- **General Operating Instructions**
  - Operate valve within pressure and temperature range.
  - Select a valve material that is compatible with the media. Consult factory for recommendations for wetted media.
  - Do not use valve with media containing particulate.
  - Do not use excessive force in operating the valve.
  - Allow sufficient space for maintenance and inspection.
  - Keep valve away from excessive heat or fire.
- **Transportation, Unpacking, and Storing**
  - Keep valve packed in the carton or box as delivered until installation.
  - Do not impact or drop the valve.
  - Protect valve from scratches and dents due to mishandling.
- **Pressure Ratings / C_v Values**

Size	Orifice Diameter (in)	5 Way C_v	4 Way C_v	3 Way C_v	2 Way C_v
1/8”	0.125	0.3	0.14	0.3	0.3
1/4"	0.228	1.15	0.55	1.15	1.15
3/8”	0.375	2	1.33	2	2
1/2"	0.435	3.69	2.4	3.69	3.69
C_v values for 5 way stack valves are approximately 25% lower. Consult Factory					

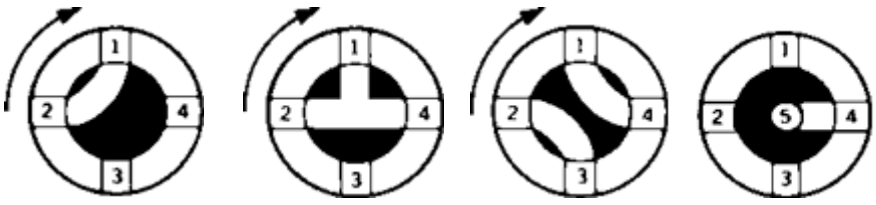
Material	Pressure Rating (PSI)	Temperature (F)
Aluminum Single Stack Valve	0-250	70
Brass Single Stack Valve	0-250	70
316 SS Single Stack Valve	0-1000	70
Hastelloy Valves	0-250	70
Aluminum Multi Stack	0-150	70
Brass Multi Stack	0-150	70
316 SS Multi Stack	0-150	70
Consult Factory for applications requiring higher pressure ratings and operating temperatures.		

- **Installation Procedure**
  - Necessary Items
    - PTFE sealing tape or pipe dope.
    - Strap wrench (To avoid damage to valve).
    - Adjustable wrench
    - Mounting hardware (1/4 – 20 Hardware).
    - Hand tools to mount valve.
  - Pipe Connection Procedure
    - Wind sealing tape around male thread of joint 1.5 – 2 times.
    - Insert male thread into valve using a clock wise motion to engage thread. Take steps to avoid cross threading.
    - Hand tighten joint.
    - Using strap wrench to hold valve, tighten joint using adjustable wrench ½ to ¾ additional rotation as needed.

Caution: Avoid excessive tightening.

Caution: Avoid installation of plastic valves using metal fittings. Over tightening will result in damage to valve body.

  - Valve Mounting Procedure
    - Valve should be securely mounted to panel or wall plate using 1/4 – 20 hardware. Length of hardware dependent on thickness of mounting surface.
    - If valve cannot be mounted insure adequate support of connecting pipe to resist torque applied during valve operation.
- **Operating Procedure**
  - Control flow by moving pointer on valve handle to required port.
  - Insure that piping is connected per porting design to insure accurate control of media.



2-Way 3-Way 4-Way 5 Way

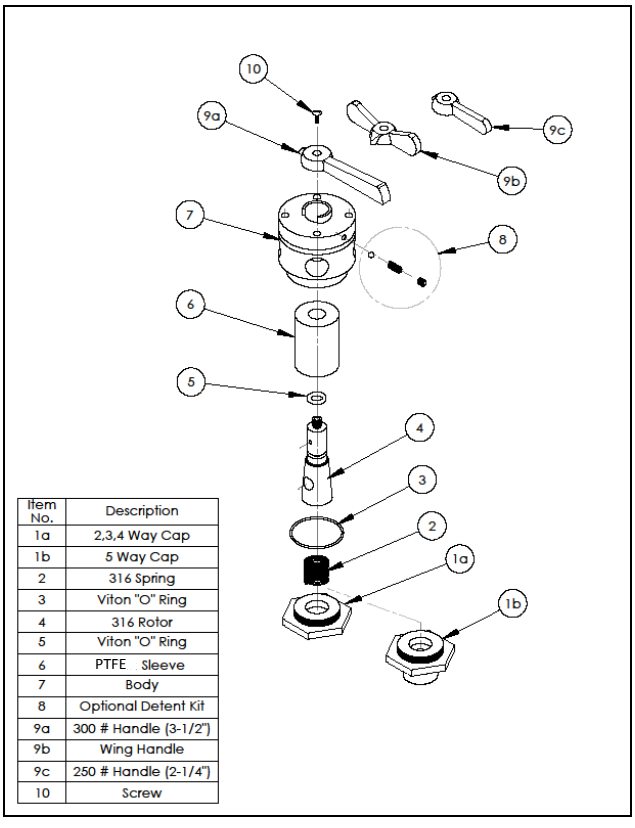
- **Disassembly & Repair Procedure**
  - **It is never recommended to open valve in the field. Only factory authorized and trained individuals should disassemble valve.**

Caution: Valve is assembled under load at factory!! Do not disassemble!!

- **Trouble Shooting**

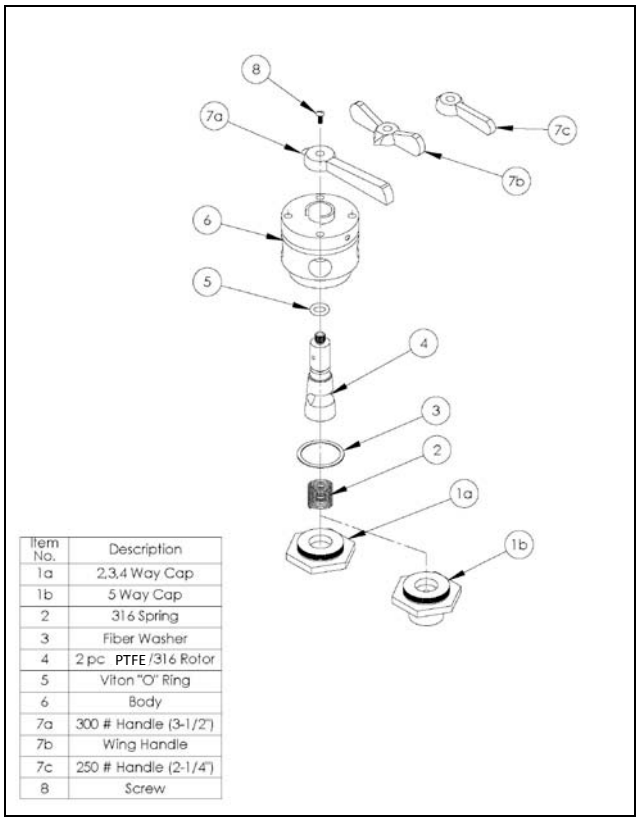
Problem	Cause	Solution
Rotation of handle requires excessive torque.	The PTFE seat will cold flow if valve remains inactive raising operational torque.	Operational torque will reduce after initial break in period.
Media leaks from valve when closed.	There is particulate in seating area.	Flush valve
	Valve is not in correct position.	Reposition valve handle.
	Seat has worn.	Return to factory for repair/replacement
Handle fails to engage	Loose screw	Tighten screw holding handle.
	Knurl has worn out on handle.	Replace handle.

- Parts List



Item No.	Description
1a	2,3,4 Way Cap
1b	5 Way Cap
2	316 Spring
3	Viton "O" Ring
4	316 Rotor
5	Viton "O" Ring
6	PTFE Sleeve
7	Body
8	Optional Detent Kit
9a	300 # Handle (3-1/2")
9b	Wing Handle
9c	250 # Handle (2-1/4")
10	Screw

TSL Style



Item No.	Description
1a	2,3,4 Way Cap
1b	5 Way Cap
2	316 Spring
3	Fiber Washer
4	2 pc PTFE /316 Rotor
5	Viton "O" Ring
6	Body
7a	300 # Handle (3-1/2")
7b	Wing Handle
7c	250 # Handle (2-1/4")
8	Screw

T Style