FORM 1211 HYDRAULIC LOADING ARM KIT INSTALLATION

Part No. HLA-A

Following are installation instructions for the hydraulic loading arm kit for 1992 model sawmills and newer (LT30 Rev. C4.00/LT40 Rev. C5.00 and later[1]). The kit will allow loading logs onto the sawmill bed with the use of the provided hydraulic loading arm.

Installation Instructions

1. Stop operation and lock out the sawmill.

2. Make sure the sawmill is setup firmly on level ground and all the outriggers/legs secure the sawmill frame.

3. Remove the loading ramps from the sawmill bed, if equipped.

PORTABLE SAWMILLS ONLY:

4. Raise the sawmill bed with the outriggers so that the tires are off the ground to allow relocation of the trailer axle for hydraulic loading arm kit installation.

5. Remove the four bolts securing the trailer axle to the sawmill bed. Move the trailer axle approximately 3" toward the front end of the mill.

6. Install the two provided axle mount plates between the trailer axle and the sawmill bed as shown. Use the four provided 1/2-13 x 1 1/2" hex head bolts to secure the axle mount plate to the sawmill bed. **NOTE:** Make sure to orient the bolts located directly above the trailer axle from the bottom to allow sufficient clearance.

See Figure 1.

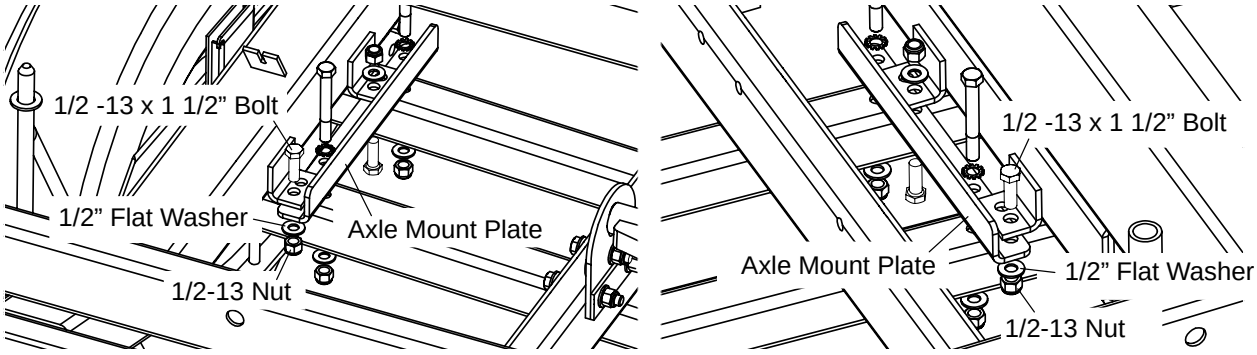


FIGURE 1

[1] Except 1992-96 G18 with Onan or Briggs engine without external alternator.

7. Replace the four bolts, washers and lock nuts to secure the trailer axle to the axle mount plates.

ALL SAWMILLS:

8. Assemble the loading arm to the two foot pad/cylinder assemblies and mounting bracket assemblies as shown. Secure the top of the cylinders to the loading arm with a short pivot pin, two 1" flat washers and cotter pins. Insert a long pivot pin through each mounting bracket, foot pad then the loading arm and secure with a 1/4" bolt and lock nut.

See Figure 2.

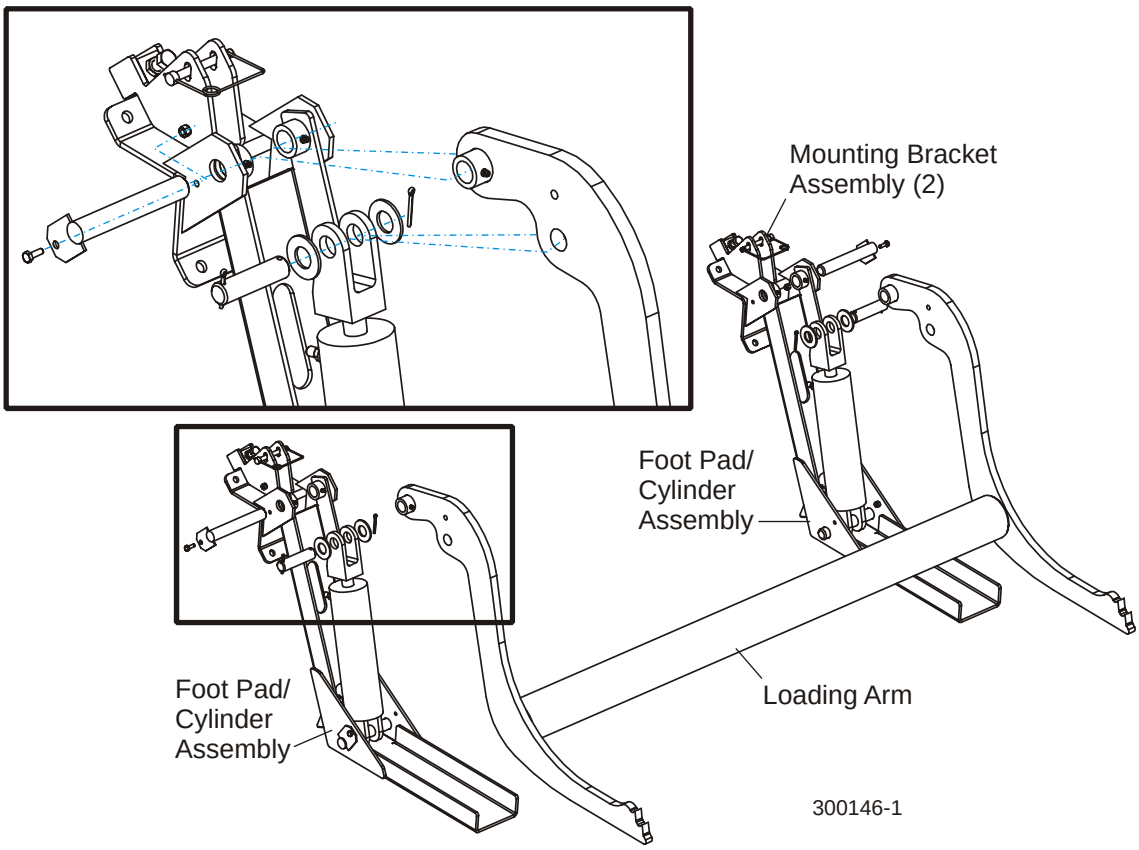


FIGURE 2

9. Position the hydraulic loading arm assembly next to the right side of the sawmill bed.

10. Use the two provided loading arm mount plates to install the loading arm to the sawmill bed. Install the provided 1/2-13 x 2" hex head bolts and 1/2-13 hex nuts into the top holes of the mounting plates. Raise the log loading arm up past the center of balance and adjust both rest bolts to meet the arm. Tighten the lock nuts securing the mount plates. Install the bolts and lock nuts into the bottom holes of the mounting plate and tighten.

NOTE: Move the loading arm assembly as far forward as possible before securing it to the frame tube to avoid its foot channels to interfere with the saw head when raised.

See Figure 3.

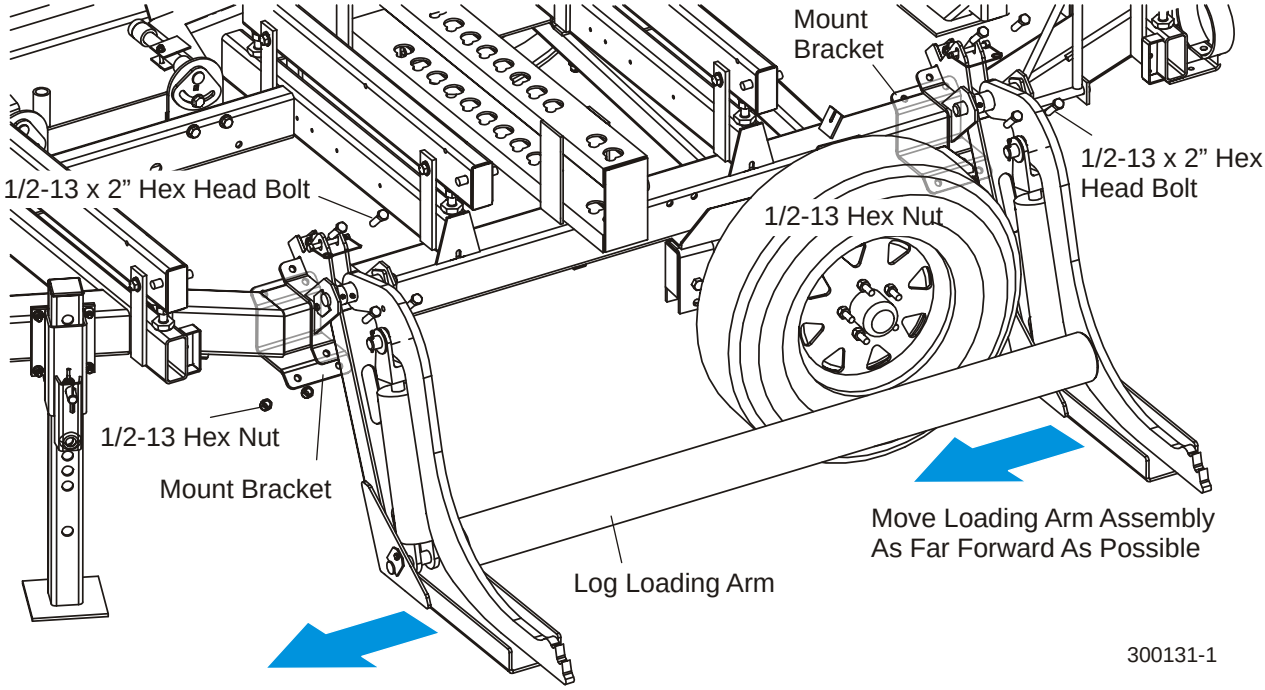


FIGURE 3

11. Remove the cover and hydraulic pump from the provided pump box assembly. Remove two nuts securing the front outrigger/leg to the sawmill frame. Place the hydraulic box against the sawmill main tube as shown.

See Figure 4.

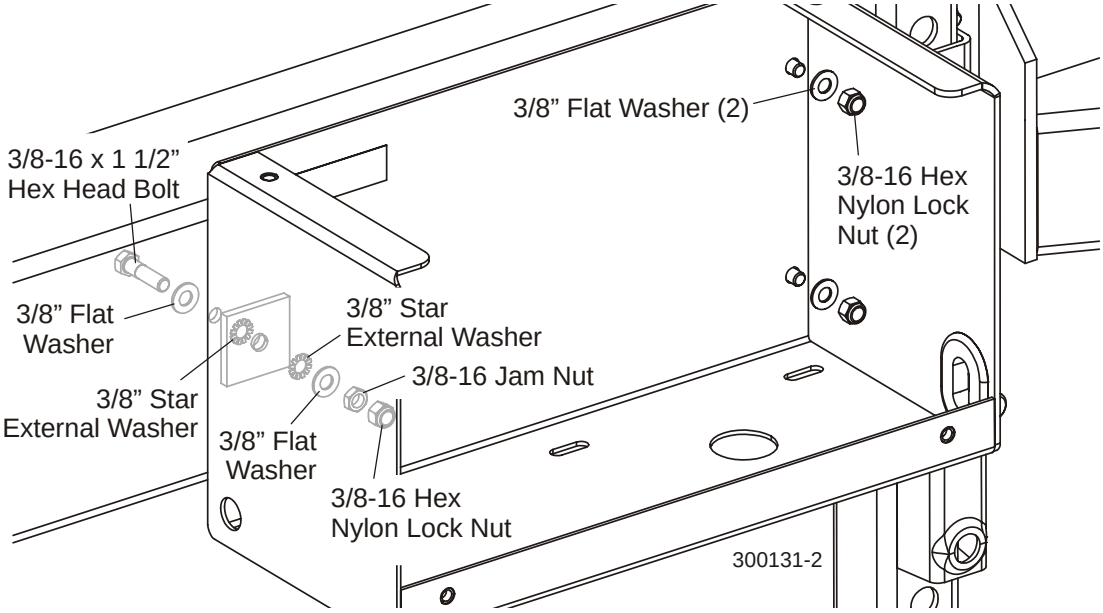


FIGURE 4

12. Replace the two nuts and washers to the front outrigger/leg to secure the hydraulic box to the sawmill frame.

13. Remove the winch and hitch assemblies from the main sawmill tube, if equipped. Unhook the winch cable from the front hook located at the bottom of the sawmill bed. Remove the old winch mount bracket from the sawmill.

14. Use the single front hole in the back wall of the hydraulic box as a guide to drill a 3/8" hole in the main sawmill tube (one wall only). **NOTE:** Make sure that wires inside the main tube are not affected by drilling.

15. Use the provided 3/8-16 x 1 1/2" hex head bolt, two 3/8" external star lock washers, 3/8-16 jam nut secure the hydraulic box to the main tube. Replace the hydraulic pump in the hydraulic box using the existing bolts (leave bolts loose). Attach the motor ground cable to the 3/8-16 x 1 1/2" bolt and secure with the provided 3/8-16 lock nut. Temporarily install the box cover and check the operation of the pump handle to insure it can be moved through its full range of motion. If necessary, adjust the pump forward or back to allow proper operation of the handle. Remove the box cover and tighten the pump mounting bolts.

16. Install the provided winch bracket and replace the winch assembly on the sawmill. Insure the cable clearance under the hydraulic box. Also, reinstall the hitch assembly to the sawmill, if equipped. Use the same bolts to secure the winch bracket and hitch assembly. Leave the winch

cable unhooked at the front hook to prevent interference with the front outrigger locking pin on portable sawmills.

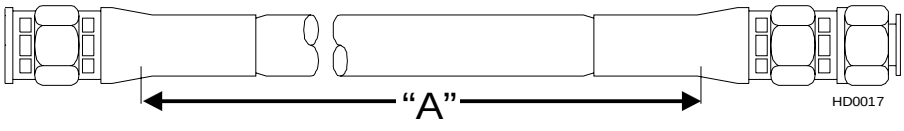
17. Remove the pump reservoir cap and fill the reservoir with the hydraulic fluid provided. Fill the reservoir to 3/4" of the top. **NOTE:** The decal specifying the hydraulic fluid level is provided as a reminder for future service. In this application, the pump is NOT shipped with the fluid installed. Install the fluid before attempting to operate the pump.

18. Reinstall the pump reservoir cap.

Hydraulic Hoses Installation Instructions

There are six hydraulic hoses included in the log loading arm kit.

See Figure 5.



COLOR	ID	LENGTH "A"	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.
Green	H1	62"	**LOADING ARM BRANCH TOP**	018020	2
Yellow	H2	64"	**LOADING ARM BRANCH BASE**	018021	2
Blue	H3	164"	**LOADING ARM TOP**	P12548	1
Red	H4	164"	**LOADING ARM BOTTOM**	P12548	1

To install the hydraulic hoses to the sawmill, perform the following steps:

1. Install the two provided 62" hoses (H1) between the top fittings on the loading arm hydraulic cylinders and one of the provided 'T' fitting assemblies.

   See Figure 6. The hydraulic layout diagram is shown.

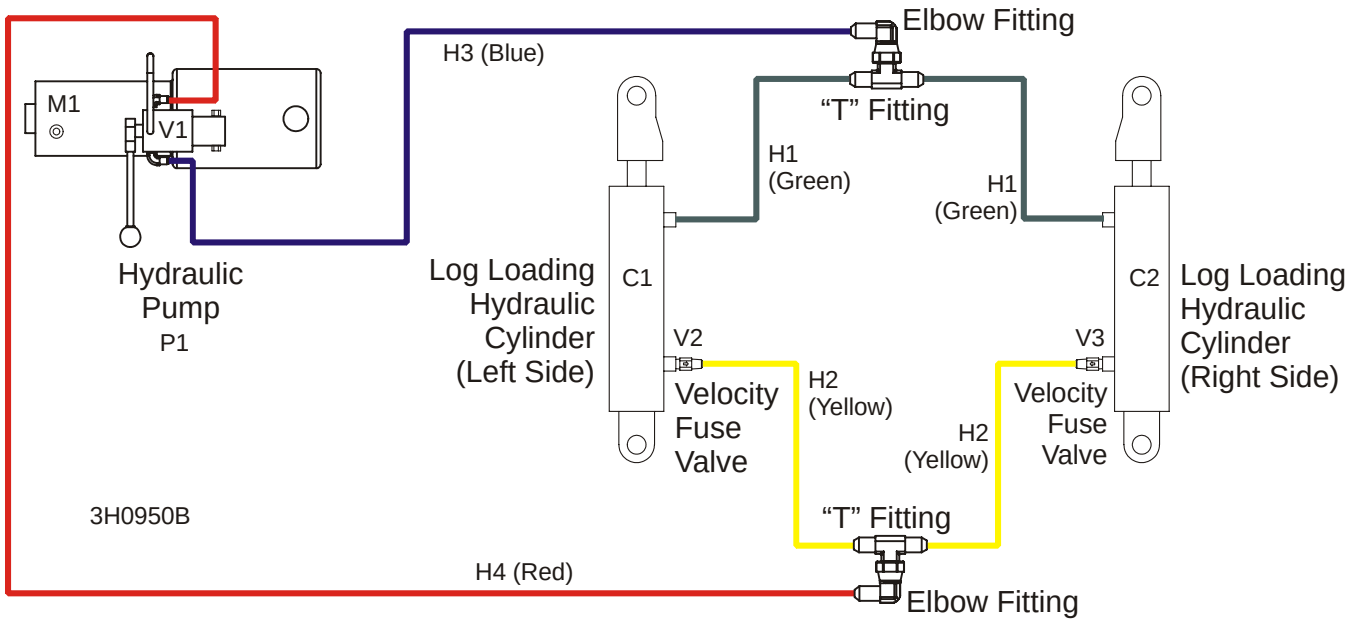


FIGURE 6

2. Install the two provided 64" hydraulic hoses (H2) between the base fittings on the loading arm hydraulic cylinders and the remaining 'T' fitting assembly.

3. Connect the two provided long hoses (H3 and H4) to each of the 'T' fitting assemblies. Route the two long hoses to the side of the hydraulic box through the four hydraulic hose retaining plates located under the frame tube. In the hydraulic box, route the hose underneath the pump and connect to the hydraulic pump fittings on the top of the pump. Be sure that as the hoses vibrate during use, there is no chance of them coming in contact with the pump motor power terminal.

DANGER! Failure to route the hydraulic hoses as described could lead to hose wear exposing the steel braids. If the exposed braids contact the pump motor power terminal post, sparks may cause a fire or cause an electrical short.

NOTE: If the sawmill is not be equipped with the hydraulic hose retaining plates, drill four 9/32" mounting holes at the bottom of the sawmill frame to install the provided hose clamps. Install the four 1/4" hose clamps to the holes and secure the hydraulic hoses to the sawmill frame as shown.

CAUTION! Make sure there is enough slack in the hydraulic hoses attached to the loading arm cylinders. Failure to do may result in damage to the hoses and hydraulic cylinder fittings after raising the loading arm all the way up.

See Figure 7. Install the hose clamps on sawmills not equipped with the hydraulic hose retaining plates.

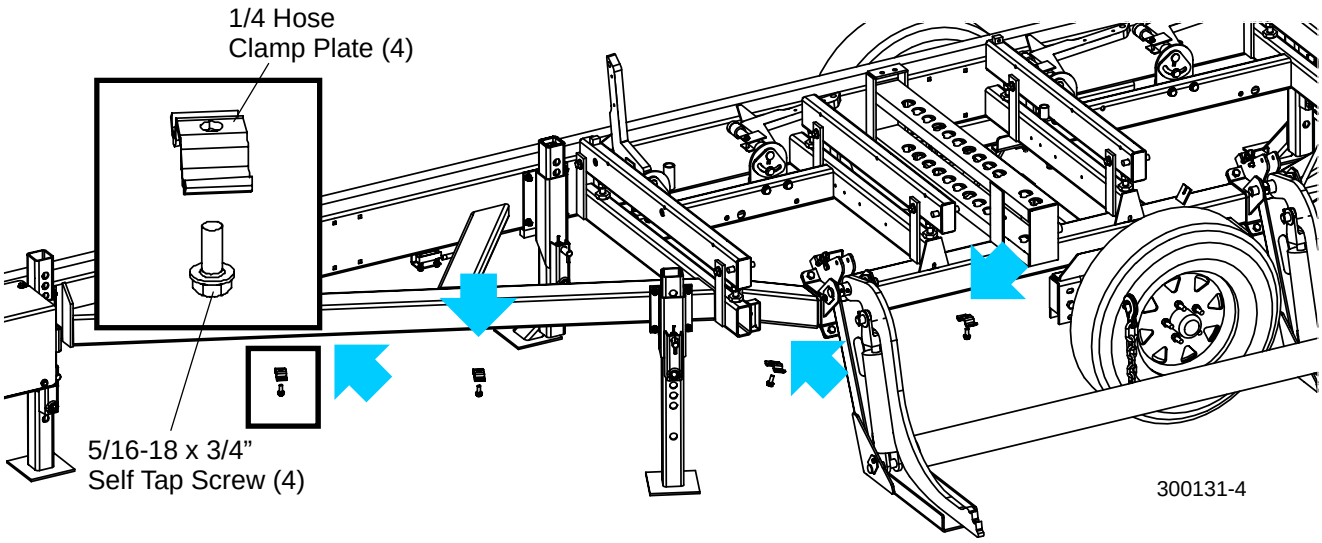


FIGURE 7

Contact Power Strip Installation Instructions

1. Use the dimensions shown below and drill the first mounting hole using a 7/32" drill bit in the main tube (one wall only). **NOTE:** Make sure that wires inside the main tube are not affected by drilling.

See Figure 8.

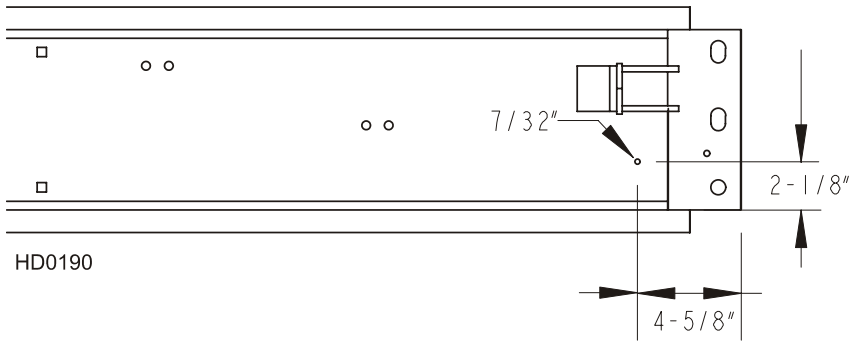


FIGURE 8

2. Install the six-foot contact strip to the main tube with the cable toward the front of the mill. Secure one end of the strip to the main tube with the provided self-tapping screw.

3. Level the contact strip and drill the remaining seven power strip mount holes using the strip as a guide. Use the self-tapping screws to secure the strip to the main tube.

4. Route the cable under the main tube and in the side of the hydraulic box. Connect the contact strip cable to the solenoid terminal as shown.

See Figure 9.

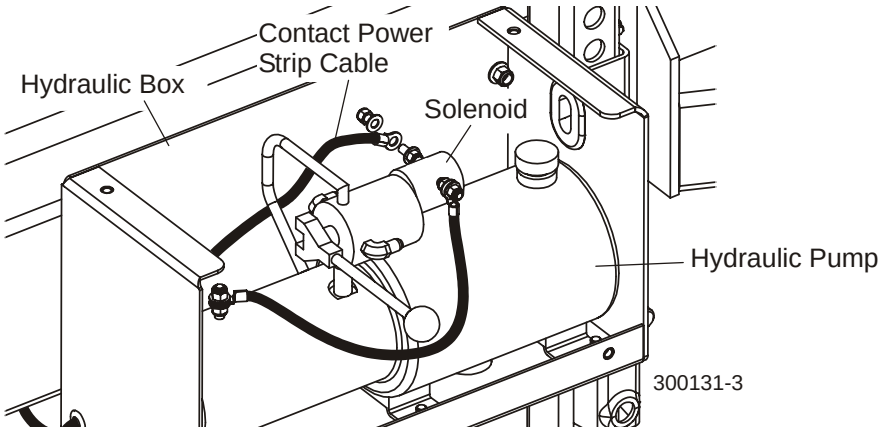


FIGURE 9

Negative/Positive Contact Installation

1. Assemble the negative contact assembly to the holes in the brace as shown. Make sure the springs are firmly compressed and solid contact is made with the bottom main tube rail.

See Figure 10.

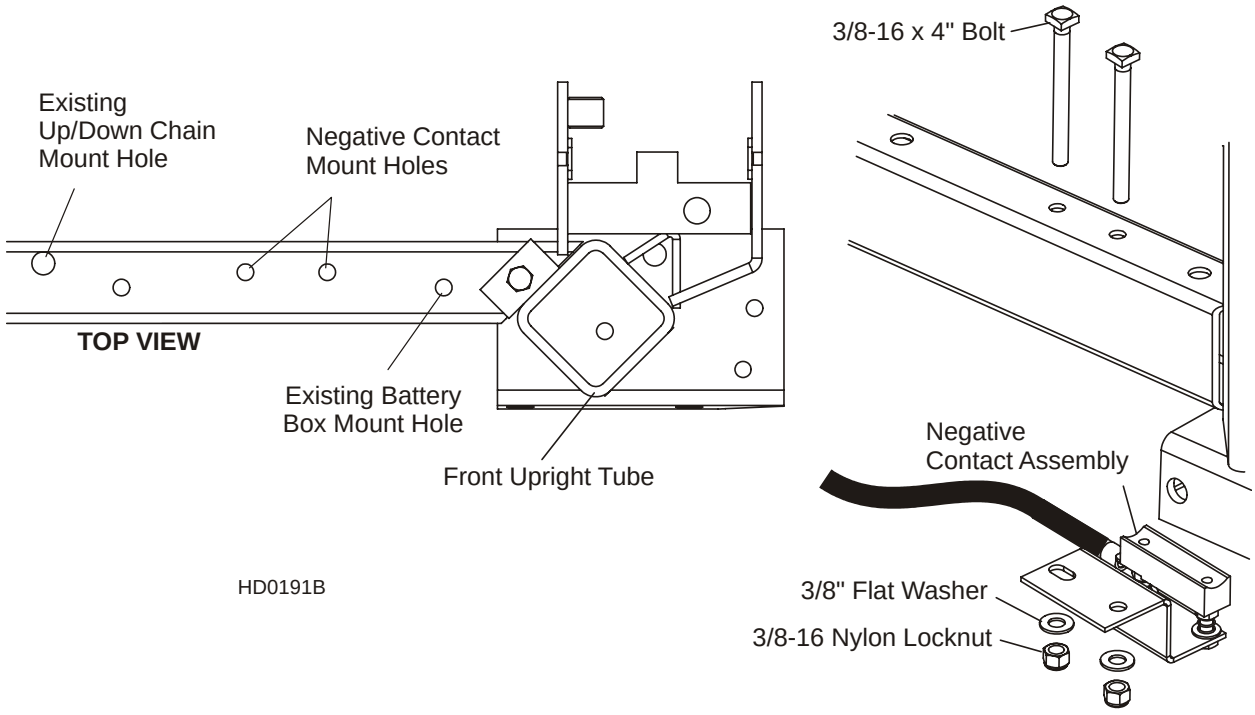


FIGURE 10

NOTE: It may be necessary to remove paint from the bottom of the main tube rail for the first seven feet at the front end of the sawmill to insure contact with the negative contact assembly.

2. Install the positive contact assembly to the mast with the provided bolts and nylon locknuts. Push the contact assembly away from the main tube of the mill and lightly tighten the bolts. This assembly will be adjusted later after assembly is complete.

See Figure 11.

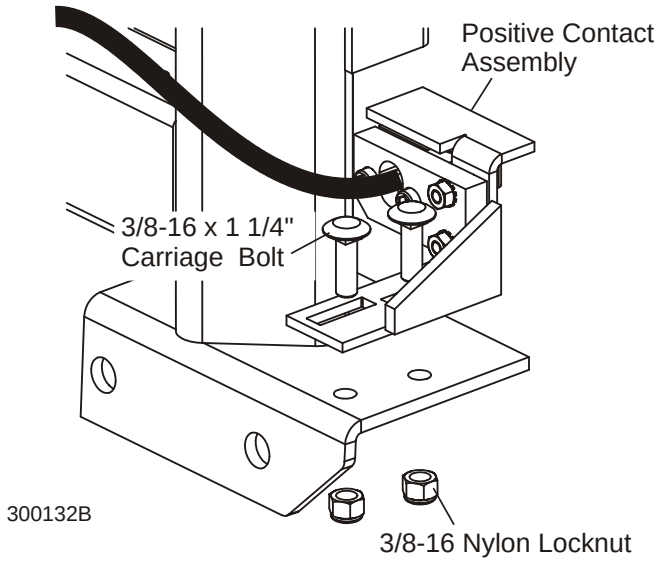


FIGURE 11

Battery/Fuse Box Installation

WARNING! Disconnect the negative battery terminal cable before performing any service to the 12-volt electrical system. Failure to do so may cause injury or electrical system damage.

1. Remove the battery box cover and disconnect the negative wire from the battery. Note all connections before removing so you can replace the wires correctly.

   See Figure 12. Before performing the negative contact installation, disconnect the cable from the negative battery terminal.

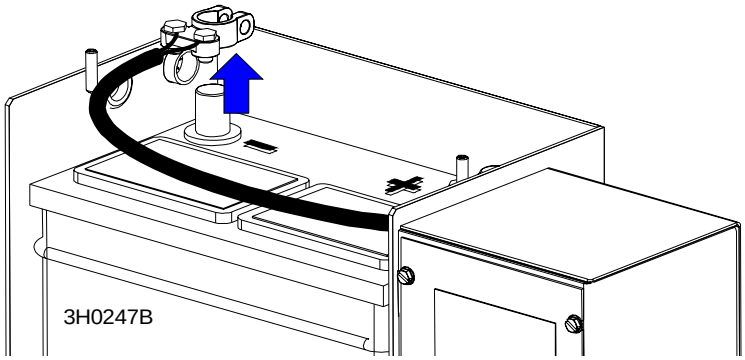


FIGURE 12

2. Replace the existing plastic wire grommets used as a hole plugs with the provided 5/8" rubber grommet in the left side of the battery box and the right side of the fuse box.

3. Route the negative contact cable through the 5/8" rubber grommet in the left side of the battery box and connect to the negative battery terminal.

4. Remove the fuse box cover and install the provided fuse and connect cables as described below.

See Figure 13. If your sawmill is equipped with standard fuse links (prior to 1/09), install one of the supplied 225 amp fuse links to the bottom posts of the fuse block. If necessary, relocate the positive battery cable to the top-right terminal of the fuse block. Route the positive contact cable through the 5/8" rubber grommet in the right side of the fuse box and connect lower-left fuse terminal. Secure the cable and fuse with the flat washers and lock nuts provided. Install the extra 225 amp fuse link to the fuse box cover with the existing hardware.

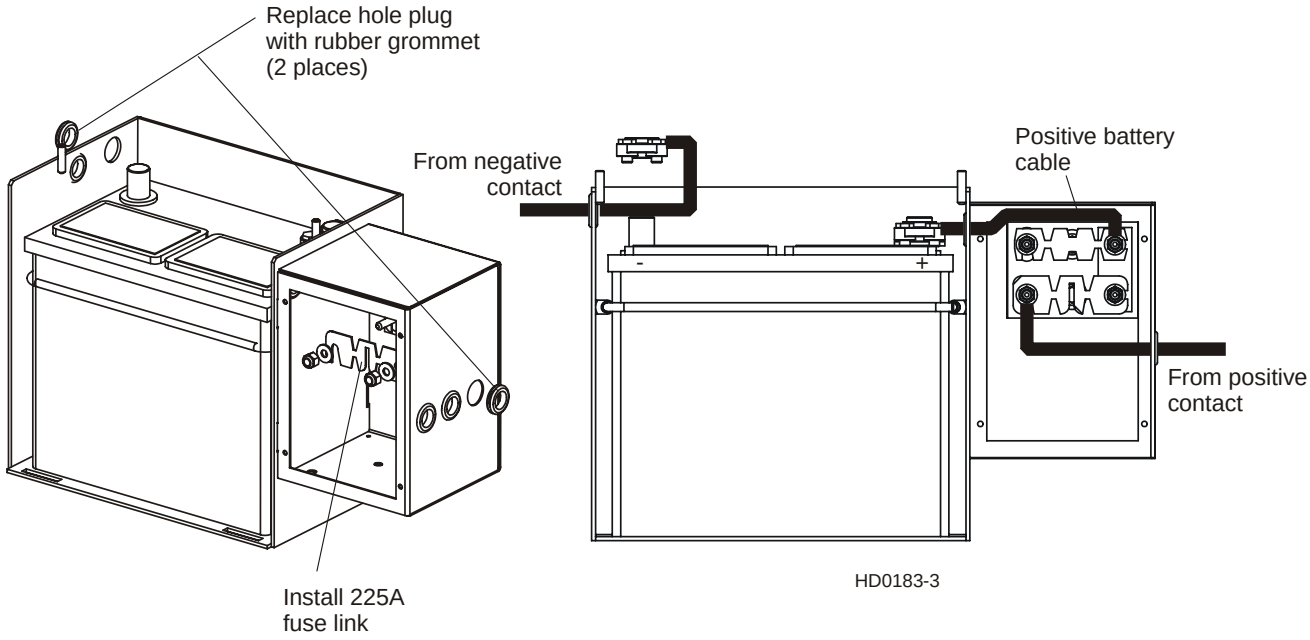


FIGURE 13

See Figure 14. If your sawmill is equipped with mega fuse links (1/09 and later), remove the two nuts holding the fuse block assembly to the back wall of the fuse box. Install the provided fuse block to the main block with the provided button head screws. Secure one of the provided 225 amp mega fuses to the fuse blocks with the two 5/16" lock washers and bolts provided. Route the positive contact cable through the rubber grommet in the right side of the fuse box and secure to the fuse block with the provided 1/4" lock washer and bolt. Reinstall the fuse block assembly to the back of the fuse box and secure with the previously removed nuts. Install the extra 225 amp mega fuse to the fuse box cover with the longer bolts and spacers provided.

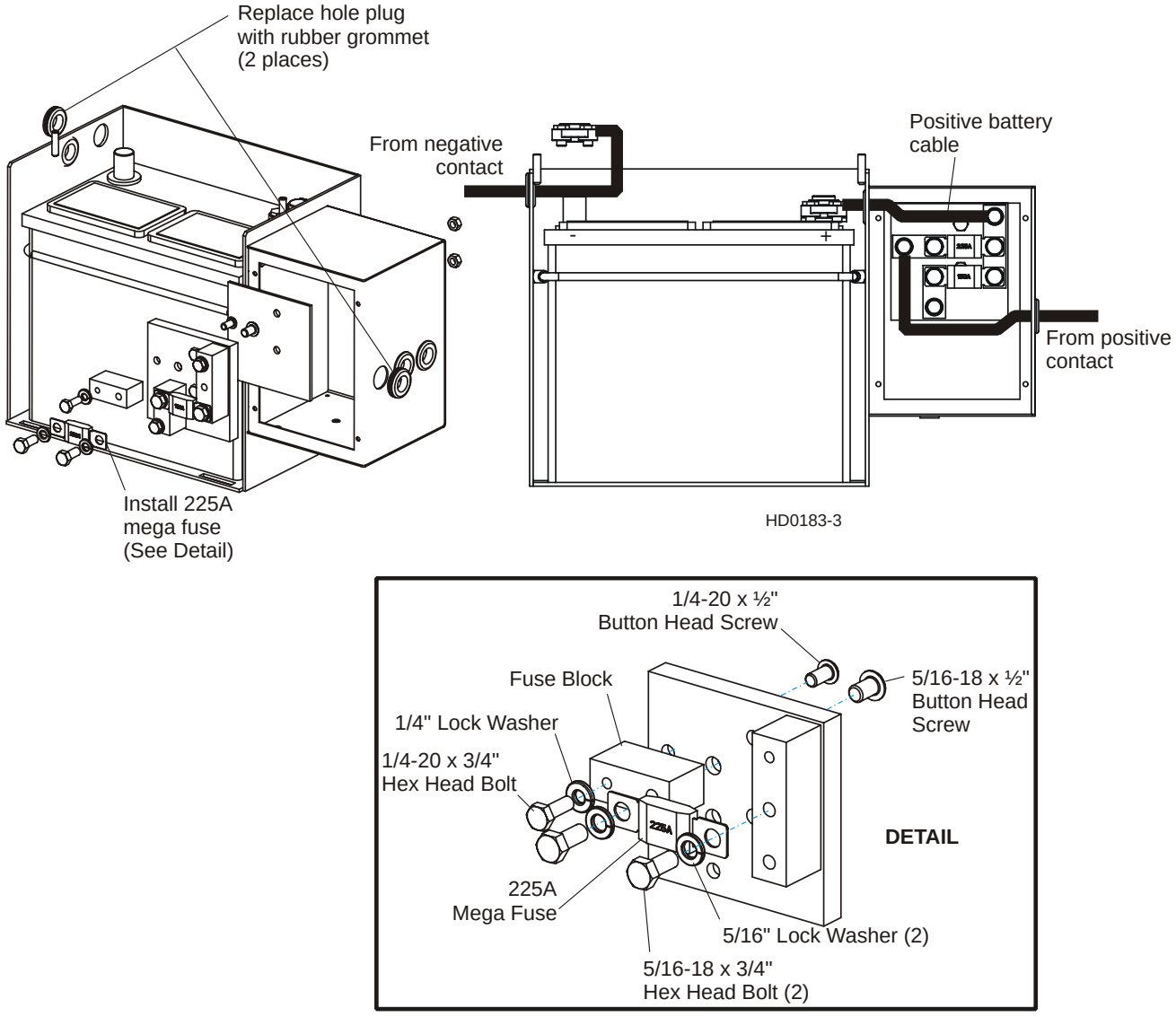


FIGURE 14

5. Use the provided tie wraps to secure the positive contact cable to the existing power feed cable.

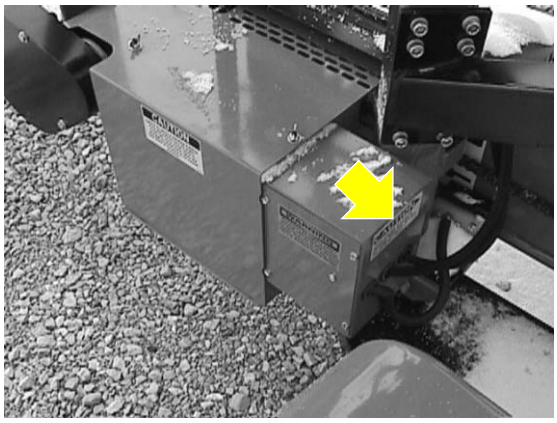
6. Manually push the cutting head toward the front of the mill until the positive contact assembly is in position on the six-foot contact strip.

7. Using the slotted holes in the positive contact mount, slide the assembly forward until the springs are firmly compressed and solid contact is made with the strip. Tighten the mounting bolts.

8. Reconnect all other wires to the battery as they were and replace the battery box and the fuse box covers.

   See Figure 15. Place the hydraulic contact caution decal (P12960) on the side of the fuse box housing.

300135



Fuse Box Housing

FIGURE 15

9. The hydraulic control should now function whenever the positive contact is touching the six-foot strip. If the pump does not operate, check all connections and grounds thoroughly.

10. Move the hydraulic control lever up and down to eliminate air in the hoses. Check the reservoir fluid level again and refill to 3/4" from the top, if necessary. Install the hydraulic box cover and secure with the provided bolts.

Hydraulic Loader Control Operation

The hydraulic control lever becomes operational when the contacts at the bottom of the carriage touch the power strip on the frame tube. The hydraulic control lever will only work when the cutting head is close enough to the front end of the mill to touch the power strip.

NOTE: LT30 prior to Rev. J7.04, LT40 prior to Rev. J8.04, LT30 Super prior to Rev. J3.04 and LT40 Super prior to Rev. J4.04: Before moving the saw carriage, the hydraulic log loader must first be lowered to the ground to avoid conflict with the saw head. The saw head rest pin was relocated on sawmills after these revisions to allow the saw head to clear the hydraulic loader in the travel position.

See Figure 16. The hydraulic loader option allows the operator to load logs onto the sawmill by operating a control lever.

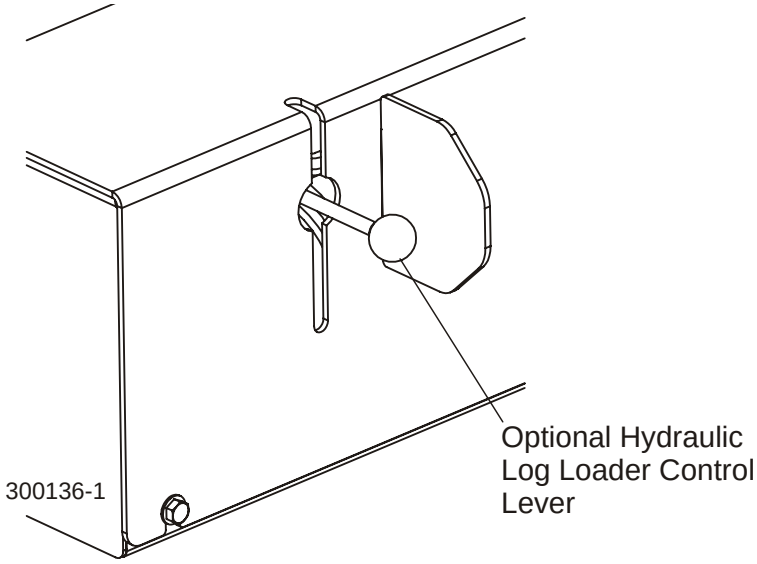


FIGURE 16

Use the hydraulic control lever to get the mill ready to load a log.

DANGER! Keep all persons out of the path of moving equipment and logs when operating sawmill or loading and turning logs. Failure to do so will result in serious injury.

CAUTION! Always make sure the engine is running before operating the hydraulic controls. Operating the controls without the engine running will result in power drainage from the battery. Holding the hydraulic switches halfway up or down also will cause excessive drainage from the battery.

1. Remove the clamp from the sawmill bed so it will not get in the way of logs being loaded onto the bed.

2. Remove the two retaining pins holding the log loader in the towing position.

   See Figure 17.

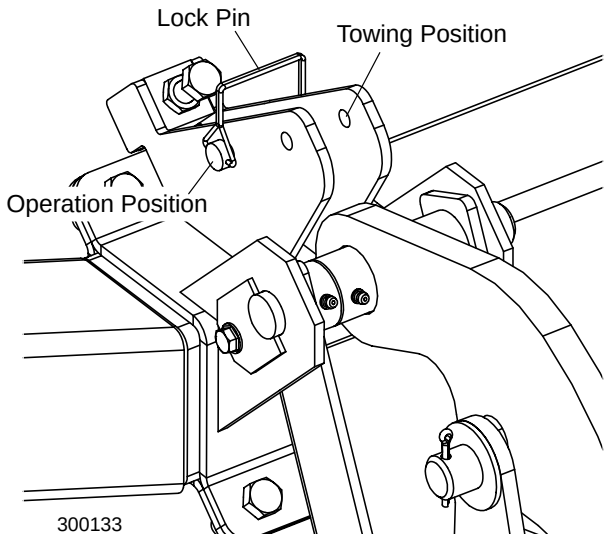


FIGURE 17

3. Manually lower the log loader so it rests on the ground.

> **CAUTION!** Be careful when manually lowering the log loader. Do not drop the loader onto the ground or perform any action which might break the velocity fuse valves on the loader cylinders. These valves control hydraulic flow and are necessary to prevent the loading arm from collapsing during use.

4. Place the retaining pins in the operation position holes.

5. The front and rear toe boards should be below bed level. Once a tapered log has been loaded, the front or rear end of the log may be lifted to parallel the heart of the log to the path of the blade.

To Load Logs

1. Move the saw carriage to the front end of the frame.

CAUTION! Before loading a log, be sure the cutting head is moved far enough forward so the log does not hit it. Failure to do so may result in machine damage.

CAUTION! Be sure the log clamp, pivot rails, turning arm and toe boards are adjusted out of the path of the log before loading a log onto the bed. Failure to do so may result in machine damage or cause misalignment.

2. Raise the side supports on the sawmill bed to prevent the log from falling off the side of the bed.

3. Roll the log onto the loader so that it is approximately centered with the sawmill bed. The log turner will operate much easier if the log is centered on the sawmill bed.

DANGER! Keep all persons out of the path of moving equipment and logs when operating sawmill or loading and turning logs. Failure to do so will result in serious injury.

4. Raise the loader lever to raise the log onto the sawmill bed. Simply let the loader rise until the log rolls onto the mill bed.

5. Lower the loading arm. Leave the loading arm about halfway up while squaring the log. This will stop the log from rolling off the side of the mill.

WARNING! Always leave loading arm halfway up while log is on sawmill bed. Failure to do so may result in serious injury or death.

WARNING! The optional hydraulic log loader is operational whenever the saw carriage and contact strip are engaged, even with the key switch off. To avoid unintentional use of the loader, do not leave the sawmill unattended with the hydraulic power contacts engaged. Doing so may result in serious injury or death.

NOTE: Logs also may be loaded onto the mill with a tractor or other equipment specifically designed for that purpose.

Preparing the Sawmill for Towing

To get your sawmill ready for towing after the log loading arm kit is installed, refer to *Preparing the Sawmill for Towing Section* in Owner's Manual.

Move the saw carriage to the front end of the sawmill to make sure that the positive contact assembly contacts the contact power strip to make the hydraulic system operational.

See Figure 18.

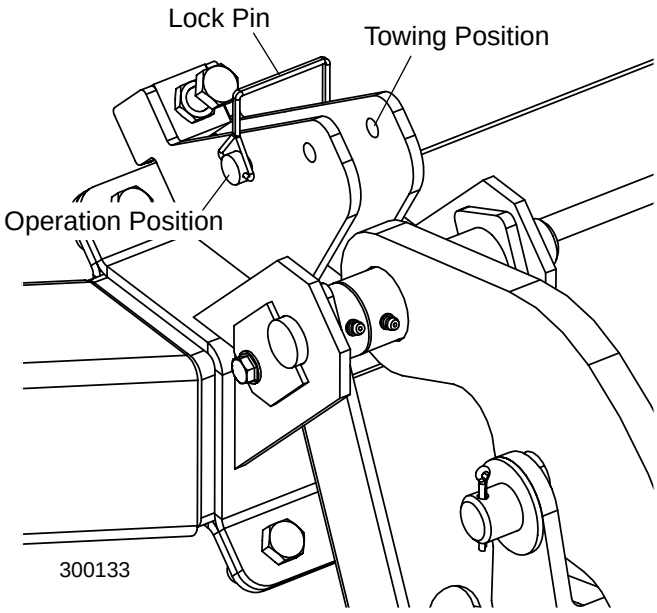


FIGURE 18

Remove the loading arm lock pins from the operation position holes. Use the hydraulic control to raise the log loading arm as high as it will go.

CAUTION! Make sure there is enough slack in the hydraulic hoses attached to the loading arm cylinders. Failure to do may result in damage to the hoses and hydraulic cylinder fittings after raising the loading arm all the way up.

Manually lift the loading arm to its towing position. Place the lock pin in the towing position holes to secure the loading arm during transportation. Push the loader lever down to bring the loading arm channels up to the loader.

See Owner's Manual to complete the towing preparation procedure.

Hydraulic Loader Maintenance

WARNING! Disconnect and lockout power before performing any service to the electrical system. For battery-powered equipment, disconnect the negative battery terminal cable. Failure to do so may result in injury and/or electrical system damage.

1. Check the hydraulic fluid level every fifty hours of operation. Add fluid as necessary. The level in the hydraulic pump should be 3/4" (19mm) from the top with all cylinders collapsed.

If humidity is a problem or the mill is used outside in humid weather, drain and replace two quarts (.95 liters) of fluid every six months. This will drain any accumulated water and help prevent pump failure due to water ingestion. It also will prevent excessive fluid wear and allow the fluid to maintain its hot end performance. If humidity is not a problem, drain and replace one gallon (3.8 liters) of fluid every year to prevent fluid wear.

See Figure 19. If you are operating in temperatures -20° to 100° F (-29° to 38° C), use an all-weather hydraulic fluid such as Exxon Univis HVI 26. For alternate fluids and/or other temperature ranges, refer to the chart below. Operating above the recommended temperature range of a fluid could result in excessive pump wear. Operating below the recommended temperature range could result in reduced hydraulic cylinder speed. To change fluid types, replace one gallon of the current fluid with one gallon of the alternate fluid.

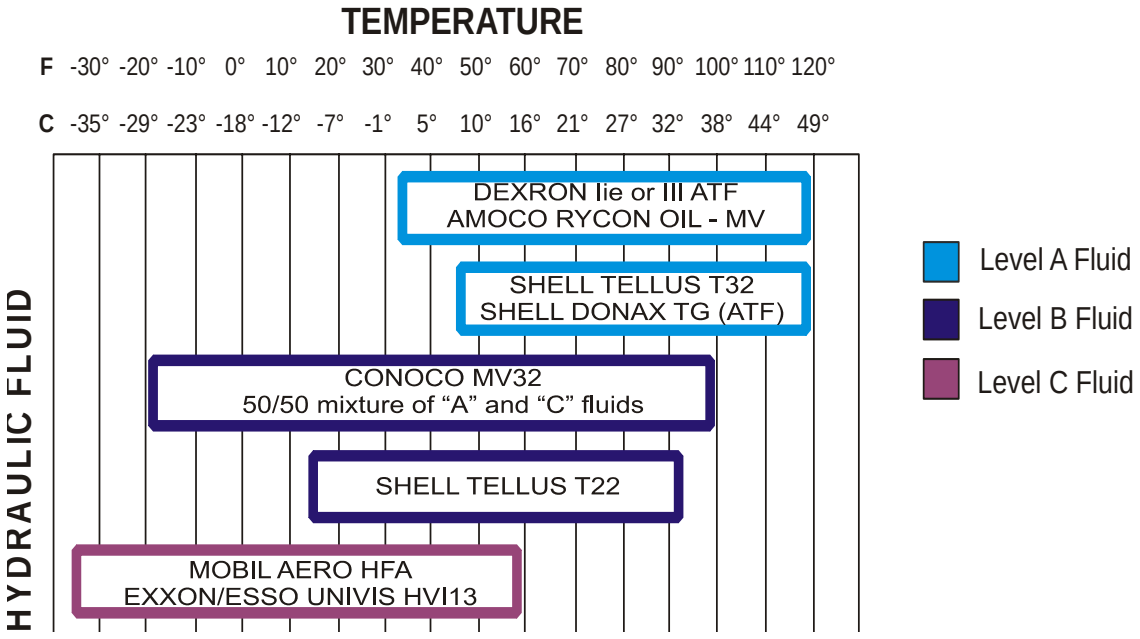


FIGURE 19

2. Inspect the hydraulic pump motor brushes every 750 hours of operation. Remove brush dust and replace the brushes if they worn to a length of 1/4” or shorter.

750

CAUTION! Do not operate the hydraulic system if the pump motor brushes are worn shorter than 1/4”. Damage to the pump motor may result.

3. Periodically check all hydraulic lines and fitting as needed. Replace as necessary.

4. Grease the optional loading arm with a NLGI No. 2 grade lithium grease every fifty hours of operation.

50

Hydraulic Loader Troubleshooting Guide

WARNING! Disconnect and lockout power before performing any service to the electrical system. For battery-powered equipment, disconnect the negative battery terminal cable. Failure to do so may result in injury and/or electrical system damage.

WARNING! Before performing service near moving parts such as blades, pulleys, motors, belts and chains, first turn the key switch to the OFF (#0) position and remove the key. If the key is turned on and moving parts activated, serious injury may result.

PROBLEM	CAUSE	SOLUTION
You Can Actuate Any Hydraulic Handle, But Get No Response From The Pump.	Carriage not positioned properly to provide power to the pump	Make sure carriage contact bracket is adjusted far enough forward for battery positive contact to touch 6ft. strip on main tube. Check contact and strip for tarnish or loose wires. Clean as necessary
	Poor ground connection	Check ground connection between pump and saw frame and between battery negative contact and lower rail. Check contact and rail for tarnish or loose wires. Clean as necessary
	Blown fuse	Replace
	Low or dead battery	Test battery amperage capability (such as low battery charge, low alternator output, defective voltage regulator, bad battery cell, battery age deterioration, etc.). Replace or recharge as necessary

PROBLEM	CAUSE	SOLUTION
	Poor cable connection	Check cable connection and make sure that battery terminals are in good condition (not corroded)
	Defective solenoid (may be indicated by solenoid clicking) See Monarch manual for troubleshooting solenoid	After checking all other possibilities for low voltage to solenoid, check solenoid. Tapping on solenoid may fix temporarily. Replace solenoid if necessary. NOTE: The solenoid is not a standard automotive type. Order from Wood-Mizer only
	Defective pump motor	Remove motor from pump and inspect. Repair or replace as necessary
No Response From The Pump By Actuating Handle	Electric contact spring inside of non-working valve corroded, broken, or dislocated	Check contact spring. Relocate or replace as necessary
	Set screw holding handle to valve shaft is loose	Tighten set screw so that valve shaft turns when handle is actuated
Pump Motor Runs With Little Or No Response From The Cylinders	Low battery	Test battery. Recharge or replace as necessary
	Low fluid level	Check fluid level. Add an all-season hydraulic fluid such as Amoco Rycon Oil MV or Mobil Multipurpose ATF (automatic transmission fluid) until level is 4 - 4 1/2" from bottom of reservoir with all cylinders retracted
	Pressure relief valve moved from proper setting	Adjust pressure relief valve.
	Low air temperature causing fluid to thicken	Allow fluid to warm up. Synthetic fluids are available that allow for hydraulic operation in cold weather conditions (Univis HVI 13)
Pump Motor Runs Continuously When Power Contact Is Made	Solenoid is stuck closed	Tapping the solenoid may solve this problem temporarily. Replace solenoid
	Valve handle spring is deformed or broken, causing the handle to not return to the neutral position	Replace handle spring
	Contact spring is dislocated and lying across contacts	Replace contact spring
Fluid Leaks From Around Cylinder Piston Ram	Worn seals	Replace seals in cylinder. Check piston ram for abrasive weld that may be causing premature seal failure

PROBLEM	CAUSE	SOLUTION
Fluid Leak Around Pump Box	Loose seal or fitting	Wipe pump off completely to locate cause of leak. You may have to unbolt the pump to wipe behind it. **NOTE:** Movement of the sawmill can cause fluid to slosh up into the foam filter in the reservoir cap, and subsequently spray out, giving the appearance that fluid is leaking from the pump
Pump runs but makes "growling" sound and hydraulic functions are slow, jerky or don't work at all.	Low fluid level	Check fluid level and add fluid as necessary. Check for leaks in the system at the control box fittings, hoses and cylinders
One of the log loader cylinders does not move when lowering the loader causing the foot of other to raise completely before loader will start down.	Damaged cylinder shaft	Replace the cylinder that is not moving

Hydraulic Schematic

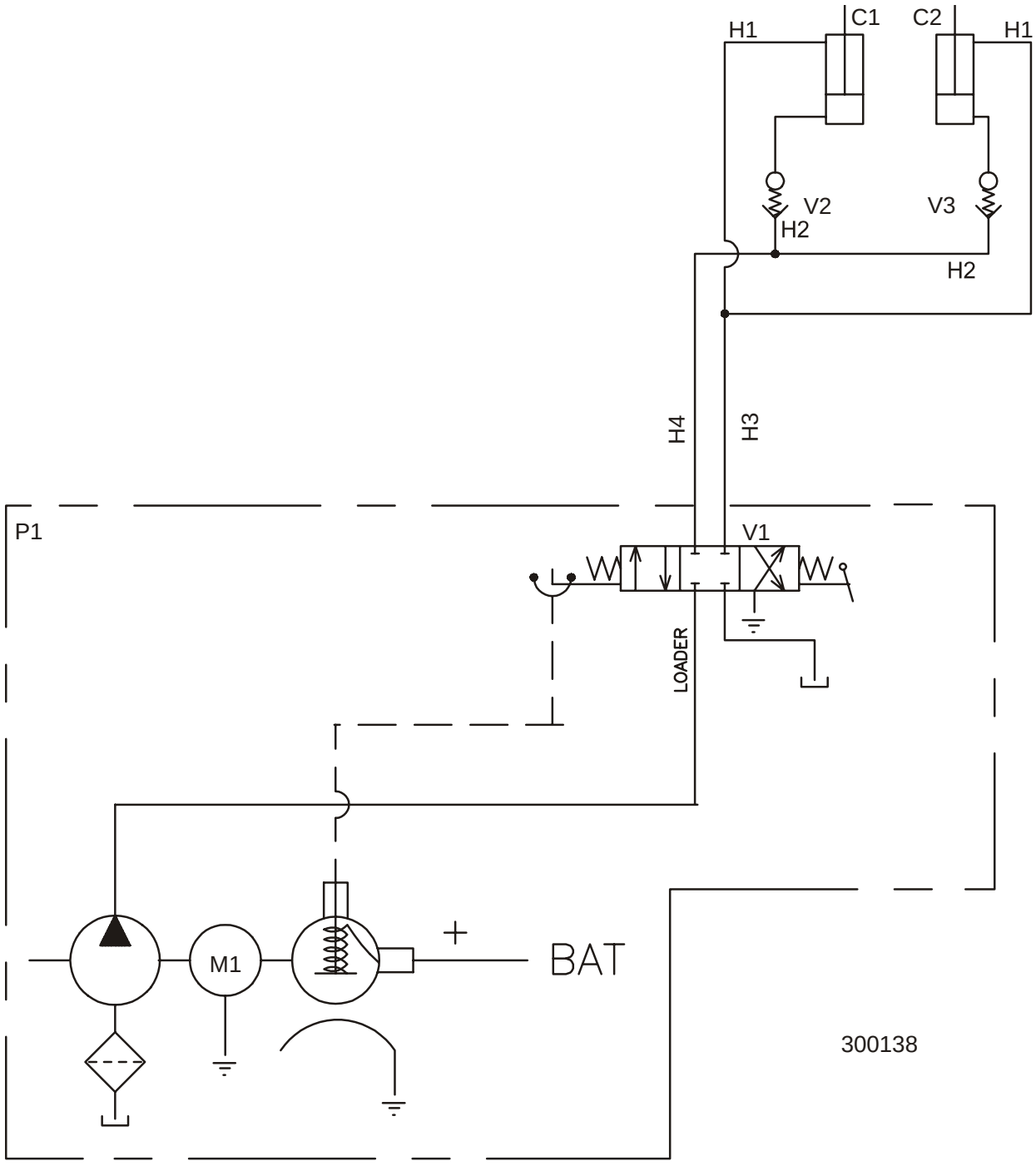


FIGURE 19OPTIONAL HYDRAULIC LOG LOADER

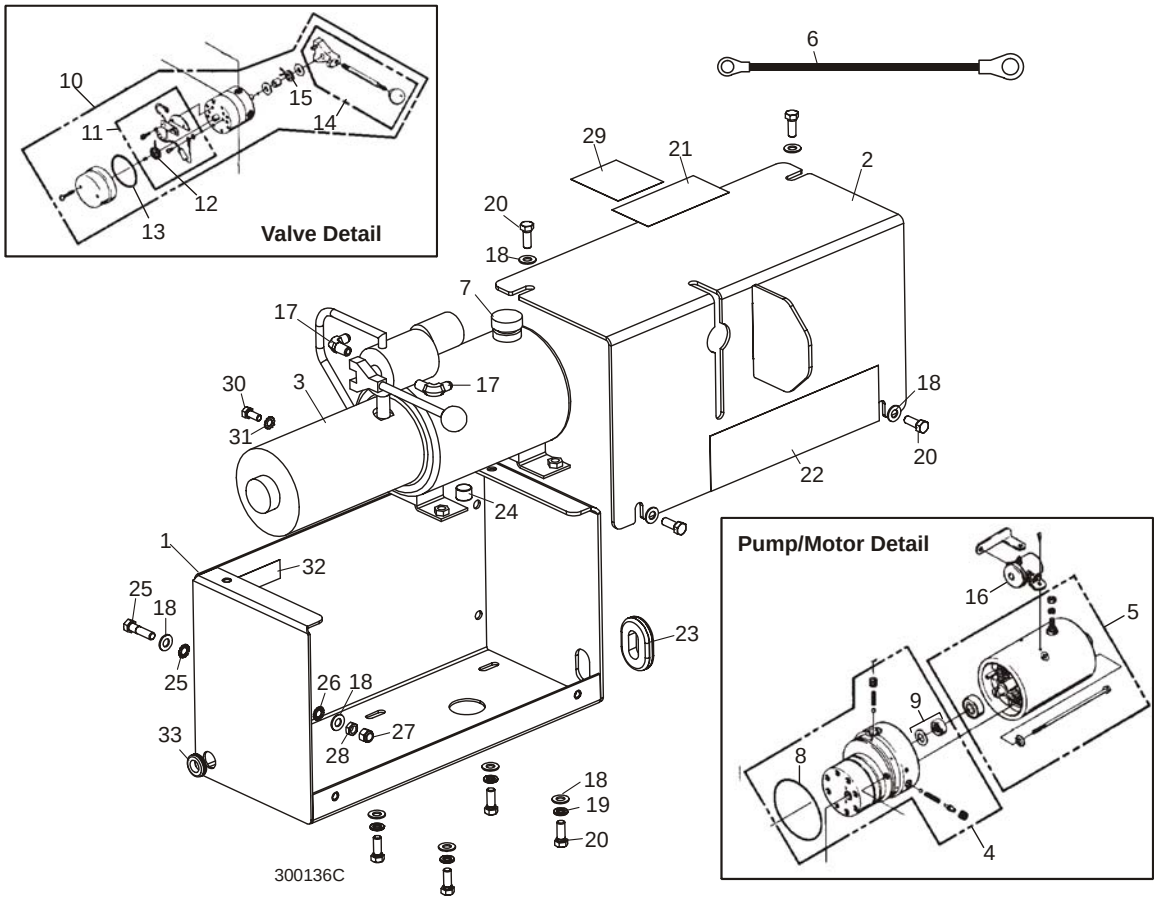
Hydraulic Components

ID	Mfg. Part No.	Manufacturer	Wood-Mizer Part.#	Description
C1, C2	P12847	J-D Hydraulic	P12847	Hyd. Cylinder, 3" Bore X 8" Stroke
P1	M-310	Monarch Hyd.	048386	Hydraulic Pump, With Motor
V1	00524	Monarch Hyd.	P10143	Valve, 4-Way Hydraulic
V2, V3	28000-502-5	Vonberg	015750	Valve, Hydraulic 5GPM Velocity Fuse
M1	08714	Monarch Hyd.	052807 [1]	Motor, 12 Volt Hydraulic Pump

TABLE 1

[1] Bosch motor P09955 replaced by vendor with Iskra motor 1/06. Brush kit P09585 no longer available to service Bosch motor. Replace motor using kit 052807 (*See Form #1578* for applicable discount information). Use Brush Kit 038682 to service Iksra motor.

Hydraulic Loader Control Box Replacement Parts



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	**BOX ASSEMBLY, HYDRAULIC LOG LOADER CONTROL**	048380	1	
2	Box Weldment, Hydraulic Loader Control	048381	1	
3	Pump Assembly, Hydraulic Loader w/Motor #M-310	048386	1	
4	Pump, Hydraulic Replacement Monarch Model #12070	016199	1	
	Motor Kit, Hydraulic Replacement	052807	1	
5	Motor, 12 VDC Hydraulic Pump #08714 (Iskra)	038683 [1]	1	◆
	Brush Kit, 4-Valve Hydraulic Pump Motor #08658-I (Iskra)	038682 [1]	1	
	Brush Kit, 4-Valve Hydraulic Pump Motor #08658 (Bosch)	P09585 [1]	1	◆
	Bearing, Base Motor #02318	P12513	1	
6	Wire Assembly, Motor Brush Ground	052806 [2]	1	
7	Cap, Hydraulic Pump Vented Fill #03171	P12817	1	
8	O-Ring, Hydraulic Pump/Reservoir #02352	P10198	1	
9	Seal, Hydraulic Pump/Motor #02330	P10315	1	
10	Valve Assembly, 4-Way Monarch #00524	P10143	1	
11	Electrical Parts Kit, Hydraulic Pump Valve #03721	P09593	1	

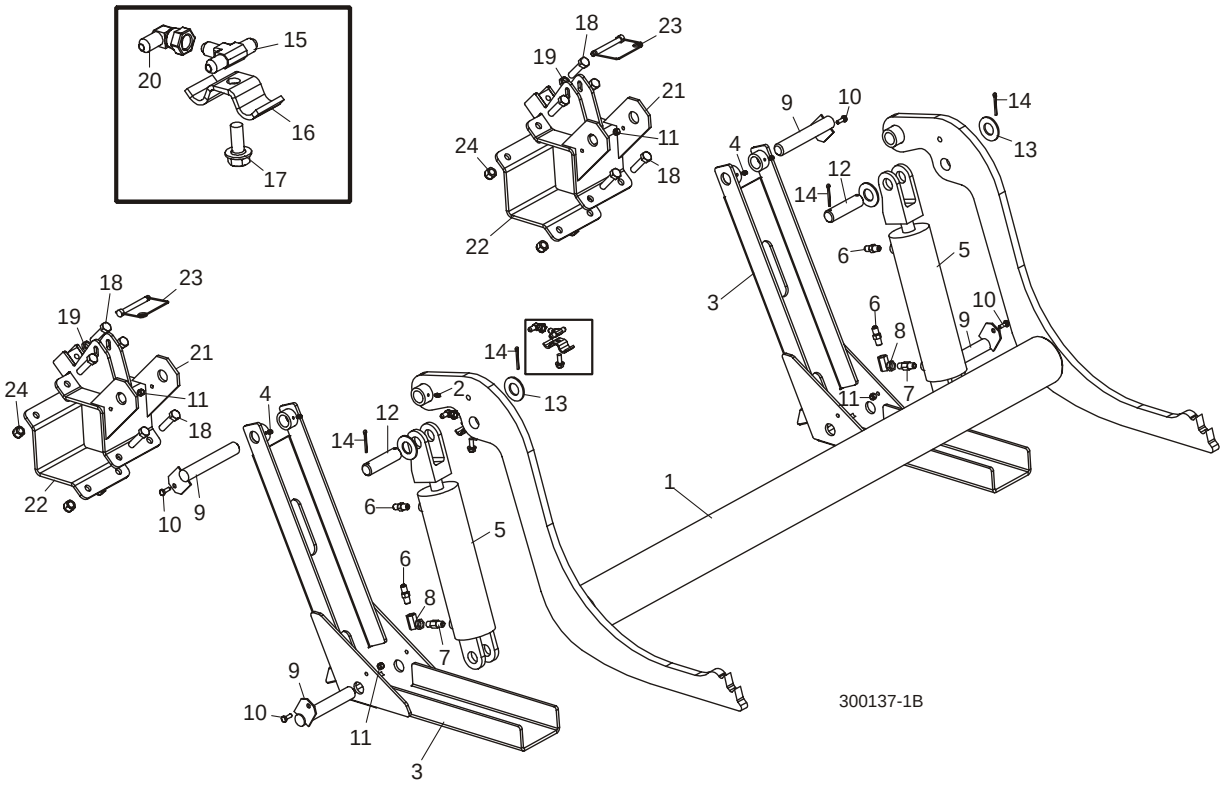
12	Spring, Hydraulic Pump Valve Contact #99188	P09846	1	
13	O-ring, Hydraulic Pump Valve Cover #02354	P09592	1	
14	Handle Assembly, Hydraulic Pump Valve #00172	P09594	1	
15	Spring, Hydraulic Pump Valve Handle #00018	P09753	1	
16	Solenoid, 12 VDC 3 Post Insulated Ground #3301	P09595	1	
17	Fitting, 1/4” NPT x 1/4” JIC Male Elbow	P09142	2	
18	Washer, 3/8” SAE Flat	F05011-3	10	
19	Washer, 3/8” Split Lock	F05011-4	4	
20	Bolt, 3/8-16 X 1" Hex Head Grade 5	F05007-87	8	
21	Decal, Keep Away Hydraulic Warning	P12961	1	
22	Decal, Hydraulic Logo	036720	1	
23	Grommet, 1” x 1 3/4” Oval Rubber	085613	1	
24	Fitting, 1/2” NPT Plug	P26258	1	
25	Bolt, 3/8-16 x 1 1/2” Hex Head Grade 5	F05007-78	1	
26	Washer, 3/8" External Star Lock	F05011-36	2	
27	Nut, 3/8-16 Hex Nylon Lock	F05010-10	1	
28	Nut, 3/8-16 Hex Jam	F05010-29	1	
29	Decal, Hydraulic Loader Option Warning	052213	1	
30	Bolt, 5/16-18 x 3/4” Hex Head	F05006-5	1	
31	Washer, 5/16” External Star Lock	F05011-33	1	
32	Decal, Hydraulic Fluid	S12825	1	
33	**GROMMET, 5/8” ID RUBBER**	P11764	1	
	FLUID, 1-QUART DEXRON III HYDRAULIC	P12742	2 1/4 gal.	
	FLUID, 1-GALLON CONOCO MV32 HYDRAULIC	006397 [3]	2 1/4 gal.	
	FLUID, 1-GALLON EXXON UNIVIS HVI 13 HYDRAULIC	P12822	2 1/4 gal.	

[1] Bosch motor P09955 replaced by vendor with Iskra motor 1/06. Brush kit P09585 no longer available to service Bosch motor. Replace motor using kit 052807 (*See Form #1578* for applicable discount information). Use Brush Kit 038682 to service Iksra motor.

[2] Brush Ground Wire 052806 added 7/06 to improve ground connection. Kit 052805 to be supplied to all customers who purchased sawmills with Iskra pump motors after 1/06. Kit includes wire, hardware and instructions.

[3] Conoco MV32 Fluid 006397 replaces Univis HVI 26 Fluid P12823 (formerly named J26) used prior to 1/08. Fluids are interchangeable.

Hydraulic Log Loader Assembly

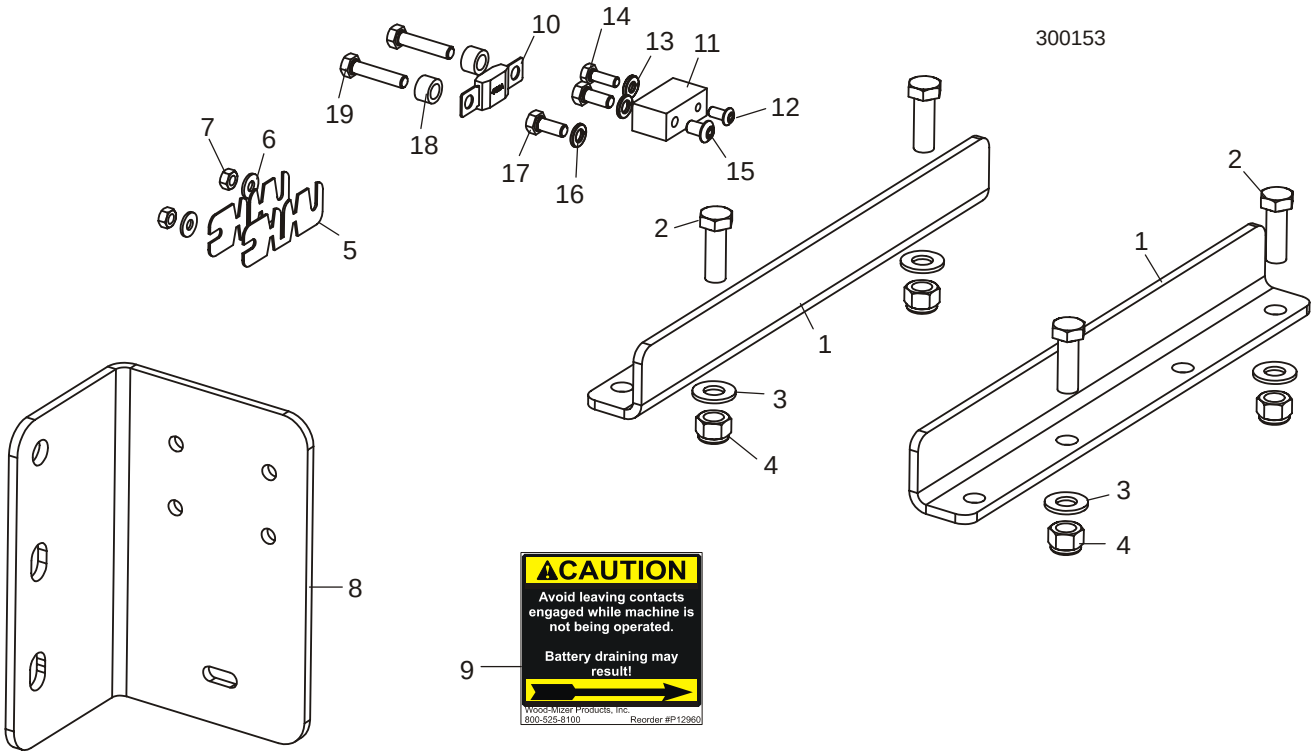


REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	LOADER KIT, HYDRAULIC LOG (MANUAL SAWMILL OPTION)	LTHDLA-M	1	
1	Arm, Hydraulic Log Loading	036722	1	
2	Fitting, 3/16" Grease	P04107	2	
3	Channel, Hydraulic Log Loading Foot	W09444	2	
4	Fitting, 3/16" Grease	P04107	4	
	Cylinder Assembly, Hydraulic Log Loading Arm	A09284	2	◆
5	Cylinder, 8" X 3" Hydraulic	P12847	1	
	Seal Kit, 8" x 3" Hydraulic Cylinder	P12956	1	
6	Fitting, C5205x4x4 Male Connector	P09143	2	
	Fitting Kit, 1/4NPT 5.0GPM Velocity Fuse	015832	1	
7	Fitting, 1/4NPT 5.0GPM Velocity Fuse	015750	2	◆
	Instruction Sheet, Velocity Fuse Replacement	015832-255	1	
8	Fitting, 0455x4x4 90° Swivel Elbow	P12199	1	
9	Pin, Loading Arm Mount	W09446	4	
10	Bolt, 1/4-20 x 3/4" Hex Head Full Thread	F05005-1	4	
11	Nut, 1/4-20 Hex Lock	F05010-69	4	
12	Pin, Loading Arm Cylinder Mount	S09251	2	
13	Washer, 1" SAE Flat	F05011-28	4	
14	Pin, 3/16" X 1 1/2" Cotter	F05012-23	4	
15	Fitting, C5705x5x4 Union 'T'	P09145	2	
16	Clamp, 1/4" Hydraulic Hose	S09245	4	

17	Screw, 5/16-18 X 3/4" Self Tapping	F05015-30	4	
18	**BOLT, 1/2-13 X 2" HEX HEAD FULL THREAD GRADE 5**	F05008-116	10	
19	**NUT, 1/2-13 JAM**	F05010-31	2	
20	**FITTING, 1/4" JIC X 1/4" JIC ELBOW**	036715	2	
21	**MOUNT WELDMENT, LOADER ARM**	048270	2	
22	**PLATE WELDMENT, LOADER ARM MOUNT**	036737	2	
23	**PIN ASSEMBLY, 3/8" X 3" WIRE LOCK**	038472 [1]	2	
24	**NUT, 1/2-13 HEX NYLON LOCK**	F05010-8	8	

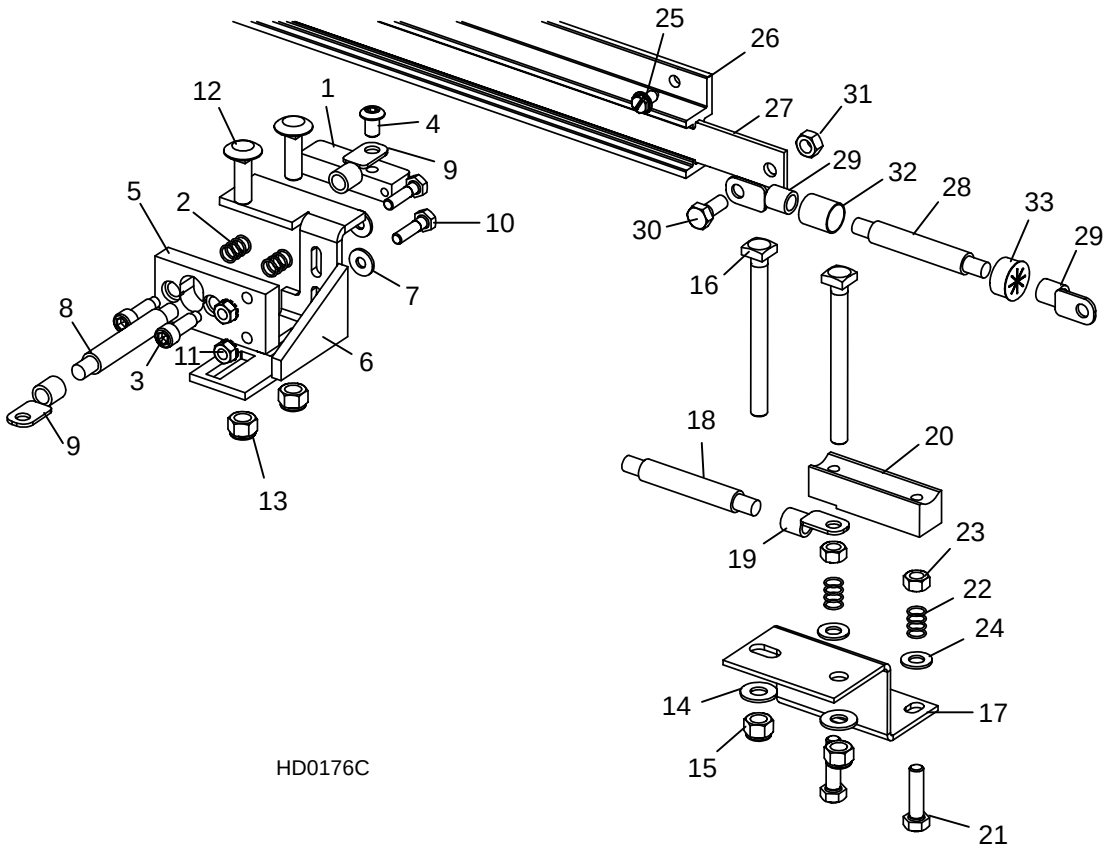
[1] Replaces 3/8" X 2 1/4" Square Wire Lock Pin (014151) to eliminate interference between the locking plates and the hydraulic cylinders (Manual Mill Loading Arm Kit Rev. A2.00; 9/05).

Miscellaneous Loader Replacement Parts



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
1	PLATE, AXLE MOUNT	048269	2	
2	BOLT, 1/2-13 X 1 1/2" HEX HEAD GRADE 5	F05008-33	4	
3	WASHER, 1/2" SAE FLAT	F05011-2	4	
4	NUT, 1/2" HEX NYLON LOCK	F05010-8	4	
5	FUSE, 225A 12V	P11550	2	
6	WASHER, 1/4" SAE FLAT	F05011-11	2	
7	NUT, 1/4-20 HEX LOCK	F05010-21	2	
8	BRACKET, WINCH MOUNT	048426	1	
9	DECAL, HYDRAULIC CONTACT CAUTION	P12960	1	
10	FUSE, 225A 32V MEGA	053339	1	
11	BLOCK, 3/4" LOWER FUSE	056998	1	
12	SCREW, 1/4-20 X 1/2" SOCKET BUTTON HEAD	F05005-59	1	
13	WASHER, 1/4" SPLIT LOCK	F05011-14	1	
14	BOLT, 1/4-20 X 3/4" HEX HEAD GRADE 5	F05005-123	1	
15	SCREW, 5/16-18 X 1/2" SOCKET BUTTON HEAD	F05006-20	1	
16	WASHER, 5/16" SPLIT LOCK	F05011-13	2	
17	BOLT, 5/16-18 X 3/4" HEX HEAD GRADE 5	F05006-102	2	
18	SPACER, .39" X .625" X .39"	055323	2	
19	BOLT, 5/16-18 X 1 1/2" HEX HEAD FULL THREAD	F05006-2	2	

Hydraulic Power Supply Strip Replacement Parts



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	CONTACT ASSEMBLY, HYDRAULIC POWER SUPPLY (POSITIVE)	036721	1	
	Contact Kit, Hydraulic Power Supply Positive	007716	1	
1	Contact, Hydraulic Power Supply (Positive)	015253	1	
2	Spring, Positive Contact	P10077	2	
3	Bolt, 5/16" X 3/4" Shoulder (1/4-20 Thread) Stainless	F05006-146	2	
4	Bolt, 5/16-18 x 1/2” Socket Button Head	F05006-20	1	
5	Insulator, Positive Contact	S10072	1	
6	Bracket, Positive Contact Mounting	015324	1	
7	Washer, 1/4" SAE Flat	F05011-11	2	
8	Cable, #1 Weld	R01971	1.71 Ft	◆
9	Terminal, 5/16" Ring #2 Gauge	F05092-16	2	
10	Bolt, 1/4-20 X 1" Hex Head Grade 2	F05005-38	2	
11	Nut, 1/4-20 Hex Self-Locking	F05010-9	2	
12	Bolt, 3/8-16 X 1 1/4” Carriage Head	F05007-11	2	
13	Nut, 3/8-16 Hex Nylon Lock	F05010-10	2	
	CONTACT KIT, HYDRAULIC POWER SUPPLY (GROUND)	010104	1	

14	Washer, 3/8" SAE Flat	F05011-3	2	
15	Nut, 3/8-16 Hex Nylon Lock	F05010-10	2	
16	Bolt, 3/8-16 X 4" Square Head	F05007-175	2	
17	Bracket, Ground Contact Mounting	016792	1	
	Cable Assy, Hydraulic Negative Contact (Ground) #1 Weld	024676	1	
18	Cable, #1 Weld	R01971	2.2 Ft	◆
19	Terminal, 5/16” Ring #2 Gauge	F05092-16	1	
	Contact Kit, Hydraulic Power Supply Ground	007717	1	
20	Contact, Hydraulic Power Supply (Ground)	015264	1	
21	Bolt, 5/16-18 X 1 1/4" Hex Head Full Thread Grade 5	F05006-93	2	
22	Spring, Ground Contact	P10077	2	
23	Nut, 5/16-18 Hex	F05010-17	2	
24	Washer, 5/16" SAE Flat	F05011-17	2	
	STRIP ASSEMBLY, 6' HYDRAULIC POWER SUPPLY W/3 FT. CABLE	A11977	1	
25	Screw, 1/4-20 X 1/2" Slotted Hex Head	F05015-1	14	
26	Housing, 6' Contact Strip	P11976	1	
	Strip, 6' Contact With Cable	A12043-N	1	
27	Strip, 6' Contact	S10075	1	◆
28	Cable, #1 Weld	R01971	3 Ft	◆
29	Terminal, 5/16" Ring #2 Gauge	F05092-16	2	
30	Bolt, 5/16-18 X 3/4" Hex Head Black Nylon	F05006-45	1	
31	Nut, 5/16-18 Hex Black Nylon	F05010-86	1	
32	Tube, 5/8" Heat Shrink	R01950-5	.10 Ft	◆
33	Grommet, 5/8” Wire	P04137	1	