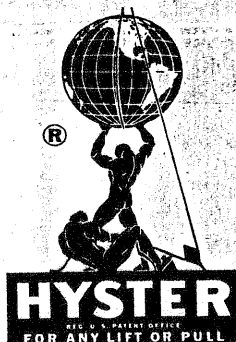


**PARTS BOOK
AND
INSTRUCTION MANUAL
FOR
HYSTER[®]
D7N TOWING WINCH**

DIRECT DRIVE



**EFFECTIVE WITH
HYSTER NO. VW-3971**

HYSTER COMPANY
PORTLAND 8, OREGON PEORIA 1, ILLINOIS
DANVILLE, ILLINOIS
U. S. A.

FORM NO. 204H

LITHO
IN
U.S.A.

2M-055

599200W

OIL SEALS

AFIC 7N 5224

PRIOR TO 5224
OMIT 56552

1- 6570
1- 31910
2 33653
1 30352

SPECIFICATIONS

Hyster Model D7N Towing Winch

	With Standard Drum
Drum size: Barrel diameter	13"
Flange diameter	22"
Barrel length	14"
Cable capacity, maximum line	375 ft. $\frac{7}{8}$ "
<i>Allowance should be made for loose and unevenly spooled line in towing service.</i>	or 280 ft. 1"

Available Line Pulls:

Bare drum	40,000 lbs.
Full drum	26,700 lbs.

Line Speeds:

Bare drum	89 f.p.m.
Full drum	133 f.p.m.

(Line Speeds and Pulls are the same when overwinding or underwinding.)

Above figures based on 108 HP at 1,000 RPM using one-inch line.

	Without Built-in Drawbar	With Built-in Drawbar
Net weight (without cable)	2,350 lbs.	*2,650 lbs.
Domestic shipping weight, approx.	2,450 lbs.	2,750 lbs.
Code word	SNTWO	SNDTW

NOTE: When using Hyster Drawbar, the "Caterpillar" Drawbar Group is omitted, reducing the net "applied weight" of winch to 2,200 lbs.

NOTE: IMPORTANT

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

MASTER PARTS CATALOG NOTICE

Supplement 1 — February 1, 1957

D7N TOWING WINCH

Form No. 204H

Page 3 . . .

Brake—*After caution note add:*

NOTE: When an automatic brake is used, the brake may be applied when pulling in a load, and MUST be released to pay out line. ✓

Page 29 . . .

Ref. 6, second line: *Change* 33737 Washer to
33738 Washer ✓

Page 35 . . .

Ref. 1, *add:*

For Tractors prior to Tractor Series 17A. Also see page 37. ✓

Page 37 . . .

Revise title as follows:

HANDLEVER GROUP — No. 46982A
For Tractors Prior to Tractor Series 17A
HANDLEVER GROUP — No. 94028A ✓
For Tractors Series 17A

Ref. 1, 2 and 3, *change* Current to read:
For Tractors Series 17A ✓

And change Non-Current to read: ✓
For Tractors Prior to Tractor Series 17A

Inside Rear Cover, after Specifications, add:

NOTE: IMPORTANT ✓

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

Important: Please make these changes promptly

HYSTER COMPANY

PORTLAND 8, OREGON

PEORIA 1, ILLINOIS

DANVILLE, ILLINOIS

U. S. A.

PRINTED
IN
U.S.A.

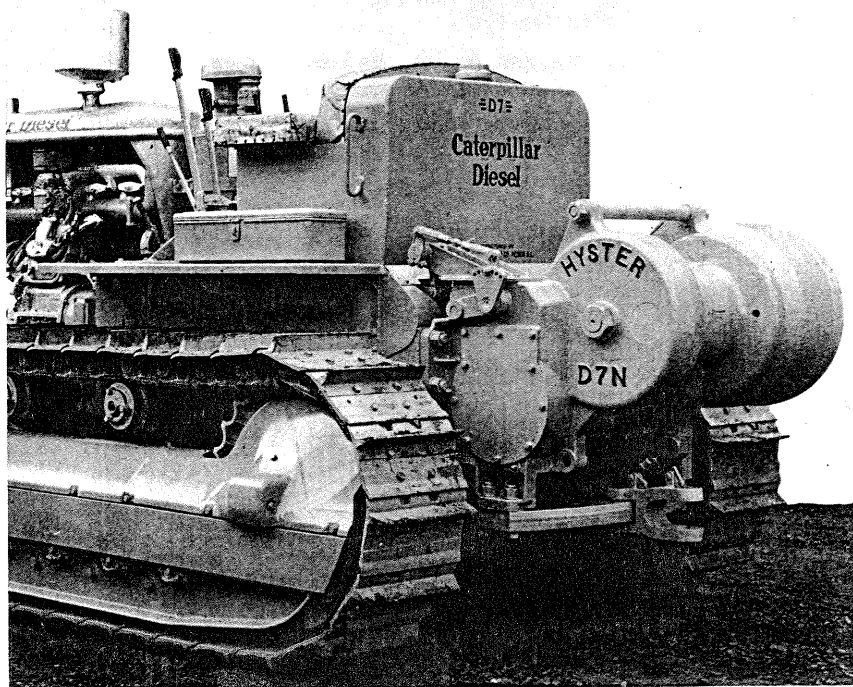
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PARTS BOOK for model VW
D7N
HYSTER TOWING WINCH

For model D7 "Caterpillar" Tractor
New Model, Beginning with Tractor Serial No. 7MI



Including
Installation, Lubrication and
Service Instructions

HYSTER COMPANY

PORTLAND 8, OREGON ■ PEORIA 1, ILLINOIS ■ DANVILLE, ILLINOIS
U. S. A.

TRACTOR OPERATOR PRECAUTIONS

1. While the tractor is in motion, extreme care should be taken to prevent accidents and personal injuries.
2. Before stopping the engine and dismounting from the tractor
 - A. Stop the motion of the tractor.
 - B. Disengage the master clutch.
 - C. Place the tractor transmission gear shift lever in neutral.
 - D. Set and lock the brakes. (When parking on a hill, the tractor should be chocked.)
3. At the start of the shift, check to be sure that all steps under Instruction 2 have been carried out. If these instructions are not followed, there is danger of the tractor moving when the operator is starting the engine, and he may be dragged under the tractor or otherwise seriously injured.

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Section A

OPERATION

This section, in addition to instructions for operating, contains illustrations and instructions pertaining to certain simple adjustments and replacements which can readily be made.

Lubrication instructions are provided on page 7, and should be carefully studied. The lubricant recommended should be used.

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

Do not operate tractor while the winch is being operated under load as damage to winch or tractor may result from accidentally pulling rigging around winch drum.

Be sure winch gear shift lever is in neutral position (L1) as shown on page 4, BEFORE MOVING THE TRACTOR.

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

TRACTOR LUBRICATION

FOR STATIONARY WORK

CAUTION

In order to provide adequate lubrication for the D7 tractor upper transmission shaft bearings, always engage flywheel clutch, leave forward-reverse lever in gear, and speed selector lever in neutral, when operating winch or other rear-mounted attachments.

When an automatic brake is used, the brake may be applied when pulling in a load, & must be released to pay out line.

BRAKE

The brake lever is located on the left-hand side of the operator. A pawl and ratchet are provided to hold the brake in the applied position.

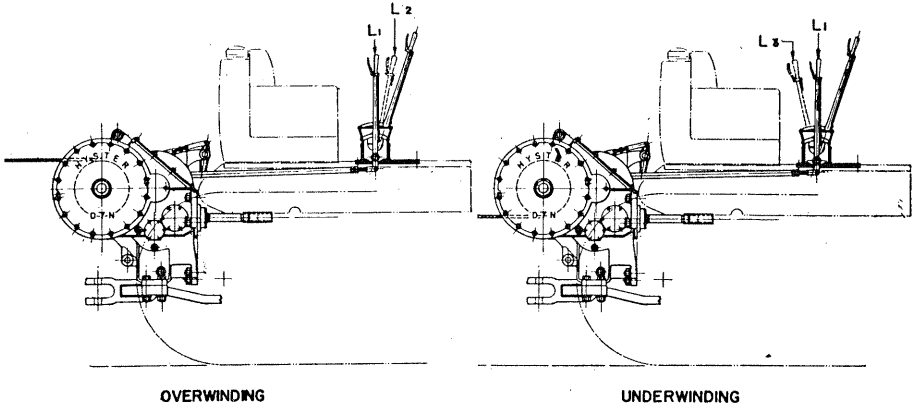
CAUTION—The brake should always be released before attempting to operate the winch, otherwise serious damage will result.

RIGHT AND LEFT HAND SIDE OF TOWING WINCH

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

OVERWINDING

When the winch is used with the cable leading from the top of the drum, the drum is **OVERWINDING**. To wrap the cable around the drum or pull in a load the shifter lever should be in position "L2". Position "L1" is neutral. To pay out line, shift lever to position opposite of "L2".

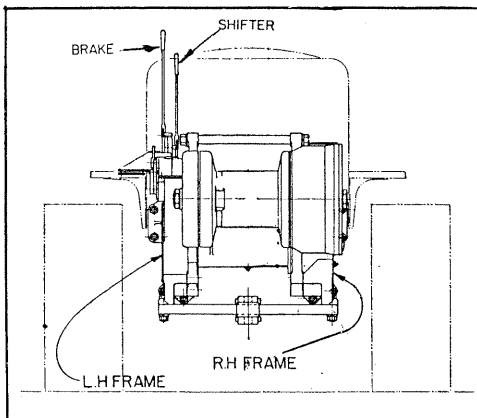


NOTE

If not otherwise specified, all winches are shipped with the brake set up for drum to be pulling cable in **OVERWINDING** (over the top of the drum barrel).

UNDERWINDING

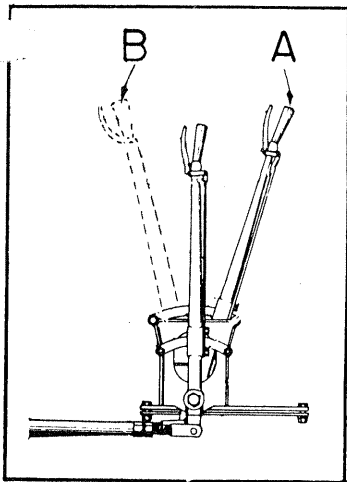
When the winch is used with the cable leading from the bottom of the drum, it is said to be **UNDERWINDING**. To wrap the cable around the drum or pull in a load the shifter lever should be in position "L3". Position "L1" is neutral. To pay out line, shift lever to position opposite of "L3".



LOCATION OF LEVERS

The brake and shifter levers are located on the left hand side of operator. A pawl and ratchet are provided to hold brake lever in applied position.

CAUTION: The brake should always be released before attempting to operate the winch, otherwise serious damage will result.

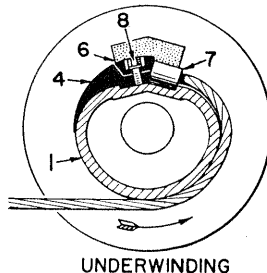
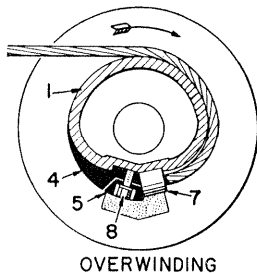


BRAKE

The brake hand lever is the *longer* lever. When in position "A" the brake is released; when in position "B" the brake is applied.

The brake is an external contracting band type which is cam operated. Care should be exercised in applying the brake. Apply brake **ONLY** when tractor master clutch is disengaged, otherwise the tractor motor will be stalled and damage could result to the winch mechanism.

METHOD OF ATTACHING CABLE FOR OVERWINDING OR UNDERWINDING DRUM

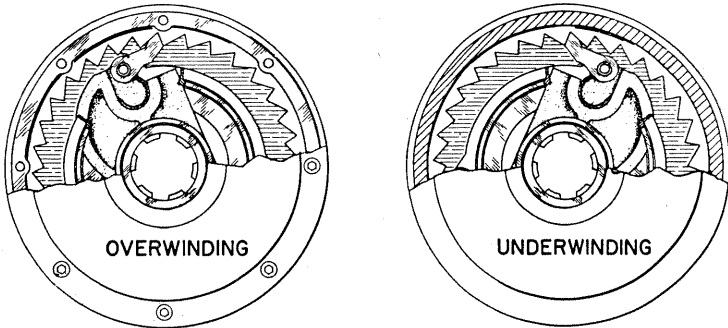


The figures above illustrate the cable installation for overwinding and underwinding drum.

OVERWINDING—Place ferrule (7) in pocket and lock into place with filler (4) and ferrule lock (5), using capscrew (8) and lockwasher.

UNDERWINDING—Place ferrule (7) in pocket and lock into place with filler (4) and ferrule lock (6), using capscrew (8) and lockwasher.

SPECIAL AUTOMATIC BRAKE



If the winch is equipped with an automatic brake, it will be noted that one side is marked "overwinding" and the other side marked "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 regular brake apply also to the special automatic brake.

SECTION B

SERVICING INSTRUCTIONS

LUBRICATION INSTRUCTIONS

The Lubrication Chart shows the location of the various lubrication fittings and filler plug on the transmission case and drum shafts.

All bearings and gears in the Hoist Unit, including the drum bearings, are lubricated from the oil in the transmission case and gear drive compartment. One oil level check plug for both compartments is located on the right-hand side frame at "B." (See chart on page 8.)

The oil should be drained from both the transmission and large drum gear drive compartment of a new hoist after about one week's service, and each compartment flushed out and refilled with fresh oil.

The oil level in transmission case should be checked weekly, keeping case filled up to the oil level plug "B." The two drain plugs are located at "C," one on the right-hand side frame as indicated, and the other on the underside of the transmission case.

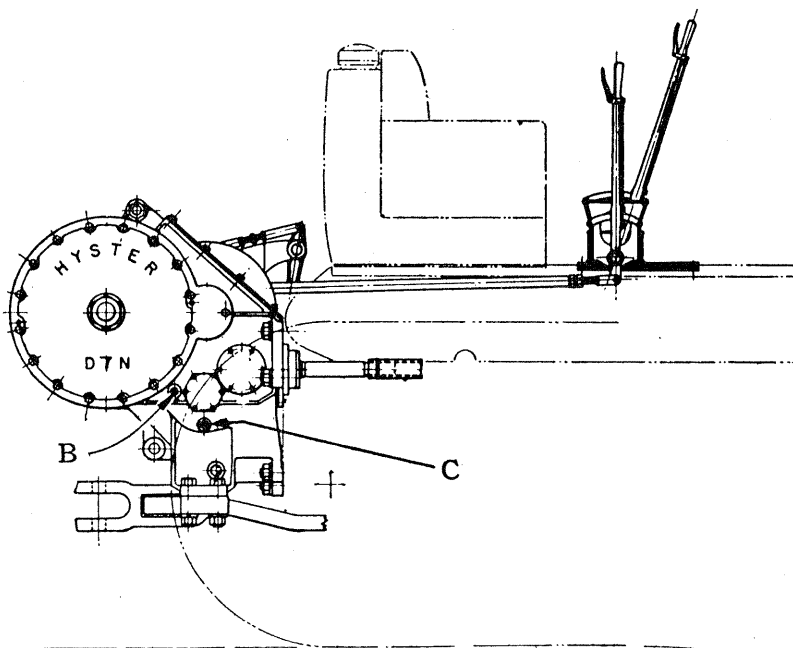
Drain oil and flush through drain plugs at "C" every 60 days (or whenever the oil is changed in the tractor transmission case). Refill through filler plug until oil comes up to level plug. In general, for refilling, use SAE 90 or the same gravity oil as is required in "Caterpillar's" transmission. Approximately 5 (five) gallons of oil are required for refilling when changing oil.

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

Filler hole, provided with pipe plug, is located in top cover of transmission case.

The brake and gear shift control shafts on the winch unit turn in special "oil-lite" bronze bushings requiring only a few drops of oil occasionally.

Handling gear link connections, and control lever fulcrum, should be oiled once every day with a few drops of oil from an ordinary oil can.



AUTOMATIC BRAKE (Optional Equipment)

Every 1000 hours of service the brake (pages 38-39) should be cleaned and repacked with a high melting point (HMP) grease. To prepare the wheel for inspection and servicing, follow the steps given below.

1. The cover plate (15), page 34, on the left-hand side frame brake compartment must be removed to gain access to the brake.
2. Pull pins (14), page 34, in ends of brake band (16) and remove brake band assembly from winch to provide ample clearance in removing brake wheel. This also makes the installation of wheel assembly after servicing much easier.
3. Remove cotter and flange nut (44), page 20, from end of shaft.
4. Assembled wheel, pages 38-39, can then be pulled from shaft. If wheel is tight, an appropriate puller may have to be used. Two $\frac{1}{2}$ " NF tapped holes, plugged with vent plug (195) and $\frac{1}{2}$ capscrews (198) with copper washers, are provided for using an appropriate puller. Remove these, taking care not to lose the copper washers as they prevent leakage of the lubricant when reassembled.
5. Remove eight capscrews and lockwashers (item 202), page 39, or (item 215), page 38.
- 6a. (Instruction for servicing older brake units prior to Serial No. 40437.) See page 39. With two screwdrivers, pry off cover (199) carefully. Do not attempt to drive off cover. Take care not to damage oil seal, while removing cover.

LUBRICATION INSTRUCTIONS—Continued

- 6b. (Instruction for removing cover on units Serial No. 40437 up.) See page 38. Remove cover with appropriate puller, using the holes in cover from which the capscrews (198) and vent plug (195) with copper gasket washers were removed. Take care not to damage oil seal.
7. After brake is open, pull out center (192), assembled with pawl (191) and drag rings (200).
8. Clean all parts thoroughly and repack brake with about $\frac{3}{4}$ pound of heavy duty wheel bearing grease of a high melting point. Apply carefully to bearings and all rubbing surfaces.
CAUTION. Do not fill brake completely with grease.
9. After servicing brake, replace center (192) assembled with pawl (191) and drag rings (200). Check to see that seal (196) is in good condition.
10. NOTE: Install oil seals so that lips of both are pointing in as shown (Ref. No. 196).
11. Clean gasket surfaces making certain that no grease remains. Use new gasket (194), page 39, or (214), page 38. Coat both sides of the gasket with Permatex Gasket cement. Carefully assemble cover (199, page 39, (216), page 38, onto case. With side cover in place, squeeze a liberal amount of Permatex No. 1 gasket cement into each capscrew hole. (Use enough so that when the capscrew is tightened the cement will squeeze out all around the head). Fasten securely with eight capscrews and lockwashers provided.
12. Be sure to replace the vent plug (195) and capscrew (198) with copper washers, removed in instruction 4.
13. When servicing older brake units (prior to Serial No. 40437; see page 39) do not use the light star washers under the head. Use part No. 15157B Kant Link lockwashers instead (see Ref. 202). Make sure all capscrews are tight.
14. On older units prior to Serial No. 40437 (see page 39) remove capscrew, $\frac{1}{2}$ NF x $\frac{3}{4}$ in the side of the brake unit or cover, and replace with special vent screw No. 59370 (Ref. No. 195) using old copper gasket which was under the capscrew removed.
15. Install assembled brake wheel on shaft in winch, and lock in place with flanged nut and cotter, removed in instruction 3.
16. Release brake handlever and install brake band over brake wheel, anchoring with pins removed in instruction 2.
17. Replace cover (15), removed in instruction 1.

BUILT-IN DRAWBAR

If the Hyster built-in drawbar is used in the swiveling set-up, it should be lubricated through the grease fitting (7), page 40, provided on bracket.

Brake Adjustment

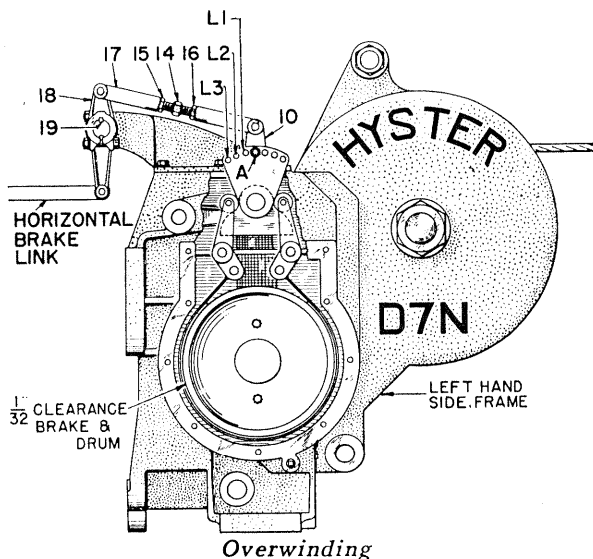
BRAKE LINKAGE

For "overwinding" cable, connect link (17) to crank (18) as shown below.

For "underwinding" cable, reverse the crank (18) and key (19), and connect link (17) as shown on page 11.

See page 6 for additional changes required when winch is equipped with special automatic brake.

If brake is used with incorrect setting, it will be much harder to apply, and the load will be difficult to hold.



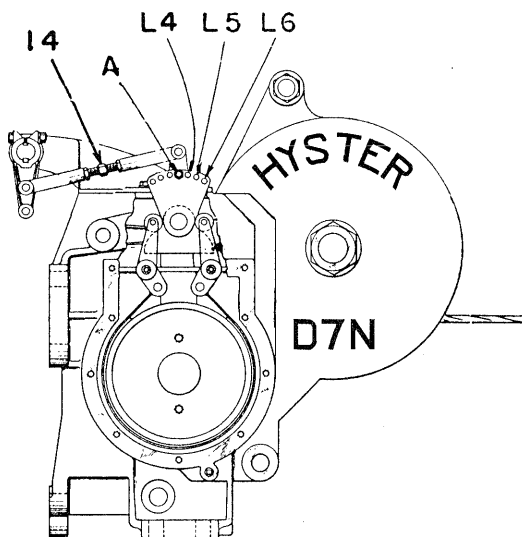
OVERWINDING BRAKE ADJUSTMENT

Care should be taken to have the brake band lining about $1/32$ " free from the brake drum when the hand lever is pushed all the way forward. As the brake band wears and brake hand lever comes too far back on quadrant to hold load, it will be necessary to lengthen the link (17). This can be done by loosening the lock-nuts (15) and (16), and turning the adjusting screw (14). After the adjustment has been made, tighten the lock-nuts.

When this adjustment ability has been exhausted, the link (17) should be returned to its original length. Then remove bolt holding brake crank to fan-shaped segment on brake shaft at "A" and relocate crank (10) at hole "L1". Further wear can again be taken up as explained in first paragraph, and again the crank can be relocated at "L2" and the process continued.

As the brake band continues to wear and adjustments made, with crank being moved to position "L2" and final adjustments of link made while crank (10) is at "L3", the brake band lining will be worn out completely and band should be relined. After relining the brake band, return the crank (10) to its original location at "A" and adjust the link (17) to its original length to be ready for further adjustments as needed.

UNDERWINDING BRAKE ADJUSTMENT



Underwinding

Brake band wear can be taken up in the same manner as explained on page 10, except that the link (17) must be **SHORTENED** and the crank (10) relocated successively in the holes "L4," "L5" and finally at "L6."

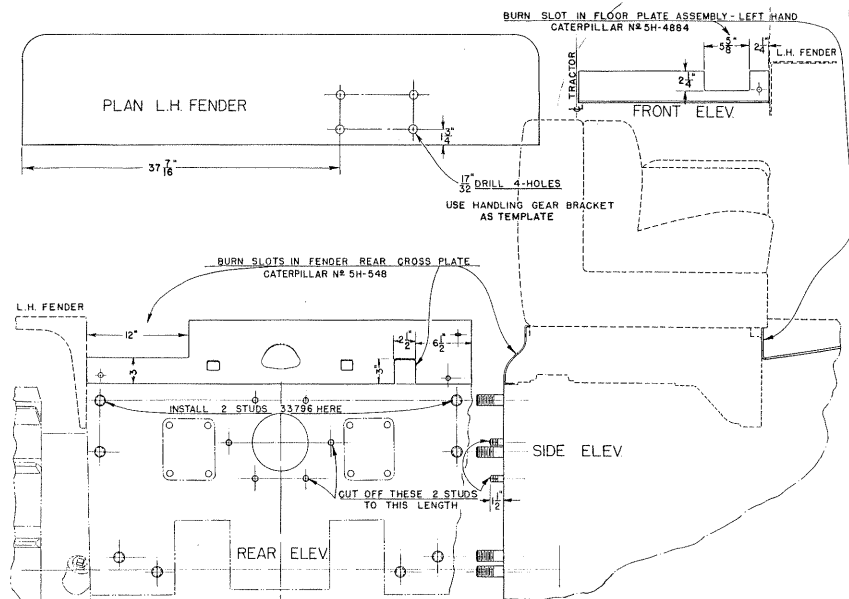
The location "A" is the *Initial* location for BOTH "overwinding" and "underwinding" drums.

ADDITIONAL brake adjustment is provided in the horizontal brake link, the forward end of which is attached to the brake hand lever, where the adjustment can be made.

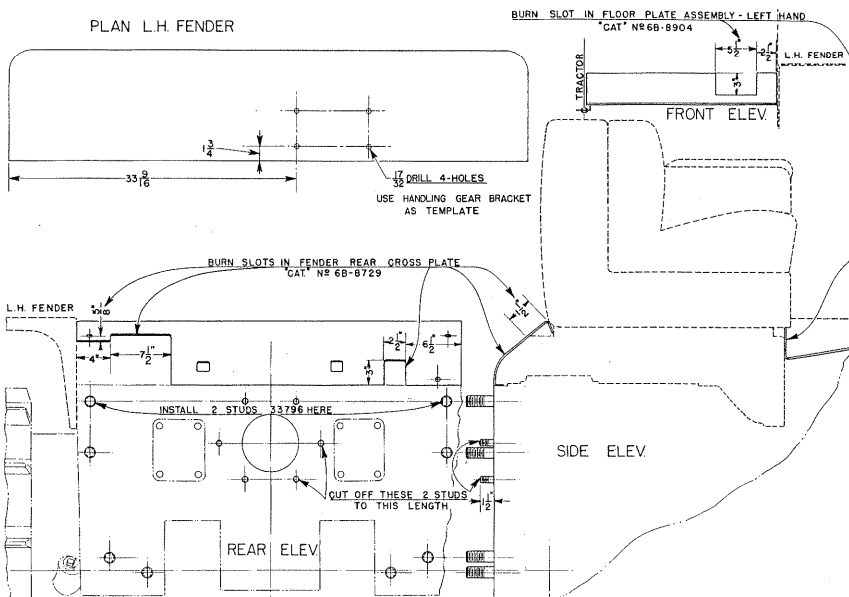
NOTE: Release the brake lever after each adjustment and check to see if brake band is sufficiently free to keep from "dragging" and burning up the lining.

See that brake links and cranks are always as near right angles as possible when applied, to insure maximum travel and easy operation.

ALTERATIONS TO TRACTOR



TRACTOR ALTERATIONS FOR TRACTOR SERIES 17A



TRACTOR ALTERATIONS PRIOR TO TRACTOR SERIES 17A

Section C

INSTALLATION INSTRUCTIONS

D7N Towing Winch

There are several steps necessary to PREPARE THE TRACTOR for installing the Hyster D7N Winch on the "Caterpillar" D7 Diesel Tractor.

1. Remove from tractor the power take-off cover plate and drawbar braces.

NOTE: If winch is equipped with the SPECIAL HYSTER DRAWBAR, remove the drawbar plate and drawbar from tractor.

2. Remove left-hand floor plate and fender rear cross plate from tractor, and burn slots as shown on page 12.

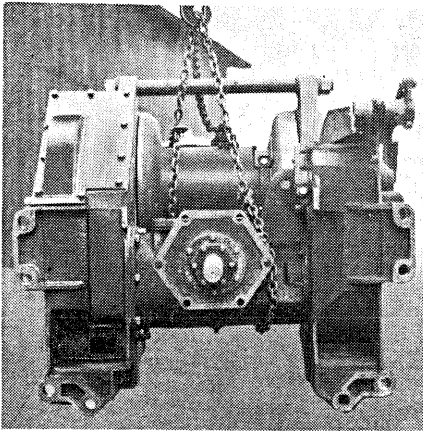
3. Mark off four holes in left fender as shown on page 12, and drill, for hand lever support bracket.

4. Cut off two studs for power take-off cover, as shown. Check rear face of tractor transmission, particularly near the studs, for possible high spots, and if any are found, such as protruding welds, file or grind level. Install two $1\frac{1}{4}$ " studs 33796 in upper right-hand and left-hand corners of the tractor transmission rear face (see page 12).

5. Replace altered left-hand floor plate and fender rear cross plate in their respective positions.

6. Place $\frac{1}{8}$ " thick gasket (33718) over studs in power take-off opening.

7. Wipe clean the machined faces on winch which will fit against tractor transmission case. Check to see that power take-off coupling is secured to winch drive shaft, and locked with snap ring.



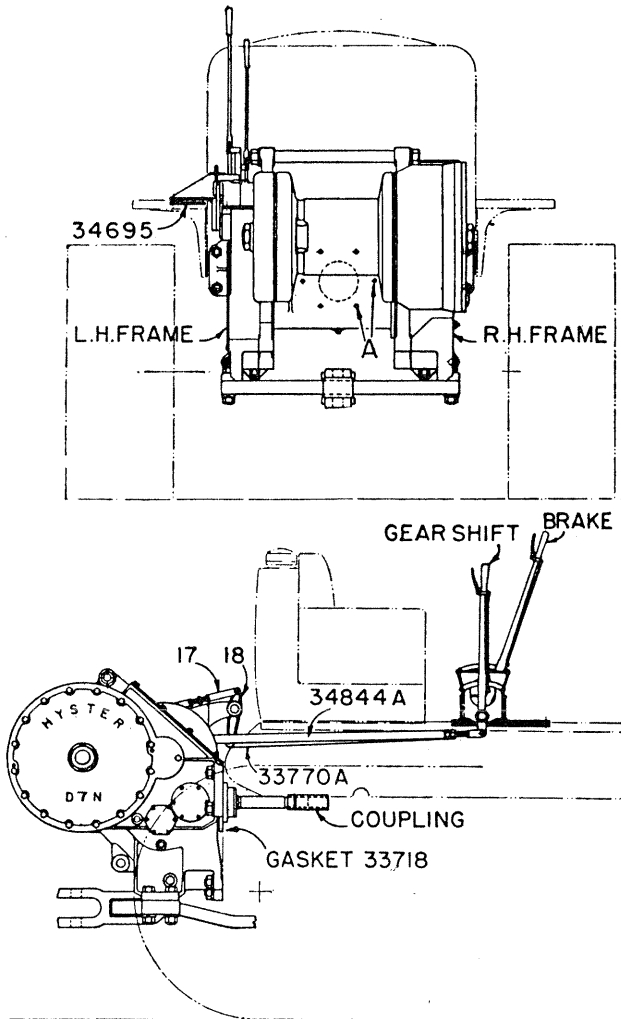
8. Hoist winch unit as shown and swing toward tractor, being careful that the drive shaft does not injure gasket when entering the power take-off opening. When nearing tractor drive shaft, turn the power take-off shaft, until the coupling will enter the splines, at the same time being careful to see that the fastening holes in side frames match with the $1\frac{1}{4}$ " studs on the tractor. When the winch is within approximately $\frac{1}{2}$ " of the tractor transmission face, slip lockwashers over the two studs marked "A",

(page 14) and start the nuts, tightening them up as the winch progresses closer to the tractor transmission. When this is done, place all lockwashers and nuts on the eight $1\frac{1}{4}$ " studs and the remaining four $\frac{3}{4}$ " studs and draw up tightly.

9. Install control lever assembly over holes on left-hand fender. Place fender brace plate (34695) underneath it on under side of fender, and secure with four $\frac{1}{2}$ " bolts, lockwashers and nuts.

10. Pass brake link (33770-A) and gear shift link (34844-A) under the seat and connect with cranks on the winch.

11. Connect the outside link to brake lever and adjust for proper position. Brake cover plate on left-hand side frame should be removed and care taken to have the brake band lining about $\frac{1}{32}$ " free from the brake drum when the hand lever is pushed all the way forward. After this adjustment is made, replace brake cover plate, and check all connections to see that cotters are properly installed.



12. Brake control link (17) and crank (18) have a different setting, depending on whether drum is used overwinding or underwinding. See pages 10 and 11, and note if crank (18) is in proper position. Crank should point UP for overwinding drum and DOWN for underwinding drum. If brake is used with incorrect setting, it will be much harder to apply and the load will be difficult to hold. (For Automatic Brake, see page 6.)

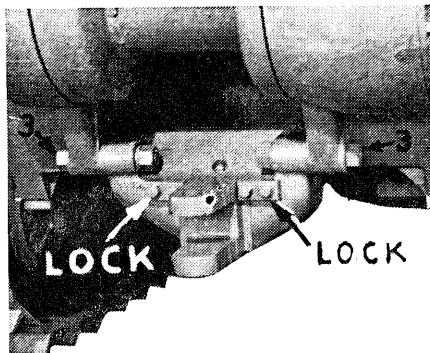
13. Put gear shift lever in neutral slot. Check to see if gears in transmission are in neutral. (Transmission cover plate should be removed to do this.) Adjust length of connecting link by means of threaded end, and secure with locknut. Connect to handlever, and then shift gears to see if gears mesh properly. There should be $7/16$ " clearance between the sides of the sliding gear and the faces of the forward and reverse idler pinions when the handlever is in neutral slot. The spring-loaded ball should now be in the center groove on the shifter fork stem. This can all be easily checked with transmission cover removed. Check all connections to see that all cotters are installed.

BEFORE replacing transmission cover, see that oil level is about up to the center of the sliding pinion shaft.

Replace transmission cover and bolt tightly.

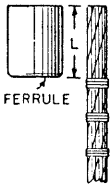
14. Fasten tractor drawbar and plate to bottom of winch side frames with bolts taken from the drawbar braces. (For special Hyster Drawbar see illustration.) Check all bolts and connections, and make sure that all nuts and lockwashers are in place and drawn up tightly.

SPECIAL DRAWBAR FOR ARCH SERVICE



If winch is to be used with a logging arch, special Hyster Drawbar (33768-AB) should replace tractor drawbar. This drawbar attaches to the winch side frames with four bolts (3) with nuts and lockwashers. Provision is made to use the "Hyster" drawbar in either swiveling or locked position, as desired. For swiveling position unscrew four capscrews holding the drawbar locks. When drawbar is used in swiveling position, grease once daily through Alemite fitting provided directly behind drawbar locks. (Keep drawbar locks and capscrews in safe place for future use.)

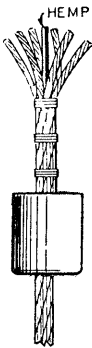
METHOD OF ATTACHING FERRULES



1 MEASURE FROM END OF CABLE A LENGTH EQUAL TO LENGTH OF FERRULE. SERVE WITH NOT LESS THAN THREE SEIZINGS.



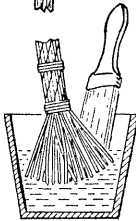
2 SLIP FERRULE OVER CABLE AND PUSH DOWN OVER SEIZINGS.



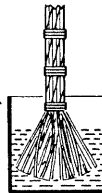
3 CUT OUT HEMP CENTER.
IF CABLE HAS A WIRE ROPE OR STEEL STRAND CENTER, DO NOT CUT OUT.



4 SEPARATE WIRES OF STRANDS AND STRAIGHTEN TO FORM A BRUSH.



5 IF WIRES ARE VERY GREASY. CLEAN WITH SOLVENT. A CHEAP PAINT BRUSH DIPPED IN THE SOLVENT CAN BE USED TO REMOVE THE SURPLUS GREASE.
DRY THOROLY.

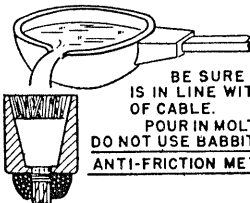


6 DIP WIRES FOR $\frac{3}{4}$ OF THE DISTANCE TO FIRST SERVING INTO ACID BATH CONSISTING OF NOT OVER ONE PART OF MURIATIC AND ONE PART WATER. TAKE CARE THAT ACID DOES NOT GET ON ANY OTHER PART OF CABLE. KEEP IN LONG ENOUGH TO BE THOROLY CLEANED. DRY THOROLY.



7 SLIP FERRULE UP. DISTRIBUTE WIRES EVENLY IN RECESS AND FLUSH WITH TOP OF FERRULE.
DO NOT CRIMP OVER ENDS OF WIRES.
PLACE MUD SEAL AROUND BOTTOM OF FERRULE AS AT "A"

8 HEAT THE ZINC TO THE POINT WHERE A SMALL STICK OF SOFT WOOD DIPPED INTO THE ZINC AND QUICKLY WITHDRAWN WILL BE SCORCHED BUT NOT IGNITED.



9 BE SURE FERRULE IS IN LINE WITH AXIS OF CABLE.
POUR IN MOLTEN ZINC. DO NOT USE BABBIT OR OTHER ANTI-FRICTION METAL.



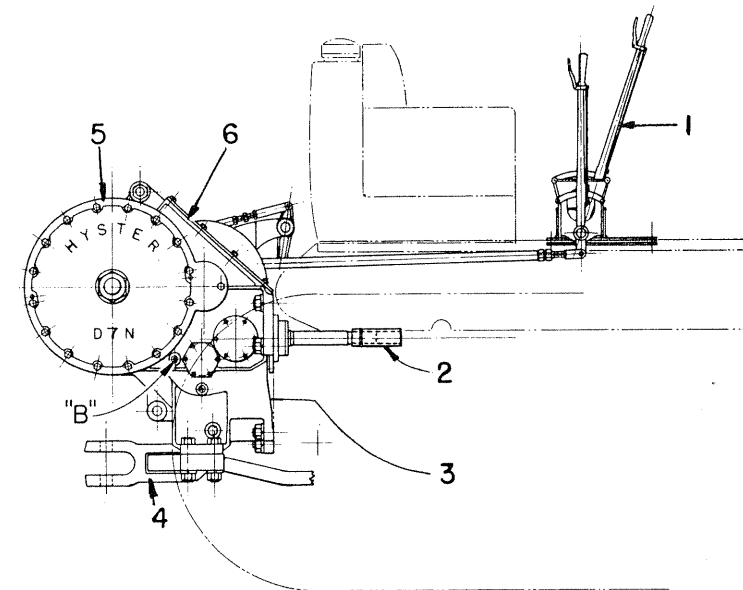
10 REMOVE SEIZINGS EXCEPT THE ONE UNDER THE FERRULE.
COOL SLOWLY.

SECTION D

LIST OF PARTS AND ILLUSTRATIONS

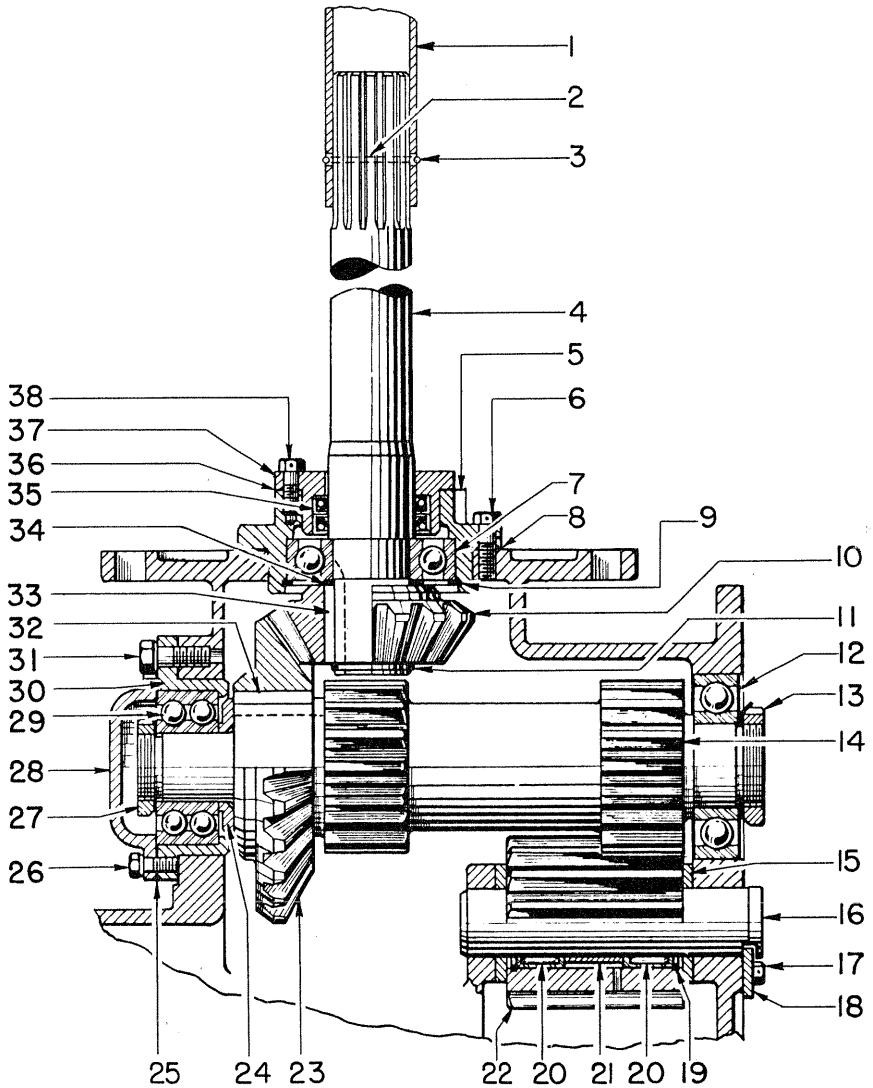
Note: Unnumbered parts in the illustrations are the same as corresponding parts shown with number. Particular attention should be given to the location of bolts, capscrews, washers, etc., so that they are replaced in the holes from which they were removed.

GENERAL ARRANGEMENT



Ref. No.	Hyster Part No.	NAME OF PART
1	Brake and Shifter Lever (see page 36)
2	Power Take-off Shaft (see page 18)
3	Side Frames (see page 24)
4	Special Drawbar (see page 41)
5	Drum Gears and Covers (see page 26)
6	Top Cover (Brake Shaft Group (see page 20)
	91883A	Gasket Set—includes all Gaskets required for D7N Towing Winch

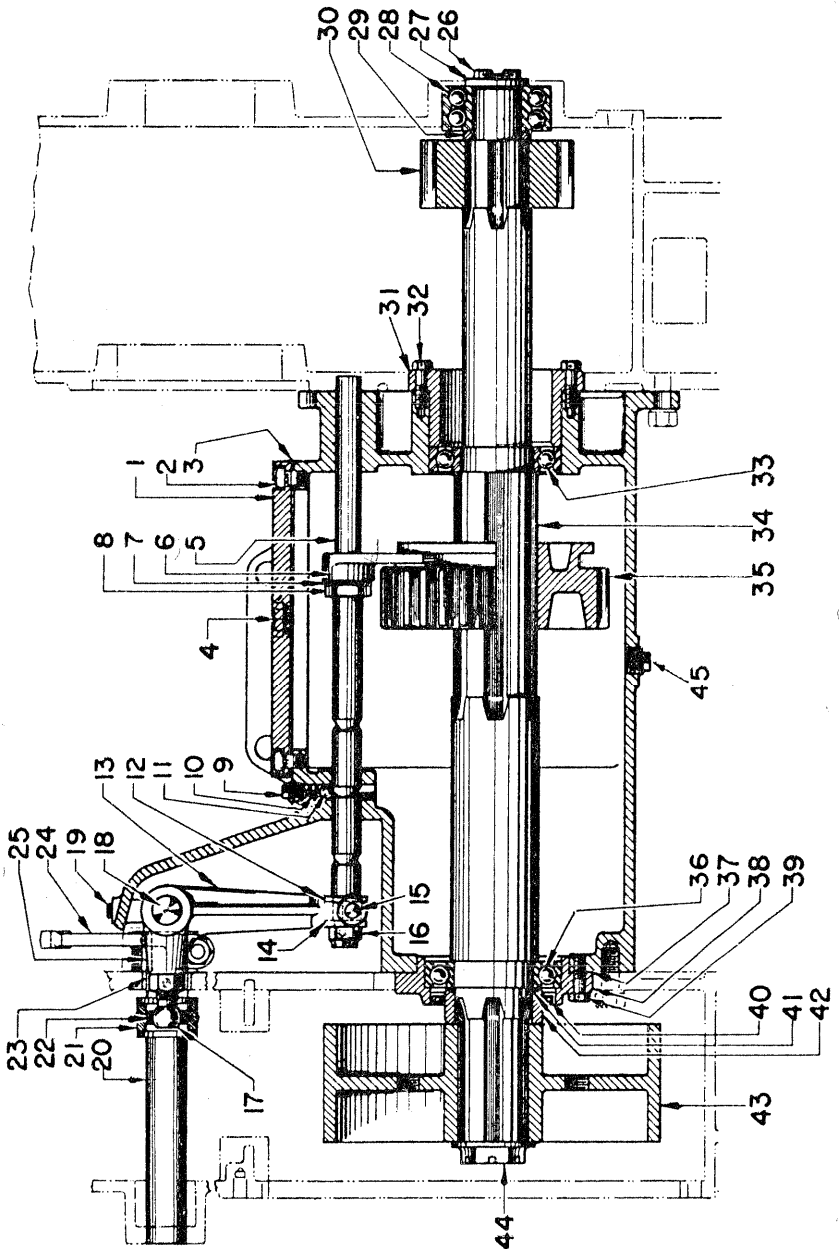
POWER TAKE-OFF AND FIRST REDUCTION



POWER TAKE-OFF AND FIRST REDUCTION

Ref. No.	Hyster Part No.	NAME OF PART
1	33785	Coupling ("Caterpillar" No. 7B-2719)
2	33786	Pin ("Caterpillar" No. 1A-4653)
3	9528	Snap Ring ("Caterpillar" No. 1A-5803)
4	33670	Shaft - 1 7/8" dia
5	33674	Carrier—Bearing
6	33794	Capscrew (6)
7	43310L	Bearing
8	33793	Shim Set
9	33655	Snap Ring
10	33672	Gear/Bevel (15 teeth)
11	33673	Snap Ring
12	43311	Bearing
13	{ 33657	Locknut
	{ 33656	Lockwasher
14	92072	Gear Shaft
15	33707	Washer (2)
16	33708	Shaft
17	798	Capscrew (2)
18	33709	Keeper
9	33799	Snap Ring (2)
20	11193	Needle Bearing (2)
21	33706	Spacer
22	92073	Gear—Reverse Idler (16 teeth)
23	33687	Gear/Bevel (24 teeth)
24	33689	Washer
25	33693	Gasket
26	{ 15518	Capscrew—3/8 NF x 7/8 (6)
	{ 15156	Lockwasher—3/8 (6)
27	{ 21014	Locknut
	{ 21013	Lockwasher
28	33692	Cover—Bearing
29	45309C	Bearing (Double Row)
30	{ 33690	Carrier—Bearing
	{ 33691	Shim Set
31	{ 15514	Capscrew—1/2 NF x 1 1/4 (5)
	{ 15158	Lockwasher—1/2 (5)
32	33688	Key
33	6362	Key
34	33671	Washer
35	33653	Oil Seal (2)
5	33676	Gasket
37	33675	Carrier—Oil Seal
38	832	Capscrew (6)

BRAKE SHAFT GROUP — (Current)

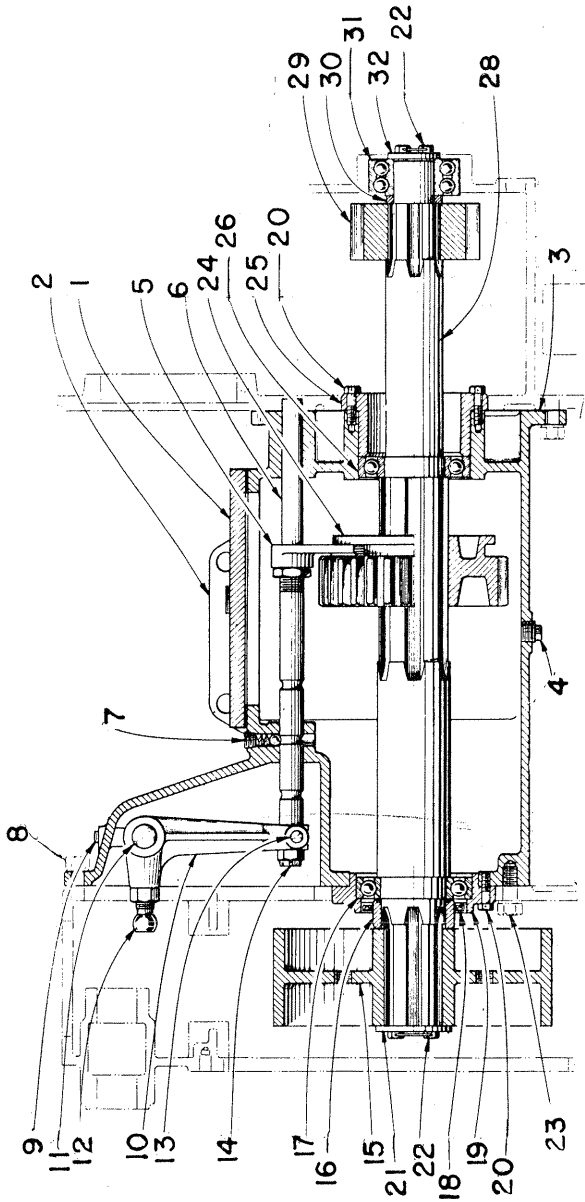


BRAKE SHAFT GROUP — (Current)

Ref. No.	Hyster Part No.	NAME OF PART	Ref. No.	Hyster Part No.	NAME OF PART
1	33677AC	Cover—Top	22	34905	Seat—Ball (2)
2	{ 34795	Capscrew—	{ 33997	Bushing—Last	
		Socket Hd. } on		used on S.N. 4178	
	{ 34796	($\frac{1}{2}$ NC x $\frac{3}{4}$ (8)) Ser.#	23	{ 33997B	Bushing—First
		Wrench } 4300			used on S.N. 4179
3	33678	Gasket		{ 34910AB	Crank
4	15317	Plug—Pipe (1")	24	* 15517	Capscrew—
5	59930	Shaft-Shifter (first used on Serial No. VW-45452)		* 15008	$\frac{1}{2}$ NF x $2\frac{1}{2}$
				* 15158	Nut—Hex ($\frac{1}{2}$ NF)
6	33680	Fork—Shifter ^{Castings} # 52355			Lockwasher— $\frac{1}{2}$
7	15936B	Lockwasher	25	9418	Key
8	15036	Nut—Jam (1" NF)	26	35200	First
9	15314	Plug—Pipe ($\frac{3}{8}$)	27	33704B	Capscrew(2) } used
10	6347B	Spring			Plate } on
11	6348	Ball (Steel)	28	45309C	Bearing
12	33681	Washer ($\frac{3}{4}$ hole)	29	33703	Washer
13	{ 33683AC	Crank	30	92074	Gear—Intermediate
	* 46336	Bushing			(15 teeth)
4	59929	Washer ($\frac{1}{8}$ " thick) (First used on Ser. No. VW-45452)	31	33701	Retainer—Bearing
15	33717	Shoe—Shifter (2)	32	34998	Capscrew (6)
	{ 21229	Nut—Slotted	33	43213L	Bearing
		($\frac{5}{8}$ NF (First used Ser. No. VW-45452)	34	33694C	Shaft—Brake
16	{ 15224	Cotter— $\frac{1}{8}$ x $1\frac{1}{4}$			(First used on Ser. No. 4678)
17	{ 33684B	Stud—Ball	35	92075	Gear—Sliding
	{ 15012	Nut—Hex ($\frac{3}{4}$ NF)	36	43214L	Bearing
18	33685	Pin—Fulcrum	37	33696	Gasket
19	33795	Setscrew—	38	33695	Carrier—Bearing
		$\frac{1}{2}$ NC x $1\frac{1}{2}$	39	34998	Capscrew (6)
20	33763C	Shaft (First used on Ser. No. 4300)	40	31970	Oil Seal ✓
	{ 33744AB	Crank	41	33716	"O" Ring
	* 15517	Capscrew—	42	33697	Spacer
		$\frac{1}{2}$ NF x $2\frac{1}{2}$	43	33698	Wheel—Brake
21	* 15008	Nut—Hex ($\frac{1}{2}$ NF)		{ 6466	Nut (First used on
	* 15158	Lockwasher— $\frac{1}{2}$			Serial No. 4678)
	{ 9418	Key	44	{ 15250	Cotter— $3/16$ x 3
			45	35503	Plug—Pipe
					(Magnetic)

*Included in assembly under which listed.

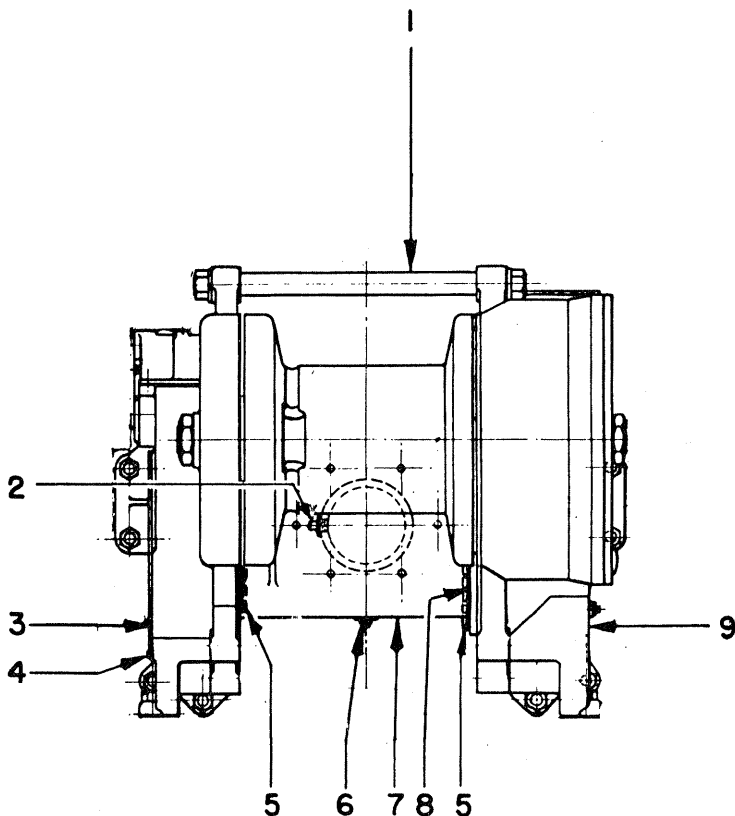
BRAKE SHAFT GROUP — (Non-Current)



BRAKE SHAFT GROUP — (Non-Current)

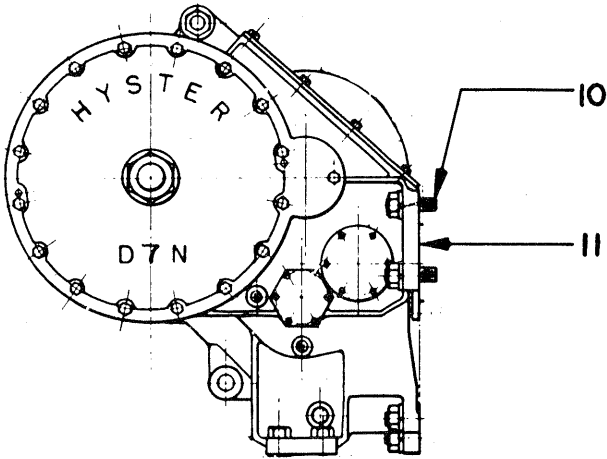
Ref. No.	Hyster Part No.	NAME OF PART
1	{ 33677	Cover—Top (Last used on Serial No. 4178)
	{ 15525	Capscrew— $\frac{3}{8}$ NC x $\frac{3}{4}$ (8)
2	33665	Housing—Transmission (Last used on Serial No. 4178. Replace with 33665B Housing, 33677AC Cover and eight 34795 Capscrews)
3	33730	Gasket
4	35503	Plug—Pipe (Magnetic)
5	33680	Fork—Shifter <i>Cadling # 52355</i>
6	{ 33679	Shaft—Shifter (Last used on Serial No. 4178)
	{ 33679B	Shaft—Shifter (First used on Serial No. 4300. Last used on Serial No. 45105. Replace with 59930 Shaft, 59929 Washer, and 21229 Nut)
7	{ 15314	Plug—Pipe ($\frac{3}{8}$)
	{ 6347B	Spring
	{ 6348	Ball (Steel)
8	15500	Capscrew— $\frac{5}{8}$ NF x $1\frac{1}{2}$ (2)
9	33795	Setscrew
10	33683	Crank (Without Bushing. Replace with 33683AC)
11	33685	Pin—Fulcrum
12	33684	Stud—Ball (Replace with 33684B)
13	33717	Shoe—Shifter (2)
14	{ 37474	Nut—Castel. ($\frac{5}{8}$ NF) } Last used on
	{ 33682	Washer ($\frac{1}{4}$ " thick) } Serial No. 45105
15	33698	Wheel—Brake
16	33697	Spacer
17	43214L	Bearing
18	31970	Oil Seal
19	33695	Carrier—Bearing
20	551	Capscrew (12) (Replace with 34998)
21	{ 33699	Plate (Last used on Serial No. 4309)
	{ 33699B	Plate (First used on Serial No. 4375; last on 4393)
22	{ 33105	Capscrew (2) (Last used on Serial No. 4309)
	{ 35200	Capscrew (2) (First used on Serial No. 4375; last on 4393)
23	15500	Capscrew— $\frac{5}{8}$ NF x $1\frac{1}{2}$ (6)
24	92075	Gear—Sliding
25	33701	Retainer—Bearing
26	43213L	Bearing
28	{ 33694	Shaft—Brake (Last used on Serial No. 4309. Replace with 33694C, 6466, 15250, 33704B and two 35200 Capscrews)
	{ 33694B	Shaft—Brake (First used on Serial No. 4375; last on Serial No. 4393. Replace with 33694C, 6466 and 15250)
29	92074	Gear—Intermediate (15 teeth)
30	33703	Washer
31	45309C	Bearing (Double Row)
32	33704	Plate (Last used on Serial No. 4309)
33	{ 33763	Shaft (Last used on Serial No. 4178) } Not illustrated here.
	{ 33763B	Shaft (For hoists changed over in field) } For illustration, see page 20, Ref. No. 20

SIDE FRAMES

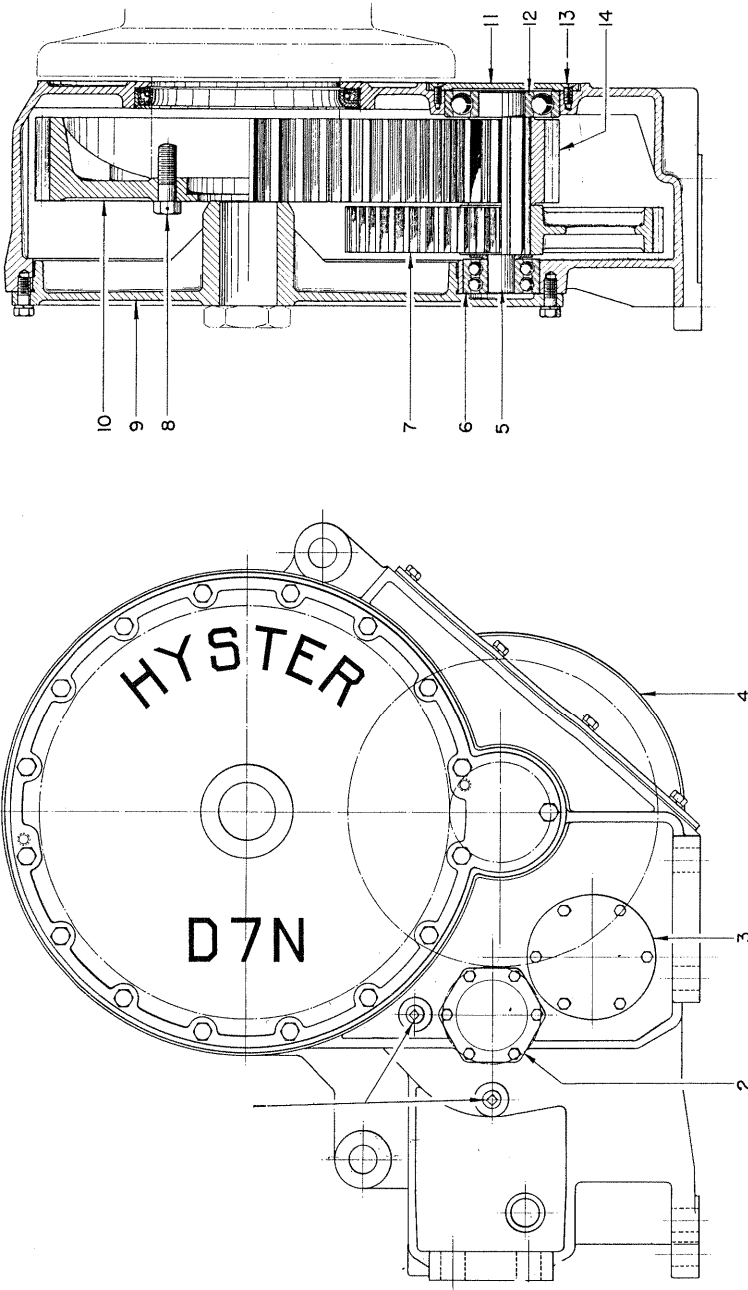


Ref. No.	Hyster. Part No.	NAME OF PART
1	33766	Link
	33767	Spacer
	5792B	Nut— $1\frac{1}{2}$ NF (2)
	15170	Lockwasher— $1\frac{1}{2}$ (2)
2	15304	Plug—Pipe ($\frac{3}{4}$) (2)
3	33612B	Frame—L.H.
4	15302	Plug—Pipe ($\frac{3}{8}$)
5	15500	Capscrew— $\frac{5}{8}$ NF x $1\frac{1}{2}$ (19)
	15160	Lockwasher— $\frac{5}{8}$ (19)
6	Plug—Pipe (Magnetic) (see page 21, item 45)
7	33665B	Housing—Transmission (First used on Serial No. 4300. For Non-current, see page 22, Ref. 2)
8	33730	Gasket
9	33664	Frame—R. H. (Last used on Serial No. 5224)
	33664B	Frame—R. H. (First used on Serial No. 5305)

SIDE FRAMES



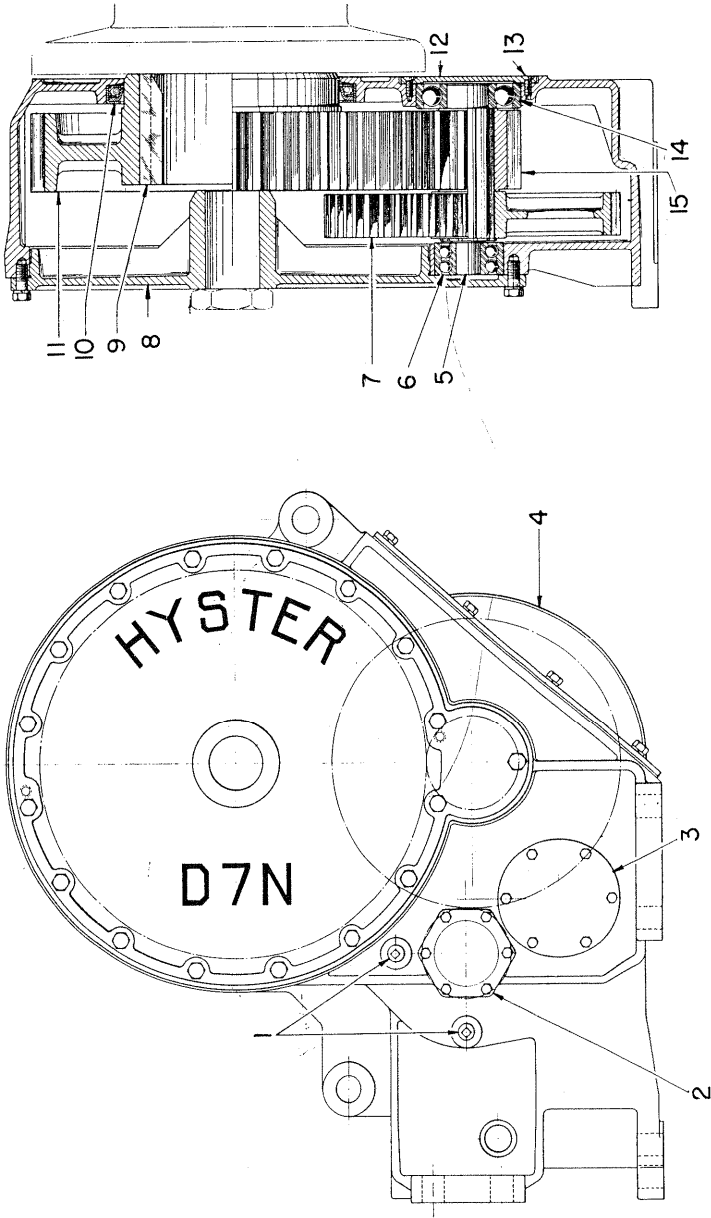
Ref. No.	Hyster Part No.	NAME OF PART
10	33796	Stud ("Caterpillar" No. 7B-782 (2)
	15018	Nut—Hex (1¼ NF) (2)
	15168	Lockwasher—1¼ (2)
11	33718	Gasket

DRUM GEARS AND COVERS — (Current)

DRUM GEARS AND COVERS (Current)

Ref. No.	Hyster Part No.	NAME OF PART
1	15304	Plug—Pipe
	33729B	Retainer—Bearing 136642
2	33736	Gasket
	15507	Capscrew— $\frac{3}{8}$ NC x $\frac{7}{8}$ (6)
	15156	Lockwasher— $\frac{3}{8}$ (6)
	33734	Cover
3	33735	Gasket
	15507	Capscrew— $\frac{3}{8}$ NC x $\frac{7}{8}$ (6)
	15156	Lockwasher— $\frac{3}{8}$ (6)
	33732A	Plate—Cover
4	33733	Gasket
	15502	Capscrew— $\frac{1}{2}$ NC x 1 (10)
	15158	Lockwasher— $\frac{1}{2}$ (10)
5	33737B	Shaft (First used on Serial No. 4300)
6	45309C	Bearing (Double Row)
7	91996	Gear—Intermediate (48 teeth)
8	35127B	Capscrew (4) (First used on Serial No. 5305)
	33712	Plate—Cover
9	33731	Gasket
	15500	Capscrew— $\frac{5}{8}$ NF x $1\frac{1}{2}$ (11)
	15160	Lockwasher— $\frac{5}{8}$
10	91997	Gear (54 teeth) (First used on Serial No. 5305)
11	33739	Plate—Cover
	33740	Gasket
12	41412L	Bearing 43412L U. 124689
13	15506	Machine Screw—Flat Head ($\frac{3}{8}$ NC x $\frac{7}{8}$) (6)
14	33719	Gear (13 teeth)

DRUM GEARS AND COVERS (Non-Current)

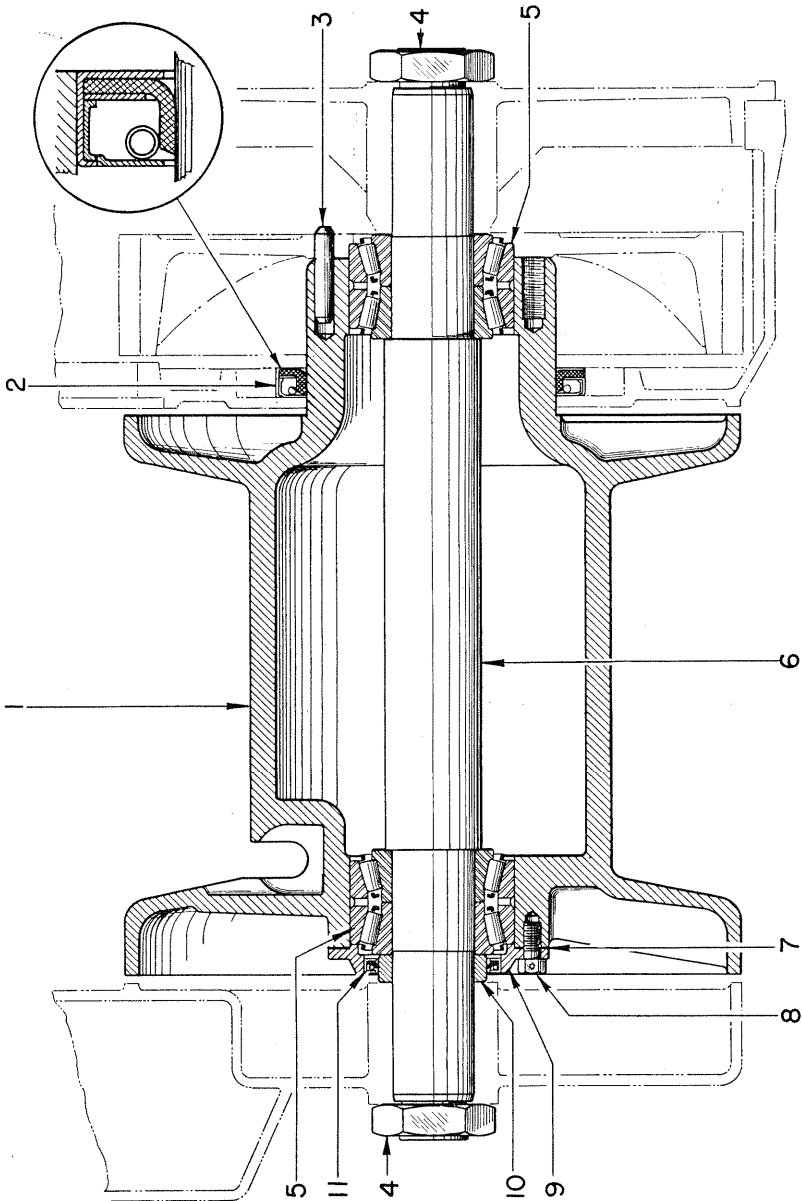


DRUM GEARS AND COVERS

(Non-Current)

Ref. No.	Hyster Part No.	NAME OF PART
1	15304	Plug—Pipe ($\frac{3}{4}$ Std.) (2)
2	33729A 33736	Retainer—Bearing 146642 Gasket
	15507	Capscrew— $\frac{3}{8}$ NC x $\frac{7}{8}$ (6)
	15156	Lockwasher— $\frac{3}{8}$ (6)
3	33734	Cover
	33735	Gasket
	15507	Capscrew— $\frac{3}{8}$ NC x $\frac{7}{8}$ (6)
	15156	Lockwasher— $\frac{3}{8}$ (6)
4	33732A	Plate—Cover
	33733	Gasket
	15502	Capscrew— $\frac{1}{2}$ NC x 1 (10)
	15158	Lockwasher— $\frac{1}{2}$ (10)
5	33737	Shaft (Last used on Serial No. 4178) (For replacement, use 33737B and 45309C)
6	33651	Bearing (Last used on Serial No. 4178)
	33737B	Washer
7	91996	Gear—Intermediate (48 teeth)
8	33712	Plate—Cover
	33731	Gasket
	15500	Capscrew— $\frac{5}{8}$ NF x $1\frac{1}{2}$ (11)
	15160	Lockwasher— $\frac{5}{8}$ (11)
9	33743	Key (Last used on Serial No. 5224)
10	33652	Oil Seal (Last used on Serial No. 5224)
11	33710	Gear (Last used on Serial No. 5224)
12	33739	Plate—Cover
13	15506	Machine Screw—Flat Head ($\frac{3}{8}$ NC x $\frac{7}{8}$) (6)
14	41412L 43412L	Bearing 43412L U 124689
15	33719	Gear (13 teeth)

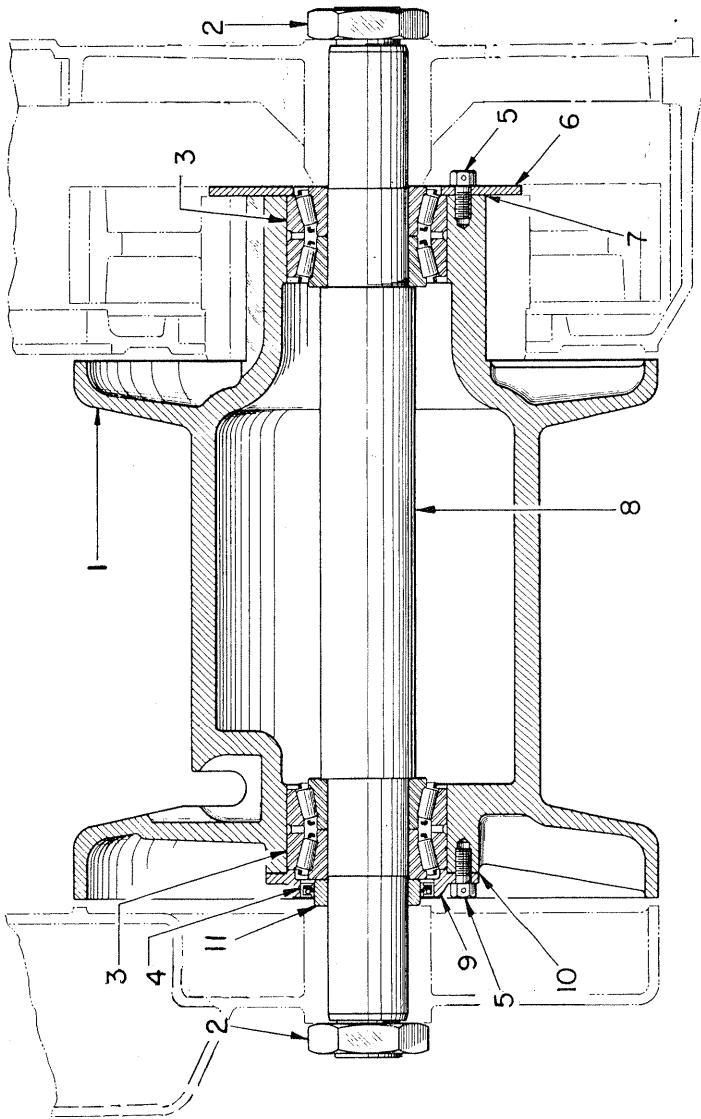
DRUM UNIT — (Current)



DRUM UNIT — (Current)

Ref. No.	Hyster Part No.	NAME OF PART	
1	33667AB	Drum Assembly (includes Item 3)	(First used on Serial No. 5305)
2	36352	Oil Seal (Inside Frame)	
3	36353	Pin—Shear (8)	
4	6607	Nut (2)	
5	31355	Roller Bearing (2)	
6	33720	Shaft—Drum	
7	33722	Gasket	
8	33728	Capscrew (6)	
9	33721	Retainer—Bearing	
10	33723	Spacer	
11	6570	Oil Seal	
	33713	Filler—Cable Groove—(Over and Underwind)	} Not Illustrated
	33714	Lock—Ferrule (Underwind)	
	33715	Lock—Ferrule (Overwind)	
	15505	Capscrew— $\frac{5}{8}$ NC x $1\frac{1}{2}$	
	15160	Lockwasher— $\frac{5}{8}$	
	32076	Wrench—Socket T	
	6697	Ferrule (For 1" Cable) or	
	8060	Ferrule (For $\frac{7}{8}$ " Cable)	

DRUM UNIT — (Non-Current)

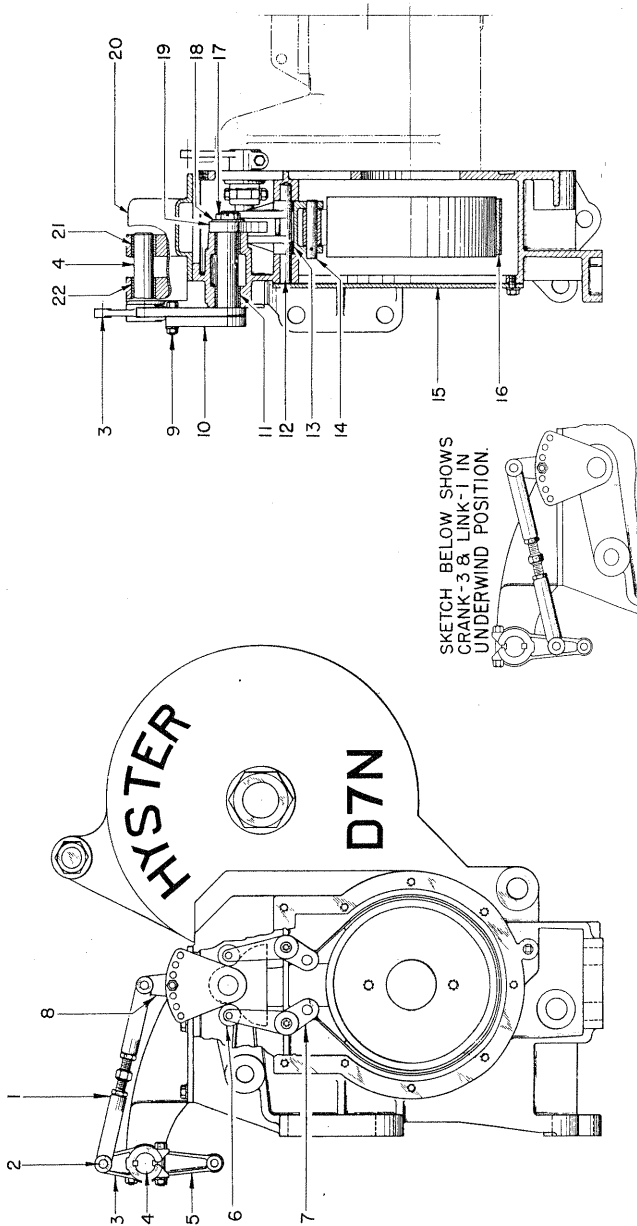


DRUM UNIT — (Non-Current)

Ref. No.	Hyster Part No.	NAME OF PART
1	33667	Drum (Last used on Ser. No. 5224)
2	6607	Nut (2)
3	31355	Roller Bearing (2)
4	6570	Oil Seal
5	33728	Capscrew (6)
6	33724	Plate—Retainer
7	33742	Gasket
8	33720	Shaft—Drum
9	33721	Retainer—Bearing
10	33722	Gasket
11	33723	Spacer

} Last used
on Serial
No. 5224

BRAKE BAND AND LINKAGE



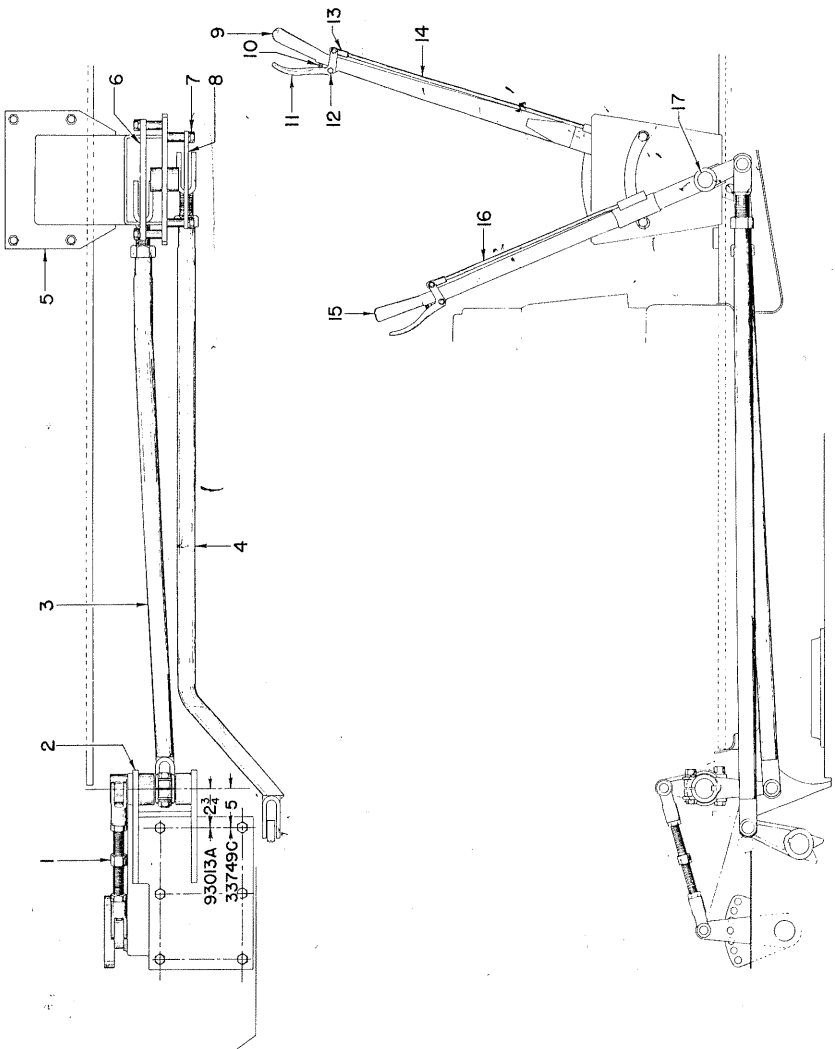
ALWAYS GIVE HOIST SERIAL NUMBER WHEN ORDERING PARTS

BRAKE BAND AND LINKAGE

Ref. No.	Hyster Part No.	NAME OF PART
	33761A	Link <i>For tractor prior to Ser. 17A. See p. 37</i>
	* 158	Rod End (R. H. Thread)
1	* 32448	Rod End (L. H. Thread)
	* 32414	Locknut (L. H. Thread)
	* 15030	Locknut (R. H. Thread)
2	* 159	Pin—Rod End (2)
	* 15223	Cotter— $\frac{1}{8}$ x 1 (2)
	33746A	Crank
	* 15517	Capscrew— $\frac{1}{2}$ NF x $2\frac{1}{2}$
3	* 15008	Nut—Hex ($\frac{1}{2}$ NF)
	* 15158	Lockwasher— $\frac{1}{2}$
	5269	Key
4	33762	Shaft (Last used on Ser. No. 4178)
	33762B	Shaft (First used on Ser. No. 4300)
	33337A	Crank
	* 15510	Capscrew— $\frac{1}{2}$ NF x $2\frac{1}{4}$
5	* 15008	Nut—Hex ($\frac{1}{2}$ NF)
	* 15158	Lockwasher— $\frac{1}{2}$
	33753	Roller (2)
6	32230	Pin (2)
	15225	Cotter— $\frac{1}{8}$ x $1\frac{1}{2}$ (2)
7	32895A	Crank (includes Item 13) (2)
8	33759	Crank
	15516	Capscrew— $\frac{1}{2}$ NF x 2
9	15008	Nut—Hex ($\frac{1}{2}$ NF)
	15158	Lockwasher— $\frac{1}{2}$
10	33755A	Shaft—Operating
11	33654	Bushing (2)
12	33754	Shaft (2)
13	40577	Bushing (4)
14	32894	Pin (2)
	15227	Cotter— $\frac{1}{8}$ x 2 (2)
	33747	Plate—Cover
15	33748	Gasket
	15502	Capscrew— $\frac{1}{2}$ NC x 1 (10)
	15158	Lockwasher— $\frac{1}{2}$ (10)
16	46448AC	Brake Band Assembly
	* 59802AB	Lining Set—Brake (on older models, band to be redrilled by owner)
17	9130	Nut
	15237	Cotter— $5/32$ x 2
18	33758	Washer
19	33756	Cam
	33749C	Bracket—Shaft <i>see page 36 & 37</i>
	21420	Plug—Breather
20	33750	Gasket
	15502	Capscrew— $\frac{1}{2}$ NC x 1 (6)
	15158	Lockwasher— $\frac{1}{2}$ (6)
21	33999	Bushing
22	33998	Bushing

*Included in assembly under which listed.

BRAKE AND SHIFTER LEVER



Price 17A Non Current
After 17A (current) 37

HANDLEVER GROUP — 46982A

In Tractors Series 17A (4-2-3)

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
✓	93017A	Link Assembly (11-15/16 max., <i>Current</i>)	1
	* 159	Pin—Rod End <i>Tractor series</i>	2
	*15223	Cotter— $\frac{1}{8}$ x 1 <i>MA</i>	2
1	*91630	Rod End—Left-hand Thread	1
	*32414	Nut—Jam, Left-hand Thread	1
	*15030	Nut—Jam, $\frac{3}{8}$ NF	1
	*91629	Rod End—Right-hand Thread	1
	33761A	Link Assembly (18-1/16 max., <i>Non-current</i>)	1
	* 158	Rod End (R. H. Thread) <i>I pin</i>	1
	*32448	Rod End (L. H. Thread) <i>to Series</i>	1
1	*32414	Nut—Jam (L. H. Thread) <i>17A</i>	1
	*15030	Nut—Jam, $\frac{3}{8}$ UNF	1
	* 159	Pin—Rod End	2
	*15223	Cotter— $\frac{1}{8}$ x 1	2
2	93013A	Bracket (2 $\frac{3}{4}$ ", Current) or -	1
	33749C	Bracket (5", Non-current)	1
	33998	Bushing—1 $\frac{7}{8}$ " long	1
	33999	Bushing—1 $\frac{1}{2}$ " long	1
	93019A	Link Assembly (45-5/16 max.— <i>Current</i>)	1
	*15036	Nut—Jam, 1" NF <i>Tractor series</i>	1
3	*33771A	Rod End <i>17A</i>	1
	* 159	Pin—Rod End	2
	*15223	Cotter— $\frac{1}{8}$ x 1	2
	33770A	Link Assembly (43" max., Non-current)	1
3	*33771A	Rod End <i>I pin to</i>	1
	* 159	Pin—Rod End <i>Series 17A</i>	2
	*15223	Cotter— $\frac{1}{8}$ x 1	2
	*15016	Nut—Hex, 1" NF	1
	93022A	Link Assembly	1
4	*33771A	Rod End	1
	* 159	Pin—Rod End	2
	*15223	Cotter— $\frac{1}{8}$ x 1	2
	*15036	Nut—Jam, 1" NF	1
	91301A	Bracket—Quadrant	1
	15509	Capscrew— $\frac{1}{2}$ NF x 1 $\frac{1}{2}$	4
5	15008	Nut—Hex, $\frac{1}{2}$ NF	4
	15158	Lockwasher— $\frac{1}{2}$	4
6	92564	Quadrant—Ratchet ($\frac{3}{8}$ " thick)	1
	32656	Quadrant—Ratchet ($\frac{1}{4}$ " thick)	1
7	15518	Capscrew— $\frac{3}{8}$ UNF x $\frac{7}{8}$	4
	15156	Lockwasher— $\frac{3}{8}$	4
8	32657	Quadrant	1
9	92558A	Handlever—Brake (When ordering Handlever include Ratchet 92564)	1
10	*32695-05	Spring	1
11	*32694	Handle	1
12	*37476-24	Machine Screw—Hex, 10-24 x $\frac{1}{2}$	2
	*15052	Nut—Hex, 10-24	2
13	*32693	Rod End	1
14	*92561	Pawl—Rod	1
15	*32659AB	Handlever—Clutch (includes items 10, 11, 12 & 13)	1
16	*92568	Rod—Pawl	1
	59413	Pin	1
17	90267	Washer	2
	15246	Cotter—3/16 x 2	2
	34695	Plate—Brace (not shown) for Lightweight Tractor Fenders only; owner to redrill with Bracket No. 91301A.	

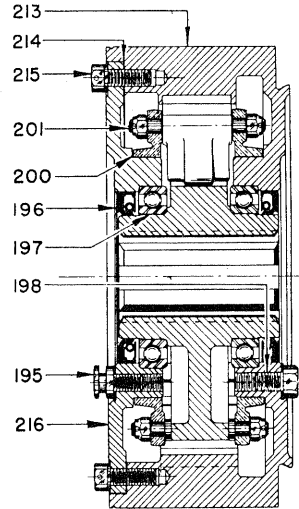
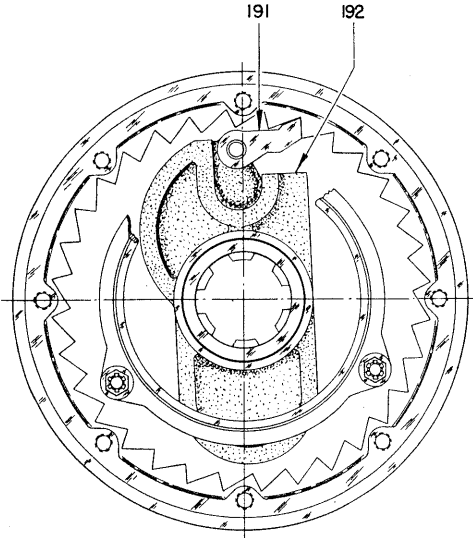
*Included in Assembly under which listed.

SECTION E

Optional Items Used on D7NTW

AUTOMATIC BRAKE — OPTIONAL

Complete Brake No. 59426A consists of the Parts listed below
(First Brake of This Type — Brake Serial No. 40437)

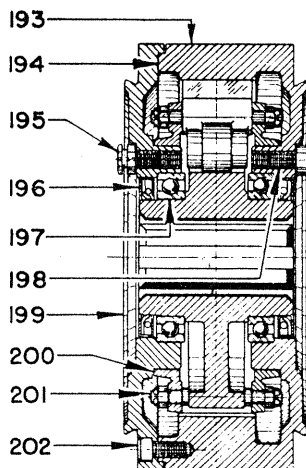
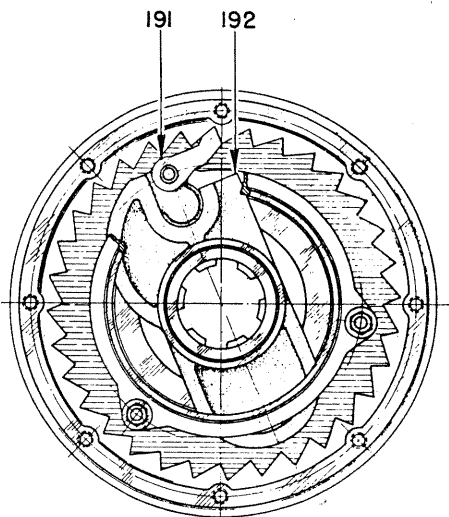


Ref. No.	Hyster Part No.	NAME OF PART
191	36007	Pawl
192	36004B	Hub
195	{ 59370	Vent Plug
	{ 35159	Gasket
196	33783	Oil Seal (2)
197	36000	Bearing (2)
198	{ 15515	Capscrew— $\frac{1}{2}$ NF x $\frac{3}{4}$ (3)
	{ 35159	Gasket (3)
200	36006	Ring—Drag (2)
	{ 36008	Link—Shoulder (3)
201	{ 38848	Nut—Castellated ($\frac{3}{8}$ NF) (6)
	{ 15201	Cotter— $\frac{1}{16}$ x $\frac{3}{4}$ (6)
213	59425A	Wheel Assembly—Brake
214	59432	Gasket—Cover
215	59927	Capscrew—Drilled Head (8)
216	59397	Cover—Side

AUTOMATIC BRAKE — OPTIONAL EQUIPMENT

Complete Brake No. 36010A consists of the Parts listed below

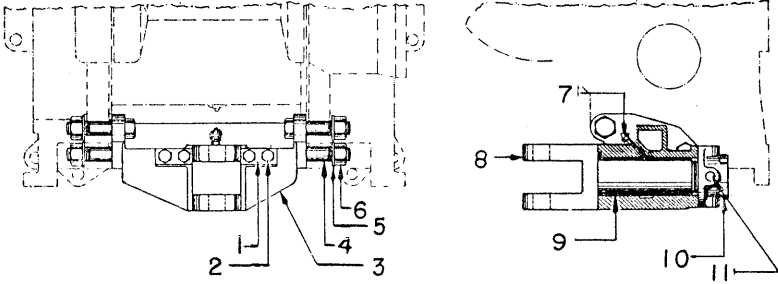
(Last Brake of This Type — Brake Serial No. 38815)



Ref. No.	Hyster Part No.	NAME OF PART
191	36007	Pawl
192	36004B	Center
193	†.....	Ring—Brake
194	36009B	Gasket
195	{59370	Plug—Vent
	{35159	Gasket (Copper Gasket)
196	33783	Oil Seal (2)
197	36000	Bearing (2)
198	{15515	Capscrew— $\frac{1}{2}$ NF x $\frac{3}{4}$ (3)
	{35159	Gasket (Copper) (3)
199	†.....	Plate—Cover
200	36006	Ring—Drag (2)
	{36008	Stud (3)
201	{15006	Nut—Hex ($\frac{3}{8}$ NF) (6)
	{15201	Cotter— $\frac{1}{16}$ x $\frac{3}{4}$ (6)
202	{35115	Capscrew (8)
	{15157B	Lockwasher (8)

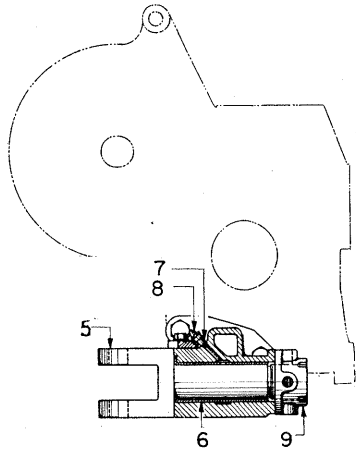
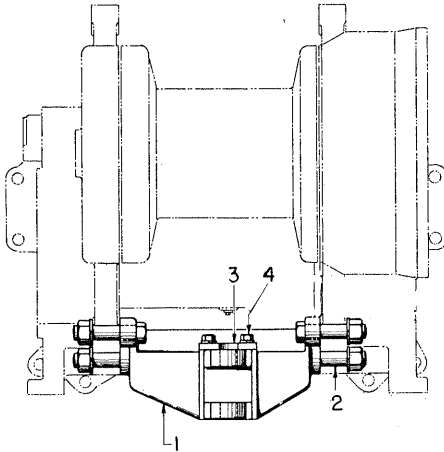
†Replace these parts with Replacement Kit No. 91072A.

SPECIAL DRAWBAR — OPTIONAL
Complete Assembly — 33768AB
(Current)



Ref. No.	Hyster Part No.	NAME OF PART
1	35126	Plate—Drawbar Lock (2)
2	15533	Capscrew— $\frac{3}{4}$ NC x 2 (4)
3	33790B	Bracket
4	33792	Capscrew— $1\frac{1}{2}$ NF x 6 (4)
5	15170	Lockwasher— $1\frac{1}{2}$ (4)
6	5792B	Nut—Hex ($1\frac{1}{2}$ NF) (4)
7	16002	Grease Fitting
8	33787	Drawbar
9	91191A	Bushing
10	33618	Nut (Special)
11	15295	Cotter— $\frac{1}{2}$ x 5

SPECIAL DRAWBAR — OPTIONAL (Non-Current)

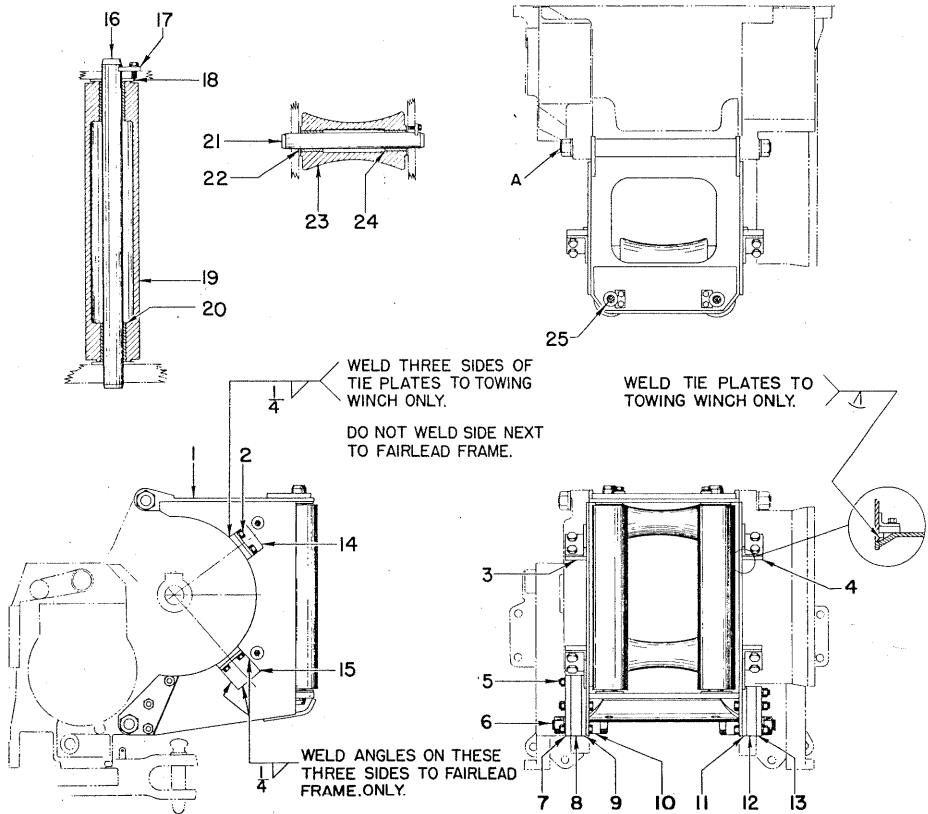


Ref. No.	Hyster Part No.	NAME OF PART
1	33790	Bracket
2	{ 33792	Capscrew— $1\frac{1}{2}$ NF x 6 (4)
	{ 5792B	Nut—Hex ($1\frac{1}{2}$ NF) (4)
	{ 15170	Lockwasher— $1\frac{1}{2}$ (4)
3	33791	Plate—Drawbar Lock
4	{ 15533	Capscrew— $\frac{3}{4}$ NC x 2 (2)
	{ 15162	Lockwasher— $\frac{3}{4}$ (2)
5	33787	Drawbar
6	91191A	Bushing
7	15450	Pipe Fitting—Nipple
8	16000	Grease Fitting
9	{ 33618	Nut (Special)
	{ 15295	Cotter— $\frac{1}{2}$ x 5

OPTIONAL LOW SPEED INTERMEDIATE GEARS:

Standard intermediate gear (Ref. 30, page 21) with 15 teeth, and matching intermediate gear (Ref. 7, page 27) with 48 teeth, may be replaced with special slow-speed gears, No. 33988 with 12 teeth, and matching gear No. 33989 with 51 teeth, if less speed and more power is desired.

FAIRLEAD ASSEMBLY — 91831AC



INSTALLATION INSTRUCTIONS

1. Install fairlead on towing winch, holding it in place with the long tie rod "A" across the top of the winch. Discard pipe spacer between winch side frames.
2. If necessary, remove burrs to provide a smooth mounting surface, and bolt tie plates (7 and 13) to the right and left-hand sides of towing winch as shown, using special capscrews (6). Spacers (10) will not be used if towing winch has built-in drawbar.
3. Place spacers (8-9 and 11-12) between fairlead frame and tie plates (7 and 13) and bolt together with capscrews (5).
4. Place the tie plates (3 and 4) bolted to angles (14 and 15) as indicated (38° above and 49° below drum centerline). Weld angles (14 and 15) to fairlead frame only on three sides with $\frac{1}{4}$ " fillet weld. Weld tie plates (3 and 4) to towing winch frame only on three sides with $\frac{1}{4}$ " fillet weld. Do not weld side next to fairfield frame.

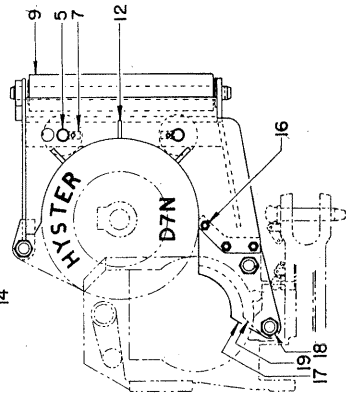
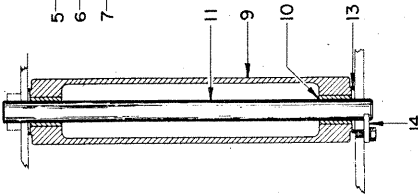
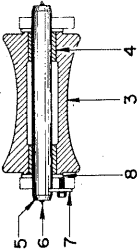
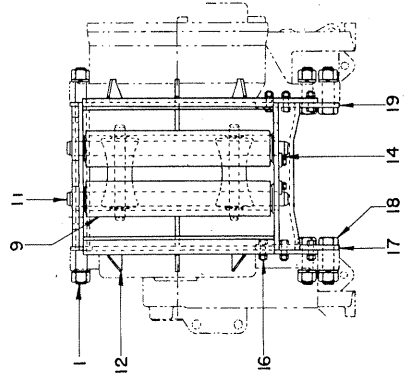
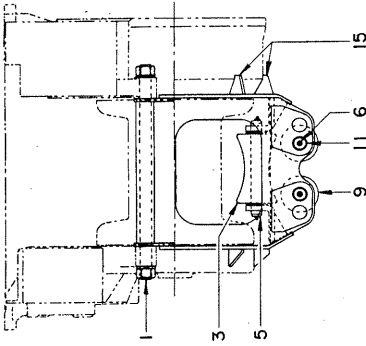
Once mounted on a D7N towing winch the fairlead is not interchangeable with other D7N towing winches unless additional fiting is done.

FAIRLEAD ASSEMBLY — 91831AC

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	92215A	Frame	1
2	{ 16804	Capscrew—Hardened, $\frac{5}{8}$ NF x $1\frac{1}{4}$	8
	{ 15156	Lockwasher— $\frac{5}{8}$	8
3	92989	Plate—Tie (L. H.)	2
4	93173A	Plate—Tie (R. H.)	2
	{ 15567	Capscrew— $\frac{3}{4}$ NF x $4\frac{1}{2}$	6
5	{ 15012	Nut—Hex, $\frac{3}{4}$ NF	6
	{ 15162	Lockwasher— $\frac{3}{4}$	6
	{ 92406	Capscrew—Special	2
6	{ 5792B	Nut—Hex, $1\frac{1}{2}$ NF	2
	{ 15170	Lockwasher— $1\frac{1}{2}$	2
7	92400	Plate—Tie, L. H.	1
8	92401	Plate—Spacer, L. H.	1
9	92402	Plate—Spacer, L. H.	1
10	59568	Spacer	2
11	92405	Plate—Spacer, R. H.	1
12	92404	Plate—Spacer, R. H.	1
13	92403	Plate—Tie, R. H.	1
14	92991	Angle—Upper	2
15	92990	Angle—Lower	2
16	91853	Shaft—Vertical	2
	{ 93166	Keeper	4
17	{ 15514	Capscrew— $\frac{1}{2}$ NF x $1\frac{1}{4}$	8
	{ 15158	Lockwasher— $\frac{1}{2}$	8
18	33394	Washer	4
19	36206A	Roller Assembly	2
20	* 2570	Bushing	4
21	92213	Shaft—Horizontal	2
22	92720	Washer	4
23	92212A	Roller Assembly	2
24	*59419	Bushing	4
25	16001	Grease Fitting	8

*Included in assembly under which listed.

FAIRLEAD ASSEMBLY — 91831A (Non-Current)



FAIRLEAD ASSEMBLY — 91831A

(Non-Current)

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	Link (see page 24, Ref. 1)	
3	91776A	Roller Assembly	2
4	*59419	Bushing	4
5	91778	Shaft	2
6	16001	Grease Fitting	8
7	{ 91779	Keeper	2
	{ 15508	Capscrew— $\frac{3}{8}$ NF x 1	2
	{ 15156	Lockwasher— $\frac{3}{8}$	2
8	92720	Washer	4
9	36206A	Roller Assembly	2
10	* 2570	Bushing	4
11	91853	Shaft	2
12	91854	Plate—Gusset (L. H. side)	3
13	33394	Washer	2
14	{ 34687	Keeper	2
	{ 15511	Capscrew— $\frac{1}{2}$ NF x 1	2
	{ 15158	Lockwasher— $\frac{1}{2}$	2
15	91855	Plate—Gusset (R. H. side)	3
16	{ 15605	Capscrew— $\frac{3}{4}$ NF x $2\frac{1}{4}$	6
	{ 15012	Nut—Hex, $\frac{3}{4}$ NF	6
	{ 15162	Lockwasher— $\frac{3}{4}$	6
17	91850	Plate (L. H. side)	1
18	{ 91852	Capscrew— $1\frac{1}{2}$ NF x $5\frac{1}{4}$	4
	{ 5792B	Nut—Hex, $1\frac{1}{2}$ NF	4
	{ 15170	Lockwasher— $1\frac{1}{2}$	4
19	91851	Plate (R. H. side)	1

*Included in assembly under which listed.

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07N 20 17A 93782

INSTRUCTIONS FOR ORDERING HYSTER REPAIR PARTS

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

Note: The oil for the transmission shall be a straight mineral type, stable, properly refined, free from fatty acids, resins, abrasives or other non-petroleum material and shall meet the following requirements.

1. Viscosity at 210° F. 80 - 90 Seconds
Saybolt Universal
2. Viscosity Index, Minimum 85
3. Pour Point, Maximum Minus 10° F.
4. B. S. & W., Maximum 05 %
5. Color, Maximum 8

Black oils or residuum materials will NOT be considered as satisfactory for this specification.

