INTERNATIONAL HARVESTER

OPERATOR'S MANUAL

INSTALLING INSTRUCTIONS

OPERATION
MAINTENANCE
LUBRICATION

Power Take-Off

(387 307 R91, 394 243 R91)

for

INTERNATIONAL®

CUB CADET®

70, 71, 100, 102 and 122

Tractors

It is the policy of International Harvester Company to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to make such changes on products sold previously.

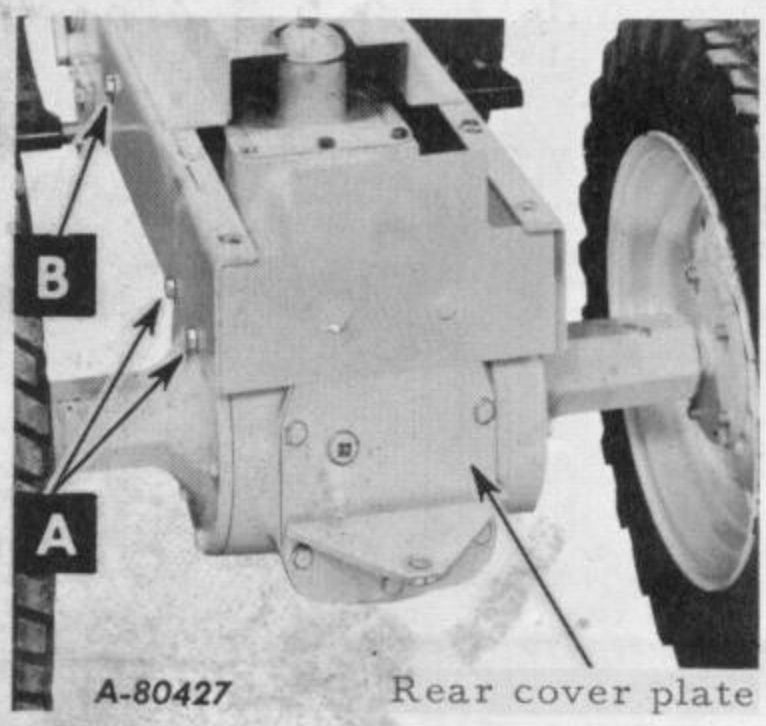
All illustrations and descriptive matter in this publication apply to International Harvester products sold under the International, McCormick, or McCormick-International trade name.

ORDERING NUMBERS

387 307 R91 – Power Take-Off Attachment for International Cub Cadet 70, 71 and 100 Tractors

394 243 R91 – Power Take-Off Attachment for International Cub Cadet 102 and 122 Tractors

INSTALLING INSTRUCTIONS



Illust. 1
Seat and seat spring support removed from the tractor.

International Cub Cadet 70, 71, and 100 Tractors

Remove the rear wheel fenders (if so equipped).

Remove the cap screws from the seat spring support and remove the seat and seat spring support assembly as a unit. See Illust. 1.

International Cub Cadet 102 and 122 Tractors

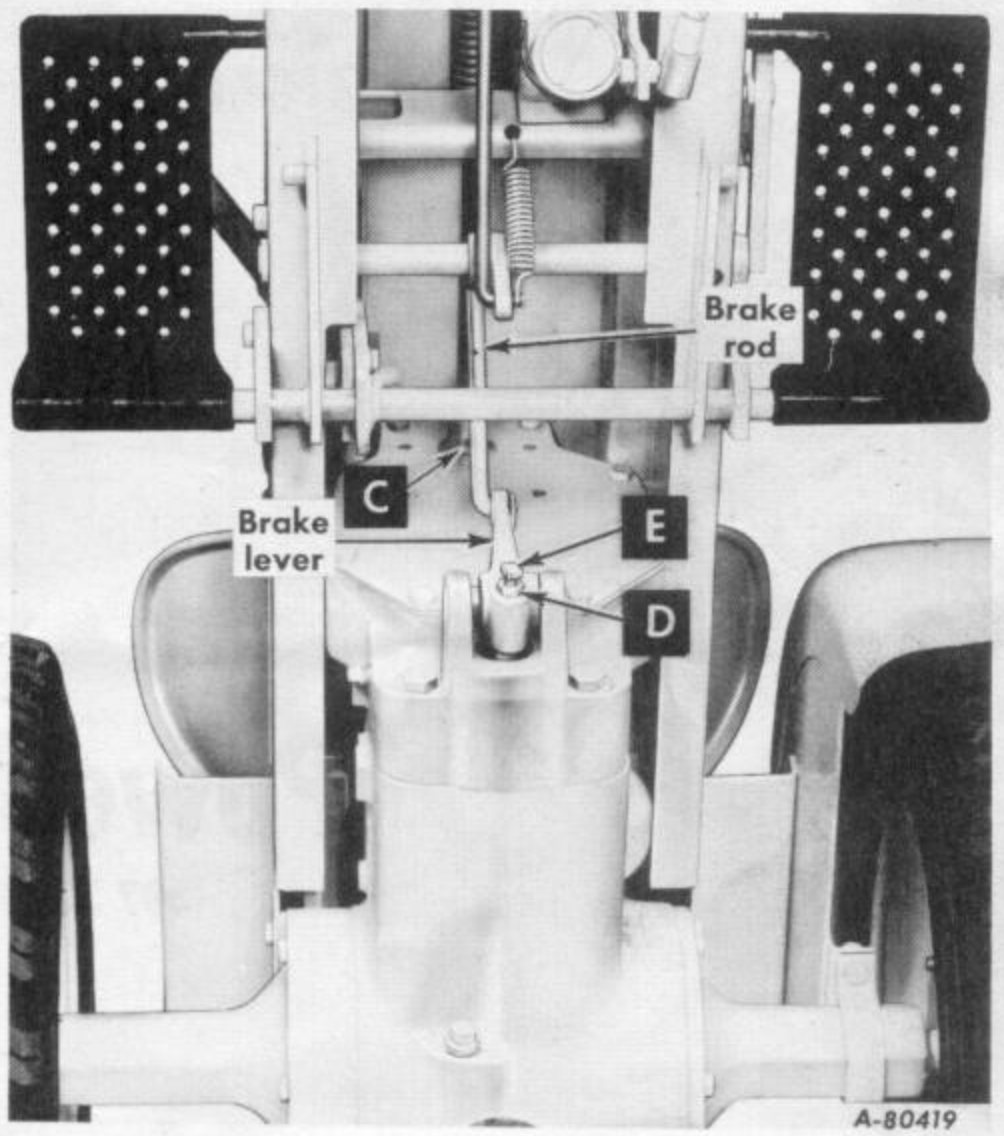
Remove the seat and seat support assembly and fenders.

All Models

Remove the cotter pin and disconnect the brake rod from the brake lever. See Illust. 2.

Remove the coiled spring "C" (Illust. 2) from the rear hole in the clutch shaft coupling.

Remove the four cap screws "A" (Illust. 1) holding the frame to the rear axle carriers and remove the two cap screws "B" holding the frame to the reduction gear housing.



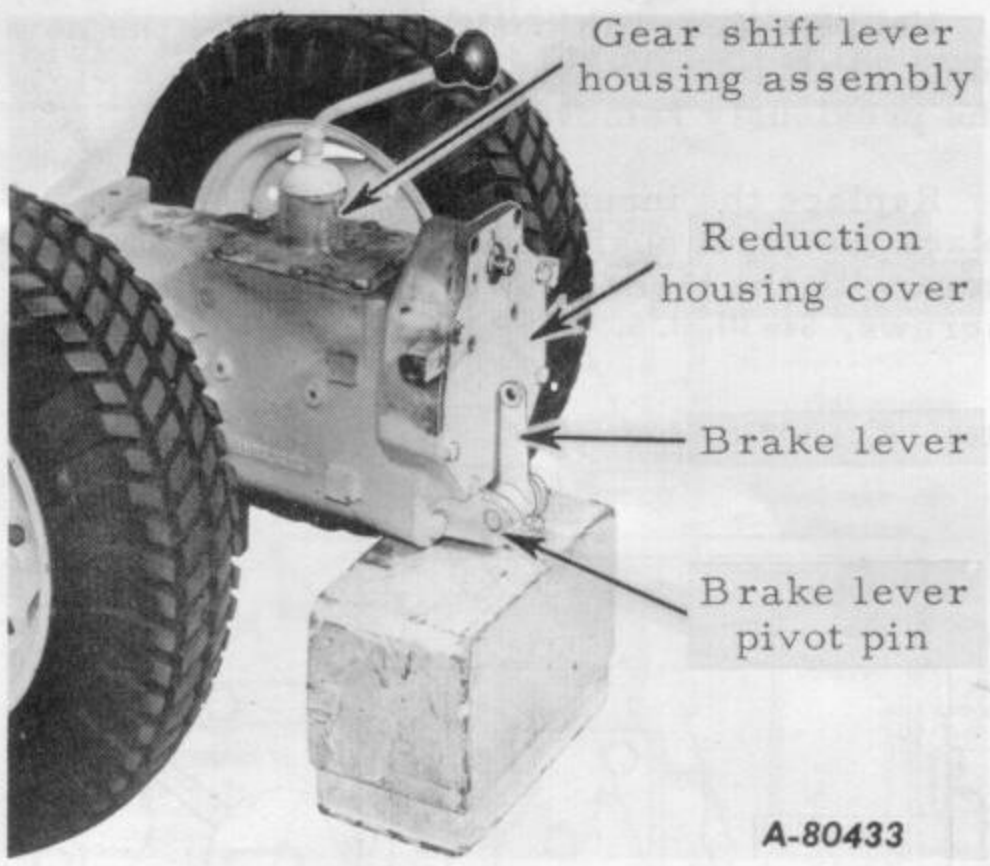
Illust. 2
View of underside of tractor.

Place a large wood block under the reduction gear housing. Then separate the front from the rear of the tractor as shown in Illust. 3.

Remove the transmission drain plug and allow the lubricant to drain completely; then replace the plug. Refer to "Lubrication Guide" in the tractor Operator's Manual.

Loosen the jam nut "D" (Illust. 2) and remove the brake lever adjusting screw "E".

Remove the brake lever pivot pin (Illust. 3) and remove the lever and push rod.



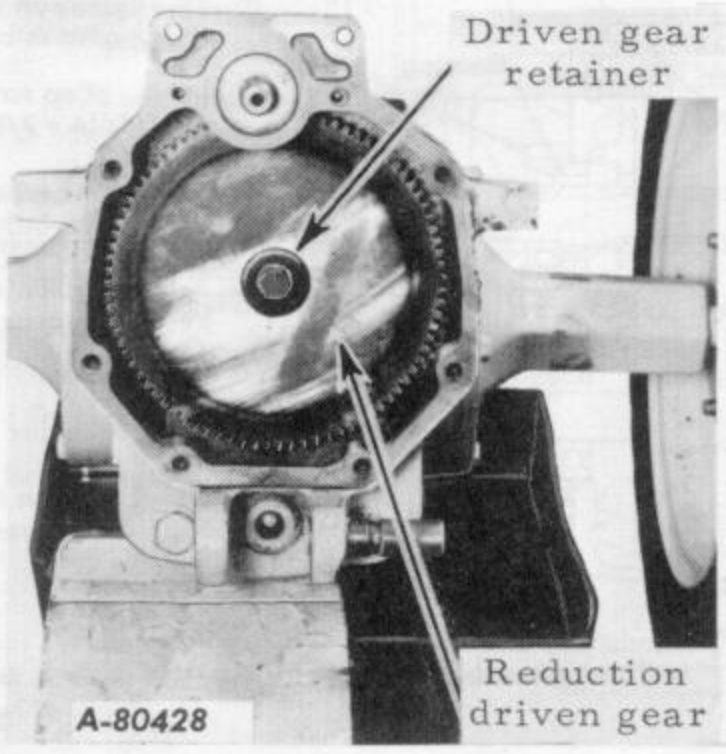
Illust. 3
Rear end separated from the tractor frame.

Remove the reduction housing cover by removing the cap screws. See Illusts. 3 and 4.

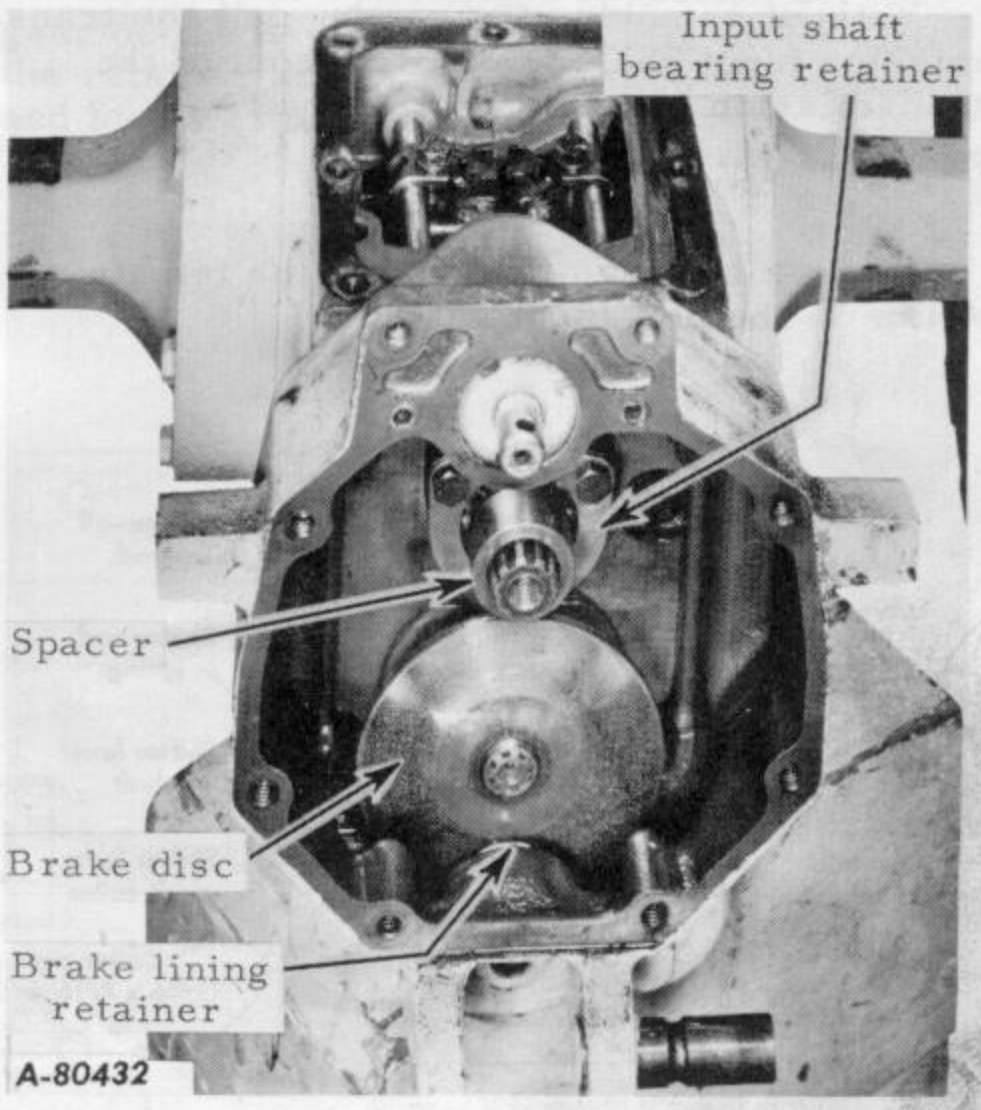
Remove the reduction driven gear by removing the 7/16 x 7/8-inch cap screw, lock washer and driven gear retainer. See Illust. 4.

Remove the gear shift lever housing assembly from the top of the transmission housing. See Illusts. 3 and 5.

Remove the spacer from the input shaft. See Illust. 5.



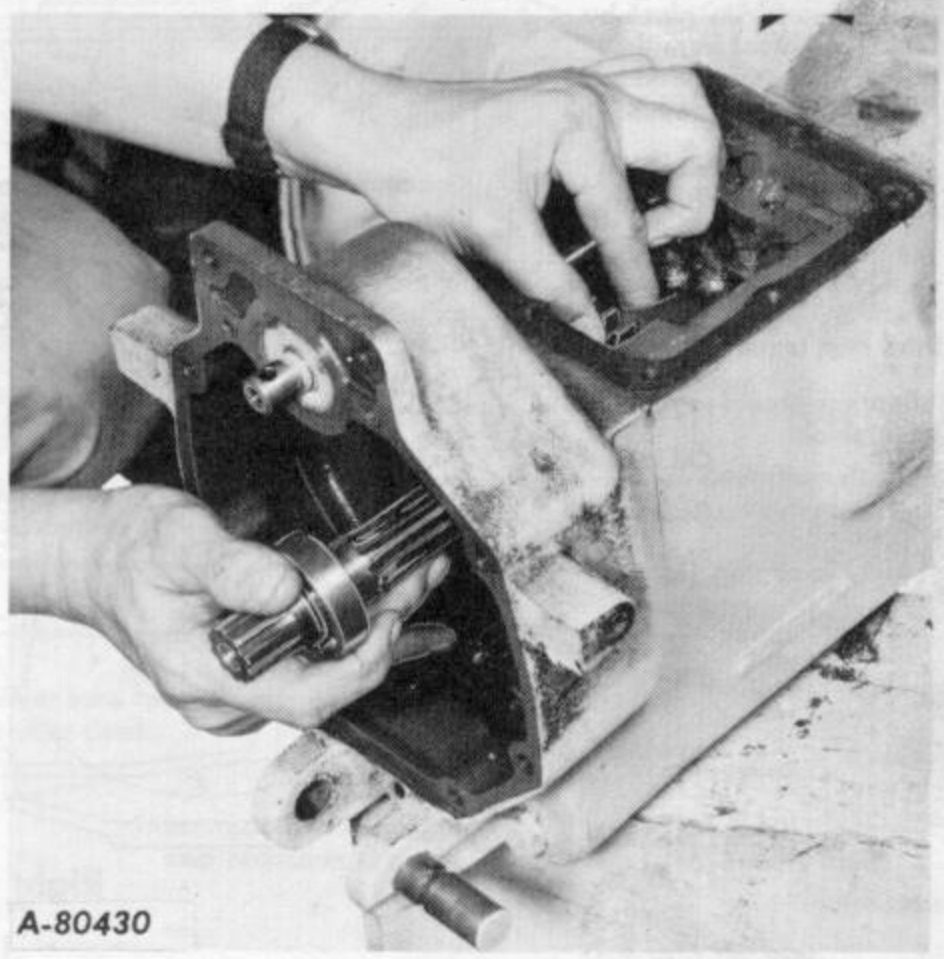
Illust. 4
Brake lever and reduction housing cover removed showing driven gear to be removed.



Illust. 5
Gear shift lever housing and reduction driven gear removed showing other parts to be removed.

Remove the three 5/16 x 11/16-inch cap screws securing the transmission input shaft bearing retainer to the transmission and remove the retainer.

Remove the brake lining retainer from the opening at the bottom of the reduction housing. Remove the brake disc.



Illust. 6
Installing the new transmission input shaft.

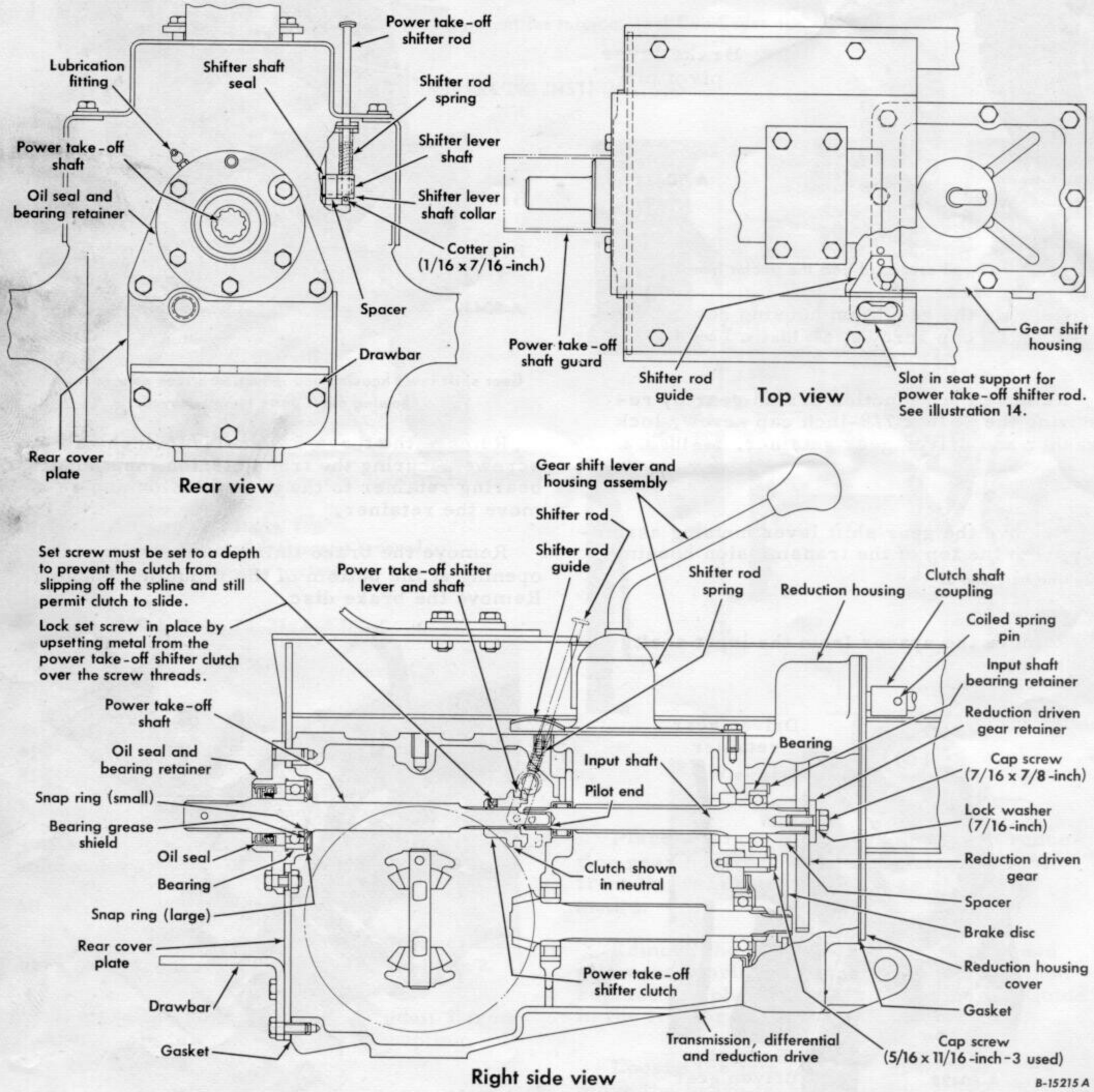
INSTALLING INSTRUCTIONS

Without removing the gears, pull the transmission input shaft forward and out of the transmission and discard the shaft.

Apply a coating of grease to the female spline in the new input shaft.

Hold the gears in position and slide the new input shaft into the transmission in place of the previously removed shaft. **See Illust. 6.**

Replace the input shaft bearing. Then replace the input shaft bearing retainer and secure with the three 5/16 x 11/16-inch cap screws. **See Illust. 5.**



Illust. 7

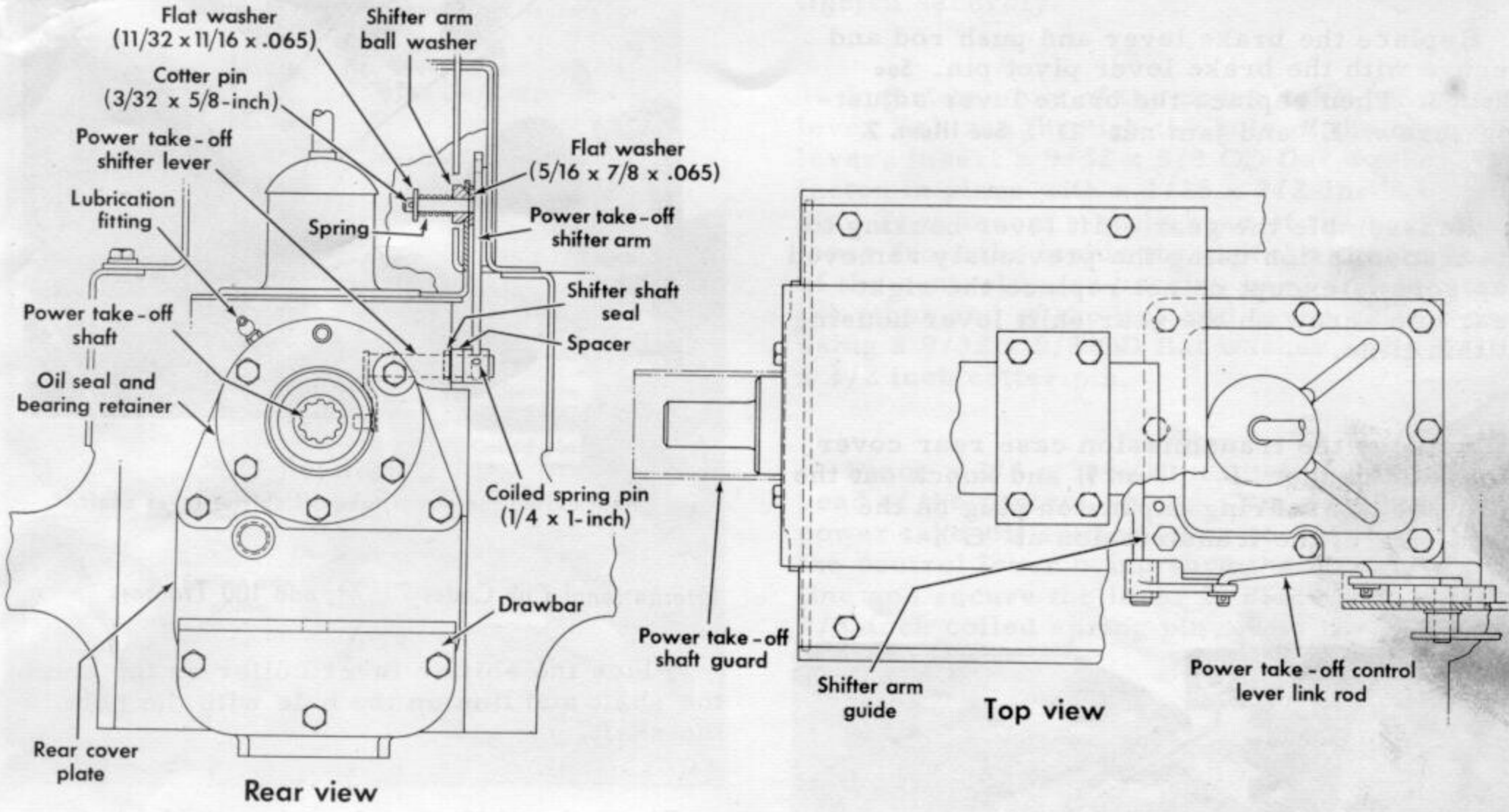
Cross sectional view of the power take-off

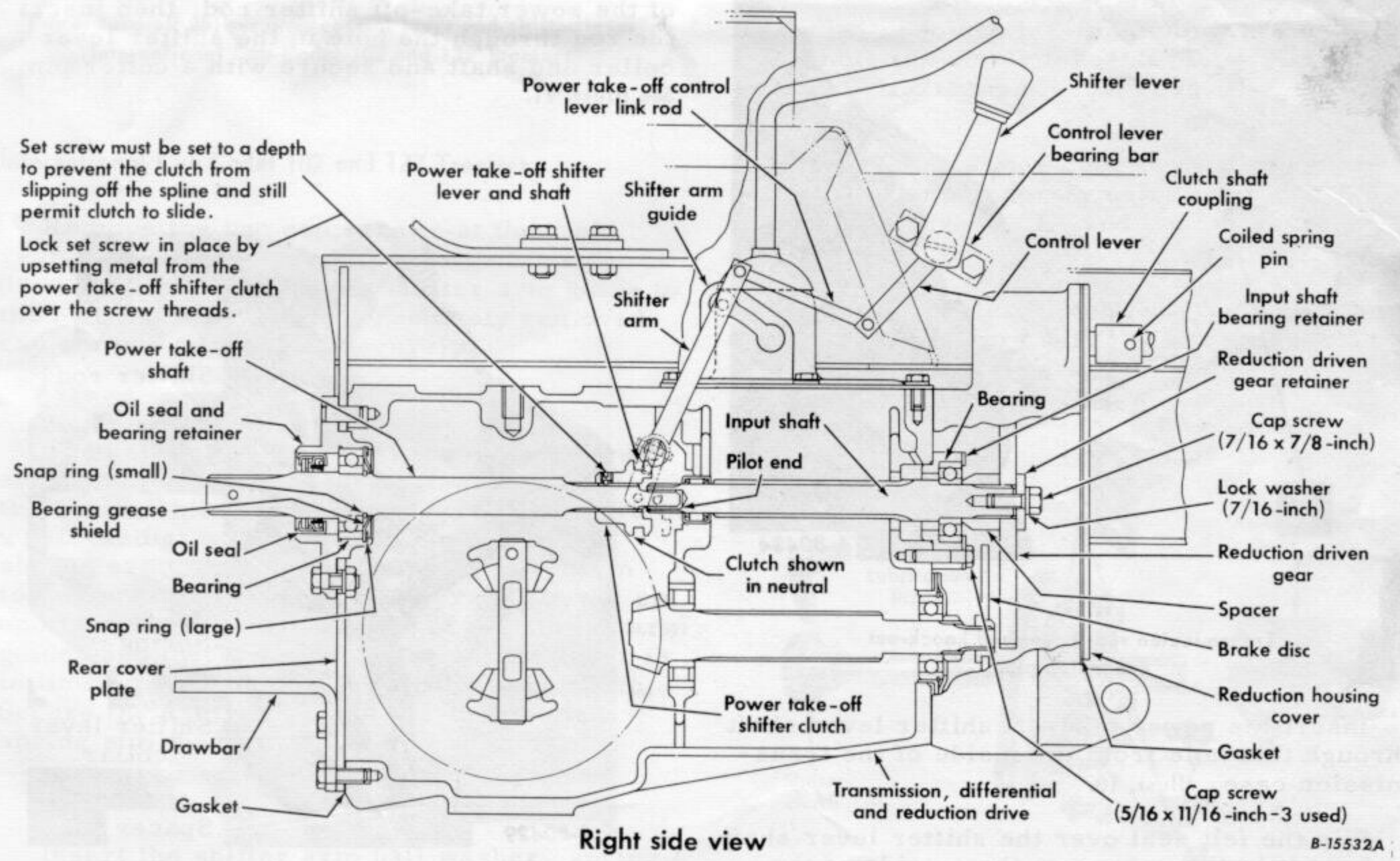
(International Cub Cadet 70, 71 and 100 Tractors)

INSTALLING INSTRUCTIONS

Replace the brake disc and replace the brake lining retainer at the bottom of the reduction housing. **See Illust. 5.**

Replace the spacer and reduction driven gear on the new shaft and lock in place with the retainer and 7/16 x 7/8-inch cap screw and lock washer. **See Illusts. 4 and 5.**





Illust. 8
Cross sectional view of the power take-off
(International Cub Cadet 102 and 122 Tractors)

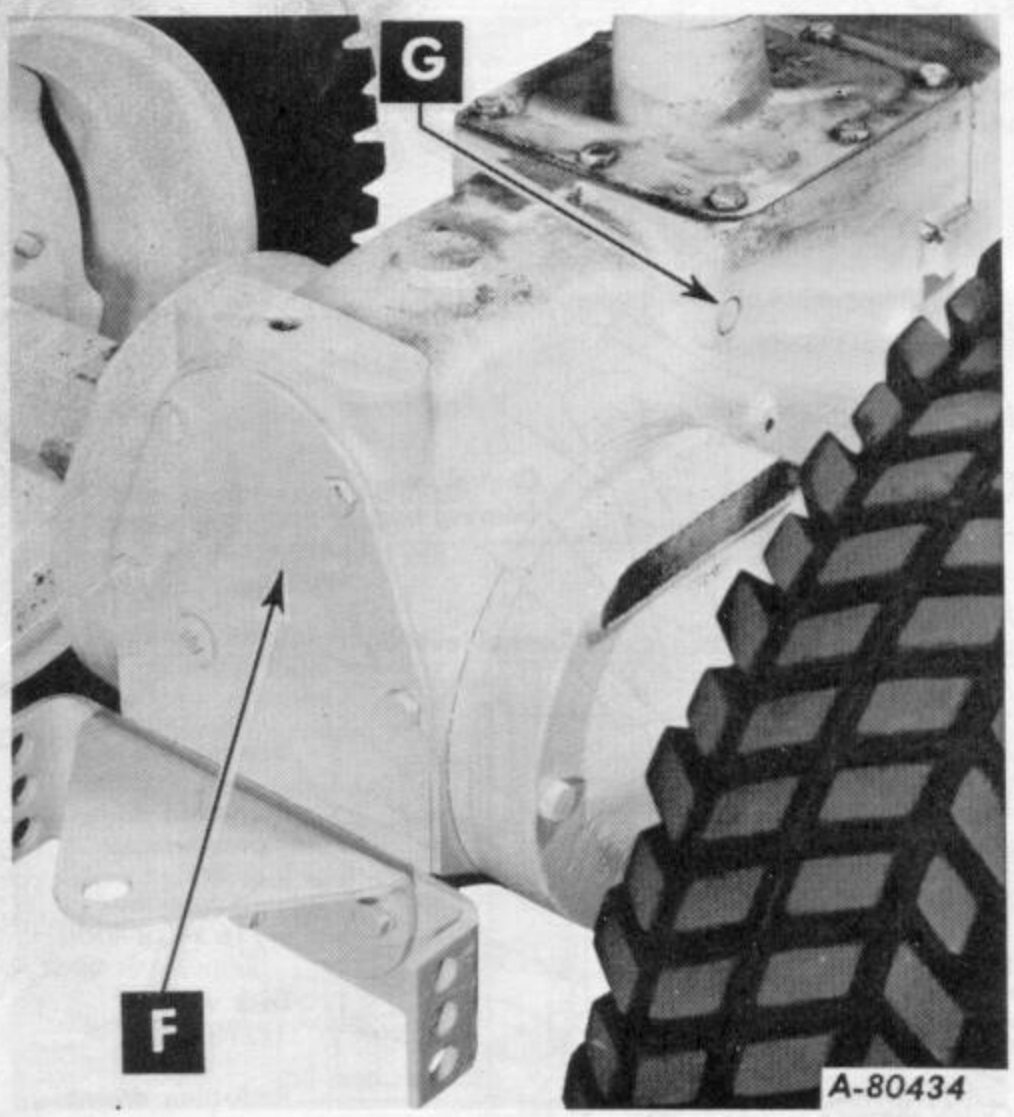
INSTALLING INSTRUCTIONS

Reassemble the reduction housing cover and gasket using the previously removed cap screws and tighten securely.

Replace the brake lever and push rod and secure with the brake lever pivot pin. **See Illust. 3.** Then replace the brake lever adjusting screw "E" and jam nut "D". **See Illust. 2.**

Reassemble the gear shift lever housing to the transmission using the previously removed cap screws except do not replace the right rear cap screw on the gear shift lever housing at this time.

Remove the transmission case rear cover plate and gasket "F" **(Illust. 9)** and knock out the shifter shaft bearing expansion plug on the right side of the transmission at "G".



Illust. 9
Transmission rear cover and knock-out expansion plug.

Insert the power take-off shifter lever shaft through this hole from the inside of the transmission case, **Illust. 10.**

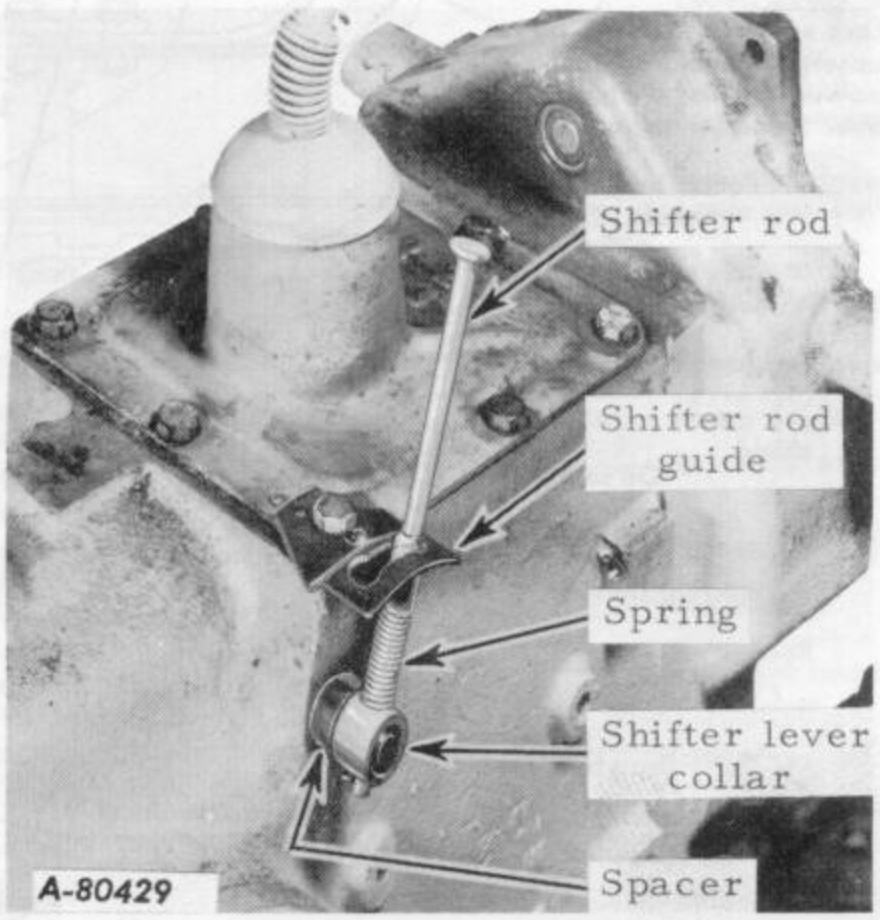
Slip the felt seal over the shifter lever shaft and set it in the recess on the outside of the transmission case. Then slide the spacer on the shaft and place it up against the side of the transmission case. **See Illusts. 10 and 11.**

Illust. 10
Assembling the power take-off shifter lever shaft.

International Cub Cadet 70, 71, and 100 Tractors

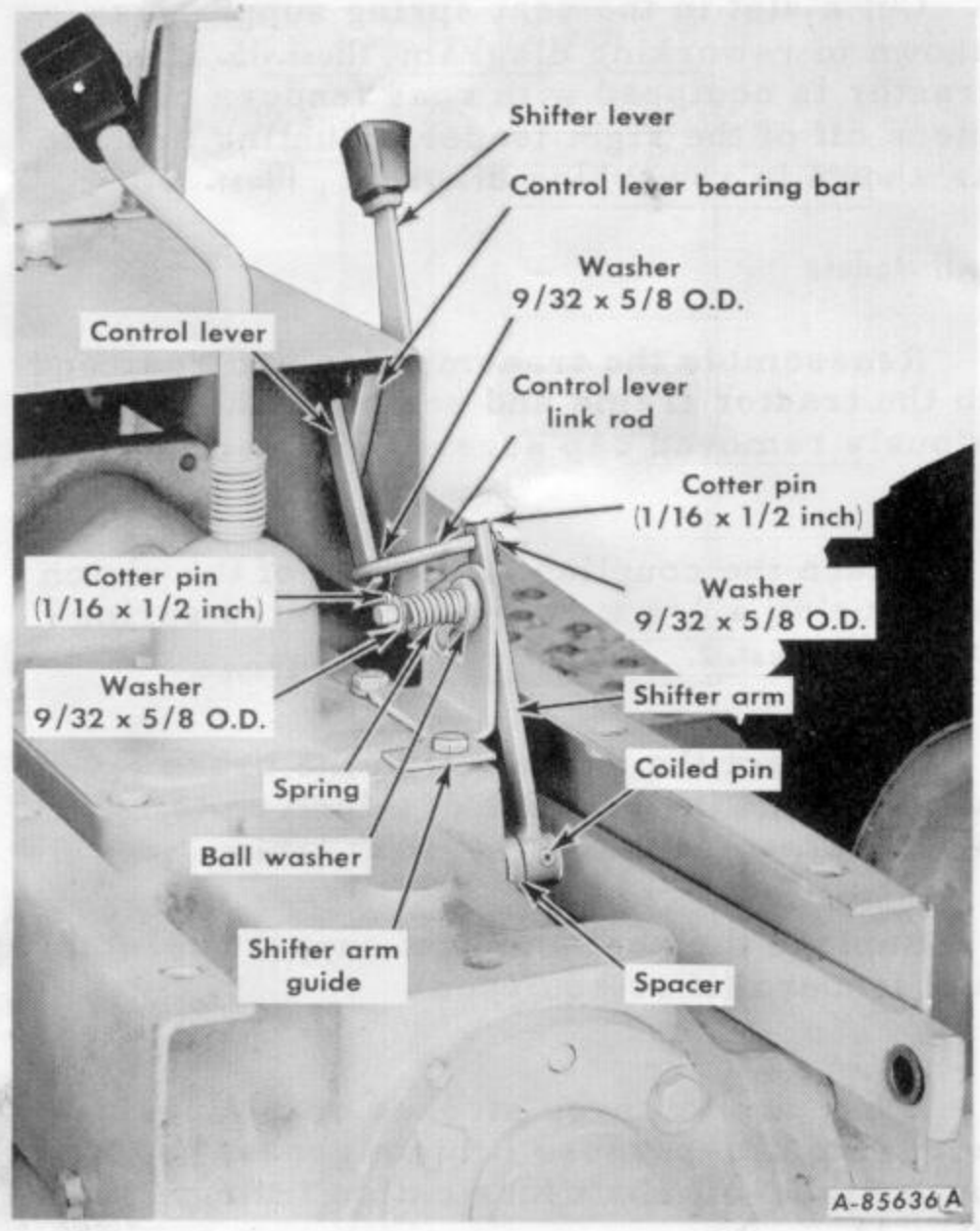
Place the shifter lever collar on the end of the shaft and line up the hole with the hole in the shaft.

Place the shifter rod spring on the bottom of the power take-off shifter rod, then insert the rod through the hole in the shifter lever collar and shaft and secure with a cotter pin. **See Illust. 11.**



Illust. 11
Power take-off shifter lever and rod assembly. (International Cub Cadet, 70, 71 and 100 Tractors)

INSTALLING INSTRUCTIONS



Illust. 12
Power take-off shifter arm, control lever and shifter lever
(International Cub Cadet 102 and 122 Tractors)

International Cub Cadet 102 and 122 Tractors

Remove the two cap screws at the right rear side of the gear shifter lever housing **(Illust. 12)** and assemble the shifter arm guide to the housing with the two previously removed cap screws and tighten securely.

Then slide the spacer on the shifter lever shaft and place it up against the side of the transmission case. **See Illust. 12.** Insert a 5/16 x 7/8 OD flat washer on the pin end of the shifter arm, then assemble the shifter arm to the power take-off shifter lever with the pin end inserted through the slot of the shifter arm guide. See that the hole on the shifter lever is in line with the hole of the shifter lever arm. Secure the arm with a 1/4 x 1-inch coiled spring pin. **See Illust. 12.**

Insert the shifter arm ball washer, spring, and a 9/32 x 5/8 OD flat washer to the pin end of the shifter arm and secure them using 1/16 x 1/2-inch cotter pin.

Drill three holes in the frame cover as shown in reworking diagram, **Illust. 17.** Fasten the control lever bearing bar to the frame cover using two 5/16 x 1/2-inch cap screws and tighten securely.

Insert one end of the power take-off control lever link rod through the hole of the control lever, insert a 9/32 x 5/8 OD flat washer and fasten in place with a 1/16 x 1/2-inch cotter pin. Then insert the pin head of the control lever from the inside through the center hole of the control lever bearing bar, and connect the other end of the link rod to the shifter arm using a 9/32 x 5/8 OD flat washer and a 1/16 x 1/2 inch cotter pin.

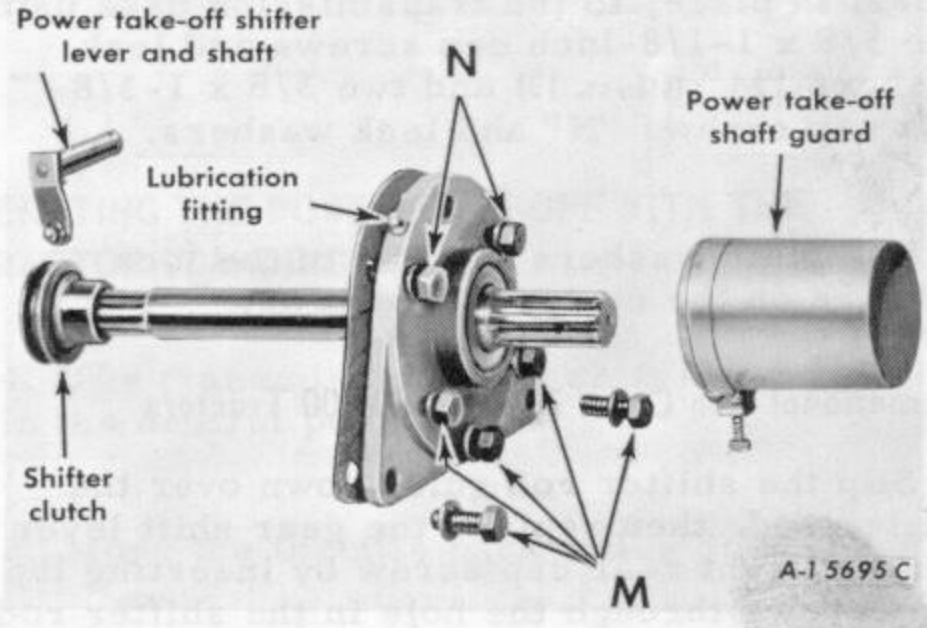
Place a 3/8 x 3/4 OD flat washer on the pin head of the control lever. Then assemble the power take-off shifter lever to the pin head of the control lever being sure the holes are in line and secure the lever in place with a 1/8 x 7/8-inch coiled spring pin, **Illust. 12.**

All Models

Drive the 1-1/16-inch dowel pin in the hole in the transmission case at "H" **(Illust. 14)** and allow it to project 9/16-inch from the case. Drive the 3/4-inch dowel pin in hole "J" and allow it to project 1/4-inch from the case. Assemble the power take-off plate "K" with gasket to the transmission case.

Place the drawbar over the adapter plate and fasten both securely using the three 3/8 x 1-inch cap screws "L" and lock washers.

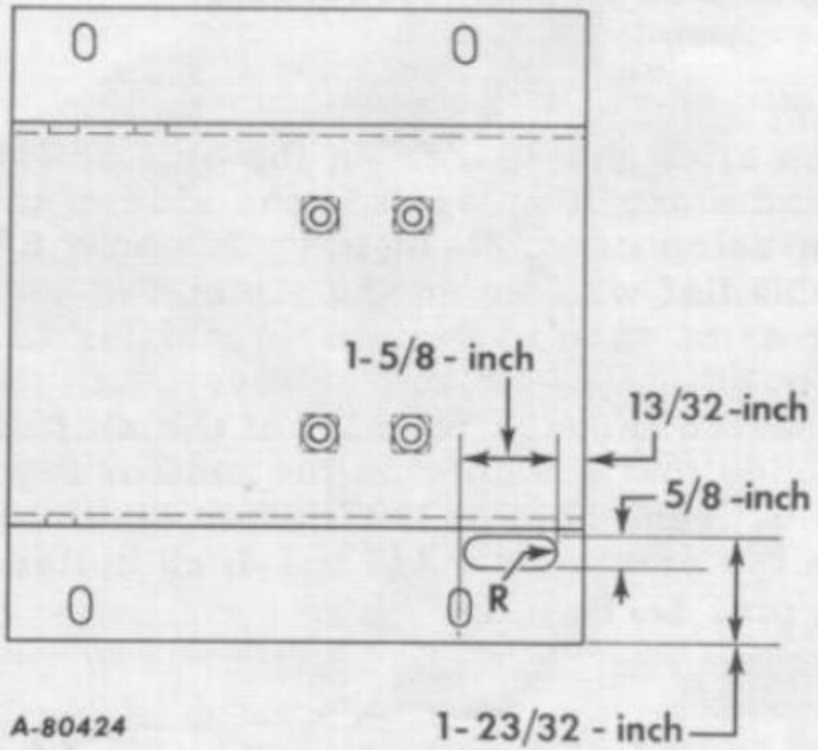
Slide the shifter clutch onto the power take-off shaft and secure with the set screws. **See Illust. 13.**



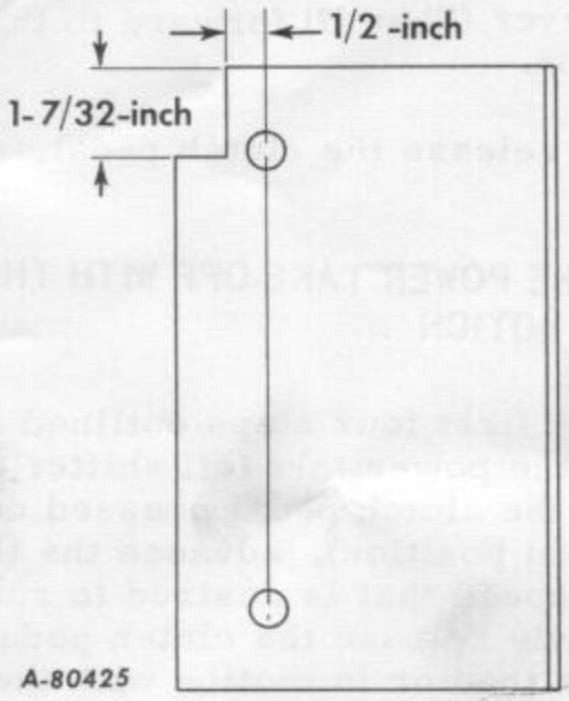
Illust. 13
Power take-off assembly.

Refill the transmission case with 3-1/2 quarts of IH Hy Tran® Fluid or SAE-30 engine oil.

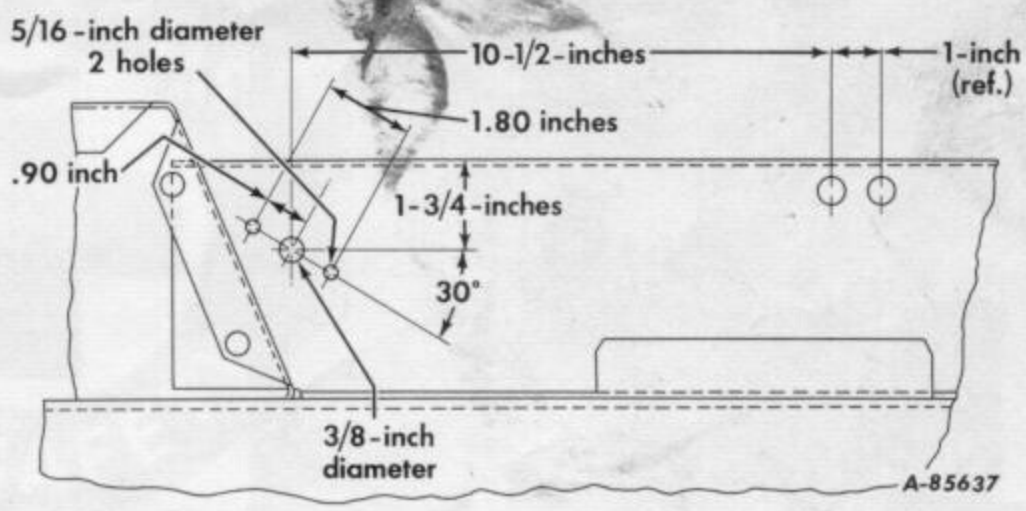
Check and adjust the clutch and brake adjustments if necessary, as instructed in the tractor Operator's Manaul.



Illust. 15
Seat spring support reworking diagram.
(International Cub Cadet 70, 71, and 100 Tractors.)

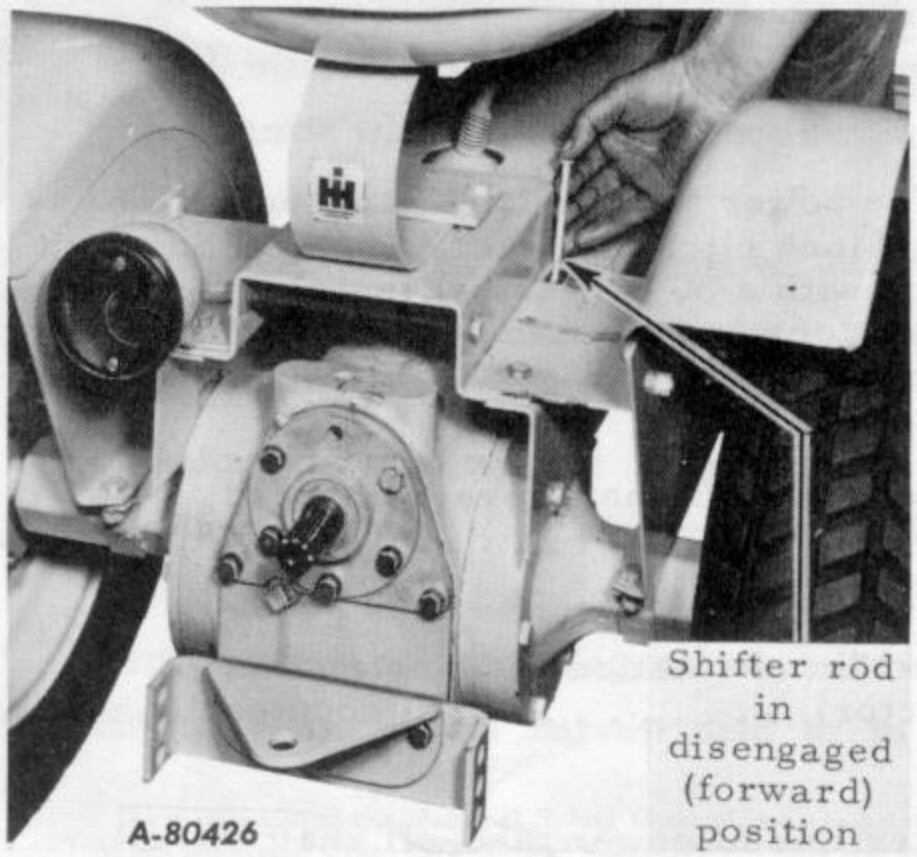


Illust. 16
Righr fender mounting bracket reworking diagram.
(International Cub Cadet 70, 71, and 100 Tractors.)



Illust. 17
Rear frame cover reworking diagram
(International Cub Cadet 102 and 122 Tractors).

OPERATION



Shifter rod in disengaged (forward) position

Illust. 18
Operating the Power Take-off.
(International Cub Cadet 70, 71 and 100 Tractors).

The rear power take-off is started and stopped by the same engine clutch as the tractor. Be sure to disengage the engine clutch before moving the power take-off shifter rod (Illust. 18), or shifter lever (Illust. 19). The shifter rod should always be in the disengaged (forward) position and the shifter lever in the disengaged (rearward) position when the power take-off is not in use.

OPERATING THE POWER TAKE-OFF WITH THE TRACTOR STANDING STILL

1. The transmission gear shift lever must be in the neutral position.

2. Move the throttle back to low idle speed.

3. Depress the clutch pedal to disengage the engine clutch.

Illust. 19
Operating the Power Take-Off.
(International Cub Cadet 102 and 122 Tractors).

4. International Cub Cadet 70, 71 and 100 Tractors; Press down on the shifter rod (Illust. 19) and move it rearward to the engaged position. Then release the shifter rod and allow it to lock in place.

International Cub Cadet 102 and 122 Tractors; Move the shifter lever (Illust. 19) forward to the engaged position.

5. Slowly release the clutch pedal.

OPERATING THE POWER TAKE-OFF WITH THE TRACTOR IN MOTION

Follow the first four steps outlined above; then engage the power take-off shifter rod or lever. Keep the clutch pedal pressed down (in the disengaged position), advance the throttle lever to the speed that is desired to run the tractor. Slowly release the clutch pedal which will start the tractor in motion with the power take-off in operation.

Note: When the power take-off shaft is not in use, always keep it covered with the power take-off shaft guard.

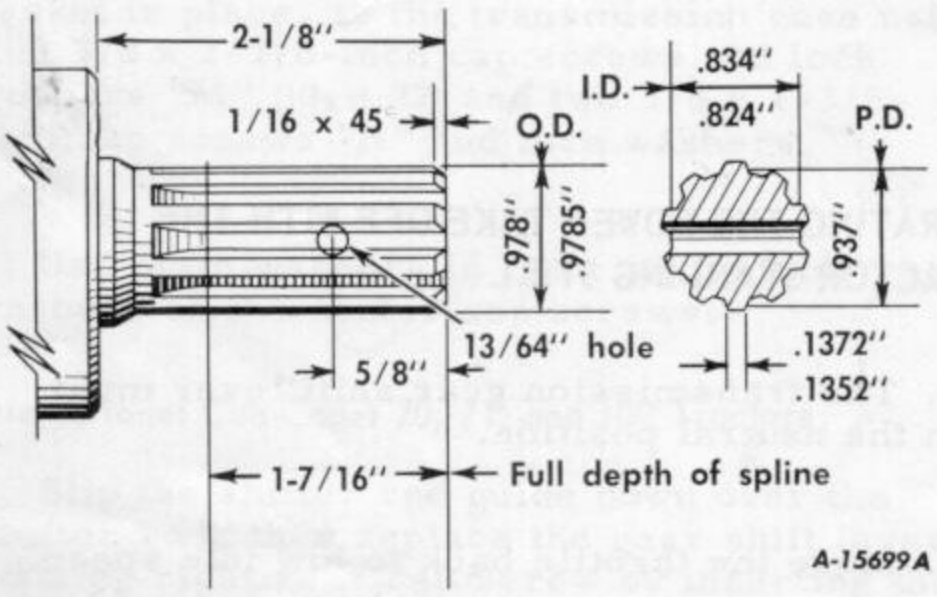
LUBRICATION

Lubricating the Power Take-Off

Use #2 multi-purpose lithium grease and apply two or three strokes of the lubricator to the power take-off lubrication fitting (Illust. 12) after every 150 hours of operation.

SPECIFICATIONS

Power Take-Off Specifications



Illust. 20.
Power take-off shaft spline dimensions.

The power take-off shaft connection is a 15/16-inch pitch diameter, ten tooth involute spline with a 30 degree pressure angle, machined for outside diameter fit. The dimensions are shown in Illust. 20.

Power take-off shaft governed speed . . . . . 515 r.p.m.

Direction of rotation (looking at rear of tractor). . . . . counterclockwise.

Center line of power take-off shaft above rear axle center line . . . . . 3-1/4-in.

End of power take-off shaft in rear of rear axle center line . . . . . 7-7/16-in.

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.

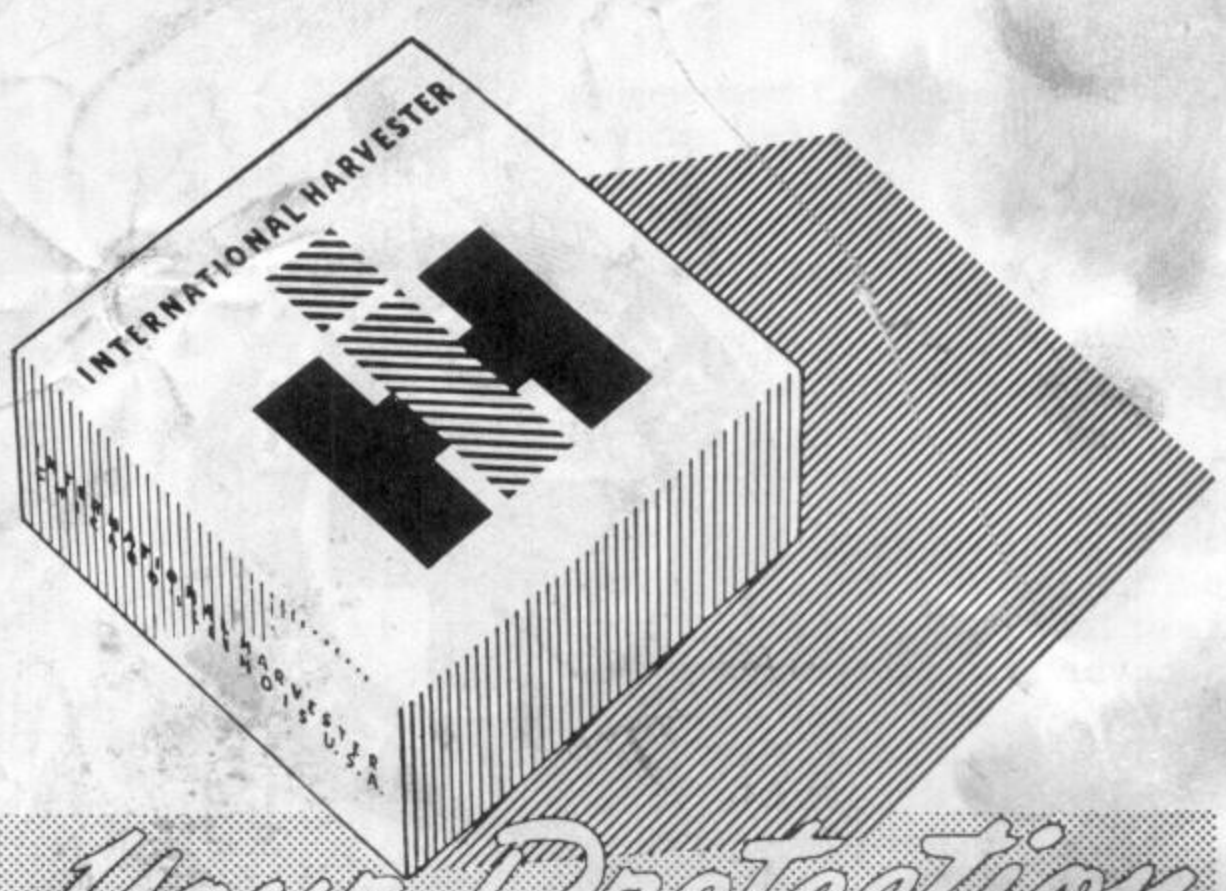
To read accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether 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.

NATIONAL SAFETY COUNCIL

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to point out more clearly the safety precautions in this manual.



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Use IH Parts

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Sincerely

The people who bring you the machines that work.

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