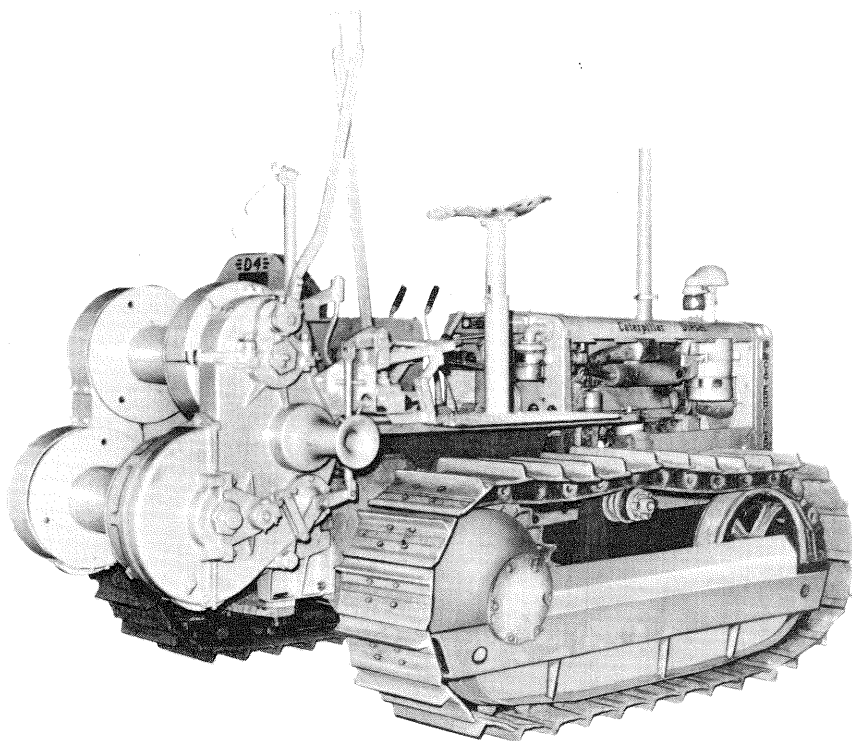


PARTS BOOK AND INSTRUCTION MANUAL

HYSTER[®] **D4N TRACTOR DONKEY**



HYSTER COMPANY

FACTORIES

Portland, Oregon ■ Danville, Illinois ■ Peoria, Illinois
Nijmegen, The Netherlands ■ Sao Paulo, Brazil ■ Irvine, Scotland
Kewanee, Illinois ■ Sydney, Australia (licensee)

FORM NO. 765C 1/61

PRICE 75 CENTS

500 LITHO
IN U.S.A.

599186W

FOR PARTS AND SERVICE CONTACT

INSTRUCTIONS FOR ORDERING

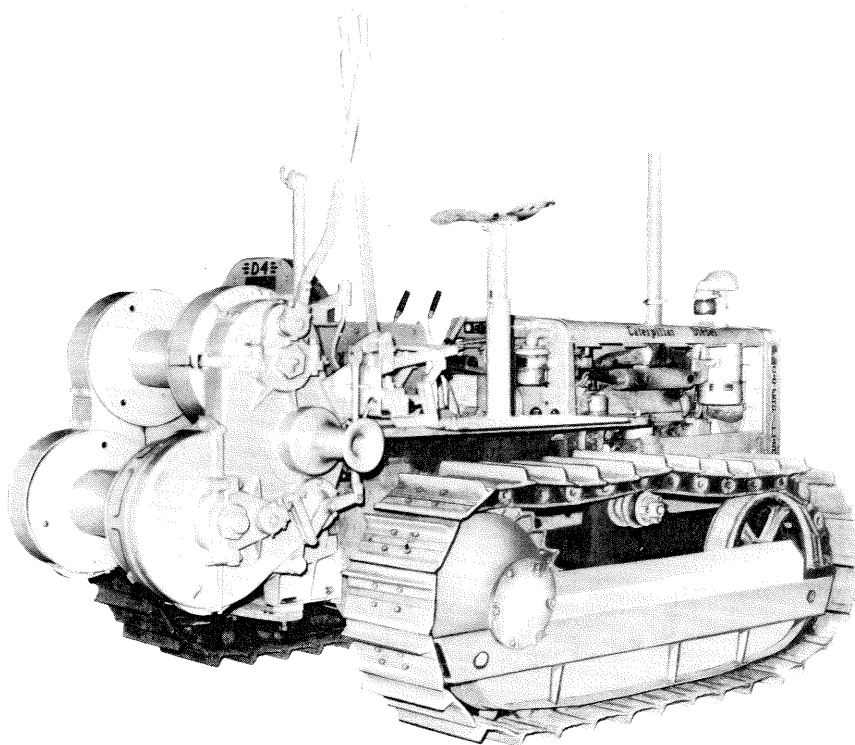
HYSTER REPAIR PARTS

1. Always give the serial number of machine, which is found on name plate.
2. Always specify name, number and letter of part required.
3. Always specify shipping destination and definite shipping instructions such as Parcel Post, Express, Air Express, Auto Freight or Rail Freight.

PARTS BOOK AND INSTRUCTION MANU

FOR HYSTER D4N TRACTOR DONKEY

**For "Caterpillar" D4 and R4 Tractors
(WITH FENDER-MOUNTED FUEL TANK AND BOX SEAT)**



**Including
Installation, Lubrication and
Servicing Instructions**

HYSTER COMPANY

PORTLAND 8, OREGON ■ PEORIA 1, ILLINOIS ■ DANVILLE, ILL.

U. S. A.

PRINTED
IN
U. S. A.

INDEX

SECTION A—Operating Instructions	4-5
SECTION B—Servicing Instructions	6-11
Lubrication Chart	9
Lubrication Instructions	10-11
Tractor Lever Alteration	12
SECTION C—Mounting Instructions	13-15
SECTION D—Parts List	16-55
Adapter Group—D4N Tractor Donkey for use with D6 Tractors	50-53
Adapter Group for HT4 Traxcavator	46-49
Brake Assembly	42
Brake Cylinder	44
Gypsy Spool and Intermediate Gears	26
Haulback Drum	30
Handling Gear	32-35
Hydraulic Braking	36-41
Main Drum	28
Master Cylinder	43
Numerical Index	54
Optional Tie Plates	45
Power Take-off	20
Rear Elevation	16
Shifter and Bevel Gear Shafts	22
Shifter Parts	24
Side Elevation	18
Specifications	Inside Back Cover

SECTION A

OPERATING INSTRUCTIONS

Keep all bolts and nuts tight and check all other connections.

**Be sure winch gear shift lever is in neutral position
BEFORE MOVING THE TRACTOR**

**THE TRACTOR MASTER CLUTCH SHOULD BE DISENGAGED
BEFORE SHIFTING GEARS IN THE WINCH.**

RIGHT AND LEFT HAND SIDE OF TRACTOR DONKEY

The part of the tractor donkey on the right-hand side of the tractor when the driver is sitting in the tractor seat is known as the right-hand side.

Note

When NoRol is in locked position, the brake should not be applied, as this will cause damage to the master cylinder.

D4N TRACTOR DONKEY FOR "CATERPILLAR" D4 AND R4 TRACTORS

HYSTER D4N Tractor Donkey is designed for logging and general service. When mounted on a tractor it creates mobile hoisting equipment for dragline scraper work in gravel pits, dredging and road operation, pile driving, and moving machinery and equipment.

TRANSMISSION is constant mesh, two-speed, with all rotating shafts mounted in heavy ball bearings. All gearing is completely enclosed in dust proof housing and runs in oil.

BRAKES are hydraulic internal expanding, two-shoe type, operated by foot pedals. Large area brakes, $16\frac{1}{4}" \times 3"$, provide effective holding and cooling characteristics.

GYPSY SPOOL is standard equipment on all D4N Tractor Donkeys and is mounted on intermediate drum shaft, thus providing auxiliary power for handling rigging and other small jobs when manila rope can be used.

DRUMS are cast of high grade cast steel, accurately machined and mounted on ball bearings for free spooling. Both drums are friction driven and are underwinding. The drums can be changed to overwinding by moving bevel gear and re-installing on opposite side of bevel gear pinion. Tractor cranes are mounted on main drum shaft.

SPEED RANGES as indicated in specifications are attained by an 18:1 gear ratio of the gears located on clutch and pinion shafts. These speeds can be increased by interchanging of the two gears. An optional gear set is also available, which gives ratio of 17-22 and, when reversed, 22-17.

CABLE recommended for general service is 6 x 19 Seale IWRC Improved Plow Steel Preformed Wire Rope, $\frac{5}{8}"$ for main drum and $\frac{3}{8}"$ for haulback drum.

For attaching the D4N tractor donkey to D6 tractors, an adapter group is available as optional equipment. (See page 50.)

Note: On "Caterpillar" D4 or R4 tractors earlier than 7J-9215 or 6G-20 tie plates are needed for attaching the tractor donkey to the tractor. Be sure to specify serial number of the tractor when ordering. (See page 45.)

SECTION B

SERVICING INSTRUCTIONS

SERVICING THE REO-TIMKEN "DP" BRAKE

Detailed Procedure for Servicing Brake

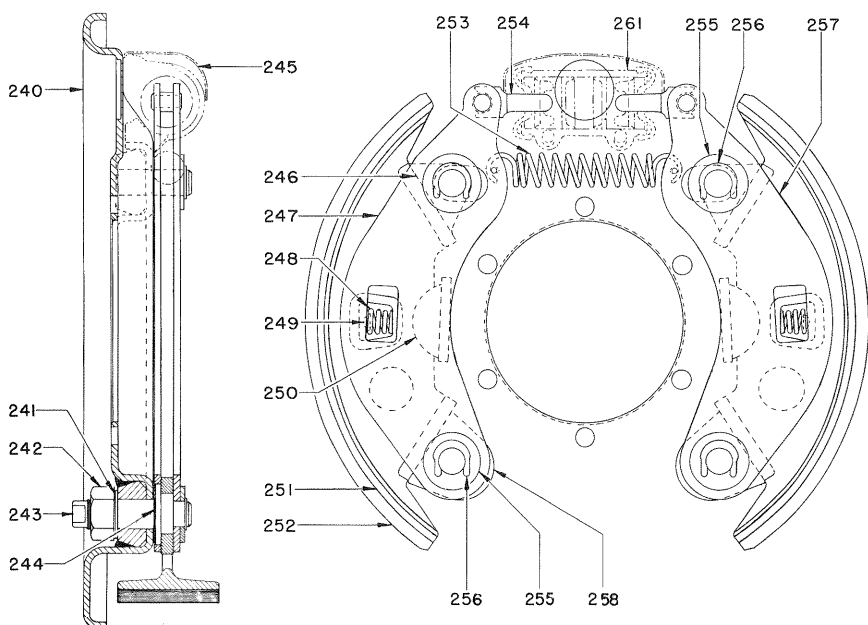


Figure 1

This brake is designated as the Timken "DP" or dual primary brake. It is a one wheel-cylinder hydraulic brake in which both shoes are more effective, in both forward and reverse directions.

These features are obtained entirely from the brake lever and shoe design shown in Figure 1. The brake shoes, 251, are fitted with linings, 252, of equal length and identical material, and are not anchored but "float" in the lever arms, 247 and 257. The wheel cylinder, 261, actuates the lever arms, which in turn apply pressure at the center of the shoes by means of removable pressure blocks, 250. The shoes are self-centered at the time of contact with the drums. Shoe rotation is prevented by self-aligning abutment blocks, 246 and 258, which bear against the angled face of the shoes.

Shoe Adjustment

The eccentric anchor pins, 243, that control the movement of the shoe toward or away from the drum, are located at the bottom. To decrease the clearance between lining and drum, proceed as follows:

SERVICING INSTRUCTIONS — Continued

Use a $1\frac{1}{4}$ " open-end wrench to loosen the anchor pin lock nut, 242. Position a $\frac{1}{2}$ " open-end wrench on the flat section of the anchor pin so that the wrench hand extends away from the vertical line of the brake. Apply pressure toward the ground until the shoe contacts the drum, then back to a minimum running clearance. (Approximately $1\frac{1}{2}$ " travel at the end of 8" wrench). Lock the anchor pin lock nut, and rotate brake drum in both directions to check for free-running clearance.

Each brake is equipped with two shoes and two eccentric anchor pins.

Adjust each shoe in the manner described above.

Be sure the anchor pin lock nuts, 242, are securely locked. Make sure linings are not worn excessively, permitting rivets to contact drums.

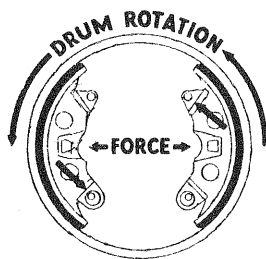


Figure 2

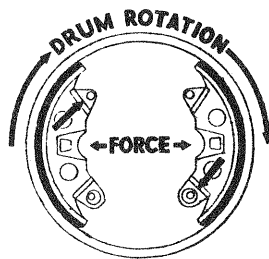


Figure 3

Brake Application

When the brake is applied, pressure from the wheel cylinder is applied through push rods, 254, to the upper ends of the brake shoe levers, 247 and 257, forcing the floating brake shoes to engage with the brake drum. Because the two shoes are not anchored, and because pressure is applied to their midpoints through movable pressure blocks, the shoes are self-centering at the instant of contact with the drum.

When the shoes are brought into contact with the drum, the natural tendency of the shoes is to follow the drum in the direction of rotation. This is prevented by self-aligning abutment blocks, 246 and 258, which lock against the angled ends of the shoes. When the brake drum rotation is shown in Figure 2, rotation of the shoes is restrained by the abutment blocks carried on anchor pins at the lower left and upper right. When rotating in reverse direction, Figure 3, rotation of the shoes is restrained by abutment blocks carried on the anchor pins at the upper left and lower right.

Uniform lining wear pattern results from radial application of the brake shoes to the drum, and lengthens lining life. The greater area of effective brake lining surface reduces pressure per square inch of the drum lining contact, lowers operating temperatures, and maintains friction values of linings more nearly constant.

A metal shield, 245, is provided over the wheel cylinder, which protects the cylinder and brake fluid from radiated heat of the drum. The wheel cylinder is of the straight bore type, and the brake has a small number of working parts and general simplicity of design and operation.

SERVICING INSTRUCTIONS — Continued

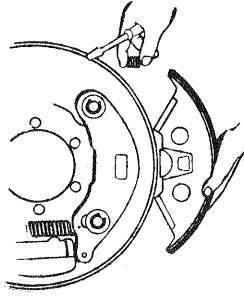


Figure 4

Refer to Figure 4. All that is necessary to remove shoe for service is a screwdriver to remove the shoe retaining spring (248).

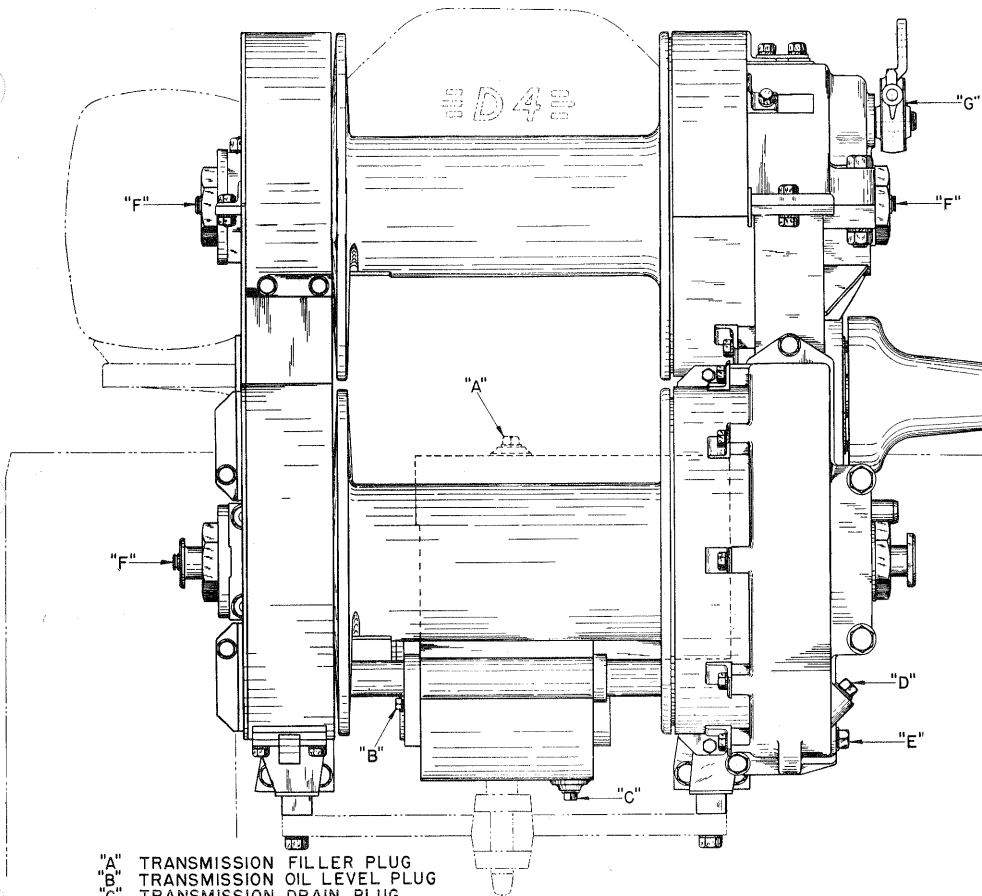
For part number references, see page 42.

To Bleed Hydraulic Brake Lines

(See page 36.)

1. Remove brake lines on outlet side of NoRol (24).
2. Loosen slightly, tube nut on inlet side of NoRol.
3. Loosen jam nut that holds NoRol in place.
4. Turn NoRol upside down.
5. Fill reservoir with brake fluid.
6. Work brake pedal slowly until all air is worked out of system up to and through NoRol.
7. Place NoRol handle in locked position and leave it locked through the subsequent operations until entire bleeding operation is completed.
8. Return NoRol to proper position and tighten tube nut and jam nut.
9. Replace brake line on outlet side of NoRol. Leave the fitting slightly loose and work brake pedal slowly to work out air trapped in fitting.
10. Tighten fitting.
11. Loosen bleeder screw in slave cylinder.
12. Work brake pedal slowly until all air is removed from the lines and slave cylinder.
13. Tighten bleeder screw.

LUBRICATION CHART



- "A" TRANSMISSION FILLER PLUG
- "B" TRANSMISSION OIL LEVEL PLUG
- "C" TRANSMISSION DRAIN PLUG
- "D" FINAL-DRIVE CASE FILLER AND OIL LEVEL PLUG
- "E" FINAL-DRIVE DRAIN PLUG
- "F" GREASE FITTINGS
- "G" SLACK ADJUSTER

LUBRICATION INSTRUCTIONS

Refer to chart shown on page 9.

The lubrication chart shows the location of the various lubrication fittings and filler plugs on the transmission and final drive cases.

NOTE: When checking oil level, if the tractor motor is running, throw out the master clutch so that hoist gears are stationary; otherwise, a false reading will result.

On a new winch the oil should be drained from both compartments of gear housings at the end of 10 days and each compartment flushed out and refilled with fresh oil.

Lubrication of Transmission

The gears and bearings in the transmission, and the inner bearing on the drum pinion shaft, are lubricated by a splash system from the oil in the transmission case. The oil level in the case should be checked twice weekly, keeping the case filled up to the oil level plug "B," which is located on the outside of the left-hand side of the transmission case.

The filler plug "A," is located in the transmission case top cover plate and the drain plug "C," is located in the bottom section of the case.

Lubrication of Final Drive

The drum gear train and bearings in the final drive compartment, including the drum gear bearings, are lubricated by a splash system from the oil in the case. The oil level in the case should be checked twice weekly, keeping the case filled up to the oil level plug "D," located on the outside of the right-hand side frame.

The level plug "D," is also the filler plug, and the drain plug "E" is located on the right-hand side frame just below the filler plug.

Oil Changes

Both drain plugs are of the magnetic type which attract and hold any metal particles out of the oil.

If the oil level drops below the level plugs "B" and "D" the upper transmission gears and drum gear bearings will not receive proper lubrication.

In normal operation of winch, drain, flush and refill with fresh oil every 30 days depending on operating conditions. For refilling, use SAE 90 under ordinary use and weather conditions. In general, use the same gravity oil as is required in the "Caterpillar" transmission. Approximately 4 quarts of oil are required for the transmission, and about 2 quarts of oil are required for the final drive compartment when changing oil.

LUBRICATION INSTRUCTIONS — Continued

Main Drum Shaft

(See page 28.)

The ball bearing in the friction end of the main drum is lubricated means of a grease fitting (37) in the end of the main drum shaft.

The thrust nut (19) receives its lubrication from this same fitting.

The ball bearing in the brake end of main drum is lubricated by means of another grease fitting (37) in the opposite end of the main drum shaft.

Haulback Drumshaft

(See page 30.)

The ball bearing in the friction end of the haulback drum, and the thrust nut (16) receive lubrication by means of a grease fitting in the end of the haulback drum shaft.

The ball bearing in the brake end of haulback drum is also lubricated by means of a grease fitting in the opposite end of the haulback drum shaft.

Above grease fittings on both drum shafts should be lubricated once a week with a high grade pressure grease No. "O."

CAUTION: Do not use too much grease in drum bearings, as excess grease will only be thrown out and may work its way onto the friction and brake surfaces. (Two shots from a conventional grease gun, once week.)

Handling Gear Lubrication

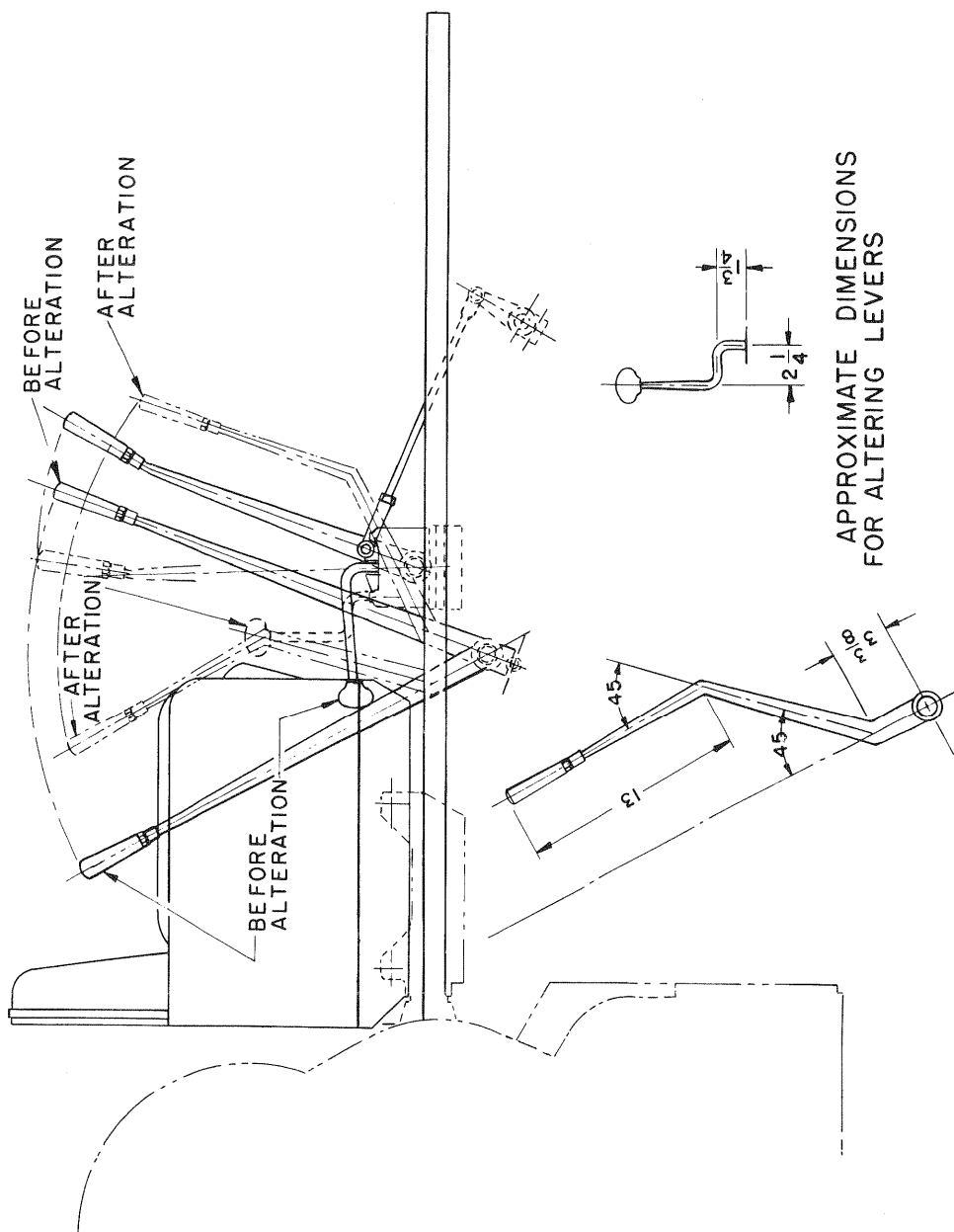
Shifter rods, lever fulcrums, pin connections and other moving parts should be kept working freely by oiling once every day with a few drops of oil from an ordinary oil can.

Slack adjuster (4, page 32) is equipped with a grease fitting, and will need to be lubricated only a few times a year.

Oilite bushings are used in the Shifter Post and need only a drop or two of oil occasionally, or when dismantled for servicing.

TRACTOR LEVER ALTERATIONS

Required for mounting D4N Tractor Donkey on D4 Tractor



SECTION C

MOUNTING INSTRUCTIONS

For Installing Hyster D4N Tractor Donkey on "Caterpillar"
Diesel D4 Tractor Serial No. 7J-9215 and up

Also on "Caterpillar" (New Thirty) Gas R4 Tractor
Serial No. 6G-2076 & up

1. Block up rear end of tractor about ten inches. This prevents oil from running out of transmission case, and makes installation easier.
2. Remove tractor seat, transmission gear inspection cover, drawbar guard plates and brackets.
3. Remove tool box from right-hand fender.
- *4. Remove studs from lower face of drawbar brackets.
5. Remove street ell and drain cock from elbow drain fitting at rear of tractor fuel tank. Reassemble with female end of street ell on elbow fitting and drain cock on male end of street ell.
6. Separate tractor seat from seat frame and discard seat frame.
7. Cut off rear end of both fenders to a line 8" from end, so that end of fenders are flush with rear face of "Caterpillar" transmission case.
- *8. Install studs (which were removed in instruction 4) in bottom pads of hoist side frames.
9. Place spline coupling (11, page 20) on hoist transmission P.T.O. shaft. Lock coupling to shaft with pin (12) and lock ring (10).
10. Place sealing ring (6, page 20) over centering boss and against wall of transmission case.
11. Hydraulic Brake Foot Pedal unit (which is wired to winch for stop movement) may be installed on winch side frame before mounting hoist on tractor. Swing the foot pedal bracket assembly into place on winch and fasten with three capscrews, $\frac{1}{2}$ NF x $1\frac{1}{2}$ and lockwashers (page Ref. 11).

*Note: For Tractors 6U10066 and up and 7U-27984 and up, use place bolt $\frac{3}{4}$ UNF x $2\frac{1}{4}$, Hyster No. 92697.

MOUNTING INSTRUCTIONS — Continued

12. Install shifter post and bracket (18, page 32) to upper R. H. gear cover and fasten with three capscrews, $\frac{1}{2}$ NC x $1\frac{1}{2}$ and lockwashers. Slip U-bolt (11) over shifter post through V-block (10) and bracket on transmission case. Pull up securely with two hex nuts, $\frac{5}{16}$ NC and lockwashers.
13. For units with serial numbers CBN-35329 to CBN-35337 only: Standpipe (33, page 41) assembled with two shut-off valves (which is wired to the winch for shipment) may be also installed at this time to upper shifter post bracket. Fasten with two capscrews, $\frac{3}{8}$ NF x 1", hex nuts and lockwashers.

See page 36.

14. Swing Hyster unit into place back of tractor, taking special care to swing the unit so it will hang level and square with tractor face.
15. Fit the spline coupling to the tractor power take-off shaft. By turning crank shaft of tractor, spline coupling on hoist unit may be lined up with shaft on tractor.
16. When hoist is several inches from tractor rear face, line up holes with studs on tractor and slide hoist over them.
17. Replace nuts and lockwashers on tractor studs which hold the frames, and draw the hoist unit tightly in place against the face of the tractor.
18. Install brackets (31, page 18). Fasten securely to top of transmission cover with two $\frac{5}{8}$ " dowel pins (16), four capscrews $\frac{5}{8}$ NC x $1\frac{1}{4}$ and lockwashers. Bolt brackets to hoist frames with two capscrews 1" NF x $4\frac{3}{4}$, hex nuts and jam nuts. On right hand side, 1" capscrew is put through hoist frame and bracket from hoist side, with hex nut and jam nut on tractor side. On left hand side, 1" capscrew is put through bracket and hoist frame from tractor side, with hex nut and jam nut on hoist side.
19. Mount seat supports (32, page 18) to brackets, 31. Fasten in place with four capscrews $\frac{1}{2}$ NF x $1\frac{1}{4}$, hex nuts and lockwashers.
20. Install tractor seat (omitting lower compartment as noted in instruction 6) on top of seat supports. Fasten with four capscrews $\frac{3}{8}$ NF x 1, (14, page 18), hex nuts and lockwashers.
See page 36.
21. Install fender plate (21) on right-hand tractor fender. Locate from the hole (6) in bracket (13). After lining up the plate, drill the remaining holes in fender to match. Fasten with four capscrews, $\frac{1}{2}$ NF x $1\frac{1}{4}$, hex nuts and lockwashers.
22. Install hoist operating seat and seat support assembly to fender plate, matching four holes of similar spacing in fender plate. Fasten with four capscrews $\frac{1}{2}$ NF x $1\frac{1}{2}$, hex nuts and lockwashers.

MOUNTING INSTRUCTIONS — Continued

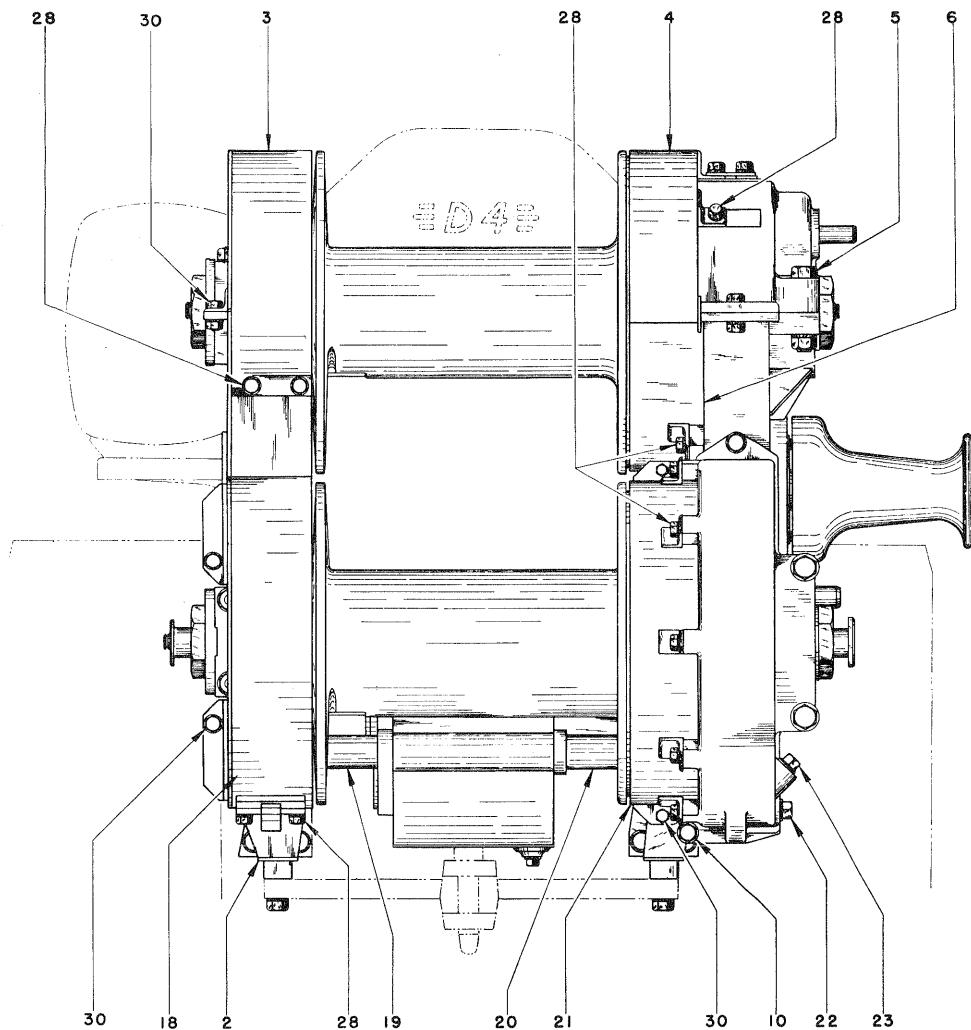
23. Install main clutch handlever (13, page 32) on foot-brake pedal bracket, locating lever toward the "Caterpillar" seat. Install haulback clutch handlever (12) on foot-brake pedal bracket, locating lever outside of the main lever, with spacer (21) between the two levers. Insert the lever shaft (22) through the bracket, levers and spacer, locking in place with two cotters, $5/32 \times 1\frac{3}{4}$.
24. Connect main clutch lever link rod (9, page 32) ($19\frac{3}{4}$ " center to center of pins) from handlever to slack adjuster.
26. Add handle extension (not illustrated) to "Caterpillar" master clutch lever.
27. Relocate tool box on the front end of fender.
28. Replace tractor drawbar guide plate to the lower flange of hoist frame and fasten securely with studs installed in instruction 8.
29. Check all bolts and connections, and make sure that all nuts and lock washers are in place and drawn up tightly.
30. For units with serial numbers CBN-35329 to CBN-35337 only:
Remove wooden plugs from vent holes in caps on master cylinder and main brake line, and on standpipe in haulback brake line. Open shut-off valves in brake lines.

For mounting D4N Tractor Donkey on Non-current D4 Tractors prior to tractor Serial No. 7J-9215 and 6G-2076), special tie brackets are required. See page 45 for parts.

SECTION D

LIST OF PARTS AND ILLUSTRATIONS

GENERAL ARRANGEMENT — REAR ELEVATION



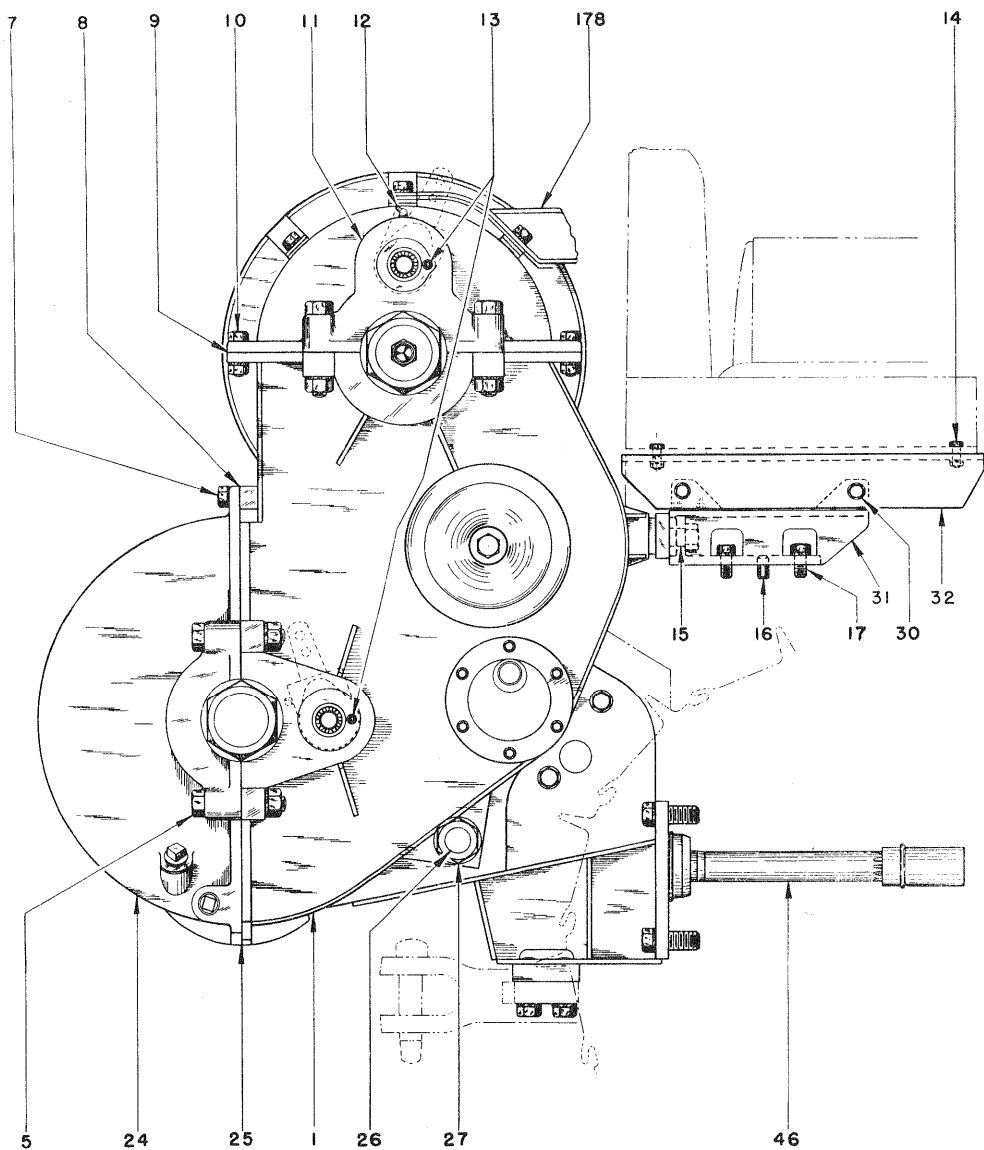
GENERAL ARRANGEMENT — REAR ELEVATION

Ref. No.	Hyster Part No.	NAME OF PART	
2	46801AB	Frame—Side (L. H.)	
3	46828A	Guard	
4	46793A	Guard	} Guard to Cover
	15502	Capscrew— $\frac{1}{2}$ NC x 1	
	15158	Lockwasher— $\frac{1}{2}$	
5	15604	Capscrew— $\frac{7}{8}$ NF x $4\frac{1}{2}$	}
	15014	Nut—Hex ($\frac{7}{8}$ NF)	
	15164	Lockwasher— $\frac{7}{8}$	
6	46798A	Guard	
10	15535	Capscrew— $\frac{5}{8}$ NF x 2	}
	15010	Nut—Hex ($\frac{5}{8}$ NF)	
	15160	Lockwasher— $\frac{5}{8}$	
18	46822A	Guard	
19	46840	Pipe	
20	46841	Pipe	
21	46784A	Guard (shown)	}
	46788A	Guard (in back, not shown)	
22	35504	Plug—Magnetic, Pipe (1")	
23	15305	Plug—Pipe (1")	
28	15511	Capscrew— $\frac{1}{2}$ NF x 1	}
	15158	Lockwasher— $\frac{1}{2}$	
30	15514	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	}
	15008	Nut—Hex ($\frac{1}{2}$ NF)	
	15158	Lockwasher— $\frac{1}{2}$	

Not illustrated:

92967 Place Bolt— $\frac{3}{4}$ UNF x $2\frac{1}{4}$
 (First used on S. N. 65664) (To hold Drawbar Plate)

GENERAL ARRANGEMENT — SIDE ELEVATION

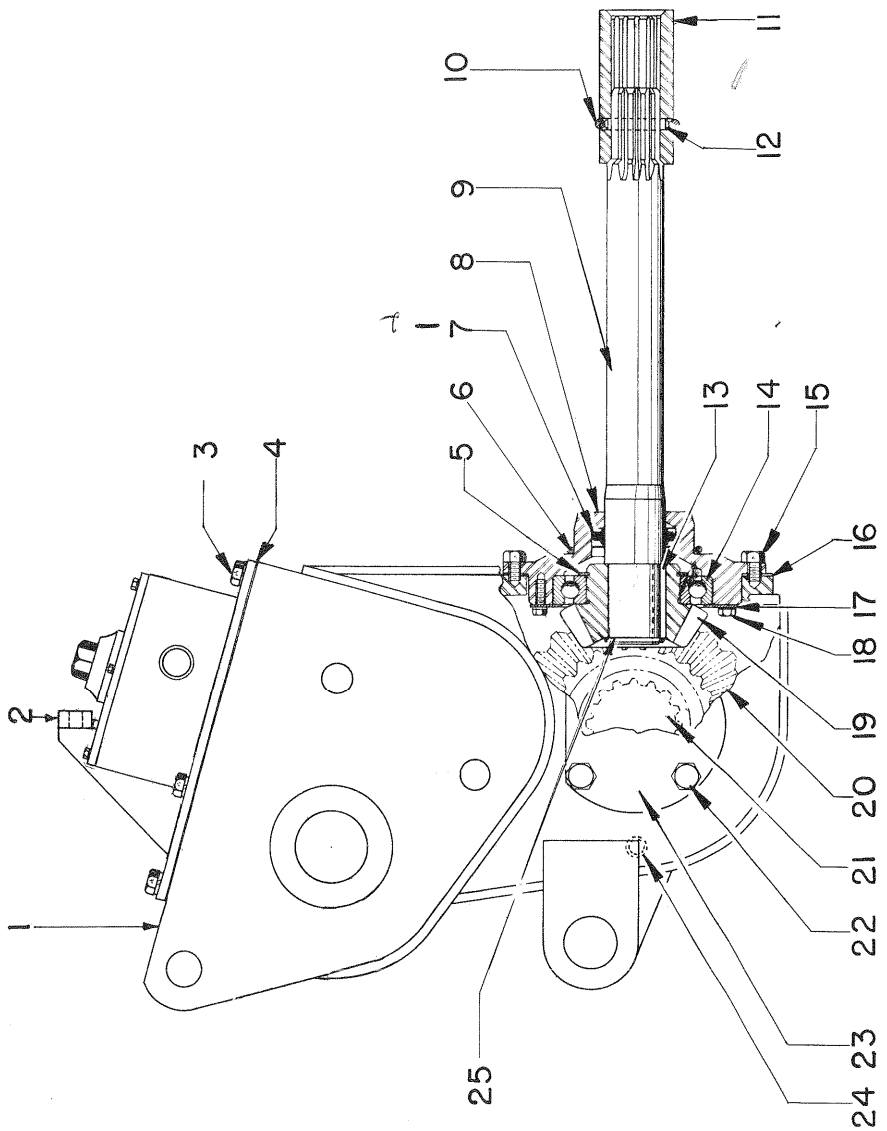


GENERAL ARRANGEMENT — SIDE ELEVATION

Ref. No.	Hyster Part No.	NAME OF PART	
1	46699A	Frame—Side (R. H.)	
	*15604	Capscrew— $\frac{7}{8}$ NF x $4\frac{1}{2}$	
5	*15014	Nut—Hex ($\frac{7}{8}$ NF)	
	*15164	Lockwasher— $\frac{7}{8}$	
7	*15579	Capscrew— $\frac{5}{8}$ NF x $1\frac{3}{4}$	
	*15160	Lockwasher— $\frac{5}{8}$	
8	*46782	Gasket	
9	*46792	Gasket	
	*15535	Capscrew— $\frac{5}{8}$ NF x 2	
10	*15010	Nut—Hex ($\frac{5}{8}$ NF)	
	*15160	Lockwasher— $\frac{5}{8}$	
11	*46791	Cover	
12	21420	Plug—Breather ($\frac{3}{8}$ NC x $1\frac{1}{4}$)	
13	46698	Capscrew—Socket Head ($\frac{3}{8}$ NC x $1\frac{1}{4}$)	
	15156B	Lockwasher—High Collar ($\frac{3}{8}$)	
	15508	Capscrew— $\frac{3}{8}$ NF x 1	
14	15006	Nut—Hex ($\frac{3}{8}$ NF)	
	15156	Lockwasher— $\frac{3}{8}$	
	15548	Capscrew—1" NF x 5	
15	15016	Nut—Hex (1" NF)	
	15036	Nut—Jam (1" NF)	
16	38454	Pin—Dowel	
17	15531	Capscrew— $\frac{5}{8}$ NC x $1\frac{1}{4}$	
	15160	Lockwasher— $\frac{5}{8}$	
24	46781	Cover	} Part of Frame
25	46783	Gasket	
26	46842	Link	} Assembly (Ref. 1)
27	5792B	Nut—Hex ($1\frac{1}{2}$ NF)	
	15170	Lockwasher— $1\frac{1}{2}$	
30	.....	Capscrew (see page 17, Ref. 30)	
31	38450	Bracket—R. H.	
	38451	Bracket—L. H.	
32	46852	Bracket—Seat (R. H.)	
	46853	Bracket—Seat (L. H.)	
46	.....	Power Take-off (see page 20)	
178	.....	Shifter Post and Bracket (see page 32, Ref. 18)	

*Included in Side Frame Assembly 46699A.

POWER TAKE-OFF (TRANSMISSION)



POWER TAKE-OFF (TRANSMISSION)

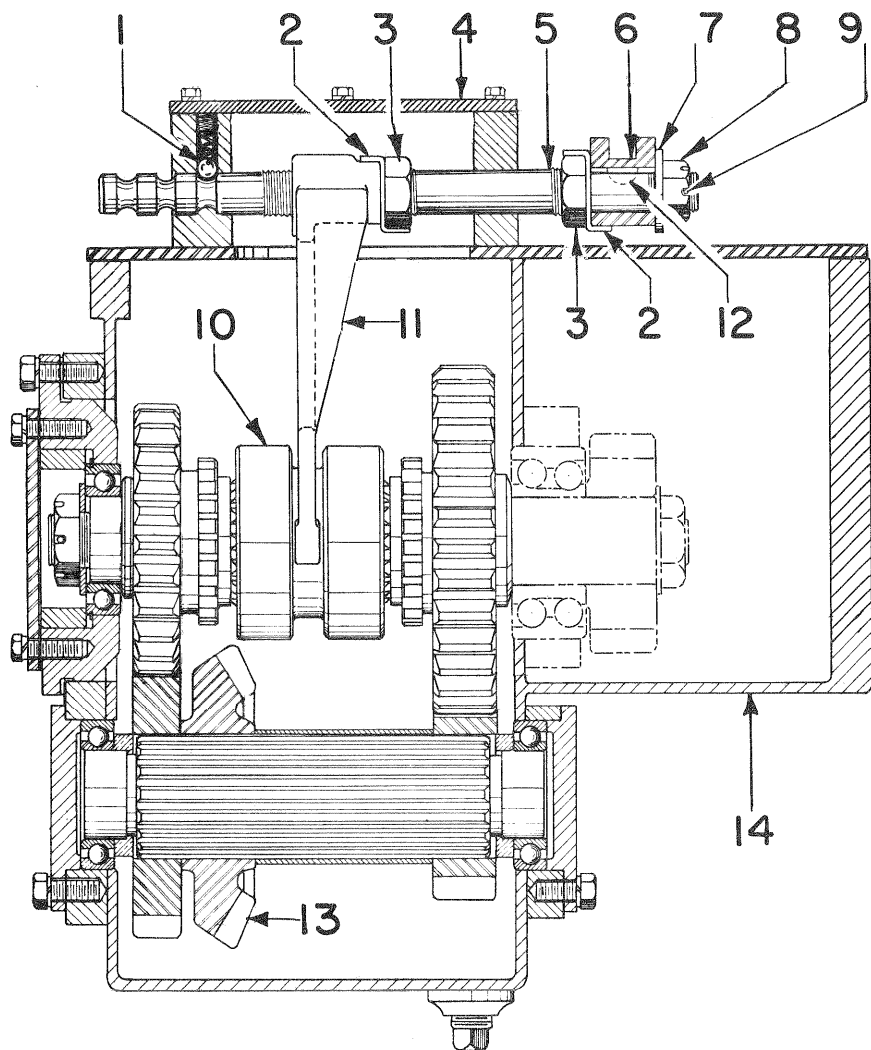
Ref. No.	Hyster Part No.	NAME OF PART	Q R
1	{ 46607 15598 15166	Housing—Transmission Capscrew—1" NF x 2 1/2 } R. H. Side Frame Lockwasher—1" } to Transmission	
2	59952A	Cover—Transmission (Prior to Serial No. 35338, include Inspection Cover No. 59154A)	
3	{ 15518 15156	Capscrew—3/8 NF x 7/8 1 Lockwasher—3/8 1	
4	46746	Gasket	
5	58905	Snap Ring	
6	46629	"O" Ring	
7	46626	Oil Seal	
8	46625	Carrier—Bearing	
9	46622	Shaft	
10	9554	Ring—Lock (Caterpillar 3B-1224)	
11	6852	Coupling (Caterpillar 3B-1042)	
12	9563	Pin (Caterpillar L-2124)	
13	326	Key (Square)	
14	44314P	Bearing	
15	30836	Capscrew—Drilled Head	
16	46628B	Shim Set	
17	46627	Plate—Retainer	
18	798	Capscrew—Drilled Head	
19	46623B	Gear/Bevel (15 teeth)	
20	46635	Gear/Bevel (28 teeth)	
21	46630	Shaft	
22	{ 15511 15158	Capscrew—1/2 NF x 1 1 Lockwasher—1/2 1	
23	46631	Retainer—Bearing	
24	15302	Plug—Pipe (3/8 Std.)	
25	32846	Snap Ring	

SHIFTER AND BEVEL GEAR SHAFTS (TRANSMISSION)

Ref. No.	Hyster Part No.	NAME OF PART	R
1	15518	Capscrew— $\frac{3}{8}$ NF x $\frac{7}{8}$	
	15156	Lockwasher— $\frac{3}{8}$	
2	15553	Capscrew— $\frac{5}{16}$ x $\frac{3}{4}$	
	15155	Lockwasher— $\frac{5}{16}$	
3	32411	Plug—Vent	
4	46747A	Cover (Last used on Serial No. 35337)	
	59954A	Cover (First used on Serial No. 35338)	
5	46748	Gasket (Last used on Serial No. 35337)	
	59955	Gasket (First used on Serial No. 35338)	
6	.....	Transmission Cover (see Page 21, Ref. 2)	
7	46831	Oil Seal	
8	46645	Gear (23 teeth)	
9	46647	Clutch—Dental	
10	46648	Gear (30 teeth)	
11	58906	Snap Ring—External	
12	45209	Bearing—Double Row	
13	† 46653	Gear (21 teeth)	
14	46644	Washer—Thrust	
15	46646	Bushing—Flanged	
16	46649	Washer—Thrust	
17	46651B	Shaft	
18	46985	Washer	
19	31262	Nut—Slotted Jam ($1\frac{1}{4}$ NF)	
20	15240	Cotter— $\frac{5}{32}$ x $2\frac{1}{2}$	
21	46833	Plug—Pilot	
22	† 46650	Gear (18 teeth)	
23	46607	Housing—Transmission	
24	45310	Bearing—Double Row	
25	43210	Bearing	
26	46630	Shaft—Bevel Gear	
27	46631	Retainer—Bearing	
28	15502	Capscrew— $\frac{1}{2}$ UNC x 1	
	15158	Lockwasher— $\frac{1}{2}$	
29	46632	Shim Set	
30	46633	Spacer	
31	35503	Plug—Magnetic ($\frac{3}{4}$)	
32	46637	Gear (17 teeth)	
33	46636	Spacer	
34	46635	Gear (28 teeth)	
35	46634	Gear (24 teeth)	
36	46640B	Carrier—Bearing (includes Item 37)	
37	21049	Snap Ring	
38	43210G	Bearing	
39	46643	Plate—Cover	
40	46641	Spacer	
41	46642	Gasket	
43	46746	Gasket	
44	46638	Shaft	
45	15511	Capscrew— $\frac{1}{2}$ UNF x 1	
	15158	Lockwasher— $\frac{1}{2}$	

†If more power and less speed is desired, Optional Gear 90634 (17 teeth) be used in place of Ref. 13, and 90635 (22 teeth) in place of Ref. 22, but must be used in pairs only.

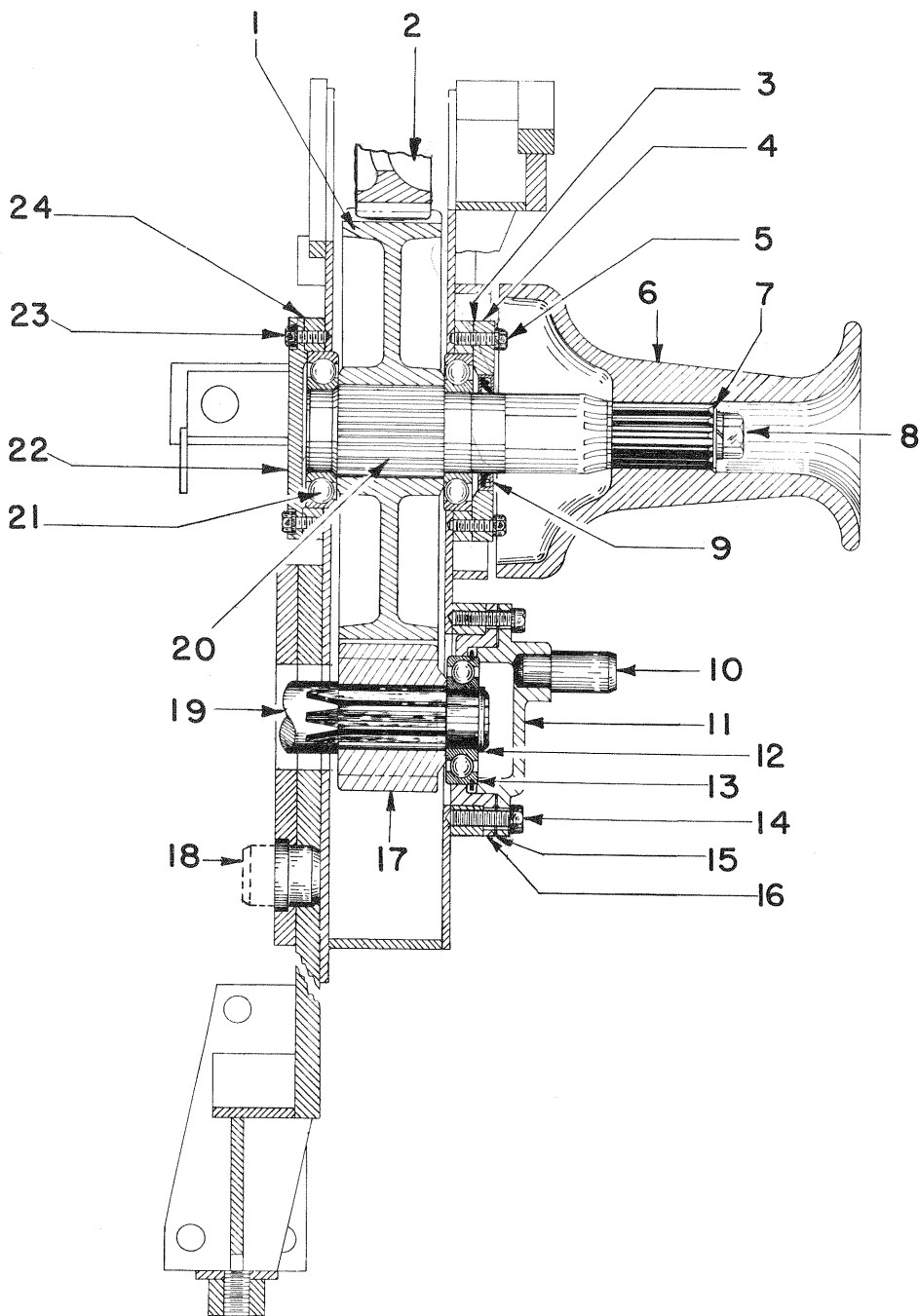
SHIFTER PARTS



SHIFTER PARTS

Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	{ 6348	Ball— $\frac{1}{2}$ }	First used on
	{ 6347B	Spring }	Serial No. 35338)
2	38325	Plate	
4	.....	Inspection Cover (see page 23, Ref. 4)	
5	59953	Shaft—Shifter	
6	{ 46760	Block—Shifter (Last used on Serial No. 35337)	
	{ 59956A	Block—Shifter (First used on Serial No. 35338)	
7	15182	Washer— $\frac{7}{8}$	
8	21110	Nut—Slotted	
9	15236	Cotter— $\frac{5}{32} \times \frac{13}{4}$	
10	46647	Clutch—Dental	
11	46761	Fork—Shifter	
12	23279	Key—Woodruff	
13	46635	Gear (28 teeth)	
14	46607	Housing—Transmission	

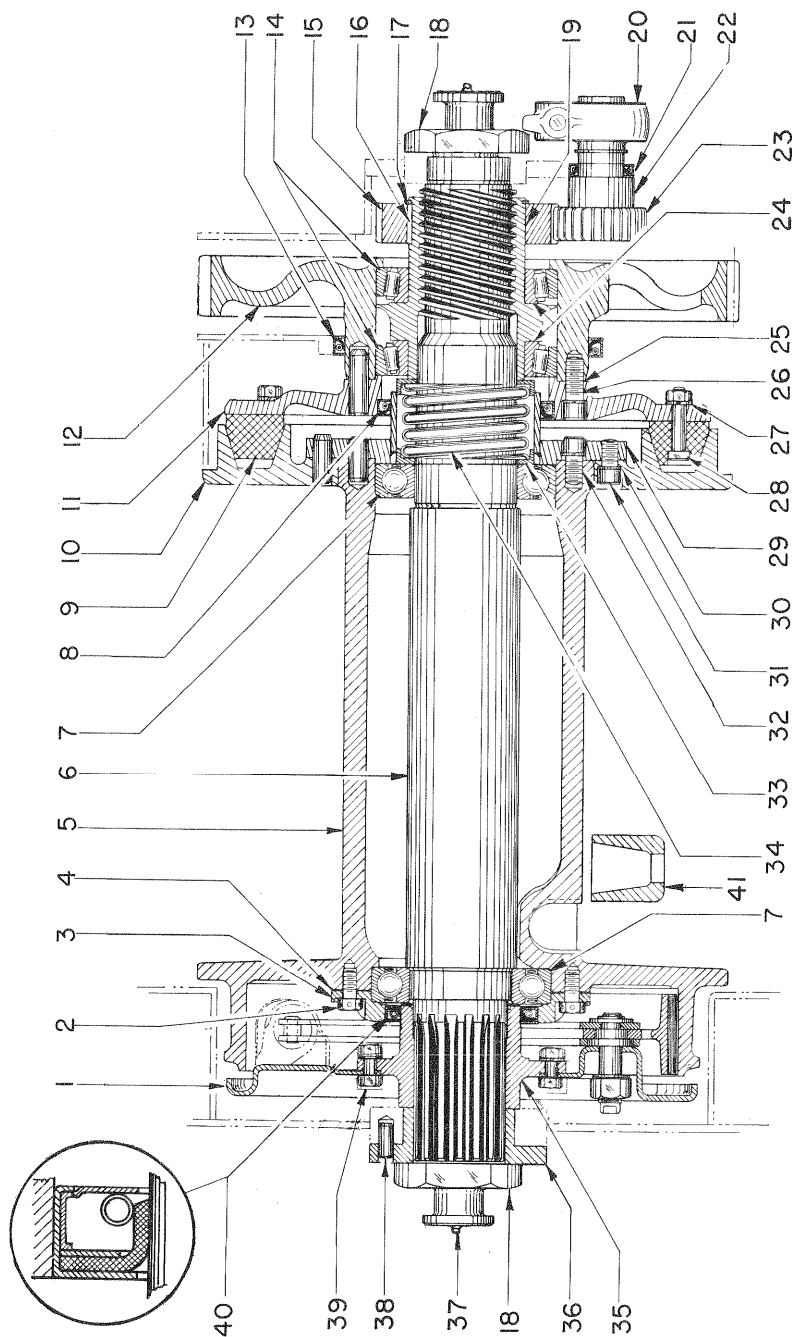
GYPSY SPOOL, INTERMEDIATE GEARS AND COVERS



GYPSY SPOOL, INTERMEDIATE GEARS AND COVERS

Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	46661	Gear (53 teeth)	
2	.....	Main Drum Gear Assembly (see page 29, Ref. 12) ..	
3	46847	Shim Set	
4	{ 46662	Retainer—Bearing (Last used on Serial No. 53164) ..	
	{ 91372	Retainer—Bearing (First used on Serial No. 61945) ..	
5	{ 15508	Capscrew— $\frac{3}{8}$ NF x 1	
	{ 15156	Lockwasher— $\frac{3}{8}$	
6	91376	Spool—Gypsy	
7	46664	Washer	
8	{ 15521	Capscrew— $\frac{3}{4}$ NF x $1\frac{1}{2}$	
	{ 15162	Lockwasher— $\frac{3}{4}$	
9	9945	Oil Seal	
10	46986	Pin (Last used on Serial No. 53164)	
	{ 46657B	Retainer—Bearing (Last used on Serial No. 53164) ..	
11	{ 91377	Retainer—Bearing (First used on Serial No. 61945) ..	
	{ 16208	Setscrew—Socket Head ($\frac{3}{8}$ NC x $\frac{1}{2}$)	
12	58906	Snap Ring	
13	{ 41309G	Bearing (Includes Snap Ring)	
	{ 23107	Snap Ring	
14	{ 15509	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{2}$	
	{ 15158	Lockwasher— $\frac{1}{2}$	
15	46655	Gasket	
16	46656	Carrier—Bearing	
17	46654	Gear (16 teeth)	
18	46833	Plug—Pilot	
19	46651B	Shaft—Drum Pinion	
20	46658	Shaft	
21	43213	Bearing	
22	46660	Retainer—Bearing	
23	{ 15513	Capscrew— $\frac{3}{8}$ NF x $\frac{3}{4}$	
	{ 15156	Lockwasher— $\frac{3}{8}$	
24	46659	Gasket	

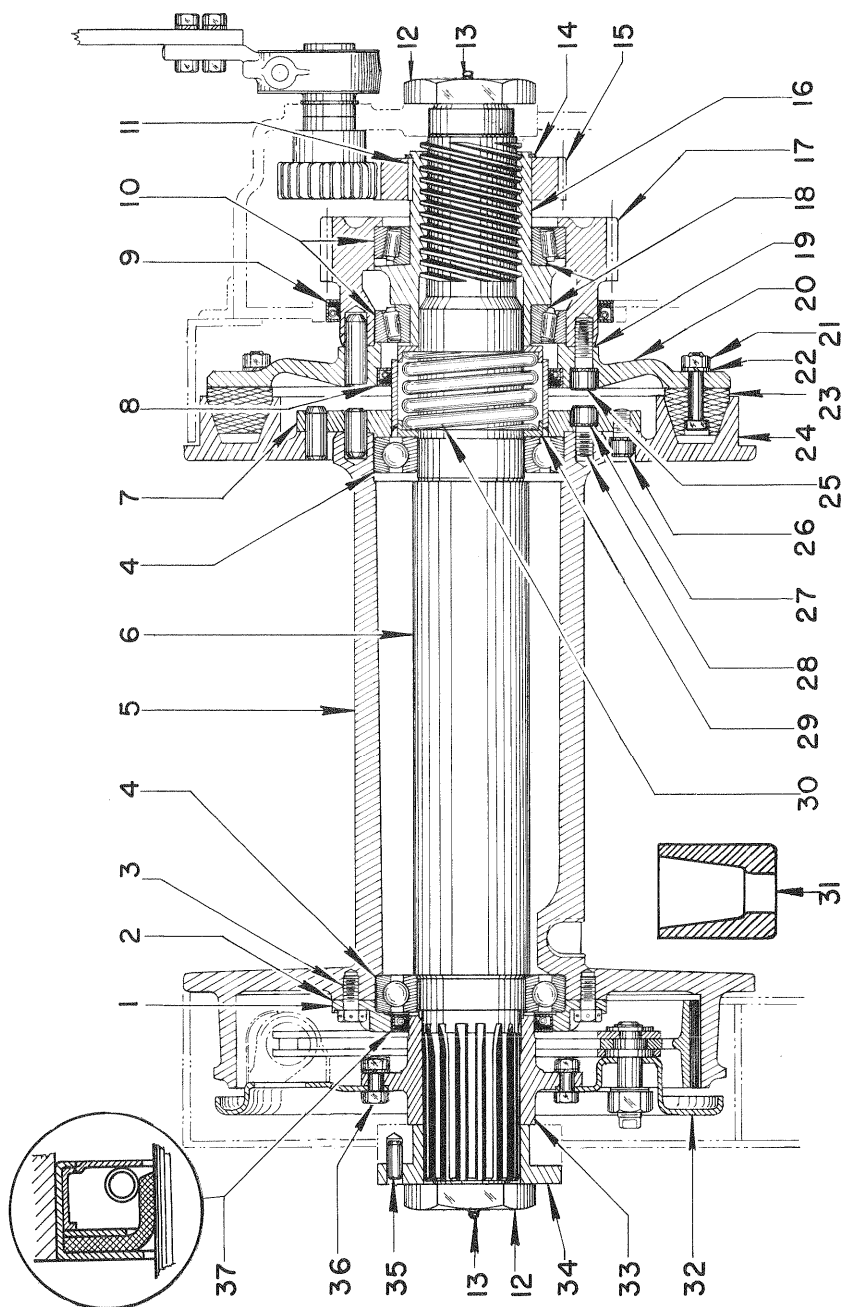
MAIN DRUM ASSEMBLY



MAIN DRUM ASSEMBLY

Ref. No.	Hyster Part No.	NAME OF PART	C Re
1	59990A	Brake Assembly (see page 42 for parts)	
2	754	Capscrew—Drilled Head	
3	46929	Carrier—Bearing	
4	46670B	Gasket	
5	{ 46666AB	Barrel Assembly—Main Drum (includes Pin)	
	{ 46667	Pin—Shear	
6	59989	Shaft—Main Drum	
7	43219	Bearing	
8	44466	Oil Seal	
9	46684	Block Set—Friction	
10	46678	Flange	
11	46682	Disc—Clutch	
	{ 46685A	Gear Assy.—Main Drum (Last used on S. No. 35337)	
12	{ 59987A	Gear Assy.—Main Drum (Used after Ser. No. 35337)	
	{ 46687	Pin—Shear (Included with Gear Assembly)	
13	44467	Oil Seal	
14	30201	Bearing Cup	
15	46691	Gear	
16	2712	Key	
17	46692	Snap Ring	
18	46675	Nut	
19	46688	Nut—Thrust	
20	46249B	Slack Adjuster	
21	46697	Oil Seal	
22	46762	Bushing—Operating Shaft	
23	46836AB	Gear Shaft	
24	30200	Bearing Cone	
25	46689	Shim Set	
26	{ 46690	Capscrew—Socket Head ($\frac{5}{8}$ NF x $1\frac{3}{4}$)	
	{ 15160B	Lockwasher—High Collar ($\frac{5}{8}$)	
27	15158B	Lockwasher—High Collar ($\frac{1}{2}$)	12
28	17004	Machine Bolt with Nut— $\frac{1}{2}$ x $2\frac{1}{4}$	12
29	{ 46676A	Hub Assembly (includes Pin)	
	{ 46667	Pin—Shear	
30	15160B	Lockwasher—High Collar ($\frac{5}{8}$)	18
31	46679	Capscrew—Socket Head, $\frac{5}{8}$ NF x 1	8
32	46677	Capscrew—Socket Head, $\frac{5}{8}$ NC x $1\frac{1}{4}$	6
33	46680	Carrier—Spring	2
34	46681	Spring	1
35	46672B	Hub	1
36	46674C	Flange	1
37	{ 16001	Grease Fitting	2
	{ 15466	Bushing—Pipe	2
38	46667	Pin—Shear	4
	{ 29490	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	6
39	{ 15008	Nut—Hex ($\frac{1}{2}$ NF)	6
	{ 15158B	Lockwasher—High Collar ($\frac{1}{2}$)	6
40	46671	Oil Seal	
	{ 9009	Ferrule— $\frac{1}{2}$ " Cable ($1\frac{5}{8}$ O.D.)} For	
41	{ 9008	Ferrule— $\frac{5}{8}$ " Cable } Main Drum	1

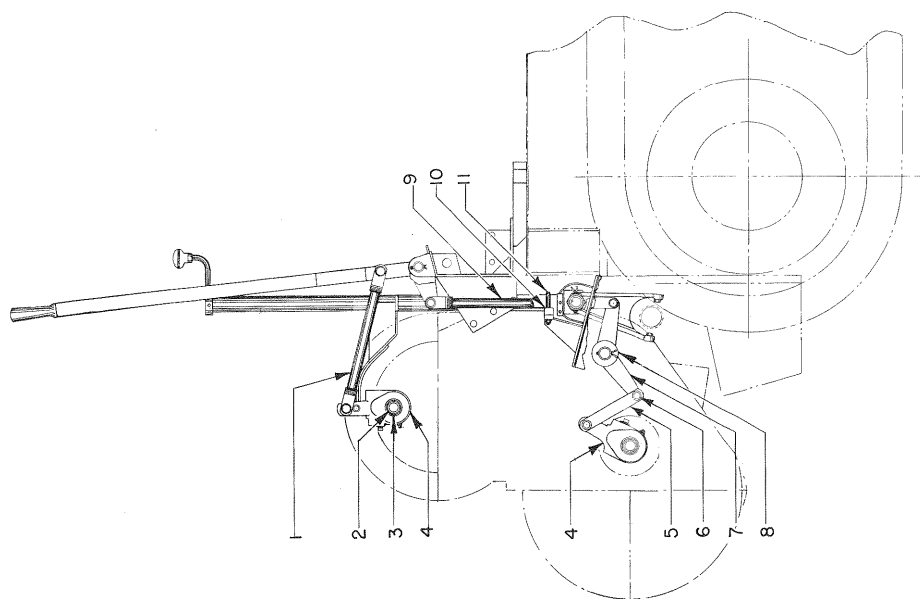
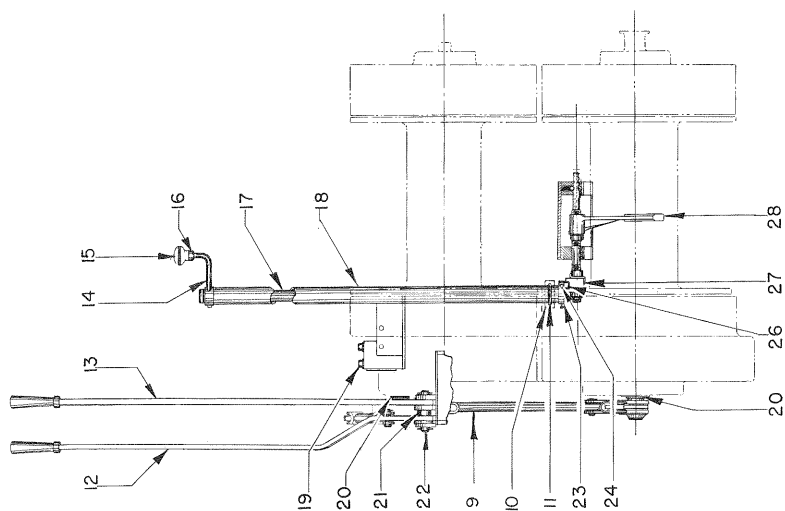
HAULBACK DRUM ASSEMBLY



HAULBACK DRUM ASSEMBLY

Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	46929	Carrier—Bearing	
2	46670B	Gasket	
3	754	Capscrew—Drilled Head	
4	43219	Bearing	
5	{ 46695AB	Barrel Assembly—Haulback Drum (includes Pin) ..	
	{ 46667	Pin—Shear	
6	46694B	Shaft	
7	{ 46676A	Hub Assembly (includes Pin)	
	{ 46667	Pin—Shear	
8	44466	Oil Seal	
9	44467	Oil Seal	
10	30201	Bearing Cup	
11	2712	Key	
12	46675	Nut	
13	{ 16001	Grease Fitting	
	{ 15466	Bushing—Pipe	
14	46692	Snap Ring	
15	46691	Gear	
16	46688	Nut—Thrust	
17	{ 46696A	Gear Assembly (includes Pin)	
	{ 46687	Pin—Shear	
18	30200	Bearing Cone	
19	46689	Shim Set	
20	46682	Disc—Clutch	
21	17004	Machine Bolt with Nut— $\frac{1}{2}$ x $2\frac{1}{4}$	12
22	15158B	Lockwasher—High Collar ($\frac{1}{2}$)	12
23	46684	Block Set—Friction	
24	46678	Flange	
25	{ 46690	Capscrew—Socket Head ($\frac{5}{8}$ NF x $1\frac{3}{4}$)	
	{ 15160B	Lockwasher—High Collar ($\frac{5}{8}$)	
26	46679	Capscrew—Socket Head, $\frac{5}{8}$ NF x 1	
27	15160B	Lockwasher—High Collar ($\frac{5}{8}$)	12
28	46677	Capscrew—Socket Head, $\frac{5}{8}$ NC x $1\frac{1}{4}$	
29	46680	Carrier—Spring	
30	46681	Spring	
31	{ 59139	Ferrule— $\frac{1}{2}$ " Cable (1" O.D.) For Haulback	
	{ 59140	Ferrule— $\frac{3}{8}$ " Cable } Drum	
32	59990A	Brake Assembly (see page 42 for parts)	
33	46672B	Hub	
34	46674C	Flange	
35	46667	Pin—Shear	
36	{ 29490	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	
	{ 15008	Nut—Hex ($\frac{1}{2}$ NF)	
	{ 15158B	Lockwasher—High Collar ($\frac{1}{2}$)	
37	46671	Oil Seal	

HANDLING GEAR

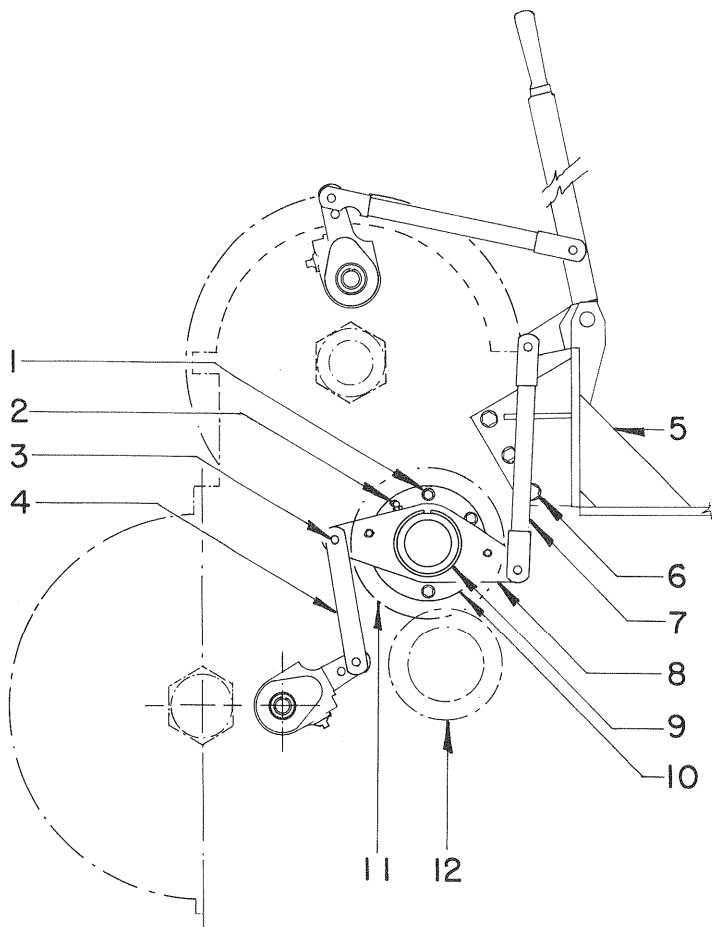


HANDLING GEAR

Ref. No.	Hyster Part No.	NAME OF PART	
	59957A	Link Assembly (includes Pin and Cotter)	
1	159	Pin—Rod End	
	15223	Cotter— $\frac{1}{8}$ x 1"	
2	34507	Snap Ring	
3	46937	Spacer	
4	46249B	Slack Adjuster	
5	46767	Plate (Last used on Serial No. 53164)	
6	159	Pin—Rod End	
	15223	Cotter— $\frac{1}{8}$ x 1"	
7	46766	Crank (Last used on Serial No. 53164)	
8	90267	Washer	
	15246	Cotter— $\frac{3}{16}$ x 2	
	46765A	Link Assembly (Last used on Serial No. 53164)	
9	159	Pin—Rod End } Included with	
	15223	Cotter— $\frac{1}{8}$ x 1" } Link Assembly	
10	46846	Block	
	46749	Bolt—"U"	
11	15055	Nut— $\frac{5}{16}$ NC	
	15155	Lockwasher— $\frac{5}{16}$	
12	46750A	Handlever (Haulback Drum)	
13	46764A	Handlever (Main Drum)	
	46753A	Handlever } Last used on	
14	46752B	Spring Clip } Serial No. 35337	
	59960A	Handlever (First on S. N. 35338, Last on S. N. 53156)	
	90590A	Handlever (First used on Serial No. 53157)	
15	809	Knob } Included with	
16	15011	Nut—Jam ($\frac{1}{2}$ NC) } Handlever	
17	46756	Pin (Last used on Serial No. 53156)	
	90589	Pin (First used on Serial No. 53157)	
	46751A	Bracket Assembly (Last used on Serial No. 35337) ..	
18	59961A	Bracket Assembly (First used on Serial No. 35338) ..	
	46834	Bushing (included with Bracket)	
19	15538	Capscrew— $\frac{1}{2}$ NC x $1\frac{1}{4}$	
	15158	Lockwasher— $\frac{1}{2}$	
20	46763	Spacer	
21	46848	Spacer	
22	46772	Pin	
	15244	Cotter— $\frac{3}{16}$ x $1\frac{1}{2}$	
	46757	Collar } Last used	
	15569	Capscrew— $\frac{3}{8}$ NC x 2 } on Serial	
23	15156	Lockwasher— $\frac{3}{8}$ } No. 53156	
	90588	Plate } First used on	
	16436	Setscrew—Sq. Head, } Serial No. 53157	
		($\frac{3}{8}$ NC x $\frac{5}{8}$)	
24	16209	Setscrew—Hex Socket ($\frac{3}{8}$ NC x $\frac{5}{8}$)	
26	46758	Pin	
27	.....	Shifter Block (see page 25, Ref. 6)	
28	46761	Shifter Fork	

CLUTCH HANDLING GEAR

(First used on Serial No. 61945)



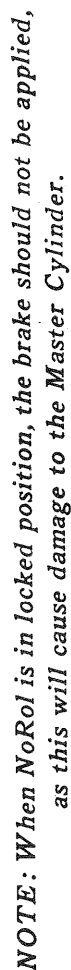
CLUTCH HANDLING GEAR

(First used on Serial No. 61945)

(Except Ref. 5)

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	{ 15508	Capscrew— $\frac{3}{8}$ NF x 1	6
	{ 15156	Lockwasher— $\frac{3}{8}$	6
2	16005	Grease Fitting	1
3	{ 159	Pin—Rod End	2
	{ 15223	Cotter— $\frac{1}{8}$ x 1	2
4	91375	Plate—Link	2
5	91449A	Bracket (First used on Serial No. 53157)	1
6	{ 15509	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{2}$	3
	{ 15158	Lockwasher— $\frac{1}{2}$	3
	{ 91373A	Link Assembly (includes Pin and Cotter)	1
7	{ 159	Pin—Rod End	2
	{ 15223	Cotter— $\frac{1}{8}$ x 1	2
8	91374	Lever	1
9	21049	Snap Ring	1
10	.....	Retainer—Bearing (see page 27, Ref. 4)	1
11	91376	Spool—Gypsy	1
12	.....	Retainer—Bearing (see page 27, Ref. 11)	1

NOTE: See page 33 for parts not listed .



HYDRAULIC BRAKING (CURRENT)

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	59976	Tank—Brake Fluid	1
2	54615	Cap—Brake Fluid Tank	1
2	59965A	Tube Assembly (includes Nut)	2
3	26796	Tube Fitting (Nut)	4
4	59983	Handle—NoRol	2
5	59971	Cover—Master Cylinder	2
6	47288	Spring	2
6	15332	Capscrew— $\frac{3}{8}$ NF x $1\frac{1}{4}$	2
7	15006	Nut—Hex ($\frac{3}{8}$ NF)	2
7	15156	Lockwasher— $\frac{3}{8}$	2
8	59972	Pin	2
8	15236	Cotter— $5/32$ x $1\frac{1}{2}$	2
9	59974	Bolt—Brake Pivot	2
9	15156	Lockwasher— $\frac{3}{8}$	2
10	38848	Nut—Castellated ($\frac{3}{8}$ NF)	2
10	15213	Cotter— $3/32$ x 1	2
11	46945	Tube Fitting (Elbow)	2
11	46942A	Tube Assembly (includes Nut)	2
12	26796	Tube Fitting (Nut)	4
12	15509	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{2}$	3
12	15158	Lockwasher— $\frac{1}{2}$	3
13	25052	Capscrew— $\frac{3}{8}$ NF x $1\frac{1}{2}$	4
13	15006	Nut—Hex ($\frac{3}{8}$ NF)	4
14	15156	Lockwasher— $\frac{3}{8}$	4
14	59979A	Bracket	1
15	7316	Seat	1
15	17100	Bolt—Carriage ($\frac{1}{2}$ x 1)	2
16	15158	Lockwasher— $\frac{1}{2}$	2
16	36860A	Bracket—Seat	1
17	15632	Capscrew— $\frac{5}{8}$ NF x $4\frac{1}{2}$	1
17	15010	Nut—Hex ($\frac{5}{8}$ NF)	1
18	15160	Lockwasher— $\frac{5}{8}$	1
18	36859A	Bracket—Seat	1
19	90440	Spring	1
20	15514	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	4
20	15508	Nut—Hex, $\frac{1}{2}$ NF	4
21	15158	Lockwasher— $\frac{1}{2}$	4
21	15628	Capscrew— $7/16$ NF x $1\frac{1}{2}$	3
22	15007	Nut—Hex ($7/16$ NF)	3
22	15157	Lockwasher— $7/16$	3
23	29383	Bolt—Fitting	1
23	29382	Gasket	1
24	54607	Tube Fitting (Inlet)	1
24	24092	Gasket—Tube Fitting	1
25	59985A	Cylinder—NoRol	2
25	46988	Tube Fitting—Adapter	2
26	59968A	Tube Assembly (includes Nut)	2
27	26796	Tube Fitting (Nut)	1
27	59980	Tube Fitting	1
28	59969A	Tube Assembly (includes Nut)	1
28	26796	Tube Fitting (Nut)	2
29	15532	Capscrew— $\frac{3}{8}$ NF x $1\frac{1}{4}$	4
29	15006	Nut—Hex ($\frac{3}{8}$ NF)	4
30	15156	Lockwasher— $\frac{3}{8}$	4
31	59977A	Pedal—Mainline Brake	1
32	59978A	Cylinder—Master (see Page 43)	2
33	59967A	Pedal—Haulback Brake	1
33	26796	Tube Assembly (includes Nut)	1
34	15350	Nut—Lock ($\frac{3}{4}$)	4
35	59148	Socket—Brake Adjust. (Hex)	2
36	59149	Socket—Brake Adjust. (Oval)	1
37	59964A	Handlever Assembly (Tractor Master Clutch) (incl. Handle)	1
37	47585	Handle	1
37	63357	Hydraulic Brake Fluid (Qt. can)	1

†These items used only on Serial Numbers 35338 to 53156 inclusive. See pages 39 and 41 for other Serial Nos.

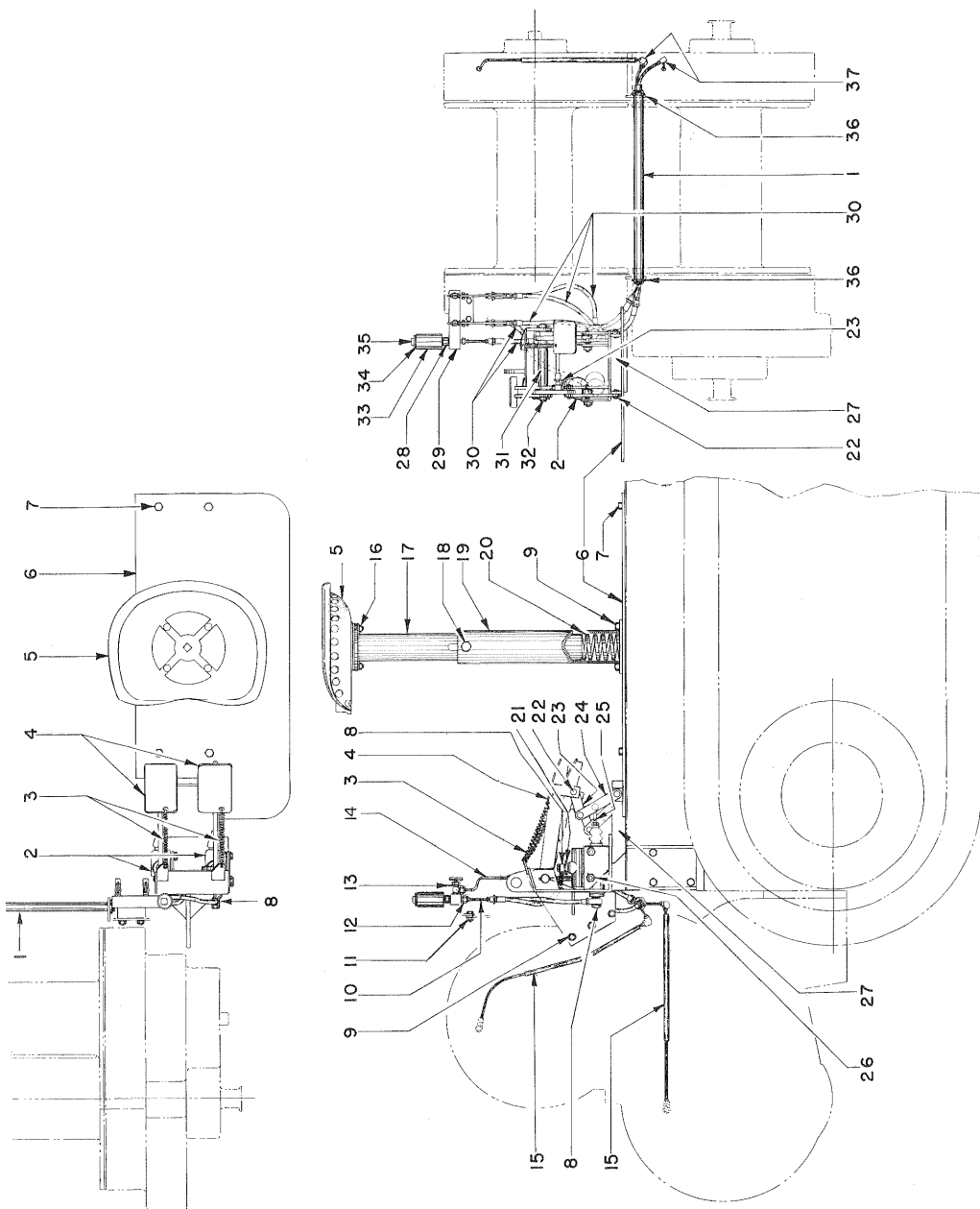
HYDRAULIC BRAKING

(First used on Serial No. 53157)

Ref. No.	Hyster Part No.	NAME OF PART	F
1	91449A	Bracket	
2	15509	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{2}$	
3	46942A	Tube Assembly	
4	46945	Tube Fitting—Elbow	
5	25052	Capscrew— $\frac{3}{8}$ NF x $1\frac{1}{2}$	
6	{ 91457	Bolt—Clamp	
	{ 15156	Lockwasher— $\frac{3}{8}$	
	{ 15006	Nut—Hex, $\frac{3}{8}$ NF	
7	46988	Tube Fitting—Adapter	
8	46944	Tube Fitting—Inverted Male Elbow	
9	47288	Spring	
10	.....	Master Cylinder (see page 43 for parts)	
11	{ 15509	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{2}$	
	{ 15158	Lockwasher— $\frac{1}{2}$	
	{ 15008	Nut—Hex, $\frac{1}{2}$ NF	
12	59974	Bolt—Brake Pivot	
13	59972	Pin	
14	15236	Cotter— $5/32$ x $1\frac{3}{4}$	
15	.....	Cover—Master Cylinder (see page 43)	
16	54615	Cap—Brake Fluid Tank	
17	55985A	Cylinder—NoRol	
18	91460A	Tube Assembly	
20	91458A	Tube Assembly	
21	24092	Gasket—Tube Fitting	
22	54655	Tube Fitting (Inlet)	
23	29582	Gasket	
24	29583	Bolt—Fitting	
25	59978A	Pedal—Brake	
26	59976	Tank—Brake Fluid	
27	16182	Tube Fitting—Inverted Tee	
28	91459A	Tube Assembly	
29	15532	Capscrew— $\frac{3}{8}$ NF x $1\frac{1}{4}$	
30	59977A	Pedal—Brake	
31	91461A	Tube Assembly	
32	91462A	Tube Assembly	
33	45934	Plate—Clamp	
34	{ 15587	Capscrew— $\frac{1}{4}$ NF x 1	
	{ 15154	Lockwasher— $\frac{1}{4}$	
35	91463A	Tube Assembly	
36	15350	Nut—Lock, $\frac{3}{4}$	
	91466	Plate (not illustrated)	
		(To be used with Bracket 91449A on Non-current Tractor with Lightweight Fenders)	

HYDRAULIC BRAKING (Non-Current)

For Units with Serial Numbers CBN-35329 to CBN-35337 inclusive, only

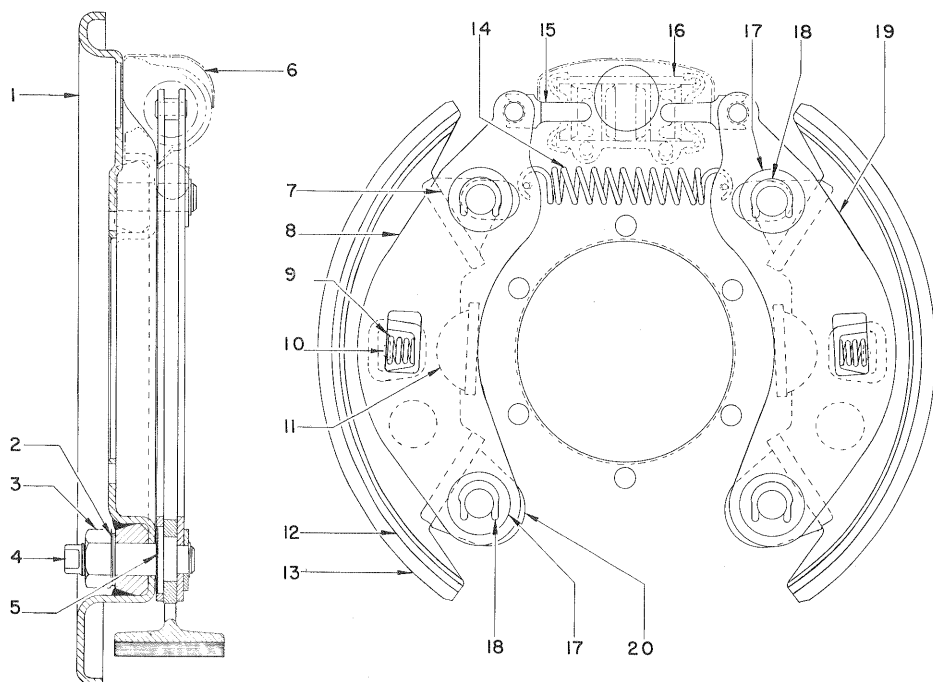


HYDRAULIC BRAKING (Non-Current)

For Units with Serial Numbers CBN-35329 to CBN-35337 inclusive, only

Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	46941A	Tubing Assembly	
2	.....	Cylinder—Master (See page 43)	
3	7288	Spring	
4	46773	Pedal—Brake	
5	7316	Seat	
6	46854	Plate—Floor	
7	15514	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	1
	15008	Nut—Hex ($\frac{1}{2}$ NF)	1
	15158	Lockwasher— $\frac{1}{2}$	1
8	46850	Tube Fitting	
	24092	Gasket	
	29583	Bolt—Fitting	
	29582	Gasket	
9	15509	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{2}$	
	15158	Lockwasher— $\frac{1}{2}$	
10	46939A	Tube Assembly	
11	15508	Capscrew— $\frac{3}{8}$ NF x 1	
	15006	Nut—Hex ($\frac{3}{8}$ NF)	
	15156	Lockwasher— $\frac{3}{8}$	
12	46988	Fitting—Tube	
13	16149	Shut-off Cock	
14	46940A	Tube Assembly	
15	46942A	Tube Assembly	
16	17100	Bolt—Carriage ($\frac{1}{2}$ x 1)	
	15158	Lockwasher— $\frac{1}{2}$	
17	36860A	Bracket—Seat	
18	15602	Capscrew— $\frac{5}{8}$ NF x $4\frac{1}{4}$	
	15010	Nut—Hex ($\frac{5}{8}$ NF)	
	15160	Lockwasher— $\frac{5}{8}$	
19	36859A	Bracket—Seat (Lower)	
20	90440	Spring	
21	46770	Adapter—Standpipe	
22	159	Pin—Rod End	
23	59520	Plate	
24	59521	Plate	
25	59522	Rod End	
	15026	Nut—Jam ($\frac{3}{8}$ NF)	
26	15007	Nut—Hex (7/16 NF)	
	15157	Lockwasher—7/16	
	46771	Bracket—Brake	
27	15514	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	
	15158	Lockwasher— $\frac{1}{2}$	
28	15351	Nipple— $\frac{1}{2}$, short, pipe, std.	
29	46938	Bar—Header	
30	29469	Hose	
31	46775	Spacer	
32	46774	Pin—Pedal Pivot	
	15236	Cotter—5/32 x $1\frac{3}{4}$	
33	46855B	Pipe—Stand	
34	27600	Gasket	
35	27599	Cap	
36	15350	Nut—Lock ($\frac{3}{4}$ Pipe)	
37	46945	Elbow—Inverted	
	46990	Handle Extension (not illustrated)	

BRAKE ASSEMBLY — 59990A



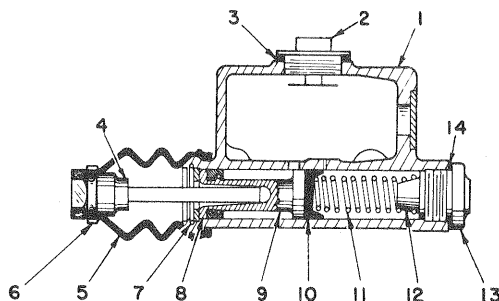
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	54599	Shield and Pin Assembly	1
2	15934B	Washer	2
3	15014	Nut—Hex ($\frac{7}{8}$ NF x $1\frac{3}{4}$)	2
4	54595	Pin—Adjustable (Lower)	2
5	54598	Lockwasher	2
6	54602	Cover	1
7	54587	Block—Anchor Pin Abutment (Upper)	2
8	54585	Lever Assembly (L. H.)	1
9	54590	Spring	2
10	54591	Retainer	2
11	54592	Block—Lever Pressure	2
12	59586A	Shoe Assembly (includes Lining)	2
13	59588A	Lining Set	2
14	54594	Spring—Upper	1
15	{ 54603	Push Rod (Last used on Serial No. 35337)	2
	{ 54614	Push Rod (First used on Serial No. 35338)	2
16	54609A	Brake Cylinder	1
17	54588	Washer	4
18	54589	Washer—"E"	4
19	54586	Lever Assembly (R. H.)	1
20	54593	Block—Abutment (Lower)	2

NOTE: Quantities listed are for one brake.

RIVETS-15800

MASTER CYLINDER — No. 25826AB

(Last used on Serial No. 35337. Replace Complete Cylinder with 59962A)



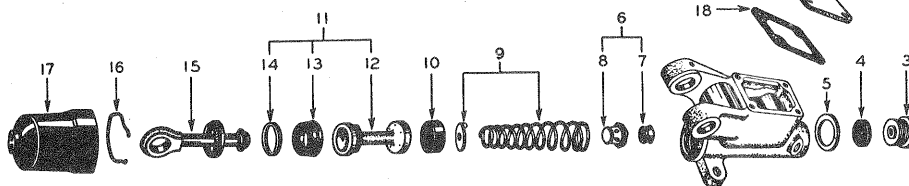
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	27598	Body	1
2	27599	Filler Cap	1
3	*27600	Filler Cap Gasket..	1
4	54527	Push Rod Assy. ...	1
5	*54528	Boot	1
6	*54529	Boot Strap	1
7	{ *27604	Piston Stop	1
	54523	Lockwire	1
		Piston Stop Washer	1

*Included in Repair Kit.

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
8	54530	Piston Stop Plate ..	1
9	*54525A	Piston Assembly ..	1
10	*54526	Primary Cup	1
11	*54568A	Spring and Valve ..	1
12		Assembly	1
13	27607A	Cylinder Hd. Ass. ..	1
14	*27609	Cylinder Head	1
		Gasket	1
	54538A	Repair Kit	1

MASTER CYLINDER — No. 59962A

(First used on Serial No. 35338)

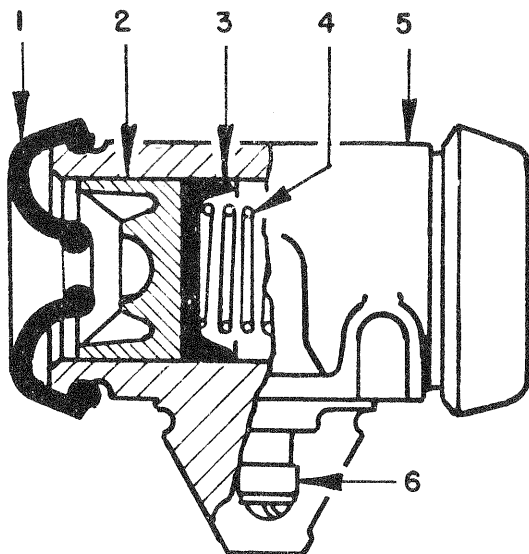


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	.....	Body, N.S.S.	1
3	54716	Head—Cylinder ..	1
4	.....	Seat—Check Valve ..	1
		N.S.S. (included ..	1
		with Item 6)	1
5	27609	Gasket—Head	1
6	54717A	Valve Assembly ..	1
7	*.....	Cup—Valve, N.S.S. ..	1
8	*.....	Body—Valve,	1
		N.S.S.	1
9	54718	Spring Assembly ..	1
10	27605	Cup—Primary	1
		Piston	1
11	27601	Piston Assembly ..	1

*Included in Repair Kit.

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
12	*.....	Piston, N.S.S.	1
13	*54719	Cup—Secondary, ..	1
		Piston	1
14	*.....	Ring, N.S.S.	1
15	54720	Plate & Rod Ass. ..	1
16	27604	Wire—Lock	1
17	27603	Boot	1
18	54721	Gasket—Cover	1
19	59971	Cover	1
20	54582	Gasket—Cover	1
		Screw	1
21	.....	Screw—1/4 NCx7/16 ..	1
		Filister Head	1
	26756	Repair Kit	1

BRAKE CYLINDER ASSEMBLY — 54609A



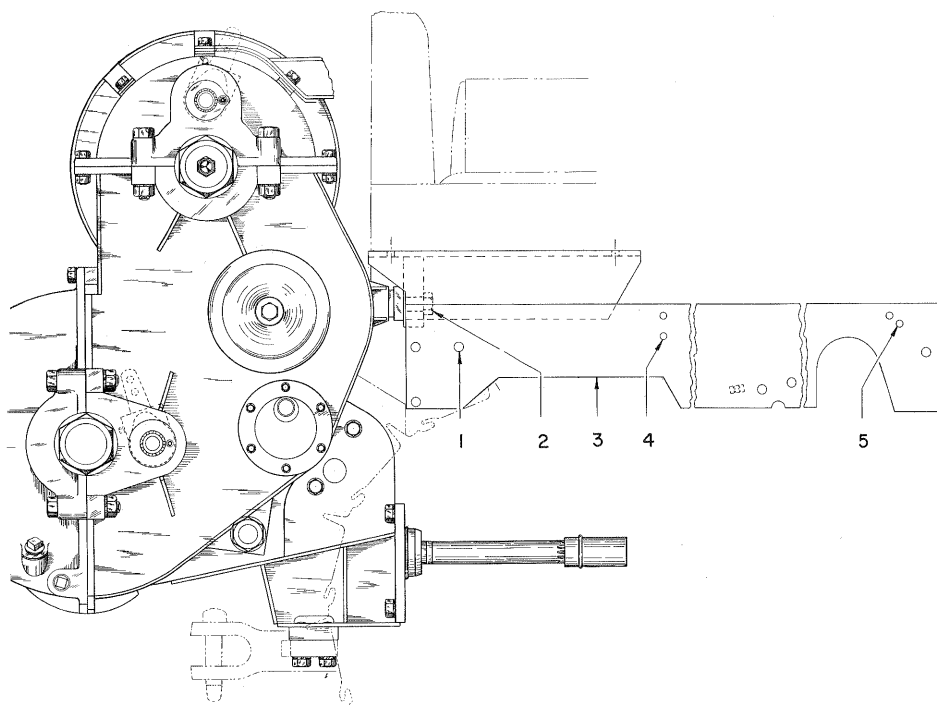
*First used on
Serial No. 35338*

*Last used on
Serial No. 35337*

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.	Hyster Part No.
1	21699	Boot	2	27615
2	21696	Piston	2	54606
3	21697	Cup	2	26170
4	21698	Spring	2	27046
5	21695	Cylinder—Wheel	1	54605
6	21700	Screw—Bleeder	1	21700
	54613A	Repair Kit (includes items 1 & 3)		54710A

TIE-PLATE BRACKET ATTACHMENT GROUP No. 90388A

For attaching D4N Tractor Donkey to D4 Tractors
Prior to Serial Numbers 7J-9215 and 6G-2076

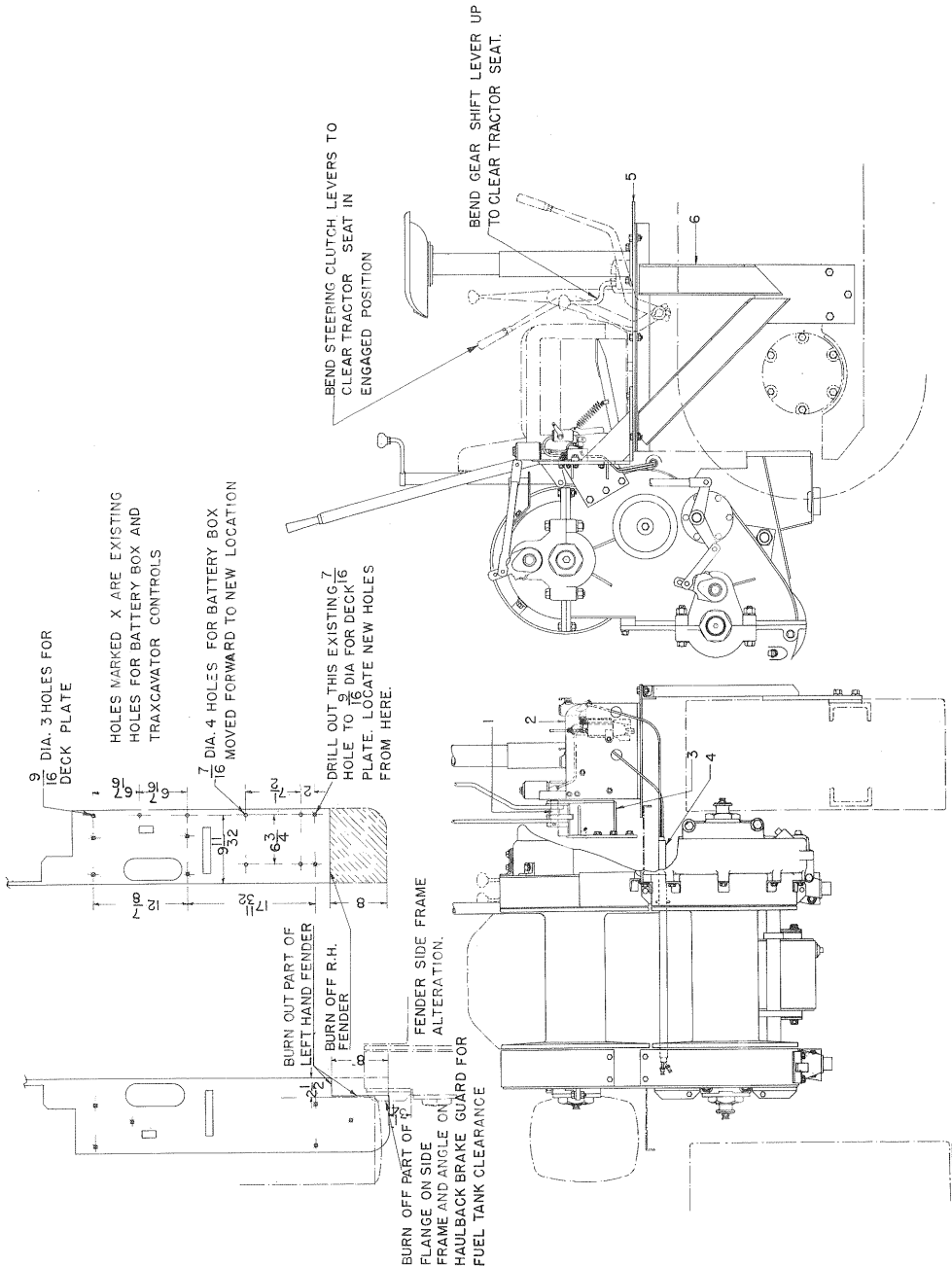


Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	{ 15547	Capscrew— $\frac{1}{2}$ NC x $1\frac{1}{2}$	14
	{ 15158	Lockwasher— $\frac{1}{2}$	14
2	{ 15638	Capscrew—1" NF x $5\frac{1}{2}$	2
	{ 15016	Nut—Hex (1" NF)	2
	{ 15036	Nut—Hex Jam (1" NF)	2
3	{ 90389A	Bracket—Tie Plate (R. H.) (as shown)	1
	{ 90390A	Bracket—Tie Plate (L. H.)	1
4	{ 15549	Capscrew— $\frac{1}{4}$ NF x $\frac{7}{8}$	4
	{ 15004	Nut—Hex ($\frac{1}{4}$ NF)	4
	{ 15154	Lockwasher— $\frac{1}{4}$	4
5	{ 15508	Capscrew— $\frac{3}{8}$ NF x 1	14
	{ 15006	Nut—Hex ($\frac{3}{8}$ NF)	14
	{ 15156	Lockwasher— $\frac{3}{8}$ "	14

D4N TRACTOR DONKEY — Serial No. 35338 and Up

For use with HT4 Traxcavator

GENERAL ARRANGEMENT



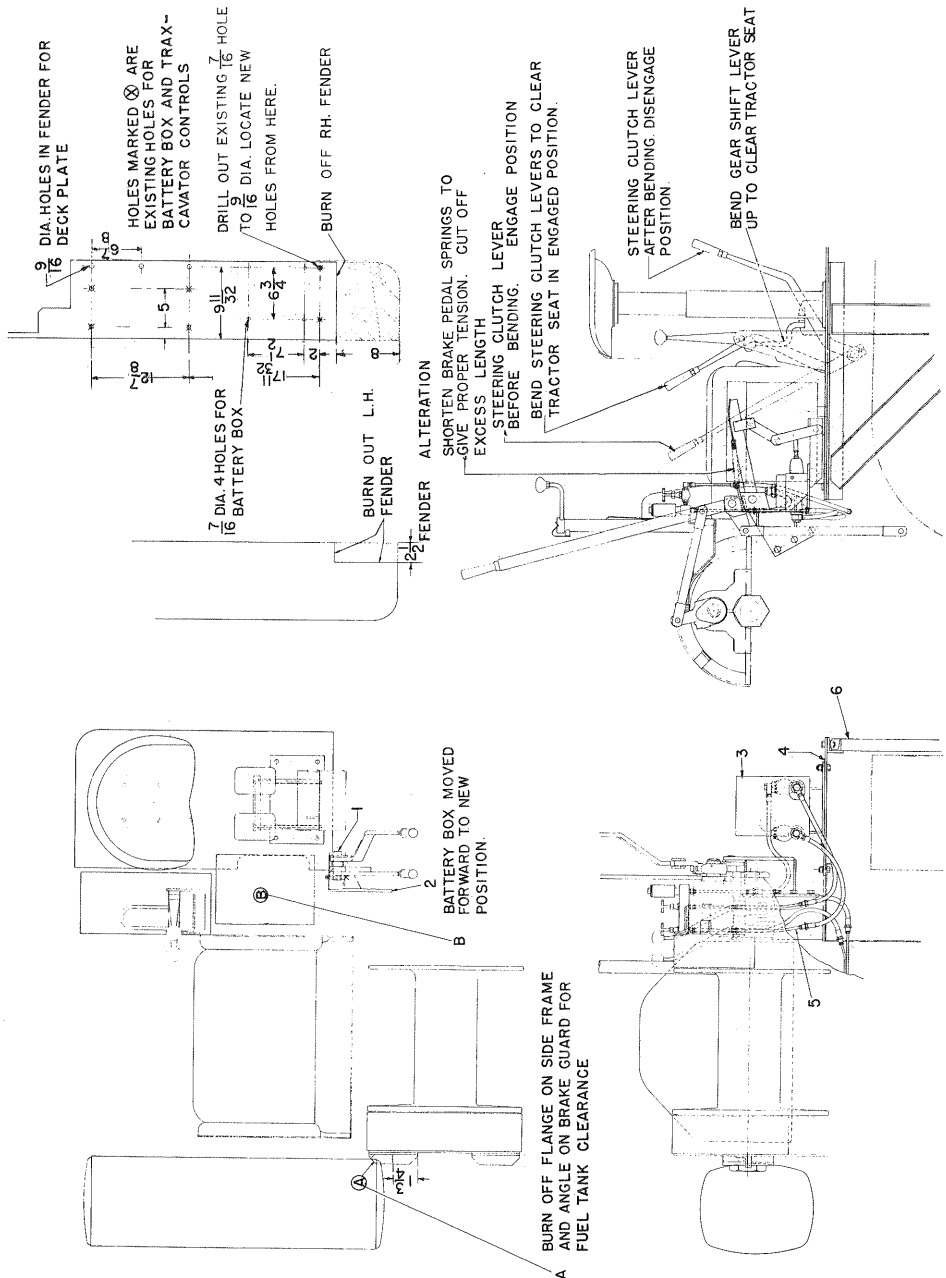
D4N TRACTOR DONKEY — Serial No. 35338 and Up
For use with HT4 Traxcavator
GENERAL ARRANGEMENT

Ref. No.	Hyster Part No.	NAME OF PART	Qty Req
1	90241	Pin	1
2	90248	Bracket—Brake Pedal	1
3	90242A	Bracket—Clutch Levers	1
4	90247A	Tube Assembly—Brake Line	1
5	90272	Plate—Floor	1
6	90244	Bracket—Floor Plate	1

D4N TRACTOR DONKEY — Prior to Serial No. 35338

For use with HT4 Traxxcavator

GENERAL ARRANGEMENT



D4N TRACTOR DONKEY — Prior to Serial No. 35338
For use with HT4 Traxcavator
GENERAL ARRANGEMENT

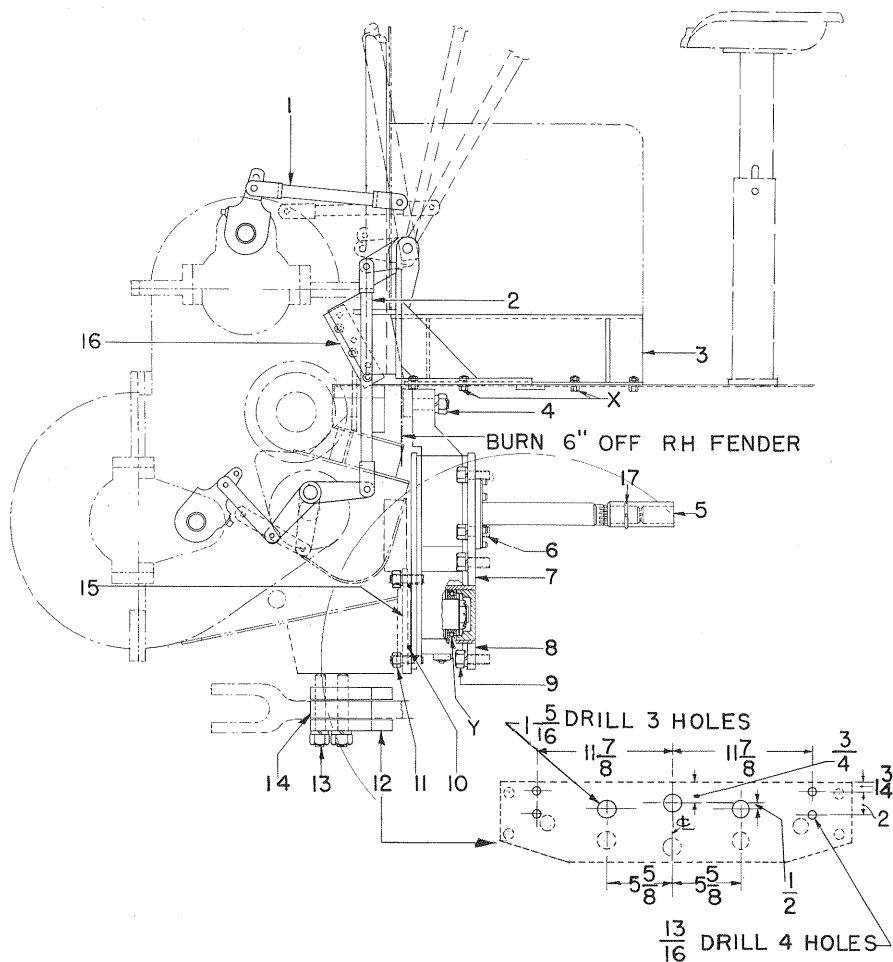
Ref. No.	Hyster Part No.	NAME OF PART
1	{ 90241	Pin
	{ 15248	Cotter—3/16 x 2½
2	90242A	Bracket—Clutch Lever
3	90243A	Bracket—Brake Pedal
4	90272	Plate—Floor
5	90240A	Tubing Assembly
6	90244	Support—Floor Plate

ADAPTER ASSEMBLY — GENERAL ARRANGEMENT

D4N Tractor Donkey — Serial No. 35338 and Up

For use with the following tractors:

D6, RD6, Diesel 40 and 35, Gas 40 and 35



ADAPTER ASSEMBLY — GENERAL ARRANGEMENT

D4N Tractor Donkey — Serial No. 35338 and Up

For use with the following tractors:

D6, RD6, Diesel 40 and 35, Gas 40 and 35

Ref. No.	Hyster Part No.	NAME OF PART	C Re
1	90221A	Link Assembly	
2	90222A	Link Assembly	
3	90223	Bracket—Seat	
	15518	Capscrew— $\frac{3}{8}$ NF x $\frac{7}{8}$	
	15006	Nut—Hex, $\frac{3}{8}$ NF	
4	15156	Lockwasher— $\frac{3}{8}$	
	15638	Capscrew—1" NF x $5\frac{1}{2}$	
	15016	Nut—Hex, 1" NF	
5	15166	Lockwasher—1"	
	6702	Coupling (Caterpillar No. 1B-3183)	
6	9227	Stud	
	15012	Nut—Hex ($\frac{3}{4}$ NF)	
	15162	Lockwasher— $\frac{3}{4}$	
7	90211A	Adapter Case Assembly D4N Tractor Donkey	
8	41845	Gasket	
9	30758	Stud	
	15014	Nut—Hex ($\frac{7}{8}$ NF)	
	15164	Lockwasher— $\frac{7}{8}$	
10	90207	"O" Ring	
11	31585	Stud	
	15012	Nut—Hex ($\frac{3}{4}$ NF)	
	15162	Lockwasher— $\frac{3}{4}$	
12	.....	Plate—Drawbar ("Caterpillar" part)	
13	30758	Studs— $\frac{7}{8}$ ("Caterpillar" No. 1A-9537)	
	15014	Nut—Hex ($\frac{7}{8}$ NF)	
	15164	Lockwasher— $\frac{7}{8}$	
14	41860	Bar	
15	90205	Carrier—Bearing	
16	90220	Bar	
	16304	Capscrew—Sockethead, $\frac{1}{2}$ NF x 2	
	15158B	Lockwasher— $\frac{1}{2}$	
17	7704	Snap Ring ("Caterpillar" No. 1B-3184)	
	7703	Pin—Lock ("Caterpillar" No. 1B-3185)	
18	90225A	Tube Assembly (not illustrated)	
		(Replaces Tube Assembly Ref. 33, page 36)	

NOTE:

Important: Insert bearing "Y" after shaft assembly and adapter case have been assembled to Tractor Donkey.

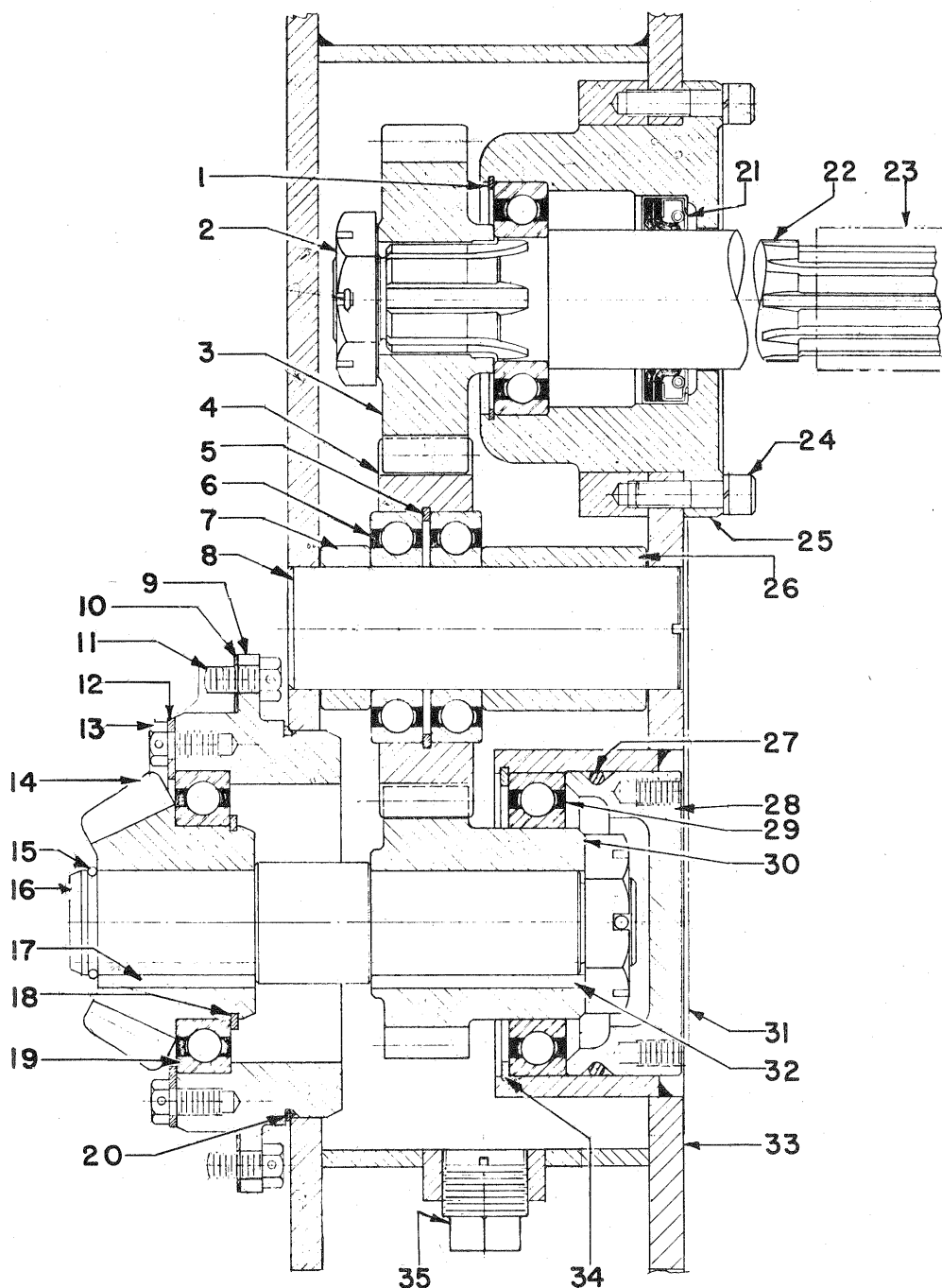
Use two holes "X" in fender to locate seat supports. Drill two additional holes. Raise handling gear bracket (Ref. No. 16) to fit on fender and mount it out to clear seat support.

No gasket is used between adapter case and Tractor Donkey side frame.

"O" Ring (Ref. No. 10) seals off escape of oil between transmission and adapter case. Check for ring being in place on bearing retainer (Ref. No. 17).

Turn drawbar plates (12) over; drill new holes and mount with original studs.

ADAPTER ASSEMBLY — Continued TRANSMISSION



ADAPTER ASSEMBLY — Continued

TRANSMISSION

Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	28176	Snap Ring	1
2	{ 6373	Nut	2
	{ 15240	Cotter—5/32 x 2 1/2	2
3	41834	Gear—Drive (18 teeth)	1
4	41839	Gear—Idler (20 teeth)	1
5	46093	Snap Ring	1
6	43209	Bearing	3
7	41837	Spacer	1
8	41838	Shaft—Idler	1
9	90205	Carrier—Bearing	1
10	46628B	Shim Set	1
11	30836	Capscrew—Drilled Head	6
12	46627	Plate—Retainer	1
13	798	Capscrew—Drilled Head	6
14	46623B	Gear—Bevel (15 teeth)	1
15	32846	Snap Ring	1
16	90206	Shaft—Drive	1
17	326	Key	1
18	58905	Snap Ring	1
19	44314	Bearing	1
20	90207	"O" Ring	1
21	41833C	Oil Seal	1
22	41832	Shaft—Drive	1
23	6702	Coupling	1
24	{ 46698	Capscrew—Socket Head, 3/8 NC x 1 1/4	6
	{ 15156B	Lockwasher—3/8	6
25	41835	Carrier—Bearing	1
26	41836	Spacer	1
27	90849	"O" Ring	1
28	90208	Retainer—Bearing	1
29	44314	Bearing	1
30	41841B	Gear (14 teeth)	1
31	41845	Gasket	1
32	19321	Key	1
33	90210A	Case—Adapter	1
34	33655	Snap Ring	1
35	35504	Pipe Plug	1

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
159	33, 35	15158B	29, 31, 37	15632	37	30200	29, 31
326	21, 53		51	15638	45, 51	30201	29, 31
754	29, 31	15160	17, 19, 37	15934B	42	30758	51
798	21, 53	15160B	29, 31, 41	16001	29, 31	30836	21, 53
809	33	15162	27, 51	16005	35	31262	23
2712	29, 31	15164	17, 51	16149	41	31585	51
5792B	19	15166	21, 51	16182	39	32411	23
6347B	25	15170	19	16208	27	32846	21, 53
6348	25	15182	25	16209	33	33655	53
6373	53	15213	37	16304	51	34507	33
6702	51	15223	33, 35	16436	33	35503	23
6852	21	15233	37	17004	29, 31	35504	17, 53
7288	41	15236	25, 37, 41	17100	37, 41	36859A	37, 41
7316	37, 41	15240	23, 53	19321	53	36860A	37, 41
7703	51	15244	33	21049	23, 35	38325	25
7704	51	15246	33	21110	25	38450	19
9008	29	15248	49	21420	19	38451	19
9009	29	15302	21	21695	44	38454	19
9227	51	15305	17	21696	44	38848	37
9554	21	15350	37, 41	21697	44	41309G	27
9563	21	15351	41	21698	44	41832	53
9945	27	15466	29, 31	21699	44	41833C	53
15004	45	15502	17	21700	44	41834	53
15006	19, 37, 39	15508	19, 27, 35	23107	27	41835	53
15007	37, 41		37	23279	25	41836	53
15008	17, 29, 31	15509	27, 35, 37	24092	37, 39, 41	41837	53
	39, 41		39	25052	37	41838	53
15010	17, 19, 37	15511	17, 21	25826AB	43	41839	53
	41	15513	27	26170	44	41841B	53
15011	33	15514	17, 37, 41	26756	43	41845	51, 53
				26796	37	41860	51
15012	51	15518	21, 51	27046	44	43209	53
15014	17, 42, 51	15521	27	27598	43	43210	23
15016	19, 25, 45	15531	19	27599	41, 43	43210G	23
	51	15532	37				
15026	41	15535	17, 19	27600	41, 43	43213	27
15036	19, 45	15538	33	27601	43	43219	29, 31
15055	33	15547	45	27603	43	44314	53
15154	39, 45	15548	19	27604	43	44314P	21
15155	23, 33	15549	45	27605	43	44466	29, 31
15156	19, 21, 27	15553	23	27607A	43	44467	29, 31
	33, 35, 37	15569	33	27609	43	45209	23
	39, 45	15579	19	27615	44	45310	23
15156B	19, 53	15587	39	28176	53	45934	39
15157	37, 41	15598	21	29469	41	46093	53
15158	17, 21, 27	15602	41	29490	29, 31	46249B	33
	33, 35, 37, 45	15604	17	29582	37, 39, 41	46607	21
		15628	37	29583	37, 39, 41	46622	21

NUMERICAL INDEX — Continued

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
46623B	21, 53	46678	29, 31	46784A	17	54568A	
46625	21	46679	29, 31	46788A	17	54582	
46626	21	46680	29, 31	46791	19	54585	
46627	21, 53	46681	29, 31	46792	19	54586	
46628B	21, 53	46682	29, 31	46793A	17	54587	
46629	21	46684	29, 31	46798A	17	54588	
46630	21	46685A	29	46801AB	17	54589	
46631	21	46687	29, 31	46822A	17	54590	
46632	23	46688	29, 31	46828A	17	54591	
46633	23	46689	29, 31	46831	23	54592	
46634	23	46690	29, 31	46833	23	54593	
46635	21	46691	29, 31	46834	33	54594	
46636	23	46692	29, 31	46836AB	29	54595	
46637	23	46694B	31	46840	17	54598	
46638	23	46695AB	31	46841	17	54599	
46640B	23	46696A	31	46842	19	54602	
46641	23	46697	29	46846	33	54603	
46642	23	46698	19, 53	46847	27	54605	
46643	23	46699A	19	46848	33	54606	
46644	23	46746	21	46850	41	54607	
46645	23	46747A	23	46852	19	54609A	
46646	23	46748	23	46853	19	54613A	
46647	23	46749	33	46854	41	54614	
46648	23	46750A	33	46855B	41	54615	
46649	23	46751A	33	46929	29, 31	54655	
46650	23	46752B	33	46937	33	54710A	
46651B	23	46753A	33	46938	41	54716	
46653	23	46756	33	46939A	41	54717A	
46654	27	46757	33	46940A	41	54718	
46655	27	46758	33	46941A	41	54719	
46656	27	46760	25	46942A	37, 41	54720	
46657B	27	46761	25	46944	39	54721	
46658	27	46762	29	46945	37, 41	58905	21,
46659	27	46763	33	46985	23	58906	23,
46660	27	46764A	33	46986	27	59139	
46661	27	46765A	33	46988	37, 41	59140	
46662	27	46766	33	46990	41	59148	
46664	27	46767	33	47288	37	59149	
46666AB	29	46770	41	47585	37	59520	
46667	29, 31	46771	41	54523	43	59521	
46670B	29, 31	46772	33	54525A	43	59522	
46671	29, 31	46773	41	54526	43	59586A	
46672B	29, 31	46774	41	54527	43	59588A	
46674C	29, 31	46775	41	54528	43	59952A	
46675	29, 31	46781	19	54529	43	59953	
46676A	29, 31	46782	19	54530	43	59954A	
46677	29, 31	46783	19	54538A	43	59955	

NUMERICAL INDEX — Continued

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
59956A	25	59983	37	90242A	47, 49	91372	27
59957A	33	59985A	37	90243A	49	91373A	35
59960A	33	59989	29	90244	47, 49	91374	35
59961A	33	59990A	42	90247A	47	91375	35
59962A	43	90205	51, 53	90248	47	91376	27
59964A	37	90206	53	90267	33	91377	27
59965A	37	90207	51, 53	90272	47, 49	91449A	35
59967A	37	90208	53	90388A	45	91457	39
59968A	37	90210A	53	90389A	45	91458A	39
59969A	37	90211A	51	90390A	45	91459A	39
59971	37-43	90220	51	90440	37, 41	91460A	39
59972	37	90221A	51	90588	33	91461A	39
59974	37	90222A	51	90589	33	91462A	39
59976	37	90223	51	90590A	33	91463A	39
59977A	37	90225A	51	90634	23	91466	39
59979A	37	90240A	49	90635	23	92967	17
59980	37	90241	47, 49	90849	53		

SPECIFICATIONS

Hyster D4N Tractor Donkey

Drum Size:	Main Drum	Haulback Drum
Barrel Diameter	9"	8"
Flange Diameter	20"	20"
Barrel Length	17 $\frac{3}{4}$ "	17 $\frac{3}{4}$ "
Cable Capacity, Maximum Line	1490'-1 $\frac{1}{2}$ "	3980'- $\frac{5}{16}$ "
	950'- $\frac{5}{8}$ "	2770'- $\frac{3}{8}$ "
	660'- $\frac{3}{4}$ "	1565'- $\frac{1}{2}$ "
Available Line Pulls:		
Low Gear, Bare Drum	13,100	7,500
Low Gear, Full Drum	6,400	3,200
High Gear, Bare Drum	7,100	4,000
High Gear, Full Drum	3,500	1,700
Line Speeds:		
Low Gear, Bare Drum	144 f.p.m.	252 f.p.m.
Low Gear, Full Drum	290 f.p.m.	590 f.p.m.
High Gear, Bare Drum	267 f.p.m.	464 f.p.m.
High Gear, Full Drum	537 f.p.m.	1,087 f.p.m.
Net Weight without Cables, approximately	2,685 lbs.	

54 HP @ 1100 RPM

