

Service Bulletin

Machinery Affected: *RoofGlider®* Press
Document: SB198
Title: Redesigned Push Bar
Applies To: Push Bars Manufactured With Gas Spring
and Clamp-Style Arm
Distribution: Customers, All With Affected Push Bar



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Purpose and Scope

MiTek has used feedback from our customers to improve the design of our *RoofGlider*[®] push bars which we are pleased to provide to you at no charge. Please immediately install these newly designed push bars to ensure the safest possible environment for your employees.

	 WARNING
	Do not operate the equipment if any guard or protective device is damaged or not working.

Overview

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



- Wrenches or socket set
- Allen wrench set
- Lockout/tagout mechanism
- Damp cloth

Table 1: Parts in SB198 Kit

Qty.	Part Description	Part #	
4	Shoulder bolt 5/8" x 3/4"	328104	
8	Washer shim, 1" OD	365844	
8	Lock nut, 3/8"-16	361990	
8	Hex head cap screw, 3/8"-16 x 1-1/2"	327265	
2	Push bar weldment	68458-501	
4	Pivot arm assembly	68460-501	
1	Loctite® Threadlocker Blue 242®	621004	
1	Service Bulletin document	SB198	

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

Procedure

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 at least include the steps listed here.

1. Lockout/tagout the electrical system:
 - a) Push an E-stop button on the press head’s operator control station.

Figure 1: Sample of an E-Stop Button



- b) Follow the instructions in Figure 2 to lockout/tagout at the machine's electrical enclosure in accordance with OSHA requirements.

Figure 2: How to Lockout/Tagout

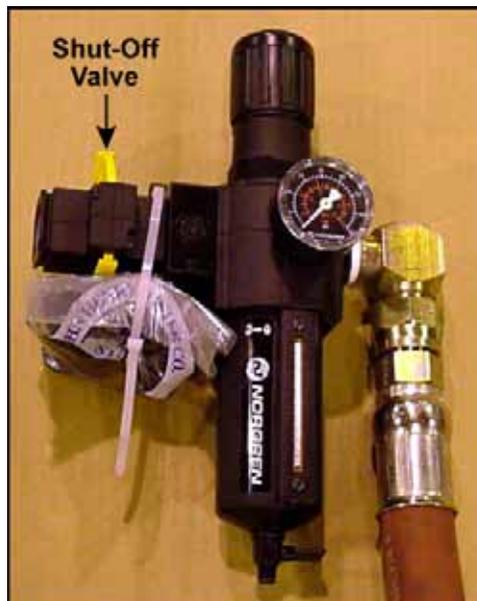


- c) Lockout/tagout additional gantry heads on the same table line by repeating step 1 for each additional gantry head.

	 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>

2. Lockout/tagout the pneumatic system:
 - a) Turn off the shutoff valve on the pneumatic system's filter/regulator. On the model shown in Figure 3, the valve is shut off when the yellow switch is pressed down. Other models may vary slightly.
 - b) Attach a lock and tag that meet OSHA requirements for lockout/tagout.

Figure 3: Turn off the Pneumatic Shutoff Valve



Replacing the Push Bar

Follow these instructions to replace the push bar on one side of the gantry head. Repeat these instructions to replace the push bar on the other side of the gantry head.



1. Remove the existing push bar (1) and pivot arm assembly (2) from the horizontal arms (3) using these steps:

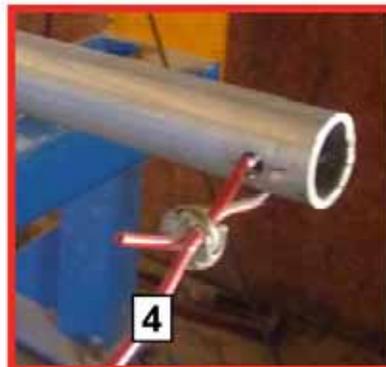
- a) Disconnect (do not cut) the wire rope (4) from both ends of the existing push bar. Leave the other end of each wire rope attached to the machine.

Keep the hardware.

Figure 4: Overview of the Major Components Related to the Push Bar



Refer to this graphic throughout the procedure to locate major components.

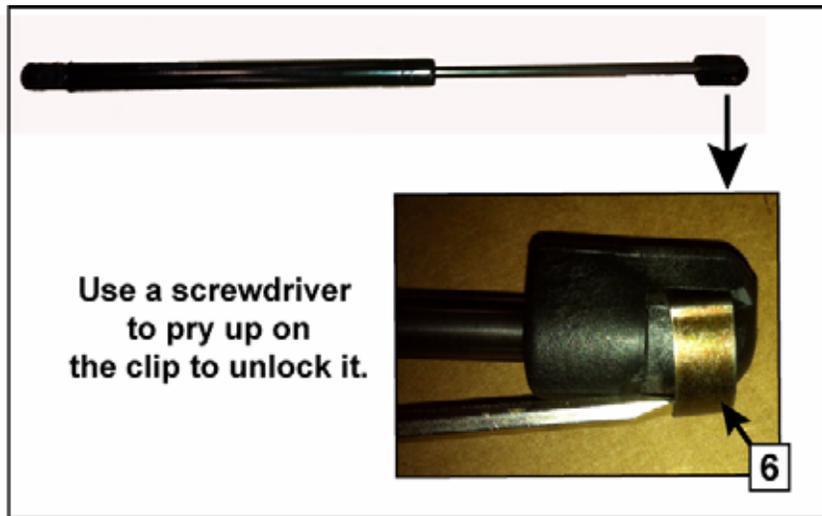




Inspect the gas spring for damage. If wear or damage exists, replace it immediately. See page 17 for ordering information.

- b) Disconnect only the end of each gas spring (5) that is connected to its pivot arm assembly (2) by prying up on the retaining clip (6) shown in Figure 5. Leave the other end of each gas spring attached to its horizontal arm (3).

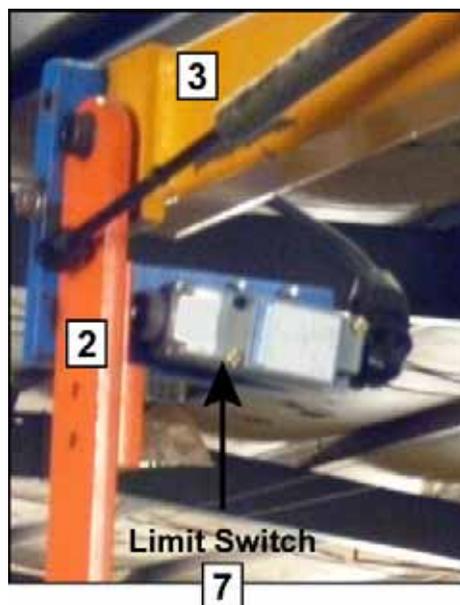
Figure 5: Gas Spring Retaining Clip



- c) Leave the limit switch (7) in place. It is shown in Figure 6.

There is 1 limit switch on each side of the gantry head.

Figure 6: Limit Switch Shown With Pivot Arm (2) and Horizontal Arm (3)

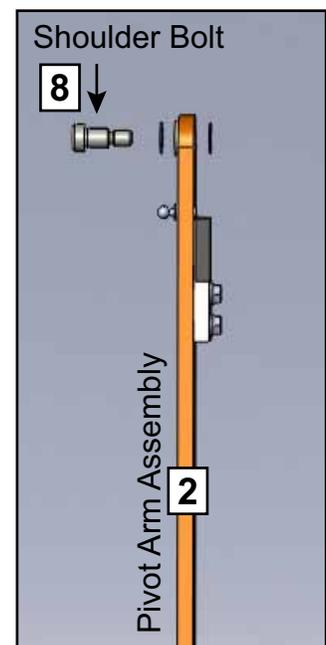


 CAUTION	
	<p>Use 2 people to hold the push bar assembly when unscrewing shoulder bolts.</p>

- d) With the help of a second person to keep the push bar assembly from falling, unscrew the shoulder bolt (8) at the top of each pivot arm.

The old push bar, pivot arms, and shoulder bolts can be discarded.

Figure 7: Unscrew the Shoulder Bolt

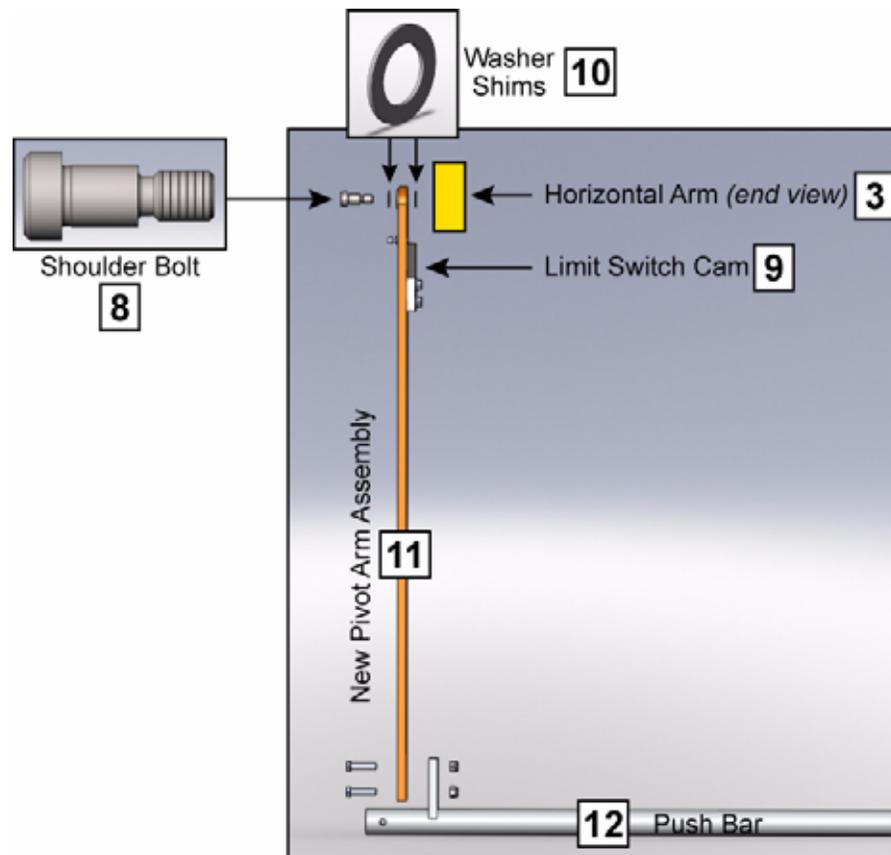




All pivot arms are identical so they can go on either end and either side of the gantry head.

2. Attach 2 newly designed pivot arm assemblies to one side of the gantry head by referring to these steps and Figure 8:
 - a) Locate the new hardware: 1 shoulder bolt (8) and 2 washer shims (10) per pivot arm assembly.
 - b) Orient one new pivot arm assembly as described here:
 - Turn the new pivot arm assembly (11) so the limit switch cam (9) is facing the center of the machine.
 - The upper end of each pivot arm will be attached to the outside surface of each horizontal arm as shown in Figure 8.

Figure 8: Attaching the Pivot Arm to the Horizontal Arm





To prevent *Loctite Threadlocker Blue 242* from clogging in the nozzle, avoid touching the bottle tip to the metal surface.

Loctite Threadlocker Blue 242 sets in approximately 10 minutes and fully cures in 24 hours.

- c) Apply the supplied *Loctite Threadlocker Blue 242* to the shoulder bolt by following these steps and referring to Figure 9:

- 1) Clean dust and grease off the new shoulder bolt (8) threads.
- 2) Shake the *Loctite Threadlocker Blue 242* bottle thoroughly.
- 3) Apply several drops of *Loctite Threadlocker Blue 242* onto the shoulder bolt threads.
- 4) Clean adhesive residue immediately with a damp cloth.

Figure 9: Apply *Loctite* to the Shoulder Bolt Threads



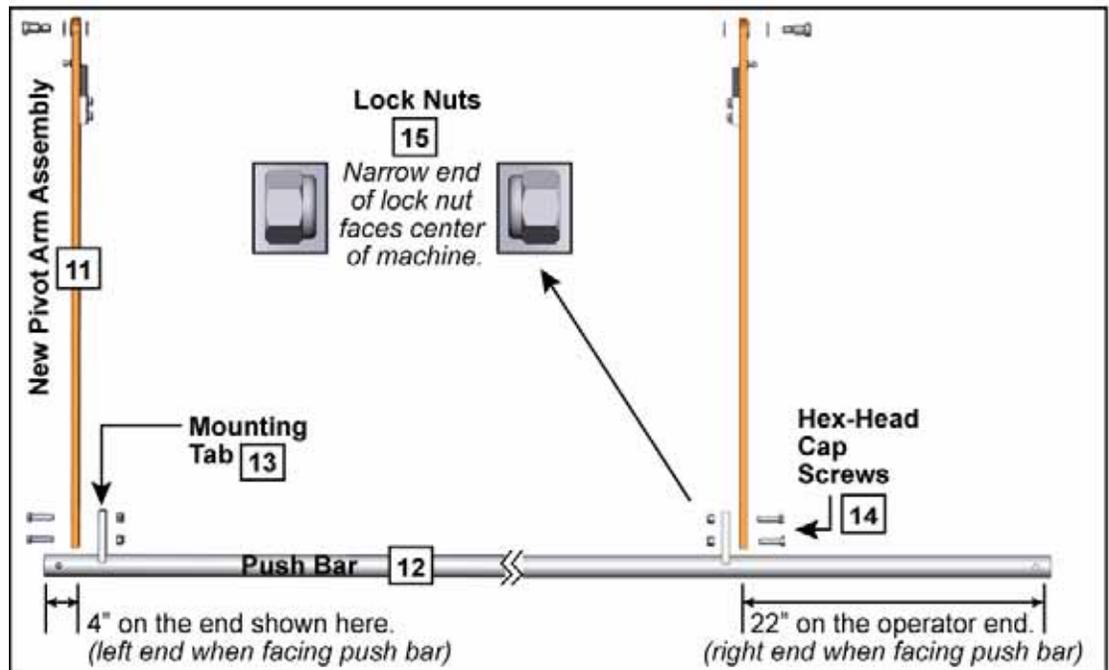
- d) Place 1 washer shim onto the shoulder bolt.
 - e) Slide the shoulder bolt into the hole located at the top of the pivot arm assembly until it shows through the other side of the pivot arm assembly.
 - f) Place the second washer shim on the end of the shoulder bolt and slide the shim past the shoulder bolt threads.
3. With washer shims assembled on the shoulder bolt (see step 2), screw the shoulder bolt into the threaded hole in the horizontal arm (3) using an Allen wrench. Clean adhesive residue immediately with a damp cloth.
 4. Repeat steps 2-5 for the pivot arm on the other end (same side) of the gantry head. This will provide both arms needed for one push bar assembly.
 5. When one complete push bar is installed, push each pivot arm assembly (11) to test that the limit switch cam causes the limit switch roller plunger to slide easily into the limit switch when the pivot arm pivots back and forth.



Tighten both shoulder bolts using approximately the same amount of pressure to ensure the push bar swings evenly.

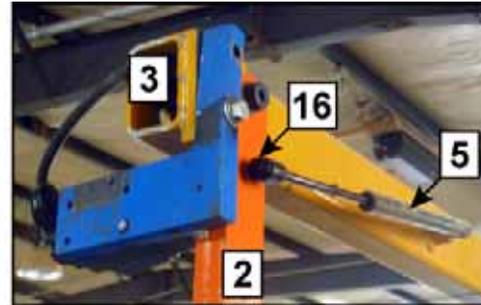
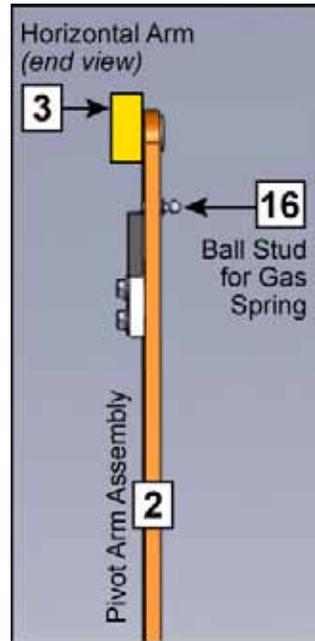
6. Attach the new push bar to the pivot arms just installed by following these steps and referring to Figure 10.
 - a) Locate the new hardware: 2 hex head cap screws (14) and 2 lock nuts (15) per pivot arm.
 - b) Orient the new push bar as described here:
 - Hold one new push bar (12) so each mounting tab (13) on the push bar is located near a pivot arm. The end closest to the operator control station should extend approximately 22" beyond the pivot arm.
 - Adjust the location of the push bar so each tab is to the inside (machined-pocket side) of each pivot arm.
 - c) Place 2 hex head cap screws (14) through the holes in the bottom of each pivot arm and through the mounting tab, so the head of the cap screws is facing the outside.
 - d) Screw a lock nut (15) on the end of each cap screw. When oriented correctly, the lock nuts face the center of the machine and are oriented as shown in Figure 10.

Figure 10: Attaching the Push Bar to the Pivot Arm Assembly



7. Reattach the loose end of the gas spring (5) to the ball stud (16) on each pivot arm and push the retaining clip in place.

Figure 11: Attach the Gas Spring to the Ball Stud

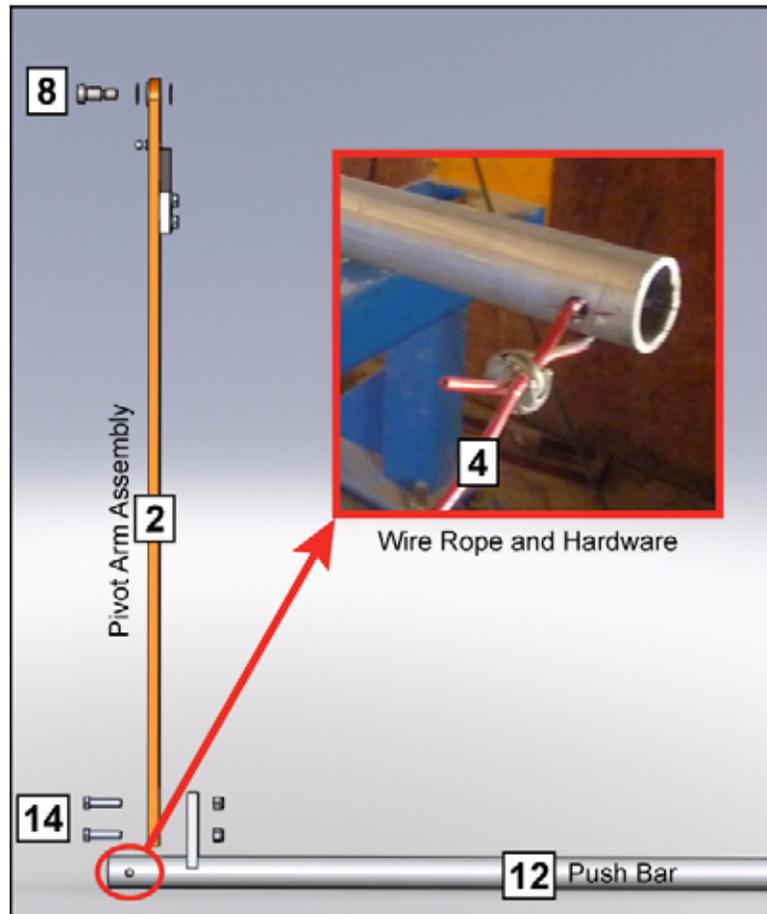


Photographic Close-Up of Diagram at Slight Angle

Diagram

- Reattach the wire rope (4) to the push bar (12) using the same hardware that was previously used.

Figure 12: Wire Rope Attachment Point and Hardware



Loctite Threadlocker Blue 242 sets in approximately 10 minutes and fully cures in 24 hours.

- Push the push bar from each end to ensure it actuates smoothly. When one end of the push bar is pushed, the other end should move approximately the same distance.

If the push bar is not moving smoothly and evenly, the shoulder bolt (8) may need to be torqued evenly on both ends. Because *Loctite Threadlocker 242* was used on the shoulder bolts, the bolt may need to be slightly heated to rotate further. Use extreme caution.

- Repeat this entire procedure to install the new push bar on the other side of the gantry head.
- Remove the lockout/tagout devices to perform the tests outlined in the next section.

Testing the Push Bar and Stopping Distance

1. Test the push bar assembly.

	 WARNING
	<p>Never stand directly in front of the gantry head when it is moving!</p> <p>Operators must ensure no other personnel are in the path of the gantry head before operating gantry head!</p> <p>If the gantry head fails to stop when expected, serious injury or death may occur.</p>

- a) Move the gantry to the middle of the table line. There must be at least 10 ft of table space on both sides of the gantry head.
- b) Place a heavy object on the table approximately 8 ft away from the push bar to one side.
 - The object height must be more than 5 ft. tall
 - The object weight must be at least 100 lb.
- c) Move the gantry head toward the object on the table. Do not let go of the joystick when the push bar strikes the object.



As the push bar moves, the limit switch will go to a open state causing the gantry to stop in an E-stop status. The stopping distance should be less then 20 in.

2. Test the stopping distance and electrical connections.
 - a) If the stopping distance is over 20 in.:
 - 1) Clean and dry the surface of the tube where the gantry head rides.
 - 2) Visually inspect the drive wheels for wear. If any is found, replace the worn wheel. Ideally, all drive wheels should be replaced at the same time.
 - 3) Check that the chain tension is within specification. It should have approximately 1/2" play when light pressure is applied (1/4" movement to both sides of center). If the chain tension needs to be adjusted, refer to the *RoofGlider* manual for the procedure.
 - 4) Inspect the brake on the gearmotor:
 - Inspect the brake disc for signs of wear.
 - Remove build-up of dirt and particles.
 - Check the air gap, and adjust to less than .050" if necessary. Refer to the *RoofGlider* manual for the procedure.
 - 5) Repeat the test until the stopping distance is under 20 in.
 - b) If the stopping distance is less than 20 in., the push bar on that side is working, and the electrical connections must now be tested by following these steps:
 - 1) After performing the test in step 1 on page 15, do NOT reset the push bar.
 - 2) Attempt to move the gantry head in the direction of the actuated push bar.
 - The gantry head should NOT move.
 - 3) Attempt to move the gantry head in the opposite direction.
 - The gantry head should move in the opposite direction.
 - 4) If the gantry head reacted as it should, continue. If the gantry head did not react as it should, check electrical connections and refer to the *RoofGlider* manual for troubleshooting assistance.
3. Repeat this entire test, starting on page 15, for the push bars on the opposite side with the gantry head moving in the opposite direction than the test just performed.

Ordering Gas Springs

Gas springs will eventually need to be replaced due to normal wear and tear. If the existing gas springs are showing any sign of damage, replace them immediately. Always replace both of the gas springs on a push bar at the same time.

Figure 13: Gas Spring



Order new gas springs by following these simple steps:

1. Create an e-mail with the following information:
 - Your name
 - Company name (include MiTek Customer Number, if you know it)
 - Shipping address
 - “Please send me (quantity) gas springs for my *RoofGlider* push bar, Part Number 370556.”
2. Send the e-mail to mitekparts@mii.com.

END OF SERVICE BULLETIN