FORM NO. 3312-382

TORO®

MODEL NO. 33460

INSTALLATION INSTRUCTIONS

ELECTRO-HYDRAULIC POWER PACK KIT

(REELMASTER TRANSPORT FRAME)

Since this instruction sheet covers only a minimal amount of information necessary to maintain and operate your machine, we suggest that you keep this material with your Operator's Manual so that both may be referred to for instructions concerning safe operation and proper maintenance procedures.

Note: Battery not included with kit. Recommended battery is a 12 volt, BCI Group 27, 105 amp with dimensions of 12.75" long, 6.75" wide, and 9.62" high. The battery should be a deep cycle type not a maintenance free or low maintenance automative type. Battery terminals should be threaded stud type with wing nuts on both negative and positive posts. A 10 amp battery charger may be used to recharge the battery when transport frame is not connected to a vehicle with a charging source. While the battery is being charged, the transport frame hydraulic system can be actuated.

TRANSPORT FRAME INSTALLATION

1. Position power pack support on center of #6 and #7 cross channels with support extension toward front (Fig. 1). Reposition any control valve hoses to avoid contact with support. Secure support to cross channels with (4) 3/8 – 16 x 5" capscrews, (8) .406 I.D. x .813 O.D. washers, (2) holddown straps, and (4) locknuts. Position washers on outside of support and holddowns.

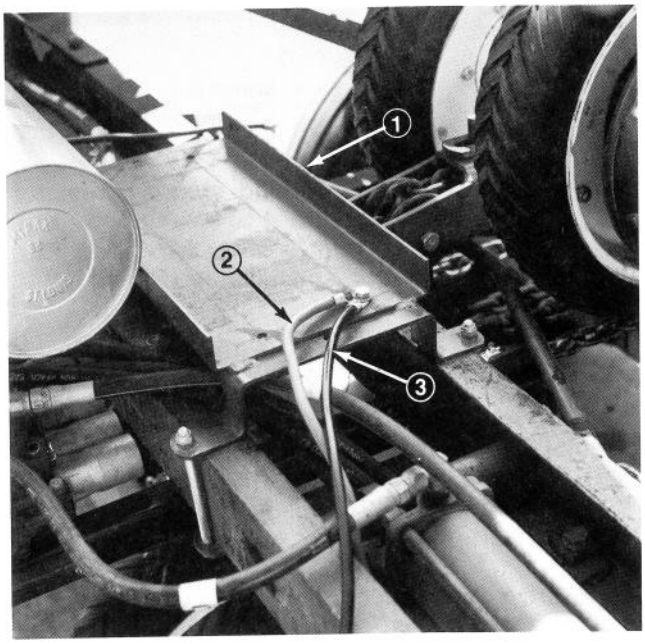

Figure 1

1. *Power pack support*
2. *Battery ground wire*
3. *Power pack ground wire*

2. Mount black battery ground wire (16½") and black power pack ground wire (30") to left rear mounting hole in power pack support with a 5/16 – 18 x 3/4" capscrew, external tooth lockwasher, and locknut (Fig. 1).

3. Install free end of power pack ground wire to trailer tongue by drilling a .296 (19/64) dia. hole and securing with a 5/16 – 18 x 7/8" thread forming screw and external tooth lockwasher (Fig. 2).

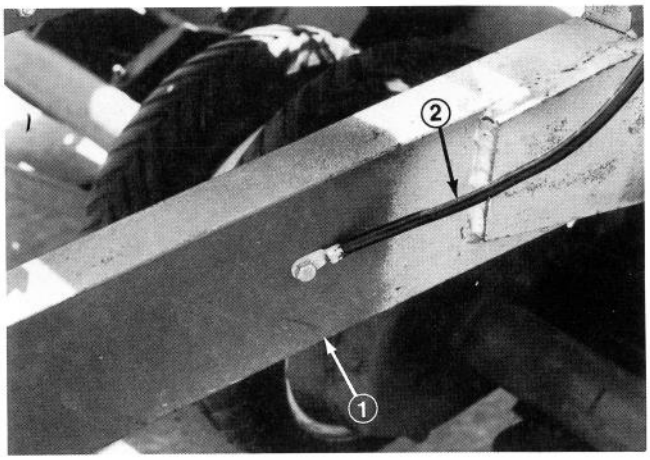

Figure 2

1. *Trailer tongue*
2. *Power pack ground wire*

4. Mount key switch in rear mounting hole of support extension with lock washer and nut supplied with switch (Fig. 3). Position switch so key is vertical when in "off" position.

5. Mount circuit breaker to support extension with (2) 10 – 24 x ½" machine screws and locknuts. Position circuit breaker with battery ("B") terminal to the rear (Fig. 3).

6. Secure frame wire assembly (90") to "A" terminal of circuit breaker. Secure red battery cable (20½") to "B" terminal of circuit breaker (Fig. 3).

7. Mount power pack assembly to support extension with (2) 3/8 16 x 1" capscrews and lockwashers. Using front mounting capscrew and lockwasher, secure frame wire to support extension with "R" clamp (Fig. 3).

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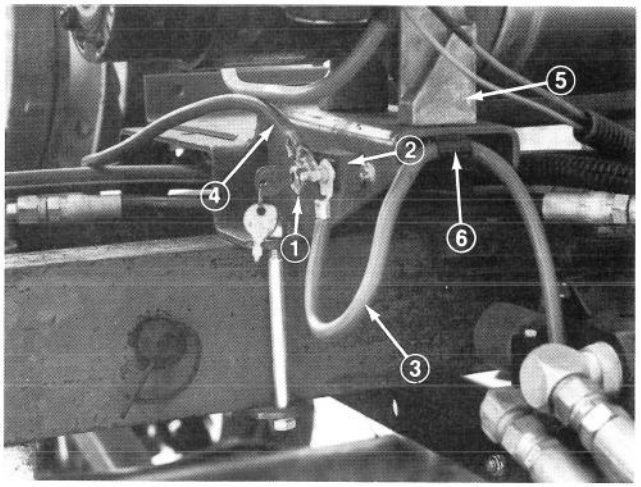


Figure 3

1. *Key switch*
2. *Circuit breaker*
3. *Frame wire assembly*
4. *Battery cable*
5. *Power pack assembly*
6. *"R" clamp*

8. Install 90° street pipe elbows, pipe couplings, pipe reducer bushings, and quick disconnect couplers to power pack as shown in Fig. 4. Apply #2 permatex to threads of fittings before installing.

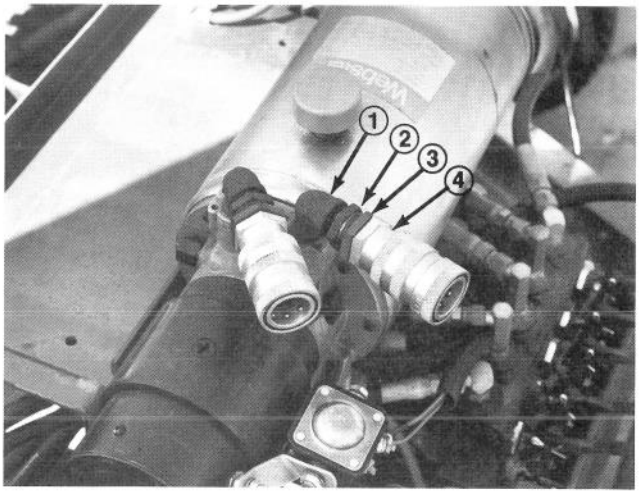


Figure 4

1. *Pipe elbow*
2. *Pipe coupling*
3. *Pipe reducer bushing*
4. *Quick disconnect coupler*

9. Secure left and right switch bail supports to valve supports with (4) 5/16 – 18 x 3/4" capscrews and locknuts (Fig. 5).

10. Position switch bail, angle leg forward, between bail supports and secure each side with switch bail pivot, .769 I.D. washer, .344 I.D. washer, 5/16 – 18 x 1¼" capscrew and locknut (Fig. 5). Position washers as shown in Fig. 6.

11. Mount plunger switch assembly to switch bail support with (2) 1/4 – 20 x 5/8" capscrews and lockwashers. Adjust switch fore or aft so circuit is completed when hydraulic control levers are actuated in both directions (Fig. 5).

12. Route wire harness under hydraulic hoses to plunger switch assembly. Slide boot over connector

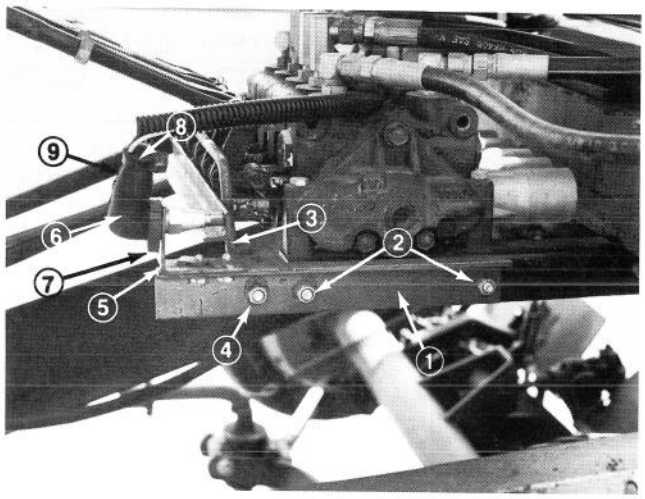


Figure 5

1. *Switch bail support*
2. *Support mounting fasteners*
3. *Switch bail*
4. *Switch bail mounting fasteners*
5. *Plunger switch assembly*
6. *Boot*
7. *Clamp (large)*
8. *Rubber plug*
9. *Clamp (small)*

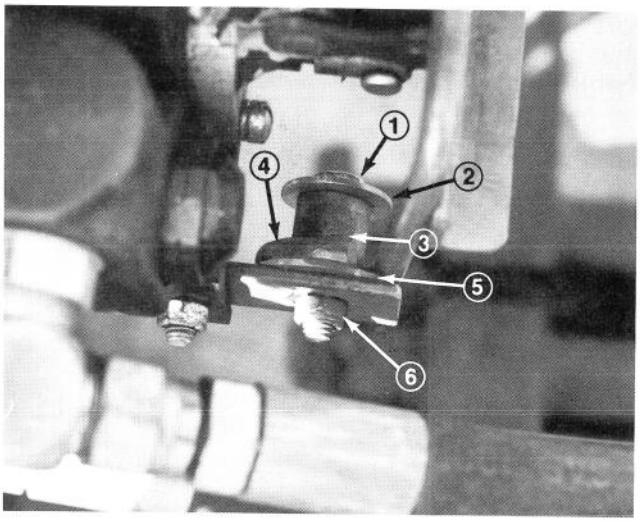


Figure 6

1. *Capscrew*
2. *.344 I.D. washer*
3. *Switch bail pivot*
4. *Switch bail*
5. *.769 I.D. washer*
6. *Locknut*

supplied with wire harness and secure connector to plunger switch. Secure boot to switch with large clamp. Insert rubber plug around wires and into top of boot. Secure with small clamp (Fig. 5).

13. Connect 5/16" ring terminal of wire harness and 5/16" terminal end of red battery cable (23") to "B" terminal of power pack solenoid (Fig. 7). Connect #10 ring terminal of wire harness to "S" terminal of power pack solenoid (Fig. 7).

14. Attach connector, supplied with wire harness to key switch (Fig. 7).

15. Mount connector end of frame wire assembly to front of trailer tongue by drilling a .296 (19/64) dia. hole in tongue, sliding "R" clamp onto long wire and securing both wires to trailer tongue with 5/16 – 18 x 7/8" thread forming screw and external tooth lockwasher (Fig. 8).

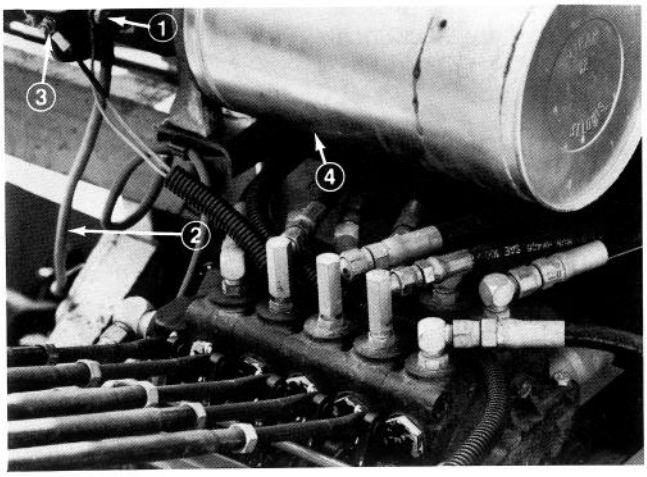


Figure 7

1. *"B" terminal*
2. *Battery cable*
3. *"S" terminal*
4. *To key switch*

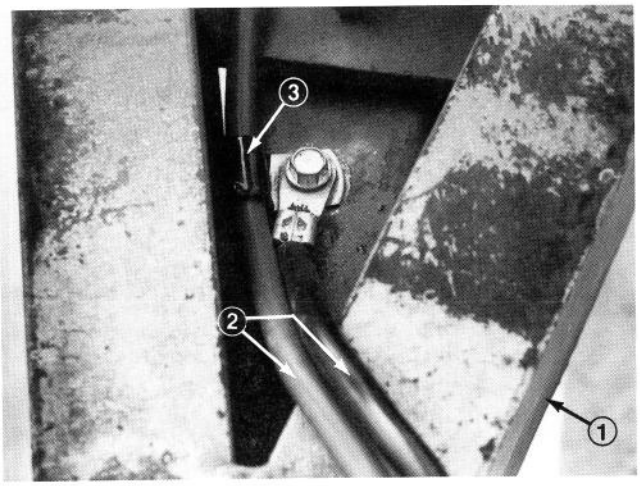


Figure 8

1. *Front of trailer*
2. *Frame wire assembly*
3. *"R" clamp*

16. Mount battery box to power pack support with (2) holddown straps, 5/16 – 18 x 1¼" capscrews, .344 I.D. washers and locknuts (Fig. 9).

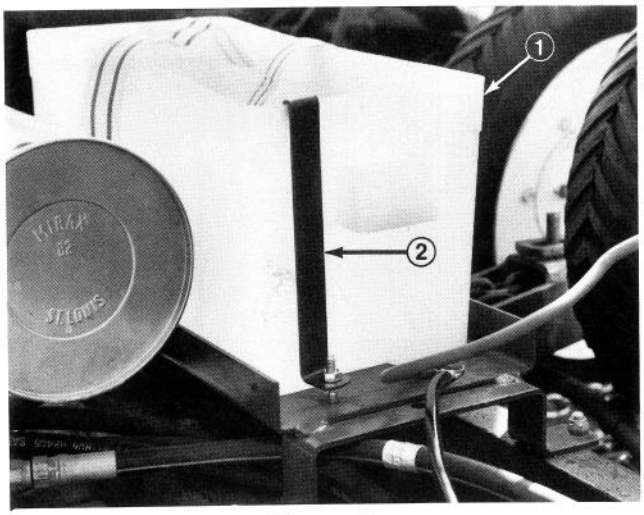


Figure 9

1. *Battery box*
2. *Holddown strap*

17. Place battery into box. Install power pack and circuit breaker cables to the positive (+) post. Secure ground cable to negative (–) post. Install cover and secure with strap.

18. Attach the transport frame hydraulic hoses to the power pack. The "outlet" port hose on the pump must be connected to the "inlet" port on the hydraulic control valve.

TOW VEHICLE INSTALLATION

1. Disconnect battery ground cable on vehicle.

2. Mount battery isolator in engine compartment of tow vehicle by drilling (4) .172 (11/64) dia. mounting holes and securing with #10 – 16 x 5/8" thread forming screws.

Note: Mount isolator on alternator side of engine and as close to alternator as practical. Do not mount directly on engine.

3. Disconnect wire at battery terminal of alternator and reconnect to "1" terminal on isolator.

Note: Motorola alternators with a colored terminal plate, follow the above instructions with this addition: move all wires on the regulator terminal of the alternator to the large post on the colored terminal plate. For Motorola alternators without a colored terminal plate, use a Sure Power Isolator with a numeral "4" after the model number. Refer to instruction sheet supplied with isolator for additional information.

Note: If battery cable length supplied with vehicle is not sufficient length to reach isolator, connect additional cable as instructed below:

a. Determine length of cable needed to reach isolator.

b. Use white (32") cable supplied with kit, to splice to vehicle battery cable. Cut cable to desired length.

c. Crimp new terminal ends, supplied with kit, to cables.

d. Secure cables together with #10 – 24 x ½" machine screw and locknut.

e. Tape metal connectors to provide electrical insulation.

4. Determine length of cable needed from battery terminal of alternator and "A" terminal of isolator.

5. Cut white (32") cable to length needed and crimp on new terminal end.

6. Secure cable to battery terminal of alternator and "A" terminal of isolator.

7. Attach long wire of tow vehicle wire assembly to "2" terminal of isolator.

8. Mount connector end of wire assembly to rear of tow vehicle, close to transport frame. Drill a .296 (19/64) dia. hole, slide "R" clamp onto long wire and secure both wires to tow vehicle with 5/16 – 18 x 7/8" thread forming screw and external tooth lockwasher.

Note: Provide sufficient wire length between the frame and tow vehicle to prevent damaging wires when turning vehicles.

9. Connect ground cable to vehicle battery.

OPERATION

1. The electro-hydraulic power pack is a self contained power system including a 12 volt, D.C. electric motor, hydraulic gear pump, fluid reservoir, filter screen and valve plate with integral cartridge type relief set at 2000 psi and check valve.

2. The power pack reservoir has a capacity of 1.5 gallons. The fluid in the reservoir should be the same type as the fluid in the transport frame. If this is not possible, drain the system and refill with Mobil 423 multi-functional transmission/hydraulic fluid.

The following is a list of fluids compatible with the transport frame hydraulic system fluid:

Allis Chalmers HPF821 or 322
Allison C-2 Fluid
J.I. Case TCH, TFD or Spec 144, 145 Fluids
John Deere Type 303 Special Purpose Oil
(J-14B) or Hy gard (J-20A)
Ford Tractor M2C41A, M2C53A, M2C86A
International Harvester Co. Hy-Tran Fluid
Massey-Ferguson M1127, M1129A, M1135
Permatran Transmission Fluids
Minneapolis-Moline Hydraulic Fluid and
Part No. 35301 Fluid
Oliver Corp. 102082A E.P. Additive in engine oil.

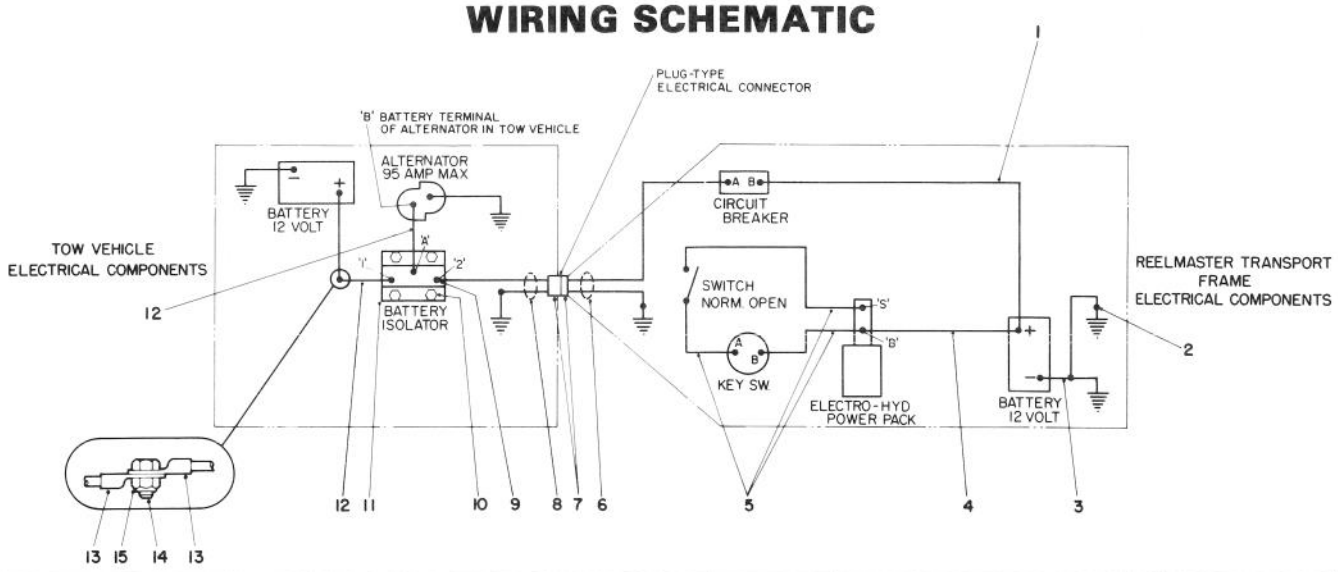
In all cases, the equipment manufacturer's recommendations regarding drain intervals should be followed.

Check oil level with cutting units in the transport position and cylinders retracted. Actuate each cylinder, then check oil level and add oil if required. Correct oil level should be 1 to 1½ inches below fill port.

3. The battery isolator has a voltage rating of 6V-36V, maximum charging current rating of 95 amps, operating temperature range of -40° C to 121° C, and an insulation rating to ground of 500V at 60 Hz/min. Isolator is to be used with a negative ground charging system.

4. To operate electro-hydraulic power pack, turn key switch to "ON" position, this completes the electrical circuit. Actuate hydraulic valve control levers on control tower to raise and lower cutting units. The unit will only operate when the control valve levers are held in position. The "automatic return to neutral feature" will not function when this kit is installed.

WIRING SCHEMATIC



1	Wire Battery to Circuit Breaker	9	Boot
2	Wire – Power Pack Ground	10	Screw – Thread Forming
3	Wire – Battery to Ground	11	Isolator – Multi Battery
4	Wire – Battery to Power Pack	12	Wire Assembly
5	Wiring Harness – Power Pack	13	Terminal – Closed End
6	Wire Assembly Frame	14	Screw – Machine Hex. Hd.
7	Connector – 2 Pole	15	Nut – Lock
8	Wire Assy. – Tow Vehicle		

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