RPS Sanitary Sample Valve

SANITARY SAMPLE VALVES
RPS type

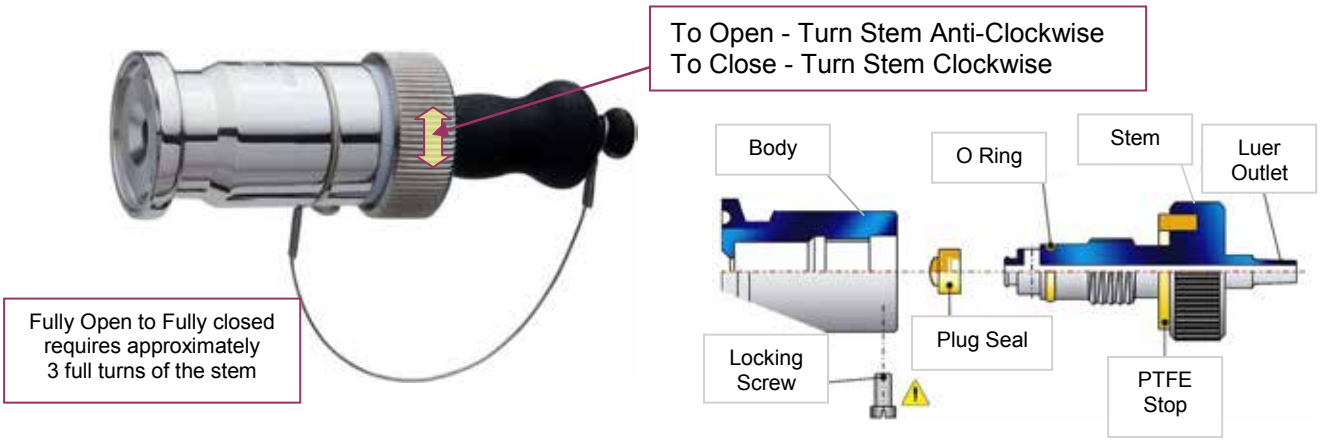
Operating and Maintenance instruction

Please read all of this information.
If you are unsure about any aspect of this information please ask

RPS Sanitary Sample Valve

AerreInox RPS Sanitary Sampling Valves are ideal for sampling of high purity water and other liquids in distribution lines or storage tanks. The valve can be sanitized effectively and easily in place to eliminate residual contaminants.
The Luer Slip outlet is designed for direct attachment of a bacteriological monitor or for directing liquid flow into any type of sterile receiver. RPS Sanitary Sampling Valves come with silicone caps to cover the outlet Luer-slip after sanitization.
These valves are intended for sampling pure water. Alternative constructions and materials are recommended for the sampling of hot liquids, fluids containing small particulates, viscous media, solvents and chemicals. Viton, PTFE or Silicone O-rings and plug seals are available. RPS Sample Valves are manufactured from pharmaceutical grade materials.

Construction Materials in Product Contact:
Metal parts: 316L (1.4404) stainless steel, **Seal & O Ring:** FDA Conforming Silicone, PTFE or viton.



2.0 INSTALLATION

Before installing an RPS Sanitary Sampling valve, thoroughly clean and then drain the process lines, and if hot, allow the pipes and equipment to cool to room temperature.
Select a valve location that will provide a representative sample of the liquid to be sampled.
Ensure that all liquids that will contact the valve are compatible with the Construction Materials (see above)

2.1 Installing the Threaded Sanitary Sampling Port

1. Loosen the retainer screw in the port body and remove the port stem.
2. Cut an appropriate-sized hole (1/2" or 3/8" thread) into the pipe or tank wall.
3. Before installing the port, ream out the inside rim of the hole to eliminate burrs.
4. Remove the probe cap and thread the port into the hole, probe end first. Make sure the probe end of the thread is flush with the inner surface of the pipe (or tank).
5. Align the probe so that the bevelled edge faces the liquid stream in the direction from which the flow originates. When correctly positioned, the retainer screw will be located at the back of the bevelled edge. If the liquid flow is from left to right, the Sanitary Sampling Port should be fitted into the pipe with the retainer screw positioned at the right side of the port. If the flow is from right to left, the screw will be on the left side of the port.
6. Open the port to flush out any small pieces of pipe material that may have been left after cutting the threaded hole. Flush for 2-3 minutes.
7. Replace the port stem and tighten the retainer screw. The port is now ready for sanitization.

2.2 Installing the Weld-Type Sanitary Sampling Port

1. Loosen the retainer screw in the port body and remove the port stem from the unit.
2. Drill a 3 5/64-inch hole in the pipe (or tank), then ream out the outside rim of the hole to remove any burrs.
3. Remove the probe cap, then slip the body of the port, probe end first, into the hole.
4. Align the probe scoop so that the bevelled edge faces the liquid stream in the direction from which the flow originates.
5. Insert the port body, probe end first, into the hole, with approximately 1/16 inch of the probe weld shoulder protruding into the inside of the line.
6. Weld the port body in place.
7. When cool, flush the line to remove any residual burrs or debris from the lines and port body. Flush for 2-3 minutes.
8. Replace the port stem and retighten the retainer screw.
9. The port is now ready for sanitization.

2.3 Installing the Clamp -Type Sanitary Sampling Port

1. Weld on a ¾" tri-clamp union on to which the RPS sample valve will be connected. This work should only be carried out by an experienced, authorised and qualified welding technician according to national and local regulations.
2. Using a new clamp gasket of a compatible material, connect the Sampling Valve assembly to a ¾" tri-clamp union. Tighten the clamp. The valve should now be flushed and cleaned through in-situ before sanitization and use.
3. To flush the valve. First remove the black rubber cap from the Luer outlet. Open the valve by gripping and rotating the serrated part of the stem anti-clockwise. This will open the valve. Flush through with water, then cleaning fluids and finally with pure water for 2-3 minutes with each fluid.
4. The valve is now ready for sanitization if required.

3.0 SANITIZATION

Sanitize the Sanitary Sampling Port immediately after installation and after each sampling operation.

1. Flush the port by turning the port stem to the left, and allow a full flow of liquid to pass out of the port for 1-2 minutes. Then do se the port by turning the stem to the right.
2. Fill a 20 mL plastic polypropylene syringe with at least 10 mL of 70% ethanol, 90% isopropyl alcohol, or 3% hydrogen peroxide solution. Attach the port needle to the male Luer tip of the syringe.
3. Insert the needle all the way into the port through the Luer opening, and express the sanitant into the port. Allow a few milliliters to flow out of the port outlet.
4. As the needle is removed from the opening, squirt a few milliliters of the sanitant over the outer surface ot the male, Luer-slip connection.
5. Fill the plastic cap with sanitizer and slip it snugly over the Luer outlet of the port. This will keep the port sanitized between sampling operations.

4.0 OPERATION

1. If the system is pressurised, reduce the pressure to as low as possible in order to avoid a risk of high velocity fluid being discharged from the valve when it is opened. If you are unsure seek advice from a technician with a good knowledge of your system.
2. Ensure that the user is wearing appropriate protective clothing and equipment for the fluids, environment and temperature.
3. Prepare and have ready appropriate containers to safely accept the fluid to be sampled.
4. If necessary obtain the assistance of a colleague to access the valve, hold the container or operate the valve.
5. When ready to take a sample, removed the black rubber cap from the Luer outlet. Wipe the Luer outlet with a sanitizer.
6. Place the receiving container under the Luer fitting. Slowly open the valve by turning the stem anti-clockwise until a small drip can be seen at the Luer outlet. Open the valve a little more until a slow but controlled flow into the container is achieved. When a sufficient quantity of sample fluid has been taken, close the valve by turning the stem clockwise until the flow stops. Do not over tighten the valve, by using tools, as it will damage the internal components.
7. Sanitize the valve as appropriate for the operation of your system, then replace the black rubber cap.

Note: The valve can be opened and closed by hand. Tools are not required. If the valve becomes hard to operate, do not use excessive force as to do so will damage the valve components. Refer any leakage or difficulty in use to a technician. If in doubt, always ask.

5.0 MAINTENANCE

Minor maintenance is more commonly required for the Sanitary Sampling Valve used for sticky or high viscosity liquids or liquids containing suspended solids. If the valve is fitted into lines (or tanks) that contain beverage or non-pure water, the valve should be periodically removed, disassembled, cleaned and the O-ring and plug seal condition examined. Replace any parts if needed.

Leakage through the Luer outlet may indicate that the O-ring and/or plug seal needs to be replaced.

To replace the O-ring or plug seal:

1. First, ensure that all liquid is drained from the pipe or tank, and that the pipes and valve are at room temperature.
2. Open the sample valve and drain any remaining liquid into a container.
3. When you are sure that no liquid remains on the inlet side of the sample valve close the valve.
4. Then loosen the locking screw by three full turns. Do not fully remove the locking screw.
5. Remove the rubber cap from the Luer outlet.
6. Then remove the stem by rotating it anti-clockwise until it can be withdrawn.
7. You can now inspect the O ring and plug seal for damage or wear. Note the position of any parts before removal.
8. If required remove the old parts and carefully fit a new plug seal onto the stem end, and a new O-ring into the groove on the stem. Immersion of the plug seal and O ring in warm water before fitting may assist assembly.
9. Clean all parts ready for assembly. Reassemble the valve in the reverse order.

10. To avoid seizure of the stainless components: You can lubricate the stem thread with a small amount of approved lubricant before assembly.
11. Carefully insert the stem into the body taking care not to damage the plug or O ring on the thread inside the body.
12. Then rotate the stem clockwise to close the valve, approximately 7 full turns from first insertion.
13. Ensure that the locking screw is fully tightened before use. This will stop the stem being withdrawn by mistake.
14. Flush and clean, and if required sanitize the valve before use.

The picture of the valve stem above shows the Plug Seal and O Ring when correctly installed on the stem

6.0 CAUTION

Do not use chlorine or other halogen agents as either sanitants or cleaning compounds. Chlorides and halogens will attack stainless steel. Use only detergents and short bristle brushes to clean. A mild abrasive may be used if deposits are stubborn. Use a pipe cleaner, moistened with cleanser, to clean the inside of the Luer outlet and the port stem.