

## 8.4 DRIVE MOTOR TEST AND REPLACEMENT

Test and (if necessary) replace the drive motor as follows:

Tools needed for testing motor:

- 5/64" hex wrench (Allen wrench)
- 3/16" hex wrench (Allen wrench)
- volt/ohm meter

Tools needed for replacing motor:

- 5/32" hex wrench (Allen wrench)
- two 1/2" open-end wrenches
- medium flat-tip screwdriver

### Note

Use the Illustrated Parts List in Chapter 11 of this manual as an aid in testing and replacing the drive motor. When you see something like "Reattach clutch guard (105, Fig 1) in the following procedure, the number 105 refers to a picture of the clutch guard (and how the guard is attached to the press) in Figure 1 of the Illustrated Parts List.



1. Press "OFF" button on control panel.
2. Unscrew clutch guard screws (101, Fig. 1) with 3/16" hex wrench if not already done so.
3. Unhook clutch guard (105) from press if not already done so. Clutch guard has two hooks that hook onto top of press.
4. Turn set up switch to "RUN" position.
5. Press "ON" button on control panel.
6. Check and see if flywheel is turning. If flywheel is turning (motor is OK), turn press off, reattach clutch guard (105) and continue to follow troubleshooting chart. If flywheel is not turning, check to see if motor's shaft is turning. If motor's shaft is turning, the shaft's key has sheared off or has fallen off shaft. If this is the case, turn press off, replace key according to steps 18-20 & 33-36, and reattach clutch guard (105). If motor's shaft is not turning, go to step 7. See Figure 8.4 A for location of flywheel and motor's shaft.
7. Press "OFF" button on control panel.

## 8.4 DRIVE MOTOR TEST AND REPLACEMENT

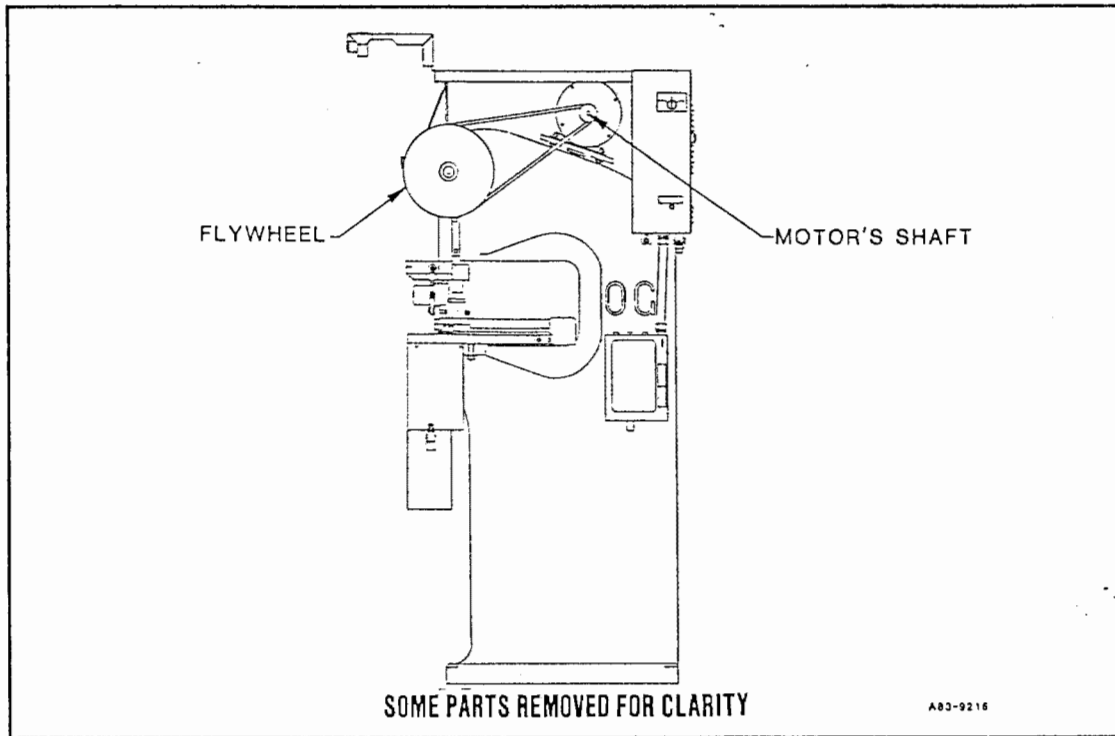


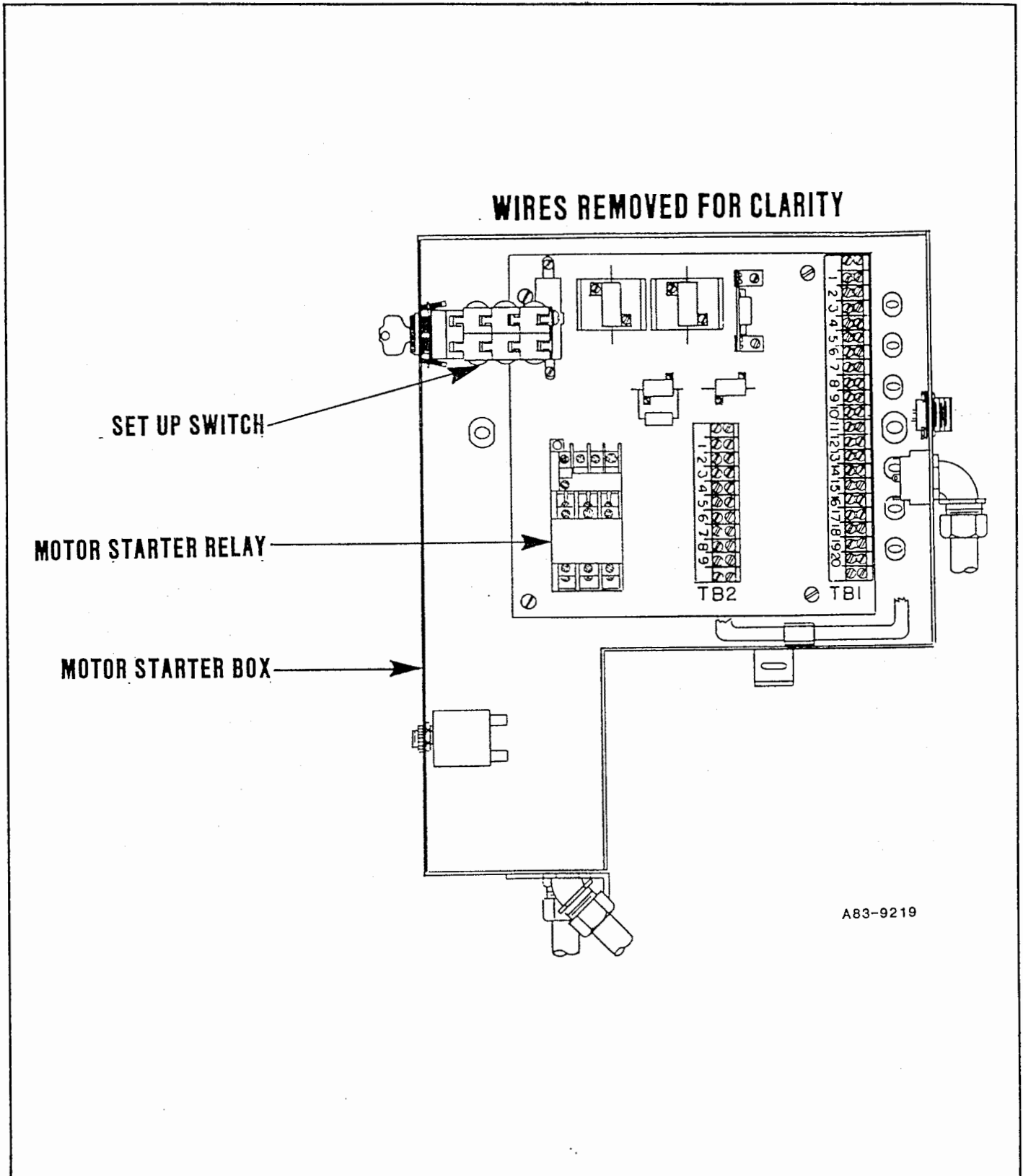
Figure 8.4 A

**! WARNING**

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

8. Turn disconnect switch to "OFF" position. See Section 3.1.5 for location of disconnect switch.
9. Try to turn motor's drive pulley by hand. If pulley cannot be easily turned, replace the motor according to steps 15-38. If pulley can easily be turned by hand, go to step 10.
10. Remove back panel screws (201, Fig. 4) with 5/64" hex wrench and remove back panel (202).
11. Check very carefully for broken or loose wires in the motor starter box, especially around the motor starter relay and the set up switch. See Figure 8.4 B. If any broken or loose wires are found, repair them and then see if the press works.
12. Turn set up switch to "RUN" position.

**8.4 DRIVE MOTOR TEST AND REPLACEMENT**



**Figure 8.4 B**

**8.4 DRIVE MOTOR TEST AND REPLACEMENT**

13. Use Table 8.4 A and Figure 8.4 C for this step:

TEST FOR:	IF:	THEN:
a. 0 to 5 ohms across set up switch terminals:	If <i>less</i> than 5 ohms are present across any terminals --	Go to step 14.
White & VRO Yellow Green & VRO Red Black & VRO Black	If <i>more</i> than 5 ohms are present --	Replace the set up switch according to steps 8-13 in Section 8.1.5.

**Table 8.4 A**

14. Use Table 8.4 B and Figure 8.4 D for this step:

TEST FOR:	IF:	THEN:
a. 15 to 20 ohms across motor starter relay terminals:	If 15 to 20 ohms <i>are</i> present across terminals --	Replace motor starter relay according to steps 5-9 in Section 8.1.6.
2 & 4 2 & 6	If 15 to 20 ohms <i>are not</i> present across terminals --	Replace drive motor according to steps 15-38 in this section.

**Table 8.4 B**

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

18. Run drive belt off of drive pulley.

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

19. Loosen drive pulley set screw (162, Fig. 2) with 5/32" hex wrench.

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

20. Pull drive pulley (163A) off of motor's shaft and remove key (164).

8.4 DRIVE MOTOR TEST AND REPLACEMENT

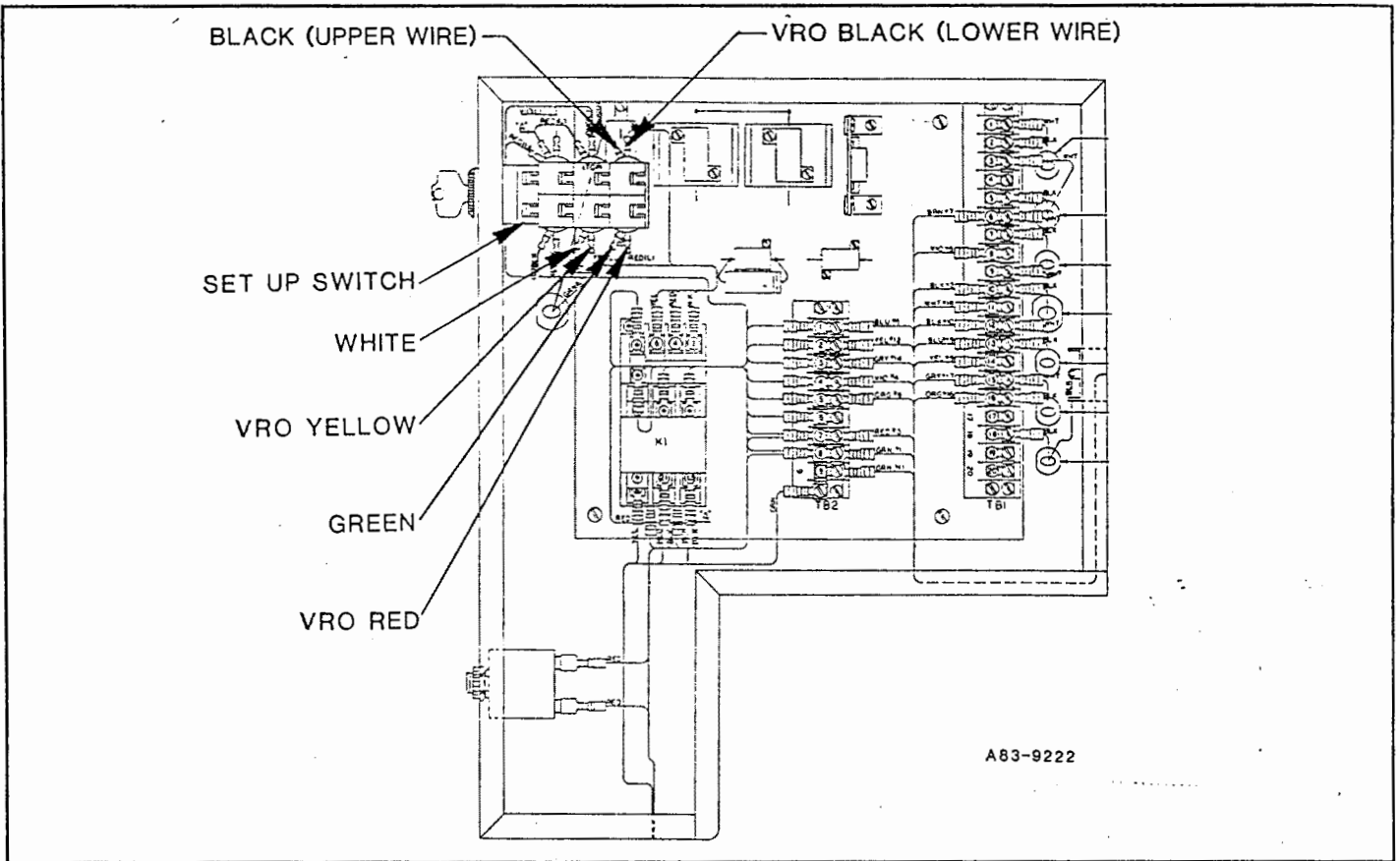


Figure 8.4 C

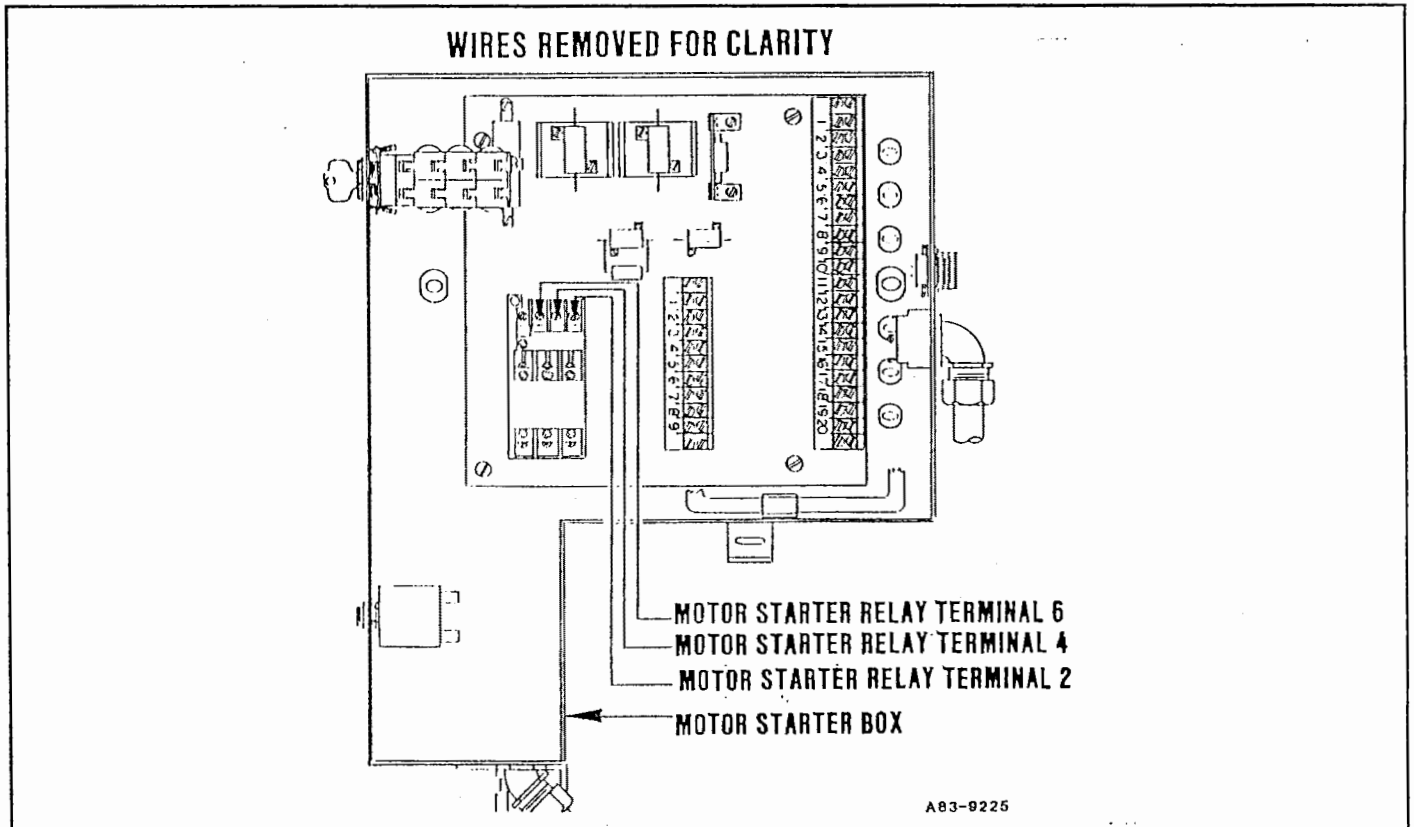
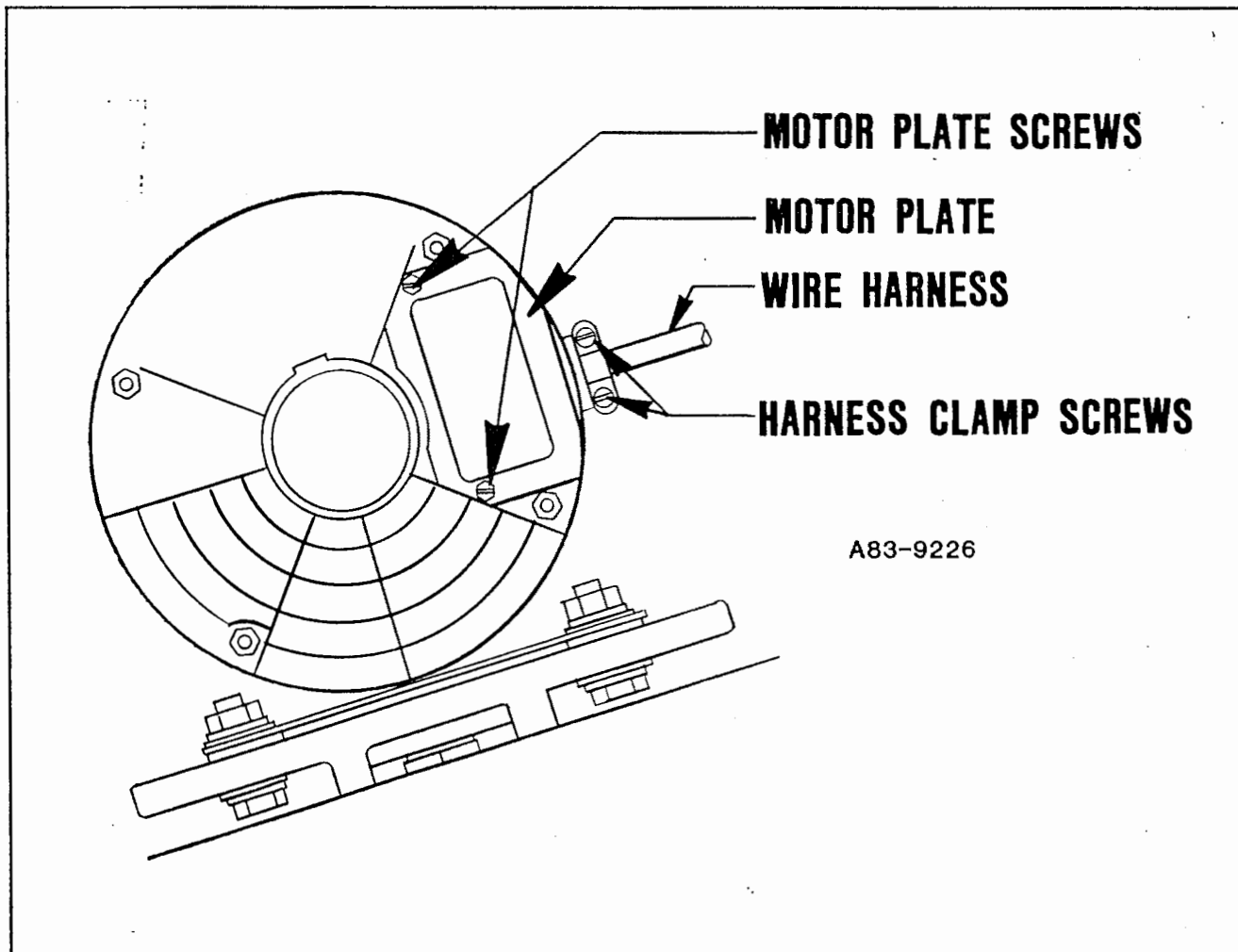


Figure 8.4 D

**8.4 DRIVE MOTOR TEST AND REPLACEMENT**

21. Unscrew motor plate screws. See Figure 8.4 E.
22. Remove motor plate. See Figure 8.4 E.
23. Loosen harness clamp screws. See Figure 8.4 E.
24. Unscrew wire nuts on motor wires and separate all wires.
25. Pull wire harness out of motor.
26. Unscrew and remove motor mounting nuts (157) and bolts (156) with 1/2" open-end wrenches.
27. Remove lock washers (159) and flat washers (158 & 161).
28. Remove motor (165).
29. Place new motor into position and secure in place with bolts, nuts, and washers but do not tighten nuts yet.
30. Feed wire harness into motor and tighten clamp screws.
31. Hook wire harness wires up to motor wires using Table 8.4 C as a guide. Each motor wire is numbered with a brass tag.

**Figure 8.4 E**

**8.4 DRIVE MOTOR TEST AND REPLACEMENT**

<b>FOR POWER SOURCES OF 200-240 VOLTS</b>	
<b>Connect Motor Wire #s</b>	<b>To:</b>
1 & 7	White Wire in Harness
2 & 8	Black Wire in Harness
3 & 9	Green Wire in Harness
4 & 5 & 6	Each Other
<b>FOR POWER SOURCES OF 380-480 VOLTS</b>	
<b>Connect Motor Wire # (s)</b>	<b>To:</b>
1	White Wire in Harness
2	Black Wire in Harness
3	Green Wire in Harness
4 & 7	Each Other
5 & 8	Each Other
6 & 9	Each Other

**Note:** Use #4 wire nuts on 200-400V connections and #6 wire nuts on 400-480V connections.

**Table 8.4 C**

**8.4 DRIVE MOTOR TEST AND REPLACEMENT**

32. Reattach motor terminal access plate.

**Caution**

Make sure wire harness lugs are hooked up to motor according to Figure 8.4 E or motor may run backwards.

33. Place key (164) and pulley (163a) on drive motor's shaft.

34. Tighten drive pulley set screw (162) with 5/32" hex wrench. Make sure that belt groove in drive pulley is lined up with belt groove in flywheel.

35. Run drive belt onto flywheel and drive pulley.

36. Tighten drive belt according to Section 9.5.2.

37. Reattach brake guard (117, Fig. 1), clutch guard (105), and back panel (202, Fig. 4).

38. Install electronics package according to steps 11-14 in Section 8.1.4.