



INSTRUCTION BULLETIN

No. 328288
Machine: M20/T20/M30/
S30
Published: 05-2011
Rev. 00

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.

NOTE: Numbers in parenthesis () are reference numbers for parts listed in Bill of Materials.

Installation instructions for **kit number 322305**

SYNOPSIS:

This kit contains the parts needed to replace the steering column on M20 / T20 / M30 / S30 machines. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: S30 - 1 hour (Pages 1-8), M20 / T20 / M30 - 45 minutes (Pages 9-12))



PROTECT THE ENVIRONMENT

Please dispose of packaging materials, old machine components, and hazardous fluids in an environmentally safe manner according to local waste disposal regulations.

Always remember to recycle.

PREPARATION (S30):

1. Park the machine on a clean level surface.
2. Completely raise the hopper and engage the hopper support bar.

 **WARNING: Lift arm pinch point. Stay clear of hopper lift arms.**

 **WARNING: Raised hopper may fall. Engage hopper support bar.**

3. Turn off the engine, remove the key, and set the parking brake.

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, remove key, and set parking brake.

4. Use the steering tilt to lower the steering wheel to the lowest position.

INSTALLATION (S30):

1. Remove the plastic rivets holding the rubber shroud to the front of the machine. Set the rivets aside. Refer to Fig. 1.

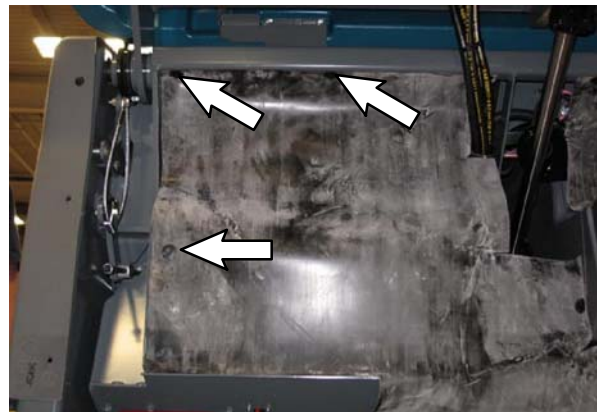


FIG. 1

2. Pull the rubber skirt aside to expose the steering mechanism. Refer to Fig. 2.



FIG. 2

3. Cut the cable tie securing the wire harness and hydraulic hoses together. Refer to Fig. 3.



FIG. 3

4. Disconnect the main wire harness from the steering assembly.
5. Remove the horn button from the steering wheel and disconnect the wire from the horn button. Set the horn assembly aside. Refer to Fig. 4.



FIG. 4

6. Remove the M20 jam nut from the steering assembly. Set the M20 jam nut aside. Refer to Fig. 5.



FIG. 5

7. Remove the steering wheel from the steering column. Set the steering wheel aside.
8. Remove the rubber boot from the steering column. Set the rubber boot aside. Refer to Fig. 6.



FIG. 6

9. Remove the t-knob from the steering tilt assembly. It may be necessary to use towels to avoid marring the surfaces of the knob and the steering lock pin when removing the t-knob. Set the t-knob aside. Refer to Fig. 7.



FIG. 7

10. Remove the two M6 SEMS hex screws securing the steering tilt assembly to the machine. Set the M6 SEMS hex screws aside. Refer to Fig. 8.

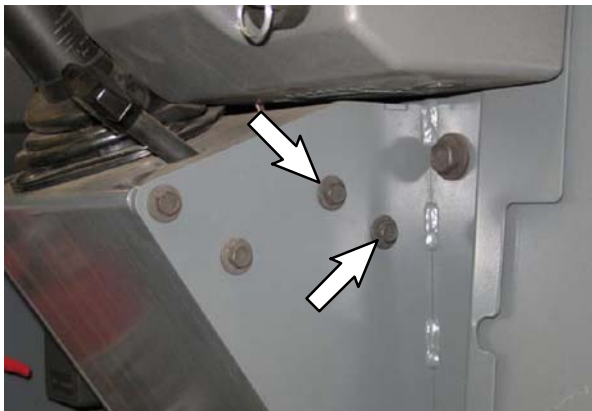


FIG. 8

11. Remove the steering tilt assembly from the machine. Set the steering tilt assembly aside. Refer to Fig. 9 and Fig. 10.



FIG. 9



FIG. 10

12. Remove the four M6 SEMS hex screws securing the steering assembly to the machine. Set the M6 SEMS hex screws aside. Refer to Fig. 11.

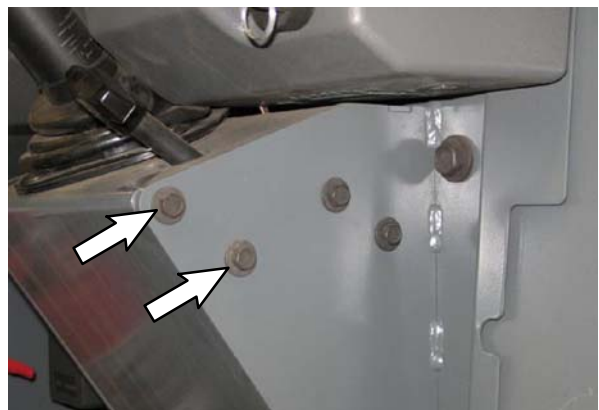


FIG. 11

13. Remove the steering assembly from the machine. Refer to Fig. 12.

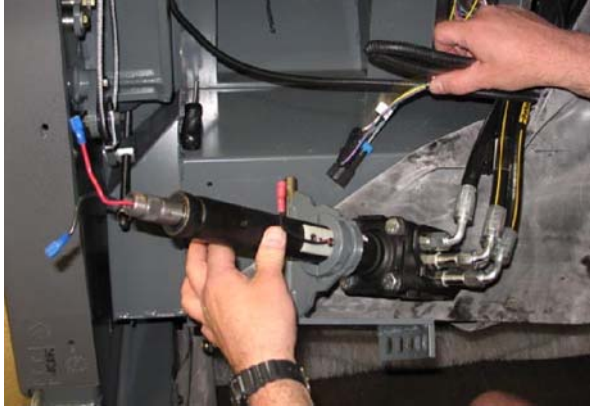


FIG. 12

14. Remove the steering column from the hydraulic steering control. Set the four M10 hex screws aside. Refer to Fig. 13.

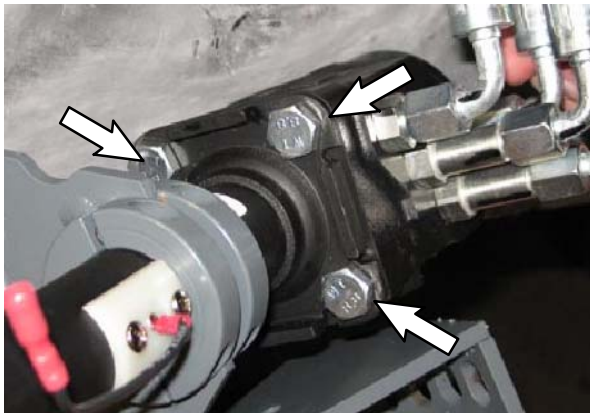


FIG. 13

15. Remove the flange bearings from the tilt steering bracket. Set the flange bearings aside. Refer to Fig. 14.

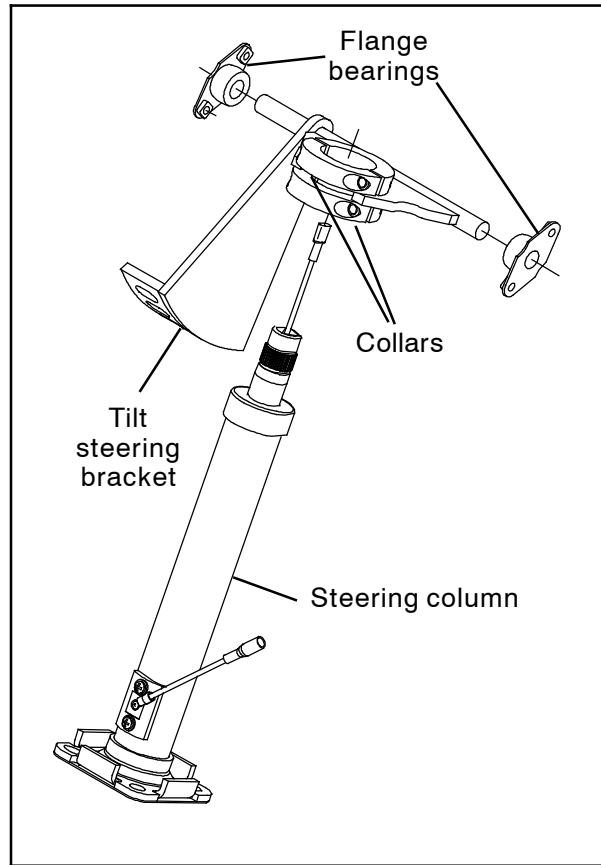


FIG. 14

16. Remove the tilt steering bracket from the steering column. Set the tilt steering bracket, collars, and hardware aside. Refer to Fig. 14.

17. Install the tilt steering bracket onto the new steering column (1). Be sure the tilt steering bracket is aligned on the steering column as shown in Fig. 16 and the white plastic horn contact is touching the lower collar on the tilt steering bracket. Torque the socket screws to 27–35 Ft. Lbs. (37–48 Nm).

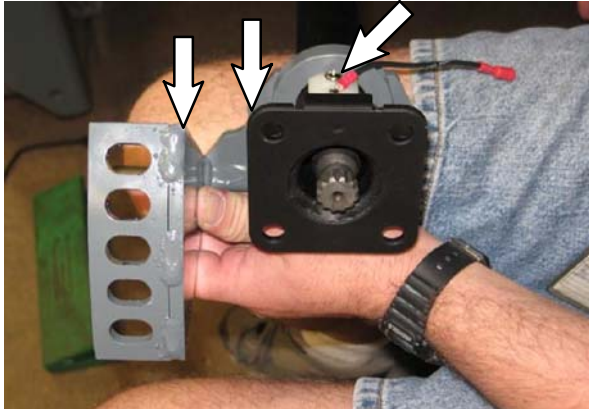


FIG. 15

18. Apply Blue Loctite® onto the threads of the four M10 hex screws.
19. Use the four M10 hex screws to install the steering column onto the hydraulic steering control. Torque the M10 hex screws to 27–35 Ft. Lbs. (37–48 Nm). Refer to Fig. 16.



FIG. 16

20. Install the flange bearings onto the tilt steering bracket. Refer to Fig. 17.



FIG. 17

21. Insert the steering column assembly into the machine. Refer to Fig. 18.



FIG. 18

22. Use two M6 SEMS hex screws to secure the steering assembly to the machine. Torque the M6 SEMS hex nuts to 5.6–7.3 Ft. Lbs. (7.6–9.9 Nm). Refer to Fig. 19.

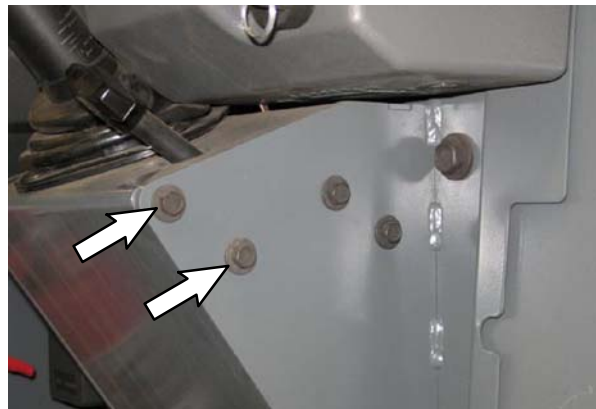


FIG. 19

23. Use a 2 X 4 board to elevate the steering column assembly up into the machine. Refer to Fig. 20.



FIG. 20

24. Install two M6 SEMS hex screws to secure the other side of the steering column assembly in the machine. Torque the M6 SEMS hex nuts to 5.6-7.3 Ft. Lbs. (7.6-9.9 Nm). Refer to Fig. 21.



FIG. 21

25. Install the steering tilt assembly into the machine. Position the tilt steering locking pin in the top hole in the tilt steering bracket. Refer to Fig. 22.

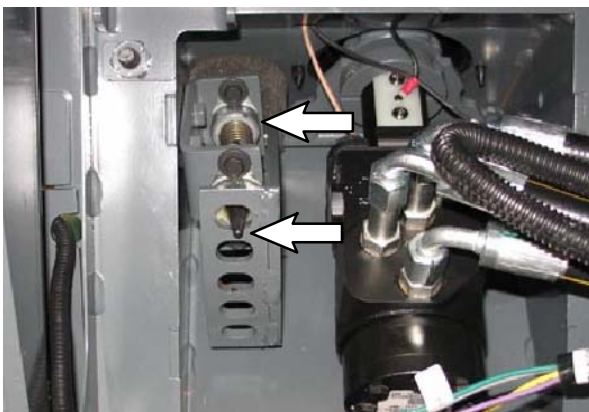


FIG. 22

26. Apply Blue Loctite onto the treads of the tilt steering locking pin and install the t-knob onto the steering tilt assembly. Refer to Fig. 23.



FIG. 23

27. Hold the t-knob so the tilt steering locking pin is centered in the hole and does not touch any of the edges and install two M6 SEMS hex screws to secure the steering tilt assembly to the machine. Refer to Fig. 24.



FIG. 24

28. Install the rubber boot onto the steering column. Refer to Fig. 25.



FIG. 25

29. Apply Blue Loctite onto the threads of the M20 jam nut.

30. Install the steering wheel onto the steering column and use the M20 jam nut to secure the steering wheel onto the column. Torque the M20 jam nut to 10-13 Ft. Lbs. (13-18 Nm). Refer to Fig. 26.



FIG. 26

31. Reassemble the horn button, reconnect the wire to the horn button, and insert the horn button into the steering wheel. Refer to Fig. 27.



FIG. 27

32. Connect the horn lead on the main wire harness to the steering assembly. Refer to Fig. 28 and Fig. 29.



FIG. 28

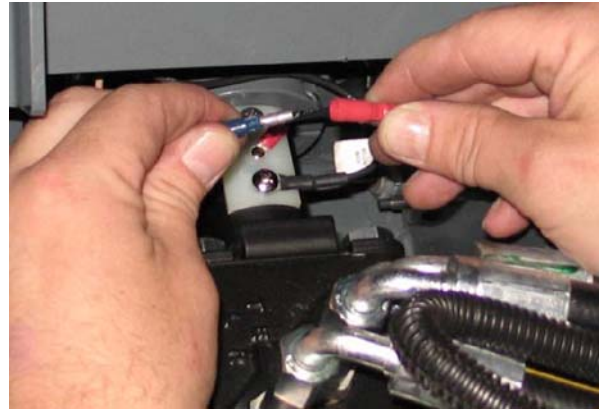


FIG. 29

33. Neatly bundle the main wire harness to the hydraulic hoses and use a wire tie to secure the bundle together. Refer to Fig. 30.

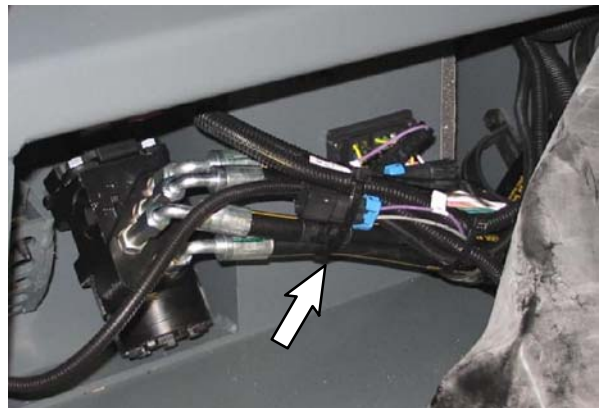


FIG. 30

34. Pull the steering tilt knob and move the steering wheel through the various positions to ensure the steering tilt assembly is functioning properly.
35. Reinstall the rubber skirt to the frame of the machine. Use extra rivets included in the kit to replace rivets that may have been broken.
36. Disengage the hopper support bar.
37. Start the machine and lower the hopper. Press the horn button to ensure the horn functions.

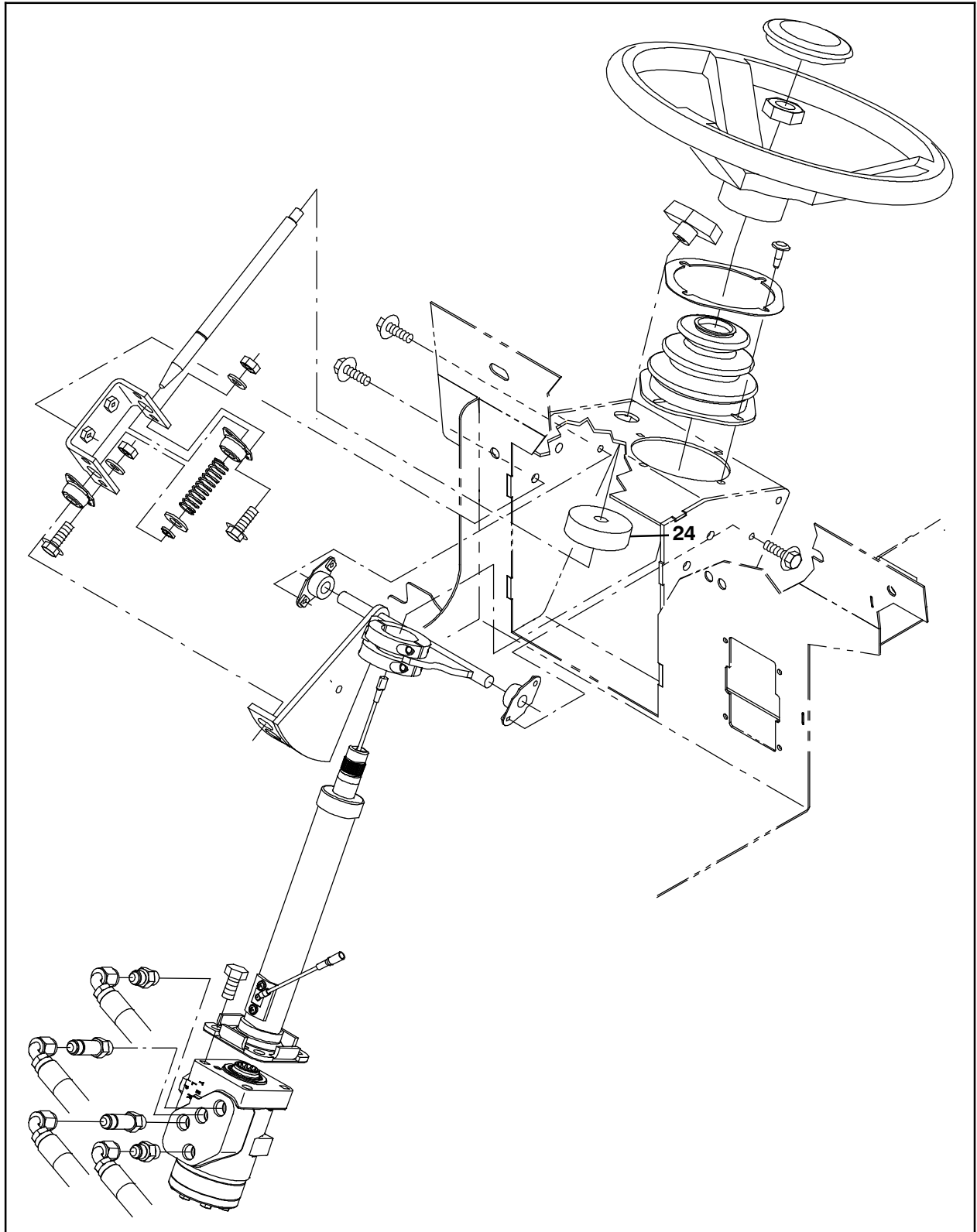


FIG. 31

PREPARATION (M20, M30, T20):

1. Park the machine on a clean level surface.
2. Turn off the engine, remove the key, and set the parking brake.

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, remove key, and set parking brake.

3. Use the steering tilt to lower the steering wheel to the lowest position.
4. Open the front shroud.

INSTALLATION (M20, M30, T20):
Refer to Fig. 46 for Illustration.

1. Remove the horn button from the steering wheel and disconnect the wire from the horn button. Set the horn assembly aside. Refer to Fig. 32.



FIG. 32

2. Remove the M20 jam nut from the steering assembly. Set the M20 jam nut aside. Refer to Fig. 33.



FIG. 33

3. Remove the steering wheel from the steering column. Set the steering wheel aside.
4. Remove the rubber boot from the steering column. Set the rubber boot aside. Refer to Fig. 34.



FIG. 34

5. Use the steering tilt wheel to raise the steering wheel to the highest position
6. Disconnect the horn wire from the machine harness. Refer to Fig. 35.

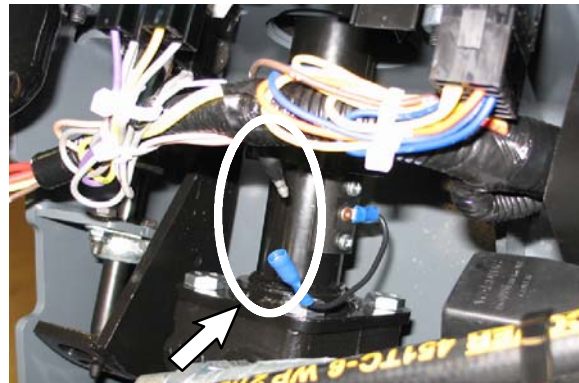


FIG. 35

7. Remove the four socket bolts from the two collars on the tilt steering bracket. Refer to Fig. 36.

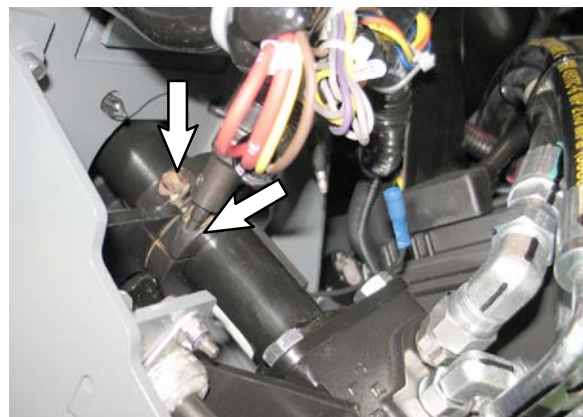


FIG. 36

8. Slide the old column down through the steering bellows.
9. Remove the four bolts mounting the column to the hydraulic steering valve and discard the old steering column. Refer to Fig. 37.

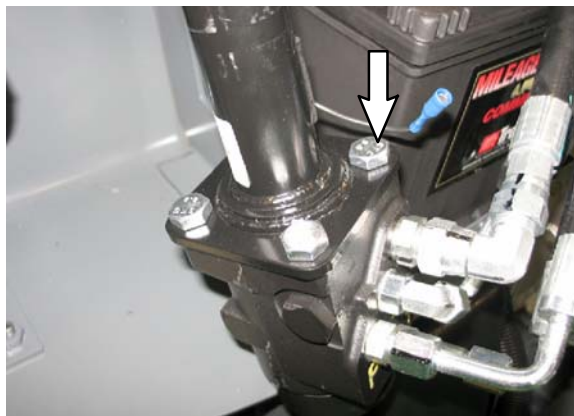


FIG. 37

10. Apply Blue Loctite onto the threads of the four M10 hex screws.
11. Fasten the new steering column onto the steering valve with the horn wire facing the battery. Torque the M10 hex screws to 27-35 Ft. Lbs. (37-48 Nm). Refer to Fig. 38.



FIG. 38

12. Remove the steering column boot from the top of the new steering column, then slide the assembly up through the steering bellows.

13. Loosely fasten the two collars over the new steering column. Refer to Fig. 39.

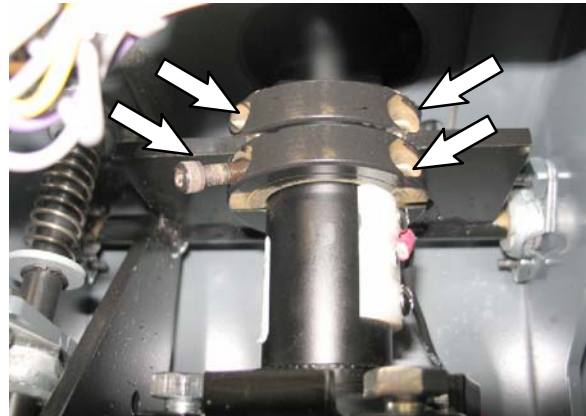


FIG. 39

14. Position the steering column so that the top of the white collar (where the horn wire mounts) presses up against the lower collar. Then tighten the four socket bolts on the two collars to secure in position. Torque the socket screws to 27-35 Ft. Lbs. (37-48 Nm). Refer to Fig. 40.

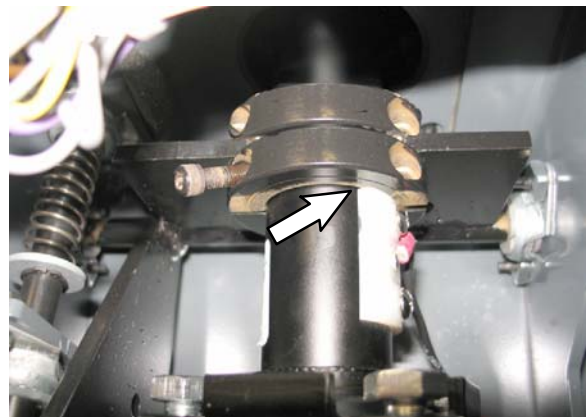


FIG. 40

15. Tilt the steering wheel into all the positions and check for clearance. Ensure that when the steering wheel is in the lowest position that the hoses do not contact the switch. If it does, loosen the two collars and reposition. Refer to Fig. 41.

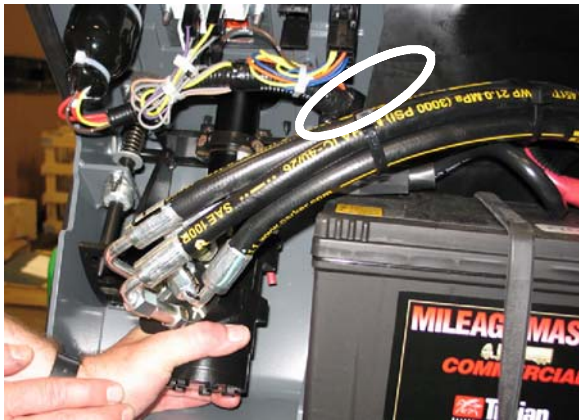


FIG. 41

16. Ensure that when the steering wheel is in the highest position that the hoses do not contact the battery. If it does, loosen the two collars and reposition. Refer to Fig. 42.



FIG. 42

17. Fasten the rubber boot onto the top of the steering column. Refer to Fig. 43.



FIG. 43

18. Mount the steering wheel and tighten with the M20 jam nut using Blue Loctite. Torque the M20 jam nut to 10-13 Ft. Lbs. (13-18 Nm). Refer to Fig. 44.

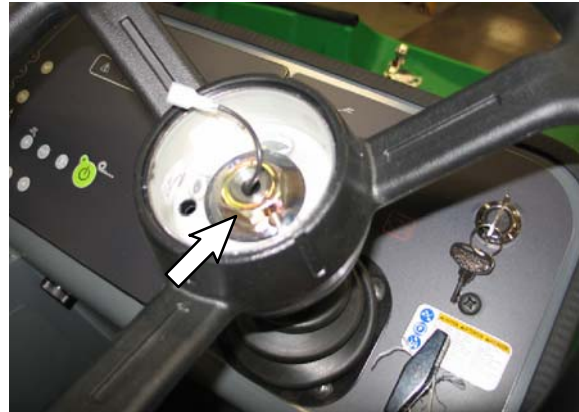


FIG. 44

19. Connect the (lower) horn wire harness to the machine harness. Refer to Fig. 45.

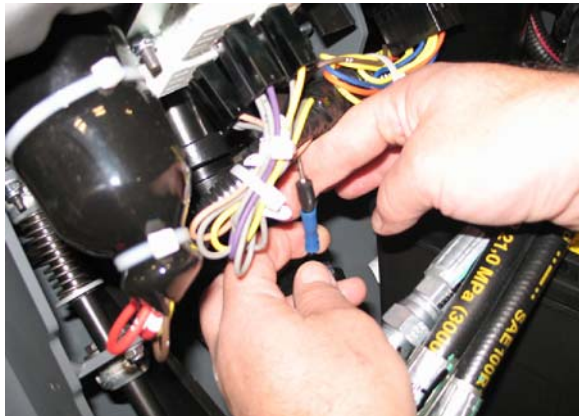


FIG. 45

20. Connect the horn assembly to the top steering column wire, then snap the horn assembly into the steering wheel. Refer to Fig. 46.



FIG. 46

21. Check the horn and steering for proper operation.

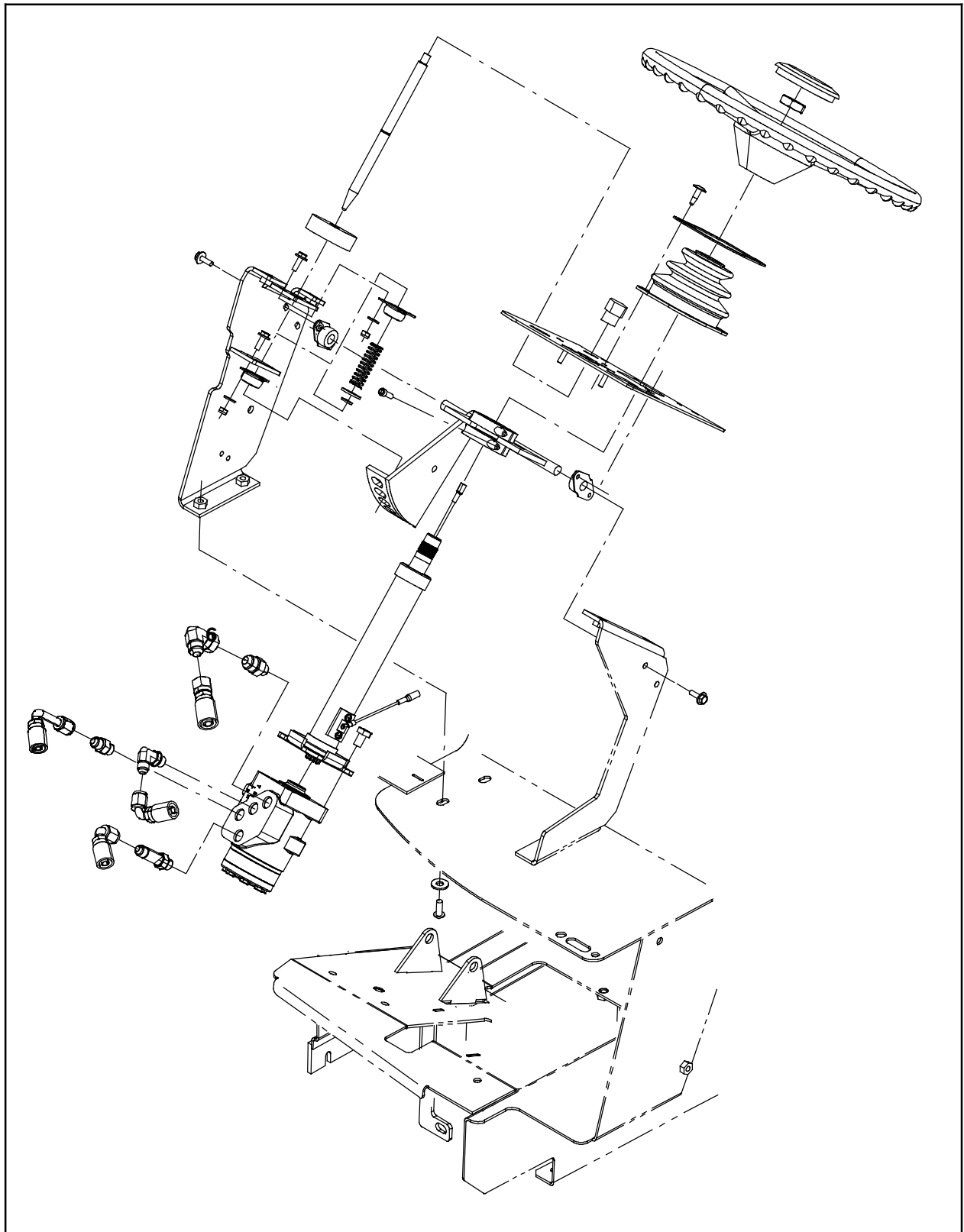


FIG. 47