

PARTS AND INSTRUCTION BOOK

FOR

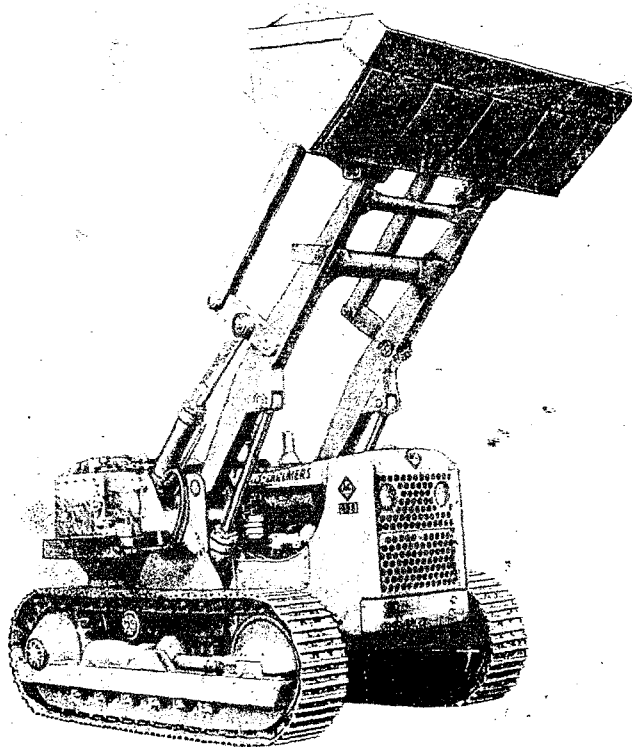
TRACTOMOTIVE

MODEL

TS - 6

TRACTO SHOVEL

SERIAL NO. 101 AND UP



TRACTOMOTIVE CORPORATION

DEERFIELD, ILLINOIS

U. S. A.

LITHO IN U. S. A.

FORM 997-12-55

TRACTOMOTIVE

FOREWARD

This Parts and Instruction book contains all necessary information for the ordering of repair parts for the Tractomotive Model TS-6 Tracto-Shovel. It also contains the essential operating instructions which will enable the operator to accomplish what the unit has been designed to do and to gain the maximum in trouble-free operation and long life.

The TS-6 Shovel unit is mounted on an Allis-Chalmers Model HD-6G long track tractor, and the combination unit is sold and serviced by the Allis-Chalmers Dealer in your territory.

The practice of going to your Allis-Chalmers Dealer for all repair parts and repair work, other than routine care and adjustments is encouraged, as the dealers will be kept informed by the factory regarding repair parts and advanced methods of servicing Tractomotive products.

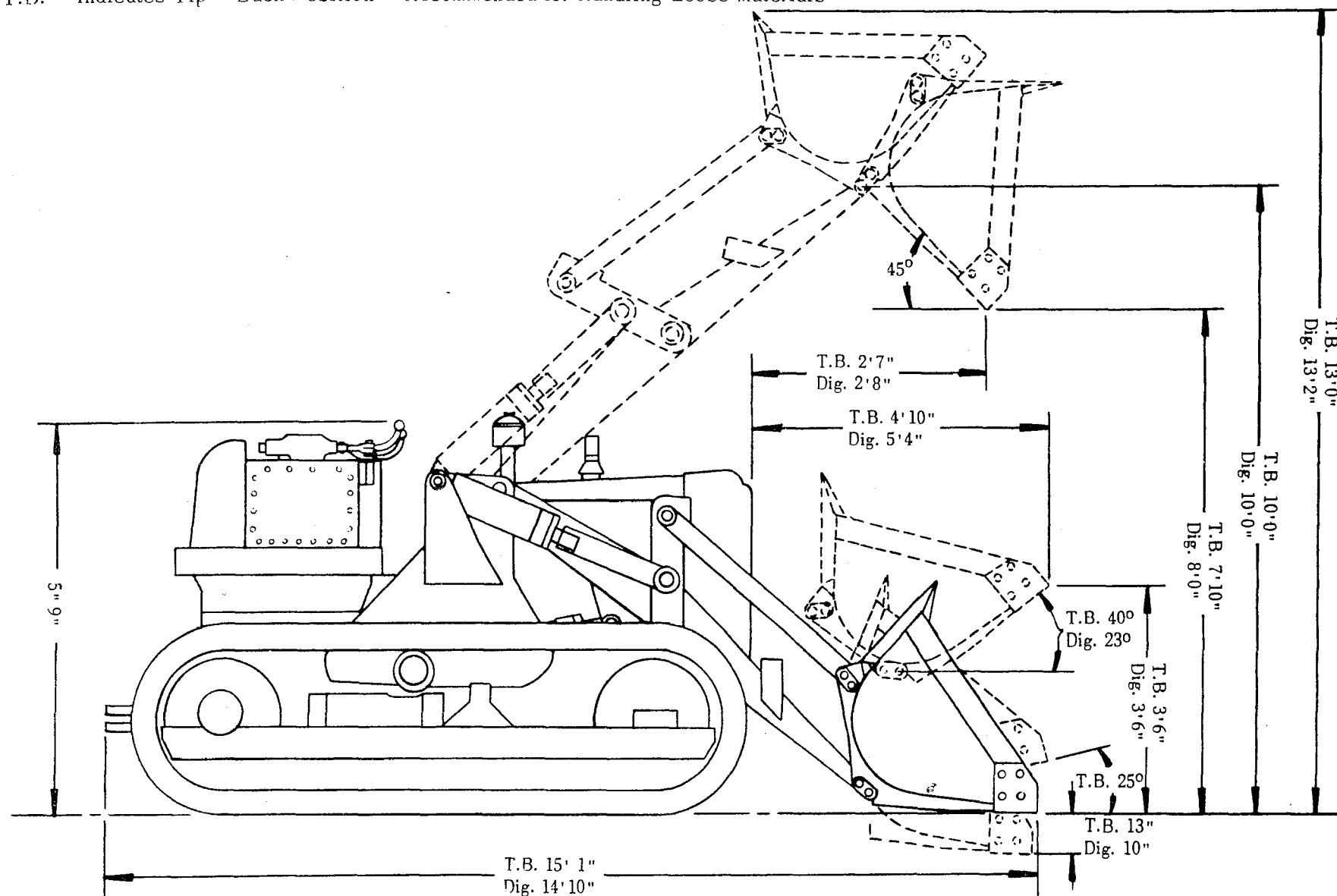
For parts and service information on the HD-6G tractor, refer to the Allis-Chalmers Parts and Instruction book furnished with the unit.

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Dig. — Indicates Digging Position — Recommended for Excavating Heavy Materials

T.B. — Indicates Tip — Back Position — Recommended for Handling Loose Materials



TS-6 SHOVEL DIMENSIONS

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SPECIFICATIONS

DIMENSIONS:

| | <u>T.B.</u> | <u>Dig</u> |
|--|-------------|------------|
| Overall Length – cutting edge to drawbar, Bucket on ground. | 15'1" | 14'10" |
| Bucket at 3'6" Carry. | 15'6" | 15'11" |
| Overall Width (Machine). | 6'6-3/4" | 6'6-3/4" |
| Overall Height | | |
| Bucket fully raised, to top of spillguard. | 13'0" | 13'2" |
| Bucket down – to top of Control Levers. | 5'9" | 5'9" |
| Dumping Reach @45° Dumping Angle. | 2'7" | 2'8" |

BUCKET: Two Position

Capacity. 1-1/3 Cu. Yd.
Width. 6'4"
"S" – Indicates Standard Digging Position – Recommended for excavating heavy materials.
"T" – Indicates Tip-Back Position – Recommended for handling loose materials.

WEIGHT:

Complete Tractor and Shovel (Approx.). 19,600 lbs.

TRACK:

Tread. 60"
Width of Shoe. 13"
Length of track on ground (Center of Sprocket
to Idler. 6'11-3/8"
Type of Shoe. Semi-grouser

HYDRAULIC SYSTEM:

Capacity (gals.). 26
Front Mounted Pump
Lift Cylinders – 5-1/2" Dia. – Double Acting for
down pressure.
Dump Cylinders - 4-1/2" Dia. – Double Acting for
controlled dump and quick return.
Oil Reservoir – on right hand rear fender at operator's compartment.
Control Valve. 4-Positions
Raise, Hold, Lower and Float

TRACTOR:

Allis-Chalmers Model HD-6G Rigid Beam, Long
Truck Frame Tractor.

ENGINE:

Make. Allis-Chalmers Diesel
Type. Four Cycle
Fuel supplied by Injection Pump

SPEEDS:

M.P.H. (at rated engine R.P.M.)
First. 1.46
Second. 2.44
Third. 3.30
Fourth. 5.47
1st Reverse. 1.99
2nd Reverse. 4.05

TRACTOMOTIVE

GENERAL OPERATING INSTRUCTIONS (Shovel)

Read carefully the operating instructions given in the Tractor Instruction Book on operation of the Tractor.

The Shovel bucket should always rest on the ground when the unit is not in operation. DO NOT ATTEMPT TO SERVICE OR ADJUST ANY PART OF THE TRACTOR OR SHOVEL WHEN THE BUCKET IS IN A RAISED POSITION — — UNLESS IT IS SUITABLY SUPPORTED BY MEANS OTHER THAN THE HYDRAULIC LIFTING CYLINDERS.

Before starting the engine, make sure there is sufficient oil in the hydraulic system.

The bucket is loaded by adjusting the digging depth to suit the digging conditions. This is done by means of the "Lift" lever in the control valve.

The tractor is equipped with 13" semi-grouser tracks as standard equipment. It will be found that in a great majority of conditions this track will provide sufficient traction to properly load the bucket but will slip before the engine stalls when the digging load becomes too great.

Flat track shoes 13" wide are also available for those conditions where a smooth track is desired. Grousers for these flat shoes can be furnished — they are recommended only for extreme wet conditions. The slippage of the track is desirable because it eliminates excessive use of the master clutch and enables the operator to adjust his digging depth without stopping the unit or stalling the engine.

The bucket is lifted by pulling back on the upper valve control lever (Boom Control Lever). It is lowered by power when the control lever is moved forward from its neutral position. When the end of the stroke is reached, either up or down, the control lever should immediately be returned to its neutral position. The bucket can be

"Floated" down by moving the control lever to its extreme forward position.

The bucket is dumped by pushing forward on the lower control lever (Bucket Control Lever). The speed of the dumping operation can be controlled by this lever. If dirt has a tendency to stick in the bottom of the bucket, it can be jarred by bumping the stops. This is done by moving the control lever back and forth rapidly. This should be done only under extreme sticking conditions.

By placing the Boom Control Lever in the "Float" position rather than in down pressure, it is possible to return the bucket to the proper digging position with the Bucket Control Lever at the same time the booms are being lowered. This practice is particularly advantageous on short hauls and stock pile work. A check valve is located in the top left hand side of the control valve and is connected into the Boom Lowering lines so that oil may be transferred from the bottom side to the top side of the lift cylinders as required to keep the cylinders full of oil at all times.

It is possible to create extremely high pressures in the Dump Cylinders by such practices as back dragging or bulldozing with the bucket and raising the booms with the bucket dumped. Although two safety valves have been provided in the hydraulic system in addition to the main relief valve, to safe-guard the shovel linkage against those high pressures; such practices should be avoided whenever possible.

One safety valve (set at 1350 PSI) is located on front side of manifold plate and connected into the Bucket Dump Line; while the other valve (set at 2000 PSI) is located on rear side of manifold plate and connected into Bucket Return Line. Both of these valves have been correctly adjusted at the factory and require no further adjustment in the field.

TRACTOMOTIVE

GENERAL OPERATING INSTRUCTIONS - CONTINUED

WITH THE BUCKET IN THE STANDARD DIG POSITION, THE CUTTING EDGE HAS THE CORRECT DIGGING ANGLE ONLY WHEN THE DUMP CYLINDER PISTON RODS ARE BACK AS FAR AS THEY WILL GO ON THE REARWARD STROKE. A stop is provided inside of the cylinder to automatically determine this position.

When loads are carried for any appreciable distance, the bucket should be carried as close to the ground as practical since the best overall

balance is obtained in this position.

IMPORTANT: Do not allow the Lift Control Lever to remain in the raise or down pressure position after the lift cylinders have reached either end of their stroke. When the end of the stroke is reached, the relief valve opens and the entire system is subjected to relief valve pressure which of necessity is substantially higher than operating pressure. If the lever is not returned to hold position immediately, unnecessary wear will result on such parts as the pump, relief valve, packing and hose.

LIST OF ABBREVIATIONS

| | | | |
|------------|-------------------------------|-------------|---------------------------------|
| ASA | American Standard Association | M.I. | Malleable Iron |
| Assy. | Assembly | Mach. | Machine |
| Blk. | Black | Med. | Medium |
| Brz. | Bronze | NC (Thread) | National Coarse |
| Capscrew | Capscrew | NF (Thread) | National Fine |
| Cont. | Continued | No. or # | Number |
| Ctsk. | Countersunk | NPT | National Pipe Thread |
| Cu. | Cubic | O.D. | Outside Diameter |
| Cyl. | Cylinder | Oz. | Ounce |
| Dia. | Diameter | psi | pounds per square inch |
| Eng. | Engine | Rd. | Round |
| Fil. | Filister | rpm | revolutions per minute |
| Ft. | Foot or Feet | SAE | Society of Automotive Engineers |
| Ga. | Gauge | Setscrew | Setscrew |
| Gal. | Gallon | Skt. | Socket |
| Hex. | Hexagonal | Sq. | Square |
| Hd. | Head | St. | Straight |
| I.D. | Inside Diameter | Std. | Standard |
| In. | Inches | Sub-Assy. | Sub-Assembly |
| Incl. | Included | Thk. | Thick |
| Int. | Internal | USS | United States Standard |
| JIC | Joint Industrial Congress | w/ | with - - - - - |
| Lb. | Pound | Yd. | Yard |
| Lockwasher | Lockwasher | | |

LUBRICATE EVERY 10 HOURS

- A - UPPER END OF LIFT CYLINDER - 4 FITTINGS
- B - LOWER END OF LIFT CYLINDERS - 2 FITTINGS
- C - REAR END OF DUMP CYLINDERS - 2 FITTINGS
- D - REAR END OF BOOMS - 2 FITTINGS
- E - UPPER END OF CROSS LINK - 2 FITTINGS
- F - CENTER OF CROSS LINK - 2 FITTINGS
- G - LOWER END OF CROSS LINK - 2 FITTINGS
- H - FRONT END OF BOOM - 4 FITTINGS
- I - FRONT END OF DUMP LINK - 2 FITTINGS

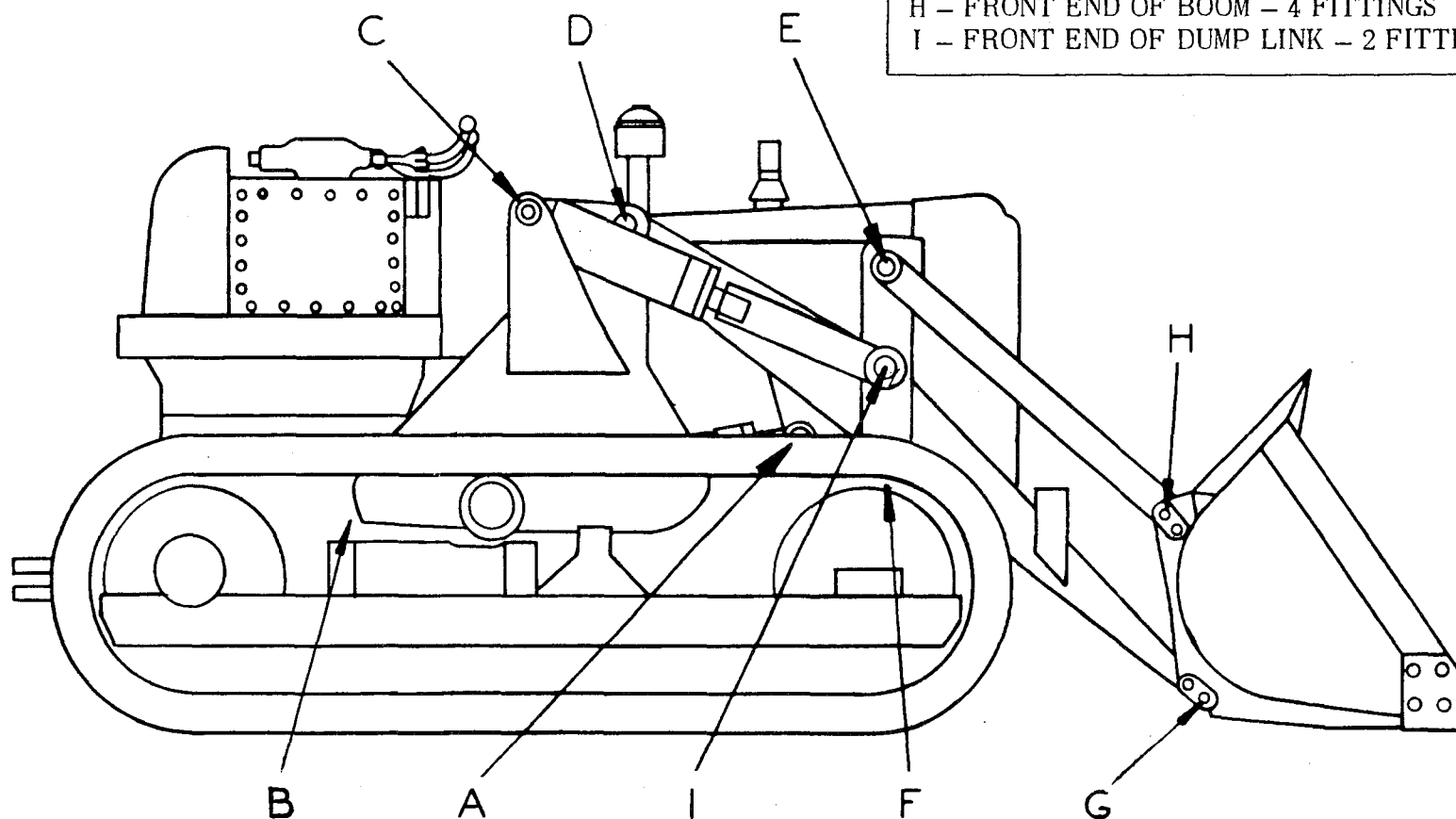


PLATE 567 - MAINTENANCE CHART

TRACTOMOTIVE

ROUTINE SERVICE

The operating life of the Tractor and Shovel can be materially increased and fewer shut-downs will be experienced if the unit is properly serviced at regular intervals. Often, major repairs and shut-downs can be avoided if the unit is inspected regularly and trouble corrected when it is of a minor nature.

LUBRICATION:

The grease fittings indicated on the Maintenance Chart on the opposite page should be lubricated every 10 hours of operation.

CLEAN:

The hydraulic system suction line screen and magnet should be cleaned quite frequently the first few days of operation to avoid clogging which might starve the pump. This can be accomplished by reaching down through the breather flange hole, and pulling up on the bail at the suction line opening in the bottom of the tank. Pull magnet and screen out of the opening and clean in the best grade of kerosene, then blow off with air — — replace.

CHECK: — (Every 60 hours)

1. The oil level in the oil reservoir. See Instructions under "Hydraulic System".
2. All bolts and pins which fasten the shovel frames and oil reservoir to the tractor — — both front and rear must be kept tight.
3. All hoses, pipes and fittings. See instructions under "Hydraulic System".
4. Packing glands on lift and dump cylinders. See instructions under "Hydraulic System".
5. Mounting bolts of hydraulic pump and bracket on front of engine. Tighten if necessary.
6. Radiator core for dirt plugging between fins. Clean out with air or water if necessary.
7. Large nuts (3 on each side) which secure Shovel Stabilizer to Shovel Frames.
8. Breather Assembly in top of Hydraulic tank. Remove element and wash in fuel oil.

SERVICE: — (Every 100 hours)

Replace both oil filter and breather elements.

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HYDRAULIC SYSTEM

Capacity – 26 gallons.

Oil Specification – Premium Grade of SAE #10, all year around.

The Hydraulic System consists of the following major parts:

1. OIL RESERVOIR – TANK – Located over fender on right hand side of operator's compartment.

The hydraulic tank has been designed so that with little but periodic service, top performance can be maintained indefinitely. Service of the following points is dependent upon operating conditions:

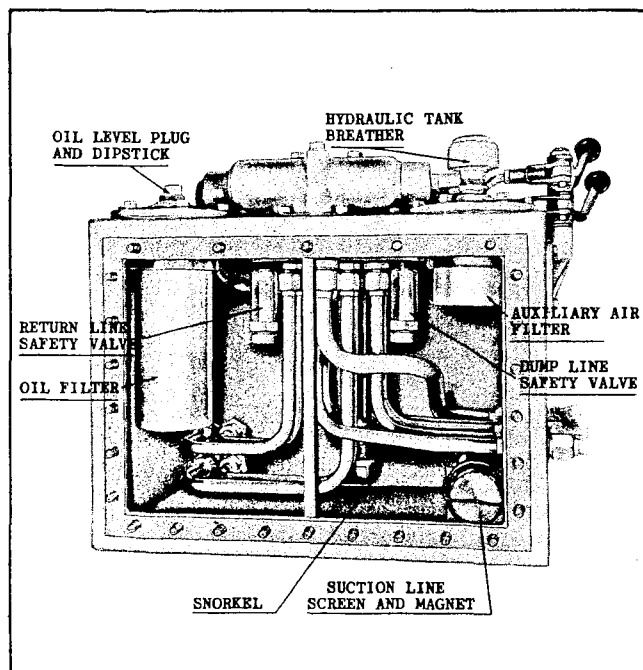


FIG. 15 – HYDRAULIC TANK

- A. Oil Filter – Located as shown in Figure 15, has a micronic element which should be replaced every 100 hours of operation or more often if conditions warrant. With oil at operating temperature, all oil is 100% filtered.

Replacement – Remove cover from top of filter and pull out element. Thoroughly clean inside of element case, new element must seat squarely on washer and spring,

around pipe in bottom of case. Place new cover gasket and attach cover.

- B. Tank Breather – Located as shown. Clean element every 60 hours or more often as conditions require. Remove machine screw and cap from top of breather, wash element in kerosene, blow off with air, dip element in clean oil, then shake off excess oil and reinstall.
- C. Auxiliary Air Breather – Located as shown. Change element every 100 hours or more often in extremely dusty conditions.

Replacement – Follow same procedure as for Oil Filter, except bottom of Breather element should be closed, and there is no washer, spring, or pipe in the bottom of the breather can.

- D. Magnetic Filter and Suction Line Screen – Located as shown. The Screen fits inside and the Magnet fits over the outside of the suction line, with a Baffle Cup held in place by a Bail at the mouth of the suction line to insure that 100% of the oil leaving the tank, passes through a strong magnetic field.

The suction screen will catch foreign non-magnetic materials, and keep them from circulating through the system.

Service: It is important that these parts be cleaned daily until the amount of foreign material collected daily has practically disappeared. Thereafter, the screen and magnet should be cleaned every 100 hours when the elements are changed in the breather and oil filters. These parts are accessible for cleaning, after removing all dirt from around breather cover, and removing breather cover, then pulling auxiliary breather can out, and reaching down into the tank. To clean, wash in kerosene, blow off with air — replace.

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HYDRAULIC SYSTEM (CONTINUED)

A SCREEN THAT IS PLUGGED WITH FOREIGN MATERIAL (PARTICULARLY, FIBRES WORN FROM PACKING RINGS) WILL STARVE THE PUMP, WHICH ALMOST ALWAYS RESULTS IN SERIOUS DAMAGE TO THE INTERNAL PUMP PARTS, THEREFORE, IT IS IMPERATIVE THAT THE SCREEN BE KEPT CLEAN.

2. CONTROL VALVE – This double valve is located on top of the oil reservoir.

The relief valve for the system is incorporated in the control valve. It is properly set at the factory for 1200 pounds per square inch pressure and requires no further adjustment in the field.

NOTE: The following test can be made to determine if the hydraulic system is functioning properly: The time required to raise empty bucket from ground level to the full raised position with engine at full throttle, should be approximately 9 seconds. (The system should be at operating temperature when the test is made.)

3. HYDRAULIC PUMP – Located at front of engine behind radiator guard. It is directly connected to the engine crankshaft by means of an internal – external gear coupling.

The pump assembly on the TS-6 Shovel should be disassembled and inspected after one year of operation even though no noticeable decrease in operating efficiency has become apparent. Without actually inspecting the internal pump parts, it is difficult to determine from an operating test, exactly when an overhaul should be made on a "gear type pump". On certain other types of pumps the efficiency begins to drop when the internal parts become worn, whereas, a "gear type pump" may maintain its maximum operating efficiency to a point where the bearings start to fail.

TO ADD OIL TO THE HYDRAULIC SYSTEM

A dipstick attached to the oil filler plug, has been provided in the rear right hand top of the oil reservoir. A periodic check (every 60 hours) should be made on the oil level, by removing the dipstick plug, and checking the oil level

on the ring groove of the dipstick. To check oil level, rest dipstick plug on top of filter cover coupling. (Be sure tractor is standing on level ground, the dump cylinders are fully retracted and the bucket is lowered to ground level).

1. Clean off all dirt around the oil filler plug on top of the oil reservoir.
2. Remove the oil filler dipstick plug.
3. Check level of oil on dipstick.
4. Add oil if oil level is below ring groove of dipstick.
5. Replace the oil dipstick plug.

NOTE: The oil level should never be allowed to drop very far below the ring groove of dipstick. When the oil level in the reservoir is too low, the action of the lifting and dumping cylinders will be sluggish because the pump is not receiving enough oil and is, to some extent, pumping air. The upward movement of the bucket during the lifting operation might be slowed to half its normal speed or it might stop entirely when there is insufficient oil in the system. The same applies to the dumping cylinders.

CONSIDERABLE DAMAGE CAN BE DONE TO THE PUMP WHEN THE OIL LEVEL IS ALLOWED TO GET SO LOW THAT THE SUCTION LINE IS NOT FULL.

TO DRAIN HYDRAULIC SYSTEM

Every 500 hours of operation, the system should be drained, flushed and refilled with new oil as follows:

1. Start engine and raise bucket about 2' above radiator height. Dump bucket as far as possible. Shut off engine. Work dump control back and forth several times to relieve pressure.
2. Disconnect Dump Hose Assemblies (outer hose) at rear of frame on left hand side and (inner hose) at front of tank on right

TRACTOMOTIVE

HYDRAULIC SYSTEM (CONTINUED)

hand side. Place a container under hoses to catch drained oil (about 1 gallon each). It is advisable to tie a clean rag over the open end of the manifold.

3. Start engine. With bucket dumped, lower the booms and "back drag" against a stump or similar object until bucket returns to normal dig position so as to empty all the oil from both Dump Cylinders.
4. Reconnect hose assemblies. Secure the bucket in normal dig position with a chain looped around the booms and bucket. CAUTION: Be sure to leave 8" to 10" slack in chain for normal movement of linkage.
5. Run front end of tractor up on 12" blocks and raise booms to maximum height.
6. Shut off engine. Remove drain plug from bottom of tank and allow oil in tank to drain.
7. Place boom control lever in "power down" position allowing bucket to drop until all oil is expelled from Lift Cylinders. This will pass into the tank and out through the drain.
8. While the tank is empty, the suction screen and magnet should be cleaned. This can be accomplished by reaching down through the auxiliary breather hole, and pulling up on the bail at the suction line opening in the bottom of the tank. Pull magnet and screen out of the opening and clean, in the best grade of kerosene, then blow off with air; — replace.

FLUSHING HYDRAULIC SYSTEM

1. Replace drain plug and remove chain from bucket.
2. Completely fill the reservoir with the best grade of kerosene. Start engine and circulate the flushing oil through the system by operating both control levers four or five times so that lift and dump cylinders fill and empty several times.

3. Completely drain system as described in "To Drain Hydraulic System", making sure that all flushing oil is removed from both lift and dump cylinders — Step #1 through #8.

TO FILL HYDRAULIC SYSTEM

To fill hydraulic system (when system is completely drained of oil) the steps given next should be followed:

1. Remove oil dipstick plug from top of oil reservoir.
2. Fill the reservoir to ring groove of dipstick. Replace dipstick plug.
3. Start engine. Operate controls so that both lifting and dumping cylinders are filled with oil, adding oil to reservoir if necessary to keep suction line full. Fully retract dump cylinders and lower bucket to ground level.
4. Remove dipstick plug, wipe with clean cloth. Rest dipstick plug on top of filter coupling to measure oil level.
5. Again add oil to ring groove of dipstick. (The tractor should be as level as possible).
6. Replace dipstick plug. The system now is full and ready to operate.

GENERAL CARE OF HYDRAULIC SYSTEM

1. Keep all tube fittings and hose connections tight to eliminate oil leaks. Do not, however, excessively tighten the tube and hose connections as it is not necessary to do so to keep them from leaking.
2. Use such compounds as Permatex #2 or red lead on pipe threads when replacing fittings. BE SURE ALL PARTS ARE THOROUGHLY CLEANED BEFORE INSTALLATION.
3. WHEN INSTALLING A HOSE ASSEMBLY, BE SURE IT IS NOT TWISTED WHEN THE CONNECTIONS ARE TIGHTENED.

TRACTOMOTIVE

HYDRAULIC SYSTEM (CONTINUED)

4. Keep hose clamps properly tightened to avoid hose chafing.

5. MAINTAIN ADJUSTMENTS OF PISTON ROD PACKING GLANDS ON LIFT AND DUMP CYLINDERS.

The piston rod packing should be adjusted so that there is a light film of oil on the rods when the unit is in operation.

The packing is adjusted by removing the lockwire from the heads of the capscrews in the packing gland end plate. To tighten the packing, screw in on capscrews using a slight pressure on a short wrench. (Tighten all four capscrews evenly).

EXCESSIVE TIGHTENING OF THESE GLANDS RESULTS IN RAPID WEAR OF THE ROD PACKING RINGS AND SEVERE WIPING OF THE PISTON ROD. IF THE GLAND LEAKS OIL AFTER BEING ADJUSTED PROPERLY, IT IS AN INDICATION THAT THE PACKING RINGS ARE WORN AND SHOULD BE REPLACED

TO REPLACE WORN PACKING RINGS

- a. Remove lockwire and capscrews from end plate on packing gland.
- b. Slide packing gland end plate and bearing up on piston rod.
- c. Remove old packing rings.
- d. Wipe out packing gland space.
- e. Install new packing rings in the order indicated in Plates 558, 559 and 564 in the Parts Book section. These rings are split and are easily installed. Care, however, must be taken so that each ring is properly seated and that edges are not doubled back or ends lapped.
- f. Replace packing gland end plate and bearings and adjust as per instructions

above.

- g. Replace capscrews and lockwire.

6. PISTON ROD WIPER SEALS

The wiper seal which is installed in the top of the packing gland serve to wipe off dirt from the rod surface. They should be replaced when there are indications that they are no longer wiping the rod surface properly. To replace this seal, it is necessary to remove the cylinder head, pull the piston rod and piston assembly from the cylinder and remove the pistons from the rod in order that packing gland end plate can be slipped off the rod.

TO CHANGE OIL FILTER AND BREATHER ELEMENTS

New elements must be installed in both the oil filter and the breather at the end of 100 hours of operation; or more often if conditions warrant.

To replace the elements, proceed as follows:

1. Clean off all dirt around filter and breather covers on top of the oil reservoir.
2. Remove covers and cover gaskets.
3. Discard the old elements, cover gaskets. Thoroughly clean inside of element cases.
4. Install new elements (from the replacement Element Kit).
- a. Filter Element must seat squarely on washer and spring, around pipe in bottom of case. Place new cover gasket (furnished in the replacement kit) and attach cover.
- b. Breather Element must be inserted with the small gasket on top, so that when attaching cover, the pipe in the cover fits through the gasket and into the hole of the element. Attach cover only after placing new cover gasket properly.

TRACTOMOTIVE

WARRANTY

"Tractomotive Corporation warrants that it will repair f.o.b. its factory, or furnish without charge f.o.b. its factory, a similar part to replace any material in its machinery which within six months after the date of sale by the Dealer, is proven to the satisfaction of the Company to have been defective at the time it was sold, provided that all parts claimed defective shall be returned properly identified to the Company's factory, charges prepaid.

"This warranty is the only warranty, either express or implied, upon which said machinery is purchased. No other warranty has been made or exists, either expressly or by implication, all statutory and implied warranties being hereby expressly waived and excluded from this transaction, and the Company's liability in connection with this transaction is expressly limited to the repair or replacement of defective parts, all other damaged, statutory or otherwise, being hereby expressly waived.

"This warranty applies only to new and unused machinery, which, after shipment from the factory of the Company, has not been altered, changed, repaired, or treated in any manner whatsoever. No warranty of any kind, statutory, implied or otherwise, shall apply to trade accessories, attachments, tools, or implements not manufactured by the Company, or to second-hand machinery, or to new and unused machinery, which, after shipment from the factory of the Company, has been altered, changed, repaired, or treated in any manner whatsoever.

"No representative of the Company has authority to change this warranty or this contract in any manner whatsoever, and no attempt or promise to repair or improve the machinery covered by this contract by any representative of the Company shall waive any consideration of the contract, or change or extend this warranty in any manner whatsoever."

TRACTOMOTIVE

ORDERING OF REPAIR PARTS

IMPORTANT

ALWAYS GIVE THE SERIAL NUMBER OF YOUR SHOVEL WHEN ORDERING PARTS. The Shovel serial number will be found stamped on a nameplate which is located on top rear face of the left hand frame.

The terms "Right" and "Left" as they are used throughout this book are applied as viewed looking forward from the driver's seat.

To obtain parts promptly, give part name and part number.

Order parts from the dealer for your territory.

Always state post office address, town, county and state where parts are to be shipped. Also, specify whether material is to be shipped by freight, express or parcel post.

Confirm all telephone or telegraph orders in writing.

No credit will be allowed on parts unless they are returned to the dealer from whom they were purchased; from there they will be returned, at the customer's expense, to the factory for inspection.

Unless claims for shortages or errors are made immediately upon receipt of goods, they will not be considered.

When broken goods are received, a full description of the damage should be made by the

carrier agent on the freight bill. If this description is insisted upon, full damage can always be collected from the transportation company.

No responsibility is assumed for delay or damage to merchandise while in transit. Our responsibility ceases upon delivery of shipment to the transportation company from whom a receipt is received showing that shipment was in good condition when delivered to them; therefore, claims (if any) should be filed with the transportation company and not with the Tractomotive Corporation.

The right is reserved to change the construction or material of any parts where it seems desirable to do so, without incurring the obligation of installing such changes on shovels already delivered.

In sending wire orders, it is important that a one-word description of the part wanted be specified after each part number. In event the message is received with incorrect part number, it will help us to ascertain the part actually required. Confirm each telegraphic order by mail in order that it may be checked and if not correctly transmitted, the error detected.

Shipping or other instructions in the body of a telegram which normally consists of many words, can be condensed into one by the use of the proper code word as given below:

TELEGRAPHIC CODE

AIRYX – Ship by Air Express
SONST – Ship to me (us) by Express
SOOTY – Ship by Express to
SOYON – Ship to me (us) by Mail
SOBOS – Ship by Mail to
SORAT – Ship to me (us) by Freight
SAPAT – Ship by Freight to

SPLAT – When and how did you ship parts on my (our) order
SPATS – When and how will you ship parts on my (our) order
STAUB – Cancel my (our) order
STUFE – Add to my (our) parts order
SOMOR – Duplicate shipment of my (our) order

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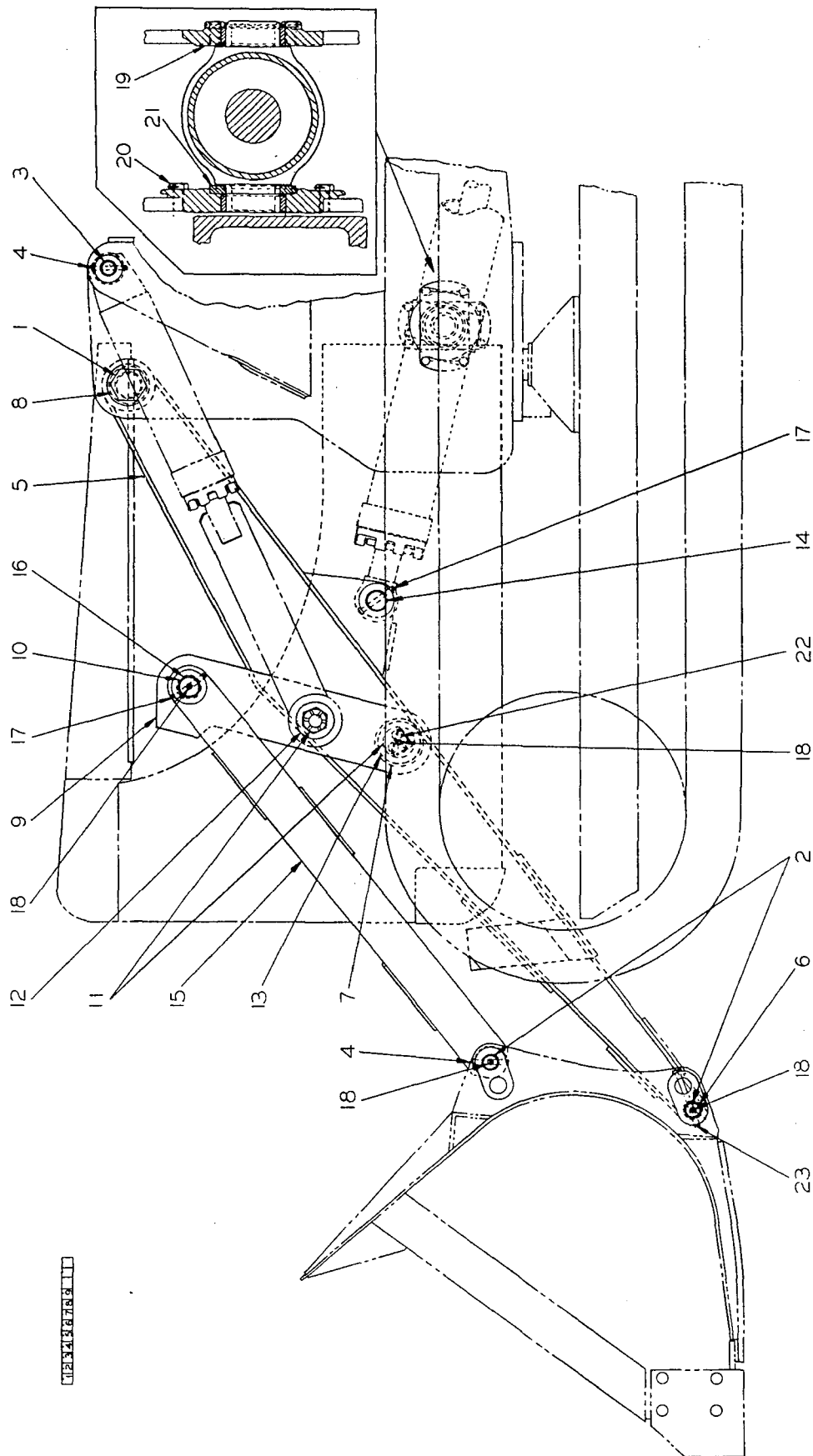


PLATE 556 - LINKAGE GROUP

TRACTOMOTIVE

LINKAGE GROUP

(See Plate 556)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|---|
| 1 | 17372 | 2 | Pin Weld Assy. |
| | 1559 | 2 | Plain Washer |
| | 16671 | 2 | Locknut, 1-1/2"-12 NF |
| 2 | 3921 | 4 | Pin, Lubricating (Bucket End) |
| 3 | 14040 | 2 | Pin |
| 4 | 1621 | 4 | Lock Pin |
| | 900806 | 4 | Cotter Pin, 1/8" x 1" |
| 5 | 17500 | 1 | Boom Assy. (Includes 4--1031, 2--5087, 4--1125 and two Item #18) |
| 6 | 1031 | 8 | Bushing |
| 7 | 5087 | 2 | Bushing |
| 8 | 1125 | 4 | Bushing |
| 9 | 17519 | 1 | Cross Link Assy., Left |
| | 17520 | 1 | Cross Link Assy., Right (Each includes 1--1066, 1--1155, 1--17513 and one Item #18) |
| 10 | 1066 | 2 | Bushing |
| 11 | 1155 | 2 | Pin (to Dump Cyl.) (Requires Welding) |
| | 17513 | 2 | Pin (to Boom (Requires Welding) |
| | 913527 | 2 | Hex Jam Nut, 1-1/2"-12 NF, Slotted |
| | 910910 | 2 | Cotter Pin, 7/32" x 3" |
| 12 | 1146 | 2 | Washer |
| 13 | 17516 | 2 | Washer |
| 14 | 1625 | 2 | Pin |
| 15 | 1147 | 2 | Dump Link Assy. (Each includes two Item #6) |
| 16 | 1624 | 2 | Pin |
| 17 | 1622 | 4 | Lock Pin |
| | 900806 | 4 | Cotter Pin, 1/8" x 1" |
| 18 | 914465 | 10 | Lubricating Fitting, St. 1/8"-27 NPT |
| 19 | 16120 | 4 | Bearing Cage Assy. (Each includes 1--16121) |
| | 16121 | 4 | Bearing |
| 20 | 16838 | 16 | Capscrew, 1/2"-20 NF x 1", Drilled Hd. |
| | 13078 | 8 | Lockwire, #16 W and M Ga. x 12" Long |
| 21 | 16473 | 4 | Bearing Sleeve (Halves) |
| 22 | 17314 | 6 | Capscrew, 5/8"-18 NF x 1-1/4" Dr. Hd. |
| | 17524 | 2 | Washer (Special) |
| | 13593 | 2 | Lockwire, #14 W and M Ga. x 11" Long |
| 23 | 14387 | 2 | Lock Pin |
| | 900806 | 2 | Cotter Pin, 1/8" x 1" (Also see Buckets) |
| - | 10081 | 2 | Name Plate (Tracto-Shovel) - Not Shown |

Used
w/Lift
Cylinders

TRACTOMOTIVE

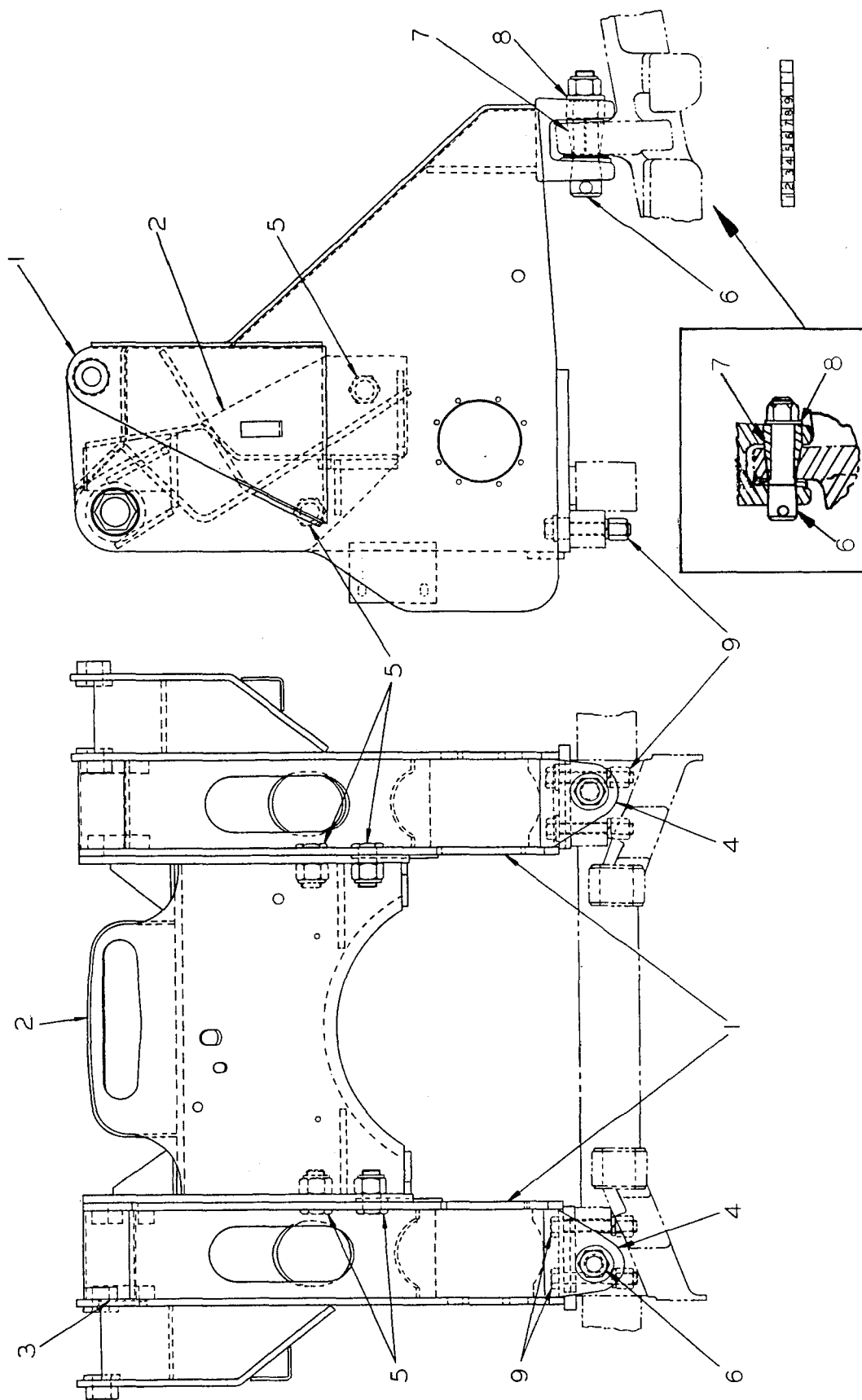


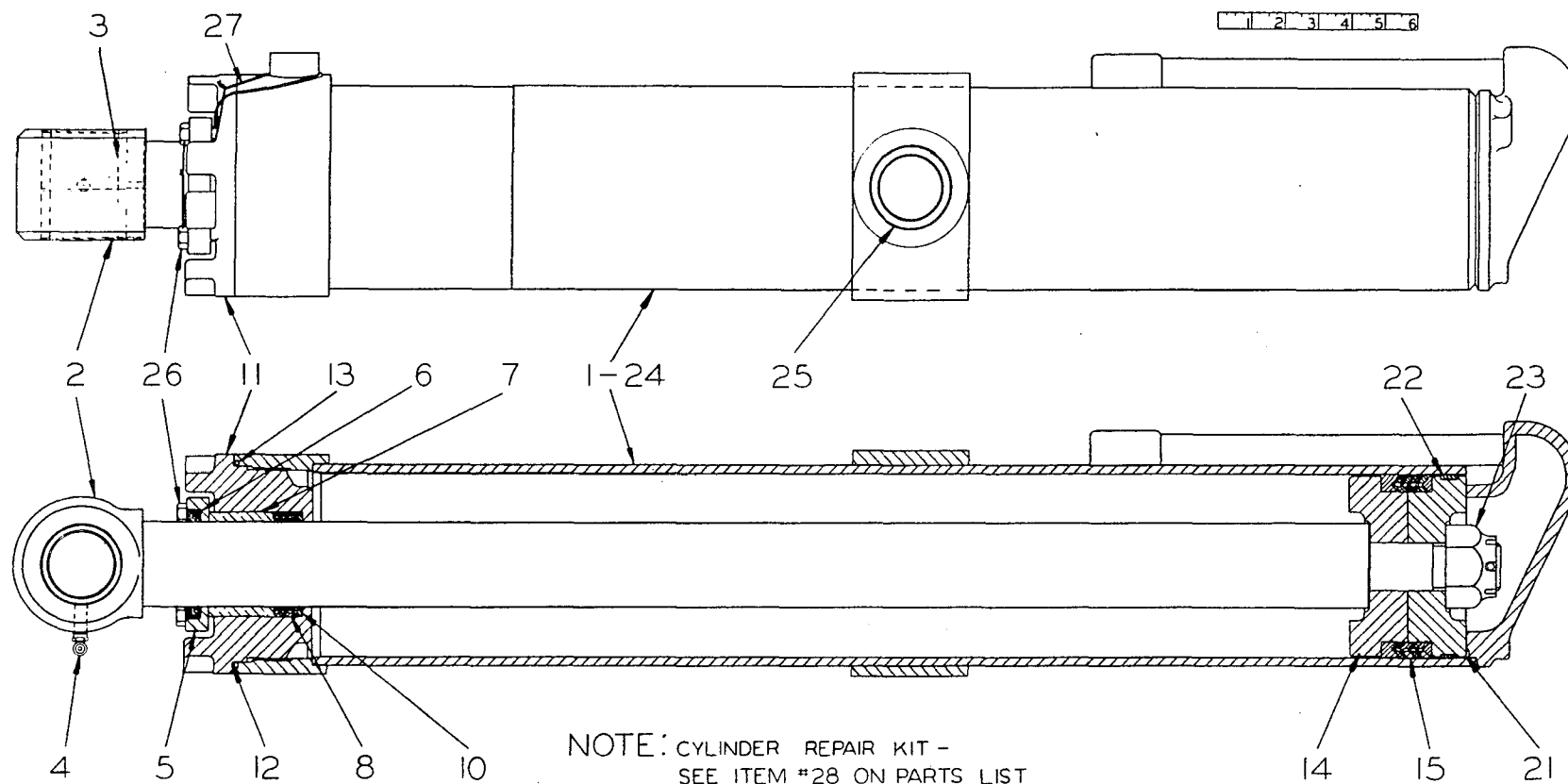
PLATE 557 - FRAME GROUP

TRACTOMOTIVE

FRAME GROUP

(See Plate 557)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|--|
| 1 | 16443 | 1 | Frame Assy., Left (Includes one Item #3 and 1--16429) |
| | 16444 | 1 | Frame Assy., Right (Includes one Item #3 and 1--16430) |
| 2 | 16650 | 1 | Stabilizer |
| 3 | 14553 | 2 | Lock Ring |
| 4 | 16429 | 1 | Bracket, Left |
| | 16430 | 1 | Bracket, Right |
| 5 | 16582 | 4 | Pin |
| | 16671 | 4 | Locknut, 1-1/2"-12 NF |
| 6 | 16585 | 2 | Pin |
| | 3064 | — | Washer, 1/16" Shim |
| | 2921 | — | Washer, 1/8" Shim |
| | 16671 | 2 | Locknut, 1-1/2"-12 NF |
| 7 | 16370 | 2 | Bushing |
| 8 | 16369 | 2 | Bushing |
| 9 | 1671 | 4 | Capscrew, 1"-14 NF x 6" |
| | 1785 | 4 | Washer |
| | 910916 | 4 | Lockwasher, 1" ASA Med. |
| | 17016 | 4 | High Nut, 1"-14 NF |
| | | | |



NOTE: CYLINDER REPAIR KIT -
SEE ITEM #28 ON PARTS LIST

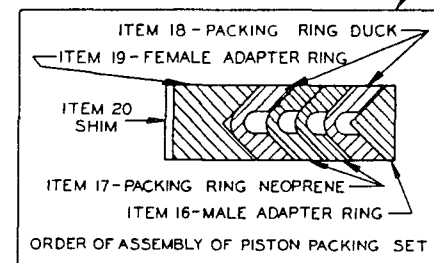
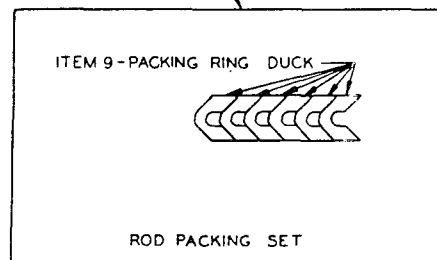


PLATE 558 - LIFT CYLINDER ASSEMBLY - LEFT AND RIGHT

TRACTOMOTIVE

LIFT CYLINDER ASSEMBLY – LEFT AND RIGHT

(See Plate 558)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|--|
| 1 | 16539 | 1 | Lift Cylinder Assy., Left (Includes ½ qty. of Item #2 thru #23, 1--16537 & #26 thru #27) |
| | 16540 | 1 | Lift Cylinder Assy., Right (Includes ½ qty. of Item #2 thru #23, 1--16538 & #26 thru #27) |
| 2 | 16536 | 2 | Piston Rod Assy. (Each includes 2--1066) |
| 3 | 1066 | 4 | Bushing |
| 4 | 915276 | 2 | Lubricating Fitting, 90°, 1/8"-27 NPT |
| 5 | 16405 | 2 | End Plate |
| 6 | 1538 | 2 | Seal |
| 7 | 16601 | 2 | Packing Gland Bearing |
| 8 | 17249 | 2 | Rod Packing Set (Each consists of 4--1534) |
| 9 | 1534 | 8 | Packing Ring, Duck |
| 10 | 1532 | 2 | Bottom Adapter Ring |
| 11 | 16272 | 2 | Cylinder Head |
| 12 | 16189 | 2 | Back-Up Ring |
| 13 | 16188 | 2 | Seal Ring |
| 14 | 1300 | 2 | Piston (Upper) |
| 15 | 1476 | 2 | Piston Packing Set (Each consists of 1--1459, 2--1302, 2--1466 and 1--1458) |
| 16 | 1459 | 2 | Male Adapter Ring |
| 17 | 1302 | 4 | Packing Ring, Neoprene |
| 18 | 1466 | 4 | Packing Ring, Duck |
| 19 | 1458 | 2 | Female Adapter Ring |
| 20 | 3160 | — | Shim (Use as required) |
| 21 | 1478 | 2 | Piston (Lower) |
| 22 | 1482 | 2 | Bearing Ring |
| 23 | 911058 | 2 | Castle Nut, 1-1/2"-12 NF |
| | 901345 | 2 | Cotter Pin, 1/4" x 2-1/2" |
| 24 | 16537 | 1 | Cylinder Tube Assy., Left |
| | 16538 | 1 | Cylinder Tube Assy., Right (Each includes 2--1064) |
| 25 | 1064 | 4 | Bushing |
| 26 | 7904 | 8 | Capscrew, 3/8" 16 NC x 1-1/2" Drilled Hd. |
| 27 | 1085 | 4 | Lockwire, #16 W and M Ga., x 17" Long |
| 28 | 17561 | — | Cylinder Repair Kit (Includes one each Item #6 thru #8, #10, #12, #13, #15, #22, 1--901345, 4--7904 and 2--1085) |

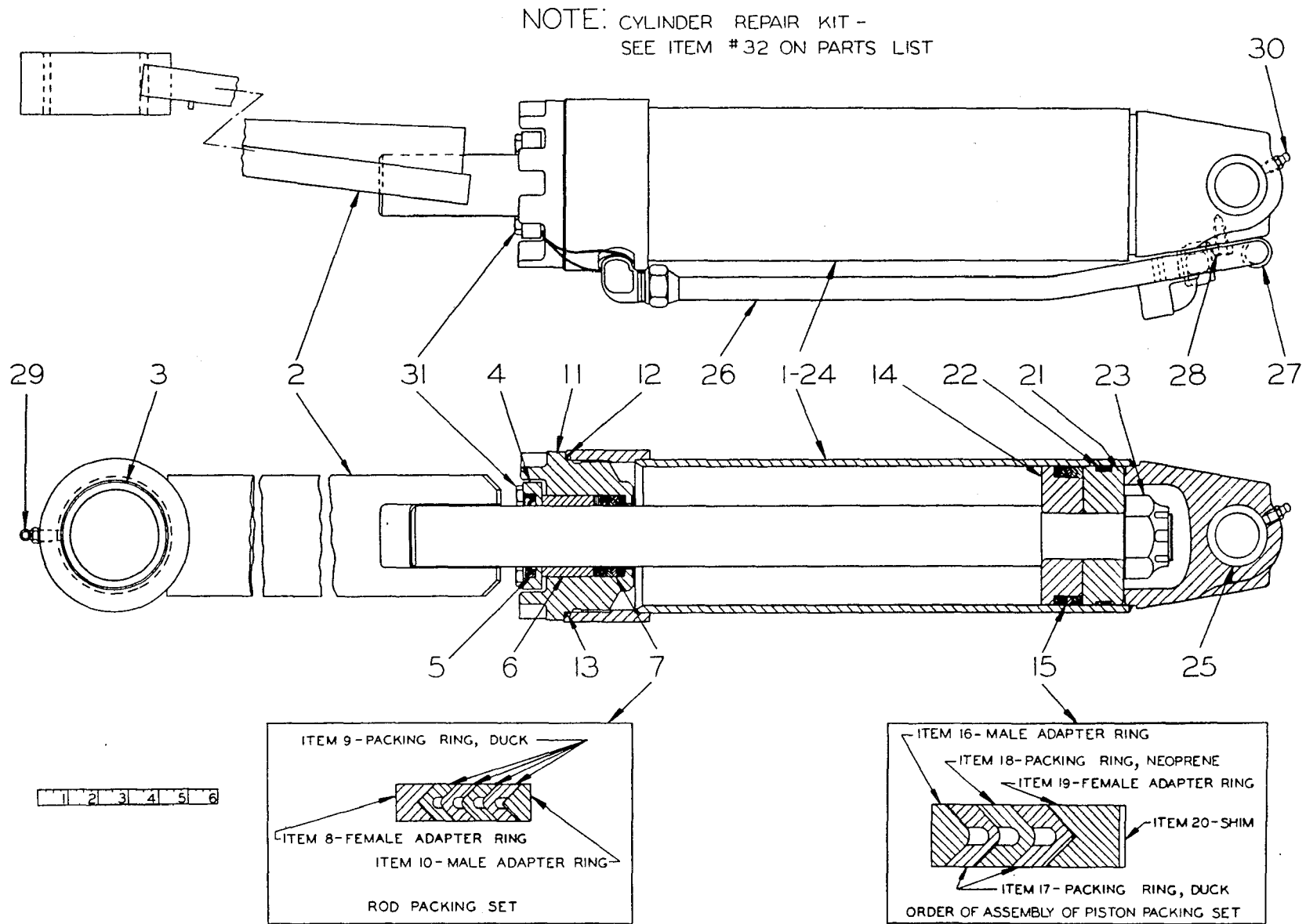


PLATE 559 - DUMP CYLINDER ASSEMBLY

TRACTOMOTIVE

DUMP CYLINDER ASSEMBLY

(See Plate 559)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|---|
| 1 | 16305 | 2 | Dump Cylinder Assy. (Each includes ½ qty. of Items #2 thru #31) |
| 2 | 3820 | 2 | Piston Rod Assy. (Each includes 1--1319) |
| 3 | 1319 | 2 | Bushing |
| 4 | 13386 | 2 | End Plate |
| 5 | 1088 | 2 | Seal |
| 6 | 4989 | 2 | Bearing, Packing Gland |
| 7 | 7015 | 2 | Rod Packing Set (Each consists of 1--4990, 4--1469 and 1--1498) |
| 8 | 4990 | 2 | Adapter Ring, Female |
| 9 | 1469 | 8 | Packing Ring, Duck |
| 10 | 1498 | 2 | Adapter Ring, Male |
| 11 | 16301 | 2 | Cylinder Head |
| 12 | 16306 | 2 | Back-Up Ring |
| 13 | 3003 | 2 | Seal Ring |
| 14 | 1315 | 2 | Piston (Upper) |
| 15 | 1472 | 2 | Piston Packing Set (Each consists of 1--1461, 2--1468, 1--1316 and 1--1460) |
| 16 | 1461 | 2 | Adapter Ring, Male |
| 17 | 1468 | 4 | Packing Ring, Duck |
| 18 | 1316 | 2 | Packing Ring, Neoprene |
| 19 | 1460 | 2 | Adapter Ring, Female |
| 20 | 3161 | — | Shim (Use as required) |
| 21 | 1479 | 2 | Piston (Lower) |
| 22 | 1481 | 2 | Bearing Ring |
| 23 | 911058 | 2 | Castle Nut, 1-1/2"-12 NF |
| | 901345 | 2 | Cotter Pin, 1/4" x 2-1/2" |
| 24 | 16300 | 2 | Cylinder Tube Assy. (Each includes 2--1031) |
| 25 | 1031 | 4 | Bushing |
| 26 | 16844 | 2 | Tube Assy. |
| 27 | 16304 | 2 | Clamp |
| 28 | 2205 | 2 | Capscrew, 3/8"-16 NC x 3/4" |
| | 904206 | 2 | Lockwasher, 3/8" ASA Med. |
| | 911115 | 2 | Plain Washer, 3/8" SAE |
| 29 | 915276 | 2 | Lubricating Fitting, 90° 1/8"-27 NPT |
| 30 | 914465 | 2 | Lubricating Fitting, St., 1/8"-27 NPT |
| 31 | 7904 | 8 | Capscrew, 3/8"-16 NC x 1-1/2", Drilled Head |
| | 1085 | 4 | Lockwire, #16 W and M Ga. x 17" Long |
| 32 | 17560 | — | Cylinder Repair Kit (Includes one each Item #5 thru #7, #12, #13, #15, #22, 1--901345, 4--7904 and 2--1085) |

TRACTOMOTIVE

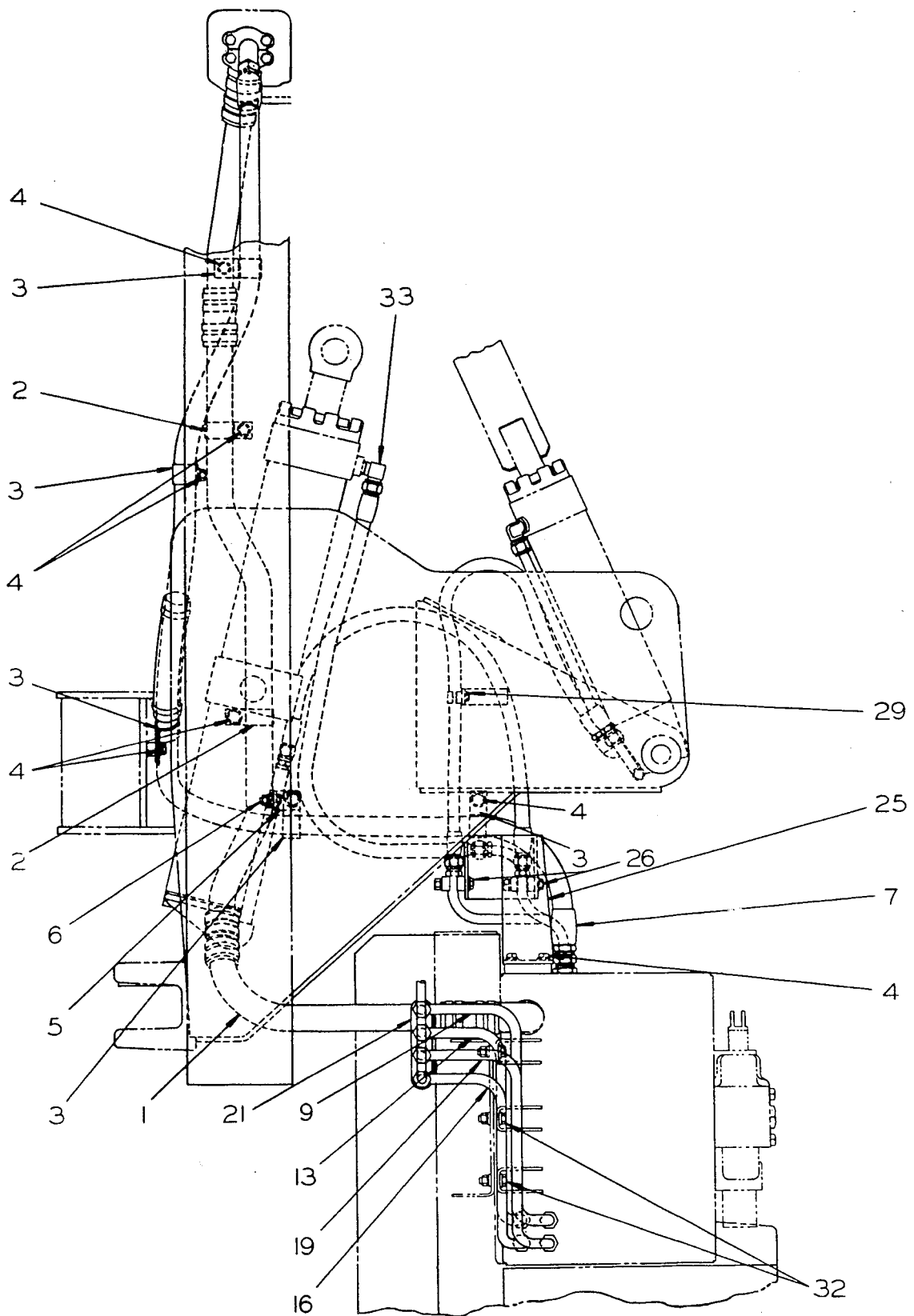


PLATE 560 - HYDRAULIC PIPING GROUP - SIDE VIEW

TRACTOMOTIVE

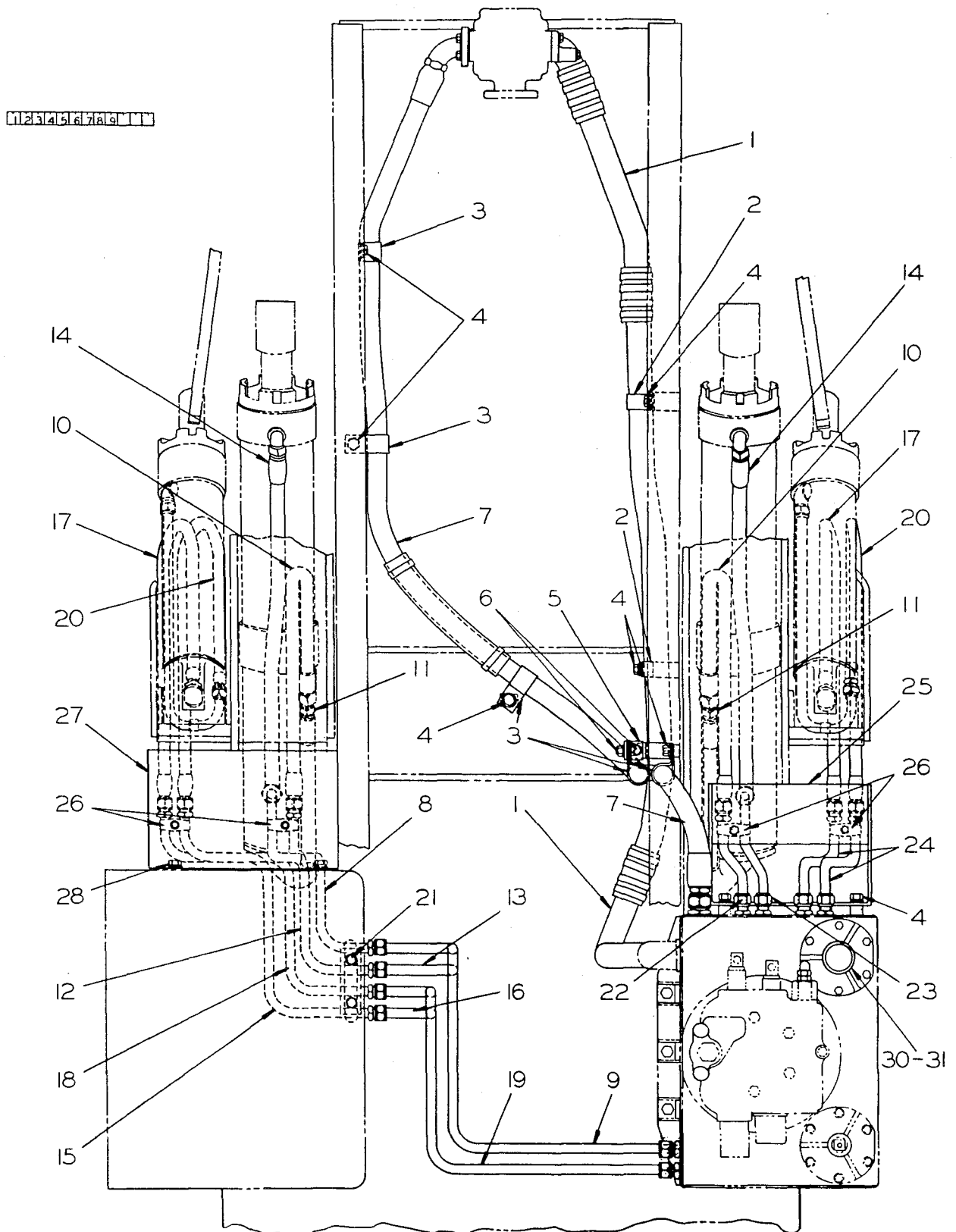


PLATE 560 - HYDRAULIC PIPING GROUP - TOP VIEW

TRACTOMOTIVE

HYDRAULIC PIPING GROUP

(See Plate 560)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|--------------|------|---|
| 1 | | 1 | Suction Line Assy. (Includes parts as listed in Item #1). |
| | 16873 | 1 | Adapter |
| | 10881 | 1 | Seal Ring |
| | 1591 | 2 | Capscrew, 1/2"-20NF x 2-3/4" |
| | 904208 | 2 | Lockwasher, 1/2" ASA Med. |
| | 1249 | 2 | Capscrew, 1/2"-20NF x 1-1/4" |
| | 904208 | 2 | Lockwasher, 1/2" ASA Med. |
| | 16874 | 1 | Tube |
| | 16862 | 4 | Hose, 2" I.D. x 4-1/2" Long |
| | 9300 | 18 | Hose Clamp, 2-1/8" I.D. |
| | 16872 | 1 | Tube |
| | 16869 | 1 | Tube |
| | | | (Pump End) |
| 2 | 12545 | 3 | Clamp |
| 3 | 16867 | 5 | Clamp |
| 4 | 1084 | 9 | Capscrew, 1/2"-20NF x 1" |
| | 904208 | 9 | Lockwasher, 1/2" ASA Med. |
| | 910244 | 9 | Plain Washer, 1/2" SAE |
| 5 | 16864 | 1 | Angle |
| 6 | 1249 | 2 | Capscrew, 1/2"-20NF x 1-1/4" |
| | 904208 | 2 | Lockwasher, 1/2" ASA Med. |
| | 910244 | 2 | Plain Washer, 1/2" SAE |
| | 911043 | 2 | Hex Nut, 1/2"-20NF |
| 7 | | 1 | Pressure Line Assy. (Includes parts as listed in Item #7) |
| | 12469 | 2 | Split Flange Clamp |
| | 16868 | 1 | Hose Assy. (Includes 1--10176, 1--Hose and 1--16863) |
| | 10176 | 1 | Swivel Nut Sub-Assy. 1" |
| | 1582-101 1/4 | 1 | Hose (Bare Length) See Note - Page #26 |
| | 16863 | 1 | Hose Fitting Assy. |
| | 10881 | 1 | Seal Ring |
| | 1249 | 4 | Capscrew, 1/2"-20NF x 1-1/4" |
| | 904208 | 4 | Lockwasher, 1/2" ASA Med. |
| | 17365 | 1 | Hose Guard |

(Continued)

TRACTOMOTIVE

HYDRAULIC PIPING GROUP – CONTINUED

(See Plate 560)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|---|
| 8 | 16286 | 1 | Tube Assy., Raise (L.H. Cylinder) Swivel Nut to Hose Assy. |
| 9 | 16819 | 1 | Tube Assy., Raise (L.H. Cylinder) Tank to Swivel Nut |
| 10 | 16244 | 2 | Hose Assy., Raise (Each includes 1--Hose and 2--3589) |
| | 1550-32 | 2 | Hose (Bare Length) See Note – Page #26 |
| | 3589 | 4 | Swivel Nut Sub-Assy. |
| 11 | 2006 | 2 | Adapter |
| 12 | 16285 | 1 | Tube Assy., Lower (L.H. Cylinder) Swivel Nut to Hose Assy. |
| 13 | 16817 | 1 | Tube Assy., Lower (L.H. Cylinder) Tank to Swivel Nut |
| 14 | 16243 | 2 | Hose Assy., Lower (Each includes 1--Hose and 2--3589) |
| | 1550-34½ | 2 | Hose (Bare Length) See Note – Page #26 |
| | 3589 | 4 | Swivel Nut Sub-Assy. |
| 15 | 16287 | 1 | Tube Assy., Dump (L.H. Cylinder) Swivel Nut to Hose Assy. |
| 16 | 16813 | 1 | Tube Assy., Dump (L.H. Cylinder) Tank to Swivel Nut |
| 17 | 16242 | 2 | Hose Assy., Dump (Each includes 1--16234, 1--Hose and 1--9490) |
| | 16234 | 2 | Swivel Nut Sub-Assy. |
| | 1501-43 | 2 | Hose (Bare Length) See Note – Page #26 |
| | 9490 | 2 | Male Pipe Sub-Assy. |
| 18 | 16288 | 1 | Tube Assy., Return (L.H. Cylinder) Swivel Nut to Hose Assy. |
| 19 | 16814 | 1 | Tube Assy., Return (L.H. Cylinder) Tank to Swivel Nut |
| 20 | 16241 | 2 | Hose Assy., Return (Each includes 1--16234, 1--Hose & 1--16233) |
| | 16234 | 2 | Swivel Nut Sub-Assy. |
| | 1501-42 | 2 | Hose (Bare Length) See Note – Page #26 |
| | 16233 | 2 | Male Flare Sub-Assy |
| 21 | 5900 | 2 | Clamp |
| | 1376 | 2 | Capscrew, 3/8"-24 NF x 2-1/4" |
| | 904206 | 2 | Lockwasher, 3/8" ASA Med. |
| 22 | 16320 | 1 | Tube Assy., Raise (R.H. Cylinder) Tank to Hose Assy. |
| 23 | 16820 | 1 | Tube Assy., Lower (R.H. Cylinder) Tank to Hose Assy. |
| 24 | 16321 | 2 | Tube Assy., Dump & Return (R.H. Cylinder) Tank to Hose Assy. |
| 25 | 16326 | 1 | Bracket |
| 26 | 16327 | 8 | Clamp (Half) |
| | 7561 | 4 | Capscrew, 3/8"-24 NF x 2-3/4" |

(Continued)

TRACTOMOTIVE

HYDRAULIC PIPING GROUP – CONTINUED

(See Plate 560)

| ITEM | PART NUMBER | QTY. | PART NAME |
|---|-------------|------|---|
| 26 | 904206 | 4 | Lockwasher, 3/8" ASA Med. |
| | 911115 | 4 | Plain Washer, 3/8" SAE |
| | 911041 | 4 | Hex Nut, 3/8" -24 NF |
| 27 | 16318 | 1 | Bracket |
| 28 | 1249 | 3 | Capscrew, 1/2" -20 NF x 1-1/4" |
| | 904208 | 3 | Lockwasher, 1/2" ASA Med. |
| | 910244 | 6 | Plain Washer, 1/2" SAE |
| | 911043 | 3 | Hex Nut, 1/2" -20 NF |
| 29 | 16323 | 4 | Clamp (Half) |
| | 1377 | 2 | Capscrew, 3/8" -24 NF x 1-3/4" |
| | 904206 | 2 | Lockwasher, 3/8" ASA Med. |
| | 911041 | 2 | Hex Nut, 3/8" -24 NF |
| | 16235 | 2 | Spacer |
| 30 | 2766 | 1 | Breather Assembly (Includes 1--2767, 1--2768, 1--2769, 1--914172 & 1--904203) (Also see Plate 561, Page #28) |
| | 2767 | 1 | |
| | 2768 | 1 | |
| | 2769 | 1 | |
| | 914172 | 1 | |
| | 904203 | 1 | |
| 31 | 901829 | 1 | Bushing, 1" x 3/4" |
| 32 | 1239 | 4 | Capscrew, 1/2" -20 NF x 1-1/2" |
| | 904208 | 4 | Lockwasher, 1/2" ASA Med. |
| | 11243 | 11 | Washer (Special) (Use as required) |
| | 911043 | 4 | Hex Nut, 1/2" -20 NF |
| 33 | 2184 | 2 | 90° Elbow |
| 34 | 1501 | — | Hose 5/8" x 25 Ft., Roll |
| | 1550 | — | Hose 3/4" x 25 Ft., Roll |
| | 1582 | — | Hose 1" x 25 Ft. Roll |
| Note: The factory will furnish 25 foot rolls of hose only. Dealer will furnish hose cut to proper length or in 25 foot rolls. | | | |
| | | | |

TRACTOMOTIVE

HYDRAULIC TANK GROUP

(See Plate 561)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|--|
| 1 | 16401 | 1 | Tank and Valve Assy., Complete (Includes Item #2 thru #59) |
| | 17138 | 1 | Tank Assy., Less Control Valve (Includes Items #2 thru #4, 10--3909 and Item #11 thru #58) |
| | 16169 | 1 | Bare Tank (For fasteners - See Piping Group) |
| 2 | 912726 | 1 | Pipe Plug, Drain, |
| 3 | 3909 | 2 | Seal Ring |
| | 16093 | 2 | Plug |
| 4 | 16100 | 1 | Valve Mounting and Manifold Plate |
| | 16281 | 1 | Gasket |
| | 904206 | 12 | Lockwasher, 3/8" ASA Med. |
| | 13072 | 12 | Hex Nut, 3/8"-16 NC (Brass) |
| 5 | 3909 | 15 | Seal Ring (Used with Control Valve & Item 40) |
| 6 | 16812 | 4 | Seal Ring |
| 7 | 1620 | 1 | Seal Ring |
| 8 | 16391 | 1 | Control Valve Assy. (See Plate #563, page 34) |
| 9 | 16466 | 5 | Capscrew, 1/2"-20 NF x 4-1/4" |
| | 904208 | 5 | Lockwasher, 1/2" ASA Med. |
| 10 | 10847 | 2 | Capscrew, 1/2"-20 NF x 5" |
| | 904208 | 2 | Lockwasher, 1/2" ASA Med. |
| 11 | 16279 | 2 | Valve Assy., Safety, (1350 PSI) (Includes 1/2 Qty. of Items #12 thru #17) |
| 12 | 17376 | 2 | Body Assy. (Includes one seat) (Serviced as Assy. only) |
| 13 | 1831 | 2 | Plunger |
| 14 | 16277 | 2 | Spring |
| 15 | 12263 | 2 | Spacer Tube |
| 16 | 910098 | 2 | Hex Jam Nut, 1-1/8"-12 NF |
| 17 | 16278 | 2 | Cap |
| 18 | 907856 | 1 | Pipe Plug, 3/8"-18 NPT, Ctsk., 5/16" Hex |
| 19 | 16279 | 1 | Valve Assy., Safety, (2000 PSI) (Includes 1/2 Qty. of Items #12 thru #17) |
| 20 | 16150 | 1 | Tube Assy. (Pressure Line) |
| 21 | ---- | 1 | Magnetic Filter and Suction Line (Includes Items #22 thru #26) |
| 22 | 10653 | 1 | Strainer |
| 23 | 13850 | 1 | Magnet |

(Continued)

TRACTOMOTIVE

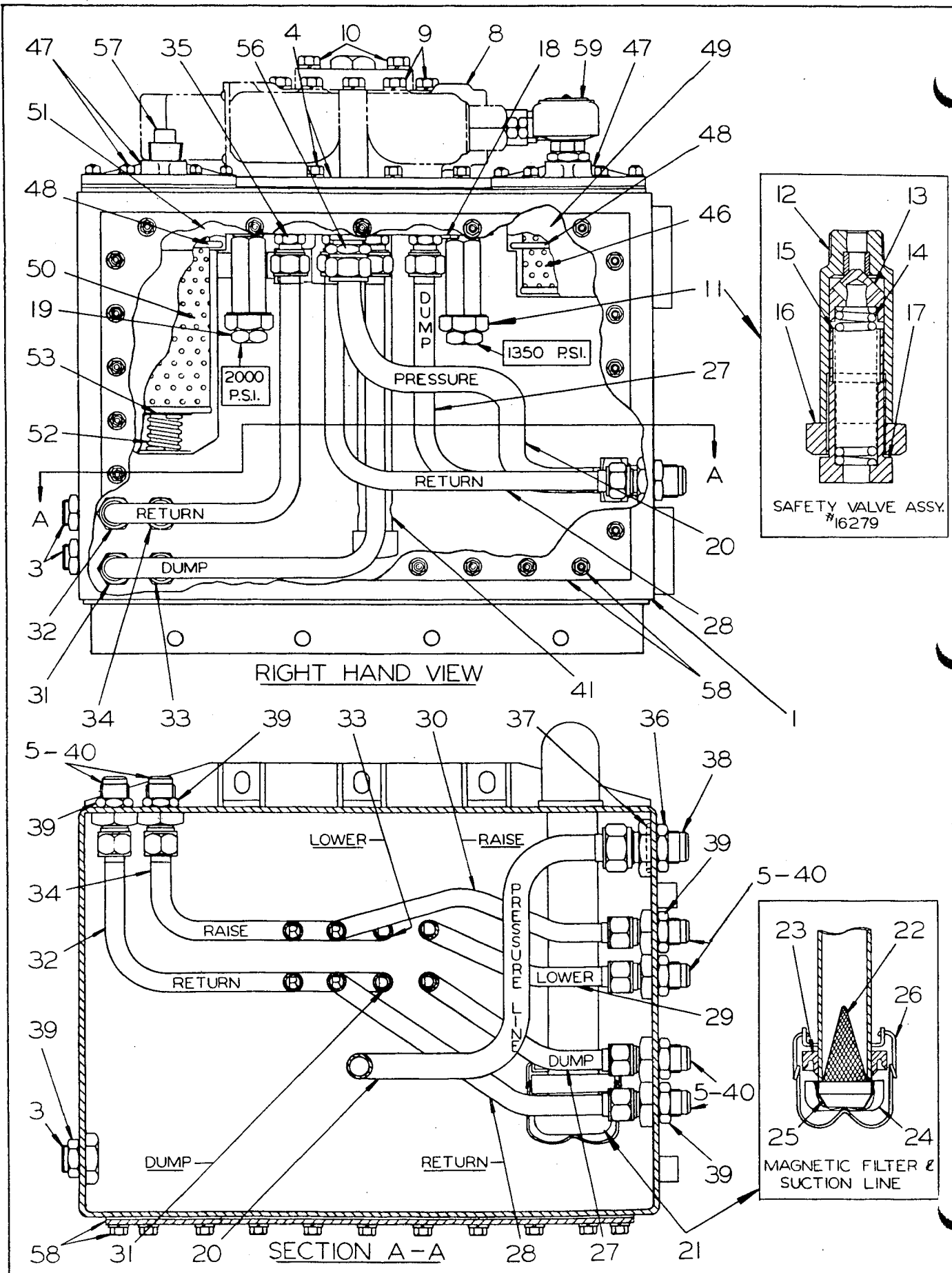


PLATE 561 - HYDRAULIC TANK GROUP - 1ST HALF

TRACTOMOTIVE

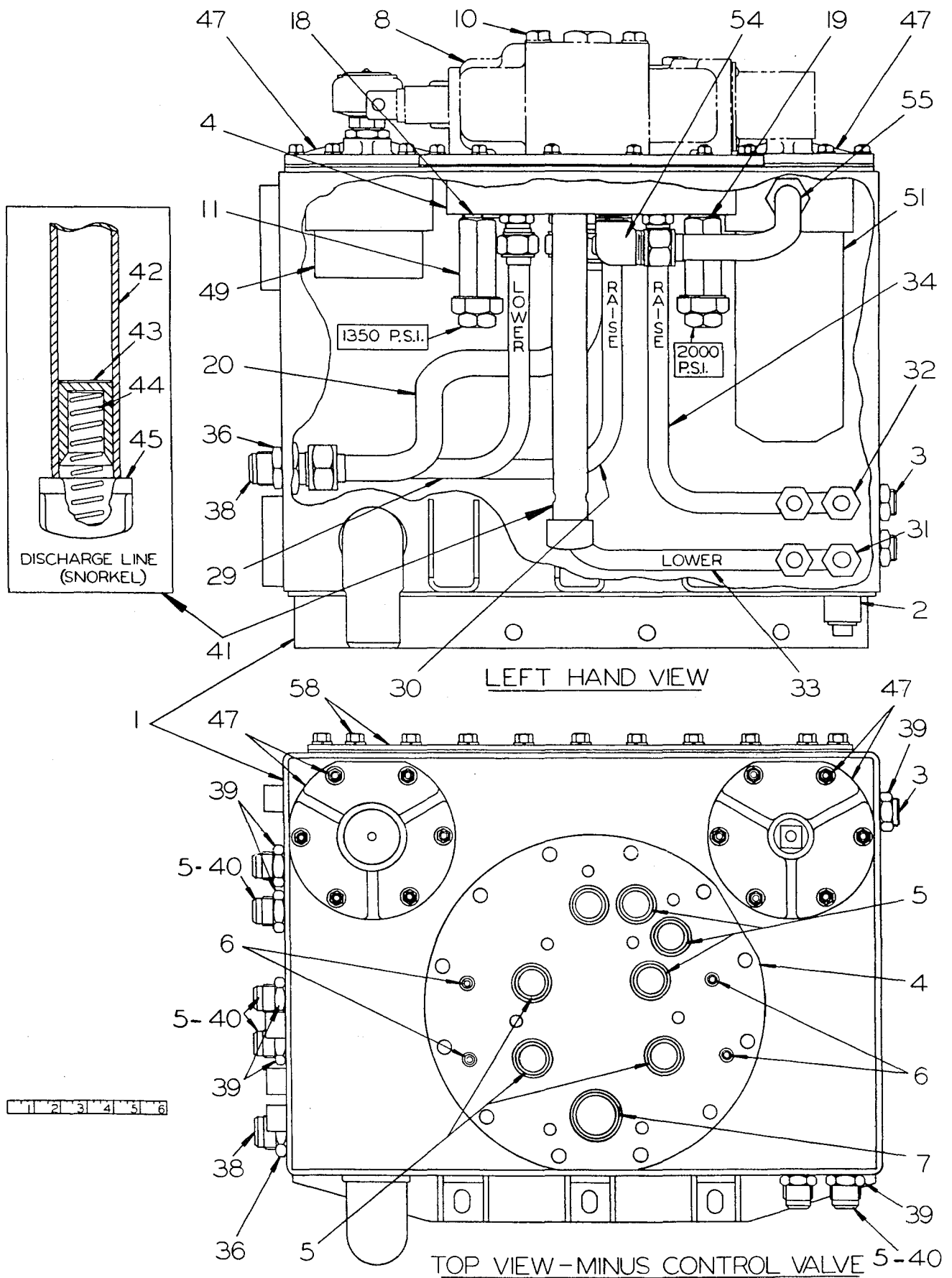


PLATE 561 - HYDRAULIC TANK GROUP - 2ND HALF

TRACTOMOTIVE

HYDRAULIC TANK GROUP - CONTINUED

(See Plate 561)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|--|
| 24 | 13852 | 1 | Baffle |
| 25 | 13847 | 1 | Baffle Support |
| 26 | 13848 | 1 | Bail |
| 27 | 16149 | 1 | Tube Assy., Dump |
| 28 | 16148 | 1 | Tube Assy., Return |
| 29 | 16141 | 1 | Tube Assy., Lower |
| 30 | 16147 | 1 | Tube Assy., Raise |
| | | | R.H. Cylinder |
| 31 | 16146 | 1 | Tube Assy., Dump |
| 32 | 16144 | 1 | Tube Assy., Return |
| 33 | 16142 | 1 | Tube Assy., Lower |
| 34 | 16143 | 1 | Tube Assy., Raise |
| | | | L.H. Cylinder |
| 35 | 16322 | 8 | Connector |
| 36 | 16394 | 1 | Hex Nut (Special) |
| 37 | 2227 | 1 | Seal Ring |
| 38 | 16070 | 1 | Bulkhead Union |
| 39 | 16404 | 10 | Hex Nut (Special) |
| 40 | 16069 | 8 | Bulkhead Union |
| 41 | ---- | 1 | Discharge Line (Snorkel) (Includes Item #42 thru #45) |
| 42 | 16395 | 1 | Discharge Pipe |
| 43 | 16398 | 1 | Plunger |
| 44 | 16397 | 1 | Spring |
| 45 | 16396 | 1 | Cap |
| 46 | 17080 | 1 | Element Kit (Includes 1 -- Breather Element, 2 -- 16282 and 1 -- Filter Element) |
| | ---- | 1 | Element, Breather (Order Kit #17080) |
| 47 | 16078 | 2 | Cover |
| | 16282 | 2 | Gasket |
| | 904206 | 12 | Lockwasher, 3/8" ASA Med. |
| | 13072 | 12 | Hex Nut, 3/8"-16 NC (Brass) |
| 48 | 16392 | 2 | Seal Ring |
| 49 | 16080 | 1 | Breather Case |
| 50 | ---- | 1 | Element, Oil Filter (Order Kit #17080) |
| 51 | 16079 | 1 | Filter Case |

(Continued)

HYDRAULIC TANK GROUP - CONTINUED

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|---|
| 52 | 16399 | 1 | Spring |
| 53 | 16403 | 1 | Washer |
| 54 | 4638 | 1 | 90° Elbow |
| 55 | 16145 | 1 | Tube Assy., Filter |
| 56 | 16347 | 1 | Connector |
| 57 | 16703 | 1 | Dip Stick Weld Assy. |
| 58 | 16280 | 1 | Gasket |
| | 16328 | 1 | Cover Plate |
| | 904206 | 26 | Lockwasher, 3/8" ASA Med. |
| | 13072 | 26 | Hex Nut, 3/8"-16 NC (Brass) |
| 59 | 2766 | 1 | Breather Assembly (Includes 1--2767, 1--2768, 1--2769, 1--914172 & 1--904203) |
| | 2767 | 1 | Base |
| | 2768 | 1 | Cup |
| | 2769 | 1 | Filter Element |
| | 914172 | 1 | Machine Screw, #10-32 NF x 1-1/4" |
| | 904203 | 1 | Lockwasher, #10 ASA Med. |
| | 901829 | 1 | Bushing, 1" x 3/4" |
| | | | |

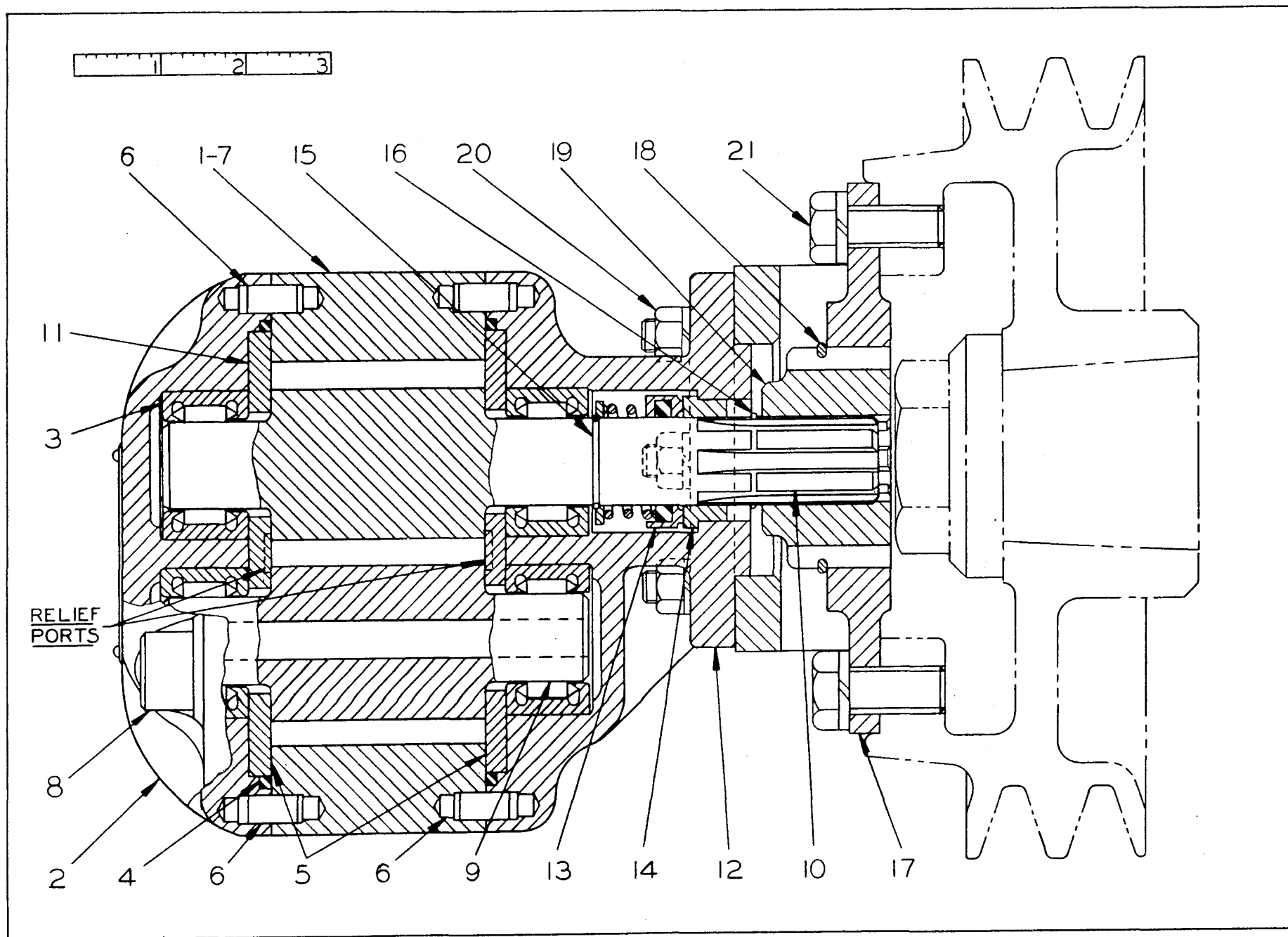


PLATE 562 - PUMP MOUNTING AND DRIVE GROUP

(See Plate 562)

33

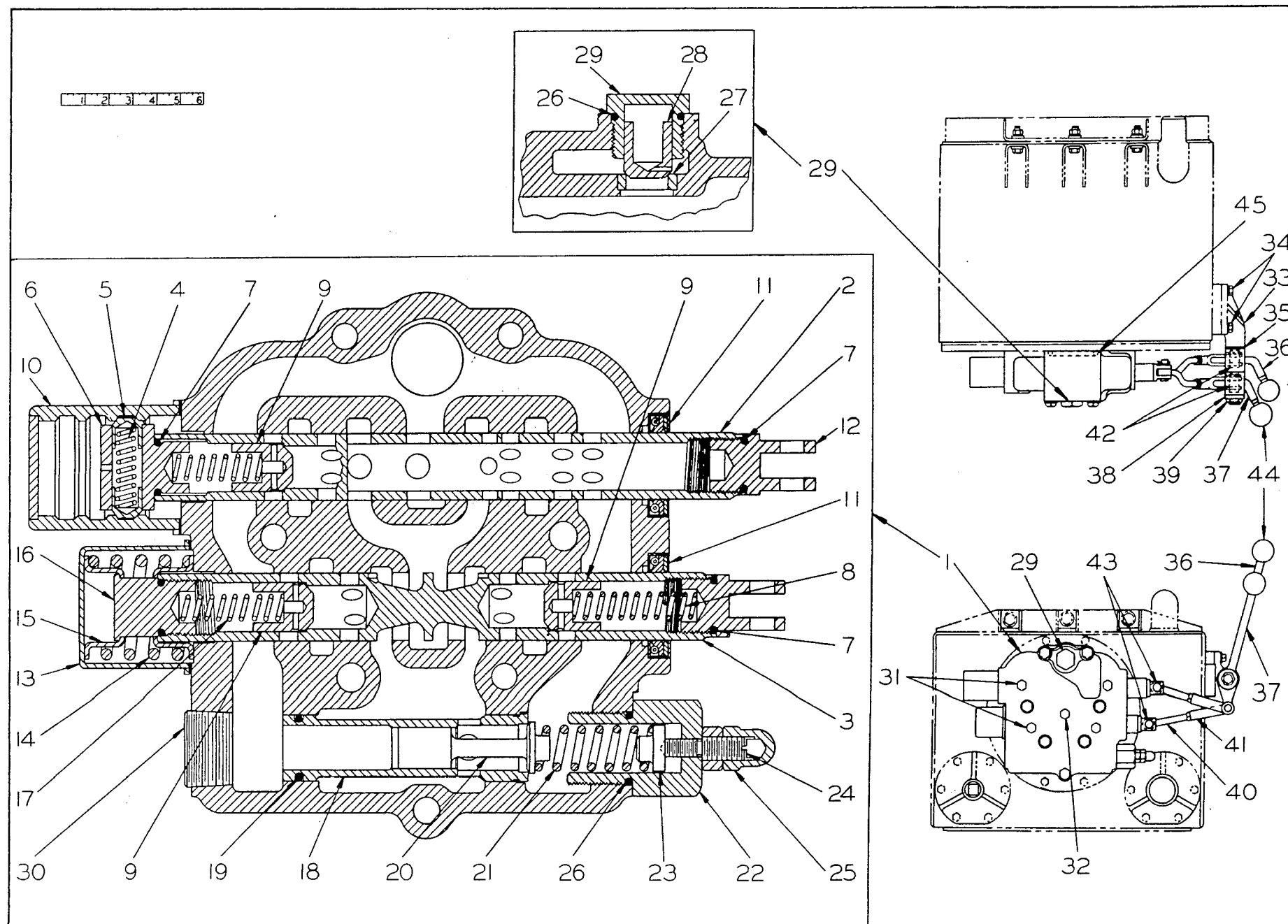


PLATE 563 - CONTROL GROUP

TRACTOMOTIVE

CONTROL GROUP

(See Plate 563)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|---|
| 1 | 16391 | 1 | Valve Assy., (Includes one Housing and Items #2 thru #32) |
| | ---- | 1 | Housing (Not Serviced Separately) |
| 2 | ---- | 1 | Plunger, Float (Not Serviced Separately) |
| 3 | ---- | 1 | Plunger, Double Acting |
| 4 | 16928 | 1 | Spring |
| 5 | 16927 | 2 | Detent Poppet Plunger |
| 6 | 16932 | 1 | Cap (Detent Poppet) |
| 7 | 2633 | 4 | Seal Ring |
| 8 | 10857 | 2 | Spring |
| 9 | 1717 | 3 | Check Valve Plunger |
| 10 | 16911 | 1 | Detent Cap |
| | 16912 | 1 | Gasket |
| 11 | 1719 | 2 | Seal |
| 12 | 1721 | 2 | Plunger Eye |
| 13 | 16923 | 1 | Spring Cover |
| | 16912 | 1 | Gasket |
| 14 | 16924 | 1 | Spring |
| 15 | 16925 | 2 | Spring Retainer |
| 16 | 16926 | 1 | Cap |
| 17 | 1716 | 1 | Spring |
| 18 | 16920 | 1 | Relief Valve Seat |
| 19 | 16921 | 1 | Seal Ring |
| 20 | 3914 | 1 | Relief Valve Plunger |
| 21 | 4724 | 1 | Spring |
| 22 | 16919 | 1 | Cap |
| 23 | 3912 | 1 | Spring Guide |
| 24 | 16918 | 1 | Adjusting Screw |
| 25 | 911043 | 1 | Hex Nut, 1/2"-20 NF |
| | 3911 | 1 | Acorn Nut |
| 26 | 3909 | 2 | Seal Ring |
| 27 | 16929 | 1 | Plunger Seat |

(Continued)

TRACTOMOTIVE

CONTROL GROUP - CONTINUED

(See Plate 563)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|--|
| 28 | 16930 | 1 | Plunger |
| 29 | 16931 | 1 | Cap |
| 30 | 4727 | 1 | Pipe Plug, Hex Socket, 1-1/4" |
| 31 | 907859 | 4 | Pipe Plug, 1/4" -14 NPT Steel, Ctsk. |
| 32 | 907856 | 1 | Pipe Plug, 3/8" Steel, Ctsk., 5/16" Hex |
| 33 | 16700 | 1 | Bracket |
| 34 | 2048 | 4 | Capscrew, 3/8"-24 NF x 1-1/4" |
| | 904206 | 4 | Lockwasher, 3/8" ASA Med. |
| 35 | 910255 | 1 | Plain Washer, 3/4" SAE |
| 36 | 16698 | 1 | Lever Assy. (Includes 2--5955, 2--5957 and 1--13909) |
| | 5955 | 2 | Bearing - Lettered End must face Pressing Tool |
| | 13909 | 1 | Bushing |
| | 5957 | 2 | Seal - Install w/Lips toward outside |
| 37 | 16699 | 1 | Lever Assy. (Includes 2--5955, 2--5957 and 1--13909) |
| | 5955 | 2 | Bearing - Lettered End must face Pressing Tool |
| | 5957 | 2 | Seal - Install w/Lips toward outside |
| | 13909 | 1 | Bushing |
| 38 | 17086 | 1 | Washer |
| 39 | 17085 | 1 | Locknut |
| 40 | 16694 | 2 | Rod Assy. (Each includes 1--13909) |
| | 13909 | 2 | Bushing |
| 41 | 5684 | 2 | Yoke |
| | 913177 | 2 | Hex Jam Nut, 1/2"-20 NF |
| 42 | 1565 | 2 | Pin |
| | 900806 | 2 | Cotter Pin, 1/8" x 1" |
| 43 | 1565 | 2 | Pin |
| | 910244 | 2 | Plain Washer, 1/2" SAE |
| | 900806 | 2 | Cotter Pin, 1/8" x 1" |
| 44 | 1171 | 2 | Knob |
| 45 | ---- | -- | Seal Ring (See Hydraulic Tank Group) |

TRACTOMOTIVE

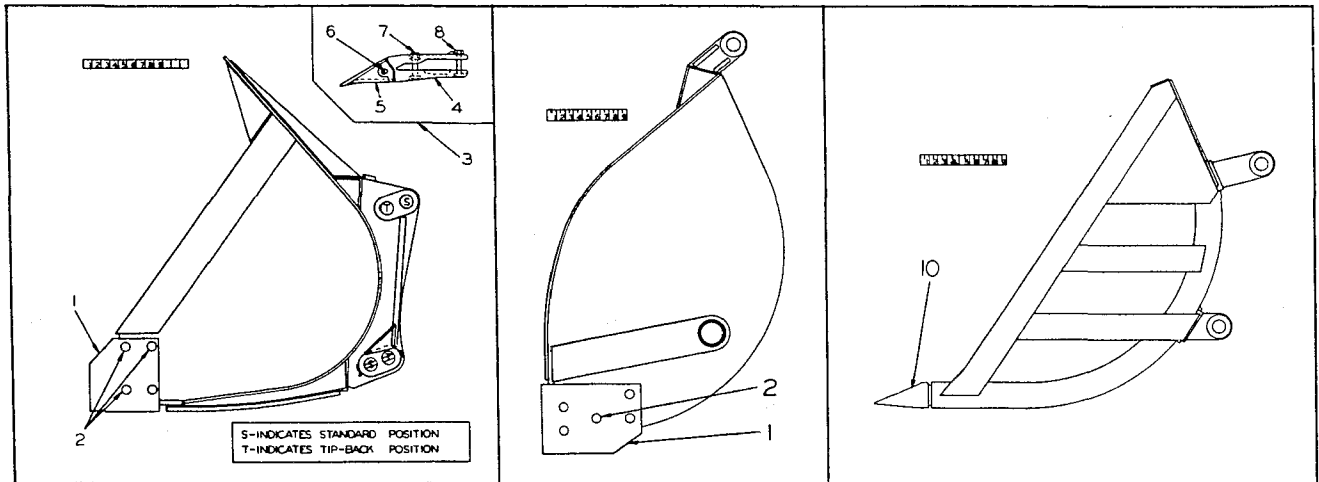


PLATE 568 BUCKET

PLATE 125 - DRAG BUCKET

PLATE 126 - FORK BUCKET

BUCKETS

| ITEM | PART NUMBER | QTY. | PART NAME | |
|------|-------------|------|--|--|
| | ---- | — | Buckets, Complete (Machinery Item — See your Allis-Chalmers Dealer) | |
| 1 | 4395 | 1 | Cutting Edge, 3/4" Thick, 76" Wide (Also order 26 - 911575) (See Plate 568) | For Bucket 1-1/3 Cu. Yd. 76" Wide |
| | 6088 | 1 | Cutting Edge, 3/4" Thick, 95-1/4" Wide (Also order 28 -- 913639) (See Plate 568) | For Light Materials Bucket 2-1/4 Cu. Yd. 95-1/4" Wide |
| | 4947 | 1 | Cutting Edge, 3/4" Thick, 75-1/2" Wide (Also order 26 -- 911575) (See Plate 125) | For Drag Bucket |
| | 16497 | 1 | Cutting Edge, 3/4" Thick, 79-7/8" Wide (Also order 26 -- 911575) (See Plate 568) | For Bucket 1-3/8 Cu. Yd. 79-7/8" Wide |
| 2 | 911575 | — | Rivet, Ctsk. Hd., 1/2" x 2", Used w/3/4" Cutting Edge (For Qty. required, See Item #1) | |
| | 913639 | — | Rivet, Pan Hd., Used w/6088 Cutting Edge only | |
| 3 | 4420 | — | Bucket Tooth Assy., One Piece (Each includes one Item #8) Not Shown | |
| | 14989 | — | Bucket Tooth Assy., (Includes Item #4 thru #8) | |
| 4 | 14988 | 1 | Tooth Shank | For Bucket of Standard Series (See Plate 568) |
| 5 | 14986 | 1 | Tip | |
| 6 | 14987 | 1 | Roll Pin | |
| 7 | 16140 | 1 | Capscrew, 1/2"-13 NC x 2-1/2", Alloy H.T. | |
| | 904208 | 1 | Lockwasher, 1/2" ASA Med. | |
| | 910325 | 1 | Hex Nut, 1/2"-13 NC | |
| 8 | 3787 | 1 | Capscrew, 1/2" - 13NC x 2-1/4" Alloy H.T. (Used w/ 4420 Tooth only) | |
| | 4809 | 1 | Capscrew, 1/2"-13 NC x 2-3/4" Alloy H.T. | |
| | 904208 | 1 | Lockwasher, 1/2" ASA Med. | |
| | 910325 | 1 | Hex Nut, 1/2"-13 NC | |
| 9 | 14387 | 2 | Lock Pin | |
| | 900806 | 2 | Cotter Pin, 1/8" x 1" | |

TRACTOMOTIVE

BUCKETS – CONTINUED

(See Plates 568, 125 and 126)

| ITEM | PART NUMBER | QTY. | PART NAME | |
|------|-------------|------|--|----------------------|
| 10 | 3042 | – | Bucket Tooth (Requires Welding)(See Plate 126) | For Rock Fork Bucket |
| | 3512 | – | Tip (Requires Welding)(See Plate 126) | For Fork Bucket |
| – | 1544 | – | Name Plate (Not Shown) | |

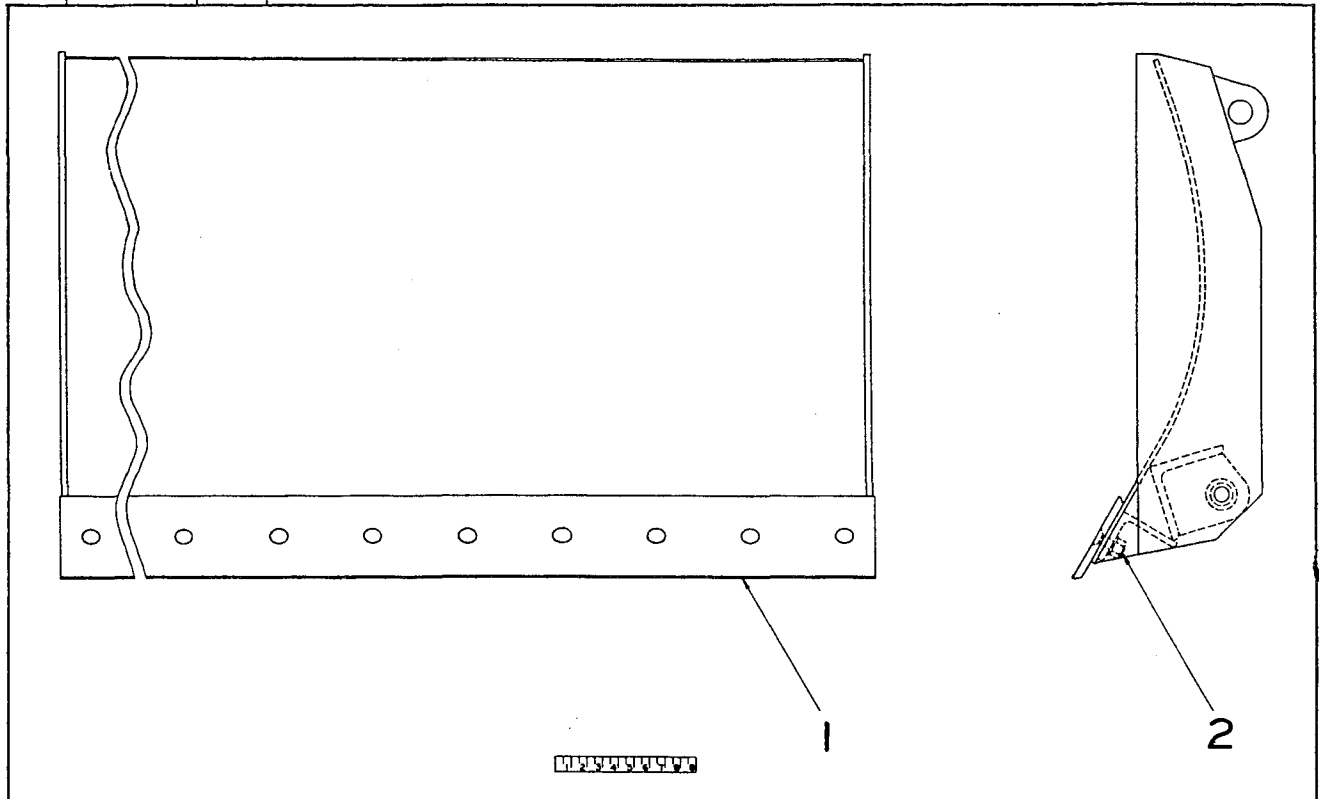


PLATE 569 – BULLDOZER MOLDBOARD ASSEMBLY

| ITEM | PART NUMBER | QTY. | PART NAME | |
|------|-------------|------|---|----------------------|
| – | ---- | – | Bulldozer Moldboard, Complete (Machinery Item – See your Allis-Chalmers Dealer) | |
| 1 | 1417 | 1 | Cutting Edge (For 76" Moldboard) | |
| | 1683 | 1 | Cutting Edge (For 96" Moldboard) | |
| 2 | 1432 | 13 | Plow Bolt, 5/8"-11 NC x 2" Ctsk Hd. | For 76" Moldboard |
| | 904209 | 13 | Lockwasher, 5/8" ASA Med. | |
| | 911029 | 13 | Hex Nut, 5/8"-11 NC | |
| | 1432 | 16 | Plow Bolt, 5/8"-11 NC x 2" Ctsk. | For 96" Moldboard |
| | 904209 | 16 | Lockwasher, 5/8" ASA Med. | |
| | 911029 | 16 | Hex Nut, 5/8"-11 NC | |
| – | 1544 | 1 | Name Plate | |
| | 910219 | 4 | Drive Screw, #7 x 5/16" | |

TRACTOMOTIVE

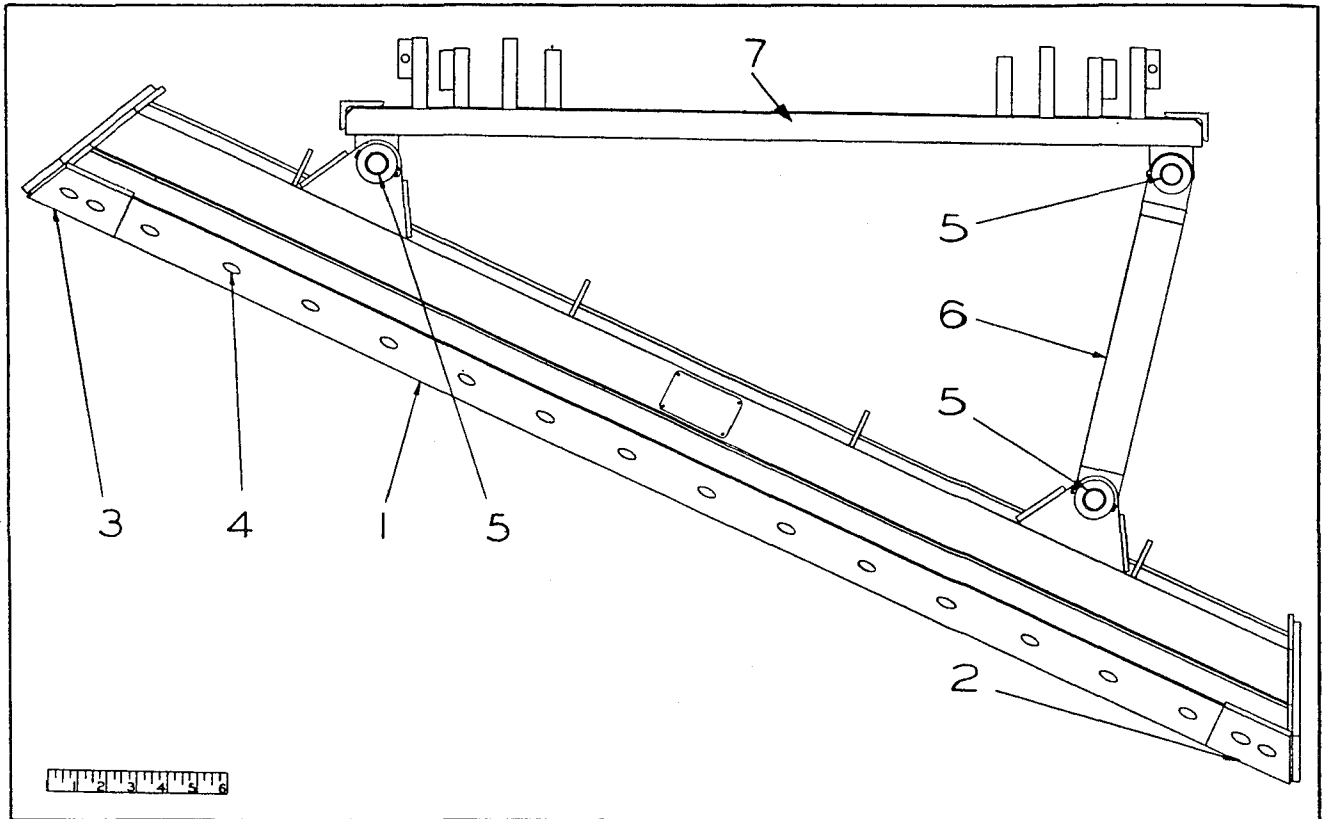


PLATE 120 - ANGLEDZOZER GROUP

| ITEM | PART NUMBER | QTY. | PART NAME |
|---|-------------|------|--|
| - | ---- | - | Angledozer, Complete (Machinery Item - See your Allis-Chalmers Dealer) |
| 1 | 3471 | 1 | Cutting Edge |
| 2 | 4094 | 1 | Bit Assembly - Left |
| 3 | 4095 | 1 | Bit Assembly - Right |
| Each Assy. Consists of 2 pieces. (Requires welding) | | | |
| 4 | 1432 | 22 | Plow Bolt, Ctsk. Hd., 5/8"-11 NC x 2" |
| | 904209 | 22 | Lockwasher, 5/8" ASA Med. |
| | 911029 | 22 | Hex Nut, 5/8"-11 NC |
| 5 | 1621 | 6 | Pin |
| | 1619 | 6 | Pin |
| | 900806 | 6 | Cotter Pin, 1/8" x 1" |
| 6 | 3414 | 1 | Strut Weld Assembly |
| 7 | 3302 | 1 | Mounting Frame |
| - | 1544 | 1 | Name Plate |
| | 910219 | 4 | Drive Screw, #7 x 5/16" |
| | | | |

TRACTOMOTIVE

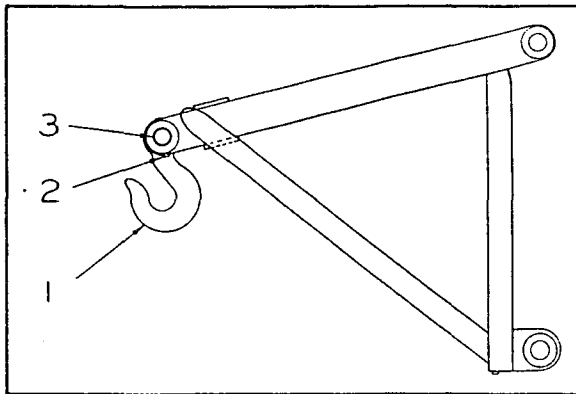


PLATE 121 - CRANE HOOK

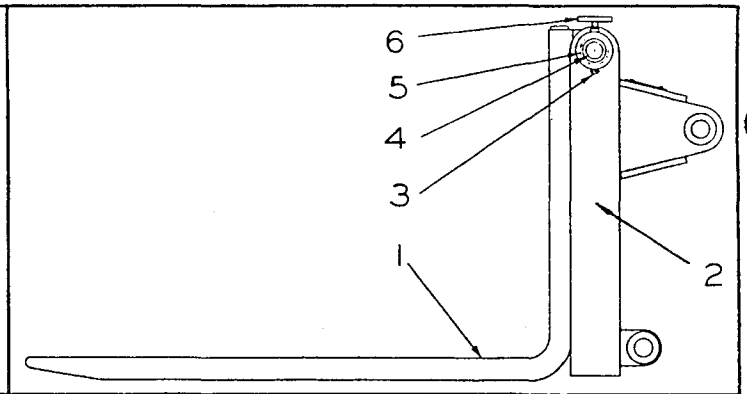


PLATE 122 - LIFT FORK

CRANE HOOK (See Plate 121)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|--|
| - | ---- | - | Crane Hook, Complete (Machinery Item - See your Allis-Chalmers Dealer) |
| 1 | 3458 | 1 | Hook |
| 2 | 1621 | 1 | Pin |
| | 900806 | 1 | Cotter Pin, 1/8" x 1" |
| 3 | 4830 | 1 | Pin |

LIFT FORK (See Plate 122)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|---|
| - | ---- | - | Lift Fork, Complete (Machinery Item - See your Allis-Chalmers Dealer) |
| - | ---- | - | Lift Fork, Complete (Fixed Tines) (Machinery Item See your Allis-Chalmers Dealer) |
| 1 | 7797 | 2 | Fork |
| | 12521 | 2 | Fork (Fixed Tines) |
| 2 | 3506 | 1 | Frame |
| | 12699 | 1 | Frame (Fixed Tines) |
| 3 | 1622 | 1 | Pin |
| | 900806 | 1 | Cotter Pin, 1/8" x 1" (Two used with Fixed Tines) |
| 4 | 3507 | 1 | Bar |
| | 12546 | 2 | Pin (Fixed Tines) |
| 5 | 3508 | 2 | Spacer (Used on Item #3 to locate Fork Assy's.) |
| 6 | 2629 | 2 | "T" Screw Assembly |
| | | | |

TRACTOMOTIVE

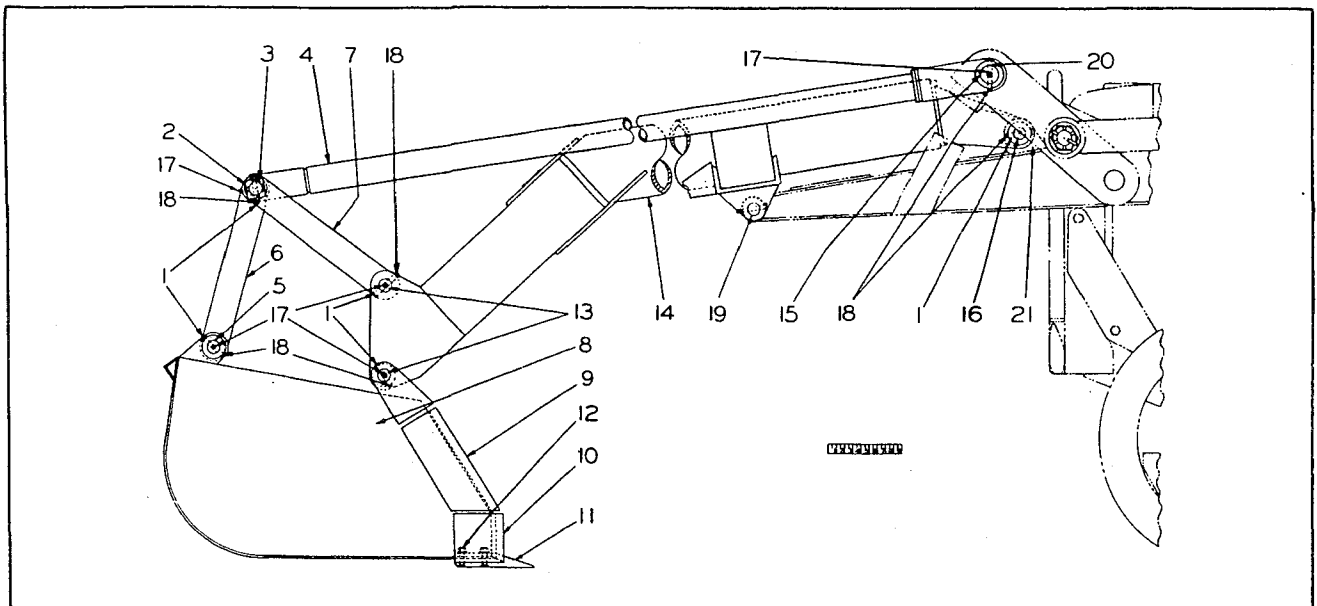


PLATE 147 - TRENCH HOE

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|-------------|------|--|
| - | ---- | - | Trench Hoe, (Complete (Machinery Item - See your Allis-Chalmers Dealer) |
| 1 | 1621 | 8 | Lock Pin |
| 2 | 4370 | 1 | Pin Weld Assy. |
| 3 | 4371 | 1 | Spacer |
| 4 | 4350 | 2 | Strut |
| 5 | 1914 | 1 | Pin |
| 6 | 4353 | 2 | Link |
| 7 | 4352 | 2 | Link |
| 8 | 4368 | 1 | Bucket Assy., 25" Wide, Std. |
| | 4511 | 1 | Bucket Assy., 31" Wide, Special Equipment |
| 9 | 4362 | 1 | Reinforcing Bar, L.H. |
| | 4363 | 1 | Reinforcing Bar, R.H. (Requires welding) |
| 10 | 5305 | 1 | Cutting Edge, 3/4" Thick, 25" Wide (Used with Bucket Tooth #1707) (Recommended for Service) |
| | 4507 | 1 | Cutting Edge, 31" Wide (Center Section) Special Equipment |
| | 4735 | 2 | End Bit |
| 11 | 3110 | - | Bucket Tooth Assy. (Includes 1--3109, 1--912921 and 2--904208) |
| | 3109 | 6 | Bucket Tooth |
| | 912921 | 12 | Plow Bolt, Rd. Hd., Sq. Neck, Ctsk., (Rep.) 1/2"-13NC x 2-1/4" w/nut |
| | 904208 | 12 | Lockwasher, 1/2" ASA Med. |
| | 1707 | - | Bucket Tooth Assy. (Includes 1--1805, 2--915247, 2--904208, 2--910325) (See Item #12) |

Used with
1/2" Thick
Cutting Edge

(Continued)

TRENCH HOE - CONTINUED

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TRACTOMOTIVE

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of some individual to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that can not be completely safeguarded against without interfering with reasonable accessibility and efficient operation.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT MANY THOUSAND SERIOUS INJURIES EACH YEAR, THAT RULE IS:

NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS IN MOTION!

"NATIONAL SAFETY COUNCIL"

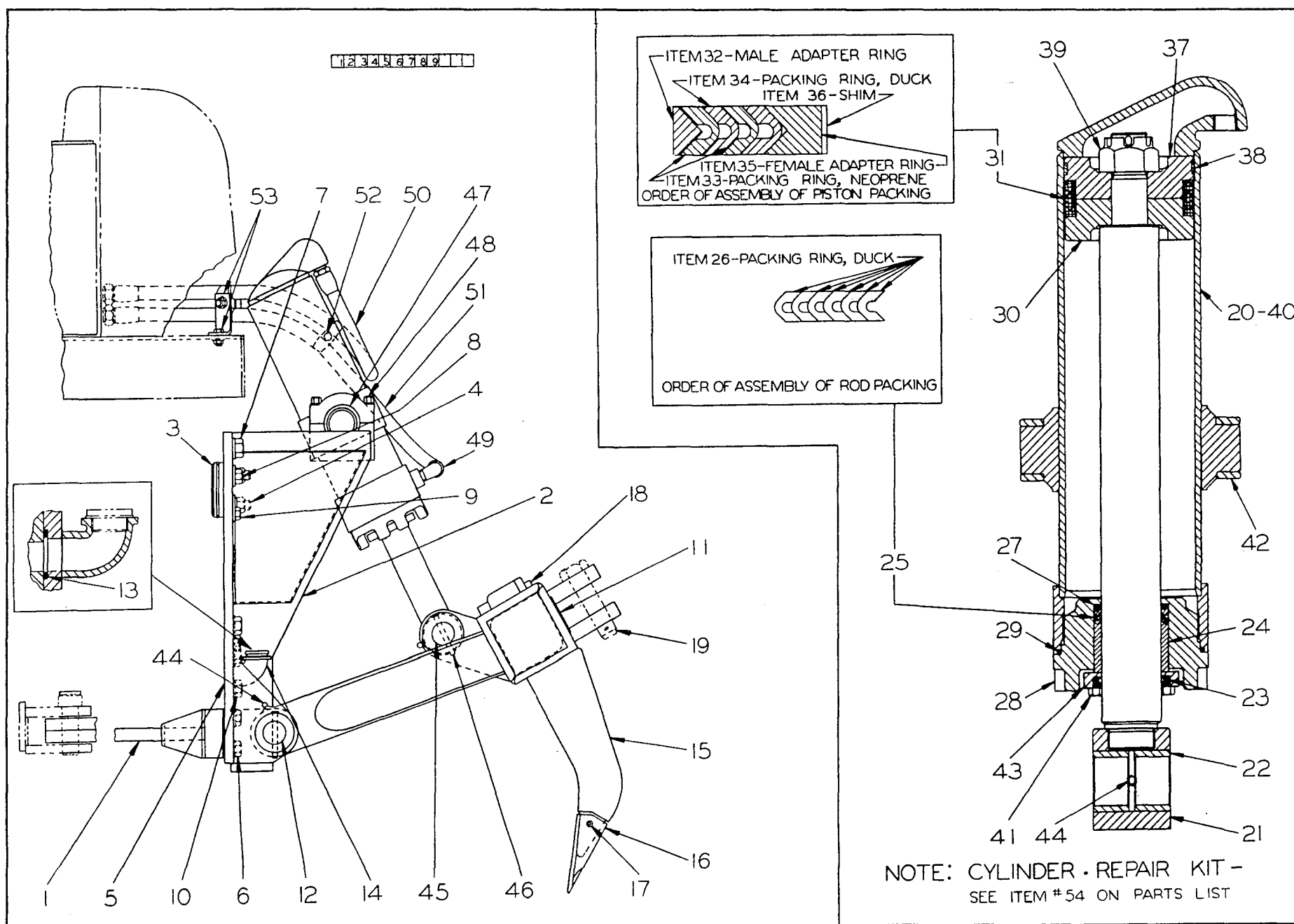


PLATE 564 - RIPPER GROUP

TRACTOMOTIVE

RIPPER GROUP

(See Plate 564)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|--|
| -- | ---- | 1 | Ripper Group, Complete (Machinery Item - See your Allis-Chalmers Dealer) |
| 1 | 16948 | 1 | Drawbar Weld Assy., Left |
| | 16949 | 1 | Drawbar Weld Assy., Right |
| 2 | 16956 | 1 | Mounting Frame |
| | 1544 | 1 | Name Plate |
| 3 | 16941 | 1 | Plug |
| | 5266 | 1 | Seal Ring |
| 4 | 900820 | 2 | Plain Washer, 3/4" USS |
| | 904369 | 2 | Lockwasher, 3/4" ASA Med. |
| | 911045 | 2 | Hex Nut, 3/4"-16 NF |
| 5 | 16943 | -- | Shim (Use as required) |
| 6 | 1244 | 8 | Capscrew, 3/4"-16 NF x 2-1/2" |
| | 904369 | 8 | Lockwasher, 3/4" ASA Med. |
| 7 | 11990 | 2 | Capscrew, 1"-8 NC x 2-1/2" |
| | 910916 | 2 | Lockwasher, 1" ASA Med. |
| 8 | 16959 | 6 | Capscrew, 7/8"-9 NC x 2-1/4" |
| | 905347 | 6 | Lockwasher, 7/8" ASA Med. |
| 9 | 5810 | 4 | Capscrew, 5/8"-11 NC x 1-3/4" |
| | 904209 | 4 | Lockwasher, 5/8" ASA Med. |
| 10 | ---- | 6 | Capscrew, 3/4"-10 NC x 2" |
| | 904369 | 6 | Lockwasher, 3/4" ASA Med. - Same as used in Drawbar Bracket |
| 11 | 4537 | 1 | Frame Weld Assy. |
| | 11626 | 1 | Name Plate (Tracto) |
| | 11627 | 1 | Name Plate (Ripper) |
| 12 | 4513 | 2 | Pin |
| 13 | 10708 | 2 | Seal Ring |
| 14 | ---- | 1 | Plug |
| | ---- | 1 | Gasket - Same as used in Drawbar Bracket |
| 15 | 15965 | 4 | Ripper Shank |
| 16 | 14986 | 4 | Ripper Tooth |
| 17 | 14987 | 4 | Roll Pin |
| 18 | 4515 | 4 | Key |

(Continued)

TRACTOMOTIVE

RIPPER GROUP - CONTINUED

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|---|
| 19 | ---- | 1 | Pin - Same as used in Drawbar |
| 20 | 17334 | 1 | Cylinder Assy. (Includes Items #21 thru #43 and one item #44) |
| 21 | 4546 | 1 | Piston Rod Assy. (Includes 2--1066) |
| 22 | 1066 | 2 | Bushing |
| 23 | 1538 | 1 | Oil Seal |
| 24 | 16601 | 1 | Packing Gland Bearing |
| 25 | 17249 | 1 | Rod Packing Set (Consists of 4--1534) |
| 26 | 1534 | 4 | Packing Ring, Duck |
| 27 | 1532 | 1 | Adapter Ring, Male |
| 28 | 16272 | 1 | Cylinder Head |
| 29 | 16188 | 1 | Seal Ring |
| | 16189 | 1 | Back-up Ring |
| 30 | 1300 | 1 | Piston (Upper) |
| 31 | 1476 | 1 | Piston Packing Set (Consists of Items #32 thru #35) |
| 32 | 1459 | 1 | Male Adapter Ring |
| 33 | 1302 | 2 | Packing Ring, Neoprene |
| 34 | 1466 | 2 | Packing Ring, Duck |
| 35 | 1458 | 1 | Female Adapter Ring |
| 36 | 3160 | - | Shim (Use as required) |
| 37 | 1478 | 1 | Piston (Lower) |
| 38 | 1482 | 1 | Bearing Ring |
| 39 | 911058 | 1 | Castle Nut, 1-1/2"-12 NF |
| | 901345 | 1 | Cotter Pin, 1/4" x 2-1/2" |
| 40 | 17333 | 1 | Cylinder Tube Assy. (Includes 2--1064) |
| 41 | 7904 | 4 | Capscrew, 3/8"-16 NC x 1-1/2" |
| | 1085 | 2 | Lockwire, #16 W and M Ga. x 17" Long (One used w/cylinder head) |
| 42 | 1064 | 2 | Bushing (Requires welding) |
| 43 | 16405 | 1 | End Plate |
| 44 | 914465 | 3 | Lubricating Fitting, St., 1/8"-27 NPT |
| 45 | 1625 | 1 | Pin |
| 46 | 1622 | 3 | Lock Pin |
| | 900806 | 3 | Cotter Pin, 1/8" x 1" |

(See Plate 564)

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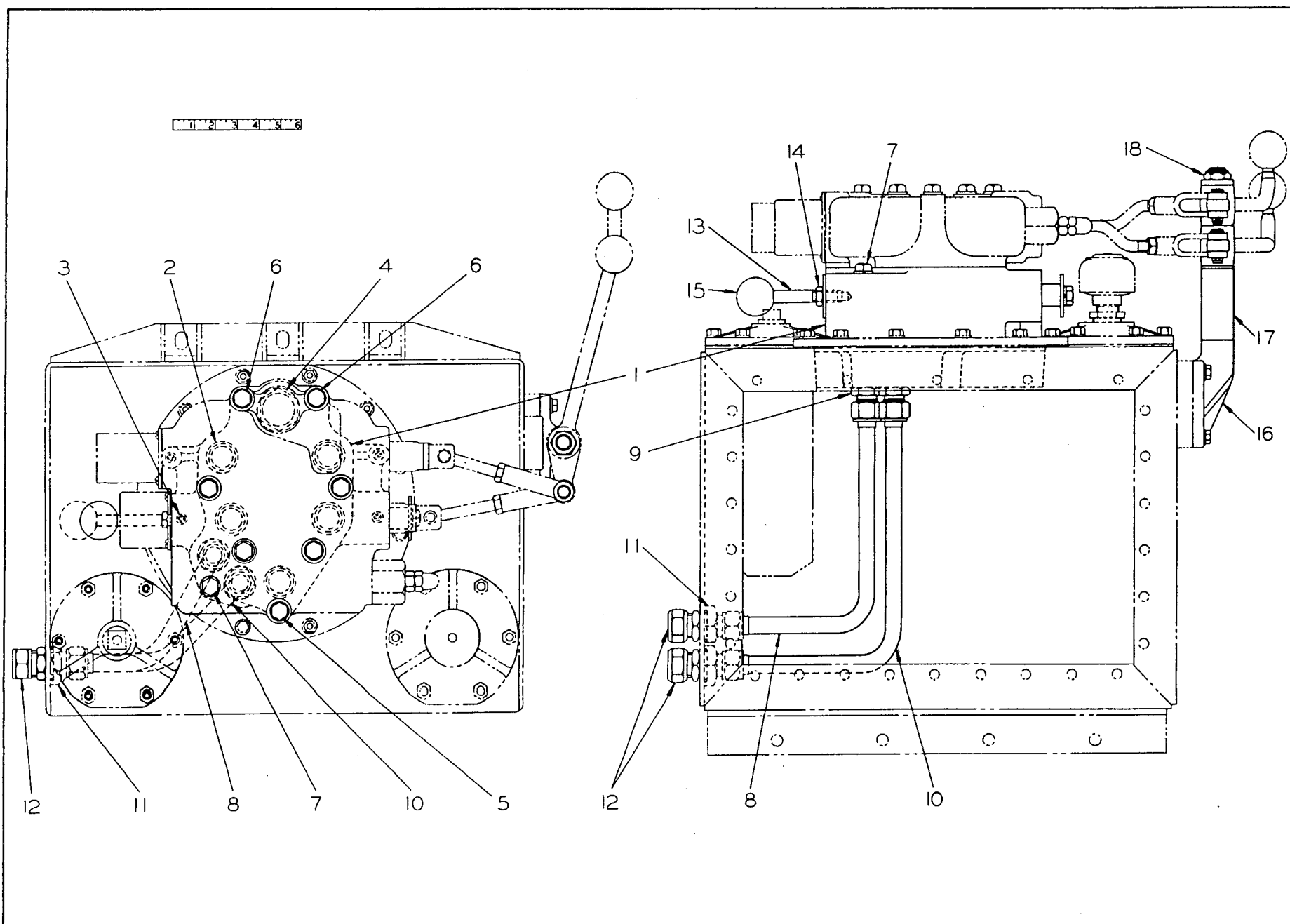


PLATE 565 - HYDRAULIC REAR PIPING TAKE-OFF KIT

TRACTOMOTIVE

HYDRAULIC REAR PIPING TAKE-OFF KIT

(See Plate 565)

| ITEM | PART NUMBER | QTY. | PART NAME |
|------|----------------|------|--|
| | 16990 | 1 | Selector Valve Control and Piping Kit, Complete (Includes items #1 thru #17) |
| 1 | 16283 | 1 | Slector Valve (Includes Parts as listed in Item #1) |
| | 1084 | 2 | Capscrew, 1/2" - 20NF x 1" |
| | 904208 | 2 | Lockwasher, 1/2" ASA Med. |
| | 17868 | 2 | Plunger Stop |
| | 16485 | 2 | Seal |
| | ---- | 1 | Housing (Not Serviced Seperately) |
| | ---- | 1 | Plunger |
| 2 | 3909 | 5 | Seal Ring |
| 3 | 16812 | 4 | Seal Ring |
| 4 | 1620 | 1 | Seal Ring |
| 5 | 16284 | 5 | Capscrew, 1/2"-20 NF x 7-1/4" |
| | 904208 | 5 | Lockwasher, 1/2" ASA Med. |
| 6 | 10040 | 2 | Capscrew, 1/2"-20 NF x 8" |
| | 904208 | 2 | Lockwasher, 1/2" ASA Med. |
| 7 | 13613 | 1 | Capscrew, 1/2"-20 NF x 3-3/4" |
| | 904208 | 1 | Lockwasher, 1/2" ASA Med. |
| 8 | 16907 | 1 | Tube Assy., Lower |
| 9 | 16322 | 2 | Connector |
| 10 | 16908 | 1 | Tube Assy., Raise |
| 11 | 16069 | 2 | Bulkhead Union |
| 12 | 16206 | 2 | Cap |
| 13 | 16289 | 1 | Rod |
| 14 | 913177 | 1 | Hex Jam Nut, 1/2"-20 NF |
| 15 | 1171 | 1 | Knob |
| 16 | 17014 | 1 | Bracket |
| 17 | 17015 | 1 | Spacer |
| 18 | 910255 | 1 | Plain Washer |
| | 17085 | 1 | Locknut |
| | | | - Same as used in Control Group |
| | | | |

TRACTOMOTIVE

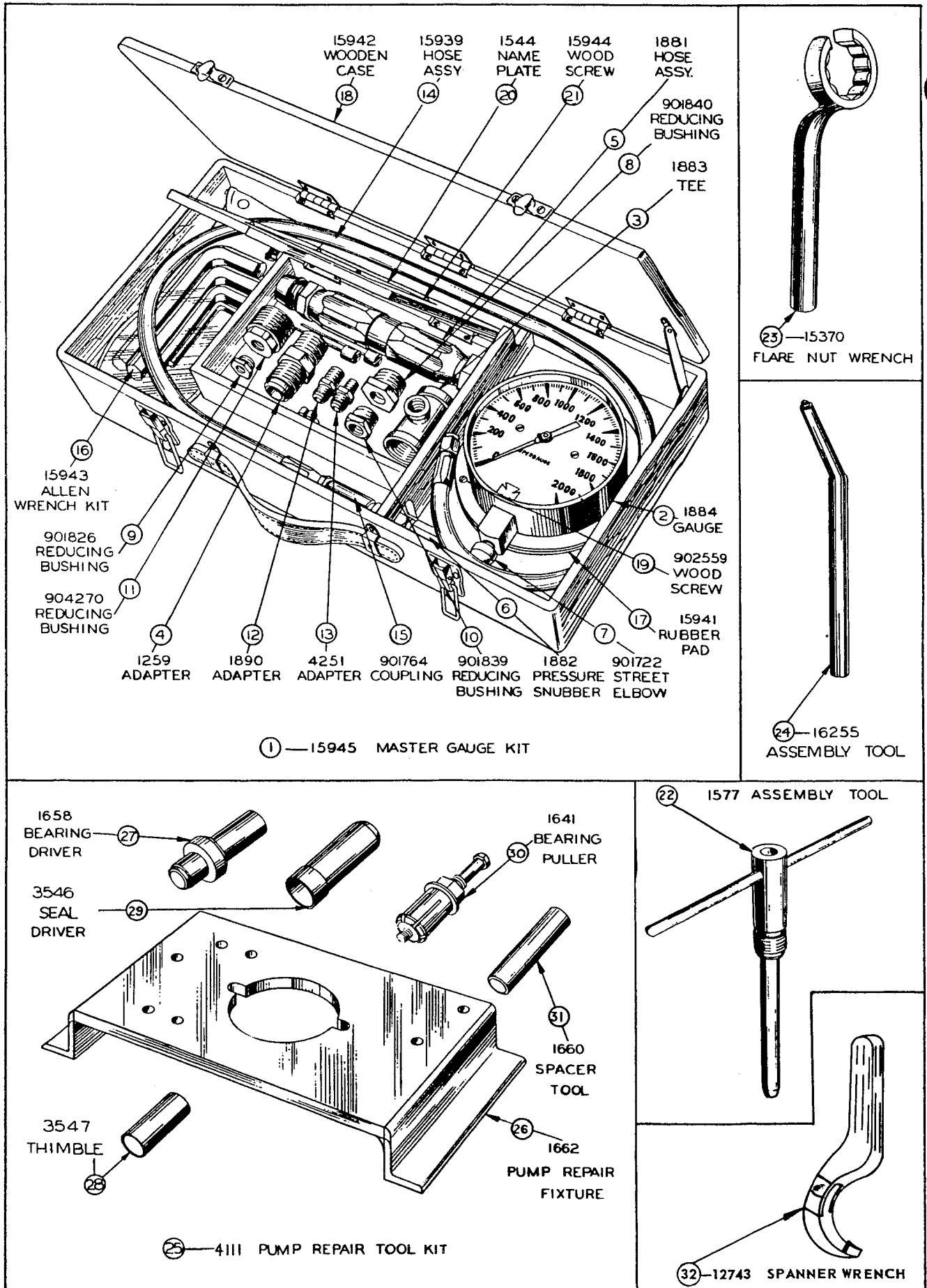


PLATE 520 - SPECIAL TOOLS

TRACTOMOTIVE

SPECIAL TOOLS

(See Plate 520)

| ITEM | PART NUMBER | QTY. | PART NAME |
|--------------------------|-------------|------|---|
| 1 | 15945 | 1 | Master Gauge Kit (Includes Items #2 thru #21) |
| 2 | 1884 | 1 | Pressure Gauge, 2000 PSI |
| 3 | 1883 | 1 | Tee, 3/4" x 3/4" x 1/4" |
| 4 | 1259 | 1 | Adapter, 3/4" |
| 5 | 1881 | 1 | Hose Assy. (Includes 1--1260, one Hose and 1--1261) |
| | 1260 | 1 | Swivel Nut Sub-Assy., 3/4" |
| | 1550-4 | 1 | Hose (Bare Length) See Note Page 26 |
| | 1261 | 1 | Male Sub-Assy., 3/4" |
| 6 | 1882 | 1 | Pressure Snubber |
| 7 | 901722 | 1 | 90° Street Elbow, 1/4" |
| 8 | 901840 | 1 | Reducing Bushing, 3/4" x 1/4" |
| 9 | 901826 | 1 | Reducing Bushing, 3/8" x 1/4" |
| 10 | 901839 | 1 | Reducing Bushing, 1/2" x 1/4" |
| 11 | 904270 | 1 | Reducing Bushing, 1" x 1/4" |
| 12 | 1890 | 1 | Adapter, 1/4" |
| 13 | 4251 | 1 | Adapter, 1/8" x 1/4" |
| 14 | 15939 | 1 | Hose Assy. (Includes 1--1889, one Hose and 1--1888) |
| | 1889 | 1 | Swivel Nut Sub-Assy., 1/4" |
| | 1891-43 | 1 | Hose (Bare Length) See Note |
| | 1888 | 1 | Male Sub-Assy., 1/4" |
| 15 | 901764 | 1 | Coupling, 1/4" |
| 16 | 15943 | 1 | Allen Wrench Kit (Consists of five wrenches, (1/8", 1/4", 3/8", 1/2" & 9/16" in bag.) |
| 17 | 15941 | 1 | Rubber Pad |
| 18 | 15942 | 1 | Wooden Case |
| 19 | 902559 | 3 | Wood Screw, #6 x 1/2", Rd. Hd. |
| 20 | 1544 | 1 | Name Plate |
| 21 | 15944 | 4 | Wood Screw, #8 x 3/8", Rd. Hd. |
| <u>HOSE TOOL</u> | | | |
| 22 | 1577 | 1 | Assembly Tool, 3/4" Hose |
| <u>TUBING TOOL</u> | | | |
| 23 | 15370 | 1 | Flare Nut Wrench, 1-1/4" |
| <u>TOOTH TOOL</u> | | | |
| 24 | 16255 | 1 | Assembly Tool |
| <u>PUMP REPAIR TOOLS</u> | | | |
| 25 | 4111 | 1 | Pump Repair Tool Kit (Includes Items #26 thru #31) |
| 26 | 1662 | 1 | Pump Repair Fixture |
| 27 | 1658 | 1 | Bearing Driver |
| 28 | 3547 | 1 | Thimble |
| 29 | 3546 | 1 | Seal Driver |
| 30 | 1641 | 1 | Bearing Puller (Includes parts as listed in Item #30) |
| | 1643 | 1 | Expander Bolt |
| | 1642 | 1 | Sleeve |
| | 911100 | 1 | Plain Washer, 5/8" SAE |
| | 911049 | 1 | Hex Jam Nut, 5/8"-18 NF |
| | 1640 | 1 | Capscrew, 5/8"-24 NF x 3-3/4" |
| 31 | 1660 | 1 | Spacer Tool |
| 32 | 12743 | 1 | Spanner Wrench |

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| 1377 | 26 | 1622 | 15,40 | 2767 | 26,31 | 4089 | 21 |
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| 1417 | 38 | 1624 | 15 | 2769 | 26,31 | 4095 | 39 |
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| 1458 | 19,46 | 1640 | 51 | 2997 | 33 | 4251 | 51 |
| 1459 | 19,46 | 1641 | 51 | 3002 | 33 | 4343 | 42 |
| 1460 | 21 | 1642 | 51 | 3003 | 21,33 | 4350 | 41 |
| 1461 | 21 | 1643 | 51 | 3005 | 33 | 4352 | 41 |
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