MiTek®
Machinery Division

Service Bulletin

Machinery Affected:	BLADE™ Wood Processing System
Document:	SB227
Title:	Installing a Horn
Distribution:	Customers Upon Order

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Purpose and Scope

Your *BLADE* software should be version 4.0 or higher before starting. If your software is older, contact Customer Service for an update.

The *BLADE* saw now has the option to add a horn to alert sawyers when a fault interrupts cutting. This Service Bulletin explains the steps to retrofit an existing saw to add a horn.

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 SB227

Qty.	Part Description	Part #
1	Service Bulletin	SB227
1	Service Bulletin (PLC RX3i software upgrade instructions)	SB218
1	Modular horn	508046
1	Modular base	508045
1	Cable	508075
1	PLC RX3i software on removable data storage device	92280-504

Before beginning the procedure, gather the supplies listed here:

- Drill
- Wire cutter
- Wire stripper
- Cable stripper
- Stepladder
- 1" socket wrench
- Tape measure
- Permanent marker
- Plastic bag
- Tape
- A 7/8" hole saw and a 1-1/8" knockout (or 1-1/4" hole saw)

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

Procedure

Electrical Lockout/Tagout Procedures

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

When Working on a Machine Inside the Machine's Main Electrical Enclosure or in the Electrical Transmission Line to the Machine

Before opening the main electrical enclosure, or attempting to repair or replace an electrical transmission line to the machine, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures which should include, but are not limited to the steps here.

1. Engage an E-stop on the machine.
2. Turn the machine's disconnect switch to the Off position. This is usually required to open the main electrical enclosure's door.
3. Shut the power to the machine off at the machine's power source, which is usually an electrical service entry panel on the facility wall. One example of a locked-out panel is shown in Figure 1.
4. Attach a lock and tag that meets OSHA requirements for lockout/tagout to the electrical service entry panel.
5. Open the door to the enclosure in which you need access, and using a multimeter, verify that the power is off.

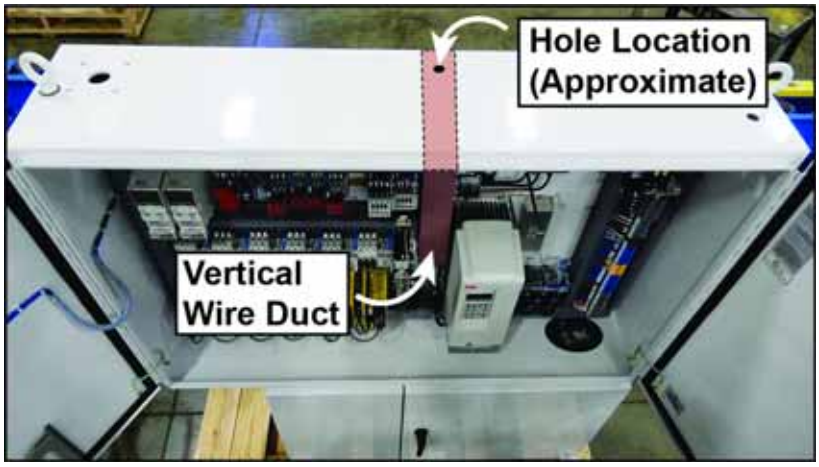
Figure 1: Lockout/Tagout on the Power Source Panel

Making the Hole for the Horn

1. Open the doors of the top half of the main electrical enclosure.

2. Mark the location of the center of the hole on the ceiling of the top half of the main electrical enclosure. The center of the hole should be 2-1/2" from the rear of the enclosure. It should be above the vertical wire duct in the middle of the main electrical enclosure. See Figure 2.

Figure 2: Location of the Hole for the Horn

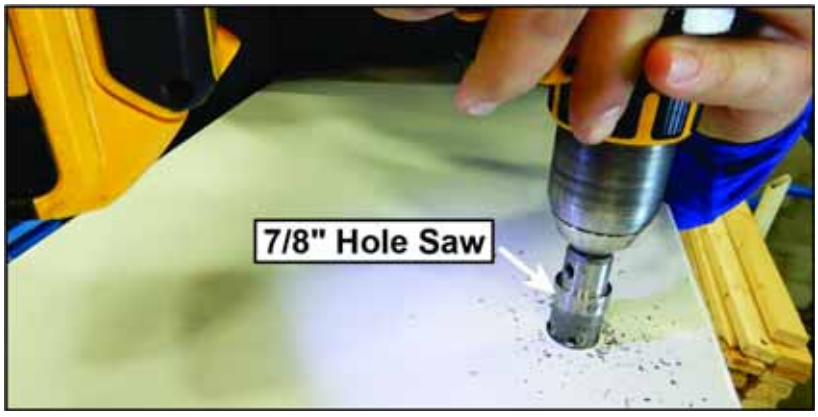


3. Tape a bag under the hole location on the inside of the main electrical enclosure.
   The bag should prevent metal shavings from falling into the main electrical enclosure.

4. Use a 7/8" hole saw to drill the initial hole where the marking indicates. See Figure 3.
   Take short breaks while drilling to allow the metal to cool. This should prevent hot metal debris from burning a hole in the bag used to catch debris.

If you do not have a knockout punch, use a 1-1/4" hole saw instead of the 7/8" hole saw and knockout punch.

Figure 3: Drilling the Initial Hole

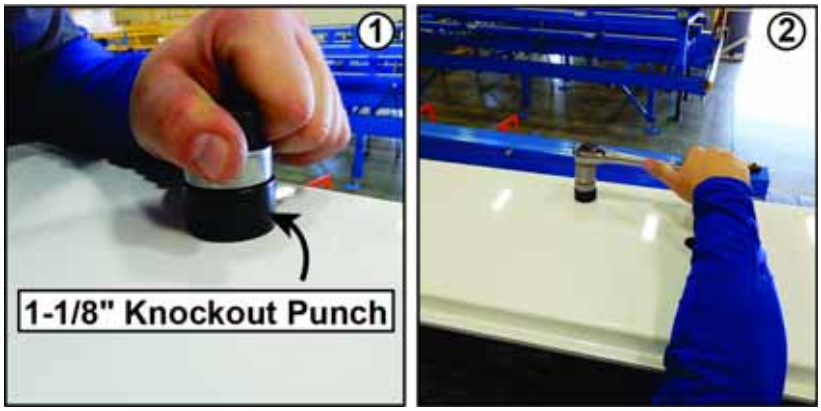


5. Clean the debris from the top of the main electrical panel.

6. Remove the bag with the shavings. Discard the bag and shavings.

7. Use a 1-1/8" knockout punch to enlarge the hole. See Figure 4.
   To use the knockout punch, remove the nut from the bolt. Place the bolt through the hole. Place the nut on the bolt on the underside of the ceiling of the enclosure. Tighten the nut by hand until it touches the ceiling of the enclosure. Turn a 1" wrench on the top of the knockout punch until the nut cuts through the metal of the ceiling.

Figure 4: Enlarging the Hole with a Knockout Punch

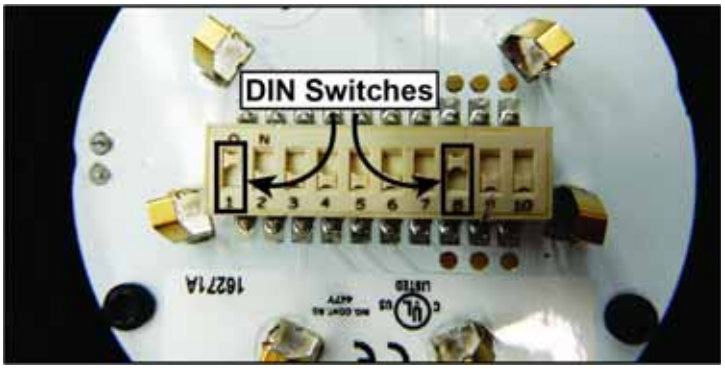


Placing the Horn

1. Remove the cover from the modular base.

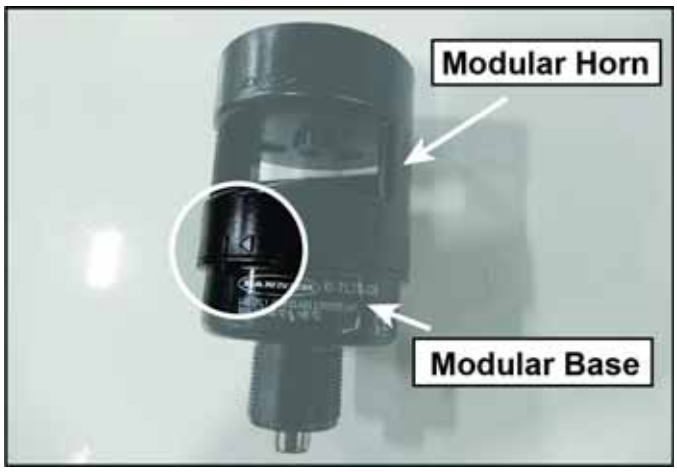
2. Flip DIN switches 1 and 8 on the underside of the modular horn to the On position. See Figure 5.

Figure 5: DIN Switches on the Modular Horn



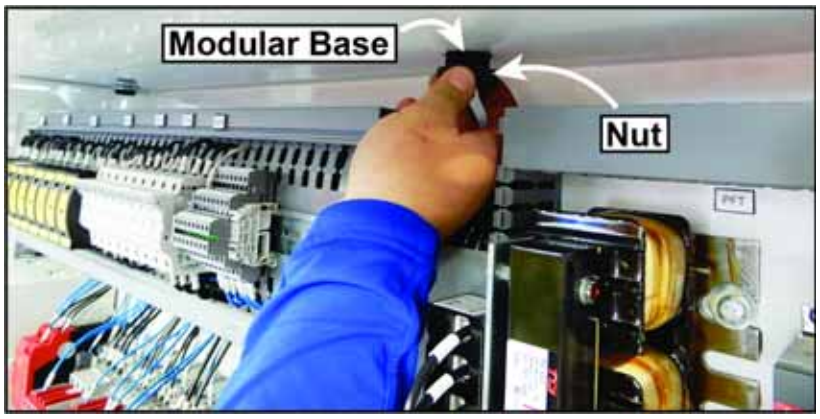
3. Connect the modular horn with the modular base by aligning the raised lines on the horn and base and then turning the base clockwise. See Figure 6.

Figure 6: Modular Horn and Base



4. Place the gasket around the bottom of the modular base.
5. Place the modular base through the hole.
6. Secure the horn by tightening the plastic nut on the modular base. See Figure 7.

Figure 7: Tightening the Nut



Connecting the Horn to Terminals

1. Run the cable through the top half of the main electrical enclosure by using the following steps.

    a) Remove the necessary wire duct covers. These are colored in red in Figure 8.

    Figure 8: Wire Duct Cover Locations (Top Half)

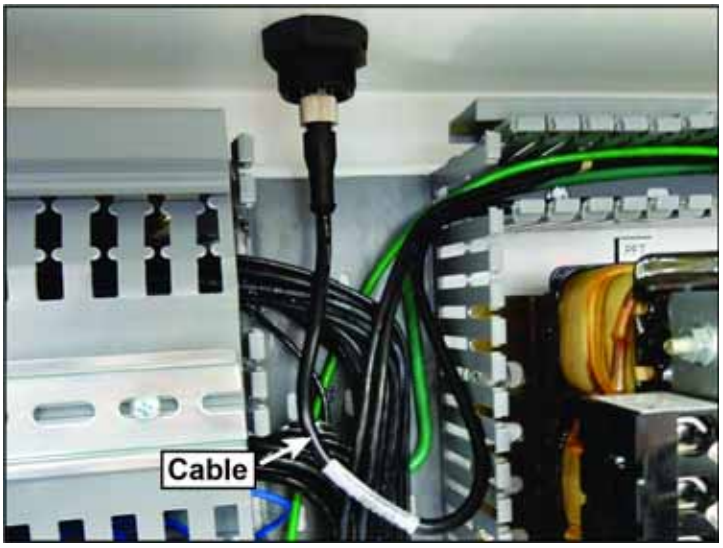
    

    b) Align the pins on the modular base with the end of the cable. Insert the cable.

    Do not force the cable into the modular base. Forcing the cable may bend the pins.

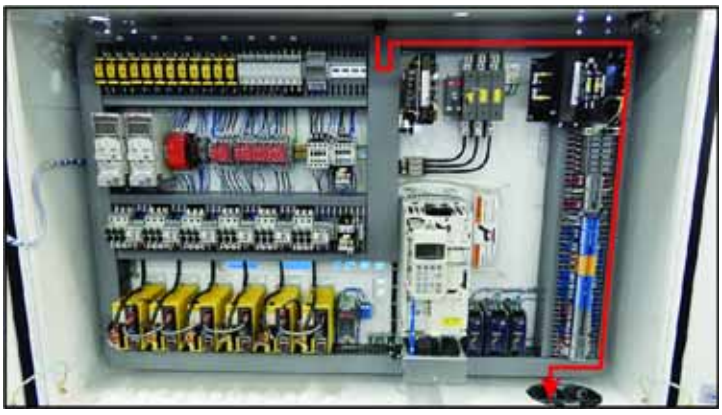
    c) Leave a loop in the cable below the horn. See Figure 9.

    Figure 9: Cable with a Loop

d) Run the cable through the wire ducts in the top half of the main enclosure to the bottom half of the enclosure. Use the path shown in red in Figure 10.

Figure 10: Wire Path (Top Half)

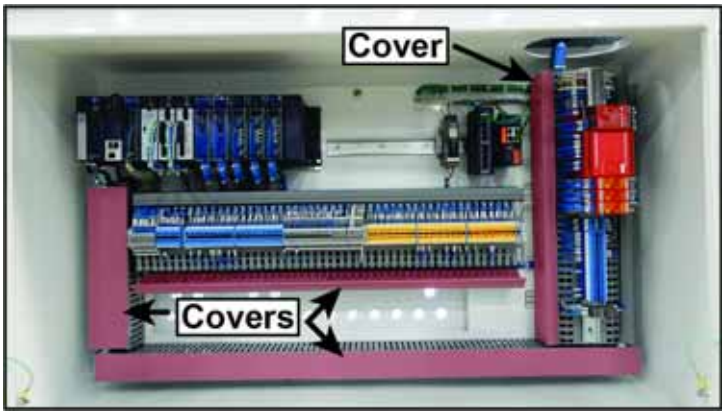


2. Run the cable through the bottom half of the main electrical enclosure by using the following steps.

   a) Open the doors on the bottom half of the main electrical enclosure.

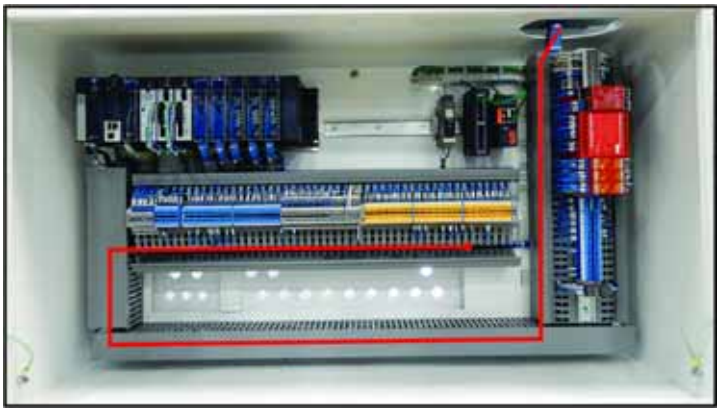
   b) Remove the necessary wire duct covers. See Figure 11.

Figure 11: Wire Duct Cover Locations (Bottom Half)



c) Run the cable through the wire ducts. Use the path shown in red in Figure 12.

Figure 12: Wire Path (Bottom Half)



d) Use wire cutters to cut the slack in the cable past terminal Q32.

Connecting Wires to Terminals

1. Cut the wires to length by using the following steps.

    a) Use a cable stripper to cut a ring around the cable insulator at terminal 52. Strip the insulator from the cable.
    There are five wires in the cable: brown, white, gray, blue, and black. The brown, white, and gray wires are not used.

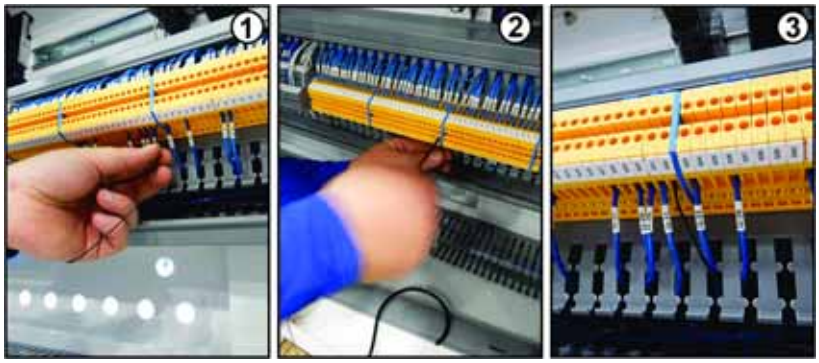
    b) Trim the brown, white, and gray wires so they end at the end of the insulator. See Figure 13.

Figure 13: Trimming Brown, White, and Gray Cables

2. Trim the black wire so that it reaches terminal Q32. Trim the blue wire so that it reaches terminal 52.

3. Use a wire stripper to strip about 1/4" of the insulation from the end of the black wire. Place the end into terminal Q32. Tighten the screw. See Figure 14.

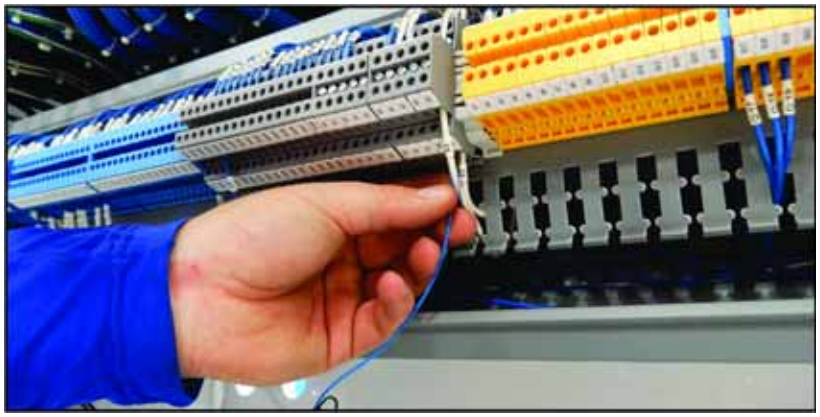
Figure 14: Placing the Black Wire into Terminal Q32



4. Strip about 1/4" of the insulation from the end of the blue wire. Place the end into terminal 52. See Figure 15. Tighten the screw.
   There are multiple terminals for terminal 52. Place the blue wire in any open terminal 52.

5. Replace all of the wire duct covers.

Figure 15: Placing Blue Wire into Terminal 52



6. Restore electricity to the saw using the following steps.

   a) Close the doors on the top half of the main electrical enclosure. Turn the disconnect switch on the right-hand door of the main electrical enclosure to the On position.

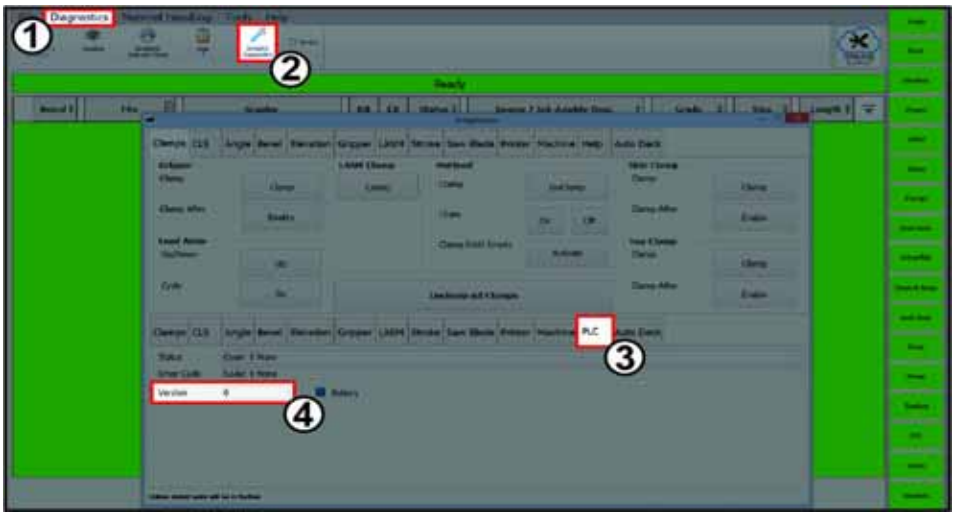
   b) Remove the lock and tag from the electrical service entry panel.

   c) Restore power at the electrical service entry panel.

Checking Software Version

1. Turn the touch screen on.
2. Start the *BLADE* software.
3. On the touch screen computer, select *Diagnostics>Detailed Diagnostics>PLC*. See Figure 16.

Figure 16: PLC Software Version Location



4. Check to make sure that your PLC software is version 4.001.002 or higher.
   - If it is, your horn is ready. Close the doors on the bottom half of the main electrical enclosure. Proceed to Using the Horn on page 14.
   - If it is not, shut down the *BLADE* software. Go to Service Bulletin SB218. Locate the Downloading the PLC RX3i Software section. Follow the instructions in that section. Continue with the instructions on page 14 in this document after completing that section.

     Ignore the rest of Service Bulletin SB218 because those parts are not relevant.

Using the Horn

The horn sounds when the PLC detects a fault. The horn sounds only in Auto Mode when the saw cuts.

To silence the horn after the PLC detects a fault, do the following.

1. Turn the selector switch from Auto Mode to Manual Mode.
2. Fix the fault.
3. Select CONTINUE, STOP, or RETRY from the menu that appears when the horn sounds. Not every option appears for every fault.

Silencing the horn does not fix the fault. Fix the fault before switching to Auto Mode and cutting again.

Figure 17: Selector Switch

END OF SERVICE BULLETIN