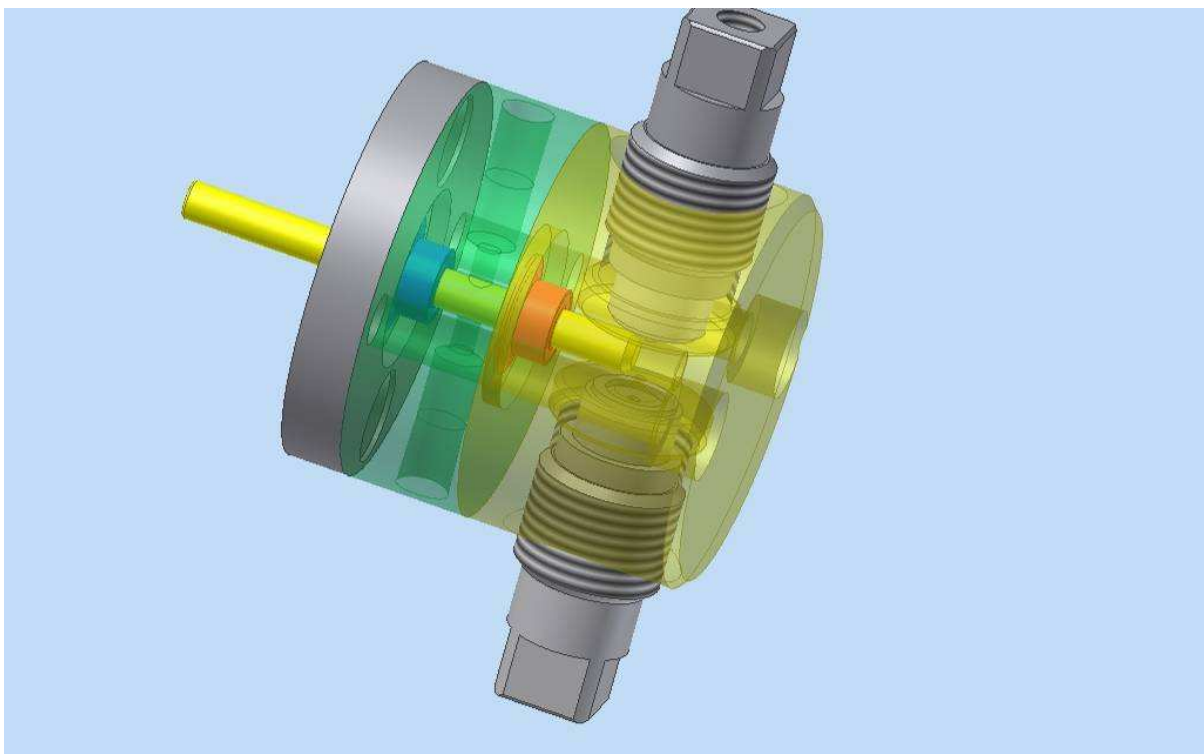


Back washing – operation with buffer solutions



Yellow – **Piston**, Blue - **Auxiliary seal**, Red – **Working seal**,
Transparent green - **Purging head**, Transparent yellow – **Pumping head**

Every ECOM pumping block has **two heads** - the **pumping** and the **purging**. Into pumping head enter moving **ceramic piston** which is **sealed by a seal (working seal)**. **Thin layer of used liquid wets the seal and piston in it**. If the pump is stopped and **the layer of liquid dry up** occur there **crystals of buffer** which after **pump next start** **damage the seal** first and **next the piston**.

From this reason is used second, purging head which **protect the pump by leaking working seal**, but also is used for **seal an piston washing if are used buffers**. The purging heads have openings with a Luer cone in the upper and lower parts, to one of which a plastic syringe can be inserted. Purging head is equipped with **auxiliary seal** so that this head can be fully filled by a liquid.

How to protect the piston and the seal against damage:

A) Pump washing after end of work (Pumping head)

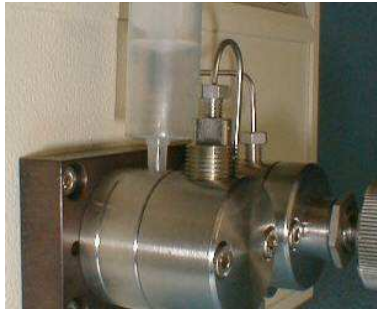
Purge the pump with a clean mobile phase, which dissolves the buffer. Use the same flow rate as by analysis for about 5 minutes.

B) Purging head washing

This purging has to be done by running pump to wash whole piston surface. If would be some part of piston hidden into seal, the buffered liquid rest there.

There are three possibilities for purging head washing as follow.

Three possibilities how to wash the seal and piston:



1) After **daily work**, purge the Pumping head with a clean mobile phase, which dissolves the buffer, and **at the same time wash the rear part of the piston in the purging head.** Carry out the purging with the help of a plastic syringe (place a Petri dish beneath the lower opening), while running the pump

2)

Connect both **Purging Heads** in series using tubing and LUER adapters. Fill the **syringe** by **clean mobile phase and push it through the heads.** The heads are now filled with clean mobile phase which wash the pistons and now from time to time push some liquid into heads again (approximately in 1-2 hours)

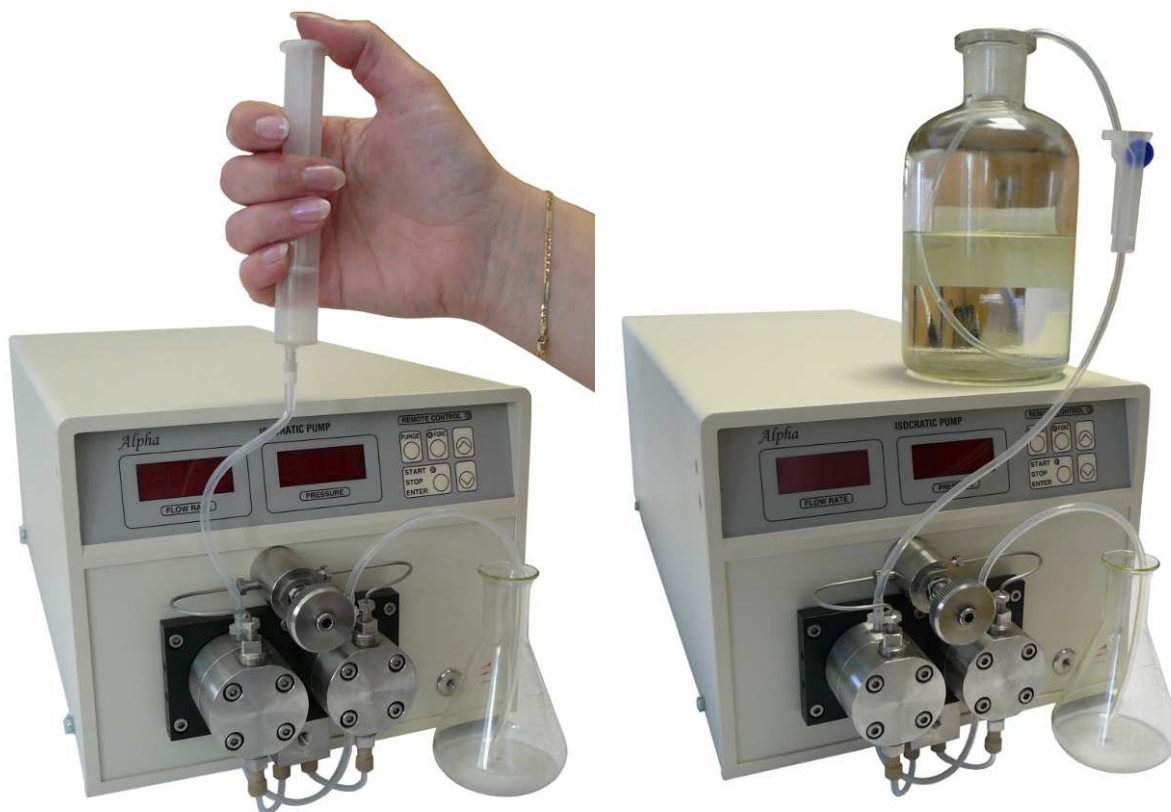


3)

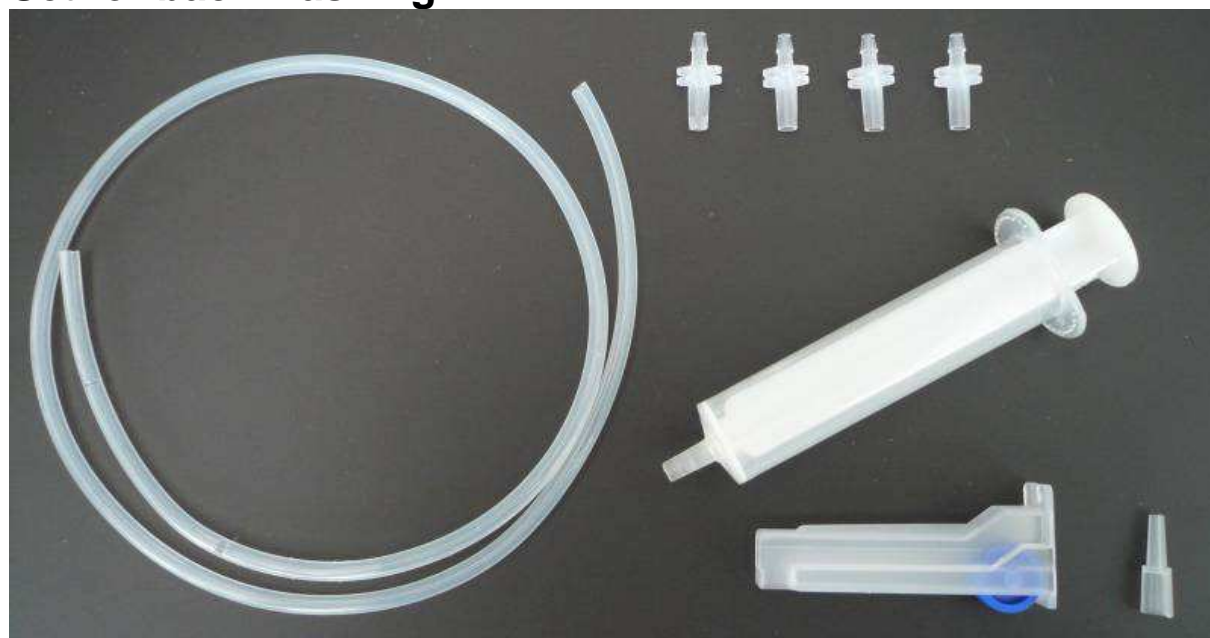
Connect both **Purging Heads** in series using tubing and LUER adapters. Tubing with mounted **flow rate reducer** put into bottle with **clean mobile phase.** Using **syringe** at the other end of tubing suck liquid into heads. Remove the syringe and now the liquid flow by

gravity circulation itself. Reduce the flow rate by flow rate reducer at about 5 – 10 drops per minute and put this end into bottle.

Possibilities 2) and 3) by **preparative pump:**



Set for back washing:



Contain:

Tubing 3 pc

LUER adapter for tubing 4 pc

LUER adapter for syringe

Syringe 50 ml