

Remove and Replace Procedures

This section contains detailed instructions for removing and replacing the system cabinet components and all field replaceable components for the InkCenter™ Refill System. *Please read through the entire procedure first before you begin.* The procedures are grouped under the following topics:

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5.1 System Cabinet Components

5.1.1 Upper Hood

5.1.1.1 Removing the Upper Hood

Removing the upper hood is a prerequisite for many service procedures, including all procedures that take place within the electrical tower, the I/O board area, or the vacuum chamber. In addition, you must remove the upper hood before you can remove the fascia on either the drill side or the touchscreen side of the system. **Caution: Removing the upper hood while the system is on exposes dangerous voltages.**

- 3/16" hex tool

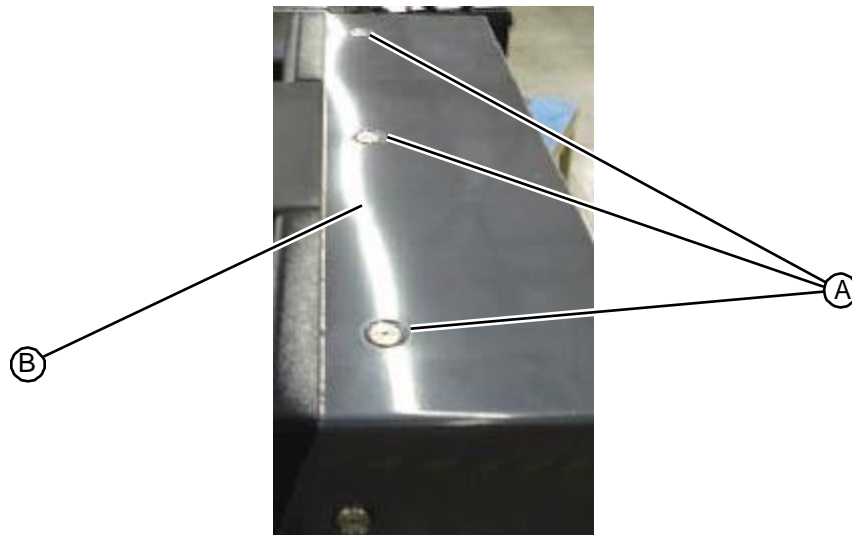
TASK

1. Using a 3/16" hex driver, remove the seven fasteners that secure the upper hood to the system. Two fasteners are located on each side of the hood and three fasteners are located across the top of the hood. *Note: some older hoods have two extra fasteners on the back lower edge.*

Figure 5.1:Fasteners located on the side of the upper hood



Figure 5.2:Fasteners located on the top of the upper hood



- Carefully slide the hood back and/or up to remove.

RELATED LINKS:

“Replacing the Upper Hood” on page 5-4

5.1.1.2 Replacing the Upper Hood

The ventilation fan located in the top of the upper hood is controlled by a reed sensor and a magnetic switch. After replacing the upper hood, check to be sure the fan operates when you turn on the system power. **Caution: Removing the upper hood while the system is on exposes dangerous voltages.**

- 3/16” hex tool

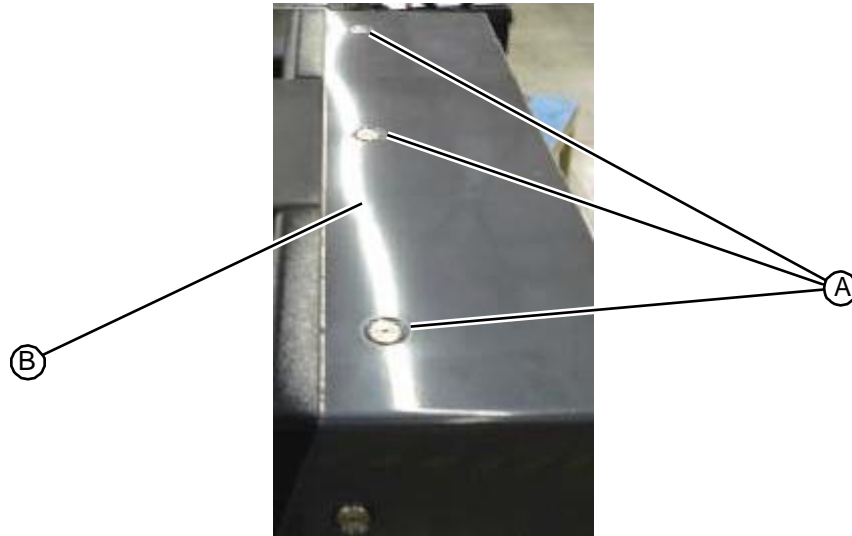
TASK

- Carefully lower the hood so that it rests on the flats located on each side of the system
- Carefully slide the hood forward until it stops.
- Using a 3/16” hex tool, insert and tighten the seven fasteners that secure the upper hood. Two fasteners are located on each side of the system and three fasteners are located across the top of the system

Figure 5.3:Fasteners located on the side of the upper hood



Figure 5.4:Fasteners located on the top of the upper hood



4. Turn on the system power and verify that air flows out of the louver vents located at the back of the upper hood. If air is not flowing from the vents, check all power connections.

RELATED LINKS:

“Removing the Upper Hood” on page 5-3

5.1.2 Drill Side Fascia

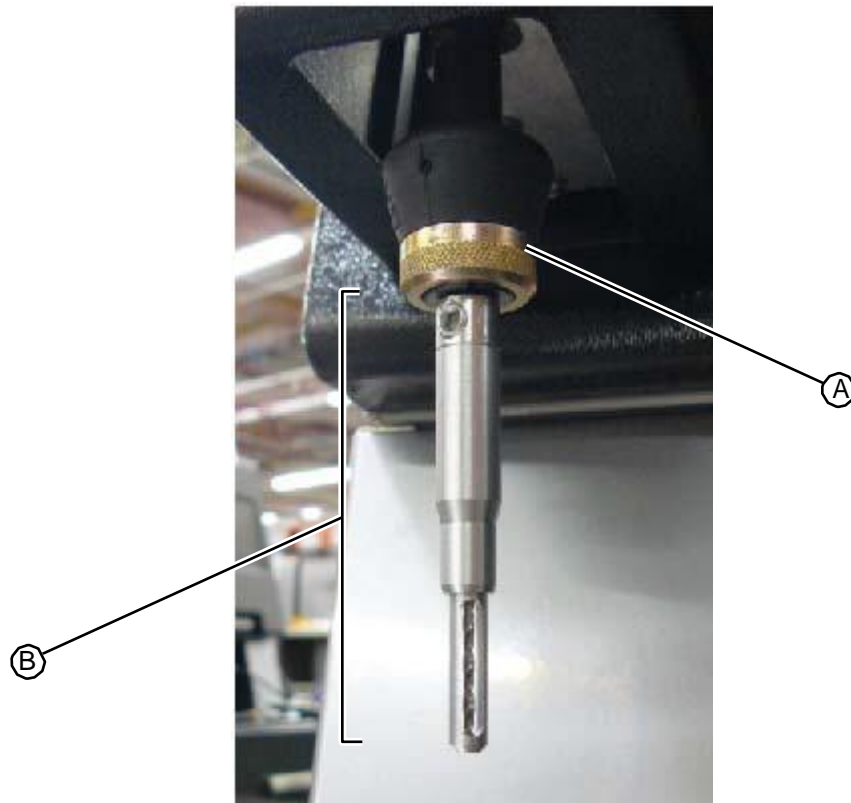
5.1.2.1 Removing the Drill Side Fascia

Removing the drill side fascia is a prerequisite for working on the drill assembly and provides increased access to components located in the plumbing tower.

- T20 torx driver

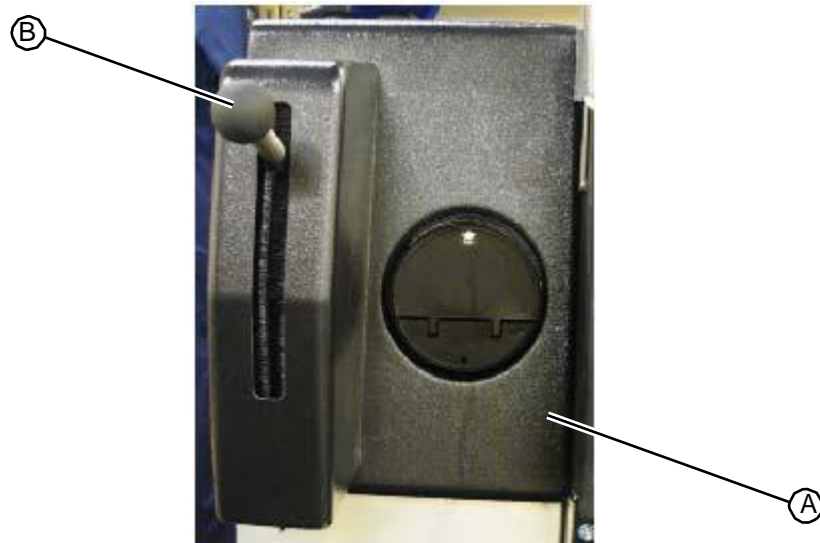
TASK

1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. Check to be sure the drill station is disabled by pulling down on the drill handle. If the drill motor rotates, disable it by performing one of the following steps:
 - Log off by touching your logon name in the upper left corner of the screen.
 - Disable the drill station from the Admin screen.
3. Remove the shrouded drill bit assembly by pressing up on the quick release collar.



4. Remove the grip knob from the end of the drill handle by unscrewing it.

Figure 5.6: Drill press grip knob



5. Using a T20 torx driver, remove the fastener on the left side of the fascia that secures it to the system.

Figure 5.7:Drill side fascia fastener



6. Slide the fascia up to release the mounting hooks and pull the fascia forward to remove it.

RELATED LINKS:

“Replacing the Drill Side Fascia” on page 5-7

“Drill Station” on page 1-5

5.1.2.2 Replacing the Drill Side Fascia

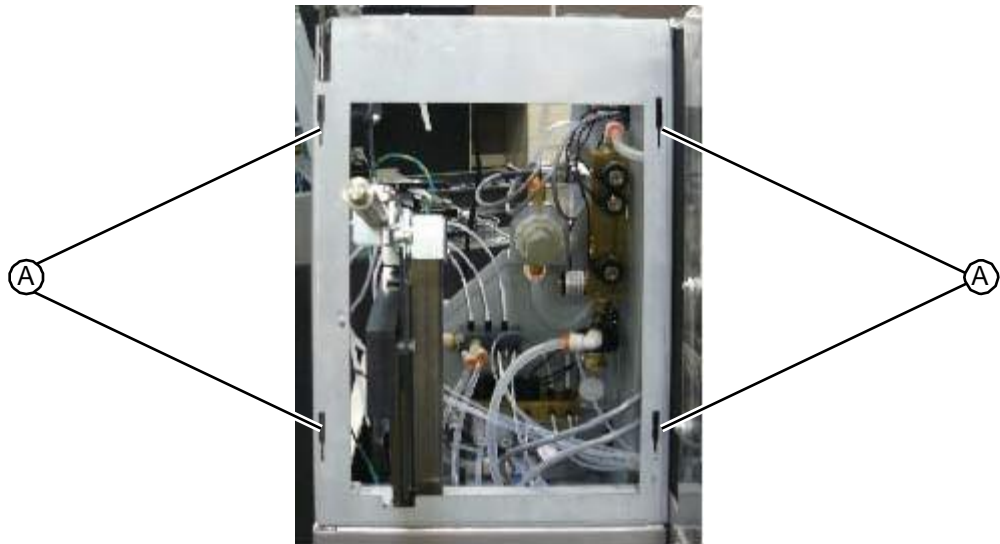
Removing the drill side fascia is a prerequisite for working on the drill assembly and provides increased access to components located in the plumbing tower.

- T20 torx driver

TASK

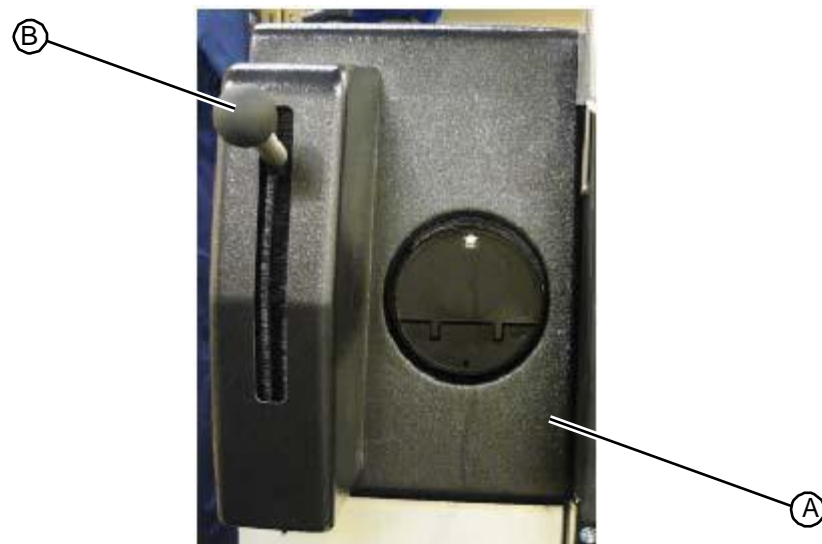
1. Check to be sure the drill station is disabled by pulling down on the drill handle. If the drill motor rotates, disable it by performing one of the following steps:
 - Log off by touching your logon name in the upper left corner of the screen.
 - Disable the drill station from the Admin screen.
2. Insert the four mounting hooks on the back of the drill side fascia into the tops of the mounting slots and push the fascia back so that it rests flush against the system.

Figure 5.7:Drill side fascia fastener



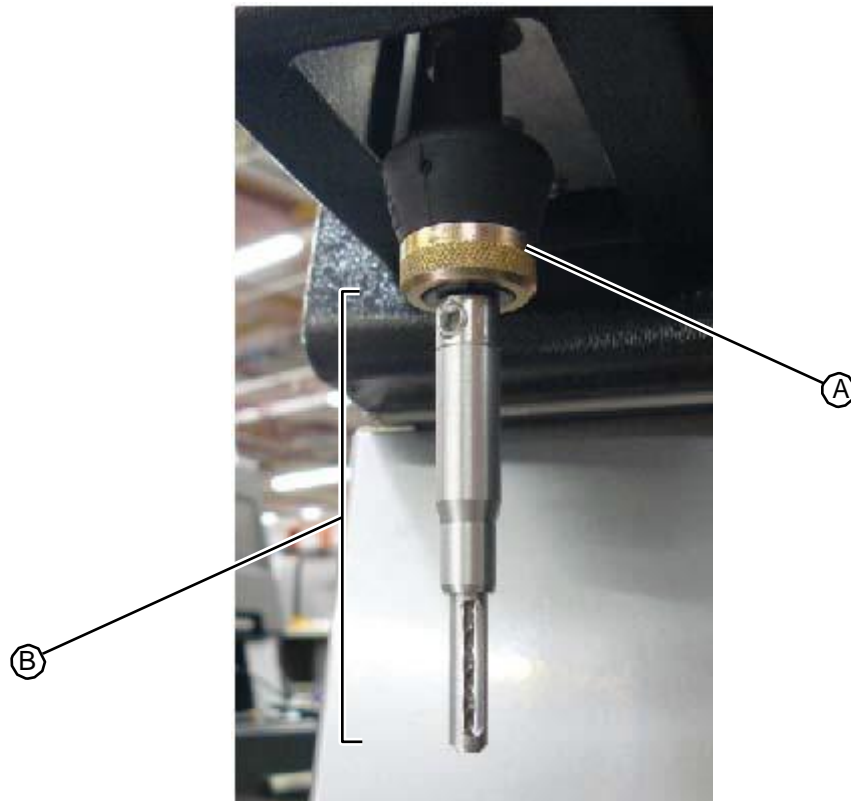
3. Slide the fascia down to engage the mounting hooks.
4. Screw the grip knob onto the end of the drill handle.

Figure 5.9:Drill press grip knob



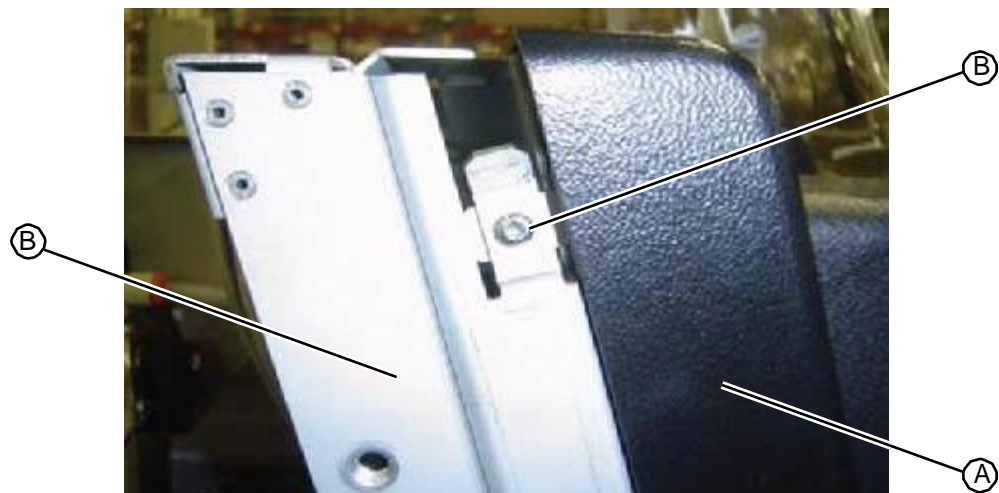
5. Press and hold up the quick release collar on the drill.
6. Insert the shrouded drill bit assembly and release the collar.

Figure 5.10:Quick release collar to remove shrouded drill bit assembly



7. Verify that the power switch is in the off position (the **O** is pressed in) and re-install the power cord at the back of the system.
8. Using a T20 torx driver, reinstall the fastener on the left side of the fascia to secure it to the system.

Figure 5.11:Drill side fascia fastener



9. Verify that the fastener is in place by trying to slide the fascia upward and confirming that it does not move.
10. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).

Figure 5.10: Quick release collar to remove shrouded drill bit assembly
“Removing the Drill Side Fascia” on page 5-5
(see “Drill Station” on page 1-5)

5.1.3 Rear Access Panel

5.1.3.1 Removing the Rear Access Panel

Removing the rear access panel is a prerequisite for procedures involving work on the backs of the drawers or the infusion pump. **Caution: Removing the rear access panel while the system is on exposes dangerous voltages.**

- 3/16” hex tool

TASK

1. Using a 3/16” hex tool, remove the two fasteners that secure the rear access panel to the system.

Figure 5.12: Fasteners that secure the rear access panel



2. Grasp the handle located in the middle of the rear access panel, pull the panel out, and lift it up to remove it from the system.

RELATED LINKS:

“Replacing the Rear Access Panel” on page 5-10

5.1.3.2 Replacing the Rear Access Panel

Removing the rear access panel is a prerequisite for procedures involving work on the backs of the drawers or the infusion pump. **Caution: Removing the rear access panel while the system is on exposes dangerous voltages.**

- 3/16” hex tool

TASK

1. Remove the power cord if it is installed at the back of the system.
2. Carefully guide the two tabs at the bottom of the rear access panel into position in the back of the system. The two tabs on the rear access panel align inside the lower wall of the system. The portion of the rear access panel located between the tabs aligns on the outside of the vertical tab extending up from the lower wall of the system.
3. Tilt the rear access panel up into position against the back of the system. Make sure that the panel rests flush against the back of the system.
4. Using a 3/16" hex tool, install the two fasteners to secure the rear panel.

Figure 5.13:Fasteners that secure the rear access panel



5. Verify that the power switch is in the off position (the **O** is pressed in) and re-install the power cord at the back of the system.

RELATED LINKS:

“Removing the Rear Access Panel” on page 5-10

5.1.4 Work Surface

5.1.4.1 Removing the Work Surface

Removing the work surface is a prerequisite for service procedures involving the prep stations.

Caution: Operating the system after the work surface has been removed exposes technicians to pinch hazards. Observe all warning labels.

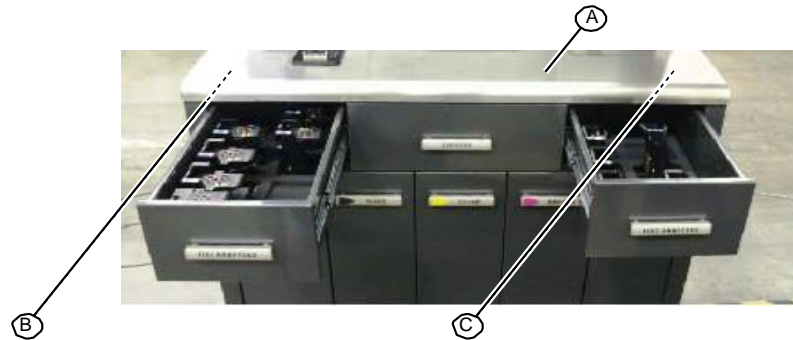
- No tools required

TASK

1. Clear any loose items from the top of the work surface.
2. Remove the tester cover by pulling forward and set it aside.

3. Raise the vacuum chamber door by pulling forward and up on the handle until it locks into the open (top) position.
4. Open the left upper drawer (labeled REFILL ADAPTERS) to gain access to the underside of the work surface and remove the thumb screw fastener.
5. Open the right upper drawer (labeled TEST ADAPTERS) to gain access to the underside of the work surface and remove the thumb screw fasteners.

Figure 5.14:Location of work surface fasteners



6. Grasp the sides of the work surface and pull straight forward to slide it off the system.

RELATED LINKS:

“Replacing the Work Surface” on page 5-12

5.1.4.2 Replacing the Work Surface

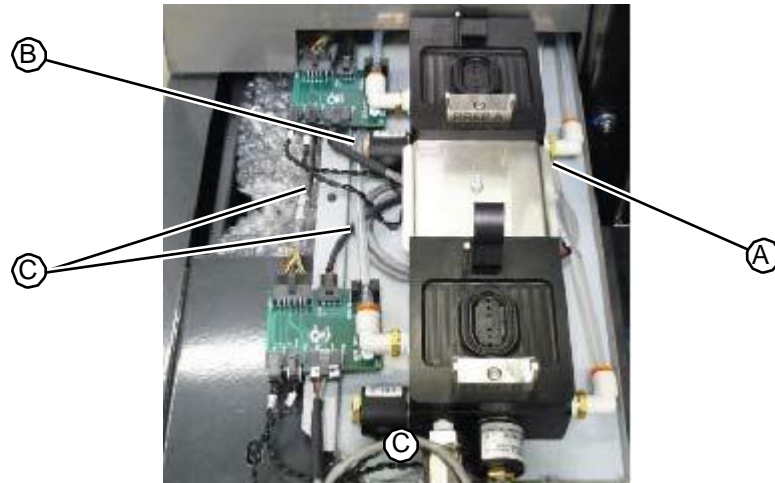
Be sure to route the cables and tubing as described in Step 1. Failure to do this will result in damage to the cable and/or tube.

- No tools required

TASK

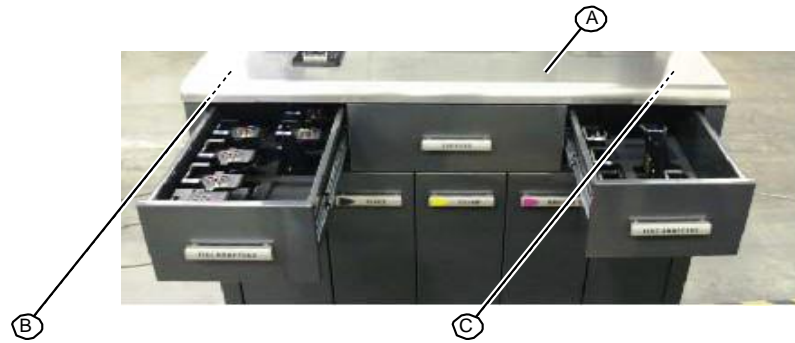
1. Locate the electrical cable and vacuum tube connected to the left side of prep station B (the station nearest the front of the system). Verify that the cables and tubing route underneath the components of prep station A. This ensures that the cables and tubing are clear of the work surface as it slides back into position. If necessary, re-route the cables and/or tubing.

Figure 5.15: Properly routed cables and tubing from prep station B



2. If the tester cover is installed, remove it by pulling forward on the handle and set it aside.
3. If the vacuum chamber door is closed, open it by pulling forward and up on the handle into the open (top) position.
4. Clear any loose items from the top of the work surface and set it into position on the front edge of the system. Be careful to route the prep station wiring underneath the work surface.
5. Align the cutout in the work surface with the prep station and push down on the surface as needed to guide the work surface edges into the grooves cut into the sides of the prep station. Be careful to tuck any wiring beneath the work surface to prevent damage.
6. Continue sliding the work surface toward the back of the system, pushing down on the surface as needed to guide it underneath the print tester station.
7. On dual prep systems, be sure to route the second station's wiring underneath the surface and push down on the surface as needed to guide the work surface edges into the grooves cut into the sides of the prep station.
8. Push the work surface back until it hits the physical stops, against the machine.
9. Open the left upper drawer (labeled "REFILL ADAPTERS") to gain access to the underside of the work surface and install the thumb screw fastener (to secure the left side of the work surface).
10. Open the right upper drawer (labeled "TEST ADAPTERS") to gain access to the underside of the work surface and install the thumb screw fastener to secure the right side of the work surface.

Figure 5.16:Location of work surface fasteners



RELATED LINKS:

“Removing the Work Surface” on page 5-11

5.1.5 Syringe Pumps Cover

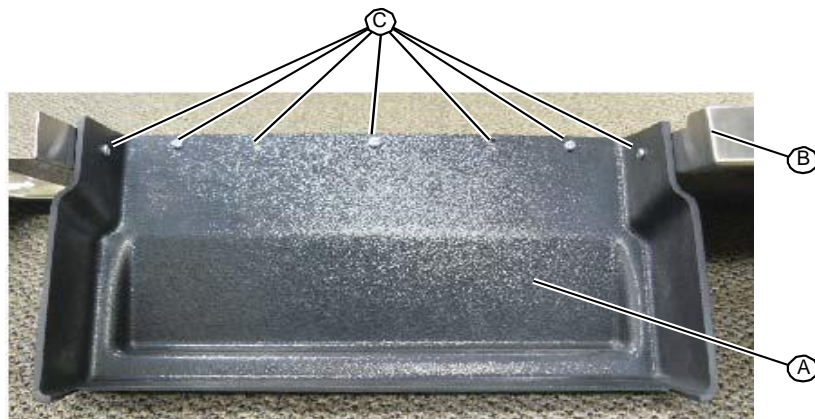
5.1.5.1 Removing the Syringe Pumps Cover

- T20 torx driver

TASK

1. Remove the work surface (see “Removing the Work Surface” on page 5-11).
2. Place the work surface with its top facing up on a protected surface.
3. Using a T20 torx driver, remove the seven fasteners that secure the syringe pumps cover to the work surface.

Figure 5.17:Fasteners that secure the syringe pumps cover to the work surface



4. Remove the syringe pumps cover and discard.

RELATED LINKS:

“Replacing the Syringe Pumps Cover” on page 5-15

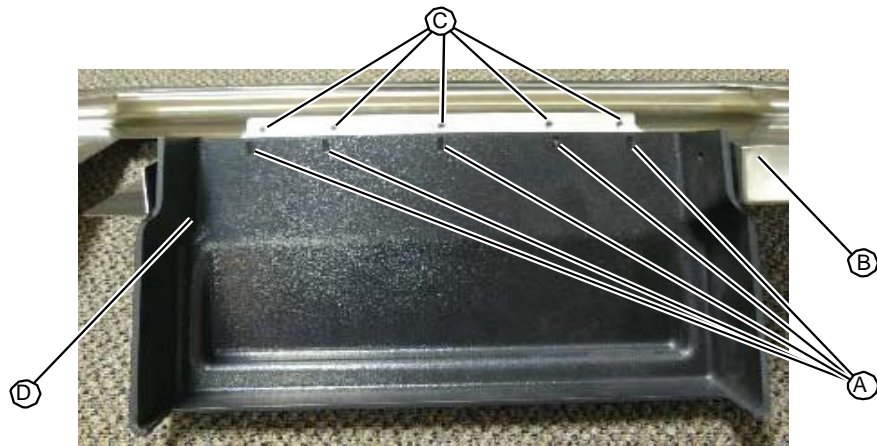
5.1.5.2 Replacing the Syringe Pumps Cover

- T20 torx driver

TASK

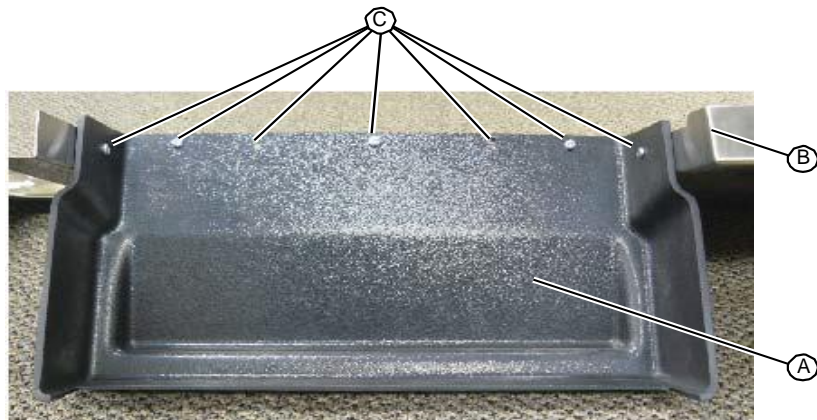
1. Place the work surface with its top facing down on a protected surface.
2. Tilt the back edge of the work surface up, place the syringe pumps cover in its cutout, and align the mounting holes in the two components.

Figure 5.18:Positioning the syringe pumps cover



3. Using a T20 torx driver, insert, but do not completely tighten the seven fasteners that secure the syringe pumps cover to the work surface.

Figure 5.19:Fasteners that secure the syringe pumps cover to the work surface



4. Align the components so that the wide edge of the syringe pumps cover is flush with the adjacent edge of the work surface and tighten all fasteners.
5. Replace the work surface (see “Replacing the Work Surface” on page 5-12).

RELATED LINKS:

“Removing the Syringe Pumps Cover” on page 5-14

5.1.6 Upper Hood Fan

5.1.6.1 Removing the Upper Hood Fan

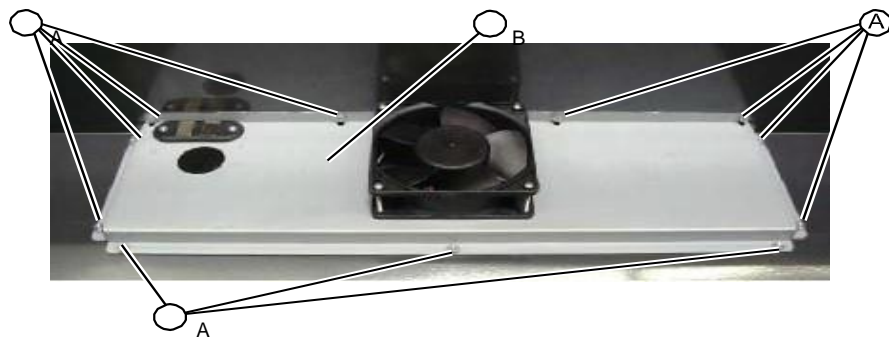
The ventilation fan located in the upper hood is powered by a spring connector switch. The stationary side of the switch is attached to the inside of the upper hood. The spring connector side of the switch is attached to the top of the system frame behind the plumbing tower.

- 5/16” nut driver
- T10 torx driver
- T15 torx driver

TASK

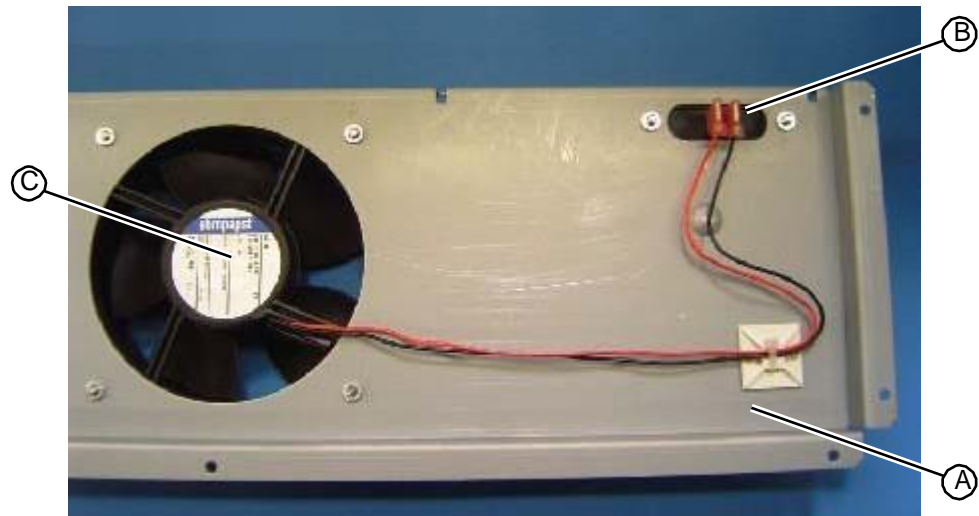
1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. Place the upper hood on a protected surface.
3. Using a 5/16” nut driver, remove the 11 nuts and lock washers that secure the fan bracket to the inside of the upper hood.

Figure 5.20:Fasteners that secure the upper hood fan bracket



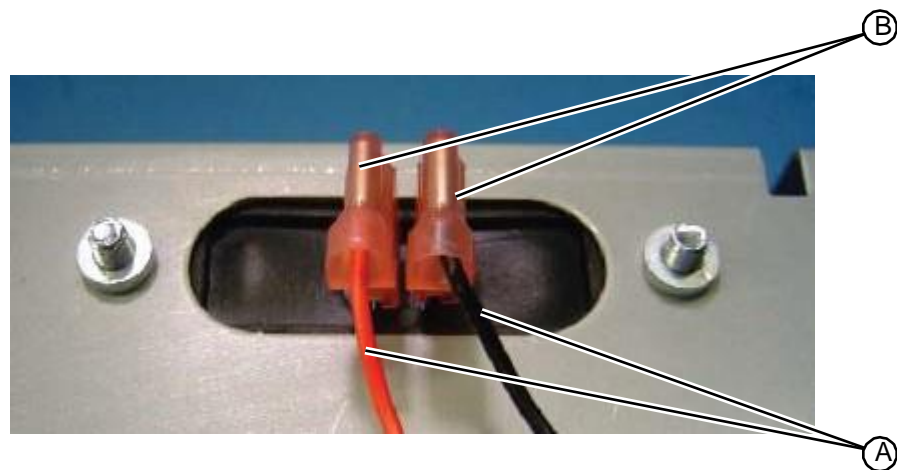
4. Remove the fan bracket assembly from the upper hood and turn it over so that you have access to the back of the bracket assembly.

Figure 5.21: Back of fan bracket assembly



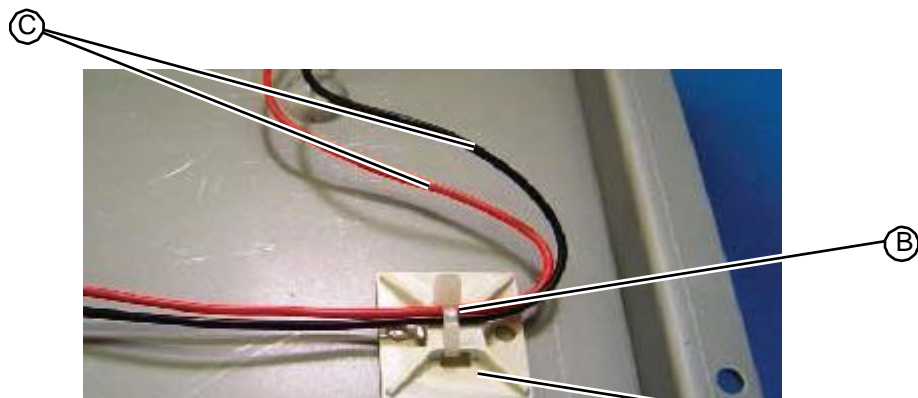
5. Disconnect the fan cables at the spring contact stationary side pins.

Figure 5.22: Fan cable connections



6. Cut the small cable tie that secures the cables to the cable tie mount.

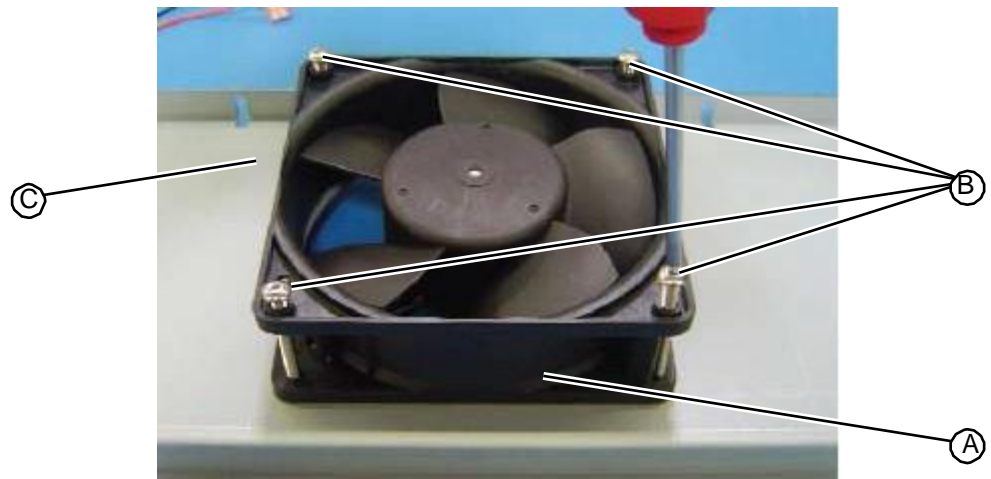
Figure 5.23: Upper hood fan cable tie



7. Turn the fan bracket assembly over.

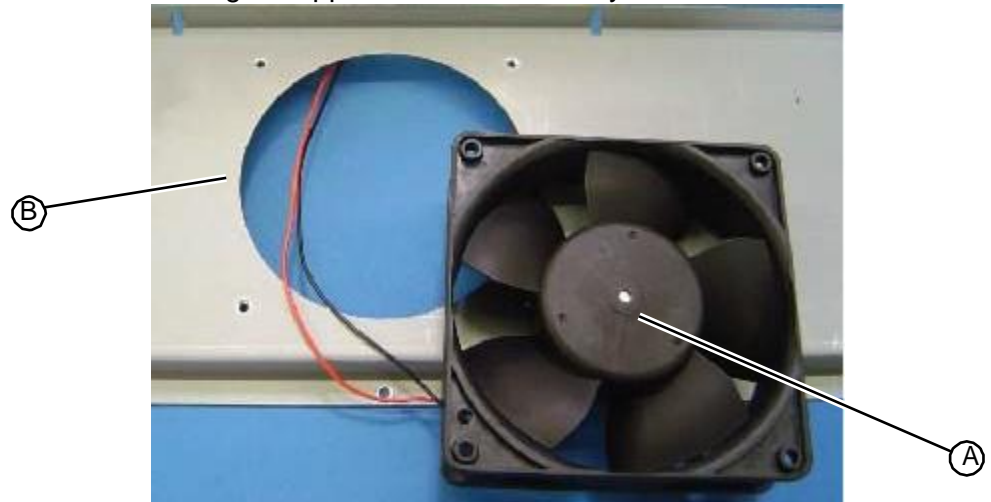
- Using a T10 torx driver, remove the four fasteners that secure the fan assembly to the fan bracket.

Figure 5.24:Fasteners securing the fan assembly to the fan bracket



- Remove the fan assembly from the fan bracket and discard.

Figure 5.25:Removing the upper hood fan assembly from the fan bracket



- Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).

RELATED LINKS:

“Replacing the Upper Hood Fan” on page 5-18

5.1.6.2 Replacing the Upper Hood Fan

The ventilation fan located in the upper hood is powered by a spring connector switch. The stationary side of the switch is attached to the inside of the upper hood. The spring connector side of the switch is attached to the top of the system frame behind the plumbing tower.

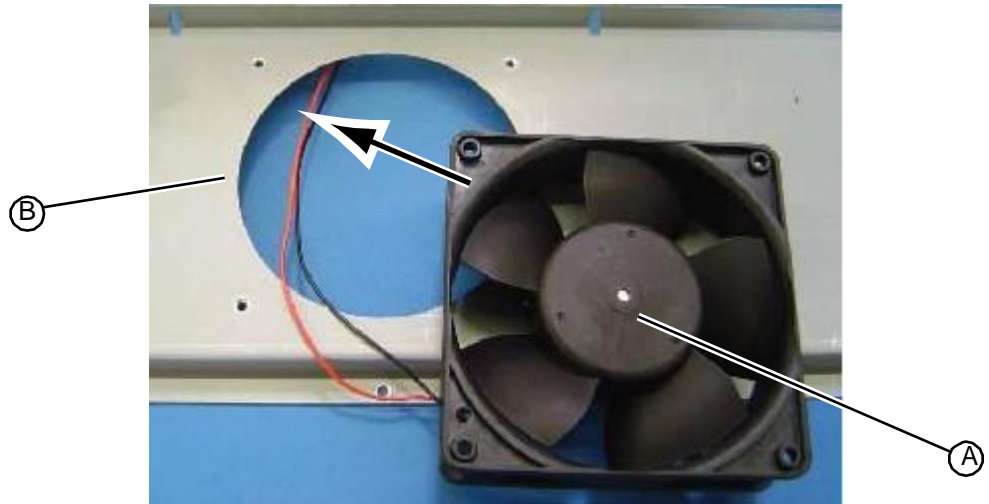
- 5/16” nut driver
- T10 torx driver

- T15 torx driver

TASK

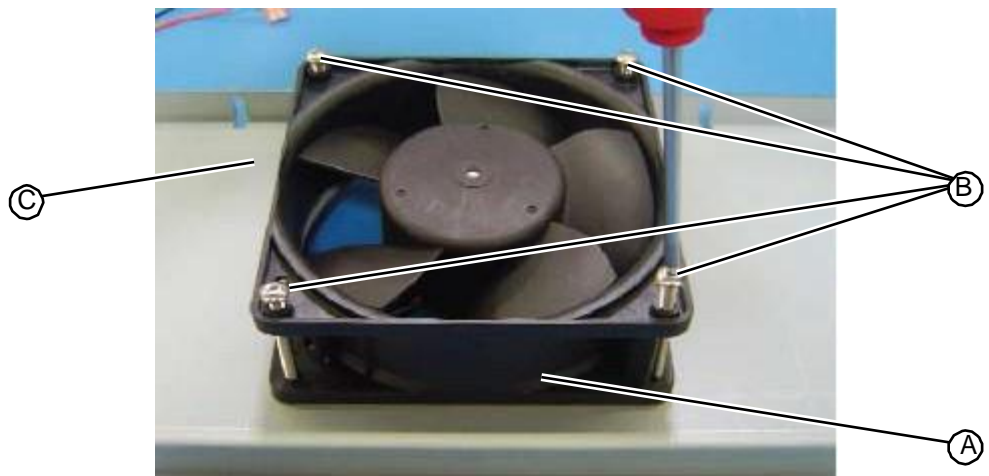
1. Position the upper hood fan assembly over the mounting hole in the upper hood fan bracket.

Figure 5.26: Positioning the upper hood fan assembly onto the fan bracket



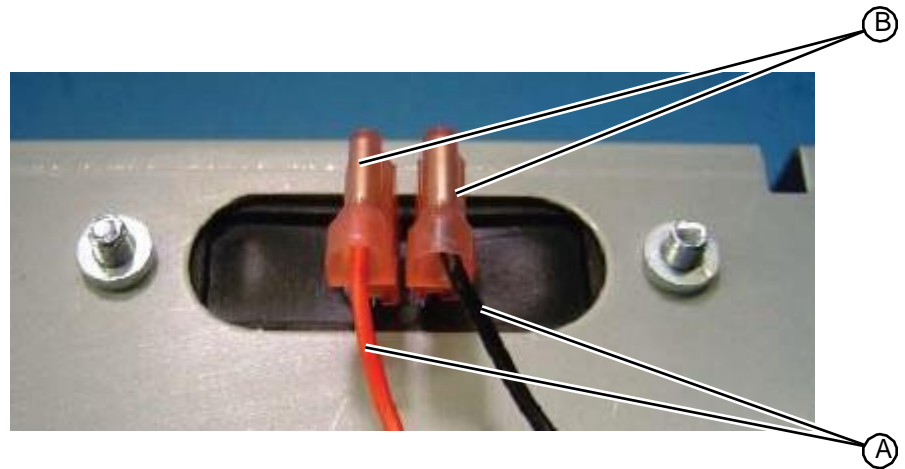
2. Using a T10 torx driver, insert and tighten the four fasteners that secure the fan assembly to the fan bracket.

Figure 5.27: Fasteners securing the fan assembly to the fan bracket



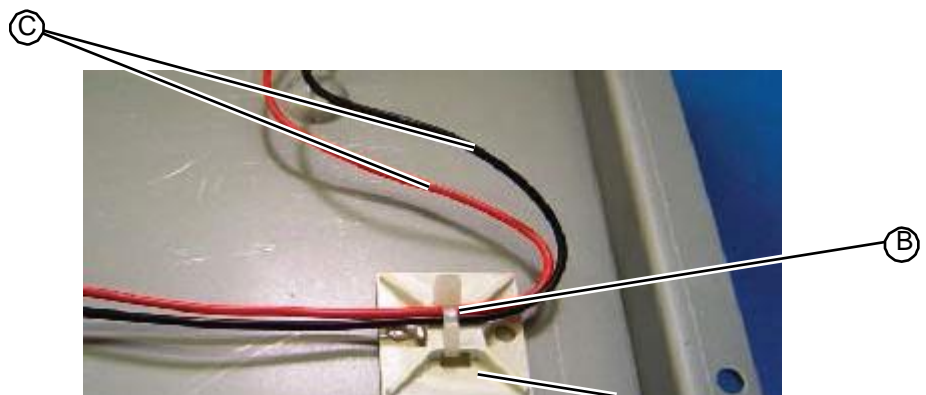
3. Turn the fan bracket assembly over.
4. Connect the fan cables to the spring contact stationary side pins.

Figure 5.28: Fan cable connections



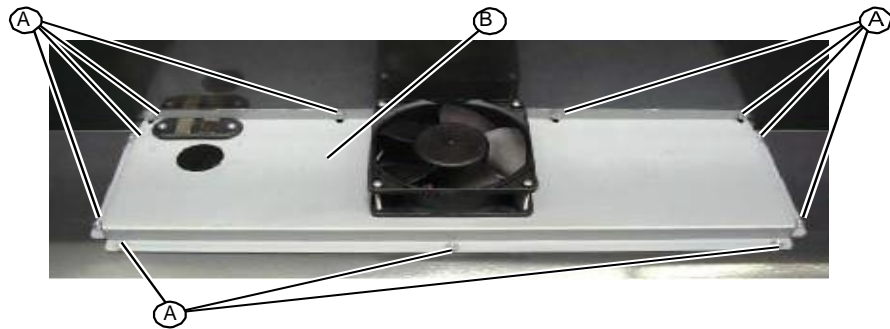
5. Secure the fan assembly cables to the cable tie mount with a small cable tie.

Figure 5.29: Upper hood fan cable tie



6. Turn the fan bracket over and align its mounting holes with the mounting holes on the inside of the upper hood.
7. Using a 5/16" nut driver, insert and tighten the 11 nuts and lock washers that secure the fan bracket to the inside of the upper hood.

Figure 5.30:Fasteners that secure the upper hood fan bracket



8. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).

RELATED LINKS:

“Removing the Upper Hood” on page 5-3

5.1.7 Hood Fan Spring Contacts

5.1.7.1 Removing the Hood Fan Spring Contacts

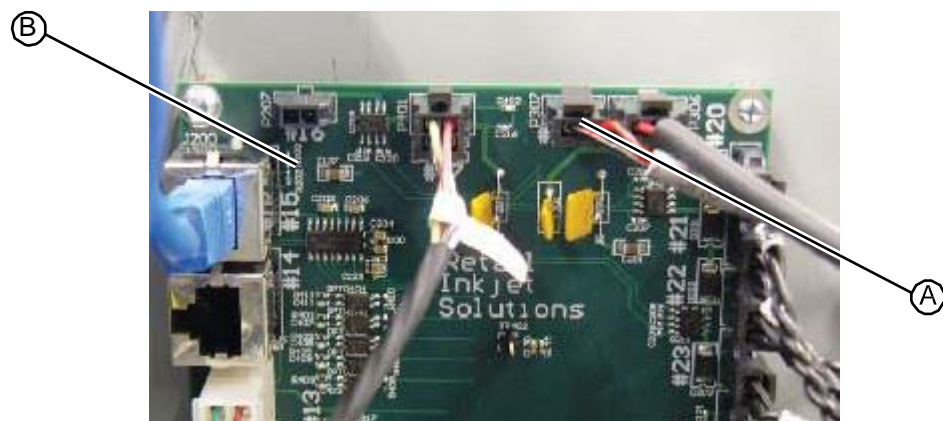
The spring contacts that provide power to the upper hood fan are mounted on the back of system frame directly behind the plumbing tower. The replacement assembly for this component includes the spring contacts and the hood fan power cable.

- T15 torx driver

TASK

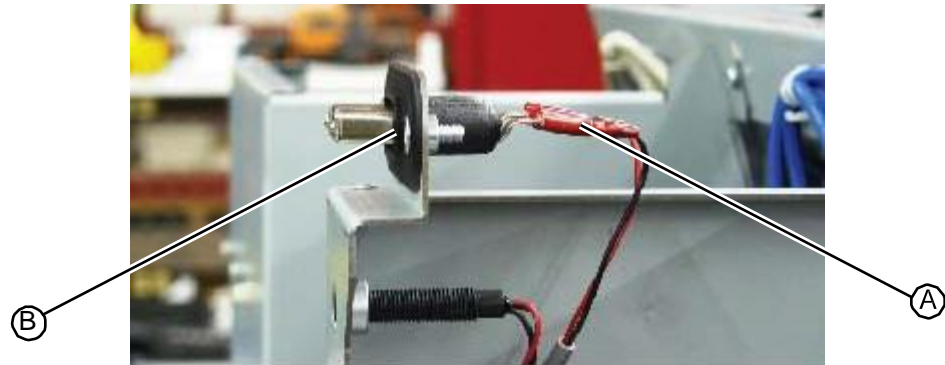
1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. From the back of the system, unplug the hood fan power cable from connector P307 located at the top the main I/O PC board.

Figure 5.31:Hood fan power cable connection at the main I/O PC board



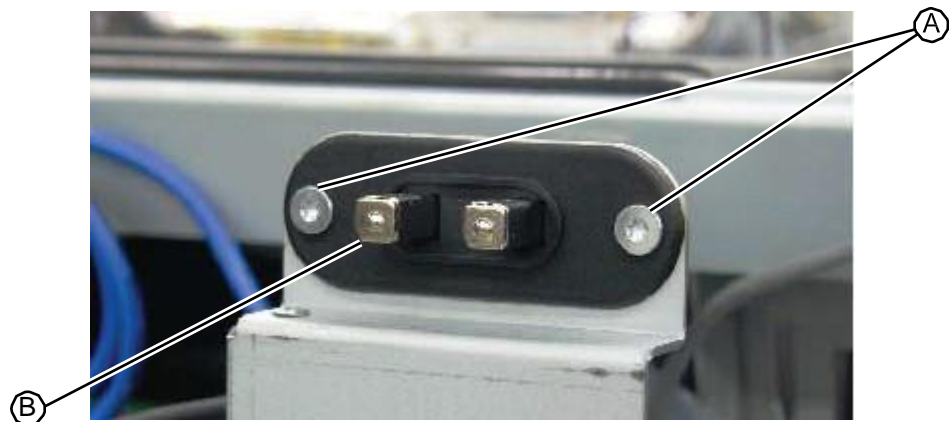
3. Pull the cable through the bushing into the plumbing tower.
4. Unplug the hood fan power cable from the connectors located on the back of the spring contacts and discard the cable.

Figure 5.32:Hood fan power cable connections on the spring contacts



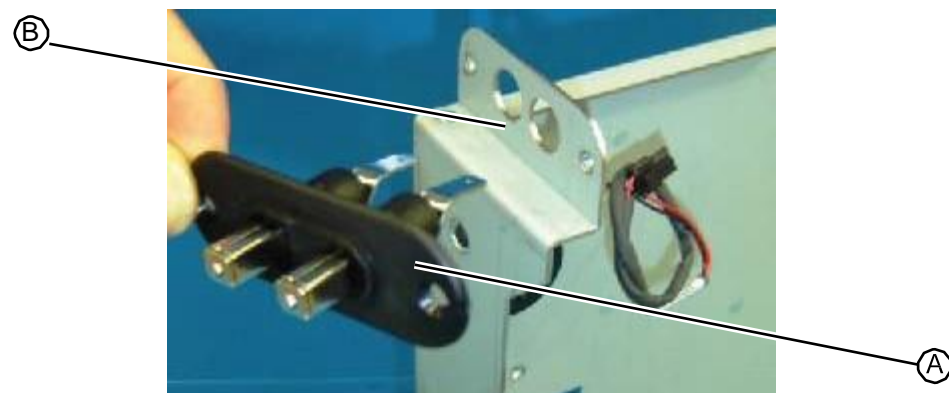
5. Using a T15 torx driver, remove the two fasteners that secure the spring contacts to the system frame.

Figure 5.33:Fasteners that secure the spring contacts to the system frame



6. Remove the spring contact assembly and discard.

Figure 5.34:Removing the spring contacts from the system frame



RELATED LINKS:

“Replacing the Hood Fan Spring Contacts” on page 5-23

5.1.7.2 Replacing the Hood Fan Spring Contacts

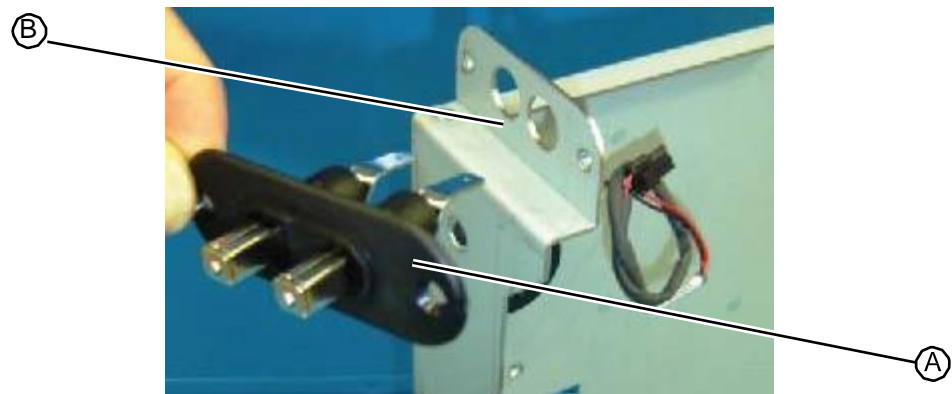
The spring contacts that provide power to the upper hood fan are mounted on the back of system frame directly behind the plumbing tower. The replacement assembly for this component includes the spring contacts and the hood fan power cable.

- T15 torx driver

TASK

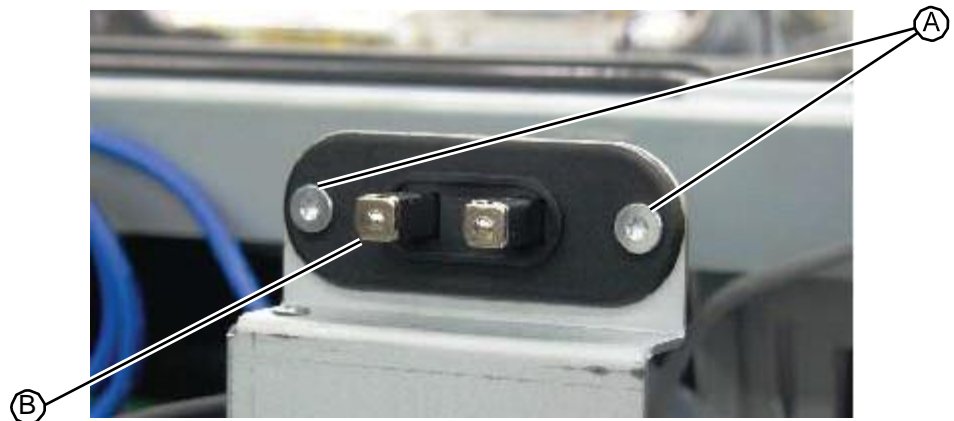
1. Insert the back of the spring contacts assembly into the two mounting holes located at the top of the system frame, directly behind the plumbing tower.

Figure 5.35: Inserting the spring contacts into the system frame



2. Using a T15 torx driver, insert and tighten the two fasteners that secure the spring contacts to the system frame.

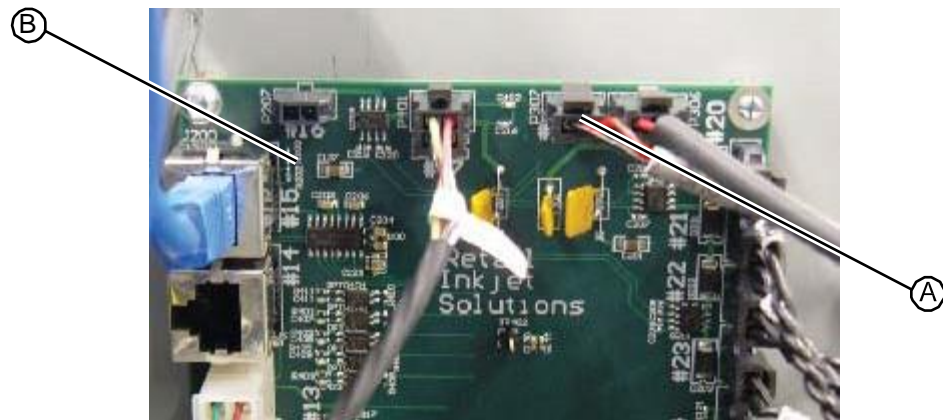
Figure 5.36: Fasteners that secure the spring contacts to the system frame



3. From the back of the system, plug the black hood fan power cable into the connector located on the right (closest to the outside of the system) and the red cable into the connector located on the left (closest to the inside of the system).

4. Route the cable through the bushing into the central area of the system behind the vacuum chamber.
5. From the back of the system, plug the hood fan power cable into connector P307 located at the top the main I/O PC board.

Figure 5.38:Hood fan power cable connection at the main I/O PC board



6. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).
7. Turn on system power and verify that the upper hood fan operates. If the fan does not turn on, remove the upper hood and switch the cable connections on the spring contacts.

RELATED LINKS:

“Removing the Hood Fan Spring Contacts” on page 5-21

5.1.8 Hood Fan Power Cable

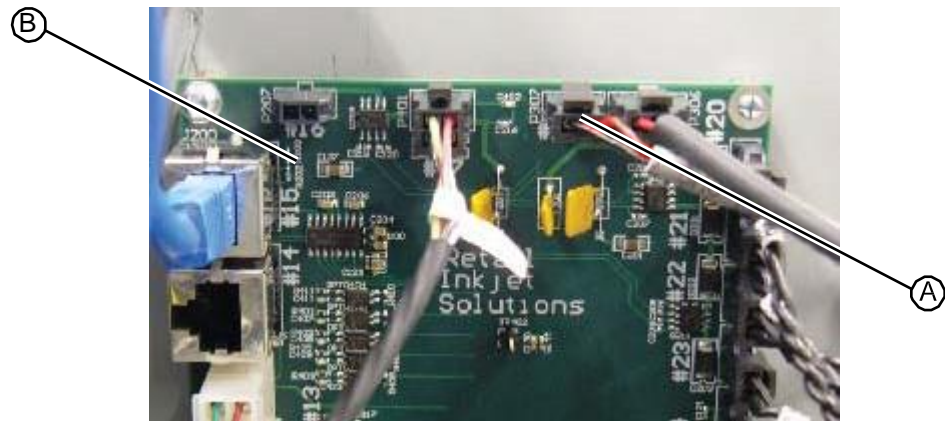
5.1.8.1 Removing the Hood Fan Power Cable

- No tools required

TASK

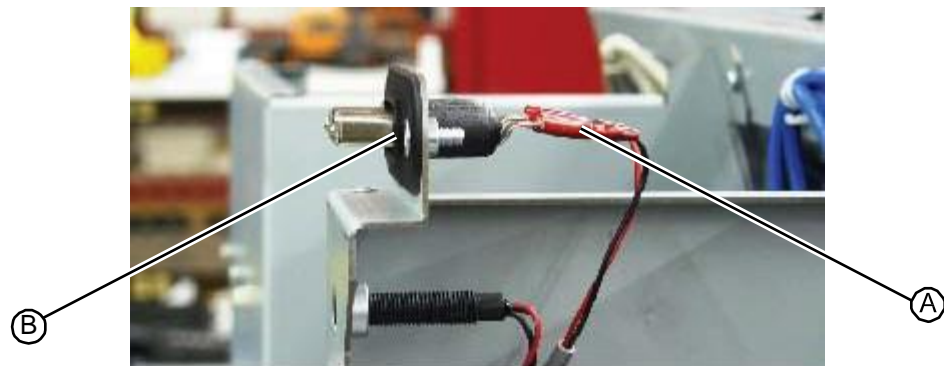
1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. From the back of the system, unplug the hood fan power cable from connector P307 located at the top the main I/O PC board.

Figure 5.39:Hood fan power cable connection at the main I/O PC board



3. Pull the cable through the bushing into the plumbing tower.
4. Unplug the hood fan power cable from the connectors located on the back of the spring contacts and discard the cable.

Figure 5.40:Hood fan power cable connections on the spring contacts



5. Remove the hood fan power cable and discard.

RELATED LINKS:

“Replacing the Hood Fan Power Cable” on page 5-25

5.1.8.2 Replacing the Hood Fan Power Cable

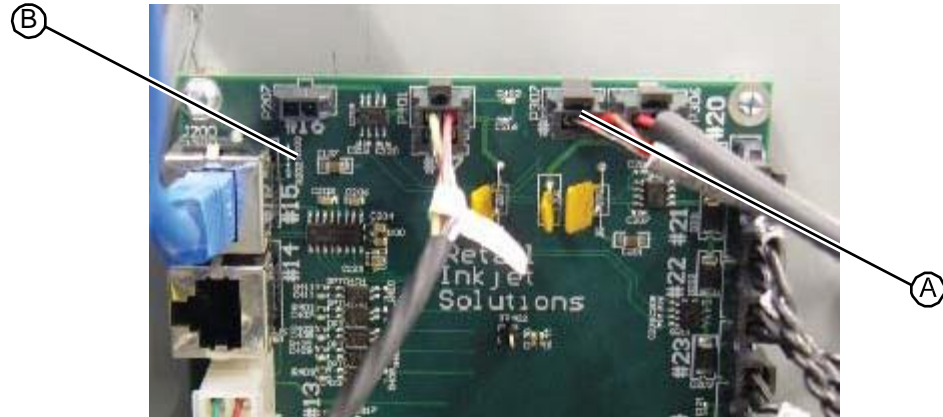
- No tools required

TASK

1. From the back of the system, plug the black hood fan power cable into the connector located on the right (closest to the outside of the system) and the red cable into the connector located on the left (closest to the inside of the system).

2. Route the cable through the bushing into the central area of the system behind the vacuum chamber.
3. From the back of the system, plug the hood fan power cable into connector P307 located at the top the main I/O PC board.

Figure 5.42: Hood fan power cable connection at the main I/O PC board



4. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).
5. Turn on system power and verify that the upper hood fan operates. If the fan does not turn on, remove the upper hood and switch the cable connections on the spring contacts.

RELATED LINKS:

(see “Removing the Hood Fan Power Cable” on page 5-24)

5.1.9 Electrical Tower Fan – No longer on machine

5.1.10 Replacing the Electrical Tower Fan No longer on machine

5.2 Drill Station

5.2.1 Drill Motor Assembly

5.2.1.1 Removing the Drill Motor Assembly

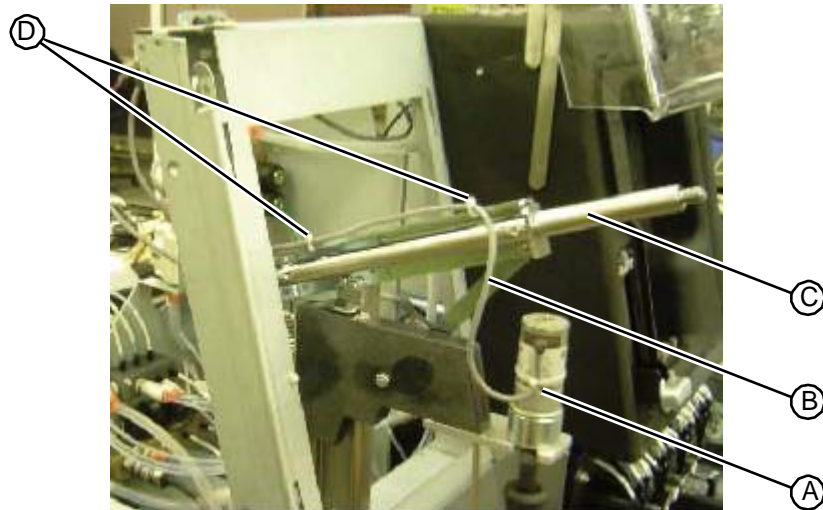
The drill motor assembly includes the drill motor, cable, mounting plate, and chuck.

- T20 torx driver

TASK

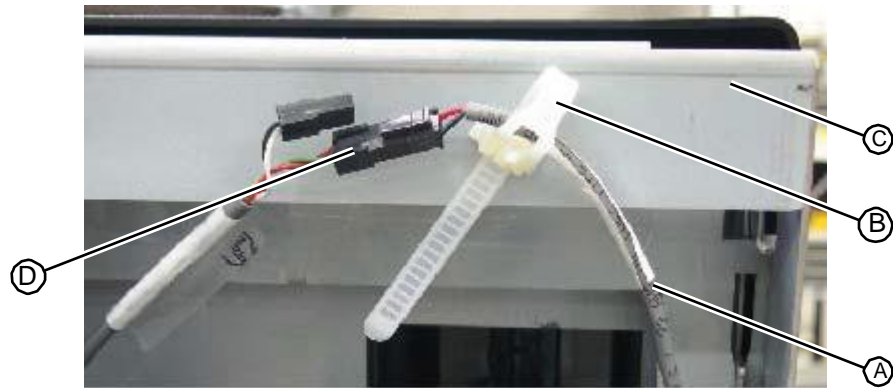
1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. Remove the drill side fascia (see “Removing the Drill Side Fascia” on page 5-5).
3. Check to be sure the drill station is disabled by pulling down on the drill handle. If the drill motor rotates, disable it by performing one of the following steps:
 - Log off by touching your logon name in the upper left corner of the screen.
 - Disable the drill station from the Admin screen.
4. Cut the plastic cable ties on the top of the drill assembly.

Figure 5.43:Drill motor assembly cable ties to cut



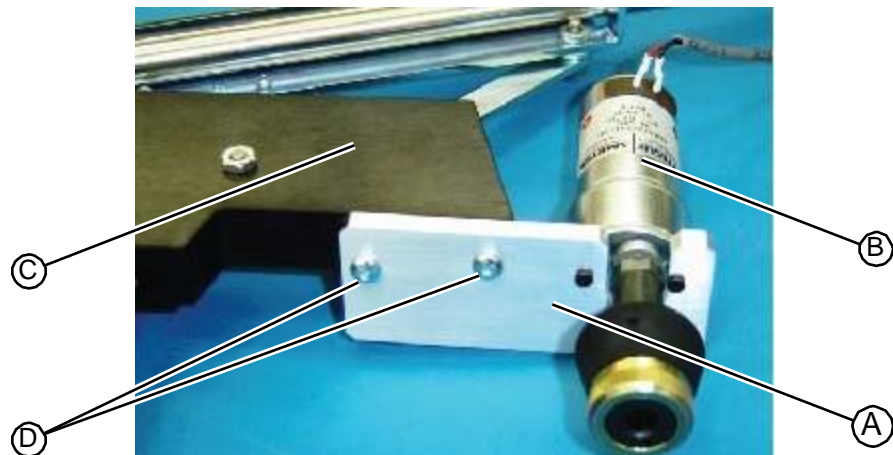
5. Unplug the drill motor cable at the connector located on the back of the drill station.

Figure 5.44:Drill motor cable connection at back of system



6. If the connector on the drill motor cable is located to the left of the cable tie, loosen the tie and pull the cable through the loop. **Do not cut this cable tie.**
7. Using a T20 driver, remove the two fasteners located under the motor assembly that secure it to the unit.

Figure 5.45:Fasteners that secure the drill motor plate to the drill motor mount plate



8. Remove the drill motor assembly from the system and return to RIS.

RELATED LINKS:

“Replacing the Drill Motor Assembly” on page 5-29

“Drill Station” on page 1-5

5.2.1.2 Replacing the Drill Motor Assembly

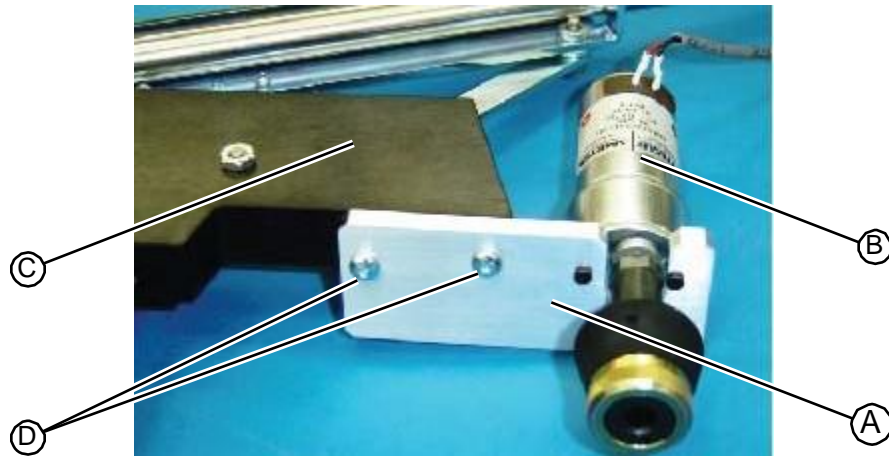
The drill motor assembly includes the drill motor, cable, mounting plate, and chuck.

- T20 torx driver

TASK

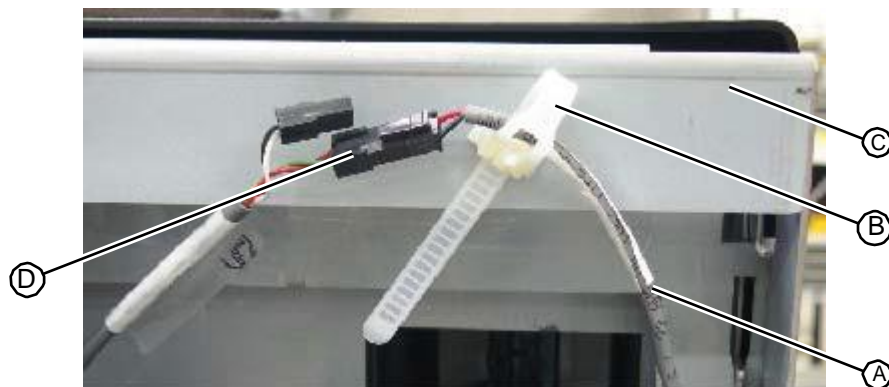
1. Check to be sure the drill station is disabled by pulling down on the drill handle. If the drill motor rotates, disable it by performing one of the following steps:
 - Log off by touching your logon name in the upper left corner of the screen.
 - Disable the drill station from the Admin screen.
2. Align the two mounting holes in the drill motor plate with the mounting holes in the drill motor mount plate.
3. Using a T20 torx driver, insert and tighten the two fasteners that secure the drill motor plate to the drill motor mount plate.

Figure 5.46:Fasteners that secure the drill motor plate to the drill motor mount plate



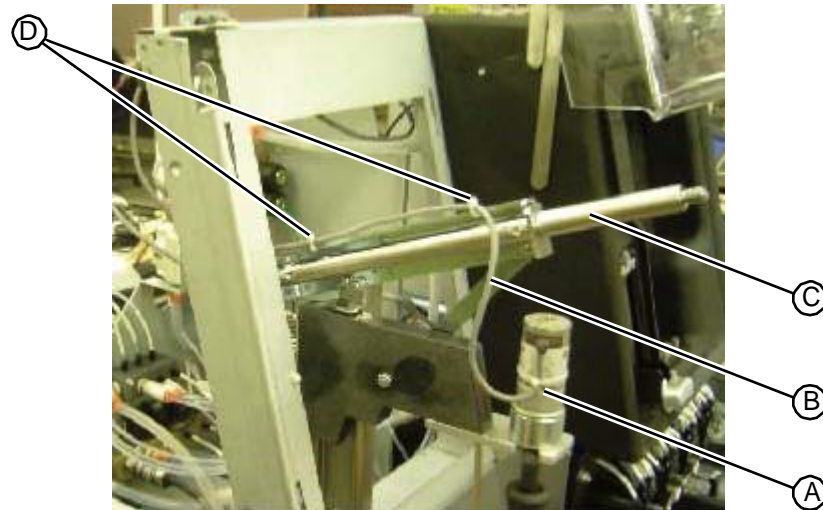
4. Route the drill motor cable to the back of the system and through the reusable plastic cable tie.
5. Plug the drill motor cable into the connector and secure the cable with the cable tie.

Figure 5.47:Drill motor cable connection at back of system



6. Use two zip ties to loosely secure the motor cable to the top of the drill press arm. Do not completely tighten the zip ties at this time.
7. Move the drill press arm down and up to ensure the cable has a proper service loop on both ends.
8. Tighten the zip ties.

Figure 5.48: Zip ties that secure the motor cable to the top of the drill press arm



9. Replace the drill side fascia (see “Replacing the Drill Side Fascia” on page 5-7).
10. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).

RELATED LINKS:

- “Removing the Drill Motor Assembly” on page 5-28
- “Drill Station” on page 1-5

5.2.2 Drill Press Assembly

5.2.2.1 Removing the Drill Press Assembly

The drill press assembly includes all the internal structural elements of the drill station. The assembly does not include the drill motor assembly.

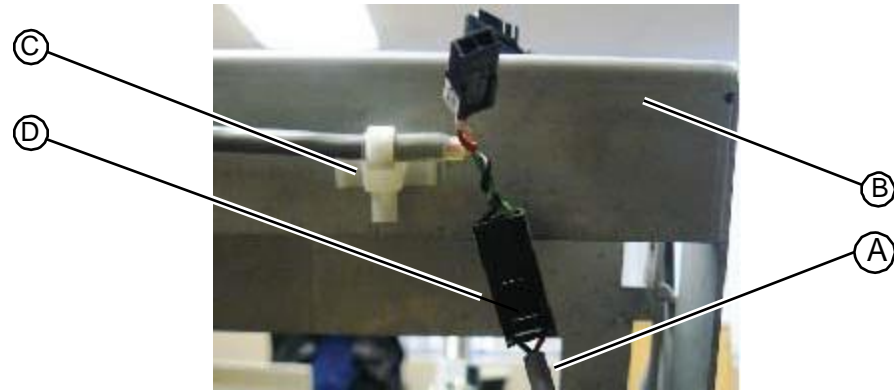
- T27 torx driver
- 8/32” hex driver

TASK

1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. Remove the drill side fascia (see “Removing the Drill Side Fascia” on page 5-5).
3. Check to be sure the drill station is disabled by pulling down on the drill handle. If the drill motor rotates, disable it by performing one of the following steps:
 - Log off by touching your logon name in the upper left corner of the screen.
 - Disable the drill station from the Admin screen.
4. Remove the drill motor assembly (see “Removing the Drill Motor Assembly” on page 5-28).

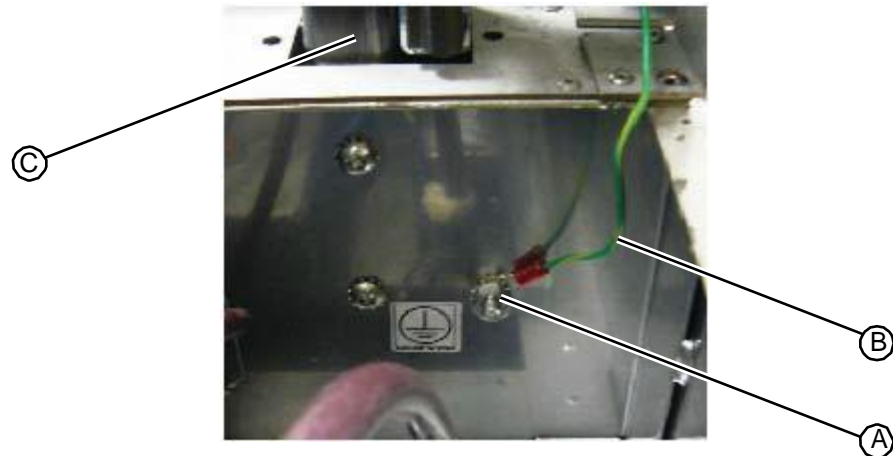
5. Unplug the drill station microswitch cable from the connector located at the back of the system frame. If the connector is located on the left side of the cable tie, loosen the tie and route end of the microswitch cable through to the right. **Do not cut the cable tie.**

Figure 5.49:Drill microswich cable connection at the back of the system frame



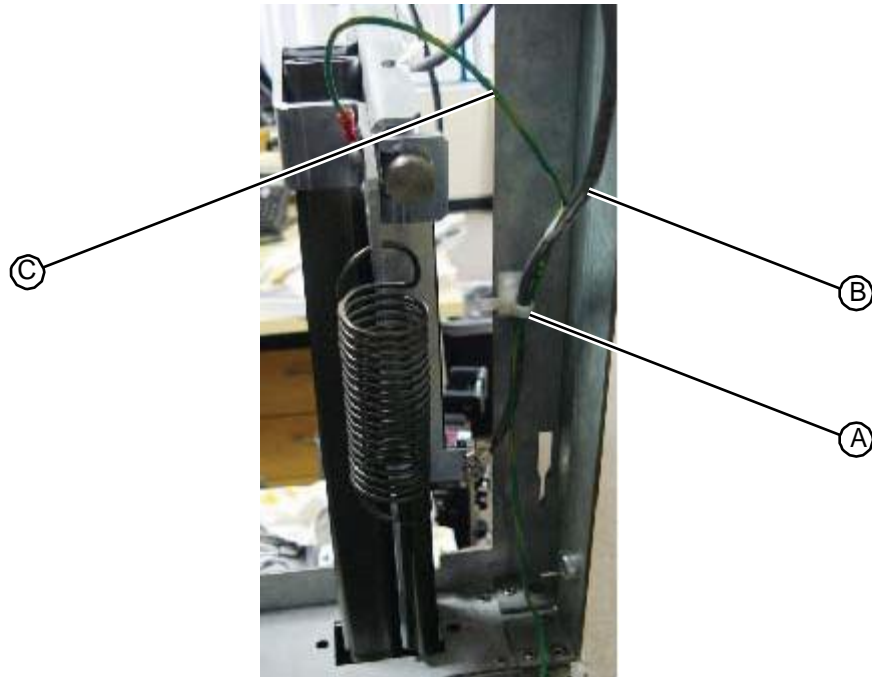
6. Using a 8/32" hex wrench, remove the nut and washer that secure the drill press assembly ground cable to the front interior wall of the plumbing tower.

Figure 5.50:Drill press assembly ground cable connection



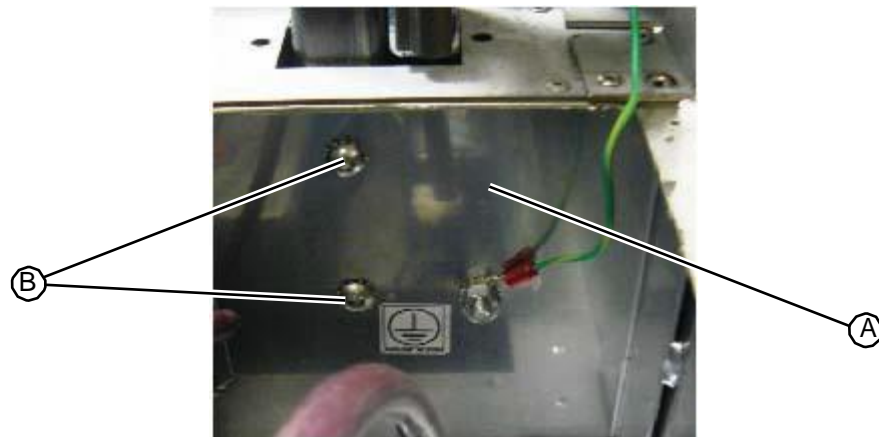
7. Loosen the arrowhead release cable tie that secures the ground cable and the drill motor microswitch cable to the front inside wall of the system frame, adjacent to the drill press assembly. Route the ends of the cables through the tie. **Do not cut this cable tie.**

Figure 5.51: Arrowhead release cable tie



- Using a T27 torx driver, remove the two fasteners that secure the drill press assembly to the front inside wall of the plumbing tower.

Figure 5.52: Fasteners that secure the drill press assembly to the system frame



- Gently lift the drill press assembly out of the system and return to RIS.

RELATED LINKS:

“Replacing the Drill Press Assembly” on page 5-33

“Drill Station” on page 1-5

5.2.2.2 Replacing the Drill Press Assembly

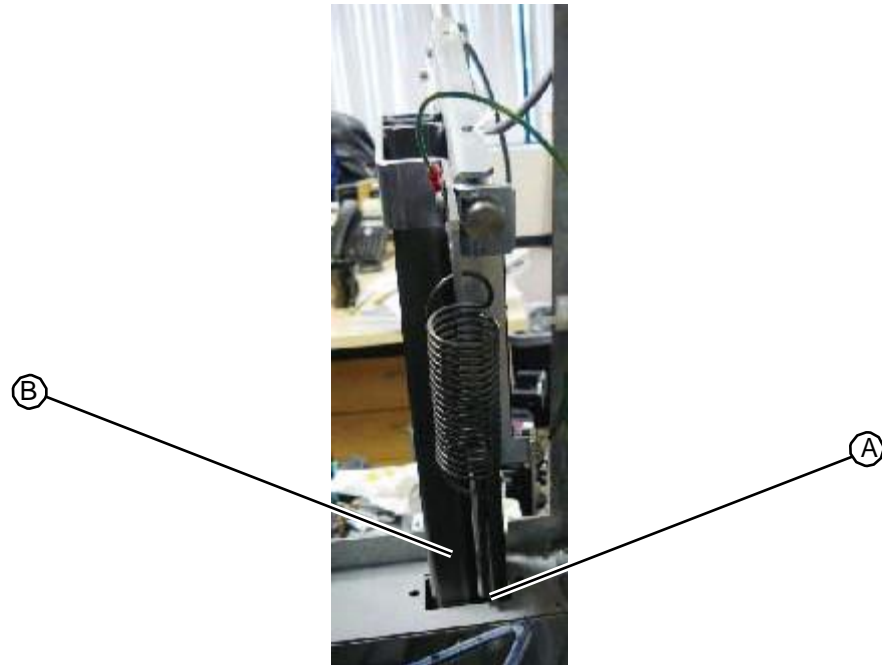
The drill press assembly includes all the internal structural elements of the drill station. The assembly does not include the drill motor assembly.

- T27 torx driver
- 8/32" hex driver

TASK

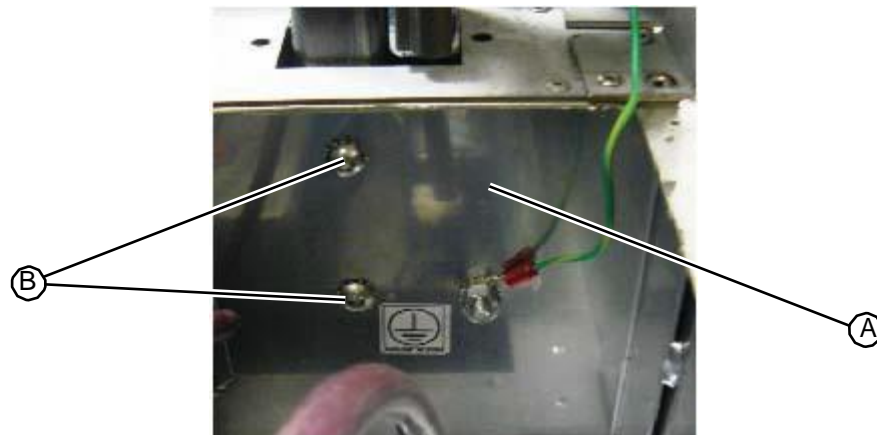
1. Gently insert the base of the drill press assembly into its mounting hole in the system frame.

Figure 5.53: Inserting the drill press assembly into the system frame



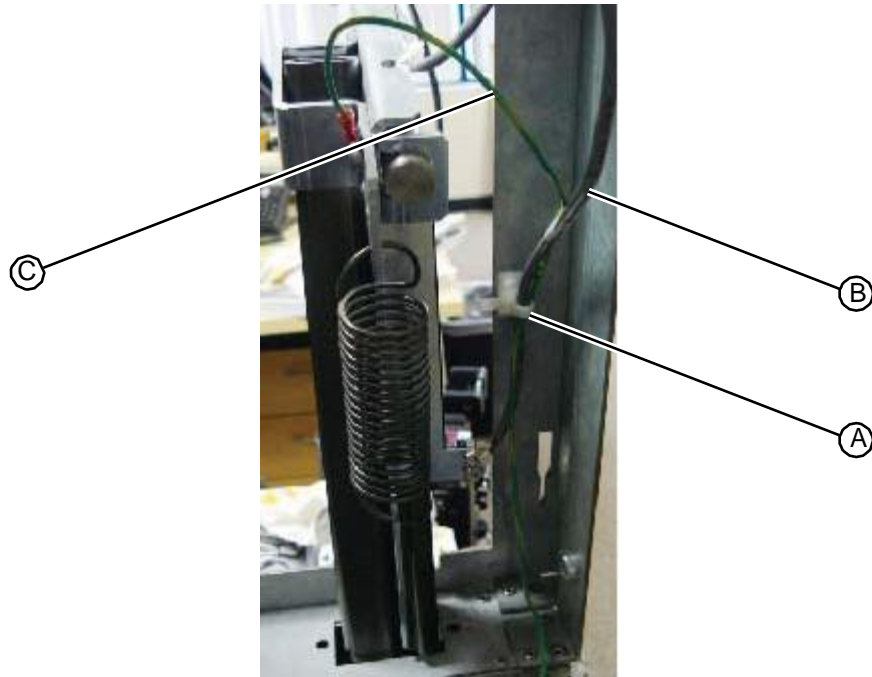
2. Using a T27 torx driver, insert and tighten the two fasteners that secure the drill press assembly to the front inside wall of the plumbing tower.

Figure 5.54: Fasteners that secure the drill press assembly to the system frame



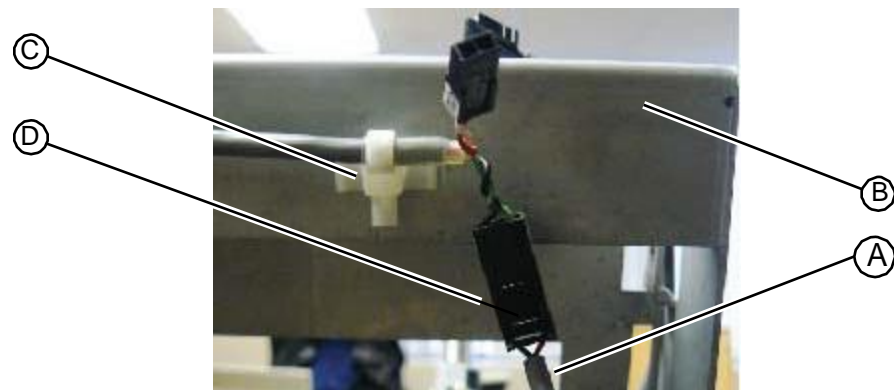
3. Route the following cables through the arrowhead release cable tie located on the front inside wall of the system frame, adjacent to the drill press assembly:
 - Drill press assembly ground cable down through the cable tie
 - Drill motor microswitch cable up through the cable tie

Figure 5.55: Arrowhead release cable tie



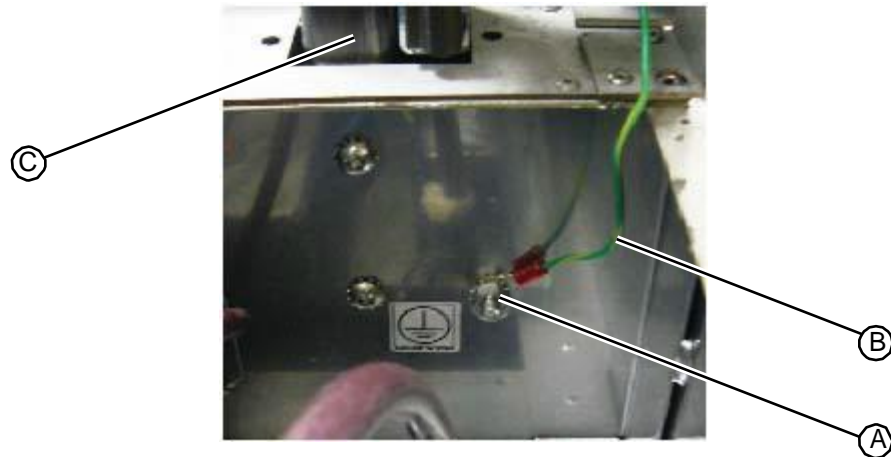
4. Plug the drill station microswitch cable into the connector located at the back of the system frame. If the connector is located on the left side of the cable tie, loosen the tie and route end of the microswitch cable through to the right. **Do not cut the cable tie.**

Figure 5.56: Drill microswitch cable connection at the back of the system frame



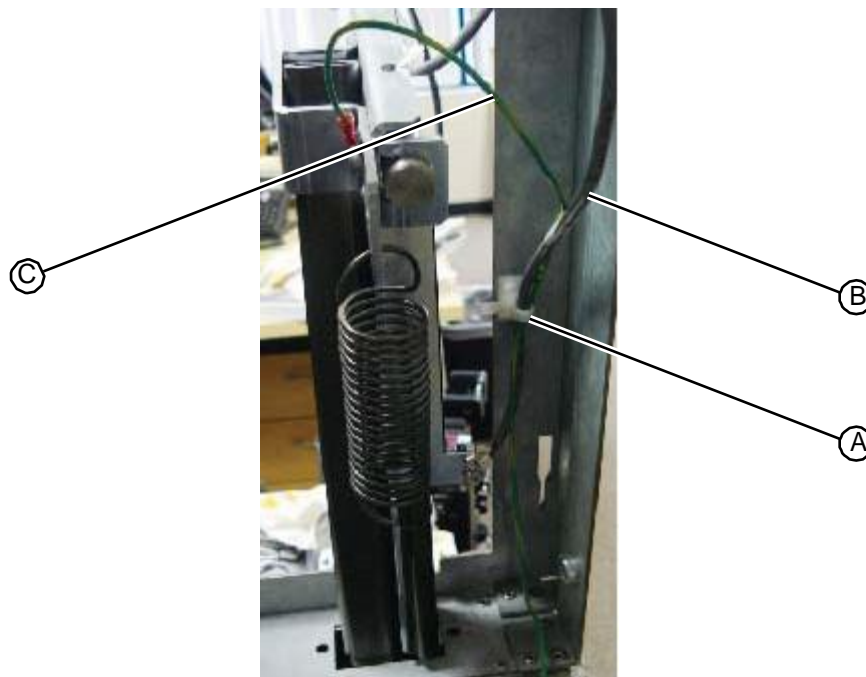
5. Insert the ground cable connector over the ground stud located on the front inside wall of the plumbing tower.
6. Using a hex wrench, insert and tighten the nut and washer that secure the ground cable.

Figure 5.57:Drill press assembly ground cable connection



7. Verify proper service loops at both ends of both cables and tighten the arrowhead release cable tie. **Do not cut this cable tie.**

Figure 5.58:Arrowhead release cable tie



8. Replace the drill motor (see “Replacing the Drill Motor Assembly” on page 5-29).
9. Replace the drill side fascia (see “Replacing the Drill Side Fascia” on page 5-7).
10. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).

RELATED LINKS:

- “Removing the Drill Press Assembly” on page 5-31
- “Drill Station” on page 1-5

5.3 Prep Station

5.3.1 Fluid Sensor PC Board

5.3.1.1 Removing the Fluid Sensor PC Board

The fluid sensor PCA board is located on the left side of each prep station and is secured by one T15 torx fastener.

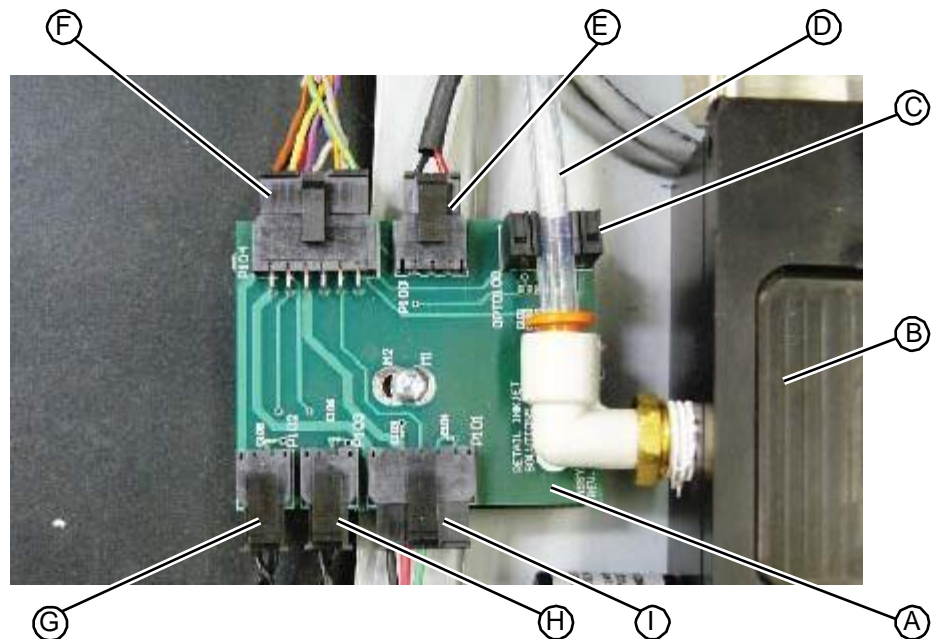
Note: Caution must be exercised when removing the Fluid Sensor PC Board. Please follow the directions exactly as shown to prevent damage to the sensor on the board.

- T15 torx driver

TASK

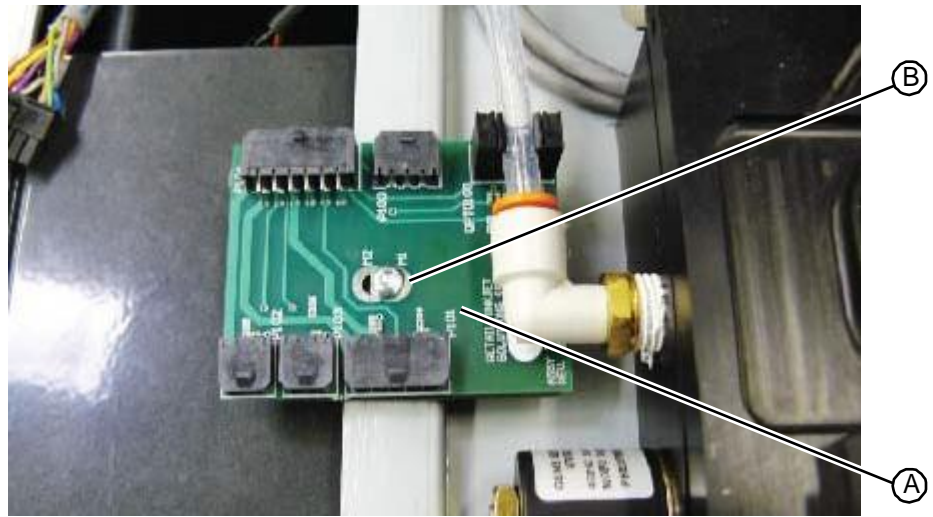
1. Turn off the system power using the rocker switch at the back corner of the system.
2. Remove the work surface (see “Removing the Work Surface” on page 5-11).
3. Unplug the five cables connected to the fluid sensor board by pressing down on the release tab on each connector and removing the connector from the board.

Figure 5.59:Fluid sensor board connections



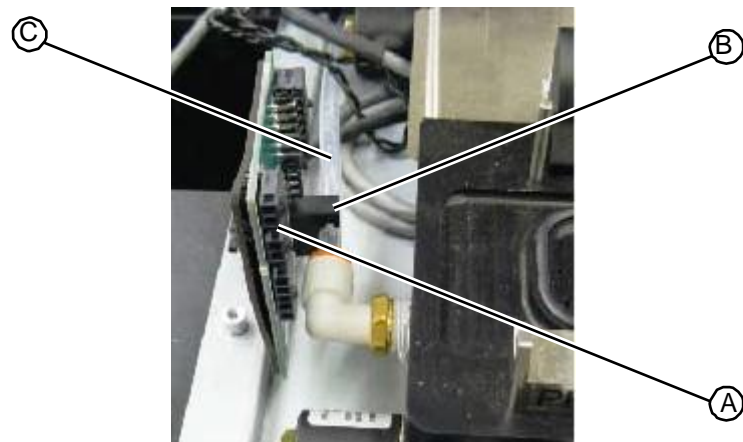
4. Using a T15 torx driver, remove the fastener that secures the PC board to the system.

Figure 5.60:Fastener that secures the fluid sensor board



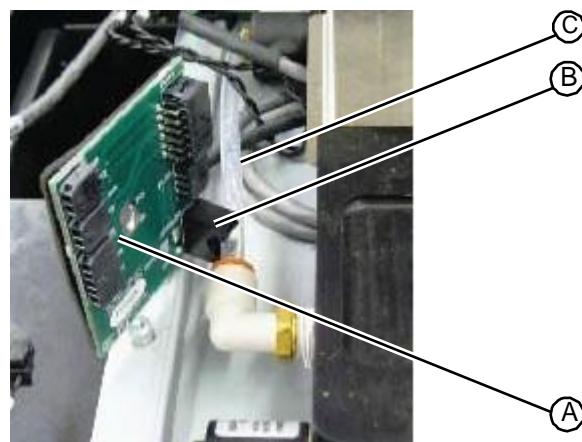
5. Carefully rotate the fluid sensor PC board on the vacuum tubing until it is perpendicular to the floor of the prep station.

Figure 5.61:Rotating the fluid sensor PC board on the prep station vacuum tubing



6. Carefully rotate the fluid sensor PC board to the left to disconnect it from the clear tubing.

Figure 5.62:Disconnecting the fluid sensor PC board from the prep station vacuum line



7. Remove the fluid sensor PC board from the system and return to RIS.

RELATED LINKS:

- “Replacing the Fluid Sensor PC Board” on page 5-39
- “Prep Station” on page 1-12

5.3.1.2 Replacing the Fluid Sensor PC Board

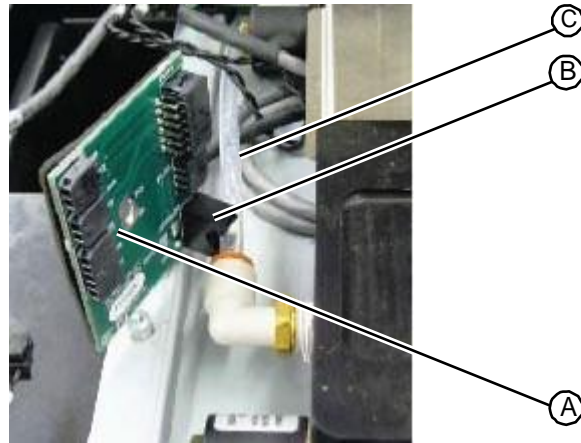
The fluid sensor PCA board is located on the left side of each prep station and is secured by one T15 torx fastener.

- T15 torx driver

TASK

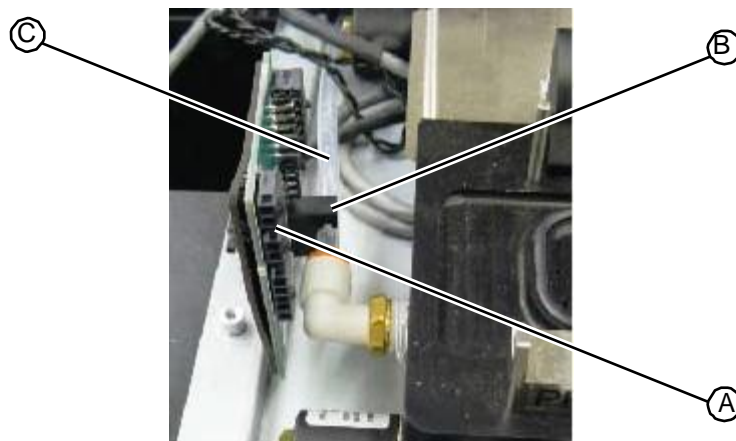
1. Orient the fluid sensor PC board so that it is perpendicular to the prep station floor, at a 45 ° angle from the station base, and so that the black plastic fitting on the board aligns with the tubing on the left side of the prep station base.

Figure 5.63:Inserting the optical sensor fitting onto the prep station vacuum tubing



2. Carefully rotate the fluid sensor PC board to the right to secure the fitting around the tubing.

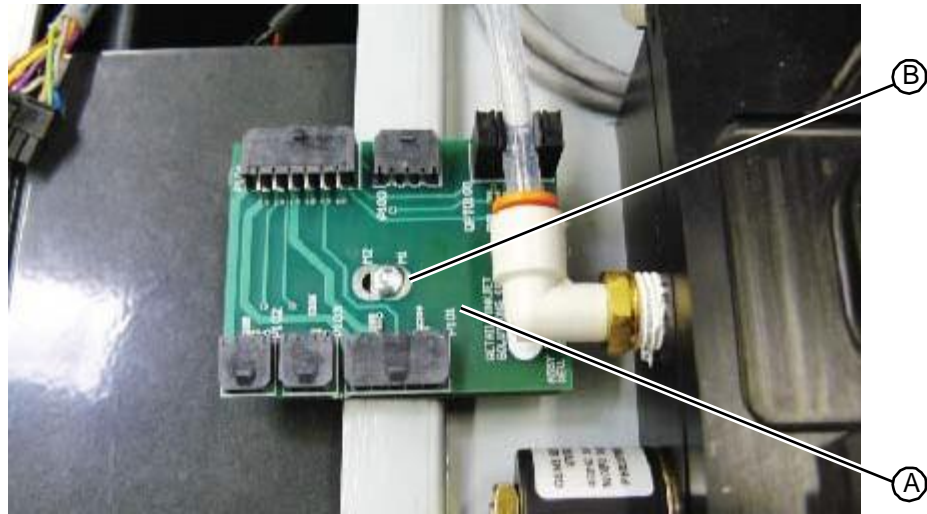
Figure 5.64:Securing the fitting around the prep station vacuum tubing



3. Rotate the fluid sensor PC board down and align its mounting hole with the mounting hole in the prep station tray.

- Using a T15 torx driver, insert and tighten the fastener that secures the fluid sensor board to the prep station tray.

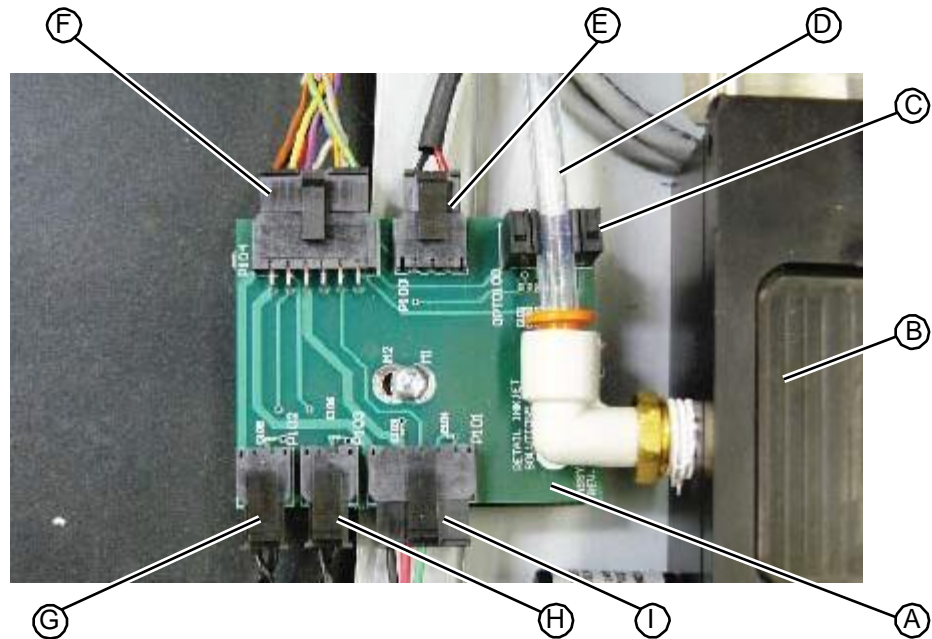
Figure 5.65:Fastener that secures the fluid sensor board



- Attach the prep station cables to their connectors on the board:

Fluid Sensor Board Connection	Cable Connector
P104	12-pin from the I/O PC board
P100	4-pin from the prep station reed sensor
P102	4-pin from the prep station fluid solenoid
P103	4-pin from the prep station vacuum solenoid
P101	4-pin Prep station vacuum transducer

Figure 5.66: Fluid sensor board connections



6. Verify the installation by performing the following steps:
 - a Restart the system and log in with the tech ID **741963**.
 - b Press the Tech Pane tab.
 - c Test the sensor by running fluid through the prep station as follows: press the vacuum pump icon, the prep vacuum valve icon, the prep rinse valve icon, and the fluid pump icon in that order to flush fluid through the prep station.
 - d Observe the numerical value on the screen next to the prep station icon. When fluid is present in the clear plastic tubing, the numerical value should vary between 1 and 900 (usually around 400-500).
 - e Press the icons listed above in the reverse order to stop the prep fluid.
7. After the installation is successfully verified, replace the work surface (see “Replacing the Work Surface” on page 5-12).

RELATED LINKS:

- “Removing the Fluid Sensor PC Board” on page 5-37
- “Prep Station” on page 1-12

5.3.2 Prep Station Manifold

5.3.2.1 Removing the Prep Station Manifold

On a dual prep station, you must remove station B, the station closest to the front of the system, before removing prep station A, the station closest to the back of the system.

- T20 torx driver

TASK

1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. Remove the work surface (see “Removing the Work Surface” on page 5-11).
3. Remove the drill side fascia (see “Removing the Drill Side Fascia” on page 5-5).
4. Remove the fluid sensor PC board (see “Removing the Fluid Sensor PC Board” on page 5-37).
5. Disconnect the rinse tubing and vacuum tubing from their prep station fittings by pressing in on the orange collars pulling on the tubing with your other hand.

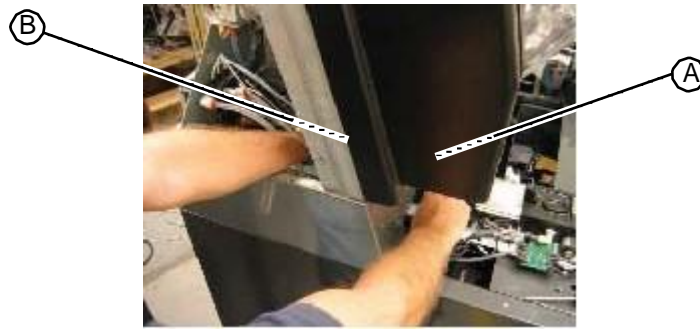
NOTE: Do not use pliers or other tools to remove the tubing.

Figure 5.67: Tubing connected to the prep station manifold



NOTE: When working on prep station A, pull the tubing from inside the plumbing tower while you release the orange fitting.

Figure 5.68:Removing tubing from prep station A



6. Open the top left drawer, labeled FILL ADAPTERS, as far as it will move.
7. Standing in front of the system, locate the black plastic tabs on the track slides attached to the sides of the drawer.

Figure 5.69:Track slide on the left side of the drawer

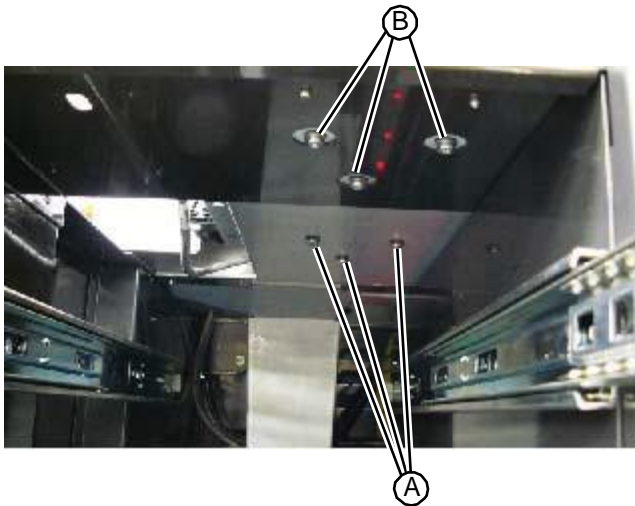


Figure 5.70:Track slide on the right side of the drawer



8. Simultaneously push the left tab up and the right tab down to release the drawer from the track slides. Pull the drawer out of the system and set aside.
9. Look up into the system and locate the three fasteners that secure each prep station manifold to the system frame.

Figure 5.71:Fasteners that secure the prep stations to the system frame



10. Using a T20 torx driver, remove the three fasteners and sealed washers for the prep station manifold you want to remove. **Note: make sure to remove the sealed washers with the fasteners as they sometimes stick to the bottom of the plate. The sealed washers MUST be put back in place to prevent leakage from the prep area into the adapter drawer.**
11. Remove the prep station manifold from the system and return it to RIS.

RELATED LINKS:

- “Replacing the Prep Station Manifold” on page 5-44
- “Prep Station” on page 1-12

5.3.2.2 Replacing the Prep Station Manifold

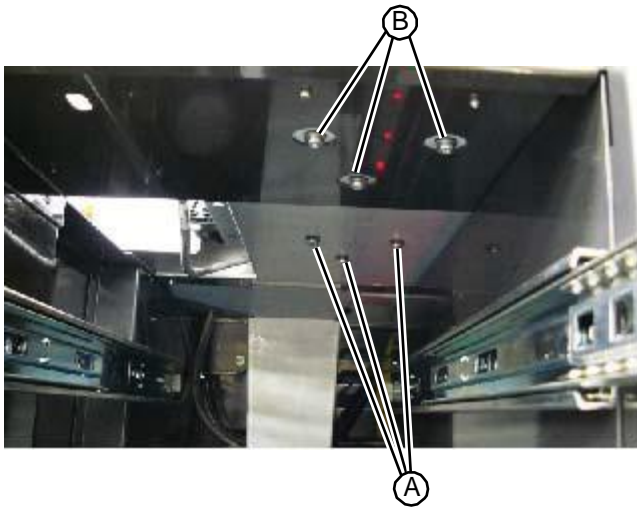
On a dual prep station, you must place station A, the station closest to the back of the system, before placing prep station B, the station closest to the front of the system.

- T20 torx driver

TASK

1. Place the prep station manifold onto the system.
2. Looking up into the system, use a T20 torx driver to insert and tighten the three sets of fasteners and sealed washers that secure the prep station manifold to the system frame. **Tip: use a small Allen wrench to guide the prep station mounting holes into the correct position.**

Figure 5.72:Fasteners and washers that secure the prep stations to the system frame



3. Slide the FILL ADAPTERS drawer into the system until the mounting tabs engage with the track slides.
4. From the top of the system, connect the rinse tubing and vacuum tubing into prep station fittings by pushing the tubing in until it stops moving. Verify the tubing on each fitting is secure by pulling on it.

NOTE: Do not use pliers or other tools to connect the tubing.

Figure 5.73:Tubing connected to the prep station manifold



5. Replace the fluid sensor PC board (see “Replacing the Fluid Sensor PC Board” on page 5-39).

6. Verify the proper installation of the prep station manifold by running a prep process.
 7. Replace the drill side fascia (see “Replacing the Drill Side Fascia” on page 5-7).
 8. Replace the work surface (see “Replacing the Work Surface” on page 5-12).
 9. Replace the upper hood. (see “Replacing the Upper Hood” on page 5-4).
-

RELATED LINKS:

- “Removing the Prep Station Manifold” on page 5-42
- “Prep Station” on page 1-12

5.3.3 Prep Station Reed Sensor

5.3.3.1 Removing the Prep Station Reed Sensor

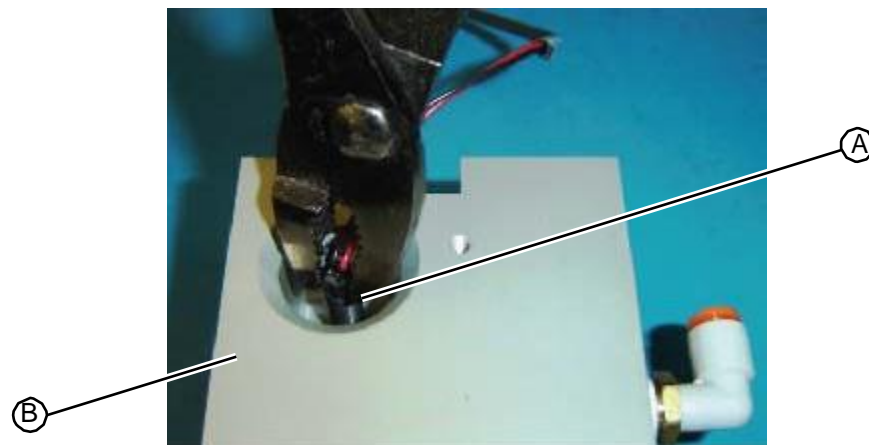
The reed sensor detects when a cartridge adapter is latched into the prep station. The sensor is located on the bottom of the prep station manifold.

- T15 torx driver
- T20 torx driver
- 1/4” open end wrench
- Slip joint pliers

TASK

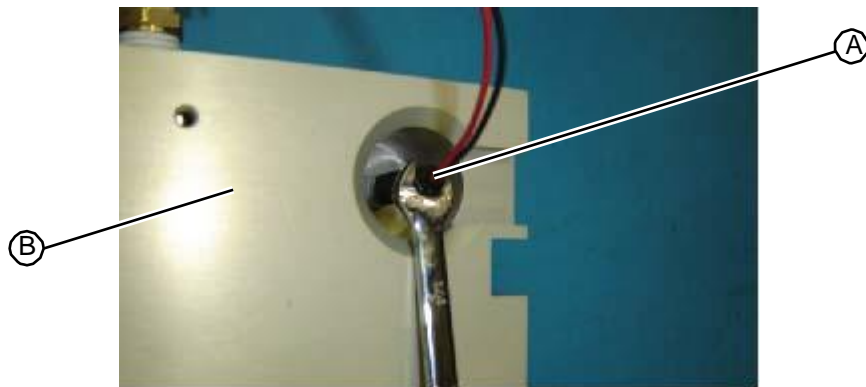
1. Remove the prep station manifold (see “Removing the Prep Station Manifold” on page 5-42).
2. Place the prep station manifold on a flat surface with the top facing down.
3. Using a pair of slip point pliers, loosen the reed sensor, which is screwed into the bottom of the prep station manifold.

Figure 5.74:Begin removing the sensor with needle nose pliers



4. After the reed sensor clears the recess, finish unscrewing the unit with a 1/4” open end wrench.

Figure 5.75:Removing the sensor with a 1/4" open end wrench



5. Remove the reed sensor from the prep station manifold and discard.

RELATED LINKS:

- “Replacing the Prep Station Reed Sensor” on page 5-47
- “Prep Station” on page 1-12

5.3.3.2 Replacing the Prep Station Reed Sensor

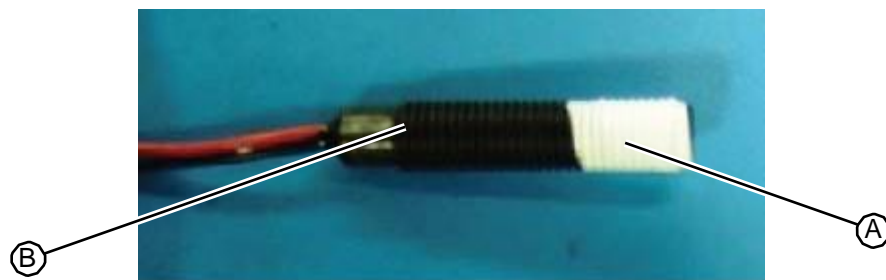
The reed sensor detects when a cartridge adapter is latched into the prep station. The sensor is located on the bottom of the prep station manifold.

- T15 torx driver
- T20 torx driver
- 1/4" open end wrench
- Slip joint pliers

TASK

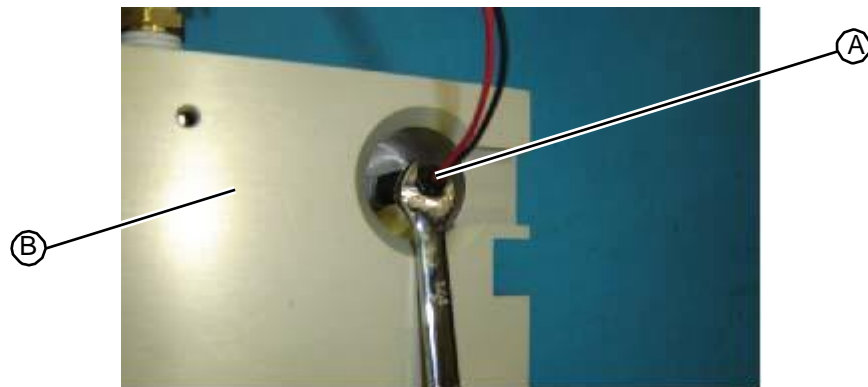
1. Apply a thin layer of teflon tape to the threads of the reed sensor, being careful not to cover the end of the sensor with tape.

Figure 5.76:Placing teflon tape on the threaded end of the sensor



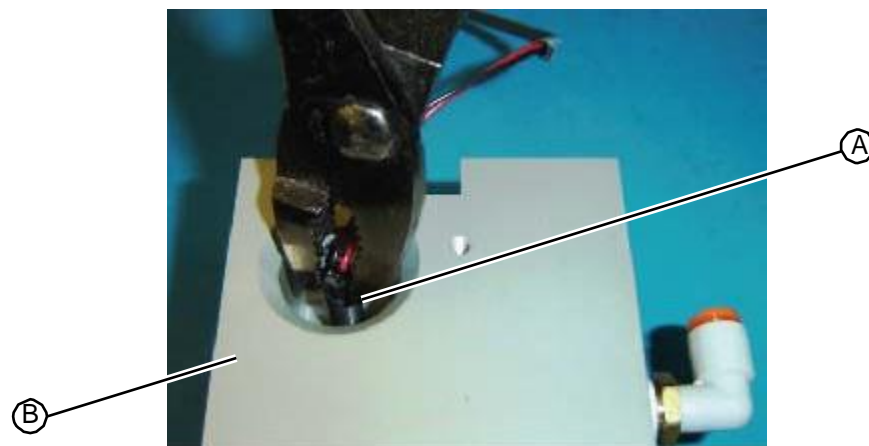
2. Using a 1 1/4" open end wrench, start tightening the sensor.

Figure 5.77: Inserting the sensor with a 1 1/4" open end wrench



3. When the sensor passes into the recess in the bottom of the prep station manifold, use a pair of slip joint pliers to finish tightening the sensor until it bottoms out in the hole.

Figure 5.78: Completing installation of the sensor with needle nose pliers



4. Replace the prep station manifold (see “Replacing the Prep Station Manifold” on page 5-44).
5. Verify the correct installation of the reed sensor by running the following test:
 - a Insert and latch an adapter into the prep station.
 - b Check the touchscreen to be sure the adapter is detected.
 - c Unlatch, but do not completely remove the adapter from the prep station. The touchscreen should show that the adapter is not present.
 - d Relatch the adapter and check to be sure the adapter is detected.
 - e If the system does not respond correctly, remove the prep station manifold, slightly back off the connection of the reed sensor, and repeat the test.
 - f Conduct this test for every adapter.

RELATED LINKS:

- “Removing the Prep Station Reed Sensor” on page 5-46
- “Prep Station” on page 1-12

5.3.4 Prep Station Vacuum Filters – as of Summer 2013 new type filters are used. See new procedure in updates

5.3.4.1 Removing the Prep Station Vacuum Filters

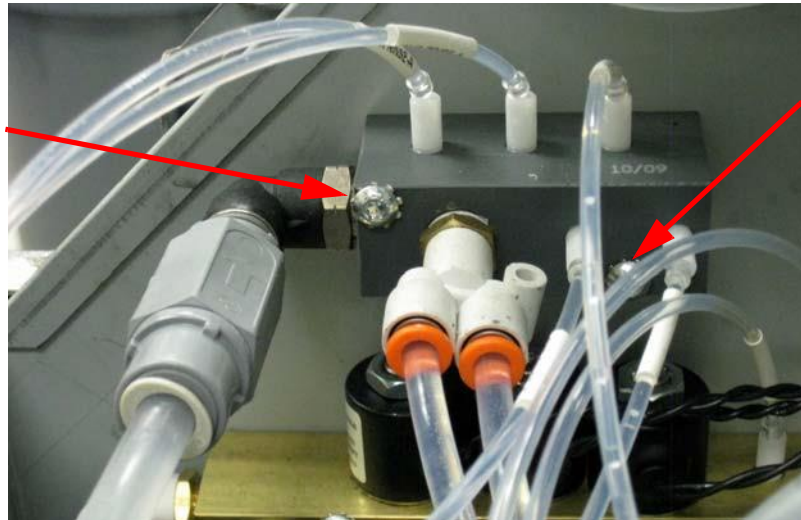
The vacuum line for each prep station contains a filter attached to the vacuum distributor manifold in the plumbing tower. The filter prevents contaminants from entering the vacuum system.

- T20 torx driver

TASK

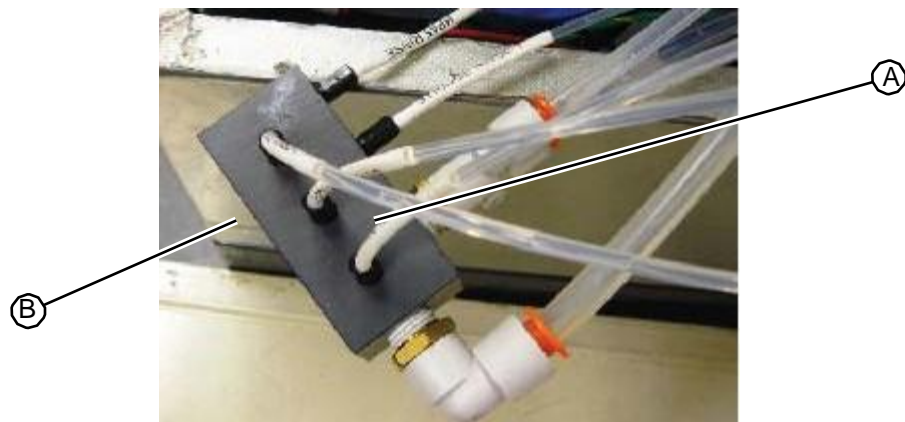
1. Remove the upper hood (see “Removing the Upper Hood” on page 5-3).
2. Using a T20 torx driver, remove the two fasteners that secure the cleaning fluid distribution manifold to the rear wall of the plumbing tower.

Figure 5.79:Fasteners that secure the fluid distribution manifold to the rear plumbing tower wall



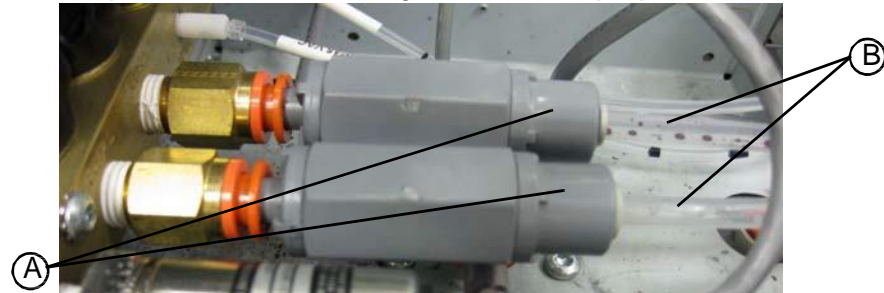
3. Without disconnecting the tubing on the water distribution manifold, move it toward the outside of the system to provide unobstructed access to the two prep vacuum fittings connected to the vacuum manifold.

Figure 5.80:Fluid distribution manifold moved to outside the system



4. Remove the prep station vacuum tubes from the vacuum filters by pushing in on the filter collar and pulling the tubes out of the connectors.

Figure 5.81: Prep station vacuum tubing connected to prep station vacuum filters



5. Remove the filters from their quick release fittings by pushing on the fitting collars and removing them from the system.

RELATED LINKS:

“Replacing the Prep Station Vacuum Filters” on page 5-50

“Prep Station” on page 1-12

5.3.4.2 Replacing the Prep Station Vacuum Filters

The vacuum line for each prep station contains a filter attached to the vacuum distributor manifold in the plumbing tower. The filter prevents contaminants from entering the vacuum system.

- T20 torx driver

TASK

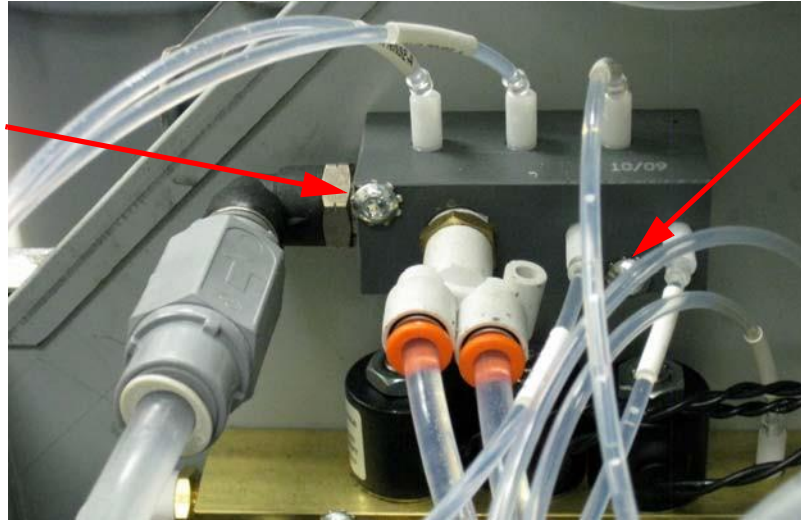
1. Install the replacement filters by pushing the long end firmly into the quick release fitting.
2. Install the vacuum line from prep station A into the filter on prep fitting 1.
3. Install the vacuum line from prep station B into the filter on prep fitting 2.

Figure 5.82: Prep station vacuum tubing connected to prep station vacuum filters



4. Validate proper line connections by running a prep process at station A and then a prep process at station B.
5. Using a T20 torx driver, attach the cleaning fluid manifold to its mounting holes on the back wall of the plumbing chamber.

Figure 5.83:Fasteners that secure the fluid distribution manifold to the rear plumbing tower wall



6. Replace the upper hood (see “Replacing the Upper Hood” on page 5-4).
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RELATED LINKS:

“Removing the Prep Station Vacuum Filters” on page 5-49

“Prep Station” on page 1-12

