

**Bulletin HY14-2707-B1/US**

# Series V26 Pressure Compensated Directional Control Valve

Effective: February 1, 2004  
Supersedes: Cat. No. GPD-1450 dated 3/98

## Description

The Parker Series V26 Sectional Directional Control Valves provide pressure compensated operation for variable displacement, load sensing, and fixed displacement systems.

## Specifications

<b>Nominal Flow Rating</b> .....	25 GPM (95 liters/min)
<b>Operating Pressure (maximum)</b>	
Continuous Operating .....	3500 PSI (242 bar)
Exhaust Core .....	500 PSI (35 bar)
<b>Operating Temperature</b> .....	-20°F (-29°C) to +180°F (+82°C)
<b>Standard Port Sizes</b> ①	
Inlet (V20) .....	SAE 12
Outlet (V20) .....	SAE 12
Work Sections (V26) .....	SAE 12
<b>Filtration Required (minimum)</b> .....	10 micrometer
<b>Number of Work Sections</b> .....	1-9
<b>Weight (approx.)</b>	
No. 8398 Inlet Cover .....	Approx. 6lbs. (2,7 kg)
No. 6770 Outlet Cover .....	Approx. 3.5 lbs. (1,6 kg)
No. 23937 Work Sections .....	Approx. 9 lbs. (4,1 kg)
No. 7820 and 22952 Utility Sections .....	Approx. 9 lbs. (4,1 kg)
<b>Work Sections</b> .....	Approx. 9 lbs. (4,1 kg)
<b>Mounting Position</b> .....	Not Restricted

① Contact the factory for optional porting

## Features

- Load sensing work sections with individual pressure compensation (pre-compensation)
- Unloading section available for use in fixed displacement systems
- Precise metering spools offering compensated flows up to 25 GPM (95 LPM)
- Continuous system operating pressures to 3500 PSI (Work port pressures to 5000 PSI)
- Utilizes many common components such as relief valves, spool positioners and handles with Series V20
- 3-Way, 4-Way and 4-Way Float operation
- Numerous manual spool positioner options plus remote hydraulic or electric solenoid operation
- Work port relief valves available
- Load sense bleed-off orifice plug
- Single handle or two function mechanical joystick control of manual sections
- Remote electronic and handle control of solenoid sections

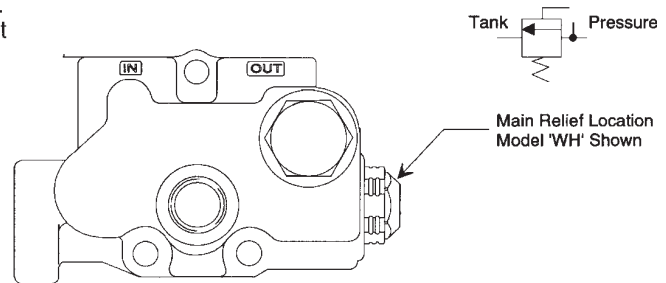
## INLET COVER

### No. 8398 Inlet Cover

No. 8398 inlet cover is used for all V26 control valve assemblies. It offers top and end inlet and outlet ports. All unused ports must be plugged.

If a gauge port is required, a part plug may be drilled and tapped for a 1/4" NPTF or SAE 4 and installed in the unused inlet port.

No. 8398 inlet covers also have the provisions for the main relief valve.



No. 8398 Inlet Cover

### Main Relief Valves

The primary function of the main relief valve is to prevent excessive pressure spikes. Main relief valve cartridges are available in externally-adjustable (Models RP51-A and WHA), internal shim adjustable (Model WH) or tamper resistant (Model RP51-N) configurations, offering a pressure range of 500 PSI (34 bar) to 3500 PSI (242 bar).

When a main relief valve is not required, a No Relief Plug must be installed in place of the relief valve.

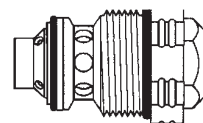
**Model 'WH'** differential area relief is internally shim adjustable within the relief spring range. Several spring and shim options are available for pressures up to 3000 PSI (207 bar).

**Model 'WHA'** differential area relief valve is externally screw adjustable within the spring range. Several spring and shim options are available for pressures up to 3000 PSI (207 bar).

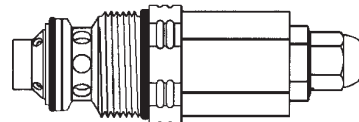
**Model 'RP51'** pilot-operated relief valve is externally screw adjustable (RP51-A) within the full relief pressure range of 500-3500 PSI (34 - 242 bar). This relief valve is also available in a tamper-resistant version (Model RP51-N).

### Spool Metering Data

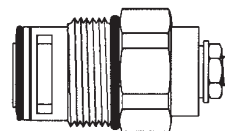
Spools can be customized for flows between 2 and 25 GPM (7,5 to 94,6 lpm). Check with the factory for availability.



Model 'WH' Relief Valve



Model 'WHA' Relief Valve



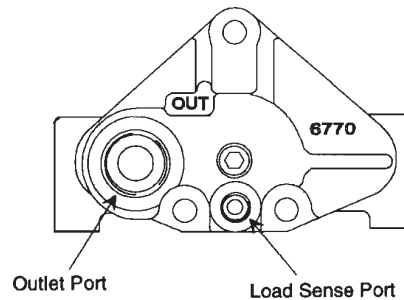
Model 'RP51' Relief Valve

# OUTLET COVERS AND UTILITY SECTIONS

## No. 6770 Load Sense Outlet Cover (No Bleed Plug)

This outlet cover is used for Model V26 valve assemblies not requiring the load sense signal bleed plug in the control valve. It provides an end outlet port and an SAE 4 load sense pilot port.

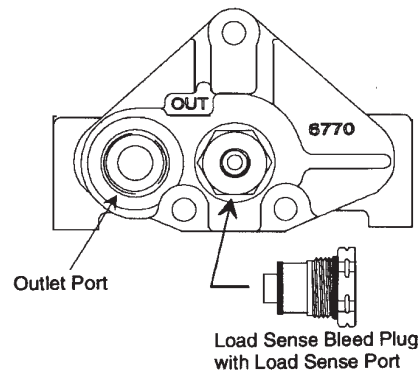
Since only one bleed plug is required in a load sense system, it is not necessary to have one in the valve when a bleed plug is located in the load sense pump.



## No. 6770 Load Sense Outlet Cover with Bleed Port

This outlet cover is used for Model V26 valve assemblies that do not offer a load sense bleed orifice in the load sense pump. It provides an end outlet port, SAE 4 load sense pilot port and load sense bleed plug.

Since one bleed plug is required in every load sense system, it is necessary to have one in the valve when a bleed plug is not located in the load sense pump.

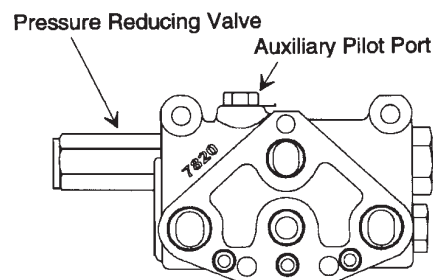


## No. 7820 Pilot Utility Section

The pilot utility section provides the pilot source required (1.5 GPM (5,7 lpm) at 325 PSI (22 bar) to operate the solenoid actuators.

The utility section incorporates all the components required to provide an internal pilot source, eliminating the need to supply any external pilot lines.

If an external pilot source is available, the utility section is not required. Optional solenoid actuator bonnets are available to connect the pilot supply to the solenoid actuators.

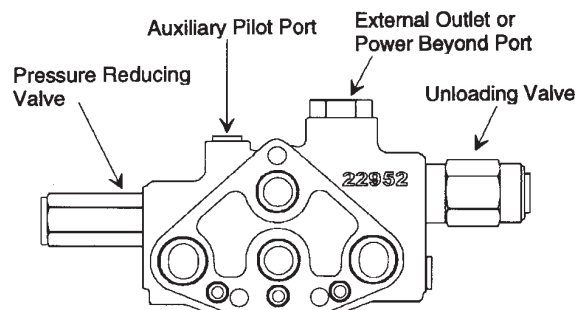


## No. 22952 Pilot Utility Section with Unloading Valve

The unloading section allows fixed displacement type pumps to be used with V26 work sections.

This section is available with or without the components required to provide an internal pilot source for solenoid actuators.

The unloading section can also be used to provide priority flow to V26 (pressure compensated) work sections upstream and unload excess flow to V20T and V20P (open center) sections downstream.



# WORK SECTIONS

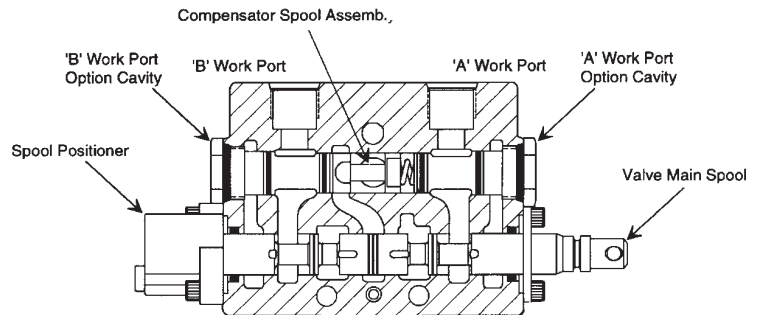
## No. 23937, V26 Pressure Compensated

Model V26 pressure compensated directional control valves provide precise pressure and flow control for simultaneous operation of multiple functions.

Model V26 gives you the increased efficiency and improved metering capability of a load sensing system.

It also gives you the ability to consistently meter flow to specific requirements regardless of load changes or system pressure fluctuations.

Custom main spools with flow rates up to 25 GPM (95 liters/min) allow the performance of each work section to match the requirements of each specific function.

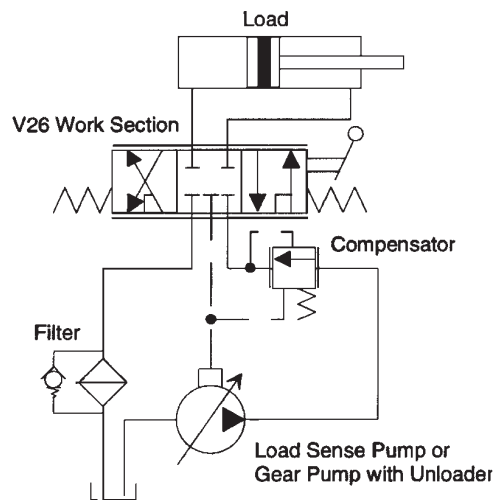


### V26 Pressure Compensation (Pre-Compensation)

Each Model V26 work section contains a pressure compensator. The compensator is located between the power core and the valve spool. It controls the pressure drop across the valve spool by controlling the pressure to the spool at a constant level higher than that spool's active work port.

By maintaining a consistent pressure differential across the spool notches, the output flow remains constant, regardless of changing load pressures. Thus the open area of the spool notches is the primary variable controlling output flow.

The load sense pump compensator (or optional inlet unloading valve) controls the inlet pressure at a level approximately 350 PSI above the load sense (highest work port) pressure. The compensator operates within this 350 PSI to maintain the differential pressure across the spool notches.

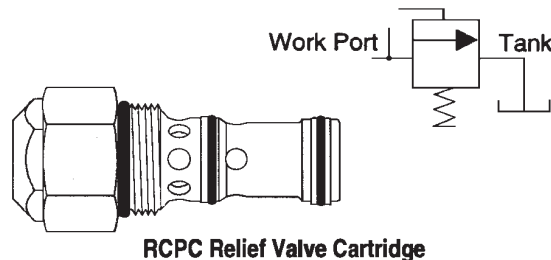


If the flow requirements of a Model V26 valve assembly exceeds the pump capacity, functions, requiring higher pressures may slow down as the oil will take the path of least resistance, satisfying the lower pressure flow requirements first.

### V26 Work Port Relief Valves

The primary function of a work port relief valve is to limit a part of a circuit to a pressure less than the main relief setting. Port relief valves will also provide spike protection while the valve is in neutral.

Work port relief valves are available in an internal shim adjustable (Model RCPC) configuration. Several relief springs are available for pressure settings within the 500 to 3500 PSI (34 to 242 bar) full pressure range.



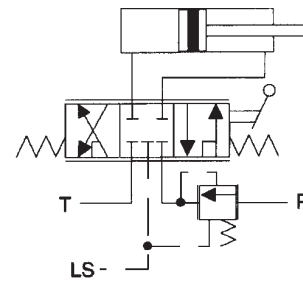
# WORK SECTIONS

## No. 23937, V26 Pressure Compensated

### Main Spool Options

#### 4-Way Cylinder Spool

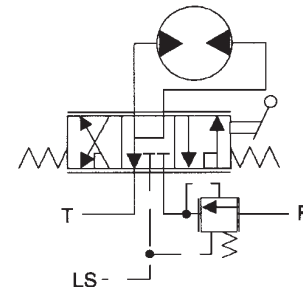
For control of double acting cylinders or reversible hydraulic motors where floating a cylinder or motor free-wheeling is not required. Both work ports are blocked in the neutral position.



4-Way Cylinder Spool

#### 4-Way Free Flow Motor Spool

For control of double acting cylinders or reversible hydraulic motors. Because both work ports are open to tank in the neutral position, free flow spools will allow a motor to coast.

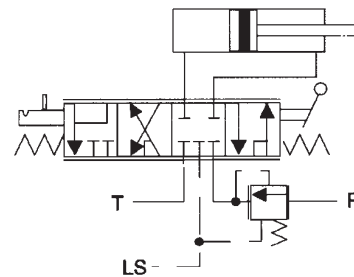


4-Way Free Flow Motor Spool

#### 4-Way 4-Position Float Spool

This spool is the same as the 4-Way Cylinder spool, with the addition of a fourth 'Float' position. It is spring-centered to neutral from the 'A' and 'B' power positions.

The fourth position is the detented 'Float' position which allows a cylinder to float or a hydraulic motor to free wheel.



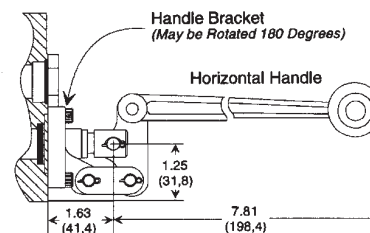
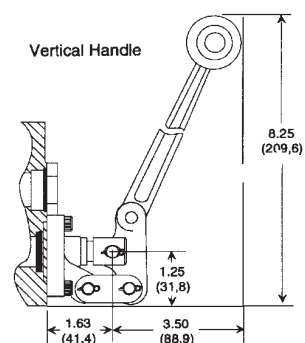
4-Way 4-Position Float Spool

### Handle End Options

The clevis (handle end) of the spool may be located at either the 'A' or 'B' port end of the valve work section. Unless otherwise specified, the handle end will be located at the 'A' port end for all sections. Valve spools may be reversed in the housing to offer 'B' port handle.

The following handle end options are available:

- CVHA (Complete Vertical Handle Assembly)
- CHHA (Complete Horizontal Handle Assembly)
- LHO (Less Handle Only)
- HBO (Handle Bracket Only)
- LCHA (Less Complete Handle Assembly)



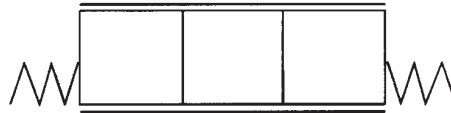
# WORK SECTIONS

## No. 23937, V26 Pressure Compensated

### Spool Positioners and Actuators

#### Spring Return Spool Positioner

The spring return spool positioner 'spring returns' the valve spool to neutral from the 'A' and 'B' power positions when the handle is released.



Spring Return Spool Positioner

#### 'D' Detent Spool Positioner

The 'D' detent spool positioner 'detents' the valve spool in neutral and the 'A' and 'B' power positions. The valve spool will remain in the position in which it was manually placed when the handle is released.

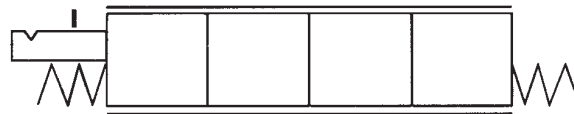


'D' Detent Spool Positioner

The option is NOT intended for use as a positive spool locking device against excessive external forces or machine vibration.

#### 'K' 4-Position Float Spool Positioner

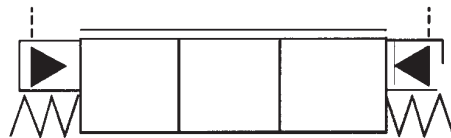
The 'K' float positioner spring returns the valve spool to neutral from the 'A' and 'B' power positions. The fourth position is the detented - float position.



'K' Float Spool Positioner

#### 'HR' and 'HRO' Remote Spool Actuators

'HR' Hydraulic Remote Spool Actuators provide for remote hydraulic operation of two and three position V26 work sections.



'HR' Hydraulic Remote Spool Actuator

A customer-supplied hydraulic controller (Gresen Model HCJ, HCS or equivalent), and a 300 to 500 PSI (20 to 33 bar) pilot source, will provide infinite spool positioning for metering workport flow.

'HRO' Hydraulic Remote Spool Actuators have an optional external adjustment screw override. This override provides a means for emergency manual operation in the event of pilot pressure failure. It may also be used as a Spool Travel Limiter.

All hydraulic remote actuator pilot ports are SAE 6 straight thread. Pilot ports may be located at the top (std), bottom, or end (end not available with external override).

#### Hydraulic Remote Actuator Specifications

Max. Pressure Rating . . . . .750 PSI (52 bar)  
 Pilot Press to Initiate Flow . . . . .60 PSI (4,2 bar)  
 Pilot Pressure at Full Stroke . . . . .220 PSI (15,2 bar)  
 Pilot Flow . . . . .2 to 4 GPM (7,5 to 15 liters/min)

# WORK SECTIONS

## No. 23937, V26 Pressure Compensated

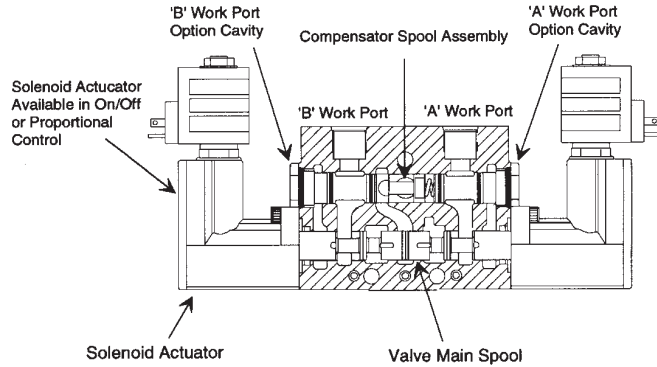
### Proportional (EPC) Electric Solenoid Actuators

The Proportional Solenoid Actuator contains two proportional solenoid-operated cartridges; one at each end of the control valve spool.

When the PWM signal is sent to a solenoid, a pilot pressure is directed to one end of the control valve spool. As the PWM % is increased or decreased, the pilot pressure increases or decreases proportionally, giving main valve spool movement.

When both solenoids are de-energized, both ends of the control valve spool are open to exhaust and the spool is spring-centered to neutral.

Optional spool travel limiters are available to adjust maximum spool shift.



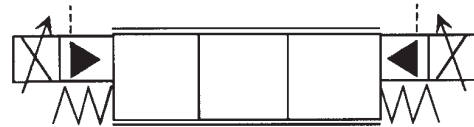
### On/Off (SOL) Electric Solenoid Actuators

The On-Off Solenoid Actuator option contains solenoid-operated valve cartridges; one at each end of the control valve spool.

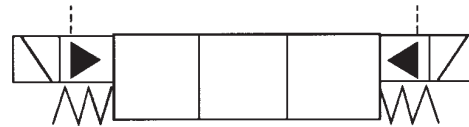
When a solenoid is energized, the cartridge directs pilot pressure to one end of the control valve spool causing the spool to shift full stroke from its neutral position.

When both solenoids are de-energized, both ends of the control valve spool are open to exhaust and the spool is spring-centered to neutral.

Optional spool travel limiters are available to adjust maximum spool shift.



Proportional (EPC) Electric Solenoid Actuators



On/Off (SOL) Electric Solenoid Actuators

### Electric Solenoid Spool Actuator Specifications

#### Electrical Requirements

Operating Voltage	.....	12VDC or 24VDC
Coil Resistance	.....@ 68°F (20° C)	
12V Proportional (1.6 Amp)	.....	7.5 ohms
24V Proportional (.8 Amp)	.....	.30 ohms
12V On/Off Solenoid (1.8 Amp)	.....	6.5 ohms
24V On/Off Solenoid (.9 Amp)	.....	.26.6 ohms
Signal (for proportional solenoid)	.....	.PWM, 50 Hz frequency

#### Solenoid Hydraulic Pilot Supply Requirements

Minimum Pressure	.....	250 PSI (17 bar)*
	.....	*250 PSI above control valve exhaust core pressure
Maximum Pressure	.....	750 PSI (52 bar)
Flow (minimum)	.....	1.5 GPM (5.7 liters/min)
Filtration Required (nominal)	.....	.10 Micron
Response Time	.....	Less than 150 milliseconds
	.....	(Neutral to full flow or full flow to zero flow)

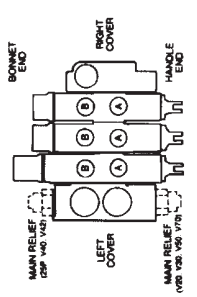






# DIRECTIONAL CONTROL VALVE ASSEMBLY FORM

LEFT COVER		CENTER SECTIONS					RIGHT COVER					
HOUSING NO.	PORT LOCATION	PORT SIZE	#1	#2	#3	#4	#5	#6	#7	#8	HOUSING NO.	OUTLET PORT SIZE
IN	OUT		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PARALLEL TANDEM SERIES LOAD SENSE			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3-Way (Handle End Work Port is Plugged as Standard) 4-Way 4-Way Float (K)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GAGE PORT PLUGGED <input type="checkbox"/> 1/4 NPT <input type="checkbox"/> SAE4 <input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM OPERATES AT: G.P.M. Max. _____ PSI Max. _____			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MAIN RELIEF INFORMATION Relief Model _____ PSI _____			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set at _____ PSI <input type="checkbox"/> Crack or <input type="checkbox"/> Full Flow @ _____ GPM			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No Relief (NR) <input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HANDLE END INFORMATION A PORT END <input type="checkbox"/> B PORT END <input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POSITION Handle P/N _____ Bracket P/N _____ Spool Boots _____			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WORK PORT #1 Work Port Relief [Specify Model] Setting (PSI) at Full Flow or Crack Anti-Cavitation Check			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WORK PORT #2 Work Port Relief [Specify Model] Setting (PSI) at Full Flow or Crack Anti-Cavitation Check			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WORK PORT #3 Work Port Relief [Specify Model] Setting (PSI) at Full Flow or Crack Anti-Cavitation Check			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WORK PORT #4 Work Port Relief [Specify Model] Setting (PSI) at Full Flow or Crack Anti-Cavitation Check			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FUNCTION OF SECTION REMARKS:			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I.D. PLATE DATA MAX INLET PRESS: MODEL NO.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## **ORDERING CODE**

Directional Control Assembly Form No. 9005 (included in this catalog) must be fully completed to assure the proper options and configurations are provided.

Following is information required when ordering V26 solenoid-controlled, pressure compensated valve assemblies:

- Pump Flow in GPM (lpm)
  
- Inlet Pressure
  
- Work Port Pressures
  
- Spool Type(s)  
3-Way, 4-Way, etc.  
Maximum flow required for each work section  
(Spool selection made from this information)
  
- Solenoid Actuator Type (Option)  
On/Off (SOL) or Proportional (EPC) Solenoid Control  
On/Off (SOL) or Proportional (EPC) Solenoid Control  
with Vertical Handle  
Mechanical Travel Limiter and/or Spool Overrides
  
- Solenoid Cartridge Type (Option)  
12VDC or 24 VDC  
Coil Connector Type  
Wire Leads  
Spade Terminals  
Weather Pack Connectors®  
43650 DIN Connectors (Hirschmann®)  
Deutsch®
  
- Pilot Source (Option)  
Utility Section  
External Source (customer supplied - include  
information on pilot flow and pilot pressure)

# AVAILABLE OPTIONS

## Inlet Cover Options Code Symbol

### No. 8398 Inlet Cover Machining

Top and End Inlet Ports . . . . .(Standard)  
 Top and End Outlet Ports . . . . .(Standard)  
 Gauge Port . . . . .(Optional)

### Inlet Relief Options

Differential Area, Internal Shim Adjustable . . . . .WH  
 Differential Area, External Screw Adjustable . . . . .WHA  
 Pilot Operated, Screw Adjustable . . . . .RP51-A  
 Pilot Operated, Tamper Resistant . . . . .RP51-N  
 No Relief Cavity Plug . . . . .K-20-NR

## Outlet Cover Options

### No. 6770 Outlet Cover Machining

Outlet Cover with Load Sense Port . . . . .-LS  
 Outlet Cover with Load Sense Port and Bleed Plug -LS-NB

## Work Section Options

### No. 23937 Work Section

Pressure Compensated, Load Sensing . . . . .V26-  
 (Standard) Spool Seals . . . . .Buna-N O-Ring  
 (Optional) Spool Seals . . . . .Lip Type

## Spool Variations

4-Way, 3-Position . . . . .04  
 4-Way, 3-Position, Free Flow . . . . .F4  
 4-Way 4-Position Float . . . . .K4

## Options Code Symbol

### Spool Action Options

Spring Return To Neutral (Standard) . . . . .-  
 1- or 2- Position Detent with Spring Return . . . . .RI, RO, or RIO  
 3-Position Detent . . . . .D  
 4-Position Float with Detent . . . . .K4  
 Pneumatic Remote Actuator . . . . .PA100  
 Hydraulic Remote Actuator . . . . .HR  
 Hydraulic Remote Actuator with Override . . . . .HRO  
 On/Off Solenoid Actuator . . . . .SOL  
 Pneumatic Solenoid Actuator . . . . .EPC  
     Travel Limiter/Spool Override  
     (for SOL and EPC) . . . . .-

### Work Port Relief Cartridge Options

Compensator (No Relief) Cavity Plug (Standard) . . . . .-  
 Internal Shim Adjustable Relief Cartridge . . . . .RCPC

### Handle End Options

Complete Vertical Handle Assembly . . . . .CVHA  
 Complete Horizontal Handle Assembly . . . . .CHHA  
 Less Handle Only . . . . .LHO  
 Less Complete Handle Assembly . . . . .LCHA  
 Mechanical Joystick (Left Hand Version) . . . . .MJA-2L  
 Mechanical Joystick (Right Hand Version) . . . . .MJA-2R



### WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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