SCI Series CV30, CV30L and CV35L

Threaded (CV30/30L) and Sweat (CV35L) Brass and Lead-Free(L) Brass In-Line Check Valve

Installation, Operation and Maintenance Instructions

CV30 / CV30L
Threaded Ends

CV35L Sweat Ends

Figure 1 – SCI Series CV30 Threaded Brass / CV30L LeadFree Brass / and CV35L Sweat-End Leadfree Brass In-Line Check Valves

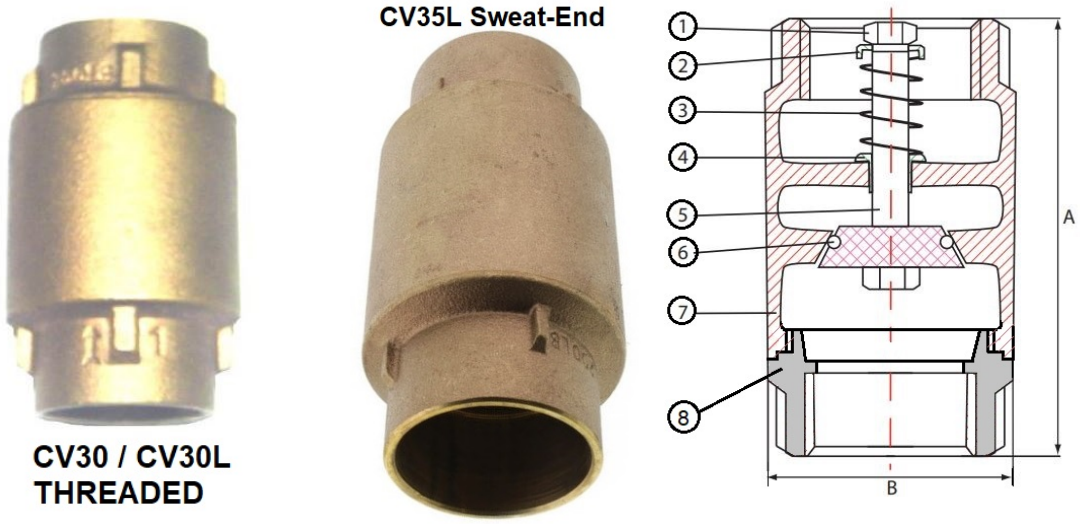

Table 1 – Series CV30 / CV30L / CV35L List of Materials (See Figure 1 for items illustrated)

Item No.	Part Description	Material (CV30)	Material (CV30L / CV35L) (2)
1	Stem Nut	Brass C26000	304 Stainless Steel
2	Spring Holder	304 Stainless Steel	304 Stainless Steel
3	Spring	304 Stainless Steel	304 Stainless Steel
4	Stem Guide	PolyOxyMethylene (POM)	PolyOxyMethylene (POM)
5	Stem	Cast Brass ASTM B584 C85700	Cast Brass ASTM B584 C85710
6	O-Ring/Seal	EPDM	FKM (Viton) (CV35L) EPDM (CV30)
7	Body	Cast Brass ASTM B584 C85700	Cast Brass ASTM B30 C89550
8	End Connector	Cast Brass ASTM B584 C85700	Cast Brass ASTM B30 C89550

Notes: (1) All check valves rated to 200psig

(2) LeadFree (L) brass – meets Federal Safe Drinking Water Act (SDWA) and California AB1953.

Table 2 – Series CV30 / CV30L / CV35L Dimensions and Weights (See Figure 1 for items illustrated)

Valve Size	Weight, Lbs	Length, A inches CV30/30L	Body Diameter, B inches CV30/30L	Length, A inches CV35L	Body Diameter, B inches CV35L
½"	0.43	2.43	1.26	2.77	1.26
¾"	0.58	2.72	1.50	3.53	1.50
1"	0.81	3.23	2.13	4.08	1.77
1-1/4"	1.27	3.62	2.13	--	--
1-1/2"	1.47	4.05	2.36	--	--
2"	2.53	5.04	3.03	--	--

Valve Installation [See Figure 1 and Table 1 for part numbers listed in parentheses ( )]

These valves may be installed in the pipeline in any orientation (e.g., in horizontal or vertical run of pipe) using good piping practice. For these threaded-end valves, use a suitable joint compound or PTFE tape on pipe threads of the body (7) and end connector (8) for ease of fit-up and to seal the threads on the piping.

After installation (if possible) it would be advisable to ensure the fluid flows freely in the normal direction (into the stem nut (1) end) and completely restricts flow in the opposite direction.

Valve Operation [See Figure 1 and Table 1 for part numbers listed in parentheses ( )]

These inline check valves are uni-directional, with the intended flow direction to match the flow direction as permanently marked or cast into the body – or into the stem nut (1) side and out the opposite body end connector (8). The primary flow direction can also be with the highest pressure of the flow into the stem nut (1) side – with prevention of backflow in the opposite direction.

Any media that might solidify, crystallize, or polymerize should not be allowed to be used in this check valve as it will interfere with the internal seat mechanisms to allow free flow in the primary direction, and stop flow in the opposite direction.

In the normal flow direction, the spring (3) loaded seat and O-ring seal (6) should begin lifting after a minimum of 2psig differential pressure is developed across the valve. The valve should restrict any backflow in the opposite direction, regardless of reverse pressure.

Valve Maintenance [See Figure 1 and Table 1 for part numbers listed in parentheses ( )]

It is recommended that the following steps be taken for safe removal of the valve from the line, or any subsequent disassembly.

- Relive the pressure in the pipeline.
- All personnel involved in removal and/or disassembly of the valve should wear protective clothing and eyewear such as safety glasses or face shields, gloves, aprons, and safety shoes.

⚠ **DANGER** –Do not attempt to perform maintenance on valves in pressurized lines. Doing so may result in severe injury or death if there is an uncontrolled release of system pressure.

It is only recommended to perform minor refurbishment of any part of the valve internals, unless a kit containing the seats (6), Stem Guide (4) and spring (3) is available.

Dismantling the valve body and refurbishing internals:

To dismantle the valve body to get access to the internals (stem, spring and seat), the valve should be moved to a clean work area first.

Remove the end connector (8) by supporting the body end (7) in a vise or suitable clamp or wrench. It may be necessary to heat the connection to remove any sealants used on the threaded joint.

Using a suitable size socket or wrench to hold the seat (6) end of the stem and plug steady, unthread the stem nut (1) and remove the spring holder (2) and spring (3) from the end of the stem (5). Note: use caution if the stem nut (1) uses a nylon insert or thread sealant on the stem end (5).

WARNING – Care must be used when removing the stem nut (1) since the spring (3) is always partially compressed. Failure to do so may result in injury if the spring (3) and spring holder (2) are ejected at the person performing maintenance on these parts. It is suggested that the user depress the spring slightly to test how much spring force will be expected when removing the nut (1).

Remove the stem (5) and seat (6) out of the end of the valve and examine it for damage. Excessive damage to the stem in the stem guide (4) area, or under the seat (6) may require replacement which would be a major repair – and the user should consider replacing the entire unit.

Examine the stem guide bushing (4) for cracking, excessive wear or damage and remove it from the body (7) if necessary to replace it. The guide (4) may be held in the body using adhesives which should also be used if the guide is replaced.

The seat area inside the body should be inspected to determine if only a simple cleaning or polishing (e.g., with scotch-brite®) is necessary, or if the seat area is too damaged and the body (7) needs replacement. Replacement of the entire body would be a major repair – and the user should consider whether the entire valve should just be replaced.

Replacement of the valve internals and reassembly:

Place a new seat (6) on the plug portion of the stem (5) and re-insert back into the body (7) and through the stem guide (4).

Insert the spring (3), spring holder (2) and stem nut (1) onto the end of the stem (5). While holding the opposite end of the stem with a wrench or socket, tighten the stem nut (1) until it is snug with the shoulder of the stem (5) – the spring (3) and holder (2) will be slightly compressed.

Re-insert the end connector (8) by threading it back into the body (7) – with the appropriate thread sealants if those were originally used to seal it to the body.

If the valve body (7) and end (8) were dismantled, it is suggested that the valve be subjected to a shell tightness test equal to 300psig (with water) or at a minimum of 80psig (with air) to ensure the body joint it completely tight for continued service.

Also, if the valve internals (seat, spring, stem guide) have been replaced, the valve seat should be tested to see if it lifts as the minimum 2psi in the direction of normal flow (flow arrow), and seals completely (drop tight, no leakage) in the opposite direction with 110% of rated pressure (225psi water) – or 80psig with air as a minimum.