

**OWNER'S/
OPERATOR'S
MANUAL
MODEL NO.'s**

HPD-16
(S/N 4215 and above)

HPD-22Q
(S/N 5501 and above)

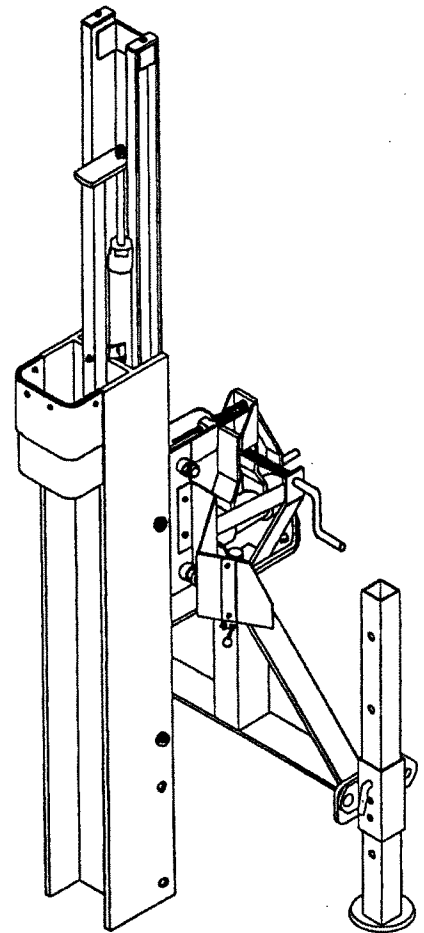
**ALSO FOR EARLIER
HPD-20 MODELS**

⚠ CAUTION

For Safe Operation
Read Rules And
Instructions Carefully

SI NO LEEINGLES, PIDA AYUDA
A AIGUIEN QUE SI LO LEA
PARA QUE LE TRADUZCA LAS
MEDIDAS DE SEGURIDAD.

**3-PT.
HYDRAULIC
POST DRIVER
with
Quick Change™
System**



**Safety Instructions
Tractor Preparation
Operating Instructions**

**Assembly & Mounting
Maintenance
Repair Parts**

⚠ CAUTION

**THE FOLLOWING SAFETY PRECAUTIONS SHOULD BE THOROUGHLY UNDERSTOOD
BEFORE ATTEMPTING TO BEGIN ASSEMBLING THIS MACHINE**

1. Select an area for assembly that is clean and free of any debris which might cause persons working on the assembly to trip.
2. Do not lift heavy parts or assemblies. Use crane, jack, tackle, fork trucks or other mechanical devices.
3. Preview the assembly instructions in your operator's manual before proceeding further.
4. If the assembly instructions call for parts or assemblies to be blocked up, use only blocking material that is in good condition and is capable of handling the weight of the assembly to be blocked. Also insure that the blocking material is on a clean, dry surface.
5. Never put hands, or any part of body, under blocked up assemblies if at all possible.
6. After completing assembly, thoroughly inspect the machine to be sure that all nuts, bolts, hydraulic fittings or any other fastened assemblies have been thoroughly tightened.
7. Before operating the machine, thoroughly read the operation section of your operator's manual.
8. Before operating, read the maintenance section of your operator's manual to be sure that any parts requiring lubrication, such as gearboxes, are full, to avoid any possible damage.
9. **Before operating equipment – If you have any questions regarding the proper assembly or operation, contact your dealer or representative.**

LIMITED WARRANTY



Worksaver warrants to the original purchaser of any new Hydraulic Post Driver, that the equipment be free from defects in material and workmanship for a period of twelve (12) months for non-commercial, state, and municipalities. Use ninety (90) days for commercial use from date of retail sale. Note: Springs are a wear item.

Replacement or repair parts installed in the equipment covered by this warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later.

Such parts shall be provided at no cost to the user during regular working hours. Worksaver reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Worksaver's obligation under this warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, including implied warranties of merchantability and fitness for a particular purpose and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Worksaver; duty; taxes; charges for normal service or adjustments; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Worksaver.

THIS WARRANTY SHALL NOT APPLY:

1. To vendor items which carry their own warranties, such as hydraulic motors, tires, and tubes.
2. If the unit has been subjected to misapplication, abuse, misuse, negligence, fire or other accident.
3. If parts not made or supplied by Worksaver have been used in connection with the unit, if, in sole judgement of Worksaver such use affects its performance, stability, or reliability.
4. If the unit has been altered or repaired outside of an authorized Worksaver dealership in a manner which, in the sole judgement of Worksaver affects its performance, stability or reliability.
5. To normal maintenance service and normal replacement items such as gearbox lubricant, hydraulic fluid, worn blades, or to normal deterioration of such things as belts and exterior finish, due to use or exposure.
6. To expendable or wear items such as teeth, chains, sprockets, belts, springs and other items that in the company's sole judgement is a wear item.

NO EMPLOYEE OR REPRESENTATIVE OF WORKSAVER IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY WORKSAVER'S SERVICE MANAGER, POST OFFICE BOX 100, LITCHFIELD, ILLINOIS 62056-0100.



SAFETY INSTRUCTIONS (continued)



EQUIPMENT SAFETY GUIDELINES



Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.



Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose fitting clothing or jewelry to be around moving parts.



Replace any CAUTION, WARNING, DANGER or instruction safety sign that is not readable or is missing. Location of such safety signs is indicated in this booklet. Do not paint over, remove or deface any safety signs or warning signs on your equipment. Observe all safety signs and practice the instruction on them.



Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.



Review the safety instructions with all users annually.



This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**



To prevent injury or death, use a tractor equipped with a Roll-Over Protective System (ROPS). **Keep foldable ROPS systems in "locked up" position at all times. Keep seat belt fastened.**



Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – **DON'T TRY IT.**



Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.



In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and Operation Instructions in each of the appropriate sections of the Tractor and Post Driver Manuals. Pay close attention to the Safety Signs affixed to the Tractor and the Post Driver.

SAFETY INSTRUCTIONS (continued)



OPERATIONAL SAFETY

The use of this equipment is subject to certain hazards which cannot be protected against by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using. If there is something in this manual you do not understand, ask your supervisor, or your dealer, to explain it to you.



Know your controls and how to stop the power unit and engine quickly in an emergency. **READ THIS MANUAL AND THE ONE PROVIDED WITH YOUR TRACTOR.**



Never operate the tractor and post driver until you have read and completely understand this manual, the Tractor Operator's Manual, and each of the Safety Messages found on the safety signs on the tractor and post driver.



Start tractor only when properly seated in the tractor seat. Starting a tractor in gear can result in injury or death. Do not mount or dismount the tractor while the tractor is moving. Mount or dismount the tractor only when the tractor and all moving parts are completely stopped.



Do not allow riders on the driver or tractor at any time. There is no safe place for any riders.



Do not walk or work under a raised driver ram unless it is securely blocked or held in position. Do not depend on the tractor hydraulic system to hold the driver ram in place.



Never leave post driver ram in the raised position. Always lower ram to the ground or to the transport position and install the transport lock pin before transporting or storing.



Do not operate post driver on steep hillsides. When installing posts on uneven or hilly terrain, position the tractor with the post driver uphill. This way if any movement of the tractor should occur, it will be away from the post driver operator.



Never position the post by hand. Always use Post Holder Tool or Post Holder Attachment.



Watch out for low overhead electrical wires and limbs when operating or transporting the post driver. Check clearance of doorways when entering a building.



Be sure post is cut "SQUARE" on top. Angle cut post can "KICK OUT" of driver and injure the operator.



Install transport lock pin and pin clip before transporting or storing the post driver. **NEVER INSERT FINGER IN TRANSPORT PIN HOLE TO CHECK ALIGNMENT.** Finger could be sheared off if driving ram moves.



Keep hands, feet, hair, jewelry, and clothing, away from all moving parts.



Do not operate the Post Driver without all safety shields and guards in place.

SAFETY INSTRUCTIONS (continued)



MAINTENANCE SAFETY

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.



Before working on this machine, drive to a level area, disengage the PTO, lower implement (or if working underneath, raise and block securely), shut off the engine, set the brakes, and remove the ignition keys. Remove hydraulic pressure prior to doing any maintenance. Operate the remote hydraulic control lever in and out several times to relieve hydraulic pressure.



Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.



Never work under equipment unless it is blocked securely. Never depend on hydraulic system to keep implement in raised position.



Keep all persons away from operator control area while performing adjustments, service, or maintenance.



Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.



Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.



When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.



Never use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.



Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by escaping hydraulic fluid, see a doctor at once. Gangrene and death can result. Without immediate medical treatment, serious infection and reactions can occur.



Check to ensure all safety signs are installed and in good condition.

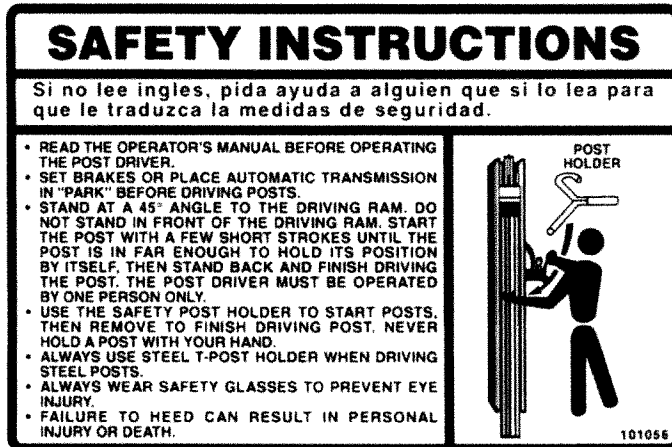
Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

SAFETY SIGNS

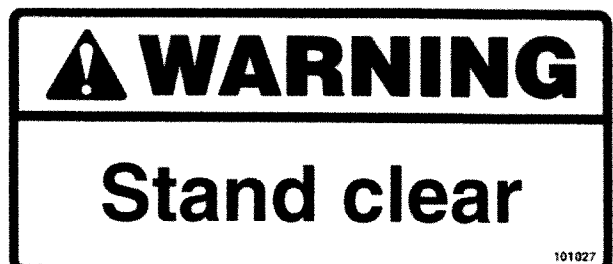
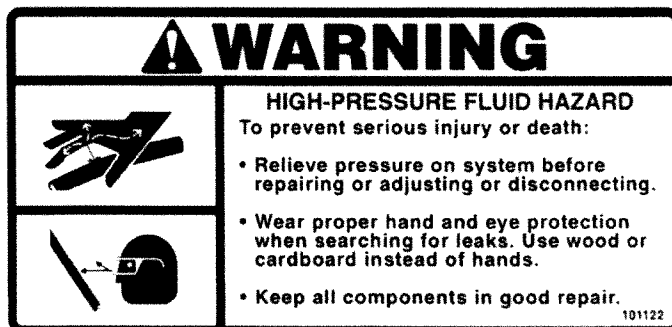
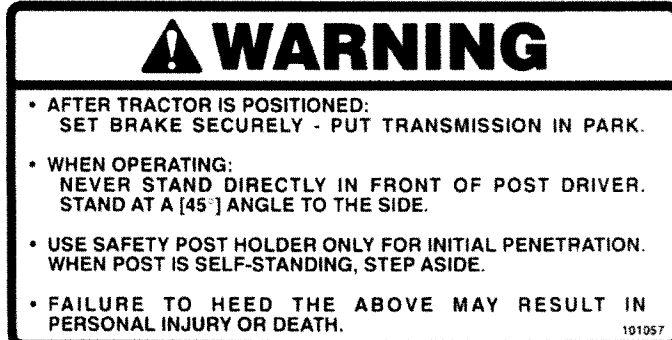


NOTE: If Safety Sign is missing or damaged, replace immediately.



**Know what's below.
Call before you dig.**

101358



Cylinder Locking Strap - Remove before using Post Driver

101202

INSTRUCTIONS (continued)

3. Attach the driving ram assembly to the base plate assembly. A chain hoist or forklift can be used to stand the driving ram assembly upright to its normal working position. Take care not to let the chain damage the hydraulic cylinder when lifting the unit. Once the ram assembly is upright, the tractor can be positioned to align the driving ram assembly to the 3 point hitch and base mounting unit. Align the top four (4) $\frac{5}{8}$ " diameter bolts already in the driving ram assembly with the four (4) holes in the base mount support channel and secure with $\frac{5}{8}$ - 11 NC nuts and lock washers provided.



WARNING

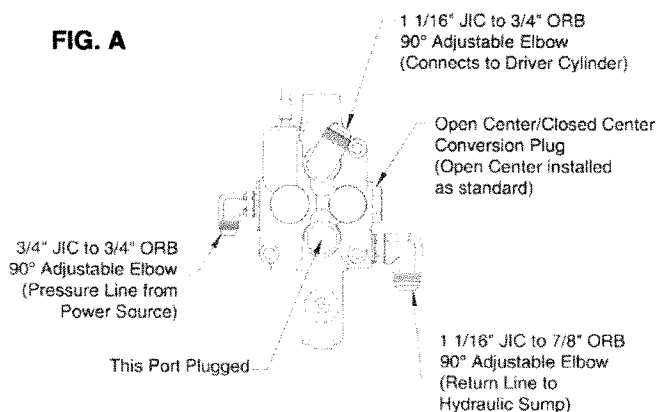
MAKE SURE THAT ALL OPERATING AND SERVICE PERSONNEL KNOW THAT IN THE EVENT HYDRAULIC FLUID PENETRATES THE SKIN, IT MUST BE SURGICALLY REMOVED WITHIN A FEW HOURS BY A DOCTOR FAMILIAR WITH THIS FORM OF INJURY, OR GANGRENE MAY RESULT.

4. Install the hydraulic package. Refer to Figure A for correct location and orientation of components.

Almost all of the hydraulic fittings on the new post drivers have O-ring type connections.

Do NOT use thread sealant on O-ring fittings.

FIG. A



Connect the $\frac{3}{4}$ " I.D. x 24" long hose from the control valve work port to the Post Driver hydraulic cylinder port.

NOTE: The port and end of the 24" hose has a NPT (pipe thread) type connection. Use a good grade of thread sealant at this connection. (Do NOT use Teflon tape.)

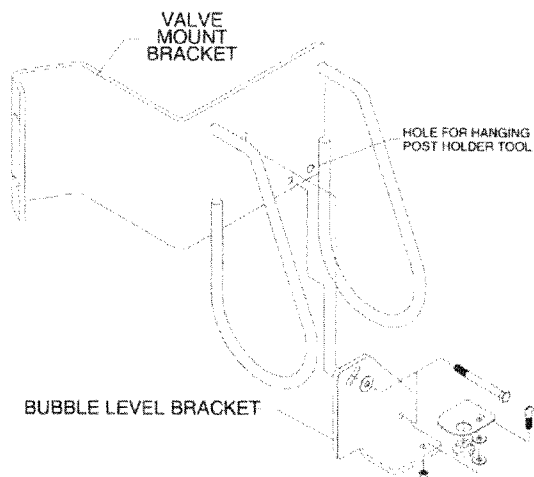
Connect the $\frac{1}{2}$ " I.D. x 60" long hose from the inlet side of the control valve to one of the tractor hydraulic remote outlets. Connect the $\frac{3}{4}$ " I.D. x 96" long return line from the control valve directly into the filler opening on the tractor's hydraulic system. On most tractors, the return line can be inserted directly into the filler opening. The hose should be securely tied in place and wrapped with a rag or duct tape to prevent contamination. Special care should be taken to remove the hose when not in use, to prevent rainwater or dirt entering the opening. Screw a $\frac{3}{4}$ " pipe cap on the hose end to keep it clean. **Special filler opening adapter fittings are available for several popular tractor models. Contact your dealer for prices and availability.**

NOTE: Due to the necessary discharge rate of hydraulic oil, the return line **CANNOT** be connected to the tractor remote outlets. To do so will restrict the drop rate of the driving ram such that it will not properly drive a post.

NOTE: Route the hoses to the tractor so that they will not be pinched or caught by the movement of the 3 pt. mount.

5. Attach the circular (bulls-eye) level as shown in the parts illustration. Adjust the alignment of the level as follows: using a 2' or longer carpenter's level, adjust the driving ram with the alignment cranks until the ram is plumb front to back and side to side. Tilt the top of the driving ram slightly to the rear to allow for recoil when the ram drops. Now adjust the valve mounting bracket and the bubble level bracket so the level bubble is centered in the level circle (see Figure B), then tighten all bolts.

FIG. B



INSTRUCTIONS (continued)

OPERATION

Observe all operating and safety instructions in this manual and those on the Post Driver before using this machine. Reviewing the trouble-shooting section may also help with machine operation.

1. Position the tractor for driving a post. The 3 pt. hitch of your tractor can be raised or lowered for various post lengths. 3 pt. hitch lift arm stabilizer bars, sway chains or sway blocks must be used to control side movement of the Driver.
2. Set the tractor brakes or place the transmission in "PARK." Raise the ram slightly and remove the transport pin. Store the pin in the additional top link pin hole of the 3 pt. mount.
3. Adjust the legs so that when the driver is at the desired height, the legs will be on the ground supporting the weight of the driver.
4. Align the driving ram vertically by use of the "bulls-eye" bubble level and the two (2) alignment cranks.
5. Raise the driving ram by lifting up on the control valve handle. **NOTE: Do not allow the ram to continually hit the urethane bumpers at the top of the carriage. Tractors with high volume hydraulic pumps will cause the ram to raise very fast.** If driving ram raises too fast, adjust the valve handle limit bolt (part # 2503020) to keep from raising the valve handle too far. Unscrewing the limit bolt shortens the stroke of the handle and slows the amount of oil raising the ram. Tighten the lock nut (part #250004) to keep limit bolt in position.
See page 29 - parts 28 and 27.
Raise the ram so that it is 18" to 24" above the top of the post. The tractor hydraulic control valve should be tied in the "ON" position so the Driver is controlled solely by the Post Driver control valve.
6. Place the post within the driving ram. The back of the post should be against the web of the I-Beam and centered between the flanges. Stabilize the post using the "Post Holder Attachment" or the "Post Holder Tool" provided.



**SAFETY....
YOU CAN LIVE WITH!**

NOTE: The Post Holder Attachment works best with smooth sided posts. For rougher sided posts, use the Post Holder Tool to stabilize the post.



CAUTION

NEVER hold the post with your hand. Always use the post holder or the special STEEL T-POST Holder when driving steel T-posts. Order part #814490.

7. Stand at a 45° angle to the post – not directly in front of the post. Be sure all bystanders are at a safe distance from the Post Driver.
8. Drop the driving ram by pushing "Full Down" on the control valve handle.
9. Repeat raising and dropping the driving ram until the post is to the desired depth. Be sure the ram slide blocks are not "BOTTOMING OUT" on the urethane bumpers. Likewise, do not raise the ram to its extreme up position with each stroke. The ram should normally be raised 18" to 20" above the top of the post. Once the post is deep enough to be stable, it is no longer necessary to hold the post with the "POST HOLDER ATTACHMENT" or "POST HOLDER TOOL." Swing the Post Holder Attachment back and out of the way. Then stand back to the right of the post driver and "DRIVE" the post.
10. In dry or light rocky conditions, cutting a point on the post may be beneficial. The point should be centered on the post to prevent the post veering to one side.
11. Re-engage the transport lock pin when finished with the job.

MAINTENANCE AND ADJUSTMENTS



WARNING

Before servicing the machine, engage the parking brake or place the transmission in "Park," shut off the tractor and remove the key. Relieve all hydraulic pressure in lines.

If the machine is used in heavy duty conditions, the maintenance operations must be carried out more frequently.

Thoroughly clean the grease zerks before servicing. Dirt mixed with lubricant will rapidly wear parts and destroy bearings. Keep it clean.

Make certain the safety and instruction decals are attached to the Post Driver. If they are lost, damaged, or painted over, order replacements.

INSTRUCTIONS (continued)

MAINTENANCE AND ADJUSTMENTS (continued)

3. Remove the hydraulic cylinder from the carriage.
4. Remove the special 7/8" step nut from the cylinder rod. Use a 1 1/2" wrench on the step nut and a 5/8" wrench on the rod flats at the top of the rod.
5. Place the base end of the hydraulic cylinder in a vise, support the upper end of the cylinder and remove the aluminum cap assembly.
6. Carefully slide the aluminum cap assembly off the upper end of the cylinder rod.
7. Pull the rod from the cylinder tube.
8. Remove the nut from the lower end of the cylinder rod. The rod must be protected with leather, cardboard, or wood blocks and placed in a vise to remove the nut. Remove the rod guide.
9. **NOTE:** It is advisable to install a new rod guide and seal when rebuilding the cylinder. Inspect the cylinder rod for pits and/or rust and replace if necessary.

CAP SEAL REPLACEMENT

Tools required:

- 2 1/8" wrench or 18" crescent wrench
- Seal pick or small flat blade screwdriver
- 1 1/2" wrench or 12" crescent wrench
- 1 5/16" wrench or 12" crescent wrench
- 5/8" wrench or 12" crescent wrench
- Anti-seize thread compound

The procedure for changing the seal is as follows:

1. The driver must be connected to the tractor/skid steer for stability. The tractor engine turned off.
2. Lock the driver in the upper lock position by inserting the transport lock pin through the bottom hole of the driver ram (Photo L).
3. Remove the top lock nut from the rod using the 1 5/16" wrench and the 1 1/2" wrench on the step nut (Photo M).



PHOTO L



PHOTO M

4. Lower the cylinder with the valve (Photo N).
5. Remove the step nut from the cylinder rod using the 1 1/2" wrench and the 5/8" wrench on the rod flats (Photo O).
6. Unscrew the top of the cap from the bottom of the cap (Photo P). (2 1/8" wrench or 18" crescent wrench.)

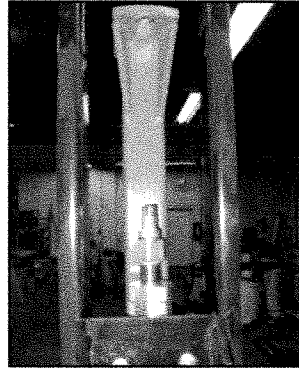


PHOTO N

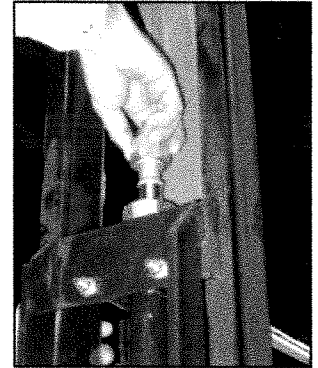


PHOTO O

7. Remove the old seal with a flat blade screw driver or seal pick.
8. Install the new seal over the rod and start one edge into the cap.
9. Carefully using a flat blade screw driver, gently work the seal into the bottom of the cap (Photo Q).

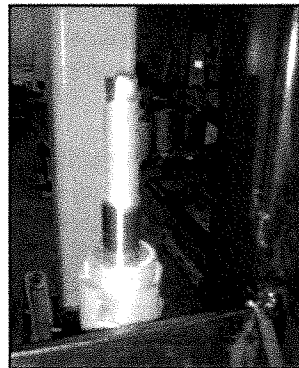


PHOTO P



PHOTO Q

10. Reinstall the top of the cap using approx. 50 FT/LB of torque.
11. Never use any type of thread sealant on the threads between the top cap and bottom part of the cap and seal assembly. This will destroy the aluminum threads when trying to remove. Thread sealant is only needed on the bottom threads of the cap to the cylinder tube weldment.
12. Reapply anti seize on threads of rod.
13. Reinstall step nut to bottom of threads on rod.
14. Pull cylinder rod up to the driver mount plate and reinstall top nut to approx. 80 FT/LB of torque.
15. The driver is now ready to drive posts.

INSTRUCTIONS (continued)

STORING THE POST DRIVER

Lower the ram to the lowest position and engage the transport lock pin. This position will have the hydraulic cylinder rod fully retracted into the cylinder and will be self-protecting.

Smear grease over the exposed portion of the plated hydraulic cylinder rod to prevent pitting and rust from forming. Also apply grease or oil to the threaded portion of the tilt adjustment cranks to help prevent rust from forming.

Be sure to cap the open return line hose end to prevent contamination during storage. Lubricate all grease fittings prior to storage.

Adjust the legs, locate the transport locking pin into the higher hole location in the ram and then adjust legs to same height.

Inside storage is preferred to prevent deterioration of the springs, hoses, etc. For safety, the Driver should be securely blocked and chained to a post or wall for stability.

Turn front to rear adjustment crank to widen the distance of the legs to the bottom of the ram. Make sure driver will be located on a solid surface and in a location away from children, animals, or traffic area.

POST DRIVER SPECIFICATIONS

	HPD-16	HPD-22Q
Maximum post size	5" x 9' **	8 ³ / ₄ " x 10' **
Impact at full stroke	32,000 lb.	80,000 lb.
Impact at half stroke	16,000 lb.	40,000 lb.
Minimum tractor size	20-22 hp*	30-35 hp
Rear hitch category	Cat. I or II	
Minimum hydraulics required	3 - 4 gpm	6 - 8 gpm
Drive cylinder size	2" x 56"	2" x 68"
Operating range (above ground) . .	50" to 116" *	50" to 128" *
Tilt adjustment – front/back	20° + (10° from vertical plus top link adjustment)	
Tilt adjustment – side/side	34° (17° from vertical – each way)	
Shipping weight	600 lb.	795 lb.

* Front weights required on small tractors. Not for subcompact tractors.

** Depends on soil type and soil condition.

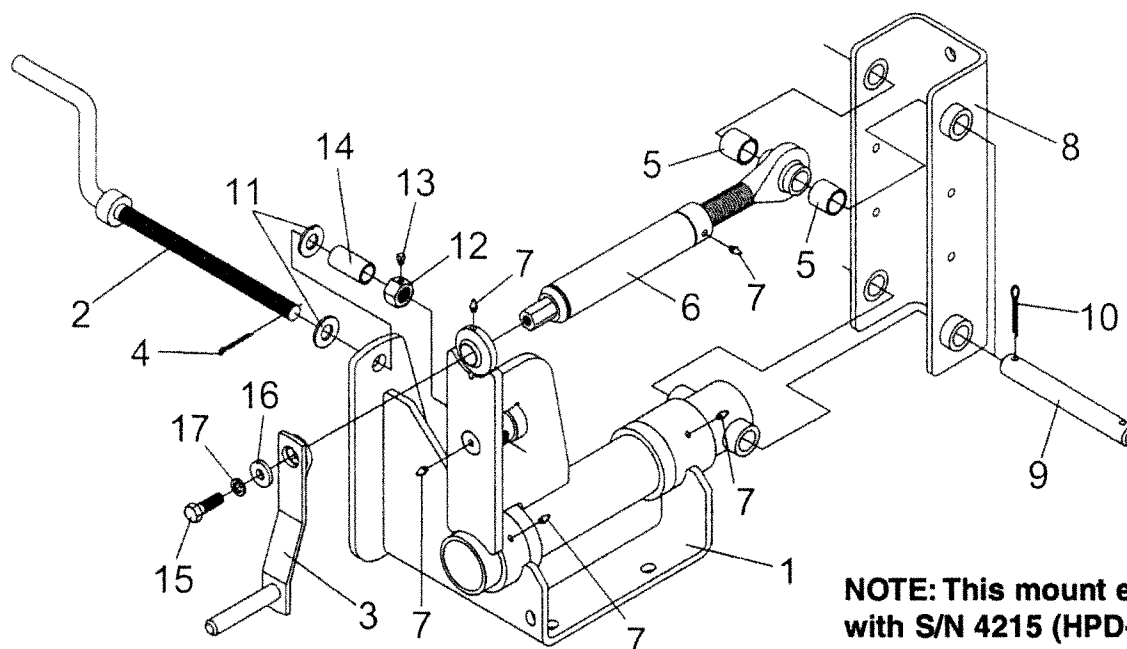
*By raising 3 pt., maximum height can be higher depending on tractor.

TROUBLE-SHOOTING GUIDE (continued)

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
POST VEERS OFF AT AN ANGLE WHILE BEING DRIVEN	1. Top of post is not cut "square," causing the post to drive at an angle.	Re-cut top of post "square."
	2. Bottom of post is cut at an angle or post is pointed off-center.	Re-cut bottom of post.
	3. Tractor 3 pt. may be moving sideways.	Install lift arm stabilizer bars, sway chains or sway blocks to limit lift arm movement.
	4. Tractor may have "Top Link Load Sensing" upper link.	Install pin to "lock out" sensing mechanism movement (usually Ford/New Holland and M-F).
	5. Tractor has moved slightly while driving post.	Always set brakes and use extra care on slopes.
	6. Post may have encountered a rock or large root.	Post may have to be relocated.
	7. Ground may be too dry or hard.	Point post or may have to wait until it rains.
HYDRAULIC OIL OVERHEATS	1. Oil level low.	Check oil level in power unit reservoir.
	2. Dirty filters.	Change oil and filters in power unit per manufacturer's recommendations.
	3. Reservoir of power unit too small.	Allow time for oil to cool down.
	4. Hydraulic valve on post driver may not be compatible with tractor hydraulic system.	See Hydraulic Valve section in this manual.
HYDRAULIC HOSE FAILURE	1. Hose being pinched.	Reroute hose and fasten out of harms way.
	2. Hoses are worn or frayed.	Replace hose.
	3. Hydraulic relief pressure on power unit too high.	Adjust relief pressure (if possible) or change power unit.
OIL SQUIRTS OUT OF RETURN LINE ORIFICE IN TRACTOR	1. Return line not properly secured with wire or tarp strap.	Secure return line properly.
	2. Wrong tractor return line opening is being used.	Check tractor for alternate return opening.
	3. Wrong return line fitting being used.	Check and get correct fitting.
	4. Tractor has high volume pump.	Reduce tractor engine rpm.

ADJUSTABLE MANUAL BASE MOUNTING PACKAGE

PARTS DRAWING & LIST



NOTE: This mount effective with S/N 4215 (HPD-16), S/N 4825 (HPD-20), and S/N 5001 (HPD-22Q).

Ref. No.	Part No.	Description	No. Req'd.
1	815252	Manual Base Mount Weldment	1
2	814450	Side Tilt Crank (3/4"-10NC Threads)	1
3	815263	Handle Weldment, Fore & Aft	1
4	2504015	Cotter Pin 1/8" x 1 1/2"	1
5	815275	Spacer, Fore & Aft Link	2
6	815266	Barrel Weldment	1
7	2504049	Drive Zerk 5/16"	5
8	814460	Support Channel Weldment	1
9	830309	Lift Pin 1" Dia. x 8" Lg.	2
10	2504068	Cotter Pin 1/4" x 1 3/4"	4
11	2504149	Machinery Bushing 3/4" ID x 10 Ga.	2
12	814425	Nut 3/4"-10NC Full Hex (Drilled & Tapped)	1
13	2503196	Set Screw 1/4"-20NC x 1/4"	1
14	590027	Toplink Bushing (AK-54)	1
15	2503350	Bolt 1/2"-13NC x 1 1/2" Hex Head (Coated)	1
16	2501039	Washer 1/2" Flat, Extra Thick	1
17	2502002	Washer 1/2" Spring Lock	1

HPD-16 PARTS LIST

Ref. No.	Part No.	Description	No. Req'd.
1	814401	Driving Ram Weldment	1
2	814551	Guide Block	4
3	2504132	Machinery Bushing 1"ID x 18 Ga.	Var.
4	2504110	Machinery Bushing 1"ID x 14 Ga.	Var.
5	2504049	Drive Zerk 5/16"	2
6	814411	Carriage Weldment	1
	815165	Complete Cylinder Assembly (Items #7 thru #14)	1
7	814417	Tube, Hydraulic Cylinder	1
8	815166	Rod, Hydraulic Cylinder	1
9	814422	Rod Guide, Hydraulic Cylinder	1
10	815170	End Cap Assembly w/Rod Seal	1
11	814523	Rod Seal (only)	1
12	2500054	Nut 1/2"-13NC Stamplock Hex	1
13	815205	Special Step Nut 7/8"-14NF	1
14	2500017	Nut 7/8"-14NF Full Hex	1
16	814426	Bumper, Urethane	4
17	2502008	Washer 3/8" Springlock	4
18	2500004	Nut 3/8"-16NC Full Hex	4
19	814427	Transport Lock Weldment	1
20	814430	Lower Spring Bracket	1
21	2503198	Bolt 3/8"-16NC x 2 1/2" Gr. 8 Full Thread	2
22	2500055	Nut 3/8"-16NC Stamplock Hex	5
23	814431	Spring, Driving Ram	2
24	814432	Clip, Spring	4
25	814581	Pipe, Plastic Stabilizing	2
26	814433	Rubber Guard	1
27	814629	Guard Retainer	1
28	2503266	Bolt 5/16"-18NC x 1 1/4" Carriage Head	4
29	2500011	Nut 5/16"-18NC Full Hex	4
30	2502011	Washer 5/16" Springlock	4
31	2501012	Washer 5/16" Flat	4
32	814488	Pin, Transport Lock	1
33	590188	Hair Clip Pin 5/32" (AK-2705)	1
34	814408	Upper Spring Bracket	1
35	2503201	Bolt 3/8"-16NC x 2 1/4" Gr. 5 Hex Head	1
36	2501004	Washer 3/8" Flat	1
38	814476	Post Holder w/Handle	1
39	2504129	Handle, Post Holder	1
40	2502007	Washer 5/8" Springlock	6
41	2500013	Nut 5/8"-11NC Full Hex	6
42	101056	Safety Sign - Safety Instructions	1
43	101057	Safety Sign - Warning (Set Brake)	1
44	101058	Safety Sign - Warning (Avoid Injury)	1
45	101078	Safety Sign - Caution (Safety Glasses)	1
46	101027	Safety Sign - Warning (Stand Clear)	1
48	101080	Safety Sign - Notice (1/2 Turn Loose)	1
49	101122	Safety Sign - Warning (Hi-Pressure)	1
50	101358	Safety Sign - 811 (Know what's below)	1
51	101318	Safety Sign - Do Not Raise	1
52	101319	Safety Sign - Red Line	2
53	815277	Holder, Limit Decal	1
54	2503038	Bolt 5/16"-18NC x 1" Hex Head Gr. 2	2
55	2500046	Nut 5/16"-18NC Hex Nylock	2

HPD-22Q PARTS LIST (*ALSO FITS HPD-20)

Ref. No.	Part No.	Description	No. Req'd.
1	815242	Driving Ram Weldment	1
2	814549	Guide Block	* 4
3	2504132	Machinery Bushing 1"ID x 18 Ga.	* Var.
4	2504110	Machinery Bushing 1"ID x 14 Ga.	* Var.
5	2504049	Drive Zerk 5/16"	* 2
6	815235	Carriage Weldment	1
	815240	Complete Cylinder Assembly (Items #7 thru #14)	1
7	815239	Tube, Hydraulic Cylinder	1
8	815204	Rod, Hydraulic Cylinder	* 1
9	814422	Rod Guide, Hydraulic Cylinder	* 1
10	815170	End Cap Assembly w/Rod Seal	* 1
11	814523	Rod Seal (only)	* 1
12	2500054	Nut 1/2"-13NC Stamplock Hex	7
13	815205	Special Step Nut 7/8"-14NF	* 1
14	2500017	Nut 7/8"-14NF Full Hex	* 1
16	814426	Bumper, Urethane	* 4
17	2502008	Washer 3/8" Springlock	4
18	2500004	Nut 3/8"-16NC Full Hex	4
19	815231	Transport Lock Weldment	1
20	815234	Spring Assembly for HPD-22 Q Only	2
21	2503264	Bolt 1/2"-13NC x 3 1/2" Hex Head Gr. 5	2
22	815246	Mount, Vibration - w/Washer	4
23	2501003	Washer 1/2" Flat	2
24	814533	Rubber Guard	* 1
25	814626	Guard Retainer	* 1
26	2503266	Bolt 5/16"-18NC x 1 1/4" Carriage Head	6
27	2500011	Nut 5/16"-18NC Full Hex	6
28	2502011	Washer 5/16" Springlock	6
29	2501012	Washer 5/16" Flat	4
30	814536	Pin, Transport Lock	* 1
31	590188	Hair Clip Pin 5/32" (AK-2705)	* 1
32	814543	Cylinder Stabilizer Strap	* 1
33	814476	Post Holder w/Handle	* 1
34	2504129	Handle, Post Holder	* 1
35	2502007	Washer 5/8" Springlock	6
36	2500013	Nut 5/8"-11NC Full Hex	6
37	101056	Safety Sign - Safety Instructions	* 1
38	101057	Safety Sign - Warning (Set Brake)	* 1
39	101058	Safety Sign - Warning (Avoid Injury)	* 1
40	101078	Safety Sign - Caution (Safety Glasses)	* 1
41	101027	Safety Sign - Warning (Stand Clear)	* 1
42	101318	Safety Sign - Do Not Raise	1
43	101319	Safety Sign - Red Line	2
44	101122	Safety Sign - Warning (Hi-Pressure)	* 1
45	101358	Safety Sign - 811 (Know what's below)	* 1

HYDRAULIC CONTROL VALVE AND MOUNTING BRACKET PARTS LIST

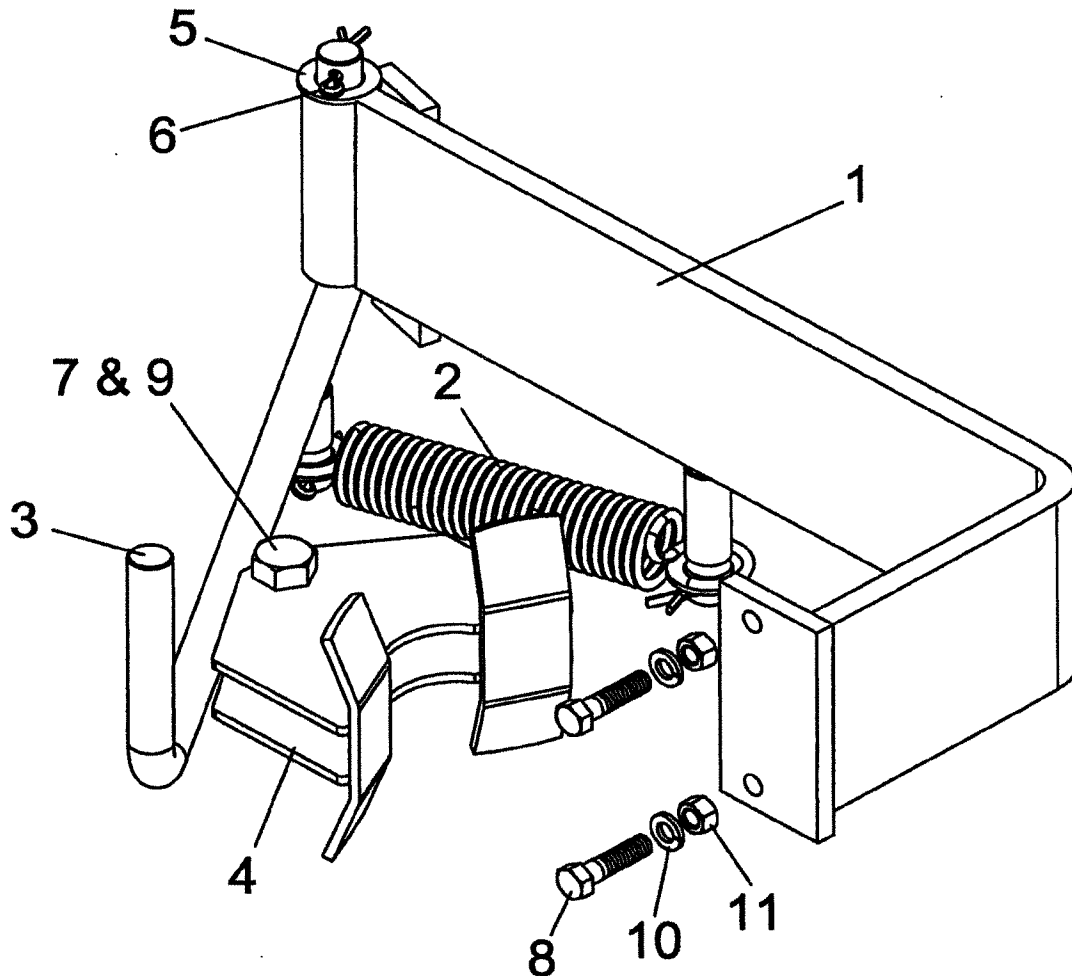
Ref. No.	Part No.	Description (* ALSO FITS HPD-20)	No. Req'd.
1	815080	Valve, Hydraulic (Nimco)	1
2	2505743	Hose, Cylinder 3/4" ID x 24" Double Braid *	1
3	2505744	Hose, Pressure 1/2" ID x 60" Double Braid *	1
4	2505742	Hose, Return 1" ID x 96" Single Braid *	1
5	2505750	Elbow, 1 1/16"-12 JIC to 7/8"-14 O-Ring *	1
6	2505737	Elbow, 3/4"-16 JIC to 3/4"-16 O-Ring *	1
7	2505749	Elbow, 1 1/16"-12 JIC to 3/4"-16 O-Ring	1
8	814647	Bracket, Valve Mount (Nimco)	1
9	814643	Plate, Level Mount *	1
10	2503020	Bolt 3/8"-16NC x 1 1/4" Hex Head Gr. 2	2
11	2502008	Washer 3/8" Springlock	2
12	2500004	Nut 3/8"-16NC Full Hex	2
13	2501004	Washer 3/8" Flat	1
14	2503114	Bolt 5/16"-18NC x 3" Hex Head Gr. 2	2
15	2502011	Washer 5/16" Springlock	2
16	2501012	Washer 5/16" Flat	1
17	2500011	Nut 5/16"-18NC Full Hex	2
18	814486	Level, Bubble	1
19	2500006	Nut 1/4"-20NC Nylock Hex	1
	814496	Return Adapter Assembly (Includes #20-#22) *	1
20	814498	Center Tube *	1
21	2504139	Elbow 3/4" NPT 90° Black *	1
22	815100	Adapter Shield *	1
23	815081	Open Center Plug (Nimco)	1
24	815082	Closed Center Plug (Nimco)	1
25	815083	Plug, 3/4"-16 O-Ring (SAE 8) (Nimco)	1
26	815087	Handle, Valve (Nimco)	1
27	2500088	Nut, M8 Hex	2
28	2503296	Screw, Limit M8 x 25 Socket Head Gr. 8.8	1
29	815103	Rubber Boot (Nimco)	1
30	2503337	Screw, M5m x 0.8 x 16mm Socket Head Gr. 12.9	2
31	815089	Valve Operator (Includes #27 - #30) (Nimco)	1
32	2502023	Washer, External Star 8mm	1
33	815086	(Option) Power Beyond Adapter - 1.415 Hex AF	1
34	815209	Plate, Level Clamp	1
35	2503009	Bolt 1/4"-20NC x 1" Round Head	1
36	2501006	Washer 1/4" Medium Flat	2

CHIEF HYDRAULIC CONTROL VALVE & MOUNTING BRACKET PARTS LISTS

(Drawing on Page 29)

Ref. No.	Part No.	Description	No. Req'd.
1	814120	Valve, Hydraulic (Chief)	1
2	2505743	Hose, Cylinder 3/4" ID x 24" Double Braid	1
3	2505744	Hose, Pressure 1/2" ID x 60" Double Braid	1
4	2505742	Hose, Return 1" ID x 96" Single Braid	1
5	2505823	Elbow, 1 1/16"-12 JIC to 1 1/16"-12 O-Ring	1
6	2505748	Elbow, 3/4"-16 JIC to 7/8"-14 O-Ring	1
7	2505750	Elbow, 1 1/16"-12 JIC to 7/8"-14 O-Ring	1
8	814137	Bracket, Valve Mount (Chief)	1
9	814135	Plate, Level Mount	1
10	2503020	Bolt 3/8"-16NC x 1 1/4" Hex Head Gr. 2	2
11	2502008	Washer 3/8" Springlock	2
12	2500004	Nut 3/8"-16NC Full Hex	2
13	2501004	Washer 3/8" Flat	1
14	2503114	Bolt 5/16"-18NC x 3" Hex Head Gr. 2	2
15	2502011	Washer 5/16" Springlock	2
16	2501012	Washer 5/16" Flat	1
17	2500011	Nut 5/16"-18NC Full Hex	2
18	814486	Level, Bubble	1
19	2500006	Nut 1/4"-20NC Nylock Hex	1
	814496	Return Adapter Assembly (Includes #20-#22)	1
20	814498	Center Tube	1
21	2504139	Elbow 3/4" NPT 90° Black	1
22	815100	Adapter Shield	1
23	814121	Open Center Plug (Chief)	1
24	814122	Closed Center Plug (Chief)	1
25	814123	Plug, Valve Body (Chief)	1
26	814124	Handle, Valve (w/Nut) (Chief)	1
27	2500004	Nut 3/8"-16NC Full Hex	1
28	2503020	Limit Bolt 3/8"-16NC x 1 1/4" Hex Head Gr. 2	1
29	814125	Rubber Boot (Chief)	1
30	814126	Valve Operator (Chief)	1
31	815209	Plate, Level Clamp	1
32	2503009	Bolt 1/4"-20NC x 1" Round Head	1
33	2501006	Washer 1/4" Medium Flat	2

POST HOLDER ATTACHMENT PARTS DRAWING & LIST



Ref. No.	Part No.	Description	No. Req'd.
1	815121	Mount Weldment, Post Holder	1
2	815129	Spring, Extension	1
3	815131	Arm Weldment	1
4	815141	Guide Weldment	1
5	2501032	Washer 3/4" SAE Flat	3
6	2504121	Cotter Pin 3/16" x 1 1/2"	3
7	2503059	Bolt 5/8"-11NC x 2 1/4" Hex Head Gr. 2	1
8	2503006	Bolt 3/8"-16NC x 1 1/2" Hex Head Gr. 5	2
9	2500041	Nut 5/8"-11NC Hex Nylock	1
10	2502008	Washer 3/8" Springlock	2
11	2500004	Nut 3/8"-16NC Full Hex	2