

8.7 HOLD-DOWN MAINTENANCE

The following sections deal with problems that the hold-downs may have.

8.7.1 HOLD DOWN LINKAGE, CYLINDER, AND TUBING INSPECTION AND REPAIR

Inspect and (if necessary) repair the hold-downs as follows:

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 hold-downs. 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. Make sure hold-down air tubing is hooked up to hold-down unit as shown in Figure 8.7 A. If an end of the tube is disconnected, reconnect it and go to step 6.

Tools Needed:

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

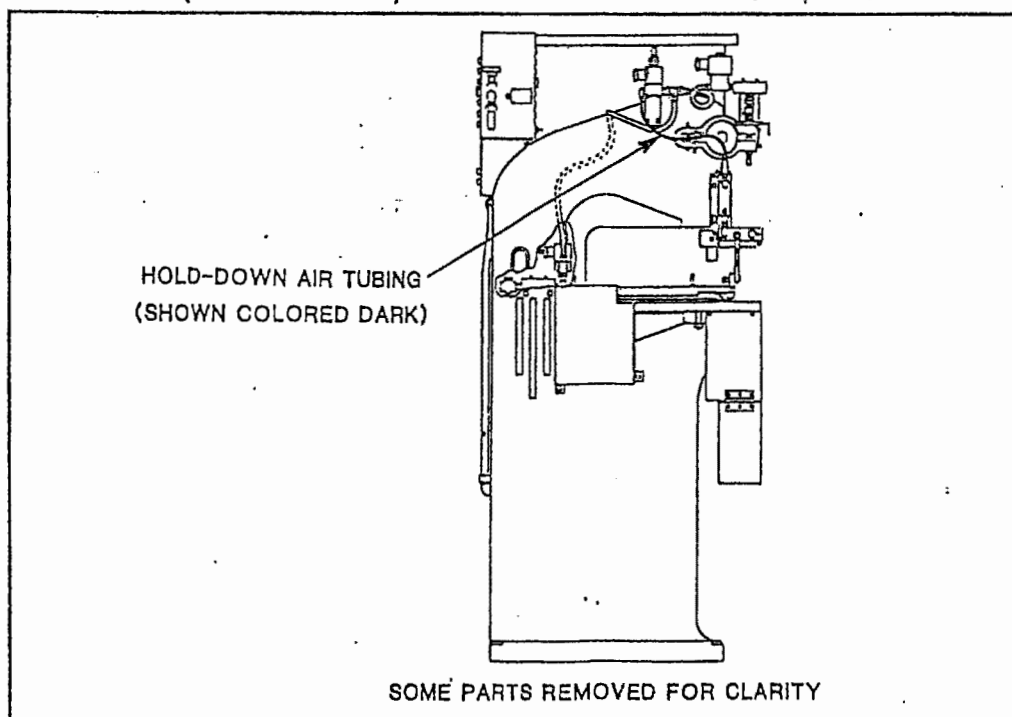


Figure 8.7 A

8.7.1 HOLD-DOWN LINKAGE, CYLINDER, AND TUBING INSPECTION AND REPAIR

6. Inspect hold-down linkage and cylinder for broken or disconnected parts. Use Figure 8.7 B as a guide. Replace or repair any broken or disconnected parts. If linkage and cylinder

are OK, install the electronics package according to steps 11-14 in Section 8.1.4, reattach brake guard, and continue to follow troubleshooting chart.

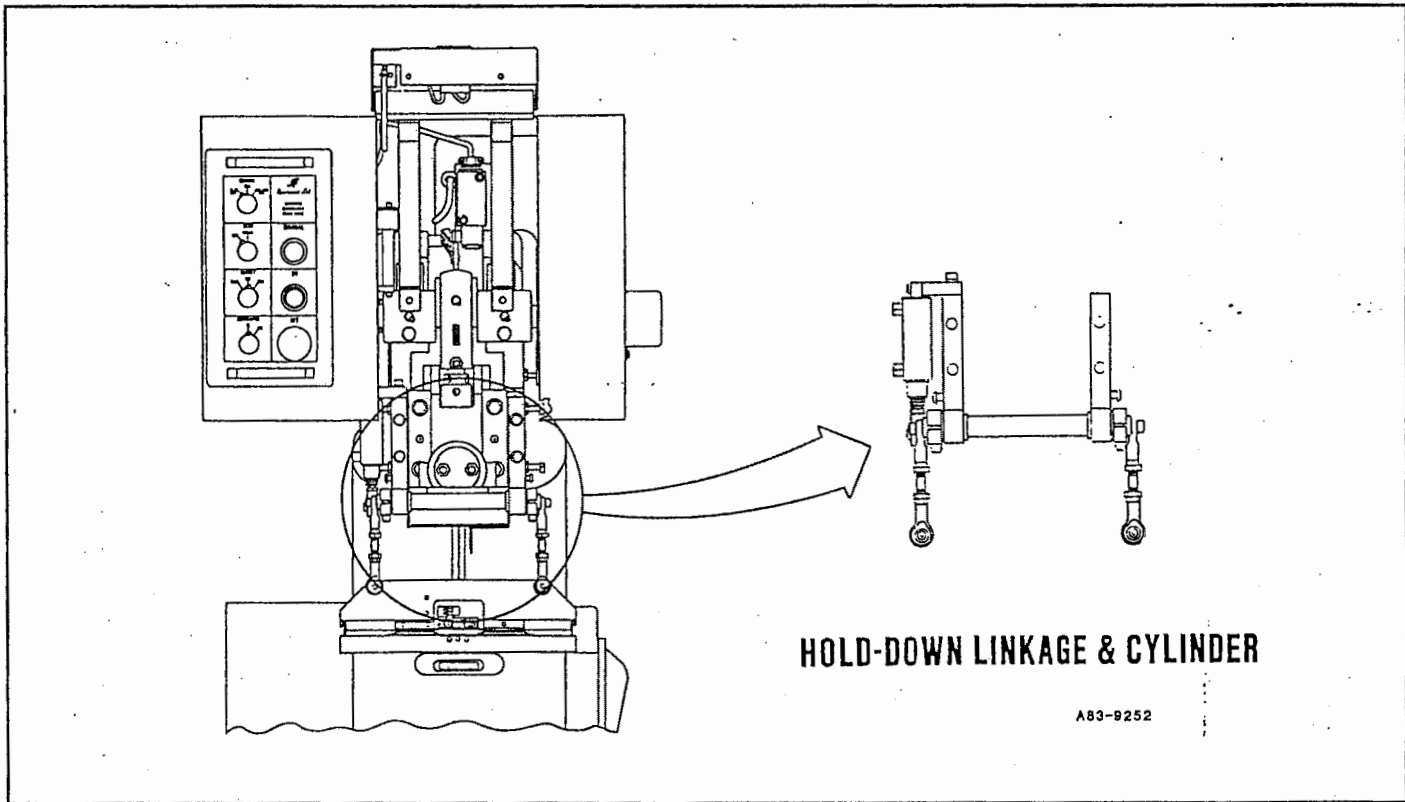


Figure 8.7 B

8.7.2 HOLD-DOWN SOLENOID TEST AND REPLACEMENT

Test and (if necessary) replace the hold-down solenoid as follows:

Tools needed to test solenoid:

- > 5/64" hex wrench (Allen wrench)
- > *Analog (needle type) volt/ohm meter

*Note: A digital volt/ohm meter *will not* work for this test

Tools needed to replace solenoid:

- > 9/64" hex wrench (Allen wrench)
- > 3/16" hex wrench (Allen wrench)
- > adjustable-end wrench
- > medium flat-tip screwdriver
- > small pipe wrench
- > pipe joint compound
- > vise

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

8.7.2 HOLD-DOWN SOLENOID TEST AND REPLACEMENT

**Note**

Use the Illustrated Parts List in the back of this manual as an aid in testing and replacing the hold-down 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) if not already done so.
3. Check very carefully for broken or loose wires in the motor starter box, especially around TB1 terminals 15 and 16 (see Figure 8.7 C). If any broken or loose wires are found, repair them and then recheck the press.

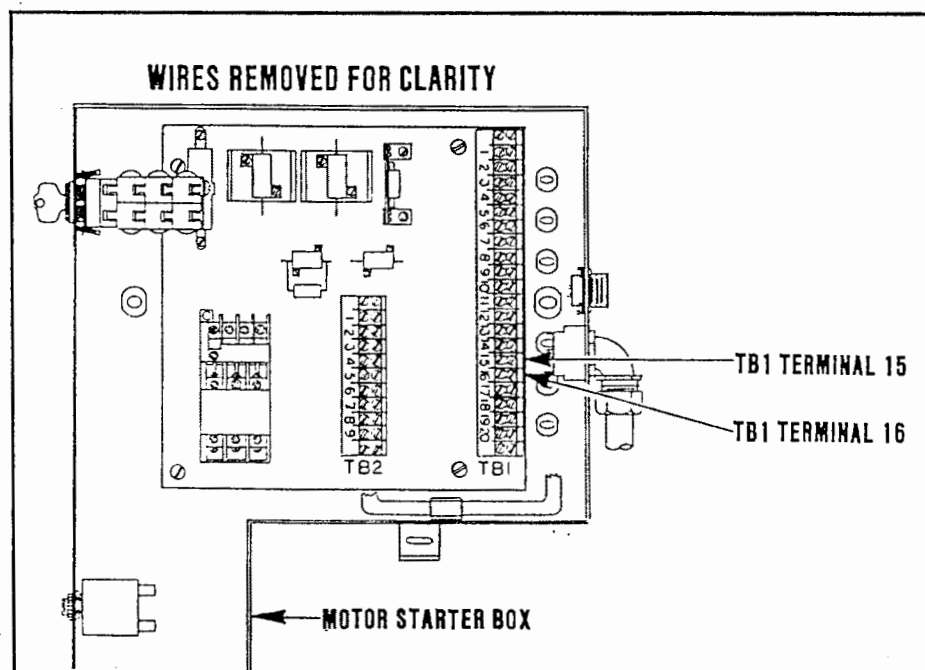


Figure 8.7 C

8.7.2 HOLD-DOWN SOLENOID TEST AND REPLACEMENT



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

*** Do not touch bare electrical terminals when doing live electrical tests. You can get fatally shocked if you do not.**

4. Loosen screws on gray and orange lugs on TB1 15 and TB1 16. See Figure 8.7 C. Pull lugs off terminal block.
5. Turn disconnect switch to "ON" position.
6. Turn set up switch to "SET UP" position.
7. Press "ON" button on control panel.
8. Use Table 8.7 A for this step:

TEST FOR:	IF:	THEN:
a. A voltage surge of 30 to 45 volts DC across orange and gray wire lugs (gray wire lug is ground) when foot switch is pressed. Make sure probes of meter contact lugs before foot switch is pressed.	Surge occurs and voltage drops to 0 soon after --	Replace solenoid according to steps 9-33.
	Surge does not occur or if voltage surges to a particular level and stays there --	Reconnect lugs, reattach rear panel, and replace electronics package according to steps 7-14 in Section 8.1.4.

Table 8.7 A

8.7.2 HOLD-DOWN SOLENOID TEST AND REPLACEMENT

! WARNING

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

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. Remove air tubes from hold-down solenoid by pinching black coupler arms of each tube and then pulling each tube out of solenoid. See Figure 8.7 D.
14. Pull hold-down solenoid wire harness out of motor starter box.
15. Remove hold-down solenoid mounting screws (298 Fig. 9), lock washers (299), and flat washers (300) with 9/64" hex wrench.
16. Remove hold-down solenoid from press and place solenoid in a vise.

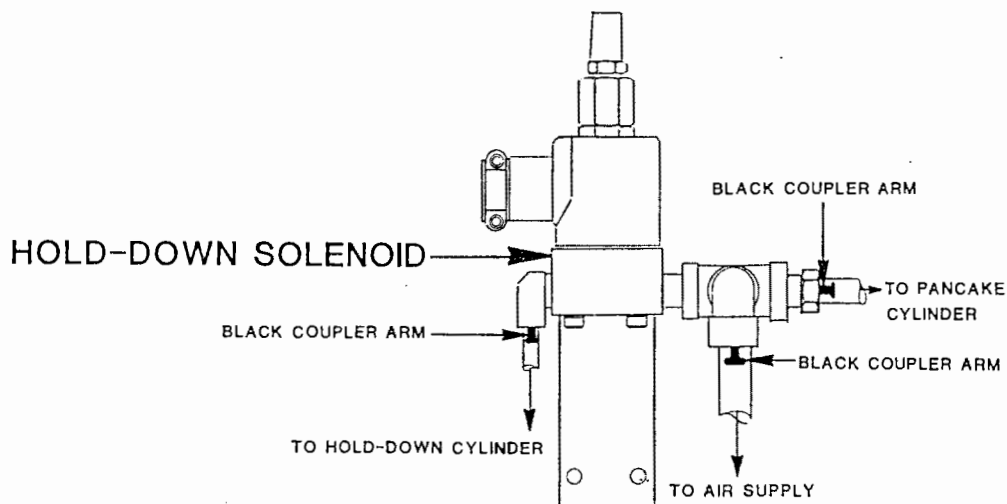


Figure 8.7 D

8.7.2 HOLD-DOWN SOLENOID TEST AND REPLACEMENT

17. Remove muffler (305) from hold-down solenoid (307) with wrench.
18. Remove connector (304) from hold-down solenoid with wrench.
19. Remove nipple (306) from solenoid with pipe wrench. Leave tee (311) connector (312), and elbow (310) attached to nipple.
20. Remove bad hold-down solenoid from vise and place new hold-down solenoid in vise.
21. Apply pipe joint compound to threads of muffler (305), connector (304), and nipple (306).
22. Screw muffler (305) into hold-down solenoid with wrench.
23. Screw connector (304) into hold-down solenoid with wrench.
24. Screw nipple (306) into hold-down solenoid with pipe wrench.
25. Remove hold-down solenoid from vise.
26. Place hold-down solenoid (307) on bracket (301) and secure in place with mounting screws (298), lock washers (299), and flat washers (300).
27. Reconnect air tubes to hold-down solenoid as shown in Figure 8.7 D.
28. Feed hold-down solenoid wire harness into motor starter box.
29. Connect hold-down solenoid wire lugs to TB1 terminals 15 and 16 (see Figure 8.7 C). The gray wire lug goes on terminal 15.
30. Tighten terminal screws with screwdriver.
31. Reattach brake guard (117, Fig 1) and back panel (202, Fig 4).
32. Install electronics package according to steps 11-14 in Section 8.1.4.

8.7.3 HOLD-DOWN SPRING INSPECTION AND REPLACEMENT

Inspect and (if necessary) replace the hold-down spring as follows:

Tools Needed:

- > needle-nose pliers

1. Check if hold-down spring is attached to press as shown in Figure 8.7 E. If spring is broken or missing, install new spring with needle-nose pliers.

8.7.3 HOLD-DOWN SPRING INSPECTION AND REPLACEMENT

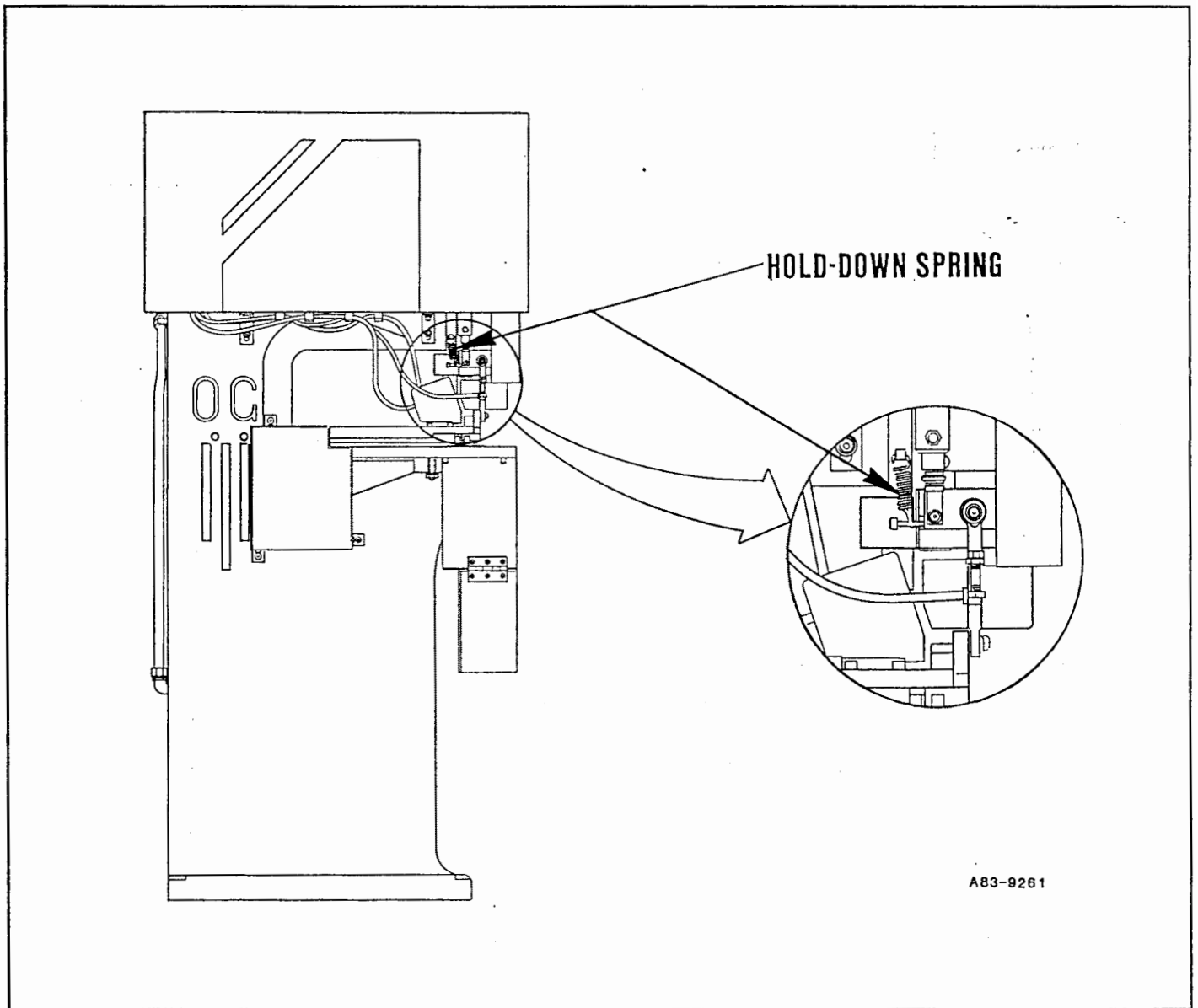


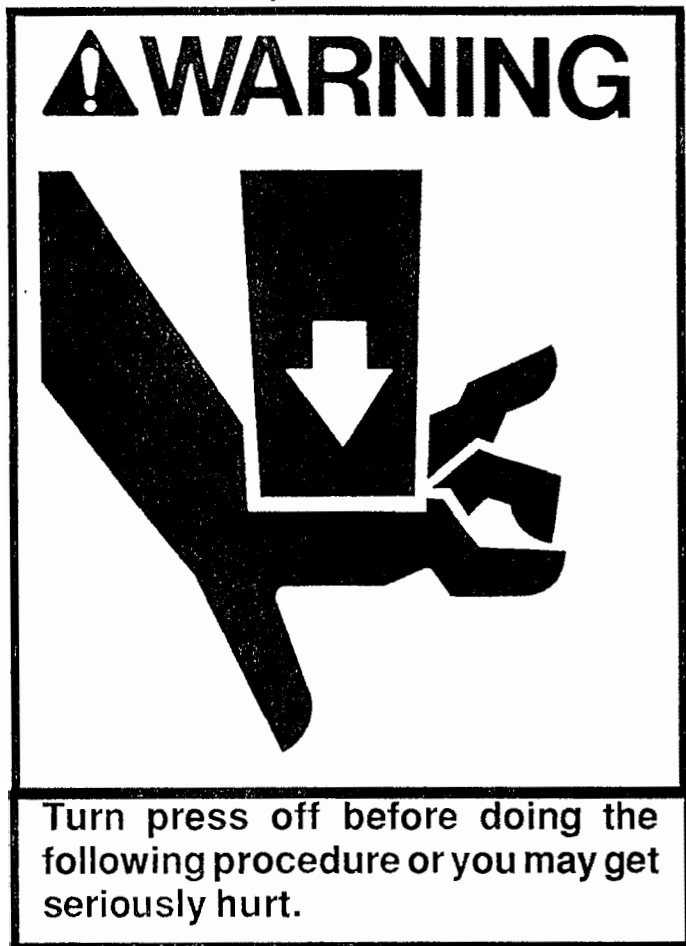
Figure 8.7 E

8.7.4 HOLD-DOWN PAD INSPECTION AND REPLACEMENT

Inspect and (if necessary) replace hold-down pads as follows.

Tools Needed:

- > 1/8" hex wrench (Allen wrench)
- > 5/32" hex wrench (Allen wrench)
- > 3/8" open-end wrench
- > small flat-tip screwdriver
- > contact cement
- > acetone
- > cotton swaps



1. Press "OFF" button on control panel.

Note

Use Figure 13 of the Illustrated Parts List in Chapter 11 of this manual as an aid in inspecting the hold-down pads. When you see something like "Remove hold-down guard (451)" in the following procedure, the number (451) refers to a picture of the hold down guard (and how the guard is attached to the press) in Figure 13 of the Illustrated Parts List.

2. Remove hold-down guard screws (450) with 5/32" hex wrench.
3. Remove hold-down guard (451) from press. Leave hold-down covers (448) and (449) attached to hold-down guard.
4. Remove hold-down guard spacers (452) with 3/8" wrench.
5. Loosen hold-down set screws with 1/8" hex wrench as shown in Figure 8.7 F.
6. Slide hold-downs out through side of press as shown in Figure 8.7 F.

7.

For Regular Hold-Downs

Check if pads are worn, damaged, or missing. If pads are OK, reinstall the hold-downs according to steps 8-10. Otherwise, scrape pads off with screwdriver, clean area with acetone, and glue new pads on with contact cement. Then reinstall the hold-downs.

For Film-Type Hold-Downs

Check leaf springs of hold-downs for cracks or damage. If the hold-down springs are damaged, install new hold-downs according to steps 8-10. Otherwise, check if pads are worn, damaged, or missing. If pads are OK, reinstall hold-downs. Otherwise, scrape pads off with screwdriver, clean area with acetone, and glue new pads on with contact cement. Then reinstall the hold-downs.

8. Place hold-downs into position and tighten set screws with 1/8" hex wrench.
9. Screw hold-down guard spacers (452) back into bolster plate with 3/8" wrench.
10. Reattach hold-down guard (451).

8.7.4 HOLD-DOWN PAD INSPECTION AND REPLACEMENT

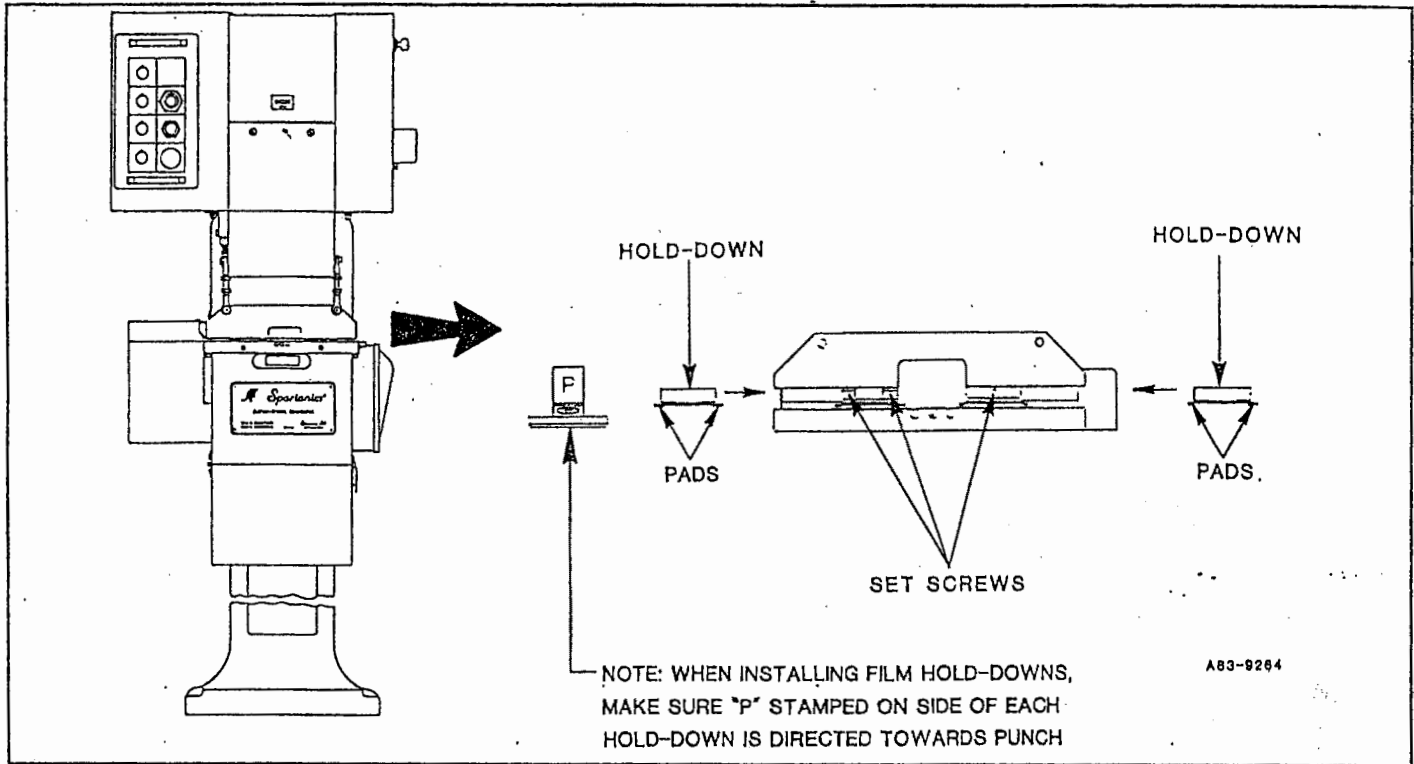


Figure 8.7 F