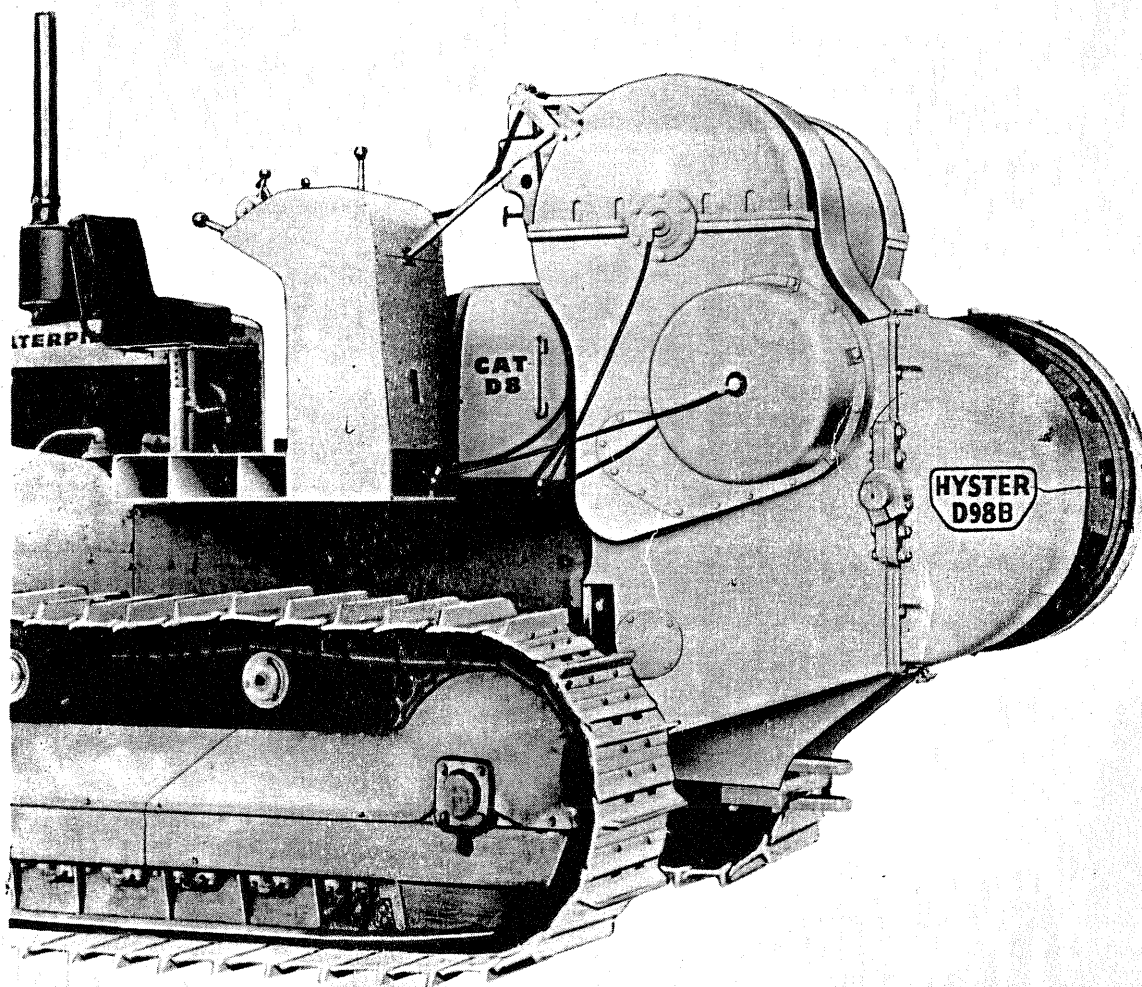


PARTS BOOK AND INSTRUCTION MANUAL

HYSTER[®]

D98B TRACTOR YARDER

For D9 and D8 "Caterpillar" Tractors



HYSTER COMPANY

TRACTOR EQUIPMENT DIVISION

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

FORM 948

LITHO IN U.S.A.

599211W

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

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

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.

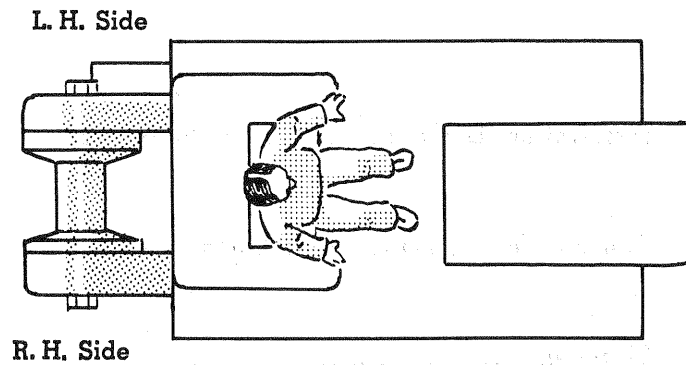
For any further information on parts, service, or ordering, consult your local Hyster dealer.

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

INDEX

SECTION A	Installation, Operating and Service Instructions	➔
SECTION B	Frames, Covers and Mounting Studs	➔
SECTION C	Clutches	➔
SECTION D	Power Take-Off, Gear Train and Drums	➔
SECTION E	Brakes	➔
SECTION F	Pneumatic and Hydraulic Systems	➔
SECTION G	Optional Equipment	➔
SECTION Q	Numerical Index	➔

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

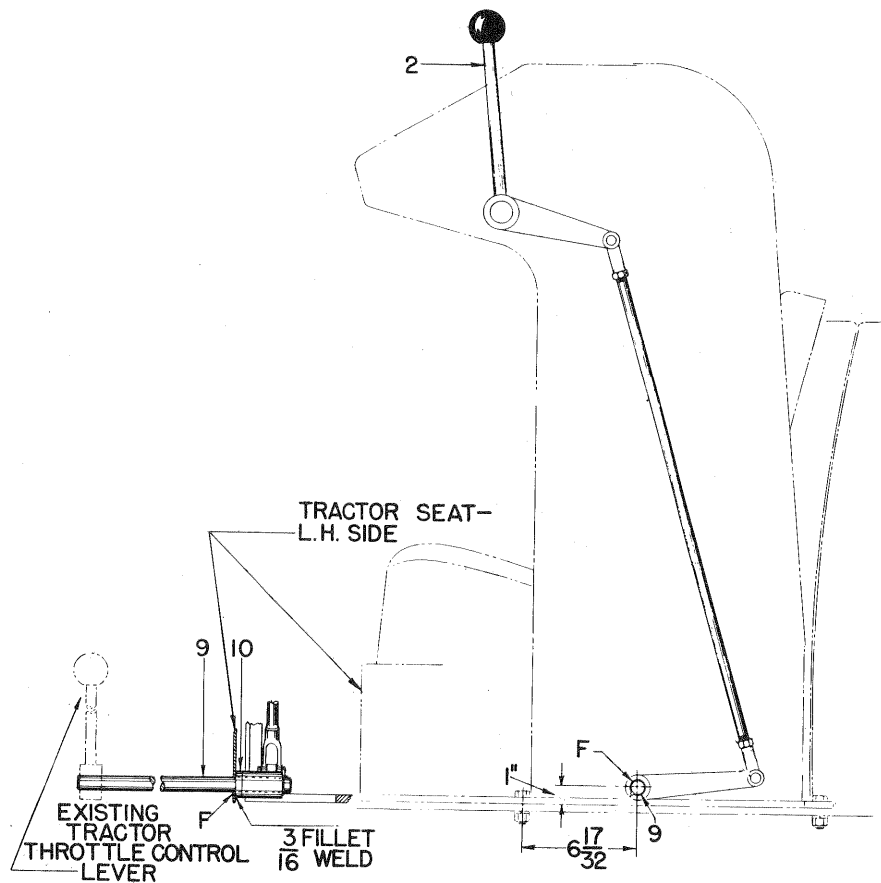


CAUTION!

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

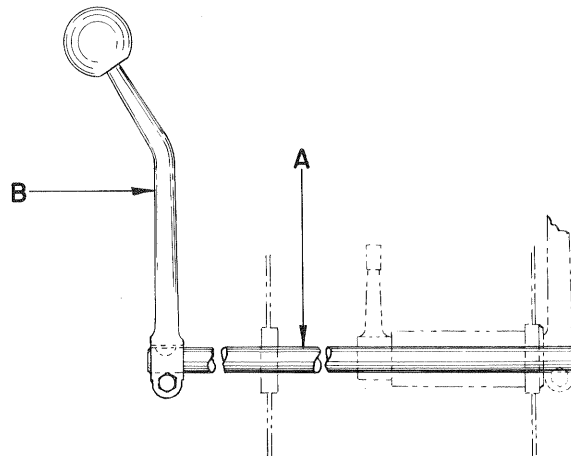
Strict Observance of this Rule will Prevent Accidents

THROTTLE CONTROL ALTERATION —
FOR D8 TRACTORS SERIAL NUMBER 14A, 15A,



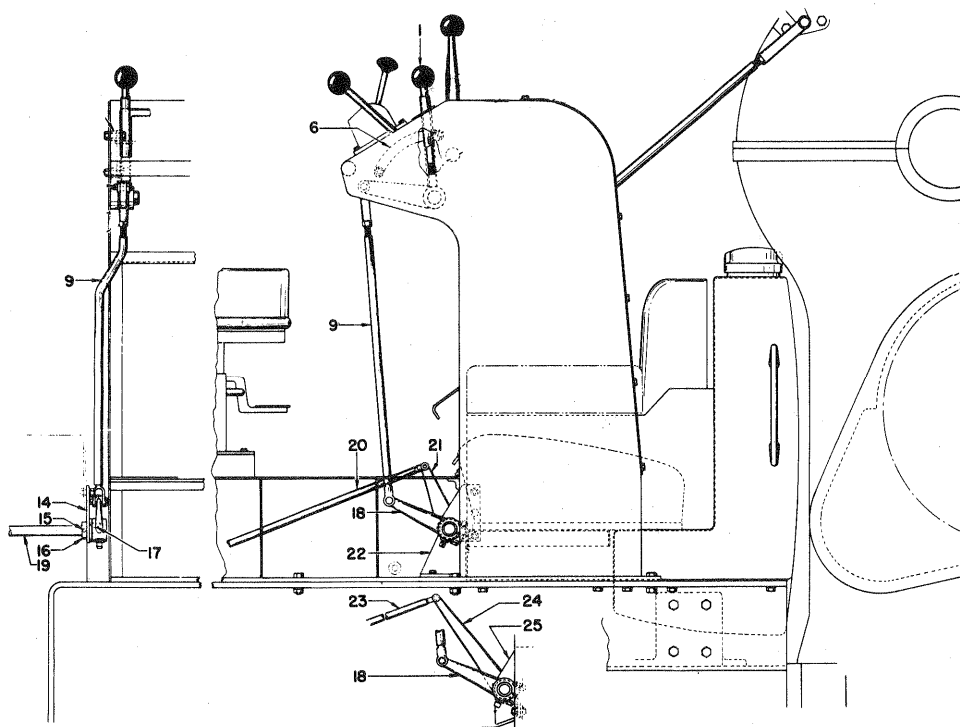
1. Remove tractor arm rest and support plate.
2. Burn 1-1/4" Diameter hole "F" in left hand side of seat. Weld boss (10) to side of tractor seat as shown, using 3/16" fillet weld all around.
3. Remove tractor throttle control shaft ("Caterpillar" No. 5H6808) and install Hyster shaft (9). Replace tractor throttle control lever in original location and install Hyster duplicate control lever (2).

FOR D8 TRACTORS S.N. 22A, 35A, 36A, 52A, 68A



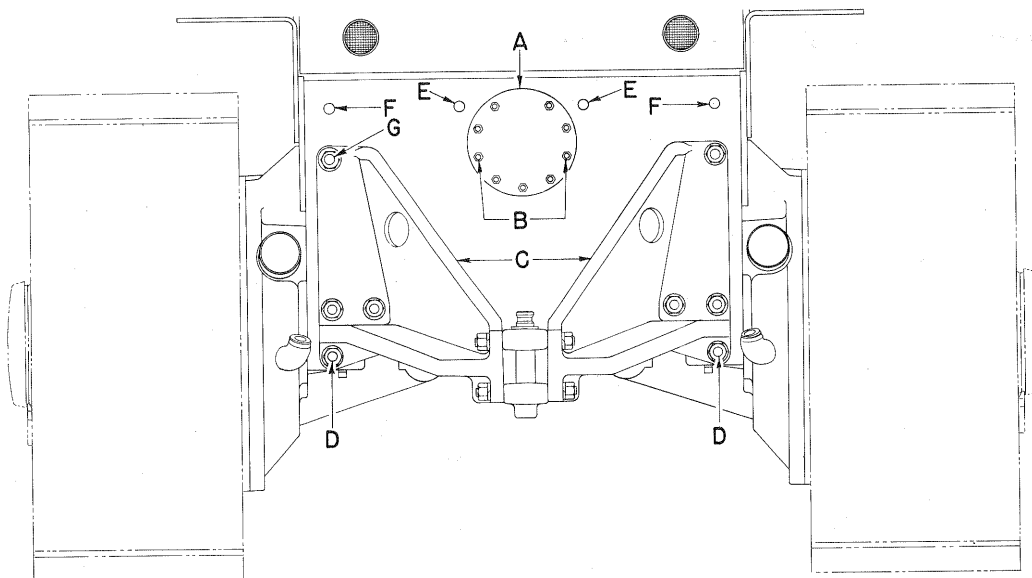
1. Remove tractor throttle control shaft ("Caterpillar" No. 5H6808) and install Hyster shaft ("A"). Re-
- place tractor throttle control lever in original location and install duplicate control lever ("B").

**THROTTLE CONTROL ALTERATION—
FOR D8 TRACTORS PRIOR TO S.N. 14A1-15A1**



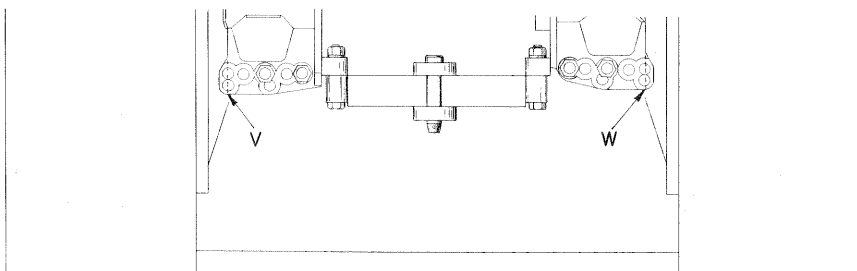
1. Attach Hyster Bracket (22 or 25), Plate (14) and Shaft (19) with Bushing (16) and Setscrew (15).
2. Remove "Caterpillar" connecting rod by pulling rod end pins at each end. Use these pins to attach Hyster Link (20 or 23) between Hyster Lever (21 or 24) and "Caterpillar" Lever, thus by-passing the "Caterpillar" friction control.
3. Engage Pawl of lever (1) in notch on Ratchet Bar (6) and connect Link (9) to Lever (1) in approximate position shown. Adjust Link (9) if necessary.
4. Press down Link (20 or 23) until fuel is shut off. Clamp Crank (18) tightly to Bushing (16), using cap-screw and setscrew provided with Crank. Be sure that Keys (17) are in place.

FOR D9 TRACTORS SERIAL NUMBER 18A, 19A

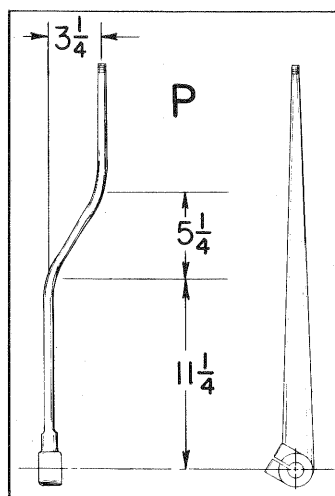


1. Remove stud "G" and install Hyster stud No. 95305 (1-1/4 x 8-3/4).
2. Remove studs "D" and install at "E".
3. Install two Hyster studs No. 93348 (1-1/2 x 5-1/4) at "F".

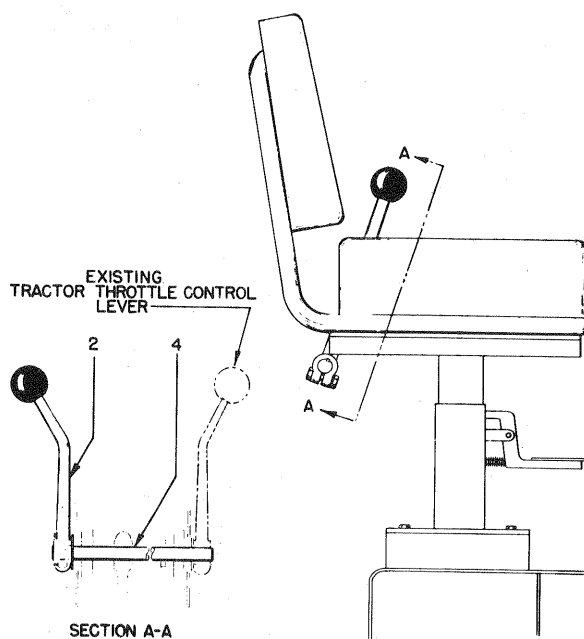
FOR D9 TRACTORS SERIAL NUMBER 18A, 19A



4. Burn R.H. and L.H. edges of Yarder mounting face, burning through center of each end holes as shown by dotted lines at "V" and "W".



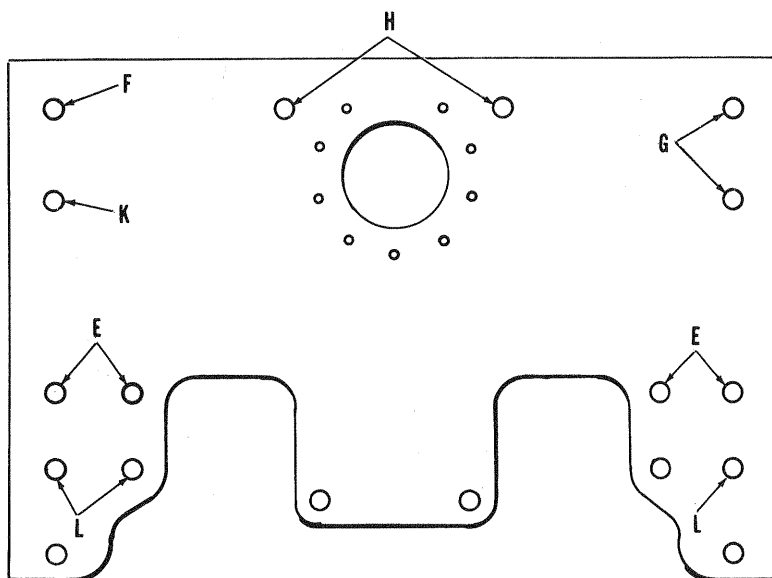
5. For Direct Drive Tractors, straighten Tractor fly-wheel clutch lever, "Caterpillar" No. 2H1818 and rebend as shown at "P".



6. Remove Tractor throttle control shaft "Caterpillar" No. 5H6808, and install Hyster shaft (4). Replace

Tractor throttle control lever in original location and install Hyster duplicate control lever (2).

FOR D9 TRACTORS S.N. 34A, 49A, 50A, 66A

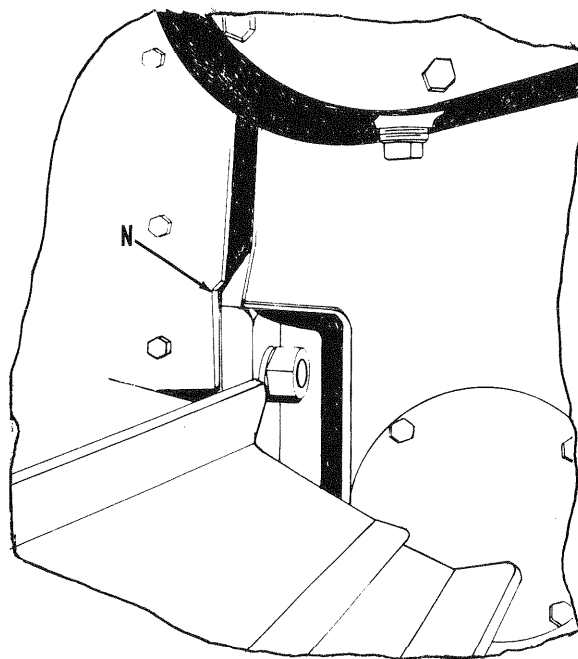


1. Alter throttle control as directed for Serial No. 18A, 19A.
2. Remove studs "E" and install at "F" and "G".
3. Install two Hyster taperlock studs 95837 at "H".

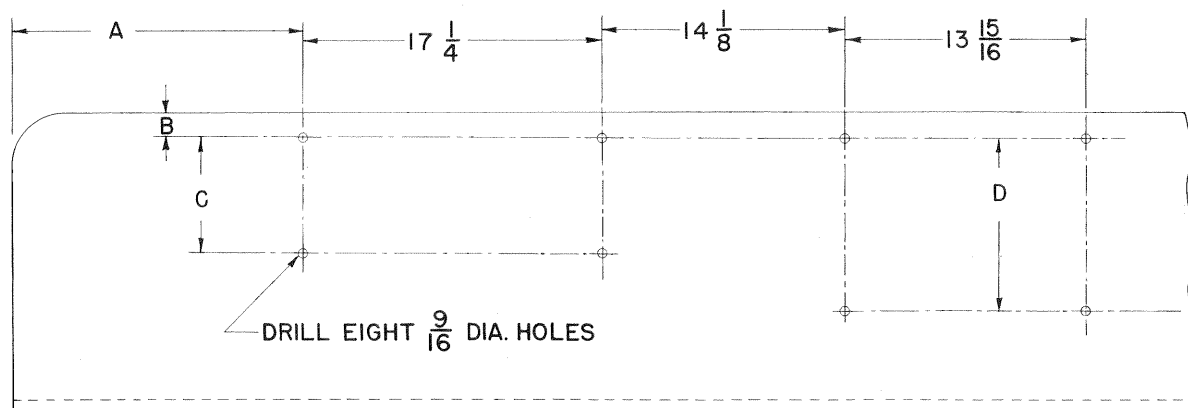
4. Install one Hyster taperlock stud 95827 at "K".
NOTE: Leave studs "L" in place for Yarder mounting.
Torque studs "H" 170 ± 20 Ft. Lbs.
studs "F", "G" and "K" 250 ± 20 Ft. Lbs.

FENDER ALTERATIONS

FOR D8 TRACTORS SERIAL NUMBER 14A, 15A, 22A, 35A, 36A, 52A

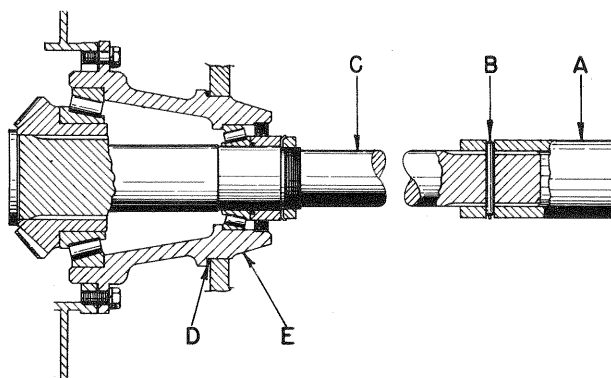


1. Notch L.H. fender flush with Tractor transmission case as shown at "N".



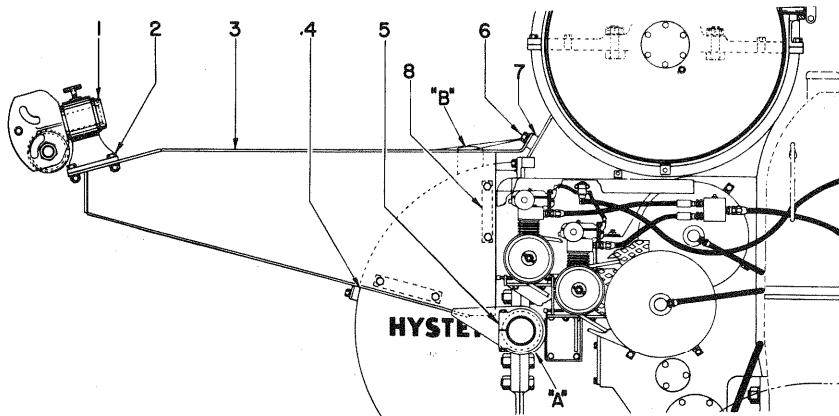
- Drill eight 9/16" diameter holes in L.H. fender as follows:
- | | |
|---|---|
| For D9 Tractors Serial Number 18A, 19A | A = 20-7/8" - B = 3/4" - C = 6-5/8" - D = 9-15/16" |
| For D8 Tractors S.N. 2U7488 & UP, 13A, 14A, 15A | A = 17" - B = 1-7/16" - C = 6-5/8" - D = 9-15/16" |
| For D8 Tractors S.N. 22A, 35A, 36A, 46A, 52A, 68A | A = 20-3/8" - B = 1-7/16" - C = 6-5/8" - D = 9-15/16" |
| For D9 Tractors Serial Number 34A, 49A, 50A | A = 20-7/8" - B = 2-1/2" - C = 4-5/8" - D = 7-15/16" |
| For D9 Tractors Serial Number 66A | A = 24-1/2" - B = 1-9/16" - C = 4-5/8" - D = 7-15/16" |

FOR ALL D8 AND D9 TRACTORS



1. Wipe the rear face of tractor transmission case.
2. Pack coupling "A" with grease and assemble on P.T.O. Shaft "C". Lock coupling on shaft with pin and lock ring "B".
3. Wipe surfaces of Yarder that fit against the rear face of tractor transmission case.
4. Apply a liberal coat of heavy type sealant to "O" Ring "D" and install on Yarder P.T.O. Carrier "E".
5. Swing Yarder into position back of tractor. Turn crank-shaft of tractor to line up splines on tractor P.T.O. shaft with splines in Yarder coupling "A".
6. Check to see that fastening holes in Yarder side frames line up with studs in tractor case as Yarder moves into position.
7. Place lockwashers and nuts over studs and draw up tightly.
8. Install handling gear on L.H. fender.
9. Install air tanks on R.H. fender. Using mounting brackets as template, drill four 9/16" Diameter holes through fender and fasten with capscrews (1/2 UNF x 1-1/2), nuts and lockwashers provided.
10. Connect hoses to proper fittings as shown in "Pneumatic Circuit", and connect push pull cable to compound shifter.
11. Install Tool Box in some convenient location.
12. Check all Bolts and Connections, making sure that all Nuts and Lockwashers are in place and drawn up tightly.

FAIRLEAD AND BRACKET GROUP NO. 95521A
(OPTIONAL)



1. Remove Drum Shaft Nut at "A".
2. Remove Cap "B".
3. Mount Bracket (3) over Drum Shaft and over pipe from which Cap "B" was removed.
4. Install Nut (5) with Capscrew, Nut and Lockwasher from old nut.
5. Attach Plates (4), (7) and (8) to Bracket (3) using

Capscrews (6) (5/8 UNF x 1).

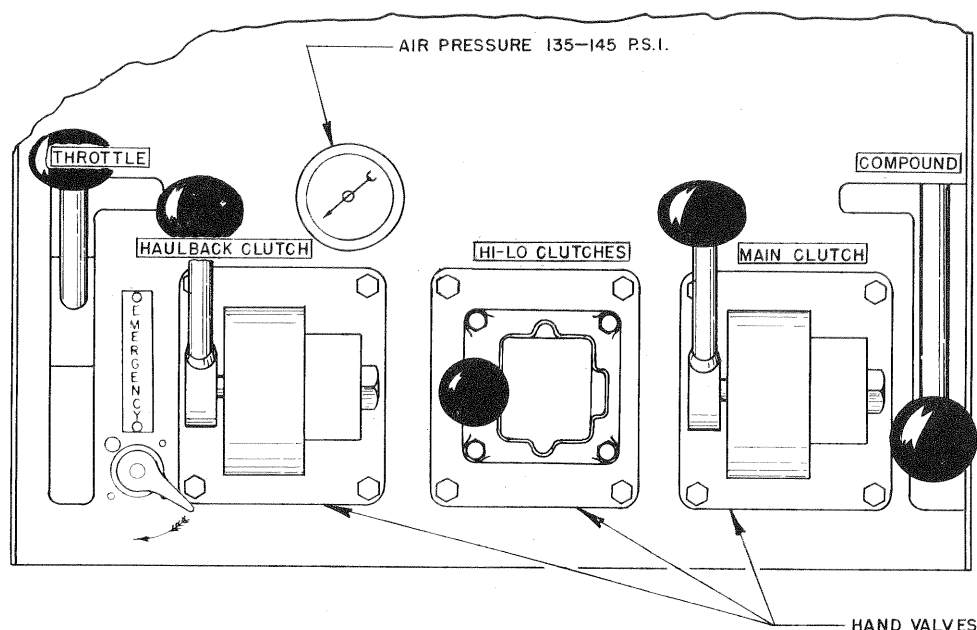
6. Tack weld plates in place on Yarder, remove Bracket (3) and complete welding.
7. Remount Bracket (3) and tighten all Capscrews (6).
8. Mount Fairlead (1) using Capscrews (2) (3/4 UNF x 2).
9. Replace Cap "B".

OPERATING INSTRUCTIONS

1. Place all Hyster hand valves in neutral, close air tank valves, and start tractor engine.
2. Engage tractor master clutch and allow five minutes to fill air tanks and manifold to 135–145 P.S.I. pres-

sure. If minimum pressure occurs (120 P.S.I.) open throttle to build pressure.

3. NOTE: Do not disengage the tractor master clutch while operating the Yarder.



TO OPERATE:

1. Place compound lever in position desired: Push forward for low speed, pull back for high speed.
2. Place Hi-Lo Lever in position desired: Push forward for low, pull back for high.
3. Engage main, haulback or strawdrum lever. NOTE: These levers may be engaged before Hi-Lo Lever if desired.

MAIN AND HAULBACK BRAKES:

1. Push down on brake pedal until spring engages, to lock brake. Push on top part of spring to release.
2. If main or haulback brake fails, turn emergency brake lever. This will lock both brakes. Repair damage to regular brake air line before continuing operation. After repairs, turn back emergency brake lever.

When Leaving the Yarder Over Night with Rigging Suspended:

1. Push Hyster brake pedals until springs engage.
2. Set mechanical locks by turning handles clockwise until they lock.
3. Open drain cocks on all three air tanks.

NOTE: When starting new shift close drain cocks and fill air tanks to operating pressure before releasing mechanical brake locks. To release locks, turn handles counter clockwise.

STRAWDRUM BRAKE:

1. Press pedal and tip to engage ratchet teeth and lock in any position.

SERVICING INSTRUCTIONS

TROUBLESHOOTING CHECKS:

If the brakes or clutches do not operate properly, check the following:

The Main and Haulback Clutches and Brakes are air controlled.

1. Air pressure gauge should register 135–145 P.S.I.
If pressure will not build up:
 - a. See if tank drain valves are closed.
 - b. See if compressor belts are too tight or too loose.
 - c. See if Governor is seating and compressors pumping.
2. See that Night Latches are fully released.
3. See that emergency brake Hand Valve is open.
4. Follow the respective air line for leaks.
5. Check brake bands for adjustment and wear.

The Strawdrum Clutch is Hydraulically actuated.

1. Check the Master Cylinder fluid level and action (BLIP).
2. Check oil line for leaks.
3. Check clutch cylinder for leaks.
4. Check clutch band for adjustment and wear.

Throttle Control, Compound Shift and Strawdrum brake are mechanically actuated.

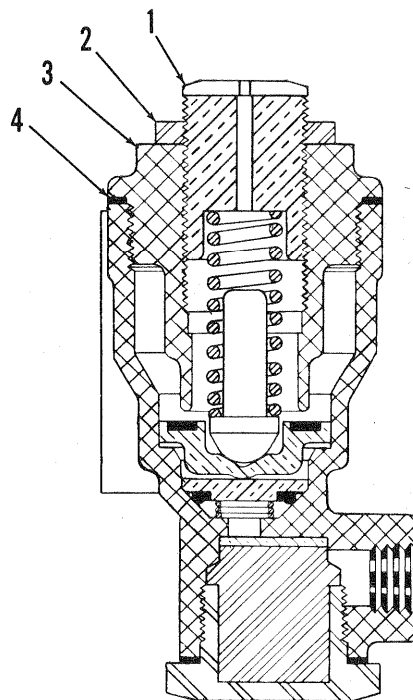
1. Check to see that levers and linkage are lubricated, and operating freely.
2. Check linkage for proper adjustment.

COMPRESSOR BELT ADJUSTMENT

1. Loosen four setscrews and move compressors to obtain proper belt tension (approximately 1/2" deflection).

AIR PRESSURE ADJUSTMENT

Adjustment of the air system is controlled by the governor assembly shown below (Hyster No. 124367).



The air system is set to a maximum of 145 P.S.I. with a 15 P.S.I. minimum range. Adjust as follows:

1. Regulate maximum pressure by loosening lock nut (2) and turning adjusting screw (1) to the right to increase and to the left to decrease.
2. Adjust range by removing exhaust valve housing (3) and adding shims (4) to decrease range and removing shims to increase.
3. Do not set the range closer than 15 P.S.I. as a Cycling condition may occur.

FOOT VALVES

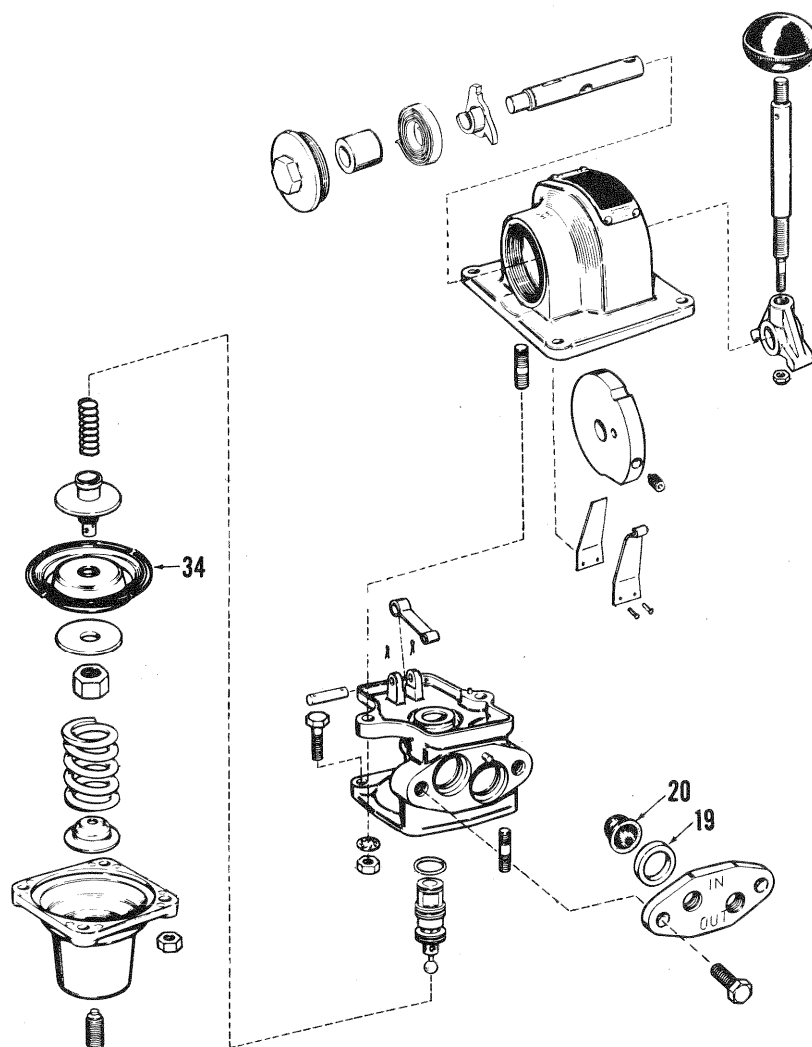
All wearing parts may be serviced with a repair cartridge.
No lines need be disconnected.

HAND VALVE MAINTENANCE

1. Periodically dismantle the valve for cleaning, inspection and lubrication.

2. Wash all metal parts with Kerosene or suitable solvent.
3. Wash all rubber parts with soap and water (replace seal rings with new parts).
4. Dry and inspect all parts for wear, cracks, etc.

HAND VALVE NO. 132306



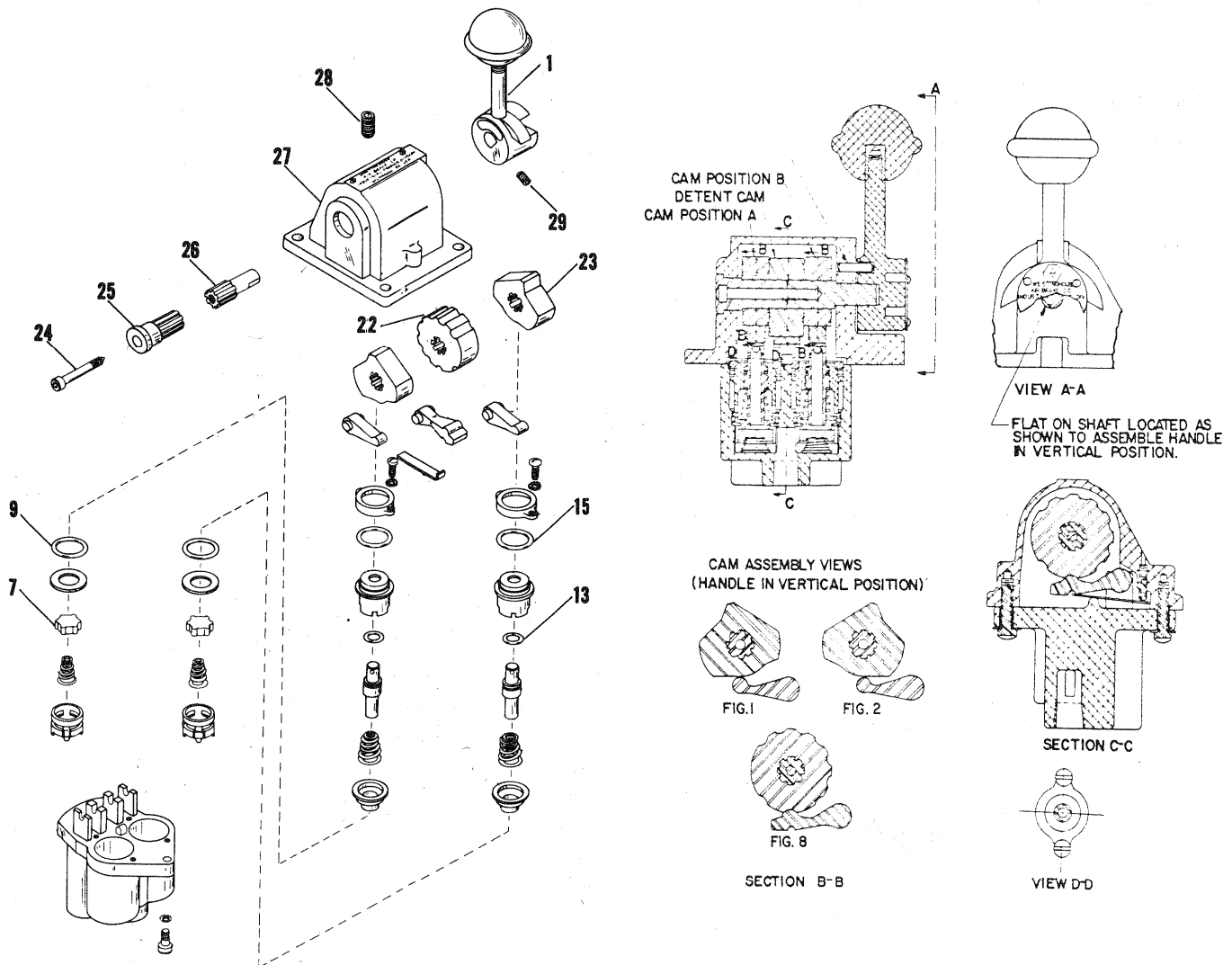
SERVICING:

1. Check diaphragm (34) carefully for cracks, broken sealing beads, and other defects.
2. Remove and clean strainers (20).
3. Inspect strainer gaskets (19) for defects.
4. Replace rubber packing rings with new parts, also any other parts that show excessive wear.

RE-ASSEMBLY:

1. Lubricate all friction surfaces of moving parts and rubber packing rings with Lubriplate or equivalent.

HAND VALVE NO. 88642A

**ADJUSTMENT:**

1. Adjust detent force on detent cam (22) by the set screw (28). Turn the screw down to increase force, turn out to decrease force.

SERVICING:

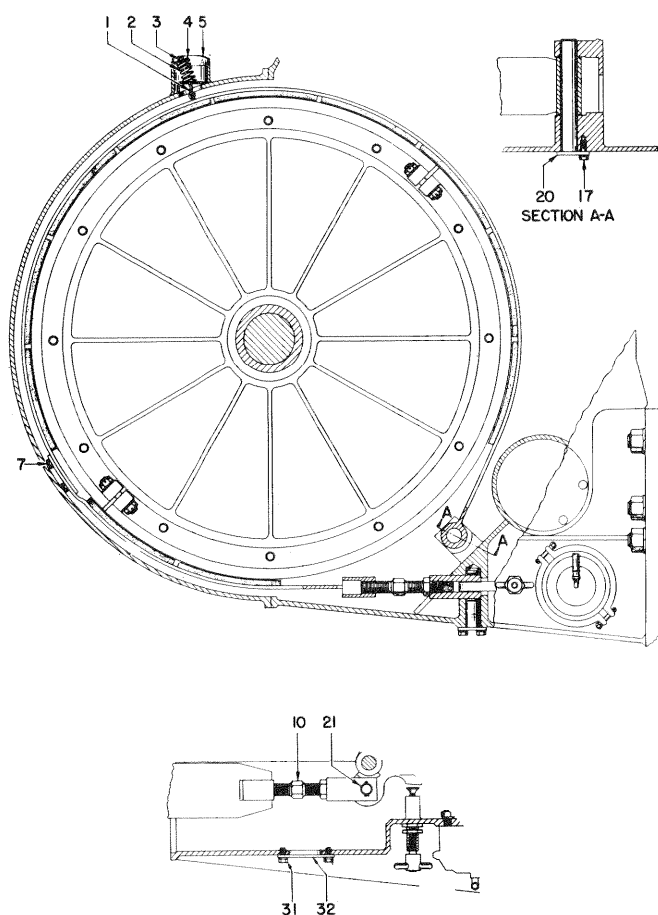
1. Examine the inlet valves (7) and replace if cracked or worn.
2. Replace packing rings (9), (13) and (15) with new parts.
3. Examine other parts and replace if there is excessive wear.
4. Lubricate all friction surfaces, including new packing rings, with LUBRIPLATE or equivalent.

RE-ASSEMBLY

It is important that cams (23) be assembled correctly.

1. Assemble the handle shaft (26) to the cam shaft (25) by means of the screw (24).
2. Insert this assembly partially through the cover (27) with the handle shaft (26) in position shown in view A-A.
3. Slide first cam (23) (position "A") over the splines on the cam shaft as shown in section B-B.
4. Install detent cam (22) as shown in view C-C.
5. Install second cam (23) (position "B") as shown in section B-B.
6. Place the handle assembly (1) on the shaft in a vertical position. A flat on the hole in the handle should correspond with the flat on the handle shaft (26).
7. Secure the handle with the set screw (29).
8. Assemble the cover assembly to the body.
9. Test for correct operation.

MAIN DRUM BRAKE ADJUSTMENT:



1. Remove cover (32), and adjusting link (10) may be tightened as lining wears.

BRAKE BAND REMOVAL:

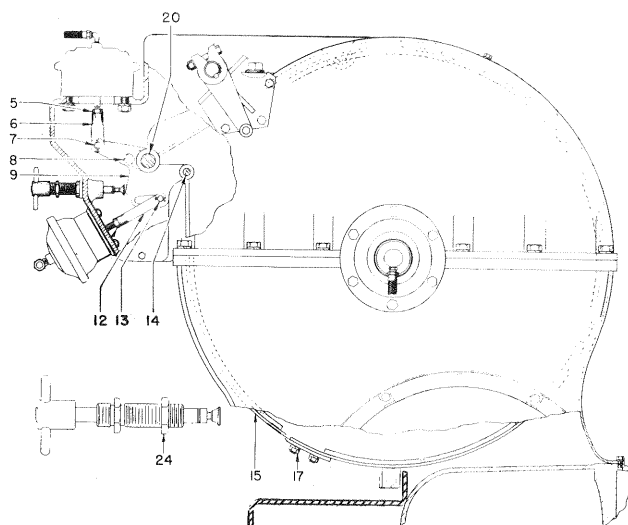
1. Disconnect support linkage items 1, 2, 3, 4 and 5. Remove capscrew (17) and anchor pin (20).
2. Remove cover (32), cotter and rod end pin (21), and remove adjusting link (10) from brake band.
3. Revolve band until it can be pulled over drum and remove locknuts (7) holding two parts of band.

AIR CHAMBER ROD END ADJUSTMENT:

1. Remove pin, loosen jam nut and adjust rod end (29) to 4-5/16" dimension as shown.

No adjustment of the night lock is required for the Main Drum brake except when replacing night lock with new parts. Follow instructions for Haulback brake night lock.

HAULBACK DRUM BRAKE ADJUSTMENT



1. Remove rod end pin (7), loosen jam nut (5) and turn rod end (6).
2. Tighten jam nut (5).

BRAKE BAND REMOVAL:

1. Remove capscrew (8) and pins (14) and (20).
2. Revolve band until it can be pulled over drum and remove locknuts (17) holding two parts of band.

ROD END ADJUSTMENT

To set emergency chamber rod end, (12) correctly, main chamber rod end (6) must first be connected to crank (9) and brake band (15) be in released position.

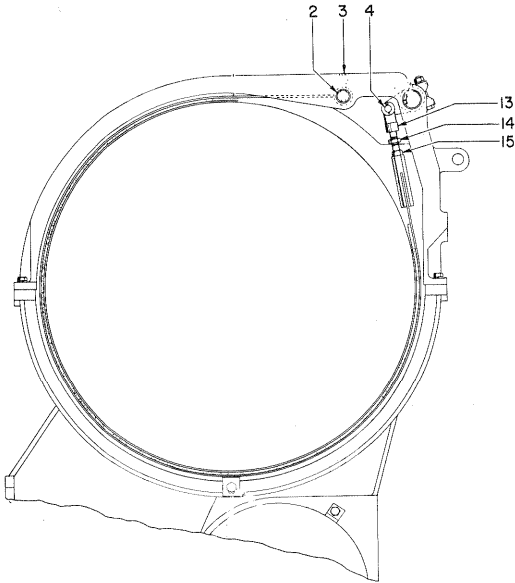
1. Adjust rod end (12) so that rod end pin (13) fits freely and just clears end of slot.
2. No other adjustment of the rod end need ever be made, even if rod end (6) is later adjusted to get full wear of brake band lining.

NIGHT LOCK ADJUSTMENT

To compensate for Haulback Brake lining wear, or when replacing with new parts, reset night lock as follows:

With pedal in brake release position, loosen lock nut (24) on night lock and turn unit in until it contacts crank, then retighten lock nut.

STRAWDRUM BRAKE ADJUSTMENT



1. Loosen jam nut (15) and turn adjusting link (14) as required. After adjustment be sure to tighten jam nut (15).

BRAKE BAND REMOVAL

1. Remove cap screw (3), pin (2) and cotter and rod end pin (4) on rod end (13).
2. Slide band over drum, spread band and remove.

BRAKE BAND CLEARANCE

With brake fully released, there should be approximately $1/16''$ clearance for all bands.

CLUTCHES

No adjustment of air clutches is required. When a clutch no longer holds, new driving plates are required. The driving plates are easily replaced without complete disassembly.

HIGH AND LOW SPEED CLUTCHES

1. Disconnect air lines to roto couplings and remove guard covering clutch and air compressors.
2. Unscrew the roto coupling by the hex section provided on the inside of the coupling.
3. Disconnect the air line between the clutch and shaft and loosen set screw from locknut (ring) (Fig. 1).
4. Unscrew locknut (ring) and remove clutch front plate (Fig. 2).
5. Slide the driving and driven plates from the shaft and spider.
6. The low speed clutch is disassembled in the same manner (Fig. 3).
7. At reassembly, be sure to install hoses the same as they were before disassembly.

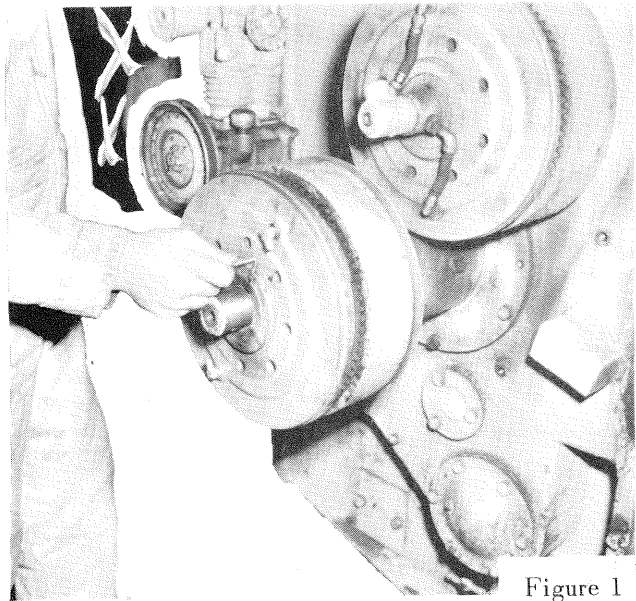


Figure 1

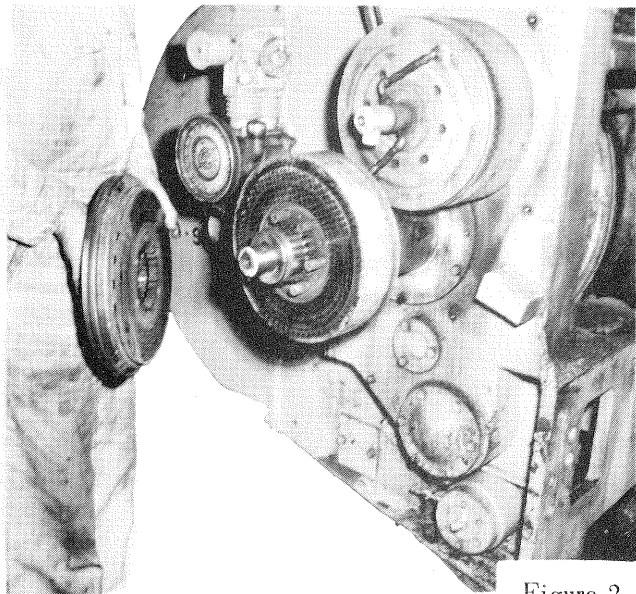


Figure 2



Figure 3

MAIN DRUM CLUTCH

The main drum clutch is disassembled basically the same as the high-low. However, the clutch hub is retained on the shaft with a keeper instead of a lock ring. (Fig. 4).

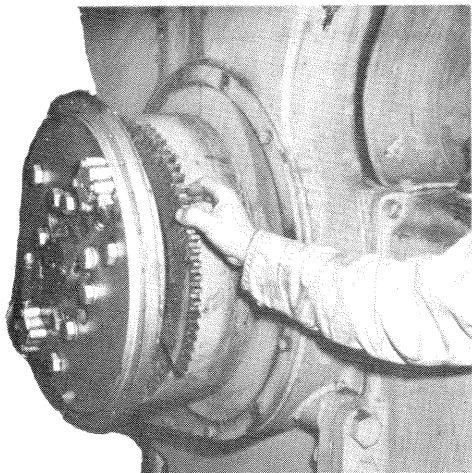


Figure 4

HAULBACK CLUTCH

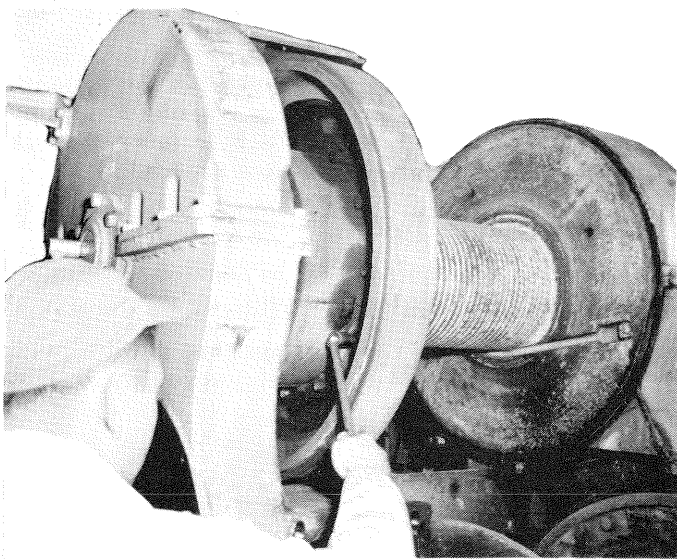


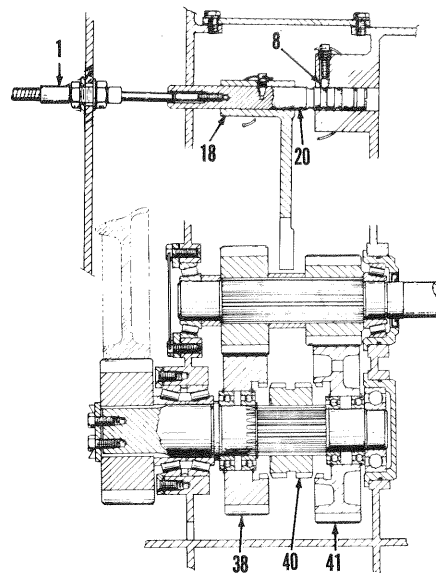
Figure 5

The haulback clutch is identical to the main drum clutch but driving plate removal is done by removing the clutch spider. The spider is in three pieces which may be removed separately.

1. Remove one section of the spider (Fig. 5) and replace the three segments.
2. Revolve the drum and remove the next section until all three sections have been replaced.

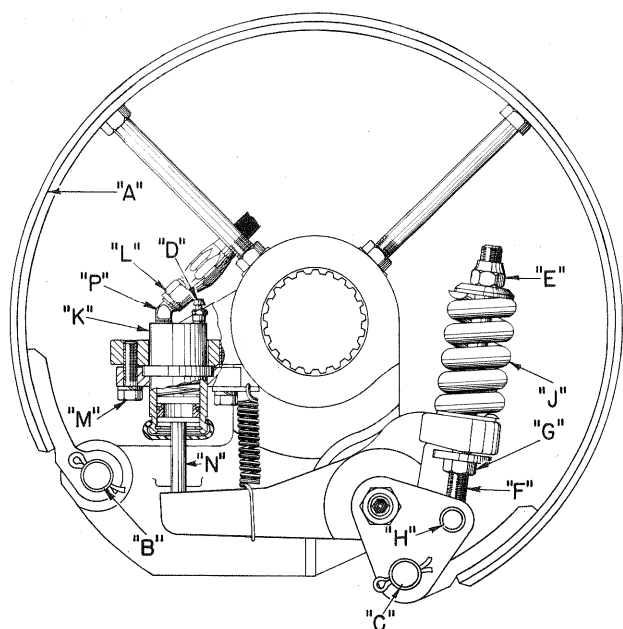
After servicing clutches, be sure all air lines are tight.

COMPOUND SHIFTER ADJUSTMENT



1. Move the shaft (20) so that the ball (8) is in the center groove of shaft (20). This will place the dental clutch (40) in neutral position between gears (38) and (41).
2. Attach push-pull cable (1) to shifter shaft (20).
3. Push compound shifter handle lever all the way forward and mark location, then all the way back, and mark location. Half way between will be neutral.
4. With handle lever in neutral position, adjust cable (1) and attach to handle lever.

STRAWDRUM HYDRAULIC CLUTCH



To Remove Air From System:

1. Remove clutch Band "A" by removing cotters and pulling pins "B" and "C". If this is not done, hydraulic fluid may spill on the band and the lining may then have to be replaced.
2. Fill master cylinder with genuine Lockheed (*or equal) brake fluid and keep at least 1/4 full during bleeding operation. (Be careful that no dirt enters the system.)
3. Loosen the bleeder screw "D" one full turn and attach a rubber bleeder hose, allowing the end of the hose to rest in a glass jar partly filled with brake fluid.

4. Pull handle lever slowly, circulating brake fluid through the system and forcing out the air. Return handle lever to forward position slowly. Continue to pump, as directed, until no more air bubbles appear in the jar. NOTE: Keep end of hose below surface.
5. When bubbles cease to appear, tighten bleeder screw and fill master cylinder with brake fluid. Clutch is now ready for operation.

*If any mineral base oil has been used, rubber parts may swell and become inoperative. It will then be necessary to drain all lines and cylinders and flush with alcohol. New parts consisting of clutch cylinder repair kit and master cylinder repair kit must be installed. This is the only satisfactory way to repair a hydraulic system which has become fouled by a mineral-base oil. Always dip cylinder repair parts in brake fluid before assembly. Never install when dry.

Clean clutch surface and reinstall Band "A".

To Adjust The Clutch:

Do not adjust tighter than required.

1. Disengage clutch and loosen nut "E" on link "F".
2. Turn nut "G" which is part of link "F" into Trunion Nut "H".
3. Tighten nut "E" snugly against spring. Do not tighten excessively.

NOTE: The spring "J" is pre-loaded at the factory and cannot be adjusted in the field. If a spring breaks, order a complete spring assembly which includes the center core and will come to you properly pre-loaded.

To Remove Slave Cylinder:

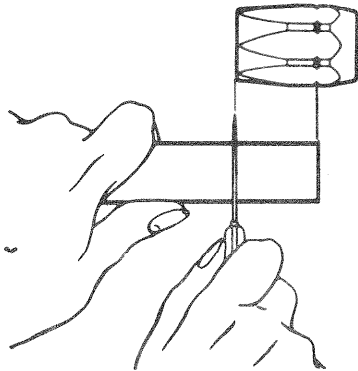
1. Remove Clutch Band "A" as directed above.
2. Disconnect hose fitting "L".
3. Remove Capscrews "M" and push rod "N" and remove cylinder. If necessary, remove fitting "P" and bleeder screw "D".

CAUTION: Before replacing clutch band, be sure clutch surface is clean and entirely free of hydraulic fluid that may have been spilled.

HOSE FITTINGS INSTALLATION

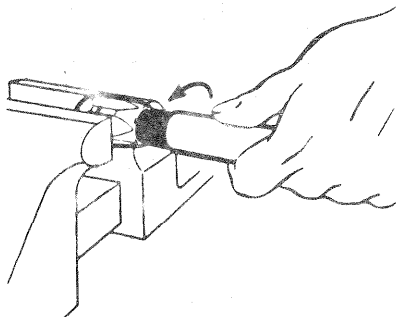
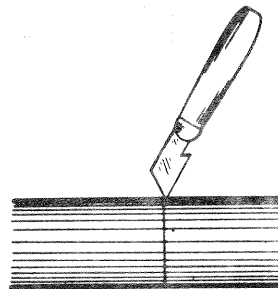
Hose - Double Wire Braid - I. D.
 1/2"
 3/4"
 1"

O.D.
 .937 to 1.000"
 1.218" to 1.281"
 1.515" to 1.609"



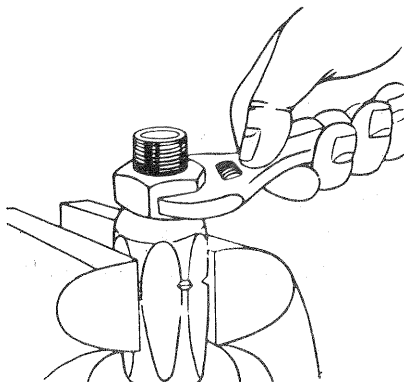
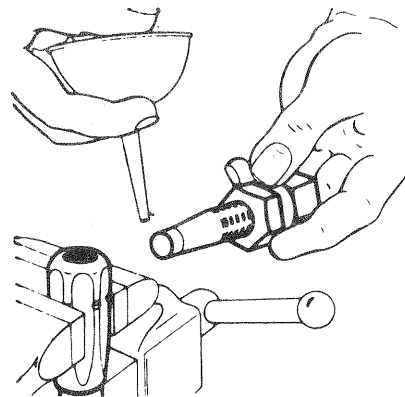
Step 1. Cut the hose to the length required. Locate the stripping point by putting the hose end next to the fitting socket as shown in Figure 1.

Step 2. To strip the hose, cut around down to the wire braid. Slit lengthwise, raise the flap and remove from the hose. Clean the wire with a steel brush or wire wheel. Be careful not to fray the wire braid.



Step 3. Put the socket in a vise and screw hose into socket counter-clockwise until it bottoms.

Step 4. Oil nipple threads and inside of hose liberally.

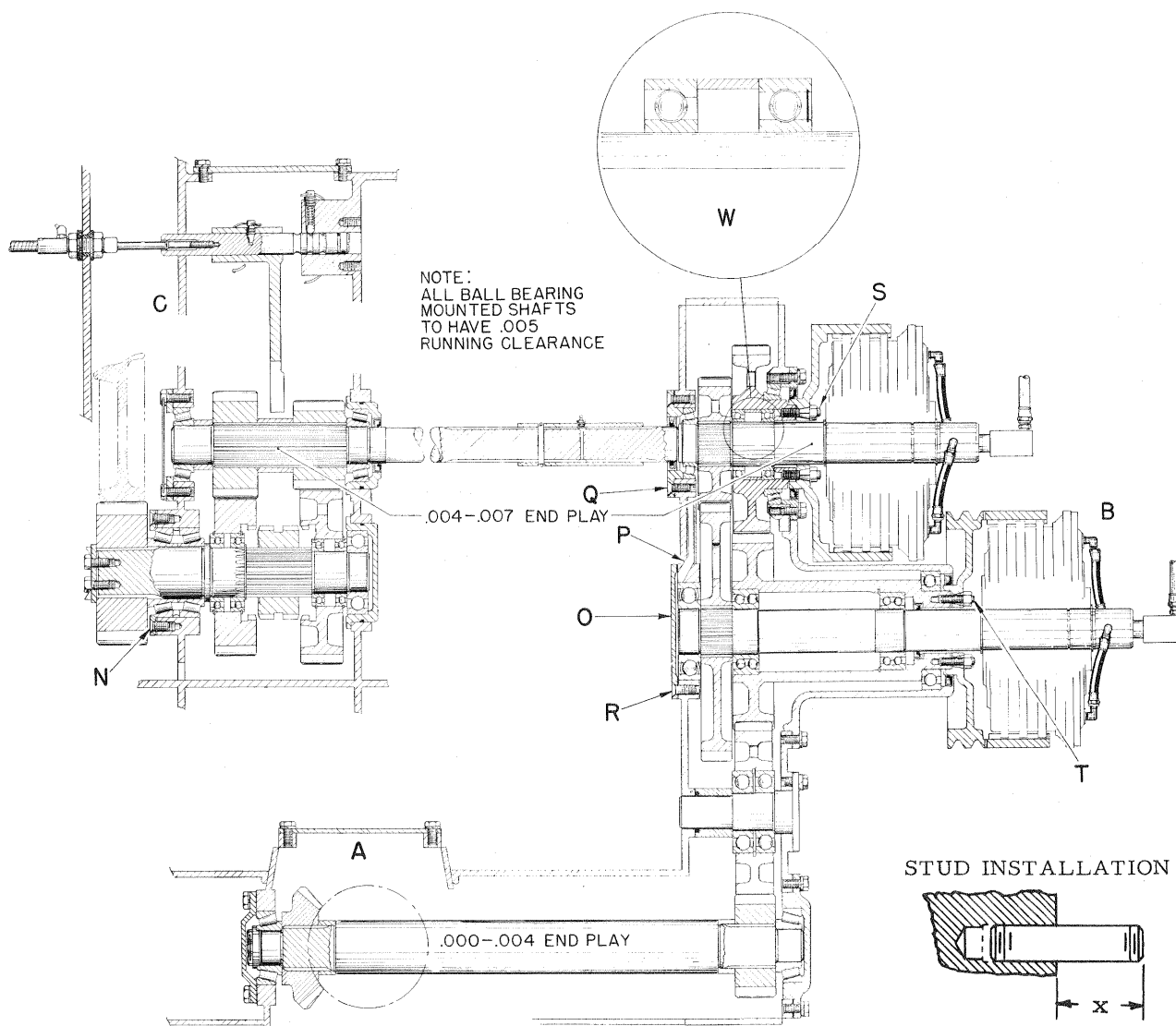


Step 5. Screw nipple into socket and hose. Leave 1/32" to 1/16" clearance for takeup.

GEAR TRAIN AND DRUM ARRANGEMENT

Disassembly of the Yarder components can be accomplished by carefully following the arrangement illustrations.

At reassembly special attention should be given to see that bearings are installed as illustrated and all adjustment notes followed. Note especially, enlarged view of the low-speed clutch shaft and bearing installation.



A. Power Take-Off Group for Direct Drive Tractor Transmissions:

Bevel Gear .005-.007 backlash at zero end play.

For Torque Converter Tractor Transmissions:

Bevel Gear .008-.011 backlash at zero end play.

For P.T.O. Shaft and Bevel Gear on end of shaft:
Preload bearings 6 to 8 in. lb. torque.

2. Slot in retainer "O" and in gasket must align with hole "P" in hub.

3. Stake flathead capscrows "N", "Q" and "R" in place.

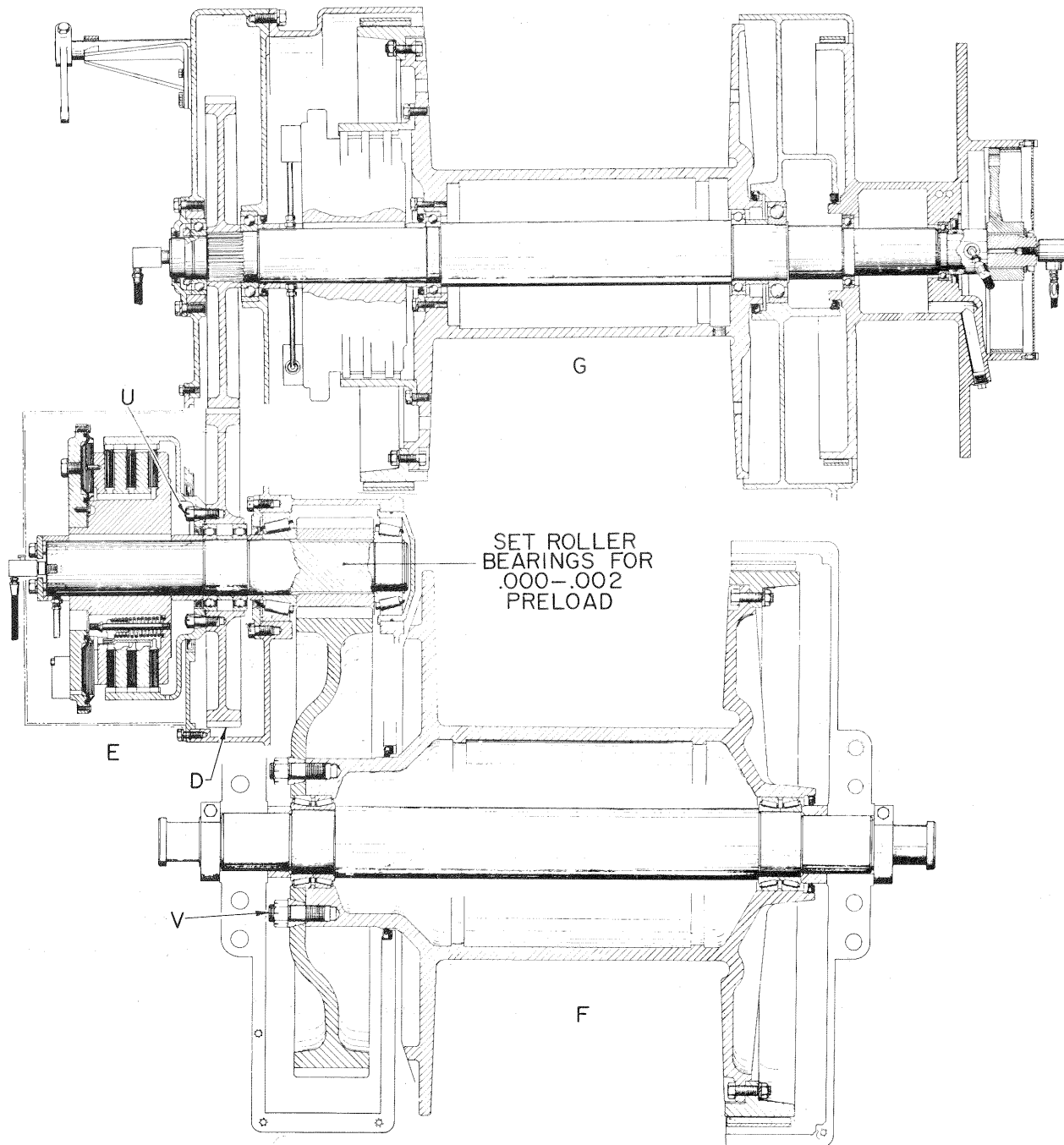
4. To install studs "S" and "T",
dimension "X" = $1\frac{1}{4} + 0 - \frac{1}{8}$.
Torque 44 lb. ft. lubricated or 68 lb. ft. dry.

B. High-Speed and Low-Speed Clutch Shafts:

1. Bearings at "W" must be installed as shown. Bearing with seal must be installed with seal facing clutch. Opposite bearing is a one way thrust bearing and must be installed as shown.

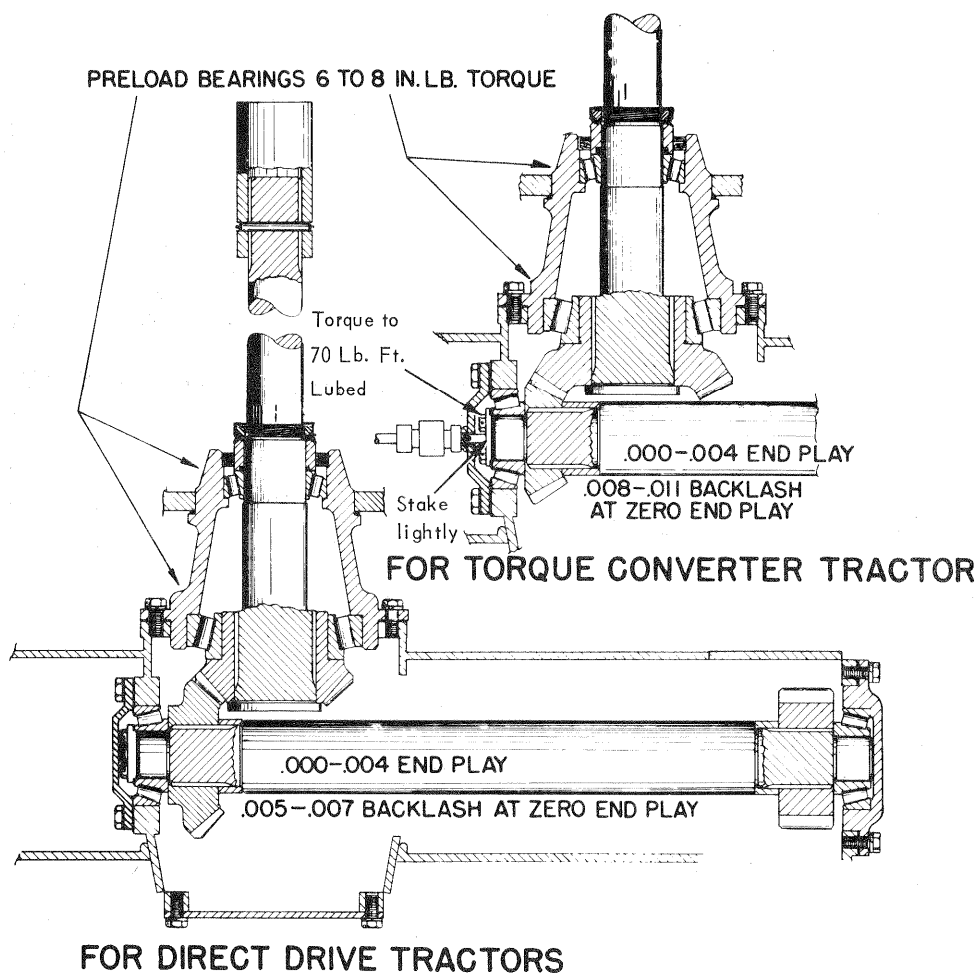
C. Compound Group

GEAR TRAIN AND DRUM ARRANGEMENT

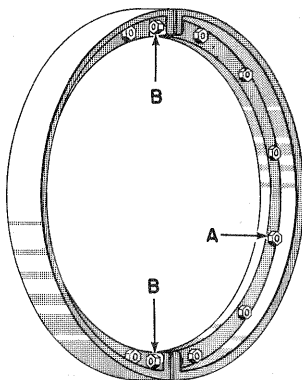


- D. Gear — Compound Group to Main Drum Clutch Drive.
- E. Main Drum Clutch Drive: To install studs “U”, dimension “X” = $1\frac{7}{8} + 0 - \frac{1}{8}$.
275–300 ft. lb. torque on nuts.
- F. Main Drum Group: To install studs “V”, dimension “X” = $2\frac{3}{4} + 0 - \frac{1}{8}$.
Tighten nuts to 650–700 ft. lb. dry.
- G. Haulback and Strawdrum Group.

P. T. O. SHAFT

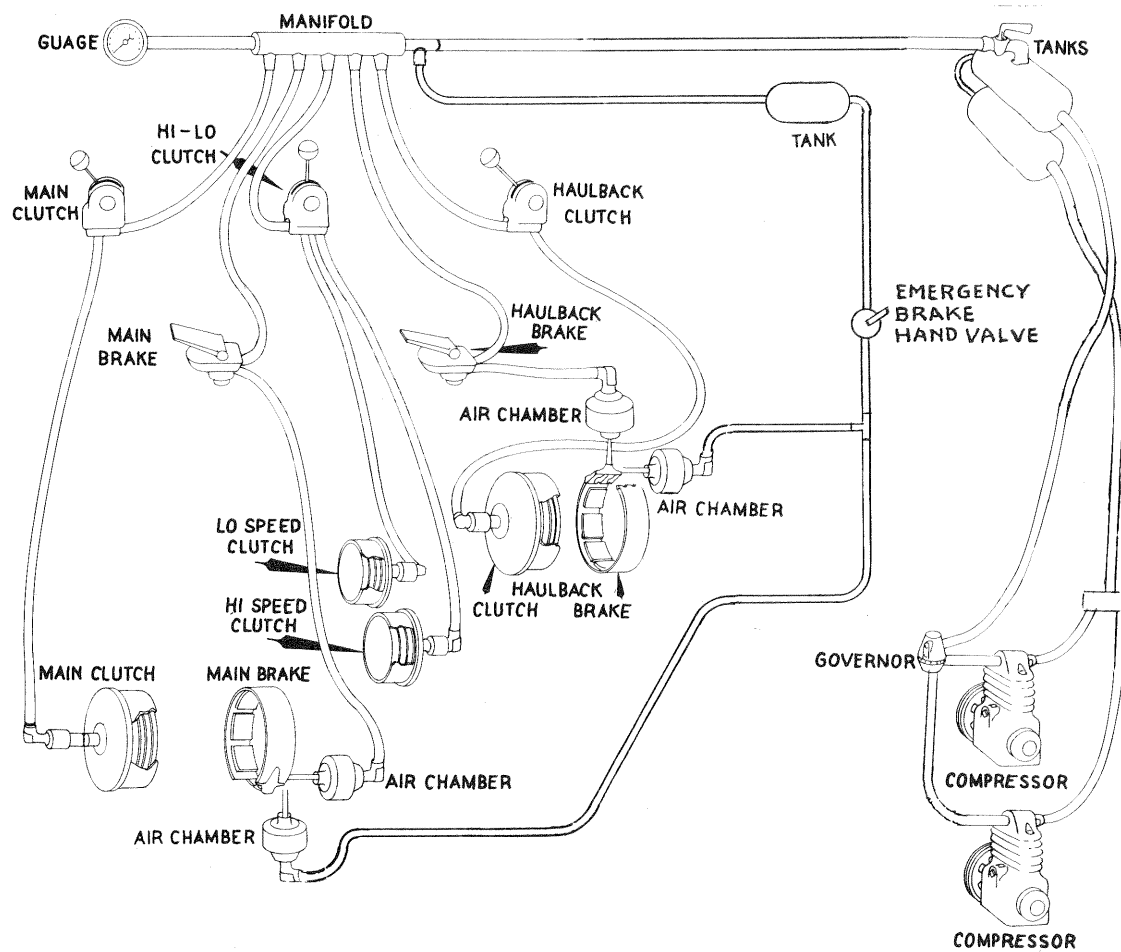


Replacing Brake Flange for Main or Haulback Drum:

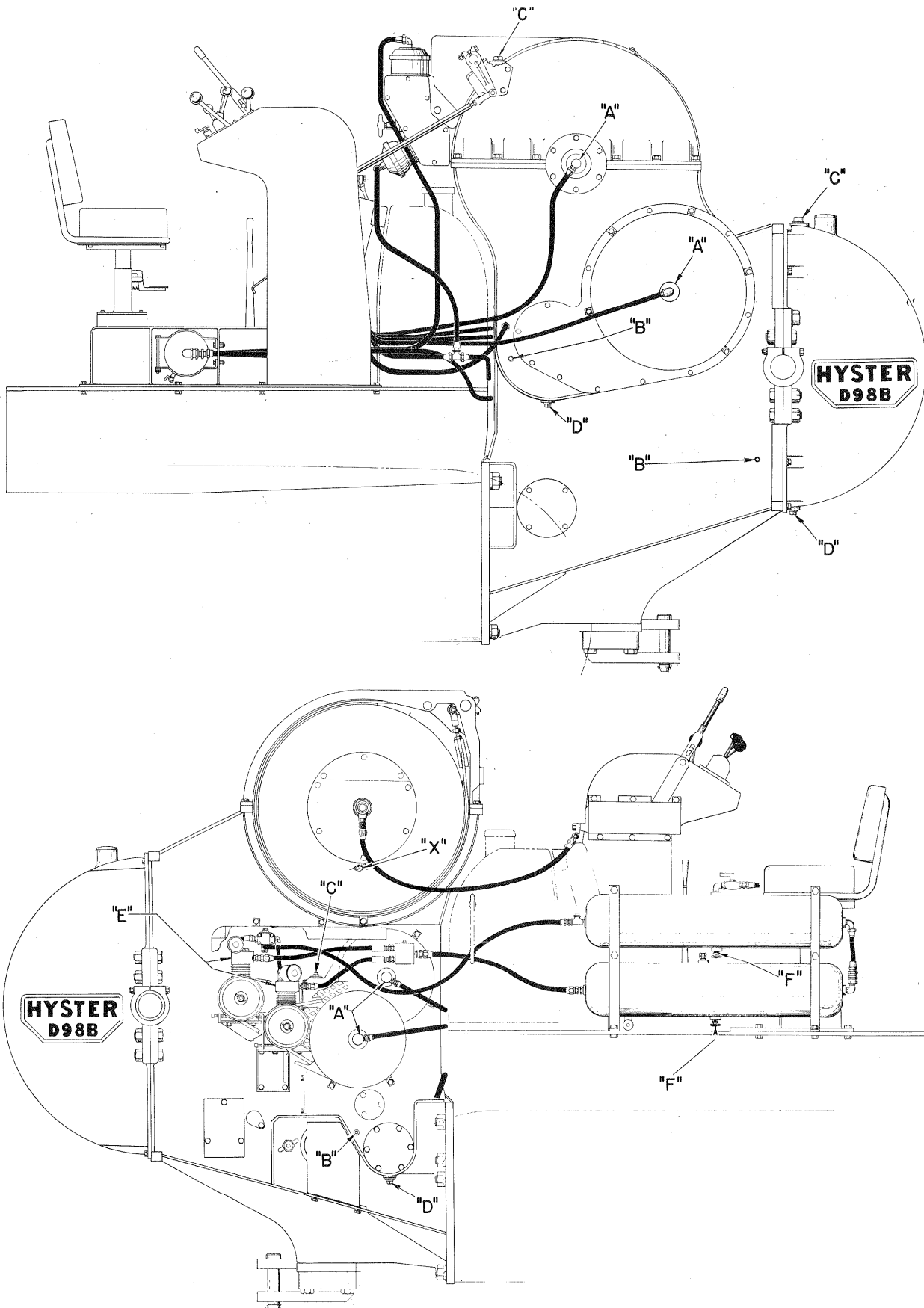


1. Install capscrews "A" but do not tighten nuts.
2. Tighten slotted nuts "B" to a minimum of 100 Ft. Lb. Torque dry.
3. Tighten twelve capscrews "A" securely.

AIR CIRCUIT



LUBRICATION CHART



LUBRICATION

EVERY EIGHT HOURS OR DAILY

ROTO COUPLINGS:

Lubricate with lightweight machine oil at "A" (Four Places)

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.

COMPRESSORS:

Check oil level daily. Add SAE 30 oil if required.

AIR TANKS AND PRESSURE:

Check for air leaks in the system by getting maximum pressure in the air tanks, then cutting the tractor engine and watching the air pressure gauge on the control panel. If it falls fairly rapidly the leak should be promptly found and repaired. At the end of each shift, open valves "F" and drain water from each tank, including the emergency tank.

EVERY 50 HOURS OR WEEKLY

COMPRESSOR AIR CLEANERS:

Wash air cleaner packing with cleaning fluid. Clean weekly during dusty conditions and monthly during normal conditions.

YARDER OIL COMPARTMENTS:

Check oil in all compartments; add oil if necessary. "B" are level plugs, "C" filler plugs and "D" drain plugs. "X" serves all three purposes. Turn drum with plug "X" at top to fill, 45° below center for level check, and at bottom to drain. If Yarder is new, drain all compartments, flush and refill with new oil.

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

CROSS SHAFT COUPLING:

Lubricate with pressure gun grease.

EVERY 400 HOURS OR EIGHT WEEKS

COMPRESSOR BELTS:

Check alignment and tension on "V" belt drives. The belts should be adjusted tightly enough to be sure there is no slippage under maximum load. This is done by the use of set screws in the bracket holding the compressors.

COMPRESSORS:

Drain and refill compressors "E" with SAE 30 oil.

YARDER OIL COMPARTMENTS:

Drain, flush and refill all YARDER oil compartments 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.

Approximate Capacities:

R.H. Side Transmission Case	20 Qts.
Compound and Intermediate Drive Case	20 Qts.
Main Drum Gear Case	15 Qts.
Haulback and Strawdrum	12 Qts.
Compressors (each)	1/2 Pint

After overhaul, add 8 Qts. oil to main drum barrel.

SPECIFICATIONS

DRUM SIZES:

	Main	Haulback	Straw
Barrel diameter	18"	13"	10"
Barrel length	22"	23"	8"
Flange diameter	42"	35"	32"

**CABLE
CAPACITY**

Main	Haulback	Straw
1100 ft. 1 $\frac{3}{8}$ "	4070 ft. 5 $\frac{8}{16}$ "	3440 ft. 3 $\frac{8}{16}$ "
1320 ft. 1 $\frac{1}{4}$ "	2820 ft. 3 $\frac{4}{16}$ "	4950 ft. 5 $\frac{16}{16}$ "
1640 ft. 1 $\frac{1}{8}$ "		

Allow for loose and unevenly spooled line.

Yarder performance on Caterpillar D8, Series H, Direct Drive Tractor, 235 HP (at flywheel) at 1200 RPM.

	LINE PULLS* (pounds)			LINE SPEEDS* (ft. per min.)		
	Bare	Average	Full	Bare	Average	Full
MAIN DRUM						
Low gear	95,000	60,800	44,900	82	127	173
Second	70,000	45,400	33,100	111	173	235
Third	47,500	30,500	22,400	163	254	346
Fourth	35,100	22,500	16,600	221	345	469
HAULBACK DRUM						
Low gear	25,400	14,600	10,230	302	530	759
Second	18,700	10,700	7,510	415	725	1,035
Third	12,700	7,300	5,110	608	1,064	1,520
Fourth	9,400	5,430	3,760	825	1,442	2,060
STRAW DRUM						
Low gear	33,400	22,200	10,810	234	474	713
Second	24,600	16,300	8,000	316	642	967
Third	16,700	11,070	5,400	466	946	1,425
Fourth	12,300	8,120	3,940	634	1,284	1,935

WEIGHT, approximate (without cable and optional straw-line fairlead)

NET 11,500 lbs.

STRAWLINE FAIRLEAD. Optional 300 lbs.

TACHOMETER. Optional 9 lbs.

*Line pulls and speeds based on 1 $\frac{1}{4}$ " mainline, 3 $\frac{1}{4}$ " haulback line and 3 $\frac{1}{8}$ " strawline.

Yarder will develop line pulls beyond breaking strength of any practical size cable when mounted on a torque converter drive tractor. Cable size should conform to all safety regulations applicable to job.

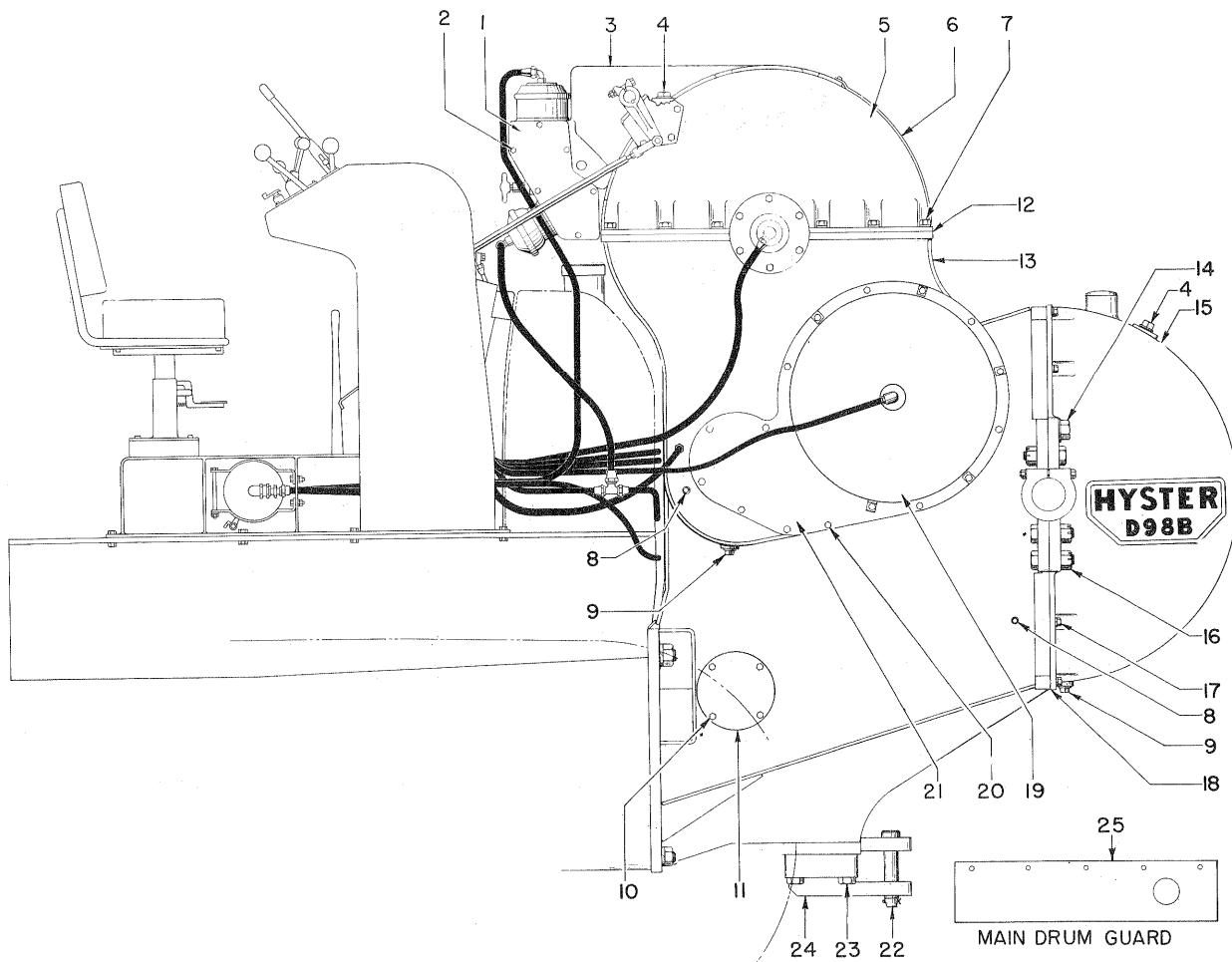
Section B

FRAMES, COVERS AND MOUNTING STUDS

INDEX

COVERS, L.H. SIDE	B1
COVERS, R.H. SIDE	B2
MOUNTING STUDS, D8 TRACTORS	B3
MOUNTING STUDS, D9 TRACTORS	B4
SEAT AND PEDESTAL ASSEMBLY	B5

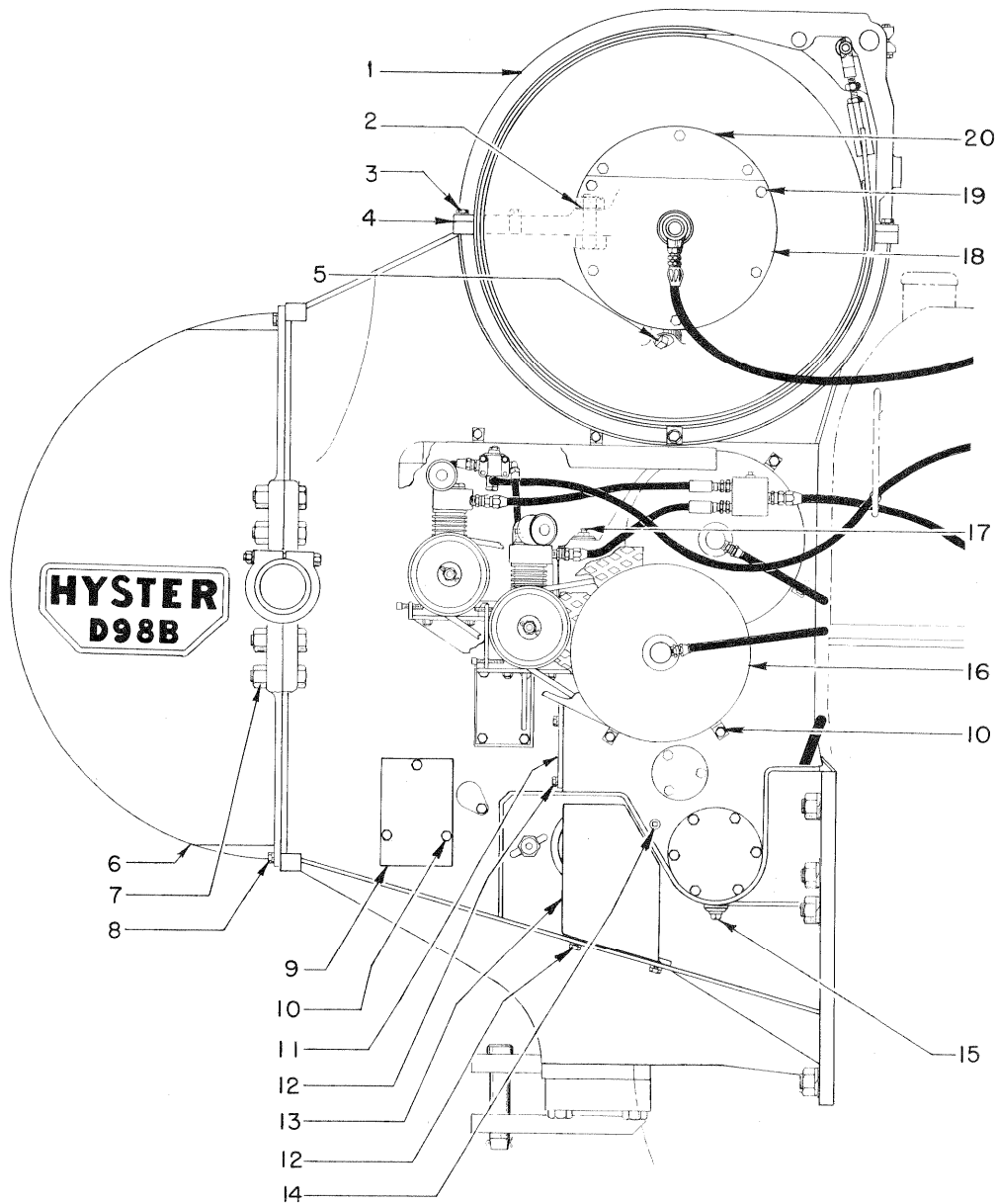
COVERS-LEFT HAND SIDE



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	96340	Plate-Cover	1
2	16696	Capscrew-3/8 UNF x 7/8	6
	15156	Lockwasher-3/8	6
3	96519	Cover-L.H., Haulback Brake	1
	16800	Capscrew-3/4 UNF x 2	4
	15162	Lockwasher-3/4	4
4	32379	Pipe Plug-Vent	2
5	96741W	Plate-Cover	1
6	127149	Plate-Cover	1
7	16831	Capscrew-3/4 UNF x 1-3/4	16
	15162	Lockwasher-3/4	16
8	15303	Pipe Plug-1/2	2
9	35504	Pipe Plug-Magnetic 1"	2
10	16820	Capscrew-1/2 UNF x 1	10
	15158	Lockwasher-1/2	10
11	95174	Plate-Cover	1
12	95205	Gasket	2
13	127055	Housing and Frame	1
14	16633	Capscrew-1-1/4 UNF x 3	1
	15168	Lockwasher-1-1/4	1
15	127153	Cover-L.H.	1
16	16641	Capscrew-1-1/4 UNF x 4	4
	67649	Nut-Lock, 1-1/4 UNF	4

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
17	12479	Capscrew-5/8 UNF x 1-3/4	6
	15160	Lockwasher-5/8	6
18	95238	Gasket-Top, L.H.	1
	95239	Gasket-Bottom, L.H.	1
19	95207W	Cover-Main Clutch	1
20	37562	Capscrew-1/2 UNF x 1-1/4	16
	15158	Lockwasher-1/2	16
21	127051	Cover	1
	127144	Gasket	1
22	94369	Pin-Drawbar	1
	15273	Cotter-3/8 x 2-1/2	1
23	16635	Capscrew-1-1/4 UNF x 6-1/2	4
	15018	Nut-1-1/4 UNF	4
	15168	Lockwasher-1 1/4	4
24	95249W	Drawbar	1
25	95241	Plate-Guard	1
	16820	Capscrew-1/2 UNF x 1	5
	15158	Lockwasher-1/2	5
		Not Illustrated	
	95386	Bracket-Seat(Angle 2 1/2 x 2 1/2 x 9 1/4)	1
		(Not required for D9 Tractors S.N. 66A)	

COVERS—RIGHT HAND SIDE



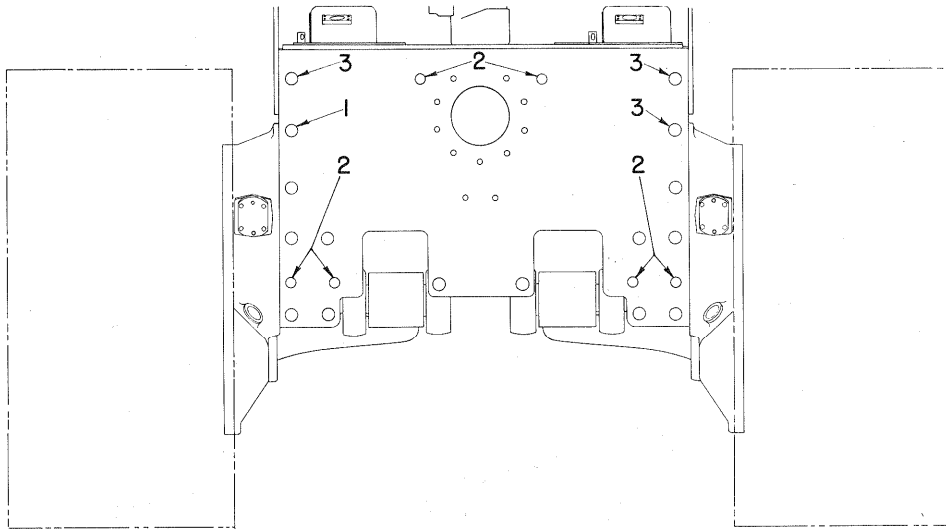
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	96214	Cover	1
2	16596	Capscrew— $1\frac{1}{4}$ UNF x $3\frac{1}{2}$	2
3	67649	Locknut— $1\frac{1}{4}$ UNF	2
3	16807	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{2}$	6
	15158	Lockwasher— $\frac{1}{2}$	6
4	95213	Gasket—R.H.	2
5	15304	Pipe Plug— $\frac{3}{4}$	1
6	127152	Cover—R.H.	1
7	16641	Capscrew— $1\frac{1}{4}$ UNF x 4	4
7	67649	Locknut— $1\frac{1}{4}$ UNF	4
8	12479	Capscrew— $\frac{5}{8}$ UNF x $1\frac{1}{4}$	2
	15160	Lockwasher— $\frac{5}{8}$	2
9	95753	Plate—Cover	1
10	16820	Capscrew— $\frac{1}{2}$ UNF x 1	9
	15158	Lockwasher— $\frac{1}{2}$	9

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
11	95214W	Cover	1
	95216	Gasket	1
12	37562	Capscrew— $\frac{1}{2}$ UNF x $1\frac{1}{4}$	10
	15158	Lockwasher— $\frac{1}{2}$	10
13	129559	Plate—Cover.	1
14	15303	Pipe Plug— $\frac{1}{2}$	1
15	35504	Pipe Plug—Magnetic, 1"	1
16	95926W	Guard—Clutch	1
17	12567	Bushing	1
	21420	Plug—Breather	1
18	96194W	Cover	1
19	16663	Capscrew— $\frac{5}{16}$ UNF x $\frac{5}{8}$	8
	15155	Lockwasher— $\frac{5}{16}$	8
20	96196	Cover	1

HYSTER COMPANY
PORTLAND, OREGON

MOUNTING STUDS

For D8 Tractors S.N. 22A, 35A, 36A, 46A, 52A, 68A

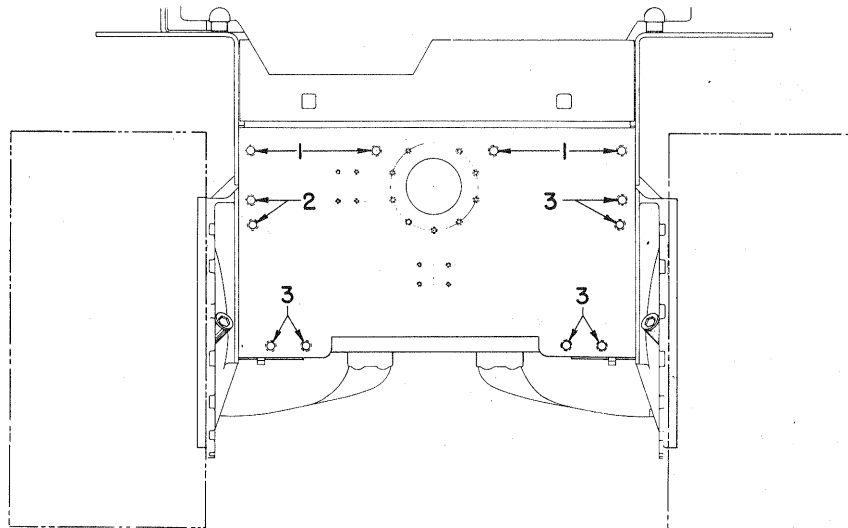


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95827	Stud-Taper Lock	1
2	95837	Stud-Taper Lock	6
	15168	Lockwasher-1¼	6
	15018	Nut-1¼ UNF	6

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
3	-----	Stud (Tractor Drawbar Studs) . .	3
	15170	Lockwasher-1½	4
	5792B	Nut-1½ UNF	4
	18000	Cork - No. 5) Not	10
	18849	Cork - No.20) Illustrated	6

MOUNTING STUDS

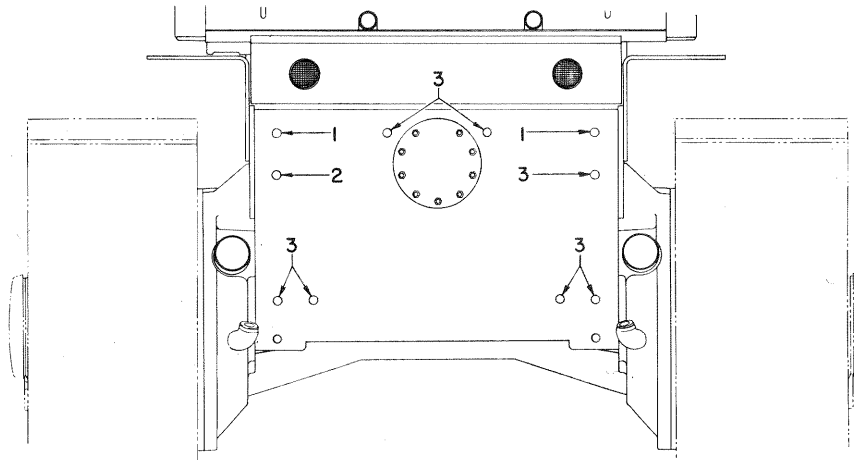
For D8 Tractors S.N. 2U7488 & UP, 13A, 14A, 15A



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	6694B	Stud	4
	15168	Lockwasher-1¼	4
	15018	Nut-Hex, 1¼ UNF	4
2	95304	Stud	2
	15168	Lockwasher-1¼	8
	15018	Nut-Hex, 1¼ UNF	8

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
3	-----	Studs Furnished with Tractor	
	18000	Cork - No. 5) Not	10
	18001	Cork - No. 17) Illustrated . . .	2

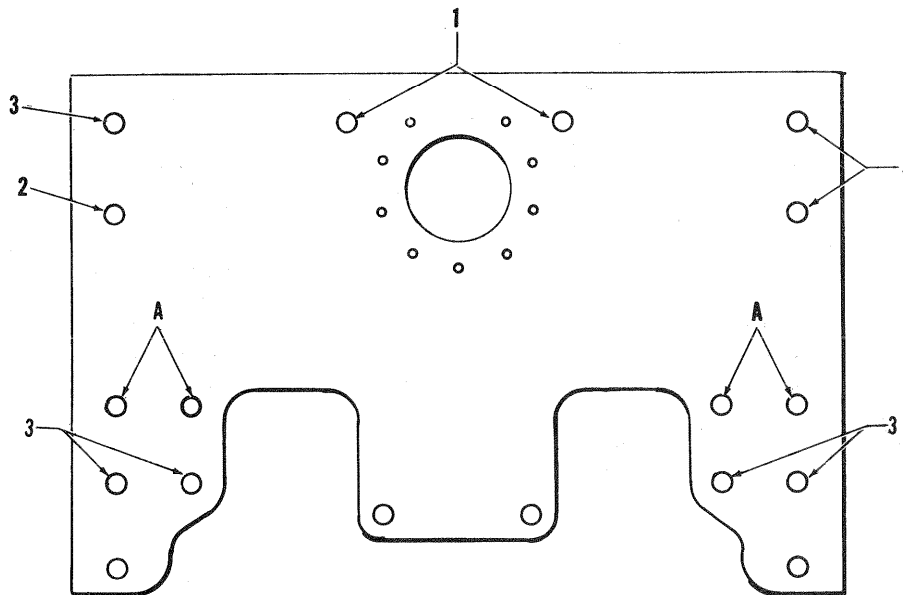
MOUNTING STUDS For D9 Tractors S.N. 18A, 19A



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	93348	Stud	2
	15170	Lockwasher-1½	2
	5792B	Nut-1½ UNF	2
2	95305	Stud	1
	15168	Lockwasher-1¼	8
	15018	Nut-1¼ UNF	8

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
3	-----	Stud-Furnished with Tractor . .	7
	18000	Cork - No. 5) Not	10
	18001	Cork - No. 17) Illustrated . . .	2

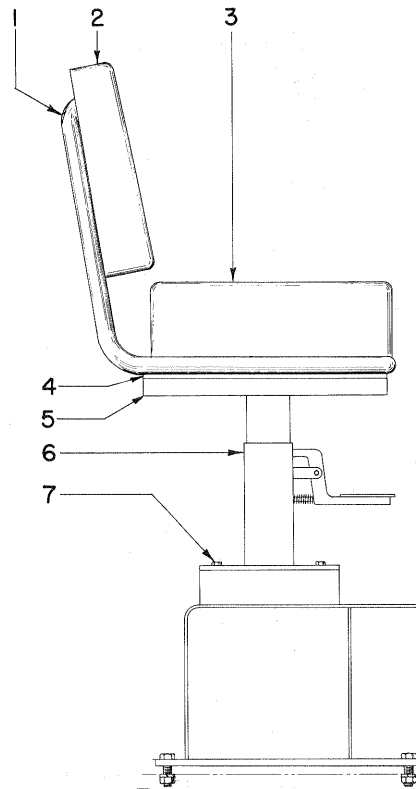
MOUNTING STUDS For D9 Tractors S.N. 34A, 49A, 50A, 66A



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95837	Stud-Taperlock	2
	15168	Lockwasher-1¼	2
	15018	Nut-1¼ UNF	2
2	95827	Stud-Taperlock	1
	15170	Lockwasher-1½	8
	5792B	Nut-1½ UNF	8

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
3	-----	Stud-Furnished with Tractor. . .	7
		(Note: Four removed from "A")	
	18000	Cork- No. 5) Not	10
	18849	Cork- No. 20) Illustrated . . .	6

SEAT AND PEDESTAL ASSEMBLY



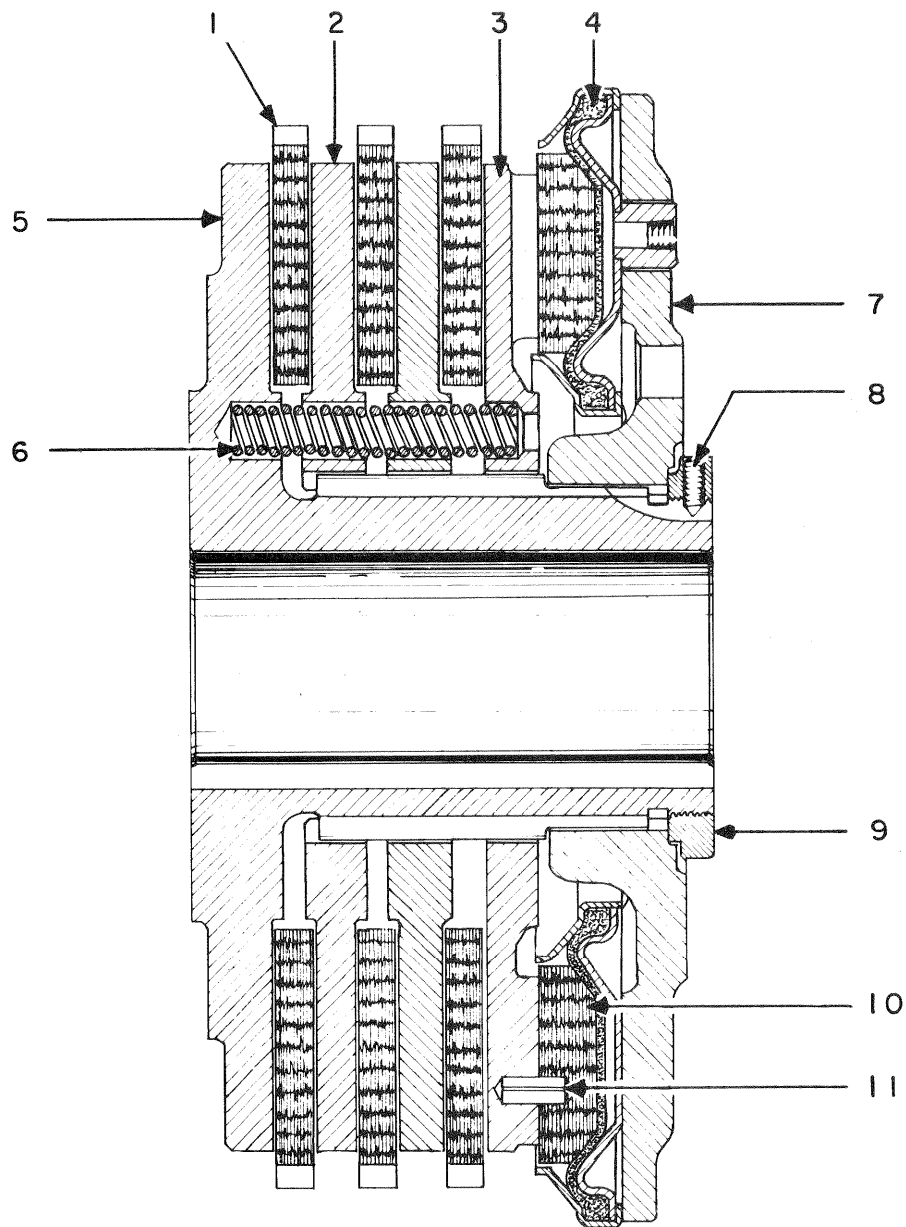
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	109983A	Seat Assembly	1
	233155	Frame-Seat	1
	233159	Stud-Sleeve	2
	233160	Nut-Acorn	2
2	233157	Cushion-Back	1
	233158	Clip-Back Cushion	2
	16709	Machine Screw-1/4 NC x 3/4	4
3	233156	Cushion-Seat	1
4	95540	Plate	1
	15005	Nut-Hex, 5/16 UNF	4
	15155	Lockwasher-5/16	4

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
5	233126A	Rail Set	1
	233161A	Seat Adjuster Assembly-L.H.	1
	233163	Spring-Latch	1
	233164A	Seat Adjuster Assembly-R.H.	1
	233162	Bolt-Mounting	4
6	94943	Pedestal-Seat	1
7	15572	Capscrew-5/16 UNF x 3/4	4
	15155	Lockwasher-5/16	4
	15005	Nut-Hex, 5/16 UNF	4

Section C

CLUTCHES INDEX

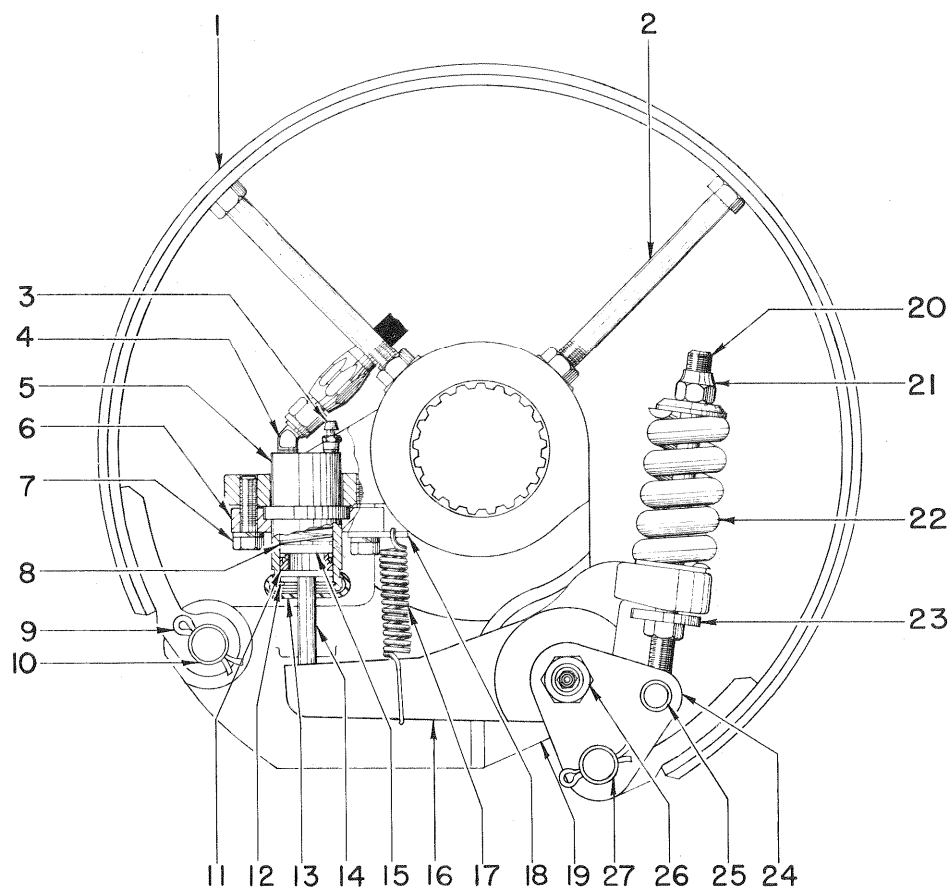
HIGH AND LOW SPEED CLUTCHES	C2
MAIN AND HAULBACK CLUTCH	C1
STRAWDRUM HYDRAULIC CLUTCH	C3

HIGH AND LOW SPEED CLUTCH ASSEMBLY—NO. 95354A *NLA - USE COMPONENTS*

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	233634	Plate—Driving	3
2	233635	Plate—Center	2
3	233636	Plate—Pressure	1
4	233637 4 138781	Diaphragm Assembly	1
5	233638	Plate—Hub and Back	1
6	233639	Spring	6

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
7	233640	Plate—Front	1
8	233641	Set Screw	1
9	233642	Nut	1
10	233643	Plate—Insulator	1
11	233644	Roll Pin—5/16 x 3/4	6

STRAWDRUM CLUTCH ASSEMBLY-NO. 96210A NRS



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	83327A	Band Assembly-Clutch	1
	82432A	Lining Set-Clutch	1
2	15593	Capscrew- $\frac{1}{2}$ UNF x $5\frac{1}{2}$	2
	15028	Nut-Jam, $\frac{1}{2}$ UNF	2
3	59651	Screw-Bleeder	1
4	17094	Fitting-Male Elbow	1
5	96208	Cylinder-Slave	1*
6	96192	Flange	1
7	18202	Capscrew- $\frac{3}{8}$ UNF x $1\frac{1}{4}$	2
	15156	Lockwasher- $\frac{3}{8}$	2
8	*	Spring	1
9	15243	Cotter- $\frac{3}{16}$ x $1\frac{1}{4}$	2
10	48596C	Pin	1
11	*	Cup	1
12	58926	Snap Ring	1
13	*	Boot	1
14	96197	Rod-Push	1
15	*	Piston	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
16	96182	Crank	1
17	96198	Spring	1
18	96193	Keeper	1
19	96181	Driver-Clutch	1
20	96203	Link	1
21	58311	Locknut- $\frac{1}{2}$ UNF	1
22	58004A	Spring Assembly	1
23	96191	Washer	1
24	96202	Plate-Link	2
25	58021	Nut-Trunnion	1
26	83312	Pin	1
	230365	Bearing-Needle	1
	17405	Locknut-Thin, $\frac{5}{8}$ UNF	1
	16041	Fitting-Lub	1
27	48591C	Pin	1

* Included in Cylinder Repair Kit No. 124015.

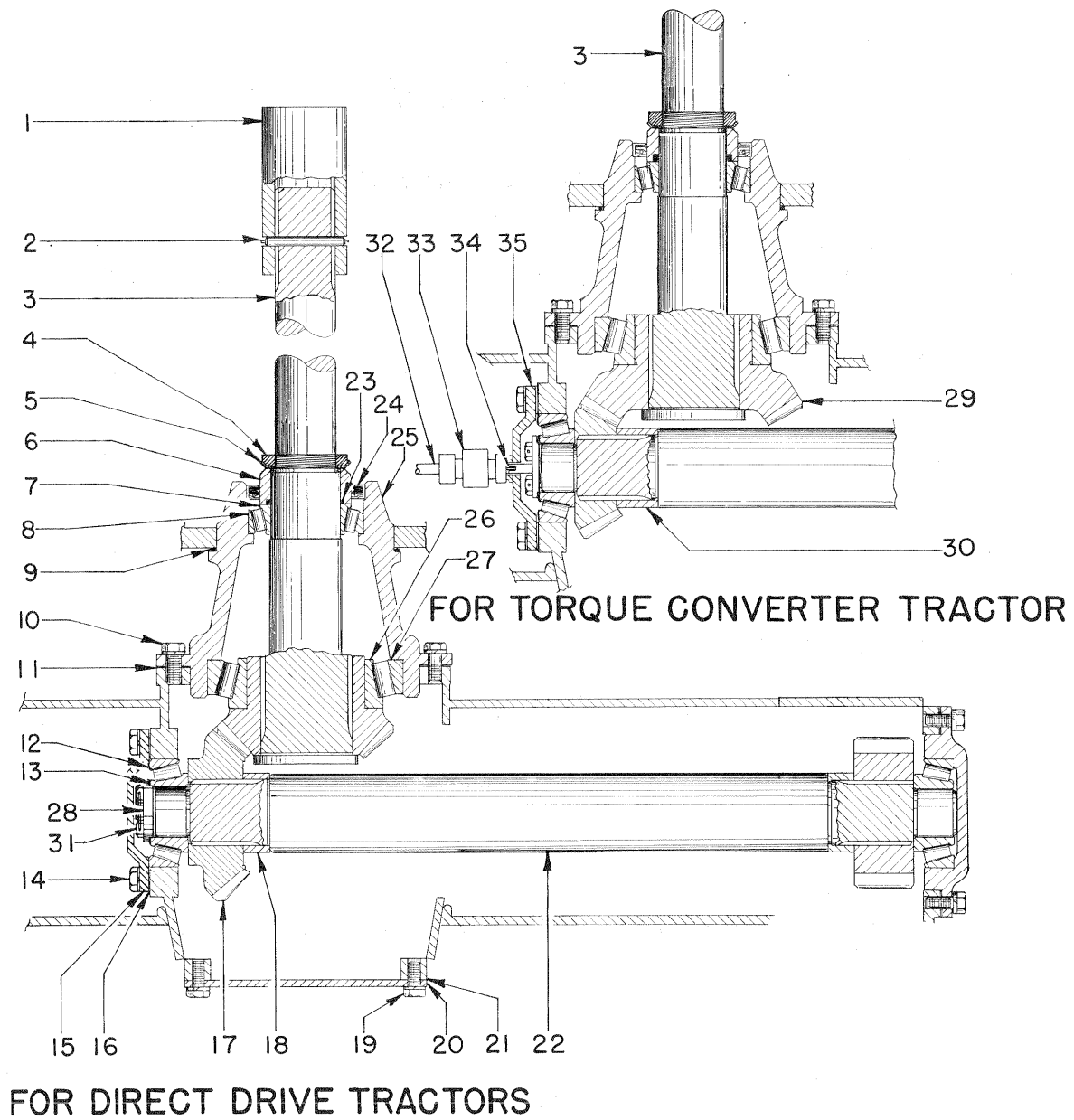
(2) 124015 make up (1) 98631-A - 10
Wagner Electric
FC 11345

Section D

POWER TAKE-OFF, GEAR TRAIN AND DRUMS INDEX

CABLE LOCK GROUP	D10
COMPOUND AND SHIFTER SHAFT	D7
HAULBACK DRUM AND STRAWDRUM	D11
HIGH SPEED CLUTCH SHAFT	D3
LOW SPEED CLUTCH SHAFT	D5
MAIN DRUM	D6
MAIN DRUM CLUTCH DRIVE	D9
POWER TAKE-OFF GROUP	D1

POWER TAKE-OFF



POWER TAKE-OFF

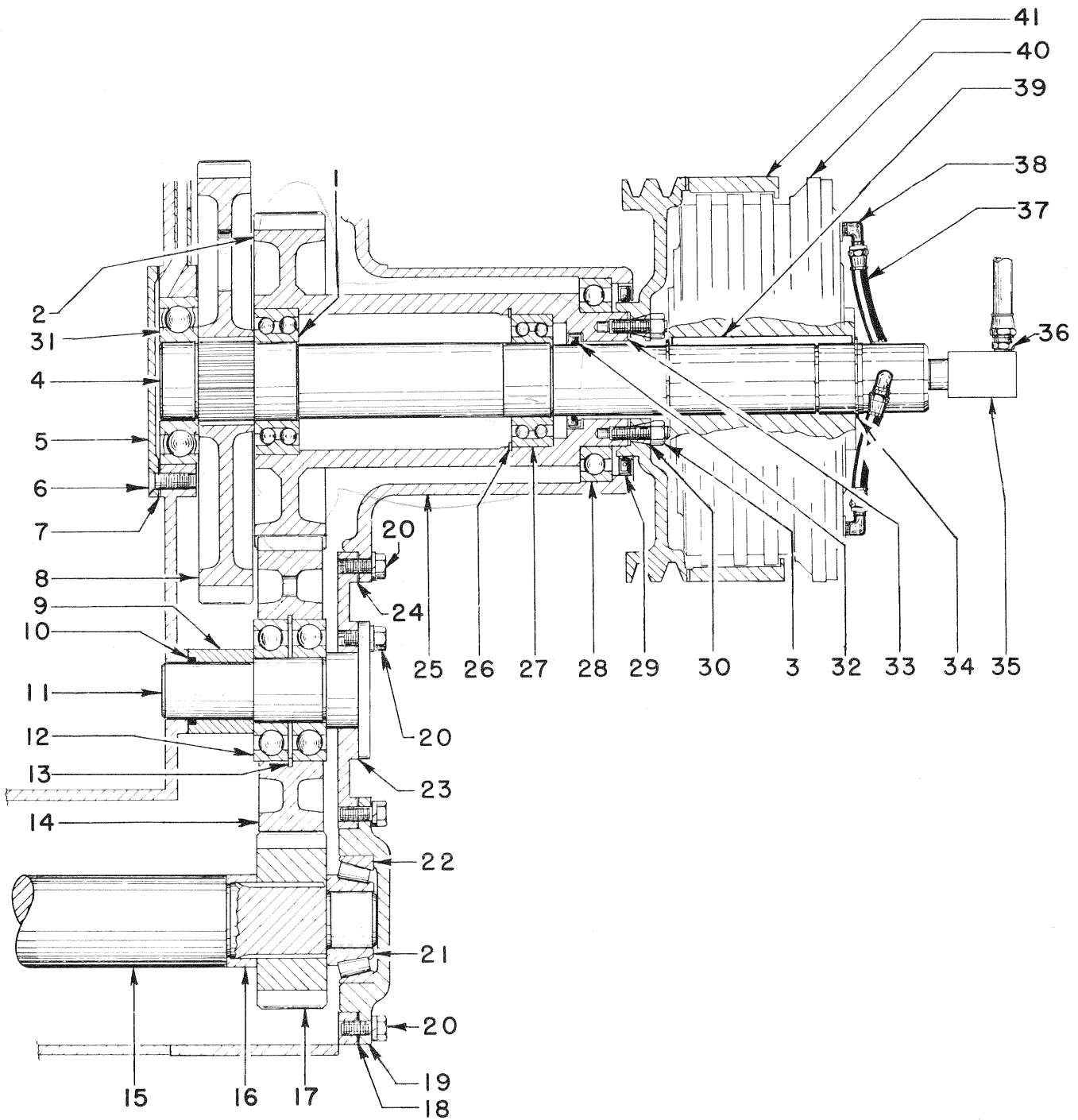
135015

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	6327	Coupling ("Cat" No. 1B-7852) .	1	16	95120	Shim—.005	3
2	9450	Pin ("Cat" No. 1A-4599)	1	17	95297	Shim—.007	1
3	90202	Lock Ring ("Cat" No. 8F-737) .	1	18	96630	Gear Set)For D8 Tractors S.N.	1
	94955	Shaft)For D8 Tractors S.N.			133668	Spacer)2U7488 & up, 13A, 14A	1
		) 2U7488 & up,	1			) 22, 36A	
		) 13A, 14A, 15A, 22A, 35A,				) For D9 Tractors S.N.	
		) 36A, 52A				) 18A, 49A	
	96239	Shaft)For D8 Tractors S.N.		19	37562	Capscrew—½ UNF x 1¼	4
		) 46A, 68A	1		15158	Lockwasher—½	4
	96238	Shaft)For D9 Tractors S.N.		20	95023	Plate—Cover	1
		) 34A, 66A	1	21	95024	Gasket	1
	94950	Shaft)For D9 Tractors S.N.		22	133663	Shaft	1
		) 18A, 19A, 49A, 50A . . .	1	23	15879	"O" Ring	1
4	34056	Locknut	1	24	79385	Oil Seal	1
5	34055	Washer	1	25	95021	Carrier—PTO	1
6	93269	Spacer	1	26	30126	Cone—Bearing.	1
7	230325	Cone—Bearing	1	27	30124	Cup—Bearing	1
8	230324	Cup—Bearing	1	28	133666	Keeper	1
9	90937	"O" Ring	1	29	96657	Gear Set)For D8 Tractors S.N. .	1
10	16823	Capscrew—5/8 UNF x 1½	8	30	133667	Spacer)15A, 35A, 46A, 52A, .	1
	15160	Lockwasher—5/8	8			) 68A D9 Tractors	
11	95022	Shim Set	1			) S.N. 19A, 34A, 50A, 66A	
12	30158	Cup—Bearing	1	31	133670	Capscrew—Drilled Head	4
13	30157	Cone—Bearing	1		-----	Lockwire	1
	231006	Cone—Bearing	1	32	x130890	Shaft—Drive, Tachometer. . . .	1
14	37562	Capscrew—½ UNF x 1¼	4	33	95526	Drive Joint	1
	15158	Lockwasher—½	4	34	x133669	Adapter	1
15	133665	Retainer—Bearing	1	35	133664	Retainer—Bearing	1

xFor Torque Converter Tractors only.

NOTE: Tachometer optional on Direct Drive Tractors.

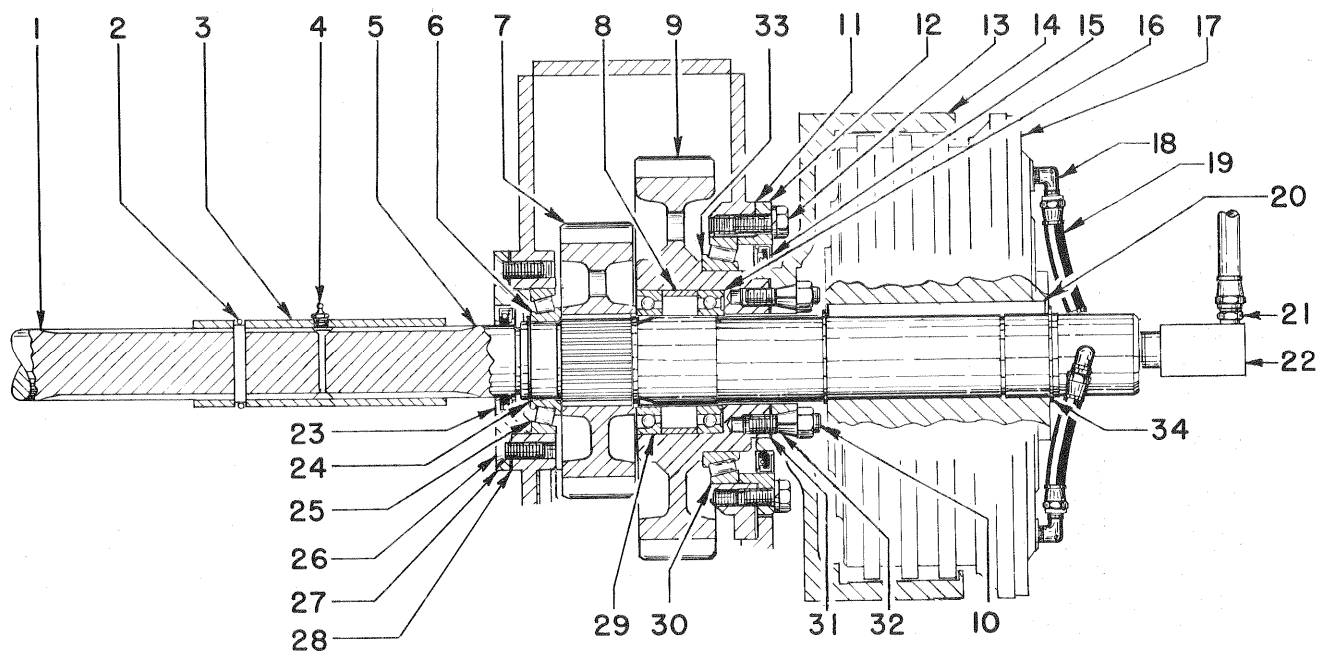
HIGH SPEED CLUTCH SHAFT



HIGH SPEED CLUTCH SHAFT

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	45213	Bearing-Double Row	1	21	30157	Cone-Bearing	1
2	235637A	Gear (Includes Studs)	1	22	30158	Cup-Bearing	1
3	{ 95079	Stud	6	23	95039	Gasket	1
	{ 15008	Nut- $\frac{1}{2}$ UNF	6	24	95086	Shim Set	1
	{ 15158	Lockwasher- $\frac{1}{2}$	6	25	95076	Carrier-Bearing	1
4	95080	Shaft	1	26	12919	Snap Ring	1
5	95083	Retainer-Bearing	1	27	125378	Bearing-Double Row	1
6	16352	Capscrew- $\frac{1}{2}$ UNF x $1\frac{1}{4}$	6	28	124619	Bearing	1
7	95084	Gasket	1	29	44526	Oil Seal	1
8	95085	Gear (56 teeth)	1	30	53661	Thimble-Tapered	6
9	95041	Spacer	1	31	124762	Bearing	1
10	92861	"O" Ring	1	32	44523	Oil Seal	1
11	95035	Shaft-Idler	1	33	131899	Gasket	1
12	41311	Bearing	2	34	12975	Snap Ring	2
13	12956	Snap Ring	1	35	94933A	Roto Coupling- $\frac{1}{4}$	1
14	95040	Gear-Idler (39 teeth)	1	36	16134	Fitting-Male Connector, 45°	1
15	77553	Shaft	1	37	95363	Hose	2
16	94801	Spacer	1	38	52501	Fitting-Male Ell	4
17	95030	Gear (21 teeth)	1	39	95082	Key	1
18	{ 95033	Shim-.005	3	40	95354A	Clutch	1
	{ 95166	Shim-.007	1	41	95918	Spider	1
	{ 95034	Shim-.020	3				
19	95031	Carrier-Bearing	1				
20	{ 37562	Capscrew- $\frac{1}{2}$ UNF x $1\frac{1}{4}$	18				
	{ 15158	Lockwasher- $\frac{1}{2}$	18				

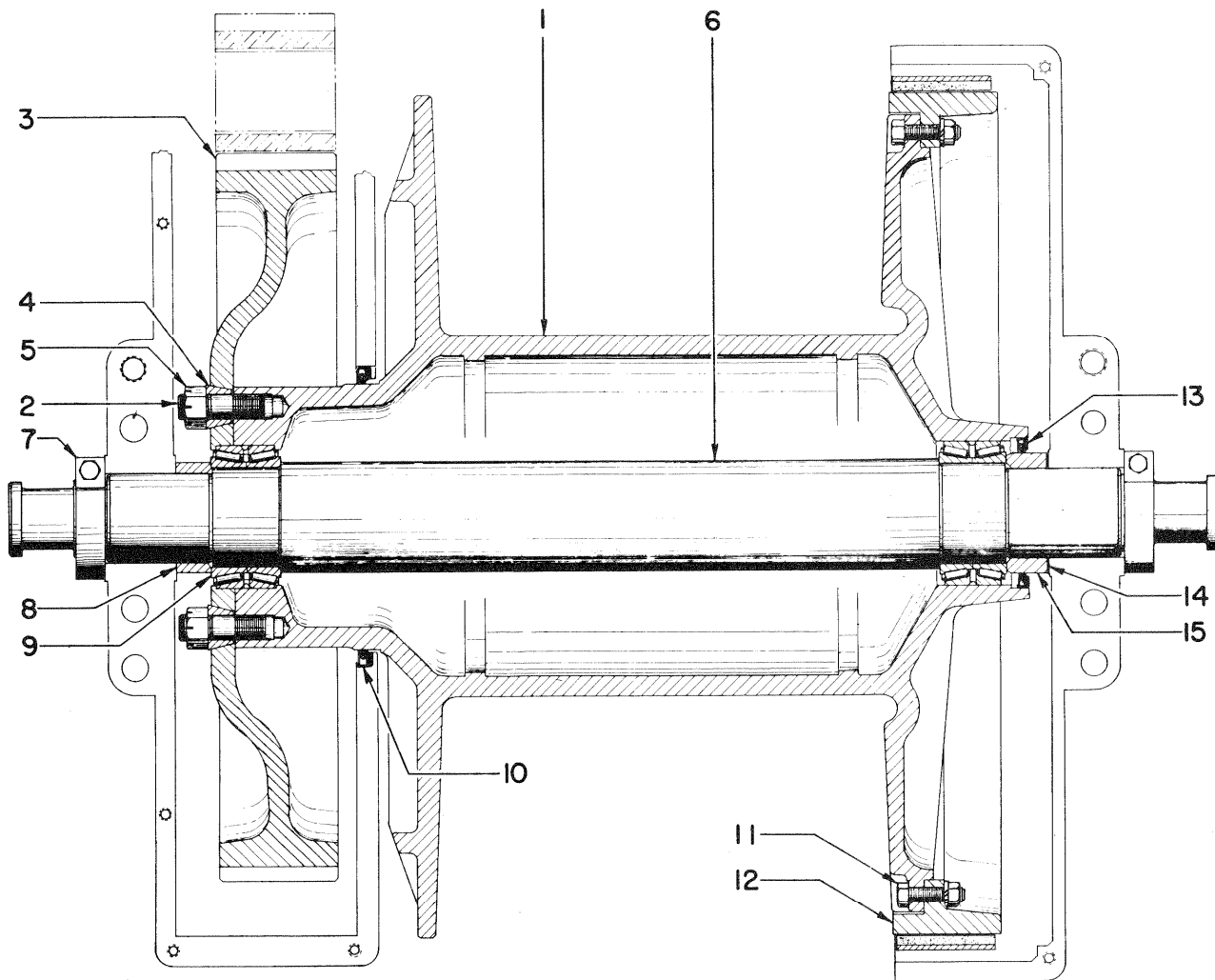
LOW-SPEED CLUTCH SHAFT



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	127096	Shaft	1
2	33786	Pin ("Cat" No. 1A 4653).	1
3	9528	Snap Ring ("Cat" No. 1A 5803).	1
4	95118	Coupling.	1
5	16001	Fitting-Lubrication	1
6	125422	Shaft-Clutch.	1
7	89091	Cone-Bearing	1
8	125421	Gear (28 teeth)	1
9	89081	Spacer	1
10	89092A	Gear Set	1
	95079	Stud.	6
	15008	Nut-1/2 UNF	6
	15158	Lockwasher	6
11	95009	Shim Set	1
12	89079	Retainer-Bearing.	1
13	16807	Capscrew-1/2 UNF x 1 1/2	6
	15158	Lockwasher-1/2	6
14	95051	Spider-Low Speed.	1
15	44526	Oil Seal	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
16	124614	Ball Bearing	1
17	95354A	Clutch	1
18	52501	Fitting-Male Ell.	4
19	95363	Hose	2
20	95082	Key	1
21	16134	Fitting-Male Connector	1
22	94933A	Roto Coupling	1
23	44529	Oil Seal	1
24	58924	Snap Ring.	1
25	89090	Cup-Bearing	1
26	16352	Capscrew-1/2 UNF x 1 1/4	6
27	89613	Retainer-Bearing	1
28	94835	Gasket	1
29	44413	Ball Bearing	1
30	89591	Cup-Bearing	1
31	131899	Gasket	1
32	53661	Thimble-Tapered	6
33	89089	Cone-Bearing	2
34	12975	Snap Ring	2

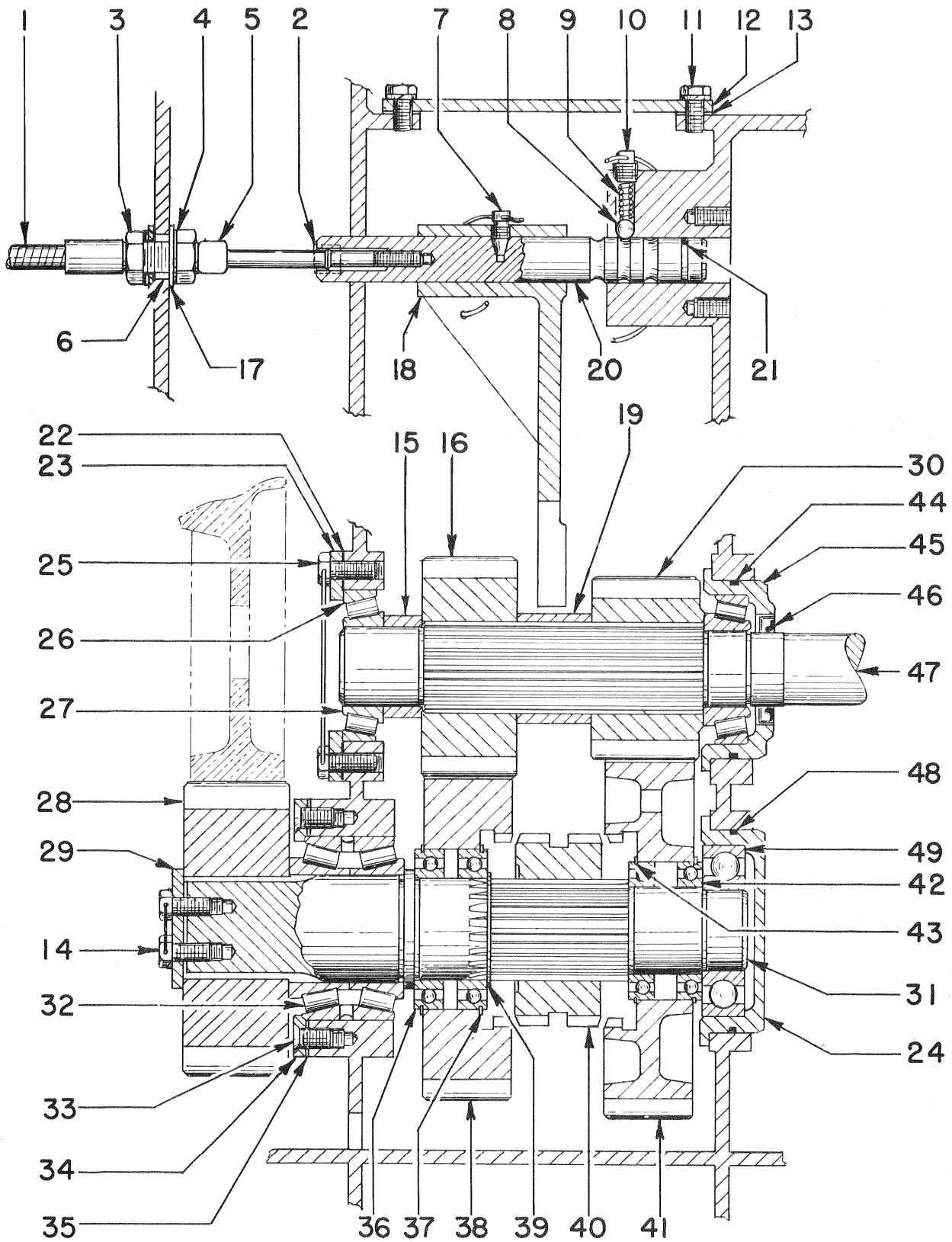
MAIN DRUM



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	235635A	Drum—Main	1
2	94833	Stud	10
3	94960	Gear	1
4	94834	Thimble—Tapered	10
5	67649	Nut—Lock	10
6	94961	Shaft—Main Drum	1
7	37110	Nut—Collar	2
	12488	Capscrew—5/8 UNF x 5½	2
	15010	Nut—5/8 UNF	2
	15160	Lockwasher—5/8	2
8	94838	Spacer	1
9	231002A	Bearing—Roller	2
10	44524	Oil Seal	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
11	18627	Capscrew—¾ UNF x 3¼	12
	15012	Nut—¾ UNF	12
	15162	Lockwasher—3/4	12
		(For Two-Piece Flange)	
12	96262A	Flange Assembly	1
	96260	Link	2
	21229	Nut—Slotted, 5/8 UNF	4
	15160	Lockwasher—5/8	4
	15224	Cotter—1/8 x 1¼	4
13	44525	Oil Seal	1
14	94836	Shim Set	1
15	94837	Spacer	1

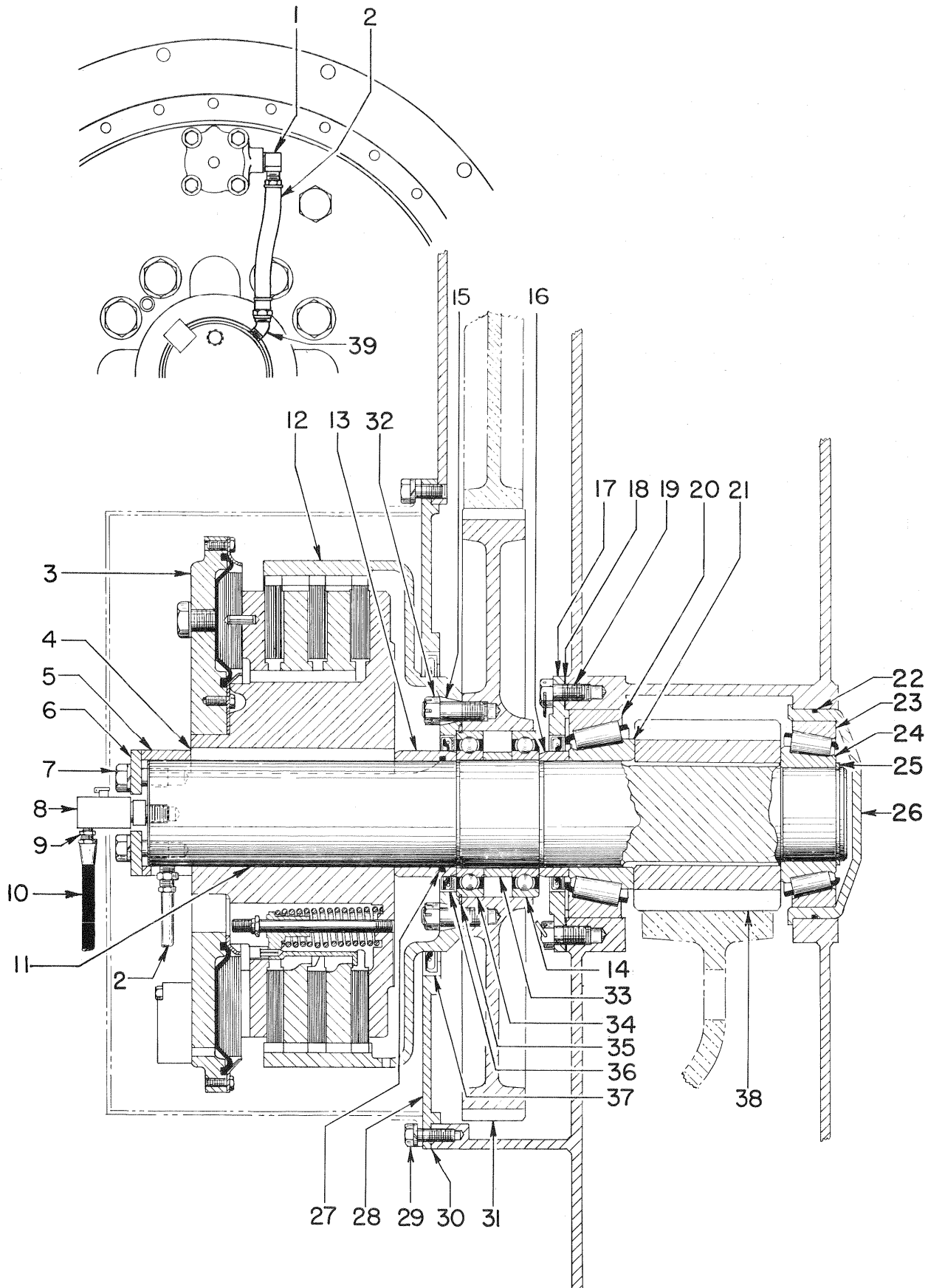
COMPOUND AND SHIFTER SHAFT



COMPOUND AND SHIFTER SHAFT

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	129603	Cable-Push Pull	1	24	95094	Retainer-Bearing	1
2	94380	Grommet-Small (Note:Remove	2	25	9718	Capscrew-Drilled Head	4
3		Grommet at this location). . . .		26		Lockwire-18 Ga. x 18" Long. . .	
4	15034	Nut-Jam, 7/8 UNF	4	27	231005	Cup-Bearing	2
5	15934	Lockwasher-Shakeproof, 7/8 .	2	28	95098	Cone-Bearing.	2
6	94381	Grommet-Large	2	29	93263	Gear (22 Teeth)	1
7	96511	Grommet	1	30	95103	Plate-Lock	1
8	27936	Lockscrew.	1	31	95103	Gear (18 Teeth)	1
9	6348	Ball-1/2" Dia.	1	32	95095	Shaft	1
10	6347C	Spring	1	33	230380A	Bearing-Roller.	1
11	46578	Plug-Wired.	1	34	16352	Capscrew-Flat head, 1/2 UNF x 1 1/4	6
12		Lockwire-18 Ga. x 12" Long . .		35	95907	Retainer-Bearing	
13	16820	Capscrew-1/2 UNF x 1	6	36	110934	Shim-.005.	3
14	15158	Lockwasher-1/2.	6	37		Shim-.020	
15	127094	Plate-cover	1	38	110936	Bearing-Double Row	2
16	127095	Gasket	1	39	124616	Snap Ring.	2
17	95362	Capscrew-Drilled Head	2	40	33655	Gear (35 Teeth)	1
18	---	Lockwire-18 Ga. x 6" Long . . .	1	41	94948	Snap Ring	1
19		Spacer		42	58905	Clutch-Dental.	1
20	94793	Gear (22 Teeth)	1	43	94946	Gear (39 Teeth)	1
21	94792	Washer-7/8	2	44	124613	Bearing-Double Row	2
22	15130	Fork-Shifter.	1	45	34490	Snap Ring	2
23	127150	Spacer	1	46	15890	"O" Ring	1
	95116	Shaft-Shifter	1	47	95102	Carrier-Bearing	1
	61056	"O" Ring	1	48	44529	Oil Seal	1
	95120	Shim-.005	1	49	127096	Shaft	1
		Shim-.007			57697	"O" Ring.	1
		Shim-.020			41311	Bearing	1
	95121	Retainer	1				

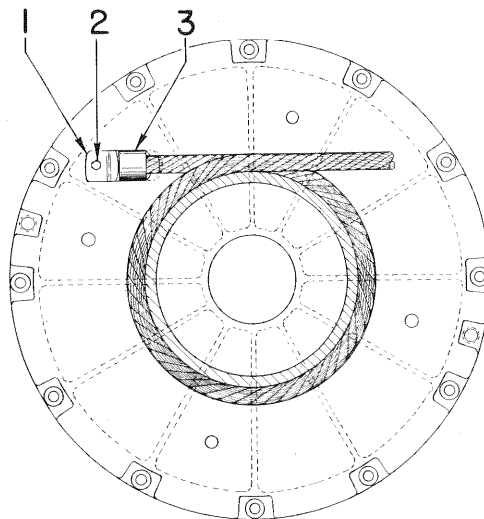
MAIN DRUM CLUTCH DRIVE



MAIN DRUM CLUTCH DRIVE

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	17314	Pipe Fitting-Elbow	2	20	30135	Cup-Bearing	1
2	95421	Hose Assembly	2	21	231003	Cone-Bearing	1
3	95013A	Clutch Assembly	1	22	16783	"O" Ring	1
4	95102	Key	1	23	30117	Cup-Bearing.	1
5	95015	Spacer	1	24	231004	Cone-Bearing.	1
6	95016	Plate-Lock	1	25	12970	Snap Ring.	1
7	16823	Capscrew, 5/8 UNF x 1½.	2	26	94901	Carrier-Bearing	1
	15160	Lockwasher-5/8	2	27	15887	"O" Ring	1
8	94933A	Roto Coupling	1	28	127051	Cover	1
9	16134	Tube Fitting-Male Connector.	1	29	37562	Capscrew, ½ UNF x 1¼.	15
10	94993	Hose Assembly	1		15158	Lockwasher-½	15
11	94902	Shaft	1	30	127144	Gasket	1
12	94905	Spider-Clutch.	1	31	235636A	Gear (72 Teeth)	1
13	95007	Spacer	1	32	95010	Stud	8
14	44322	Ball Bearing	1		11277	Nut-Lock, ¾ UNF.	8
15	95011	Thimble-Tapered	8	33	95006	Spacer	1
16	95000	Spacer	1	34	124618	Ball Bearing	1
17	94969	Retainer-Bearing	1	35	58919	Snap Ring.	1
18	95002	Shim .005	2	36	44526	Oil Seal	2
	95003	Shim .007	2	37	44528	Oil Seal	1
	95004	Shim .020	3	38	94968	Gear (17 Teeth)	1
19	10236	Capscrew-Drilled Head	6	39	16863	Tube Fitting-Elbow.	2
	----	Lockwire-18 Ga. x 34"	1				

CABLE - LOCK GROUP

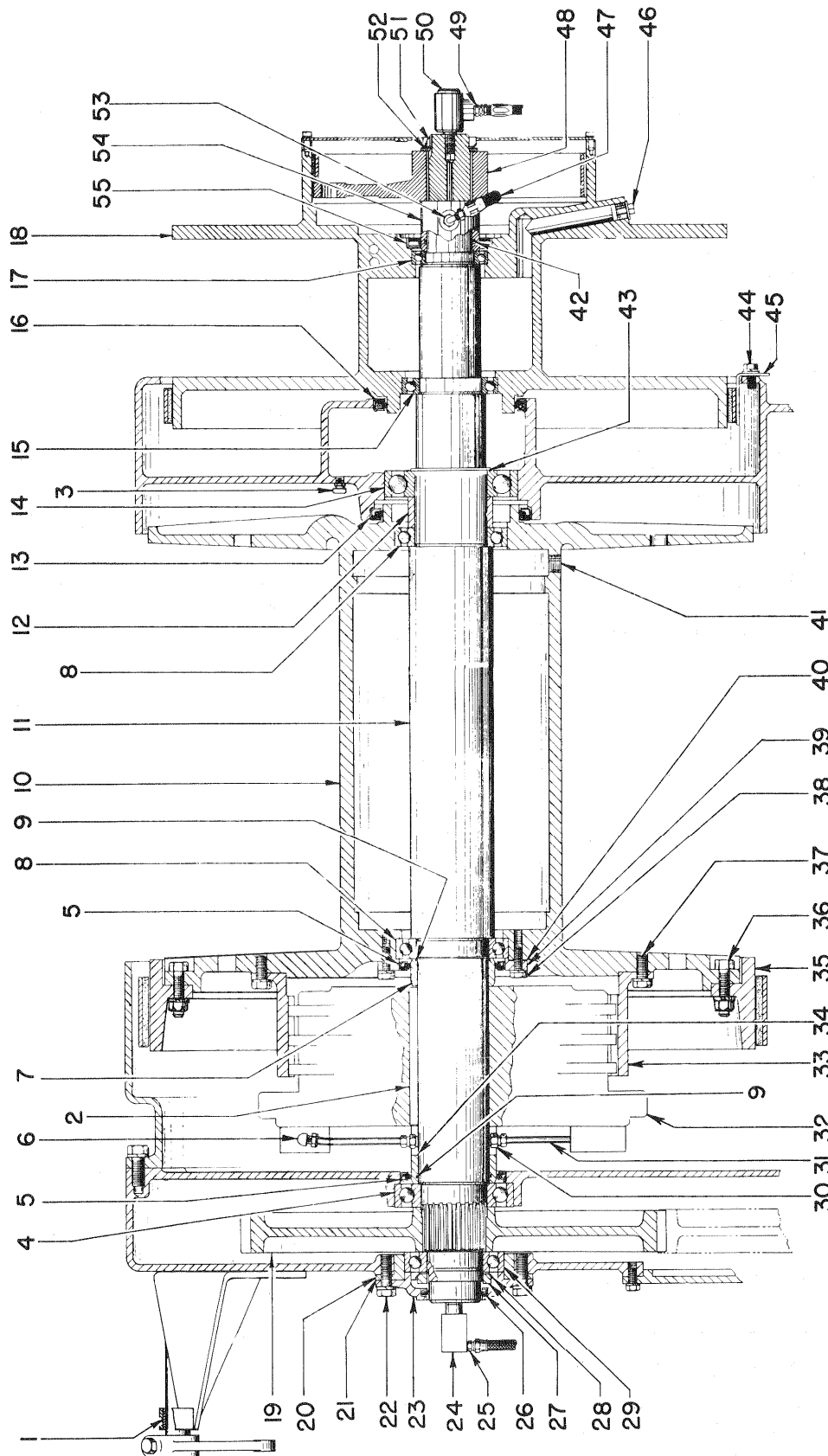


For Main Drum - As Shown

Haulback

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94196W	Lock-Ferrule	1	1	95047	Lock-Ferrule	1
2	16823	Capscrew-5/8 UNF x 1½.	1	2	16820	Capscrew-½ UNF x 1	1
	15160	Lockwasher-5/8	1		15158	Lockwasher-½	1
3	30509	Ferrule	1	3	35506	Ferrule	1

HAULBACK DRUM AND STRAWDRUM



HAULBACK DRUM AND STRAWDRUM

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	9277	Bushing	1	34	95050	Spacer	1
2	95012	Key	1	35	96261A	Flange Assembly	1
3	21420	Plug-Breather	1		96260	Link	2
4	41220	Bearing	1		21229	Nut-Slotted, 5/8 UNF	4
5	44526	Oil Seal	2		15160	Lockwasher-5/8	4
6	17314	Fitting-Elbow	2		15224	Cotter-1/8 x 1 1/4	4
7	95049	Spacer	1	36	18605	Capscrew, 5/8 UNF x 2 3/4	10
8	44322	Bearing	2		15010	Nut-Hex, 5/8 UNF	10
9	15887	"O" Ring	2		15160	Lockwasher-5/8	10
10	94908W	Drum-Haulback	1	37	16823	Capscrew, 5/8 UNF x 1 1/2	18
11	96183	Shaft-Drum	1		15160	Lockwasher-5/8	18
12	95052	Spacer	1	38	16807	Capscrew, 1/2 UNF x 1 1/2	6
13	44527	Oil Seal	1		15158	Lockwasher-1/2	6
14	41222	Bearing	1	39	94974	Retainer-Bearing	1
15	44319	Bearing	1	40	95048	Gasket	1
16	44522	Oil Seal	1	41	15316	Pipe Plug-Countersunk, 3/4	1
17	44315	Bearing	1	42	55146	"O" Ring	1
18	96184W	Drum-Straw	1	43	12976	Snap Ring	1
19	94914	Gear (72 Teeth)	1	44	16820	Capscrew, 1/2 UNF x 1	1
20	94975	Carrier-Bearing	1		15158	Lockwasher-1/2	1
21	93284	Shim-.005	4		15135	Washer-1/2	2
	93286	Shim-.020	3	45	95324	Bracket	2
22	12480	Capscrew, 5/8 UNF x 2	6	46	15304	Fitting-Pipe Plug	1
	15160	Lockwasher-5/8	6	47	96205	Hose	1
23	94976	Retainer-Bearing	1	48	96210A	Clutch Assembly	1
24	94933A	Roto-Coupling	1	49	14301	Fitting-Male Connector	1
25	16134	Tube Fitting-Male Connector	1	50	96179	Union-Hydraulic	1
26	44521	Oil Seal	1	51	32967	Locknut	1
27	38239	Locknut-Bearing	1		32966	Lockwasher	1
28	38240	Lockwasher-Bearing	1	52	90502	Washer	1
29	43217	Bearing	1	53	28584	Fitting-Adapter	1
30	16863	Tube Fitting-Elbow	2		52501	Fitting-Male Ell	1
31	95421	Hose Assembly	2	54	96207	Spacer	1
32	95013A	Clutch-Air	1	55	44548	Oil Seal	1
33	94913	Segment-Spider-Haulback Clutch	3				

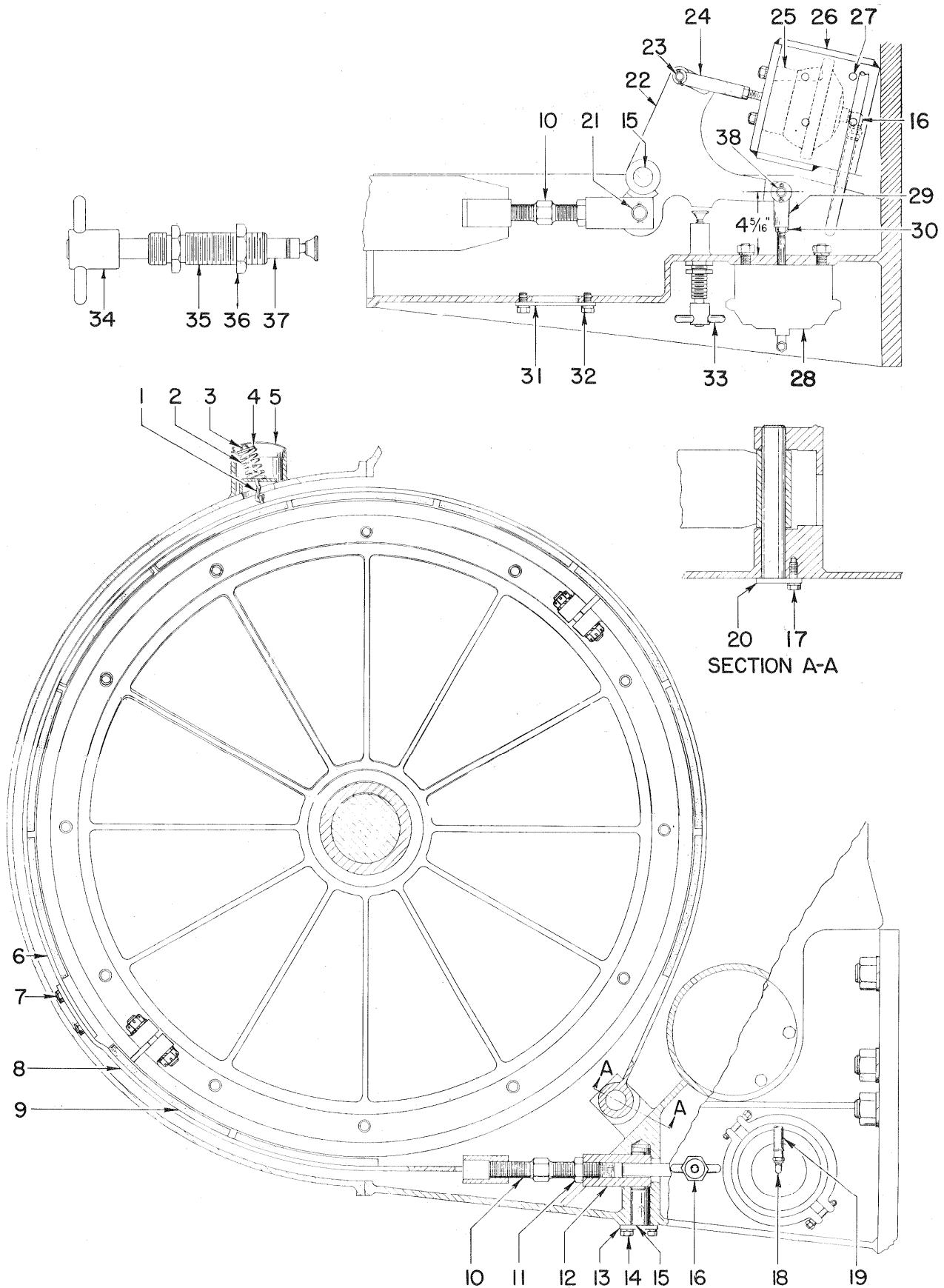
Section E

BRAKES

INDEX

HAULBACK DRUM BRAKE	E3
MAIN DRUM BRAKE	E1
STRAWDRUM BRAKE	E4

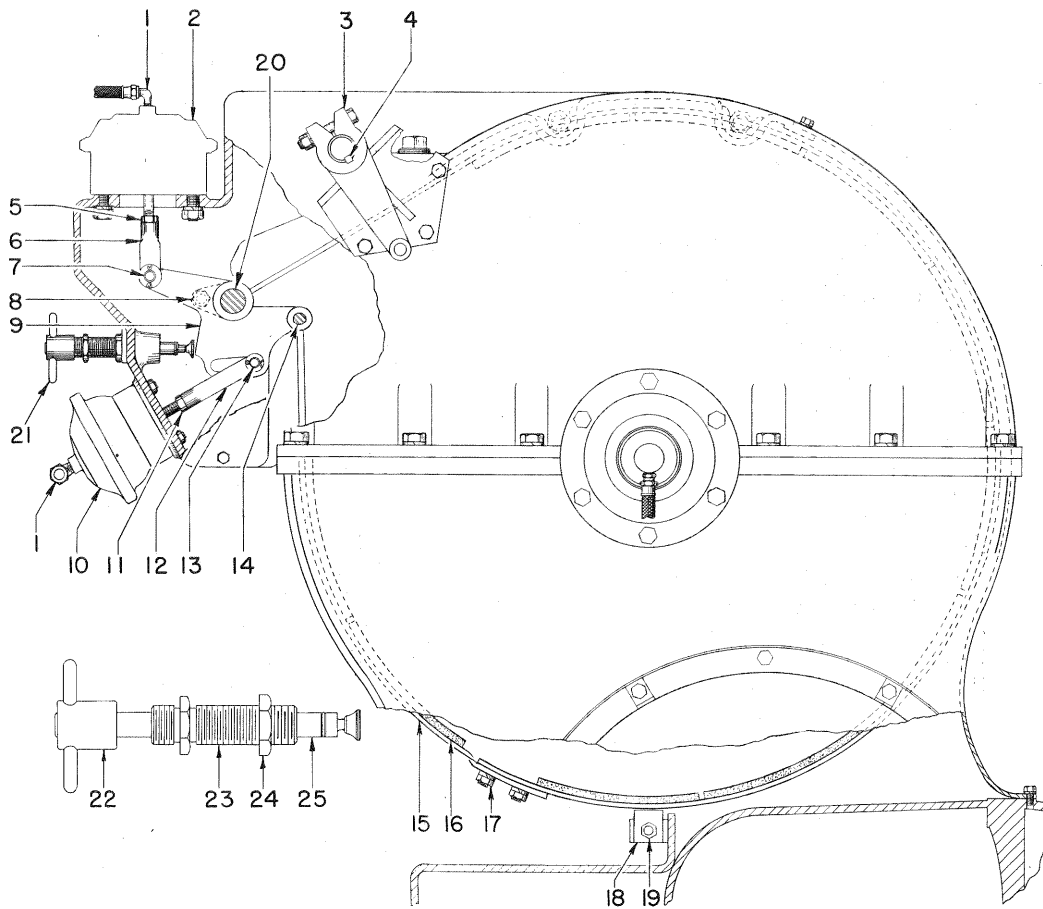
MAIN DRUM BRAKE ASSEMBLY



MAIN DRUM BRAKE ASSEMBLY

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	37248	Bolt-Eye	1	21	6627	Pin-Rod End	1
2	95322	Spring	1		15235	Cotter-5/32 x 1½	1
	95326W	Bracket-Spring Seat	1	22	96347W	Crank	1
3	15024	Nut-Jam, ¼ UNF	1		124780	Bushing	1
4	95323	Nut	1	23	153	Pin-Rod End	1
5	69029	Cover	1		15223	Cotter-1/8 x 1	1
6	95337A	Brake Band Assembly	1	24	96516	Rod End	1
7	16862	Nut-Lock, 9/16 UNF	6	25	96339A	Air Chamber Assembly	1
8	----	Brake Band Section	1	26	127146	Bracket	1
9	94845A	Lining Set-Brake . 145630	1	27	16807	Capscrew-½ UNF x 1½	4
10	94851	Link-Adjusting	1		15158	Lockwasher-½	4
11	15036	Nut-Jam, 1" N.F.	1	28	94932A	Air Chamber Assembly	1
12	94852	Rod End	1	29	200891	Rod End	1
13	94857	Cover	1	30	15030	Nut-Jam, 5/8 UNF	1
14	16820	Capscrew-½ UNF x 1	2	31	95753	Plate-Cover	1
	15158	Lockwasher-½	2	32	16820	Capscrew-½ UNF x 1	3
15	94856	Pin	1		15158	Lockwasher-½	3
16	14358	Fitting-Male Ell	1	33	97573A	Lock Assembly-Night	1
17	16820	Capscrew-½ UNF x 1	1	34	99030	Knob Assembly	1
	15158	Lockwasher-½	1	35	99031	Adapter Assembly	1
18	14358	Fitting-Male Ell	1	36	15021	Nut-Jam, 1"-8 UNF	1
19	94997	Hose Assembly	1	37	99029	Shaft Assembly	1
20	94848W	Pin -Anchor	1				

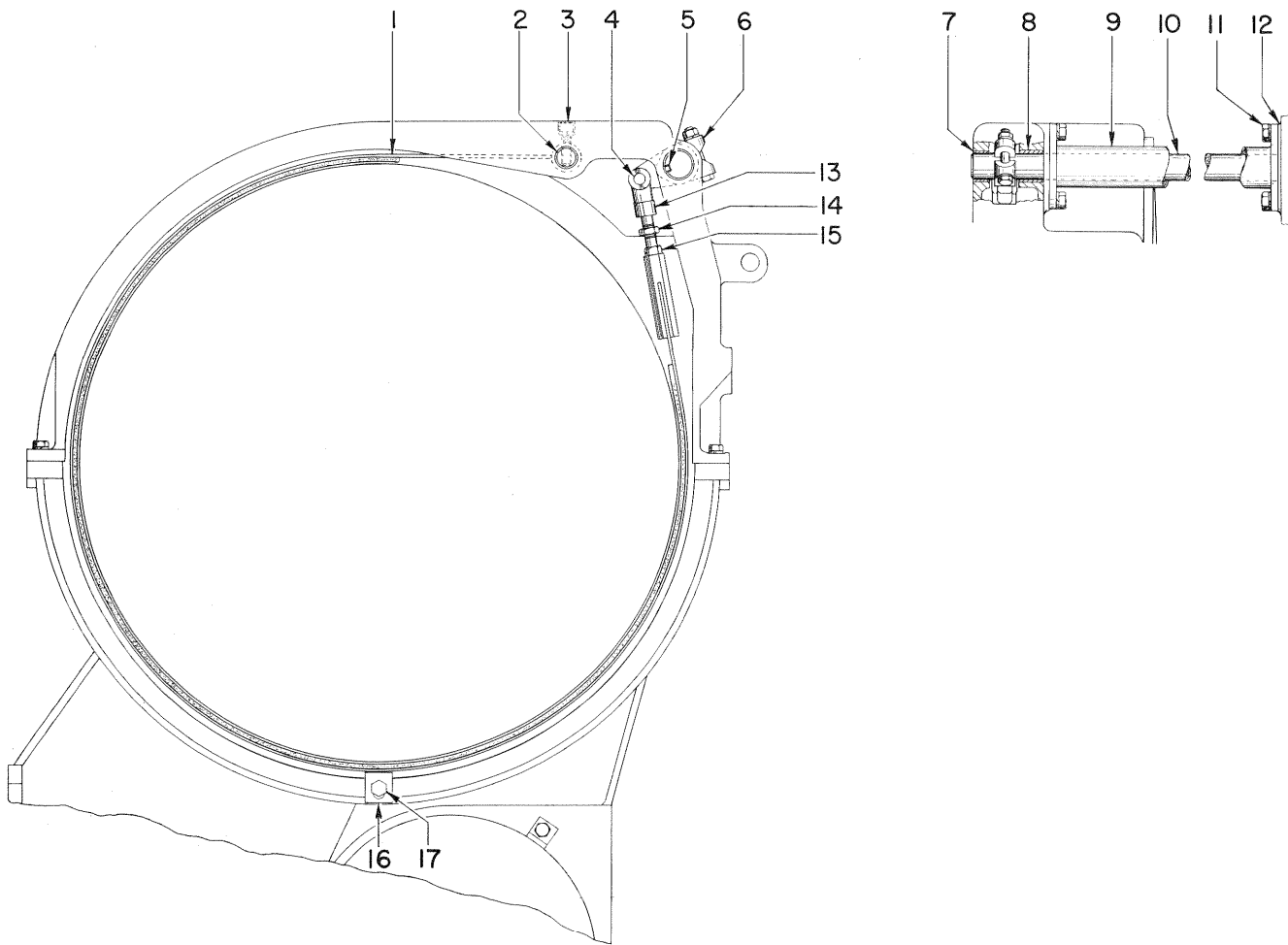
HAULBACK BRAKE



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	14358	Fitting-Tube, Male Ell	2
2	94932A	Air Chamber Assembly	1
3		(For D9 Tractors SN 34A, 49A, 50A, 66A)	
	77461W	Crank-Strawdrum Brake	1
	15503	Capscrew- $\frac{1}{2}$ UNF x $2\frac{3}{4}$	1
	15158	Lockwasher- $\frac{1}{2}$	1
	15008	Nut- $\frac{1}{2}$ UNF	1
3		(For D9 Tractors SN 18A, 19A)	
		(For D8 Tractors S.N. 14A, 15A, and Prior, Also for S.N. 22A, 35A, 36A, 52A)	
	35670AB	Crank-Strawdrum Brake	1
	15503	Capscrew- $\frac{1}{2}$ UNF x $2\frac{3}{4}$	1
	15158	Lockwasher- $\frac{1}{2}$	1
	15008	Nut- $\frac{1}{2}$ UNF	1
4	5269	Key	1
5	15030	Nut-Jam, $\frac{5}{8}$ UNF	1
6	200891	Rod End	1
7	159	Pin-Rod End	1
7	15223	Cotter- $\frac{1}{8}$ x 1	1
8	16820	Capscrew- $\frac{1}{2}$ UNF x 1	1
8	15158	Lockwasher- $\frac{1}{2}$	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
9	96337W	Crank	1
10	96339A	Air Chamber	1
11	15028	Nut-Jam, $\frac{1}{2}$ UNF	1
12	96516	Rod End	1
13	153	Pin-Rod End	1
	15223	Cotter- $\frac{1}{8}$ x 1	1
14	95065	Pin	1
	15246	Cotter- $\frac{3}{16}$ x 2	1
15	95353A	Band Assembly-Brake	1
16	95056A	Lining Set	1
17	16862	Nut-Lock, $\frac{9}{16}$ UNF, Thin	4
18	95324	Bracket-Band Support	1
	15135	Washer- $\frac{1}{2}$	1
19	16820	Capscrew- $\frac{1}{2}$ UNF x 1	1
	15158	Lockwasher- $\frac{1}{2}$	1
20	95062	Pin-Anchor	1
21	97572A	Lock Assembly-Night	1
22	99030	Knob Assembly	1
23	99031	Adapter Assembly	1
24	15021	Nut-Jam, 1"-8UNC	1
25	99032	Shaft Assembly	1

STRAWDRUM BRAKE



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94927A	Brake Band Assembly	1
	95109A	Lining Set-Strawdrum Brake . .	1
2	95111	Pin	1
3	37297	Capscrew- $\frac{1}{2}$ UNF x $1\frac{1}{2}$	1
	15158B	Lockwasher- $\frac{1}{2}$	1
4	159	Pin-Rod End	1
	15223	Cotter- $\frac{1}{8}$ x 1	1
5	5269	Key	1
6	92779A	Crank Assembly	1
	15503	Capscrew- $\frac{1}{2}$ UNF x $2\frac{3}{4}$	1
	15158	Lockwasher- $\frac{1}{2}$	1
	15008	Nut-Hex, $\frac{1}{2}$ UNF	1
7	95179	Bushing	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
8	92777	Bushing	1
9	94984W	Support Assembly	1
10	95074	Shaft	1
11	16820	Capscrew- $\frac{1}{2}$ UNF x 1	6
	15158	Lockwasher- $\frac{1}{2}$	6
12	95115	Shim Set	1
13	92688	Rod End-Left Hand	1
14	92687	Link-Adjusting	1
15	15030	Nut-Jam, $\frac{5}{8}$ UNF	1
16	95324	Bracket-Band Support	1
	15135	Washer- $\frac{1}{2}$	1
17	16820	Capscrew- $\frac{1}{2}$ UNF x 1,	1
	15158	Lockwasher- $\frac{1}{2}$	1

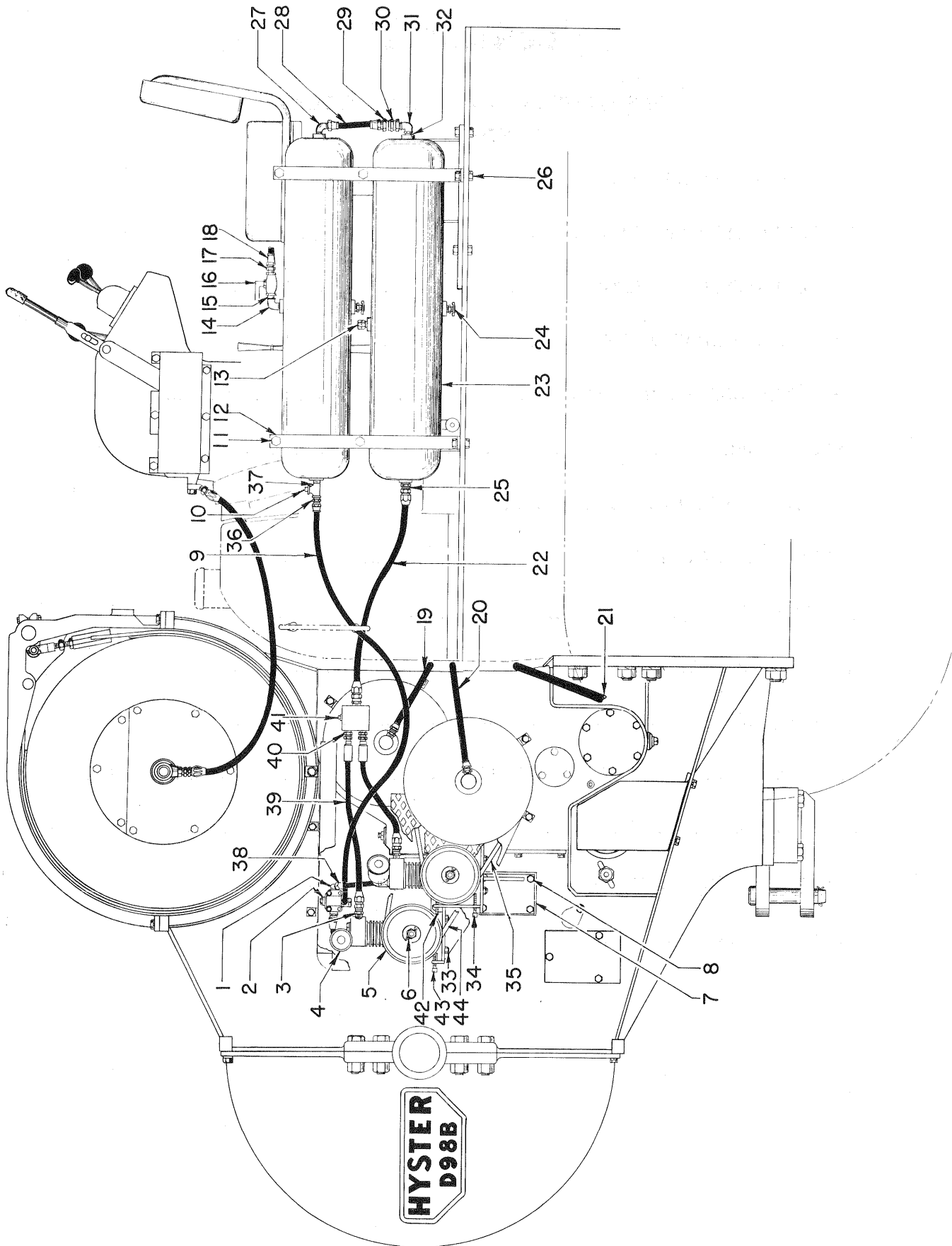


Section F

PNEUMATIC AND HYDRAULIC SYSTEM INDEX

AIR CHAMBER ASSEMBLY	F9
AIR COMPRESSOR ASSEMBLY	F5
AIR COMPRESSOR GOVERNOR	F8
AIR COMPRESSOR UNLOADER	F7
AIR TANKS, HOSES AND FITTINGS	F1
CHECK VALVE	F10
CYLINDER ASSEMBLY	F14
EMERGENCY BRAKE LINES	F3
FOOT VALVE	F17
HAND LEVERS	F13
HANDLING GEAR	F11
HANDLING GEAR FOR STRAWDRUM CLUTCH	F14
HAND VALVES	F15
PNEUMATIC CIRCUIT, MANIFOLD AND FITTINGS	F4
ROTO COUPLING	F10

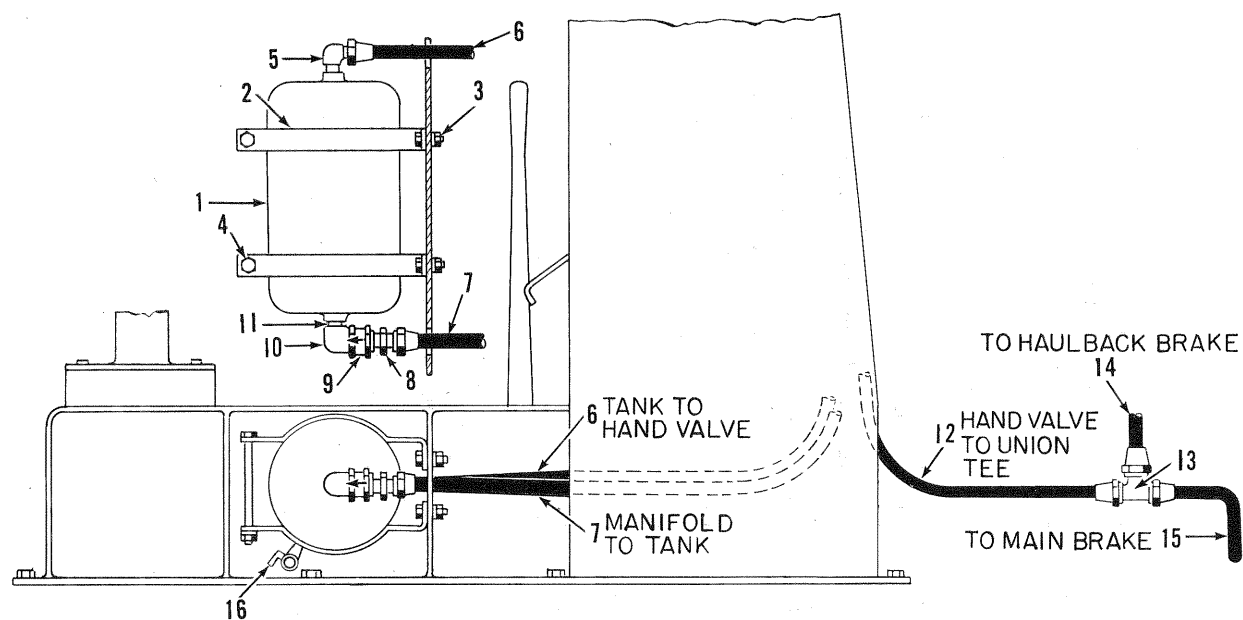
AIR TANKS, HOSES AND FITTINGS



AIR TANKS, HOSES AND FITTINGS

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	52501	Fitting-Male Ell	1
2	{ 124367	Governor Assembly	1
	{ 14303	Fitting-Male Connector	1
	{ 15622	Capscrew-5/16 UNF x 2	2
	{ 15155	Lockwasher-5/16	2
3	16294	Tube Fitting-Male Connector	2
4	124368	Compressor-Air	2
5	94820	Pulley	2
6	15217	Cotter-3/32 x 1 1/2	2
7	95916W	Bracket-Air Compressor	1
8	{ 37562	Capscrew-1/2 UNF x 1 1/4	6
	{ 16397	Capscrew-1/2 UNF x 1 3/4	1
	{ 15158	Lockwasher-1/2	7
9	94814	Hose Assembly (For D9 Tractors)	1
	{ 94811	Hose Assembly (For D8 Tractors)	1
	{ 15302	Pipe Plug	1
10	18227	Capscrew-1/2 UNF x 6 1/2	4
11	{ 15158	Lockwasher-1/2	4
	{ 15008	Nut-Hex, 1/2 UNF	4
	{ 15028	Nut-Jam, 1/2 UNF	4
12	94823	Bracket	4
13	94826	Valve-Safety	1
14	16499	Pipe Fitting-Reducing Street Ell	1
15	15334	Pipe Fitting-Close Nipple	1
16	94827	Aircock-Vented	1
17	14305	Tube Fitting-Male Connector	1
18	{ 95347	Hose Assembly (For D9 Tractors)	1
	{ S.N. 66A1 And Up)		1
	{ 94992	Hose Assembly (For All Tractors Except D9 S.N. 66A)	1
19	94995	Hose Assembly	1
20	94996	Hose Assembly	1
21	94997	Hose Assembly	1
22	* { 95921	Hose Assembly (For D9 Tractors)	1
	{ 95922	Hose Assembly (For D8 Tractors)	1
23	94822	Tank-Air	2
24	78103	Valve-Drain	2
25	16396	Fitting-Male Connector	1
26	{ 16807	Capscrew-1/2 UNF x 1 1/2	4
	{ 15158	Lockwasher-1/2	4
	{ 15008	Nut-Hex, 1/2 UNF	4
27	24272	Fitting-Male Elbow	1
28	94825	Hose Assembly	1
29	21798	Fitting-Male Connector	1
30	94824	Valve-Check	1
31	16143	Fitting-Street Ell	1
32	19987	Fitting-Close Nipple	1
33	{ 16814	Capscrew-3/8 UNF x 1 1/2	8
	{ 15176	Washer-3/8	8
	{ 15156	Lockwasher-3/8	8
	{ 15006	Nut-3/8 UNF	8
34	{ 18813	Setscrew-3/8 UNC x 2 1/4	1
	{ 15086	Nut-Jam, 3/8 UNC	1
35	95924	Belt-V	1
36	21798	Fitting-Male Connector	1
37	19535	Fitting-Tee	1
38	{ 95541	Hose	2
	{ 16124	Fitting-Male Connector	3
39	95923	Hose Assembly-Special	2
40	14681	Fitting-Male Connector	3
41	15303	Fitting-Pipe Plug, 1/2	1
42	{ 15955	Setscrew-3/8 UNC x 1 1/4	1
	{ 15086	Nut-Jam, 3/8 UNC	1
43	{ 16276	Setscrew-3/8 UNC x 2	2
	{ 15086	Nut-Jam, 3/8 UNC	2
44	95925	Belt-V	1

EMERGENCY BRAKE LINES AND FITTINGS



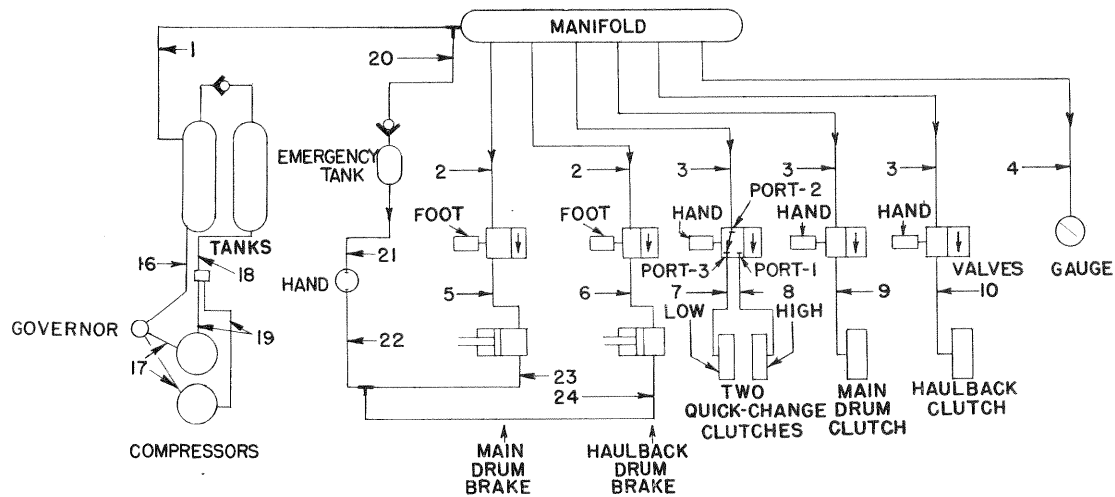
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	96322	Tank—Emergency	1
2	96323	Bracket	4
3	16634	Capscrew—3/8 UNF x 1	4
	15006	Nut—3/8 UNF	4
	15156	Lockwasher—3/8	4
4	15739	Capscrew—3/8 UNF x 5½	2
	15006	Nut—3/8 UNF	2
	15156	Lockwasher—3/8	2
5	24272	Fitting—Male Ell	1
6	96325	Hose	1
7	96324	Hose	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
8	17074	Fitting—Male Connector	1
9 *	94824	Valve—Check	1
10	16143	Fitting—Street Ell.	1
11	19987	Fitting—Close Nipple	1
12	96327	Hose	1
13	14382	Fitting—Union Tee	1
14	96328	Hose	1
15	94994	Hose	1
16	78103	Valve—Drain	1

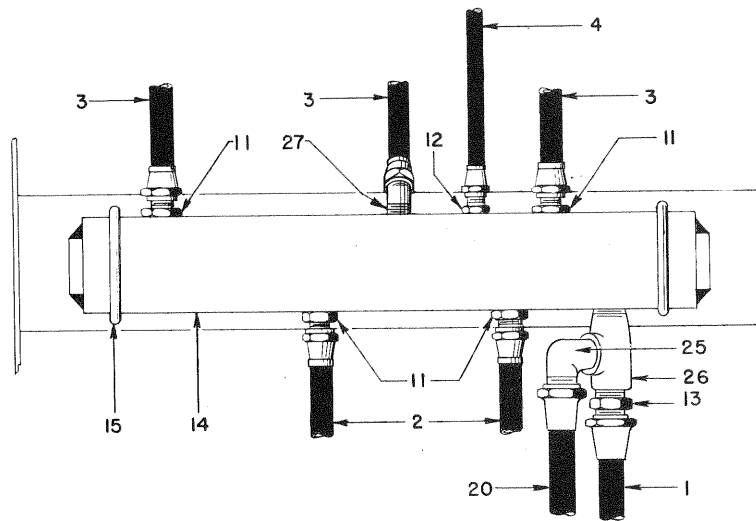
* Note: Install Valve With Arrow Pointed as shown.

PNEUMATIC CIRCUIT—MANIFOLD AND FITTINGS

PNEUMATIC CIRCUIT



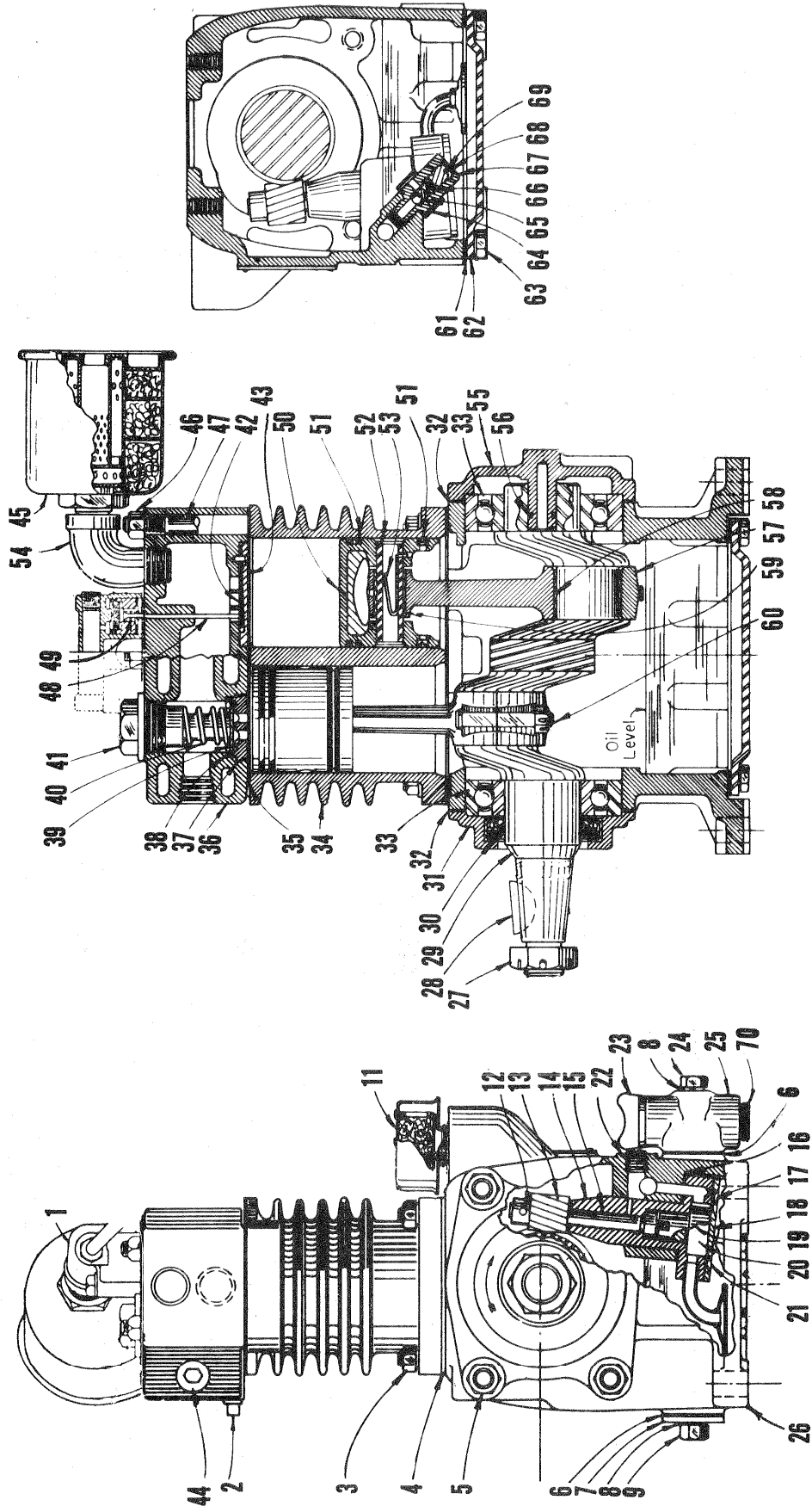
MANIFOLD AND FITTINGS



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94992	Hose	1	16	{ 94811	Hose (For D8)	1
2	94990	Hose	2		{ 94814	Hose (For D9)	1
3	94989	Hose	3	17	95541	Hose (Governor to Compressor) .	2
4	94991	Hose	1	18	{ 95922	Hose (For D8)	1
5	94997	Hose	1		{ 95921	Hose (For D9)	1
6	94998	Hose	1	19	95923	Hose (Special)	2
7	94995	Hose	1	20	96324	Hose	1
8	94996	Hose	1	21	96325	Hose	1
9	94993	Hose	1	22	96327	Hose	1
10	94994	Hose	1	23	94994	Hose	1
11	16134	Fitting	8	24	96328	Hose	1
12	16124	Fitting	1	25	14360	Fitting	1
13	14305	Fitting	1	26	19536	Fitting	1
14	95019W	Manifold	1	27	16863	Fitting	1
15	{ 94898	Bolt-U	2				
	{ 15025	Nut-Jam, 5/16 UNF	8				

HYSTER COMPANY
PORTLAND, OREGON

AIR COMPRESSOR

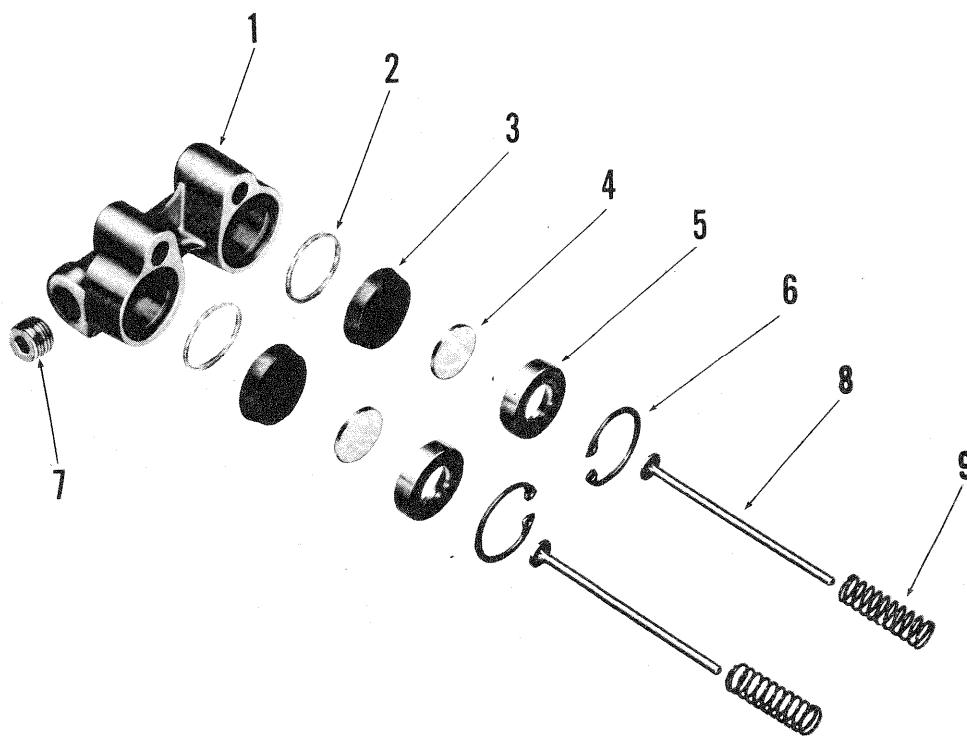


AIR COMPRESSOR

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	124368	Compressor Assembly	2	37	233554	Seat-Exhaust Valve	2
2	234678A	Unloader Assembly	2	38	233555	Washer	2
3	78615	Plug-Drain	1	39	233556	Valve-Exhaust	2
	233514	Stud-Crankcase to Block	6	40	233557	Spring	2
	15005	Nut-5/16-24	6	41	233558	Cage	2
	15932	Lockwasher-5/16	6	42	233563	Valve-Inlet	2
4	233513	Gasket	1	43	233564	Guard and Spring Assembly	2
5	233512	Stud-Case to Bearing Cap	8	44	12877	Plug	1
	15056	Nut-3/8-16	8	45	233560	Air Cleaner	1
	15156	Lockwasher-3/8	8	46	15005	Nut-5/16-24	6
6	233511	Gasket	2	47	233561	Stud-Long	5
7	233510	Plate-Cover	1		233562	Stud-Short	1
8	15154	Lockwasher-1/4	4	48	234680	Plunger	2
9	233509	Screw-1/4-20	2	49	234679	Spring	2
11	233524	Breather	1	50	233565	Piston	2
	233528	Oil Pump Assembly	1	51	233566A	Piston Ring Set	1
12	233529	Pin	1	52	233567	Pin-Piston	2
13	233530	Gear	1	53	233568	Lockwire	2
14	233531	Body	1	54	233559	Elbow	1
15	233532	Shaft	1	55	233570	Cap-Rear Bearing	1
16	233538	Gasket	1	56	233571	"O" Ring	1
17	233539	Screw	2	57	233581A	Connecting Rod Assembly	2
18	233540	Cover	1	58	233582	Bearing Set	2
19	233541	Rotor	1	59	233583	Bushing-Piston Pin	2
20	233542	Vane	1	60	233584	Bolt	4
21	233543	Screw-Cover	2		233585	Nut	4
22	233533	Plug	1		15212	Cotter	4
23	233534	Cap-Oil Filler	1	61	233572	Gasket-Cover Plate	1
24	15687	Screw	2	62	233573	Plate-Cover	1
25	233536	Body-Oil Filler	1	63	233509	Screw-1/4-20	12
26	233527	Crankcase (includes 14 studs)	1		15923	Lockwasher-1/4	12
27	122860	Nut-3/4-16	1	64	233574	Cup-Splash Shield	1
28	206	Key	1		233575A	Relief Valve Assembly	1
29	233545	Crankshaft	1	65	233576	Ball	1
30	233546	Seal	1	66	233577	Spring	1
31	233547	Cap-Front Bearing	1	67	233578	Body	1
32	233548	Gasket	2	68	233579	Plug	1
33	233549	Bearing	2	69	233580	Pin	1
34	233550	Block-Cylinder (includes 6 studs)	1	70	12877	Plug	1
35	233551	Gasket-Cylinder Head	1				
36	233552A	Head Assembly	1				
	233553	Head	1				

* Included in Repair Kit 122856

UNLOADER ASSEMBLY

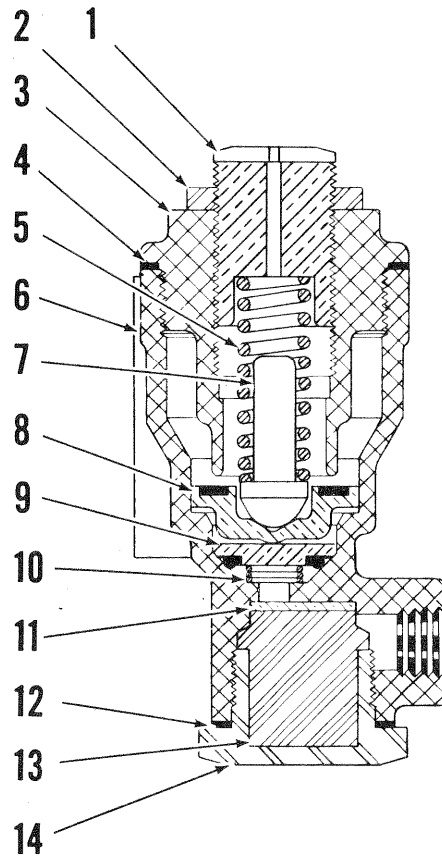
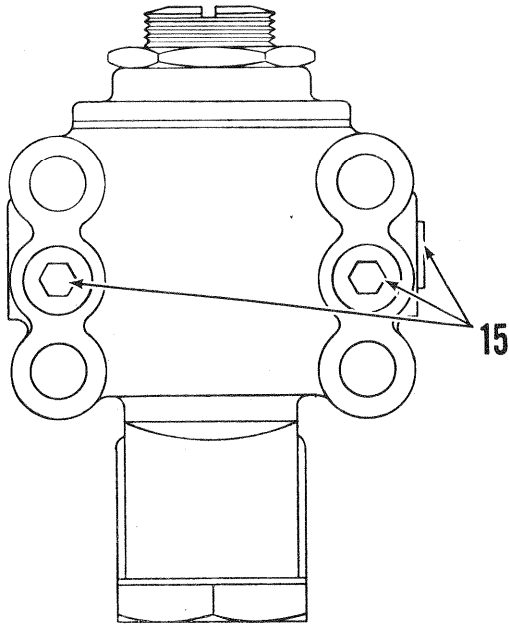


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	234678A	Unloader Assembly	2
1	78704	Body	1
2 *	234685	Spring—Expanding	2
3 *	234684	Cup	2
4	234682	Disc—Valve	2
5	234683	Bushing	2

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
6	234681	Snap Ring.	2
7	15483	Pipe Plug—1/8	1
8 *	234680	Plunger	2
9 *	234679	Spring	2

* Included in Repair Kit 122856.

GOVERNOR ASSEMBLY-124367

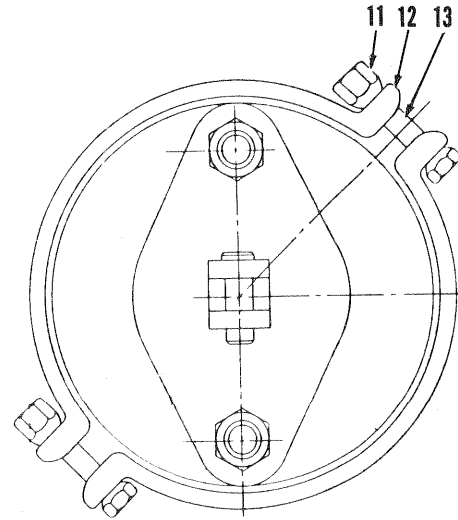
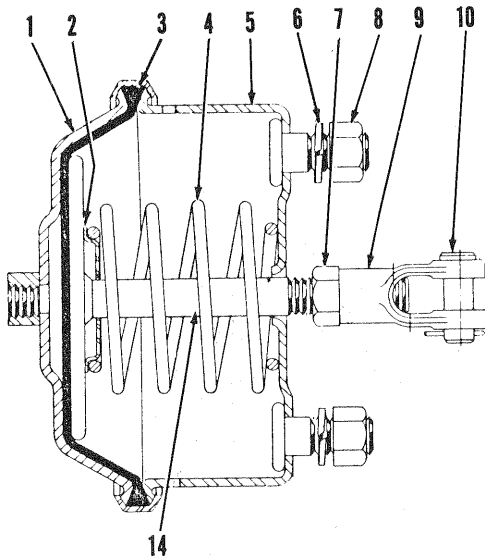


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	233587	Plug	1
2	233595	Nut-Jam	1
3	233588	Housing	1
4 *	-----	Spacer	2
5 *	-----	Spring	1
6	-----	Body (N.S.S.)	1
7	233591	Guide-Spring	1
8 *	-----	Valve Assembly	1
9 *	-----	Valve	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
10 *	-----	Spring	1
11 *	-----	Screen	1
12 *	-----	Washer	1
13 *	-----	Filter	1
14	233599	Cap-End	1
15	15483	Pipe Plug	3

* Included in repair kit - 87240

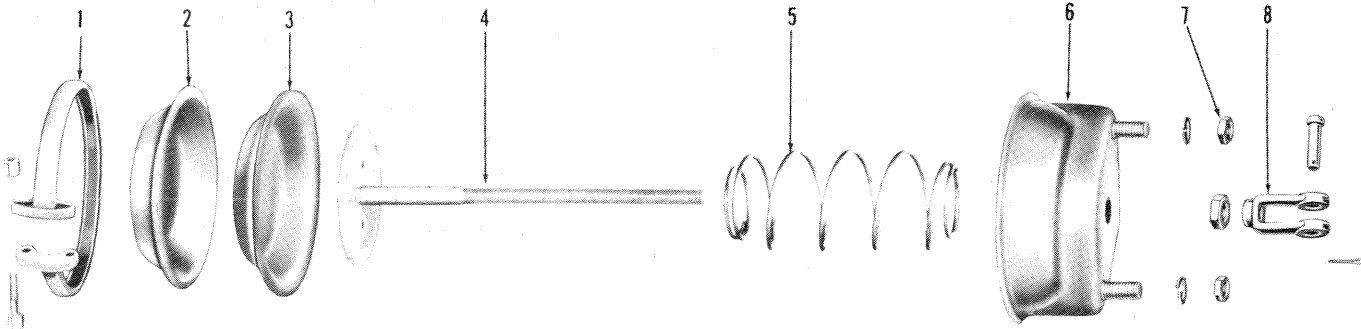
AIR CHAMBER ASSEMBLY



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	94932A	Air Chamber Assembly	2
1	233424	Cover Assembly	1
2	202762	Retainer-Spring	1
3	233425	Diaphragm	1
4	233426	Spring	1
5	233430	Body Assembly	1
6	15160	Lockwasher-5/8	2
7	15030	Nut-Jam, 5/8 UNF	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
8	15010	Nut-5/8 UNF	2
9	200891	Rod End	1
10	159	Pin-Rod End	1
	15223	Cotter-1/8 x 1	1
11	233427	Nut	2
12	233428	Band-Clamp	2
13	233429	Bolt	2
14	122852	Push Rod	1

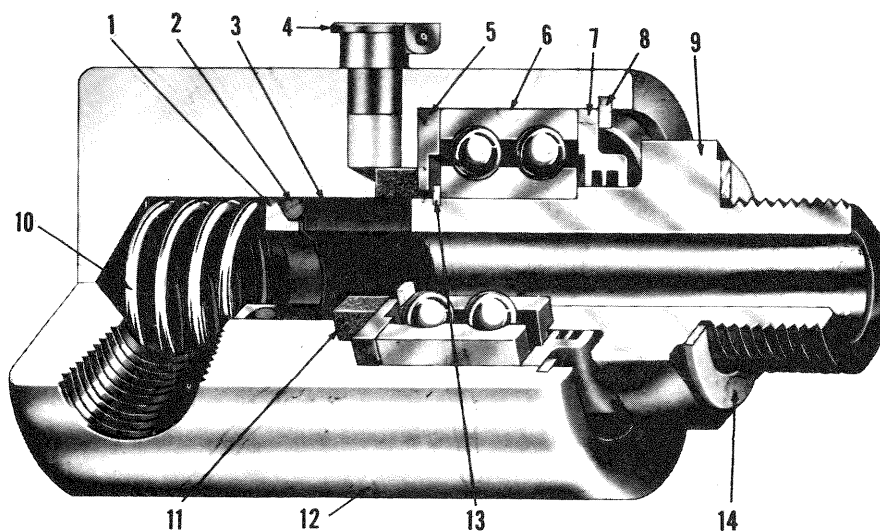
AIR CHAMBER ASSEMBLY



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	96339A	Air Chamber Assembly	2
1	202731	Ring-Clamping	1
	202732	Bolt	2
	202733	Nut	2
2	202734	Plate-Pressure	1
3	202735	Diaphragm	1
4	202736	Push Rod	1
5	202737	Spring	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
6	202738	Plate-Non Pressure	1
7	15007	Nut-7/16 UNF	2
	15157	Lockwasher-7/16	2
8	15028	Nut-Jam, 1/2 UNF	1
	96516	Rod End	1
	153	Pin-Rod End	1
	15223	Cotter-1/8 x 1	1

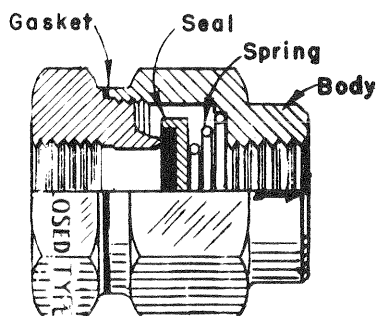
ROTO COUPLING-94933A



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	233411	Retainer—"O" Ring	1
2	233418	"O" Ring	1
3	233413	Ring—Carbon	1
4	233414	Cup—Oil	1
5	233415	Retainer—Bearing	1
6	233416	Bearing	1
7	233417	Retainer—Bearing	1

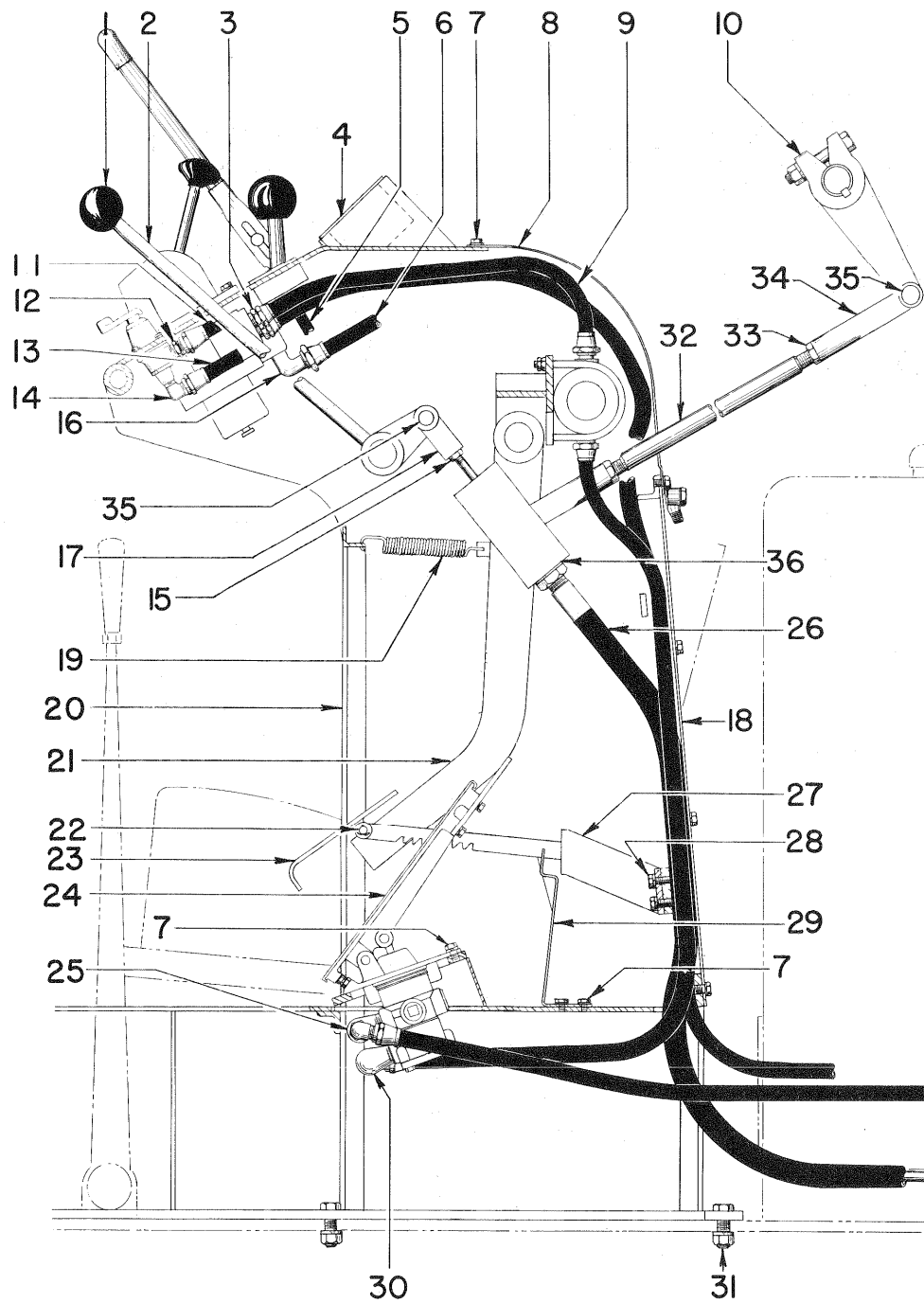
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
8	12977	Snap Ring	1
9	233419	Coupling	1
10	233420	Spring	1
11	233421	Seal—Felt	1
12	233422	Housing	1
13	12978	Snap Ring	1
14	233423	Washer	1

CHECK VALVE—NO. 94824



Hyster Part No.	NAME OF PART
95361	Repair Kit—Check Valve

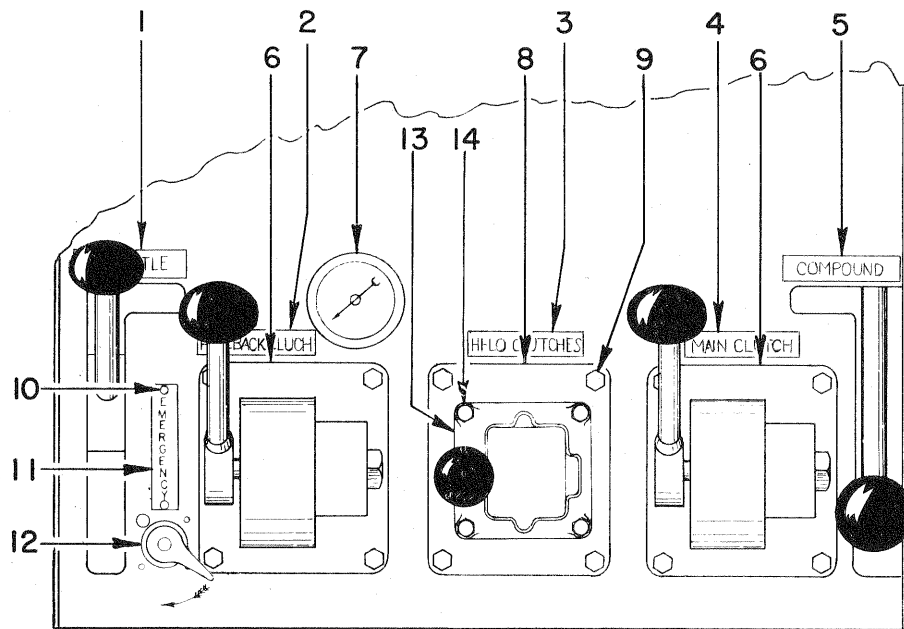
HANDLING GEAR



HANDLING GEAR

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94321	Knob	2	20	129791	Panel-Control (For Tachometer Use)	1
2	94798W	Lever	1		129790	Panel-Control (Without Tachometer)	1
3	16134	Fitting-Male Connector	8	21	94987W	Lever	1
4	130889	Tachometer	1	22	94894	Pin	1
5	94991	Hose Assembly	1		15222	Cotter-1/8 x 3/4	2
6	94995	Hose Assembly	1	23	94890W	Pedal	1
7	15583	Capscrew-5/16 UNF x 1/2	25	24	124407	Valve-Foot	2
	15155	Lockwasher-5/16	25	25	24272	Fitting-Male Ell	4
	18515	Washer-5/16	5		16116	Fitting-Bushing	4
8	94941	Cover	1	26	129603	Cable-Push Pull	1
9	94989	Hose Assembly	1	27	94882W	Bracket	1
		For D9 Tractors S.N. 34A, 49A, 50A, 66A.		28	15572	Capscrew-5/16 UNF x 3/4	16
10	77461W	Crank	1		15155	Lockwasher-5/16	16
	5269	Key	1	29	94881	Spring	2
	16748	Capscrew-1/2 UNF x 2 3/4	1	30	17324	Fitting-Street Ell	4
	15008	Nut-1/2 UNF	1	31	16807	Capscrew-1/2 UNF x 1 1/2	8
	15158	Lockwasher-1/2	1		15158	Lockwasher-1/2	8
		For all D8 Tractors and D9 Tractors S.N. 18A, 19A.			15008	Nut-1/2 UNF	8
10	35670AB	Crank	1	32		For D9 Tractors S.N. 34A, 49A, 50A	
	15503	Capscrew-1/2 UNF x 2 3/4	1		77668A	Link Assembly-Strawdrum Brake	1
	15008	Nut-1/2 UNF	1	32		For D9 Tractors S.N. 66A	
11	96327	Hose (Hand Valve to Emergency Tank)	1		77669A	Link Assembly-Strawdrum Brake	1
12	14303	Fitting-Male Connector	1	32		For D9 Tractors S.N. 18A, 19A and D8 Tractors S.N. 22A, 35A, 36A, 52A, 68A	
13	96325	Hose-Hand Valve to Emergency Tank)	1		36188A	Link Assembly-Strawdrum Brake	1
14	14357	Fitting-Male Ell	1	32		For D8 Tractors prior to S.N. 22A	
15	15026	Nut-Jam, 3/8 UNF	1		37198A	Link Assembly-Strawdrum Brake	1
16	14358	Fitting-Male Ell	1	33	15010	Nut-5/8 UNF	2
17	92683	Rod End	1	34	158	Rod End	2
18	94942	Cover	1	35	159	Pin-Rod End	2
19	64037	Spring	1		15223	Cotter-1/8 x 1	2
				36	15934	Lockwasher-Shakeproof, 7/8	2

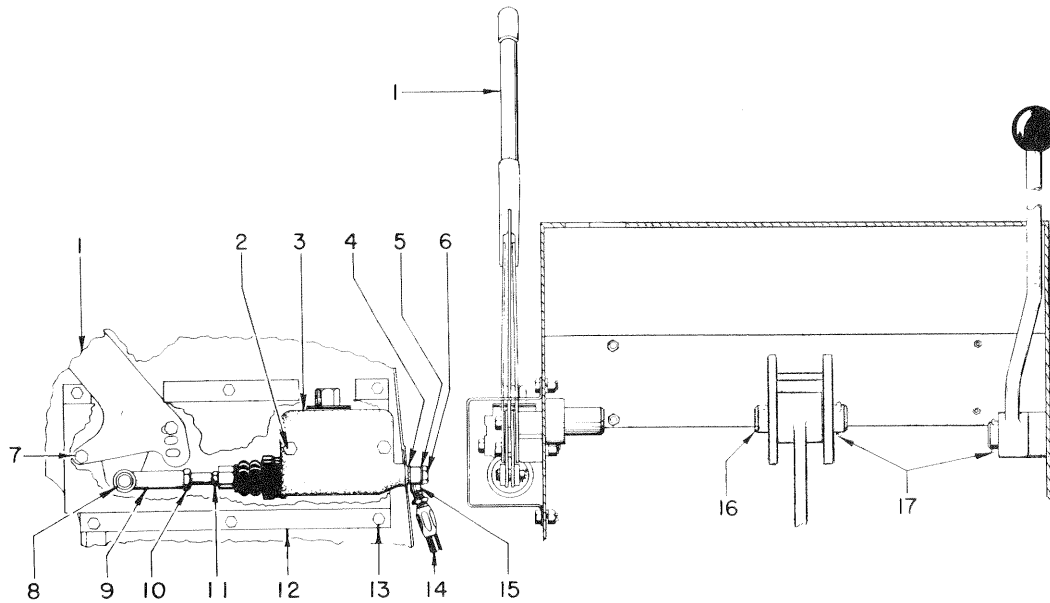
HANDLEVERS



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95384	Name Plate-Throttle	1
2	95385	Name Plate-Haulback Clutch . .	1
3	95382	Name Plate-Hi-Lo Clutches . .	1
4	95381	Name Plate-Main Clutch	1
5	95383	Name Plate-Compound	1
6	132306	Valve-Hand	2
	14372	Fitting-Female Ell	1
	15453	Fitting-Nipple- $\frac{1}{4}$ x $2\frac{1}{2}$	1
7	116153	Gauge-Air Pressure	1
8	96348	Plate	1
9	15572	Capscrew-5/16 UNF x $\frac{3}{4}$	12
	15155	Lockwasher-5/16	12

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
10	16602	Screw-Drive, No. 6 x $\frac{1}{4}$	12
11	96520	Name Plate-Emergency	1
12	96326	Valve-Hand, Emergency Brake. .	1
	14357	Fitting-Male Ell	1
	14303	Fitting-Male Connector	1
	16853	Machine Screw- No. 8-32 x $\frac{1}{2}$. .	3
13	88642A	Valve-Hand	1
	14372	Fitting-Female Ell	1
	15380	Fitting-Nipple, $\frac{1}{4}$ x $1\frac{1}{2}$	1
14	18461	Capscrew- $\frac{1}{4}$ UNF x $\frac{3}{4}$	4
	15154	Lockwasher- $\frac{1}{4}$	4
	15004	Nut- $\frac{1}{4}$ UNF	4

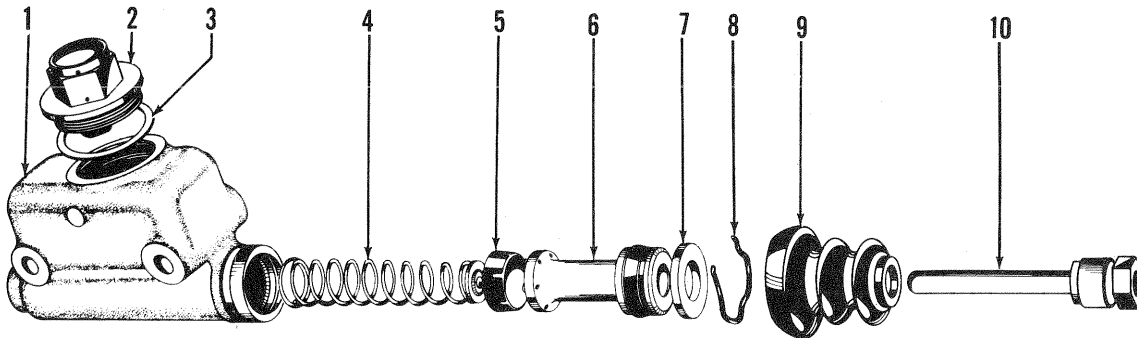
HANDLING GEAR-STRAWDRUM CLUTCH



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	96213	Lever	1
2	{ 17155	Capscrew-3/8 UNF x 3¼	2
	{ 15006	Nut-Hex, 3/8 UNF	2
	{ 15156	Lockwasher-3/8	2
3	96199A	Cylinder-Master	1
4	24092	Gasket	1
5	29582	Gasket	1
6	29583	Bolt-Fitting	1
7	{ 96200	Spacer	2
	{ 17154	Capscrew-3/8 UNF x 2½	2
	{ 15006	Nut-Hex, 3/8 UNF	2
	{ 15156	Lockwasher-3/8	2
8	{ 142	Pin-Rod	1
	{ 15212	Cotter-3/32 x ¼	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
9	141	Rod End	1
10	15026	Nut-Jam, 3/8 UNF	1
11	96201	Link	1
12	96209	Cover	1
13	{ 16818	Capscrew-5/16 UNF x ¼	6
	{ 15005	Nut-Hex, 5/16 UNF	6
	{ 15155	Lockwasher-5/16	6
14	96204	Hose	1
15	42075	Fitting	1
16	94895	Pin	1
17	15246	Cotter-3/16 x 2	2

CYLINDER ASSEMBLY-96199A

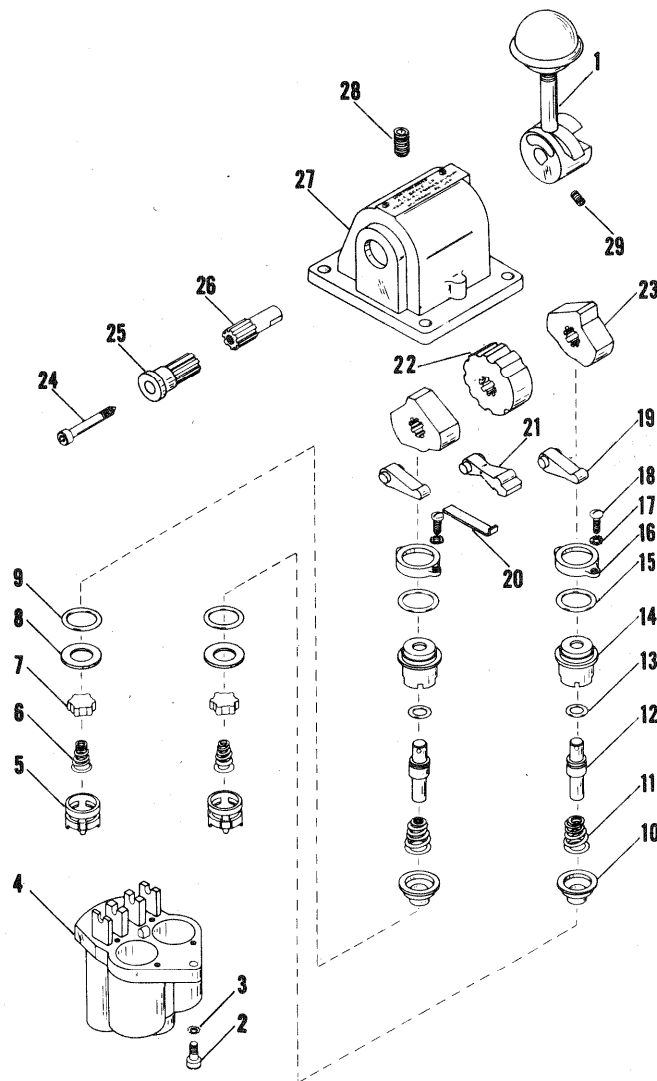


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	-----	Housing	1
2	54705	Plug-Filler	1
3	54659	Gasket-Filler Plug	1
4	54573	Spring Assembly	1
5 *	-----	Cup-Primary	1
6 *	-----	Piston Assembly	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
7	54576	Plate-Stop	1
8 *	-----	Wire-Lock	1
9 *	-----	Boot	1
10	96231	Rod-Push	1

*Included in Repair Kit 54584.

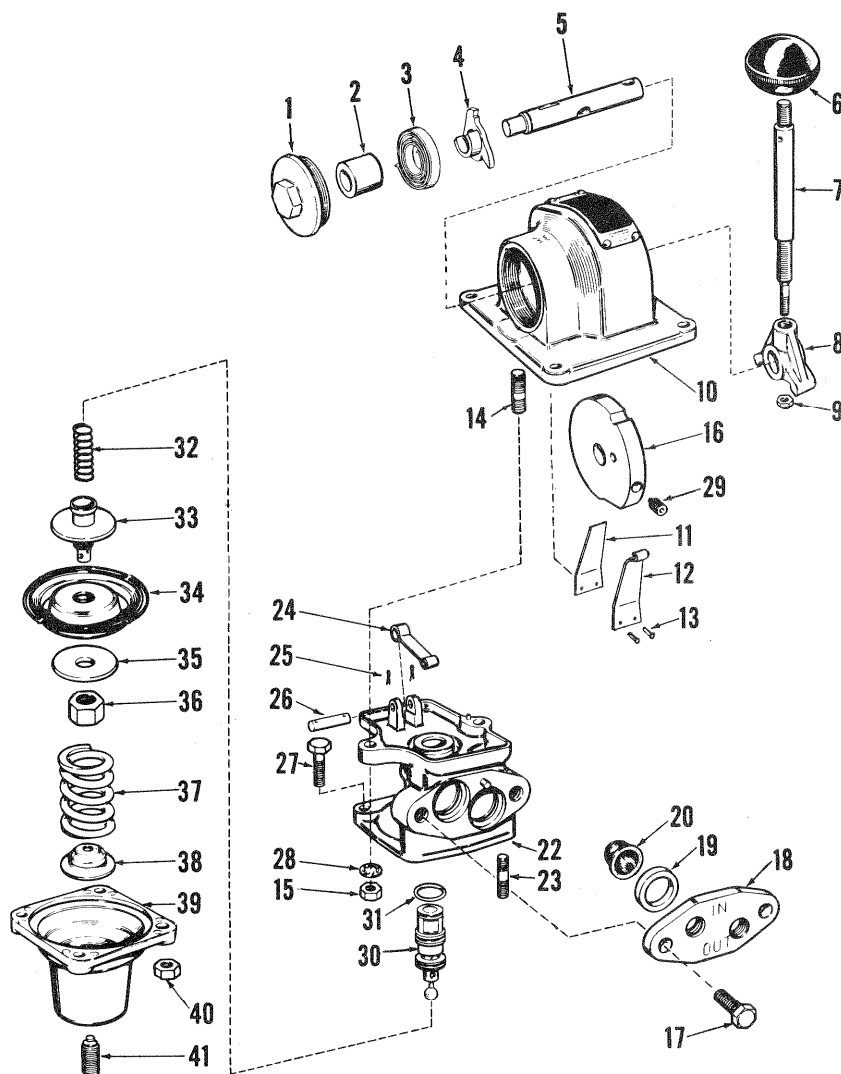
HAND VALVE ASSEMBLY-88642A



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	86864	Handle Assembly	1
2	86629	Machine Screw-No.10 UNC x ¼ . .	2
3	15931	Lockwasher-No. 10	2
4	86630	Body	1
5	86631	Spacer-Valve	2
6	233478	Spring-Inlet Valve	2
7	86632	Valve-Inlet	2
8	86633	Washer	2
9	86634	Ring-Packing, 7/8" O.D.	2
10	86635	Seat-Inlet Valve	2
11	86636	Spring-Exhaust Valve	2
12	86637	Plunger-Valve	2
13	86638	Ring-Packing, 7/16" O.D.	2
14	86639	Guide-Plunger	2
15	86640	Ring-Packing, 15/16" O.D.	2

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
16	86641	Flange-Valve Retaining	2
17	16743	Lockwasher-No.6	4
18	86852	Machine Screw-No.6 UNC x 3/8 . .	4
19	86853	Follower-Cam	2
20	86854	Spring-Detent	1
21	86855	Follower-Detent Cam	1
22	86856	Cam-Detent	1
23	86857	Cam	1
24	17948	Capscrew-No.10 UNF x 1½	1
25	86859	Shaft-Cam	1
26	86860	Shaft-Handle	1
27	86861	Housing	1
28	86862	Setscrew-No.6 UNC x ½	1
29	86863	Setscrew-No.10 UNF x ¼	1

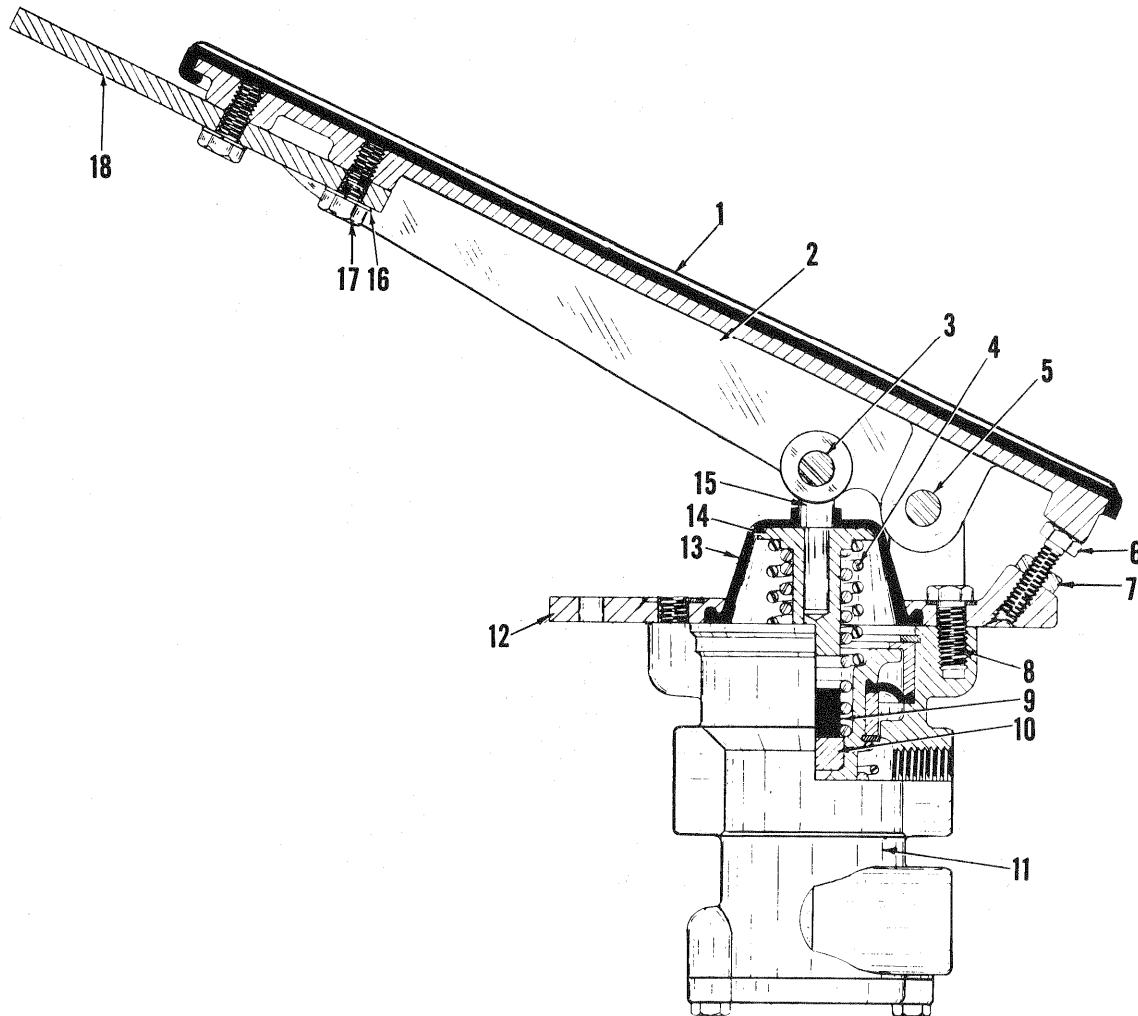
HAND VALVE ASSEMBLY-132306



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	133490	Nut	1
2	233439	Sleeve	1
3	233441	Spring-Handle Return	1
4	233440	Arbor	1
5	233442	Shaft-Cam	1
6	233436	Ball-Handle	1
7	233435	Shaft-Handle	1
8	233437	Yoke-Handle	1
9	86620	Nut	1
10	233545	Housing-Cam	1
11	233446	Spring-Latch Booster	1
12	233447	Latch-Spring	1
13	14524	Rivet-3/32 x 3/4	2
14	133491	Stud	2
15	15055	Nut-5/16 UNC	4
16	233443	Cam	1
17	133492	Capscrew-3/8 UNC x 1-1/8	2
18	233431	Bracket-Pipe	1
19	133493	Gasket-Strainer	2
20	133494	Strainer	2
22	133496	Body	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
23	133497	Stud	2
24	133495	Dog-Cam	1
25	15200	Cotter-1/16 x 1/2	2
26	233448	Pin-Cam Dog	1
27	133498	Capscrew-5/16 UNC x 1-1/8	2
28	15918	Lockwasher-5/16	2
29	54980	Set Screw	1
30	133499	Valve	1
31	86625	Ring-Packing	2
32	133500	Spring-Exhaust Valve	1
33	133501	Seat-Exhaust Valve	1
34	133502	"O" Ring-3/4 O.D.	1
35	233455	Diaphragm	1
36	233454	Follower-Diaphragm	1
37	54981	Nut-Special	1
38	233457	Spring-Diaphragm (125 PSI)	1
39	233458	Seat-Spring	1
40	233459	Housing-Spring	1
41	15055	Nut-5/16 UNC	2
	233460	Screw-Adjusting	1

FOOT VALVE ASSEMBLY



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
	124407	Foot Valve Assembly	2
1	128780	Cover-Treadle	1
2	128793	Treadle	1
3	128777	Pin-Push Rod	1
* {	-----	Cotter	4
4	128781	Spring	1
5	128779	Pin-Treadle	1
6	128786	Capscrew	1
7	128785	Nut	1
8	128787	Capscrew	2
9	128788	Lockwasher	2
* {	-----	Spring-Rubber	1
10	128784	Spacer	1
11	-----	Control Unit	1
* {	128795	Cartridge Assembly	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
12	128778	Plate-Mounting	1
	128789	Plug	2
13	*	Boot-Dust	1
14	128782	Cap-Spring	1
15	128783	Rod-Push	1
16	128792	Lockwasher	2
17	128791	Capscrew	2
18	128790	Extension-Treadle	1

*Included in complete Repair Kit 128794.
Cartridge Repair Kit 128796 includes Poppet Tube, Exhaust Check, "U" Cup, and "O" Rings.

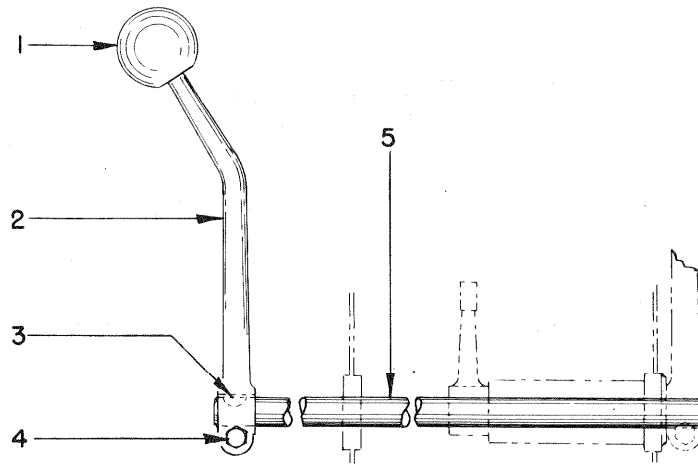
Section G

OPTIONAL EQUIPMENT INDEX

FAIRLEAD	G5
FAIRLEAD AND BRACKET	G4
THROTTLE CONTROL GROUP FOR D9 TRACTORS	G1
THROTTLE CONTROL GROUP FOR D8 TRACTORS S.N. 22A, 35A,... 36A, 46A, 52A, 68A	G1
THROTTLE CONTROL GROUP FOR D8 TRACTORS S.N. 14A, 15A ...	G2
THROTTLE CONTROL GROUP FOR D8 TRACTORS PRIOR TO S.N. . 14A, 15A.	G3

THROTTLE CONTROL

For D8 Tractors S.N. 22A, 35A, 36A, 46A, 52A, 68A

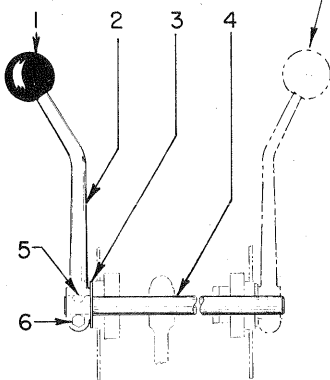


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94321	Knob	1
2	94808	Lever ("Caterpillar" No. 5H6804)	1
3	32415	Key	1

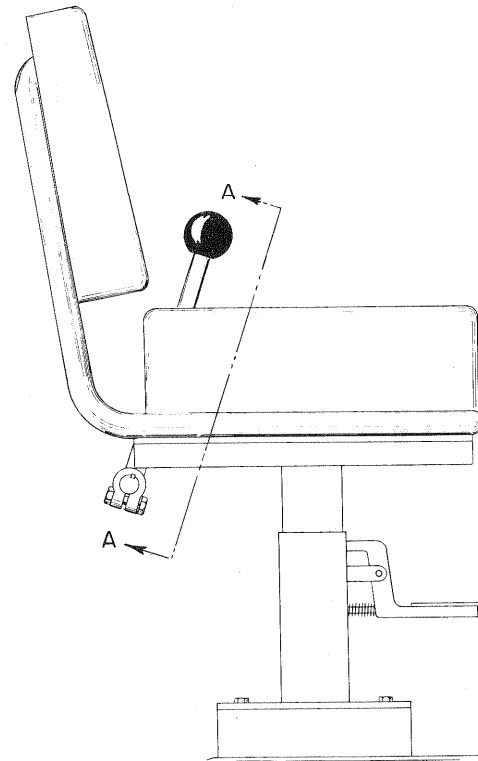
Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
4	15527	Capscrew—3/8 UNF x 1 3/4	1
	15006	Nut—Hex, 3/8 UNF	1
	15156	Lockwasher—3/8	1
5	95860	Shaft	1

THROTTLE CONTROL

For D9 Tractors S.N. 18A, 19A, 34A, 49A, 50A, 66A

EXISTING
TRACTOR
THROTTLE CONTROL
LEVER

SECTION A-A

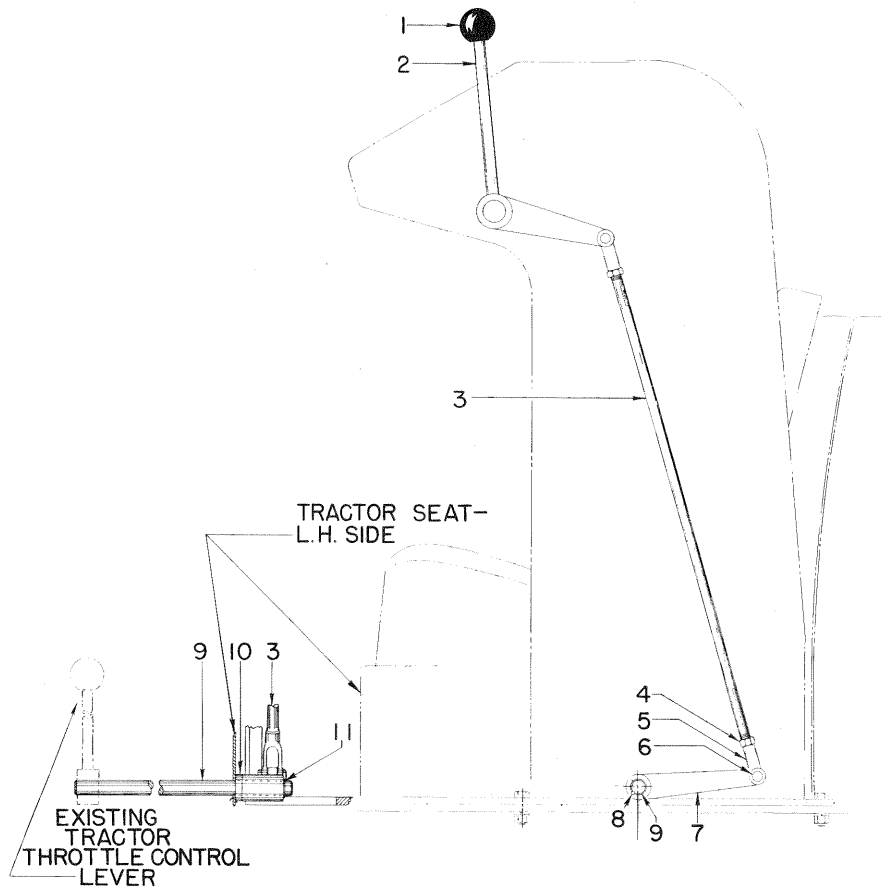


Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94321	Knob	1
2	94808	Lever ("Caterpillar" No. 5H6804)	1
3	15136	Washer—3/4	1
4	94807	Shaft	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
5	32415	Key	1
6	15527	Capscrew—3/8 UNF x 1 3/4	1
	15006	Nut—3/8 UNF	1
	15156	Lockwasher—3/8	1

HYSTER COMPANY
PORTLAND, OREGON

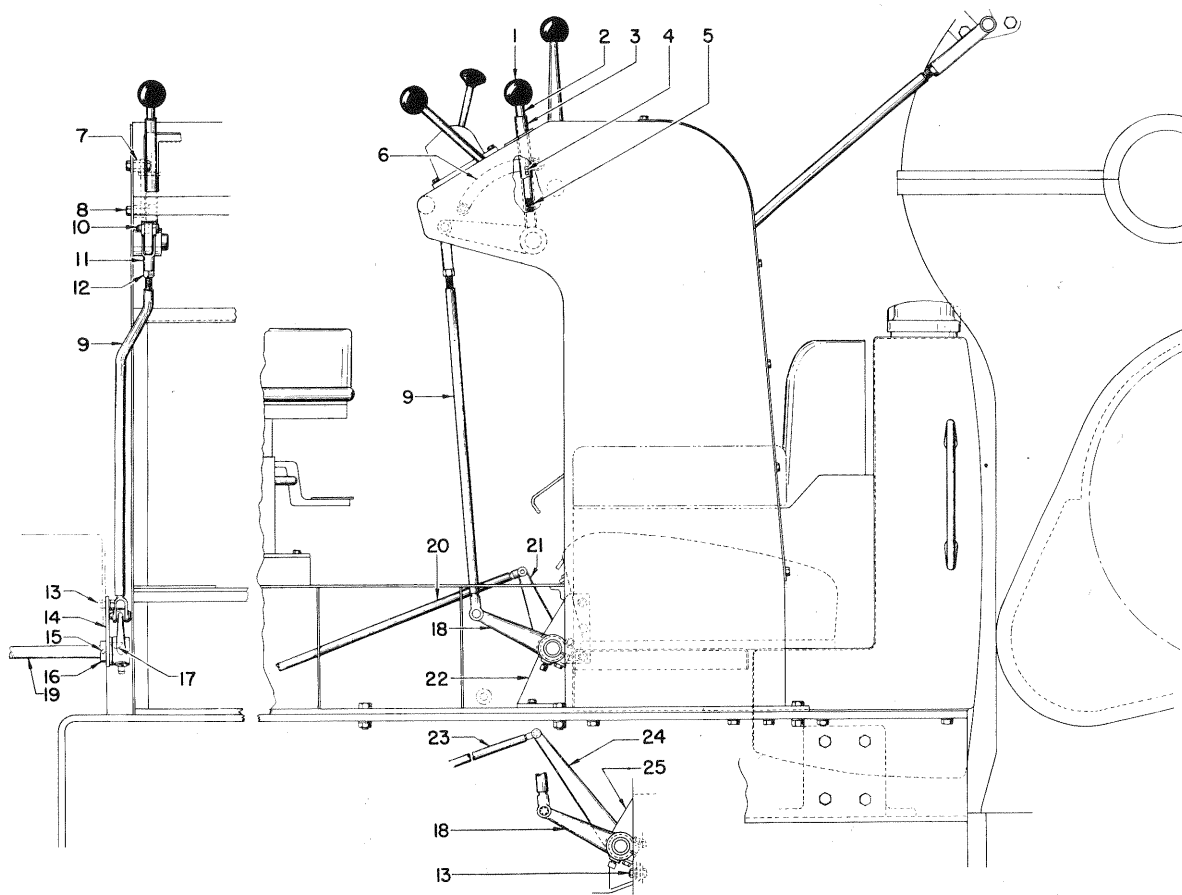
THROTTLE CONTROL For D8 Tractors S.N. 14A, 15A



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	94321	Knob	1
2	{ 94777W	Lever	1
	{ 15246	Cotter-3/16 x 2	1
3	9272AB	Link Assembly	1
4	15008	Nut-1/2 UNF	2
5	152	Rod End	2
6	{ 153	Pin-Rod End.	2
	{ 15223	Cotter-1/8 x 1	2

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
7	94774W	Crank	1
8	9413	Key	1
9	94772	Shaft	1
10	94773	Spacer	1
11	58902	Snap Ring	1

THROTTLE CONTROL GROUPS For D8 Tractors



Key:

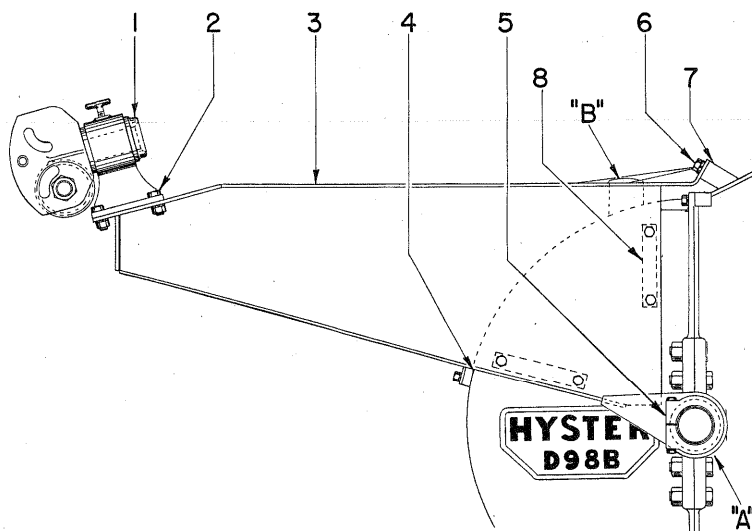
A—For D8 Tractors S.N. 2U7488 To 2U21512 Inclusive.

B—For D8 Tractors S.N. 2U21513 To 13A Inclusive.

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
1	{ 95392A	Lever Assembly	1	1
	{ 94321	Knob	1	1
2	95395	Rod	1	1
3	95393W	Lever	1	1
4	19909	Roll Pin	1	1
5	5782	Spring	1	1
6	59288	Ratchet Bar	1	1
7	80647	Spacer	2	2
8	{ 25052	Capscrew—3/8 UNF x 1½	2	2
	{ 15006	Nut—Hex, 3/8 UNF	2	2
	{ 15156	Lockwasher—3/8	2	2
9	95396A	Link Assembly	1	1
10	{ 153	Pin—Rod End	2	2
	{ 15223	Cotter—1/8 x 1	2	2
11	152	Rod End	1	1
12	15028	Nut—Jam, ½ UNF	1	1
13	{ 15513	Capscrew—3/8 UNF x ¾	4	6
	{ 15006	Nut—Hex, 3/8 UNF	4	6
	{ 15156	Lockwasher	4	6
14	95391W	Plate	1	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.	
			A	B
15	16415	Set Screw—5/16 UNC x ½	1	1
16	59290	Bushing	1	1
17	7882	Key	2	1
18	{ 95400A	Crank Assembly	1	1
	{ 15528	Capscrew—3/8 UNF x 2	1	1
	{ 15006	Nut—Hex, 3/8 UNF	1	1
	{ 15156	Lockwasher—3/8	1	1
	{ 16416	Set Screw—3/8 UNC x 5/8	1	1
19	59291	Shaft	1	---
19	93155	Shaft	---	1
20	93157A	Link	---	1
21	{ 93162A	Lever	---	1
	{ 16414	Set Screw—5/16 UNC x 5/8	---	1
22	{ 93159A	Bracket	---	1
	{ 25062	Capscrew—3/8 UNC x 1¼	---	2
	{ 15156	Lockwasher—3/8	---	2
23	91833A	Link	1	---
24	{ 59293	Lever	1	---
	{ 16414	Set Screw—5/16 UNC x 5/8	1	---
25	59292	Bracket	1	---

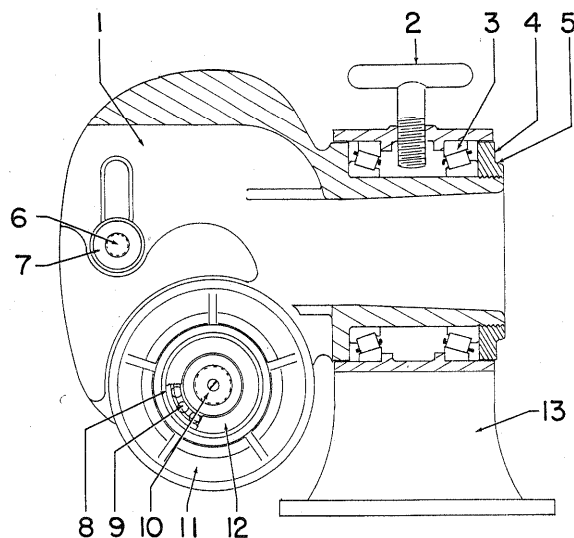
FAIRLEAD AND BRACKET GROUP—NO. 95521A (OPTIONAL)



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	95508AB	Fairlead	1
2	16800	Capscrew— $\frac{3}{4}$ UNF x 2	4
	15012	Nut— $\frac{3}{4}$ UNF	4
	15162	Lockwasher— $\frac{3}{4}$	4
3	129419	Bracket	1
4	96627	Plate	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
5	95519	Nut—Special.	1
6	12447	Capscrew— $\frac{5}{8}$ UNF x 1	10
	15160	Lockwasher— $\frac{5}{8}$	10
7	129416	Bar	1
8	96626	Bar	2

FAIRLEAD ASSEMBLY—95508AB



Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
1	200070	Head—Swivel	1
2	200076	Screw—Lock	1
3	30218	Cone—Bearing	2
	30219	Cup—Bearing	2
4	200072	Closure—Rear	1
5	16246	Set Screw— $\frac{1}{4}$ UNC x $\frac{1}{2}$	3
6	200078	Bolt—Idler (with nuts)	1
7	200077	Sheave—Idler	1

Ref. No.	Hyster Part No.	NAME OF PART	Qty. Req.
8	200074	Sleeve	1
9	30156	Cup—Bearing	1
	230399	Cone—Bearing	1
	200068	Tube—Bearing	1
10	200075	Pin—Sheave (with nuts)	1
11	200073	Sheave	1
12	200069	Seal—Bearing	2
13	200071	Base	1

Section Q

NUMERICAL INDEX

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
141	F14	15030	E2	16116	F12	19987	F2	45213	D4
142	F14	15034	D8	16124	F2	21229	D6	46578	D8
152	G2	15036	E2	16134	D4	21420	B2	48591 C	C3
153	E2	15055	F16	16143	F2	24272	F2	48596 C	C3
158	F12	15056	F6	16246	G4	25052	G3	52501	D4
159	E3	15086	F2	16276	F2	25062	G3	53661	D4
206	F6	15130	C1	16294	F2	27936	D8	54081	C1
5269	E3	15135	D12	16352	D4	28584	D12	54083	C1
5782	G3	15136	G1	16396	F2	29582	F14	54573	F14
5792 B	B3	15154	F6	16397	F2	29583	F14	54576	F14
6327	D2	15155	B2	16414	G3	30117	D10	54584	F14
6347 C	D8	15156	B1	16415	G3	30124	D2	54659	F14
6348	D8	15157	F9	16416	G3	30126	D2	54705	F14
6627	E2	15158	B1	16499	F2	30135	D10	54980	F16
6694 B	B3	15158 B	E4	16596	B2	30156	G4	54981	F16
7882	G3	15160	B1	16597	C1	30157	D2	55146	D12
9272AB	G2	15162	B1	16602	F13	30158	D2	57697	D8
9277	D12	15168	B1	16633	B1	30218	G4	58004 A	C3
9413	G2	15170	B3	16634	F3	30219	G4	58021	C3
9450	D2	15176	F2	16635	B1	30260	D8	58311	C3
9528	D5	15200	F16	16641	B1	30509	D10	58902	G2
9718	D8	15212	F6	16663	B2	32379	B1	58905	D8
10236	D10	15217	F2	16696	B1	32415	G1	58919	D10
11277	D10	15222	F12	16709	B5	32966	D12	58924	D5
12447	G4	15223	E2	16743	F15	32967	D12	58926	C3
12479	B1	15224	D6	16748	F12	33655	D8	59288	G3
12480	D12	15235	E2	16783	D10	33786	D5	59290	G3
12488	D6	15243	C3	16800	B1	34055	D2	59291	G3
12567	B2	15246	E3	16807	B2	34056	D2	59292	G3
12877	F6	15273	B1	16814	F2	34490	D8	59293	G3
12919	D4	15302	F2	16818	F14	35504	B1	59651	C3
12956	D4	15303	B1	16820	B1	35506	D10	61056	D8
12970	D10	15304	B2	16823	D2	35670AB	F12	64037	F12
12975	D4	15316	D12	16831	B1	36188 A	F12	67649	B1
12976	D12	15334	F2	16853	F13	37110	D6	69029	E2
12977	F10	15380	F13	16862	E2	37198 A	F12	77461 W	E3
12978	F10	15453	F13	16863	D10	37248	E2	77553	D4
14301	D12	15483	F7	16885	C1	37297	E4	77668 A	F12
14303	F2	15483	F8	17074	F3	37562	B1	77669 A	F12
14305	F2	15503	E3	17094	C3	38239	D12	78103	F2
14357	F12	15513	G3	17154	F14	38240	D12	78615	F6
14358	E2	15527	G1	17155	F14	41220	D12	78704	F7
14360	F4	15528	G3	17314	D10	41222	D12	79385	D2
14372	F13	15572	B5	17324	F12	41311	D4	80647	G3
14382	F3	15583	F12	17405	C3	42075	F14	82432 A	C3
14524	F16	15593	C3	17948	F15	43217	D12	83312	C3
14681	F2	15622	F2	18000	B3	44315	D12	83327 A	C3
15004	F13	15687	F6	18001	B3	44319	D12	86620	F16
15005	B5	15739	F3	18202	C3	44322	D10	86625	F16
15006	F2	15879	D2	18227	F2	44413	D5	86629	F15
15007	F9	15887	D10	18461	F13	44521	D12	86630	F15
15008	D4	15890	D8	18515	F12	44522	D12	86631	F15
15010	D6	15918	F16	18605	D12	44523	D4	86632	F15
15012	D6	15923	F6	18627	D6	44524	D6	86633	F15
15018	B1	15931	F15	18813	F2	44525	D6	86634	F15
15021	E2	15932	F6	18849	B3	44526	D4	86635	F15
15024	E2	15934	D8	19535	F2	44527	D12	86636	F15
15025	F4	15955	F2	19536	F4	44528	D10	86637	F15
15026	F12	16001	D5	19899	C1	44529	D5	86638	F15
15028	C3	16041	C3	19909	G3	44548	D12	86639	F15

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
86640	F15	94814	F2	94997	F4	95174	B1	96183	D12
86641	F15	94820	F2	94998	F4	95179	E4	96184 W	D12
86852	F15	94822	F2	95000	D10	95205	B1	96191	C3
86853	F15	94823	F2	95002	D10	95207 W	B1	96192	C3
86854	F15	94824	F2	95003	D10	95213	B2	96193	C3
86855	F15	94825	F2	95004	D10	95214 W	B2	96194 W	B2
86856	F15	94826	F2	95006	D10	95216	B2	96196	B2
86857	F15	94827	F2	95007	D10	95238	B1	96197	C3
86859	F15	94833	D6	95009	D5	95239	B1	96198	C3
86860	F15	94834	D6	95010	D10	95241	B1	96199 A	F14
86861	F15	94835	D5	95011	D10	95249 W	B1	96200	F14
86862	F15	94836	D6	95012	D12	95297	D8	96201	F14
86863	F15	94837	D6	95013 A	C1	95304	B3	96202	C3
86864	F15	94838	D6	95015	D10	95305	B4	96203	C3
87240	F8	94845 A	E2	95016	D10	95322	E2	96204	F14
88642 A	F13	94848 W	E2	95019 W	F4	95323	E2	96205	D12
89079	D5	94851	E2	95021	D2	95324	E4	96207	D12
89081	D5	94852	E2	95022	D2	95326 W	E2	96208	C3
89089	D5	94856	E2	95023	D2	95337 A	E2	96209	F14
89090	D5	94857	E2	95024	D2	95347	F2	96210 A	C3
89091	D5	94881	F12	95030	D4	95353 A	E3	96213	F14
89092 A	D5	94882 W	F12	95031	D4	95354 A	C2	96214	B2
89591	D5	94890 W	F12	95033	D4	95361	F10	96231	F14
89613	D5	94894	F12	95034	D4	95362	D8	96238	D2
90202	D2	94895	F14	95035	D4	95363	D5	96239	D2
90502	D12	94898	F4	95039	D4	95381	F13	96260	D12
90937	D2	94901	D10	95040	D4	95382	F13	96261 A	D12
91833 A	G3	94902	D10	95041	D4	95383	F13	96262 A	D6
92683	F12	94905	D10	95047	D10	95384	F13	96322	F3
92687	E4	94908 W	D12	95048	D12	95385	F13	96323	F3
92688	E4	94913	D12	95049	D12	95386	B1	96324	F4
92777	E4	94914	D12	95050	D12	95391 W	G3	96325	F12
92779 A	E4	94927 A	E4	95051	D5	95392 A	G3	96326	F13
92861	D4	94932 A	F9	95052	D12	95393 W	G3	96327	F12
93155	G3	94933 A	F10	95056 A	E3	95395	G3	96328	F4
93157 A	G3	94941	F12	95062	E3	95396 A	G3	96337 W	E3
93159 A	G3	94942	F12	95065	E3	95400 A	G3	96339 A	F9
93162 A	G3	94943	B5	95074	E4	95421	D12	96340	B1
93263	D8	94946	D8	95076	D4	95508AB	G4	96347 W	E2
93269	D2	94947	D8	95079	D5	95519	G4	96348	F13
93284	D12	94948	D8	95080	D4	95521 A	G4	96511	D8
93286	D12	94950	D2	95082	D5	95526	D2	96516	F9
93348	B4	94955	D2	95083	D4	95540	B5	96519	B1
94196 W	D10	94960	D6	95084	D4	95541	F4	96520	F13
94321	F12	94961	D6	95085	D4	95753	E2	96626	G4
94369	B1	94968	D10	95086	D4	95827	B4	96627	G4
94380	D8	94969	D10	95094	D8	95837	B4	96630	D2
94381	D8	94974	D12	95095	D8	95860	G1	96657	D2
94772	G2	94975	D12	95098	D8	95907	D8	96741 W	B1
94773	G2	94976	D12	95102	D10	95916 W	F2	97572 A	E3
94774 W	G2	94984 W	E4	95103	D8	95918	D4	97573 A	E2
94777 W	G2	94987 W	F12	95109 A	E4	95921	F4	99029	E2
94792	D8	94989	F12	95111	E4	95922	F4	99030	E3
94793	D8	94990	F4	95115	E4	95923	F4	99031	E3
94794	D8	94991	F12	95116	D8	95924	F2	99032	E3
94798 W	F12	94992	F4	95118	D5	95925	F2	109983 A	B5
94801	D4	94993	F4	95120	D8	95926 W	B2	110934	D8
94807	G1	94994	F4	95121	D8	96179	D12	110936	D8
94808	G1	94995	F12	95122	D8	96181	C3	116153	F13
94811	F2	94996	F4	95166	D4	96182	C3	122852	F9

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
122856	F7	133493	F16	233411	F10	233545	F16	233650	C1
122860	F6	133494	F16	233413	F10	233546	F6	233651	C1
124015	C3	133495	F16	233414	F10	233547	F6	233652	C1
124367	F8	133496	F16	233415	F10	233548	F6	233653	C1
124368	F6	133497	F16	233416	F10	233549	F6	233654	C1
124407	F17	133498	F16	233417	F10	233550	F6	233655	C1
124613	D8	133499	F16	233418	F10	233551	F6	233656	C1
124614	D5	133500	F16	233419	F10	233552 A	F6	233657	C1
124616	D8	133501	F16	233420	F10	233553	F6	233658	C1
124618	D10	133502	F16	233421	F10	233554	F6	233659	C1
124619	D4	133663	D2	233422	F10	233555	F6	233660	C1
124762	D4	133664	D2	233423	F10	233556	F6	233661	C1
124780	E2	133665	D2	233424	F9	233557	F6	233662	C1
125378	D4	133666	D2	233425	F9	233558	F6	233664	C1
125421	D5	133667	D2	233426	F9	233559	F6	233665	C1
125422	D5	133668	D2	233427	F9	233560	F6	233666	C1
127051	D10	133669	D2	233428	F9	233561	F6	233667	C1
127055	B1	133670	D2	233429	F9	233562	F6	233668	C1
127094	D8	200068	G4	233430	F9	233563	F6	234678 A	F7
127095	D8	200069	G4	233431	F16	233564	F6	234679	F7
127096	D8	200070	G4	233435	F16	233565	F6	234680	F7
127144	D10	200071	G4	233436	F16	233566 A	F6	234681	F7
127146	E2	200072	G4	233437	F16	233567	F6	234682	F7
127149	B1	200073	G4	233439	F16	233568	F6	234683	F7
127150	D8	200074	G4	233440	F16	233570	F6	234684	F7
127152	B2	200075	G4	233441	F16	233571	F6	234685	F7
127153	B1	200076	G4	233442	F16	233572	F6	235635 A	D6
128777	F17	200077	G4	233443	F16	233573	F6	235636 A	D10
128778	F17	200078	G4	233446	F16	233574	F6	235637 A	D4
128779	F17	200891	F9	233447	F16	233575 A	F6		
128780	F17	202731	F9	233448	F16	233576	F6		
128781	F17	202732	F9	233454	F16	233577	F6		
128782	F17	202733	F9	233455	F16	233578	F6		
128783	F17	202734	F9	233457	F16	233579	F6		
128784	F17	202735	F9	233458	F16	233580	F6		
128785	F17	202736	F9	233459	F16	233581 A	F6		
128786	F17	202737	F9	233460	F16	233582	F6		
128787	F17	202738	F9	233478	F15	233583	F6		
128788	F17	202762	F9	233509	F6	233584	F6		
128789	F17	230324	D2	233510	F6	233587	F8		
128790	F17	230325	D2	233511	F6	233588	F8		
128791	F17	230365	C3	233512	F6	233591	F8		
128792	F17	230380 A	D8	233513	F6	233595	F8		
128793	F17	230399	G4	233514	F6	233599	F8		
128794	F17	231002 A	D6	233524	F6	233634	C2		
128795	F17	231003	D10	233527	F6	233635	C2		
128796	F17	231004	D10	233528	F6	233636	C2		
129416	G4	231005	D8	233529	F6	233637	C2		
129419	G4	231006	D2	233530	F6	233638	C2		
129559	B2	233126 A	B5	233531	F6	233639	C2		
129603	F12	233155	B5	233532	F6	233640	C2		
129790	F12	233156	B5	233533	F6	233641	C2		
129791	F12	233157	B5	233534	F6	233642	C2		
130889	F12	233158	B5	233536	F6	233643	C2		
130890	D2	233159	B5	233538	F6	233644	C2		
131899	D5	233160	B5	233539	F6	233645	C1		
132306	F16	233161 A	B5	233540	F6	233646	C1		
133490	F16	233162	B5	233541	F6	233647	C1		
133491	F16	233163	B5	233542	F6	233648	C1		
133492	F16	233164 A	B5	233543	F6	233649	C1		