SOLENOID OPERATED DIRECTIONAL CONTROLS

4 Way 2 Position Spool Valves

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<th>PSI</th>
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<td>HG-S4F</td>
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</table>

Typical Schematic

Typical application for the S4A, S4D, and S4F is directional motor or cylinder control.
Typical application for the S4B is directional motor or cylinder control in a parallel circuit.
Typical application for the S4C is directional motor or cylinder control in a series circuit.
Typical application for the S4E is motor control in a series/parallel circuit.

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TECNORD
Phone +39 059 254895  Fax +39 059 253512  E-mail: tecnord@tecnord.com

a Delta Power Co.
MD-S4A Direct Acting Spool, 4 Way 2 Position

DESCRIPTION
7 size, 5/8-18 thread, “Mini” series, solenoid operated, 4 way 2 position, spool valve.

OPERATION
When de-energized the MD-S4A allows flow from (1) to (4) and (2) to (3). When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL
Operational shift limit 1 GPM (3.8 LPM).
For shifted flow performance consult chart.
For higher pressures or flows see HD-S4A.

PERFORMANCE
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS
- Maximum Flow: 1 GPM (4 LPM)
- Rated Operating Pressure: 3000 PSI (207 bar)
- Typical Internal Leakage (150 SSU): 5 cu in/min (82 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: .15 lbs. (.07 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 15 ft-lbs (20.3 Nm)
- Coil Nut Torque Requirements: 3-5 ft-lbs (4.1-6.8 Nm)
- Cavity: MINI 4W
- Cavity Tools kit (form tool, reamer, tap): 40500006
- Seal Kit: 21191008

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a Delta Power Co.
# SOLENOID OPERATED DIRECTIONAL CONTROLS

## DIMENSIONS

![Diagram](image)

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>OPTIONS</th>
<th>MD-S4A</th>
<th>-</th>
<th>-</th>
<th>BODIES</th>
<th>VOLTAGE</th>
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<td></td>
<td></td>
<td>Blank Without Body</td>
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<tr>
<td>Viton Standard</td>
<td>V0</td>
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<td></td>
<td>¼” BSP Ports</td>
<td>24 24 VDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#6 SAE Ports</td>
<td>22 220 VAC with molded full wave rectifier</td>
</tr>
</tbody>
</table>

### "M" COIL TERMINATION

- Double Lead: DL
- DIN 43650 (Hirschman): HC

* Approximate Coil Weight: 0.30 lbs/0.14 kg

## WARNING

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* a Delta Power Co.
DESCRIPTION
“High Pressure” 7 size, 5/8-18 thread, “Mini” series, solenoid operated, 4 way 2 position spool valve.

OPERATION
When de-energized the HD-S4A allows flow from (1) to (4) and (2) to (3). When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

PERFORMANCE
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS
- Nominal Flow: 1.5 GPM (6 LPM)
- Rated Operating Pressure: 4000 PSI (276 bar)
- Typical Internal Leakage: 8 cu in/min (131 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: .16 lbs. (.07 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 15 ft-lbs (20 Nm)
- Coil Nut Torque Requirements: 3-5 ft-lbs (4.1-6.8 Nm)
- Cavity: MINI 4W
- Cavity Tools kit (form tool, reamer, tap): 40500006
- Seal Kit: 21191008

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a Delta Power Co.
SOLENOID OPERATED DIRECTIONAL CONTROLS

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DIMENSIONS

ORDERING INFORMATION

HD-S4A - - -

OPTIONS
Buna Standard 00
Viton Standard V0

"M" COIL TERMINATION
Double Lead DL
(*) several types of termination can be attached on leads on request
DIN 43650 (Hirschman)

BODIES
Blank Without Body
N ¼" BSP Ports
S #6 SAE Ports

VOLTAGE (*other voltages available on request)
12 12 VDC
24 24 VDC
22 220 VAC with molded full wave rectifier

Approximate Coil Weight: .30 lbs/.14 kg

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.
DESCRIPTION
8 size, 3/4-16 thread, “Power” series, solenoid operated, 4 way 2 position, spool valve.

OPERATION
When de-energized the PQ-S4A allows flow from (1) to (4) and from (2) to (3). When energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

PERFORMANCE
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS
Nominal Flow 4 GPM (15 LPM)
Rated Operating Pressure 3000 PSI (207 bar)
Typical Internal Leakage (150 SSU) 5 cu in/min (82 ml/min) per path
Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
Filtration ISO 18/16/13
Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
Weight .24 lbs. (.11 kg)
Operating Fluid Media General Purpose Hydraulic Fluid
Cartridge Torque Requirements 25 ft-lbs (34 Nm)
Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1 Nm)
Cavity POWER 4 W
Cavity Tools kit (form tool, reamer, tap 40500029
Seal Kit 21191108

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**SOLENOID OPERATED DIRECTIONAL CONTROLS**

**TECNORD**

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**TECNORD**
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*a Delta Power Co.*
**DG-S4A Direct Acting Spool, 4 Way 2 Position**

**DESCRIPTION**
10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position, side flow spool valve.

**OPERATION**
When de-energized the DG-S4A allows flow between (1) to (4) and (2) to (3). When energized the valve allows flow between (2) to (1) and (3) to (4).

**OPERATION OF MANUAL OVERRIDE OPTION:** To override, turn the manual override screw counterclockwise. To release turn the manual override screw clockwise.

**FEATURES**
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**

For higher pressures see HG-S4A.

**PERFORMANCE**
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**
- Nominal Flow: 10 GPM (38 LPM)
- Rated Operating Pressure: 3000 PSI (207 bar)
- Typical Internal Leakage (150 SSU): 5 cu in/min (82 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: .32 lbs. (.15 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 30 ft-lbs (40.6 Nm)
- Coil Nut Torque Requirements: 4-6 ft-lbs (5.4-8.1 Nm) Maximum
- Cavity: DELTA 4W
- Cavity Tools kit (form tool, reamer, tap): 40500002
- Seal Kit: 21191214

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*a Delta Power Co.*
SOLENOID OPERATED DIRECTIONAL CONTROLS

TECNORD

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a Delta Power Co.
SOLENOID OPERATED DIRECTIONAL CONTROLS

HG-S4A, Direct Acting Spool, 4 Way 2 Position, Criss Cross

DESCRIPTION

OPERATION
When de-energized the HG-S4A allows flow from (1) to (4) and from (2) to (3). When energized the valve allows flow from (2) to (1) and from (3) to (4).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

Uses “L” Coil.

PERFORMANCE
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS
Nominal Flow 10 GPM (38 LPM)
Rated Operating Pressure 4000 PSI (276 bar)
Typical Internal Leakage (150 SSU) 10 cu in/min (164 ml/min) per path
Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
Filtration ISO 18/16/13
Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
Weight .44 lbs. (.20 kg)
Operating Fluid Media General Purpose Hydraulic Fluid
Cartridge Torque Requirements 30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1 Nm)
Cavity DELTA 4W
Cavity Tools kit (form tool, reamer, tap) 40500002
Seal Kit 21191214

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SOLENOID OPERATED DIRECTIONAL CONTROLS

TECNORD

DIMENSIONS

ORDERING INFORMATION

HG-S4A

OPTIONS
- BODIES
- VOLTAGE
- "L" COIL TERMINATION

BODIES
- Blank
- 3/8"BSP Ports
- #6 SAE Ports

VOLTAGE
- 12 VDC
- 24 VDC
- 220 VAC without internal rectifier

"L" COIL TERMINATION
- Double Lead
- DIN 43650 (Hirschman) – (AC & DC)
- Deutsch – Integral DT04-2P

(All DC Except as Noted)

IMMERSION PROOF "L" TYPE
- "I" Coil AMP Superseal - Integral
- "I" Coil Deutsch – Integral DT04-2P
- "I" Coil AMP Jr. Timer - Integral
- "I" Coil Metri-Pack – Integral

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a Delta Power Co.
**DESCRIPTION**

“High pressure” 12 size, 1 1/16-12 thread, “Tecnord” series, solenoid operated, 4 way 2 position, criss cross side flow spool valve.

**OPERATION**

When de-energized the HV-S4A allows flow from (1) to (4) and from (2) to (3). When energized the valve allows flow from (2) to (1) and from (3) to (4).

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**PERFORMANCE**

- Nominal Flow: 15 GPM (57 LPM)
- Rated Operating Pressure: 5000 PSI (345 bar)
- Typical Internal Leakage (150 SSU): 8 cu in/min (131 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: 1.07 lbs. (.48 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 50 ft-lbs (67.8 Nm)
- Coil Nut Torque Requirements: 5-7 ft-lbs (6.8-9.5Nm)
- Cavity: TECNORD 4W
- Cavity Tools kit (form tool, reamer, tap): 40500035
- Seal Kit: 21191309

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**SOLENOID OPERATED DIRECTIONAL CONTROLS**

**TECNORD**

**DIMENSIONS**

![Diagram of HV-S4A solenoid operated directional control]

**ORDERING INFORMATION**

**HV-S4A**

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<tr>
<td>Viton Standard</td>
<td>V0</td>
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**“T” COIL TERMINATION**

(All DC Except as Noted)

- Double Lead: DL
- Blank: BL

**BODIES**

Without Body: Blank
3/4" BSP Ports: N
#10 SAE Ports: S

**VOLTAGE**

(*other voltages available on request)

- 12 VDC: 12
- 24 VDC: 24
- 220 VAC without internal rectifier: 22

Approximate Coil Weight: .78 lbs / .35 kg
SOLENOID OPERATED DIRECTIONAL CONTROLS

MD-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center

DESCRIPTION
7 size, 5/8-18 thread, “Mini” series, solenoid operated, 4 way 2 position, closed center spool valve.

OPERATION
When de-energized the MD-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

Modes of shift operation to 3 GPM, Consult Factory.
For higher pressures or flows see HD-S4B.

PERFORMANCE
Actual Test Data (Cartridge Only)

![Flow vs. Pressure Drop Graph]

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<td>Pressure Drop (BAR)</td>
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VALVE SPECIFICATIONS

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<td>Typical Internal Leakage (150 SSU)</td>
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<tr>
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<tr>
<td>Coil Nut Torque Requirements</td>
<td>3-5 ft-lbs (4.1-6.8 Nm)</td>
</tr>
<tr>
<td>Cavity</td>
<td>MINI 4W</td>
</tr>
<tr>
<td>Cavity Tools (form tool, reamer, tap)</td>
<td>40500006</td>
</tr>
<tr>
<td>Seal Kit</td>
<td>21191008</td>
</tr>
</tbody>
</table>

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DESCRIPTION
"High Pressure" 7 size, 5/8-18 thread, “Mini” series, solenoid operated, 4 way 2 Position, closed center spool valve.

OPERATION
When de-energized the HD-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

VALVE SPECIFICATIONS
- Maximum Flow: 3 GPM (11 LPM)
- Rated Operating Pressure: 4000 PSI (276 bar)
- Typical Internal Leakage: 8 cu in/min (131 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: .16 lbs. (.07 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 15 ft-lbs (20 Nm)
- Coil Nut Torque Requirements: 3-5 ft-lbs (4.1-6.8 Nm)
- Cavity: MINI 4W
- Cavity Tools kit (form tool, reamer, tap): 40500006
- Seal Kit: 21191008

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a Delta Power Co.
SOLENOID OPERATED DIRECTIONAL CONTROLS

PQ-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center

DESCRIPTION
8 size, 3/4 -16 thread, “Power” series, solenoid operated, 4 way 2 position, closed center spool valve.

OPERATION
When de-energized the PQ-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

PERFORMANCE
Actual Test Data (Cartridge Only)

Valve Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Flow</td>
<td>4 GPM (15 LPM)</td>
</tr>
<tr>
<td>Rated Operating Pressure</td>
<td>3000 PSI (207 bar)</td>
</tr>
<tr>
<td>Typical Internal Leakage</td>
<td>5 cu in/min (82 ml/min) per path</td>
</tr>
<tr>
<td>Viscosity Range</td>
<td>36 to 3000 SSU (3 to 647 cSt)</td>
</tr>
<tr>
<td>Filtration</td>
<td>ISO 18/16/13</td>
</tr>
<tr>
<td>Media Operating Temperature</td>
<td>-40° to 250° F (-40° to 120° C)</td>
</tr>
<tr>
<td>Weight</td>
<td>.24 lbs (.11 kg)</td>
</tr>
<tr>
<td>Operating Fluid Media</td>
<td>General Purpose Hydraulic Fluid</td>
</tr>
<tr>
<td>Cartridge Torque Requirements</td>
<td>25 ft-lbs (34 Nm)</td>
</tr>
<tr>
<td>Coil Nut Torque Requirements</td>
<td>4-6 ft-lbs (5.4-8.1 Nm)</td>
</tr>
<tr>
<td>Cavity</td>
<td>POWER 4 W</td>
</tr>
<tr>
<td>Cavity Tools kit (form, tool, reamer, tap)</td>
<td>40500029</td>
</tr>
<tr>
<td>Seal Kit</td>
<td>21191108</td>
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</table>

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SOLENOID OPERATED DIRECTIONAL CONTROLS

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**Solenoid Operated Directional Controls**

**DG-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center**

**DESCRIPTION**
10 size, 7/8 -14 thread, “Delta” series, solenoid operated, 4 way 2 position, closed center spool valve.

**OPERATION**
When de-energized the DG-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and (3) to (4).

**OPERATION OF MANUAL OVERRIDE OPTION:** To override, turn the manual override screw counterclockwise. To release turn the manual override screw clockwise.

**FEATURES**
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**Hydraulic Symbol**

For higher pressures see HG-S4B.
Operational shift limit, 10 GPM.
For shift performance consult chart.

**PERFORMANCE**
Actual Test Data (Cartridge Only)

**Valve Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Flow</td>
<td>10 GPM (38 LPM)</td>
</tr>
<tr>
<td>Rated Operating Pressure</td>
<td>3000 PSI (207 bar)</td>
</tr>
<tr>
<td>Typical Internal Leakage</td>
<td>5 cu in/min (82 ml/min) per path</td>
</tr>
<tr>
<td>Viscosity Range</td>
<td>36 to 3000 SSU (3 to 647 cSt)</td>
</tr>
<tr>
<td>Filtration</td>
<td>ISO 18/16/13</td>
</tr>
<tr>
<td>Media Operating Temperature</td>
<td>-40° to 250° F (-40° to 120° C)</td>
</tr>
<tr>
<td>Weight</td>
<td>32 lbs (.15 kg)</td>
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<tr>
<td>Operating Fluid Media</td>
<td>General Purpose Hydraulic Fluid</td>
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<tr>
<td>Cartridge Torque Requirements</td>
<td>30 ft-lbs (40.6 Nm)</td>
</tr>
<tr>
<td>Coil Nut Torque Requirements</td>
<td>4-6 ft-lbs (5.4-8.1 Nm)</td>
</tr>
<tr>
<td>Cavity</td>
<td>DELTA 4W</td>
</tr>
<tr>
<td>Cavity Tools kit (form tool, reamer, tap)</td>
<td>40500002</td>
</tr>
<tr>
<td>Seal Kit</td>
<td>21191214</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>DIMENSIONS</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>ORDERING INFORMATION</th>
</tr>
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<table>
<thead>
<tr>
<th>OPTIONS</th>
<th>BODIES</th>
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<tbody>
<tr>
<td>Buna Standard</td>
<td>Blank</td>
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<tr>
<td>Viton Standard</td>
<td>Without Body</td>
</tr>
<tr>
<td>Buna, Override</td>
<td>N</td>
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<tr>
<td>Viton, Override</td>
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<table>
<thead>
<tr>
<th>VOLTAGE</th>
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<tbody>
<tr>
<td>12 12 VDC</td>
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<tr>
<td>24 24 VDC</td>
</tr>
<tr>
<td>22 220 VAC without internal rectifier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>&quot;V&quot; COIL TERMINATION</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>IMMERSION PROOF &quot;D&quot; TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL Double Lead</td>
</tr>
<tr>
<td>HC DIN 43650 (Hirschman) – (AC &amp; DC)</td>
</tr>
<tr>
<td>DI Deutsch – Integral DT04-2P</td>
</tr>
<tr>
<td>DIJ &quot;I&quot; Coil AMP Jr. Timer - Integral</td>
</tr>
<tr>
<td>DIM &quot;I&quot; Coil Metri-Pack – Integral</td>
</tr>
</tbody>
</table>

Approximate Coil Weight: .56 lbs/.25 kg.
SOLENOID OPERATED DIRECTIONAL CONTROLS

HG-S4B, Direct Acting Spool, 4 Way 2 Position

**DESCRIPTION**
“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position closed center spool valve.

**OPERATION**
When de-energized the HG-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and from (3) to (4).

**FEATURES**
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**
Uses “L” Coil

**PERFORMANCE**
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**
- Nominal Flow: 10 GPM (38 LPM)
- Rated Operating Pressure: 4000 PSI (276 bar)
- Typical Internal Leakage: 10 cu in/min (164 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: 0.44 lbs. (.20 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 30 ft-lbs (40.6 Nm)
- Coil Nut Torque Requirements: 4-6 ft-lbs (5.4-8.1 Nm)
- Cavity: DELTA 4W
- Cavity Tools kit (form tool, reamer, tap): 40500002
- Seal Kit: 21191214

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SOLENOID OPERATED DIRECTIONAL CONTROLS

PQ-S4C Direct Acting Spool, 4 Way 2 Position, Tandem Center

DESCRIPTION

8 size, 3/4-16 thread, “Power” series, solenoid operated, 4 way 2 position, tandem center spool valve.

OPERATION

When de-energized the PQ-S4C allows flow between (2) and (4), blocks flow at (1) and (3). When energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

• Hardened parts for long life.
• Efficient wet-armature construction.
• Cartridges are voltage interchangeable.
• Manual override option.
• Industry common cavity.
• Unitized, molded coil design.
• Continuous duty rated solenoid.
• Optional coil voltages and terminations.

HYDRAULIC SYMBOL

PERFORMANCE

Actual Test Data (Cartridge Only)

Flow (GPM) vs. Pressure Drop (PSI)

Flow (LPM) vs. Pressure Drop (BAR)

VALVE SPECIFICATIONS

Nominal Flow 4 GPM (15 LPM)
Rated Operating Pressure 3000 PSI (207 bar)
Typical Internal Leakage (150 SSU) 5 cu in/min (82 ml/min) per path
Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
Filtration ISO 18/16/13
Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
Weight .24 lbs. (.11 kg)
Operating Fluid Media General Purpose Hydraulic Fluid
Cartridge Torque Requirements 25 ft-lbs (34 Nm)
Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1 Nm)
Cavity POWER 4 W
Cavity Tools kit (form tool, reamer, tap) 40500029
Seal Kit 21191108
SOLENOID OPERATED DIRECTIONAL CONTROLS

ORDERING INFORMATION

PQ-S4C - - -

OPTIONS
Buna Standard 00
Viton Standard V0
Buna, Override, Detent 0M
Viton, Override, Detent VM
Buna, Override, Non-detent B1
Viton, Override, Non-detent V1

BODIES
Blank Without Body
N ¼" BSP Ports
N1 3/8" BSP Ports
S #6 SAE Ports

VOLTAGE  (*other voltages available on request)
12 12 VDC
24 24 VDC
22 220 VAC without internal rectifier

“K” COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
("several types of termination can be attached on leads on request")

HC DIN 43650 (Hirschman) – (AC & DC)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF “P” TYPE
PJA "1" Coil AMP Superseal – Integral
PID "1" Coil Deutsch – Integral DT04-2P
PLJ "1" Coil AMP Jr. Timer – Integral
PIM "1" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

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**SOLENOID OPERATED DIRECTIONAL CONTROLS**

**DG-S4C Direct Acting Spool, 4 Way 2 Position, Tandem Center**

**DESCRIPTION**
10 size, 7/8 -14 thread, “Delta” series, solenoid operated, 4 way 2 position, tandem center spool valve.

**OPERATION**
When de-energized the DG-S4C allows flow between (2) and (4), and blocks flow at ports (1) and (3). When energized the valve allows flow from (2) to (3) and (1) to (4).

**OPERATION OF MANUAL OVERRIDE OPTION:** To override, turn the manual override screw counterclockwise. To release turn the manual override screw clockwise.

**FEATURES**
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**

For higher pressures see HG-S4C.
Operational shift limit, 8 GPM.
For shift performance consult chart.

**PERFORMANCE**
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**
- Nominal Flow 8 GPM (30 LPM)
- Rated Operating Pressure 3000 PSI (207 bar)
- Typical Internal Leakage (150 SSU) 5 cu in/min (82 ml/min) per path
- Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
- Filtration ISO 18/16/13
- Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
- Weight .31 lbs (.14 kg)
- Operating Fluid Media General Purpose Hydraulic Fluid
- Cartridge Torque 30 ft-lbs (40.6 Nm)
- Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1Nm)
- Cavity DELTA 4W
- Cavity Tools kit (form tool, reamer, tap) 40500002
- Seal Kit 21191214

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SOLENOID OPERATED DIRECTIONAL CONTROLS

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a Delta Power Co.
**HG-S4C, Direct Acting Spool, 4 Way 2 Position, Tandem**

**DESCRIPTION**

"High Pressure" 10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 2 position tandem center spool valve.

**OPERATION**

When de-energized the HG-S4C allows flow between (2) and (4) and blocks the flow at (1) and (3). When energized the valve allows flow from (2) to (3) and from (1) to (4).

**FEATURES**

- Hardened Parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**

Uses "L" Coil

---

**PERFORMANCE**

Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Flow</td>
<td>8 GPM (30 LPM)</td>
</tr>
<tr>
<td>Rated Operating Pressure</td>
<td>4000 PSI (276 bar)</td>
</tr>
<tr>
<td>Typical Internal Leakage (150 SSU)</td>
<td>10 cu in/min (164 ml/min) per path</td>
</tr>
<tr>
<td>Viscosity Range</td>
<td>36 to 3000 SSU (3 to 647 cSt)</td>
</tr>
<tr>
<td>Filtration</td>
<td>ISO 18/16/13</td>
</tr>
<tr>
<td>Media Operating Temperature</td>
<td>-40° to 250° F (-40° to 120° C)</td>
</tr>
<tr>
<td>Weight</td>
<td>.43 lbs. (.20 kg)</td>
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<tr>
<td>Operating Fluid Media</td>
<td>General Purpose Hydraulic Fluid</td>
</tr>
<tr>
<td>Cartridge Torque Requirements</td>
<td>30 ft-lbs (40.6 Nm)</td>
</tr>
<tr>
<td>Coil Nut Torque Requirements</td>
<td>4-6 ft-lbs (5.4-8.1 Nm)</td>
</tr>
<tr>
<td>Cavity</td>
<td>DELTA 4W</td>
</tr>
<tr>
<td>Cavity Tools kit (form tool, reamer, tap)</td>
<td>40500002</td>
</tr>
<tr>
<td>Seal Kit</td>
<td>21191214</td>
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</tbody>
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a Delta Power Co.
DESCRIPTION
8 size, 3/4-16 thread, “Power” series, solenoid operated, 4 way 2 position, criss cross, bottom flow spool valve.

OPERATION
When de-energized the PQ-S4D allows flow from (3) to (2), and from (4) to (1). When energized the valve allows flow from (1) to (2) and from (4) to (3).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

PERFORMANCE
Actual Test Data (Cartridge Only)

Valve Specifications
- Maximum Flow: 2.5 GPM (9 LPM)
- Rated Operating Pressure: 3000 PSI (207 bar)
- Typical Internal Leakage: 5 cu in/min (82 ml/min) per path
- Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
- Filtration: ISO 18/16/13
- Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
- Weight: .24 lbs. (.11 kg)
- Operating Fluid Media: General Purpose Hydraulic Fluid
- Cartridge Torque Requirements: 25 ft-lbs (33.8 Nm)
- Coil Nut Torque Requirements: 4-6 ft-lbs (5.4-8.1 Nm)
- Cavity: POWER 4 W
- Cavity Tools kit (form tool, reamer, tap): 40500029
- Seal Kit: 21191108

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**DIMENSIONS**

**ORDERING INFORMATION**

**OPTIONS**

- Buna Standard
- Viton Standard
- Buna, Override, Detent
- Viton, Override, Detent
- Buna, Override, Non-dentent
- Viton, Override, Non-dentent

**BODIES**

- Blank
- Without Body
- N: ¼” BSP Ports
- N1: 3/8” BSP Ports
- S: #6 SAE Ports

**VOLTAGE**

- 12 VDC
- 24 VDC
- 220 VAC without internal rectifier

**“K” COIL TERMINATION**

- Double Lead: DL
- (*several types of termination can be attached on leads on request)

**IMMERSION PROOF “P” TYPE**

- DL: Double Lead
- HC: DIN 43650 (Hirschman) – (AC & DC)
- DI: Deutsch – Integral DT04-2P

**Approximate Coil Weight:** .42 lbs (.19 kg.)

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*a Delta Power Co.*
SOLENOID OPERATED DIRECTIONAL CONTROLS

DG-S4D Direct Acting Spool, 4 Way 2 Position, Criss Cross

DESCRIPTION
10 size, 7/8 -14 thread, “Delta” series, solenoid operated, 4 way 2 position, criss cross, bottom flow spool valve.

OPERATION
When de-energized the DG-S4D allows flow from (4) to (1), and (3) to (2). When energized the valve allows flow from (4) to (3) and (1) to (2).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw counterclockwise. To release turn the manual override screw clockwise.

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

For higher pressures see HG-S4D.
Operational shift limit, 6 GPM.
For shift performance consult chart.

PERFORMANCE
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS
Nominal Flow 6 GPM (23 LPM)
Rated Operating Pressure 3000 PSI (207 bar)
Typical Internal Leakage (150 SSU) 5 cu in/min (82 ml/min) per path
Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
Filtration ISO 18/16/13
Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
Weight .31 lbs (.14 kg)
Operating Fluid Media General Purpose Hydraulic Fluid
Cartridge Torque Requirements 30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1 Nm)
Cavity DELTA 4W
Cavity tools kit (form tool, reamer, tap) 40500002
Seal Kit 21191214

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**SOLENOID OPERATED DIRECTIONAL CONTROLS**

**DIMENSIONS**

![Diagram of solenoid operated directional controls]

**ORDERING INFORMATION**

**DG-S4D**

**OPTIONS**
- Buna Standard: 00
- Viton Standard: V0
- Buna, Override: 0M
- Viton, Override: VM

**BODIES**
- Blank: Without Body
- N: 3/8" BSP Ports
- S: #6 SAE Ports

**VOLTAGE**
- 12: 12 VDC
- 24: 24 VDC
- 22: 220 VAC without internal rectifier

**“V” COIL TERMINATION**

*All DC Except as Noted*
- DL: Double Lead
- HC: DIN 43650 (Hirschman) – (AC & DC)
- DI: Deutsch – Integral DT04-2P
- DIA: “I” Coil AMP Superseal – Integral
- DID: “I” Coil Deutsch – Integral DT04-2P
- DIJ: “I” Coil AMP Jr. Timer – Integral
- DIM: “I” Coil Metri-Pack – Integral

**IMMERSION PROOF “D” TYPE**
- DL: Double Lead
- HC: DIN 43650 (Hirschman) – (AC & DC)
- DI: Deutsch – Integral DT04-2P
- DIA: “I” Coil AMP Superseal – Integral
- DID: “I” Coil Deutsch – Integral DT04-2P
- DIJ: “I” Coil AMP Jr. Timer – Integral
- DIM: “I” Coil Metri-Pack – Integral

Approximate Coil Weight: .56 lbs/.25 kg.

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*a Delta Power Co.*
SOLENOID OPERATED DIRECTIONAL CONTROLS

HG-S4D, Direct Acting Spool, 4 Way 2 Position, Bottom Flow

DESCRIPTION
“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position bottom flow spool valve.

OPERATION
When de-energized the HG-S4D allows flow from (4) to (1) and from (3) to (2). When energized the valve allows flow from (4) to (3) and from (1) to (2).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

 Uses “L” Coil

PERFORMANCE
Actual Test Data (Cartridge Only)

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<th>Flow (GPM)</th>
<th>Pressure Drop (PSI)</th>
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<thead>
<tr>
<th>Port 3 to 2 (de-eng)</th>
<th>Port 4 to 1 (de-eng)</th>
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<table>
<thead>
<tr>
<th>Port 1 to 2 (eng)</th>
<th>Port 4 to 3 (eng)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VALVE SPECIFICATIONS
Nominal Flow 8 GPM (30 LPM)
Rated Operating Pressure 4000 PSI (276 bar)
Typical Internal Leakage (150 SSU) 10 cu in/min (164 ml/min) per path
Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
Filtration ISO 18/16/13
Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
Weight .43 lbs. (.20 kg)
Operating Fluid Media General Purpose Hydraulic Fluid
Cartridge Torque Requirements 30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1 Nm)
Cavity DELTA 4W
Cavity Tools kit (form tool, reamer, tap) 40500002
Seal Kit 21191214

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SOLENOID OPERATED DIRECTIONAL CONTROLS

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DIMENSIONS

ORDERING INFORMATION

HG-S4D - - -

OPTIONS
Buna Standard 00
Viton Standard V0

BODIES
Blank Without Body
N 3/8"BSP Ports
S #6 SAE Ports

VOLTAGE (*other voltages available on request)
12 12 VDC
24 24 VDC
22 220 VAC without internal rectifier

“L” COIL TERMINATION
(All DC Except as Noted)
DL Double Lead
(* several types of termination can be attached on leads on request)
HC DIN 43650 (Hirschman) – (AC & DC)
DI Deutsch – Integral DT04-2P

IMMERSSION PROOF “L” TYPE
LIA “I” Coil AMP Superseal - Integral
LID “I” Coil Deutsch – Integral DT04-2P
LIJ “I” Coil AMP Jr. Timer - Integral
LIM “I” Coil Metri-Pack – Integral

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for options.
SOLENOID OPERATED DIRECTIONAL CONTROLS

DG-S4E Direct Acting Spool, 4 Way 2 Position, Series/Parallel

DESCRIPTION
10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 2 position, series/parallel spool valve.

OPERATION
When de-energized the DG-S4E allows flow from (2) and (1), and (3) to (4). When energized the valve allows flow (2) to (4) and blocks the flow at (1) and (3).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw counterclockwise. To release turn the manual override screw clockwise.

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

For higher pressures see HG-S4E. Operational shift limit, 6 GPM. For shift performance consult chart.

PERFORMANCE
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS
Nominal Flow: 6 GPM (23 LPM)
Rated Operating Pressure: 3000 PSI (207 bar)
Typical Internal Leakage: 5 cu in/min (82 ml/min) per path (150 SSU)
Viscosity Range: 36 to 3000 SSU (3 to 647 cSt)
Filtration: ISO 18/16/13
Media Operating Temperature Range: -40° to 250° F (-40° to 120° C)
Weight: .31 lbs (.14 kg)
Operating Fluid Media: General Purpose Hydraulic Fluid
Cartridge Torque Requirements: 30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements: 4-6 ft-lbs (5.4-8.1 Nm)
Cavity: DELTA 4W
Cavity tools kit (form tool, reamer, tap): 40500002
Seal Kit: 21191214

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SOLENOID OPERATED DIRECTIONAL CONTROLS

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DIMENSIONS

ORDERING INFORMATION

DG-S4E - - -

OPTIONS
Buna Standard 00
Viton Standard 0M
Blank Without Body

OPTIONS
Buna, Override VM
Viton, Override VM

BODIES
Blank Without Body
N 3/8"BSP Ports
S #6 SAE Ports

VOLTAGE
12 12 VDC
24 24 VDC
22 220 VAC without internal rectifier

"V" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
(* several types of termination can be attached on leads on request)

DI Deutsch – integral DT04-2P

DIA DIN 43650 (Hirschman) – (AC & DC)

DID "I" Coil Deutsch – integral DT04-2P

DIJ "I" Coil AMP Jr. Timer – Integral

DIM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .56 lbs/.25 kg.

IMMERSION PROOF “D” TYPE

"I" Coil AMP Superseal - Integral
"I" Coil Deutsch – integral DT04-2P
"I" Coil AMP Jr. Timer - Integral
"I" Coil Metri-Pack – Integral
HG-S4E, Direct Acting Spool, 4 Way 2 Position, Series/Parallel

DESCRIPTION

OPERATION
When de-energized the HG-S4E allows flow from (1) to (2) and from (3) to (4). When energized the valve allows flow from (2) to (4) and blocks flow at (1) and (3).

FEATURES
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

Uses “L” Coil

PERFORMANCE
Actual Test Data (Cartridge Only)

Valve Specifications
Nominal Flow 8 GPM (30 LPM)
Rated Operating Pressure 4000 PSI (276 bar)
Typical Internal Leakage (150 SSU) 10 cu in/min (164 ml/min) per path
Viscosity Range 36 to 3000 SSU (3 to 647 cSt)
Filtration ISO 18/16/13
Media Operating Temperature Range -40° to 250° F (-40° to 120° C)
Weight .43 lbs. (.20 kg)
Operating Fluid Media General Purpose Hydraulic Fluid
Cartridge Torque 30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements 4-6 ft-lbs (5.4-8.1 Nm)
Cavity DELTA 4W
Cavity Tools kit (form tool, reamer, tap) 40500002
Seal Kit 21191214

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a Delta Power Co.
HV-S4E Direct Acting Spool, 4 Way 2 Position, Series / Parallel

**DESCRIPTION**

"High pressure" 12 size, 1 1/16-12 thread, "Tecnord" series, solenoid operated, 4 way 2 position, series / parallel flow spool valve.

**OPERATION**

When de-energized the HV-S4E allows flow from (2) to (1) and from (3) to (4). When energized the valve allows flow from (2) to (4) and blocks flow at (1) to (3).

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**

![Hydraulic Symbol]

**PERFORMANCE**

![Performance Graph]

**VALVE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Nominal Flow</td>
<td>15 GPM (57 LPM)</td>
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<tr>
<td>Rated Operating Pressure</td>
<td>5000 PSI (345 bar)</td>
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<tr>
<td>Typical Internal Leakage (150 SSU)</td>
<td>8 cu in/min (131 ml/min) per path</td>
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<tr>
<td>Viscosity Range</td>
<td>36 to 3000 SSU (3 to 647 cSt)</td>
</tr>
<tr>
<td>Filtration</td>
<td>ISO 18/16/13</td>
</tr>
<tr>
<td>Media Operating Temperature Range</td>
<td>-40° to 250° F (-40° to 120° C)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.09 lbs. (.49 kg)</td>
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<tr>
<td>Operating Fluid Media</td>
<td>General Purpose Hydraulic Fluid</td>
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<tr>
<td>Cartridge Torque Requirements</td>
<td>50 ft-lbs (67.8 Nm)</td>
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<tr>
<td>Coil Nut Torque Requirements</td>
<td>5-7 ft-lbs (6.8-9.5 Nm) Maximum</td>
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<tr>
<td>Cavity</td>
<td>TECNORD 4W</td>
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<tr>
<td>Cavity Tools kit (form tool, reamer, tap)</td>
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<tr>
<td>Seal Kit</td>
<td>21191309</td>
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</tbody>
</table>

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*a Delta Power Co.*
**SOLENOID OPERATED DIRECTIONAL CONTROLS**

**DG-S4F Direct Acting Spool, 4 Way 2 Position, Energized to Block**

**DESCRIPTION**
10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 2 position, energized to block spool valve.

**OPERATION**
When de-energized the DG-S4F allows flow from (2) and (1), and from (3) to (4). When energized the valve blocks flow at all ports.

**OPERATION OF MANUAL OVERRIDE OPTION:** To override, turn the manual override screw counter-clockwise. To release turn the manual override screw clockwise.

**FEATURES**
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**

For higher pressures see HG-S4F. Operational shift limit, 6 GPM. For shift performance consult chart.

**PERFORMANCE**
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tr>
<td>Nominal Flow</td>
<td>6 GPM (23 LPM)</td>
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<tr>
<td>Rated Operating Pressure</td>
<td>3000 PSI (207 bar)</td>
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<tr>
<td>Typical Internal Leakage</td>
<td>5 cu in/min (82 ml/min) per path</td>
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<td>Viscosity Range</td>
<td>36 to 3000 SSU (3 to 647 cSt)</td>
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<tr>
<td>Filtration</td>
<td>ISO 18/16/13</td>
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<tr>
<td>Media Operating Temperature</td>
<td>-40° to 250° F (-40° to 120° C)</td>
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<tr>
<td>Weight</td>
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<tr>
<td>Operating Fluid Media</td>
<td>General Purpose Hydraulic Fluid</td>
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<tr>
<td>Cartridge Torque Requirements</td>
<td>30 ft-lbs (40.6 Nm)</td>
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<tr>
<td>Coil Nut Torque Requirements</td>
<td>4-6 ft-lbs (5.4-8.1 Nm)</td>
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<td>Cavity</td>
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<td>Cavity Tools kit (form tool, reamer, tap)</td>
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<td>Seal Kit</td>
<td>21191214</td>
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</tbody>
</table>

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a Delta Power Co.
HG-S4F, Direct Acting Spool, 4 Way 2 Position, Energized to Block

DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position energized to block spool valve.

OPERATION

When de-energized the HG-S4F allows flow from (2) to (1) and from (3) to (4). When energized the valve blocks flow at all ports.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rate solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

![HYDRAULIC SYMBOL](image)

USES “L” COIL

PERFORMANCE

Actual Test Data (Cartridge Only)

![PERFORMANCE GRAPH](image)

VALVE SPECIFICATIONS

<table>
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<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Nominal Flow</td>
<td>6 GPM (23 LPM)</td>
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<tr>
<td>Rated Operating Pressure</td>
<td>4000 PSI (276 bar)</td>
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<tr>
<td>Typical Internal Leakage</td>
<td>10 cu in/min (164 ml/min) per path</td>
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<tr>
<td>Viscosity Range</td>
<td>36 to 300 SSU (3 to 647 cSt)</td>
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<tr>
<td>Filtration</td>
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<td>Media Operating Temperature</td>
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<td>Weight</td>
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<td>Operating Fluid Media</td>
<td>General Purpose Hydraulic Fluid</td>
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<td>Cartridge Torque Requirements</td>
<td>30 ft-lbs (40.6 Nm)</td>
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<tr>
<td>Coil Nut Torque Requirements</td>
<td>4-6 ft-lbs (5.4-8.1 Nm)</td>
</tr>
<tr>
<td>Cavity</td>
<td>DELTA 4W</td>
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<td>Cavity Tools kit (form tool, reamer, tap)</td>
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<tr>
<td>Seal Kit</td>
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**SOLENOID OPERATED DIRECTIONAL CONTROLS**

**TECNORD**

**DIMENSIONS**

---

**ORDERING INFORMATION**

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<thead>
<tr>
<th>HG-S4F</th>
<th>OPTIONS</th>
<th>BODIES</th>
<th>VOLTAGE</th>
<th>IMMERSION PROOF &quot;L&quot; TYPE</th>
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<td>&quot;L&quot; Coil AMP Superseal - Integral</td>
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<td>&quot;L&quot; Coil AMP Jr. Timer - Integral</td>
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<tr>
<td>S</td>
<td>3/8&quot;BSP Ports</td>
<td>without internal rectifier</td>
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<td>&quot;L&quot; Coil Metri-Pack – Integral</td>
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</tbody>
</table>

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**NOTICE:** All DC except as noted.

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