



INSTRUCTION BULLETIN

No. 340860
Machine: M20 / T20
Published: 09-2007
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 numbers 1039147 and 1039148**

SYNOPSIS:

This kit contains the parts needed to install a hydraulic propel hose kit on M20 / T20 machines. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 3 hours)

When assembling/disassembling hydraulic components:

1. Thoroughly clean hydraulic components **before** disconnecting hydraulic hoses or fittings to prevent contaminants from entering the system.
2. Cap disconnected hoses and open ports to prevent contaminants from entering the system.
3. Flush hoses and fittings with air, solvent, or hydraulic fluid to prevent contaminants from entering the system.
4. Mark hydraulic hoses with locations of where they are attached. Markings make it easier to reconnect hoses to proper locations.
5. Replenish the hydraulic system if any fluid was drained from the system. Use only new Tennant approved hydraulic fluid to replenish hydraulic reservoir.
6. Dispose of all hydraulic fluid drained from the system. Hydraulic fluid is potentially dangerous to the environment. Obey all federal, state, and local laws/regulations governing the disposal of environmentally hazardous materials when disposing hydraulic fluid.

PREPARATION: (KIT 1039147 & KIT 1039148)

NOTE: Complete Step 1 through Step 3 before installing either kit onto the machine.

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

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

2. Remove the engine access panel from the operator compartment. Set the access panel and hardware aside. Refer to Fig. 1.

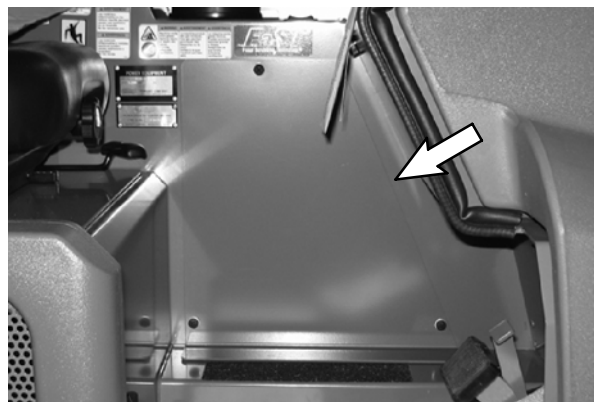


FIG. 1

3. Remove the LPG tank (if machine is equipped with LPG fuel system) to access the hose clamp located on the inner side of the operator compartment. Refer to Operators Manual for instructions how to remove the LPG tank. Refer to Fig. 2.

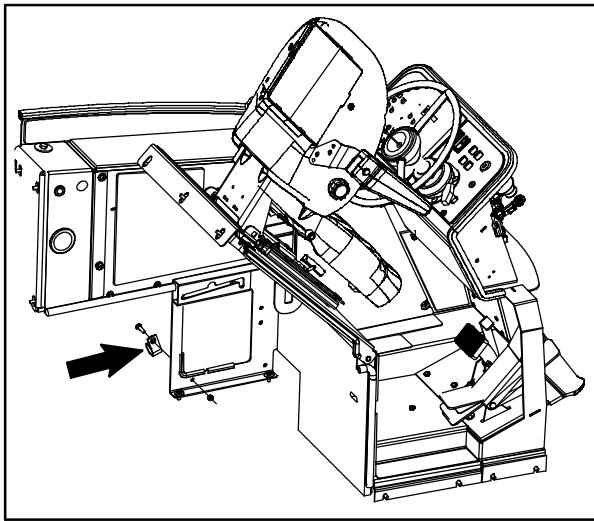


FIG. 2

NOTE: After completing Step 1 through Step 3: If installing Kit 1039147, proceed to the instructions below. If installing Kit 1039148, proceed to the instructions on page 4. If installing both kits, proceed to the instructions on page 6.

**INSTALLATION:
(INSTALL KIT #1039147 ONLY)**

1. Locate hydraulic hose (A) connected to the propel pump and wheel drive motor. Note where/how hydraulic hose (A) is routed. The new hydraulic hose (1) must be routed the same as hydraulic hose (A). Refer to Fig. 6.
2. Loosen the hose clamp and remove hydraulic hose (A) from the clamp. Refer to Fig. 2, Fig. 3, and Fig. 6.

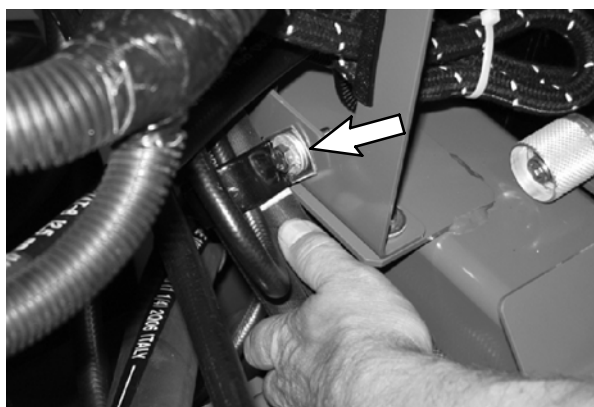


FIG. 3

3. Reinstall the hose clamp. Be sure the markings on the remaining hoses remain positioned as shown in Fig. 3.
4. Disconnect hydraulic hose (A) from the propel pump and the wheel drive motor, pull the hydraulic hose from the machine, and discard the hose. Refer to Fig. 6.
5. Loosely thread the new hydraulic hose (1) onto the fitting on the wheel drive motor where hydraulic hose (A) was previously installed. Refer to Fig. 6.
6. Route the hydraulic hose (1) toward the hose clamp located on the inner side of the operator compartment and use two cable ties (2) to secure the hydraulic hose to the other two hoses it is routed near. Refer to Fig. 4.

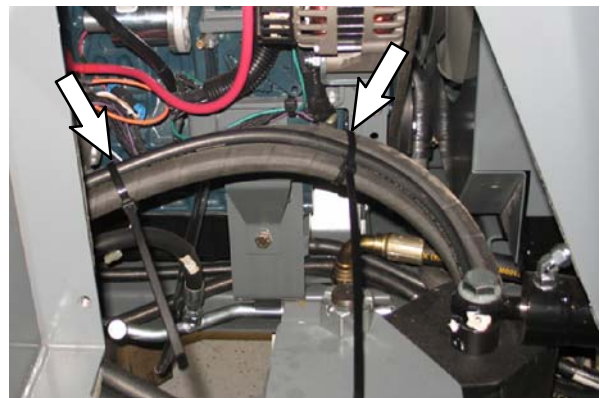


FIG. 4

7. Cut the ends from the cable ties (2).
8. Route the hydraulic hose (1) the rest of the way to the hose clamp. Refer to Fig. 2 and Fig. 6.
9. Loosen the hose clamp, position the hydraulic hose (1) so the CLAMP LOCATION LINE markings on the label are centered in the hose clamp, and reinstall the hose clamp. Refer to Fig. 2, Fig. 3, and Fig. 5.

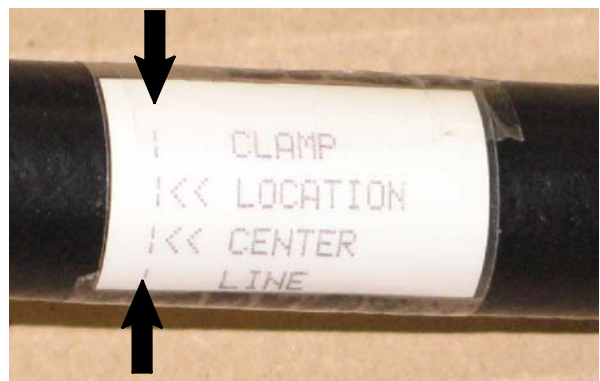


FIG. 5

10. Route the hydraulic hose (1) from the hose clamp to the propel pump. Refer to Fig. 6.
11. **Loosely** thread the 90° fitting on the hydraulic hose (1) onto the 90° fitting where hydraulic hose (A) was located on the propel pump. Refer to Fig. 6.
12. Turn the steering wheel counter clockwise until the front tire is at approximately a 20° angle to the left.
13. Tighten the hydraulic hose (1) onto the fitting on the wheel drive motor. Refer to Fig. 6.
14. Tighten 90° fitting on the hydraulic hose (1) onto the 90° fitting on the propel pump. Refer to Fig. 6.
15. Reinstall the engine access panel.
16. **LPG machines only:** Reinstall the LPG tank. Refer to the Operators manual for installation instructions.
17. Start and test the machine. Observe the newly installed hose (1) for leaks.

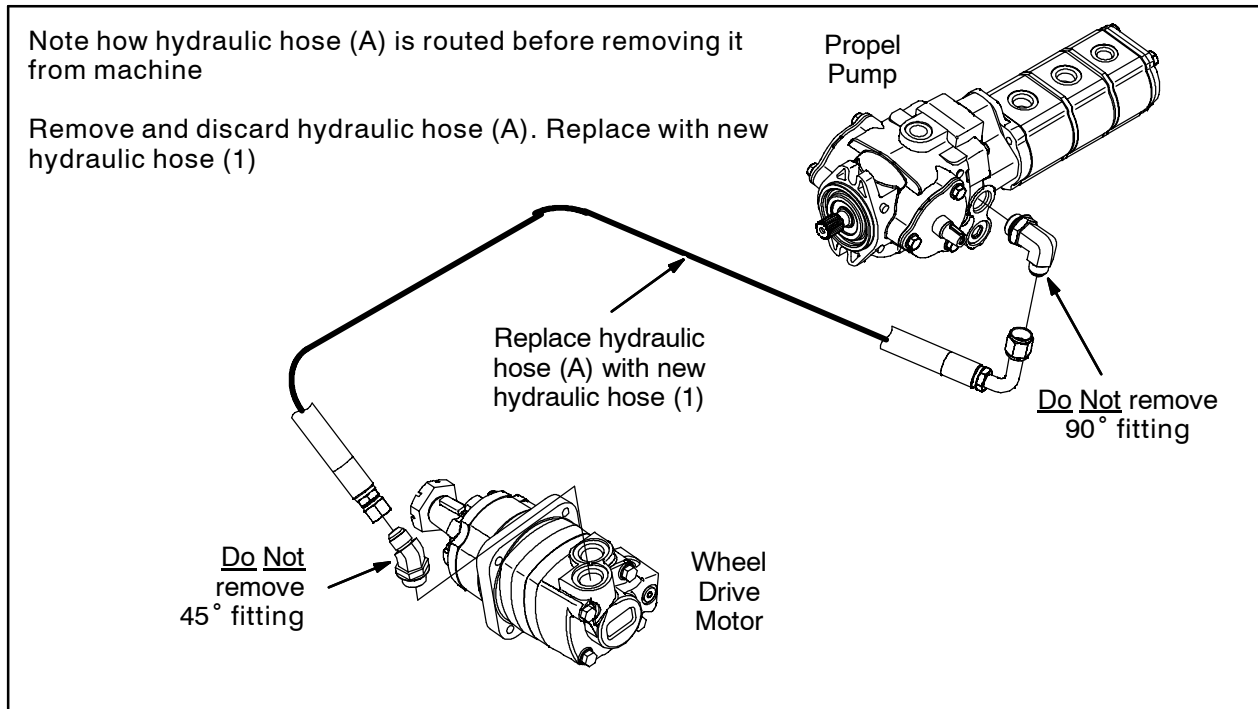


FIG. 6

**INSTALLATION:
(INSTALL KIT #1039148 ONLY)**

1. Locate hydraulic hose (A) connected to the propel pump and wheel drive motor. Note where/how hydraulic hose (A) is routed. The new hydraulic hose (1) must be routed the same as hydraulic hose (A). Refer to Fig. 6.
2. Loosen the hose clamp and remove hydraulic hose (A) from the clamp. Refer to Fig. 1, Fig. 2, and Fig. 6.

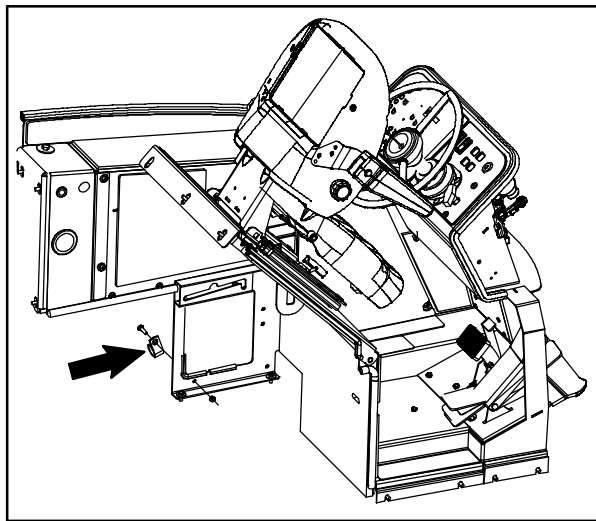


FIG. 1

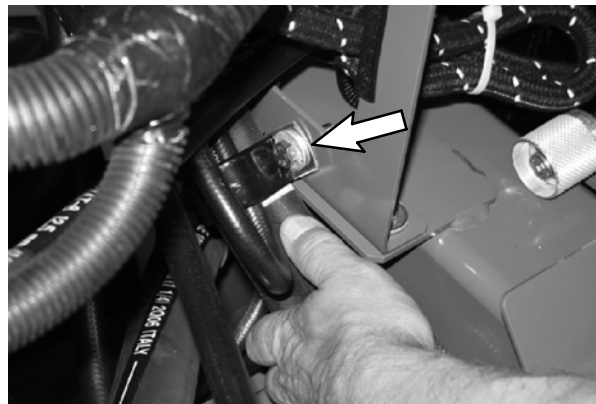


FIG. 2

3. Reinstall the hose clamp. Be sure the markings on the remaining hoses remain positioned as shown in Fig. 2.
4. Disconnect hydraulic hose (A) from the propel pump and the wheel drive motor, pull the hydraulic hose from the machine, and discard the hose. Refer to Fig. 6.
5. Loosely thread the new hydraulic hose (1) onto the fitting on the wheel drive motor where hydraulic hose (A) was previously installed. Refer to Fig. 6.

6. Route the hydraulic hose (1) toward the hose clamp located on the inner side of the operator compartment and use two cable ties (2) to secure the hydraulic hose to the other two hoses it is routed near. Refer to Fig. 3.

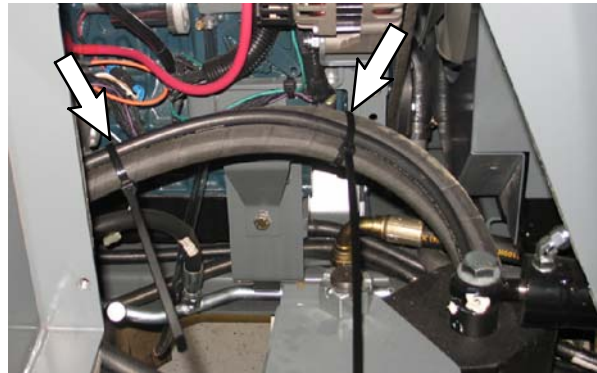


FIG. 3

7. Cut the ends from the cable ties (3).
8. Route the hydraulic hose (1) the rest of the way to the hose clamp. Refer to Fig. 1 and Fig. 2.
9. Loosen the hose clamp, position the hydraulic hose (1) so the CLAMP LOCATION LINE markings on the label are centered in the hose clamp, and reinstall the hose clamp. Refer to Fig. 1, Fig. 2, and Fig. 4.

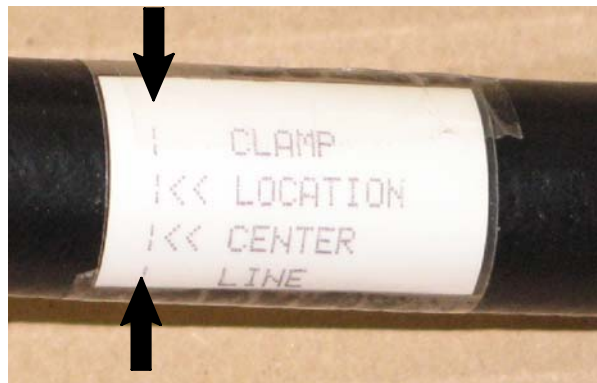


FIG. 4

10. Route the hydraulic hose (1) from the hose clamp to the propel pump. Refer to Fig. 6.

11. **Loosely** thread the 45° hydraulic fitting (2) onto the end of the hydraulic hose (1) labeled HOSE PUMP END. Refer to Fig. 5.

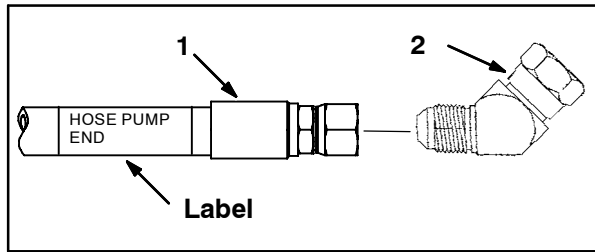


FIG. 5

12. Install the 45° hydraulic fitting (2)/hydraulic hose (1) onto the 90° fitting where hydraulic hose (A) was located on the propel pump. Refer to Fig. 4 and Fig. 6.

13. Tighten the 45° hydraulic fitting (2) onto the hydraulic hose (1). Refer to Fig. 5 and Fig. 6.
14. Turn the steering wheel counter clockwise until the front tire is at approximately a 20° angle to the left.
15. Tighten the hydraulic hose (1) onto the fitting on the wheel drive motor. Refer to Fig. 6.
16. Reinstall the engine access panel.
17. **LPG machines only:** Reinstall the LPG tank. Refer to the Operators manual for installation instructions.
18. Start and test the machine. Observe to newly installed fitting (2) and hose (1) for leaks.

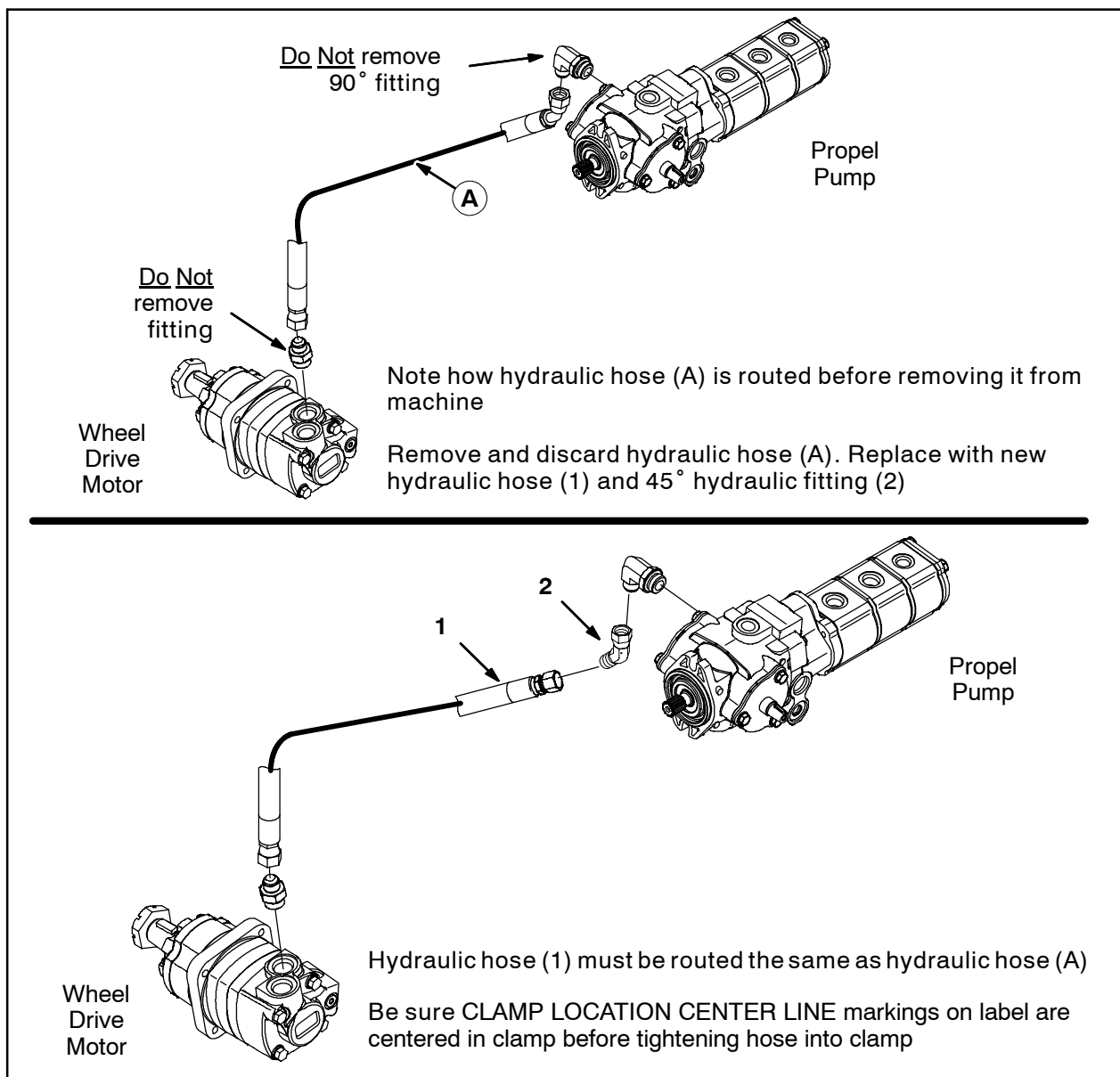


FIG. 6

**INSTALLATION:
(INSTALL KIT #1039147 & KIT #1039148)**

1. Locate hydraulic hose (A) and (B) connected to the propel pump and wheel drive motor. Note where/how both hydraulic hoses are routed. The new hydraulic hoses (1) must be routed the same as hydraulic hose (A) and (B). Refer to Fig. 6.
2. Loosen the hose clamp and remove hydraulic hoses (A) and (B) from the clamp. Refer to Fig. 1 and Fig. 2.

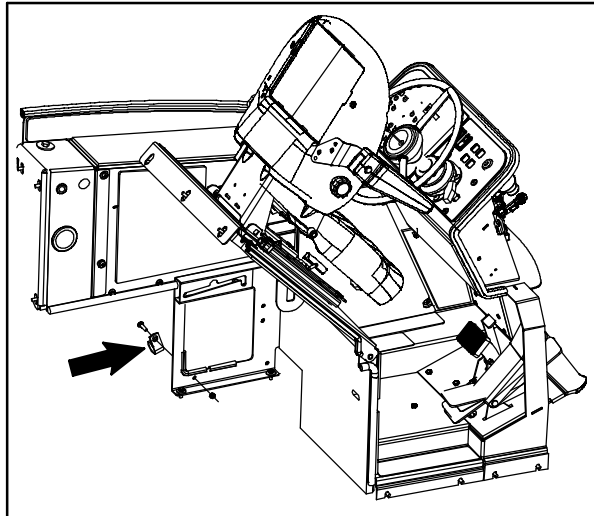


FIG. 1

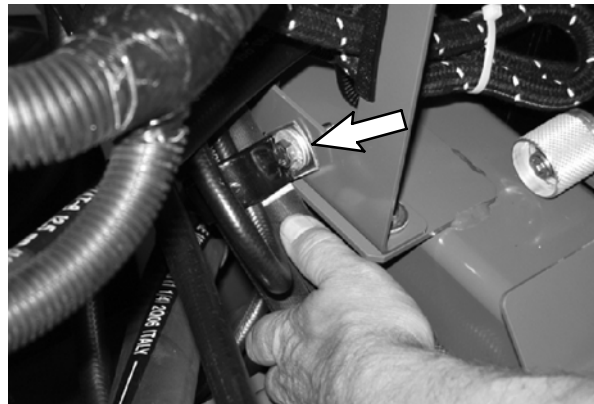


FIG. 2

3. Reinstall the hose clamp. Be sure the markings on the remaining hoses remain positioned as shown in Fig. 2.
4. Disconnect hydraulic hoses (A) and (B) from the propel pump and the wheel drive motor, pull both hydraulic hoses from the machine, and discard both hoses. Refer to Fig. 6.
5. Loosely thread the new hydraulic hoses (1) to the fittings on the wheel drive motor where hydraulic hoses (A) and (B) were previously installed. Refer to Fig. 6.

6. Route both hydraulic hoses (1) toward the hose clamp located on the inner side of the operator compartment and use two cable ties (2) to secure the hydraulic hoses to the other hose they are routed near. Refer to Fig. 3.

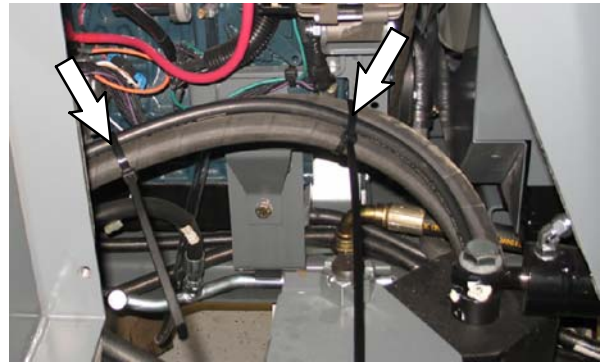


FIG. 3

7. Cut the ends from the cable ties (3).
8. Route both hydraulic hoses (1) the rest of the way to the hose clamp. Refer to Fig. 1 and Fig. 2.
9. Loosen the hose clamp, position the hydraulic hoses (1) so the CLAMP LOCATION CENTER LINE markings on the labels are centered in the hose clamp, and reinstall the hose clamp. Refer to Fig. 1, Fig. 2, and Fig. 4.

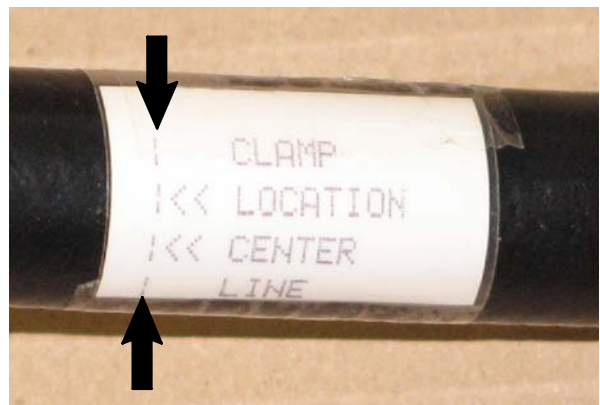


FIG. 4

10. Route the hydraulic hoses (1) from the hose clamp to the propel pump. Refer to Fig. 6.
11. **Loosely** thread the 45° hydraulic fitting (2) from kit 1039148 onto the end of the hydraulic hose (1) labeled HOSE PUMP END from kit 1039148. Refer to Fig. 5.

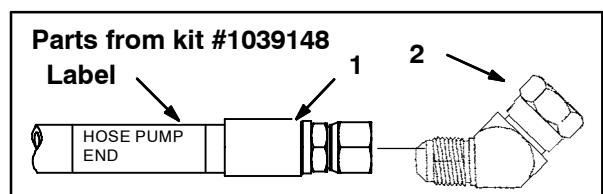


FIG. 5

12. Install the 45° hydraulic fitting (2)/hydraulic hose (1) from kit 1039148 onto the 90° fitting where hydraulic hose (A) was located. Refer to Fig. 5 and Fig. 6.
13. **Loosely** thread the 90° fitting on hydraulic hose (1) from kit 1039147 onto the 90° fitting where hydraulic hose (B) was located. Refer to Fig. 6.
14. Turn the steering wheel counter clockwise until the front tire is at approximately a 20° angle to the left.
15. Tighten both hydraulic hoses (1) to the fittings on the wheel drive motor. Refer to Fig. 6.
16. Tighten the 45° hydraulic fitting (2) from kit 1039148 onto the hydraulic hose (1). Refer to Fig. 5 and Fig. 6.
17. Tighten 90° fitting on hydraulic hose (1) onto the 90° fitting where hydraulic hose (B) was located on the propel pump. Refer to Fig. 6.
18. Reinstall the engine access panel.
19. **LPG machines only:** Reinstall the LPG tank. Refer to the Operators manual for installation instructions.
20. Start and test the machine. Observe to newly installed fittings (2) and hoses (1) for leaks.

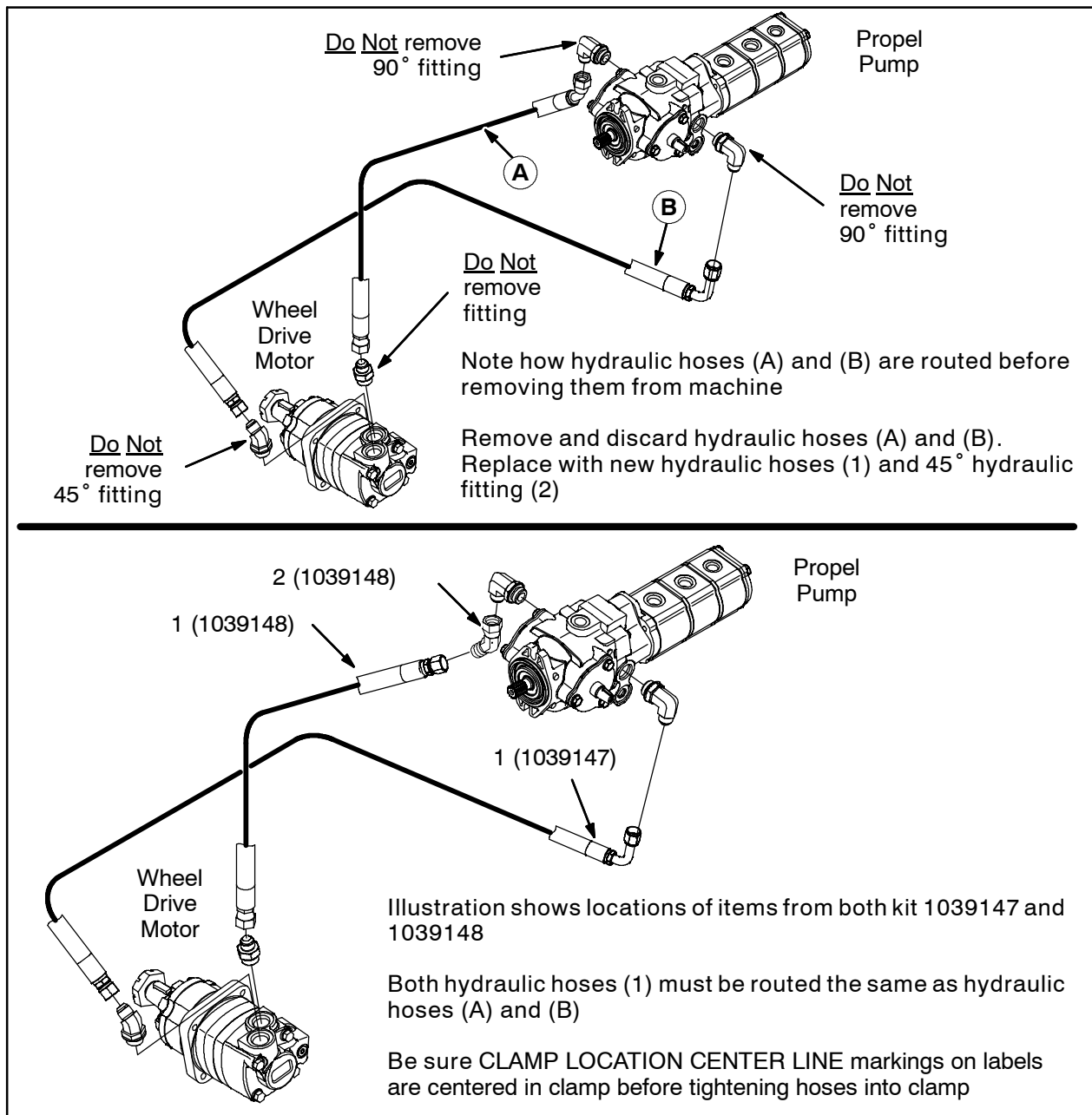


FIG. 6

Bill of Materials for Hose Kit, Hyd, Propel, CI [M20/T20]-1039147

	Ref.	Tennant Part No.	Description	Qty.
▽		1039147	Hose Kit, Hyd, Propel, CI [M20/T20]	1
▲	1	1023488	Hose, Hyd, Spcl, JF10E90/JF10Str, 063.0	1
▲	2	763116	Tie, Cable, Nyl, 15.3L. W 4.5 Max D	2

Bill of Materials for Hose Kit, Hyd, Propel, CI [M20/T20]-1039148

	Ref.	Tennant Part No.	Description	Qty.
▽		1039148	Hose Kit, Hyd, Propel, CI [M20/T20]	1
▲	1	1038569	Hose, Hyd, Spcl, JF10Str/JF10Str, 56.5	1
▲	2	54017	Fitting, Hyd, E45, JF10/JM10	1
▲	3	763116	Tie, Cable, Nyl, 15.3L. W 4.5 Max D	2

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