

OWNER'S MANUAL

HYDRAULIC POST TABLES & LONG DECK CART Model HT, LDLT

Contents

Warnings and Safety Instructions	1	1 & 2-Post Hydraulic Parts/Drawing	8-9
Receiving Instructions	1	4-Post Hydraulic & DC Parts/Drawing	10-11
Operating Instructions - HT, LDLT	2	Foot Operated Jack Parts/Drawing	12 -15
Instructions for Battery-Powered Units	3	2-Speed Operating Instructions	16
Power Unit's Operation - HT, LDLT	4	Trouble Shooting Guide	17-18
Electrical, Hydraulic Diagrams - HT, LDLT	5	2-Speed Foot Pump Parts/Drawing	19 - 20
Routine Maintenance & Safety Checks	6	Warning Labels	21
Trouble Shooting Guides - HT, LDLT	7	Warranty	22

WARNINGS & SAFETY INSTRUCTIONS

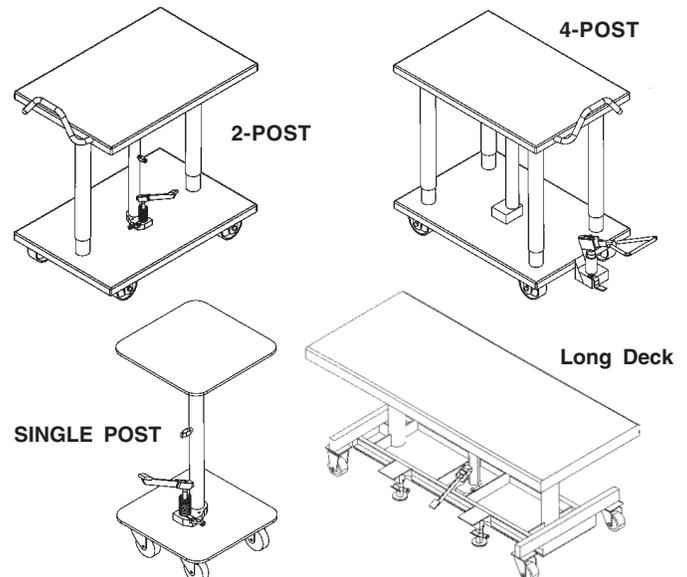
Insure that all employees understand and follow the following instructions.

- Read and understand the owner's manual before using or servicing the table.
- For battery-powered units, review the additional warnings included elsewhere in this manual.
- Do not use the table if any damage or unusual noise is observed.
- Always watch the table and any load on it carefully when it is being moved or used.
- Avoid sudden stops or quick turns to prevent accidental tipping of the table.
- Use caution if you slide a load onto the table top.
- The table's load must be centered and evenly distributed on the table.
- Do not perform any modifications to the table without the manufacturer's approval. Failure to receive authorization for changes to the equipment could void the warranty.
- Maintenance and repairs are to be done only by personnel qualified to perform the required work.
- Do not use brake fluid or jack oil in the hydraulic system. If oil is needed, use an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 @ 40° C), or a non-synthetic transmission fluid.
- Use only replacement parts either supplied or approved by the manufacturer.

RECEIVING INSTRUCTIONS

Every unit is thoroughly tested and inspected prior to shipment. However, it is possible that the unit may incur damage during transit. If you see damage when unloading, make a note of it on the SHIPPER RECEIVER.

Remove all packing and strapping material, inspect for damage. **IF DAMAGE IS EVIDENT, FILE A CLAIM WITH THE CARRIER IMMEDIATELY!** Also, check the platform size, type of power unit, etc., to see that the unit is correct for the intended application.



HYDRAULIC POST TABLES & LONG DECK CART

OPERATION INSTRUCTIONS - HT, LDLT

LOADING:

The load rating, in pounds, is shown on the capacity tag located on the base. It indicates the net capacity of the table, assuming a centered load. Permanent damage to the table or injury to personnel could result from exceeding the listed capacity.

The load size should not exceed the table dimensions by more than 50% and should not exceed twenty-four inches in height.

Do not use the base of the hydraulic table as a storage shelf.

OPERATION:

The manually-powered hydraulic tables are furnished with a foot-pump.

On the single and two-post tables, step on the foot treadle to raise the table and step on the release lever on the right side of the pump to lower the table.

The four-post table has a two-speed foot pump, separate from the lifting cylinder. Step on the foot treadle to raise the table. You can change the pump from the low-volume to high-volume by pulling the slide on top of the foot pump back toward the foot treadle.

The DC-powered table is furnished with either a constant-pressure (dead-man style), push-button (standard), or twin foot switch (optional) control.

Pressing the "UP" push-button or foot switch will turn the power unit to raise the platform. The platform will raise only while the control is pressed. Upon releasing the control, the platform will stop and hold its position.

Pressing the "DOWN" push-button or foot switch will energize the lowering valve to allow the platform to descend. Again, releasing the control will stop the platform movement and the unit will hold its position. Be certain no part of any person or object is under any part of the platform before lowering the unit.

Attempting to raise the platform when the battery is low will cause the motor relay protection to prevent the motor's operation. Adequate battery voltage is indicated by a green LED on the motor relay. See the next page for more notes regarding operation of battery-powered units.

SAFETY:

Keep all personnel clear of the machine when it is in operation.

Do not exceed the table's load rating.

Use caution to avoid tipping the table when placing or sliding a load onto or off of the table.

Avoid obstacles that can cause the base to sudden stop when moving a loaded table, such as cracks in the floor or the corners of machines, etc. Doing so could cause the post table to tip over or allow the load to slide off the table.

Never use the table if it is in need of repairs or if it seems to be malfunctioning.

Notify your maintenance personnel if you notice anything out of the ordinary, such as odd noises, erratic motion, or damage to any part of the table or its components.

ORDERING REPLACEMENT PARTS:

We take pride in using quality parts on the equipment we manufacture. We are not responsible for equipment problems resulting from the use of unapproved replacement parts.

To order replacement or spare parts for this equipment, contact the factory.

In any communication with the factory, please be prepared to provide the machine's serial number, which is indicated on the machine dataplate.

ADDITIONAL INSTRUCTIONS FOR BATTERY-POWERED UNITS

WARNING!

- ! Working with or near lead batteries is dangerous. Batteries contain sulfuric acid and produce explosive gases. A battery explosion could result in loss of eyesight or serious burns.
- ! Do not smoke or allow a spark or flame near batteries. Charge batteries in locations which are clean, dry, and well-ventilated.
- ! Do not lay tools or anything metallic on top of any battery. All repairs to a battery must be made by experienced and qualified personnel.
- ! When working with batteries, remove personal items such as rings, bracelets, necklaces, and watches. Batteries can produce enough energy to weld jewelry to metal, causing a severe burn.
- ! Always have fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- ! Operating the battery with a low battery voltage can cause premature motor contact failure.
- ! Do not expose the lift or charger to rain or adverse conditions.
- ! Replace defective cords or wires immediately.
- ! Check the battery's water level frequently.

BATTERY CHARGER OPERATING INSTRUCTIONS:

Never operate the charger with either of the cables coiled. Operating the unit with the cord wrapping around itself can cause the cord to overheat, melt, and cause a short-circuit or a fire.

Plug the charger into a standard 115V receptacle. If an extension cord must be used, keep it as short and as large as possible. A small cord will decrease the output of the charger due to the voltage in the line. This will increase the charging time. It can also cause the 115V cord to overheat.

When properly connected, the charge LED will indicate the status of charge flowing to the battery, as follows:

Red only - the charger is providing full output to the battery.

Both red and green - the charger is "topping off" the battery.

Green only - the charger is providing a "float," or maintenance, charge.

Remember to unplug the charger before moving the equipment. Failure to do so could cause damage to cords, receptacles, and other equipment.

TROUBLESHOOTING:

If the unit does not operate, check all the wiring connections to make sure they're both mechanically and electrically sound - specifically at the battery, the motor, and at any location a wire is connected to the chassis. Also make sure the quick-connect plug on the end of the pendant control cord is plugged in correctly.

A full-charged lead acid battery in good condition at room temperature should read 12.65 volts. At 11.9 volts it is considered to be fully discharged and in need of charging. When checking battery voltage, wait at least 1/2 hour after the charger has been turned off before checking the battery's voltage. If the motor doesn't run, observe the green LED on the motor relay. If it is not lit, or if the LED goes out when the "UP" control is pressed, the battery voltage should be checked with a voltmeter.

If the batteries aren't being charged by the charger, check the output charger fuse. If it is good, check the battery's state of charge with a voltmeter.

THE POWER UNIT'S OPERATION - HT, LDLT

The electric/hydraulic table utilizes an electric motor directly coupled to a gear-type hydraulic pump to produce the needed fluid pressure and flow to allow the cylinders to perform the work of lifting the table load.

A hydraulic manifold houses the hydraulic control components, and is bolted directly onto the gear pump.

The power unit's hydraulic components are all treated for 3,000 psi working pressure.

Important parts of the power unit include:

- The electric motor operates on 12 VDC.
- The gear pump. Its shaft is coupled directly to the shaft of the electric motor.
- The check valve. Its purpose is to prevent the backflow of fluid through the pump. In this way it allows the table to be held at a given elevation indefinitely.
- The pressure relief valve. Its job is to open a path for fluid to flow back to the reservoir in the event that the fluid pressure built up by the pump exceeds 3,000 psi. Thus the pump cannot generate more than 3,000 psi.
- The lowering solenoid valve. This is an electrically-operated cartridge valve. It contains a screen to keep contaminants from entering the valve.
- The pressure-compensated flow control spool. This rests under the lowering valve and regulates the fluid flow back to the reservoir when the valve opens. It allows the table to always lower at the same rate regardless of whether there is a load on the table or not.
- The hydraulic lift cylinder. On units with a motor or two-speed foot pump, the cylinder has a bleeder valve located at their top end to allow air to be bled from the hydraulic system.
- The safety velocity fuse. This is a device that is installed in the cylinder's hose port. It closes quickly in the event of a catastrophic hose failure to prevent the table from collapsing down. The table remains stationary until pressure is reapplied to the system.
- The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 @ 40°C) such as AW 32 or non-synthetic transmission fluid is acceptable.

When the table is to be raised, press the "UP" push-button or foot switch. The motor turns, and in turning it spins the hydraulic gear pump. Oil is drawn from the reservoir through the suction filter and into the pump. The pump pushes the then-pressurized oil through the check valve and out to the lift cylinders.

When the table is to be lowered, press the "DOWN" push-button or foot switch. The lowering valve opens, bypassing the check valve and allowing the oil in the cylinders to return back to the reservoir through the return hose. The rate at which the table lowers is regulated by the internal pressure-compensated flow spool.

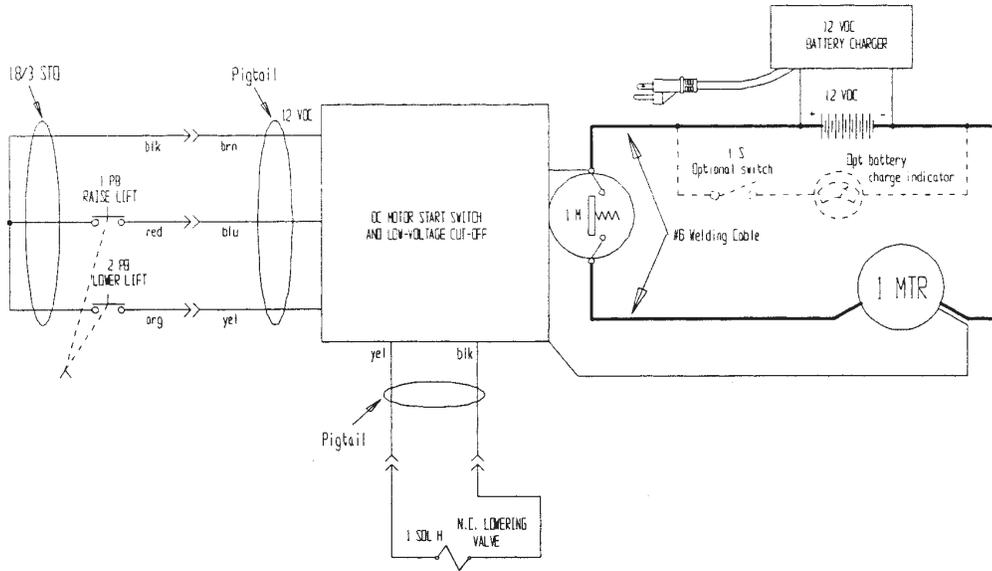
In the event that the table creeps down slowly after releasing the "DOWN" control, it will be necessary to remove the lowering cartridge valve for inspection and cleaning, as follows:

- Lower the table entirely.
- Remove any load from the table.
- Remove the nut holding the solenoid coil on the valve stem, remove the coil, and then unscrew the valve from the manifold.
- Inspect the valve for contaminants, and the valve's o-rings and backup washers for cuts, tears, or other damage.
- With the valve immersed in mineral spirits or kerosene, use a thin tool such as a small screwdriver or a small hex wrench to push the poppet in and out several times from the bottom end of the valve. The valve should move freely, and 1/16" from closed to open position. If it sticks in, the valve stem could be bent and will need to be replaced if it doesn't free up after cleaning. Blow the valve off with a compressed-air gun while again pushing the poppet in and out.
- Inspect the bottom of the manifold's valve cavity for contaminants.
- Again with the thin tool, press on the middle of the flow control spool located in the bottom of the cavity. It should move down and back up freely.
- Reinstall the valve into the manifold, tightening the valve with approximately 20 lb-ft of torque.

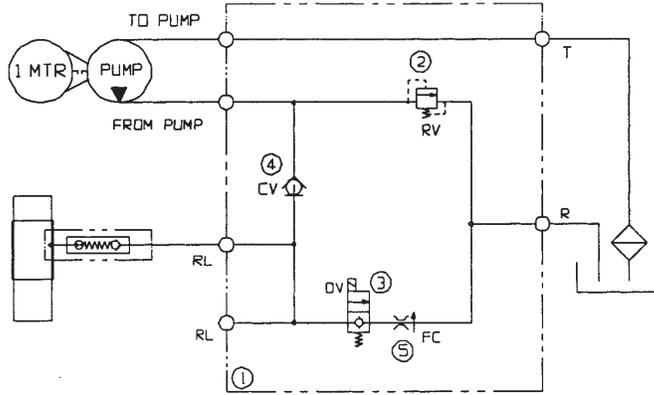
If the table lowers extremely slowly, or not at all, the cylinder's velocity fuse could be closing. This can be caused by air in the hydraulic cylinders. To bleed the air from the system:

- Lower the table entirely.
- Remove any load from the table.
- Hold a rag over the cylinder's bleeder valve (it looks like a grease zirk) and open the valve about 1/2 turn with a 1/4" or 5/16" wrench. Oil and air will sputter from the valve - once no air is observed, close the valve.

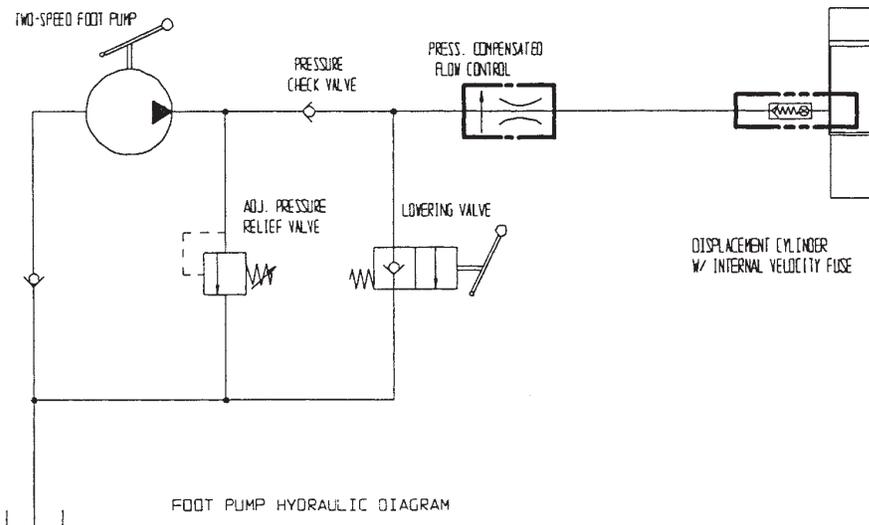
ELECTRICAL, HYDRAULIC DIAGRAMS – HT, LDLT



CAUTION: Do not use brake fluid or jack oils in the hydraulic system. If oil is needed, use an anti-wear hydraulic fluid with a viscosity of 150 SUS at 100°F (ISO 32 @ 40°C) or a non-synthetic transmission fluid.



ELECTRIC / HYDRAULIC DIAGRAM



FOOT PUMP HYDRAULIC DIAGRAM

ROUTINE MAINTENANCE & SAFETY CHECKS - HT, LDLT

Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work.

Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment.

(A) Before each use inspect the following, where applicable:

- 1.) Frayed wires.
- 2.) Oil leaks.
- 3.) Pinched or chafed hoses.
- 4.) Damage or structural deformation to the structural members, the cylinder, the foot pump, etc.
- 5.) Unusual noise or binding or evidence thereof.
- 6.) Proper functioning of all limit switches.

(B) Inspect monthly for, where applicable:

- 1.) The oil level. Oil should be 1" to 1 1/2" below the cylinder's or the reservoir's fill hole with the lift in the fully lowered position.
- 2.) Oil leaks.
- 3.) Worn or damaged hydraulic hoses and electrical wires, if applicable.
- 4.) Integrity of the retaining rings and pins at all pivot points.
- 5.) Looseness, wear, or damage to the casters' bearings, mounting hardware, or surface material.
- 6.) Proper water level in the battery. (DC units only.)
- 7.) Unusual noises.
- 8.) Information and warning labels being in place and in good condition.
- 9.) The need to clean off dirt and debris.

(C) Yearly inspection

The oil should be changed if the oil darkens, becomes gritty, or turns a milky color (indicating the presence of water). Replace with an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 @ 40°C). Ex: AW 32 or HO 150 hydraulic fluid, or non-synthetic transmission fluid.

TROUBLESHOOTING GUIDE, DC UNITS - HT, LDLT

Before performing any task, always lower the table entirely.

Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning.

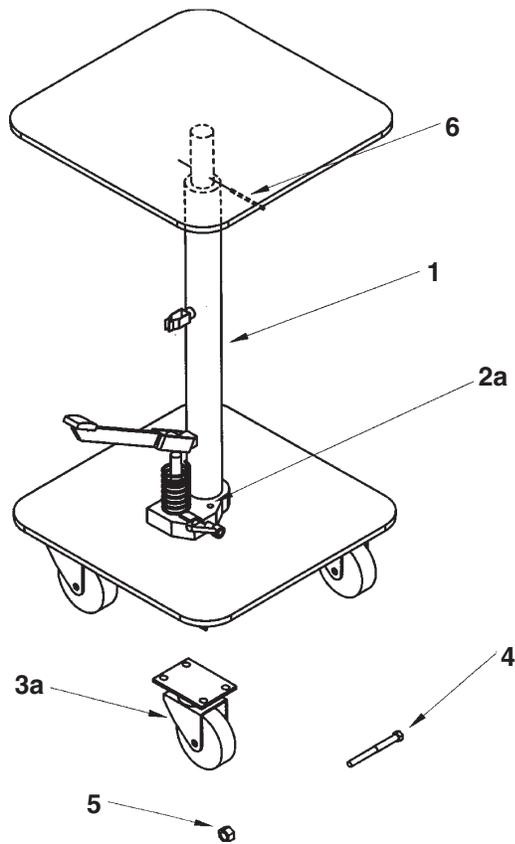
Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment.

Consult the factory for any problems not addressed in this manual.

* Check the DC notes page for other troubleshooting notes specific to battery-powered units.

<u>Problem:</u>	<u>Possible Causes:</u>	<u>Action:</u>
1. Power unit doesn't run when "UP" button is pressed.	A. Upper-travel switch is engaged or bad. B. Push-button control cord not plugged into motor relay assembly properly. C. Bad motor relay assembly (green LED not lit at all or turns off when the motor relay pulls in). D. Battery voltage low (green LED turns off as or just after the motor relay pulls in).	A. Inspect and test switch. Replace if bad. B. Verify that the push-button cable's plug is connected properly to the relay assembly's quick-connect. C. Check for green LED on relay. Consult the factory. D. Test with meter. Charge battery if low (< 12 volts). A fully charged battery has 12.6 volts.
2. Motor runs, but table does not move or only moves slowly. Power unit not noisy.	A. Pump is failing to build pressure. B. Contamination holding open the lowering valve or the check valve.	A. Consult the factory. B. Remove and inspect. Clean per instructions in this manual.
3. The power unit runs but makes a higher-pitched sound; the table does not move, or the table moves only slowly.	A. Pressure relief opening at full pressure.	A. Check for structural damage or binding of the posts, etc. B. Check for table overload condition.
4. Table raises, then drifts down.	A. Contamination holding open the lowering valve or the check valve.	A. Remove and inspect. Clean per instructions in this manual.
5. Spongy or jerky table movement.	A. Excessive air in the hydraulic cylinder.	A. Bleed air from the bleeder valve at the top of the cylinder.
6. Table lowers too quickly.	A. Flow control spool sticking.	A. Remove plug from FC port; push on edge of flow spool to ensure it is fully pressed into the cavity. Pull and clean spool if dirty.
7. Table won't lower.	A. Solenoid coil is bad. B. Physical blockage of the structure. C. Solenoid valve or suction hose screen plugged.	A. Check with multimeter on diode check function. (Reading for ohms will not provide an accurate test of the coil.) B. Inspect for foreign material or objects that might obstruct the table or guide posts. C. Remove and inspect. Clean per instructions in this manual.
8. Table lowers too slowly.	A. Pinched hose. B. Flow control spool sticking. C. Velocity fuse locking (table only slowly creeps down).	A. Check pressure, supply, and return hoses for kinks. B. Remove plug from FC port; push on flow spool to ensure it is fully pressed into the cavity. Pull and clean spool if dirty. C. Same as for jerky table movement.

EXPLODED PARTS DRAWING 1 & 2-POST HYDRAULIC TABLE



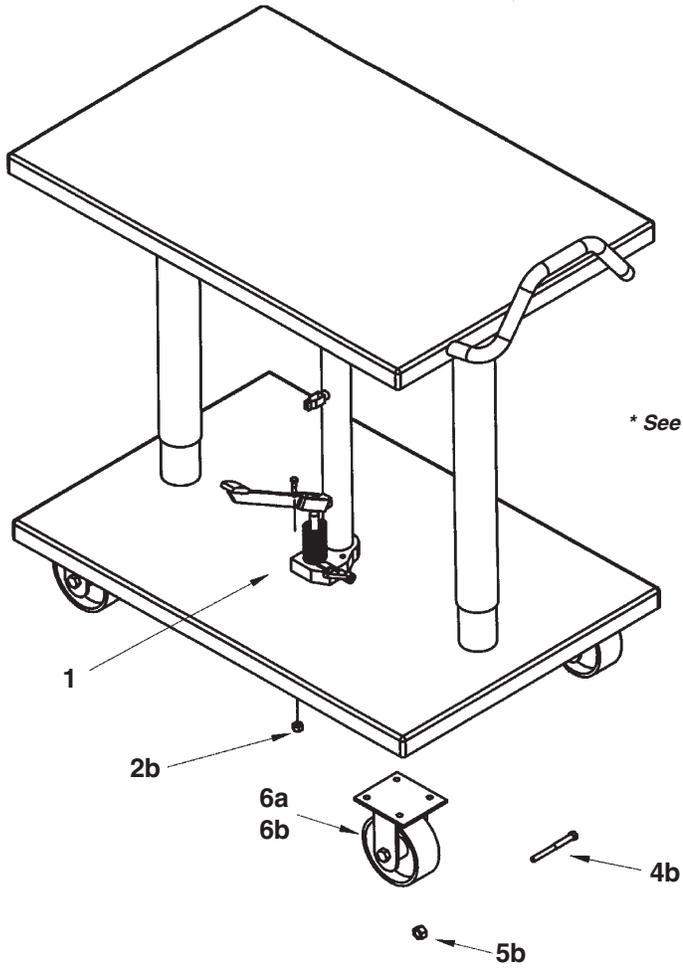
PARTS LIST 1 & 2-POST HYDRAULIC TABLES

ITEM NO.	DESCRIPTION	ENGINEER NO.	PART NO.	QTY.
1	Foot Pump (FHJ-18 style)	01-640-030	HT2-FTP	1
2a	Foot Pump Mt. Bolts 1/4-20 x 2	a/l	a/l	2
2b	Nut 1/4-20 Nylock	a/l	a/l	2
2c	Washer 1/2-20 Flat Washer	a/l	a/l	2
3a	Casters 3-1/2 x 1-1/4 Polyurethane	16-132-003	HT2-CSTR	4
3b	Caster with Total Locks, Polyurethane	16-132-002	HT2-CSTRTL	4
4a	Bolt, Caster Mt. 1/4-20 x 3-1/2, or equivalent	a/l	a/l	4
4b	Bolt 3/8-16 unc x 5 Carriage Bolt, or equivalent	a/l	a/l	4
5a	Nut, Nylock Caster Mt. 1/4-20	a/l	a/l	1
5b	Nut 3/8-16	a/l	a/l	-
6	Pin, Upper Cylinder Mt. (roller pin) 3/16 x 1-1/2	a/l	a/l	-
6a	5 x 2 Poly-on-Steel Rigid Caster	16-132-022	HT2-HDCSTR	2
6b	5 x 2 Poly-on-Steel Swivel with Lock	16-132-03	HT2-HDLCSTR	2
A	Seal Kit Foot Pump	01-136-412	HT2-KITA	1
B	Caster Kit (includes either 3a or 3b)	21-154-009	HT2-KITB	1
C	HD Caster Kit (see page 10)	16-154-020	HT2-KITC	1

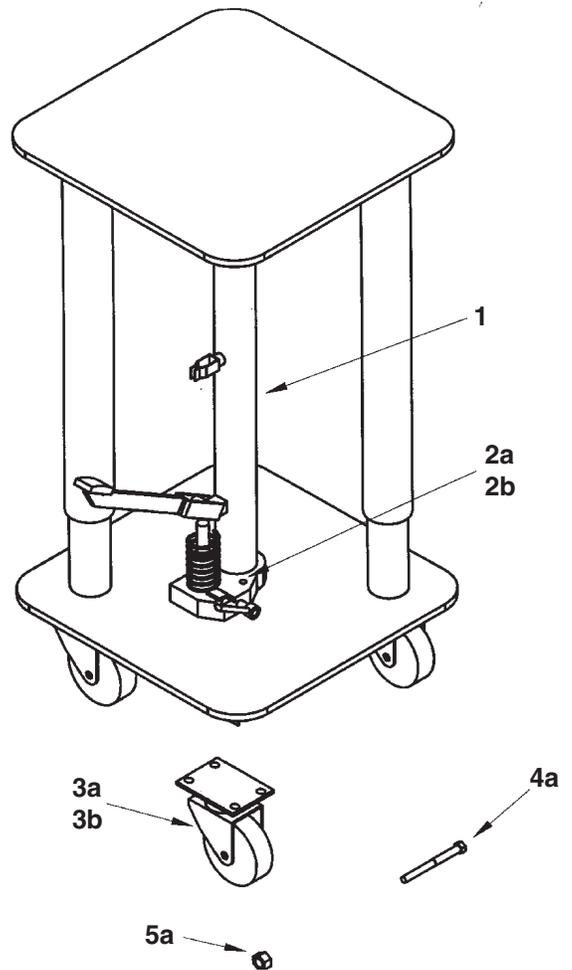
a/l - Available at Local Hardware Store

*See page 9 for Two-Post Table Exploded Drawing

EXPLODED PARTS DRAWING 2-POST HYDRAULIC TABLES

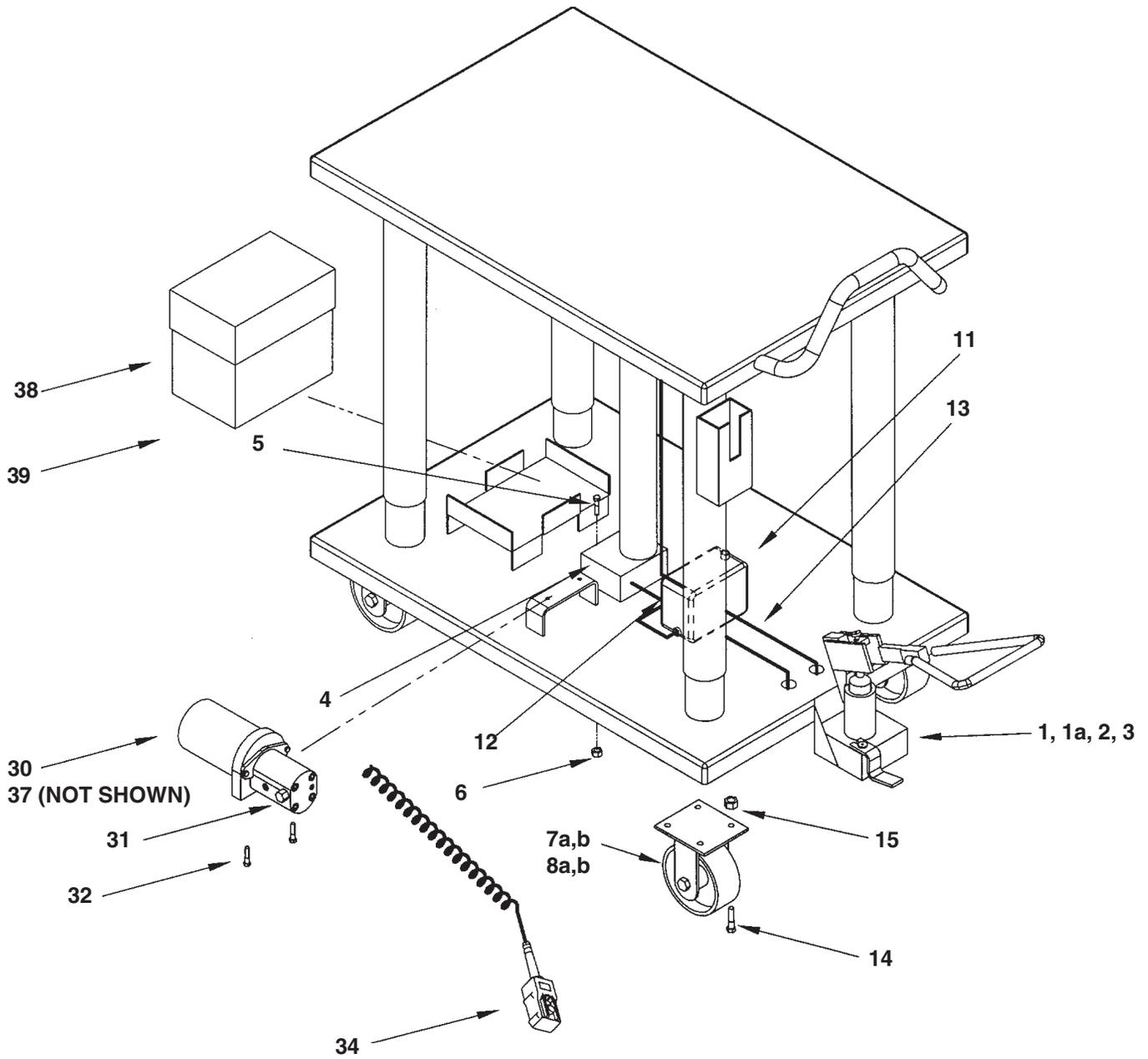


* See page 8 for Parts List



* See page 8 for Parts List

**EXPLODED PARTS LIST
4-POST HYDRAULIC & DC POWERED POST TABLES**



PARTS LIST

4-POST & DC POWERED HYDRAULIC POST TABLES

ITEM NO.	DESCRIPTION	ENGINEER NO.	PART NO.	QTY.
1	Foot Pump, Two Speed	01-640-004	HT4-2SFP	1
2	Bolt, Foot Pump Mt. 3/8-16 x 3	a/l	a/l	2
3	Nut, Foot Pump Mt. 3/8-16	a/l	a/l	2
4a	Cylinder 1-1/8 x 18	21-021-006	HT4-CYL	1
4b	Cylinder 1-3/4 x 18	21-021-005	HT6-CYL	1
5	Bolt, Cylinder 3/8-16 x 1-1/4	a/l	a/l	2
6	Nut, Cylinder 3/8-16	a/l	a/l	2
7a	Casters, Rigid 4 x 2 Phenolic	16-132-016	HT4-RGPHN	2
8a	Caster, Swivel 4 x 2 Phenolic with Brake	16-132-148	HT4-SWPHN	2
9	Bolt, Caster Mt. 3/8-16 x 5 Lg.	a/l	a/l	4
10	Nut, Caster Mt. 3/8-16	a/l	a/l	4
11	Hose Assembly - Pressure	21-523-001	HT4-PSRHA	1
12	Hose Assembly - Return	21-523-002	HT4-RTNHA	1
13	Bolt Caster, 3/8-16 x 1 (6,000 lb. unit only)	a/l	a/l	16
14	Nut Lock, Caster 3/8-16 x 1 (6,000 lb. unit only)	a/l	a/l	16
15	Washer 3/8 (not shown) (6,000 lb. unit only)	a/l	a/l	16
1a	Seal Kit for Foot Pump	01-136-441	HT4-FP-SK	1

DC POWERED POST TABLES

ITEM NO.	DESCRIPTION	ENGINEER NO.	PART NO.	QTY.
30	Motor	01-135-042	HTDC-MTR	-
31	Pump	01-143-010	HTDC-PMP	-
32	Bolt Motor/Pump Mt. 3/8-16 x 1	a/l	a/l	-
34	Hand Control	01-522-022	HTDC-HC	-
35	Hydraulic Hose Assembly Pressure	21-523-003	HTDC-HHAP	-
36	Hydraulic Hose Assembly Return	21-523-004	HTDC-HHAR	-
38	Battery	21-139-003	HTDC-BATT	-
37	Motor, Solenoid Smart Start Switch	15-022-004	HTDC-SOL	-
39	Battery Box, Strap	21-154-010	HTDC-BBS	-

A/L Available at local hardware store
A/K Available only with purchase of kit

Reference Number	Component Description	Model Number
1	Cylinder Assembly 18 Inch	FHJ-C-1-18
1	Cylinder Assembly 24 Inch	FHJ-C-1-24
2	O-Ring 31.5 x 1.8	FHJ-C-2
3	Inside Cylinder Body 18 Inch	FHJ-C-3-18
3	Inside Cylinder Body 24 Inch	FHJ-C-3-24
4	O-Ring 31.5 x 1.8	FHJ-C-4
5	O-Ring 34 x 3.5	FHJ-C-5
6	O-Ring 56 x 3.5	FHJ-C-6
7	Valve Plug	FHJ-C-7
8	Lift Piston 18 Inch	FHJ-C-8-18
8	Lift Piston 24 Inch	FHJ-C-8-24
9	U-Packing UHS28	FHJ-C-9
10	Dust Ring DH28	FHJ-C-10
11	Washer	FHJ-C-11
12	Pump Cylinder	FHJ-C-12
13	Screw Plug	FHJ-C-13
14	Steel Ball	FHJ-C-14
15	Screw Plug	FHJ-C-15
16	Cone Valve	FHJ-C-16
17	Spring	FHJ-C-17
18	O-Ring 28 x 2.4	FHJ-C-18
19	Pump Piston	FHJ-C-19
20	U-Packing UHS18	FHJ-C-20
21	Dust Ring DH18	FHJ-C-21
22	Lock Shaft	FHJ-C-22
23	Spring Slide	FHJ-C-23
24	Screw	FHJ-C-24
25	Link shaft	FHJ-C-25
26	Roller Guide	FHJ-C-26
27	C-Ring	FHJ-C-27
28	Foot Assembly	FHJ-C-28
29	Rubber Rad	FHJ-C-29
30	Press Set Screw	FHJ-C-30
31	Spring	FHJ-C-31
32	Single Valve Pin	FHJ-C-32
33	Single Valve Pad	FHJ-C-33
34	O-Ring 10 x 1.9	FHJ-C-34
35	Steel Ball 5	FHJ-C-35
36	Spring	FHJ-C-36
37	Push Lever	FHJ-C-37
38	O-Ring 7 x 1.9	FHJ-C-38
39	Push Lever Pad	FHJ-C-39
40	O-Ring 15 x 2.4	FHJ-C-40
41	Lock Shaft	FHJ-C-41
42	Twist Spring	FHJ-C-42
43	Leading Pad	FHJ-C-43
44	Discharge Foot Assembly	FHJ-C-44
45	Socket Set Screw	FHJ-C-45
46	Adjusting Screw	FHJ-C-46
47	Hex Cap Nut	FHJ-C-47
48	Steel Ball	FHJ-C-48
49	Spring Seat	FHJ-C-49
50	Adjusting Pressure Spring	FHJ-C-50
51	Adjusting Pressure Plug	FHJ-C-51
52	O-Ring 11 x 1.9	FHJ-C-52
53	Fix Screw	FHJ-C-53
54	Screw Air Breather	FHJ-C-54
55	O-Ring 10 x 1.9	FHJ-C-55
	Seal Kit	FHJ-C-SK

PARTS LIST FOOT OPERATED HYDRAULIC JACK - MODEL FHJ-C

ITEM #	PART NUMBER	DESCRIPTION	QUANTITY
1	FHJ-P103	Snap Ring	2
2	FHJ-P104	Spring Holder	1
3	FHJ-P102	Plunger	1
4	FHJ-P105	Pressure Spring	1
K 5	FHJ-P106	Rod Wiper	1
K 6	HYD-02-2706	O-Ring	1
7	FHJ-P113	Check Valve Plug	1
K 8	HYD-01-2514	O-Ring	1
9	PLT-P1036	Valve Spring	1
10	PLT-P1037	Cone Valve	1
11	PLT-P1038	Cone Valve Seat	1
K 12	HYD-01-0803	O-Ring	2
13	SB-9-32	Steel Ball	1
14	FHJ-P153	Roller	1
15	FHJ-P151	Snap Ring	4
16	FHJ-P152	Pedal Pin	2
17	FHJ-P168	Foot Pedal	1
18	SB-5-32	Steel Ball	1
19	FHJ-P111	Relief Seat	1
20	FHJ-P110	Relief Spring	1
21	FHJ-P109	Relief Plug	1
22	FHJ-P121	Lowering Pedal Spring	1
23	FHJ-P119	Lowering Pedal	1
24	FHJ-P147	Filler Breather Plug	1
25	FHJ-P150	Pedal Crimp Spring	1
26	FHJ-P148	Lock Washer	1
27	FHJ-P149	Screw	1
K 28	FHJ-P107	Back-Up Ring	1
K 29	FHJ-P166	Dust Seal	1
K 30	FHJ-P167	Rod Seal	1
K 31	CYL-M0010-020	Dyna Seal	1
32	FHJ-P135	Gland Nut	1
33	FHJ-P163	Socket Head Cap Screw	1
K 34	HYD-02-2811	O-Ring (Gland)	1
K 35	HYD-02-6038	O-Ring (Inner Tube)	2
36	FHJ-P156-3020-00	Piston Rod	1
37	FHJ-P141-2424	Inner Tube	1
38	FHJ-P101-2424	Base & Tube Weldment	1
39	FHJ-P129	Bolt	1
40	FHJ-P130	Lock Washer	1
41	FHJ-P1015	Valve Spring	1
42	FHJ-P123	Pressure Pin	1
K 43	HYD-01-2506	O-Ring	1
44	FHJ-P124	Bushing	1
K 45	HYD-01-2637	O-Ring	1
46	FHJ-P122	Lowering Spacer	1
47	FHJ-P120	Lowering Sleeve	1
48	FHJ-P128	Set Screw	1
49	FHJ-P118	Push Bolt	1
50	FHJ-P164	Lock Nut	1
51	FHJ-P139	Piston	1
52	FHJ-P165	Snap Ring	1
A	FHJ-SK	Seal Kit	1

K Available in seal kit only

OPERATING INSTRUCTIONS FOR TWO- SPEED FOOT PUMP

FEATURES:

Your new lift equipment has been supplied with an exclusive single-speed or two-speed foot pump. The internal features of your pump includes a primary pressure relief, pressure compensated return flow control valve, and an integrated lowering valve. Replacements are necessary.

OPERATING INSTRUCTIONS:

Stay clear of moving parts. The platform will rise as the foot pedal is pumped. Depressing the release lever will lower the table at a controlled rate of descent. In the event the platform has been overloaded, the pressure relief will open because of excessive pressure buildup in the hydraulic system. Oil will bypass into the reservoir. Never increase the pressure relief setting more than necessary. Do not exceed the rated capacity of your equipment.

TWO-SPEED SELECTION:

The two-speed hydraulic foot pump offers two "speeds". The low speed products *low volume/high pressure*. The high speed products *high volume/low pressure*. The operator has the option of selecting the optimum pump speed for the application at hand. Pump speeds are selected by sliding the "lock collar" (Item #2 on the parts identification) in or out. An occasional drop of oil will keep the collar working freely.

AIR BLEED PROCEDURE FOR TWO-SPEED FOOT PUMP

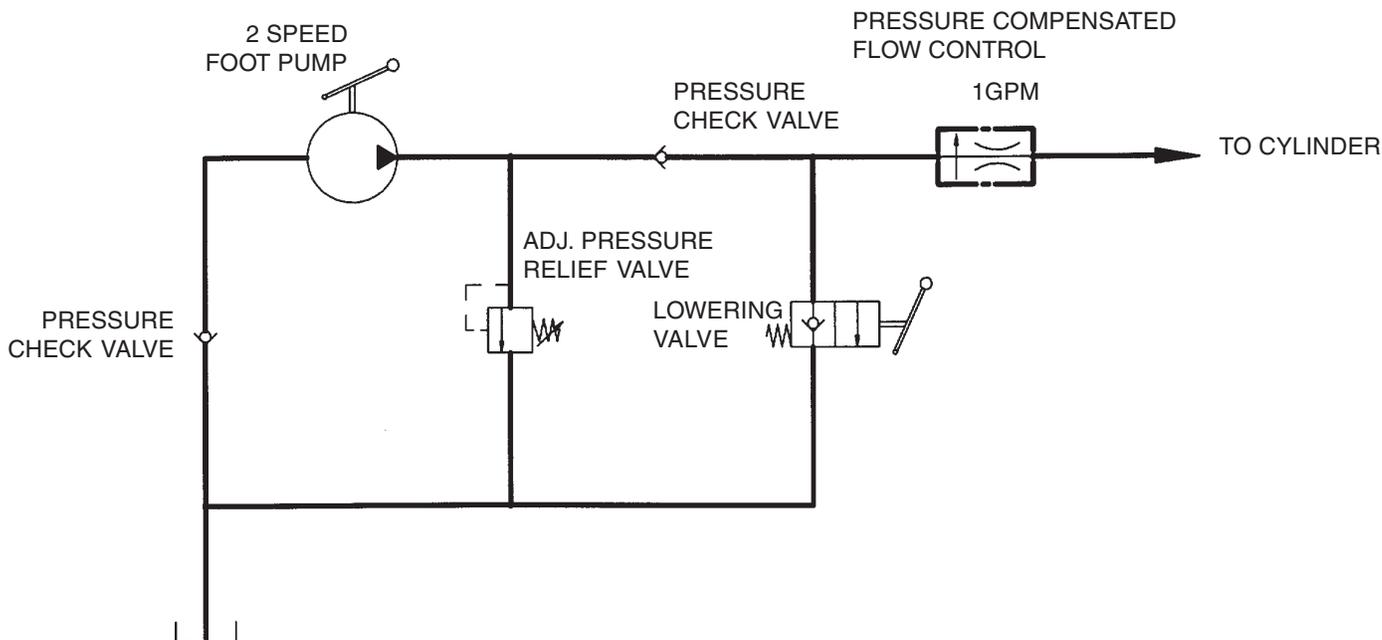
Whether your pump is a new installation, or has been recently serviced, air has likely entered the hydraulic system. The design of this pump includes an "air bleed screw" which will aid in the removal of unwanted air from the foot pump area of the hydraulic system. Use the following steps to remove this air from the system.

1) Check all fittings to be sure they are tight. Ensure that the oil is filled to within 1" of the top of the reservoir when the lift is in the fully lowered position.

2) Locate the "air bleed screw" (item #34 on the pump body) and loosen approximately 1/2 turn counterclockwise. As soon as you have loosened the screw, slowly depress the foot pedal. This unit will force the air out of the pump chambers. Before you let the pump pedal return to the "up" or "home" position, tighten the air bleed screw. This will prevent air from reentering the pump chamber. Repeat the above procedure until the pump chamber is completely filled with oil and a "spongy" feel is no longer present. If the air bleeding procedure has been successful, the feel of the pump pedal will be firm and the complete stroke of the pump will produce fluid flow.

Air can also become trapped in the hydraulic cylinder(s). Review your owners manual for air removal instructions.

HYDRAULIC DIAGRAM FOR TWO-SPEED FOOT PUMP



HYDRAULIC FOOT PUMP --- TROUBLE SHOOTING GUIDE

TROUBLE SHOOTING

(Read all instructions thoroughly prior to performing any maintenance.)

SYMPTOMS

- Foot pumping action does not raise platform.
- Cylinder slowly drifts downward under load.
- Cylinder pumps up, but will not go down.

REMEDY

Tools required: 3 & 5 mm hex key wrenches
Standard head screwdriver
Adjustable wrench

1) Adjust Release Pedal

(Refer to figure below)

- Loosen setscrew on release pedal. Rotate pedal counterclockwise until pedal touches the base. While holding pedal, use hex key wrench to turn release shaft counterclockwise to stop. (NOTE: Do not loosen lock nut on release pedal shaft.) Tighten pedal set screws. Release pedal.

2) Check Fluid Level

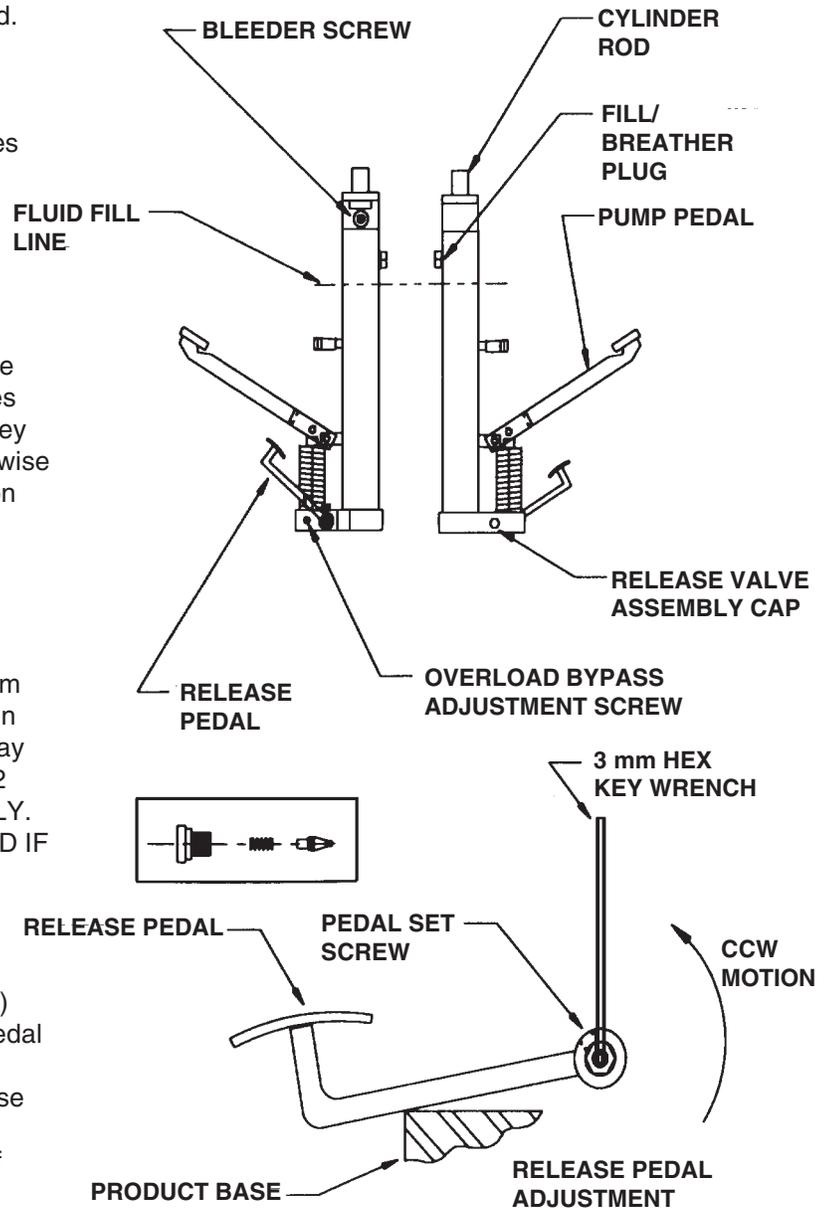
- Remove fill/breather plug.
- Fluid should be filled to 2-2 1/2 inches from bottom edge of hole when cylinder rod is in the lowered position. If overfilled, fluid may seep from fill/breather plug. (ISO #AW-32 ANTIWEAR HYDRAULIC PUMP OIL ONLY. FLUID MUST BE CLEAN! STRAIN FLUID IF NECESSARY).

3) Clean Release Valve Assembly

- Remove release valve assembly cap and clean assembly (shown in exploded view.)
- While assembly is removed, pump foot pedal vigorously at least five times.
CAUTION: Fluid will discharge from release valve hole. This will dislodge any foreign matter from the ball socket. Clear hole of debris and reassemble release valve and tighten cap.
- Repeat procedure #2 to refill fluid.

4) Bleed Pump of Trapped Air

- Pump up cylinder at least 4 inches.
While putting pressure on the platform, release bleeder screw until fluid flows free and clear from behind the screw. Then tighten bleeder screw and release pressure from platform.
Repeat procedure until no signs of air are present. If after following the above procedures the problem still exists or if unit is leaking fluid, please contact the factory at (260)665-7586.



TROUBLESHOOTING GUIDE - 2-SPEED FOOT PUMP

Before performing any task, always lower the table entirely.

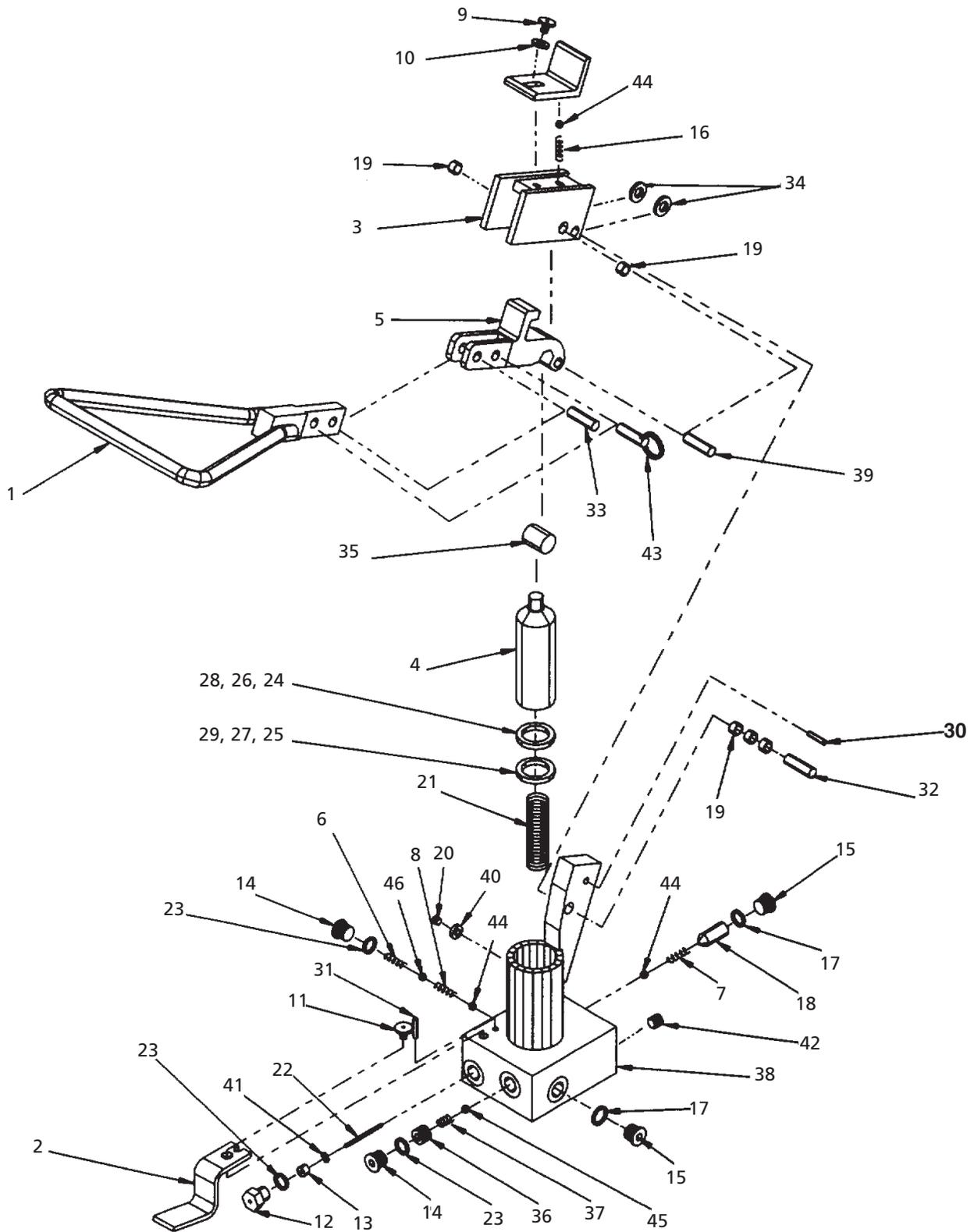
Consult the factory for any problems at time of installation or for any problems not addressed below:

*Check the DC notes page for other troubleshooting notes specific to battery-powered units.

<u>Problem:</u>	<u>Possible Causes:</u>	<u>Action:</u>
1. Platform does not raise when the foot treadle is pressed. Foot treadle goes down without excessive force.	A. No oil getting through the pump - not enough oil in reservoir, or the pump has become "air-locked." B. Pinched or kinked hose. C. Relief valve is opening. D. Inlet check valve assembly being held open by contamination.	A. Check the reservoir's oil level. It might be necessary to bleed air from the pump piston at the socket-head screw located on the left side of the pump cylinder. B. Visually inspect all hoses. Replace or reposition as necessary. C. Check for excessive load on the platform. D. Open the port on the left side of the pump and clean any foreign material from the ball and its seat. Press the foot treadle to help flush any contamination out of the port.
2. Platform will fit under no load, but not when fully loaded. Foot treadle goes down without excessive force.	A. Same as above. B. Contamination holding open the relief valve assembly. C. Air in the pump piston.	A. Same as above. B. Open the port to the right of the release pedal. Inspect and clean the parts. Press the foot treadle to flush contamination out of the port. C. Bleed air from the piston.
3. Platform raises with the pump downstroke, but lowers with the pump upstroke.	A. Outlet check valve assembly being held open by contamination.	A. Open the port on the left side of the pump and clean any foreign material from the ball and its seat.
4. Platform raises, then drifts down.	A. Same as above.	A. Same as above.
5. Platform raises, but in smaller increments than normal.	A. Contamination holding open the relief valve assembly or the inlet check valve assembly.	A. Reference the instructions above for cleaning each assembly.
6. Excessive effort is required to operate the foot pump.	A. Operating pressure is too high for effective use at the current pump displacement.	A. Slide the speed selector forward to put the pump into low volume operation. B. Check for excessive load on the platform.
7. Platform won't lower when the release pedal is pressed or lowers too slowly.	A. Pinched hose. B. Release pin is bent or broken. C. Velocity fuse is locked. D. Flow control spool sticking or plugged by contamination. E. Object under platform or obstructing the leg assembly movement or roller travel. F. Damaged to the leg assembly structure.	A. Check all hoses for kinks, crimped spots, or visual damage. Reroute or replace as necessary. B. Inspect the release pin under the release pedal. It should protrude 3/16", and should move in and out by 1/8"+. C. Bleed air from the cylinder. D. Remove the pressure hose to access and inspect the flow control. Push on the outside edge of the flow spool to ensure it is fully pressed into the cavity, and on the center to verify that it moves freely. E. Inspect for and remove any physical obstructions. F. Inspect for evidence of rubbing, binding, twisting, etc. of the leg set.
8. Platform lowers too quickly.	A. Same as last item above.	A. Same as above.
9. Platform lowers with a jerky motion.	A. Air in the hydraulic system, especially the cylinder(s).	A. Bleed air from the system at the cylinder.

•The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 @ 40°C) such as AW 32 or non-synthetic transmission fluid is acceptable.

2-SPEED FOOT PUMP PARTS

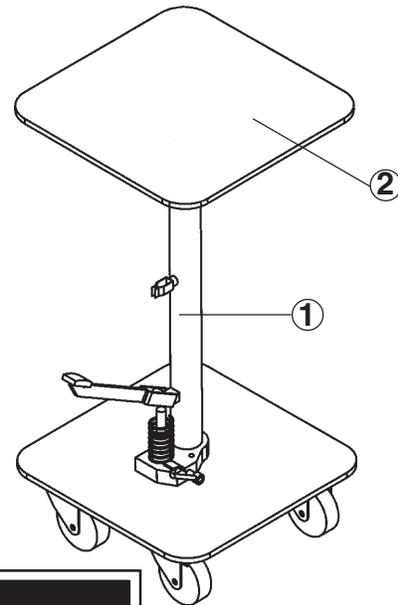
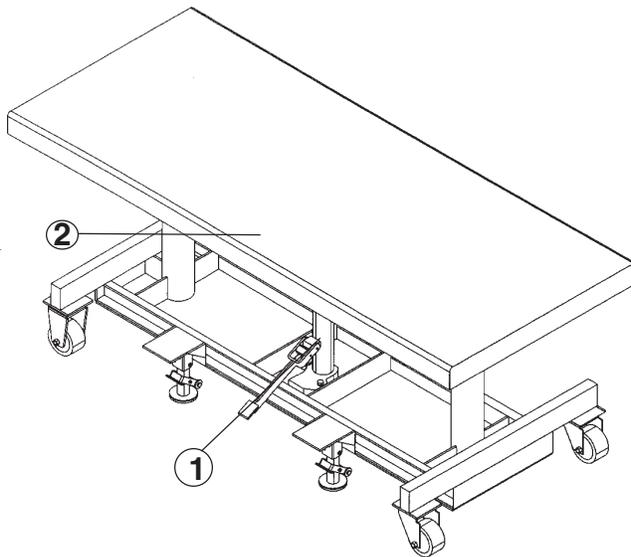
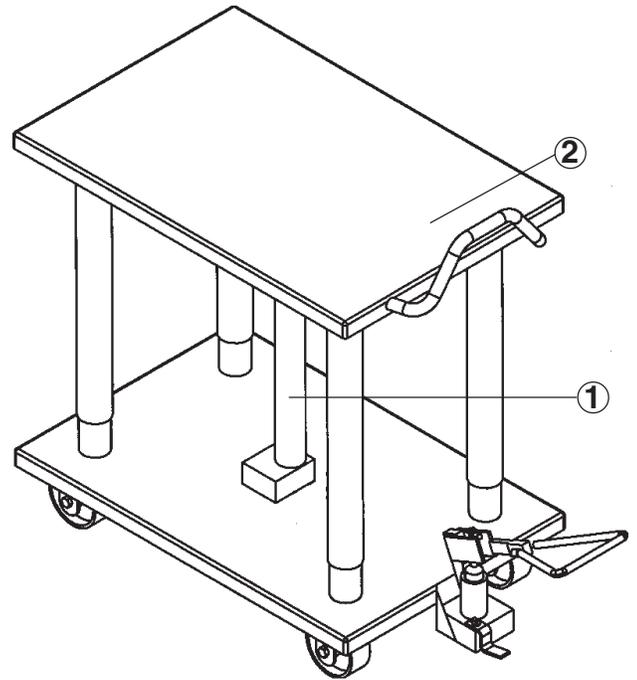
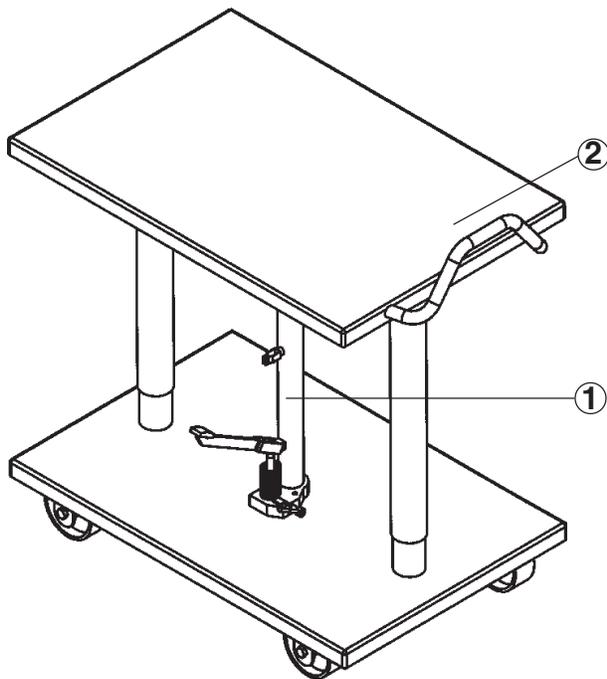


TWO SPEED FOOT PUMP PARTS

Reference Number	Description	Engineer Number	Part Number	Quantity
1	Assembly, Foot Pedal, Double Speed	n/a	VI081601	1
2	Release Lever	n/a	VI081604	1
3	Lever, First Link	n/a	VI081607	1
4	Assembly Pump Plunger	n/a	VI081605	1
5	Lever Second Link	n/a	VI081609	1
6	Outlet Check Spring (7/16" Steel Ball)	n/a	VI081610	1
7	Release Check Spring	n/a	VI081611	1
8	Inlet Check Spring (5/16" Steel Ball)	n/a	VI081612	1
9	Guide Shoulder Screw	n/a	VI081613	1
10	Guide Shoulder Screw Washer	n/a	VI081614	1
11	Release Lever Shoulder Screw	n/a	VI081615	1
12	Fitting O-Ring Plug	n/a	VI081616	1
13	Release Rod U-Cup Seal	n/a	VI081617	1
14	Fitting O-Ring Plug	n/a	VI081618	2
15	Dirt Plug	n/a	VI081619	2
16	Detent Latch Spring	n/a	VI081620	1
17	Dirt Plug Washer	n/a	VI081621	2
18	Pressure Compensated Flow Control Valve	n/a	VI081622	1
19	Sleeve Sintered Bronze Bearing	n/a	VI081623	5
20	Hexagon Socket Head Cap Screw	n/a	VI081624	1
21	Piston Return Spring	n/a	VI081625	1
22	Release Pin	n/a	VI081627	1
23	O-Ring	n/a	VI081628	3
24	Piston Wiper Seal (1.25)	n/a	VI081629	1
25	Piston U-Cup Seal (1.25)	n/a	VI081630	1
26	Piston Wiper Seal (1.00)	n/a	VI081655	1
27	Piston U-Cup Seal (1.00)	n/a	VI081656	1
28	Piston Wiper Seal (1.375)	n/a	VI081660	1
29	Piston U-Cup Seal (1.375)	n/a	VI081661	1
30	Spring Pin (0.25 x 1.5 lg.)	n/a	VI081631	1
31	Spring Pin (0.188 x 0.75 lg.)	n/a	VI081632	1
32	Round Head Groove Pin (0.375 x 1.50 lg.)	n/a	VI081633	1
33	Round Head Groove Pin (0.375 x 1 lg.)	n/a	VI081634	1
34	Round Head Groove Pin Washer	n/a	VI081635	2
35	Lever (Second Link) Roller	n/a	VI081636	1
36	Fitting Pressure Adjustment Plug	n/a	VI081641	1
37	Pressure Relief Spring	n/a	VI081642	1
38	Subassembly, Foot Pump Base	n/a	VI081644	1
39	Ground Dowell Pin (0.375 x 1.5 lg.)	n/a	VI081646	1
40	Socket Head Screw Sealing Washer	n/a	VI081647	1
41	Release Pin Seal Retaining Ring	n/a	VI081648	1
42	Assembly Hole Plug	n/a	VI081651	1
43	Detent Pin	n/a	VI081662	1
44	5/16" Steel Chrome Ball	n/a	n/a	1
45	3/8" Steel Chrome Ball	n/a	n/a	1
46	7/16" Steel Chrome Ball	n/a	n/a	1
47	Seal Kit	01-140-014	CRT2000-SK	1
48	Foot Pump Assembly	01-136-442	CRT2000-FPA	1

WARNING LABEL IDENTIFICATION

MAKE SURE ALL WARNING LABELS ARE IN PLACE!



①

ISO 32 / 150 SUS	
HYDRAULIC OIL OR NON-SYNTHETIC TRANSMISSION FLUID	
ACEITE HIDRAULICO O LIQUIDOS DE TRANSMISION NO SINTETICOS	
HUILE OU LIQUIDE HYDRAULIQUE NON-SYNTHÉTIQUE	
<small>206 Rev. 1003</small>	
VESTIL MANUFACTURING CORPORATION • Phone (260) 665-7586 • www.vestil.com	

*Product safety signs or labels should be periodically inspected and cleaned by the product users as necessary to maintain good legibility for safe viewing distance
...
ANSI 535.4 (10.21)
Contact manufacturer for replacement labels.

②

⚠ CAUTION	⚠ ATENCIÓN	⚠ ATTENTION
PLATFORM MUST BE LOWERED BEFORE MOVING LIFT	LA PLATAFORMA DEBE DE ESTAR EN LA POSICIÓN BAJA ANTES DE MOVER EL ELEVADOR	LA PLATE-FORME DOIT ÊTRE ABAISSÉE AVANT D'ACTIVER LE MONTE-CHARGE

VESTIL MANUFACTURING COMPANY • Angola, Indiana USA • Phone (260) 665-7586 • www.vestil.com

210 Rev 04/03

LIMITED WARRANTY

ONE YEAR LIMITED WARRANTY. The manufacturer warrants for the original purchaser against defects in materials and workmanship under normal use one year after date of purchase. (Not to exceed 15 months after date of manufacture.) Any part which is determined by the manufacturer to be defective in material or workmanship and returned to the factory, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at our option. Labor costs for warranty repairs and/or modifications are not covered unless done at manufacturer's facilities. Any modifications performed without written approval of the manufacturer may void warranty. This limited warranty gives purchaser specific legal rights which vary from state to state.

LIMITATION OF LIABILITY. To the extent allowable under applicable law, the manufacturer's liability for consequential and incidental damages is expressly disclaimed. The manufacturer's liability in any event is limited to, and shall not exceed, the purchase price paid. Misuse or modification may void warranty.

WARRANTY DISCLAIMER. Our company has made a diligent effort to illustrate and describe the products shown accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions.

The provisions of the warranty shall be construed and enforced in accordance with the UNIFORM COMMERCIAL CODE and laws as enacted in the State of Indiana.

DISPOSITION. Our company will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within the Limited Warranty. Warranty claims must be made in writing within said year.

SERVICE RECORD

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____

