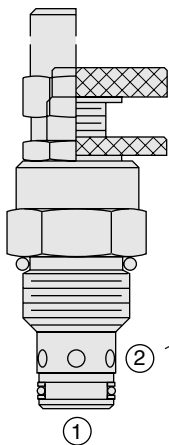
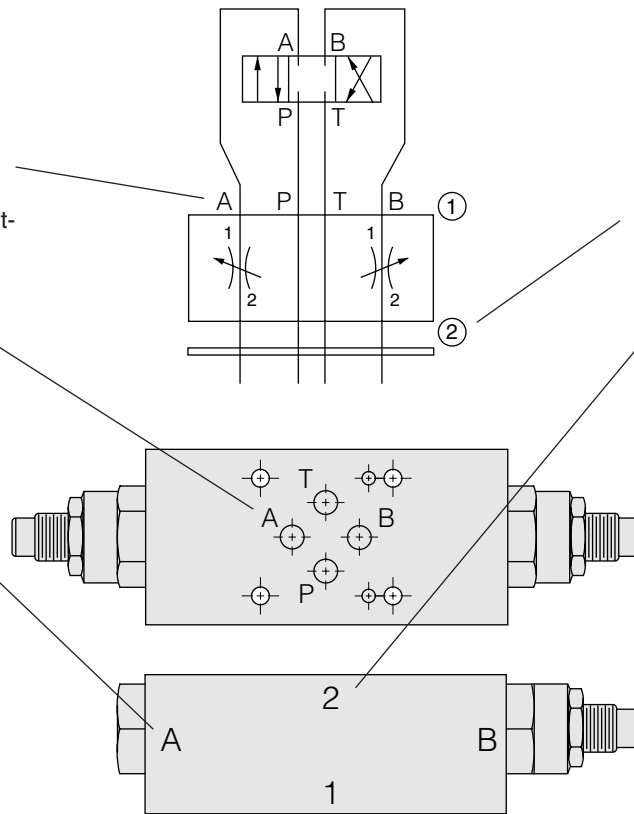


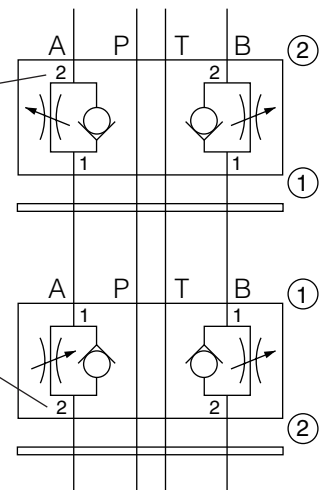
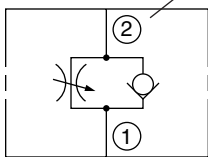
Sandwich Valve Labels & Symbols

The letters A and B stamped on the manifold indicate the side of the manifold which serves as port A and port B, relative to the valve symbol and the ISO/CETOP mounting surface.

Numbers ① and ② stamped on the manifold indicate the surface to be positioned toward the sub-base manifold surface vs. the four-way valve surface.



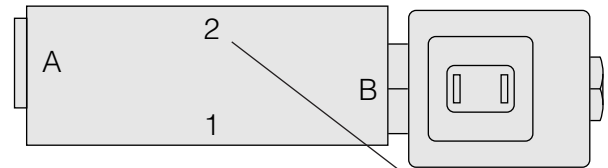
Small uncircled numbers in the valve symbol indicate the port logic of the cavity used. Individual cartridge product pages explain this port logic and labeling.



Reversible & Non-Reversible Sandwich Valves

REVERSIBLE SANDWICHES

Some sandwich valves may be flipped to reverse function direction. These require the installation of a seal plate, as no O-ring counterbores are provided on the sandwich body. When sandwich valves are ordered complete, required seal plates are automatically provided. These are indicated in the description adjacent to the symbol.



EXAMPLES:

Blocking on B, Normally Closed

Side Up: 2 Plug: 6103010
Block No.: 7170820 Plug Side: A

Model No. SV10-22-S03B-x-xx

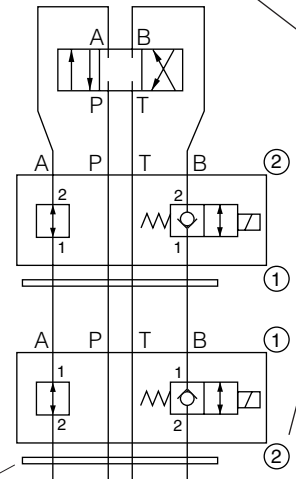
Seal Plate: Yes
Catalog Ref.: 1.044.1

Load Holding on B, Normally Closed

Side Up: 1 Plug: 6103010
Block No.: 7170820 Plug Side: A

Model No. SV10-22-S03B-x-xx

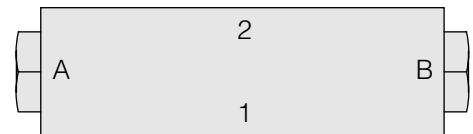
Seal Plate: Yes
Catalog Ref.: 1.044.1



Seal plate indicated under symbol

NON-REVERSIBLE SANDWICHES

Other sandwich valves include counterbores for O-ring seals and do not require seal plates. These are indicated on the symbol and description.



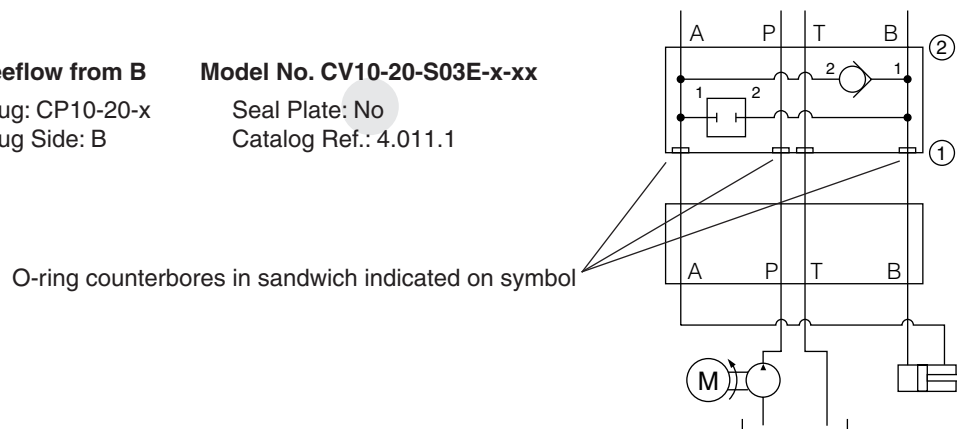
EXAMPLE:

Flow Checked Out, A Freeflow from B

Side Up: 2 Plug: CP10-20-x
Block No.: 7170810 Plug Side: B

Model No. CV10-20-S03E-x-xx

Seal Plate: No
Catalog Ref.: 4.011.1



O-ring counterbores in sandwich indicated on symbol

D03 (NG6) SANDWICH VALVES

Sandwich Valve Ordering Information

TO ORDER SANDWICH VALVES COMPLETE

First, review the products available on the forthcoming pages and select the BASE MODEL NUMBER as indicated in the examples below. Note that the sandwich body code substitutes for the standard in-line body code in the same model field.

Blocking on B, Normally Closed

Side Up: 2 Plug: 6103010
Block No.: 7170820 Plug Side: A

Model No. SV10-22-S03B-x-xx

Seal Plate: Yes
Catalog Ref.: 1.044.1

Base Model No.

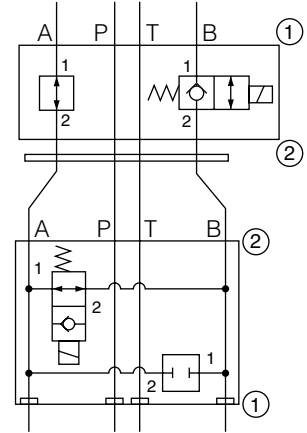
Catalog Ref. No.

Normally Open, Block B to A

Side Up: 2 Plug: CP10-20-x
Block No.: 7170810 Plug Side: B

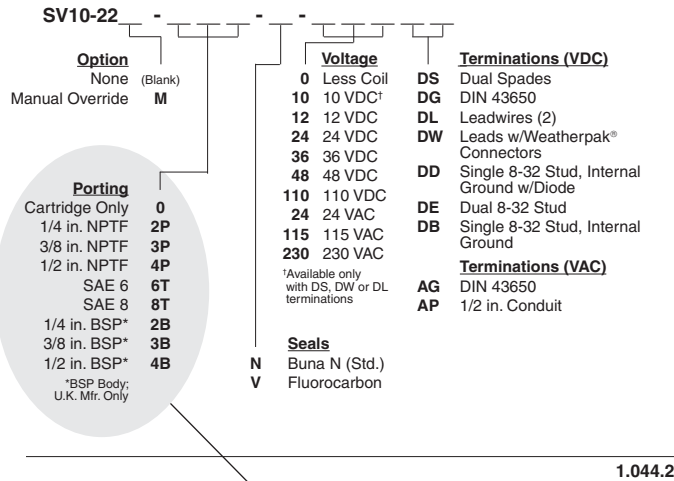
Model No. SV10-23-S03F-x-xx

Seal Plate: No
Catalog Ref.: 1.053.1

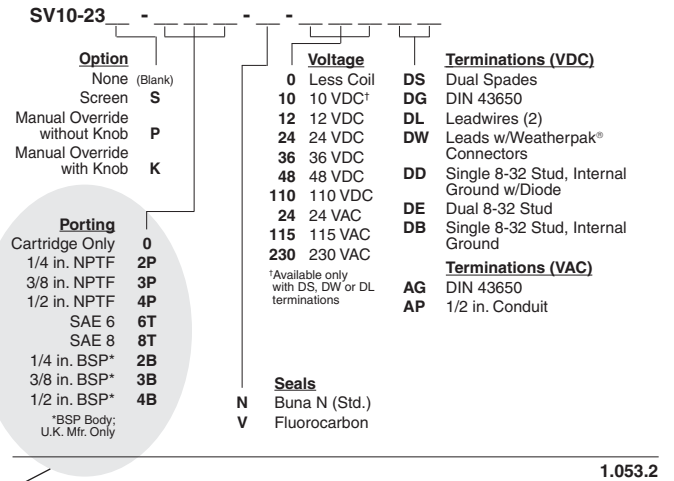


Second, once you know your BASE MODEL NO., go to the CATALOG REF. page indicated to complete the balance of the model number. Note that all fields indicated by the lower case x's must be filled in.

TO ORDER



TO ORDER



Sandwich Valve Body Code Substitutes for Porting Field

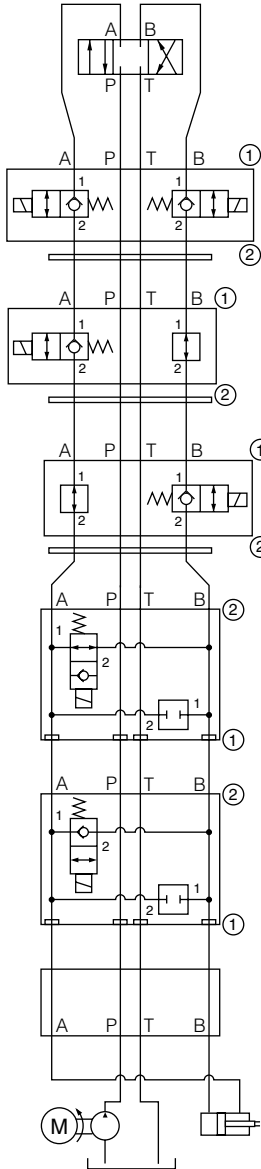
Ordering Examples (Complete Valve):

SV10-22-S03B-N-115AG
SV10-23-S03F-V-230AP
CV10-20-S03E-N-5
FC10-20A-S03A-N
RV10-22H-S03C-NC-25/14

Sandwich Valve Ordering Information

TO ORDER SANDWICH VALVE PARTS

Standard HydraForce sandwich valves may be ordered in parts format. The base model tables indicate the parts required to complete a unit.



Dual Load Holding, Normally Closed

Side Up: 1
Block No.: 7170820
Plug: None
Plug Side: n/a

Model No. SV10-22-S03D-x-xx

Seal Plate: Yes
Catalog Ref.: 1.044.1

Load Holding on A, Normally Closed

Side Up: 1
Block No.: 7170820
Plug: 6103010
Plug Side: B

Model No. SV10-22-S03A-x-xx

Seal Plate: Yes
Catalog Ref.: 1.044.1

Load Holding on B, Normally Closed

Side Up: 1
Block No.: 7170820
Plug: 6103010
Plug Side: A

Model No. SV10-22-S03B-x-xx

Seal Plate: Yes
Catalog Ref.: 1.044.1

Normally Open, Block B to A

Model No. SV10-23-S03F-x-xx

Side Up: 2
Block No.: 7170810
Plug: CP10-20-x
Plug Side: B

Seal Plate: No
Catalog Ref.: 1.053.1

Normally Closed, Block B to A

Model No. SV10-22-S03F-x-xx

Side Up: 2
Block No.: 7170810
Plug: CP10-20-x
Plug Side: B

Seal Plate: No
Catalog Ref.: 1.044.1

The (plain) **BLOCK NO.** is referenced on each table. Note that no seals, plugs, etc. are included.

Any **PLUG** required in the block to yield the function is indicated. These might be simple SAE hex plugs (see Manifold Accessories, page 8.500.1), cavity plugs (see page 8.450.1), or special closure plugs as indicated. These plugs are offered with Buna or Fluorocarbon O-rings.

SEAL PLATES may be required. See table on page 7.800.1. If seal plates are not used, an **O-RING KIT** must be ordered. See table below.

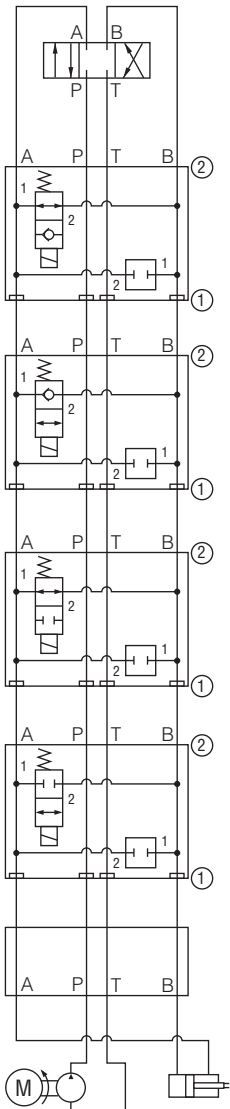
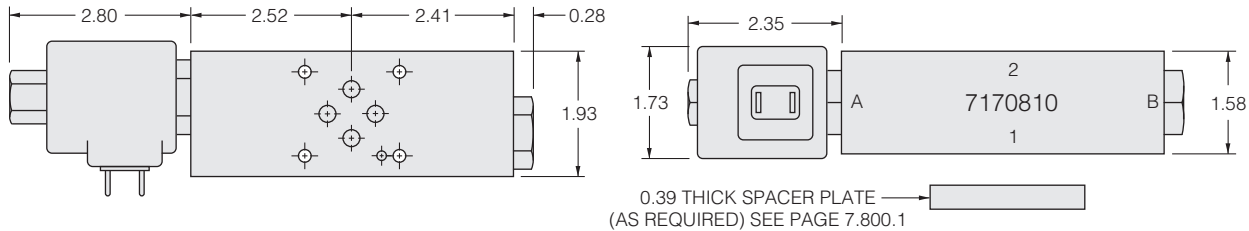
O-RING SERVICE KITS		
Kit Part No.	O-Ring Part No.	Qty.
6299001	6001012 (Buna)	4
6299003	6003012 (Fluorocarbon)	4

Solenoid Sandwich Valves

HydraForce solenoid-operated cartridge valves offer designers increased flexibility with new methods of load holding, regeneration, system unloading, etc.

HydraForce solenoids are available with many termination/voltage combinations, all of which are continuous duty rated.

Due to the size of HydraForce -10 size coils, use with standard sub-bases and sub-plate type valves will likely require the use of a spacer plate to prevent an interference fit.



Normally Open, Block B to A Model No. SV10-23-S03F-x-xx

Side Up: 2 Plug: CP10-20-x Seal Plate: No Catalog Ref.: 1.053.1
 Block No.: 7170810 Plug Side: B

Normally Closed, Block B to A Model No. SV10-22-S03F-x-xx

Side Up: 2 Plug: CP10-20-x Seal Plate: No Catalog Ref.: 1.044.1
 Block No.: 7170810 Plug Side: B

Normally Open, Block B to A, A to B Model No. SV10-25-S03F-x-xx

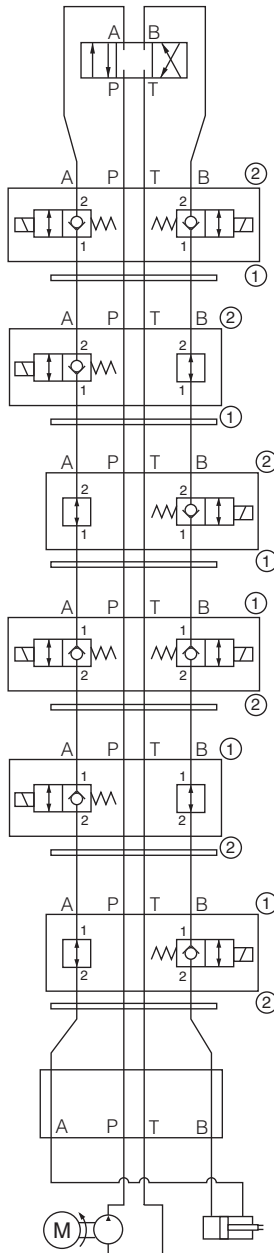
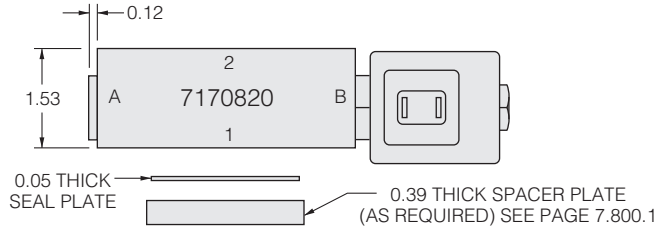
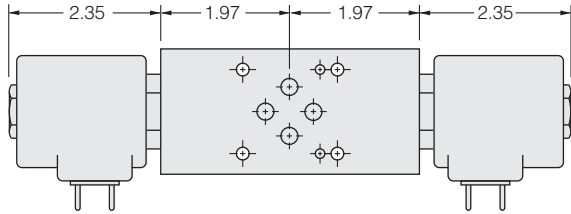
Side Up: 2 Plug: CP10-20-x Seal Plate: No Catalog Ref.: 1.076.1
 Block No.: 7170810 Plug Side: B Max. Flow: 6 gpm

Normally Closed, Block B to A, A to B Model No. SV10-24-S03F-x-xx

Side Up: 2 Plug: CP10-20-x Seal Plate: No Catalog Ref.: 1.064.1
 Block No.: 7170810 Plug Side: B

ISO/CETOP 3 Manifold

Solenoid Sandwich Valves



Dual Blocking, Normally Closed

Side Up: 2 Plug: None
 Block No.: 7170820 Plug Side: n/a

Model No. SV10-22-S03D-x-xx

Seal Plate: Yes Catalog Ref.: 1.044.1

Blocking on A, Normally Closed

Side Up: 2 Plug: 6103010
 Block No.: 7170820 Plug Side: B

Model No. SV10-22-S03A-x-xx

Seal Plate: Yes Catalog Ref.: 1.044.1

Blocking on B, Normally Closed

Side Up: 2 Plug: 6103010
 Block No.: 7170820 Plug Side: A

Model No. SV10-22-S03B-x-xx

Seal Plate: Yes Catalog Ref.: 1.044.1

Dual Load Holding, Normally Closed

Side Up: 1 Plug: None
 Block No.: 7170820 Plug Side: n/a

Model No. SV10-22-S03H-x-xx

Seal Plate: Yes Catalog Ref.: 1.044.1

Load Holding on A, Normally Closed

Side Up: 1 Plug: 6103010
 Block No.: 7170820 Plug Side: B

Model No. SV10-22-S03G-x-xx

Seal Plate: Yes Catalog Ref.: 1.044.1

Load Holding on B, Normally Closed

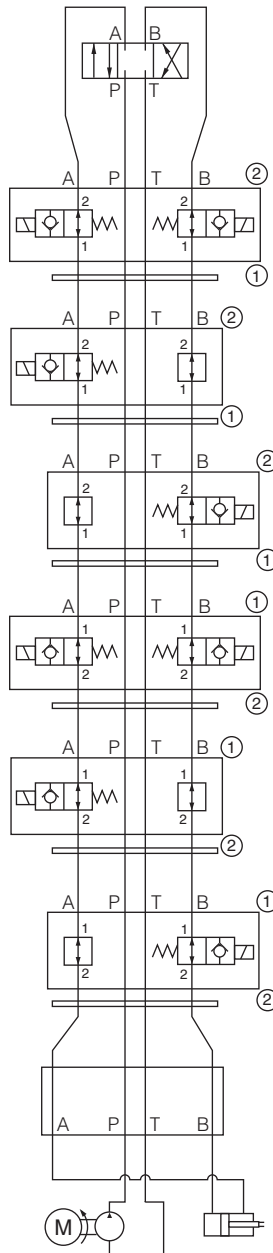
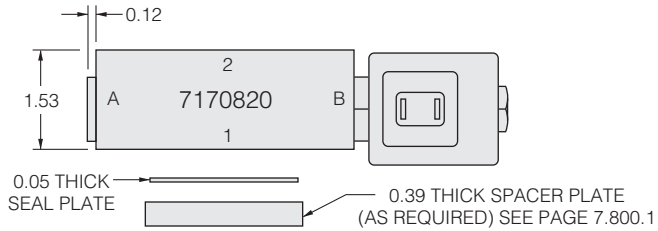
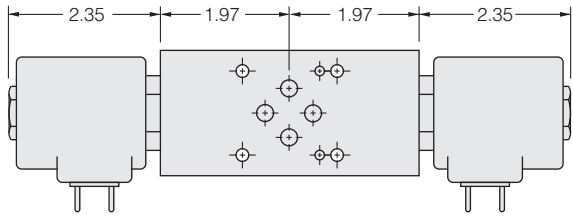
Side Up: 1 Plug: 6103010
 Block No.: 7170820 Plug Side: A

Model No. SV10-22-S03L-x-xx

Seal Plate: Yes Catalog Ref.: 1.044.1

ISO/CETOP 3 Manifold

Solenoid Sandwich Valves



Dual Blocking, Normally Open

Side Up: 2 Plug: None
 Block No.: 7170820 Plug Side: n/a

Model No. SV10-23-S03D-x-xx

Seal Plate: Yes Catalog Ref.: 1.053.1

Blocking on A, Normally Open

Side Up: 2 Plug: 6103010
 Block No.: 7170820 Plug Side: B

Model No. SV10-23-S03A-x-xx

Seal Plate: Yes Catalog Ref.: 1.053.1

Blocking on B, Normally Open

Side Up: 2 Plug: 6103010
 Block No.: 7170820 Plug Side: A

Model No. SV10-23-S03B-x-xx

Seal Plate: Yes Catalog Ref.: 1.053.1

Dual Load Holding, Normally Open

Side Up: 1 Plug: None
 Block No.: 7170820 Plug Side: n/a

Model No. SV10-23-S03H-x-xx

Seal Plate: Yes Catalog Ref.: 1.053.1

Load Holding on A, Normally Open

Side Up: 1 Plug: 6103010
 Block No.: 7170820 Plug Side: B

Model No. SV10-23-S03G-x-xx

Seal Plate: Yes Catalog Ref.: 1.053.1

Load Holding on B, Normally Open

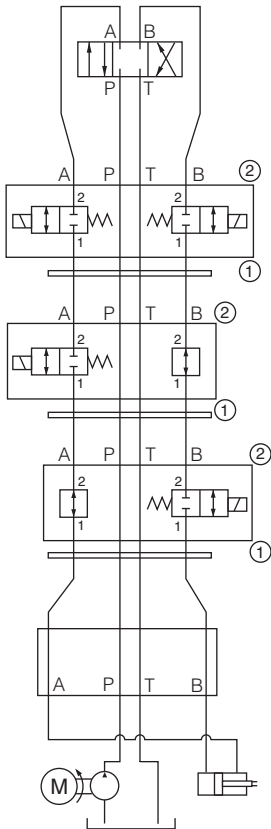
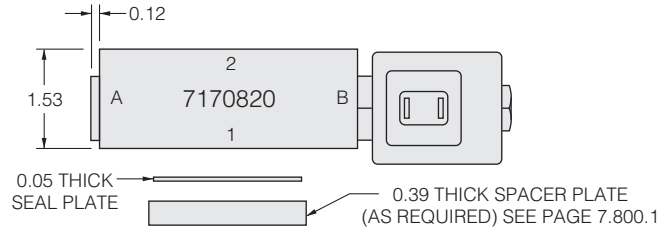
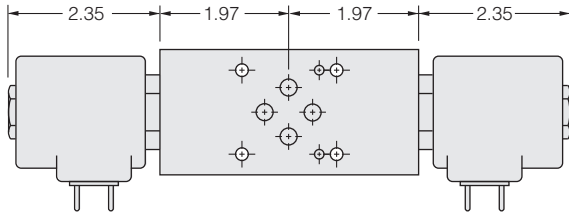
Side Up: 1 Plug: 6103010
 Block No.: 7170820 Plug Side: A

Model No. SV10-23-S03L-x-xx

Seal Plate: Yes Catalog Ref.: 1.053.1

ISO/CETOP 3 Manifold

Solenoid Sandwich Valves



Dual Blocking, Normally Closed

Side Up: 2
Block No.: 7170820
Plug: None
Plug Side: n/a

Model No. SV10-24-S03D-x-xx

Seal Plate: Yes
Catalog Ref.: 1.064.1

Blocking on A, Normally Closed

Side Up: 2
Block No.: 7170820
Plug: 6103010
Plug Side: B

Model No. SV10-24-S03A-x-xx

Seal Plate: Yes
Catalog Ref.: 1.064.1

Blocking on B, Normally Closed

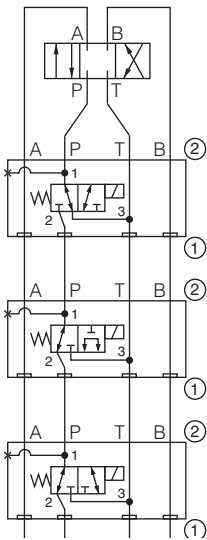
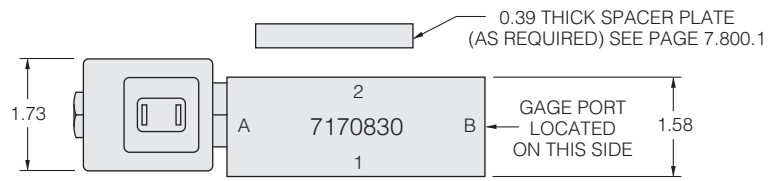
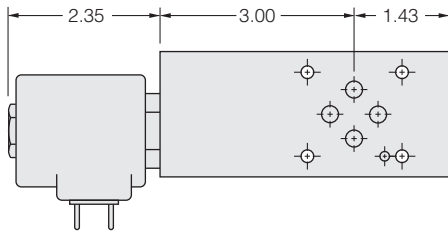
Side Up: 2
Block No.: 7170820
Plug: 6103010
Plug Side: A

Model No. SV10-24-S03B-x-xx

Seal Plate: Yes
Catalog Ref.: 1.064.1

ISO/CETOP 3 Manifold

Solenoid Sandwich Valves



Solenoid 3-Way, Selector on P Model No. SV10-33-S030-x-xx

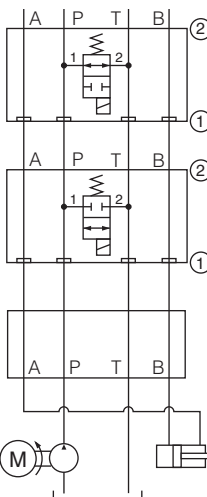
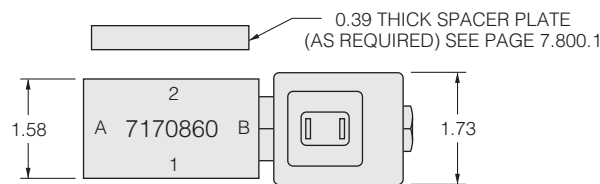
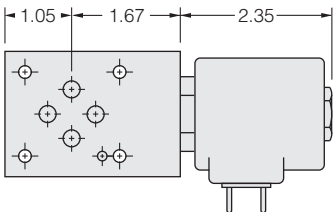
Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.372.1
 Block No.: 7170830 Plug Side: n/a Max. Flow: 5 gpm May Require Spacer Plate

Solenoid 3-Way, Selector on P Model No. SV10-34-S030-x-xx

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.380.1
 Block No.: 7170830 Plug Side: n/a Max. Flow: 7 gpm May Require Spacer Plate

Solenoid 3-Way, Selector on P Model No. SV10-31-S030-x-xx

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.368.1
 Block No.: 7170830 Plug Side: n/a Max. Flow: 6 gpm May Require Spacer Plate



Solenoid 2-Way, Dump P to T, N.O. Model No. SV10-25-S030-x-xx

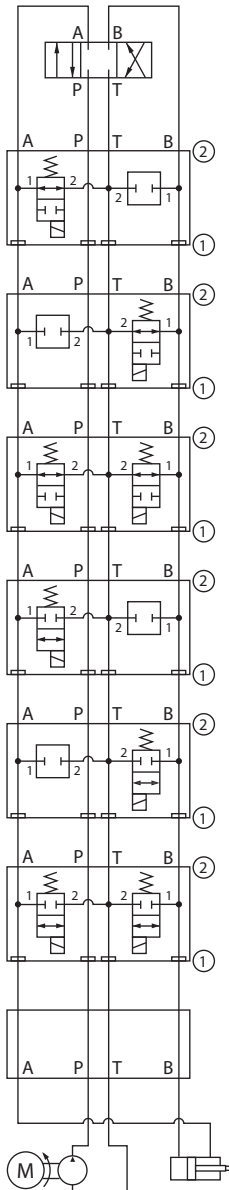
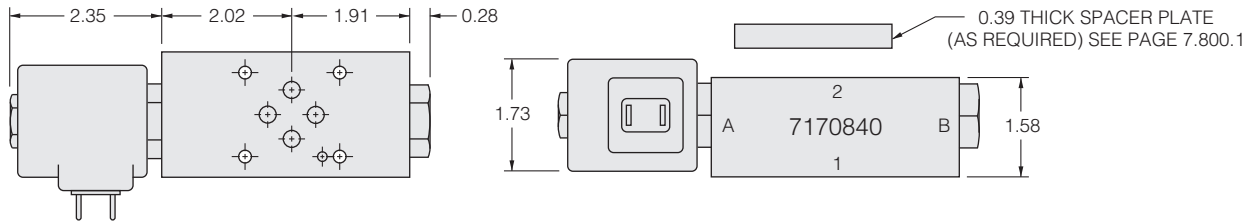
Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.076.1
 Block No.: 7170860 Plug Side: n/a Max. Flow: 6 gpm

Solenoid 2-Way, Dump P to T, N.C. Model No. SV10-24-S030-x-xx

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.064.1
 Block No.: 7170860 Plug Side: n/a

ISO/CETOP 3 Manifold

Solenoid Sandwich Valves



Solenoid, Unload A to T, Normally Open

Side Up: 2
Block No.: 7170840
Plug: CP10-20-x
Plug Side: B

Model No. SV10-25-S03U-x-xx

Seal Plate: No
Max. Flow: 6 gpm
Catalog Ref.: 1.076.1

Solenoid, Unload B to T, Normally Open

Side Up: 2
Block No.: 7170840
Plug: CP10-20-x
Plug Side: A

Model No. SV10-25-S03V-x-xx

Seal Plate: No
Max. Flow: 6 gpm
Catalog Ref.: 1.076.1

Solenoid, Unload A & B to T, Normally Open

Side Up: 2
Block No.: 7170840
Plug: None
Plug Side: n/a

Model No. SV10-25-S03W-x-xx

Seal Plate: No
Max. Flow: 6 gpm
Catalog Ref.: 1.076.1

Solenoid, Unload A to T, Normally Closed

Side Up: 2
Block No.: 7170840
Plug: CP10-20-x
Plug Side: B

Model No. SV10-24-S03U-x-xx

Seal Plate: No
Catalog Ref.: 1.064.1

Solenoid, Unload B to T, Normally Closed

Side Up: 2
Block No.: 7170840
Plug: CP10-20-x
Plug Side: A

Model No. SV10-24-S03V-x-xx

Seal Plate: No
Catalog Ref.: 1.064.1

Solenoid, Unload A & B to T, Normally Closed

Side Up: 2
Block No.: 7170840
Plug: None
Plug Side: n/a

Model No. SV10-24-S03W-x-xx

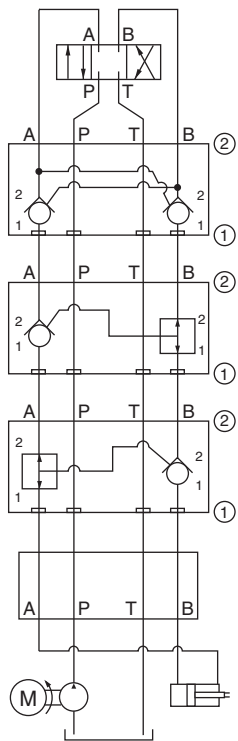
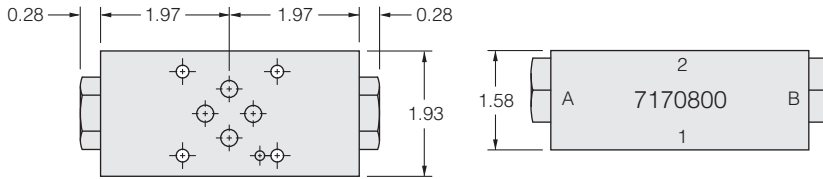
Seal Plate: No
Catalog Ref.: 1.064.1

ISO/CETOP 3 Manifold

Directional Sandwich Valves

HydraForce's broad range of directional cartridge valves in sandwich format offers unique opportunities to the system designer.

All products are rated to 210 bar (3000 psi) and are made with hardened working parts to assure long, trouble-free operation.



Dual P.O. Check

Side Up: 2
Block No.: 7170800

Model No. DCV08-S03K-x

Plug: None
Plug Side: n/a
Seal Plate: No
Max Flow: 8 gpm

Catalog Ref.: 4.250.1
Piston:

P.O. Check on A

Side Up: 2
Block No.: 7170800

Model No. PCV08-S03I-x

Plug: 5294000
Plug Side: B
Seal Plate: No
Max. Flow: 8 gpm

Catalog Ref.: None
Piston:

P.O. Check on B

Side Up: 2
Block No.: 7170800

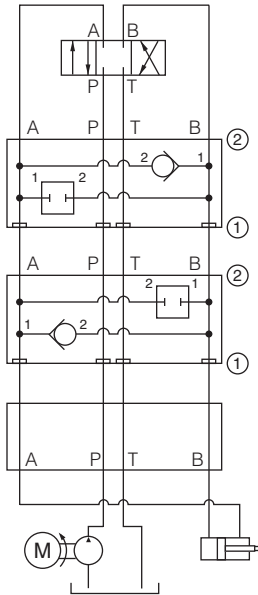
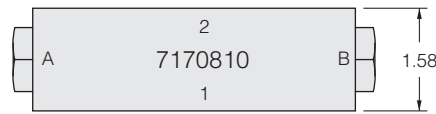
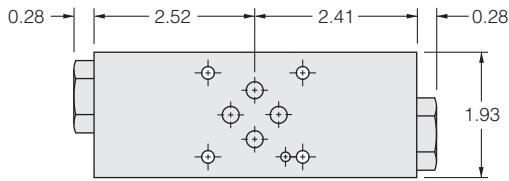
Model No. PCV08-S03J-x

Plug: 5294000
Plug Side: A
Seal Plate: No
Max. Flow: 8 gpm

Catalog Ref.: None
Piston:

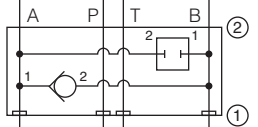
ISO/CETOP 3 Manifold

Directional Sandwich Valves



Flow Checked Out, A Freeflow from B
 Side Up: 2 Plug: CP10-20-x
 Block No.: 7170810 Plug Side: B

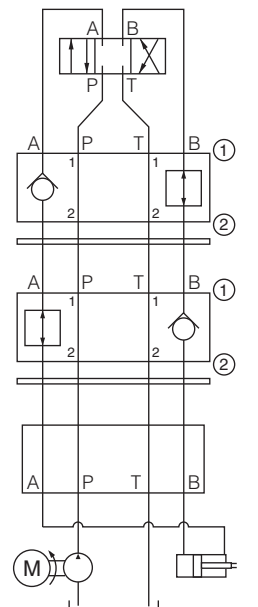
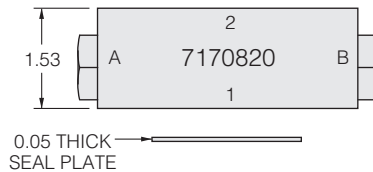
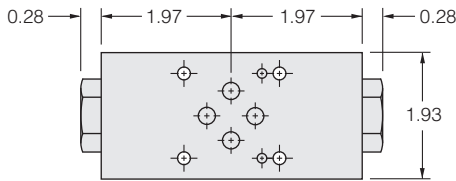
Model No. CV10-20-S03E-x-xx
 Seal Plate: No Catalog Ref.: 4.011.1



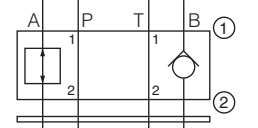
Flow Checked Out, B Freeflow from A
 Side Up: 2 Plug: CP10-20-x
 Block No.: 7170810 Plug Side: A

Model No. CV10-20-S03F-x-xx
 Seal Plate: No Catalog Ref.: 4.011.1

ISO/CETOP 3 Manifold



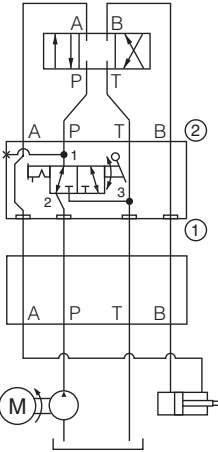
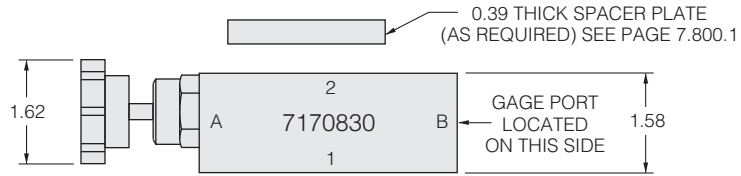
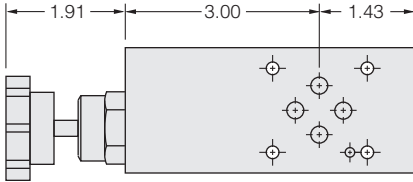
Flow Checked In A **Model No. CV10-20-S03A-x-xx**
 Side Up: 1 Plug: 6103010 Seal Plate: Yes Catalog Ref.: 4.011.1
 Block No.: 7170820 Plug Side: B Max Flow:



Flow Checked In B **Model No. CV10-20-S03B-x-xx**
 Side Up: 1 Plug: 6103010 Seal Plate: Yes Catalog Ref.: 4.011.1
 Block No.: 7170820 Plug Side: A Max. Flow:

ISO/CETOP 3 Manifold

Directional Sandwich Valves

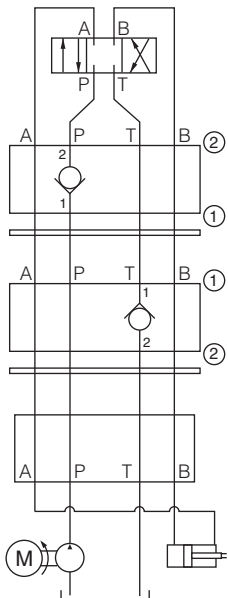
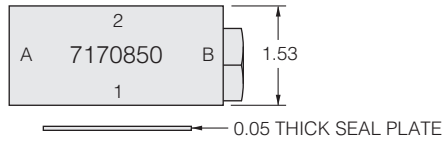
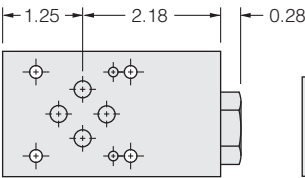


Manual Rotary Selector on P Model No. MR10-31-S030-x

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 4.774.1
 Block No.: 7170830 Plug Side: n/a Max Flow: 10 gpm

Note: Knob Kit part no. 5341010 ordered separately; see catalog page 4.770.1

ISO/CETOP 3 Manifold



Flow Checked Out P Model No. CV10-20-S03P-x-xx

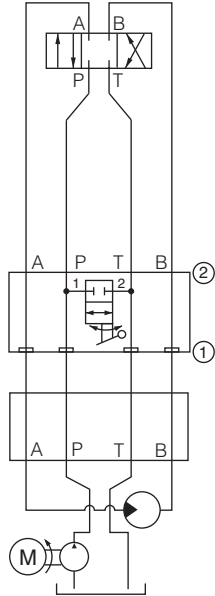
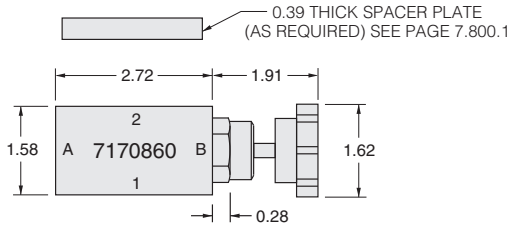
Side Up: 2 Plug: None Seal Plate: Yes Catalog Ref.: 4.011.1
 Block No.: 7170850 Plug Side: n/a Max Flow:

Flow Checked Out T Model No. CV10-20-S03T-x-xx

Side Up: 1 Plug: None Seal Plate: Yes Catalog Ref.: 4.011.1
 Block No.: 7170850 Plug Side: n/a Max. Flow:

ISO/CETOP 3 Manifold

Directional Sandwich Valves



Manual Rotary Unload P to T Model No. MR10-20x-S03S-x

Side Up: 2

Plug: None

Seal Plate: No

Catalog Ref.: 5.013.1

Block No.: 7170860

Plug Side: n/a

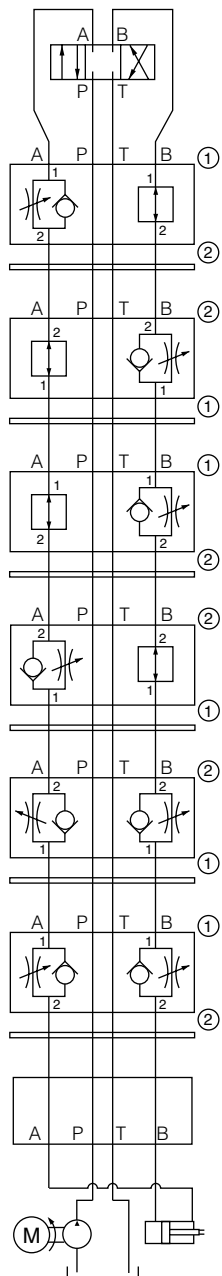
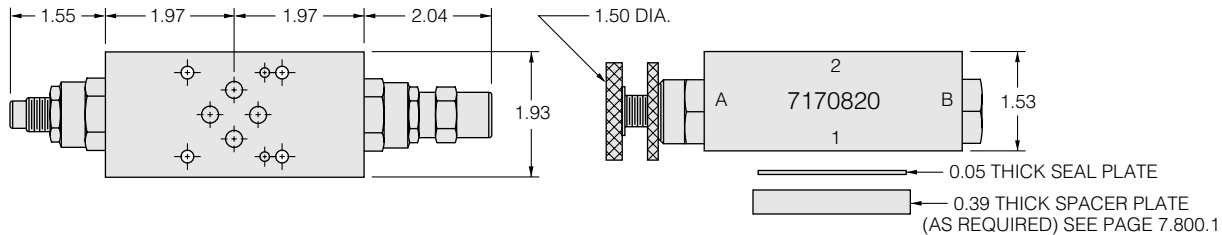
Max. Flow: 13 gpm

Note: Handle Kit part no. 5341010 ordered separately. Back pressure on P may require use of Spacer Plate(s).

ISO/CETOP 3 Manifold

Flow Control Sandwich Valves

HydraForce's quiet, durable flow controls and flow regulators have been proven in hundreds of applications. Now available in sandwich format, these cartridge valves feature high accuracy in compensated or non-compensated versions.



Flow Control, Meter Out A Model No. FC10-20x-S03A-x
 Side Up: 1 Plug: 6103010 Seal Plate: Yes Catalog Ref.: 5.201.1
 Block No.: 7170820 Plug Side: B Max Flow:

Flow Control, Meter In B Model No. FC10-20x-S03B-x
 Side Up: 2 Plug: 6103010 Seal Plate: Yes Catalog Ref.: 5.201.1
 Block No.: 7170820 Plug Side: A Max Flow:

Flow Control, Meter Out B Model No. FC10-20x-S03B-x
 Side Up: 1 Plug: 6103010 Seal Plate: Yes Catalog Ref.: 5.201.1
 Block No.: 7170820 Plug Side: A Max Flow:

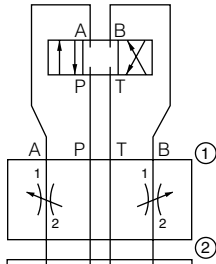
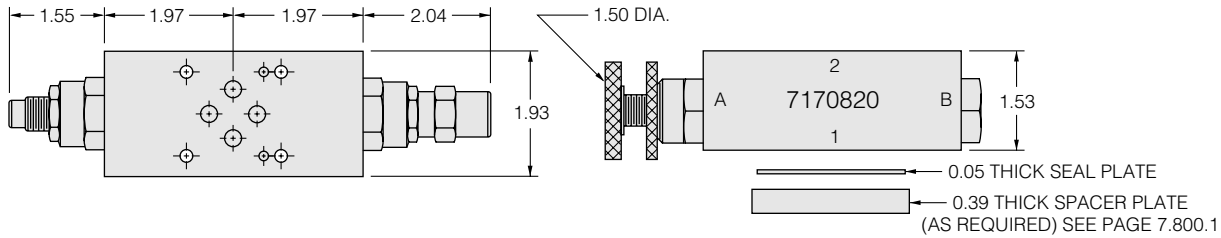
Flow Control, Meter In A Model No. FC10-20x-S03A-x
 Side Up: 2 Plug: 6103010 Seal Plate: Yes Catalog Ref.: 5.201.1
 Block No.: 7170820 Plug Side: B Max Flow: 12 gpm

Dual Flow Control, Meter In Model No. FC10-20x-S03D-x
 Side Up: 2 Plug: None Seal Plate: Yes Catalog Ref.: 5.201.1
 Block No.: 7170820 Plug Side: n/a Max Flow: 12 gpm

Dual Flow Control, Meter Out Model No. FC10-20x-S03D-x
 Side Up: 1 Plug: None Seal Plate: Yes Catalog Ref.: 5.201.1
 Block No.: 7170820 Plug Side: n/a Max Flow: 12 gpm

ISO/CETOP 3 Manifold

Flow Control Sandwich Valves



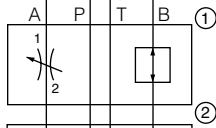
Dual Needle Valve

Side Up: 2
Block No.: 7170820

Model No. NV10-20x-S03D-x

Plug: None
Plug Side: n/a
Seal Plate: Yes
Max Flow: 12 gpm

Catalog Ref.: 5.012.1



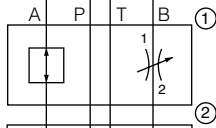
Needle Valve on A

Side Up: 2
Block No.: 7170820

Model No. NV10-20x-S03A-x

Plug: 6103010
Plug Side: B
Seal Plate: Yes
Max. Flow: 12 gpm

Catalog Ref.: 5.012.1



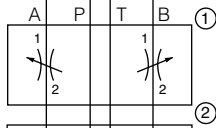
Needle Valve on B

Side Up: 2
Block No.: 7170820

Model No. NV10-20x-S03B-x

Plug: 6103010
Plug Side: A
Seal Plate: Yes
Max. Flow: 12 gpm

Catalog Ref.: 5.012.1



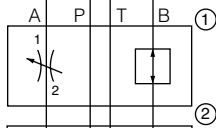
Dual Needle Valve, Fine Metering

Side Up: 2
Block No.: 7170820
Plug: None
Plug Side: n/a

Model No. NV10-21x-S03D-x

Seal Plate: Yes
Max Flow: 12 gpm

Catalog Ref.: 5.032.1



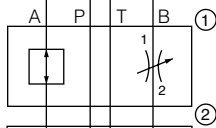
Needle Valve on A, Fine Metering

Side Up: 2
Block No.: 7170820
Plug: 6103010
Plug Side: B

Model No. NV10-21x-S03A-x

Seal Plate: Yes
Max. Flow: 12 gpm

Catalog Ref.: 5.032.1



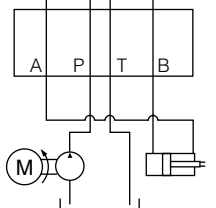
Needle Valve on B, Fine Metering

Side Up: 2
Block No.: 7170820
Plug: 6103010
Plug Side: A

Model No. NV10-21x-S03B-x

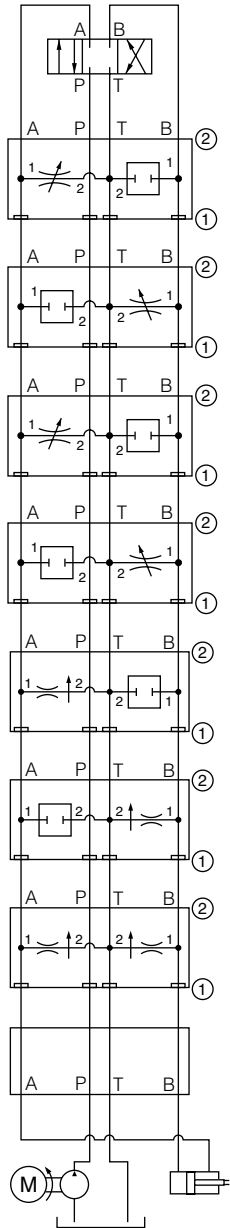
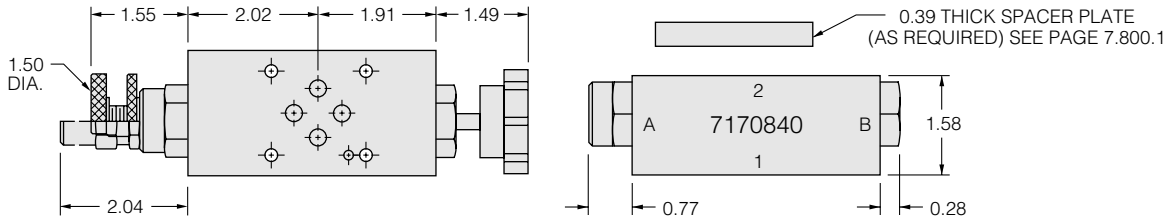
Seal Plate: Yes
Max. Flow: 12 gpm

Catalog Ref.: 5.032.1



ISO/CETOP 3 Manifold

Flow Control Sandwich Valves



Needle Valve, Bleed Off A to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: B

Model No. NV10-20x-S03U-x

Seal Plate: No Catalog Ref.: 5.012.1

Needle Valve, Bleed Off B to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: A

Model No. NV10-20x-S03V-x

Seal Plate: No Catalog Ref.: 5.012.1

Needle Valve, Fine Metering A to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: B

Model No. NV10-21x-S03U-x

Seal Plate: No Catalog Ref.: 5.032.1

Needle Valve, Fine Metering B to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: A

Model No. NV10-21x-S03V-x

Seal Plate: No Catalog Ref.: 5.032.1

Bleed Off P.C. Flow Regulator A to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: B

Model No. FR10-20F-S03U-x-xx

Seal Plate: No Catalog Ref.: 5.301.1
Max. Fixed Flow: Preset to 6 gpm

Bleed Off P.C. Flow Regulator B to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: A

Model No. FR10-20F-S03V-x-xx

Seal Plate: No Catalog Ref.: 5.301.1
Max. Fixed Flow: Preset to 6 gpm

Bleed Off P.C. Flow Regulator A & B to T

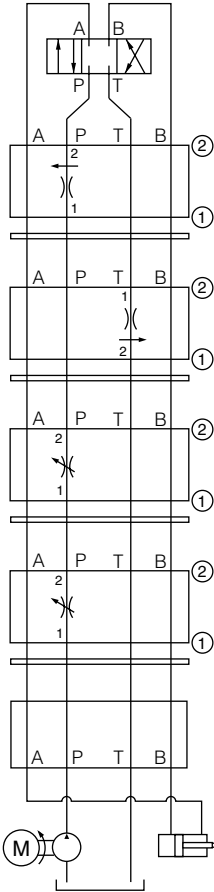
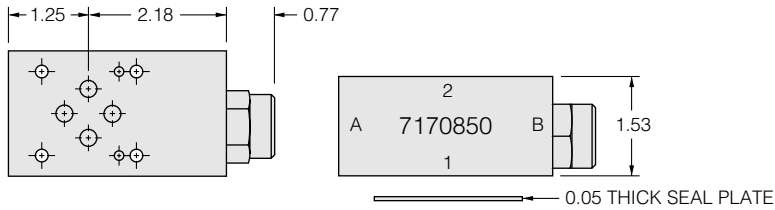
Side Up: 2 Plug: None
Block No.: 7170840 Plug Side: n/a

Model No. FR10-20F-S03W-x-xx/xx

Seal Plate: No Catalog Ref.: 5.301.1
Max. Fixed Flow: Preset to 6 gpm Specify side A first

ISO/CETOP 3 Manifold

Flow Control Sandwich Valves



Flow Regulator P.C. Fixed on P

Side Up: 2 Plug: None
 Block No.: 7170850 Plug Side: n/a

Model No. FR10-20F-S03P-x

Seal Plate: Yes Catalog Ref.: 5.301.1
 Max. Fixed Flow: Preset to 6 gpm

Flow Regulator P.C. Fixed out T

Side Up: 1 Plug: None
 Block No.: 7170850 Plug Side: n/a

Model No. FR10-20F-S03T-x-xx

Seal Plate: Yes Catalog Ref.: 5.301.1
 Max. Fixed Flow: Preset to 6 gpm

Needle Valve on P

Side Up: 2 Plug: None
 Block No.: 7170850 Plug Side: n/a

Model No. NV10-20x-S03P-x

Seal Plate: Yes Catalog Ref.: 5.012.1

Needle Valve on P, Fine Metering

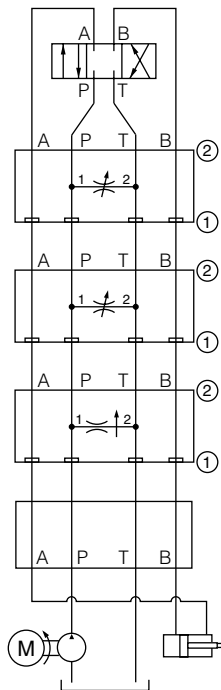
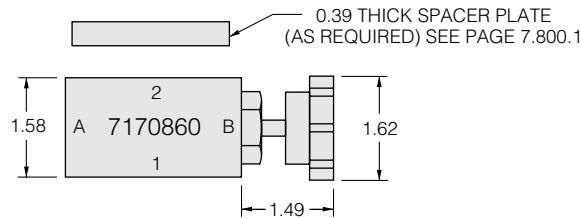
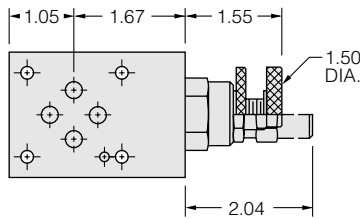
Side Up: 2 Plug: None
 Block No.: 7170850 Plug Side: n/a

Model No. NV10-21x-S03P-x

Seal Plate: Yes Catalog Ref.: 5.032.1

ISO/CETOP 3 Manifold

Flow Control Sandwich Valves



Needle Valve, Coarse Adjustment, Bleed Off P to T **Model No. NV10-20x-S03S-x**

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 5.012.1
 Block No.: 7170860 Plug Side: n/a Max Flow:

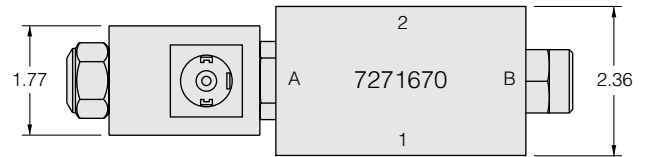
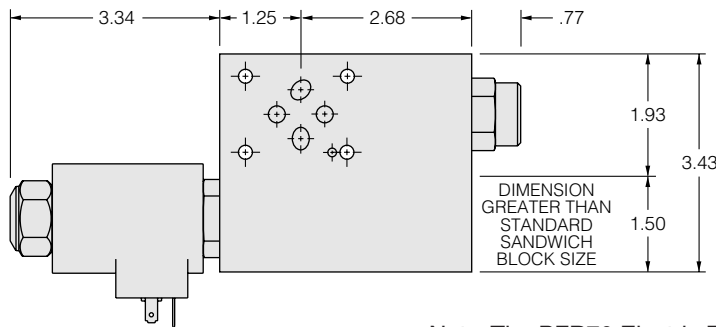
Needle Valve, Fine Adjustment, Bleed Off P to T **Model No. NV10-21x-S03S-x**

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 5.032.1
 Block No.: 7170860 Plug Side: n/a Max. Flow:

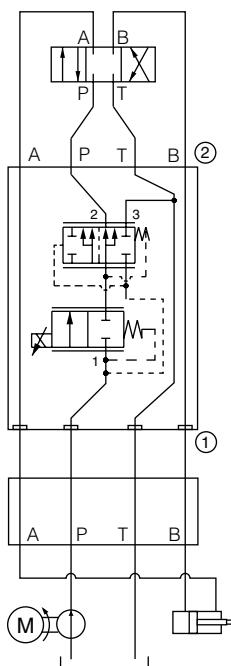
Flow Regulator P.C. Fixed, Bleed Off P to T **Model No. FR10-20F-S03S-x-xx**

Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 5.301.1
 Block No.: 7170860 Plug Side: n/a Max. Fixed Flow: Preset to 6 gpm

Flow Control Sandwich Valves



Note: The PFR70 Electric Flow Regulator mounts on a standard D03 footprint, but it does not conform to standardized sandwich width. The housing will overhang the normal pad and should be considered in design of installation.



Electric Flow Regulator

Model No. PFR70-33B-x80-S03x-N-xxxx

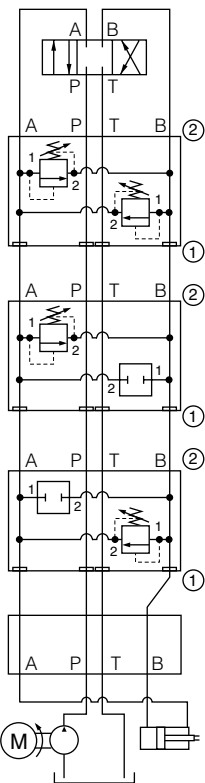
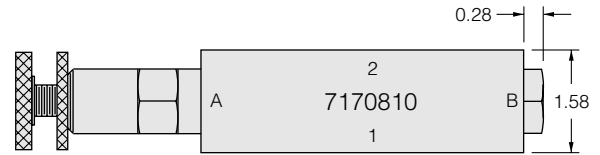
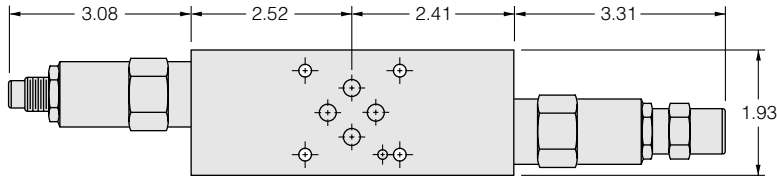
Side Up:
Block No.: 7271670

Plug: None
Plug Side: n/a

Seal Plate: No
Catalog Ref.:
Max Flow: Consult factory for standard
Flow Rate/Pressure Compensator Settings

Pressure Control Sandwich Valves

Standard HydraForce cartridge relief valves offer quiet, stable response in most load conditions. Now available in sandwich format, these reliefs can be selectively applied in both pressure limiting and pressure regulating applications.



Cross Port Relief, Direct-Acting

Side Up: 2 Plug: None
Block No.: 7170810 Plug Side: n/a

Model No. CRV10-20x-S03C-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.260.1
Max Flow: 10 gpm

Relief, Direct-Acting A to B

Side Up: 2 Plug: CP10-20-x
Block No.: 7170810 Plug Side: B

Model No. RV10-20x-S03E-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.020.1
Max. Flow: 10 gpm

Relief, Direct-Acting B to A

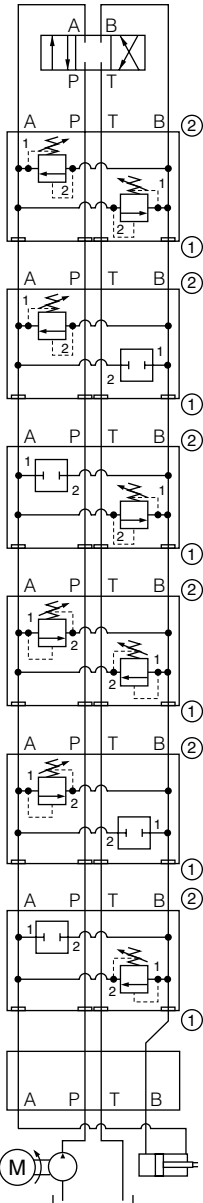
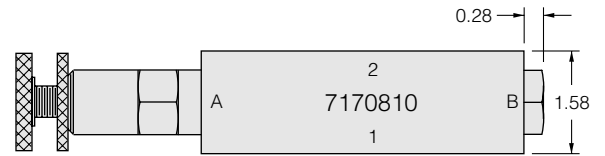
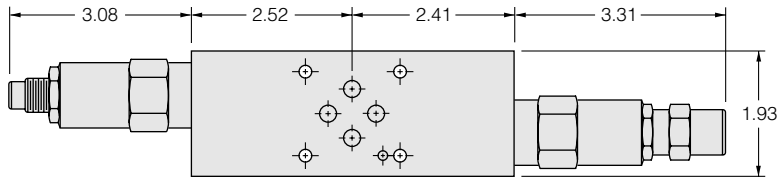
Side Up: 2 Plug: CP10-20-x
Block No.: 7170810 Plug Side: A

Model No. RV10-20x-S03F-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.020.1
Max. Flow: 10 gpm

ISO/CETOP 3 Manifold

Pressure Control Sandwich Valves



Cross Port Relief, Differential Area

Side Up: 2 Plug: None
 Block No.: 7170810 Plug Side: n/a

Model No. CRV10-22x-S03C-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.280.1
 Max. Flow: 20 gpm

Port Relief, Differential Area, B to A

Side Up: 2 Plug: CP10-20-x
 Block No.: 7170810 Plug Side: B

Model No. RV10-22x-S03F-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.050.1
 Max. Flow: 20 gpm

Port Relief, Differential Area, A to B

Side Up: 2 Plug: CP10-20-x
 Block No.: 7170810 Plug Side: A

Model No. RV10-22x-S03E-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.050.1
 Max. Flow: 20 gpm

Cross Port Relief, Pilot-Operated

Side Up: 2 Plug: None
 Block No.: 7170810 Plug Side: n/a

Model No. CRV10-26x-S03C-xC-xx/xx

Seal Plate: No Catalog Ref.:
 Max. Flow: 30 gpm

Port Relief, Pilot-Operated, A to B

Side Up: 2 Plug: CP10-20-x
 Block No.: 7170810 Plug Side: B

Model No. RV10-26x-S03E-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.150.1
 Max. Flow: 30 gpm

Port Relief, Pilot-Operated, B to A

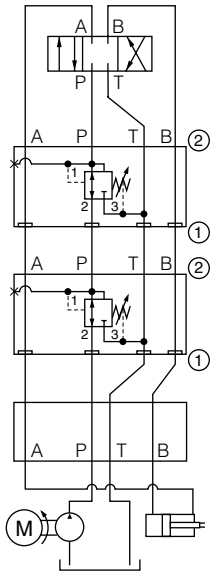
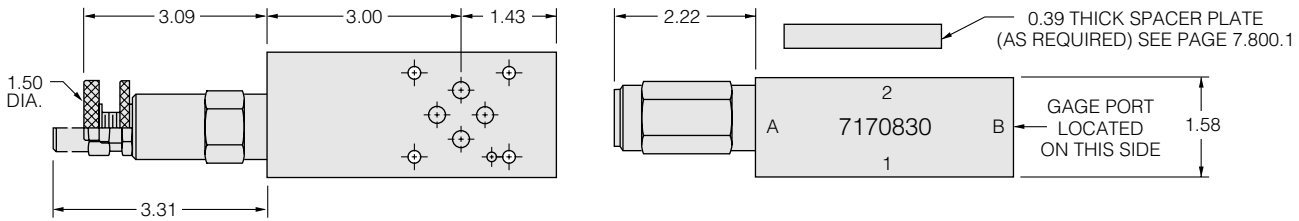
Side Up: 2 Plug: CP10-20-x
 Block No.: 7170810 Plug Side: A

Model No. RV10-26x-S03F-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.150.1
 Max. Flow: 30 gpm

ISO/CETOP 3 Manifold

Pressure Control Sandwich Valves



Pressure Reducing/Relieving, Direct-Acting on P

Model No. PR10-32x-S03P-x-xx/xx

Side Up: 2

Plug: None

Seal Plate: No

Catalog Ref.: 6.420.1

Block No.: 7170830

Plug Side: n/a

Max Flow: 10 gpm

Pressure Reducing/Relieving, Pilot Operated on P

Model No. PR10-36x-S03P-x-xx/xx

Side Up: 2

Plug: None

Seal Plate: No

Catalog Ref.: 6.440.1

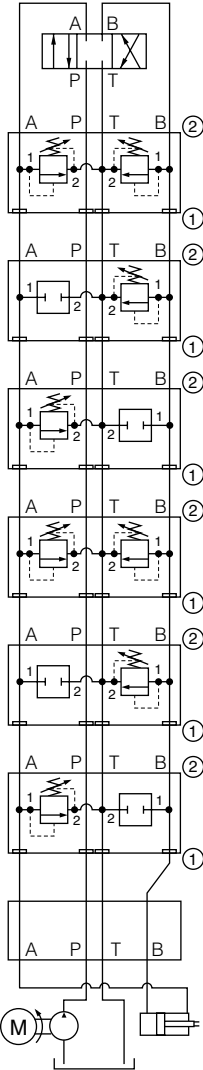
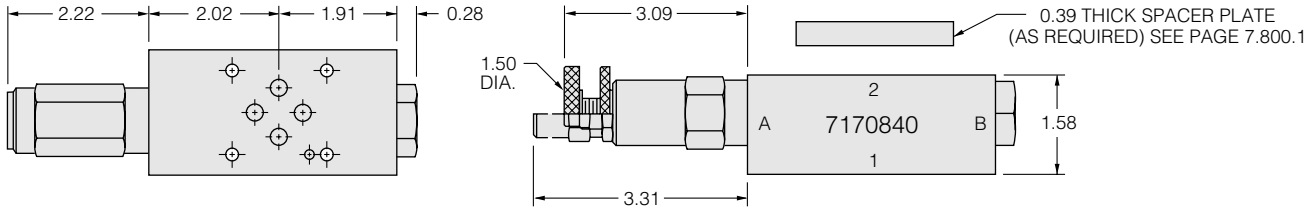
Block No.: 7170830

Plug Side: n/a

Max. Flow: 15 gpm

ISO/CETOP 3 Manifold

Pressure Control Sandwich Valves



Relief, Direct-Acting, A & B to T

Side Up: 2 Plug: None
Block No.: 7170840 Plug Side: n/a

Model No. RV10-20x-S03W-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.020.1
Max Flow: 10 gpm

Relief, Direct-Acting, B to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: A

Model No. RV10-20x-S03V-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.020.1
Max Flow: 10 gpm

Relief, Direct-Acting, A to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: B

Model No. RV10-20x-S03U-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.020.1
Max Flow: 10 gpm

Relief, Pilot Operated, A & B to T

Side Up: 2 Plug: None
Block No.: 7170840 Plug Side: n/a

Model No. RV10-26x-S03W-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.150.1
Max Flow: 30 gpm

Relief, Pilot Operated, B to T

Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: A

Model No. RV10-26x-S03V-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.150.1
Max Flow: 30 gpm

Relief, Pilot Operated, A to T

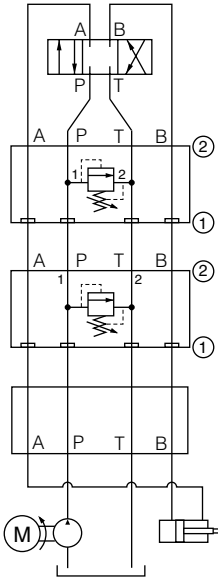
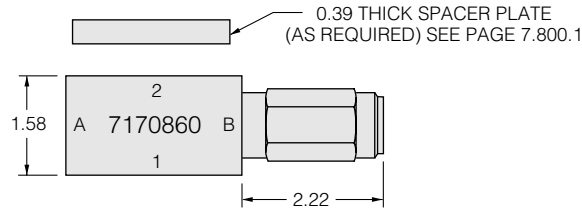
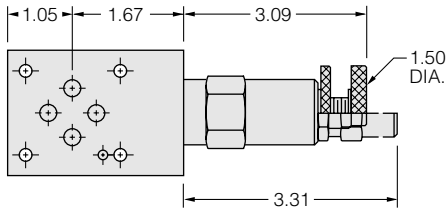
Side Up: 2 Plug: CP10-20-x
Block No.: 7170840 Plug Side: B

Model No. RV10-26x-S03U-xC-xx/xx

Seal Plate: No Catalog Ref.: 6.150.1
Max Flow: 30 gpm

ISO/CETOP 3 Manifold

Pressure Control Sandwich Valves



Relieving, P to T

Model No. RV10-20x-S03S-x-xx

Side Up: 2
Block No.: 7170860

Plug: None
Plug Side: n/a

Seal Plate: No
Max. Flow: 10 gpm

Catalog Ref.: 6.020.1

Relieving, High Capacity, P to T

Model No. RV10-26x-S03S-x-xx

Side Up: 2
Block No.: 7170860

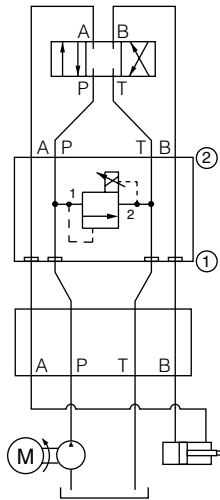
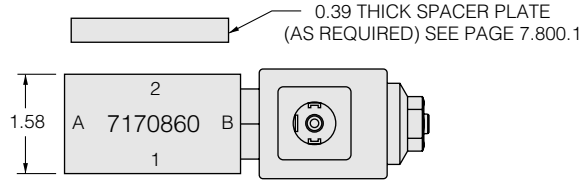
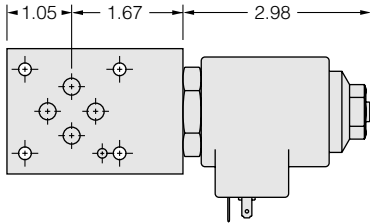
Plug: None
Plug Side: n/a

Seal Plate: No
Max. Flow: 30 gpm

Catalog Ref.: 6.150.1

ISO/CETOP 3 Manifold

Pressure Control Sandwich Valves



Electric Relief Valve

Model No. TS10-26A-S03S-N-xxxx

Side Up: 2

Block No.: 7170860

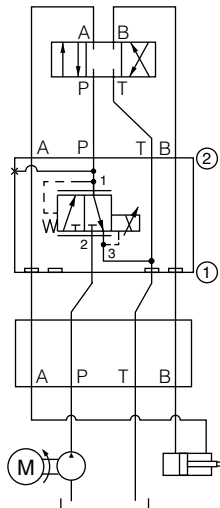
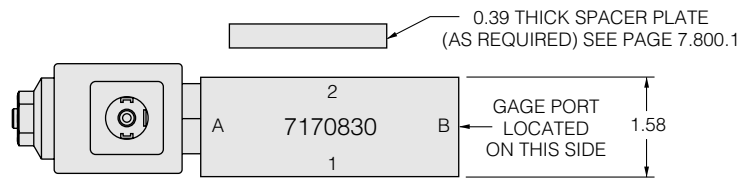
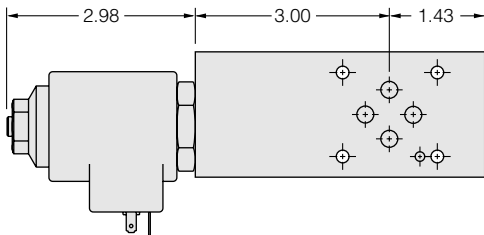
Plug: None

Plug Side: n/a

Seal Plate: No

Catalog Ref.: 2.852.1

Consult factory for standard pressure ramp ranges and other specifications.



Electric Pressure-Reducing Valve

Model No. TS10-36A-S03P-N-xxxx

Side Up: 2

Block No.: 7170830

Plug: None

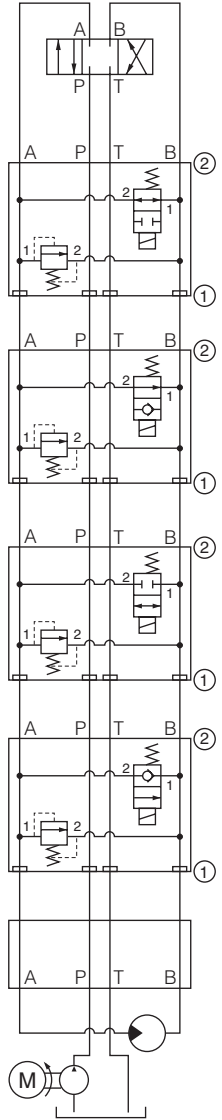
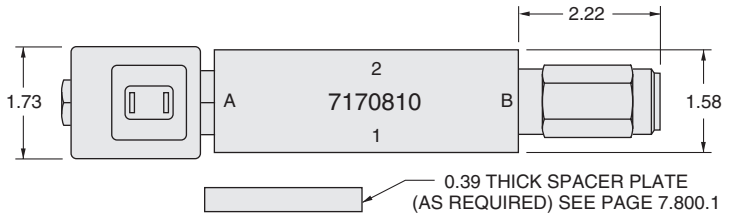
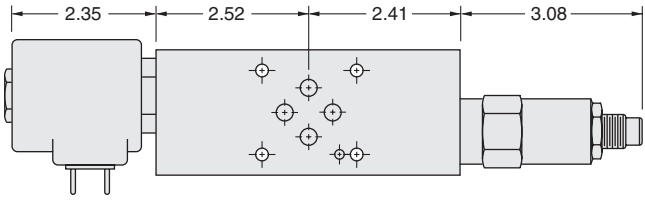
Plug Side: n/a

Seal Plate: No

Catalog Ref.: 2.900.1

Consult factory for standard pressure ramp ranges and other specifications.

Double Function Sandwich Valves



Solenoid, Normally Open, Unloading/Relieving A to B SRV10-25-S03E-N-xxxx
Side B Model No. SV10-25-x-xxxx **Side A Model No. RV10-20A-0-x-33/xx**
 Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.076.1, 6.020.1
 Block No.: 7170810 Plug Side: n/a Max Flow: 6 gpm

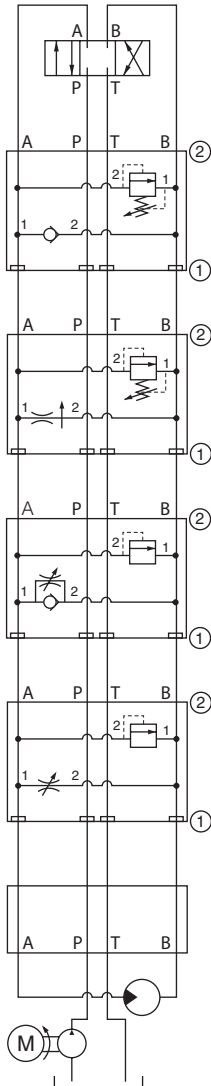
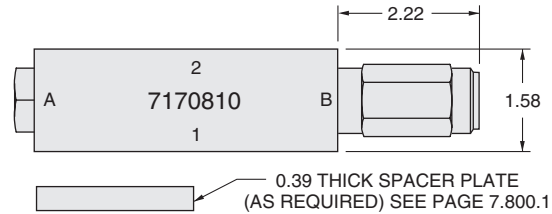
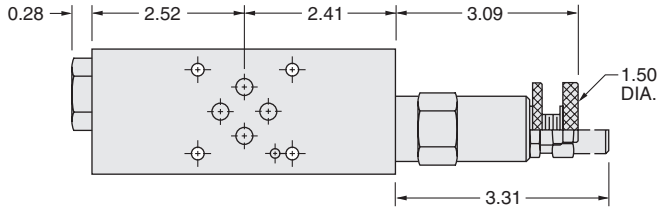
Solenoid, Normally Open, Unloading/Relieving A to B, High Capacity SRV10-21-S03E-N-xxxx
Side B Model No. SV10-21-x-xxxx **Side A Model No. RV10-26A-0-x-30/xx**
 Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.032.1, 6.150.1
 Block No.: 7170810 Plug Side: n/a Flow passes in reverse across SRV10-21

Solenoid, Normally Closed, Unloading/Relieving A to B SRV10-24-S03E-N-xxxx
Side B Model No. SV10-24-x-xxxx **Side A Model No. RV10-20A-0-x-33/xx**
 Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.064.1, 6.020.1
 Block No.: 7170810 Plug Side: n/a

Solenoid, Normally Closed, Unloading/Relieving A to B, High Capacity SRV10-20-S03E-N-xxxx
Side B Model No. SV10-20-x-xxxx **Side A Model No. RV10-26A-0-x-30/xx**
 Side Up: 2 Plug: None Seal Plate: No Catalog Ref.: 1.016.1, 6.150.1
 Block No.: 7170810 Plug Side: n/a Flow passes in reverse across SRV10-20

ISO/CETOP 3 Manifold

Double Function Sandwich Valves



Relief & Anti-Cavitation Check on A
Side B Model No. RV10-22x-x-xx/xx

Side Up: 2 Plug: None
 Block No.: 7170810 Plug Side: n/a
 Note: Reverse cartridges for check on B

RVC10-22x-S03A-x-xx/xx
Side A Model No. CV10-24-0-x-4

Seal Plate: No Catalog Ref.: 6.050.1, 4.019.1
 Max Flow: 15 gpm

Bleed Off P.C. Flow Regulator & Relief on A
Side B Model No. RV10-22A-0-x-35/xx

Side Up: 2 Plug: None
 Block No.: 7170810 Plug Side: n/a
 Note: Relief is not pre-set. Reverse cartridges for relief on B

FRR10-20F-S03A-x-xx/xx
Side A Model No. FR10-20F-S03C-x-xx

Seal Plate: No Catalog Ref.: 6.050.1, 5.301.1
 Max Preset Flow: 6 gpm (FR)

Relief & Anti-Cavity Flow Control on A
Side B Model No. RV10-22x-x-xx/xxxx

Side Up: 2 Plug: None
 Block No.: 7170810 Plug Side: A
 Note: Relief is not pre-set. Reverse cartridges for relief on B

RAC10-22x-S03A-x-xx/xx
Side A Model No. FC10-21D-0-x

Seal Plate: No Catalog Ref.: 6.050.1, 5.212.1
 Max Flow: 15 gpm

Relief & Flow Control on A
Side B Model No. RV10-22x-x-xx/xxxx

Side Up: 2 Plug: None
 Block No.: 7170810 Plug Side: A
 Note: Relief is not pre-set. Reverse cartridges for relief on B

RFC10-22x-S03A-x-xx/xx
Side A Model No. NV10-20D-0-x

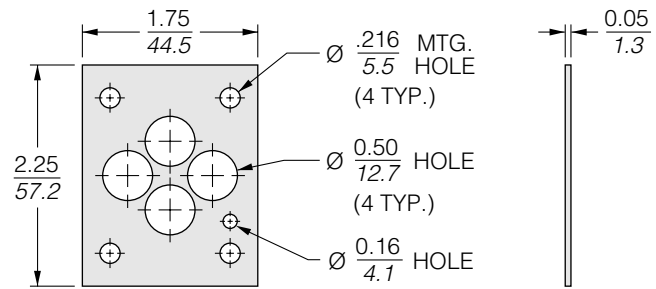
Seal Plate: No Catalog Ref.: 6.050.1, 5.012.1
 Max Preset Flow: 6 gpm (FR)

ISO/CETOP 3 Manifold

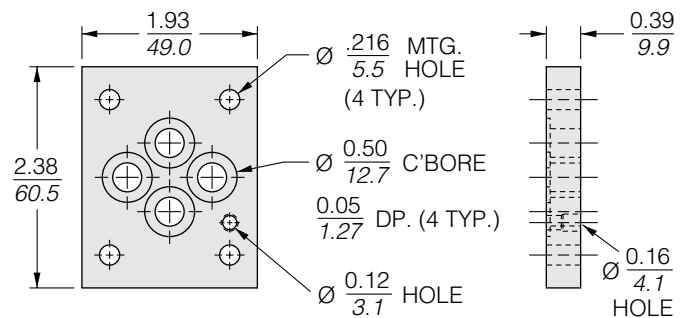
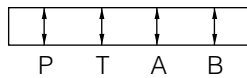
D03 (NG6) SANDWICH VALVES

Sandwich Valve Accessories

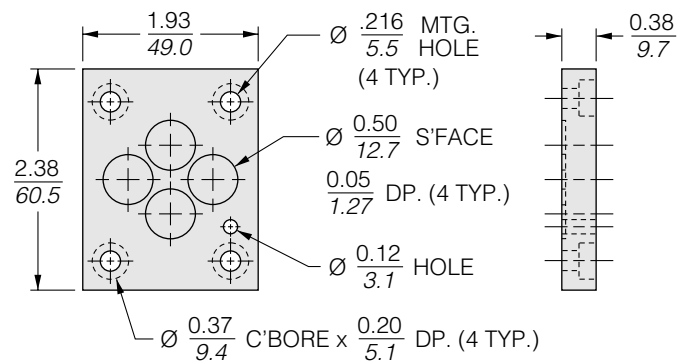
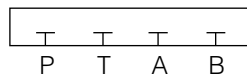
SEAL PLATE KITS			
Kit Part No.	Plate Part No.	O-Ring Part No.	Qty.
6299011	7018716	6001012 (Buna)	4
6299013	7018716	6003012 (Viton)	4



SPACER PLATE KITS			
Kit Part No.	Plate Part No.	O-Ring Part No.	Qty.
6299021	7018721	6001012 (Buna)	4
6299023	7018721	6003012 (Viton)	4



BLOCKING PLATE KITS			
Kit Part No.	Plate Part No.	O-Ring Part No.	Qty.
6299031	7018731	6001012 (Buna)	4
6299033	7018731	6003012 (Viton)	4



P-A LINKING PLATE KITS			
Kit Part No.	Plate Part No.	O-Ring Part No.	Qty.
6299060	7018760	6001012 (Buna)	4
6299061	7018760	6003012 (Viton)	4

