

8.3.1 BRAKE SHOE INSPECTION AND REPLACEMENT

Note:

Replace brake shoe with rebuilt brake shoe from Spartanics or your service representative.

Inspect and (if necessary) replace brake shoes as follows:

Tools needed for inspecting shoes:

- > 3/16" hex wrench

Tools needed for replacing shoes:

- > 1/8" hex wrench (Allen wrench)
- > 3/16" hex wrench (Allen wrench)
- > 1/4" hex wrench (Allen wrench)
- > 7/16" open-end wrench
- > 7/8" open-end wrench
- > 15/16" open-end wrench
- > medium flat-tip screwdriver
- > needle-nose pliers

1. Turn disconnect switch to "OFF" position. See Section 3.1.5 for location of disconnect switch.



Turn disconnect switch off before doing the following steps. You can get seriously hurt if you do not. See Section 3.1.5 for location of switch.

2. Remove electronics package according to steps 7-10 in Section 8.1.4.

Note

Use Figure 1 of the Illustrated Parts List in Chapter 11 of this manual as an aid in inspecting the brake shoes. When you see something like "Remove brake guard (117)" in the following procedure, the number (117) refers to a picture of the brake guard (and how the brake guard is attached to the press) in Figure 1 of the Illustrated Parts List.

3. Unscrew brake guard screws (113) with 3/16" hex wrench and remove washers (114 & 115).
4. Unhook brake guard (117) from press. Brake guard has two hooks that hook onto top of press.
5. Inspect brake shoes for excessive wear as shown in Figure 8.3 A. If brake shoes are OK, then the problem is with the electronics package. Reattach the brake guard and then place a loaner electronics package into the press according to steps 11-14 in Section 8.1.4. If brake shoes are worn or if brake shoes squeak when press is in use, replace the brake shoes as follows:
 6. Remove brake preload spring with needle-nose pliers. See (A) in Figure 8.3 B.
 7. Loosen brake preload spring jam nuts (B) with needle-nose pliers.
 8. Unscrew brake preload spring screws (C) with screwdriver.

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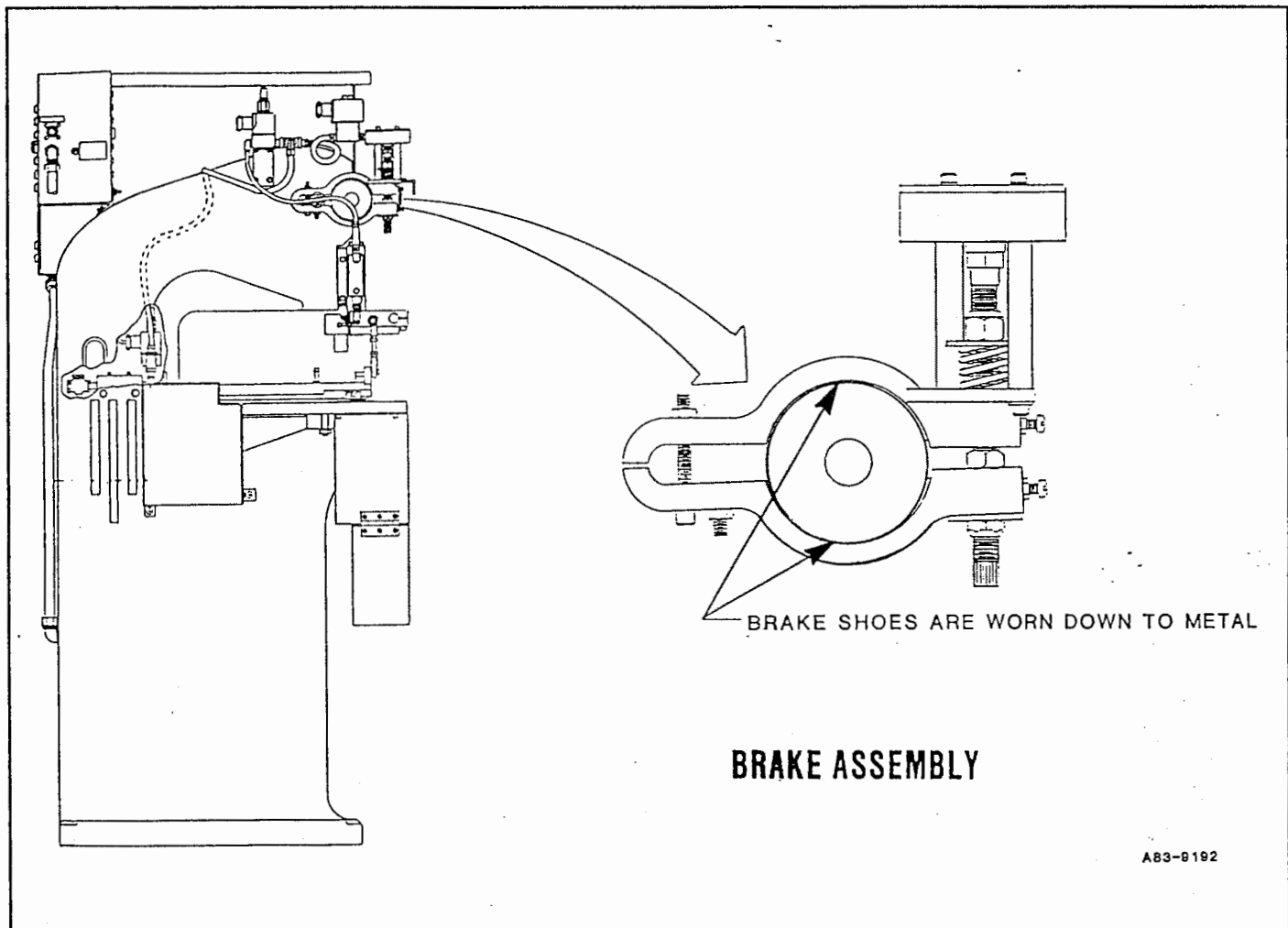


Figure 8.3 A

9. Unscrew pancake cylinder screws (D) with 3/16" hex wrench and lift cylinder (E) and washers (F) off of brake assembly.
10. Pull shaft shoe (G) off of threaded shaft (H).
11. Unscrew upper nut (I) from threaded shaft with 7/8" wrench.
12. Pull spring washer (J), spring (K), and post assembly (L) off of threaded shaft.
13. While holding threaded shaft (H) still with 1/4" hex wrench, unscrew and remove jam nut (M) with 7/8" wrench. Pull threaded shaft out of brake assembly.
14. Loosen brake axle jam nut (N) with 7/16" wrench.
15. Unscrew and remove brake axle set screw (O) with 1/8" hex wrench.
16. Unscrew and remove brake mounting nut (P) with 15/16" wrench. Pull brake mounting washer (Q) off of brake axle (R).
17. Pull brake shoe assembly (S) off of brake drum (T) and brake axle (R).
18. Place rebuilt brake shoe assembly (S) on brake drum (T) and brake axle (R).
19. Place brake mounting washer (Q) onto brake axle (R).

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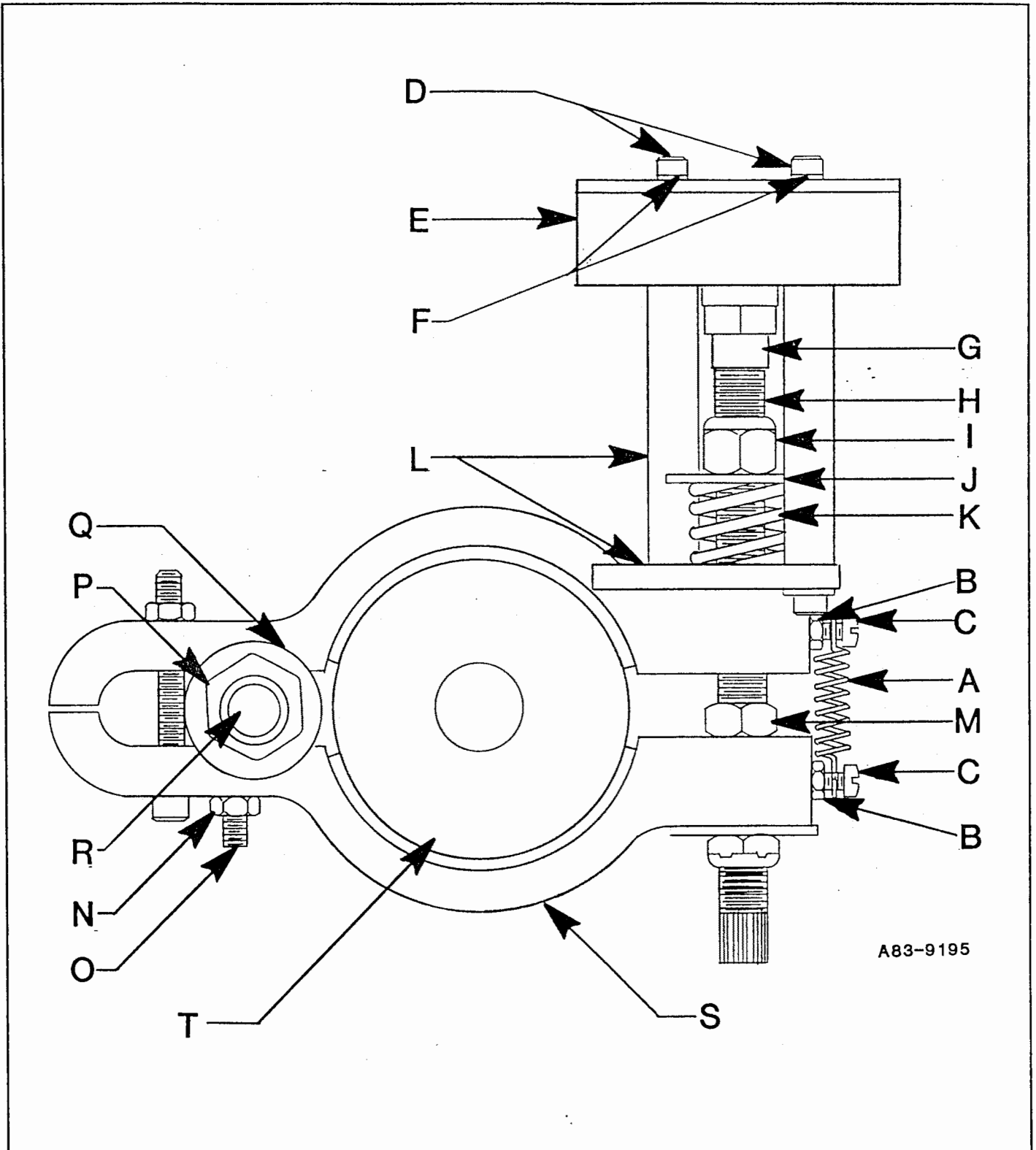


Figure 8.3 B

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20. Screw brake mounting nut (P) onto brake axle (R). Do not tighten nut against brake shoe assembly or brake will not work. Brake shoe assembly should have as little side to side motion as possible but still be able to move up and down freely after nut is screwed onto brake axle. See Figure 8.3 C.
21. Place threaded shaft (H) part way into brake shoe assembly and then screw jam nut (M) onto threaded shaft until shaft is in position shown in Figure 8.3 B.
22. While holding threaded shaft still with 1/4" hex wrench, tighten jam nut with 3/4" wrench.
23. Place post assembly (L), spring (K), and spring washer (J) onto threaded shaft (H).
24. Screw upper nut (I) onto threaded shaft (H) with 7/8" wrench.
25. Place shaft shoe back (G) onto threaded shaft (H).
26. Place pancake cylinder (E) onto post assembly (L) and secure it in place with screws (D) and washers (F).
27. Screw brake preload spring screws (C) into brake shoe assembly.

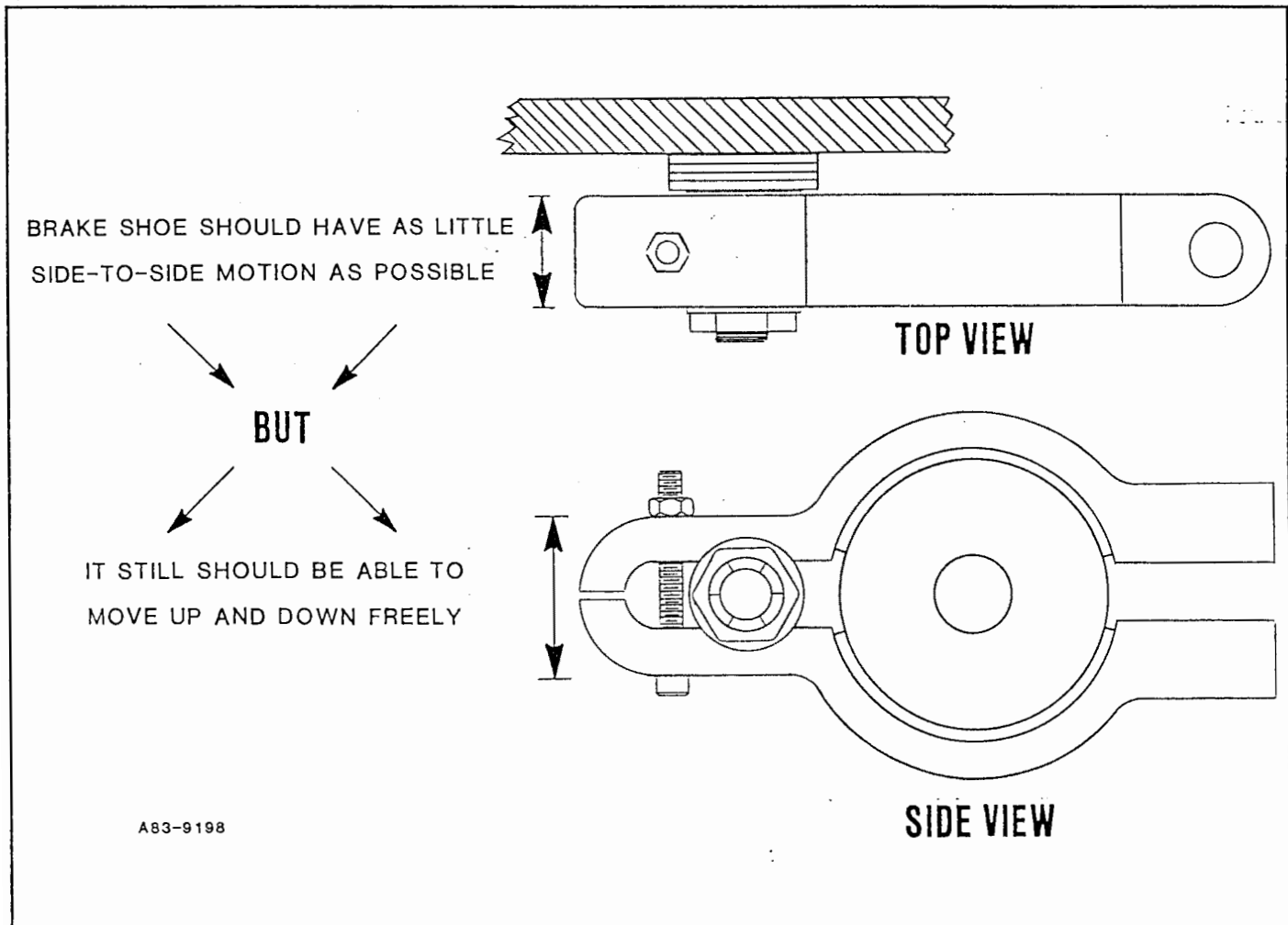


Figure 8.3 C

8.3.1 BRAKE SHOE INSPECTION AND REPLACEMENT

28. Tighten brake preload spring jam nuts (B) with needle-nose pliers.
29. Reattach brake preload spring (A) with needle-nose pliers.
30. Screw in and tighten brake axle set screw with 1/8" hex wrench until there is about .040" (1mm) up-and-down play in the brake shoe assembly. See Figure 8.3 D.
31. While holding brake axle set screw still with 1/8" hex wrench, tighten brake axle jam nut with 7/16" wrench. See Figure 8.3 D.
32. Reattach brake guard (117, Fig. 1) to press.
33. Reinstall electronics package according to steps 11-14 in Section 8.1.4.
34. Adjust brake stroke according to Section 9.2.

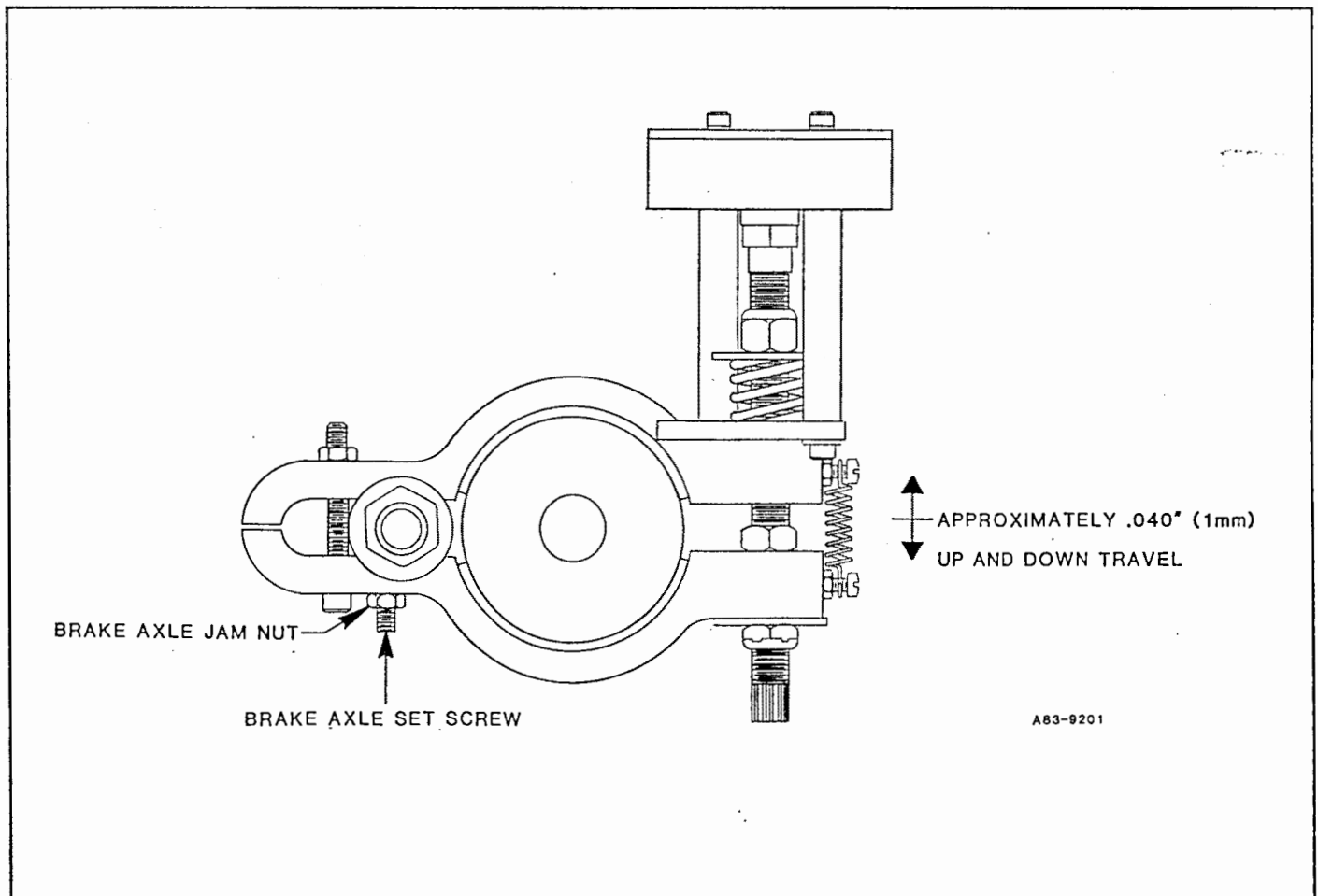


Figure 8.3 D

8.3.2 BRAKE SOLENOID TEST AND REPLACEMENT

Test and (if necessary) replace the brake solenoid as follows:

Tools needed to test solenoid:

- 5/64" hex wrench (Allen wrench)
- volt/ohm meter

Tools needed to replace solenoid:

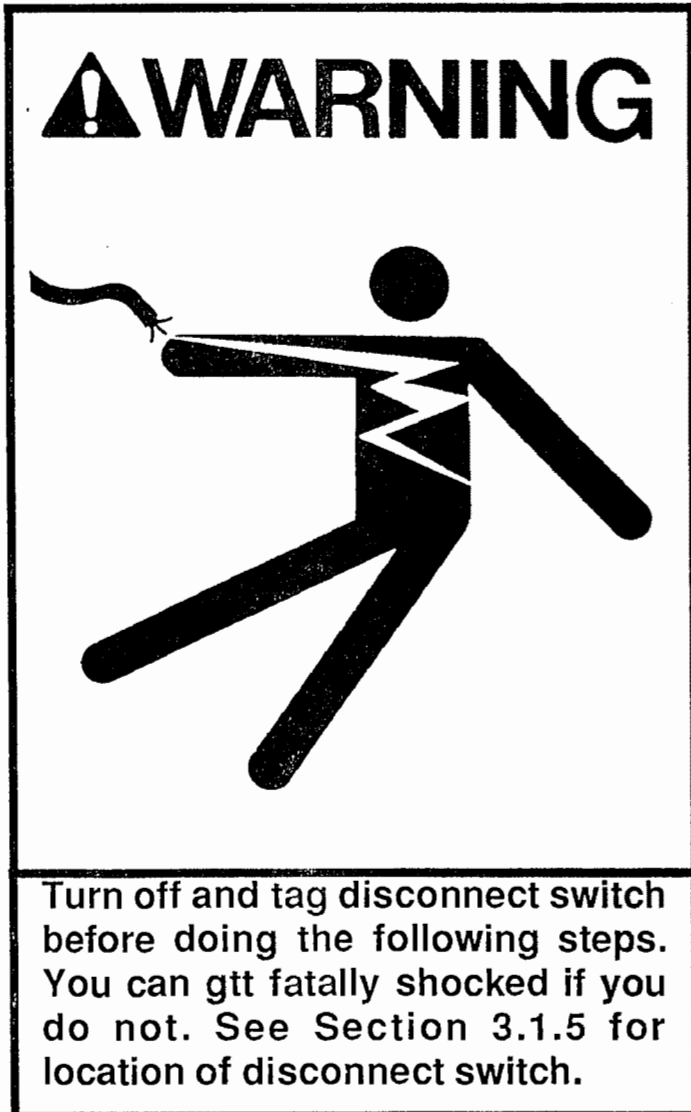
- 3/16" hex wrench (Allen wrench)
- 9/16" open-end wrench
- 11/16" open-end wrench
- medium flat-tip screwdriver
- pipe joint compound
- vise

1. Turn disconnect switch to "OFF" position. See Section 3.1.5 for location of disconnect switch.

Note

Use the Illustrated Parts List in Chapter 11 of this manual as an aid in testing and replacing the brake solenoid. When you see something like "Remove back panel (202, Fig. 4)" in the following procedure, the number (202) refers to a picture of the back panel (and how the back panel is attached to the press) in Figure 4 of the Illustrated Parts List.

2. Remove back panel screws (201, Fig. 4) with 5/64" hex wrench and remove back panel (202).
3. Check very carefully for broken or loose wires in the motor starter box, especially around TB1 terminals 1, 2, and 4; and TB2 terminals 4 and 5. See Figure 8.3 E. If any broken or loose wires are found, repair them and then see if the press works.
4. Test for 140 ± 10 ohms across TB1 terminals 1 and 2 with volt/ohm meter. See Figure 8.3 E. If 140 ± 10 ohms are not present (coil is bad), go to step 9. If 140 ± 10 ohms are present (solenoid is OK), go to step 5.
5. Turn disconnect switch to "ON" position.
6. Turn set up switch key to "SET UP" position
7. Press "ON" button on control panel.



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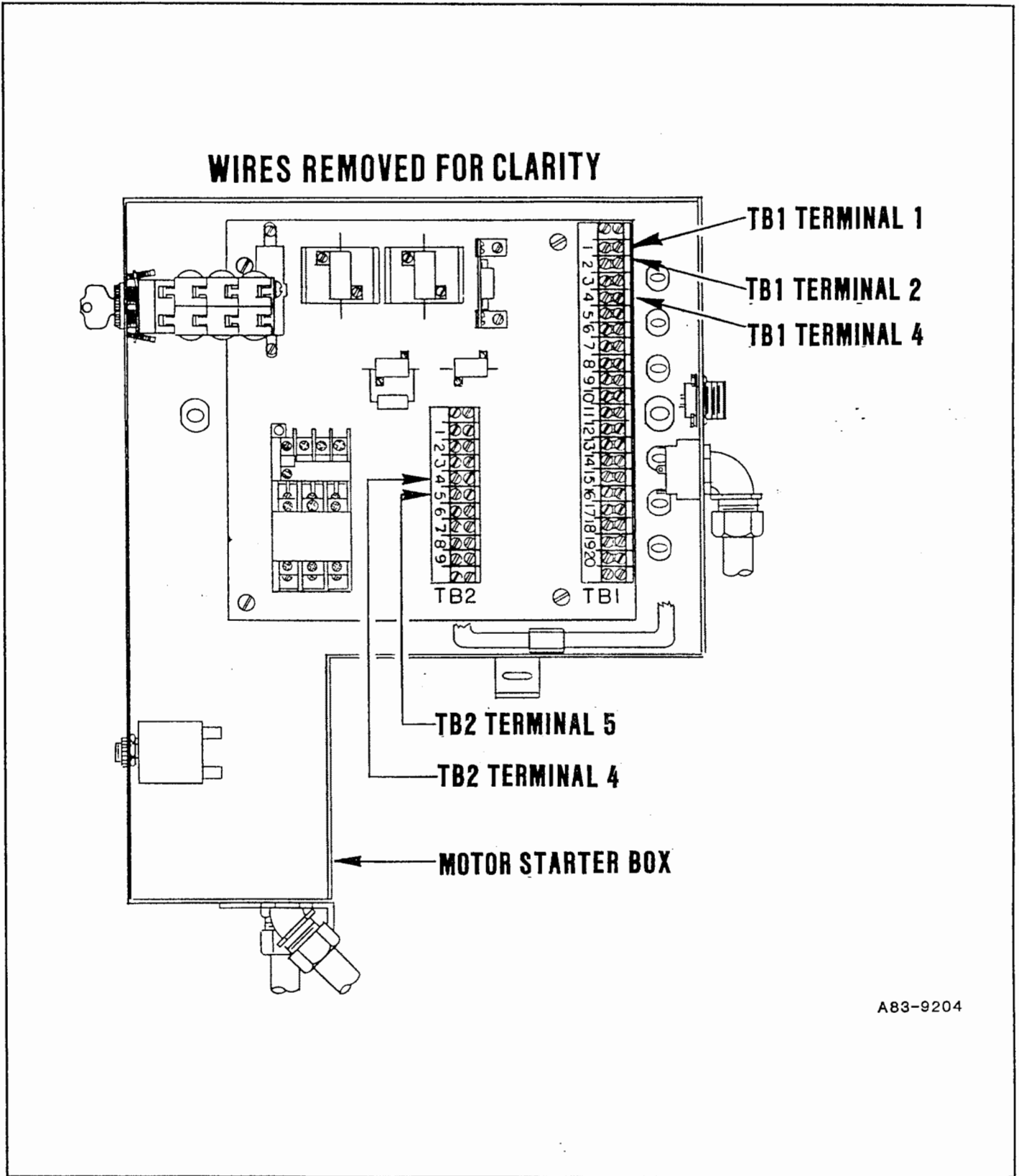


Figure 8.3 E

8.3.2 BRAKE SOLENOID TEST AND REPLACEMENT

! WARNING

* Never do live electrical tests on the press when you are alone. Always make sure someone is present to help you in case you get shocked.

* Do not touch bare electrical terminals when doing live electrical tests.

! WARNING

Turn off and tag disconnect switch before doing the following steps. You may get fatally shocked if you do not. See Section 3.1.5 for location of disconnect switch.

8. Test for 40 to 55 volts DC across TB1 terminals 1 and 2 (2 is ground) with volt/ohm meter. See Figure 8.3 E. If 40 to 55 volts are not present, replace brake solenoid PCB according to Section 8.3.3. If 40 to 55 volts are present, reattach the back panel and continue to follow the troubleshooting chart.

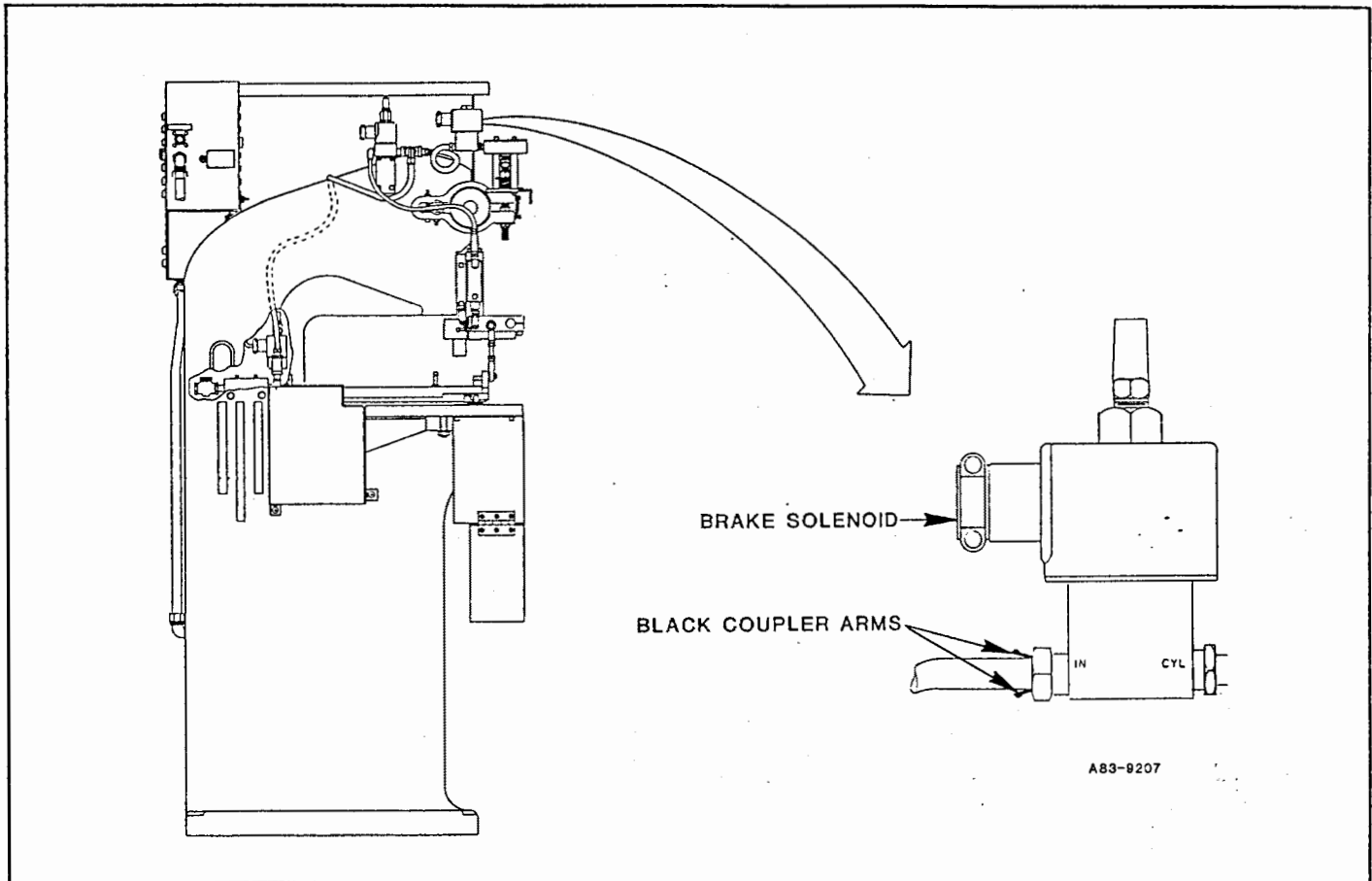
9. Turn disconnect switch to "OFF" position.

10. Remove electronics package according to steps 7-10 in Section 8.1.4.

11. Unscrew brake guard screws (113, Fig. 1.) with 3/16" hex wrench.

12. Unhook brake guard (117) from press. Brake guard has two hooks that hook onto top of press.

13. Squeeze black coupler arms on brake solenoid air tube and pull tube out of brake solenoid. See Figure 8.3 F

8.3.2 BRAKE SOLENOID TEST AND REPLACEMENT**Figure 8.3 F**

14. Remove pancake cylinder screws (379, Fig 11.) and lock washers (380) with 3/16" hex wrench, lift cylinder and attaching parts off of brake assembly, and place cylinder in vise.
15. Unscrew connector (315, Fig. 9) from brake solenoid (317) with 11/16" wrench.
16. Unscrew reducer (318) from pancake cylinder. Reducer will still be attached to brake solenoid (317). Mark which side of the pancake cylinder that the reducer screwed into.
17. Remove pancake cylinder from vise and place brake solenoid in vise.
18. Unscrew muffler (316) from brake solenoid with 9/16" wrench.
19. Unscrew reducer (318) from brake solenoid with 9/16" wrench.
20. Remove bad brake solenoid from vise and place pancake cylinder in vise.
21. Apply pipe joint compound to reducer, muffler, and connector.
22. Screw reducer into pancake cylinder. Make sure that the reducer is screwed into the proper (marked) side of the cylinder.
23. Screw new brake solenoid onto the reducer in pancake cylinder. You should be able to tighten the solenoid by hand. Make sure that the reducer is screwed into the brake solenoid hole that has "CYL" stamped next to it.

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24. Screw muffler into new brake solenoid with 9/16" wrench.
25. Screw connector into new brake solenoid with 11/16" wrench.
26. Remove pancake cylinder from vise.
27. Place pancake cylinder back on brake and secure in place with mounting screws and lock washers.
28. Reattach air tube to brake solenoid.
29. Feed brake solenoid wire harness into motor starter box.
30. Connect brake solenoid wire lugs to TB1 terminals 1 and 2. See Figure 8.3 E. It does not matter which lug goes on which terminal.
31. Tighten terminal screws with screwdriver.
32. Reattach brake guard and back panel.

8.3.3 BRAKE SOLENOID PCB REPLACEMENT

Replace the brake solenoid PCB as follows:

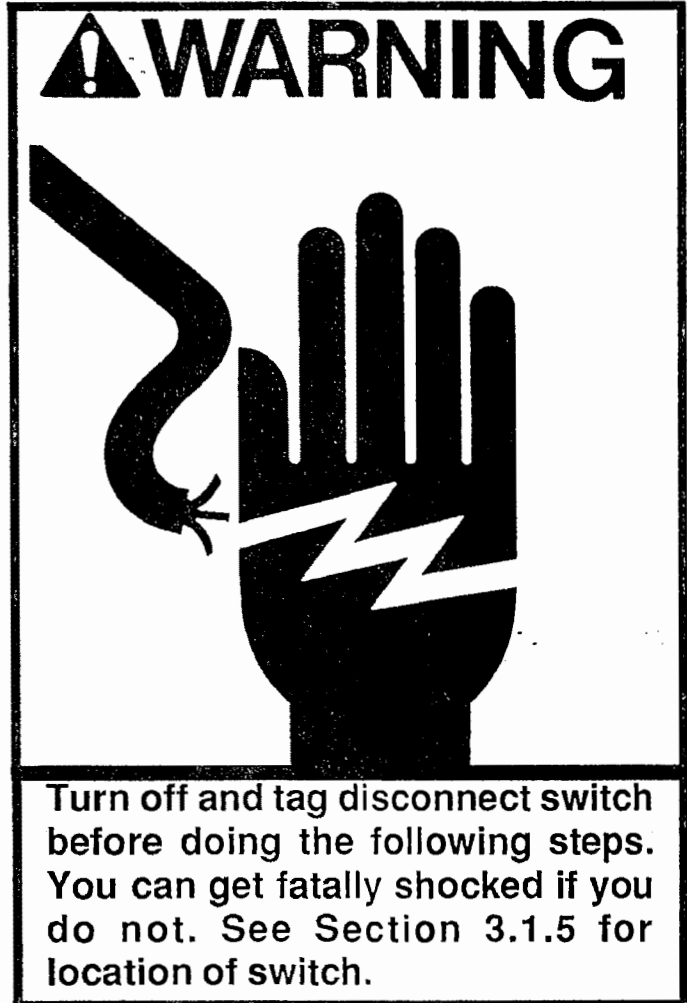
Tools Needed:

- > 5/64" hex wrench (Allen wrench)
- > medium flat-tip screwdriver

Note

Use the Illustrated Parts List in Chapter 11 of this manual as an aid in replacing the brake solenoid PCB. When you see something like "Remove brake solenoid PCB (599, Fig.14)" in the following procedure, (599) refers to a picture of the brake solenoid PCB (and how the PCB is attached to the press) in Figure 14 of the Illustrated Parts List.

1. Turn disconnect switch to "OFF" position.



2. Loosen screws on TB1 terminals 1, 2, and 4. See Figure 8.3 G.
3. Pull wire lugs from brake solenoid PCB (599, Fig.14) off of TB1 terminals 1, 2, and 4. Do not pull any lugs off terminals that are not from brake solenoid PCB (some terminals have more than one lug connected).
4. Unscrew PCB mounting screws (598) with screwdriver and remove brake solenoid PCB.
5. Place new brake solenoid into position and secure in place with mounting screws.
6. Connect brake solenoid PCB wire lugs to TB1 terminals 1, 2, and 4 as shown in Figure 8.3 G.
7. Tighten terminal screws with screwdriver.
8. Reattach back panel (202, Fig.4).

8.3.3 BRAKE SOLENOID PCB REPLACEMENT

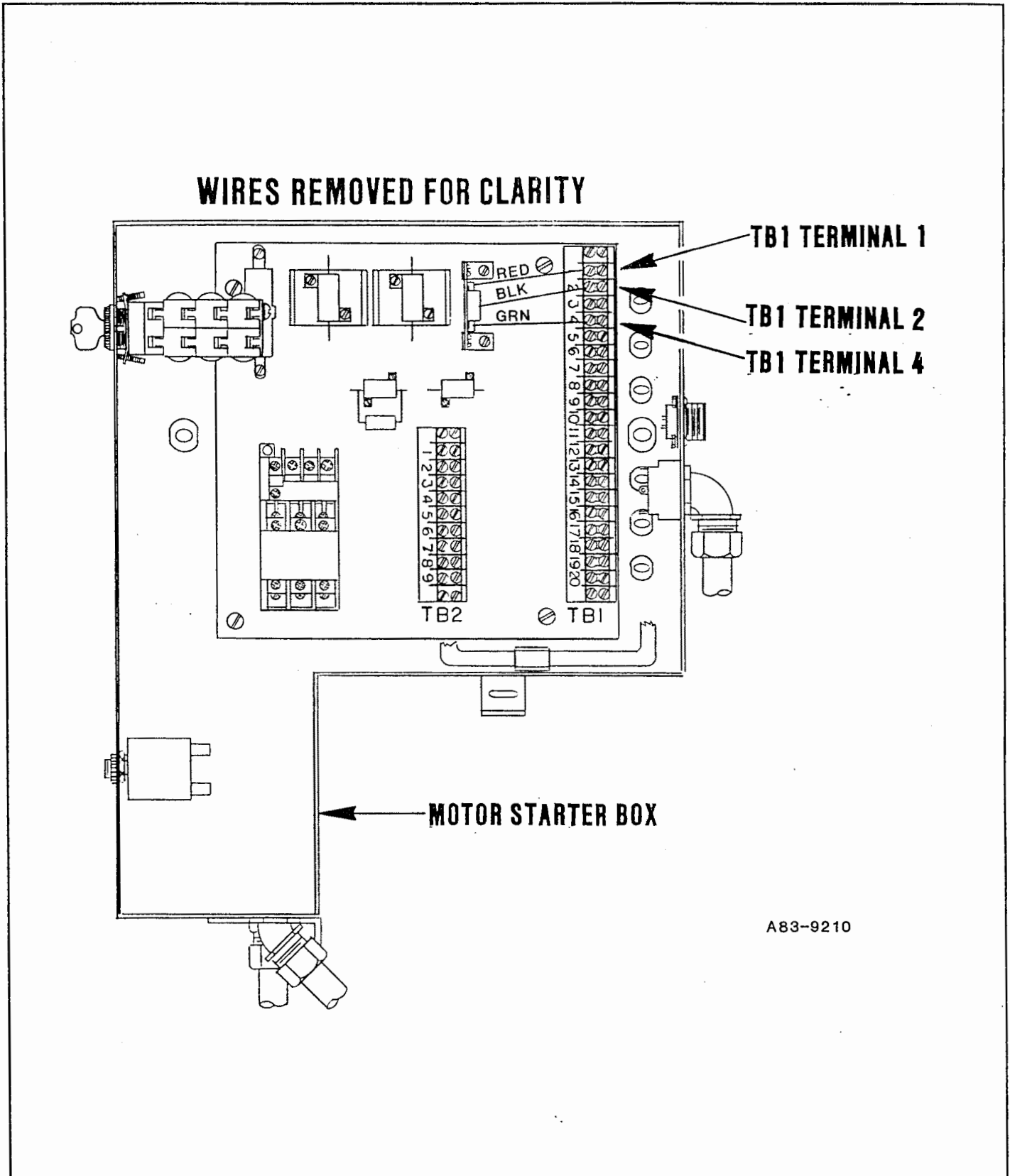


Figure 8.3 G

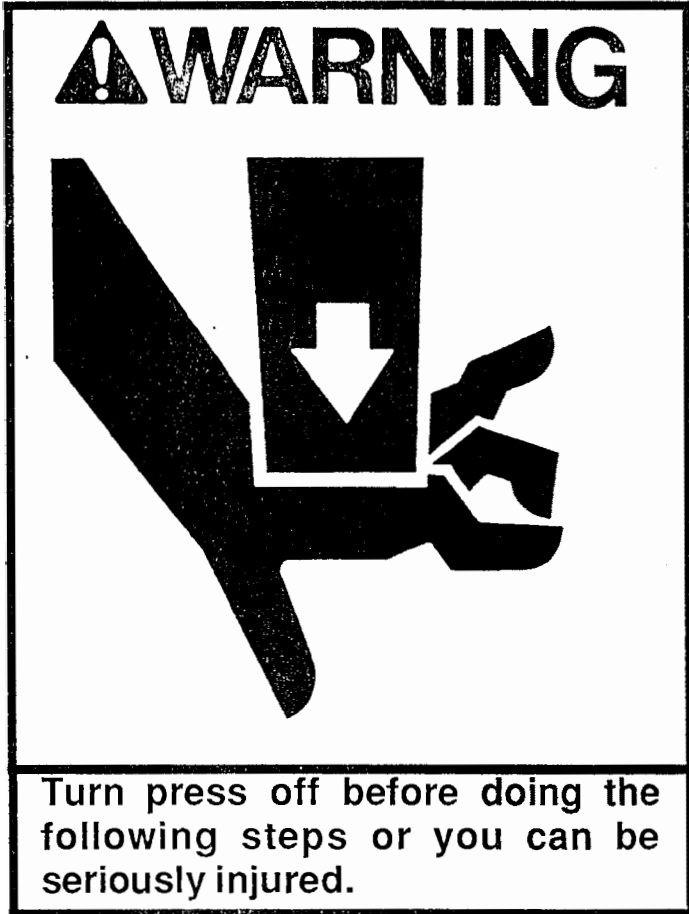
8.3.4 BRAKE SOLENOID TUBING INSPECTION

Inspect and (if necessary) repair the brake solenoid tubing as follows:

Tools Needed:

- > 3/16" hex wrench (Allen wrench)

1. Press "OFF" button on control panel.



Note

Use Figure 1 of the Illustrated Parts List in Chapter 11 of this manual as an aid in inspecting the brake solenoid tubing. When you see something like "Unhook brake guard (117)" in the following procedure, the number (117) refers to a picture of the brake guard (and how the brake guard is attached to the press) in Figure 1 of the Illustrated Parts List.

2. Remove electronics package according to steps 7-10 in Section 8.1.4.

3. Unscrew brake guard screws (113) with 3/16" hex wrench.

4. Unhook brake guard (117) from press. Brake guard has two hooks that hook onto top of press.

5. Inspect brake solenoid tubing. See Figure 8.3 H. If tubing is disconnected, reconnect it, reattach brake guard, and install electronics package according to steps 11-14 in Section 8.1.4. If tubing is OK, reattach brake guard, install electronics package according to steps 11-14 in Section 8.1.4, and continue to follow troubleshooting chart.

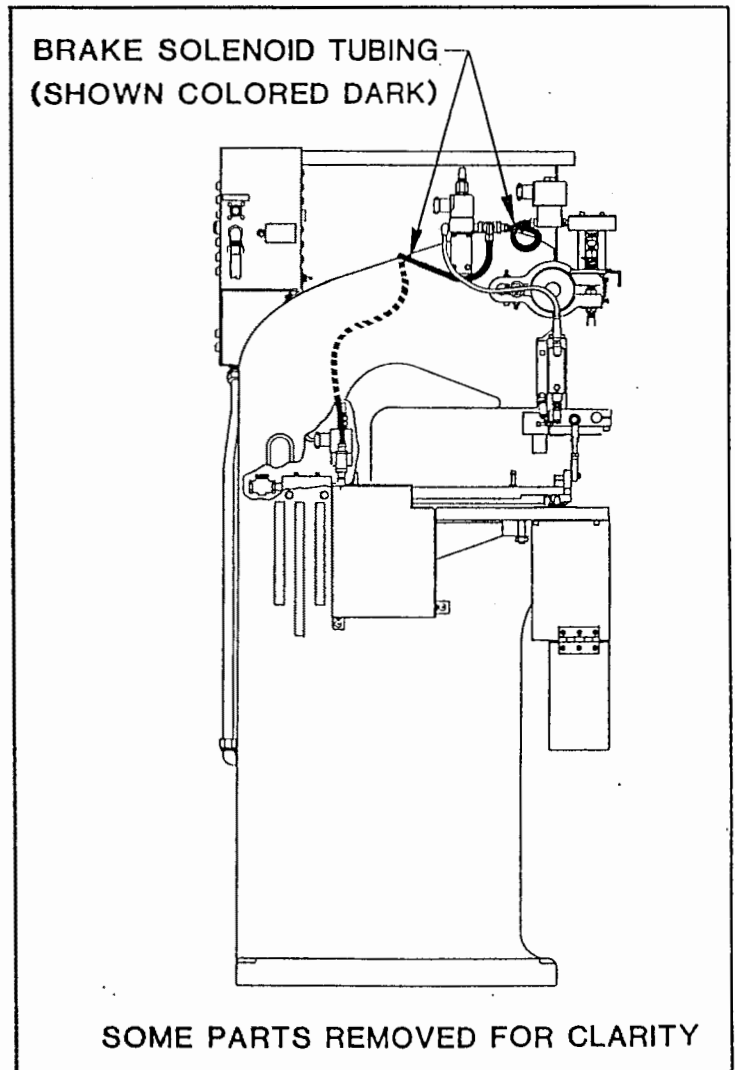


Figure 8.3 H