

SEAL WEAR-IN PROCEDURE LC110/ LC110S/P6.1L

In this document the seal wear-in procedure is described, which should be executed after installation of new high-pressure seals:

193.0308	LC 110(S)/P6.1L piston seal, high pressure, PTFE
193.0312	LC 110(S)/P6.1L piston seal, high pressure, PE



This procedure is crucial for proper operation of the pump head. In case new seals are not worn-in correctly it may lead to leakage or poor pump performance. A worn or scratched piston needs to be replaced immediately. Use a magnifying glass or microscope, as scratches and other signs of wear may not be visible to the naked eye. For optimal performance use Zirconium (stainless steel pump head) or Sapphire pistons (bio-inert pump head).

Requirements

1. Mobile phase (MP) for seal wear-in: degassed Iso-propanol/Water 20/80 v/v%
2. Restriction capillary which gives a system pressure of approximately 375 bar @ 2 mL/min.

Wear-in procedure

1. Connect the bottle with MP for seal wear-in.
2. Connect the restriction capillary to the purge valve. Insert the other end into a waste container.
3. Open the purge valve and prime the pump head with MP, purge the system for 3 minutes with MP at a flow rate of 10 ml/min.
4. Close the purge valve, set the flow rate to (approximately) 2 mL/min adequate to achieve a system pressure of 375 bar for SST pump head and 300 bar for the bio-inert pump head.
5. Pump for 45 minutes at this pressure to wear in the seals. Check that the system pressure stabilizes over time. The system pressure can be monitored using Clarity or comparable CDS (auxiliary channel).
6. Turn OFF the pump and slowly open the purge valve to release the pressure from the system.
7. Connect the bottle with mobile phase of the application.
8. Open the purge valve and prime the pump head with MP, purge the system for 3 minutes with MP at a flow rate of 10 ml/min.
9. Close the purge valve, remove the restriction capillary and connect the pump back to the LC system.
10. The pump is ready for use again.