. Consult factory.

### Please Note

- For flows over 6 GPM, use of both "T" (Tank") porting is required to maximize efficiency
- Air cylinder can be rotated in 90° increments
- Dimensions in inches

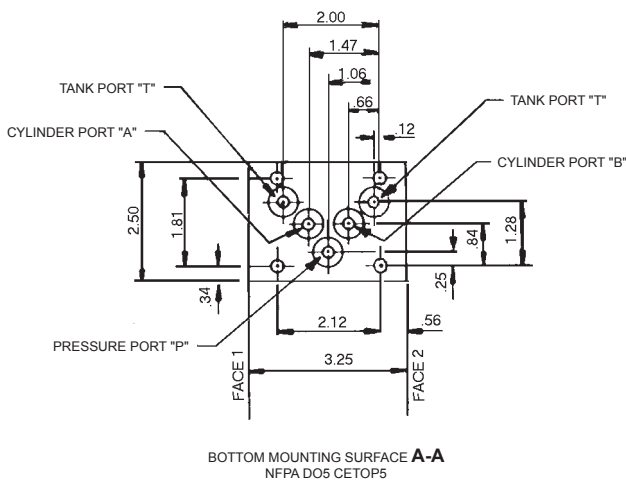
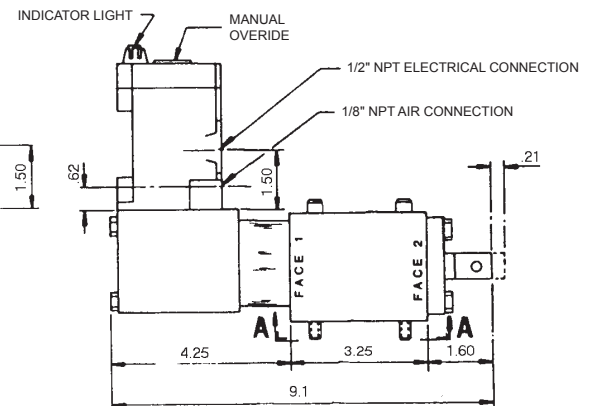
### Double Solenoid Valve

L.H. ACTUATOR SHOWN  
R.H. ACTUATOR OPPOSITE



### Single Solenoid Valve

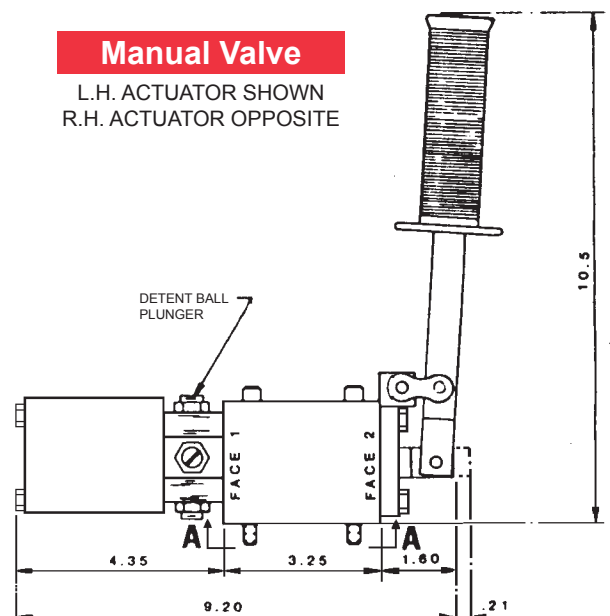
L.H. ACTUATOR SHOWN  
R.H. ACTUATOR OPPOSITE



BOTTOM MOUNTING SURFACE A-A  
NFPA D05 CETOP5

### Manual Valve

L.H. ACTUATOR SHOWN  
R.H. ACTUATOR OPPOSITE



# Ordering Data - Packed Spool Directional Control Valve

THIS VALVE IS A 1/4" 4-WAY DIRECTIONAL CONTROL VALVE WITH ANSI D02, NFPA D05 OR CETOP-5 MOUNTING PATTERN.

## MODEL CODE EXAMPLE

**PS - 250 - 40 - DR - 6 - 11D**

Model

Function

Actuator Type

Voltage

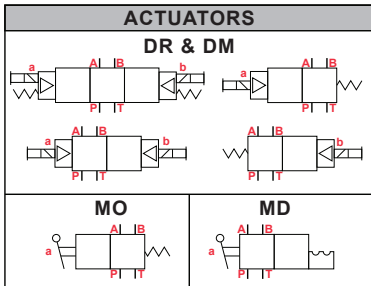
Valve Accessories

MODEL							
CODE	Recommended Flow				Maximum Working Pressure		CV
	Nominal		MAX		psi	bar	
	gpm	L/min	gpm	L/min			
3 PS-415	6	22	8	32	6000	415	0.4
PS-250	16	60	22	83	3600	248	1.5

FUNCTIONS											
40		CROSS OVER FOR FUNCTION	01		        						
44			02								
45			03								
501		601									
502		602									
503		603									
51		61									
52		62									
53		63									
54		64									
55		65									
56		66									

ACTUATOR TYPE	
DM	AIR ACTUATED VALVE WITH MAC SOLENOID
DR	AIR ACTUATED VALVE WITH ROSS SOLENOID
2 MO	MANUAL HAND LEVER OPERATOR
2 MD	MANUAL HAND LEVER OPERATOR WITH DETENT

VOLTAGE	
1	6 VDC
2	12 VDC
3	24 VDC
5	110 VDC
6	110/120VAC 50/60Hz
8	220/240VAC 50/60Hz
9	410/460VAC 50/60Hz
10	200VAC 50/60Hz
11	440/480VAC 60Hz
12	24VAC 50/60Hz



VALVE ACCESSORIES	
CODE NO.	DESCRIPTION
11B	ELECTRICAL QUICK DISCONNECT MALE - INDUSTRIAL, 3-BLADE PATTERN
11D	ELECTRICAL QUICK DISCONNECT MALE - DIN# 43650, 3-BLADE PATTERN
11E	ELECTRICAL QUICK DISCONNECT MALE - BRAD HARRISON 3-PIN
INDICATOR LIGHTS ARE STANDARD	

Accessories		
MODULAR VALVES		
<ul style="list-style-type: none"> <li>Check Valve</li> <li>Flow Control Sandwich Plate</li> <li>Filter Block Assembly</li> </ul>		
SUBPLATES		
<ul style="list-style-type: none"> <li>Side Ported</li> <li>Bottom Ported</li> </ul>		
ELECTRICAL CORD ASSEMBLIES		
Standard Cords Available	Conn. Type	
6' molded cords	11D	X
18" shielded cable w/ 3' extended wire	11B	X

## Air Actuator Specifications

- FEATURES
- Solenoid Actuator
  - Manual Override

MODEL/FUNCTION	RECOMMENDED AIR PRESSURE			
	MIN		MAX	
	psi	bar	psi	bar
PS-250	72	5	120	8
PS-415	81	6	120	8
To Actuate for 98/2 HWCF	61	4	120	8

*Air Volume Required to Shift: 1.25 cubic inches (20 mL)*

## Notes

1 Codes 3, 6, & 8 are standard voltages. For non-standard voltages, please contact us!

2 For actuator types MO & MD, please use ACTUATOR CODE 7 and corresponding ACTUATOR TYPE MO/MD.

3 PS-415 uses a modified D05 pattern to include 5/16"-18 size bolts.

*For custom specifications and non-standard voltages, please contact us! Our team at Elwood is happy to customize a valve to fit your requirements!*

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## Packed Spool Pilot Accessories

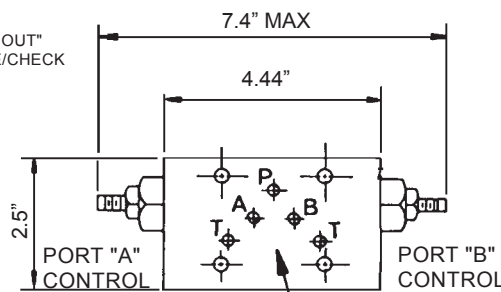
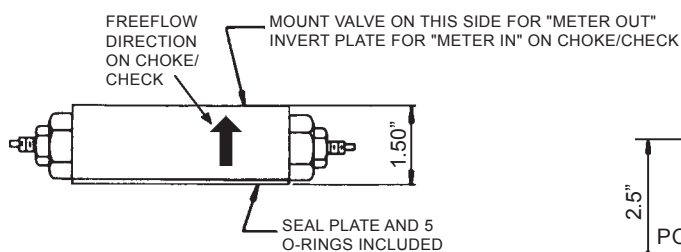
(order required items separately)

- Flow Control Sandwich Plate
  - Control flow via adjusting screw
- Pressure Filter
  - Protect pilot portion of the valve
- Ported Subplates
  - For standalone pilot capabilities
- Electrical Cords
  - Supply power to air actuators
- Isolation Valve
  - Lock-out valves from hydraulic system for easy maintenance
- Consult factory for custom specifications

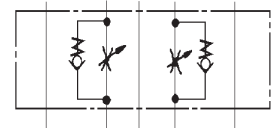
## Flow Control Sandwich Plate

- "Check/Choke" Flow Control
- Turn adjustment screw clockwise to decrease flow
- Available in stainless steel
- Compatible with PS-250 & PS-415 models
  - D05-3K/3.6K for PS-250 (9794 8961)
  - D05-6K for PS-415 (9793 8046)
- For custom specifications, consult factory

### Flow Control



"CHECK/CHOKE" FLOW CONTROL "CC"



DO2, CETOP5 VALVE PATTERN

## Pressure Filter

Sandwich Type with Electrical Clogging Indicator

- Filters fluid between pilot valve and poppets.
- Various micron filtration options available.

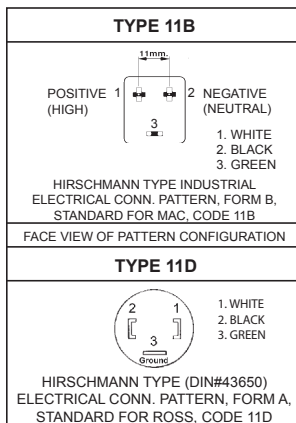


## Ported Subplates

- Model PS-250 (210 bar) available port types:
  - Various NPT connections
  - Various SAE o-ring connections
  - 1/4"-20 UNC mounting bolts
- Model PS-415 (410 bar) available port types
  - Various NPT connections
  - Various SAE o-ring connections
  - 5/16"-18 UNC mounting bolts

## Electrical Cord Ordering Data (Electrical cord not supplied with valve assembly)

- Hirschmann Type Industrial
  - Form B
  - Standard for MAC solenoids
- Hirschmann Type (DIN#43650)
  - Form A
  - Standard for ROSS solenoids

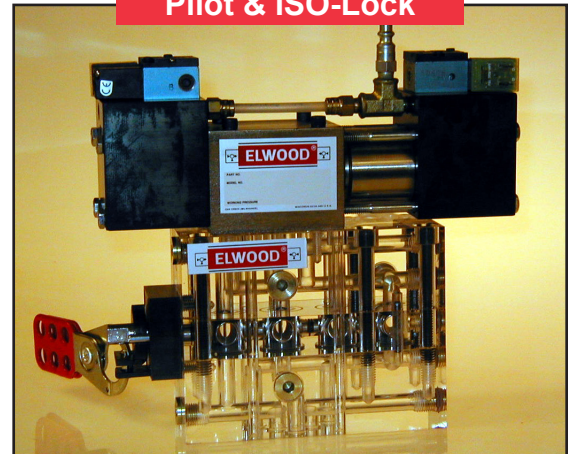


Part No.	STD. CORDS AVAILABLE ②
8712 0100	Type 11D with 6 ft. long molded cord
① 8712 0103	Type 11D with indicator light and 18" length of shielded cable with 3 ft. of extended wire - 1/2" NPT conn.
8712 0150	Type 11B with 6 ft. long cord

### NOTES:

- ① When ordering cord that requires indicator light other than 110/220V, 50/60Hz, please specify voltage.
- ② Longer cord lengths and electrical connector patterns other than listed above can be supplied at additional cost. Consult factory.

### Pilot & ISO-Lock



## Isolation Valve (Lock-Out) Brochure 250

- Isolates manifold mounted directional valves.
- Reduces maintenance time by allowing directional valve replacement without depressurizing and draining the hydraulic system.
- Single lever operation to close all four ports (P, T, A, B). Cylinders can remain under external load without having to be blocked.
- Lockable via Lockout Hasp.
- NFPA "DO"/CETOP and special mounting patterns available. Request NFPA D05 pattern for compatibility with Elwood's Packed Spool Series. Specify whether PS-250 or PS-415 model to assure mounting bolt compatibility.
- Contact factory to identify appropriate part number for application.

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Elwood Fluid Power is proud to provide high pressure hydraulic valves and systems for water and other low viscosity applications. Traditionally, Elwood custom valves have been used in steel mills, aluminum mills, and petrochemical facilities across the world!

Today Elwood is expanding its markets into custom high pressure water or low viscosity applications across many industries. Contact us today to start talking with our team!

## Water and Low Viscosity Hydraulics

### *2-, 3- & 4-Way Directional Control Valves*

As one of the most fundamental components in hydraulic and pneumatic machinery, directional control valves are responsible for stopping, allowing, and changing direction of fluid flow from one or multiple sources.

### *Packed Spool 4-Way Directional Control Valves*

Deliver precise valve control through air actuated function.

### *Pressure Control Valves*

Named for their primary function, pressure control valves relieve, reduce, or stop system pressure.

### *Isolation Valves*

Utilize system maintenance with the ISO-Lock valve by isolating manifold mounted directional control valves without shutting the entire system down.

### *2-Way Valves*

- Descaling applications
- Pump unloading & bypass applications
- Stopping applications

### *Accumulator System Shut-Off Valves*

As system pressure builds, this safety valve shuts off pressure when determined levels are reached.

### *Decoking Control Valves*

Assisting the refinery industry since the late 1930's, Elwood's decoking control valves have come a long way. Support provided is for older Nordberg and Rexnord valves. Newer designs feature additional beneficial characteristics. Available in spindle and cartridge designs, customized to fit your needs.

### *Valve Stands & Manifolds*

## ELWOOD CORPORATE POLICY STATEMENT

It is the policy of Elwood to provide our customers with products that meet or exceed their expectations for performance, reliability and safety while ensuring compliance with applicable laws and regulations, and to continually improve all aspects of our business.



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