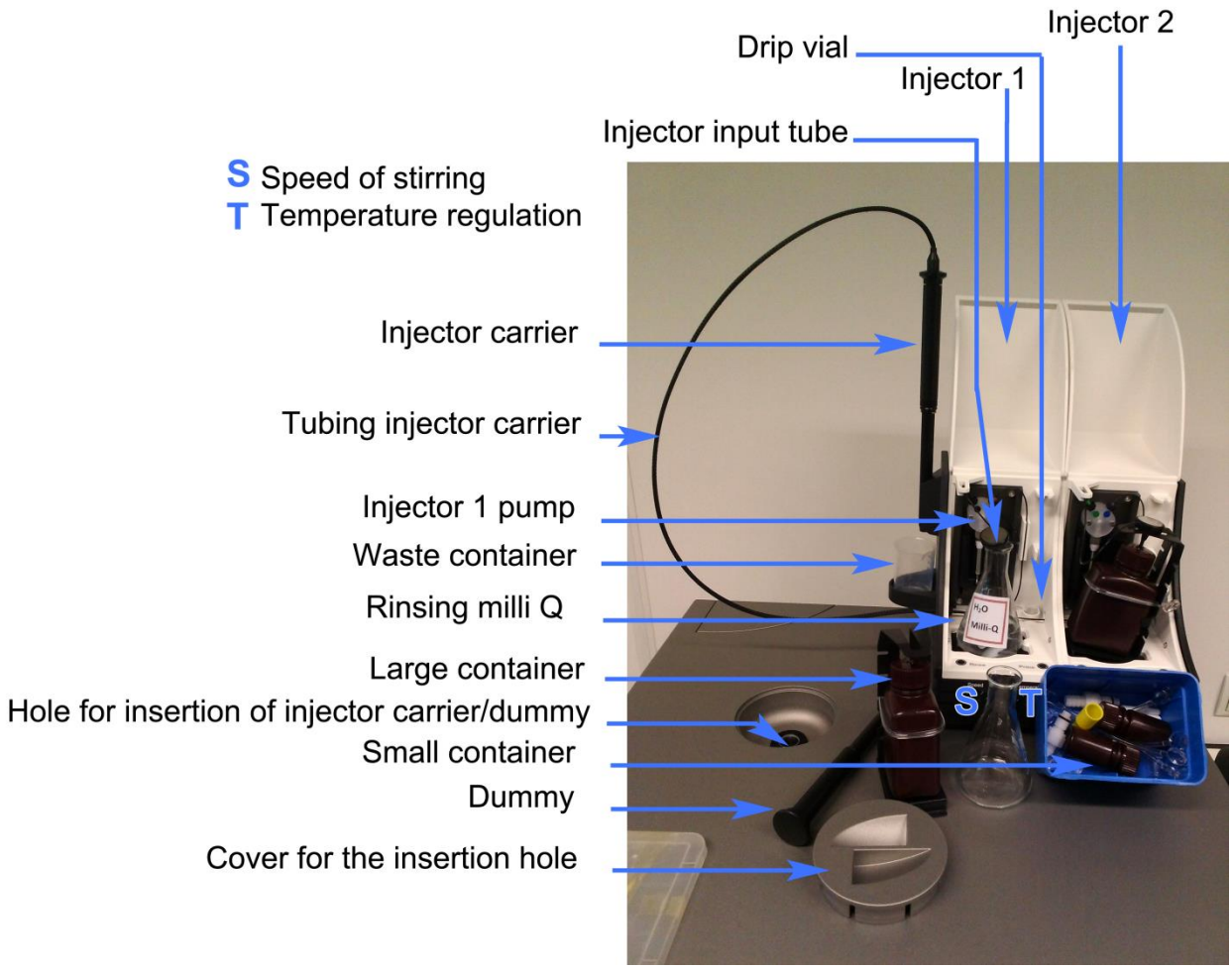
Using the injector(s)

The injector unit consists of two proper injectors, containers, tubing, cover on top of the instrument, holders, and a dummy. The dummy replaces the injector when the injector carrier is not in use. The dummy ensures that the desired atmosphere in the instrument remains stable concerning temperature and gas concentration. Make sure that this injector dummy is inserted in the injector port every time the injector is not in use.
Never touch the syringes during operation.

INJECTOR OF THE SPARK M10



Priming and Rinsing
The initial filling step of the injector system (priming) as well as the cleaning step of the injector system (rinsing) must take place **outside** of the instrument. For these procedures the injector carrier is removed from instrument and put into the service position of the injector module. (see figure service position).

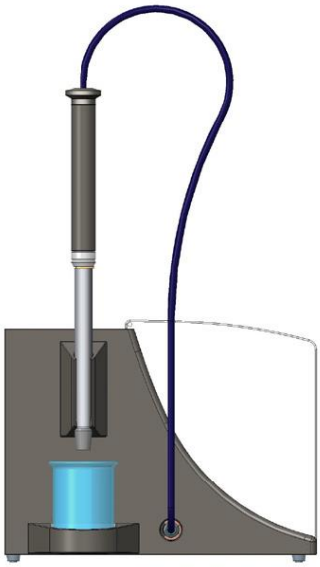


Figure 68: Injector carrier in service position

For priming and rinsing steps of the injector system, a default setting for injection speed and volume dispensed is provided. See buttons. If required the priming parameters can be adjusted in the Injector Control window of the software. The minimal prime volume for this 100 cm tube is 1000µl.
CAUTION: Prime volumes that are too small may result in incomplete filling of the system, and therefore may negatively affect assay performance.
CAUTION: Do not touch the injector needles! They can become easily bent or misaligned, which can cause injection problems, inaccuracy of dispensing or damage the instrument.

Procedure for priming
It is recommended to perform a rinsing step before priming.
Before the injection system can be used, an initial filling step (priming) is needed to remove all air and to
completely fill the system with liquid.
1. Fill the storage bottles/tube with the necessary reagents and insert the feeding tube(s). Make sure,
that the tube(s) reaches the bottom of the bottle.
2. Remove the injector from the injector carrier port of the instrument and insert it into the service
position of the injector module (see figure service position).
3. Put an empty container under the injector.
4. Adjust parameters via the Injector/Prime window in the Method Editor.
5. Visually inspect the liquid jet, the syringes for air bubbles and the tube(s) for leaks and kinks. Any bubbles should be removed after priming to ensure good injection performance.
6. Select the required injector(s).
7. Define the prime volume.
8. Define the prime speed (values depend on selected syringe size).
9. Define the refill speed (values depend on selected syringe size) or select Refill speed equal to prime speed.

10. Start prime by clicking the Start prime button.
11. Select Close to exit the Injector/Prime window.

Measurements

Before measurement, remove the injector dummy and insert the injector carrier into the injector port. Press the injector carrier gently into the port to lock it in place. (A click can be heard).

Injector Cleaning and Maintenance

The required maintenance may vary with your application. The following procedures are recommended for optimal performance and maximum life of the injector system.
CAUTION: To avoid reagent mixing and cross-contamination, rinse the whole injector system thoroughly between different applications requiring the injector(s).

Daily Maintenance:

If not otherwise stated by the manufacturer of the kit used, the following tasks must be performed daily:
• Inspect the syringes(s) and tubing for leaks.
• Flush the whole system thoroughly with distilled or deionized water after each use and when the syringe is not in use. Failure to do so can result in crystallization of reagents. These crystals can damage the syringe seal and valve plug, which can result in leakage.
CAUTION: CAUTION: Do not allow the syringes(s) to run dry for more than a few cycles.

Weekly/Periodical Maintenance:

The injector system (tubing, syringes, inject needles) must be cleaned weekly to remove precipitates such as salts and eliminate bacterial growth.
Follow these steps to clean the syringe/injector system with 70 % EtOH (ethanol):
1. Depending on the user's application thoroughly flush the system with buffer or distilled water before rinsing with 70 % EtOH.
2. Rinse the syringe with 70 % EtOH with syringes fully lowered for 30 minutes.
3. After the 30-minute period, cycle all the fluid from the syringe and tubing into a waste container.
4. Rinse the syringe/injector system with 70 % EtOH.
5. Rinse the syringe/injector system with distilled or deionized water. Leave the fluid pathway filled for storage.
6. Clean the end of the injector needles carefully with a cotton swab soaked in 70 % ethanol or isopropanol.
WARNING: Risk of fire and explosion!
Ethanol is flammable and when improperly handled can lead to explosions.
Proper laboratory safety precautions must be observed.