

Service Bulletin

Machinery Affected: *MatchPoint BLADE™*
Document: SB204
Title: Replacing the Blade Motor Cable
Applies To: All *BLADE* Saws
Distribution: Customers, Upon Order



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Applicability	all saws
Effectivity	all saws

Purpose and Scope

When replacing the blade motor cable on the *BLADE*[™] wood processing system saw, follow these instructions carefully to guarantee the cable will make a solid connection and be routed safely.

Overview

The parts included in this kit are shown in Table 1. Please ensure all parts are present before starting this procedure.

Table 1: Parts in SB204KIT

Qty.	Part Description	Part #
1	spring	89593
1	blade motor cable	92025
1	protective sheath for cable	508094
1	screw (for clamp)	326155
1	lock washer (for clamp)	364034
1	cable tie	508700
1	clamp (not needed on all saws)	511267
1	Service Bulletin document	SB204

Before beginning the procedure, gather the supplies listed here:

- lock and tag
- Phillips screwdriver
- marker
- tape measure
- pliers
- file

If you have any questions, call MiTek Machinery Division Customer Service at 800-523-3380.

Procedure

Electrical Lockout/Tagout Procedures



	 WARNING
	<p>ELECTROCUTION HAZARD!</p> <p>Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures before performing any maintenance.</p> <p>All electrical work must performed by a qualified electrician.</p> <p>If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.</p>

Before performing maintenance on any machine with electrical power, lockout/tagout the machine properly. When working on a machine outside of the machine’s main electrical enclosure, not including work on the electrical transmission line to the machine, follow your company’s approved lockout/tagout procedures which should include, but are not limited to the steps here.

Figure 1: Lockout/Tagout on the Main Electrical Enclosure



1. Engage an E-stop on the machine.
2. Turn the disconnect switch handle on the machine’s main electrical enclosure to the “off” position. See Figure .

	 WARNING
	<p>ELECTROCUTION HAZARD.</p> <p>When the disconnect switch is off, there is still live power within the disconnect switch’s enclosure. Always turn off power at the building’s power source to the equipment before opening this electrical enclosure!</p>

3. Attach a lock and tag that meets OSHA requirements for lockout/tagout.

Pneumatic System Lockout/Tagout Procedure

	 WARNING
	<p>MOVING PARTS CAN CRUSH AND CUT.</p> <p>Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.</p> <p>Turn off the air switch before performing any maintenance on the equipment.</p>

	 WARNING
	<p>HIGH PRESSURE HAZARD.</p> <p>Bleed pneumatic lines before performing any maintenance on the pneumatic system.</p>

Replacing the Blade Motor Cable



1. After performing lockout/tagout, disconnect the blade motor cable from the junction box inside the stroke/elevation chamber in this way:

- a) Locate the blade motor cable terminal points in the junction box. Newer saws look like Figure 2.
- b) Note and record the terminal label and wire label at each terminal point. The terminal points should be labeled 1T1, 1T2, and 1T3, plus the ground wire. If they are not labeled, label them in a way that will be useful when installing the new cable.

Figure 2: Junction Box in the Stroke/Elevation Chamber (on newer saws)



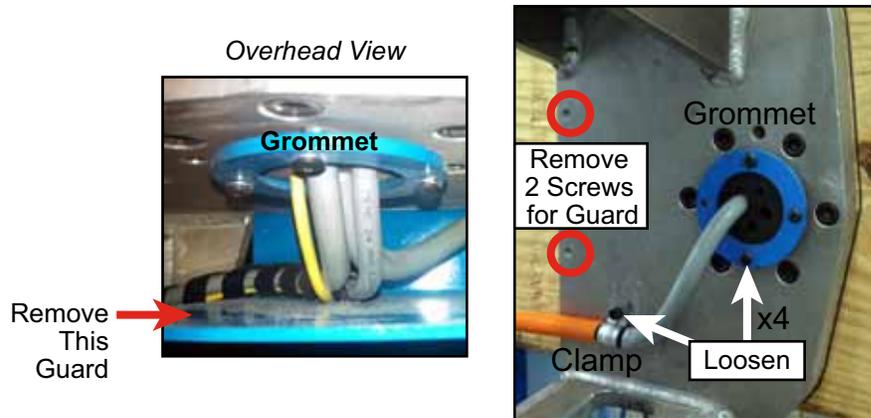
- c) Loosen the 2 clamps near the junction box that hold all wires routed through the stroke cylinder.
- d) Disconnect all 4 wires in the blade motor cable from the junction box.



Do NOT remove the blade motor cable yet. It will be used to snake the new cable later in this procedure.

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

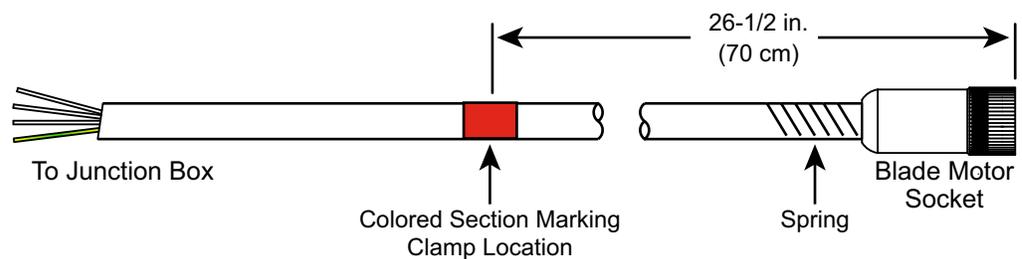
Figure 3: Remove Guard and Loosen Screws (in Saw Chamber)



Early saws did not use a clamp, but it is needed now. If clamp is not present, install the clamp supplied in this kit.

4. Determine if a new clamp must be installed:
 - If **no** clamp is present on the saw, install the supplied clamp as instructed on page 12, then return to this point in the procedure.
 - If a clamp is already present, proceed to the next step and disregard new clamp.

Figure 4: Blade Motor Cable Overview



5. Place the protective covering and spring onto the 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 junction-box 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 6.
- c) Add a cable tie, near the narrow end of the spring to hold the protective covering in place.
- d) On the opposite end, the protective covering should extend just past the colored section marking the clamp location. The clamp will hold it in place on that end.

Figure 5: Cable Assembly

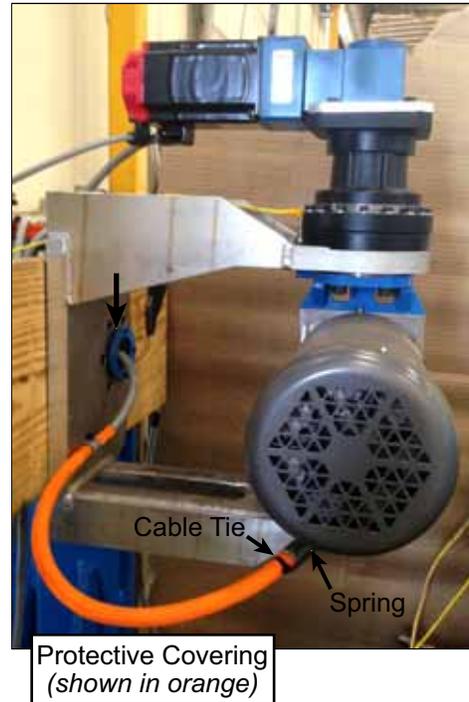
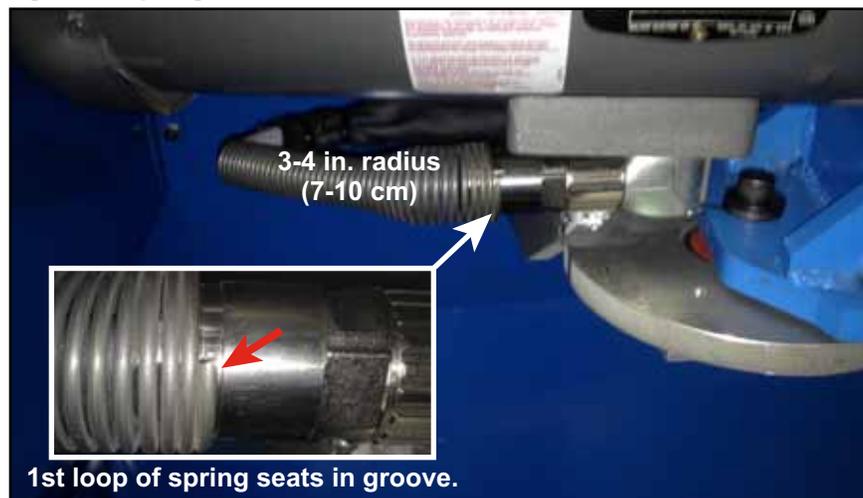


Figure 6: Spring Installed on Blade Motor Socket





The socket and plug are shown in the close-up photo in Figure 6.

6. Install the blade motor cable by following these steps. Ensure there is no twist in the cable at each step. This part of the procedure is easier with two people.

- a) Use the existing blade motor cable to snake a wire using these steps:
 - 1) From the stroke/elevation chamber, connect the junction-box end of the existing blade motor cable (disconnected from junction box on page 5) to a snake wire.
 - 2) 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: Connection Point at Saw Blade Motor



- 3) 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.
 - 4) 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.
- b) From the saw chamber, plug the new blade motor cable's socket into the blade motor:
 - 1) Align the keys in the blade motor socket with the motor plug, and push into place.
 - 2) 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.
 - c) Use the snake wire to pull the new blade motor cable through the grommet to the junction box using these steps:
 - 1) From the saw chamber, attach the junction-box end of the new blade motor cable to the snake wire.
 - 2) From the stroke/elevation chamber, pull the wire snake back toward the junction box until the new blade motor cable is pulled through the grommet.
 - 3) Still in the stroke/elevation chamber, disconnect the blade motor cable from the wire snake. Secure the cable so it doesn't pull through. It will be connected to the junction box in a later step.

d) Secure the new blade motor cable with the clamp using these steps:

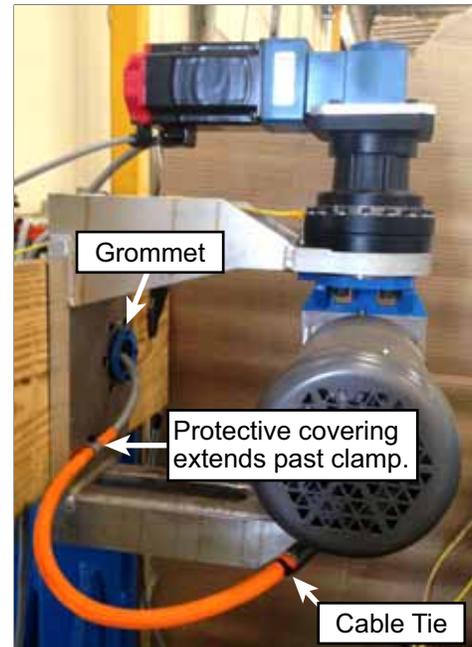
- 1) From the saw chamber, straighten the protective covering on the blade motor cable so it is smooth and covers the colored section of the cable that marks the clamp location. It will provide additional protection from the clamp. The colored section can still be felt under the protective covering.
- 2) Tighten the clamp around the colored section and protective covering, ensuring there is no twist in the cable before or after the clamp.

e) Ensure the cable has a comfortable bend into the grommet, then tighten the grommet. The bend should look like the overhead view in Figure 3. If the bend is too tight or loose, push or pull more or less cable through the grommet.

f) Ensure the cable is routed as shown in Figure 8.

g) Re-install the blue guard that was removed. It is shown on page 6.

Figure 8: Routing of Blade Motor Cable



7. Once the cable is the correct length at the clamp and grommet, connect the other end of the cable to the junction box in the stroke/elevation chamber using these steps:
 - a) Access the junction box in the stroke/elevation chamber (shown in Figure 2):
 - From the left side of the saw, enter the stroke/elevation chamber OR
 - For better accessibility, remove the blue cover on the back side of the saw.
 - b) Locate the free end of the blade motor cable that was threaded through the grommet, and attach each conductor and the ground wire to the correct termination point inside the junction box, as listed in Table 1-1.



If the terminals are not marked by MiTek, they should have been marked as instructed in step b on page 5.

Table 1-1: Termination Points Inside Junction Box

Wire Label	Termination Point Label
1T1	1T1
1T2	1T2
1T3	1T3
green/yellow ground	green/yellow ground

- c) Close the junction box and stroke/elevation chamber door.
- d) Reinstall the back side cover, if it was removed.

 WARNING	
 	<p>Ensure all personnel are clear of machine before operating.</p> <p>Do not operate this equipment unless all guards and safety devices are secure and in working order.</p>

8. 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 back and forth freely and the cable nor any part of it is interfering with the saw blade for entire 0-180 degrees rotation.
 - b) The cable has an adequate and smooth radius at the connector to avoid crimping (approximately 3-4 in.).
 - c) The cable stays within the slot on the aluminum housing for entire 0-180 degrees rotation.
 - d) The quick disconnect connector points towards the back of the motor and does not rotate when the bevel rotates. A slight movement is acceptable.
 - e) Ensure that the protective wrap is secure and not slipping.

9. 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 in the junction box. Connect them as shown in Table 1-1.

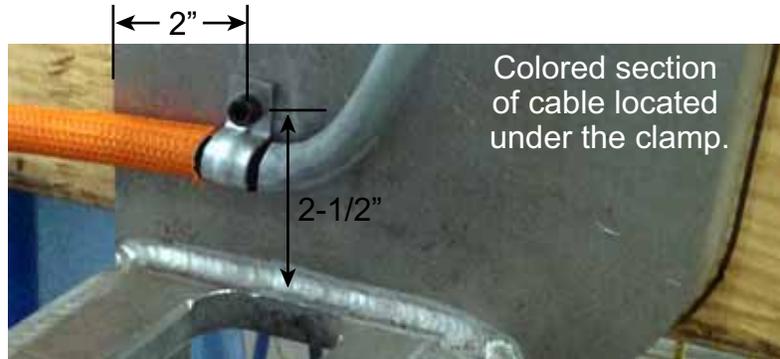


- center punch
- hammer
- 1/8" drill bit
- #7 drill bit
(.201 Dia.)
- drill motor
- 1/4-20 hand
(bottom) tap
- tap handle
- supplied clamp,
lock washer,
and 1/4-20x5/8"
screw
- Allen wrench

Installing a New Clamp

A clamp holding the blade motor cable in place is necessary to prevent cable damage. If there is no clamp present on the saw, install the supplied clamp as instructed here. Additional supplies needed for this section are listed in the margin.

Figure 9: Mark the Location of the Clamp Hole



1. Mark the clamp position as shown in Figure 9.
2. Drill and tap the hole:
 - a) Using a center punch, punch the hole location to prevent the drill from walking.
 - b) Drill a pilot hole (1/8" drill bit) just deep enough as needed for the supplied screw and clamp.
 - c) Drill to the same depth again using a #7 (.201") drill bit.
 - d) Tap each hole to full depth using a 1/4"-20 hand (bottom) tap.
 - e) Blow out the hole with compressed air.
3. Loosely screw the screw and lock washer through the clamp and into the new hole.



Clamp location measurements have slight flexibility, but clamp must be in a vertical position as shown in Figure 9.

4. Return to step b on page 7 to continue the procedure.

END OF SERVICE BULLETIN