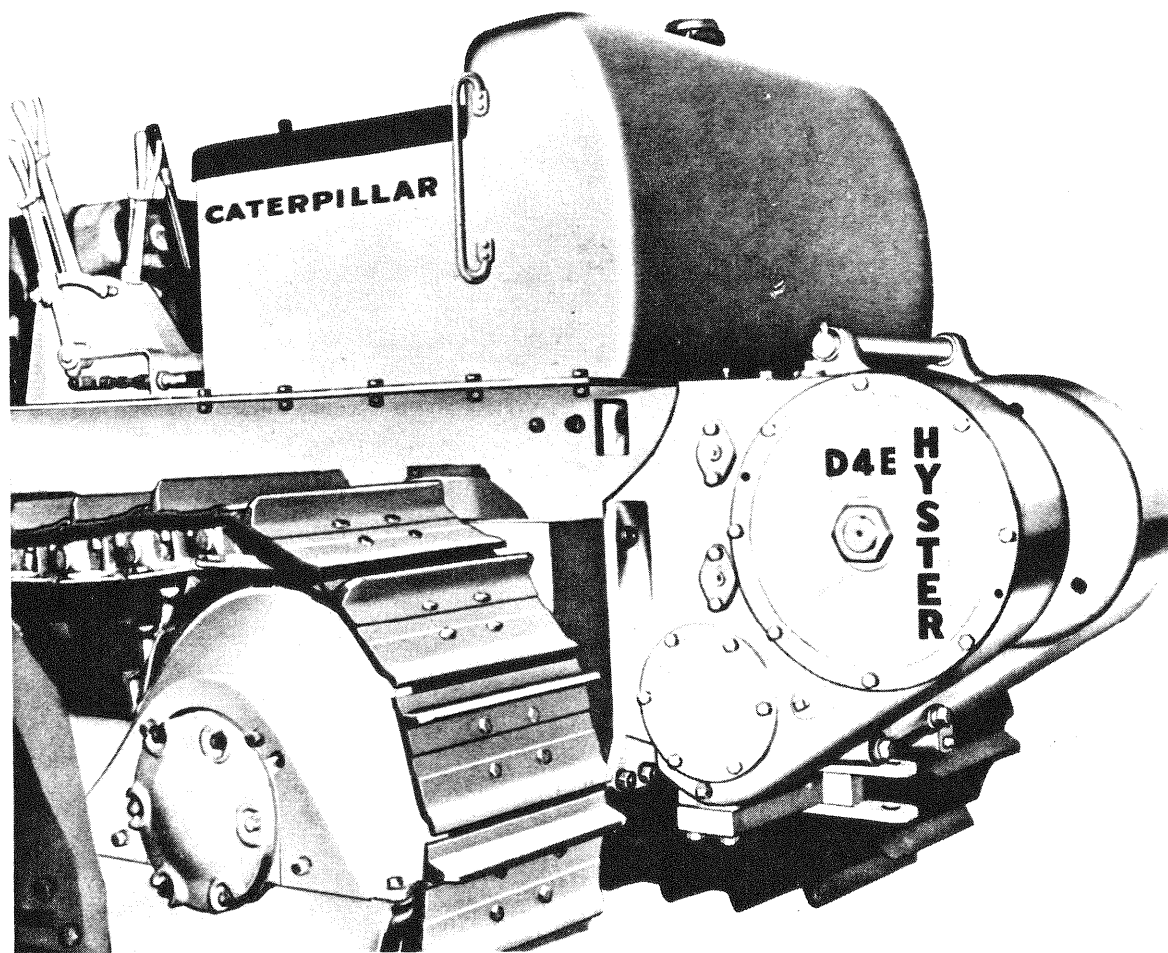


PARTS BOOK AND INSTRUCTION MANUAL

HYSTER[®]

D4E TOWING WINCH



HYSTER COMPANY

TRACTOR EQUIPMENT OPERATIONS

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

FORM NO. 911C

599183W

LITHO
IN
U.S.A.

FOR PARTS AND SERVICE CONTACT

Date Purchased _____

Model Number _____

Serial Number _____

LIST OTHER SPECIAL EQUIPMENT

HOW TO USE YOUR PARTS BOOK

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

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

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

Quantities shown are quantities per assembly unless otherwise stated.

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

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

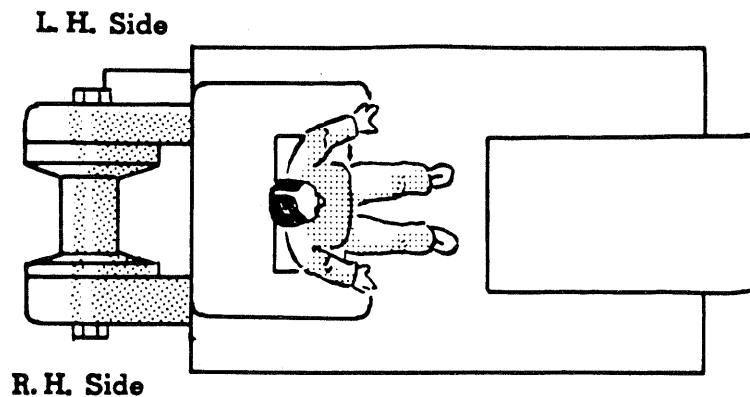
For any further information on parts, service, or ordering, consult your local Hyster dealer.

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

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



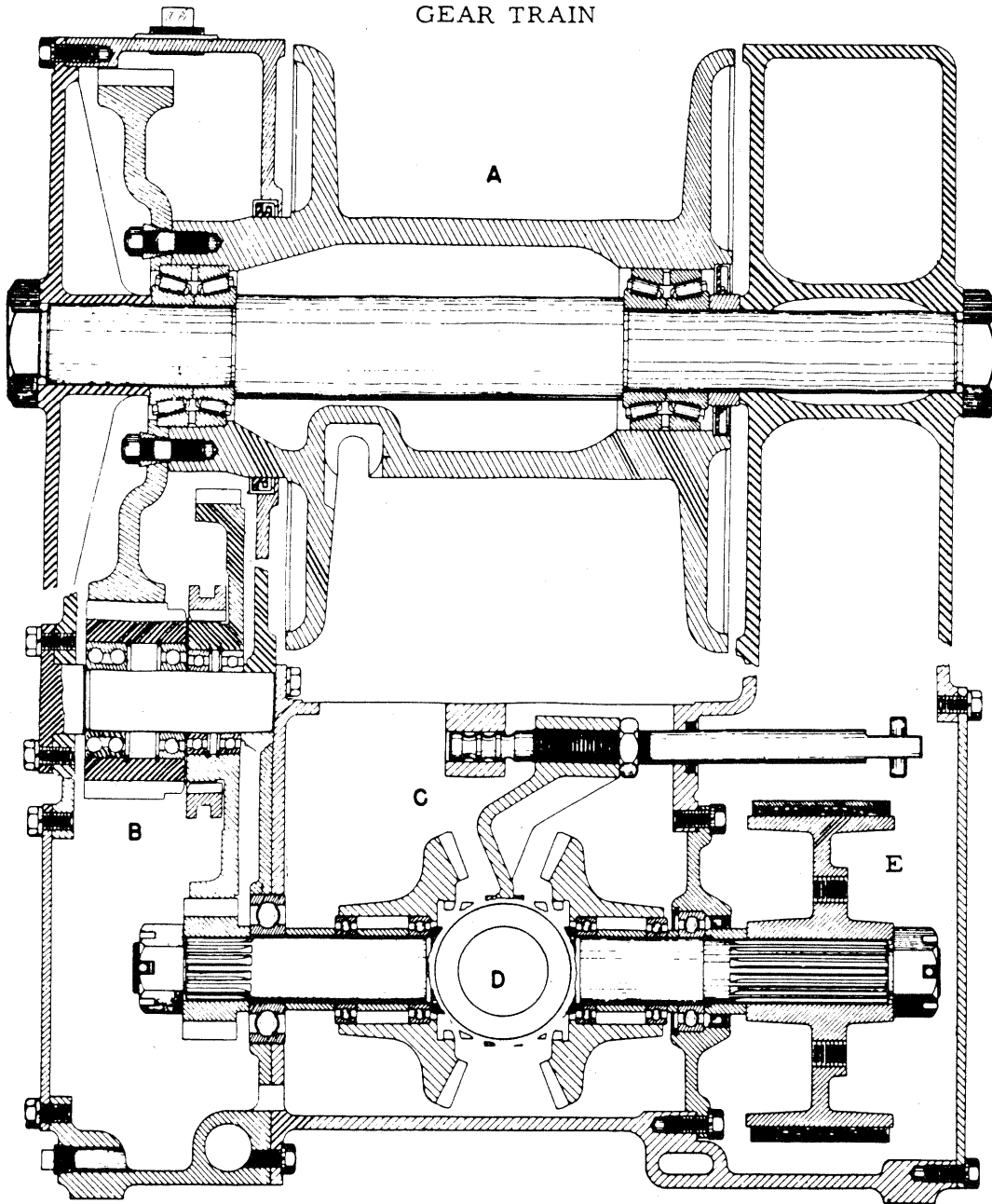
CAUTION!

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

Strict Observance of this Rule will Prevent Accidents

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

GEAR TRAIN



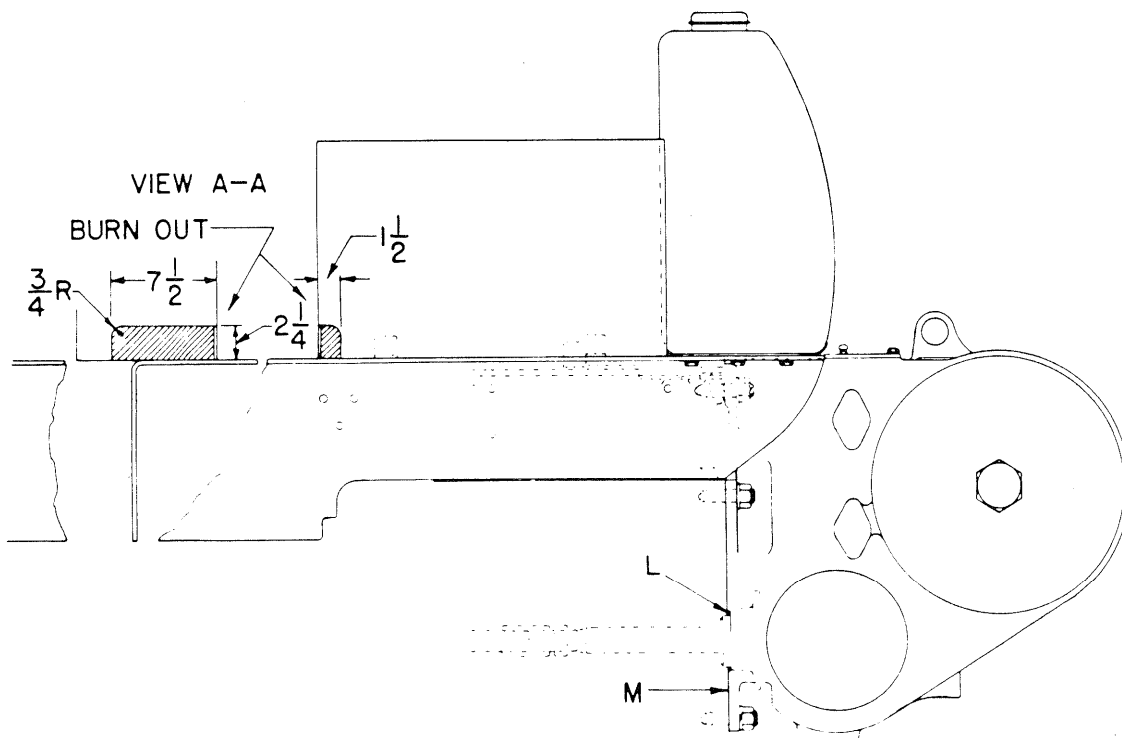
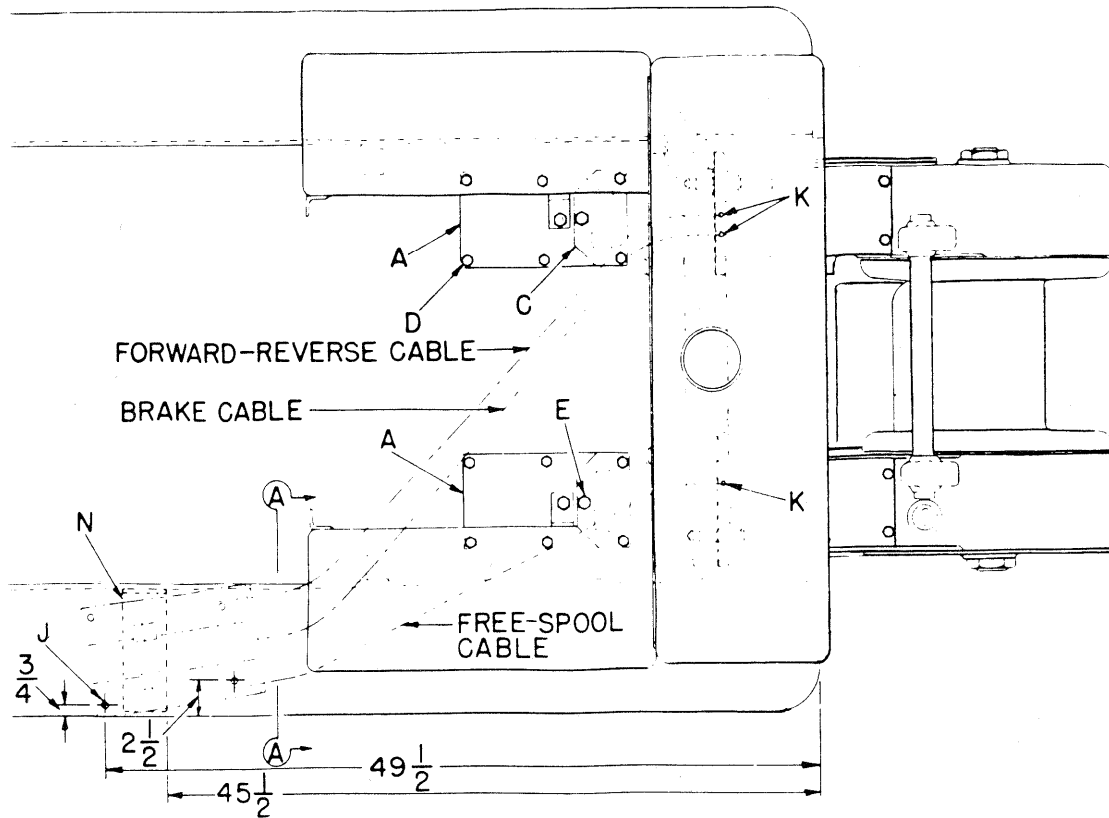
- A DRUM ASSEMBLY
- B INTERMEDIATE GROUP
- FREE-SPOOLING GROUP
- C FORWARD AND REVERSE SHIFTER
- D POWER TAKE-OFF GROUP
- E BRAKE SHAFT GROUP
- BRAKE

SECTION A
INSTALLATION, OPERATING AND SERVICING
INSTRUCTIONS

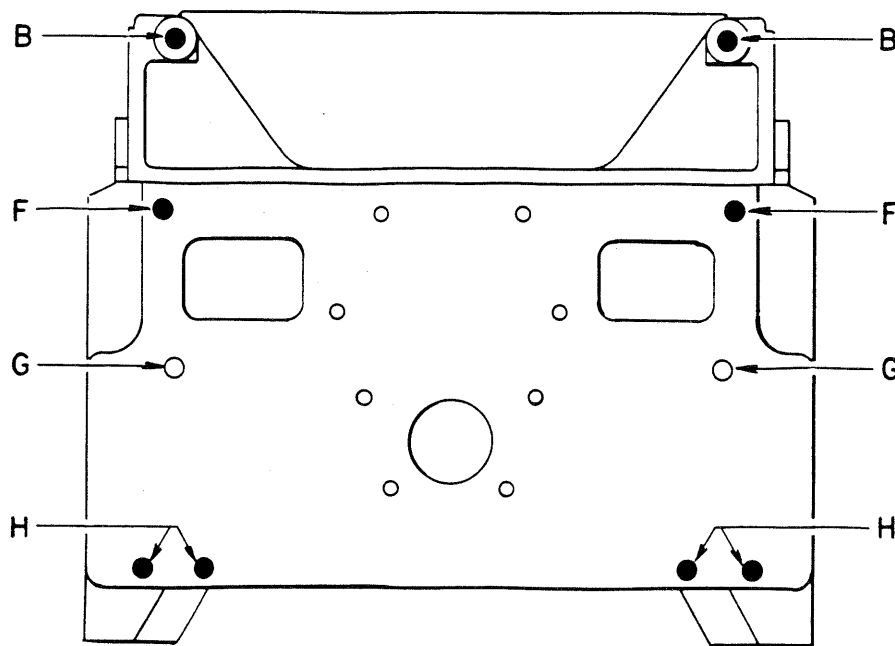
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INSTALLATION INSTRUCTIONS
For D4 Tractors S.N. 78A1 and up



INSTALLATION INSTRUCTIONS For D4 Tractors S.N. 78A1 and up



Tractor Preparation

1. Block up rear end of Tractor six to eight inches high.
2. Remove P.T.O. cover, brake inspection covers and drawbar brackets.
3. Plug P.T.O. cover capscrew holes with corks.
4. Remove two studs from "G" and install at "F". Torque 80 to 100 pound feet dry.
5. Install two Hyster taperlock studs (7/8 x 3 5/8) at "B". Torque 80 to 100 pound feet dry.
6. Leave drawbar studs at "H" for winch mounting.
7. Check rear face of tractor transmission case and remove any high spots, particularly near mounting studs where winch pads make contact.
8. Shut off fuel supply and disconnect line. Remove fuel tank from fenders.
9. Replace two tractor brake anchor covers with Hyster covers "A".
10. Disconnect brake anchor from tractor cover and discard cover. Mount anchor to Hyster cover.
11. Install gasket and plate "C" on cover "A" using four capscrews 3/8UNC x 1 1/2 and two capscrews, 1/2UNC x 1 "E".
12. Install covers "A" on tractor.
13. Burn out lower part of forward sheet on L. H. Battery Box, for control cables. (See View "A-A".)
14. Drill four 9/16" diameter holes in L. H. fender. Locate forward hole "J" and use handlever bracket as template.
15. Weld brace "N" under fender as shown. Use 3/16" fillet weld.
16. Install winch before remounting fuel tank.

INSTALLATION INSTRUCTIONS
D4 Tractors S.N. 78A1 and up

Winch Preparation

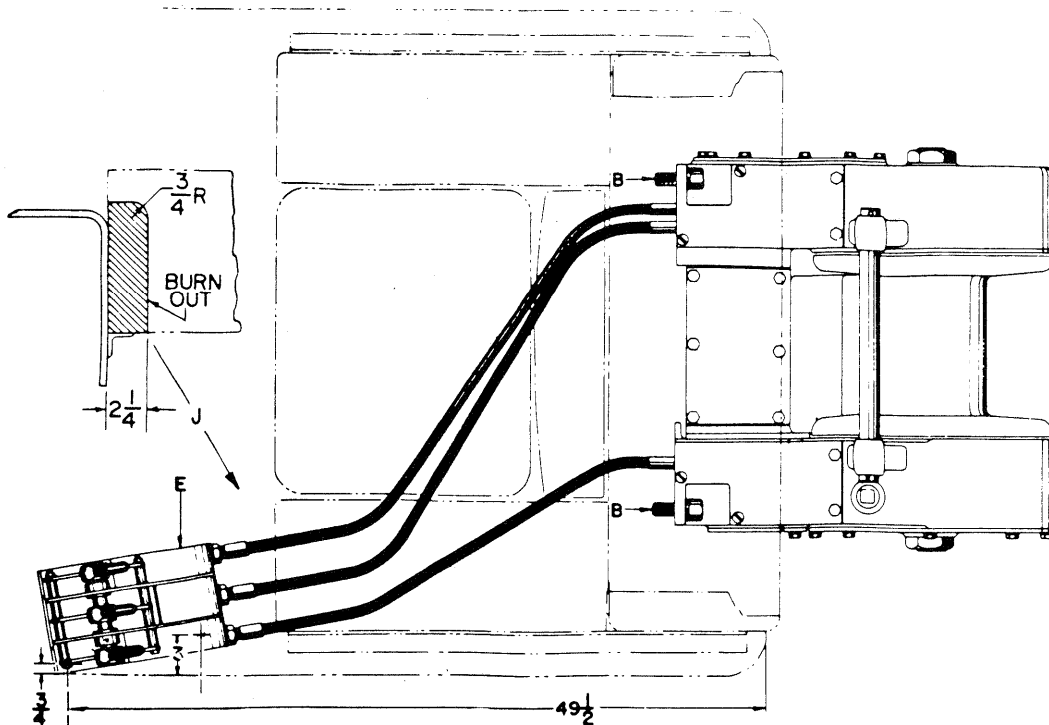
1. Remove R. H. and L. H. side frame top covers and remove three corks, two from R. H., one from L. H. side frame.
2. Install the forward-reverse cable in the outside hole on the R. H. side frame.
3. Install the brake cable in the inside hole on the R. H. side frame.
4. Install the free-spool cable in the hole on the L. H. side frame.
5. Make sure lock nuts on cable ends are in place and that set screws "K" are in groove of push-pull cable, and are tight.
6. Adjust push-pull cables as directed in Servicing Instructions, pages A21, A22, A23.
7. Place "O" ring "L" over P.T.O. shaft carrier and place gaskets "M" for R. H. and L. H. winch frames in position.

INSTALLATION INSTRUCTIONS
For D4 Tractors S.N. 78A1 and up

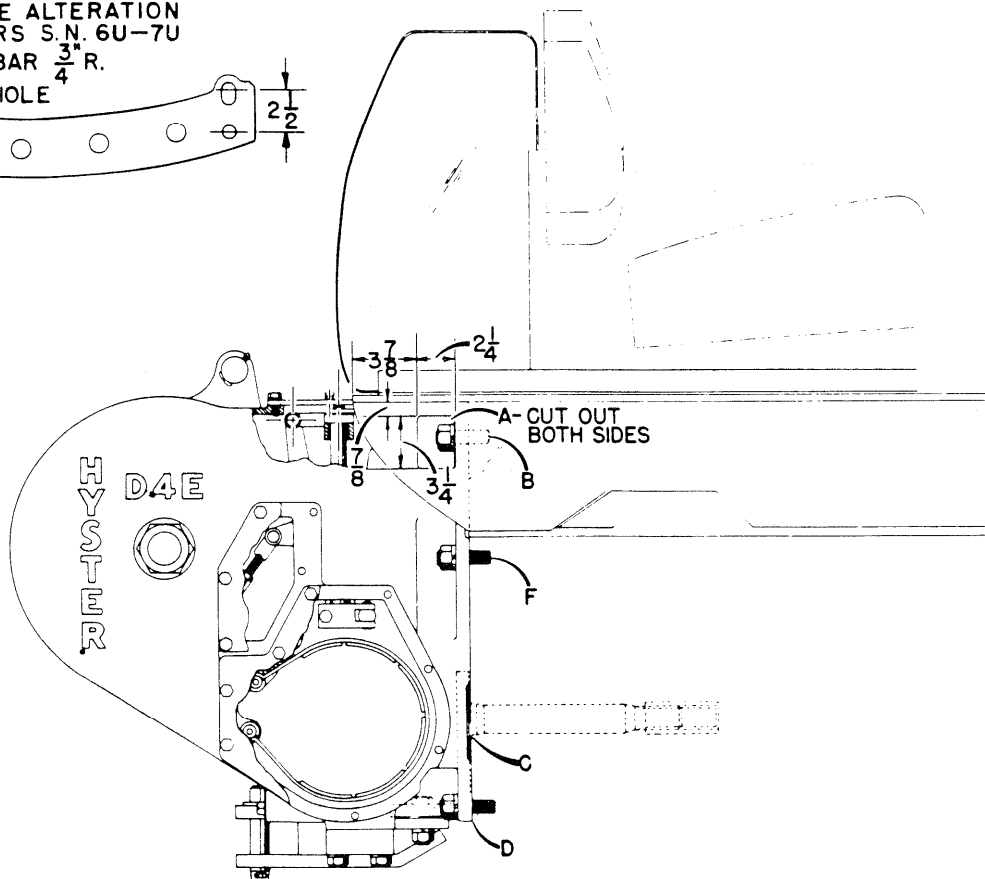
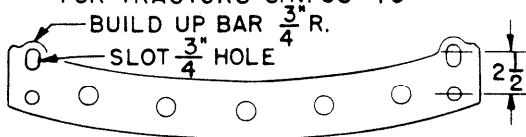
Winch Installation

1. Wipe all mounting pads and transmission face of winch.
2. Lift winch to position at rear of tractor.
3. Line up splines of P. T. O. shaft with splines in coupling. Turn P. T. O. shaft if required.
4. Route push-pull cables as winch moves into position.
5. Install lock washers and nuts on all mounting studs. Tighten all nuts on tractor rear face before tightening two top nuts.
6. Tighten two top nuts just enough so that nuts are tight and the studs are in tension. Excessive tightening may distort winch cases.
7. Install hand levers and bracket on tractor fender and attach push-pull cables. Free spool cable connects to the L. H. handlever, brake cable to the middle handlever and forward-reverse cable to the R. H. handlever. Be sure push-pull cables are not crossed.
8. Tighten all nuts.

INSTALLATION INSTRUCTIONS For D4 Tractors S. N. 23A1 - 24A1 - 39A1 - 40A1 And Up

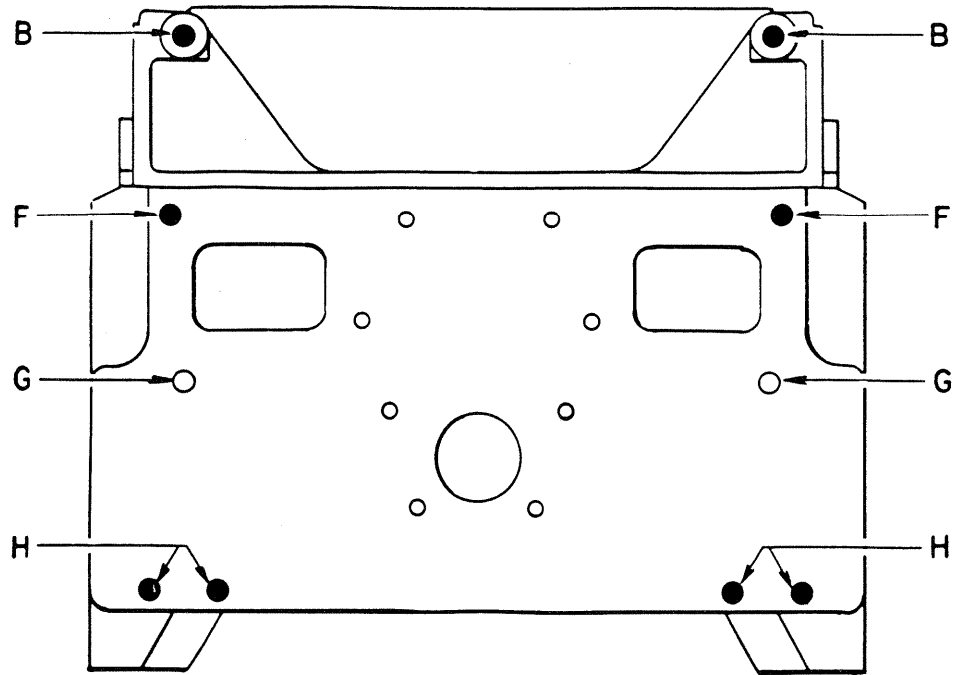


DRAWBAR PLATE ALTERATION FOR TRACTORS S. N. 6U-7U



INSTALLATION INSTRUCTIONS
For D4 Tractors S. N. 23A1 - 24A1 - 39A1 - 40A1 And Up

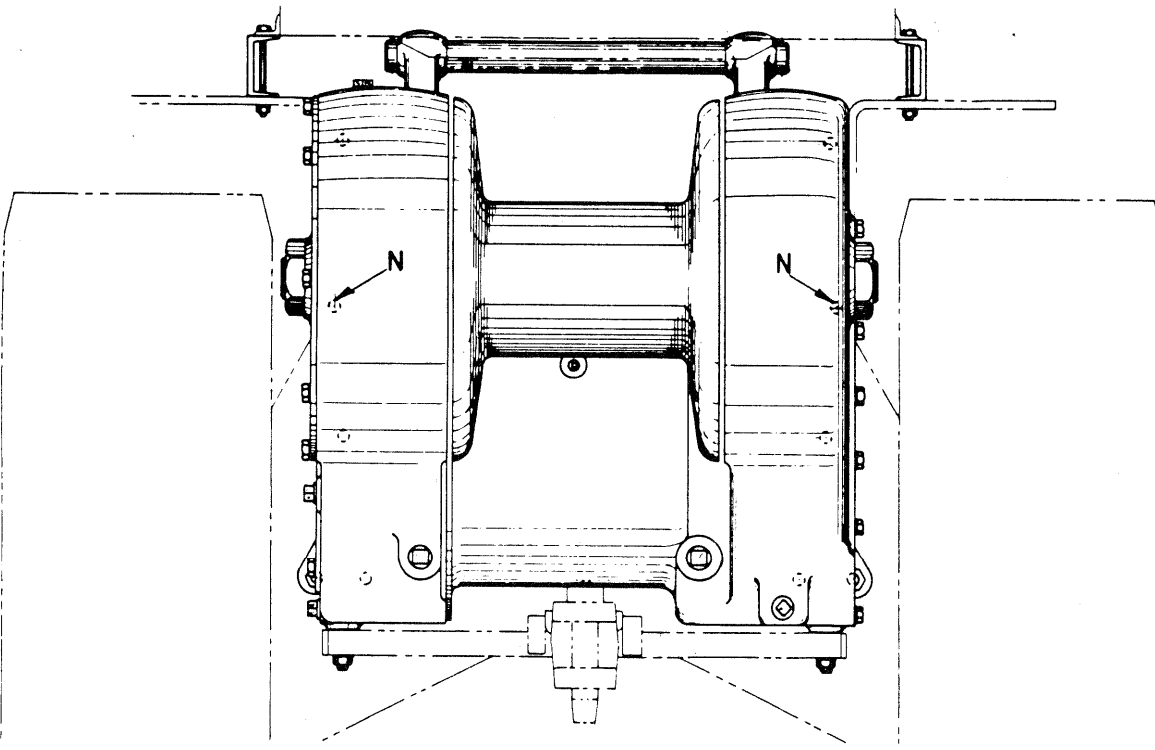
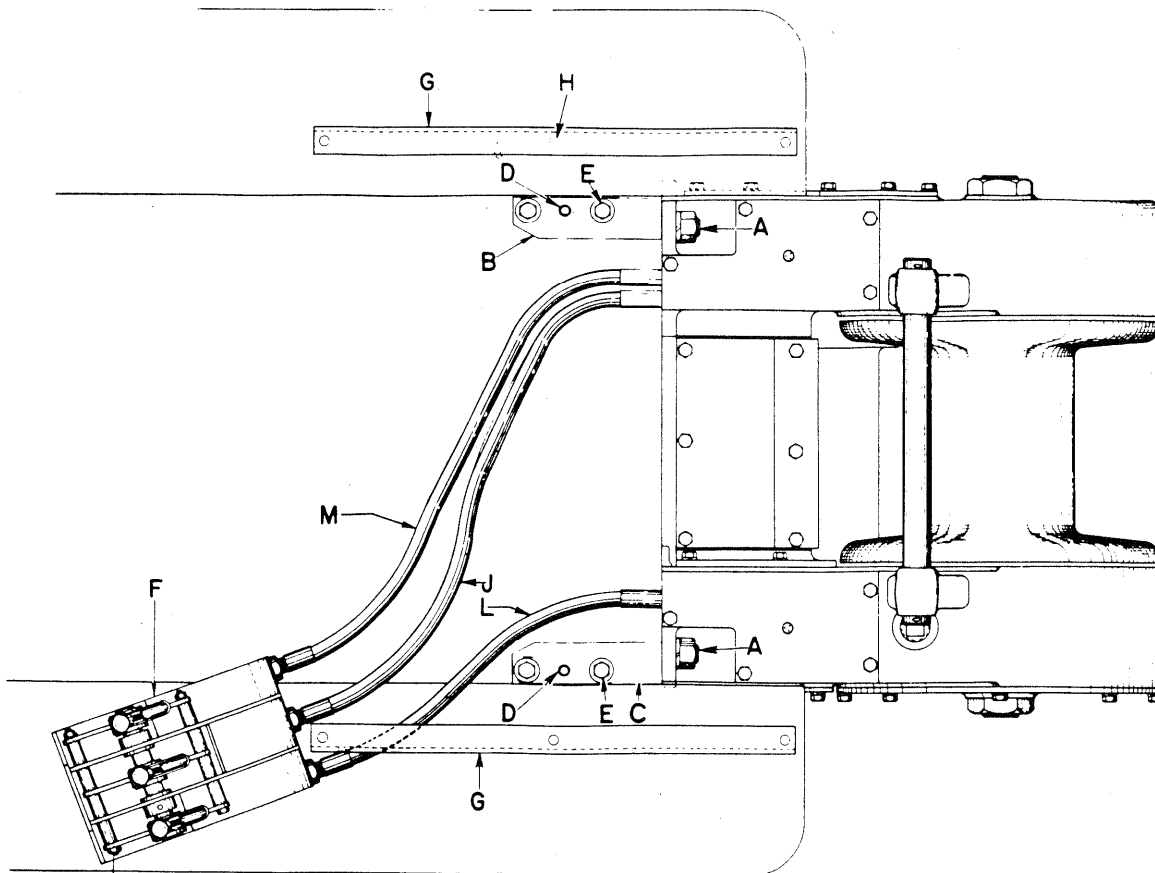
MOUNTING STUDS



1. Block up rear end of tractor six or eight inches high.
2. Remove PTO cover, brake inspection covers and drawbar brackets. Plug PTO cover capscrew holes with corks. Remove two top drawbar bracket studs from "G" and install at "F". Torque from 80 to 100 pound feet dry. Leave studs at "H" for winch mounting. Plug holes at "G" with corks.
3. Install two studs (7/8 x 3-3/8" long) in rear top tractor cover, RH and LH side, at "B". Torque from 80 to 100 pound feet dry.
4. Cut out RH and LH side of seat support as shown at "A".
5. Burn out sheet at left of operator's seat as shown at "J" (for control cables).
6. Check rear face of tractor transmission case and remove any high spots, particularly near mounting studs where winch mounting pads make contact.
7. Place "O" Ring over winch PTO shaft at "C" and place gaskets for RH and LH winch frames in position at "D".
8. Swing the winch into place on the rear face of the tractor. Make sure the splines on the power take-off shaft enter those of the coupling on the tractor.
9. When the winch is in place, place nuts and lockwashers on studs. Tighten all nuts so that winch is securely fastened to tractor.
10. Drill four 9/16" dia. holes in fender (using bracket as template), and install handlebar bracket assembly "E" as shown. Connect control cables as shown.
11. Check all bolts and connections making sure that all bolts, nuts and other connections are in place and securely tightened.

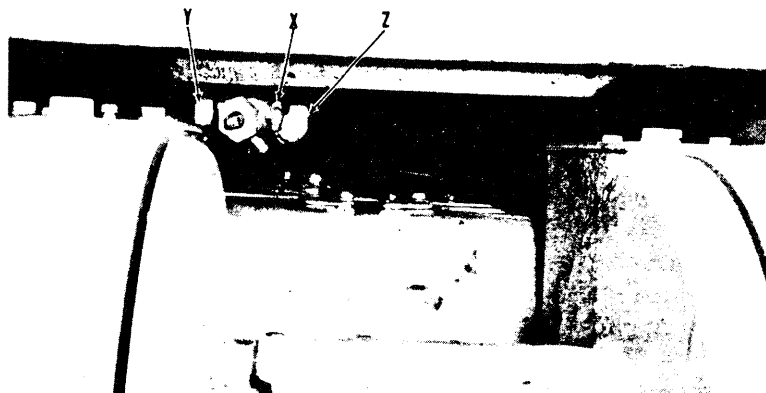
Note: For tractors S. N. 6U - 7U and prior, alter drawbar plate No. 3B1654 as shown.

INSTALLATION INSTRUCTIONS
For "Caterpillar" D4 Tractors With Seat Mounted
Fuel Tanks, Prior To S. N. 23A1-24A1-39A1-40A1



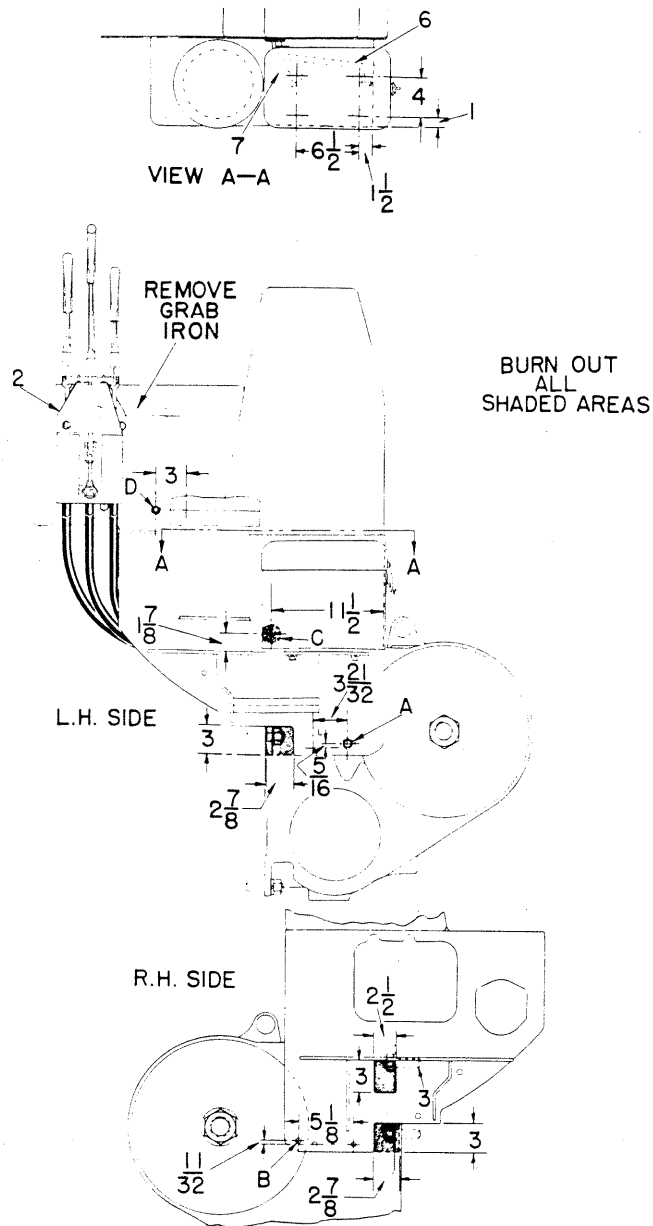
INSTALLATION INSTRUCTIONS
For "Caterpillar" D4 Tractors With Seat Mounted
Fuel Tanks, Prior To S. N. 23A1-24A1-39A1-40A1

1. Block up rear end of tractor six or eight inches high.
2. Remove tractor seat, P. T. O. cover, brake inspection covers, drawbar brackets, and final drive filler cups from tractor. Plug P. T. O. cover capscrew holes with corks. Remove two top drawbar bracket studs and install at "N".
3. Remove nuts and studs tying drawbar brackets to drawbar plate, for installation later in pads on bottom of winch frames.
4. Place "O" Ring over winch P. T. O. shaft and place gaskets for R. H. and L. H. winch frames in position.
5. Swing the winch into place on the rear face of the tractor. Make sure the splines on the power take-off shaft enter those of the coupling.
6. When the winch is in place, place nuts and lockwashers on the studs. Tighten all nuts so that winch is securely fastened to tractor.
7. Before mounting brackets (B and C) on top of tractor transmission cover, insert studs (A) in ends of brackets. Fasten brackets securely with dowel pins (D) and capscrews (E) (5/8 NC x 1-1/4) to tractor transmission cover.
8. Fasten the winch securely to brackets (B and C) with studs (A) (Installed under instruction 7 above). Fasten tractor drawbar plate to winch, using the studs and nuts which were removed from tractor drawbar brackets.
9. Remove drain cock from bottom of tractor fuel tank and grind off 3/16" from face (X). Install street ell Hyster No. 17324 (Y) in fuel tank and install drain cock in street ell.
NOTE: Fitting (Z) may have to be turned so that drain cock will pass.
10. Place channels (G) in place on tractor fenders, and tractor seat on top of channels. Fasten seat securely with capscrews (1/2 x 4-1/2) at (H) through angle on bottom of seat, channels (G) and tractor fender.
11. Drill holes in fender and install lever bracket assembly (F). Fasten securely to L. H. tractor fender with capscrews, 1/2 NF x 1-1/4. Install in most convenient location for operator. Install cables (J), (L), and (M).
12. Check all bolts and connections making sure that all bolts, nuts and other connections are in place and securely tightened.
13. Filler plugs are provided in the Hyster unit to fill the tractor final drive to proper oil level. (Filler cups removed in instruction 2).



INSTALLATION INSTRUCTIONS

For 955 Traxcavators, 12 Volt, Serial No. 45A1 And Up

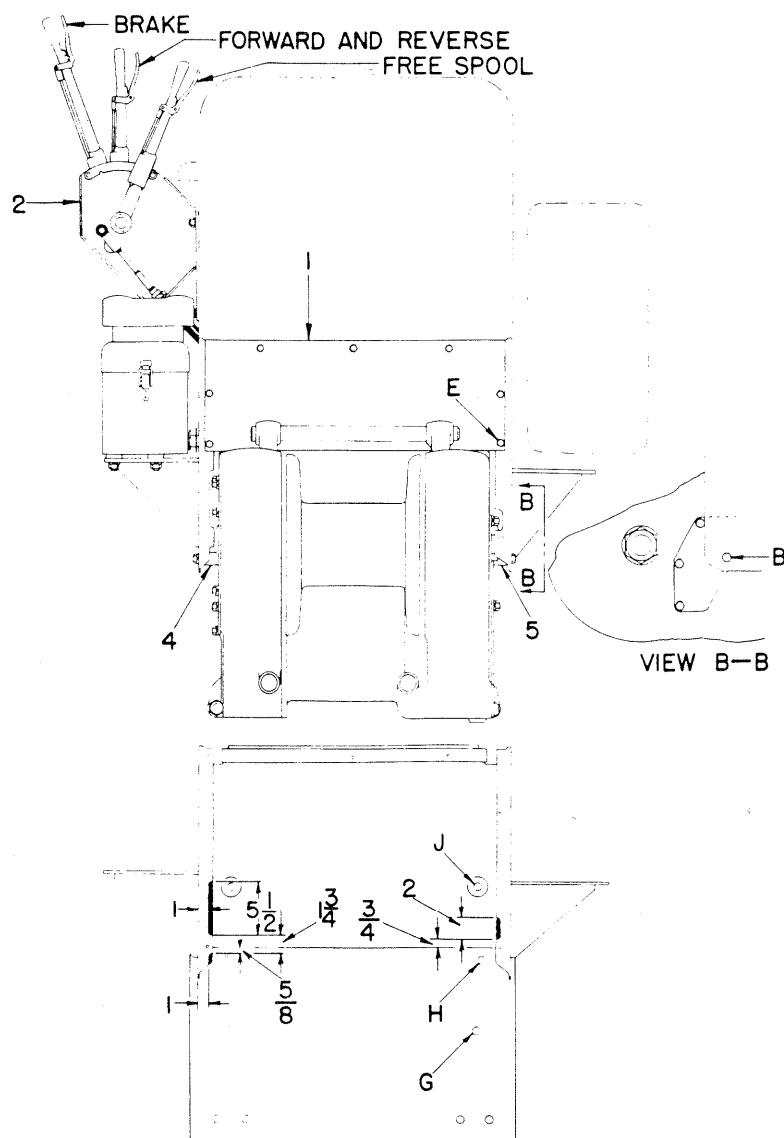


Traxcavator Alterations

Burn Out Shaded Areas

1. Disconnect and remove 12 volt battery and battery cables.
2. Remove rear battery box and door assembly, rear cover assembly, and grab iron from L. H. seat side.
3. Alter rear flange of R. H. and L. H. fender assemblies as shown.
4. Burn access holes in fender assembly side plates as shown (for access to mounting stud nuts).

INSTALLATION INSTRUCTIONS For 955 Traxcavators, 12 Volt, Serial No. 45A1 and Up



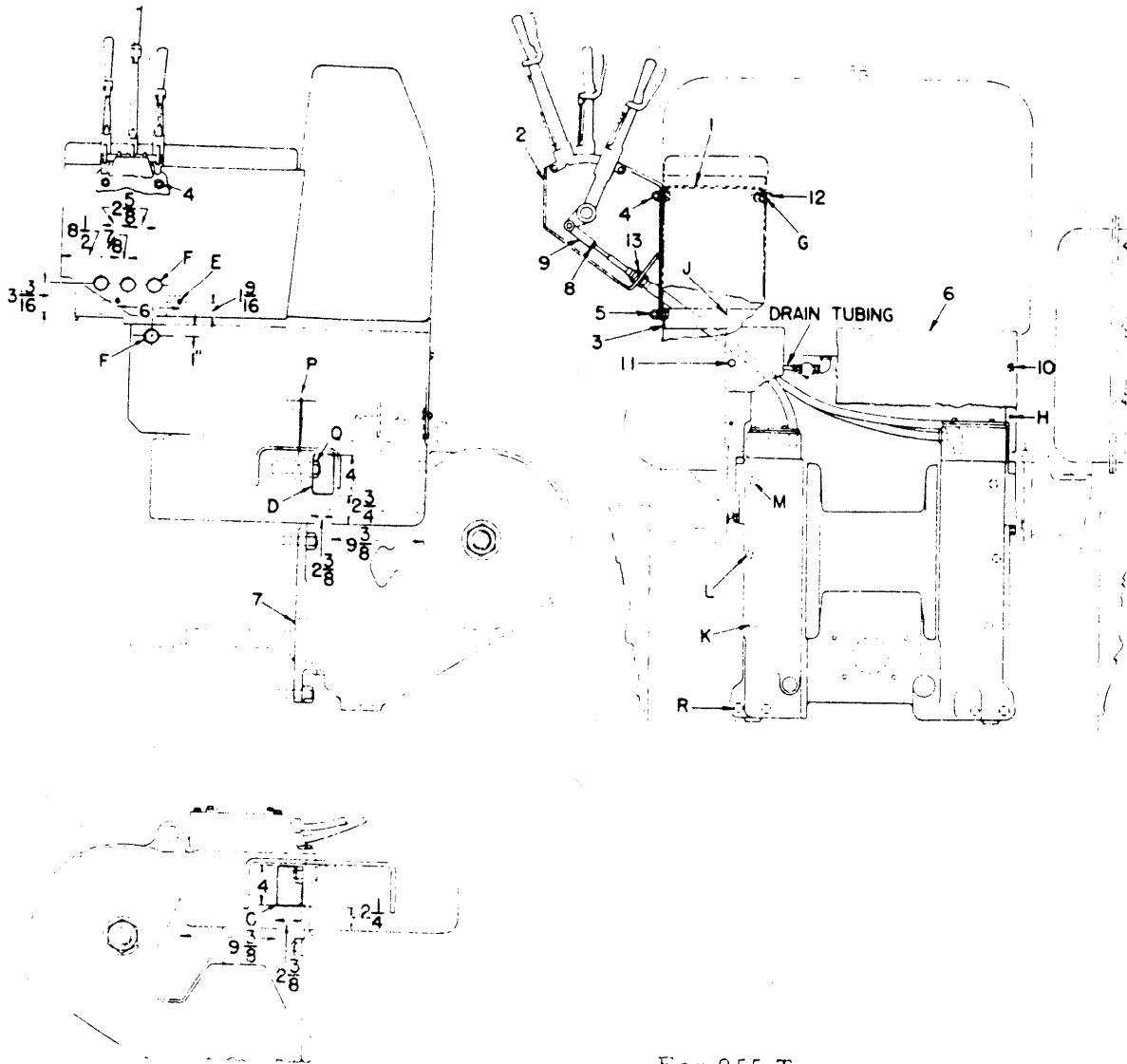
5. Drill two 9/16 dia. holes at "A", L. H. and "B" R. H. side.
6. Drill one 1-11/16 dia. hole at "C" and insert grommet.
7. Drill one 9/16 dia. hole at "D", line up handlever bracket as shown and drill three additional holes.
8. Use rear cover (1) as template and drill two 7/16 dia. holes in rear flange of side plates at "E".
9. Drill four 9/16 dia. holes "F" in L. H. fender as shown.
10. Mount battery box on L. H. fender using holes "F".
11. Remove PTO cover, brake inspection covers, and drawbar brackets. Plug PTO cover holes with corks.
12. Remove two studs from "G" and install at "H". Install two Hyster studs (7/8 x 3-3/8) at "J". Tighten studs to 80-100 ft. lbs. torque.

INSTALLATION INSTRUCTIONS
For 955 Traxcavators, 12 Volt, Serial No. 45A1 and Up

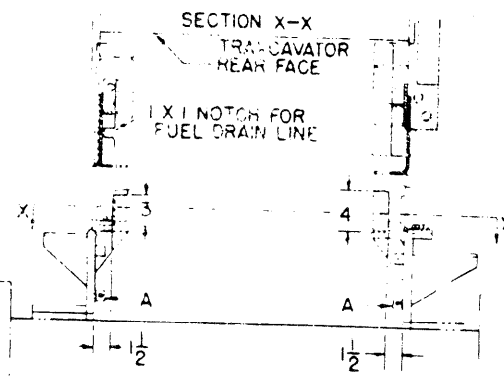
WINCH INSTALLATION

1. Mount handlever bracket (2) as shown.
2. Place "O" Ring over winch P. T. O. shaft carrier and install R. H. and L. H. gaskets over mounting studs.
3. Swing winch into place on rear face of Traxcavator, threading the push-pull cables into their respective holes in handlever bracket (2). Make sure the splines on the tractor P. T. O. shaft enter those of the coupling on the winch shaft.
4. After the winch is in place, install shakeproof lockwashers and hex nuts on the four upper studs and regular lockwashers and hex nuts on the four lower studs. Tighten only the six nuts on the six lower studs that are in the tractor mounting face until the winch is securely fastened to tractor. The nuts on the two top studs should be only moderately tightened, as a clearance between winch case and stud bosses in Traxcavator top cover exists. Excessive tightening of these nuts could distort and damage winch case.
5. Remove two capscrews from winch, R. H. and L. H. at "A" and "B". Install 1-1/2" long spacer (4) and capscrew 1/2 x 2-3/4 on L. H. side and 1-7/16" long spacer (5) and capscrew 1/2 x 2-3/4 on R. H. side, to tie fender side plates to winch.
6. Lock push pull cables to handlever bracket with 7/8 hex nuts. Starting with center cable, install locknut and rod end on cable. Adjust rod end so that brake band and handlever are in released position and install rod end pin and cotter. Tighten jam nut. Note: Brake rod end is different than other two rod ends.
7. Install locknuts and rod ends on other two cables. Next, adjust forward-reverse lever. Place handlever in neutral (central position) and dental clutch disengaged. Adjust rod end on cable to match handlever, insert rod end pin and cotter and tighten jam nut.
9. With free spool clutch fully engaged (not free-spooling) and handlever in locked position, adjust rod end and install pin and cotter. Tighten jam nut.
10. Install 12 volt battery in battery box. Thread Hyster battery cable (6) through grommet. Connect to positive post on battery and to starter post. Thread Hyster battery cable (7) through grommet, connect one end to negative post on battery and to disconnect switch.
11. Install rear cover plate item (1). Use three capscrews 3/8 UNF x 1 at top and four capscrews 3/8 UNF x 3/4 at sides.

Installation Instructions
 For 955 Traxcavators Serial No. 60A7437 and up and
 951 Traxcavators Serial No. 89A1 and up



For 955 Traxcavators



Installation Instructions

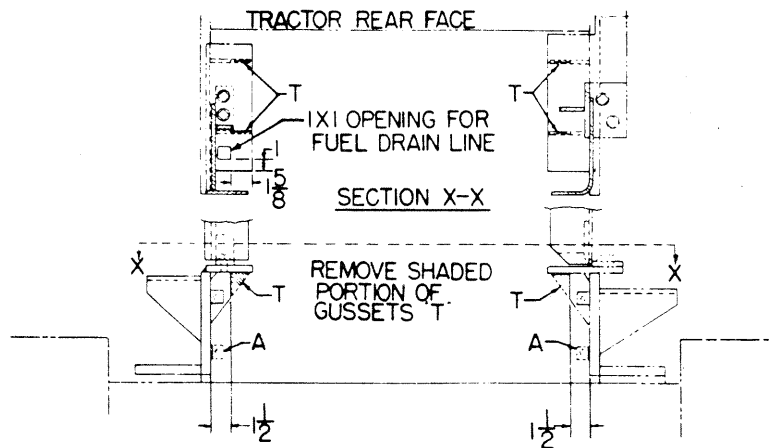
For 955 Traxcavators Serial No. 60A7437 and up and
951 Traxcavators Serial No. 89A1 and up

Traxcavator Alterations

Note: Burn out shaded areas

1. Remove rear door assembly and hand knob assemblies from loader frame.
2. Remove rear cross tie on gasoline start tractor. On 24 volt electric start, remove rear batteries, battery box and hold down assemblies.
3. Remove lower rear cover fuel tank drain tubing (tubing later to be re-installed).
4. Burn off lower lugs at "A" on R. H. and L. H. loader frame.
5. Burn off opening in frame as shown (for winch clearance).
6. Burn openings in R. H. and L. H. loader frame sides at "C" and "D" (for access to upper mounting stud nuts).
7. Drill two 9/16 dia. holes "E" for mounting handlever bracket, and, using bracket as a template, drill two additional holes for upper capscrews.
8. Burn four 1 - 1/2 dia. holes "F", three in battery box side and one in seat support (for push-pull cables).
9. Using tie plate (1) as a template, drill two 7/16 dia. holes "G" in inboard side of battery box. Attach to battery box with two capscrews (12) (3/8UNF x 3/4) with nuts and lockwashers.
10. Install handlever bracket (2) and tie angle (3) to battery box side using three capscrews (4) (1/2UNF x 1) and one capscrew (5) (1/2UNF x 1 - 1/4) with nuts and lockwashers. Weld tie angle (3) at "J" with 3/16 fillet weld all around.
11. Using rear cover (6) as a template, drill two holes "H" in rear of loader frame.

For 951 Traxcavators



Installation Instructions

For 955 Traxcavators Serial No. 60A7437 and up and
951 Traxcavators Serial No. 89A1 and up

Winch Installation

1. Use a clean container that will hold at least fifteen gallons, to catch the oil from bevel gear of Traxcavator. Drain compartment by removing drain plug located beneath and on center line of Traxcavator.
- 2a. For 955 Traxcavators:

Remove P.T.O. cover and fixed drawbar brackets. Plug P.T.O. cover stud holes with corks.
- 2b. For 951 Traxcavators:

Remove two brake access covers and drawbar hook bracket. Plug holes around P.T.O. opening with corks provided.
- 3a. For 955 Traxcavators S.N. 60A7642 and up:

Remove drawbar studs and install Hyster studs 96726 at "L" and "R". Plug other stud openings with corks provided.
- 3b. For 955 Traxcavators S.N. 60A7437 and up to 60A7641 incl.:

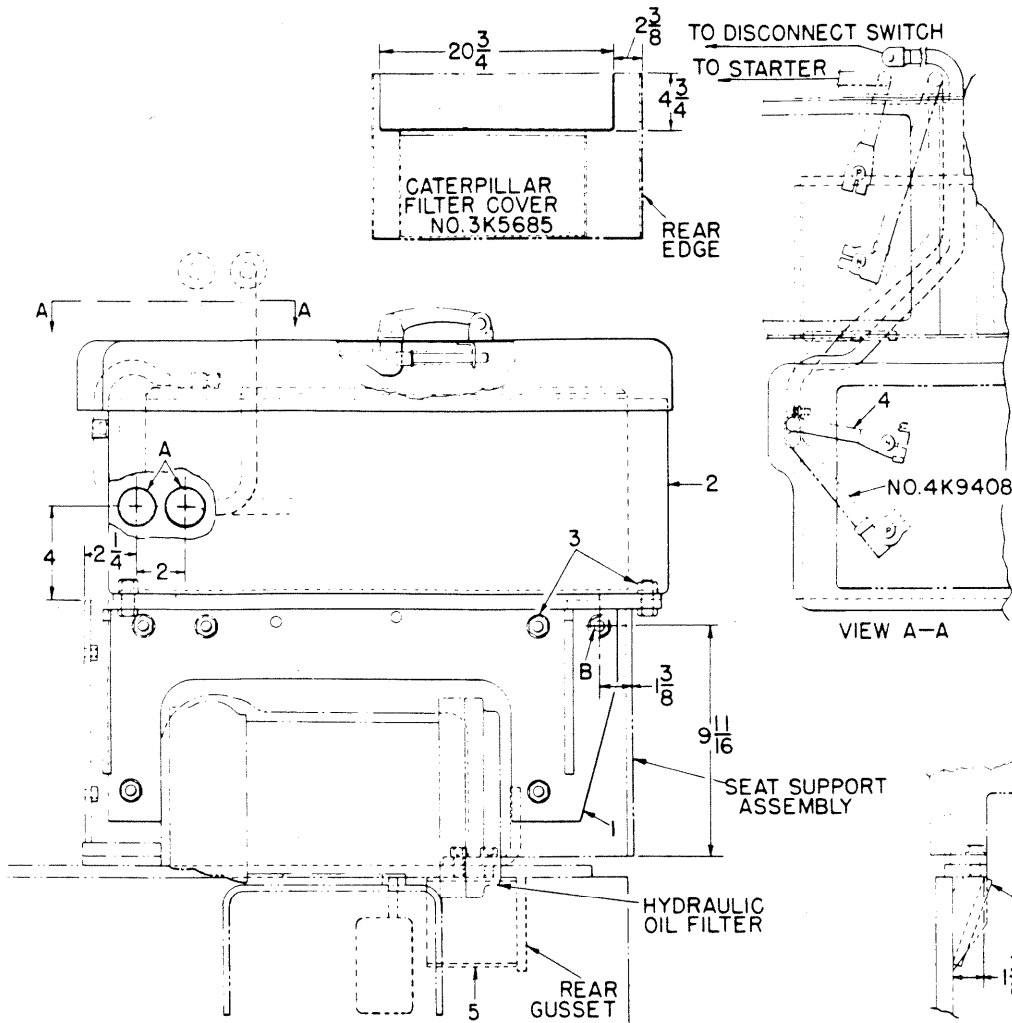
Remove two upper drawbar studs "K" and install them at "L". Leave studs "R" in place for winch mounting.
- 3c. For 951 Traxcavator S.N. 89A1 and up:

Install four Hyster studs 96726 at "L" and "R".
4. Install two Hyster studs (96726) at "M". Torque studs "L", "M" and "R" to 80-100 ft. lbs.
5. Place "O" Ring (7) on P.T.O. shaft carrier and swing the winch into place on the rear face of the Traxcavator. Thread the push-pull cables through the holes drilled in "Traxcavator Alterations" and into their respective holes in the handlever bracket as the winch moves in. Make sure that the splines on the Traxcavator power take-off shaft enter those of the coupling on the winch shaft.
6. Install nuts and lockwashers on mounting studs. First tighten four lower studs (in rear face of Traxcavator), then tighten the two upper studs just enough so that the nuts are tight and the studs are in tension. There will be a normal clearance of approximately $3/32$ " at "P". Excessive tightening of the two top stud nuts "Q" could distort the winch cases.
7. Lock push-pull cables to handlever bracket using nuts and lockwashers (13).
8. Install nut (8) and rod end (9) on brake handlever cable (center one). With brake band, inside of winch, and handlever in released position, adjust rod end (9) to match hole in brake handlever and insert rod end pin. Insert cotter in rod end pin and tighten jam nut (8).
9. Connect other two push-pull cables following same procedure. For forward and reverse, have handlever in neutral (center position) and dental clutch, inside winch, disengaged. For free spool, have handlever in locked position on quadrant bar and free spool clutch fully engaged (drum under power and not free spooling).
10. Re-install Traxcavator drain tubing, removed in "Traxcavator Alterations". If required, bend slightly to clear winch side.
11. Install rear cover plate (6) using two capscrews (10) (3/8 UNF x 1) with nuts and lockwashers and two capscrews (11) (3/8 UNC x 1) with lockwashers.

NOTE: For traxcavators with 24-volt electric start, see additional instructions for mounting battery box.

Battery Box Installation

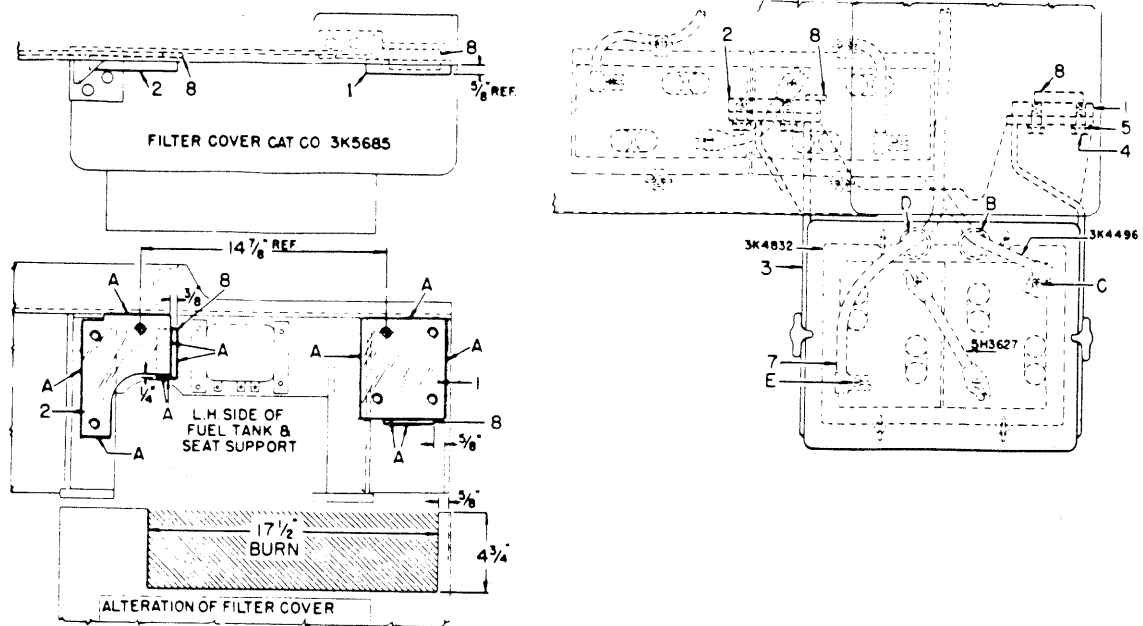
For 24 volt 955 Traxcavators Serial No. 60A7437 and up and
951 Traxcavators Serial No. 89A1 and up



1. Remove filter cover "Caterpillar" 3K5685 and alter as shown. Remove batteries and battery box.
2. Burn two 1 - 11/16 dia. holes at "A" and install Hyster grommets.
3. Locate and drill one 17/32 dia. hole at "B" and, using Hyster Battery Bracket (1) as a template, locate and drill five additional 17/32 dia. holes.
4. Install battery bracket (1) to tractor and battery box assembly (2) to bracket (1). Use ten capscrews (3) (1/2 UNC x 1 - 1/4) with nuts and lock washers.
5. Install "Caterpillar" batteries in battery box (2).
6. Install battery cables and clamp to side of battery box. Hyster cable (4) replaces "Caterpillar" cable 4K9409 (rear battery to disconnect switch). Use "Caterpillar" cable 4K9408 to complete circuit.
7. Install altered filter cover 3K5685.
8. Install plate (5) and weld to support assembly rear gusset. Weld at top and bottom as shown.

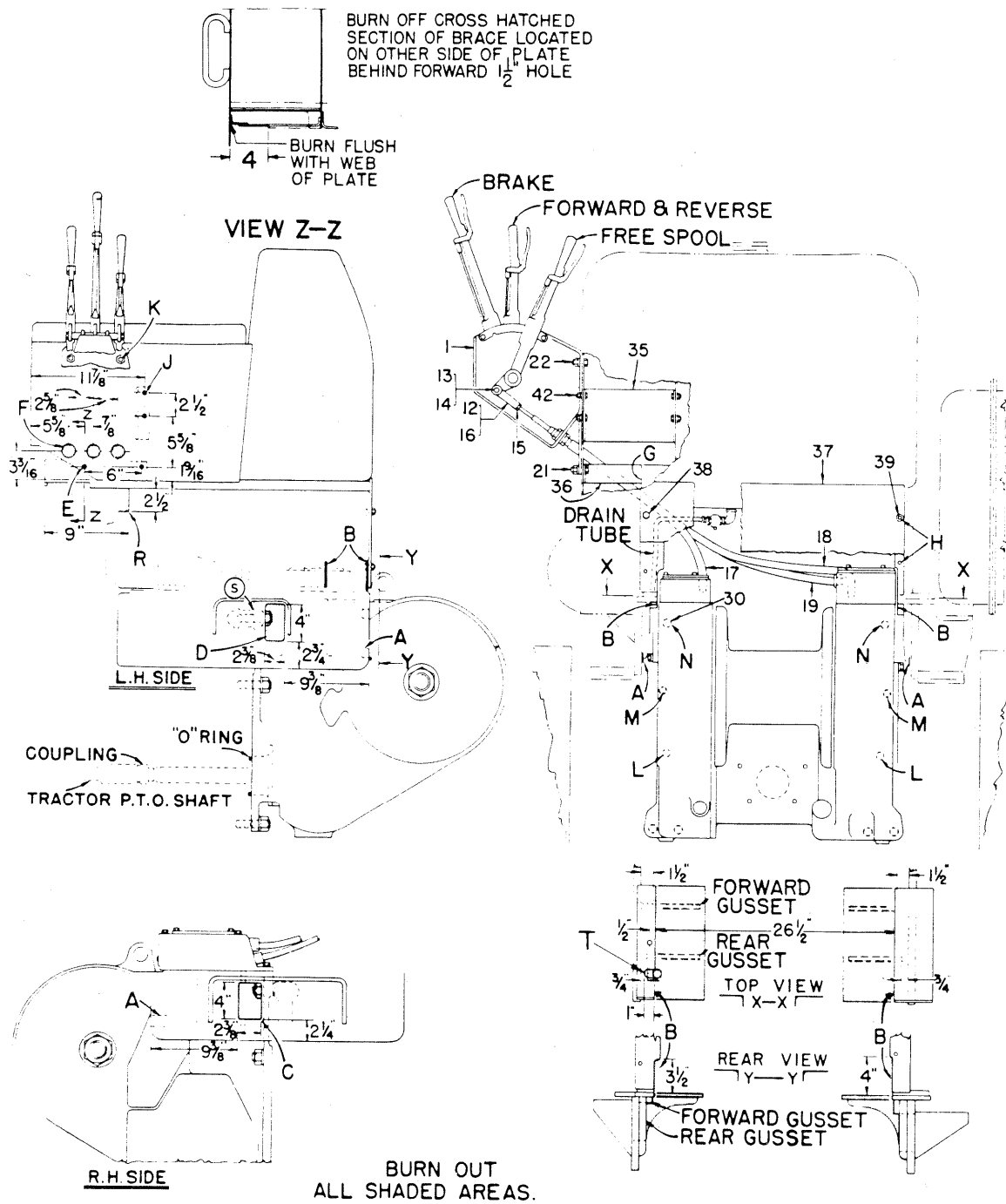
BATTERY BOX INSTALLATION INSTRUCTIONS

For 955 Traxcavators, 24 Volt S.N. 60A1 And Up to 60A7436 Inclusive



1. Remove filter cover assembly Cat. Co. 3K5685 and alter as shown.
2. Attach plates "1" and "2" to Hyster battery box "3" with capscrews "4" and lockwashers "5". Locate this assembly on Traxcavator frame and tackweld "1" and "2" in place.
3. Remove battery box "3" and complete welding of plates "1" and "2" with spacers "8" in place. Use 1/4" fillet weld at all joints "A". Replace battery box "3" using capscrews "4" and lockwashers "5".
4. Install two grommets in holes "B" and "D" in bottom plate of battery box.
5. Remove Cat. Co. batteries from rear compartment and install in Hyster battery box. Use Cat. Co. holddown assembly 3K4832 with four bolts, wing nuts, etc., to secure batteries in place.
6. Use Cat. Co. cable 5H3627 to connect batteries. Thread Cat. Co. cable 3K4496 thru grommet at "B" and connect to positive terminal "C". Thread Hyster cable "7" thru grommet at "D" and connect to negative terminal "E". Connect other end of cable "7" to DISCONNECT SWITCH.
7. Replace altered filter cover 3KJ685 and install battery box cover.

INSTALLATION INSTRUCTIONS
 For 955 Traxcavators Serial No. 60A3626 And Up
 to 60A7436 Inclusive



INSTALLATION INSTRUCTIONS
For 955 Traxcavators Serial No. 60A3626 and Up
to 60A7436 Inclusive

TRAXCAVATOR ALTERATION

1. Remove rear door assembly and hand knob assemblies from loader frame.
2. On gasoline start Traxcavators, remove rear crosstie. On 24 volt electric start, remove rear batteries, battery box and hold-down assemblies.
3. Remove lower rear cover and drain-tube (see Installation Note 9).
4. Burn off lower lugs at "A"; R. H. and L. H. side of loader frame.
5. Burn out for winch clearance at "B". Trim gussets to 3/4" and 1-1/2" as shown at Y-Y. Also burn clearance slot 1" long for drain tube (at "T").
6. Burn out access holes "C" and "D".
7. Drill two 9/16 holes at "E" for handlever bracket (1). Use bracket as template to drill two 9/16 upper holes "K". Burn out section of brace as shown in View Z-Z.
8. Burn three 1-1/2 holes at "F" for push pull cables. Also burn clearance at "R".
9. Drill two 7/16 holes "J" in outside plate and two in inside plate. Install tie plate (35) using four capscrews (42) 3/8 UNF x 3/4 with lockwashers and hex nuts.
10. Secure bracket (1) and tie angle (36) to outside plate with three capscrews (22) 1/2 UNF x 1 and one (21) 1/2 UNF x 1-1/4 with lockwashers and hex nuts. Weld the angle (36) to frame at "G" with 3/16 fillet weld all around.
11. Using capscrews (38), line up rear cover plate (37) and drill two 7/16 holes at "H".

WINCH INSTALLATION

1. Drain the bevel gear compartment of Traxcavator.
NOTE: Use a clean container that will hold at least 15 gallons to catch the oil, oil to be reused after winch is installed. Drain compartment by removing drain plug located beneath and on centerline of tractor.
2. Remove PTO cover and plug holes with corks. Remove drawbar brackets. Remove two studs from "L" and install at "M". Install two Hyster studs (30) (96726) in bevel gear case cover at "N". On all four studs apply 80-100 ft. lbs torque.
3. Place O-Ring on PTO shaft carrier. Swing winch toward rear face of Traxcavator, threading push-pull cables thru their respective openings at "R" and "F" and mounting holes in bracket (1). Line up splines on Traxcavator PTO shaft to enter coupling on winch shaft.
4. With winch in place, install nuts and lockwashers on all studs. Tighten nuts on two studs at "M" and on four lower studs to fasten winch securely to tractor. Clearance "S" between winch and stud boss may be 3/32 or more. Do not overtighten nuts on studs (30) because winch frame MUST NOT be distorted.
5. Lock push-pull cables to bracket (1). Start with the center (brake) cable (18) and install locknut (15) and rod-end (12). With brake band and brake handlever in released position (as shown), adjust rod end (12) so that pin holes in lever and rod end will line up. Insert pin (13) and cotter (14). Lock rod end to cable with nut (15).
6. Assemble locknut (15) and rod end (16) to remaining cables (17) and (19).
7. With Forward & Reverse in neutral position (as shown) and dental clutch disengaged; adjust rod end (16) so that pin holes in hand lever and rod end line up. Insert pin (13) and cotter (14). Lock rod end (16) with nut (15).
8. With Free Spool handlever in locked position and clutch fully engaged (drum under power) adjust rod end (16) so that pin holes in handlever and rod end line up. Insert pin (13) and cotter (14). Lock rod end (16) with nut (15).
9. Replace drain tube, that was removed as per Alteration Instruction Note "3". Bend if necessary, to clear winch side.
10. Install Hyster cover plate (37) using two capscrews (38) (3/8 UNC x 1) and lockwashers: also two capscrews (39) (3/8 UNF x 1) and lockwashers and hex nuts.

INSTALLATION INSTRUCTIONS

For No. 955 Traxcavators Serial No. 60A and Up to 60A3625 Incl.

TRAXCAVATOR ALTERATIONS

1. Remove rear door assembly and hand knob assemblies from loader frame.
2. On gasoline start Traxcavator, remove rear cross tie. On 24 Volt electric start, remove rear batteries, battery box and holddown assemblies.
3. Remove lower rear cover and drain tube (See Installation Note 10).
4. Burn off lower lugs "A" R. H. and L. H. side of loader frame.
5. Burn out for winch clearance at "B".
6. Burn access holes "C" and "D" in loader frame sides.
7. Drill two 9/16 holes at "E". Use Item 1 as template to drill two upper holes.
8. Burn three 1-1/2 holes at "F" for push-pull cables. Also burn clearance at "R".
9. Drill four 7/16 holes "T" in outside and inside plates and install Item 45.
10. Secure bracket "1" and angle 46 to outside plate. Weld 46 all around at "G" with 3/16 fillet weld.
11. Use rear cover 47 as template and drill two 7/16 holes at "H".

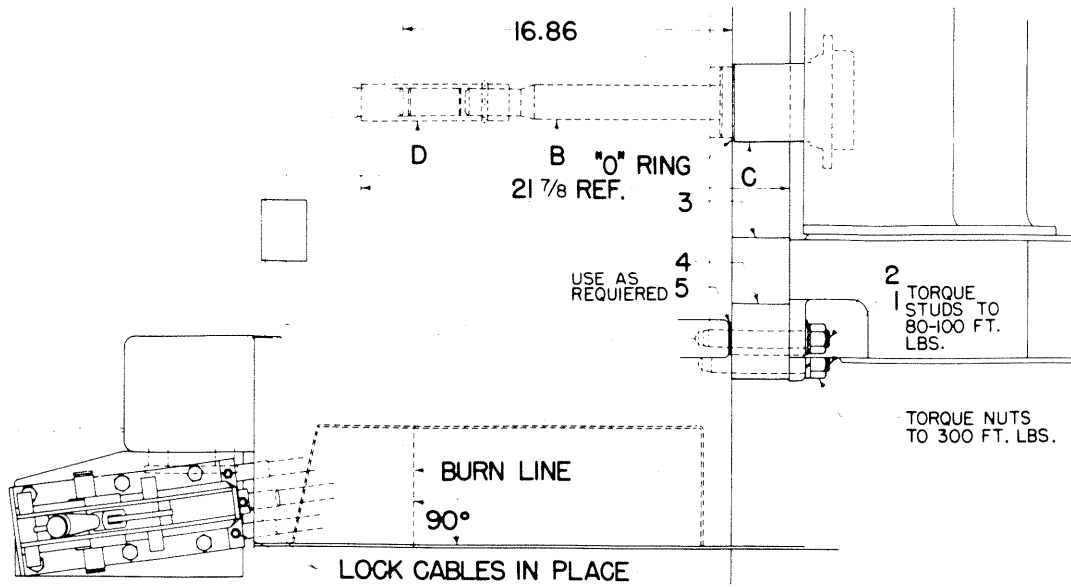
WINCH INSTALLATION

1. Drain bevel gear compartment of Traxcavator.
2. Remove P. T. O. cover and studs, plug stud holes with corks. Remove drawbar brackets and four lower studs at "L". Install Hyster studs 38, at "L", "M", and "N". Apply 80 - 100 Ft. Lbs. Torque.
3. Install spacers 35 on upper studs and spacers 36 and 37 on lower studs.
4. Place O" Ring on P. T. O. carrier 30. Swing winch toward rear face of Traxcavator threading push-pull cables thru their respective openings at "F" and "R". Line up splines on Traxcavator P. T. O. shaft to enter coupling on winch shaft.
5. With winch in place install lockwashers and nuts on all studs. First tighten nuts on two studs "M" and four studs "L" then tighten the nuts on top studs "N" just enough to put the studs in tension because on this unit there may be excessive clearance between winch case surface and stud bosses on Traxcavator top cover and excessive tightening could distort the winch cases.
6. Lock push-pull cables to bracket 1. Start with the central or brake lever cable 18 and install locknut 15 and rod end 12. Adjust rod end so that when brake band and handlever are in released position the pin holes in handlever and rod end are aligned. Insert pin 13 and secure with cotter 14. Tighten locknut 15.
7. Install locknut 15 and rod end 16 on remaining cables 19 and 17.
8. With forward-reverse lever in neutral (central position) and dental clutch disengaged, adjust rod end 16 so that pin holes in lever and rod end are aligned. Insert pin 13 and secure with cotter 14. Tighten locknut 15.
9. Put free spool lever in locked position as shown and free spool clutch in fully engaged position. Adjust rod end 16 so that pin holes in lever and rod end are aligned. Insert pin 13 and secure with cotter 14. Tighten locknut 15.
10. Replace drain tube which was removed (Traxcavator Alteration Note 3). Bend slightly if necessary to clear winch side.
11. Install rear cover plate 47 using capscrews 48 and lockwashers 51 on L. H. side and capscrews 49, lockwashers 51 and nuts 50 on R. H. side.

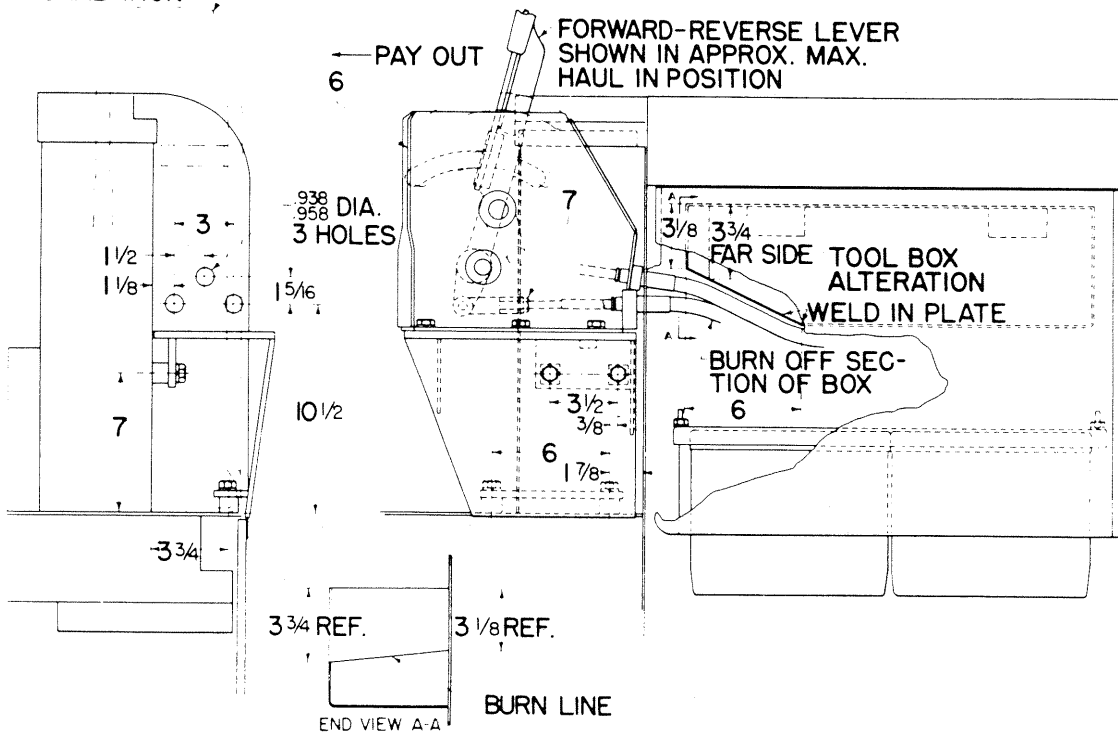
A10.1

Installation Instructions

For No. 951B Traxcavator Serial No. 86J1 and Up and
941 Traxcavator Serial No. 80H1 and Up.



REMOVE
GRAB IRON



INSTALLATION INSTRUCTIONS

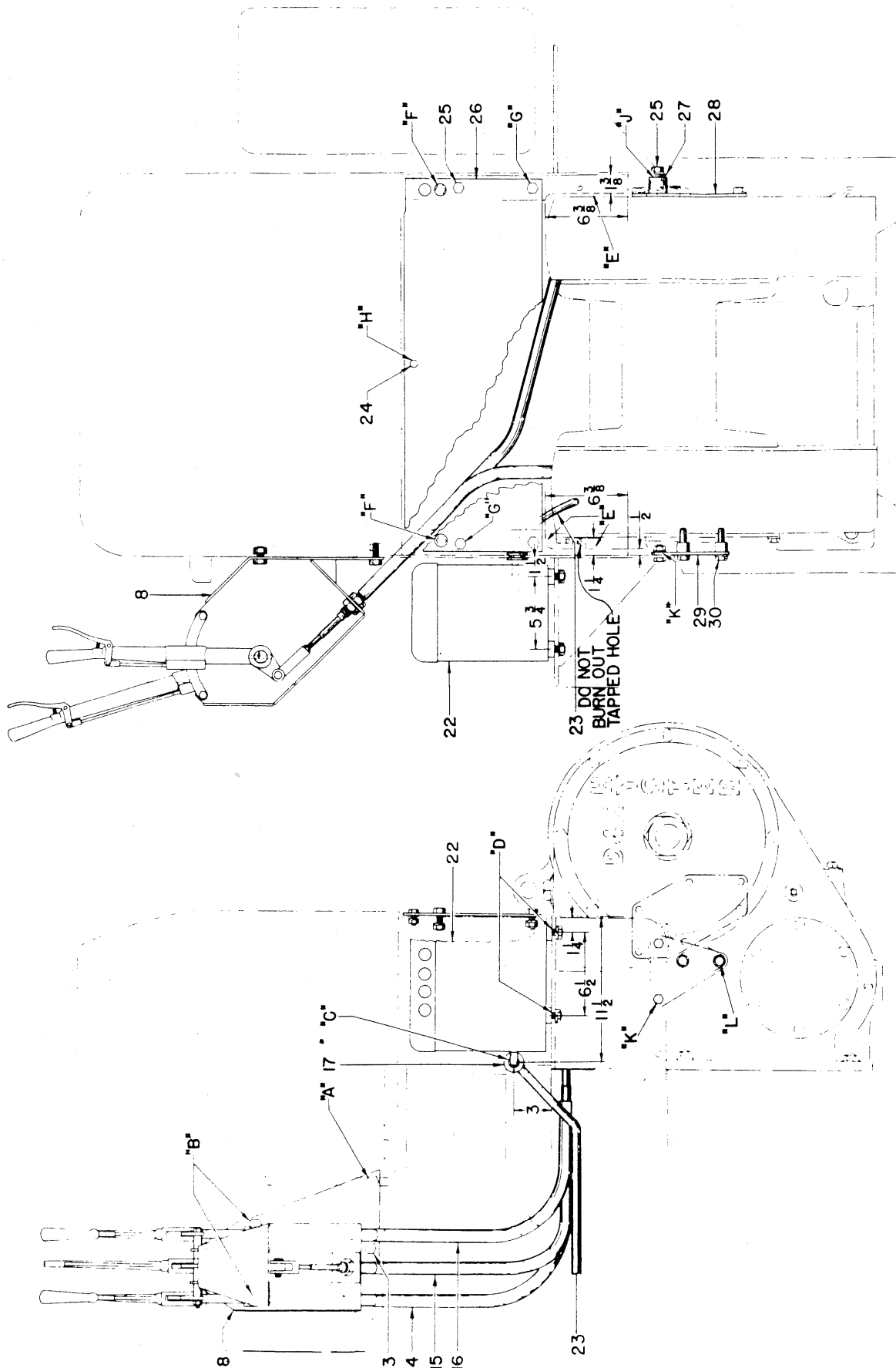
For No. 951B Traxcavator Serial No. 86J1 and Up and
941 Traxcavator Serial No. 80H1 and Up.

TRAXCAVATOR ALTERATIONS

1. Traxcavator must be equipped with the optional P.T.O. shaft.
2. Relocate brace assembly 6K5227 (loader linkage support) in a location where it can easily be retrieved.
3. Remove grab iron assembly 6K3952 on transmission control console and discard.
4. Cut three (3) holes in front side of battery box for push pull cables.
5. Alter tool box on battery box door as shown for control cable clearance.
6. Weld in plate supplied.
7. Locate tapped weld pads on floor plate and transmission control console side, as noted.

WINCH INSTALLATION

1. Drain the bevel gear compartment of Traxcavator.
2. Remove P.T.O. cover; plug 8 holes with corks. Install 6 Hyster studs, Item (1), in bevel gear case and 2 Hyster studs, Item (2), in case cover, torque studs to 80-100 ft.lbs.
3. Place spacer item (3) over lower studs and spacer, Item (4), one each side over stud in cover and upper stud in case. Shim space between cover boss and spacer with Item (5) as required, so that when winch is mounted & nuts are torqued tight, neither bevel gear case cover nor Hyster winch is damaged.
4. Before mounting winch on Traxcavator, check if winch is supplied with gear shaft, Item (B), P.T.O. shaft carrier, Item (C), and spec. coupling, Item (D). Distance from winch mount. pads to end of coupling should be at least 21-7/8 inches.
5. Place "O" ring on P.T.O. shaft carrier, Item (C), swing the winch in place on rear face of Traxcavator guiding the push pull cables to their respective locations on lever bracket, Item (6), Make sure the splines on Traxcavator P.T.O. shaft enter splines in coupling on winch P.T.O. shaft.
6. When the winch is in place, install on studs in slotted winch holes one plain washer with one shakeproof lockwasher and nut. Use the split lockwasher on studs in round holes. Tighten all nuts securely, torque to 300 ft.lbs.
7. Secure push pull cables to lever bracket. Install 3/8 hex nuts Item (7) and rod ends on cables and adjust as follows. Starting with the center or brake lever & cable, adjust rod end on cable so that when band is fully released, and lever in forward position holes in rod end and lever line up. Insert pin and secure with cotter, lock rod end to push pull cable with 3/8 locknut.
8. Now adjust the forward-reverse (inside) lever as follows. Lever locked in center position and dental clutch disengaged. Adjust rod end so holes in rod end line up with hole in lever, insert rod end pin and secure with cotter, lock rod end to cable with 3/8 locknut.
9. Finish with free spool (outside) lever. Free spool clutch should be fully engaged (drum under power) and handlever in locked position on quadrant bar. Adjust rod end so that holes in rod end line up with hole in lever. Insert rod end pin secure with cotter. Lock rod end to cable with 3/8 locknut.



HYSTER COMPANY
PORTLAND, OREGON

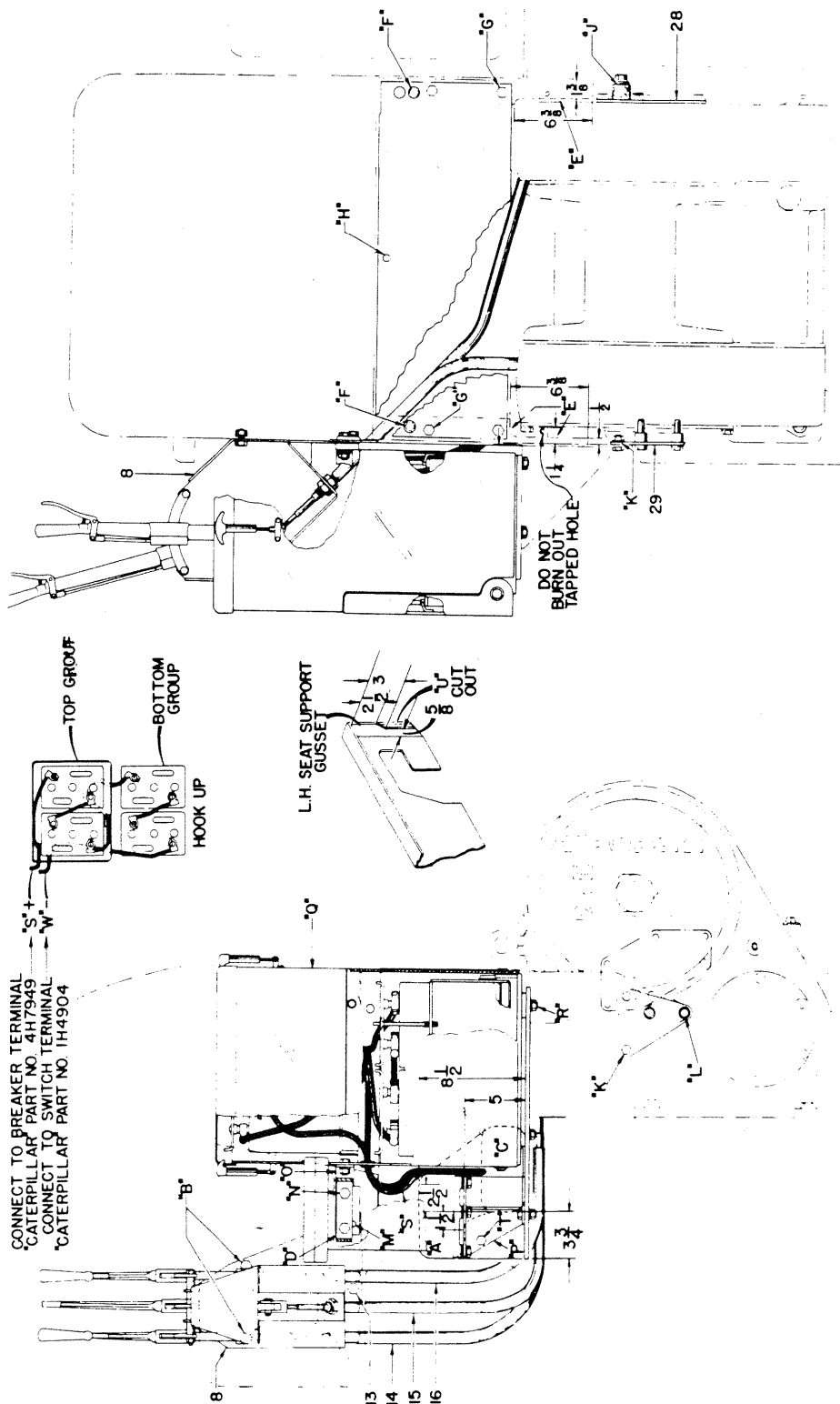
INSTALLATION INSTRUCTIONS

For 955 Traxcavators, 6 Volt, Prior to S. N. 45A1, 60A1

NOTE: No. 955 Traxcavator fixed drawbar and D4E Towing Winch cannot be attached simultaneously. Optional Hyster fixed drawbar available.

1. Disconnect battery from cable and remove battery, pad, mat, plate, and wing bolts from battery box. Detach battery base ("Caterpillar" No. 6H-2903), rear door ("Caterpillar" 6H-2868) and angle ("Caterpillar" No. 6H-2905).
2. Remove grab iron. Keep lower capscrew to attach handlever bracket at "A".
3. Drill two 9/16" dia. holes in L. H. seat side at "B", using handlever bracket (8) as template.
4. Drill 1-1/4" dia. hole in L. H. side at "C" and insert grommet (17).
5. Replace "Caterpillar" battery cable with Hyster cable (23), threading it through grommet (17).
6. Drill four 9/16" dia. holes in L. H. fender at "D" to locate battery box (22).
7. Burn rear of seat support as shown at "E". Do not burn out 3/8" tapped holes unless necessary.
8. Install Winch as directed for D4 Tractors prior to S. N. 23A1, 24A1, 39A1, 40A1.
9. Use 1" dia. holes "F" to locate cross plate (26).
10. Drill four 9/16" dia. holes at "G" and one 7/16" dia. hole at "H" using cross plate (26) as a template. Fasten with four capscrews (25) 1/2 UNF x 1-1/4 and one capscrew (24) (3/8 UNF x 1).
11. Remove winch brake adjustment cover and drill one 9/16" dia. hole "J" through new cover (28) at assembly. Bolt to R. H. side of tractor with capscrew (25) (1/2 UNF x 1-1/4). Use two washers (27) to shim.
12. Remove two capscrews "L" and attach bracket (29) using capscrews (30). Drill two holes "K" through bracket at assembly.
13. Bolt handlever bracket (8) in place, attach new control cables (14, 15 and 16) and thread them through L. H. side below seat, as shown. Use two capscrews (1/2 UNF x 1) at "B" and one capscrew (13) (1/2 UNC x 1-1/4).
14. Bolt battery box (22) to L. H. fender and install battery.

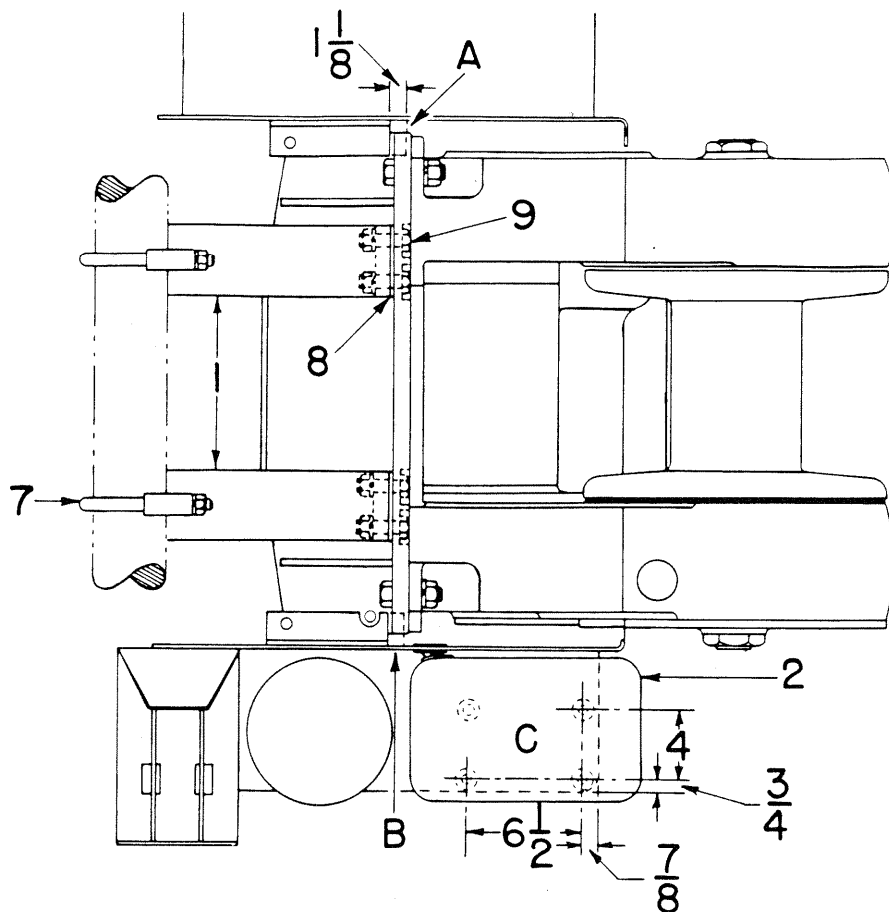
INSTALLATION INSTRUCTIONS For 955 Traxcavators, 24 Volt, Prior to S. N. 45A1-60A1



INSTALLATION INSTRUCTIONS
For 955 Traxcavators, 24 Volt, Prior to S. N. 45A1-60A1

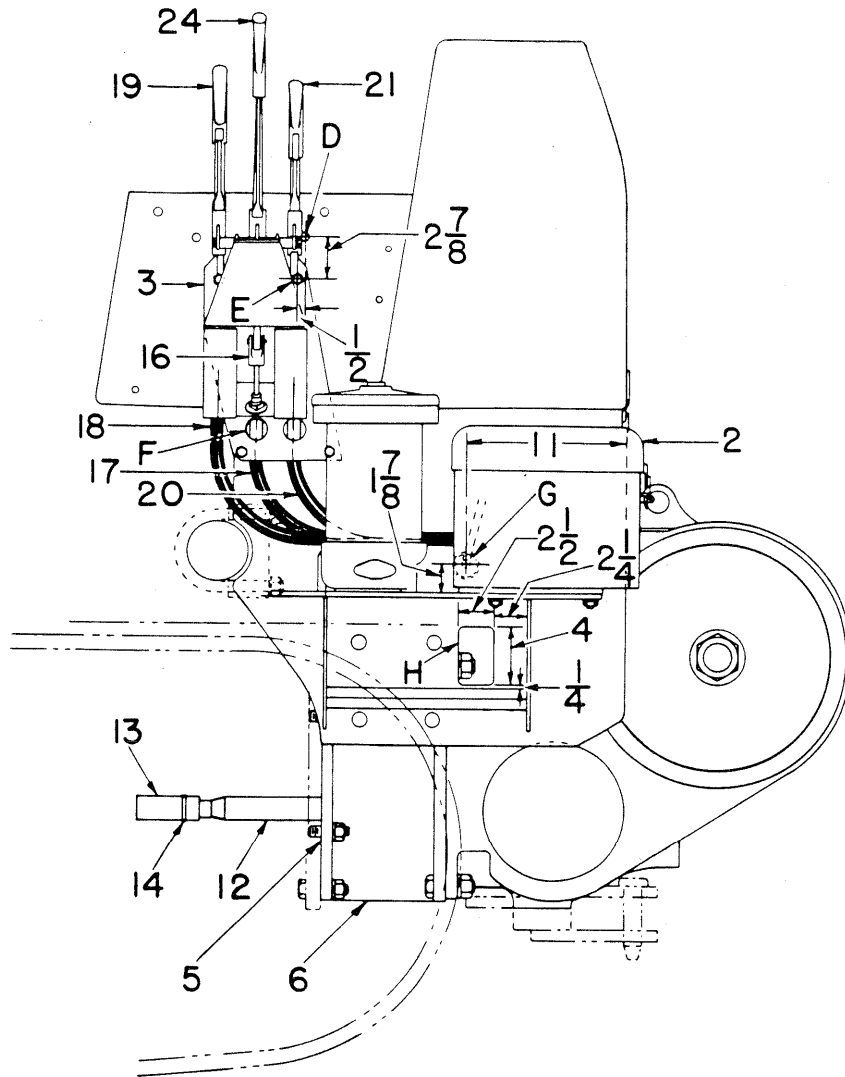
1. Disconnect and remove all battery cables and all four batteries from tractor battery compartment. Remove the rear door assembly, battery base assembly and angle assembly.
2. Loosen all screws on both hydraulic lines to filter and one hydraulic line from filter to tank. Loosen only enough to turn but not leak. Do not drain oil from hydraulic system or remove hoses unless necessary.
3. Remove all screws holding hydraulic oil filter to tractor.
4. Burn out opening at "A", starting with existing opening "C". Burn out L. H. seat support gusset as shown at "U".
5. Remove grab iron. Use lower capscrow to locate handlever bracket (8) and drill two 9/16 Dia. holes at "B". Capscrow (13) is 1/2 UNF x 1-1/4.
6. Attach bar "D" to seat side on outside of handlever bracket using capscrow "M" with the head on the inside of seat side. Drill 9/16" Dia. hole "N", slip clip "O" between seat side and bar "D" and insert capscrow.
7. Move filter forward and up, slip bracket "P" under filter and attach to filter and tractor as shown. Drill one 9/16 Dia. hole for capscrow "T". Use washers to shim as required. Tighten all hose connections and check for leaks.
8. Attach battery box "Q" to L. H. fender, using rear filter mounting hole to locate, and drill three 9/16" holes for capscrows "R". Attach battery box to clip "O" as shown. Thread battery cables through grommets in box and opening in seat support plate. Cable (+) "S" goes through grommet nearest tractor. Connect terminals as indicated.
9. Install batteries with positive (+) terminals nearest tractor and connect cables as shown in hook-up. From grommet to battery post, positive cable "S" should be 22" and negative cable "W" should be 25".
10. Burn out reliefs in fender gussets as shown at "E". Do not burn out tapped holes.
11. Use four 1" Dia. holes "F" in cross plate to locate, and drill four 9/16 Dia. holes "G" and one 7/16 Dia. hole "H".
12. Install winch as directed for D4 Tractors prior to S. N. 23A1, 24A1, 39A1, 40A1.
13. Replace winch brake adjustment cover with new cover (28). Drill one 9/16 dia. hole "J" through fender and new cover at assembly.
14. Remove two capscrows from winch a "L" and install bracket (29). Drill two 9/16 dia. holes "K" through fender and bracket at assembly.
15. Attach control cables (14, 15 and 16) as shown.

Installation Instructions
For Mounting on 933F Traxcavator
With Gas Start Engine, 12-Volt Electrical System
Plan View



1. Remove Diesel fuel tank from frame. Do not reinstall until Hyster adapter and winch are mounted.
2. Disconnect and remove 12-volt battery, battery cable, pad, mat, plate and wing bolts.
3. Detatch battery box and door assembly from fender support group and discard.
4. Remove drawbar assembly "Caterpillar" No. 9H9408 and discard.
5. For units with tie bar assemblies Caterpillar No. 9H9446, remove the assemblies, and discard. Burn off mounting pad from 4" dia. loader frame bar so Hyster mounting brackets (1) will fit at 7" from tractor center line.
6. Burn off the rear inside section of R. H. and L. H. support angle along dotted line at "A" and "B" to clear Hyster adapter.
7. Drill four 9/16" dia. holes in L. H. fender as shown at "C" and install Hyster battery box (2).

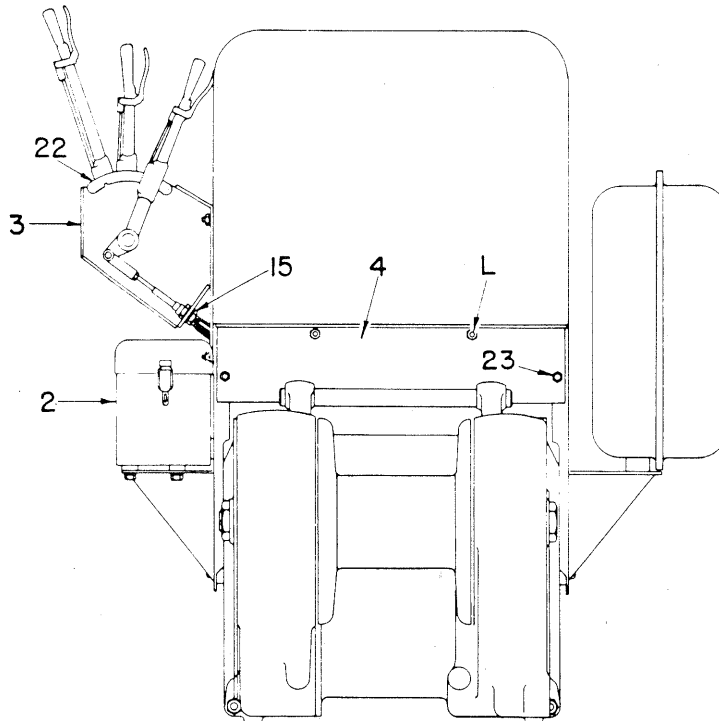
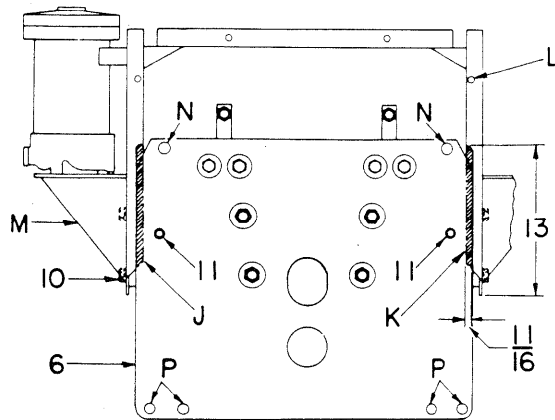
Installation Instructions
For Mounting on 933F Traxcavator
With Gas Start Engine, 12-Volt Electrical System
Side Elevation



1. Remove rear grab iron from L. H. seat side.
2. From rear grab iron hole "D" lay out and drill one 9/16" hole "E".
3. Use handle lever bracket (3) as template and drill three additional holes for mounting.
4. Locate with bracket (3) and drill two 1 - 1/2" dia. holes "F," for push-pull cables.
5. Drill one 1 - 11/16" dia. hole in L. H. fender side at "G" and insert grommet (for Hyster battery cable).
6. Burn out openings "H" in R. H. and L. H. fender side, for access to mounting studs.

Installation Instructions
For Mounting on 933F Traxcavator
With Gas Start Engine, 12-Volt Electrical System
Rear Elevation (Without Winch)

1. Burn off shaded section of R. H. and L. H. fender side plates at "J" and "K".



1. Using rear cover (4) as template, drill four holes "L" in rear flange of side plates.

Installation Instructions
For Mounting on 933F Traxcavator
With Gas Start Engine, 12-Volt Electrical System

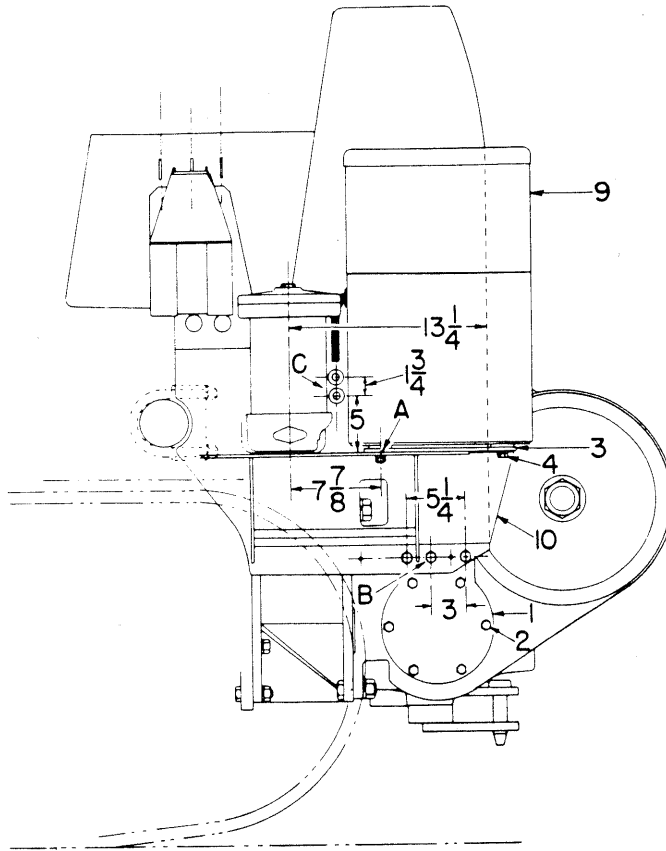
ADAPTER INSTALLATION

1. Clean rear face of Traxcavator transmission case.
2. (Side Elevation) Install gasket (5) over studs in rear face of Traxcavator and mount Hyster adapter (6).
3. Install four nuts and lockwashers on upper studs, through hand hole in rear mounting plate, and tighten securely. Install nuts and lockwashers on lower four studs and capscrews, nuts and lockwashers in lower two holes (Use "Caterpillar" parts from drawbar frame).
4. (Plan View) Install mounting brackets (1) and tighten U bolts (7) securely.
5. Adjust shims (8) so there is from .010 to .040 gap before tightening capscrews (9) (3/4 UNF x 2 - 1/4). Tighten capscrews (9) and torque to 175 ft. lbs. lubed.
6. (Rear Elevation) Bolt fender supports "M" to adapter (6) with eight capscrews (10) (5/8 UNF x 1).
7. Install two Hyster studs (11) in rear face of adapter (6).

Winch Installation

1. (Side Elevation) Mount hand lever bracket (3) on L. H. seat side and battery box (2) on L. H. fender.
2. Place "O" Ring over carrier for P. T. O. shaft (12). Be sure coupling (13) is secured with pin and lock ring (14).
3. Swing winch into position on rear face of adapter (6). Be sure the splines on the tractor P. T. O. shaft enter the coupling (13) and line up properly. It may be necessary to turn the Traxcavator P. T. O. shaft to line up the splines.
4. Thread the push-pull cables through their respective holes in the hand lever bracket (3) as the winch moves in.
5. (Rear Elevation) After the winch is in place, install shakeproof lockwashers and nuts on the two studs (11) and on the two upper capscrews (at "N"). Use regular lockwashers with the four remaining capscrews (at "P"). Tighten nuts securely and torque to 400 - 420 ft. lbs.
6. Lock push-pull cables to handlever bracket (3) with 7/8 nuts (15) and shakeproof lockwashers.
7. (Side Elevation) Install locknut and rod end (16) on brake push-pull cable (17). With handlever (24) and brake band in released position, adjust rod end (16) until rod end pin can be installed through rod end and crank on handlever.
8. To install forward - reverse cable (18), disengage dental clutch (inside winch) and place forward-reverse handlever (19) in neutral (center position.) Install and adjust rod end on cable until pin holes in rod end and handlever match.
9. To install free spool cable (20), fully engage free spool clutch inside winch (drum under power) and place handlever (21) in locked position on quadrant bar (22). Install and adjust rod end on cable so that pin holes in rod end and handlever match.
10. Be sure that jam nuts are in place under each rod end and are tight, and that cotters are installed in rod end pins.
11. Install 12-volt battery in battery box (2) using original battery hold-down parts. Attach Hyster battery cable and "Caterpillar" battery strap, nuts and lockwashers.
12. Remount Traxcavator fuel tank. A hole is provided in Hyster adapter (6) for fuel drain pipe.
13. Install rear cover plate (4) and fasten with four capscrews (23) (1/2 UNF x 1 - 1/2), nuts and lockwashers.

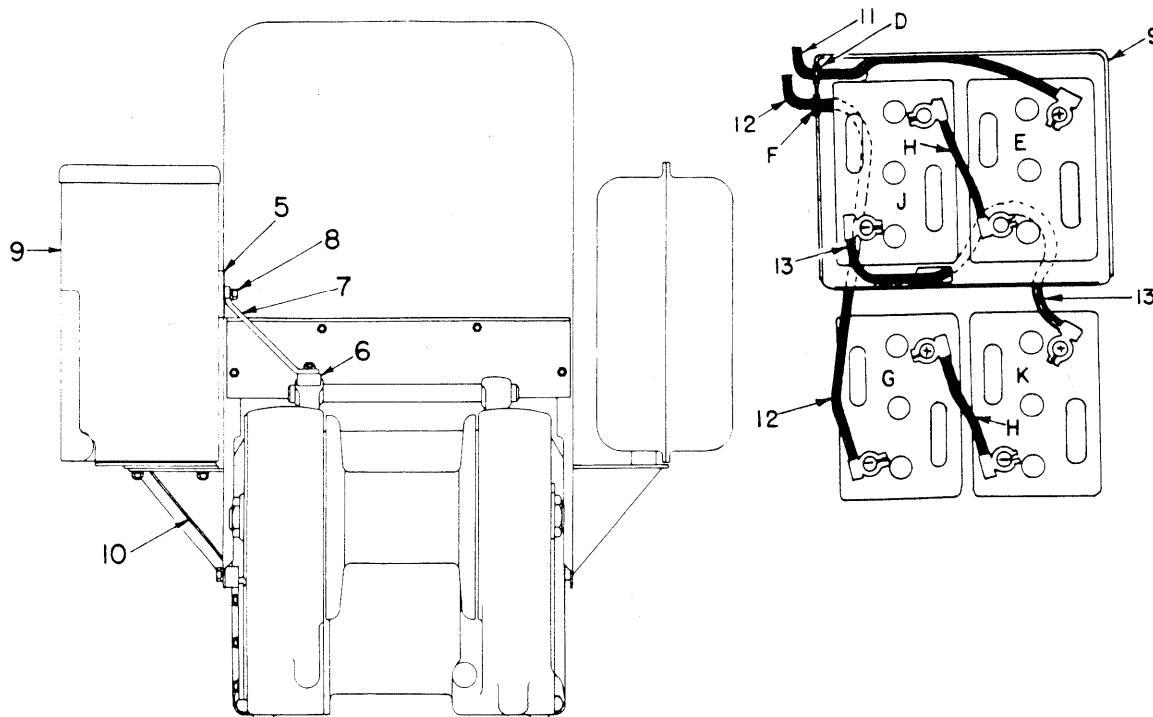
Installation Instructions
For Mounting on 933F Traxcavators
With 24-Volt Electrical System



NOTE: Installation instructions for 933F Traxcavator with 12-Volt Electrical System (except those pertaining to mounting 12-volt battery box) also apply to this installation.

1. Place winch on R. H. side and replace standard gear cover 92852 with new cover and support (1). Use old gasket and lockwashers and six new capscrews (2) (1/2 UNF x 1 - 1/4).
2. Drill two 9/16 dia. holes in L. H. fender at "A".
3. Drill three 11/16 dia. holes in L. H. side plate. Use existing 7/16 dia. hole at "B" to lay out two additional holes, holes to be in line with three 7/16" holes in the plate.
4. Drill two 1" dia. holes in L. H. side plate at "C" and insert Hyster grommets.
5. Bolt Hyster fender extension plate (3) to battery box as shown, using two capscrews (4) (1/2 UNF x 1 - 3/4) with nuts and lockwashers.
6. Install plate (5) and bar (6) on support tie (7) with four capscrews (8) (1/2 UNF x 1) and shakeproof lockwashers.
7. Bolt battery box (9) with plate (3) attached, to fender at "A". Use two capscrews (1/2 UNF x 2) with nuts and lockwashers.
8. Place support tie (7), with plate (5) and bar (6) attached, against battery box (9). Tack weld plate (5) to battery box and bar (6) to top of winch tie bar ear.
9. Place gusset plate (10) against Traxcavator fender and side plate as shown and weld all around with 3/16" fillet weld.
10. Complete welding plate (5) and bar (6) with 1/4" fillet weld.

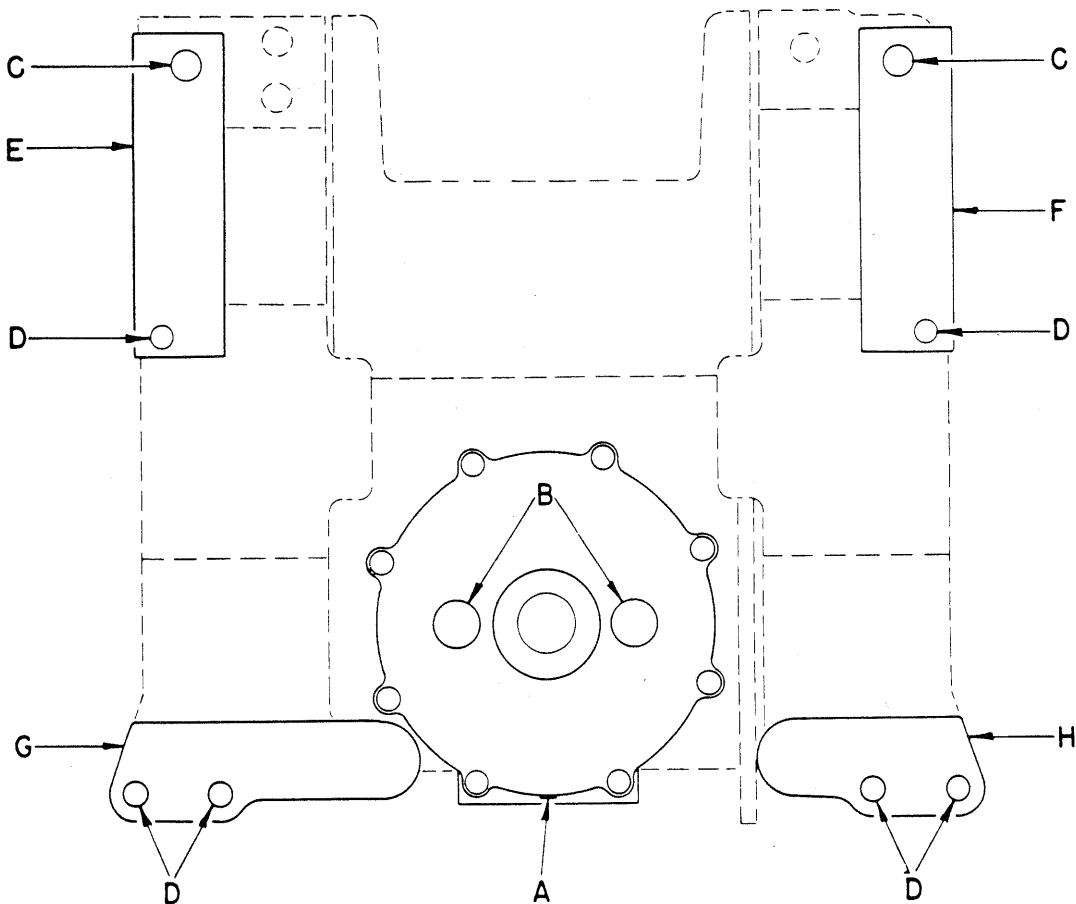
Installation Instructions
For mounting 933F Traxcavator
With 24 volt Electrical System



Battery Cable Installation

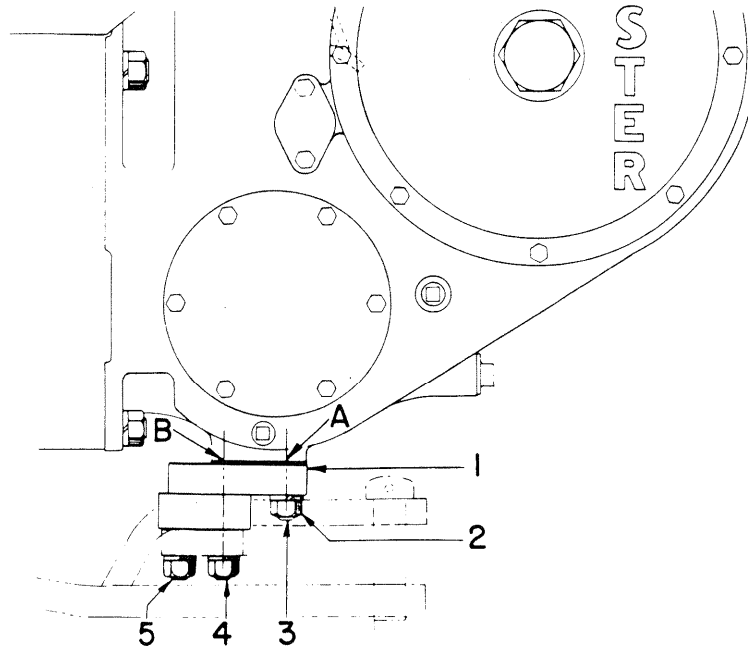
1. Thread battery cable (11) from upper compartment of battery box (9) through grommet at "D" in upper compartment, and through upper grommet in L. H. side plate at "C". One end of battery cable (11) connects to + post in rear upper battery "E" and other end to Traxcavator breaker terminal.
2. Thread battery cable (12) from lower compartment of battery box (9) through lower grommet at "C" and through grommet "F" in upper compartment. One end of cable (12) connects to - post in lower forward "battery G" and other end to Traxcavator switch terminal.
3. Install Traxcavator batteries in upper and lower compartment of battery box (9), with (+) positive posts toward center line of Traxcavator. Hold in place with "Caterpillar" hold-down assembly 3K5885 and Hyster studs, wing nuts and washers.
4. Connect the two upper batteries and the two lower batteries with two "Caterpillar" cable assemblies 5H3627 "H".
5. Connect Hyster cable (13) to (-) minus post on upper forward battery "J" and (+) plus post on lower rear battery "K".
6. Connect battery cables (11 and 12) as directed in instructions 1 and 2.
7. After connecting battery cables, roll in battery box carriage and make sure that the long cables in lower compartment fold in correctly. To avoid pinching cables, adjust terminal connectors and length of cables as required.

Lo-Speed Group Installation



1. Install lo-speed transmission unit so that drain plug "A" is down, and gear centers "B" are horizontal, as shown.
2. Install studs "C" and "D" in rear face of tractor and install spacers "E", "F", "G" and "H" over studs.
3. Install D4E Towing Winch as directed for D4 Tractors.

"Caterpillar" Swinging Drawbar Installation (Optional)



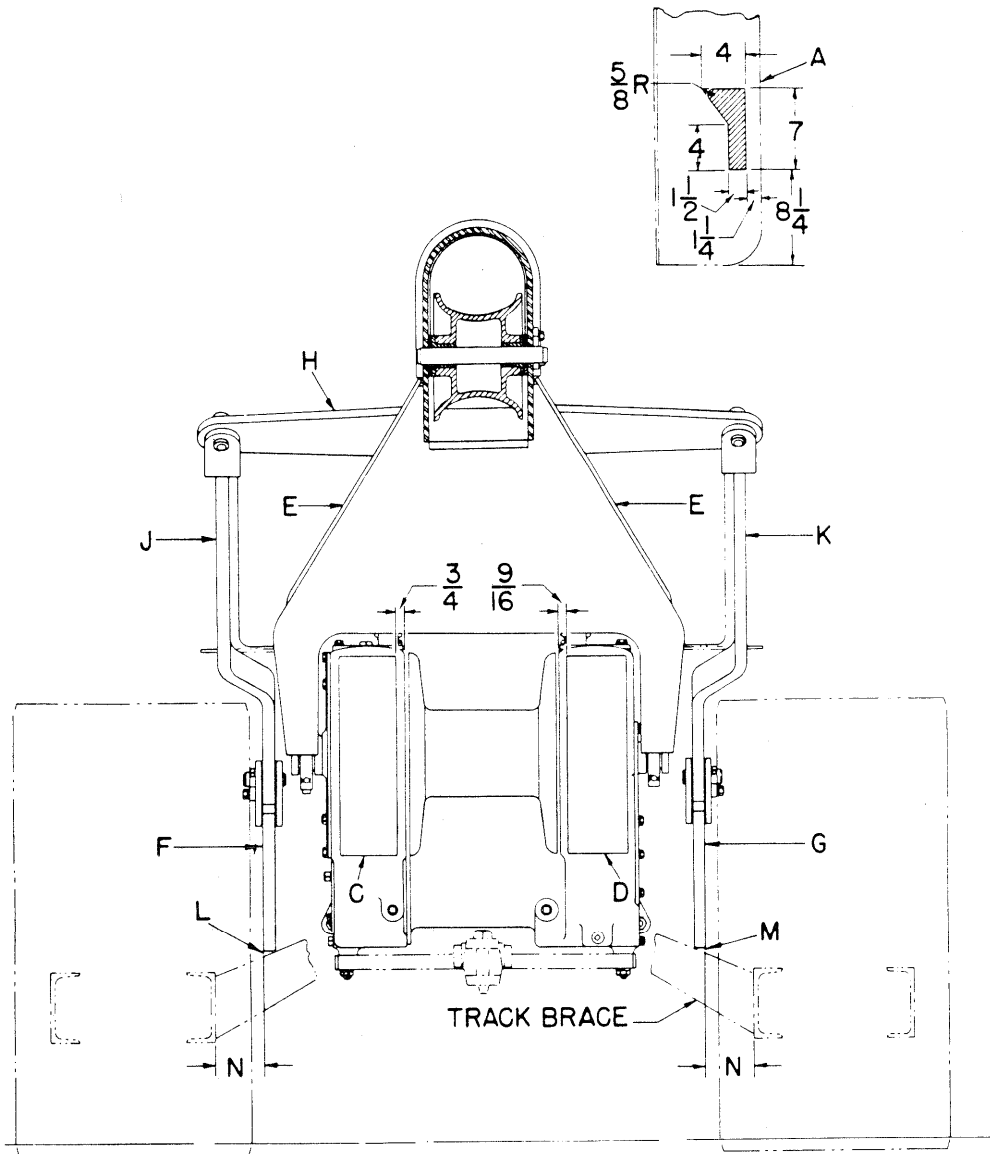
To install optional swinging drawbar for D4 Tractors Serial No. 78A1 and up:

1. Remove four tractor studs 1A4953 from drawbar support bracket and install one (5) in each Hyster mounting block (1).
2. Install the other two studs in tapped holes "A" in winch mounting pads.
3. Install two Hyster studs 96508 (4) in tapped holes "B".
4. Install mounting blocks (1) over studs installed above and secure with "Caterpillar" nuts and lockwashers.
5. Install "Caterpillar" drawbar plate with swinging drawbar attached, to mounting blocks (1).
6. Tighten all nuts securely.

The installation for other D4 Tractors is similar to above.

1. Install two Hyster studs 96507 ($3/4 \times 5 - 1/4$) at "A."
2. Install two Hyster studs 96508 ($3/4 \times 6 - 3/8$) at "B."
3. Use "Caterpillar" studs, nuts and lockwashers to complete installation.

Integral Arch Installation (Optional)
(Current for D4 Tractors Series C and D)

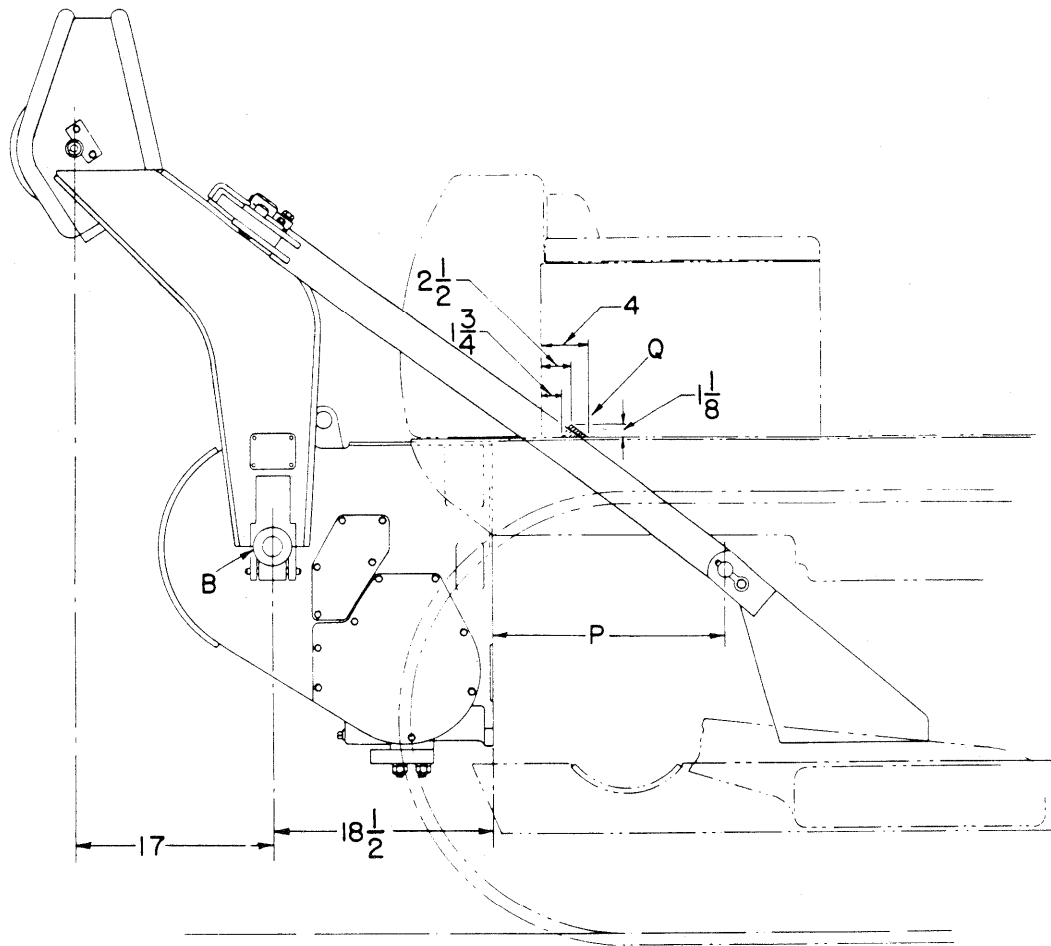


Burn out shaded areas.

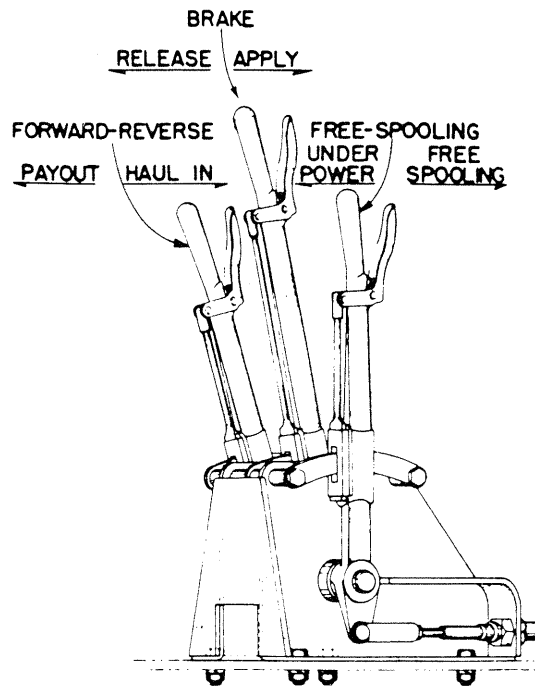
1. Burn holes in fenders (R. H. and L. H.) as shown at "A." Burn out openings in battery box as shown at "Q."
2. Remove winch drum shaft nuts and replace with special nuts "B."
3. Weld winch guards "C" and "D" in place as shown. Use 4 - 8 skip weld both sides.
4. Install frame "E" on winch and hold in place.
5. Tack weld track brackets "F" and "G" on tractor as shown and install equalizer beam "H" and back stay struts "J" and "K."
6. Check alignment and complete welding track brackets to tractor. Use 3/8 fillet weld, both sides, at "L" and "M."

NOTE: For Series C tractors, 20" maximum track width,
dimension "N" equals 4 - 1/8 - dimension "P" equals 20 - 1/16.
For series C and D tractors, 18" maximum track width,
dimension "N" equals 2 - 3/4 - dimension "P" equals 20 - 3/4.

Integral Arch Installation (Optional)



OPERATING INSTRUCTIONS LOCATION AND OPERATION OF LEVERS



CAUTION: Do not operate the winch while the tractor is in motion.

1. To apply the winch hand brake pull the handlever back. Push forward to release. **CAUTION:** With a standard brake the handlever must be released before operating the winch. The tractor master clutch must be disengaged before the winch brake is applied to avoid stalling the tractor or burning the winch brake lining. The automatic brake may be applied while hauling in a load but must be released to pay out line.
2. To haul in a load pull back the clutch handlever. Push forward to pay out line.
3. For a free-spooling drum, pull the free-spooling handlever to a vertical position. To turn drum under power, push the handlever forward.

Caution: Do not apply more handlever effort than necessary to operate brake or shifter.

Clutch Operating Instructions

For 955 Traxcavators With Power Shift Transmission :

1. Disengage Tractor powershift transmission.
2. Put Tractor range selector in "neutral".
3. Engage winch transmission.
4. Re-engage Tractor power shift transmission to line speed desired.

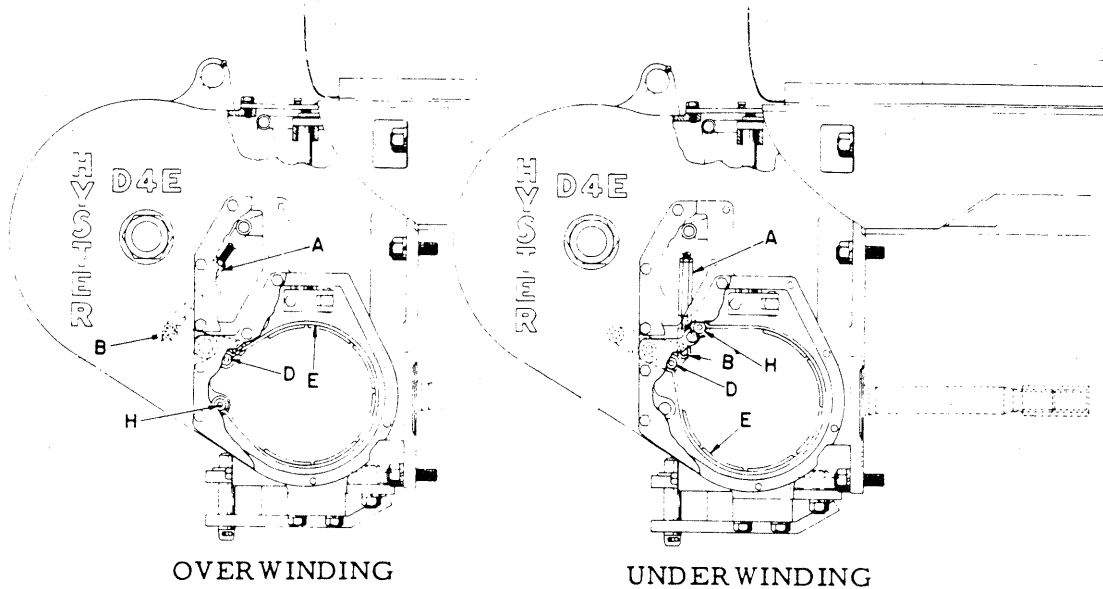
For all Tractors and Traxcavators Without Power Shift Transmission:

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

OPERATING INSTRUCTIONS - CONTINUED

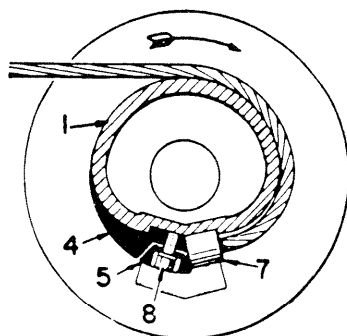
Brake linkage change from overwind to underwind.

NOTE: Unless otherwise specified, all winches are set to overwind the cable (over the top of the drum barrel).

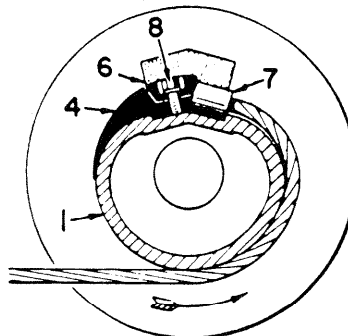


1. Remove pins "B", "D", and "H" and replace them as shown for underwind.
2. Adjust link "A" so there is approximately $1/32$ " clearance between lining "E" and brake drum, with handle lever in fully re-released position.

OPERATING INSTRUCTIONS - Continued

METHOD OF ATTACHING CABLE FOR
OVERWINDING OR UNDERWINDING DRUM

OVERWINDING



UNDERWINDING

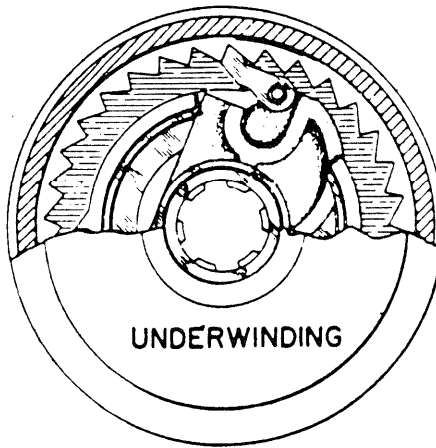
OVERWINDING - Place ferrule (7) in pocket and lock into place with filler (4) and ferrule lock (5), using capscrew (8) and lockwasher.

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)



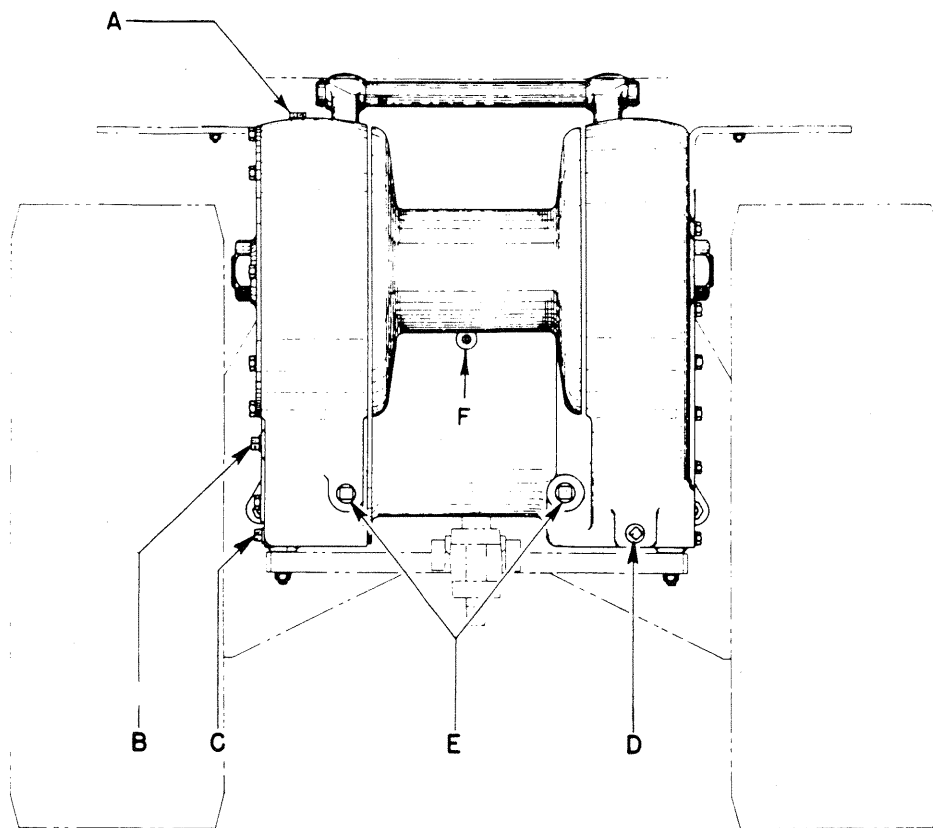
OVERWINDING



UNDERWINDING

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

SERVICING INSTRUCTIONS
LUBRICATION CHART



Transmission Capacity - 3 Gal.

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.

LUBRICATION INSTRUCTIONS

Every Eight Hours or Daily

Rod End Pins:

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

Every 50 Hours or Weekly

Transmission:

Check oil level at plug "B"; add oil if necessary.
If winch is new, drain, flush and refill with new oil.

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

EVERY 200 HOURS OR FOUR WEEKS

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

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

EVERY 1000 HOURS OR SIX MONTHS (Under Normal Conditions)

Transmission:

Drain, flush and refill with new oil. A straight mineral oil (or if preferred, same oil as used in tractor) should be used. SAE 90 mineral oil is satisfactory for temperatures down to +30°F; SAE 80 for temperatures below 32°F; SAE 80 diluted with kerosene to provide fluidity, for extremely cold temperatures.

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

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

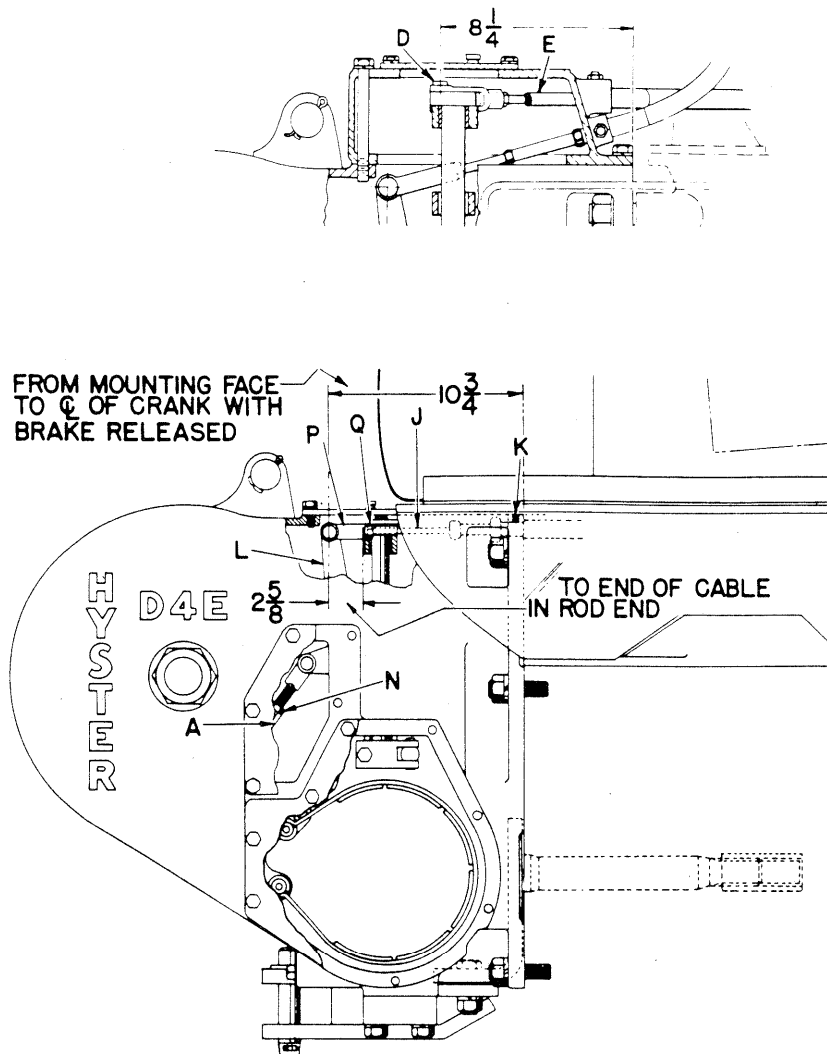
Transmission Capacity -----3 Gallons

For D4 Tractors prior to serial no. 23A1-24A1-39A1-40A1, the pipe plugs "E" are filler plugs for the tractor final drive. For tractors 23A1-24A1-39A1-40A1 and up, these openings are not used. Do not remove plug "F" for lubrication. This plug holds detent ball and spring.

SERVICING DRUM

When reassembling drum unit after servicing, add two quarts of oil, SAE 90, to drum barrel.

SERVICING INSTRUCTIONS -Continued

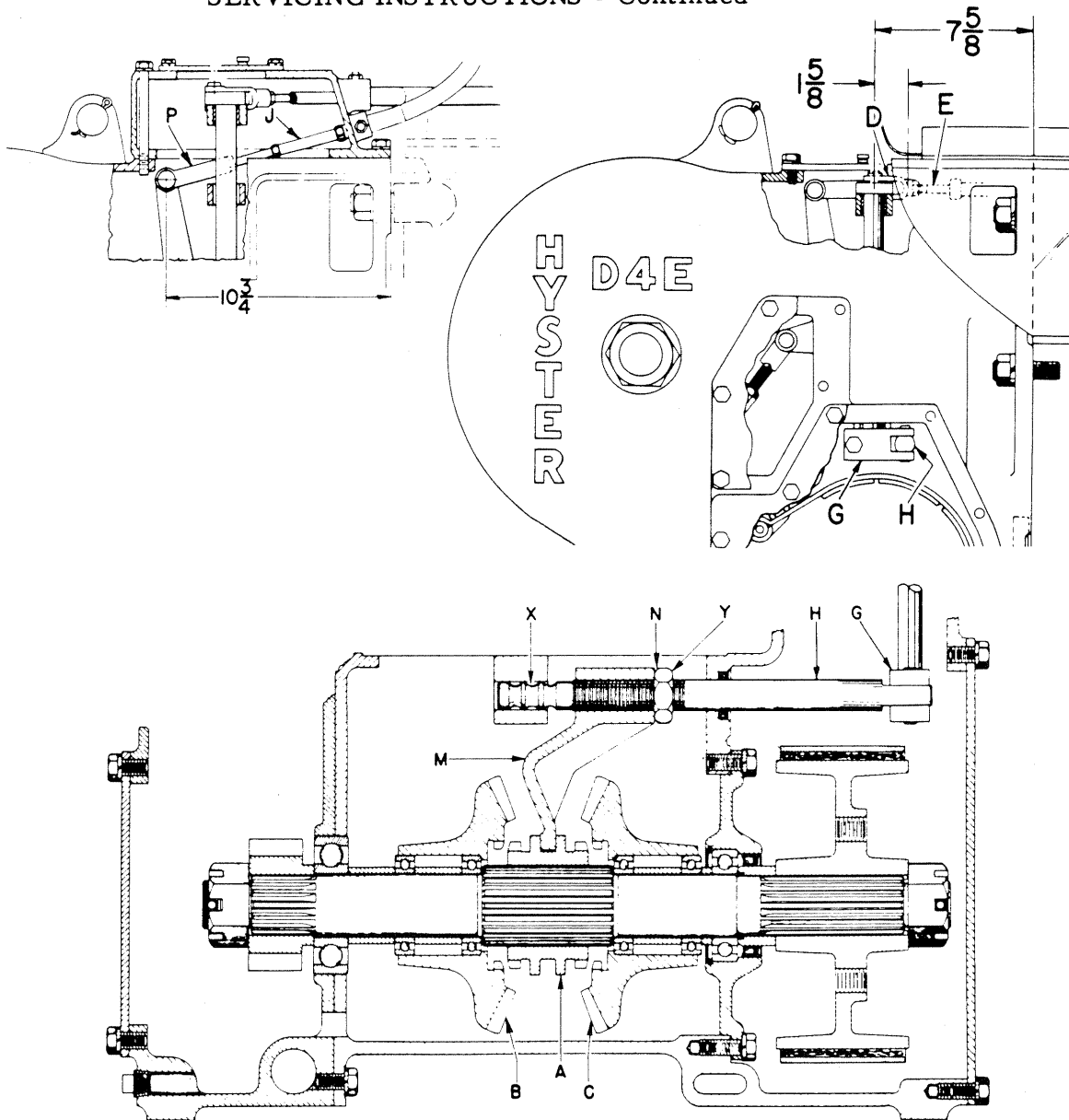


BRAKE BAND ADJUSTMENT

1. Remove both covers on the R. H. side of winch.
2. Push brake handlever (center handlever) forward into the release position.
3. Loosen jam nut "N" and turn link "A" to the right to tighten or to the left to loosen brake band. Allow approximately 1/32" clearance to prevent "dragging".
4. If cable "J" is replaced, reset as follows:
Centerline of crank "L" to winch mounting face, 10-3/4" and
centerline of crank "L" to end of cable "J" in rod end "P", 2-5/8".

Note: To install push-pull cable, remove large grommet, insert cable in winch opening and replace grommet on cable.

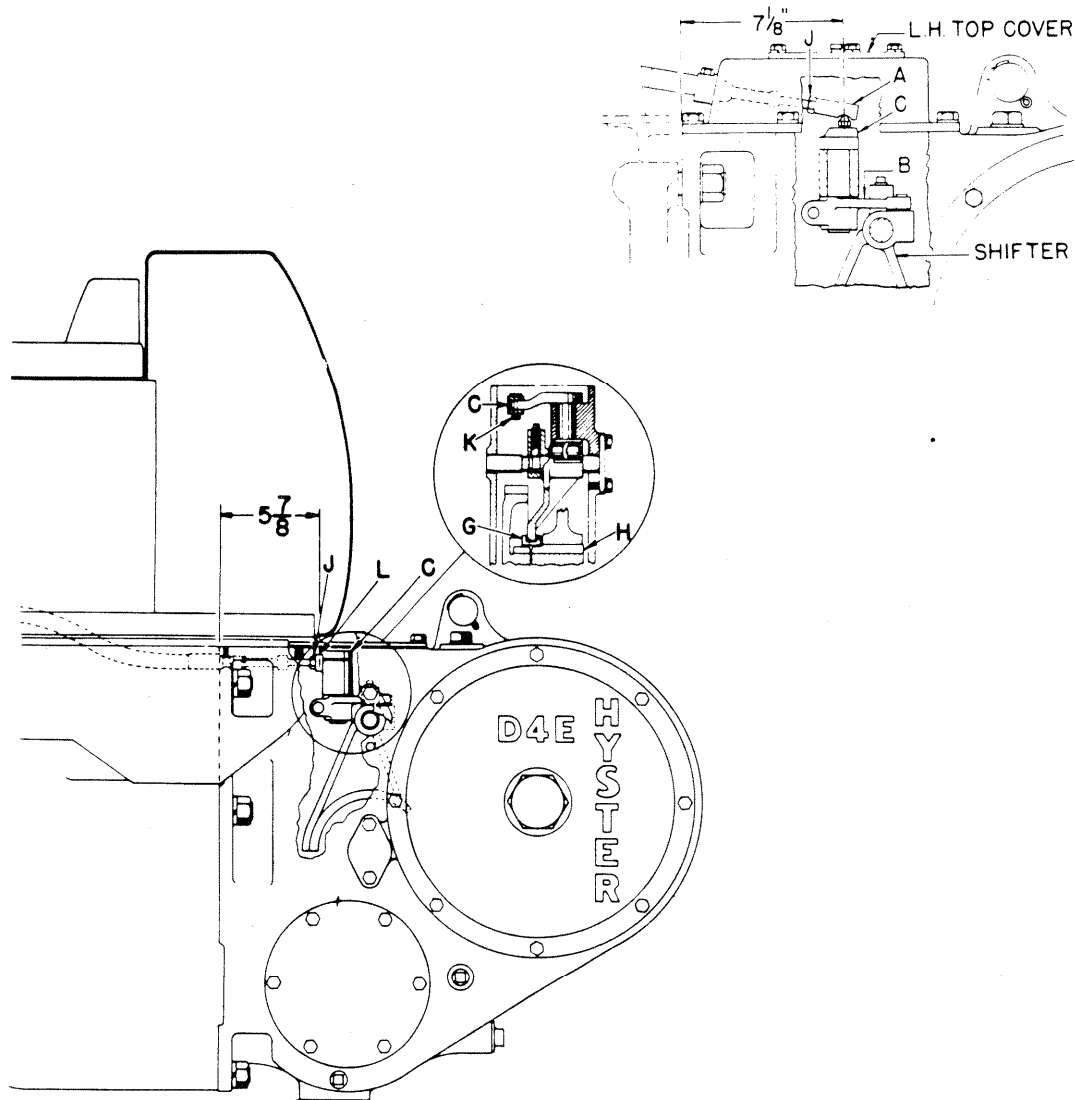
SERVICING INSTRUCTIONS - Continued



FORWARD AND REVERSE ADJUSTMENT

1. Engage forward and reverse handle in notch on quadrant.
2. Remove transmission top cover.
3. Engage detent ball in center notch "X" on shifter shaft "H".
4. Check clutch "A" to see if it is in the exact center between gears "B" and "C". If not, proceed as follows.
5. Remove crank "G" and loosen jam nut "Y".
6. Turn shifter shaft "H" until shifter fork "M" centers clutch "A".
7. Tighten jam nut "Y" and stake in place at "N".
8. Replace cover removed in instruction 2.
9. To install push-pull cable, remove large grommet at winch end and discard.
 - A: For 955 Traxcavators S. N. 60A3626 and up only:
Adjust cable to 8-1/4" from center of rod end pin (7) to winch mounting face.
 - B: For all tractors and Traxcavators except 955 S. N. 60A3626 and up:
Reset with end of cable 1-5/8" to center of pin in rod end "D" and 7-5/8" from winch mounting face to same center.

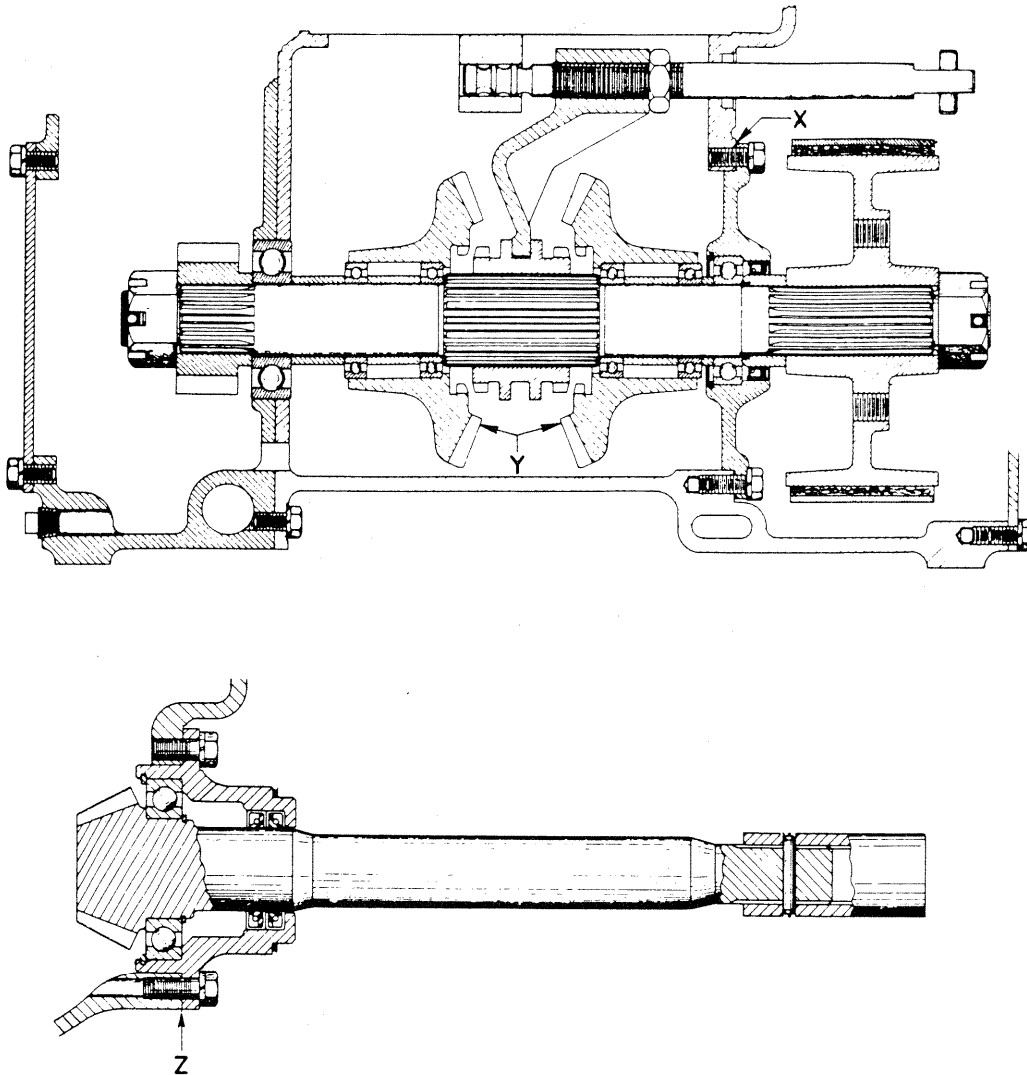
SERVICING INSTRUCTIONS - Continued



Free Spooling Adjustment

1. Remove L. H. side top cover.
2. Engage dental clutch "G" with pinion gear "H" and detent ball in second groove of shifter shaft as shown. Hold in this position throughout adjustment.
3. To install push-pull cable, remove larger grommet, insert cable in winch opening and replace grommet on cable.
 - A: For Traxcavators S. N. 60A3626 and up only.
Adjust push-pull cable with center of ball joint "A" 7-1/8" from mounting face as shown. If required, loosen capscrew on crank "B" and adjust crank "C" (with integral splined shaft).
 - B: For all tractors and Traxcavators except 955A S. N. 60A3626 and up.
Adjust push-pull cable with end of cable in rod end "L" 5-7/8" from mounting face. If required, loosen capscrew on lower crank and adjust crank "C" (with integral splined shaft) to match.
4. Insert rod end pin "K" and cotter, and tighten jam nut "J".
5. Adjust rod end on free-spooling handle lever until handle lever is engaged in notch on quadrant.
6. Replace cover removed in instruction 1.

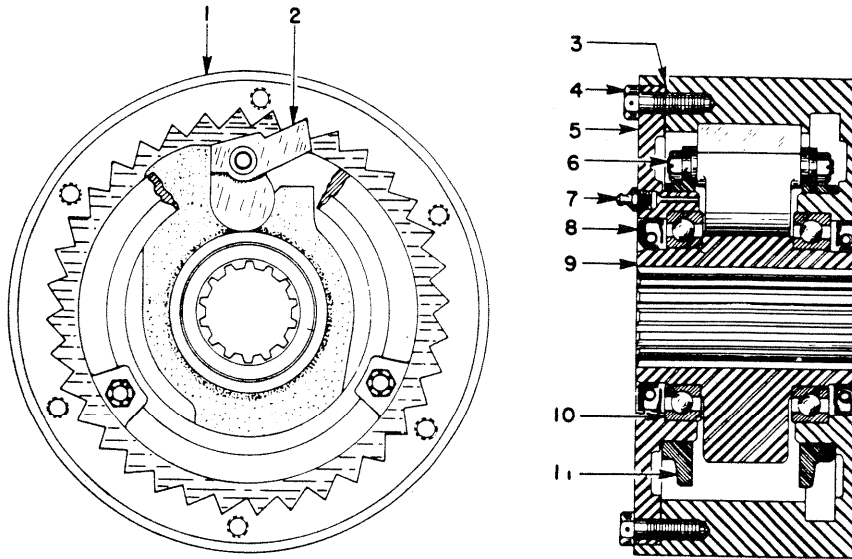
SERVICING INSTRUCTIONS - Continued



BEVEL GEAR ADJUSTMENT

1. Center gears "Y" with P. T. O. gear by adding or removing shims at "X" as required.
2. Add or remove shims at "Z" to produce .006-.014 total backlash.

SERVICING INSTRUCTIONS - Continued



AUTOMATIC BRAKE (OPTIONAL)

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

1. Remove the cover on the R. H. side frame brake compartment.
 2. Remove pins in the ends of brake band and remove brake band.
 3. Remove cotter and flange nut from end of brake shaft, and pull the brake assembly out.
 4. Remove lockwire and the six drilled head cover cap screws (4).
 5. Open brake by tapping hub from opposite side, being careful not to damage oil seals (8). Hub (9) assembled with pawl (2) and drag rings (11) will come out with cover (5). Remove nuts (6) to replace drag rings (11) if required.
 6. Clean all parts thoroughly and repack brake with one pound of high melting point grease. Apply carefully to bearings (10) and all wearing surfaces.
- CAUTION: Do not fill brake completely with grease. Item (7) is a vent plug. Do not attempt to grease through this fitting.
7. After servicing, replace center assembly removed in instruction (5).
 8. Check to see that oil seals (8) are in good condition and install with lips of both turned in as shown.
 9. Clean gasket surfaces thoroughly and use new gasket (3).
 10. Coat both sides of gasket (3) with Plastic Lead Seal No. 2 and assemble cover (5) on to case being careful not to damage oil seal (8).
 11. Use a liberal amount of Plastic Lead Seal No. 2 in each cover cap screw hole. Install cap screws (4) and tighten securely. Replace lockwire through cap screw heads.
 12. Install assembled brake on shaft with word "overwind" to the outside for overwind operation. Lock in place with flange nut and cotter.
 13. Install brake band, anchoring with pins removed in instruction 2.
 14. Replace cover removed in instruction 1.

SECTION B

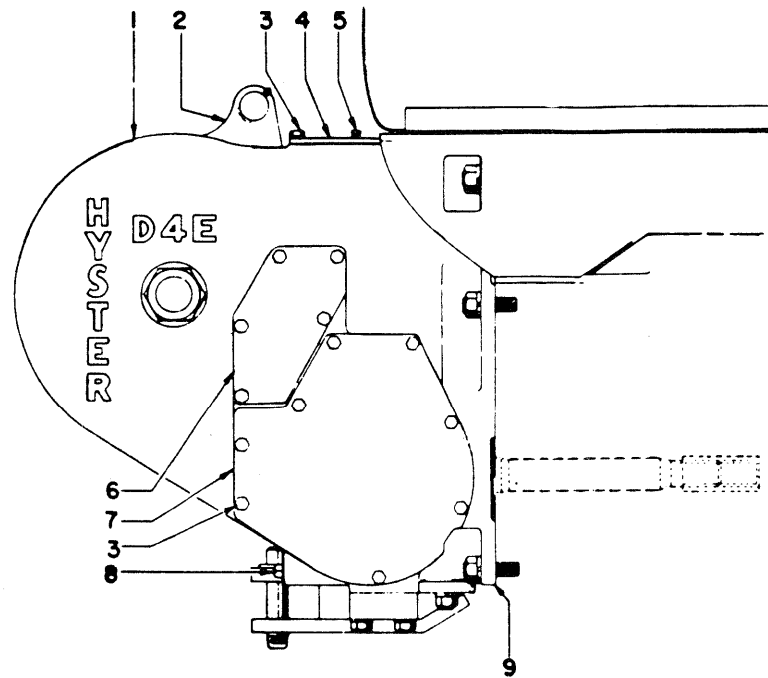
FRAMES, COVERS AND MOUNTING GROUPS

INDEX

COVERS, R.H. SIDE	B1
COVERS, L.H. SIDE	B2
MOUNTING GROUP	B6-B9
MOUNTING STUDS	B3-B5

Note: Traxcavator Mounting Parts And
Battery Box Groups Are Included
With Handlever Groups, Section E

FRAMES AND COVERS - R. H. SIDE



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96157W	Housing - Transmission	1
2	93926	Ear - Tie (Included with Housing	2
3	16820	Capscrew - 1/2 UNF x 1	15
	15158	Lockwasher - 1/2	15
	46507	Capscrew - Flat head, 1/2 UNF x 1	3
4	15929	Lockwasher - Countersunk, 1/2	3
	96148	Cover - Top	1
	@ c 96149	Gasket	1
5	21420	Plug - Breather.....	1
6	92894	Cover - Brake Adjustment	1
	@ c 92895	Gasket	1
7	92892	Cover - Brake Drum	1
	@ c 92893	Gasket	1
8	15303	Pipe Plug - 1/2	1
9	* @ 96160	Gasket - R.H.	1
	# c 92931	Gasket - R.H.	1

Not Illustrated

126952	Bar-Brace (Fender Support)	1
135487	Wrench - Box	1

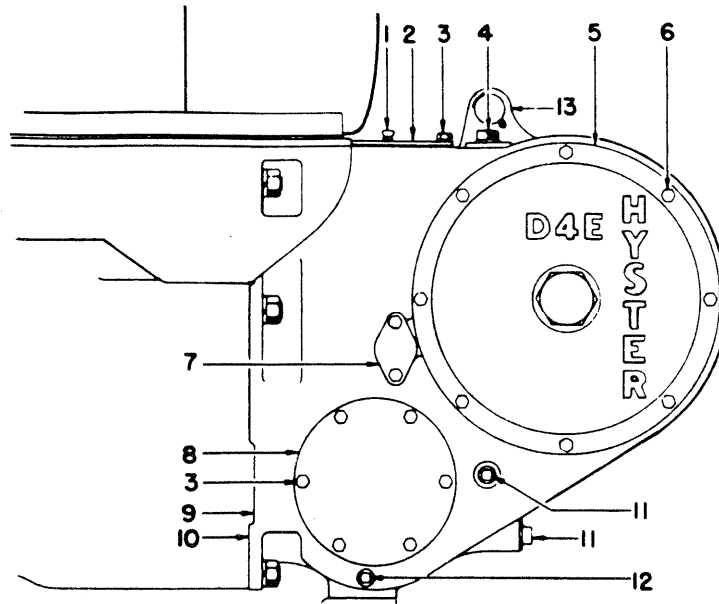
* For D4 Tractors S.N. 23A1 - 24A1 - 40A1 - 78A1 and Up
955 Traxcavators S.N. 45A1 - 60A1 - 61H1 - 85J1 - 48H1
and Up

For D4 Tractors Prior to S.N. 23A1 - 24A1 - 39A1 - 40A
955 Traxcavators Prior to S.N. 45A1 - 60A1

* @ Included in Gasket Set 96475A.

c Included in Gasket Set 96527A.

FRAMES AND COVERS - L. H. SIDE



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	21420	Plug - Breather.....	1
2	96147	Cover - Top.....	1
	* # 92897	Gasket.....	1
	16820	Capscrew - Hardened, 1/2 UNF x 1.....	8
3	15158	Lockwasher - 1/2.....	8
	46507	Capscrew - Flathead, 1/2 UNF x 1.....	2
	15929	Lockwasher - Countersunk, 1/2.....	2
4	15308	Pipe Plug - 1-1/4 Square Head.....	1
5	96212	Cover - Drum Gear.....	1
	* # 92848	Gasket.....	1
6	37562	Capscrew - Hardened, 1/2 UNF x 1-1/4....	8
	15158	Lockwasher - 1/2.....	8
7	92844A	Shaft - Intermediate (See Page D 5).....	1
8	92852	Cover.....	1
	* # 92851	Gasket.....	1
9	96158W	Frame - Side.....	1
10	* @ 96159	Gasket.....	1
	# ¢ 92930	Gasket.....	1
11	15303	Pipe Plug, 1/2" Square Head.....	2
12	35502	Pipe Plug, 1/2" Magnetic.....	1
13	93926	Ear - Tie (Included with Frame).....	1

@ * Included in Gasket Set 96475A.

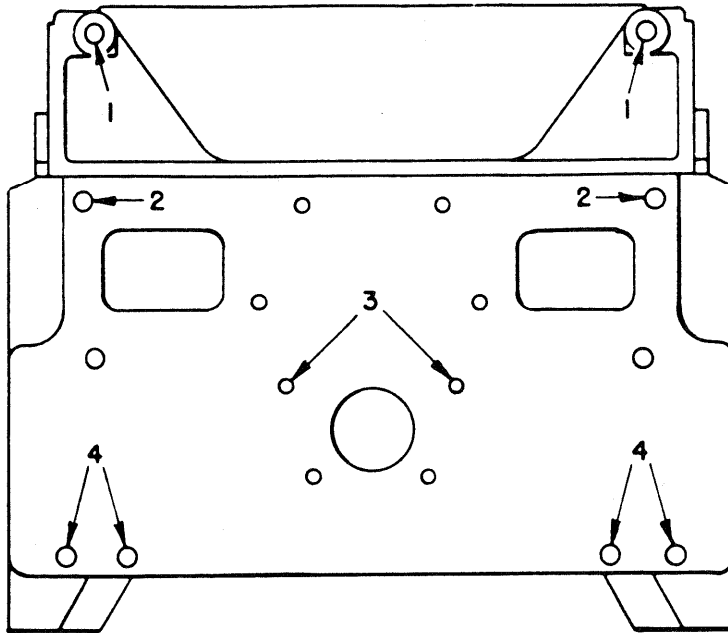
¢ # Included in Gasket Set 96527A.

@ For D4 Tractors S.N. 23A1-24A1-40A1-78A1-22C1-83J1
and up. 955 Traxcavators S.N. 45A1-60A1 and up.

¢ For D4 Tractors Prior to S.N. 23A1-24A1-39A1-40A1 -
955 Traxcavators Prior to S.N. 45A1-60A1.

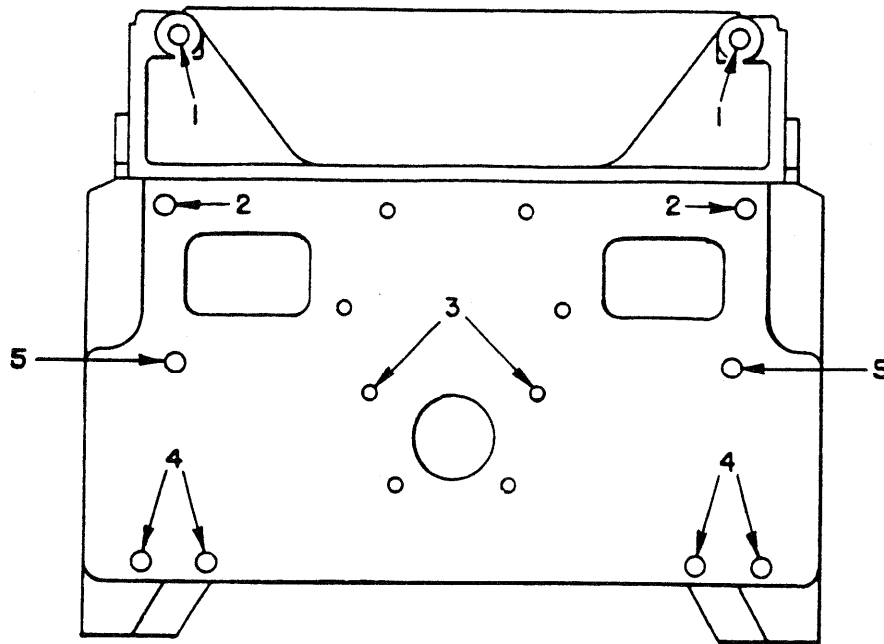
B3
MOUNTING STUDS

For D4 Tractors S.N. 78A1 and up, 23A1 and up, 24A1 and up, 39A235 and up, 40A1095 and up, 82J1 and up, and 955 Traxcavators 60A3626 and up, 61H1 and up, 85J and up, and 48H1 and up.
951 Traxcavators S.N. 89A1 and up.



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96726	Stud - Taperlock	2
	136408	Lockwasher - 7/8	2
	15014	Nut - 7/8 UNF	2
2		Stud - Drawbar	2
	* 96726	Stud	2
	136408	Lockwasher - 7/8	2
3	15014	Nut - 7/8 UNF	2
	136578	Cork-No. 9	4
4		Stud - Drawbar	4
	* 96726	Stud	4
	15164	Lockwasher - 7/8	4
	15014	Nut - 7/8 UNF	4
* For 955 Traxcavators S.N. 60A7642 and up, 61H1 and up, 85J1 and up, 48H1 and up and 951 Traxcavators S.N. 89A1 and up.			

MOUNTING STUDS
(FOR TRACTORS AND TRAXCAVATORS LISTED)



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	@ 96726	Stud	2
	# 96744	Stud	2
	* 96161	Stud	2
	15014	Nut - 7/8 UNF	2
	136408	Lockwasher - 7/8	2
2	@ # 96744	Stud	2
	*	Stud - Drawbar	2
	@ # 15014	Nut - 7/8 UNF	2
	@ # 136408	Lockwasher - 7/8	2
3	# * 136578	Cork-No. 9	4
	@ 18000	Cork-No. 5	4
	@ # 96744	Stud	4
4	*	Stud - Drawbar	4
	@ # 15014	Nut - 7/8 UNF	4
	@ # 15164	Lockwasher - 7/8	4
	@ 18000	Cork-No. 5	4

* For D4 Tractors S.N. 39A1 to 39A234 and 40A1 to 40A1094 inclusive

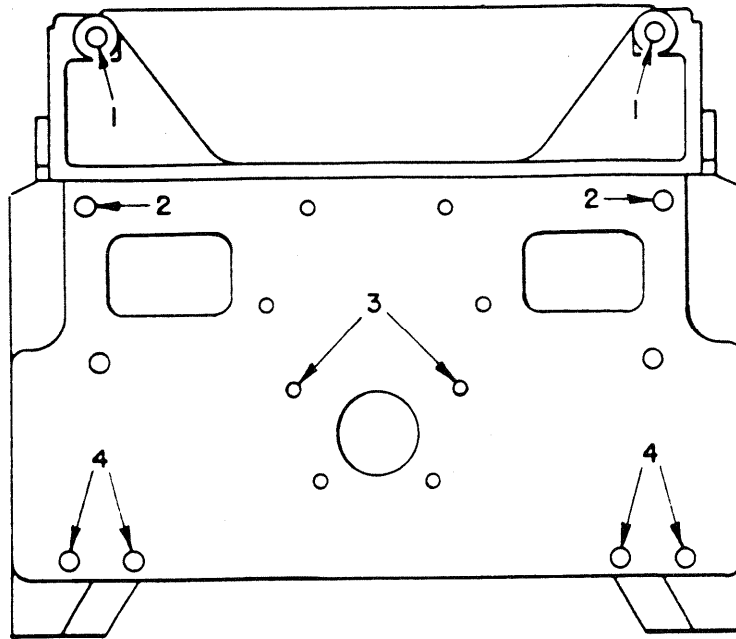
For 955 Traxcavators S.N. 60A1 to 60A3625 inclusive.

@ For Power Shift Units.

NOTE: For 933 Traxcavators, use "CAT" studs, nuts and lockwashers.

MOUNTING STUDS

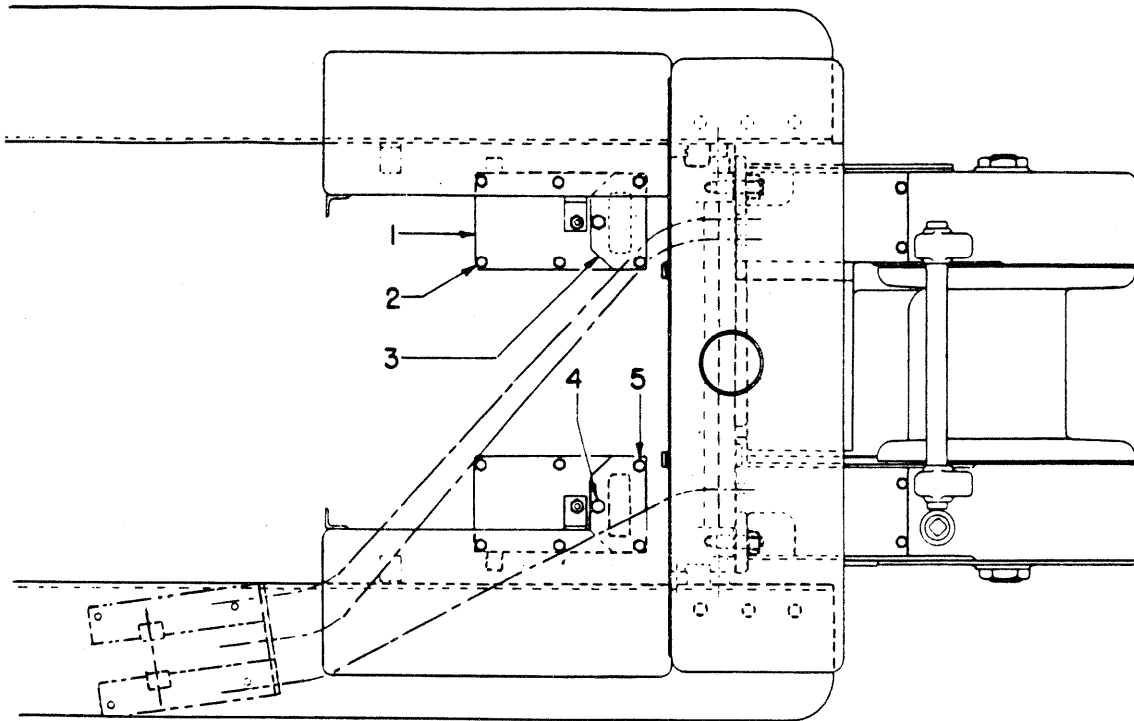
For D4 Tractors prior to Series "C" and 955 Traxcavators prior to S.N. 45A1



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1		Stud - Drawbar	2
	15014	Nut - 7/8 UNF	2
	136408	Lockwasher - 7/8	2
2		Stud - Drawbar	2
	15012	Nut - 3/4 UNF	2
	15907	Lockwasher - 3/4	2
3	136578	Cork-No. 9	4
4		Stud - Drawbar	4
	15012	Nut - 3/4 UNF	4
	15162	Lockwasher - 3/4	4

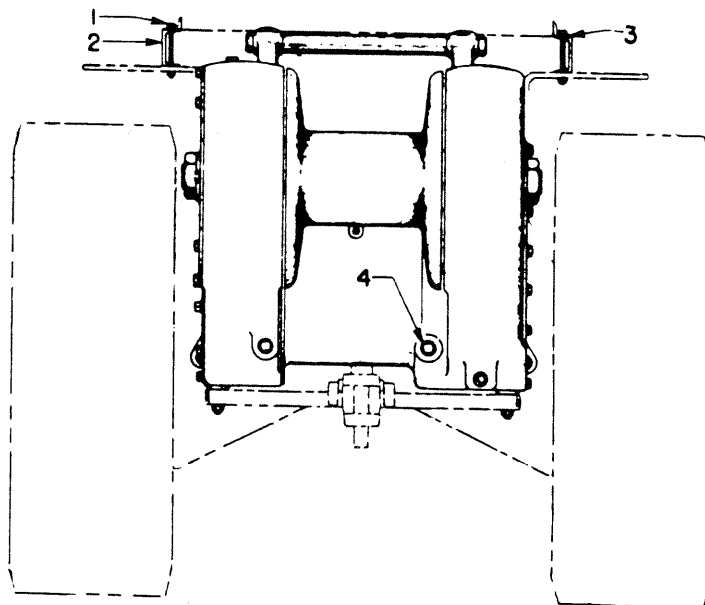
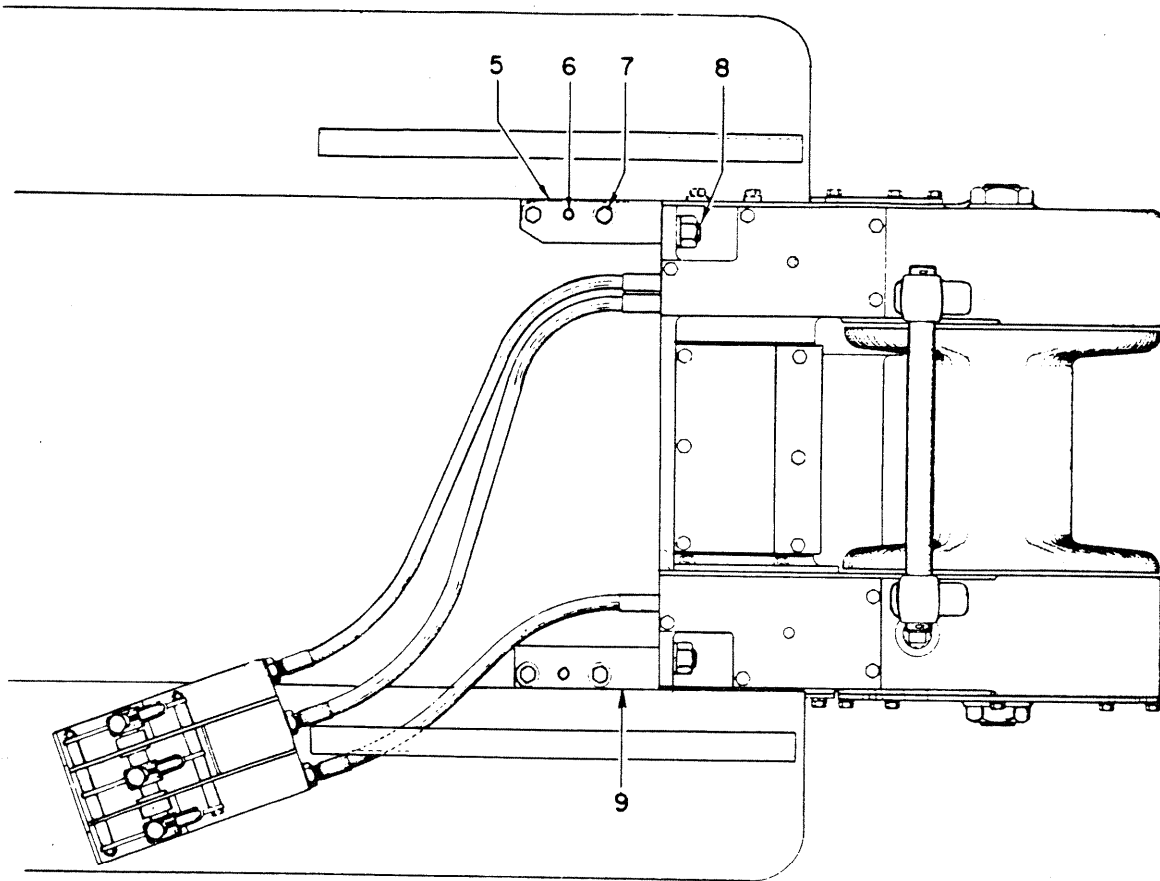
MOUNTING PARTS

FOR D4 TRACTORS LAST USED S.N. 78A6977



REF. NO.	HYSTER PART NO.	NAME OF PART	QTY. REQ.
1	123519	Cover-----	2
2	-----	Capscrew (From Tractor Cover)--	8
3	123520	Cover-----	2
	123521	Gasket-----	2
4	16829	Capscrew- $\frac{1}{2}$ UNC x 1-----	2
	15158	Lockwasher- $\frac{1}{2}$ -----	2
5	16815	Capscrew- $\frac{3}{8}$ UNC x $1\frac{1}{2}$ -----	4

MOUNTING GROUP
(For D4 Tractors Prior To S. N. 23A1-24A1-39A1-40A1)
And 955 Traxcavators Prior to 45A1-60A1



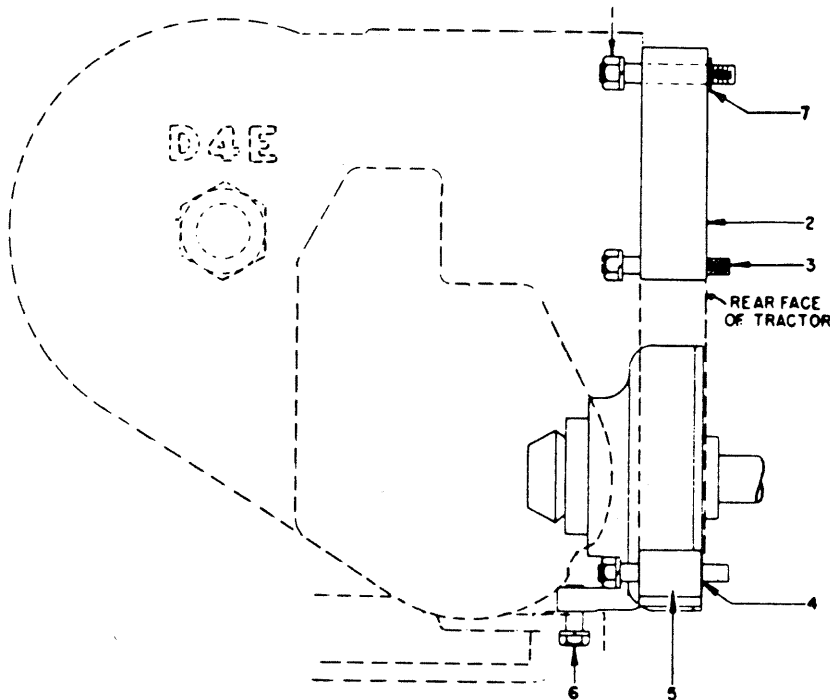
MOUNTING GROUP
 (For D4 Tractors Prior To S. N. 23A1-24A1-39A1-40A1)
 (And 955 Traxcavators Prior To S. N. 45A1-60A1)



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	* 15592	Capscrew - 1/2 UNF x 4-1/2	6
	* 15008	Nut - 1/2 UNF	6
	* 15158	Lockwasher - 1/2	6
2	* 92935	Channel - Seat Support	2
3	* 93891	Plate - Spacer	2
4	15308	Pipe Plug - 1-1/4	2
5	96125	Bracket - R.H.	1
6	38454	Pin - Dowel	2
7	18604	Capscrew - 5/8 UNC x 2-1/2	4
	15160	Lockwasher - 5/8	4
	58537	Stud	2
8	15014	Nut - 7/8 NF	2
	136408	Lockwasher - 7/8	2
9	96124	Bracket - L.H.	1
10	* 17324	Fitting - Street Ell (For Tractor Drain Valve).....	1
* Used Only on D4 Tractors Prior to S.N. 23A1-24A1-39A1-40A1			

MOUNTING GROUP

For Low Speed D4 Tractors and Traxcavators S.N. 60A1 to 60A3625 Inclusive



REF. No.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	\$@ 96744	Stud	2
	+ 96123	Stud	2
	c 96129	Stud	2
	& 174036	Stud	2
	15014	Nut-7/8 UNF	2
2	136408	Lockwasher-7/8	4
	& 15130	Washer-7/8	4
	+ 96122	Spacer-Upper	2
	&\$c 96126	Spacer-Upper	2
	+ 96116	Stud	6
3	+ 15012	Nut-3/4 UNF	6
	+ 15907	Lockwasher 3/4 Shakeproof (Upper Studs).	2
	+ 15162	Lockwasher-3/4-(lower Studs Only)	4
	&\$@ 96744	Stud	6
	c 96129	Stud	6
4	&@Sc 15014	Nut-7/8 UNF	6
	&@Sc 15164	Lockwasher-7/8-(Lower Studs Only)	4
	#* 96119	Gasket-L.H.	2
	#* 96121	Gasket-R.H.	2
	+ 96118	Spacer-Lower L.H.	1
5	+ 96120	Spacer-Lower R.H.	1
	&@Sc 96127	Spacer-Lower	2
6	12482	Capscrew-Hardened, 3/4 UNF x 2-1/4	2
	15162	Lockwasher-3/4	2
7	& 104392	Shim	2

* Included in Gasket Set 96475A.

Included in Gasket Set 96527A.

@ For D4 Tractors S.N. 23A1-24A1-39A235-40A1095 and up.

c For D4 Tractors S.N. 39A1 to 39A234-40A1 to 40A1094 inc.

+ For D4 Tractors prior to S.N. 23A1-24A1-39A1-40A1.

\$ For D4 Tractors S.N. 78A1 and up, and Traxcavator S.N. 60A to 60A 3625 inclusive.

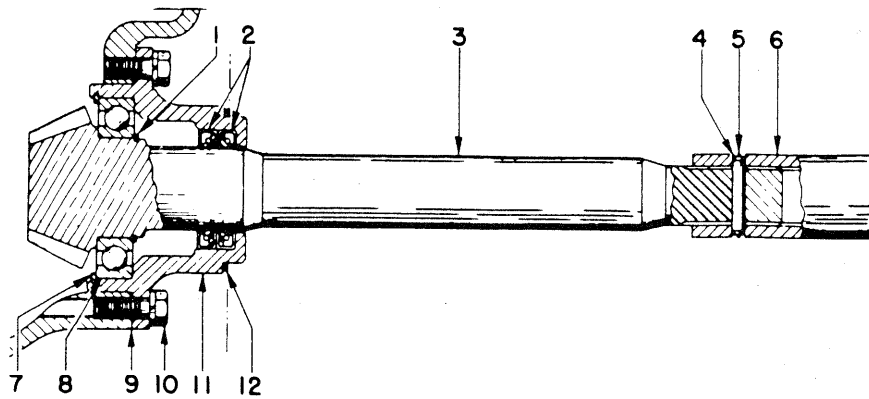
& For 951B Traxcavators S.N. 86J and up and 941 Traxcavators S.N. 80H and up.

SECTION D

POWER TAKE-OFF, GEAR TRAIN AND DRUM

BRAKE SHAFT GROUP -----	D 3
DRUM SHAFT GROUP -----	D 5
INTERMEDIATE GEAR GROUP -----	D 4
POWER TAKE-OFF GROUP-----	D 1

POWER TAKE-OFF SHAFT (Standard Speed Winch)



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	12917	Snap Ring	1
2	44492	Oil Seal	2
3	@ 128582	Gear Shaft-Bevel Pinion	1
	*# 92828	Gear Shaft-Bevel Pinion	1
	+c 159915	Gear Shaft-Bevel Pinion	1
4	@ 9556	Pin ("Caterpillar" No. 1A4596)	1
	++c# 9563	Pin ("Caterpillar" No. L2124)	1
5	@ 9557	Ring-Lock ("Caterpillar" No. 1A4591) ...	1
	++c# 9554	Ring-Lock ("Caterpillar" No. 3B1224) ...	1
	@ 5602	Coupling ("Caterpillar" No. V484)	1
6	++ 96617W	Coupling	1
	c# 6852	Coupling ("Caterpillar" No. 3B1042)	1
7	12919	Snap Ring	1
8	41212	Bearing	1
9	92830	Shim Set	1
10	106253	Capscrew-Drilled Head	6
		Lockwire	1
11	+# 96609W	Carrier-P.T.O.	1
	@# 96165	Carrier-P.T.O.	1
12	92831	"O" Ring	1

* Used on 955 Traxcavators S.N. 60A1 and up to 60A3625, inclusive.

Used on D4 Direct Drive Tractors, 951 Traxcavators and 955 Traxcavators except 60A1 to 60A3625, inclusive.

@ Used on 933 Traxcavators S.N. 42A1109 and up.

c Used on D4 Power Shift Tractors.

+ Used on 941 Traxcavators S.N. 80H1 and up and 951B Traxcavators S.N. 86J1 and up.

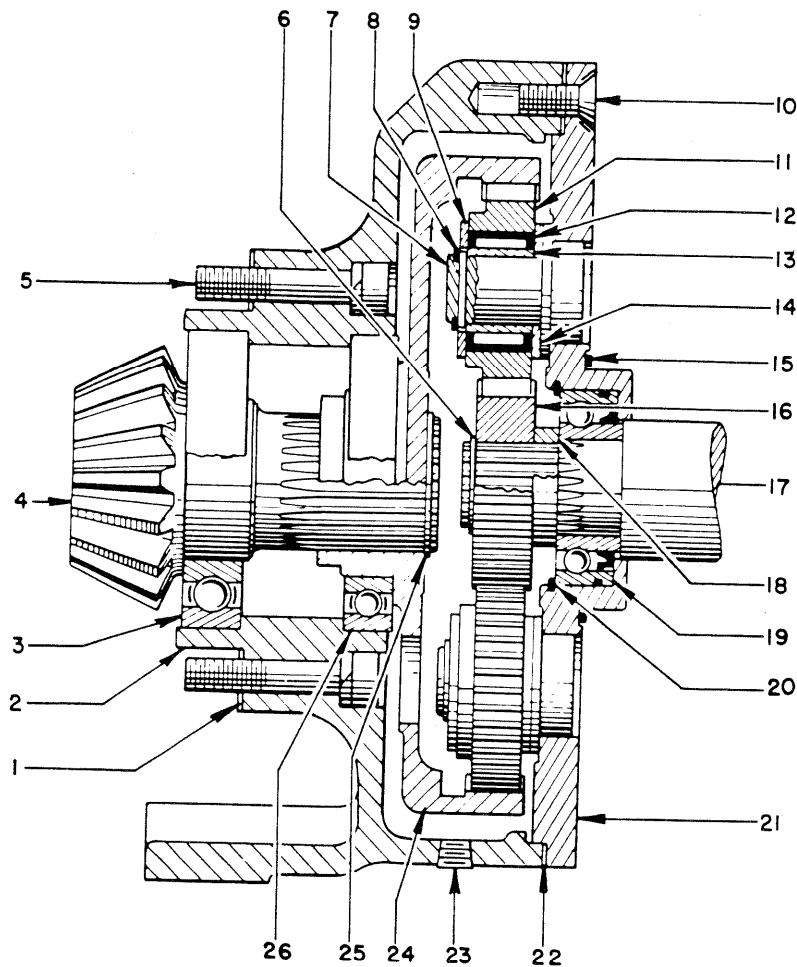
POWER TAKE-OFF GROUP

(Lo-Speed Winch - Illustration on Page D2)

REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	92830	Shim Set	1
2	96098	Case	1
3	41212	Bearing	1
4	96099	Gear - Bevel	1
5	16324	Capscrew - Socket Head 1/2 UNF x 2-1/2 .	6
	15158B	Lockwasher - 1/2	6
6	58907	Snap Ring	1
7	96112	Pin	2
8	58933	Snap Ring	2
9	96111	Washer - Special	2
10	16355	Capscrew - Flat Head, 1/2 UNF x 1	8
	15929	Lockwasher - Countersunk, 1/2	8

HYSTER COMPANY
PORTLAND, OREGON

POWER TAKE-OFF GROUP (Lo-Speed Winch)



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
11	96113	Gear - Planet	2
12	230410	Bearing	2
13	230409	Bearing - Inner Race	2
14	96110	Washer - Special	2
15	92831	"O" Ring	1
16	96108	Gear - Sun	1
17	@ 96109	Shaft - P.T.O.	1
	c 165567	Shaft - P.T.O.	1
	6852	Coupling ("Caterpillar" No. 3B-1042) ...	1
	9563	Pin ("Caterpillar" No. L-2124)	1
18	9554	Ring - Lock ("Caterpillar" No. 3B-1224)	1
18	96107	Spacer - P.T.O.	1
19	231018	Bearing	1
20	58952	Snap Ring	1
21	96104W	Cover	1
22	# * 96114	Gasket	1
23	15314	Plug - Pipe	1
24	96100	Gear - Ring	1
25	58954	Snap Ring	1
26	44314	Bearing	1

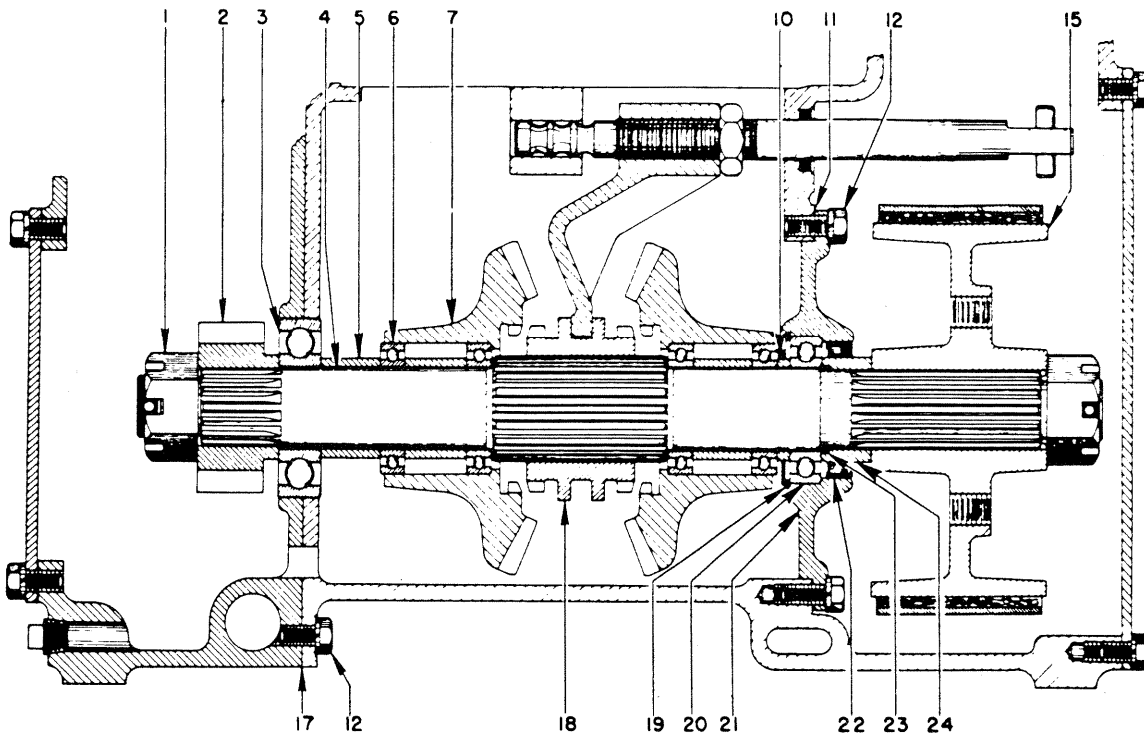
* Included in Gasket Set 96475A.

Included in Gasket Set 96527A.

@ Used on D4 Direct Drive Tractors.

c Used on D4 Power Shift Tractor S.N. 22C1 and up and 83J1 and up.

BRAKE SHAFT GROUP

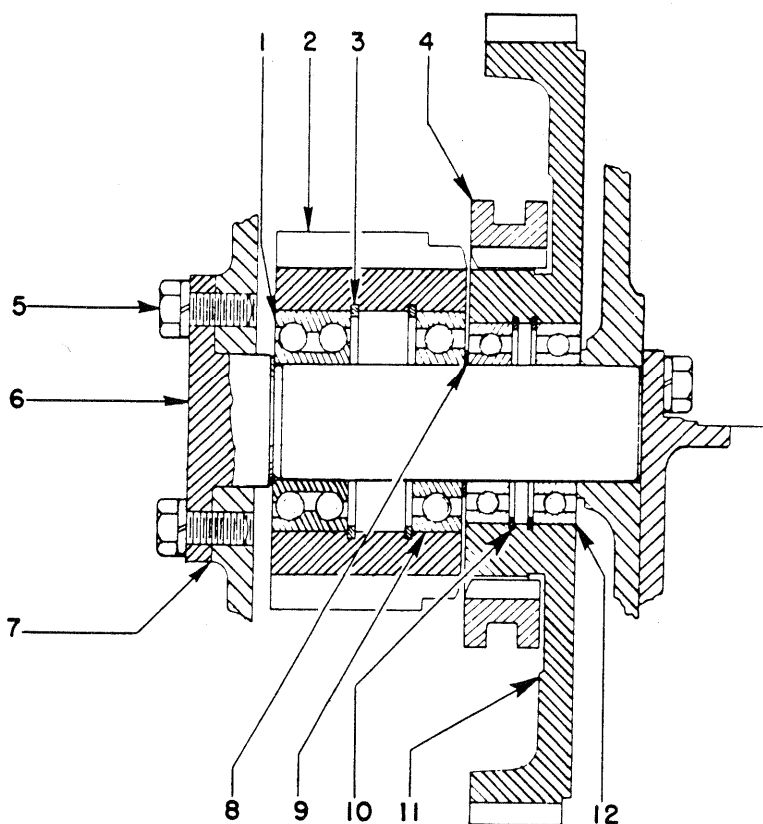


REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	32515	Nut - Slotted -----	2
	15259	Cotter 1/4 x 3 -----	2
2	92857	Gear - Intermediate Pinion (14 Teeth) -----	1
3	43310	Bearing -----	1
4	92853	Shaft - Brake -----	1
5	92856	Spacer -----	3
6	44310	Bearing -----	4
7	92855	Gear - Bevel (40 Teeth) -----	2
10	92858	Spacer -----	1
11	92860	Shim Set -----	1
12	37562	Capscrew - Hardened 1/2 UNF x 1-1/4 -----	11
	15158	Lockwasher 1/2 -----	11
15	92863	Wheel - Brake -----	1
17	92837	Gasket - Transmission -----	1
18	92854	Clutch - Dental -----	1
19	67551	Snap Ring -----	1
20	43210	Bearing -----	1
21	92859	Retainer -----	1
22	79387	Oil Seal -----	1
23	92861	"O" Ring -----	1
24	92862	Spacer - Brake -----	1

‡ Included in Gasket Set 96475A.

§ Included in Gasket Set 96527A.

INTERMEDIATE GEAR GROUP

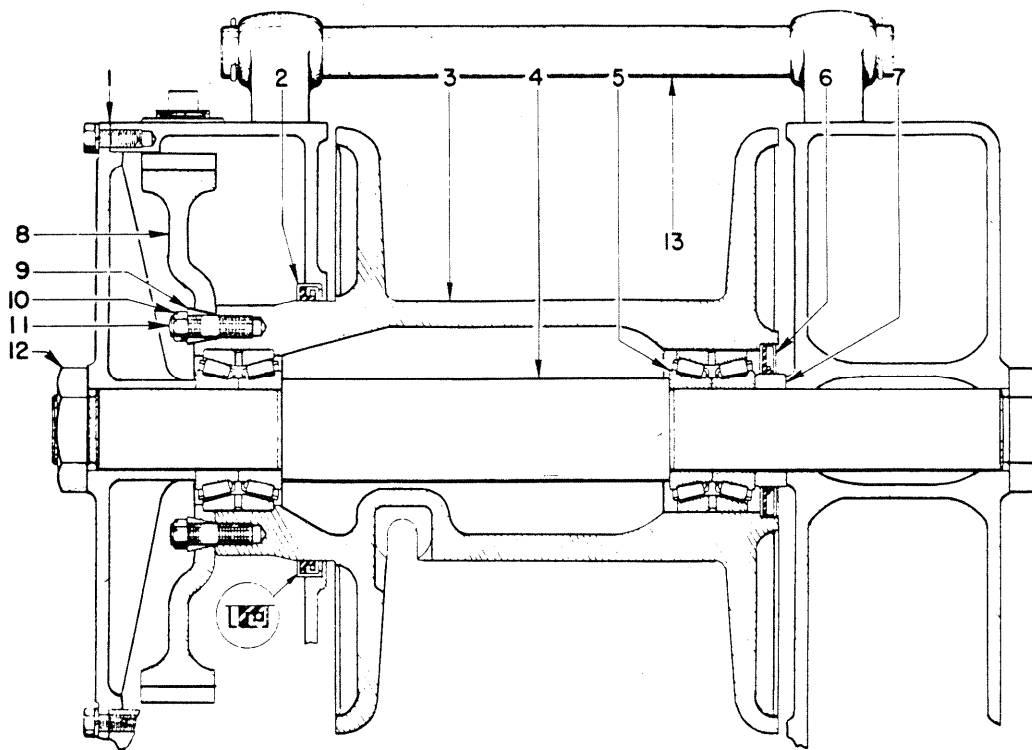


REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	45209	Bearing -----	1
2	92843	Gear - Drum Pinion (18 Teeth)-----	1
3	12895	Snap Ring -----	2
4	92842	Clutch - Dental-----	1
5	{ (16820	Capscrew - Hardened, 1/2 UNF x 1-----	2
	(15158	Lockwasher 1/2-----	2
6	92844A	Shaft - Intermediate-----	1
7	§ 92847	Gasket - Intermediate Shaft -----	1
8	36150	Snap Ring-----	1
9	43209	Bearing-----	1
10	12918	Snap Ring-----	2
11	92841	Gear - Intermediate (48 Teeth)-----	1
12	44309	Bearing-----	2

§ Included in Gasket Set 96475A.

§ Included in Gasket Set 96527A.

DRUM SHAFT



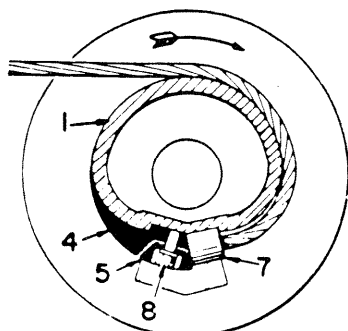
REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	* # 92848	Gasket - Drum Gear Cover	1
2	150194	Oil Seal	1
3	92833	Drum	1
4	92834	Shaft - Drum	1
5	78023	Roller Bearing Assembly	2
6	44490	Oil Seal	1
7	92835	Spacer	1
8	92840	Gear - Drum (54 Teeth)	1
9	53559	Dowel - Split Taper	10
10	92839	Locknut - 5/8 UNF	10
11	92838	Stud	10
12	59058	Nut - Hex, Special	2
13	93927	Rod - Tie	1
	15247	Cotter - 3/16 x 2-1/4	2

Add two quarts oil SAE 90 to drum at assembly.

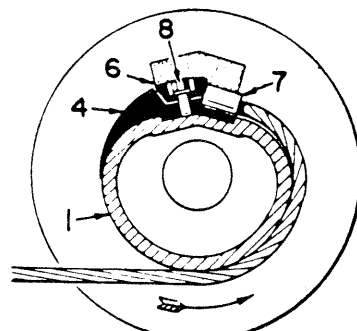
* Included in Gasket Set 96527A.

Included in Gasket Set 96475A.

FERRULE - LOCK GROUP



OVERWINDING



UNDERWINDING

REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1		Drum Unit	
4	92870	Filler - Cable Groove-----	1
5	92871	Ferrule Lock - Overwind -----	1
6	92872	Ferrule Lock - Underwind-----	1
7	(9008	Ferrule 5/8-----	1
	(35506	Ferrule 3/4-----	1
8	34811	Capscrew 3/8 UNF x 1-----	1

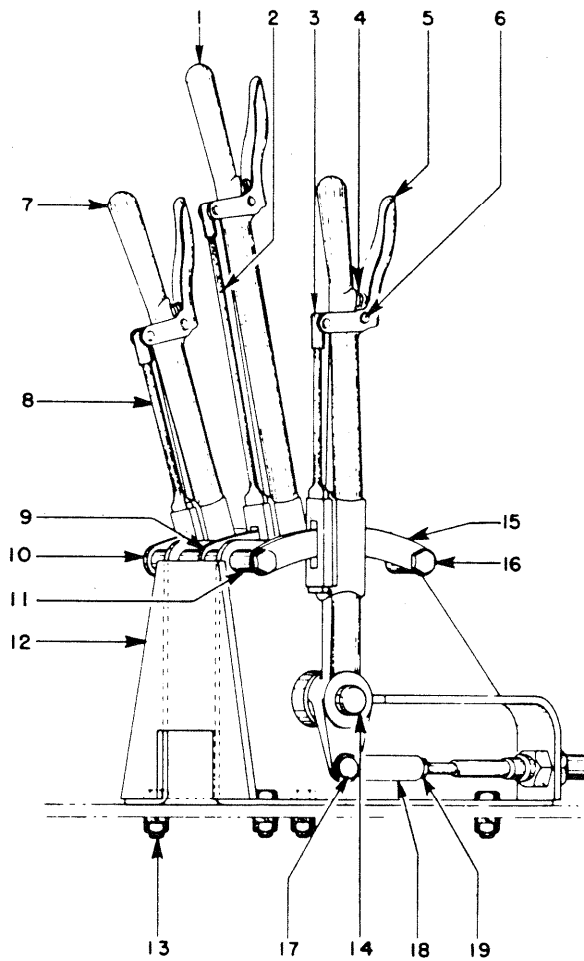
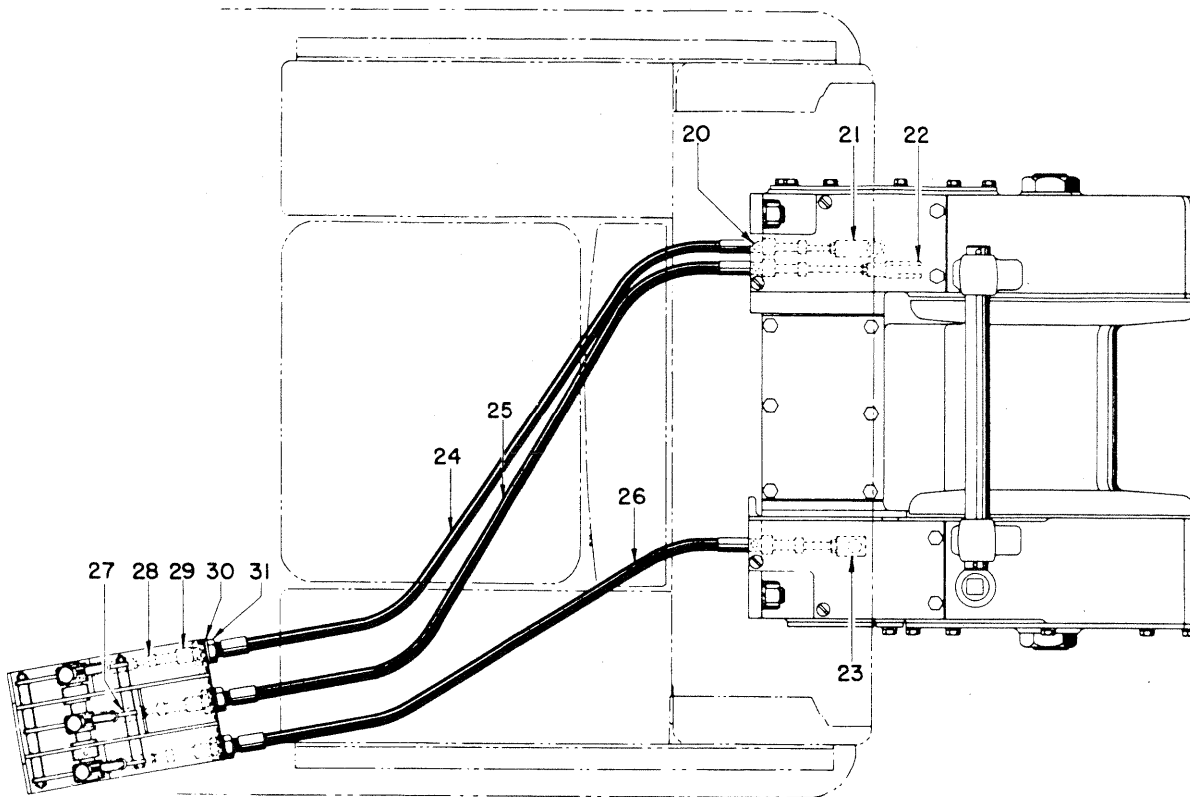
SECTION E

BRAKE AND SHIFTER MECHANISM

INDEX

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HANDLEVER GROUP



* HANDLEVER GROUP - No. 96517A

HANDLEVER GROUP - No. 96555A

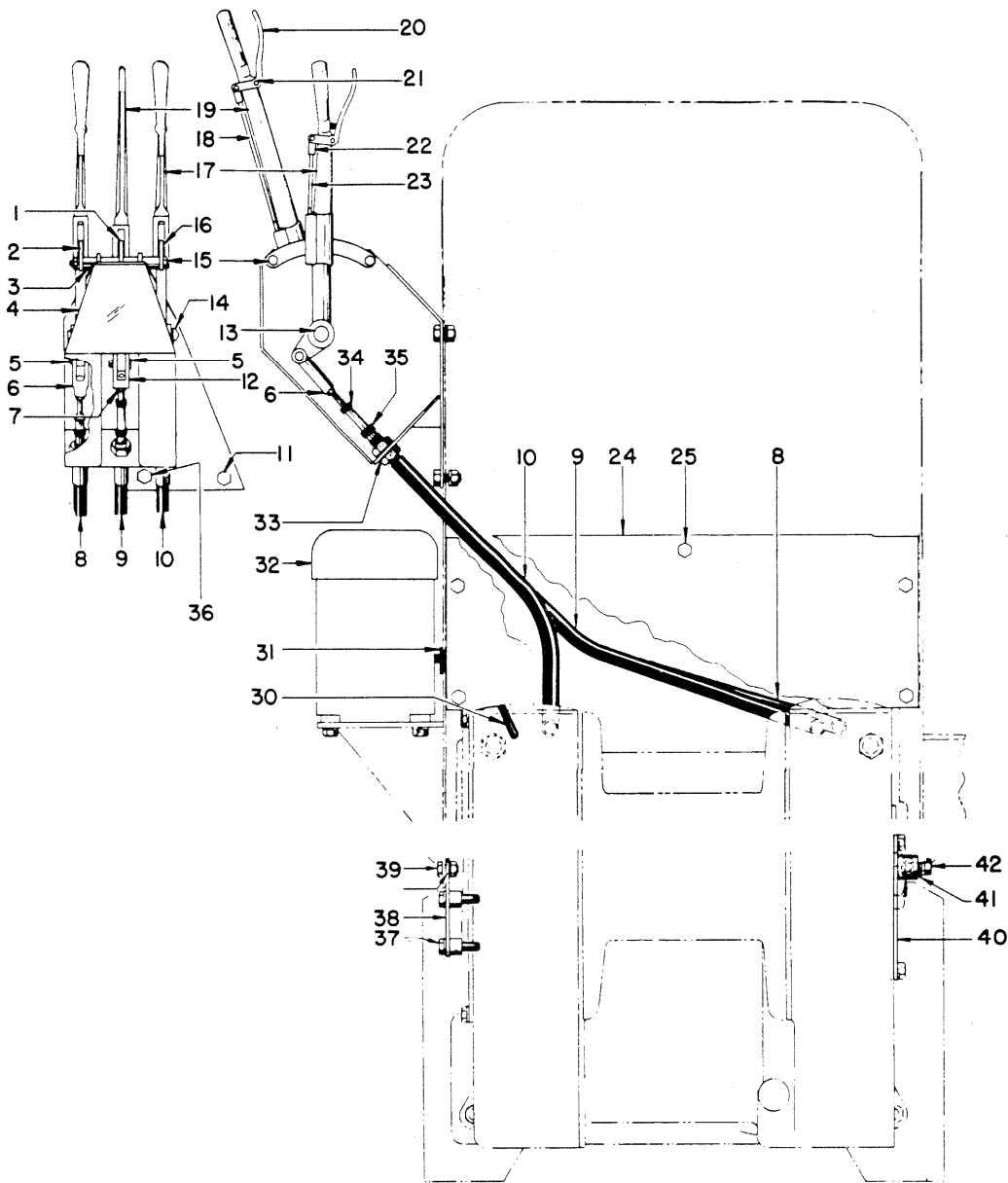
REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	92916A	Handlever - Brake	1
2	92918	Rod - Pawl (Included with Handlever 92916A	1
3	32693	Rod End	3
4	32695	Spring	3
5	32694	Handle	3
6	37476	Machine Screw-Special	6
7	15052	Nut-Hex, No. 10-24	6
8	92920A	Handlever	2
9	92922	Rod - Pawl Included with Handlever 92920A	2
10	90371	Quadrant - Brake	1
11	32657	Quadrant - Forward & Reverse	1
12	92924	Spacer	8
13	92910A	Bracket - Handling Gear	1
14	37562	Capscrew - Hardened 1/2 UNF x 1-1/4	4
15	15008	Nut - Hex 1/2 UNF	4
16	15158	Lockwasher 1/2	4
17	92919	Shaft - Handlever	1
18	19909	Roll Pin 1/4 x 1-3/4	1
19	92923	Quadrant - Free Spooling	1
20	14578	Capscrew 3/8 UNF x 7	2
21	15006	Nut - Hex 3/8 UNF	2
22	15156	Lockwasher 3/8	2
23	153	Pin - Rod End	6
24	15224	Cotter 1/8 x 1-1/4	6
25	92925	Rod End (For Forward - Reverse and Free-Spooling at Handlever End)	2
26	15026	Nut - Jam, 3/8 UNF	6
27	16407	Setscrew - 5/16 UNC x 5/8	3
28	92886	Rod End (Forward and Reverse) } At.....	1
29	92925	Rod End (Brake)	1
30	92909	Rod End (Free-Spooling)	1
31	* 96163	Cable (Forward and Reverse) 60" Long ...	1
32	@ 154985	Cable (Forward and Reverse) 78" Long ...	1
33	# 96162	Cable (Forward and Reverse) 52" Long ...	1
34	* 96164	Cable (Brake) 64" Long	1
35	@ 96600	Cable (Brake) 66" Long	1
36	# 96178	Cable (Brake) 55" Long	1
37	* 96162	Cable (Free Spooling) 52" Long	1
38	@ 96598	Cable (Free Spooling) 55" Long	1
39	# 96180	Cable (Free Spooling) 39" Long	1
40	92909	Rod End (Brake) Handlever End	1
41	95905	Grommet - Small	6
42	94381	Grommet - Large	6
43	15934	Lockwasher - 7/8 Shakeproof	6
44	15034	Nut - Jam, 7/8 UNF (Included with Cables) 3	3

* For D4 Tractors S.N. 23A1-24A1-39A1-40A1-78A1 and 22C1 and up.

For D4 Tractors (Seat Tank Type) Prior to S.N. 23A1-24A1-39A1-40A1.

@ For 955 Traxcavator 61H-85J1 and 48H1 and up.

HANDLING GEAR AND ATTACHMENT GROUPS
For 955 Traxcavators Prior to S. N. 45A1, 60A1
(6 Volt Shown)



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	90371	Quadrant - Brake-----	1
2	32657	Quadrant - Forward & Reverse -----	1
3	94352	Spacer -----	8
4	93910W	Bracket - Handlever -----	1
5	153	Pin - Rod End -----	3
	15224	Cotter - 1/8 x 1-1/4 -----	3
6	92925	Rod End (Handlever End) -----	2
7	15026	Nut - Jam, 3/8 UNF-----	3
8	96162	Cable - Forward and Reverse - 52" Long ----	1
9	96178	Cable - Brake - 55" Long-----	1
10	96180	Cable - Free Spool - 39" Long-----	1

HANDLING GEAR AND ATTACHMENT GROUPS

For 955 Traxcavators, 6 Volt, Prior to S. N. 45A1, 60A1-No. 96135A

For 955 Traxcavators, 24 Volt, Prior to S. N. 45A1, 60A1-No. 96136A

REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
11	(-----	Use Tractor Capscrew-----	1
12	92909	Rod End - Brake (Handlever End)-----	1
13	(94353	Shaft - Handlever-----	1
	(19909	Roll Pin -----	1
14	(16820	Capscrew - Hardened, 1/2 UNF x 1-----	2
	(15008	Nut - 1/2 UNF-----	2
	(15158	Lockwasher - 1/2-----	2
15	(12337	Capscrew - 3/8 UNF x 6-----	2
	(15006	Nut - 3/8 UNF-----	2
	(15156	Lockwasher - 3/8-----	2
16	92923	Quadrant - Free Spool-----	1
17	93919A	Handlever Assembly - Shifter (Includes Items 20, 21, 22, & 23)-----	2
18	92918	Rod - Pawl-----	1
19	93920A	Handlever Assy. - Brake (Includes Items 18, 20, 21, & 22)-----	1
20	(32694	Handle-----	3
	(32695	Spring-----	3
21	(37476	Capscrew - Special-----	6
	(15052	Nut - #10 UNC-----	6
22	32693	Rod End-----	3
23	92922	Rod - Pawl-----	2
24	(93939	Plate-----	1
25	(15508	Capscrew - 3/8 UNF x 1-----	1
	(15006	Nut- 3/8 UNF-----	1
	(15156	Lockwasher - 3/8-----	1
	(15514	Capscrew - 1/2 UNF x 1-1/4-----	5
	(15008	Nut - 1/2 UNF-----	5
	(15158	Lockwasher - 1/2-----	5
30	* (93942	Cable - Battery-----	1
31	* 94351	Grommet - Rubber-----	1
32	* 93937	Box - Battery-----	1
33	(15034	Nut - Jam, 7/8 UNF (Included with Cables)---	6
	(15934	Lockwasher - 7/8 Shakeproof-----	6
		(Three Included with Cables)	
34	95905	Grommet - Small) Included-----	6
35	94381	Grommet - Large) With Cables-----	6
36	16830	Capscrew - 1/2 UNC x 1-1/4-----	1
		(Use Tractor Nut and Lockwasher)	
37	16821	Capscrew - 1/2 UNF x 2-1/4-----	2
38	94733W	Bracket-----	1
39	(16820	Capscrew - 1/2 UNF x 1-----	2
	(15008	Nut - 1/2 UNF-----	2
	(15158	Lockwasher - 1/2-----	2
40	94349W	Cover - Brake Adjustment-----	1
41	15178	Washer-----	2
42	(37562	Capscrew - 1/2 UNF x 1-1/4-----	1
	(15158	Lockwasher - 1/2-----	1
	(15008	Nut - 1/2 UNF-----	1
	+96226A	Battery Box) See-----	1
	+95573	Cable - Battery) Page-----	1
	+95574	Cable - Battery) E 5-----	1
	*Included in group no. 96135A only		
	+Included in group no. 96136A only		

BATTERY BOX AND MOUNTING GROUP
For No. 955 Traxcavators, 24 Volt, Prior To S.N. 45A1-60A1

For No. 955 Traxcavators, 24 Volt, Prior To S.N. 45A1-60A1

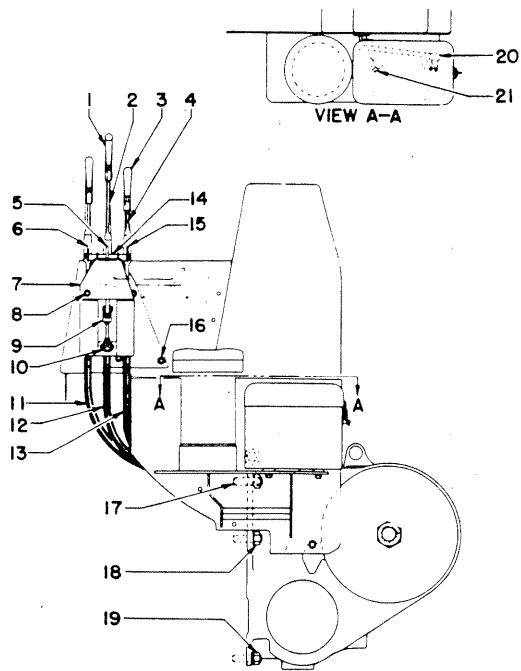


BATTERY BOX AND MOUNTING GROUP
 For No. 955 Traxcavators, 24 Volt, Prior To S. N. 45A1-60A1
 (Included In Group No. 96136A, Page E4)

REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	(15648	Capscrew - 1/2 UNF x 7/8-----	1
	(15158	Lockwasher - 1/2-----	1
2	(37562	Capscrew - Hardened 1/2 UNF x 1-1/4-----	1
	(15158	Lockwasher - 1/2-----	1
3	(15516	Capscrew - 1/2 UNF x 2-----	1
	(15008	Nut - 1/2 UNF-----	1
	(15158	Lockwasher - 1/2-----	1
4	(15511	Capscrew - 1/2 UNF x 1-----	3
	(15008	Nut - 1/2 UNF-----	3
	(15158	Lockwasher - 1/2-----	3
5	94732	Clip-----	1
6	95567	Cable - Battery-----	1
7	94724	Grommet-----	2
8	94711W	Cover - Top-----	1
9	2009B	Catch-----	2
10	(16708	Machine Screw - No. 10 UNF x 1/2-----	4
	(15152	Lockwasher - 3/16-----	4
	(15002	Nut - No. 10 UNF-----	4
11	* 94691W	Box-----	1
12	*(94709A	Fasterner Assembly - Cowl-----	2
13	*(94704W	Cover - Side-----	1
	*(17115	Rivet - 1/8 x 1/4-----	4
14	94714A	Carriage Assembly (Includes Item 15)-----	1
15	(94723	Roller-----	4
	(58951	Snap Ring - External-----	4
16	*(95547	Pin-----	2
	*(15135	Washer - 1/2-----	2
	*(94708	Spacer-----	2
17	* 12986	Ring - Retainer-----	2
18	95572A	Box & Side Cover Assembly-----	1
19	(15574	Capscrew - 1/2 UNF x 1-3/4-----	4
	(15008	Nut - 1/2 UNF-----	4
	(15158	Lockwasher - 1/2-----	4
20	94728W	Bracket-----	1
21	15135	Washer, 1/2-----	6
22	94731	Bar-----	1
23	(95574	Cable - Battery (+)-----	1
24	(95573	Cable - Battery (-)-----	1
25	-----	Cable Ass'y. (Furnished with Tractor)-----	2

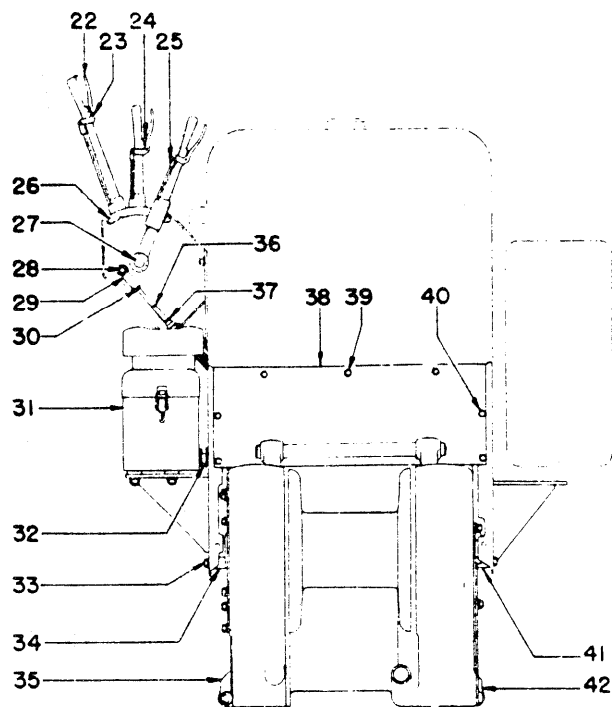
*Included in Box & Side Cover Assembly No. 95572A

HANDLING GEAR AND ATTACHMENT GROUP
For 955 Traxcavator, 12 Volt, S. N. 45A1 And Up



Ref. No.	Hyster Part No.	Description	Qty. Req.
1	93920A	Handlever Assembly -----	1
2	92918	Rod - Pawl (Included with 93920A)-----	1
3	93919A	Handlever Assembly -----	1
4	92922	Rod - Pawl (Included with 93919A)-----	1
5	90371	Quadrant - Brake-----	1
6	32657	Quadrant - Forward and Reverse -----	1
7	93910W	Bracket - Handlever -----	1
8	(16820	Capscrew - 1/2 UNF x 1 -----	2
	(15008	Nut - 1/2 UNF-----	2
	(15158	Lockwasher - 1/2 -----	2
9	92909	Rod End - Brake -- -----	1
10	(15034	Nut - 7/8 UNF (Included with Cables)-----	6
	(15934	Lockwasher - 7/8-(3 Included with Cables)---	6
11	96598	Cable - Push Pull (55" Long) -----	1
12	96178	Cable - Push Pull (55" Long) -----	1
13	96729	Cable - Push Pull (42" Long) -----	1
14	94352	Spacer -----	8
15	93923	Quadrant - Free Spool-----	1
16	(37562	Capscrew - 1/2 UNF x 1-1/4-----	2
	(15008	Nut - 1/2 UNF -----	2
	(15158	Lockwasher - 1/2 -----	2
17	(96726	Stud - Taperlock -----	2
	(15014	Nut - 7/8 UNF -----	2
	(15934	Lockwasher - 7/8 -----	2
18	(-----	Stud - Tractor Drawbar -----	2
	(15014	Nut - 7/8 UNF-----	2
	(15934	Lockwasher - 7/8 -----	2
19	(-----	Stud - Tractor Drawbar -----	2
	(15014	Nut - 7/8 UNF-----	2
	(15164	Lockwasher - 7/8 -----	2
20	96218	Cable - Battery , Positive-----	1
21	96767	Cable - Battery , Negative -----	1

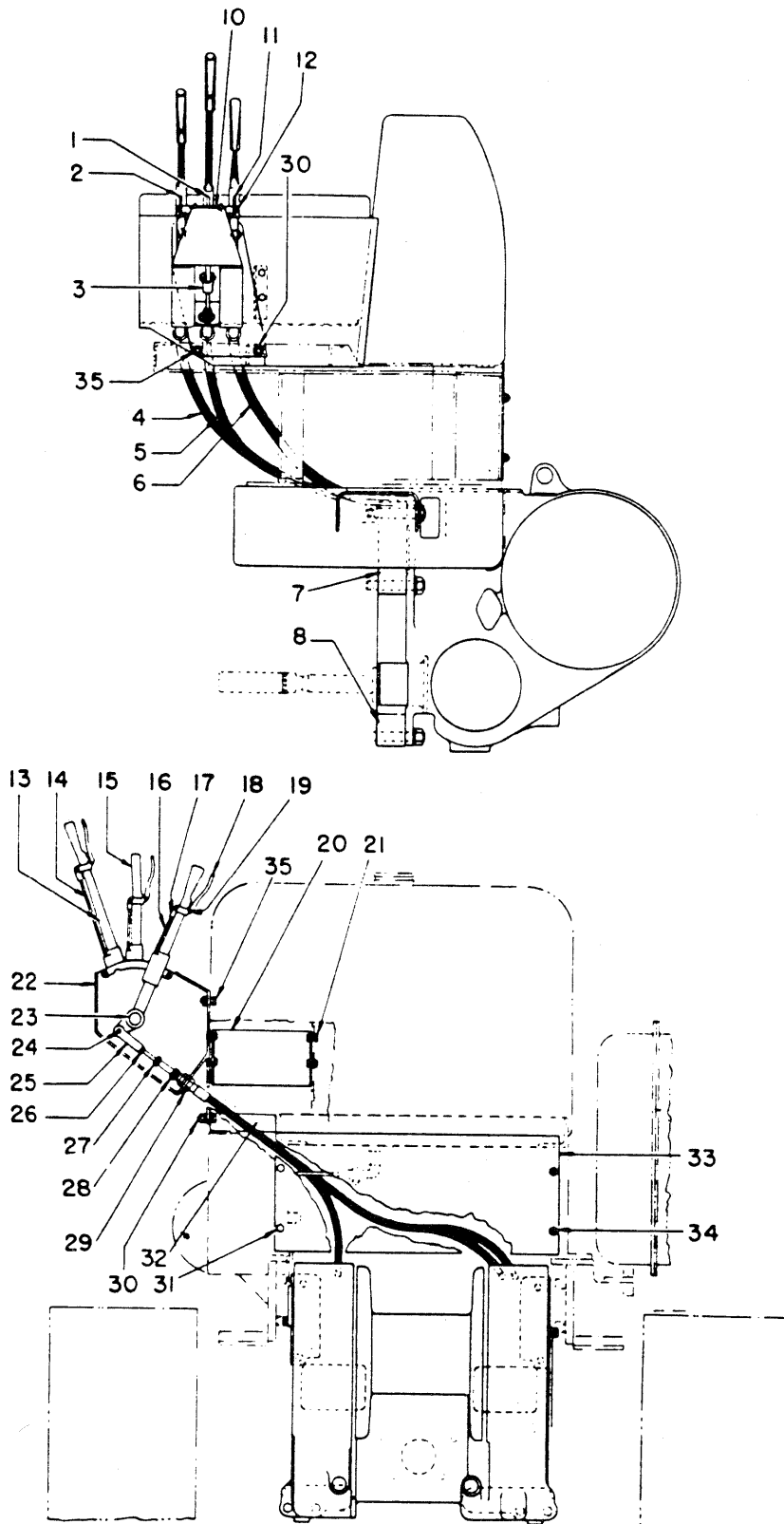
HANDLING GEAR AND ATTACHMENT GROUP - NO. 96224A
For 955 Traxcavator, 12 Volt, S. N. 45A1 and Up



Ref. No.	Hyster Part No.	Description	Qty. Req.
22	* 32694	Handle -----	3
23	* (37476	Screw - Special -----	6
	(15052	Nut - 10-24 -----	6
24	* 32695	Spring -----	3
25	* 32693	Rod End -----	3
26	(18553	Capscrew - 3/8 UNF x 6 -----	2
	(15006	Nut - 3/8 UNF -----	2
	(15156	Lockwasher - 3/8 -----	2
27	(94353	Shaft - Handlever -----	1
	(19909	Roll Pin -----	1
28	(153	Pin - Rod End -----	3
	(15224	Cotter - 1/8 x 1-1/4 -----	3
29	92925	Rod End -----	2
30	15026	Nut - Jam, 3/8 UNF -----	3
31	96628A	Box Assembly - Modified -----	1
32	96730	Grommet (Caterpillar No. 8B6678) -----	1
33	(16748	Capscrew - 1/2 UNF x 2-3/4 -----	2
	(15158	Lockwasher - 1/2 -----	2
34	96222	Spacer - LH, 1-1/2" Long -----	1
35	96159	Gasket - L. H., Mounting -----	1
36	95905	Grommet - Small) -- Included -----	6
37	94381	Grommet - Large) -- With Cables -----	6
38	96091	Plate - Rear Cross -----	1
39	(16634	Capscrew - 3/8 UNF x 1 -----	3
	(15006	Nut - 3/8 UNF -----	3
	(15156	Lockwasher - 3/8 -----	3
40	(16811	Capscrew - 3/8 UNF x 3/4 -----	4
	(15006	Nut - 3/8 UNF -----	4
	(15156	Lockwasher - 3/8 -----	4
41	96221	Spacer - R. H., 1-7/16" Long -----	1
42	96160	Gasket - R. H., Mounting -----	1

* Included With Handlevs

Handling Gear and Attachment Group
For 955 Traxcavators Serial No. 60A1 and up
951 Traxcavators Serial No. 89A1 and up



E10
HANDLING GEAR AND ATTACHMENT GROUP

REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	90371	Quadrant - Brake	1
2	32657	Quadrant - Forward-Reverse	1
3	92909	Rod End - Brake	1
4	@ 96600	Cable - Push Pull, Forward-Reverse	1
	+ 147329	Cable - Push Pull, Forward-Reverse	1
	c 96598	Cable - Push Pull, Forward-Reverse	1
5	@ 96599	Cable - Push Pull, Brake	1
	+ 147328	Cable - Push Pull, Brake	1
	c 88577	Cable - Push Pull, Brake	1
6	@ 96598	Cable - Push Pull, Free Spool	1
	+ 147327	Cable - Push Pull, Free Spool	1
	c 96729	Cable - Push Pull, Free Spool	1
7	@ 96126	Spacer - Upper	2
8	@ 96127	Spacer - Lower, L.H.	1
	@ 96128	Spacer - Lower, R.H.	1
	c 96159	Gasket - L.H.	1
	c 96160	Gasket - R.H.	1
10	94352	Spacer	8
11	92923	Quadrant - Free Spool	1
12	18553	Capscrew - 3/8 UNF x 6	2
	15006	Nut - Hex, 3/8 UNF	2
	15156	Lockwasher - 3/8	2
13	96607A	Handlever Assembly - Brake	1
14	92918	Rod - Pawl (Included with Item 13)	1
15	96608A	Handlever - Clutch	2
16	92922	Rod - Pawl (Included with Item 15)	2
17	* 32693	Rod End	3
18	* 32694	Handle	3
	* 32695	Spring	3
	* 37476	Screw - Special	6
19	* 15052	Nut - 10-24	6
	96733	Plate - Tie	1
	133248	Plate - Tie (For Traxcavators S.N. 60A7437 and up only)	1
21	16811	Capscrew - 3/8 UNF x 3/4	4
	15006	Nut - 3/8 UNF	4
	15156	Lockwasher - 3/8	4
22	96601W	Bracket - Handlever	1
23	94353	Shaft - Handlever	1
24	19909	Roll Pin	1
	153	Pin - Rod End	3
	15224	Cotter - 1/8 x 1-1/4	3
25	92925	Rod End	2
26	15026	Nut - Jam, 3/8 UNF	3
27	# 95905	Grommet - Small	6
28	# 94381	Grommet - Large	6
29	# 15034	Nut - Jam, 7/8 UNF	6
	# 15934	Lockwasher - 7/8 Shakeproof (Three included with Cables)	6
	37562	Capscrew - 1/2 UNF x 1-1/4	1
30	15008	Nut - 1/2 UNF	1
	15128	Lockwasher - 1/2	1
	16805	Capscrew - 3/8 UNC x 1	2
31	15156	Lockwasher - 3/8	2
	96620	Angle - Tie	1
	@ 96618	Plate - Cover	1
33	c 88558	Plate - Cover	1
	16634	Capscrew - 3/8 UNF x 1	2
	15006	Nut - 3/8 UNF	2
34	15156	Lockwasher - 3/8	2
	16820	Capscrew - 1/2 UNF x 1	3
	15008	Nut - 1/2 UNF	3
35	15158	Lockwasher - 1/2	3

* Included with each handlever.

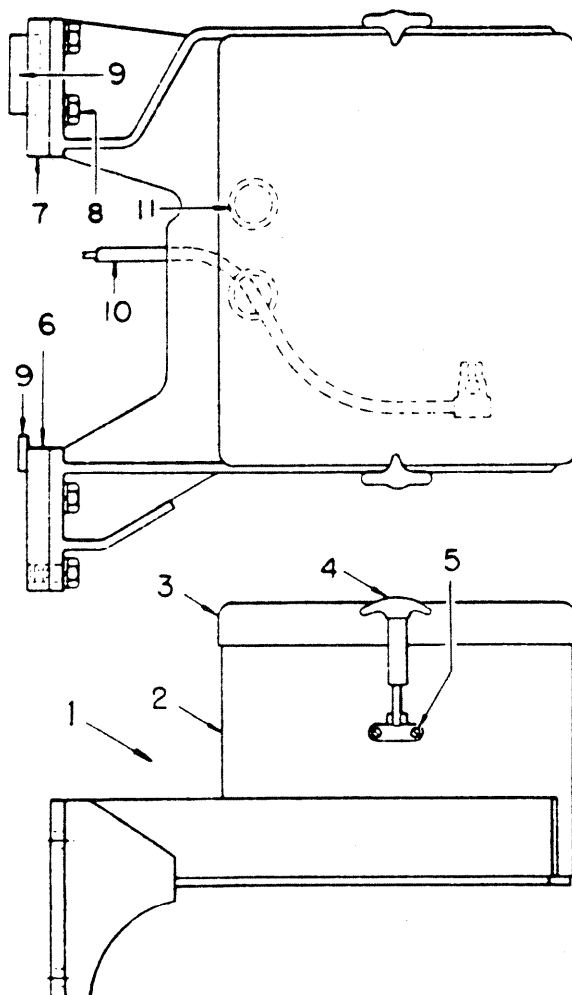
Included with each push-pull cable.

@ Used on Traxcavators S.N. 60A1 to 60A3625 Incl.

c Used on Traxcavators S.N. 60A3626 and Up, 89A1 and up.

+ Used on Traxcavators S.N. 89A1 and up.

BATTERY BOX GROUP - NO. 96629A
For No. 955 Traxcavators, 24 Volt, Serial No. 60A1 And Up
to 60A7436 Inclusive

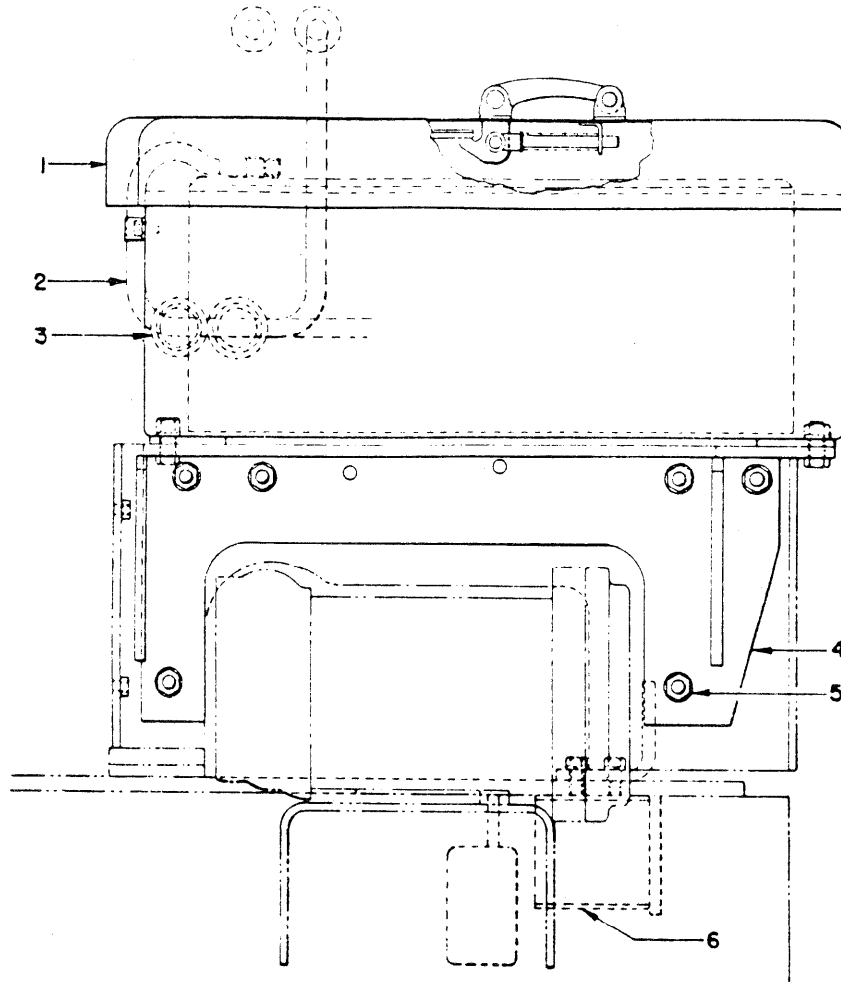


REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96654A	Battery Box Assembly -----	1
2	* 96641W	Box - Battery -----	1
3	* 94711W	Cover - Top -----	1
4	* 2009B	Latch -----	2
5	* 16708	Machine Screw--No. 10 UNF x 1/2 -----	4
	* 15152	Lockwasher - 3/16 -----	4
	* 15002	Nut #10 NF -----	4
6	96652	Plate (Front)-----	1
7	96653	Plate (Rear)-----	1
8	16823	Capscrew - 5/8 UNF x 1-1/2-----	7
	15160	Lockwasher - 5/8-----	7
9	39391-S2	Plate - Standard Blank -----	2
10	96656	Cable - Battery -----	1
11	96730	Grommet-----	2

* Part of Battery Box Assembly No. 96654A

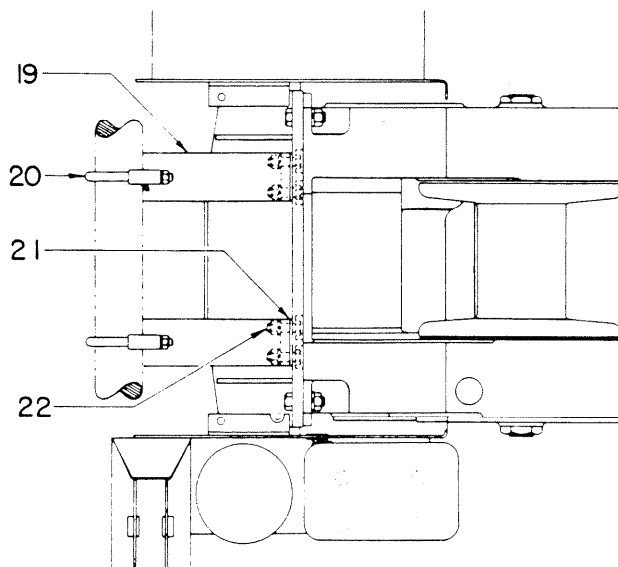
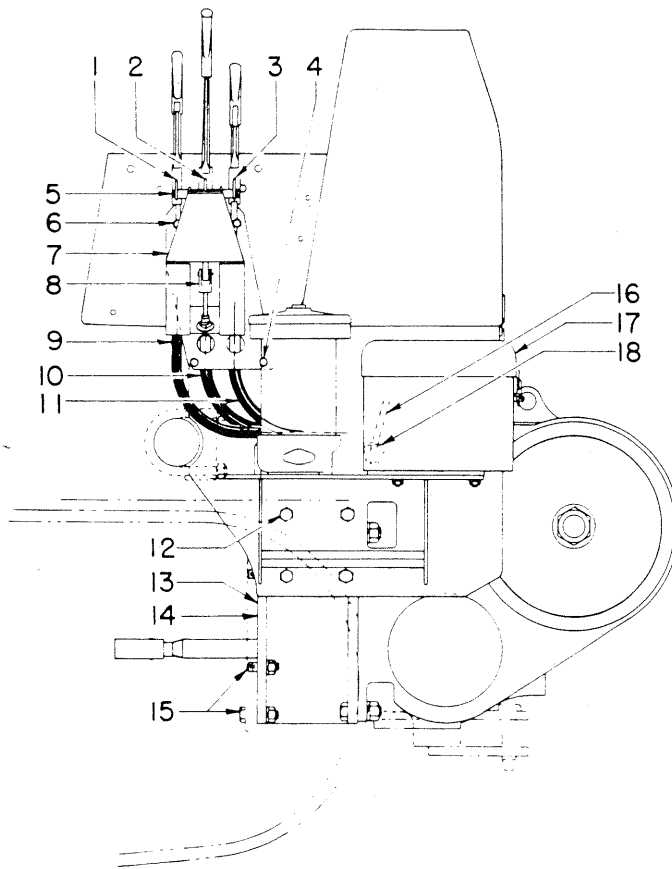
Battery Box Group

For 955 Traxcavators, 24 volt, Serial No. 60A7437 and up
 951 Traxcavators Serial No. 89A1 and up



Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	*133241	Battery Box Assembly ("Cat" No. 5K3922) - -	1
2	133246	Cable - Battery- - - - -	1
3	96730	Grommet ("Cat" No. 8B6678) - - - - -	2
4	133242	Bracket - Battery - - - - -	1
5	{ 16830	Cap screw - 1/2 UNC x 1- 1/4 - - - - -	10
	{ 15158	Lockwasher - 1/2- - - - -	10
	{ 15058	Nut - 1/2 UNC - - - - -	10
6	39569-S5	Plate - - - - -	1
* Battery Box consists of the following "Caterpillar" Parts:			
	1- 1S7849 Box Assembly	1- 1S7850 Mat	
	1- 1S8230 Hold Down Assy.	2- 2S1686 Bolt	
	4- 9H8524 Nut	4- 4B4278 Washer	
	1- 1B9920 Spring	1- T431 Washer	
	1- 1H7366 Rod	1- 1J4384 Pin	
	1- 3B4615 Cotter	1- 1H7365 Handle	
	1- 2B2938 Pin	1- 3B4617 Cotter	
	1- 2B4823 Washer	1- 9M737 Cover Assy.	
	1- 9M9015 Clamp	1- S509 Bolt	
	1- 3B4506 Lockwasher		

Handling Group and Attachment Group
For No. 933F Traxcavators
(Side and Plan Views)

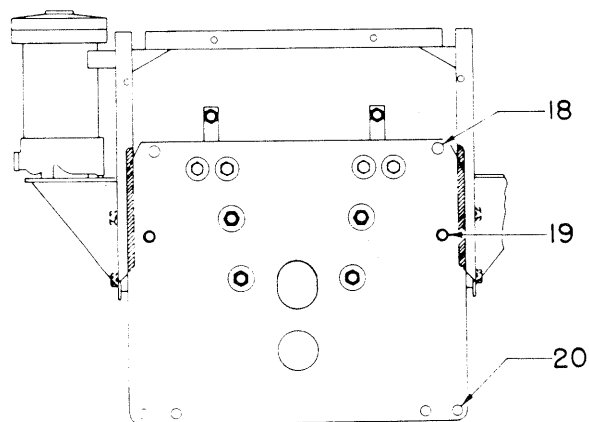
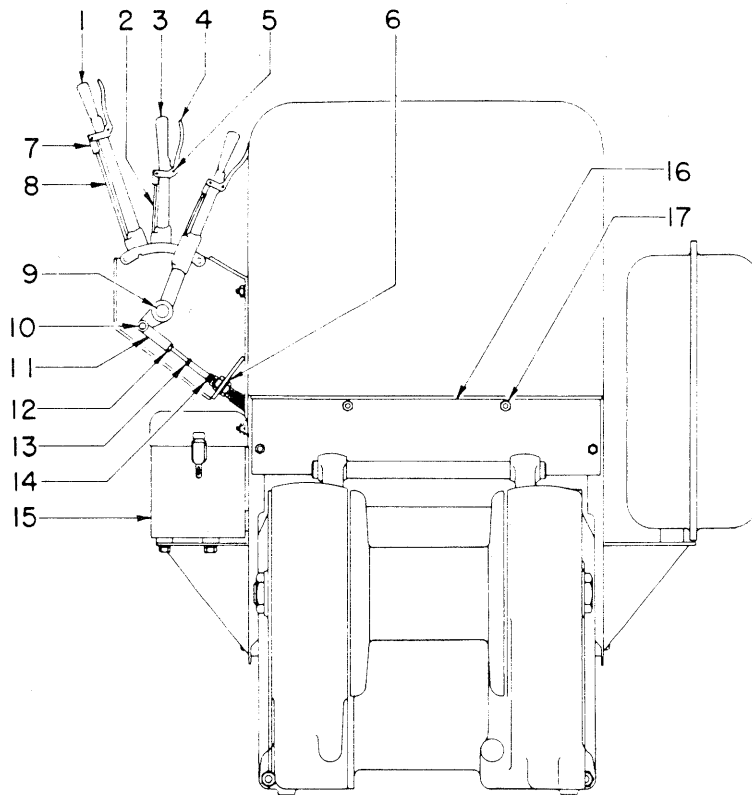


Handling Gear and Attachment Group
For No. 933F Traxcavators
(Side and Plan Views)

Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	32657	Quadrant - Forward-Reverse - - - - -	1
2	90371	Quadrant - Brake - - - - -	1
3	92923	Quadrant - Free Spool - - - - -	1
4	{ 37562	Capscrew - 1/2 UNF x 1- 1/4 - - - - -	1
	{ 15008	Nut - 1/2 UNF - - - - -	1
	{ 15158	Lockwasher - 1/2 - - - - -	1
5	{ 18553	Capscrew - 3/8 UNF x 6 - - - - -	2
	{ 15006	Nut - 3/8 UNF - - - - -	2
	{ 15156	Lockwasher - 3/8 - - - - -	2
	{ 94352	Spacer- - - - -	8
6	{ 16820	Capscrew - 1/2 UNF x 1 - - - - -	3
	{ 15008	Nut - 1/2 UNF - - - - -	3
	{ 15158	Lockwasher - 1/2 - - - - -	3
7	96601W	Bracket - Handlever - - - - -	1
8	92909	Rod End - Brake - - - - -	1
9	96162	Cable - Push-Pull, Forward-Reverse (52" long)	1
10	96178	Cable - Push-Pull, Brake (55" long) - - - - -	1
11	96180	Cable - Push-Pull, Free Spool (39" long) - - - - -	1
12	{ 12447	Capscrew - 5/8 UNF x 1- - - - -	8
	{ 15160	Lockwasher - 5/8 - - - - -	8
13	128589	Gasket - - - - -	1
14	128581	Adapter - - - - -	1
15	-----	Studs and Capscrews - "Caterpillar" parts - - - - -	-
16	* 96766	Cable - Battery - - - - -	1
17	* 96765A	Battery Box Assembly - - - - -	1
18	* 96730	Grommet ("Caterpillar" No. 8B6678) - - - - -	1
19	129484	Bracket - - - - -	2
20	{ 129482	"U" Bolt- - - - -	2
	{ 15012	Nut - 3/4 UNF - - - - -	4
	{ 15162	Lockwasher - 3/4 - - - - -	4
21	{ 129477	Shim - 20 Gauge - - - - -	2
	{ 129478	Shim - 16 Gauge - - - - -	6
	{ 129479	Shim - 12 Gauge - - - - -	2
22	{ 12482	Capscrew - 3/4 UNF x 2- 1/4 - - - - -	4
	{ 15012	Nut - 3/4 UNF - - - - -	4
	{ 15162	Lockwasher - 3/4 - - - - -	4

* For 12-Volt, Gas Start only

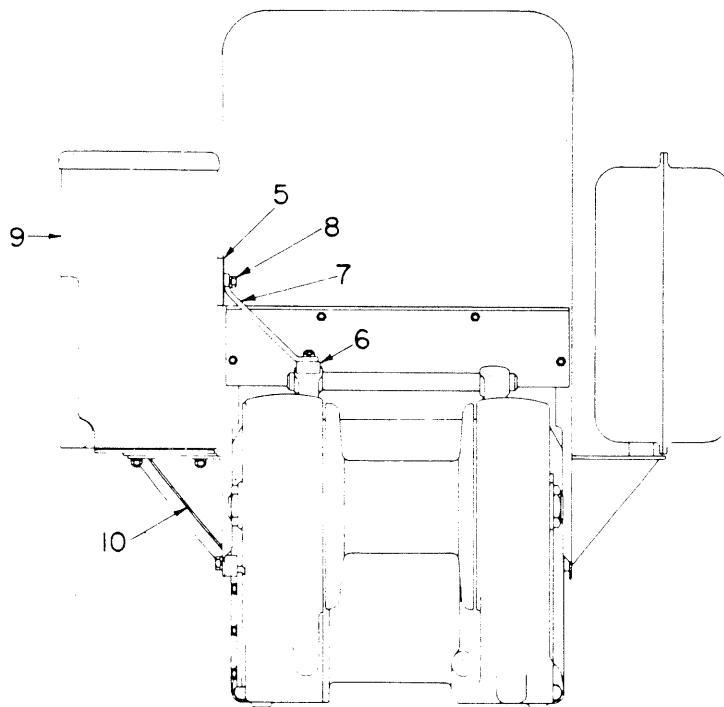
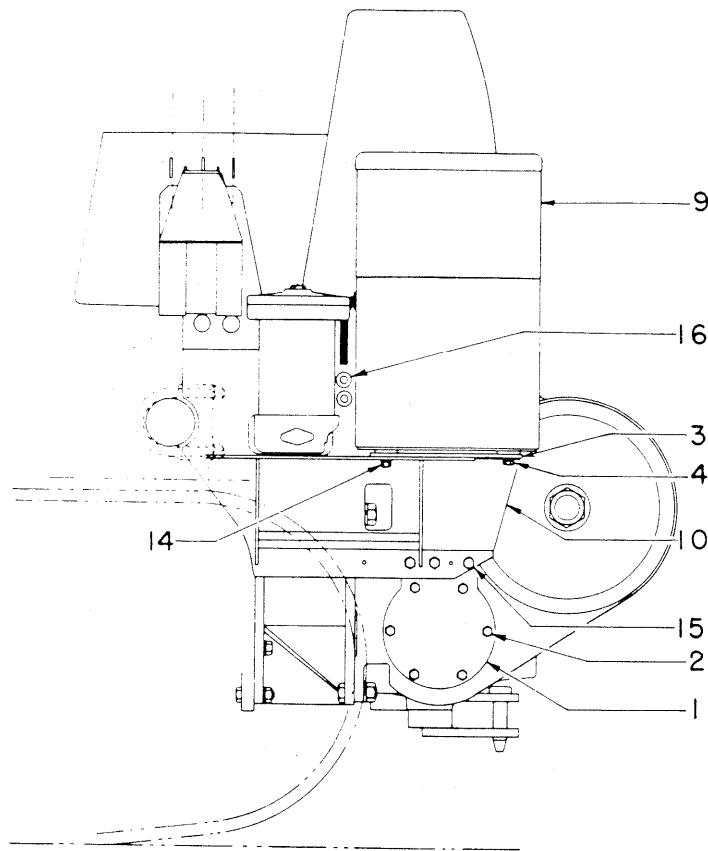
Handling Gear and Attachment Group
For 933F Traxcavators
(Rear Views)



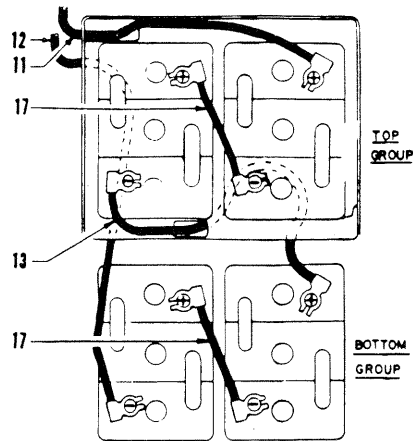
Handling Gear and Attachment Group
For 933F Traxcavators
(Rear Views)

Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	96607A	Handlever - Brake - - - - -	1
2	92922	Rod - Pawl (Included with item 3) - - - - -	2
3	96608A	Handlever - Clutch - - - - -	2
4	† { 32694	Handle- - - - -	3
	† { 32695	Spring - - - - -	3
5	† { 37476	Screw - Special - - - - -	6
	† { 15052	Nut - 10-24 - - - - -	6
6	+ { 15934	Lockwasher - 7/8 Special - - - - -	6
	x { 15034	Nut - 7/8 UNF - - - - -	6
7	92925	Rod End - - - - -	3
8	92918	Rod - Pawl (Included with item 1) - - - - -	1
9	{ 94353	Shaft - Handlever - - - - -	1
	{ 19909	Roll Pin - - - - -	1
10	{ 153	Pin - Rod End - - - - -	3
	{ 15224	Cotter - 1/8 x 1-1/4 - - - - -	3
11	92925	Rod End - - - - -	2
12	15026	Nut - Jam, 3/8 UNF - - - - -	3
13	x 95905	Grommet - Small - - - - -	6
14	x 94381	Grommet - Large - - - - -	6
15	* 96765A	Battery Box Assembly - - - - -	1
16	128583	Plate - Cross - - - - -	1
17	{ 37562	Capscrew - 1/2 UNF x 1-1/4 - - - - -	4
	{ 15158	Lockwasher - 1/2 - - - - -	4
	{ 15008	Nut - 1/2 UNF - - - - -	4
18	{ 16810	Capscrew - 7/8 UNF x 2-1/2 - - - - -	2
	{ 136408	Lockwasher - 7/8 Shakeproof - - - - -	2
	{ 15014	Nut - 7/8 UNF - - - - -	2
19	{ 128599	Stud - - - - -	2
	{ 136408	Lockwasher - 7/8 Shakeproof - - - - -	2
	{ 15014	Nut - 7/8 UNF - - - - -	2
20	{ 16810	Capscrew - 7/8 UNF x 2-1/2 - - - - -	4
	{ 15164	Lockwasher - 7/8 - - - - -	4
	{ 15014	Nut - 7/8 UNF - - - - -	4
* For 12-Volt, Gas Start only			
x Included with Push-Pull cables			
+ Three Included with Push-Pull cables			
† Included with Handlevers			

Battery Box and Mounting Parts
For 933F Traxcavator with 24 Volt Electrical System



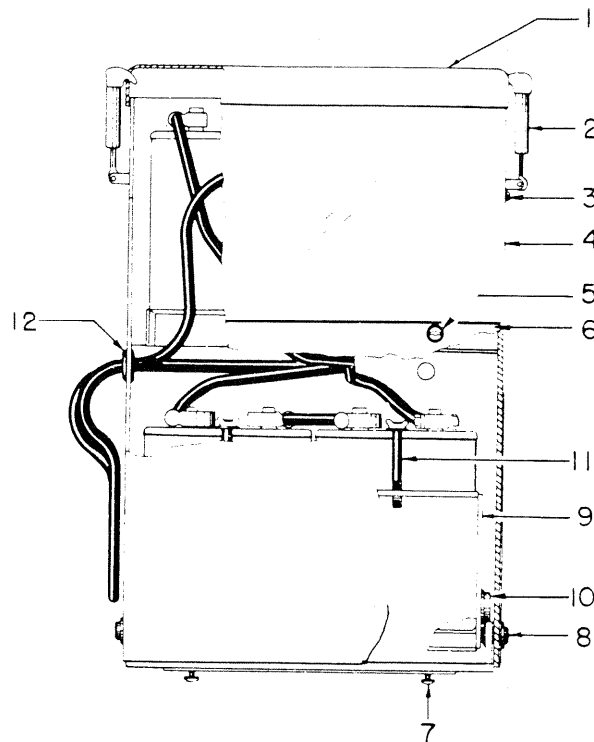
Battery Box and Mounting Parts
For 933F Traxcavator with 24-Volt Electrical System



PLAN VIEW
BATTERY ARRANGEMENT AND HOOK-UP

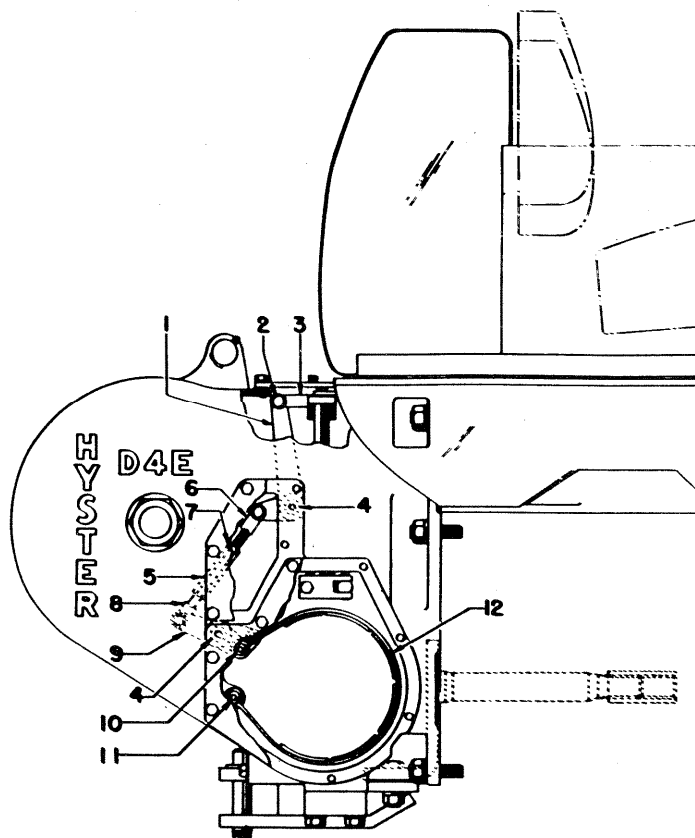
Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	131124	Support and Cover Assembly - - - - -	1
2	37562	Capscrew - 1/2 UNF x 1- 1/2 - - - - -	6
3	131130	Plate - Fender Extension - - - - -	1
4	{ 16397	Capscrew - 1/2 UNF x 1- 3/4 - - - - -	2
	{ 15008	Nut - 1/2 UNF - - - - -	2
	{ 15158	Lockwasher - 1/2 - - - - -	2
5	131132	Plate - - - - -	1
6	131133	Bar - - - - -	1
7	131134	Tie - Support - - - - -	1
8	{ 16820	Capscrew - 1/2 UNF x 1 - - - - -	4
	{ 15927	Lockwasher - 1/2 Shakeproof - - - - -	4
9	131175	Battery Box Assembly - - - - -	1
10	131131	Plate - Gusset - - - - -	1
11	96219	Cable - Battery (132" long) - - - - -	1
12	96220	Cable - Battery (147" long) - - - - -	1
13	95567	Cable - Battery (31- 1/2" long) - - - - -	1
14	{ 16808	Capscrew - 1/2 UNF x 2 - - - - -	2
	{ 15008	Nut - 1/2 UNF - - - - -	2
	{ 15158	Lockwasher - 1/2 - - - - -	2
15	{ 12479	Capscrew - 5/8 UNF x 1- 3/4 - - - - -	3
	{ 15160	Lockwasher - 5/8- - - - -	3
16	94724	Grommet - - - - -	2
17	-----	Cable - Battery ("Caterpillar" No. 5H3627) - -	2

Battery Box Assembly - 131176
For 933F Traxcavator with 24-Volt Electrical System



Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	94711W	Cover - - - - -	1
2	2009B	Catch - - - - -	2
3	16708	Machine Screw #10 UNF x 1/2 - - - - -	4
	15152	Lockwasher - 3/16 - - - - -	4
	15002	Nut - #10 UNF - - - - -	4
4	95572A	Box Assembly (Includes items 5, 6, 7, 8) - -	1
5	94709A	Fastener Assembly-Cowl - - - - -	2
	18101	Spring - - - - -	2
	17115	Rivet-1/8 x 1/4 - - - - -	4
6	94704W	Cover - Side - - - - -	1
7	94710	Stud - - - - -	2
	18103	Pin - - - - -	2
8	95547	Pin - - - - -	2
	94708	Spacer - - - - -	2
	15135	Washer - 1/2 - - - - -	2
	12986	Snap Ring - - - - -	2
9	94714A	Carriage Assembly (Includes item 10) - - -	1
10	94723	Roller - - - - -	4
	58951	Snap Ring - - - - -	4
11	131177	Stud - - - - -	8
	15134	Washer - 3/8 - - - - -	8
	19148	Wing Nut - 3/8 UNC - - - - -	8
12	94724	Grommet - - - - -	2

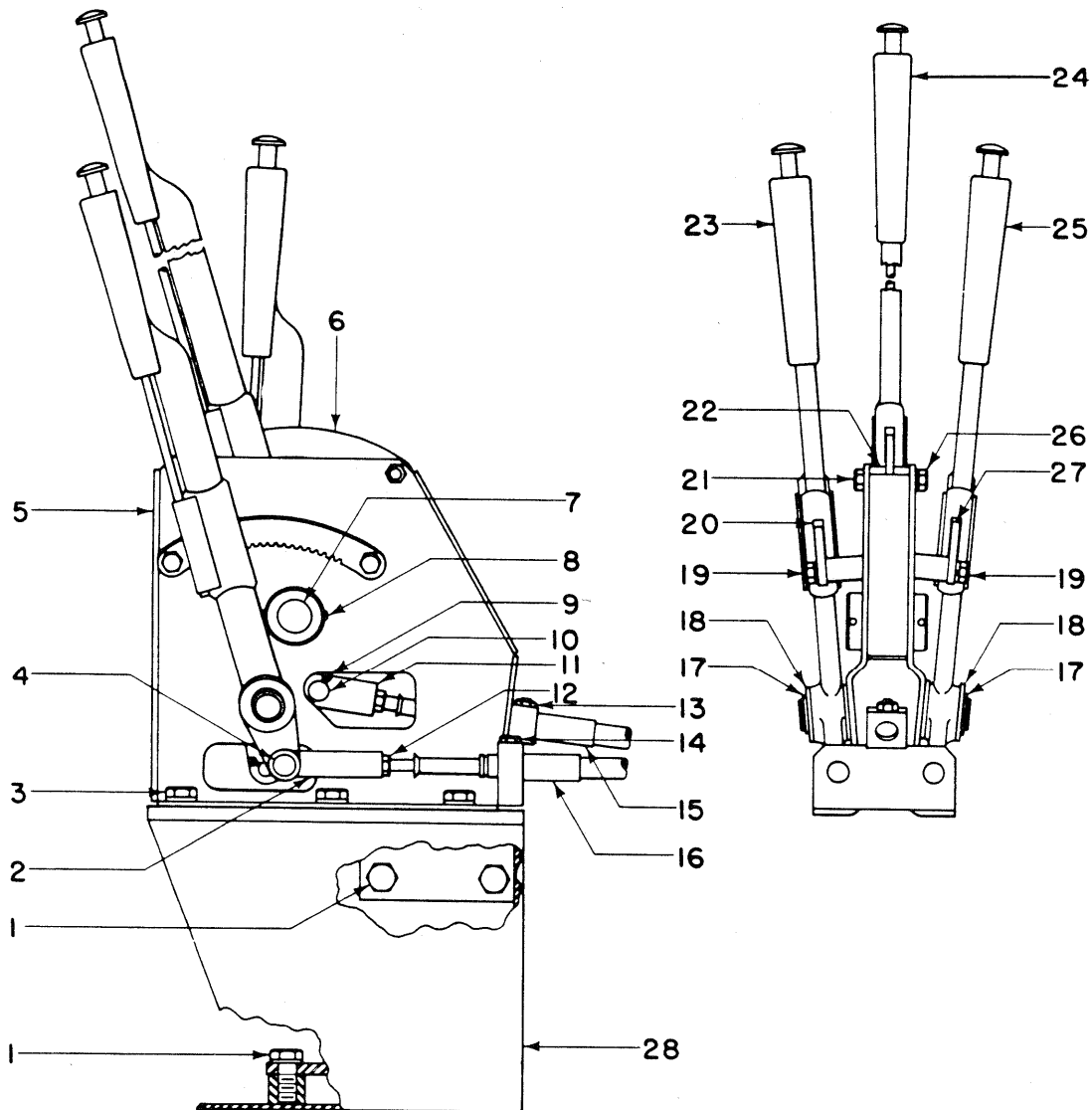
BRAKE MECHANISM



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	{ 96143A	Crank Assembly (Includes Bushing) -----	1
	{ 94024	Bushing -----	2
2	{ 153	Pin - Rod End) Two included with-----	3
	{ 15224	Cotter - 1/8 x 1-1/4) Turn Buckle 93875A--	3
3	{ 92925	Rod End-----	1
	{ 15026	Nut - Jam, 3/8 UNF-----	1
4	92879	Shaft-----	2
5	93875A	Turnbuckle Assembly-----	1
6	* 93876	Rod End (R. H. Thread)-----	1
7	* 15028	Nut - Jam, 1/2 UNF-----	1
8	* 92885	Rod End (L. H. Thread)-----	1
9	{ 94641A	Crank Assembly (Includes Bushing) -----	1
	{ 92707	Bushing-----	1
10	{ 92880	Shaft-----	1
	{ 15229	Cotter - 1/8 x 2-1/2 -----	1
11	92877	Shaft - Brake Band Anchor-----	1
12	{ 92874A	Brake Band Assembly (Includes Lining)-----	1
	{ 93673A	Lining Set (Drill at Assembly)-----	1

* Included in Turnbuckle Assembly

HANDLING GEAR AND ATTACHMENT GROUP
For 951B Traxcavators Serial No. 86J1 and Up.
941 Traxcavators Serial No. 80H1 and Up.

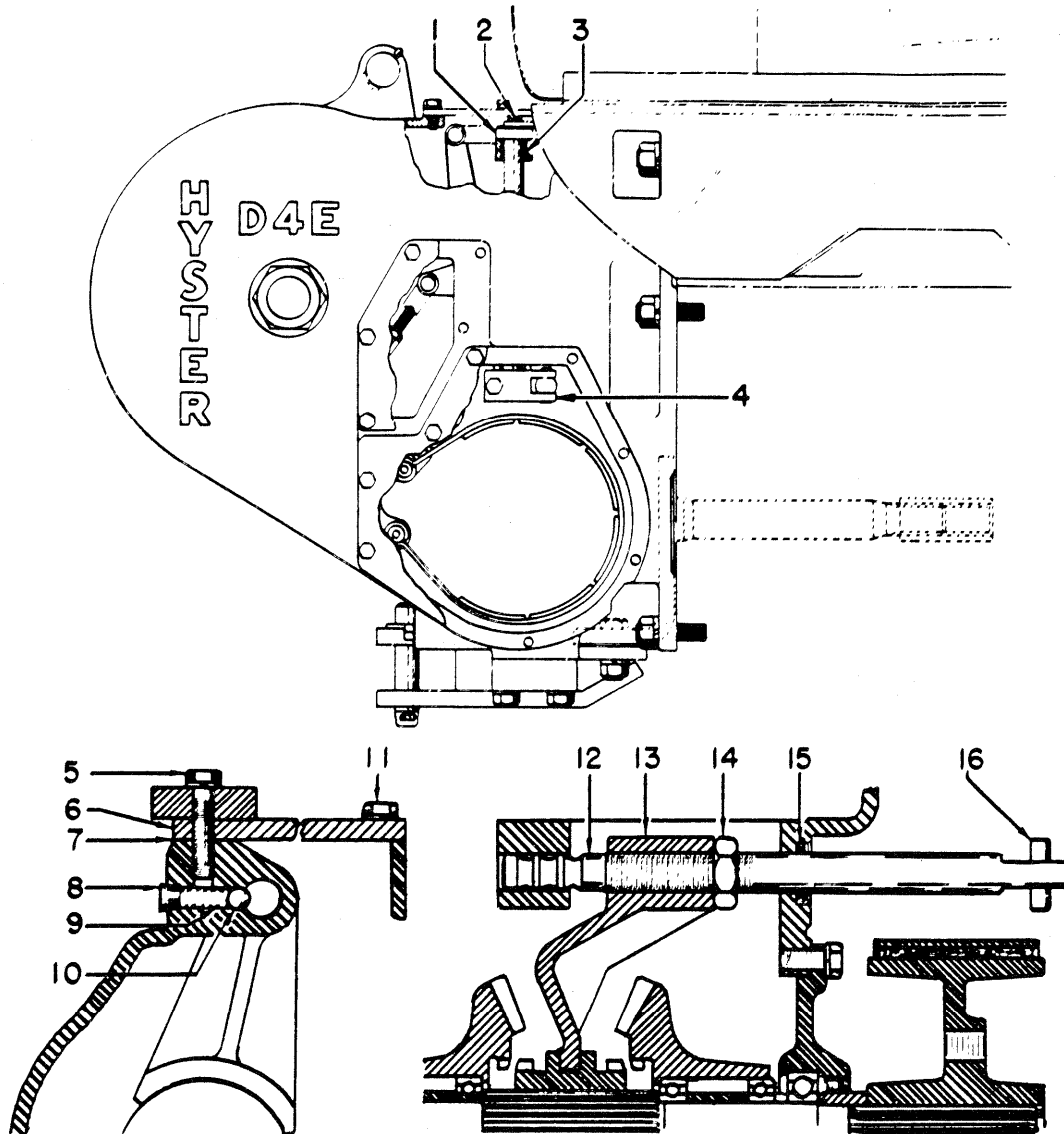


HANDLING GEAR AND ATTACHMENT GROUP
For 951B Traxcavators Serial No. 86J1 and up and
941 Traxcavators Serial No. 80H1 and up.

REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1 {	16829	Capscrew-1/2 UNC x 1	4
	15158	Lockwasher-1/2	4
2	92925	Rod End	2
3 {	18585	Capscrew-1/2 UNC x 3/4	6
	15158	Lockwasher-1/2	6
4 {	153	Pin-Rod End	2
	15223	Cotter-1/8 x 1	2
5	174028	Bracket	1
6	90371	Ratchet	1
7	174047	Pin-Lever	1
8	19880	Roll Pin-3/16 x 2	1
9	15223	Cotter-1/8 x 1	3
10	174037	Pin-Rod End	1
11	92909	Rod End	1
12	15006	Nut-3/8 UNF	6
13 {	16259	Set Screw-5/16 UNC x 5/8	1
	15001	Nut-5/16 UNC	1
14 {	16220	Set Screw-5/16 UNC x 3/4	2
	15001	Nut-5/16 UNC	2
15	174039	Cable-Push-Pull, 1" Travel	2
16	174038	Cable-Push-Pull, 2" Travel	1
17	58928	Snap Ring	2
18	59362	Washer	2
19 {	16598	Capscrew-3/8 UNC x 7/8	4
	15156	Lockwasher-3/8	4
20	92923	Quadrant-Free Spool	1
21	16376	Capscrew-3/8 UNC x 2	2
22	11412	Spacer	4
	174031	Handlever-Free Spool	1
23 {	* 175182	Rod	1
	* 79417	Spring	1
	* 79418	Push Button	1
	174032	Handlever-Brake	1
24 {	* 175716	Rod	1
	* 79417	Spring	1
	* 79418	Push Button	1
	174030	Handlever-Forward-Reverse	1
25 {	* 175182	Rod	1
	* 79417	Spring	1
	* 79418	Push Button	1
26 {	15056	Nut-3/8 UNC	2
	15156	Lockwasher-3/8	2
27	32657	Quadrant-Forward-Reverse	1
28	174029	Bracket-Support	1

* Included with each handlever.

SHIFTER GROUP - FORWARD AND REVERSE



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.	REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96145W	Crank-Shaft-----	1	6	94430W	Cover-	
	92886	Rod End-----	1			Transmission Top-1	
2	15026	Nut-Jam, 3/8 UNF-4		7	§ 92868	Gasket-----	1
	153	Pin - Rod End-----	1	8	15314	Pipe Plug-3/8	
	15224	Cotter-1/8x1-1/4--	1			Countersunk-----	1
3	93296	Bushing-----	2	9	6347D	Spring-----	1
	92887A	Crank Assembly---	1	10	6348	Ball-1/2 Dia.-----	1
4	* 15510	Capscrew - 1/2			37562	Capscrew-Hardened,	
		UNF x 2-1/4-----	1	11		1/2 UNF x 1-1/4---3	
	* 15158	Lockwasher-1/2---	1		15158	Lockwasher-1/2---	3
	* 15008	Nut-Hex, 1/2 UNF--	1	12	96141A	Shaft-Shifter-----	1
5	16808	Capscrew-Hardened		13	92864	Fork-Shifter-----	1
		1/2 UNF x 2-----	3	14	15036	Nut-Hex, Jam,	
	15158	Lockwasher-1/2---	3			1" NF-----	1
				15	23206	Oil Seal-----	1
				16	+ 92867	Pin - Dowel-----	1

*Included with Crank Assembly 92887A

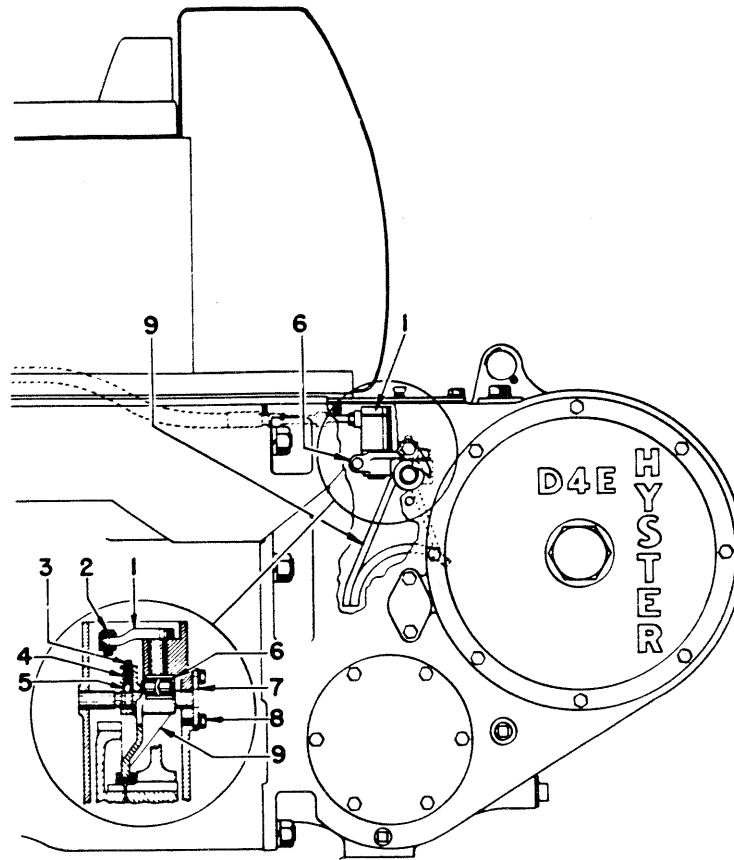
+Included with Shaft 96141A.

§ Included in Gasket Set 96475A.

§ Included in Gasket Set 96527A.

HYSTER COMPANY
PORTLAND, OREGON

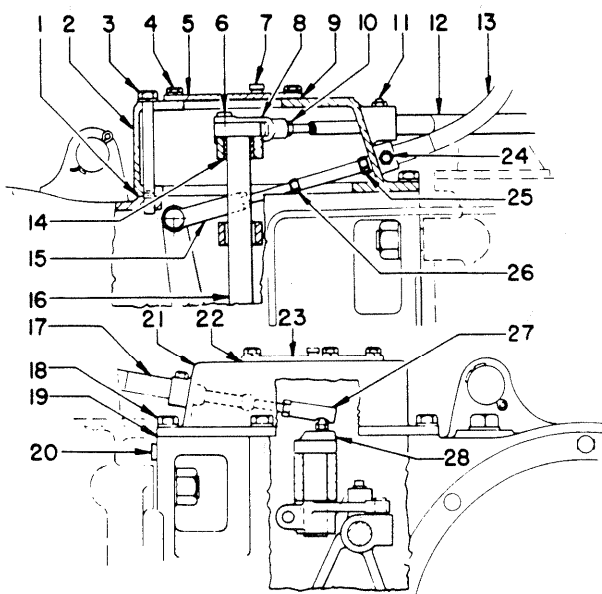
SHIFTER GROUP - FREE SPOOL



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96150W	Crank Assembly	1
2	92909	Rod End	1
	15026	Nut - Jam, 3/8 UNF	1
	153	Pin - Rod End	1
	15224	Cotter - 1/8 x 1-1/4	1
3	46578	Plug - Drilled Head	1
	67355	Lockwire - 18 GA. x 12" Long	1
4	6347B	Spring	1
5	6348	Ball - 1/2, Steel	1
6	96153A	Crank Assembly	1
	* 15509	Capscrew - 1/2 UNF x 1-1/2	1
	* 15158	Lockwasher - 1/2	1
7	92899A	Shaft	1
8	16820	Capscrew - Hardened, 1/2 UNF x 1	2
	15158	Lockwasher - 1/2	2
9	92902A	Fork Assembly - Shifter	1
	+ 92867	Pin - Dowel	1
* Included with Crank Assembly 96153A			
+ Included with Fork Assembly 92902A			

SPECIAL WINCH PARTS

For Installation on 955 Traxcavators SN 60A3626 and up, 61H1 and up, 85J1 and up, and 48H1 and up.



REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96149	Gasket - RH Control Cover	1
2	* 87223W	Cover - Control RH	1
	# 154987	Cover - Control RH	1
	* 18597	Capscrew - 1/2 UNF x 5	3
3	# 16827	Capscrew - 1/2 UNF x 6	3
	15158	Lockwasher - 1/2	3
4	16811	Capscrew - 3/8 UNF x 3/4	7
	15156	Lockwasher - 3/8	7
5	87232	Plate - Cover	1
6	153	Pin - Rod End	1
	15224	Cotter - 1/8 x 1-1/4	1
7	21420	Plug - Breather	2
8	92886	Rod End	1
9	87233	Gasket - Cover Plate R.H.	1
10	15026	Nut - Jam, 3/8 UNF	2
11	16254	Set Screw - 5/16 UNC x 1	1
	15055	Nut - 5/16 UNC	1
12	96598	Cable - Push Pull, Forward and Reverse .	1
13	88577	Cable - Ush Pull, Brake	1
14	93296	Bushing	2
15	92925	Rod End	1
16	87235W	Crank - Shaft	1
17	96729	Cable - Push Pull, Free Spooling	1
18	16820	Capscrew - 1/2 UNF x 1	6
	15158	Lockwasher - 1/2	6
19	92897	Gasket - L.H. Control Cover	1
20	87242	Cork - No. 6	3
21	87213W	Cover - Control, L.H.	1
22	87222	Gasket - Cover Plate, L.H.	1
23	87221	Plate - Cover, L.H.	1
24	16259	Set Screw - 5/16 UNC x 5/8	2
	15055	Nut - 5/16 UNC	3
25	94381	Grommet - LargeIncluded.....	5
26	95905	Grommet - SmallWith Cables.....	6
27	119758	Ball Joint	1
28	* 87237W	Crank - Shaft	1
	# 154994	Crank - Shaft	1

* Use on S.N. 60A3626 and up.

Use on S.N. 61H1 and up, 85J1 and up, and 48H1 and up.

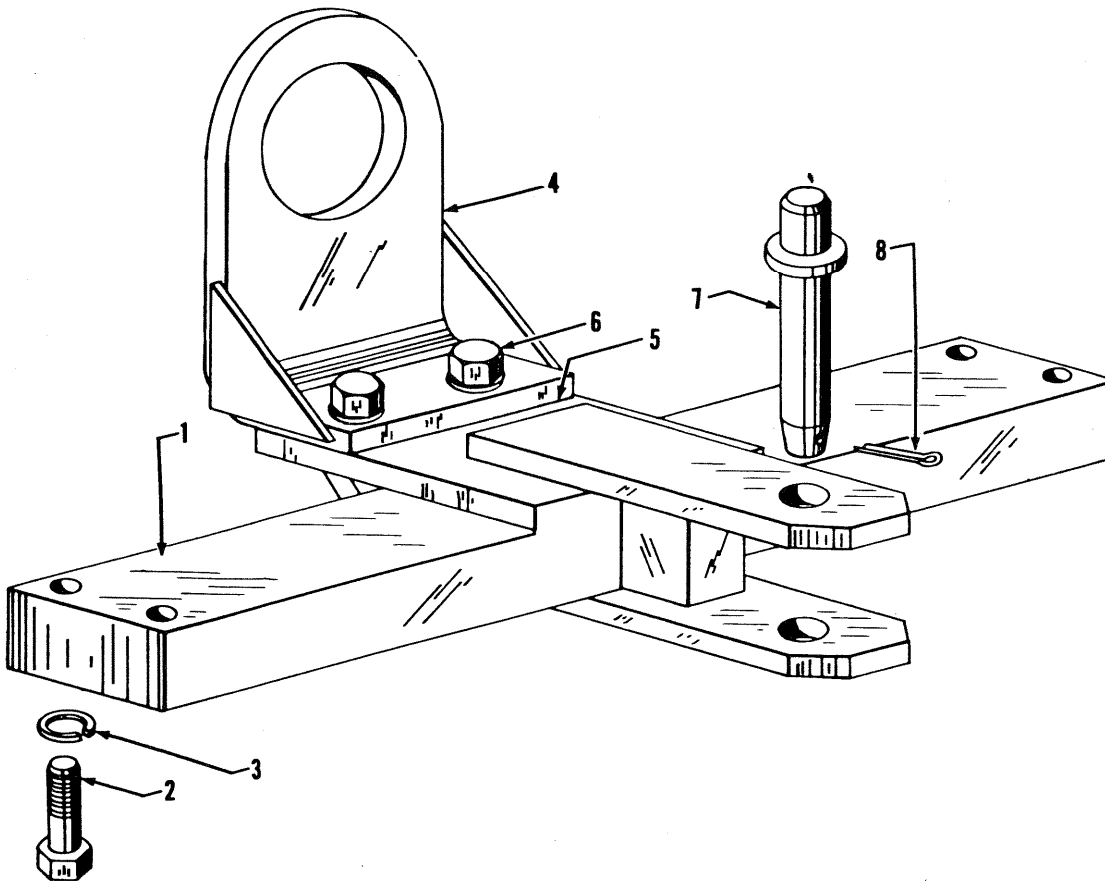
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OPTIONAL EQUIPMENT

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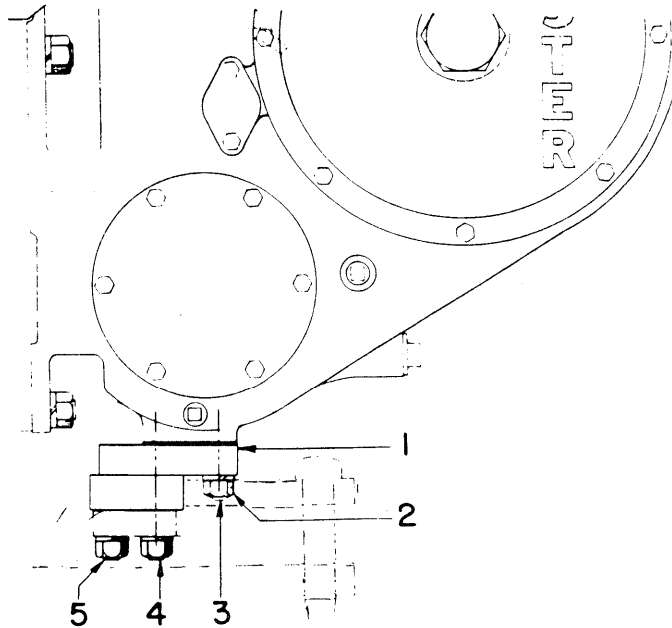
AUTOMATIC BRAKE -----	G 3
DRAWBAR GROUPS-----	G 1
DRAWBAR HITCH ASSEMBLY (For Logging Sulky)-----	G 4
INTEGRAL ARCH -----	G 5

* DRAWBAR GROUP - No. 96139A
 + DRAWBAR GROUP - No. 96562A
 For D4 Tractors S. N 39A1 and Up - 40A1 and Up
 78A1 and Up and all Traxcavators



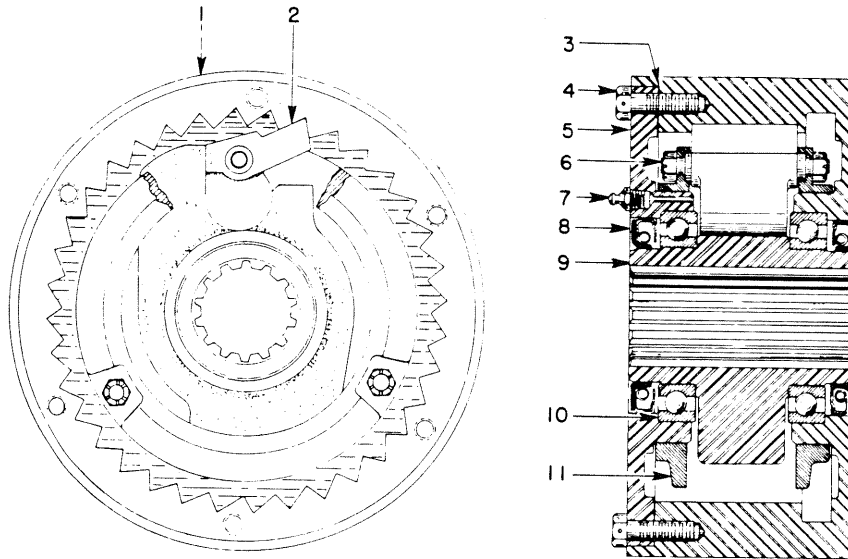
REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	96166W	Bracket -----	1
2	15784	Capscrew - Hardened, 3/4 UNC x 2-3/4 ----	4
3	15162	Lockwasher - 3/4 -----	4
4	* 96172W	Bracket -----	1
5	96174	Shim -----	2
6	*(16802	Capscrew - Hardened, 3/4 UNF x 2-1/2 =----	2
	*(15012	Nut - 3/4 UNF-----	2
	*+(15162	Lockwasher - 3/4-----	2
	+(12482	Capscrew - 3/4 UNF x 2-1/4-----	2
7	94448	Pin - Drawbar-----	1
8	15264	Cotter - 5/16 x 1-3/4-----	1
	* For Standard Speed Winch Only.		
	+ For Lo-Speed Winch Only.		

"Caterpillar" Swinging Drawbar Mounting Parts



Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	* { 123524	Block - Mounting - - - - -	2
	+ { 96506	Block - Mounting - - - - -	2
2	{ 15012	Nut - 3/4 UNF - - - - -	4
	{ 15162	Lockwasher - 3/4 - - - - -	4
3	* { -----	Stud - "Caterpillar" No. 1A4953 - - - - -	2
	+ { 96507	Stud - 3/4 x 5 - 1/4 - - - - -	2
4	96508	Stud - 3/4 x 6 - 3/8 - - - - -	2
5	{ -----	Stud - "Caterpillar" No. 1A4953 - - - - -	2
	{ -----	Nut - "Caterpillar" No. 1B4207 - - - - -	2
	{ -----	Lockwasher - "Caterpillar" No. 3B4512 - - - - -	2
* For D4 Tractors Series 78A. Complete group no. 123526			
+ For D4 Tractors Series 23A, 24A, 39A, 40A. Complete group no. 96505A			

AUTOMATIC BRAKE NO. 92826A--OPTIONAL

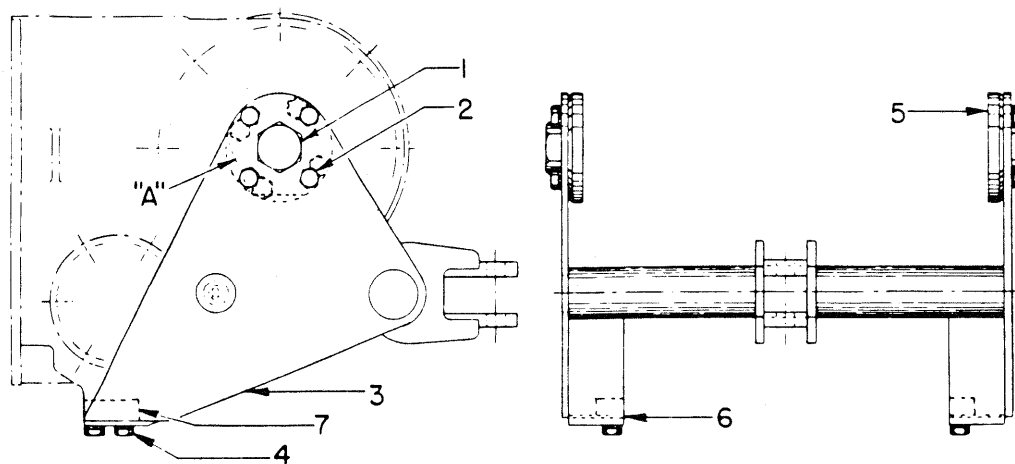


REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	59389A	Wheel - Brake -----	1
2	59393	Pawl -----	1
3	§ 59396	Gasket -----	1
4	(67355)	Lockwire 18 Ga. x 38" Long -----	1
	(27259)	Capscrew - Drilled Head-----	6
5	59387	Cover -----	1
6	(94599)	Link -----	3
	(12430)	Nut - Hex Slotted -----	6
	(15201)	Cotter - 1/16 x 3/4-----	6
7	46187	Plug - Vent, Special-----	1
8	59395	Oil Seal -----	2
9	92950	Hub -----	1
10	44313	Bearing -----	2
11	92945	Ring - Drag-----	2
	58700	Grease - 3 Lb. Can (High Melting Point)	

§ Included in Gasket Set 96527A.

¶ Included in Gasket Set 96475A.

DRAWBAR HITCH ASSEMBLY - NO. 93589A
FOR LOGGING SULKY

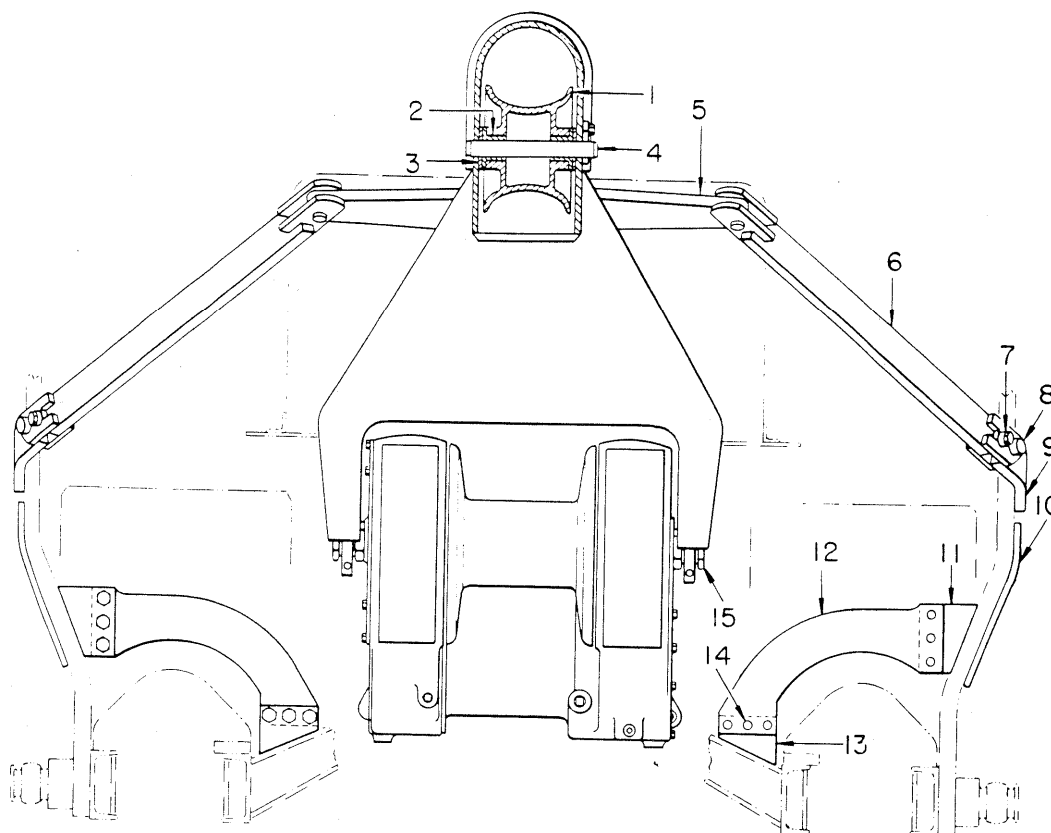


REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	91397	Nut-----	2
2	(16831	Capscrew - 3/4 UNF x 1-3/4-----	8
	(15162	Lockwasher - 3/4-----	8
3	93650A	Bracket-----	1
4	(15786	Capscrew - 3/4 UNC x 3-----	4
	or (15541	Capscrew - 3/4 UNF x 3-----	4
	(15162	Lockwasher - 3/4-----	4
	(15136	Washer-----	2
5	93656	Washer - Special-----	2
6	77227	Shim Set-----	2
7	* 96557	Spacer-----	2

NOTE: On R. H. Side, Washer (5) must be installed as shown at "A" to avoid R. H. Cover on Winch.

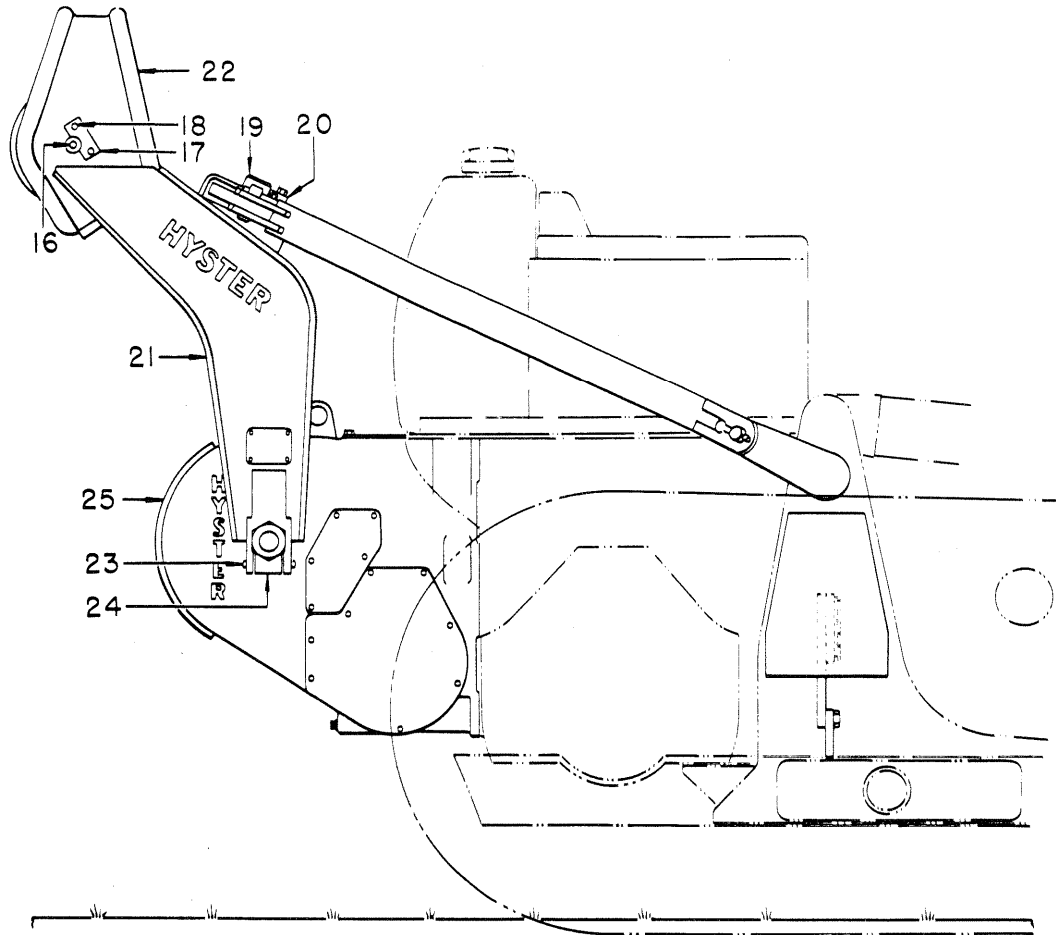
* For D4 Tractors Serial No. 39A-40A and Up.

D4 INTEGRAL ARCH



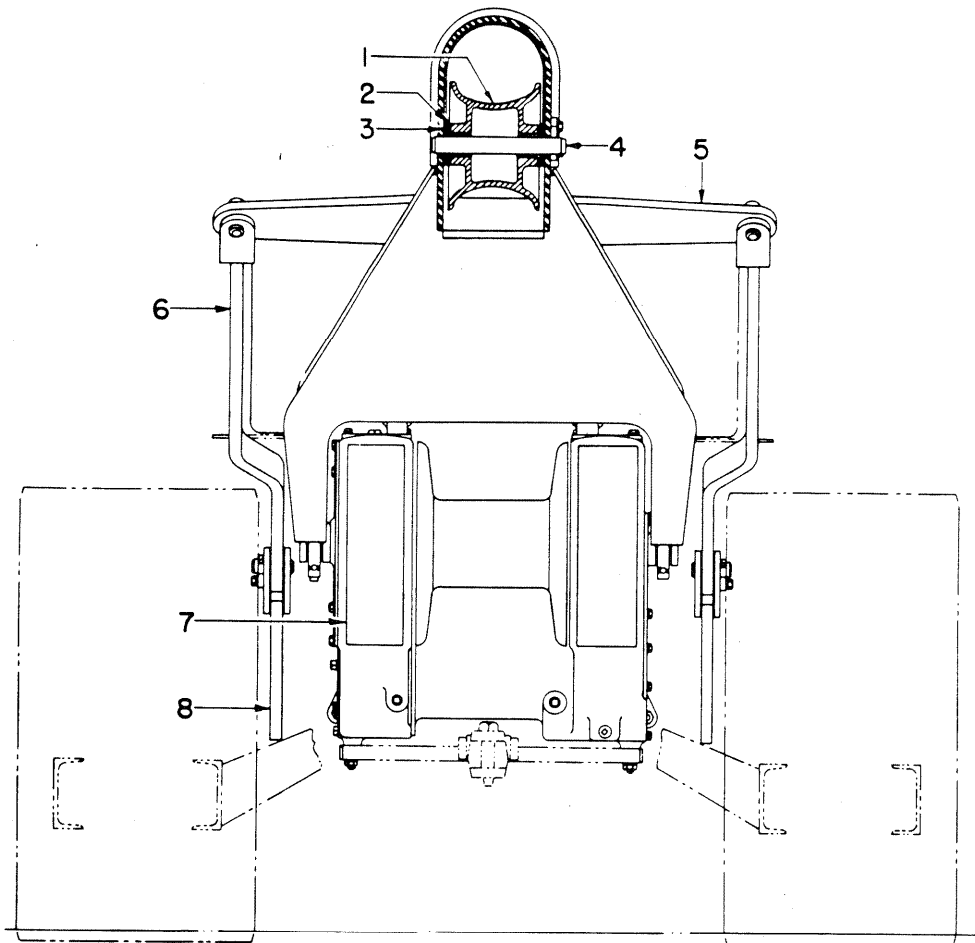
REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
1	11650B	Roller - Fairlead-----	1
2	11648B	Bushing-----	2
3	32532	Washer-----	2
4	94507	Shaft-----	1
5	(84223A	Equalizer Beam (Includes Bushings)-----	1
	(84226	Bushing - Center-----	1
	(84227	Bushing - End-----	2
6	84689W	Strut - Backstay-----	2
7	(82270	Anchor-----	4
	(15511	Capscrew - 1/2 UNF x 1-----	4
	(15158	Lockwasher - 1/2-----	4
8	84233	Pin-----	4
9	(84671A	Bracket (Includes Bushing)-----	2
	(84227	Bushing-----	2
10	84691	Plate-----	2
11	84687	Plate-----	2
12	84688	Plate-----	2
13	84686	Plate-----	2
14	82653	Bolt - Special-----	12
15	37385	Nut - Shaft-----	2

D4 INTEGRAL ARCH



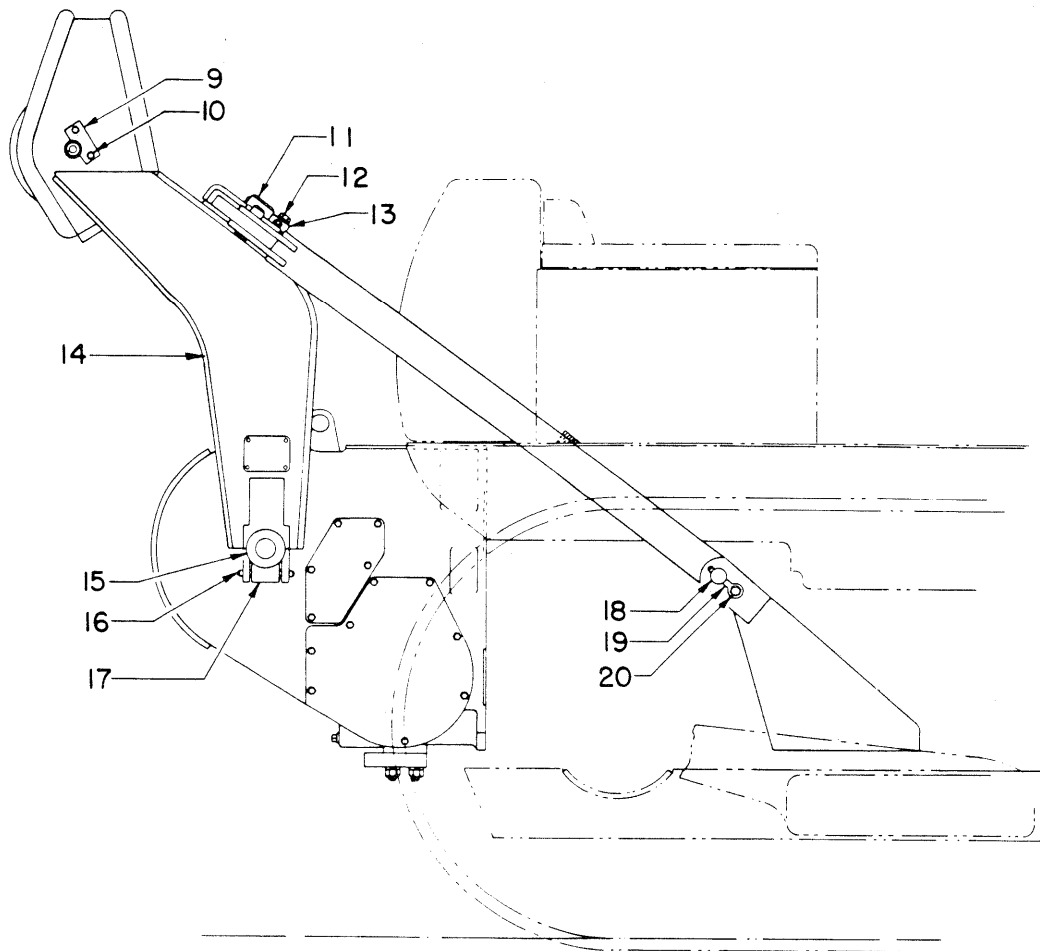
REF. NO.	HYSTER PART NO.	DESCRIPTION	QTY. REQ.
16	16002	Fitting - Lubrication-----	2
17	106028	Plate-----	1
18	(15511	Capscrew - 1/2 UNF x 1-----	2
	(15158	Lockwasher - 1/2-----	2
19	84228	Pin-----	1
20	(80926	Anchor -----	1
	(15504	Capscrew - 5/8 UNF x 1-1/4-----	1
	(15160	Lockwasher - 5/8-----	1
21	84643W	Frame - Arch (Includes Item 22)-----	1
22	84207W	Frame - Fairlead-----	1
23	(104009	Pin-----	2
	(15223	Cotter - 1/8 x 1-----	4
24	84239	Keeper-----	2
25	84237	Plate - Winch Guard-----	2

Integral Arch
(Current for D4 Tractors Series C and D)



Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
1	11650B	Roller - Fairlead - - - - -	1
2	11648B	Bushing - - - - -	2
3	32532	Washer - - - - -	2
4	{ 94507	Shaft - - - - -	1
	{ 16002	Fitting - Lubrication - - - - -	2
5	{ 125459	Equalizer Beam Assembly - - - - -	1
	{ 84226	Bushing - Center - - - - -	1
	{ 84227	Bushing - End - - - - -	2
6	* { 125462	Strut - Backstay - - - - -	2
	{ 84227	Bushing - - - - -	2
	+ { 128367	Strut - Backstay - - - - -	2
7	84237	Guard - Winch - - - - -	2
8	125465	Bracket - Track - - - - -	2
* For D4 Tractors with 20" Maximum Track Width			
+ For D4 Tractors with 18" Maximum Track Width			

Integral Arch
(Current for D 4 Tractors Series C and D)



Ref. No.	Hyster Part No.	Name of Part	Qty. Req.
9	106028	Plate - - - - -	1
10	{ 15511	Capscrew - 1/2 UNF x 1 - - - - -	2
	{ 15158	Lockwasher - 1/2 - - - - -	2
11	84228	Pin - - - - -	1
12	{ 15504	Capscrew - 5/8 UNF x 1- 1/4 - - - - -	1
	{ 15160	Lockwasher - 5/8 - - - - -	1
13	80926	Anchor - - - - -	1
14	84202W	Frame - - - - -	1
15	37385	Nut - Shaft - - - - -	2
16	{ 104009	Pin - - - - -	2
	{ 15223	Cotter - 1/8 x 1 - - - - -	4
17	84239	Keeper - - - - -	2
18	84233	Pin - - - - -	4
19	82270	Anchor - - - - -	4
20	{ 15511	Capscrew - 1/2 UNF x 1 - - - - -	4
	{ 15158	Lockwasher - 1/2 - - - - -	4

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2009 B E11		15264 G1		32515 D3		84237 G6		92877 E12	
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HYSTER COMPANY
PORTLAND, OREGON

SPECIFICATIONS

HYSTER MODEL ----- D4E Towing Winch

Drum Size:

Barrel Diameter-----7-1/2"
 Flange Diameter----- 17-1/2"
 Barrel Length ----- 10-1/4"

Cable Capacity, Maximum Line-----{ 298 ft. of 3/4" Line
 (or 430 ft. of 5/8" Line

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

	Standard	Lo-Speed
*Available Line Pulls: D4 Tractor S.N.39A-40A Winch	Winch	Winch
Tractor Transmission Forward	Forward	Forward
Bare Drum -----	25,800 Lbs.	58,800
Full Drum-----	12,700 Lbs.	25,400
Tractor Transmission Reverse	Reverse	Reverse
Bare Drum-----	22,400 Lbs.	58,800
Full Drum-----	11,000 Lbs.	25,400

	Tractor Transmission Forward	Forward
Line Speeds		
Bare Drum -----	83 F.P.M.	19
Full Drum -----	168 F.P.M.	39
Tractor Transmission Reverse	Reverse	Reverse
Bare Drum -----	97 F.P.M.	22
Full Drum-----	198 F.P.M.	45

*Line pulls for standard winch are based on 65 H. P. at 927 R. P. M. of P. T. O. forward and 1090 R. P. M. of P. T. O. reverse, using 3/4" line. Line pulls for Lo-Speed winch are based on breaking point of 3/4" line. Line speeds for Lo-Speed winch are based on 638 R. P. M. of P. T. O. forward and 750 R. P. M. of P. T. O. reverse (maximum torque conditions), using 3/4" line.

+ Available Line Pulls: 955 Traxcavator S.N. 45A :

	Forward	Forward
Bare Drum -----	26,500 Lbs.	58,800
Full Drum -----	13,000 Lbs.	25,400

Line Speeds

Bare Drum-----	87 F.P.M.	18
Full Drum -----	177 F.P.M.	36

+ Line pulls for standard winch are based on 70 H. P. at 977 R. P. M. of P. T. O. using 3/4" line. Line pulls for Lo-Speed winch are based on breaking point of 3/4" 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.

Net Weight with Standard Brake (without cable) ----- 1,140 Lbs.

Domestic Shipping Weight, Approx. ----- 1,200 Lbs.

