PARTS BOOK
AND
INSTRUCTION MANUAL
for
HYSTER®
D8D Towing Winch

EFFECTIVE WITH
HYSTER NO. HRD-92804

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

FORM NO. 831B LITHO IN U.S.A. 3M-157

599203W

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.

SPECIFICATIONS

HYSTER MODEL ..... D8D Towing Winch
Single Speed Forward and Reverse

Drum Size:	With Standard Drum
Barrel Diameter	13"
Flange Diameter	24"
Barrel Length	12"

Cable Capacity, Maximum Line ..... 320 ft.—1"
252 ft.—1 1/8"

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

Available Line Pulls:
Bare Drum, 1" Line ..... 58,500 lbs.
Full Drum, 1" Line ..... 35,600 lbs.

Line Speeds:
Bare Drum, 1" Line ..... 104 f.p.m.
Full Drum, 1" Line ..... 171 f.p.m.
(Line Speeds and Pulls are the same when Overwinding or Underwinding)

Above figures based on 191 H.P. at 1200 R.P.M. using 1" line.

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.

WITH STANDARD DRUM AND BUILT-IN DRAWBAR

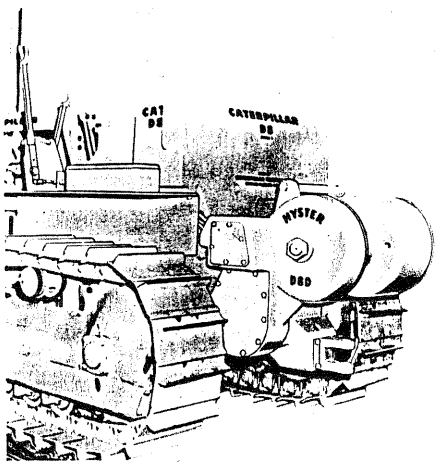
Net Weight (without cable) ..... 3,130 lbs.

PARTS BOOK
AND
INSTRUCTION MANUAL
FOR
HYSTER
D8D Towing Winch

For" Caterpillar" Diesel D8 Tractor

Tractor Serial No. 1H1 to 1H9999
Tractor Serial No. 8R1 & Up
Tractor Serial No. 14A1 & Up
Tractor Serial No. 15A1 & Up
Also for No. 583 Pipe Layer

For Torque Converter Tractors use Winch with
Serial No. Prefix HRD-T-



Including
Installation, Lubrication and
Servicing Instructions

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

INDEX

SECTION A
Operation

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.

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

OPERATING INSTRUCTIONS—Continued

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 8, and should be carefully studied. The lubricant recommended should be used. Keep all bolts and nuts tight and check all other connections.

BE SURE WINCH GEAR SHIFT LEVER IS IN NEUTRAL POSITION *BEFORE MOVING THE TRACTOR*

WHEN WINCH IS NOT IN DAILY USE ENGAGE WINCH TRANSMISSION CLUTCH LEVER ONCE EVERY 8 HOURS FOR A PERIOD OF FIVE MINUTES TO INSURE THAT LUBRICATION REACHES THE POWER TAKE-OFF SHAFT BEARINGS.

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

TRACTOR LUBRICATION

FOR STATIONARY WORK

CAUTION

INSTRUCTIONS FOR D8 TRACTORS PRIOR TO SERIAL 2U-5307

For D8 tractors not provided with forward-reverse lever, it will be necessary, at intervals of about four hours, to release steering clutches and engage master clutch while tractor is in gear, and let the oil splash around in the transmission for a few minutes. Obviously, if tractor is moved for any distance, the same result will be accomplished and this precaution may be disregarded.

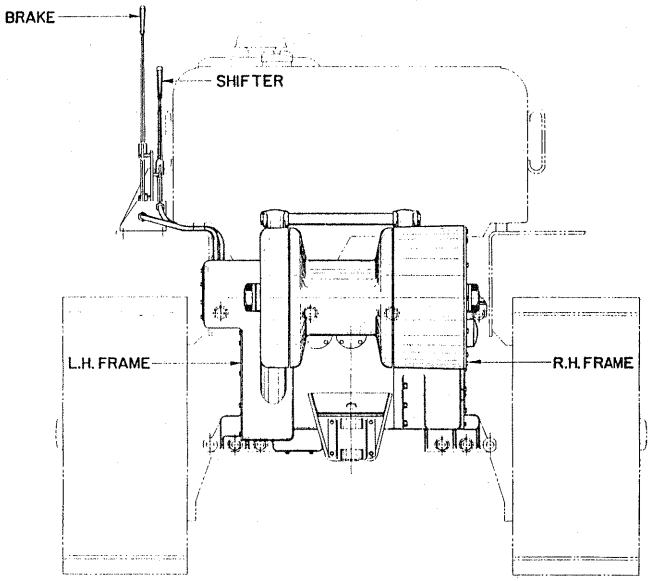
INSTRUCTIONS FOR D8 TRACTORS SERIAL 2U-5307 AND UP

D8 tractors with Serial No. 2U-5307 and up are equipped with oil pumps and should be left with both gear shift levers in neutral.

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.

LOCATION AND OPERATION OF LEVERS



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

(See illustrations on page 6.)

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

NOTE: When the optional automatic brake is used brake lever may be applied when hauling in a load and *must* be released to pay out line.

When the clutch shifter lever (the shorter handlever on the inside towards the operator) is in the forward position, the drum will rotate in an overwinding direction. When the clutch shifter handlever is pulled back by the operator the drum will rotate in an underwinding direction.

The brake handlever is the longer lever. When lever is in the forward postion, the brake is released. When lever is pulled back toward the operator the brake is applied.

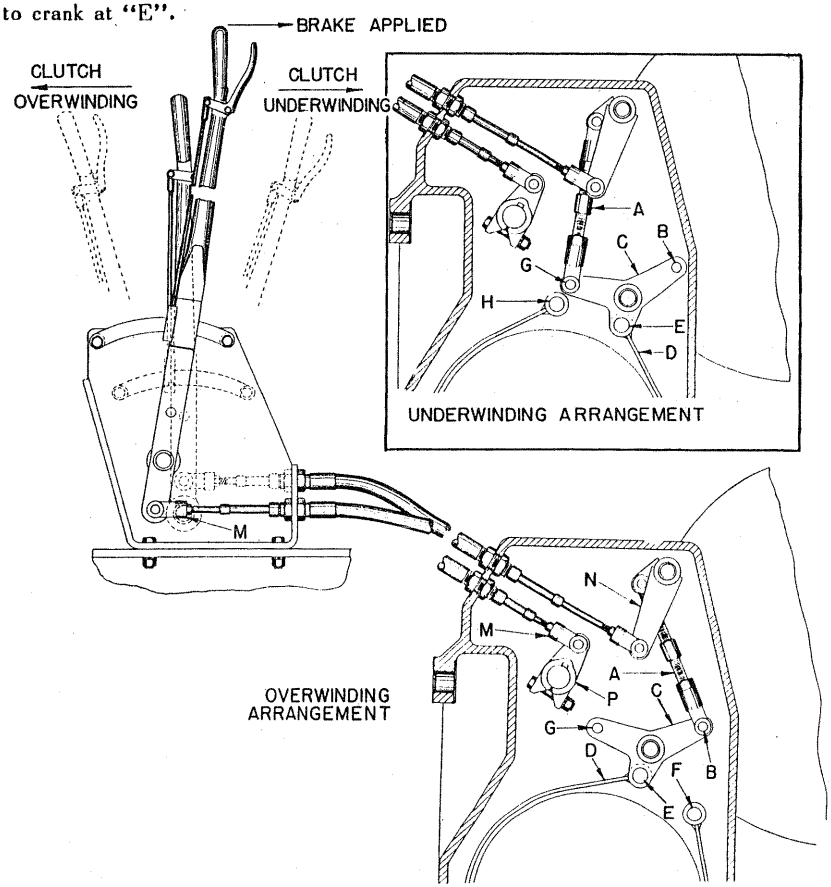
The brake is an external contracting band type. Care should be exercised in applying the brake ONLY when the tractor master clutch is disengaged. Otherwise the tractor motor will be stalled and damage could result to the winch mechanism.

OPERATING INSTRUCTIONS—Continued

Brake Linkage

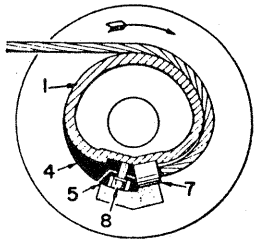
When the winch is used with the cable leading from the top of the drum, the drum is overwinding. For "overwinding" cable, connect the turnbuckle "A" to hole "B" in crank "C", and loose end of brake bank "D" in hole "E". Anchored end of brake band is in hole "F". All winches are overwind unless underwind is specified.

When the winch is used with the cable leading from the bottom of the drum, it is said to be underwinding. For "underwinding" cable, connect the turnbuckle "A" to hole "G" in crank "C" and anchor end of brake band in hole "H". Loose end "D" of brake band (formerly the anchored end) is connected to crank at "E".

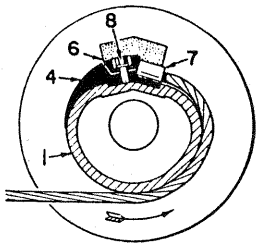


OPERATING INSTRUCTIONS—Continued

Method of Attaching Cable for Overwinding or Underwinding Drum



OVERWINDING

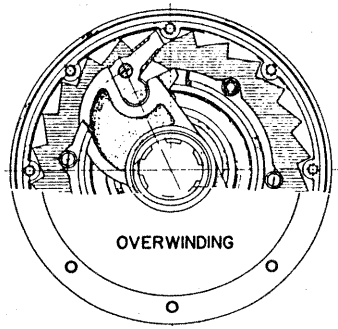


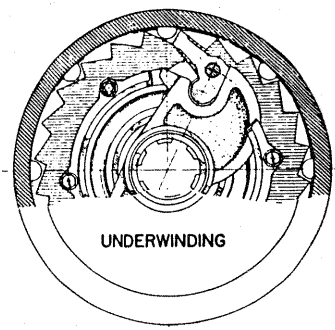
UNDERWINDING

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.

Automatic Brake (Optional Equipment)





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 on page 12, covering brake linkage and adjustments on regular brake apply also to the special automatic brake.

SECTION B
Servicing Instructions

LUBRICATION INSTRUCTIONS

Refer to chart shown on opposite page.

The lubrication chart shows the location of the various filler, level and drain plugs on the transmission case and lubrication fitting at the drawbar swivel.

WHEN WINCH IS NOT IN DAILY USE ENGAGE WINCH TRANSMISSION CLUTCH LEVER ONCE EVERY 8 HOURS FOR A PERIOD OF FIVE MINUTES TO INSURE THAT LUBRICATION REACHES THE POWER TAKE-OFF SHAFT BEARINGS.

On a new winch the oil should be drained from both compartments of gear housings at the end of one week, flushed and refilled with fresh oil.

Transmission Case Lubrication

The bearings in the transmission, intermediate and drum gear train are lubricated from the oil in the transmission case. The oil level in the case should be checked weekly, keeping the case filled up to the oil level plug "K" which is located on the outside of the right-hand side frame.

The filler plug "P" is located in the transmission case top cover plate. Oil reaches both compartments through this one filler.

The two drain plugs "R" are located in the bottom section of transmission case and the bottom section of the right-hand frame. These drain plugs are of the magnetic type which attract and hold any metal particles settling out of the oil.

In normal operation of winch, drain, flush and refill with fresh oil every 60 days depending on operating conditions. For refilling, use SAE 90 under ordinary use and weather conditions. In general use the same gravity oil as is required in the "Caterpillar" transmission. Approximately eight gallons of oil required for both compartments.

Built-in Drawbar

If the Hyster built-in drawbar is used in the swiveling set-up, it should be lubricated through the grease fitting "L" provided on bracket.

Fairlead grease fittings in fairlead roll shafts should be serviced daily.

Handling Gear Lubrication

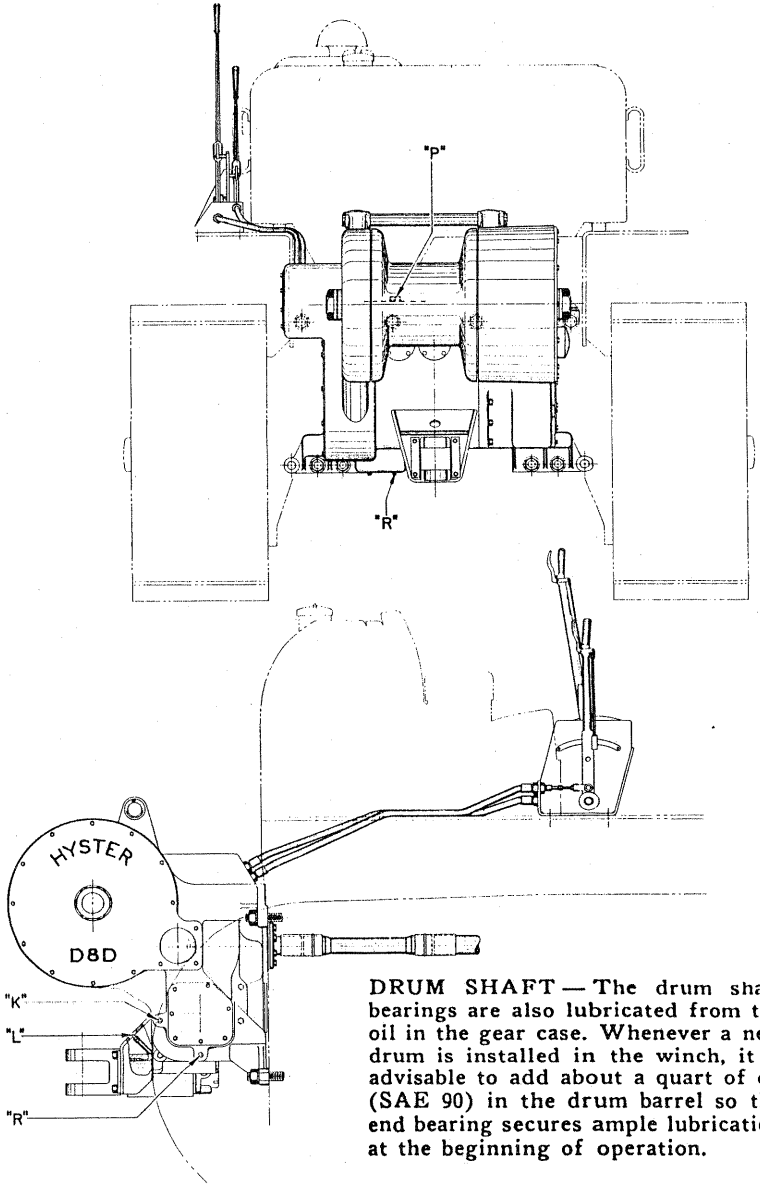
Shifter rods, lever fulcrums, pin connections and other moving parts should be kept working freely by oiling once every day with a few drops of oil from an ordinary oil can.

NOTE: Although equipped with grease fittings, at each end, control cables should not be lubricated unless they become stiff or inoperative. Use Lubriplate 105V or Aero or equivalent ONLY if grease is required. If this is not available, do not lubricate at all. Too much lubricant will blow out seals of cables and permit foreign matter to enter.

Brake Compartment Drain

The pipe plug in the bottom of brake compartment should in no cas be discarded, and should be removed at least twice each month to drain the brake compartment of water accumulated by condensation.

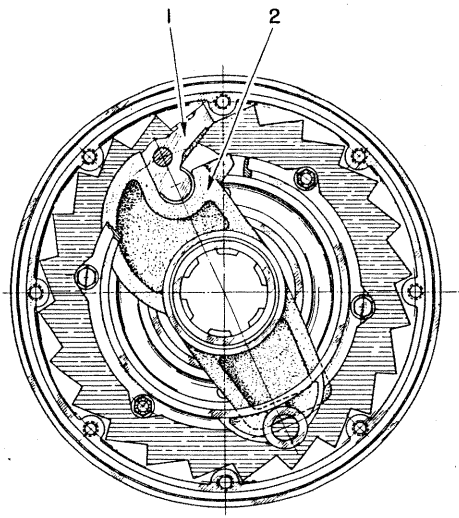
LUBRICATION CHART

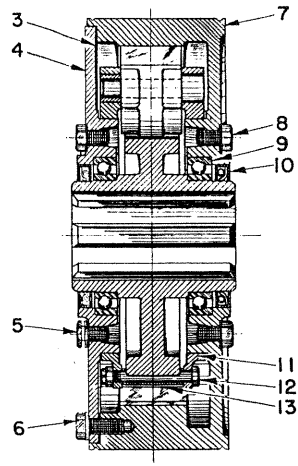


DRUM SHAFT — The drum shaft bearings are also lubricated from the oil in the gear case. Whenever a new drum is installed in the winch, it is advisable to add about a quart of oil (SAE 90) in the drum barrel so the end bearing secures ample lubrication at the beginning of operation.

Automatic Brake (Optional Equipment)

Every 1000 hours of service the brake 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 (4, page 24) on the left-hand side frame brake compartment must be removed to gain access to the brake.
2. (See page 30.) Pull pins 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 (7, page 24) from end of shaft.
4. Assembled wheel can then be pulled from shaft. If wheel is tight, an appropriate puller may have to be used. Two ½" NF tapped holes, plugged with vent plug (5) and ½" capscrews (8) 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 (6).
6. Remove cover with appropriate puller, using the holes in cover from which the capscrew (8) and vent plug (5) with copper gasket washers were removed. Take care not to damage oil seal.
7. After brake is open, pull out center (2), assembled with pawl (1) and drag rings (11).
8. Clean all parts thoroughly and repack brake with about ¾ 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.

LUBRICATION INSTRUCTIONS—Continued

9. After servicing brake, replace center (2) assembled with pawl (1) and drag rings(11). Check to see that seal (10) is in good condition.

10. NOTE: Install oil seals so that lips of both are pointing in as shown.

11. Clean gasket surfaces making certain that no grease remains. Use new gasket (3) . Coat both sides of the gasket with Permatex Gasket cement. Carefully assemble cover (4) 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 (5) and capscrew (8) with copper washers, removed in Instruction 4.

13. Install assembled brake wheel on shaft in winch and lock in place with flange nut and cotter removed in instruction 3.

14. Release brake hand lever and install brake band over brake wheel, anchoring with pins removed in instruction 2.

15. Replace cover (4, page 24) removed in Instruction 1.

Brake and Clutch Link Adjustment

NOTE: If not otherwise specified, all winches are shipped with the brake set up for the drum to be pulling cable in OVERWINDING (over the top of the drum barrel). If brake is used with incorrect setting, it will be much harder to apply, and the load will be difficult to hold.

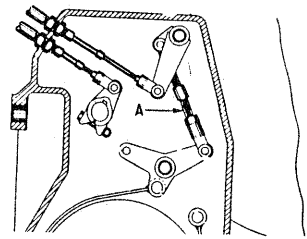
When winch is equipped with automatic brake, additional changes are required as noted on page 7.

Brake Adjustment

Care should be taken to have the brake band lining about 1/32" free from the brake drum when the handlever is pushed all the way forward.

SERVICING INSTRUCTIONS—Continued
BRAKE ADJUSTMENT—Continued

OVERWINDING ARRANGEMENT



As the brake band wears it will be necessary to readjust turnbuckle "A." This can be done by removing housing cover and shortening turnbuckle.

With the brake handlever in fully released position, loosen nuts on turnbuckle "A" and adjust until the desired clearance between brake drum and lining is obtained (approx. 1/32"). If required, additional adjustment may be obtained by turning rod ends on cable leading to brake handlever.

Be sure to tighten nuts on turnbuckle after adjustment.

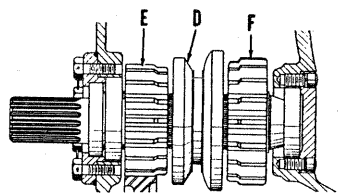
Brake band wear can be taken up exactly the same way with the brake link in either the overwinding or underwinding position as explained above. No pins or connections need be disturbed.

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

Clutch Adjustment

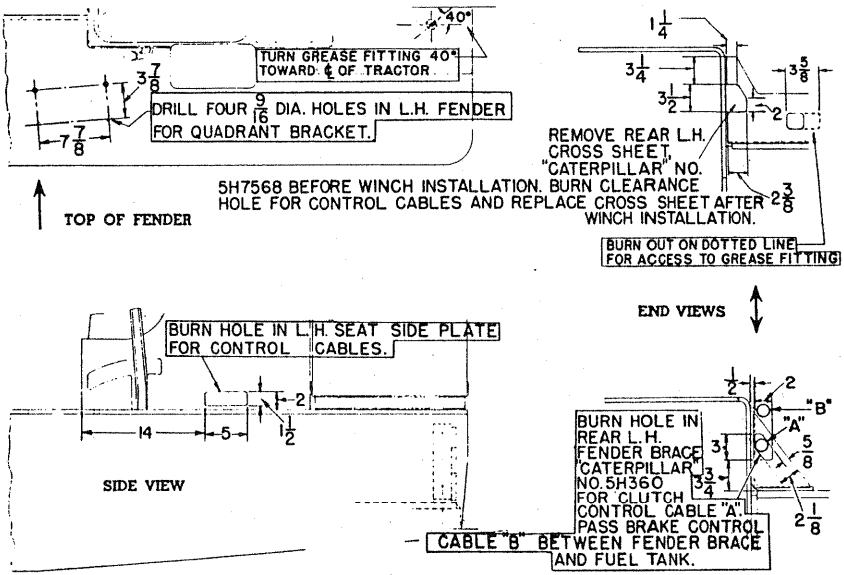
One end of the clutch cable is connected to shifter handlever and the other end to the operating crank.

A ball and spring holds the shifter fork in one of the three notches on the shifter shaft; for forward, neutral or reverse. With the ball in the center (neutral) position, adjust rod ends on cable until the pawl on shifter handlever is in the notch on the quadrant bar. In this position the dental clutch "D" should be centered between gears "E" and "F" as shown.

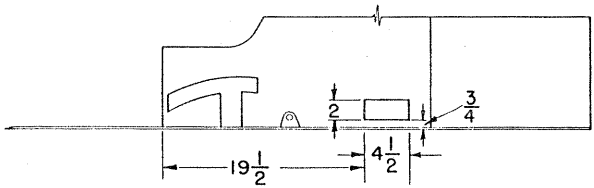


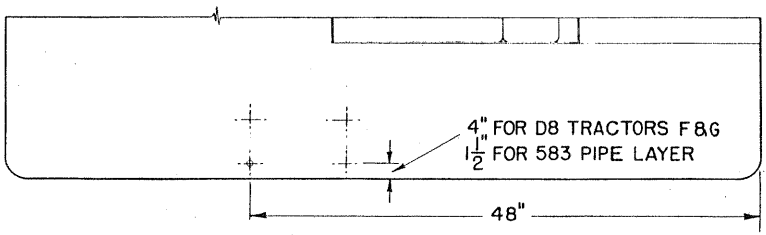
TRACTOR ALTERATIONS

For Tractors Series D and E

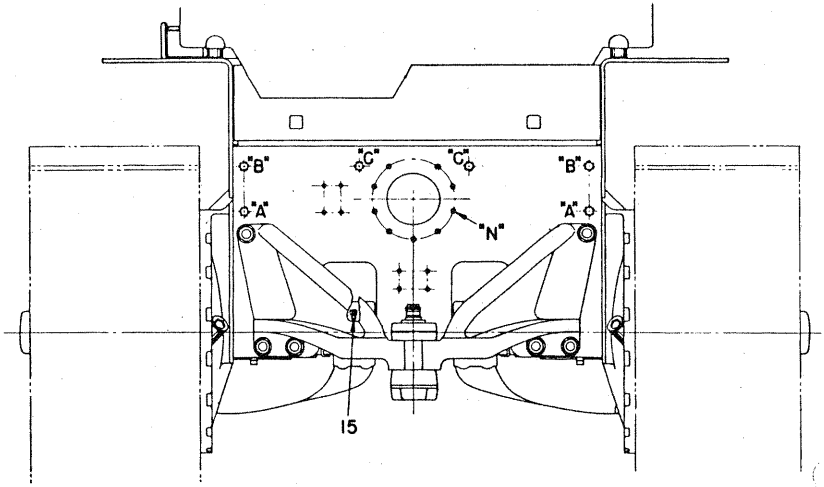


For Tractors Series F and G
And 583 Pipe Layer

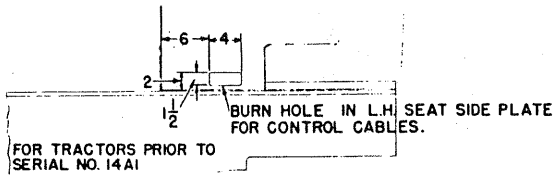




SECTION C
Installation Instructions



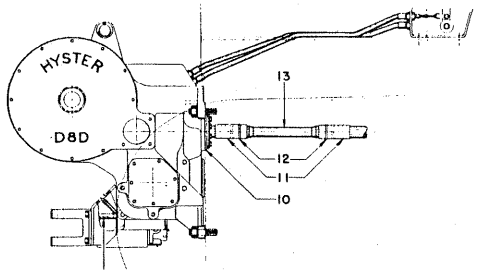
TRACTOR ALTERATIONS
For Tractors Prior to Series 14A and 15A



INSTALLATION INSTRUCTIONS

FOR INSTALLING HYSTER D8D TOWING WINCH, SERIAL No. HRD-92804 & Up, ON D8 TRACTOR

1. Remove "Caterpillar" power take-off cover, drawbar, drawbar brackets, drawbar plates and fastenings and discard.
   (See illustration on page 14.)
2. Remove two lubrication fittings from caps on cross-shaft in rear of tractor transmission about 8" from center line just under the edge of transmission case. Install two elbow bodies 90° (15) in these locations. Thread the above fittings removed from tractor, into these elbow bodies.
3. Move two "Caterpillar" drawbar bracket studs from position "A" to position "B." The lower studs, which previously held the drawbar bracket to the tractor, are left in position to hold lower lugs of winch.
   NOTE: Plug the holes from which the studs were removed with Hyster plugs, 93193, furnished to prevent oil from leaking out of the tractor. Burn holes for control cables in L. H. seat side plate and L. H. fender brace, as shown in sketches.



4. Install couplings (11), on extension shaft (13), and lock couplings in place on extension shaft with pins and lock rings (12) provided. The assembled couplings and extension shaft then are placed on the power take-off shaft in the "Caterpillar" transmission.
5. The two drilled mounting studs which are furnished with the winch are to be used in the two middle holes "C" (page 14) at the top of the "CATERPILLAR" transmission case.
6. After the removal of the P.T.O. cover plate from the tractor, plug the top two and lower three 5/8" bolt holes (N, page 14) with corks to prevent the oil from leaking out of the tractor.
7. Swing Hyster winch by means of a sling so that the unit will hang with the mounting pads square with the rear face of the tractor transmission housing. At least a two-ton block should be used. Wipe all mounting pads and transmission face so that they are clean and free of any foreign matter.
8. Remove the cork from the face of the winch transmission case. Location of cork is where the left-hand drilled stud "C" enters the winch transmission case.
9. NO GASKET USED. Winch is equipped with a sealing ring (10).

INSTALLATION INSTRUCTIONS—Continued

10. Swing hoist unit toward tractor and tilt or twist winch, causing the left-hand or brake side to swing up and the right-hand or drum gear side to swing down. Twist the unit until the lower right-hand bolt pad will just slide under tractor transmission filler plug. When bolt pads are past the filler plug, straighten unit up again.

    During this process turn the tractor power take-off shaft to line up splines on coupling with winch power take-off shaft splines. When splines have entered, and lower bolt pads have passed by the tractor filler plug, line up holes in winch side frames to match studs.

11. After winch is in position, hold in place with nuts on two upper feet at "B," page 14. With transmission top cover plate removed from top of winch, proceed to bolt winch to tractor using slotted nuts and cotters on the drilled studs "C." A straight box wrench should handle both of these nuts.

    Place hex nuts, 1¼ NF and lockwashers on studs (2), page 18, holding side frames, and fasten securely.

12. Attach control cables to handlevers and locate quadrant bracket according to dimensions on page 13, or in most convenient position for operator. Drill holes in fender to match mounting holes in bracket.

13. When mounting handling gear on fender, use the shorter cable, page 6, for the clutch shift and the longer cable for the brake. For overwinding drum install brake cable connecting one end to the brake handlever and the other end to the upper crank (N) with link (A) connected to crank (C) as shown for overwinding.

14. Connect one end of shifter cable to shorter handlever, and the other end to crank (P).

15. Check and adjust the clutch shifter cable as given on page 12.

16. Check and adjust the brake link as given under brake adjustment on page 12.

17. Check all bolts, nuts and other connections.

    NOTE: If not otherwise specified, all winches are set up for drum to be pulling cable OVERWINDING (over top of the drum barrel). To operate the winch UNDERWINDING, the following changes must be made: (See page 6.)

18. Disconnect one end of brake link (A) from position (B) on crank (C) and reconnect to position (G).

    If winch is equipped with automatic brake, follow Instructions 19, 20 and 21.

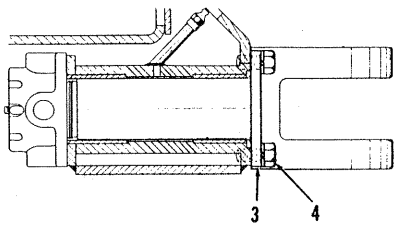
INSTALLATION INSTRUCTIONS—Continued

19. Remove brake cover (4, page 24) on left-hand side frame.

20. Remove the brake wheel from the shaft and re-install in the reverse position with the side marked "underwinding" face outward.

21. Replace cover plate on left-hand side frame (removed in Instruction 20) making sure gasket is in place and in good condition.

22. Change cable groove filler in drum barrel as shown on page 7.



NOTE: All towing winches to be used for logging arch service are to be used with special Hyster built-in drawbar. This drawbar has two lock plates (3) held in place with two capscrews (4) each, to keep it from swiveling, and MUST BE USED AS FOLLOWS:

Rule 1. If coupler in logging arch is swiveling, the drawbar in towing winch has to be locked.

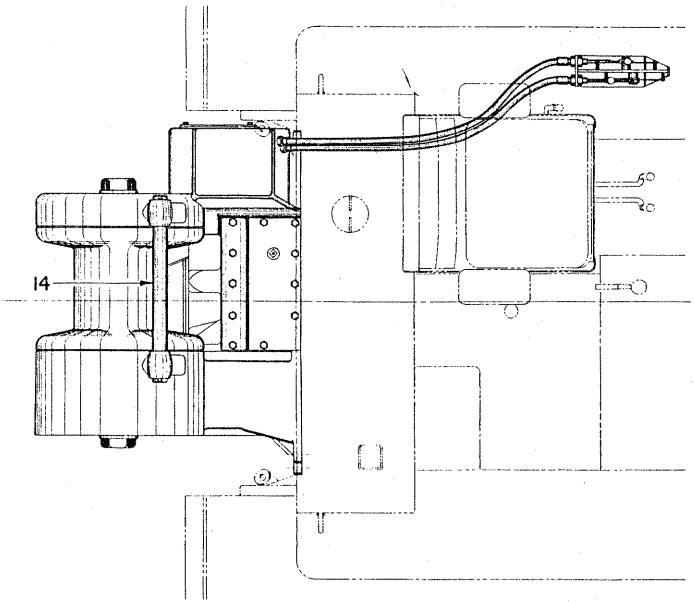
Rule 2. If coupler in logging arch is locked, the drawbar in towing winch has to be swiveling. This is accomplished by removing lock plates (3).

Failure to observe these rules will result in broken drawbar and coupler parts. When connecting the arch to the towing winch, a special Hyster drawbar bolt with castellated nut is sent with each coupler. This nut must be drawn up tightly and locked at all times. Failure to do this will cause undue expense in broken couplers and drawbar yokes.

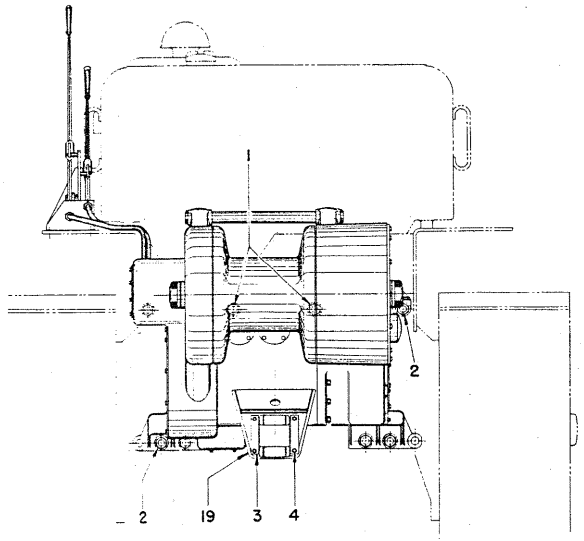
SECTION D
List of Parts and Illustrations

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.

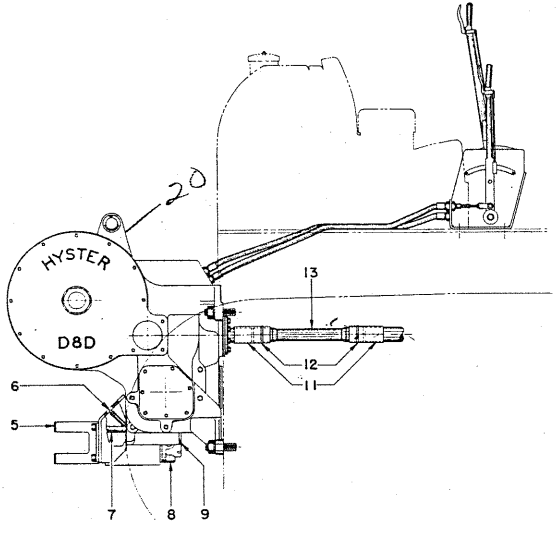
PLAN



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd
	35103B	Stud	2
1	15061	Nut—Slotted (1¼ NF)	2
	15248	Cotter—3/16 x 2½	2
	.....	Studs, furnished with tractor; previously used to hold	
2		Drawbar Brackets	6
	15018	Nut—Hex (1¼ NF)	6
	15168	Lockwasher—1¼	2
3	46462	Plate—Link	2
4	15148	Capscrew—¾ UNF x 1½, Hardened	4
	15162	Lockwasher—¾	4
5	33787	Drawbar—Special	1
6	16002	Grease Fitting—¼	1
7	92671	Bushing	2



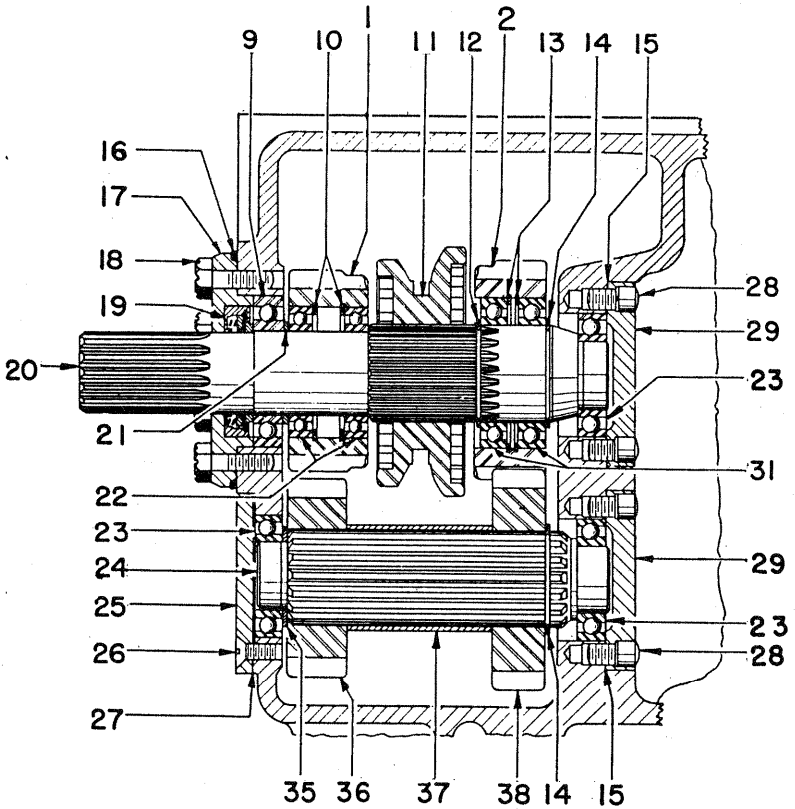
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
8	33618	Nut	1
9	15295	Cotter—½ x 5	1
11	6327	Coupling ("Caterpillar" 1B-7852)	2
12	9450	Pin ("Caterpillar" 1A-4599) ...	2
	90202	Ring—Lock ("Caterpillar" 8F-737)	2
13	59824	Shaft—Extension	1
14	92606	Rod—Tie (26" long)	1
	46463	Rod—Tie ,27-5/16" long)	1
	15272	Cotter—⅜ x 3	2



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
19	92734A	Bracket—Drawbar (Included with Frame. Winch owner to to weld if ordered separately)	1
	93771	Bracket—Tie Rod (Included with Frames. Winch owner to weld if ordered separately)..	2
Not illustrated:			
	16017	Grease Fitting (see page 14) ..	2
	94369	Pin—Drawbar	1
	15273	Cotter—⅜ x 2½	1

ELEVATION

TRANSMISSION SECTION



62716

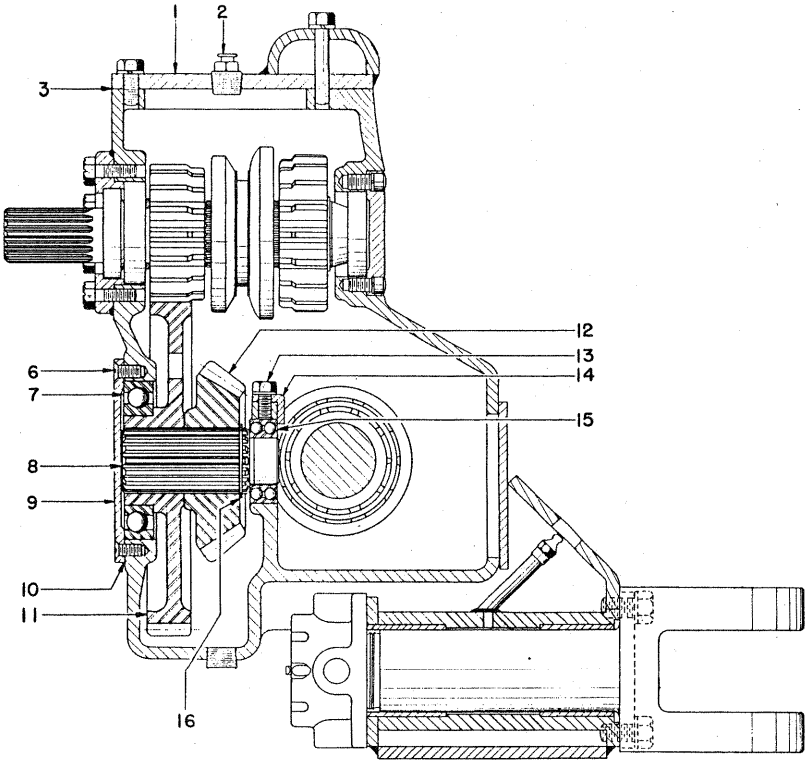
TRANSMISSION SECTION

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	46371	Gear (16 teeth)	1
2	46438C	Gear (18 teeth)	1
9	43212	Bearing	1
10	46441	Snap Ring	2
11	46575	Clutch—Dental	1
12	58905	Snap Ring	1
13	46692	Snap Ring	2
14	35366	Snap Ring	2
15	46436	Gasket	2
16	46389	"O" Ring	1
17	46428B	Carrier—Oil Seal	1
18	9986	Capscrew—Drilled Head	6
	67355	Wire—18 ga. x 18" long	1
19	46392B	Oil Seal	1
20	46455C	Shaft—P. T.O.	1
21	46456	Washer	1
22	44312	Bearing	2
23	41210	Bearing	3
24	46453B	Shaft	1
25	46434B	Plate—Cover	1
26	16355	Capscrew—Flathead (½ NF x 1) (stake in place)	4
27	46435B	Gasket	1
28	28149	Capscrew—Socket Head (½ NF x 1)	8
	15158B	Lockwasher—½	8
29	46427	Plate—Cover	2
31	44314	Bearing	2
35	46450B	Washer	1
36	46437	Gear (16 teeth)	1
37	46451	Spacer	1
38	46439B	Gear (18 teeth)	1

Parts not illustrated:

	34796	Key (For ½" Socket Head Capscrew)	1
	18000	Cork—No. 5 (To plug holes	5
	18001	Cork—No. 17 (in Tractor	1
	93193	Plug (See Instruction 3, page 15)	2
	92992A	Gasket Set (Complete set of gaskets for D8D Towing Winch)	1

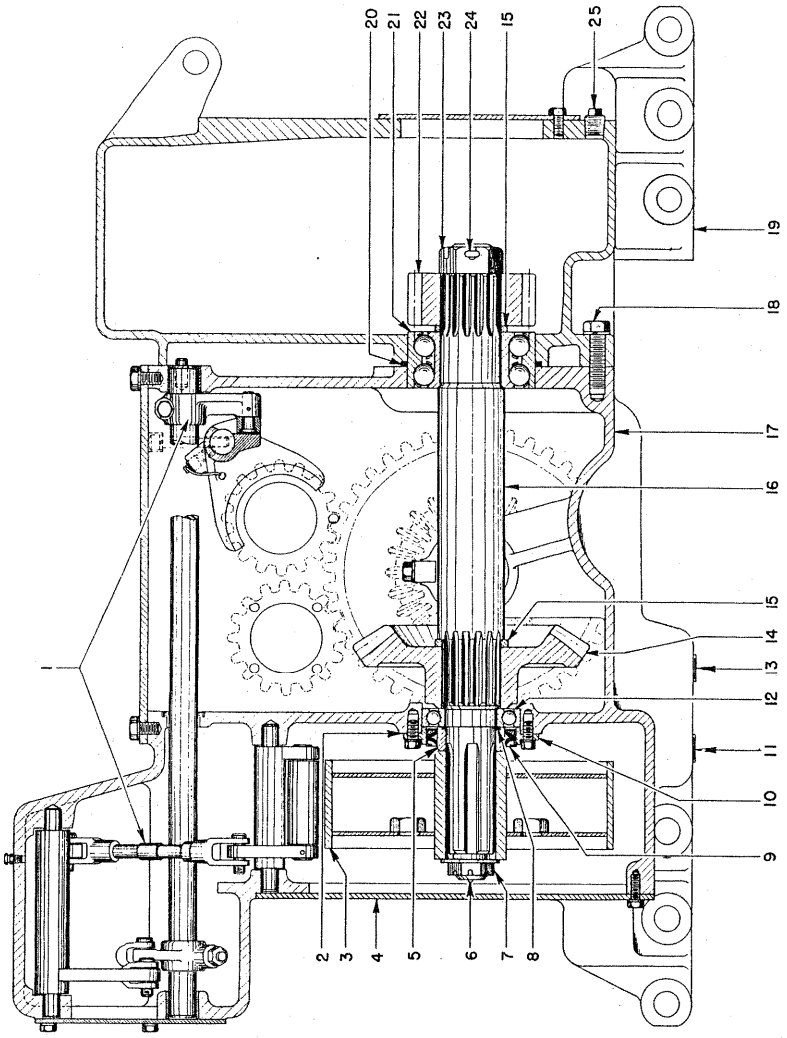
TRANSMISSION — ELEVATION



TRANSMISSION — ELEVATION

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
	92752A	Cover—Top	1
1	15504	Capscrew—5/8 UNF x 1 1/4	6
	15526	Capscrew—5/8 UNF x 3 1/2	5
	15160	Lockwasher—5/8	11
2	93738	Plug—Vent	1
	21420	Plug—Breather	1
3	92756	Gasket	1
6	16355	Capscrew—Flathead, 1/2 NF x 1 (Stake in place)	6
7	43219	Bearing	1
8	46452B	Shaft	1
9	46431	Retainer—Bearing	1
10	46406B	Gasket	1
11	92743	Gear (42 teeth)	1
12	46384	Gear/Bevel (24 teeth)	1
13	15511	Capscrew—1/2 NF x 1	1
	46409	Keeper	1
14	46408	Plate—Bearing Stop	1
15	45210	Bearing	1
16	35366	Snap Ring	1

BEVEL GEAR AND BRAKE SHAFT

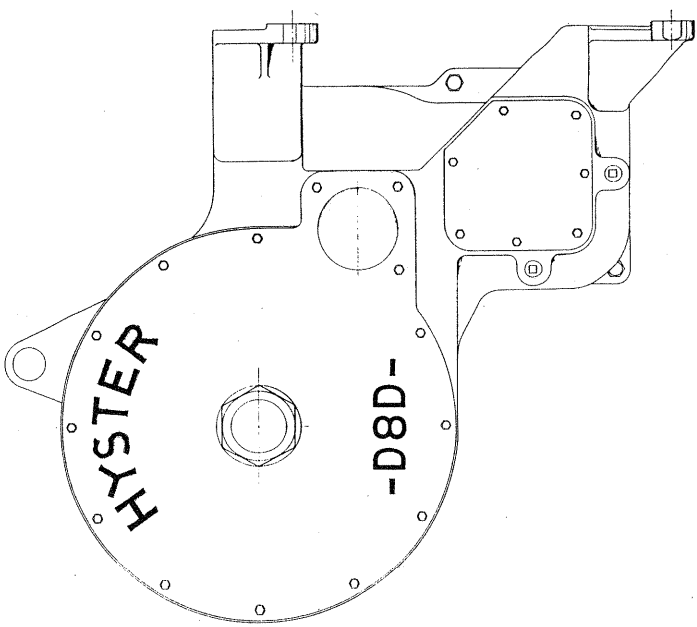


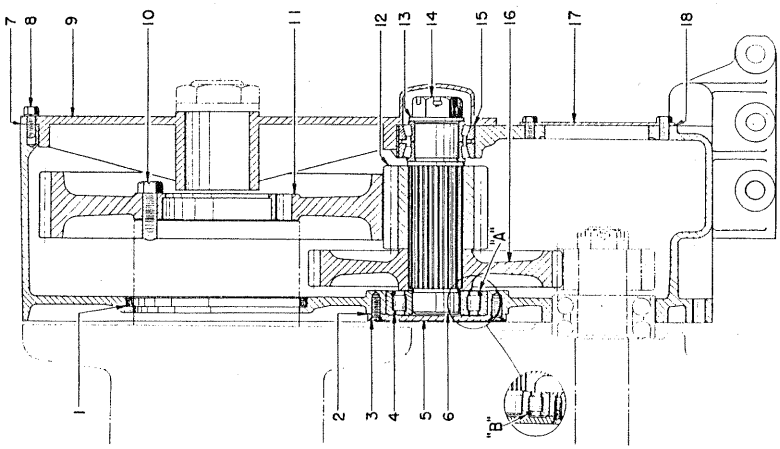
BEVEL GEAR AND BRAKE SHAFT

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	.....	Brake and Shifter Mechanism (See page 30)	
2	46396B	Shim Set	1
3	92747A	Wheel—Brake	1
4	92757	Plate—Cover	1
	92758	Gasket	1
	15511	Capscrew—½ UNF x 1	10
	15158	Lockwasher—½	10
5	92746	Spacer	1
6	15246	Cotter—3/16 x 2	1
7	6466	Nut—Slotted	1
8	46388	"O" Ring	1
9	46482	Oil Seal	1
10	92745	Retainer—Oil Seal	1
	15514	Capscrew—½ UNF x 1¼	6
	15158	Lockwasher—½	6
11	15316	Plug—Pipe (¾)	1
12	41213	Bearing	1
13	10389	Plug—¾ (Magnetic), Drain	1
14	46383	Gear—Bevel (34 teeth)	1
15	46356B	Spacer	2
16	92744	Shaft—Brake	1
17	92731A	Housing—Transmission	1
	46224	Pin—Dowel	1
18	15557	Capscrew—¾ UNF x 2¾	7
	15162	Lockwasher—¾	7
19	93819W	Frame—Side (R. H.)	1
20	46389	"O" Ring	1
21	45315	Bearing	1
22	92196	Gear (13 teeth) For Winch with suffix "HRD (For Standard Tractors Series 14A)	1
	93460	Gear (17 teeth) For Winch with suffix "HRD-T" (For Torque Converter Tractors Series 15A)	1
23	32282	Nut—Slotted	1
24	15272	Cotter—⅜ x 3	1
25	35503	Plug—¾ (Magnetic), Drain	1
	15304	Plug—¾, Oil Level	1

**Included in assembly under which listed.*

DRUM GEAR TRAIN



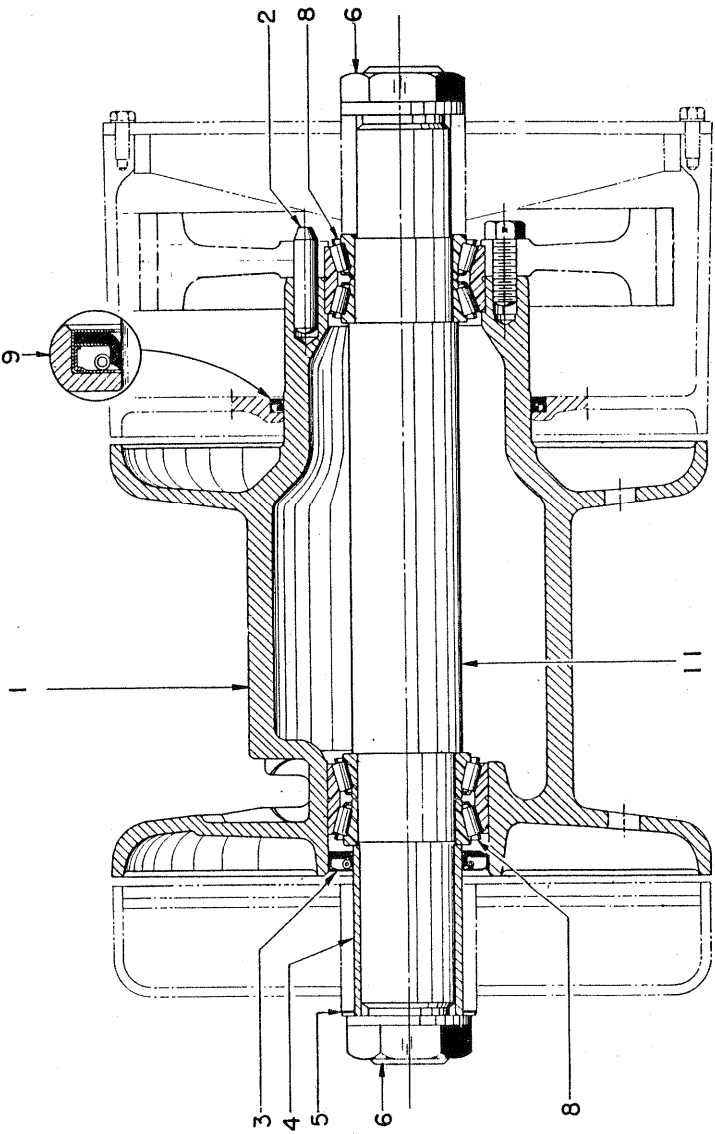


DRUM GEAR TRAIN

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	35030	Oil Seal	1
2	46406B	Gasket	1
3	16355	Capscrew—Flathead, ½ UNF x 1 (Stake in place)	6
4	230312	Bearing	1
5	46431	Retainer—Bearing	1
6	46457	Shaft—Intermediate	1
7	46447	Gasket	1
8	15514	Capscrew—½ UNF x 1¼	14
	15158	Lockwasher—½	14
9	92762	Cover—Drum Gear	1
10	92817	Place Bolt—⅞ UNF x 2¾	4
11	91995	Gear—Drum (53 teeth)	1
12	46367	Gear (14 teeth)	1
13	32472	Washer	1
14	32471	Nut	1
	15272	Cotter—⅜ x 3	1
15	35041	Roller Bearing	1
16	92197	Gear (39 teeth) For Winch with suffix "HRD" (For Standard Tractors Series 14A)	1
	93459	Gear (35 teeth) For Winch with suffix "HRD-T" (For Torque Converter Tractors Series 15A)	1
17	46357B	Plate—Cover	1
	24092	Washer	7
	15511	Capscrew—½ UNF x 1	7
18	46358B	Gasket	1

NOTE: If roller bearing (Ref. 4) has the snap ring in the outer race as at "A," install with snap ring on side toward gear (Ref. 16). If snap ring is in the inner race as at "B," install with snap ring away from gear (Ref. 16).

DRUM



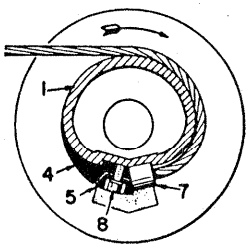
DRUM

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	46360AC	Drum Assembly	1
2	*35087	Pin—Shear	12
3	46445	Oil Seal	1
4	46399	Sleeve	1
5	46397	Shim Set	1
6	46398	Nut	2
8	35040	Roller Bearing	2
9	35030	Oil Seal	1
11	46443	Shaft—Drum	1

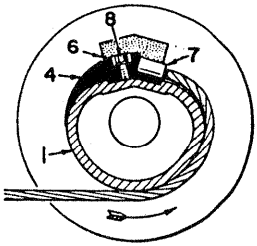
**Included in assembly under which listed.*

Note: Add two quarts oil, SAE 90, to drum at assembly.

CABLE-LOCK GROUP



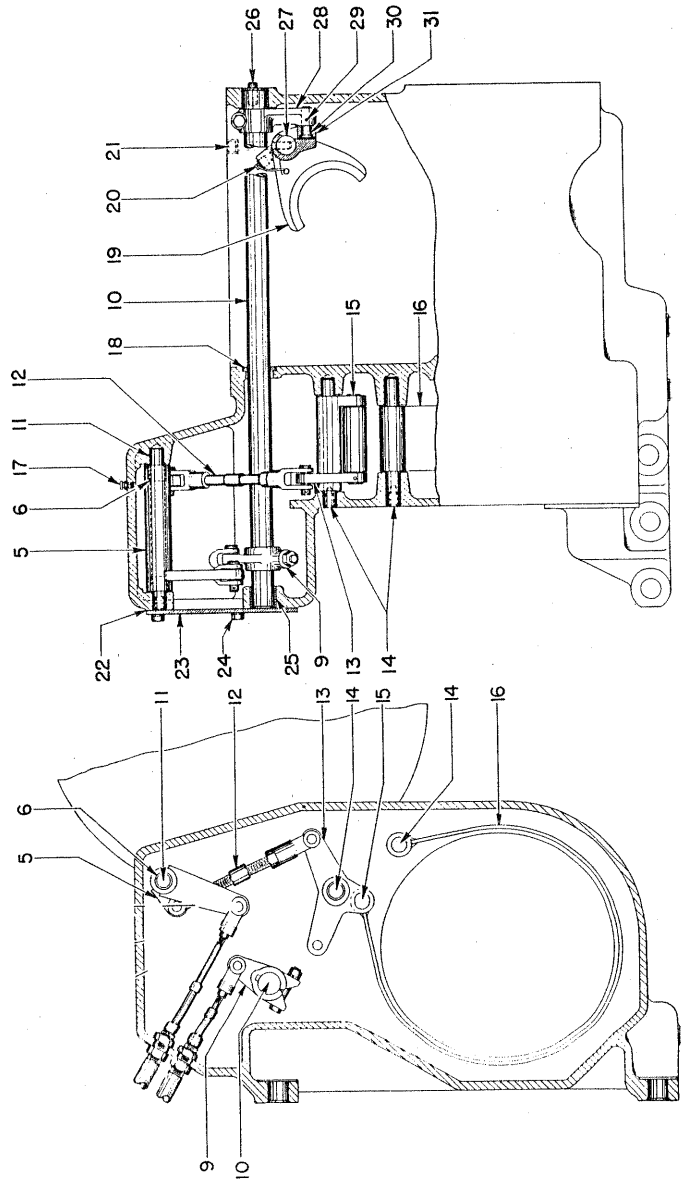
OVERWINDING



UNDERWINDING

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
4	33713	Filler—Cable Groove	1
5	33715	Lock—Ferrule (Overwind)	1
6	33714	Lock—Ferrule (Underwind)	1
7	6697	Ferrule—Cable	1
3	15505	Capscrew—⅝ NC x 1½	1

BRAKE AND SHIFTER MECHANISM

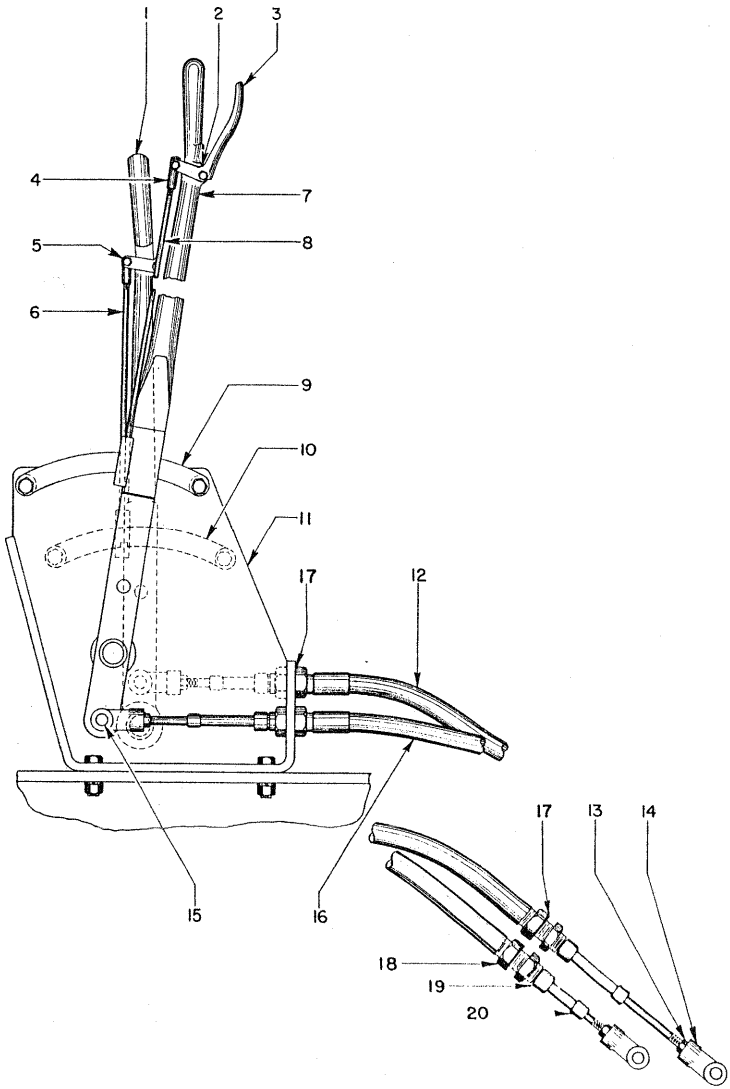


BRAKE AND SHIFTER MECHANISM

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
5	92771A	Crank Assembly—Brake	1
6	* 92768	Bushing	2
9	92779A (*)	Crank Assembly—Clutch	1
	* 15503	Capscrew—½ UNF x 2¾	1
	* 15008	Nut—Hex, ½ UNF	1
	* 15158	Lockwasher—½	1
10	92778	Shaft—Clutch	1
	40627	Key—Woodruff	2
11	92776	Shaft	1
12	92769A	Turnbuckle	1
	* 91630	Rod End—L. H. Thread	1
	* 14577	Nut—Hex, ⅝ UNF, L. H. Thread	1
	* 91629	Rod End—R. H. Thread	1
	* 15010	Nut—Hex, ⅝ UNF, R. H. Thread	1
	* 159	Pin—Rod End	2
	* 15223	Cotter—⅛ x 1	2
13	92766A	Crank Assembly—Brake	1
	* 92768	Bushing	2
14	92764	Shaft	2
15	92765	Shaft (Loose End Brake Band)	1
	15247	Cotter—3/16 x 2¼	1
16	35083AC	Brake Band Assembly	1
	* ~~59805AB~~	Lining Set use 95423A	1
17	21420	Plug—Breather	1
18	25050	Oil Seal	1
19	92785	Fork—Shifter	1
20	6348	Ball	1
	6347B	Spring	1
	46578	Plug—Pipe	1
	67355	Lockwire—18 ga. x 12" long	1
21	16325	Capscrew—Socket Head, ½ UNF x 3¼	1
	15158B	Lockwasher—½, High Collar	1
22	92760	Gasket	1
23	92759	Cover—Push-Pull Housing	1
24	15511	Capscrew—½ UNF x 1	6
	15158	Lockwasher—½	6
25	92777	Bushing	2
26	46224	Pin—Dowel	1
27	92786	Shaft—Shifter	1
28	92781A	Crank Assembly	1
	* 15581	Capscrew—⅜ UNF x 2¼	1
	* 15006	Nut—Hex, ⅜ UNF	1
	* 15156	Lockwasher—⅜	1
29	* 65945	Roll Pin	1
30	* 92784	Pin	1
31	* 92783	Block	1

**Included in assembly under which listed.*

HAND LEVER GROUP — 92968A



Dennal Arr. Dwg. 95672A

HAND LEVER GROUP — 92968A

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	46381AD	Handlever—Clutch	1
2	* 32695	Spring	1
3	* 32694	Handle	1
4	* 32693	Rod End	1
5	* 37476	Capscrew—Special	2
	* 15052	Nut—Hex, No. 10-24	2
6	* 92566	Rod—Pawl	1
7	(92557A)	Handlever—Brake 77187-A	1
2	* 32695	Spring	1
3	* 32694	Handle	1
4	* 32693	Rod End	1
5	* 37476	Capscrew—Special	2
	* 15052	Nut—Hex, No. 10-24	2
8	* 92561	Rod—Pawl	1
	(92564)	Quadrant—Ratchet, Brake 77188	1
9	15518	Capscrew—3/8 UNF x 7/8	2
	15156	Lockwasher—3/8	2
	92682	Quadrant—Clutch	1
10	15518	Capscrew—3/8 UNF x 7/8	2
	15156	Lockwasher—3/8	2
	93909	Clip—Lever Stop	1
	92787A	Bracket—Quadrant	1
11	15509	Capscrew—1/2 UNF x 1 1/2	4
	15008	Nut—Hex (1/2 UNF)	4
	15158	Lockwasher—1/2	4
	92685A	Cable—Clutch Control (53" long) For Tractors prior to Series 14A-15A	1
12	92791A	Cable—Clutch Control (61" long) For Tractors Series 14A-15A and up)	1
	* 16040	Grease Fitting	4
13	15006	Nut—Hex, 3/8 UNF	4
14	92683	Rod End—Special	4
15	159	Pin—Rod End	4
	15223	Cotter—1/8 x 1	4
	92718A	Cable—Brake Control (54" long) For Tractors prior to Series 14A-15A	1
16	92790A	Cable—Brake Control (65" long) For Tractors Series 14A-15A and up	1
	* 16040	Grease Fitting	4
17	15934	Lockwasher—Special, 7/8 (4 included with Cables)	8
18	15034	Nut—Jam, 7/8 UNF } Included with Cable Assembly	8
19	94381	Grommet } Included with Cable Assembly	4
20	94380	Grommet } Included with Cable Assembly	4

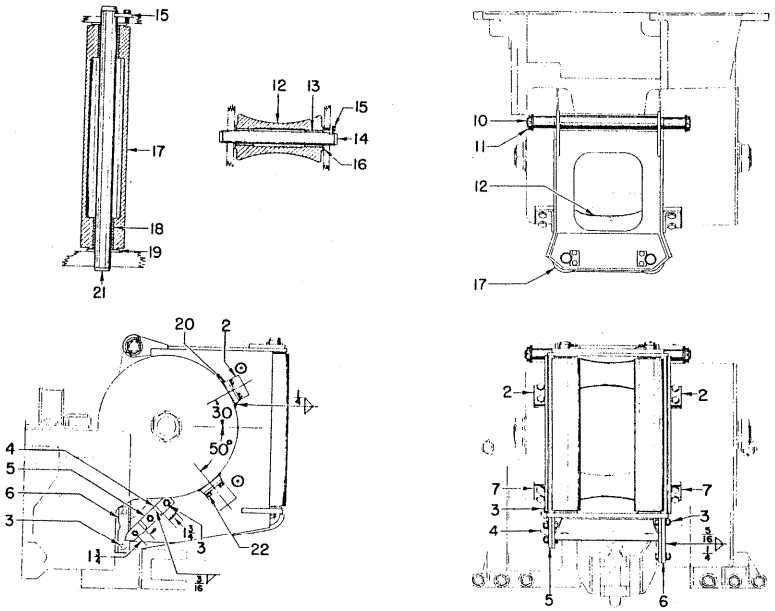
For Tractors with cab, the following parts supersede parts above with same Ref. No.:

1	93687A	Handlever—Clutch	1
7	93690A	Handlever—Brake	1
11	93683W	Bracket	1
15	93490	Pin	2
	15229	Cotter—1/8 x 2 1/2	2

**Included in assembly under which listed.*

NOTE: Cables (12 and 16) include items 18, 19, 20 and four of item 17.

FAIRLEAD ASSEMBLY (OPTIONAL)



INSTALLATION INSTRUCTIONS

Fairlead frame should be considered as part of the winch unit to which it was attached. It can easily be removed and reassembled on the same winch, but without additional alteration, cannot be mounted on a different winch.

Install fairlead on towing winch, holding it with tie rod (10).

1. Place angles (2) and (7) in approximate position shown and weld to sides of fairlead frame with ¼" fillet weld, both sides. Weld to fairlead frame only. Angles (2) are 30° above drum center line and angles (7) 50° below.

2. At assembly, weld plate (5) to winch with ½" fillet weld and weld two gussets (4) to winch with 3/16" fillet weld all around. Gussets (4) are 1¾" from center line of two outer capscrews (3).

3. At assembly, weld plate (6) to winch with ¼" fillet weld to the outside and 5/16" fillet weld to the inside.

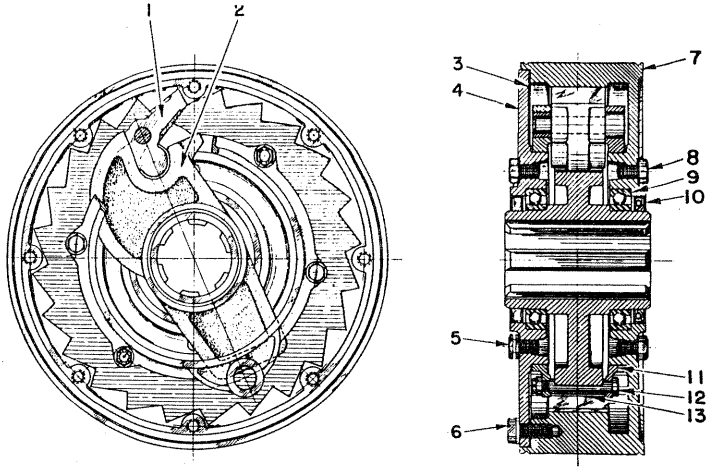
4. At assembly fasten plates (20) to angles (2 and 7) with capscrews (22) and weld plates (20) to winch only with 5/16" weld all around.

FAIRLEAD ASSEMBLY — 91832AC (OPTIONAL EQUIPMENT)

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	93183A	Frame—Fairlead	1
2	92991	Angle	2
3	15522	Capscrew—3/4 UNF x 2	5
	15012	Nut—Hex, 3/4 UNF	5
	15162	Lockwasher—3/4	5
4	91872	Plate—Gusset (Lower)	2
5	92986	Plate—Tie (L. H. Side)	1
6	92389	Plate	1
7	92990	Angle	2
10	.....	Link (Not included with Fairlead Group, see page 19, Ref. 14)	1
11	15272	Cotter—3/8 x 3	2
12	92212A	Roller Assembly	2
13	* 59419	Bushing	4
14	92213	Shaft—Horizontal	2
	16001	Grease Fitting	4
15	93166	Keeper	4
	15514	Capscrew—1/2 UNF x 1 1/4	8
	15158	Lockwasher—1/2	8
16	92720	Washer	4
17	36206A	Roller Assembly	2
18	* 2570	Bushing	4
19	33394	Washer	4
20	92989	Plate—Tie	4
21	91853	Shaft—Vertical	2
	16001	Grease Fitting	4
22	16804	Capscrew—5/8 UNF x 1 1/4, Hardened	8
	15160	Lockwasher—5/8	8

**Included in assembly under which listed.*

AUTOMATIC BRAKE — 92728A (OPTIONAL)



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
	35880A	Pawl Assembly	1
1	* 35880	Pawl	1
	* 35877B	Pin	1
	* 36478	Bushing	1
2	92793	Hub	1
3	92940	Gasket	1
4	92941	Cover	1
5	59370	Plug—Vent	1
6	9718	Capscrew—Drilled Head	8
	67355	Lockwire—18 ga. x 42"	1
7	92938A	Ring—Brake	1
8	35159	Gasket	4
	15515	Capscrew—½ UNFx ¾	3
9	35148	Bearing	2
10	31970	Oil Seal	2
11	35876B	Ring—Drag	2
	94600	Link—Shoulder	4
12	15079	Nut—Hex Slot, ⅜ UNF	8
	15212	Cotter—3/32 x ¾	8
13	36476	Spacer (Non-current)	4
	58700	Grease—3-lb. can (High Melting Point)	

**Included in assembly under which listed.*

ADAPTER ASSEMBLY TO ADAPT A D8D TOWING WINCH TO A DW 20 TRACTOR MOUNTING INSTRUCTIONS

The bottom of the adapter transmission is fastened by means of studs (3) and brackets (1) to two ears "A" projecting from the bottom of the DW 20 tractor transmission case. (see fig. 2)

The ears "A" are not necessarily square with the rear face of the tractor transmission, and their outer surfaces where the brackets (1) attach, are not uniformly located from the tractor center line. The brackets (1) must be positioned with shims (4 and 6) so that they will bolt up squarely with the front face (tractor side) of the adapter transmission, with the holes "E" properly spaced from the tractor center line. To do this, proceed as follows:

1. Remove covers, and parking brake, if any, so that the rear face of transmission has no projecting parts. Clean this surface.

2. Bolt the locating plate (2) to tractor transmission case, using four 3/4-10 N. C. capscrews (5) as shown in fig. 1.

3. Install two studs (3) in each bracket (1).

4. Install shims (4) as required around studs (3) at positions "B" and "C" to line up holes "E" and "F".

5. Secure brackets (1) to tractor with nuts and lockwashers on studs (3), forcing brackets toward rear to eliminate later movement of studs in oversize holes.

6. Remove locating plate (2). Use straight edge to check for uniform gap "D" along the length of each bracket, and to determine the amount of shims (6) to be used on each side between bracket (1) and adapter transmission.

7. If the gap "D" varies along the length of the bracket, adjust by changing shims (4) at "B" or "C", then recheck against alignment of holes "E" and "F" with locating plate (2). Tighten nuts on studs (3).

8. Install two 1-3/8 studs "G" and two 1-1/4 studs "H" in front (tractor side) of adapter transmission.

9. Install over these studs, shims (6) equal to the gap "D" measured for each side of adapter transmission.

10. See general arrangement, page 42. Install tie rods (14) on tractor at "E". Install the P. T. O. shaft extension "A" to adapter transmission (15) with gasket "C" on tractor side.

11. Raise into position and start ends of tie rods (14) through housing at "D", and studs (1 and 6) through brackets (5). Be sure that shims (16) are on these studs. (Installed in instruction 9).

12. When the adapter transmission is approximately three inches from the rear face of the tractor transmission, feel for the end of the tractor P. T. O. shaft. Rotate the adapter transmission shaft to align splines in coupling, and move the adapter transmission tightly against tractor transmission.

13. Install lockwashers and tighten nuts on tie rods (14), and on studs (1 and 6), which go through brackets (5).

ADAPTER ASSEMBLY TO ADAPT A D8D TOWING WINCH
TO A DW 20 TRACTOR
MOUNTING INSTRUCTIONS

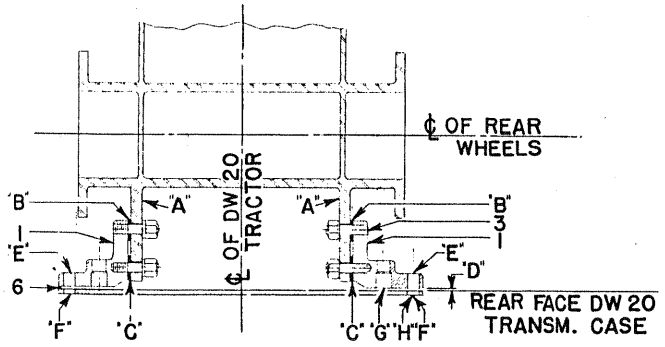


FIG. 2
SECTION X-X

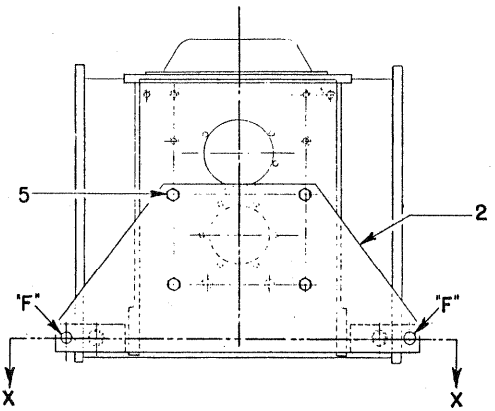


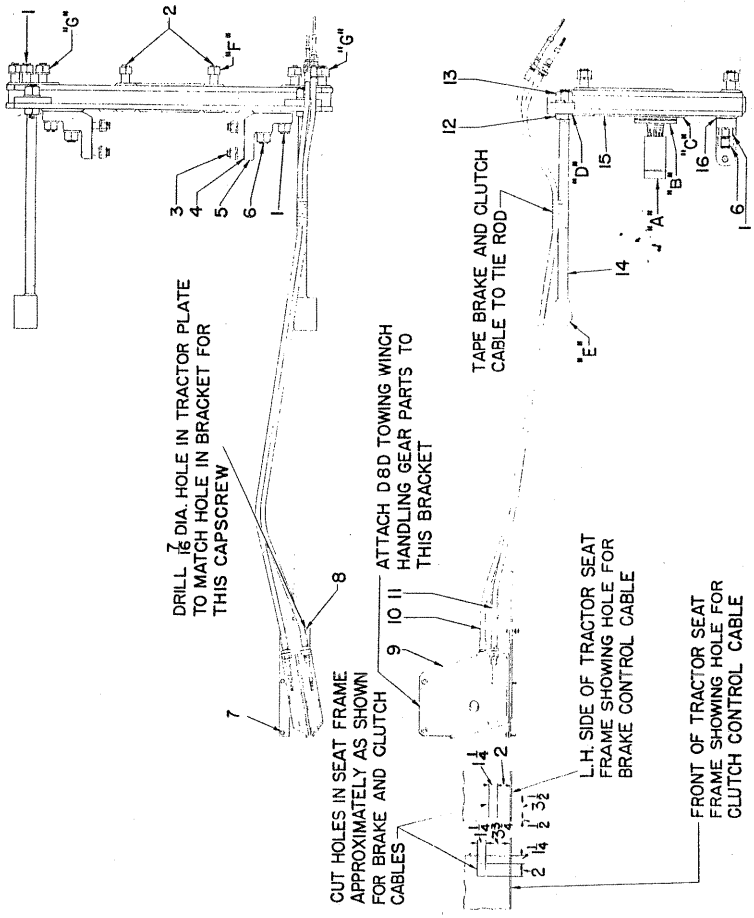
FIG. 1
REAR VIEW OF DW 20 TRANSM. CASE

14. Install two studs (2) and six studs (1) in rear face of adapter transmission at "F" and "G".

15. See transmission assembly, page 44. Mount oil seal (12), retainer (15) with gasket (14), gear (2) with snap ring 6, bearing 4 and retainer 5 with "O" ring (7) on new shaft (11) of towing winch. Install this assembly in adapter transmission, revolving shaft (11) so that gear (2) will mesh with gear (32). Push winch against adapter transmission, install lockwashers and nuts on all studs and draw up tightly. (Winch transmission cover must be removed to gain access to one stud). Use slotted nuts and cotters on studs at "F".

16. Install handling gear as shown on general arrangement drawing, page 42.

ADAPTER ASSEMBLY
TO ADAPT A D8D TOWING WINCH TO A DW 20 TRACTOR
GENERAL ARRANGEMENT



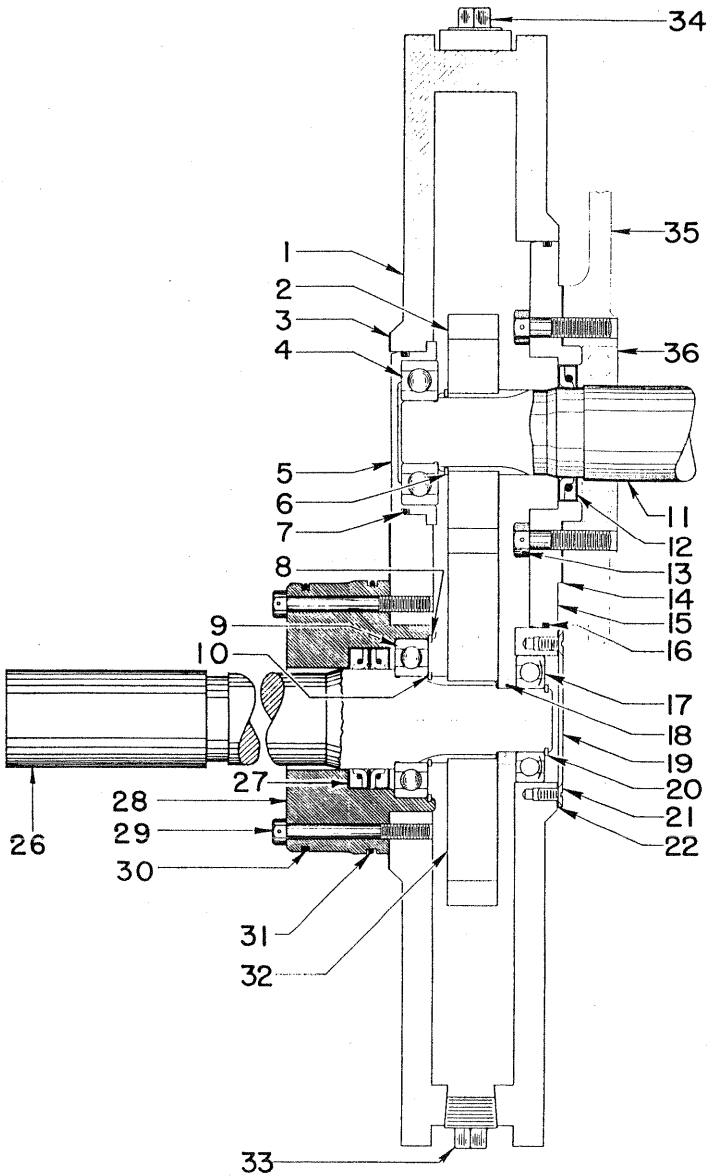
ADAPTER ASSEMBLY
To Adapt a D8D Towing Winch to a DW20 Tractor
GENERAL ARRANGEMENT

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	92498	Stud	14 reqd. on 4-Wheel Drive
	15018	Nut—Hex, 1¼ UNF	
	15168	Lockwasher—1¼	8 reqd. on 2-Wheel Drive
2	92548	Stud	2
	15061	Nut—Slotted, 1¼ UNF	2
	15248	Cotter—3/16 x 2½	2
3	†92494	Stud	4
	†15016	Nut—Hex, 1" NF	4
	†15166	Lockwasher—1"	4
4	†92495	Shim Set	4
5	†92492	Bracket—Adapter	2
6	†92497	Stud	2
	†32746	Nut—Hex, 1⅜ UNF	2
	†15169	Lockwasher—1⅜	2
7	15529	Capscrew—⅜ UNC x 1	3
	15156	Lockwasher—⅜	3
8	25052	Capscrew—⅜ UNF x 1½	1
	15006	Nut—Hex, ⅜ UNF	1
	15156	Lockwasher—⅜	1
9	93194A	Bracket	2
10	93198A	Cable—Clutch	1
	* 16040	Grease Fitting	Includes items 18, 19, 20 and 2
11	93199A	Cable—Brake	four of item 17, page 33 1
	* 16040	Grease Fitting	2
12	†32528	Nut—Jam, 1½ UNF	2
13	†15170	Lockwasher—1½	2
	† 5792B	Nut—Hex, 1½ UNF	2
14	†92499A	Rod—Tie	2
15	.....	Transmission Assembly (see page 44)	
16	†92496	Shim Set	2
	†92493	Plate—Locating (Page 39, Ref. 2)	

†*These parts used only on two-wheel drive tractors. All other parts used on both two-wheel and four-wheel drive tractors.*

**Included in assembly under which listed.*

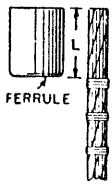
ADAPTER ASSEMBLY — TRANSMISSION
To Adapt a D8D Towing Winch to a DW20 Tractor



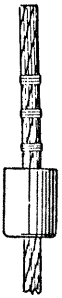
ADAPTER ASSEMBLY — TRANSMISSION
To Adapt a D8D Towing Winch to a DW20 Tractor

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Reqd.
1	92454	Housing—Adapter	1
2	92474	Gear	1
3	92483	Gasket	1
4	43308	Bearing	1
5	92481	Carrier—Bearing	1
6	36150	Snap Ring	1
7	92482	O-Ring	1
8	37591	Snap Ring	1
9	43211	Bearing	1
10	41459	Snap Ring	1
11	92476	Shaft—Winch (Replaces 46455C)	1
12	31235	Oil Seal	1
13	6497	Capscrew—Drilled Head	6
14	92479	Gasket	1
15	92478	Retainer	1
16	92480	O-Ring	1
17	43208T	Bearing	1
18	92485	Washer	1
19	92486	Plate—Cover	1
20	29557	Snap Ring	1
21	16500	Machine Screw—Flat Head, 5/16 UNC x ¾	6
22	92487	Gasket	1
26	94556W	Shaft—PTO	1
27	9945	Oil Seal	2
28	92484	Carrier—Bearing	1
29	94558	Capscrew—Drilled Head	6
30	15897	O-Ring	1
31	90937	O-Ring	1
32	92475	Gear	1
33	15305	Pipe Plug—1"	1
34	32411	Vent Plug—1"	1
35	.....	Housing—Transmission } Winch Parts, for	
36	.....	Bearing } reference only	

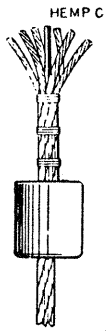
METHOD OF ATTACHING FERRULES



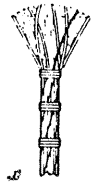
1 MEASURE FROM END OF CABLE A LENGTH EQUAL TO LENGTH OF FERRULE. SERVE WITH NOT LESS THAN THREE SEIZINGS.



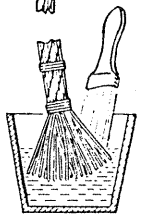
2 SLIP FERRULE OVER CABLE AND PUSH DOWN OVER SEIZINGS.



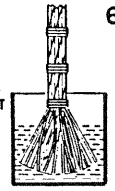
3 CUT OUT HEMP CENTER
IF CABLE HAS A WIRE ROPE OR STEEL STRAND CENTER, DO NOT CUT OUT



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



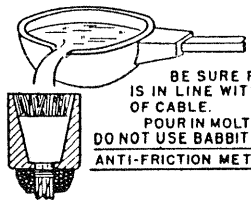
5 IF WIRES ARE VERY GREASY. CLEAN WITH SOLVENT
A CHEAP PAINT BRUSH DIPPED IN THE SOLVENT CAN BE USED TO REMOVE THE SURPLUS GREASE.
DRY THOROLY.



6 DIP WIRES FOR 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 BABBITT OR OTHER ANTI-FRICTION METAL.

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

NUMERICAL INDEX

NUMERICAL INDEX—Continued