

# F9-R, Frac-920 or ÄKTAprime+

## Tube sensor replacement

## Instructions

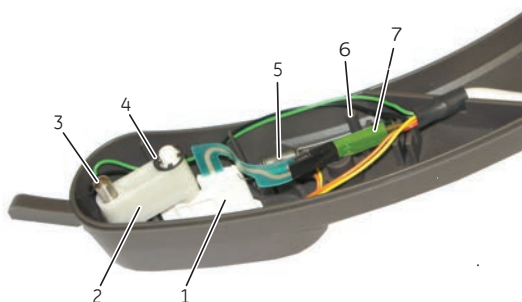
### Introduction

These instructions show how to replace the tube sensor, article number 19781502, in F9-R, Frac-920, and ÄKTA™prime+.

**Note:** *The illustrations in the instructions below refer to Frac-920 but are valid also for the other products.*

### Overview

The parts listed in the table below are used together with the tube sensor.



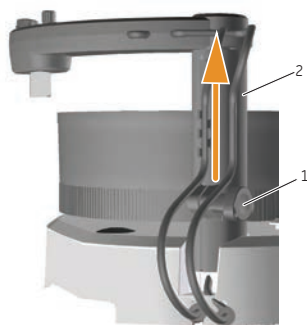
Part	Function	Part	Function
1	Tube sensor	5	Tension spring
2	Plastic link	6	Plastic bar
3	Pin	7	PCB connector
4	Locking washer		

## Remove the arm

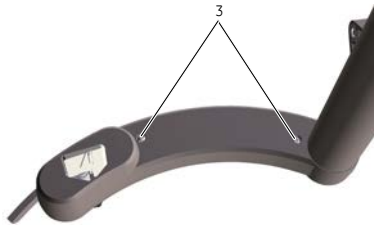
Follow the instructions below to remove the arm.

Step	Action
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- |   |   |
|---|---|
| 1 | Disconnect the mains cable.   |
| 2 | Loosen the clamp at the pillar (1)<br>Lift the pillar upwards (2), remove and place the complete arm and pillar on a working area next to the fraction collector. |



Step	Action
3	Lift off the arm from the support column and place it upside down to expose the two fixing screws. Remove the two screws (3) from the bottom half of the arm.



**Note:**

*ÅKTAprime+ has three screws. The third screw is situated in the recess for the tube sensor.*



4	Turn the arm right way up and remove the cover. The tube sensor can now be accessed.
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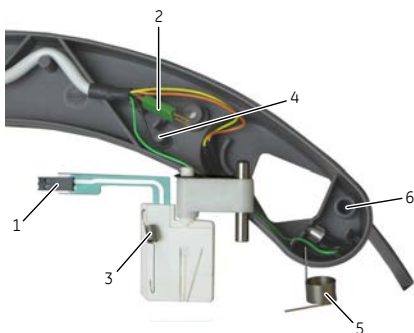
## Disassemble the tube sensor

Follow the instructions below to disassemble the tube sensor.

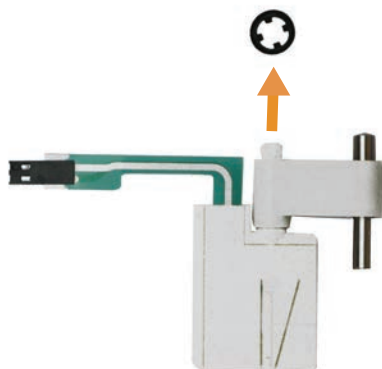
Step	Action
1	Disconnect the tube sensor connector (1) from the PCB connector (2). Detach the tension spring (3) from the plastic bar (4), and the torsion spring (5) from the the pillar (6).

Step	Action
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- 2 Remove the locking washer. Note the position of the plastic link.



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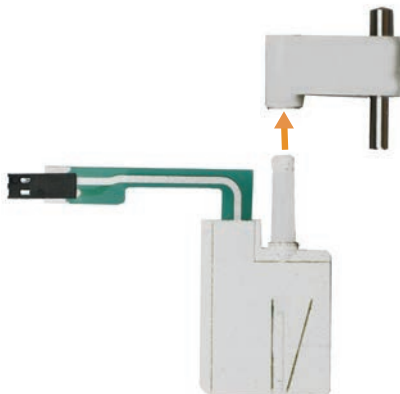
## Replace the tube sensor

Follow the instructions below to replace and reassemble the tube sensor.

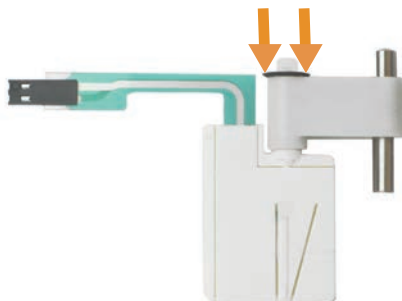
**Step**    **Action**

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- 1            Fit the new tube sensor to the hole in the neck of the plastic link.



- 2            Attach the locking washer to the tube sensor. Press the locking washer firmly to the plastic link. Apply the pressure on the outer edge of the locking washer



Step	Action
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- |   |   |
|---|---|
| 3 | Insert the axial end of the torsion spring into the small hole in the plastic link. |
|---|---|



- |   |   |
|---|---|
| 4 | Whilst holding the plastic link and pin in position, push the pin into the hole in the pillar, and twist the radial end of the torsion spring half a turn clockwise and lock it behind the plastic bar. |
|---|---|



Step	Action
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- |   |   |
|---|---|
| 5 | Insert the tension spring into the small hole in the tube sensor. The tension spring should fit in the recess in the arm. Then gently stretch the tension spring and hook the end onto the plastic bar. |
|---|---|



- |   |                                    |
|---|------------------------------------|
| 6 | Connect the tube sensor connector. |
|---|------------------------------------|

## Replace the arm

Follow the instructions below to replace the arm.

Step	Action
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- |   |   |
|---|---|
| 1 | Check that knob is at the "large tube" position. Then place the complete cover onto the arm. If necessary, move the tube sensor a little sideways to make sure the small pin inside the knob fits into the slot in the plastic link. Turn the knob and check that the tube sensor movement is controlled by the torsion spring. |
|---|---|



<b>Step</b>	<b>Action</b>
2	Hold the cover in position and fit the screws. Do not tighten them too hard.
3	Reassemble the arm and pillar to the instrument.
4	Connect the mains cable.



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