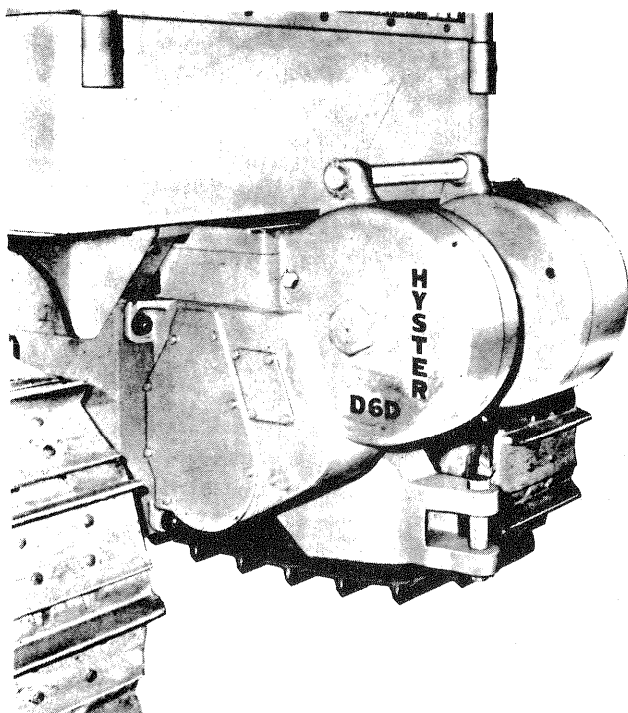


PARTS BOOK AND INSTRUCTION MANUAL

HYSTER[®]

D6D TOWING WINCH

DIRECT DRIVE AND POWER CONTROLLER



HYSTER COMPANY

TRACTOR EQUIPMENT OPERATIONS

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

599188

LITHO IN U.S.A.

FOR PARTS AND SERVICE CONTACT

Model Number _____

Serial Number _____

LIST OTHER SPECIAL EQUIPMENT

HOW TO USE YOUR PARTS BOOK

This parts book contains a complete listing of all parts used since the first model. When ordering parts give the model number, serial number, catalog form number, quantity and name of part.

To find any part needed for replacement, start with the index shown on the right. Determine which section contains the part desired. By bending the book back slightly to the right, the heavy arrows on the right hand side of the index page will line up with a black tab on the edge of the index page of the section desired. Proceed then to locate the part in this section.

Service, Operating, and Lubrication Instructions will be found in Section "A."

Quantities shown are quantities per assembly unless otherwise stated.

Assembly number at the top of a page contain all of the parts listed on that page; exceptions are noted.

Be sure to read all foot notes at the bottom of any page from which parts are being ordered. Foot notes are indicated by an asterisk or other symbol preceding a part number.

For any further information on parts, service, or ordering, consult your local Hyster dealer.

Parts with Indented Descriptions are included in the assembly immediately above.

EXAMPLE:

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
1	134274	Kit—Major	1	1
2	127039	Capscrew	6	6
	78035A	Kit—Minor	1	1
3	.....	Seal	2	2
4	123699	Kit—Gear	1	1

We reserve the right to make changes in design or add improvements without incurring the obligation to make such changes in Winches previously manufactured.

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Service, Operation and Installation Instructions

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SECTION E

**Brake and Shifter Mechanism
For Direct Drive Winch**

SECTION F

**Brake and Hydraulic System
For Power Controlled Winch**

SECTION G

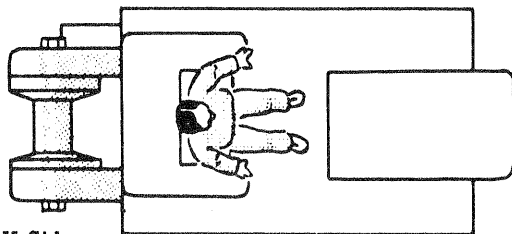
Optional Equipment

SECTION Q

Numerical Index

**Parts Referred to in This Book as Right or Left Hand Parts
Are in Accordance with the Sketch Below**

L. H. Side



R. H. Side

CAUTION!

**Never Attempt to Clean, Oil or Adjust a Machine
While it is in Motion**

Strict Observance of this Rule will Prevent Accidents

**NOTE: All Studs and Capscrews used in this Winch
are Heat-treated.**

Section A

SERVICE, OPERATION AND INSTALLATION INSTRUCTIONS

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INSTALLATION INSTRUCTIONS

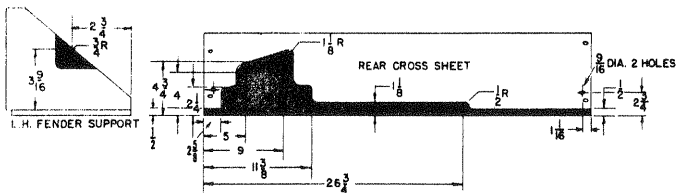
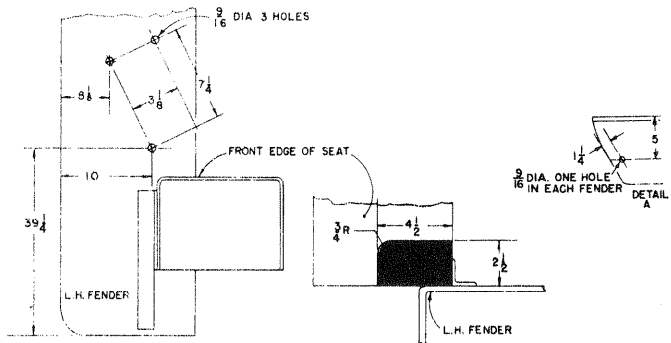
Alterations for Tractors Series 37A, 44A, 8U and 9U For Mounting Direct Drive Winch

NOTE: BURN OUT SHADED AREAS

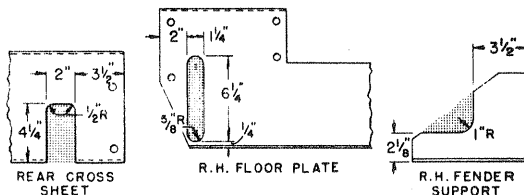
1. Remove tool box from tractor fender.
2. Remove rear cross sheet and alter as shown.
3. Alter L. H. fender support as shown.
4. Locate handlever bracket on L. H. fender and drill 9/16 holes as shown.
5. Relocate tool box in most convenient location.
6. For optional Free-Spooling, make additional alterations as shown.

Alterations for Tractors Serial No. 37A1 & Up — 44A1 & Up Only

1. Drill two 9/16 holes (one in each fender) as shown in detail "A," for rear cross sheet support.
2. Bolt Hyster lugs 96798 to fenders using capscrews provided ($\frac{1}{2}$ UNF x 1).



ADDITIONAL ALTERATIONS FOR FREE SPOOLING



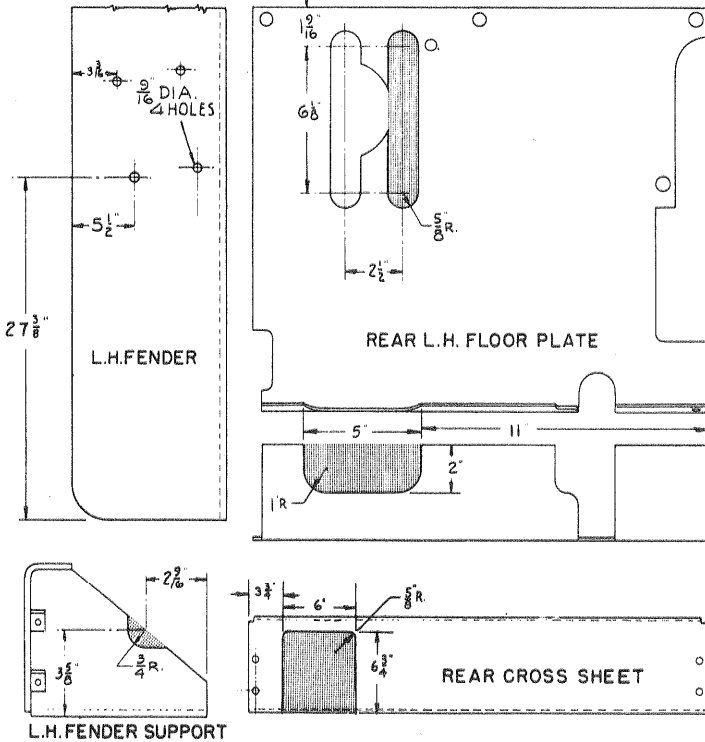
INSTALLATION INSTRUCTIONS

Alterations for D6 Tractors Serial No. 8U1 & Up — 9U1 & Up On

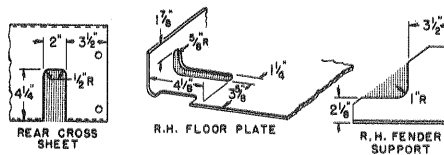
For Mounting Direct Drive Winch

NOTE: BURN OUT SHADED AREAS

1. Remove rear L. H. floor plate and alter as shown.
2. Straighten master clutch control lever to clear all other handleve and relocate in new slot added in floor plate.

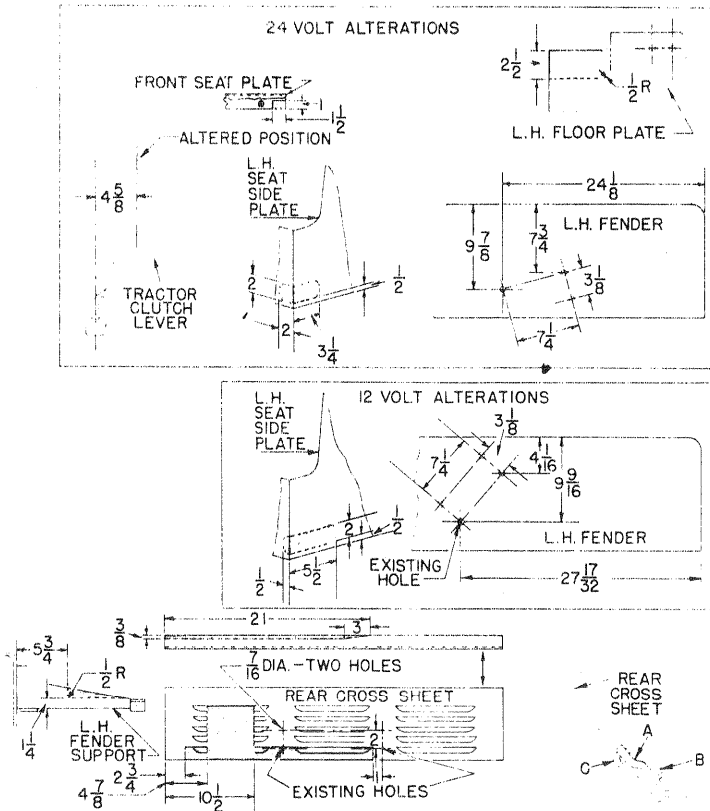


ADDITIONAL ALTERATIONS FOR FREE SPOOLING



INSTALLATION INSTRUCTIONS

Alterations for D6 Tractor Serial No. 74A1 & Up For Mounting Direct Drive Winch

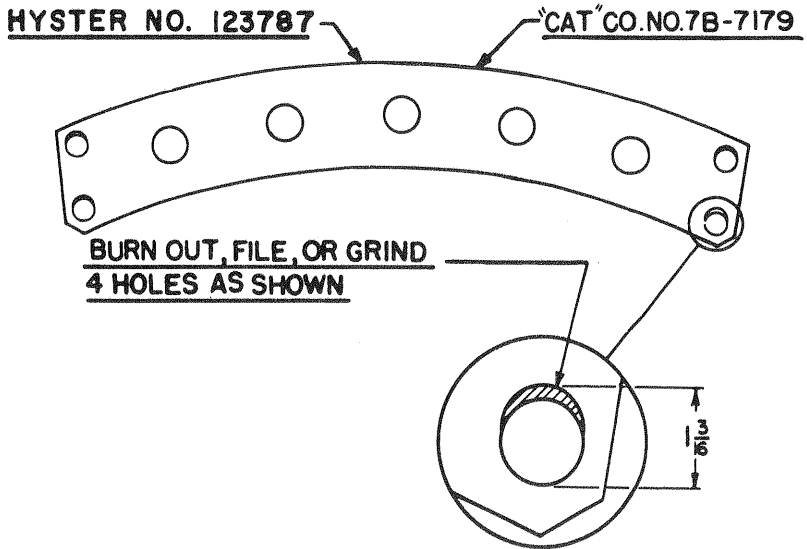


NOTE: BURN OUT SHADED AREAS

1. Alter L. H. fender support as shown.
2. Remove rear cross sheet and burn out shaded area. Drill two 7/16 diameter holes as shown.
3. Alter L. H. seat side plate as shown.
4. Drill three 9/16 diameter holes in L. H. fender as shown.
5. For 24 volt tractor mounting, alter clutch lever, front seat plate, and L. H. floor plate as shown.
6. Install two Hyster plates (A) on tractor, using Hyster capscrews (B) 3/8 UNC x 1. "Caterpillar" capscrews (C) are used later to attach cross sheet.
7. For optional free spooling, make additional alterations shown on next page.

INSTALLATION INSTRUCTIONS

Drawbar Alteration for D74A Tractor With Direct Drive Winch



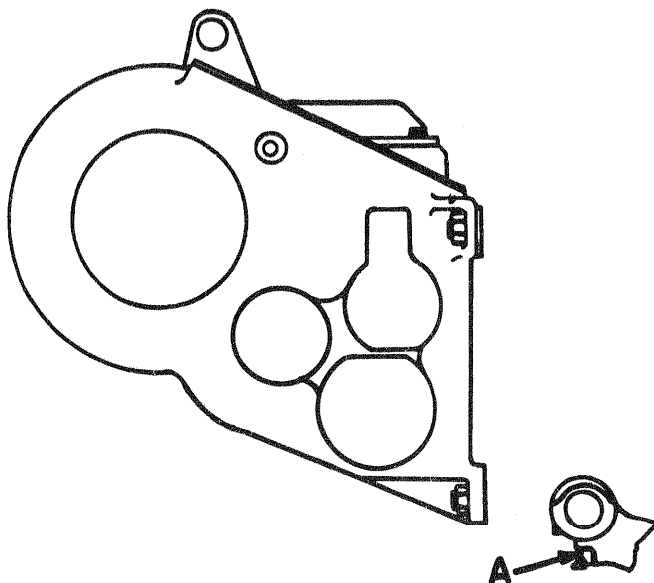
1. Alter "Caterpillar" drawbar No. 7B-7179 as shown.

INSTALLATION INSTRUCTIONS

Alteration to R.H. and L.H. Diagonal Brace Bearing Lubrication
Arrangement for D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

For Direct Drive or Power Controlled Winch

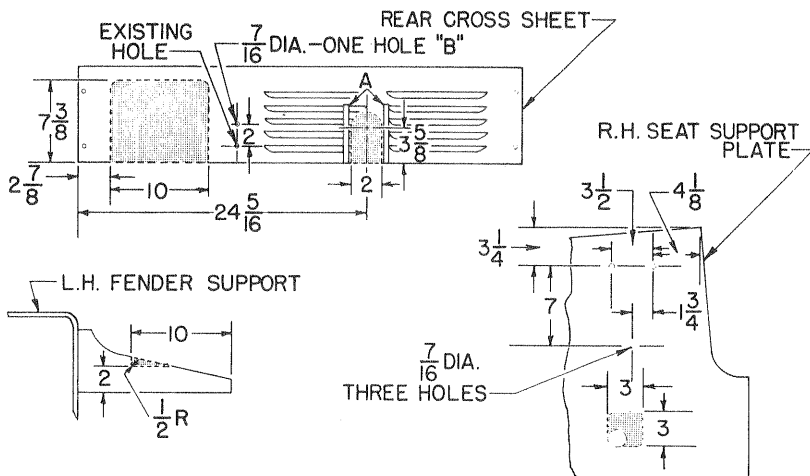
Arrangement for D5 Tractors Serial No. 81H1 & Up — 82H1 & Up
83H1 & Up — 93J1 — 96J1 & Up ^{R2}



1. Install 60° elbow body fitting No. 13987 "A" between fitting and diagonal brace bearing.

INSTALLATION INSTRUCTIONS

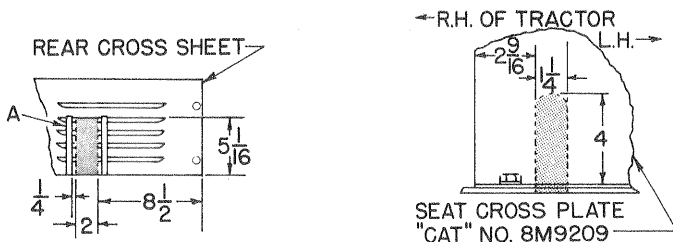
Alterations for D6 Tractors Serial No. 74A1 & Up — 76A1 & Up For Mounting Power Controlled Winch



NOTE: BURN OUT SHADED AREAS

1. Remove rear cross sheet and burn out shaded areas. Weld two support strips (A) as shown, with $\frac{1}{8}$ tack weld between louvers. Drill one $\frac{7}{16}$ diameter hole at (B) for Hyster support plate.
2. Alter L. H. fender support as shown.
3. Cut 3×3 hole in R. H. seat support plate for Hyster control cables and drill three $\frac{7}{16}$ diameter holes for mounting handlever bracket.
4. Remove tractor fuel tank to simplify winch installation.
5. See side elevation of rear cross sheet on page A3. Install one plate (A) on tractor using Hyster capscrew (B) $\frac{3}{8}$ UNC x 1. "Caterpillar" cap-screw (C) is used later for installing cross sheet.
6. For optional free-spooling, make additional alterations as shown.

Additional Alterations for D6 Tractors Serial No. 74A1 and up and 76A1 and up for Mounting Direct Drive or Power Controlled Winch with Optional Free Spool

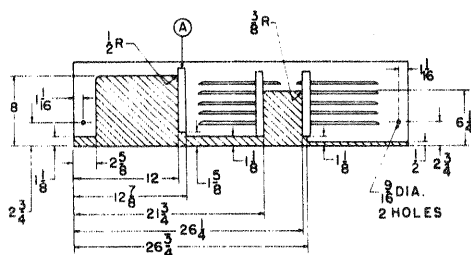


NOTE: BURN OUT SHADED AREAS

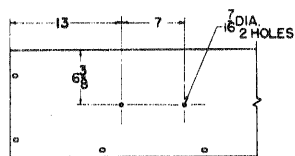
1. Burn out shaded area of rear cross sheet and weld two Hyster support strips No. 97554 (A) as shown. Use $\frac{1}{8}$ fillet tack weld between louvers.
2. Burn the R. H. side of tractor front seat cross plate ("Cat" No. 8M9209) as shown. Extend burn to floor plate. (This opening for Hyster free spool shift lever.)

INSTALLATION INSTRUCTIONS

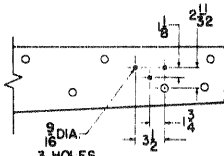
**Alterations for D5 Tractors Serial No. 81H1 & Up — 83H1 & Up
95J1 & Up — 96J1 & Up ^{R2}
For Mounting Power Controlled Winch**



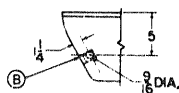
REAR CROSS SHEET



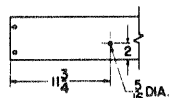
GUARD-ENGINE SIDE R.H.



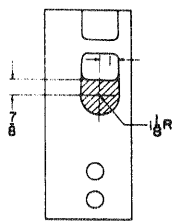
FRAME ASSEMBLY-MAIN R.H.
(FRONT)



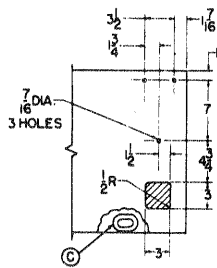
R.H. FENDER



SEAT SUPPORT



SUPPORT ASSEMBLY-
RH FENDER & DASH



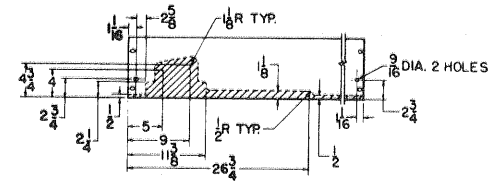
BATTERY BOX R.H.

NOTE: BURN OUT SHADED AREAS

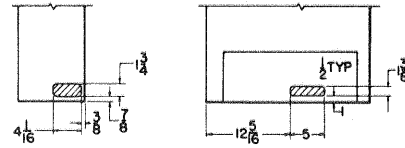
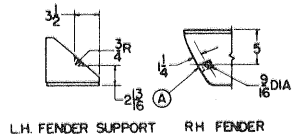
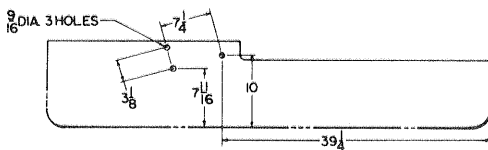
1. Remove rear cross sheet and burn out shaded area. Weld three support strips (A) Hyster No. 154961 as shown, with $\frac{1}{8}$ tack weld between louvers. Drill two $\frac{9}{16}$ diameter holes.
2. Burn out shaded area of R.H. battery box as shown. Drill three $\frac{7}{16}$ diameter holes.
3. Drill one $\frac{9}{16}$ diameter hole in each fender as shown at (B). Bolt lugs (B) Hyster No. 96798 to fenders with $\frac{1}{2}$ UNF x 1 capscrews and lockwashers for cross sheet support.
4. Insert rubber grommet (C) Hyster No. 154960 in battery box.
5. Burn fender and dash support as shown.
6. Drill one $\frac{5}{16}$ diameter hole in seat support as shown.

INSTALLATION INSTRUCTIONS

**Alterations for D5 Tractors Serial No. 81H1 & Up — 82H1 & Up
83H1 & Up — 93J1 & Up — 94J1 & Up ^{R2}
For Mounting Direct Drive Winch**



REAR CROSS SHEET



BATTERY BOX LH

NOTE: BURN OUT SHADED AREAS

1. Remove rear cross sheet and burn out shaded area. Drill two 9/16 diameter holes as shown.
2. Burn out shaded areas of L.H. battery box.
3. Burn out shaded area of L.H. fender support.
4. Drill three 9/16 diameter holes in L.H. fender as shown.
5. Drill one 9/16 diameter hole in each fender as shown at (A). Bolt lug (A) Hyster No. 96798 to fender with 1/2 UNF x 1 capscrew and lock washer for cross sheet support.

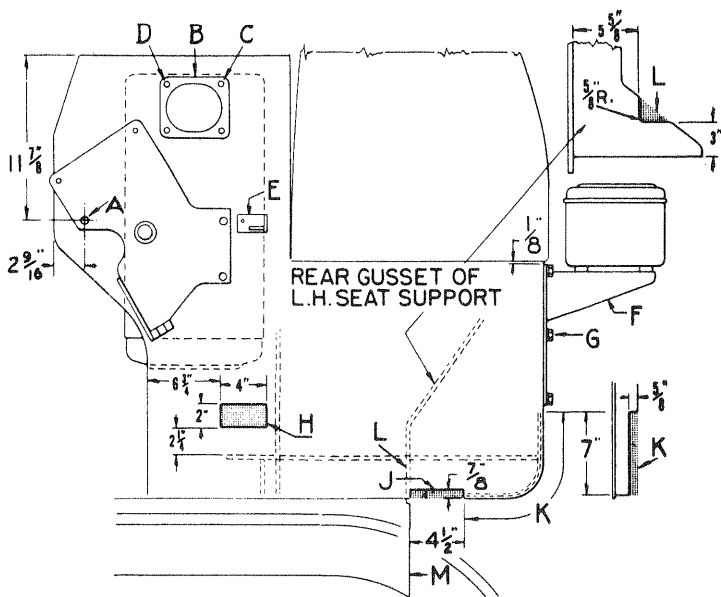
INSTALLATION INSTRUCTIONS

Alterations for 977 Traxcavators Serial No. 53A1 & Up For Mounting Direct Drive Winch

NOTE: BURN OUT SHADED AREAS

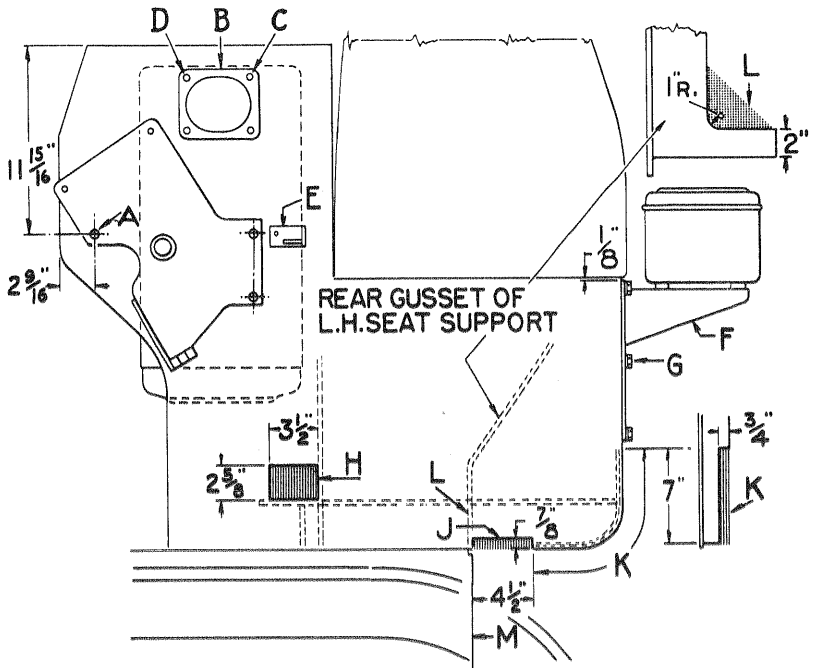
1. Drill three holes, 9/16" dia. "A." Use handlevel bracket as template.
2. Mount Hyster spacer and gasket "B." Discard two capscrews (1/2 UNC x 3) from "C" and replace with two capscrews (1/2 UNC x 5 3/4) from "D." Install two Hyster capscrews (1/2 UNC x 8 1/2) at "D."
3. Remove air cleaner and support brace and discard brace. Attach bracket "E" to air cleaner and tractor, using existing holes and tractor capscrews, nuts and lockwashers.
4. Remove tractor tool box and cover assembly beneath fuel tank. Locate Hyster tool box bracket "F" on center line of tractor and 1/8" below fuel tank using bracket as template, drill six holes 25/64" diameter and tap 7/16-20 UNF at "G."
5. Burn hole at "H," in L. H. side plate of seat support.
6. Burn 7/8x4 1/2 from bottom of L. H. and R. H. tractor side sheets, at "J," starting at rear face of tractor transmission case "M."
7. Burn off 5/8" along flange of L. H. side sheet as indicated at "K."
8. Burn out rear gusset of L. H. seat support as indicated at "L."
9. Install studs and mount winch as directed.

Alterations for 977 Traxcavator Serial No. 53A1907 & Up (With Oil Clutch and Brakes)



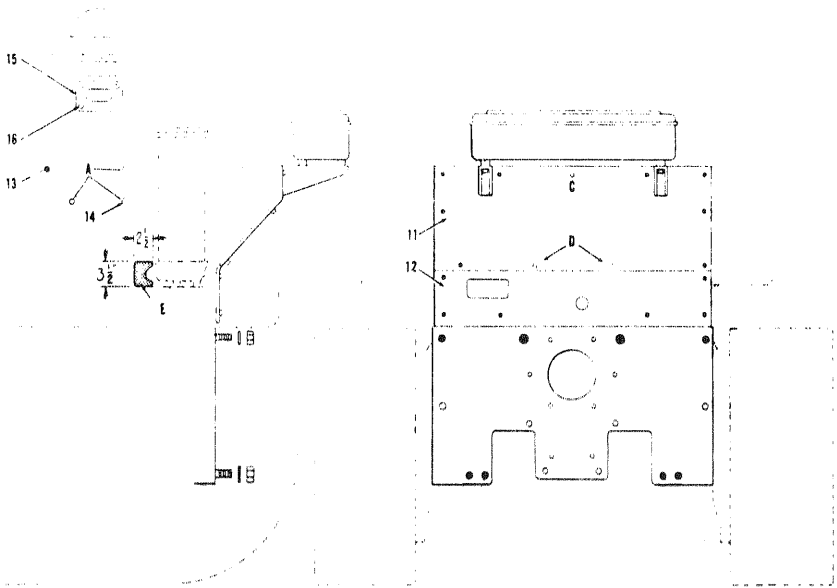
INSTALLATION INSTRUCTIONS

**Alterations for 977 Traxcavator Serial No. 53A1 and Up
To 53A1906 Incl.**



INSTALLATION INSTRUCTIONS

Alterations for 977 Traxcavators
Serial No. 20A1 & Up
For Mounting Direct Drive Winch



NOTE: BURN OUT SHADED AREAS

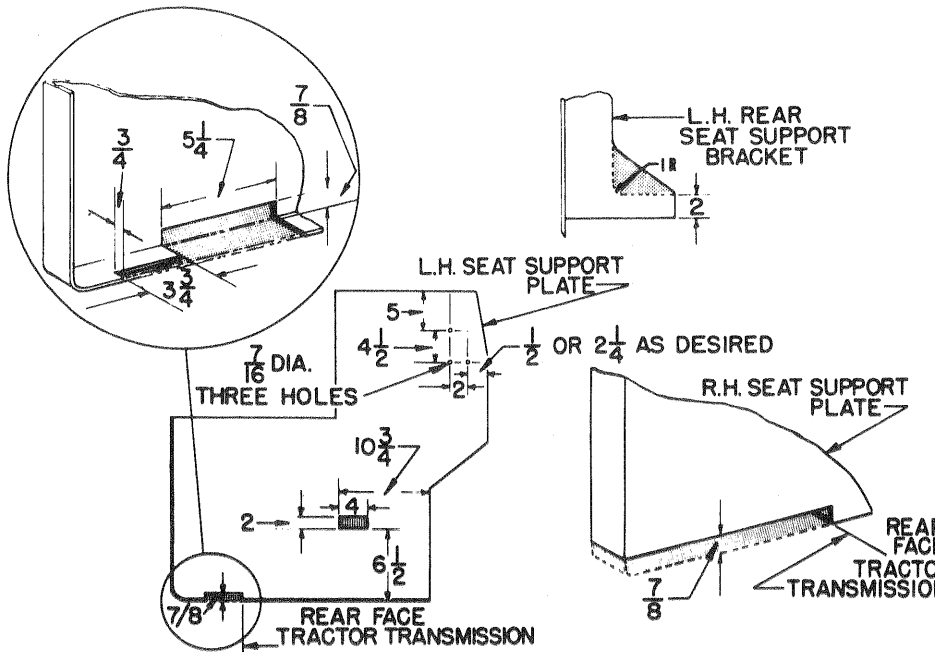
1. Remove Traxcavator tool box and discard. Save capscrews.
2. Locate tool box support (11) with hole "C."
3. Bolt cover (12) to support (11) with two capscrews ($\frac{3}{8}$ UNC x $\frac{3}{4}$) at "D."
4. Using support (11) and cover (12) as template, drill and tap fourteen $\frac{3}{8}$ UNC holes.
5. Bolt tool box support (11) and cover (12) to Traxcavator using capscrews removed in Instruction 1 and two Hyster capscrews, $\frac{3}{8}$ UNC x $\frac{3}{4}$.
6. Remove three Traxcavator capscrews at "A" and fasten handle lever bracket with two $\frac{1}{2}$ UNF x $1\frac{1}{2}$ capscrews (14). Drill one $9/16$ hole and install $\frac{1}{2}$ UNF x $1\frac{1}{2}$ capscrew at (13).
7. Enlarge filter opening in L. H. side seat support as shown at "E." (For Hyster control cables)
8. Install air cleaner spacer (15) and gasket, using four capscrews, $\frac{1}{2}$ UNF x $1\frac{1}{2}$ (16).
9. Install studs and mount winch as directed.

INSTALLATION INSTRUCTIONS

Alterations for 977 Traxcavators

Serial No. 53A1 & Up

For Mounting Power Controlled Winch



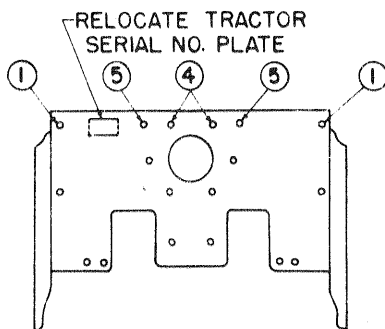
NOTE: BURN OUT SHADED AREAS

1. Remove tool box and cover beneath fuel tank.
2. Burn out area of L. H. rear seat support bracket as shown.
3. Burn out area of R. H. seat support plate as shown.
4. Burn out hole in side and area at bottom of L. H. seat support plate.
5. Remove grab iron and discard.
6. Drill three $\frac{7}{16}$ " dia. holes in L. H. seat support plate (for handle bracket).
7. Install studs and mount winch as directed.

INSTALLATION INSTRUCTIONS

For Mounting on D5 Tractors

Serial No. 81H1 & Up — 82H1 & Up — 83H1 & Up
93J1 & Up — 94J1 & Up ^{R2}



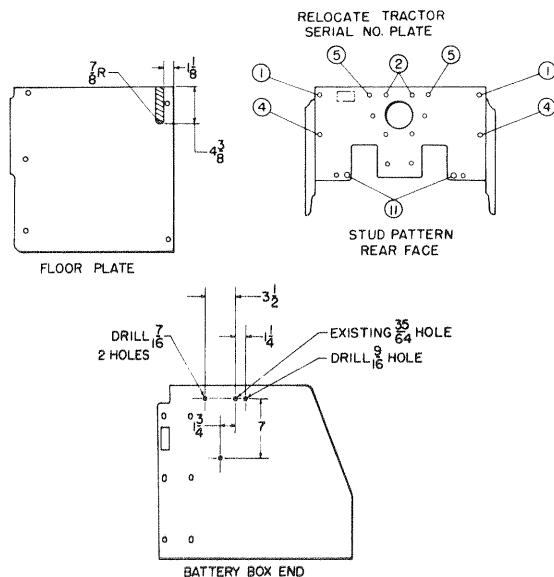
STUD PATTERN-TRACTOR
REAR FACE

1. Remove bevel gear compartment P.T.O. cover and plug six holes with steel plugs (Item 4) Hyster No. 136384. Use plastic filler to seal oil tight.
2. Remove drawbar and brackets. Remove two drawbar studs and replace with the two drawbar studs (Item 1). Catco.
3. Remove cork plugs and replace with studs (Item 5) Hyster No. 89035.
4. Check rear face of transmission case for high spots, particularly of welds near mounting studs, where winch pads are to make contact. Grind or file to insure proper fit.
5. Relocate tractor serial number plate.

INSTALLATION INSTRUCTIONS

For Mounting on 977K Traxcavators

Serial No. 46H1 & Up



NOTE: BURN OUT SHADED AREAS

1. Remove and discard "Caterpillar" guard assembly No. 3S3933.
2. Remove bevel gear compartment PTO cover and plug six holes with steel plugs at (2) Hyster No. 136384.
3. Remove drawbar and brackets. Remove two drawbar studs and replace with cork plugs at (4). Remove cork plugs at (1), and replace with the two drawbar studs removed from location 4.
4. Remove and discard studs at (11) and replace with cork plugs (Hyster No. 156879).
5. Remove cork plugs and replace with Hyster studs at (5) (Hyster No. 89035).
6. Check rear face of transmission case for high spots, particularly of welds near mounting studs where winch pads are to make contact. Grind or file to insure proper fit.
7. Relocate tractor serial number plate.
8. Remove "Caterpillar" grab iron 3S6103, and "Caterpillar" guard 4S9027.
9. Alter "Caterpillar" floor plate 3S5670, and battery box end 3S4091 as shown.
10. Install handlever bracket assembly (Hyster No. 123279) and guard (Hyster No. 156872). Use hardware from step 8.

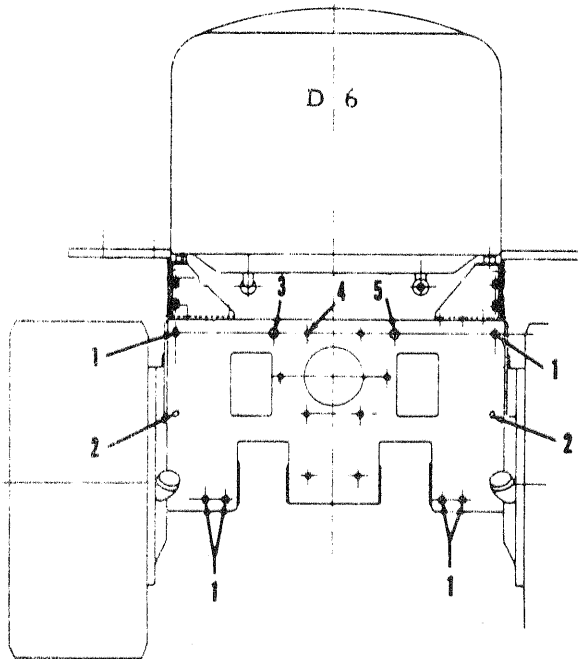
INSTALLATION INSTRUCTIONS

For Mounting on D6 Tractors

Serial No. 8U1 & Up — 9U1 & Up — 37A1 & Up — 44A1 & Up

44A1 & Up — 74A1 & Up — 76A1 & Up

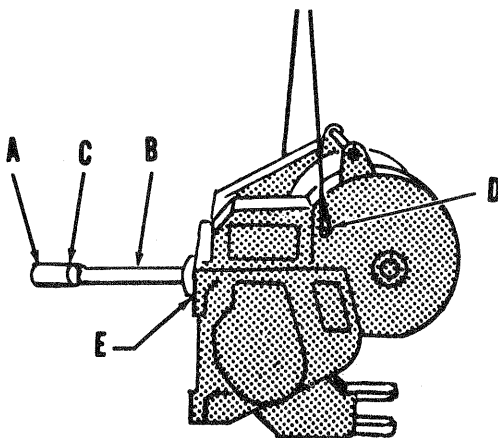
Also 977 Traxcavators Serial No. 20A1 & Up — 53A1 & Up



1. Remove drawbar brackets.
2. Remove "Caterpillar" power take-off cover and plug the six tapped holes at (4) with corks, Hyster No. 18004. If required, move studs from location (2) to location (1) above and plug the two tapped holes at (2) with corks, Hyster No. 18005.
Smooth out the bevel edge of the P.T.O. bore. Remove all burrs and nicks. Smooth out machining marks on the surface of the bore. Use a round back or emery.
3. Check rear face of transmission case for high spots particularly of welds near mounting studs where winch pads are to make contact. Grind or file to insure proper fit.
4. For all Tractors and Traxcavators except S.N. 74A1 & Up — 76A1 & Up. Install two $1\frac{1}{4} \times 3-27/32$ drilled studs, Hyster No. 95952 at (3) and (5). The six studs at (1) are "Caterpillar" drawbar studs. (Furnished by Hyster for Traxcavator Installations.)
5. For Tractors S.N. 74A1 & Up — 76A1 & Up only. Install two $1\frac{1}{4} \times 4$ drilled taperlock studs, Hyster No. 89035 at (3) and (5).
6. If required, remove drawbar studs not used and plug holes with corks.

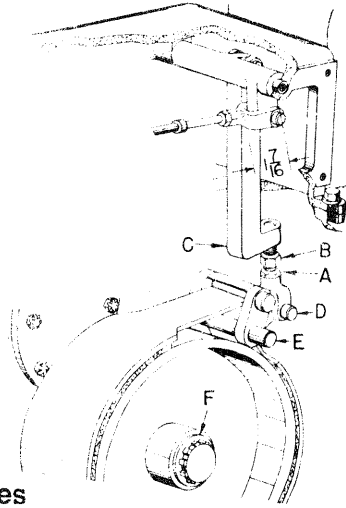
INSTALLATION INSTRUCTIONS

WINCH INSTALLATION



1. Be sure that coupling "A" is secured to shaft "B" at "C" with pin and lock ring.
2. Apply a liberal coat of heavy type sealant to "O" ring and to bearing carrier where "O" ring makes contact, and install "O" ring on bearing carrier at "E."
3. Install $\frac{7}{8}$ " UNF capscrews in side frames at "D" and attach sling as illustrated.
4. Clean mounting surfaces and be sure that tractor P.T.O. cover bolt holes are plugged.
5. Remove winch transmission cover and remove plastic plugs, two in cable openings and one in stud hole in winch mounting face.
6. Move winch toward tractor and line up splines on tractor P.T.O. with splines on coupling "A."
7. When winch is in place, install nuts and lockwashers on the two upper mounting studs first. *Note:* Coat the stud that is inside the winch with Permatex, Plastic Lead Seal or comparable sealant. Install nuts and lockwashers on the remaining mounting studs and tighten all mounting nuts securely. Be sure cotter is installed in drilled stud inside winch.
8. Remove cover on handling gear control box and install cables (see illustrations showing adjustments required). *Note:* Brake cable goes the opening toward the center of the tractor. Be sure locknuts at rod ends are tight and that set screws in housing are in grooves in cables and are tight. Replace cover.
9. Install handlever bracket and connect cables. Cross cables for proper handlever operations. This will place the brake cable away from the center of the tractor at the handlever end. (See routing diagram on page A12.) *Note:* For Traxcavator installations rod end pins at handlever end must be inserted with heads away from Traxcavator.
10. Replace altered rear cross sheet (and fuel tank, if removed).
11. Check and adjust brake lining clearance.
12. For direct drive winch check and adjust clutch shifter.
13. Recheck to see that all fastenings are tight.

INSTALLATION INSTRUCTIONS For Direct Drive Winches



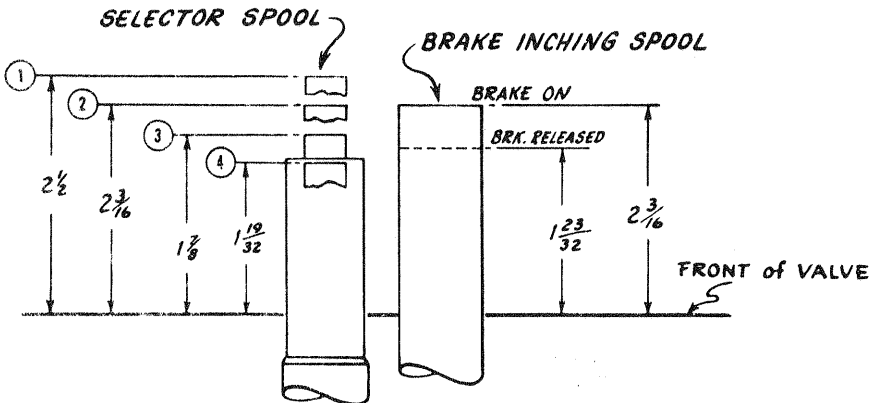
Setting Control Cables

1. Place brake handlever in released position and clutch handlever in neutral.
2. With the brake handlever in full release position, adjust control cable to the 1-7/16" dimension as shown.

Note: Large grommets on cables must be removed to insert cables in winch openings, then replaced.

Control Valve Spool Positions for Power Controlled Winch

After installation, the control cable adjustment should be checked by measuring the control valve spool positions at each position of the control levers. The spool positions must be equal to the dimensions shown. If the spool positions do not check with these dimensions, the push-pull cables must be readjusted until the spools are in the correct positions as indicated.

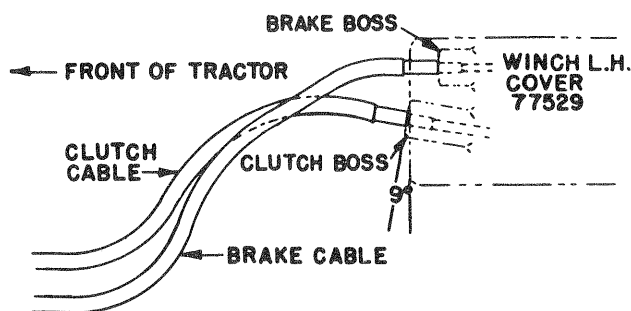


- 1 REVERSE CLUTCH ENGAGED
- 2 BRAKE RELEASE

- 3 NEUTRAL
- 4 FORWARD CLUTCH ENGAGED

INSTALLATION INSTRUCTIONS

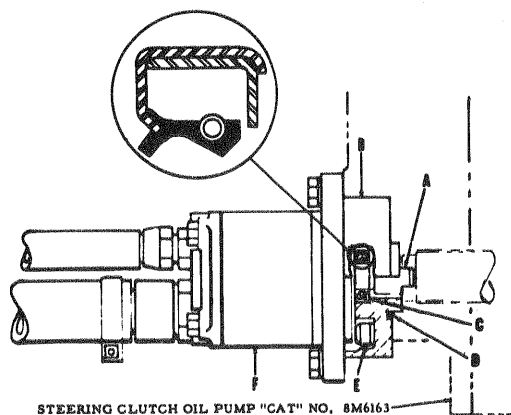
Control Cable Routing (Diagram Shows Plan View Installation for 977 Traxcavator Serial No. 53A1907 & Up, with Oil Clutch and Brakes)



1. Cross brake cable over clutch cable to outside of handling gear bracket as shown.

Note: Handling gear cover box (142507) is required for Traxcavators Serial No. 53A-1907 & up. The boss for the clutch cable on this cover is on 9° slant.

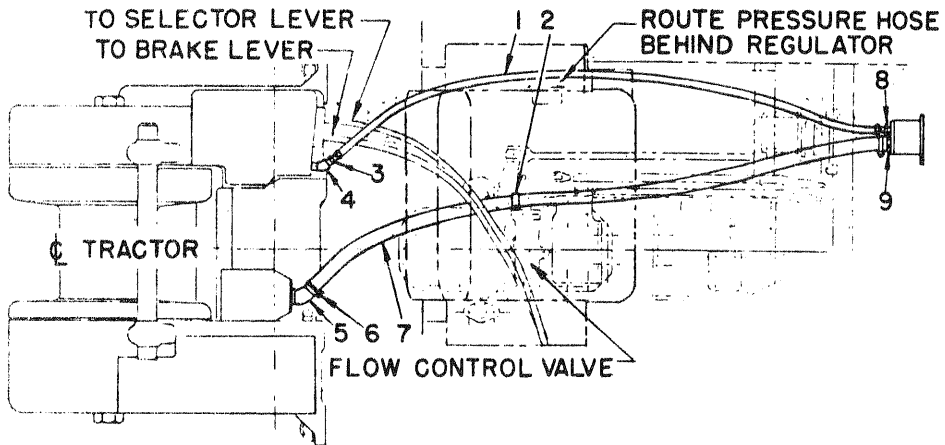
Power Control Winch Pump Installation for Tractors Serial No. 74A1 & Up — 76A1 & Up



1. Remove tractor floor plates and left brake pedal.
2. Remove cover from tractor steering clutch oil pump "Cat" No. 8M6163 located below tractor L. H. brake pedal.
3. Install coupling (A). Polish coupling tongues with emery cloth so coupling does not slide freely.
4. Assemble pump bracket (B) "O" ring (D) and oil seal (C) and install on tractor pump with two $\frac{3}{8}$ UNC x 1 capscrews (E). *Note:* Install oil seal (C) as shown in enlarged view.
5. Install Hyster pump (F) with fittings below center line.

INSTALLATION INSTRUCTIONS

Hydraulic Hose Routing — Power Controlled Winch on D6 Tractors Serial No. 74A1 & Up, 76A1 & Up

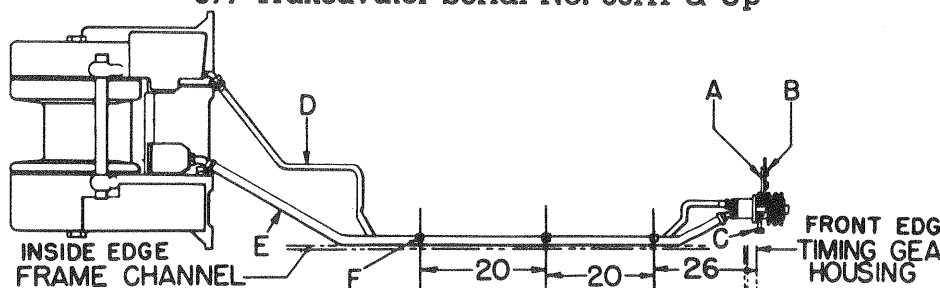


1. Remove protective plugs and attach hose (1) to L. H. side of winch using 45° elbow fitting (4) and male connector (3).
2. Attach hose (7) to R. H. side of winch using hose nipple (5) and clamp (6).
3. Attach opposite end of hose (4) to pump using special hose fitting (9) and another clamp (6).
4. Fasten hose (4) to "Caterpillar" flow control valve with clamp (2) using existing capscrew.
5. Route hose (1) to the left, behind regulator and connect to pump with male connector fitting (8).

Note: Be sure Hyster hydraulic lines do not rub on any moving tractor parts.

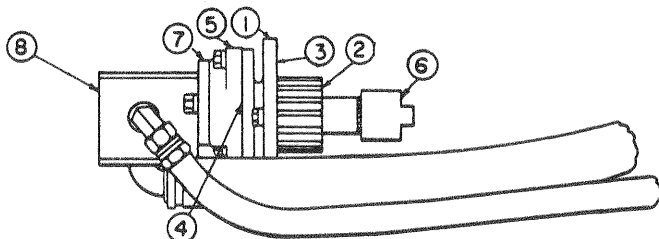
INSTALLATION INSTRUCTIONS

Pump and Hose Installation — Power Controlled Winch on 977 Traxcavator Serial No. 53A1 & Up



1. Remove $\frac{1}{8}$ pipe plug from pump assembly and check oil level. Fill with winch transmission oil, if required, and replace plug.
2. Remove "Caterpillar" belt tightener group and install Hyster pump assembly to timing gear cover.
For Traxcavators Serial No. 53A2272 and up (and previous series with spring-loaded belt tightener) use three capscrews $\frac{1}{2}$ UNC x $1\frac{1}{2}$ "B" with plain washers and lockwashers. Shimming may be required at "A" (between timing gear cover and pump bracket) for proper belt alignment.
For 977 Traxcavators with screw-type belt tightener, use plain washers and lockwashers with "Caterpillar" nuts.
3. Tighten belts with adjusting screw "C."
4. Drill three $\frac{5}{16}$ holes in side of Traxcavator frame channel, approximately 4" down from top and install Hyster hydraulic hoses "D" and "E." Use three Hyster clamps "F," with the larger hose on top as shown.

Pump and Hose Installation — Power Controlled Winch on 977K Traxcavator Serial No. 46H1 & Up

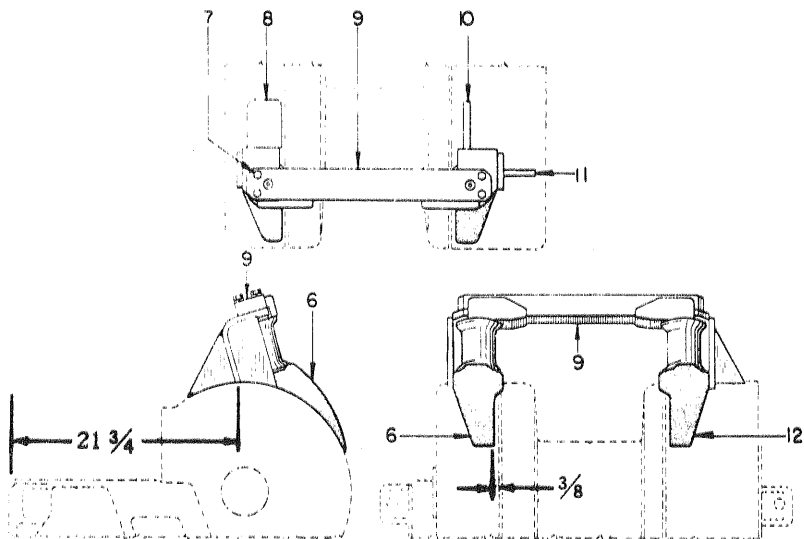


NOTE: BEFORE INSTALLATION CLEAN AREA AROUND TRACTOR OIL PUMP

1. Remove pump cover, "Caterpillar" No. 1S5544.
2. Remove pump gear, "Caterpillar" No. 1S6509. Replace with gear (item 2) Hyster No. 89047. (Prelubricate with clean hydraulic oil.)
3. Place o-ring (item 3) Hyster No. 15893, in groove on cover (item 1) Hyster No. 156092, and assemble to pump using original hardware.
4. Place o-ring (item 4) Hyster No. 109607, in groove on item 1, and assemble adapter (item 5) Hyster No. 156861, to cover.
5. Position coupling (item 6) Hyster No. 89047, and gasket (item 7) Hyster No. 97952, on pump (item 8) Hyster No. 155161, and assemble to adapter.
6. Connect hoses and fittings. Clamp hoses.

INSTALLATION INSTRUCTIONS

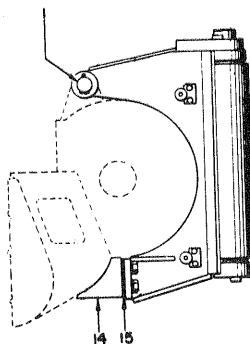
CABLE GUIDE ROLL GROUP



1. Remove tie bar and tie bar ears from winch.
2. Assemble cable guide roll parts, place on winch as shown, and tack weld to winch frame. Tack weld support (8) to bracket (6) and gussets (10 and 11) to bracket (12).
3. Weld securely to winch using intermittent weld to avoid distorting winch side frames. Complete welding support (8) and gussets (10 & 11).

Note: Front part of brackets (6) and (12), where they contact the winch side frames, should be $21\frac{3}{4}$ " from the rear face of the tractor and the inside edges of these brackets should be $\frac{3}{8}$ " from edges of winch side frames nearest the drum.

FAIRLEAD INSTALLATION



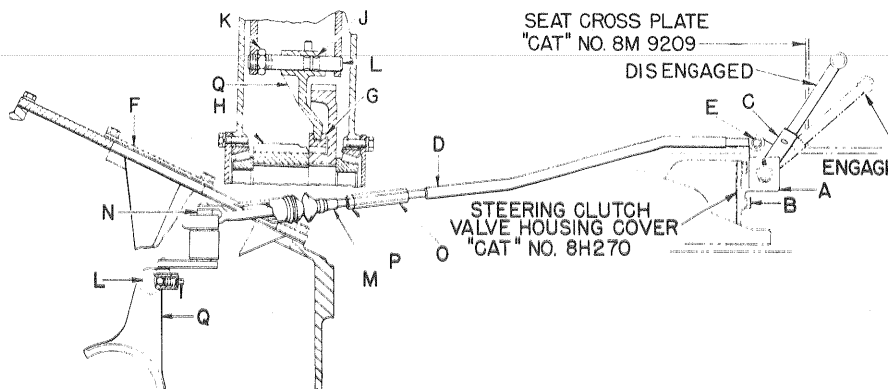
INSTALLATION INSTRUCTIONS

FAIRLEAD ASSEMBLY

1. Remove winch tie rod (1).
2. Swing fairlead into position and insert tie rod (1) through tie rod eye on winch and fairlead brackets. If tie rod (1) is bent, replace it with new one. Install cotters, $\frac{3}{8} \times 3$, in ends of tie rod (1).
3. Bolt brackets (14) to each side of fairlead frame using shims (15) as required. There should now be $\frac{1}{8}$ " clearance between winch drums and fairlead frame.
4. With fairlead frame correctly in position, weld brackets (14) securely to winch frame.

FREE SPOOL GROUP INSTALLATION

(For Tractors Serial No. 74A1 & Up — 76A1 & Up)

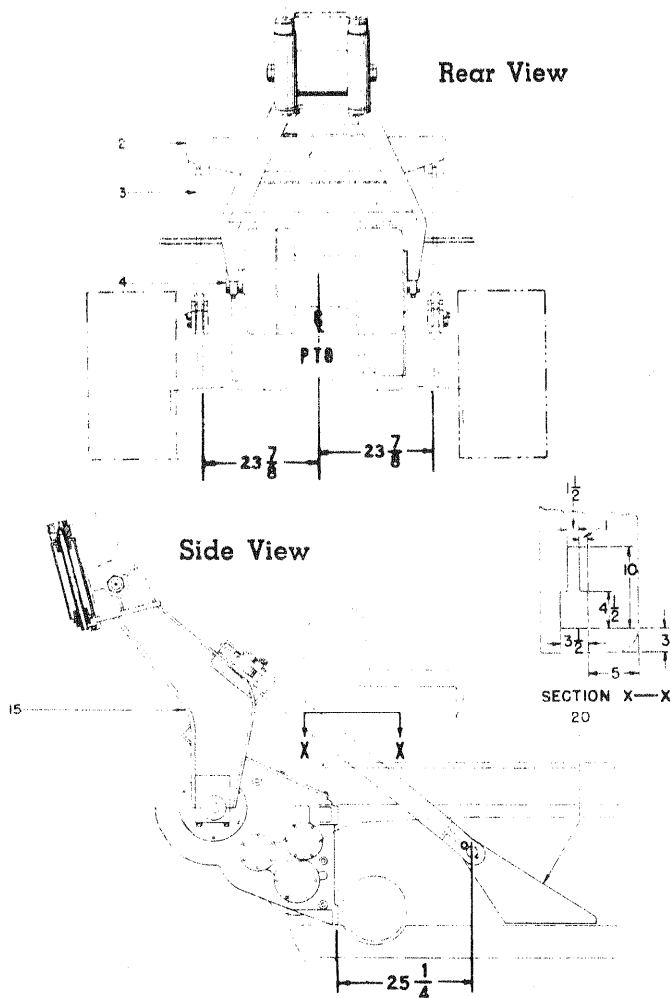


1. Remove two capscrews from steering clutch valve housing cover, "Caterpillar" pillar No. 8H270, and install Hyster lever bracket "A," using Hyster cap screws "B," $\frac{3}{8}$ UNC x 1, with lockwashers.
2. Install Hyster lever "C" through opening cut in seat cross plate "Caterpillar" No. 8M9209.
3. Attach link "D" to lever crank at "E."
4. Remove winch cover "F" and check shifting arrangement inside of winch as follows:
5. With the dental clutch "G" fully disengaged from gear "H" as shown, detent ball (in boss of shifter "Q") should be in notch "J." If not properly adjusted, loosen jam nut "K" on shaft "L" and turn shaft in or out as required. Be sure to tighten jam nut "K." Once the shifter "Q" is properly adjusted, it will not require other adjustment.
6. Section "M" of link "D" is attached to crank "N" inside the winch at the factory. Connect section "M" to turn buckle "O" and adjust link "D" to proper length. Be sure to tighten jam nut "P" after adjustment.
7. Replace cover "F."
8. Push lever all the way down for drum rotation under power. Move lever all the way up for free spooling drum.

INSTALLATION INSTRUCTIONS

INTEGRAL ARCH

(For Wide Gauge Tractors Prior to Serial No. 74A1 — 76A1)

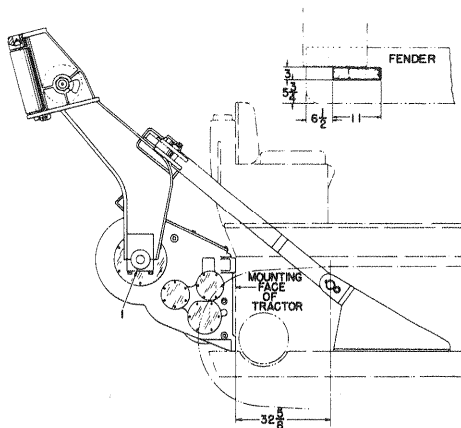
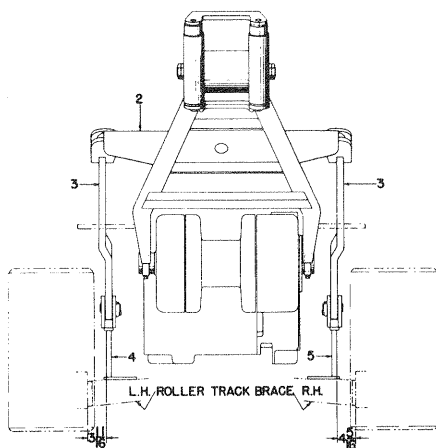


1. Remove winch drum shaft nuts and replace with special nut (4).
2. Remove tool box and alter fenders as shown at X—X.
3. Remove winch tie rod.
4. Install frame (15), equalizer assembly (2), bar supports (3) and support assemblies (20).
5. Tack weld support assemblies (20) to tractor as shown: $23\frac{7}{8}$ " from each side of P.T.O. center line.
6. Check alignment and complete welding support assemblies (20) to tractor: $\frac{3}{8}$ " fillet weld on inside and $\frac{1}{2}$ " fillet weld on outside.
7. Install tool box in most convenient location.

INSTALLATION INSTRUCTIONS

INTEGRAL ARCH

For D6 Tractors Serial No. 74A1 & Up — 76A1 & Up



REMOVE SHADED AREA

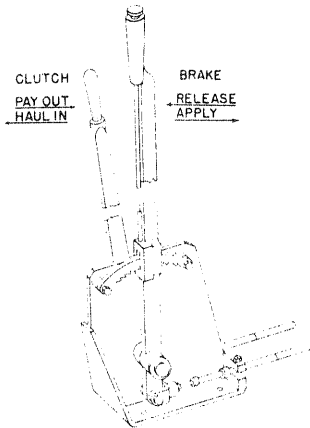
1. Remove winch drum shaft nuts and replace with special nuts (1).
2. Remove tool box and alter tractor fenders as shown.
3. Remove winch tie rod.
4. Install equalizer (2), struts (3) and brackets (4) and (5).
5. Tack weld brackets (4 and 5) to tractor R.H. and L.H. track roller brace.
6. Check for alignment and complete welding of brackets with $\frac{3}{8}$ fillet weld.
7. Install tool box in a convenient location.

OPERATING INSTRUCTIONS

DIRECT DRIVE WINCH

Do Not Operate Winch While Tractor Is In Motion

To Apply the Brake **PULL THE
HANDLEVER BACK.**
PUSH FORWARD to release.



CAUTION: With a standard brake, the brake handlever must be released *before* operating the winch. The tractor master clutch must be disengaged *before* the winch brake is applied to avoid stalling the tractor motor or burning the winch brake lining.

The optional automatic brake should be applied while hauling in a load, but *must* be released to pay out cable.

To haul in a load push the clutch lever forward. Pull back to pay out cable.

**CAUTION: DO NOT APPLY MORE HANDLEVER EFFORT
THAN NECESSARY TO OPERATE BRAKE OR SHIFTER**

Clutch Operating Instructions

For 977 Traxcavators with Power Shift Transmissions (Serial No. 53A1 and up):

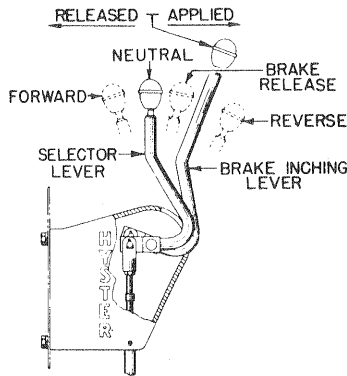
1. Disengage traxcavator power shift transmission.
2. Put traxcavator range selector in "Neutral."
3. Engage winch transmission.
4. Re-engage tractor power shift transmission to line speed desired.

For All Tractors and Traxcavators Without Power Shift Transmission:

1. Disengage the tractor master clutch.
2. Engage winch transmission.
3. Re-engage the tractor master clutch.

OPERATING INSTRUCTIONS

POWER CONTROLLED WINCH

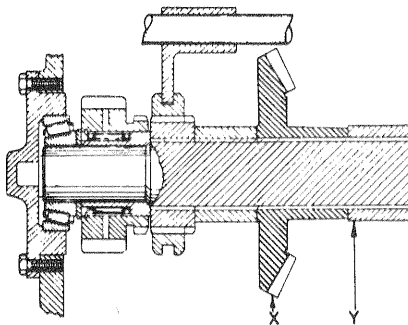


For normal operation the selector lever only is used; push for reverse and pull for forward. The brake is automatically released when the clutches are engaged and applied when the clutches are disengaged. For inching a load pull on the brake lever. It will automatically return to the applied position.

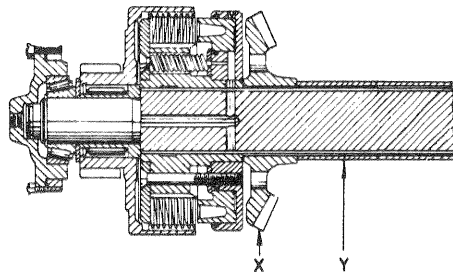
CAUTION: Do not operate winch if clutches slip. Investigate cause.

Vary line speed by throttling engine. Low idle is recommended for reverse. Selector lever must be in neutral for brake inching. Ease selector lever into neutral to hold a tight line.

OVERWIND — UNDERWIND



Direct Drive



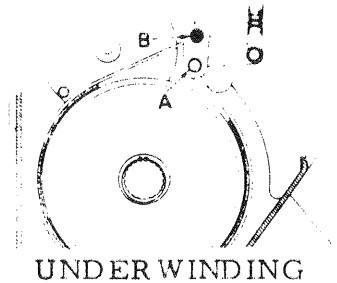
Power Controlled

Unless otherwise specified, all winches are set to wind the cable over the top of the drum barrel.

For underwind operation remove bevel gear "X" and spacer "Y" and replace them as shown.

OPERATING INSTRUCTIONS

BRAKE BAND CHANGE FROM OVERWIND TO UNDERWIND



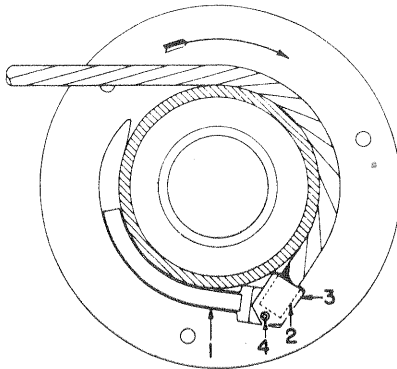
Pin "A," $4\frac{5}{8}$ " long with cotter hole in center, holds the moveable end of the brake band.

Pin "B," $6\frac{3}{8}$ " long with tapped hole in end, is the anchor pin.

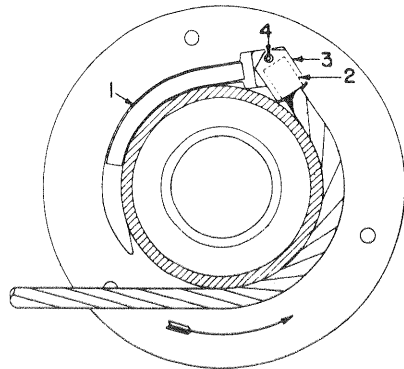
1. To change from overwind to underwind, remove pins "A" and "B" from positions shown in illustration marked "overwinding" and insert them in positions shown in illustration marked "underwinding."

OPERATING INSTRUCTIONS

METHOD OF ATTACHING CABLE FOR OVERWINDING OR UNDERWINDING DRUM



OVERWINDING



UNDERWINDING

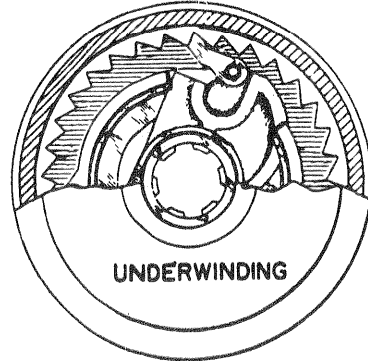
Place cable groove filler (1) in drum barrel as shown and tack weld in place.

Place ferrule (2) in pocket and lock in place with ferrule lock (3) using capscrew (4).

SPECIAL AUTOMATIC BRAKE (Optional Equipment)



OVERWINDING



UNDERWINDING

When cable is to be used "overwinding" the side of brake which is marked overwinding should face outwardly. When cable is to be used "underwinding," the automatic brake should be removed and re-installed in the reverse position with the side marked "underwinding" facing outward.

Instructions covering brake linkage and adjustments on standard brake apply also to the optional automatic brake.

SERVICE INSTRUCTIONS

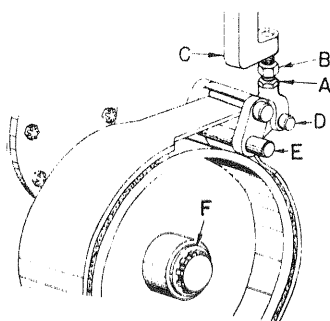
TROUBLESHOOTING FOR DIRECT DRIVE WINCHES

A. Brake Not Holding

1. Drain water from brake compartment.
2. Check brake lining for oil saturation and wear.
3. Check brake band adjustment.
4. Check push-pull cable for proper adjustment.

B. Hard Shifting

1. Check push-pull cable for freeness.
2. Check clutch handlever for binding due to rust, dirt, etc.
3. Disconnect push-pull cable and check the shifter shaft for binding in the transmission case and R. H. side frame bores.



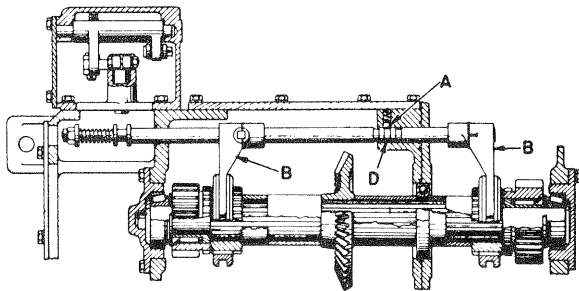
Brake Band Adjustment

1. Remove the small brake cover from L. H. side of winch.
2. Push brake handlever to release position.
3. Loosen jam nut "A" and turn adjusting link "B" in or out of link "C," as required.
4. Adjust to approximately $1/32''$ clearance between brake and drum, or just enough to prevent "Brake Drag."
5. Tighten jam nut "A."
6. Replace cover removed in Instruction 1.

Brake Band Removal

1. With brake in the "Release" position, remove pins "D" and "E."
2. Remove snap ring "F."
3. Slide drum from shaft and remove brake band.

SERVICING INSTRUCTIONS FOR DIRECT DRIVE WINCH



Shifter Adjustment

1. Ball and spring "A" holds shifter rod and forks "B" in forward, neutral or reverse position.
2. With shifter in neutral position as shown at "D," make necessary adjustments with the rod ends on control cable. No adjustment inside the winch is necessary.

SERVICING INSTRUCTIONS

TROUBLESHOOTING FOR POWER CONTROLLED WINCH

A. Winch fails to operate or is sluggish in its operation:

1. Check filter for leaks or excessively plugged.
2. Check all connections in suction line to see if they are tight.
3. Check winch oil level.
4. Check pump for proper flow output.
5. Check relief valve (part of control valve) for proper setting.
6. Check all hoses inside of winch case for leaks.
7. Check push-pull cables for proper adjustment. The push-pull cables should have one inch of travel with the valve spools and handlevers connected to the cables. If the cable does not have the specified travel, adjust valve spool and handlever adjustment until the one inch travel is obtained.

If the trouble is not eliminated with the above check, some internal parts are probably broken. Check the following:

A. Low Operating Pressure: Check Control Valve for:

1. Broken relief valve spring.
2. Dirt jammed in relief valve port.
3. Adjusting washers left out by mistake.

B. Brake Not Holding Properly

1. Water in brake compartment.
2. Improper brake band adjustment.
3. Oil on brake band.
4. Broken brake spring.
5. Sticky piston in brake cylinder due to dirt, chips or damaged piston.
6. Worn poppet on control valve selector spool allowing spool to shift to "Brake Release Position."

C. Low Clutch Pressure:

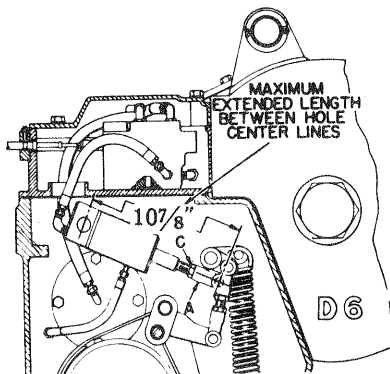
1. Improper stroke adjustment on push-pull cable to selector spool.
2. Broken seal ring on bevel gear shaft.
3. Damaged "O" Ring in clutch pack.
4. Damaged or badly worn pump.
5. Plugged filter

D. Slow Response:

1. Cold temperature operation with warm weather oil.
2. Improper stroke adjustment on push-pull cable to selector spool.
3. Filter plugged
4. Tractor engine idled too low.

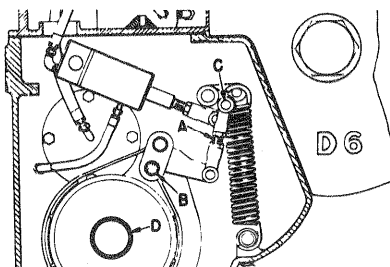
SERVICING INSTRUCTIONS FOR POWER CONTROLLED WINCHES

Brake Cylinder Adjustment



Fully extend cylinder rod and adjust rod end "A" to maximum extended length of $10\frac{7}{8}$ ". After adjustment be sure to tighten jam nut "C."

Brake Band Adjustment



1. Release brake.
2. Loosen jam nut on adjusting link "A" and turn link to the right or the left as required for $1/32$ " clearance between band and drum.
3. Tighten jam nut.

Brake Band Removal

1. Remove pins "B" and "C."
2. Remove snap ring "D" and slide brake drum from shaft.
3. Remove brake band from drum.

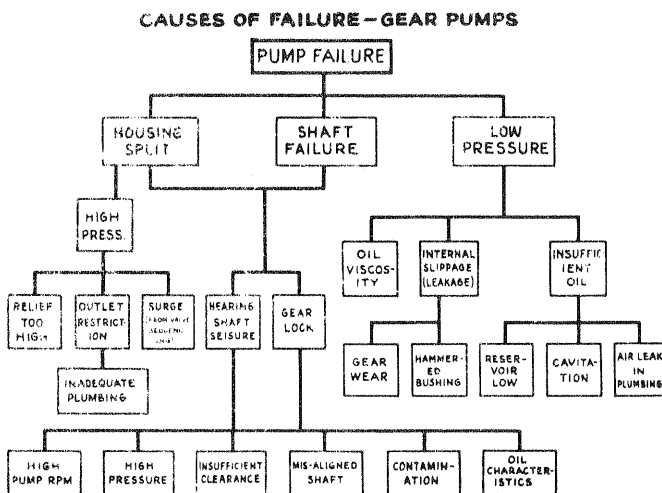
Clutch Adjustment

No adjustment of clutches is required.

CAUTION: Do not operate winch if clutches slip. Slipping will cause clutch plate failure. If clutches slip, check hydraulic system for: Plugged filter, faulty pump operation, incorrect relief valve setting, leaking line etc. If this caution is observed, the clutches will give years of satisfactory operation without overhaul.

SERVICING INSTRUCTIONS — POWER CONTROLLED WINCH

Servicing Pump



The pump contains two steel gears, a drive and driven shaft, and four bearing assemblies. The machined housings support the gear shafts and are provided with oil seal rings.

When servicing the pump, extreme care must be taken to prevent foreign matter from entering the unit and causing damage to the machined surfaces.

Disassembly

- Remove the four screws and washers (1) and lift covers (2 and 9) from body (4). If covers stick, tap lightly with raw-hide mallet.
- Bearings (5) should be match marked in their respective locations for reassembly.
- Identify gears (6 and 11) with match marks for correct reassembly.

Cleaning

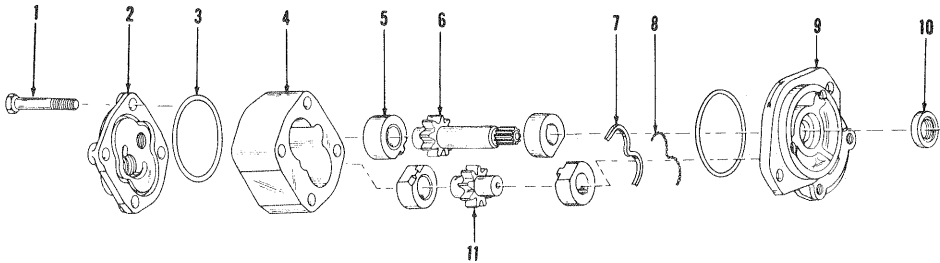
- Wash all parts in a suitable cleaning solvent and dry with filtered compressed air.

Inspection and Repair

- Inspect gears for chipping or evidence of wear.
- Inspect bearing bore for scoring or wear.
- Inspect bearing surfaces for deep grooving or scoring and refinish if necessary. Bearing surfaces may be dressed on a piece of fine abrasive paper held to a true flat surface plate. Do not dress enough to remove oil groove.

SERVICING INSTRUCTIONS — POWER CONTROLLED WINCH

Servicing Pump — Continued



- d. Check bearing flats and bearing for wedging in their respective housing. If bearings wedge in the housings or new bearings are installed, proceed as follows: Hold the bearings at extreme ends of a discarded gear shaft from which the teeth have been removed and dress the flats lightly against a piece of fine abrasive paper held to a true flat surface plate. Dress a little at a time and repeat. Check in the housing until the bearing slide into place freely. The clearance between the flats, when assembled in their housing, should not exceed .005 to prevent turning of the bearing, resulting in lowering the pump efficiency.

Lubrication

- a. Lubricate drive gear journal with SAE No. 10 oil before installing.

Reassembly

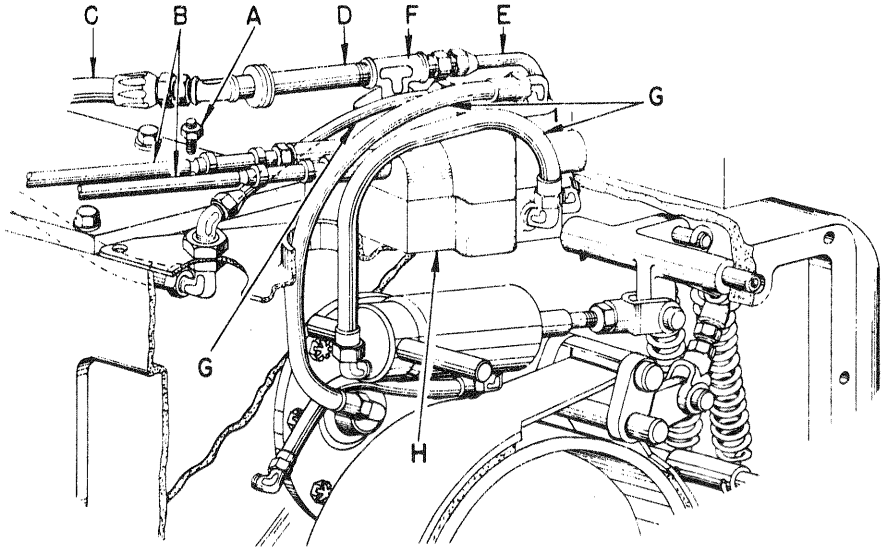
- a. Discard all rubber seal rings and replace at time of overhaul.
- b. Insert body bearings (5) in their previously match-marked positions.
- c. Insert drive gear (6) into body bearing.
- d. Insert driven gear (11) into body bearing in the same position from which it was removed. (Do not invert driven gear.)
- e. Insert seal rings (3) in recesses.
- f. Secure covers to body with the four screws torqued to 28-32 foot pounds.

SERVICING INSTRUCTIONS — POWER CONTROLLED WINCH

Servicing Control Valve

Remove valve for servicing. Clean thoroughly and place on a clean work area. The internal parts of the valve have finely ground finishes and any nicks or scratches may cause irreparable damage.

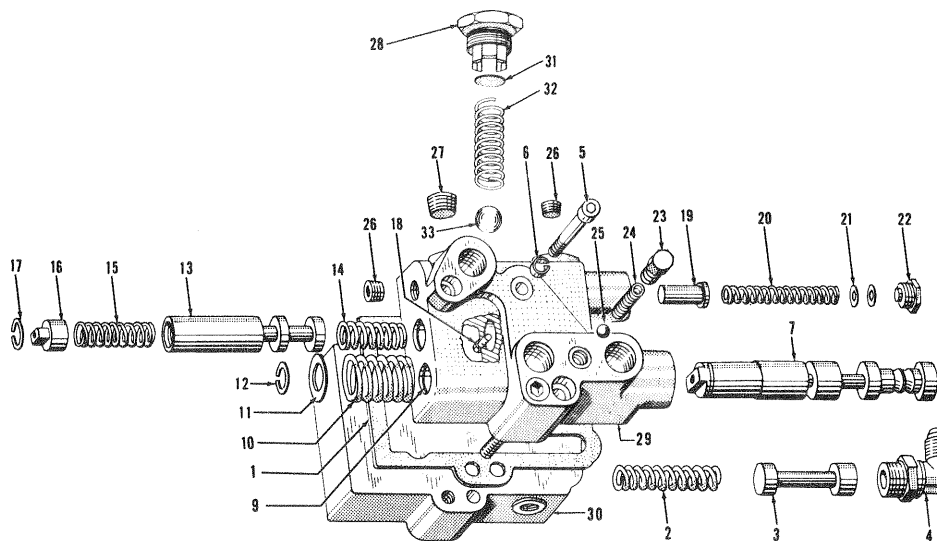
Removal of Valve From Winch



1. Remove valve housing cover set screws "A" and loosen push-pull cable lock nuts on the valve spools.
2. Remove cables from handle lever bracket on tractor and unscrew the cable ends from the valve spools by turning the free ends of the cables "B."
3. Remove the pump supply hose "C" and nipple "D."
4. Remove the valve housing.
5. Detach tube assembly "E" and remove tee "F."
6. Disconnect the clutch and brake hoses "G."
7. Remove socket head capscrews attaching valve "H" to winch.
8. Remove valve "H" from winch. Remove or secure the "O" Ring that seals between the valve and the winch. Be sure "O" Ring is replaced when reinstalling valve on winch to avoid seepage around base of control valve.
9. Reverse above procedure for valve installation and check for proper stroke adjustment between the push-pull cables and spools.

SERVICING INSTRUCTIONS — POWER CONTROLLED WINCH

Control Valve



Selector Spool Removal

This may be accomplished without removing the valve body (29) from the support (30).

1. Remove the snap ring (12), washer (11), and spring (10).
2. Remove the plug (23), spring (24), and ball (25).
3. Remove the spool (7), by pushing the rod end through the valve body as shown.

CAUTION: Do not pull the rod end of the spool after the ball (25) has been removed or the "O" Ring (8), on the spool will come in contact with a dump port and be damaged.

Selector Spool Inspection and Reinstallation

1. Inspect for nicks on the spool. Light nicks may be removed by lapping but if there are deep nicks spool must be replaced.
2. Replace "O" Rings (8) and (9) with new parts.
3. Use a light oil on all parts before reassembly. Install "O" Ring (9) and install spool in reverse manner from removal. "O" Ring (8) is replaced last and does not pass over port.

CAUTION: Do not pull on spool (7) to get "O" Ring (8) compressed into spool bore. Tap end of spool to accomplish this, and avoid over travel causing damage to "O" Ring (8) in internal ports.

SERVICING INSTRUCTIONS — POWER CONTROLLED WINCH

Control Valve—Continued

Brake Inching Spool Removal

1. Plug (16) or spring (15) may be removed without removing the inching spool (13) by removing snap ring (17).
2. To remove spool (13) remove capscrews (5) and detach the valve body (29) from the support (30).
3. Remove the spool stop capscrew (18) on the under side of the valve body while pressing gently on the inching spool to take the load off the stop.
4. Remove the spool and return spring (14).

Inching Spool Inspection and Assembly

1. Check bore and spool (13) for dirt or nicks. Remove light nicks by lapping. Deep nicks necessitate new parts.
2. Oil all parts generously. Place new "O" Ring firmly in groove and install spring (14) and spool. Tap spool gently to pass over "O" Ring, and while holding in position, replace spool stop capscrew (18).
3. Clean out socket for travel spring (15), grease lightly and replace spring and cable plug (16).

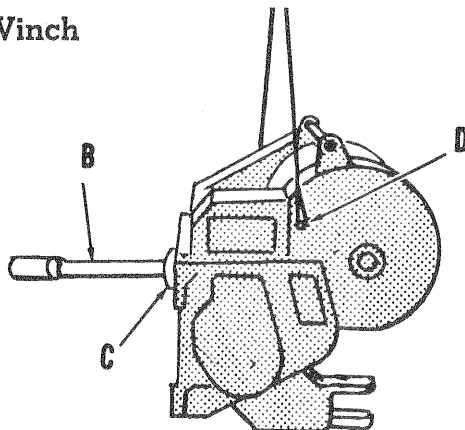
Relief Valve and Quick Release Valve

1. Remove retainer (22), washers (21), spring (20) and piston (19). The washers (21) regulate relief valve pressure. Add washers to increase pressure, remove washers to decrease pressure. The relief valve setting is as follows: 225 PSI at 6- $\frac{1}{2}$ GPM—1,000 RPM—Oil Temperature 70°.
2. To check quick release valve spring (2), remove fitting (4) and piston (3).
3. After checking and cleaning all parts thoroughly, lubricate with SAE No. 10 engine oil and assemble in the reverse order of disassembly. Replace pistons (19) and (3) with new parts if there are deep nicks, and remove light nicks by lapping.

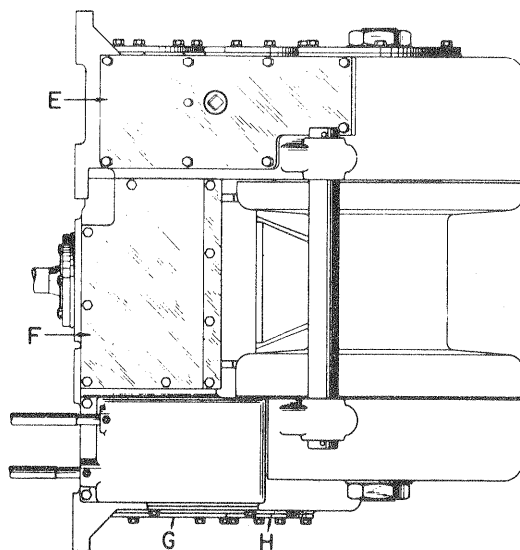
SERVICING INSTRUCTIONS

REMOVAL OF WINCH

Removal of Winch



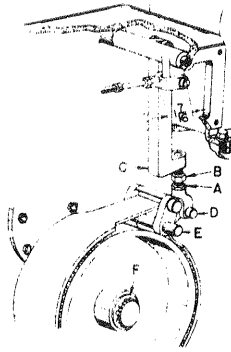
1. Disconnect all control linkage.
2. Install two $\frac{7}{8}$ " UNC capscrews in the winch side frames at "D" and mount a sling as shown.
3. Remove winch and drain the oil from transmission compartment.
4. Remove power take-off shaft "B" being careful not to damage the shims behind bearing carrier "C."
5. Remove cover plates "E," "F," "G" and "H."



P.T.O. Assembly Removal

Unbolt the P.T.O. bearing carrier and remove the complete P.T.O. assembly.

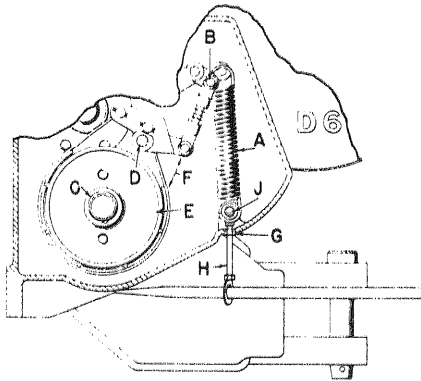
DISASSEMBLY OF WINCH DIRECT DRIVE



Brake Shaft Removal

1. Set brake in "Released" position and remove pins "D" and "E" and snap ring "F."
2. Slide brake drum from shaft and remove band.
3. Remove bearing retainers from both ends of shaft and remove shaft through opening in R. H. side frame.

POWER CONTROLLED

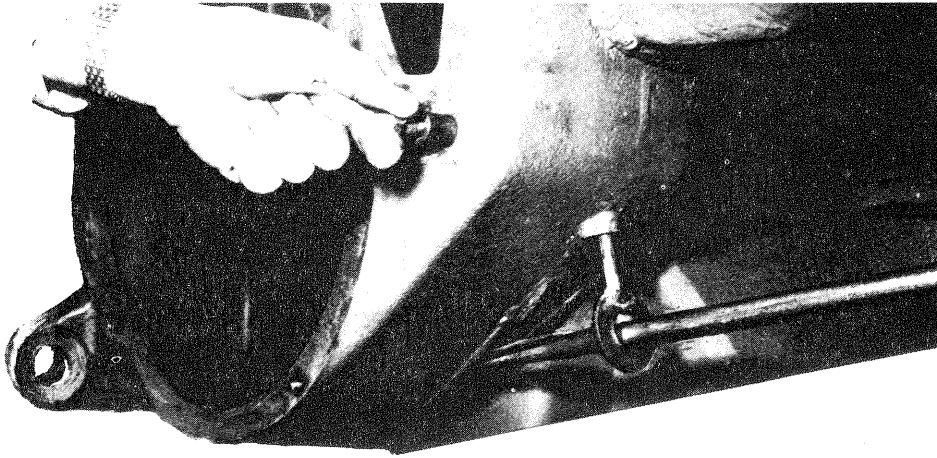


Brake Shaft Removal

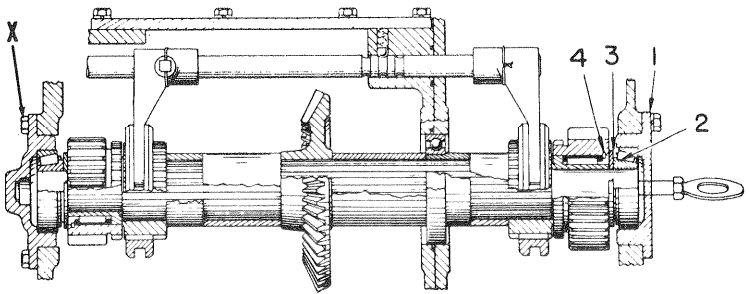
1. Set brake in "Released" position and remove pin "B," pin "D" and snap ring "C."
2. Slide brake drum "E" from shaft and remove brake band assembly "F."
3. To remove brake springs "A" take out pipe plug at "G." Thread eye bolt "H" into tapped hole in spring anchor sleeve and using pry bar as shown, relieve tension on spring "A" and remove anchor pin "J." Eye bolt "H" can be made by welding a cut washer to a $\frac{1}{2}$ " UNF x 4" capscrew.
4. Remove bearing retainers from both ends of shaft and remove shaft through opening in R. H. side frame.

DISASSEMBLY OF WINCH

Brake Shaft Removal — Continued



Bevel Gear Shaft Removal — Direct Drive Winch



1. Remove the brake drum and linkage as instructed.
2. Remove nut from L. H. end of drum shaft (if drum shaft is to be removed).
3. Turn winch so that R. H. side is up.
4. Remove bearing carrier "1," bearing cone "2," washer "3" and snap ring "4."

WINCH DISASSEMBLY

Bevel Gear Shaft Removal — Power Controlled Winch

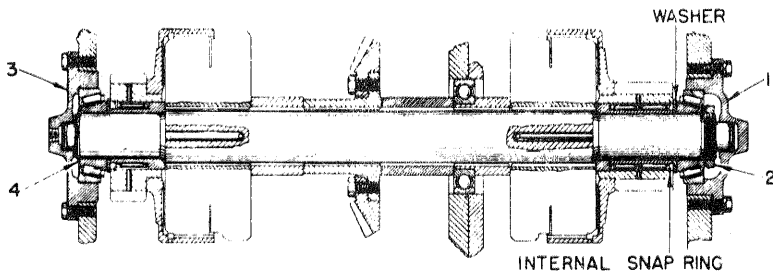


Figure 7

1. Remove brake drum and linkage as instructed.
2. Disconnect the hydraulic line to bearing retainer (3) Figure 7.
3. Remove bearing retainer taking care to protect shims.
4. Remove the top side frame cover and disconnect the hydraulic line as shown in Figure 9.
5. Remove the R. H. bearing retainer (1), Figure 7.
6. Loosen bearing nut (2) enough to permit removal of snap ring (4).
7. Replace bearing retainers (1) and (3), Figure 7, for support. (If drum is to be removed, remove L. H. drum shaft nut.)
8. Turn winch with R. H. side up and remove retainer (1).

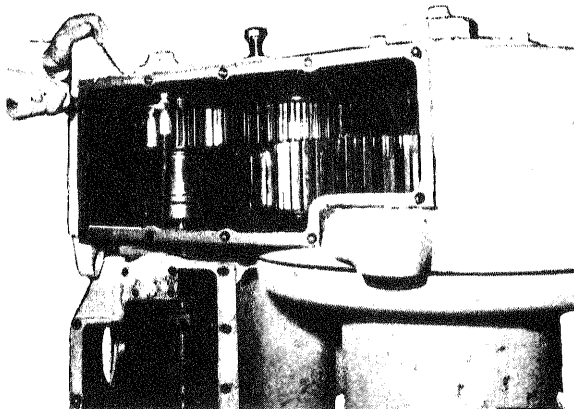


Figure 9

9. Remove bearing nut (2) Figure 7.
10. Slide roller bearing and the spacer washer from the shaft.
11. Remove the internal snap ring retaining the bearing and clutch drive gear as shown in Figure 10.

WINCH DISASSEMBLY

Bevel Gear Shaft Removal—Continued

For Direct Drive and Power Controlled Winches

1. Insert a $\frac{5}{8}$ UNF bolt (with a ring or washer welded to it) into the threaded end of the shaft.
2. Pull shaft slowly as shown in Figure 11.
3. DO NOT pound or drive on the ends of the bevel gear shaft.
4. Slide the shaft completely away from the unit freeing all component parts on the shaft, Figure 13.

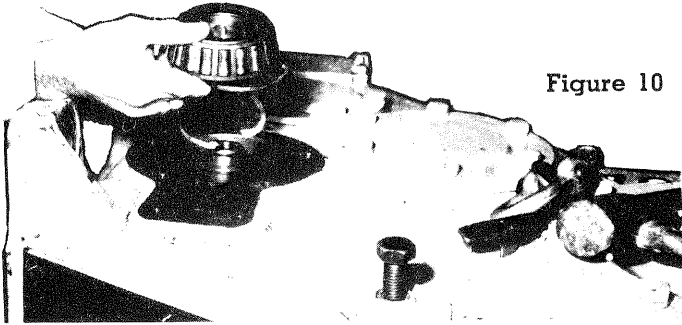


Figure 10

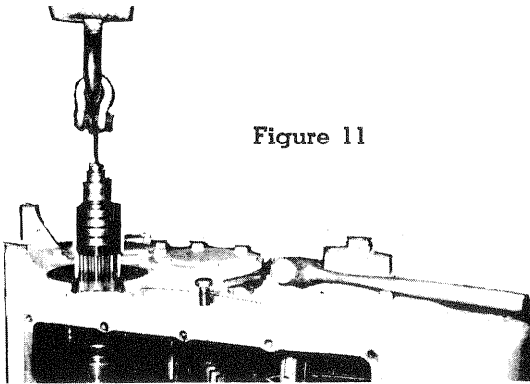


Figure 11



Figure 12

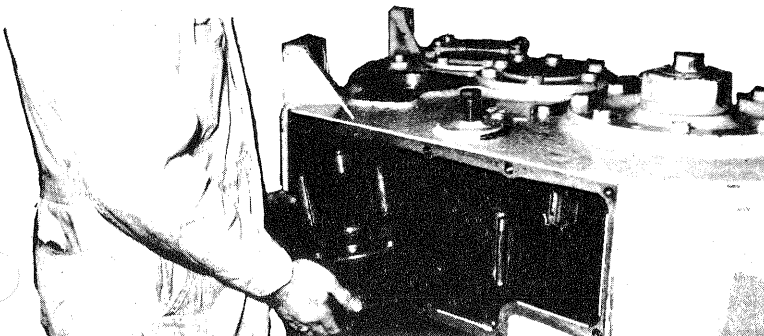


Figure 13

WINCH DISASSEMBLY

Intermediate Gear Shaft Removal

1. Remove bearing retainer.
2. Insert puller screw in shaft.
3. Pull shaft as shown in Figure 15.
4. Remove intermediate gear and drum pinion as shown in Figure 16.

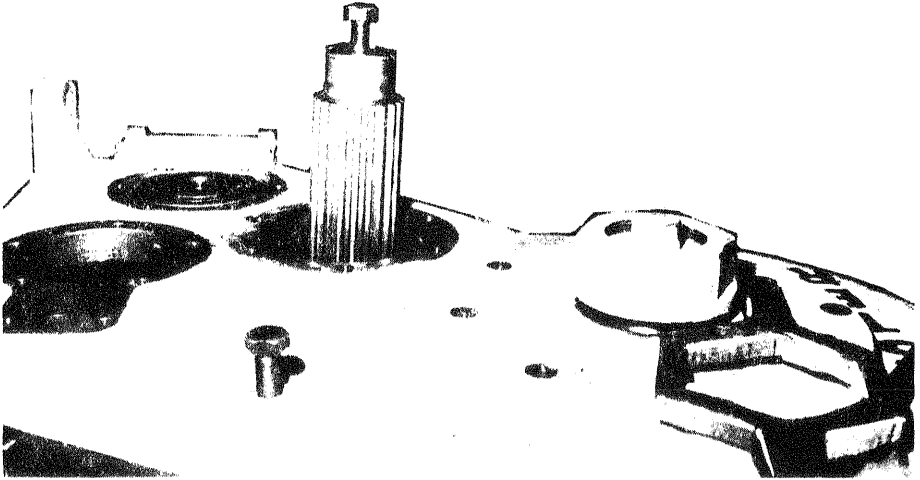


Figure 15

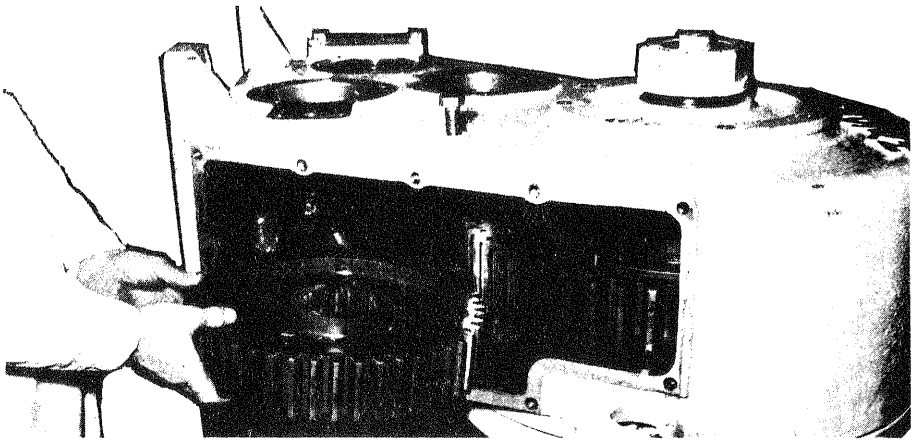


Figure 16

WINCH DISASSEMBLY

Drum Shaft Removal

1. Unscrew drum shaft nut.
2. Remove bearing retainer as shown in Figure 17.
3. Remove place bolts in drum gear.
4. Rethread nut on shaft.
5. Sling shaft using nut.
6. Pull shaft straight up as shown in Figure 18.

NOTE: Place pan under drum shaft to catch oil that is in the drum. Be sure to add two quarts of oil to drum at reassembly.

Drum Removal

1. Remove capscrews holding drum to adapter.
2. Remove drum.

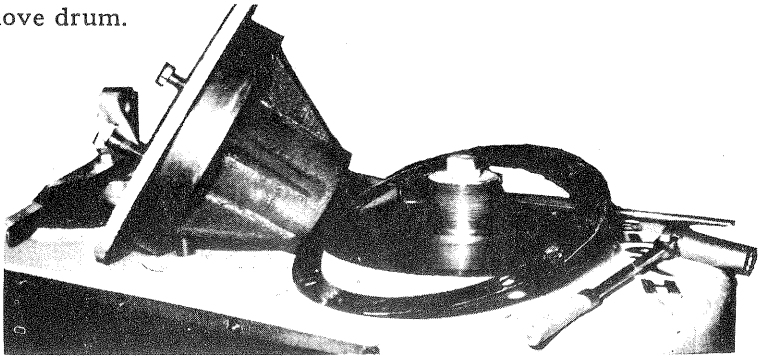


Figure 17

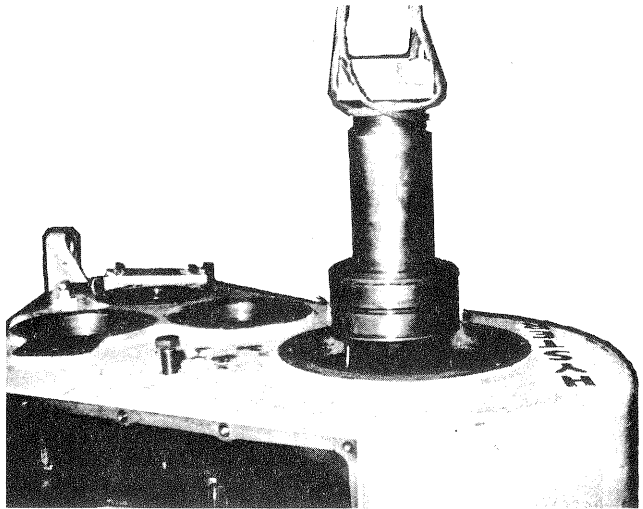


Figure 18

WINCH DISASSEMBLY

POWER CONTROLLED WINCHES ONLY

Clutch Disassembly

NOTE: It is unlikely that the clutch discs and separator plates will have to be replaced because of wear. Overheating due to slipping or lack of cooling oil will cause most damage to the discs and separator plates. Overheating causes both parts to warp which causes clutch drag. The clutch discs are flat. The separators are hardened steel with a slight dish built into them as shown in Figure 27.

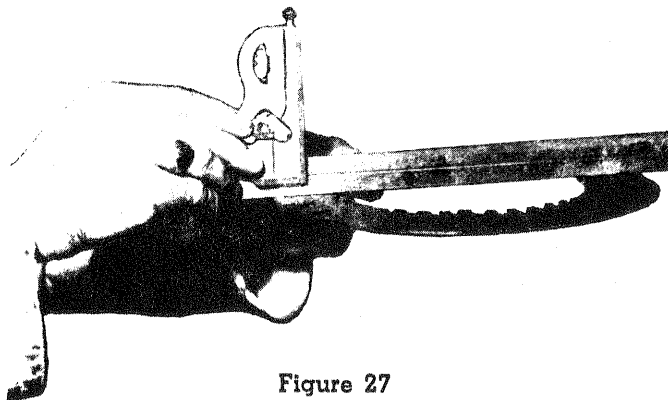


Figure 27

THE HYDRAULIC CLUTCH MUST BE SERVICED IN A CLEAN AREA. The clutch pack contains two parts: The clutch (1), Figure 21, contains friction discs and separator plates, and the clutch spider (2). The two parts are not fastened together and may be separated by sliding them apart as shown. The clutch is held together by six flat head capscrews that are locked on the back side by six allen head set screws.

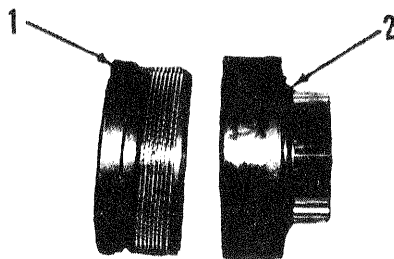


Figure 21

1. Remove the allen head set screws (17) Figure 23.
2. Turn clutch over and remove flat head capscrews (1), remove end plate (2) Figure 23, exposing the clutch discs (10) and return springs (4).
3. Lift discs (10) and separator plates (11) from the drive hub (3).
4. Lift drive hub (3) and clutch piston (12) from retainer plate (15).

WINCH DISASSEMBLY — POWER CONTROLLED

Clutch Disassembly — Continued

5. The cross drilled stud with three holes is the cooling valve (5). Remove by unscrewing to the left and disassemble for cleaning.

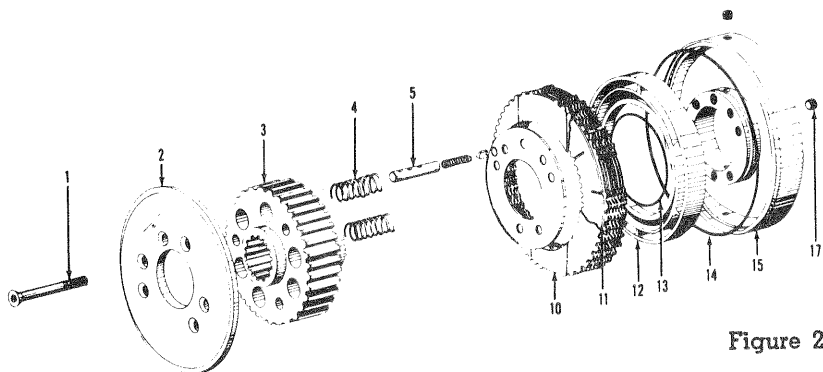


Figure 23

Clutch Reassembly

Reassembly is opposite of disassembly.

Observe the following precautions during reassembly.

1. Dish in separator plates **MUST** all face same way as a unit. The direction of the unit is unimportant.
2. The forward and reverse clutch packs are interchangeable but the spiders are not.
3. **NEVER** assemble a clutch pack dry. Presoak all parts in oil.
4. Small parts and passages must be free of dirt and foreign matter.
5. When sliding the clutch piston into the retainer plate, be certain the "O" rings (13 and 14) are well lubricated and are seated in the respective grooves.
6. When assembled, the holes "A" in the clutch hub will be in line with the oil cooling valve "B" as shown in Figure 28.
7. Blanked out teeth on friction discs (10) must be in line.
8. Assembled clearance to be from .040 to .070 Use shims as required.
9. Torque capscrews (1) with 70 ft. lbs., set screws (17) with 40 ft. lbs.

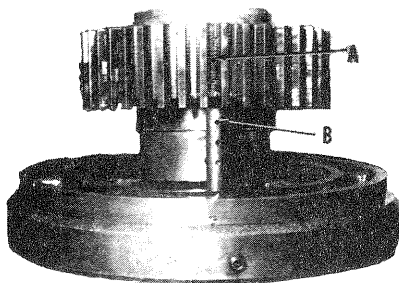


Figure 28

WINCH REASSEMBLY

Assemble winch in reverse order of disassembly.

Drum Shaft Assembly

1. Check all oil seals and install drum, adapter and drum shaft.
2. Torque capscrews holding drum to adapter to 200 lb. ft. lubed.
3. Add two quarts of oil to drum cavity before installing R.H. bearings (SAE 90 for Direct Drive—SAE 30 Series E for Power Controlled).
4. Bolt drum gear to drum torquing the place bolts to 75 ft. lbs. lubed or 115 ft. lbs. dry.

Intermediate Shaft Assembly

1. Install intermediate shaft with .004 to .007 end play in bearings.

Bevel Gear Shaft Assembly — Direct Drive Winch

1. Place all of the parts into the winch case in the same manner as they were removed.
2. Lower the bevel gear shaft into the stacked parts. **DO NOT** use a hammer to drive the shaft through the component parts. Fix the shaft in place and revolve the winch to an upright position. Bearing adjustment is made by shims under each bearing retainer. Set the bearing end play at .006 to .009.

Bevel Gear Shaft Assembly — Power Controlled Winch

1. Place all parts into winch case in the same order they were removed.
2. Line up the marked pipe plugs in the outer diameter of the retainer plate in the clutch packs, with holes in the bevel gear shaft splines. (Only one of the plugs will be correct as cross hole goes through one major diameter and one minor diameter of spline.)
3. Sling the bevel gear shaft.



Figure 12

4. Lower the shaft through side frame, being certain that the match marks on the shaft line up with the match marks on the clutches. The two holes in the shaft (for hydraulic oil to the clutches) shown in Figure 12 will then line up with the holes in the clutch retainer plate. **DO NOT** use a hammer to drive the shaft through the component parts.
Note: Coat side and top of seals (8 and 9, Page D3) with Lubriplate before inserting in shaft.
5. Fix the shaft in place and revolve winch to upright position.
6. Lock the bearings on the end of the shaft that is toward brake compartment, with snap rings provided.
7. Install the bearing nut on the opposite end (torque to 200 Ft. Lbs. ± 25) and lock it with lockwasher provided. (Always use new lockwasher.) **DO NOT** install metal seal rings on ends of shaft.
8. Adjust end play to .000 - .004 by use of shims under each bearing retainer.
9. Remove bearing retainers and install metal seal rings on ends of shafts. Be sure these seal rings are not broken or damaged when reinstalling bearing retainers.

WINCH REASSEMBLY

Brake Shaft Assembly

1. Install brake shaft with end play in bearings as follows: Direct Drive .006 to .009; Power Controlled .000 to .004.
2. Apply plastic lead seal No. 2 or equivalent to threads of capscrews holding oil seal retainer at brake end of shaft.

Power Take-Off Assembly

1. Recheck the backlash and gear mesh of the bevel gear set. This is best done by painting the gears with white lead and obtaining a gear pattern as shown in Figure 30.
2. After the correct gear pattern is obtained, move the bevel ring gear away from the pinion to obtain .006 - .014 backlash.

The following diagrams show the results of too little or too much pinion depth as determined from the impression of the tooth bearing on the white lead.



- a. Check adjustments at driveside of bevel gear tooth.



- b. Shows correct tooth contact.



- c. Shows short contact at heel. To correct, move gear toward pinion. Then move pinion away from gear to again secure correct backlash.



- d. Shows short contact at toe. To correct, move gear way from pinion. Then move pinion toward gear to again secure correct backlash.



- e. Shows heavy contact on flank or lower portion of tooth. To correct, move pinion away from gear until contact comes to full working depth of tooth without breaking contact at flank. Then move gear toward pinion to secure correct backlash.



- f. Shows heavy contact on face or upper portion of tooth. To correct, move pinion toward gear until contact covers flank of tooth without breaking contact at face. Then move gear away from pinion to secure correct backlash.

Figure 30

SPECIFICATIONS

DRUM SIZE:	Standard Speed	Lo-Speed
	Winch	Winch
Barrel Diameter	10"	7"
Flange Diameter	21"	21"
Barrel Length	10 $\frac{7}{8}$ "	10 $\frac{7}{8}$ "

CABLE CAPACITY

$\frac{3}{4}$ " LINE (Recommended)	401 ft.	461 ft.
$\frac{7}{8}$ " LINE	295 ft.	339 ft.

Allowance should be made for loose or unevenly spooled line in towing service.

NOTE. Important

Available line pulls may be greater than the breaking point of cable used. Line pulls should be limited by the operator to comply with all safety laws applicable where the equipment is being used.

FERRULE SIZE..... for $\frac{3}{4}$ in. line, L6; for $\frac{7}{8}$ in. line, L7

HYDRAULIC SYSTEM (For Power Controlled Winch)

Pump	Gear-Type, 9.2 GPM at 1800 RPM
Maximum operating pressure	230 P.S.I.
Valve	Special two spool
Filter	Full flow, 50 mesh screen cartridge

WEIGHT, Approximate (without cable) (Power Controlled Winch)

Net ‡	2000 lbs.
Without Drawbar	1900 lbs.

WEIGHT, Approximate (without cable) (Direct Drive Winch)

Net ‡	1900 lbs.
Without Drawbar	1800 lbs.

AUTOMATIC BRAKE — For Direct Drive Winch (Optional) 50 lbs.

FAIRLEAD ASSEMBLY (Optional) 530 lbs.

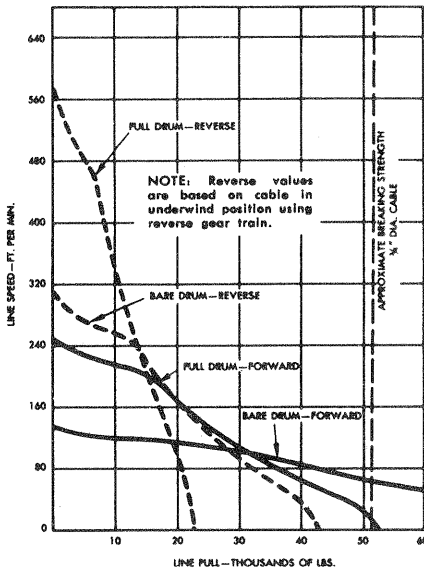
GUIDE ROLLS (Optional) 150 lbs.

FREESPOOLING GROUP (Optional) 100 lbs.

‡The Caterpillar drawbar group, weighing approximately 300 pounds, cannot be used with the D6C Towing Winch equipped with built-in drawbar, thus decreasing the Net Applied Weight on the tractor.

SPECIFICATIONS FOR POWER CONTROLLED WINCH

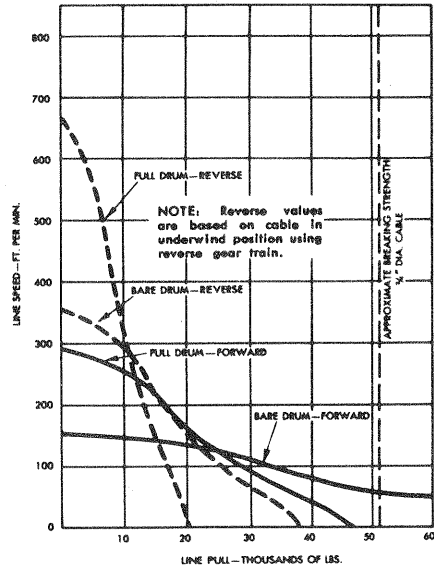
Standard Speed Winch



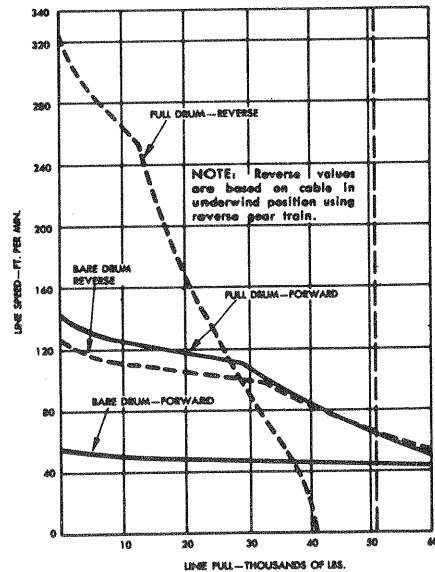
Winch performance on Caterpillar D6, Series C Power-Shift Tractor, 120 HP (at flywheel) using $\frac{3}{4}$ " cable.

Lo-Speed Winch

Winch performance on Caterpillar D6, Series C, Power-Shift Tractor, 120 HP (at flywheel) using $\frac{3}{4}$ " cable.



Winch performance on Caterpillar Traxcavator Loader Series H, 150 HP (at flywheel) using $\frac{3}{4}$ " cable.



SPECIFICATIONS FOR DIRECT DRIVE WINCH

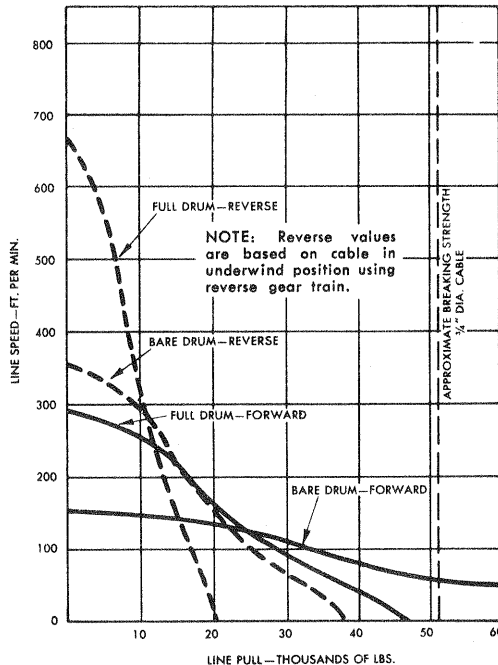
	Standard Speed Winch	Lo-Speed Winch
*AVAILABLE LINE PULLS	Forward	Forward
Bare Drum	36,700 lbs.	79,600 lbs.
Full Drum	19,500 lbs.	42,300 lbs.
	Reverse	Reverse
Bare Drum	15,900 lbs.	47,800 lbs.
Full Drum	8,420 lbs.	18,300 lbs.
LINE SPEED:	Forward	Forward
Bare Drum	112 F.P.M.	32 F.P.M.
Full Drum	212 F.P.M.	85 F.P.M.
	Reverse	Reverse
Bare Drum	259 F.P.M.	75 F.P.M.
Full Drum	489 F.P.M.	196 F.P.M.

***STANDARD SPEED WINCH** on Caterpillar D6 Series C Direct Drive Tractor, 120 HP (at flywheel) at 1800 RPM.

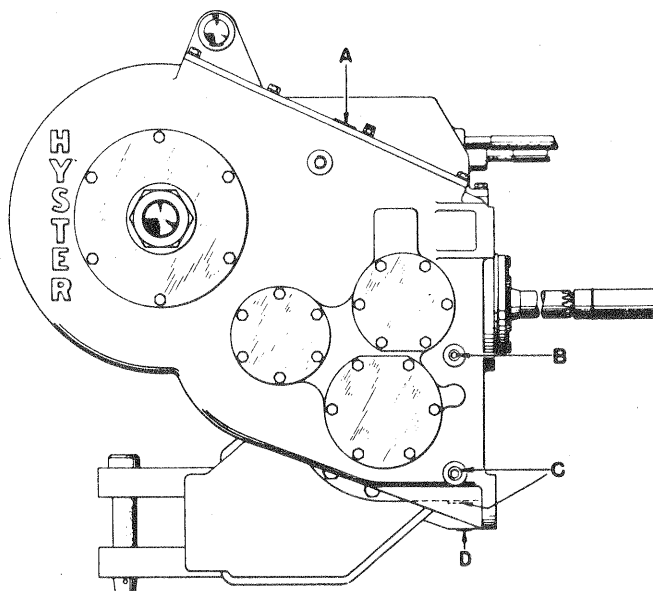
***LO-SPEED WINCH** on Caterpillar D6 Series C Direct Drive Tractor, at maximum engine torque speed of 1300.

Standard Speed Winch

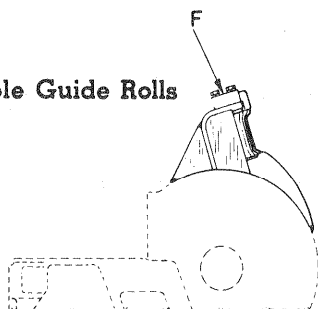
Winch performance on Caterpillar 977 Traxcavator Loader, Series H, with 150 HP at 1950 RPM using $\frac{3}{4}$ " cable.



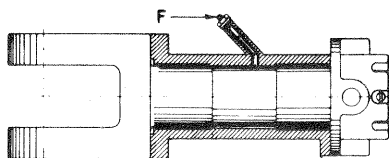
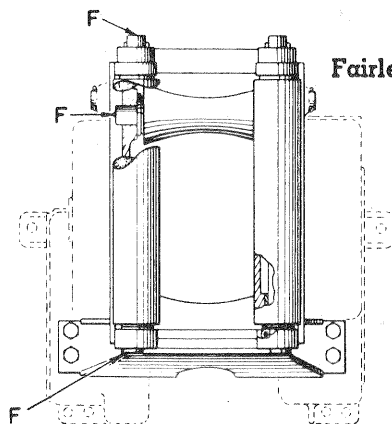
LUBRICATION CHART



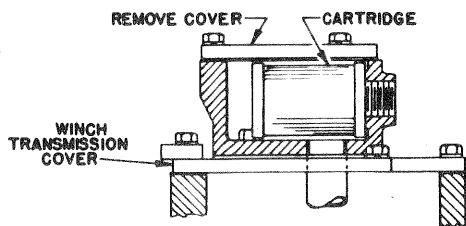
Cable Guide Rolls



Fairlead Rolls



Swiveling Drawbar



Filter (Power Controlled Winch)

LUBRICATION INSTRUCTIONS

Every Eight Hours or Daily

Swiveling Drawbar, Fairlead and Cable Guide Rolls (optional):

Lubricate with pressure gun grease.

Rod End Pins:

Rod end pins, shifter rods, lever fulcrums, pin connections and other moving parts should be lubricated with SAE 30 engine oil at the end of each shift.

Every 50 Hours or Weekly

Transmission:

Check oil level at plug "B"; add oil if necessary.

If winch is new, drain, flush and refill with new oil.

NOTE: When checking oil level in winches mounted on powershift tractors, stop tractor engine to obtain a correct reading. On winches mounted on direct drive tractors, disengage the tractor master clutch to obtain a correct reading.

Every 200 Hours or Four Weeks

Loosen plugs "C" and drain any accumulation of water in the transmission. Tighten plugs when oil appears, and check oil level.

Remove plug "D" and drain any water which may have accumulated in the brake compartment. Replace plug and tighten securely.

Every 500 Hours or When Tractor Engine Oil Filter Is Changed

Power Controlled Winch Only

Filter:

Remove filter housing cover.

Remove cartridge, clean thoroughly and replace.

Pump Drive (For Traxcavator):

Remove pipe plug and add oil (HCE30) as required.

Every 1000 Hours or Six Months (Under Normal Conditions)

Transmission

Drain, flush and refill with new oil. At the factory the winch is filled to proper level with SAE 90 oil in standard winch and SAE 30 Series 3 oil in power control winch. In service, use the same oil as used in tractor transmission, for all weather conditions.

To simplify maintenance, use of identical oil as used in tractor transmission is recommended for all weather conditions.

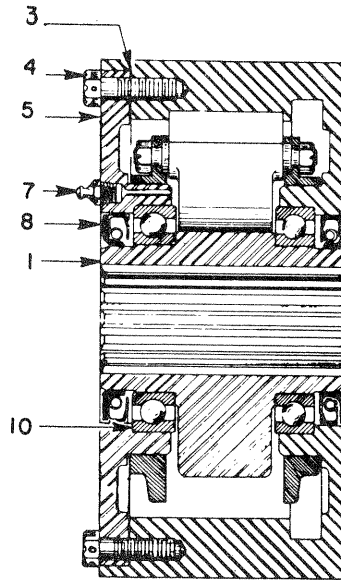
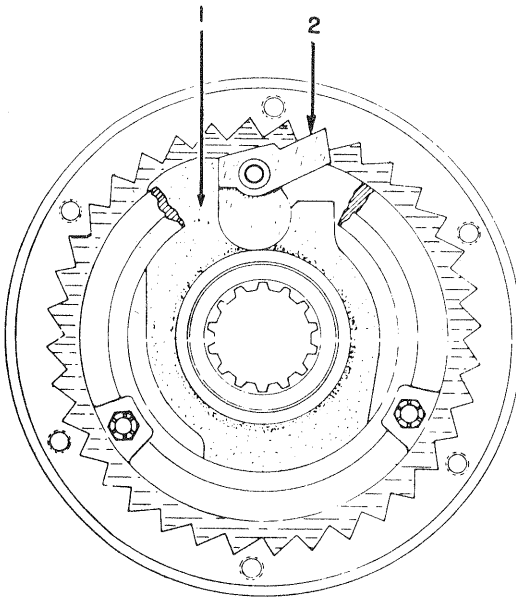
Drain through plugs "C." Refill through plug "A" up to level plug "B."

CAPACITY—Direct Drive Winch.....10 Gallons

CAPACITY—Power Controlled Winch..... 6 Gallons

LUBRICATING INSTRUCTIONS

Automatic Brake (Optional)



Every 1000 hours the brake should be cleaned and repacked with a high melting point grease. Proceed as follows:

1. Remove the cover plate on the L. H. side frame brake compartment.
2. Remove pins in the ends of brake band and remove brake band.
3. Remove snap ring from the end of the brake shaft, and pull the brake assembly out.
4. Remove lockwire and the six drilled head cover capscrews (4).
5. Open brake by tapping hub from opposite side, being careful not to damage oil seals (8).
6. Remove hub (1), assembled with pawl (2) and drag rings from cover (5).
7. Clean all parts thoroughly and repack brake with one pound of high melting point grease. Apply carefully to bearings (10) and all wearing surfaces.

Caution! Do not fill brake completely with grease. Item (7) is a vent plug. Do not attempt to grease through this fitting.

8. After servicing, replace center assembly removed in Instruction 6.
9. Clean gasket surfaces thoroughly and use new gasket (3). Install oil seals (8) with lips turned in as shown.
10. Coat both sides of gasket (3) with Plastic Lead Seal No. 2 and assemble cover (5) onto case being careful not to damage oil seal (8).
11. Use a liberal amount of Plastic Lead Seal No. 2 in each cover capscrew hole. Install capscrews (4) and tighten securely. Replace lockwire through capscrew heads.
12. Install assembled brake wheel on shaft with word "overwind" to the outside for overwind operation. Lock in place with snap ring.
13. Install brake band on brake wheel, anchoring with pins removed in Instruction 2.
14. Replace cover removed in Instruction 1.

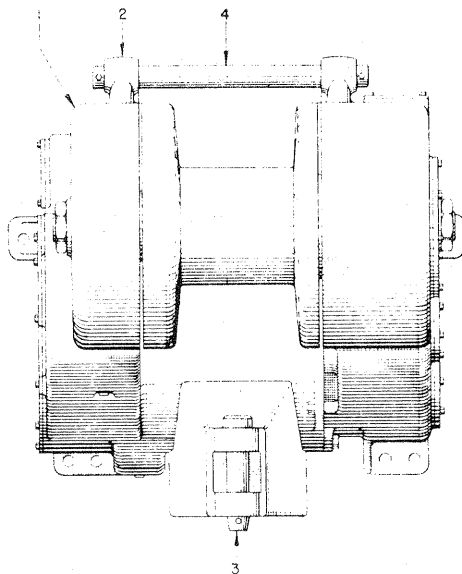
Section B

INDEX

FRAMES AND MOUNTING STUDS

ATTACHING PARTS—DIRECT DRIVE	B6
ATTACHING PARTS—POWER CONTROL	B7-B8
MOUNTING STUDS	B4
TRAXCAVATOR MOUNTING PARTS	B5
WINCH—REAR	B1
WINCH—L. H. SIDE	B2
WINCH—R. H. SIDE	B3

WINCH ASSEMBLY — REAR



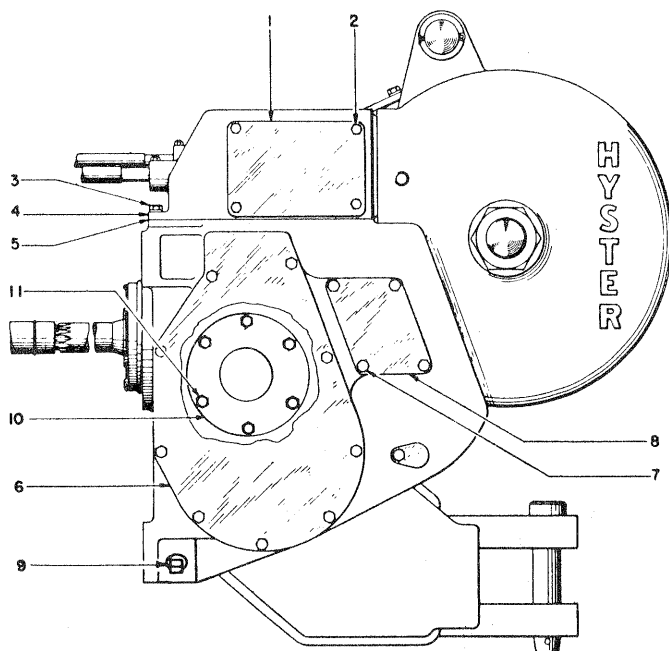
KEY

A—For Direct Drive Winch.

B—For Power Controlled Winch.

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
1	{ 141600	Housing	1	..
	{ 141620	Housing	..	1
2	93771	Bracket—Tie Rod	2	2
3	{ 95959	Pin—Drawbar	1	1
	{ 15273	Cotter— $\frac{3}{8}$ x $2\frac{1}{2}$	1	1
4	{ 95981	Rod—Tie	1	1
	{ 15272	Cotter— $\frac{3}{8}$ x 3	2	2

WINCH ASSEMBLY — L. H. SIDE



KEY

A—For Direct Drive Winch.

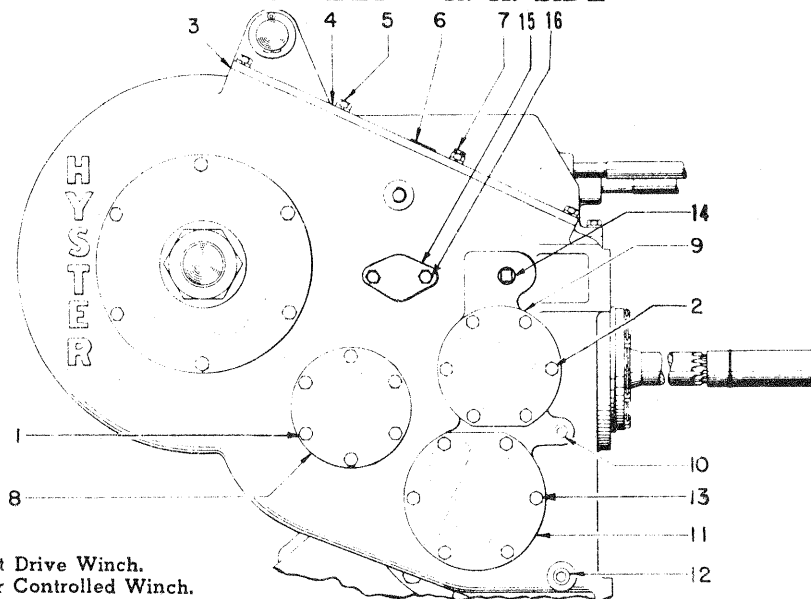
B—For Power Controlled Winch.

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
1	95985	Plate—Cover	1	..
2	* 95986	Gasket—Cover	1	..
	178403	Capscrew— $\frac{1}{2}$ UNC x 1	4	..
3	15158	Lockwasher— $\frac{1}{2}$	4	..
	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	6	..
4	15158	Lockwasher— $\frac{1}{2}$	6	..
	141691	Cover	1	..
5	89057	Housing—Valve	..	1
	* 141692	Gasket	1	..
6	95953	Plate Cover	1	1
	*† 95954	Gasket	1	1
7	178403	Capscrew— $\frac{1}{2}$ UNC x 1	9	9
	15158	Lockwasher— $\frac{1}{2}$	9	9
8	178403	Capscrew— $\frac{1}{2}$ UNC x 1	4	4
	15158	Lockwasher— $\frac{1}{2}$	4	4
9	95955	Plate—Cover	1	1
	*† 95956	Gasket	1	1
10	15304	Plug—Magnetic	1	1
	95942	Carrier—Bearing	1	..
11	95966	Carrier—Bearing	..	1
	110934	Shim—.005	2	2
11	110935	Shim—.007	4	4
	110936	Shim—.020	1	1
11	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	6	6
	15158	Lockwasher— $\frac{1}{2}$	6	6

†Included in Gasket Kit 147518. For Power Controlled Winch. R2

*Included in Gasket Kit 147519. For Direct Drive Winch. R2

WINCH ASSEMBLY — R. H. SIDE



KEY

A—For Direct Drive Winch.

B—For Power Controlled Winch.

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
1	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	6	6
	15158	Lockwasher— $\frac{1}{2}$	6	6
2	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	6	6
	15158	Lockwasher— $\frac{1}{2}$	6	6
3	+* 95958	Gasket	1	1
4	95957	Cover—Top	1	1
5	178403	Capscrew— $\frac{1}{2}$ UNC x 1	8	8
	15158	Lockwasher— $\frac{1}{2}$	8	8
6	15319	Plug—Pipe, $1\frac{1}{2}$	1	1
7	21420	Plug—Vent	1	1
8	93254	Retainer—Bearing	1	1
	93258	Shim Set	AR	AR
	95948	Retainer—Bearing	1	..
	110934	Shim—.005	2	..
	110935	Shim—.007	4	..
	110936	Shim—.020	1	..
9	96472	Retainer—Bearing	..	1
	134107	Shim—.005	..	3
	134108	Shim—.007	..	3
	134109	Shim—.020	..	1
	15302	Plug—Pipe	..	1
10	15303	Plug—Pipe, $\frac{1}{2}$	1	1
	95970	Carrier—Bearing	1	1
11	95033	Shim—.005	2	2
	95166	Shim—.007	3	3
	95034	Shim—.020	4	4
12	35503	Plug—Magnetic, $\frac{3}{4}$	1	1
13	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	6	6
	15158	Lockwasher— $\frac{1}{2}$	6	6
14	15320	Fitting—Plug	1	1
15	151589	Plate	1	1
	151646	Gasket	1	1
16	178403	Capscrew— $\frac{1}{2}$ UNC x 1	2	2
	15158	Lockwasher— $\frac{1}{2}$	2	2

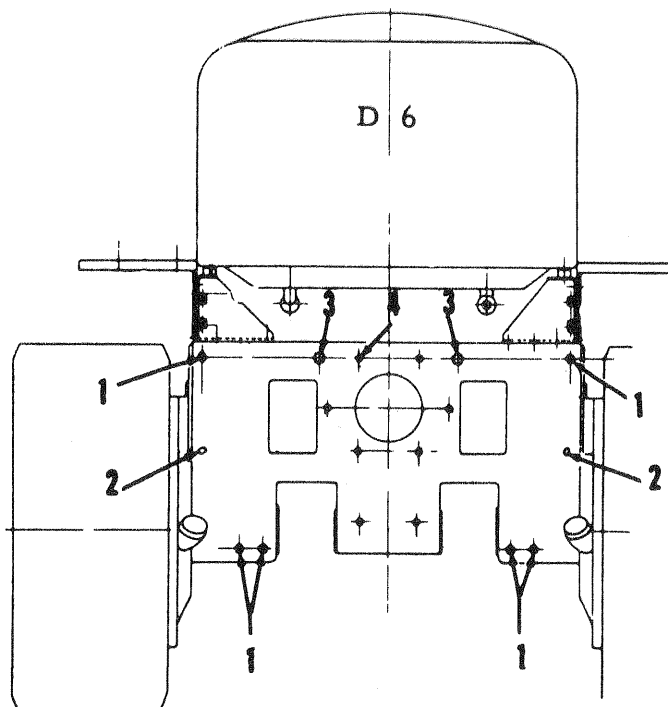
*Included in Gasket Kit 147519. For Direct Drive Winch.

†Included in Gasket Kit 147518. For Power Controlled Winch.

§First used on Serial No. B82L-2117, C39L-2067. R2

MOUNTING STUDS

For D6 Tractors and D5 Tractors

**KEY**

A—For D6 Series 8U1 & Up—9U1 & Up—37A1 & Up—44A1 & Up.

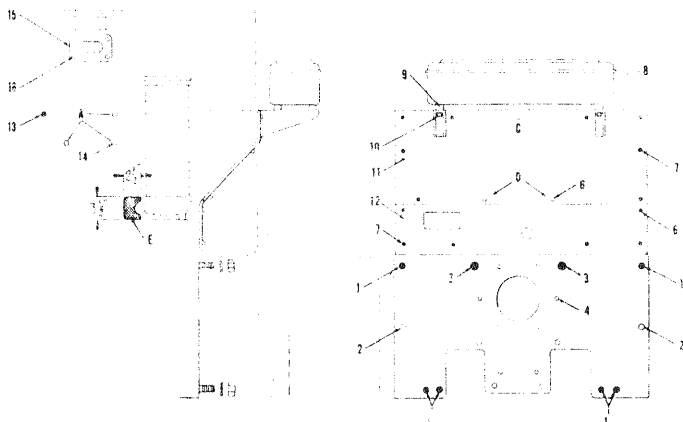
B—For D6 Series 74A1 & Up—76A1 & Up.

C—For D5 Series 81H1 & Up—83H1 & Up and 93J1 & Up—94J1 & Up
95J1 & Up—96J1 & Up.

Ref. No.	Hyster Part No.	NAME OF PART	Quantity Req.		
			A	B	C
1	.....	Stud (Furn. with Tractor)	6	6	6
	15016	Nut—1"—14 UNS	6	..	..
	15066	Nut—1"—8 UNS	..	..	6
	15166	Lockwasher—1"	6	..	6
2	127156	Locknut—1"—8 UNC	..	6	..
	18005	Cork No. 11	2	2	2
3	95952	Stud	2	..	..
	89035	Stud—Taperlock	..	2	2
	55434	O-Ring	2	2	2
	134821	Nut—1¼ UNF	2	2	2
4	15239	Cotter—5/32 x 2½	2	2	2
	15229	Cotter—¼ x 3	..	..	2
	136384	Plug	6	..	6
	18004	Cork	..	6	..

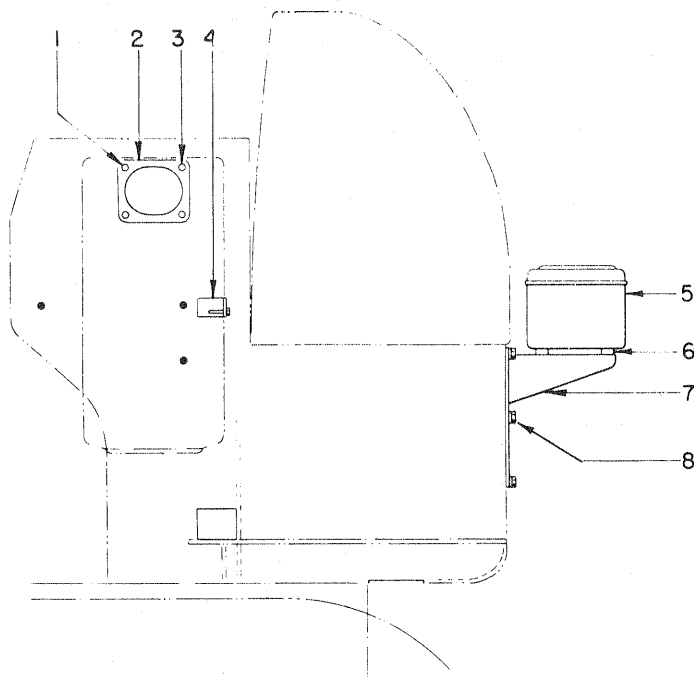
ATTACHING PARTS — DIRECT DRIVE WINCH

For 977 Traxcavator Serial No. 20A1 & Up



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	35680	Stud—"Caterpillar" No. 7B9672	6
	15016	Nut—1" UNF	6
	15166	Lockwasher—1"	6
2	18005	Cork	2
	95952	Stud	2
3	134821	Nut—1¼ UNF	2
	15239	Cotter—5/32 x 2½	2
4	162412	Plug	6 R2
6	15525	Capscrew—¾ UNC x ¾	4
	15156	Lockwasher—¾	4
7	.....	Capscrew—"Caterpillar" No. S-509	13
	.....	Lockwasher—"Caterpillar" No. 3B-4506	13
8	94293	Tool Box	1
9	94294	Spacer	4
10	15532	Capscrew—¾ UNF x 1¼	4
	15134	Washer—¾	8
	15156	Lockwasher—¾	4
	15006	Nut—¾ UNF	4
11	95298W	Support	1
12	96514W	Cover	1
13	15607	Capscrew—½ UNF x 3¾	1
	15509	Capscrew—½ UNF x 1½	2
14	15158	Lockwasher—½ } Two furnished with	3
	15008	Nut—½ UNF } Traxcavator	3
	92058	Spacer	1
15	92059	Gasket	1
	.....	Gasket "Caterpillar" No. 4F7818	1
	15509	Capscrew—½ UNF x 1½	4
16	15158	Lockwasher—½	4
	15008	Nut—½ UNF	4

ATTACHING PARTS — DIRECT DRIVE WINCH **For 977 Traxcavators Serial No. 53A1 & Up**



Ref. No.	Hyster Part No.	NAME OF PART	
1	18848	Capscrew— $\frac{1}{2}$ UNC x $8\frac{1}{2}$	
2	96245	Spacer	{
	96255	Gasket	
3	.....	Capscrews, $\frac{1}{2}$ UNC x $5\frac{3}{4}$ (furnished w/Traxcavator)	
4	96585W	Bracket	
5	94293	Tool Box	
	15532	Capscrew— $\frac{3}{8}$ UNF x $1\frac{1}{4}$	{
	15134	Washer— $\frac{3}{8}$	
6	15156	Lockwasher— $\frac{3}{8}$	
	15006	Nut— $\frac{3}{8}$ UNF	
	94294	Spacer	
7	96252W	Bracket—Cover	
8	17149	Capscrew— $\frac{7}{16}$ UNF x $\frac{3}{4}$	{
	15157	Lockwasher— $\frac{7}{16}$	

Note: Mounting studs are the same as items 1 to 5 inclusive on Page

TRACTOR ALTERATION PARTS

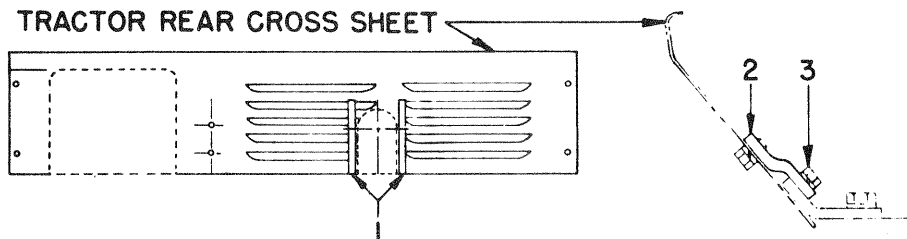
D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

D5 Tractors Serial No. 81H1 & Up — 83H1 & Up — 93J1 & Up

94J1 & Up — 95J1 & Up — 96J1 & Up ^{R2}

For Power Controlled Winch

TRACTOR REAR CROSS SHEET



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	{ * 97554	Strip	2
	{ 154961	Strip	3
2	* 97556	Plate	1
3	{ * 16805	Capscrew— $\frac{3}{8}$ UNC x 1	1
	{ * 15156	Lockwasher— $\frac{3}{8}$	1

*For D6 Tractors.

D6 Tractors Serial No. 74A1 & Up

For Direct Drive Winch

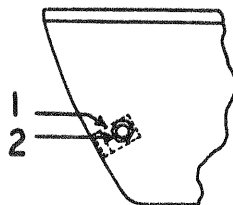
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
2	97556	Plate	2
3	{ 16805	Capscrew— $\frac{3}{8}$ UNC x 1	2
	{ 15156	Lockwasher— $\frac{3}{8}$	2

D6 Tractors Serial No. 37A-44A

D5 Tractors Serial No. 81H1 & Up — 83H1 & Up — 93J1 & Up

94J1 & Up — 95J1 & Up — 96J1 & Up ^{R2}

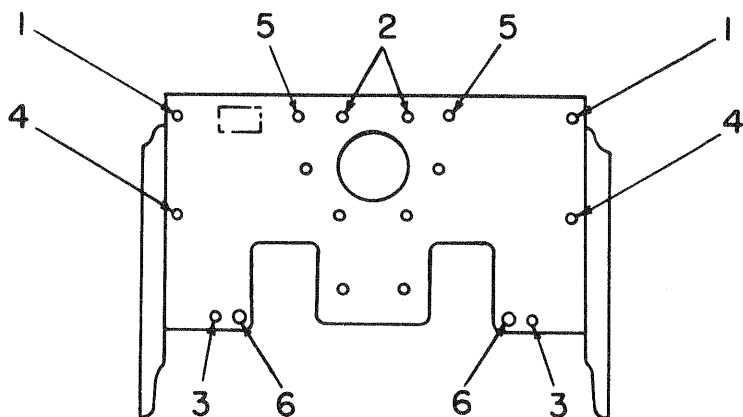
For Direct Drive Winch



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	96798	Lug—Fender Support	2
2	{ 16820	Capscrew— $\frac{1}{2}$ UNF x 1	2
	{ 15158	Lockwasher— $\frac{1}{2}$	2

ATTACHING PARTS — POWER CONTROLLED WINCH

For 977K Traxcavator Serial No. 46H1 & Up



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	.....	Stud—"Caterpillar"	2
	15066	Nut—1" UNC	2
	15166	Lockwasher—1"	2
2	136384	Plug—Steel	6
3	.....	Stud—"Caterpillar"	2
	15066	Nut—1" UNC	2
	15166	Lockwasher—1"	2
4	18005	Cork No. 11	2
5	89035	Stud—Taperlock	2
	134821	Nut—Slotted, Jam— $\frac{1}{4}$ UNF	2
	15259	Cotter— $\frac{1}{4}$ x 3	2
	55434	"O" Ring	2
6	156879	Cork No. 15	2

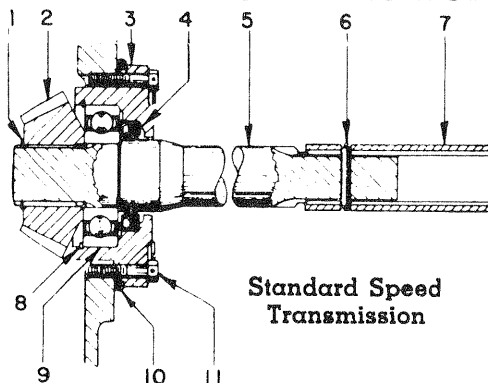
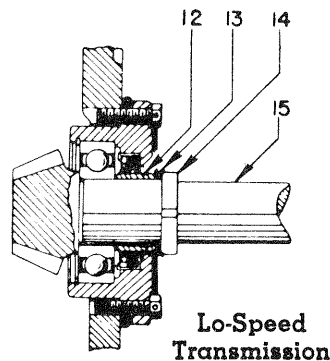
Section D

GEAR TRAIN AND SHAFT ASSEMBLIES

INDEX

BEVEL GEAR SHAFT	D2-D3
BRAKE SHAFT	D5
CABLE LOCK	D8
CLUTCH ASSEMBLY	D4
DRUM SHAFT	D7
INTERMEDIATE GEAR	D6
POWER TAKE-OFF	D1

POWER TAKE-OFF

Standard Speed
TransmissionLo-Speed
Transmission

Ref. No.	Hyster Part No.	NAME OF PART	Qty Req
1	12916	Snap Ring	1
2	96020	Gear—Bevel	1
3	98598	Carrier—Bearing	1
4	79389	Oil Seal	1
5	± 89064	Shaft—P.T.O. } (Standard	1
	* 96019	Shaft—P.T.O. } Speed	1
	† 96591	Shaft—P.T.O. } Transmission)	1
	§155491	Shaft—P.T.O.	1
	¶155490	Shaft—P.T.O.	1
6	9563	Pin ("Caterpillar" No. L2124)	1
	9554	Ring—Lock ("Caterpillar" No. 3B1223)	1
7	¶ 97553	Coupling	1
	§155492	Coupling	1
8	35573	Snap Ring	1
9	124684	Bearing	1
10	90937	"O" Ring	1
	134078	Shim—.005	5
	134079	Shim—.007	1
11	179867	Capscrew—Drilled Head	6
	.....	Lockwire	1
12	96027	Spacer	1
13	6036	Lockwasher	1
14	6037	Nut—Lock	1
15	± 89065	Shaft—P.T.O. } Lo-Speed Transmission Parts	1
	* 96026	Shaft—P.T.O.	1
	† 96593	Shaft—P.T.O.	1
	¶155494	Shaft—P.T.O.	1
	¶155493	Shaft—P.T.O.	1

¶For D5 Tractors Serial No. 81H1 & Up—82H1 & Up—93H1 & Up
94H1 & Up. R2

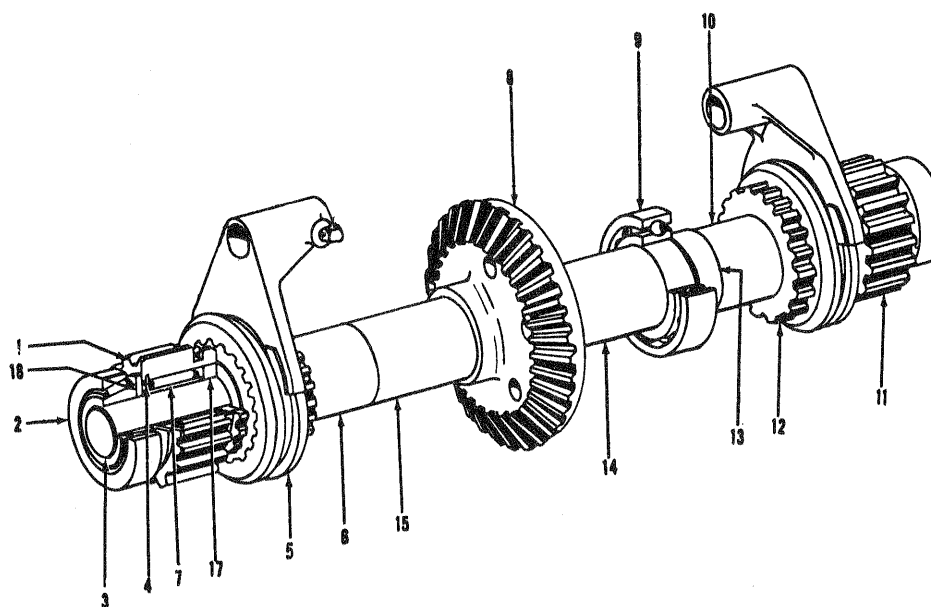
§For D5 Tractors Serial No. 83H1 & Up—84H1 & Up—95H1 & Up
96H1 & Up. R2

*For D6 Tractors prior to 74A1, 76A1 and 977 Traxcavators prior
Serial No. 53A1.

†For 977 Traxcavators Serial No. 53A1 & Up.

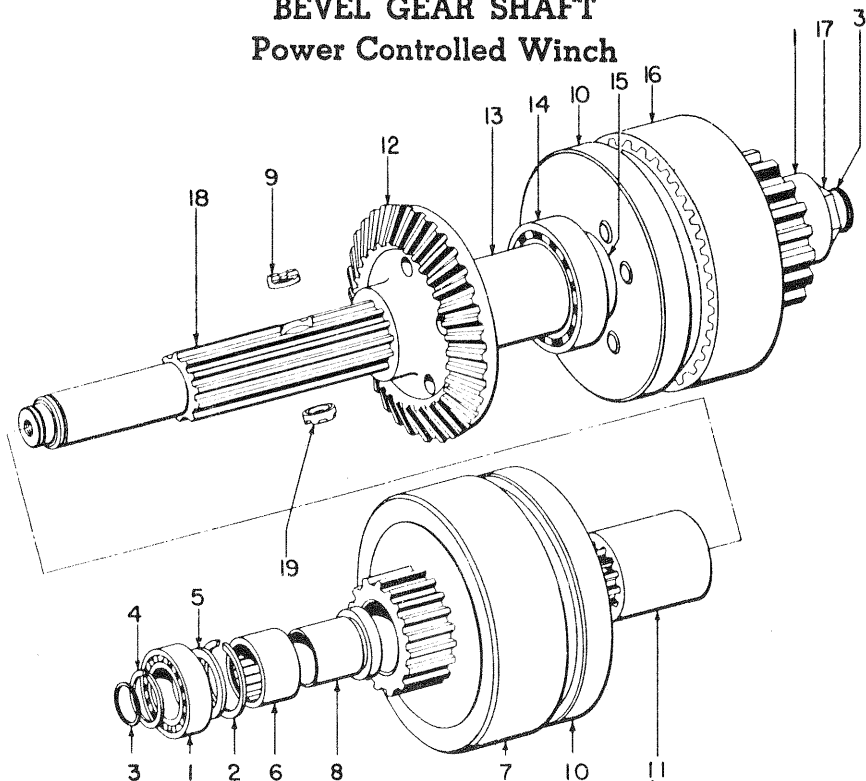
‡For D6 Tractors Serial No. 74A1 & Up—76A1 & Up. Also 977K
Traxcavators Serial No. 46H1 & Up.

BEVEL GEAR SHAFT **For Direct Drive Winch**



Ref. No.	Hyster Part No.	NAME OF PART
1	95944	Gear—(22 Teeth)
2	{ 230351	Cup—Bearing
	{ 230405	Cone—Bearing
3	95943	Shaft—Bevel Gear
4	58938	Snap Ring
5	95946	Clutch—Dental
6	95947	Spacer
7	230407	Bearing—Roller
8	{ 96021	Gear—Bevel (45 Teeth), Standard Speed
	{ 96028	Gear—Bevel (45 Teeth), Lo-Speed
9	44316	Bearing
10	95947	Spacer
11	{ 96022	Gear—(20 Teeth), Standard Speed
	{ 96029	Gear—(17 Teeth), Lo-Speed
12	95945	Hub—Dental Clutch
13	95965	Carrier—Bearing
14	95964	Spacer
15	95963	Spacer
17	95961	Carrier—Bearing
18	95962	Washer

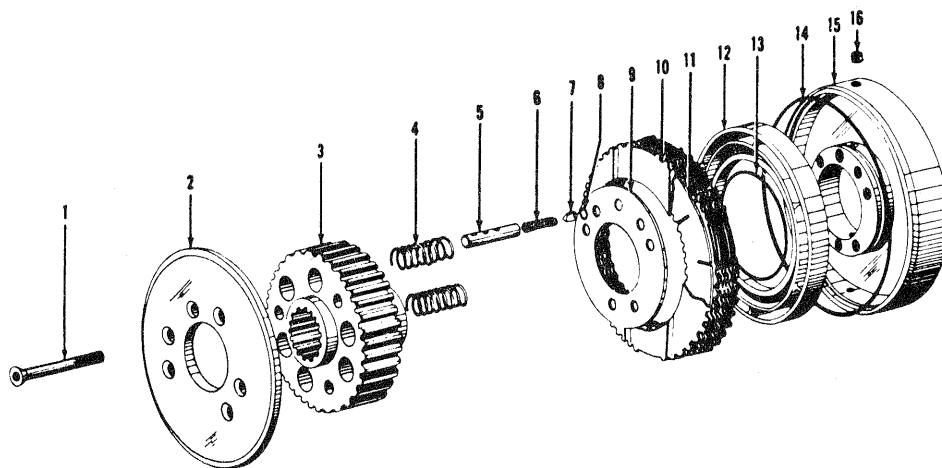
BEVEL GEAR SHAFT Power Controlled Winch



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	{ 230351	Cup—Bearing	2
	{ 230405	Cone—Bearing	2
2	58938	Snap Ring	2
3	95581	Ring—Seal	2
4	12916	Snap Ring	1
5	95962	Washer	2
6	230407	Bearing—Roller	2
7	96469W	Gear—Spider, Second Reduction	1
8	95961	Carrier—Bearing	1
9	96783	Seal (Three Teeth)	2
10	132580	Clutch Assembly	2
11	95963	Spacer	1
12	{ 96021	Gear—Bevel (45 Teeth), Standard Speed	1
	{ 96028	Gear—Bevel (45 Teeth), Lo-Speed	1
13	95964	Spacer	1
14	44316	Bearing—Ball	1
15	95965	Carrier—Bearing	1
16	{ 89009W	Gear—Reverse, Standard Speed	1
	{ 97775W	Gear—Reverse, Lo-Speed	1
17	{ 21014	Locknut—Bearing	1
	{ 21013	Lockwasher—Bearing	1
18	89027	Shaft—Clutch	1
19	96784	Seal (Two Teeth)	2

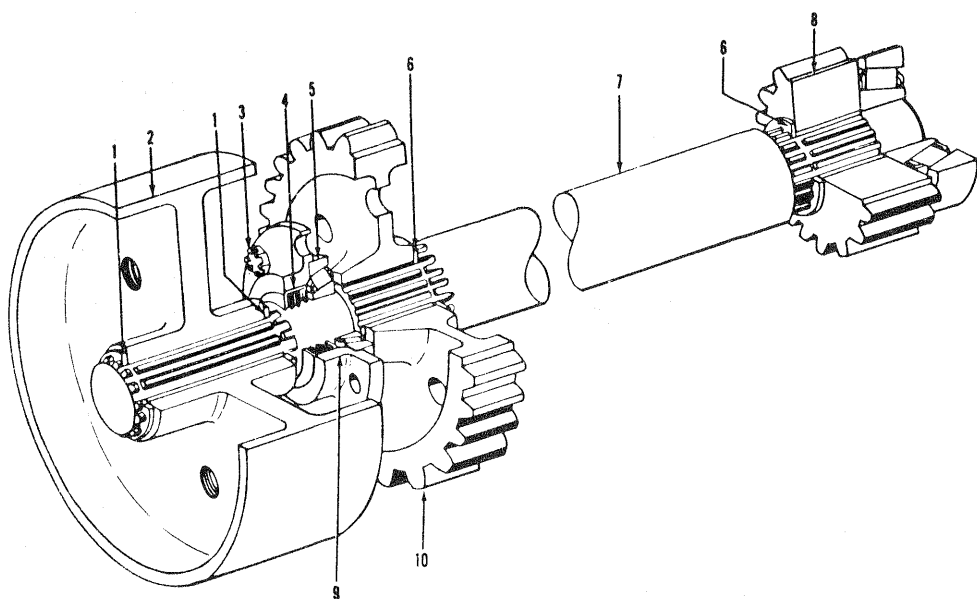
CLUTCH ASSEMBLY — 132580

For Power Controlled Winch



Ref. No.	Hyster Part No.	NAME OF PART	Qty Req
1	89031	Capscrew— $\frac{1}{2}$ UNF x $\frac{3}{4}$	6
2	96467	Plate	1
3	89029	Hub	1
4	89030	Spring	6
5	132579	Body—Valve	1
6	89033	Spring	1
7	95831	Plunger	1
8	54132	Snap Ring	1
9	96461	Retainer—Spring	1
10	133917	Friction Disc	6
11	96464	Plate—Separator	6
12	96462	Piston—Clutch	1
13	89777	“O” Ring	1
14	79972	“O” Ring	1
15	96463	Plate—Retainer	1
16	15961	Plug	1
17	149642	Set Screw— $\frac{1}{2}$ UNF x $\frac{3}{8}$	6
	96785	Shim (not illustrated, between items 2 and 3)	8

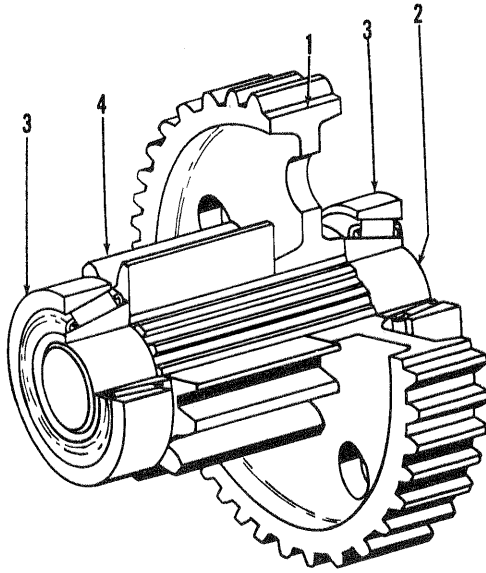
BRAKE SHAFT ASSEMBLY



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	58954	Snap Ring	1
2	96036	Wheel—Brake	1
3	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	6 R2
	15158	Lockwasher— $\frac{1}{2}$	6
4	87656	Seal—Oil	1
5	230311	Cup—Bearing	2
	230310	Cone—Bearing	2
6	12915	Snap Ring	2
7	95968	Shaft—Brake	1
8	96023	Gear—(20 Teeth), Standard	1
	96030	Gear—(17 Teeth), Lo-Speed	1
9	89727	Retainer—Oil Seal	1
	* 92649	Gasket	1
10	95969	Gear—(51 Teeth)	1

*Included in Gasket Kit 147519 and Gasket Kit 147519.

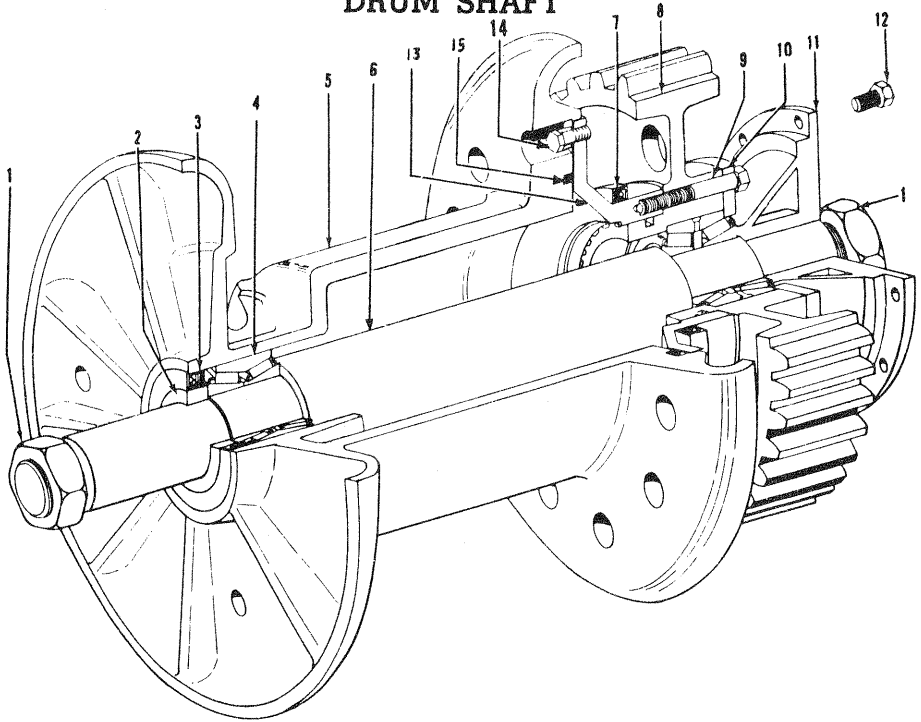
INTERMEDIATE GEAR



Ref. No.	Hyster Part No.	NAME OF PART
1	{ 96024	Gear—(49 teeth), Standard Speed
	{ ‡ 96046	Gear—49 teeth), Standard Speed
	{ 96031	Gear—(52 teeth), Lo-Speed
	{ ‡ 96047	Gear—(52 teeth), Lo-Speed
2	{ 95972	Shaft—Intermediate
	{ ‡ 96042	Shaft—Intermediate
3	{ 30059	Cup—Bearing
	{ 30080	Cone—Bearing
	{ ‡ 30058	Cone—Bearing
4	{ 95973	Gear—(16 teeth)
	{ ‡ 96043	Gear—(16 teeth)

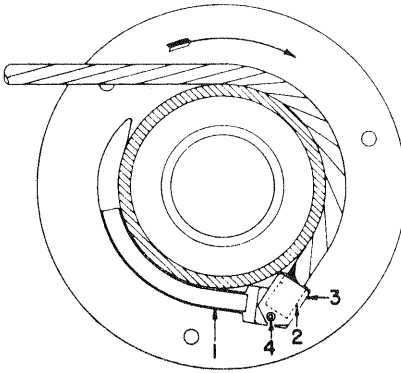
‡ First used on D5 Tractor Serial No. 81H1 - 84H1 & Up, 93J1 - 96
Up and D6D Winch Serial No. B82L-2155, C39L-2071. R2

DRUM SHAFT

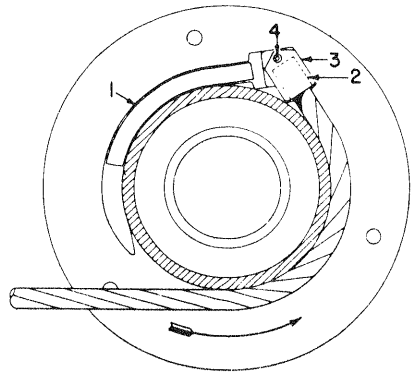


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	6607	Nut—Special	2
2	95979	Spacer	1
3	44547	Seal—Oil	1
4	230406A	Bearing Assembly	2
5	{ 141676	Drum—10" Standard Speed	1
	{ 141679	Drum—7" Lo-Speed	1
6	95976	Shaft—Drum	1
7	141671	Seal—Oil	1
8	95977	Gear—Drum	1
9	18811	Bolt—Place, 1/2 UNF x 2 1/2	8
10	95978	Plate—Retainer	1
	{ 95974	Retainer—Bearing	1
	{ 175646	Shim—.005	AR
11	{ 175647	Shim—.007	AR
	{ 175648	Shim—.020	AR
12	{ 18588	Capscrew—1/2 UNC x 1 1/2	6
	{ 15158	Lockwasher—1/2	6
13	141674	Adapter	1
14	{ 141675	Capscrew	10
	{ 53559	Dowel	10
15	133927	Ring—Seal	1

CABLE LOCK



OVERWINDING



UNDERWINDING

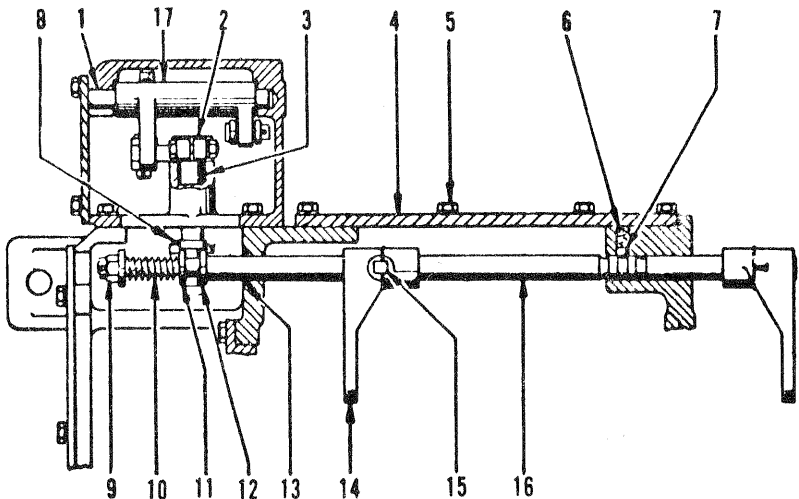
Ref. No.	Hyster Part No.	NAME OF PART	Qty Req.
1	{ 96033	Filler—10" Std. Drum	1
	{ 96035	Filler—7" Lo-Speed Drum	1
2	30712	Ferrule	1
3	95980	Lock—Ferrule	1
4	{ 14721	Capscrew— $\frac{1}{2}$ UNF x $2\frac{3}{4}$	1
	{ 15158B	Lockwasher— $\frac{1}{2}$	1

Section E

BRAKE AND SHIFTER MECHANISM FOR DIRECT DRIVE WINCH INDEX

BRAKE MECHANISM	E2
SHIFTER MECHANISM	E1
HANDLEVER GROUP—For D6 Tractors Serial No. 37A1 & up — 44A1 & up — 74A1 & up	E3
HANDLEVER GROUP—For D6 Tractors Serial No. 8U1 & up — 9U1 & up	E4
HANDLEVER GROUP—For 977 Traxcavators	E5

SHIFTER MECHANISM

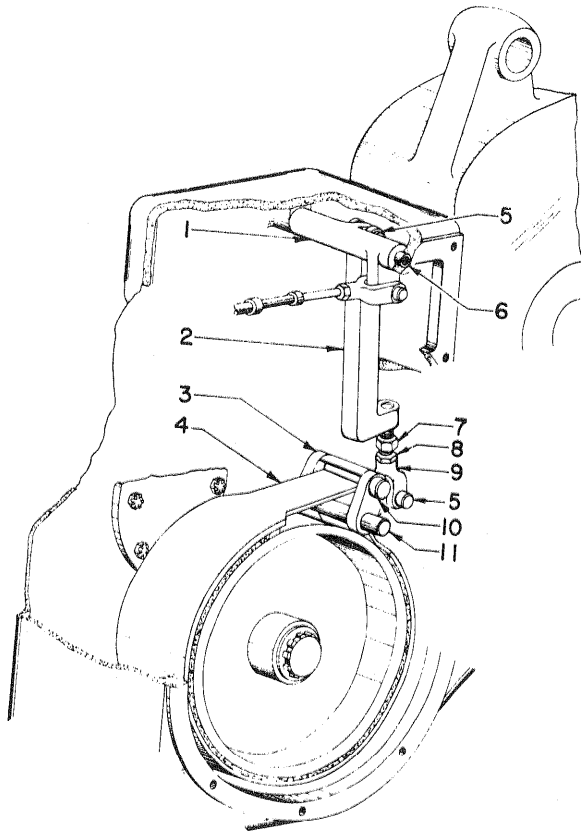


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95989	Pin	1
2	95987A	Crank Assembly	1
	15527	Capscrew— $\frac{3}{8}$ UNF x $1\frac{3}{4}$	1
	15006	Nut— $\frac{3}{8}$ UNF	1
	15156	Lockwasher— $\frac{3}{8}$	1
3	95615	Bushing	2
4	141688	Cover—Transmission	1
	§161854	Cover—Transmission	1 R
	*141690	Gasket	1
	§165854	Gasket	1 R
	16085	Capscrew— $\frac{1}{2}$ UNC x $1\frac{3}{4}$	4
5	§163249	Capscrew— $\frac{1}{2}$ UNC x $2\frac{1}{4}$	4 R
	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	5 R
	§169268	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	5 R
	15158	Lockwasher— $\frac{1}{2}$	9
	§ 15135	Washer— $\frac{1}{2}$	9 R
6	96545	Spring	1
7	6348	Ball— $\frac{1}{2}$	1
8	95636W	Crank—Shifter	1
	33717	Shoe	2
9	63085	Nut—Lock, $\frac{5}{8}$ UNF	1
10	95950	Spring	1
11	33682	Washer	2
12	33681	Washer	1
13	44551	Oil Seal	1
14	95951	Fork—Shifter	2
15	27936	Lockscrew	2
	.....	Lockwire	2
16	95949	Shaft—Shifter	1
17	77114A	Crank Assembly	1
	92705	Bushing	2
	16212	Setscrew— $\frac{3}{8}$ UNC x $1\frac{1}{4}$	2
	15086	Nut—Jam, $\frac{3}{8}$ UNC	2
		Cable Mount.	
		Not illustrated	

*Included in Gasket Kit 147519.

§First used on Serial No. B82A-1551, B82L-2485, B82S-1515. R2

BRAKE MECHANISM

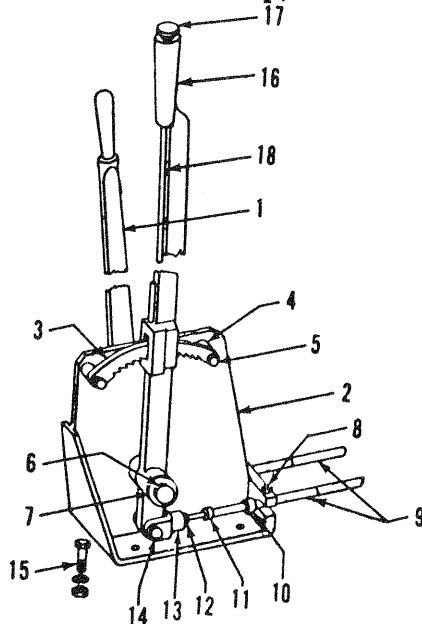


Ref. No.	Hyster Part No.	NAME OF PART
1	77114A	Crank Assembly—Brake
	92705	Bushing
2	76697	Link—Brake
3	76695A	Lever Assembly—Brake
	104607	Bushing
4	128386	Brake Band Assembly
	96300A	Lining Set with Rivets (Drill at Assembly)
5	159	Pin—Rod End
	15223	Cotter— $\frac{1}{8}$ x 1
6	95989	Pin
7	76696	Link—Adjusting
8	15030	Nut—Jam, $\frac{5}{8}$ UNF
9	91629	Rod End
10	96725	Pin—Brake
	15226	Cotter— $\frac{1}{8}$ x $1\frac{3}{4}$
11	128383	Pin

HANDLEVER GROUP

(For D6 Tractors Serial No. 37A1 & up — 44A1 & up 74A1 & up)

(For D5 Tractors Serial No. 81H1 & Up)



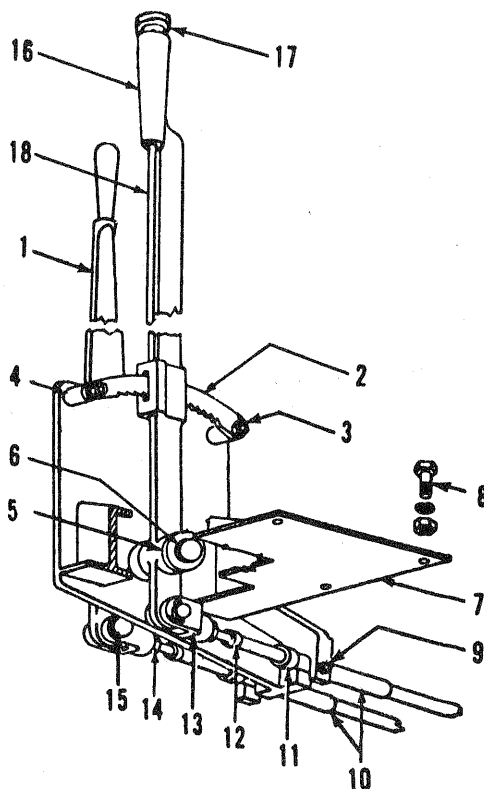
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	77222A	Handlever Assembly	1
1	95750	Handlever—Clutch	1
2	76706W	Bracket	1
3	77188	Bar—Quadrant	1
4	94891	Spacer	2
5	18451	Capscrew— $\frac{3}{8}$ UNF x 2	2
	15156	Lockwasher— $\frac{3}{8}$	2
	15006	Nut— $\frac{3}{8}$ UNF	2
6	58907	Snap Ring	2
7	90267	Washer	2
8	16212	Setscrew— $\frac{3}{8}$ UNF x $1\frac{1}{4}$	4
	15086	Nut—Jam, $\frac{3}{8}$ UNF	4
	* 121181	Clamp	2
9	* 123422	Cable—Push-Pull (Clutch, 56")	1
	* 125629	Cable—Push-Pull (Brake, 58")	1
	+ 96240	Cable—Push-Pull (Brake)	1
	+ 96241	Cable—Push-Pull (Clutch)	1
10	94381	Grommet—Large	4
11	95905	Grommet—Small	4
12	15026	Nut—Jam, $\frac{3}{8}$ UNF	4
13	92683	Rod End	4
14	159	Pin—Rod End	4
	15223	Cotter— $\frac{1}{2}$ UNF x $1\frac{1}{2}$	4
	16807	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{2}$	4
15	15158	Lockwasher— $\frac{1}{2}$	4
	15008	Nut— $\frac{1}{2}$ UNF	4
16	77187A	Handlever Assembly—Brake	1
17	79418	Button	1
	79417	Spring	1
18	79416	Pawl and Rod	1

+For Tractor Serial No. 37A1 and up — 44A1 and up.

*For Tractor Serial No. 74A1 and up.

HANDLEVER GROUP

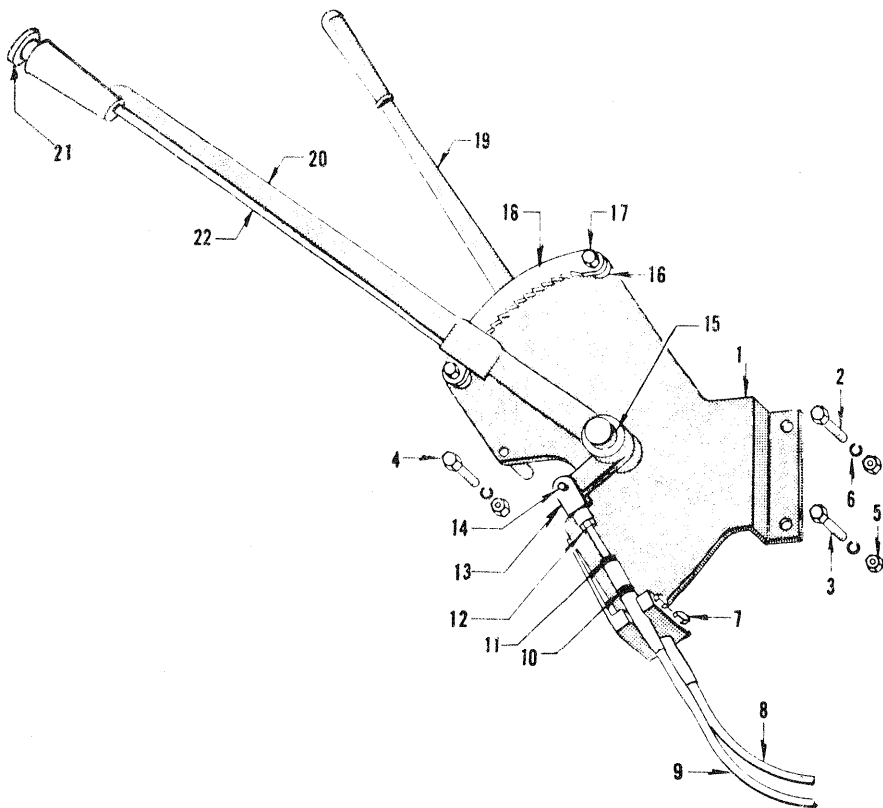
(For D6 Tractors Serial No. 8U1—9U1 & Up)



Ref. No.	Hyster Part No.	NAME OF PART	Qty Recd
	77221A	Handlever Assembly	1
1	96016	Handlever—Clutch	1
2	77188	Bar—Quadrant	1
3	18451	Capscrew— $\frac{3}{8}$ UNF x 2	2
	15006	Nut— $\frac{3}{8}$ UNF	2
	15156	Lockwasher— $\frac{3}{8}$	2
4	94891	Spacer	2
5	90267	Washer	2
6	58907	Snap Ring	2
7	76702W	Bracket	1
	16807	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{2}$	4
8	15008	Nut— $\frac{1}{2}$ UNF	4
	15158	Lockwasher— $\frac{1}{2}$	4
9	16212	Setscrew— $\frac{3}{8}$ UNC x $1\frac{1}{4}$	2
	15086	Nut—Jam, $\frac{3}{8}$ UNC	2
10	96017	Cable—Push-Pull	2
11	94381	Grommet—Large	2
12	95905	Grommet—Small	2
13	92683	Rod End	4
14	15026	Nut—Jam, $\frac{3}{8}$ UNF	4
15	159	Pin—Rod End	4
	15223	Cotter— $\frac{1}{8}$ x 1	4
16	77187A	Handlever Assembly—Brake	1
17	79418	Button	1
	79417	Spring	1
18	77416	Pawl and Rod	1

HANDLEVER GROUP

(For 977 Traxcavators)



HANDLEVER GROUP

(For 977 Traxcavators)

Ref. No.	Hyster Part No.	NAME OF PART	Qt Re
1	77129W	Bracket—Handlever	1
2	{* 37562	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{4}$	1
	† 16807	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{2}$	1
3	16807	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{2}$	1
4	{* 17141	Capscrew— $\frac{1}{2}$ UNF x $3\frac{1}{2}$	1
	† 17148	Capscrew— $\frac{1}{2}$ UNF x $3\frac{3}{4}$	1
5	15008	Nut— $\frac{1}{2}$ UNF	3
6	15158	Lockwasher— $\frac{1}{2}$	3
7	{ 16212	Setscrew— $\frac{3}{8}$ UNC x $1\frac{1}{4}$	2
	15086	Nut—Jam— $\frac{3}{8}$ UNC	2
8	{* 96581	Cable—Clutch	1
	† 96244	Cable—Clutch	1
9	{* 96241	Cable—Brake	1
	† 96243	Cable—Brake	1
10	94381	Grommet—Large	4
11	95905	Grommet—Small	4
12	15026	Nut—Jam, $\frac{3}{8}$ UNF	4
13	92683	Rod End	4
14	{ 159	Pin—Rod End	4
	15223	Cotter— $\frac{1}{8}$ x 1	4
15	{ 90267	Washer	2
	58907	Snap Ring	2
16	89711	Spacer	2
	16594	Capscrew— $\frac{3}{8}$ UNF x $1\frac{3}{4}$	2
17	{ 15006	Nut— $\frac{3}{8}$ UNF	2
	15156	Lockwasher— $\frac{3}{8}$	2
18	77188	Quadrant—Bar	1
19	96247	Handlever—Clutch	1
20	79394W	Handlever—Brake	1
21	{ 79418	Button	1
	79417	Spring	1
22	79416	Pawl and Rod	1

*For 977 Traxcavators Serial No. 53A1 & up.

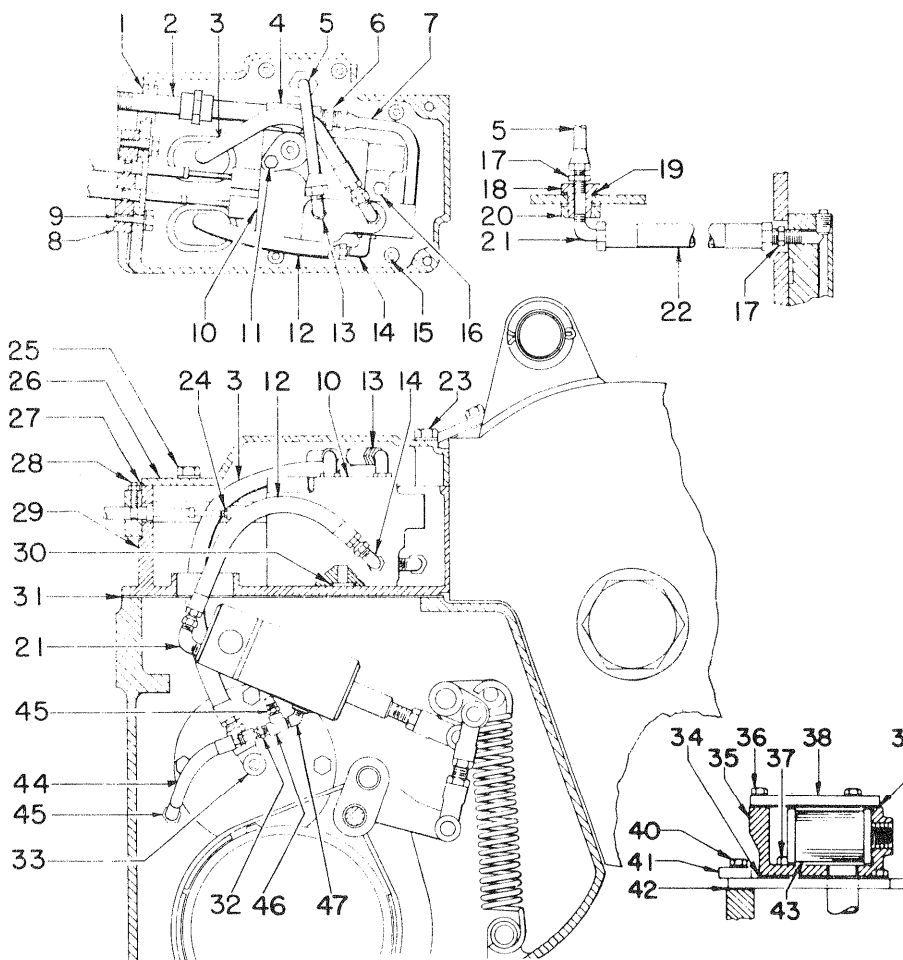
†For 977 Traxcavators Serial No. 20A1 & up.

Section F

BRAKE AND HYDRAULIC SYSTEM FOR POWER CONTROLLED WINCH INDEX

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HANDLING GEAR ASSEMBLY	
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PUMP AND HOSES	
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PUMP AND PULLEY ASSEMBLY	
For 977 Traxcavators Serial No. 53A1 & up	F13
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VALVE ASSEMBLY	F7

HYDRAULIC SYSTEM



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95737	Grommet	1
2	19606	Nipple, $\frac{1}{2}$ x $3\frac{1}{2}$	1
	15462	Nipple, $\frac{1}{2}$ x 3	1
	12828	Coupling	1
3	88297	Hose	1
4	124768	Fitting—"T"	1
5	89052	Tube Assembly	1
6	17302	Fitting—Male Connector	1
7	89050	Tube Assembly	1
8	89061	Block	1
	*166326	Block	1 R
9	16814	Capscrew— $\frac{3}{8}$ UNF x $1\frac{1}{2}$	2

HYDRAULIC SYSTEM

Ref. No.	Hyster Part No.	NAME OF PART	Qty Rec
10	.....	Valve—See Page F8	1
11	{ 18789	Capscrew— $\frac{3}{8}$ UNC x 5	2
	15156B	Lockwasher— $\frac{3}{8}$	2
12	132005	Hose	2
13	16559	Fitting—Elbow	1
14	96521	Fitting—Special	1
15	{ 38759	Capscrew— $\frac{1}{2}$ UNC x 1	5
	15158B	Lockwasher— $\frac{1}{2}$	5
16	{ 18889	Capscrew— $\frac{3}{8}$ UNC x $3\frac{1}{2}$	1
	15156B	Lockwasher— $\frac{3}{8}$	1
17	17315	Fitting—Male Connector	2
18	132002	Fitting—Special	1
19	61056	"O" Ring	1
20	{ 15036	Nut—Jam, 1" NF	1
	15936	Lockwasher—Shakeproof, 1"	1
21	17309	Fitting, Elbow	2
22	{ 141698	Hose	1
	* 73470	Hose	1
23	{ 18537	Capscrew— $\frac{3}{8}$ UNC x $2\frac{1}{2}$	2
	15156	Lockwasher— $\frac{3}{8}$	2
24	15025	Nut—Jam, 5/16 UNF	2
25	{ 16805	Capscrew— $\frac{3}{8}$ UNC x 1	2
	15156	Lockwasher— $\frac{3}{8}$	2
26	89059	Cover	1
27	‡ 89060	Gasket	1
28	{ 16254	Setscrew—5/16 UNC x 1	2
	15001	Nut—Jam, 5/16 UNC	2
29	89057	Housing—Control Valve	1
30	61142	"O" Ring	1
31	‡ 89058	Gasket	1
32	14668	Fitting—Male Connector	1
33	{ 19535	Fitting—Tee	1
	14386	Fitting—Plug	1
34	‡ 89022	Gasket	1
35	141695	Manifold—Intake	1
36	{ 37562	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{4}$	5
	15158	Lockwasher— $\frac{1}{2}$	10
	86229	Washer—Seal	3
37	{ 178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	3
	†169268	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	5
38	89025	Cover	1
39	{ ‡ 89023	Gasket	1
	16085	Capscrew— $\frac{1}{2}$ UNC x $1\frac{3}{4}$	4
	†163249	Capscrew— $\frac{1}{2}$ UNC x $2\frac{1}{2}$	4
40	{ 15158	Lockwasher— $\frac{1}{2}$	5
	† 15135	Washer	9
41	{ 141693	Cover—Transmission	1
	†161856	Cover—Transmission	1
42	‡141690	Gasket	1
43	{ 95893	Cartridge	1
	†160387	Cartridge	1
44	140288	Hose	1
45	128002	Fitting—Ball Check Connector	2
46	16186	Fitting—Tee	1
47	12821	Fitting—Elbow	1

‡Included in Gasket Kit 147518 for Power Controlled Winch.

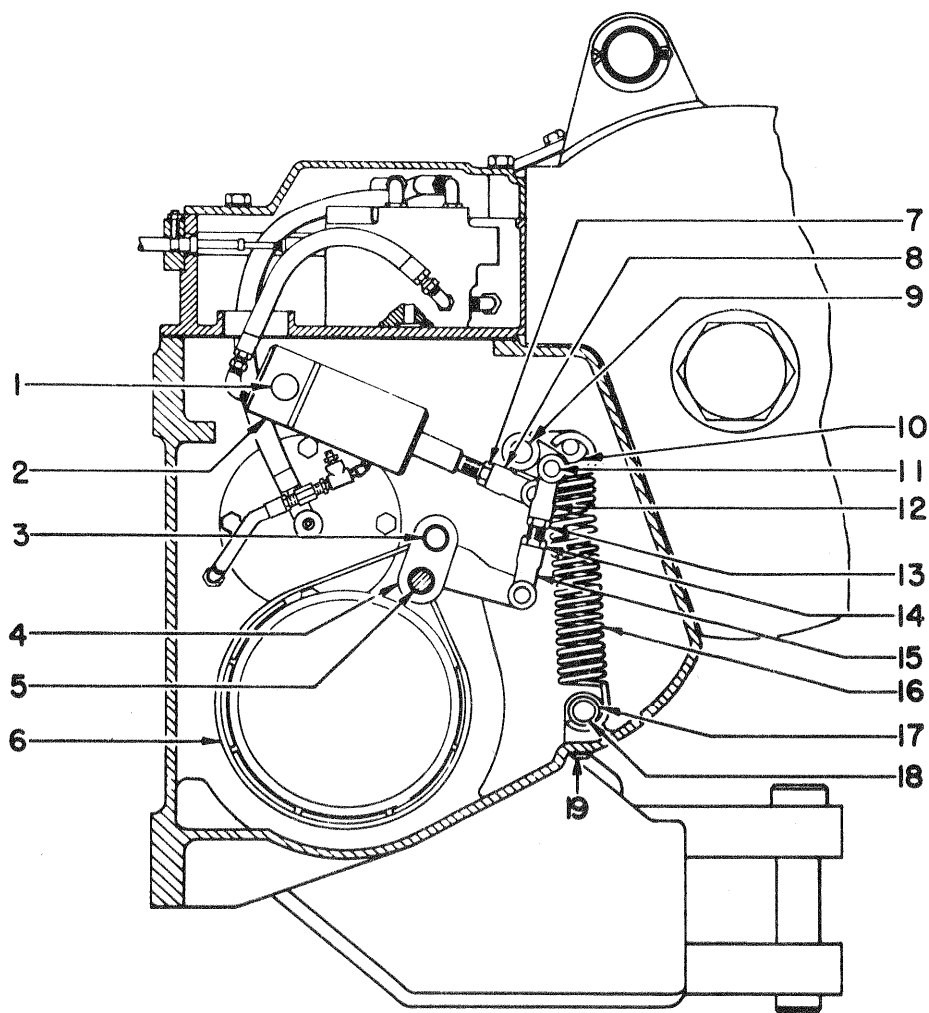
*First used on Serial No. B82A-1514, B82S-1511, B82L-2211. R2

†First used on Serial No. B82L-1999. R2

‡First used on Serial No. B82S-1513, B82L-2487. R2

†First used on Serial No. B82A-1551, B82L-2485, B82S-1515. R2

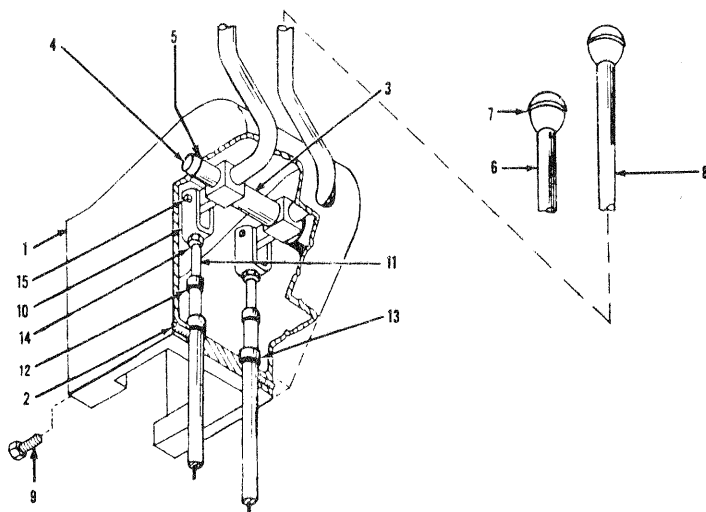
BRAKE MECHANISM



BRAKE MECHANISM

Ref. No.	Hyster Part No.	NAME OF PART	Qty Req
1	89051	Pin	1
2	{ 97978A	Cylinder—Brake	1
	{ 165200	Cylinder	1
3	96725	Pin	1
	{ 96780A	Lever Assembly (Includes Bushings)	1
4	{ 104607	Bushing	2
	{ 15226	Cotter— $\frac{1}{8}$ x $1\frac{3}{4}$	1
5	128383	Pin	1
6	{ 128386	Band Assembly (Includes Lining Set)	1
	{ 96300A	Lining Set with Rivets (Drill at Assembly)	1
7	15030	Nut—Jam, $\frac{5}{8}$ UNF	1
	{ 92689	Rod End	1
8	{ 159	Pin—Rod End	1
	{ 15223	Cotter— $\frac{1}{8}$ x 1	1
9	95989	Pin	1
10	{ 128384	Crank Assembly (Includes Bushings)	1
	{ 92705	Bushing	2
11	{ 95628A	Link Assembly	1
	{ 15223	Cotter— $\frac{1}{8}$ x 1	2
12	92689	Rod End—R. H.	1
13	15030	Nut—Jam, $\frac{5}{8}$ UNF	1
14	95629	Link—Adjusting	1
15	92688	Rod End—L. H.	1
16	161836	Spring	2
17	95996W	Spacer	1
	{ 95998W	Pin	1
18	{ 16829	Capscrew— $\frac{1}{2}$ UNC x 1	1
	{ 15158	Lockwasher— $\frac{1}{2}$	1
19	15308	Fitting—Pipe Plug, $1\frac{1}{4}$	1

HANDLING GEAR



KEY

A—For D5 Tractors Serial No. 81H & Up—83H1 & Up.

B—For D5 and D6 Tractors.

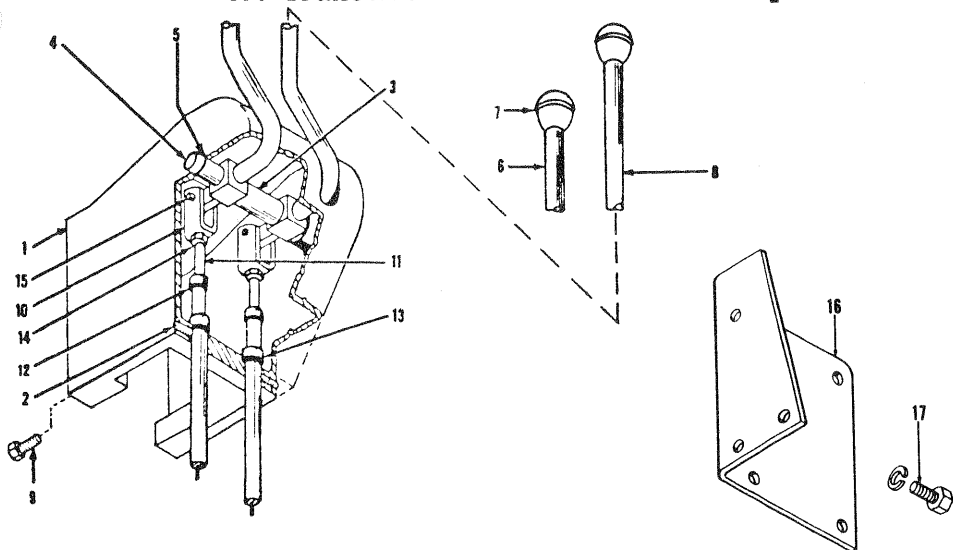
C—For 977K Traxcavators Serial No. 46H1 & Up.

Ref. No.	Hyster Part No.	NAME OF PART	Quantity Req.		
			A	B	C
	123279	Handling Gear	..	1	1
	155769	Handling Gear	1	..	..
1	123278	Bracket	1	1	1
2	16202	Setscrew—5/16 UNC x 3/8	4	4	4
3	95707	Spacer	1	1	1
4	95708	Pin	1	1	1
5	58951	Snap Ring	2	2	2
6	{ 123277	Lever—Selector	..	1	1
	{ 155768	Lever—Selector	1	..	..
7	66716	Knob	2	2	2
8	123276	Lever—Brake	1	1	1
9	{ 16597	Capscrew—3/8 UNC x 3/4	3	3	3
	{ 15156	Lockwasher—3/8	3	3	3
10	95709	Rod End	2	2	2
11	{ 89038	Cable Control	..	2	..
	{ §159808	Cable Control—58"	..	2	..
	{ 96474	Cable Control	..	..	2
	{ §159811	Cable Control—74"	..	..	2
12	95876	Grommet—Small	2	2	2
13	94380	Grommet—Large	2	2	2
14	15025	Nut—Jam, 5/16 UNF	2	2	2
15	{ 142	Pin—Rod End	2	2	2
	{ 15212	Cotter—3/32 x 3/4	2	2	2

§First used on Serial No. B82A-1515, B82L-2382.

HANDLING GEAR ASSEMBLY

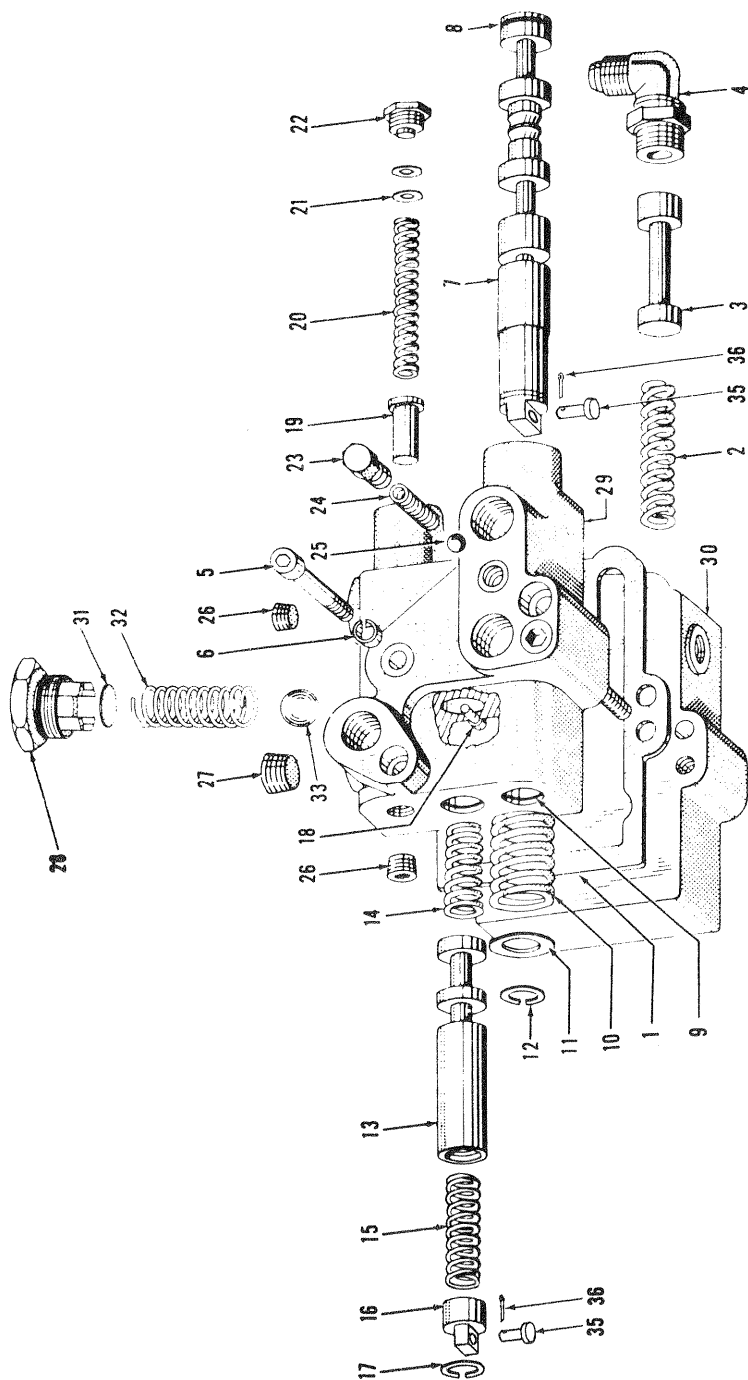
977 Traxcavators Serial No. 53A1 & up



Ref. No.	Hyster Part No.	NAME OF PART	Q R
	95703A	Handling Gear Assembly	1
1	95704	Bracket	1
2	16202	Setscrew—5/16 UNC x 3/8	4
3	95707	Spacer	1
4	95708	Pin	1
5	58951	Snap Ring	2
6	95706	Lever—Selector	1
7	66716	Knob	2
8	95705	Lever—Brake	1
9	{ 16598	Capscrew—3/8 UNC x 7/8	1
	{ 15156	Lockwasher—3/8	1
10	95709	Rod End	1
11	{ 95611	Cable—Control	1
	{ §159810	Cable—Control	1
12	95876	Grommet—Small	1
13	94380	Grommet—Large	1
14	15025	Nut—Jam, 5/16 UNF	1
15	{ 142	Pin—Rod End	1
	{ 15212	Cotter—3/32 x 3/4	1
16	97949	Bracket	1
17	{ 16634	Capscrew—3/8 UNF x 1	1
	{ 15156	Lockwasher—3/8	1
	{ 15006	Nut—3/8 UNF	1

§First used on Serial No. B82A-1515, B82L-2382. R2

VALVE ASSEMBLY



VALVE ASSEMBLY

KEY

A—Last used on Serial No. B82A-1514, B82L-2165.

B—First used on Serial No. B82L-2166.

C—First used on Serial No. B82A-1515, B82L-2382, and B82S-1513.

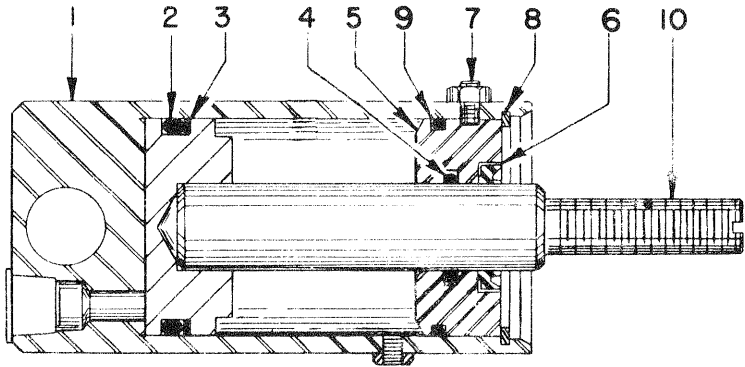
Ref. No.	Hyster Part No.	NAME OF PART	Quantity Re		
			A	B	C
	153766	Valve	1	..	..
	155584	Valve	..	1	..
	159751	Valve	..	..	1
1	* 95725	Gasket	1	1	1
2	95675	Spring	1	1	1
3	129198	Piston	1	1	1
4	{ 16959	Elbow—Male	1	1	1
	{ 16484	O-Ring	1	1	1
	{ 16586	Locknut	1	1	1
5	17138	Capscrew— $\frac{3}{8}$ UNC x 3	2	2	2
6	15156B	Lockwasher— $\frac{3}{8}$	2	2	2
7	{ 77975	Spool	1	1	..
	{ 159745	Spool	..	..	1
8	95721	O-Ring	1	1	1
9	95716	O-Ring	2	2	2
10	95612	Spring	1	1	1
11	95676	Washer	1	1	1
12	58950	Snap Ring	1	1	1
13	95718	Spool	1	1	1
14	95717	Spring—2-3/32" long	1	1	1
15	95719	Spring	1	1	1
16	{ 95720	Plug	1	1	..
	{ 159746	Plug	..	..	1
17	12992	Snap Ring	1	1	1
18	139197	Capscrew—Special	1	1	1
19	95714	Piston	1	1	1
20	95715	Spring	1	1	1
21	108408	Washer	AR	AR	AR
22	{ 147220	Retainer—Spring	1	1	1
	{ 29582	Gasket—Copper	1	1	1
23	{ 77736	Plug—Special	1	1	1
	{ 16482	O-Ring	1	1	1
24	96234	Spring	1	1	1
25	55280	Ball—5/16	1	1	1
26	15347	Plug—Pipe, $\frac{1}{4}$ NPT	2	2	2
27	15315	Plug—Pipe, $\frac{1}{2}$ NPT	1	1	1
28	{ 89766	Fitting—Special	1	..	..
	{ 16976	Fitting—Special	..	1	..
	{ 152989	Fitting—Special	..	..	1
29	89778	Body—Valve	1	1	..
30	89765	Support—Valve	1	1	1
31	89768	Shim	AR	..	..
32	89767	Spring—1-29/32" long	1	..	..
33	89769	Ball—13/16	1	..	..
34	152649	Rod	1	1	1
35	159747	Pin	..	..	2
36	18821	Cotter Pin—1/16 x 7/16	..	..	2

*Included in Gasket Kit 147518.

Caution: Do not interchange Springs 14 and 32.

CYLINDER ASSEMBLY

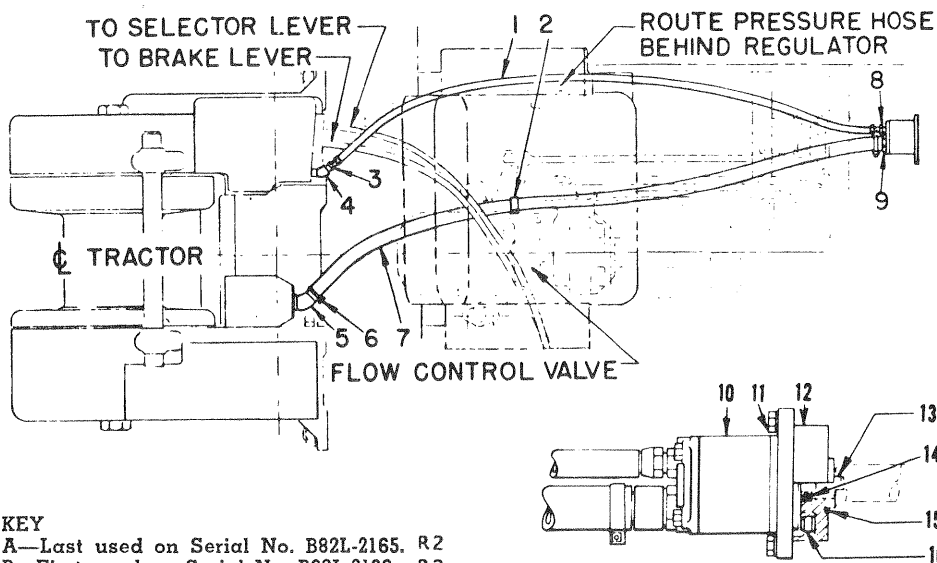
Last used on Serial No. B82A-1537, B82L-2386



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	97978A	Cylinder Assembly	1
1	76982	Tube and Head Assembly	1
2	63655	"O" Ring	1
3	63654	Back-up Ring	1
4	61056	"O" Ring	1
5	98359A	Guide Assembly	1
6	44573	Seal—Oil	1
7	16246	Setscrew— $\frac{1}{4}$ UNC x $\frac{1}{2}$	1
	15000	Nut—Jam, $\frac{1}{4}$ UNC	1
8	54129	Snap Ring	1
9	57664	"O" Ring	1
10	76984	Rod Assembly	1

PUMP AND HOSES

For D6 Tractors Serial No. 74A1 & up — 76A1 & up



KEY

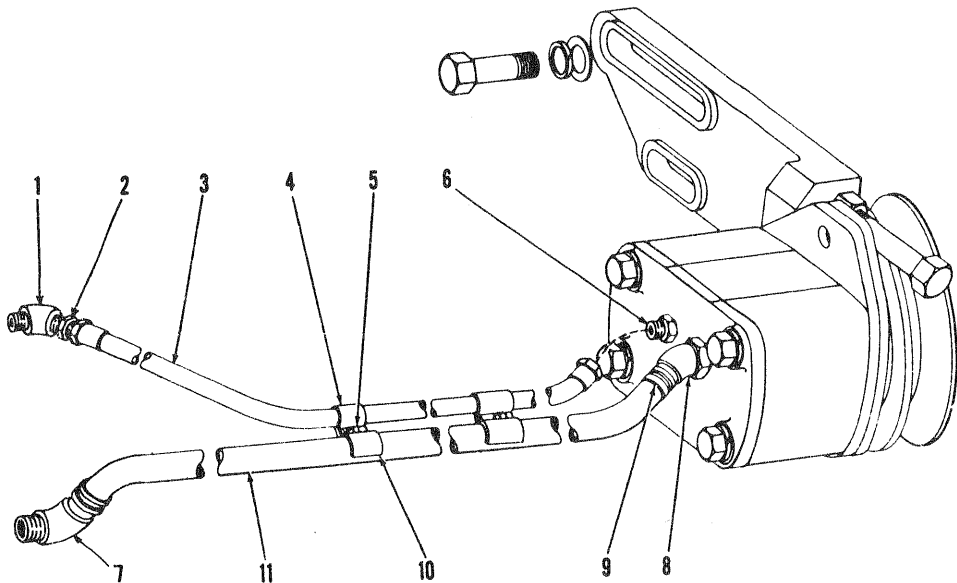
A—Last used on Serial No. B82L-2165. R2

B—First used on Serial No. B82L-2166. R2

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
1	99445	Hose—Pump To Valve	1	..
	76817	Hose—Pump To Valve	..	1
2	123426	Clamp	1	..
	105699	Clamp	..	1
3	17302	Fitting—Connector, 8 x 8	1	..
	14683	Fitting—Connector, 12 x 8	..	1
4	19512	Fitting—Elbow	1	1
5	16845	Fitting—Elbow	1	..
	111330	Fitting—Elbow	..	1
6	18999	Clamp—Hose	2	..
	119236	Clamp—Hose	..	2
8	16541	Fitting—Connector	1	..
	16543	Fitting—Connector	..	1
9	98599	Fitting—Special	1	..
	155579	Fitting—Special	..	1
10	.....	Pump, See Page F12	1	1
11	16828	Capscrew— $\frac{3}{8}$ UNC x $1\frac{1}{4}$	2	2
	15156	Lockwasher— $\frac{3}{8}$	2	2
12	89045	Bracket—Pump	1	1
13	89047	Coupling—Shaft	1	1
14	89046	Oil Seal	1	..
	155577	Oil Seal	..	1
15	55407	O-Ring	1	1
16	27187	Capscrew— $\frac{3}{8}$ UNC x 1	2	2
	15156B	Lockwasher— $\frac{3}{8}$	2	2

PUMP AND HOSES

For 977 Traxcavator Serial No. 53A1 & up

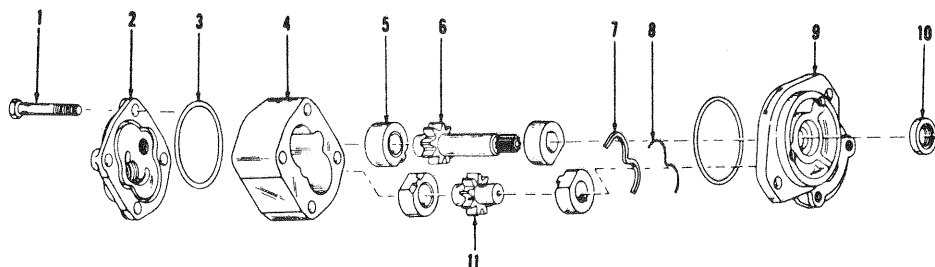


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	19512	Elbow—45°	1
2	17302	Connector—Male	1
3	{ ‡ 97962	Hose—Pump to Valve	1 R2
	{ * 89888	Hose—Pump To Valve	1 R2
4	60016	Clamp	3
5	{ 18467	Capscrew— $\frac{1}{4}$ UNF x $1\frac{1}{4}$	3
	{ 15154	Lockwasher— $\frac{1}{4}$	3
	{ 15004	Nut— $\frac{1}{4}$ UNF	3
6	16541	Connector—Male	1
7	135488	Elbow—Male, 30°	1
8	97961	Fitting—Special	1
9	18999	Clamp—Hose	2 R2
10	15978	Clamp	3
11	{ *135486	Hose—Shielded	1
	{ ‡ 97963	Hose—Shielded	1 R

‡ Last used on 977 Traxcavator Serial No. 53A-4796.

* First used on 977 Traxcavator Serial No. 53A-4797.

PUMP ASSEMBLY



A—For D6 Tractors Serial No. 74A1 & Up—76A1 & Up; Last used on Serial No. B82L-216

B—For 977 Traxcavator Serial No. 53A1 & Up.

C—For D5 Tractors Serial No. 81H1 & Up—83H1 & Up.

D—For 977K Traxcavators Serial No. 46H1 & Up.

E—For D5 Tractors Serial No. 95J1 & Up—96J1 & Up. R2

Ref. No.	Hyster Part No.	NAME OF PART	Quantity Required				
			A	B	C	D	E
	123280	Pump	1	..	..	..	..
	97951A	Pump	..	1	..	..	..
	155296	Pump	..	..	1	..	..
	155161	Pump	..	..	..	1	..
	155162	Pump	..	..	..	..	1
1	*125869	Capscrew	4	..	..	4	4
	*235931	Washer	4	..	..	4	4
	*124247	Capscrew	..	4	4	..	..
2	124241	Cover—Rear	1	1	1	..	..
	157440	Cover—Rear	..	..	..	1	1
3	†*.....	Seal	2	2	2	2	2
4	.....	Body (NSS)	1	1	1	1	..
	168948	Body	..	..	..	..	1
5	*.....	Bearing	4	4	4	4	..
	*168950	Bearing	..	..	..	..	4
6	‡.....	Gear	1	1	1	1	1
7	†*.....	Gasket	1	1	1	1	1
8	†*.....	Spacer	1	..	..	..	..
9	124240	Cover—Front	1	1	1	..	1
	157349	Cover—Front	..	..	..	1	..
10	†*147494	Seal—Shaft	1	..	..	1	1
11	‡.....	Gear	1	1	1	1	1
	124248	Key—Gear (Not illust.)	..	1	1	..	..
	790	Key—Gear (Not illust.)	..	..	..	..	1
	125868	Major Kit	1	..	..	..	..
	124245	Major Kit	..	1	1	..	..
	157442	Major Kit	..	..	..	1	..
	168949	Major Kit	..	..	..	..	1
	127870	Minor Kit	1	..	..	..	..
	124249	Minor Kit	..	1	1	..	..
	157443	Minor Kit	..	..	..	1	1
	125867	Gear Kit	1	..	..	..	..
	124242	Gear Kit	..	1	..	..	..
	157438	Gear Kit	..	..	1	..	..
	157441	Gear Kit	..	..	..	1	..
	168692	Gear Kit	..	..	..	..	1

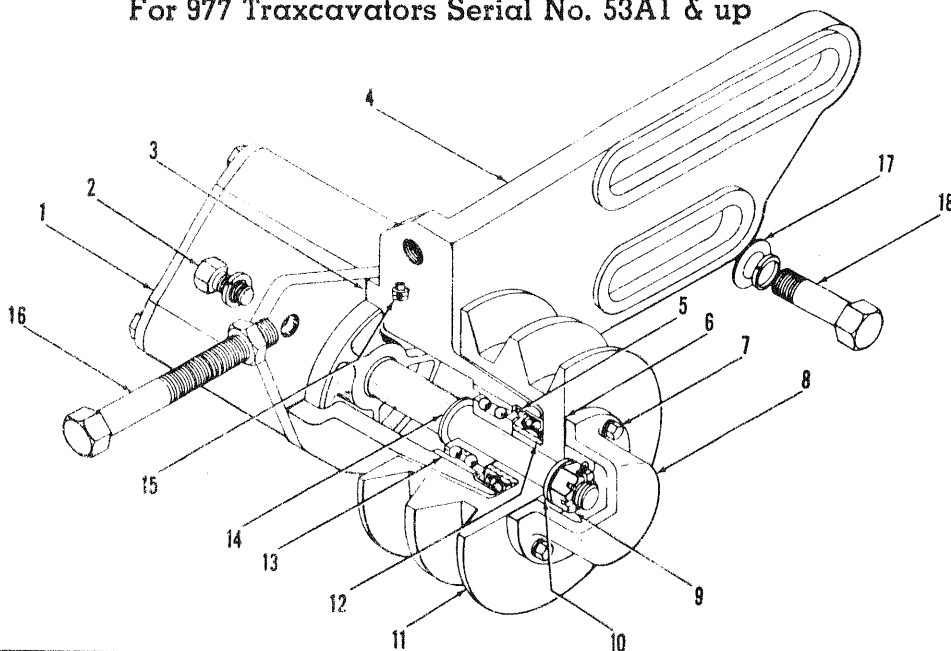
*Included in Major Kit.

†Included in Minor Kit.

‡Included in Gear Kit.

PUMP AND PULLEY ASSEMBLY

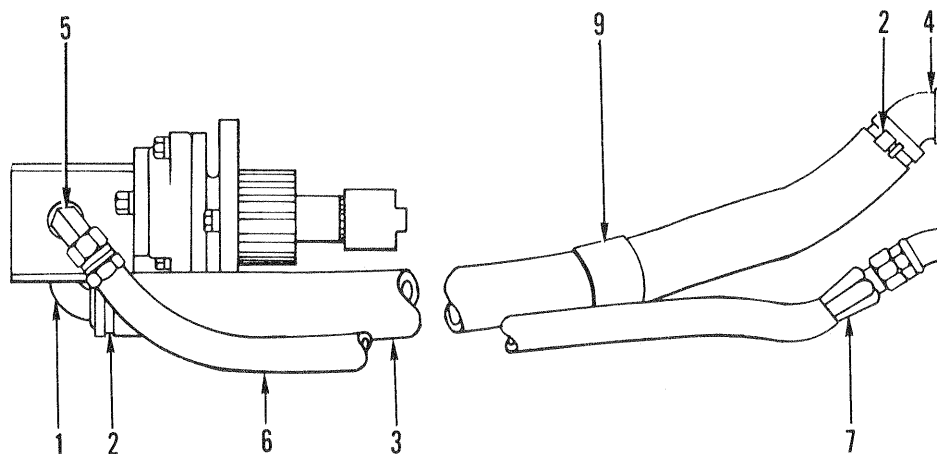
For 977 Traxcavators Serial No. 53A1 & up



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	97950A	Pump and Pulley Assembly	1
1	97951A	Pump—Hydraulic	1
2	16634	Capscrew— $\frac{3}{8}$ UNF x 1	2
	15156	Lockwasher— $\frac{3}{8}$	2
3	97952	Gasket	1
4	97953	Bracket—Pump Drive	1
5	97955	Seal—Oil	1
6	97959	Gasket	1
7	18460	Capscrew— $\frac{1}{4}$ UNC x $\frac{3}{4}$	4
	15154	Lockwasher— $\frac{1}{4}$	4
8	97960	Cover—Pulley	1
9	15078	Nut— $\frac{1}{2}$ UNF	1
	15213	Cotter— $\frac{3}{32}$ x 1	1
10	15135	Washer— $\frac{1}{2}$	1
11	97956A	Pulley Assembly	1
12	97958	Sleeve—Wear	1
13	45303	Bearing—Ball	1
14	97954	Washer—Special	1
15	15306	Fitting—Pipe Plug, $\frac{1}{8}$	1
16	97964	Bolt—Adjusting	1
	15015	Nut—Jam, $\frac{5}{8}$ UNC	1
17	15135	Washer	3
18	18588	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	3
	15158	Lockwasher— $\frac{1}{2}$	3

PUMP AND HOSES

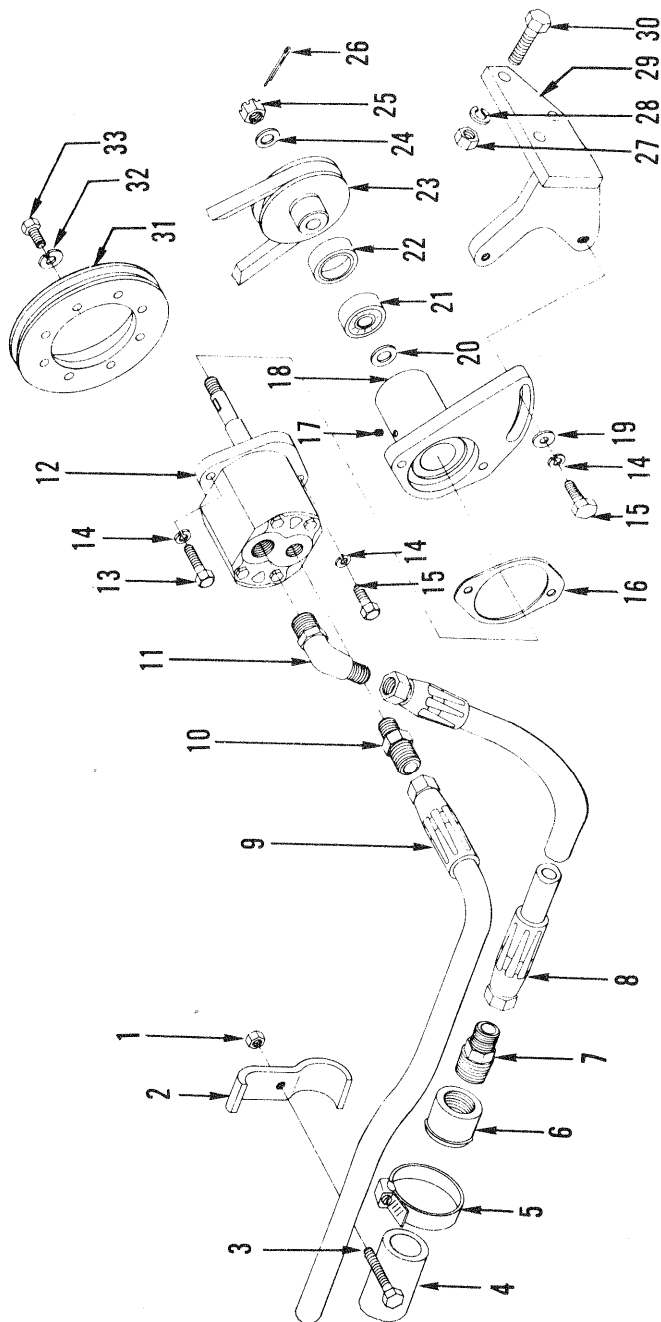
For 977K Traxxcavator Serial No. 46H1 & Up



Ref. No.	Hyster Part No.	NAME OF PART	Q. Re.
1	{ 16562	Elbow	
	{ 156866	Tube Assembly	
2	119236	Clamp—Hose	
3	156869	Hose	
4	154956	Elbow—Hose, 45°	
5	16560	Elbow	
6	156865	Hose—Hydraulic	
7	14681	Connector	
8	19512	Elbow—45°	
	{ 156870	Bracket—Hose	
	{ 156871	Bracket—Hose	
9	{ 115922	Clamp—Hose	
	{ 18535	Capscrew— $\frac{3}{8}$ UNC x $\frac{5}{8}$	
	{ 15056	Nut— $\frac{3}{8}$ UNC	
	{ 15156	Lockwasher— $\frac{3}{8}$	

PUMP AND HOSES

For D5 Tractors Serial No. 81H1 & Up — 83H1 & Up



PUMP AND HOSES

For D5 Tractors Serial No. 81H1 & Up — 83H1 & Up

Ref. No.	Hyster Part No.	NAME OF PART	C R
1	15115	Nut—Lock, $\frac{3}{8}$ UNC	
2	154955	Clamp	
3	18537	Capscrew— $\frac{3}{8}$ UNC x $2\frac{1}{2}$	
4	* 154964	Hose	
	† 154965	Hose	
	‡ 154963	Hose—Hydraulic	
5	119236	Clamp—Hose	
6	*† 155297	Tube	
7	*† 17346	Connector	
8	*† 154954	Hose—Hydraulic	
9	155298	Hose—Hydraulic	
10	154952	Elbow—45°	
	16484	“O” Ring	
	*† 16570	Elbow—45°	
11	*† 16587	Nut—Lock	
	*† 16485	“O” Ring	
	‡ 154953	Nipple	
	‡ 16485	“O” Ring	
12	145072	Pump and Drive Assembly	
	155296	Pump—Hydraulic	
13	16816	Capscrew— $\frac{3}{8}$ UNC x $1\frac{3}{4}$	
14	15156	Lockwasher— $\frac{3}{8}$	
15	16828	Capscrew— $\frac{3}{8}$ UNC x $1\frac{1}{4}$	
16	97952	Gasket	
17	15306	Plug— $\frac{1}{8}$ Pipe	
18	145077	Carrier—Bearing	
19	15134	Washer	
20	97954	Washer—Special	
21	43303	Bearing—Ball	
22	97955	Oil Seal	
23	156081	Pulley—Pump	
24	15135	Washer— $\frac{1}{2}$	
25	15078	Nut, Slotted, $\frac{1}{2}$ UNF	
26	15213	Cotter— $\frac{3}{32}$ x 1	
27	15058	Nut— $\frac{1}{2}$ UNC	
28	15158	Lockwasher— $\frac{1}{2}$	
29	145073	Bracket—Pump	
30	16813	Capscrew— $\frac{1}{2}$ UNC x 2	
31	145070	Pulley—Crankshaft	
32	15156	Lockwasher— $\frac{3}{8}$	
33	16805	Capscrew— $\frac{3}{8}$ UNC x 1	
34	154951	V-Belt	

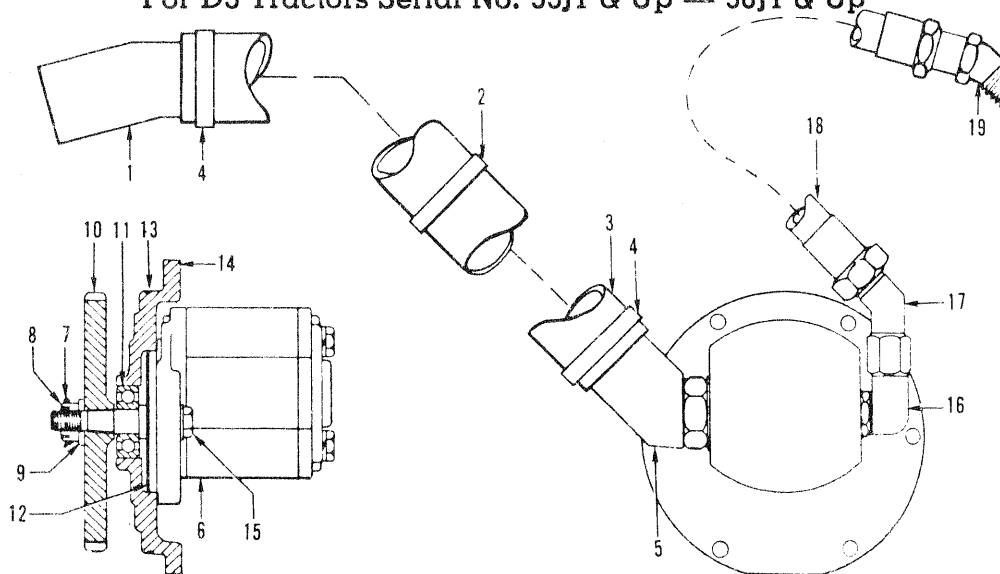
*For Gas Start Direct Drive Tractors.

†For Gas Start Power Shift Tractors.

‡For Electric Start Tractors.

PUMP AND HOSES

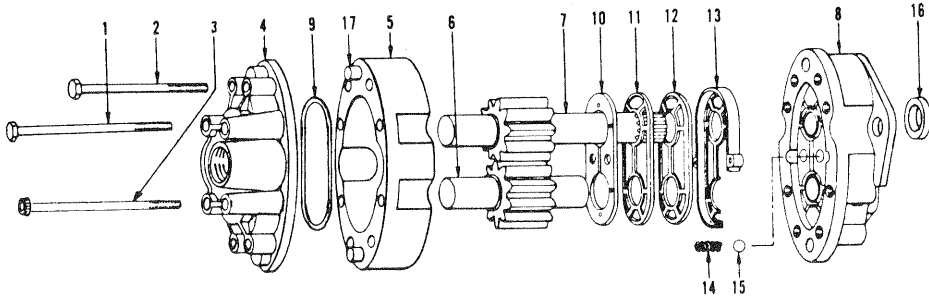
For D5 Tractors Serial No. 95J1 & Up — 96J1 & Up



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	154956	Nipple—Hose, 45 Deg.	1
2	154955	Clamp—Hose, Locating	1
	18537	Capscrew—H.T., $\frac{3}{8}$ UNC x $2\frac{1}{2}$..	1
	15115	Lockwasher— $\frac{3}{8}$	1
3	161840	Hose	1
4	119236	Clamp—Hose	2
5	161841	Nipple—Hose, 45 Deg. Special ..	1
	16487	O-Ring	1
	16589	Locknut	1
6	.....	Pump—Hydraulic, See Page F12 ..	1
7	15234	Cotter— $\frac{5}{32}$ x $1\frac{1}{4}$	1
8	15078	Nut—Slotted, $\frac{1}{2}$ UNF	1
9	15135	Washer— $\frac{1}{2}$	1
10	161838	Gear—Pump Drive	1
11	43302	Bearing—Ball	1
12	132044	Gasket	1
13	15896	O-Ring	1
14	161837	Adapter—Pump Mounting	1
15	18877	Capscrew—Locking, $\frac{3}{8}$ UNC x $1 \times 1\frac{1}{4}$..	2
	15134	Washer— $\frac{3}{8}$	2
16	16560	Elbow	1
	16485	O-Ring	1
	16587	Locknut	1
17	17039	Elbow—45 Deg.	1
18	161842	Hose	1
19	17040	Elbow—45 Deg.	1

PUMP

For D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

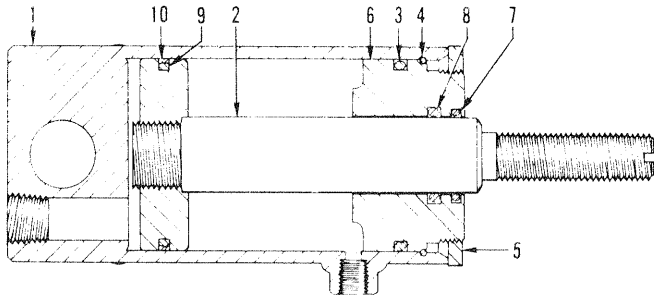
First used on Serial No. B82L-2166

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	173108	Pump	1
	132596	Capscrew—3"	2
2	160758	Capscrew—3¼	2
3	175145	Screw—Lock	2
4	175153	Cover—Rear	1
5	175155	Body	1
6	175154	Gear—Idler	1
7	160755	Gear—Drive	1
8	*170883	Cover—Front	1
9	*160760	O-Ring	1
10	*160761	Diaphragm	1
11	*160762	Gasket—Backup	1
12	*132715	Gasket—Protector	1
13	*160759	Diaphragm—Seal	1
14	* 68964	Spring	2
15	*132718	Ball—Steel	2
16	160756	Seal—Shaft	1
17	165620	Pin—Dowel	2
	171252	Kit, Seal Repair	2

**Included in Repair Kit 171252.*

CYLINDER ASSEMBLY

First used on Serial No. B82A-1538, B82L-2387



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	165200	Cylinder	1
1	.....	Shell	1
2	165450	Piston and Rod	1
3	* 57664	O-Ring	1
4	*165615	Lock Ring	1
5	*165613	Nut—Bearing	1
6	*165612	Bearing	1
7	*165616	Seal	1
8	* 61056	O-Ring	1
9	*162074	O-Ring	1
10	*162076	Ring—Piston	1

**Included in Seal Kit 165614.*

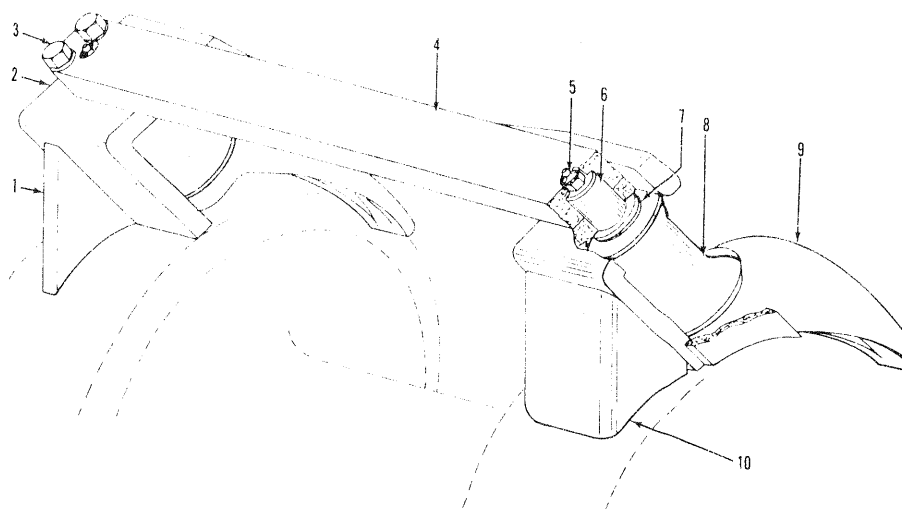
Section G

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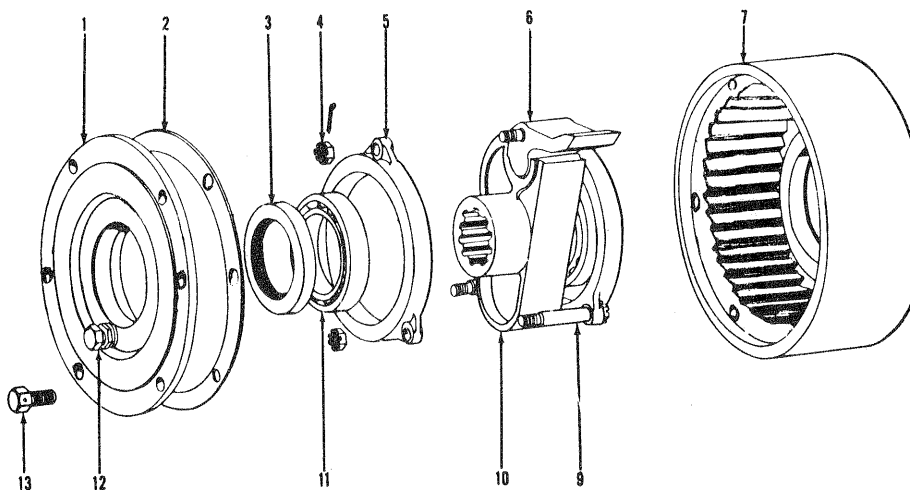
CABLE GUIDE ROLL GROUP



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	95896A	Cable Guide Roll Assembly	1
1	95892	Gusset	1
2	{ 95883W	Bracket—R. H.	1
	{ 95891	Gusset	1
3	{ 16645	Capscrew— $\frac{5}{8}$ UNF x $2\frac{1}{4}$	4
	{ 15160	Lockwasher— $\frac{5}{8}$	4
4	95898W	Guard—Cable	1
5	16006	Grease Fitting	2
6	95669	Pin—Roller	2
7	95668	Washer	6
8	{ 95666A	Roller Assembly	2
	{ 35135	Bushing	4
9	95879W	Bracket—L. H.	1
10	95890	Gusset	1

AUTOMATIC BRAKE

For Direct Drive Winches



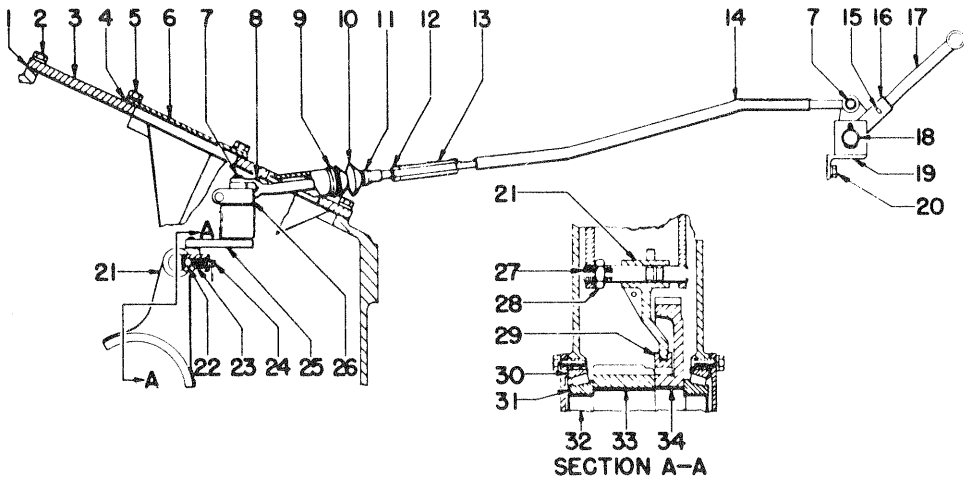
Ref. No.	Hyster Part No.	NAME OF PART	Qt Re
	96037A	Automatic Brake Assembly	1
1	59387	Cover—Side	1
2	* 59396	Gasket—Cover	1
3	59395	Oil Seal	2
4	{ 12430	Nut—5/16 UNF	6
	{ 15201	Cotter—1/16	6
5	92945	Ring—Drag	2
6	59393	Pawl	1
7	59389A	Wheel—Brake	1
9	94599	Link—Shoulder	3
10	96039	Hub	1
11	44313	Bearing—Ball	2
12	46187	Plug—Vent	1
13	{ 27259	Capscrew—Drilled Head	6
	{	Lockwire	1

*Included in Gasket Kit 147519.

FREE-SPOOLING GROUP

For D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

Last used on Serial No. B82L-2154, C39L-2070 R2



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
1	95958	Gasket	1	
2	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	4	R2
	15158	Lockwasher— $\frac{1}{2}$	4	
3	123412	Cover	1	
4	96061	Gasket	1	
5	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	4	R2
	15158	Lockwasher— $\frac{1}{2}$	4	
	96060	Cover	1	
6	15319	Fill-Plug	1	R2
	21420	Vent-Plug	1	R2
7	153	Pin	2	
	15223	Cotter— $\frac{1}{8}$	2	
8	123414	Link Assembly	1	
9	127045	Clamp—Hose	1	R2
10	96062	Sleeve	1	

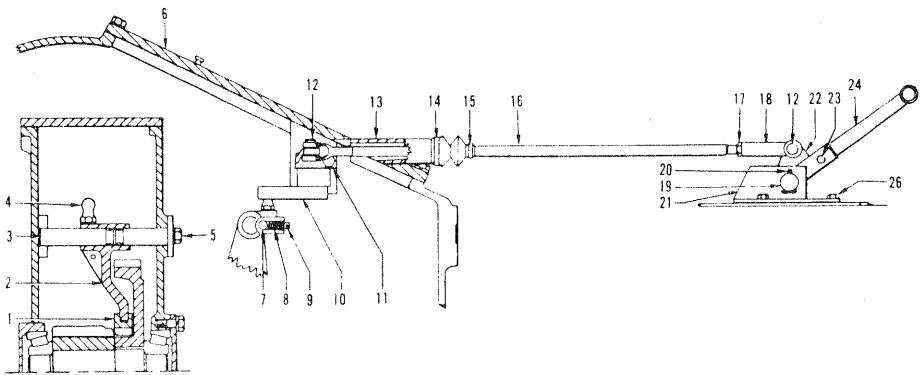
FREE-SPOOLING GROUP

For D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

Last used on Serial No. B82L-2154, C39L-2070

Ref. No.	Hyster Part No.	NAME OF PART	Qty Req.
11	166857	Clamp—Hose	1
12	15028	Nut—Jam, 1/2 UNF	1
13	93877	Turnbuckle	1
14	123425	Link Assembly	1
15	15244	Cotter—3/16 x 1 1/2	3
	* 18468	Capscrew—1/2 UNC x 1 1/2	1
	* 15154	Lockwasher—1/2	1
	* 15054	Nut—1/4	1
16	123418	Crank	1
	*169608	Crank	1
17	96759W	Lever	1
	*169605	Lever	1
18	123419	Pin	1
19	145434	Bracket—Lever	1
20	16805	Capscrew—3/8 UNC x 1	2
	15156	Lockwasher—3/8	2
21	123457	Shifter Assembly	1
	92867	Pin	1
22	6348	Ball—1/2, Steel	1
23	96375	Spring	1
24	46578	Plug—Drilled Head	1
	.....	Lockwire	1
25	92904A	Crankshaft	1
	92907A	Crank Assembly	1
26	15547	Capscrew—1/2 UNC x 1 1/2	1
	15158	Lockwasher—1/2	1
27	96057	Shaft—Shifter	1
28	15036	Nut—Jam, 1" UNF	1
	136409	Lockwasher—1" Shakeproof	1
29	96047	Clutch—Dental	1
30	30059	Cup—Bearing	2
31	30058	Cone—Bearing	2
32	96042	Shaft—Intermediate Gear	1
33	96043A	Gear Assembly	1
	96044	Bushing	1
34	96046	Gear (Standard Speed Transmission)	1
	96747	Gear (Lo-Speed Transmission)	1
	97554	Strip (For Supporting Tractor Rear Cross Sheet) (Not illustrated)	2

*First used on Serial No. C39S-1507, B82S-1525.

FREE-SPOOLING GROUP**For D6 Tractor Serial No. 74A1 & Up and 76A1 & Up***First used on Serial No. B82L-2155, C39L-2071*

FREE-SPOOLING GROUP

For D6 Tractor Serial No. 74A1 & Up and 76A1 & Up

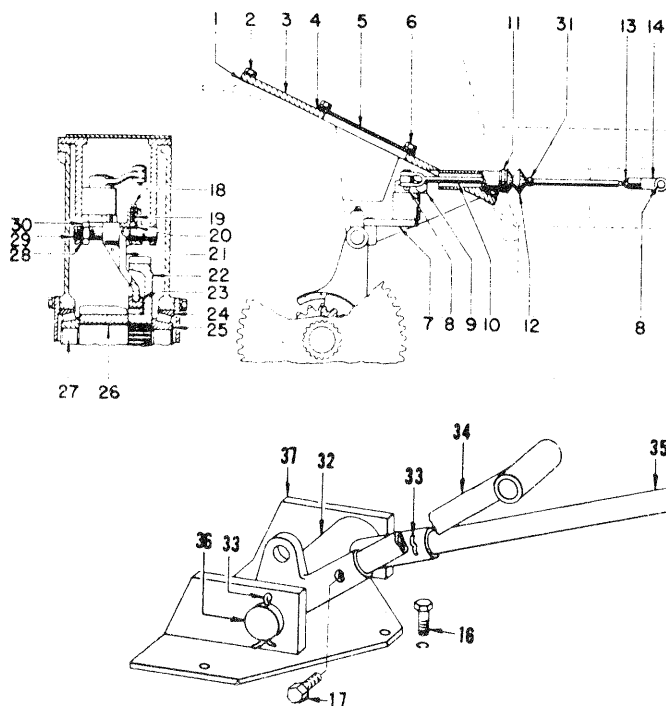
First used on Serial No. B82L-2155, C39L-2071

Ref. No.	Hyster Part No.	NAME OF PART	Qt Re
1	151588	Clutch—Dental	1
2	151580	Shifter	1
3	151581	Shaft—Shifter	1
4	{ 151583	Ball Stud	1
	{ 15906	Lockwasher— $\frac{5}{8}$	1
5	{ 178403	Capscrew—Ht. $\frac{1}{2}$ UNC x 1	2
	{ 15158	Lockwasher— $\frac{1}{2}$	2
6	151590	Cover—Transmission	1
7	6348	Ball—Detent	1
8	96375	Spring—Detent Ball	1
9	{ 46578	Plug—Drilled Head	1
	{	Lockwire	1
10	151584	Crankshaft	1
	{ 92907A	Crank	1
11	{ 15547	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	1
	{ 15158	Lockwasher— $\frac{1}{2}$	1
12	{ 153	Pin—Rod End	2
	{ 15223	Cotter— $\frac{1}{8}$ x 1	2
13	96062	Sleeve	1
14	127045	Clamp—Hose	1
15	166857	Clamp—Hose	1
16	96756W	Link	1
17	15028	Nut—Jam, $\frac{1}{2}$ UNF	1
18	152	Rod End	1
19	31671	Pin	1
20	15244	Cotter— $\frac{3}{16}$ x $1\frac{1}{2}$	2
21	96750	Bracket—Handlever	1
22	169609	Crank	1
	{ 18468	Capscrew—Ht. $\frac{1}{4}$ UNC x $1\frac{1}{2}$	1
23	{ 15154	Lockwasher— $\frac{1}{4}$	1
	{ 15054	Nut— $\frac{1}{4}$ UNC	1
24	{ 169605	Handlever—For 8U1 & Up and 9U1 & Up	1
	{ 169603	Handlever—For 37A1 & Up and 44A1 & Up	1
26	{ 16805	Capscrew—Ht., $\frac{3}{8}$ UNC x 1	3
	{ 15156	Lockwasher— $\frac{3}{8}$	3

FREE-SPOOLING GROUP

For D6 Tractors Serial No. 8U1 — 9U1 & Up — 37A1 — 44A1 & Up

Last used on Serial No. B82L-2154, C39L-2070



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95958	Gasket	1
2	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{4}$	4
	15158	Lockwasher— $\frac{1}{2}$	4
3	96048W	Cover	1
4	96061	Gasket	1
5	96060	Plate—Cover	1
6	178402	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	4
	15158	Lockwasher— $\frac{1}{2}$	4
7	92904A	Crankshaft	1
8	153	Pin—Rod End	2
	15223	Cotter— $\frac{1}{8}$ x 1	2
	92907A	Crank	1
9	15547	Capscrew— $\frac{1}{2}$ UNC x $1\frac{1}{2}$	1
	15158	Lockwasher— $\frac{1}{2}$	1
10	96756W	Link Assembly	1

FREE-SPOOLING GROUP

For D6 Tractors Serial No. 8U1 — 9U1 & Up — 37A1 — 44A1 & Up

Last used on Serial No. B82L-2154, C39L-2070

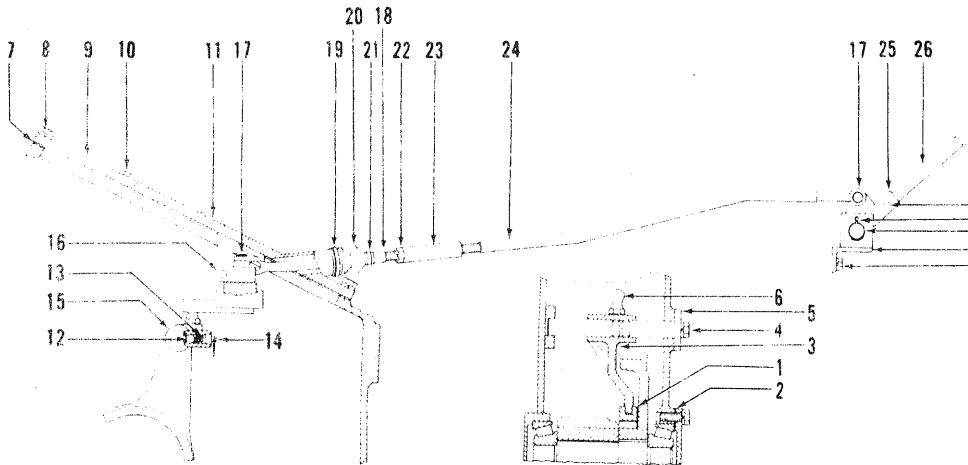
Ref. No.	Hyster Part No.	NAME OF PART	Qty Req
11	127045	Clamp—Hose	1
12	96062	Sleeve	1
13	15028	Nut—Jam, ½ UNF	1
14	152	Rod End—½ UNF	1
16	{ 15156	Lockwasher—¾	4
	{ 16805	Capscrew—¾ UNC x 1	4
17	{ § 18468	Capscrew—¼ UNC x ½	1
	{ § 15154	Lockwasher—¼	1
	{ § 15054	Nut	1
18	{ 46578	Plug—Drilled Head	1
	{	Lockwire—18 ga. x 13	1
19	96375	Spring	1
20	6348	Steel Ball—½ dia.	1
21	{ 96055A	Shifter Assembly	1
	{ 92867	Pin	1
22	{ 96046	Gear (Std. Transmission)	1
	{ 96747	Gear (Lo-Speed Transmission)	1
23	96047	Clutch—Dental	1
24	30059	Cup—Bearing	2
25	30058	Cone—Bearing	2
26	{ 96043A	Gear Assembly	1
	{ 96044	Bushing	1
27	96042	Shaft—Intermediate	1
28	136409	Lockwasher—1"	1
29	96057	Shaft—Free Spool Shifter	1
30	15036	Nut—Jam, 1" UNF	1
31	166857	Crank	1
32	{ 96754W	Crank	1
	{ §169609	Crank	1
33	15244	Cotter—3/16 x 1½	3
34	{ 96759W	Lever (D6 Tractors S. N. 8U1—9U1 & Up)	1
	{ §169605	Lever	1
35	{ 96761W	Lever (D6 Tractors S. N. 37A1—44A1 & Up)	1
	{ §169608	Lever	1
36	{ 31671	Pin	1
	{ §123419	Pin	1
37	96750W	Bracket—Lever	1

§First used on Serial No. C39S-1507, B82S-1525.

FREE-SPOOLING GROUP

**For D6 Tractor Serial No. 10K1 & Up, 74A1 & Up, 76A1 & Up,
99J1 & Up**

First used on Serial No. B82L-2155, C39L-2071



FREE-SPOOLING GROUP

For D6 Tractor Serial No. 10K1 & Up, 74A1 & Up, 76A1 & Up,
99J1 & Up

First used on Serial No. B82L-2155, C39L-2071

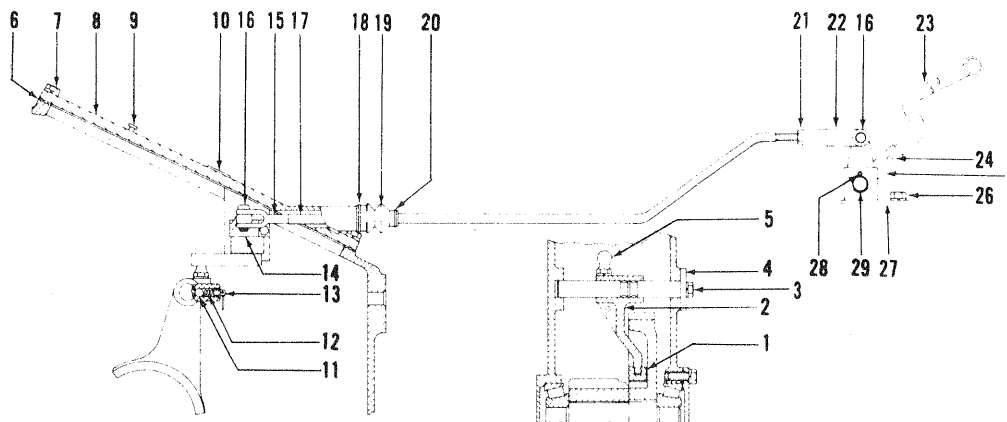
Ref. No.	Hyster Part No.	NAME OF PART	Q Re
1	151588	Clutch—Dental	1
2	{ 149541	Shim—.005	2
	{ 149542	Shim—.007	2
	{ 149543	Shim—.020	1
3	151580	Shifter	1
4	{ 178403	Capscrew— $\frac{1}{2}$ UNC x 1	2
	{ 15158	Lockwasher— $\frac{1}{2}$	2
5	151581	Shaft—Shifter	1
6	{ 151583	Ball—Stud	1
	{ 15906	Lockwasher— $\frac{5}{8}$	1
7	95958	Gasket	1
8	{ 178403	Capscrew— $\frac{1}{2}$ UNC x 1	8
	{ 15158	Lockwasher— $\frac{1}{2}$	8
9	151575	Cover	1
10	21420	Plug—Vent	1
11	15319	Fitting—Plug	1
12	6348	Ball— $\frac{1}{2}$	1
13	96375	Spring	1
14	{ 46578	Plug	1
	{ 67355	Lockwire	1
15	151584	Crankshaft	1
16	92907A	Crank	1
17	{ 153	Pin—Rod End	1
	{ 15223	Cotter— $\frac{1}{8}$ x 1	1
18	123414	Link	1
19	127045	Hose Clamp	1
20	96062	Sleeve	1
21	166857	Hose Clamp	1
22	15028	Nut—Jam, $\frac{1}{2}$ UNF	1
23	93877	Turnbuckle	1
24	123425	Link	1
25	169608	Crank	1
26	169605	Lever	1
27	{ 18468	Capscrew— $\frac{1}{4}$ UNC x $1\frac{1}{2}$	1
	{ 15154	Lockwasher— $\frac{1}{4}$	1
	{ 15054	Nut— $\frac{1}{4}$ UNC	1
28	15244	Cotter— $\frac{3}{16}$ x $1\frac{1}{2}$	2
29	123419	Pin	1
30	{ 123416	Bracket Lever	1
	{ *145434	Bracket Lever	1
	{ §155245	Bracket Lever	1
31	{ 16805	Capscrew	2
	{ 15156	Lockwasher— $\frac{3}{8}$	2

*First used on Serial No. 76A-2893.

§First used on Serial No. 74A-1753.

FREE-SPOOLING GROUP

For D5 Tractors Serial No. 81H1 — 84H1 & Up and
93J1 — 96J1 & Up

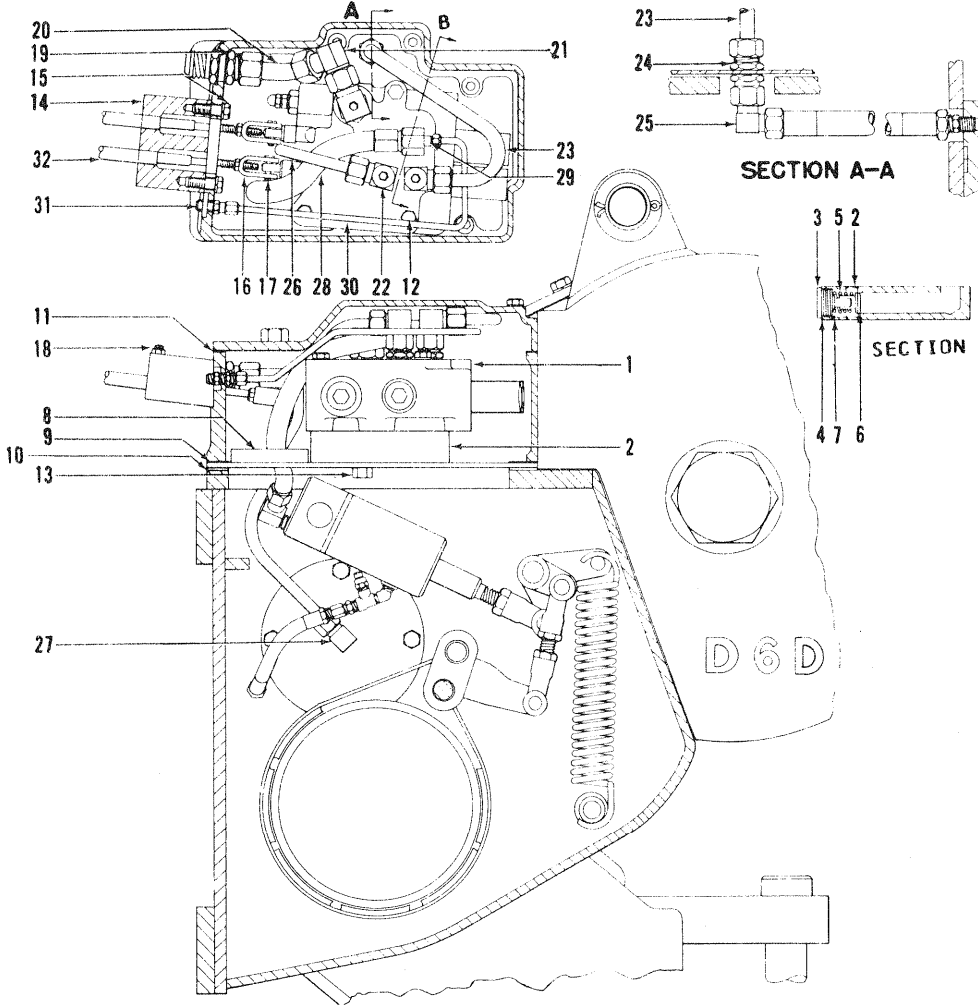


FREE-SPOOLING GROUP

For D5 Tractors Serial No. 81H1 — 84H1 & Up and
93J1 — 96J1 & Up

Ref. No.	Hyster Part No.	NAME OF PART	Qty Req.
1	151588	Clutch—Dental	1
2	151580	Shifter	1
3	{ 178403	Capscrew—Ht., $\frac{1}{2}$ UNC x 1	2
	{ 15158	Lockwasher— $\frac{1}{2}$	2
4	151581	Shaft—Shifter	1
5	{ 151583	Ball Stud	1
	{ 15906	Lockwasher— $\frac{5}{8}$	1
6	95958	Gasket	1
7	{ 178403	Capscrew—Ht., $\frac{1}{2}$ UNC x 1	8
	{ 15158	Lockwasher— $\frac{1}{2}$	8
8	151590	Cover	1
9	21420	Plug—Vent	1
10	15319	Fitting—Plug	1
11	6348	Ball— $\frac{1}{2}$	1
12	96375	Spring	1
13	{ 46578	Plug	1
	{	Lockwire—18 Ga. x 12	1
14	151584	Crankshaft	1
15	92907	Crank	1
16	{ 15223	Cotter— $\frac{1}{8}$ x 1	2
	{ 153	Pin—Rod End	2
17	159496	Link	1
18	127045	Hose Clamp	1
19	96062	Sleeve	1
20	166587	Hose Clamp	1
21	15028	Nut—Jam, $\frac{1}{2}$ UNF	1
22	152	Rod End	1
23	159494	Lever	1
24	{ 18468	Capscrew—Ht., $\frac{1}{4}$ UNC x $1\frac{1}{2}$	1
	{ 15154	Lockwasher— $\frac{1}{4}$	1
	{ 15054	Nut— $\frac{1}{4}$ UNC	1
25	159490	Crank	1
26	{ 15156	Lockwasher— $\frac{3}{8}$	2
	{ 16828	Capscrew—Ht., $\frac{3}{8}$ UNC x $1\frac{1}{4}$	2
27	159487	Base	1
28	15244	Cotter— $\frac{3}{16}$ x $1\frac{1}{2}$	2
29	159493	Pin	1

HYDRAULIC SYSTEM



A—For D6 Tractor Serial No. 74A1—76A1 & Up, 99J1 & Up, 10K1 & Up.

B—For D6 Tractor Serial No. 81H1—84H1 & Up.

C—For D5 Tractor Serial No. 95J1 & Up, 96J1 & Up, 977 Traxcavator,
Serial No. 46H1 & Up, 11K1 & Up.

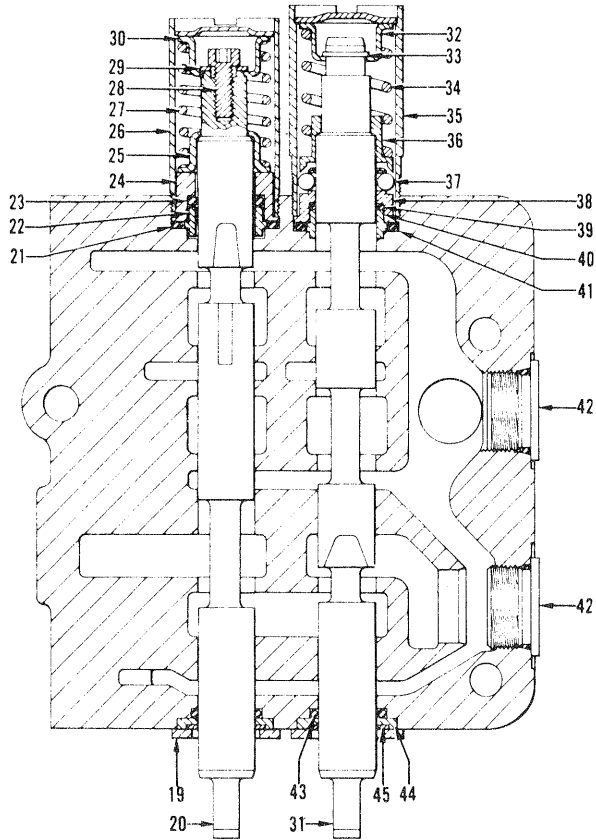
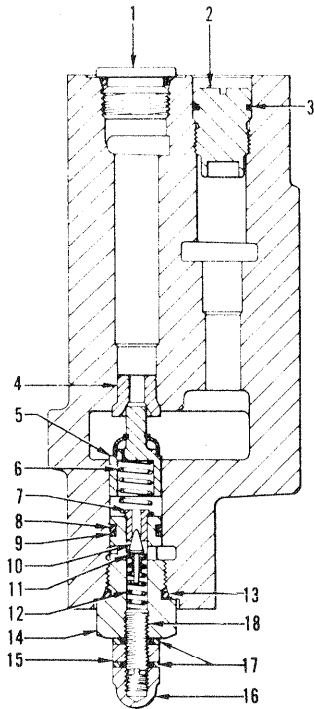
Ref. No.	Hyster Part No.	NAME OF PART	Quantity Req		
			A	B	C
1	.....	Valve, See Page G15	1	1	1
2	167245	Valve—Support	1	1	1
3	169731	Plug	1	1	1
4	16982	O-Ring	1	1	1
5	168733	Spring	1	1	1
6	234648	Spool	1	1	1
7	39371	O-Ring	1	1	1
8	167240	Plate	1	1	1
9	167238	Gasket	1	1	1
10	89058	Gasket	1	1	1
11	89060	Gasket	1	1	1

HYSTER COMPANY
PORTLAND, OREGON

HYDRAULIC SYSTEM

Ref. No.	Hyster Part No	NAME OF PART	Quantity Rec		
			A	B	C
12	18543	Capscrew— $\frac{3}{8}$ UNC x $\frac{3}{4}$	3	3	3
	15156	Lockwasher— $\frac{3}{8}$	6	6	6
13	16597	Capscrew— $\frac{3}{8}$ UNC x $\frac{3}{4}$	3	3	3
14	167239	Block	1	1	1
15	16828	Capcrew— $\frac{3}{8}$ UNC x $1\frac{1}{4}$	2	2	2
	15156	Lockwasher— $\frac{3}{8}$	2	2	2
16	165659	Rod End	2	2	2
17	133683	Pin—Rod End	2	2	2
	15211	Pin—Cotter, 3.32 x $\frac{1}{2}$	2	2	2
18	15001	Nut—Jam, 5.16	2	2	2
	18853	Screw—5.16 UNC x $1\frac{1}{2}$	2	2	2
19	16450	Fitting	1	1	1
20	167243	Tube	1	1	1
	83857	Elbow	1	1	1
21	167244	Elbow—Special	1	1	1
	14349	Plug	1	1	1
	16909	Connector	1	1	1
22	165662	Elbow	1	1	1
	14349	Plug	1	1	1
23	167249	Tube	1	1	1
24	16448	Fitting	1	1	1
25	16989	Elbow	1	1	1
26	167250	Tube	1	1	1
27	17309	Elbow	1	1	1
28	168735	Hose	1	1	1
29	14668	Connector	1	1	1
30	167252	Tube	1	1	1
31	16445	Fitting	1	1	1
32	167225	Cable—Push Pull	2	2	2
	165492	Cable—Push Pull	2	2	2
	167260	Fitting	1	1	1
	167261	Nut	1	1	1
	17040	Elbow	1	1	1
	172761	Decal—Operating Instructions	1	1	1

HYDRAULIC CONTROL VALVE

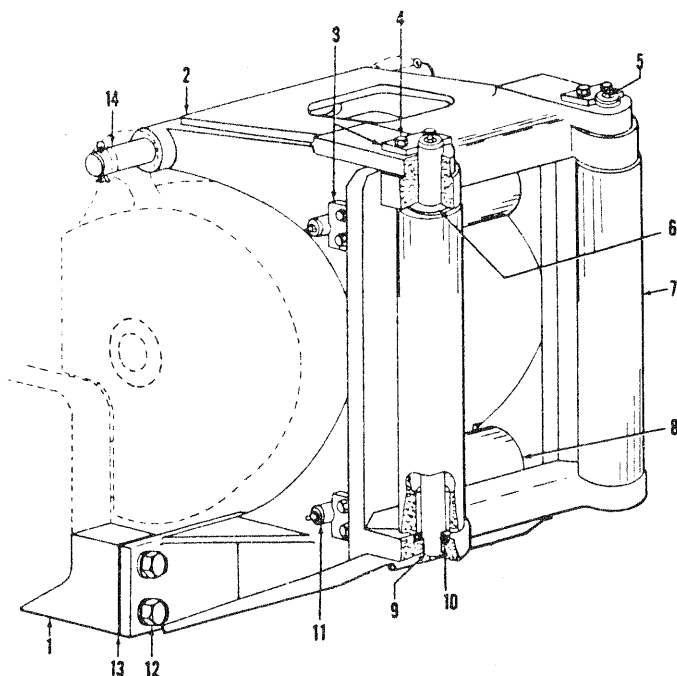


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	168732	Valve—Control	1
1	233693	Plug	4
	16485	O-Ring	1
2	233492	Cap	2
3	118389	O-Ring	2
4	166917	Valve—Relief	1
	170988	Seat	1
5	170989	Poppet	1
6	170993	Spring	1
7	166919	Seat—Pilot	1
8	159859	O-Ring	1
9	159858	Ring—Back-up	1
10	170995	Plunger—Pilot	1
11	170996	Sleeve	1
12	166920	Spring—Pilot	1
13	16484	O-Ring	1
14	170994	Cap	1
15	233502	Nut—Jam	1
16	233503	Nut—Acorn	1

HYDRAULIC CONTROL VALVE

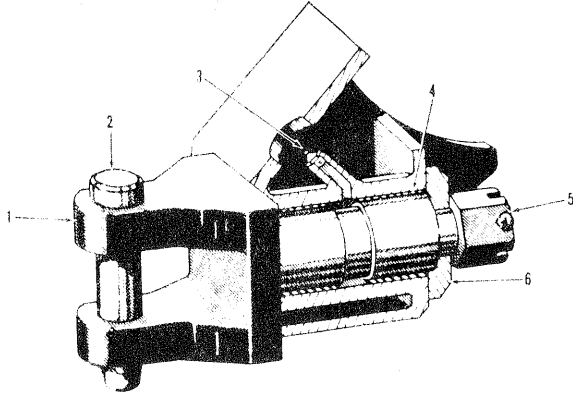
Ref. No.	Hyster Part No.	NAME OF PART	Q R
17	234823	Washer—Seal	
18	170997	Setscrew	
19	233508	Plate—Retainer	
	233696	Screw	
20	166913	Spool—Modulating	
21	166912	O-Ring	
22	166909	Retainer—Seal	
23	60836	O-Ring	
24	166910	Retainer—Seal	
25	166905	Retainer—Spring	
26	166906	Cap	
27	166911	Spring—Spool	
28	166914	Screw	
29	166922	Washer	
30	166904	Retainer—Spring	
31	170981	Spool—Selector	
32	166904	Retainer—Spring	
33	233495	Snap Ring	
34	166911	Spring—Spool	
35	170985	Cap	
36	170983	Spacer—Selector	
37	170987	Ball—Steel	
38	170984	Retainer—Balls	
39	60836	O-Ring	
40	170986	Retainer—Seal	
41	166912	O-Ring	
42	163660	Plug	
	16486	O-Ring	
43	60836	O-Ring	
44	233506	Retainer—Seal	
45	233505	Wiper	
	166912	O-Ring—Valve To Support	

FAIRLEAD ASSEMBLY



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	152993	Fairlead Assembly	1
1	143292	Bracket	2
2	152995	Frame	1
3	93166	Keeper	4
4	15514	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{4}$	4
	15511	Capscrew— $\frac{1}{2}$ UNF x 1	4
	15158	Lockwasher— $\frac{1}{2}$	8
5	16001	Grease Fitting	8
6	33394	Washer	2
7	36206A	Roller Assembly	2
	2570	Bushing	4
8	92212A	Roller Assembly	2
	59419	Bushing	4
	92720	Washer	4
9	96087	Shaft—Vertical	2
10	230336	Bearing—Thrust	2
11	96086	Shaft	2
12	15598	Capscrew—1" UNF x $2\frac{1}{2}$	4
	15166	Lockwasher—1"	4
13	93878	Shim	6
14	95981	Rod—Tie	1
	15272	Cotter— $\frac{3}{8}$ x 3	2

SWIVELING DRAWBAR

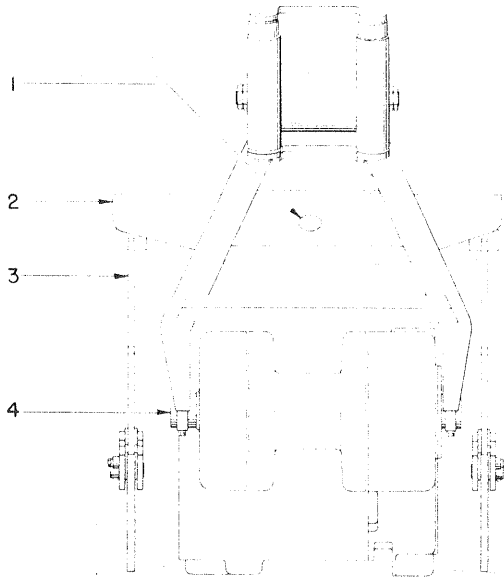


Ref. No.	Hyster Part No.	NAME OF PART	C R
1	96542	Drawbar	
2	94369	Pin—Drawbar	
	15273	Cotter— $\frac{3}{8}$ x $2\frac{1}{2}$	
3	16002	Fitting—Lubrication	
4	92671	Bushing	
5	15041	Nut—Slotted, 2 $4\frac{1}{2}$ NC	
	15274	Cotter— $\frac{3}{8}$ x $3\frac{1}{2}$	
6	96541	Bar	

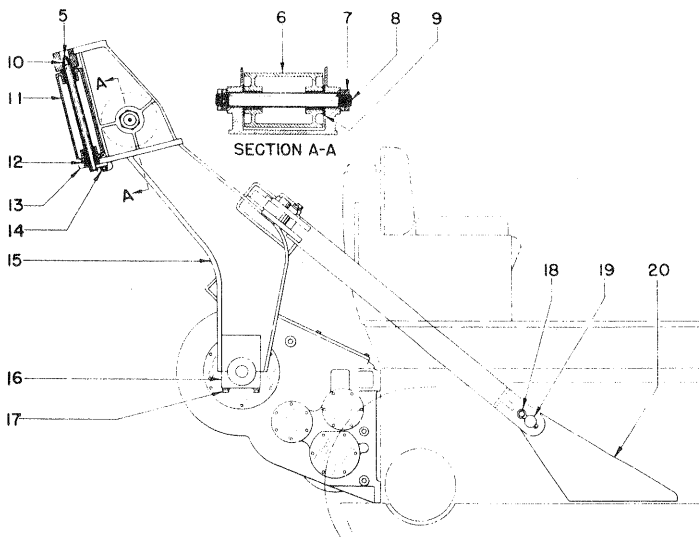
INTEGRAL ARCH

For D6 Tractors Serial No. 8U1 — 9U1 & Up — 37A1 — 44A1 & Up

Rear View



Side View



INTEGRAL ARCH

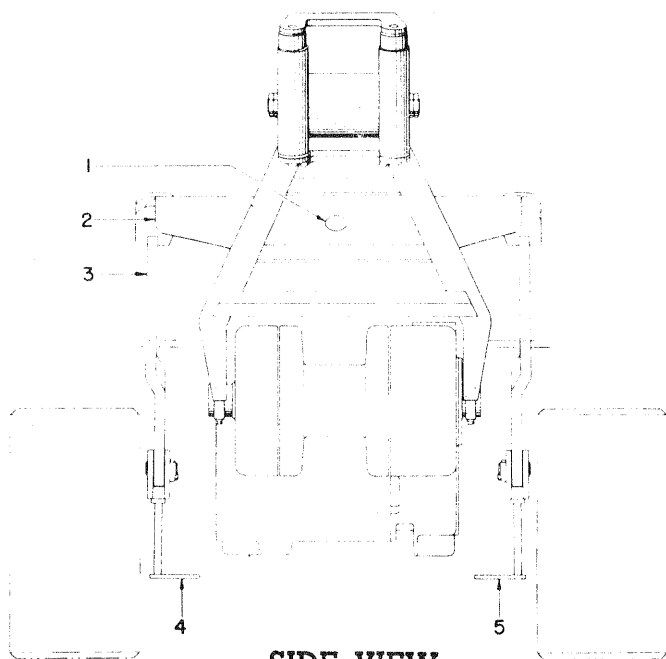
For D6 Tractors Serial No. 8U1 — 9U1 & Up — 37A1 — 44A1 & Up

Ref. No.	Hyster Part No.	NAME OF PART	Qty Reqd
1	84866	Pin	1
	84861A	Equalizer Assembly	1
2	84865	Bushing—Center	1
	84856	Bushing—Side	2
3	84857W	Support—Bar	2
4	84869	Nut—Special	2
5	16002	Fitting—Lubrication	4
6	2816A	Roller Assembly—Horizontal	1
	2817	Bushing	2
7	7043	Nut—2-12 UN	4
8	2818B	Shaft	1
9	2821	Washer	2
10	59423	Pin	2
11	59846A	Roller Assembly—Vertical	2
	59419	Bushing	4
12	35843	Washer	2
13	84837W	Frame—Fairlead	1
	31541	Keeper	2
14	16804	Capscrew— $\frac{5}{8}$ UNF x $1\frac{1}{4}$	2
	15160	Lockwasher— $\frac{5}{8}$	2
15	84823A	Frame—Arch	1
16	84830A	Block Assembly	2
17	18630	Capscrew— $\frac{3}{4}$ UNF x $3\frac{3}{4}$	4
	15162	Lockwasher— $\frac{3}{4}$	4
	80926	Anchor	5
18	16823	Capscrew— $\frac{5}{8}$ UNF x $1\frac{1}{2}$	5
	15160	Lockwasher— $\frac{5}{8}$	5
19	84867	Pin	4
20	84852A	Support Assembly	2
	84856	Bushing	2

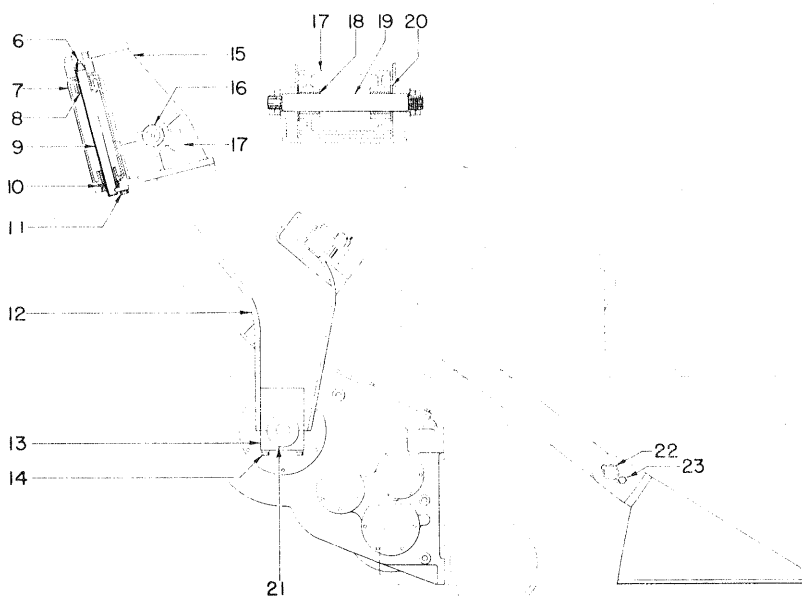
INTEGRAL ARCH

For D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

REAR VIEW



SIDE VIEW

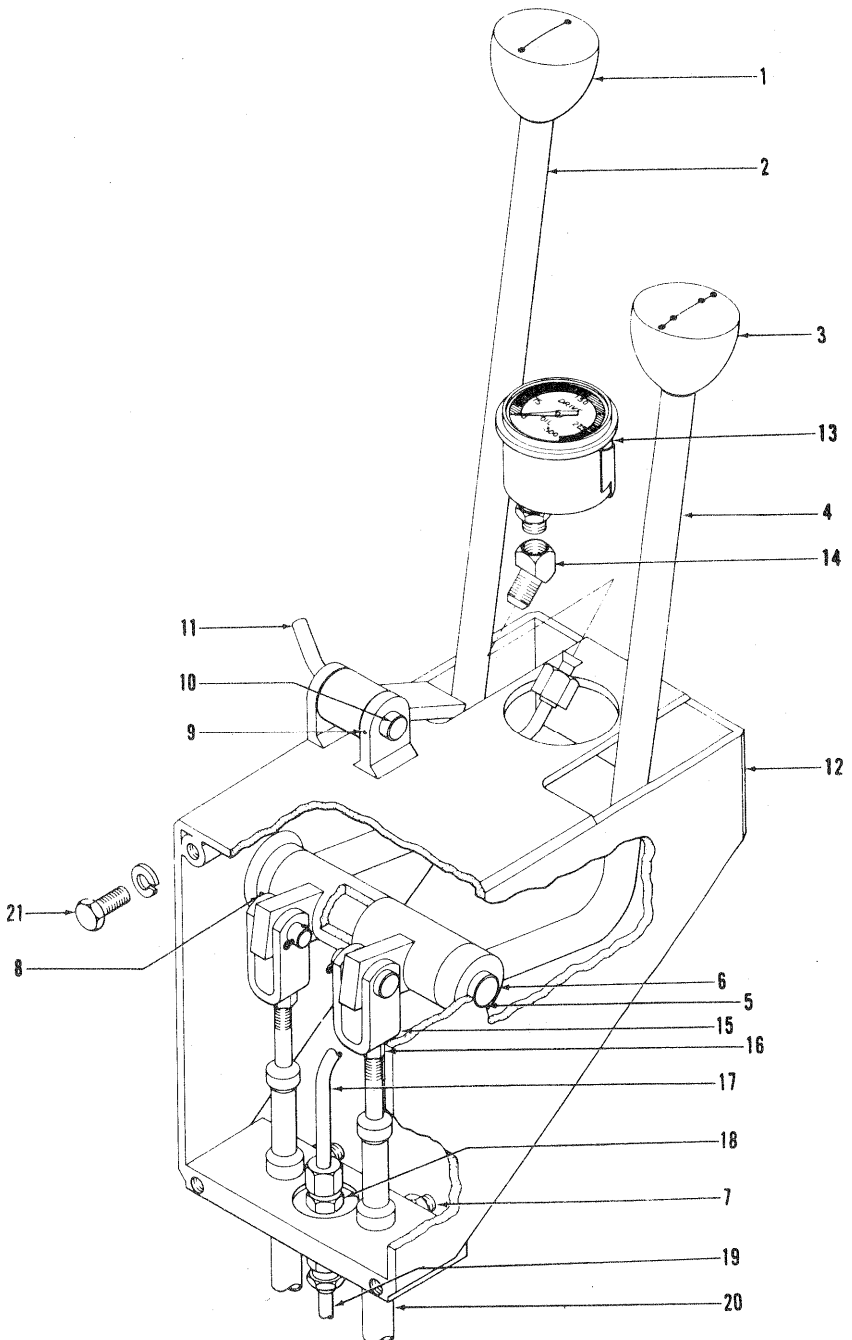


INTEGRAL ARCH

For D6 Tractors Serial No. 74A1 & Up — 76A1 & Up

Ref. No.	Hyster Part No.	NAME OF PART	Qty Req
1	84866	Pin—Equalizer	1
	84861A	Equalizer Assembly	1
2	84865	Bushing—Center	1
	84856	Bushing—Side	2
3	125492	Strut Assembly	2
	84856	Bushing	2
4	125486	Bracket—L.H.	1
5	125487	Bracket—R.H.	1
6	16002	Grease Fitting	4
7	59846A	Roller Assembly	2
8	59419	Bushing	4
9	59423	Pin	2
10	35843	Washer	2
	31541	Keeper	2
11	16804	Capscrew— $\frac{5}{8}$ UNF x $1\frac{1}{4}$	2
	15160	Lockwasher— $\frac{5}{8}$	2
12	84823W	Frame—Arch	1
13	84830A	Block Assembly	2
14	18630	Capscrew— $\frac{3}{4}$ UNF x $3\frac{3}{4}$	4
	15162	Lockwasher— $\frac{3}{4}$	4
15	84837W	Bracket—Fairlead	1
16	7043	Nut—2-12 UN	4
17	2816A	Roller Assembly	1
18	2817	Bushing	2
19	2818B	Shaft	1
20	2821	Washer	2
21	84869	Nut—Special	2
22	84867	Pin	4
	80926	Anchor	5
23	16823	Capscrew— $\frac{5}{8}$ UNF x $1\frac{1}{2}$	5
	15160	Lockwasher— $\frac{5}{8}$	5

HANDLING GEAR



HANDLING GEAR

KEY

A—For D5 Tractor Serial No. 81H1 - 84H1 & Up.

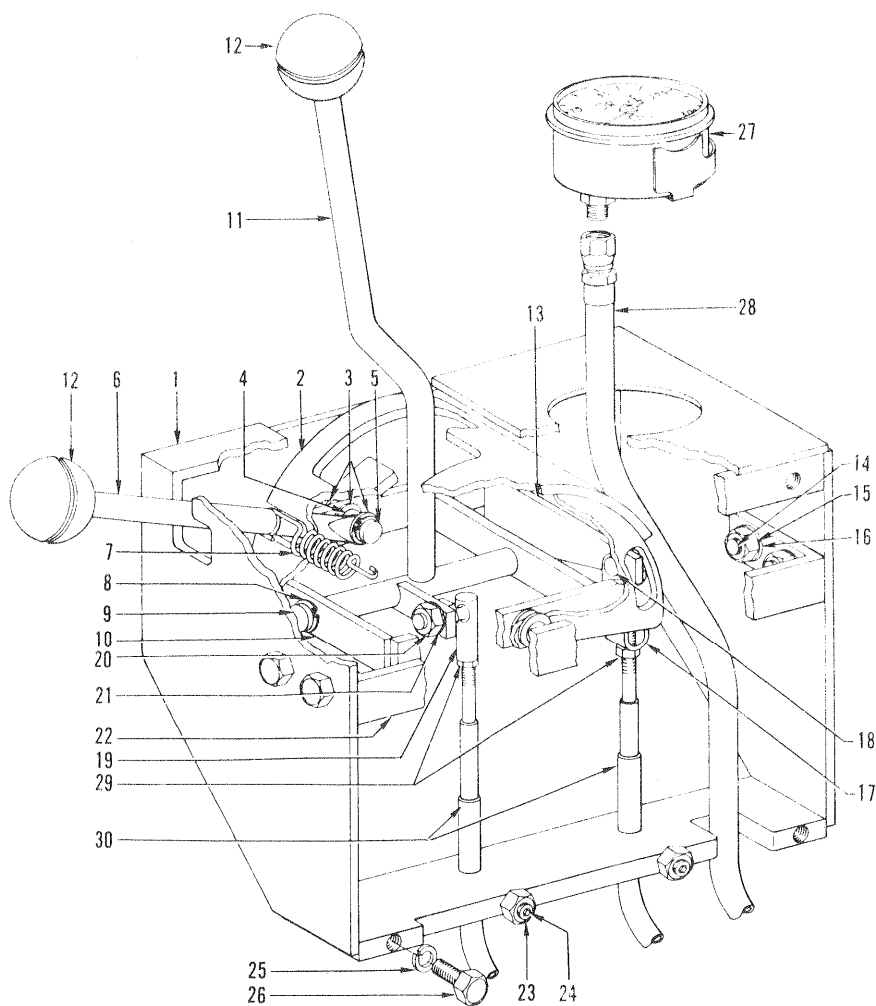
B—For D5 Tractor Serial No. 95J1 & Up and 96J1 & Up.

C—For 977 Traxcavator Serial No. 11K1 & Up and 46H1 & Up.

D—For D6 Tractor Serial No. 74A1 - 76A1 & Up, 99J1 & Up and 10K1 & Up.

Ref. No.	Hyster Part No.	NAME OF PART	Quantity Required			
			A	B	C	D
	172755	Handlever	1	1	1	1
1	172744	Knob	1	1	1	1
2	172757	Lever—Inching	1	1	1	1
3	172747	Knob	1	1	1	1
4	172759	Lever—Selector	1	1	1	1
5	174421	Bushing	2	2	2	2
6	172748	Pin	1	1	1	1
7	{ 173310	Setscrew—5/16 x 1	2	2	2	2
	{ 15001	Nut Jam—5/16	2	2	2	2
8	19981	Roll Pin— $\frac{1}{8}$ x $1\frac{1}{4}$	1	1	1	1
9	172751	Rod	1	1	1	1
10	174564	Roll Pin—3/32 x 1	2	2	2	2
12	172732	Housing	1	1	1	1
13	169782	Gauge—Oil Pressure	1	1	1	1
14	172762	Fitting Elbow	1	1	1	1
	{ 95709	Rod End— $\frac{3}{8}$	2	2	2	2
15	{ 142	Pin—Rod End	2	2	2	2
	{ 15212	Cotter Pin	2	2	2	2
16	15025	Nut—Jam, 5/16 UNF	4	4	4	4
17	174422	Tube	1	1	1	1
18	16445	Fitting	1	1	1	1
19	{ 165505	Hose	1	1	1	..
	{ 146296	Hose	..	..	..	1
	{	Cable, See Page G14	1	1	1	1
20	{ 119025	Clamp—Cable, Locating	1	..	..	..
	{ 18466	Capscrew— $\frac{1}{4}$ UNC x $1\frac{1}{4}$	1	..	..	..
	{ 15113	Locknut— $\frac{1}{4}$ UNC	1	..	..	..
	{ 15553	Capscrew—5/16 UNC x $\frac{3}{4}$	4	4	4	4
21	{ 15155	Lockwasher—5/16	4	4	4	4
	{ 167264	Guard—Handling Gear } Not	..	..	1	..
	{ 172724	Grab—Iron } Illustrated	..	..	1	..

HANDLING GEAR



HANDLING GEAR

KEY

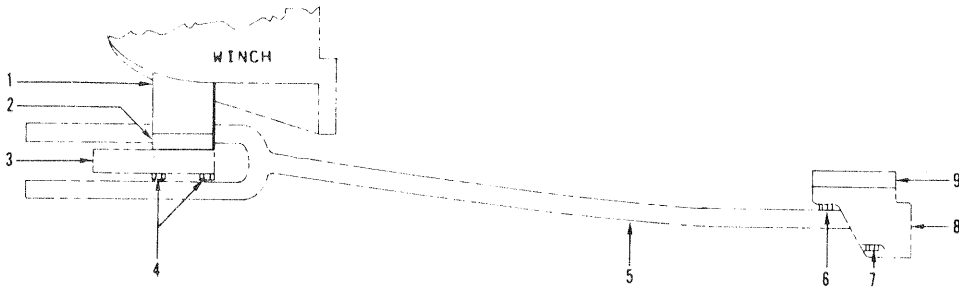
A—For D5 Tractor Serial No. 81H1-84H1 & Up, 95J1 & Up and 96J1 & Up.

B—For D6 Tractor Serial No. 10K1 & Up, 74A1 & Up, 76A1 & Up and 99J1 & Up.

C—For 977 Traxcavator Serial No. 11K1 & Up and 46H1 & Up.

Ref. No.	Hyster Part No.	NAME OF PART	Quantity Re-		
			A	B	C
	165641	Handling Gear	1	1	1
1	165634	Housing—Handler	1	1	1
2	165637	Gate—Handler	1	1	1
3	15134	Washer	5	5	5
4	165517	Bushing	1	1	1
5	175180	Rod	1	1	1
	15028	Nut—Jam, $\frac{1}{2}$ UNF	1	1	1
6	165643	Lever	1	1	1
7	165639	Spring	1	1	1
8	12897	Snap Ring	3	3	3
9	165510	Rod	1	1	1
10	165640	Base	1	1	1
11	165645	Lever	1	1	1
12	131976	Knob—Control	2	2	2
13	164701	Plate	1	1	1
14	15675	Capscrew— $\frac{1}{4}$ UNC x $\frac{7}{8}$	4	4	4
15	15054	Nut— $\frac{1}{4}$ UNC	4	4	4
16	15154	Lockwasher— $\frac{1}{4}$	4	4	4
17	165659	Rod End	1	1	1
18	133683	Pin	1	1	1
	15211	Cotter— $\frac{1}{8}$ x $\frac{1}{2}$	1	1	1
19	157593	Ball Joint	1	1	1
20	15005	Nut— $\frac{5}{16}$ UNF	1	1	1
21	15155	Lockwasher—5 16	1	1	1
22	165644	Bracket—Gate Pivot	1	1	1
23	15001	Nut—Jam, 5 16 UNC	2	2	2
24	16220	Setscrew— $\frac{5}{16}$ x UNC x $\frac{3}{4}$	2	2	2
25	15155	Lockwasher—5 16	4	4	4
26	15553	Capscrew— $\frac{5}{16}$ UNC x $\frac{3}{4}$	4	4	4
27	169782	Gauge—Brake Oil Pressure	1	1	1
	14712	Connector—Female	1	1	1
28	165505	Hose	1	..	..
	146296	Hose	..	1	..
29	15025	Nut—Jam, $\frac{5}{16}$ UNF	4	4	4
	165492	Cable—Control	2	..	..
	167255	Cable—Control	..	2	..
30	119025	Clamp—Cable, Locating	1	..	..
	18466	Capscrew— $\frac{1}{4}$ UNC x $1\frac{1}{4}$	1	..	..
	15113	Locknut— $\frac{1}{4}$ UNC	1	..	..
	167264	Guard—Handling Gear { Not	..	..	..
	172724	Grab Iron { Illustrated	..	..	..

SWINGING DRAWBAR



KEY

A—For Power Control Winch on D5 Tractors Serial No. 81H1 & Up, 82H1 & Up and Power Control Winch on D6 Tractors Serial No. 74A1 & Up, 86A1 & Up.

B—For Direct Drive Winch on D5 Tractors Serial No. 81H1 & Up, 82H1 & Up, 93J1 & Up, and 94J1 & Up.

C—For Direct Drive Winch on D6 Tractors Serial No. 8U1 & Up, 9U1 & Up, 37A1 & Up, 44A1 & Up, 56A1 & Up, and 57A1 & Up.

D—For Direct Drive Winch on D6 Tractors Serial No. 74A1 & Up, 99J1 & Up.

Ref. No.	Hyster Part No.	NAME OF PART	Quantity Required			
			A	B	C	D
1	.....	Bracket—Drawbar, See Page B1	2	2	2	2
2	{ 140749	Spacer	..	..	1	..
	{ 123788	Spacer	..	..	..	1
3	.....	Drawbar—Catco	..	..	..	1
4	{ 16385	Capscrew—Ht., 1 UNC x 4	4	4	..	..
	{ 16915	Capscrew—Ht., 1 UNS x 4	..	..	4	..
	{ 18683	Capscrew—Ht., 1 UNS x 6	..	..	..	4
	{ 15166	Lockwasher—1"	4	4	4	4
5	.....	Drawbar—Swinging, Cat.	1	1	1	1
6	{ * 18648	Capscrew—Ht., 7/8 UNC x 3	2	2	..	..
	{ * 15164	Lockwasher—7/8	2	2	..	..
7	{ * 18660	Capscrew—Ht., 7/8 UNC x 6	2	2	..	..
	{ * 15164	Lockwasher—7/8	2	2	..	..
8		Bracket—Drawbar, Cat.	1	1	..	..
9	*165981	Spacer	1	1	..	..

**For D5 Tractors only.*

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