

SCI Series 8155L-A and 8156L-A 2-Piece Forged Brass Ball Valve Installation, Operation and Maintenance Instructions

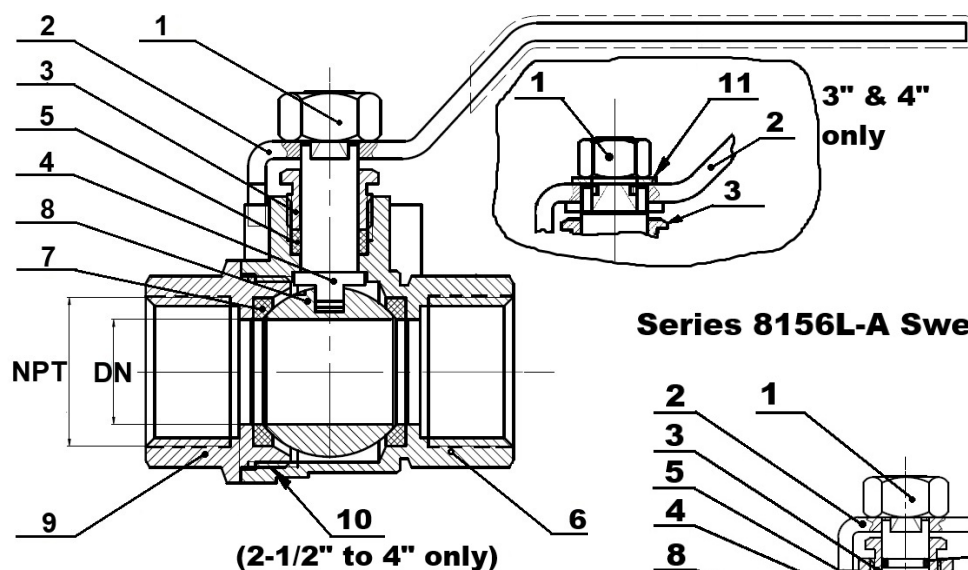
**Series 8155L-A Threaded-End
Lead-Free Brass Ball Valve**



**Series 8156L-A Sweat-End
Lead-Free Brass Ball Valve**

Figure 1 – SCI Series 8155L-A and 8156L-A 2-Piece Brass Ball Valves

Series 8155L-A Threaded-End Valves



Series 8156L-A Sweat-End Valves

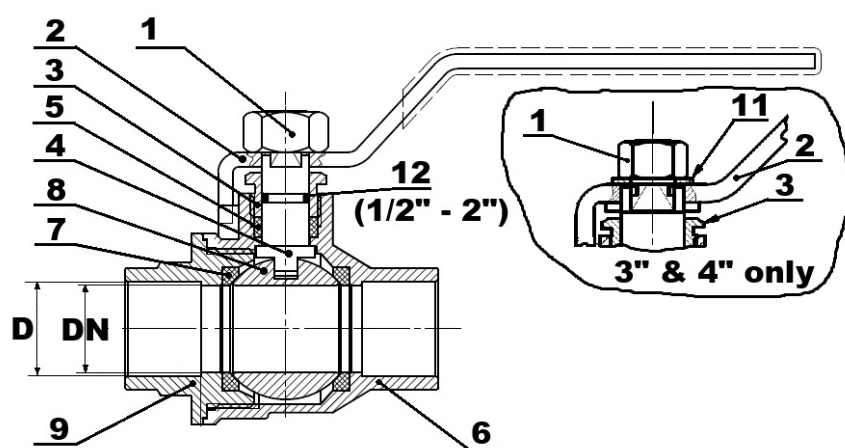


Table 1 – SCI Series 8155L-A and 8156L-A List of Materials (See Figure 1 for items illustrated)

Item No.	Part Description	Material
1	Handle Nut	Forged Steel ASTM A570 Gr. A
2	Handle	Forged Steel AISI 1008
3	Packing Nut	Forged Brass ASTM B124 C37700
4	Stem	Forged Brass ASTM B124 C37700
5	Stem Packing	PTFE
6	Body	Brass SAE J461 C46500
7	Seat Ring (2)	PTFE
8	Ball	Chrome Plated Brass SAE J461 C46500 (≤ 1 inch) Chrome Plated 316 Stainless (1-1/4 to 4inch)
9	Body End Cap	Brass SAE J461 C46500
10	Seal Washer	PTFE (2-1/2\" to 4\" only)
11	Handle Washer	Forged Steel ASTM A570 Gr. A (3\" & 4\" only)
12	O-Ring Stem Seal	FKM (8156L-A 1/2\" to 2\" only)

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

NOTE: These valves can be installed into systems that have a LEAD-FREE service requirement or are intended for use in POTABLE WATER. These valves typically have a plastic hang-tag under the handle (2) which indicates the valve is suitable for Lead-Free (LF) service & meets requirements for the Safe Water Drinking Act (SWDA).

THREADED END VALVES:

- Follow all applicable and appropriate code requirements and piping practices.
- Confirm the valve is suitable for the service / application.
- Confirm that the valve and pipe connections are clean and free of foreign material, including metal shavings and debris.
- Use a suitable PTFE tape on the pipe threads that will be inserted into the valve's body (6) and end cap (9). The PTFE tape will help seal the threaded connections.
- Hand-tighten the pipe into the valve.
- **NOTE:** Two wrenches must be used when joining pipes to these valves.
 1. Apply one flat-faced wrench to the valve hex that is CLOSEST to the pipe joint that is being tightened, and
 2. Use a second pipe wrench on the pipe.The wrench that is closest to the joint and on the valve (wrench #1) will prevent torque from being transmitted through the valve's body joint.
- Wrench makeup is approximately 1-1/2 turns after installing the pipe hand tight.
- DO NOT over-tighten the valve onto the pipe, as this can cause damage or distort the valve.

SOLDER END / SWEAT END VALVES:

 **CAUTION** – Prevent heat damage to the valve's soft elastomer seats (7) when soldering the valve pipe joint. The installer should be mindful of the type of gas being used. Acetylene is the hottest industrial gas and requires the most care and caution when soldering versus MAPP gas or propane.

 **CAUTION** – The valve body (6) and ends (9) should only be soldered to adjacent piping with the valve's ball (8) in the fully open position to avoid heat buildup which would damage the valve internals and seats (7).

- Follow all applicable and appropriate code requirements, and piping practices.
- Confirm the valve is suitable for the service / application.
- Confirm that the valve and pipe connections are clean and free of foreign material, including metal shavings and debris.
- Clean and flux the surfaces to be soldered.
- **NOTE:** Monitor the temperature! The mid portion of the valve's body should not exceed 300°F. Use Tempilstik® Temperature indicators or an infra-red temperature sensor to monitor the temperature.
- Do NOT oversize the torch tip! The torch tip selection should be appropriate for the pipe size.
- Wrap a wet rag around the valve body or use another heat absorbing technique.
- With the flame directed away from the valve, apply heat. Always move the flame to evenly distribute the heat to all surfaces of the solder cup during heating.
- Apply solder on the first solder joint end.
- Repeat the process on the other solder joint.

- After soldering the valve, let the valve cool naturally. Quenching the valve with water will cause unnecessary joint stress.
- **NOTE:** Heat from soldering may affect stem sealing; therefore, after soldering (installation & cooling), always check for leakage. It may be necessary to tighten the packing nut (3).
- Additional Resources:
Copper Development Association Recommended Practice for Soldering of No-Lead Copper Alloys:
https://www.copper.org/publications/pub_list/pdf/A4108-NoLeadSoldering.pdf

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

These are quarter-turn (90° rotation) ball valves which are typically fitted with a lever handle (2) for manual operation. The valve body (6) also contains travel stops at fully open and closed positions.

To open the valve, turn the handle (2) counterclockwise. The handle (2) should be in-line or parallel to the axis of the pipe, which indicates the valve is in the OPEN position.

To close the valve, turn the handle (2) clockwise. The handle (2) should be perpendicular to the axis of the pipe, which indicates the valve is in the CLOSED position.

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

Safety Precautions Prior to Performing Maintenance:

 **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.

Before removing a valve from the pipeline, determine which media may be flowing through the valve. The media may be corrosive, toxic, flammable or contaminated. When there is evidence of hazardous fluids having flowed through the valve, additional precautions should be taken to avoid contact with these fluids and additional precautions should be taken when handling the valves during removal. Review the Safety Data Sheet (SDS) for any hazardous flowing fluids for any additional precautions. As a minimum, the following additional precautions should be taken.

1. Always wear OSHA-approved Safety Eyewear or face shields.
2. Always wear protective gloves and overalls or a chemical-resistant apron.
3. Wear protective footwear (e.g., safety shoes).
4. Wear protective headgear as required for the work area (e.g., hard hat – if required).
5. Ensure that running water is easily accessible (e.g., to rinse fluids from hands or valve / parts).
6. Have a suitable fire extinguisher ready if working with flammable media.

Check pipeline gauges to ensure that no pressure exists on either the upstream or downstream sides of the valve before performing any maintenance.

Ensure that any trapped media is released from the valve and piping by operating the valve slowly to the half-open position. Then leave the valve in fully open position during maintenance.

Valve Maintenance:

Stem Packing (5) Adjustment:

If leakage is evident from the stem packing (5) area, tighten the packing nut (3) beneath the handle (2) approximately 1/8 of a turn. If the leakage persists, repeat the tightening sequence again. If the leakage cannot be corrected by tightening the packing nut (3), replace the valve. See Table 2 for maximum recommended torques on the packing nut (3).

Table 2 – SCI Series 8155L-A & 8156L-A Ball Valve Torques (See Figure 1 for items illustrated)

Valve Size	Packing Nut (3) Torque, Lbf-in	Packing Nut (3) Torque, N-m
1/4" – 3/8"	88	10
1/2"	123	14
3/4"	159	18
1"	177	20
1-1/4"	247	28
1-1/2" & 2"	354	40
2-1/2"	486	55
3" & 4"	486	55