



EMERSON™

ANDERSON GREENWOOD

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The intent of these instructions is to acquaint the user with the storage, installation and operation of this product. Please read these instructions carefully before installation.



Safety Precautions

When the valve is under pressure never place any part of your body near the outlet of the relief valve.

Always wear proper safety gear to protect head, eyes, ears, etc. anytime you are near pressurized valves.

Never attempt to remove the valve from a system that is pressurized.

Never perform maintenance on the valve while in service unless the valve is isolated from the system pressure. If not properly isolated from the system pressure, the valve may inadvertently vent resulting in serious injury.

Remove the valve prior to performing any pressure testing of the system.

The safety of lives and property often depends on the proper operation of the valve. The valve must be maintained according to appropriate instructions and must be periodically tested and reconditioned to ensure correct function.



Warning

An attempt to repair this product by unauthorized or unqualified persons voids the product warranty and may cause damage to equipment and serious injury or death to persons.

The product is a safety related component intended for use in critical applications. The improper application, installation or maintenance of the product or the use of parts or components not manufactured by Anderson Greenwood may result in a failure of the product.

Any installation, maintenance, adjustment, test, etc. performed on the product must be done in accordance with the requirements of all applicable Anderson Greenwood procedures and instructions as well as applicable National and International Codes and Standards.

Storage and Handling

Valve performance may be adversely affected if the valve is stored for an extended period without proper protection. Rough handling and dirt may damage, deform, or cause misalignment of valve parts and adversely affect valve performance and seat tightness. It is recommended that the valve be stored in the original shipping container in a warehouse or as a minimum on a dry surface with a protective covering until installation. Inlet and outlet protectors should remain in place until the valve is ready to be installed in the system.

1.0 General valve description and instructions

The Anderson Greenwood Safety Selector Valve (SSV) is a device for diverting process flow from one pressure relief valve (PRV) to another. Different configurations are shown in Figures 1 thru 4.

2.0 Maintenance of Single Active SSV: 1" 150#-600#

Refer to Figure 1 and 2

2.1 Disassembly

- Remove lock (240, 250).
- Turn hex (1 1/2 inch) under index bushing/indicator, retraction bushing (550) clockwise (downward) to stop.
- Remove elbow bolts (270) and elbow (130), on both sides.
- Remove seat seals (400) and seats (320).
- Remove disc bolt (330), disc assembly and lock washer (350) from rotor (340). Remove parts through body outlet.
- Remove shaft nut (380) and bolt (370) by extending two swivel sockets with extensions through body outlet holes on opposite sides of the body. Rotor (340) is free to drop. Remove through body outlet.
- Remove four yoke nuts (230) and two packing nuts (310).
- Work yoke assembly loose and slide out of body.
- Remove pin (590), index bushing/indicator (510), set screw (600), lock stop (540) and retainer bushing (480) and inspect bearings (560) and races (460, 480, 550).

Note: Retainer bushing (480) has left hand threads.

2.2 Assembly

- Clean all parts prior to assembly. Lubricate all threads and bearing surfaces with "Never Seez Pure Nickel Special" number NG-8, Never Seez Compound Corp. or equivalent. All soft goods (except Grafoil® seals) to be lubricated with a thin coat of compatible lubricant.
- Replace shaft packing (430). Install yoke assembly into body and tighten four yoke nuts (230). Install packing nuts (310) and tighten only enough to prevent leakage.
- Insert rotor (340) into body through outlet opening and maneuver the rotor into position on the end of the index shaft (460). Install shaft bolt (370) and nut (380) through body outlet and with the aid of two swivel sockets with extensions, secure rotor to shaft.
- Teflon® and Peek Valves: Install new lock washer (350), new disc (360) through body outlet ports and tighten disc bolt (330). Disc bolt torque should not exceed 29 lb. in. Grafoil® Valves: Replace disc seal (390) using the same seat retainer (700). Replace rotor equalizer seal (410) using the same equalizer ring (710). Install new lock washer (350) through body outlet ports and tighten disc bolt (330). Disc bolt torque should not exceed 29 lb in.
- Disc (360) should be free to swivel and rotate around the disc bolt (330) on the rotor assembly.
- Inspect the seat (320) surfaces for nicks or scratches. Restoration of seat surfaces should only include lapping and/or polishing. If the seat surfaces are damaged more extensively, machining may be required (surface finish 32 RMS or better). The total maximum allowed material removal shall not exceed 0.010 in. For Grafoil® valves, if seat surface reconditioning is required, please contact the factory.
- Replace seat seals (400) and install seats (320).
- Install elbows (130) and elbow bolts (270).

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GRAFOIL® is a registered trademark of UCAR Carbon.

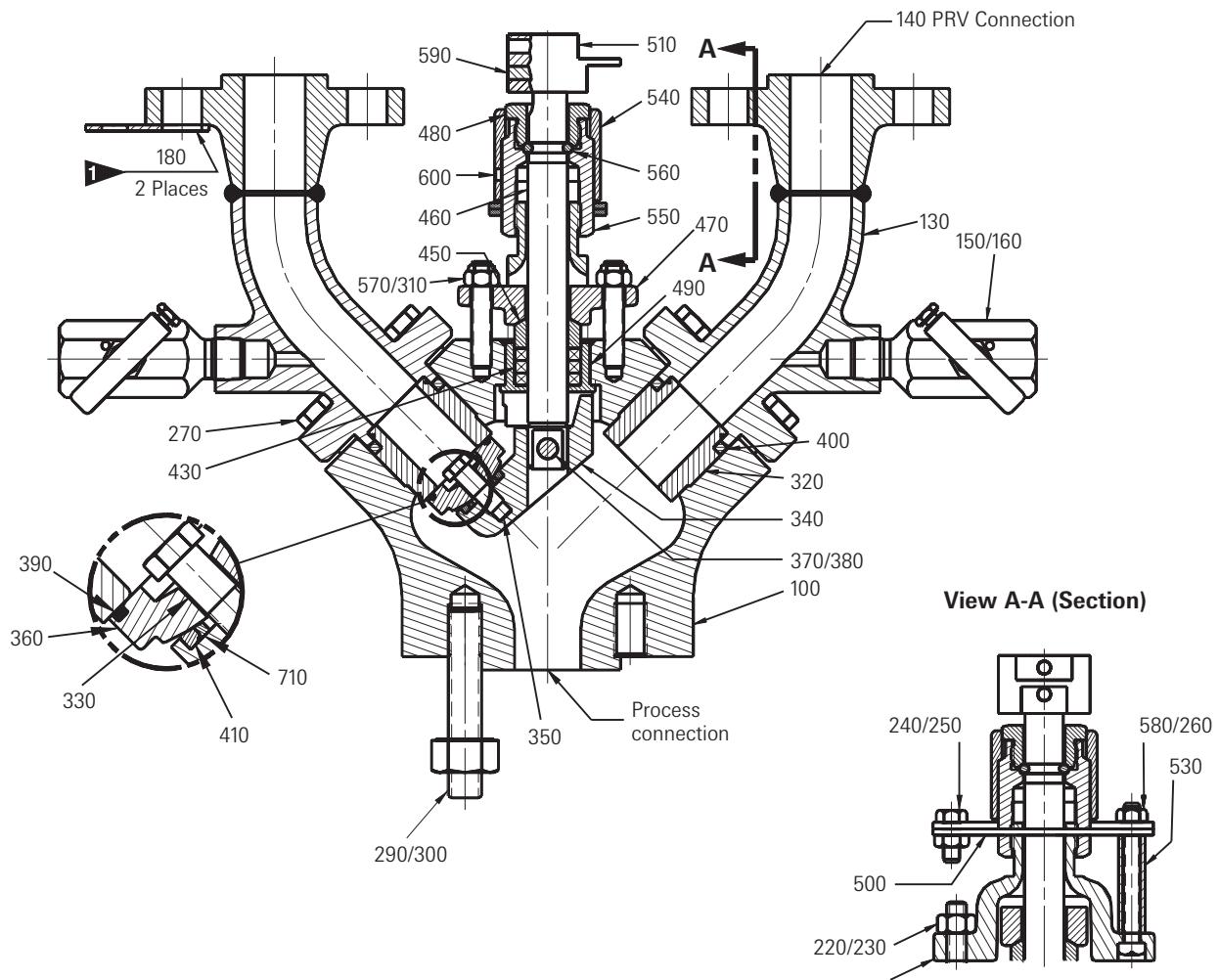


Figure 1 - Safety Selector Valve 1"- 150# thru 600# (Teflon®)

Parts List

Item	Description	Item	Description
Body/Base Parts		250	Nut, Reg Hex (Lock Device)
100	Body	260	Nut, Flexloc (Lock Device)
130	Elbow	440	Yoke
140	Flange (PRV Connection)	450	Follower
490	Insert, Body	470	Gland Flange
Internal Parts		480	Bushing, Retainer
320	Ring, Seat	500	Lock, Rotor Assembly
330	Bolt, Disc	510	Indicator/Bushing
340	Rotor	530	Spacer
350	Washer, Lock	540	Lock Stop
360	Disc, Isolation	550	Bushing, Retraction
370	Bolt, Shaft	560	Balls
380	Nut, Shaft Bolt	580	Bolt (Lock Device)
460	Shaft, Index	590	Pin
710	Ring, Extrusion Equalizer	600	Screw, Set
Soft Goods		Bolting	
390	Seal, Disc	180	Hook-Lifting
400	Seal, Seat Ring	270	Bolt, Hex (Body/Elbow)
410	Seal, Rotor	290	Studs (Studded Base)
430	Packing	300	Nuts (Studded Base)
Operator Parts		310	Nuts, Locking (Packing)
220	Studs (Yoke Bolting)	570	Studs (Packing)
230	Nuts (Yoke Bolting)		
240	Bolt (Lock Device)		
		Bleed Port Accessories	
		150/160	Hand Valves/Flanges/Plugs

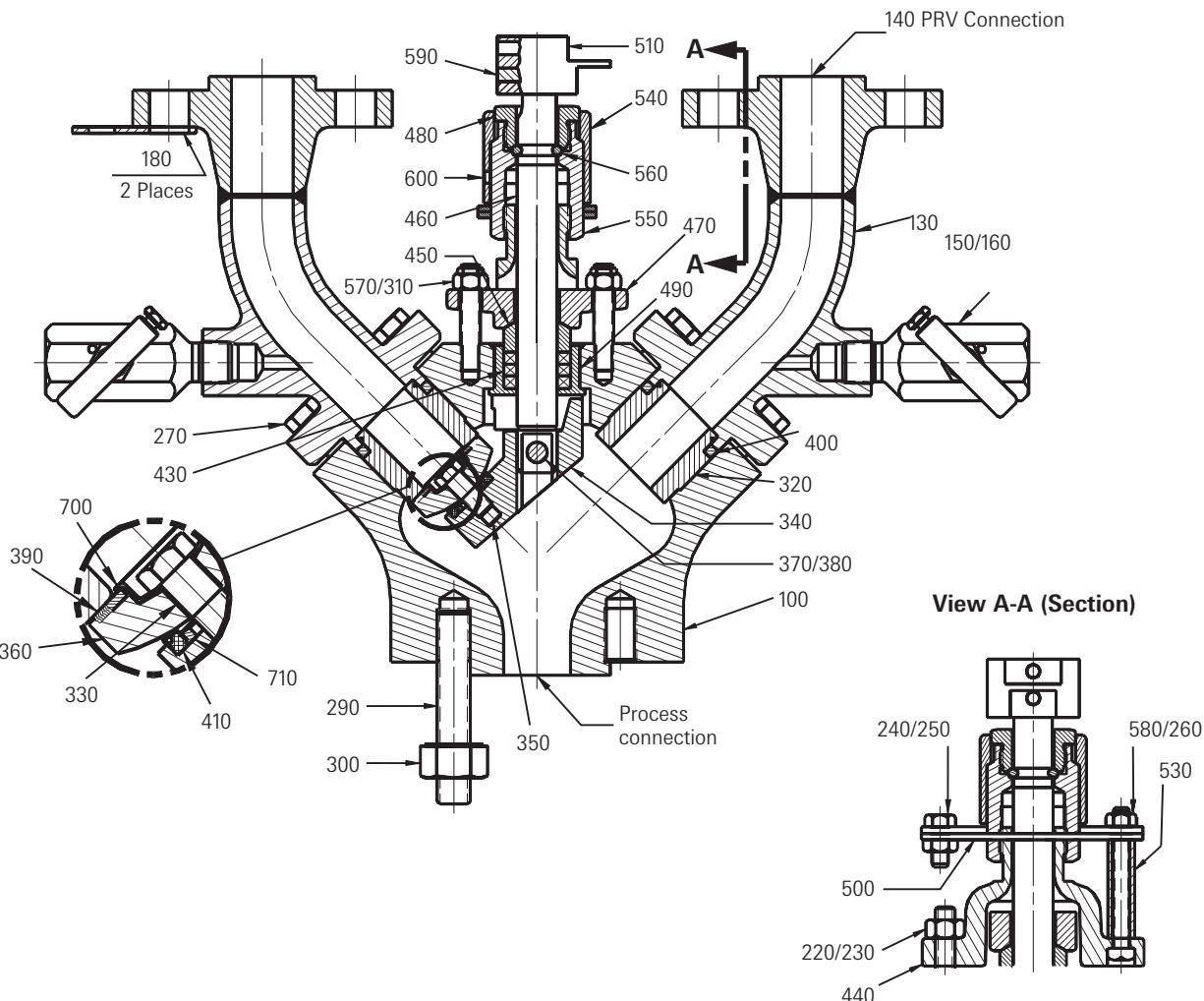


Figure 2 - Safety Selector Valve 1"- 150# thru 600# (Grafoil®)

Parts List

Item	Description	Item	Description
Body/Base Parts			
100	Body	250	Nut, Reg Hex (Lock Device)
130	Elbow	260	Nut, Flexloc (Lock Device)
140	Flange (PRV Connection)	440	Yoke
490	Insert, Body	450	Follower
Internal Parts			
320	Ring, Seat	470	Gland Flange
330	Bolt, Disc	480	Bushing, Retainer
340	Rotor	500	Lock, Rotor Assembly
350	Washer, Lock	510	Indicator/Bushing 530
360	Disc, Isolation	530	Spacer
370	Bolt, Shaft	540	Lock Stop
380	Nut, Shaft Bolt	550	Bushing, Retraction
460	Shaft, Index	560	Balls
710	Ring, Extrusion Equalizer	580	Bolt (Lock Device)
Soft Goods			
390	Seal, Disc	590	Pin
400	Seal, Seat Ring	600	Screw, Set
410	Seal, Rotor		
430	Packing		
Operator Parts			
220	Studs (Yoke Bolting)	180	Hook-Lifting
230	Nuts (Yoke Bolting)	270	Bolt, Hex (Body/Elbow)
240	Bolt (Lock Device)	290	Studs (Studded Base)
		300	Nuts (Studded Base)
		310	Nuts, Locking (Packing)
		570	Studs (Packing)
Bleed Port Accessories			
		150/160	Hand Valves/Flanges/Plugs

3.0 Maintenance of Single Active SSV: 1" 900#-2500# and 1.5"- 8"

Refer to Figures 3 and 4

3.1 Disassembly

- Remove lock (240, 250).
- Turn hex (1 1/2 inch) under index bushing/indicator, retraction bushing (550) clockwise (downward) to stop.
- Remove body/base nuts (280) and base (100).
- Remove shaft nut (380) and bolt (370). Rotor (340) is free to drop.
- Remove disc-bolt (330) and disc assembly from rotor (340).
- Remove four yoke nuts (230) and two packing nuts (310).
- Work yoke assembly loose and slide out of body.
- Remove pin (590), index bushing/indicator (510), set screw (600), lock stop (540) and retainer bushing (480) and inspect bearings (560) and races (460, 480, 550).

Note: Retainer bushing (480) has left hand threads.

- Remove shaft retaining ring (520) from shaft (460).
- If seat removal is required use seat tool listed below:

Valve Size	Seat Removal Tool
Anderson Greenwood Part Number	
1" thru 2"	04.8475.001
3"	04.8475.002
4"	04.8475.003
6"	04.8475.004
8"	04.8475.005

3.2 Assembly

- Clean all parts prior to assembly. Lubricate all threads and bearing surfaces with "Never- Seez® Pure Nickel Special" number NG-8, Never-Seez Compound Corp. or equivalent. All soft goods (except GRAFOIL® seals) to be lubricated with a thin coat of compatible lubricant.
- Inspect the seat (320) surfaces for nicks or scratches. Restoration of seat surfaces should only include lapping and/or polishing. If the seat surfaces are damaged more extensively, machining may be required (surface finish 32 RMS or better). The total maximum allowed material removal shall not exceed 0.010 in. For GRAFOIL® valves, if seat surface reconditioning is required, please contact the factory.
- Install seats (320) with new seat seals (400), if needed. Torque seats to 350 ft lb.
- Replace shaft packing (430) and install shaft retaining ring (520). Install yoke assembly into body and tighten four yoke nuts (230). Install packing nuts (310) and tighten only enough to prevent leakage.
- Teflon® and PEEK valves: Install new lock washer (350), new disc (360) and tighten disc bolt (330).
GRAFOIL® valves: Replace disc seal (390) using the same seat retainer ring (700). Replace rotor equalizer seal (410) using the same equalizer ring (710). Install new lock washer (350) and tighten disc bolt (330).
- Disc (360) should be free to swivel and rotate around the disc bolt (330) on the rotor assembly.
- Install rotor assembly onto shaft (460) and secure with bolt and nut (370, 380).
- Replace base seal (420) on base. Install base (100) onto body (130), tighten nuts (280).

Note: Align either of two rotor slots with boss in base and orient pins (120) in body to holes in base.

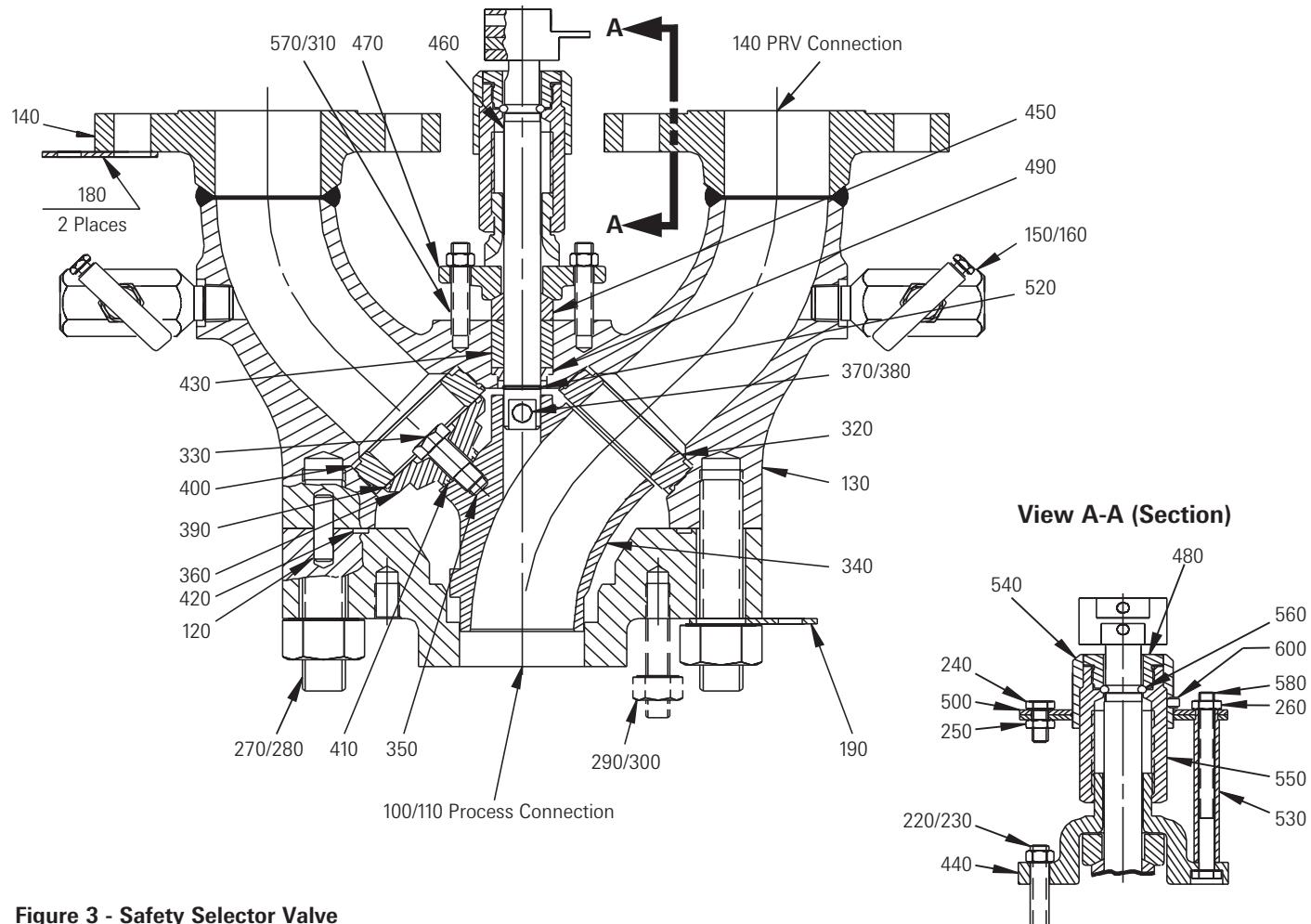


Figure 3 - Safety Selector Valve
1"- 900# thru 2500# and 1.5" - 8" all (Teflon®)

Parts List

Item	Description	Item	Description
Body/Base Parts			
100	Base	250	Nut, Reg Hex (Lock Device)
110	Flange (Process Connection)	260	Nut, Flexloc (Lock Device)
130	Body	440	Yoke
140	Flange (PRV Connection)	450	Follower
170	Expanders	470	Gland Flange
Internal Parts			
320	Ring, Seat	480	Bushing, Retainer
330	Bolt, Disc	500	Lock, Rotor Assembly
340	Rotor	510	Indicator/Bushing
350	Washer, Lock	530	Spacer
360	Disc, Isolation	540	Lock Stop
370	Bolt, Shaft	550	Bushing, Retraction
380	Nut, Shaft Bolt	560	Balls
460	Shaft, Index	580	Bolt (Lock Device)
490	Bearing, Packing	590	Pin
520	Retaining Ring, Shaft	600	Screw, Set
Soft Goods			
390	Seal, Disc	120	Pin, Groove
400	Seal, Seat Ring	180	Hook-Lifting
410	Seal, Rotor	190	Hook-Lifting
420	Gasket, Base	270	Bolt, Hex (Body/Base)
430	Packing	290	Studs (Studded Base)
Operator Parts			
220	Studs (Yoke Bolting)	300	Nuts (Studded Base)
230	Nuts (Yoke Bolting)	310	Nuts, Locking (Packing)
240	Bolt (Lock Device)	570	Studs (Packing)
Bleed Port Accessories			
150/160	Hand Valves/Flanges/Plugs		

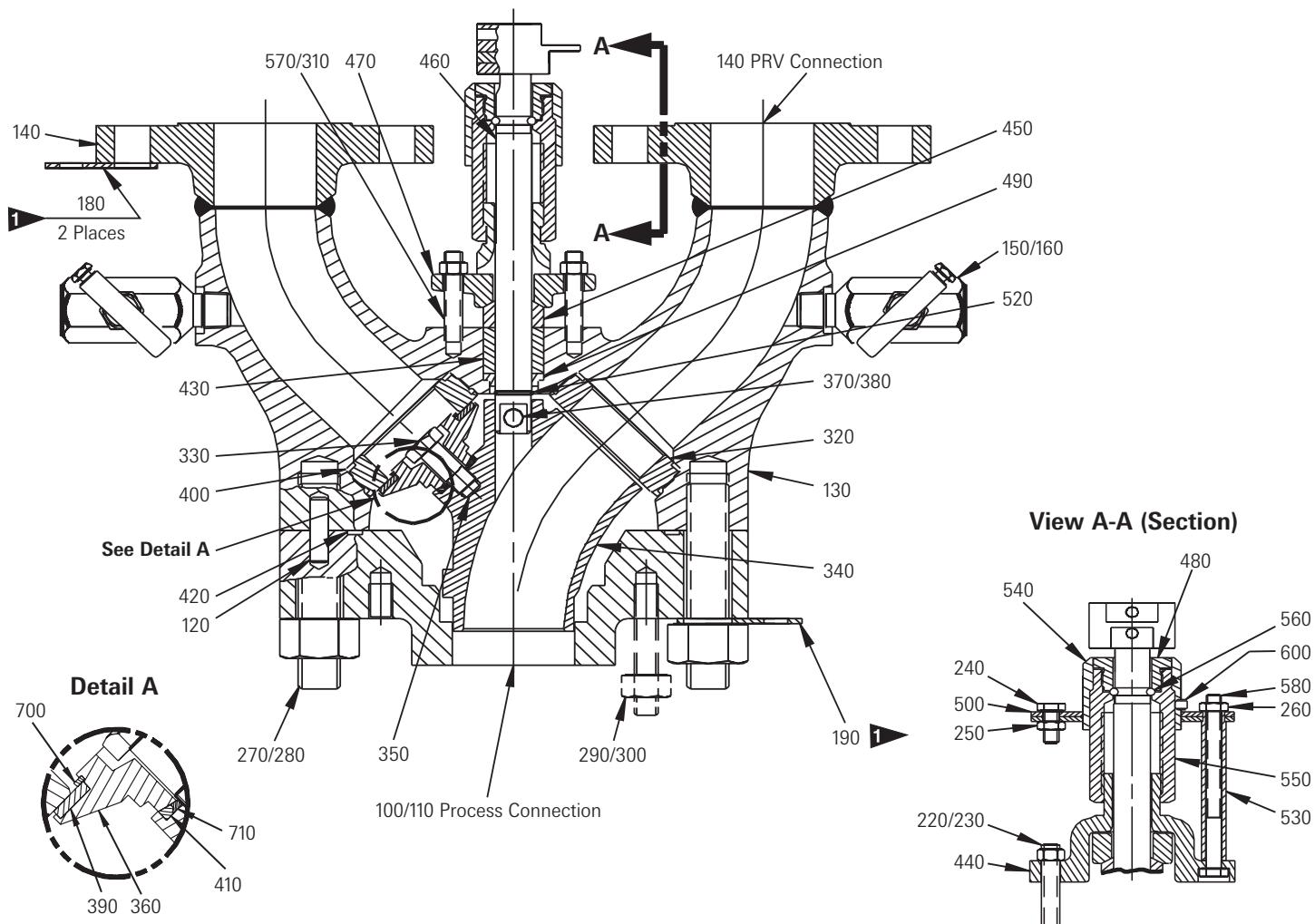


Figure 4 - Safety Selector Valve
1"- 900# thru 2500# and 1.5" - 8" all (Grafoil®)

Parts List

Item	Description	Item	Description
Body/Base Parts		260	Nut, Flexloc (Lock Device)
100	Base	440	Yoke
110	Flange (Process Connection)	450	Follower
130	Body	470	Gland Flange
140	Flange (PRV Connection)	480	Bushing, Retainer
170	Expanders	500	Lock, Rotor Assembly
Internal Parts		510	Indicator/Bushing
320	Ring, Seat	530	Spacer
330	Bolt, Disc	540	Lock Stop
340	Rotor	550	Bushing, Retraction
350	Washer, Lock	560	Balls
360	Disc, Isolation	580	Bolt (Lock Device)
370	Bolt, Shaft	590	Pin
380	Nut, Shaft Bolt	600	Screw, Set
460	Shaft, Index	Locators	
490	Bearing, Packing	120	Pin, Groove
520	Retaining Ring, Shaft	Bolting	
700	Retaining Ring, Seat	180	Hook-Lifting
710	Ring, Extrusion Equalizer	190	Hook-Lifting
Soft Goods		270	Studs (Body/Base)
390	Seal, Disc	280	Nuts (Body/Base)
400	Seal, Seat Ring	290	Studs (Studded Base)
410	Seal, Rotor	300	Nuts (Studded Base)
420	Gasket, Base	310	Nuts, Locking (Packing)
430	Packing	570	Studs (Packing)
Operator Parts		Bleed Port Accessories	
220	Studs (Yoke Bolting)	150/160	Hand Valves/Flanges/Plugs
230	Nuts (Yoke Bolting)		
240	Bolt (Lock Device)		
250	Nut, Reg Hex (Lock Device)		

4.0 Soft Goods and Repair Kits

The kits are available from stock. To ensure the purchase of the correct kit, the user should confirm the correct kit number with the factory prior to placing an order. The order should specify the valve part number, the serial number from the nameplate, and the kit number from the Anderson Greenwood recommended Soft Goods Kits Report 04.8474.

5.0 Leak Testing

5.1 Internal Leak Test

- With safety relief valves in place, rotate index bushing/indicator (510) to either side. Turn hex under index bushing/indicator, retraction bushing (550) counter clockwise (upward) to stop, torque approximately 20 ft lb.
- Open bleed port (150/160) on neck opposite index bushing/indicator (510).
- Pressurize inlet to 90% of PRV set pressure. Open bleed port (150/160) on inactive side and check for leaks using standard leak check. If leak is present, tighten hex under index bushing/indicator, retraction bushing (550) until leak stops using 80 ft lb torque maximum. At this time leak check joint of relief valve on opposite neck with a leak test solution.
- Close bleed port (150/160). Turn hex under index bushing/indicator, retraction bushing (550) clockwise (downward) to stop. Turn indicator bushing/indicator (510) to opposite side. Turn hex under index bushing/indicator, retraction bushing (550) counterclockwise (upward) to stop, torque approximately 20 ft lb.
- Open bleed port (150/160) on inactive side and again check for leaks as described above.

5.1 External Leak Test

- Check for external leakage by applying leak test solution to all joints and seals. At this point, retighten packing nuts (310) if required.

6.0 Installation

Repaired valves should be installed per Emerson's Installation and Operational Safety Instructions AGCDR-0054-EN.