MiTek®
SERVICE BULLETIN

Document ID:
SB260

Title:
Replacing the Motor Cable

Affected machinery: *BLADE II* wood processing system

Distribution: Customers upon order

Applies to: All *BLADE II* saws

CAUTION:
MiTek recommends printing this document in high resolution using color ink. Many of the graphics may be unclear and may create an unsafe condition if this recommendation is not followed.

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Approved By	R. Tucker

Purpose and Scope

This service bulletin instructs how to install a new *BLADE II* saw motor cable.

Parts Included

The parts included in this kit are shown in Table 1. Please make sure all parts and supplies are present before starting the procedure.

Table 1: Parts in SB260KIT-A

Quantity	Description	Part #
1	Spring	89593
1	Blade motor cable	92025-24
1	Protective sheath for cable	508094
6	Cable ties	508700
1	Service bulletin document	SB260

If you have any questions, call MiTek Automation Support at 1-800-523-3380.

Supplies Needed

- Phillips screwdriver
- Pliers
- Tongue-and-groove pliers
- Wrench set
- Tape measure

Procedure

Electrical Lockout/Tagout Procedure

	**⚠ WARNING** **ELECTROCUTION HAZARD.** **All electrical work must be performed by a qualified electrician.** **Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures before performing any maintenance.** **If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.** **When the disconnect switch is off, there is still live power within the disconnect switch's enclosure. Always turn off the power at the building's power source to the equipment before opening this electrical enclosure.**

1. Engage an E-stop on the machine.
2. Turn the disconnect switch handle to the Off position. See Figure 1.
3. Attach a lock and tag that meet OSHA requirements for lockout/tagout to the electrical service entry panel.
4. Open the door to the enclosure to which you need access. Using a multimeter, verify that the power is off.

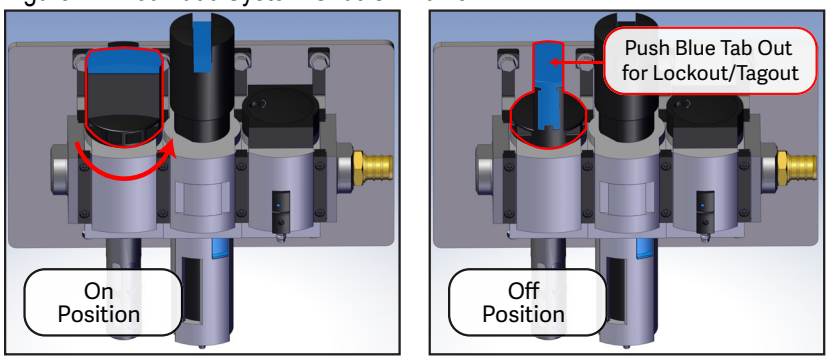
Figure 1: Disconnect Switch

Pneumatic or Hydraulic System Lockout/Tagout Procedure

	⚠ WARNING
	**HIGH PRESSURE HAZARD.** **Bleed pneumatic lines before performing any maintenance on the system.** **Working on pressurized lines may cause injury.**

1. After lockout tagout of the electrical power, turn off or close the system's air shut-off valve and attach a lock and tag. See Figure 2.

Figure 2: Pneumatic System Shut-Off Valve

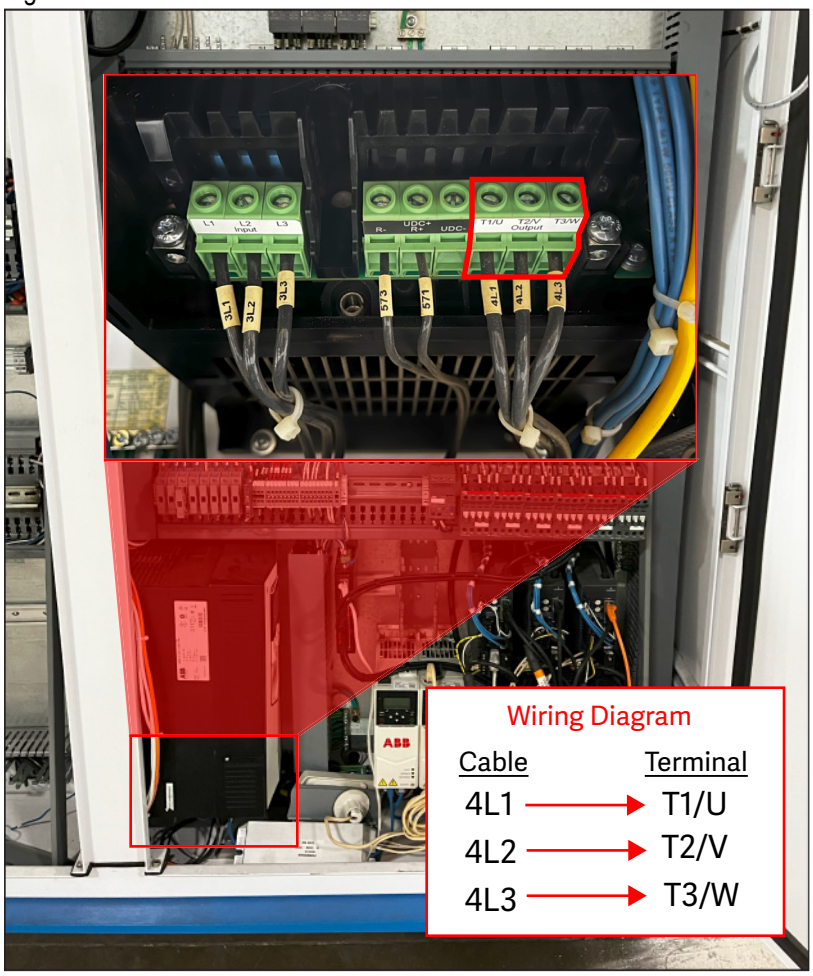


Replacing the motor cable

	⚠ WARNING
	**MOVING PARTS CAN CRUSH AND CUT.** **Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.**

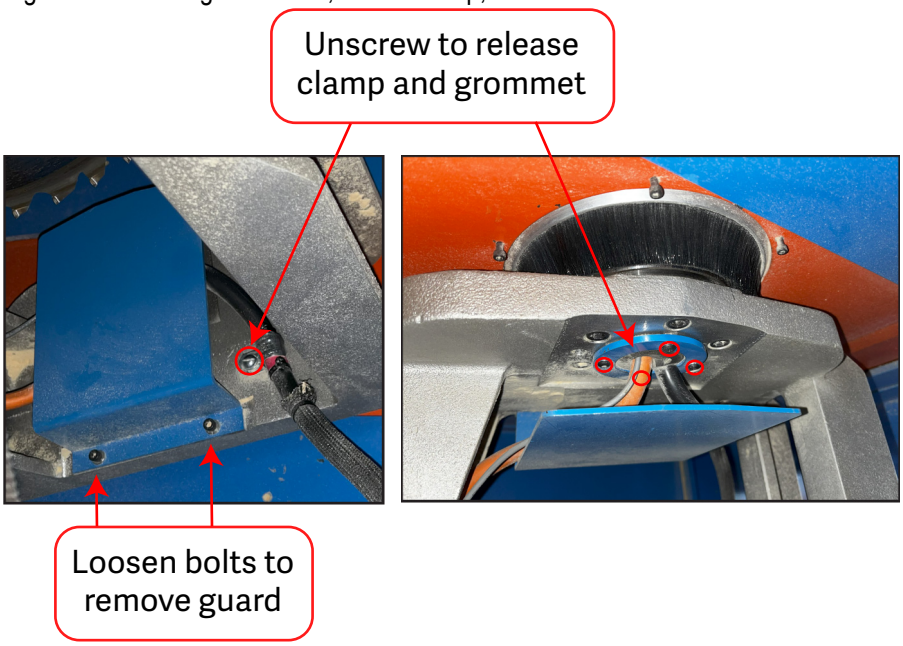
1. With power locked out as previously described, remove the front cover of the VFD and disconnect the existing blade motor cables (4L1, 4L2, and 4L3) from the VFD inside the electrical enclosure.

Figure 3: VFD and Motor Cables Location



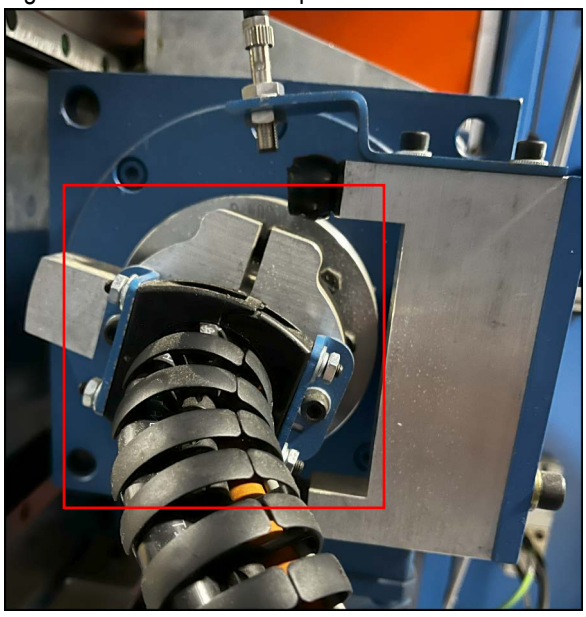
2. From the saw chamber, remove the blue guard shown in Figure 4 at the back of the saw blade assembly so the grommet can be accessed.
3. Loosen the screws holding the grommet and the clamp shown in Figure 4.

Figure 4: Removing the Guard, Cable Clamp, and Grommet



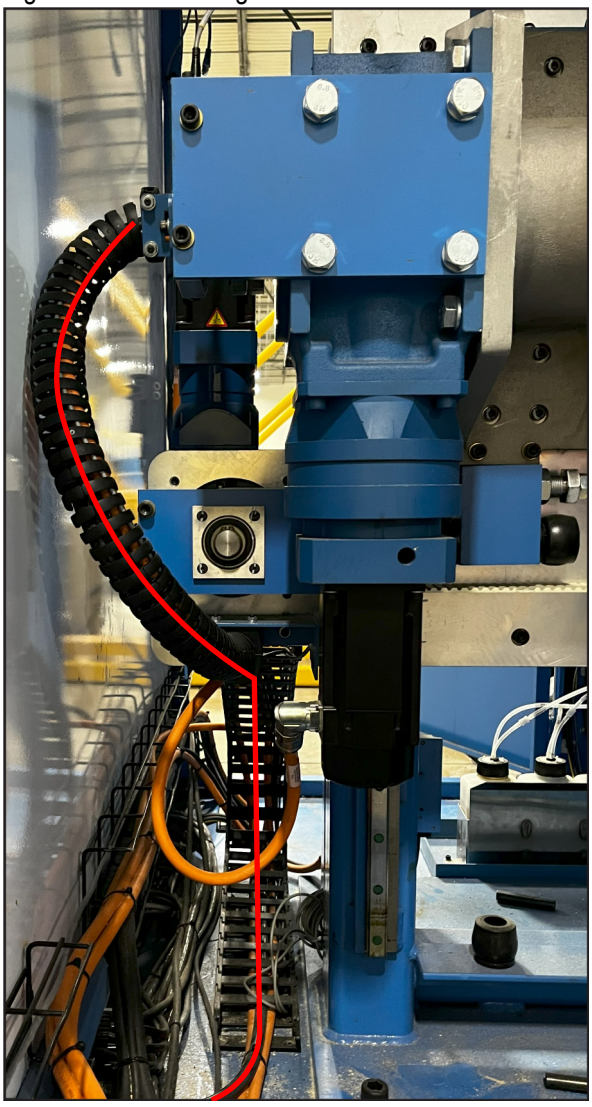
4. Inside the stroke / elevation chamber, use a wrench to remove the strain relief clamp to allow free movement of the cable (see Figure 5). Set aside all bolts, nuts, and washers for reattachment in a later step.

Figure 5: Strain Relief Clamp Location



5. In the same area, cut all cable ties and modify any cable management that may prevent movement of the existing (old) blade motor cable.

Figure 6: Cable Management Inside Stroke / Elevation Chamber



6. Use the existing (old) blade motor cable to snake a wire using these steps:
   a) From electrical enclosure, connect the now free end of the existing blade motor cable (disconnected from the VFD in step 1) to a snake wire.
   b) From the saw chamber, disconnect the existing blade motor cable from the blade motor by unscrewing the retaining ring and pulling socket out.

Figure 7: Connect Point at Saw Blade Motor

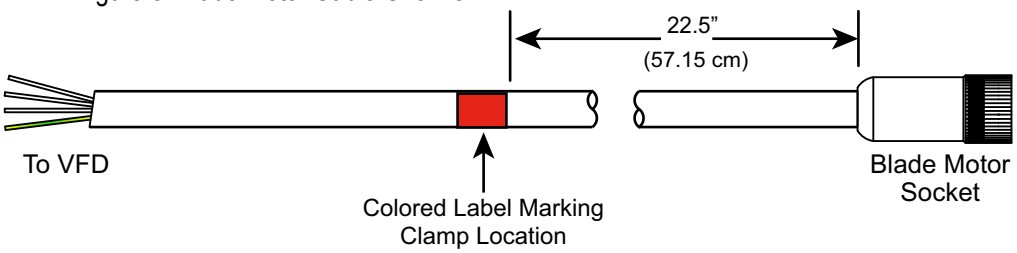
c) Also from the saw chamber, pull the existing (old) blade motor cable toward the front of the saw until the snake wire begins passing through the grommet.

d) Still in the saw chamber, disconnect the existing (old) blade motor cable from the snake wire, while ensuring the snake wire does not pull back through the grommet. Discard the old blade motor cable.

7. On the new motor cable, verify the distance between the colored labeled and the beginning of the socket matches the figure shown in Figure 8.

   The correct placement of label is critical as it determines the correct amount of cable slack in the saw chamber.

Figure 8: Blade Motor Cable Overview

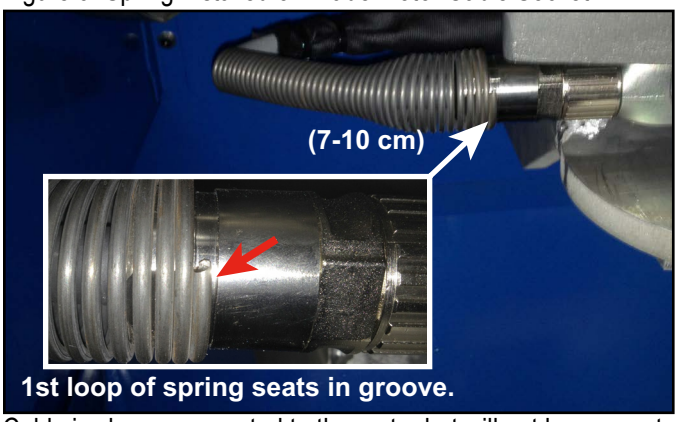


8. Place the protective covering and spring onto the new cable using these steps:

   a) Pull the covering apart enough to fit the cable into it, then let the covering wrap back around the cable.

   b) Thread the electrical enclosure end of the new cable through the supplied spring, and pull the spring along the length of the cable/ protective covering until it reaches the blade motor socket and is seated in the groove shown in Figure 9.

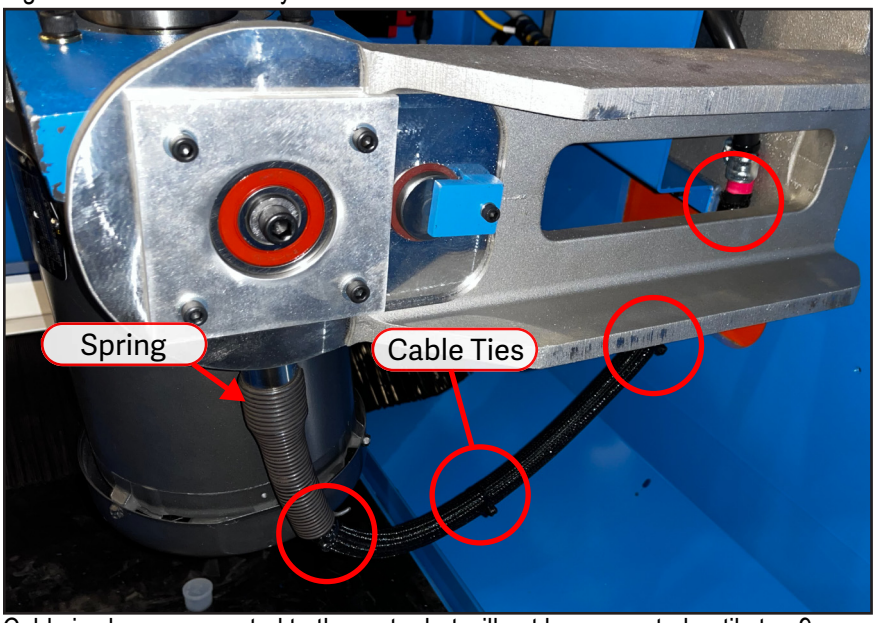
Figure 9: Spring Installed on Blade Motor Cable Socket



Cable is shown connected to the motor but will not be connected until step 9.

c) Place the cable ties after the clamping label and at other locations along the cable as shown in Figure 10.

Figure 10: Cable Assembly



Cable is shown connected to the motor but will not be connected until step 9.

9. From the saw chamber, plug the new blade motor cable's socket into the blade motor:

   a) Align the keys in the blade motor socket with the motor plug, and push into place.

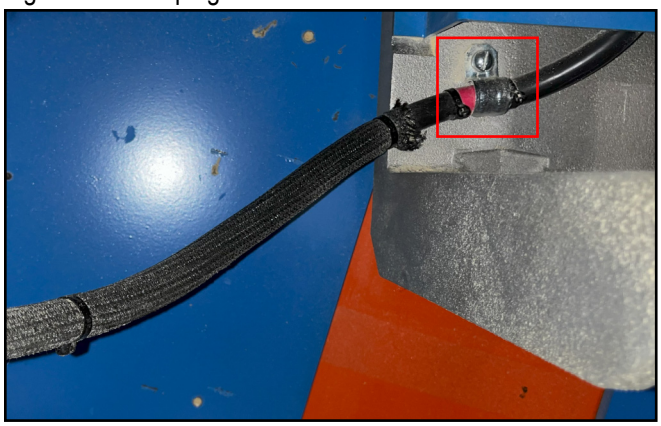
   b) Hold the connector next to the retaining ring with pliers to keep the cable from rotating. Turn the spring **clockwise** until the tang points up.

Figure 11: Turning the Spring

c) Screw the retaining ring down until it is tight. It should bottom out on the rubber seal on the matting. Pliers may be required to tighten correctly.

10. Use the snake wire to pull the new blade motor cable through the grommet to the electrical enclosure using these steps:
    a) From the saw chamber, attach the VFD end of the new blade motor cable to the snake wire.
    b) From the electrical enclosure, pull the wire snake back toward the enclosure, ensuring there is no twist in the cable, until the new blade motor cable is pulled into the stroke / elevation chamber.
    c) Move to the stroke / elevation chamber and carefully route the new cable through existing cable management, following the example shown in Figure 6.
    d) Move back to the electrical enclosure, and pull the wire snake until the new blade motor cable is inside the enclosure.
    e) Disconnect the blade motor cable from the wire snake. Secure the cable so it doesn't pull through. It will be connected to the VFD in a later step.
11. Tighten the clamp around the colored section to secure the blade motor cable, ensuring there is no twist in the cable before or after the clamp.

Figure 12: Clamping the Blade Motor Cable



12. Ensure the cable has a comfortable bend into the grommet, then tighten the grommet. The bend should look like the overhead view in Figure 4. If the bend is too tight or loose, push or pull more or less cable through the grommet.
13. Re-install the blue guard that was removed (see Figure 4).
14. Once the cable is the correct length at the clamp and grommet, connect the other the 3 cables (4L1, 4L2, and 4L3) to the matching VFD in the electrical enclosure as shown in Figure 3.
15. Remove the lockout/tagout devices, ensure all personnel are at a safe distance, and test the stability of the new cable. Rotate the bevel axis from 0 to 180 degrees and ensure the following:
    a) The blade assembly moves freely and there is always a minimum 1 inch gap between the cable and saw blade for the entire 0-180 degrees rotation.
    b) The cable stays within the slot on the aluminum housing for entire 0-180 degrees rotation.
    c) The quick disconnect connector points towards the back of the motor and does not rotate when the bevel rotates. A slight movement is acceptable.
    d) Ensure that the protective wrap is secure and not slipping.
16. Test the blade rotation:
    a) Place the blade in home position.
    b) Start the blade motor and ensure the blade is rotating toward the operator.
    c) If it is rotating in the wrong direction, the wires are connected incorrectly to the VFD. Connect them as shown in Figure 3.

END OF SERVICE BULLETIN