



Machine Pump Syringe Installation Guide

A microsyringe is the heart of many liquid handling systems. The lifetime is highly dependent on the type of application and the frequency of use. As it is a consumable, the periodic maintenance and exchange is vital to increase the lifetime and assure the best performance in the application. The better it is taken care of, the longer it will last.

Tightening a syringe

To ensure proper function, we recommend finger-tightening for syringe installation only.

We do not recommend using any tool to apply torque during tightening. Using a tool may cause damage of the syringe, manifold, or valve.

Sealing is achieved with the PTFE insert and not from the thread. If you face sealing issues, please check the bottom surface of the manifold or valve. The complimentary washer disc may be used to enhance the sealing. Using a tool to tighten a leaking syringe is not recommended and may cause damage to the syringe, manifold, or valve.

Common syringes are made with a white PTFE insert. After a while it is common to see deformation of this insert. This deformation is caused by the soft surface property of PTFE (also called 'cold flow').

To avoid this deformation, we have developed a unique technology made with a PCTFE insert, which includes a sealing disc. With this PCTFE insert we have eliminated the deformation problem again. Please ask our team about purchasing syringes with an integrated washer.

Operating temperatures

After delivery, allow the syringes to acclimate for 24 hrs. to the room temperature.

Our machine syringes are designed to operate from 59°F to 104°F. Using the syringes below the minimum temperature may cause leaking. Long term use above the maximum temperature can cause damage to the glue connection and will change the mechanical properties of the PTFE plunger seal rapidly. Different glues are available for higher temperature range.



- The humidity of the working environment should not exceed 40%
- Do not use your syringes and connected equipment directly under air conditioners.
- Do not immerse the entire glass body in solvent. The glued parts may peel off.
- If possible, do not move the piston in a dry syringe, the seal may be damaged and cause leaking

We have developed a unique plunger seal design to operate machine syringes below 59°C.

The cryo-line syringes are especially developed to use these syringes to -4°F operating temperature. Contact our team to get more information about availability of cryo-line syringes.

Exposure to higher temperatures without losing tightness while cooling down is one of the superior advantage of the cryo-line syringes.



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Wetted material

Virgin PTFE and borosilicate glass

PE-HD, PE-UHMW

Accuracy / Precision

L-MARK® syringes are manufactured to be accurate within $\pm 1\%$ of nominal volume, and with precision within 1%, measured at 80% of total scale volume. The precision manufacturing of the L-MARK barrel and plunger assures high levels of accuracy.

All products provided from **L-MARK®** are wear and tear parts. For this reason, there is no warranty for lifetime guarantee. **We do offer a wide range of accessories to extend the syringe lifetime:**

- Lubrication set to increase lifetime of plunger seals
- Replacement plungers to extend lifetime of the syringe barrels
- Set of sealing disc (washer) to enhance tightness