

HD-21

Crawler Tractor

**INDEPENDENT
HYDRAULIC
SYSTEMS**

PARTS CATALOG

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 cannot 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

—WARNING—

On machines having hydraulically, mechanically, and/or cable controlled equipment (such as shovels, loaders, dozers, scrapers, etc.) be certain the equipment is lowered to the ground before servicing, adjusting and/or repairing. If it is necessary to have the hydraulically, mechanically, and/or cable controlled equipment partially or fully raised to gain access to certain items, be sure the equipment is suitably supported by means other than the hydraulic lift cylinders, cable and/or mechanical devices used for controlling the equipment.

Fiatallis is not responsible for any liability arising from any damage resulting from defects caused by parts and/or components not approved by Fiatallis for use in maintaining and/or repairing products manufactured or merchandized by Fiatallis.

In any case, no warranty of any kind is made or shall be imposed with respect to products manufactured or merchandized by Fiatallis when failures are caused by the use of parts and/or components not approved by Fiatallis.



SUPPLEMENT NO. 1
PARTS CATALOG FORM 70648552
INDEPENDENT HYDRAULIC SYSTEMS
for
HD-21 CRAWLER TRACTORS (Prior to S/N 16001)

(11-77)

ATTENTION: Insert this sheet in the front of publication as record of receipt.
Replace or add pages in the publication according to instructions below.

Additional copies of this supplement are available. Please direct your request to
*Fiat-Allis Construction Machinery, Inc., Technical Publications Dept., 3000 South
6th Street, Springfield, Illinois, 62710 U.S.A.*

11 No change
12 Revised

43 No change
44 Revised

NOTICE
THESE CHANGES ARE
INCLUDED IN THIS COPY

NOTICE

Allis-Chalmers Corporation and Fiat S.p.A. entered into a joint venture agreement to combine their manufacture, sale and service of construction machinery products throughout the world after January 1, 1974.

In view of the new enterprise, wherever in this publication reference is made to Allis-Chalmers or your Allis-Chalmers dealer, such reference is intended to identify Fiat-Allis Construction Machinery, Inc. or your Fiat-Allis dealer.

Also, for this new enterprise, a new series of 8-digit part numbers is in effect. This change is accomplished by eliminating the "check digit" wherever it may appear, and then, to this basic part number, prefixing a "7" (or "7" plus one or more zeros) to make a full 8-digit part number.

Examples:

667367	becomes	70667367
0688917-4	becomes	<u>7</u> 0688917
3060101-7	becomes	<u>7</u> 3060101

All part numbers listed herein must be changed per the above formula before ordering.

IMPORTANT

All parts listed herein, which have no specific usage indicated, are applicable to all models. Those parts which are used only on specific models are so indicated.

Attaching parts such as bolts, nuts, rivets, screws, washers, etc., are indented immediately following the parts which they attach.

Parts indicated with a square (□) are also available in packaged sets. Refer to section titled "PACKAGED PARTS".

The terms "right" and "left" used throughout this parts catalog are determined by facing the direction of forward travel.

INSTRUCTIONS FOR ORDERING PARTS

At the time this parts catalog was published the listed part numbers were current. It is our policy to constantly improve our machines and therefore, part numbers and design may change. When ordering parts, verify part numbers through your dealer's parts catalog which is up to date with all latest part numbers.

Order parts from the dealer covering the local territory.

ALWAYS GIVE THE MODEL AND SERIAL NUMBER OF MACHINE. IF PARTS ARE FOR AN ASSEMBLY WHICH HAS A MODEL AND/OR SERIAL NUMBER (SUCH AS ENGINE ASSEMBLY, PUMP ASSEMBLY), ALSO INCLUDE THIS INFORMATION.

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

Give 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.

Parts for standard motor accessories such as generators and starting motors should be ordered from authorized Service Stations maintained by manufacturers of these units throughout the country.

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 Allis-Chalmers.

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 units already delivered.

(Specifications and design subject to change without notice)

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NOTE: This catalog does not include parts data for cylinders or cylinder piping. See parts catalogs covering dozer, ripper, winch or scraper for this information.

HOSE

SOCKETS

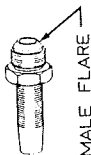
NIPPLES

TYPE A



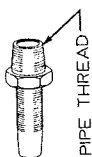
FEMALE FLARE

TYPE B



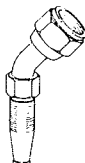
MALE FLARE

TYPE C

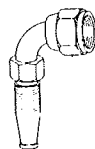


PIPE THREAD

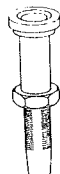
TYPE D



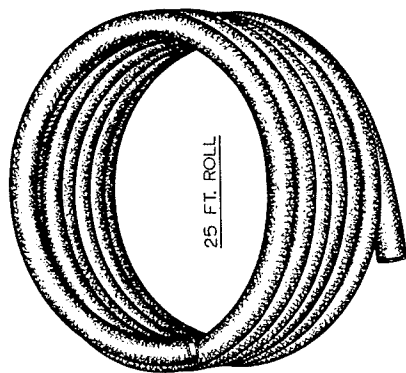
TYPE E



TYPE J



TYPE K



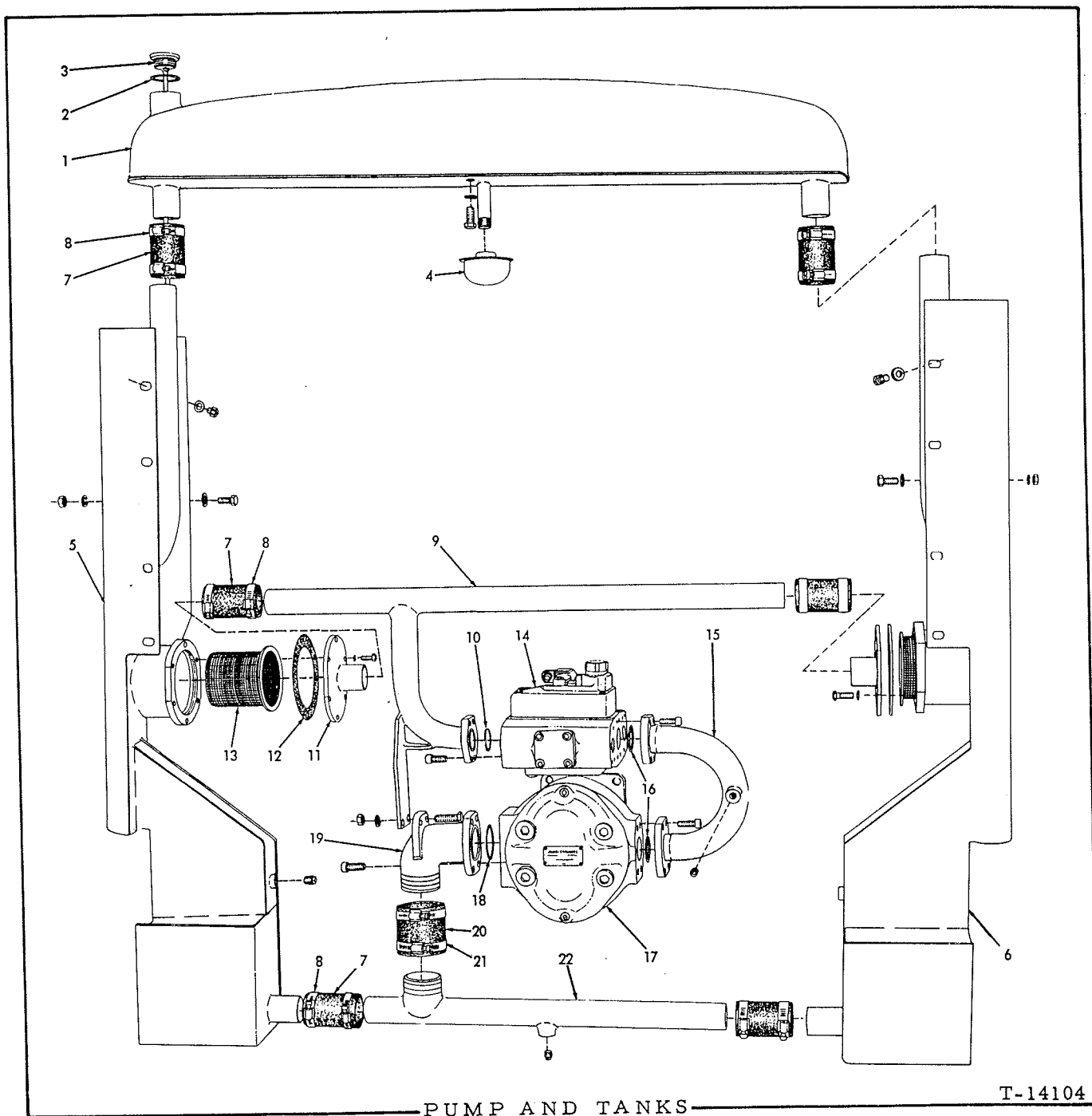
25 FT. ROLL

T-71335

HOSE PARTS

NOTE: Refer to right hand column for identity of interchangeable crimped-type hose (fittings not re-usable). Assembly number shown in left hand column indicates available replacement hose assembly with re-usable components; where no assembly number is listed, hose assembly is not available from factory but may be constructed in the field from data indicated.

HOSE ASSEMBLY NO. (See NOTE)	BULK HOSE (25' roll)	HOSE LENGTH (inches)	NIPPLE (#1 end)		NIPPLE (#2 end)		SOCKET (both ends)	NIPPLE FLANGE		CRIMPED-TYPE HOSE (See NOTE) Part No.
			Including SOCKET	NIPPLE only	Type	Including SOCKET	NIPPLE only	Type	Part No.	Dim
625565	920795	16-1/4	920935	921304	B	920928	920970	C	920973	
625567	920795	49	920928	920970	C		625586	Tube	920973	
625571	920795	49	920928	920970	C		625587	Tube	920973	
635088	920795	136-1/2	920935	921304	B		625586	Tube	920973	
635089	920795	136-1/2	920935	921304	B		625587	Tube	920973	
	920795	47-3/4	920928	920970	C	920928	920970	C	920973	613445
	920795	93-3/8	920928	920970	C	920928	920970	C	920973	613446
	920982	34-1/4	920929	920984	C	920929	920984	C	920986	617177
	920732	148-1/4	920844	922737	C	920844	922737	C	920569	618072



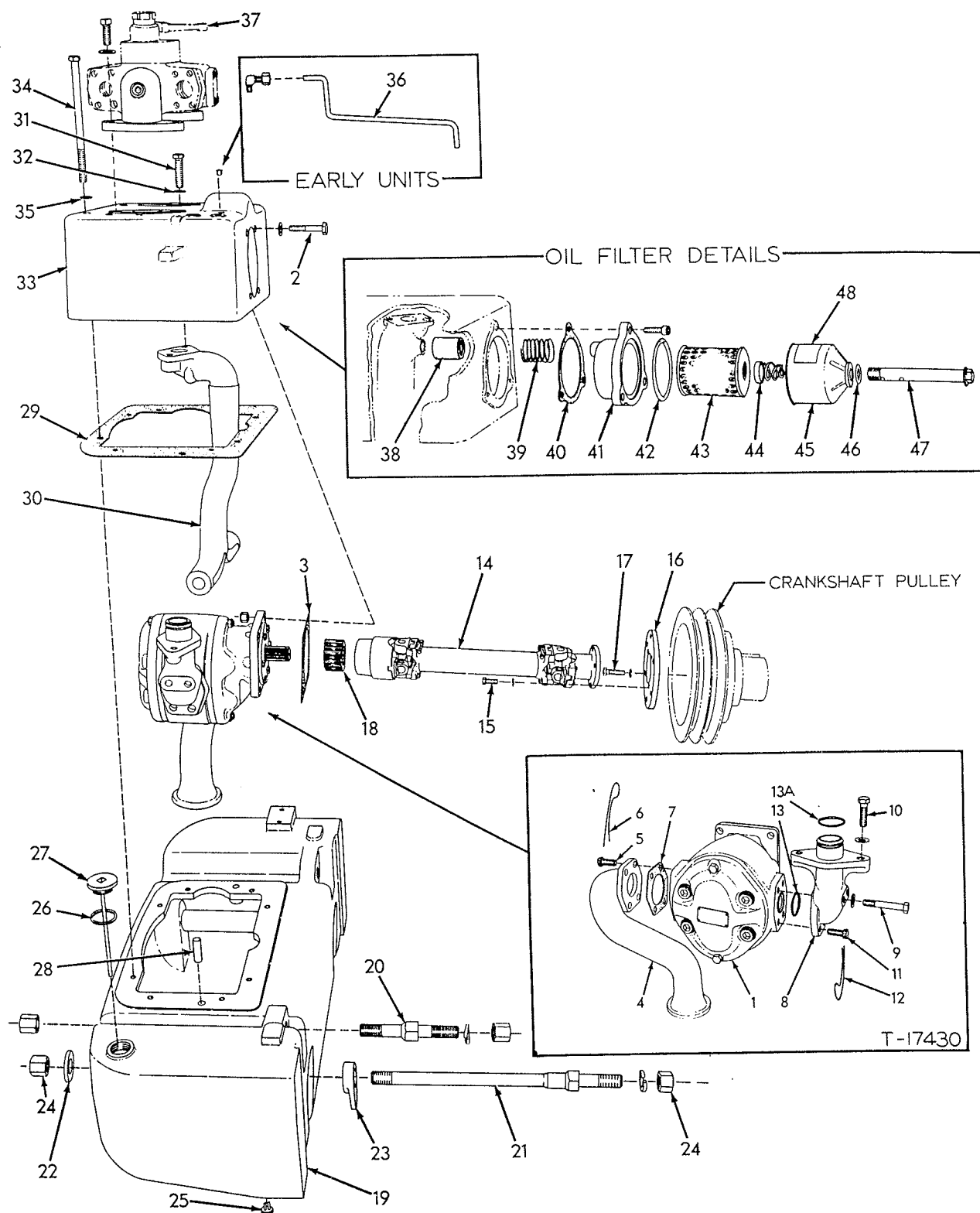
USAGE: Model 21BD, GD, GE Dozers. Front-mounted

ITEM	PART NO.	QTY.	DESCRIPTION
1	609147	1	TANK, oil, top section
	911978	4	CAPSCREW, 1/2"NF x 1-1/2"
	904208	4	LOCKWASHER, 1/2"
2	035249	1	GASKET, oil level dipstick
3	609169	1	DIPSTICK, oil level
4	606929	1	BREATHER, top tank

(Continued)

PUMP AND TANKS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	609150	1	TANK, oil, right side
	901653	1	PLUG, pipe, 3/8"NPT
	910319	4	CAPSCREW, 1/2"NF x 1"
	911978	3	CAPSCREW, 1/2"NF x 1-1/2"
	900818	7	WASHER, plain, U.S. std., 1/2"
	904208	3	LOCKWASHER, 1/2"
	911043	3	NUT, 1/2"NF
6	609149	1	TANK, oil, left side
	910319	4	CAPSCREW, 1/2"NF x 1"
	911978	3	CAPSCREW, 1/2"NF x 1-1/2"
	900818	7	WASHER, plain, U.S. std., 1/2"
	904208	3	LOCKWASHER, 1/2"
	911043	3	NUT, 1/2"NF
7	609176	6	HOSE, tank connecting
8	921913	12	CLAMP, tank connecting hose
9	609249	1	PIPE, valve to tanks
	912273	4	CAPSCREW, hex-socket-hd., 7/16"NC x 1"
	903639	2	CAPSCREW, 1/2"NC x 1-1/2"
	904208	2	LOCKWASHER, 1/2"
	911028	2	NUT, 1/2"NC
10	619801	1	RING, sealing, valve to tank pipe
11	609172	2	COVER, tank filter
	903629	12	CAPSCREW, 3/8"NC x 3/4"
	904206	12	LOCKWASHER, 3/8"
12	609177	2	GASKET, filter cover
13	606162	2	FILTER, oil tank
14	-----	1	VALVE ASSEMBLY (See FRONT VALVE AND CONTROLS)
15	609256	1	PIPE, pump to valve
	907859	1	PLUG, pipe, hex-socket-hd., 1/4"NPT
	912273	4	CAPSCREW, hex-socket-hd., 7/16"NC x 1"
	912607	4	CAPSCREW, hex-socket-hd., 1/2"NF x 1-1/4" (For PUMP 607926)
	912277	4	CAPSCREW, hex-socket-hd., 1/2"NC x 1-1/4" (For PUMP 619750)
16	619801	2	RING, sealing pressure pipe (1-7/8" O.D.)
17	-----	1	PUMP ASSEMBLY (See PUMP AND DRIVE on page 19)
18	619823	1	RING, sealing, pump inlet elbow (2-1/2" O.D.)
19	609278	1	ELBOW, pump inlet
	912607	4	CAPSCREW, hex-socket-hd., 1/2"NF x 1-1/4" (For PUMP 607926)
	912277	4	CAPSCREW, hex-socket-hd., 1/2"NC x 1-1/4" (For PUMP 619750)
20	609264	1	HOSE, pump inlet elbow
21	921915	2	CLAMP, pump inlet hose
22	609245	1	PIPE, tanks to pump
	912725	1	PLUG, pipe, 1/2"NPT



PUMP AND TANK (First type 21HA, HS, CS)

T-15213

PUMP AND TANK

USAGE: Model 21HA, HS dozers; also Model 21CS dozer with hydraulic tilt. Front-mounted. Used prior to June 15, 1965.

* 21HA, HS
** 21CS

ITEM	PART NO.	QTY. * **	DESCRIPTION
1	607926	1 -	PUMP ASSEMBLY (See page 24 for parts)(Used prior to May 1961. Order PUMP ASSEMBLY 619750, 2 CAPSCREWS 041877 and 6 CAPSCREWS 625615)
	619750	1 -	PUMP ASSEMBLY (See page 22 for parts)(Effective May 1961)
	619790	- 1	PUMP ASSEMBLY (See page 22 for parts)
2	035892	4 -	CAPSCREW, 1/2"NF x 2-1/2"
	035278	- 4	CAPSCREW, 1/2"NF x 2-3/4"
	618724	4 4	WASHER, copper
	914487	4 4	NUT, elastic stop, 1/2"NF
3	613132	1 1	GASKET, pump to tank
4	612917	1 -	LINE, suction
	617709	- 1	LINE, suction
5	060833	4 -	CAPSCREW, drilled-hd., 1/2"NF x 1-1/4"(For PUMP 607926)
6	625615	4 4	CAPSCREW, drilled-hd., 1/2"NC x 1-1/4"(For PUMP 619750)
	023633	2 2	WIRE, locking, 1/16" x 12"
7	617033	1 -	GASKET, suction line
	617716	- 1	GASKET, suction line
8	615326	1 -	LINE, pressure
	617721	- 1	LINE, pressure
9	070403	2 -	CAPSCREW, 1/2"NF x 3" (For PUMP 607926)
	041877	2 -	CAPSCREW, 1/2"NC x 3" (For PUMP 619750)
	053323	- 2	CAPSCREW, 7/16"NC x 2-3/4"
10	035073	2 2	CAPSCREW, 1/2"NF x 1-3/4"
	618724	4 2	WASHER, copper (1/2")
	917265	- 2	WASHER, copper (7/16")
11	060833	2 -	CAPSCREW, drilled-hd., 1/2"NF x 1-1/4"(For PUMP 607926)
	625615	2 -	CAPSCREW, drilled-hd., 1/2"NC x 1-1/4"(For PUMP 619750)
	625618	- 2	CAPSCREW, drilled-hd., 7/16"NC x 1-1/4"
12	023633	1 1	WIRE, locking, 1/16" x 12"
13	619798	1 -	RING, sealing, pressure line, lower (2" O. D.)
	619799	- 1	RING, sealing, pressure line, lower (1-3/4" O. D.)
13A	619798	1 1	RING, sealing, pressure line, upper (2" O. D.)

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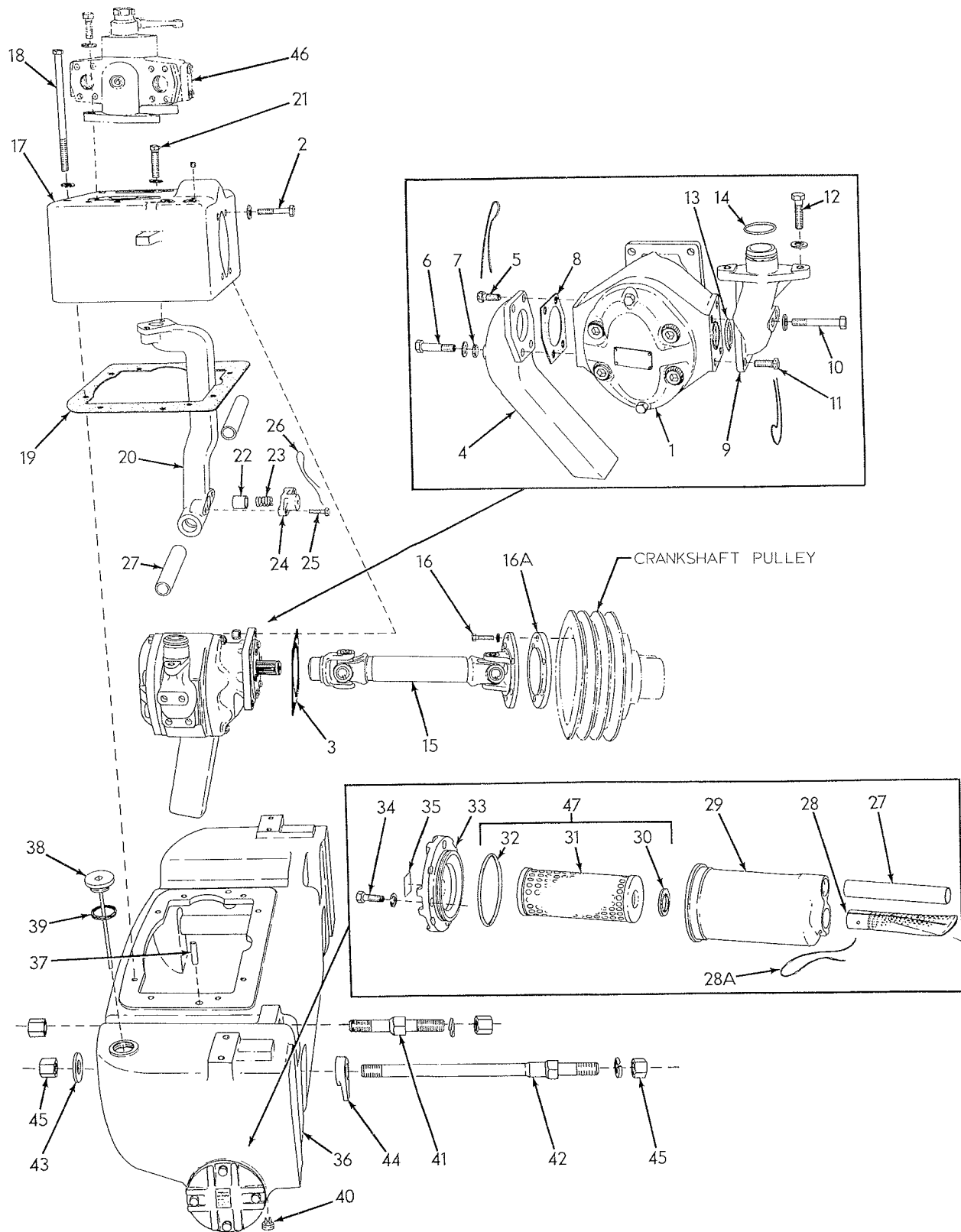
PUMP AND TANK (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
14	613154	1	-	JOINT ASSEMBLY, universal (16-1/8" long. See page 30 for parts) (Used prior to tractor #11001. Order JOINT ASSEMBLY 646248 and spacing PLATE 647537)
	618721	1	-	JOINT ASSEMBLY, universal (15-5/8" long. See page 30 for parts) (Effective with tractor #11001 but later discontinued May 1959. Order JOINT ASSEMBLY 646248)
	619446	1	-	JOINT ASSEMBLY, universal (15-5/8" long. See page 31 for parts) (Used May 1959 to May 1961). Order JOINT ASSEMBLY 646248)
	619707	1	1	JOINT ASSEMBLY, universal (15-3/4" long. See page 32 for parts) (Effective May 1961. Used thru January 1965. Order JOINT ASSEMBLY 646248. If for tractors prior to #11001 also order spacing PLATE 647537)
	646248	1	1	JOINT ASSEMBLY, universal (See page 33 for parts)(Effective February 1965)
15	035167	4	4	CAPSCREW, 3/8"NF x 7/8" } For all U-JOINTS except 646248
	904206	4	4	
	035190	4	4	CAPSCREW, 1/2"NC x 1-1/2" } For U-JOINT 646248 only
	904208	4	4	
16	606198	1	-	PLATE, universal joint adapting (1/2" thick)(Original equipment except on units using U-JOINT 646248)
	618722	1	1	PLATE, universal joint adapting (1" thick)(Required to install service replacement JOINT ASSEMBLIES 618721, 619446 and 619707 on tractors prior to #11001)
	647537	1	1	PLATE, universal joint spacing (Required to install U-JOINT 646248 on tractors prior to #11001)
17	035190	6	-	CAPSCREW, 1/2"NC x 1-1/2" (For PLATE 606198)
	921556	6	6	CAPSCREW, 1/2"NC x 2" (For PLATE 618722)
	904208	6	6	LOCKWASHER, 1/2"
18	619765	1	1	ADAPTER, universal joint (Used with U-JOINT 619707 only)
19	612911	1	1	TANK, lower half
20	614715	2	2	STUD, oil tank attaching, short
	914728	2	2	LOCKWASHER, heavy, 1"
21	613130	2	2	STUD, oil tank attaching, long
	914728	2	2	LOCKWASHER, heavy, 1"
22	617611	2	2	WASHER, plain
23	619321	2	2	RETAINER, oil tank long stud
24	600236	8	8	NUT, oil tank stud (high, 1"NF)
25	613126	1	1	PLUG, oil drain (magnetic)
26	035249	1	1	GASKET, oil level dipstick
27	614130	1	1	DIPSTICK, oil level
28	049914	2	2	PIN, dowel, oil tank

(Continued)

PUMP AND TANK (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
29	617137	1	1	GASKET, oil tank
30	612915	1	-	LINE, pump oil return(Used prior to tank #271. Units without oil filter)
	618725	1	-	LINE, pump oil return(Effective with tank #271. Units with oil filter)
	617630	-	1	LINE, pump oil return
31	035073	2	2	CAPSCREW, 1/2"NF x 1-3/4"
32	618724	2	2	WASHER, copper
33	-----	1	-	TANK, upper half (Used prior to tank #271. Units without oil filter) (Order TANK 618318, LINE 618725 and items 38 thru 48)
	618318	1	-	TANK, upper half (Effective with tank #271)
	617604	-	1	TANK, upper half
34	907859	1	1	PLUG, pipe, hex-socket, 1/4"NPT
	613133	8	8	CAPSCREW, 1/2"NF x 8-1/8"
	618724	8	8	WASHER, copper
36	-----	1	-	TUBE, vent (Used prior to March 1959. Order PLUG 907859)
	914076	1	-	ELBOW, Ermeto, 90°, 3/8" tube, 1/4"NPT male (Includes nut and sleeve)
37	-----	1	1	VALVE (See FRONT VALVE AND CONTROLS)
<u>NOTE:</u> Items listed below became effective with Tank serial No. 271				
38	615238	1	1	HOSE, oil filter housing
39	619586	1	1	SPRING, hose reinforcing
40	615236	1	1	GASKET, oil filter housing
41	615235	1	1	HOUSING, oil filter
	920269	3	3	CAPSCREW, hex-socket-hd., 3/8"NF x 1-1/4"
42	637392	1	1	GASKET, oil filter body
43	625780	1	1	ELEMENT PACKAGE, oil filter (Includes item 42)
44	618476	1	1	SPRING ASSEMBLY, oil filter element (Includes seal and retainer)
45	618477	1	1	BODY, oil filter
46	618474	1	1	GASKET, oil filter body bolt
47	618475	1	1	BOLT, oil filter body
48	619928	1	1	TRANSFER, instruction



PUMP AND TANK (Second type 21HA, HS, CS)

T-71282

PUMP AND TANK

USAGE: Model 21HA, HS dozers; also Model 21CS dozer with hydraulic tilt. Front-mounted.
Effective approximately June 15, 1965.

* 21HA, HS
** 21CS

ITEM	PART NO.	QTY. * **		DESCRIPTION
1	637407	1	-	PUMP ASSEMBLY (See page 22 for parts)
	650803	1	-	PUMP ASSEMBLY (See page 22 for parts)(Optional. For use with phosphate-ester hydraulic fluid)
	619790	-	1	PUMP ASSEMBLY ("Hydreco." See page 22 for parts)(Used prior to June 1966)
	650963	-	1	PUMP ASSEMBLY ("Tyrone." See page 29 for parts)(Effective June 1966)
2	035892	4	-	CAPSCREW, 1/2"NF x 2-1/2"
	035278	-	4	CAPSCREW, 1/2"NF x 2-3/4"
	618724	4	4	WASHER, copper
	914487	4	4	NUT, elastic stop, 1/2"NF
3	613132	1	1	GASKET, pump to tank
4	637402	1	-	LINE, suction
	617709	-	1	LINE, suction (For "Hydreco" pump)
	650913	-	1	LINE, suction (For "Tyrone" pump)
5	625615	2	4	CAPSCREW, drilled-hd., 1/2"NC x 1-1/4"
	023633	1	2	WIRE, locking, 1/16" x 12"
6	041877	2	-	CAPSCREW, 1/2"NC x 3"
	058614	2	-	WASHER, plain
7	924937	2	-	O-RING, suction line capscREW
	923611	2	-	O-RING, suction line capscREW (For use with phosphate-ester fluid)
8	637403	1	-	GASKET, suction line
	617716	-	1	GASKET, suction (For "Hydreco" pump)
	617033	-	1	GASKET, suction line (For "Tyrone" pump)

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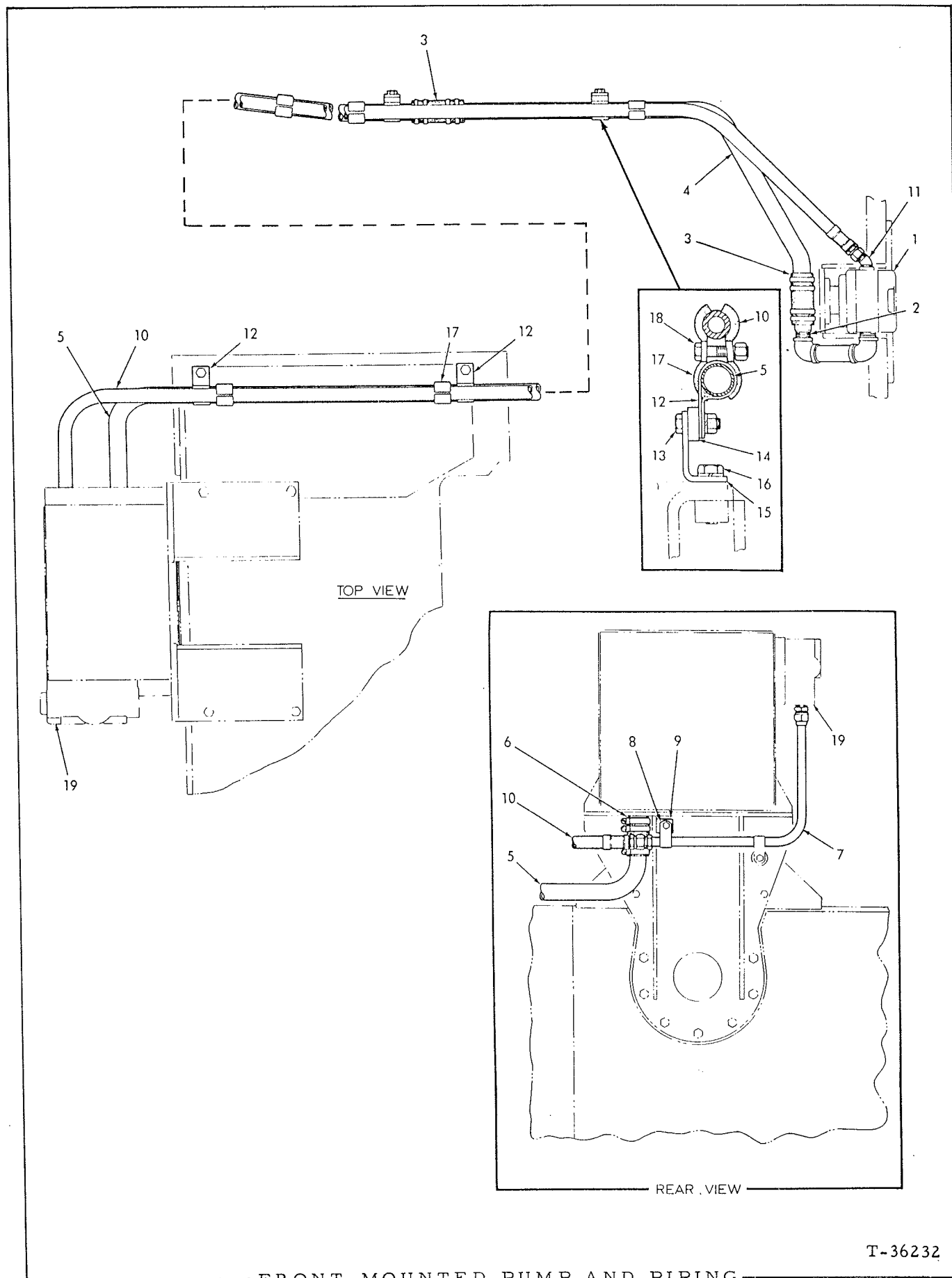
PUMP AND TANK (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
9	637404	1 -	LINE, pressure
	617721	- 1	LINE, pressure (For "Hydreco" pump)
	650912	- 1	LINE, pressure (For "Tyrone" pump)
10	041877	2 -	CAPSCREW, 1/2"NC x 3"
	618724	2 -	WASHER, copper
	053323	- 2	CAPSCREW, 7/16"NC x 2-3/4" (For "Hydreco" pump)
	622781	- 2	CAPSCREW, 7/16"NC x 4-7/8" (For "Tyrone" pump)
	917265	- 2	WASHER, copper
11	625615	2 -	CAPSCREW, drilled-hd., 1/2"NC x 1-1/4"
	625618	- 2	CAPSCREW, drilled-hd., 7/16"NC x 1-1/4" (For "Hydreco" pump)
	650926	- 2	CAPSCREW, drilled-hd., 7/16"NC x 3-1/2" (For "Tyrone" pump)
	023633	1 1	WIRE, locking, 1/16" x 12"
12	614478	2 -	CAPSCREW, 1/2"NF x 1-3/8"
	035073	- 2	CAPSCREW, 1/2"NF x 1-3/4" (For "Hydreco" pump)
	614478	- 2	CAPSCREW, 1/2"NF x 1-3/8" (For "Tyrone" pump)
	618724	2 2	WASHER, copper
13	619798	1 -	RING, sealing, pressure line, lower
	923621	1 -	O-RING, pressure line, lower (For use with phosphate-ester fluid)
	619799	- 1	RING, sealing, pressure line lower
14	646116	1 -	RING, sealing, pressure line, upper (3-piece type)
	650797	1 -	O-RING, pressure line, upper (For use with phosphate-ester fluid)
	619798	- 1	RING, sealing, pressure line, upper
15	646248	1 1	JOINT ASSEMBLY, universal (See page 33 for parts)
16	035190	6 6	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6 6	LOCKWASHER, 1/2"
16A	647537	- 1	PLATE, universal joint spacing
17	647335	1 -	TANK, upper half
	647356	- 1	TANK, upper half
18	907859	1 1	PLUG, pipe, hex-socket, 1/4"NPT
	613133	8 8	CAPSCREW, 1/2"NF x 8-1/8"
	618724	8 8	WASHER, copper
19	617137	1 1	GASKET, oil tank
20	647116	1 1	LINE, oil return
21	035073	2 2	CAPSCREW, 1/2"NF x 1-3/4"
	618724	2 2	WASHER, copper
22	647151	1 1	VALVE, oil by-pass
23	647108	1 1	SPRING, oil by-pass valve

(Continued)

PUMP AND TANK (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
24	647122	1	1	CAP, oil by-pass valve
25	033182	2	2	CAPSCREW, drilled-hd., 3/8"NC x 1-1/2"
26	023633	1	1	WIRE, locking, 1/16" x 12"
27	646125	2	2	TUBE, connecting, oil return line
28	647238	2	2	TUBE, oil discharge
28A	023633	2	2	WIRE, retaining, oil discharge tube
29	660769	2	2	HOUSING, oil filter
30	{ 647130	2	2	GASKET, oil filter element
	{ 650789	2	-	GASKET, oil filter element (For use with phosphate-ester fluid)
31	-----	2	2	ELEMENT, oil filter (Order item 47)
32	{ 924925	2	2	O-RING, oil filter cover
	{ 924264	2	-	O-RING, oil filter cover (For use with phosphate-ester fluid)
33	647114	2	2	COVER, oil filter
34	013058	8	8	CAPSCREW, 3/8"NC x 1-1/4"
	904206	8	8	LOCKWASHER, 3/8"
35	647254	2	2	TRANSFER, instruction, oil filter
36	647230	1	1	TANK, lower half
37	049914	2	2	PIN, dowel, oil tank
38	614130	1	1	DIPSTICK, oil level
39	035249	1	1	GASKET, oil level dipstick
40	613126	1	1	PLUG, oil drain (magnetic)
41	614715	2	2	STUD, oil tank attaching, short
	914728	2	2	LOCKWASHER, heavy, 1"
42	613130	2	2	STUD, oil tank attaching, long
	914728	2	2	LOCKWASHER, heavy, 1"
43	617611	2	2	WASHER, plain
44	619321	2	2	RETAINER, oil tank stud
45	600236	8	8	NUT, oil tank stud
46	-----	1	1	VALVE. (See FRONT VALVE AND CONTROLS)
47	647256	1	1	ELEMENT KIT, oil filter (Includes elements for both filters; items 30 thru 32)

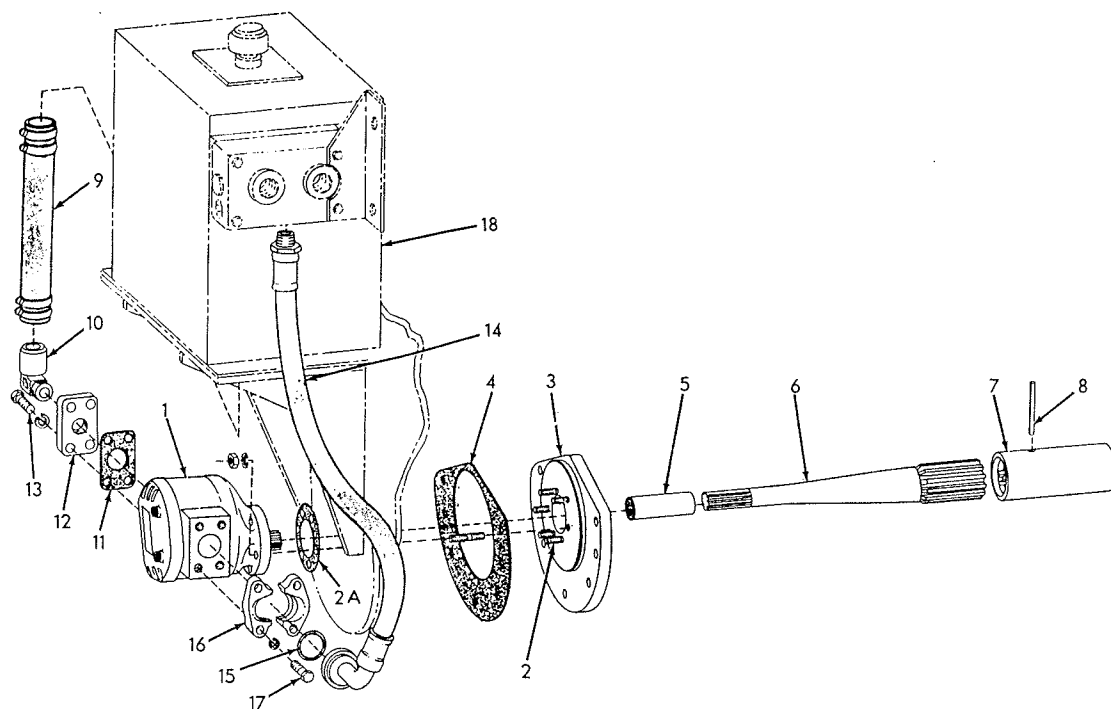


T-36232

FRONT-MOUNTED PUMP AND PIPING

USAGE: Tractors without dozer hydraulics. Provides single independent hydraulic circuit for operating auxiliary equipment such as Rippers, Scrapers, etc.

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	PUMP ASSEMBLY (See page 21)
2	625467	1	NIPPLE, suction line front tube
	901681	2	ELBOW, pipe, 1"NPT
	901527	1	NIPPLE, pipe, 1"NPT x 5"
	901520	1	NIPPLE, pipe, 1"NPT x 1-1/2"
3	3006439	2	HOSE, suction line tube, front and center
	921913	8	CLAMP, hose, 1-13/16" to 2-3/4" diam.
4	625449	1	TUBE, suction line, front section
5	625448	1	TUBE, suction line, rear section
6	625445	1	HOSE, suction line tube, rear
	921913	4	CLAMP, hose, 1-13/16" to 2-3/4" diam.
7	625514	1	TUBE ASSEMBLY, pressure line (Includes nuts)
	919342	1	CONNECTOR, flare type, 3/4" tube, 3/4"NPT male
8	3012460	1	CLAMP, pressure line tube
	918493	1	CAPSCREW, 1/2"NF x 7/8"
	904208	1	LOCKWASHER, 1/2"
9	625516	1	LUG, tube clamp (Requires welding to install)
10	646250	1	HOSE, pressure line (See HOSE PARTS)
11	922740	1	ELBOW, flare type, 45°, 3/4" tube, 1"NPT male
12	3005382	4	CLAMP, suction hose
13	035073	4	CAPSCREW, 1/2"NF x 1-3/4"
	904208	4	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
14	625468	4	SPACER, tube clamp
15	625446	2	BRACKET, supporting, suction hose clip
16	035248	2	CAPSCREW, 5/8"NF x 2-1/4"
	904209	2	LOCKWASHER, 5/8"
17	625221	10	CLAMP, pressure hose (half only)
18	035067	5	CAPSCREW, 1/2"NF x 2"
	914487	5	NUT, elastic stop, 1/2"NF
19	-----	-	CONTROL VALVE AND TANK (See page 35)

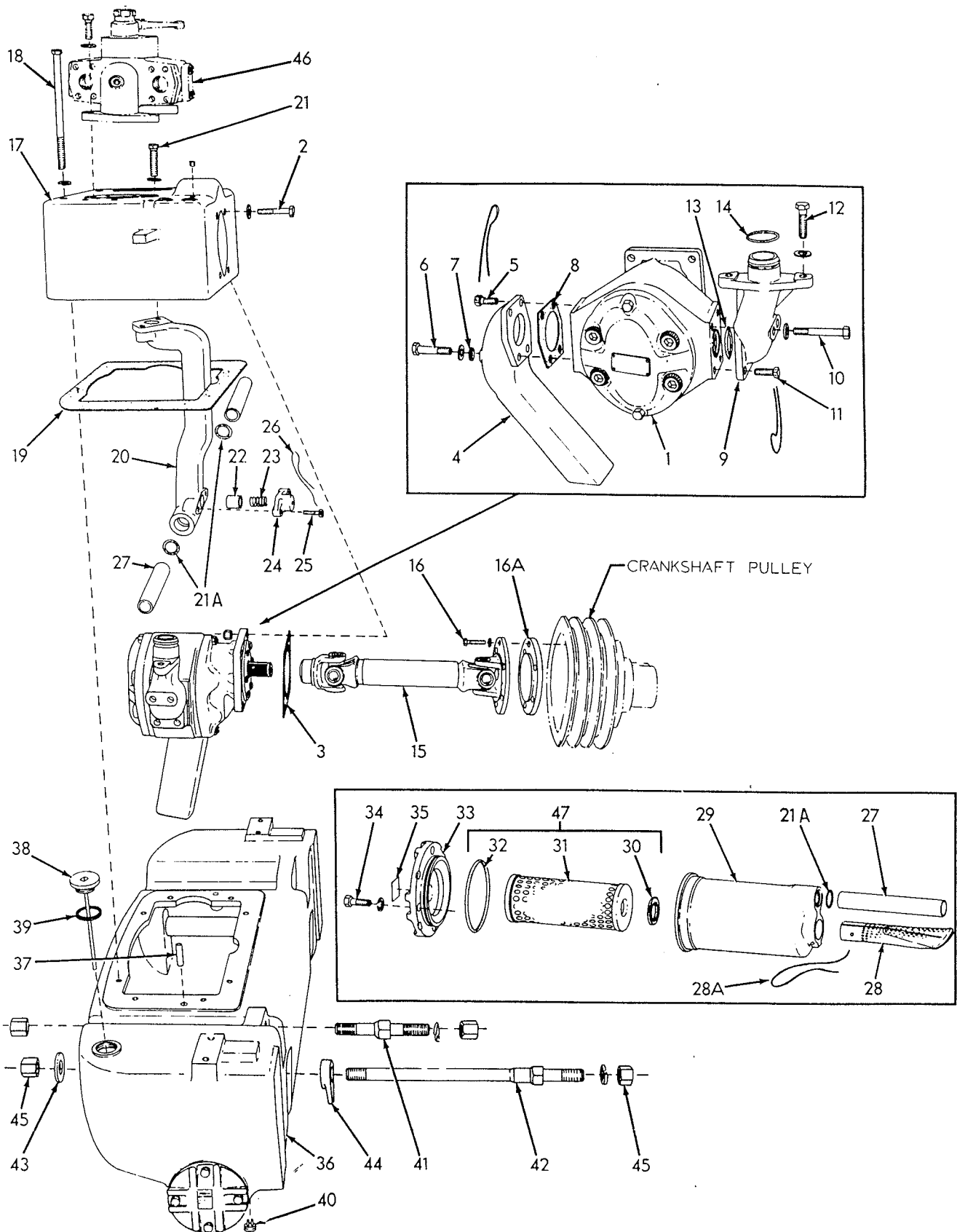


REAR-MOUNTED PUMP AND PIPING

T-71331

USAGE: Provides single independent hydraulic circuit for operating auxiliary equipment such as Rippers, Scrapers, etc.

ITEM	PART NO.	QTY.	DESCRIPTION
1	3016859	1	PUMP ASSEMBLY (See page 26 for parts)
2	3006240	6	STUD
	904206	6	LOCKWASHER, 3/8"
	911041	6	NUT, 3/8"NF
2A	615592	1	GASKET, pump mounting
3	625489	1	PLATE, pump adapting
4	625471	1	GASKET, pump adapting plate
5	3007722	1	SLEEVE, coupling
6	625491	1	SHAFT, coupling
7	058057	1	COUPLING, front
8	625486	1	PIN, rivet, coupling retaining
9	625484	1	HOSE, suction line
	921913	4	CLAMP, hose, 1-13/16" to 2-3/4" diam.
10	3016775	1	ELBOW, suction line
11	3019275	1	GASKET, elbow adapting plate
12	625490	1	PLATE, elbow adapting
13	035018	4	CAPSCREW, 1/2"NF x 1-1/2"
	904208	4	LOCKWASHER, 1/2"
14	645467	1	HOSE, pump to valve (See HOSE PARTS)
15	924193	1	O-RING, hose to pump
16	921118	2	FLANGE, hose attaching (half only)
17	070469	4	CAPSCREW, 1/2"NF x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
18	-----	1	CONTROL VALVE AND TANK (See page 35)



PUMP AND TANK (Second type 21HA, HS, CS)

T-71282

PUMP AND TANK

USAGE: Model 21HA, HS dozers; also Model 21CS dozer with hydraulic tilt. Front-mounted.
Effective approximately June 15, 1965.

* 21HA, HS
** 21CS

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	637407	1	-	PUMP ASSEMBLY (See page 22 for parts)
	650803	1	-	PUMP ASSEMBLY (See page 22 for parts)(Optional. For use with phosphate-ester hydraulic fluid)
	619790	-	1	PUMP ASSEMBLY ("Hydreco." See page 22 for parts)(Used prior to June 1966)
	650963	-	1	PUMP ASSEMBLY ("Tyrone." See page 29 for parts)(Effective June 1966)
2	035892	4	-	CAPSCREW, 1/2"NF x 2-1/2"
	035278	-	4	CAPSCREW, 1/2"NF x 2-3/4"
	618724	4	4	WASHER, copper
	914487	4	4	NUT, elastic stop, 1/2"NF
3	613132	1	1	GASKET, pump to tank
4	637402	1	-	LINE, suction
	617709	-	1	LINE, suction (For "Hydreco" pump)
	650913	-	1	LINE, suction (For "Tyrone" pump)
5	625615	2	4	CAPSCREW, drilled-hd., 1/2"NC x 1-1/4"
	023633	1	2	WIRE, locking, 1/16" x 12"
6	041877	2	-	CAPSCREW, 1/2"NC x 3"
	058614	2	-	WASHER, plain
7	924937	2	-	O-RING, suction line capscREW
	923611	2	-	O-RING, suction line capscREW (For use with phosphate-ester fluid)
8	637403	1	-	GASKET, suction line
	617716	-	1	GASKET, suction (For "Hydreco" pump)
	617033	-	1	GASKET, suction line (For "Tyrone" pump)

(Continued)

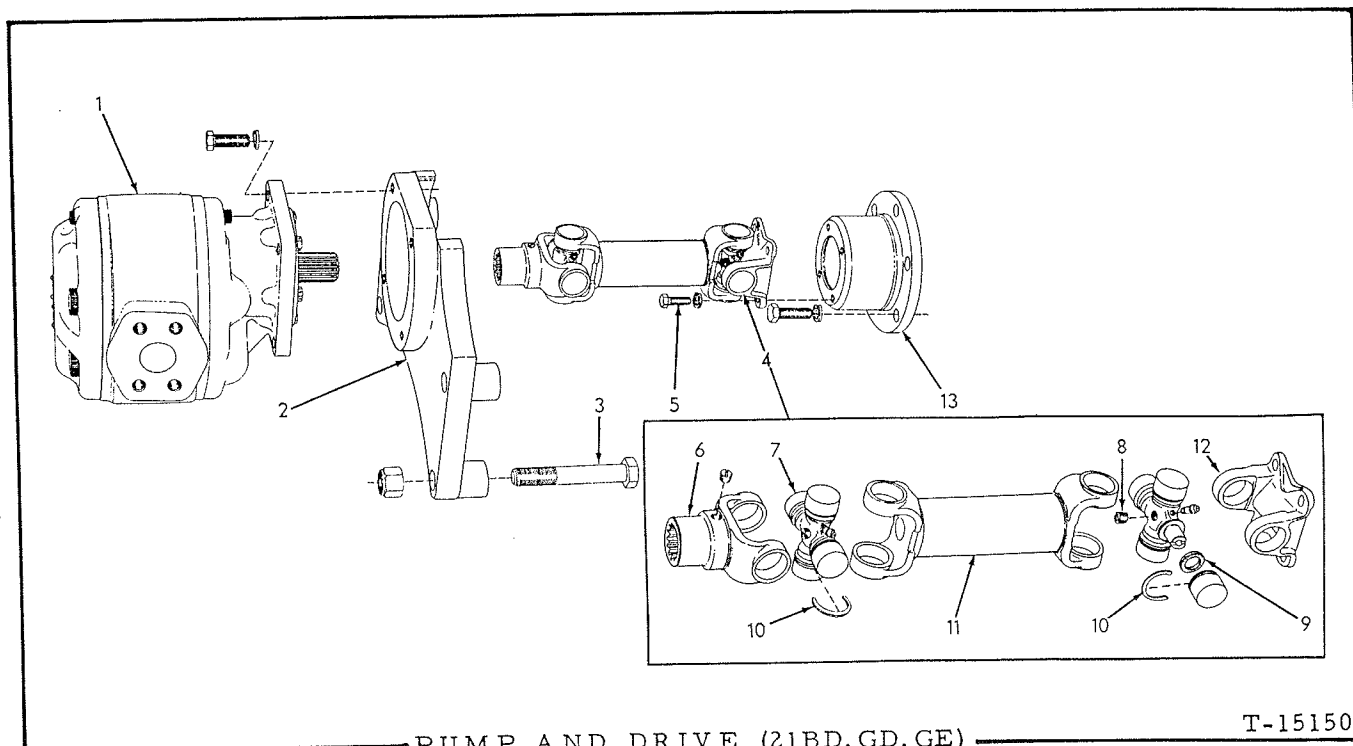
PUMP AND TANK (Continued)

ITEM	PART NO.	QTY. * **		DESCRIPTION
9	637404	1	-	LINE, pressure
	617721	-	1	LINE, pressure (For "Hydreco" pump)
	650912	-	1	LINE, pressure (For "Tyrone" pump)
10	041877	2	-	CAPSCREW, 1/2"NC x 3"
	618724	2	-	WASHER, copper
	053323	-	2	CAPSCREW, 7/16"NC x 2-3/4" (For "Hydreco" pump)
	622781	-	2	CAPSCREW, 7/16"NC x 4-7/8" (For "Tyrone" pump)
	917265	-	2	WASHER, copper
11	625615	2	-	CAPSCREW, drilled-hd., 1/2"NC x 1-1/4"
	625618	-	2	CAPSCREW, drilled-hd., 7/16"NC x 1-1/4" (For "Hydreco" pump)
	650926	-	2	CAPSCREW, drilled-hd., 7/16"NC x 3-1/2" (For "Tyrone" pump)
	023633	1	1	WIRE, locking, 1/16" x 12"
12	614478	2	-	CAPSCREW, 1/2"NF x 1-3/8"
	035073	-	2	CAPSCREW, 1/2"NF x 1-3/4" (For "Hydreco" pump)
	614478	-	2	CAPSCREW, 1/2"NF x 1-3/8" (For "Tyrone" pump)
	618724	2	2	WASHER, copper
13	619798	1	-	RING, sealing, pressure line, lower
	923621	1	-	O-RING, pressure line, lower (For use with phosphate-ester fluid)
	619799	-	1	RING, sealing, pressure line lower
14	646116	1	-	RING, sealing, pressure line, upper (3-piece type)
	650797	1	-	O-RING, pressure line, upper (For use with phosphate-ester fluid)
	619798	-	1	RING, sealing, pressure line, upper
15	646248	1	1	JOINT ASSEMBLY, universal (See page 33 for parts)
16	035190	6	6	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6	6	LOCKWASHER, 1/2"
16A	647537	-	1	PLATE, universal joint spacing
17	647335	1	-	TANK, upper half
	647356	-	1	TANK, upper half
18	907859	1	1	PLUG, pipe, hex-socket, 1/4"NPT
	613133	8	8	CAPSCREW, 1/2"NF x 8-1/8"
	618724	8	8	WASHER, copper
19	617137	1	1	GASKET, oil tank
20	70647116	1	1	LINE, oil return
21	70035073	2	2	CAPSCREW, 1/2"NF x 1-3/4"
	70618724	2	2	WASHER, copper
21A	70923948	4	4	O-RING, oil return line (Effective October 1967)
22	70647151	1	1	VALVE, oil by-pass
23	70647108	1	1	SPRING, oil by-pass valve

(Continued)

PUMP AND TANK (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
24	647122	1	1	CAP, oil by-pass valve
25	033182	2	2	CAPSCREW, drilled-hd., 3/8"NC x 1-1/2"
26	023633	1	1	WIRE, locking, 1/16" x 12"
27	646125	2	2	TUBE, connecting, oil return line
28	647238	2	2	TUBE, oil discharge
28A	023633	2	2	WIRE, retaining, oil discharge tube
29	660769	2	2	HOUSING, oil filter
30	{ 647130	2	2	GASKET, oil filter element
	{ 650789	2	-	GASKET, oil filter element (For use with phosphate-ester fluid)
31	-----	2	2	ELEMENT, oil filter (Order item 47)
32	{ 924925	2	2	O-RING, oil filter cover
	{ 924264	2	-	O-RING, oil filter cover (For use with phosphate-ester fluid)
33	647114	2	2	COVER, oil filter
34	013058	8	8	CAPSCREW, 3/8"NC x 1-1/4"
	904206	8	8	LOCKWASHER, 3/8"
35	647254	2	2	TRANSFER, instruction, oil filter
36	647230	1	1	TANK, lower half
37	049914	2	2	PIN, dowel, oil tank
38	614130	1	1	DIPSTICK, oil level
39	035249	1	1	GASKET, oil level dipstick
40	613126	1	1	PLUG, oil drain (magnetic)
41	614715	2	2	STUD, oil tank attaching, short
	914728	2	2	LOCKWASHER, heavy, 1"
42	613130	2	2	STUD, oil tank attaching, long
	914728	2	2	LOCKWASHER, heavy, 1"
43	617611	2	2	WASHER, plain
44	619321	2	2	RETAINER, oil tank stud
45	600236	8	8	NUT, oil tank stud
46	-----	1	1	VALVE, (See FRONT VALVE AND CONTROLS)
47	647256	1	1	ELEMENT KIT, oil filter (Includes elements for both filters; items 30 thru 32)

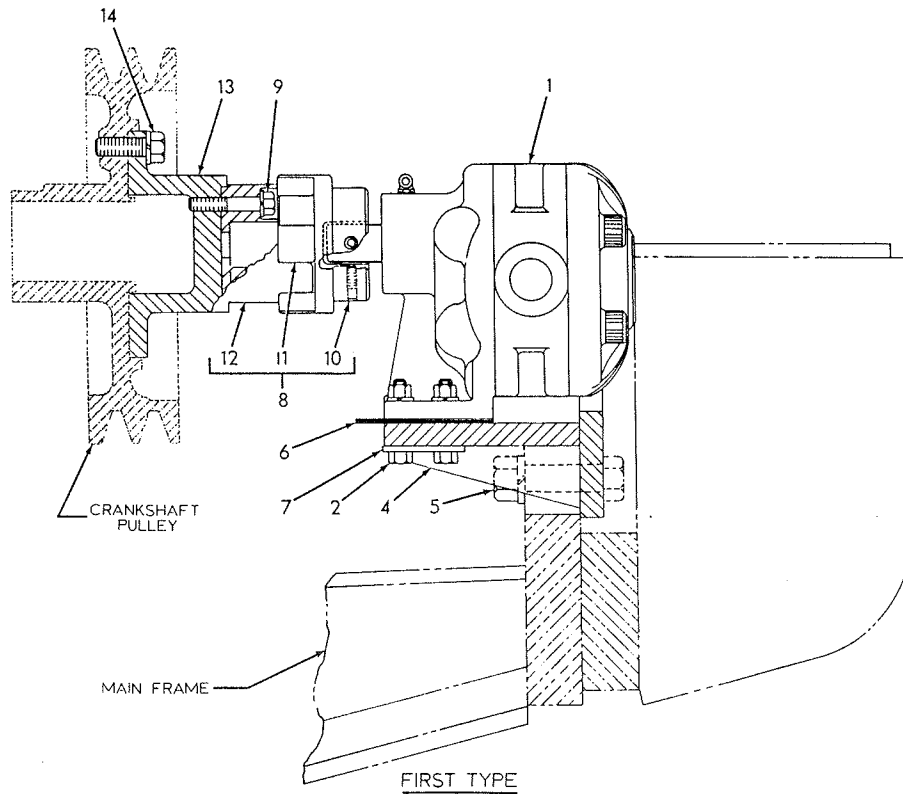


USAGE: Model 21BD, GD, GE Dozers. Front-mounted. See page 6.

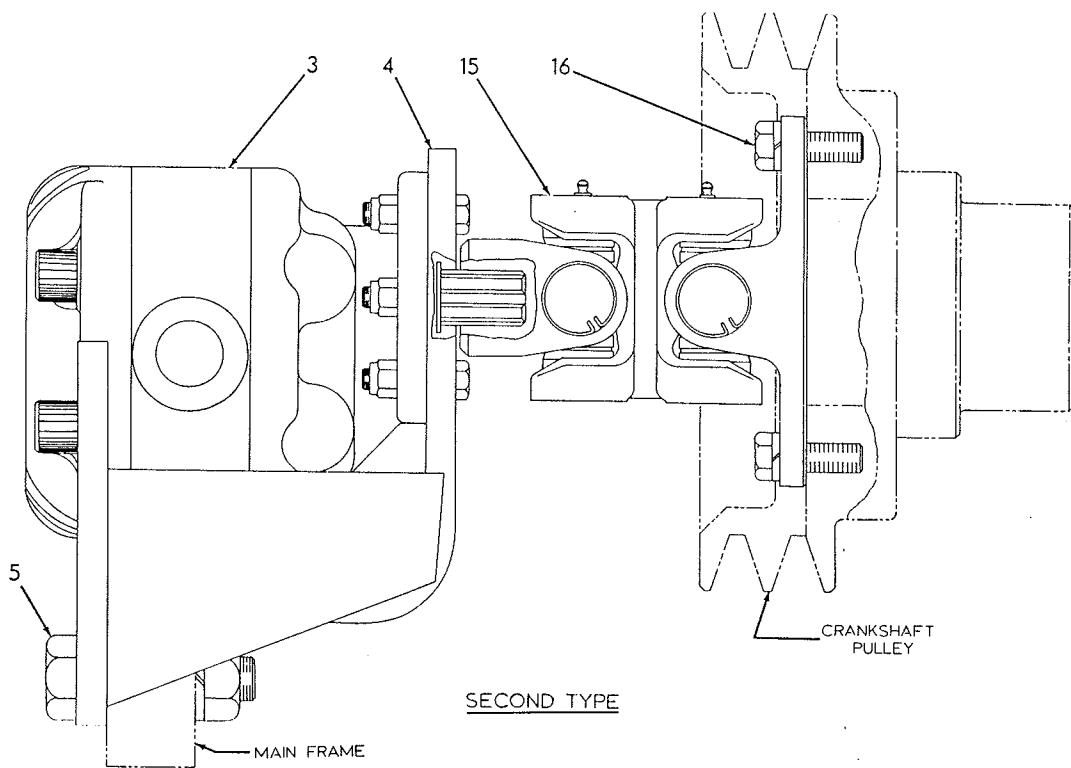
ITEM PART NO. QTY. DESCRIPTION

1	607926	1	PUMP ASSEMBLY (See page 24 for parts)(Original equipment. Order PUMP ASSEMBLY 619750 and 8 CAPSCREWS 912277)
	619750	1	PUMP ASSEMBLY (See page 22 for parts)(Used as service replacement only)
	903639	4	CAPSCREW, 1/2"NC x 1-1/2"
	904208	4	LOCKWASHER, 1/2"
2	609186	1	ADAPTER, pump mounting
3	047137	4	CAPSCREW, 3/4"NF x 4-3/4"
	916591	4	NUT, elastic stop, 3/4"NF
4	609182	1	JOINT ASSEMBLY, universal (Consists of items 6 thru 12)
5	036034	4	CAPSCREW, 3/8"NF x 1"
	904206	4	LOCKWASHER, 3/8"
6	612618	1	YOKE ASSEMBLY, front (Includes PLUG indented below)
	910230	1	PLUG, pipe, slotted-hd., 1/8"NPT
7	612621	2	SPIDER ASSEMBLY (Includes BEARINGS, items 8, 9, 10 and FITTING indented below. Serviced only as a unit)
	912499	2	FITTING, lubricating, straight, 1/4"-28NS (long type)
8	607955	2	VALVE, relief, spider
9	612619	8	WASHER, sealing, spider bearing
10	607954	8	RING, snap
11	612901	1	YOKE, center
12	612620	1	YOKE, rear
13	609183	1	DRIVE, joint adapting
	903639	6	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6	LOCKWASHER, 1/2"

ATTN ROW



T-36194



T-36193

FRONT MOUNTED PUMP AND DRIVE

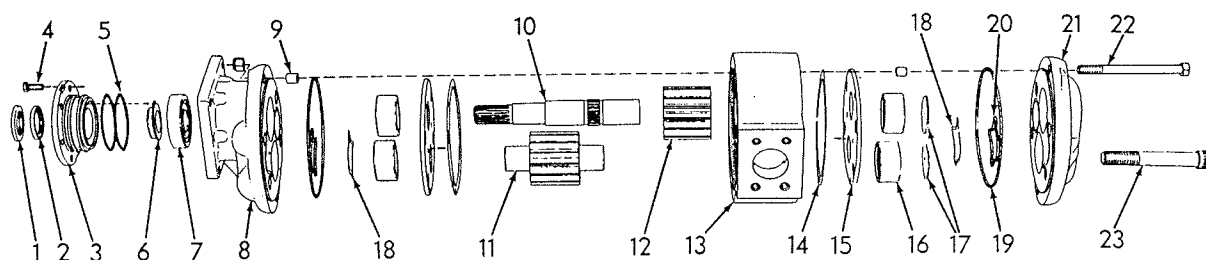
FRONT-MOUNTED PUMP AND DRIVE

USAGE: See page 17

* First type
** Second type

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	3003265	1	-	PUMP ASSEMBLY, hydraulic (See page 27 for parts)
2	046419	4	-	CAPSCREW, 3/8"NF x 2"
	904206	4	-	LOCKWASHER, 3/8"
	911041	4	-	NUT, 3/8"NF
3	625520	-	1	PUMP ASSEMBLY, hydraulic (See page 28 for parts)
	916383	-	6	CAPSCREW, 3/8"NF x 1-1/2"
	913528	-	6	NUT, elastic stop, 3/8"NF
4	625465	1	-	BRACKET, pump mounting
	3021991	-	1	BRACKET, pump mounting (Used prior to tractor #11001)
	625521	-	1	BRACKET, pump mounting (Effective with tractor #11001)
5	070285	4	4	CAPSCREW, 3/4"NF x 3"
	904369	4	4	LOCKWASHER, 3/4"
	911045	4	4	NUT, 3/4"NF
6	625466	4	-	SHIM, adjusting, pump mounting (.005" thick)
	625421	4	-	SHIM, adjusting, pump mounting (.010" thick)
	625422	4	-	SHIM, adjusting, pump mounting (1/16" thick)
7	3003737	2	-	PLATE, pump attaching
8	3005184	1	-	COUPLING ASSEMBLY, flexible (Consists of items 10 thru 12)
9	013059	3	-	CAPSCREW, 3/8"NC x 2"
	904206	3	-	LOCKWASHER, 3/8"
10	3005183	1	-	BODY, coupling, pump end
	903837	2	-	SETSCREW, socket-hd., cup-pt., 3/8"NC x 3/4"
11	3005182	1	-	SPIDER, coupling
12	3005181	1	-	BODY, coupling, pulley end
13	3015896	1	-	ADAPTER, coupling
14	035190	6	-	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6	-	LOCKWASHER, 1/2"
15	625525	-	1	JOINT ASSEMBLY, universal (See page 34 for parts)
16	035190	-	6	CAPSCREW, 1/2"NC x 1-1/4"
	904208	-	6	LOCKWASHER, 1/2"

Use as required



PUMP PARTS

T-32066

* PUMP ASSEMBLY 619750 (See pages 9 and 19)

** PUMP ASSEMBLY 619790 (See pages 9 and 13)

Δ PUMP ASSEMBLY 637407 (See page 13)

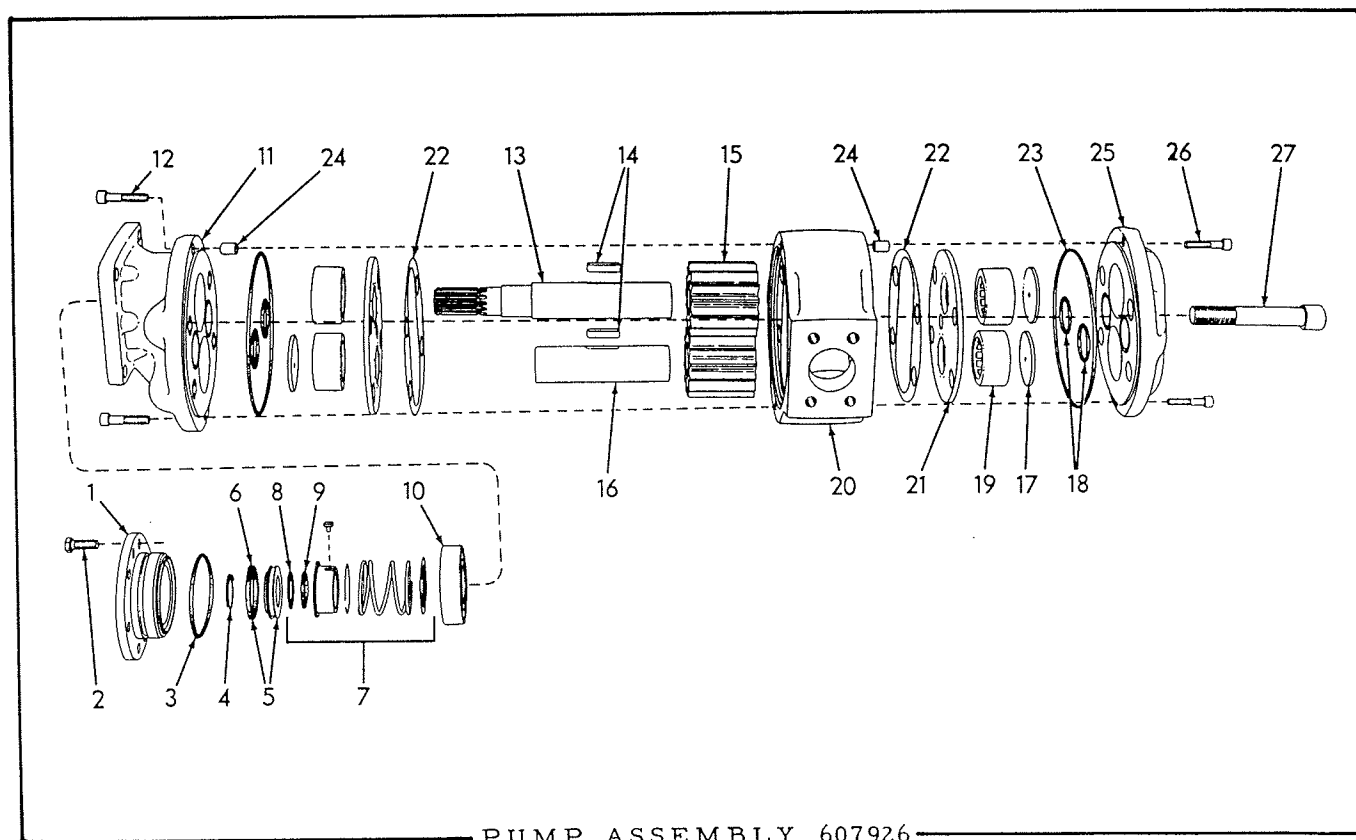
ΔΔ PUMP ASSEMBLY 650803 (See page 13) *High-temp pump used w/ Phosphate ester oil, Foundry*

ITEM	PART NO.	QUANTITY				DESCRIPTION
		*	**	Δ	ΔΔ	
1	3033357	1	1	1	-	SEAL, dust
	650802	-	-	-	1	SEAL, dust
2	3033358	1	1	1	-	SEAL, oil
	650798	-	-	-	1	SEAL, oil
3	619753	1	1	1	1	RETAINER, oil seal
	917947	1	1	1	1	PIN, spring, 3/16" x 1/2" (dowel)
4	3033370	6	6	6	6	CAPSCREW, 3/8"NF x 7/8", Nylok
5	923585	2	2	2	-	O-RING, seal retainer
	923626	-	-	-	2	O-RING, seal retainer
6	619751	1	1	1	1	RING, sealing
7	3011878	1	1	1	1	BEARING, ball, drive shaft
8	619754	1	1	1	1	ADAPTER, pump mounting
9	3024417	4	4	4	4	SLEEVE, dowel, pump housing
10	619749	1	-	-	-	SHAFT, drive
	619825	-	1	-	-	SHAFT, drive
	619804	-	-	1	1	SHAFT, drive
11	619761	1	-	-	-	GEAR, lower
	619829	-	1	-	-	GEAR, lower
	645857	-	-	1	1	GEAR, lower

(Continued)

PUMP PARTS (Continued)

ITEM	PART NO.	QUANTITY				DESCRIPTION
		*	**	Δ	ΔΔ	
12	{ 619757	1	-	-	-	GEAR, upper
	{ 619828	-	1	-	-	GEAR, upper
	{ 645858	-	-	1	1	GEAR, upper
13	{ 619756	1	-	-	-	HOUSING
	{ 619826	-	1	-	-	HOUSING
	{ 645859	-	-	1	1	HOUSING
14	3023860	2	2	-	-	SHIM, wear plate (Use as required)
15	606360	2	2	2	2	PLATE, wear
	916169	2	2	2	2	PIN, roll, 3/16" x 3/4" (dowel)
16	3033933	4	4	4	4	BEARING, roller
17	3011884	2	2	2	2	WASHER, thrust, drive shaft
18	3033369	2	2	2	2	RING, back-up
19	{ 637425	2	2	2	-	RING, sealing, pump housing
	{ 650799	-	-	-	2	RING, sealing, pump housing
20	{ 3023858	2	2	2	-	RING, sealing, wear plate
	{ 650801	-	-	-	2	RING, sealing, wear plate
21	3042042	1	1	1	1	COVER, pump housing
22	{ 920608	2	-	-	-	CAPSCREW, 1/2"NF x 6-1/2"
	{ 053037	-	2	-	-	CAPSCREW, 1/2"NF x 5-1/2"
	{ 053038	-	-	2	2	CAPSCREW, 1/2"NF x 6"
	{ 914487	2	2	2	2	NUT, self-locking, 1/2"NF
23	{ 606662	4	-	-	-	CAPSCREW, hex-socket-hd., 7/8"NF x 6"
	{ 606660	-	4	-	-	CAPSCREW, hex-socket-hd., 7/8"NF x 5"
	{ 606661	-	-	4	4	CAPSCREW, hex-socket-hd., 7/8"NF x 5-1/2"



PUMP ASSEMBLY 607926

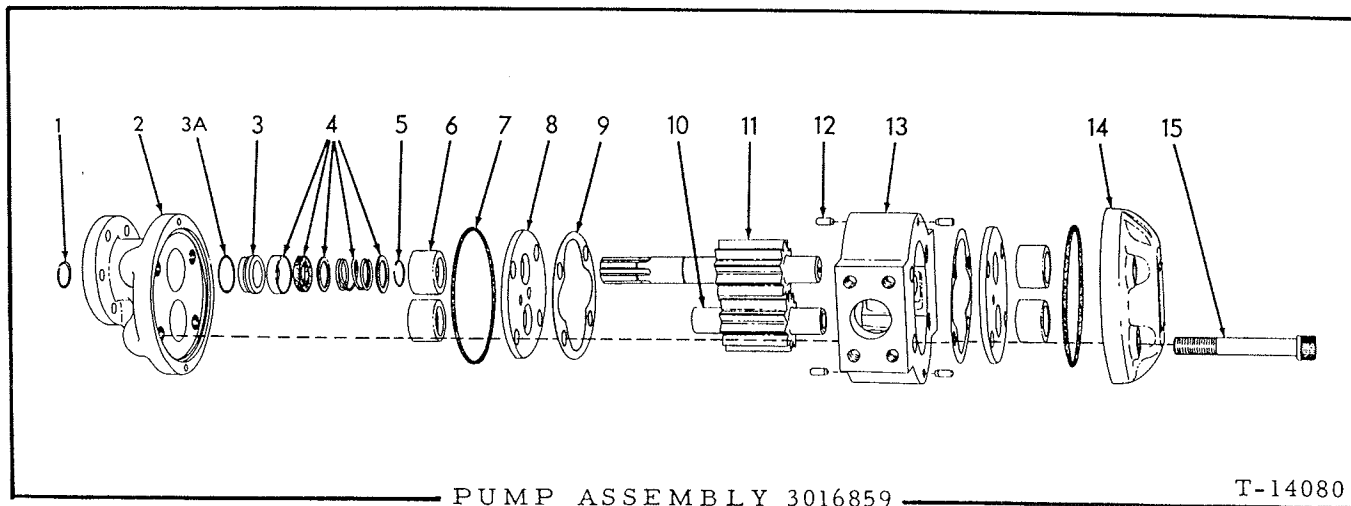
USAGE: See pages 9 and 19

ITEM	PART NO.	QTY.	DESCRIPTION
1	606372	1	RETAINER, pump seal
2	3023347	6	CAPSCREW (3/8"NF x 1", nylok)
3	923585	1	O-RING, retainer
4	-----	1	RING, snap, drive shaft (Discontinued since is unnecessary)
5	606356	1	SEAT ASSEMBLY, drive shaft seal (Includes item 6)
6	615240	1	RING, seat sealing
7	606357	1	SEAL ASSEMBLY, drive shaft (Includes items 8 and 9)
8	615297	1	WASHER, drive shaft seal <i>NL 4</i>
9	923649	1	O-RING, drive shaft seal <i>OK</i>
10	3011878	1	BEARING, ball, drive shaft
11	606368	1	ADAPTER, pump mounting
12	3011881	2	CAPSCREW (hex-socket-hd., 3/8"NF x 1-3/4")
13	607470	1	SHAFT, drive
14	3012564	2	KEY, straight
15	607472	2	GEAR

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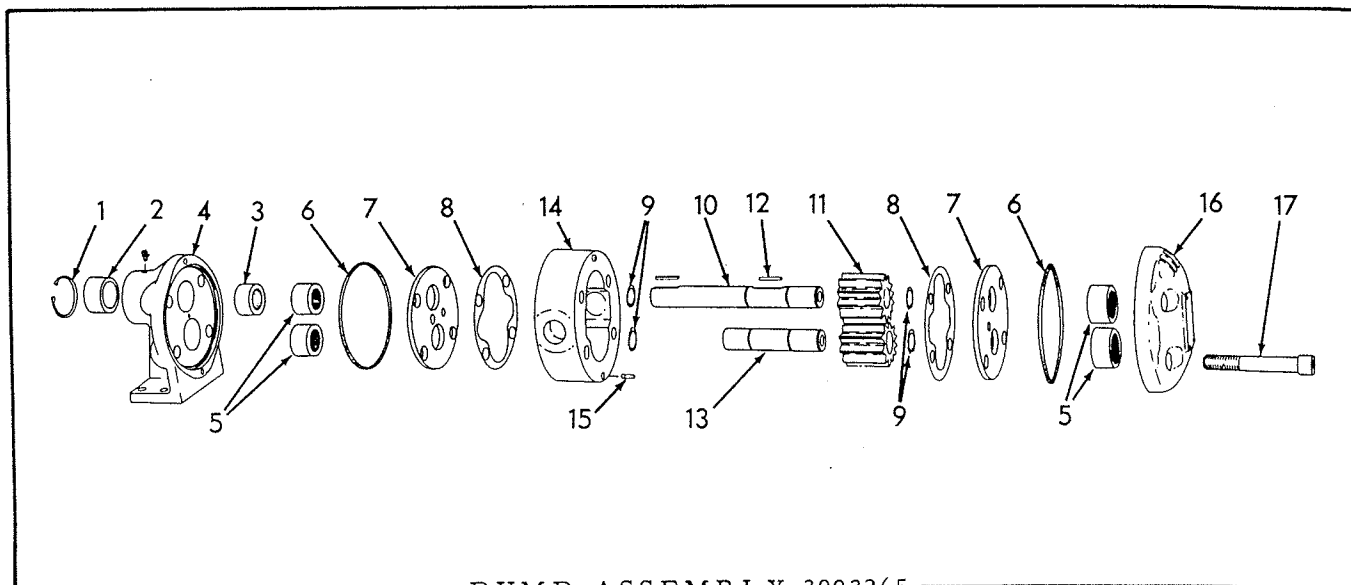
PUMP ASSEMBLY 607926 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
16	607471	1	SHAFT, driven
17	3011884	3	WASHER, thrust, driven shaft
18	923664	4	O-RING, pump housing (small)
19	3033933	4	BEARING, roller
20	607462	1	HOUSING, pump
21	606360	2	PLATE, wear
22	3023860	2	SHIM, wear plate (Use as req'd)
23	924195	2	O-RING, pump housing (large)
24	3011883	2	PIN, dowel, pump housing (hollow)
25	606367	1	COVER, housing
26	3011881	2	CAPSCREW (hex-socket-hd., 3/8"NF x 1-3/4")
27	606661	4	CAPSCREW (hex-socket-hd., 7/8"NF x 5-1/2")



USAGE: Rear-mounted. See page 18

ITEM	PART NO.	QTY.	DESCRIPTION
1	3002997	1	RING, snap, drive shaft, outer
2	3009546	1	COVER, drive end
3	3007752	1	SEAT ASSEMBLY, drive shaft seal (Includes item 3A)
3A	3029725	1	O-RING, seal seat
4	3007753	1	SEAL ASSEMBLY, drive shaft (Serviced only as a unit)
5	3003689	1	RING, snap, drive shaft, inner
6	3025030	4	BEARING, needle
7	923591	2	O-RING, sealing, pump housing
8	3003009	2	PLATE, wear
9	3003691	-	GASKET, shimming, wear plate (.001" thick)
	3003692	-	GASKET, shimming, wear plate (.002" thick)
			Use as required
10	3003004	1	GEAR, driven
11	3003007	1	GEAR, drive
12	3003002	4	PIN, dowel, pump housing (5/16" x 3/4")
13	3016856	1	HOUSING, pump
14	3007756	1	COVER, pump
15	3003010	4	CAPSCREW (hex-socket, 5/8"NF x 4-1/2")

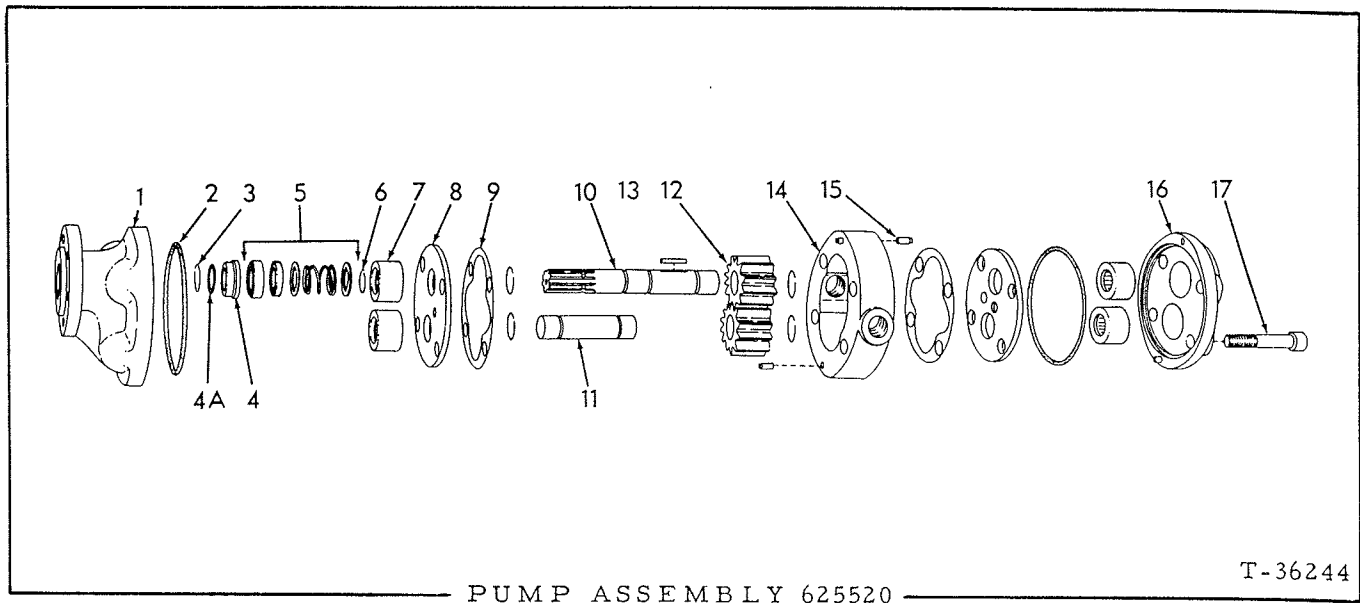


PUMP ASSEMBLY 3003265

USAGE: See page 21

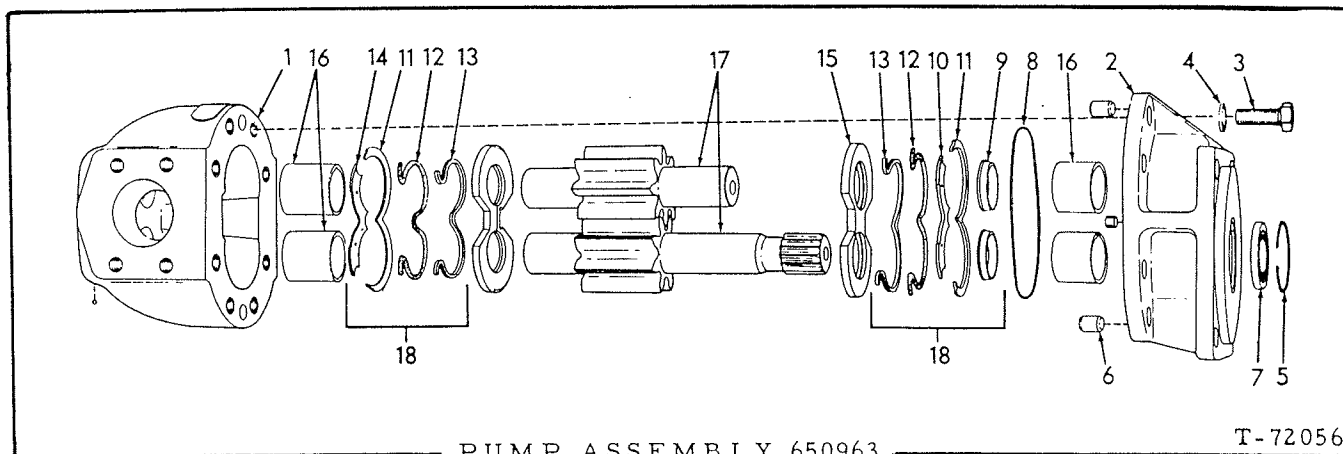
ITEM PART NO. QTY. DESCRIPTION

1	3003696	1	RING, snap, drive shaft, outer
2	3003697	1	BEARING, ball
3	3002998	1	SEAL, oil, drive shaft
4	3003694	1	COVER, drive end
	915276	1	FITTING, lubricating, 90°, 1/8"NPT
5	3025030	4	BEARING, needle
6	923591	2	O-RING, pump housing
7	3003009	2	PLATE, wear
8	3003691	-	GASKET, shimming, wear plate (.001" thick. Use as req'd)
	3003692	-	GASKET, shimming, wear plate (.002" thick. Use as req'd)
9	3003689	4	RING, snap, drive shaft, inner
10	3003688	1	SHAFT, drive
	915569	1	KEY, straight, 3/16"sq. x 1-1/8"
11	3003687	2	GEAR, pump
12	3003693	1	PIN, dowel (For drive shaft only)
13	3003690	1	SHAFT, driven
14	3003686	1	HOUSING, pump
15	3003002	4	PIN, dowel, pump housing
16	3003006	1	COVER, pump
17	3003698	4	CAPSCREW (hex-socket, 5/8" x 4")



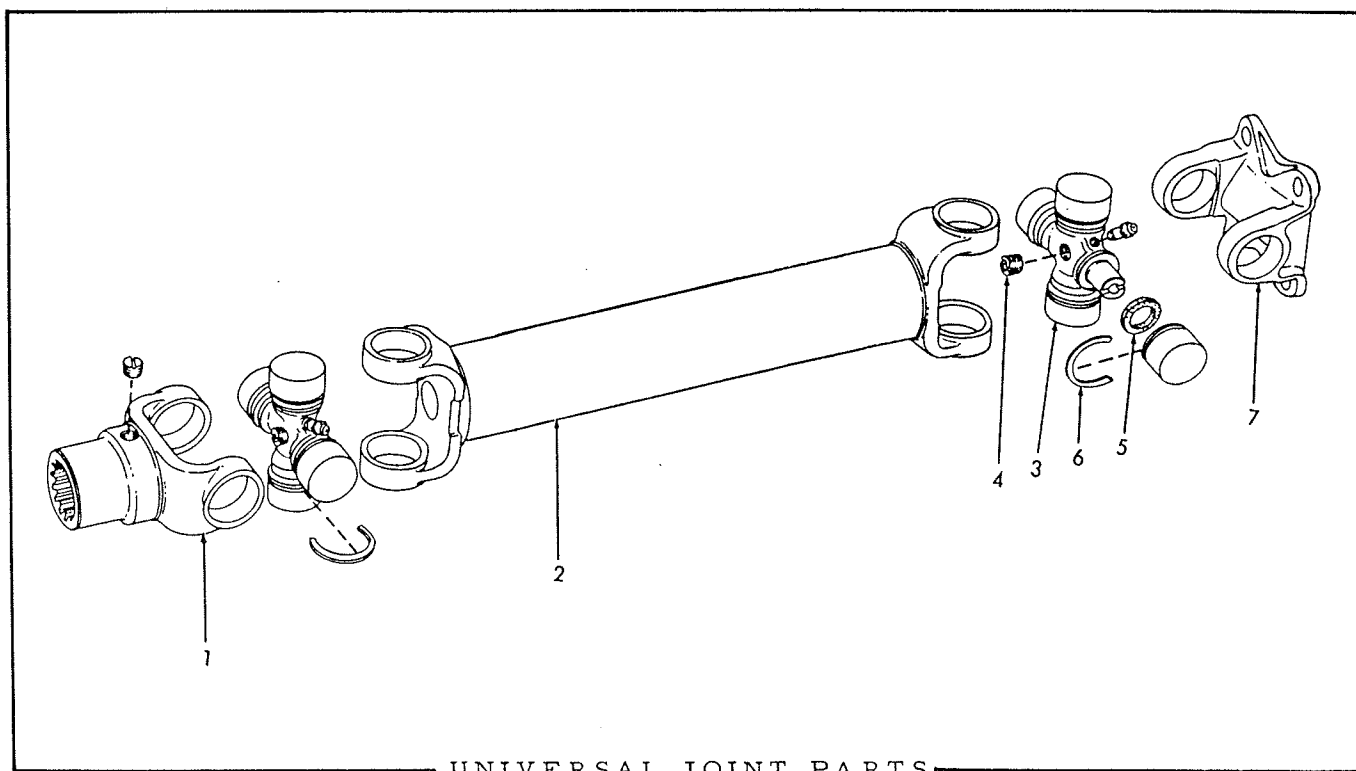
USAGE: See page 21

ITEM	PART NO.	QTY.	DESCRIPTION
1	3009546	1	COVER, adapter, driving end
2	923591	2	O-RING, adapter cover
3	3002997	1	RING, snap, drive shaft
4	3007752	1	SEAT ASSEMBLY, drive shaft seal (Includes item 4A)
4A	3029725	1	O-RING, seal seat
5	3007753	1	SEAL ASSEMBLY, drive shaft (Serviced only as a unit)
6	3006662	5	RING, snap, seal and gear
7	3025030	4	BEARING, needle
8	3003009	2	PLATE, wear
9	3003692	-	GASKET, shimming (.002" thick. Used as req'd)
10	635370	1	SHAFT, drive
11	3003690	1	SHAFT, driven
12	3003687	2	GEAR, pump
13	3003693	1	PIN, dowel, pump gear
14	3003686	1	HOUSING, pump
15	3003407	4	PIN, dowel, pump housing (hollow)
16	3007756	1	COVER, housing
17	3003698	4	CAPSCREW, socket-hd., 5/8"NF x 4"



		QTY.		DESCRIPTION
ITEM	PART NO.	*	**	
1	651099	1	1	BODY ASSEMBLY (Includes bushings and BALL indented below)
	915906	1	1	BALL, steel, 3/16" diam.
2	651102	1	1	FLANGE ASSEMBLY (Includes bushings and PLUG indented below)
	910231	1	1	PLUG, pipe, hex-socket, 1/8"NPT
3	035061	8	8	CAPSCREW, 1/2"NC x 1-1/4"
4	651109	8	8	WASHER, plain
5	194166	1	1	RING, snap
6	194132	2	2	PIN, dowel, pump body
7	194165	1	1	□SEAL, oil
8	925655	1	1	□O-RING, mounting flange
9	659716	2	-	□RING, mounting flange (steel)
	664694	-	2	RING, mounting flange (steel)
10	196775	1	-	□PLATE, isolation
	665098	-	1	PLATE, isolation
11	651108	2	-	□RETAINER, sealing ring (nylon)
	665099	-	2	RETAINER, sealing ring (nylon)
12	194161	2	-	□RING, sealing (rubber)
	665097	-	2	RING, sealing (rubber)
13	651105	2	-	□RING, back-up (teflon)
	665096	-	2	RING, back-up (teflon)
14	659714	1	-	□PLATE, isolation
	665095	-	1	PLATE, isolation
15	658241	2	2	□PLATE, wear
16	656741	4	4	□BUSHING, body and flange
17	660429	1	1	□GEAR KIT (Consists of 2 matched gears)
18	665141	-	1	SEAL KIT (Consists of items 9 thru 14; includes full set for both sides)
19	651103	1	-	REPAIR KIT (Includes items 7 thru 17)(Not illustrated)
□ Components of item 19				

(Revised March 1968)

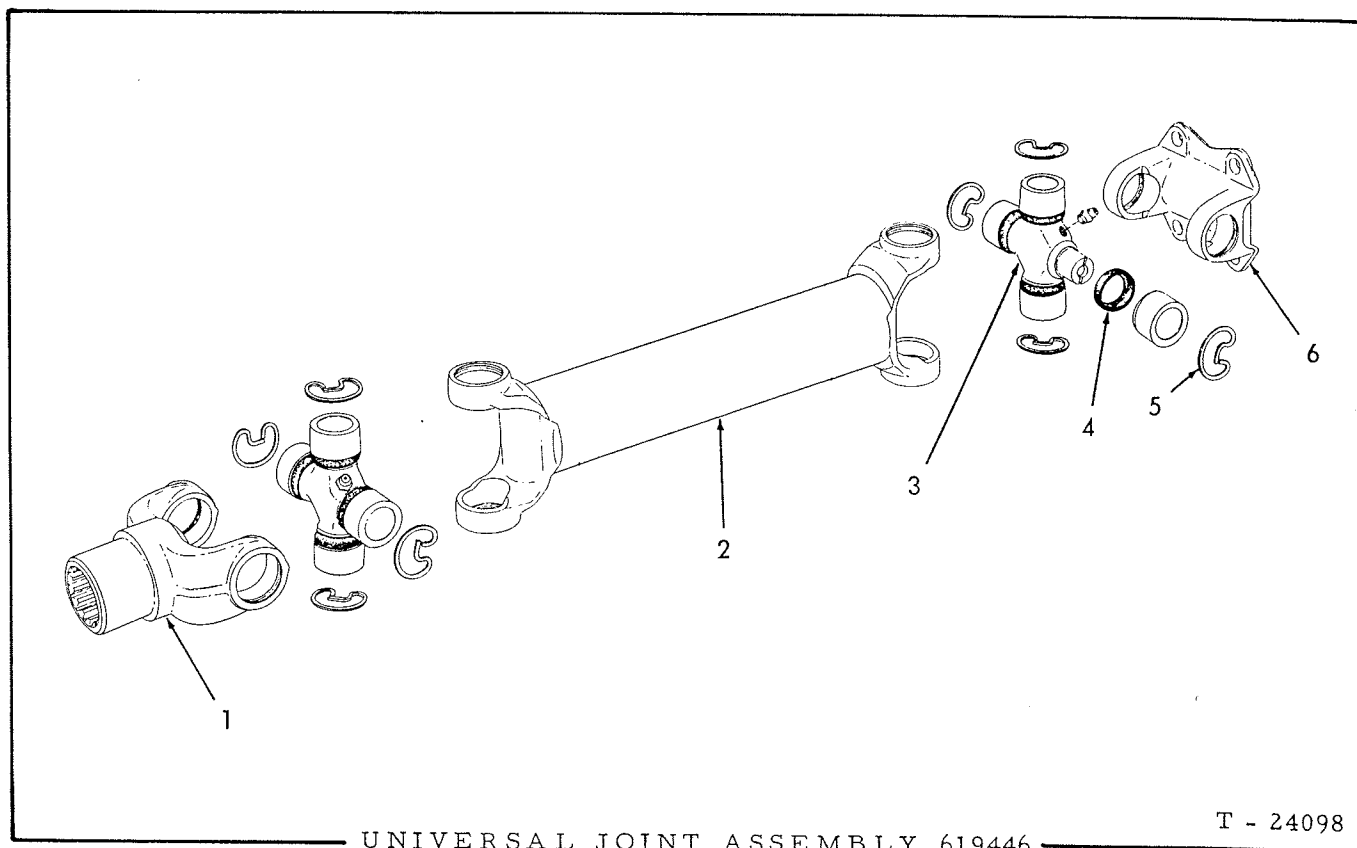


UNIVERSAL JOINT PARTS

USAGE: See page 9

* 613154 JOINT ASSEMBLY
 ** 618721 JOINT ASSEMBLY

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	612618	1	1	YOKE ASSEMBLY, front (splined) (Includes PLUG indented below) PLUG, pipe, slotted-hd., 1/8"NPT
	910230	1	1	
2	613153	1	-	YOKE, center (11-3/4" long)
	618719	-	1	
3	612621	2	2	SPIDER ASSEMBLY (Includes bearings, items 4, 5, 6 and FITTING indented below) FITTING, lubricating, straight, 1/4"-28NS (long type)
	912499	2	2	
4	607955	2	2	VALVE, relief, spider
5	612619	8	8	WASHER, sealing, spider bearing
6	607954	8	8	RING, snap
7	612620	1	1	YOKE, rear (flanged)

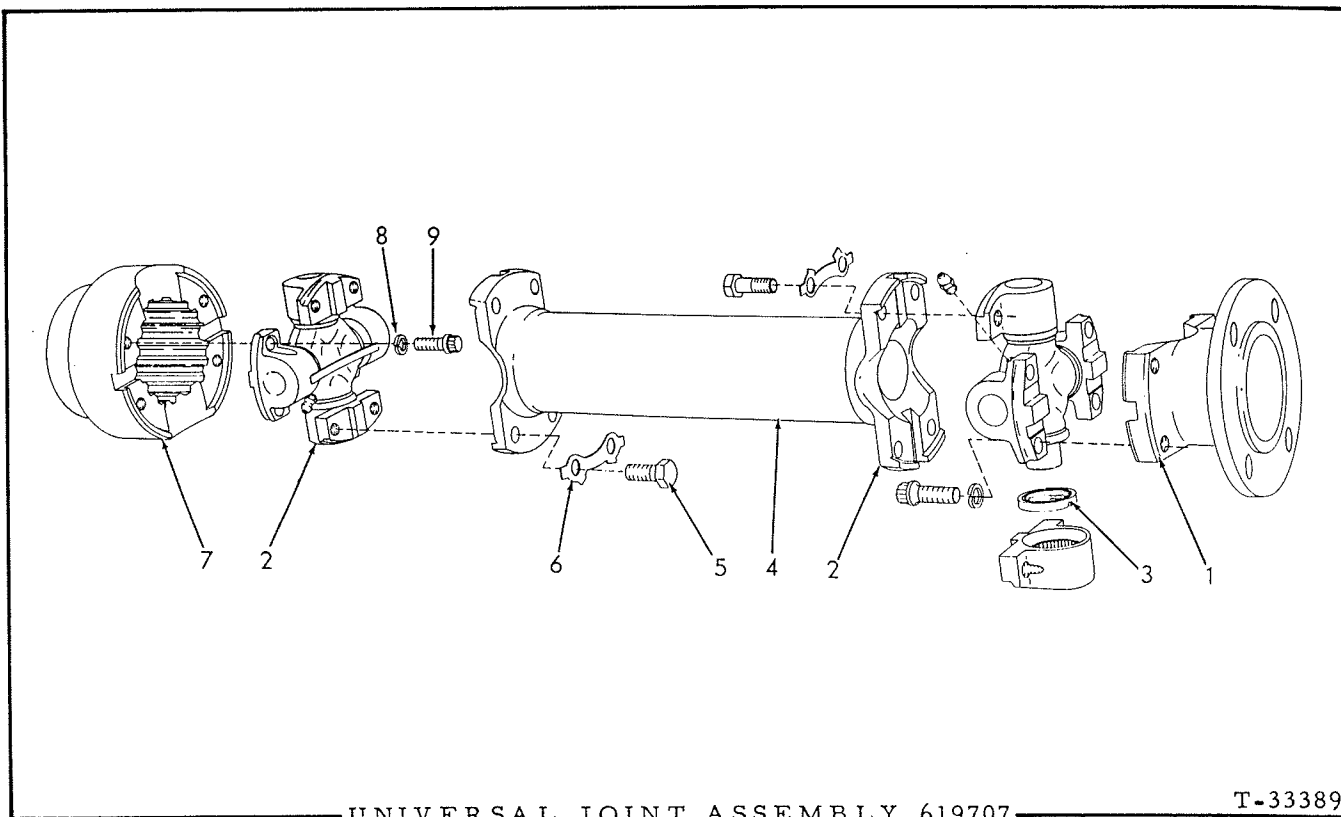


UNIVERSAL JOINT ASSEMBLY 619446

T - 24098

USAGE: See page 9

ITEM	PART NO.	QTY.	DESCRIPTION
1	617513	1	YOKE, front (splined)
2	619457	1	YOKE, center
3	617512	2	SPIDER ASSEMBLY (Includes bearings, items 4, 5 and FITTING in-
	914687	2	dentented below) FITTING, lubricating, straight, 1/4"NF
4	617892	8	SEAL, spider bearing
5	617518	8	RING, snap
6	617510	1	YOKE, rear (flanged)

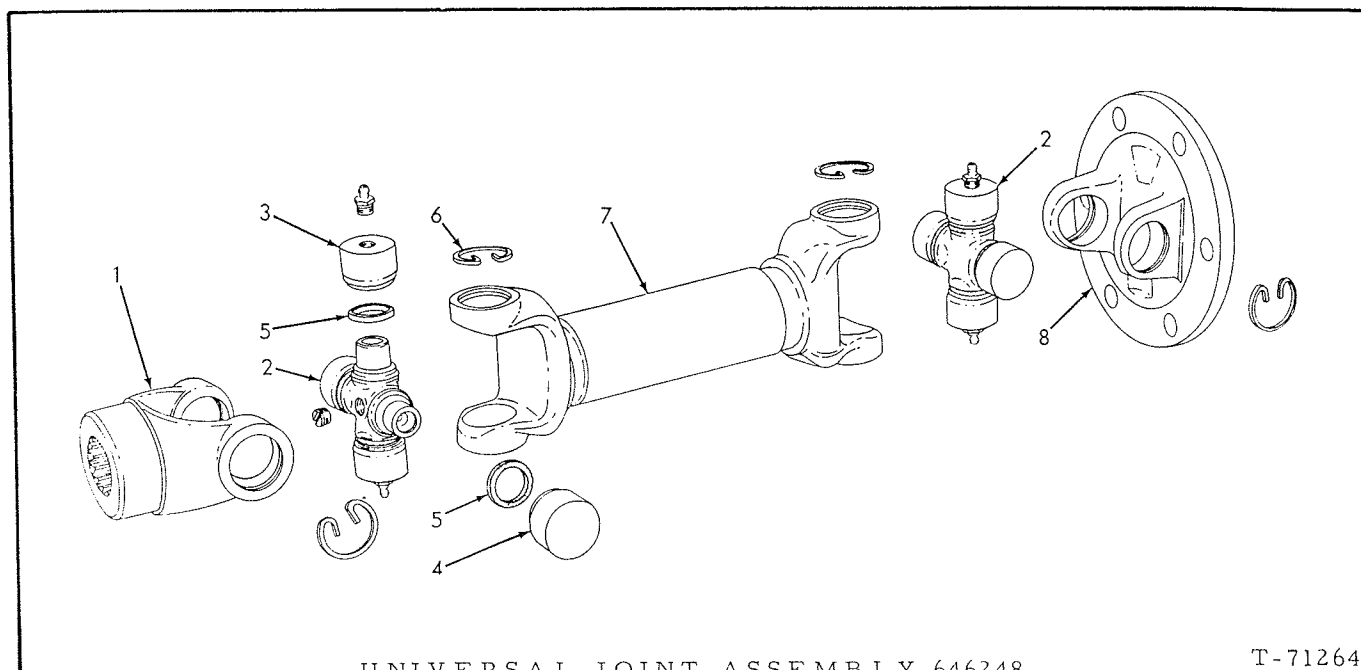


UNIVERSAL JOINT ASSEMBLY 619707

T-33389

USAGE: See page 9

ITEM	PART NO.	QTY.	DESCRIPTION
1	619706	1	FITTING, rear (flanged)
2	619703	2	SPIDER ASSEMBLY (Includes bearings, item 3 and FITTING indented below)
	914687	2	FITTING, lubricating, straight, 1/4"NF
3	625543	8	SEAL, spider bearing
4	619704	1	TUBE, center
5	057927	8	CAPSCREW, center tube
6	073935	4	LOCK, center tube capscREW
7	619766	1	COUPLING, front (splined)
8	645798	8	LOCKWASHER, spider attaching capscREW
9	645797	8	CAPSCREW, spider attaching

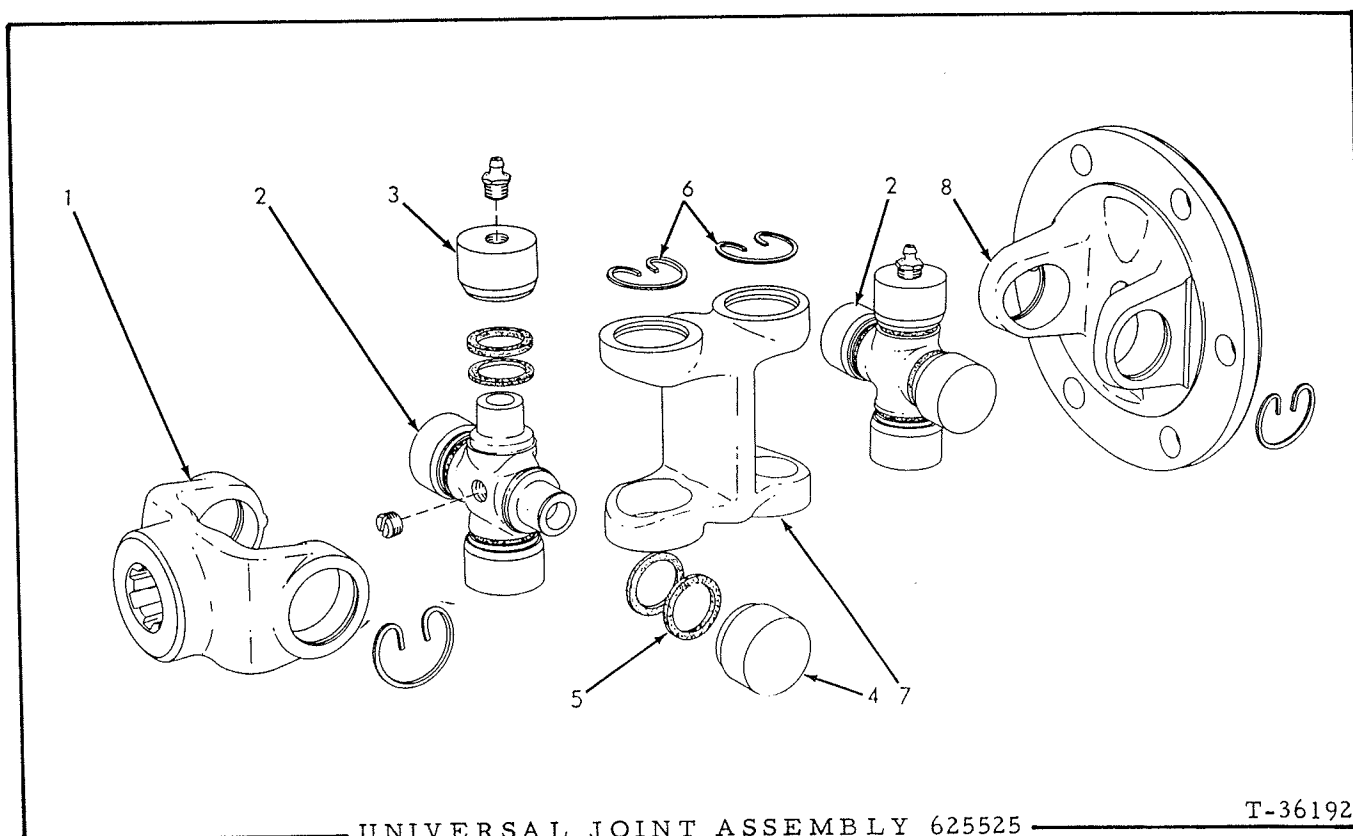


UNIVERSAL JOINT ASSEMBLY 646248

T-71264

USAGE: See pages 9 and 13

ITEM	PART NO.	QTY.	DESCRIPTION
1	665625	1	YOKE, front (splined)
2	665611	2	SPIDER ASSEMBLY (Includes items 3 thru 6 and PLUG indented below)
	910230	2	PLUG, pipe, 1/8"NPT
3	-----	4	BEARING ASSEMBLY (Not serviced separately)
	914465	4	FITTING, lubricating, straight, 1/8"NPT
4	-----	4	BEARING ASSEMBLY (Not serviced separately)
5	{ 3011023	16	WASHER, cork (Early units)
	{ -----	8	SEAL, rubber (Late units. Not serviced separately)
6	618804	8	RING, snap, bearing retaining
7	648502	1	YOKE, center
8	664692	1	YOKE, rear (flanged)



USAGE: For front-mounted pump. See page 21

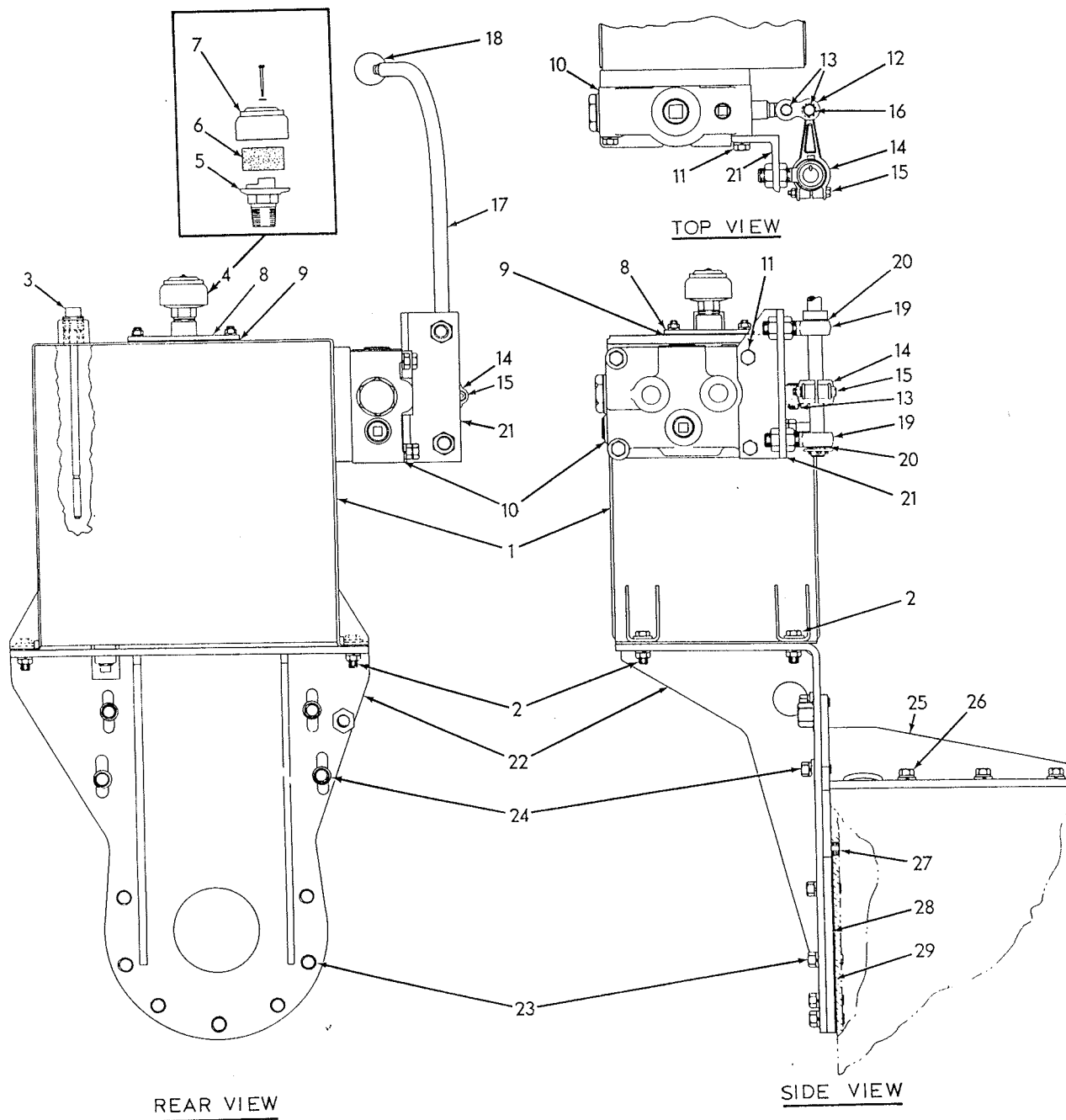
ITEM	PART NO.	QTY.	DESCRIPTION
1	625523	1	YOKE, front
2	618805	2	SPIDER ASSEMBLY (Includes items 3 thru 6 and PLUG indented below)
	910230	2	PLUG, pipe, 1/8"NPT
3	618807	2	BEARING ASSEMBLY (Includes cork WASHER and retaining cup)
	914465	2	FITTING, lubricating, straight, 1/8"NPT
4	3011022	6	BEARING ASSEMBLY (Includes cork WASHERS and retaining cup)
5	3011023	16	WASHER, cork
6	618804	8	RING, snap, bearing retaining
7	618809	1	YOKE, center
8	3021989	1	FLANGE, coupling (Used prior to tractor #11001)
	625524	1	FLANGE, coupling (Effective with tractor #11001)

CONTROL VALVE AND TANK

USAGE: For front-mounted pump illustrated on page 16 or for rear-mounted pump illustrated on page 18.

ITEM	PART NO.	QTY.	DESCRIPTION
1	625444	1	TANK, hydraulic
	912725	1	PLUG, pipe, 1/2"NPT
2	035018	4	CAPSCREW, 1/2"NF x 1-1/2"
	910244	4	WASHER, plain, SAE std., 1/2"
	904208	4	LOCKWASHER, 1/2"
	911043	4	NUT, 1/2"NF
3	625502	1	DIPSTICK
4	3002766	1	BREATHER ASSEMBLY (Includes items 5 thru 7)
5	3002767	1	BASE, breather
6	3002769	1	ELEMENT, breather
7	3002768	1	CAP, breather
	914172	1	SCREW, machine, #10-32NF x 1-1/4"
	904203	1	LOCKWASHER, #10
8	625500	1	COVER, tank
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
9	625497	1	GASKET, breather cover
10	625385	1	VALVE ASSEMBLY, control (See page 60 for parts)
11	057517	2	CAPSCREW, 1/2"NF x 4"
	916424	2	CAPSCREW, 1/2"NF x 3-1/2"
	904208	4	LOCKWASHER, 1/2"
12	3001523	1	LINK KIT, operating lever (Includes 2 plates and bushing)
13	3001566	2	PIN, operating lever plate
	910244	4	WASHER, plain, SAE std., 1/2"
	900806	2	PIN, cotter, 1/8" x 1"
14	625495	1	LEVER ASSEMBLY, operating rod (Includes item 16)
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
15	046419	1	CAPSCREW, 3/8"NF x 2"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
16	3013908	1	BUSHING, operating rod lever
17	625504	1	ROD, operating (Tractors prior to #12501)
	637268	1	ROD, operating (Tractors #12501 and up)
	910255	1	WASHER, plain, SAE std., 3/4"
	900807	1	PIN, cotter, 1/8" x 1-1/4"
18	091862	1	KNOB, operating rod
19	625496	2	END, rod
	910847	4	NUT, jam, 3/4"NF
20	3019104	2	BEARING, operating rod end (Nylon)
21	625498	1	ANGLE, supporting, operating rod end

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CONTROL VALVE AND TANK

T-71268

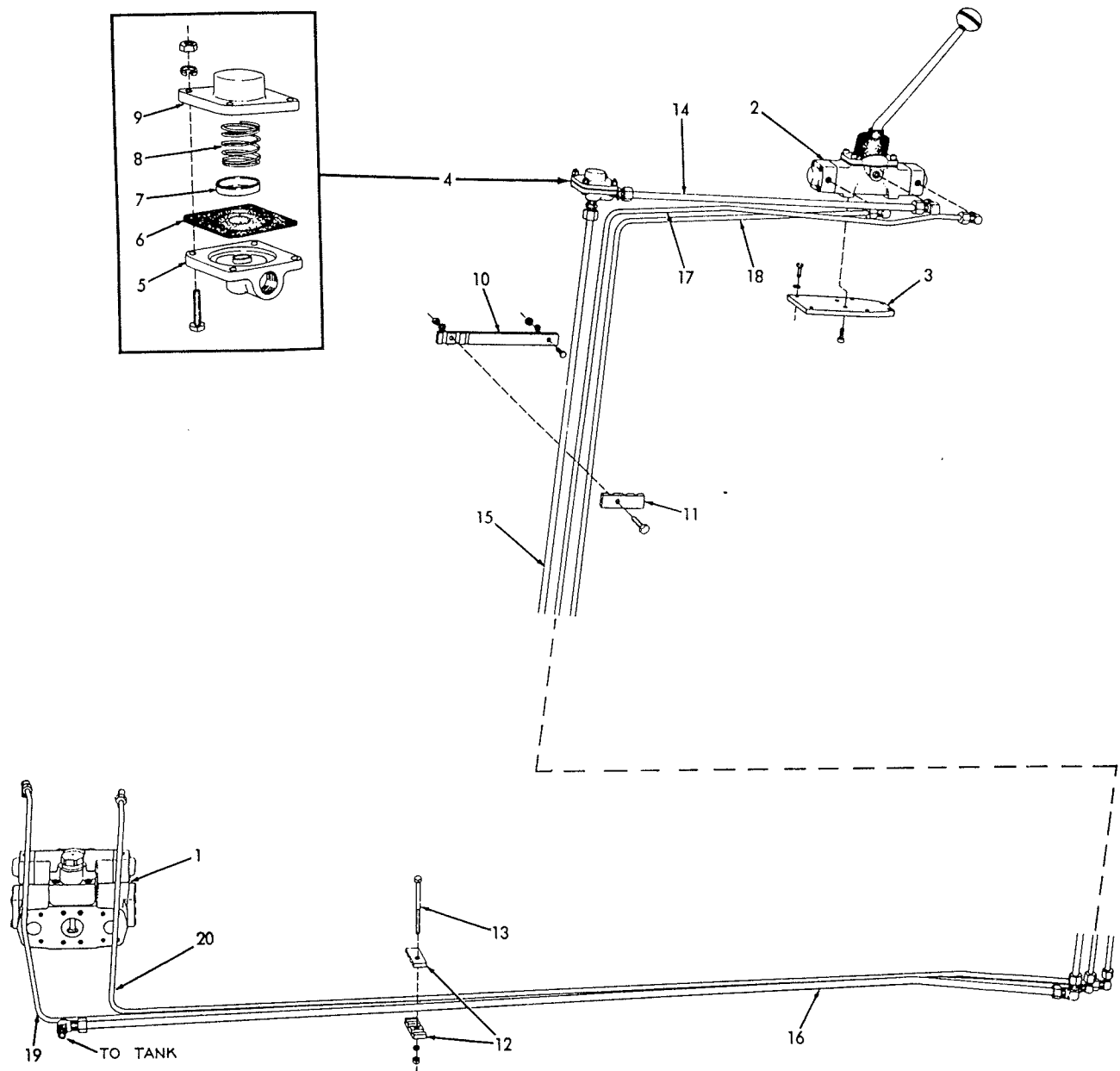
CONTROL VALVE AND TANK (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
22	625481	1	BRACKET, tank mounting
23	035229	7	CAPSCREW, 5/8"NF x 2" (Tractors prior to #9359)
	071113	7	CAPSCREW, 5/8"NC x 2" (Tractors #9359 and up)
	904209	7	LOCKWASHER, 5/8"
24	070469	4	CAPSCREW, 1/2"NF x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
	064531	4	WASHER, plain
25	625477	1	BRACKET, left side
	625478	1	BRACKET, right side
	637263	1	BRACKET, left side
	637264	1	BRACKET, right side
26	089900	6	CAPSCREW, 1/2"NF x 2-3/16"
	904208	6	LOCKWASHER, 1/2"
	064531	6	WASHER, plain
27	625469	2	PLUG, steering clutch housing (5/8"NC)(Tractors prior to #9359)
	051496	2	PLUG, steering clutch housing (5/8"NF)(Tractors #9359 and up)
28	625470	1	SPACER, tank mounting bracket
29	625471	1	GASKET, bracket spacer

Tractors prior to #12501

Tractors #12501 and up

For units with front-mounted pump only



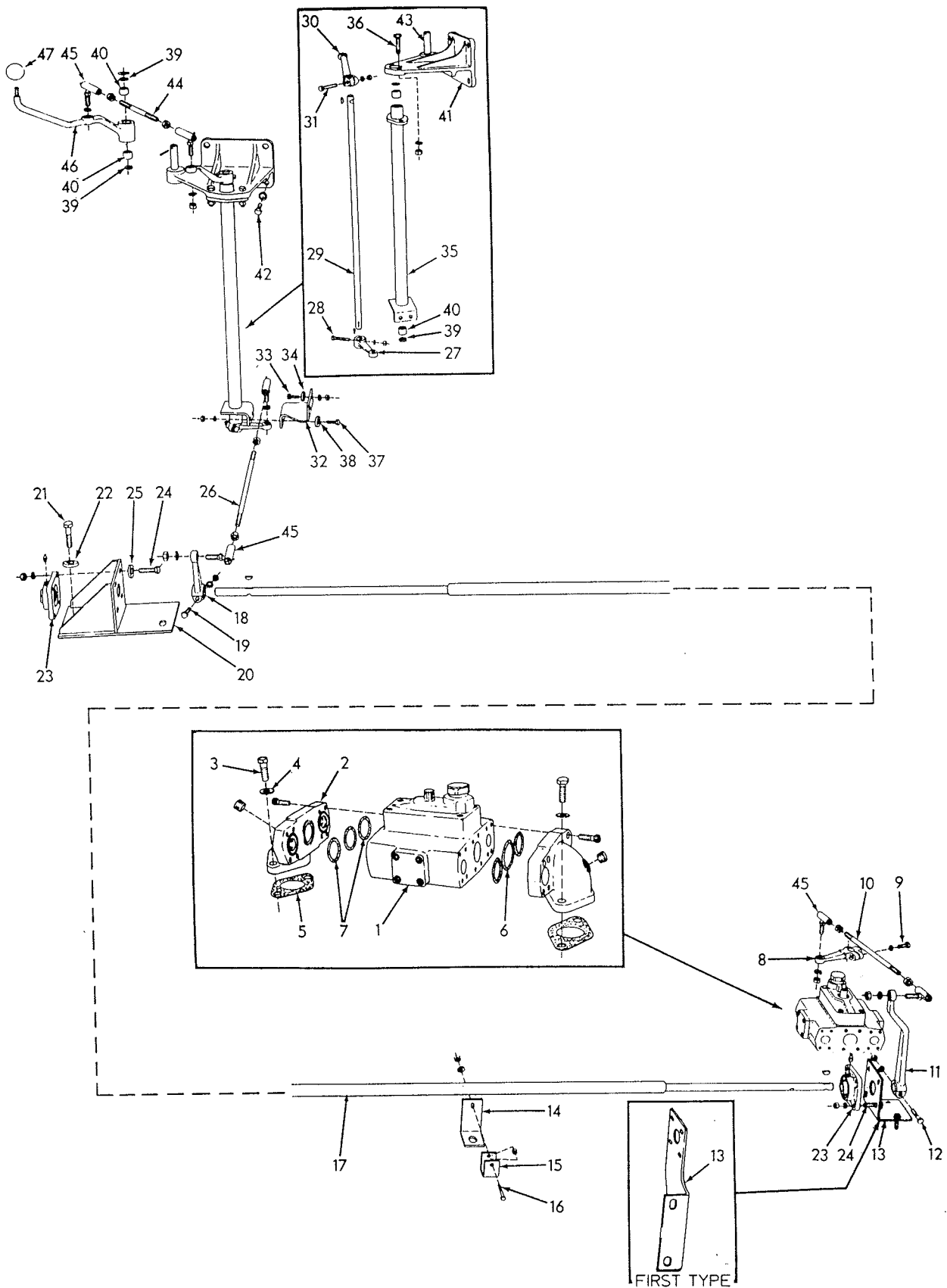
T-14097

FRONT VALVE AND CONTROLS (First type)

FRONT VALVE AND CONTROLS

USAGE: Model 21BD, GD dozers prior to serial No. 283

ITEM	PART NO.	QTY.	DESCRIPTION
1	606301	1	VALVE ASSEMBLY, control (See page 63 for parts)
2	606302	1	UNIT ASSEMBLY, valve control (See page 65 for parts)
	914864	4	CAPSCREW, hex-socket-hd., 5/16"NC x 3/4"
3	609277	1	PLATE, control unit mounting
	903772	4	CAPSCREW, 5/16"NC x 1"
	904205	4	LOCKWASHER, 5/16"
4	607428	1	VALVE ASSEMBLY, check (Consists of items 5 thru 9)
5	607681	1	BODY, check valve
6	607682	1	DIAPHRAGM, check valve
7	607683	1	PLATE, pressure, check valve
8	607427	1	SPRING, check valve
9	607680	1	CAP, check valve
	905657	4	CAPSCREW, 1/4"NC x 1"
	904204	4	LOCKWASHER, 1/4"
	911024	4	NUT, 1/4"NC
10	609276	1	CLAMP, tube supporting
	910167	1	CAPSCREW, 5/16"NF x 3/4"
	904205	1	LOCKWASHER, 5/16"
	913636	1	NUT, 5/16"NF
11	612742	1	CLAMP, tube supporting
	912185	1	CAPSCREW, 3/8"NF x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
12	609275	2	CLAMP, tube supporting (half only)
13	042265	1	CAPSCREW, 3/8"NF x 3-1/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
14	609272	1	TUBE, control unit oil return, rear section
	914025	1	ELBOW, Ermeto, 90°, 1/2" tube, 3/8"NPT male (Includes nut and sleeve)
	914021	1	CONNECTOR, Ermeto, 1/2" tube, 3/8"NPT male (Includes nut and sleeve)
15	609273	1	TUBE, control unit oil return, intermediate section
	914021	1	CONNECTOR, Ermeto, 1/2" tube, 3/8"NPT male (Includes nut and sleeve)
	918387	1	ELBOW, union, Ermeto, 1/2" tube (Includes nuts and sleeves)
16	609274	1	TUBE, control unit oil return, front section
	914025	1	ELBOW, Ermeto, 90°, 1/2" tube, 3/8"NPT male (Includes nut and sleeve)
17	609271	1	TUBE, control unit to valve, rear section (lowering control)
	914076	1	ELBOW, Ermeto, 90°, 3/8" tube, 1/4"NPT male (Includes nut and sleeve)
18	609270	1	TUBE, control unit to valve, rear section (raise control)
	914076	1	ELBOW, Ermeto, 90°, 3/8" tube, 1/4"NPT male (Includes nut and sleeve)
19	609268	1	TUBE, control unit to valve, front section (lowering control)
	914176	1	ELBOW, union, Ermeto, 3/8" tube (Includes nuts and sleeves)
	914076	1	ELBOW, Ermeto, 90°, 3/8" tube, 1/4"NPT male (Includes nut and sleeve)
20	609269	1	TUBE, control unit to valve, front section (raise control)
	914176	1	ELBOW, union, Ermeto, 3/8" tube (Includes nuts and sleeves)
	914076	1	ELBOW, Ermeto, 90°, 3/8" tube, 1/4"NPT male (Includes nut and sleeve)



FRONT VALVE AND CONTROLS (Second type)

T-14095

FRONT VALVE AND CONTROLS

USAGE: Model 21GE Dozers; also Model 21BD, GD Dozers serial No. 283 and up; also Model 21HS, HA Dozers prior to August 1961.

ITEM PART NO. QTY. DESCRIPTION

1	609553	1	VALVE ASSEMBLY, control (See page 67 for parts)
NOTE: Items 2 thru 7 are applicable only to units equipped with PUMP AND TANK shown on page 9			
2	612916	2	MANIFOLD (Also see DIVERTER VALVE AND PIPING for optional manifolds)
	907859	2	PLUG, pipe, hex-socket, 1/4"NPT (Used prior to tank #709)
	904224	2	PLUG, pipe, ctsk-hd., 3/4"NPT (Effective with tank #709)
	917733	16	CAPSCREW, hex-socket-hd., 3/8"NC x 1-1/4"
3	614478	4	CAPSCREW, 1/2"NF x 1-3/8"
4	618724	4	WASHER, copper
5	613128	2	GASKET, manifold
6	619798	2	RING, manifold sealing (2" O.D.)
7	619799	4	RING, manifold sealing (1-3/4" O.D.)
8	611928	1	LEVER, control valve
	905119	1	KEY, #3 woodruff, 1/8" x 1/2"
9	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
10	611920	1	ROD, front
	911043	2	NUT, 1/2"NF
11	611904	1	LEVER, horizontal shaft, front
12	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
13	611917	1	BRACKET, horizontal shaft front bearing (Early units)
	613260	1	BRACKET, horizontal shaft front bearing (Late units)
	036034	2	CAPSCREW, 3/8"NF x 1"
	904206	2	LOCKWASHER, 3/8"
14	611916	1	ANGLE, shaft supporting bracket
15	611957	1	BRACKET, supporting, horizontal shaft
16	611975	1	CAPSCREW, 1/4"NC x 2-1/2"
	911114	1	WASHER, plain, SAE std., 1/4"
	911325	2	NUT, jam, 1/4"NC
17	611925	1	SHAFT, horizontal
	905122	2	KEY, #7 woodruff, 1/8" x 3/4"
18	611903	1	LEVER, horizontal shaft, rear
19	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
20	635945	1	BRACKET, horizontal shaft rear bearing
21	035067	2	CAPSCREW, 1/2"NF x 2"
22	064531	2	WASHER, plain

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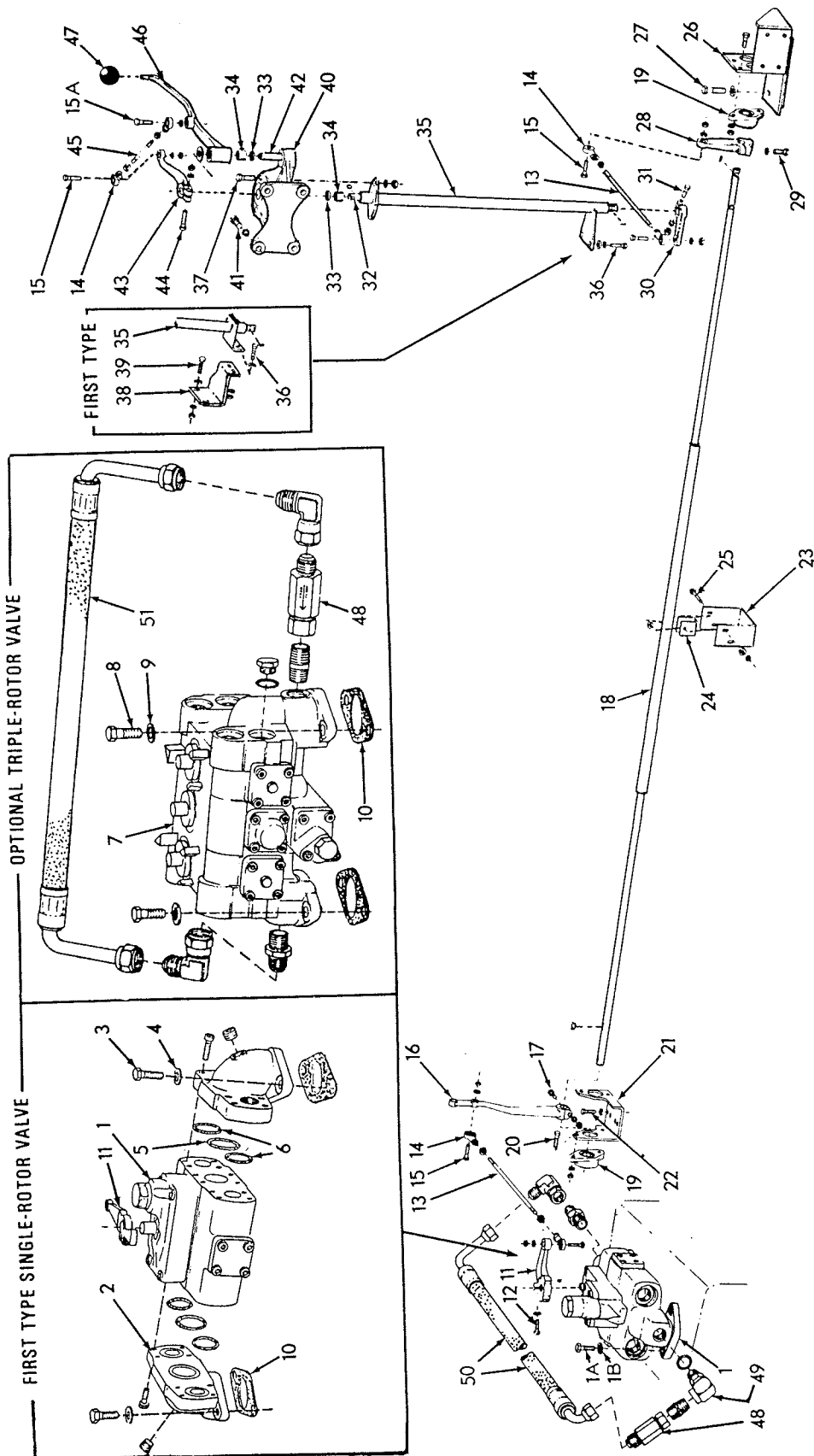
FRONT VALVE AND CONTROLS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
23	611901	2	BEARING ASSEMBLY, horizontal shaft (Includes FITTING indented below)
	912808	2	FITTING, lubricating, straight, 1/4"NF
24	012992	8	CAPSCREW, 3/8"NF x 1-1/4"
25	044973	4	WASHER, plain
	904206	8	LOCKWASHER, 3/8"
	911041	8	NUT, 3/8"NF
26	611919	1	ROD, lower rear
	911043	2	NUT, 1/2"NF
27	611929	1	LEVER, vertical shaft, lower
28	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
29	611905	1	SHAFT, vertical
	905122	2	KEY, #7 woodruff, 1/8" x 3/4"
30	612861	1	LEVER, vertical shaft, upper
31	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
32	611910	1	BRACKET, tube supporting
33	012992	2	CAPSCREW, 3/8"NF x 1-1/4"
34	044973	2	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
35	611909	1	TUBE, vertical shaft
36	035018	2	CAPSCREW, 1/2"NF x 1-1/2"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
37	012992	2	CAPSCREW, 3/8"NF x 1-1/4"
38	044973	2	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
39	052662	4	SEAL, dust
40	208253	4	BEARING, needle
41	611922	1	BRACKET ASSEMBLY, operating lever (Includes item 43)
42	035733	4	CAPSCREW, 1/2"NC x 1-3/8"
	904208	4	LOCKWASHER, 1/2"
43	611921	1	SHAFT, operating lever
	910255	1	WASHER, plain, SAE std., 3/4"
	900807	1	PIN, cotter, 1/8" x 1-1/4"
44	611918	1	ROD, upper
	911043	2	NUT, 1/2"NF
45	618281	6	JOINT, ball and socket, control rods (Includes FITTING indented below)
	912808	6	FITTING, lubricating, straight, 1/4"NF
	904208	6	LOCKWASHER, 1/2"
	911043	4	NUT, 1/2"NF

(Continued)

FRONT VALVE AND CONTROLS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
46	657635	1	LEVER, operating
47	{ 091862	1	KNOB, operating lever (1/2"NF)(Early units)
	{ 090020	1	KNOB, operating lever (1/2"NC)(Late units)



T-39322

FRONT VALVE AND CONTROLS (Third type)

FRONT VALVE AND CONTROLS

USAGE: Model 21HS, HA dozers effective August 1961; also for Model 21CS dozers with hydraulic tilt.

ITEM	PART NO.	QTY.	DESCRIPTION
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1	609553	1	VALVE ASSY., single-rotor (See page 67 for parts)(Standard equipment on units prior to April 1966. Also see item 7)
	668258	1	VALVE ASSY., single-rotor (See page 70 for parts)(Standard equipment on units after March 1966. Also see item 7)
	921216	2	PLUG, 1-5/16" straight thread (Includes O-RING 921214) (For Model 21CS dozer application only)
1A	614478	4	CAPSCREW, 1/2"NF x 1-3/8"
1B	618724	4	WASHER, copper

2	612916	2	MANIFOLD (Also see DIVERTER VALVE AND PIPING for optional manifolds)
	904224	2	PLUG, pipe, ctsk-hd., 3/4"NPT
	917733	16	CAPSCREW, hex-socket, 3/8"NC x 1-1/4"
3	614478	4	CAPSCREW, 1/2"NF x 1-3/8"
4	618724	4	WASHER, copper

5	924114	2	O-RING, manifold (2" O.D.)
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6	924192	4	O-RING, manifold (1-3/4" O.D.)
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NOTE: Items 2 thru 6 are used only with single-rotor VALVE 609553

7	626202	1	VALVE ASSY., triple-rotor (See page 68 for parts)(Optional equipment on units prior to July 1965. Order 668259, 2 CONNECTORS 921228, 2 CONNECTORS 922997, 4 PLUGS 921216 and KIT 657311)
	901666	4	PLUG, pipe, ctsk-hd., 1"NPT
	649844	1	VALVE ASSY., triple-rotor (See page 72 for parts)(Optional equipment effective April 1966 thru March 1967. Order 668259 and KIT 657311)
	921216	4	PLUG, 1-5/16" straight thread (Includes O-RING 921214)
	668259	1	VALVE ASSY., triple-rotor (See page 72 for parts)(Optional equipment effective April 1967)
	921216	4	PLUG, 1-5/16" straight thread (Includes O-RING 921214)
	650786	1	VALVE ASSY., triple-rotor (See page 72 for parts)(Optional. For use with phosphate-ester fire-resistant hydraulic fluid)
	921216	4	PLUG, 1-5/16" straight thread (Includes O-RING 921214)

8	614478	4	CAPSCREW, 1/2"NF x 1-3/8"
9	618724	4	WASHER, copper

10	613128	2	GASKET, valve to tank
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11	617942	1	LEVER, valve (For single-rotor VALVE 609553)
	647729	1	LEVER, valve (For single-rotor VALVE 668258)
	626220	1	LEVER, valve (For triple-rotor valves)

12	905119	1	KEY, #3 woodruff, 1/8" x 1/2"
	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"

(Continued)

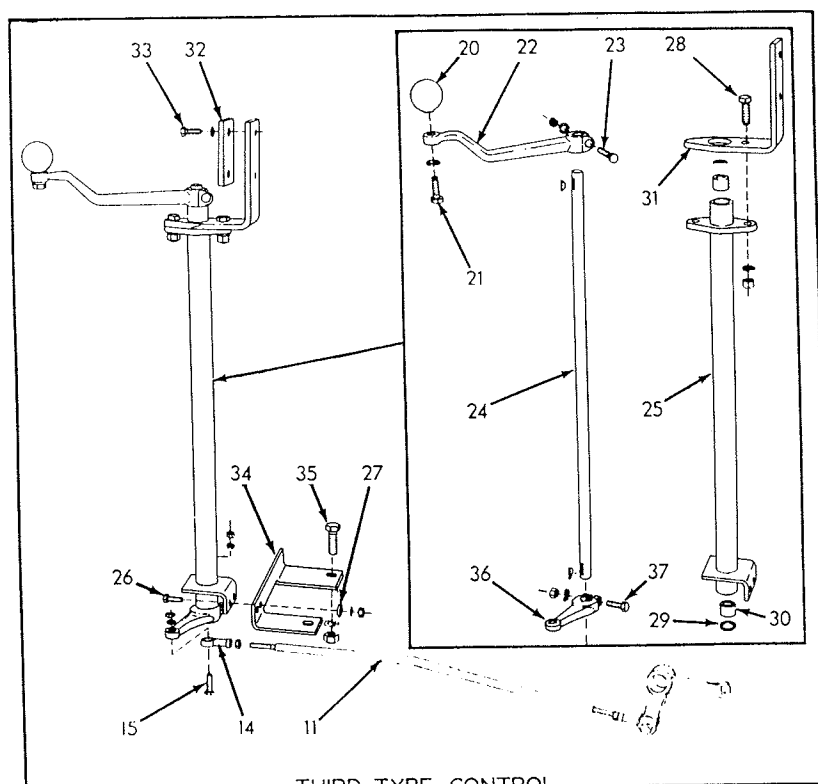
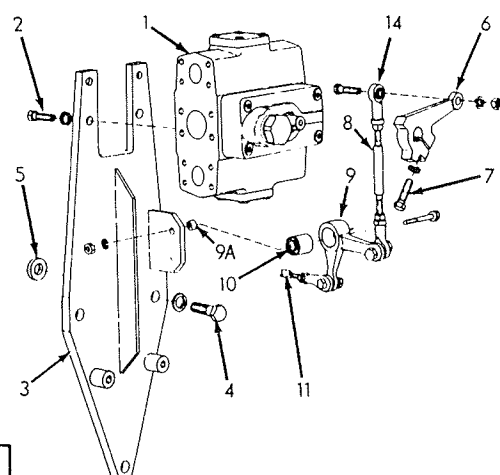
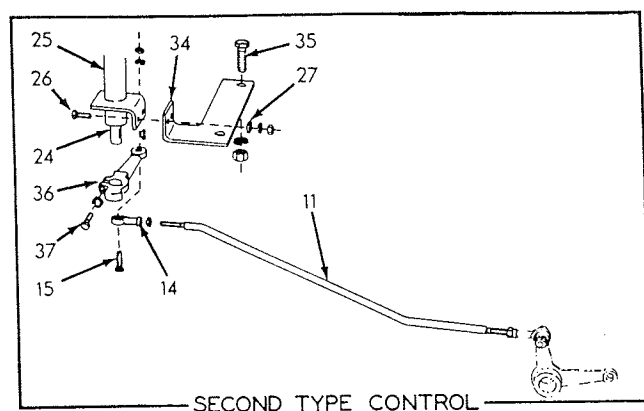
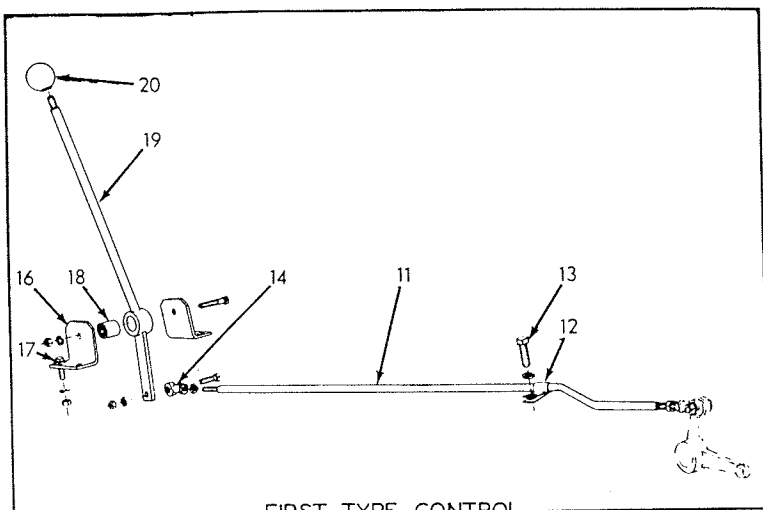
FRONT VALVE AND CONTROLS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
13	620553	2	ROD, connecting
	911041	4	NUT, 3/8"NF
14	617932	6	END, connecting rod
15	203188	5	CAPSCREW, 3/8"NF x 1-1/2"
15A	012992	1	CAPSCREW, 3/8"NF x 1-1/4"
	904206	6	LOCKWASHER, 3/8"
	911041	5	NUT, 3/8"NF
16	625542	1	LEVER, horizontal control shaft, front
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
17	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
18	625549	1	SHAFT, control, horizontal
19	617132	2	BEARING, horizontal control shaft
20	012992	4	CAPSCREW, 3/8"NF x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
21	619987	1	BRACKET, supporting, shaft front bearing
	036034	2	CAPSCREW, 3/8"NF x 1" (Early units)
22	035439	2	CAPSCREW, 3/8"NC x 1" (Late units)
	904206	2	LOCKWASHER, 3/8"
23	619986	1	BRACKET, control shaft bracket
24	611957	1	BRACKET, supporting, horizontal control shaft
25	611975	1	CAPSCREW, 1/4"NC x 2-1/2"
	911114	1	WASHER, plain, SAE std., 1/4"
	911325	2	NUT, jam, 1/4"NC
26	619995	1	BRACKET, supporting, shaft rear bearing
27	035067	2	CAPSCREW, 1/2"NF x 2"
	064531	2	WASHER, plain
28	617942	1	LEVER, horizontal control shaft, rear
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
29	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
30	625561	1	LEVER, vertical shaft, lower
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
31	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
32	611905	1	SHAFT, control vertical
33	052662	4	SEAL, dust
34	208253	4	BEARING, needle

(Continued)

FRONT VALVE AND CONTROLS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
35	611909	1	TUBE, vertical control shaft (Used prior to tractor #12801)
	627120	1	TUBE, vertical control shaft (Effective with tractor #12801)
36	012992	2	CAPSCREW, 3/8"NF x 1-1/4" (Used prior to tractor #12801)
	035439	2	CAPSCREW, 3/8"NC x 1" (Effective with tractor #12801)
	044973	2	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF (Used prior to tractor #12801)
37	035018	2	CAPSCREW, 1/2"NF x 1-1/2"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 3/8"NF
38	611910	1	BRACKET, tube supporting (Used prior to tractor #12801)
39	012992	2	CAPSCREW, 3/8"NF x 1-1/4"
	044973	2	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
40	611922	1	BRACKET ASSY., operating lever (Includes item 42)(Used prior to tractor #12801)
	635086	1	BRACKET ASSY., operating lever (Includes item 42)(Effective with tractor #12801)
41	035733	4	CAPSCREW, 1/2"NC x 1-3/8"
	904208	4	LOCKWASHER, 1/2"
42	611921	1	SHAFT, operating lever
	910255	1	WASHER, plain, SAE std., 3/4"
	900807	1	PIN, cotter, 1/8" x 1-1/4"
43	625562	1	LEVER, vertical shaft, upper
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
44	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
45	620552	1	ROD, connecting
	911041	2	NUT, 3/8"NF
46	657637	1	LEVER, operating
47	091862	1	KNOB, operating lever (1/2"NC)(Early units)
	090020	1	KNOB, operating lever (1/2"NF)(Late units)
48	668246	1	VALVE ASSY., pressure relief (Serviced only as a unit)
	916631	1	NIPPLE, pipe, 1"NPT x 1-1/2" (Used with single-rotor valve only)
	916670	1	NIPPLE, pipe, 1"NPT x 2" (Used with triple-rotor valve only)
49	668264	1	ELBOW, swivel, pressure relief valve (Includes O-RING 921214) (Used with single-rotor valve only)
50	668253	1	HOSE, jumper (See HOSE PARTS)(Used with single-rotor valve only)
	919625	1	ELBOW, flare type, 90°, swivel nut, 1" tube
	919064	1	CONNECTOR, flare type, 1" tube, 1" NPT male
51	668245	1	HOSE, jumper (See HOSE PARTS)(Used with triple-rotor valve only)
	919625	2	ELBOW, flare type, 90°, swivel nut, 1" tube
	919064	1	CONNECTOR, flare type, 1" tube, 1" NPT male



REAR CONTROL VALVE (HD21A, P Tractors)

REAR CONTROL VALVE

USAGE: Tractors equipped with Model 21HS, HA dozers. Provides rear hydraulic outlet for operating auxiliary equipment when used with DIVERter VALVE AND PIPING shown on page 79.

* Used prior to May 1959
 ** Used May 1959 thru January 1961
 *** Effective February 1961 (Tractors with power brakes)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	609553	1	1	1	VALVE ASSEMBLY, rear (See page 67 for parts)
2	041916	4	4	4	CAPSCREW, 7/16"NC x 2" (Replaces CAPSCREW 918314)
	904207	4	4	4	LOCKWASHER, 7/16"
3	618352	1	1	1	BRACKET, valve mounting
4	035248	3	-	-	CAPSCREW, 5/8"NF x 2-1/4" (Used prior to tractor #9359)
	023755	3	3	3	CAPSCREW, 5/8"NC x 2-1/4" (Effective with tractor #9359)
	904209	3	3	3	LOCKWASHER, 5/8"
5	064810	3	3	3	WASHER, spacing, valve mounting bracket
6	618017	1	1	1	LEVER, valve
7	905119	1	1	1	KEY, #3 woodruff, 1/8" x 1/2"
	036039	1	1	1	CAPSCREW, 3/8"NF x 1-3/8"
	904206	1	1	1	LOCKWASHER, 3/8"
8	618115	1	1	1	ROD, control (vertical)
	911041	2	2	2	NUT, 3/8"NF
9	618111	1	1	1	BELLCRANK, control rod
9A	625547	-	-	1	SPACER, bellcrank
10	606392	1	1	1	BEARING, control rod bellcrank
	913619	1	1	-	CAPSCREW, 3/8"NF x 2-1/4"
	045174	-	-	1	CAPSCREW, 3/8"NF x 2-1/2"
	904206	1	1	1	LOCKWASHER, 3/8"
	911041	1	1	1	NUT, 3/8"NF
11	618183	1	-	-	ROD, control (horizontal)
	618890	-	1	-	ROD, control (horizontal)
	625623	-	-	1	ROD, control (horizontal)
	911041	2	2	2	NUT, 3/8"NF
12	051311	1	-	-	CLIP, supporting, control rod (5/8" diam., 17/32" bolt-hole)
13	035733	1	-	-	CAPSCREW, 1/2"NC x 1-3/8"
	904208	1	-	-	LOCKWASHER, 1/2"
14	617932	4	4	4	END, control rod
	917125	4	3	3	CAPSCREW, 3/8"NF x 1-3/8"
15	203188	-	1	1	CAPSCREW, 3/8"NF x 1-1/2"
	904206	4	4	4	LOCKWASHER, 3/8"
	911041	4	4	4	NUT, 3/8"NF
16	618013	2	-	-	ANGLE, operating lever mounting
	912185	4	-	-	CAPSCREW, 3/8"NF x 1-1/4"
17	044973	4	-	-	WASHER, plain
	904206	4	-	-	LOCKWASHER, 3/8"
	911041	4	-	-	NUT, 3/8"NF

(Continued)

REAR CONTROL VALVE (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
18	606392	1	-	-	BEARING, operating lever
	913619	1	-	-	CAPSCREW, 3/8"NF x 2-1/4"
	904206	1	-	-	LOCKWASHER, 3/8"
	911041	1	-	-	NUT, 3/8"NF
19	618032	1	-	-	LEVER, operating
20	091862	1	1	1	KNOB, operating lever
21	035061	-	1	1	CAPSCREW, 1/2"NC x 1-1/4"
	904208	-	1	1	LOCKWASHER, 1/2"
22	611904	-	1	1	LEVER, operating
23	035336	-	1	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	-	1	1	LOCKWASHER, 3/8"
	911041	-	1	1	NUT, 3/8"NF
24	611905	-	1	-	SHAFT, operating lever
	625544	-	-	1	SHAFT, operating lever
	905122	-	2	2	KEY, #7 woodruff, 1/8" x 3/4"
25	611909	-	1	1	TUBE, operating lever shaft
26	036034	-	2	2	CAPSCREW, 3/8"NF x 1"
27	044973	-	2	2	WASHER, plain
	904206	-	2	2	LOCKWASHER, 3/8"
	911041	-	2	2	NUT, 3/8"NF
28	614478	-	2	2	CAPSCREW, 1/2"NF x 1-3/8"
	904208	-	2	2	LOCKWASHER, 1/2"
	911043	-	2	2	NUT, 1/2"NF
29	052662	-	2	2	SEAL, dust
30	208253	-	2	2	BEARING, needle
31	618888	-	1	1	ANGLE, shaft tube supporting, upper
32	618889	-	1	1	PLATE, angle clamping
33	036034	-	2	2	CAPSCREW, 3/8"NF x 1"
	904206	-	2	2	LOCKWASHER, 3/8"
34	618884	-	1	-	ANGLE, shaft tube supporting, lower (Used prior to January 1961)
	625598	-	1	1	ANGLE, shaft tube supporting, lower (Effective January 1961)
35	023465	-	2	2	CAPSCREW, 5/8"NF x 1-3/4"
	904209	-	2	2	LOCKWASHER, 5/8"
	911044	-	2	2	NUT, 5/8"NF
36	618978	-	1	-	LEVER, lower
	611973	-	-	1	LEVER, lower
37	013058	-	1	-	CAPSCREW, 3/8"NC x 1-1/4"
	035336	-	-	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	-	1	1	LOCKWASHER, 3/8"
	911041	-	-	1	NUT, 3/8"NF

VALVE CONTROL

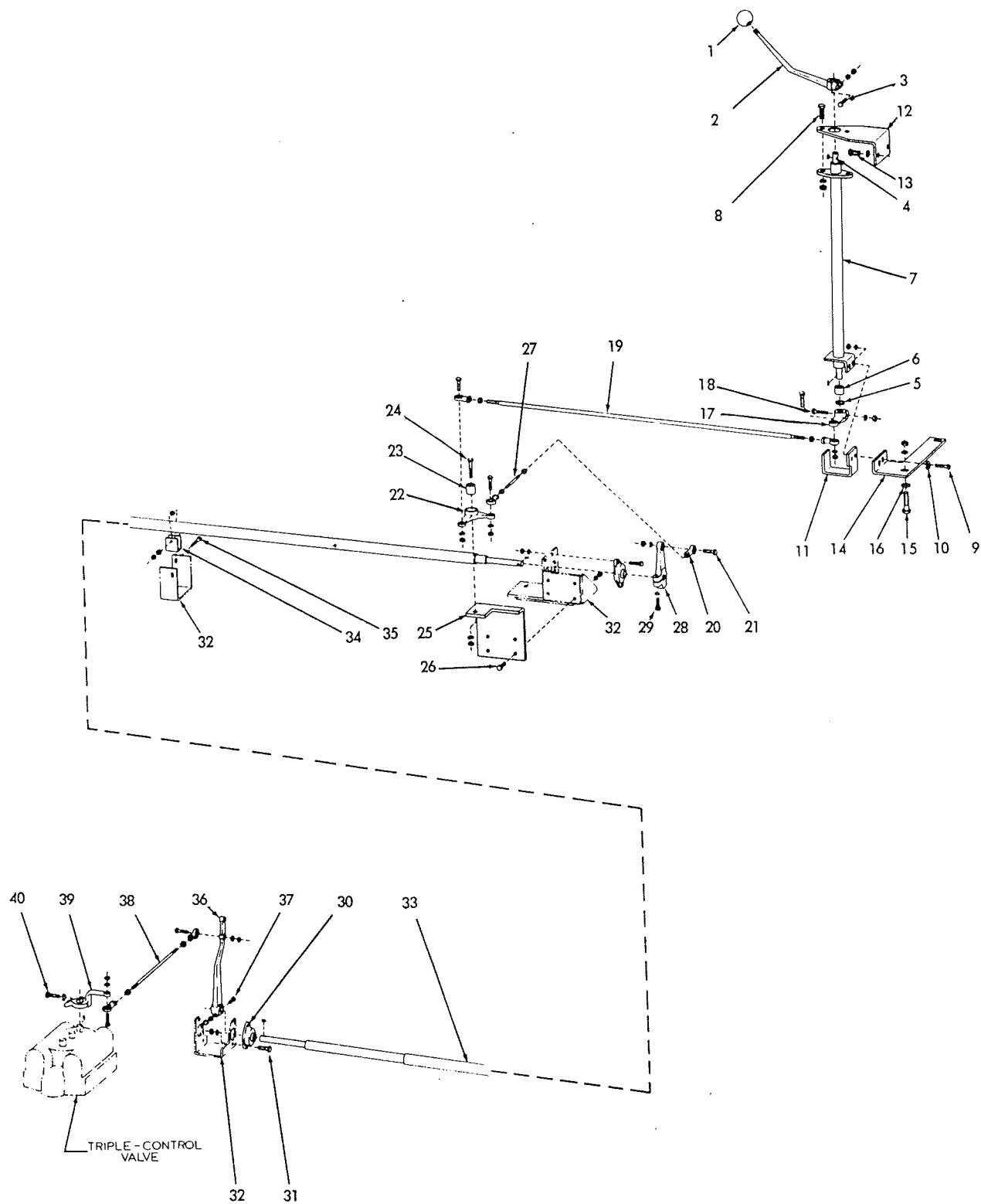
USAGE: Tractors prior to serial No. 12801. Used with triple-control valve and rear piping to provide rear hydraulic outlet for operating auxiliary equipment.

ITEM	PART NO.	QTY.	DESCRIPTION
1	091862	1	KNOB, operating lever
2	035061	1	CAPSCREW, 1/2"NC x 1-1/4"
	904208	1	LOCKWASHER, 1/2"
3	611904	1	LEVER, operating
4	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
5	625544	1	SHAFT, operating lever
	905122	2	KEY, #7 woodruff, 1/8" x 3/4"
6	052662	2	SEAL, dust, shaft bearing
7	208253	2	BEARING, needle, operating lever shaft
8	611909	1	TUBE, operating lever shaft
9	614478	2	CAPSCREW, 1/2"NF x 1-3/8"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
10	203188	2	CAPSCREW, 3/8"NF x 1-1/2"
	044973	2	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
10A	627895	1	STOP, lower lever
11	618888	1	ANGLE, tube supporting, upper
12	618889	1	PLATE, angle clamping
13	036034	2	CAPSCREW, 3/8"NF x 1"
	904206	2	LOCKWASHER, 3/8"
14	625598	1	ANGLE, tube supporting, lower
15	035248	2	CAPSCREW, 5/8"NF x 2-1/4"
	904209	2	LOCKWASHER, 5/8"
	911044	2	NUT, 5/8"NF
	064810	2	WASHER, plain
16	617648	1	LEVER, lower
17	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"
18	619998	1	ROD, connecting, rear
	911041	2	NUT, 3/8"NF
19	617932	6	END, connecting rod
20	203188	6	CAPSCREW, 3/8"NF x 1-1/2"
	904206	6	LOCKWASHER, 3/8"
	911041	6	NUT, 3/8"NF
21	618111	1	BELLCRANK
22	606392	1	BEARING, bellcrank
23	046419	1	CAPSCREW, 3/8"NF x 2"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF

(Continued)

VALVE CONTROL (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
24	619996	1	BRACKET, bellcrank supporting
25	012992	4	CAPSCREW, 3/8"NF x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
26	618998	1	ROD, connecting, intermediate (5-1/2" long)(Used prior to dozer #1328)
	626975	1	ROD, connecting, intermediate (4-3/4" long)(Effective with dozer #1328)
	911041	2	NUT, 3/8"NF
27	617942	1	LEVER, control shaft, rear
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
28	617132	2	BEARING ASSEMBLY, control shaft (Includes FITTING indented below)
	912808	2	FITTING, lubricating, straight, 1/4"NF
29	012992	4	CAPSCREW, 3/8"NF x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
30	-----	-	BRACKET, (See FRONT VALVE AND CONTROL)
31	625549	1	SHAFT, control
32	611957	1	BRACKET, shaft supporting
33	611975	1	CAPSCREW, 1/4"NC x 2"
	911114	1	WASHER, plain, SAE std., 1/4"
	911325	2	NUT, jam, 1/4"NC
34	625542	1	LEVER, control shaft, front
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
35	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
36	625553	1	ROD, connecting, front
	911041	2	NUT, 3/8"NF
37	626217	1	LEVER, valve
	905119	1	KEY, #3 woodruff, 1/8" x 1/2"
38	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"



T-39329

VALVE CONTROL (For rear outlet)(Second type)

VALVE CONTROL

USAGE: Tractors serial No. 12801 and up. Used with triple-control valve and rear piping to provide rear hydraulic outlet for operating auxiliary equipment.

ITEM	PART NO.	QTY.	DESCRIPTION
1	090020	1	KNOB, operating lever
2	646384	1	LEVER, operating
3	046419	1	CAPSCREW, 3/8"NF x 2"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
4	625544	1	SHAFT, operating lever
	905122	2	KEY, #7 woodruff, 1/8" x 3/4"
5	052662	2	SEAL, dust, shaft bearing
6	208253	2	BEARING, needle, operating lever shaft
7	611909	1	TUBE, operating lever shaft
8	070469	2	CAPSCREW, 1/2"NF x 1-1/4"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
9	203188	2	CAPSCREW, 3/8"NF x 1-1/2"
10	044973	2	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
11	627895	1	STOP, lower lever
12	627905	1	ANGLE, tube supporting, upper
13	070467	2	CAPSCREW, 1/2"NF x 1"
	904208	2	LOCKWASHER, 1/2"
14	627904	1	ANGLE, tube supporting, lower
15	035248	2	CAPSCREW, 5/8"NF x 2-1/4"
	904209	2	LOCKWASHER, 5/8"
	911044	2	NUT, 5/8"NF
16	064810	2	WASHER, plain
17	617648	1	LEVER, lower
18	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
19	627116	1	ROD, connecting, rear
	911041	2	NUT, 3/8"NF
20	617932	6	END, connecting rod
21	203188	6	CAPSCREW, 3/8"NF x 1-1/2"
	904206	6	LOCKWASHER, 3/8"
	911041	6	NUT, 3/8"NF
22	618111	1	BELLCRANK
23	606392	1	BEARING, bellcrank
24	046419	1	CAPSCREW, 3/8"NF x 2"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
25	619996	1	BRACKET, bellcrank supporting
26	012992	4	CAPSCREW, 3/8"NF x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF

(Continued)

VALVE CONTROL (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
27	626975	1	ROD, connecting, intermediate
	911041	2	NUT, 3/8"NF
28	617942	1	LEVER, control shaft, rear
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
29	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
30	617132	2	BEARING ASSEMBLY, control shaft (Includes FITTING indented below)
	912808	2	FITTING, lubricating, straight, 1/4"NF
31	012992	4	CAPSCREW, 3/8"NF x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
32	-----	-	BRACKET (See FRONT VALVE AND CONTROL on page 45)
33	635946	1	SHAFT, control
34	635939	1	BRACKET, shaft supporting
35	611975	1	CAPSCREW, 1/4"NC x 2"
	911114	1	WASHER, plain, SAE std., 1/4"
	911325	2	NUT, jam, 1/4"NC
36	625542	1	LEVER, control shaft, front
	905122	1	KEY, #7 woodruff, 1/8" x 3/4"
37	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
38	625553	1	ROD, connecting, front
	911041	2	NUT, 3/8"NF
39	626217	1	LEVER, valve
	905119	1	KEY, #3 woodruff, 1/8" x 1/2"
40	013058	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	LOCKWASHER, 3/8"

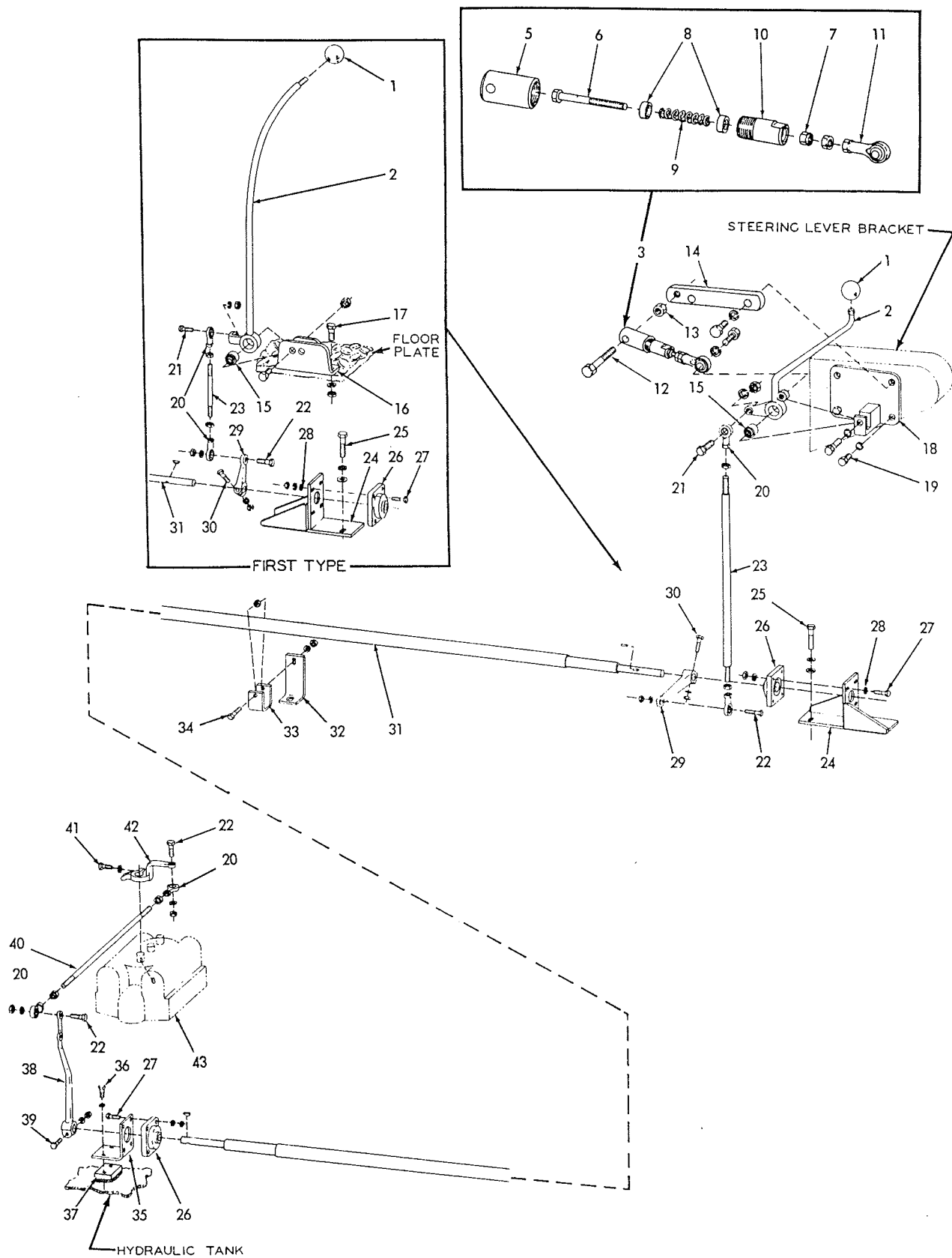
VALVE CONTROL

USAGE: Model HD21A, P tractors. For operating dozer hydraulic tilt thru left section of triple-control valve.

* Tractors prior to serial No. 12801
 ** Tractors serial No. 12801 and up

ITEM	PART NO.	QTY.		DESCRIPTION
1	{ 091862	1	-	KNOB, operating lever (1/2"NC)
	090020	-	1	KNOB, operating lever (1/2"NF)
2	{ 625591	1	-	LEVER, operating
	657228	-	1	□LEVER, operating
3	657223	-	1	□CENTERING ASSEMBLY, operating lever (Consists of items 5 thru 11)
4	013058	-	1	□CAPSCREW, 3/8"NC x 1-1/4"
	904206	-	1	□LOCKWASHER, 3/8"
5	657224	-	1	CAP, centering unit
6	657225	-	1	CAPSCREW, centering unit
7	913528	-	1	NUT, elastic stop, 3/8"NF
	911048	-	1	NUT, jam, 3/8"NF
8	657226	-	2	WASHER, centering unit
9	635331	-	1	SPRING, centering unit
10	657227	-	1	TUBE, centering unit
11	617932	-	1	END, centering unit
12	070403	-	1	□CAPSCREW, centering unit pivot (1/2"NF x 3")
13	038234	-	1	□NUT, high, 1/2"NF
14	657229	-	1	□BAR, mounting, centering unit
	916315	-	2	□CAPSCREW, 1/2"NC x 2-1/4"
	904208	-	2	□LOCKWASHER, 1/2"
15	606392	1	1	BEARING, operating lever
	914339	1	-	CAPSCREW, 3/8"NF x 2-3/4"
	913528	1	-	NUT, elastic stop, 3/8"NF
	045174	-	1	CAPSCREW, 3/8"NF x 2-1/2"
	904206	-	1	LOCKWASHER, 3/8"
16	626499	1	-	BRACKET, operating lever
17	035018	2	-	CAPSCREW, 1/2"NF x 1-1/2"
	904208	2	-	LOCKWASHER, 1/2"
	911043	2	-	NUT, 1/2"NF
18	627919	-	1	BRACKET, operating lever
19	035061	-	2	CAPSCREW, 1/2"NC x 1-1/4"
	904208	-	2	LOCKWASHER, 1/2"
20	617932	4	4	END, connecting rod
21	012992	1	1	CAPSCREW, 3/8"NF x 1-1/4"
22	203188	3	3	CAPSCREW, 3/8"NF x 1-1/2"
	904206	4	4	LOCKWASHER, 3/8"
	911041	3	3	NUT, 3/8"NF
23	{ 618998	1	-	ROD, connecting, rear
	627922	-	1	ROD, connecting, rear
	911041	2	2	NUT, 3/8"NF
24	635945	1	1	BRACKET, control shaft, rear
25	035067	2	2	CAPSCREW, 1/2"NF x 2"
	904208	2	2	LOCKWASHER, 1/2"
	064531	2	2	WASHER, plain

(Continued)



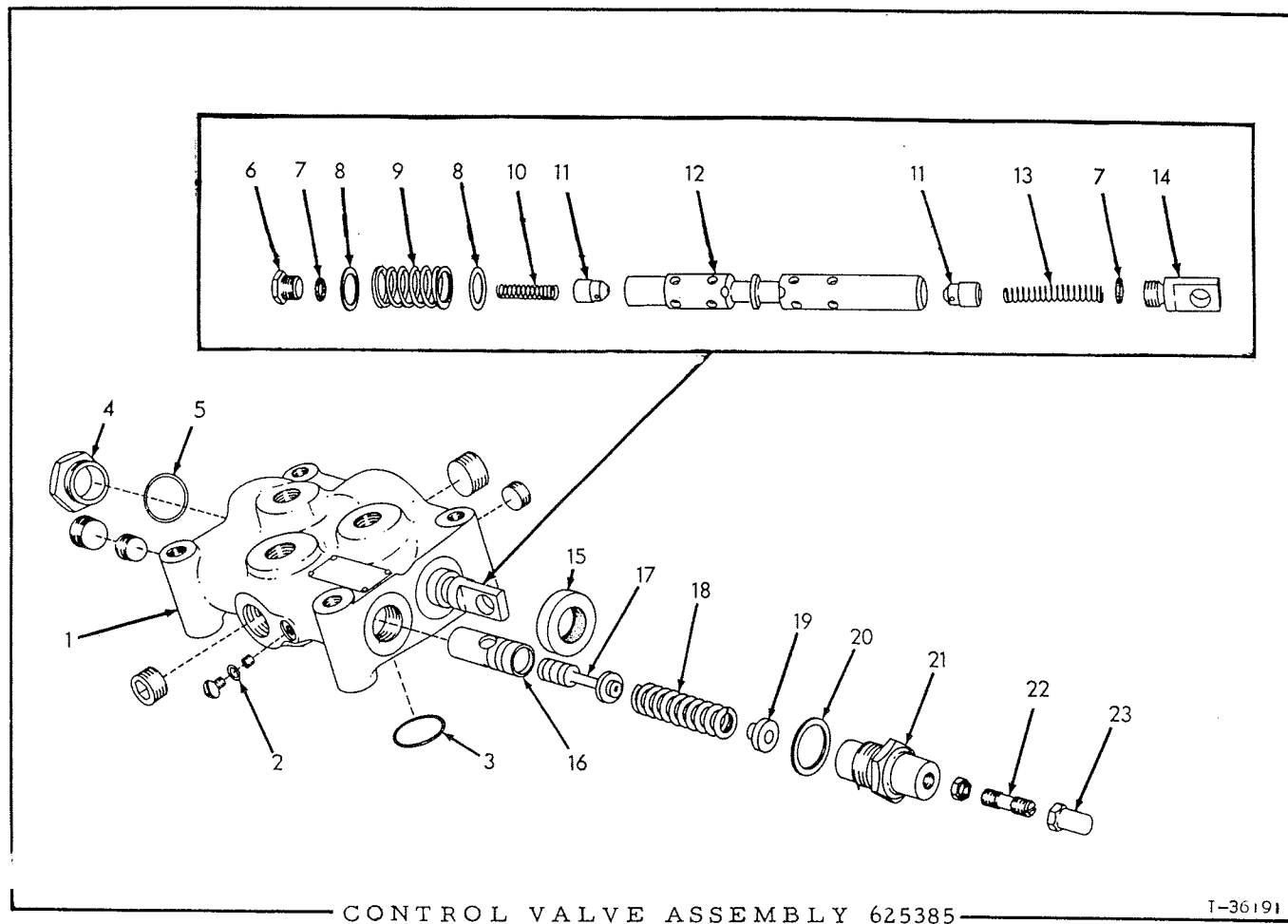
VALVE CONTROL (Auxiliary functions)

T-39320

VALVE CONTROL (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
26	611901	2	2	BEARING ASSEMBLY, control shaft (Includes FITTING indented below)
	912808	2	2	FITTING, lubricating, straight, 1/4"NF
27	012992	8	8	CAPSCREW, 3/8"NF x 1-1/4"
28	044973	4	4	WASHER, plain
	904206	8	8	LOCKWASHER, 3/8"
	911041	8	8	NUT, 3/8"NF
29	625561	1	-	LEVER, control shaft, rear
	626494	-	1	LEVER, control shaft, rear
	905122	1	1	KEY, #7 woodruff, 1/8" x 3/4"
30	035336	1	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	1	LOCKWASHER, 3/8"
	911041	1	1	NUT, 3/8"NF
31	611925	1	-	SHAFT, control
	635941	-	1	SHAFT, control
32	611916	1	1	ANGLE, shaft supporting
33	611957	1	-	BRACKET, shaft supporting
	635939	-	1	BRACKET, shaft supporting
34	611975	1	1	CAPSCREW, 1/4"NC x 2-1/2"
	911114	1	1	WASHER, plain, SAE std., 1/4"
	911325	2	2	NUT, jam, 1/4"NC
35	613260	1	1	BRACKET, control shaft, front
	036034	2	2	CAPSCREW, 3/8"NF x 1" (Early units)
36	035439	2	2	CAPSCREW, 3/8"NC x 1" (Late units)
	904206	2	2	LOCKWASHER, 3/8"
37	619809	1	1	BLOCK, tapped, bracket attachment (Requires welding to install) (Early units only)
38	625542	1	1	LEVER, control shaft, front
	905122	1	1	KEY, #7 woodruff, 1/8" x 3/4"
39	035336	1	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	1	LOCKWASHER, 3/8"
	911041	1	1	NUT, 3/8"NF
40	625553	1	1	ROD, connecting, front
	911041	2	2	NUT, 3/8"NF
41	626217	1	1	LEVER, valve
	905119	1	1	KEY, #3 woodruff, 1/8" x 1/2"
42	013058	1	1	CAPSCREW, 3/8"NC x 1-1/4"
	904206	1	1	LOCKWASHER, 3/8"
43	-----	-	-	VALVE ASSEMBLY (See FRONT VALVE AND CONTROL)
44	657311	-	1	NEUTRAL-RETURN KIT (Consists of items 2 thru 14)(Required when 657249 VALVE is used in place of 649844 VALVE on units equipped with Dozer Hydraulic Tilt. Not illustrated)

□Components of item 44



CONTROL VALVE ASSEMBLY 625385

T-36191

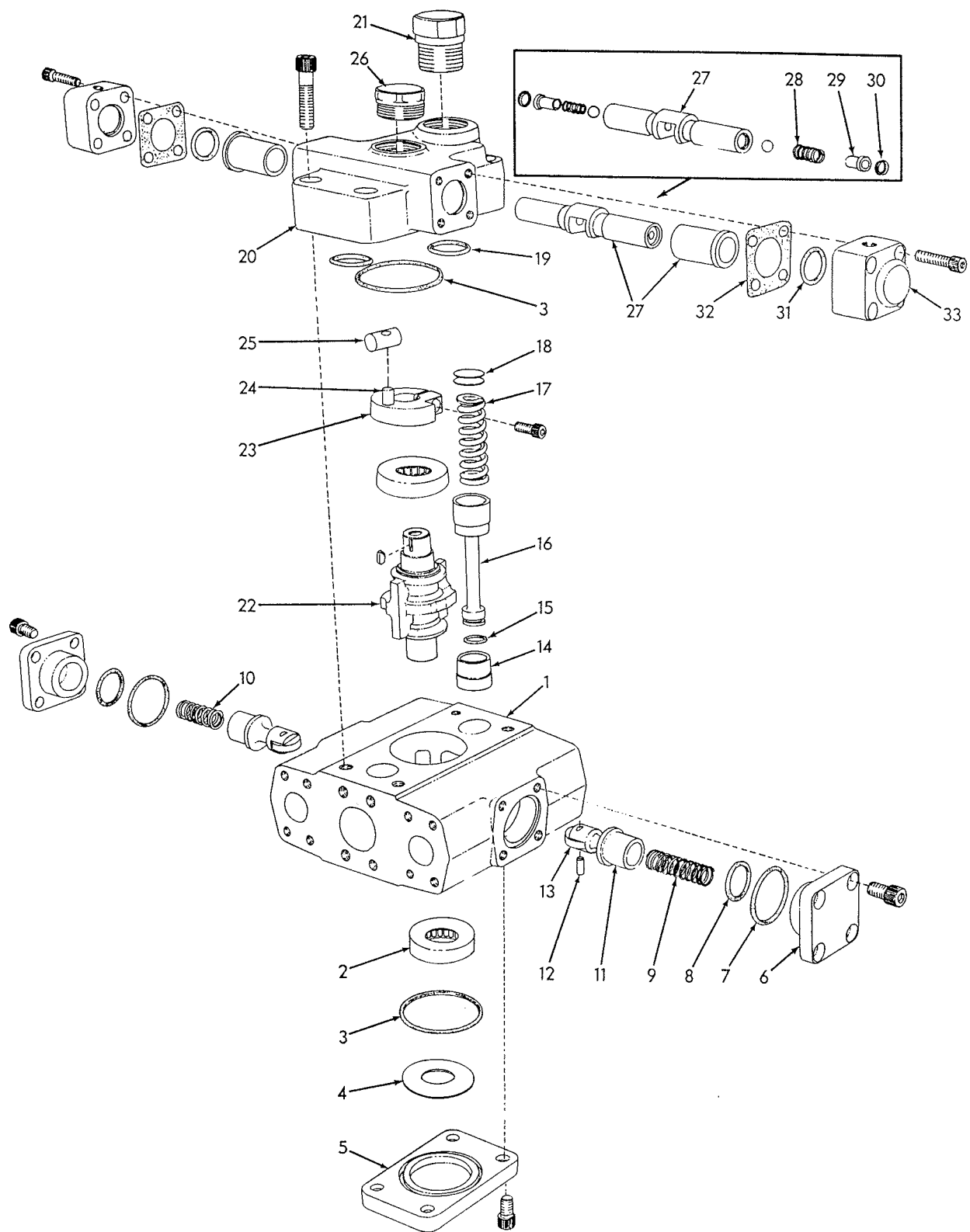
USAGE: For rear-mounted tank. See page 35

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	HOUSING (Not serviced separately)
	908944	2	PLUG, pipe, hex-socket, 1/2"NPT
	909091	2	PLUG, pipe, hex-socket, 3/4"NPT
	909365	1	PLUG, pipe, hex-socket, 1"NPT
	914372	1	SCREW, machine, 5/16"NC x 3/8"
2	3001737	1	GASKET, screw (fibre)
3	924192	1	O-RING, valve housing
4	3002763	1	CAP, plunger
5	3001731	1	GASKET, plunger cap
6	3028743	1	PLUG, operating plunger
7	3002746	2	O-RING, operating plunger
8	3002745	2	WASHER, plunger return spring
9	3002747	1	SPRING, return, operating plunger
10	3002749	1	SPRING, plunger front check valve
11	3002748	2	PLUNGER, check valve

(Continued)

CONTROL VALVE ASSEMBLY 625385 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
12	-----	1	PLUNGER, operating (Not serviced separately)
13	3002750	1	SPRING, plunger rear check valve
14	3002751	1	EYE, operating plunger
15	3016485	1	SEAL, oil, operating plunger
16	3002752	1	SEAT, relief valve
	905564	1	SETSCREW, hex-socket, cup-pt., 5/16"NC x 3/8"
17	3002753	1	PLUNGER, relief valve
18	3023924	1	SPRING, relief valve
19	3002756	1	GUIDE, relief valve spring
20	3002755	1	GASKET, relief valve cap
21	3002759	1	CAP, relief valve
22	921303	1	SETSCREW, slotted, oval-pt., 3/8"NF
	911048	1	NUT, jam, 3/8"NF
23	3002757	1	NUT, acorn, relief valve



CONTROL VALVE ASSEMBLY 606301

T-14092

CONTROL VALVE ASSEMBLY 606301

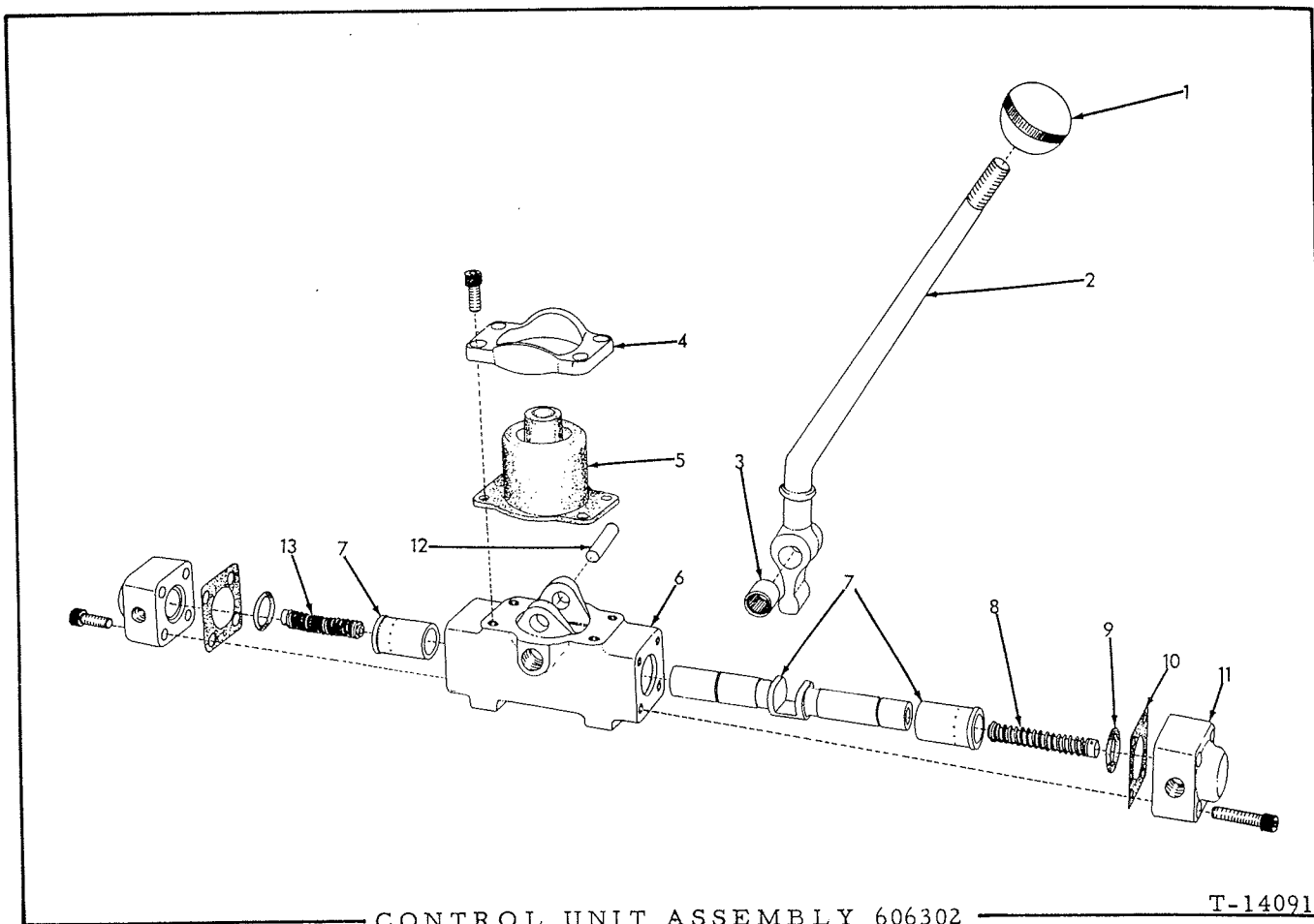
USAGE: See page 39

ITEM	PART NO.	QTY.	DESCRIPTION
1	607440	1	HOUSING
2	617868	2	BEARING, rotor
3	924093	2	O-RING, top and bottom heads
4	618301	1	SHIM, bottom head (.001" thick)
	618302	1	SHIM, bottom head (.002" thick)
	618303	1	SHIM, bottom head (.003" thick)
Use as required			
5	607442	1	HEAD, bottom (Used prior to October 1959)
	619218	1	HEAD, bottom (Effective October 1959)
	918314	4	CAPSCREW, hex-socket-hd., 7/16"NC x 3/4"
6	607453	2	CAP, housing
	912266	8	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
7	924112	2	O-RING, housing cap, outer
8	923648	2	O-RING, housing cap, inner
9	619261	1	SPRING, raise valve (light)
10	619260	1	SPRING, drop valve (heavy)
11	607429	2	VALVE
12	607432	2	PIN, valve roller
13	607430	2	ROLLER, valve
14	619204	1	SEAT, pressure relief valve
15	923376	1	O-RING, pressure relief valve
16	607451	1	VALVE, pressure relief
17	607423	1	SPRING, pressure relief valve
18	625668	4	SHIM, pressure relief valve spring (Use as required)
19	924111	2	O-RING, top head
20	607436	1	HEAD, top
	918315	4	CAPSCREW, hex-socket-hd., 7/16"NC x 1-3/4"
21	625667	1	CAP, pressure relief valve
22	619250	1	ROTOR
	905119	1	KEY, #3 woodruff, 1/8" x 1/2"
23	607418	1	CRANK ASSEMBLY (Includes item 24)
	912264	1	CAPSCREW, hex-socket-hd., 5/16"NC x 1"
24	-----	1	PIN, crank

(Continued)

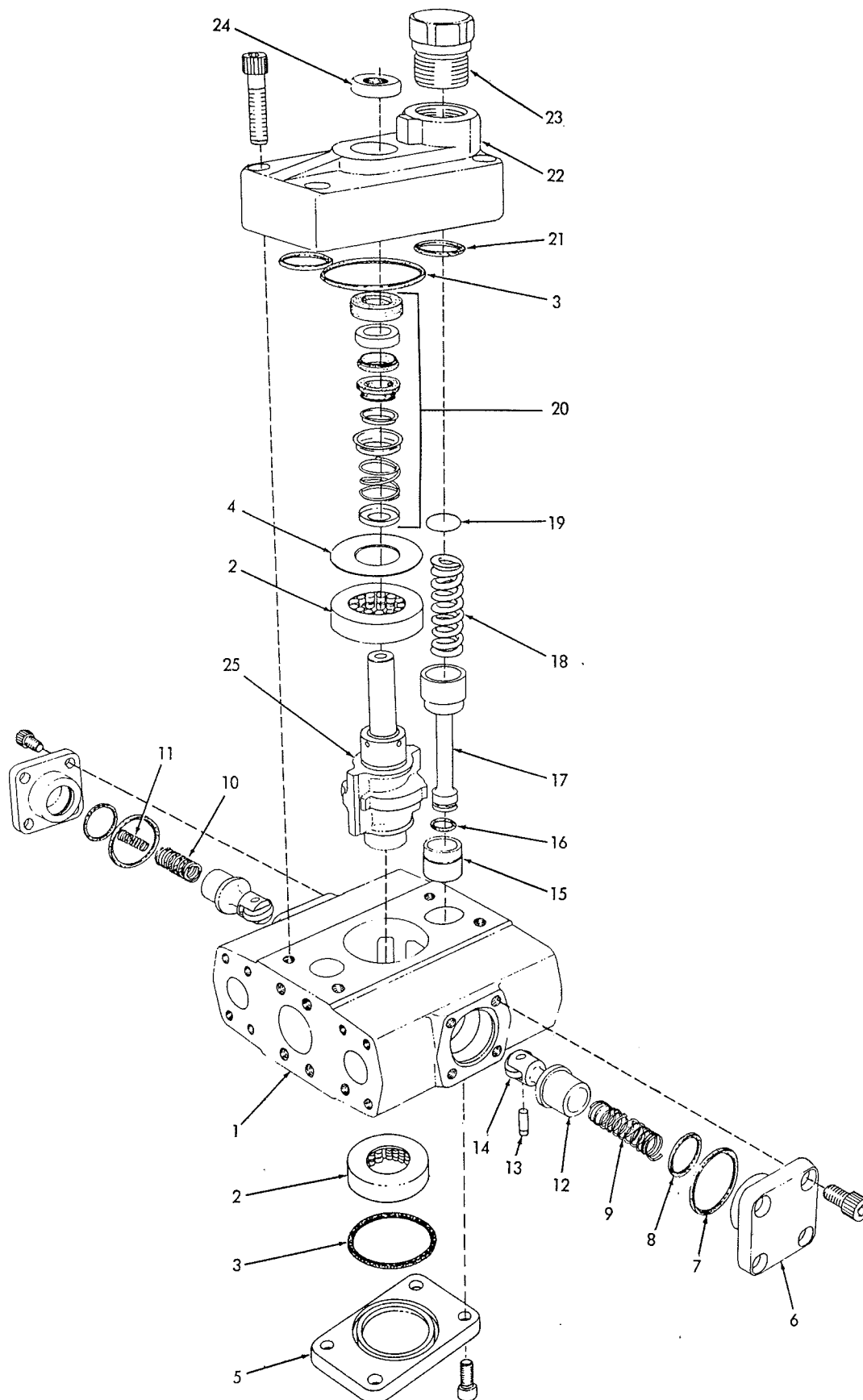
VALVE ASSEMBLY 606301 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
25	607450	1	PIN, swivel
26	607443	1	CAP, top head
27	607420	1	PISTON ASSEMBLY, operating (1 piston and 2 matched cylinders. Serviced only as a unit)
	915905	2	BALL, steel, 3/8" diam.
28	607424	2	SPRING, operating piston
29	607445	2	RETAINER, operating piston spring
30	607454	2	RING, snap, operating piston
31	924922	2	O-RING, top head cap
32	607409	2	GASKET, top head cap
33	607407	2	CAP, top head
	918310	8	CAPSCREW, hex-socket-hd., 5/16"NC x 1-1/4"



USAGE: See page 39

ITEM	PART NO.	QTY.	DESCRIPTION
1	091862	1	KNOB, operating lever
2	607400	1	LEVER, operating
3	074699	1	BEARING, needle
4	607403 912264	1 4	RETAINER, operating lever boot CAPSCREW, hex-socket-hd., 5/16"NC x 1"
5	607401	1	BOOT, operating lever
6	607405	1	HOUSING
7	607410	1	PISTON ASSEMBLY (1 piston and 2 matched cylinders. Serviced only as a unit)
8	607408	1	STEM ASSEMBLY, piston equalizing, rear (1 stem, 1 spring, 1 nut, 1 pin and 1 washer. Serviced only as a unit)
9	924922	2	O-RING, end cap
10	607409	2	GASKET, end cap
11	607407 918310	2 8	CAP, end CAPSCREW, hex-socket-hd., 5/16"NC x 1-1/4"
12	607402	1	PIN, operating lever
13	607404	1	STEM ASSEMBLY, piston equalizing, front (1 stem, 1 spring, 1 nut, 1 pin and 1 washer. Serviced only as a unit)



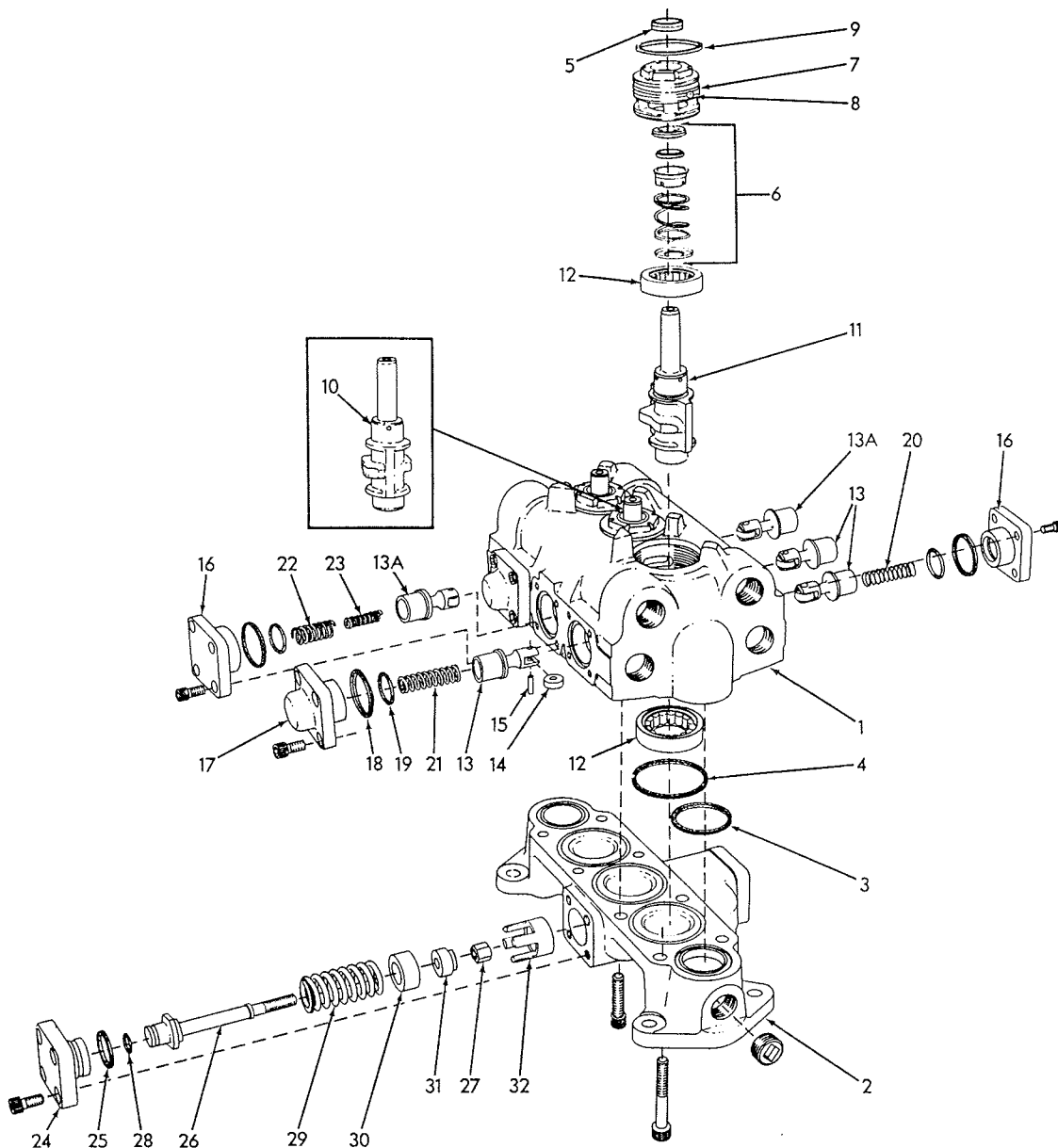
CONTROL VALVE ASSEMBLY 609553

T-14093

CONTROL VALVE ASSEMBLY 609553

USAGE: See pages 41, 45 and 49

ITEM	PART NO.	QTY.	DESCRIPTION
1	607440	1	HOUSING
2	617868	2	BEARING, rotor
3	924093	2	O-RING, top and bottom heads
4	618301	1	SHIM, rotor bearing (.001" thick)
	618302	1	SHIM, rotor bearing (.002" thick)
	618303	1	SHIM, rotor bearing (.003" thick)
} Use as required			
5	607442	1	HEAD, bottom (Used prior to valve #4070)
	619218	1	HEAD, bottom (Effective with valve #4070)
	918314	4	CAPSCREW, hex-socket-hd., 7/16"NC x 3/4"
6	607453	2	CAP, housing
	912266	8	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
7	924112	2	O-RING, housing cap, outer
8	923648	2	O-RING, housing cap, inner
9	619261	1	SPRING, raise valve
10	619260	1	SPRING, drop valve, outer
11	619262	1	SPRING, drop valve, inner (Effective with valve #3202)
12	607429	2	VALVE
13	607432	2	PIN, valve roller
14	607430	2	ROLLER, valve
15	619204	1	SEAT, pressure relief valve
16	923376	1	O-RING, pressure relief valve
17	607451	1	VALVE, pressure relief
18	607423	1	SPRING, pressure relief valve
19	625668	4	SHIM, pressure relief valve spring (Use as required)
20	618321	1	SEAL ASSEMBLY, rotor stem (Serviced only as a unit)
21	924111	2	O-RING, top head
22	619216	1	HEAD, top (If for valves prior to #4070 also order item 2)
	918315	4	CAPSCREW, hex-socket-hd., 7/16"NC x 1-3/4"
23	625667	1	CAP, pressure relief valve
24	618662	1	SEAL, oil, rotor stem
25	609900	1	ROTOR



CONTROL VALVE ASSEMBLY 626202

T-41815

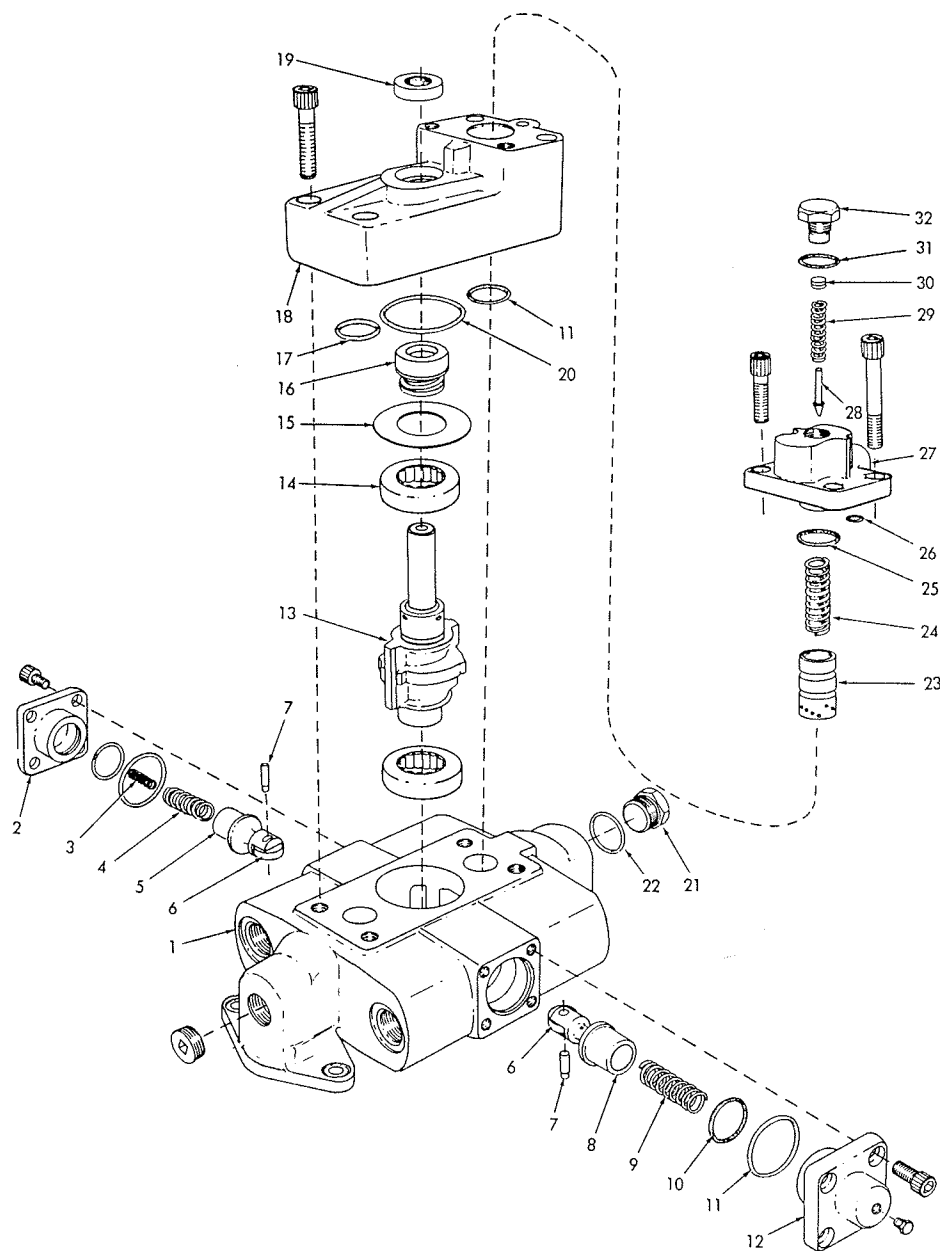
USAGE: See page 45

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	HOUSING, valve (Order HOUSING 649819, 2 CONNECTORS 921228, 2 CONNECTORS 922997 and 4 PLUGS 921216)
2	626208	1	ADAPTER, valve housing
	904224	2	PLUG, pipe, ctsk-hd., 3/4"NPT
	918315	4	CAPSCREW, hex-socket-hd., 7/16"NC x 1-3/4"
	917975	4	CAPSCREW, hex-socket-hd., 7/16"NC x 2-3/4"
3	924114	2	O-RING, housing adapter (2" O. D.)
4	924093	3	O-RING, housing adapter (2-3/4" O. D.)
5	618662	3	SEAL, rotor stem

(Continued)

CONTROL VALVE ASSEMBLY 626202 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
6	618321	3	SEAL ASSEMBLY, rotor stem (Serviced only as a unit)
7	626214	3	RETAINER ASSEMBLY, rotor stem seal (Includes item 8)
8	626215	3	PLUG, locking (Nylon)
9	924274	3	O-RING, seal retainer (2-5/8" O.D.)
10	609900	1	ROTOR, center
11	626207	2	ROTOR, left and right
12	617868	6	BEARING, rotor
13	607429	4	VALVE
13A	635330	2	VALVE (Has bleed hole)
14	607430	6	ROLLER, valve
15	607432	6	PIN, valve roller
16	607453 912266	4 16	CAP, housing CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
17	626206 912266	2 8	CAP, housing CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
18	924112	6	O-RING, housing cap (1-7/8" O.D.)
19	923648	6	O-RING, housing cap (1-5/16" O.D.)
20	619261	3	SPRING, raise valve
21	635331	2	SPRING, drop valve
22	619260	1	SPRING, drop valve, outer
23	619262	1	SPRING, drop valve, inner
24	626203 912266	2 8	CAP, adapter CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
25	619793	2	RING, sealing, adapter cap (1-3/8" O.D.)
26	626205	1	STEM, relief valve
27	045010	1	NUT, high, 7/16"NF
28	923376	1	O-RING, relief valve stem (3/4" O.D.)
29	626204	1	SPRING, relief valve
30	626211	1	SEAT, relief valve
31	626213	1	HEAD, relief valve stem
32	626210	1	GUIDE, relief valve stem head



T-72060

CONTROL VALVE ASSEMBLY 668258

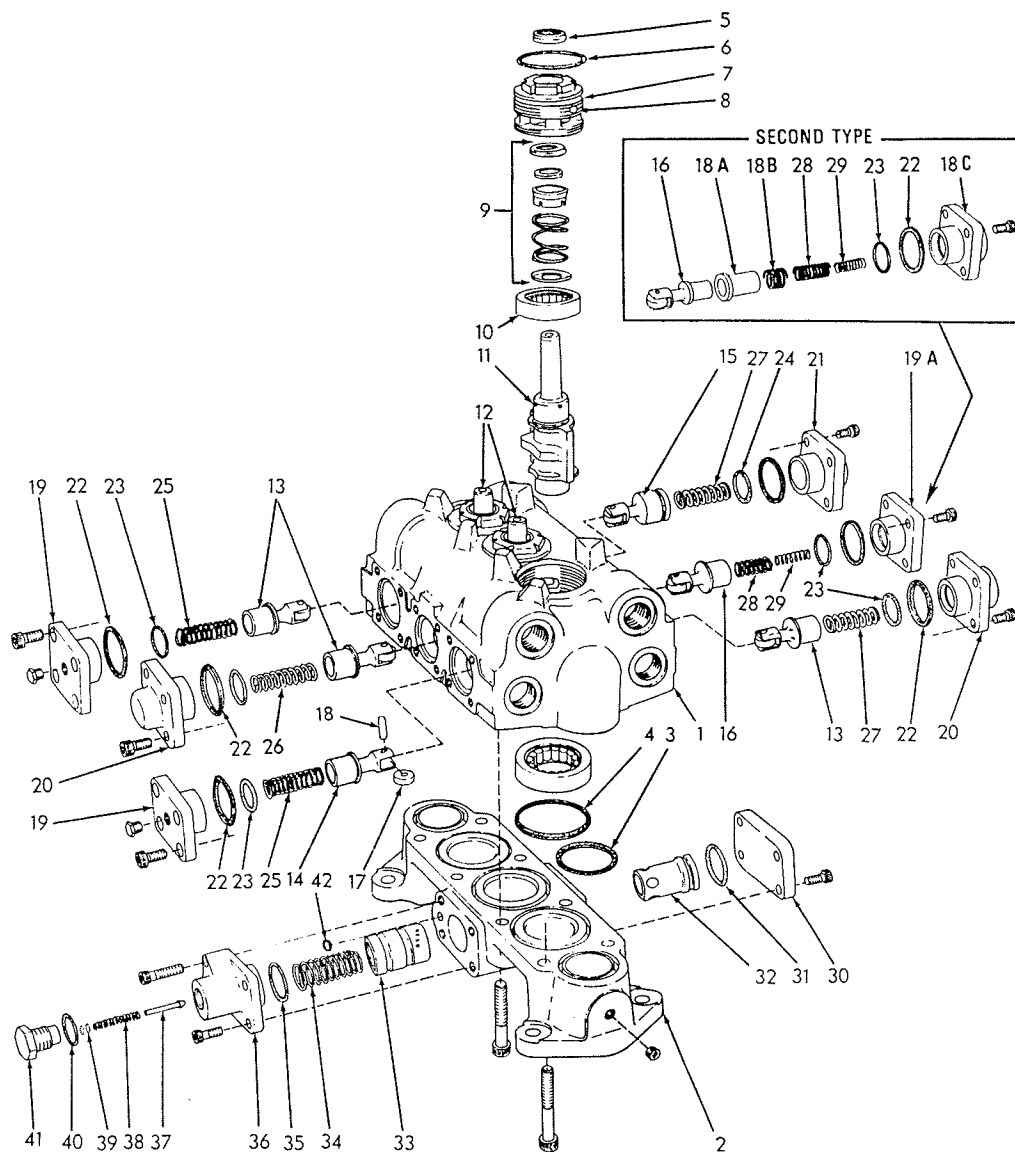
USAGE: See page 45

ITEM	PART NO.	QTY.	DESCRIPTION
1	668256	1	HOUSING
	901666	1	PLUG, pipe, ctsk-hd., 1"NPT
2	607453	1	CAP, drop valve
	912266	4	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
3	619262	1	SPRING, drop valve, inner
4	619260	1	SPRING, drop valve, outer

(Continued)

CONTROL VALVE ASSEMBLY 668258 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	649296	1	VALVE, drop
6	607430	2	ROLLER, valve
7	607432	2	PIN, valve roller
8	637378	1	VALVE, raise
9	637380	1	SPRING, raise valve
10	923648	2	O-RING, housing cap
11	925648	3	O-RING, housing cap
12	667205	1	CAP, raise valve
	912266	4	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
	919134	1	PLUG, pipe, hex-hd., 1/8"NPT
13	637377	1	ROTOR
14	617868	2	BEARING, rotor
15	618301	1	SHIM, rotor bearing (.001" thick)
	618302	1	SHIM, rotor bearing (.002" thick)
	618303	1	SHIM, rotor bearing (.003" thick)
			} Use as required
16	618321	1	SEAL ASSY., rotor stem (Serviced only as a unit)
17	925646	1	O-RING, head
18	647851	1	HEAD
	918315	2	CAPSCREW, hex-socket-hd., 7/16"NC x 1-3/4"
19	618662	1	SEAL, oil, rotor stem
20	925495	1	O-RING, head
21	921216	1	PLUG, pressure check (Includes item 22)
22	921214	1	O-RING, pressure check plug
23	627957	1	VALVE, relief
24	627953	1	SPRING, relief valve
25	925645	1	O-RING, relief valve cap (large)
26	925643	1	O-RING, relief valve cap (small)
27	647932	1	CAP, relief valve
	918225	2	CAPSCREW, hex-socket-hd., 7/16"NC x 1-1/4"
	918789	2	CAPSCREW, hex-socket-hd., 7/16"NC x 4"
28	627951	1	VALVE, pilot relief
29	627952	1	SPRING, pilot relief valve
30	627948	4	SHIM, pilot relief valve spring (.020". Use as required)
	627978	1	SHIM, pilot relief valve spring (.062". Use as required)
31	925644	1	O-RING, pilot relief valve cap
32	627958	1	CAP, pilot relief valve



T-71338

CONTROL VALVE PARTS

- * 649844 VALVE ASSEMBLY (Petroleum fluid)
- ** 657249 VALVE ASSEMBLY (Petroleum fluid)
- ** 668259 VALVE ASSEMBLY (Petroleum fluid)
- *** 650786 VALVE ASSEMBLY (Phosphate-ester fluid)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	-----	1	-	-	HOUSING (For 1"NPT connectors)(Early units. Order HOUSING 649819, 2 CONNECTORS 922997, 2 CONNECTORS 921228 and 4 PLUGS 921216)
	649819	1	1	1	HOUSING (For 1-5/16" straight thread connectors)(Late units)

(Continued)

CONTROL VALVE PARTS (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
2	668257	1	1	1	ADAPTER, valve housing
	907070	2	2	2	PLUG, pipe, ctsk-hd., 1/4"NPT (Early units)
	901666	-	2	2	PLUG, pipe, ctsk-hd., 1"NPT (Late units)
	929709	4	4	4	CAPSCREW, hex-socket-hd., 7/16"NC x 2-1/2"
	929710	4	4	4	CAPSCREW, hex-socket-hd., 7/16"NC x 2-3/4"
3	{ 925494	2	2	-	O-RING, housing adapter (2"O.D.)
	{ 923621	-	-	2	O-RING, housing adapter (2"O.D.)
4	{ 925495	3	3	-	O-RING, housing adapter (2-3/4"O.D.)
	{ 923965	-	-	3	O-RING, housing adapter (2-3/4"O.D.)
5	{ 618662	3	3	-	SEAL, rotor stem
	{ 650794	-	-	3	SEAL, rotor stem
6	{ 925649	3	3	-	O-RING, seal retainer
	{ 924263	-	-	3	O-RING, seal retainer
7	626214	3	3	3	RETAINER ASSY., rotor stem seal (Includes item 8)
8	626215	3	3	3	PLUG, locking (nylon)
9	{ 618321	3	3	-	SEAL ASSY., rotor stem (Serviced only as a unit)
	{ 650795	-	-	3	SEAL ASSY., rotor stem (Serviced only as a unit)
10	617868	6	6	6	BEARING, rotor
11	{ 637377	1	-	-	ROTOR, left section
	{ 657247	-	1	1	ROTOR, left section
12	{ 637377	2	-	-	ROTOR, center and right sections
	{ 657244	-	2	2	ROTOR, center and right sections
13	637378	3	3	3	VALVE
14	{ 649296	1	-	-	VALVE
	{ 637378	-	1	1	VALVE
15	{ 637378	1	-	-	VALVE
	{ 657245	-	1	1	VALVE
16	{ 649296	1	-	-	VALVE
	{ 657246	-	1	1	VALVE (1-1/16" diam.)(Early units)
	{ 666612	-	1	1	VALVE (3/4" diam.)(Late units)
17	607430	6	6	6	ROLLER, valve
18	607432	6	6	6	PIN, valve roller
18A	666610	-	1	1	SLEEVE, valve
18B	666609	-	1	1	SPRING, valve sleeve
18C	666611	-	1	1	CAP, housing
	912666	-	4	4	CAPSCREW, 3/8"NC x 3/4"

Late units

(Continued)

CONTROL VALVE PARTS (Continued)

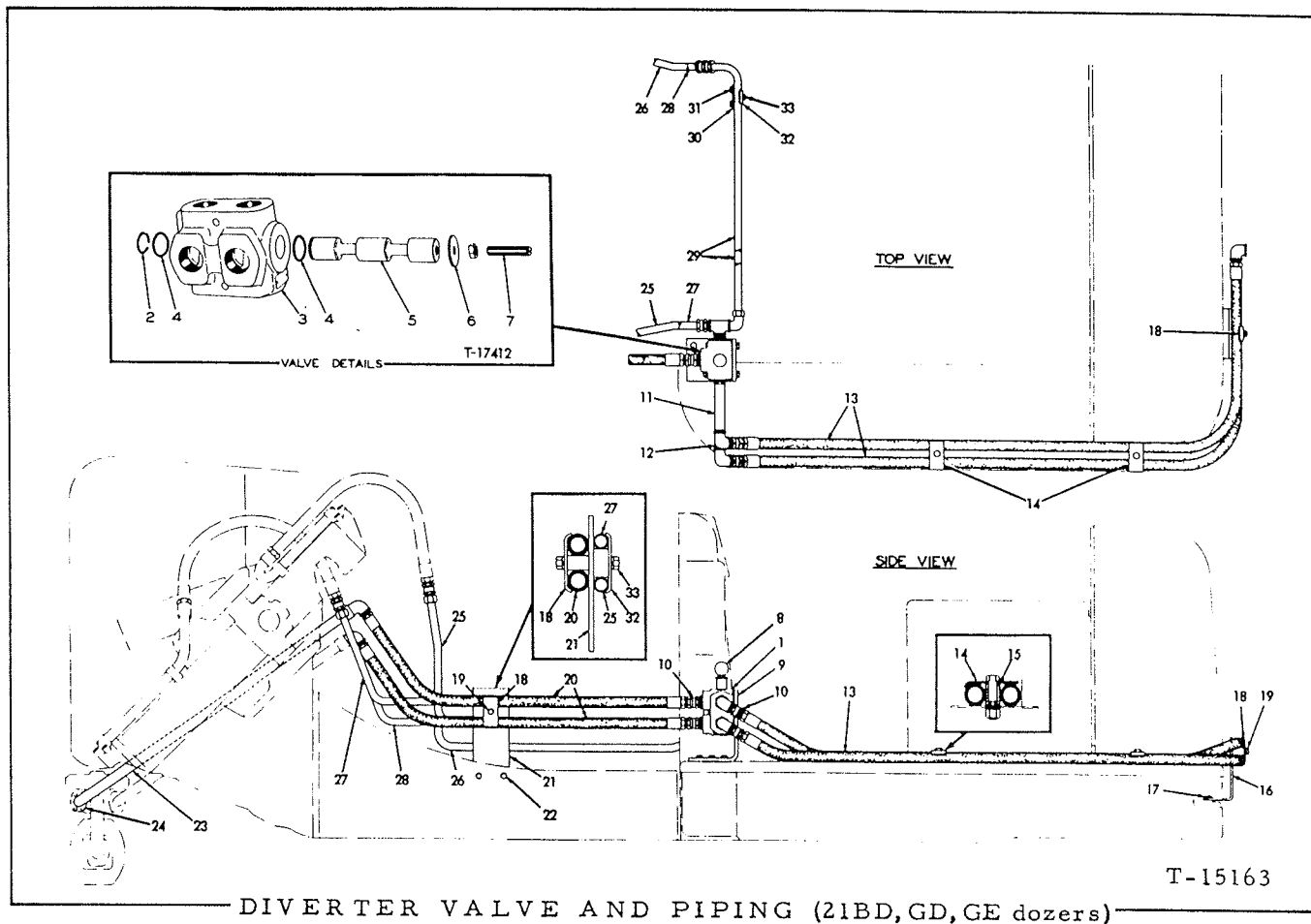
ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
19	667204	2	2	2	CAP, housing
	912266	8	8	8	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
	919134	2	2	2	PLUG, pipe, hex-hd., 1/8"NPT
19A	607453	1	1	1	CAP, housing (Early units. See item 18C)
	912266	4	4	4	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
20	626206	2	2	2	CAP, housing
	912266	8	8	8	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
21	607453	1	-	-	CAP, housing
	657248	-	1	1	CAP, housing
22	925648	6	6	-	O-RING, housing caps (1-7/8"O.D.)
	924262	-	-	6	O-RING, housing caps (1-7/8"O.D.)
23	923648	5	5	-	O-RING, housing caps (1-5/16"O.D.)
	924260	-	-	5	O-RING, housing caps (1-5/16"O.D.)
24	923648	1	-	-	O-RING, housing cap (1-5/16"O.D.)
	923575	-	1	-	O-RING, housing cap (1-1/4"O.D.)
	923616	-	-	1	O-RING, housing cap (1-1/4"O.D.)
25	619261	2	2	2	SPRING, outer front valves
26	637380	1	1	1	SPRING, center front valve
27	635331	2	2	2	SPRING, outer rear valves
28	619260	1	1	1	SPRING, center rear valve (large)
29	619262	1	1	1	SPRING, center rear valve (small)
30	627946	1	1	1	COVER, adapter (rear)
	912266	4	4	4	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
31	925647	1	1	-	O-RING, relief valve seat
	923619	-	-	1	O-RING, relief valve seat
32	627955	1	1	1	SEAT, relief valve
33	627957	1	1	1	VALVE, relief
34	627953	1	1	1	SPRING, relief valve
35	925645	1	1	-	O-RING, relief valve cap (large)
	923617	-	-	1	O-RING, relief valve cap (large)
36	627956	1	1	1	CAP, adapter (front)
	912266	2	2	2	CAPSCREW, hex-socket-hd., 3/8"NC x 3/4"
	912268	2	2	2	CAPSCREW, hex-socket-hd., 3/8"NC x 1-1/2"
37	627951	1	1	1	VALVE, pilot relief
38	627952	1	1	1	SPRING, pilot relief valve
39	627948	4	4	4	SHIM, pilot relief valve spring (.020". Use as req'd)
	627978	1	1	1	SHIM, pilot relief valve spring (.062". Use as req'd)
40	925644	1	1	-	O-RING, relief valve cap
	923616	-	-	1	O-RING, relief valve cap
41	627958	1	1	1	CAP, relief valve
42	925643	1	1	-	O-RING, relief valve cap (small)
	923610	-	-	1	O-RING, relief valve cap (small)

DIVERTER VALVE AND PIPING

USAGE: Tractors equipped with Model 21BD, GD, GE dozers. Provides rear hydraulic outlet for operating auxiliary equipment with single control valve.

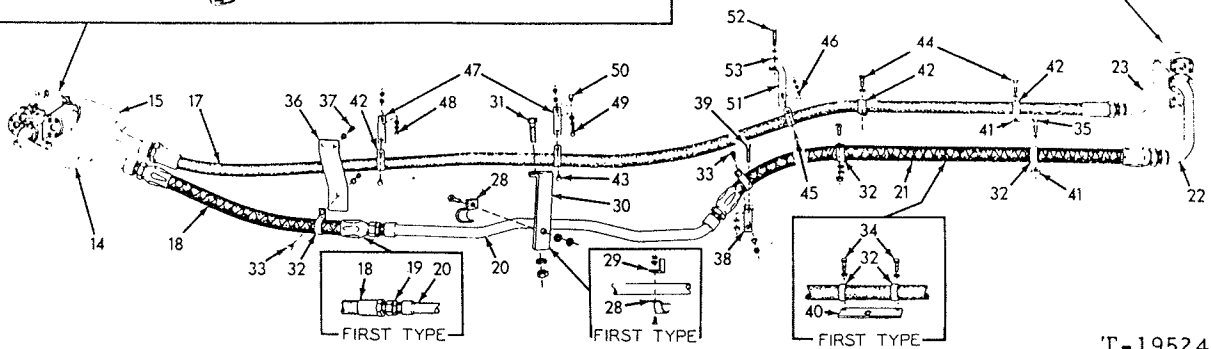
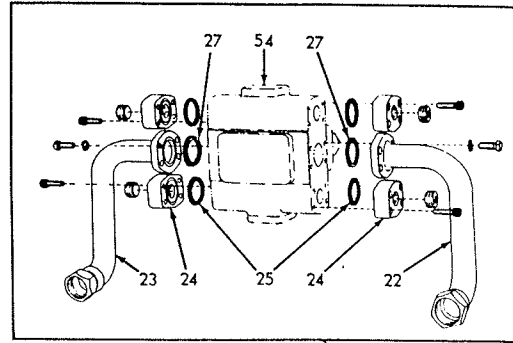
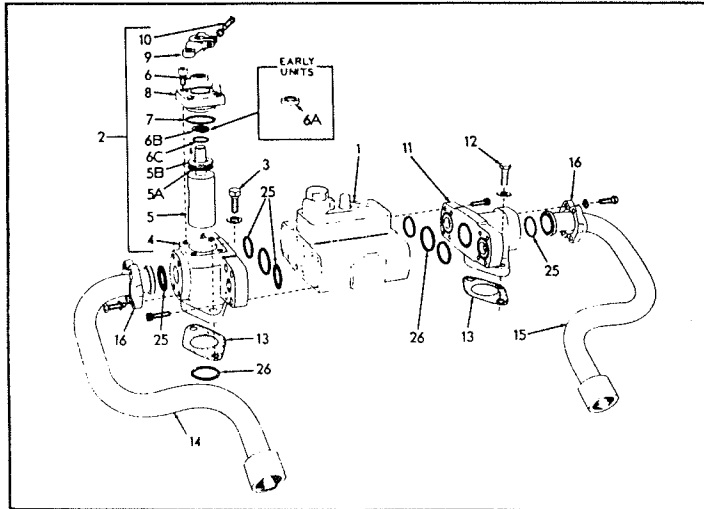
ITEM	PART NO.	QTY.	DESCRIPTION
1	613632	1	VALVE ASSEMBLY (Consists of items 2 thru 7)
	918553	2	CAPSCREW, 7/16"NF x 4-1/2"
	904207	2	LOCKWASHER, 7/16"
	911042	2	NUT, 7/16"NF
2	3007239	1	RING, snap, plunger retaining
3	615627	1	HOUSING, valve
4	923813	2	O-RING, valve plunger
5	615628	1	PLUNGER, valve
6	914906	1	WASHER, plunger retaining
7	615630	1	SCREW, valve plunger
	913830	1	NUT, jam, 1/2"NF
8	090020	1	KNOB, operating
9	613645	1	BRACKET, valve mounting
	911978	3	CAPSCREW, 1/2"NF x 1-1/2"
	904208	3	LOCKWASHER, 1/2"
	911043	3	NUT, 1/2"NF
10	606535	4	UNION, hose connecting
	901830	2	BUSHING, pipe reducing, 1-1/4"NPT to 1"NPT
	901681	2	ELBOW, pipe, 90°, 1"NPT
11	613448	1	NIPPLE, rear hose, upper (1"NPT x 8-5/16" long)
	901830	1	BUSHING, pipe reducing, 1-1/4"NPT to 1"NPT
12	613447	1	NIPPLE, rear hose, lower (1"NPT x 10-15/16" long)
	901830	1	BUSHING, pipe reducing, 1-1/4"NPT to 1"NPT
13	613446	2	HOSE, rear (See HOSE PARTS)
	901681	2	ELBOW, pipe, 90°, 1"NPT
14	613449	2	CLAMP, rear hose
	912193	2	CAPSCREW, 1/2"NF x 2-1/2"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
15	613231	2	BLOCK, clamp spacing
16	613451	1	BRACKET, rear hose supporting
17	070469	2	CAPSCREW, 1/2"NF x 1-1/4"
	904208	2	LOCKWASHER, 1/2"
18	613230	2	CLAMP, hose
19	070469	2	CAPSCREW, 1/2"NF x 1-1/4"
	904208	2	LOCKWASHER, 1/2"
20	613445	2	HOSE, front (See HOSE PARTS)
	901726	2	ELBOW, street, 90°, 1"NPT

(Continued)



DIVER TER VALVE AND PIPING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
21	{ 613643	1	BRACKET, tube supporting, left side
	613644	1	BRACKET, tube supporting, right side (Not illustrated)
22	070469	4	CAPSCREW, 1/2"NF x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
	911043	4	NUT, 1/2"NF
23	613854	1	PIPE, control valve to hose (Replaces standard PIPE 609241)
24	-----	-	FLANGE, pipe attaching (See CYLINDERS AND PIPING)
25	613639	1	TUBE, lower left
	914016	1	CONNECTOR, Ermeto, 1" tube, 1"NPT male (Includes nut and sleeve)
	914018	1	CONNECTOR, Ermeto, 1" tube, 1"NPT female (Includes nut and sleeve)
26	613640	1	TUBE, lower right
	914018	1	CONNECTOR, Ermeto, 1" tube, 1"NPT female (Includes nut and sleeve)
27	613637	1	TUBE, upper left
	914016	1	CONNECTOR, Ermeto, 1" tube, 1"NPT male (Includes nut and sleeve)
	914018	1	CONNECTOR, Ermeto, 1" tube, 1"NPT female (Includes nut and sleeve)
28	613638	1	TUBE, upper right
	914018	1	CONNECTOR, Ermeto, 1" tube, 1"NPT female (Includes nut and sleeve)
29	{ 613856	1	TUBE, lower rear
	615538	1	TUBE, upper rear
	914020	2	UNION, Ermeto, 1" tube (Includes nuts and sleeves)
	914019	2	ELBOW, Ermeto, 90°, 1" tube, 1"NPT male (Includes nut and sleeve)
	901707	2	TEE, pipe, 1"NPT
	901520	2	NIPPLE, pipe, 1"NPT x 1-1/2"
	901830	2	BUSHING, pipe reducing, 1-1/4"NPT to 1"NPT
30	613858	1	BRACKET, rear tube supporting
31	070469	2	CAPSCREW, 1/2"NF x 1-1/4"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
32	613855	3	CLAMP, tube
33	070469	3	CAPSCREW, 1/2"NF x 1-1/4"
	904208	3	LOCKWASHER, 1/2"
34	912768	2	PLUG, pipe, 1"NPT (For plugging valve to cylinder pipes on right hand side)(Not illustrated)



T-19524

DIVERTER VALVE AND PIPING (21HS, HA dozer)

DIVERTER VALVE AND PIPING

USAGE: Tractors equipped with Model 21HS, HA dozers. Provides rear hydraulic outlet for operating auxiliary equipment thru separate rear-mounted control valve. See page 49.

* Used prior to May 1959
 ** Used May 1959 thru January 1961
 *** Effective February 1961 (Tractors with power brakes)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	-----	-	-	-	VALVE ASSEMBLY, front (See FRONT VALVE AND CONTROLS)
2	{ 618700	1	1	-	VALVE ASSEMBLY, diverting (Consists of items 4 thru 10) (First type. For units with flexible cable-type valve control)
	{ 619819	-	1	1	VALVE ASSEMBLY, diverting (Consists of items 4 thru 10) (Second type. For units with rod-type valve control)
3	917733	8	8	8	CAPSCREW, hex-socket-hd., 3/8"NC x 1-1/4"
	614478	2	2	2	CAPSCREW, 1/2"NF x 1-3/8"
	618724	2	2	2	WASHER, copper
4	617117	1	1	1	MANIFOLD, left side (Replaces standard manifold)
5	{ -----	1	-	-	ROTOR (Used prior to October 1958. Order ROTOR 618770 with items 5A, 5B, 6B and 8)
	{ 618770	1	1	1	ROTOR (Effective October 1958)
5A	618767	1	1	1	BEARING, thrust, valve rotor (Effective October 1958)
5B	618768	1	1	1	WASHER, thrust, valve rotor (Effective October 1958)
6	618662	1	1	1	SEAL, rotor
6A	618720	1	-	-	RETAINER, valve rotor O-ring (Used prior to October 1958)
6B	618769	1	1	1	RING, back-up, valve rotor O-ring (Effective October 1958)
6C	619824	1	1	1	RING, sealing, valve rotor (1" O. D.)
7	619798	1	1	1	RING, sealing, rotor cap (2" O. D.)
8	618771	1	1	1	CAP, rotor (If for dozers built prior to October 1958 also order 1 BEARING 618767, 1 WASHER 618768, 1 RING 618769 and 1 ROTOR 618770)
	918314	4	4	4	CAPSCREW, hex-socket-hd., 7/16"NC x 3/4"
9	{ 618054	1	1	-	LEVER, rotor (First type. In Valve Assembly 618700 only)
	{ 619811	-	1	1	LEVER, rotor (Second type. In Valve Assembly 619819 only)
10	{ 905119	1	1	1	KEY, #3 woodruff, 1/8" x 1/2"
	{ 910505	1	1	-	CAPSCREW, 5/16"NF x 1" (For LEVER 618054)
	{ 043646	-	1	1	CAPSCREW, 5/16"NF x 1-1/4" (For LEVER 619811)
	{ 904205	1	1	1	LOCKWASHER, 5/16"

(Continued)

DIVERTER VALVE AND PIPING (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
11	617116	1	1	1	MANIFOLD, right side (Replaces standard manifold)
	917733	8	8	8	CAPSCREW, hex-socket-hd., 3/8"NC x 1-1/4"
12	614478	2	2	2	CAPSCREW, 1/2"NF x 1-3/8"
	618724	2	2	2	WASHER, copper
13	613128	2	2	2	GASKET, manifold
14	618080	1	-	-	TUBE, front, left side (1-1/4"NPT)
	618945	-	1	-	TUBE, front, left side (1-1/2"NPT) (First type. For units with flexible cable-type valve control)
	618943	-	1	1	TUBE, front, left side (1-1/2"NPT) (Second type. For units with rod-type valve control)
15	618078	1	-	-	TUBE, front, right side (1-1/4"NPT)
	618943	-	1	1	TUBE, front, right side (1-1/2"NPT)
16	921117	4	4	4	FLANGE, front tube attaching (half only)
	904706	8	8	8	CAPSCREW, 7/16"NC x 1-1/4"
	904207	8	8	8	LOCKWASHER, 7/16"
17	618072	1	-	-	HOSE, right side (1-1/4"NPT)(See HOSE PARTS)
	618942	-	1	1	HOSE, right side (1-1/2"NPT)
18	617177	1	-	-	HOSE, front, left side (1-1/4"NPT)(See HOSE PARTS)
	618940	-	1	1	HOSE, front, left side (1-1/2"NPT)(See HOSE PARTS)
19	606536	1	-	-	UNION, adapting, hose connecting
20	618154	1	-	-	TUBE, intermediate, left side (1-1/4"NPT)
	618944	-	1	-	TUBE, intermediate, left side (1-1/2"NPT. Includes integral union)
	625678	-	-	1	TUBE, intermediate, left side (1-1/2"NPT. Includes integral union)
21	618094	1	-	-	HOSE, rear, left side (1-1/4"NPT)(See HOSE PARTS)
	618941	-	1	1	HOSE, rear, left side (1-1/2"NPT)(See HOSE PARTS)
22	618137	1	-	-	TUBE, rear, left side (1-1/4"NPT)
	618947	-	1	-	TUBE, rear, left side (1-1/2"NPT)
	625675	-	-	1	TUBE, rear, left side (1-1/2"NPT)
	913877	4	4	4	CAPSCREW, 7/16"NC x 1-1/8"
	904207	4	4	4	LOCKWASHER, 7/16"

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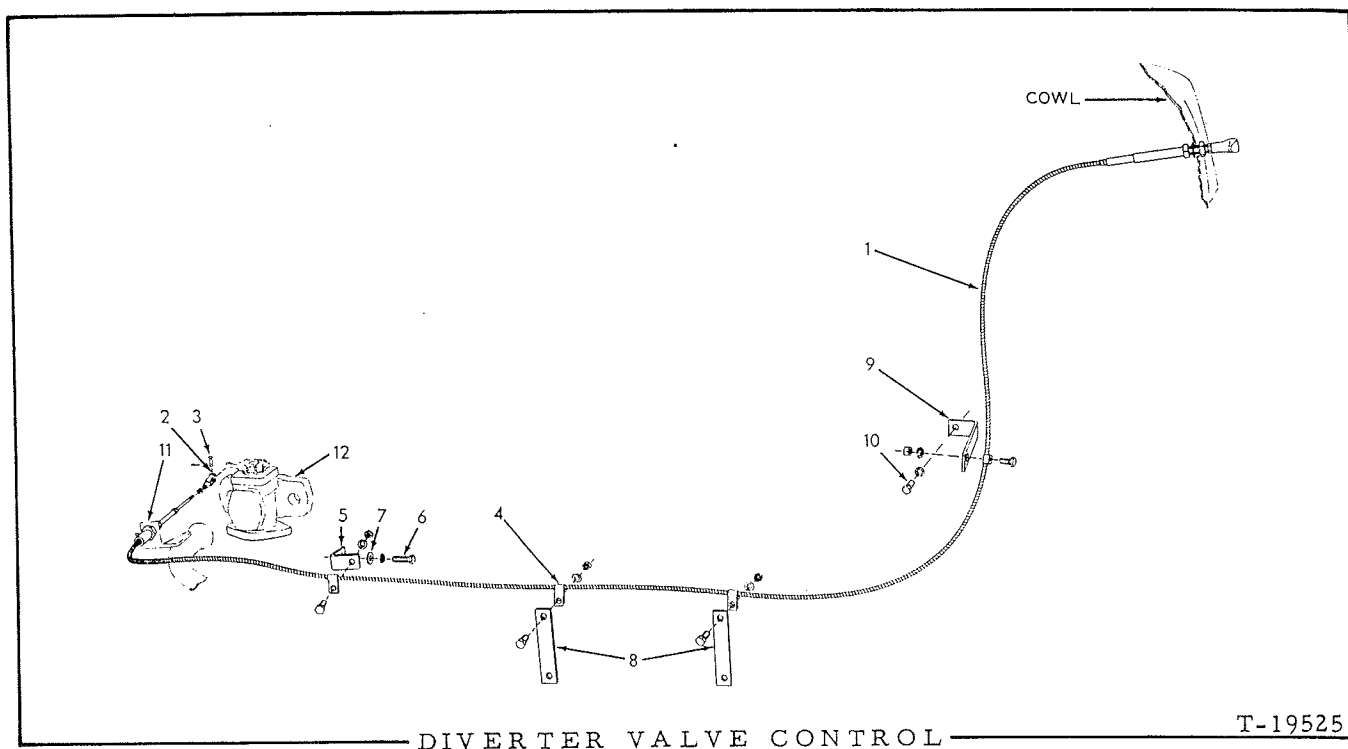
DIVERTER VALVE AND PIPING (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
23	618138	1	-	-	TUBE, rear, right side (1-1/4"NPT)
	618948	-	1	-	TUBE, rear, right side (1-1/2"NPT)
	625676	-	-	1	TUBE, rear, right side (1-1/2"NPT)
	913877	4	4	4	CAPSCREW, 7/16"NC x 1-1/8"
	904207	4	4	4	LOCKWASHER, 7/16"
24	618114	4	4	4	FITTING, valve
	917733	16	16	16	CAPSCREW, hex-socket-hd., 3/8"NC x 1-1/4"
	904224	4	4	4	PLUG, pipe, ctsk-hd., 3/4"NPT
25	619799	10	10	10	RING, sealing (1-3/4"O.D.)
26	619798	3	3	3	RING, sealing (2"O.D.)
27	619801	2	2	2	RING, sealing (1-7/8"O.D.)
28	618087	1	1	1	CLAMP, supporting, intermediate tube
	036032	1	1	1	CAPSCREW, 3/8"NF x 3/4"
	904206	1	1	1	LOCKWASHER, 3/8"
	911041	1	1	1	NUT, 3/8"NF
29	618145	1	-	-	ANGLE, clamp supporting (Used prior to tractor #11001)
30	618953	1	1	1	ANGLE, clamp supporting (Effective with tractor #11001)
31	012742	1	1	1	CAPSCREW, 3/4"NF x 2-1/4"
	904369	1	1	1	LOCKWASHER, 3/4"
	911045	1	1	1	NUT, 3/4"NF
32	618025	5	-	-	CLIP, left hoses (2" diam., 9/16" bolt-hole)
	618913	-	5	4	CLIP left hoses (2-1/4" diam., 9/16" bolt-hole)
33	070467	2	2	2	CAPSCREW, 1/2"NF x 1"
34	035190	2	2	-	CAPSCREW, 1/2"NC x 1-1/2"
35	035073	1	1	-	CAPSCREW, 1/2"NF x 1-3/4"
	904208	5	5	2	LOCKWASHER, 1/2"
	911043	2	2	2	NUT, 1/2"NF
36	618131	1	1	1	PLATE, clip supporting
37	035190	2	2	2	CAPSCREW, 1/2"NC x 1-1/2"
	904208	2	2	2	LOCKWASHER, 1/2"
38	618134	1	1	-	ANGLE, clip supporting (short type)
	625672	-	-	1	ANGLE, clip supporting (long type)
39	035067	1	1	1	CAPSCREW, 1/2"NF x 2"
	904208	1	1	1	LOCKWASHER, 1/2"
	911043	1	1	1	NUT, 1/2"NF
40	618133	1	1	-	PLATE, clip supporting
41	091553	2	2	-	SPACER, hose clip

(Continued)

DIVERTER VALVE AND PIPING (Continued)

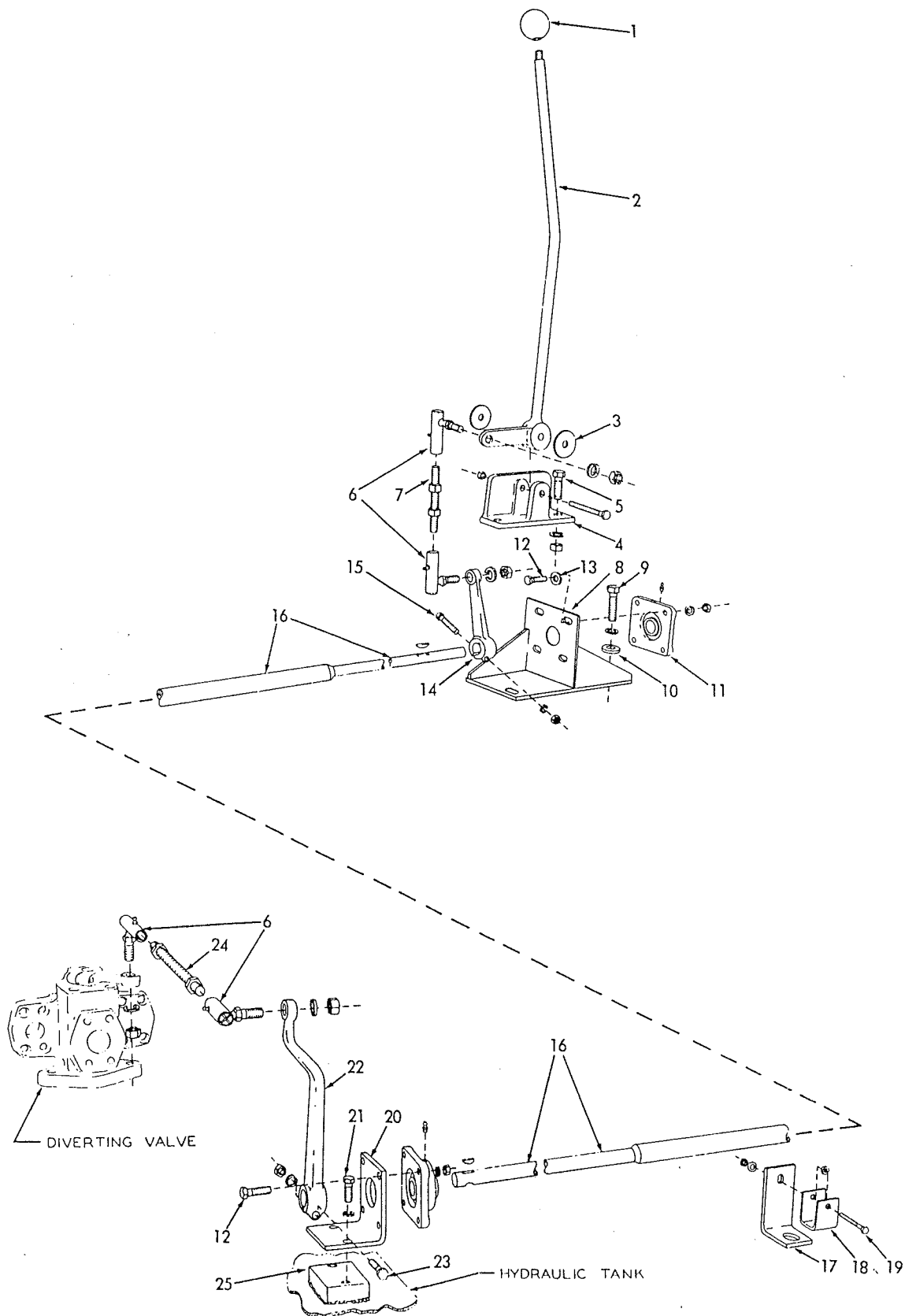
ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
42	{ 606315	4	-	-	CLIP, right hose (1-3/4" diam., 9/16" bolt-hole)
	{ 618025	-	4	5	CLIP, right hose (2" diam., 9/16" bolt-hole)
43	070467	2	2	2	CAPSCREW, 1/2 "NF x 1"
44	{ 035073	1	1	-	CAPSCREW, 1/2"NF x 1-3/4"
	{ 035061	-	-	1	CAPSCREW, 1/2"NC x 1-1/4"
	{ 904208	3	3	3	LOCKWASHER, 1/2"
	911043	2	2	2	NUT 1/2"NF
45	036034	1	1	1	CAPSCREW, 3/8"NF x 1"
46	044973	1	1	1	WASHER, plain
	904206	1	1	1	LOCKWASHER, 3/8"
	911041	1	1	1	NUT, 3/8"NF
47	618130	2	2	2	ANGLE, clip supporting
48	036034	1	1	1	CAPSCREW, 3/8"NF x 1"
49	{ 036034	1	-	-	CAPSCREW, 3/8"NF x 1" (Used prior to July 1958)
	{ 035336	1	1	1	CAPSCREW, 3/8"NF x 1-3/4" (Effective July 1958)
	{ 904206	2	2	2	LOCKWASHER, 3/8"
	911115	2	2	2	WASHER, plain, SAE std., 3/8"
50	065461	1	1	1	BLOCK, angle spacing (Effective July 1958)
51	618101	1	1	1	ANGLE, clip supporting
52	035892	1	1	1	CAPSCREW, 1/2"NF x 2-1/2"
53	064531	1	1	1	WASHER, plain
	904208	1	1	1	LOCKWASHER, 1/2"
54	-----	-	-	-	VALVE ASSEMBLY, rear (See page 49)
--	618132	1	1	-	PLATE, extension (Used to raise tractor hydraulic steering control hoses)(Not illustrated)



USAGE: For Model HD21A, P tractors prior to January 1961 with 21HS, HA dozers

ITEM	PART NO.	QTY.	DESCRIPTION
1	618053	1	CONTROL ASSEMBLY, push-pull (Serviced only as a unit)
	911040	1	NUT, 1/4"NF.
2	628737	1	YOKE, rod end
3	628738	1	PIN, rod end yoke
	900970	1	PIN, cotter, 1/16" x 1/2"
4	040796	4	CLIP, supporting, control assembly
	036032	3	CAPSCREW, 3/8"NF x 3/4" (1 additional used prior to tractor #11001)
	012992	1	CAPSCREW, 3/8"NF x 1-1/4" (Effective with tractor #11001)
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
5	618129	1	ANGLE, clip supporting
6	012992	1	CAPSCREW, 3/8"NF x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
7	044973	1	WASHER, plain
8	618102	2	PLATE, clip supporting
9	639417	1	ANGLE, clip supporting (Used prior to tractor #11001)
10	012992	1	CAPSCREW, 3/8"NF x 1-1/4"
	904206	1	LOCKWASHER, 3/8"
11	-----	-	TUBE, front, left side
12	-----	-	VALVE ASSEMBLY, diverting

See DIVERTER VALVE
AND PIPING



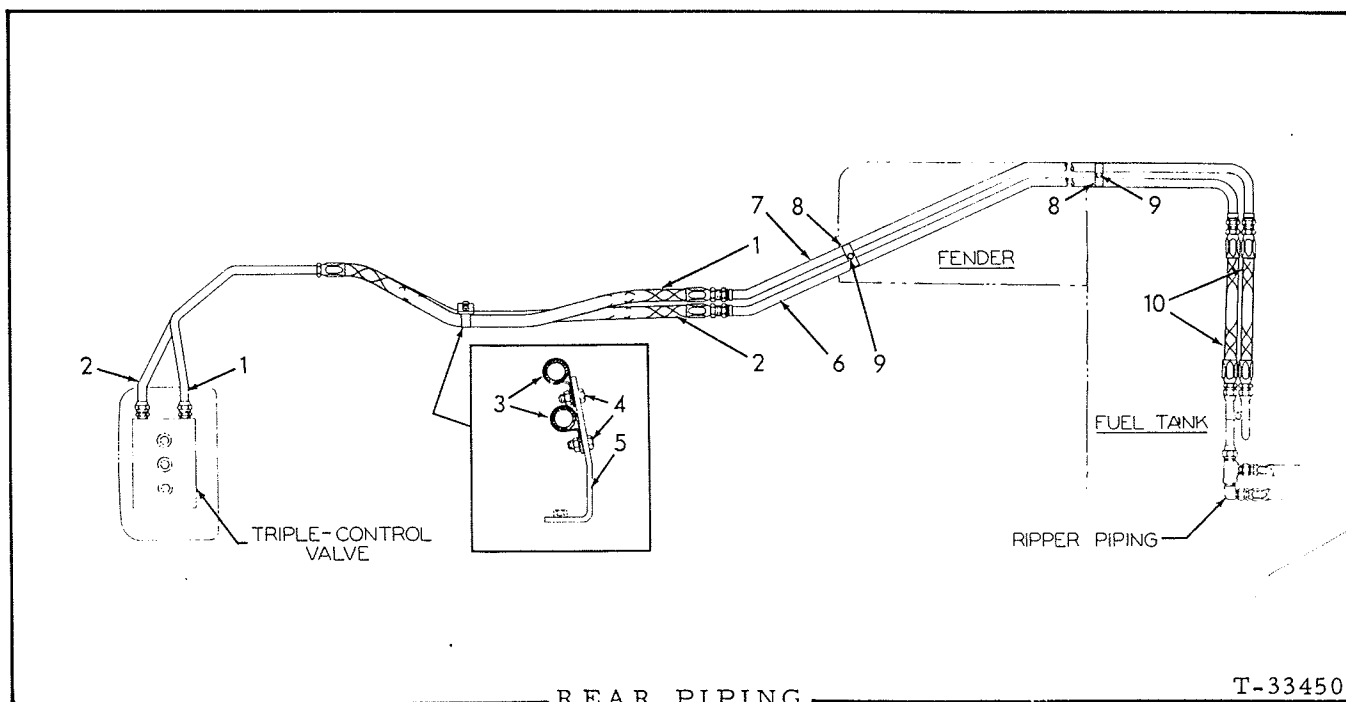
T-33403

DIVERTER VALVE CONTROL (Second type)

DIVERTER VALVE CONTROL

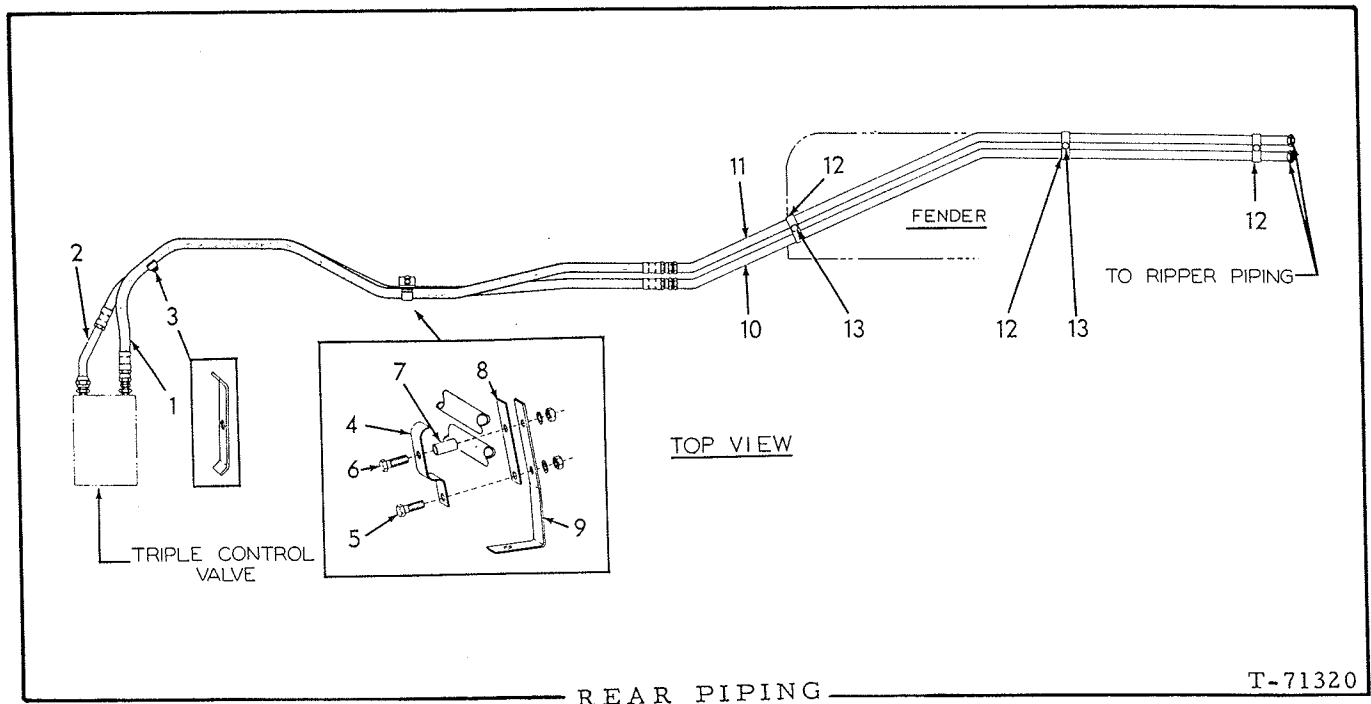
USAGE: Model HD21A, P tractors with 21HS, HA dozers. Effective January 1961

ITEM	PART No.	QTY.	DESCRIPTION
1	091862	1	KNOB, operating lever
2	619815	1	LEVER, operating
	914339	1	CAPSCREW, 3/8"NF x 2-3/4"
	913528	1	NUT, elastic stop, 3/8"NF
3	619820	2	WASHER, operating lever
4	626499	1	BRACKET, operating lever
5	035018	2	CAPSCREW, 1/2"NF x 1-1/2"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
6	618281	4	JOINT, ball and socket (Includes FITTING indented below)
	912808	4	FITTING, lubricating, straight, 1/4"NF
	911043	4	NUT, 1/2"NF
	904208	4	LOCKWASHER, 1/2"
7	619813	1	ROD, connecting, rear
	911043	2	NUT, 1/2"NF
8	635945	1	BRACKET, control shaft, rear
9	035067	2	CAPSCREW, 1/2"NF x 2"
	904208	2	LOCKWASHER, 1/2"
10	064531	2	WASHER, plain
11	611901	2	BEARING ASSEMBLY, control shaft (Includes FITTING indented below)
	912808	2	FITTING, lubricating, straight, 1/4"NF
12	012992	8	CAPSCREW, 3/8"NF x 1-1/4"
	904206	8	LOCKWASHER, 3/8"
	911041	8	NUT, 3/8"NF
13	044973	4	WASHER, plain
14	611903	1	LEVER, control shaft, rear
15	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
16	611925	1	SHAFT, control
	905122	2	KEY, #7 woodruff, 1/8" x 3/4"
17	611916	1	ANGLE, shaft supporting
18	611957	1	BRACKET, shaft supporting
19	611975	1	CAPSCREW, 1/4"NC x 2-1/2"
	911114	1	WASHER, plain, SAE std., 1/4"
	911325	2	NUT, jam, 1/4"NC
20	613260	1	BRACKET, control shaft, front
21	036034	2	CAPSCREW, 3/8"NF x 1"
	904206	2	LOCKWASHER, 3/8"
22	611904	1	LEVER, control shaft, front
23	035336	1	CAPSCREW, 3/8"NF x 1-3/4"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
24	619814	1	ROD, connecting, front
	911043	2	NUT, 1/2"NF
25	619809	1	BLOCK, tapped, bracket attachment (Requires welding to install)



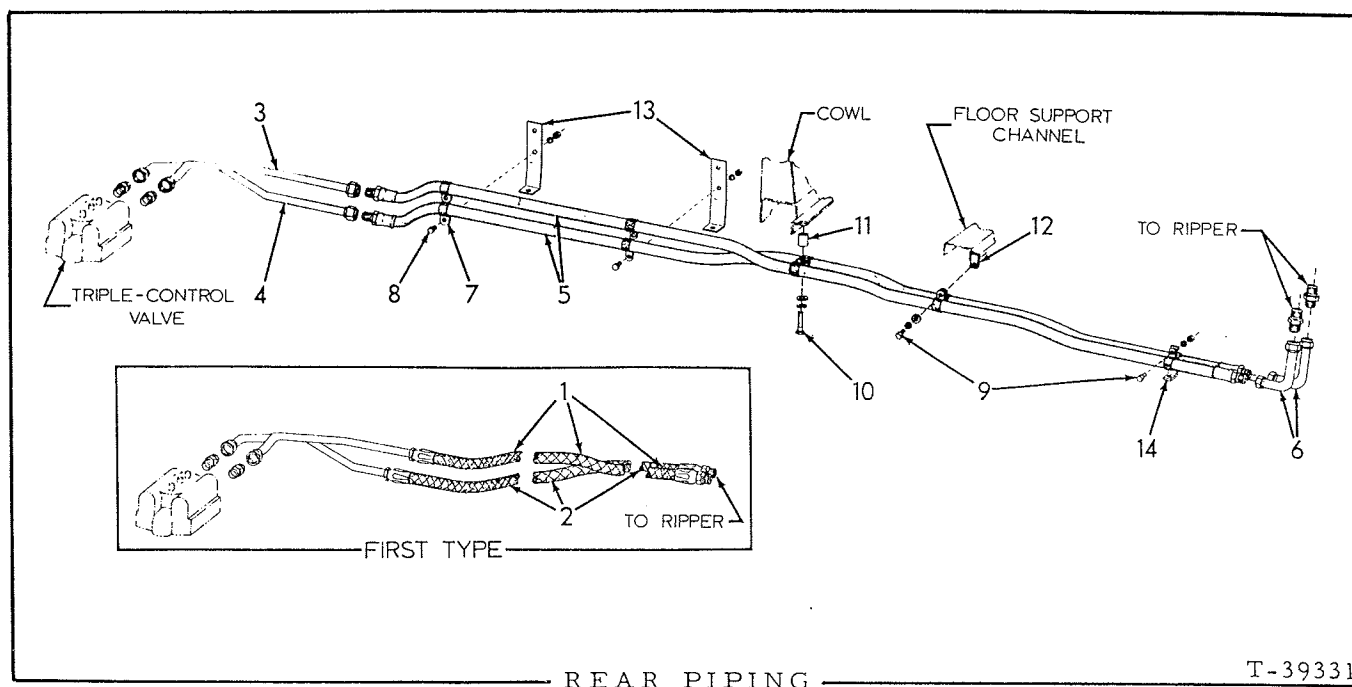
USAGE: Tractors prior to serial No. 12801. Used with triple-control valve to provide rear hydraulic outlet for operating auxiliary equipment. Used prior to June 15, 1965.

ITEM	PART NO.	QTY.	DESCRIPTION
1	625571	1	HOSE ASSEMBLY, upper (See HOSE PARTS)
	919064	1	CONNECTOR, flare type, 1" tube, 1"NPT male
2	625567	1	HOSE ASSEMBLY, lower (See HOSE PARTS)
	919064	1	CONNECTOR, flare type, 1" tube, 1"NPT male
3	618024	2	CLIP, hose supporting
4	070467	2	CAPSCREW, 1/2"NF x 1"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
5	625564	1	BRACKET, hose supporting
6	625558	1	TUBE, inner
7	625557	1	TUBE, outer
8	625010	2	CLAMP, tube
9	035278	2	CAPSCREW, 1/2"NF x 2-3/4"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
10	625565	2	HOSE ASSEMBLY, rear (See HOSE PARTS)



USAGE: Tractors prior to serial No. 12801. Used with triple-control valve to provide rear hydraulic outlet for operating auxiliary equipment. Effective approx. June 15, 1965.

ITEM	PART NO.	QTY.	DESCRIPTION
1	648505	1	HOSE, upper (See HOSE PARTS)
	919342	1	CONNECTOR, flare type, 3/4" tube, 3/4"NPT male
	901829	1	BUSHING, pipe reducing, 1"NPT to 3/4"NPT
	922997	1	CONNECTOR, flare type, 3/4" tube, 1-5/16" straight thread (Includes O-RING 921214)(Late units)
2	648506	1	HOSE, lower (See HOSE PARTS)
	919064	1	CONNECTOR, flare type, 1" tube, 1"NPT male (Early units)
	921228	1	CONNECTOR, flare type, 1" tube, 1-5/16" straight thread (Includes O-RING 921214)(Late units)
3	635497	1	CLAMP, hose supporting, front
4	635491	1	CLAMP, hose supporting, rear
5	614478	1	CAPSCREW, 1/2"NF x 1-3/8"
6	035892	1	CAPSCREW, 1/2"NF x 2-1/2"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
7	635489	1	SPACER, hose supporting clip
8	635490	1	STRAP, hose supporting clip
9	625564	1	BRACKET, hose supporting
10	648408	1	TUBE, inner
11	648409	1	TUBE, outer
12	635496	6	CLAMP, tube supporting
13	035892	3	CAPSCREW, 1/2"NF x 2-1/2"
	904208	3	LOCKWASHER, 1/2"
	911043	3	NUT, 1/2"NF



USAGE: Tractors serial No. 12801 and up. Used with triple-control valve to provide rear hydraulic outlet for operating auxiliary equipment on units prior to June 1966.

* Used prior to June 15, 1965 (Model TR21 Ripper)

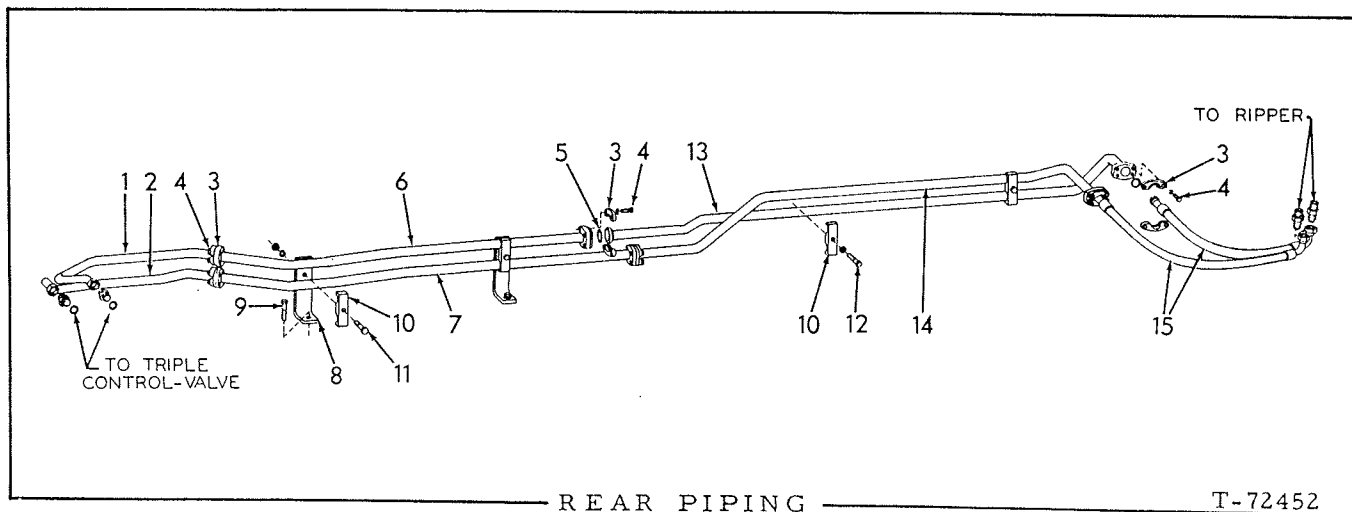
** Effective approx. June 15, 1965 (Model 21R Ripper)

ITEM	PART NO.	QTY. * **		DESCRIPTION
1	635089	1	-	HOSE ASSEMBLY, upper (See HOSE PARTS)
	919064	1	-	CONNECTOR, flare type, 1" tube, 1"NPT male
2	635088	1	-	HOSE ASSEMBLY, lower (See HOSE PARTS)
	919064	1	-	CONNECTOR, flare type, 1" tube, 1"NPT male
3	647790	-	1	TUBE, front upper
	919064	-	1	CONNECTOR, flare type, 1" tube, 1"NPT male (Early units)
	921228	-	1	CONNECTOR, flare type, 1" tube, 1-5/16" straight thread (Includes O-RING 921214 (Late units)
4	647789	-	1	TUBE, front lower
	919064	-	1	CONNECTOR, flare type, 1" tube, 1"NPT male (Early units)
	921228	-	1	CONNECTOR, flare type, 1" tube, 1-5/16" straight thread (Includes O-RING 921214)(Late units)
5	647809	-	2	HOSE (See HOSE PARTS)
	650774	-	2	HOSE (Optional. For use with phosphate-ester hydraulic fluid)
6	651815	-	2	TUBE, rear
	919064	-	2	CONNECTOR, flare type, 1" tube, 1"NPT male
7	618024	10	10	CLIP, hose supporting
8	070467	4	4	CAPSCREW, 1/2"NF x 1"
9	070469	2	2	CAPSCREW, 1/2"NF x 1-1/4"
10	028979	1	1	CAPSCREW, 1/2"NC x 2-1/2"
	904208	7	7	LOCKWASHER, 1/2"
	910244	2	2	WASHER, plain, SAE std., 1/2"
	911043	5	5	NUT, 1/2"NF

(Continued)

REAR PIPING (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
11	645440	1	1	SPACER, hose supporting clip
12	086521	1	1	BLOCK, tapped, hose supporting (Requires welding to install)
13	625564	2	2	BRACKET, supporting, hose clip
14	635087	1	1	ANGLE, supporting, hose clip



USAGE: Tractors serial No. 12801 and up. Used with triple-control valve to provide rear hydraulic outlet for operating auxiliary equipment. Effective June 1966.

ITEM	PART NO.	QTY.	DESCRIPTION
1	656225	1	TUBE, front upper
	919064	1	CONNECTOR, flare type, 1" tube, 1"NPT male (Early units)
	921228	1	CONNECTOR, flare type, 1" tube, 1-5/16" straight thread (Includes O-RING 921214)(Late units)
2	656224	1	TUBE, front lower
	919064	1	CONNECTOR, flare type, 1" tube, 1"NPT male (Early units)
	921228	1	CONNECTOR, flare type, 1" tube, 1-5/16" straight thread (Includes O-RING 921214)(Late units)
3	921116	12	FLANGE, tube attaching (half only)
4	040382	24	CAPSCREW, 3/8"NC x 1-3/8"
	904206	24	LOCKWASHER, 3/8"
5	924200	6	O-RING, tube sealing
6	656222	1	TUBE, intermediate upper
7	656223	1	TUBE, intermediate lower
8	656185	2	BRACKET, supporting, intermediate tubes
9	035248	2	CAPSCREW, 5/8"NF x 2-1/4"
10	656218	4	CLAMP, tube supporting
11	041877	2	CAPSCREW, 1/2"NC x 3"
	904208	2	LOCKWASHER, 1/2"
	911028	2	NUT, 1/2"NC
12	921556	2	CAPSCREW, 1/2"NC x 2"
	904208	2	LOCKWASHER, 1/2"
13	656221	1	TUBE, rear, upper line
14	656220	1	TUBE, rear, lower line
15	656219	2	HOSE (See HOSE PARTS)
	919064	2	CONNECTOR, flare type, 1" tube, 1"NPT male
	924692	2	PLUG, flare type, 1" tube (Used in place of 919064 CONNECTOR when rear hydraulic outlet is disconnected)

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