

ÄKTAexplorer 10 to ÄKTAexplorer 100 Upgrade kit

Instruction

Conversion kit code number

18-1125-16

IMPORTANT: Read through this instruction in whole before commencing with the installation.

IMPORTANT: Install the new software included in this kit before switching off the existing system.

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General

The ÄKTAexplorer 10 to ÄKTAexplorer 100 upgrade kit converts the flow rate from 10 ml to 100 ml and maximum pressure range from 25 MPa to 10 MPa (P903 is converted to P-901). It adds new functions such as automatic sample application (P-910 and PV-908) and reversed flow through column (INV-907). The kit also includes new software and new manuals as well as capillaries and other components in the flowpath.

56-3060-21

Edition AA

Unpacking

Unpack the ÄKTAexplorer 10 to ÄKTAexplorer 100 conversion kit, and check the items against the supplied packing list. Inspect the items for obvious damage which may have occurred during transportation.

Please note that some of the included packages have their own packing lists included. Check these as you go along.

It is recommended to reuse the packing material to pack the surplus ÄKTAexplorer 10 equipment for possible future use.

Software pre-requisites

Before you start disassembling the ÄKTAexplorer 10 system, install the new software included in the conversion kit. General installation instructions for UNICORN software are given in the UNICORN User Manual, Chapter 13. Remember to check the boxes for loading strategy and templates.

Required tools and documents

Tools included in Tool kit	56-3008-20 (included in existing system)
Fibre detachment tool	18-1111-16 (included in existing system)
Connection diagram UniNet 2	56-3011-92 (included in upgrade kit)
Connection diagram capillaries	56-3011-93 (included in upgrade kit)
ÄKTAdesign Component binder	18-1120-17 (included in existing system)

Removing ÄKTAexplorer 10 capillaries

WARNING: Ensure that the mains supply is disconnected before starting the installation.

WARNING: Ensure that the entire system has been flushed thoroughly with distilled water before removing any capillaries.

Remove all capillaries and connectors from the separation unit and the Pump P-903. The following items will be reused:

- W1 Tefzel, 0.75 i.d., L=1300 mm
- W2 Tefzel, 0.75 i.d., L=1200 mm
- W3 56-3047-57
- Piston seal rinsing system 18-1113-32
- Purge kit 18-1115-63
- Flow restrictor FR-904 18-1112-42
- Inlet filters 18-1113-15

Removing ÄKTAexplorer 10 components

WARNING: Ensure that the mains supply is disconnected before starting the installation.

WARNING: Ensure that the entire system has been flushed thoroughly with distilled water before removing any components.

1. Remove the 10 mm UV flow cell. Use the fibre detachment tool 18-1111-16.
2. Remove the four 10 ml pump heads. Use the 3 mm Allen key included in Tool kit 56-3008-20, and save the attachment screws. They will be re-used.

Installing ÄKTAexplorer 100 components

1. Assemble the 100 ml pump heads according to instructions in the Pump P-900 User Manual (*Changing piston sealings*).
2. Mount the 100 ml pump heads. Please observe the UP marking. Fit in position and fasten using the old attachment screws.
3. Mount the piston seal rinsing system capillaries. Please observe the flow direction of the check valve (arrow should point towards the front of P-900).
4. Mount the purge capillaries.
5. Mount the pump head capillaries. The capillaries from the A pump heads should be connected to the inner part of the outlet manifold.
6. Mount the inlet manifolds on each pump module and fix with the screwed end pieces (do not overtighten).
7. Attach the Switch valves SV-903 to the mounting rail on P-900. Check that the control cable is running free.
8. Check the id. no. on the INV-907 valve (56-3047-07). It should be set to 7. The digit 7 should also be attached on the valve front plate to identify the valve.
9. Use bracket 1 (56-3002-99), locate and mount the valve V7 according to the diagram 56-3011-92. Use two M4 screws (59-3464-00).

***Note:** If the valve door is of the old type, i.e. not moulded, use bracket 6 (56-3060-31) instead of bracket 1.*
10. Check the id. no. on the PV-908 valve (56-1196-08). It should be set to 5. The digit 5 should also be attached on the valve rear plate to identify the valve.
11. Remove the lid covering the hole for the Sample valve V5 in the valve door. Use angled bracket 2 (56-3003-01), locate and mount the valve V5 according to the diagram 56-3011-92. Use two M4 screws (59-3464-00).

12. Locate and mount the Sample pump P-910 (56-6500-00) according to the diagram 56-3011-92. Use two M4 screws (59-3464-00). See Instructions, P-910 included in the ÄKTAdesign Component binder on how to prepare the pump for operation.
13. Mount the 2 mm UV flow cell (18-1111-10). Use the fibre detachment tool 18-1111-16. Slide the rubber sleeves on the two optical fibres onto the connectors. Make sure that the sleeves are pushed tight to the housing to prevent dust or fluid from entering the connections.

Note: Fit all the protective caps on the old 10 mm flow cell.

14. If the pH flow cell (included with the original ÄKTAexplorer 10 delivery) is not fitted, it should be mounted according to the instructions in the ÄKTAexplorer 10 System Manual, Section A.6

Installing ÄKTAexplorer 100 UniNet 2 cables

1. Install the UniNet 2 cables according to diagram 56-3011-92.

Installing ÄKTAexplorer 100 capillaries

1. If not already done, unpack and check the ÄKTAexplorer 100 tubing kit cpl. 18-1126-30.
2. Change the inlet filter inserts (18-1114-42) if required.
3. Attach the inlet filters to capillaries A11, A2, B1 and B2.
4. Connect the inlet capillaries A1-A3, A11 and B1-B3 in that order according to diagram 56-3011-93.
5. Connect G1 and G2 to the 2 ml mixer chamber inlets. G1 is connected to the inner connection of the outlet manifold (A pump module).
6. Attach the on-line filter (18-1112-44) to the G3 capillary and connect to the mixer outlet. Observe the flow direction marked by an arrow.
7. Thread the G4 capillary through the hole under V1 from the outside. Check that the capillary designation is on the inside of the valve door, and connect G4.
8. Mount the sample loop 500 µl (18-1113-99) on V1.
9. Thread the G18 capillary through the hole under V1 from the inside. Check that the capillary designation is on the inside of the valve door, and connect G18.

10. Cut off the connector from W2 capillary and thread it through the hole under V5 from the inside. Check that the capillary designation is on the inside of the valve door, and connect W2. Put the open end of W2 in a waste flask. The cut off connector can be disposed of.
11. Connect W1 to V1 and put the open end of W1 in a waste flask.
12. Connect G17 between V1 and V5.
13. Thread the G5 capillary through the hole under V1 from the outside. Check that the capillary designation is on the inside of the valve door, and connect G5.
14. Thread the G6 capillary through the hole under V2 from the outside. Check that the capillary designation is on the inside of the valve door, and connect G6.
15. Thread the G7 capillary through the holes under V2 and V3 from the inside. Check that the capillary designation is on the inside of the valve door, and connect G7.
16. Thread the G8 capillary through the hole under V3 from the outside. Check that the capillary designation is on the inside of the valve door, and connect G8.
17. Connect a stop plug in V7, port 5 (18-1112-52).
18. Mount G9 on V7.
19. Connect G10 to the inlet of the UV flow cell (top connection) and V7.
20. Connect G11 from the outlet of the UV flow cell (bottom connection) to the conductivity flow cell. The flow direction of the flow cell should be so that the screw head end of the flow cell faces the pH flow cell.
21. Thread the G12 capillary through the hole under V4 from the inside. Connect G12 between the conductivity flow cell and the **lower** connection of the pH flow cell (marked IN).
22. Attach the flow restrictor FR-904 (marked IN) to the G13 capillary and connect to the pH flow cell **upper** connection (marked OUT). The flow restrictor should be housed in the hole in the pH flow cell holder (store the dummy pH electrode in Box-900 when not used).
23. Connect G14.
24. Connect W3. Put the open end of W3 in a waste flask.
25. Connect G15. The connection of G15 to the tube holder on the Frac-901 delivery arm is described in the Frac-900/901 User Manual.
26. Connect F3. Put the open end of F3 in a flowthrough container.

27. Mount the sample holder parts (56-3033-37) on the plastic mounting plate below V5. Install the parts (sample tray, tube holders and tubing holder) by pushing them into the slits.

Checking the installation

When all of the installation is carried out, check that all the connections and mountings are performed according to the diagrams 56-3011-92 and 56-3011-93.

All excessive material is stored in Box-900.

ÄKTAexplorer 100 installation test

Perform an installation test as described in the ÄKTAexplorer 100 Installation Guide, Chapter 6.

ÄKTAexplorer 100 test record

Make a photocopy of the test record included in the ÄKTAexplorer 100 Installation Guide, Chapter 7, and store the test record in the ÄKTAdesign System Logbook. Store also the packing lists in the System Logbook.

Accessories

The accessories included in the upgrade kit is to complement the upgraded system to original delivery status. Store the accessories in Box-900, or wherever convenient for the customer.