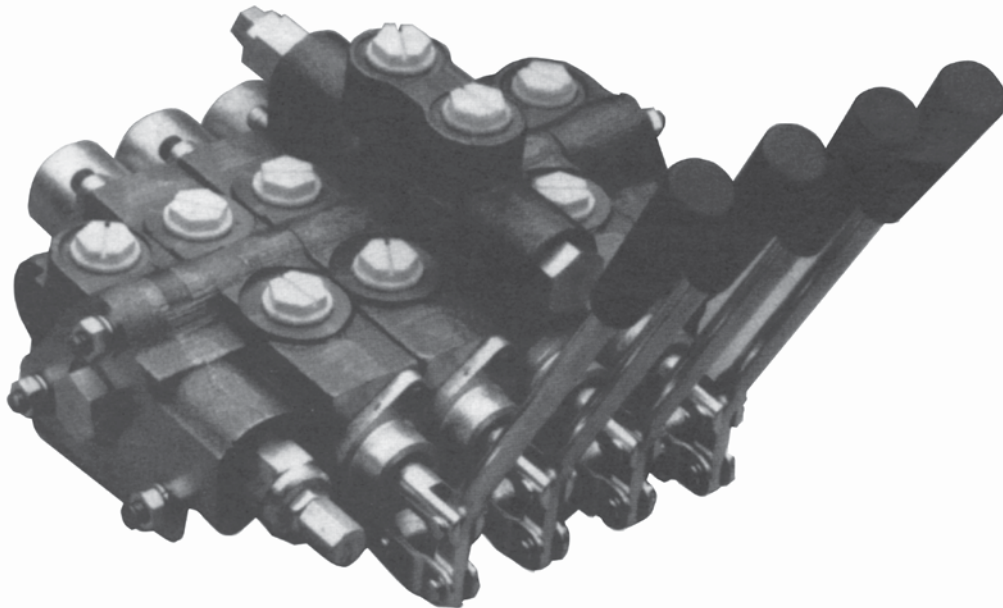


# Directional Control Valves

## SECTIONAL BODY



*Model SV*

VALVES

### STANDARD FEATURES

- 1-10 Sections Per Valve Bank
- Load Checks On Each Section
- Hard Chrome Plated Spools
- Compact Construction
- Enhanced Metering Section Available in both the High and Low Sections
- Differential Poppet Style Relief, Adjustable from 1500 to 3000 psi (Also available in Low Pressure Version Adjustable from 500 to 1500 psi)
- Power Beyond Capability
- Reversible Handle
- Mid-Inlet and Lock Valve Section available
- Flow Control Inlet

### SPECIFICATIONS

#### Parallel or Series Circuit Construction Pressure Rating

Maximum Operating Pressure ..... 3000 psi  
Maximum Tank Pressure..... 500 psi

**Nominal Flow Rating** ..... 12 GPM  
Refer to Pressure Drop Curves.

**Filtration:** For general purpose valves, fluid cleanliness should meet the ISO 4406 19/17/14 level. For extended life or for pilot operated valves, the 18/16/13 fluid cleanliness level is recommended.

#### Foot Mounting

**Maximum Operating Temp.** ..... 180°F

#### Weight Per Section

Inlet Section ..... Approx 3.75 lbs.  
Outlet Section ..... Approx 3.75 lbs.  
Work Section (Standard) ..... Approx 5.50 lbs.  
Work Section (High) ..... Approx 8.00 lbs.

## ORDERING INFORMATION:

The following is a listing of valve sections available from stock on a standard basis.  
**STANDARD SECTIONS AVAILABLE:**

### INLET SECTIONS ALL HAVE BOTH TOP AND SIDE INLET PORTS

**PART NO. RELIEF TYPE AND SETTING**

SVI21	No Relief
SVI24	Adjustable Low Pressure Relief Set at 1000 PSI
SVI15	Adjustable High Pressure Relief Set At 2000 PSI
SVI25	Adjustable High Pressure Relief Set at 2000 PSI

**PORT SIZE**

#10 SAE ORB (7/8-14 THD)
#10 SAE ORB (7/8-14 THD)
#8 SAE ORB (3/4-16 THD)
#10 SAE ORB (7/8-14 THD)

### WORK SECTIONS ALL HAVE #8 SAE ORB (3/4-16 THD) PORTS, LOAD CHECK AND STANDARD LEVER HANDLE

**PART NO. SPOOL TYPE AND ACTION**

SVW1AA1	3-Way Single Acting w/ Spring Center
SVW1BA1	4-Way Double Acting w/ Spring Center (Work Ports Blocked in Neutral)
SVW1BB1	4-Way Double Acting w/ 3 Position Detent (Work Ports Blocked in Neutral)
SVW1CA1	4-Way Motor Spool w/ Spring Center (Work Ports Open to Tank in Neutral)
SVW1CB1	4-Way Motor Spool w/ 3 Position Detent (Work Ports Open to Tank in Neutral)
SVW1DD1	4-Way 4 Position Float w/ Spring Center and Float Detent
SVL1CA1	4-Way Spool w/ Spring Center (with Pilot Operated Checks on Both Work Ports)
SVM1ES1	4-Way Meter Spool w/ Spring Center (Work Ports Blocked in Neutral)

### PORT RELIEF WORK SECTIONS ALL HAVE #8 SAE ORB (3/4-16 THD) PORTS, LOAD CHECK AND STANDARD LEVER HANDLE. MODELS WITH RELIEF FACTORY SET AT 2000 PSI AT 3 GPM.

**PART NO. SPOOL TYPE AND ACTION**

SVH1BA1AA	4-Way Double Acting w/ Spring Center
SVH1BA1GG	4-Way Double Acting w/ Spring Center
SVH1DD1AA	4-Way 4 Position Float w/ Spring Center and Float Detent
SVH1DD1BB	4-Way 4 Position Float w/ Spring Center and Float Detent
SVR1ES1AA	4-Way Meter Spool w/ Spring Center
SVR1ES1GG	4-Way Meter Spool w/ Spring Center
SVS1GA1GG	4-Way Double Acting Series w/ Spring Center
SVS1GA1AA	4-Way Double Acting Series w/ Spring Center

**PORT RELIEFS**

Port Relief Plugged
Adjustable 1500-3000 PSI
Port Relief Plugged
Shim Adjustable 1500-3000 PSI
Port Relief Plugged
Adjustable 1500-3000 PSI
Adjustable 1500-3000 PSI
Port Relief Plugged

### OUTLET SECTIONS ALL HAVE BOTH TOP AND SIDE OUTLET PORTS

**PART NO. EXHAUST OPTIONS**

SVE11	Open Center Outlet w/ Conversion Plug
SVE21	Open Center Outlet w/ Conversion Plug
SVE22	Power Beyond Outlet w/ #8 SAE Beyond Port
SVE23	Closed Center Outlet
SVE26	Open Center Outlet Pressure Build-up Valve
SVE27	Power Beyond Pressure Build-up Valve

**PORT SIZE**

#8 SAE ORB (3/4-16 THD)
#10 SAE ORB (7/8-14 THD)
#10 SAE ORB (7/8-14 THD)
#10 SAE ORB (7/8-14 THD)
#10 SAE ORB (7/8-14 THD)
#10 SAE ORB (7/8-14 THD)

### TIE ROD KITS

TIE ROD TORQUE  
 150in-lbs ± 6in-lbs  
 (12 1/2 ft-lbs ± 1/2)

**PART NO.**

660401001	1 Section*
660401002	2 Sections*
660401003	3 Sections*
660401004	4 Sections*
660401005	5 Sections*

\*Number of Work Sections

**PART NO.**

660401006	6 Sections*
660401007	7 Sections*
660401008	8 Sections*
660401009	9 Sections*
660401010	10 Sections*

**SPECIAL INLET AND OUTLET SECTIONS AVAILABLE:** Sections other than standard models listed can be made to order. Use order code Matrix below to generate a model number that meets your requirements. If you prefer, contact your Sales Representative with your specific requirements and a model number will be assigned for you. This model number can be used for future orders. A minimum order quantity will apply to special valves. Please consult Sales Representative.

#### INLET SECTIONS

All inlet sections have top and side inlets.

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**PORT SIZE**

- #8 SAE ORB (3/4-16 THD)
- #10 SAE ORB (7/8-14 THD)

**RELIEF SETTING (in PSI)**

- RELIEF OPTION**
- No Relief Plug
  - Adj. Low Pressure 500-1500 PSI
  - Adj. High Pressure 1500-3000 PSI
  - Plastic Plug in relief cavity. Use only when cartridge is to be installed at a later date.

#### OUTLET SECTION

All outlet sections have top and side outlets.

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**PORT SIZE**

- #8 SAE ORB (3/4-16 THD)
- #10 SAE ORB (7/8-14 THD)

**EXHAUST OPTION**

- Std. Open Center Outlet w/Conversion Plug
- Power Beyond Outlet w/#8 SAE Beyond Port
- Closed Center Outlet<sup>0</sup>
- Open Center Outlet Pressure Build-up
- Power Beyond Pressure Build-up #8 SAE Beyond Port

<sup>0</sup> Often used with no relief. Review application

## VALVE ASSEMBLIES

The Model SV sectional body directional control valve can be ordered as separate sections or as a complete factory tested assembly. This will need to be specified with each order. An assembly number will be assigned at the time of the order. This assembly number can then be used for future orders.

**ASSEMBLY MODEL NUMBER SVA-XXXX**

XXXX = Sequence of Numbers. This number will be assigned to final valve to be assembled and tested at the factory. Each new order or quote will be assigned a new assembly model number. Please use quotation sheet at the end of SV section.

**SPECIAL WORK SECTIONS AVAILABLE:** Work Sections other than standard models listed can be made to order. Use order code Matrix below to generate a model number that meets your requirements. If you prefer, contact your Sales Representative with your specific requirements and a model number will be assigned for you. This model number can be used for future orders. A minimum order quantity will apply to special valves. Please consult Sales Representative.

## WORK SECTIONS

### SECTION TYPE

- W-Std. Work Section
- M-Metering Work Section<sup>2</sup>
- L-Work Section with Double P.O. Checks<sup>1</sup>
- F-Fine Metering<sup>3</sup>

### PORT SIZE

- 1. #8 SAE ORB (3/4-16 THD)
- 2. #6 SAE ORB (9/16-18 THD)

### SPOOL TYPE

- A-3-Way 3-Position
- B-4-Way 3-Position
- C-4-Way 3 Position Motor
- D-4-Way 4 Position Float
- E-4-Way 3 Position Metering (SVM only)
- F-3-Way 3 Position Metering (SVM only)
- J-4-Way 3 Position Fine Metering (SVF only)
- 1. Lock Valve Section available only with Spool Option C.
- 2. Metering Section available only with Spool Options E or F.
- 3. Fine Metering available only with Spool Options J.

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### HANDLE OPTION

- 1. Standard Lever Handle
- 2. Less Handle Only
- 3. Less Complete Handle Assembly
- 4. Adjustable Handle
- 5. Tang Spool End Only
- 6. Clevis Spool End Only
- 7. Vertical Handle
- 8. Straight Handle
- 9. Blank for Optional Joystick Handle
- 11. Enclosed Handle
- 12. Extended Enclosed Handle

### SPOOL ACTION

- A-Spring Center (SVW & SVL only)
- B-3 Position Detent
- C-Friction Detent
- D-Spring Center w/Float Detent (SVW only)
- E-Light Spring Center
- F-2 Position Detent Neutral and Out (No IN Position)
- G-2 Position (Center and Spool Out) - Spring Loaded to Spool Out (Pressure to B Port) Position
- H-2 Position (Center and Spool In)-Spring Loaded to Spool In (Pressure to A Port) Position
- J-S/C with MicroSwitch Bracket 2-Position (MicroSwitch not provided)
- K-S/C with MicroSwitch Bracket 1-Position (MicroSwitch not provided) (activates on spool out only)
- M-Spring Center Detent In
- N-Spring Center Detent Out
- R-Spring Center Pneumatic Actuator
- S-Spring Center (SVM & SVF)

## PORT RELIEF WORK SECTIONS

### SECTION TYPE

- H-Port Relief Section
- R-Port Relief Metering Section<sup>2</sup>
- S-Series Circuit Port Relief Section
- G-Port Relief Fine Metering Section<sup>3</sup>

### PORT SIZE

- 1.#8 SAE ORB (3/4-16 THD)
- 2.#6 SAE ORB (9/16-18 THD)

### SPOOL TYPE

- A-3-Way 3-Position
- B-4-Way 3-Position
- C-4-Way 3 Position Motor
- D-4-Way 4 Position Float
- E-4-Way 3 Position Metering (SVR only)
- F-3-Way 3 Position Metering (SVR only)
- G-4-Way 3 Position Series (SVS only)
- H-4-Way 3 Position Motor Series (SVS only)
- J- 4-Way 3 Position Fine Metering (SVG only)

### SPOOL ACTION

- A-Spring Center (SVH & SVS only)
- B- 3 Position Detent
- C-Friction Detent
- D- Spring Center w/ Float Detent (SVH only)
- E-Light Spring Center
- F-2 Position Detent Neutral and Out (No IN Position)
- J-S/C with Micro Switch Bracket 2-Position\*
- K-S/C with MicroSwitch Bracket 1-Position\*
- M-Spring Center Detent In
- N-Spring Center Detent Out
- R-Spring Center Pneumatic Actuator
- S-Spring Center (SVR & SVG)

\*MicroSwitch not provided

### HANDLE OPTION

- 1. Standard Lever Handle
- 2. Less Handle Only
- 3. Less Complete Handle Assembly
- 4. Adjustable Handle
- 5. Tang Spool End Only
- 6. Clevis Spool End Only
- 7. Vertical Handle
- 9. Blank for Optional Joystick Handle
- 12. Extended Enclosed Handle

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### PORT RELIEF "B" OPTION

- A-Relief Cavity Plugged
- B-Non-Adjustable Direct Acting Relief 1500-3000 PSI
- C-Non-Adjustable Direct Acting Relief 500-1500 PSI
- D-Anti-Cavitation Check
- E-Adjustable Combination Port Relief/Anti-Cavitation Check 1000-2500 PSI\*\*\*
- F-Non-Adjustable Combination Port Relief/Anti-Cavitation Check 1000-2500 PSI\*\*\*
- G-Adjustable Direct Acting Relief 1500-3000 PSI
- H-Adjustable Direct Acting Relief 500-1500 PSI

### PORT RELIEF "A" OPTION

- A-Relief Cavity Plugged
- B-Non-Adjustable Direct Acting Relief 1500-3000 PSI
- C-Non-Adjustable Direct Acting Relief 500-1500 PSI
- D-Anti-Cavitation Check
- \*\*E-Adjustable Combination Port Relief/Anti-Cavitation Check 1000-2500 PSI\*\*\*
- F-Non-Adjustable Combination Port Relief/Anti-Cavitation Check 1000-2500 PSI\*\*\*
- \*\*G-Adjustable Direct Acting Relief 1500-3000 PSI
- \*\*H-Adjustable Direct Acting Relief 500-1500 PSI
- \*\* Cannot be used on work sections with float option due to interference with handle.
- \*\*\* Do not use in applications that require low work port leakage. Max allowable leakage 5 in<sup>3</sup>/min @1000 psi.

### For Work Port Relief Settings Other Than Standard SVH1BA1GG-18-25

B PORT RELIEF PRESSURE IN HUNDREDS  
EXAMPLE: 25=2500 PSI at 3 GPM  
All Port Reliefs set at 3 GPM

A PORT RELIEF PRESSURE IN HUNDREDS  
EXAMPLE: 18=1800 PSI at 3 GPM  
All Port Reliefs set at 3 GPM

**CUSTOM SECTION:** For OEM application custom sections can often be designed to meet your specifications. Special handles, spool, and spool actions are often easily made because of the SV valve's flexible design. Consult your sales representative with your specifications.

# FIELD CONVERSION KITS, REPAIR KITS AND RELIEF CARTRIDGES

## SPOOL ATTACHMENT KITS

- 660180001 Spring Center Kit (except SVM)
- 660180002 3 Position Detent Kit
- 660180003 Friction Detent Kit
- 660180051 Float Detent Kit
- 660180036 Spring Center Detent In
- 660180037 Spring Center Detent Out
- 660180015 S/C w/Micro-Switch, 2 Position\*
- 660180016 S/C w/Micro-Switch, 1 Position\*

## HANDLE KITS

- 660180011 Std. Handle Kit
- 660180032 Clevis Sub-Assy
- 660180005 Complete Handle Kit
- 660180031 Pin Kit
- 660180026 Vertical Handle Kit
- 660180028 Straight Handle Kit
- 660180007 Complete Adjustable Handle Kit

\*Bracket only, Micro-Switch is not provided.

- 660180006 Adjustable Handle Kit
- 660180055 Joystick Handle Kit Less Handle
- 660180033 Bent Joystick Handle Kit
- 660180017 Straight Joystick Handle Kit
- 660180018 Offset Joystick Handle Kit

## SEAL KITS

- 660580001 SVW/SVM Replacement Seal Kit
- 660580002 Inlet Seal Kit
- 660580003 Outlet Seal Kit
- 660580004 Between Section Seal Kit
- 660580010 SVH/SVR Replacement Seal Kit
- 660580009 SVL Replacement Seal Kit
- 660580011 SVS Replacement Seal Kit

## PORT RELIEFS

- 660280004 Port Relief Plug
- 660280003 Shim Adj. Port Relief 1500-3000 PSI
- 660280010 Shim Adj. Port Relief 500-1500 PSI
- 660280012 Adj. Combination Port Relief/Anti-Cav Check 1000-2500 PSI

- 660280008 Shim Adj. Combination Port Relief/Anti-Cav Check 1000-2500 PSI
- 660280005 Anti-Cavitation Check
- 660280009 Adj. Port Relief 1500-3000 PSI
- 660280011 Adj. Port Relief 500-1500 PSI
- 672000101 .015 SHIM
- 672000102 .033 SHIM
- 672000103 .060 SHIM

## INLET RELIEFS

- 660250006 Inlet Relief Plug
- 660250003 Low Pressure Inlet Relief
- 660250002 High Pressure Inlet Relief

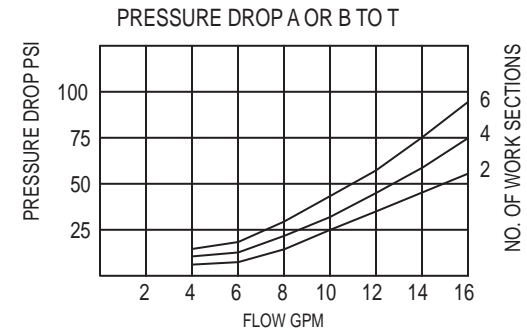
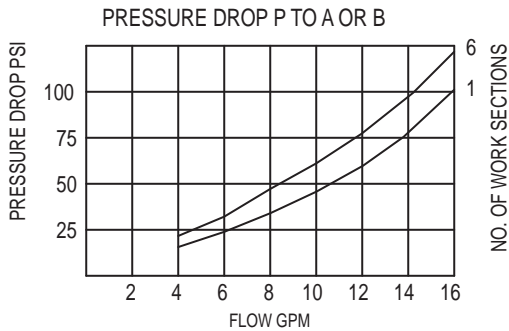
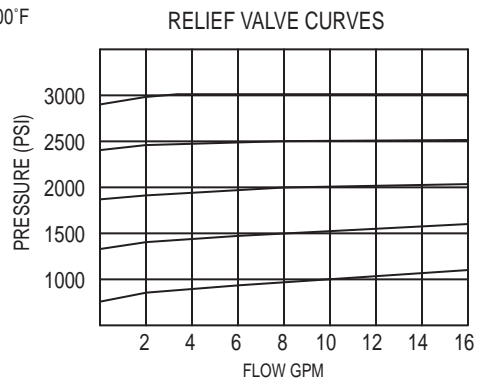
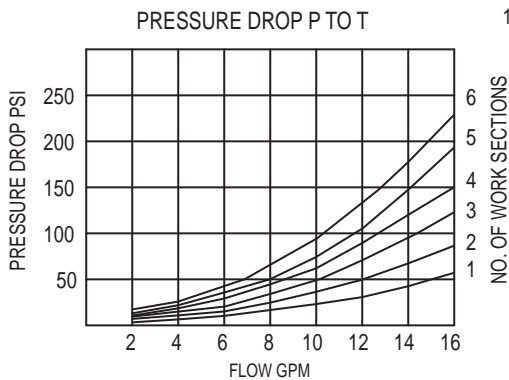
## OUTLET CARTRIDGES

- 200400030 Open Center Plug
- 660280001 #8 SAE Power Beyond Cart.
- 660280002 Closed Center Plug
- 660280018 Open Center Build-Up Cart.
- 660280019 Power Beyond Build-Up Cart.

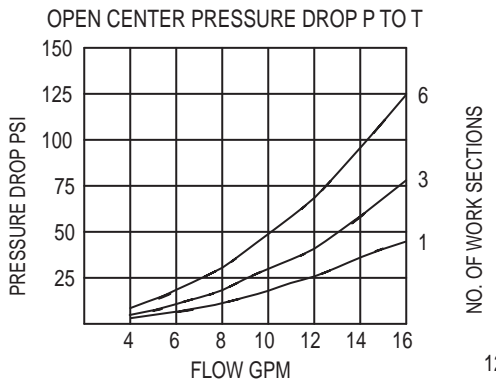
## MISC. KITS

- 660180052 Load Check Kit

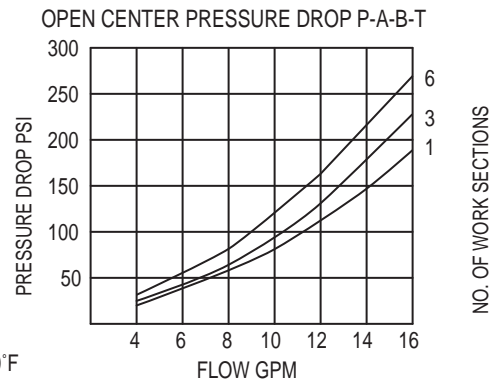
## PERFORMANCE CURVES



## SVS SERIES SECTION TEST DATA



120 SUS OIL AT 100°F



VALVES