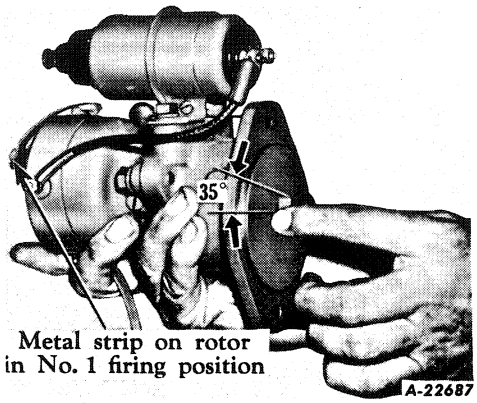


Illust. 60
Adjusting the distributor rotor and drive shaft lugs for timing the distributor.

1. Disconnect ignition switch cable "C" (*Illust. 60A*) from the ignition coil.
2. Pull secondary cable "A" (*Illust. 61*) out of the center socket on the distributor cap and remove the cap.
3. Crank the engine slowly until the distributor rotor arm is in the No. 1 firing position. *See Illust. 60A.*
4. Remove the two cap screws from the distributor drive housing flange and remove the complete unit.

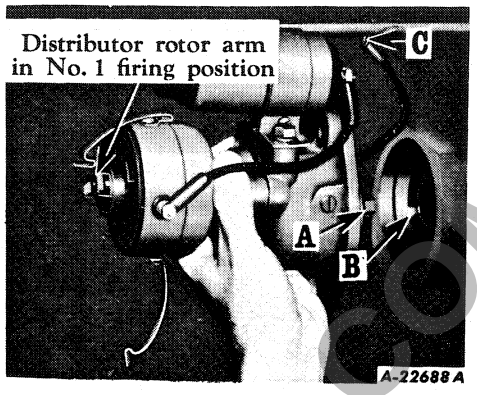
Installing the Battery Ignition Unit

Note: If the gears on the drive shaft have not been disengaged or rotated at any time after the complete unit has been removed, disregard steps 1 and 2 outlined below. Also it should not be necessary to retime the distributor to the engine as described below.

1. Place the battery ignition unit in one hand and, with the fingers of the other hand, turn the drive lugs in a clockwise direction until the rotor arm is approximately in the No. 1 firing position. *See Illust. 60.* Then continue to turn slowly and lightly until a slight resistance is felt.
2. Pull out the drive shaft to disengage the gears; then turn the shaft so drive shaft lugs "A" are approximately 35° past horizontal or approximately in the same position as drive shaft slots "B." *See Illust. 60A.* Engage the gears and press the drive shaft in with the palm of the hand.
3. Assemble the battery ignition unit and gasket and fasten with the mounting bolts and washers. Assemble the distributor cap.
4. Connect ignition switch cable "C" (*Illust. 60A*) to the negative (—) terminal on the ignition coil.

Timing the Distributor to the Engine

Loosen distributor mounting bolts "B." *See Illust. 61.* Set the engine on the top dead center of the No. 1 firing stroke by cranking the engine until the No. 1 piston (the piston next to the radiator) is on the top dead center of the compression stroke.



Illust. 60A
Assembling the battery ignition unit.

The compression stroke can be determined by removing the No. 1 spark plug, placing your thumb over the opening, and cranking the engine until an outward pressure is felt. The secondary cable should be assembled properly in the coil terminal.

Turn the ignition switch key clockwise (to the right) and note whether the charge indicator shows discharge. If the charge indicator shows discharge, the points are closed and retarding the distributor is not necessary. If the charge indicator does not show discharge, retard the distributor by turning the body about 30° in the same direction as the cam rotation.

Hold the free end of secondary cable "A" within 1/16 inch to 1/8 inch from the distributor primary terminal, as shown *in Illust. 61.* Advance the distributor by turning the distributor body slowly in a direction opposite to the cam rotation until a spark occurs.

Place the secondary cable under the distributor cap spring and place the terminal within 1/16 inch to 1/8 inch of the distributor primary terminal as shown *in Illust. 61A.* Make a final check by cranking the engine until the TDC (top dead center) mark (third notch) on the back flange of the fan drive pulley is in line with the pointer on the front crankcase cover (*see Illust. 61B*) and continuing until the spark just occurs at the gap between the secondary cable and the primary terminal. The timing marks should just be in line or slightly past top dead center (never time before top dead center). If necessary, make the required adjustment to have the spark occur as specified. Retighten the distributor mounting bolts.

If the spark plug cables have been removed for any reason, attach the cables to the spark plugs and to the terminal sockets of the distributor cap in the following order: The No. 1 cylinder spark plug cable to the socket marked "1" *in Illust. 58A.* Then, going around the distributor cap in a clockwise direction, attach the cable from the No. 3 spark plug to the next or second socket, the cable from the No. 4 spark plug to the next or third socket, and the cable from the No. 2 spark plug to the fourth or last socket. Assemble the secondary cable in the distributor cap. *See Illust. 59.*

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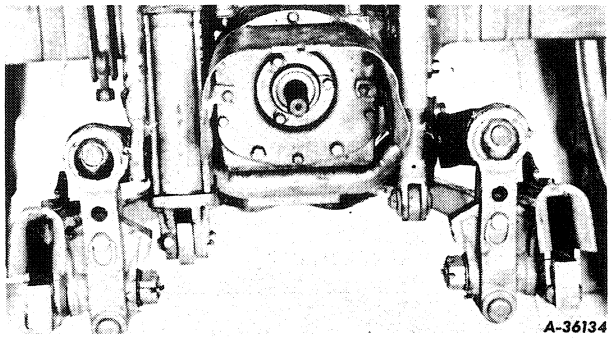
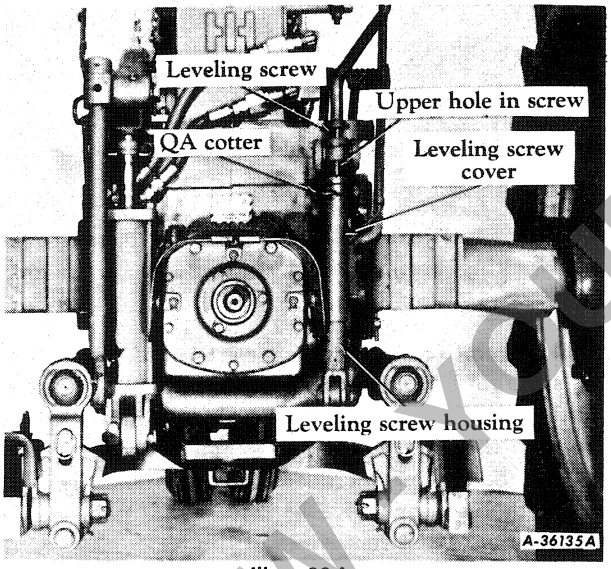


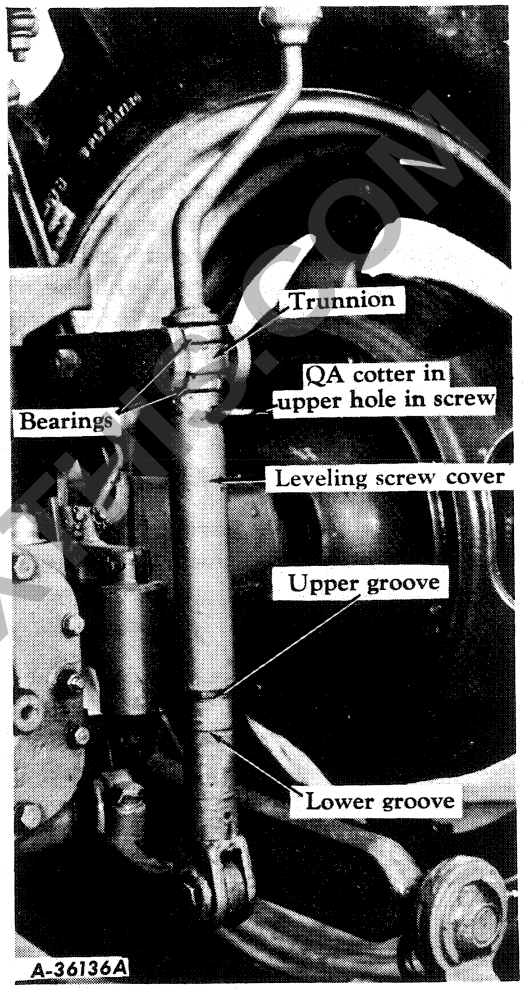
Illust. 33

Lateral links pinned rigid.



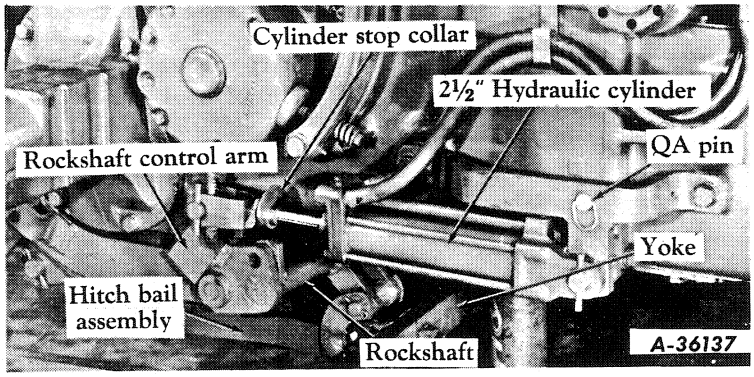
Illust. 33A

Leveling screw pinned to float.



Illust. 33B

Leveling screw pinned for controlled leveling.



Illust. 33C

Front cylinder for hydraulic depth control.

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MAINTENANCE

Clutches

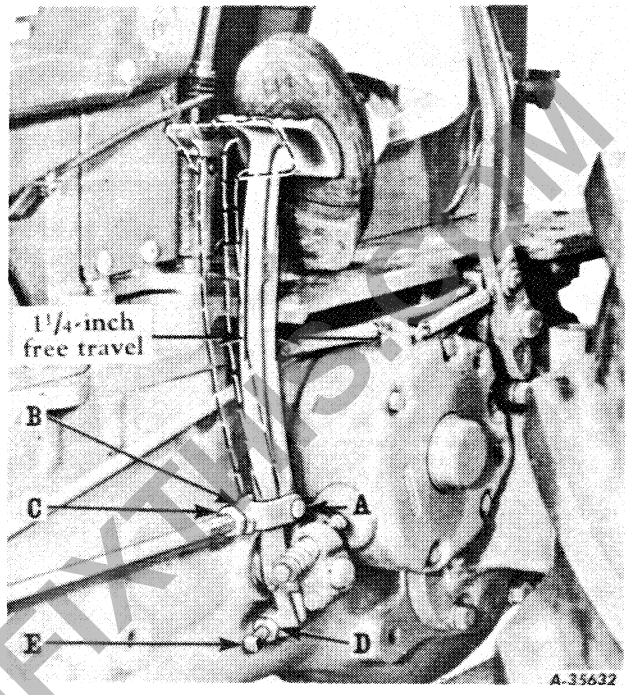
The **engine** is equipped with a spring-loaded, 10½-inch diameter, single-plate, dry-disc clutch. **Tractors with a Torque Amplifier Attachment** have an additional spring-loaded, 7-inch diameter, single-plate, dry-disc clutch. These clutches should be checked for free movement and correct clearances every 400 hours of operation.

Care of the Engine Clutch

The engine clutch is designed so that it requires a minimum of attention. It is important, however, that a clearance of approximately 3/16 inch be maintained between the engine clutch release bearing and the engine clutch release levers. Also, the clutch release shaft should be lubricated at proper intervals as instructed in the "Lubrication Guide."

Care of the Torque Amplifier Clutch

The torque amplifier clutch is designed so that it also requires a minimum of attention. It is important, however, that a clearance of approximately 3/16 inch be maintained between the torque amplifier clutch release bearing and the clutch release levers. Also, the clutch release shaft should be lubricated at proper intervals as instructed in the "Lubrication Guide."



Illust. 74

Clutch pedal free movement.

Adjusting the Engine Clutch (Tractors without Torque Amplifier)

To adjust the engine clutch, follow these instructions:

Loosen lock nut "C" and remove clevis pin "A" (*Illust. 74*). Turn clevis "B" until a free pedal movement of 1¼ inch is obtained (measured between the point of contact on the clutch pedal arm and the rear frame cover when the clutch is fully engaged). Then replace clevis pin "A" and tighten lock nut "C."

Adjust the set screw near the bottom of the clutch pedal by loosening lock nut "D" and turning set screw "E" to provide 3¾-inch full travel of the clutch pedal (*Illust. 75*) (measured between the point of contact on the clutch pedal arm and the rear frame cover). Then tighten lock nut "D."

Note: Repeat the entire adjustment when the clutch pedal has a free pedal movement of only ¾ inch.

Adjusting the Engine and Torque Amplifier Clutches (Tractors with Torque Amplifier)

To adjust the engine clutch and the torque amplifier clutch, follow these instructions:

Remove spring "M." Loosen lock nut "K," and remove clevis pin "I" (*Illust. 75*). Loosen lock nut "C" and remove clevis pin "A" (*Illust. 75*). Turn clevis "B" until a free pedal movement of 1¼ inch is obtained (measured between the point of contact on the clutch pedal arm and the rear frame cover when the clutch is fully engaged). Then replace clevis pin "A" and tighten lock nut "C."

Adjust the set screw near the bottom of the clutch pedal by loosening lock nut "D" and turning set screw "E" to provide 3¾ inches full travel of the clutch pedal (*Illust. 75*) (measured between the point of contact on the clutch pedal arm and the rear frame cover). Then tighten lock nut "D."

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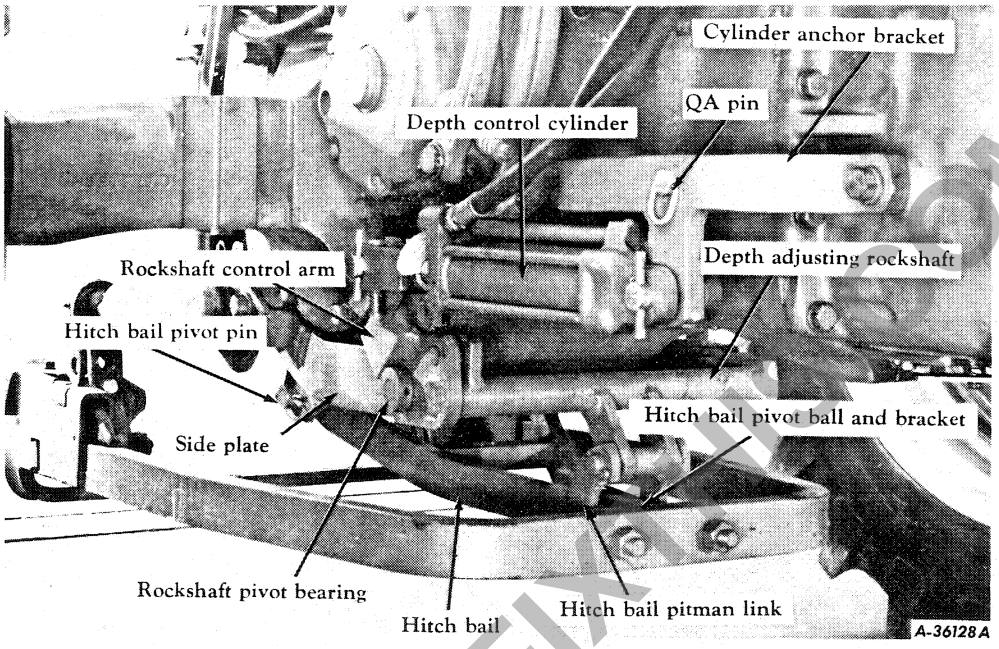


Illust. 9

Depth adjusting hitch bail assembly.

The hitch point can be adjusted vertically by means of a hydraulic cylinder (2½ x 8″ stroke) and a depth adjusting rockshaft. The hydraulic cylinder, which is anchored at the forward end to the tractor, pivots the rockshaft on the side plates. This action causes the hitch point to be raised or lowered by the hitch bail pitman straps that connect the rockshaft with the bail pivot ball.

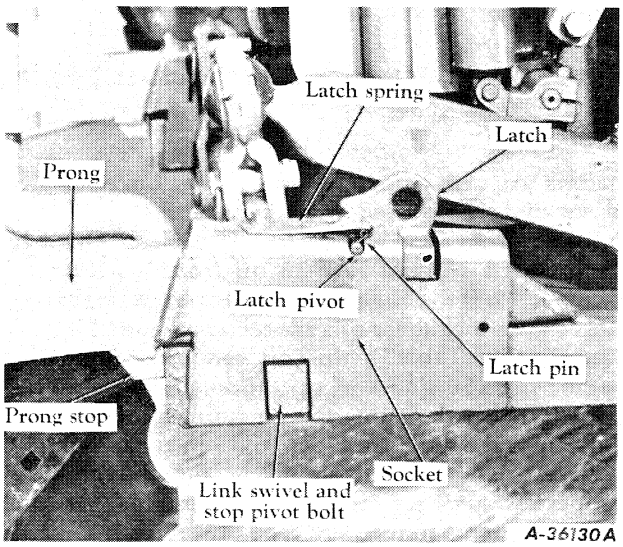
The depth adjusting cylinder can be removed and the hitch point pinned in a fixed position. To do this, the QA (quick-attachable) pin is removed from the depth adjusting cylinder anchor bracket (*Illust. 33C*) and inserted in the aligned holes of the depth adjusting rockshaft and the hitch side plate.

The yoke (*Illust. 10*) is attached to the depth adjusting hitch bail assembly with the bail pivot ball brackets at the front and to the rockshaft at the rear with lateral links and link swivel and stops.

Since the lateral links are connected to the rockshaft with a ball and socket joint and to the yoke by means of a link swivel and stop, the yoke is free to float laterally up to the limit of the stop. This also permits the lateral link and the link swivel and stop to pivot when the implement is raised or lowered.

Lateral movement of the yoke is permitted when the quick-attachable pins are in the upper holes. The hitch can be made rigid by having the pins in the lower holes. This pins the link solidly to the link swivel and stop.

The sockets (*Illust. 10*) on each end of the yoke have flared openings to permit easy entry of the tapered coupling beam prongs on the implements. An automatic latch block engages the notch in the coupling beam prong and holds it in place. A flat spring exerts pressure on a pin in the latch, keeping it in the engaged position. This same spring, through overcenter action on the latch pin, holds the latch up when raised with the latch hook to disconnect an implement.



Illust. 9A

Close-up of the socket and latch assembly.

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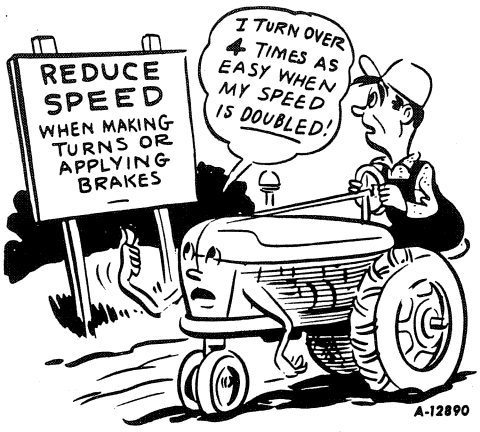
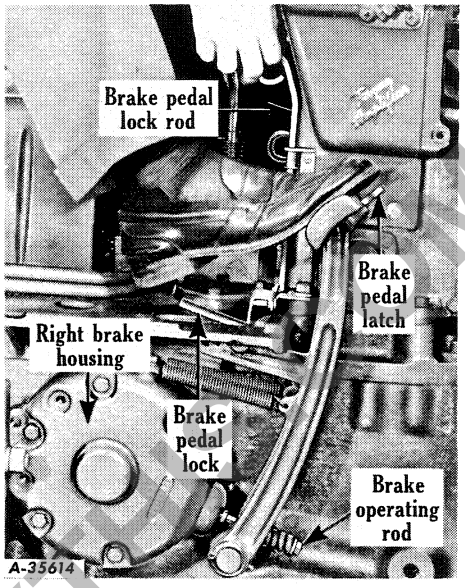


Reduce speed before making a turn or when applying the brakes. Remember, the danger of the tractor overturning increases four times when the speed is doubled.



Illust. 22

Locking the brakes.

Locking the Brakes

Always lock the brakes when the tractor is parked on a grade or when doing belt work. To lock the brakes, latch the brake pedals together and press down with the foot; then lift up the brake pedal lock rod. *See Illust. 22.* The lock will then engage with the ratchet on the left brake pedal. The brake pedals will lock in this position. To release the brakes, simply press the brake pedals further down and the lock will automatically fall back into the disengaged position.

Normal Ground Speeds According to Tire Size

Note: The tachometer used with the tractor is calibrated according to 11-38 rear tires. The tractor speed will vary according to other tire sizes as shown in the table.

Tire Size		Miles per Hour											
		10-38 + 26.9 §		11-38 + 27.8 §		11-38 * 28.3 §		12-38 + 28.6 §		12-38 * 29.0 §		13-38 * 30.1 §	
Gear	Engine R. P. M.	300	300 Hi-Clear	300	300 Hi-Clear	300	300 Hi-Clear	300	300 Hi-Clear	300	300 Hi-Clear	300	300 Hi-Clear
1st	1,750	2.4	—	2.5	—	2.5	2.4	2.6	2.4	2.6	2.5	2.7	2.6
2nd	1,750	3.7	—	3.8	—	3.9	3.7	3.9	3.7	4.0	3.8	4.1	3.9
3rd	1,750	5.0	—	5.2	—	5.2	5.0	5.3	5.0	5.4	5.1	5.6	5.2
4th	1,750	6.4	—	6.6	—	6.7	6.3	6.8	6.4	6.9	6.5	7.1	6.8
5th	1,750	15.6	—	16.1	—	16.4	15.5	16.6	15.7	16.8	15.9	17.4	16.5

+ Agricultural Type Tire * Rice and Canefield Type Tire § Rolling Radii

Operating the Torque Amplifier

This attachment is a manually controlled, mechanical supplemental transmission unit which provides an optional lower gear speed in each respective transmission gear speed without interruption of engine power.

Tractors with a Torque Amplifier Attachment are provided with two ranges of traveling speeds as indicated in the table. The ranges are based on tractors with 11-38 rear tires and maximum, full-load governed engine speed.

The Torque Amplifier Attachment can save much time and energy when the tractor is operated with either mounted or pull-behind implements. For example, if extra-hard ground is encountered when plowing, the speed of the tractor can be reduced to provide more pulling power without disengaging the engine clutch, shifting gears, or stopping the tractor.

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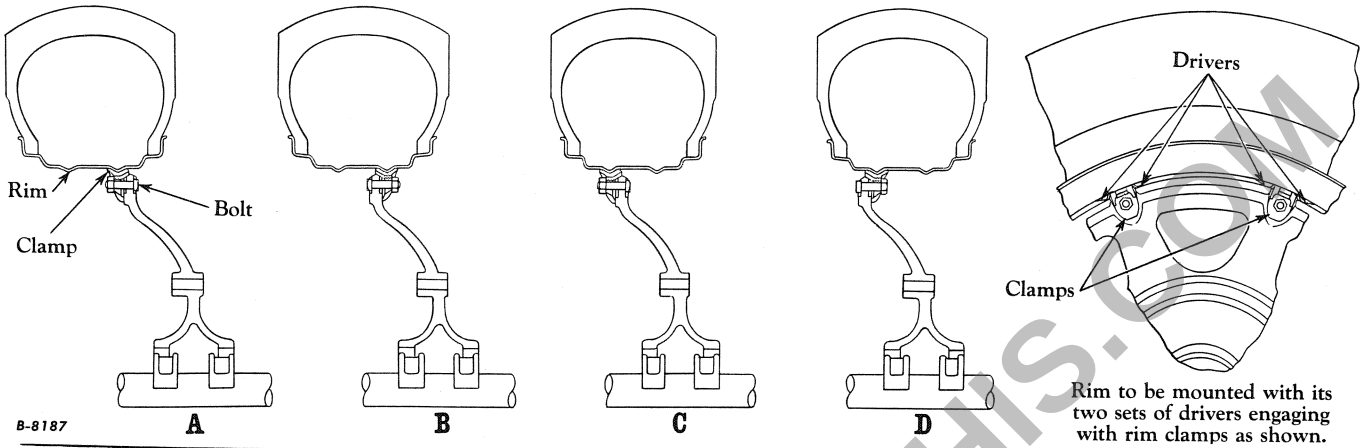
Rear Wheels



Rim to be mounted with its two sets of drivers engaging with rim clamps as shown.

Tractor		Wheel Dish	Rim and Clamp Position			
			A	B	C	D
Farmall 300	Standard Axle	In	48″–61″	48″–65″	48″–69″	51″–73″
		Out	59″–81″	63″–85″	67″–89″	71″–93″
	Wide-Tread Axle Attachment	In	48″–73″	48″–77″	48″–81″	51″–85″
		Out	59″–93″	63″–97″	67″–101″	71″–105″
Farmall 300 Hi-Clear	Fixed Wheels	In	62″	66″	70″	74″

Illust. 80
Rear wheel tread and rim mounting diagram. (rear view of right wheel shown.)

Farmall 300: Tractors may be equipped with pneumatic tires or steel rear wheels with spade lugs. Pneumatic tired rear wheels are equipped with demountable double beaded rims for 10-38, 11-38, 12-38 or 13-38 tractor type tires, as ordered with the tractor.

Tread Adjustments (Pneumatic Tire Rear Wheels)

The double beaded rims permit suitable tread adjustments when going from plowing to cultivating operations, or vice versa, without removing the wheels from the axles.

When observing the rear wheels on your tractor, you will note that the rim is held to the wheel by eight clamps which engage in a raised bead around the inside of the rim. The clamps may be bolted to either side of the wheel and will engage either of the two beads in the rim.

Treads from 48-inch minimum to 93-inch maximum may be obtained on tractors equipped with standard axle when using assembly combinations as shown *in Illust. 80* and by sliding the wheels in or out on the axles. Treads of 48-inch minimum to 105-inch maximum may be obtained when the tractor is equipped with Wide-Tread Axle Attachment.

Tread Adjustments (Steel Rear Wheels)

Rear wheel tread adjustments of 52 inches to 88 inches may be obtained on tractors equipped with steel wheels by sliding the wheels in or out, and reversing the wheels on the axles.

Important! Check the rear wheel hub clamp bolts after every 60 hours of operation to maintain a torque tightness of 240-280 foot-pounds on the Farmall 300 Tractor or 390-440 foot-pounds on the Farmall 300 Hi-Clear Tractor.

Farmall 300 Hi-Clear: Tractors are equipped with 11-38, 12-38 or 13-38 cane field type tires. The following treads may be obtained by using the beads of the rim in combination with the rim clamps:

Inner Bead		Outer Bead	
Clamp Inside	Clamp Outside	Clamp Inside	Clamp Outside
70″	74″	62″	66″

Note: When reversing pneumatic tire rear wheels, make sure that the tires rotate in the direction shown by the arrow on the side of the tires. It may sometimes be necessary to change them from one side of the tractor to the other.

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SPECIAL EQUIPMENT

Fast-Hitch

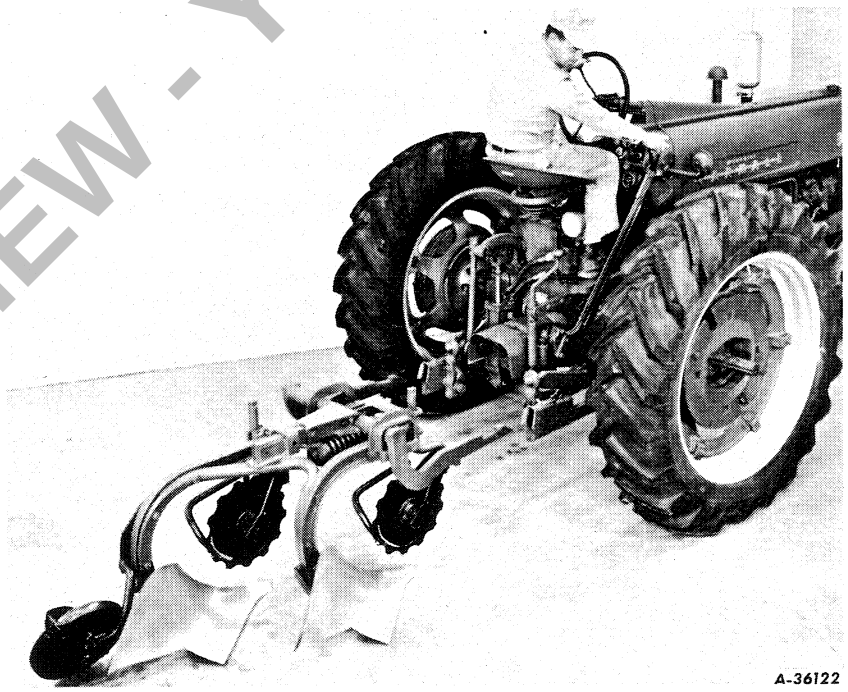
The Farmall Fast-Hitch for Farmall 300 Tractors provides the most modern method for quickly attaching rear-mounted implements. Hydra-Touch, a new, versatile hydraulic system for these tractors introduces a new method for controlling the Fast-Hitch and the attaching implements.

Fast-Hitch has reduced the attachment of implements to the tractor to a simple "line-up, back-up, and go" procedure. It is the quickest and easiest way to hitch implements ever devised. The operator remains on the tractor seat and backs in with the socket latches of the hitch either open or closed. Coupling is automatically completed on contact, hydraulic power raises the implement from the ground, and the operator drives off to the work area. Practically all of the manual labor previously required for attachment of implements has been eliminated. Fast-Hitch permits the operator to have maximum time for work in the field, where his profit is made.

The Farmall Fast-Hitch consists of a simple yoke, with a socket at each end, suspended from a rock-shaft under the tractor. The bell-mouthed sockets receive a pair of coupling beams on the implement. The beams on all Fast-Hitch implements have the same shape and spacing. The yoke therefore provides a common hitch-frame for all implements.

Most controls are built into the hitch rather than on each implement. The Fast-Hitch mounting frame is common for all implements and remains on the tractor. This practically eliminates the need for separate, special pieces formerly required for each implement. This, in turn, keeps the customer's initial investment to a minimum.

Flexibility of the Fast-Hitch and versatility of controls assures top-quality work from every implement. Field performance is not sacrificed for ease and speed of attaching.



Illust. 99

Hitching a two bottom plow to Farmall 300 Fast-Hitch.

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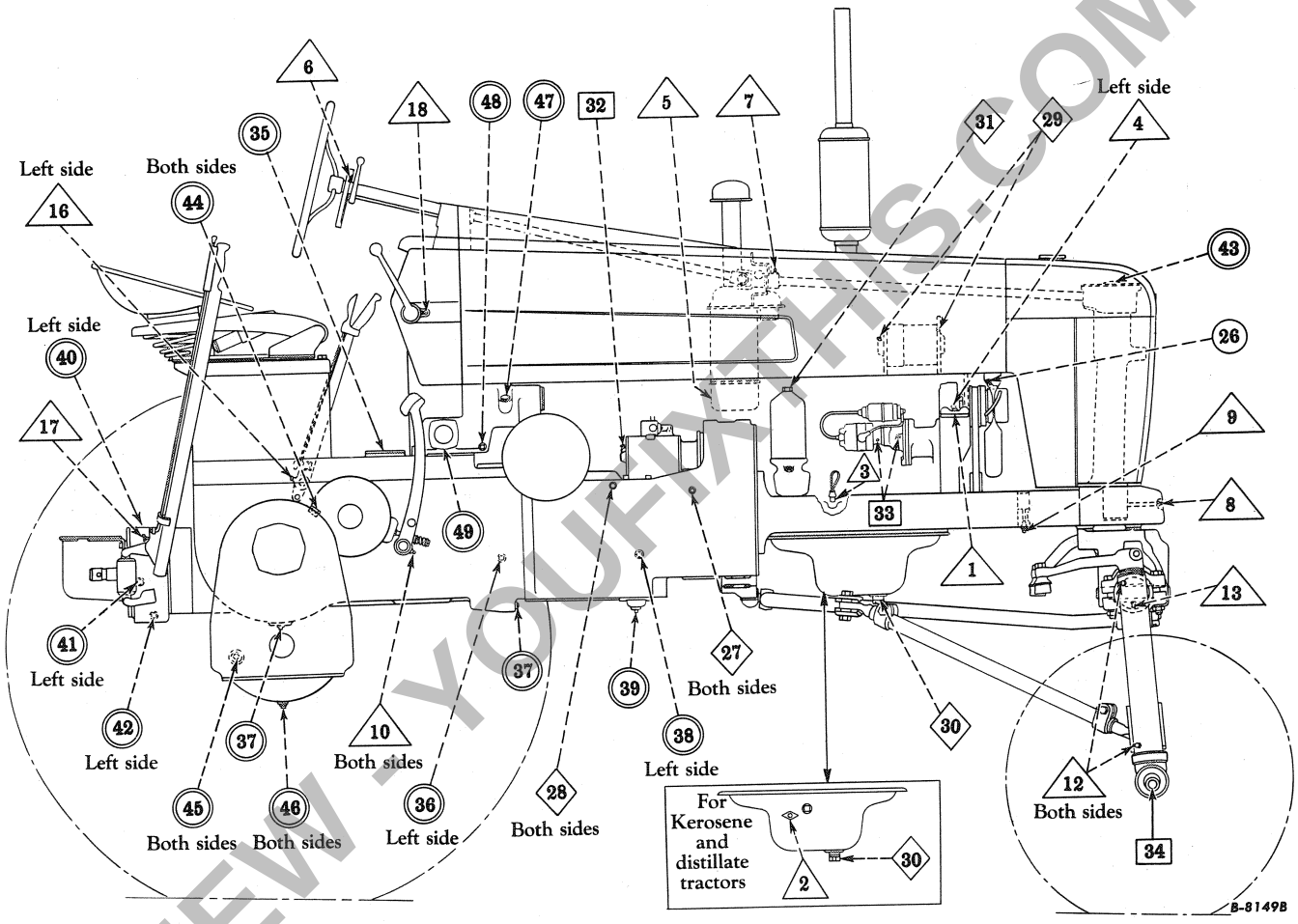
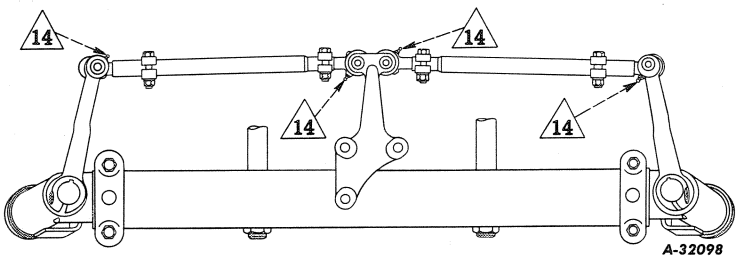
LUBRICATION

The symbols shown around the reference numbers on the illustrations on this page indicate the intervals of lubrication.



Illust. 43

Right side view of Farmall 300 Hi-Clear.



Illust. 43A

Top view of front axle and steering linkage (Farmall 300 Hi-Clear).

For instructions, see pages 44 to 48.

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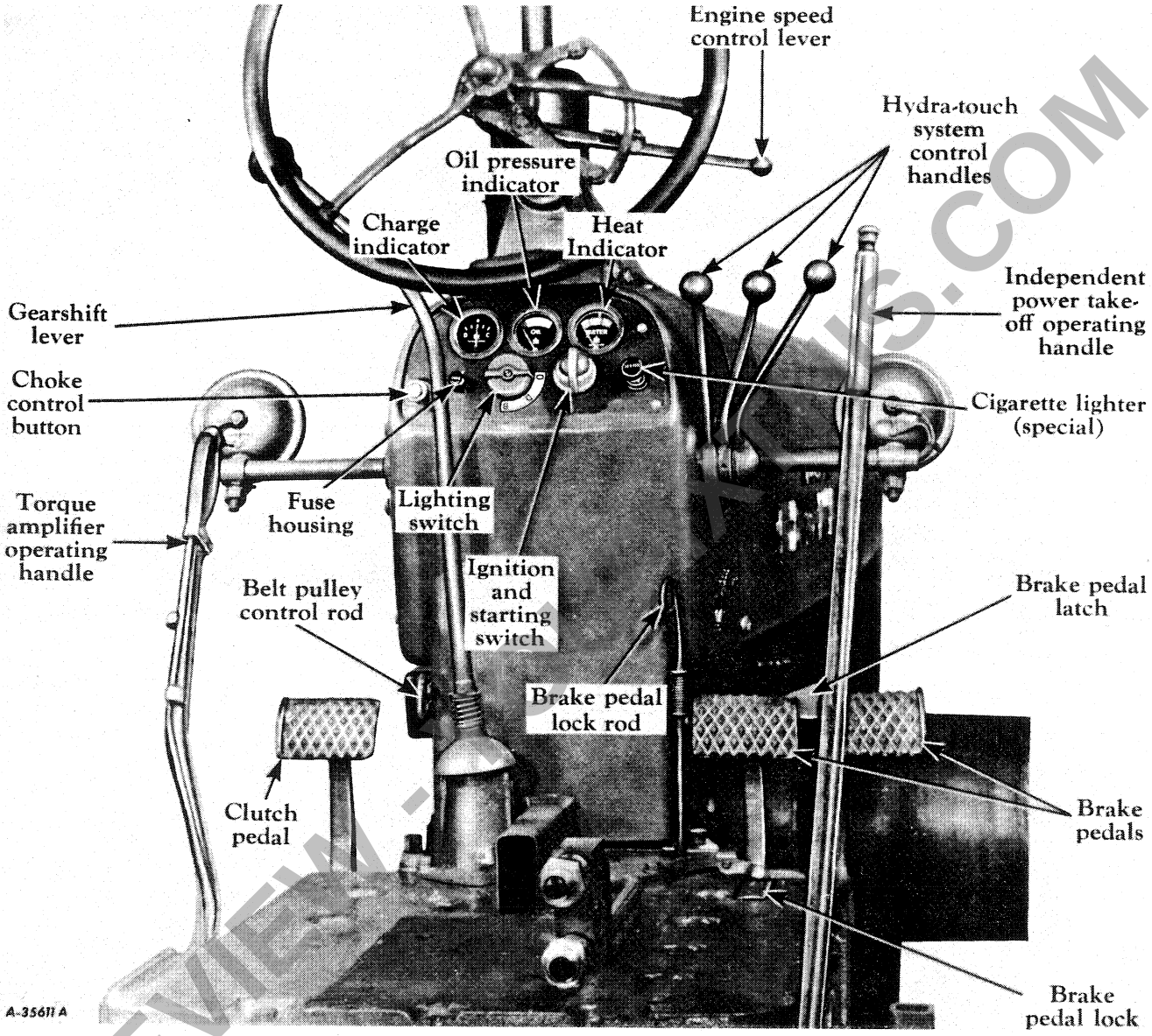
DESCRIPTION

Instruments and Controls



Illust. 4

Location of instruments and controls.

Brake Pedals

These pedals are used to stop the tractor, to hold the tractor in a stationary position, or to assist in making sharp turns as outlined below:

To stop the tractor, depress both pedals at the same time. Before driving the tractor in high gear, always latch the pedals together.

To hold the tractor in a stationary position, latch the pedals together, depress and lock them in this depressed position by using the brake pedal lock.

To assist in making a sharp turn, operate the pedals individually, depressing the pedal on the side toward which the turn is to be made.

The brake pedal latch (*Illusts. 4 and 22*) is used to latch both brake pedals together, causing the brakes to operate simultaneously.

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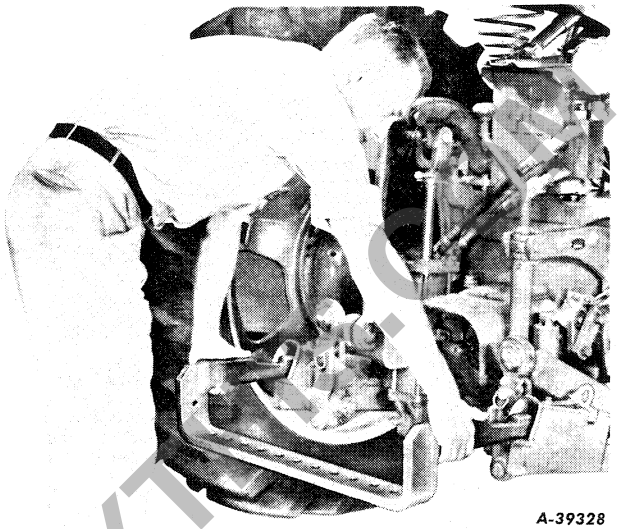
lower end of the cylinder is attached to an arm on the left side plate. The upper end of the cylinder is connected to the rocker arm mounted on the tractor rear frame cover. The rockshaft is connected to the rocker arm by means of the lift link.

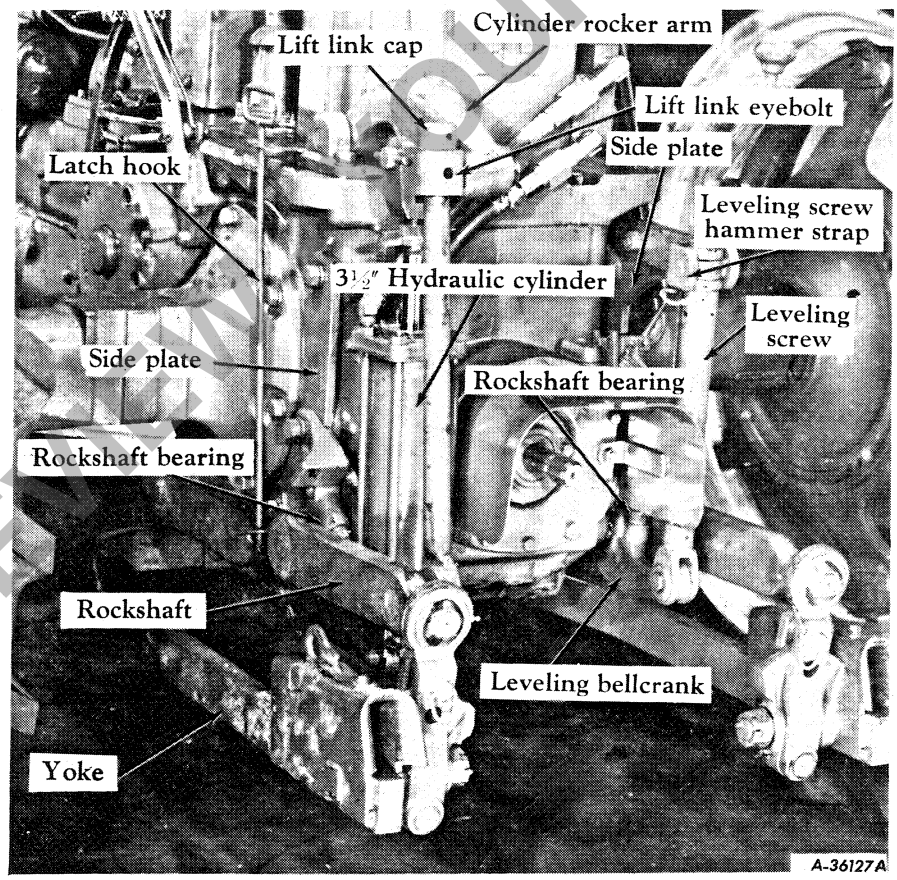
It is the lift link and rocker arm along with the hydraulic cylinder that permits both positive raising and lowering, and the vertical "float" feature for the Fast-Hitch. Positive raising or lowering is accomplished by pinning the lift link rigid to the lift link eyebolt in the rocker arm. Vertical float is accomplished by allowing the lift link to float through the eyebolt in the rocker arm. A cap at the top of the lift link prevents the lift link from floating out of the eyebolt and permits the rockshaft to be raised.

The depth adjusting bail assembly (*Illust. 9*) which supports the forward end of the yoke consists of a hitch bail, bail pivot ball assembly, hitch bail pitman straps, and depth adjusting rockshaft.

The yoke is attached to the hitch bail pivot ball and bracket. The bail is attached to and pivots on the side plates at the rear and is connected to the pivot ball at the front. This establishes a hitch point.



Illust. 8
Installing Fast-Hitch drawbar.



Illust. 8A
Parts of the rockshaft assembly.

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4. After the system has drained completely, replace the drain plug (*Illust. 84*) and fill the reservoir with clean IH Touch-Control fluid to the "Full" mark on the dip stick attached to the filler plug.

5. Start the tractor engine and operate it at a moderate idle speed. With the filler plug removed, move the control handle or handles back and forth ten or twelve times through their full range of travel. This frees the system of trapped air. Then, with the handles in the neutral position, stop the engine.

6. Add sufficient clean fluid to the reservoir to bring the fluid level to the "Full" mark on the dip stick attached to the filler plug. Replace and tighten the filler plug.

7. Reinstall the right side hood.

Note: If it is necessary to flush the system, use only IH Touch Control fluid so the necessary lubrication of the pump and control system is maintained without adulteration. Never use kerosene or any other oils.

Air in the System

Make certain that all connections and openings are well sealed. The entire system must be kept tightly sealed at all times, not only to prevent loss of fluid, but also to avoid entrance of air in the inlet end of the system. Air entering the system interferes with proper lubrication of the moving parts. It causes an increased amount of vibration and an unsteady pressure. Presence of air in the system will be noticed by a noise in the pump or by the pump laboring when operating under high pressure. Proper filling of the reservoir and working the system during the filling process as previously described will work the air out of the system.

Care of Cylinders used with Implements

When setting up a new implement to operate, all that is necessary to put the cylinders into service is to connect them to the implement and to the proper junction ports according to the instructions furnished with the implement, using the high pressure hoses and fittings furnished.

Adding Fluid after Connecting Cylinders and Hoses

Start the engine and operate it at a moderate idle speed. Set the stroke limit collar at the yoke end of the piston; then operate the piston to its maximum stroke in both directions about ten times by moving the proper control handle back and forth. This will fill the cylinder and hoses with fluid and remove the air.

Set the piston in the retracted position (all the way in) and remove the reservoir filler plug. Add clean IH Touch-Control fluid to the reservoir up to the "Full" mark on the dip stick attached to the filler plug.

Note: When using a cylinder which can be used only for single action, **do not add fluid to the reservoir when the piston rod is extended.**

The cylinders used are single or double acting. The fluid pressure acting on one for the other side of the piston pushes the piston rod in or out. The weight of the implement and the pressure springs, when used, push the piston rod in when used as single acting. When used as double acting you can maintain the operating position of the implement at any point between the fully raised and the fully lowered position.

When doing drawbar work, belt work, or any work not requiring the cylinders, the cylinders and hoses may be left on or, if removed from the tractor, it is advisable to leave the hoses connected to the cylinders to prevent dirt from entering. If the hoses are removed, cap the ends of the hoses with the caps furnished with the cylinders to prevent dirt, etc., from entering, and hang up or lay in a clean dry place.

Beware of sand or grit in the Hydra-Touch system. When disconnecting or connecting the hoses, utmost care should be taken to prevent the ends of the hoses or any of the connecting parts from coming in contact with the ground or any object where dirt or sand is present. The oily surfaces will readily pick up any sand or grit which they contact and this will destroy the working parts of the pump very rapidly.

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300 Tractor

Operators Manual

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