Operator's Manual

INSTALLING INSTRUCTIONS

Hydraulic Unit

(395 009 R92)

for

INTERNATIONAL®

CUB CADET®

102, 104, 105, 122, 123, 124 and 125

Tractors

INTERNATIONAL HARVESTER COMPANY
401 NORTH MICHIGAN AVE. CHICAGO, ILLINOIS 60611, U.S.A.

TO THE OWNER

We are glad to welcome you as an owner of a product of International Harvester Company. You have a fine product, designed and built to give you many years of efficient operation. The way you operate and the care you give this product will have much to do with its successful performance.

To help you operate your equipment with utmost efficiency we have provided this operator's manual. It has been carefully prepared to give you the benefit of many years of experience gained in field testing and normal usage of this and similar products.

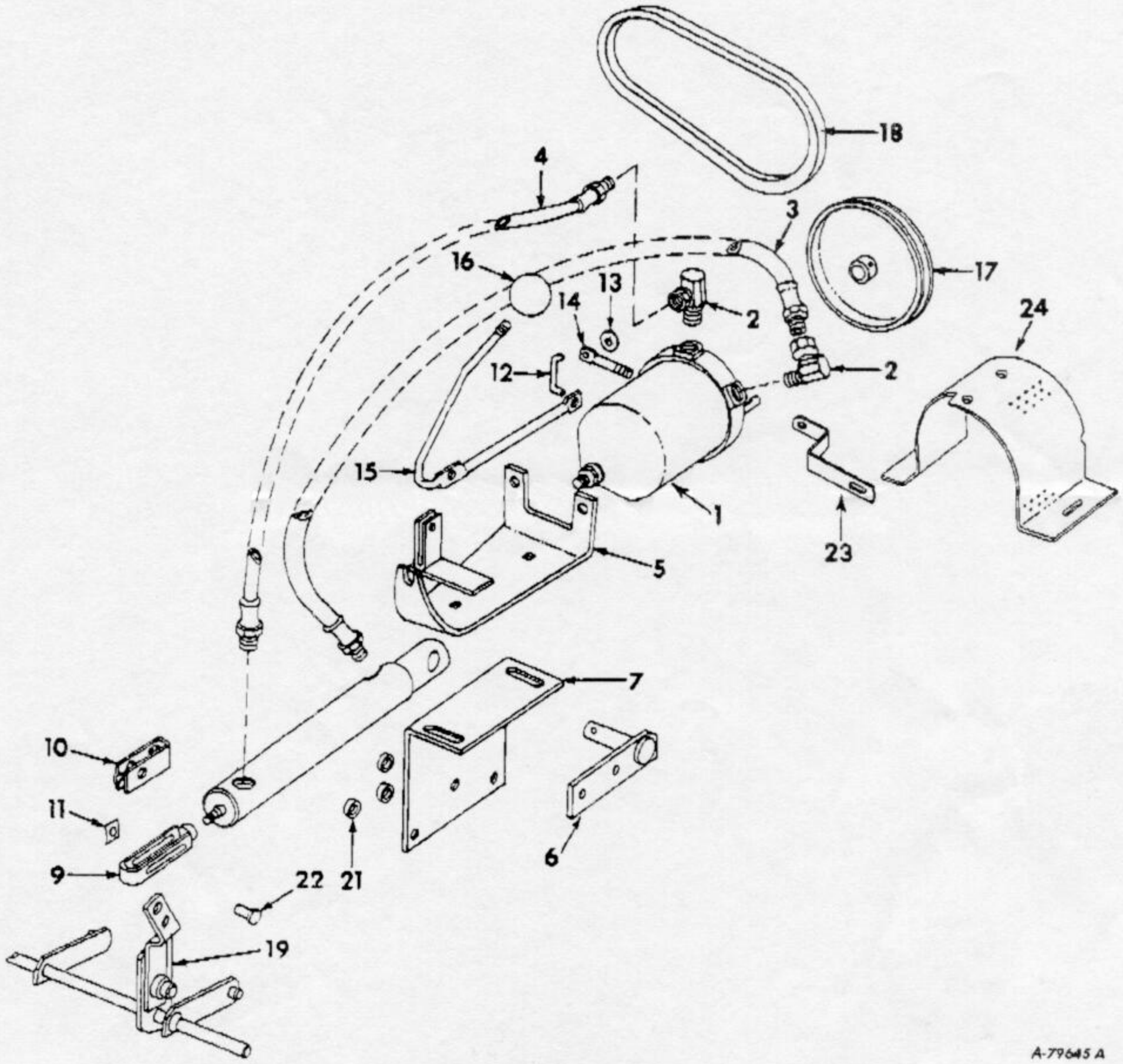
We urge you to study this manual so you will understand your new equipment thoroughly before operating it. We also urge you to take care of your manual so you will have it available for reference when you need it.

If your manual is lost or destroyed, a new copy may be ordered from the International Harvester dealer at a nominal price. Your International Harvester dealer will also be glad to answer any questions you may have on the operation or care of this product.

ORDERING NUMBERS

395 009 R92 - Hydraulic Unit for International Cub Cadet 102, 104, 105, 122, 123, 124 and 125 Tractors

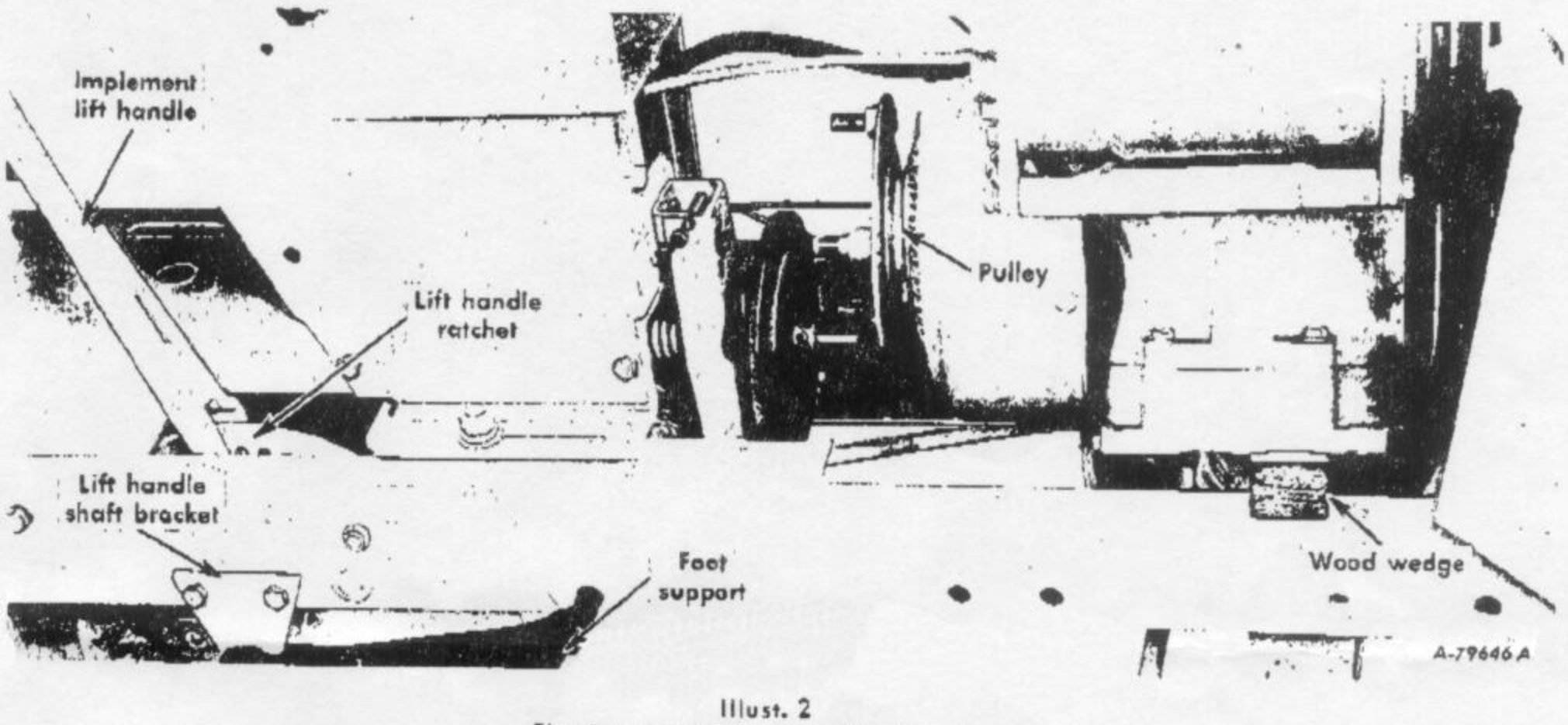
Note: When the Hydraulic Unit is used in conjunction with the 42-inch Blade Attachment, the following parts must be ordered from parts stock. Order, one 27 934 A spacer (1/2 x 1-1/32-inch pipe); one 179 888 - 1/2 x 13 x 1-7/8-inch hex-hd. capscrew and one 103 323 - 1/2-inch medium lock washer.



Illust. 1
Exploded view of Hydraulic Unit

Ref. No.	Description	Ref. No.	Description
1	Hydraulic pump.	13	Actuator control rod push-on type nut (2).
2	90-degree union fitting (2).	14	Pump spool extension.
3	Hydraulic hose - 9 inches long.	15	Control lever rod.
4	Hydraulic hose - 14 inches long.	16	Control lever rod knob.
5	Hydraulic pump mounting bracket.	17	Driven pulley.
6	Hydraulic cylinder support bracket.	18	Drive pulley belt.
7	Frame mounting bracket.	19	Lift arm.
8	Hydraulic cylinder.	20	Dowel pin.
9	Hydraulic cylinder end clevis.	21	Frame mounting bracket spacer (3).
10	Cylinder end clevis rivet locking clip.	22	Flat head rivet.
11	Locking clip push-on type nut.	23	Support arm
12	Hydraulic pump actuator control rod.	24	Clutch shield

DESCRIPTION



Illust. 2
Showing parts to be removed and engine dislodged for installing drive belt.

The hydraulic unit system is designed to give you hydraulic power with fingertip control for raising and lowering front or rear mounted equipment, eliminating the need for the manually operated implement lift handle.

This unit is a completely self-contained hydraulic gear pump with delivery of approximately 2-1/2-gallons per minute at pressures up to 400 PSI, directional control valve, and oil reservoir; with a companion hydraulic cylinder and hoses connecting the power unit to the cylinder. The unit has a built in safety valve to eliminate overloading of the hydraulic system and tractor attachments.

Note: Reference numbers in parenthesis following the description of a part in the following installing instructions are for identification purposes. See Illust. 1.

OPERATING INSTRUCTIONS

To familiarize yourself with the operation of the hydraulic unit, start the tractor engine and adjust the throttle to fast idle.

Note: A slightly sluggish action of the control lever returning to neutral may exist during the break-in period. A few hours of running will eliminate this. No adjustments are necessary.

To raise the front or rear mounted equipment move the control lever rearward until the desired height is reached, then release the lever and it will return to the center or neutral position. The equipment will "hold" in whatever position you desire depending upon when you release the control lever. To lower the equipment move the control lever forward. The lever will again return to the neutral position when you release it.

To raise or lower front or rear mounted equipment and to operate in "rigid" position, the end clevis locking clip must be in the locked position as shown in Illust. 10.

To operate equipment such as a mower in "float" position, lift the end clevis locking clip up, in the unlocked position.

TROUBLE SHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Slow action with tractor engine at operating speed.	Belt Slipping	Tighten belt to proper tension.
	Improper type of oil	Replace oil. *
	Low oil supply	Fill to proper oil level. *
Attachment not holding in raised position.	Oil leak in system	Check all hose connections.
	Improper oil	Fill system with correct oil viscosity. *
Excessive noise or chattering.	Insufficient oil	Fill with oil to its proper level. *
	Unit run at too high an r.p.m.	Reduce shaft speed to recommended speed as originally equipped.
	Improper oil	Drain and refill system with correct oil. *
Excessive Heating	Restrictions in the system, such as kinked or pinched lines	Replace defective hoses. Straighten kinked hoses and check fittings for obstructions.
	Insufficient oil	Fill to proper oil level. *

* Refer to "Filling the hydraulic system" on page 11.

INSTALLING INSTRUCTIONS

PARTS TO BE REMOVED

Remove and discard the lift handle ratchet and spacer assembly. See Illust. 2.

If the tractor is equipped with a Three-Point Hitch, disconnect the lift link or lift bar from the lower end of the implement lift handle.

Remove the left and right foot support assemblies.

Remove the cap screws holding the lift handle shaft brackets on each side of the tractor frame (Illust. 2) and remove the lift handle and shaft assembly.

Remove the clutch shield.

PARTS TO BE REWORKED

Cut off the upper part of the lift handle as shown in reworking diagram, Illust. 3.

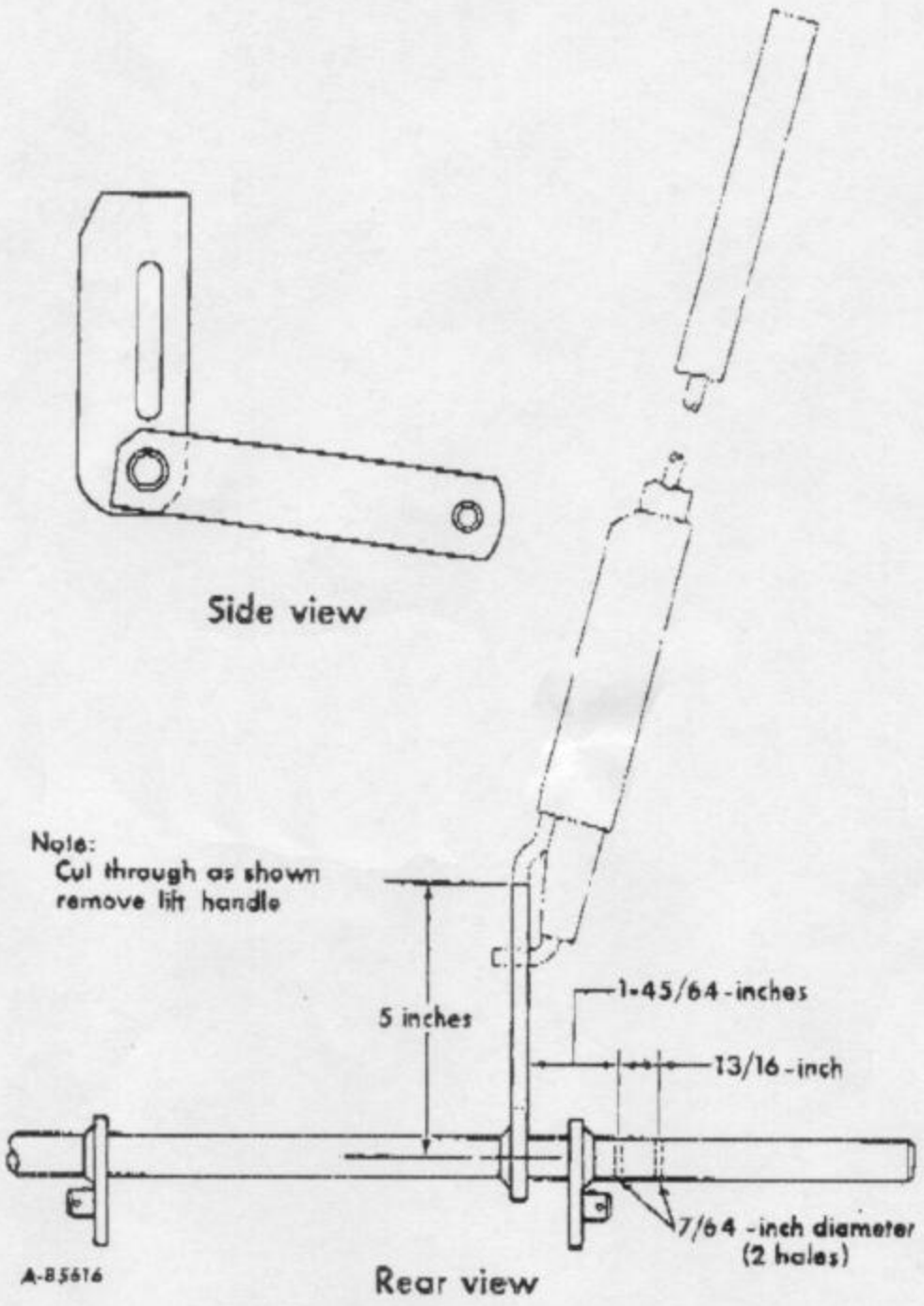
Drill two 7/64-inch holes in the lift handle shaft as shown in Illust. 3.

Assemble the new lift arm (19) at the slotted portion of the reworked lift handle and shaft assembly, using two 5/16 x 7/8-inch cap screws, internal-tooth lock washers and plain washers. See Illust. 5.

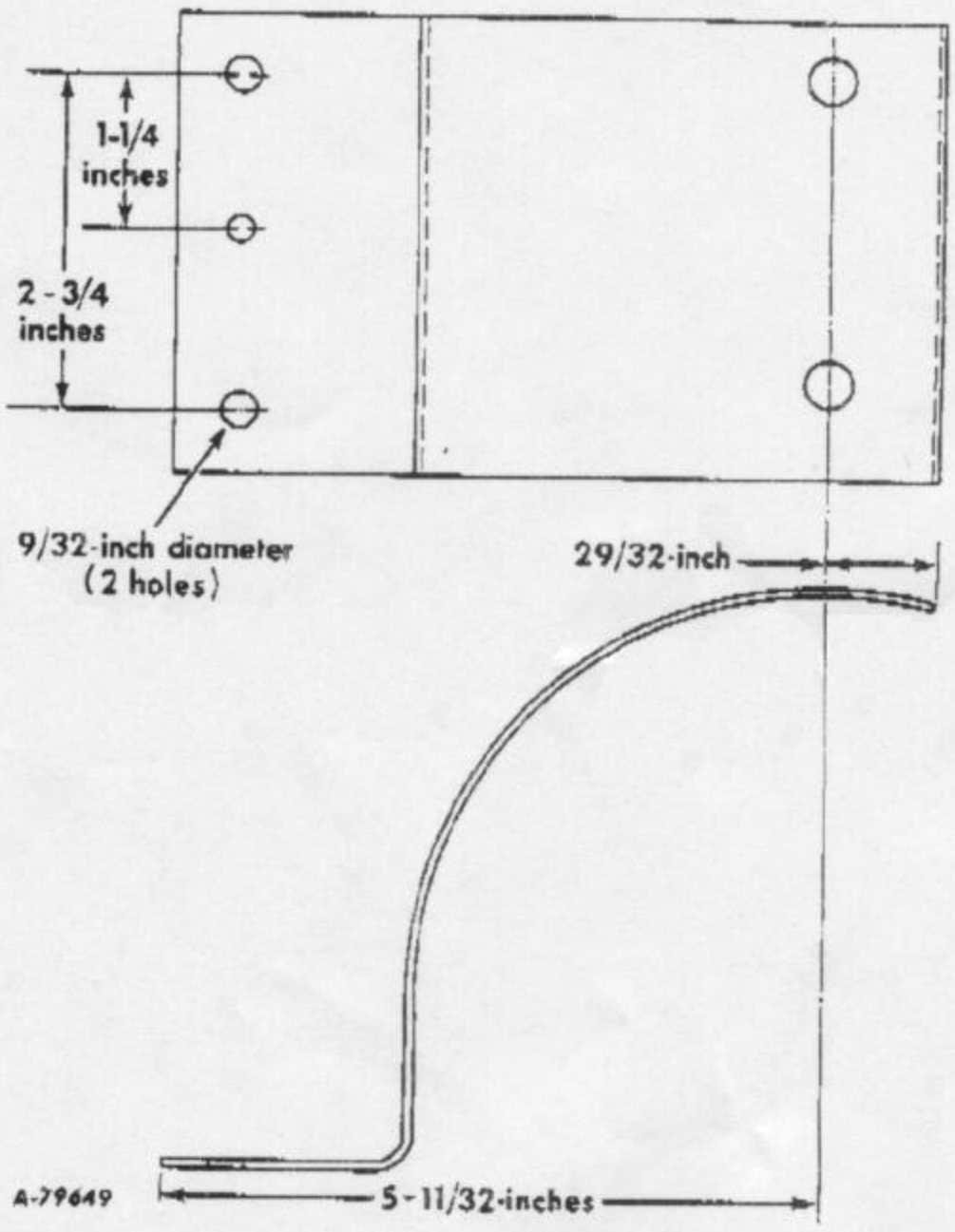
Cut off a part of the previously removed clutch shield and drill two 9/32-inch holes as shown in reworking diagram, Illust. 4.

International Cub Cadet 102, 122 and 123 Tractors: Drill three 13/32-inch holes in the right side of the frame and two 9/32-inch holes at the top of the left side of the frame as shown in reworking diagram, Illust. 6.

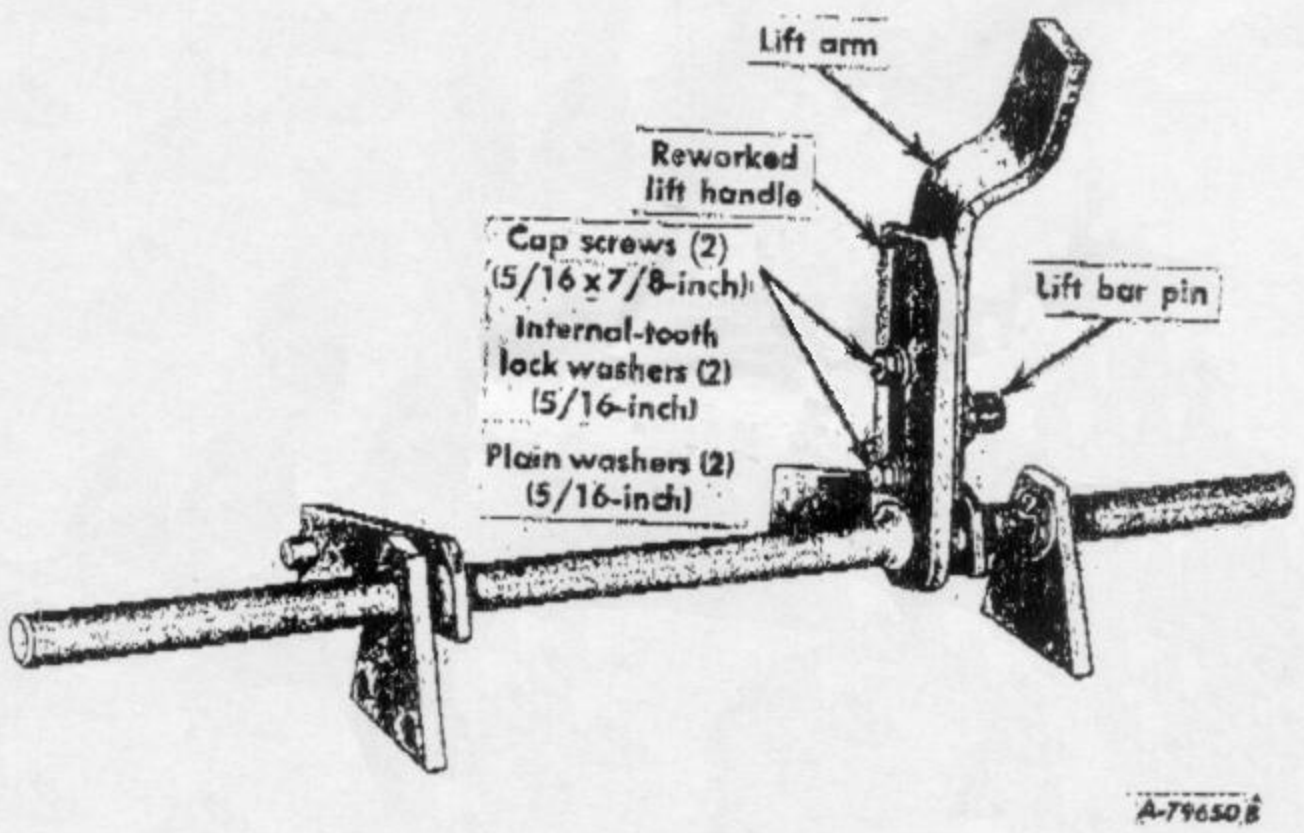
PARTS TO BE REWORKED - Continued



Illust. 3
Reworking diagram for lift handle assembly.

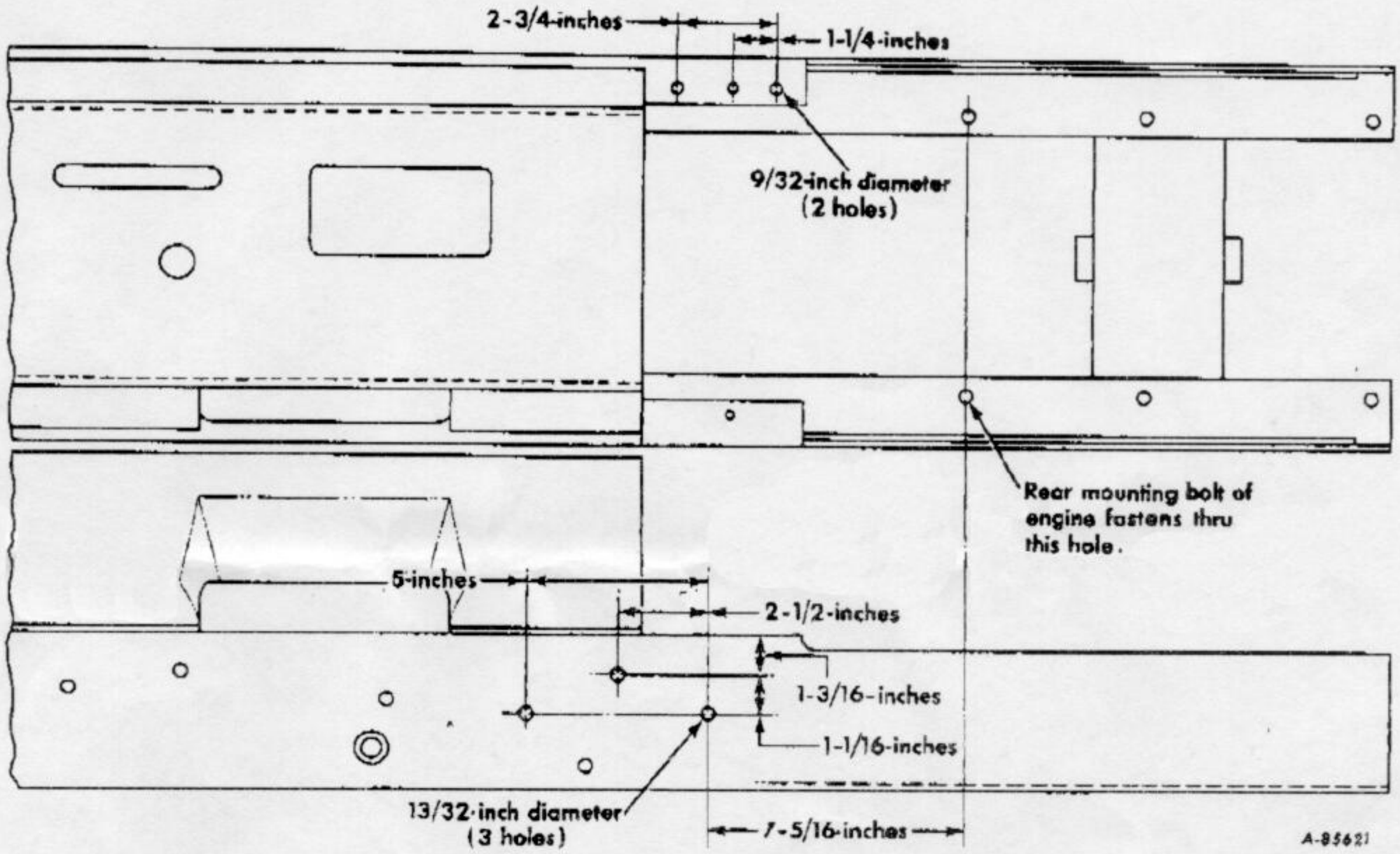


Illust. 4
Clutch shield reworking diagram.



Illust. 5
Reworked lift handle and shaft
assembly with new lift arm.

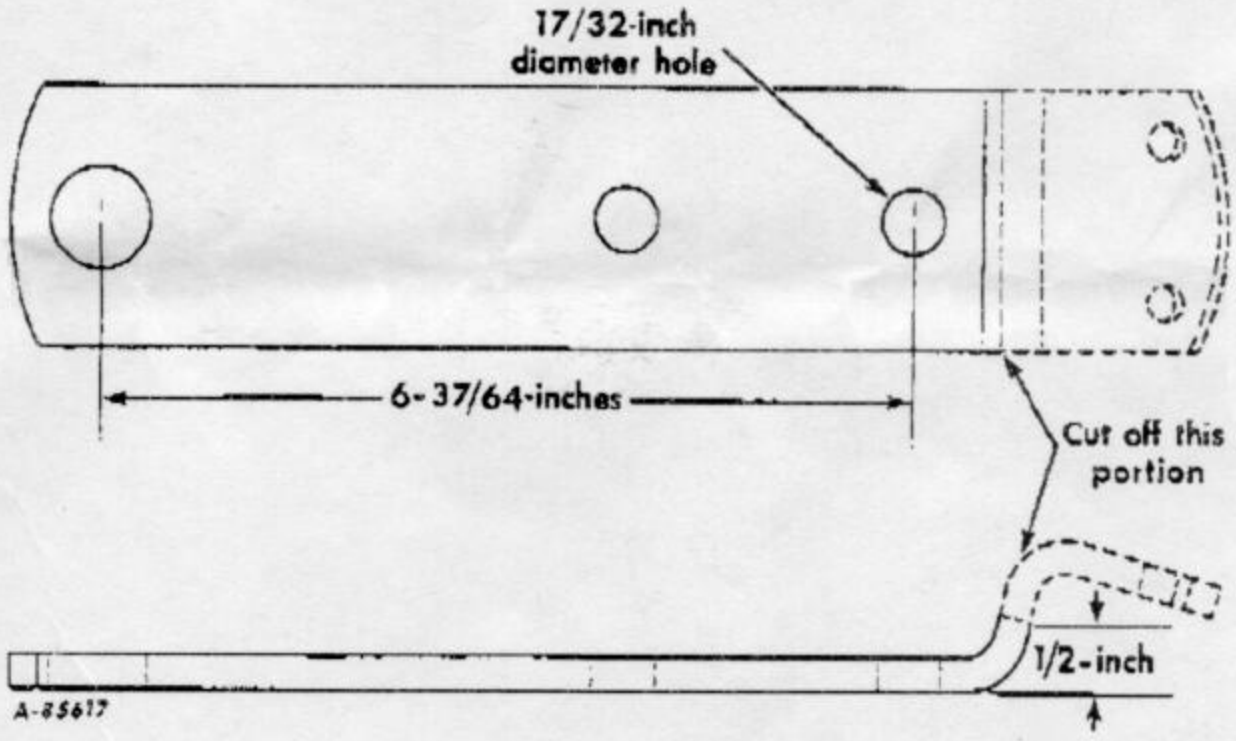
PARTS TO BE REWORKED - Continued



Illust. 6
Frame reworking diagram.
(International Cub Cadet)
(102, 122 and 123 Tractors)

Note: When the 42-inch blade with spring trip is used, it may be necessary to drill an additional 17/32-inch hole in the blade lift arm as shown in reworking diagram, Illust. 7.

The blade lift arm can then be fastened to the hydraulic lift arm (19) with a pipe spacer between the two arms.



Illust. 7
Reworking diagram for blade lift arm.

INSTALLATION

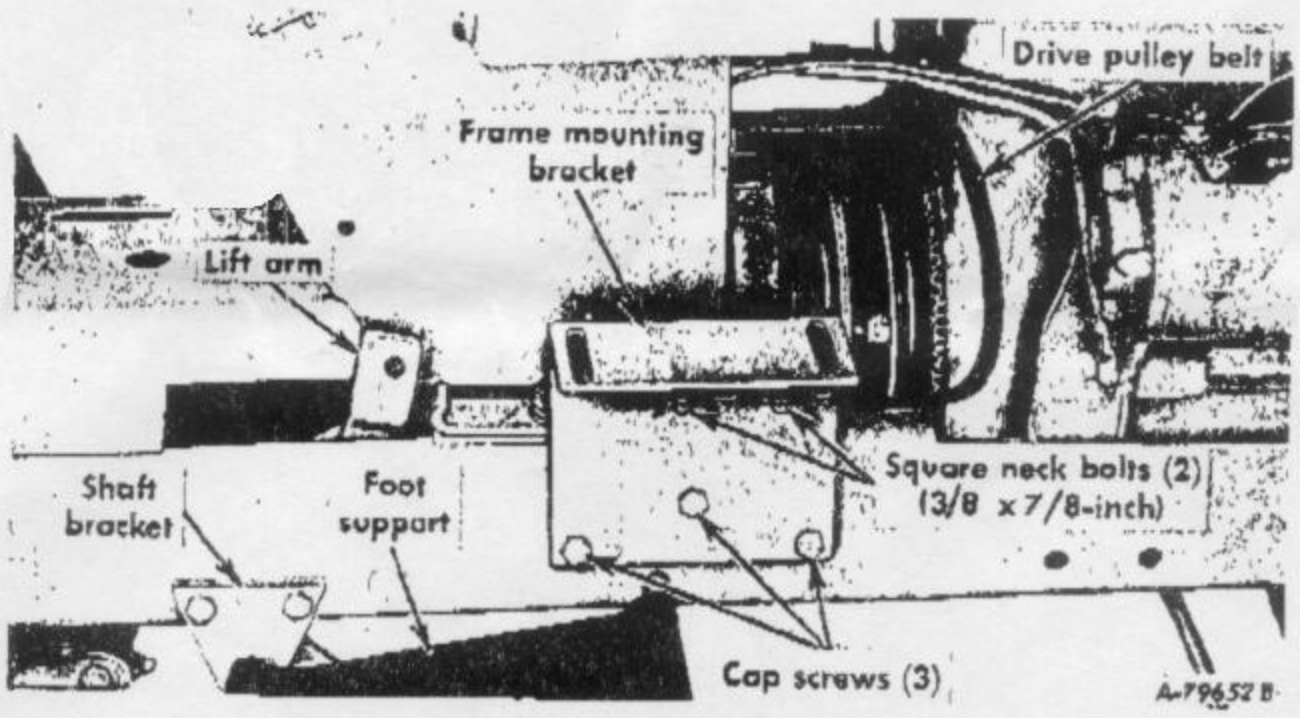
Install the reworked implement shaft and new lift arm assembly, the shaft brackets and the left and right foot support assemblies.

Note: When installing the implement shaft bracket on the right side of the tractor (Illust. 8), assemble a 13/16 x 1-1/2-inch flat washer and a 3/32 x 1-1/4-inch cotter pin on each side of the bracket at the newly drilled holes in the lift handle shaft. (See Illusts. 3 and 5).

If the tractor is equipped with a Three-Point Hitch, reinstall the lift bar on the lift bar pin on the new lift arm (19). See Illust. 5.

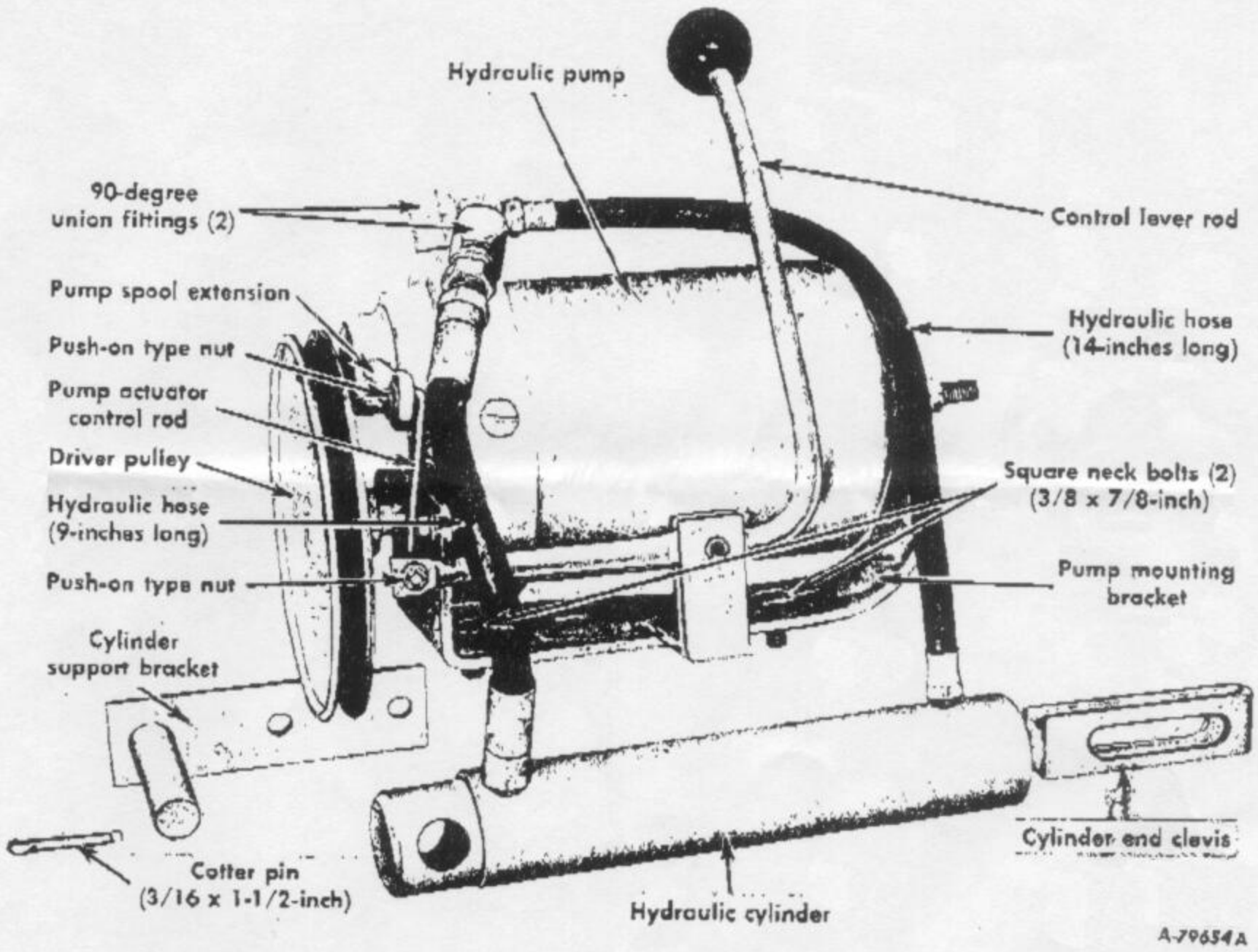
Insert the two 3/8 x 7/8-inch square neck bolts through the second and fourth square holes at the rear of the hydraulic unit frame mounting bracket. See Illust. 8. Then fasten the bracket to the tractor frame at the three newly drilled holes, using the three 3/8 x 1-1/4-inch cap screws, lock washers, and nuts. Use the three spacers (21) between the frame and the bracket and tighten the cap screws securely.

Insert the two 3/8 x 7/8-inch square neck bolts (Illust. 9) through the two square holes in the bottom of the hydraulic pump mounting bracket (5). Then assemble the hydraulic pump (1), driven pulley (17), control lever rod (15), pump spool extension (14), actuator control rod (12), 90-degree unions (2), hydraulic hoses (3 and 4), hydraulic cylinder (8), and cylinder end clevis assembly (9). See Illust. 9.



Illust. 8
New lift arm frame mounting bracket and drive pulley belt installed on the tractor.

INSTALLATION - Continued



Illust. 9
Hydraulic unit assembly.

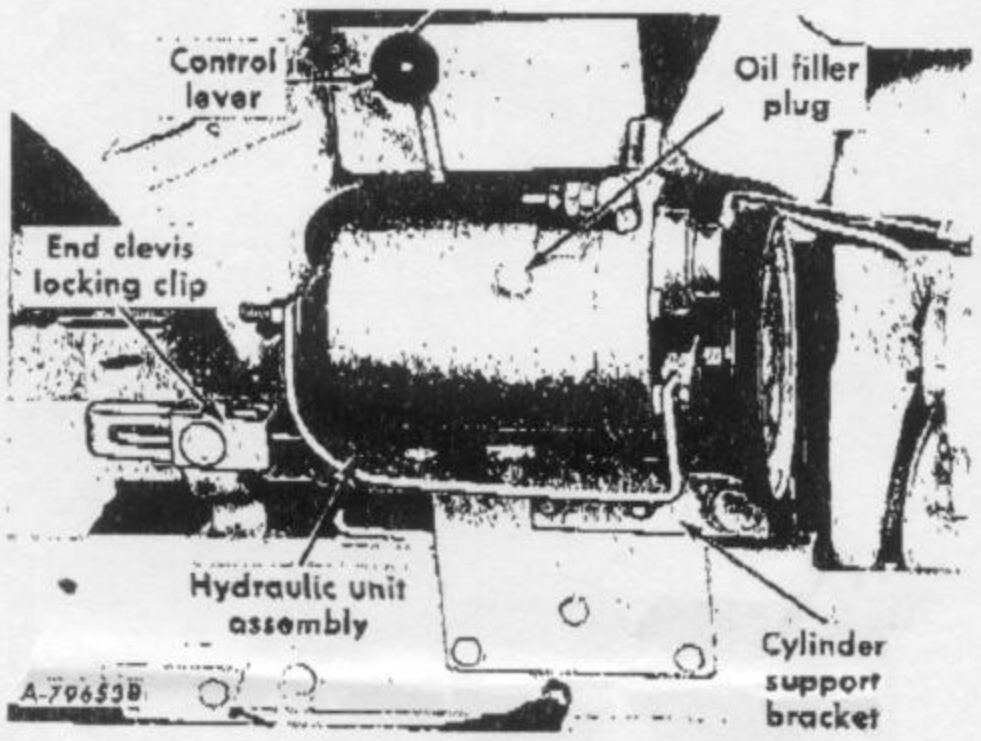
Install the complete assembly on the frame mounting bracket (on tractor) by using the two square neck bolts through the two slotted holes and fasten loosely with two 3/8-inch hex. nuts and flat washers.

Simultaneously assemble the hydraulic cylinder support bracket (6) on the two square neck bolts on the hydraulic unit frame mounting bracket (7) and assemble the hydraulic cylinder (8) on the pin on the bracket. See Illusts. 9 and 10. Secure the bracket on the two square neck bolts with two 3/8-inch hex. nuts and lock washers and secure the hydraulic cylinder on the pin on the bracket with the 3/16 x 1-1/2-inch cotter pin.

Assemble the cylinder end clevis rivet locking clip (10) to the cylinder end clevis (9) and the lift arm assembly (19), using the rivet (22) and the push-on type locking nut (11). See Illust. 10.

Remove the four engine mounting cap screws. Then lift the engine forward being careful not to damage any of the wiring harness or kink the choke and throttle cables.

INSTALLATION - Continued



Illust. 10
Hydraulic Unit assembled on the Tractor.

Note: On tractors equipped with a front power take-off clutch, the grille must be removed to provide clearance. Install the hydraulic unit pump drive pulley belt on the pulley at the rear of the engine. Then reposition the engine and fasten in place with the previously removed engine mounting cap screws.

To provide clearance between the drive belt and the cable harness, assemble the new cable clip provided, under the head of the 1/4-inch bolt on the right side of the engine. Then route the cable harness over the drive belt and through the new clip.

Now install the belt on the hydraulic pump driven pulley and pull the hydraulic pump (1) and mounting bracket (5) away from the tractor until the belt is tight enough to drive the pump driven pulley without slipping. Then secure the pump bracket at this position by tightening the two 3/8-inch hex. nuts on the square neck bolts securely.

Assemble the support arm (Illust. 1) to the hydraulic pump and secure with a 3/8 x 1-inch cap screw, 13/32 x 3/4 x 16 ga. plain washer, 3/8-inch lock washer and nut.

Install the reworked clutch shield on the left side of the tractor and secure with two 1/4 x 1/2-inch cap screws, lock washers, and nuts.

FILLING THE HYDRAULIC SYSTEM

Use IH Hy-Tran® Fluid or a good quality SAE-10W engine oil.

Remove the oil filler plug from the hydraulic pump and fill to the level of the filler plug opening then replace the plug. Capacity - approximately 3 pints.

Start the engine, adjust the throttle to fast idle and test the hydraulic system. Check for oil leaks at hose connections.

After the unit has been checked for operation, stop the engine, remove the oil filler plug and add more fluid if necessary to bring it up to the filler plug opening. Then replace the plug.

Note: Never run the hydraulic unit without hydraulic fluid. WARRANTY WILL BE VOID IF RUN WITHOUT FLUID.

MEMBER, NATIONAL SAFETY COUNCIL

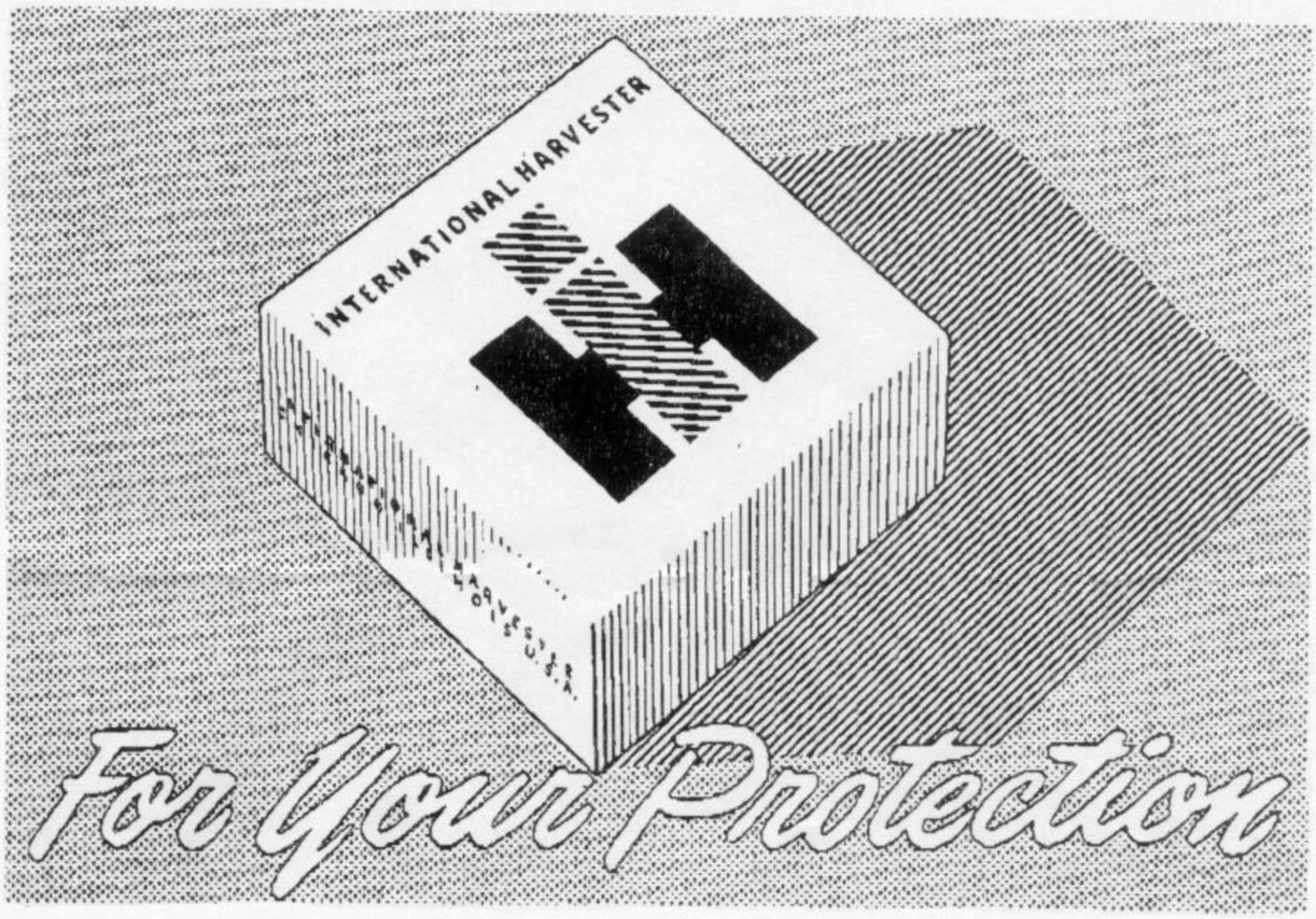
Accidents can be prevented with your help

No accident-prevention program can be successful without the wholehearted co-operation of the person who is directly responsible for the operation of equipment.

To read accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the harvest field or in the industrial plant, can be safer than the man who is at the controls. If accidents are to be prevented—and they can be prevented—it will be done by the operators who accept a full measure of their responsibility.

It is true that the designer, the manufacturer, the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that *"the best kind of a safety device is a careful operator."* We ask you to be that kind of an operator.



Always Use IH Parts

The finest engineering skill and the most advanced manufacturing methods go into all International Harvester products. Each part is built to our own high manufacturing standards. These are important things to remember when wear and tear make new parts necessary.

IH parts retain and continue the original performance you get when you choose International Harvester quality products. When replacing parts, don't handicap your equipment. For your protection, be sure to use IH SERVICE PARTS.

International Harvester dealers' bins are well stocked with IH parts and their well-equipped service departments are staffed by trained servicemen. Dealers are backed in every case by the full facilities of a nearby International Harvester District Office and Parts Depot.

When selecting new equipment, keep in mind the protective service facilities provided by the International Harvester dealer in your community.

2-6-62.

1 082 547 R4. 3-22-68—22A.

Printed in United States of America.