

45

Motor Grader

PARTS CATALOG

FORM 70642041
Reprint 4-89

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.

MODEL IDENTIFICATION

The symbol listed below is stamped in front of the model serial number on each unit.

MODEL SYMBOL	ENGINE MODEL	DESCRIPTION
45	10, 000	Diesel Motor Grader (naturally aspirated)

RECORD YOUR SERIAL NUMBERS BELOW

GRADER SERIAL NO. _____

ENGINE SERIAL NO. _____

ALLIS-CHALMERS WARRANTY

"ALLIS-CHALMERS MANUFACTURING COMPANY warrants that it will repair F.O.B. its factory, or furnish without charge F.O.B. its factory, a similar part to replace any material in its machinery which within six months, or 1500 hours of use, whichever occurs first, (except six months on utility wheel tractors sold for non-farm use) after the date of delivery by the Dealer, is proven to the satisfaction of the Company to have been defective at the time it was delivered, provided that all parts claimed defective shall be returned properly identified to the Company's factory, charges prepaid.

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

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

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

"Allied or Companion equipment not manufactured by the Company is covered only by the standard warranty of the manufacturer of such allied or companion equipment though sold or operated with the Company's machinery."

IMPORTANT

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

The engine is mounted unconventionally with the flywheel toward the front of the machine, but all engine parts are designated in respect to the engine as it would be installed in a conventional machine with the flywheel to the rear.

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

INSTRUCTIONS FOR ORDERING PARTS

ALWAYS GIVE THE MODEL AND ENGINE SERIAL NUMBER. (Location shown below)

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.

Order parts from the dealer covering the local territory.

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 Manufacturing Company.

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.

SERIAL NUMBER LOCATIONS

MODEL SERIAL NO: On plate attached to the right side of the frame near the operator's platform.

ENGINE SERIAL NO: On plate attached to the lefthand side of the cylinder block at the rear end.

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PACKAGED PARTS

PACKAGE
NUMBER

DESCRIPTION

639956

LINKAGE KIT, gear shift lock
 1 074959 SEAL, clutch fork shaft
 1 074975 BEARING, clutch fork shaft
 1 078810 PIN, joint adjusting yoke
 1 628261 LINK, locking plunger (145 grader)
 1 628271 STUD, plunger rod lever
 1 628463 JOINT, ball and socket
 1 628564 LEVER, plunger rod operating
 1 628727 SHAFT, clutch fork
 1 628734 BRACKET, operating lever
 1 628748 YOKE, joint adjusting
 1 632222 LINK, locking plunger (45 grader)
 2 900801 PIN, cotter, 3/32" x 3/4"
 3 903633 CAPSCREW, 3/8"NC x 1-3/4"
 5 904206 LOCKWASHER, 3/8"
 1 910255 WASHER, plain, SAE std., 3/4"
 1 910302 PIN, cotter, 5/32" x 1-1/4"
 3 911041 NUT, 3/8"NF
 1 911115 WASHER, plain, SAE std., 3/8"
 1 ----- INSTRUCTION SHEET

4335830

GASKET KIT, intermediate, cylinder block (Graders prior to #1780)
 1 035249 GASKET, oil drain plug
 2 4113897 GASKET, oil regulating valve nut
 5 4253106 O-RING, oil filter lines
 1 4254082 O-RING, camshaft hole cover
 1 4254624 O-RING, camshaft hole plug
 1 4335056 GASKET, water pump volute
 1 4336897 O-RING, flywheel housing to crankcase
 1 4346169 GASKET, oil pipe
 1 4346744 GASKET, water pump
 1 4347031 GASKET, water by-pass pipe
 1 4347120 GASKET, timing hole cover
 1 4347880 GASKET, timing gear housing
 1 4348126 GASKET, timing gear cover
 1 4348184 GASKET, oil cooler water outlet
 1 4348185 GASKET, oil cooler water inlet
 1 4348215 GASKET, oil pipe
 1 4348218 GASKET, oil pipe
 1 4371289 GASKET, oil pan cover

4335831

GASKET KIT, cylinder head (Graders prior to #1780)
 6 4251987 O-RING, valve lifter cover nut
 1 4300145 GASKET, engine water outlet elbow
 2 4335279 GASKET, cylinder head cover
 1 4336430 GASKET, front cylinder head
 1 4336431 GASKET, rear cylinder head
 2 4337764 GASKET, valve lifter cover
 6 4338511 GASKET, exhaust manifold
 6 4346138 GASKET, intake manifold
 1 4346330 GASKET, water manifold connecting
 1 4347824 GASKET, supercharger drain flange
 2 4347940 GASKET, thermostat housing
 2 4348133 GASKET, breather tube
 6 4348278 GASKET, water manifold
 2 4349031 GASKET, supercharger
 1 4349384 GASKET, intake manifold cover
 6 4511204 GASKET, injection nozzle

PACKAGED PARTS

PACKAGE
NUMBER

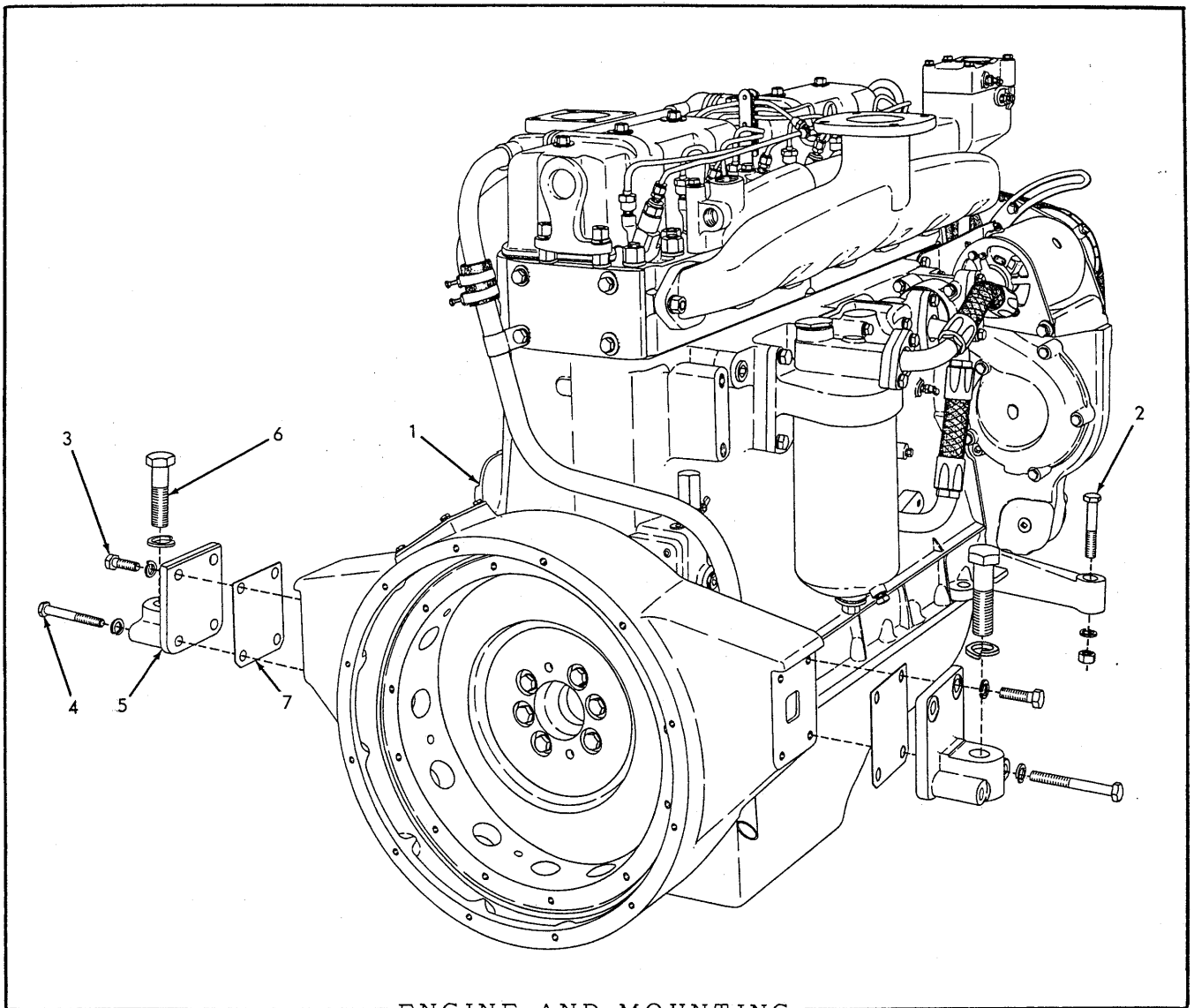
DESCRIPTION

4336577	GASKET KIT, intermediate, cylinder block (Graders #1780 and up)	
	2	035249 GASKET, oil drain plug
	2	4113897 GASKET, oil regulating valve nut
	1	4253106 O-RING, oil filter
	1	4253818 O-RING (Discard. Not for grader)
	1	4253929 O-RING, fan drive (Discard. Not for grader)
	1	4254624 O-RING, camshaft hole plug
	1	4335056 GASKET, water pump volute
	3	4335577 GASKET, oil filter hose
	1	4335578 GASKET, oil filter hose
	1	4335712 GASKET, cover plate
	1	4336345 GASKET, cover plate
	1	4336897 O-RING, flywheel housing to crankcase
	1	4346169 GASKET, oil pipe
	2	4346441 GASKET, oil pipe (Discard. Not for grader)
	1	4346456 GASKET, water inlet elbow
	1	4346744 GASKET, water pump
	1	4347031 GASKET, water by-pass flange
	1	4347120 GASKET, oil filler hole cover
	1	4348136 GASKET, timing gear housing
	1	4348126 GASKET, timing gear cover
	1	4348184 GASKET, oil cooler water outlet
	1	4348185 GASKET, oil cooler water inlet
	2	4348215 GASKET, oil pipe
	1	4348218 GASKET, oil pipe
	1	4349011 GASKET, cover plate
	1	4362458 GASKET, oil pump cover (Discard. Not for grader)
	1	4371289 GASKET, oil pan cover
	2	4373069 GASKET, oil pan cover (Discard. Not for grader)

4337974	PISTON AND SLEEVE KIT (Graders prior to #1780)	
	2	4304699 RETAINER, piston pin
	1	4336190 RING, oil control
	1	4336321 RING, oil control
	1	4337971 SLEEVE, cylinder
	2	4337972 O-RING, cylinder sleeve
	2	4347235 RING, compression
	1	4347281 PIN, piston
	1	4347458 RING, compression
	1	4347676 PISTON

4337975	PISTON AND SLEEVE KIT (Graders #1780 and up)	
	2	4254814 RETAINER, piston pin
	1	4336512 PISTON
	1	4336559 RING, oil control
	1	4337395 PIN, piston
	1	4337971 SLEEVE, cylinder
	2	4337972 O-RING, cylinder sleeve
	2	4347235 RING, compression
	1	4347458 RING, compression

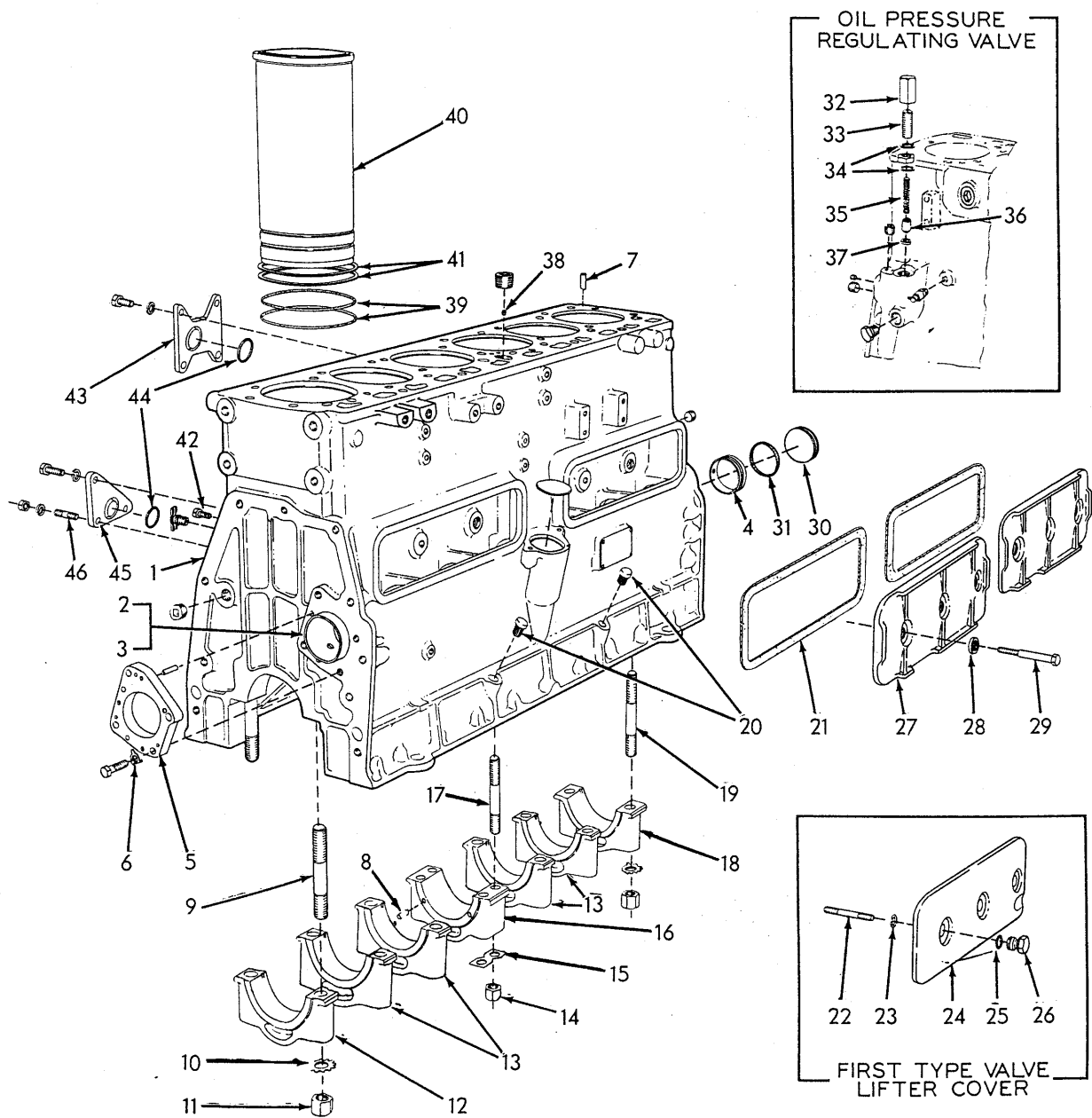
4338735	GASKET KIT, cylinder head (Graders #1780 and up)	
	4	4252796 O-RING
	4	4254294 O-RING, water by-pass tube
	2	4336148 GASKET, rocker cover
	4	4336182 GASKET, water manifold
	1	4336263 GASKET, thermostat housing
	1	4336266 GASKET, engine water outlet elbow
	1	4336430 GASKET, front cylinder head
	1	4336431 GASKET, rear cylinder head
	2	4337764 GASKET, valve lifter cover
	6	4338511 GASKET, exhaust manifold
	6	4346138 GASKET, intake manifold
	2	4348133 GASKET, breather tube
	6	4378031 GASKET, injection nozzle



ENGINE AND MOUNTING

* Used prior to grader serial No. 1780
 ** Effective with grader serial No. 1780

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4347946	1	-	ENGINE ASSEMBLY (Less Air Cleaner, Fan, Starter and Muffler, but includes Generator, Oil and Fuel Filters and Supercharger)
	4336519	-	1	ENGINE ASSEMBLY (Less Air Cleaner, Fan, Starter and Muffler, but includes Generator, Oil and Fuel Filters)
2	034440	2	2	CAPSCREW, 5/8"NF x 3-1/2"
	904209	2	2	LOCKWASHER, 5/8"
	911044	2	2	NUT, 5/8"NF
3	035190	4	4	CAPSCREW, 1/2"NC x 1-1/2"
4	045253	4	4	CAPSCREW, 1/2"NC x 3-3/4"
	904208	8	8	LOCKWASHER, 1/2"
5	085769	2	2	BRACKET, engine supporting, front
6	012762	2	2	CAPSCREW, 7/8"NF x 3-1/4"
	905347	2	2	LOCKWASHER, 7/8"
7	089617	2	2	SHIM, spacing (1/32" thick. Use as req'd)



CYLINDER BLOCK

CYLINDER BLOCK

* Used prior to grader serial No. 1780
 ** Effective with grader serial No. 1780

ITEM	PART NO.	QTY. * **	DESCRIPTION
1	-----	1 -	BLOCK ASSEMBLY (Used prior to engine #45-2025. Order BLOCK ASSEMBLY 4336591. If for engines #90846 thru #45-1209 also order 1 LINE ASSY. 4336524, 1 O-RING 4253106, 1 PLATE 4034292, 1 GASKET 4347655, 2 CAPSCREWS 903630, 2 CAPSCREWS 910211, 4 LOCK WASHERS 904206, 1 STUD 4335371, 1 NUT 910915 and 1 LOCKWASHER 904208. If for engines prior to #90846 also add: 1 TUBE ASSY. 4335043, 1 TUBE ASSY. 4349309, 2 SHAFT ASSYS. 4349294, 2 BRACKETS 4349291, 2 ELBOWS 4335381, 2 ELBOWS 911017 and 2 ELBOWS 913039)
	4336591	1 -	BLOCK ASSEMBLY (Includes items 2 thru 20, 37, 38, 42 thru 46 and hardware indented below)(Effective with engine #45-2025)
	4338151	- 1	BLOCK ASSEMBLY (Includes items 2 thru 4, 7 thru 20, 37, 38, 42 thru 46 and hardware indented below)
	910015	1 -	PLUG, expansion, 2-1/8" diam. (Used prior to engine #45-2025)
	910017	1 1	PLUG, expansion, 2-3/8" diam. (Effective with engine #45-2025)
	919134	1 3	PLUG, pipe, hex-hd., 1/8"NPT
	920333	2 2	PLUG, pipe, hex-hd., 3/8"NPT
	904223	2 -	PLUG, pipe, ctsk-hd., 1/2"NPT
	917970	- 2	PLUG, pipe, hex-socket, 1/2"NPT
	920416	1 1	PLUG, pipe, hex-hd., 1/2"NPT
	904224	1 -	PLUG, pipe, 3/4"NPT
	918851	- 1	PLUG, pipe, hex-socket, 3/4"NPT
	918888	1 1	PLUG, pipe, hex-socket, 1"NPT
	912415	2 2	COCK, drain, 1/4"NPT(1 less used prior to engine #45-1210)
2	4347879	1 -	BEARING, camshaft, front (Standard size)
	4336755	1 -	BEARING, camshaft, front (.010" undersize)
	4346100	- 1	BEARING, camshaft, front (Standard size)
	4347416	- 1	BEARING, camshaft, front (.010" undersize)
3	4346099	2 2	BEARING, camshaft, intermediate (Standard size)
	4347419	2 2	BEARING, camshaft, intermediate (.010" undersize)
4	4346108	1 1	BEARING, camshaft, rear (Standard size)
	4347413	1 1	BEARING, camshaft, rear (.010" undersize)
5	4347878	1 -	ADAPTER, camshaft front bearing
6	917540	2 -	DOWEL, 3/8" x 1-1/8"
	904541	4 -	CAPSCREW, 1/2"NC x 1-3/4"
	4335175	4 -	LOCKWASHER
7	4336432	- 4	PIN, dowel, cylinder head (Effective with grader #1780)
8	-----	4 4	PIN, dowel, crankshaft thrust flange (See CRANKSHAFT)
9	4348829	2 2	STUD, front main bearing (3/4" diam., 5-1/2" long)

(Continued)

CYLINDER BLOCK (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
10	4346324	12 12	LOCKWASHER, main bearing stud nut
11	4346191	12 12	NUT, main bearing stud (3/4"NF)
12	4349630	1 1	Δ CAP, front main bearing
13	4349632	4 4	Δ CAP, intermediate main bearing
14	4346322	4 4	NUT, center main bearing stud (5/8"NF)
15	4346323	2 2	PLATE, locking, center main bearing stud nut
16	4349629	1 1	Δ CAP, center main bearing
17	4348831	4 4	STUD, center main bearing (5/8" diam.)
18	4349631	1 1	Δ CAP, rear main bearing
19	4348830	10 10	STUD, rear and intermediate main bearings (3/4" diam., 5-7/8" long)
20	4362338	2 2	PLUG, crankcase
21	4337764	2 2	□GASKET, valve lifter cover
<p><u>NOTE:</u> Items 22 thru 26 comprise the FIRST TYPE VALVE LIFTER COVERS used prior to engine serial No. 45-1293</p>			
22	4346653	6 -	STUD, valve lifter cover
23	4253520	6 -	RING, snap, valve lifter cover nut
24	-----	2 -	COVER, valve lifter, (Order items 27, 28 and 29)
25	4251987	6 -	□O-RING, valve lifter cover nut
26	4347126	6 -	NUT, valve lifter cover
<p><u>NOTE:</u> Items 27 thru 29 comprise the SECOND TYPE VALVE LIFTER COVERS effective with engine serial No. 45-1293</p>			
27	4335453	2 2	COVER, valve lifter
28	4335456	6 6	WASHER, valve lifter cover bolt
29	4335455	6 6	BOLT, valve lifter cover
30	917724	1 -	PLUG, expansion, 2-3/4" diam. (Used prior to engine #45-1397)
	4335534	1 1	PLUG, camshaft hole (grooved for O-ring)(Effective with engine #45-1397)
31	4254624	1 1	□O-RING, camshaft hole plug (Effective with engine #45-1397)
32	4660357	1 1	NUT, cap, oil pressure regulating valve
33	4660356	1 1	SCREW, oil pressure regulating valve
	910847	1 1	NUT, jam, 3/4"NF
34	4113897	2 2	□GASKET, regulating valve nut

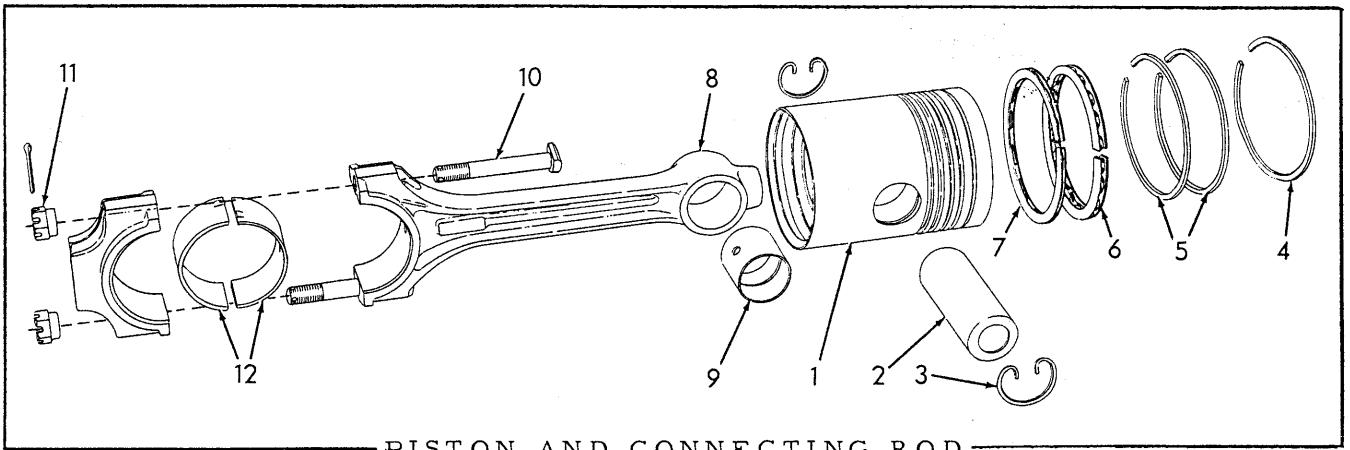
Δ Replacement bearing caps are semi-finished and must be line-bored after installing
 □Also see PACKAGED PARTS

(Continued)

CYLINDER BLOCK (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
35	4660358	1	1	SPRING, oil pressure regulating valve
36	4500230	1	1	PISTON, oil pressure regulating valve
37	4347465	1	1	INSERT, oil pressure regulating valve seat
38	4347061	1	1	RESTRICTOR, oil passage (Additional 2 used on engines prior to #90846)
39	4346184	12	12	O-RING, cylinder sleeve (black) (Used prior to engine #45-2260)
	4337972	12	12	□O-RING, cylinder sleeve (red) (Effective with engine #45-2260)
40	4337971	6	6	□SLEEVE, cylinder (If for engines prior to #45-2260 also order O-RING 4337972)
41	4348857	-	-	SHIM, cylinder sleeve (.005" thick)
	4348856	-	-	SHIM, cylinder sleeve (.008" thick)
	4348859	-	-	SHIM, cylinder sleeve (.010" thick)
	4348858	-	-	SHIM, cylinder sleeve (.015" thick)
	4348900	-	-	SHIM, cylinder sleeve (.020" thick)
Use as req'd when re-machining cylinder blocks				
42	4335777	2	2	CAPSCREW, crankcase pad (3/8"NC x 3/4", nylok) (Effective with engine #45-1397)
<u>NOTE:</u> Items listed below are furnished only with service replacement cylinder block and are not original equipment.				
43	4335369	1	1	PLATE, cover, oil gallery hole, upper
	903638	4	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	4	LOCKWASHER, 1/2"
44	4253106	2	2	□O-RING, oil gallery hole cover plates
45	4335782	1	1	PLATE, cover, oil gallery hole, lower
	915666	1	1	CAPSCREW, 1/2"NC x 1-3/8"
46	4506946	2	2	STUD
	904208	3	3	LOCKWASHER, 1/2"
	910195	2	2	NUT, 1/2"NF

□Also see PACKAGED PARTS

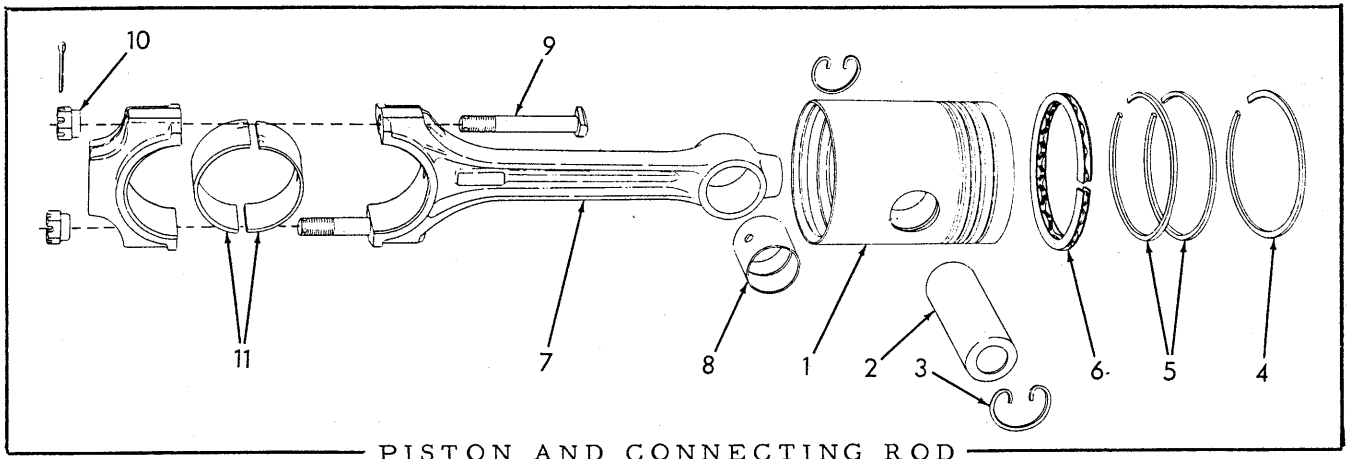


PISTON AND CONNECTING ROD

USAGE: Graders prior to serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4347676	6	□PISTON
2	4347281	6	□PIN, piston
3	4304699	12	□RETAINER, piston pin
4	4347458	6	□RING, compression (top groove) (See item 13)
5	4347235	12	□RING, compression (2nd and 3rd grooves)(See item 13)
6	4336321	6	□RING, oil control (4th groove)(See item 13)
7	4336190	6	□RING, oil control (5th groove)(See item 13)
8	4348451	6	ROD ASSEMBLY, connecting (Includes items 9 thru 11)
9	4340081	6	BUSHING, connecting rod
10	4338510	12	BOLT, connecting rod
11	4338509	12	NUT, connecting rod bolt
	900806	12	PIN, cotter, 1/8" x 1"
12	4335208	12	BEARING, connecting rod (standard size)(Used prior to engine #45-1670)
	4337701	12	BEARING, connecting rod (standard size)(Effective with engine #45-1670)
	4337702	12	BEARING, connecting rod (.010" undersize)
	4337703	12	BEARING, connecting rod (.020" undersize)
	4337704	12	BEARING, connecting rod (.030" undersize)
	4337705	12	BEARING, connecting rod (.040" undersize)
13	4336408	6	RING SET (Consists of items 4 thru 7)(Not illustrated)

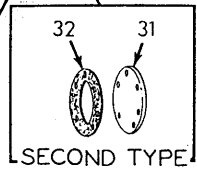
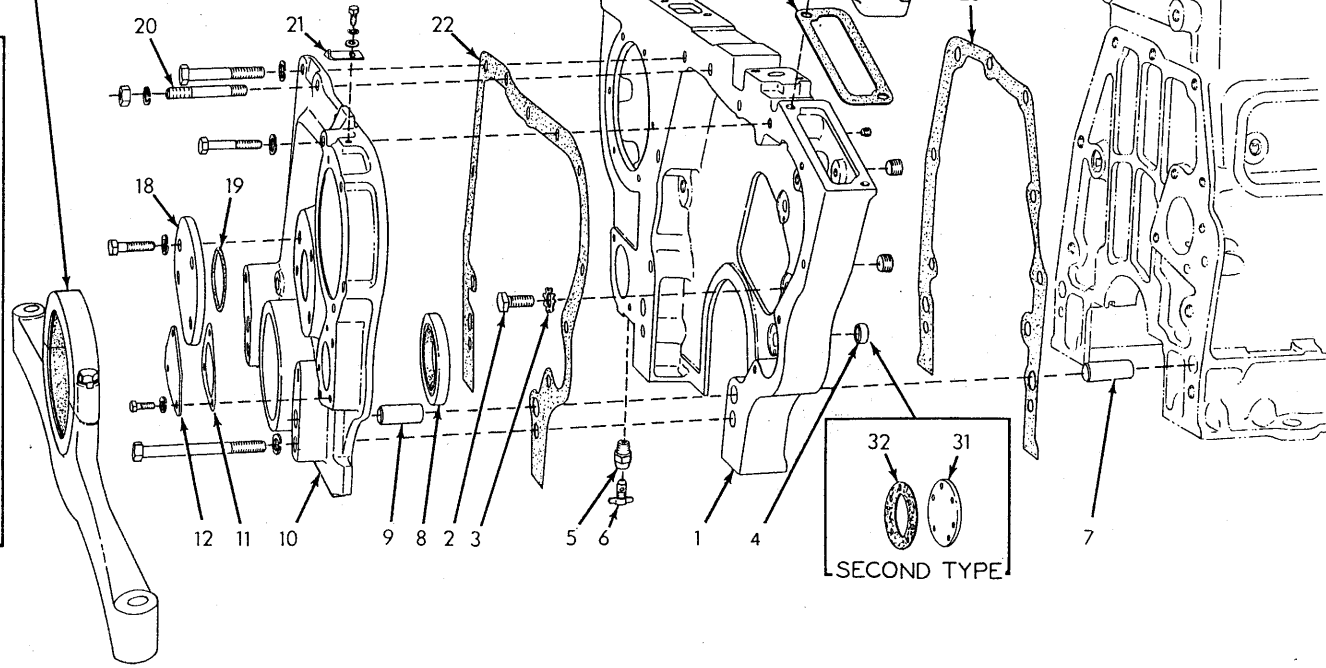
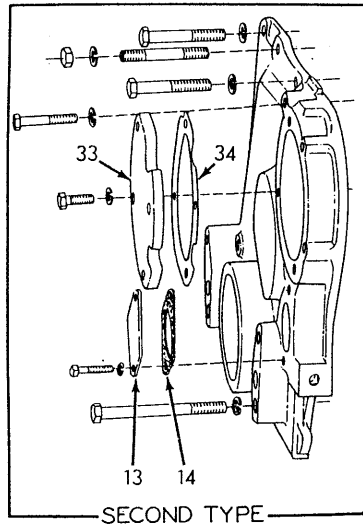
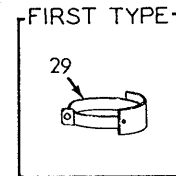
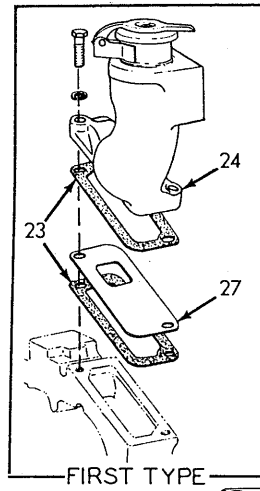
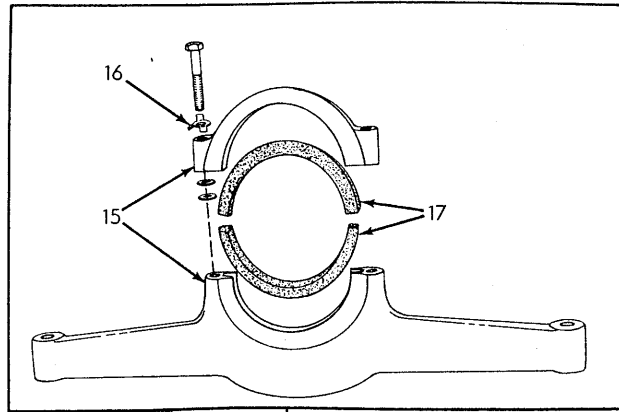
□Also see PACKAGED PARTS



USAGE: Graders serial No. 1780 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	4336512	6	□PISTON
2	4337395	6	□PIN, piston
3	4254814	12	□RETAINER, piston pin
4	4347458	6	□RING, compression (top groove)(See item 12)
5	4347235	12	□RING, compression (See item 12)
6	4336559	6	□RING, oil control (See item 12)
7	4339018	6	ROD ASSEMBLY, connecting (Includes items 8 thru 10)
8	4339017	6	BUSHING, connecting rod
9	4338510	12	BOLT, connecting rod
10	4338509	12	NUT, connecting rod bolt
	900806	12	PIN, cotter, 1/8" x 1"
11	4337701	12	BEARING, connecting rod (standard size)
	4337702	12	BEARING, connecting rod (.010" undersize)
	4337703	12	BEARING, connecting rod (.020" undersize)
	4337704	12	BEARING, connecting rod (.030" undersize)
	4337705	12	BEARING, connecting rod (.040" undersize)
12	4336578	6	RING SET, piston (Not Illustrated)

□Also see PACKAGED PARTS



TIMING GEAR HOUSING

TIMING GEAR HOUSING

* Used prior to grader serial No. 1780
 ** Effective with grader serial No. 1780

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4347874	1	-	HOUSING, timing gear (Used prior to engine #45-1257)
	4335274	1	-	HOUSING ASSEMBLY, timing gear (Includes item 4)(Effective with engine #45-1257)
	4337228	-	1	HOUSING, timing gear
	904260	1	-	PLUG, pipe, ctsk-hd., 3/8"NPT
	904223	1	-	PLUG, pipe, ctsk-hd., 1/2"NPT
	919134	-	1	PLUG, pipe, hex-hd., 1/8"NPT
	917970	-	1	PLUG, pipe, hex-socket, 1/2"NPT
2	4004054	3	3	CAPSCREW, 1/2"NC x 1-1/16"
3	4253490	3	3	LOCKWASHER
4	4253924	1	-	PLUG, cup (3/4"O. D.)
5	915433	1	-	COCK, drain, 1/4"NPT (Used prior to grader #820)
	201671	1	1	COCK, drain, 3/8"NPT (Includes item 6)(Effective with grader #820)
6	209359	1	1	STEM, drain cock (For 201671 COCK only)
7	4346246	2	2	PIN, dowel, timing gear housing
8	4338507	1	1	SEAL, oil crankshaft
9	4348107	2	2	PIN, dowel, timing gear cover
10	4337281	-	1	COVER ASSEMBLY, timing gear housing (Includes item 9)(If for engines prior to #45-2140 also order 1 CAPSCREW 921299)
	4347887	1	-	COVER ASSEMBLY, timing gear housing (Includes item 9)
	904283	3	3	CAPSCREW, 1/2"NC x 3"
	903782	1	1	CAPSCREW, 1/2"NC x 3-1/2"
	910257	2	2	CAPSCREW, 1/2"NC x 4-3/4"(1 less used effective with engine #45-2140)
	915635	5	3	CAPSCREW, 3/8"NC x 1-7/8"
	904281	-	2	CAPSCREW, 3/8"NC x 2-1/4"
	921299	-	1	CAPSCREW, 1/2"NC x 4" (Effective with engine #45-2140)
	908191	1	-	WASHER, plain (copper)(Used prior to engine #45-1210)
	904208	6	6	LOCKWASHER, 1/2"
	904206	5	5	LOCKWASHER, 3/8"
11	4376605	1	-	GASKET, cover plate
12	4348285	1	-	PLATE, cover, timing gear
	905661	3	-	CAPSCREW, 5/16"NC x 5/8"
	904205	3	-	LOCKWASHER, 5/16"
13	4335711	-	1	PLATE, cover, timing gear
14	4335712	-	1	GASKET, cover plate

□Also see PACKAGED PARTS

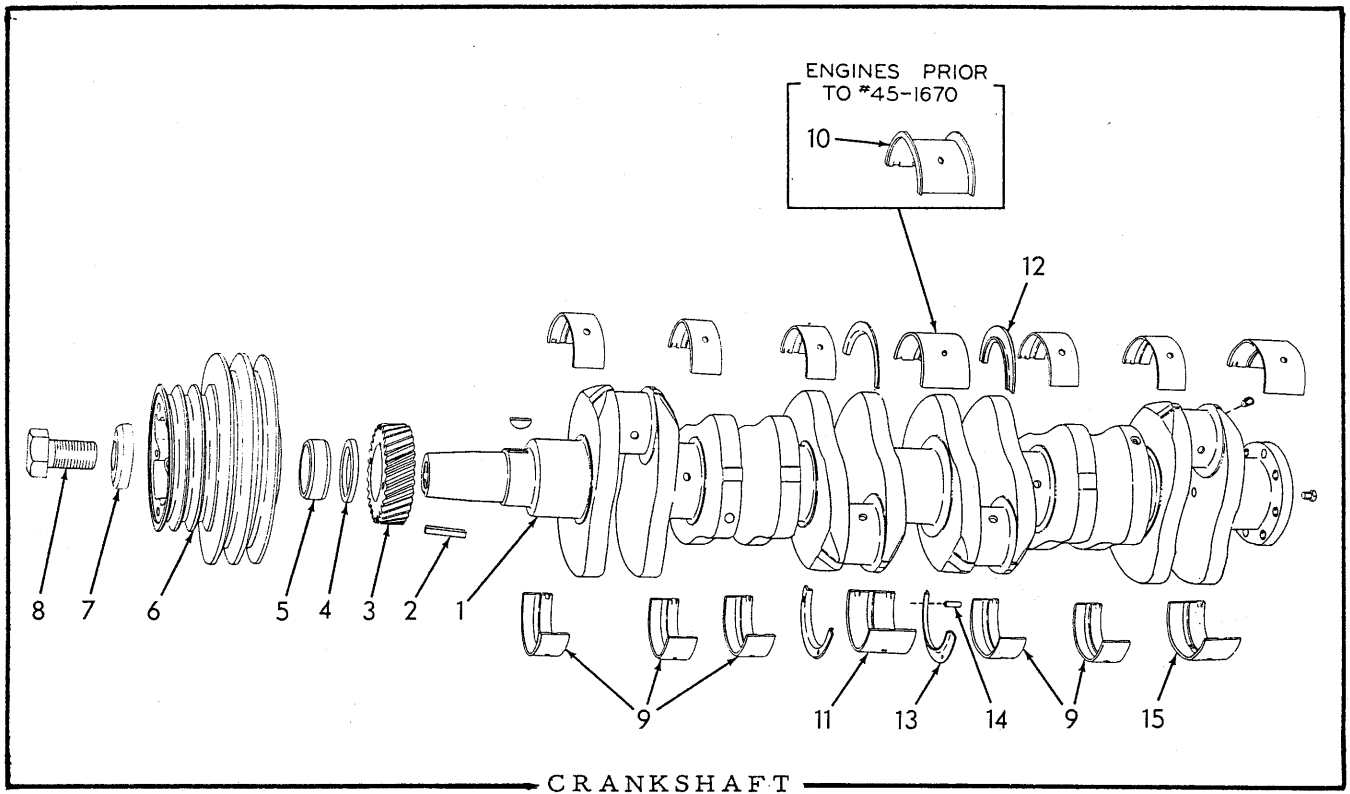
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TIMING GEAR HOUSING (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
15	4349324	1	-	BRACKET, engine mounting (Includes cap)(Used prior to engine #45-1612)
	4335069	1	1	BRACKET, engine mounting (Includes cap)(Effective with engine #45-1612)
16	4254891	2	2	CAPSCREW, 1/2"NC x 2-1/2"
	916009	10	10	WASHER, plain (1/32" thick. Use as req'd)
	4335550	2	2	LOCKWASHER
17	4364864	2	2	LINER, engine mounting bracket (rubber)(Used prior to engine #45-1932)
	4336491	-	2	LINER, engine mounting bracket (nylon)(Effective with engine #45-1932)
18	4347935	1	-	COVER, timing gear cover camshaft hole
	903638	4	-	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	-	LOCKWASHER, 1/2"
19	4254082	1	-	□O-RING, camshaft hole cover
20	4335371	1	1	STUD, timing gear housing
	904208	1	1	LOCKWASHER, 1/2"
	910195	1	1	NUT, 1/2"NF
21	4347673	1	-	POINTER, timing
	903626	1	-	CAPSCREW, 5/16"NC x 3/4"
	904205	1	-	LOCKWASHER, 5/16"
	910335	1	-	WASHER, plain, SAE std., 5/16"
22	4348126	1	1	□GASKET, timing gear housing cover
23	4347120	1	1	□GASKET, oil filter hole cover (1 additional used prior to grader #365)
24	4338049	1	1	FILLER ASSEMBLY, oil (Includes item 23 and 24)
	910245	2	2	CAPSCREW, 3/8"NC x 1-3/8"
	904206	2	2	LOCKWASHER, 3/8"
25	4335022	1	1	STRAINER, oil filler (Effective with grader #365)
26	4366461	1	1	CAP ASSEMBLY, oil filler (Serviced only as a unit)
27	089765	1	-	BAFFLE, oil filler (Used prior to grader #365)
28	4347880	1	-	□GASKET, timing gear housing
	4348136	-	1	□GASKET, timing gear housing
29	4379291	1	1	PLATE AND STRAP ASSEMBLY, oil data (Used prior to engine #45-2271)
30	4379141	-	1	PLATE, oil data (Effective with engine #45-2271)
	904516	-	4	SCREW, drive, #6 x 1/4"
31	4336346	-	1	COVER, timing gear housing
	905661	-	6	CAPSCREW, 5/16"NC x 5/8"
	917230	-	6	WASHER, plain, copper, 5/16"
32	4336345	-	1	□GASKET, housing cover
33	4348310	-	1	PLATE, cover, injection pump driving gear
	903775	-	4	CAPSCREW, 3/8"NC x 7/8"
	904206	-	4	LOCKWASHER, 3/8"
34	4349011	-	1	□GASKET, cover plate

□Also see PACKAGED PARTS

MEMO



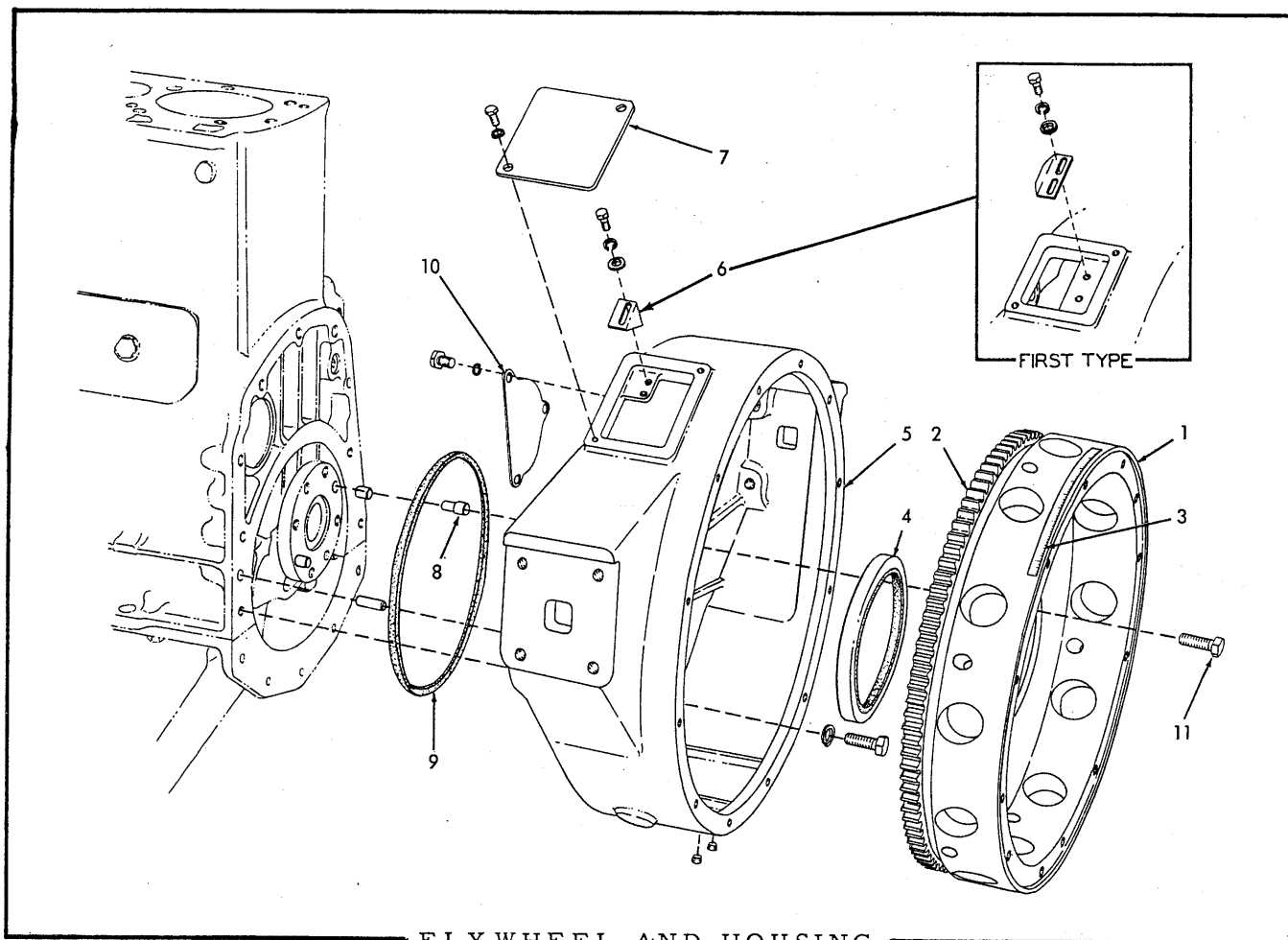
* Engines prior to serial No. 45-1670
 ** Effective with engine serial No. 45-1670

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4337718	1	1	CRANKSHAFT ASSEMBLY (Includes PLUGS indented below)
	917673	6	6	PLUG, pipe, hex-socket, 1/8"NPT
	919840	1	1	PLUG, pipe, hex-head, 1/4"NPT
2	4003490	1	1	KEY, crankshaft pulley
3	4346205	1	1	GEAR, crankshaft (Used prior to engine #45-2235)
	4337060	-	1	GEAR, crankshaft (hardened)(Effective with engine #45-2235)
	905127	1	1	KEY, "B" woodruff, 5/16" x 1"
4	4374391	1	1	SPACER, front oil seal sleeve (Used prior to engine #45-2289)
5	4374390	1	1	SLEEVE, front oil seal (Used prior to engine #45-2289)
6	4347899	1	1	PULLEY, crankshaft
7	4371503	1	1	WASHER, crankshaft pulley bolt
8	4347897	1	1	CAPSCREW, crankshaft pulley
9	4337710	10	10	BEARING, front and intermediate main (standard size)
	4337711	10	10	BEARING, front and intermediate main (.010" undersize)
	4337712	10	10	BEARING, front and intermediate main (.020" undersize)
	4337713	10	10	BEARING, front and intermediate main (.030" undersize)
	4337714	10	10	BEARING, front and intermediate main (.040" undersize)

(Continued)

CRANKSHAFT (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
10	4337062	2	-	BEARING, center main (standard size)
	4337063	2	-	BEARING, center main (.010" undersize)
	4337064	2	-	BEARING, center main (.020" undersize)
	4337065	2	-	BEARING, center main (.030" undersize)
	4337066	2	-	BEARING, center main (.040" undersize)
11	4337735	-	1	BEARING KIT, center main (standard size)
	4337736	-	1	BEARING KIT, center main (.010" undersize)
	4337737	-	1	BEARING KIT, center main (.020" undersize)
	4337738	-	1	BEARING KIT, center main (.030" undersize)
	4337739	-	1	BEARING KIT, center main (.040" undersize)
<u>NOTE:</u> Each Bearing Kit listed above includes upper and lower bearings, set of standard thrust flanges and dowel pins				
12	4337683	-	2	FLANGE, thrust, center main, upper (standard size)
	4337684	-	2	FLANGE, thrust, center main, upper (.005" oversize)
	4337685	-	2	FLANGE, thrust, center main, upper (.010" oversize)
	4337686	-	2	FLANGE, thrust, center main, upper (.015" oversize)
13	4337687	-	2	FLANGE, thrust, center main, lower (standard size)
	4337688	-	2	FLANGE, thrust, center main, lower (.005" oversize)
	4337689	-	2	FLANGE, thrust, center main, lower (.010" oversize)
	4337690	-	2	FLANGE, thrust, center main, lower (.015" oversize)
14	4250898	-	4	PIN, dowel, thrust flange
15	4337698	2	2	BEARING, rear main (standard size)
	4337699	2	2	BEARING, rear main (.010" undersize)
	4337700	2	2	BEARING, rear main (.020" undersize)
	4337715	2	2	BEARING, rear main (.030" undersize)
	4337716	2	2	BEARING, rear main (.040" undersize)



FLYWHEEL AND HOUSING

* Engines prior to serial No. 45-2176
 ** Engines serial No. 45-2176 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4336658	1	-	FLYWHEEL ASSEMBLY (Includes items 2 and 3)(Used prior to grader #1780)
	4336554	1	-	FLYWHEEL ASSEMBLY (Includes item 2)(Effective with grader #1780)
	4338546	-	1	FLYWHEEL ASSEMBLY (Includes item 2)
2	4341292	1	1	GEAR, ring
3	4336621	1	1	STRIP, timing marks (Used prior to engine #10178)
4	4338219	1	1	SEAL, oil, crankshaft rear end
5	4349964	-	1	HOUSING, flywheel (If for engines prior to #45-1684 also order item 10)
	917021	2	2	PIN, dowel, 1/2" x 1"
	918850	2	2	PLUG, pipe, hex-socket, 1/4"NPT
	903638	9	9	CAPSCREW, 1/2"NC x 1-1/4"
	904208	9	9	LOCKWASHER, 1/2"

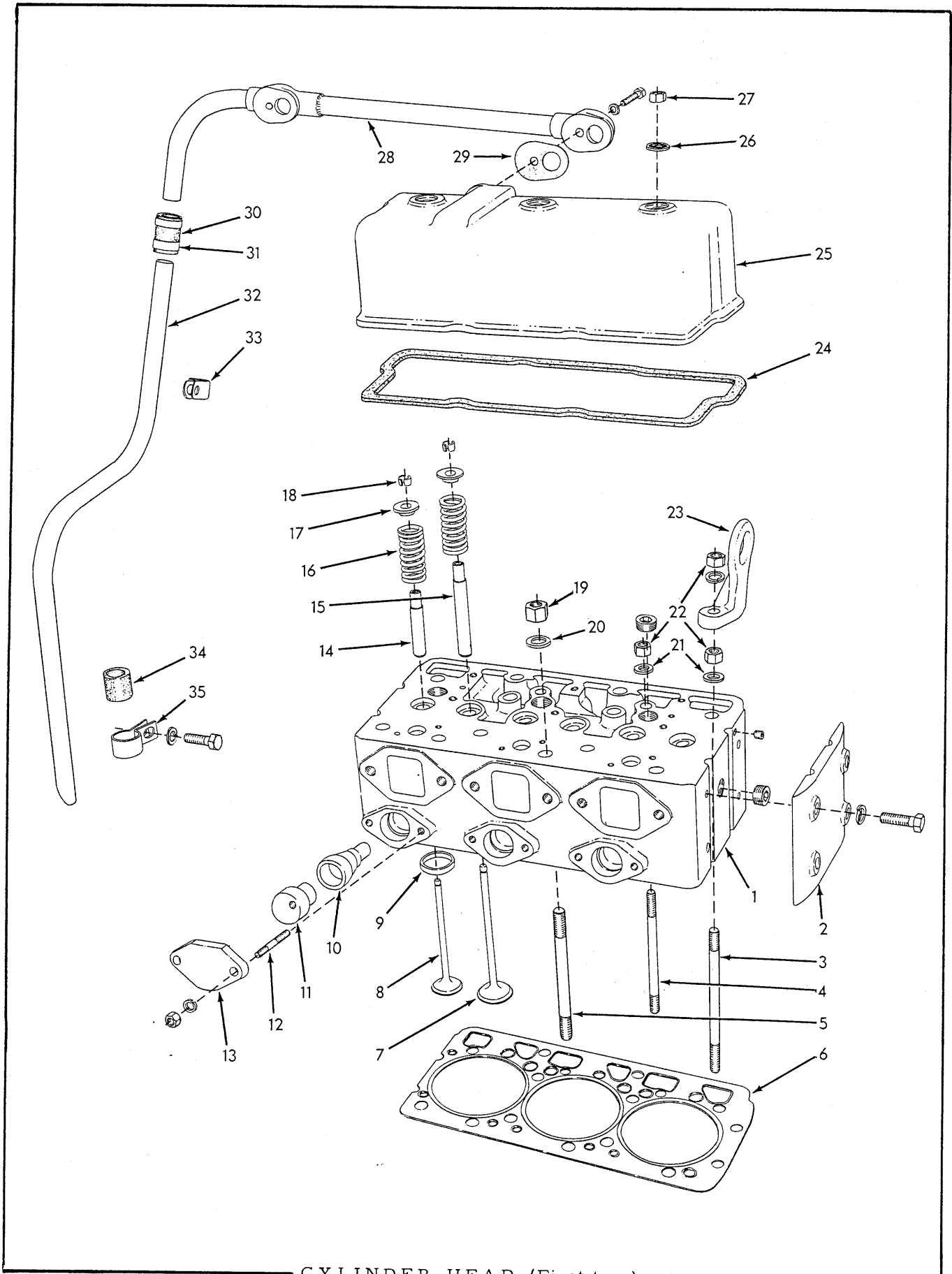
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FLYWHEEL AND HOUSING (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
6	{ 4348410	1	-	POINTER, timing
		-	1	POINTER, timing
	905655	2	2	CAPSCREW, 1/4"NC x 1/2"
	904204	2	2	LOCKWASHER, 1/4"
7	{ 4348253	1	-	COVER, timing hole (3-1/2" x 4")
		-	1	COVER, timing hole (4" x 4-1/2")
	905655	2	2	CAPSCREW, 1/4"NC x 1/2"
	904204	2	2	LOCKWASHER, 1/4"
8	4500300	2	2	DOWEL, flywheel to crankshaft
9	4336897	1	1	□RING, sealing, flywheel housing to crankcase
10	4303737	1	1	COVER, starter hole
	917153	3	3	CAPSCREW, 5/8"NC x 5/8"
	904209	3	3	LOCKWASHER, 5/8"
11	{ 4255336	6	6	BOLT, flywheel (1-1/8" long)(Engines prior to #10178)
		4255343	6	6

NOTE: New flywheel bolts are self-locking and do not require the lockwasher formerly used with standard type capscREW in this location

□Also see PACKAGED PARTS



CYLINDER HEAD (First type)

CYLINDER HEAD

USAGE: Graders prior to serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4336489	2	HEAD ASSEMBLY, cylinder (Includes items 9, 14, 15 and PLUGS indented below)
	917673	4	PLUG, pipe, hex-socket, 1/8"NPT
	918851	10	PLUG, pipe, hex-socket, 3/4"NPT
2	4347505	2	PLATE, end
	903639	7	CAPSCREW, 1/2"NC x 1-1/2"
	904208	7	LOCKWASHER, 1/2"
3	4034282	2	STUD, cylinder head (1/2" x 9")(Also attaches lifting eye)
	4372725	2	STUD, cylinder head (1/2" x 8-1/2")
4	4372724	6	STUD, cylinder head (1/2" x 7-5/8")
5	4347435	24	STUD, cylinder head (5/8" x 8")
6	4336430	1	□GASKET, cylinder head, front (shown)
	4336431	1	□GASKET, cylinder head, rear (opposite)
7	4348079	6	VALVE, intake
8	4348090	6	VALVE, exhaust
9	4346146	6	INSERT, exhaust valve seat (standard size)
	4337215	6	INSERT, exhaust valve seat (.005" oversize)
10	4345658	6	CELL ASSEMBLY, energy (Includes orifice and pin. Serviced only as a unit)
11	4341123	6	PLUG, energy cell
12	4335573	12	STUD, energy cell clamp
	904206	12	LOCKWASHER, 3/8"
	910123	12	NUT, 3/8"NF
13	4346543	6	RETAINER, energy cell
14	4346093	6	GUIDE, exhaust valve
15	4346092	6	GUIDE, intake valve
16	4345412	12	SPRING, valve
17	4343799	12	RETAINER, valve spring
18	4347270	24	LOCK, valve spring retainer (half only)
19	4366780	24	NUT, cylinder head stud (5/8"NF)
20	4372863	24	WASHER, cylinder head nut (For 5/8" stud)
21	4372864	14	WASHER, cylinder head nut (For 1/2" stud)
22	4366781	14	NUT, cylinder head stud (1/2"NF)
23	4347619	2	EYE, engine lifting
24	4335279	2	□GASKET, rocker cover
25	4347514	2	COVER, rocker

□Also see PACKAGED PARTS

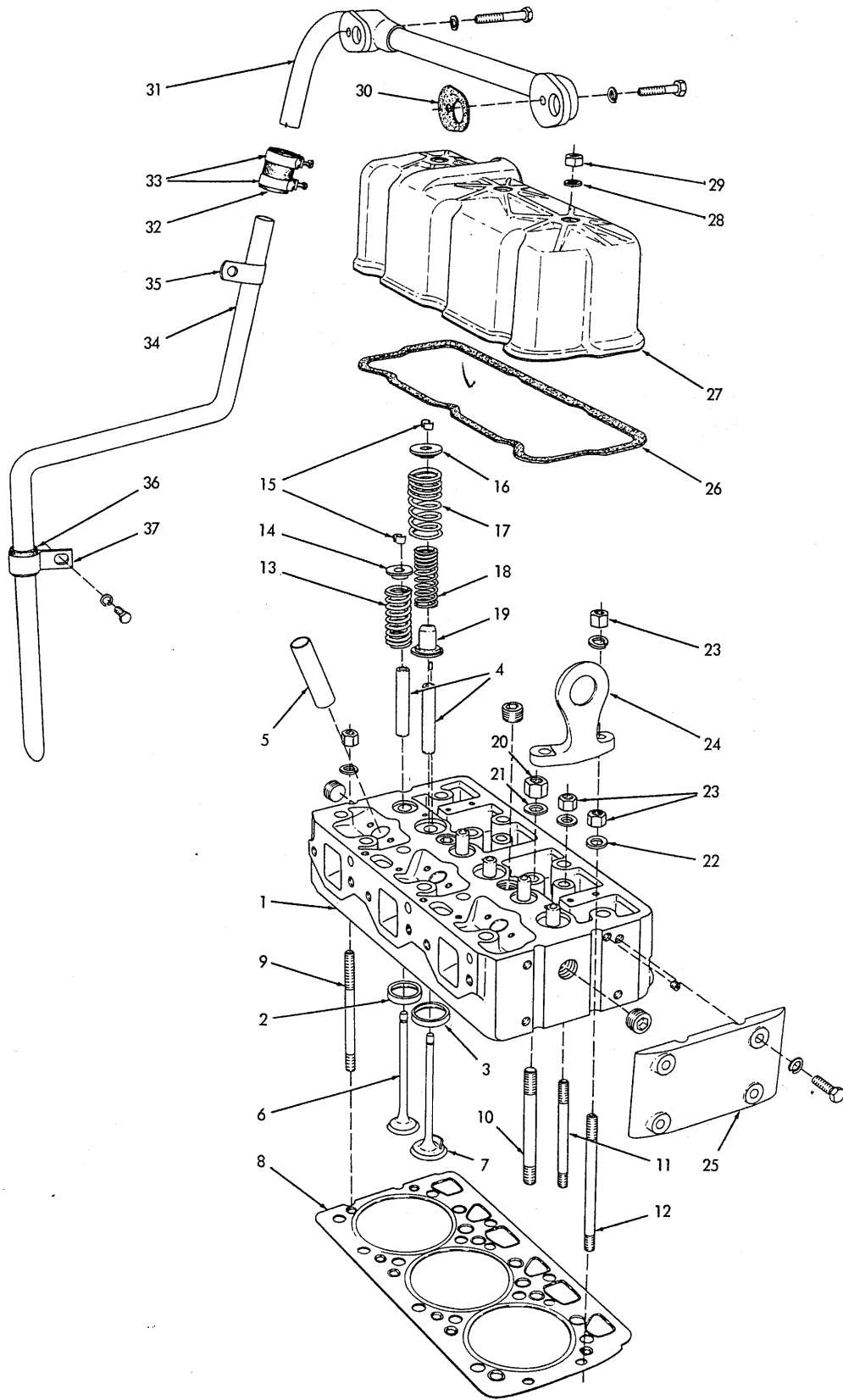
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CYLINDER HEAD (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
26	4364131	6	WASHER, sealing, rocker cover nut (Used prior to engine #45-1493)
	4375938	6	WASHER, sealing, rocker cover nut (Effective with engine #45-1493)
27	910986	6	NUT, rocker cover (Used prior to engine #45-1493)
	906985	6	WASHER, plain, U.S. std., 7/16"
	4375937	6	NUT, rocker cover (Nylok)(Effective with engine #45-1493)
28	4349305	1	TUBE, breather, upper section
	904281	1	CAPSCREW, 3/8"NC x 2-1/4" (Used prior to engine #97096)
	903633	1	CAPSCREW, 3/8"NC x 1-3/4" (Effective with engine #97096)
	903635	1	CAPSCREW, 3/8"NC x 2-1/2"
	904206	2	LOCKWASHER, 3/8"
29	4348133	2	OGASKET, breather tube
30	4347924	1	HOSE, breather tube
31	4253453	2	CLAMP, breather tube hose
32	4347923	1	TUBE, breather, lower section
33	4254173	1	CLIP, breather tube supporting, upper
34	4371324	1	INSULATOR, breather tube (rubber)
35	4371323	1	CLIP, breather tube supporting, lower
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"

□Also see PACKAGED PARTS

MEMO



CYLINDER HEAD (Second type)

CYLINDER HEAD

USAGE: Graders serial No. 1780 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	4336503	2	HEAD ASSEMBLY, cylinder (Includes items 2 thru 5 and hardware indented below)
	917673	4	PLUG, pipe, hex-socket, 1/8"NPT
	920340	8	PLUG, pipe, hex-socket, 3/4"NPT
	917560	6	PIN, dowel, 3/16" x 3/8" (intake valve locator)
2	{ 4336419	6	INSERT, exhaust valve seat (standard size)
	{ 4336602	6	INSERT, exhaust valve seat (.005" oversize)
3	{ 4336418	6	INSERT, intake valve seat (standard size)
	{ 4336601	6	INSERT, intake valve seat (.005" oversize)
4	4336586	12	GUIDE, valve stem
5	4336157	6	SLEEVE, injection nozzle
6	4336128	6	VALVE, exhaust
7	4336127	6	VALVE, intake
8	{ 4336430	1	□GASKET, cylinder head, front (shown)
	{ 4336431	1	□GASKET, cylinder head, rear (opposite)
9	4336188	4	STUD, cylinder head (1/2" x 7")
10	4336185	24	STUD, cylinder head (5/8" x 6-1/2")
11	4336187	4	STUD, cylinder head (1/2" x 6-1/8")
12	4336186	2	STUD, cylinder head (1/2" x 7-3/8")
13	4336131	6	SPRING, exhaust valve
14	4343799	6	RETAINER, exhaust valve spring
15	4376497	24	LOCK, valve spring retainer (half only)
16	4336153	6	RETAINER, intake valve spring
17	4336129	6	SPRING, intake valve, outer
18	4336130	6	SPRING, intake valve, inner
19	4336758	6	LOCATOR, intake valve
20	{ 4366780	20	NUT, cylinder head stud (5/8"NF)
	{ 4338445	4	NUT, cylinder head stud (5/8"NF, Nylok)(For end studs only)
21	4372863	24	WASHER, cylinder head nut (For 5/8"stud)
22	4372864	14	WASHER, cylinder head nut (For 1/2" stud)
23	4366781	14	NUT, cylinder head stud (1/2"NF)
24	4347619	2	EYE, engine lifting

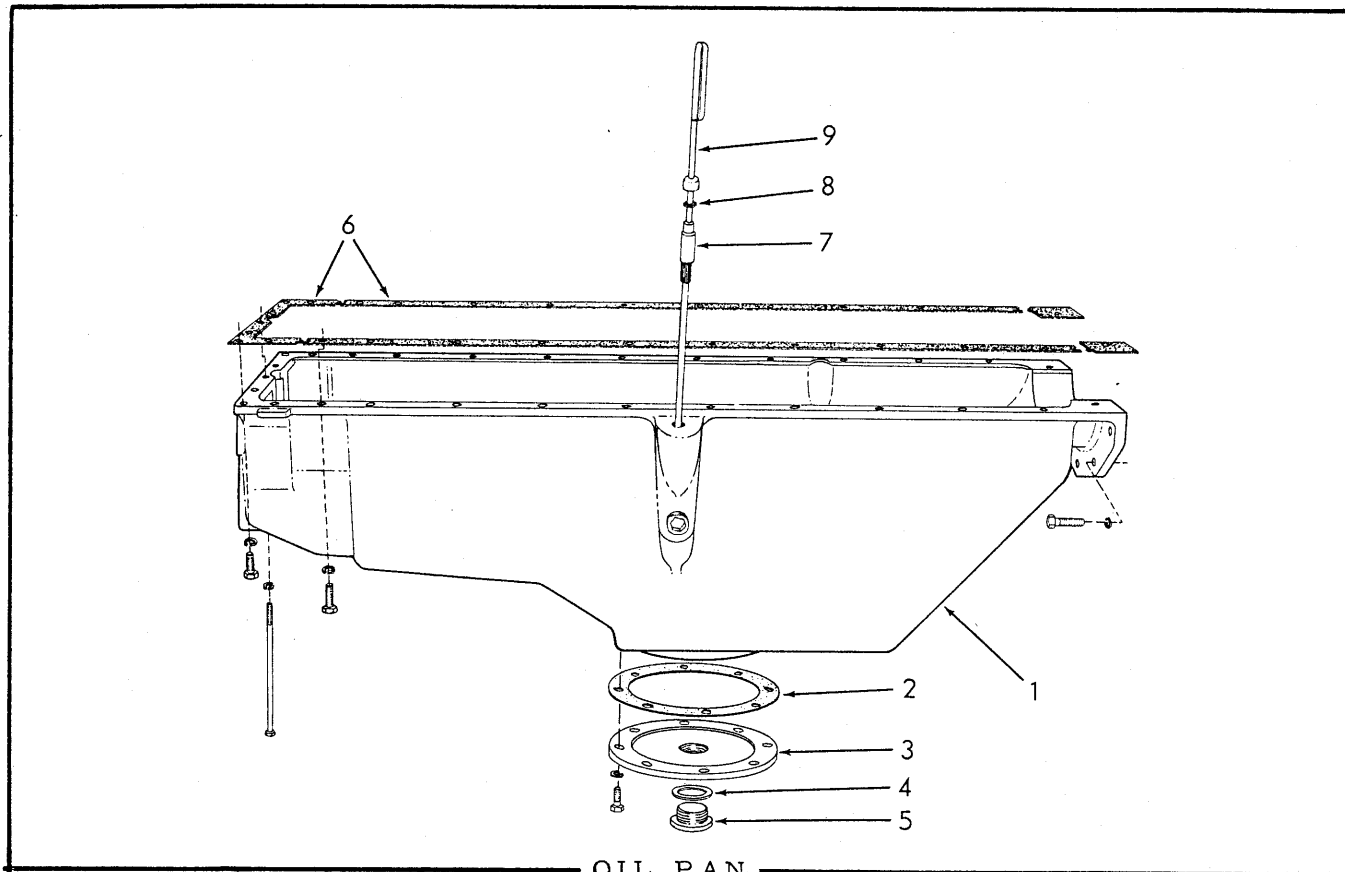
□Also see PACKAGED PARTS

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CYLINDER HEAD (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
25	4336178	2	PLATE, end
	916191	8	CAPSCREW, 7/16"NC x 1-1/2"
	904207	8	LOCKWASHER, 7/16"
26	4336148	2	□GASKET, rocker cover
27	4336146	2	COVER, rocker
28	4376749	6	WASHER, sealing, rocker cover nut
29	4375937	6	NUT, rocker cover
30	4348133	2	□GASKET, breather tube
31	4349305	1	TUBE, breather, upper section
	903633	1	CAPSCREW, 3/8"NC x 1-3/4"
	903635	1	CAPSCREW, 3/8"NC x 2-1/2"
	904206	2	LOCKWASHER, 3/8"
32	4347924	1	HOSE, breather tube
33	4253453	2	CLAMP, breather tube hose
34	4337905	1	TUBE, breather, lower section
35	4254173	1	CLIP, breather tube supporting, upper
36	4371324	1	INSULATOR, breather tube (rubber)
37	4371323	1	CLIP, breather tube supporting, lower
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"

□Also see PACKAGED PARTS

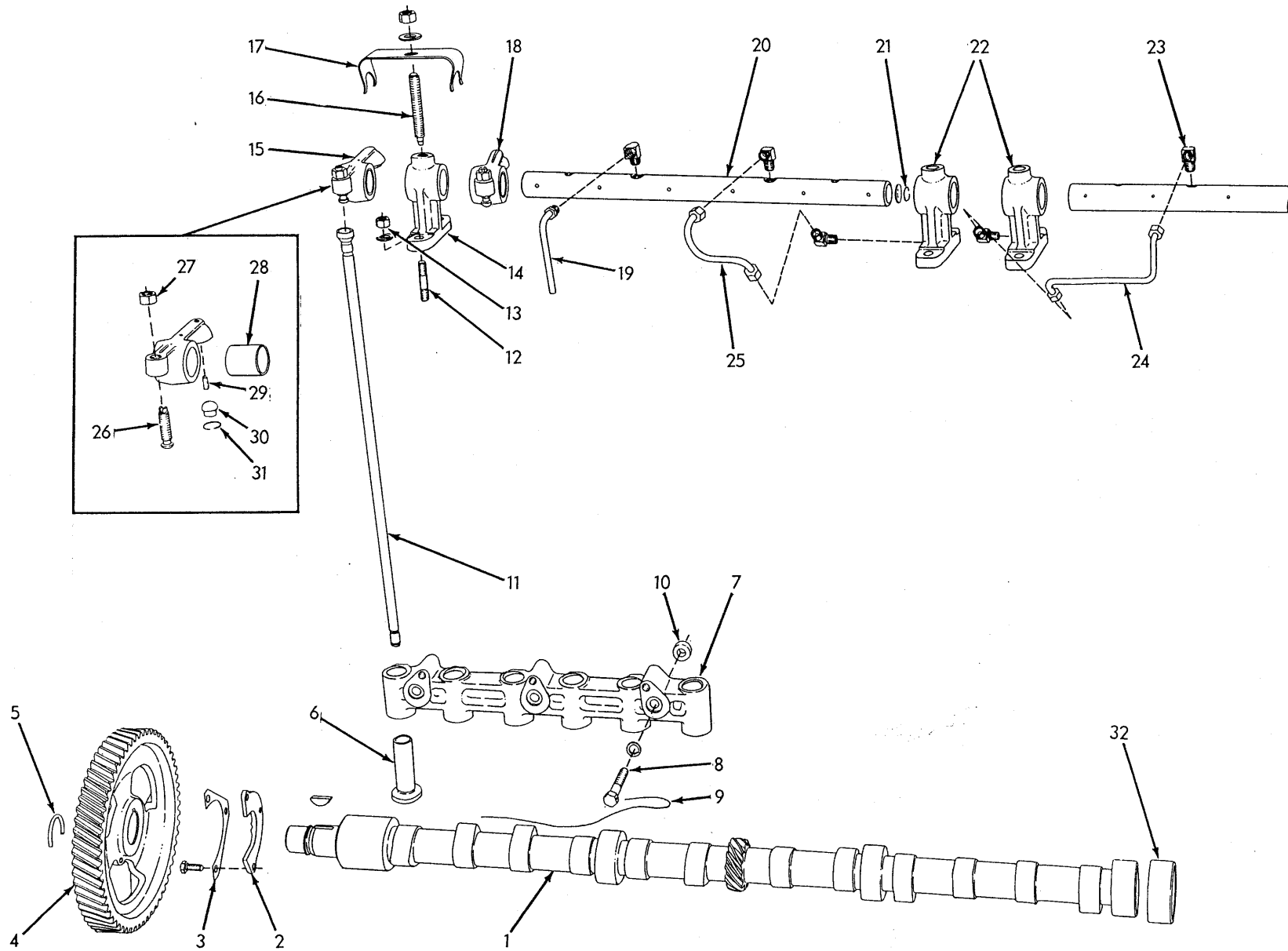


OIL PAN

* Used prior to engine serial No. 45-1051
 ** Effective with engine serial No. 45-1051

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4347852	1	-	PAN, oil
	4335233	-	1	PAN, oil
	904224	-	1	PLUG, pipe, ctsk-hd., 3/4"NPT
	910211	29	29	CAPSCREW, 3/8"NC x 1-1/8"
	903772	2	2	CAPSCREW, 5/16"NC x 1"
	917869	3	3	CAPSCREW, 5/16"NC x 6-1/2"
	904206	29	29	LOCKWASHER, 3/8"
	904205	5	5	LOCKWASHER, 5/16"
2	4371289	-	1	GASKET, oil screen cover
3	4371255	-	1	PLATE, oil screen hole
	910211	-	8	CAPSCREW, 3/8"NC x 1-1/8"
	904206	-	8	LOCKWASHER, 3/8"
4	035249	1	1	GASKET, oil drain plug
5	035250	1	1	PLUG, oil drain
6	4347543	1	1	GASKET SET, oil pan (5 pieces)
7	4349037	1	1	ADAPTOR, oil level gauge
8	4506607	1	1	SEAL, oil level gauge
9	4349261	1	-	GAUGE, oil level
	4335154	-	1	GAUGE, oil level

□Also see PACKAGED PARTS



VALVE OPERATING MECHANISM (First type)

VALVE OPERATING MECHANISM

* Used prior to engine serial No. 90846.
 ** Effective with engine serial No. 90846.

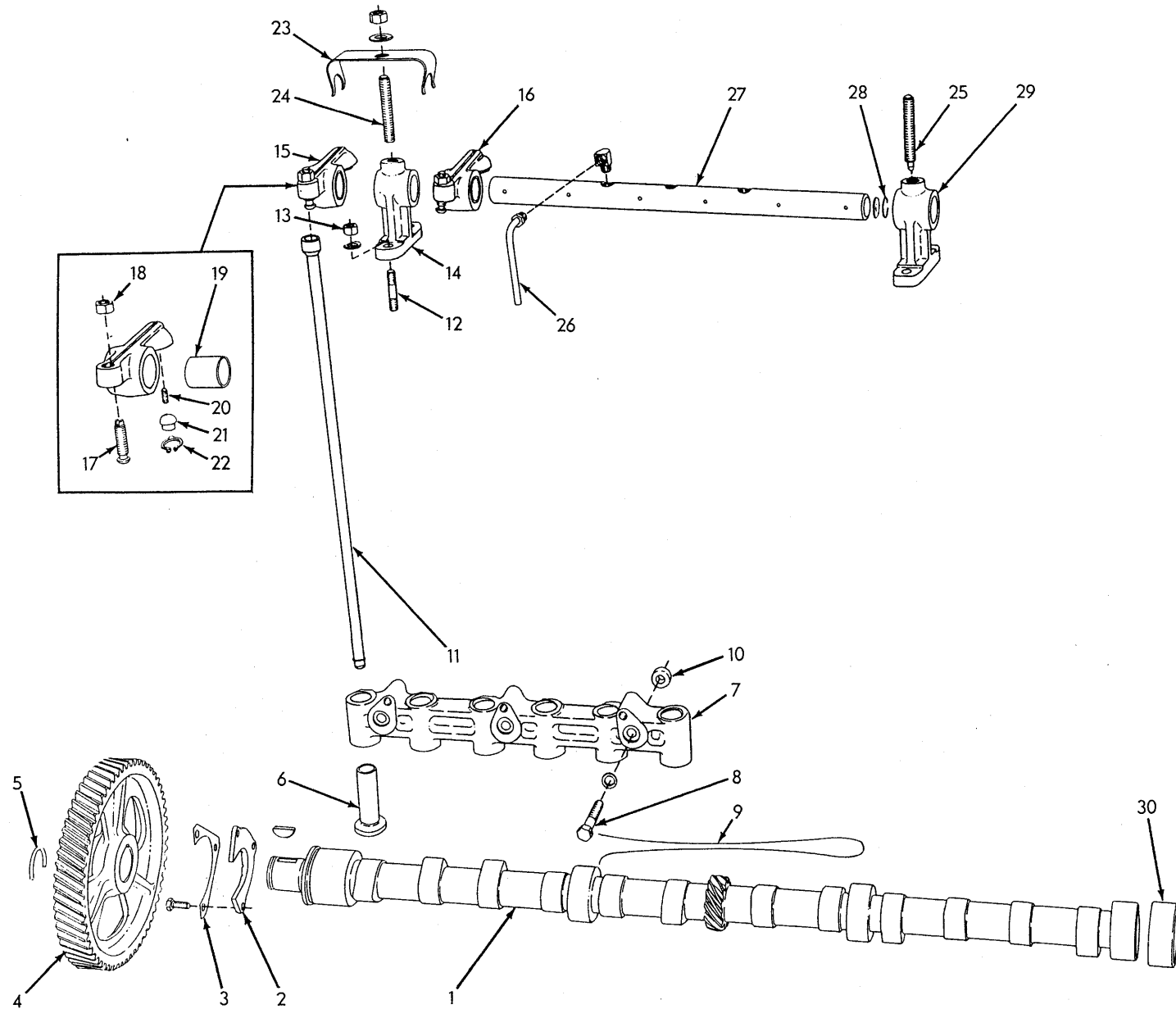
ITEM	PART NO.	QTY.		DESCRIPTION	
		*	**		
1	4347876	1	1	CAMSHAFT	
	905126	1	1	KEY, #5 woodruff, 1/4" x 1"	
2	4349257	1	1	COLLAR, camshaft thrust	
	903626	3	3	CAPSCREW, 5/16"NC x 3/4"	
3	4348416	1	1	PLATE, capscrew locking	
4	4347877	1	1	GEAR, camshaft	
5	4346307	1	1	RING, snap, gear retaining	
6	4344869	12	12	LIFTER, valve	
7	4347511	2	2	BRACKET, valve lifter	
8	4335548	6	6	CAPSCREW, 3/8"NC x 1-7/8"	
	904206	6	6	LOCKWASHER, 3/8"	
9	4335547	2	2	WIRE, locking	
10	4347832	4	4	DOWEL, hollow, valve lifter bracket	
11	4346209	12	12	ROD, push	
12	4506946	12	12	STUD, rocker shaft bracket (3/8"NC x 3/8"NF x 1-9/16")	
	904206	12	12	LOCKWASHER, 3/8"	
13	4348440	12	12	NUT, heat-treated, 3/8"NF	
14	{	4346992	4	-	BRACKET, rocker shaft (No. 1, 2, 5 and 6 cylinders)
		4335057	-	4	BRACKET, rocker shaft (No. 1, 2, 5 and 6 cylinders)
15	4346017	6	6	ARM ASSEMBLY, rocker, intake valve (Includes items 26 thru 31)	
16	{	4348130	2	2	SCREW, rocker shaft retaining (3" long, dog-pt.)
		4348129	4	4	STUD, rocker arm retaining clip (2-5/8" long)
		910919	6	6	WASHER, plain
		910986	6	6	NUT, 7/16"NF
17	4338143	6	6	CLIP, spring, rocker arm retaining	
18	4346018	6	6	ARM ASSEMBLY, rocker, exhaust valve (Includes items 26 thru 31)	
19		4349157	2	2	TUBE ASSEMBLY, rocker shaft overflow (Includes nut)
		913040	2	-	ELBOW, inverted flare, 90°, 1/4" tube, 1/4"NPT male
		913039	-	2	ELBOW, inverted flare, 90°, 1/4" tube, 1/8"NPT male
20	{	4347462	2	-	SHAFT ASSEMBLY, rocker arm (Includes 910002 PLUGS)
		4335399	-	2	SHAFT ASSEMBLY, rocker arm (Includes 910002 PLUGS and item 21)
	910002	4	4	PLUG, expansion, 3/4" diam.	

(Continued)

VALVE OPERATING MECHANISM (Continued)

ITEM	PART NUMBER	QTY.		DESCRIPTION
		*	**	
21	4254363	-	4	RING, snap, rocker shaft (Effective with engine #45-1418)
22	4346992	2	-	BRACKET, rocker shaft (No. 3 and 4 cylinders)
23	4335381	-	2	ELBOW, rocker shaft tube (restricted)
24	4349309	-	1	TUBE ASSEMBLY, rear shaft oil supply (Includes NUTS and SLEEVES indented below)
	911437	-	2	NUT, compression fitting, 1/4" tube
	911435	-	2	SLEEVE, compression fitting, 1/4" tube
	911017	-	1	ELBOW, compression type, 1/4" tube, 1/8"NPT male
25	4335043	-	1	TUBE ASSEMBLY, front shaft oil supply (Includes NUTS and SLEEVES indented below)
	911437	-	2	NUT, compression fitting, 1/4" tube
	911435	-	2	SLEEVE, compression fitting, 1/4" tube
	911017	-	1	ELBOW, compression type, 1/4" tube, 1/8"NPT male
26	4304051	12	12	SCREW, valve lash adjustment
27	4348440	12	12	NUT, valve lash adjustment screw
28	4660369	12	12	BUSHING, rocker arm
29	4364422	12	12	WICK, oiling, rocker ball
30	4661329	12	12	BALL, rocker arm
31	4661328	12	12	RETAINER, rocker arm ball
32	-----	--	--	BEARING, camshaft (See CYLINDER BLOCK)

MEMO



VALVE OPERATING MECHANISM (Second type)

VALVE OPERATING MECHANISM

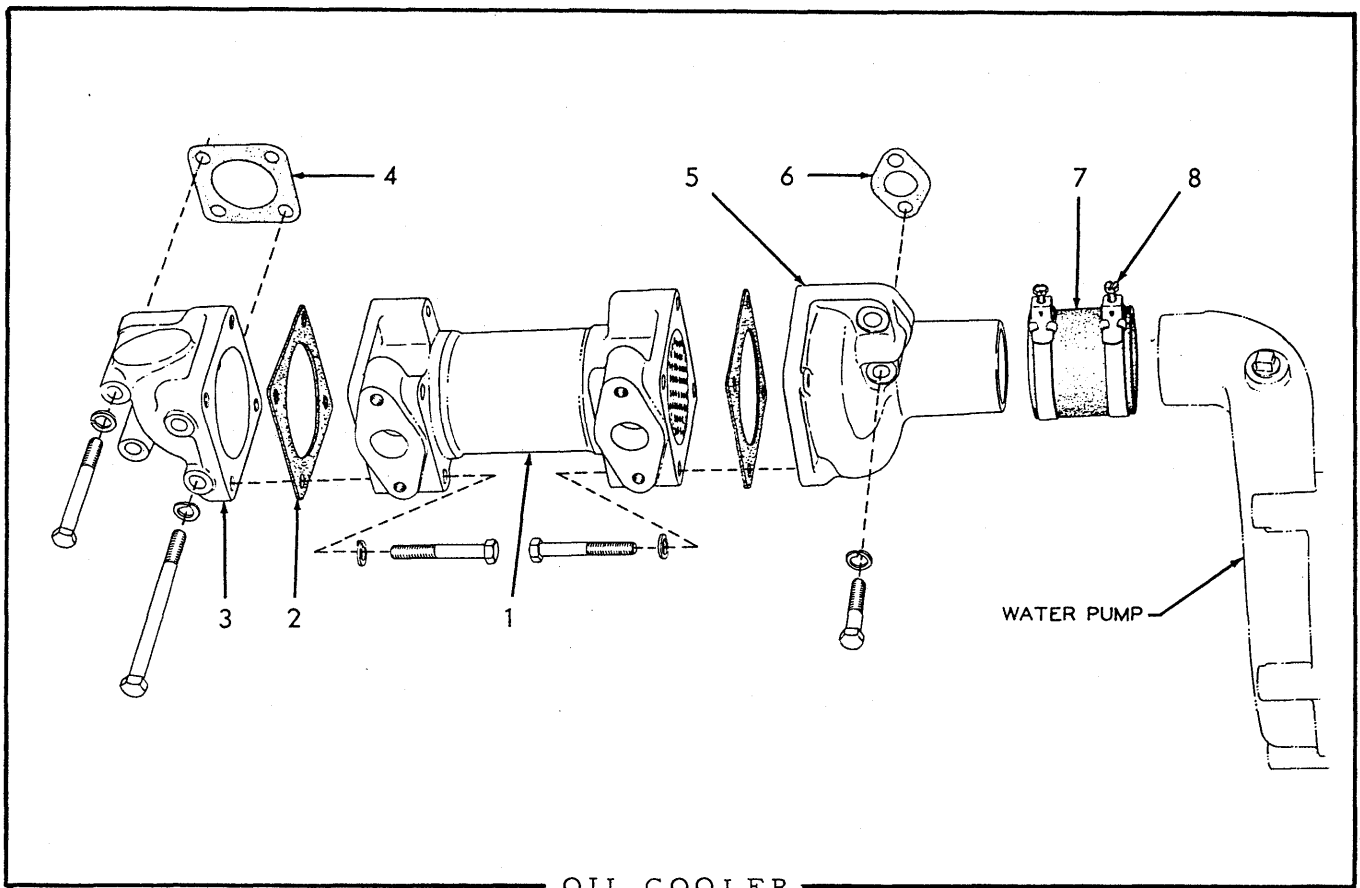
USAGE: Graders serial No. 1780 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	4337223	1	CAMSHAFT
	905126	1	KEY, #5 woodruff, 1/4" x 1"
2	4349257	1	COLLAR, camshaft thrust
	905661	3	CAPSCREW, 5/16"NC x 5/8"
3	4348416	1	PLATE, capscrew locking
4	4346206	1	GEAR, camshaft (Used prior to engine #45-2235)
	4337045	1	GEAR, camshaft (Effective with engine #45-2235)
5	4346307	1	RING, snap, gear retaining
6	4338299	12	LIFTER, valve
7	4347511	2	BRACKET, valve lifter
8	4335548	6	CAPSCREW, 3/8"NC x 1-7/8"
	904206	6	LOCKWASHER, 3/8"
9	4335547	2	WIRE, locking
10	4347832	4	DOWEL, hollow, valve lifter bracket
11	4336234	12	ROD, push
12	4506946	12	STUD, rocker shaft bracket
	904206	12	LOCKWASHER, 3/8"
13	4348440	12	NUT, heat-treated, 3/8"NF
14	4336143	4	BRACKET, rocker shaft, end
15	4337478	6	ARM ASSEMBLY, rocker, intake valve (Includes items 17 thru 22)
16	4337479	6	ARM ASSEMBLY, rocker, exhaust valve (Includes items 17 thru 22)
17	4336646	12	SCREW, valve lash adjustment
18	4348440	12	NUT, valve lash adjustment screw
19	4660369	12	BUSHING, rocker arm
20	4364422	12	WICK, oiling, rocker ball
21	4379305	12	BALL, rocker arm
22	4385480	12	RING, snap, rocker arm ball
23	4338143	6	CLIP, spring, rocker arm retaining
	912298	6	WASHER, plain, SAE std., 7/16"
	910986	6	NUT, 7/16"NF
24	4348129	4	STUD, rocker cover (2-5/8" long)
25	4348130	2	SCREW, rocker shaft retaining (3" long, dog-pt.)
26	4349157	2	TUBE ASSEMBLY, rocker shaft overflow (Includes nuts)
	913039	2	ELBOW, inverted flare, 90°, 1/4" tube, 1/8"NPT male

(Continued)

VALVE OPERATING MECHANISM (Continued)

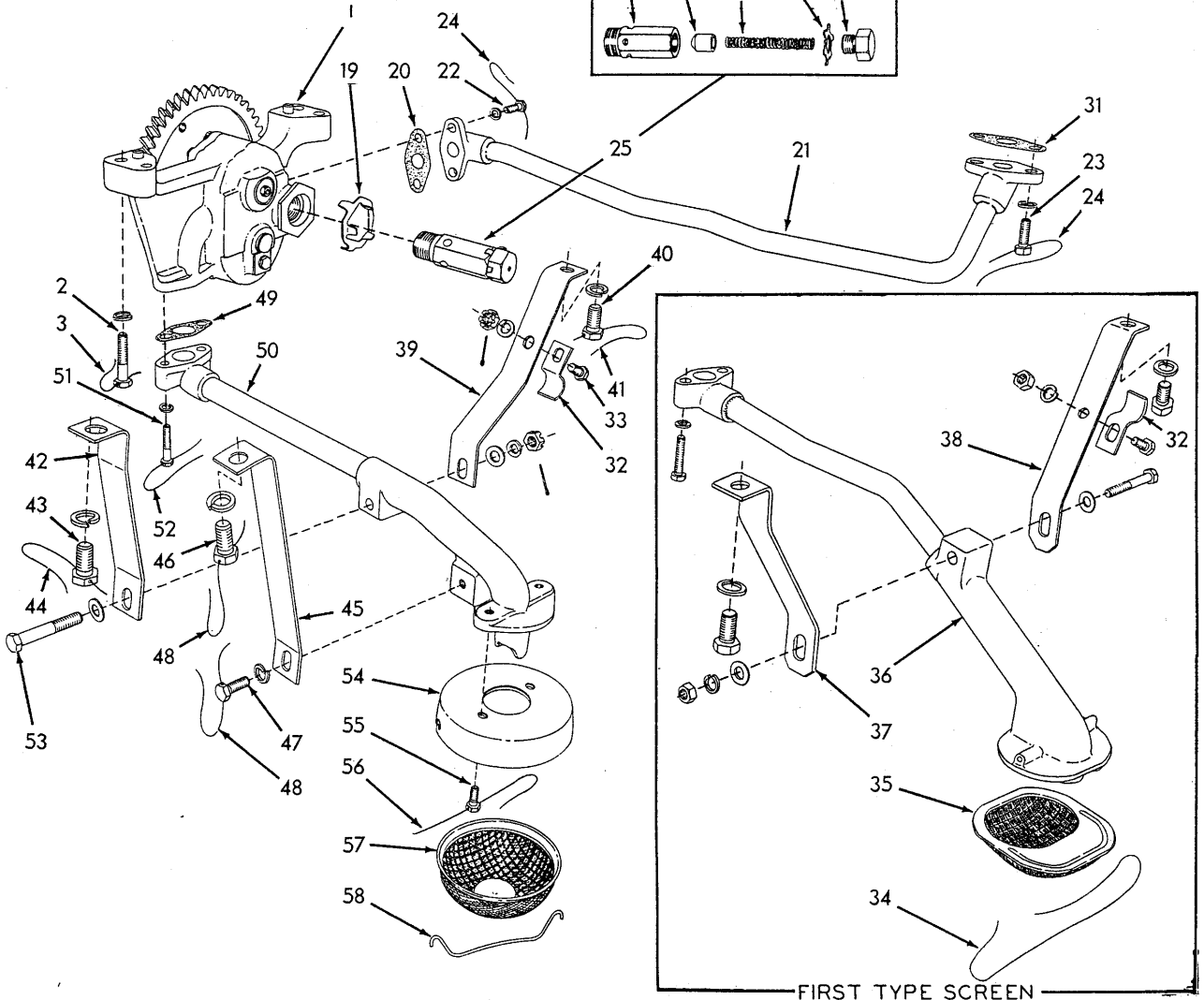
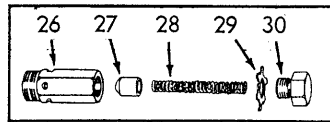
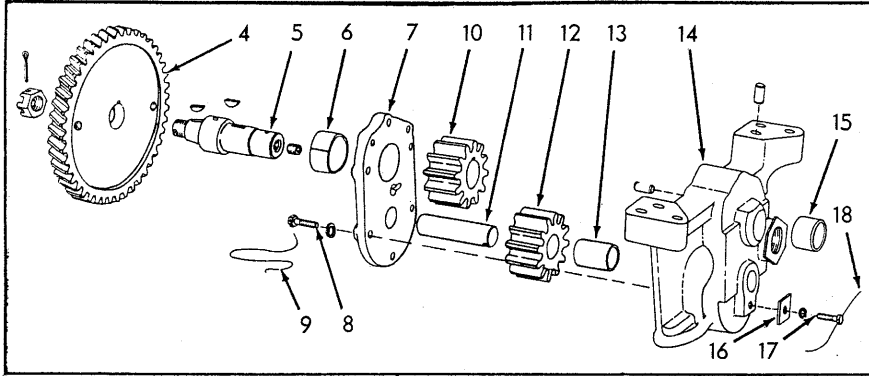
ITEM	PART NUMBER	QTY.	DESCRIPTION
27	4336145	2	SHAFT ASSEMBLY, rocker arm (Includes 910002 PLUGS and item 28)
	910002	4	PLUG, expansion, 3/4" diam.
28	4254363	4	RING, snap, rocker shaft
29	4336142	2	BRACKET, rocker shaft, center
30	-----	-	BEARING, camshaft (See CYLINDER BLOCK)



OIL COOLER

ITEM	PART NO.	QTY.	DESCRIPTION
1	4336596	1	COOLER, lubricating oil
	903635	8	CAPSCREW, 3/8"NC x 2-1/2"
	904206	8	LOCKWASHER, 3/8"
2	4349984	2	GASKET, oil cooler
3	4348099	1	CONNECTION, water outlet
	906695	2	CAPSCREW, 3/8"NC x 3-1/4"
	906698	2	CAPSCREW, 3/8"NC x 4-3/4"
	904206	4	LOCKWASHER, 3/8"
4	4348184	1	□GASKET, water outlet
5	4348100	1	CONNECTION, water inlet
	903633	2	CAPSCREW, 3/8"NC x 1-3/4"
	904206	2	LOCKWASHER, 3/8"
6	4348185	1	□GASKET, water inlet
7	4506737	1	HOSE, water pump to cooler
8	4253922	2	CLAMP, hose

□Also see PACKAGED PARTS



OIL PUMP

OIL PUMP

* Used prior to engine serial No. 45-1051
 ** Effective with engine serial No. 45-1051

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4348886	1	1	PUMP ASSEMBLY (Consists of items 4 thru 18)(Used prior to engine #45-2235)
	4337059	-	1	PUMP ASSEMBLY (Consists of items 4 thru 18)(Effective with engine #45-2235)
2	903633	4	-	CAPSCREW, 3/8"NC x 1-3/4"
	4348692	-	4	CAPSCREW, (drilled-hd., 3/8"NC x 1-3/4")
	904206	4	4	LOCKWASHER, 3/8"
3	4509035	-	2	WIRE, locking (#18 x 10")
4	4348352	1	1	GEAR, driving (Used prior to engine #45-2235)
	4337047	-	1	GEAR, driving (Effective with engine #45-2235)
5	4348894	1	1	SHAFT, upper
	910224	2	2	KEY, #6 woodruff, 5/32" x 5/8"
	912840	1	1	NUT, slotted, 5/8"NF
	900807	1	1	PIN, cotter, 1/8" x 1-1/4"
	910231	1	1	PLUG, pipe, hex-socket, 1/8"NPT
6	4347659	1	1	BUSHING, pump cover
7	4348044	1	1	COVER ASSEMBLY (Includes item 6)
8	4875601	6	6	CAPSCREW (Drilled-hd., 1/4"NC x 7/8")
	904204	6	6	LOCKWASHER, 1/4"
9	4348691	3	3	WIRE, locking
10	4348042	1	1	GEAR, upper (12 teeth)(Used prior to engine #45-1127)
	4348883	-	1	GEAR, upper (10 teeth)(Effective with engine #45-1127)
11	4348038	1	1	SHAFT, lower
12	4348040	1	1	GEAR ASSEMBLY, lower (12 teeth. Includes item 13)(Used prior to engine #45-1127)
	4348891	-	1	GEAR ASSEMBLY, lower (10 teeth. Includes item 13)(Effective with engine #45-1127)
13	4348083	1	1	BUSHING, lower gear
14	4348885	1	1	HOUSING ASSEMBLY (Includes item 15 and dowel PINS indented below)(If for engines prior to #45-1127 also order 1 GEAR 4348883 and 1 GEAR 4348891)
	917554	1	1	PIN, dowel, 1/4" x 1/2"
	917546	2	2	PIN, dowel, 3/8" x 5/8"
15	4348303	1	1	BUSHING, pump housing
16	4348020	1	1	RETAINER, lower shaft
	905655	1	-	CAPSCREW, 1/4"NC x 1/2"
	4349378	-	1	CAPSCREW (drilled-hd., 1/4"NC x 1/2")
	904204	1	1	LOCKWASHER, 1/4"
18	4348769	-	1	WIRE, locking (#18 x 4")
19	4347938	1	1	LOCK, pressure relief valve body

(Continued)

OIL PUMP (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
20	4348215	1 1	□GASKET, discharge pipe to pump
21	4335387	1 1	PIPE, discharge
22	903771	2 -	CAPSCREW, 5/16"NC x 7/8"
	4320227	- 2	CAPSCREW (drilled-hd., 5/16"NC x 7/8")
	904205	2 2	LOCKWASHER, 5/16"
23	903630	2 -	CAPSCREW, 3/8"NC x 1"
	4346483	- 2	CAPSCREW (drilled-hd., 3/8"NC x 1-1/4")
24	904206	2 2	LOCKWASHER, 3/8"
	4509035	- 2	WIRE, locking (#18 x 10")
25	4373676	1 1	VALVE ASSEMBLY, oil pressure relief (Consists of items items 26 thru 30)
26	-----	1 1	BODY, pressure relief valve (Not serviced separately)
27	-----	1 1	PISTON, pressure relief valve (Not serviced separately)
28	4373672	1 1	SPRING, pressure relief valve
29	4374564	1 1	WASHER, locking, relief valve cap
30	4386525	1 1	CAP, pressure relief valve
31	4346169	1 1	□GASKET, discharge pipe to crankcase
32	4347572	1 1	CLAMP, discharge pipe
33	900802	- 1	PIN, cotter, 3/32" x 1"
	903629	1 -	CAPSCREW, 3/8"NC x 3/4"
	4335152	- 1	CAPSCREW (drilled end, 3/8"NC x 3/4")
	904206	1 1	LOCKWASHER, 3/8"
	910324	1 -	NUT, 3/8"NC
	914773	- 1	NUT, slotted, 3/8"NC
34	4335110	1 -	WIRE, oil screen retaining (1/16" x 18")
35	4500270	1 -	SCREEN, oil
36	4347858	1 -	PIPE, suction
	917135	2 -	CAPSCREW, 5/16"NC x 1-5/8"
	904205	2 -	LOCKWASHER, 5/16"
	904281	1 -	CAPSCREW, 3/8"NC x 2-1/4"
	900817	2 -	WASHER, plain, U.S. std., 3/8"
	904206	1 -	LOCKWASHER, 3/8"
	910324	1 -	NUT, 3/8"NC
	37	4347759	1 -
911980	1 -	CAPSCREW, 1/2"NC x 7/8"	
904208	1 -	LOCKWASHER, 1/2"	
38	4347760	1 -	BRACKET, suction pipe supporting, right
	911980	1 -	CAPSCREW, 1/2"NC x 7/8"
	904208	1 -	LOCKWASHER, 1/2"
39	4335144	- 1	BRACKET, suction pipe supporting, right
40	4375812	- 1	CAPSCREW (drilled-hd., 1/2"NC x 1")
	904208	- 1	LOCKWASHER, 1/2"
41	4348691	- 1	WIRE, locking (#18 x 6")

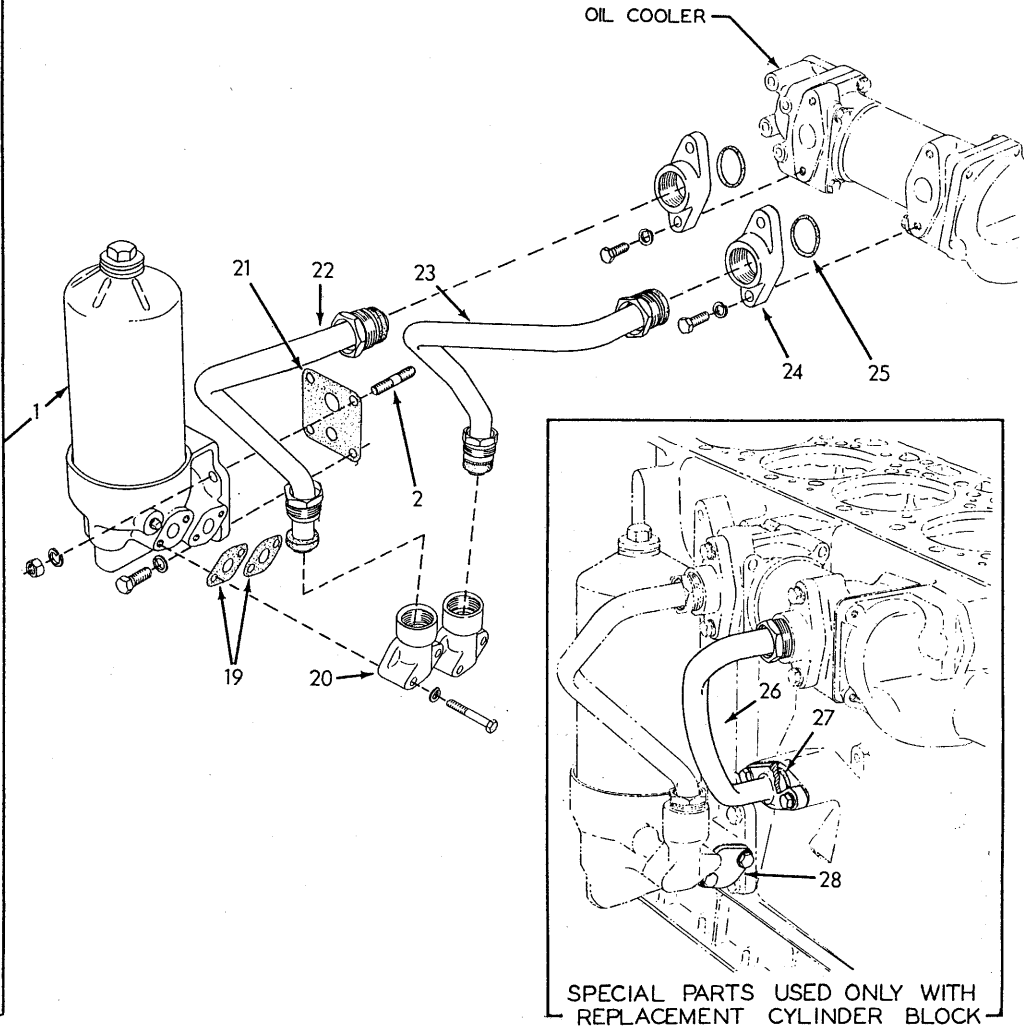
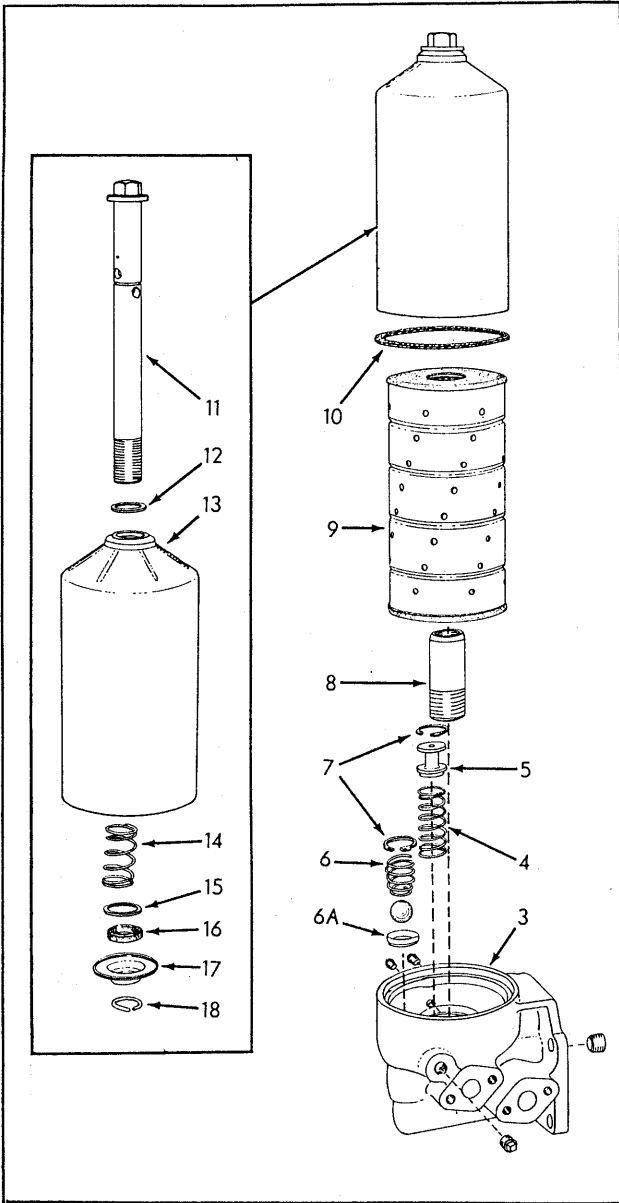
□Also see PACKAGED PARTS

(Continued)

OIL PUMP (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
42	4335145	-	1	BRACKET, suction pipe supporting, left front
43	4375812	-	1	CAPSCREW (drilled-hd., 1/2"NC x 1")
	904208	-	1	LOCKWASHER, 1/2"
44	4348691	-	1	WIRE, locking (#18 x 6")
45	4335143	-	1	BRACKET, suction pipe supporting, left rear
46	4375812	-	1	CAPSCREW, upper
	904208	-	1	LOCKWASHER, 1/2"
47	4369110	-	1	CAPSCREW, lower
	904206	-	1	LOCKWASHER, 3/8"
48	4348691	-	2	WIRE, locking (#18 x 6")
49	4348218	1	1	OGASKET, suction pipe to pressure pump
50	4335390	-	1	PIPE, suction
51	4349375	-	2	CAPSCREW (drilled-hd., 5/16"NC x 1-5/8")
	904205	-	2	LOCKWASHER, 5/16"
52	4509035	-	1	WIRE, locking (#18 x 10")
53	4335153	-	1	CAPSCREW (drilled end, 3/8"NC x 2-1/4")
	912597	-	2	WASHER, plain
	904206	-	1	LOCKWASHER, 3/8"
	914773	-	1	NUT, slotted, 3/8"NC
	900802	-	1	PIN, cotter, 3/32" x 1"
54	4348684	-	1	COVER, oil screen
55	4374129	-	2	CAPSCREW
56	4509035	-	1	WIRE, locking (#18 x 10")
57	4348683	-	1	SCREEN, oil
58	4348682	-	1	RETAINER, oil screen

□Also see PACKAGED PARTS



SPECIAL PARTS USED ONLY WITH REPLACEMENT CYLINDER BLOCK

OIL FILTER (First type)

OIL FILTER

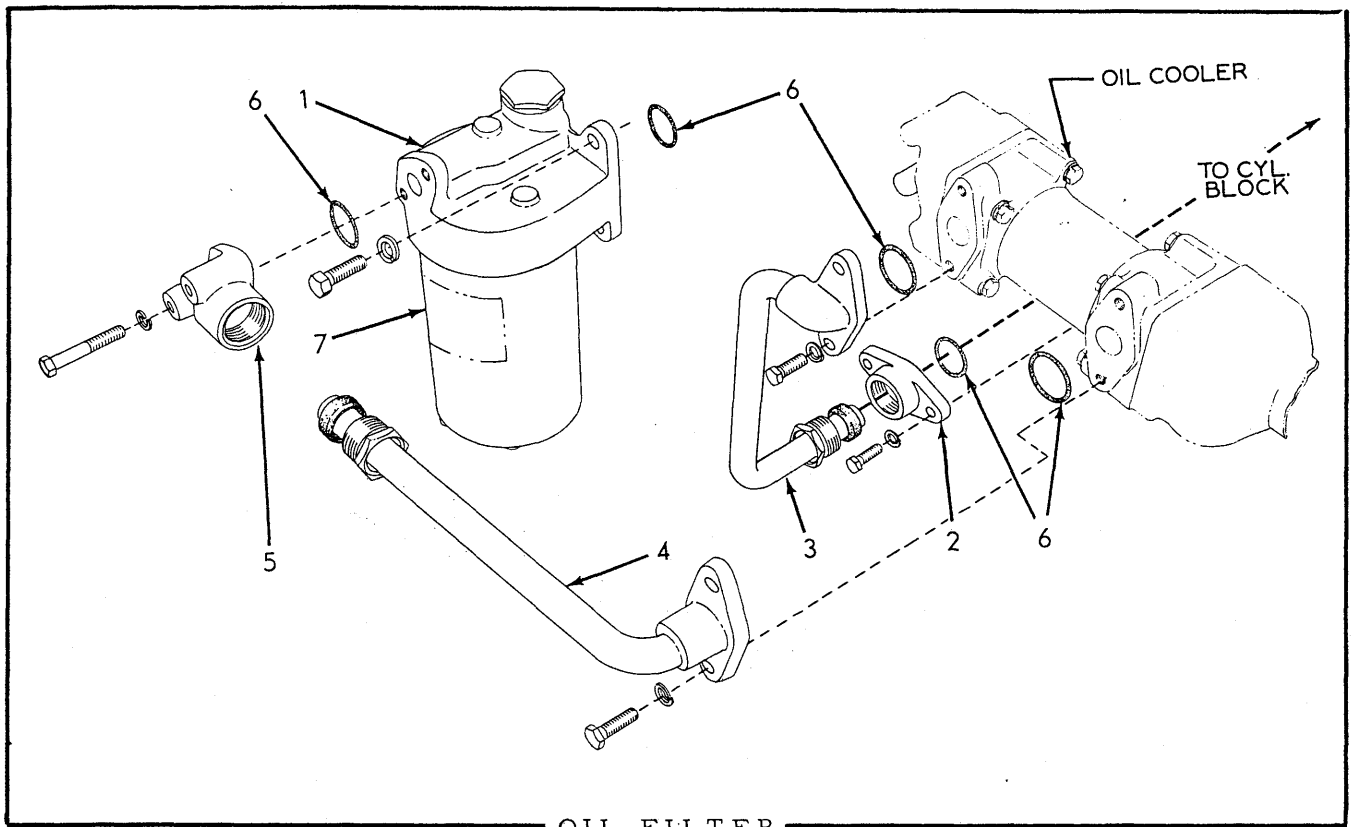
USAGE: Engines prior to serial No. 45-1210

ITEM	PART NO.	QTY.	DESCRIPTION
1	4349132	1	FILTER ASSEMBLY, lubricating oil (Consists of items 3 thru 18)
	915666	2	CAPSCREW, 1/2"NC x 1-3/8"
2	4506946	2	STUD (1/2"NC x 1/2"NF x 1-3/4")
	904208	4	LOCKWASHER, 1/2"
	910195	2	NUT, 1/2"NF
3	4349133	1	BASE ASSEMBLY (Includes items 4 thru 8 and hardware indented below)
	901651	2	PLUG, pipe, 1/8"NPT
	901652	1	PLUG, pipe, 1/4"NPT
	904223	1	PLUG, pipe, ctsk-hd., 1/2"NPT
	917015	1	BALL, steel, 7/8" diam.
4	4348087	1	SPRING, pressure relief valve
5	4348086	1	VALVE, pressure relief
6	4347190	1	SPRING, check valve
6A	4348580	1	INSERT, check valve seat
7	4253766	2	RING, snap, valve retaining
8	4371443	1	ADAPTER, center bolt
9	4371021	1	ELEMENT KIT, oil filter (Includes item 10)
10	4372325	1	GASKET, oil filter body
11	4374735	1	BOLT, center
12	4041103	1	GASKET, filter center bolt
13	4371040	1	BODY, oil filter
14	4371036	1	SPRING, filter element
15	4348268	1	WASHER, filter element seal
16	4348270	1	SEAL, filter element
17	4348269	1	ADAPTER, filter element
18	4253195	1	RING, snap, filter center bolt
19	4347655	2	GASKET, oil line elbow
20	4347654	2	FLANGE, oil line
	904281	4	CAPSCREW, 3/8"NC x 2-1/4"
	904206	4	LOCKWASHER, 3/8"
21	4347554	1	GASKET, filter to crankcase
22	4347661	1	LINE ASSEMBLY, filter to cooler (Includes nuts and sealing RINGS)
	918253	2	RING, Sealastic, 7/8" tube (rubber)

(Continued)

OIL FILTER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
23	4347663	1	LINE ASSEMBLY, cooler to filter (Includes nuts and sealing RINGS)
	918253	2	RING, Sealastic, 7/8" tube (rubber)
24	4348279	2	FLANGE, oil cooler
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
	904206	4	LOCKWASHER, 3/8"
25	4253106	2	O-RING, oil cooler flange
<p><u>NOTE:</u> Following items were not used as original equipment and are required only when replacement CYLINDER BLOCK ASSEMBLY 4335546 is installed.</p>			
26	4336574	1	LINE ASSEMBLY, oil cooler to block (Includes NUT and RING indented below)
	917741	1	NUT, Sealastic, 7/8" tube
	918327	1	RING, Sealastic, 7/8" tube (Includes ferrule)
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
27	4253106	1	O-RING, oil cooler return line
28	4034292	1	PLATE, cover, oil filter base
	903630	2	CAPSCREW, 3/8"NC x 1"
	904206	2	LOCKWASHER, 3/8"

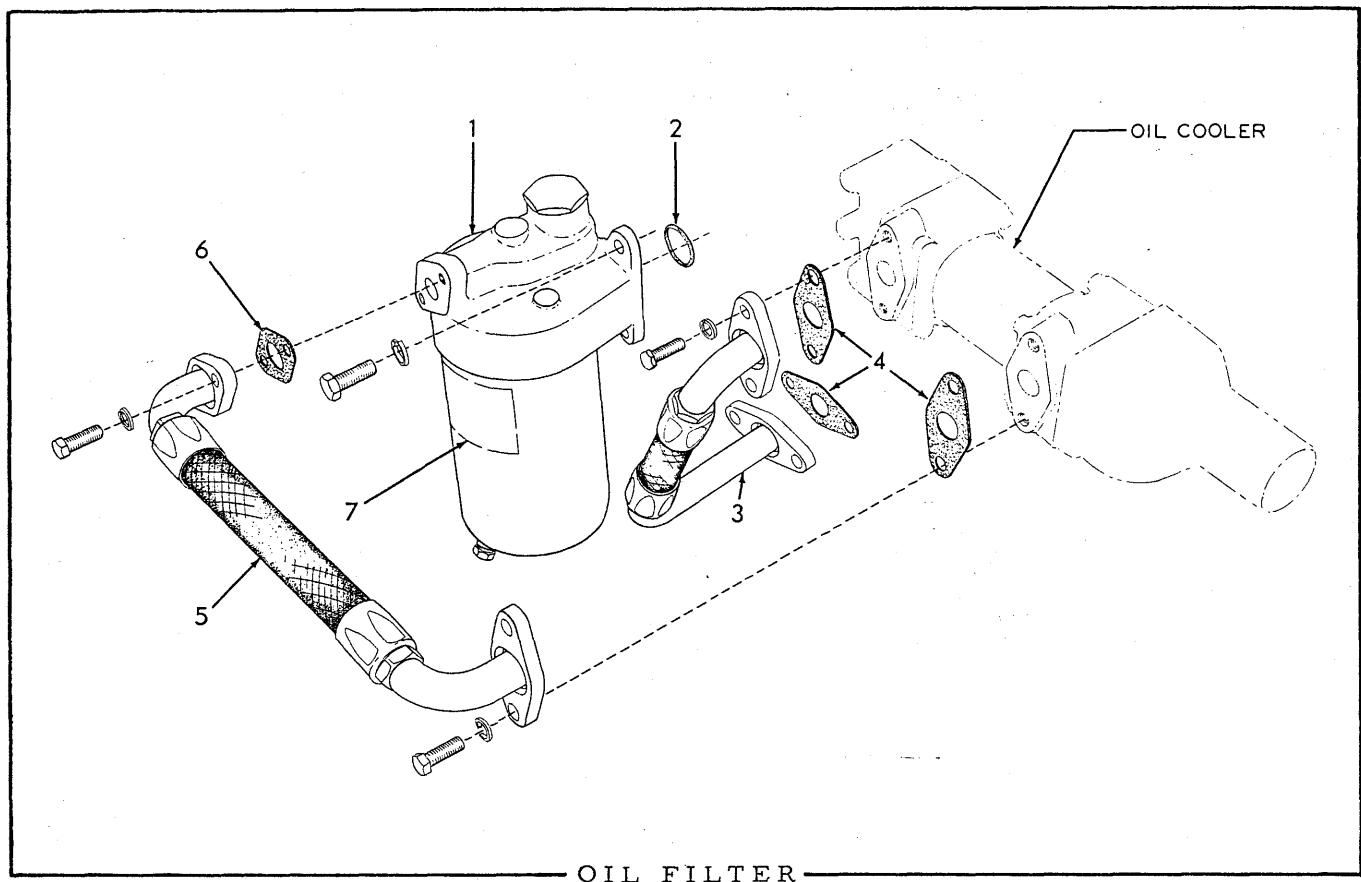


OIL FILTER

USAGE: Effective with engine serial No. 45-1210. But later discontinued with Grader serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4335338	1	FILTER ASSEMBLY, lubricating oil (See page 47 for parts)
	915666	4	CAPSCREW, 1/2"NC x 1-3/8"
	904208	4	LOCKWASHER, 1/2"
2	4348279	1	FLANGE, crankcase oil line
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
3	4335331	1	LINE ASSEMBLY, oil cooler to crankcase (Includes NUT and RING indented below)
	917741	1	NUT, male, Sealastic, 7/8" tube
	918327	1	RING, Sealastic, 7/8" tube (Includes ferrule)
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
4	4335323	1	LINE ASSEMBLY, oil filter to cooler (Includes NUT and RING indented below)
	917741	1	NUT, male, Sealastic, 7/8" tube
	918327	1	RING, Sealastic, 7/8" tube (Includes ferrule)
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
5	4335334	1	FLANGE, oil line connection
	903635	2	CAPSCREW, 3/8"NC x 2-1/4"
	904206	2	LOCKWASHER, 3/8"
6	4253106	5	O-RING, oil lines
7	-----	1	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)

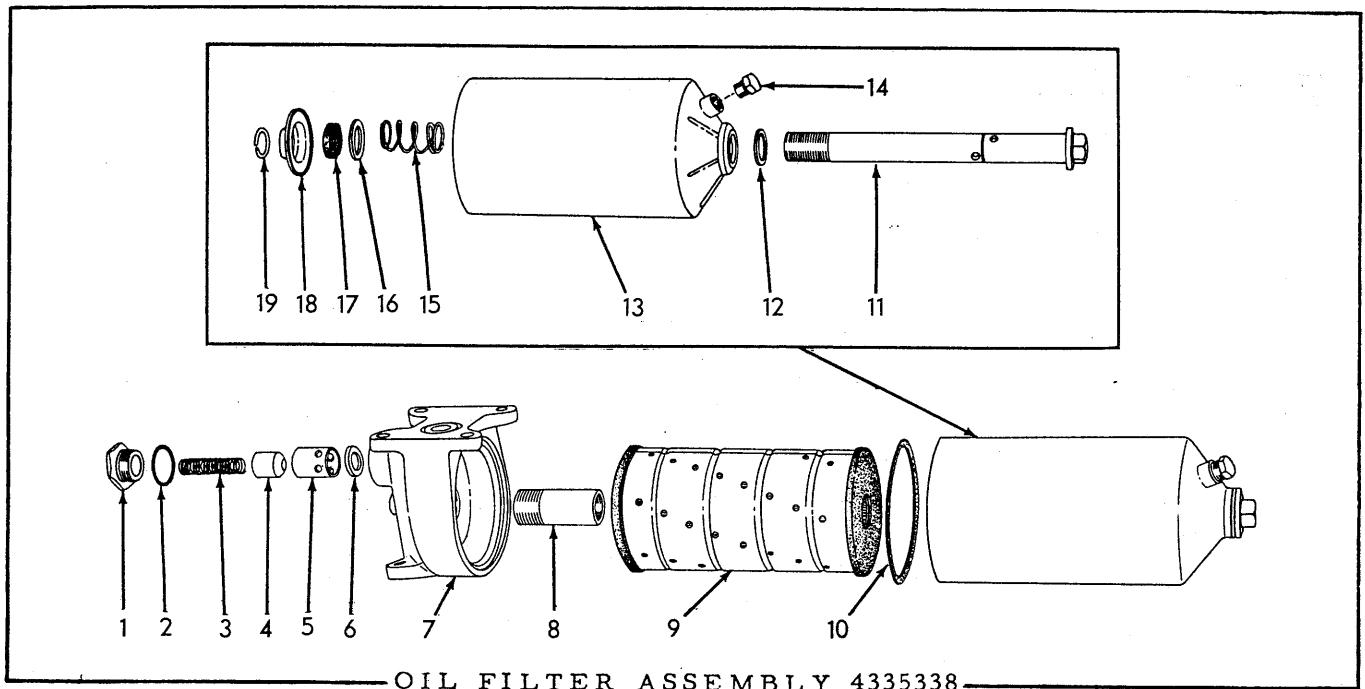
□Also see PACKAGED PARTS



USAGE: Graders serial No. 1780 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	4335338	1	FILTER ASSEMBLY (See page 47 for parts)
	915666	4	CAPSCREW, 1/2"NC x 1-3/8"
	904208	4	LOCKWASHER, 1/2"
2	4253106	1	□O-RING filter to cylinder block
3	4335566	1	HOSE ASSEMBLY, oil cooler to crankcase (See page 6 for parts)
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
	904206	4	LOCKWASHER, 3/8"
4	4335577	3	□GASKET, oil hole
5	4335567	1	HOSE ASSEMBLY, oil filter to cooler (See page 6 for parts)
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
	904206	4	LOCKWASHER, 3/8"
6	4335578	1	□GASKET, hose to filter
7	-----	1	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)

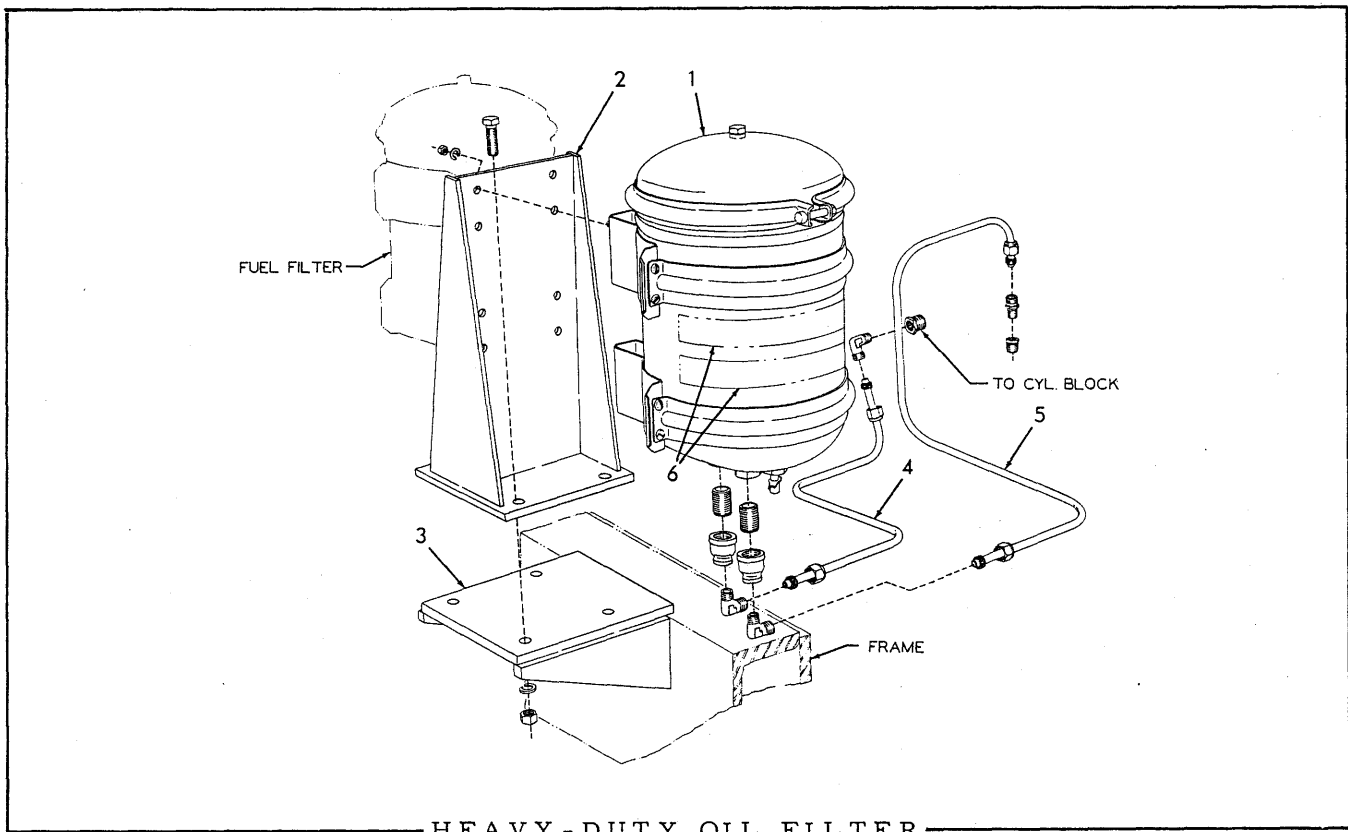
□Also see PACKAGED PARTS



OIL FILTER ASSEMBLY 4335338

USAGE: See pages 45 and 46

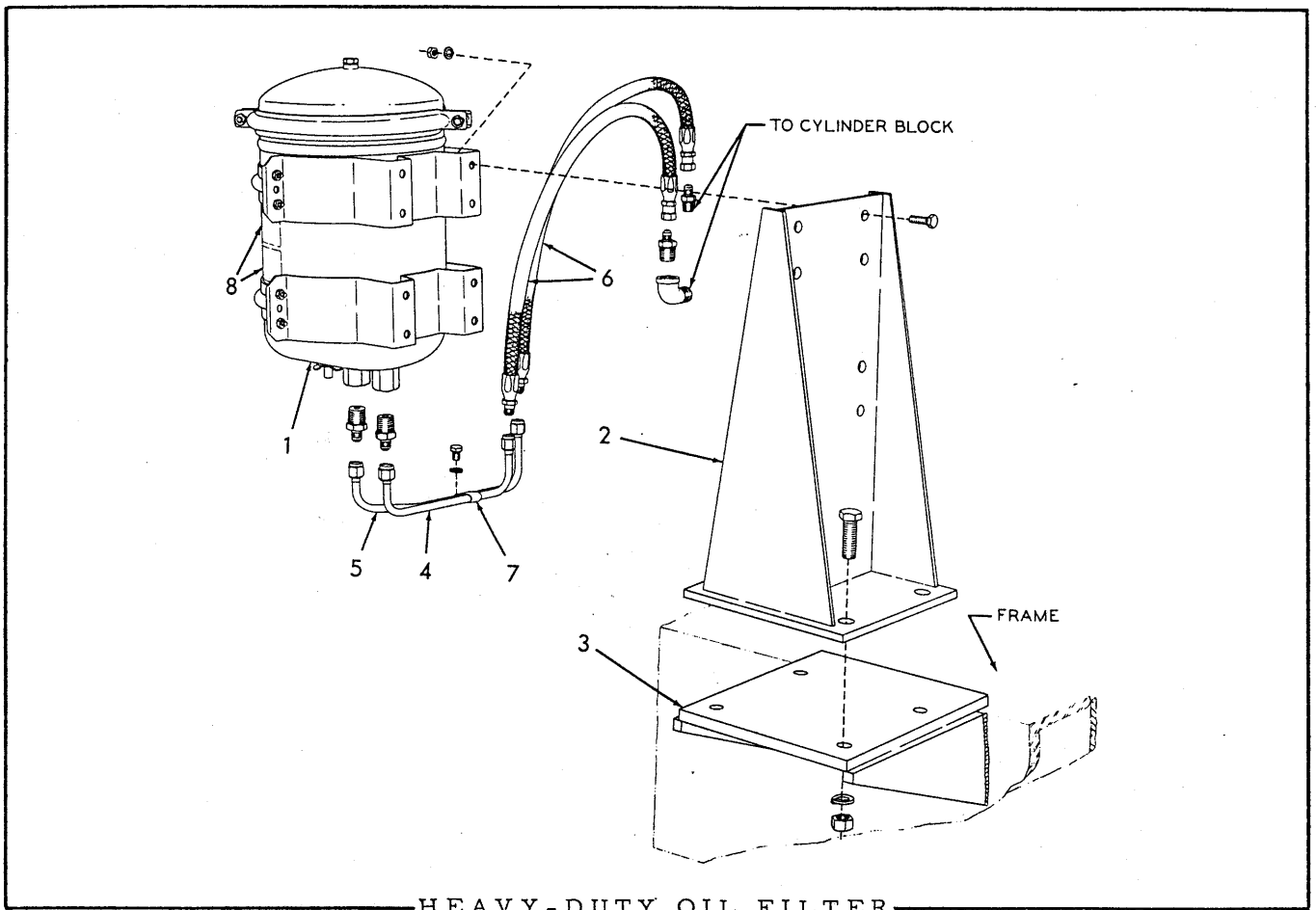
ITEM	PART NO.	QTY.	DESCRIPTION
1	4373610	1	CAP, relief valve
2	4253751	1	GASKET, relief valve cap
3	4335666	1	SPRING, relief valve
4	4373613	1	PISTON, relief valve
5	4373612	1	SLEEVE, relief valve piston
6	4373614	1	SEAT, relief valve piston
7	4335339	1	HEAD ASSEMBLY (Includes items 1 thru 6)
8	4371443	1	ADAPTER, center bolt
9	4371021	1	ELEMENT KIT, oil filter (Includes item 10)
10	4372325	1	GASKET, oil filter body
11	4374735	1	BOLT, center
12	4041103	1	GASKET, filter center bolt
13	4335352	1	BODY, oil filter
14	918951	1	PLUG, pipe, hex-hd., 3/8"NPT
15	4371036	1	SPRING, filter element
16	4348268	1	WASHER, filter element seal
17	4348270	1	SEAL, filter element
18	4348269	1	ADAPTER, filter element
19	4253195	1	RING, snap, filter center bolt



HEAVY-DUTY OIL FILTER

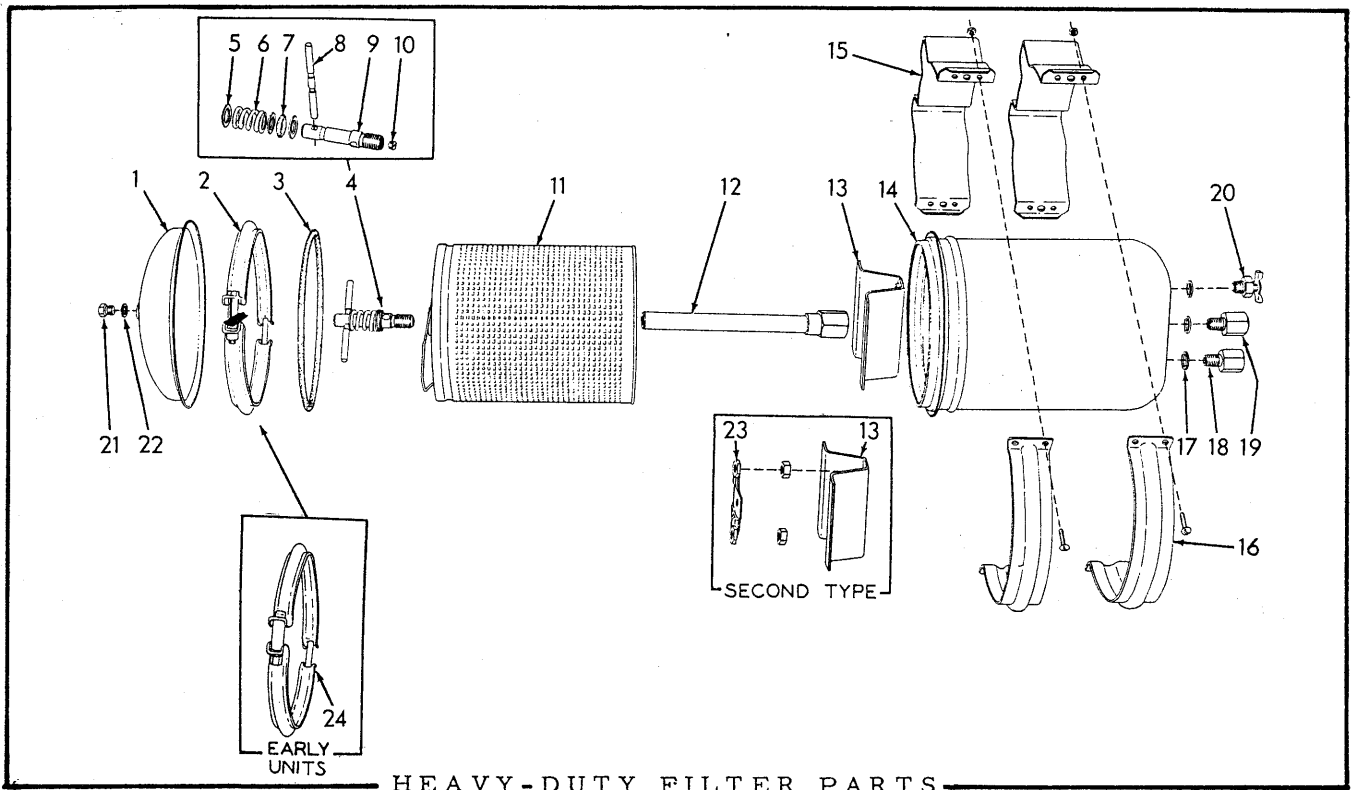
USAGE: Special equipment. Supplements standard oil filters listed on pages 43 and 45. Used prior to grader serial No. 1780.

ITEM	PART NO.	QTY.	DESCRIPTION
1	082442	1	FILTER ASSEMBLY, lubricating oil (See page 50 for parts)
	917772	2	COUPLING, pipe reducing, 1/2"NPT to 1/4"NPT
	901500	2	NIPPLE, pipe, 1/2"NPT x 1-1/8"
	911168	8	CAPSCREW, 5/16"NF x 7/8"
	904205	8	LOCKWASHER, 5/16"
	913636	8	NUT, 5/16"NF
			} Also attach Heavy-duty Fuel Filter.
2	076239	1	BRACKET, filter mounting
	911978	4	CAPSCREW, 1/2"NF x 1-1/2"
	904208	4	LOCKWASHER, 1/2"
	911043	4	NUT, 1/2"NF
3	076235	1	BRACKET, mounting (Requires welding to frame)
4	089343	1	TUBE, oil supply
	918325	2	NUT, Sealastic, 3/8" tube
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915369	2	ELBOW, Sealastic, 90°, 3/8" tube, 1/4"NPT male
	901839	1	BUSHING, pipe reducing, 1/2"NPT to 1/4"NPT
5	089349	1	TUBE, oil return
	918325	2	NUT, Sealastic, 3/8" tube
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915369	1	ELBOW, Sealastic, 90°, 3/8" tube, 1/4"NPT male
	915368	1	CONNECTOR, Sealastic, 3/8" tube, 1/4"NPT male
	901826	1	BUSHING, pipe reducing, 3/8"NPT to 1/4"NPT
6	-----	2	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



USAGE: Special equipment. Supplements standard oil filter listed on page 46. Effective with grader serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	082442	1	FILTER ASSEMBLY, lubricating oil (See page 50 for parts)
	911168	8	CAPSCREW, 5/16"NF x 7/8"
	904205	8	LOCKWASHER, 5/16"
	913636	8	NUT, 5/16"NF
			} Also attach Heavy-duty Fuel Filter.
2	076239	1	BRACKET, filter mounting
	911978	4	CAPSCREW, 1/2"NF x 1-1/2"
	904208	4	LOCKWASHER, 1/2"
	911043	4	NUT, 1/2"NF
3	076235	1	BRACKET, mounting (Requires welding to frame)
4	098373	1	TUBE ASSEMBLY, oil supply (Includes nuts)
	919127	1	CONNECTOR, flare type, 3/8" tube, 1/2"NPT male
5	098374	1	TUBE ASSEMBLY, oil return (Includes nuts)
	919127	1	CONNECTOR, flare type, 3/8" tube, 1/2"NPT male
6	098378	2	HOSE ASSEMBLY, oil (See page 6 for parts)
	919127	1	CONNECTOR, flare type, 3/8" tube, 1/2"NPT male
	919172	1	CONNECTOR, flare type, 3/8" tube, 3/8"NPT male
	901724	1	ELBOW, street, 90°, 1/2"NPT
7	055676	1	CLIP, tube supporting
	903627	1	CAPSCREW, 3/8"NC x 1/2"
	904206	1	LOCKWASHER, 3/8"
8	-----	2	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



HEAVY-DUTY FILTER PARTS

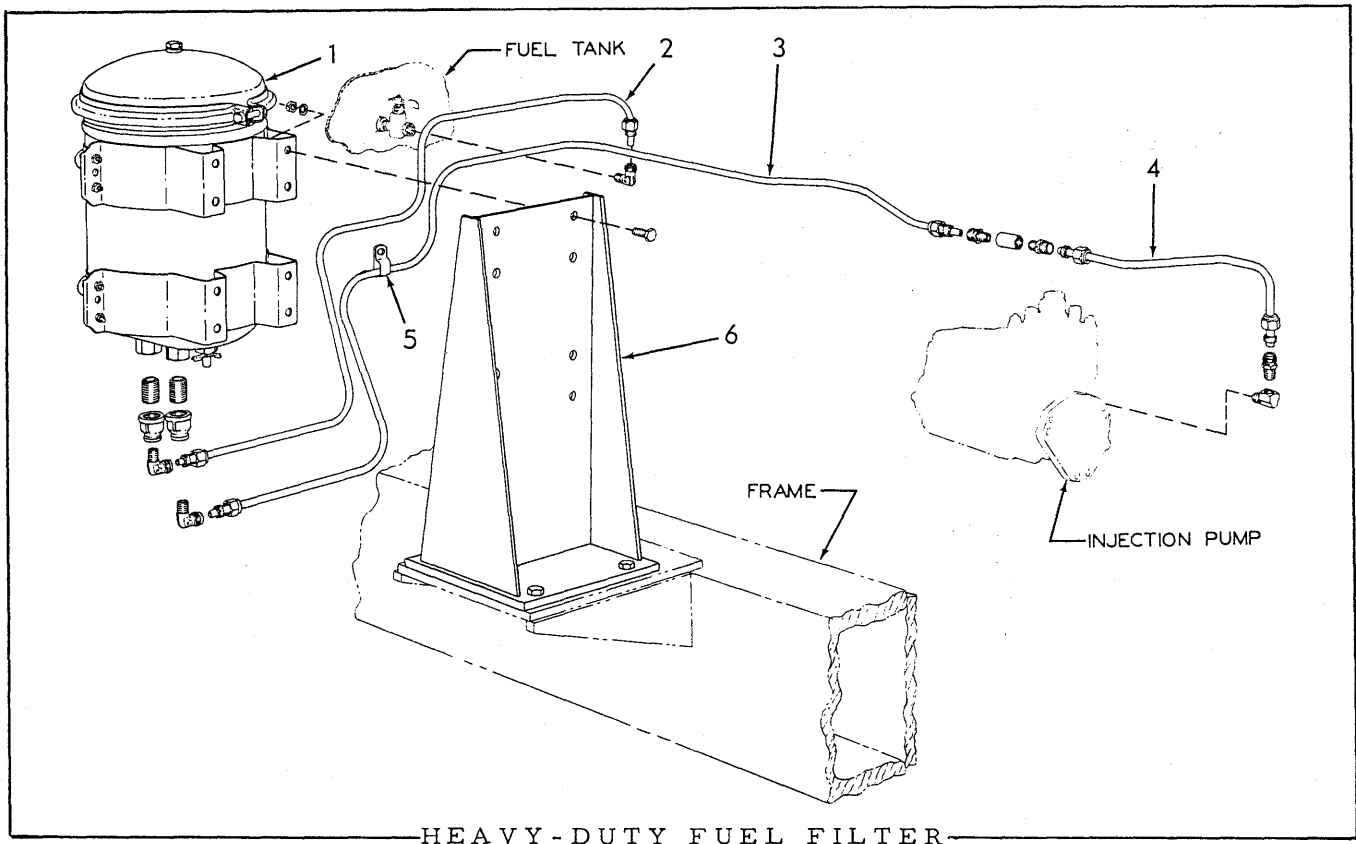
* 082441 FILTER ASSEMBLY, fuel (See pages 52 and 53)
 ** 082442 FILTER ASSEMBLY, oil (See pages 48 and 49)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	082505	1	1	COVER
2	630540	1	1	RING ASSEMBLY, cover retaining (Includes nut and bolt)
3	082449	1	1	GASKET, cover
4	082492	1	-	HOLD-DOWN ASSEMBLY, filter element (Includes items 5 thru 9)
	082493	-	1	HOLD-DOWN ASSEMBLY, filter element (Includes items 5 thru 10)
5	082489	3	3	WASHER, element hold-down
6	082490	1	1	SPRING, element hold-down
7	082487	1	1	SEAL, element hold-down
8	082488	1	1	HANDLE, element hold-down
9	-----	1	1	STUD, element hold-down (Not serviced separately)
10	082491	-	1	PLUG, orifice, element hold-down
11	091540	1	1	ELEMENT, filtering (Original equipment)
	637957	1	1	ELEMENT, filtering (Optional)
12	076668	1	1	TUBE ASSEMBLY, outlet (Includes nut)

(Continued)

HEAVY-DUTY FILTER PARTS (Continued)

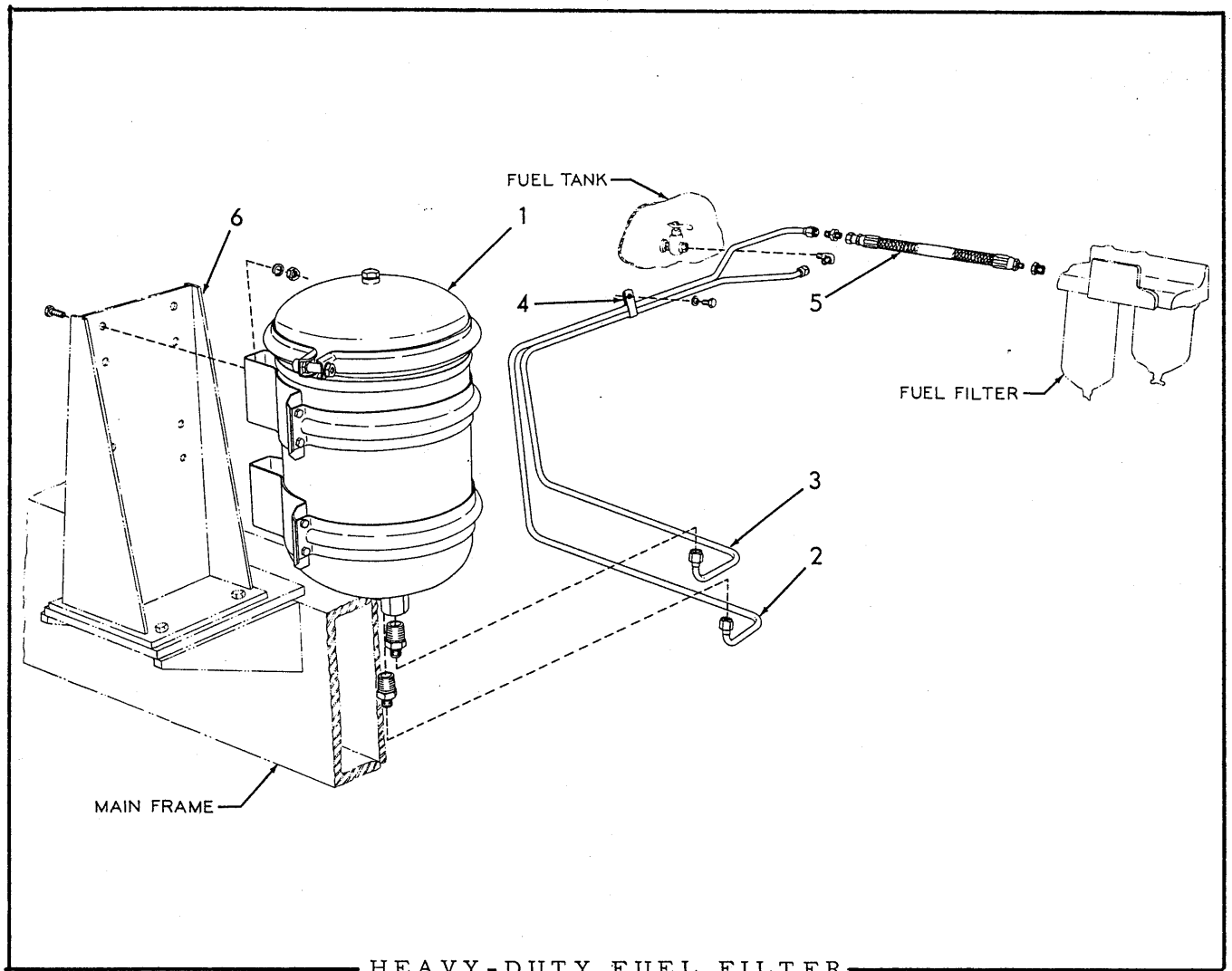
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
13	082967	1	1	SUPPORT, filter element (Used prior to January 1958)
	096816	1	1	SUPPORT, filter element (Effective January 1958)
	911049	2	2	NUT, jam, 5/8"NF
14	-----	1	1	HOUSING (Not serviced separately)
15	082444	2	2	BRACKET, mounting
16	082443	2	2	BAND, mounting bracket
	900576	8	8	SCREW, machine, 1/4"NC x 3/4"
	911024	8	8	NUT, 1/4"NC
17	063891	3	3	GASKET
18	063890	-	1	VALVE ASSEMBLY, inlet check (Includes 1 spring, 1 ring and 1 cup. Serviced only as a unit)
	063889	1	-	BOLT, hollow
19	080758	-	1	VALVE ASSEMBLY, outlet check (Includes 1 spring, 1 ring and 1 cup. Serviced only as a unit)
	063889	1	-	BOLT, hollow
20	094167	1	1	COCK, drain
21	084897	1	1	PLUG, venting
22	084899	1	1	WASHER, venting plug
23	096815	1	1	RETAINER, element support nut (Effective January 1958)
24	098038	1	1	BOLT ASSEMBLY, cover retaining ring (Includes nuts)(Effective September 1958. Early units only)



HEAVY-DUTY FUEL FILTER

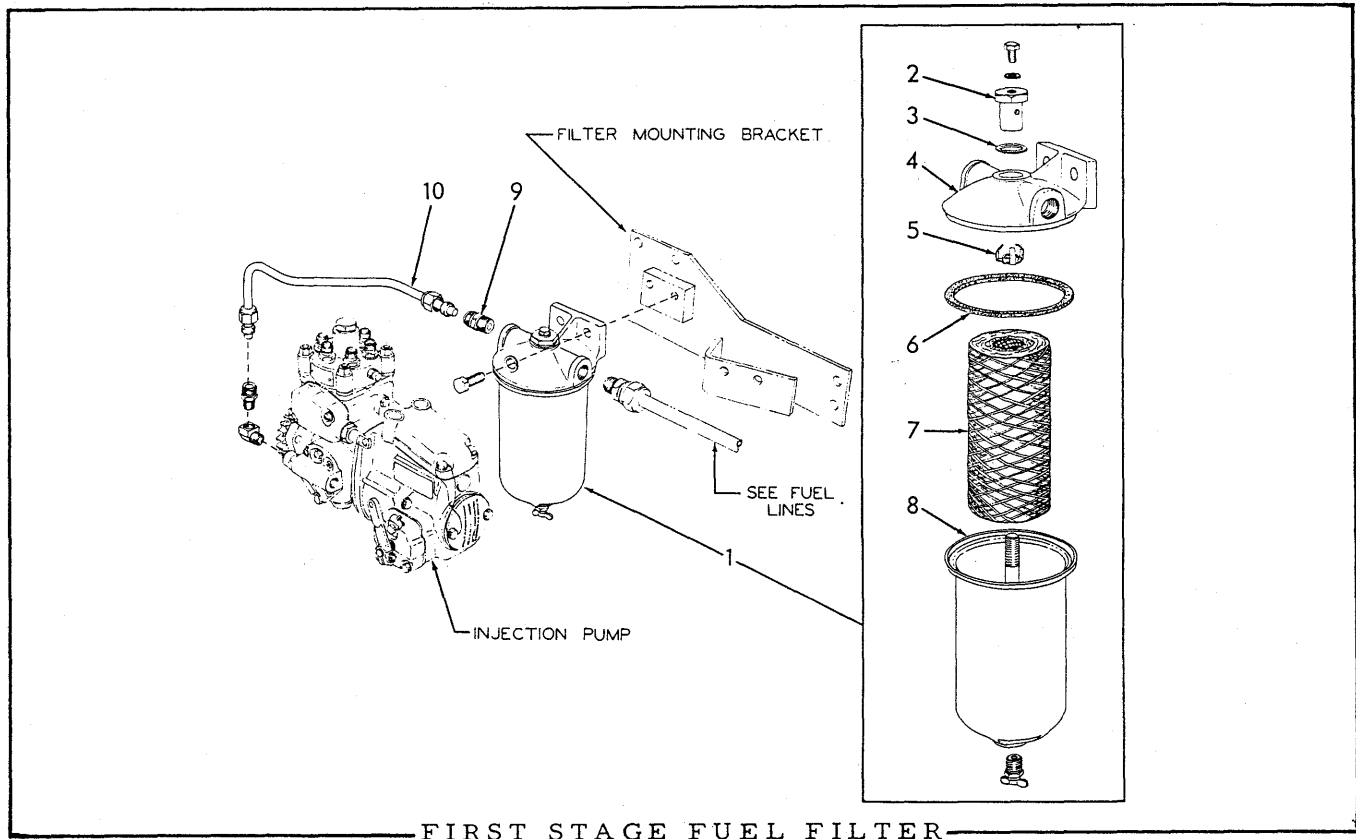
USAGE: Special equipment. Replaces standard first stage fuel filter listed on page 54. Used prior to grader serial No. 1780.

ITEM	PART NO.	QTY.	DESCRIPTION
1	082441	1	FILTER ASSEMBLY, fuel (See page 50 for service parts)
	917772	2	COUPLING, pipe reducing, 1/2"NPT to 1/4"NPT
	901500	2	NIPPLE, pipe, 1/2"NPT x 1-1/8"
	911168	8	CAPSCREW, 5/16"NF x 7/8"
	904205	8	LOCKWASHER, 5/16"
	913636	8	NUT, 5/16"NF
			} Also attach Heavy-duty Oil Filter.
2	089348	1	TUBE, fuel tank to filter
	918325	2	NUT, Sealastic, 3/8" tube
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915369	2	ELBOW, Sealastic, 90°, 3/8" tube, 1/4"NPT male
3	089344	1	TUBE, filter to injection pump, front section
	918325	2	NUT, Sealastic, 3/8" tube
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915369	1	ELBOW, Sealastic, 90°, 3/8" tube, 1/4"NPT male
	915368	1	CONNECTOR, Sealastic, 3/8" tube, 1/4"NPT male
	901764	1	COUPLING, pipe, 1/4"NPT
4	4347905	1	LINE, filter to injection pump, rear section
	918325	2	NUT, Sealastic, 3/8" tube
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915368	2	CONNECTOR, Sealastic, 3/8" tube, 1/4"NPT male
	914588	1	ELBOW, street, brass, 90°, 1/4"NPT
5	055676	1	CLIP, tube supporting
6	-----	-	BRACKET, mounting (See HEAVY-DUTY OIL FILTER)



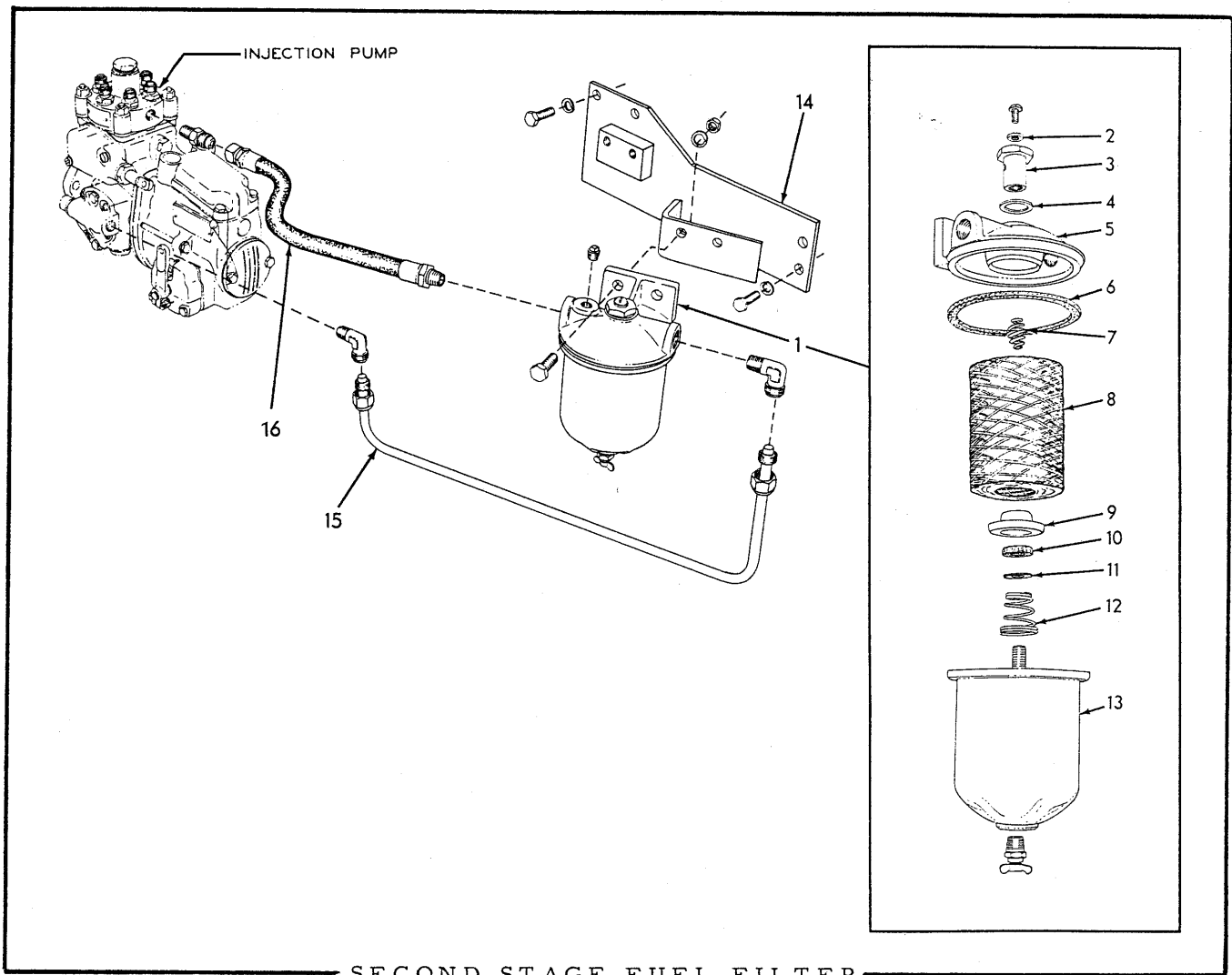
USAGE: Special equipment. Effective with grader serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	082441	1	FILTER ASSEMBLY, fuel (See page 50 for parts)
	911168	8	CAPSCREW, 5/16"NF x 7/8" } Also attach
	904205	8	LOCKWASHER, 5/16" } Heavy-Duty
	913636	8	NUT, 5/16"NF } Oil Filter
2	098376	1	TUBE ASSEMBLY, filter outlet
	919127	1	CONNECTOR, flare type, 3/8" tube, 1/2"NPT male
	919065	1	UNION, flare type, 3/8" tube
3	098375	1	TUBE ASSEMBLY, fuel tank to filter (Includes nuts)
	919127	1	CONNECTOR, flare type, 3/8" tube, 1/2"NPT male
	919135	1	ELBOW, 90°, flare type, 3/8" tube, 1/4"NPT male
4	055676	1	CLIP, tube supporting
5	099136	1	HOSE ASSEMBLY, fuel supply (See page 6 for parts)
	901826	1	BUSHING, pipe reducing, 3/8"NPT to 1/4"NPT
6	-----	-	BRACKET, mounting (See HEAVY-DUTY OIL FILTER)



USAGE: Standard equipment. Not used on graders equipped with Heavy-Duty Fuel Filter.
Used prior to grader serial No. 1780.

ITEM	PART NO.	QTY.	DESCRIPTION
1	4347786	1	FILTER ASSEMBLY, fuel (Consists of items 2 thru 8)
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
2	4051483	1	NUT, shell retaining
	919288	1	CAPSCREW, 1/4"NC x 3/8"
	914686	1	WASHER, plain, copper, 1/4" I.D.
3	4051484	1	GASKET, shell retaining nut
4	4347790	1	HEAD, filter
5	4051485	1	GUIDE, element centering
6	4040013	1	GASKET, filter shell
7	4347787	1	ELEMENT KIT, filter (Includes item 6)
8	4347791	1	SHELL, filter
	915433	1	COCK, drain, 1/4"NPT
9	4254097	1	CONNECTOR, fuel line (Sealastic, 3/8" tube, 3/8"NPT male)
10	4347905	1	LINE, filter to injection pump
	918325	2	NUT, Sealastic, 3/8" tube
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915368	1	CONNECTOR, Sealastic, 3/8" tube, 1/4"NPT male
	914588	1	ELBOW, street, brass, 90°, 1/4"NPT



USAGE: Graders prior to serial No. 1780

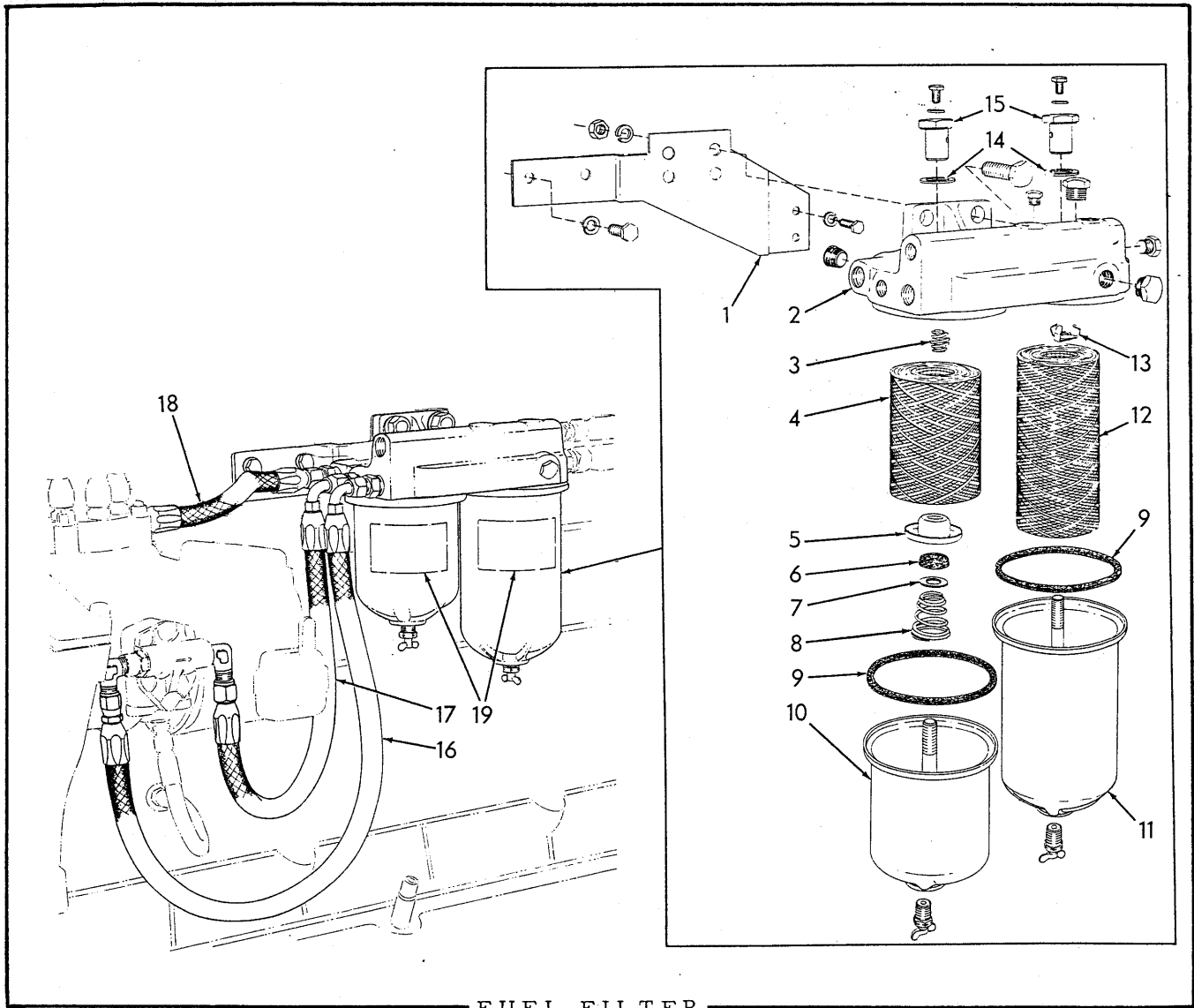
ITEM	PART NO.	QTY.	DESCRIPTION
1	4349146	1	FILTER ASSEMBLY, fuel (Includes items 2 thru 13)
	901652	1	PLUG, pipe, 1/4"NPT
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
	910324	2	NUT, 3/8"NC
2	065577	1	GASKET, bleeding screw
3	4051483	1	NUT, shell retaining
	915432	1	SCREW, machine, 1/4"NC x 5/16"
4	4051484	1	GASKET, shell retaining nut
5	4347790	1	HEAD, filter (3/8"NPT connections)(Used prior to engine #91928)
	4349147	1	HEAD, filter (1/4"NPT connections)(Effective with engine #91928)
6	4040013	1	GASKET, shell
7	4055913	1	GUIDE, element centering

(Continued)

SECOND STAGE FUEL FILTER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
8	639214	1	ELEMENT KIT (Includes items 6, 10 and 11)
9	4052173	1	PLATE, element seating
10	-----	1	GASKET, element seating plate (Furnished only as part of item 8)
11	-----	1	WASHER, seating plate gasket (Furnished only as part of item 8)
12	4052174	1	SPRING, element
13	4051492	1	SHELL, filter
	915433	1	COCK, drain, T-handle, 1/4"NPT
14	4335235	1	BRACKET, filter mounting
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"
	903771	2	CAPSCREW, 5/16"NC x 7/8"
	904205	2	LOCKWASHER, 5/16"
15	4347907	1	LINE, pump to filter
	918325	2	NUT, Sealastic, 3/8" tube (Includes swivel collar)
	915367	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915369	2	ELBOW, Sealastic, 90°, 3/8" tube, 1/4"NPT male
	901826	1	BUSHING, pipe reducing, 3/8"NPT to 1/4"NPT (Used prior to engine #91928)
16	4504056	1	HOSE, filter to pump (14" long)
	918598	1	TEE, pipe reducing, 1/4"NPT side, 1/4"NPT and 3/8"NPT ends
	916641	1	NIPPLE, pipe, 3/8"NPT x 1-1/2"
	912324	1	CONNECTOR, flare type, 3/8" tube, 1/4"NPT male (Effective with engine #91928)

} Used prior to engine #91928



FUEL FILTER

USAGE: Graders serial No. 1780 and up

ITEM PART NO. QTY. DESCRIPTION

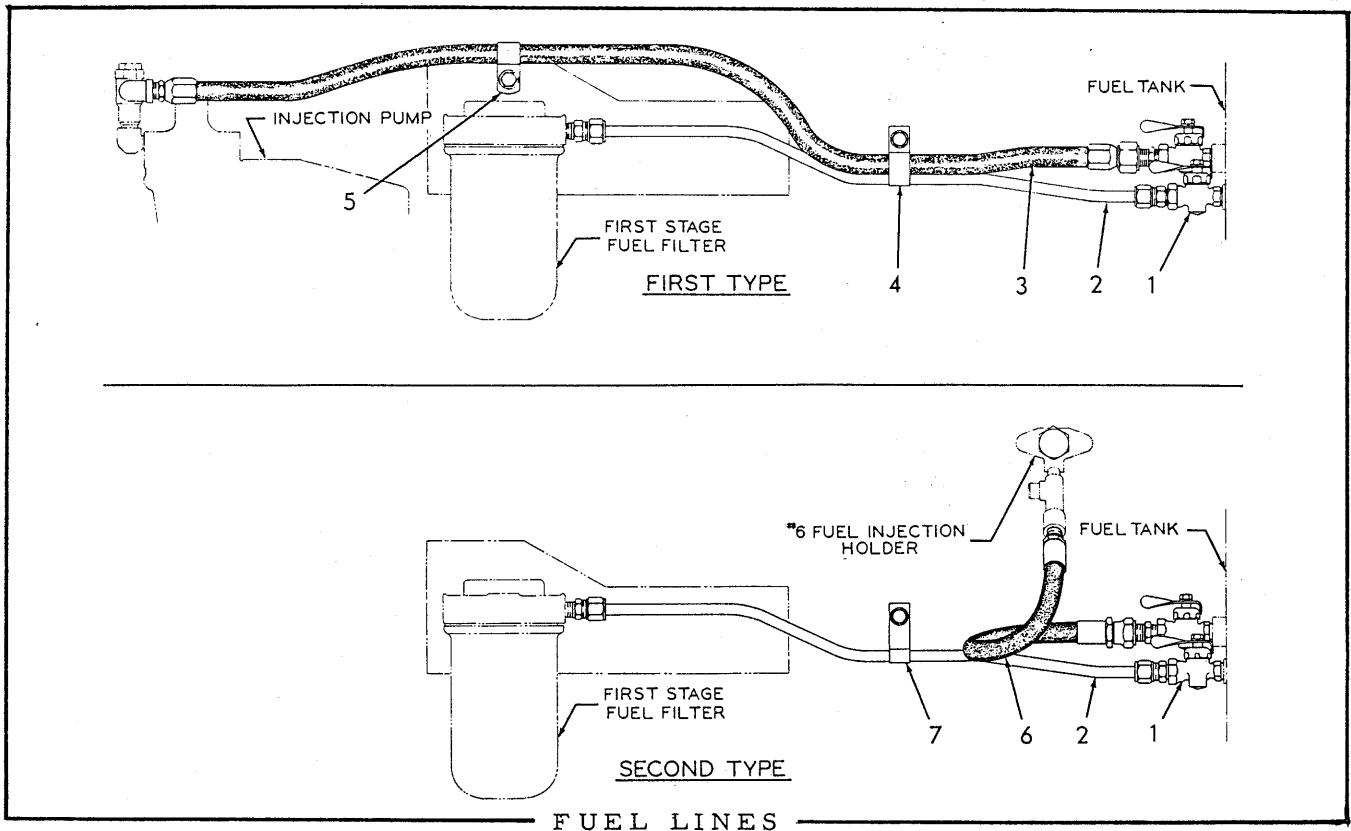
NOTE: Also see pages 52 and 53 for supplementary Heavy-Duty Fuel Filter

1	4336589	1	BRACKET, filter mounting
	903630	2	CAPSCREW, 3/8"NC x 1"
	904206	2	LOCKWASHER, 3/8"
	903771	2	CAPSCREW, 5/16"NC x 7/8"
	904205	2	LOCKWASHER, 5/16"
2	4377259	1	HEAD ASSEMBLY (Includes PLUGS indented below)
	919134	2	PLUG, pipe, hex-hd., 1/8"NPT
	919840	1	PLUG, pipe, hex-hd., 1/4"NPT
	920333	2	PLUG, pipe, hex-hd., 3/8"NPT
	918887	1	PLUG, pipe, hex-socket, 3/8"NPT
	915666	2	CAPSCREW, 1/2"NC x 1-3/8"
	904208	2	LOCKWASHER, 1/2"
	910325	2	NUT, 1/2"NC

(Continued)

FUEL FILTER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
3	4055913	1	GUIDE, element centering, second stage filter
4	639214	1	ELEMENT KIT, second stage filter (Includes items 6, 7 and 9)
5	4052173	1	PLATE, element seating, second stage filter
6	-----	1	GASKET, element seat plate (Furnished only as part of item 4)
7	-----	1	WASHER, seating plate gasket (Furnished only as part of item 4)
8	4052174	1	SPRING, second stage filter
9	4040013	2	GASKET, filter shell
10	4051492	1	SHELL, second stage filter
	915433	1	COCK, drain, 1/4"NPT
11	4347791	1	SHELL, first stage filter
	915433	1	COCK, drain, 1/4"NPT
12	4055563	1	ELEMENT ASSEMBLY, first stage filter (Includes item 9)(Not used when Heavy-Duty Fuel Filter is installed)
13	4051485	1	GUIDE, element centering, first stage filter
14	4051484	2	GASKET, shell retaining nut
15	4051483	2	NUT, shell retaining
	919288	2	CAPSCREW, 1/4"NC x 3/8"
	914686	2	WASHER, plain, copper, 1/4"I.D.
16	4335898	1	HOSE ASSEMBLY, first stage filter to transfer pump (See page 6 for parts)
	919172	1	CONNECTOR, flare type, 3/8" tube, 3/8"NPT male
	4337251	1	ELBOW, flare type, 90°, brass, 3/8" tube, 1/4"NPT male
17	4335935	1	HOSE ASSEMBLY, transfer pump to second stage filter (See page 6 for parts)
	919062	1	CONNECTOR, flare type, 3/8" tube, 1/4"NPT male
	4337251	1	ELBOW, flare type, 90°, brass, 3/8" tube, 1/4"NPT male
18	4335897	1	HOSE ASSEMBLY, filter to injection pump (See page 6 for parts)
	919172	1	CONNECTOR, flare type, 3/8" tube, 3/8"NPT male
19	-----	2	TRANSFER (See page 258)

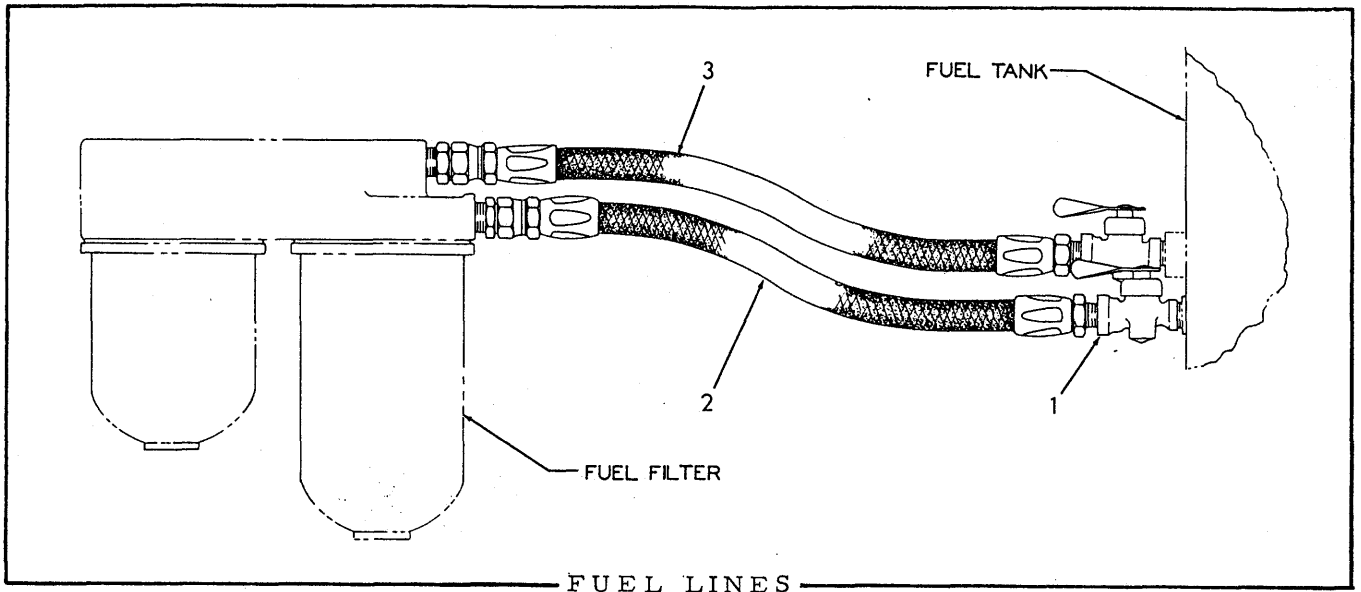


USAGE: Used prior to graders serial No. 1780

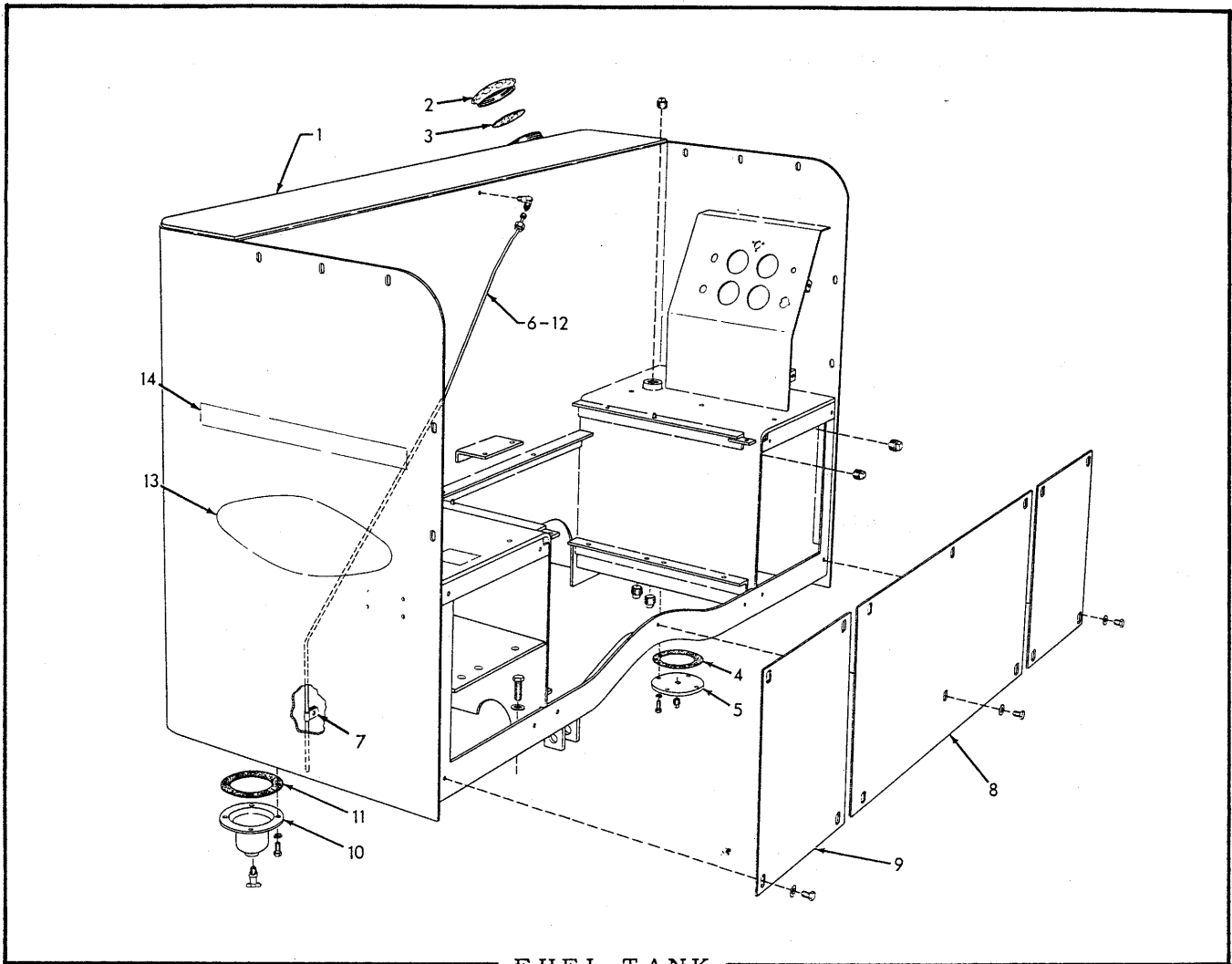
* Used prior to grader serial No. 1046 excluding No. 988 and Nos. 1035 thru 1043

** Used on graders serial No. 1046 and up; also No. 988 and 1035 thru 1043

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	092726	2	2	COCK, fuel shut-off (1/4"NPT male and female)
2	087598	1	1	TUBE, tank to 1st stage filter (Not used with special Heavy-Duty Fuel Filter)
	918325	2	2	NUT, Sealastic, 3/8" tube
	915367	2	2	RING, Sealastic, 3/8" tube (Includes ferrule)
	915368	1	1	CONNECTOR, Sealastic, 3/8" tube, 1/4"NPT male
	4254097	1	1	CONNECTOR, Sealastic, 3/8" tube, 3/8"NPT male
3	087599	1	-	HOSE, injection pump to tank (41" long)
	901722	1	-	ELBOW, street, 90°, 1/4"NPT
	912324	1	-	CONNECTOR, flare type, 3/8" tube, 1/4"NPT male
4	078912	1	-	CLIP, supporting (For one 5/8" diam. line and one 3/8" diam. line, 13/32" bolt-hole)
	905661	1	-	CAPSCREW, 5/16"NC x 5/8"
	904205	1	-	LOCKWASHER, 5/16"
5	047381	1	-	CLIP, hose supporting (5/8" diam., 13/32" bolt-hole)
6	093305	-	1	HOSE, injection nozzle to tank (14" long)
	912324	-	1	CONNECTOR, flare type, 3/8" tube, 1/4"NPT male
7	041262	-	1	CLIP, tube supporting, 3/8" diam., 13/32" bolt-hole)
	905661	-	1	CAPSCREW, 5/16"NC x 5/8"
	904205	-	1	LOCKWASHER, 5/16"



ITEM	PART NO.	QTY.	DESCRIPTION
1	099433	2	COCK, fuel shut-off (1/4"NPT male and female)
2	099136	1	HOSE ASSEMBLY, fuel supply (See page 6 for parts)
	919172	1	CONNECTOR, flare type, 3/8" tube, 3/8"NPT male
3	099135	1	HOSE ASSEMBLY, fuel return (See page 6 for parts)
	919062	1	CONNECTOR, flare type, 3/8" tube, 1/4"NPT male



FUEL TANK

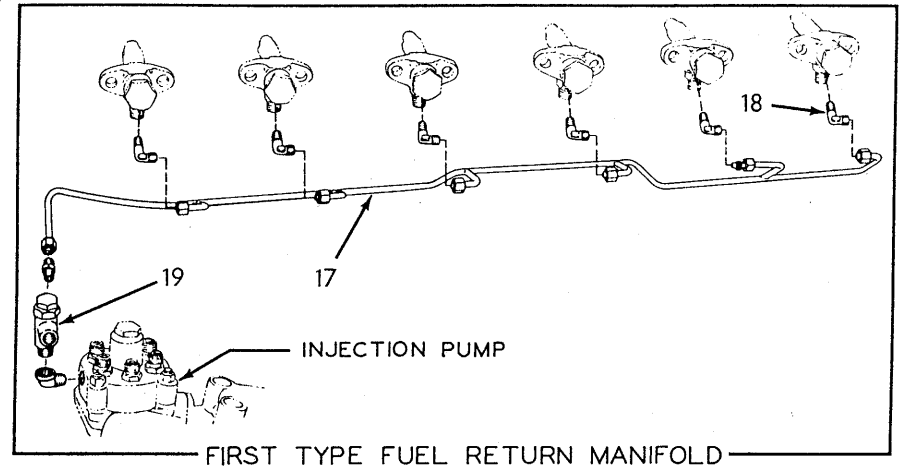
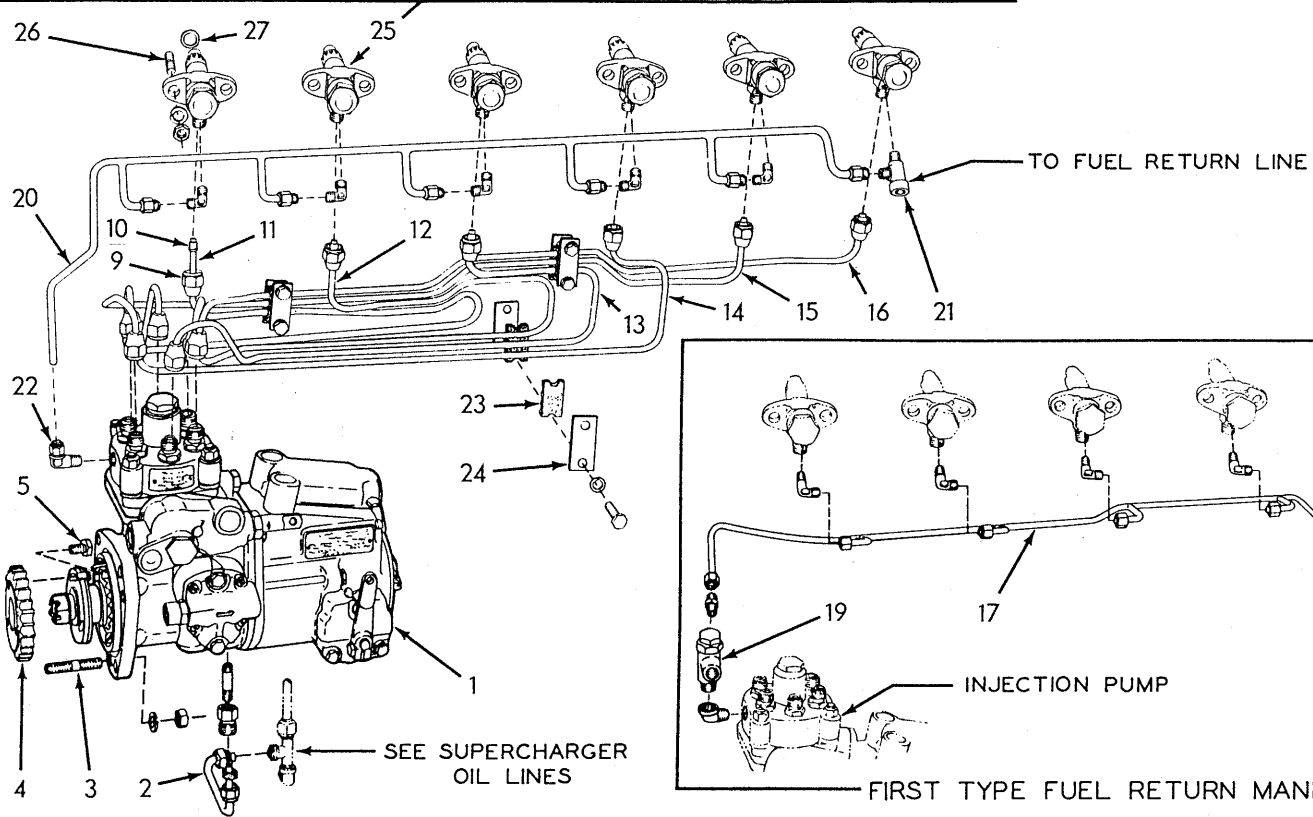
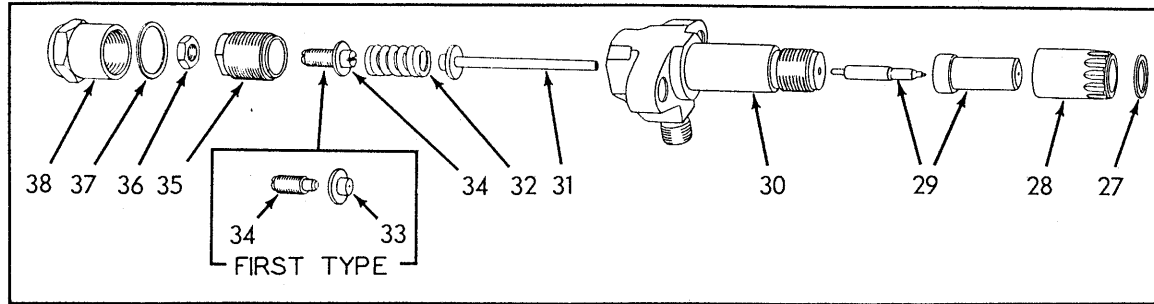
* Used prior to grader serial No. 1123
 ** Effective with grader serial No. 1123

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	096533	1	1	SEAT AND TANK ASSEMBLY (Includes items 2 and 3)(If for graders prior to #1464, also order 1 BRACKET 052091, 2 CAPSCREW 903775 and 2 LOCKWASHER 904206)
	912725	-	1	PLUG, pipe, 1/2"NPT (Effective with grader #1133)
	912726	-	4	PLUG, pipe, 3/4"NPT (Effective with grader #1133)
	903639	6	6	CAPSCREW, 1/2"NC x 1-1/2"
	900818	6	6	WASHER, plain, U.S. std., 1/2"
2	088042	1	1	CAP, fuel tank
3	065613	1	1	GASKET, fuel tank cap
4	042641	-	1	GASKET, hydraulic reservoir cover (Effective with grader #1133)
5	093539	-	1	COVER, hydraulic reservoir (Effective with grader #1133)
	901653	-	1	PLUG, pipe, 3/8"NPT
	912180	-	4	CAPSCREW, 3/8"NF x 7/8"
	904206	-	4	LOCKWASHER, 3/8"

(Continued)

FUEL TANK (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
6	-----	1	1	TUBE, vent, copper, 1/8" O.D. x 43" long (Order item 12)
	915486	1	1	RING, Sealastic, 1/8" tube (Includes ferrule)
	915488	1	1	NUT, Sealastic, 1/8" tube
	915557	1	1	ELBOW, Sealastic, 1/8" tube, 1/8"NPT male
7	066260	1	1	CLIP, vent tube (1/8" diam., 13/32" bolt-hole)
8	086270	1	-	PLATE, front closure
		-	1	PLATE, front closure, center
	903627	10	6	CAPSCREW, 3/8"NC x 1/2"
	900817	10	6	WASHER, plain, U.S. std., 3/8"
9	093171	-	2	PLATE, front closure, end
	903627	-	8	CAPSCREW, 3/8"NC x 1/2"
	900817	-	8	WASHER, plain, U.S. std., 3/8"
10	042645	1	1	SUMP, fuel tank sediment
	912319	1	1	COCK, drain, 1/4"NPT
	910922	4	4	CAPSCREW, 3/8"NF x 3/4"
	904206	4	4	LOCKWASHER, 3/8"
11	042641	1	1	GASKET, sediment sump
12	066253	-	-	TUBING, copper, 1/8" O.D., 10 ft. roll (Use as req'd)
	089045	2	2	MONOGRAM, "FORTY-FIVE" (Attached to side of seat)(Used prior to approx. grader #1796)
13	918370	12	12	RIVET, drive, 3/16" x 9/32"
	-----	-	-	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)
14	089046	2	2	MONOGRAM, "ALLIS-CHALMERS" (2-7/8" x 20", attached to sides of seat)(Used prior to approx. grader #1796)
	918370	12	12	RIVET, drive, 3/16" x 9/32"
	-----	-	-	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



INJECTION PUMP AND NOZZLES (First type)

INJECTION PUMP AND NOZZLES

USAGE: Graders prior to serial No. 1780

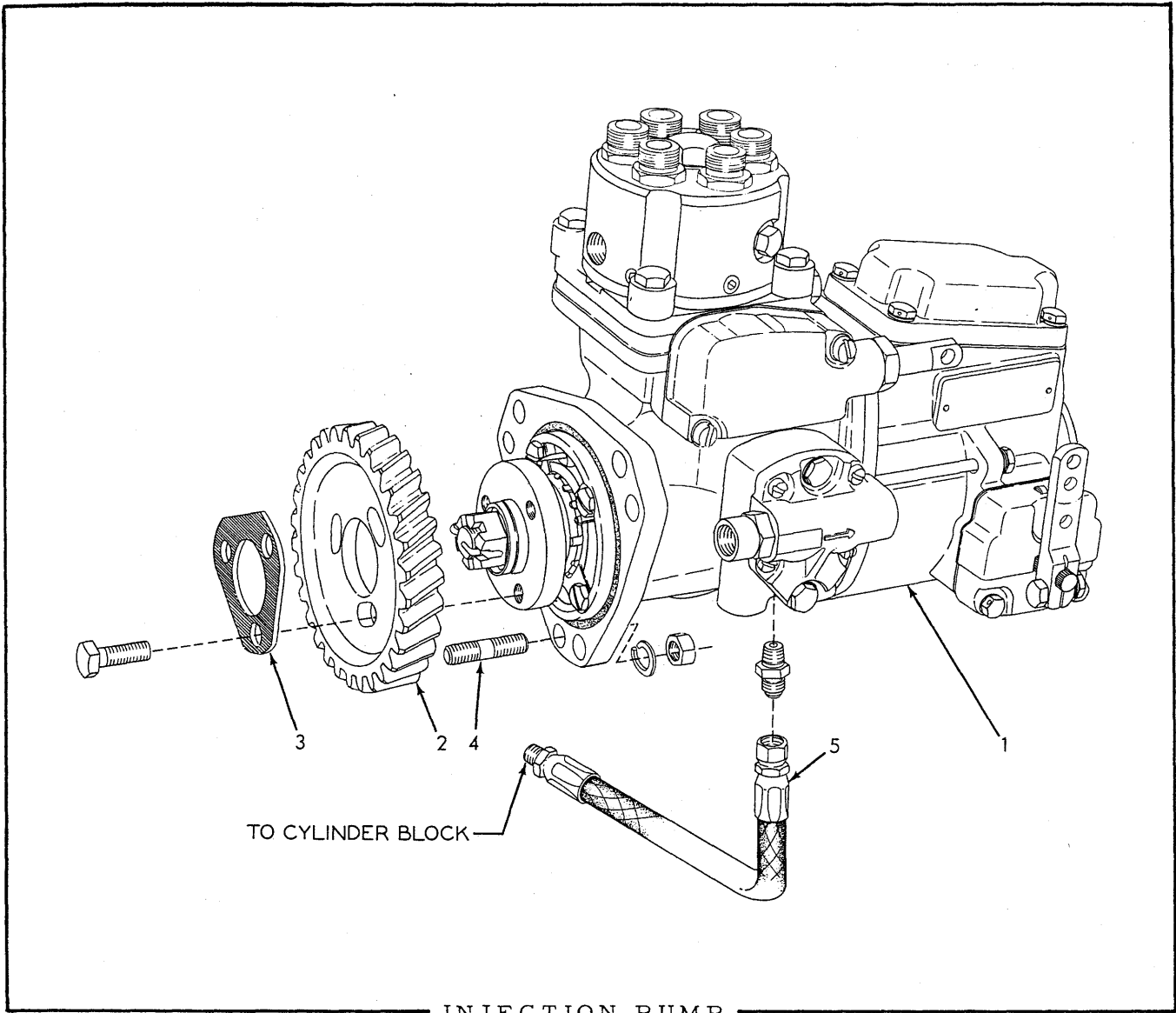
ITEM	PART NO.	QTY.	DESCRIPTION
1	4336371	1	PUMPASSEMBLY, fuel injection (See your "Allis-Chalmers" dealer for service)
2	4347839	1	LINE, oil, cylinder block to injection pump
	918235	2	NUT, Sealastic, 5/16" tube
	915852	2	RING, Sealastic, 5/16" tube (Includes ferrule)
	917980	1	CONNECTOR, Sealastic, 5/16" tube, 1/8"NPT female
	910205	1	NIPPLE, pipe, 1/8"NPT x 1-1/4"
3	4346347	3	STUD, injection pump attaching (3/8"NC x 3/8"NF x 1-5/8")
	904206	3	LOCKWASHER, 3/8"
	910123	3	NUT, 3/8"NF
4	4347834	1	GEAR, injection pump coupling
5	916381	3	CAPSCREW, 3/8"NF x 3/4"
6	4346704	1	SPRING, injection pump timing shaft
7	4347833	1	SHAFT, injection pump timing (3-5/8" long) (Used prior to engine #45-1223)
8	4253104	1	O-RING, injection pump timing shaft
9	4504409	12	NUT, fuel injection line
10	4501149	12	SLEEVE, fuel injection line
11	4347596	1	LINE, fuel injection (#1 cylinder)
12	4347597	1	LINE, fuel injection (#2 cylinder)
13	4347598	1	LINE, fuel injection (#3 cylinder)
14	4347599	1	LINE, fuel injection (#4 cylinder)
15	4347600	1	LINE, fuel injection (#5 cylinder)
16	4347601	1	LINE, fuel injection (#6 cylinder)
17	4347915	1	MANIFOLD ASSEMBLY, fuel return (Includes NUTS and SLEEVES indented below) (Used prior to engine #45-1091)
	911437	7	NUT, compression fitting, 1/4" tube
	911435	7	SLEEVE, compression fitting, 1/4" tube
18	4349376	6	ELBOW, compression type, 1/4" tube, 1/8"NPT male
	914626	1	CONNECTOR, compression type, 1/4" tube, 1/8"NPT male
19	4040718	1	VALVE ASSEMBLY, pressure relief (Used prior to engine #45-1091)
	914588	1	ELBOW, street, brass, 90°, 1/4"NPT
20	4335146	1	MANIFOLD ASSEMBLY (Includes NUTS and SLEEVES indented below) (Effective with engine #45-1091)
	917809	5	NUT, Imperial, 1/4" tube
	918804	1	NUT, Imperial, 5/16" tube
	917806	5	SLEEVE, Imperial, 1/4" tube
	918802	1	SLEEVE, Imperial, 5/16" tube
	919040	5	ELBOW, Imperial, 1/4" tube, 1/8"NPT male
21	4335164	1	TEE, service, Imperial, 5/16" tube, 1/8"NPT male, 1/4"NPT female

(Continued)

INJECTION PUMP AND NOZZLES (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
22	4348705	1	ELBOW ASSEMBLY, fuel return manifold (Restricted. Includes NUT and SLEEVE indented below)(Effective with engine #45-1091)
	918804	1	NUT, Imperial, 5/16" tube
	918802	1	SLEEVE, Imperial, 5/16" tube
23	4507359	6	SPACER, fuel injection lines (rubber)
24	4347649	6	PLATE, fuel injection line clamping
	903773	6	CAPSCREW, 5/16"NC x 1-1/4"
	904205	6	LOCKWASHER, 5/16"
25	4346227	6	HOLDER ASSEMBLY, injection nozzle (Includes items 27 thru 38)
26	4335573	12	STUD, injection nozzle holder
	904206	12	LOCKWASHER, 3/8"
	910123	12	NUT, 3/8"NF
27	4511204	6	□GASKET, injection nozzle holder
28	4040100	6	NUT, injection nozzle
29	4380445	6	NOZZLE ASSEMBLY, injection (1 body and 1 valve)
30	-----	6	BODY, nozzle holder (Not serviced separately)
31	4040552	6	SPINDLE, nozzle holder
32	4371121	6	SPRING, nozzle holder
33	-----	6	SEAT, nozzle holder spring (Used with first type SCREW only. Order SCREW 4047538)
34	-----	6	SCREW, nozzle holder (First type)(Order SCREW 4047538)
		6	SCREW, nozzle holder (Second type)
35	4040096	6	NUT, nozzle holder spring
36	4040098	6	NUT, nozzle holder screw
37	4372113	6	GASKET, nozzle holder cap
38	4040099	6	CAP, nozzle holder

□Also see PACKAGED PARTS

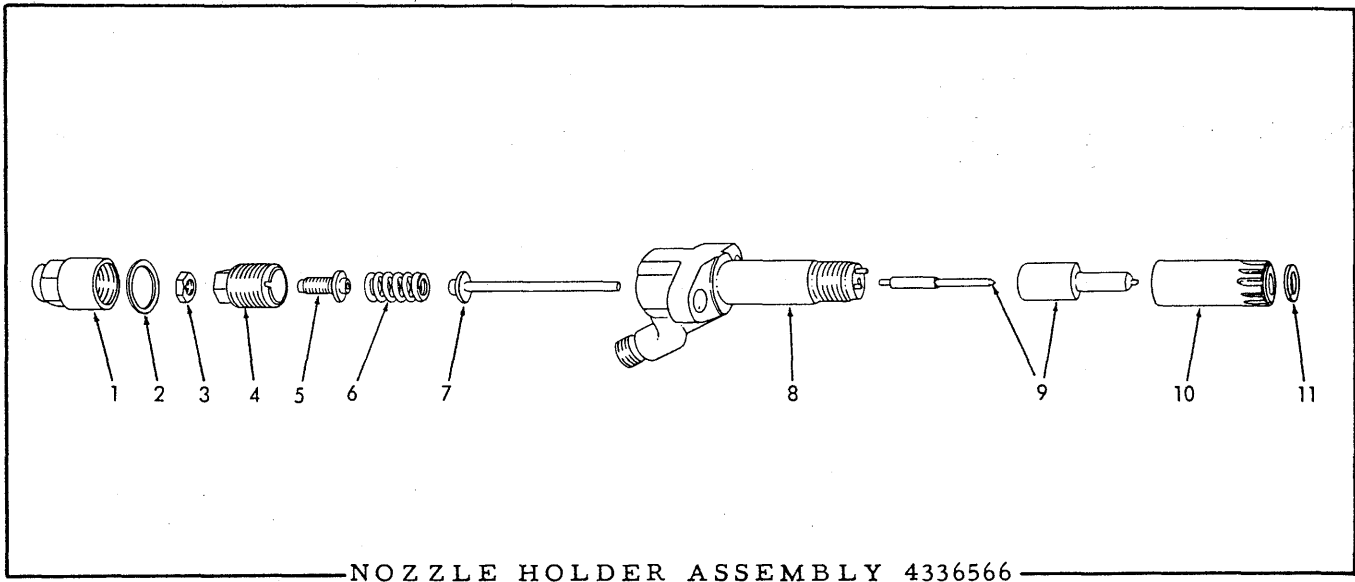


INJECTION PUMP

USAGE: Graders serial No. 1780 and up

ITEM PART NO. QTY. DESCRIPTION

1	4338307	1	PUMP ASSEMBLY, fuel injection (See your Allis-Chalmers dealer for service)
2	4348438	1	GEAR, injection pump drive (Used prior to engine #45-2235)
	4337061	1	GEAR, injection pump drive (Effective with engine #45-2235)
	912180	3	CAPSCREW, 3/8"NF x 7/8"
3	4347836	1	WASHER, serrated, injection pump drive gear
4	4346347	3	STUD, injection pump attaching
	904206	3	LOCKWASHER, 3/8"
	910123	3	NUT, 3/8"NF
5	4335557	1	HOSE ASSEMBLY, cylinder block to injection pump (See page 6 for parts)
	919171	1	CONNECTOR, flare type, 1/4" tube, 1/8"NPT male



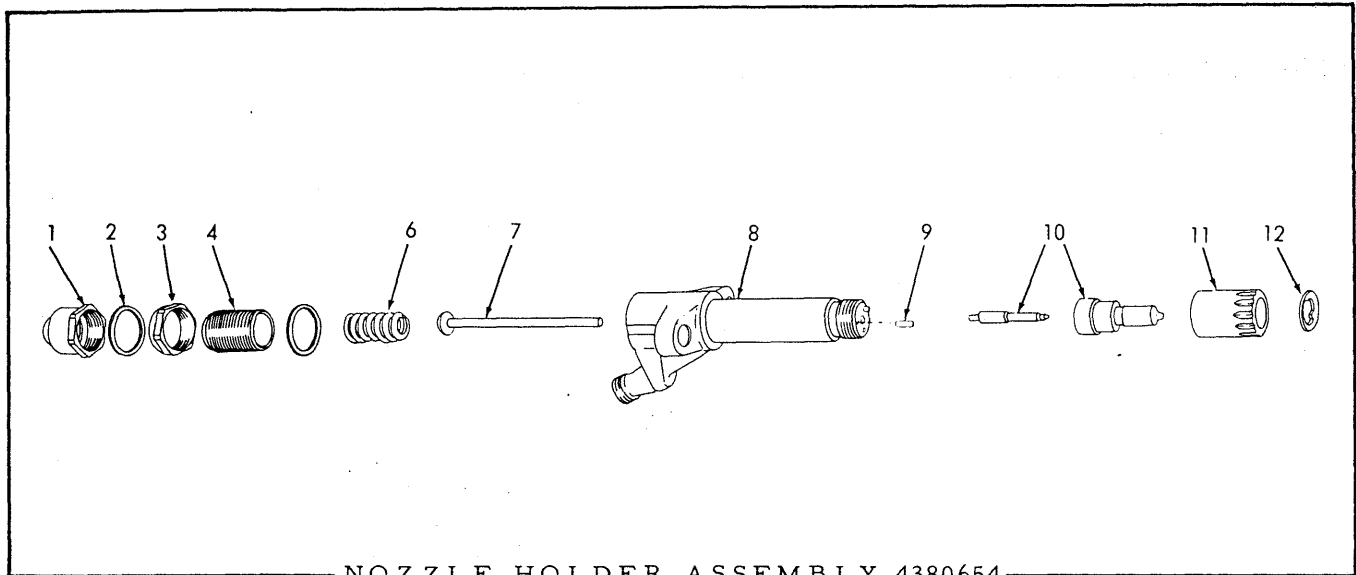
USAGE: See page 73

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one (1) assembly only

1	4052715	1	CAP, protecting
2	4049282	1	GASKET, protecting cap
3	4050523	1	NUT, adjusting screw
4	4050520	1	NUT, spindle retaining
5	4051839	1	SCREW, adjusting
6	4050519	1	SPRING, nozzle spindle
7	4052714	1	SPINDLE ASSEMBLY (Serviced only as a unit)
8	-----	1	BODY (Not serviced separately)
9	4336568	1	NOZZLE ASSEMBLY, injection (Includes item 11)
10	4050516	1	NUT, nozzle retaining
11	4378031	1	□GASKET, nozzle holder

□Also see PACKAGED PARTS



NOZZLE HOLDER ASSEMBLY 4380654

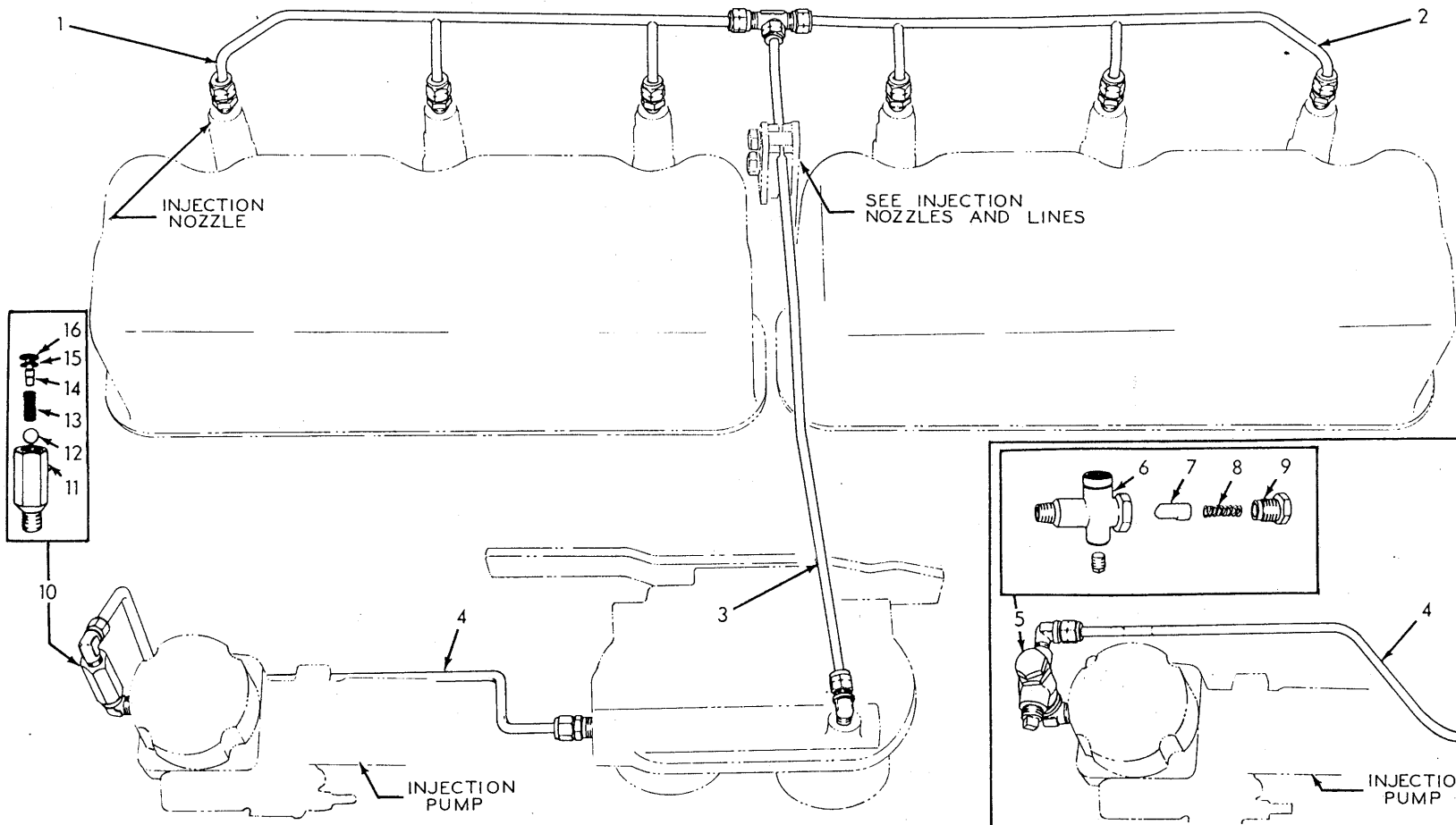
USAGE: See page 73

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated below are for one(1)
Holder Assembly only.

1	4378032	1	NUT, cap
2	4511243	2	GASKET, cap nut
3	4511213	1	NUT, locking
4	4378033	1	SCREW, adjusting
6	4380652	1	SPRING
7	4380656	1	ROD, spindle
8	-----	1	BODY (Not serviced separately)
9	4254913	2	PIN, nozzle locating
10	4380651	1	NOZZLE ASSEMBLY (Includes item 12)
11	4380662	1	NUT, nozzle retaining
12	4378031	1	□GASKET, nozzle holder

□Also see PACKAGED PARTS



INJECTION FUEL RETURN LINES (Second type)

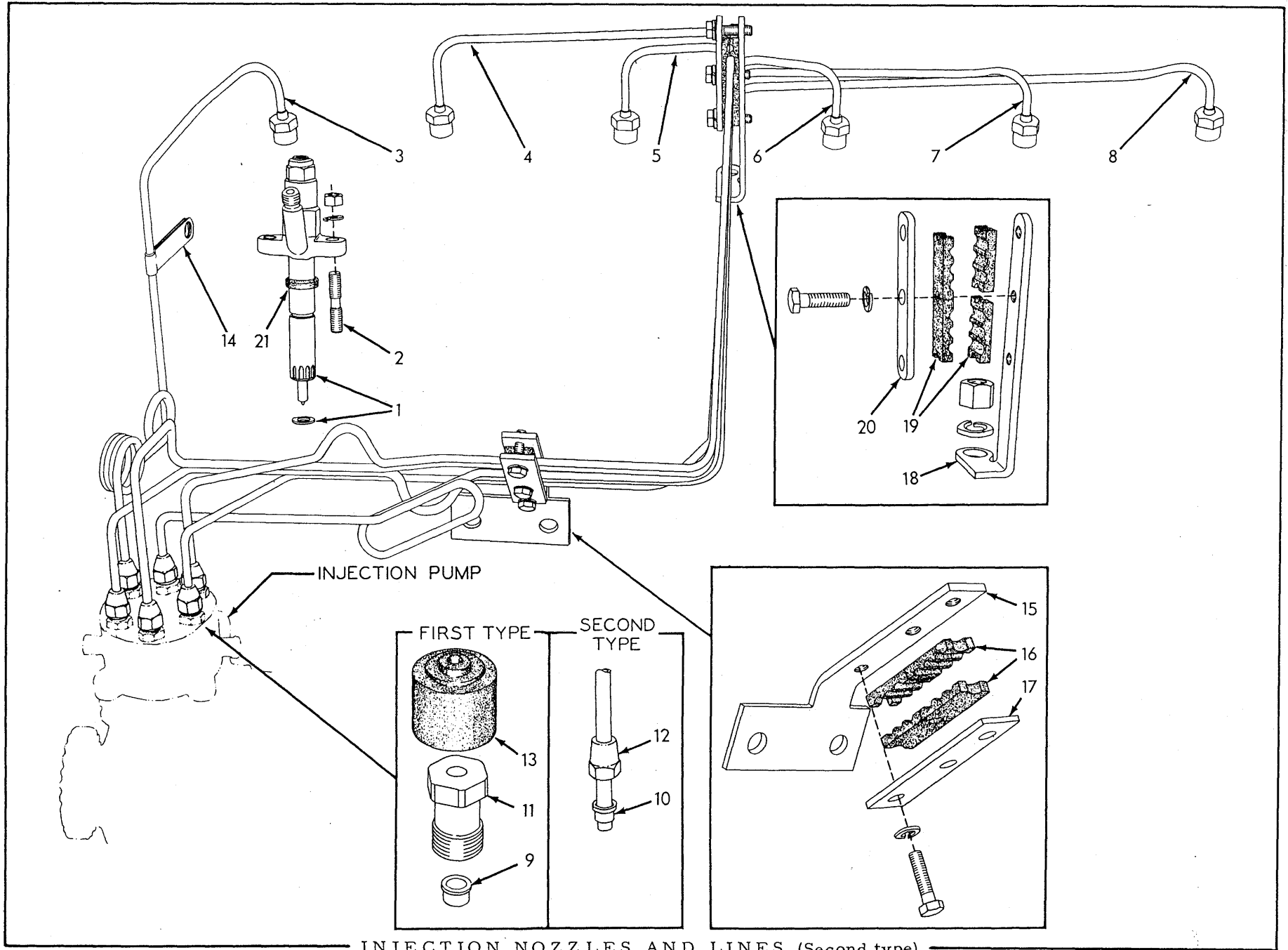
INJECTION FUEL RETURN LINES

USAGE: Graders serial No. 1780 and up

* Engines prior to serial No. 45-2235

** Engines serial No. 45-2235 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	4336546	1	1	MANIFOLD ASSEMBLY, front (Includes NUTS and SLEEVES indented below)
	917809	4	4	NUT, Imperial, 1/4" tube
	917806	4	4	SLEEVE, Imperial, 1/4" tube
	919800	3	3	CONNECTOR, Imperial, 1/4" tube, 1/8"NPT male
2	4336547	1	1	MANIFOLD ASSEMBLY, rear (Includes NUTS and SLEEVES indented below)
	917809	4	4	NUT, Imperial, 1/4" tube
	917806	4	4	SLEEVE, Imperial, 1/4" tube
	919800	3	3	CONNECTOR, Imperial, 1/4" tube, 1/8"NPT male
3	4336687	1	1	TUBE ASSEMBLY, manifolds to filter (Includes NUTS and SLEEVES indented below)(Used prior to engine #45-2375)
	4338463	-	1	TUBE ASSEMBLY, manifolds to filter (Includes NUTS and SLEEVES indented below)(Eff. with engine #45-2375)
	917809	2	2	NUT, Imperial, 1/4" tube
	917806	2	2	SLEEVE, Imperial, 1/4" tube
	919797	1	1	TEE, union, Imperial, 1/4" tube
	919481	1	1	ELBOW, Imperial, 1/4" tube, 1/4"NPT male
4	4336549	1	-	TUBE ASSEMBLY, pump to filter (Includes NUTS and SLEEVES indented below)
	919040	1	-	ELBOW, Imperial, 1/4" tube, 1/8"NPT male
	4337223	-	1	TUBE ASSEMBLY, pump to filter (Includes NUTS and SLEEVES indented below)
	919481	-	1	ELBOW, Imperial, 1/4" tube, 1/4"NPT male
	917809	2	2	NUT, Imperial, 1/4" tube
	917806	2	2	SLEEVE, Imperial, 1/4" tube
	920242	1	1	CONNECTOR, Imperial, 1/4" tube, 1/8"NPT male
5	4505556	1	-	VALVE ASSEMBLY, pressure relief (Consists of items 6 thru 9)
	914588	1	-	ELBOW, street, brass, 90°, 1/4"NPT
6	-----	1	-	BODY, relief valve (Not serviced separately)
	901651	1	-	PLUG, pipe, 1/8"NPT
7	4041015	1	-	VALVE, pressure relief
8	4050685	1	-	SPRING, pressure relief valve
9	4051304	1	-	SCREW, pressure relief valve
10	4337015	-	1	VALVE ASSEMBLY, pressure relief (Consists of items 11 thru 16)
	914588	-	1	ELBOW, street, brass, 90°, 1/4"NPT
11	-----	-	1	BODY, relief valve (Not serviced separately)
12	4337022	-	1	BALL, relief valve
13	4337023	-	1	SPRING, relief valve
14	4337019	-	1	STOP, relief valve
15	4255017	-	1	E-RING, relief valve stop
16	4255020	-	1	RING, snap, relief valve



INJECTION NOZZLES AND LINES (Second type)

INJECTION NOZZLES AND LINES

USAGE: Graders serial No. 1780 and up

- * Engines prior to approx. serial No. 45-2235
- ** Engines approx. serial No. 45-2235 thru 45-2374
- *** Engines serial No. 45-2375 and up

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	4336566	6	6	-	HOLDER ASSEMBLY, injection nozzle (See page 68 for parts) (Used prior to engine #45-2283. Order HOLDER ASSEMBLY 4380654)
	4380654	6	6	6	HOLDER ASSEMBLY, injection nozzle (See page 69 for parts) (Effective with engine #45-2283)
2	4336209	12	12	12	STUD, injection nozzle holder
	910123	12	12	12	NUT, 3/8"NF
	904206	12	12	12	LOCKWASHER, 3/8"
3	-----	1	-	-	TUBE ASSEMBLY, fuel injection (#1 cylinder)
	4337805	-	1	-	TUBE ASSEMBLY, fuel injection (#1 cylinder)
	4338428	-	-	1	TUBE ASSEMBLY, fuel injection (#1 cylinder)
4	-----	1	-	-	TUBE ASSEMBLY, fuel injection (#2 cylinder)
	4337806	-	1	-	TUBE ASSEMBLY, fuel injection (#2 cylinder)
	4338429	-	-	1	TUBE ASSEMBLY, fuel injection (#2 cylinder)
5	-----	1	-	-	TUBE ASSEMBLY, fuel injection (#3 cylinder)
	4337807	-	1	-	TUBE ASSEMBLY, fuel injection (#3 cylinder)
	4338430	-	-	1	TUBE ASSEMBLY, fuel injection (#3 cylinder)
6	-----	1	-	-	TUBE ASSEMBLY, fuel injection (#4 cylinder)
	4337808	-	1	-	TUBE ASSEMBLY, fuel injection (#4 cylinder)
	4338431	-	-	1	TUBE ASSEMBLY, fuel injection (#4 cylinder)
7	-----	1	-	-	TUBE ASSEMBLY, fuel injection (#5 cylinder)
	4337809	-	1	-	TUBE ASSEMBLY, fuel injection (#5 cylinder)
	4338432	-	-	1	TUBE ASSEMBLY, fuel injection (#5 cylinder)
8	-----	1	-	-	TUBE ASSEMBLY, fuel injection (#6 cylinder)
	4337810	-	1	-	TUBE ASSEMBLY, fuel injection (#6 cylinder)
	4338433	-	-	1	TUBE ASSEMBLY, fuel injection (#6 cylinder)

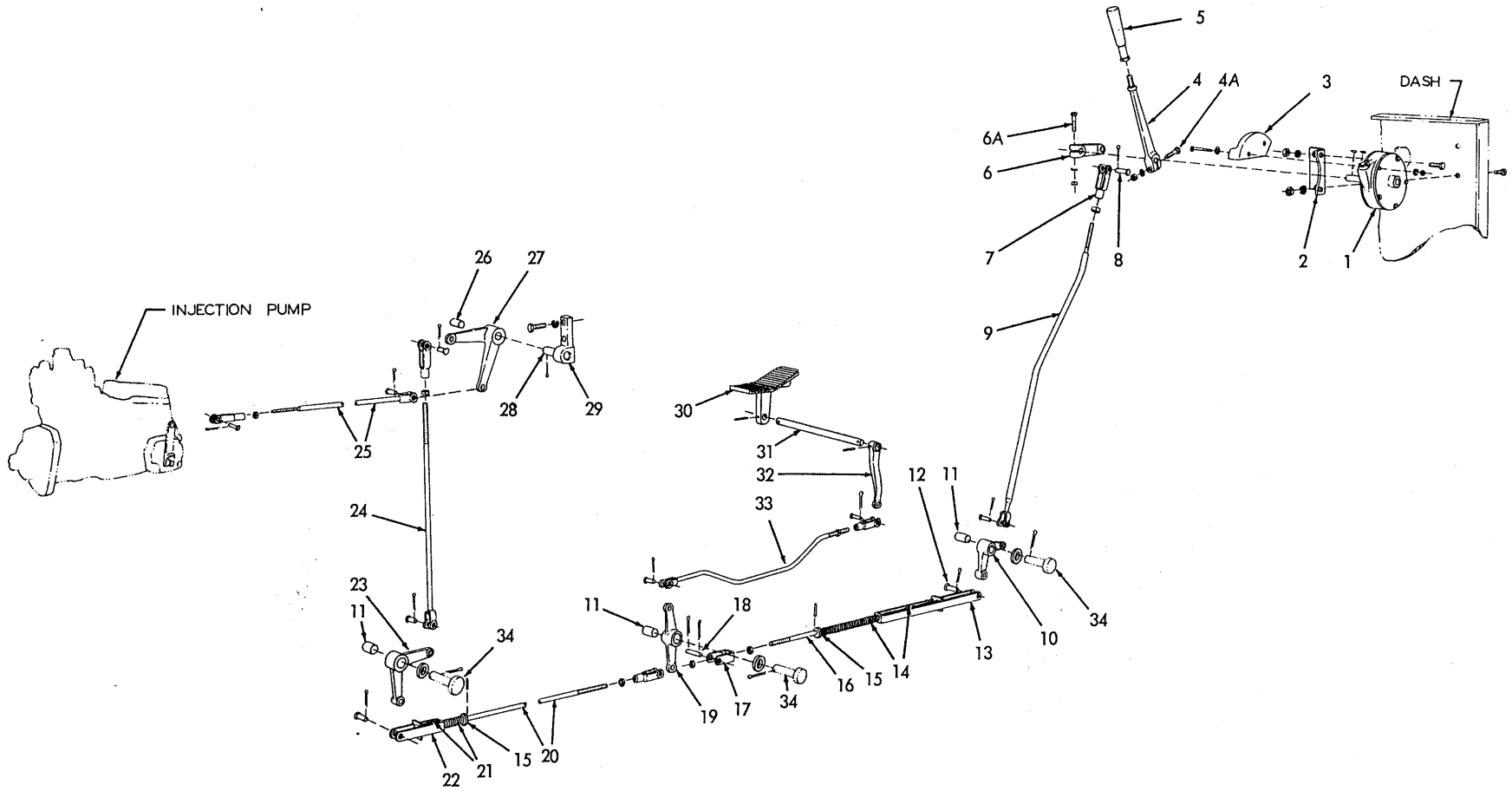
NOTE: Each Tube Assembly listed above includes Nut and Sleeve for the upper end. Where part No. is not listed, order the corresponding Tube Assembly of later design and include with each 1 SLEEVE 4501149, 1 SLEEVE 4054096, 1 NUT 4504409 and 1 FITTING 4054095. When replacing entire set of tubes (items 3 thru 8) for engines prior to serial No. 45-2375, order latest type as listed above.

(Continued)

INJECTION NOZZLES AND LINES (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
9	4052556	6	-	-	SLEEVE, injection tube, lower end
10	4501149	-	6	6	SLEEVE, injection tube, lower end
11	4052555	6	-	-	FITTING, injection tube, lower end
12	4504409	-	6	6	NUT, injection tube, lower end
13	4053156	6	-	-	CAP, injection tube fitting (rubber)
14	4336255	1	1	1	CLIP, fuel injection tube (#1 cylinder)
15	4336530	1	1	1	BRACKET, tube supporting, lower
16	4336532	2	2	2	SPACER, injection tubes, lower
17	4336531	1	1	1	PLATE, clamping, injection tubes, lower
	903772	3	3	3	CAPSCREW, 5/16"NC x 1"
	904205	3	3	3	LOCKWASHER, 5/16"
18	4336249	1	1	1	BRACKET, tube supporting, upper
	910195	1	1	1	NUT, 1/2"NF
	904208	1	1	1	LOCKWASHER, 1/2"
19	4507359	4	4	4	SPACER, injection tubes, upper
20	4336250	1	1	1	CLAMP, injection tubes, upper
	903772	3	3	3	CAPSCREW, 5/16"NC x 1"
	904205	3	3	3	LOCKWASHER; 5/16"
21	4337031	6	6	6	SHIELD, dirt

MEMO



THROTTLE CONTROL

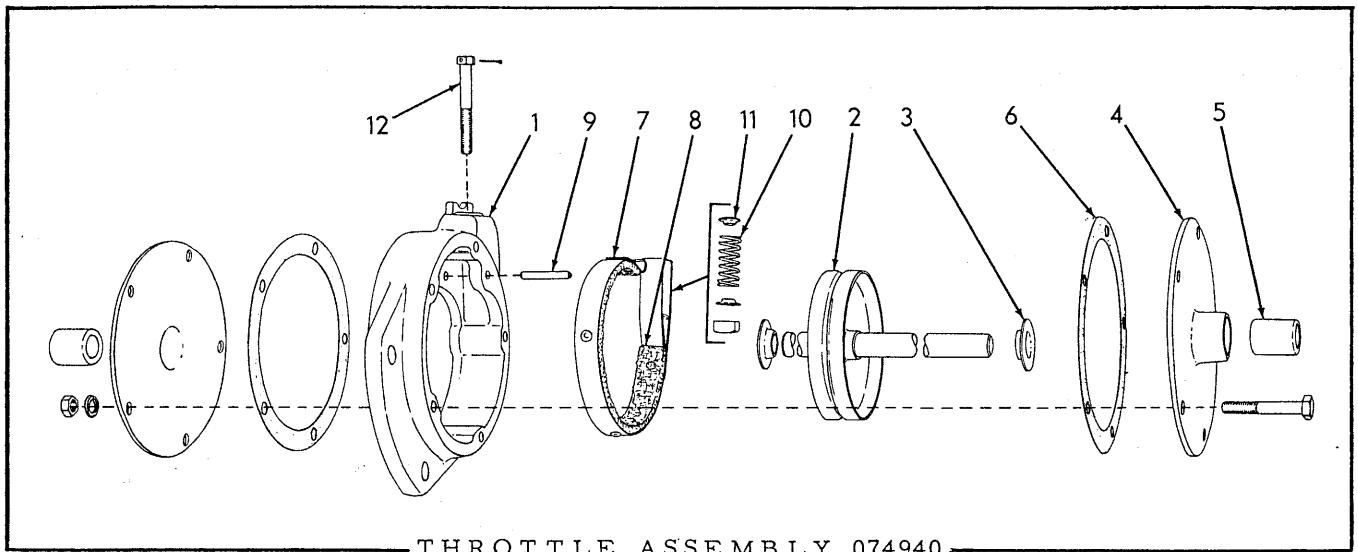
THROTTLE CONTROL

ITEM	PART NO.	QTY.	DESCRIPTION
1	074940	1	THROTTLE ASSEMBLY (See page 79 for parts)
	913017	2	CAPSCREW, 3/8"NF x 1"
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
2	074951	1	BRACKET, throttle attaching
	912185	2	CAPSCREW, 3/8"NF x 1-1/4"
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
3	081760	1	BRACKET, operating lever stop
	916933	2	CAPSCREW, 1/4"NF x 2"
	911114	2	WASHER, plain, SAE std., 1/4"
	904204	2	LOCKWASHER, 1/4"
	911040	2	NUT, 1/4"NF
4	074952	1	LEVER, operating
	905121	1	KEY, #5 woodruff, 1/8" x 5/8"
4A	056590	1	CAPSCREW, 3/8"NF x 1-5/8"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
5	078620	1	GRIP, operating lever
6	074953	1	LEVER, throttle control
	905121	1	KEY, #5 woodruff, 1/8" x 5/8"
6A	056590	1	CAPSCREW, 3/8"NF x 1-5/8"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
7	605973	1	YOKE, adjustable, control rod (7/16"NF)
8	051049	1	PIN, yoke, control rod (7/16" x 1-1/4")
	900801	1	PIN, cotter, 3/32" x 3/4"
9	086649	1	ROD, throttle control, front (vertical)
	078810	1	PIN, yoke, 3/8" diam.
	900942	1	PIN, cotter, 3/32" x 5/8"
	911042	1	NUT, 7/16"NF
10	097277	1	BELLCRANK ASSEMBLY, front (Includes item 11)
11	097273	3	BUSHING, bellcrank
12	082875	2	PIN, yoke, control rod (3/8" x 1-5/16")
	900942	2	PIN, cotter, 3/32" x 5/8"
13	086643	1	YOKE, sliding, front control rod (13" long)
14	086646	2	SPRING, front control rod
15	044973	2	WASHER, bearing, control rod springs
16	086657	1	ROD, throttle control, front (horizontal)
	916202	1	PIN, roll, 1/8" x 7/8"
	911041	2	NUT, 3/8"NF
17	084732	1	YOKE, front control rod (2-1/4" long)
18	054561	1	PIN, control rod yokes
	900806	2	PIN, cotter, 1/8" x 1"

(Continued)

THROTTLE CONTROL (Continued)

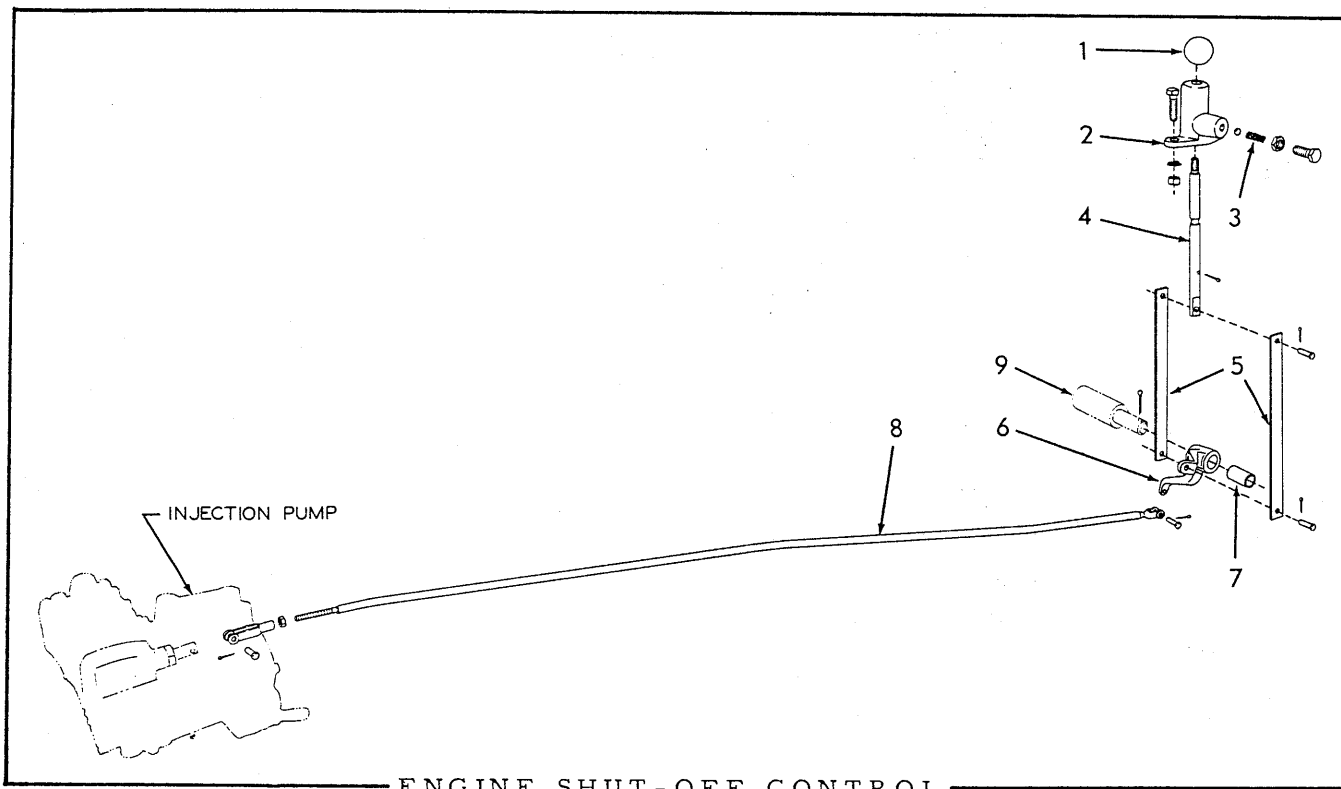
ITEM	PART NO.	QTY.	DESCRIPTION
19	097275	1	BELLCRANK ASSEMBLY, intermediate (Includes item 11)
20	086655	1	ROD, throttle control, intermediate (horizontal)
	916202	1	PIN, roll, 1/8" x 7/8"
	628736	1	YOKE, rod end, adjustable, 3/8"NF
	911041	1	NUT, 3/8"NF
21	035910	2	SPRING, intermediate control rod
22	078967	1	YOKE, sliding, intermediate control rod (4-1/4" long)
23	097276	1	BELLCRANK ASSEMBLY, lower rear (Includes item 11)
24	086638	1	ROD, throttle control, rear (vertical)
	628736	1	YOKE, rod end, adjustable, 3/8"NF
	911041	1	NUT, 3/8"NF
	078810	2	PIN, yoke, 3/8" diam.
	900942	2	PIN, cotter, 3/32" x 5/8"
25	086637	1	ROD, throttle control, rear (horizontal)
	628737	1	YOKE, rod end, adjustable, 1/4"NF
	911040	1	NUT, 1/4"NF
	078810	1	PIN, yoke, 3/8" diam.
	900942	1	PIN, cotter, 3/32" x 5/8"
	628738	1	PIN, yoke, 1/4" diam.
	900970	1	PIN, cotter, 1/16" x 1/2"
26	065169	1	BUSHING, bellcrank
27	086576	1	BELLCRANK ASSEMBLY, upper rear (Includes item 26)
28	086578	1	PIN, bellcrank supporting bracket
	900806	1	PIN, cotter, 1/8" x 1"
29	086579	1	BRACKET ASSEMBLY, bellcrank supporting (Includes item 28)
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
30	086647	1	PEDAL, foot, throttle control
	915797	1	PIN, roll, 3/16" x 1-1/4"
31	096706	1	SHAFT, cross
32	086645	1	LEVER, throttle control, foot
	915711	1	PIN, roll, 3/16" x 7/8"
33	086648	1	ROD, foot throttle
	628736	1	YOKE, rod end, adjustable, 3/8"NF
	911041	1	NUT, 3/8"NF
	078810	2	PIN, yoke, 3/8" diam.
	900942	2	PIN, cotter, 3/32" x 5/8"
34	-----	3	PIN, bellcrank fulcrum (welded to frame)
	900806	3	PIN, cotter, 1/8" x 1"
	911100	3	WASHER, plain, SAE std., 5/8"



THROTTLE ASSEMBLY 074940

USAGE: See page 77

ITEM	PART NO.	QTY.	DESCRIPTION
1	068859	1	HOUSING
2	074941	1	DRUM AND SHAFT
3	069996	2	WASHER, thrust
4	068866	2	PLATE ASSEMBLY, housing cover (Includes item 5)
	914892	5	CAPSCREW, 1/4"NF x 1-3/4"
	904204	5	LOCKWASHER, 1/4"
	911040	5	NUT, 1/4"NF
5	071800	2	BUSHING, throttle shaft
6	068865	2	GASKET, housing cover plate
7	068861	1	BAND ASSEMBLY, friction (Includes item 8)
8	068864	1	LINING, friction band
	915707	4	RIVET, tubular, brass, 3/16" x 9/64"
9	068869	1	PIN, friction band
10	068911	1	SPRING, friction band
11	069349	2	COLLAR, friction band spring
12	068862	1	CAPSCREW, friction band adjustment
	904020	1	PIN, cotter, 1/16" x 1"
	901150	1	NUT, square, 1/4"NC



ENGINE SHUT-OFF CONTROL

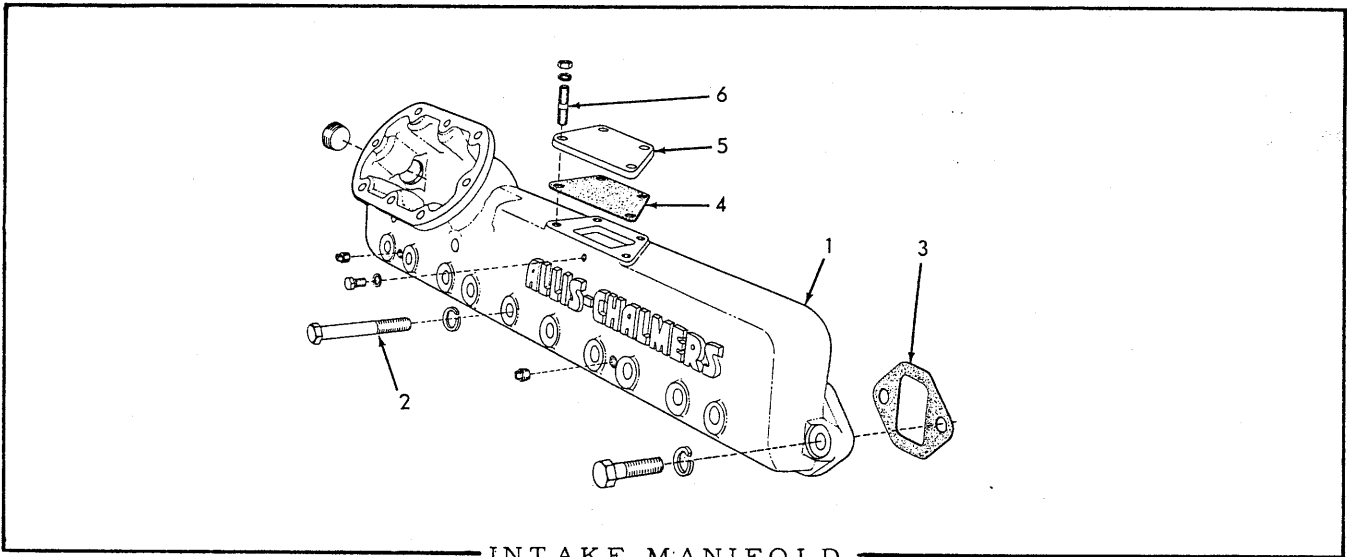
* Used prior to grader serial No. 360
 ** Effective with grader serial No. 360

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	091855	1	1	KNOB, control shaft
2	086425	1	1	BRACKET, control shaft
	903631	2	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	2	LOCKWASHER, 3/8"
	911026	2	2	NUT, 3/8"NC
3	050975	1	1	SPRING, control shaft
	913729	1	1	CAPSCREW, 7/16"NF x 1"
	910876	1	1	NUT, jam, 7/16"NF
	905360	1	1	BALL, steel, 3/8" diam.
4	086547	1	1	SHAFT, control
	900805	1	1	PIN, cotter, 1/8" x 3/4"
5	086550	2	-	LINK, control shaft
	089693	-	2	LINK, control shaft
	628738	1	2	PIN, yoke, 1/4" diam.
	078810	1	-	PIN, yoke, 3/8" diam.
	900970	1	2	PIN, cotter, 1/16" x 1/2"
6	900942	1	-	PIN, cotter, 3/32" x 5/8"
	-----	1	-	BELLCRANK ASSEMBLY (Includes item 7)(Order 1 each BELLCRANK ASSY. 089689, PIN 628738, PIN 900970 and 2 LINK 089693)
	089689	-	1	BELLCRANK ASSEMBLY (Includes item 7)
	900806	1	1	PIN, cotter, 1/8" x 1"

(Continued)

ENGINE SHUT-OFF CONTROL (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
7	065172	1	1	BUSHING, bellcrank
8	086548	1	1	ROD, control
	628737	1	1	YOKE, rod end, adjustable, 1/4"NF
	628738	2	2	PIN, yoke, 1/4" diam.
	900970	2	2	PIN, cotter, 1/16" x 1/2"
	911040	1	1	NUT, 1/4"NF
9	-----	-	-	PIN, bellcrank pivot (welded to seat frame)



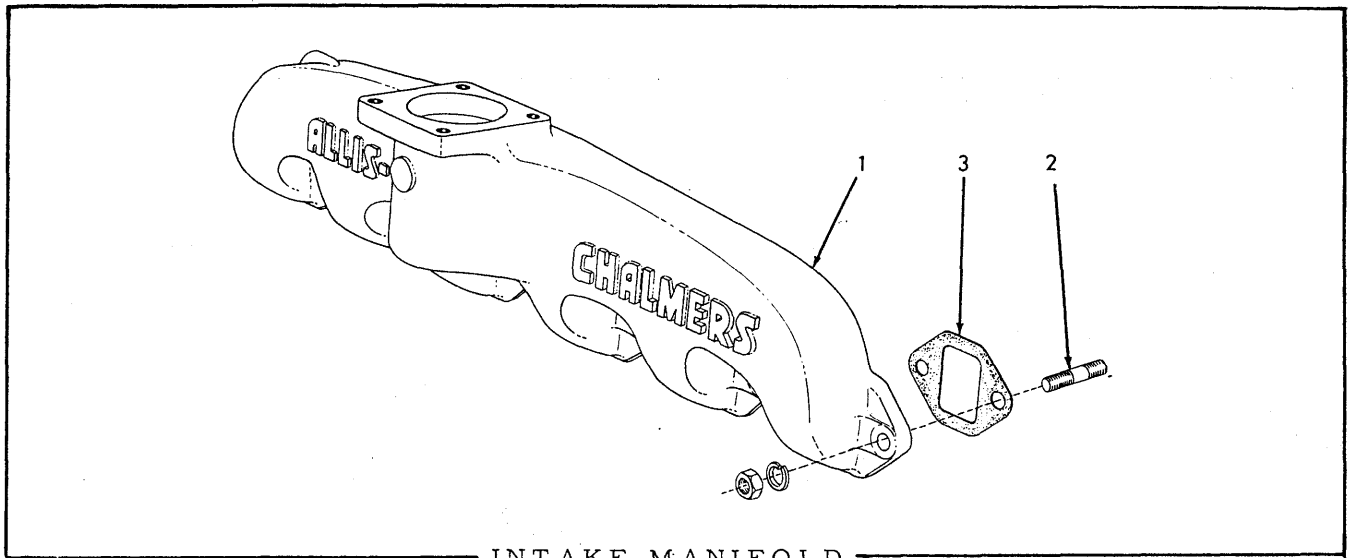
INTAKE MANIFOLD

USAGE: Used prior to grader serial No. 1780

* Used prior to engine serial No. 98863
 ** Effective with engine serial No. 98863

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	-----	1	-	MANIFOLD, intake (Order 1 each, MANIFOLD 4349433, COVER 4349381, GASKET 4349384, CAPSCREW 906692, WASHER 914686; 4 each STUD 4641420, NUT 910324, LOCKWASHER 904206)
	4349433	-	1	MANIFOLD, intake
	901652	2	2	PLUG, pipe, 1/4"NPT
	901666	1	1	PLUG, pipe, 1"NPT
	906692	-	1	CAPSCREW, 1/4"NC x 3/8"
	914686	-	1	WASHER, copper
	917010	2	2	CAPSCREW, 1/2"NC x 1-7/8"
2	4336101	12	12	CAPSCREW, 1/2"NC x 3-3/4" (Nylok)
	904208	14	14	LOCKWASHER, 1/2"
3	4346138	6	6	□GASKET, intake manifold
4	4349384	-	1	□GASKET, manifold cover
5	4349381	-	1	COVER, manifold
6	4641420	-	4	STUD
	904206	-	4	LOCKWASHER, 3/8"
	910324	-	4	NUT, 3/8"NC

□Also see PACKAGED PARTS

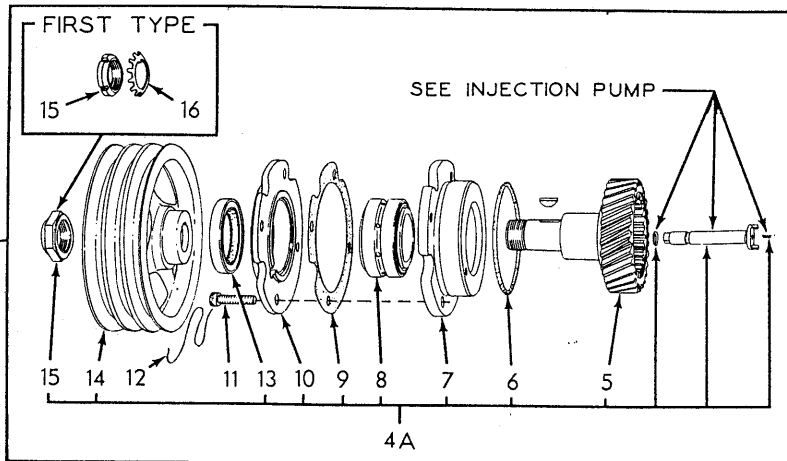
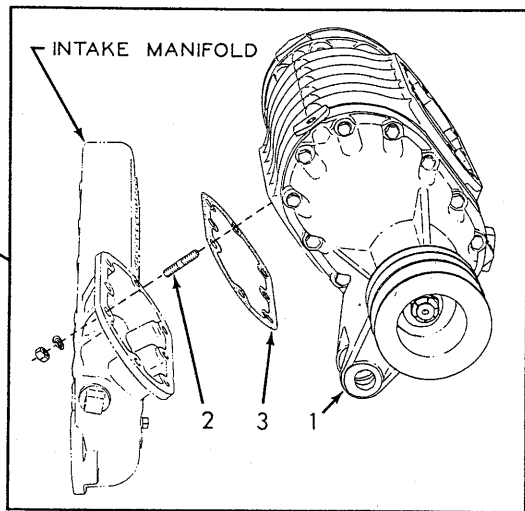
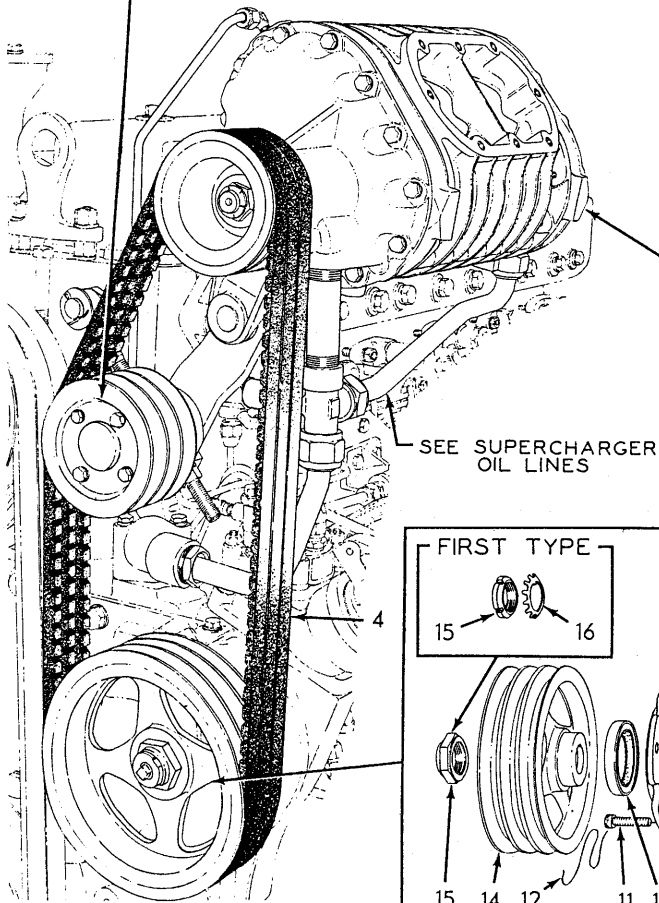
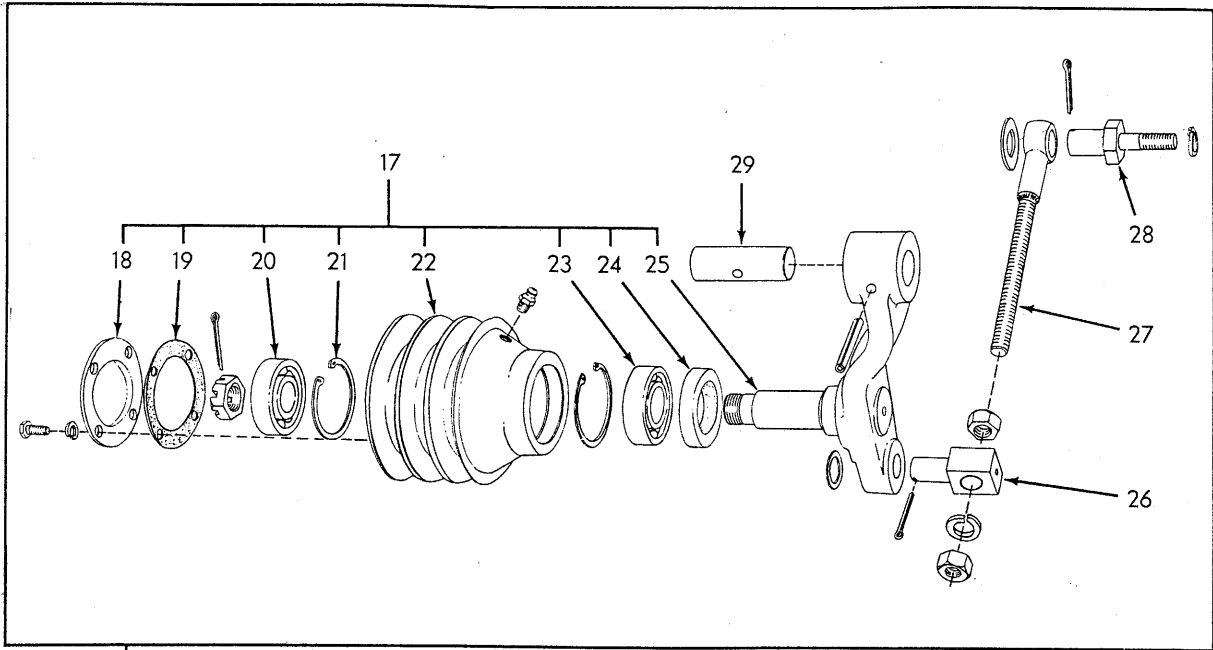


INTAKE MANIFOLD

USAGE: Effective with grader serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4336202	1	MANIFOLD, intake
2	4346208	12	STUD, exhaust manifold
	904208	12	LOCKWASHER, 1/2"
	910325	12	NUT, 1/2"NC
3	4346138	6	□GASKET, intake manifold

□Also see PACKAGED PARTS



SUPERCHARGER AND DRIVE

SUPERCHARGER AND DRIVE

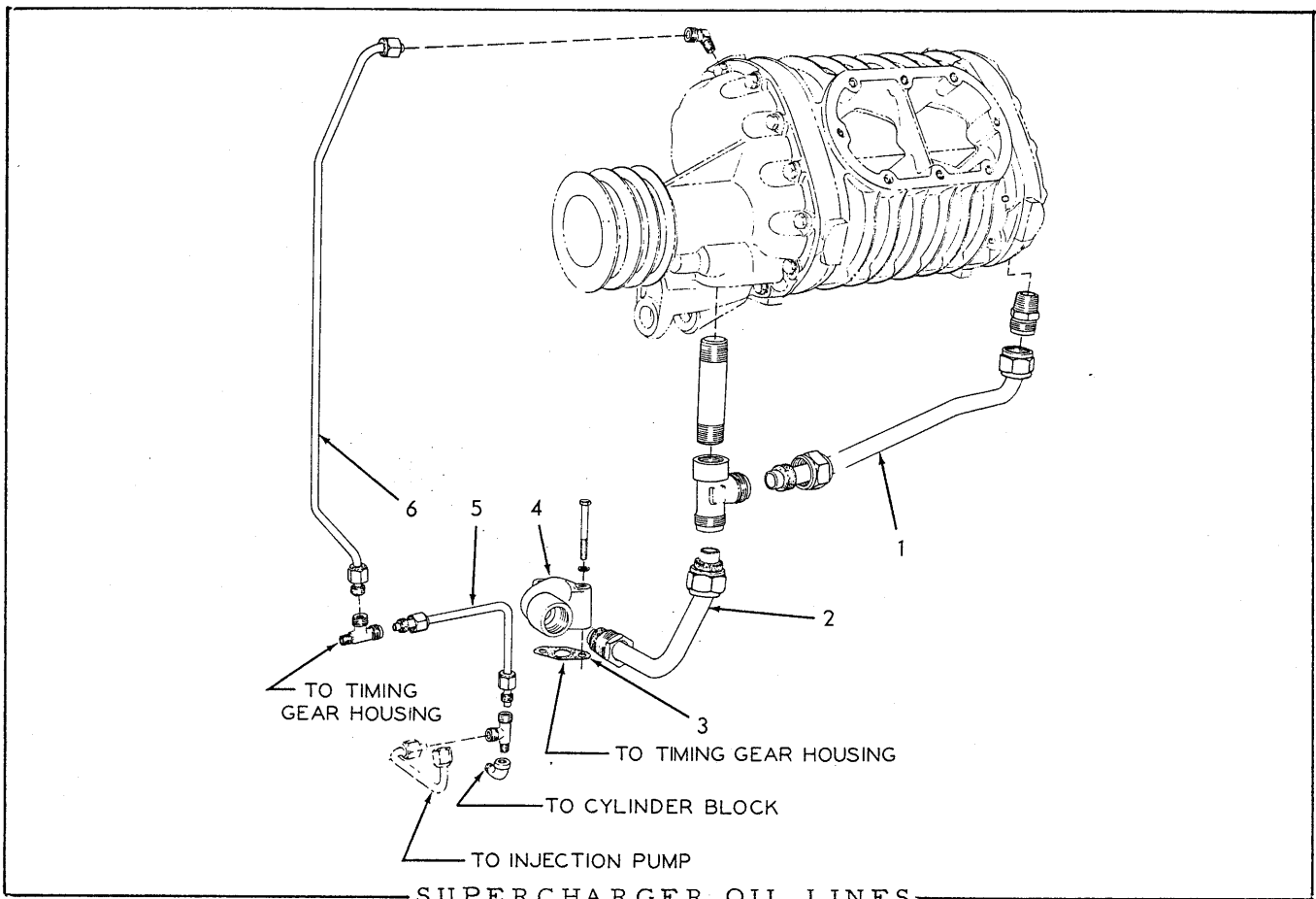
ITEM	PART NO.	QTY.	DESCRIPTION
1	4349251	1	SUPERCHARGER ASSEMBLY (See page 89 for parts)
2	4506946	8	STUD (3/8"NC x 3/8"NF x 1-5/8")
	904206	8	LOCKWASHER, 3/8"
	910123	8	NUT, 3/8"NF
3	4349031	1	□GASKET, supercharger to intake manifold
4	4348693	3	BELT, supercharger drive (Order as matched set)
4A	4335441	1	DRIVE ASSEMBLY, supercharger (Consists of items 5 thru 10, 13, 14 and 15)
5	4347835	1	GEAR AND SHAFT, supercharger drive (4-3/8" long) (Used prior to engine #45-1223)
	4337189	1	GEAR AND SHAFT, supercharger drive (5-1/2" long) (Effective with engine #45-1223)
	917755	1	KEY, #91 woodruff, 1/4" x 3/4"
6	4253929	1	O-RING, drive shaft bearing retainer
7	4349014	1	RETAINER, supercharger drive shaft bearing
8	4253825	1	BEARING, roller
9	4349011	1	GASKET, seal retaining flange
10	4349674	1	FLANGE, seal retaining, supercharger drive shaft
11	4347672	4	CAPSCREW (drilled hex-socket-hd., 3/16"NC x 1-1/4")
12	4371122	2	WIRE, locking (1/16" x 14")
13	4349736	1	SEAL, oil, supercharger drive shaft
14	4349247	1	PULLEY, supercharger drive shaft (Used prior to engine #45-1223)
	4335442	1	PULLEY, supercharger drive shaft (Effective with engine #45-1223)
15	4127709	1	NUT, pulley retaining (Used prior to engine #45-1223)
	4335476	1	NUT, pulley retaining (Effective with engine #45-1223)
16	4127686	1	WASHER, pulley retaining nut (Used prior to engine #45-1223)
17	4349249	1	IDLER ASSEMBLY, supercharger drive (Consists of items 18 thru 26)(Used prior to engine #89669)
	4335272	1	IDLER ASSEMBLY, supercharger drive (Consists of items 18 thru 26)(Effective with engine #89669)
18	4347751	1	COVER, idler pulley
	912261	4	CAPSCREW, hex-socket-hd., 1/4"NC x 3/4"
	904204	4	LOCKWASHER, 1/4"
19	4347752	1	GASKET, pulley cover

□Also see PACKAGED PARTS

(Continued)

SUPERCHARGER AND DRIVE (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION	
20	4253869	1	BEARING, ball, front	
21	4252137	2	RING, snap, bearing retaining	
22	-----	1	PULLEY, idler (Used prior to engine #89669) (Order 1 PULLEY 4335032 and 1 ARM ASSEMBLY 4335271)	
	4335032	1		PULLEY, idler (Effective with engine #89669)
	914465	1	FITTING, lubricating, straight, 1/8"NPT	
23	4253862	1	BEARING, ball, rear	
24	4254079	1	SEAL, oil	
25	4347753	1	ARM ASSEMBLY (Includes item 26)(Used prior to engine #89669)	
	4335271	1		ARM ASSEMBLY (Includes item 26)(Effective with engine #89669)
	915943	1	NUT, slotted, 3/4"NF	
	900807	1	PIN, cotter, 1/8" x 1-1/4"	
26	4349027	1	TRUNNION, belt adjusting rod	
	913540	1		WASHER, plain, 21/32" I. D. x 1"O. D. x 1/16" thick
	900806	1		PIN, cotter, 1/8" x 1"
27	4349026	1	ROD, belt adjustment	
	904208	1		LOCKWASHER, 1/2"
	910195	2		NUT, regular, 1/2"NF
28	4349028	1	PIN, belt adjustment rod	
	904208	1		LOCKWASHER, 1/2"
	910255	1		WASHER, plain, SAE std., 3/4"
	910302	1		PIN, cotter, 5/32" x 1-1/4"
29	4349029	1	PIN, idler arm pivot	
	915692	1		PIN, roll, 1/4" x 1-7/8"

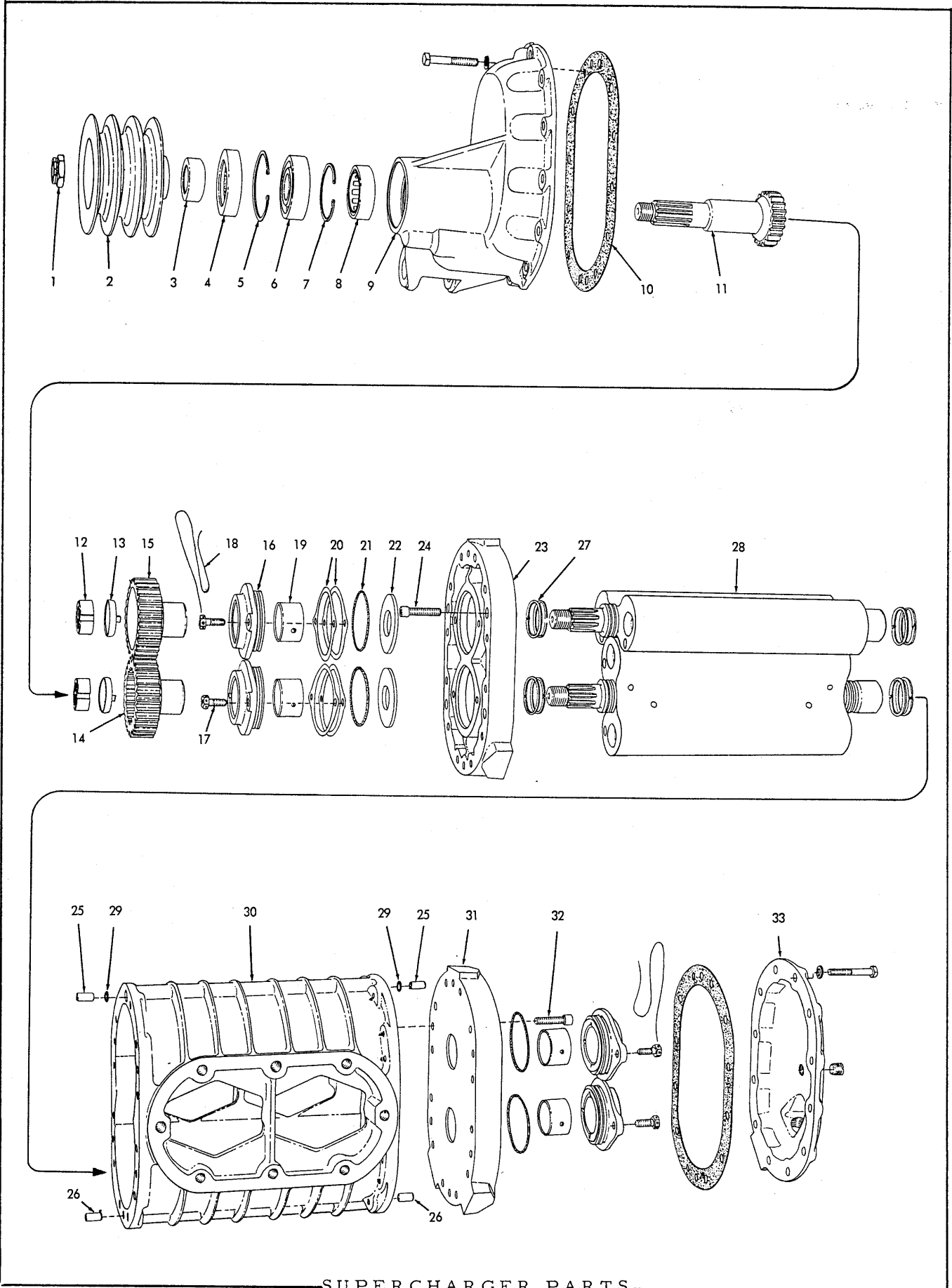


SUPERCHARGER OIL LINES

USAGE: Used prior to grader serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4347809	1	LINE, oil drain, rear
	918234	2	NUT, female, Sealastic, 3/4" tube
	915558	2	RING, Sealastic, 3/4" tube (Includes ferrule)
	915561	1	CONNECTOR, Sealastic, 3/4" tube, 3/4"NPT male
	918179	1	TEE, service, Sealastic, 3/4" tube, 3/4"NPT female
	901515	1	NIPPLE, pipe, 3/4"NPT x 4"
2	4347808	1	LINE, oil drain, front
	918236	1	NUT, male, Sealastic, 3/4" tube
	918234	1	NUT, female, Sealastic, 3/4" tube
	915558	2	RING, Sealastic, 3/4" tube (Includes ferrule)
3	4347824	1	OGASKET, oil drain line flange
4	4347821	1	FLANGE, oil drain line
	905666	2	CAPSCREW, 5/16"NC x 2-1/2"
	904205	2	LOCKWASHER, 5/16"
5	4347840	1	LINE, oil supply, crankcase to gear housing
	918235	2	NUT, Sealastic, 5/16" tube
	915852	2	RING, Sealastic, 5/16" tube (Includes ferrule)
	917982	2	TEE, service, Sealastic, 5/16" tube, 1/8"NPT male
	907059	1	ELBOW, street, 90°, 1/8"NPT
6	4347841	1	LINE, oil supply, gear housing to supercharger
	918235	2	NUT, Sealastic, 5/16" tube
	915852	2	RING, Sealastic, 5/16" tube (Includes ferrule)
	917981	1	ELBOW, Sealastic, 90°, 5/16" tube, 1/8"NPT male

Also see PACKAGED PARTS



SUPERCHARGER PARTS.

SUPERCHARGER PARTS

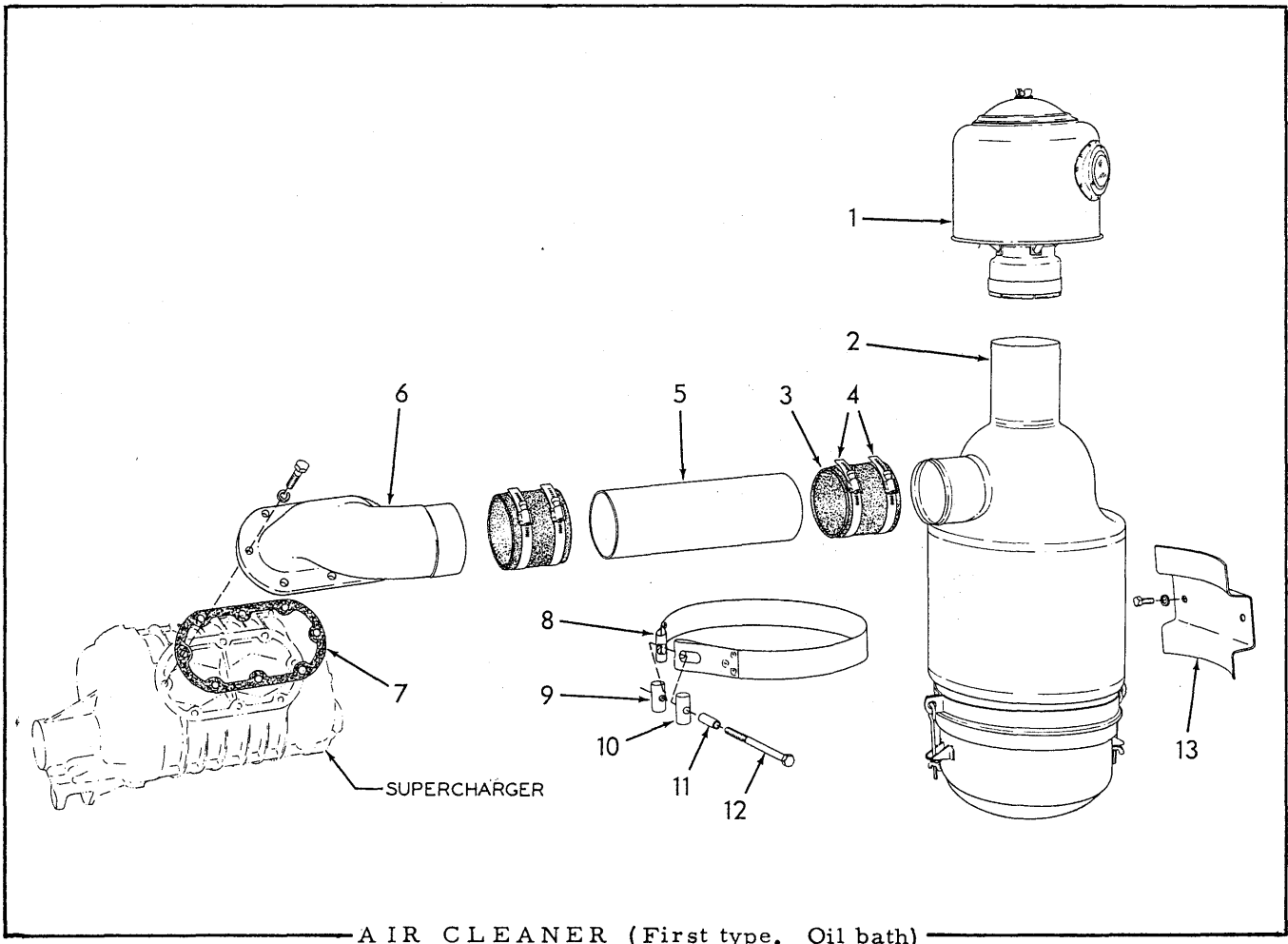
USAGE: See page 85

ITEM	PART NO.	QTY.	DESCRIPTION
1	4040372	1	NUT, driving shaft
2	4335029	1	PULLEY, driving shaft
3	4040380	1	COLLAR, oil seal
4	4254101	1	SEAL, oil
5	4253540	1	RING, snap, ball bearing retaining
6	4253870	1	BEARING, ball
7	4254100	1	RING, snap, roller bearing retaining
8	4254102	1	BEARING, roller
9	4040377	1	COVER, front end
	903774	12	CAPSCREW, 5/16"NC x 2"
	904205	12	LOCKWASHER, 5/16"
10	4040371	2	GASKET, end covers
11	4040378	1	SHAFT, driving
12	4040365	2	NUT, rotor shaft
13	4040364	2	WASHER, locking, rotor shaft nut
14	4040379	1	GEAR, lower rotor
15	4040363	1	GEAR, upper rotor
16	4040358	4	CAGE ASSEMBLY, bearing (Includes item 19)
17	4040356	8	CAPSCREW (drilled hex-hd., 5/16"NC x 3/4")
18	4040357	2	WIRE, locking
19	4040481	4	BEARING, rotor
20	4040366	-	SHIM, rotor adjustment (.010" thick. Use as req'd)
	4040367	-	SHIM, rotor adjustment (.003" thick. Use as req'd)
	4040368	-	SHIM, rotor adjustment (.002" thick. Use as req'd)
21	4040362	4	O-RING, bearing cage
22	4040361	2	WASHER, rotor thrust
23	4040375	1	PLATE ASSEMBLY, front (Consists of 1 plate, 2 oil collectors and items 25 and 26)
24	4040369	4	CAPSCREW (hex-socket-hd., 5/16"NC x 1-1/4")
25	4040359	2	DOWEL, hollow
26	4040370	2	DOWEL, plain
27	4040360	8	RING, sealing, rotor shaft (metal)

(Continued)

SUPERCHARGER PARTS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
28	4040373	2	ROTOR ASSEMBLY, supercharger (Includes shafts and plugs. Serviced only as a unit)
29	4251986	2	O-RING, hollow dowel pin
30	4040382	1	HOUSING, rotor
31	4040374	1	PLATE ASSEMBLY, rear (Consists of 1 plate, 1 plug, 2 oil collectors and items 25 and 26)
32	4040369	4	CAPSCREW (hex-socket-hd., 5/16"NC x 1-1/4")
33	4040376	1	COVER, rear end
	911081	1	PLUG, pipe, slotted head, 1/4"NPT
	903774	12	CAPSCREW, 5/16"NC x 2"
	904205	12	LOCKWASHER, 5/16"

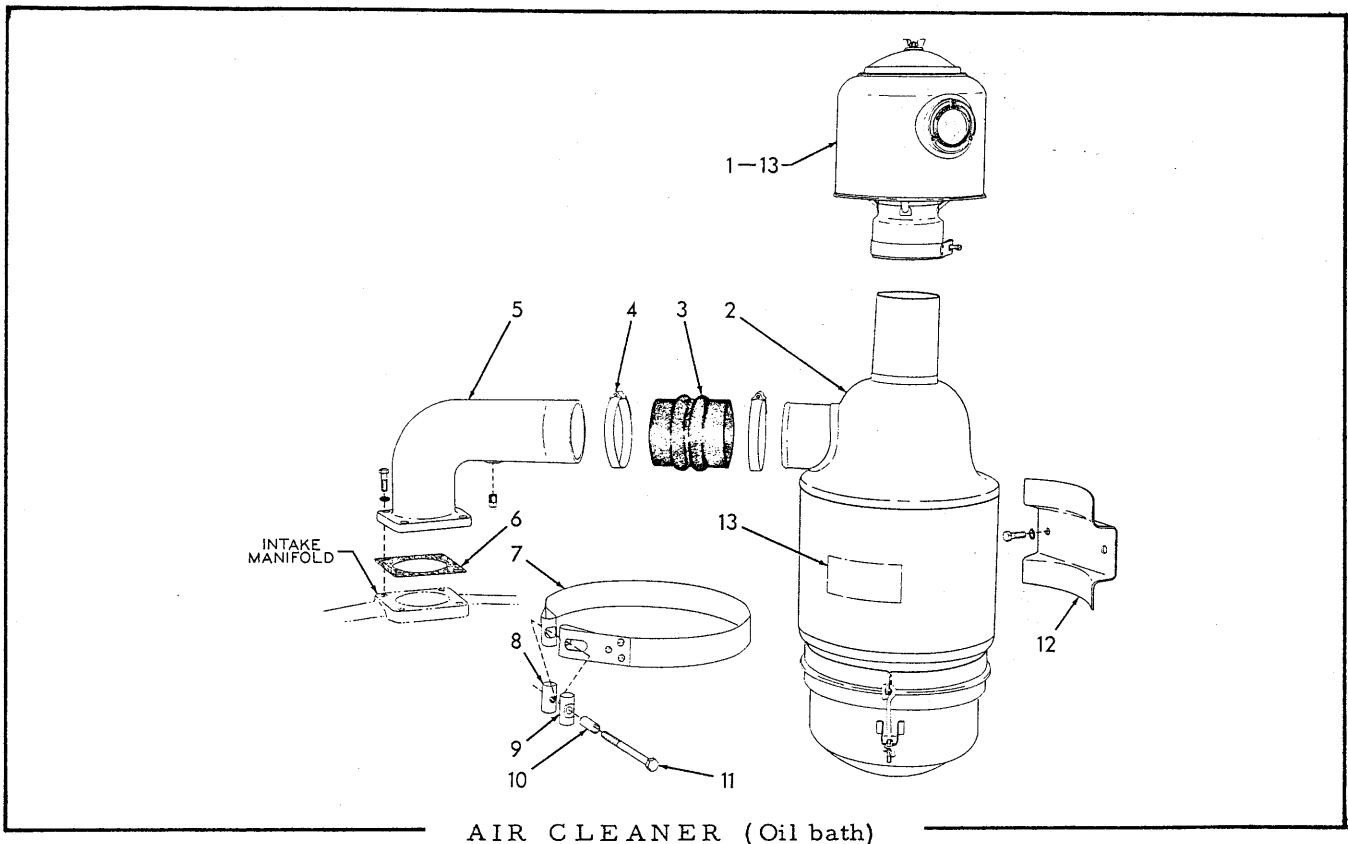


AIR CLEANER (First type. Oil bath)

AIR CLEANER (Oil bath)

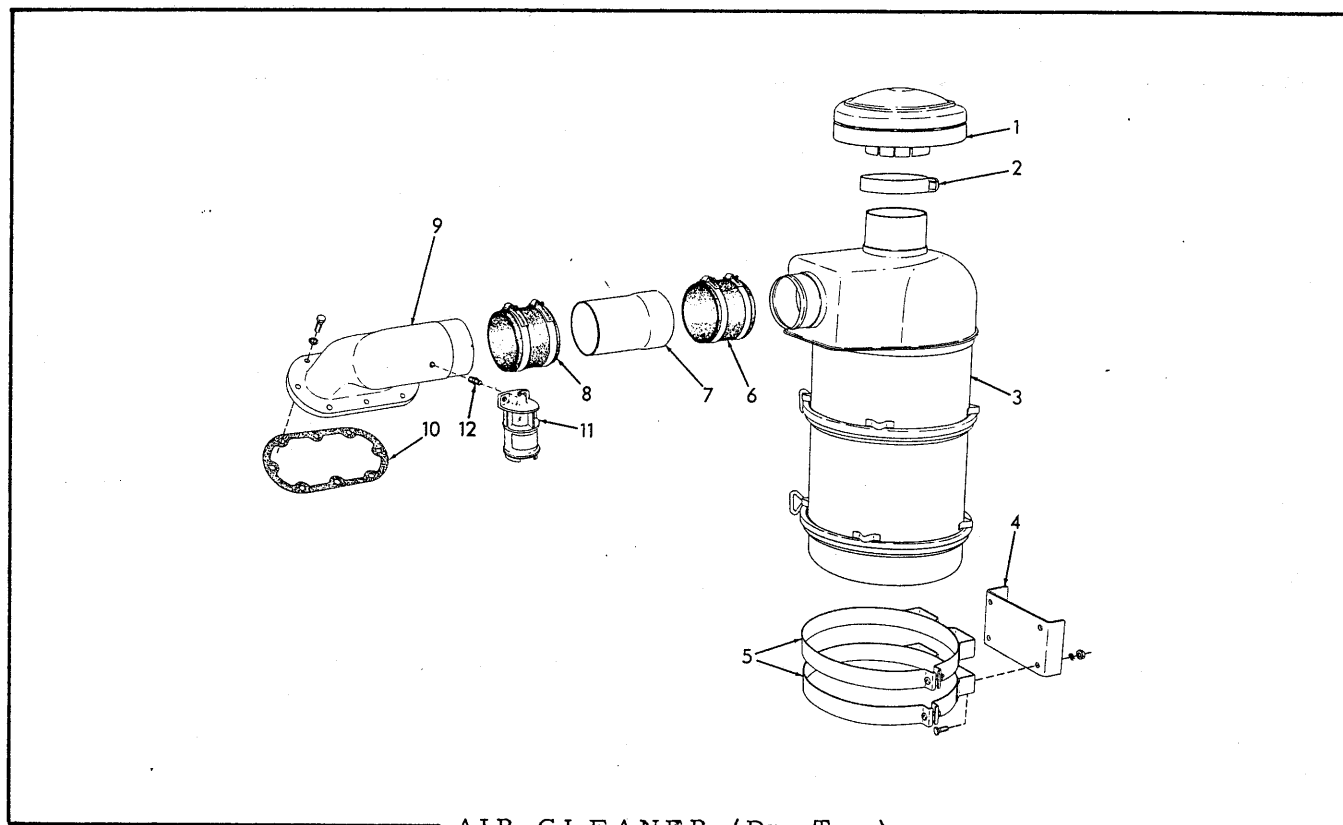
USAGE: Standard equipment on graders prior to serial No. 1780. See page 93 for optional Dry-type air cleaner

ITEM	PART NO.	QTY.	DESCRIPTION
1	074099	1	PRE-CLEANER ASSEMBLY, air (See page 97 for parts)
2	089646	1	CLEANER ASSEMBLY, air (See page 96 for parts)
3	084421	2	HOSE, air cleaner (3-3/4" I. D. x 3-1/4" long)
4	921916	4	CLAMP, hose, 3-13/16" to 4-3/4" diam.
5	085756	1	TUBE, air
6	085758	1	HOUSING, air inlet
	910211	8	CAPSCREW, 3/8"NC x 1-1/8"
	904206	8	LOCKWASHER, 3/8"
	901652	1	PLUG, pipe, 1/4"NPT
7	4349031	1	GASKET, air inlet housing
8	052090	2	BAND, air cleaner mounting
9	050734	2	PIN, mounting band (threaded hole)
10	050735	2	PIN, mounting band (plain hole)
11	053667	2	SPACER, mounting band capscREW
12	053668	2	CAPSCREW, mounting band (3/8"NC x 5")
13	052091	1	BRACKET, mounting (Effective with grader #1464)
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"



USAGE: Standard equipment on graders serial No. 1780 and up. See page 95 for optional Dry-type air cleaner

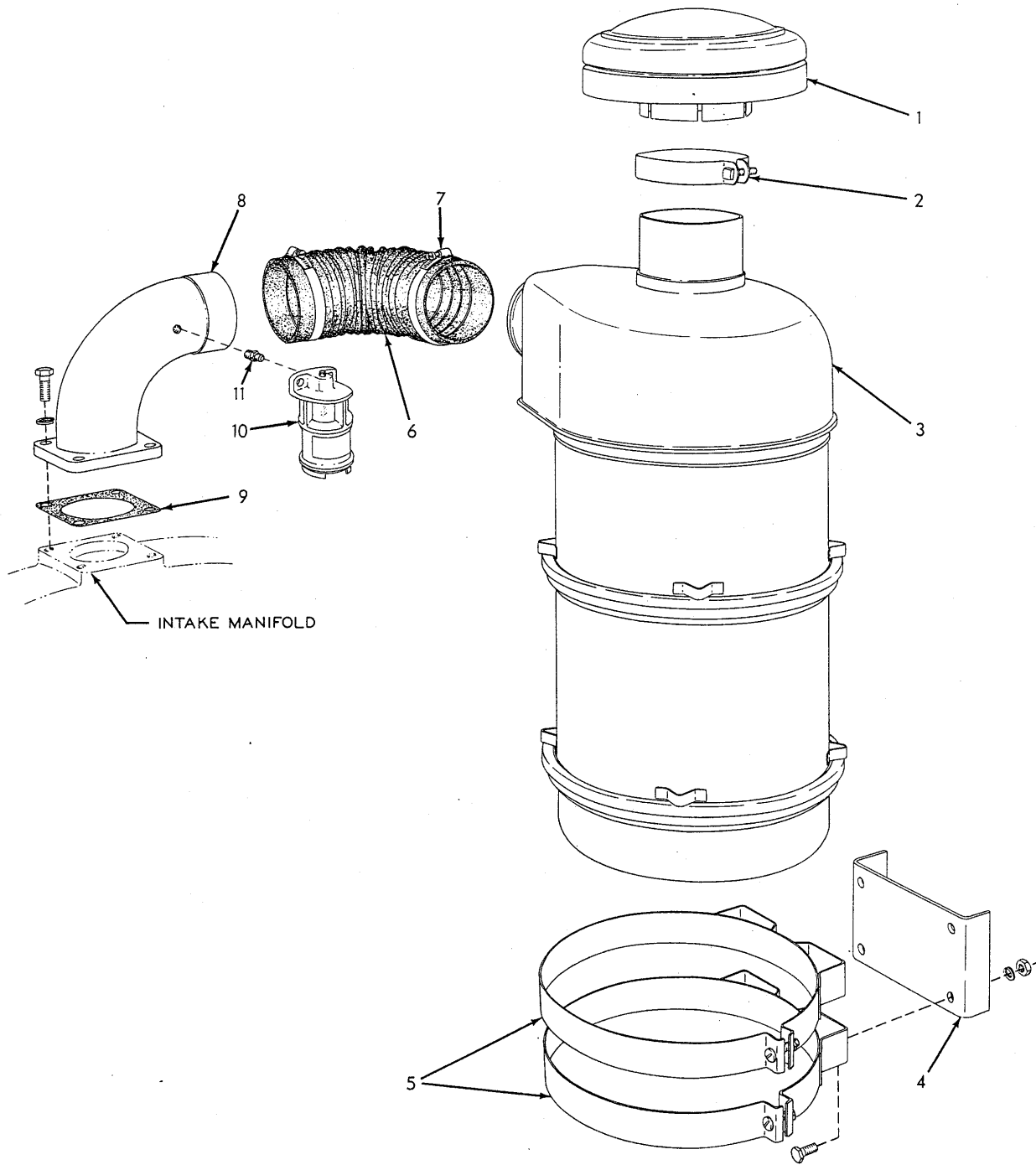
ITEM	PART NO.	QTY.	DESCRIPTION
1	074099	1	PRE-CLEANER ASSEMBLY, air (See page 97 for parts)
2	089646	1	CLEANER ASSEMBLY, air (See page 96 for parts)
3	084508	1	HOSE, air cleaner
4	921916	2	CLAMP, hose, 3-13/16" to 4-3/4" diam.
5	099967	1	ELBOW, air inlet
	903638	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
	901652	1	PLUG, pipe, 1/4"NPT
6	084868	1	GASKET, air inlet elbow
7	052090	2	BAND, air cleaner mounting
8	050734	2	PIN, mounting band (threaded hole)
9	050735	2	PIN, mounting band (plain hole)
10	053667	2	SPACER, mounting band capscrew
11	053668	2	CAPSCREW, mounting band (3/8"NC x 5")
12	052091	1	BRACKET, mounting
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"
13	-----	2	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



AIR CLEANER (Dry-Type)

USAGE: Special equipment on graders prior to serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	621979	1	CAP, rain (Includes item 2)
2	-----	1	CLAMP ASSEMBLY, rain cap (Includes bolt and nut)
3	621980	1	CLEANER ASSEMBLY, air (See page 96 for parts)
4	621881	1	BRACKET, air cleaner mounting (Requires welding to seat back)
5	622081	2	BAND ASSEMBLY, air cleaner mounting (Includes screw and nut)
	903775	4	CAPSCREW, 3/8"NC x 7/8"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
6	040120	1	HOSE, air cleaner
	921916	2	CLAMP, hose, 3-13/16" to 4-3/4" diam.
7	621882	1	TUBE, air
8	084421	1	HOSE, air inlet housing
	921916	2	CLAMP, hose, 3-13/16" to 4-3/4" diam.
9	085758	1	HOUSING, air inlet
	901652	1	PLUG, pipe, 1/4"NPT
	910211	8	CAPSCREW, 3/8"NC x 1-1/8"
	904206	8	LOCKWASHER, 3/8"
10	4349031	1	GASKET, air inlet housing
11	631564	1	INDICATOR, air restriction
12	622447	1	FITTING, connector (Includes filter)



AIR CLEANER (Dry. Second type)

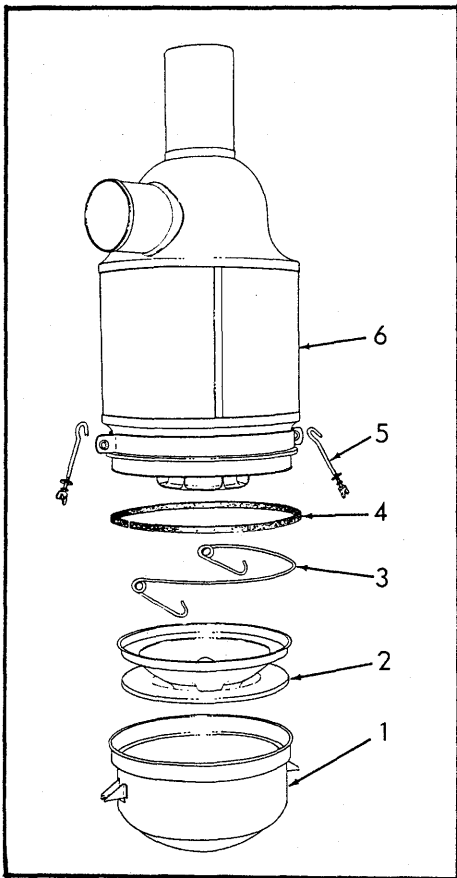
AIR CLEANER (Dry-Type)

USAGE: Special equipment on graders serial No. 1780 and up.

ITEM	PART NO.	QTY.	DESCRIPTION
1	621979	1	CAP, rain (Includes item 2)
2	632650	1	CLAMP ASSEMBLY, rain cap (Includes bolt and nut)
3	621980	1	CLEANER ASSEMBLY, air (See page 96 for parts)
4	621881	1	BRACKET, air cleaner mounting (Requires welding to seat back)
5	622081	2	BAND ASSEMBLY, air cleaner mounting (Includes screw and nut)
	903775	4	CAPSCREW, 3/8"NC x 7/8"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
6	622939	1	HOSE, air cleaner
7	921916	2	CLAMP, hose, 3-13/16" to 4-3/4" diam.
8	084385	1	ELBOW, air inlet
	903638	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
9	084868	1	GASKET, air inlet elbow
10	631564	1	INDICATOR, air restriction
11	622447	1	FITTING, connector (Includes filter)

AIR CLEANER ASSEMBLY 089646

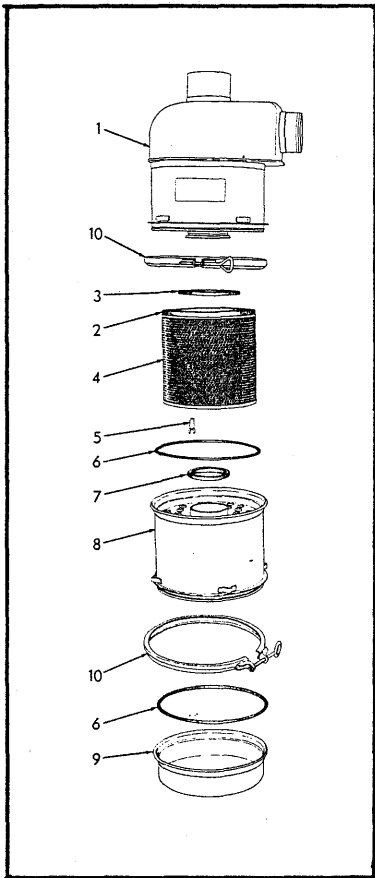
USAGE: See pages 91 and 92



ITEM	PART NO.	QTY.	DESCRIPTION
1	073536	1	CUP, oil
2	078904	1	BAFFLE, air
3	059149	1	RING, air baffle retaining
4	059144	1	GASKET, oil cup
5	059294	2	BOLT ASSEMBLY, oil cup (Includes nut and washers)
6	-----	1	BODY (Not serviced separately)

AIR CLEANER ASSEMBLY 621980

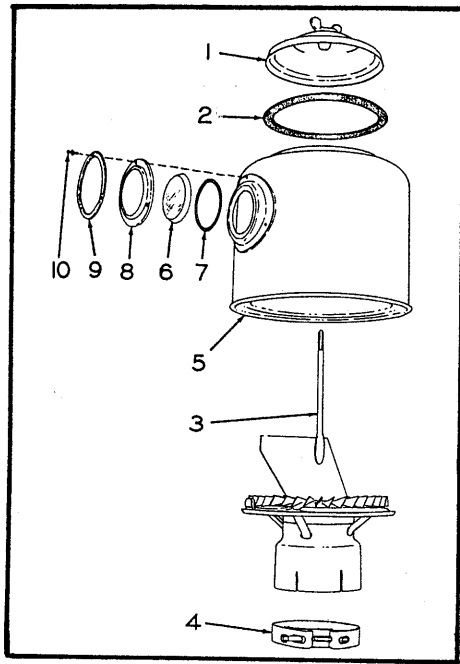
USAGE: See pages 93 and 95



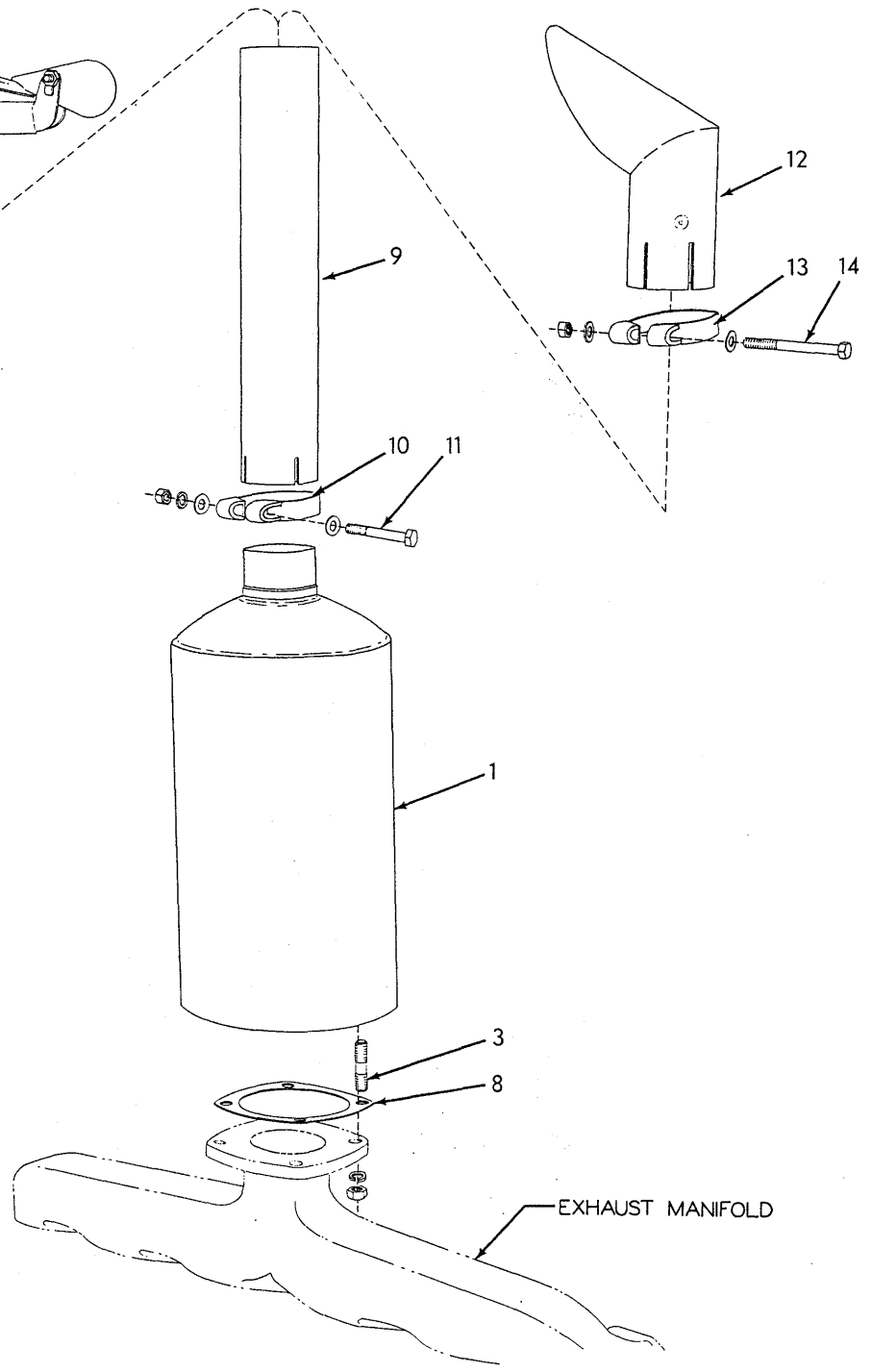
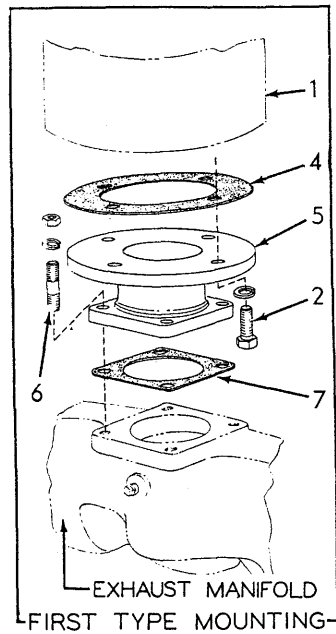
ITEM	PART NO.	QTY.	DESCRIPTION
1	622892	1	BODY, upper
2	-----	1	GASKET, filter element, upper (Not serviced separately)
3	-----	1	GASKET, filter element, lower (Not serviced separately)
4	622893	1	ELEMENT ASSEMBLY, filter (Includes items 2 and 3)
5	620719	3	NUT, wing, element retaining
6	622895	2	GASKET, air pre-cleaner, outer
7	622898	1	GASKET, air pre-cleaner, inner
8	622894	1	PRE-CLEANER ASSEMBLY, air (Serviced only as a unit)
9	622896	1	CUP, dust
10	622897	2	CLAMP ASSEMBLY (Includes tightening screw)

AIR PRE-CLEANER ASSEMBLY 074099

USAGE: See pages 91 and 92



ITEM	PART NO.	QTY.	DESCRIPTION
1	044255	1	CAP ASSEMBLY (Includes wing nut)
2	044256	1	GASKET, cap
3	074100	1	BODY
4	065413	1	CLAMP ASSEMBLY (Includes screw)
5	058723	1	SHELL ASSEMBLY (Includes items 6 thru 10)
6	043860	1	GLASS, window
7	043852	1	GASKET, window glass
8	043853	1	RETAINER, window glass
9	043991	1	RING, window glass retainer
10	043856	3	SCREW ASSEMBLY (Includes lockwasher)

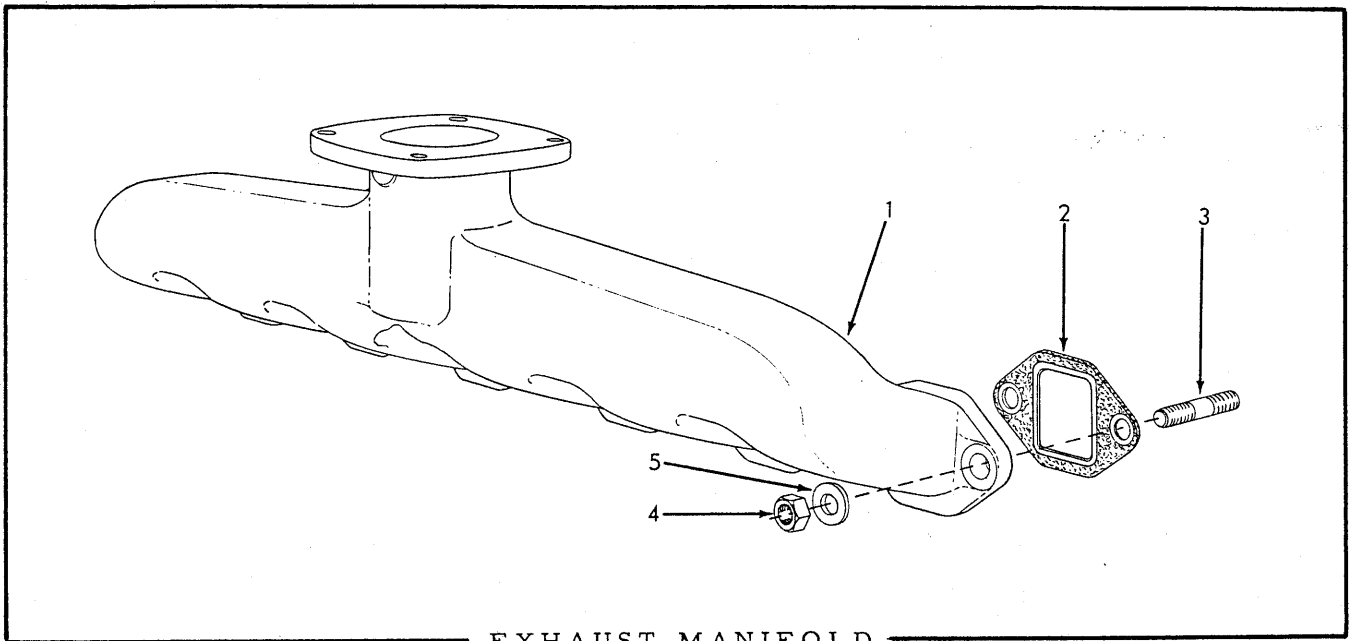


MUFFLER

MUFFLER

* Used prior to grader serial No. 174
 ** Effective with grader serial No. 174

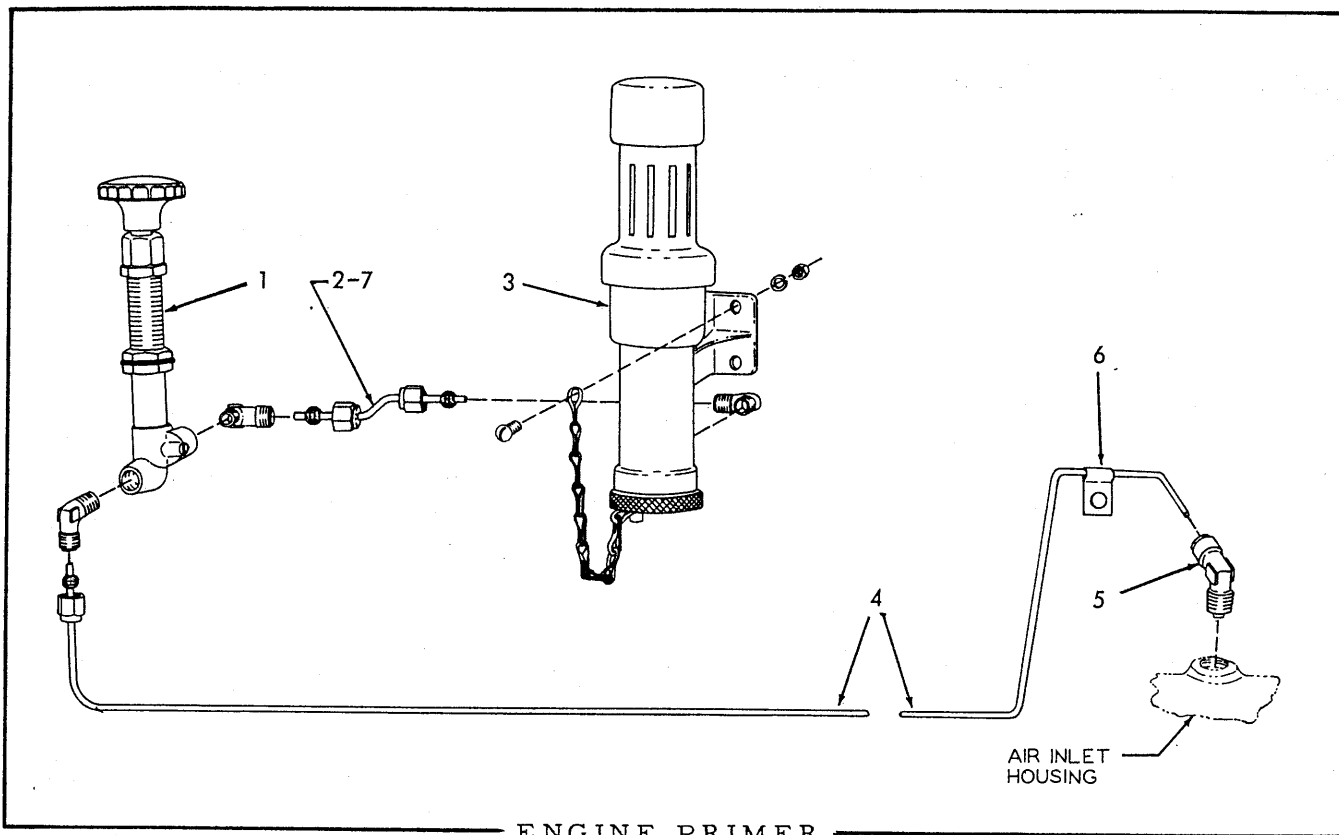
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	092497	1	1	MUFFLER
2	035061	4	-	CAPSCREW, 1/2"NC x 1-1/4"
3	4346208	-	4	STUD (1/2" diam.)
	904208	4	4	LOCKWASHER, 1/2"
	917260	-	4	NUT, brass, 1/2"NC
4	084884	1	-	GASKET, muffler to adapter
5	084501	1	-	ADAPTER, muffler to manifold
6	4346208	4	-	STUD (1/2" diam.)
	904208	4	-	LOCKWASHER, 1/2"
	917260	4	-	NUT, brass, 1/2"NC
7	084885	1	-	GASKET, adapter to manifold
8	4366244	-	1	GASKET, muffler to manifold
9	084890	1	1	PIPE, exhaust
10	084887	1	1	CLAMP, exhaust pipe
11	041913	1	1	CAPSCREW, 3/8"NF x 2-7/8"
	911115	2	2	WASHER, plain, SAE std., 3/8"
	904206	1	1	LOCKWASHER, 3/8"
	911041	1	1	NUT, 3/8"NF
<u>NOTE:</u> The following items are Special Equipment.				
12	085280	1	1	SHIELD, rain, exhaust pipe
13	084887	1	1	CLAMP, exhaust pipe rain shield
14	053619	1	1	CAPSCREW, 3/8"NF x 3-3/4"
	911115	2	2	WASHER, plain, SAE std., 3/8"
	911041	1	1	NUT, 3/8"NF
15	085088	1	1	RAINCAP, exhaust pipe



EXHAUST MANIFOLD

ITEM	PART NO.	QTY.	DESCRIPTION
1	4347952	1	MANIFOLD, exhaust
2	4338511	6	□GASKET, exhaust manifold
3	4346208	12	STUD, exhaust manifold
4	4253270	12	NUT, manifold stud
5	4371107	12	WASHER, plain, manifold stud nut

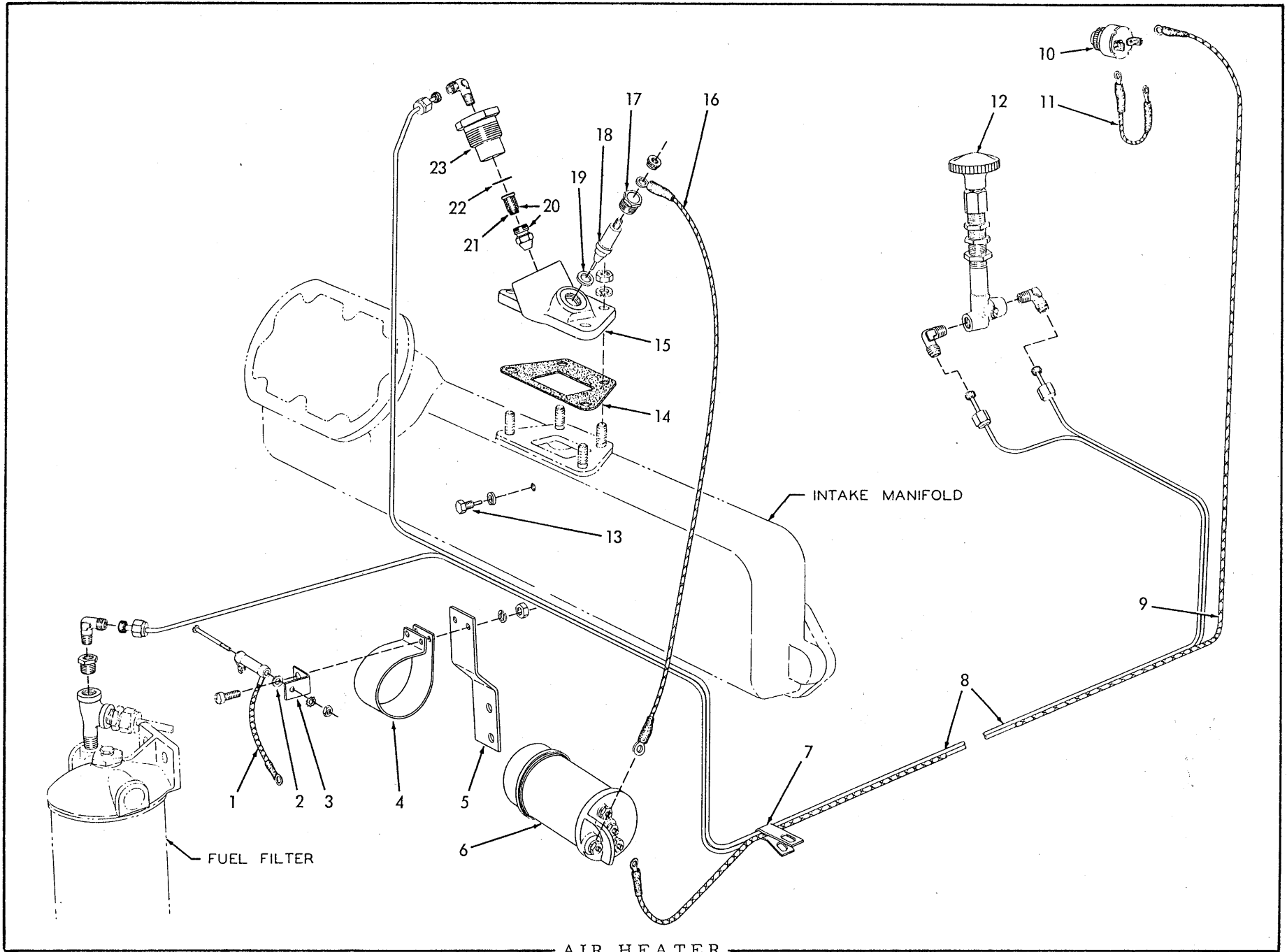
□Also see PACKAGED PARTS



ENGINE PRIMER

USAGE: Standard equipment on graders prior to serial No. 1749 except on units ordered with AIR HEATER as a substitute; special thereafter.

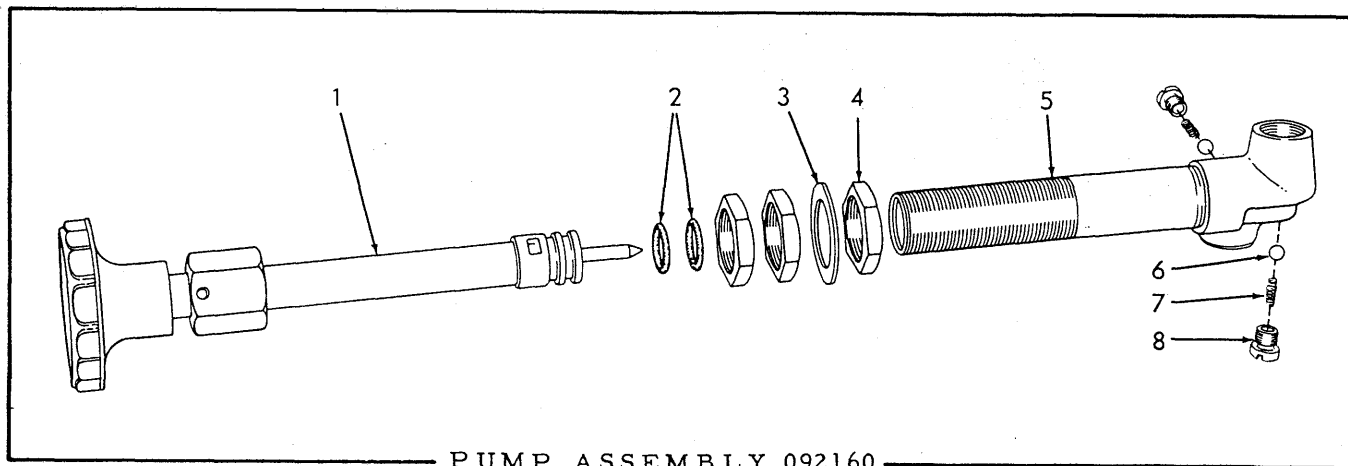
ITEM	PART NO.	QTY.	DESCRIPTION
1	092160	1	PUMP ASSEMBLY (See page 104 for parts)
2	-----	1	TUBE, copper, 1/8" O.D. x 3" long (Order item 7)
	915486	2	RING, Sealastic, 1/8" tube (Includes ferrule)
	915488	2	NUT, Sealastic, 1/8" tube
	915557	2	ELBOW, Sealastic, 1/8" tube, 1/8" NPT male
3	075771	1	DISPENSER ASSEMBLY, priming fuel (See page 105 for parts)
	901174	4	SCREW, machine, rd-hd., #10-24NC x 3/4"
	904203	4	LOCKWASHER, #10
	901310	4	NUT, #10-24NC
4	086575	1	TUBE, copper, 1/8" O.D. x 131" long
	915557	1	ELBOW, Sealastic, 1/8" tube, 1/8" NPT male
	915486	1	RING, Sealastic, 1/8" tube (Includes ferrule)
	915488	1	NUT, Sealastic, 1/8" tube
5	066517	1	ELBOW ASSEMBLY, fuel spray (Includes nozzle, nut and sleeve. Serviced only as a unit)
6	066260	1	CLIP, tube supporting (1/8" diam., 13/32" bolt-hole) (Used prior to grader #1780)
	235794	3	CLIP, tube supporting (1/4" diam., 13/32" bolt-hole) (Effective with grader #1780)
7	066253	1	TUBING, copper, 1/8" O.D., 10 ft. roll (Use as req'd)



AIR HEATER

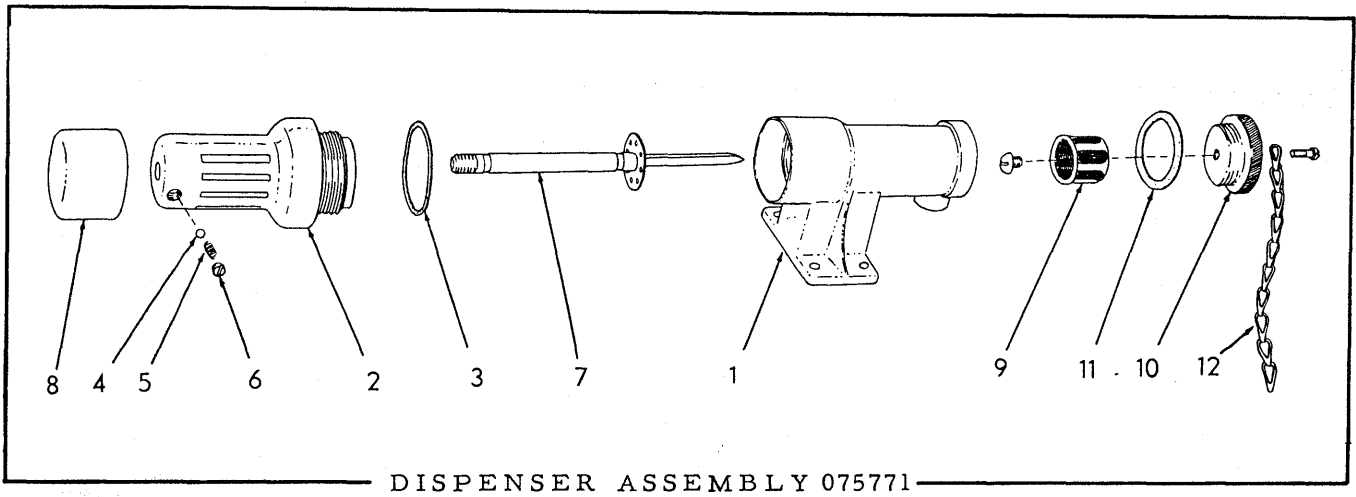
USAGE: Optional equipment in place of Engine Primer on graders prior to serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	630830	1	RESISTOR
	915922	1	SCREW, machine, #8-32 x 2-1/4"
	915923	1	WASHER, external teeth, #8
	907154	1	NUT, #8-32
2	631198	1	WASHER, insulating
3	630829	1	BRACKET, resistor mounting
4	631199	1	BRACKET, ignition coil clamping
	912226	2	SCREW, machine, fil-hd., 1/4"NC x 5/8"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
5	090642	1	BRACKET, ignition coil mounting
6	097026	1	COIL, ignition (Serviced only as a unit)
7	034632	3	CLIP, supporting, fuel tubes and cable
8	090641	2	TUBE, fuel
	915488	4	NUT, Sealastic, 1/8" tube
	915486	4	RING, Sealastic, 1/8" tube (Includes ferrule)
	915557	3	ELBOW, Sealastic, 90°, 1/8" tube, 1/8"NPT male
	913938	1	TEE, service, 1/4"NPT
	901825	1	BUSHING, pipe reducing, 1/4"NPT to 1/8"NPT
9	077356	1	CABLE, coil to switch
10	031337	1	SWITCH, push-button (Includes mounting nut)
11	051006	1	CABLE, switch to ammeter
12	092160	1	PUMP ASSEMBLY (See page 104 for parts)
13	630827	1	SCREW ASSEMBLY, electrode (Serviced only as a unit)
	904204	1	LOCKWASHER, 1/4"
14	092298	1	GASKET, air heater housing
15	090430	1	HOUSING, air heater (See INTAKE MANIFOLD for attaching parts)
16	078067	1	CABLE, coil to insulator
17	630828	1	NUT, insulator retaining
18	631226	1	INSULATOR PACKAGE (Includes terminal nut and item 19)
19	631566	1	GASKET, insulator
20	631224	1	NOZZLE ASSEMBLY, spray (Includes item 21)
21	631225	1	STRAINER ASSEMBLY, spray nozzle (1 body and 1 screen)
22	630787	1	WASHER, spray nozzle
23	088038	1	BUSHING, spray nozzle



USAGE: See Pages 101 and 103

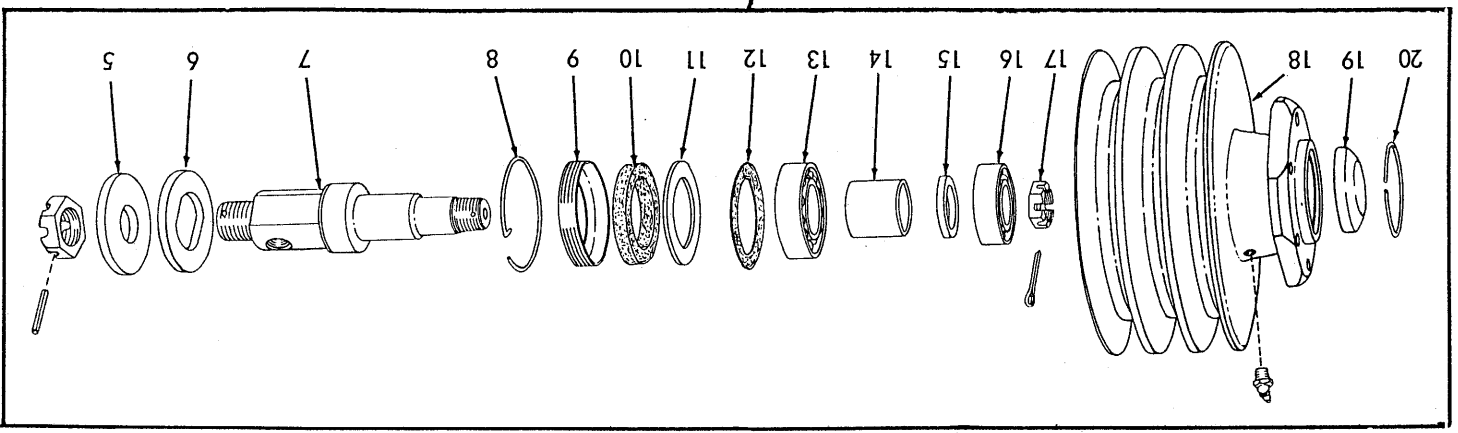
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	-----	1	PISTON ASSEMBLY (Not serviced separately)
2	066878	2	RING, plunger packing (rubber)
3	066873	1	WASHER, mounting
4	066872	3	NUT, mounting
5	-----	1	BARREL ASSEMBLY (Not serviced separately)
6	066876	2	BALL, check valve (5/32" diam.)
7	066875	2	SPRING, check valve
8	066874	2	RETAINER, check valve



USAGE: See page 101

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	068878	1	BODY, fuel dispenser
2	068879	1	CHAMBER, fuel dispenser
3	069164	1	GASKET, fuel dispenser chamber
4	905357	1	BALL, steel, 3/16" diam.
5	066251	1	SPRING, plunger locking ball
6	066252	1	PLUG, retaining, locking ball spring
7	066255	1	PLUNGER, fuel dispenser
8	068881	1	KNOB, fuel dispenser plunger
9	068875	1	STRAINER, fuel dispenser
	915432	1	SCREW, machine, 1/4"NC x 5/16"
10	075770	1	PLUG, fuel dispenser strainer
11	068876	1	GASKET, fuel dispenser strainer plug
12	075769	1	CHAIN, strainer plug retaining
	901781	1	SCREW, machine, fil-hd., #10-32NF x 1/2"

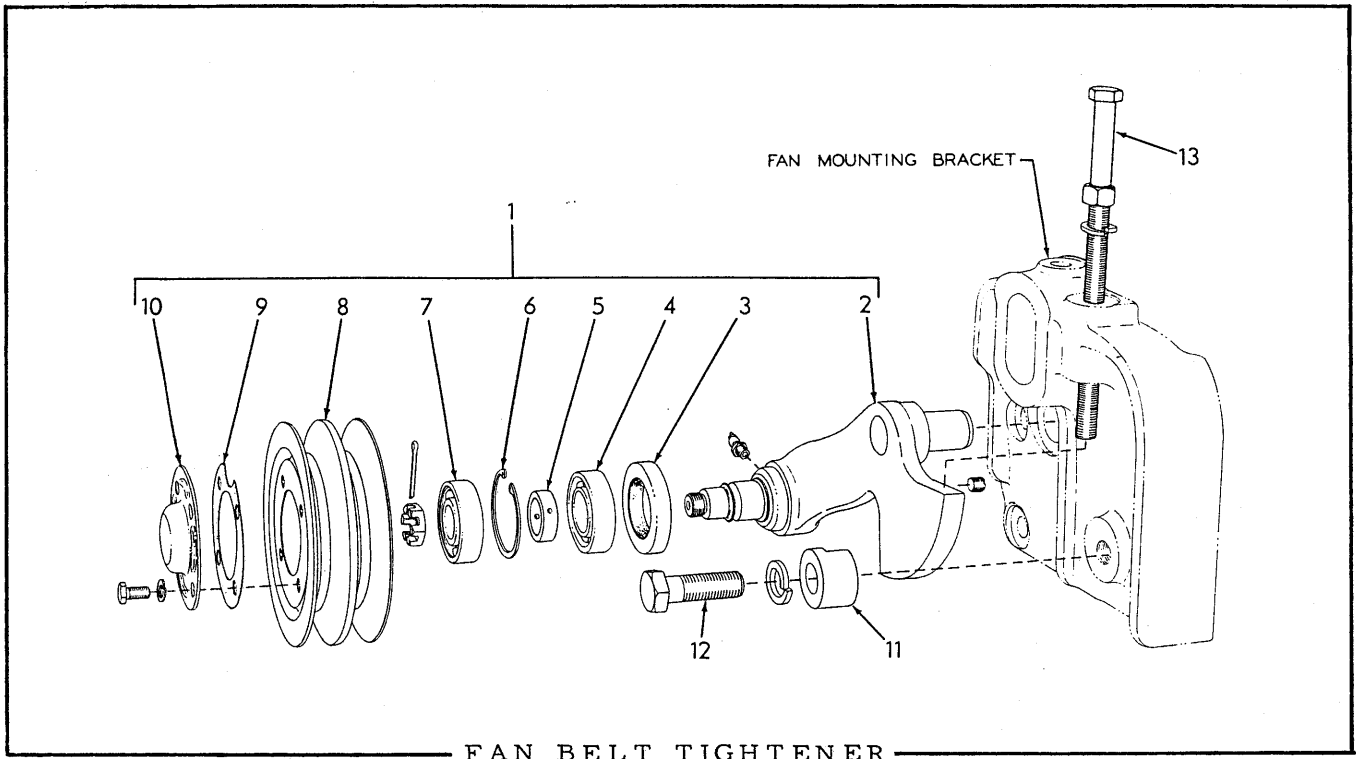
FAN



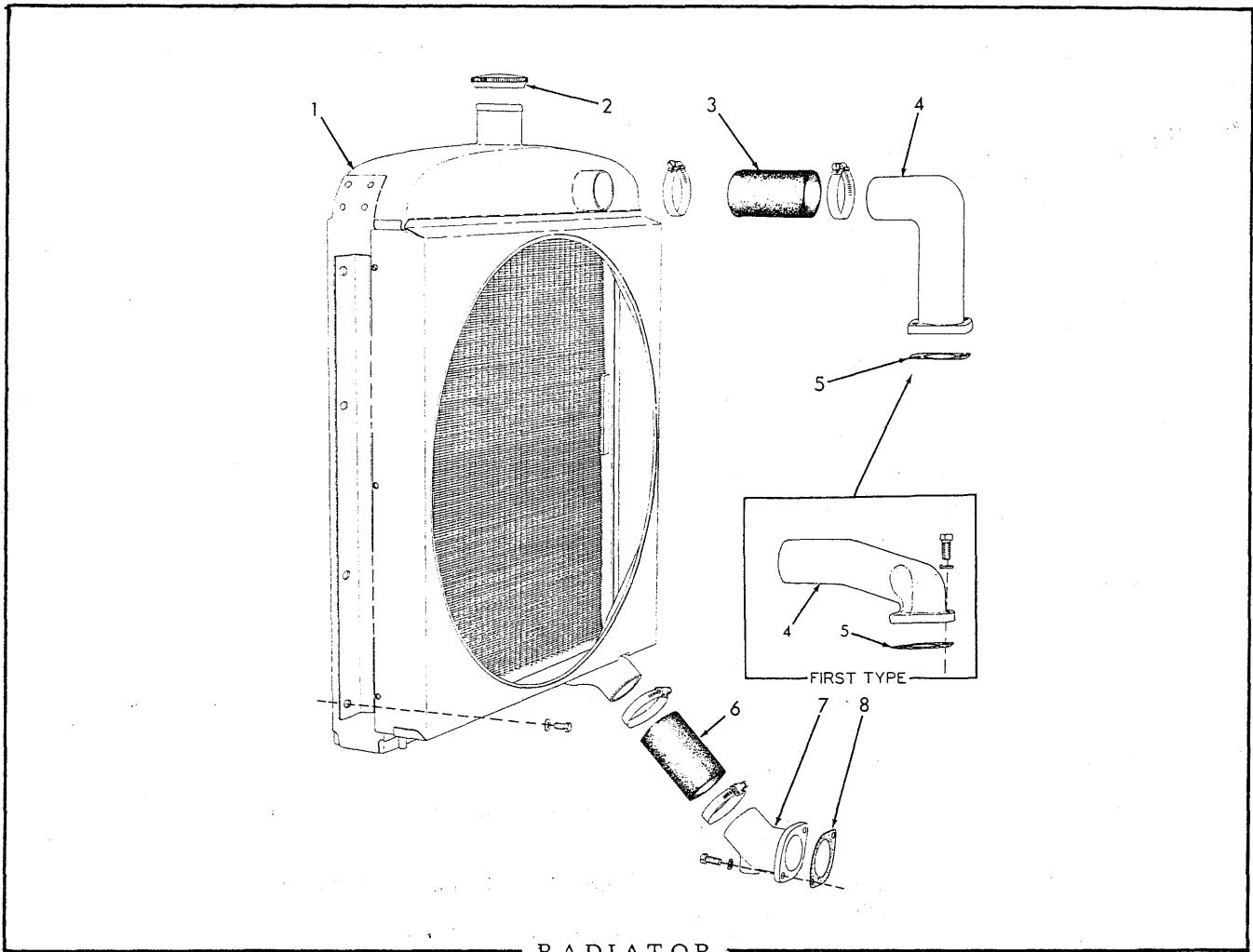
FAN

ITEM	PART NO.	QTY.	DESCRIPTION
1	097929	1	FAN, cooling (Special 6-blade)(Used prior to grader #1780)
	085806	1	FAN, cooling (Standard)
2	056721	6	CAPSCREW, 3/8"NC x 2-1/2"
	904206	6	LOCKWASHER, 3/8"
3	088422	1	SPACER, fan (5/16" deep counterbore)(Used prior to grader #439)
	090876	1	SPACER, fan (1/2" deep counterbore)(Effective with grader #439)
4	4337765	1	HUB ASSEMBLY (Consists of items 5 thru 20)
5	4371703	1	WASHER, plain, spindle clamping, rear
6	4347094	1	WASHER, plain, spindle clamping, front
7	4040381	1	SPINDLE
	911174	1	NUT, jam, slotted, 1"NF
	915946	1	PIN, roll, 5/32" x 1-1/4"
8	4371707	1	LOCKWIRE, fan hub
9	4040386	1	RETAINER, spindle sealing washer
10	4040385	1	WASHER, spindle sealing (cork)
11	4040384	1	WASHER, retaining, rear bearing
12	4640976	1	GASKET, bearing retaining washer
13	4253863	1	BEARING, ball, rear
14	4040383	1	SPACER, spindle bearings
15	4640978	1	WASHER, spacing, front bearing
16	4253862	1	BEARING, ball, front
17	4348502	1	NUT, spindle
	911064	1	PIN, cotter, 1/8" x 1-3/8"
18	4054345	1	HUB
	915274	2	FITTING, lubricating, 45°, 1/8"NPT (Used prior to engine #45-2266)
	915276	2	FITTING, lubricating, 90°, 1/8"NPT (Effective with engine #45-2266)
19	088561	1	CAP, hub
20	4042081	1	RING, snap, cap retaining (Effective with engine #91521)
21	4003603	1	SCREW, fan belt adjustment
22	4347814	1	BRACKET, fan mounting
	903640	4	CAPSCREW, 1/2"NC x 2"
	904208	4	LOCKWASHER, 1/2"
23	4348694	2	BELT, fan driving (Used prior to engine #45-1973)
	4363593	2	BELT, fan driving (Effective with engine #45-1973)

MEMO



ITEM	PART NO.	QTY.	DESCRIPTION
1	4348419	1	PULLEY ASSEMBLY, fan belt tightener (Consists of items 2 thru 10)
2	4348420	1	ARM ASSEMBLY (Includes PLUG and FITTING indented below)
	910230	1	PLUG, pipe, slotted-hd., 1/8"NPT
	915275	1	FITTING, lubricating, 65°, 1/8"NPT
	913470	1	NUT, jam, slotted, 5/8"NF
	900807	1	PIN, cotter, 1/8" x 1-1/4"
3	4253765	1	SEAL, oil
4	042986	1	BEARING, ball, rear
5	4348121	1	SPACER, bearing
6	4252137	1	RING, snap, pulley retaining
7	042979	1	BEARING, ball, front
8	4348421	1	PULLEY
9	4348122	1	GASKET, pulley cover
10	4348118	1	COVER, pulley
	903626	4	CAPSCREW, 5/16"NC x 3/4"
	904205	4	LOCKWASHER, 5/16"
11	4348442	1	CLAMP, locking
12	4347842	1	CAPSCREW, locking clamp (5/8"NC x 2")
	904209	1	LOCKWASHER, 5/8"
13	4348205	1	SCREW, belt adjustment (1/2"NC x 8")
	904208	1	LOCKWASHER, 1/2"
	910510	1	NUT, jam, 1/2"NC



RADIATOR

* Graders prior to serial No. 1780

** Graders serial No. 1780 and up

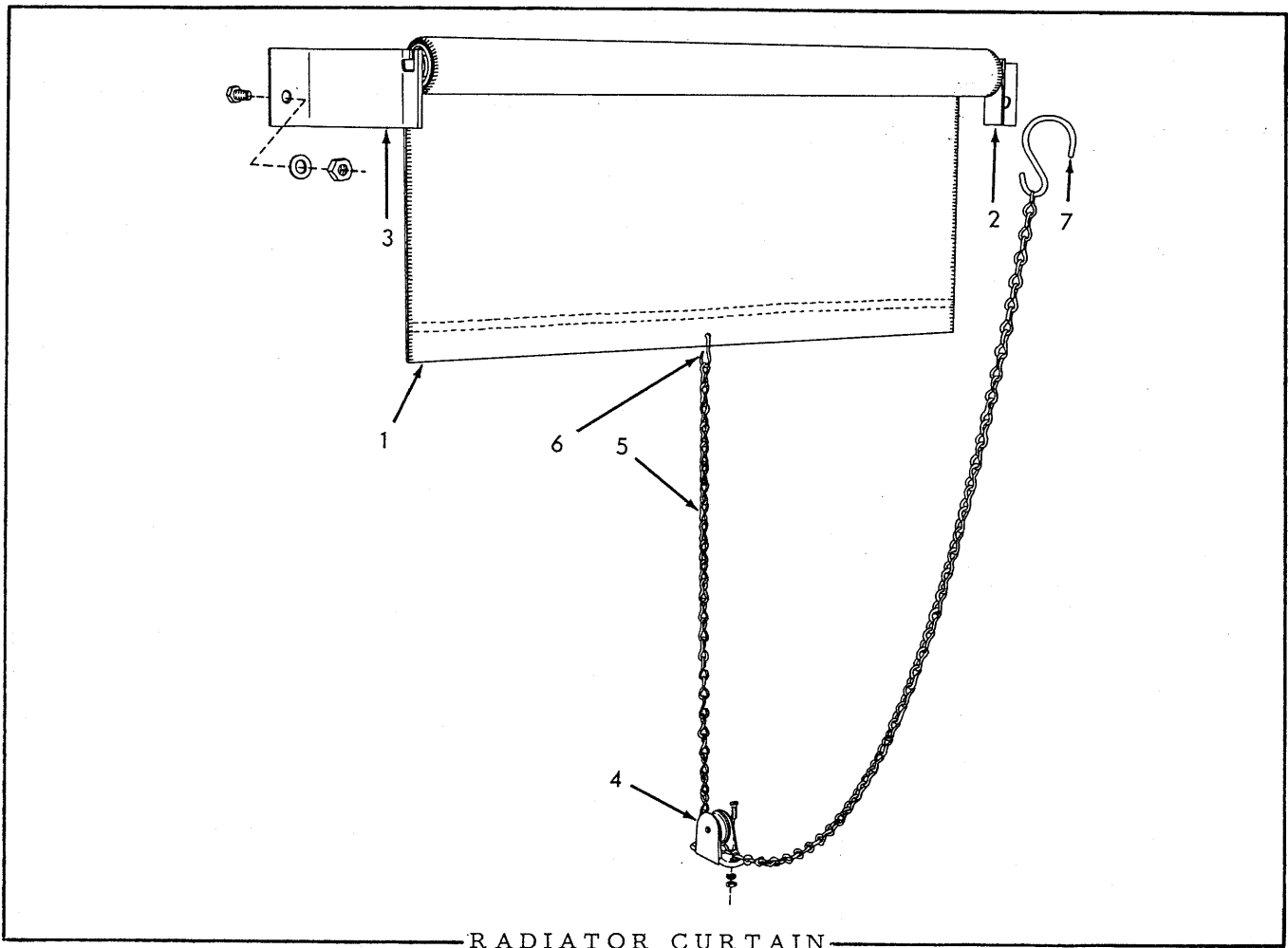
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	085047	1	1	RADIATOR ASSEMBLY, engine cooling (Includes item 2)(Standard)
	097938	1	-	RADIATOR ASSEMBLY (Includes item 2)(Special. Provides increased cooling)
	910922	8	8	CAPSCREW, 3/8"NF x 3/4"
	911115	8	8	WASHER, plain, SAE std., 3/8"
2	074263	1	1	CAP, radiator (Includes gasket which is not serviced separately)
3	085647	1	-	HOSE, radiator inlet (2-1/4"I. D. x 6" long)(Standard)
	629285	1	-	HOSE, radiator inlet (2-1/4"I. D. x 7-1/8" long)(Special. For RADIATOR ASSEMBLY 097938 only)
	605396	-	1	HOSE, radiator inlet (2-1/4"I. D. x 4-1/2" long)
	921913	2	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.

(Continued)

RADIATOR (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
4	088333	1	-	ELBOW, engine water outlet
	912187	2	-	CAPSCREW, 7/16"NC x 1"
	904207	2	-	LOCKWASHER, 7/16"
	099968	-	1	ELBOW, engine water outlet
5	4300145	1	-	□GASKET, engine water outlet elbow
	4336266	-	1	□GASKET, engine water outlet elbow
6	085648	1	1	HOSE, radiator outlet (2-1/2" I.D. x 4-3/4" long)(Standard)
	088348	1	-	HOSE, radiator outlet (Corrugated type)(Special. For RADIATOR ASSY. 097938 only)
	921914	2	2	CLAMP, hose, 2-5/16" to 3-1/4"
7	085644	1	1	ELBOW, engine water inlet
	903630	2	2	CAPSCREW, 3/8"NC x 1"
	904206	2	2	LOCKWASHER, 3/8"
8	4346456	1	1	□GASKET, engine water inlet elbow

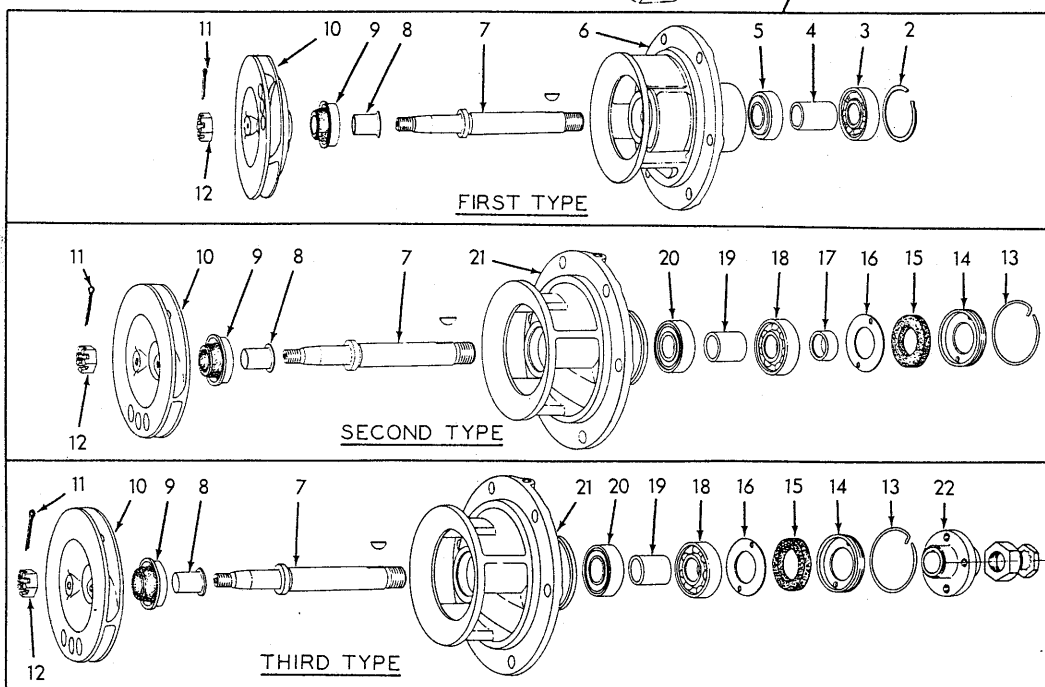
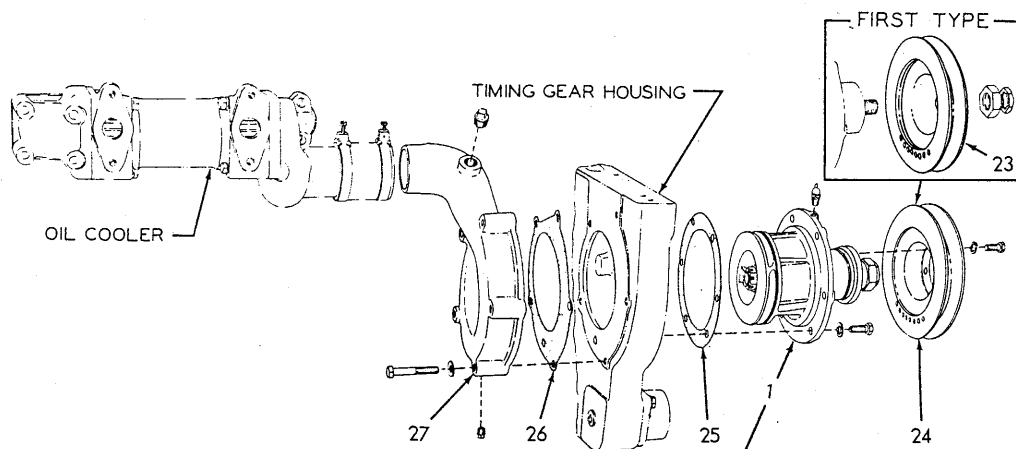
□Also see PACKAGED PARTS



USAGE: Special equipment

ITEM PART NO. QTY. DESCRIPTION

1	089377	1	CURTAIN ASSEMBLY (Includes roller)
2	089378	1	BRACKET, mounting, right
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	911115	1	WASHER, plain, SAE std., 3/8"
	911026	1	NUT, 3/8"NC
3	089379	1	BRACKET, mounting, left
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	911115	1	WASHER, plain, SAE std., 3/8"
	911026	1	NUT, 3/8"NC
4	057634	1	PULLEY, adjusting chain
	901287	2	SCREW, machine, fl-hd., #10-24NC x 5/8"
	904203	2	LOCKWASHER, #10
	901310	2	NUT, #10-24NC
5	057636	1	CHAIN, adjusting
6	057638	1	HOOK, adjusting chain (inside)
7	057637	1	HOOK, adjusting chain (outside)



WATER PUMP

- * FIRST TYPE - Used prior to engine #96167.
- ** SECOND TYPE - Used on engines #96167 thru #45-1348.
- *** THIRD TYPE - Effective with engine #45-1348.

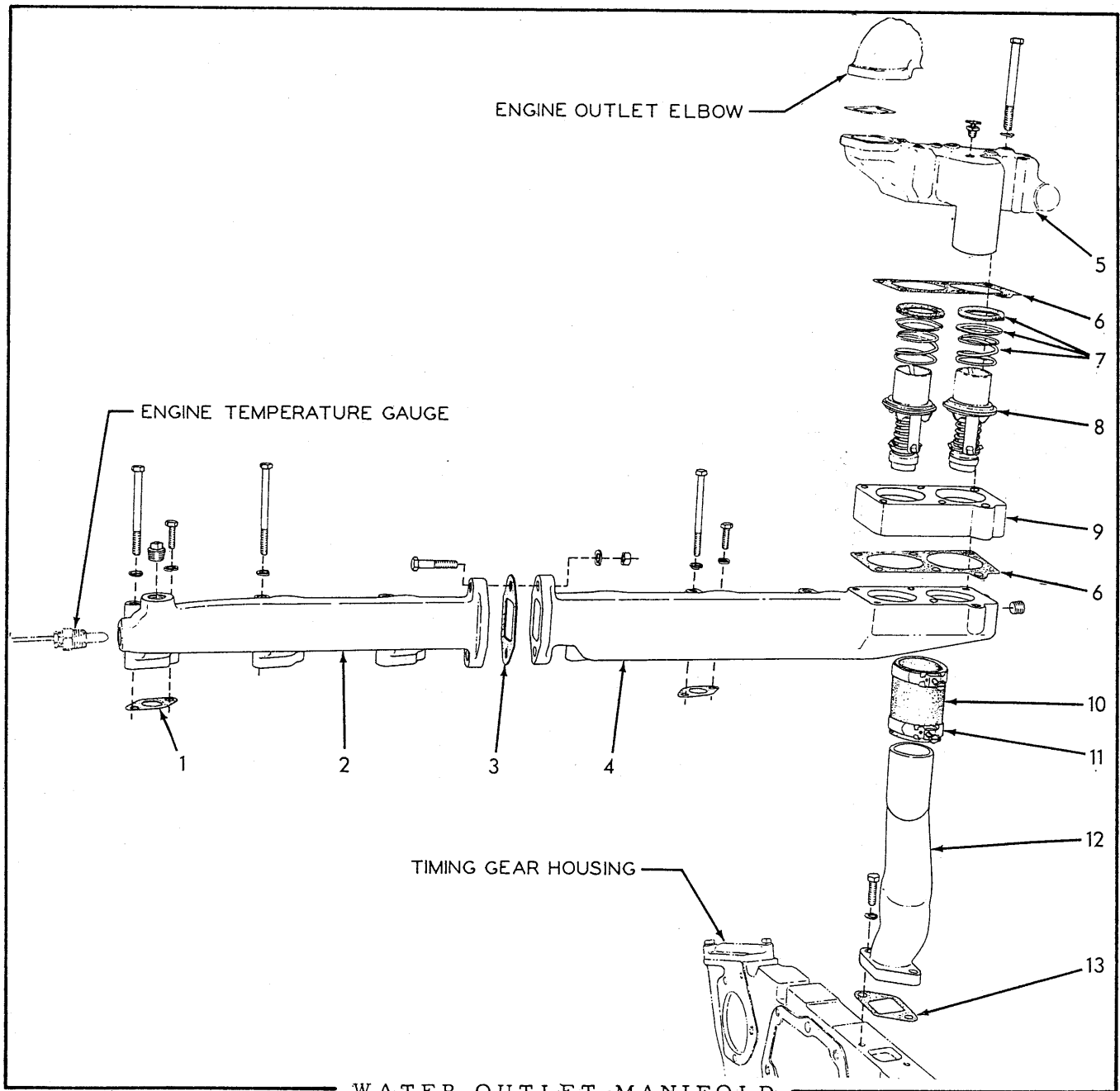
ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	1 - PUMP ASSEMBLY (Order PUMP ASSY. 4338662 and item 24)
	4338662	-	1 PUMP ASSEMBLY (Consists of items 7 thru 22)
	914465	-	1 FITTING, lubricating, straight, 1/8"NPT
	903630	6	6 CAPSCREW, 3/8"NC x 1"
	904206	6	6 LOCKWASHER, 3/8"

(Continued)

WATER PUMP (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
2	4041134	1	-	-	RING, snap
3	4253917	1	-	-	BEARING, ball, front
4	4346951	1	-	-	SPACER, bearing
5	4253914	1	-	-	BEARING, ball, rear
6	-----	1	-	-	HOUSING (Order 1 PUMP ASSY. 4338662 and item 24)
7	4348757	1	1	1	SHAFT ASSEMBLY (Includes item 8)
	905121	1	1	1	KEY, 35 woodruff, 1/8" x 5/8"
8	4507084	1	1	1	FLINGER, water
9	4507091	1	1	1	SEAL ASSEMBLY (Serviced only as a unit)
10	4047400	1	1	1	IMPELLER ASSEMBLY (Includes ceramic insert)
11	4041097	1	1	1	PIN, cotter, impeller nut
12	4375686	-	-	1	NUT, impeller retaining
13	4371707	-	1	1	LOCKWIRE, sealing washer retainer
14	4044206	-	1	-	RETAINER, sealing washer
	4335320	-	-	1	RETAINER, sealing washer
15	4044205	-	1	-	WASHER, sealing
	4348825	-	-	1	WASHER, sealing
16	4044209	-	1	1	WASHER, retaining
17	4044207	-	1	-	SPACER, driving pulley
18	4044210	-	1	1	BEARING, ball, front
19	4044211	-	1	1	SPACER, bearing
20	4044212	-	1	1	BEARING, ball, rear
21	4338663	-	1	1	BODY, water pump
22	4335808	-	-	1	FLANGE, driving pulley
	910847	-	-	1	NUT, 3/4"NF
	917680	-	-	1	NUT, Pal locking, 3/4"NF
23	4348393	1	1	-	PULLEY
	910847	1	1	-	NUT, 3/4"NF
	917680	1	1	-	NUT, Pal locking, 3/4"NF
24	4335809	-	-	1	PULLEY, driving
	916206	-	-	4	CAPSCREW, 5/16"NF x 7/8"
	904205	-	-	4	LOCKWASHER, 5/16"
25	4346744	1	1	1	OGASKET, water pump
26	4335056	1	1	1	OGASKET, water pump volute
27	4348330	1	-	-	VOLUTE (Has external drain)(Used prior to engine #91809)
	901651	1	-	-	PLUG, pipe, 1/8"NPT
	4349953	1	1	1	VOLUTE (Has internal drain)(Effective with engine #91809)
	901653	1	1	1	PLUG, pipe, 3/8"NPT
	904281	5	5	5	CAPSCREW, 3/8"NC x 2-1/4"
	911115	5	5	5	WASHER, plain, SAE std., 3/8"

Also see PACKAGED PARTS



WATER OUTLET MANIFOLD

USAGE: Graders prior to serial No. 1780

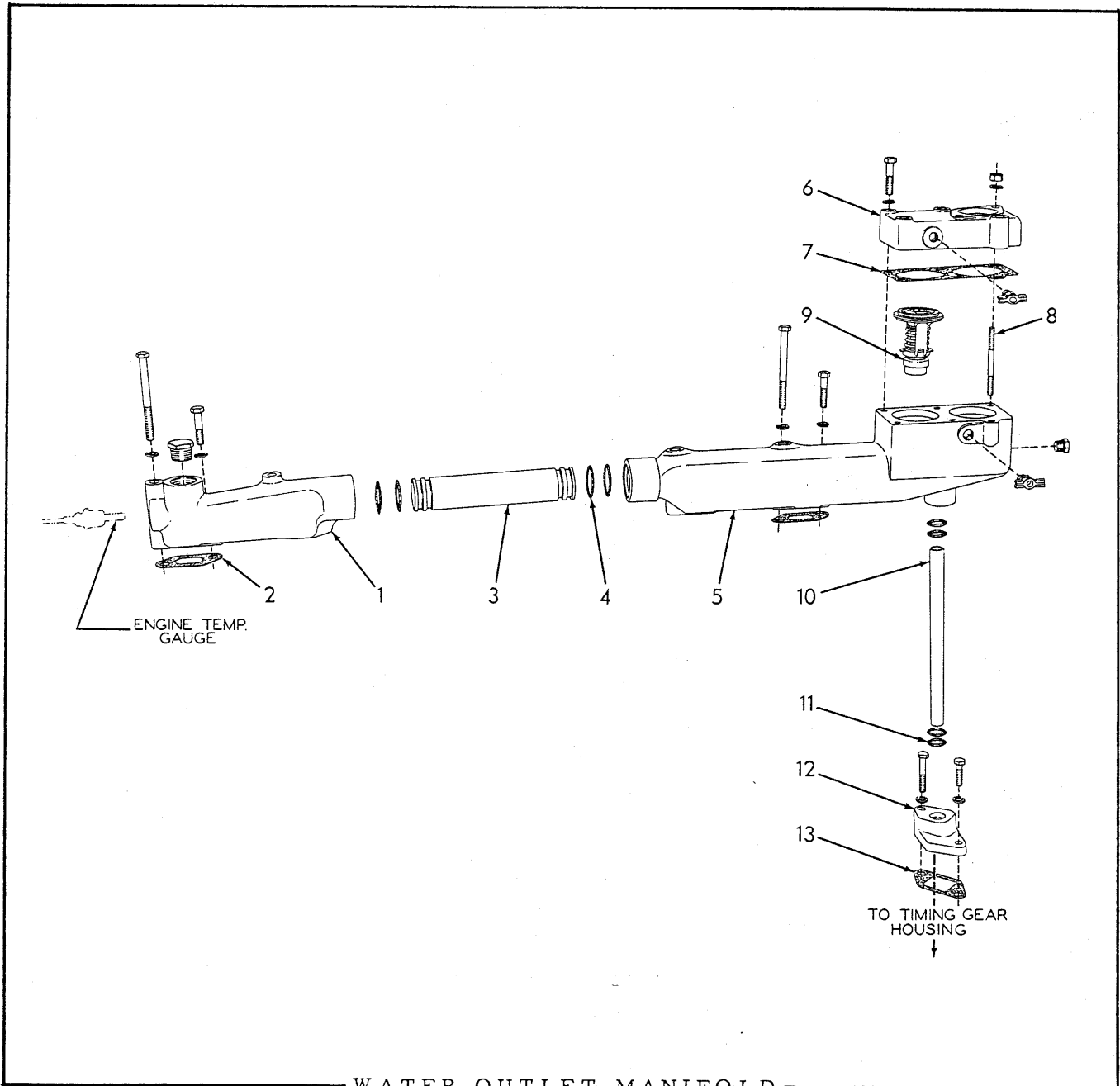
ITEM PART NO. QTY. DESCRIPTION

1	4348278	6	□GASKET, water manifold
2	4349296	1	MANIFOLD, water outlet, rear
	912726	1	PLUG, pipe, 3/4"NPT (Effective with engine #79818)
	903772	3	CAPSCREW, 5/16"NC x 1"
	917016	1	CAPSCREW, 5/16"NC x 3-1/2"
	917277	2	CAPSCREW, 5/16"NC x 3-3/4"
	904205	6	LOCKWASHER, 5/16"
	914492	2	CAPSCREW, 3/8"NF x 1-7/8"
	904206	2	LOCKWASHER, 3/8"
	910123	2	NUT, 3/8"NF
3	4346330	1	□GASKET, water manifold connecting

□Also see PACKAGED PARTS
(Continued)

WATER OUTLET MANIFOLD (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
4	4347509	1	MANIFOLD, water outlet, front
	904260	1	PLUG, pipe, ctsk-hd., 3/8"NPT
	903772	3	CAPSCREW, 5/16"NC x 1"
	917277	3	CAPSCREW, 5/16"NC x 3-3/4"
	904205	6	LOCKWASHER, 5/16"
5	4348588	1	HOUSING ASSEMBLY, thermostat (Includes brass insert)(Used prior to engine #95314)
	4335244	1	HOUSING ASSEMBLY, thermostat (Includes brass insert)(Effective with engine #95314)
	912415	1	COCK, T-handle, 1/4"NPT
	906698	6	CAPSCREW, 3/8"NC x 4-3/4"
	904206	6	LOCKWASHER, 3/8"
6	4347940	2	□GASKET, thermostat housing
7	4375678	2	SEAL ASSEMBLY, thermostat (1 seal, 1 spring and 1 retainer. Serviced only as a unit)
8	4363280	2	THERMOSTAT
9	4347932	1	SPACER, thermostat housing
10	4341743	1	HOSE, water by-pass tube (2-1/4" long)(Used prior to engine #95968)
	4337602	1	HOSE, water by-pass tube (3-1/4" long)(Effective with engine #95968)
11	4253459	2	CLAMP, hose
12	4348097	1	PIPE, water by-pass
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	2	LOCKWASHER, 3/8"
13	4347031	1	□GASKET, water by-pass pipe □Also see PACKAGED PARTS



WATER OUTLET MANIFOLD

USAGE: Graders serial No. 1780 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	4336506	1	MANIFOLD, water outlet, rear
	920525	1	PLUG, pipe, hex-hd., 3/4"NPT
	903632	2	CAPSCREW, 3/8"NC x 1-1/2"
	906696	2	CAPSCREW, 3/8"NC x 3-3/4"
	904206	4	LOCKWASHER, 3/8"
2	4336182	4	GASKET, water manifold
3	4336156	1	TUBE, water manifold connecting
4	4252796	4	O-RING, water manifold connecting tube

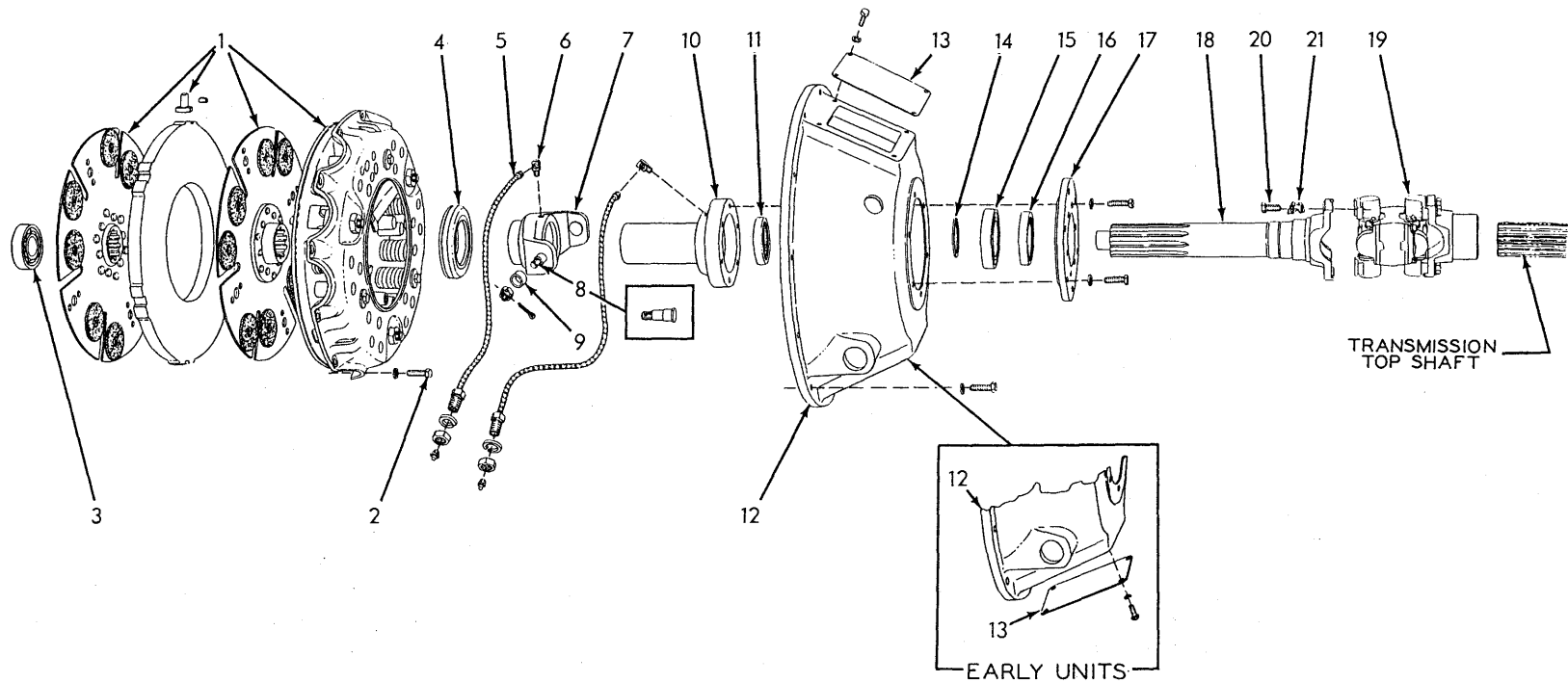
Also see PACKAGED PARTS

(Continued)

WATER OUTLET MANIFOLD (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	4336260	1	MANIFOLD, water outlet, front
	920333	1	PLUG, pipe, hex-hd., 3/8"NPT
	903632	2	CAPSCREW, 3/8"NC x 1-1/2"
	906696	2	CAPSCREW, 3/8"NC x 3-3/4"
	904206	4	LOCKWASHER, 3/8"
	912415	1	COCK, T-handle, 1/4"NPT (air venting)
6	4336264	1	HOUSING, thermostat
	912415	1	COCK, T-handle, 1/4"NPT (air venting)
	904281	4	CAPSCREW, 3/8"NC x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
7	4336263	1	OGASKET, thermostat housing
8	4336261	2	STUD, thermostat housing
	910123	2	NUT, 3/8"NF
	904206	2	LOCKWASHER, 3/8"
9	4379916	1	THERMOSTAT (170°)
	4378269	1	THERMOSTAT (180°)
10	4336268	1	TUBE, water by-pass
11	4254294	4	OO-RING, water by-pass tube
	4336267	1	FLANGE, water by-pass
	910211	1	CAPSCREW, 3/8"NC x 1-1/8"
	903634	1	CAPSCREW, 3/8"NC x 2"
	904206	2	LOCKWASHER, 3/8"
13	4347031	1	OGASKET, water by-pass pipe

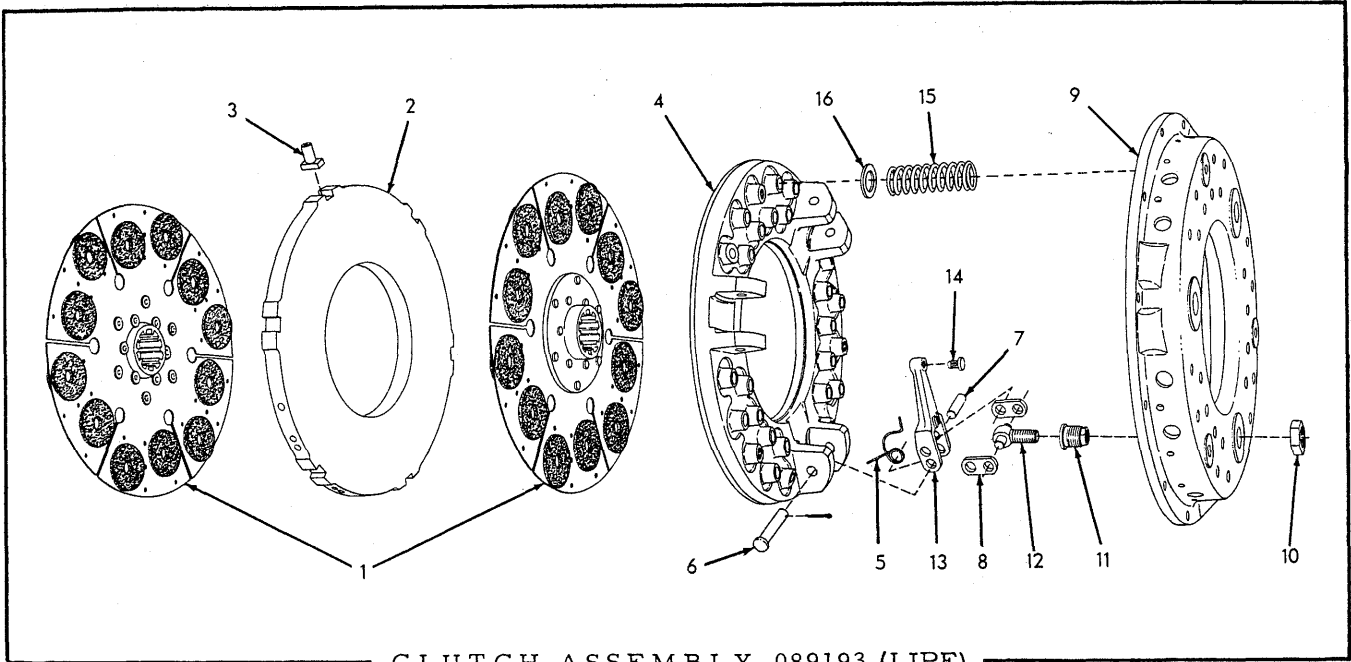
□Also see PACKAGED PARTS



ENGINE CLUTCH AND UNIVERSAL JOINT

ENGINE CLUTCH AND UNIVERSAL JOINT

ITEM	PART NO.	QTY.	DESCRIPTION
1	089193	1	CLUTCH ASSEMBLY, "LIPE" (Used prior to grader #785 excluding #779) (See page 122 for parts)
	091845	1	CLUTCH ASSEMBLY, "ROCKFORD" (Effective with grader #785 including #779) (See page 124 for parts)
2	902871	6	SETSCREW, hex-socket, cup-pt., 3/8"NC x 1/2"
	013058	12	CAPSCREW, 3/8"NC x 1-1/4"
	904206	12	LOCKWASHER, 3/8"
3	099133	1	BEARING, ball, clutch shaft, rear (In flywheel)
4	085651	1	BEARING, ball, clutch release
5	045496	2	HOSE, lubricating, clutch shaft and release bearings
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	904209	2	LOCKWASHER, 5/8"
	911049	2	NUT, jam, 5/8"NF
6	605794	2	ELBOW, lubricating hose (90°, 1/8"NPT male and female)
7	085744	1	CARRIER ASSEMBLY, release bearing (Includes item 8)
8	054119	2	PIN, release bearing carrier
	910867	2	NUT, slotted, 1/2"NF
	910967	2	PIN, cotter, 1/8" x 7/8"
9	054118	2	BUSHING, carrier pin
10	085639	1	SLEEVE, release bearing carrier
	910245	6	CAPSCREW, 3/8" x 1-3/8"
	904206	6	LOCKWASHER, 3/8"
11	074962	1	SEAL, oil, clutch shaft front bearing, rear
12	085638	1	HOUSING, engine clutch
	910245	12	CAPSCREW, 3/8"NC x 1-3/8"
	904206	6	LOCKWASHER, 3/8"
13	085695	1	PLATE, cover, clutch inspection (1 additional required prior to grader #2095)
	905655	4	CAPSCREW, 1/4"NC x 1/2"
	904204	4	LOCKWASHER, 1/4"
			} 4 additional required prior to grader #2095
14	050292	1	RING, snap, clutch shaft front bearing
15	4254151	1	BEARING, ball, clutch shaft, front
16	074961	1	SEAL, oil, clutch shaft front bearing, front
17	074957	1	ADAPTER, carrier sleeve
	910211	6	CAPSCREW, 3/8"NC x 1-1/8"
	904206	6	LOCKWASHER, 3/8"
18	085643	1	SHAFT, clutch
19	076438	1	JOINT ASSEMBLY, universal (See page 125 for parts)
20	035167	4	CAPSCREW, 3/8"NF x 7/8"
21	059876	4	LOCK, capscrew



CLUTCH ASSEMBLY 089193 (LIPE)

USAGE: See page 121

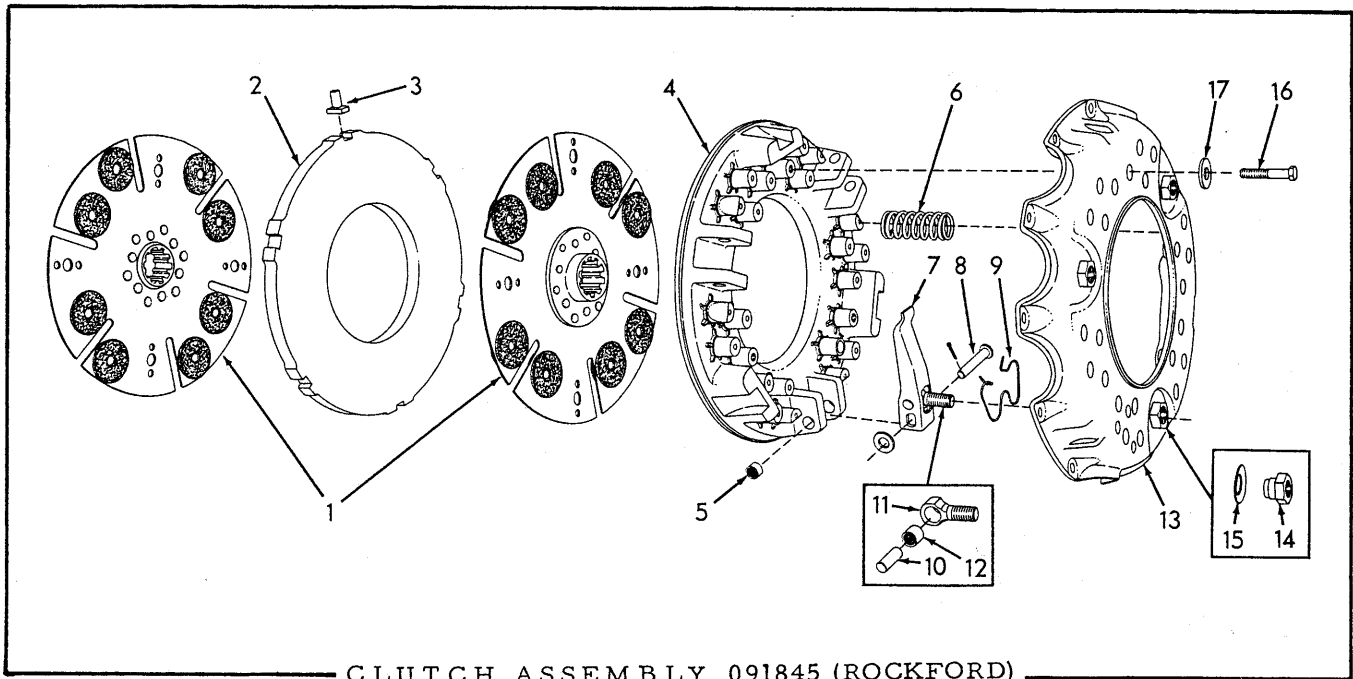
* Original equipment clutches
 ** Service replacement clutches

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	092049	2	2	PLATE ASSEMBLY, driven
2	088032	1	1	PLATE, drive
3	088024	6	6	PIN, drive plate
4	088943	1	-	PLATE, pressure
	640262	-	1	PLATE ASSEMBLY, pressure (Includes BEARINGS indented below)
	640264	-	6	BEARING, needle, release lever pin
5	088018	3	3	SPRING, release lever retracting
6	088020	3	-	PIN, release lever
	900805	3	-	PIN, cotter, 1/8" x 3/4"
	640259	-	3	PIN, release lever
	641152	-	6	WASHER, plain
	640261	-	3	RING, snap
7	088019	3	3	PIN, release lever link
8	088021	6	6	LINK, release lever
9	088944	1	-	COVER, pressure plate
	640266	-	1	COVER, pressure plate
10	088023	3	3	NUT, locking
11	088025	3	-	NUT, adjusting
	640260	-	3	NUT, adjusting

(Continued)

CLUTCH ASSEMBLY 089193 (LIPE) (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
12	088022	3	-	EYE-BOLT ASSEMBLY (Includes pin)
	640265	-	3	EYE-BOLT (Pin is not included)
	641153	-	3	PIN, eye-bolt
	640263	-	6	RING, snap
13	088014	3	3	LEVER ASSEMBLY, release (Includes item 14)
14	088015	3	3	BUTTON, release lever
15	088027	18	18	SPRING, pressure plate
16	088026	18	18	INSULATOR, pressure plate spring

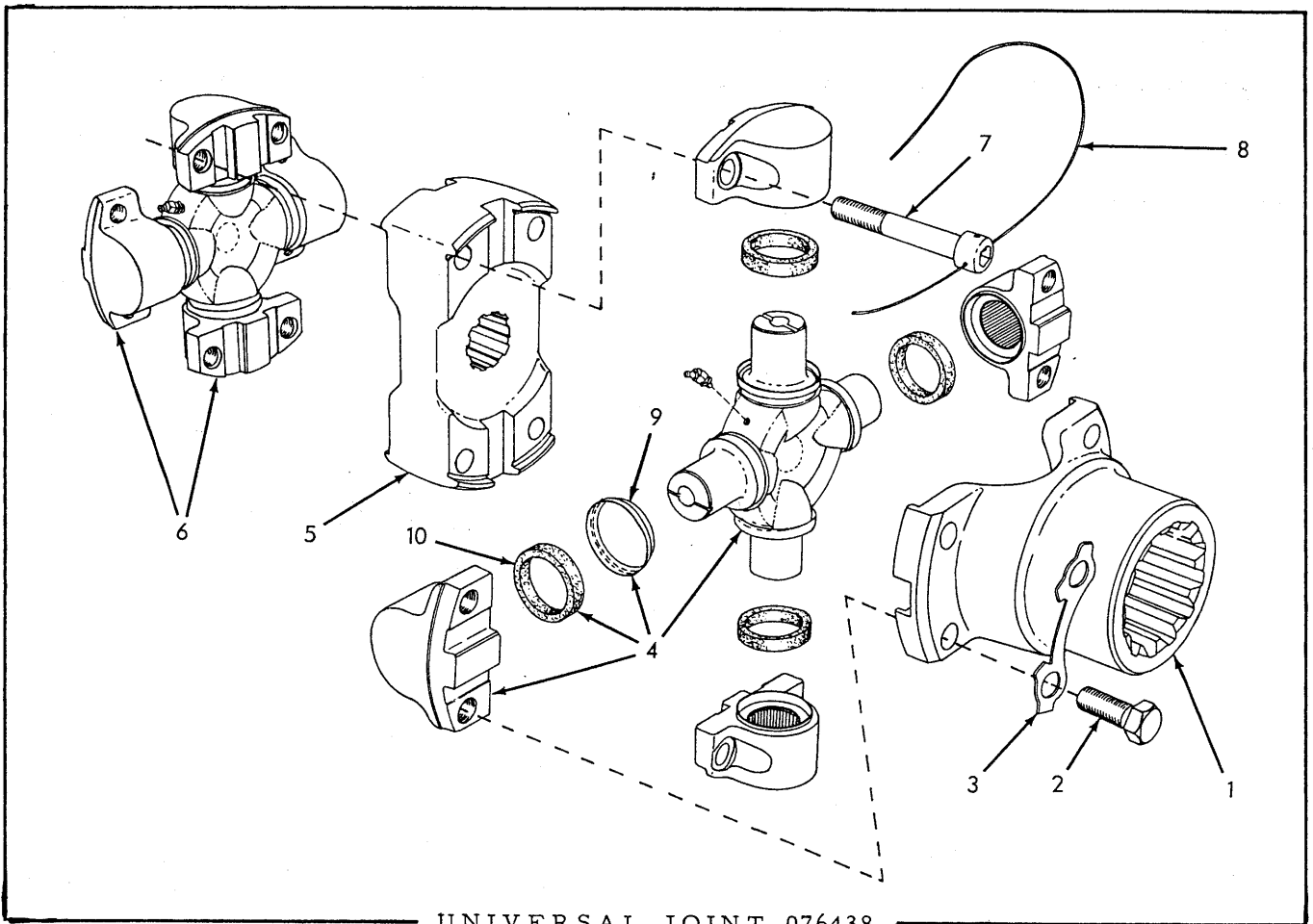


CLUTCH ASSEMBLY 091845 (ROCKFORD)

USAGE: See page 121

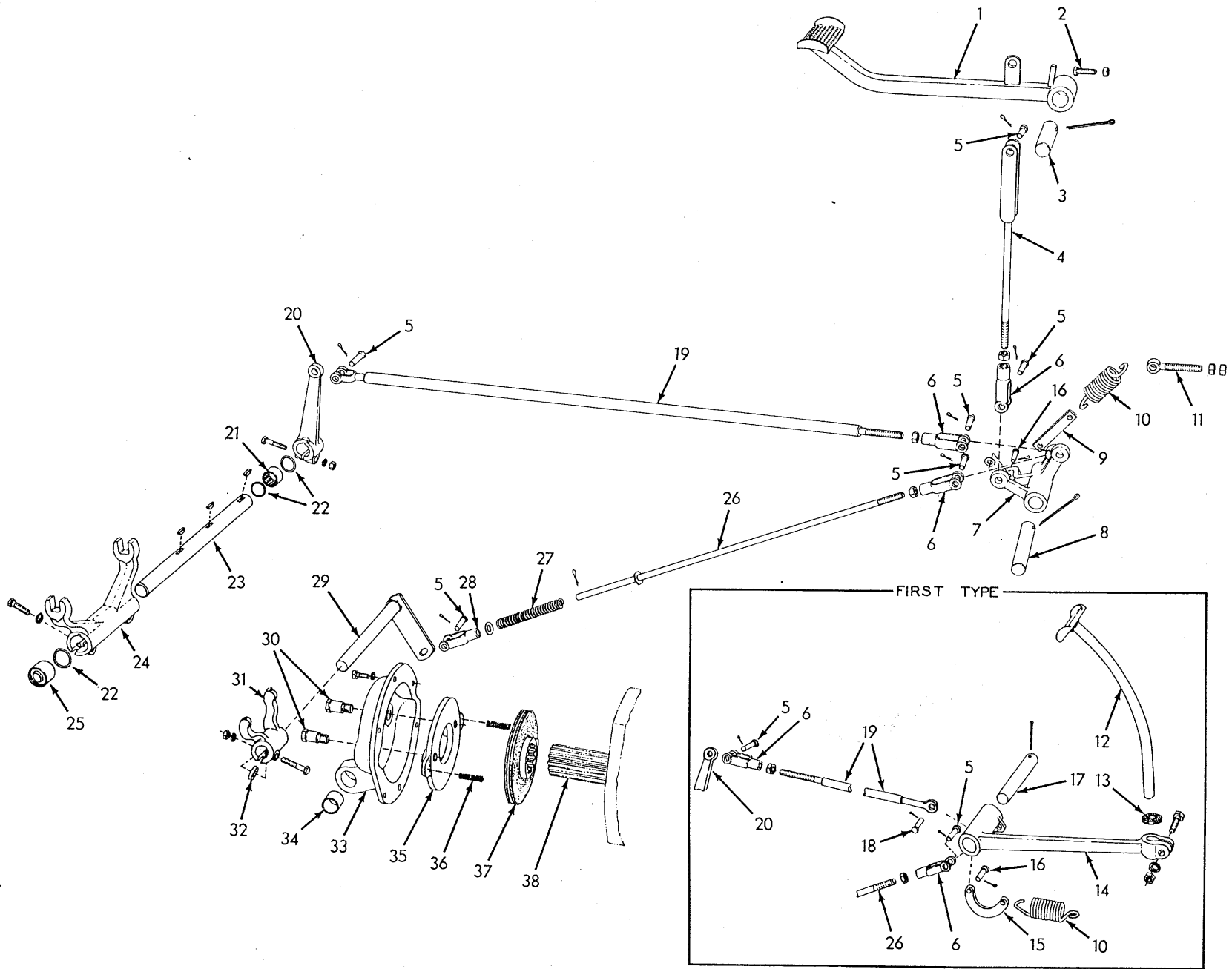
ITEM	PART NO.	QTY.	DESCRIPTION
1	092049	2	PLATE ASSEMBLY, driven (Has ceramic friction discs)
2	088032	1	PLATE, driving
3	088024	6	PIN, driving plate
4	092035	1	PLATE ASSEMBLY, pressure (Includes item 5)
5	075790	6	BEARING, needle, release lever pin
6	092060	12	SPRING, pressure
7	092064	3	LEVER, release
8	092061	3	PIN, release lever
	910967	3	PIN, cotter, 1/8" x 7/8"
	911997	3	WASHER, plain, 7/16" x 1" x 14 Ga.
9	092062	3	SPRING, anti-rattle, release lever
10	092063	3	PIN, release lever eyebolt
11	092065	3	EYEBOLT ASSEMBLY (Includes item 12)
12	074699	3	BEARING, needle, eyebolt pin
13	092069	1	PLATE ASSEMBLY, back (Includes items 14 and 15)
14	092067	3	NUT, adjusting
15	092068	3	WASHER, adjusting nut
16	-----	3	CAPSCREW
17	-----	3	WASHER

} For shipping only. Remove and discard after installing clutch.



USAGE: See page 121

ITEM	PART NO.	QTY.	DESCRIPTION
1	076437	1	YOKE, coupling
2	035167	4	CAPSCREW, 3/8"NF x 7/8"
3	059876	4	LOCK, capscrew
4	086752	1	SPIDER ASSEMBLY, transmission side (Includes bearings, items 9 and 10 and FITTING indented below)(Serviced only as a unit)
	918186	1	FITTING, lubricating, 45°, 1/4"NF
5	076459	1	PLATE, coupling
6	086747	1	SPIDER ASSEMBLY, clutch side (Includes bearings, items 9 and 10 and FITTING indented below)(Serviced only as a unit)
	918186	1	FITTING, lubricating, 45°, 1/4"NF
7	076460	4	CAPSCREW, coupling
8	023756	1	WIRE, locking, 1/16" x 26"
9	059873	8	SHIELD, dust
10	076461	8	WASHER, sealing (cork)



ENGINE CLUTCH CONTROL

ENGINE CLUTCH CONTROL

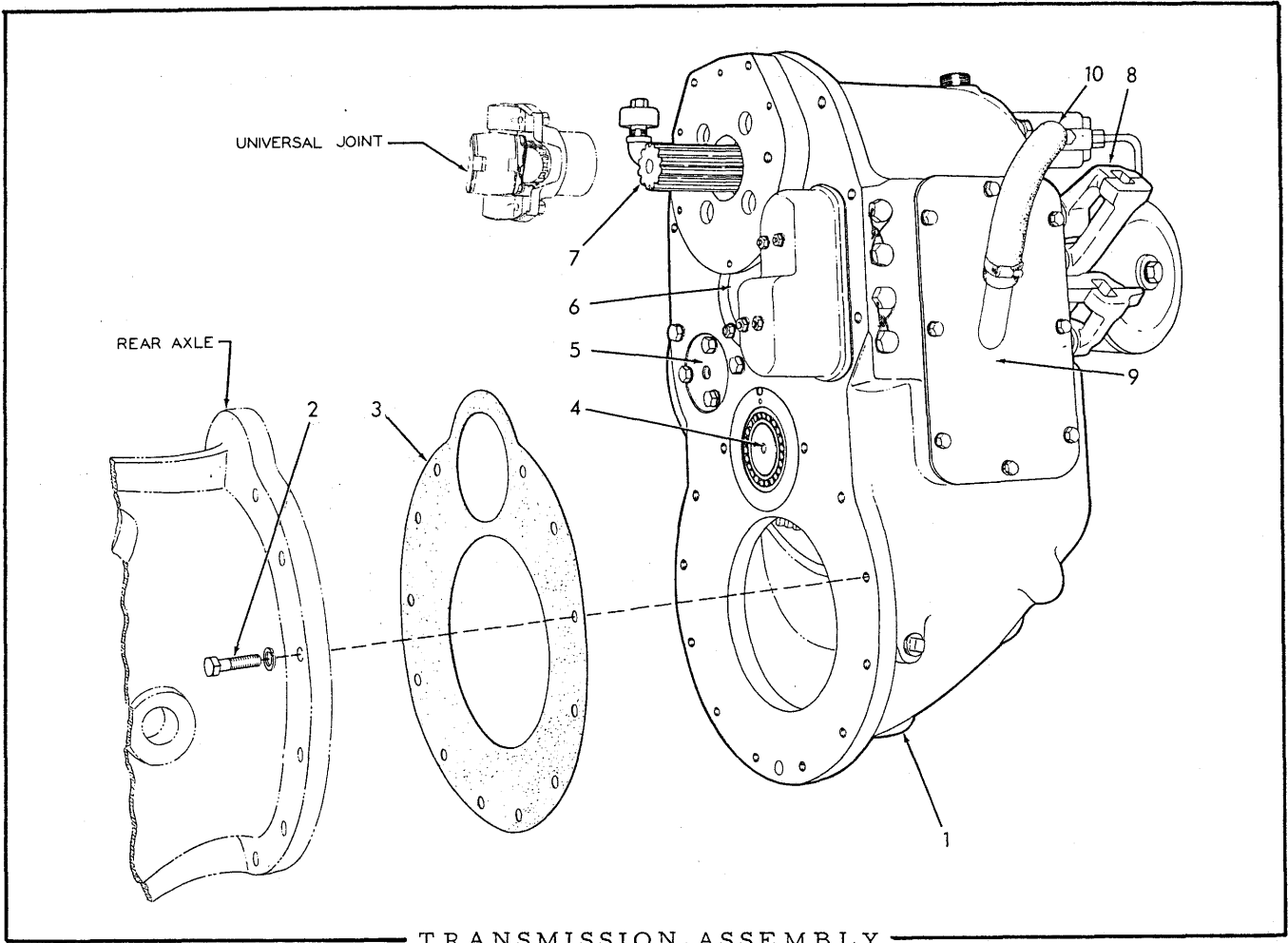
* Used prior to grader serial No. 1361.
 ** Effective with grader serial No. 1361.

ITEM	PART NO.	QTY.		DESCRIPTION	
		*	**		
1	096676	-	1	PEDAL, clutch operating	
2	912185	-	1	CAPSCREW, pedal stop (3/8"NF x 1-1/4")	
	911048	-	1	NUT, jam, 3/8"NF	
3	096684	-	1	SHAFT, pedal	
	904007	-	1	PIN, cotter, 3/16" x 3"	
4	096690	-	1	ROD, operating, vertical	
	911043	-	1	NUT, 1/2"NF	
5	049993	3	6	PIN, control rod yokes	
	900805	3	6	PIN, cotter, 1/8" x 3/4"	
6	068389	2	3	YOKE, adjusting	
7	096677	-	1	BELLCRANK	
8	096698	-	1	SHAFT, bellcrank	
	910024	-	1	PIN, cotter, 3/16" x 2-1/2"	
9	096701	-	1	LINK, pedal retracting spring	
10	052357	1	1	SPRING, pedal retracting	
11	096697	-	1	BOLT, eye, pedal retracting spring	
	911043	-	2	NUT, 1/2"NF	
12	074930	1	-	PEDAL, clutch operating	
13	605785	1	-	BUMPER, clutch pedal arm (rubber)	
14	{	085642	1	-	ARM, clutch pedal (Used prior to grader #785, excluding #779)
		091953	1	-	ARM, clutch pedal (Effective with grader #785, including #779)
		915659	1	-	CAPSCREW, 1/2"NF x 2-1/4"
		904208	1	-	LOCKWASHER, 1/2"
		911043	1	-	NUT, 1/2"NF
15	052358	1	-	LINK, pedal retracting spring	
16	{	082875	1	1	PIN, retracting spring link
		900942	1	1	PIN, cotter, 3/32" x 5/8"
		911115	-	1	WASHER, plain, SAE std., 3/8"
17	{	085685	1	-	SHAFT, clutch pedal arm
		904381	1	-	PIN, cotter, 3/16" x 2-1/4"
18	{	085660	1	-	PIN, clutch control rod
		900805	1	-	PIN, cotter, 1/8" x 3/4"
19	{	085655	1	-	ROD, clutch control
		096703	-	1	ROD, clutch control
		911043	1	1	NUT, 1/2"NF

(Continued)

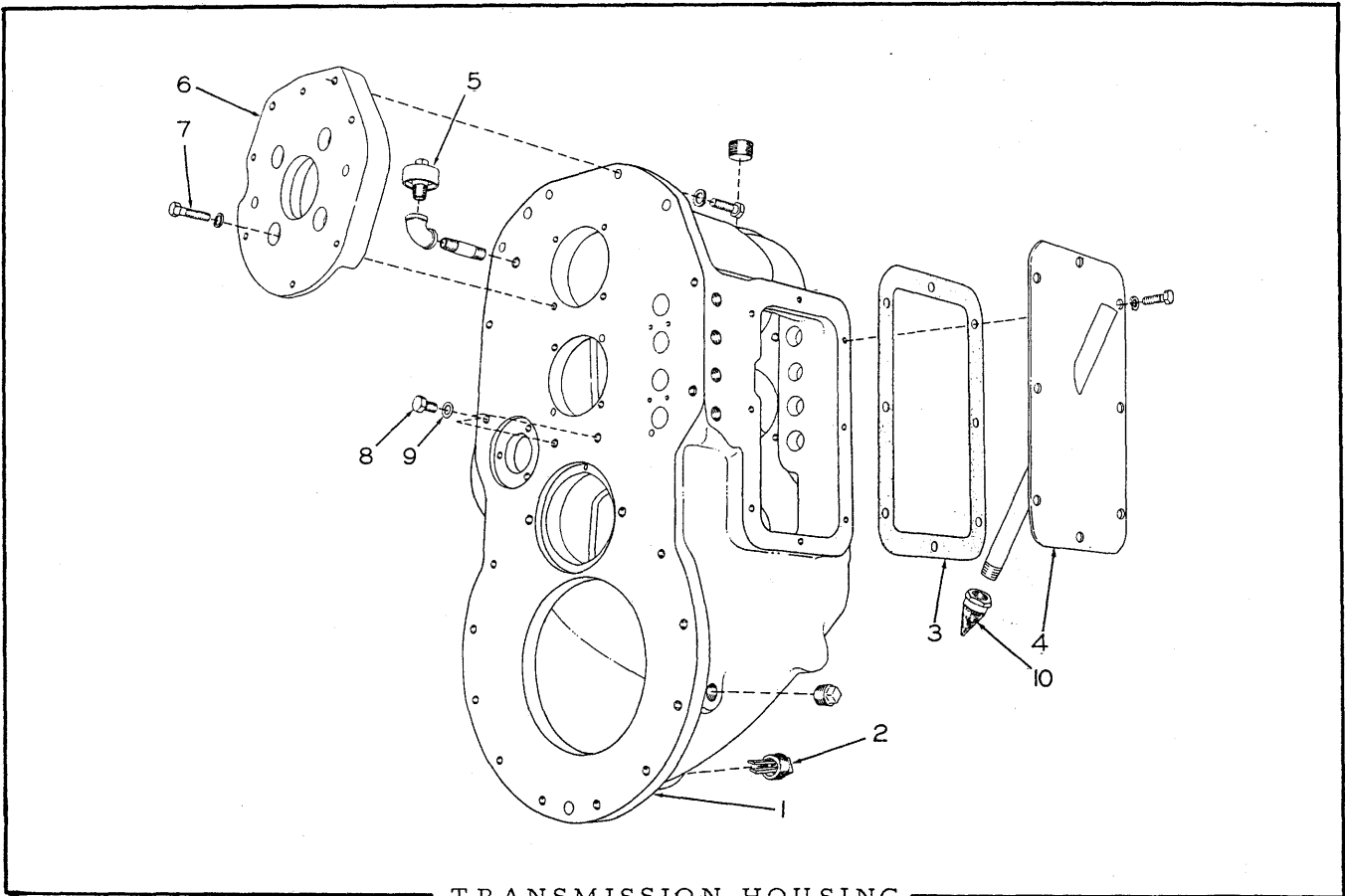
ENGINE CLUTCH CONTROL (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
20	085645	1	1	LEVER, clutch operating
	905126	1	1	KEY, #15 woodruff, 1/4" x 1"
	911848	1	1	CAPSCREW, 3/8"NF x 2"
	904206	1	1	LOCKWASHER, 3/8"
	911041	1	1	NUT, 3/8"NF
21	074975	1	1	BEARING, needle, clutch fork shaft, left
22	074959	3	3	SEAL, dust, clutch fork shaft bearings (1 additional used with SHAFT 628727)
23	628727	1	1	SHAFT, clutch fork (Used only on units with Gear Shift Lock conversion. See page 147)
	085713	1	1	SHAFT, clutch fork (Original equipment)
24	630813	1	1	FORK, clutch release
	905126	2	2	KEY, #15 woodruff, 1/4" x 1"
	904744	2	2	CAPSCREW, 7/16"NC x 1-1/2"
	904207	2	2	LOCKWASHER, 7/16"
25	074976	1	1	BEARING, needle, clutch fork shaft, right (Original equipment)
	074975	1	1	BEARING, needle, clutch fork shaft, right (Used with SHAFT 628727 only)
26	085693	1	-	ROD, brake operating
	096700	-	1	ROD, brake operating
	912317	1	1	PIN, cotter, 5/32" x 1"
	911043	1	1	NUT, 1/2"NF
	910244	1	1	WASHER, plain, SAE std., 1/2"
27	085694	1	1	SPRING, brake operating rod
28	076780	1	1	YOKE, sliding
29	085665	1	1	LEVER, clutch brake
30	075681	2	2	STUD, pressure plate
31	074978	1	1	YOKE, brake operating
	911848	1	1	CAPSCREW, 3/8"NF x 2"
	904206	1	1	LOCKWASHER, 3/8"
	911041	1	1	NUT, 3/8"NF
32	075679	1	1	KEY, brake operating yoke
33	075715	1	1	COVER ASSEMBLY, brake (Includes item 34)
	903630	6	6	CAPSCREW, 3/8"NC x 1"
	904206	6	6	LOCKWASHER, 3/8"
34	034514	2	2	BUSHING, brake cover
35	074956	1	1	PLATE, pressure
36	040475	2	2	SPRING, pressure plate
37	068908	1	1	HUB ASSEMBLY, brake (Facings are cemented and are not serviced separately)
38	-----	-	-	See TRANSMISSION TOP SHAFT



TRANSMISSION ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1	631637	1	TRANSMISSION ASSEMBLY (Includes gears, shafts, shifting forks, lubricating oil pump and filter) (If for graders prior to #785, excluding #779, also order GEAR 080500)
	639957	1	TRANSMISSION ASSEMBLY (Includes gears, shafts, shifting forks, lubricating oil pump and filter) (Used as service replacement only. Includes positive-type gear shift locking mechanism as shown on page 149. When making first replacement also order LINKAGE KIT 639956)
2	921556	12	CAPSCREW, 1/2"NC x 2"
	904208	12	LOCKWASHER, 1/2"
3	604978	1	GASKET, transmission to rear axle (Used prior to grader #1548)
	098322	1	GASKET, transmission to rear axle (Effective with grader #1548)
4	-----	-	See BOTTOM SHAFT
5	-----	-	See REVERSE GEAR SHAFT
6	-----	-	See INTERMEDIATE SHAFT
7	-----	-	See TOP SHAFT
8	-----	-	See GEAR SHIFTING FORKS
9	-----	-	See TRANSMISSION CASE
10	-----	-	See TRANSMISSION OIL PUMP



TRANSMISSION HOUSING

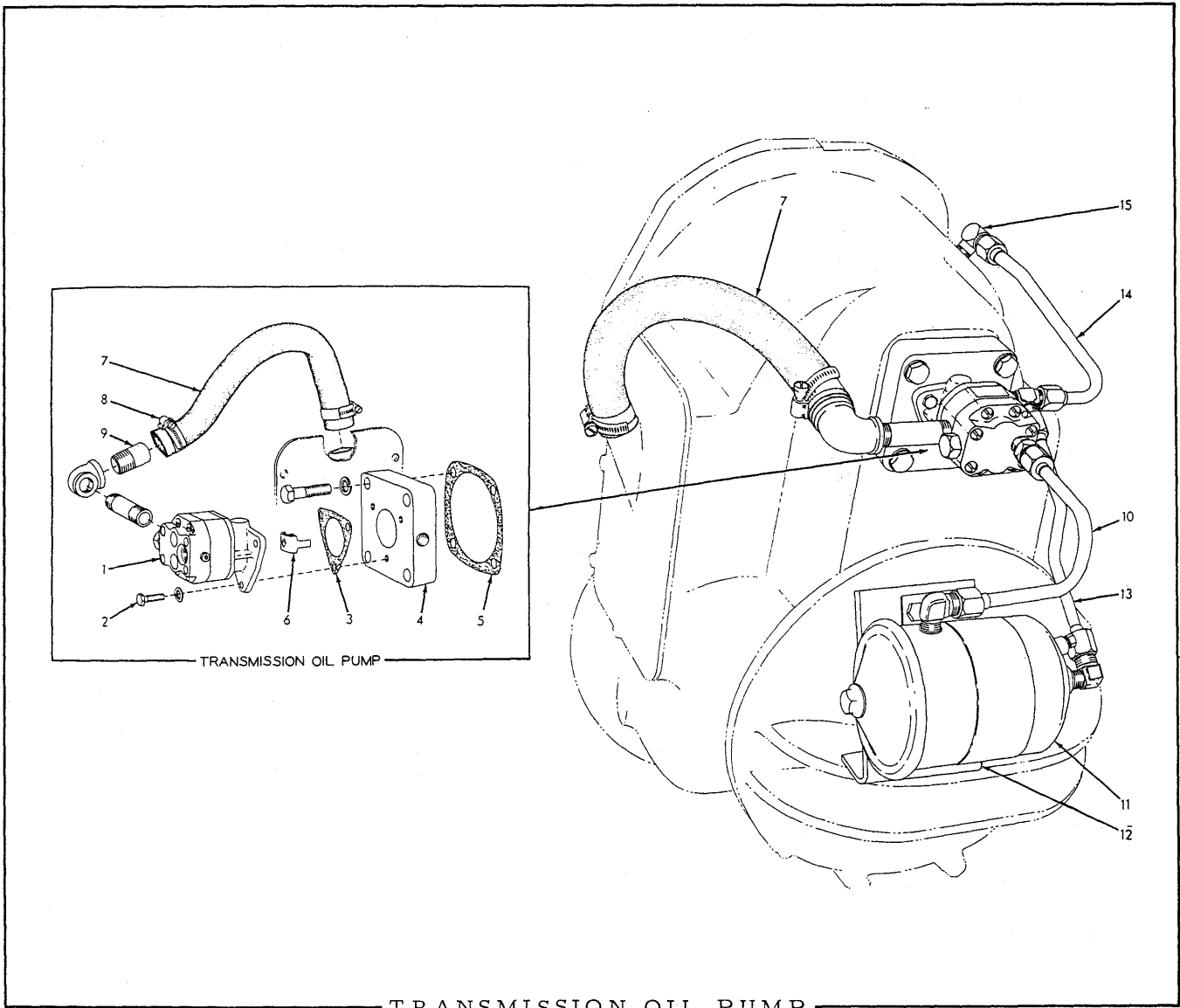
* Used prior to grader serial No. 2013 excluding #1953, 1970, 1976, 1995, 1997 and 2000 thru 2004)
 ** Effective with grader serial No. 2013 including #1953, 1970, 1976, 1995, 1997 and 2000 thru 2004)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	605637	1	-	HOUSING, transmission (Used prior to grader #785, excluding #779)
	091560	1	-	HOUSING, transmission (Used on graders #785 thru #1547, including #779)
	098307	1	-	HOUSING, transmission (Used on graders #1548 thru #2012)
	640620	-	1	HOUSING ASSEMBLY (Includes 3 plugging SETSCREWS 640071)
	901666	1	1	PLUG, pipe, ctsk-hd., 1"NPT
	912725	1	1	PLUG, pipe, sq-hd., 1/2"NPT (oil level)
	904541	2	2	CAPSCREW, 1/2"NC x 1-3/4"
	904208	2	2	LOCKWASHER, 1/2"
2	634668	1	1	PLUG, oil drain (sq-hd., 1"NPT, magnetic)
3	605911	1	1	GASKET, housing cover
4	605896	1	-	COVER, housing
	631407	-	1	COVER, housing
	903629	8	8	CAPSCREW, 3/8"NC x 3/4"
	904206	8	8	LOCKWASHER, 3/8"

(Continued)

TRANSMISSION HOUSING (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
5	050748	1	1	BREATHER
	901678	1	1	ELBOW, pipe, 90°, 3/8"NPT
	901492	1	1	NIPPLE, pipe, 3/8"NPT x 2-1/2"
6	079371	1	1	ADAPTER, transmission housing
7	013058	4	4	CAPSCREW, 3/8"NC x 1-1/4"
	904206	4	4	LOCKWASHER, 3/8"
8	911980	3	3	CAPSCREW, 1/2"NC x 7/8" (hole plugging)
9	603585	3	3	WASHER
10	631247	-	1	STRAINER, oil



TRANSMISSION OIL PUMP

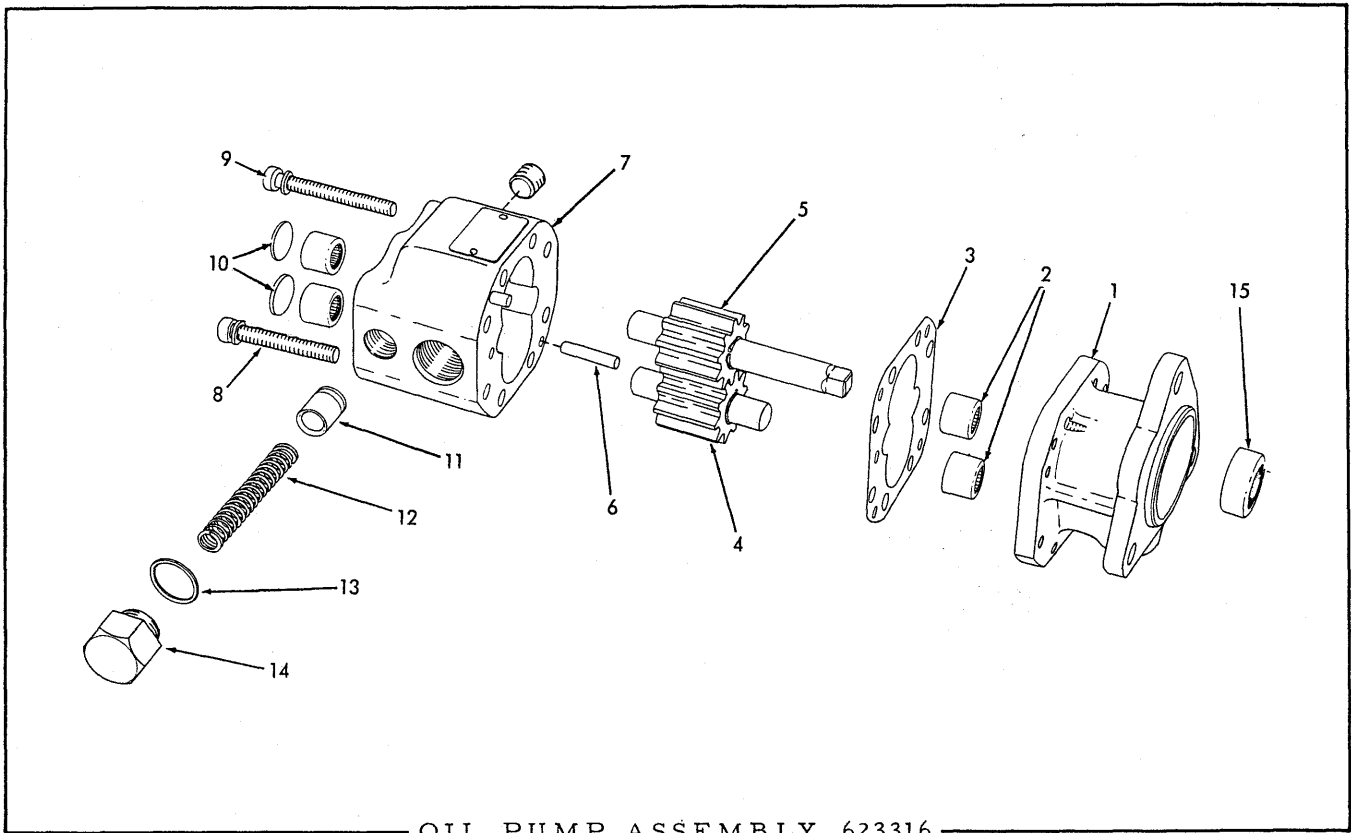
USAGE: Model 45 Graders serial No. 2013 and up, including #1953, 1970, 1976, 1995, 1997 and 2000 thru 2004

ITEM	PART NO.	QTY.	DESCRIPTION
1	623316	1	PUMP ASSEMBLY (See page 134 for parts)
2	054130	3	CAPSCREW, 5/16"NC x 7/8"
	917330	3	WASHER, copper, 5/16"
3	4376605	1	GASKET, pump to adapter
4	632304	1	ADAPTER ASSEMBLY, pump mounting (Includes restrictor. Has 3.347 bearing bore)(Not original equipment. Used on field installations only)
	633608	1	ADAPTER ASSEMBLY, pump mounting (Includes restrictor. Has 3.937 bearing bore)
	903641	4	CAPSCREW, 1/2"NC x 2-1/4"
	904208	4	LOCKWASHER, 1/2"

(Continued)

TRANSMISSION OIL PUMP (Continued)

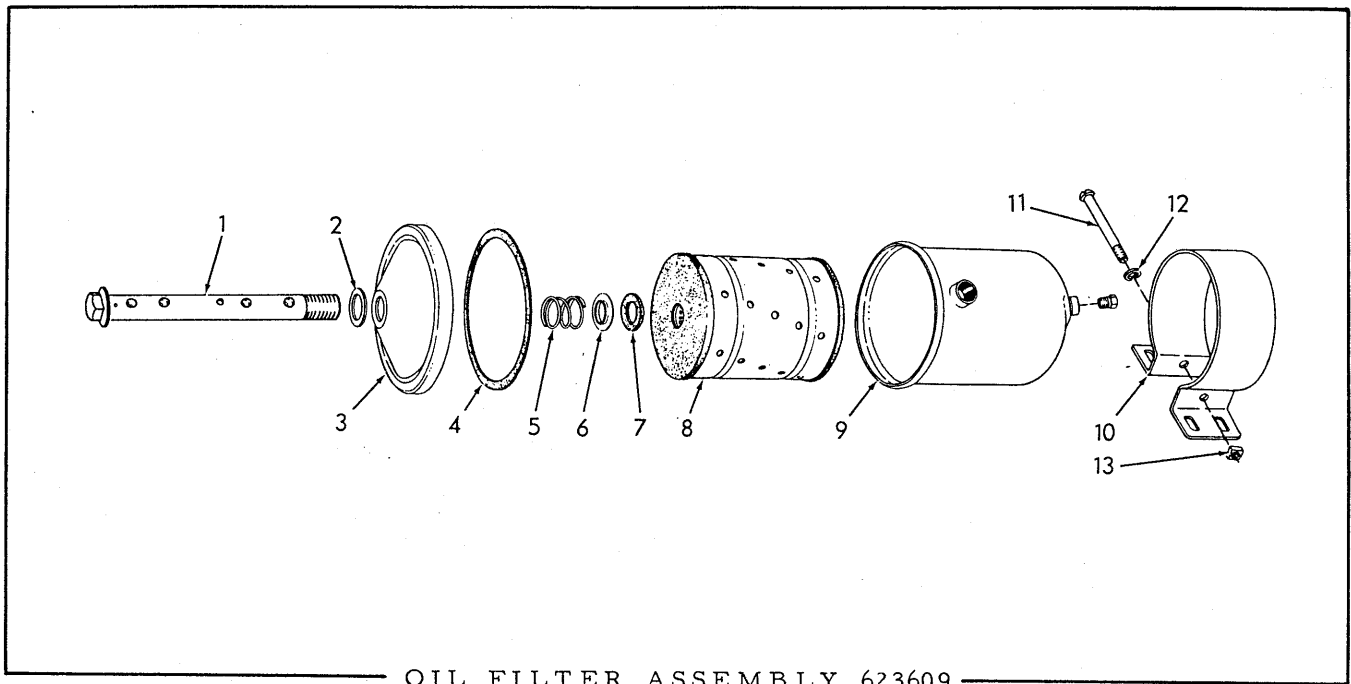
ITEM	PART NO.	QTY.	DESCRIPTION
5	633609	1	GASKET, pump mounting adaptor
6	630914	1	COUPLING, pump drive
7	631410	1	HOSE, suction line
8	921912	2	CLAMP, hose, 1-1/16" to 2" diam.
9	623363	1	PIPE, hose connecting
	901505	1	NIPPLE, pipe, 1/2"NPT x 3-1/2"
	916149	1	ELBOW, pipe reducing, 90°, 3/4"NPT to 1/2"NPT
10	631413	1	TUBE ASSEMBLY, pump to filter (Includes nuts)
	919128	1	CONNECTOR, flare type, 1/2" tube, 1/2"NPT male
	919206	1	ELBOW, flare type, 90°, 1/2" tube, 3/8"NPT male
11	623609	1	FILTER ASSEMBLY, oil (See page 135 for parts)
	912327	4	CAPSCREW, 1/4"NC x 7/8"
	092635	4	WASHER, plain
	904204	4	LOCKWASHER, 1/4"
	911024	4	NUT, 1/4"NC
12	620254	1	BRACKET, filter mounting
	903631	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
13	631414	1	TUBE ASSEMBLY, filter discharge (Includes nuts)
	919206	1	ELBOW, flare type, 90°, 1/2" tube, 3/8"NPT male
	921990	1	TEE, flare type, 1/2" tube side and end, 3/8"NPT male end
14	631416	1	TUBE ASSEMBLY, adapter to housing (Includes nuts)
15	631248	1	ELBOW, oil spray



OIL PUMP ASSEMBLY 623316

USAGE: See page 132

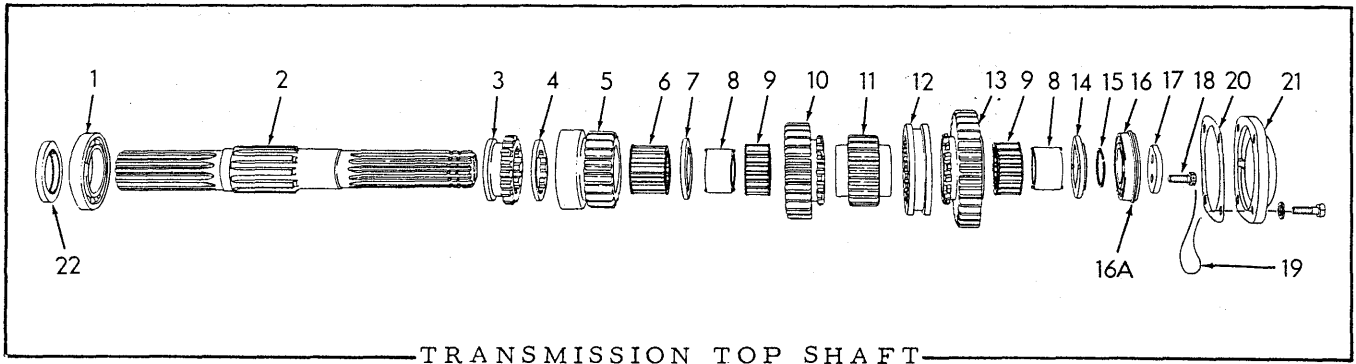
ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	STATOR (Not serviced separately)
2	077241	4	BEARING, needle
3	621363	1	GASKET, pump housing
4	098394	1	SHAFT ASSEMBLY, idler (Includes gear. Serviced only as a unit)
5	623845	1	SHAFT ASSEMBLY, driving (Includes gear. Serviced only as a unit)
6	4048000	2	PIN, dowel, pump housing
7	-----	1	HOUSING, gear (Not serviced separately)
	910231	1	PLUG, pipe, hex-socket, 1/8"NPT
8	622083	4	SCREW ASSEMBLY, short (Includes lockwasher)
9	623834	4	SCREW ASSEMBLY, long (Includes lockwasher)
10	092107	2	PLUG, expansion, 11/16" diam.
11	623835	1	PLUNGER, pressure relief valve
12	623838	1	SPRING, pressure relief valve
13	623837	1	GASKET, pressure relief valve cap
14	623836	1	CAP, pressure relief valve
15	4047783	1	SEAL, oil



OIL FILTER ASSEMBLY 623609

USAGE: See page 133

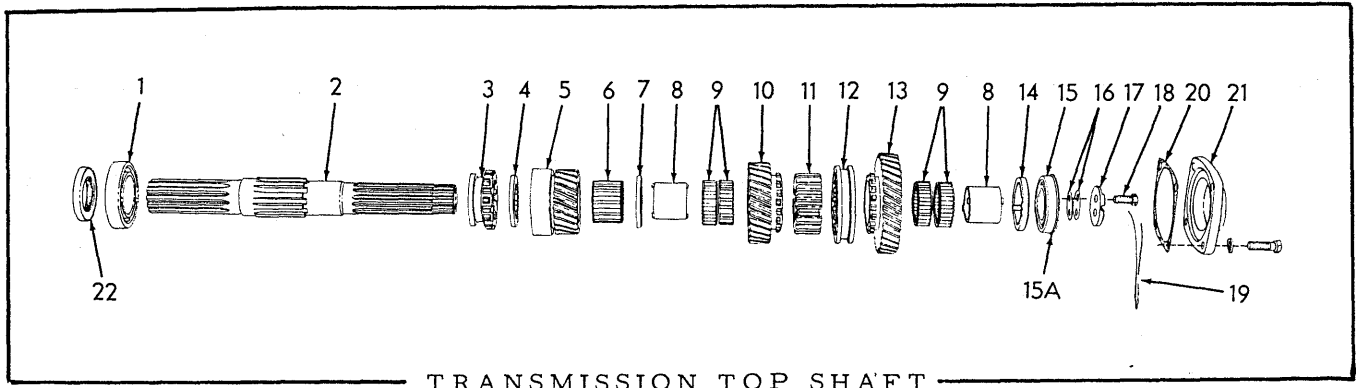
ITEM	PART NO.	QTY.	DESCRIPTION
1	623608	1	BOLT ASSEMBLY (Includes check valve. Serviced only as a unit)
2	4049469	1	GASKET, cover bolt
3	4049471	1	COVER, filter body
4	4049470	1	GASKET, filter body cover
5	4048793	1	SPRING, cartridge retaining
6	4048794	1	WASHER, cartridge gasket
7	4041209	1	GASKET, cartridge
8	4372517	1	CARTRIDGE ASSEMBLY (Includes items 2, 4 and 7)
9	4049472	1	BODY, oil filter
	917426	1	PLUG, pipe, hex-hd., 1/8"NPT
10	4506165	1	CLAMP, mounting
11	4371974	1	BOLT, mounting clamp
12	4371973	1	LOCKWASHER
13	4371795	1	NUT



TRANSMISSION TOP SHAFT

USAGE: Graders prior to serial No. 785, excluding No. 779

ITEM	PART NO.	QTY.	DESCRIPTION
1	067566	1	BEARING, ball, rear
2	082180	1	SHAFT, top
3	075275	1	GEAR, shifting, 1st and 4th speeds (18 teeth)
4	075276	1	WASHER, spacing, 1st and 4th speed gear
5	075278	1	GEAR, 1st and 4th speeds (21 teeth)
6	075277	1	BEARING, roller, 1st and 4th speed gear
7	075279	1	WASHER, spacing, 2nd and 5th speed gear
8	075282	2	SLEEVE, roller bearing
9	075281	2	BEARING, roller, 2nd and 5th speed gear
10	075280	1	GEAR, 2nd and 5th speeds (18 and 27 teeth)
11	075283	1	HUB, shifting collar
12	075284	1	COLLAR, shifting
13	075285	1	GEAR, 3rd and 6th speeds (33 teeth)
14	082163	1	WASHER, thrust
15	050293	1	RING, snap
16	097117	1	BEARING, ball, front
16A	057289	1	RING, snap, bearing retaining
17	059022	1	WASHER, retaining, front bearing
18	059023	2	CAPSCREW (drilled hd., 7/16"NC x 1")
19	023633	1	WIRE, locking (1/16" x 12")
20	059103	1	GASKET, front bearing cover
21	075287	1	COVER, front bearing
	903639	4	CAPSCREW, 1/2"NC x 1-1/2"
	904208	4	LOCKWASHER, 1/2"
22	064302	1	SEAL, oil, rear bearing



TRANSMISSION TOP SHAFT

USAGE: Effective with grader serial No. 785, including No. 779

* Used prior to grader serial No. 2013 excluding #1953, 1970, 1976, 1995, 1997 and 2000 thru 2004)

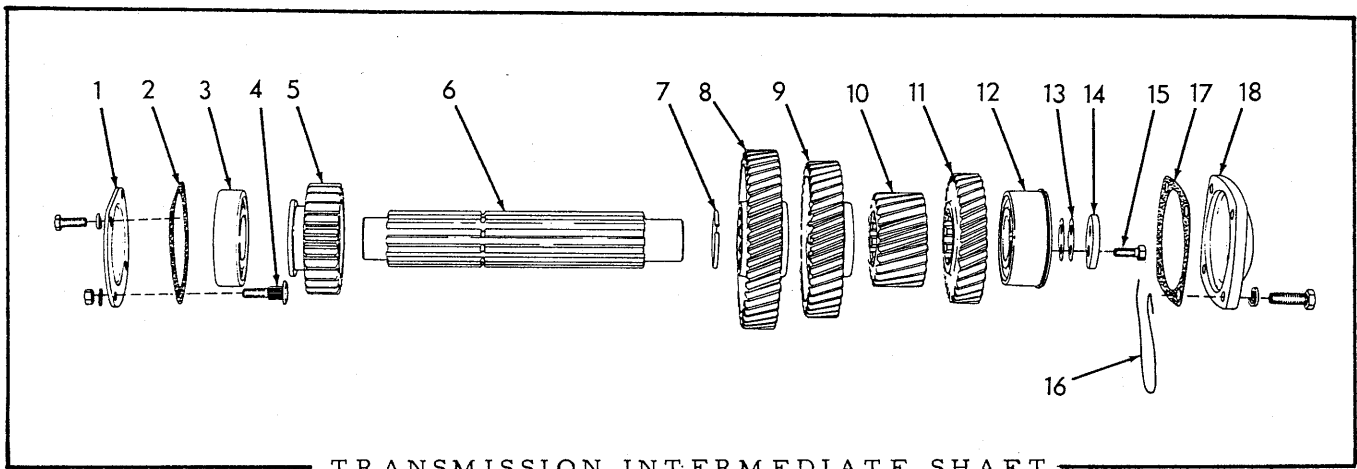
** Effective with grader serial No. 2013 including #1953, 1970, 1976, 1995, 1997 and 2000 thru 2004)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	067566	1	-	BEARING, ball, rear
	633598	-	1	BEARING, roller, rear
2	091537	1	1	SHAFT, top
3	075275	1	1	GEAR, shifting, 1st and 4th speeds (18 teeth)
4	075276	1	1	WASHER, spacing, 1st and 4th speed gear
5	079715	1	1	GEAR, 1st and 4th speeds (23 helical teeth)
6	075277	1	1	BEARING, roller, 1st and 4th speed gear
7	075279	1	1	WASHER, spacing, 2nd and 5th speed gear
8	080582	2	2	SLEEVE, roller bearing
9	080581	4	4	BEARING, roller, 2nd and 5th speed gear
10	079716	1	1	GEAR, 2nd and 5th speeds (29 helical teeth)
11	080583	1	-	HUB, shifting collar (straight teeth)(Used prior to grader #1980 excluding #1953, 1970, 1976 only)
	629712	1	1	HUB, shifting collar (tapered teeth)(Effective with grader #1980 including #1953, 1970, 1976)
12	075284	1	-	COLLAR, shifting (straight teeth)(Used prior to grader #1980 excluding #1953, 1970 1976 only)
	629710	1	1	COLLAR, shifting (tapered teeth)(Effective with grader #1980 including #1953, 1970, 1976)
13	079717	1	1	GEAR, 3rd and 6th speeds (35 helical teeth)
14	099370	1	-	WASHER, thrust
	623080	-	1	WASHER, thrust

(Continued)

TRANSMISSION TOP SHAFT (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
15	097117	1	-	BEARING, ball, front
	619627	-	1	BEARING, ball, front
15A	057289	1	-	RING, snap, bearing retaining
	042121	-	1	RING, snap, bearing retaining
16	059788	6	6	SHIM, front bearing washer (.005" thick)(Use as req'd)
	059789	3	3	SHIM, front bearing washer (.028" thick)(Use as req'd)
17	631412	-	1	WASHER, retaining, front bearing
	059022	1	-	WASHER, retaining, front bearing
18	059023	2	2	CAPSCREW, drilled-hd., 7/16"NC x 1"
19	023633	1	1	WIRE, locking, 1/16" x 12"
20	059103	1	-	GASKET, front bearing cover
21	075287	1	-	COVER, front bearing
	903639	4	-	CAPSCREW, 1/2"NC x 1-1/2"
	904208	4	-	LOCKWASHER, 1/2"
22	633630	1	1	SEAL, oil, rear bearing



TRANSMISSION INTERMEDIATE SHAFT

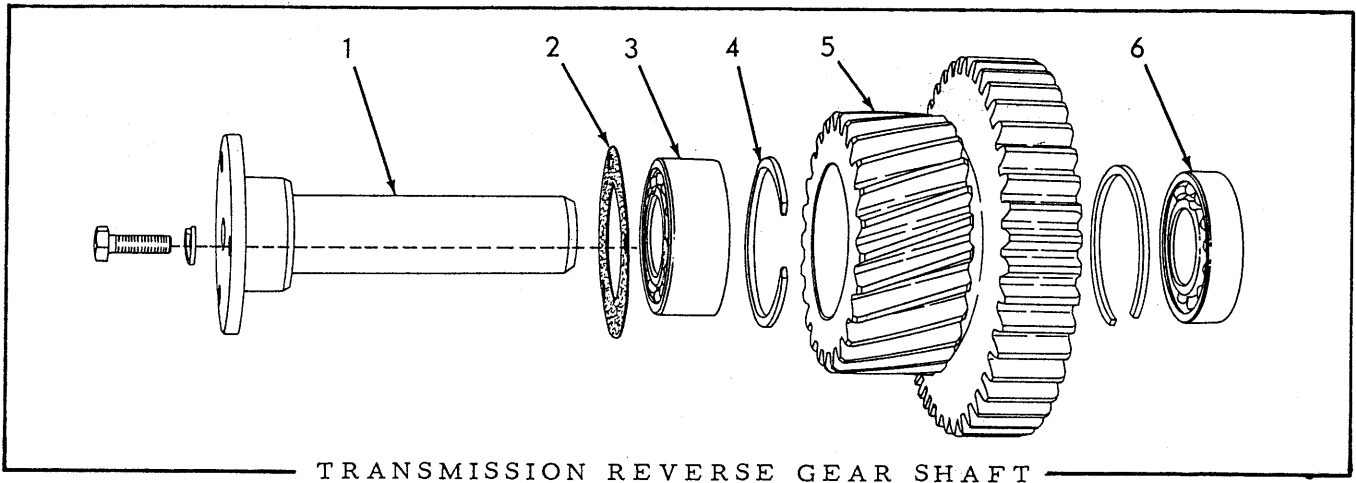
* Graders prior to serial No. 785 excluding No. 779
 ** Graders serial No. 785 and up, including No. 779

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	605008	1	1	COVER, rear bearing
	903630	2	2	CAPSCREW, 3/8"NC x 1"
	904206	2	2	LOCKWASHER, 3/8"
2	604997	1	1	GASKET, rear bearing cover
3	059095	1	1	BEARING, roller, rear

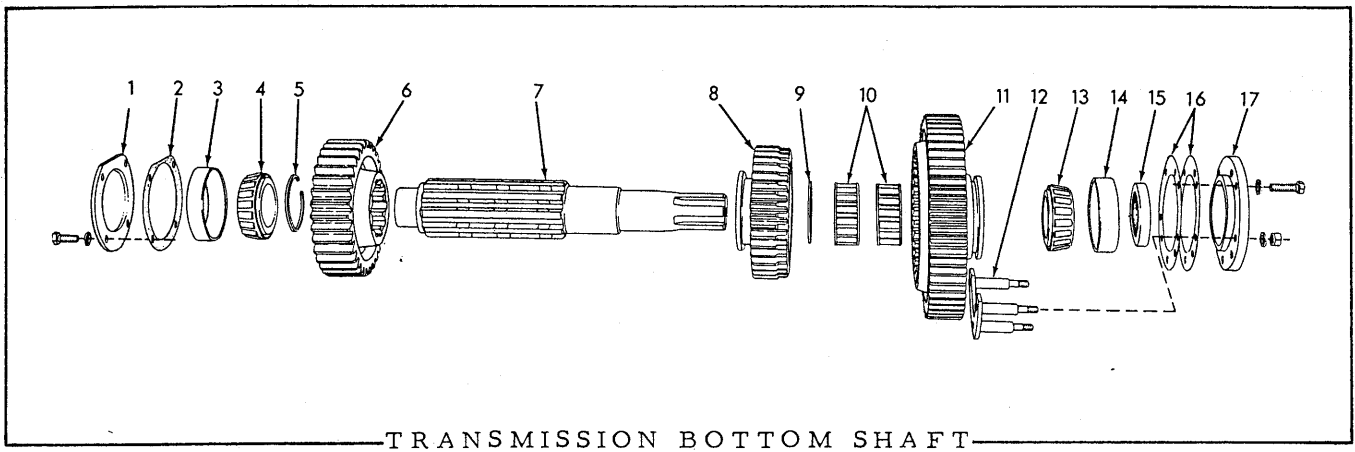
(Continued)

TRANSMISSION INTERMEDIATE SHAFT (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
4	059120	2	2	SCREW, retaining, rear bearing
	912301	2	2	LOCKWASHER, external teeth, 3/8"
	911041	2	2	NUT, 3/8"NF
5	050941	1	1	GEAR, shifting, reverse (25 teeth)
6	075290	1	1	SHAFT, intermediate
7	605003	1	1	RING, snap
8	605004	1	-	GEAR, (43 straight teeth)
	079718	-	1	GEAR, (46 helical teeth)
9	605005	1	-	GEAR, (37 straight teeth)
	079719	-	1	GEAR, (40 helical teeth)
10	605006	1	-	GEAR, (21 straight teeth)
	079720	-	1	GEAR, (24 helical teeth)
11	075288	1	-	GEAR, (31 straight teeth)
	079721	-	1	GEAR, (32 helical teeth)
12	075289	1	1	BEARING, ball, front (snap-ring type)
13	059788	6	6	SHIM, retaining washer (.005" thick. Use as req'd)
	059789	5	5	SHIM, retaining washer (.028" thick. Use as req'd)
14	059022	1	1	WASHER, retaining, front bearing
15	059023	2	2	CAPSCREW (drilled-hd., 7/16"NC x 1")
16	023633	1	1	WIRE, locking (1/16" x 12")
17	059103	1	1	GASKET, front bearing cover
18	059102	1	1	COVER, front bearing
	903639	4	4	CAPSCREW, 1/2"NC x 1-1/2"
	904208	4	4	LOCKWASHER, 1/2"



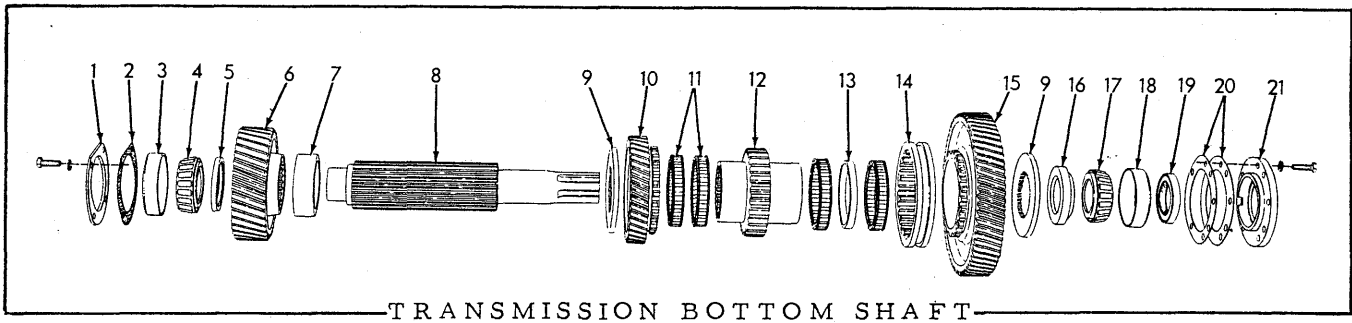
ITEM	PART NO.	QTY.	DESCRIPTION
1	605915	1	SHAFT, reverse gear
	903630	3	CAPSCREW, 3/8"NC x 1"
	904206	3	LOCKWASHER, 3/8"
2	605905	1	GASKET, reverse gear shaft
3	058967	1	BEARING, ball, reverse gear, rear
4	605895	2	RING, snap, reverse gear
5	079722	1	GEAR, reverse (25 and 40 teeth)
6	058974	1	BEARING, ball, reverse gear, front



TRANSMISSION BOTTOM SHAFT

USAGE: Graders prior to serial No. 785, excluding No. 779

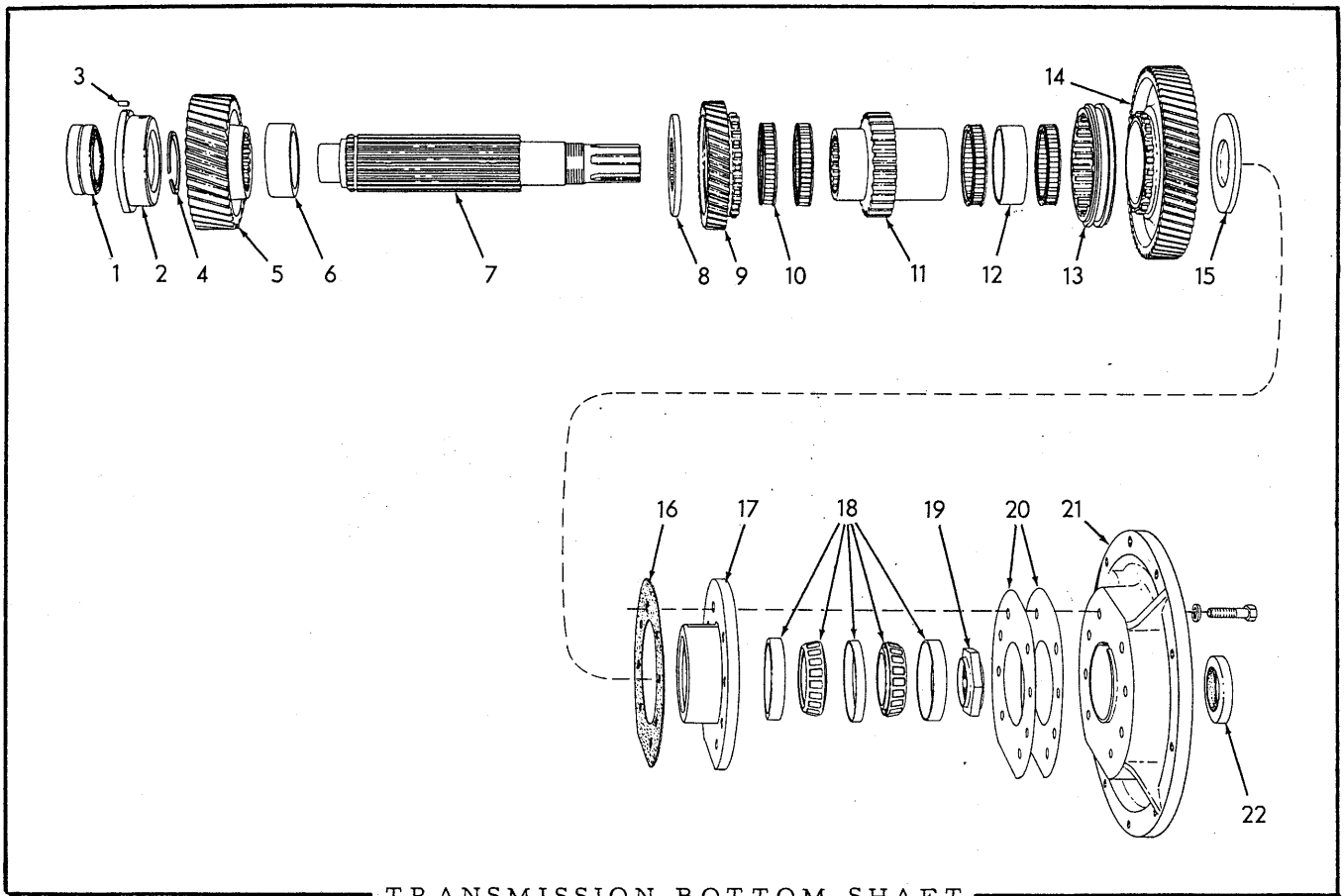
ITEM	PART NO.	QTY.	DESCRIPTION
1	068197	1	COVER, rear bearing
	903630	4	CAPSCREW, 3/8"NC x 1"
	904206	4	LOCKWASHER, 3/8"
2	604997	1	GASKET, rear bearing cover
3	061088	1	CUP, rear bearing
4	061087	1	CONE ASSEMBLY, rear bearing
5	605080	1	RING, snap
6	605012	1	GEAR, reverse (33 teeth)
7	050936	1	SHAFT, bottom
8	050938	1	GEAR, shifting, hi-lo range (38 teeth)
9	605081	1	WASHER, thrust
10	061085	2	ROLLER ASSEMBLY
11	605015	1	GEAR, low range speeds (60 teeth)
12	605090	1	SEGMENT ASSEMBLY, gear retaining (Serviced only as a unit)
	904206	3	LOCKWASHER, 3/8"
	911041	3	NUT, 3/8"NF
13	605175	1	CONE ASSEMBLY, front bearing
14	210740	1	CUP, front bearing
15	605093	1	SEAL, oil, front bearing
16	605082	12	SHIM, bearing adjusting (.005" thick. Use as req'd)
	056586	2	SHIM, bearing adjusting (.003" thick. Use as req'd)
17	605010	1	COVER, front bearing
	903631	4	CAPSCREW, 3/8"NC x 1-1/4"
	904206	4	LOCKWASHER, 3/8"



TRANSMISSION BOTTOM SHAFT

USAGE: Graders serial No. 785 thru 1548; also 779

ITEM	PART NO.	QTY.	DESCRIPTION
1	068197	1	COVER, rear bearing
	903630	4	CAPSCREW, 3/8"NC x 1"
	904206	4	LOCKWASHER, 3/8"
2	604997	1	GASKET, rear bearing cover
3	061088	1	CUP, rear bearing
4	061087	1	CONE ASSEMBLY, rear bearing
5	080584	1	WASHER, gear retaining
6	079723	1	GEAR, reverse (37 teeth)
7	080585	1	SPACER, reverse gear
8	080587	1	SHAFT, bottom
9	069454	2	WASHER, gear retaining
10	079724	1	GEAR, high range speeds (41 teeth)
11	069385	4	BEARING, roller
12	079725	1	HUB, range gears
13	069462	1	SPACER, low range gear bearings
14	069244	1	COLLAR, shifting
15	079726	1	GEAR, low range speeds (66 teeth)
16	080586	1	WASHER, spacing
17	605175	1	CONE ASSEMBLY, front bearing
18	210740	1	CUP, front bearing
19	605093	1	SEAL, oil, front bearing
20	605082	12	SHIM, bearing adjusting (.005" thick. Use as req'd)
	056586	2	SHIM, bearing adjusting (.003"thick. Use as req'd)
21	605010	1	COVER, front bearing
	903631	4	CAPSCREW, 3/8"NC x 1-1/4"
	904206	4	LOCKWASHER, 3/8"



TRANSMISSION BOTTOM SHAFT

USAGE: Effective with grader serial No. 1548

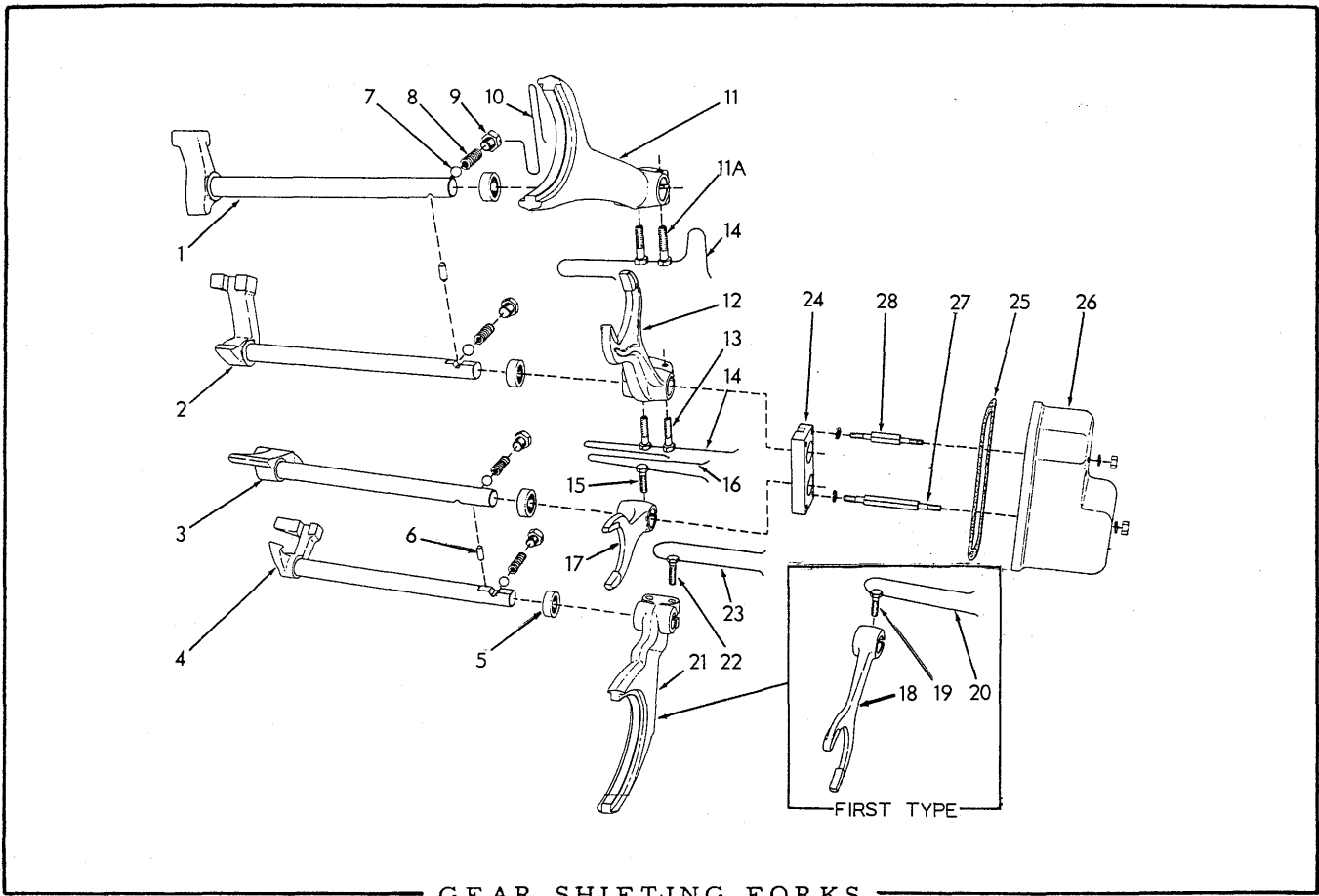
ITEM	PART NO.	QTY.	DESCRIPTION
1	098311	1	BEARING, roller, rear
2	098308	1	CARRIER, rear bearing
3	098309	1	PIN, locating, rear bearing carrier
4	088735	1	RING, snap
5	079723	1	GEAR, reverse (37 teeth)
6	098865	1	SPACER, reverse gear
7	098318	1	SHAFT, bottom
8	069454	1	WASHER, gear retaining, rear
9	079724	1	GEAR, high range speeds (41 teeth)
10	069385	4	BEARING, roller
11	098222	1	HUB, range gears (straight teeth)(Used prior to grader #1980 excluding #1953, 1970, 1976)
	629955	1	HUB, range gears (tapered teeth)(Effective with grader #1980 including #1953, 1970, 1976)
12	098315	1	SPACER, low gear bearings

(Continued)

TRANSMISSION BOTTOM SHAFT (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
13	069244	1	COLLAR, shifting (straight teeth)(Used prior to grader #1980 excluding #1953, 1970, 1976)
	629956	1	COLLAR, shifting (tapered teeth)(Effective with grader #1980 including #1953, 1970, 1976)
14	098187	1	GEAR, low range speeds (66 teeth)
15	098316	1	WASHER, gear retaining, front
16	098321	1	GASKET, front bearing carrier
17	631128	1	CARRIER, front bearing
18	098317	1	BEARING, roller, front (Serviced only as a unit)
19	078864	1	NUT, retaining
20	098319	3	SHIM, bearing adjustment (.003" thick. Use as req'd)
	098320	10	SHIM, bearing adjustment (.005" thick. Use as req'd)
21	098223	1	RETAINER, front bearing (Also serves as transmission brake pressure plate)
	917010	8	CAPSCREW, 1/2"NC x 1-7/8"
	904208	8	LOCKWASHER, 1/2"
22	064302	1	SEAL, oil

MEMO



GEAR SHIFTING FORKS

USAGE: Original equipment. Also see page 149 for later design used as service replacement

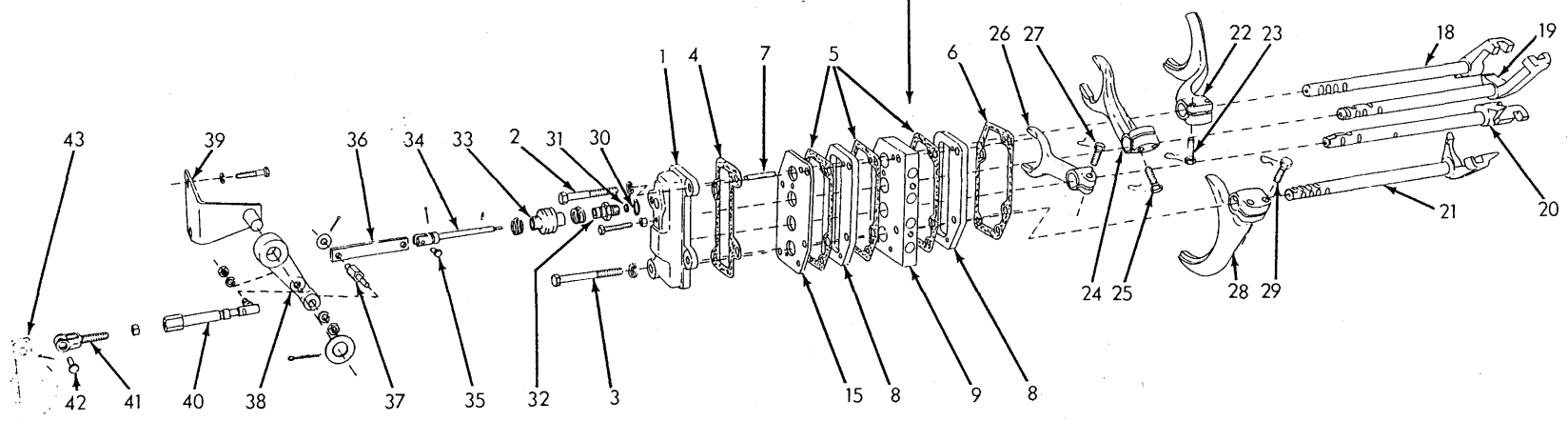
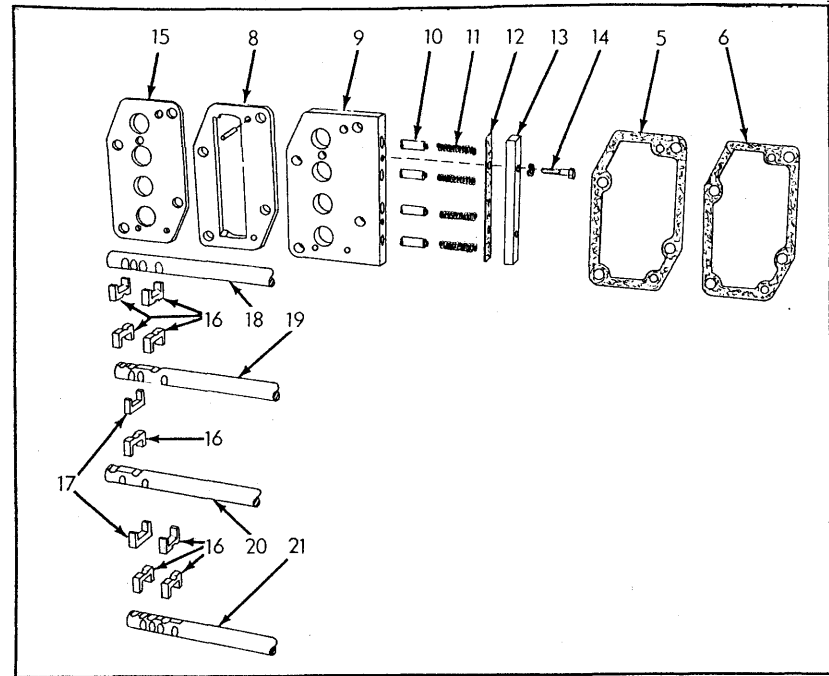
- * Graders prior to serial No. 785, excluding No. 779
- ** Graders serial No. 785 thru No. 1979, including No. 779 but excluding Nos. 1953, 1970, 1976
- *** Graders serial No. 1980 and up, including Nos. 1953, 1970, 1976

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	076275	1	1	-	SHAFT, 2nd and 3rd shifting fork
	629711	-	-	1	SHAFT, 2nd and 3rd shifting fork
2	076276	1	1	1	SHAFT, low shifting fork
3	076274	1	1	1	SHAFT, reverse shifting fork
4	076273	1	-	-	SHAFT, high-low shifting fork
	080589	-	1	-	SHAFT, high-low shifting fork
	630049	-	-	1	SHAFT, high-low shifting fork
5	605898	4	4	4	SEAL, oil, shifting fork shaft
6	605900	2	2	2	PLUNGER, interlocking, shifting fork shafts
7	910181	4	4	4	BALL, steel, 9/16" diam.
8	605909	4	4	4	SPRING, shifting shaft locking ball

(Continued)

GEAR SHIFTING FORKS (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
9	095253	4	4	4	CAPSCREW, shifting shaft locking ball
10	023633	1	1	1	WIRE, locking 1/16" x 12"
11	621790	1	1	1	FORK, 2nd and 3rd (If for graders prior to #1968 also order 2 CAPSCREW 621802)
11A	076942	2	2	-	CAPSCREW (3/8"NF x 1-1/2")(Used prior to grader #1968)
	621802	-	2	2	CAPSCREW (1/2"NF x 1-1/2")(Effective with grader #1968)
12	621791	1	1	1	FORK, low (If for graders prior to #1980 also order 2 CAPSCREW 621802)
13	076942	2	2	-	CAPSCREW (3/8"NF x 1-1/2")
	621802	-	-	2	CAPSCREW (1/2"NF x 1-1/2")
14	023633	2	2	2	WIRE, locking, 1/16" x 12"
15	045617	1	1	-	CAPSCREW, reverse fork (3/8"NC x 1-1/4")
	060833	-	-	1	CAPSCREW, reverse fork (1/2"NC x 1-1/4")
16	023633	1	1	1	WIRE, locking, 1/16" x 12"
17	621788	1	1	1	FORK, reverse (If for graders prior to #1980 also order 1 CAPSCREW 060833)
18	605633	1	-	-	FORK, high-low
19	045617	1	-	-	CAPSCREW, high-low fork (3/8"NC x 1-1/4")
20	023633	1	-	-	WIRE, locking (1/16" x 12")
21	621789	-	1	1	FORK, high-low (If for graders prior to #1980 also order 2 CAPSCREW 621802)
22	076942	2	2	-	CAPSCREW, high-low fork (3/8"NF x 1-1/2")
	621802	-	-	2	CAPSCREW, high-low fork (1/2"NF x 1-1/2")
23	023633	2	2	2	WIRE, locking, 1/16" x 12"
24	605899	1	1	1	GUIDE, interlocking plunger
25	075292	1	1	1	GASKET, shifting fork cover
26	075293	1	1	1	COVER, shifting fork
27	075299	2	2	2	STUD, hex (long)
28	075298	2	2	2	STUD, hex (short)
	904204	8	8	8	LOCKWASHER, 1/4"
	911024	4	4	4	NUT, 1/4"NC



GEAR SHIFT FORKS AND LOCK

GEAR SHIFT FORKS AND LOCK

USAGE: Service replacement only. Recommended for all graders equipped with tapered-tooth shifting collars. Order GEAR SHIFT LOCK KIT 628562 to make conversion.

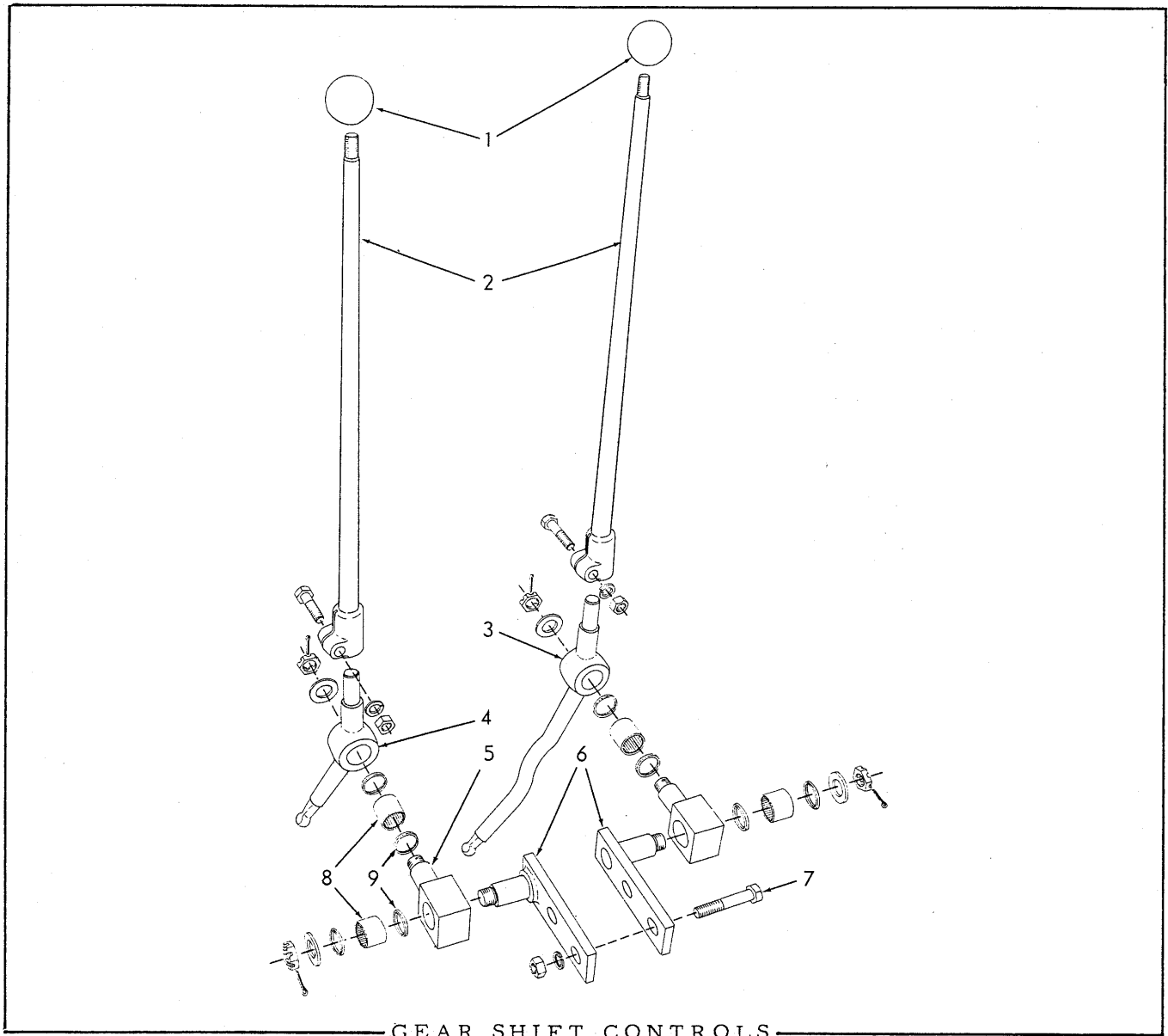
ITEM	PART NO.	QTY.	DESCRIPTION
1	622481	1	COVER, shifting shafts
	902208	1	SETSCREW, sq.-hd., oval point, 3/8"NC x 2"
	911034	1	NUT, jam, 3/8"NC
2	061631	2	CAPSCREW, 1/2"NC x 3-1/2"
3	639792	2	CAPSCREW, Nylok, 1/2"NC x 4-1/2"
	904208	4	LOCKWASHER, 1/2"
4	622482	1	GASKET, cover
5	622476	3	GASKET, shaft locking plates (.010" thick)
6	622474	1	GASKET, shaft rear locking plate (1/32" thick)
7	633135	2	PIN, dowel, shaft locking plates
8	622473	2	PLATE, shaft locking
9	622475	1	PLATE, shifting shaft plunger
10	620967	4	PLUNGER, shifting shaft
11	096922	4	SPRING, shifting shaft plunger
12	622479	1	GASKET, plunger retaining bar
13	622478	1	BAR, plunger retaining
14	013058	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	LOCKWASHER, 3/8"
15	622480	1	PLATE, shaft guiding
16	623639	8	DETENT, shifting shaft interlock
17	622477	2	SPACER, interlock detent
18	622466	1	SHAFT, shifting fork, upper
19	623553	1	SHAFT, shifting fork, intermediate upper
20	622470	1	SHAFT, shifting fork, intermediate lower
21	622472	1	SHAFT, shifting fork, lower
22	621790	1	FORK, upper shifting shaft
23	621802	2	CAPSCREW, drilled-hd., 1/2"NF x 1-1/2"
	023633	2	WIRE, locking, 1/16" x 12"
24	621791	1	FORK, intermediate upper shifting shaft
25	621802	2	CAPSCREW, drilled-hd., 1/2"NF x 1-1/2"
	023633	2	WIRE, locking, 1/16" x 12"
26	621788	1	FORK, intermediate lower shifting shaft
27	060833	1	CAPSCREW, drilled-hd., 1/2"NF x 1-1/4"
	023633	1	WIRE, locking, 1/16" x 12"
28	621789	1	FORK, lower shifting shaft
29	621802	2	CAPSCREW, drilled-hd., 1/2"NF x 1-1/2"
	023633	2	WIRE, locking, 1/16" x 12"

(Continued)

GEAR SHIFT FORKS AND LOCK (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
30	050267	1	WASHER, plunger sleeve (copper)
31	078402	1	WASHER, shifting lock plunger
32	620975	1	SLEEVE, shifting lock plunger
33	080166	1	BOOT, locking plunger
	916897	2	CLAMP, hose, 1" diam.
34	628466	1	PLUNGER, shifting lock
	916146	1	PIN, roll, 3/32" x 1/2"
35	627451	1	PIN, shifting lock plunger
	900801	1	PIN, cotter, 3/32" x 3/4"
36	628261	1	LINK, locking plunger
	911115	1	WASHER, plain, SAE std., 3/8"
	900801	1	PIN, cotter, 3/32" x 3/4"
37	628271	1	STUD, connecting, link to lever
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
38	628564	1	LEVER, plunger rod operating
	910255	1	WASHER, plain, SAE std., 3/4"
	910302	1	PIN, cotter, 5/32" x 1-1/4"
39	628734	1	BRACKET, rod operating lever
	903633	3	CAPSCREW, 3/8"NC x 1-1/4"
	904206	3	LOCKWASHER, 3/8"
40	628463	1	JOINT, ball and socket
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
41	628748	1	YOKE, joint adjusting (3/8"NF)
	911041	1	NUT, 3/8"NF
42	078810	1	PIN, joint adjusting yoke
	900801	1	PIN, cotter, 3/32" x 3/4"
43	-----	1	SHAFT, operating (See ENGINE CLUTCH CONTROL)

MEMO



GEAR SHIFT CONTROLS

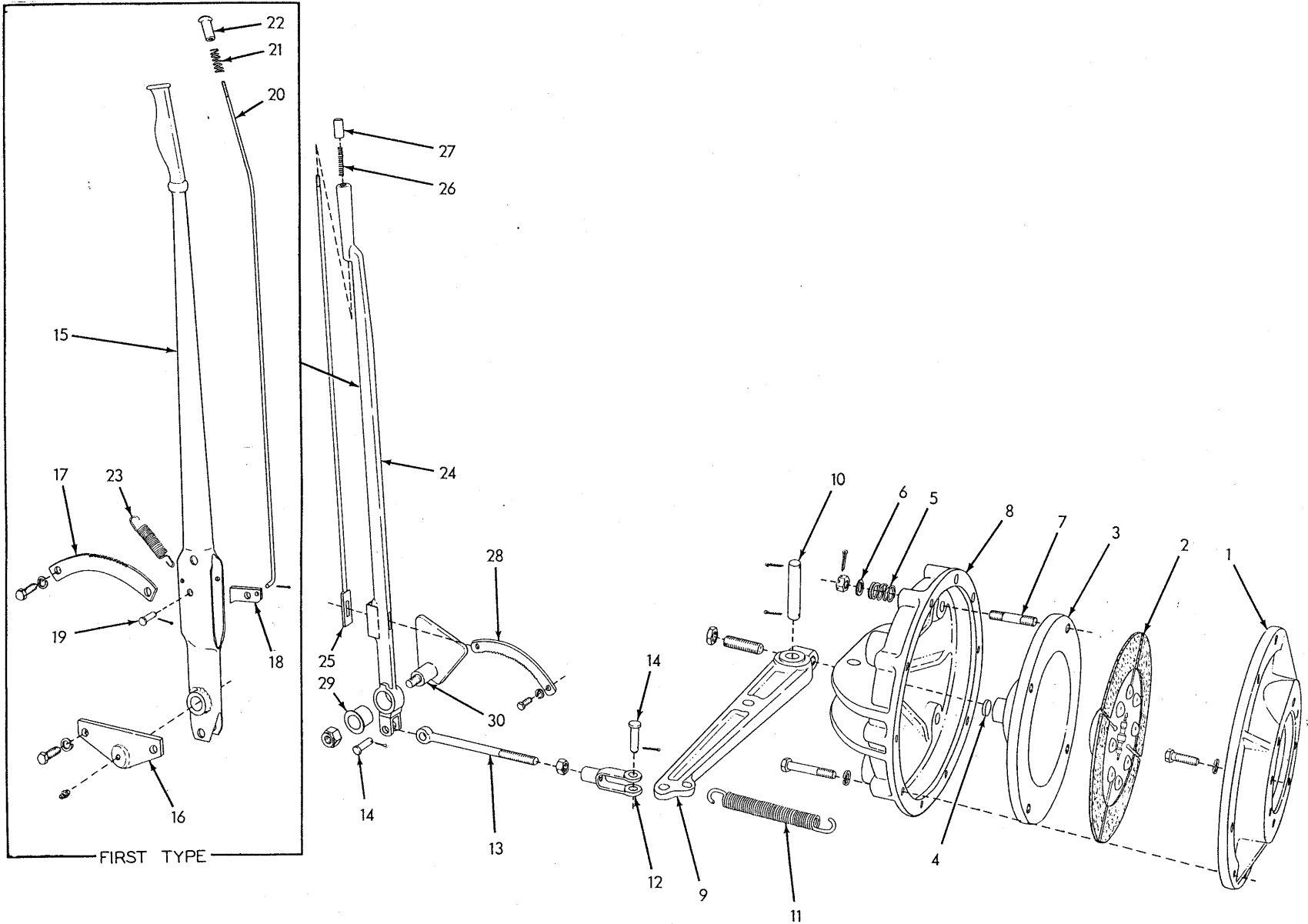
* Used prior to grader serial No. 1151.
 ** Effective with grader serial No. 1151.

ITEM	PART NUMBER	QTY.		DESCRIPTION
		*	**	
1	091862	2	2	KNOB, gear shift lever
2	074982	2	2	LEVER, extension, gear shift
	911849	2	2	CAPSCREW, 1/2"NF x 2"
	904208	2	2	LOCKWASHER, 1/2"
	911043	2	2	NUT, 1/2"NF
3	-----	1	-	LEVER, hi-lo and reverse speeds (Order 1 LEVER 080287, 1 PIN 080284, 1 PLATE 080286, 2 BEARINGS 604925 and 4 SEALS 053926)
	080287	-	1	LEVER, hi-lo and reverse speeds

(Continued)

GEAR SHIFT CONTROLS (Continued)

ITEM	PART NUMBER	QTY.	DESCRIPTION
		* **	
4	-----	1 -	LEVER, 1st, 2nd and 3rd speeds (Order 1 LEVER 080288, 1 PIN 080284, 1 PLATE 080286, 2 BEARINGS 604925 and 4 SEALS 053926)
	080288	- 1	LEVER, 1st, 2nd and 3rd speeds
5	075117	2 -	PIN, lever pivot
	080284	- 2	PIN, lever pivot
	900807	2 2	PIN, cotter, 1/8" x 1-1/4"
	910255	2 2	WASHER, plain, SAE std., 3/4"
	913472	2 2	NUT, jam, slotted, 3/4"NF
6	080286	2 2	PLATE, lever mounting
	900807	2 2	PIN, cotter, 1/8" x 1-1/4"
	910255	2 2	WASHER, plain, SAE std., 3/4"
	913472	2 2	NUT, jam, slotted, 3/4"NF
7	075122	2 -	CAPSCREW, mounting plate (1/2"NF x 2-3/4")
	900805	2 -	PIN, cotter, 1/8" x 3/4"
	910867	2 -	NUT, slotted, 1/2"NF
	910244	4 -	WASHER, plain, SAE std., 1/2"
	914132	- 2	CAPSCREW, 1/2"NF x 2-3/4"
	904208	- 2	LOCKWASHER, 1/2"
	911043	- 2	NUT, 1/2"NF
8	604925	- 4	BEARING, needle
9	053926	- 8	SEAL, dust



TRANSMISSION BRAKE

TRANSMISSION BRAKE

* Used prior to grader serial No. 1133.

** Effective with grader serial No. 1133.

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	074918	1	1	PLATE, pressure, inner (Used prior to grader # 1548. See TRANSMISSION BOTTOM SHAFT for super- seding part used on later units)
	903638	8	8	CAPSCREW, 1/2"NC x 1-1/4"
	904208	8	8	LOCKWASHER, 1/2"
2	604881	1	1	DISC ASSEMBLY, brake (1 hub, 1 disc, 8 rivets. Separate parts are not serviced)
3	604215	1	1	PLATE, pressure, outer
4	604880	1	1	INSERT, wear, outer pressure plate
5	604878	4	4	SPRING, retracting, outer pressure plate
6	604879	4	4	WASHER, retracting spring
7	604877	4	4	STUD, retracting, outer pressure plate (5/8"NC x 5/8"NF x 2-7/8")
	912840	4	4	NUT, slotted, 5/8"NF
	900806	4	4	PIN, cotter, 1/8" x 1"
8	053698	1	1	COVER
	903642	10	10	CAPSCREW, 1/2"NC x 2-1/2"
	904208	10	10	LOCKWASHER, 1/2"
9	604885	1	1	LEVER, actuating
	913468	1	1	SETSCREW, slotted-hd., oval-pt., 3/4"NF x 2-1/2"
	910847	1	1	NUT, jam, 3/4"NF
10	604887	1	1	PIN, actuating lever
	911440	2	2	PIN, cotter, 3/16" x 1-1/8"
11	604757	1	1	SPRING, retracting, brake lever
12	068389	1	1	YOKE, brake rod
13	605801	1	1	ROD, brake
	911043	1	1	NUT, 1/2"NF
14	917648	2	2	PIN, yoke, 1/2" diam.
	910967	2	2	PIN, cotter, 1/8" x 7/8"
15	-----	1	-	LEVER, operating (Order items 24, 28, 29 and 30)
16	057742	1	-	PIVOT, operating lever
	914465	1	-	FITTING, lubricating, straight, 1/8"NPT
	903630	2	-	CAPSCREW, 3/8"NC x 1"
	904206	2	-	LOCKWASHER, 3/8"
17	604904	1	-	RATCHET, operating lever
	903630	2	-	CAPSCREW, 3/8"NC x 1"
	904206	2	-	LOCKWASHER, 3/8"
18	604895	1	-	PAWL, operating lever

(Continued)

TRANSMISSION BRAKE (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
19	082875	1	-	PIN, pawl
	900942	1	-	PIN, cotter, 3/32" x 5/8"
20	604896	1	-	ROD, lever pawl
	900970	1	-	PIN, cotter, 1/16" x 1/2"
21	604835	1	-	SPRING, pawl rod
22	604898	1	-	BUTTON, pawl rod
23	605603	1	-	SPRING, retracting, operating lever
24	094761	-	1	LEVER ASSEMBLY, operating (Includes items 25, 26, 27)
25	094758	-	1	ROD, pawl, operating lever
26	094760	-	1	SPRING, pawl rod
27	094759	-	1	BUTTON, pawl rod
28	094762	-	1	RATCHET, operating lever
	913014	-	2	CAPSCREW, 3/8"NF x 1-1/8"
	904206	-	2	LOCKWASHER, 3/8"
29	094757	-	1	BUSHING, pivot, operating lever
	915256	-	1	NUT, elastic stop, 5/8"NC
30	094763	-	1	STUD PLATE (Welded to frame)

TANDEMS

* Used prior to grader serial No. 1780

** Effective with grader serial No. 1780

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	604470	2	2	CASE, tandem
	912768	2	2	PLUG, pipe, 1"NPT (oil filling hole)
	901652	2	2	PLUG, pipe, 1/4"NPT (oil level checking)
	912725	2	2	PLUG, pipe, 1/2"NPT (oil drain)
	903627	4	4	CAPSCREW, 3/8"NC x 1/2" (for plugging holes)
2	604481	6	6	COVER, case access holes
3	035439	24	24	CAPSCREW, 3/8"NC x 1"
	904206	24	24	LOCKWASHER, 3/8"
4	604482	6	6	GASKET, case cover
5	604489	2	2	HUB, tandem case
	914465	2	2	FITTING, lubricating, straight, 1/8"NPT
6	035061	22	22	CAPSCREW, 1/2"NC x 1-1/4"
	904208	22	22	LOCKWASHER, 1/2"
7	064129	2	2	ADAPTER, air vent
	904208	2	2	LOCKWASHER, 1/2"
8	605132	2	2	VENT, air, tandem case
9	604487	2	2	SEAL, case hub

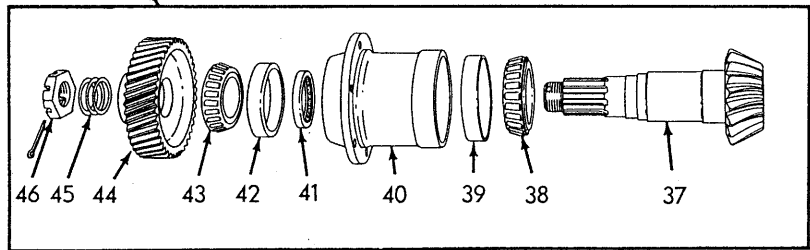
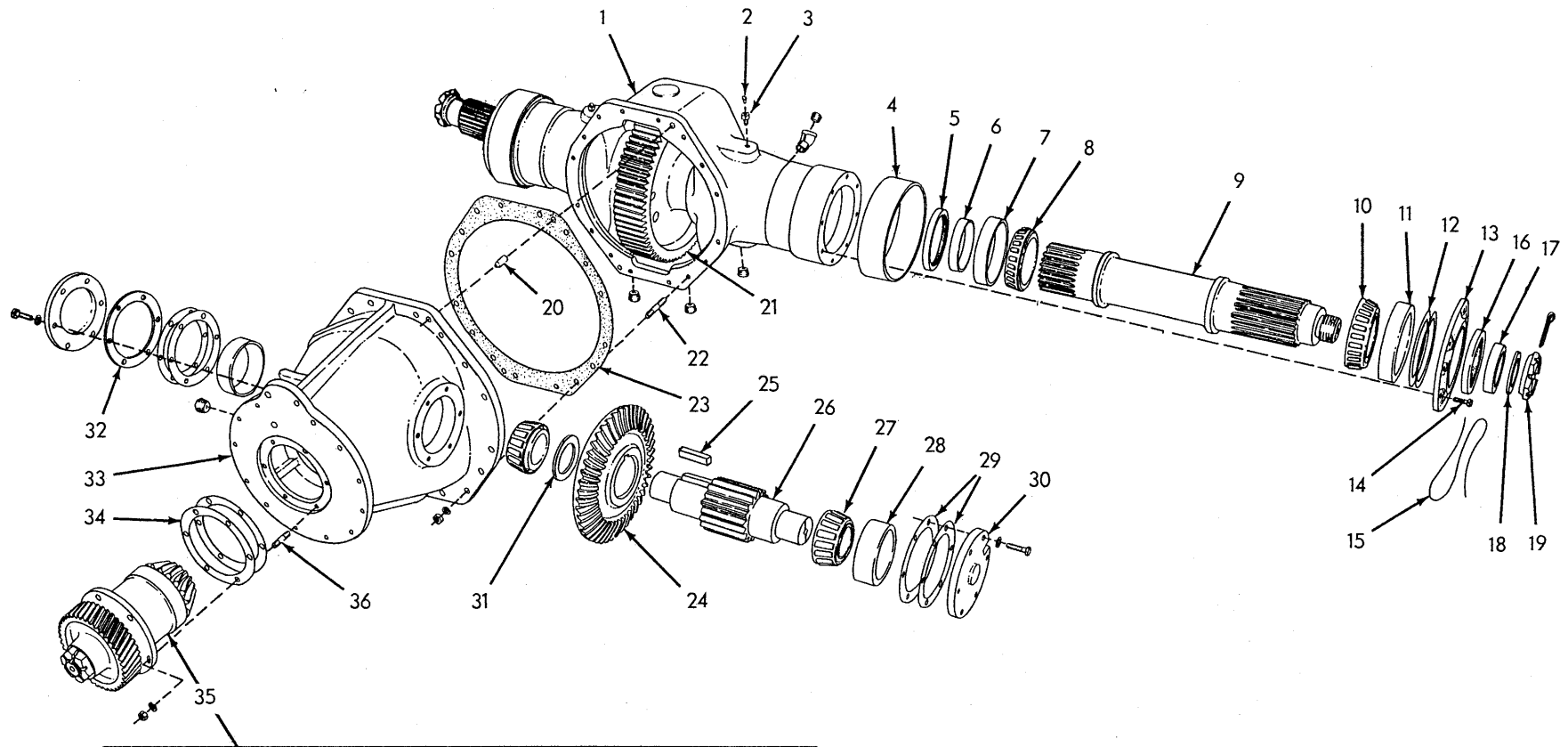
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TANDEM S (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
10	091382	8	8	SEGMENT, retaining, case hub seal
11	905661	20	20	CAPSCREW, 5/16"NC x 5/8"
	904205	20	20	LOCKWASHER, 5/16"
	910335	4	4	WASHER, plain, SAE std., 5/16"
12	083566	4	-	SPROCKET, driving (15 teeth)
	096636	-	4	SPROCKET, driving (13 teeth)
13	604483	4	-	CHAIN, driving (45 links)(Includes items 14 thru 16)
	064034	-	4	CHAIN, driving (44 links)(Includes items 14 and 15)
14	605578	-	-	LINK, roller, driving chain
15	605508	-	-	LINK, connecting, driving chain (Includes side bar and cotter pins)
16	605507	4	4	LINK, offset, driving chain (Includes connecting pin and cotter pin)
17	604486	4	4	STOP, tandem
18	035190	40	40	CAPSCREW, 1/2"NC x 1-1/2"
	904208	40	40	LOCKWASHER, 1/2"
19	639679	4	4	SHIM, adjusting, wheel shaft bearings (.003" thick)
	064763	4	4	SHIM, adjusting, wheel shaft bearings (.005" thick)
	604477	36	36	SHIM, adjusting, wheel shaft bearings (.010" thick)
20	604480	4	4	ECCENTRIC, tandem wheel shaft, inner
21	035061	40	40	CAPSCREW, 1/2"NC x 1-1/4"
	904208	40	40	LOCKWASHER, 1/2"
22	633870	4	4	BEARING, roller, tandem wheel shafts, inner (Each consists of 1 cut and 1 roller assembly. Serviced only as a unit)
23	066990	2	2	SPROCKET AND SHAFT, rear wheel
24	051141	4	4	RETAINER, bearing compartment sealing ring
25	238070	4	4	O-RING, bearing compartment
26	633872	4	4	BEARING, roller, tandem wheel shafts, outer (Each consists of 1 cup and 1 roller assembly. Serviced only as a unit)
27	066860	4	4	SEAL, oil, wheel shaft
28	099375	4	4	ECCENTRIC, tandem wheel shaft, outer
29	914465	4	4	FITTING, lubricating, straight, 1/8"NPT
	035061	40	40	CAPSCREW, 1/2"NC x 1-1/4"
	904208	40	40	LOCKWASHER, 1/2"
30	066988	2	2	SPROCKET AND SHAFT, front wheel
31	099747	2	2	CAP, rear axle bearing
	914465	2	2	FITTING, lubricating, straight, 1/8"NPT
32	035061	12	12	CAPSCREW, 1/2"NC x 1-1/4"
	904208	12	12	LOCKWASHER, 1/2"
33	-----	2	2	NUT (See REAR AXLE)
34	081188	2	2	BEARING, roller, rear axle
35	096638	-	2	SPACER, rear axle bearing
36	081187	2	-	CASE, rear axle bearing
	096640	-	2	CASE, rear axle bearing
37	035061	24	24	CAPSCREW, 1/2"NC x 1-1/4"
	904208	24	24	LOCKWASHER, 1/2"

Use as req'd

MEMO



REAR AXLE

REAR AXLE

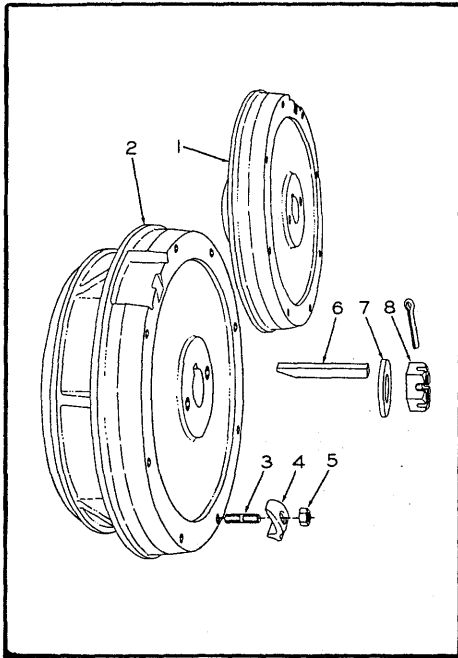
* Used prior to grader serial No. 1712
 ** Effective with grader serial No. 1712

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	605083	1	-	HOUSING ASSEMBLY (Includes item 4)
	095579	-	1	HOUSING ASSEMBLY (Includes item 4)
	911076	3	3	ELBOW, street, 45 ^o , 1"NPT
	901666	6	6	PLUG, pipe, ctsk-hd., 1"NPT
2	605132	3	3	VENT, air
3	605917	2	2	ADAPTER, air vent
4	605053	2	2	BUSHING, housing
5	604974	2	-	SEAL, oil, inner (6-5/8" O.D.)
	095580	-	2	SEAL, oil, inner (6-1/4" O.D.)
6	604972	2	-	SPACER, inner bearing (3-7/8" bore)
	078884	-	2	SPACER, inner bearing (4-1/2" bore)
7	605338	2	-	CUP, inner bearing (6-5/8" O.D.)
	069614	-	2	CUP, inner bearing (7" O.D.)
8	605339	2	-	CONE ASSEMBLY, inner bearing (3-7/8" bore)
	069615	-	2	CONE ASSEMBLY, inner bearing (4-1/2" bore)
9	090213	2	-	AXLE, rear (10 gear - splines)
	099194	-	2	AXLE, rear (27 gear - splines)
10	605337	2	2	CONE ASSEMBLY, outer bearing
11	605336	2	2	CUP, outer bearing
12	604969	2	2	SHIM, adjusting, outer bearings (.005" thick)(Use as req'd)
	077337	10	10	SHIM, adjusting, outer bearings (.010" thick)(Use as req'd)
13	078785	2	2	COVER, outer bearing
14	604963	16	16	CAPSCREW, bearing cover, drilled-hd., 1/2"NC x 1-3/8"
15	052519	2	2	WIRE, locking, 1/16" x 39"
16	078593	2	2	SEAL, oil, outer
17	078884	2	2	SPACER, outer bearing
18	078895	2	2	WASHER, nut
19	604968	2	2	NUT (hex, slotted, 2-1/2"NF)
	911690	2	2	PIN, cotter, 1/4" x 3-1/4"
20	910179	2	2	PIN, dowel, cross shaft housing (5/8" x 1-1/2")
21	060994	1	-	GEAR (10 splines)
	095581	-	1	GEAR (27 splines)

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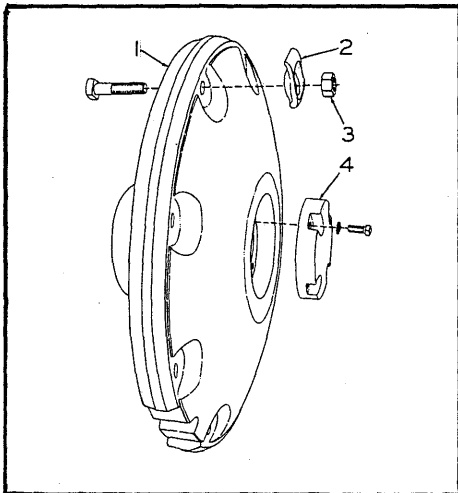
REAR AXLE (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
22	605416	16	16	STUD, cross shaft housing (5/8" diam.)
	904209	16	16	LOCKWASHER, 5/8"
	911029	16	16	NUT, 5/8"NC
23	605106	2	2	GASKET, cross shaft housing (Use as req'd)
24	057809	1	1	GEAR, bevel, cross shaft (45 teeth)
25	604982	1	1	KEY, cross shaft bevel gear (1/2" x 3/4" x 2-11/16")
26	057956	1	1	SHAFT AND PINION, cross (17 teeth)
27	605335	2	2	CONE ASSEMBLY, cross shaft bearing
28	605334	2	2	CUP, cross shaft bearing
29	605085	16	16	SHIM, adjusting, cross shaft bearings (.005" thick. Use as req'd)
	065042	4	4	SHIM, adjusting, cross shaft bearings (.015" thick. Use as req'd)
30	066751	2	2	COVER, cross shaft bearing (Also see page 309 for special cover used when ODOMETER is installed)
	904541	6	6	CAPSCREW, 1/2"NC x 1-3/4" (left side)
	903640	6	6	CAPSCREW, 1/2"NC x 2" (right side)
	904208	12	12	LOCKWASHER, 1/2"
31	066673	1	1	WASHER, cross shaft bevel gear
32	066674	1	1	WASHER, spacing, cross shaft bearing cover
33	604977	1	1	HOUSING, cross shaft
	901666	1	1	PLUG, pipe, ctsk-hd., 1"NPT
34	200078	4	4	SHIM, adjusting, bevel pinion mesh (.005" thick. Use as req'd)
	200314	3	3	SHIM, adjusting, bevel pinion mesh (.015" thick. Use as req'd)
35	057812	1	-	PINION AND SHAFT ASSEMBLY (Consists of items 37 thru 46) (Used prior to grader #785, excluding #779)
	091444	1	1	PINION AND SHAFT ASSEMBLY (Consists of items 37 thru 46) (Effective with grader #785, including #779)
36	061842	6	6	STUD
	904208	6	6	LOCKWASHER, 1/2"
	911043	6	6	NUT, 1/2"NF
37	633715	1	1	PINION AND SHAFT (18 teeth)
38	065870	1	1	CONE ASSEMBLY, bevel pinion shaft rear bearing
39	061086	1	1	CUP, bevel pinion shaft rear bearing
40	065540	1	1	CARRIER ASSEMBLY, bevel pinion and shaft (Includes items 39 and 42)
41	638607	1	1	SEAL, oil, bevel pinion shaft
42	061090	1	1	CUP, bevel pinion shaft front bearing
43	061089	1	1	CONE ASSEMBLY, bevel pinion shaft front bearing
44	064405	1	-	GEAR, bevel pinion shaft (36 straight teeth)(Used prior to grader #785, excluding #779)
	080500	1	1	GEAR, bevel pinion shaft (41 helical teeth)(Effective with grader #785, including #779)
45	605494	8	8	SHIM, adjusting, pinion shaft bearings (.002" thick. Use as req'd)
	605493	6	6	SHIM, adjusting, pinion shaft bearings (.005" thick. Use as req'd)
	605492	5	5	SHIM, adjusting, pinion shaft bearings (.020" thick. Use as req'd)
46	605477	1	1	NUT, bevel pinion shaft (hex, slotted)
	901345	1	1	PIN, cotter, 1/4" x 2-1/2"



REAR WHEELS

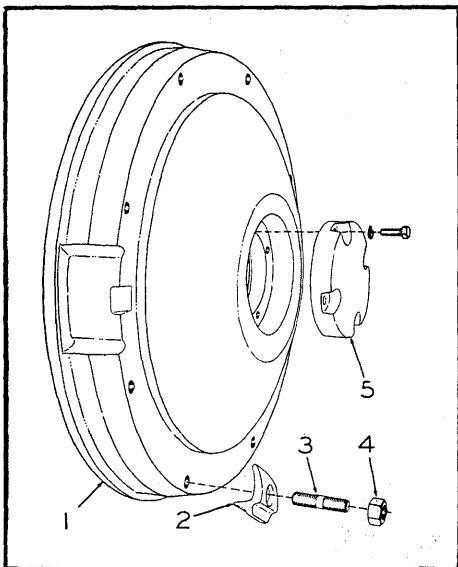
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	066984	2	WHEEL, tandem, front
2	066985	2	WHEEL, tandem, rear (4 used on graders equipped with 4-wheel brakes)
3	603488	32	STUD, rim clamp (5/8" diam.)
4	603489	32	CLAMP, wheel rim
5	601405	32	NUT, rim clamp (5/8"NC)
6	066986	4	KEY, tandem wheels
7	605918	4	WASHER, wheel retaining
8	060670	4	NUT, wheel retaining (1-3/4"NF)
	911446	4	PIN, cotter, 3/8" x 2-3/4"



FRONT WHEELS

USAGE: Standard Equipment. For 9.00 tires.

1	065414	2	WHEEL, front
2	604361	16	CLAMP, front wheel rim
	912181	16	BOLT, machine, 5/8"NC x 2-3/4"
3	601405	16	NUT, rim clamp (5/8"NC)
4	604226	2	CAP, front wheel hub
	903630	8	CAPSCREW, 3/8"NC x 1"
	904206	8	LOCKWASHER, 3/8"



FRONT WHEELS

USAGE: Special Equipment. For 11.00, 13.00 or 14.00 Tires.

1	056069	2	WHEEL, front
2	603489	16	CLAMP, front wheel rim
3	603488	16	STUD, rim clamp (5/8" diam.)
4	601405	16	NUT, rim clamp (5/8"NC)
5	604226	2	CAP, front wheel hub
	903630	8	CAPSCREW, 3/8"NC x 1"
	904206	8	LOCKWASHER, 3/8"

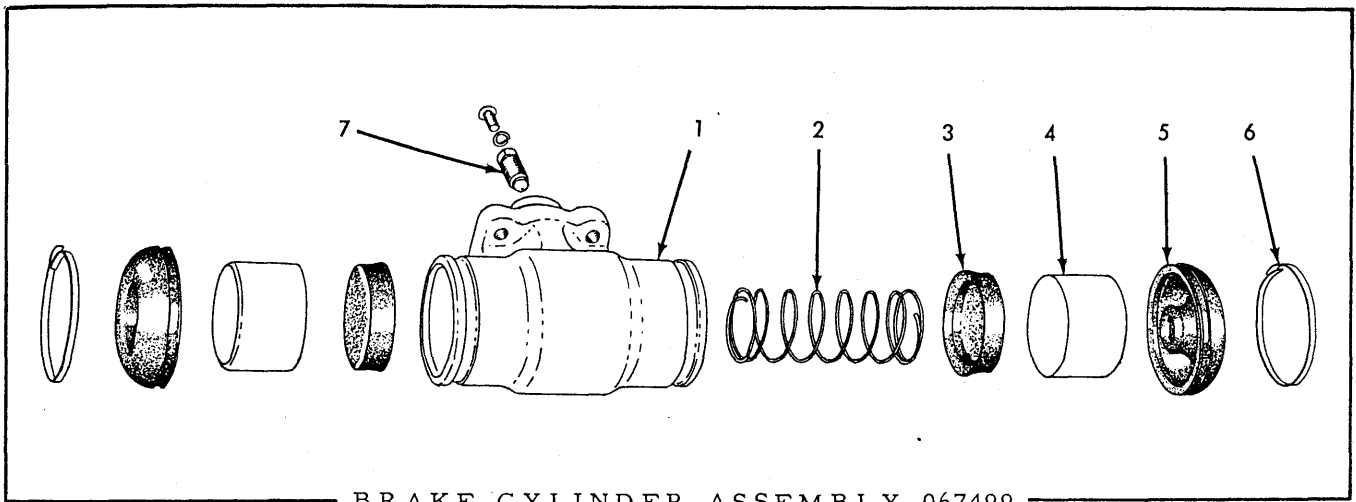
TIRES, TUBES AND RIMS
(Not Illustrated)

* Tube type. Used prior to February 15, 1961
** Tubeless. Effective February 15, 1961

ITEM	PART NO.	QTY. * **	DESCRIPTION
<u>NOTE:</u> Order from local Tire Dealer. Tire equipment listed below is optional			
<u>For Rear Wheels</u>			
1	{	----- 4	- RIM, pneumatic tire, semi-drop-center, 24 x 8 (Goodyear No. 154D or Firestone No. 88RTH-5 ^o -1)
		----- 4	4 RIM, pneumatic tire, demountable rim, 24 x 8 (Goodyear No. 8024TGD, Firestone No. 161T-5 ^o -1 or Firestone No. 88T-5 ^o)
2	{	----- 4	4 TIRE, pneumatic road grader, 13.00-24", 8 to 12 ply rating
		----- 4	4 TIRE, pneumatic road grader, 14.00-24", 8 to 12 ply rating
3	{	----- 4	- TUBE, pneumatic tire, 13.00-24", with TR-220 or TR-218 valve
		----- 4	- TUBE, pneumatic tire, 14.00-24", with TR-220 or TR-218 valve
4		----- -	4 VALVE, rim, TR-618

For Front Wheels

5	{	----- 2	- RIM, pneumatic tire, 24 x 6.50 (Goodyear No. 829 or Firestone No. 223R-5 ^o -1)(For 9.00 tire)
		----- 2	2 RIM ASSEMBLY, pneumatic tire, 24 x 6.50 (Goodyear No. 6524 JMD) (For 9.00 tire)
		----- 2	- RIM, pneumatic tire, semi-drop-center 24 x 8 (Goodyear No. 154D or Firestone No. 88RTH-5 ^o -1)(Used with 13.00 and 14.00 tube-type tires)
		----- 2	2 RIM, pneumatic tire, demountable rim, 24 x 8 (Goodyear No. 8024 TGD, Firestone No. 161T-5 ^o -1 or Firestone No. 88T-5 ^o)
6	{	----- 2	2 TIRE, pneumatic road grader, ribbed tread, 9.00-24", 10 ply rating
		----- 2	2 TIRE, pneumatic road grader, 13.00-24", 8 to 12 ply rating
		----- 2	2 TIRE, pneumatic road grader, 14.00-24", 8 to 12 ply rating
7	{	----- 2	- TUBE, pneumatic tire, 9.00-24", with TR-76A valve
		----- 2	- TUBE, pneumatic tire, 13.00-24", with TR-220 or TR-218 valve
		----- 2	- TUBE, pneumatic tire, 14.00-24", with TR-220 or TR-218 valve
8	{	----- -	2 VALVE, rim, TR-534 (For 9.00 tires only)
		----- -	2 VALVE, rim, TR-618 (For 13.00 and 14.00 tires)



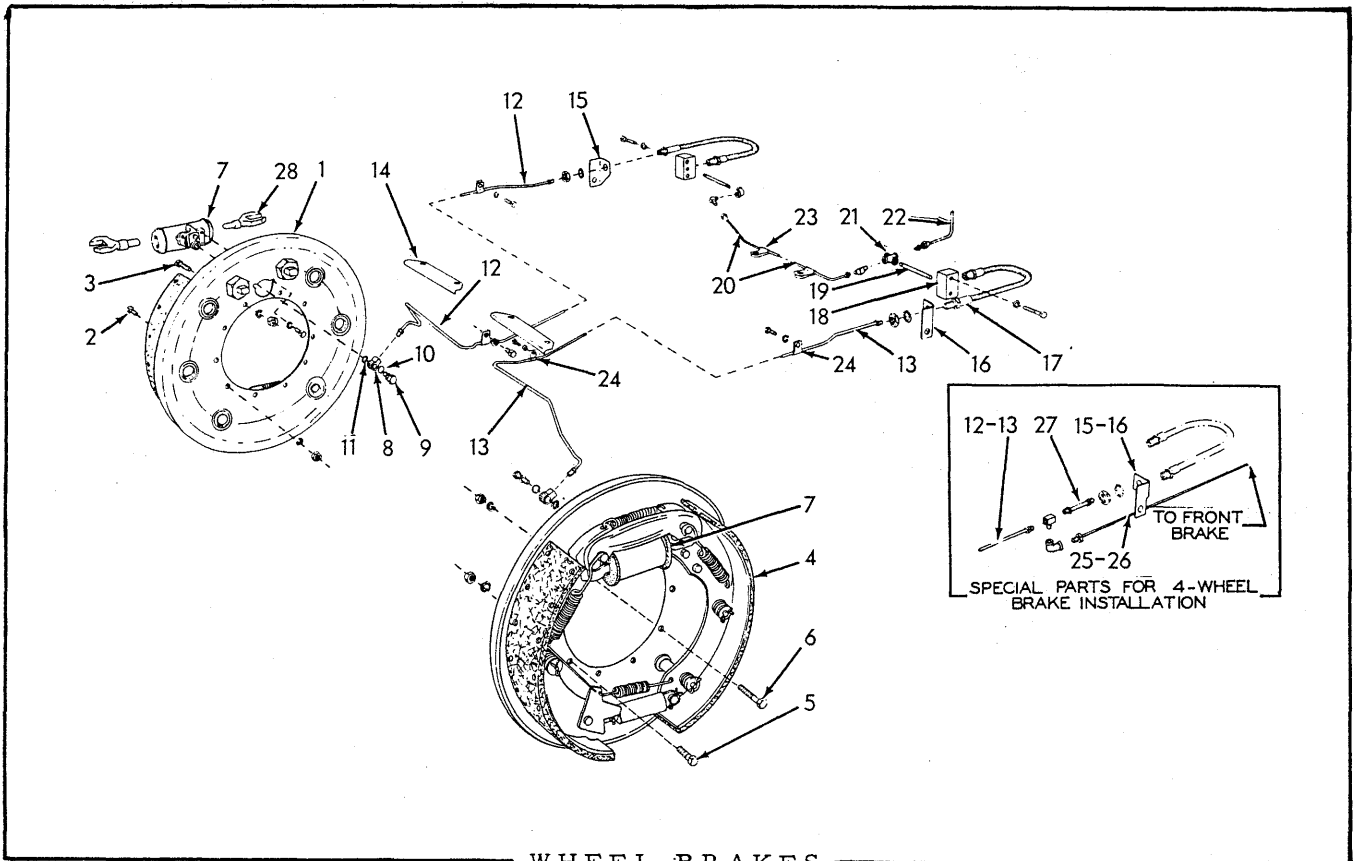
BRAKE CYLINDER ASSEMBLY 067499

USAGE: See page 166

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one (1) unit only

1	-----	1	CASTING, cylinder (Not serviced separately)
2	067505	1	SPRING, return
3	067504	2	CUP, piston
4	067503	2	PISTON
5	067502	2	BOOT
6	067501	2	STRAP, boot retaining
7	059232	1	SCREW, bleeder
	903753	1	SCREW, machine, rd-hd., #10-32NF x 1/4"
	904203	1	LOCKWASHER, #10



WHEEL BRAKES

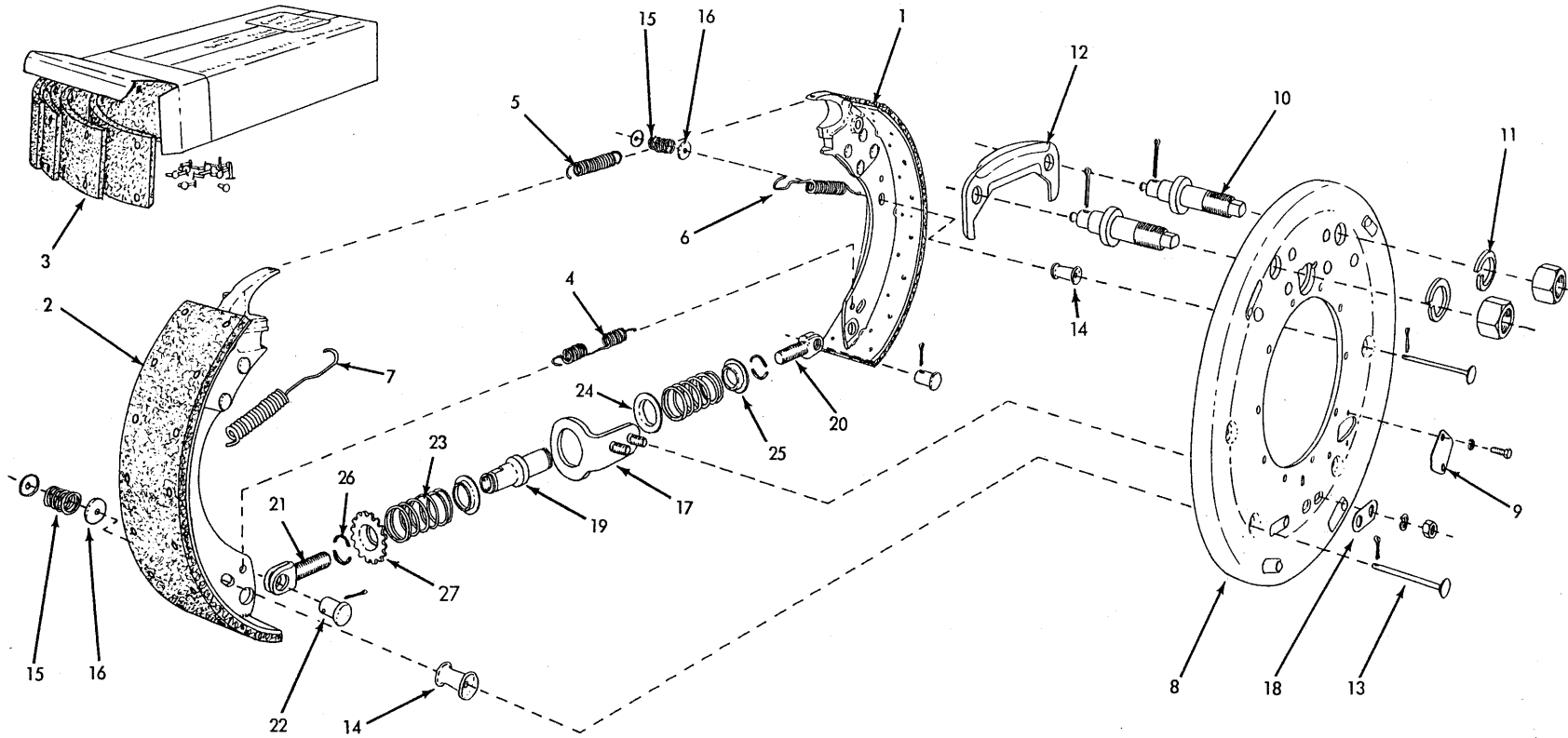
* Graders with standard 2-wheel brakes
 ** Graders with special 4-wheel brakes

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	066961	1	2	BRAKE ASSEMBLY, left wheel (See page 169 for parts)(Used prior to grader #1935, excluding #1908. Order BRAKE ASSEMBLY 639745)
	639745	1	2	BRAKE ASSEMBLY, left wheel (See page 171 for parts)(Effective with grader #1935, including #1908)
2	040013	6	12	CAPSCREW, 7/16"NC x 1-3/4"
3	047558	4	8	CAPSCREW, 7/16"NC x 2-1/4"
	904207	10	20	LOCKWASHER, 7/16"
	911027	10	20	NUT, 7/16"NC
4	066962	1	2	BRAKE ASSEMBLY, right wheel (See page 169 for parts)(Used prior to grader #1935, excluding #1908. Order BRAKE ASSEMBLY 639746)
	639746	1	2	BRAKE ASSEMBLY, right wheel (See page 171 for parts)(Effective with grader #1935, including #1908)
5	040013	6	12	CAPSCREW, 7/16"NC x 1-3/4"
6	047558	4	8	CAPSCREW, 7/16"NC x 2-1/4"
	904207	10	20	LOCKWASHER, 7/16"
	911027	10	20	NUT, 7/16"NC
7	067499	2	4	CYLINDER ASSEMBLY, brake operating (See page 165 for parts)
	903626	4	8	CAPSCREW, 5/16"NC x 3/4"
	904205	4	8	LOCKWASHER, 5/16"

(Continued)

WHEEL BRAKES (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
8	605453	2	4	FITTING, brake cylinder connection
9	605452	2	4	BOLT
10	605451	2	4	GASKET, attaching
11	605450	2	4	GASKET, brake cylinder fitting
12	066965	1	-	TUBE ASSEMBLY, left rear brake (Includes 2 nuts)
	077883	-	1	TUBE ASSEMBLY, left rear brake (Includes 2 nuts)
13	066966	1	-	TUBE ASSEMBLY, right rear brake (Includes 2 nuts)
	077884	-	1	TUBE ASSEMBLY, right rear brake (Includes 2 nuts)
14	604769	2	4	SHIELD, brake tubes
15	066979	1	-	BRACKET, hose supporting, left
	068485	-	1	BRACKET, hose supporting, left
16	066980	1	-	BRACKET, hose supporting, right
	068486	-	1	BRACKET, hose supporting, right
17	600675	2	2	HOSE (17-1/4" long)
	910543	2	2	LOCKWASHER, external teeth, 5/8"
	911049	2	2	NUT, jam, 5/8"NF
18	604765	2	2	BLOCK, hose connecting
	903633	4	4	CAPSCREW, 3/8"NC x 1-3/4"
	904206	4	4	LOCKWASHER, 3/8"
19	062035	2	2	NIPPLE, hose connecting (pipe, 1/4"NPT x 3-3/4")
20	066970	1	1	TUBE ASSEMBLY, master cylinder tube to left brake (Includes 2 nuts)
	910161	2	2	ELBOW, flare type, 1/4" tube, 1/8"NPT male
	901676	1	1	ELBOW, pipe, 90°, 1/8"NPT
21	914630	1	1	CROSS, pipe, 1/8"NPT (Also accommodates stop light switch)
22	-----	-	-	TUBE ASSEMBLY (See BRAKE CONTROL)
23	044044	2	4	CLIP, brake tubes (1/4" diam., 17/32" bolt-hole)
24	235794	4	8	CLIP, brake tubes
	903628	4	8	CAPSCREW, 3/8"NC x 5/8"
	904206	4	8	LOCKWASHER, 3/8"
25	068483	-	1	TUBE ASSEMBLY, left front brake (Includes 2 nuts)
26	068484	-	1	TUBE ASSEMBLY, right front brake (Includes 2 nuts)
27	068479	-	2	TUBE ASSEMBLY, rear brake connecting (Each includes 2 NUTS 913536)
	913536	-	4	NUT, inverted flare, 1/4" tube
	915841	-	2	TEE, inverted flare, 1/4" tube, 1/8"NPT male
	915842	-	2	ELBOW, inverted flare, 1/4" tube, 1/8"NPT female
28	067405	4	8	LINK, wheel cylinder

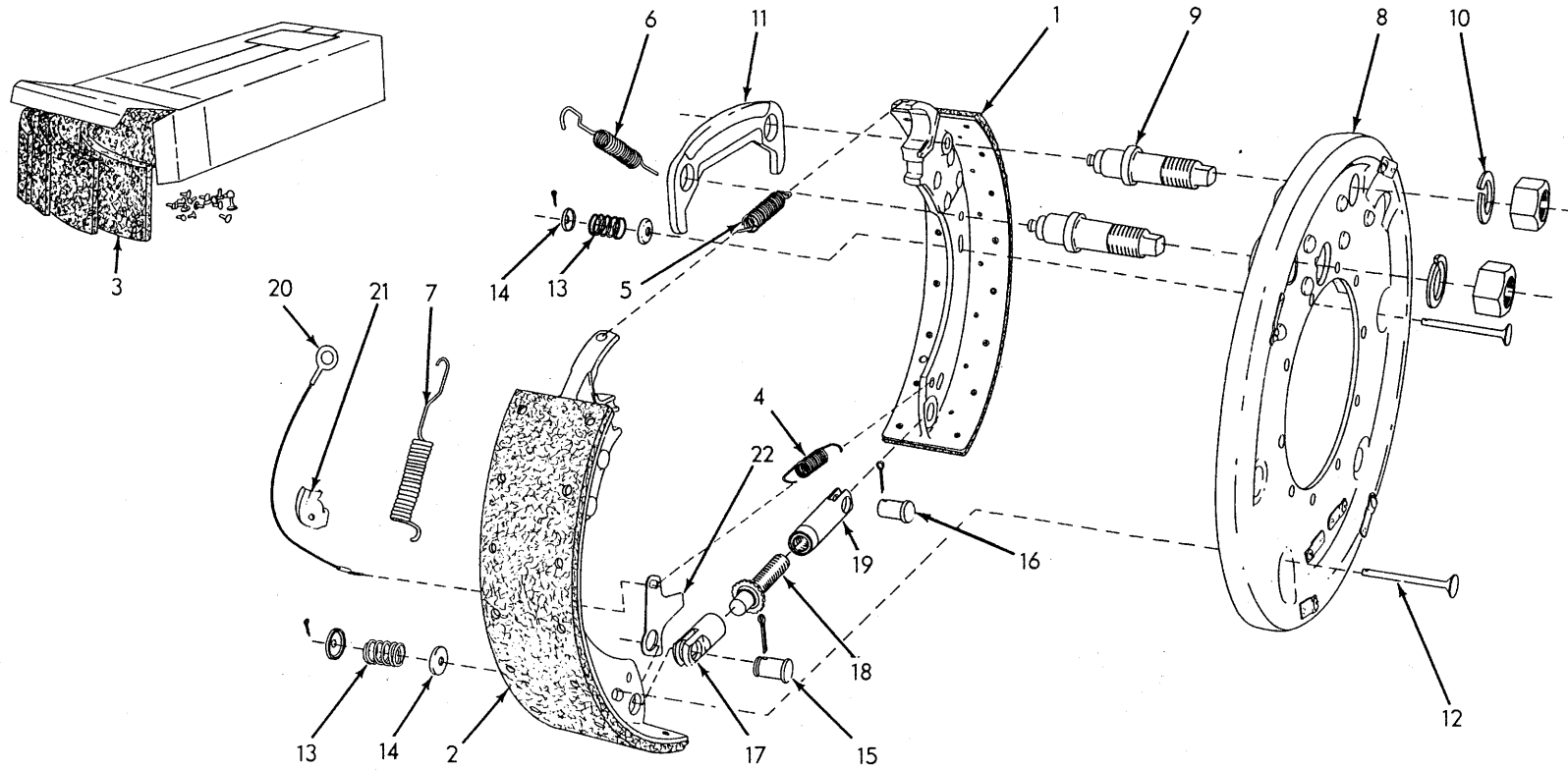


WHEEL BRAKE PARTS (First type)

WHEEL BRAKE PARTS

* 066961 BRAKE ASSEMBLY, left wheel
 ** 066962 BRAKE ASSEMBLY, right wheel } See page 166

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	629031	1	-	SHOE ASSEMBLY, front (Includes LINING)
	629032	-	1	SHOE ASSEMBLY, front (Includes LINING)
2	629032	1	-	SHOE ASSEMBLY, rear (Includes LINING)
	629031	-	1	SHOE ASSEMBLY, rear (Includes LINING)
3	629054	1	1	LINING KIT (Consists of 4 linings and 70 rivets. Complete set for two wheels)
4	067419	1	1	SPRING, shoe retracting, lower
5	067404	1	1	SPRING, shoe retracting, upper
6	067396	1	1	SPRING, retracting, front shoe
7	067416	1	1	SPRING, retracting, rear shoe
8	067399	1	-	PLATE ASSEMBLY, back, left brake (Includes riveted bracket and inspection covers. Serviced only as a unit)
	067400	-	1	PLATE ASSEMBLY, back, right brake (Includes riveted bracket and inspection covers. Serviced only as a unit)
9	067394	1	1	PLATE, inspection
	910167	2	2	CAPSCREW, 5/16"NF x 3/4"
	904205	2	2	LOCKWASHER, 5/16"
10	067401	2	2	PIN, upper shoe adjustment
11	031558	2	2	LOCKWASHER
	913469	2	2	NUT, 1-1/8"NF
12	067403	1	1	PLATE, guide
	900811	2	2	PIN, cotter, 3/16" x 1-1/2"
13	067421	4	4	PIN, shoe retaining
	913115	4	4	PIN, cotter, 5/32" x 3/4"
14	067420	4	4	SPACER, shoe retaining pin
15	067422	4	4	SPRING, shoe retaining pin
16	067395	8	8	CUP, shoe retaining pin spring
17	067406	1	1	BRACKET, centralizing
18	059019	1	1	PLATE, washer
	904208	2	2	LOCKWASHER, 1/2"
	911043	2	2	NUT, 1/2"NF
19	067413	1	1	NUT, shoe adjustment
20	067409	1	1	SCREW, front shoe adjustment (left hand thread)
21	067410	1	1	SCREW, rear shoe adjustment (right hand thread)
22	067408	2	2	PIN, shoe pivot
	910302	2	2	PIN, cotter, 5/32" x 1-1/4"
23	067411	2	2	SPRING, shoe adjustment
24	067412	2	2	RETAINER, shoe adjustment spring, inner
25	067414	1	1	RETAINER, shoe adjustment spring, outer
26	067407	4	4	LOCK, shoe adjustment nut (half only)
27	067415	1	1	WHEEL, shoe adjustment

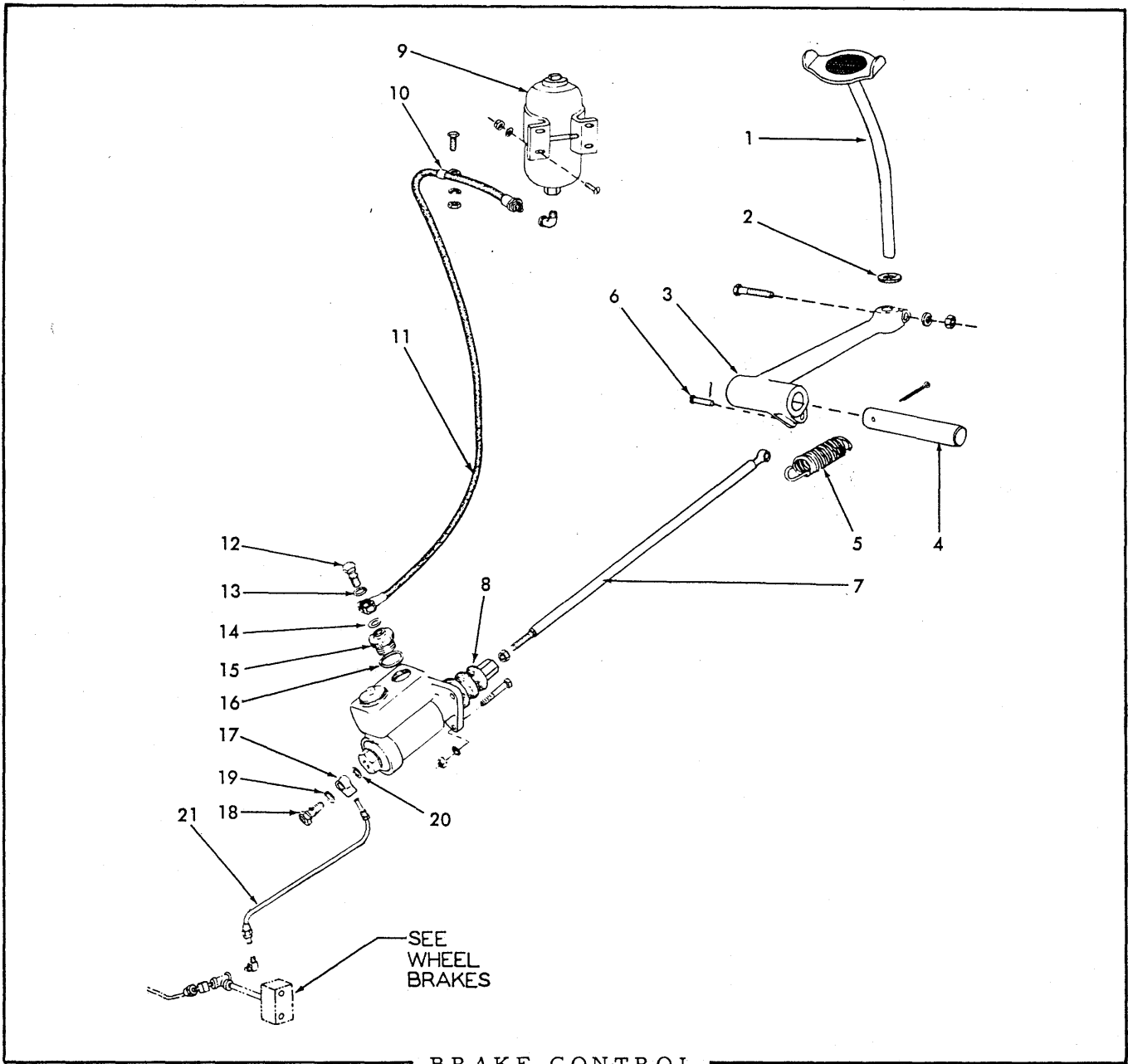


WHEEL BRAKE PARTS (Second type)

WHEEL BRAKE PARTS

* 639745 BRAKE ASSEMBLY, left wheel } See page 166
 ** 639746 BRAKE ASSEMBLY, right wheel }

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	629031	1	-	SHOE ASSEMBLY, front (Includes LINING)
	629032	-	1	SHOE ASSEMBLY, front (Includes LINING)
2	629032	1	-	SHOE ASSEMBLY, rear (Includes LINING)
	629031	-	1	SHOE ASSEMBLY, rear (Includes LINING)
3	629054	1	1	LINING KIT (Consists of 4 linings and 70 rivets. For two (2) wheels)
4	629025	1	1	SPRING, shoe retracting, lower
5	067404	1	1	SPRING, shoe retracting, upper
6	067396	1	1	SPRING, retracting, left shoe
7	067416	1	1	SPRING, retracting, right shoe
8	629019	1	1	PLATE ASSEMBLY, back (Includes riveted bracket and inspection covers. Serviced only as a unit)
9	629020	2	2	PIN, anchor
10	031558	2	2	LOCKWASHER
	913469	2	2	NUT, 1-1/8"NF
11	067403	1	1	PLATE, guide
12	067421	4	4	PIN, shoe retaining
	913115	4	4	PIN, cotter, 5/32" x 3/4"
13	067422	4	4	SPRING, shoe retaining pin
14	067395	8	8	CUP, shoe retaining pin spring
15	629027	1	1	PIN, pivot, socket adjustment
	910302	1	1	PIN, cotter, 5/32" x 1-1/4"
16	067408	1	1	PIN, pivot, nut adjustment
	910302	1	1	PIN, cotter, 5/32" x 1-1/4"
17	629026	1	1	SOCKET, shoe adjustment screw
18	630511	1	-	SCREW, shoe adjustment (right hand thread)
	630512	-	1	SCREW, shoe adjustment (left hand thread)
19	630523	1	-	NUT, pivot, shoe adjustment (right hand thread)
	630524	-	1	NUT, pivot, shoe adjustment (left hand thread)
20	629029	1	1	CABLE ASSEMBLY, shoe adjustment (Includes terminals)
21	629022	1	1	GUIDE, shoe adjustment cable
22	629028	1	1	LEVER, shoe adjustment



USAGE: Graders prior to serial No. 1361.

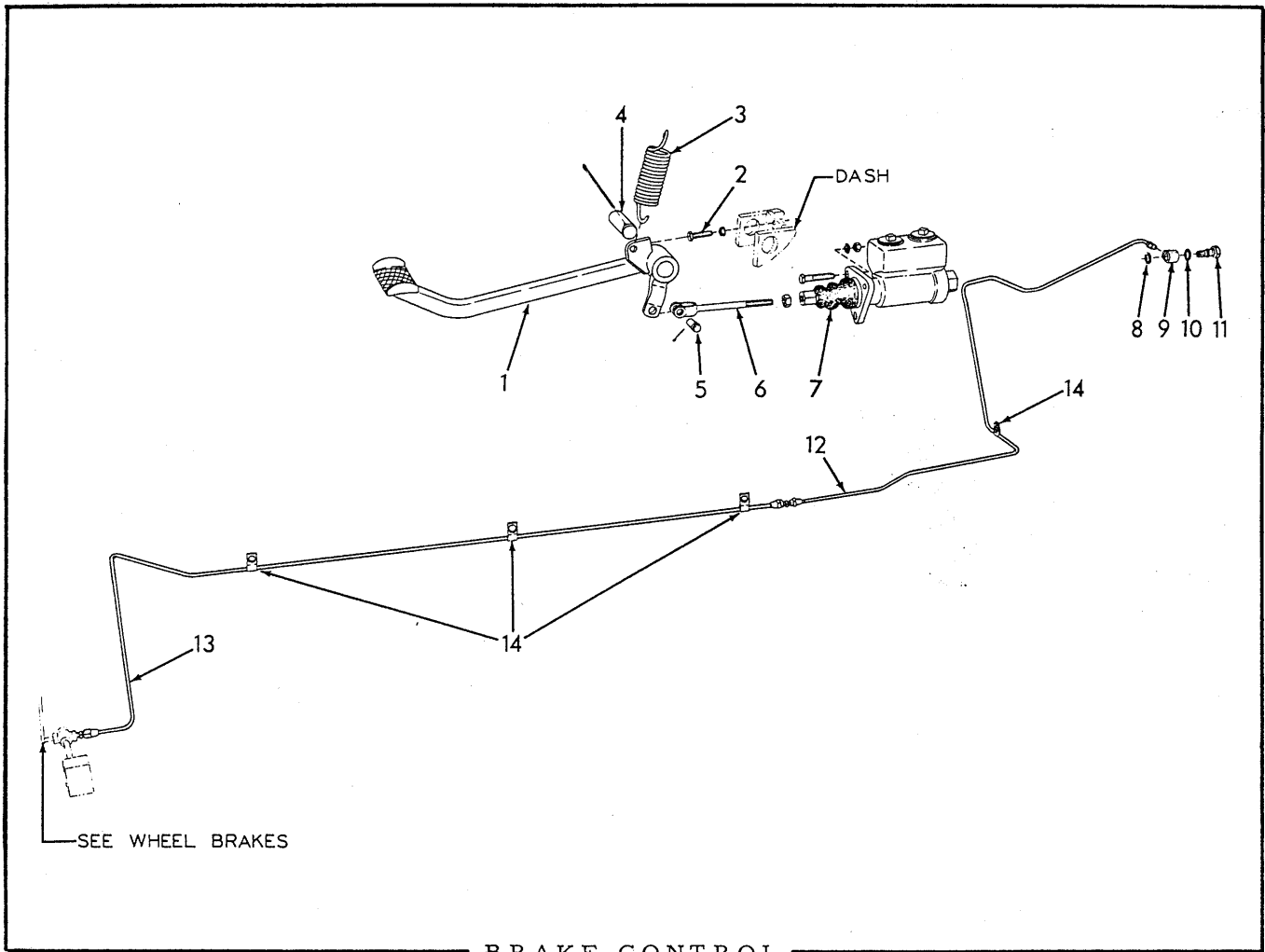
* Used prior to grader serial No. 179, excluding No. 176.
 ** Effective with grader serial No. 179, including No. 176.

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	074930	1	1	PEDAL
2	605785	1	1	BUMPER, pedal arm (rubber)
3	074933	1	1	ARM, pedal
	915659	1	1	CAPSCREW, 1/2"NF x 2-1/4"
	904208	1	1	LOCKWASHER, 1/2"
	911043	1	1	NUT, 1/2"NF

(Continued)

BRAKE CONTROL (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
4	074934	1	1	SHAFT, pedal
	904007	1	1	PIN, cotter, 3/16" x 3"
5	051193	1	1	SPRING, pedal return
6	074935	1	1	PIN, brake rod yoke
	900801	1	1	PIN, cotter, 3/32" x 3/4"
7	079464	1	1	ROD, control
	911042	1	1	NUT, 7/16"NF
8	085076	1	-	MASTER CYLINDER ASSEMBLY (See page 176 for parts)
	088946	-	1	MASTER CYLINDER ASSEMBLY (See page 176 for parts)
	911848	3	3	CAPSCREW, 3/8"NF x 2"
	904206	3	3	LOCKWASHER, 3/8"
	911041	3	3	NUT, 3/8"NF
9	088949	-	1	TANK ASSEMBLY, auxiliary (Includes mounting bracket)
	900576	-	4	SCREW, machine, rd-hd., 1/4"NC x 3/4"
	911114	-	4	WASHER, plain, SAE std., 1/4"
	911024	-	4	NUT, 1/4"NC
10	088622	-	1	CLIP, hose supporting
	903637	-	1	CAPSCREW, 1/2"NC x 1"
	904208	-	1	LOCKWASHER, 1/2"
	911028	-	1	NUT, 1/2"NC
11	088950	-	1	HOSE, tank to master cylinder
	901722	-	1	ELBOW, street, 90°, 1/4"NPT
12	059224	-	1	SCREW, hose attaching
13	059225	-	1	GASKET, hose attaching screw
14	059220	-	1	GASKET, master cylinder hose
15	059237	-	1	HEAD
16	088951	-	1	GASKET, head
17	059229	1	1	CONNECTOR, master cylinder
18	085232	1	1	SCREW, connector attaching (Also drilled for stop light switch)
19	059225	1	1	GASKET, connector attaching screw
20	059220	1	1	GASKET, master cylinder connector
21	085242	1	1	TUBE ASSEMBLY, master cylinder (Includes 2 nuts)
	910161	1	1	ELBOW, flare type, 1/4" tube, 1/8"NPT male



BRAKE CONTROL

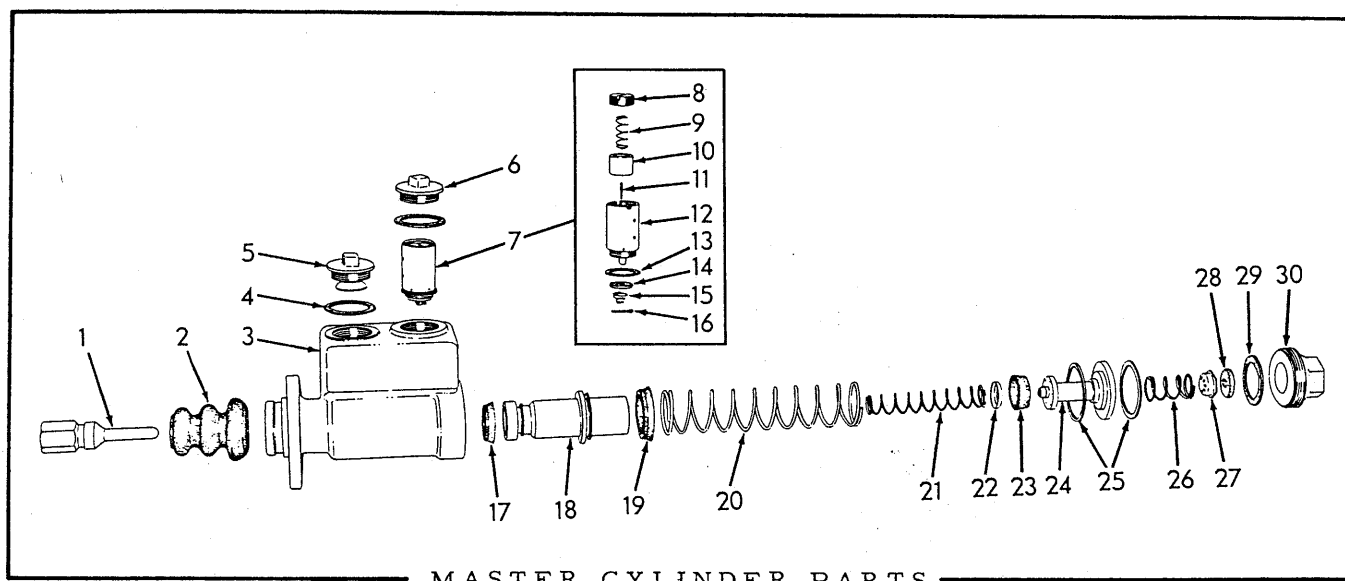
USAGE: Effective with grader serial No. 1361

ITEM	PART NO.	QTY.	DESCRIPTION
1	096675	1	PEDAL, brake
2	912185	1	CAPSCREW, pedal stop (3/8"NF x 1-1/4")
	911048	1	NUT, jam, 3/8"NF
3	051193	1	SPRING, pedal retracting
4	096684	1	SHAFT, pedal
	904007	1	PIN, cotter, 3/16" x 3"
5	051049	1	PIN, control rod
	900801	1	PIN, cotter, 3/32" x 3/4"
6	096685	1	ROD, control
	911042	1	NUT, 7/16"NF
7	085076	1	MASTER CYLINDER ASSEMBLY (See page 176 for parts)
	911848	3	CAPSCREW, 3/8"NF x 2"
	904206	3	LOCKWASHER, 3/8"
	911041	3	NUT, 3/8"NF
8	059220	1	GASKET, master cylinder connector

(Continued)

BRAKE CONTROL (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
9	059229	1	CONNECTOR, master cylinder
10	059225	1	GASKET, connector attaching screw
11	059224	1	SCREW, connector attaching
12	096682	1	TUBE ASSEMBLY, master cylinder, front (Includes 2 nuts)
13	096683	1	TUBE ASSEMBLY, master cylinder, rear (Includes 2 nuts)
	917332	1	UNION, flare type, 1/4" tube
	910141	1	CONNECTOR, flare type, 1/4" tube, 1/8"NPT male
14	235794	4	CLIP, tube supporting



MASTER CYLINDER PARTS

USAGE: See pages 172 and 174

- * 085076 MASTER CYLINDER ASSEMBLY (For units without auxiliary tank)
- ** 088946 MASTER CYLINDER ASSEMBLY (For units with auxiliary tank)

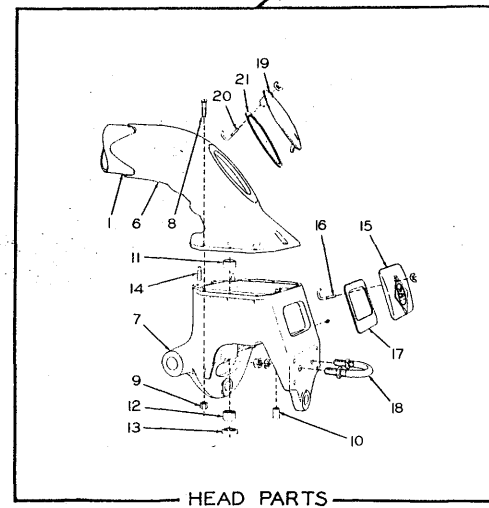
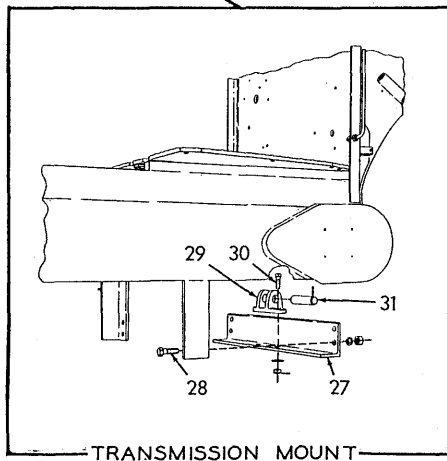
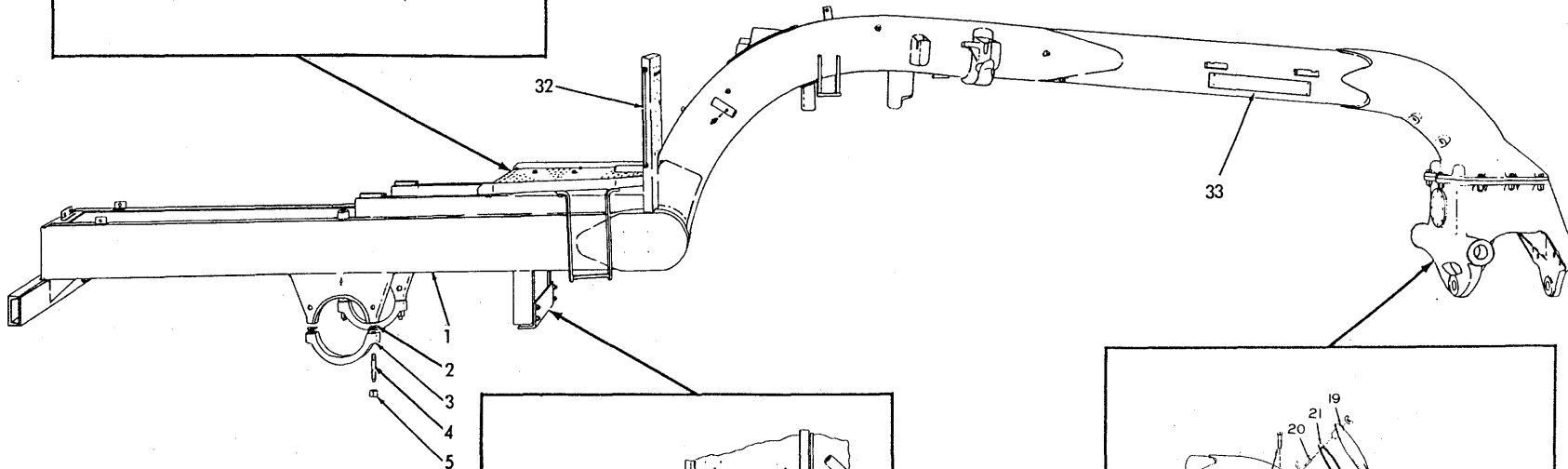
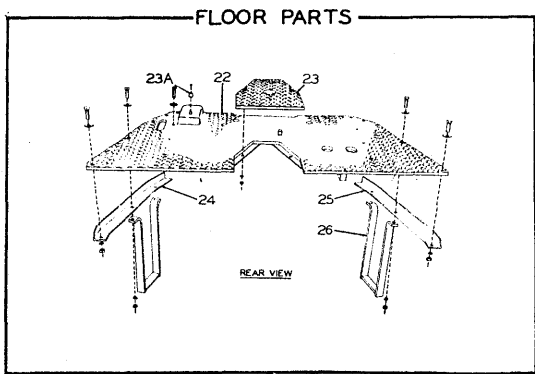
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	085095	1	1	ROD, push
2	-----	1	1	BOOT, push rod (Order item 31)
3	-----	1	1	HOUSING (N. S. S.)
4	-----	2	1	GASKET, filler plug (Order item 31)
5	085094	1	-	PLUG, filler, front
6	085093	1	-	PLUG, filler, rear
	088947	-	1	PLUG, filler, rear
7	085079	1	1	VALVE ASSEMBLY, relief (Consists of items 8 thru 16)
8	-----	1	1	SCREW, relief valve (N. S. S. Order item 7)
9	-----	1	1	SPRING, relief valve (N. S. S. Order item 7)
10	-----	1	1	PISTON, relief valve (N. S. S. Order item 7)
11	-----	1	1	NEEDLE, relief valve (N. S. S. Order item 7)
12	-----	1	1	BODY, relief valve (N. S. S. Order item 7)
13	-----	1	1	GASKET, relief valve body (Order item 31)
14	-----	1	1	DISC, check, relief valve (Order item 31)
15	-----	1	1	SPRING, relief valve check disc (Order item 31)
16	-----	1	1	PIN, cotter, relief valve (Order item 31)

(Continued)

MASTER CYLINDER PARTS (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
17	-----	1	1	CUP, low pressure piston, small (Order item 31)
18	085097	1	1	PISTON, low pressure
19	-----	1	1	CUP, low pressure piston, large (Order item 31)
20	085096	1	1	SPRING, piston return, outer
21	085098	1	1	SPRING, piston return, inner
22	-----	1	1	WASHER, high pressure piston cup (Order item 31)
23	-----	1	1	CUP, high pressure piston (Order item 31)
24	085099	1	1	PISTON, high pressure
25	-----	2	2	GASKET, high pressure piston (Order item 31)
26	-----	1	1	SPRING, check valve (Order item 31)
27	-----	1	1	VALVE, check (Order item 31)
28	-----	1	1	SEAT, check valve (Order item 31)
29	-----	1	1	SEAL, end plug (Order item 31)
30	085100	1	1	PLUG, end
31	085078	x	x	REPAIR KIT, master cylinder (Consists of items 2, 4, 13 thru 17, 19, 22, 23, 25 thru 29) (Not Illustrated)

N. S. S. indicates not serviced separately



FRAME

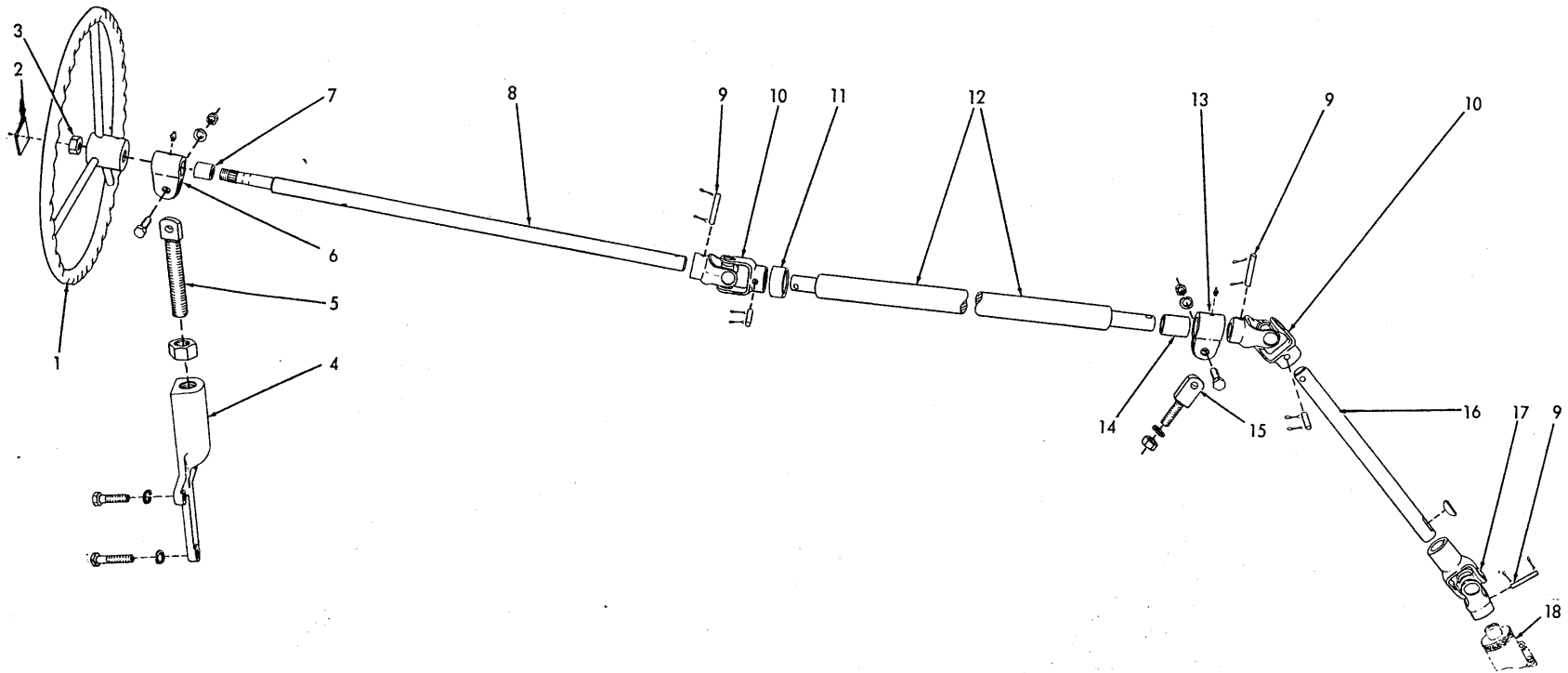
ITEM	PART NO.	QTY.	DESCRIPTION
1	086000	1	FRAME ASSEMBLY (Includes items 2 thru 6)(When required for graders prior to #1778 also order 1 BEARING 075234, 1 CAP 078275, 2 CAPSCREW 098265, 2 LOCKWASHER 910916, 6 SHIM 075150 and 10 SHIM 075151. If for graders prior to #1133 also order 1 LEVER ASSY. 094761, 1 RATCHET 094762, 1 BUSHING 094757, 1 NUT 915256 and 2 CAPSCREW 913014)
	914465	1	FITTING, lubricating, straight, 1/8"NPT (For side shift control shaft bearings)
2	604493	24	SHIM, trunnion cap (Use as req'd)
3	054853	2	CAP, trunnion
4	602258	4	STUD (1"NF x 4-3/4")
5	600236	4	NUT, high, 1"NF
6	075387	1	HEAD CASTING, upper section (Welded in frame assembly)
7	082028	1	HEAD CASTING ASSEMBLY, lower section (Includes items 10, 11 and 14)
	912808	1	FITTING, lubricating, straight, 1/4"NF
8	012984	9	CAPSCREW, 3/4"NF x 2-3/4"
9	012767	9	NUT, high, 3/4"NF
10	081662	1	BUSHING, pivot, power steering cylinder (steel)
11	081677	1	BUSHING, steering shaft (bronze)
12	081707	1	BEARING, needle, steering shaft
13	074962	1	SEAL, dust, steering shaft needle bearing
14	075543	2	PIN, dowel, head casting
15	075544	1	COVER, steering inspection, lower
16	602765	1	J-BOLT
	915018	1	NUT, wing, 1/2"NC
17	075556	1	GASKET, lower steering inspection cover
18	604641	1	U-BOLT, towing
	904210	2	LOCKWASHER, 1-1/4"
	912251	2	NUT, jam, 1-1/4"NF
	913097	2	NUT, 1-1/4"NF
19	601692	1	COVER, steering inspection, upper
20	602765	1	J-BOLT
	915018	1	NUT, wing, 1/2"NC
21	602827	1	GASKET, upper steering inspection cover
22	086433	1	PLATE ASSEMBLY, floor (Includes item 23)(Used prior to grader #1361)
	903639	8	CAPSCREW, 1/2"NC x 1-1/2"
	900818	8	WASHER, plain, U. S. std., 1/2"
	096629	1	PLATE ASSEMBLY, floor (Includes item 23)(Effective with grader #1361)
	903639	7	CAPSCREW, 1/2"NC x 1-1/2"
	900818	7	WASHER, plain, U. S. std., 1/2"

(Continued)

FRAME (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
23	087862	1	PLATE, cover
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
23A	623730	1	COVER, lubricating hole (Effective with grader #1888)
	914198	1	SCREW, thread-cutting, #10-24 x 3/8"
24	075095	1	ANGLE, floor plate, left (Not used with enclosed cab)
	903639	1	CAPSCREW, 1/2"NC x 1-1/2"
	900818	1	WASHER, plain, U.S. std., 1/2"
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
25	075096	1	ANGLE, floor plate, right (Not used with enclosed cab)
	903639	1	CAPSCREW, 1/2"NC x 1-1/2"
	900818	1	WASHER, plain, U.S. std., 1/2"
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
26	075090	2	STEP, mounting
	903640	4	CAPSCREW, 1/2"NC x 2"
	900818	4	WASHER, plain, U.S. std., 1/2"
	904208	4	LOCKWASHER, 1/2"
	911028	4	NUT, 1/2"NC
27	604635	1	ANGLE, transmission supporting
28	013238	4	CAPSCREW, 3/4"NC x 2"
	911030	4	NUT, 3/4"NC
	904369	4	LOCKWASHER, 3/4"
29	604181	1	BRACKET, transmission supporting
	900807	2	PIN, cotter, 1/8" x 1-1/4"
30	604637	2	CAPSCREW (drilled end, 3/4"NF x 2")
	900820	2	WASHER, plain, U.S. std., 3/4"
	912331	2	NUT, slotted, 3/4"NF
31	604636	1	PIN, transmission supporting bracket
	901344	2	PIN, cotter, 1/4" x 2"
32	075191	2	HANDLE, grab (Not used with enclosed cab)
	904208	4	LOCKWASHER, 1/2"
	911028	8	NUT, 1/2"NC
33	089047	2	MONOGRAM, "ALLIS-CHALMERS" (2-7/8" x 20", curved, attached to sides of frame)(Used prior to approx. grader #1796. See TRANSFERS for later design)
	918370	12	RIVET, drive, 3/16" x 9/32"

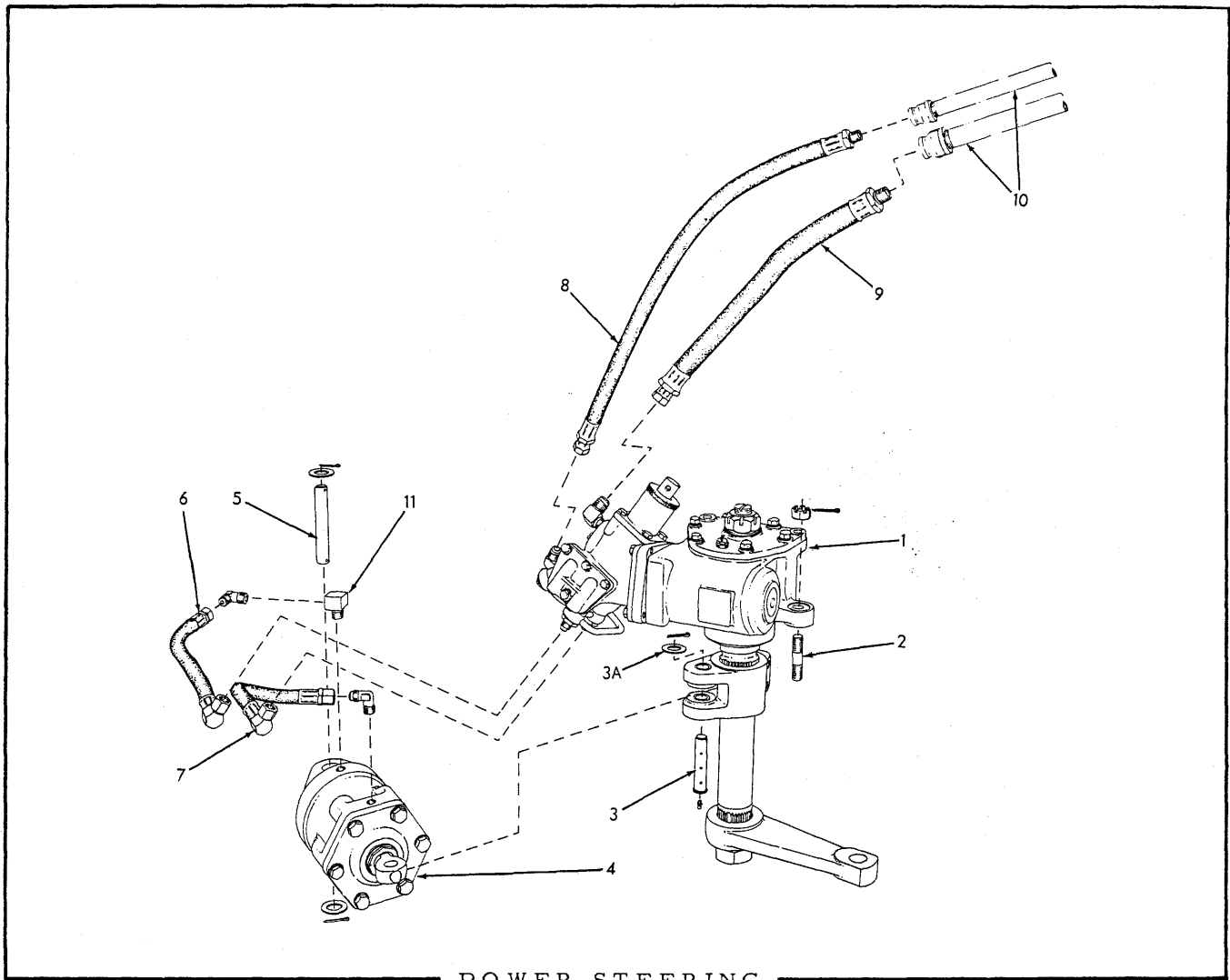
MEMO



STEERING CONTROL

STEERING CONTROL

ITEM	PART NO.	QTY.	DESCRIPTION
1	229677	1	WHEEL, steering (Straight bore)(Used prior to grader #1816)
	912343	1	PIN, groove, 3/8" x 2"
	639984	1	WHEEL, steering (Splined bore)(Effective with grader #1816)
2	921041	1	EMBLEM, "AC" (Effective with grader #1816)
	918698	2	SCREW, thread-cutting, #8 x 1/2"
3	208584	1	NUT, steering wheel shaft (Effective with grader #1816)
4	085069	1	SUPPORT, steering wheel shaft
	910245	2	CAPSCREW, 3/8"NC x 1-3/8"
	903634	1	CAPSCREW, 3/8"NC x 2" (Also attaches control box cover)
	904206	3	LOCKWASHER, 3/8"
5	633987	1	BOLT, eye, steering wheel shaft bearing
	911032	1	NUT, 1"NC
6	622063	1	BEARING ASSEMBLY, steering wheel shaft (Includes item 7)
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	904541	1	CAPSCREW, 1/2"NC x 1-3/4"
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
7	622062	1	BUSHING, steering wheel shaft bearing (Effective with grader #1816)
8	074987	1	SHAFT, steering wheel (Used prior to grader #1816)
	620042	1	SHAFT, steering wheel (Effective with grader #1816)
9	601935	5	PIN, universal joint (3/8" x 2")
	900805	10	PIN, cotter, 1/8" x 3/4"
10	053121	2	JOINT ASSEMBLY, universal (See page 243 for parts)
11	604549	1	BEARING, plain (Oilite bronze. Pressed in frame)
12	074988	1	SHAFT (138" long)
13	622063	1	BEARING ASSEMBLY, control shaft (Includes item 14)(If for graders prior to #1895 also order 1 FITTING 915275)
	915275	1	FITTING, lubricating, 65°, 1/8"NPT
	904541	1	CAPSCREW, 1/2"NC x 1-3/4"
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
14	622062	1	BUSHING, control shaft bearing
15	076014	1	BOLT, eye, steering control shaft bearing
	904209	1	LOCKWASHER, 5/8"
	911029	1	NUT, 5/8"NC
16	074995	1	SHAFT, steering control
	911273	1	KEY, #127 woodruff, 1/4" x 2-1/8"
17	053123	1	JOINT ASSEMBLY, universal (See page 243 for parts)
18	-----	1	STEERING ASSEMBLY (See POWER STEERING)



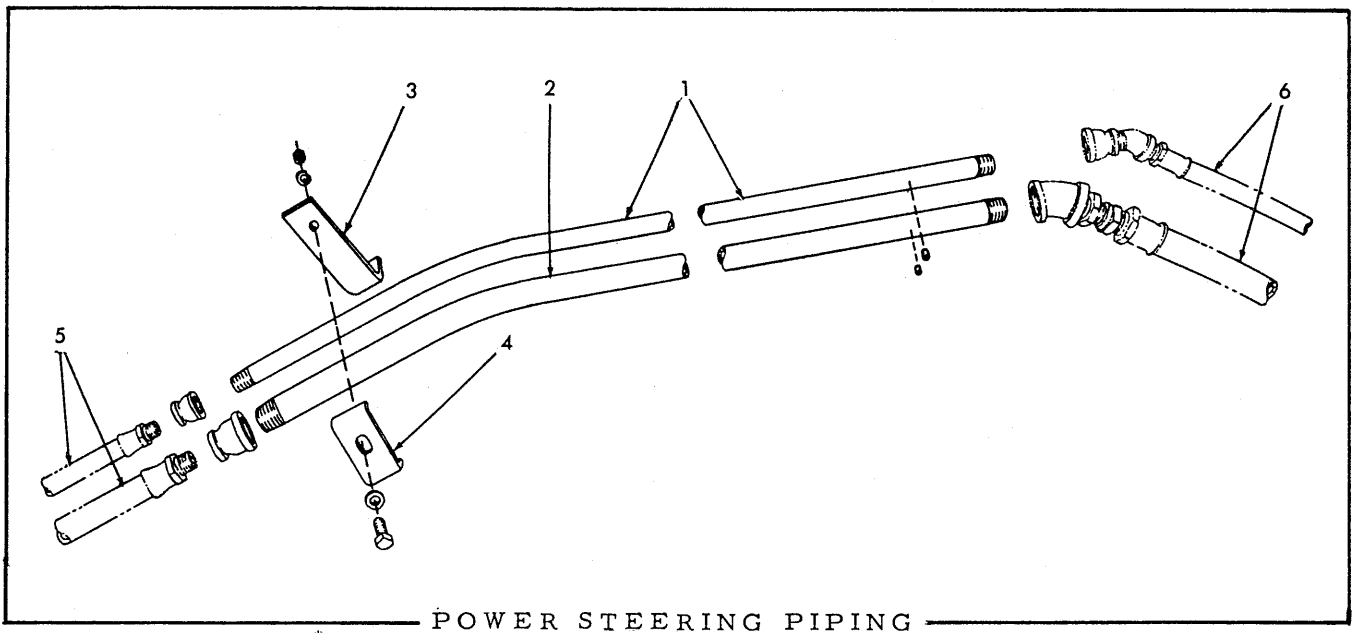
POWER STEERING

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	STEERING ASSEMBLY, power (See page 189 for parts)(Used prior to grader #1309. Order STEERING ASSEMBLY 096827)
	096827	1	STEERING ASSEMBLY, power (See page 189 for parts)(Effective with grader #1309)
2	081594	2	STUD (5/8"NC x 2-3/4")
	911059	2	NUT, slotted, 5/8"NC
	900807	2	PIN, cotter, 1/8" x 1-1/4"
3	633844	1	PIN, power steering lever
3A	634163	1	WASHER, plain
	900807	1	PIN, cotter, 1/8" x 1-1/4"
	912808	1	FITTING, lubricating, straight, 1/4"NF
4	082657	1	CYLINDER ASSEMBLY, power steering (See page 195 for parts)

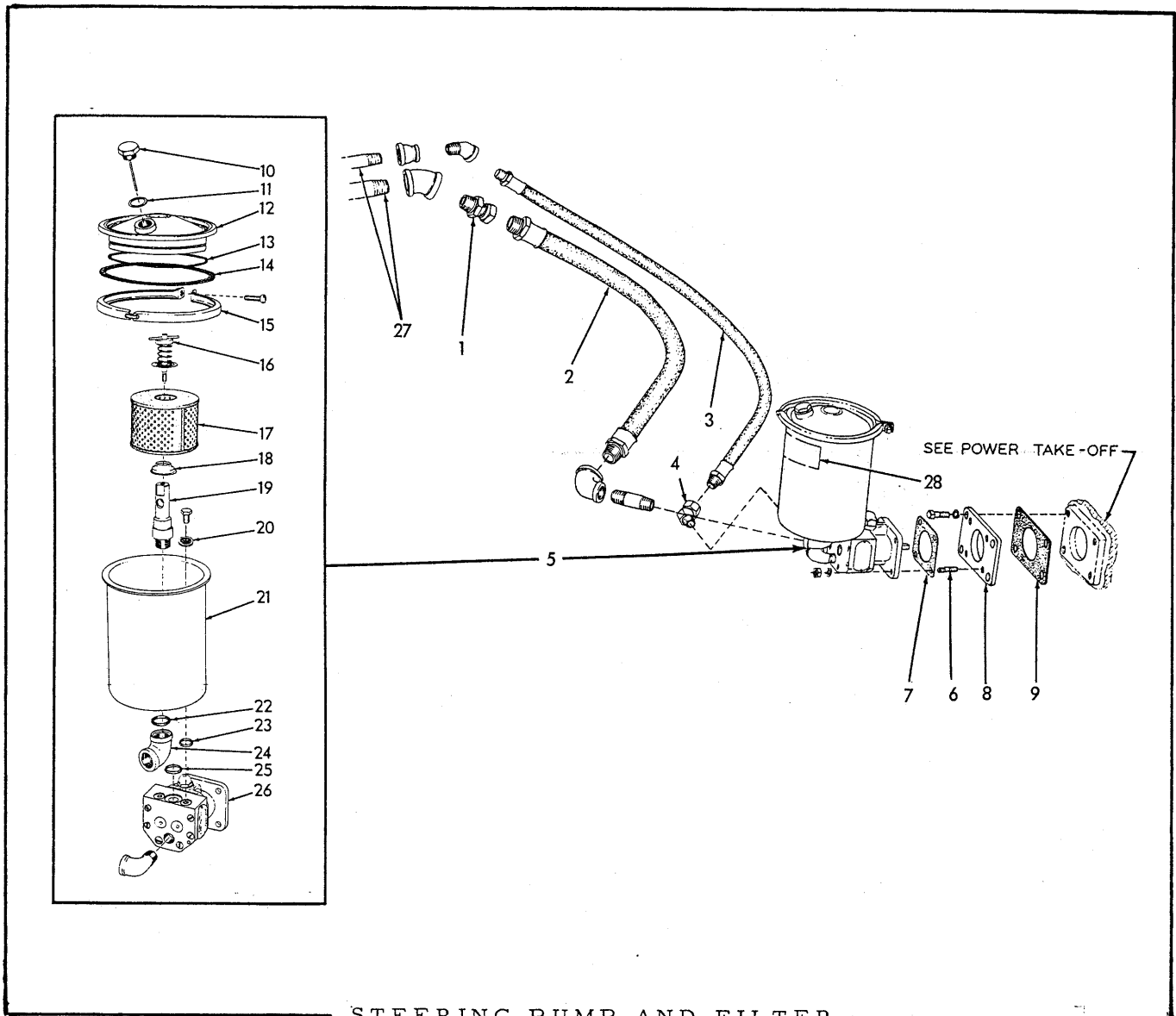
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POWER STEERING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	633843	1	PIN, pivot, power steering cylinder
	910255	2	WASHER, plain, SAE std., 3/4"
	900807	2	PIN, cotter, 1/8" x 1-1/4"
6	081373	1	HOSE, valve to cylinder (12-3/4" long)
	917750	1	ELBOW, flare type, 3/8" tube, 3/8"NPT male
7	082184	1	HOSE, cylinder to valve (11-1/4" long)
	917750	1	ELBOW, flare type, 3/8" tube, 3/8"NPT male
8	082214	1	HOSE, oil supply (26-3/4" long)
9	082215	1	HOSE, oil return (23-1/2" long)
10	-----	-	PIPES (See POWER STEERING PIPING)
11	055245	1	ELBOW, oil hose (90°, 3/8"NPT male and female)



ITEM	PART NO.	QTY.	DESCRIPTION
1	076016	1	PIPE, oil supply (1/2"NPT)
	902871	1	SETSCREW, hex-socket, cup-pt., 3/8"NC x 1/2"
	904227	1	COUPLING, pipe reducing, 1/2"NPT to 3/8"NPT
2	079428	1	PIPE, oil return (3/4"NPT)
	902871	1	SETSCREW, hex-socket, cup-pt., 3/8"NC x 1/2"
	915478	1	COUPLING, pipe reducing, 3/4"NPT to 1/2"NPT
3	082216	1	SUPPORT, oil pipes
4	079429	1	CLAMP, oil pipes
	911848	1	CAPSCREW, 3/8"NF x 2"
	911115	1	WASHER, plain, SAE std., 3/8"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
5	-----	-	HOSE (See POWER STEERING)
6	-----	-	HOSE (See STEERING PUMP AND FILTER)



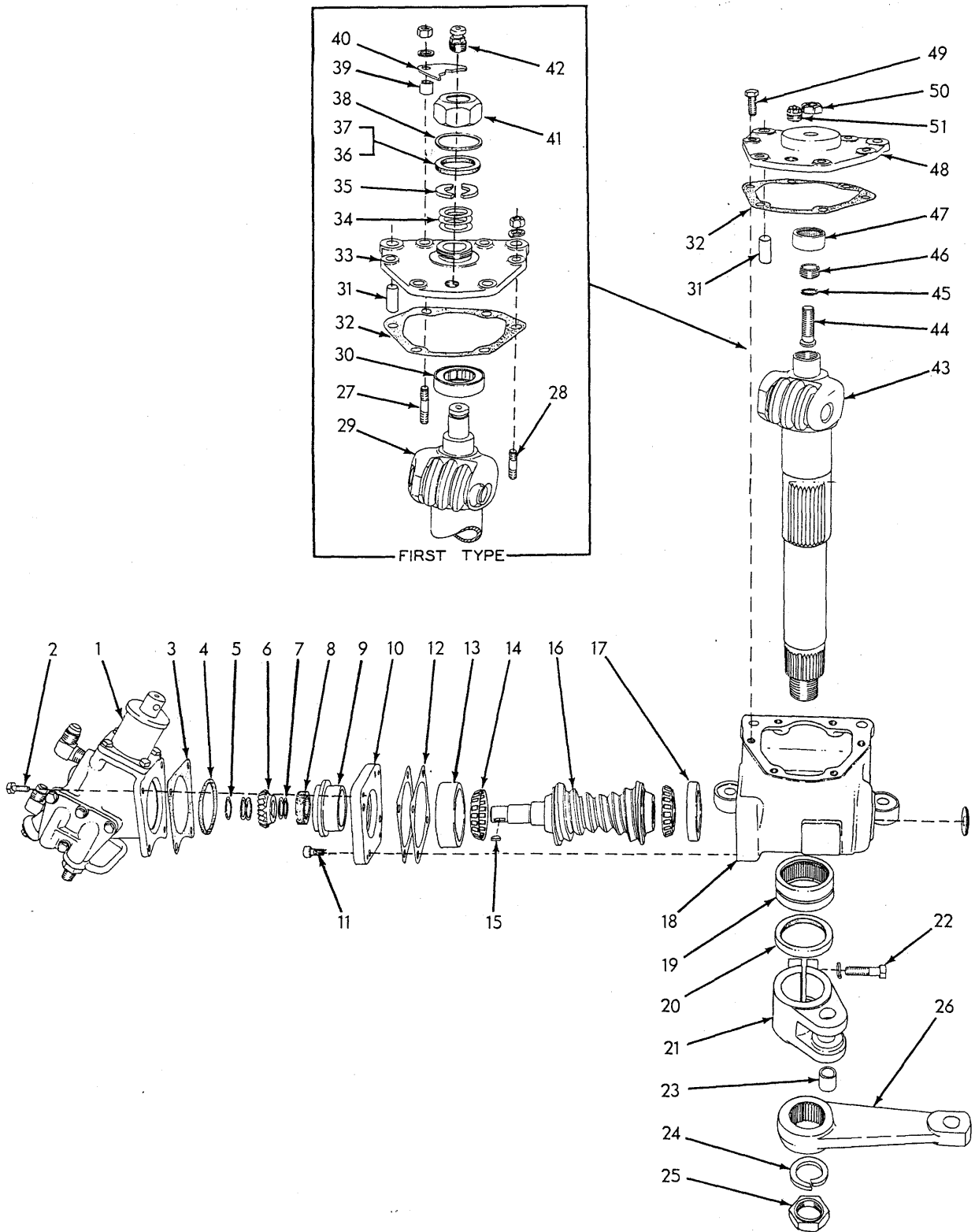
STEERING PUMP AND FILTER

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	032032	1	UNION, adapting, swivel, return line hose (3/4"NPT male and female)
	901694	1	ELBOW, pipe, 45°, 3/4"NPT
2	081220	1	HOSE, return line
	916149	1	ELBOW, pipe reducing, 90°, 3/4"NPT to 1/2"NPT
	901503	1	NIPPLE, pipe, 1/2"NPT x 2-1/2"
3	081218	1	HOSE, oil supply line
	904227	1	COUPLING pipe reducing, 1/2"NPT to 3/8"NPT
	910149	1	ELBOW, street, 45°, 3/8"NPT
4	081219	1	UNION, adapting, supply line hose (45°, 3/8"NPT male and female)

(Continued)

STEERING PUMP AND FILTER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	620246	1	PUMP AND FILTER ASSEMBLY (Consists of items 10 thru 26)
6	082025	4	STUD (5/16" diam.)
	904205	4	LOCKWASHER, 5/16"
	913636	4	NUT, 5/16"NF
7	075029	1	GASKET steering pump
8	087207	1	ADAPTER, steering pump mounting
	903775	4	CAPSCREW, 3/8"NC x 7/8"
	904206	4	LOCKWASHER, 3/8"
9	087427	1	GASKET, steering pump adapter
10	079177	1	PLUG ASSEMBLY, filler hole (Includes dipstick)
11	079169	1	GASKET, filler hole plug
12	099818	1	COVER ASSEMBLY (Includes item 14) (For graders prior to #1613 also order 1 O-RING 076965)
13	076965	1	O-RING, filter case cover (Effective with grader #1613)
14	079260	1	GASKET, cover
15	079175	1	RING ASSEMBLY, cover clamping (Serviced only as a unit)
	901230	1	SCREW, machine, fil-hd., 1/4"NC x 1"
16	079174	1	VALVE ASSEMBLY, pressure relief (Serviced only as a unit)
17	079170	1	ELEMENT, filtering
18	079176	1	CUP, element sealing
19	081757	1	STUD, element centering
20	098240	2	WASHER, dynaseal
21	097019	1	CASE, filter
	905660	2	CAPSCREW 5/16"NC x 1/2"
22	607906	1	O-RING, sealing, filter inlet elbow (1"O.D.)
23	066878	2	O-RING, sealing (1/2"O.D.) (Effective with grader #1278)
24	081547	1	ELBOW, filter inlet
25	081553	1	O-RING, sealing, pump to filter (15/16"O.D.)
26	081829	1	PUMP ASSEMBLY, hydraulic (See page 191 for parts)
	901723	1	ELBOW, street, 90°, 3/8"NPT
27	-----	-	PIPE (See POWER STEERING PIPING)
28	-----	1	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



STEERING PARTS

STEERING PARTS

USAGE: See page 184

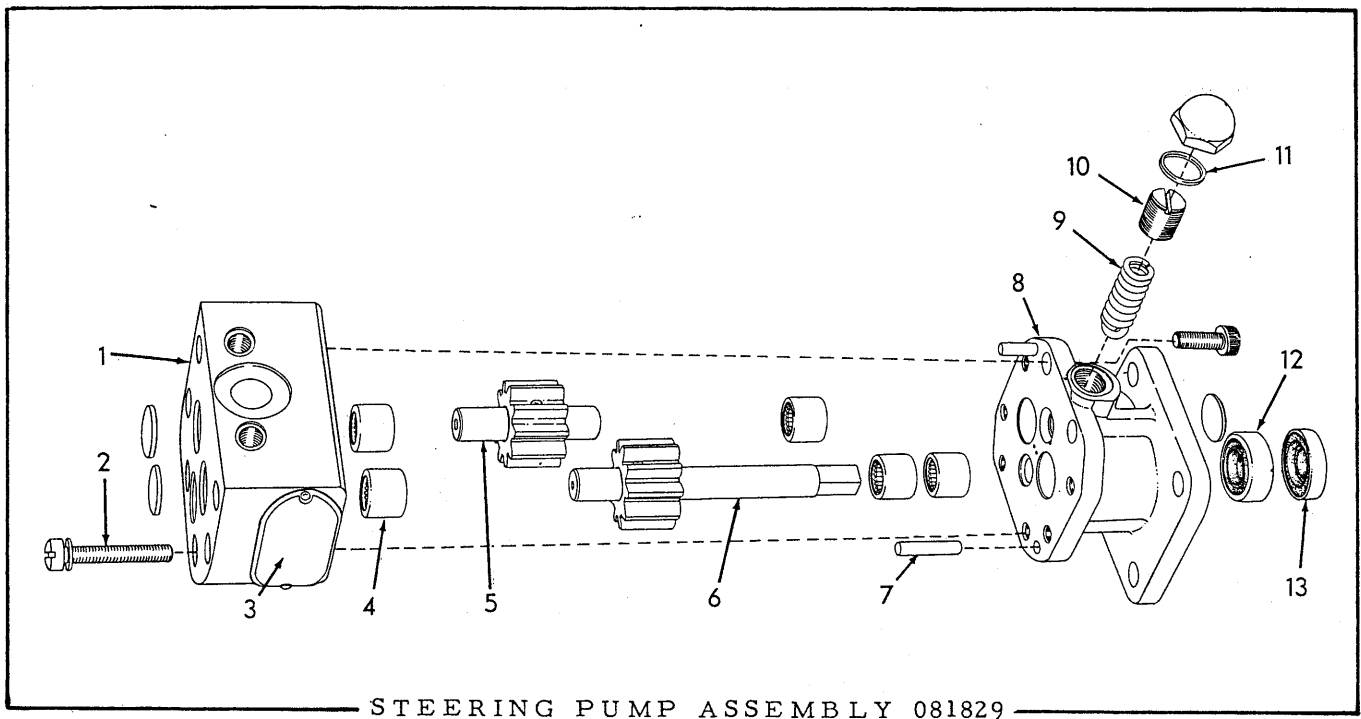
* Used prior to grader serial No. 1309
 ** Effective with grader serial No. 1309

ITEM	PART NO.	QTY.	DESCRIPTION
1	080300	1 1	VALVE ASSEMBLY, control (See page 193 for parts)
2	076976	4 4	CAPSCREW
3	080294	1 1	GASKET, control valve
4	080293	1 1	RING, valve sealing
5	076961	1 1	RING, snap, worm driving gear
6	076978	1 1	GEAR, bevel worm driving
7	080292	4 4	SHIM, worm driving gear (Use as req'd)
8	078329	1 1	SEAL, oil, worm shaft
9	080296	1 1	PILOT, valve body
10	080295	1 1	PLATE, valve adapting
11	080315	4 4	SCREW (hex-socket-hd., 7/16"NC x 3/4")
12	054784	1 1	SHIM, worm adjustment (.002" thick. Use as req'd)
	605255	1 1	SHIM, worm adjustment (.005" thick. Use as req'd)
	605256	5 5	SHIM, worm adjustment (.010" thick. Use as req'd)
13	067426	1 1	CUP, worm front bearing
14	605258	2 2	BEARING, steering worm
15	076979	1 1	KEY, worm shaft bevel gear
16	080317	1 1	WORM AND SHAFT ASSEMBLY (Serviced only as a unit)
17	605259	1 1	CUP, worm rear bearing
18	082059	1 -	HOUSING ASSEMBLY (Includes items 17, 19, 20, 27, 28 and 33)
	098241	- 1	HOUSING KIT (Includes items 17, 19, 20, 31, 32, 48 and 49)
	910106	1 1	PLUG, expansion, 1-5/8" diam.
19	080298	1 1	BEARING, needle, steering arm shaft
20	080297	1 1	SEAL, oil, steering arm shaft
21	080290	1 1	ARM ASSEMBLY, power (Includes items 22 and 23)
22	035067	2 2	CAPSCREW, 1/2"NF x 2"
	904208	2 2	LOCKWASHER, 1/2"
23	082098	2 2	BUSHING, power arm
24	080299	1 1	LOCKWASHER, steering arm shaft
25	080304	1 1	NUT, steering arm shaft

(Continued)

STEERING PARTS (Continued)

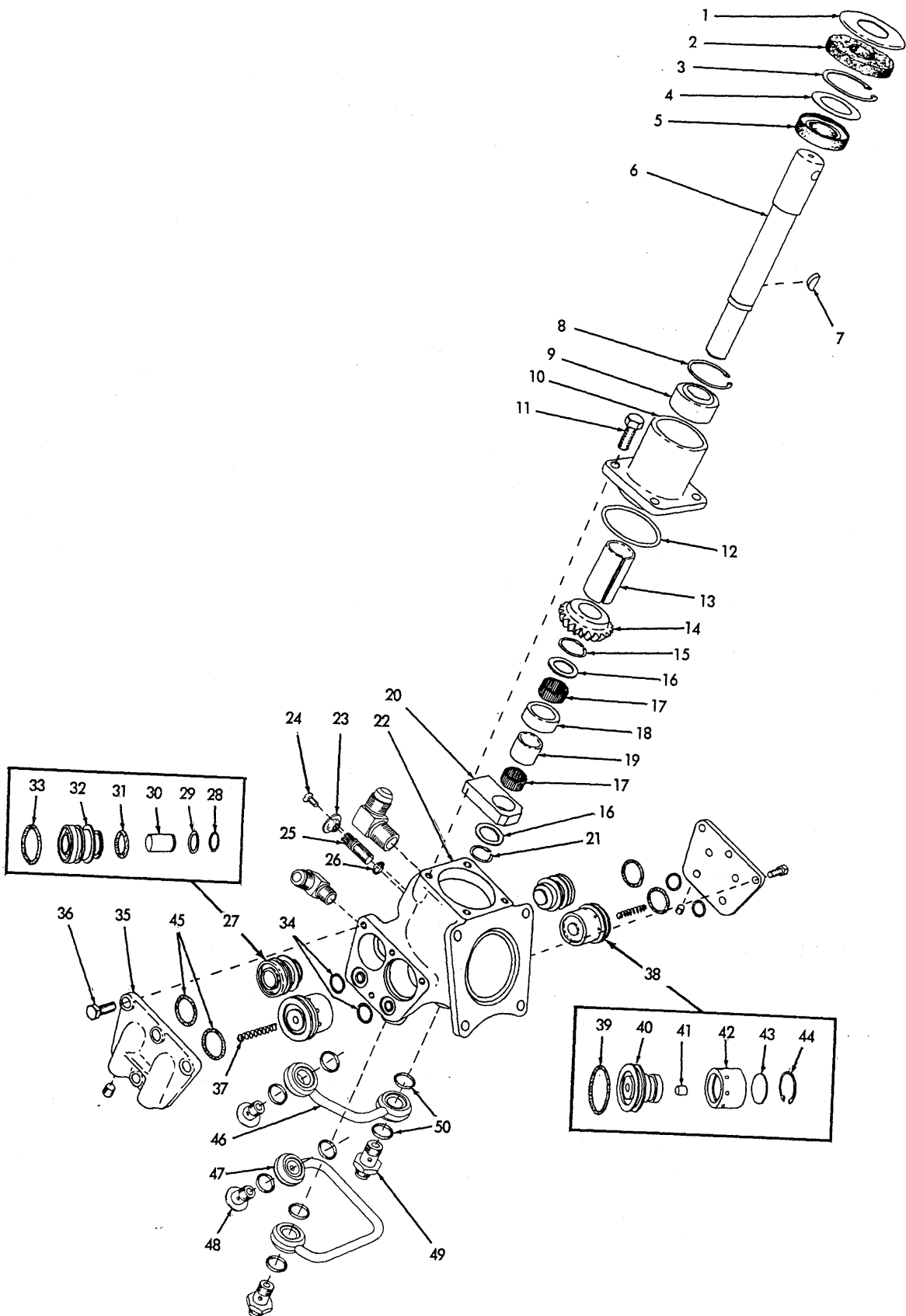
ITEM	PART NO.	QTY. * **	DESCRIPTION
26	080311	1 1	ARM, steering
27	605246	1 -	STUD, cover (7/16"NC x 7/16"NF x 2-5/16")
	904207	1 -	LOCKWASHER, 7/16"
	911042	1 -	NUT, 7/16"NF
28	605239	5 -	STUD, cover (7/16"NC x 7/16"NF x 1-11/16")
	904207	5 -	LOCKWASHER, 7/16"
	911042	5 -	NUT, 7/16"NF
29	-----	1 -	SHAFT AND GEAR ASSEMBLY (Order items 43, 48 and 50)
30	605236	1 -	BEARING, roller, steering arm shaft
31	605262	2 2	PIN, dowel, top cover
32	605235	1 1	GASKET, top cover
33	605234	1 -	COVER KIT, top (Includes items 30, 31, 41 and 42)
34	605244	2 -	SHIM, shaft end play (.010" thick. Use as req'd)
	605245	8 -	SHIM, shaft end play (.020" thick. Use as req'd)
35	605243	2 -	WASHER, half, shaft thrust
36	605240	1 -	WASHER, sealing, thrust nut (rubber, 1/8" thick)
37	605241	1 -	WASHER, sealing, thrust nut (rubber, 1/4" thick)
38	605242	1 -	RETAINER, thrust nut sealing washer
39	605247	1 -	SPACER, thrust nut locking plate
40	605248	1 -	PLATE, thrust nut locking
41	605237	1 -	NUT, shaft thrust
42	605238	1 -	PLUG, vent, top cover
43	096835	- 1	SHAFT AND GEAR ASSEMBLY (Includes item 44)
44	097274	- 1	SCREW KIT, shaft adjustment (Includes items 45 and 46)
45	-----	- 1	WASHER, thrust (Order item 44)
46	096837	- 1	RETAINER, shaft adjusting screw
47	096843	- 1	BEARING, needle, steering arm shaft, upper
48	096841	- 1	COVER ASSEMBLY, top (Includes items 47 and 51)
49	082271	- 6	CAPSCREW, 7/16"NC x 1"
50	096842	- 1	NUT, shaft adjusting screw
51	096844	- 1	PLUG ASSEMBLY, filler (Includes cotter pin)



STEERING PUMP ASSEMBLY 081829

USAGE: See page 186

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	HOUSING (Not serviced separately)
	092107	2	PLUG, expansion, 11/16" diam.
	912261	2	CAPSCREW, hex-socket hd., 1/4"NC x 3/4"
2	077239	6	SCREW ASSEMBLY (Includes lockwasher)
3	-----	1	PLATE, identification (Not serviced)
4	077241	5	BEARING, needle
5	082591	1	SHAFT ASSEMBLY, idler (Includes gear. Serviced only as a unit)
6	082590	1	SHAFT ASSEMBLY, driving (Includes gear. Serviced only as a unit)
7	4048000	2	PIN, dowel, stator to housing (3/16" x 1")
8	-----	1	STATOR (Not serviced separately)
	092107	1	PLUG, expansion, 11/16" diam.
9	077240	1	SPRING ASSEMBLY, pressure relief (Includes ball)
10	077245	1	SCREW, pressure relief adjustment
	913463	1	NUT, cap, 1/2"NF
11	4048002	1	GASKET, cap nut
12	4047783	1	SEAL, pump shaft, inner
13	079351	1	SEAL, pump shaft, outer



VALVE ASSEMBLY 080300

VALVE ASSEMBLY 080300

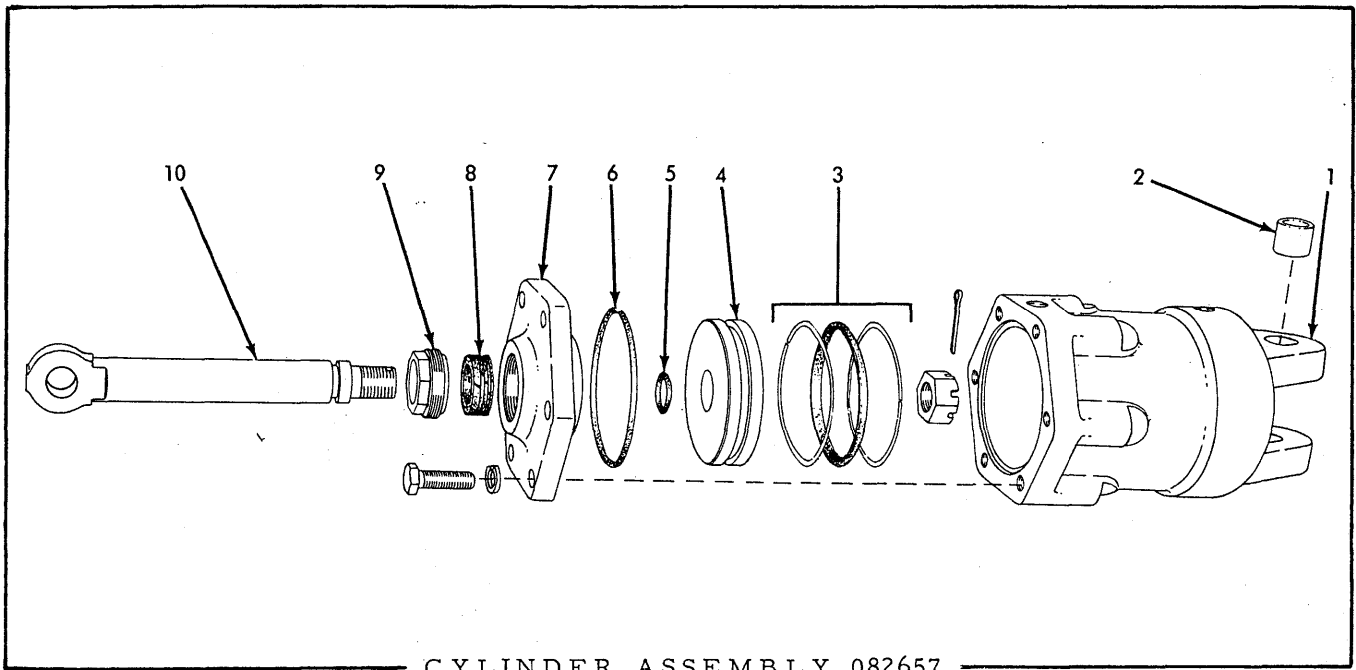
USAGE: See page 189

ITEM	PART NO.	QTY.	DESCRIPTION
1	078332	1	RETAINER, drive shaft washer
2	078333	1	WASHER, drive shaft (felt)
3	078360	1	RING, snap, retaining washer
4	078334	1	WASHER, retaining, shaft oil seal
5	078329	1	SEAL, oil, drive shaft
6	078302	1	SHAFT, drive
7	076979	1	KEY
8	078358	1	RING, snap, drive shaft bearing
9	078309	1	BEARING, swivel, drive shaft (Serviced only as a unit)
10	078313	1	CAP, valve body
11	076976	4	CAPSCREW
12	078350	1	RING, sealing, valve body cap
13	078331	1	SPACER, drive shaft gear
14	076978	1	GEAR, bevel, drive shaft
15	076961	1	RING, snap, drive shaft gear
16	078326	2	WASHER, bearing retaining
17	078356	2	BEARING KIT (Each consists of 34 rollers)
18	078330	1	ROLLER, adjusting, shaft gear
19	078325	1	SPACER, roller
20	078365	1	BLOCK, valve operating
21	078361	1	RING, snap
22	080319	1	BODY, valve
	911309	1	ELBOW, flare type, 90°, 3/4" SAE, 3/8"NPT male
	917164	1	ELBOW, flare type, 90°, 7/8"SAE, 1/2"NPT male
23	080320	1	PLATE, locking, adjusting screw
24	080322	1	SCREW, locking
25	078363	1	SCREW, gear adjusting
26	073621	1	RING, sealing, adjusting screw
27	078372	2	VALVE ASSEMBLY, distributing (Consists of items 28 thru 33)
28	078362	2	RING, snap, piston retaining washer
29	078311	2	WASHER, piston retaining

(Continued)

VALVE ASSEMBLY 080300 (Continued)

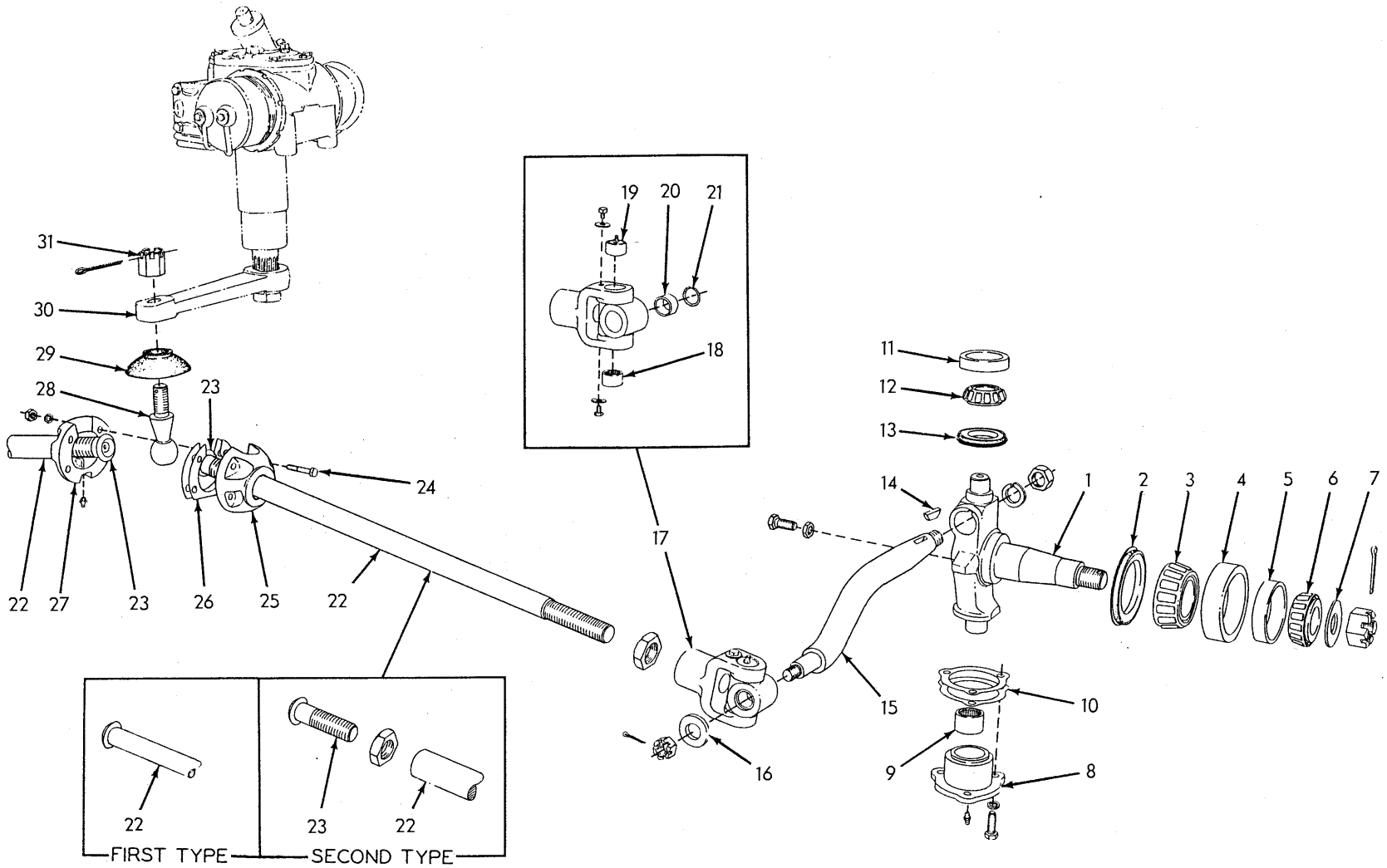
ITEM	PART NO.	QTY.	DESCRIPTION
30	-----	2	PISTON (Not serviced separately)
31	607906	2	O-RING, valve body (1"O.D.)
32	-----	2	BODY (Not serviced separately)
33	078352	2	RING, valve body (1-3/8"O.D.)
34	607433	4	O-RING, cover sealing
35	078364	2	COVER, valve
36	910231	4	PLUG, pipe, socket-hd., 1/8"NPT
	064426	8	CAPSCREW, 5/16"NC x 3/4"
37	078312	2	SPRING, reaction valve
38	078371	2	VALVE ASSEMBLY, reaction (Consists of items 39 thru 44)
39	607573	2	O-RING, valve body
40	-----	2	BODY (Not serviced separately)
41	-----	2	PISTON (Not serviced separately)
42	-----	2	SLEEVE (Not serviced separately)
43	078324	2	PLUG, valve body piston
44	078359	2	RING, snap, piston plug
45	081693	4	O-RING, valve sealing
46	080328	1	TUBE, jumper
47	080324	1	TUBE, jumper
48	076958	2	BOLT, tube attaching
49	080323	2	ADAPTER, tube attaching
50	076966	8	RING, tube sealing



CYLINDER ASSEMBLY 082657

USAGE: See page 184

ITEM	PART NO.	QTY.	DESCRIPTION
1	082065	1	CYLINDER ASSEMBLY, power steering (Includes item 2)
2	081661	2	BUSHING, cylinder pivot
3	076971	1	RING KIT, cylinder piston (Each consists of 2 composition rings and 1 rubber ring)
4	082646	1	PISTON, power steering cylinder
5	081693	1	RING, piston rod sealing
6	080289	1	RING, sealing, cylinder cover
7	083181	1	COVER, power steering cylinder
	903639	6	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6	LOCKWASHER, 1/2"
8	083186	1	PACKING ASSEMBLY, piston rod (5 rings)
9	083190	1	NUT, piston rod packing
10	082647	1	ROD, power steering cylinder piston
	916896	1	NUT, slotted, 7/8"NF
	910320	1	PIN, cotter, 5/32" x 1-1/2"



FRONT WHEEL SPINDLES AND STEERING LINKAGE

FRONT WHEEL SPINDLES AND STEERING LINKAGE

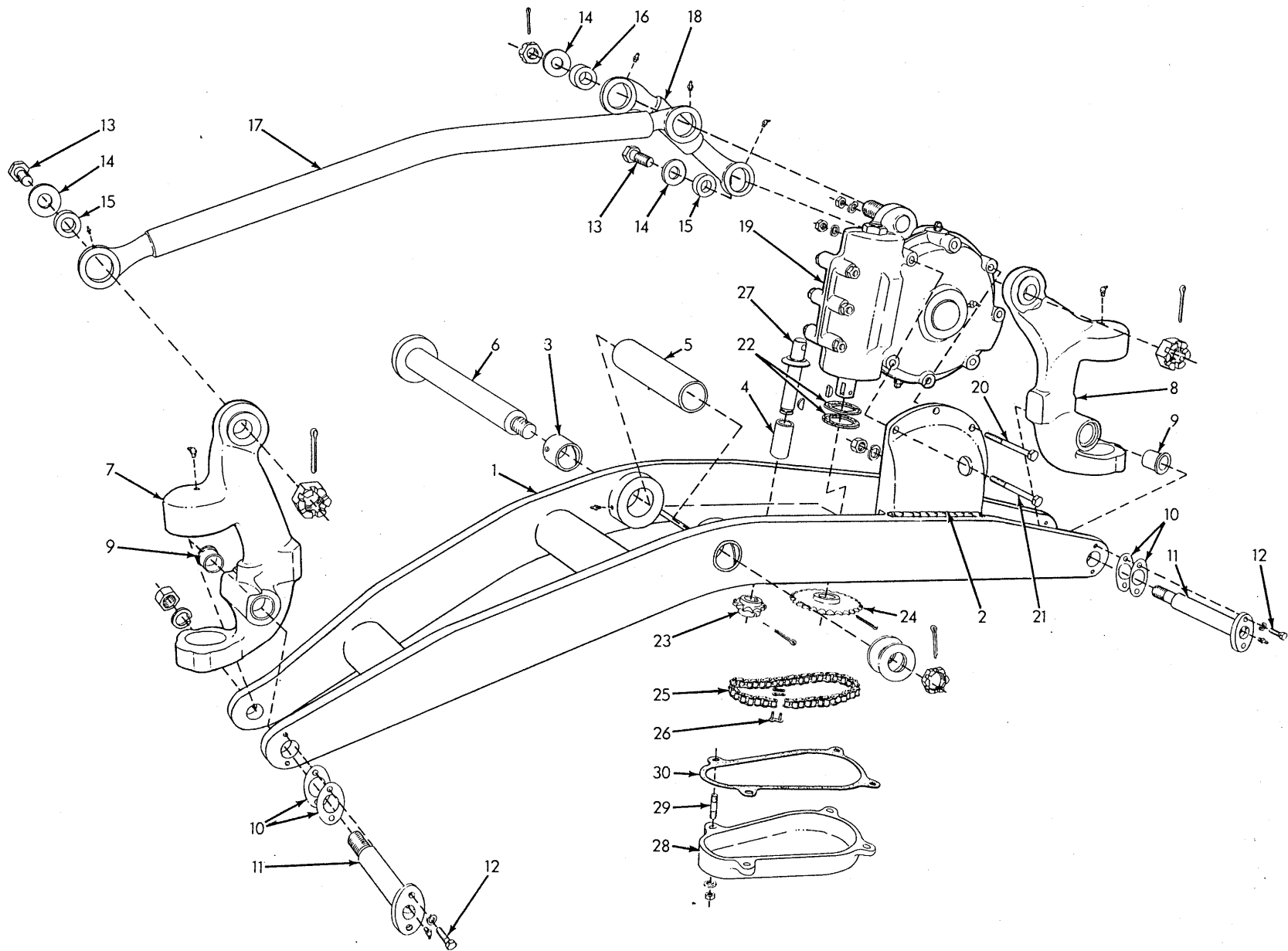
ITEM	PART NO.	QTY.	DESCRIPTION
1	082131	1	SPINDLE, left wheel (Used prior to grader #1754)
	099199	1	SPINDLE, left wheel (Effective with grader #1754)
	082132	1	SPINDLE, right wheel (Used prior to grader #1754)
	099200	1	SPINDLE, right wheel (Effective with grader #1754)
	911843	2	NUT, slotted, 1-1/4"NF
	910024	2	PIN, cotter, 3/16" x 2-1/2"
2	604345	2	SEAL, oil, front wheel (external type)
3	082021	2	CONE ASSEMBLY, front wheel inner bearing
4	211581	2	CUP, front wheel inner bearing
5	211567	2	CUP, front wheel outer bearing
6	604922	2	CONE ASSEMBLY, front wheel outer bearing
7	601949	2	WASHER, front wheel spindle
8	066365	2	RETAINER, spindle needle bearing
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	903639	6	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6	LOCKWASHER, 1/2"
9	066362	2	BEARING, needle, front wheel spindle
10	604292	18	SHIM, spindle lower bearing (Use as req'd)
11	604387	2	CUP, spindle upper bearing
12	604388	2	CONE ASSEMBLY, spindle upper bearing
13	604343	2	SEAL, oil, front wheel spindle (external type)
14	049149	2	KEY, spindle steering arm (1-1/8" long)(Used prior to grader #912)
	092954	2	KEY, spindle steering arm (2-1/8" long)(Effective with grader #912)
15	092953	2	ARM, steering, front wheel spindle (Used prior to grader #1754) (If for grader prior to #912 also order KEY 092954)
	911051	2	NUT, jam, 1"NF
	910916	2	LOCKWASHER, 1"
	912331	2	NUT, slotted, 3/4"NF
	900807	2	PIN, cotter, 1/8" x 1-1/4"
	099222	2	ARM, steering, front wheel spindle (Effective with grader #1754)
	913097	2	NUT, 1-1/4"NF
904210	2	LOCKWASHER, 1-1/4"	
912331	2	NUT, slotted, 3/4"NF	
900807	2	PIN, cotter, 1/8" x 1-1/4"	
16	602068	2	WASHER, plain
17	066627	2	SWIVEL ASSEMBLY, drag link (Each consists of 1 yoke, 1 swivel, 1 pin and items 18 thru 21)

(Continued)

FRONT WHEEL SPINDLES AND STEERING LINKAGE (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
18	066632	2	BEARING, needle drag link swivel yoke, lower
	910196	2	CAPSCREW, 5/16"NC x 3/8"
	901165	2	WASHER, plain, U.S. std., 5/16"
19	066633	2	BEARING, needle, drag link swivel yoke, upper
	910196	2	CAPSCREW, 5/16"NC x 3/8"
	901165	2	WASHER, plain, U.S. std., 5/16"
20	066631	4	BUSHING, drag link swivel
21	053926	4	SEAL, oil, drag link swivel
22	097125	2	LINK, drag (Used prior to grader #1614)
	099203	2	LINK, drag (Effective with grader #1614)
	912251	2	NUT, jam, 1-1/4"NF
23	099198	2	SOCKET, drag link (Effective with grader #1614)
	912251	2	NUT, jam, 1-1/4"NF
24	046419	4	CAPSCREW, ball cap (3/8"NF x 2")
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
25	604109	1	CAP, steering arm ball
26	604290	18	SHIM, ball cap (Use as req'd)
27	604110	1	CAP, steering arm ball
	914465	1	FITTING, lubricating, straight, 1/8"NPT
28	099123	1	BALL, steering arm
29	604289	1	SHIELD, steering arm ball (neoprene)
30	-----	1	STEERING ASSEMBLY (See POWER STEERING)
31	044241	1	NUT, steering arm ball (1"NF)
	901344	1	PIN, cotter, 1/4" x 2"

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FRONT AXLE AND WHEEL LEAN (First type)

FRONT AXLE AND WHEEL LEAN

USAGE: Used prior to grader serial No. 1669

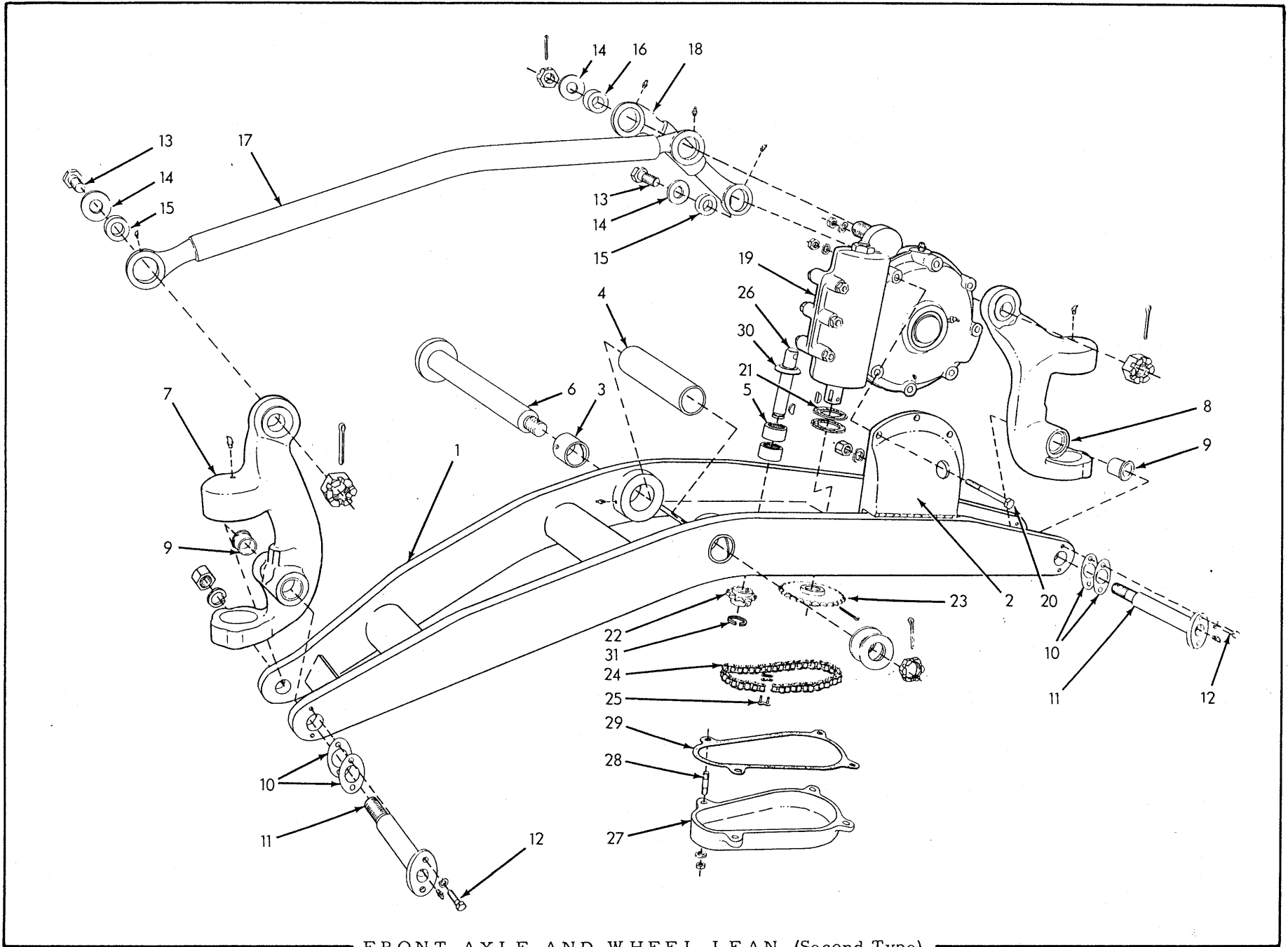
ITEM	PART NO.	QTY.	DESCRIPTION
1	089080	1	AXLE ASSEMBLY, front (Includes items 2 thru 4)
	915275	2	FITTING, lubricating, 65°, 1/8"NPT
2	050959	1	BRACKET, supporting, worm gear housing (Required welding to axle)
3	604949	2	BUSHING, front axle pivot (2"I. D.)
4	604338	1	BUSHING, front wheel lean sprocket shaft (1"I. D.)
5	605438	1	SPACER, front axle pivot bushings
6	075573	1	PIN, front axle pivot
	900825	2	WASHER, plain, U. S. std., 1-1/2" (Use as req'd)
	913527	1	NUT, jam, slotted, 1-1/2"NF
	900813	1	PIN, cotter, 3/16" x 2"
7	079133	1	KNUCKLE ASSEMBLY, front wheel lean, left (Includes item 9)
	915274	1	FITTING, lubricating, 45°, 1/8"NPT
8	079134	1	KNUCKLE ASSEMBLY, front wheel lean, right (Includes item 9)
	915274	1	FITTING, lubricating, 45°, 1/8"NPT
9	084629	4	BUSHING, front wheel lean knuckle
10	052960	10	SHIM, knuckle pivot bolt (Use as req'd)
11	051078	2	BOLT, pivot, front wheel lean knuckle
	915274	2	FITTING, lubricating, 45°, 1/8"NPT
	910916	2	LOCKWASHER, 1"
	911047	2	NUT, 1"NF
12	036034	4	CAPSCREW, 3/8"NF x 1"
	904206	4	LOCKWASHER, 3/8"
13	601968	2	BOLT, wheel lean link
	911061	2	NUT, slotted, 1-1/4"NC
	901344	2	PIN, cotter, 1/4" x 2"
14	601967	3	WASHER, wheel lean link bolt
15	601966	2	SPACER, wheel lean link outer bolt
16	099468	1	SPACER, wheel lean link inner bolt
17	604284	1	LINK, wheel lean, long (Used prior to grader #434)
	099467	1	LINK, wheel lean, long (Effective with grader #434)
	912808	1	FITTING, lubricating, straight, 1/4"NF
18	918186	1	FITTING, lubricating, 45°, 1/4"NF
	604283	1	LINK, wheel lean, short (Used prior to grader #434)
	099466	1	LINK, wheel lean, short (Effective with grader #434)
	912808	1	FITTING, lubricating, straight, 1/4"NF
	918186	1	FITTING, lubricating, 45°, 1/4"NF

(Continued)

FRONT AXLE AND WHEEL LEAN (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
19	086467	1	WORM AND GEAR ASSEMBLY, front wheel lean (See page 209 for parts)(Used prior to grader #434)
	-----	1	WORM AND GEAR ASSEMBLY, front wheel lean (See page 211 for parts)(Effective with grader #434. Order WORM AND GEAR ASSEMBLY 099455)
	911061	1	NUT, slotted, 1-1/4"NC (Used prior to grader #434)
	913798	1	NUT, slotted, 1-1/4"NF (Effective with grader #434)
	901344	1	PIN, cotter, 1/4" x 2"
20	053038	4	CAPSCREW, 1/2"NF x 6" (Used prior to grader #434)
21	053037	7	CAPSCREW, 1/2"NF x 5-1/2" (2 used prior to grader #434)
	904208	6	LOCKWASHER, 1/2"
	911043	6	NUT, 1/2"NF
22	601941	2	SEAL, worm and gear assembly (cork)
23	601936	1	SPROCKET, driving, front wheel lean (12 teeth)
	900813	1	PIN, cotter, 3/16" x 2"
	905126	1	KEY, #15 woodruff, 1/4" x 1"
24	604286	1	SPROCKET, driven, front wheel lean (27 teeth)
	900813	1	PIN, cotter, 3/16" x 2"
	910156	1	KEY, #C woodruff, 5/16" x 1-1/8"
25	074924	1	CHAIN, wheel lean drive (42 links)(5/8" pitch)(Includes item 26)
26	605509	1	LINK, connecting, wheel lean drive chain
27	604334	1	SHAFT, wheel lean driving sprocket
28	604089	1	COVER, wheel lean driving sprockets
29	601940	4	STUD (1/2"NC x 2")
	904208	4	LOCKWASHER, 1/2"
	911028	4	NUT, 1/2"NC
30	604285	1	GASKET, wheel lean driving sprocket cover

MEMO



FRONT AXLE AND WHEEL LEAN (Second Type)

FRONT AXLE AND WHEEL LEAN

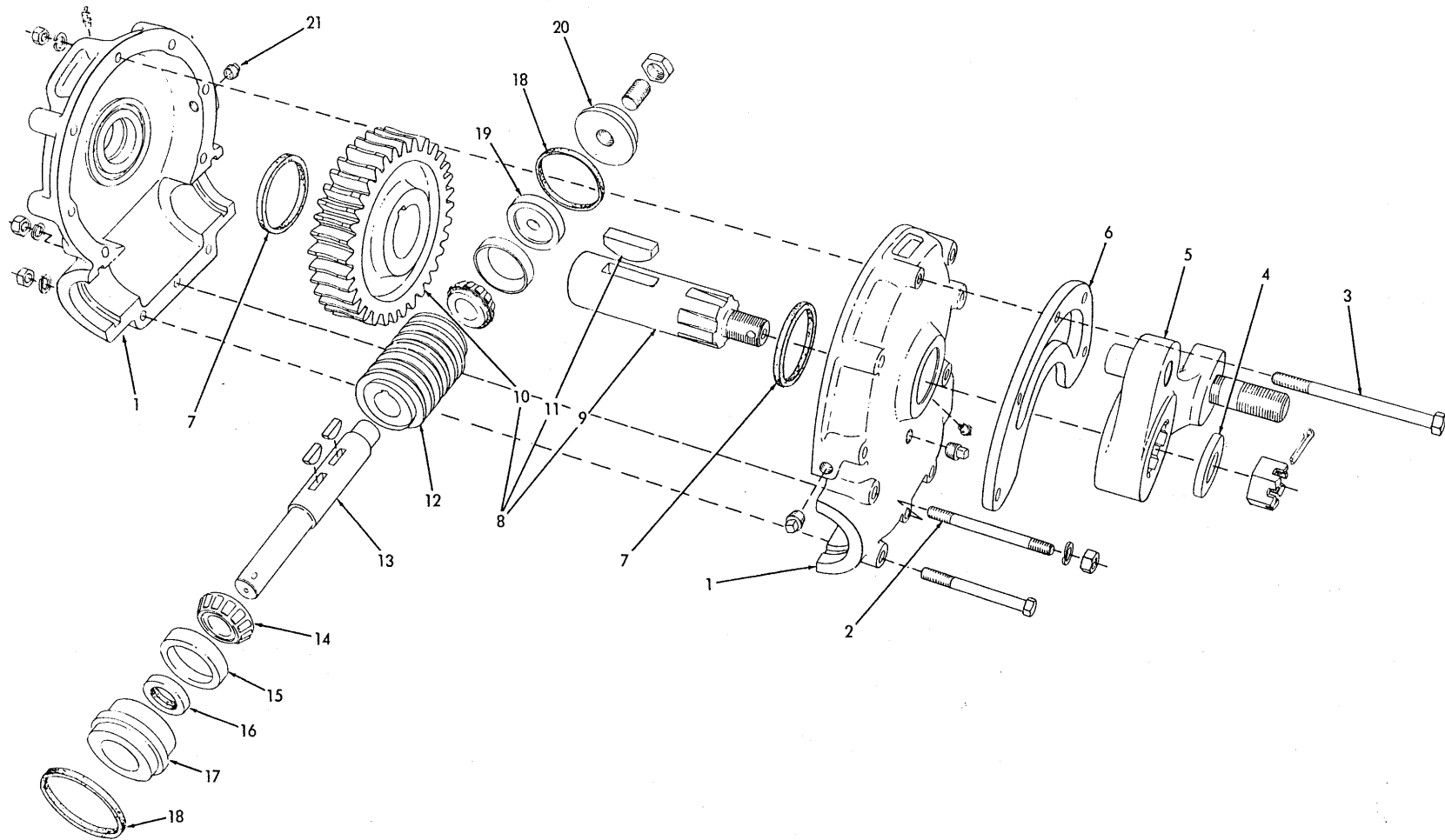
USAGE: Effective with grader serial No. 1669

ITEM	PART NO.	QTY.	DESCRIPTION
1	099031 915275	1 3	AXLE ASSEMBLY, front (Includes items 2 and 3) FITTING, lubricating, 65°, 1/8"NPT
2	050959	1	BRACKET, supporting, worm gear housing (Requires welding to axle)
3	604949	2	BUSHING, front axle pivot (2" I. D.)
4	605438	1	SPACER, front axle pivot bushings
5	604925	2	BEARING, needle, front wheel lean sprocket shaft
6	075573 900825 913527 900813	1 2 1 1	PIN, front axle pivot WASHER, plain, U.S. std., 1-1/2" (Use as req'd) NUT, jam, slotted, 1-1/2"NF PIN, cotter, 3/16" x 2"
7	098965 915274	1 1	KNUCKLE ASSEMBLY, front wheel lean, left (Includes item 9) FITTING, lubricating, 45°, 1/8"NPT
8	098966 915274	1 1	KNUCKLE ASSEMBLY, front wheel lean, right (Includes item 9) FITTING, lubricating, 45°, 1/8"NPT
9	087932	4	BUSHING, front wheel lean knuckle
10	098969	10	SHIM, knuckle pivot bolt (Use as req'd)
11	098962 915274 904210 913097	2 2 2 2	BOLT, pivot, front wheel lean knuckle FITTING, lubricating, 45°, 1/8"NPT LOCKWASHER, 1-1/4" NUT, 1-1/4"NF
12	012992 904206	4 4	CAPSCREW, pivot bolt retaining (3/8"NF x 1-1/4") LOCKWASHER, 3/8"
13	601968 911061 901344	2 2 2	BOLT, wheel lean link NUT, slotted, 1-1/4"NC PIN, cotter, 1/4" x 2"
14	601967	3	WASHER, wheel lean link bolt
15	601966	2	SPACER, wheel lean link outer bolt
16	099468	1	SPACER, wheel lean link inner bolt
17	099467 912808 918186	1 1 1	LINK, wheel lean, long FITTING, lubricating, straight, 1/4"NF FITTING, lubricating, 45°, 1/4"NF
18	099466 912808 918186	1 1 1	LINK, wheel lean, short FITTING, lubricating, straight, 1/4"NF FITTING, lubricating, 45°, 1/4"NF

(Continued)

FRONT AXLE AND WHEEL LEAN (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
19	-----	1	WORM AND GEAR ASSEMBLY, front wheel lean (See page 211 for parts)(Used prior to grader #1805. Order ASSEMBLY 099455)
	099455	1	WORM AND GEAR ASSEMBLY, front wheel lean (See page 213 for parts)(Effective with grader #1805)
20	913798	1	NUT, slotted, 1-1/4"NF
	901344	1	PIN, cotter, 1/4" x 2"
	053037	7	CAPSCREW, 1/2"NF x 5-1/2"
	904208	6	LOCKWASHER, 1/2"
	911043	6	NUT, 1/2"NF
21	601941	2	SEAL, worm and gear assembly (Cork)
22	099122	1	SPROCKET, driving, front wheel lean (12 teeth)
	905126	1	KEY, #15 woodruff, 1/4" x 1"
23	604286	1	SPROCKET, driven, front wheel lean (27 teeth)
	900813	1	PIN, cotter, 3/16" x 2"
	910156	1	KEY, #C woodruff, 5/16" x 1-1/8"
24	074924	1	CHAIN, wheel lean drive (42 links)(5/8" pitch)(Includes item 25)
25	605509	1	LINK, connecting, wheel lean drive chain
26	-----	1	SHAFT, wheel lean driving sprocket (Used prior to grader #1930. Order SHAFT 630766 and RING 624698)
	630766	1	SHAFT, wheel lean driving sprocket (Effective with grader #1930)
27	604089	1	COVER, wheel lean driving sprockets
28	601940	4	STUD (1/2"NC x 2")
	904208	4	LOCKWASHER, 1/2"
	911028	4	NUT, 1/2"NC
29	604285	1	GASKET, wheel lean driving sprocket cover
30	604298	1	SHIELD, dirt, sprocket shaft
31	054182	1	RING, snap, sprocket retaining (5/64" thick)(Used prior to grader #1930)
	624698	1	RING, snap, sprocket retaining (1/8" thick)(Effective with grader #1930)

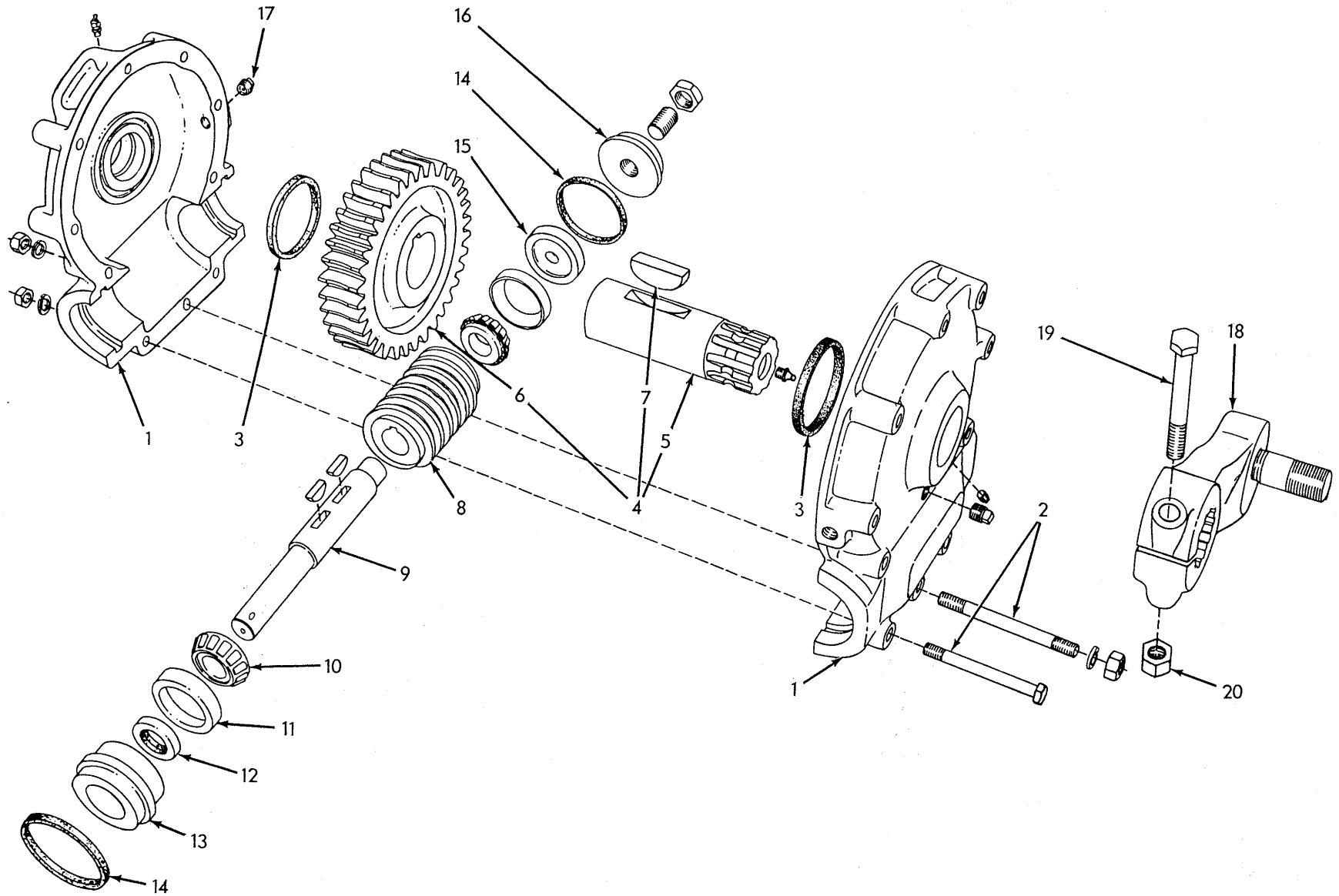


WORM AND GEAR ASSEMBLY 086467

WORM AND GEAR ASSEMBLY 086467

USAGE: Graders prior to serial No. 434. See page 201

ITEM	PART NO.	QTY.	DESCRIPTION
1	602234	1	HOUSING ASSEMBLY (Consists of 2 HOUSINGS, 4 STUDS 602264, 8 NUTS 911028 and 8 LOCKWASHERS 904208)
	901653	2	PLUG, pipe, 3/8"NPT
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	915273	1	FITTING, lubricating, 30°, 1/8"NPT
2	602264	1	STUD, (1/2"NC x 5-1/2")
3	053038	1	CAPSCREW, 1/2"NF x 6"
	910257	2	CAPSCREW, 1/2"NC x 4-3/4"
	904208	5	LOCKWASHER, 1/2"
	911043	1	NUT, 1/2"NF
	911028	4	NUT, 1/2"NC
4	075420	1	WASHER, crank retaining
	912841	1	NUT, slotted, 1-1/4"NF
	901345	1	PIN, cotter, 1/4" x 2-1/2"
5	050940	1	CRANK
6	053036	1	PLATE, crank stop
7	602265	2	SEAL, housing
8	085766	1	GEAR AND SHAFT ASSEMBLY (Consists of items 9 thru 11)
9	075418	1	SHAFT only
10	085765	1	GEAR only
11	602270	1	KEY (woodruff, 5/8" x 2-7/16")
12	085764	1	WORM (right hand)
	911201	2	KEY, #E woodruff, 3/8" x 1-1/4"
13	602280	1	SHAFT, worm
14	604388	2	CONE ASSEMBLY, worm shaft bearing
15	604387	2	CUP, worm shaft bearing
16	603007	1	SEAL, oil, worm shaft
17	602274	1	CAP, worm shaft lower bearing
18	602462	2	SEAL, worm shaft bearing cap
19	602272	1	PLUG, worm shaft bearing adjustment
20	602273	1	CAP, worm shaft upper bearing
	911227	1	SETSCREW, socket-hd., 1"NC x 2"
	911038	1	NUT, jam, 1"NC
21	605207	1	PLUG, vent, gear housing

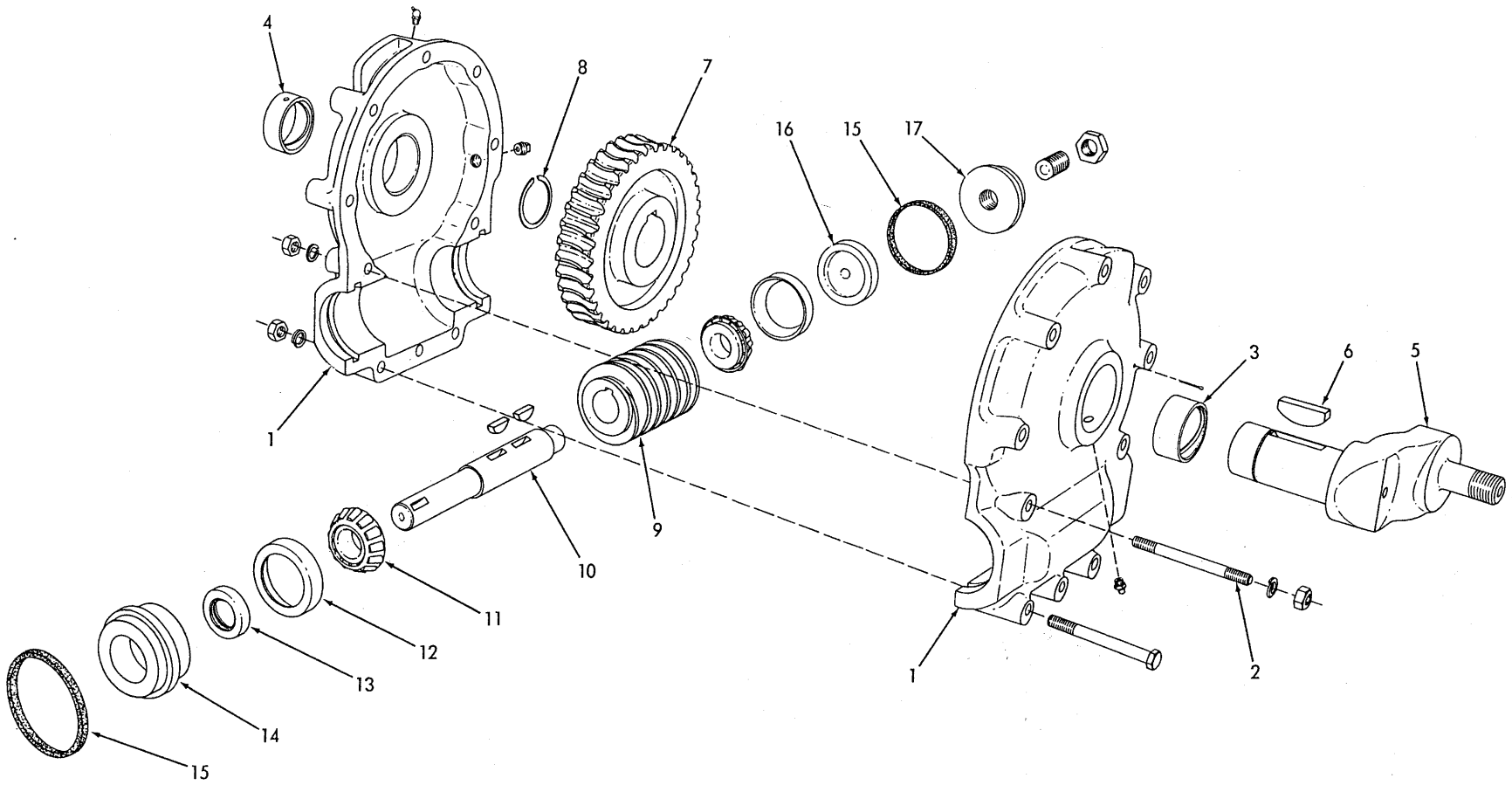


FRONT WHEEL LEAN WORM AND GEAR DETAILS

FRONT WHEEL LEAN WORM AND GEAR DETAILS

USAGE: Graders serial No. 434 thru 1805. See pages 201 and 205

ITEM	PART NO.	QTY.	DESCRIPTION
1	602234	1	HOUSING ASSEMBLY (Consists of 2 HOUSINGS, 5 STUDS 602264, 10 NUTS 911028 and 10 LOCKWASHERS 904208)
	910231	1	PLUG, pipe, 1/8"NPT
	901653	2	PLUG, pipe, 3/8"NPT
	915273	1	FITTING, lubricating, 30°, 1/8"NPT
2	602264	1	STUD (1/2"NC x 5-1/2")
	910257	2	CAPSCREW, 1/2"NC x 4-3/4"
	904208	4	LOCKWASHER, 1/2"
	911028	4	NUT, 1/2"NC
3	602265	2	SEAL, housing
4	089068	1	GEAR AND SHAFT ASSEMBLY (Consists of items 5 thru 7)
5	089077	1	SHAFT only
	914465	1	FITTING, lubricating, straight, 1/8"NPT
6	085765	1	GEAR only
7	602270	1	KEY (woodruff, 5/8" x 2-7/16")
8	085764	1	WORM (right hand)
	911201	2	KEY, #E woodruff, 3/8" x 1-1/4"
9	602280	1	SHAFT, worm
10	604388	2	CONE ASSEMBLY, worm shaft bearings
11	604387	2	CUP, worm shaft bearing
12	603007	1	SEAL, oil, worm shaft
13	602274	1	CAP, worm shaft lower bearing
14	602462	2	SEAL, worm shaft bearing cap
15	602272	1	PLUG, worm shaft bearing adjustment
16	602273	1	CAP, worm shaft upper bearing
	911227	1	SETSCREW, socket-hd., 1"NC x 2"
	911038	1	NUT, jam, 1"NC
17	605207	1	PLUG, vent, gear housing
18	089067	1	CRANK
19	071987	1	CAPSCREW, 5/8"NF x 5"
20	072366	1	NUT, high, 5/8"NF

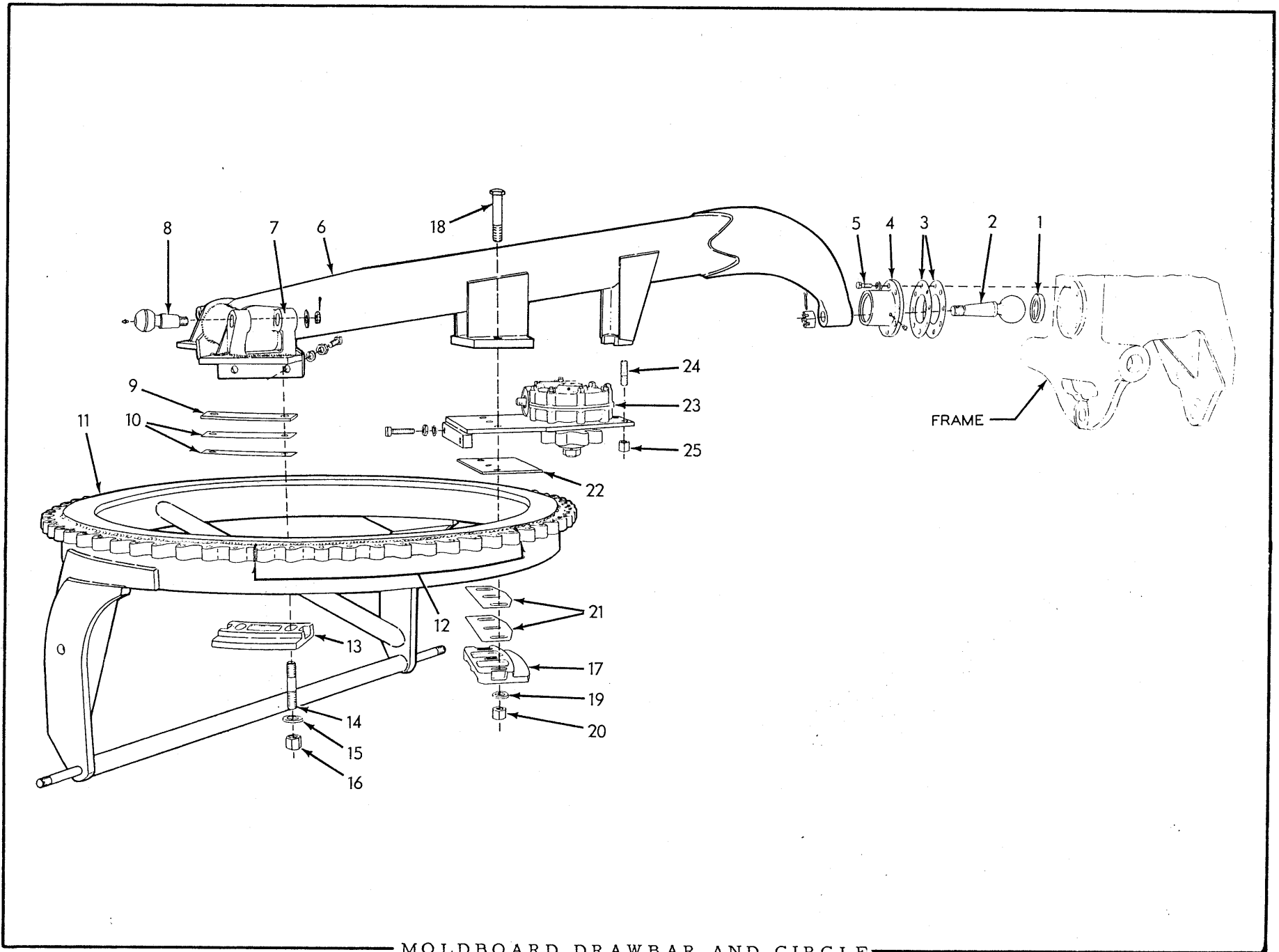


WORM AND GEAR ASSEMBLY 099455

WORM AND GEAR ASSEMBLY 099455

USAGE: Effective with grader serial No. 1805. See page 205

ITEM	PART NO.	QTY.	DESCRIPTION
1	099456	1	HOUSING ASSEMBLY (Consists of 2 HOUSINGS, 5 STUDS 602264, 10 NUTS 911028, 10 LOCKWASHERS 904208, 1 BUSHING 099451, 1 BUSHING 099452 and 1 cotter PIN 900805)
	900805	1	PIN, cotter, 1/8" x 3/4" (vent hole)
	901653	1	PLUG, pipe, 3/8"NPT
	915273	1	FITTING, lubricating, 30°, 1/8"NPT
	914465	1	FITTING, lubricating, straight, 1/8"NPT
2	602264	1	STUD (1/2" diam.)
	910257	2	CAPSCREW, 1/2"NC x 4-3/4"
	904208	4	LOCKWASHER, 1/2"
	911028	4	NUT, 1/2"NC
3	099452	1	BUSHING, gear housing, front
4	099451	1	BUSHING, gear housing, rear
5	099454	1	CRANK
6	602270	1	KEY (woodruff, 5/8" x 2-7/16")
7	085765	1	GEAR
8	030801	1	RING, snap, gear retaining
9	085764	1	WORM (right hand)
	911201	2	KEY, #E woodruff, 3/8" x 1-1/4"
10	602280	1	SHAFT, worm
11	604388	2	CONE ASSEMBLY, worm shaft bearings
12	604387	2	CUP, worm shaft bearing
13	603007	1	SEAL, oil, worm shaft
14	602274	1	CAP, worm shaft lower bearing
15	602462	2	SEAL, worm shaft bearing cap
16	602272	1	PLUG, worm shaft bearing adjustment
17	602273	1	CAP, worm shaft upper bearing
	911227	1	SETSCREW, socket-hd., 1"NC x 2"
	911038	1	NUT, jam, 1"NC

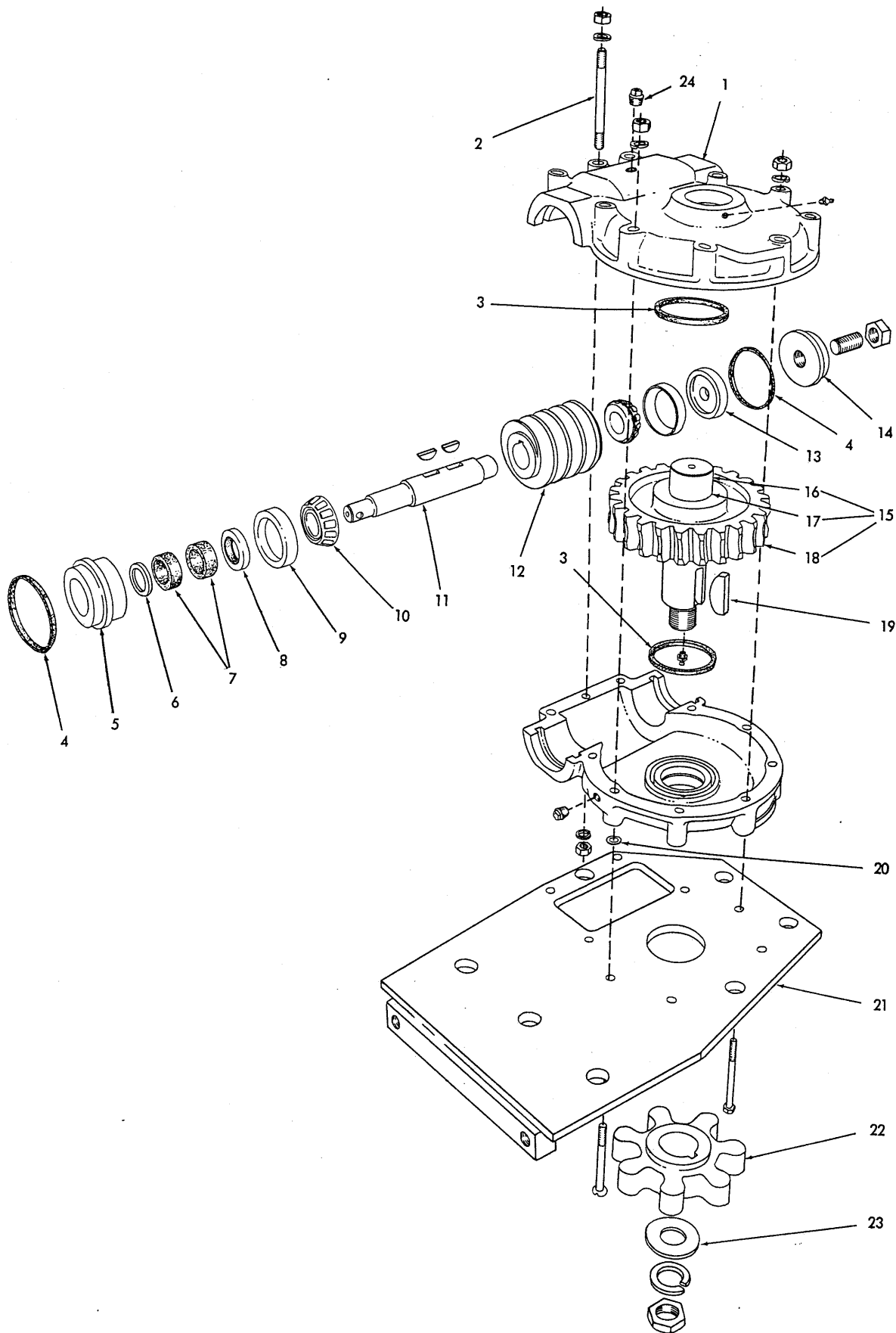


MOLDBOARD DRAWBAR AND CIRCLE

MOLDBAORD DRAWBAR AND CIRCLE

ITEM	PART NO.	QTY.	DESCRIPTION
1	602198	1	SEAT, drawbar ball
2	078056	1	BALL, drawbar
	902279	1	NUT, slotted, 1-1/2"NC
	911279	1	PIN, cotter, 5/16" x 2-1/4"
3	602199	10	SHIM, drawbar ball socket (Use as req'd)
4	075386	1	SOCKET, drawbar ball
	914465	1	FITTING, lubricating, straight, 1/8"NPT
5	036707	8	CAPSCREW, 5/8"NC x 1-3/4"
	904209	8	LOCKWASHER, 5/8"
6	086529	1	DRAWBAR, moldboard (Includes item 7)(Standard on graders prior to #1455. If for graders prior to #1745, excluding #1719, 1720, 1722, 1723, also order 3 CAPSCREW 099992)
	091615	1	DRAWBAR, moldboard (Includes item 7)(Standard on graders #1455 and up. Optional on prior units. Required for laterally shiftable moldboard with power shift)
	901267	4	SETSCREW, sq-hd., oval point, 7/8"NC x 2-1/2"
	905347	4	LOCKWASHER, 7/8"
7	086527	1	*END, cross pipe, left
	086528	1	*END, cross pipe, right
	901421	4	NUT, jam, 7/8"NC
8	601972	3	PIN, ball, circle lift and side shift
	914465	3	FITTING, lubricating, straight, 1/8"NPT
	900822	3	WASHER, plain, U.S. std., 1"
	911174	3	NUT, jam, slotted, 1"NF
	900808	3	PIN, cotter, 1/8" x 1-1/2"
9	602667	2	PLATE, wear, moldboard circle, rear
10	602688	32	SHIM, circle rear guide (Use as req'd)
11	081029	1	CIRCLE, moldboard (Includes item 12)(Standard on graders prior to #1455)
	079514	1	CIRCLE, moldboard (Includes item 12)(Standard on graders #1455 and up. Optional on prior units. Used with laterally shiftable moldboard only)
12	604150	6	*SEGMENT, circle gear (11-tooth segment)
13	093515	2	GUIDE, circle, rear
14	602664	4	STUD (1-1/8"NF x 5-1/2")
15	602663	4	WASHER, plain
16	053994	4	NUT, high, 1-1/8"NF
17	093514	1	GUIDE, circle, front
18	602721	3	STUD (1-1/8"NF x 6-1/4")(Used prior to grader #1745, excluding #1719, 1720, 1722, 1723)
	099992	3	CAPSCREW, 1-1/8"NF x 6" (Effective with grader #1745, including #1719, 1720, 1722, 1723)
19	602663	3	WASHER, plain
20	053994	3	NUT, high, 1-1/8"NF
21	604270	16	SHIM, circle front guide (Use as req'd)
22	604272	1	PLATE, wear, moldboard circle, front
23	099084	1	CIRCLE TURN ASSEMBLY (See page 217 for parts)
	912606	2	SETSCREW, sq-hd., oval point, 7/8"NC x 3-1/2"
	905347	2	LOCKWASHER, 7/8"
	901421	2	NUT, jam, 7/8"NC
24	602248	2	STUD (1"NF x 3-1/8")
25	600236	2	NUT, high, 1"NF

*Require welding to install

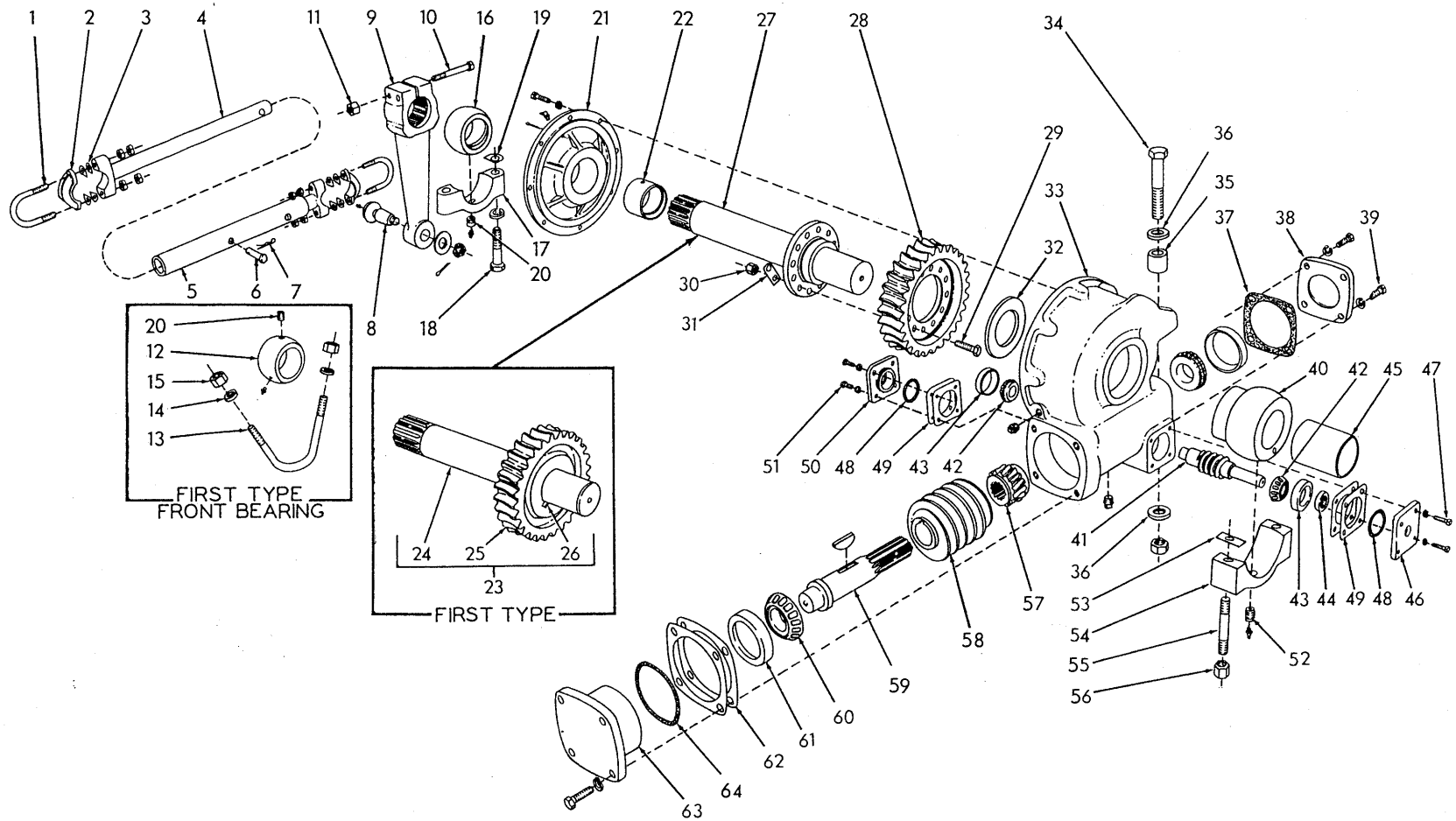


CIRCLE TURN ASSEMBLY 099084

CIRCLE TURN ASSEMBLY 099084

USAGE: See page 215

ITEM	PART NO.	QTY.	DESCRIPTION
1	602237	1	HOUSING ASSEMBLY, worm gear (Consists of 2 HOUSINGS, 5 STUDS 602264, 10 NUTS 911028 and 10 LOCKWASHERS 904208)
	901653	1	PLUG, pipe, 3/8"NPT
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	911258	1	CAPSCREW, fl-hd., 1/2"NC x 5-1/2"
	911259	7	CAPSCREW, hex-hd., 1/2"NC x 5-1/2"
2	602264	2	STUD (1/2" diam.)
	904208	12	LOCKWASHER, 1/2"
	911028	12	NUT, 1/2"NC
3	602265	2	SEAL, oil, worm gear housing (cork, 3-3/4"O.D.)
4	602462	2	SEAL, oil, worm shaft bearing cap (cork, 3-7/8"O.D.)
5	602274	1	CAP, retaining, worm shaft rear bearing
6	603232	1	WASHER, retaining, worm shaft
7	603408	2	PACKING, worm shaft (felt)
8	603007	1	SEAL, oil, worm shaft
9	604387	2	CUP, worm shaft bearing
10	604388	2	CONE ASSEMBLY, worm shaft bearing
11	602271	1	SHAFT, worm
	911201	2	KEY, #E woodruff, 3/8" x 1-1/4"
12	099039	1	WORM (left hand)
13	602272	1	PLUG, worm shaft bearing adjustment
14	602273	1	CAP, worm shaft front bearing
	911227	1	SETSCREW socket-hd., oval-pt., 1"NC x 2"
	911038	1	NUT, jam, 1"NC
15	604258	1	GEAR AND SHAFT ASSEMBLY (Consists of items 16 thru 18)
16	604257	1	SHAFT, only
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	913077	1	LOCKWASHER, 1-1/2"
	911207	1	NUT, jam, 1-1/2"NF
17	602270	1	KEY, worm gear (woodruff, 5/8" x 2-7/16")
18	602269	1	GEAR only (left helix)
19	602270	1	KEY, pinion (woodruff, 5/8" x 2-7/16")
20	603585	8	WASHER, plain (copper)
21	604252	1	PLATE, supporting
22	604154	1	PINION (7 teeth)
23	602560	1	WASHER, plain
24	605207	1	PLUG, vent, worm gear housing



MOLDBOARD SIDE SHIFT

MOLDBOARD SIDE SHIFT

ITEM	PART NO.	QTY.	DESCRIPTION
-	087706	1	SIDE SHIFT ASSEMBLY (Consists of items 1 thru 64)
1	605665	2	U-BOLT, socket cap
	911049	8	NUT, jam, 5/8"NF
2	053986	2	CAP, socket
3	053992	16	SHIM, socket cap (Use as req'd)
4	604366	1	ROD, link
5	604364	1	TUBE, link
6	602224	1	PIN, coupling, link rod and tube
7	617855	1	CLIP, retaining, coupling pin
8	601972	1	PIN, ball
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	900822	1	WASHER, plain, U.S. std., 1"
	911174	1	NUT, jam, slotted, 1"NF
	900808	1	PIN, cotter, 1/8" x 1-1/2"
9	087704	1	CRANK
10	051655	2	CAPSCREW, 3/4"NF x 5-1/4"
11	012767	2	NUT, high, 3/4"NF
<p><u>NOTE:</u> Items 12 thru 15 comprise the FIRST TYPE FRONT BEARING used on graders prior to serial No. 1778</p>			
12	605324	1	BEARING, worm gear shaft, front
	914465	1	FITTING, lubricating, straight, 1/8"NPT
13	602763	1	U-BOLT, worm gear shaft front bearing
14	602214	2	WASHER, plain
15	600236	2	NUT, high, 1"NF
<p><u>NOTE:</u> Items 16 thru 19 comprise the SECOND TYPE FRONT BEARING used on graders serial No. 1778 and up.</p>			
16	075234	1	BEARING, worm gear shaft, front
17	078275	1	CAP, front bearing
18	098265	2	CAPSCREW, 1"NF x 4-3/4"
	910916	2	LOCKWASHER, 1"
19	075150	6	SHIM, front bearing cap (1/32" thick. Use as req'd)
	075151	10	SHIM, front bearing cap (.012" thick. Use as req'd)
20	605307	1	NIPPLE, anchor, worm gear shaft bearing
	914465	1	FITTING, lubricating, straight, 1/8"NPT (Effective with grader #1778)
21	075152	1	COVER ASSEMBLY (Includes item 22; also cotter pin indented below) (Used prior to grader #366)
	085243	1	COVER ASSEMBLY (Includes item 22; also cotter pin indented below) (Effective with grader #366)
	900806	1	PIN, cotter, 1/8" (breather hole restriction)
	915275	1	FITTING, lubricating, 65°, 1/8"NPT
	903639	8	CAPSCREW, 1/2"NC x 1-1/2"
	904208	8	LOCKWASHER, 1/2"

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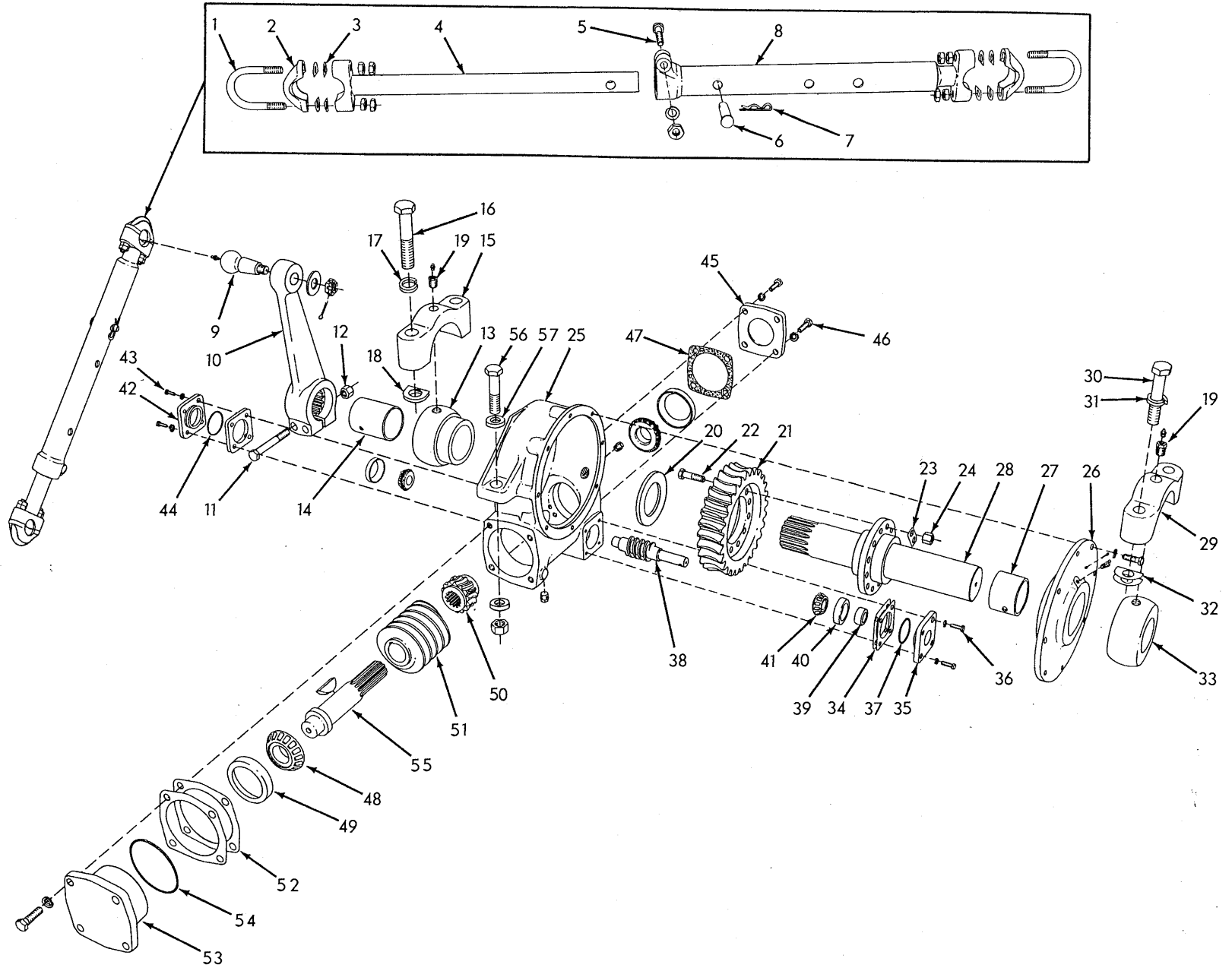
MOLDBOARD SIDE SHIFT (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
22	075155	1	BUSHING, housing cover (3" wide)(Used prior to grader #366)
	085545	1	BUSHING, housing cover (2-1/2" wide)(Effective with grader #366)
<p><u>NOTE:</u> Items 23 thru 26 comprise the FIRST TYPE GEAR ARRANGEMENT used on graders prior to serial No. 366.</p>			
23	087708	1	GEAR AND SHAFT ASSEMBLY, worm (Consists of items 24 thru 26)
24	087705	1	SHAFT only
25	075157	1	GEAR only
26	601833	2	KEY (woodruff, 3/4" x 2-7/16")
<p><u>NOTE:</u> Items 27 thru 32 comprise the SECOND TYPE GEAR ARRANGEMENT used on graders serial No. 366 and up.</p>			
27	088103	1	SHAFT, worm gear
28	085574	1	GEAR, worm (aluminum)(Used prior to grader #1330)
	094913	1	GEAR, worm (steel)(Effective with grader #1330)
	095314	12	CAPSCREW, 5/8"NF x 2-1/4"
	072366	12	NUT, high, 5/8"NF
31	085551	6	LOCK, nut
32	085549	1	WASHER, thrust, worm gear
33	075154	1	HOUSING
	912725	2	PLUG, pipe, 1/2"NPT
34	012561	1	CAPSCREW, housing anchor (1"NF x 5-1/4")(Used prior to grader #1622)
	607161	1	CAPSCREW, housing anchor (1"NF x 5-1/2")(Effective with grader #1622)
	911047	1	NUT, 1"NF
35	075238	1	SPACER, housing anchor screw (1-1/2" long)(Used prior to grader #1622)
	099266	1	SPACER, housing anchor screw (1-5/8" long)(Effective with grader #1622)
36	083318	2	WASHER, plain, housing anchor screw
37	076920	1	GASKET, worm shaft right bearing cap
38	075139	1	CAP, worm shaft right bearing
	903793	2	CAPSCREW, 5/8"NC x 2"
39	092014	2	CAPSCREW, 5/8"NC x 2" (Nyllok)
	904209	4	LOCKWASHER, 5/8"
40	075138	1	BEARING, worm gear shaft, rear (Used prior to grader #366)
	085247	1	BEARING ASSEMBLY, worm gear shaft, rear (Includes item 45) (Effective with grader #366)
41	075239	1	WORM, input
42	604382	2	CONE ASSEMBLY, input worm bearing

(Continued)

MOLDBOARD SIDE SHIFT (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
43	604383	2	CUP, input worm bearing
44	603010	1	SEAL, oil, input worm bearing (7/16" wide)(Used prior to grader #919)
	057848	1	SEAL, oil, input worm bearing (3/4" wide)(Effective with grader #919)
45	085248	1	BUSHING, rear bearing
46	092026	1	CAP, input worm rear bearing
47	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	092013	2	CAPSCREW, 3/8"NC x 1-1/8" (Nylok)
	904206	4	LOCKWASHER, 3/8"
48	092011	2	O-RING, input worm bearing cup (Effective with grader #919)
49	075134	4	SHIM, adjusting, input bearing (.003" thick. Use as req'd)
	075135	8	SHIM, adjusting, input bearing (.010" thick. Use as req'd)
50	092025	1	CAP, input worm front bearing
51	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	092013	2	CAPSCREW, 3/8"NC x 1-1/8" (Nylok)
	904206	4	LOCKWASHER, 3/8"
52	605307	1	NIPPLE, worm gear shaft lubricating
	914465	1	FITTING, lubricating, straight, 1/8"NPT
53	061181	6	SHIM, ball cap (1/32" thick. Use as req'd)
	061182	10	SHIM, ball cap (.013" thick. Use as req'd)
54	601288	1	CAP, ball
55	050913	2	STUD (3/4" diam.)
56	012767	2	NUT, high, 3/4"NF
57	078033	1	GEAR, worm
58	075145	1	WORM, gear driving (cast iron)(Used prior to grader #366)
	085387	1	WORM, gear driving (steel)(Used on graders #366 thru #1329)
	094917	1	WORM, gear driving (bronze)(Effective with grader #1330)
	911238	1	KEY, #U woodruff, 7/16" x 2-3/4"
59	075146	1	SHAFT, worm
60	075142	2	CONE ASSEMBLY, worm shaft bearing
61	075.143	2	CUP, worm shaft bearing
62	075603	4	SHIM, adjusting, worm shaft left bearing (.002" thick. Use as req'd)
	075602	9	SHIM, adjusting, worm shaft left bearing (.010" thick. Use as req'd)
63	092024	1	CAP, worm shaft left bearing
	903793	4	CAPSCREW, 5/8"NC x 2"
	904209	4	LOCKWASHER, 5/8"
64	079446	1	O-RING, worm shaft bearing cap (Effective with grader #919)



MOLDBOARD LIFT

MOLDBOARD LIFT

ITEM	PART NUMBER	QTY.	DESCRIPTION
-	085517	1	LIFT GROUP, left (Consists of items 1 thru 57)
-	085518	1	LIFT GROUP, right (Consists of items 1 thru 57)
1	605665	4	U-BOLT, socket cap
	911049	16	NUT, jam, 5/8"NF
2	053986	4	CAP, socket
3	053992	32	SHIM, socket cap (Use as req'd)
4	603419	2	ROD, lift link
5	037573	2	CAPSCREW, lift link clamping (5/8"NC x 2-3/4")
	904209	2	LOCKWASHER, 5/8"
	911029	2	NUT, 5/8"NC
6	602224	2	PIN, coupling, lift link and rod
7	617855	2	CLIP, retaining, coupling pin
8	083127	2	LINK, lift
9	601972	2	PIN, ball, lifting crank
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	900822	2	WASHER, plain, U.S. std., 1"
	911174	2	NUT, jam, slotted, 1"NF
	900808	2	PIN, cotter, 1/8" x 1-1/2"
10	087039	2	CRANK, lifting
11	051655	4	CAPSCREW, 3/4"NF x 5-1/4"
12	012767	4	NUT, high, 3/4"NF
13	085247	2	BEARING ASSEMBLY, worm gear shaft, front (Includes item 14)
14	085248	2	BUSHING, worm gear shaft front bearing
15	085249	2	CAP, front bearing
16	085250	4	STUD (1-1/4"NF x 7-5/16")(Used prior to #1564)
	098266	4	CAPSCREW (1-1/4"NF x 5-5/8")(Effective with #1564)
17	028847	4	NUT, high, 1-1/4"NF (Used prior to #1564)
	904210	4	LOCKWASHER, 1-1/4" (Effective with #1564)
18	085251	12	SHIM, front bearing cap (1/32" thick. Use as req'd)
	085252	20	SHIM, front bearing cap (.012" thick. Use as req'd)
19	605307	4	NIPPLE, worm gear shaft lubricating
	914465	4	FITTING, lubricating, straight, 1/8"NPT
20	085549	2	WASHER, thrust
21	085574	2	GEAR, worm (aluminum)(Used prior to grader #1330)
	094913	2	GEAR, worm (steel)(Effective with grader #1330)
22	095314	24	CAPSCREW
23	085551	12	LOCK, nut
24	072366	24	NUT, high, 5/8"NF

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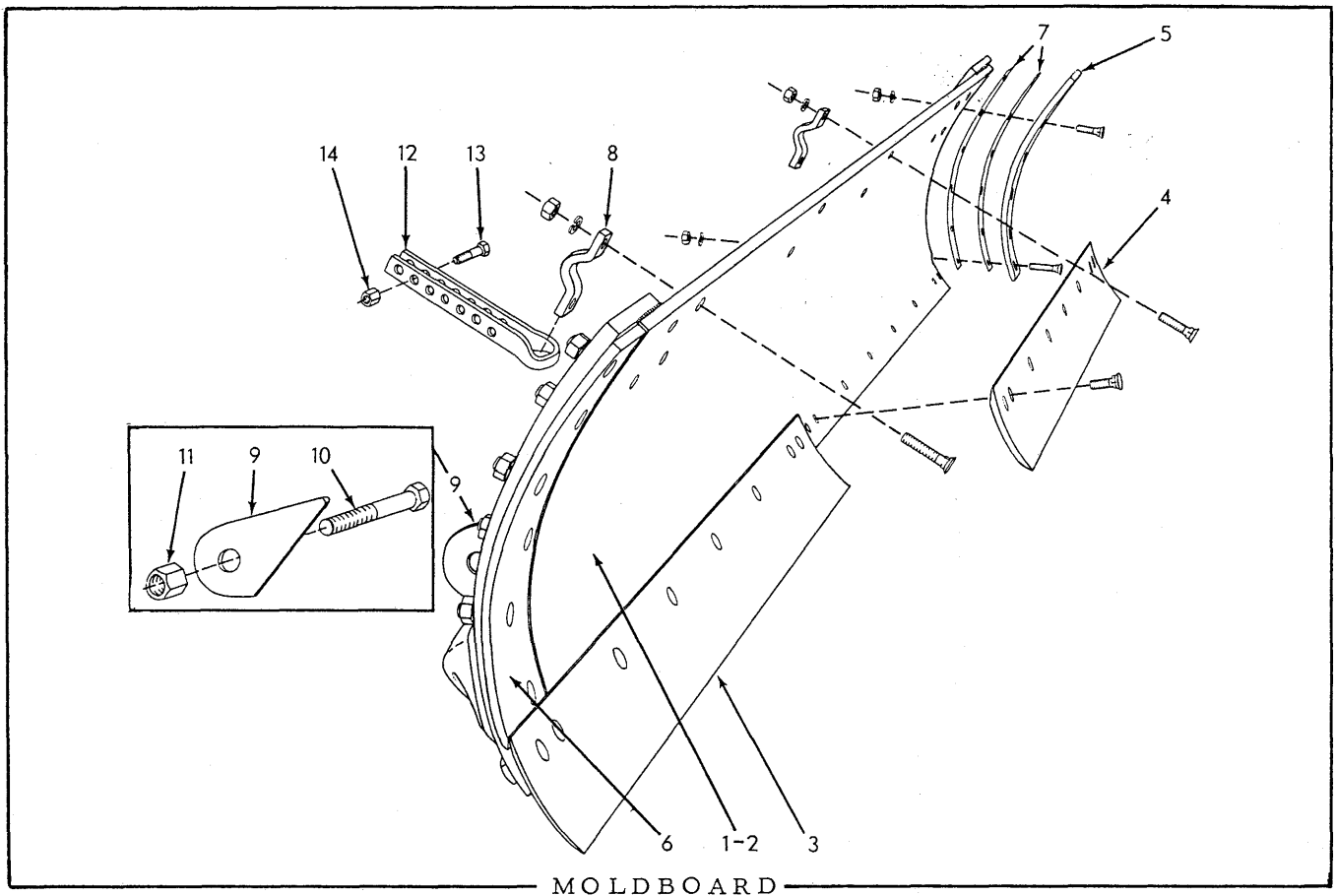
MOLDBOARD LIFT (Continued)

ITEM	PART NUMBER	QTY.	DESCRIPTION
25	086601	1	HOUSING, left side
	086602	1	HOUSING, right side
	912725	4	PLUG, pipe, 1/2"NPT
26	085243	2	COVER ASSEMBLY, housing (Includes item 27 and cotter PIN indented below)
	915275	2	FITTING, lubricating, 65°, 1/8"NPT
	903639	16	CAPSCREW, 1/2"NC x 1-1/2"
	904208	16	LOCKWASHER, 1/2"
	900806	2	PIN, cotter, 1/8" x 1"
27	085545	2	BUSHING, housing cover
28	087038	2	SHAFT, worm gear
29	078275	2	CAP, rear bearing
30	075149	4	STUD (1"NF x 5-7/8")(Used prior to #1564)
	098265	4	CAPSCREW, 1"NF x 4-3/4" (Effective with #1564)
31	600236	4	NUT, high, 1"NF (Used prior to #1564)
	910816	4	LOCKWASHER, 1" (Effective with #1564)
32	075150	12	SHIM, rear bearing cap (1/32" thick. Use as req'd)
	075151	20	SHIM, rear bearing cap (.012" thick. Use as req'd)
33	075234	2	BEARING, worm gear shaft, rear
34	075134	8	SHIM, bearing adjusting (.003" thick. Use as req'd)
	075135	16	SHIM, bearing adjusting (.010" thick. Use as req'd)
35	092026	2	CAP, input worm rear bearing
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
36	092013	4	CAPSCREW, 3/8"NC x 1-1/8" (Nylok)
	904206	8	LOCKWASHER, 3/8"
37	092011	2	O-RING, input worm bearing cap (Effective with grader #919)
38	075137	2	WORM, input
39	603010	2	SEAL, oil, input worm (7/16"wide)(Used prior to grader #919)
	057848	2	SEAL, oil, input worm (3/4"wide)(Effective with grader#919)
40	604383	4	CUP, input worm bearing
41	604382	4	CONE ASSEMBLY, input worm bearing
42	092025	2	CAP, input worm front bearing
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
43	092013	4	CAPSCREW, 3/8"NC x 1-1/8" (Nylok)
	904206	8	LOCKWASHER, 3/8"
44	092011	2	O-RING, input worm bearing cap (Effective with grader #919)

(Continued)

MOLDBOARD LIFT (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
45	075139	2	CAP, worm shaft outer bearing
	903793	4	CAPSCREW, 5/8"NC x 2"
46	092014	4	CAPSCREW, 5/8"NC x 2" (Nylok)
	904209	8	LOCKWASHER, 5/8"
47	076920	2	GASKET, worm shaft outer bearing cap
48	075142	4	CONE ASSEMBLY, worm shaft bearing
49	075143	4	CUP, worm shaft bearing
50	078034	2	GEAR, worm
51	085387	2	WORM (steel)(Used prior to grader #1330)
	094917	2	WORM (bronze)(Effective with grader #1330)
	911238	2	KEY, #U woodruff, 7/16" x 2-3/4"
52	075603	8	SHIM, bearing adjusting (.002" thick. Use as req'd)
	075602	18	SHIM, bearing adjusting (.010" thick. Use as req'd)
53	092024	2	CAP, worm shaft inner bearing
	903793	8	CAPSCREW, 5/8"NC x 2"
	904209	8	LOCKWASHER, 5/8"
54	079446	2	O-RING, worm shaft inner bearing cap (Effective with grader #919)
55	075146	2	SHAFT, worm
56	036546	2	CAPSCREW, housing anchor (1"NF x 4-1/4")
	911047	2	NUT, 1"NF
57	083318	4	WASHER, plain, housing anchor screw



MOLDBOARD

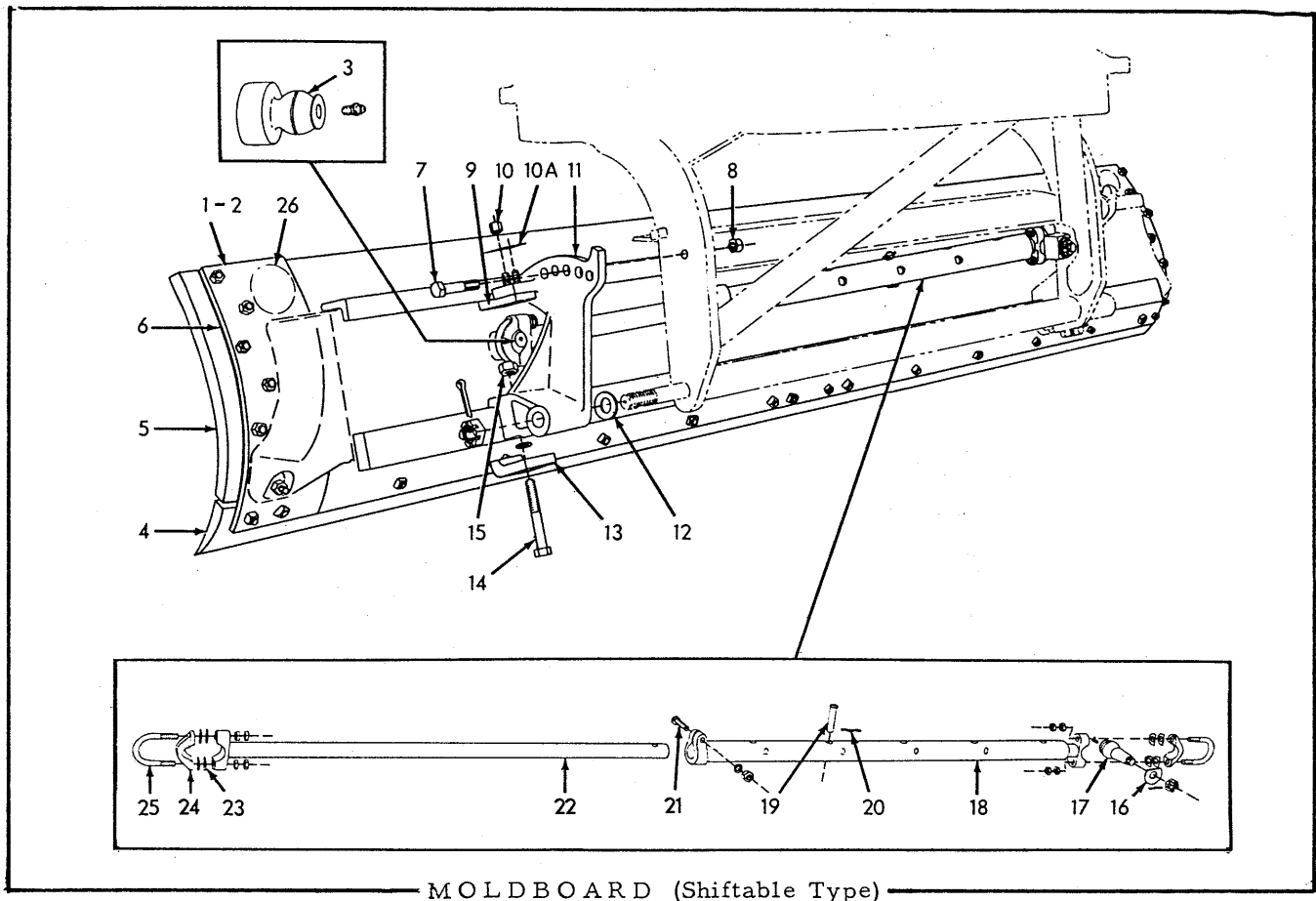
USAGE: Graders prior to serial No. 1455. Also see page 228 for Shiftable Moldboard used as optional equipment

ITEM	PART NO.	QUANTITY			DESCRIPTION
		10 ft.	12 ft.	14 ft.	
1	605065	1	-	-	MOLDBOARD ASSEMBLY (10 ft.) (Special equipment)
	068305	-	1	-	MOLDBOARD ASSEMBLY (12 ft.) (Standard equipment)
	605067	-	-	1	MOLDBOARD ASSEMBLY (14 ft.) (Special equipment)
<u>NOTE:</u> Each Moldboard Assembly listed above consists of items 2 thru 9.					
2	054841	1	-	-	MOLDBOARD only (10 ft. Includes item 9)
	068302	-	1	-	MOLDBOARD only (12 ft. Includes item 9)
	054842	-	-	1	MOLDBOARD only (14 ft. Includes item 9)
3	601530	1	-	-	EDGE, cutting, right hand (5 ft., 1/2" thick)
	601532	-	1	-	EDGE, cutting, right hand (6 ft., 1/2" thick) (Original equipment)
	099352	-	1	-	EDGE, cutting, right hand (6 ft., 5/8" thick) (Service replacement)
	601534	-	-	1	EDGE, cutting, right hand (7 ft., 1/2" thick) (Original equipment)
	099354	-	-	1	EDGE, cutting, right hand (7 ft., 5/8" thick) (Service replacement)
	914484	7	8	9	BOLT, plow, 5/8"NC x 2" (For 1/2" Edges)
	911633	7	8	9	BOLT, plow, 5/8"NC x 2-1/4" (For 5/8" Edges)
	900407	7	8	9	NUT, square, 5/8"NC

(Continued)

MOLDBOARD (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION	
		10 ft.	12 ft.	14 ft.		
4	601531	1	-	-	EDGE, cutting, left hand (5 ft., 1/2" thick)	
	601533	-	1	-	EDGE, cutting, left hand (6 ft., 1/2" thick)(Original equipment)	
	099351	-	1	-	EDGE, cutting, left hand (6 ft., 5/8" thick)(Service replacement)	
	601535	-	-	1	EDGE, cutting, left hand (7 ft., 1/2" thick)(Original equipment)	
	099353	-	-	1	EDGE, cutting, left hand (7 ft., 5/8" thick)(Service replacement)	
5	914484	7	8	9	BOLT, plow, 5/8"NC x 2" (For 1/2" Edges)	
	911633	7	8	9	BOLT, plow, 5/8"NC x 2-1/4" (For 5/8" Edges)	
	900407	7	8	9	NUT, square, 5/8"NC	
	605193	1	-	-	BIT, end, left hand (1/2" thick)	
	603475	-	1	1	BIT, end, left hand (5/8" thick)	
	911633	5	5	5	BOLT, plow, 5/8"NC x 2-1/4"	
	915693	1	1	1	BOLT, plow, 5/8"NC x 3"	
	904209	6	6	6	LOCKWASHER, 5/8"	
	911029	6	6	6	NUT, 5/8"NC	
	6	605192	1	-	-	BIT, end, right hand (1/2" thick)
603474		-	1	1	BIT, end, right hand (5/8" thick)	
911633		5	5	5	BOLT, plow, 5/8"NC x 2-1/4"	
915693		1	1	1	BOLT, plow, 5/8"NC x 3"	
904209		6	6	6	LOCKWASHER, 5/8"	
911029		6	6	6	NUT, 5/8"NC	
7		061479	-	8	6	SHIM, end bit (Use as req'd)
		601181	2	2	2	BRACKET, moldboard pitch
8		911633	4	4	4	BOLT, plow, 5/8"NC x 2-1/4"
		904209	4	4	4	LOCKWASHER, 5/8"
	911029	4	4	4	NUT, 5/8"NC	
	604134	6	6	6	BRACKET, mounting (Requires welding to moldboard)	
10	036546	2	2	2	CAPSCREW, moldboard attachment (1"NF x 4-1/4")	
11	600236	2	2	2	NUT, high, 1"NF	
12	602937	2	2	2	LINK, adjusting, moldboard pitch	
13	031055	2	2	2	CAPSCREW, 1"NF x 3-3/4"	
14	600236	2	2	2	NUT, high, 1"NF	



MOLDBOARD (Shiftable Type)

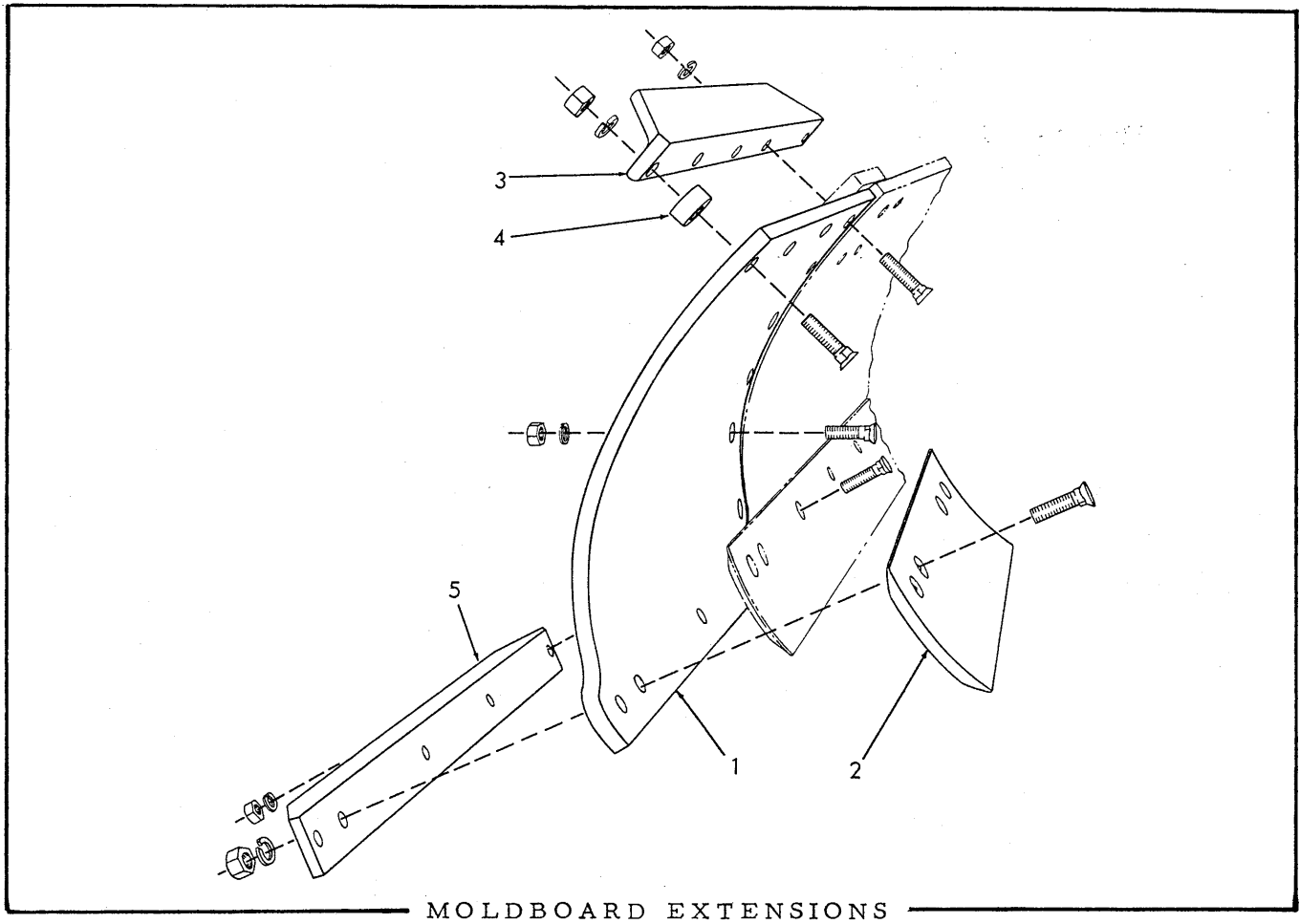
USAGE: Standard equipment effective with grader serial No. 1455. Optional on prior units.

ITEM	PART NO.	QTY.		DESCRIPTION	
		12 ft.	14 ft.		
1	079521	1	-	MOLDBOARD ASSEMBLY (Consists of items 2 thru 6) (Standard)	
	084024	-	1	MOLDBOARD ASSEMBLY (Consists of items 2 thru 6) (Optional)	
2	081065	1	-	MOLDBOARD only (Includes item 3)	
	084044	-	1	MOLDBOARD only (Includes item 3)	
3	081321	1	1	BALL, shifting (Requires welding to moldboard)	
	914465	1	1	FITTING, lubricating, straight, 1/8"NPT	
4	601532	1	-	EDGE, cutting, right hand (6 ft.)	} 1/2" thick. Used prior to grader #1658
	601533	1	-	EDGE, cutting, left hand (6 ft.)	
	601534	-	1	EDGE, cutting, right hand (7 ft.)	
	601535	-	1	EDGE, cutting, left hand (7 ft.)	
	099352	1	-	EDGE, cutting, right hand (6 ft.)	} 5/8" thick. Effective with grader #1658
	099351	1	-	EDGE, cutting, left hand (6 ft.)	
	099354	-	1	EDGE, cutting, right hand (7 ft.)	
	099353	-	1	EDGE, cutting, left hand (7 ft.)	
	914484	16	18	BOLT, plow, 5/8"NC x 2" (For 1/2" Edges)	
	911633	16	18	BOLT, plow, 5/8"NC x 2-1/4" (For 5/8" Edges)	
	900407	16	18	NUT, square, 5/8"NC	

(Continued)

MOLDBOARD (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		1/2 ft.	1/4 ft.	
5	603475	1	1	BIT, end, left hand
	603474	1	1	BIT, end, right hand
	911633	10	10	BOLT, plow, 5/8"NC x 2-1/4"
	915693	2	2	BOLT, plow, 5/8"NC x 3"
	904209	12	12	LOCKWASHER, 5/8"
	911029	12	12	NUT, 5/8"NC
6	061479	8	6	SHIM, end bit (Use as req'd)
7	031055	2	2	CAPSCREW, moldboard support (1"NF x 3-3/4")
8	600236	2	2	NUT, high, 1"NF
9	099176	2	2	GUIDE, moldboard slide (If for units prior to #1658 also order 1 LOCK 099173 and 2 NUT 012767)
10	033291	4	4	CAPSCREW, 3/4"NC x 1-3/4" (Used prior to grader #1658) } Effective with grader #1658
	012767	4	4	
10A	099173	2	2	LOCK, nut
11	081263	1	1	SUPPORT, left side
	081264	1	1	SUPPORT, right side
	912842	2	2	NUT, slotted, 1-1/2"NF
	911279	2	2	PIN, cotter, 5/16" x 2-1/4"
12	081324	6	6	WASHER, spacing, moldboard support
13	079507	2	2	BRACKET, moldboard slide
	915978	20	20	WASHER, spacing (Use as req'd)
14	048075	4	4	CAPSCREW, 1"NF x 6-1/2"
15	600236	4	4	NUT, high, 1"NF
16	081246	1	1	WASHER, linkage ball
17	081322	1	1	BALL, shifting linkage, right side
	915276	1	1	FITTING, lubricating, 90°, 1/8"NPT
	911174	1	1	NUT, jam, slotted, 1"NF
	900808	1	1	PIN, cotter, 1/8" x 1-1/2"
18	097868	1	1	LINK, shifting
19	602224	1	1	PIN, coupling, shifting linkage
20	617855	1	1	CLIP, retaining, linkage coupling pin
21	037573	1	1	CAPSCREW, shifting link clamping (5/8"NC x 2-3/4") LOCKWASHER, 5/8" NUT, 5/8"NC
	904209	1	1	
	911029	1	1	
22	097869	1	1	ROD, shifting
23	053992	16	16	SHIM, shifting linkage cap (Use as req'd)
24	053986	2	2	CAP, shifting linkage
25	605665	2	2	U-BOLT
	911049	8	8	NUT, jam, 5/8"NF
26	-----	2	2	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



MOLDBOARD EXTENSIONS

USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION	
1	054845	1	EXTENSION, moldboard, left hand	
		1	EXTENSION, moldboard, right hand	
	911633	8	BOLT, plow, 5/8"NC x 2-1/4"	
	913648	2	BOLT, plow, 5/8"NC x 2-3/4" (For 1/2" cutting edge)	
	915693	2	BOLT, plow, 5/8"NC x 3" (For 5/8" cutting edge)	
	904209	10	LOCKWASHER, 5/8"	
	911029	10	NUT, 5/8"NC	
	2	601603	2	EDGE, cutting (1/2" thick)(Early units)
			6	BOLT, plow, 5/8"NC x 2-3/4"
			6	LOCKWASHER, 5/8"
6			NUT, 5/8"NC	
099350		2	EDGE, cutting (5/8" thick)(Late units)	
		6	BOLT, plow, 5/8"NC x 3"	
		6	LOCKWASHER, 5/8"	
		6	NUT, 5/8"NC	

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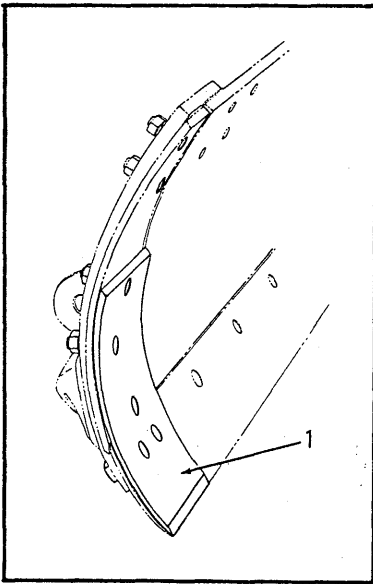
MOLDBOARD EXTENSIONS (Continued)

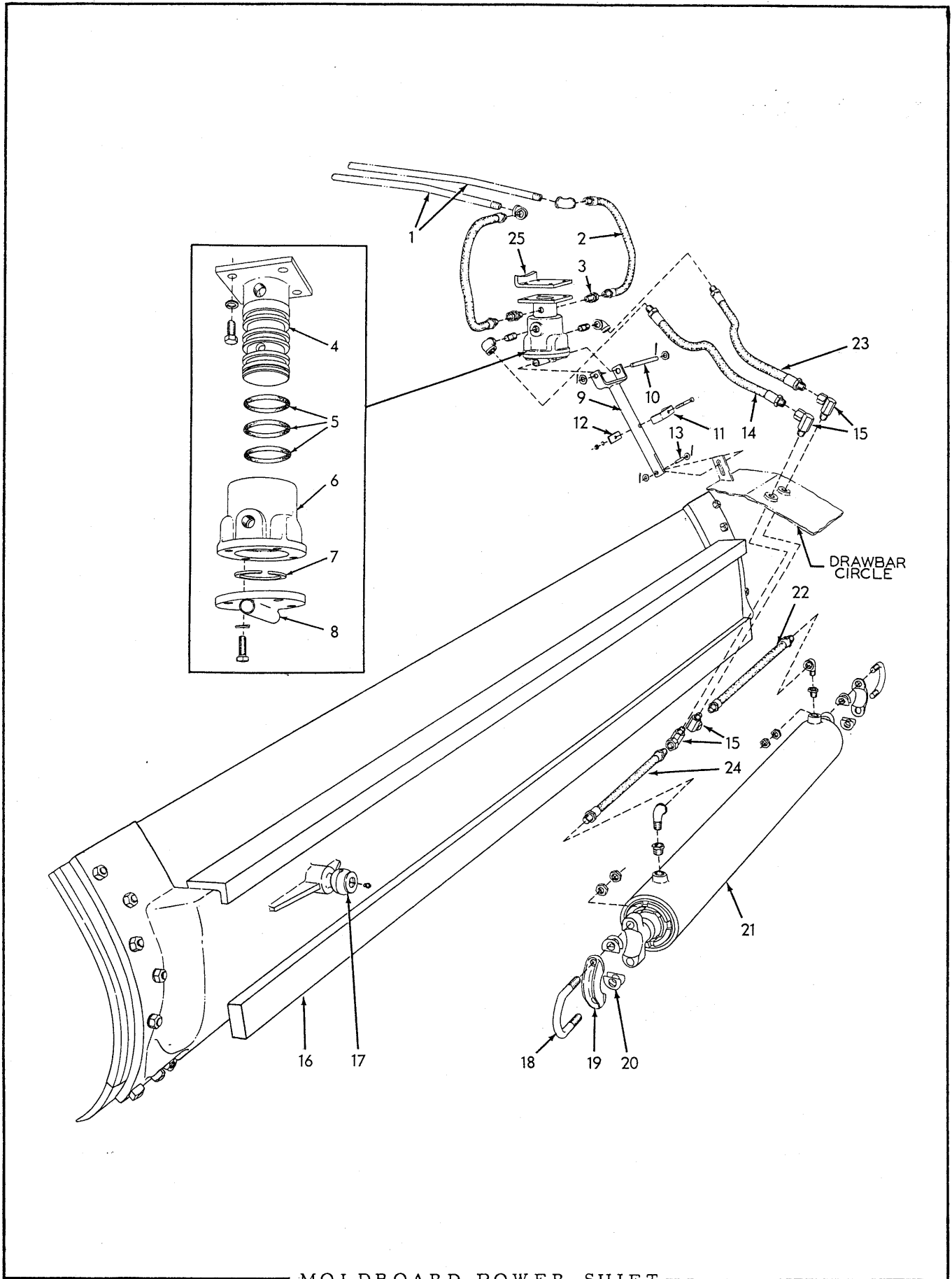
ITEM	PART NO.	QTY.	DESCRIPTION
3	603156	1	ANGLE, top reinforcing, right hand
	603157	1	ANGLE, top reinforcing, left hand
	913648	10	BOLT, plow, 5/8"NC x 2-3/4"
	904209	10	LOCKWASHER, 5/8"
	911029	10	NUT, 5/8"NC
4	602449	8	SPACER, moldboard extension
5	602457	1	ANGLE, bottom reinforcing, right hand
	602451	1	ANGLE, bottom reinforcing, left hand
	913648	4	BOLT, plow, 5/8"NC x 2-3/4" (For 1/2" cutting edge)
	915693	4	BOLT plow, 5/8"NC x 3" (For 5/8" cutting edge)
	904209	4	LOCKWASHER, 5/8"
	911029	4	NUT, 5/8"NC

MOLDBOARD ROCK BITS

USAGE: Special equipment. For use under conditions of extreme abrasion.

ITEM	PART NO.	QTY.	DESCRIPTION
1	094921	1	BIT, rock, left hand
	094922	1	BIT, rock, right hand
	913648	4	BOLT, plow, 5/8"NC x 2-3/4"
	900407	4	NUT, square, heavy, 5/8"NC
	915693	4	BOLT, plow, 5/8"NC x 3"
	911635	2	BOLT, plow, 5/8"NC x 3-1/2"
	904209	6	LOCKWASHER, 5/8"
	911029	6	NUT, 5/8"NC





MOLDBOARD POWER SHIFT

MOLDBOARD POWER SHIFT

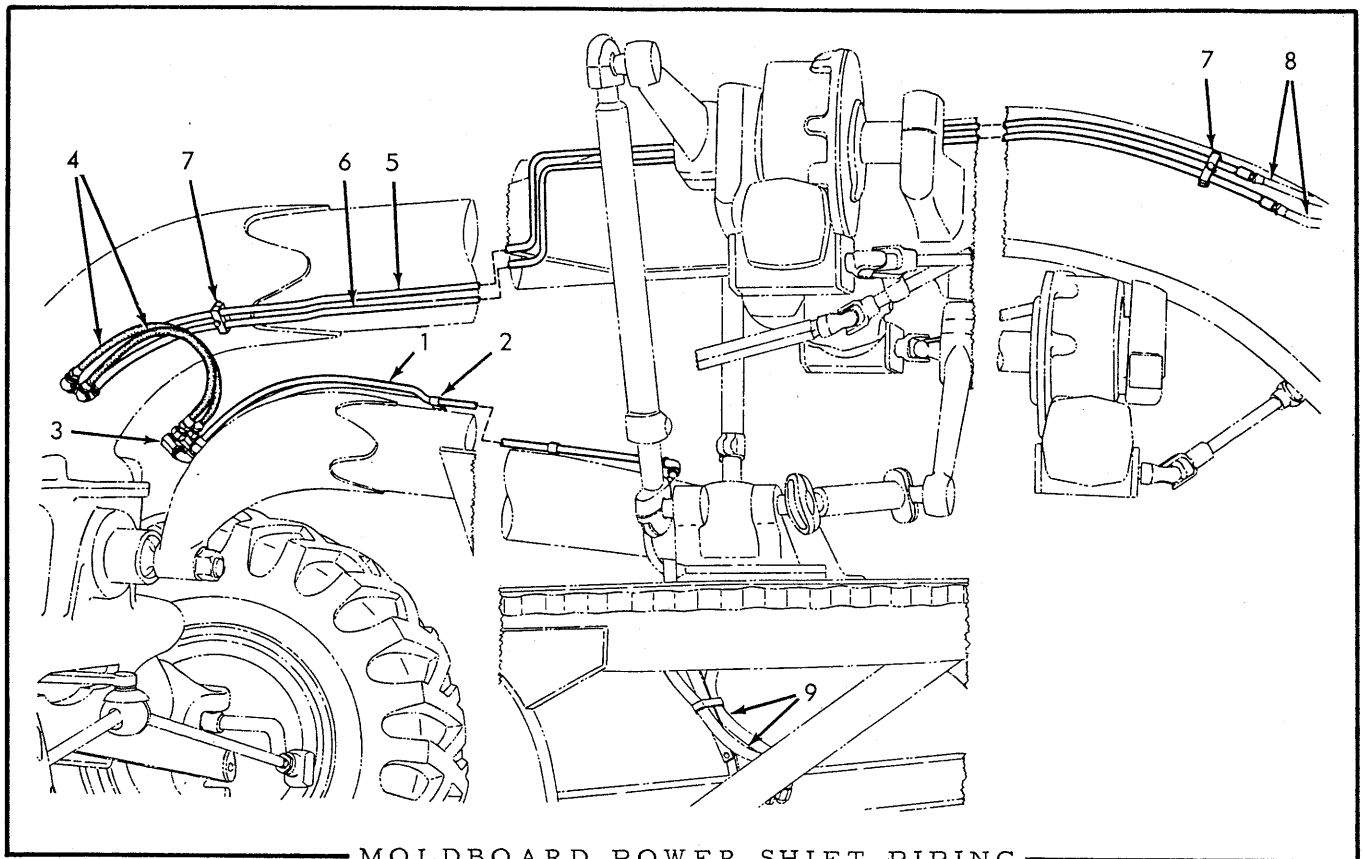
USAGE: Special equipment. For use with Shiftable Type Moldboard only

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	2	PIPE, oil (See MOLDBOARD POWER SHIFT PIPING)
2	080422	2	HOSE, pipe to swivel (18" long)
	901678	2	ELBOW, pipe, 90°, 3/8"NPT
3	069710	2	UNION, hose adapting
4	080002	1	SWIVEL, oil line
	903629	4	CAPSCREW, 3/8"NC x 3/4"
	904206	4	LOCKWASHER, 3/8"
5	079855	3	RING, swivel sealing
6	079853	1	HOUSING, swivel
7	050292	1	RING, snap, oil line swivel
8	080241	1	PLATE, swivel housing
	903630	4	CAPSCREW, 3/8"NC x 1"
	904206	4	LOCKWASHER, 3/8"
9	081323	1	YOKE, swivel operating
10	080472	1	PIN, swivel operating yoke, upper
	900817	2	WASHER, plain, U.S. std., 3/8"
	900942	2	PIN, cotter, 3/32" x 5/8"
11	081309	1	STRAP, hose retaining
	914892	1	CAPSCREW, 1/4"NF x 1-3/4"
	904204	1	LOCKWASHER, 1/4"
	911040	1	NUT, 1/4"NF
12	081312	1	BLOCK, hose retaining strap
13	081314	1	PIN, swivel operating yoke, lower
	900816	2	WASHER, plain, U.S. std., 1/4"
	900942	2	PIN, cotter, 3/32" x 5/8"
14	081228	1	HOSE, swivel to cylinder, upper left (17" long)
	901490	1	NIPPLE, pipe, 3/8"NPT x 1-1/2"
	901678	1	ELBOW, pipe, 90°, 3/8"NPT
15	081230	4	UNION, hose adapting, 90°
16	-----	1	MOLDBOARD ASSEMBLY
17	-----	1	BALL, shifting cylinder
			} See MOLDBOARD SECTION
18	605665	2	U-BOLT, cylinder end cap
	911049	8	NUT, jam, 5/8"NF
19	053986	2	CAP, cylinder end
20	053992	16	SHIM, cylinder end cap (Use as req'd)
21	081325	1	CYLINDER ASSEMBLY, moldboard shifting (See page 242 for parts)

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MOLDBOARD POWER SHIFT (Continued)

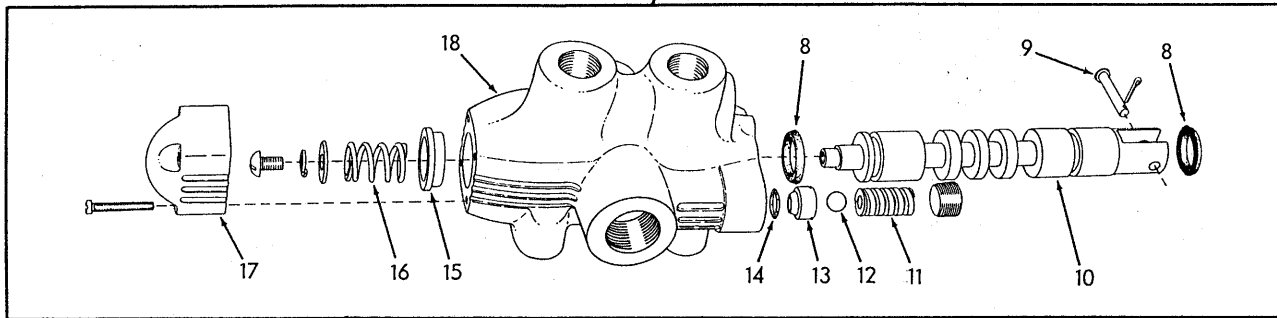
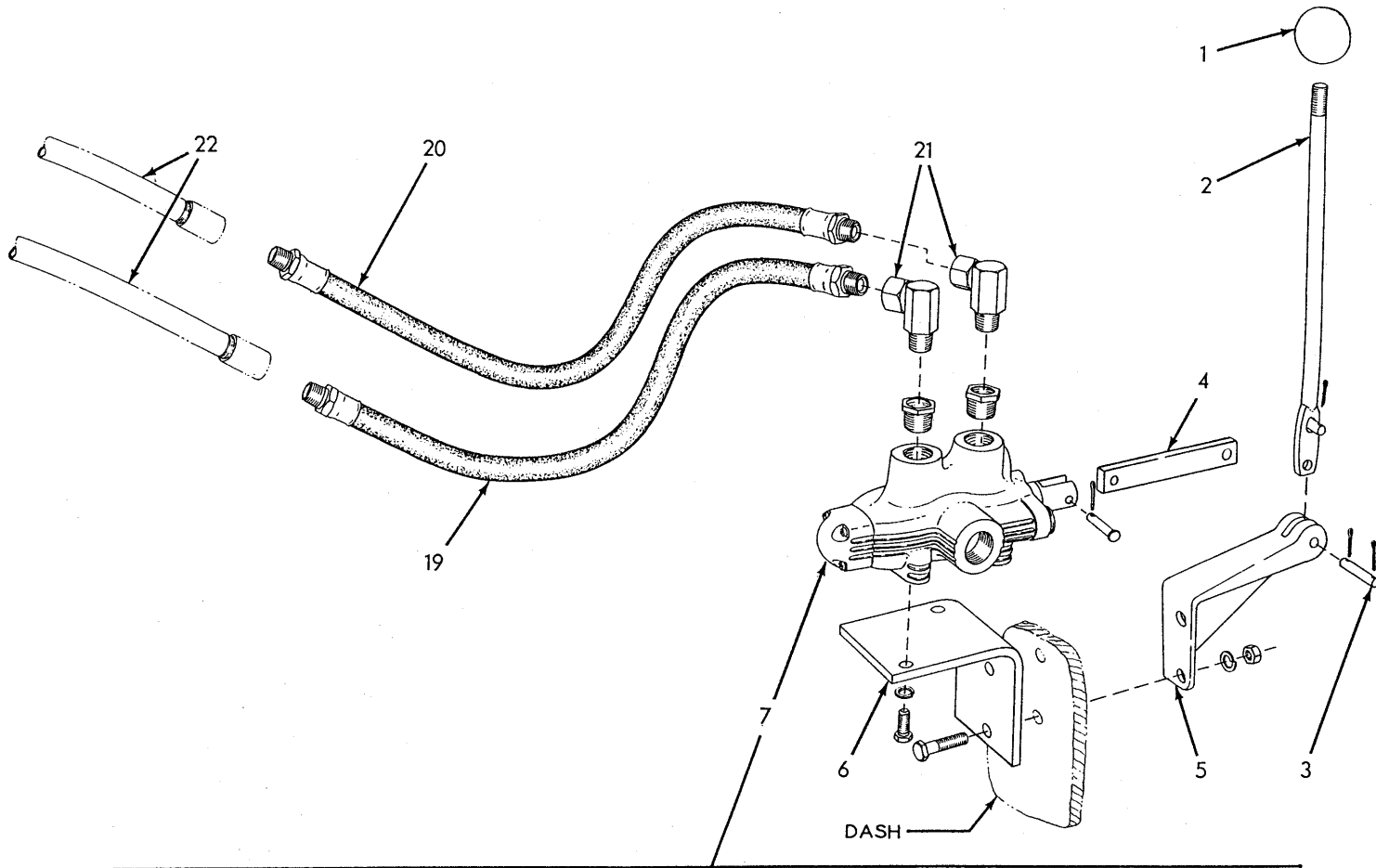
ITEM	PART NO.	QTY.	DESCRIPTION
22	069739	1	HOSE, swivel to cylinder, lower right (24" long)
	901723	1	ELBOW, street, 90°, 3/8"NPT
	904271	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
23	069716	1	HOSE, swivel to cylinder, upper right (16-1/4" long)
	901490	1	NIPPLE, pipe, 3/8"NPT to 1-1/2"
	901678	1	ELBOW, pipe, 90°, 3/8"NPT
24	081228	1	HOSE, swivel to cylinder, lower left (17" long)
	901723	1	ELBOW, street, 90°, 3/8"NPT
	904271	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
25	080259	1	PLATE, swivel mounting (Requires welding to moldboard drawbar)



MOLDBOARD POWER SHIFT PIPING

USAGE: Special equipment. For use with Shiftable Type Moldboard only.

ITEM	PART NO.	QTY.	DESCRIPTION
1	080112	2	PIPE, oil
	901678	2	ELBOW, pipe, 90°, 3/8"NPT
2	076498	6	CLIP, pipe supporting
	903628	3	CAPSCREW, 3/8"NC x 5/8"
	904206	3	LOCKWASHER, 3/8"
3	081230	2	UNION, hose adapting (90°)
4	081218	2	HOSE, pipe connecting (32" long)
	901723	2	ELBOW, street, 90°, 3/8"NPT
5	099263	1	PIPE, oil, upper
	901678	1	ELBOW, pipe, 90°, 3/8"NPT
	901765	1	COUPLING, pipe, 3/8"NPT
6	099264	1	PIPE, oil, lower
	901678	1	ELBOW, pipe, 90°, 3/8"NPT
	901765	1	COUPLING, pipe, 3/8"NPT
7	080116	3	BLOCK, pipe clamping
	903632	2	CAPSCREW, 3/8"NC x 1-1/2"
	904206	3	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
8	-----	-	HOSE (See MOLDBOARD POWER SHIFT CONTROL VALVE)
9	-----	-	HOSE (See MOLDBOARD POWER SHIFT)

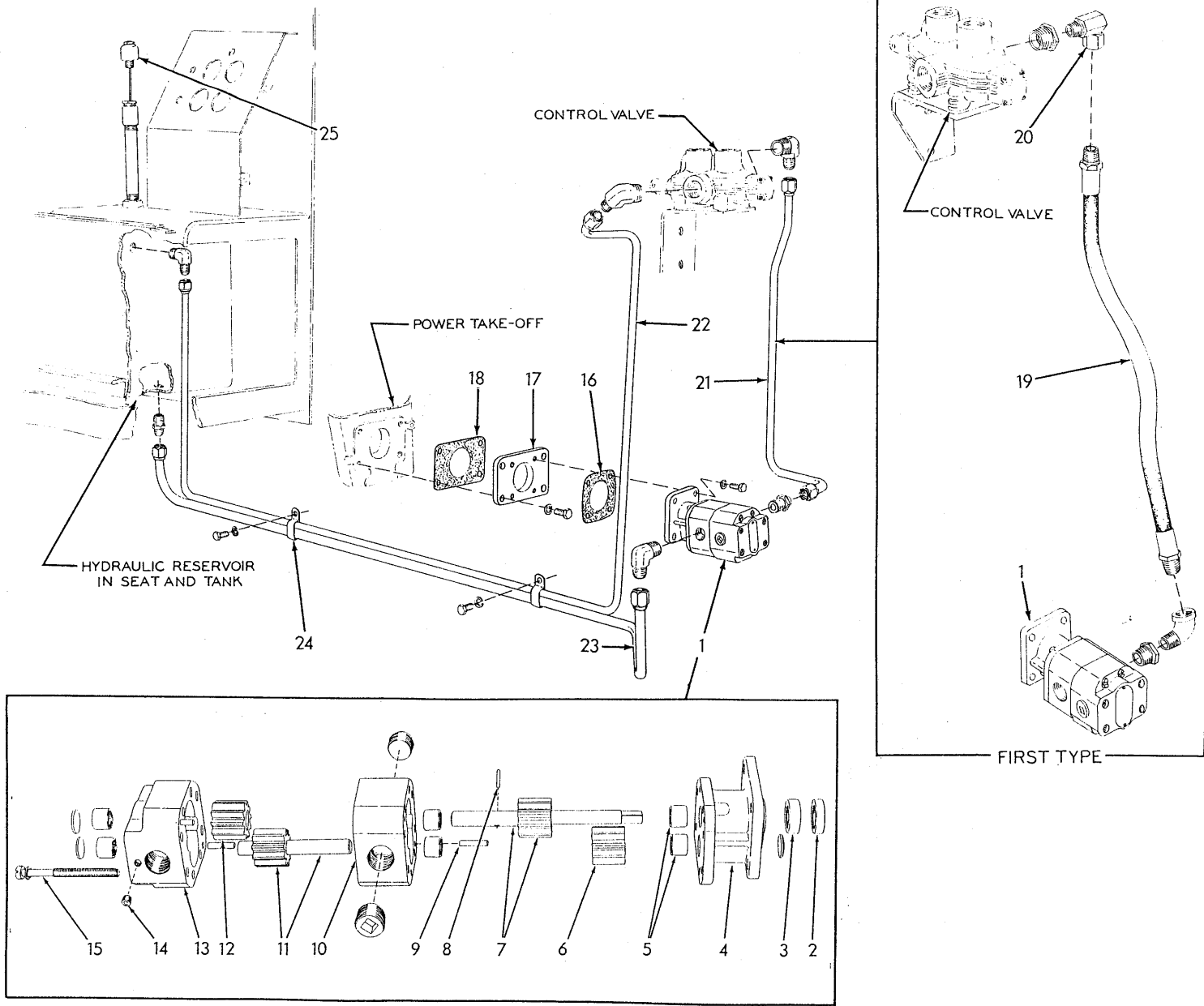


MOLDBOARD POWER SHIFT CONTROL VALVE

MOLDBOARD POWER SHIFT CONTROL VALVE

USAGE: Special equipment. For use with Shiftable Type Moldboard only.

ITEM	PART NO.	QTY.	DESCRIPTION
1	091862	1	KNOB, operating lever
2	081278	1	LEVER, valve operating
	900942	1	PIN, cotter, 3/32" x 5/8"
3	605983	1	PIN, pivot, operating lever
	900942	2	PIN, cotter, 3/32" x 5/8"
4	081282	1	BAR, connecting, operating lever
5	081280	1	BRACKET, operating lever
6	081279	1	BRACKET, valve mounting
	910862	2	CAPSCREW, 3/8"NF x 1-1/2"
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
7	091567	1	VALVE ASSEMBLY (Consists of items 8 thru 18)
	904271	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
	903629	2	CAPSCREW, 3/8"NC x 3/4"
	904206	2	LOCKWASHER, 3/8"
8	081634	2	SEAL, valve spool
9	081633	1	PIN, operating handle
	900970	1	PIN, cotter, 1/16" x 1/2"
10	-----	1	SPOOL, valve (Not serviced separately)
11	081635	1	SPRING, pressure relief valve
	907856	1	PLUG, pipe, socket-hd., 3/8"NPT
12	{ 905632	1	BALL, pressure relief (1/2" diam.)(Used prior to grader #715)
	{ 091632	1	BALL, pressure relief (3/8" diam.)(Effective with grader #715)
13	091606	1	SEAT, pressure relief ball (Effective with grader #715)
14	073621	1	O-RING, pressure relief ball seat (Effective with grader #715)
15	081632	1	COLLAR, spool centering
16	081631	1	SPRING, spool centering
	901164	1	SCREW, machine, rd-hd., 1/4"NC
	904204	1	LOCKWASHER, 1/4"
	911423	1	WASHER, plain, 3/8"
17	081630	1	BONNET, centering spring
	901214	4	SCREW, machine, fil-hd., #8-32 x 1"
18	-----	1	HOUSING, valve (Not serviced separately)
19	079055	1	HOSE, valve to pipe (21" long)
20	069739	1	HOSE, valve to pipe (24" long)
21	081230	2	UNION, hose adapting
22	-----	-	PIPES (See MOLDBOARD POWER SHIFT PIPING)



HYDRAULIC PUMP AND LINES

HYDRAULIC PUMP AND LINES

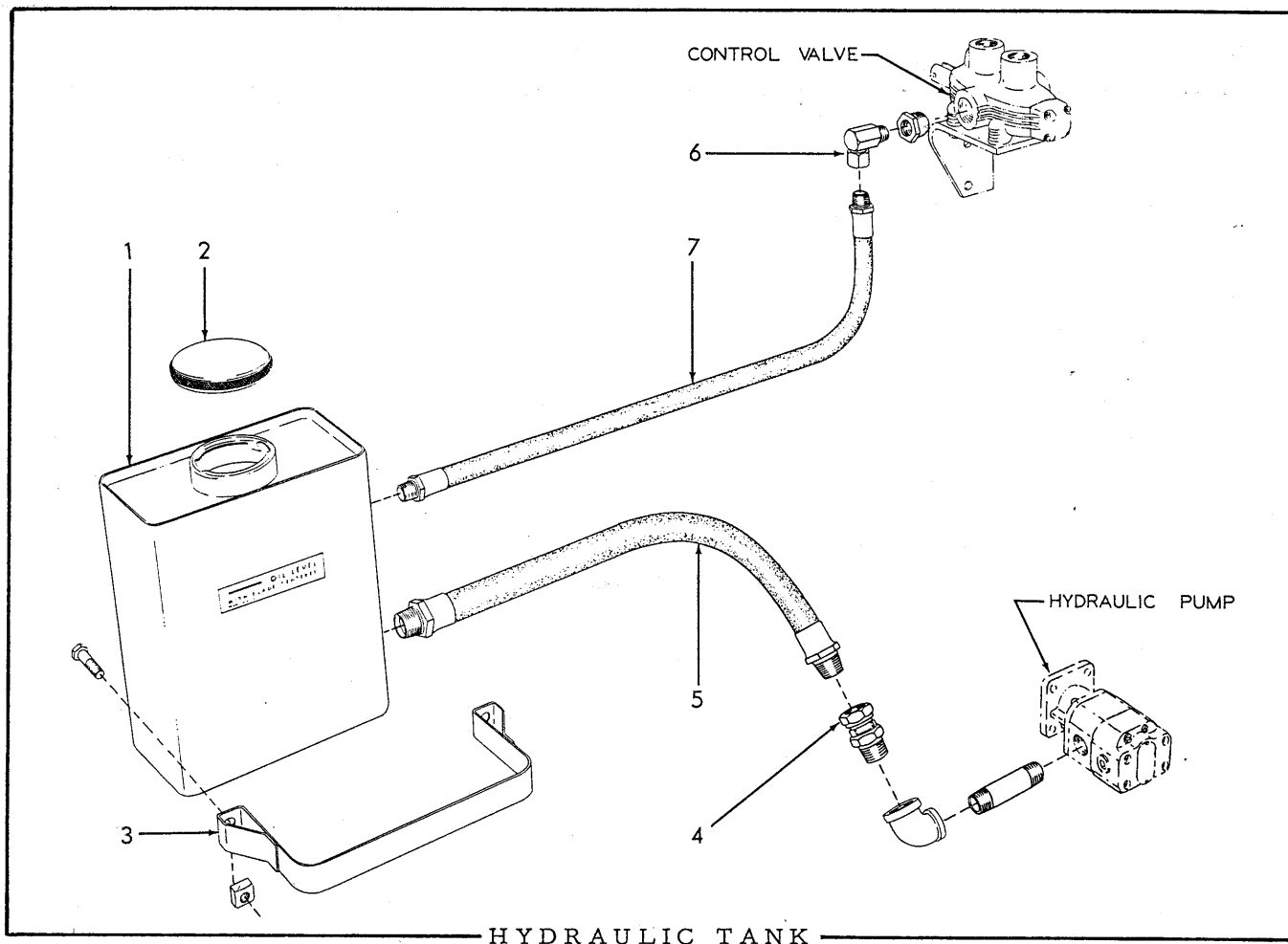
USAGE: Special equipment. Used with Power Shift Moldboard only.

ITEM	PART NO.	QTY.	DESCRIPTION
			<u>NOTE:</u> See HYDRAULIC TANK section for oil reservoir and lines used prior to grader serial No. 1277.
1	079527	1	PUMP ASSEMBLY, hydraulic (Consists of items 2 thru 15)
	903626	4	CAPSCREW, 5/16"NC x 3/4"
	904205	4	LOCKWASHER, 5/16"
2	079351	1	SEAL, pump shaft, outer
3	4047783	1	SEAL, pump shaft, inner
4	-----	1	STATOR (Not serviced separately)
	092107	1	PLUG, expansion, 11/16" diam.
5	077241	6	BEARING, needle
6	082346	1	GEAR, idling
7	082347	1	SHAFT ASSEMBLY, driving (Includes gear. Serviced only as a unit)
8	081798	1	PIN, driving gear (1/8" x 5/8")
9	4048000	4	PIN, dowel, housing to housing
10	-----	1	HOUSING, rear (Not serviced separately)
	904223	2	PLUG, pipe, ctsk-hd., 1/2"NPT
11	082348	1	SHAFT ASSEMBLY, idler (Includes gear. Serviced only as a unit)
12	081797	1	GEAR, driving
13	-----	1	HOUSING, front (Not serviced separately)
	092107	2	PLUG, expansion, 11/16" diam.
14	077423	1	PLUG, pump housing (hex-socket-hd., 1/16"NPT) (Used on early units only)
15	081802	8	SCREW ASSEMBLY (Includes lockwasher)
16	075029	1	GASKET, hydraulic pump
17	087207	1	ADAPTER, hydraulic pump mounting
	903775	4	CAPSCREW, 3/8"NC x 7/8"
	904206	4	LOCKWASHER, 3/8"
18	087427	1	GASKET, pump mounting adapter
19	081227	1	HOSE, valve to pump (Graders prior to #1277)
	901723	1	ELBOW, street, 90°, 3/8"NPT
	904271	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
20	081230	1	UNION, hose adapting (Graders prior to #1277)
	904239	1	BUSHING, pipe reducing, 3/4"NPT to 3/8"NPT

(Continued)

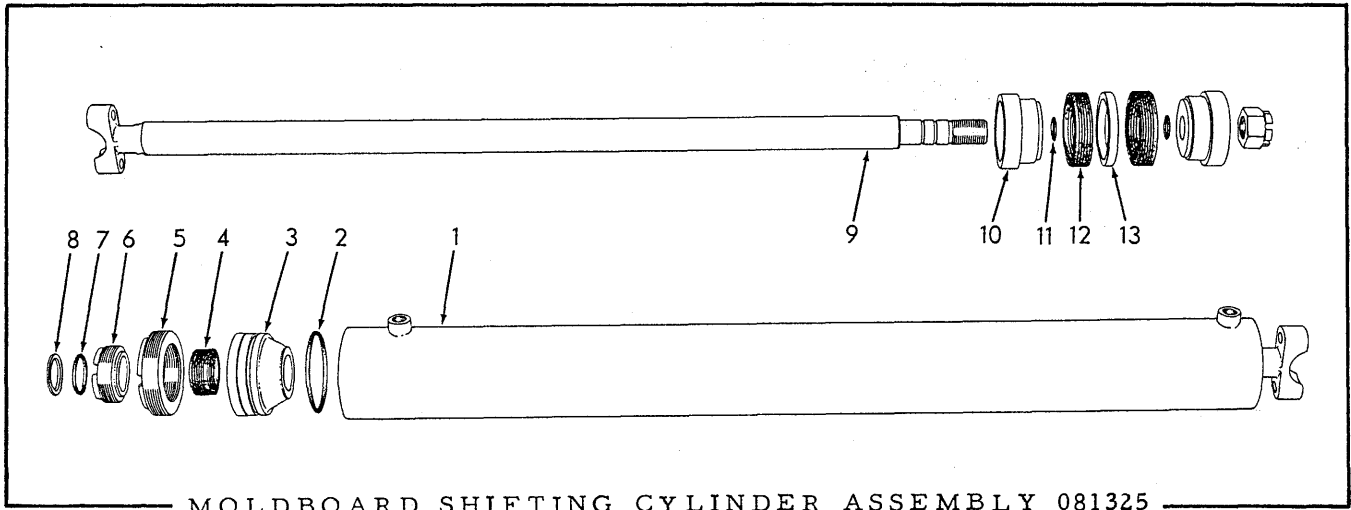
HYDRAULIC PUMP AND LINES (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
21	093536	1	TUBE ASSEMBLY, pump to valve (Includes nuts)(Effective with grader #1277)
	919128	1	CONNECTOR, flare type, 1/2" tube, 1/2"NPT male
	919272	1	ELBOW, flare type, 90°, 1/2" tube, 3/4"NPT male
22	093543	1	TUBE ASSEMBLY, valve to tank (Includes nuts)(Effective with grader #1277)
	919272	1	ELBOW, flare type, 90°, 1/2" tube, 3/4"NPT male
	919195	1	ELBOW, flare type, 90°, 1/2" tube, 1/2"NPT male
23	093544	1	TUBE ASSEMBLY, tank to pump (Includes nuts)(Used on grader #1277 thru #1761)
	919128	1	CONNECTOR, flare type, 1/2" tube, 1/2"NPT male
	919195	1	ELBOW, flare type, 90°, 1/2" tube, 1/2"NPT male
	620780	1	TUBE ASSEMBLY, tank to pump (Includes nuts)(Effective with grader #1762)
	919342	1	CONNECTOR, flare type, 3/4" tube, 3/4"NPT male
24	920751	1	ELBOW, flare type, 3/4" tube, 1/2"NPT male
	059635	2	CLIP, tube supporting (Used on grader #1277 thru #1761)
	093542	2	CLIP, tube supporting (Effective with grader #1762)
	903629	2	CAPSCREW, 3/8"NC x 3/4"
	904206	2	LOCKWASHER, 3/8"
25	095277	1	BREATHER AND DIPSTICK, hydraulic reservoir (Effective with grader #1277)
	904239	1	BUSHING, pipe reducing, 3/4"NPT to 3/8"NPT
	901767	1	COUPLING, pipe, 3/4"NPT
	912085	1	NIPPLE, pipe, 3/4"NPT x 7"



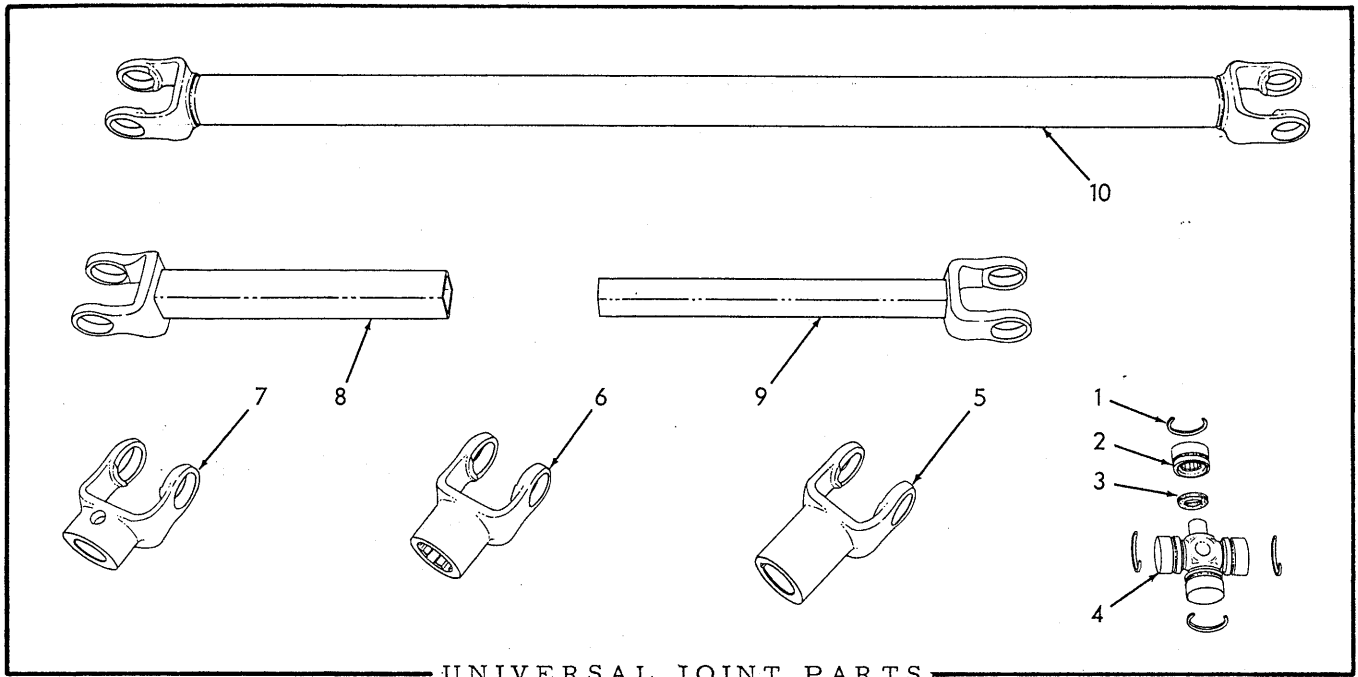
USAGE: Special equipment. Used with Shiftable Moldboard on graders prior to serial No. 1277.

ITEM	PART NO.	QTY.	DESCRIPTION
1	081286	1	TANK oil supply (Includes item 2)
2	078922	1	CAP, oil supply tank
3	081281	2	STRAP, tank mounting
	903632	2	CAPSCREW, 3/8"NC x 1-1/2"
	903633	2	CAPSCREW, 3/8"NC x 1-3/4"
	900405	4	NUT, square, 3/8"NC
4	032032	1	UNION, hose adapting
	916149	1	ELBOW, pipe reducing, 3/4"NPT to 1/2"NPT
	901505	1	NIPPLE, pipe, 1/2"NPT x 3-1/2"
5	067794	1	HOSE, supply, tank to pump (23" long)
6	081230	1	UNION, hose adapting (90°)
	904239	1	BUSHING, pipe reducing, 3/4"NPT to 3/8"NPT
7	081229	1	HOSE, return, valve to tank (27-1/2" long)



USAGE: See page 233

ITEM	PART NO.	QTY.	DESCRIPTION
1	080309	1	TUBE, cylinder
2	080301	1	O-RING, sealing
3	080306	1	BOX, stuffing
4	080285	1	PACKING ASSEMBLY, stuffing box
5	080305	1	NUT, stuffing box retaining
6	080282	1	NUT, packing adjustment
7	080303	1	O-RING, piston rod sealing
8	080283	1	RING, piston rod wiping
9	080308	1	ROD, piston
	905344	1	NUT, castle, 1-1/2"NF
10	080279	2	PISTON
11	080302	2	O-RING, piston sealing
12	080277	2	PACKING ASSEMBLY, piston
13	080278	1	WASHER, piston



UNIVERSAL JOINT PARTS

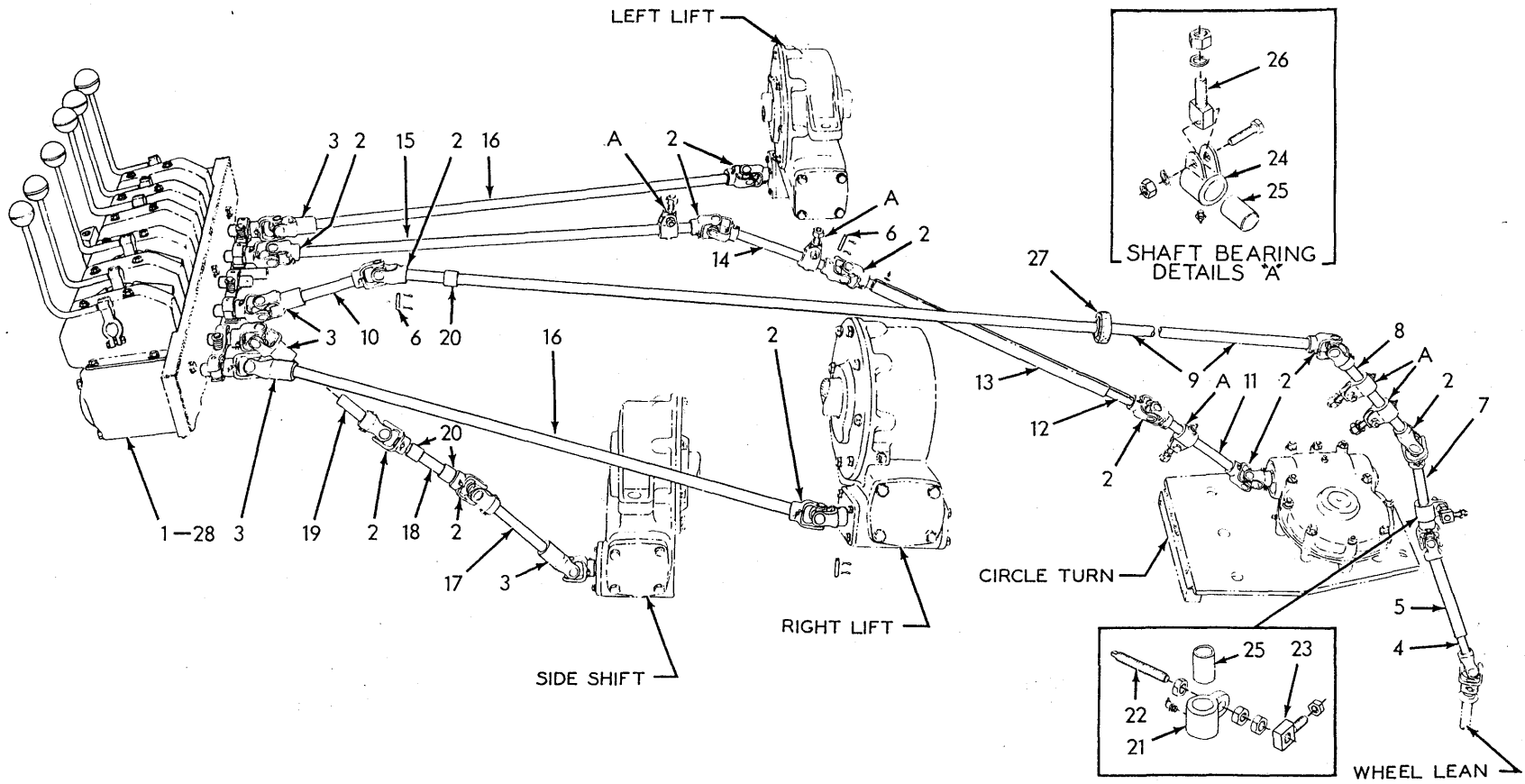
053121 JOINT ASSEMBLY (See pages 183, 245 and 303)
 053123 JOINT ASSEMBLY (See pages 183, 245 and 303)
 074990 JOINT ASSEMBLY (See page 245)
 074991 JOINT ASSEMBLY (See page 245)
 085980 JOINT ASSEMBLY (See page 252)

ITEM PART NO.	053121	053123	074990	074991	085980	QUANTITY
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DESCRIPTION

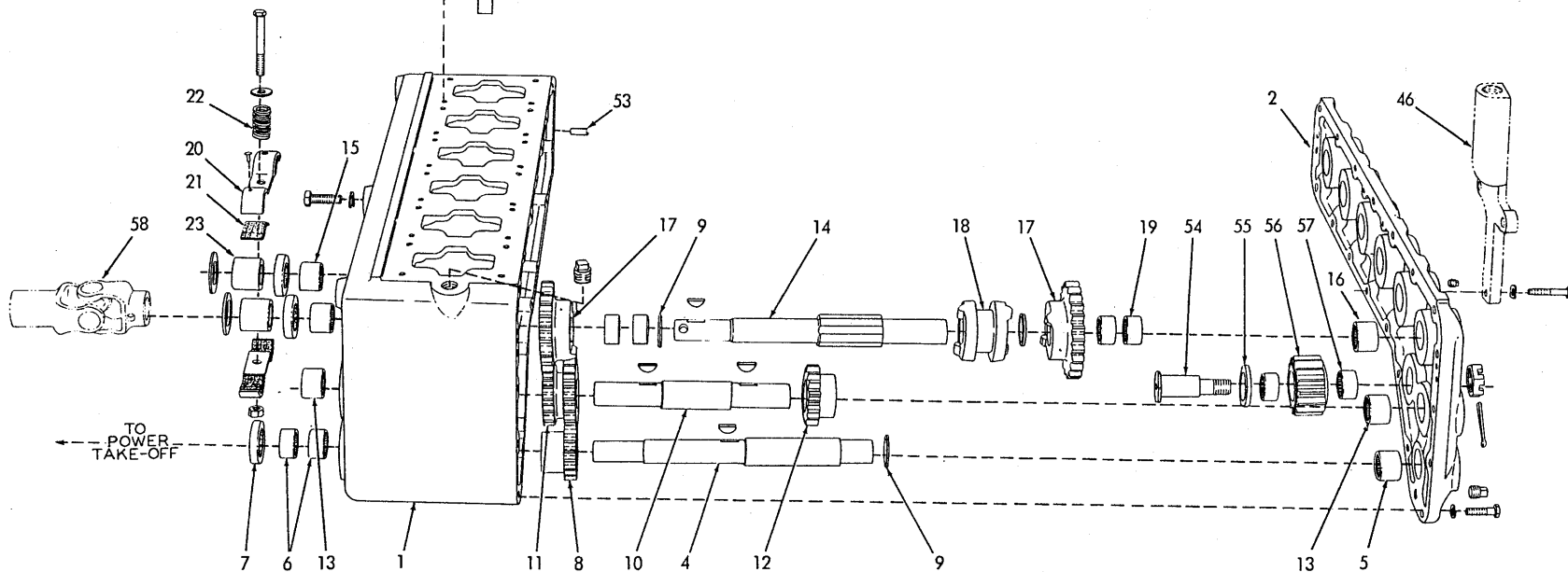
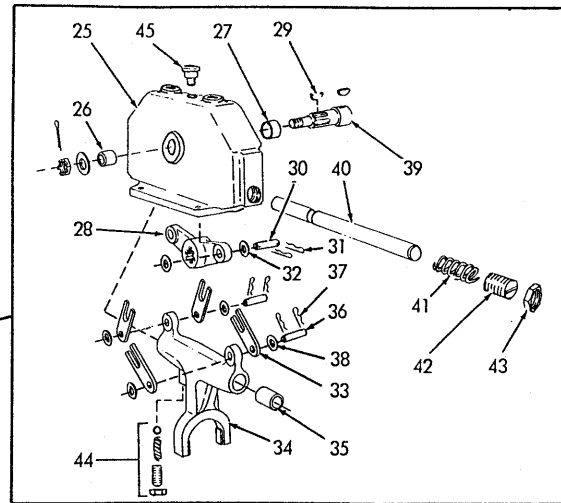
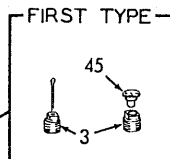
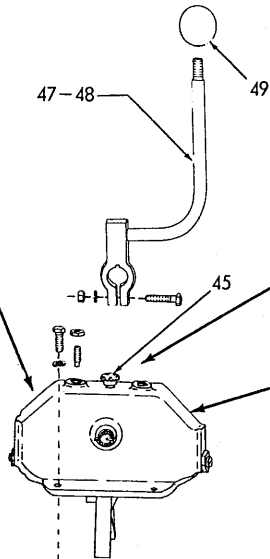
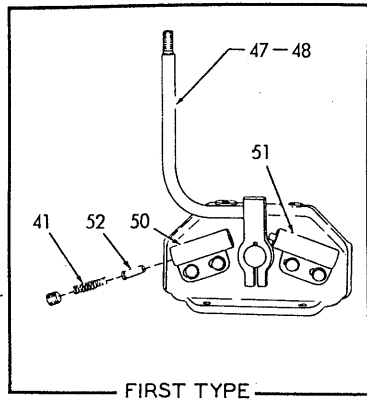
NOTE: Parts for main drive shaft universal joint are listed on page 125

1	053240	4	4	4	4	8	RING, snap
2	-----	4	4	4	4	8	BEARING, (Not serviced separately. Order item 4)
3	055733	4	4	4	4	8	WASHER, sealing (cork)
4	053120	1	1	1	1	-	SPIDER KIT (Includes items 1, 2 and 3)
	081058	-	-	-	-	2	SPIDER KIT (Includes items 1, 2 and 3; also FITTING indented below)
	915275	-	-	-	-	2	FITTING, lubricating, 65°, 1/8"NPT
5	053122	-	1	-	-	-	YOKE (keywayed bore)
6	053124	-	-	-	-	1	YOKE (splined bore)
7	053119	2	1	1	1	1	YOKE (plain bore)
8	075306	-	-	-	1	-	TUBE (Includes welded yoke)
9	075305	-	-	1	-	-	SHAFT (Includes welded yoke)
10	085979	-	-	-	-	1	TUBE, center (Includes welded yokes)



POWER CONTROL

ITEM	PART NO.	QTY.	DESCRIPTION
1	085516	1	BOX ASSEMBLY, power control (See page 247 for parts)
2	053121	12	JOINT ASSEMBLY, universal (See page 243 for parts)
3	053123	5	JOINT ASSEMBLY, universal (See page 243 for parts)
	911273	5	KEY, #127 woodruff, 1/4" x 2-1/8"
4	074990	1	JOINT ASSEMBLY, universal, front wheel lean control (See page 243 for parts)
5	074991	1	JOINT ASSEMBLY, universal, front wheel lean control (See page 243 for parts)
6	601935	31	PIN, universal joint (3/8" x 2")
	900805	62	PIN, cotter, 1/8" x 3/4"
7	075044	1	SHAFT, front wheel lean control (8" long)
8	604540	1	SHAFT, front wheel lean control (11-1/4" long)
9	074989	1	SHAFT, front wheel lean control (135" long)
10	074998	1	SHAFT, front wheel lean control (7-1/4" long)
11	064085	1	SHAFT, circle turn control (10-3/4" long)
12	064086	1	SHAFT, sliding, circle turn control, male (27-3/4" long)
13	064088	1	SHAFT, sliding, circle turn control, female (29-1/2" long)
	912808	1	FITTING, lubricating, straight, 1/4"NF
	911114	1	WASHER, plain, SAE std., 1/4"
14	074992	1	SHAFT, circle turn control (11-5/8" long)
15	074993	1	SHAFT, circle turn control (40-1/2" long)
16	081626	2	SHAFT, moldboard lift control (50-1/2" long)
17	074995	1	SHAFT, moldboard side shift control (10-1/4" long)
18	074996	1	SHAFT, moldboard side shift control (7-3/8" long)
19	074997	1	SHAFT, moldboard side shift control (3-3/4" long)
20	604553	3	BEARING, plain control rod (Pressed in frame)
21	633868	1	BEARING ASSEMBLY, supporting, front lean wheel control shaft (Includes item 25)
	915275	1	FITTING, lubricating, 67-1/2°, 1/8"NPT
22	076081	1	SCREW, bearing
	911049	3	NUT, jam, 5/8"NF
23	076078	1	BOLT, eye, shaft supporting bearing
	911043	1	NUT, 1/2"NF
24	622063	5	BEARING ASSEMBLY, front wheel lean and circle turn control shafts (Includes item 25)(If for grader prior to #1895 also order FITTING 914465)
	914465	5	FITTING, lubricating, straight, 1-1/8"NPT
	904541	5	CAPSCREW, 1/2"NC x 1-3/4"
	904208	5	LOCKWASHER, 1/2"
	911028	5	NUT, 1/2"NC
25	622062	6	BUSHING, control shaft bearing (oilite bronze)
26	602328	5	BOLT, eye, circle turn control shaft bearing (1-5/8" long)
	904209	5	LOCKWASHER, 5/8"
	911029	5	NUT, 5/8"NC
27	077510	1	WASHER, bearing, wheel lean control shaft (wood)
	911159	2	WASHER, plain, SAE std., 1"
	900808	2	PIN, cotter, 1/8" x 1-1/2"
28	-----	5	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



CONTROL BOX ASSEMBLY 085516

CONTROL BOX ASSEMBLY 085516

USAGE: See page 245

* Graders prior to serial No. 2013, excluding Nos. 1953, 1968, 1970, 1971, 1976 and 1985

** Graders serial No. 2013 and up, including Nos. 1953, 1968, 1970, 1971, 1976 and 1985

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	086642	1	1	BOX AND COVER ASSEMBLY (Consists of 1 BOX, 1 COVER, 2 dowel PINS 053990, 5 CAPSCREWS 910245, 5 LOCKWASHER 904206, 2 BEARINGS 080325, 6 BEARINGS 074975 and 9 BEARINGS 074976)
	912725	1	1	PLUG, pipe, 1/2"NPT (oil filling)
	901653	1	1	PLUG, pipe, 3/8"NPT (oil drain)
	901651	1	1	PLUG, pipe, 1/8"NPT (oil check)
	903639	6	6	CAPSCREW, 1/2"NC x 1-1/2"
	904208	6	6	LOCKWASHER, 1/2"
2	-----	1	1	COVER, control box (Not serviced separately. Order item 1)
	910245	18	18	CAPSCREW, 3/8"NC x 1-3/8"
	903634	1	1	CAPSCREW, 3/8"NC x 2" (Also attaches steering shaft support)
	904206	19	19	LOCKWASHER, 3/8"
3	050839	6	-	PLUG, vent (Used prior to grader #1937)
	904020	6	-	PIN, cotter, 1/16" x 1"
	630605	6	-	PLUG, vent (Used on graders #1937 thru #2012)
4	087352	1	-	SHAFT, power input (12-15/16" long)(Used prior to grader #525)
	090421	1	1	SHAFT, power input (13-1/8" long)(Effective with grader #525)
5	074976	1	1	BEARING, needle, power input shaft, rear
6	080325	2	2	BEARING, needle, power input shaft, front
7	044741	7	7	SEAL, oil, driving and input shafts
8	075101	1	1	GEAR, power input shaft (15 teeth)
	905126	1	1	KEY, #15 woodruff, 1/4" x 1"
9	600909	13	13	WASHER, thrust, driving and input shafts
10	080740	1	1	SHAFT, intermediate
11	075100	1	1	GEAR, driving (20 teeth and 15 teeth)
	905126	1	1	KEY, #15 woodruff, 1/4" x 1"
12	604455	1	1	PINION, intermediate shaft (15 teeth)
	905126	1	1	KEY, #15 woodruff, 1/4" x 1"
13	074976	2	2	BEARING, needle, intermediate shaft
14	079748	6	-	SHAFT, driving (Used prior to grader #1356)
	097523	6	6	SHAFT, driving (Effective with grader #1356)
15	074975	6	6	BEARING, needle, driving shaft, front
16	074976	6	6	BEARING, needle, driving shaft, rear

(Continued)

CONTROL BOX ASSEMBLY 085516 (Continued)

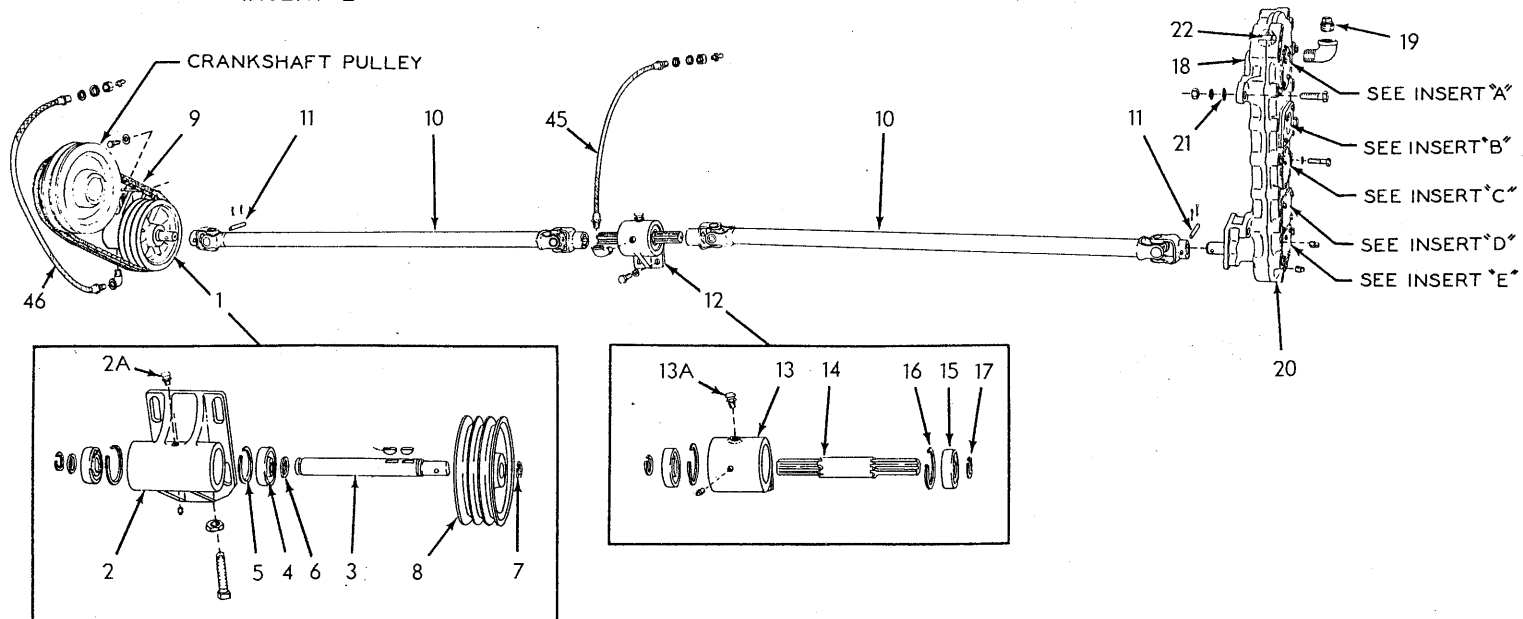
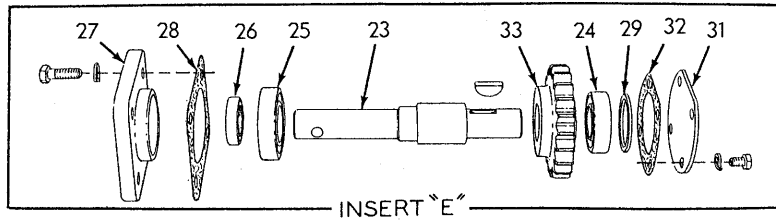
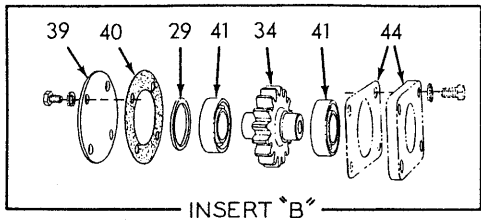
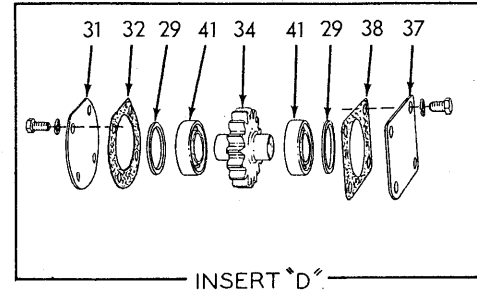
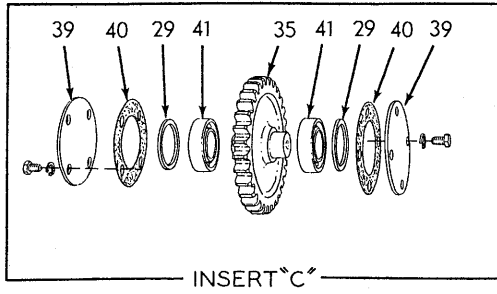
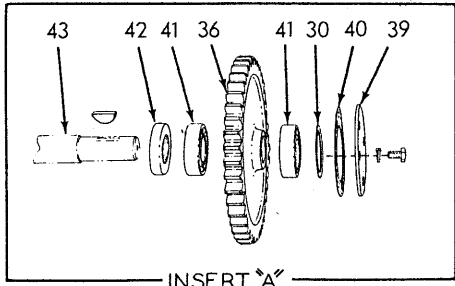
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
17	081855	12	12	GEAR ASSEMBLY, clutch (Includes item 19)
18	641965	6	6	CLUTCH, sliding
19	080325	24	24	BEARING, needle, clutch gear
20	604954	6	6	SHOE ASSEMBLY, driving shaft brake (Includes item 21)
	905667	3	3	CAPSCREW, 3/8"NC x 3"
	900817	3	3	WASHER, plain, U. S. std., 3/8"
	911159	5	5	WASHER, plain, SAE std., 1"
	911026	3	3	NUT, 3/8"NC
21	053991	12	12	LINING, brake shoe
	912312	12	12	RIVET, split, ctsk-hd., steel, brass plated, 5/32" x 1/2"
22	050972	3	3	SPRING, brake shoe
23	602189	6	-	COLLAR, driving shaft brake (1" long)(Used prior to grader #1356)
	097524	6	6	COLLAR, driving shaft brake (1-5/16" long)(Effective with grader #1356)
	911233	6	6	KEY, #11 woodruff, 3/16" x 7/8"
24	098282	6	-	FORK AND HOUSING ASSEMBLY (Consists of items 25 thru 40)
	631152	-	6	FORK AND HOUSING ASSEMBLY (Consists of items 25 thru 45)
	903630	24	24	CAPSCREW, 3/8"NC x 1"
	904206	24	24	LOCKWASHER, 3/8"
	914462	12	12	SETSCREW, slotted-hd., dog-pt., 3/8"NC x 1"
911034	12	12	NUT, jam, 3/8"NC	
25	098281	6	-	HOUSING ASSEMBLY, shifter (Includes items 26 and 27)(If for graders prior to #1465 also order 2 SCREW 098279 and 2 NUT 091420)
	631121	-	6	HOUSING ASSEMBLY, shifter (Includes items 26 and 27)
26	063222	6	6	BUSHING, shifting lever shaft (1/2" I. D.)
27	085203	6	6	BUSHING, shifting lever shaft (3/4" I. D.)
28	099044	6	6	LEVER ASSEMBLY, shifting (Includes item 30)(If for graders prior to #1563 also order 4 CLIP 098817 and 4 WASHER 099043)
29	085309	6	-	KEY, shifting lever (Used prior to grader #1132)
30	-----	12	-	PIN, shifting lever (Used prior to grader #1563)(Order 1 PIN 099042, 2 CLIP 098817 and 2 WASHER 099043)
	911115	24	-	WASHER, plain, SAE std., 3/8"
	900800	24	-	PIN, cotter, 1/16" x 3/4"
	099042	12	12	PIN, shifting lever (Effective with grader #1563)
31	098817	24	24	CLIP, shifting lever pin (Effective with grader #1563)
32	099043	24	24	WASHER, shifting lever pin (Effective with grader #1563)
33	097208	24	24	LINK, shifting lever

(Continued)

CONTROL BOX ASSEMBLY 085516 (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
34	099045	6 -	FORK ASSEMBLY, shifting (Includes items 35 and 36)(If for graders prior to #1563 also order 4 CLIP 098817 and 4 WASHER 099043)
	624616	- 6	FORK ASSEMBLY, shifting (Includes items 35 and 36)
35	087751	12 12	BUSHING, shifting fork
36	-----	12 -	PIN, shifting fork (Used prior to grader #1563)(Order 1 PIN 099042, 2 CLIP 098817 and 2 WASHER 099043)
	911115	24 -	WASHER, plain, SAE std., 3/8"
	900800	24 -	PIN, cotter, 1/16" x 3/4"
	099042	12 12	PIN, shifting fork (Effective with grader #1563)
37	098817	24 24	CLIP, shifting fork pin (Effective with grader #1563)
38	099043	24 24	WASHER, shifting fork pin (Effective with grader #1563)
39	094885	6 6	SHAFT, shifting lever
	910244	6 6	WASHER, plain, SAE std., 1/2"
	913471	6 6	NUT, jam, slotted, 1/2"NF
	900806	6 6	PIN, cotter, 1/8" x 1"
	905123	6 6	KEY, #9 woodruff, 3/16" x 3/4"
40	085307	6 -	SHAFT, shifting fork (8-7/8" long)
	630878	- 6	SHAFT, shifting fork (9-1/2" long)
41	099138	12 -	SPRING, lever centering
	631254	- 12	SPRING, lever centering
42	098279	12 -	SCREW, lever centering spring (Effective with grader #1465)
	630879	- 12	PLUG, shaft supporting
43	091420	12 -	NUT, centering spring screw (Effective with grader #1465)
	630880	- 12	NUT, shaft supporting plug
44	627298	- 6	SPRING, detent
	905630	- 6	BALL, steel, 3/8" diam.
	914480	- 6	SETSCREW, slotted-hd., oval-pt., 7/16"NF x 3/4"
	910876	- 6	NUT, jam, 7/16"NF
45	605132	6 6	VENT, air (Effective with grader #1937)
46	-----	1 1	SUPPORT (See STEERING CONTROL)
47	087809	3 3	LEVER, operating, left
	910862	3 3	CAPSCREW, 3/8"NF x 1-1/2"
	904206	3 3	LOCKWASHER, 3/8"
	911041	3 3	NUT, 3/8"NF
48	087810	3 3	LEVER, operating, right
	910862	3 3	CAPSCREW, 3/8"NF x 1-1/2"
	904206	3 3	LOCKWASHER, 3/8"
	911041	3 3	NUT, 3/8"NF
49	091862	6 6	KNOB, operating lever

(Continued)



POWER TAKE-OFF

CONTROL BOX ASSEMBLY 085516 (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
50	087733	6	-	HOUSING, plunger, left (Used prior to grader #1465)
	903628	12	-	CAPSCREW, 3/8"NC x 5/8"
	904206	12	-	LOCKWASHER, 3/8"
	918362	6	-	SETSCREW, hex-socket, oval-pt., 5/8"NF x 5/8"
51	087734	6	-	HOUSING, plunger, right (Used prior to grader #1465)
	903628	12	-	CAPSCREW, 3/8"NC x 5/8"
	904206	12	-	LOCKWASHER, 3/8"
	918362	6	-	SETSCREW, hex-socket, oval-pt., 5/8"NF x 5/8"
52	087735	12	-	PLUNGER, operating lever centering (Used prior to grader #1465)
53	053990	2	2	PIN, dowel, control box
54	080739	1	1	STUD, reverse pinion
	911174	1	1	NUT, jam, slotted, 1"NF
	900812	1	1	PIN, cotter, 3/16" x 1-3/4"
55	600899	1	1	WASHER, plain, reverse pinion stud
56	081871	1	1	PINION ASSEMBLY, reverse (Includes item 57)
57	080325	2	2	BEARING, needle, reverse pinion
58	-----	-	-	UNIVERSAL JOINT (See POWER CONTROL)

POWER TAKE-OFF

* Graders prior to serial No. 2031, excluding Nos. 2001 and 2004
 ** Graders serial No. 2031 and up, including Nos. 2001 and 2004

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	075201	1	-	DRIVE ASSEMBLY (Consists of items 2 thru 8)(Used prior to grader #1780)
	099999	1	-	DRIVE ASSEMBLY (Consists of items 2 thru 8)(Effective with grader #1780)
	634209	-	1	DRIVE ASSEMBLY (Consists of items 2 thru 8)
	903638	4	4	CAPSCREW, 1/2"NC x 1-1/4"
	910244	4	4	WASHER, plain, SAE std., 1/2"
2	634208	1	1	HOUSING, drive
	914482	1	-	FITTING, lubricating, 67-1/2°, 1/8"NPT (vent type)
	901651	-	1	PLUG, pipe, 1/8"NPT
	900668	1	1	SETSCREW, sq-hd., oval-pt., 5/8"NC x 2"
	911036	1	1	NUT, jam, 5/8"NC
2A	634161	-	1	VENT, drive housing
3	079062	1	-	SHAFT, drive
4	075203	2	2	BEARING, ball

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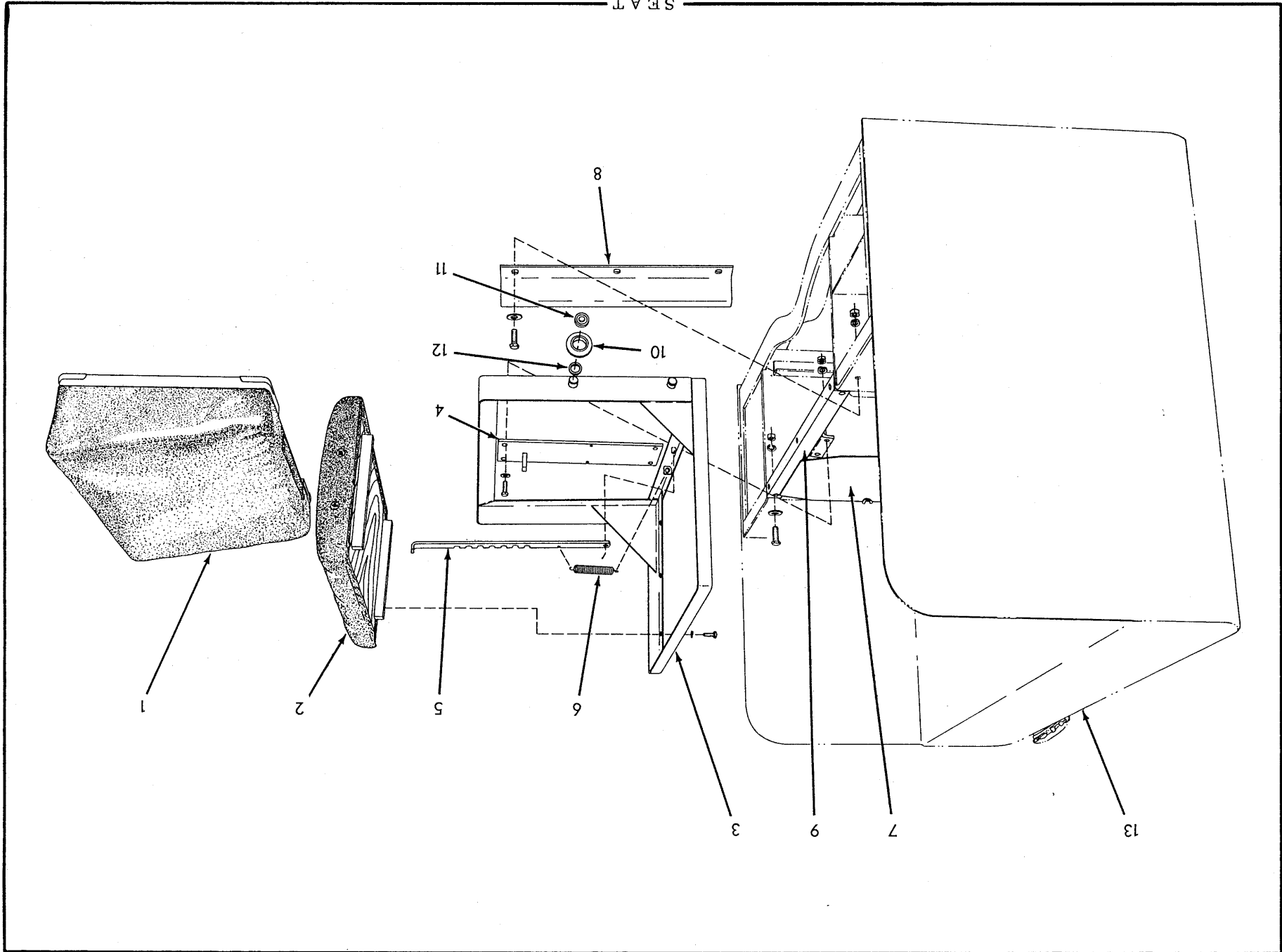
POWER TAKE-OFF (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
5	050291	2	2	RING, snap, bearing retaining
6	075202	2	2	SPACER, bearing
7	052224	2	2	RING, snap, shaft retaining
8	069498	1	-	PULLEY (Used prior to grader #1780)
	097158	1	1	PULLEY (Effective with grader #1780)
	905126	2	2	KEY, #15 woodruff, 1/4" x 1"
9	604929	3	-	BELT, drive (V-type, 21/32" wide x 47" long. Furnished in matched set)(Used prior to grader #1780)
	097159	3	3	BELT, drive (V-type, 21/32" wide x 51" long. Furnished in matched set)(Effective with grader #1780)
10	085980	2	2	JOINT ASSEMBLY, universal (See page 243 for parts)
11	601935	2	2	PIN, coupling
	900805	4	4	PIN, cotter, 1/8" x 3/4"
12	634212	1	1	HOUSING ASSEMBLY, drive supporting (Consists of items 13 thru 17)
	903638	2	2	CAPSCREW, 1/2"NC x 1-1/4"
	904208	2	2	LOCKWASHER, 1/2"
13	087783	1	-	HOUSING, drive supporting
	914482	1	-	FITTING, lubricating, 67-1/2°, 1/8"NPT (vent type)
	634211	-	1	HOUSING, drive supporting
	901651	-	1	PLUG, pipe, 1/8"NPT
13A	634161	-	1	VENT, drive supporting housing
14	088327	1	1	SHAFT, drive coupling
15	075203	2	2	BEARING, ball, drive coupling shaft
16	050291	2	2	RING, snap, bearing retaining
17	052224	2	2	RING, snap, shaft retaining
18	087242	1	-	HOUSING ASSEMBLY (Consists of 1 housing, 1 cover, 2 dowel PINS 053990, 4 CAPSCREWS 903632 and 4 LOCKWASHERS 904206)(Used prior to grader #525)
	090474	1	1	HOUSING ASSEMBLY (Consists of 1 housing, 1 cover, 2 dowel PINS 053990, 6 CAPSCREWS 903632 and 6 LOCKWASHERS 904206)(Effective with grader #525)
	903638	4	-	CAPSCREW, 1/2"NC x 1-1/4" (Used prior to grader #135)
	904541	4	4	CAPSCREW, 1/2"NC x 1-3/4" } Effective with grader #135
	911028	4	4	NUT, 1/2"NC
	904208	4	4	LOCKWASHER, 1/2"
	901652	2	2	PLUG, pipe, 1/4"NPT
19	051094	1	1	PLUG, vent (3/4"NPT)
	901725	1	1	ELBOW, street, 3/4"NPT

(Continued)

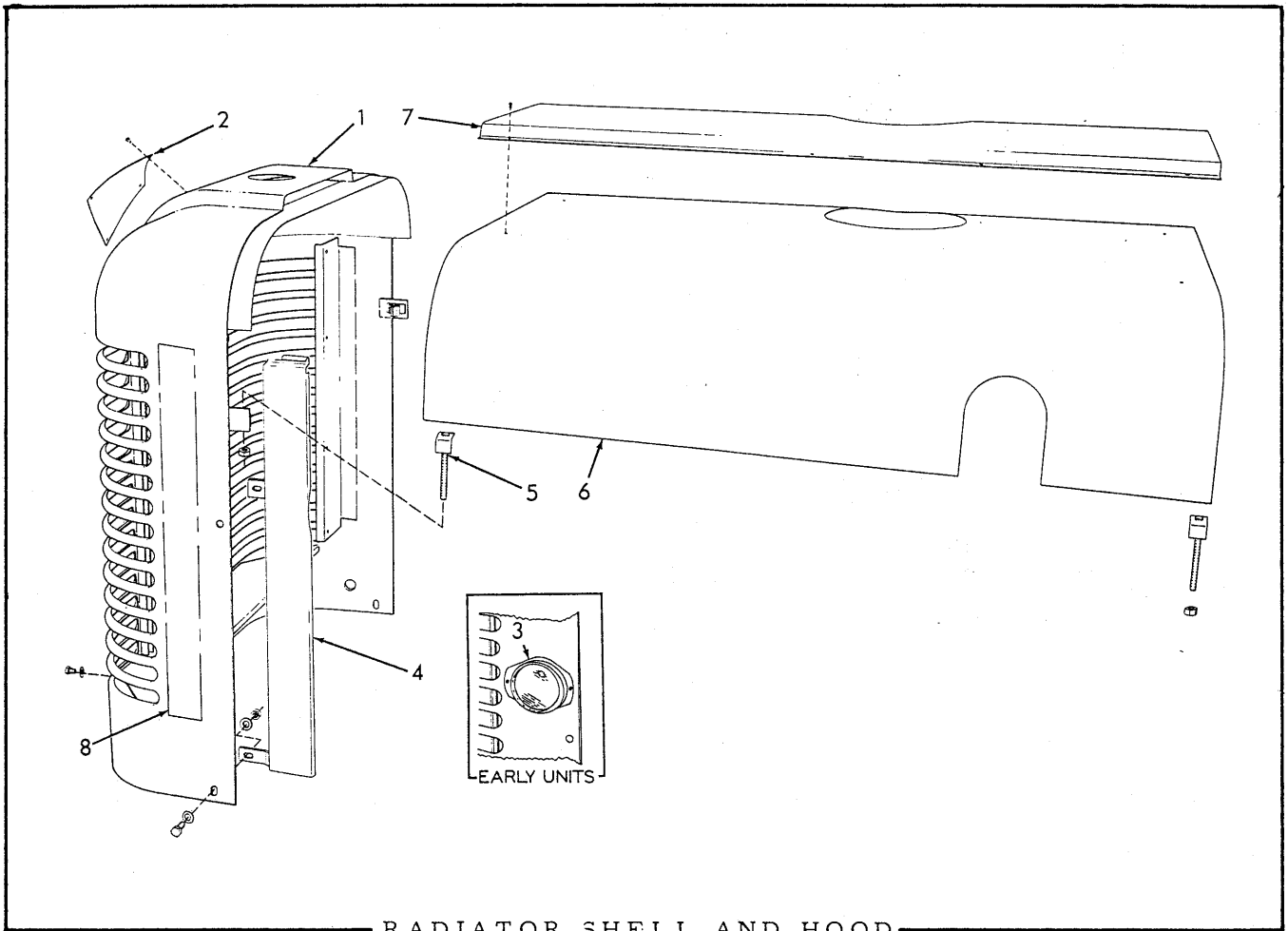
POWER TAKE-OFF (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
20	-----	1	1	COVER, housing (Not serviced separately. Order item 18)
	903632	18	18	CAPSCREW, 3/8"NC x 1-1/2"
	904206	18	18	LOCKWASHER, 3/8"
21	087426	24	24	SHIM, spacing (.020" thick. Use as req'd)
22	053990	2	2	PIN, dowel, housing cover
23	087247	1	-	SHAFT, gear drive (7-5/8" long)(Used prior to grader #525)
	090427	1	1	SHAFT, gear drive (7-3/16" long)(Effective with grader #525)
24	042986	1	1	BEARING, ball, gear drive shaft, front
25	075212	1	1	BEARING, ball, gear drive shaft, rear
26	603010	1	1	SEAL, oil, gear drive shaft
27	087422	1	1	CAP, housing
	910211	4	4	CAPSCREW, 3/8"NC x 1-1/8"
	904206	4	4	LOCKWASHER, 3/8"
28	087421	1	1	GASKET, housing cap
29	038226	6	6	SPACER, bearing (1/8" thick)(3 used prior to grader #525. 1 less used on grader equipped with shiftable moldboard)
30	087417	1	1	SPACER, bearing (1/32" thick)(4 used prior to grader #525)
31	087418	2	2	COVER, housing (3 quarter round)
	905660	8	8	CAPSCREW, 5/16"NC x 1/2"
	904205	8	8	LOCKWASHER, 5/16"
32	087416	2	2	GASKET, housing cover (3 quarter round)
33	087203	1	1	GEAR, drive, lower (21 teeth)
	905126	1	1	KEY, # 15 woodruff, 1/4" x 1"
34	087204	2	2	GEAR, hydraulic pump driving (16 teeth)
35	087205	1	1	GEAR, drive, intermediate (30 teeth)
36	087206	1	1	GEAR, drive, upper (42 teeth)
	905126	1	1	KEY, # 15 woodruff, 1/4" x 1"
37	087419	1	1	COVER, housing (rectangular)(Remove when installing auxiliary hydraulic pump)
	903628	4	4	CAPSCREW, 3/8"NC x 5/8"
	904206	4	4	LOCKWASHER, 3/8"
38	087427	1	1	GASKET, housing cover (rectangular)
39	087208	4	4	COVER, housing (round)
	905660	16	16	CAPSCREW, 5/16"NC x 1/2"
	904205	16	16	LOCKWASHER, 5/16"
40	087415	4	4	GASKET, housing cover (round)
41	042986	8	8	BEARING, ball, drive gears
42	048720	1	1	SEAL, oil, control box shaft
43	-----	-	-	SHAFT (See POWER CONTROL BOX)
44	-----	-	-	ADAPTER (See STEERING PUMP AND FILTER)
45	045507	-	1	HOSE, lubricating, supporting housing
	914465	-	1	FITTING, lubricating, straight, 1/8"NPT
	911049	-	1	NUT, jam, 5/8"NF
	911100	-	2	WASHER, plain, SAE std., 5/8"
	907059	-	1	ELBOW, street, 90°, 1/8"NPT
46	033137	-	1	HOSE, lubricating, drive housing
	914465	-	1	FITTING, lubricating, straight, 1/8"NPT
	911049	-	1	NUT, jam, 5/8"NF
	911100	-	2	WASHER, plain, SAE std., 5/8"
	907059	-	1	ELBOW, street, 90°, 1/8"NPT



SEAT

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	085940	1	CUSHION, seat
2	085941	1	CUSHION, back
	903630	2	CAPSCREW, 3/8"NC x 1"
	904206	2	LOCKWASHER, 3/8"
3	085923	1	FRAME, seat
4	086261	1	PLATE, latching
	903630	4	CAPSCREW, 3/8"NC x 1"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
5	085930	1	LATCH, seat adjusting
	904746	1	PIN, cotter, 1/16" x 5/8"
6	072438	1	SPRING, latch tension
7	085900	2	PLATE, cover, battery compartment
	915015	4	NUT, wing, 1/4"NC
8	086256	2	GUARD, seat frame roller
	910211	6	CAPSCREW, 3/8"NC x 1-1/8"
	900817	6	WASHER, plain, U.S. std., 3/8"
	904206	5	LOCKWASHER, 3/8"
	911026	5	NUT, 3/8"NC
9	086268	1	ANGLE, supporting, latching plate
	903630	2	CAPSCREW, 3/8"NC x 1"
	911115	2	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
10	075379	4	ROLLER, seat frame
11	075378	4	BEARING, needle, seat frame roller
12	052662	4	SEAL, dust, seat frame roller bearing
13	-----	1	SEAT AND TANK ASSEMBLY (See FUEL TANK)



RADIATOR SHELL AND HOOD

ITEM	PART NO.	QTY.	DESCRIPTION
1	089767	1	SHELL ASSEMBLY, radiator (Includes items 2 and 3)
	903627	2	CAPSCREW, 3/8"NC x 1/2"
	903630	2	CAPSCREW, 3/8"NC x 1"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
	2	623525	1
918370		4	RIVET, drive, 3/16" x 9/32" (Not original equipment)
3	053830	2	MARKER, ruby (Used prior to grader #1796)
	901170	4	SCREW, machine, #10-24NC x 1/4"
	904203	4	LOCKWASHER, #10
4	091081	1	GUARD, supercharger driving belts (Used on graders #940 thru #1779)
	903630	1	CAPSCREW, 3/8"NC x 1"
	911115	2	WASHER, plain, SAE std., 3/8"
	911026	1	NUT, 3/8"NC
5	605956	4	BOLT, hook
	911026	6	NUT, 3/8"NC
6	086236	1	HOOD, engine (Used prior to grader #1780)
	099969	1	HOOD, engine (Effective with grader #1780)

(Continued)

RADIATOR SHELL AND HOOD (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
7	086237	1	PLATE, engine hood
	907618	8	SCREW, rd-hd., thread-cutting, #8 x 1/4"
8	-----	-	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)
9	629279	2	BRACKET, radiator mounting (Special. Use with high-capacity RADIATOR 097938 only. Requires welding to install)(Not illustrated)
10	629280	1	BAFFLE, air (Special. Used with high-capacity RADIATOR 097938 only. Requires welding to install)(Not illustrated)

ILLUSTRATION PLATES AND TRANSFERS
(Not Illustrated)

ITEM	PART NO.	QTY.	DESCRIPTION
			<u>NOTE:</u> All plates and transfers are English language printings unless otherwise indicated
1	091317	1	PLATE, grader check and lubrication guide (10-1/4" square) (Attached to inside of right seat side)
	918370	4	RIVET, drive, 3/16" x 9/32"
2	621392	1	TRANSFER, shifter positions (3" x 4" pressure-sensitive type) (Applied to seat)
3	623490	2	*TRANSFER, "ROLL-AWAY MOLDBOARD" (5-1/2" diam.) (Applied to moldboard)
4	621393	1	TRANSFER, identification, circle turn operating lever (1-1/8" x 1-3/4" pressure-sensitive type)(Applied to shifter housing)
5	621395	2	TRANSFER, identification, circle lift operating lever (1-1/8" x 1-3/4" pressure-sensitive type)(Applied to shifter housing)
6	621396	1	TRANSFER, identification, side shift operating lever (1-1/8" x 1-3/4" pressure-sensitive type)(Applied to shifter housing)
7	621394	1	TRANSFER, identification, wheel lean operating lever (1-1/8" x 1-3/4" pressure-sensitive type)(Applied to shifter housing)
8	621397	1	TRANSFER, identification, scarifier operating lever (1-1/8" x 1-3/4" pressure-sensitive type)(Applied to shifter housing)
9	621484	1	TRANSFER, scarifier check and lubrication guide (3" x 6-1/2") (Applied to scarifier lift support)
10	621343	1	TRANSFER, instruction, oil filter (2-5/16" x 3-1/4" pressure-sensitive type)(Applied to engine filter)
11	621399	1	TRANSFER, warning, special heavy-duty oil filter (Includes Portuguese translation, 2" x 10" pressure-sensitive type) (Applied to filter)
	621400	1	TRANSFER, warning, special heavy-duty oil filter (French and Spanish translations, 2" x 10" pressure-sensitive type) (Applied to filter)
12	621339	1	TRANSFER, instruction, 1st stage fuel filter (1-3/4" x 2-1/4", pressure-sensitive type)(Applied to fuel filter)
13	621346	1	TRANSFER, instruction, 2nd stage fuel filter (1-3/4" x 2-1/4" pressure-sensitive type)(Applied to fuel filter)
14	050842	1	TRANSFER, instruction, air cleaner (1-1/2" x 3-3/4")(Applied to oil bath air cleaner only)
	074578	1	*TRANSFER, instruction, air cleaner (Spanish translation, 1-5/8" x 4")(Applied to oil bath air cleaner only)
15	050838	1	*TRANSFER, instruction, air pre-cleaner (Applied to air pre-cleaner)
	074577	1	*TRANSFER, instruction, air pre-cleaner (Spanish translation, 1-5/8" x 4")(Applied to air pre-cleaner)

(Continued)

ILLUSTRATION PLATES AND TRANSFERS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
16	621342	1	TRANSFER, instruction, engine primer (1-3/4" x 6" pressure-sensitive type)(Applied to left inside of seat back)
17	621390	1	TRANSFER, instruction, power steering oil filter (1-1/2" x 3-1/4" pressure-sensitive type)(Applied to filter)
18	081502	1	*TRANSFER, oil level, shiftable moldboard oil tank (7/8" x 4". Applied to tank)(Used prior to grader #1277)
19	621338	1	TRANSFER, instruction, air heater operation (2" x 6" pressure-sensitive type) (Applied to left inside of seat back)
	074579	1	*TRANSFER, instruction, air heater operation (Spanish translation, 2" x 6")(Applied to left inside of seat back)
20	623476	2	*TRANSFER, vertical, "ALLIS-CHALMERS" (2-1/4" x 25-1/2") (Applied to sides of radiator shell. Effective with approx. grader #1796)
21	634284	2	TRANSFER, horizontal, "ALLIS-CHALMERS" (1-5/16" x 30" pressure-sensitive type)(Applied to sides of frame. Effective with approx. grader #1796)
22	634376	2	TRANSFER, horizontal, "ALLIS-CHALMERS" (1-1/8" x 20" pressure-sensitive type)(Applied to sides of seat. Effective with approx. grader #1796)
23	623532	2	TRANSFER, model identification, "45" (elliptical, pressure-sensitive type)(Applied to sides of seat. Effective with approx. grader #1796)
24	096154	1	TRANSFER SET (Consists of one each TRANSFERS 050838, 050842, 621339, 621342, 621343, 621346, 621390, 621392, 621393, 621394, 621396, 621397; two each TRANSFERS 621395 and 623490)
25	067937	-	CEMENT, transfer application, 1/2 pint jar (Makes solution by adding 4 parts water. Required to apply transfers indicated by asterisk (*) above)

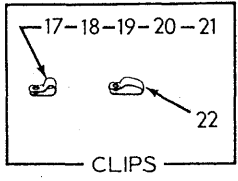
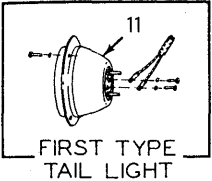
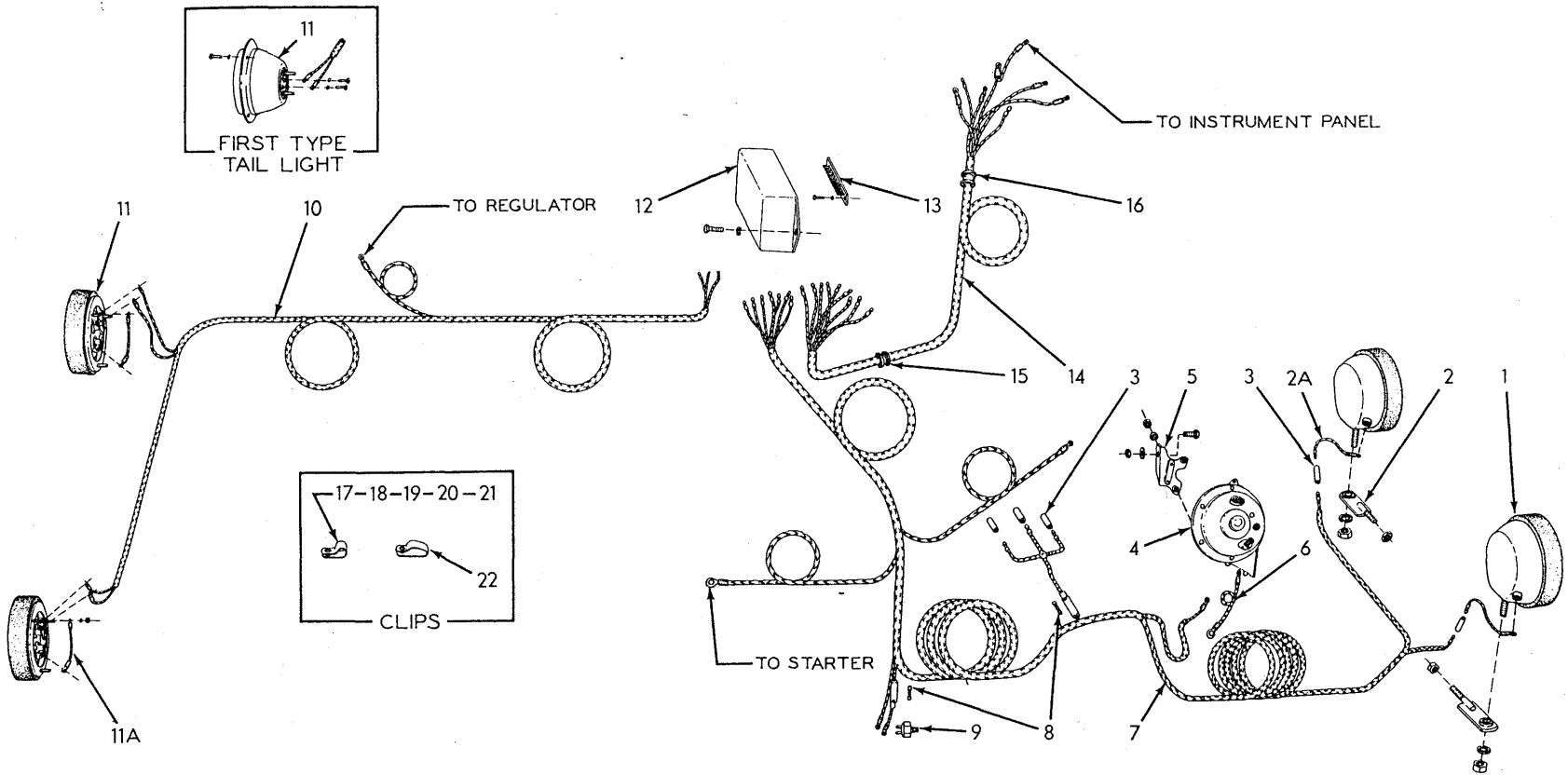
*Indicates permanent type transfer. See item 25

PAINTING

(Not Illustrated)

1	921094	-	ENAMEL, persian orange, quart can
	921285	-	ENAMEL, A-C yellow, quart can
2	921093	-	ENAMEL, persian orange, gallon can
	921286	-	ENAMEL, A-C yellow, gallon can
3	921354	-	ENAMEL, A-C yellow, 5 gallon can
4	921092	-	ENAMEL, persian orange, 12 oz. pressurized spray-type can
	921289	-	ENAMEL, A-C yellow, 12 oz. pressurized spray-type can

NOTE: Approximately 4-1/2 gallons of enamel and 1 gallon of thinner are required to paint grader one coat.



LIGHTS, HORN AND WIRING

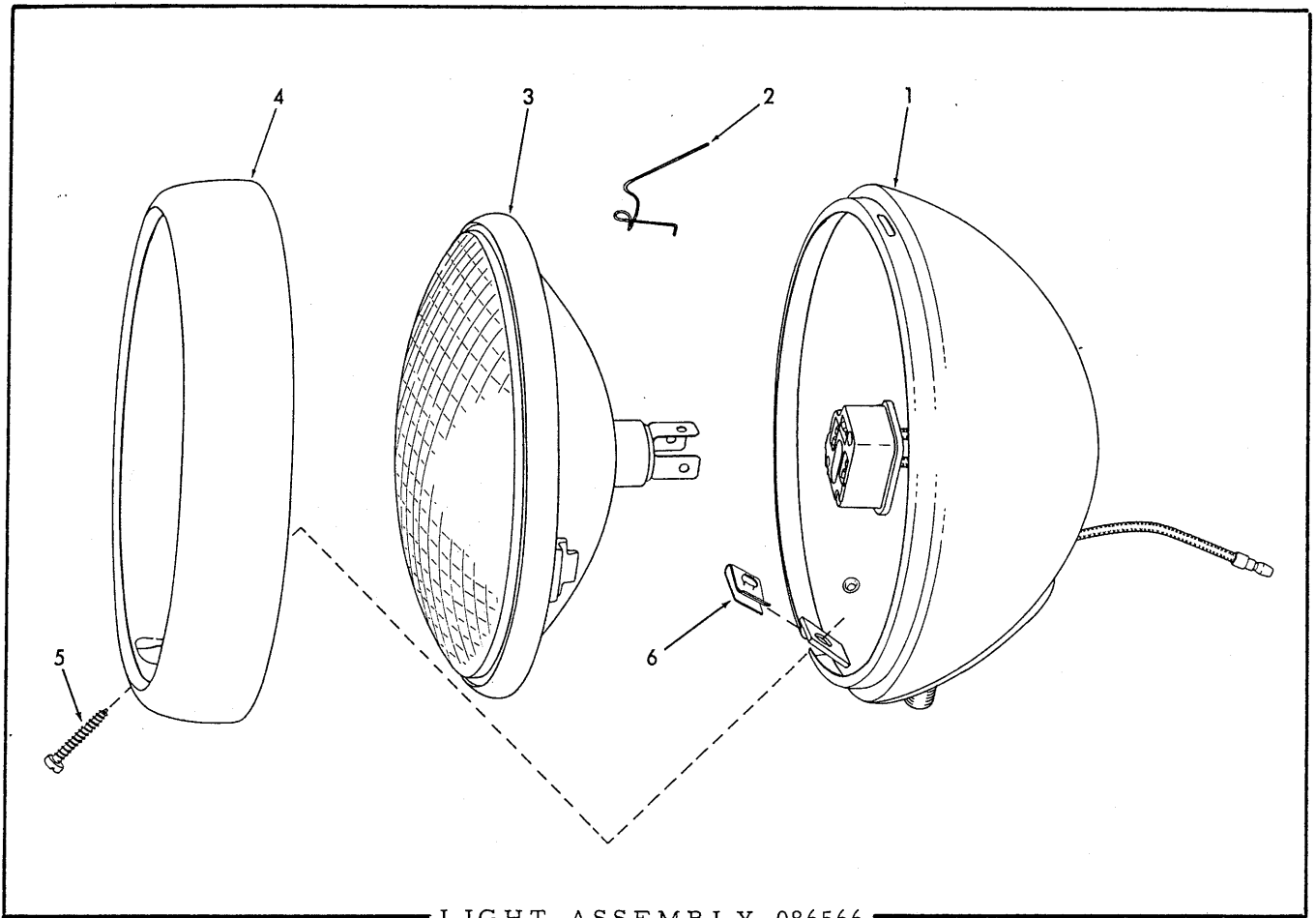
LIGHTS, HORN AND WIRING

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	086566	2	-	LIGHT ASSEMBLY, head (See page 263 for parts)(Order LIGHT ASSY. 621429, NUT 911043 and LOCKWASHER 904208)
	904206	2	-	LOCKWASHER, 3/8"
	911026	2	-	NUT, 3/8"NC
	621429	-	2	LIGHT ASSEMBLY, head (See page 264 for parts)
	904208	-	2	LOCKWASHER, 1/2"
	911043	-	2	NUT, 1/2"NF
2	080353	2	-	BRACKET, head light mounting
	621895	-	2	BRACKET, head light mounting
	911035	2	2	NUT, jam, 1/2"NC
2A	621892	-	2	CABLE, head light connecting (4" long)
3	048142	5	5	CONNECTOR, front wiring harness
4	094139	1	1	HORN, warning (Delco-Remy # 9000503. Order parts from local United Motors Service agency)
	906958	2	2	LOCKWASHER, 1/4"
	910267	2	2	NUT, jam, 1/4"NF
5	081173	1	1	BRACKET, horn mounting
	903631	1	1	CAPSCREW, 3/8"NC x 1-1/4"
	900817	1	1	WASHER, plain, U.S. std., 3/8"
	911026	1	1	NUT, 3/8"NC
6	094190	1	1	CABLE, horn ground
7	095416	1	1	HARNESS, front wiring
8	208960	2	2	FUSE, 20 ampere, 1/4" x 1-1/4" (1 less used prior to grader #1024)
9	094334	1	1	SWITCH, pressure, stop light operating
10	086568	1	1	HARNESS, rear wiring
	634686	2	-	CONNECTOR, tail light cable (Not original equipment. Used with LIGHT ASSY. 634687 only)
11	086567	2	-	LIGHT ASSEMBLY, combination tail and stop (See page 265 for parts) (Original equipment. Order LIGHT ASSY. 634687 and 2 CONNECTORS 634686)
	634687	2	-	LIGHT ASSEMBLY, combination tail and stop (See page 266 for parts)(Service replacement only)
	901172	6	-	SCREW, machine, #10-24NC x 1/2"
	904203	6	-	LOCKWASHER, #10
	621818	-	2	LIGHT ASSEMBLY, combination tail and stop (See page 265 for parts)
	901310	-	6	NUT, #10-24NC
904203	-	6	LOCKWASHER, #10	
11A	624477	-	2	CABLE, tail light ground (4-1/2" long)
12	086570	1	1	COVER, wiring junction block
	903628	2	2	CAPSCREW, 3/8"NC x 5/8"
	904206	2	2	LOCKWASHER, 3/8"

(Continued)

LIGHTS, HORN AND WIRING (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
13	079444	1	1	BLOCK, junction, electric wiring
	901172	2	2	SCREW, machine, #10-24NC x 1/2"
	904203	2	2	LOCKWASHER, # 10
14	086571	1	1	HARNESS, instrument panel wiring
15	605164	1	1	GROMMET, instrument panel wiring harness (1/2" thick, rubber)
16	055418	1	1	GROMMET, instrument panel wiring harness (3/4" thick, rubber)
17	091046	1	1	CLIP, front wiring harness (1/2" diam., 7/16" bolt-hole)
	903630	1	1	CAPSCREW, 3/8"NC x 1"
	904206	1	1	LOCKWASHER, 3/8"
	911026	1	1	NUT, 3/8"NC
18	055234	2	2	CLIP, instrument panel wiring harness (3/4" diam., 13/32" bolt-hole)
	903630	1	1	CAPSCREW, 3/8"NC x 1"
	904206	1	1	LOCKWASHER, 3/8"
19	033043	2	2	CLIP, front wiring harness (7/16" diam., 13/32" bolt-hole)
	903628	2	2	CAPSCREW, 3/8"NC x 5/8"
	904206	2	2	LOCKWASHER, 3/8"
20	040796	9	9	CLIP, wiring harness (3/8" diam., 13/32" bolt-hole)
	903627	6	6	CAPSCREW, 3/8"NC x 1/2"
	910211	2	2	CAPSCREW, 3/8"NC x 1-1/8"
	904206	8	8	LOCKWASHER, 3/8"
	911026	2	2	NUT, 3/8"NC
21	034632	9	9	CLIP, wiring harness (5/16" diam., 13/32" bolt-hole)
	903627	7	7	CAPSCREW, 3/8"NC x 1/2"
	910211	1	1	CAPSCREW, 3/8"NC x 1-1/8"
	903632	1	1	CAPSCREW, 3/8"NC x 1-1/2"
	904206	9	9	LOCKWASHER, 3/8"
911026	2	2	NUT, 3/8"NC	
22	055232	1	1	CLIP, front and rear wiring harness (For one 1/2" diam. line and one 3/8" diam. line, 13/32" bolt-hole)
	903628	1	1	CAPSCREW, 3/8"NC x 5/8"
	904206	1	1	LOCKWASHER, 3/8"



LIGHT ASSEMBLY 086566

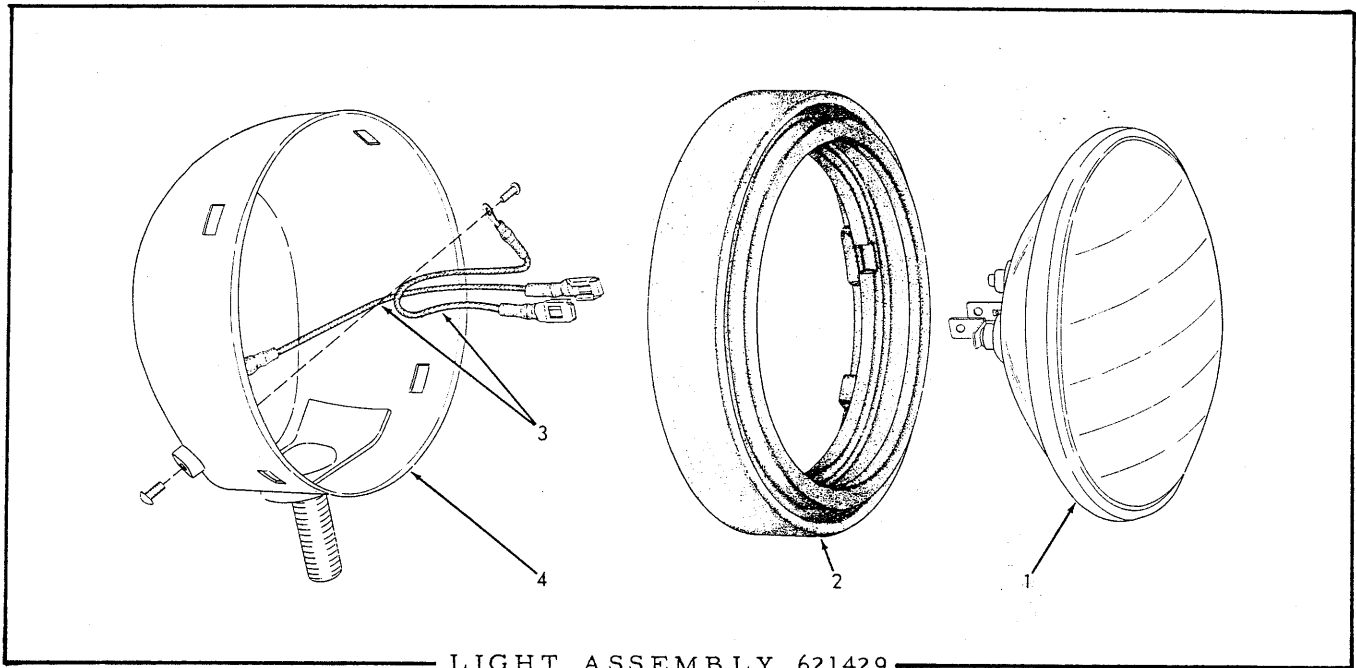
USAGE: See pages 261 and 282

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one (1) light only

1	-----	1	BODY (Includes WIRING. Not serviced separately)
2	081161	4	SPRING, unit retaining
3	182763	1	SEALED BEAM (24 volt)
4	081159	1	DOOR
5	081162	1	SCREW, door retaining
6	-----	1	NUT, speed

Items listed above without part numbers are no longer available, replace entire unit with LIGHT ASSY. 621429.



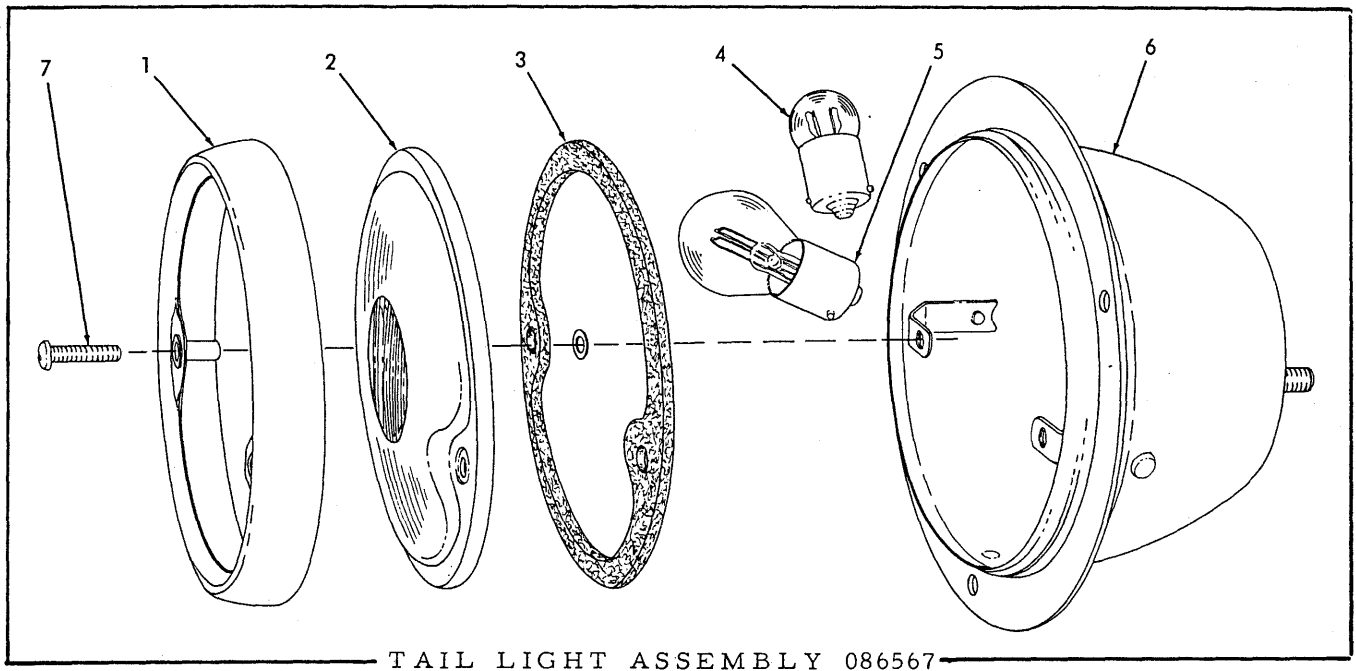
LIGHT ASSEMBLY 621429

USAGE: See page 261 and 282

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one (1) light only

1	182763	1	SEALED BEAM (24 volt)
2	621428	1	RETAINER (rubber)
3	621724	2	CABLE, sealed beam (Includes terminals)
	912731	1	SCREW, machine, #8-32 NC x 5/16"
4	-----	1	BODY ASSEMBLY (Not serviced separately)
	912731	1	SCREW, machine, #8-32NC x 5/16"



TAIL LIGHT ASSEMBLY 086567

USAGE: See page 261

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one (1) light only

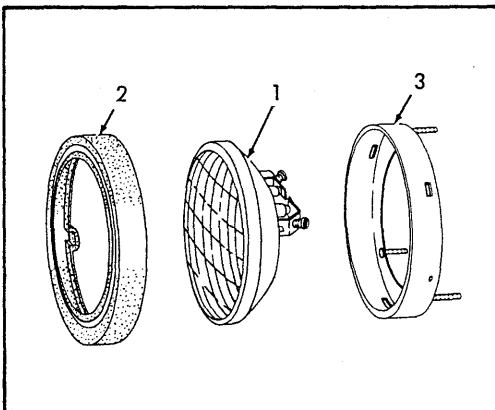
1	621214	1	DOOR ASSEMBLY (Includes items 2 and 3)
2	621454	1	LENS, ruby
3	054289	1	GASKET, lens
4	074452	1	BULB, tail light (single contact, 6 c.p., 24 volt)
5	088472	1	BULB, stop light (single contact, 32 c.p., 24 volt)
6	-----	1	BODY (Not serviced separately)
7	621578	2	SCREW, door retaining

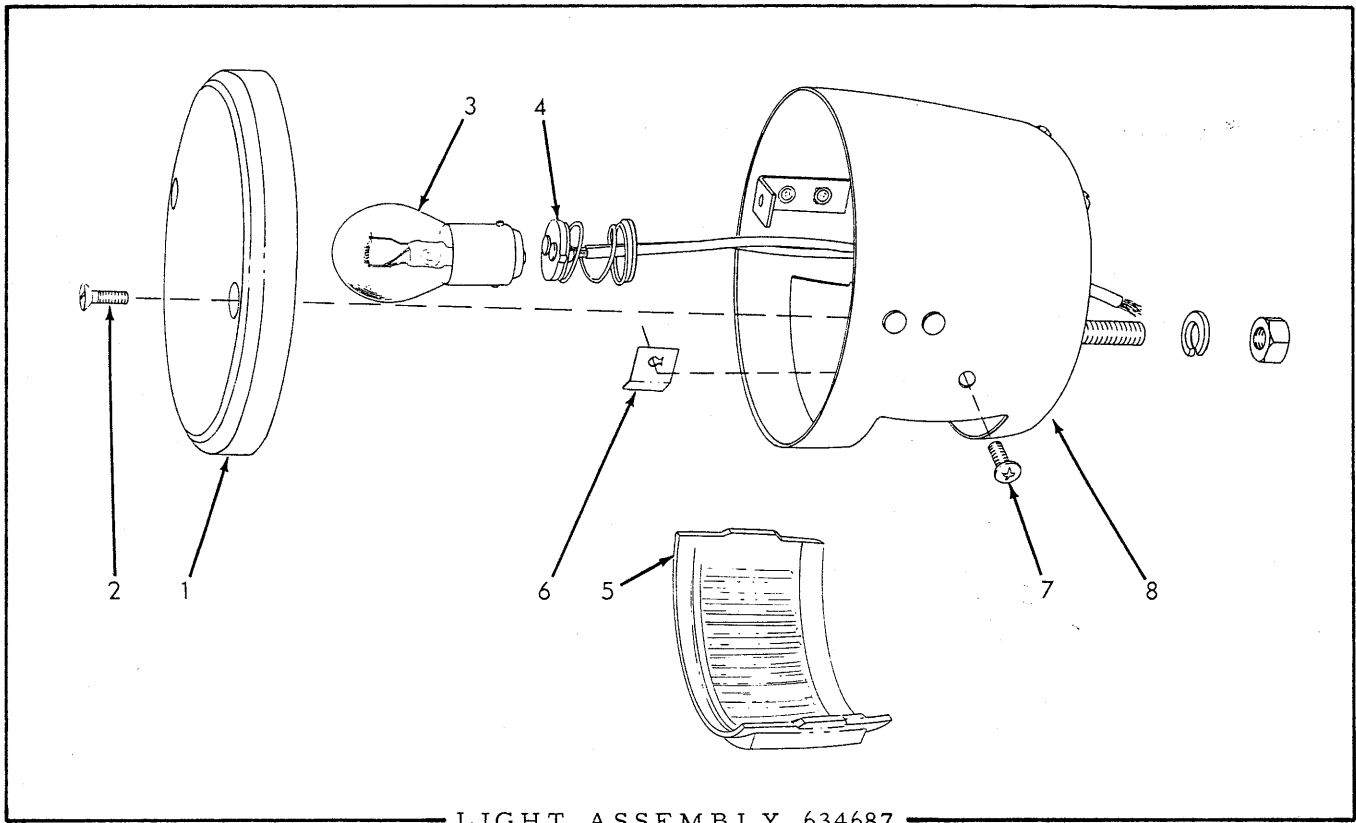
LIGHT ASSEMBLY 621818

USAGE: See page 261

ITEM PART NO. QTY. DESCRIPTION

1	621820	1	LAMP, sealed beam (red, dual filament, 24 volt)
2	621821	1	RETAINER, lamp
3	621819	1	FRAME



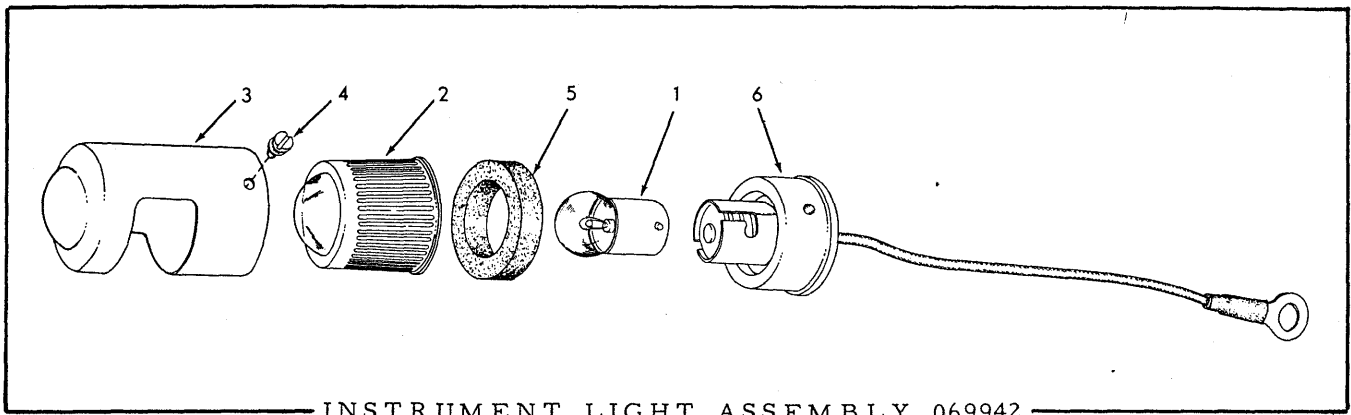


USAGE: See page 261

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one (1) Light Assembly only

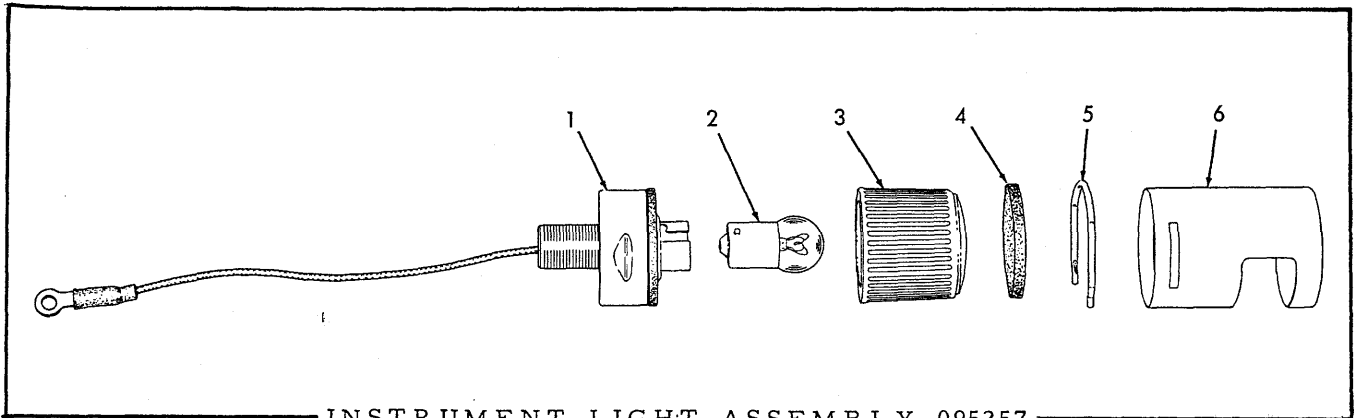
1	643442	1	LENS (red)
2	643441	2	SCREW
3	643443	1	BULB (Double contact, 32c.p. and 6 c.p., 24 volt)
4	643444	1	WIRING ASSEMBLY (Includes spring and washers)
5	643448	1	LENS (white)
6	643446	2	NUT, speed, lens retaining
7	643445	2	SCREW
8	643447	1	BODY ASSEMBLY (Includes hardware listed below)
	916964	2	LOCKWASHER, cd.-pltd., 1/4"
	916622	2	NUT, cd.-pltd., 1/4"NC



INSTRUMENT LIGHT ASSEMBLY 069942

USAGE: See page 269

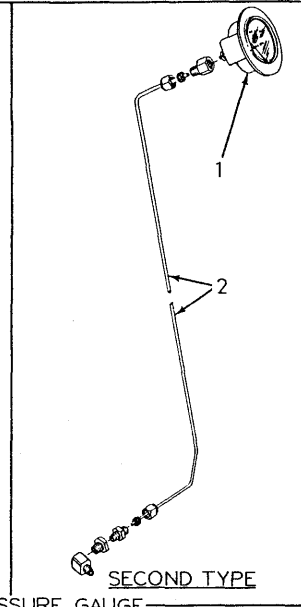
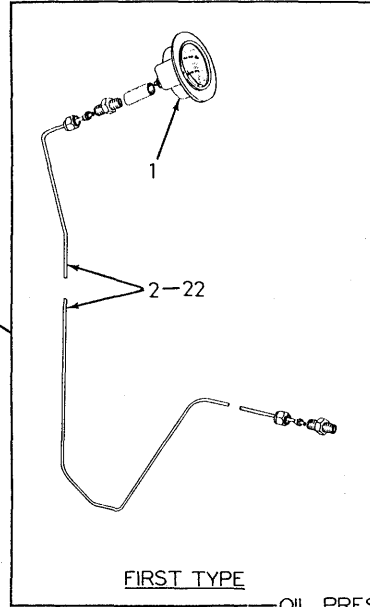
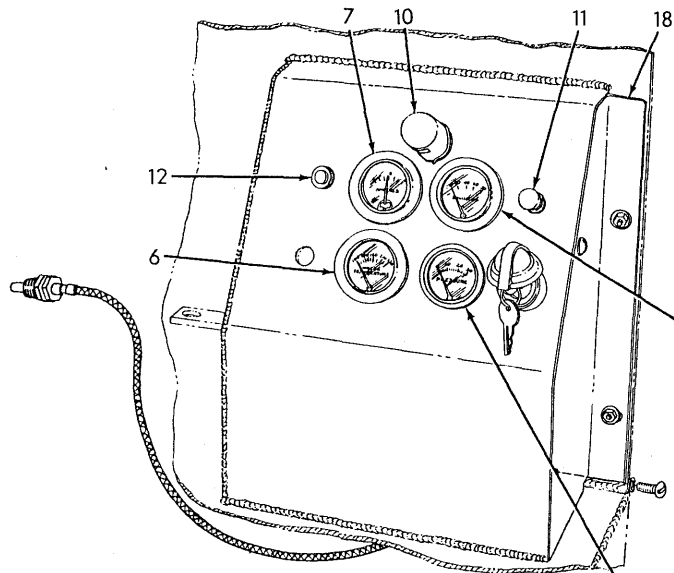
ITEM	PART NO.	QTY.	DESCRIPTION
1	074452	1	BULB, single contact, 6 c.p., 24 volts
2	040974	1	GLASS
3	040973	1	COVER, bulb
4	044211	2	SCREW
5	040969	1	GASKET, bulb cover
6	-----	1	BASE ASSEMBLY (Not serviced separately)



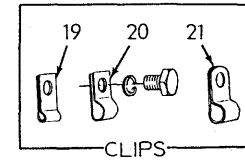
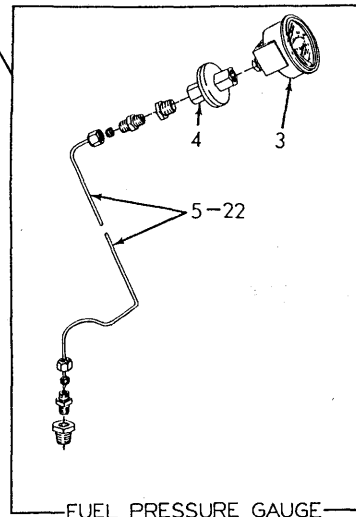
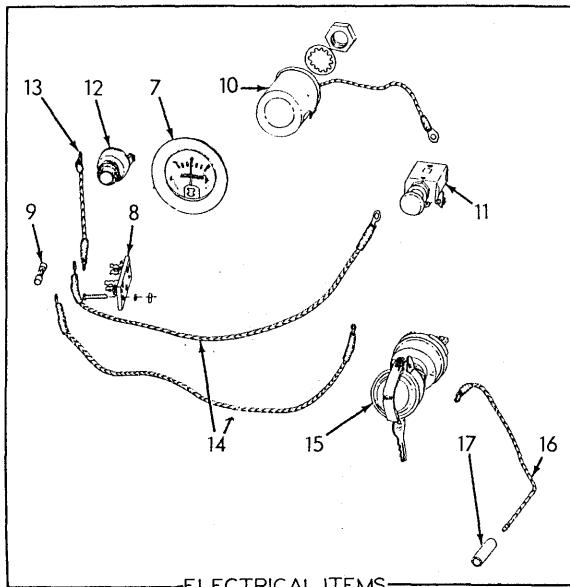
INSTRUMENT LIGHT ASSEMBLY 095257

USAGE: See page 269

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	BASE ASSEMBLY (Not serviced separately)
2	074452	1	BULB, single contact, 6 c.p., 24 volts
3	095267	1	LENS
4	095268	1	GASKET
5	095265	1	SPRING, cover retaining
6	095269	1	COVER



OIL PRESSURE GAUGE



INSTRUMENTS

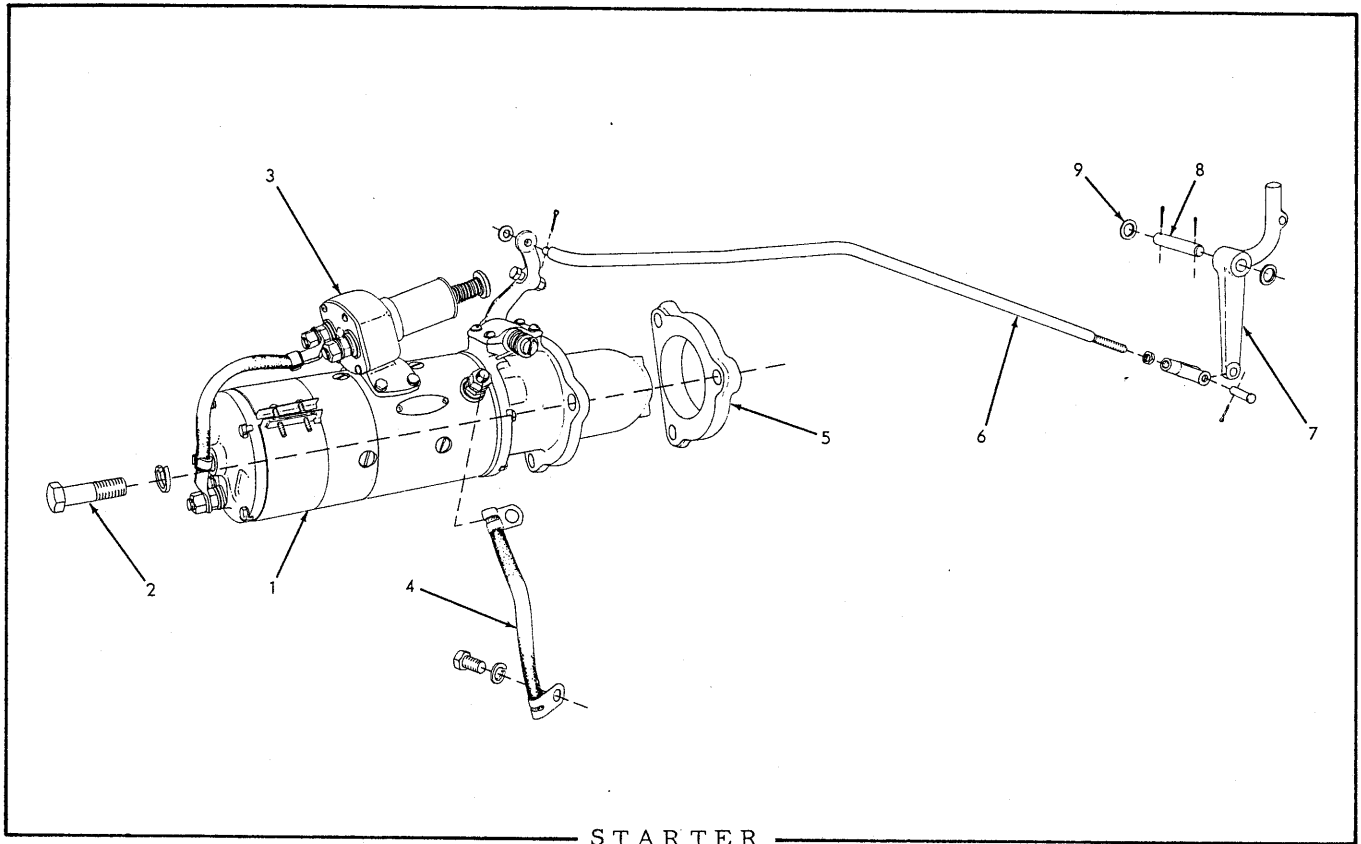
INSTRUMENTS

ITEM	PART NO.	QTY.	DESCRIPTION
1	065659	1	GAUGE, engine oil pressure (Includes mounting clamp)
2	-----	1	TUBE, oil pressure gauge (1/8" O.D. x 88" long. Order item 22) (Used prior to grader #1852)
	915490	1	CONNECTOR, Sealastic, 1/8" tube, 1/8"NPT female
	915556	1	CONNECTOR, Sealastic, 1/8" tube, 1/8"NPT male
	915486	2	RING, Sealastic, 1/8" tube, (Includes ferrule)
	915488	2	NUT, Sealastic, 1/8" tube
	901825	1	BUSHING, pipe reducing, 1/4"NPT to 1/8"NPT
	047852	1	ELBOW, 90°, 1/8"NPT male, 1/4"NPT female
	093899	1	TUBE ASSEMBLY, oil pressure gage (Includes nuts)(Effective with grader #1852)
	919094	2	CONNECTOR, flare type, 1/8" tube, 1/8"NPT male
	901763	1	COUPLING, pipe, 1/8"NPT
3	083913	1	GAUGE, fuel pressure (Includes mounting clamp)
4	069674	1	RESTRICTOR, fuel pressure gauge
5	-----	1	TUBE, fuel pressure gauge (1/8"O.D. x 113" long. Order item 22)
	915556	2	CONNECTOR, Sealastic, 1/8" tube, 1/8"NPT male
	915486	2	RING, Sealastic, 1/8" tube (Includes ferrule)
	915488	2	NUT, Sealastic, 1/8" tube
	901825	1	BUSHING, pipe reducing, 1/4"NPT to 1/8"NPT
6	086572	1	GAUGE, engine temperature (Includes mounting clamp)
7	065677	1	AMMETER (Includes mounting clamp)
8	605842	1	BLOCK, fuse mounting
	900555	2	SCREW, machine, #8NC x 3/4"
	906964	2	LOCKWASHER, #8
	907154	2	NUT, #8NC
9	208960	1	FUSE, 20 ampere (1/4" x 1-1/4")
10	069942	1	LIGHT ASSEMBLY, instrument panel (See page 267 for parts) (Used prior to grader #1209)
	900553	3	SCREW, machine, #8-32NC x 1/2"
	906964	3	LOCKWASHER, #8
	095257	1	LIGHT ASSEMBLY, instrument panel (See page 267 for parts) (Effective with grader #1209)
	911049	1	NUT, jam, 5/8"NF
	910334	1	LOCKWASHER, ext-tooth, 5/8"
11	051195	1	SWITCH, push-pull, lights (Includes operating knob)
12	031337	1	SWITCH, push-button, horn
13	051006	1	CABLE, horn switch to fuse block (4-1/2" long)(Effective with grader #1306)
14	074887	2	CABLE, switches to fuse block (14" long)
15	178187	1	SWITCH, master (Includes keys)(Delco-Remy #1116525. Order service parts from local United Motors Service agency)(Effective with grader #1306)
16	068367	1	CABLE, master switch to wiring harness (9" long)(Effective with grader #1306)

(Continued)

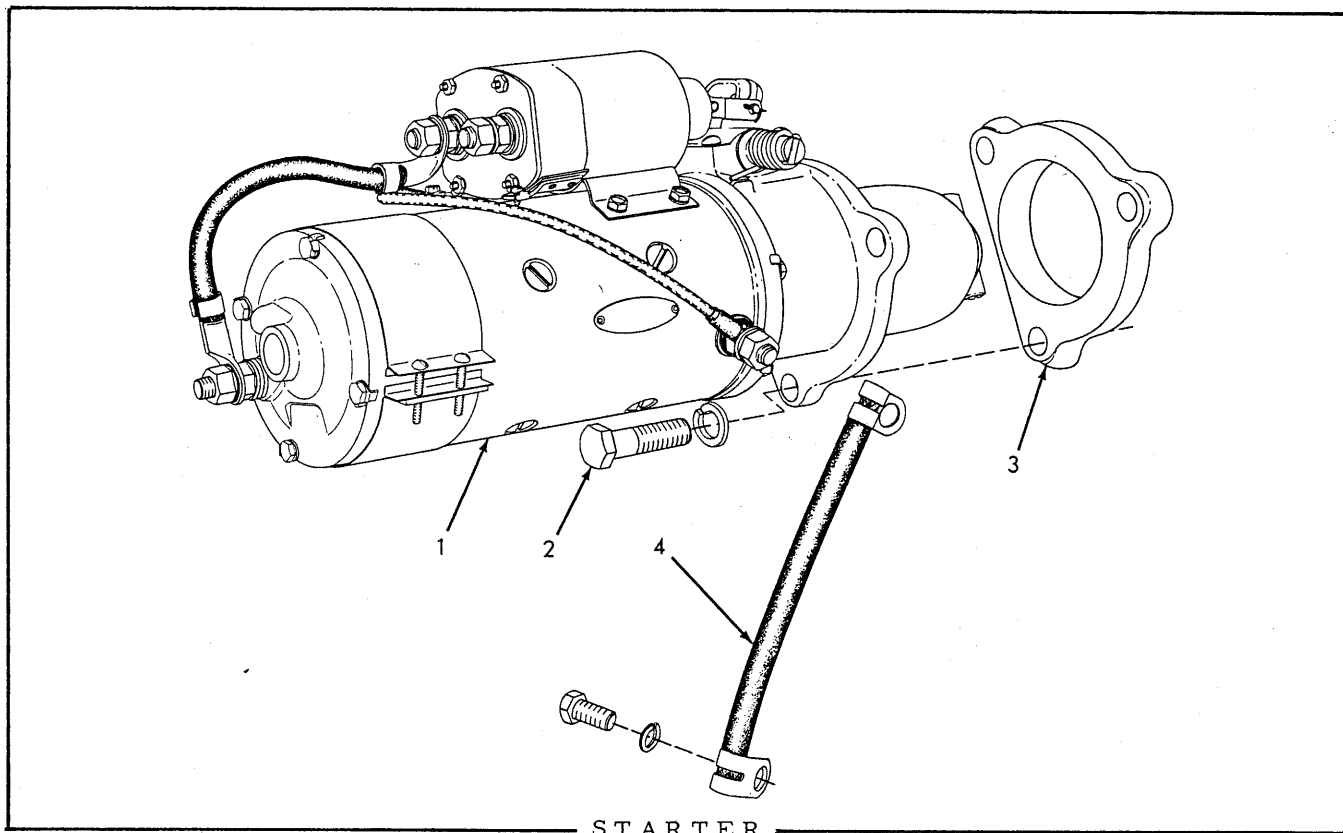
INSTRUMENTS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
17	048142	1	CONNECTOR, master switch cable (Effective with grader #1306)
18	078913	1	PANEL, instrument access
	900593	2	SCREW, machine, 3/8"NC x 3/4" (Panel to instrument box)
	900594	2	SCREW, machine, 3/8"NC x 1" (Panel to seat back)
	904206	2	LOCKWASHER, 3/8"
	911115	2	WASHER, plain, SAE std., 3/8"
	911034	2	NUT, jam, 3/8"NC
19	235794	3	CLIP, fuel pressure gauge tube (1/4" diam., 13/32" bolt-hole) (For units with engine primer)
	066260	3	CLIP, fuel pressure gauge tube (1/8" diam., 13/32" bolt-hole) (For units without engine primer)
	905661	1	CAPSCREW, 5/16"NC x 5/8"
	904205	1	LOCKWASHER, 5/16"
20	034632	1	CLIP, instrument tubes (5/16" diam., 13/32" bolt-hole)
	903627	1	CAPSCREW, 3/8"NC x 1/2"
	904206	1	LOCKWASHER, 3/8"
21	033043	1	CLIP, instrument tubes (7/16" diam., 13/32" bolt-hole)
22	066253	-	TUBING, copper, 1/8"O.D., 10 ft. roll (Use as req'd)



USAGE: Graders prior to serial No. 1306

ITEM	PART NO.	QTY.	DESCRIPTION
1	085066	1	MOTOR, starting (Delco-Remy #1109862. Order service parts from local United Motors Service agency) (Includes item 3)
2	023755	3	CAPSCREW, 5/8"NC x 2-1/4"
	904209	3	LOCKWASHER, 5/8"
3	034924	1	SWITCH, starting motor (Delco-Remy #1857074. Order service parts from local United Motors Service agency)
4	086431	1	CABLE, starter to ground
	905274	1	CAPSCREW, 1/2"NC x 3/4"
	904208	1	LOCKWASHER, 1/2"
5	4346320	1	ADAPTER, starting motor
6	086874	1	ROD, operating
	910335	1	WASHER, plain, SAE std., 5/16"
	904001	1	PIN, cotter, 3/32" x 1/2"
	911048	1	NUT jam, 3/8"NF
	917664	1	YOKE, rod end, adjustable, 3/8"NF
	917646	1	PIN, yoke, 3/8" diam.
	900942	1	PIN, cotter, 3/32" x 5/8"
7	086875	1	LEVER, operating
8	086873	1	SHAFT, operating lever
9	060553	2	WASHER, plain, operating lever shaft
	900806	2	PIN, cotter, 1/8" x 1"



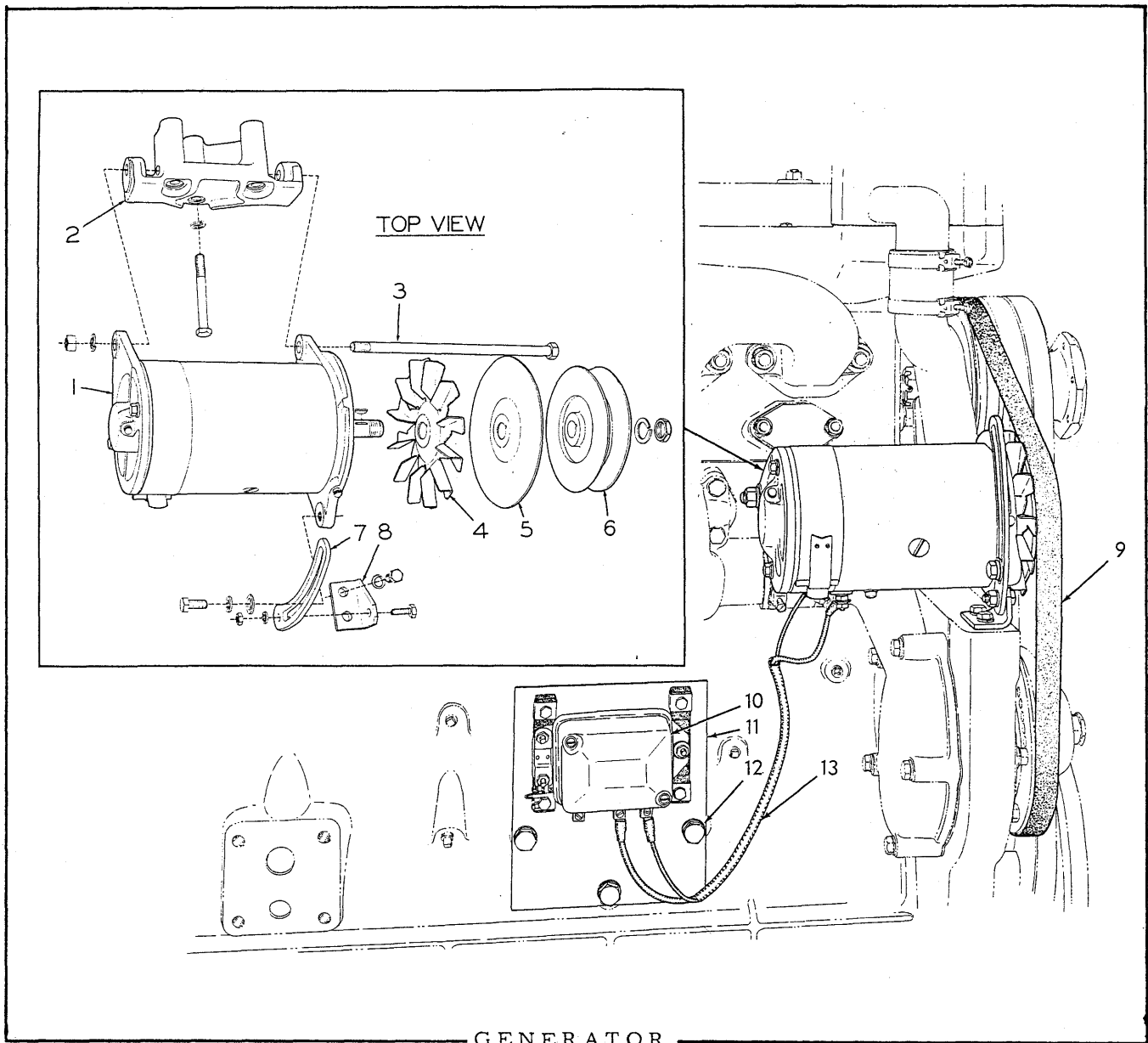
USAGE: Effective with grader serial No. 1306

ITEM PART NO. QTY. DESCRIPTION

NOTE: See INSTRUMENTS for starter operating switch.

1	4358473	1	MOTOR, starting (Delco-Remy #1113710. Order service parts from local United Motors Service agency)
2	023755	3	CAPSCREW, 5/8"NC x 2-1/4"
	904209	3	LOCKWASHER, 5/8"
3	4346320	1	ADAPTER, starting motor
4	086431	1	CABLE, starter to ground
	905274	1	CAPSCREW, 1/2"NC x 3/4"
	904208	1	LOCKWASHER, 1/2"

MEMO



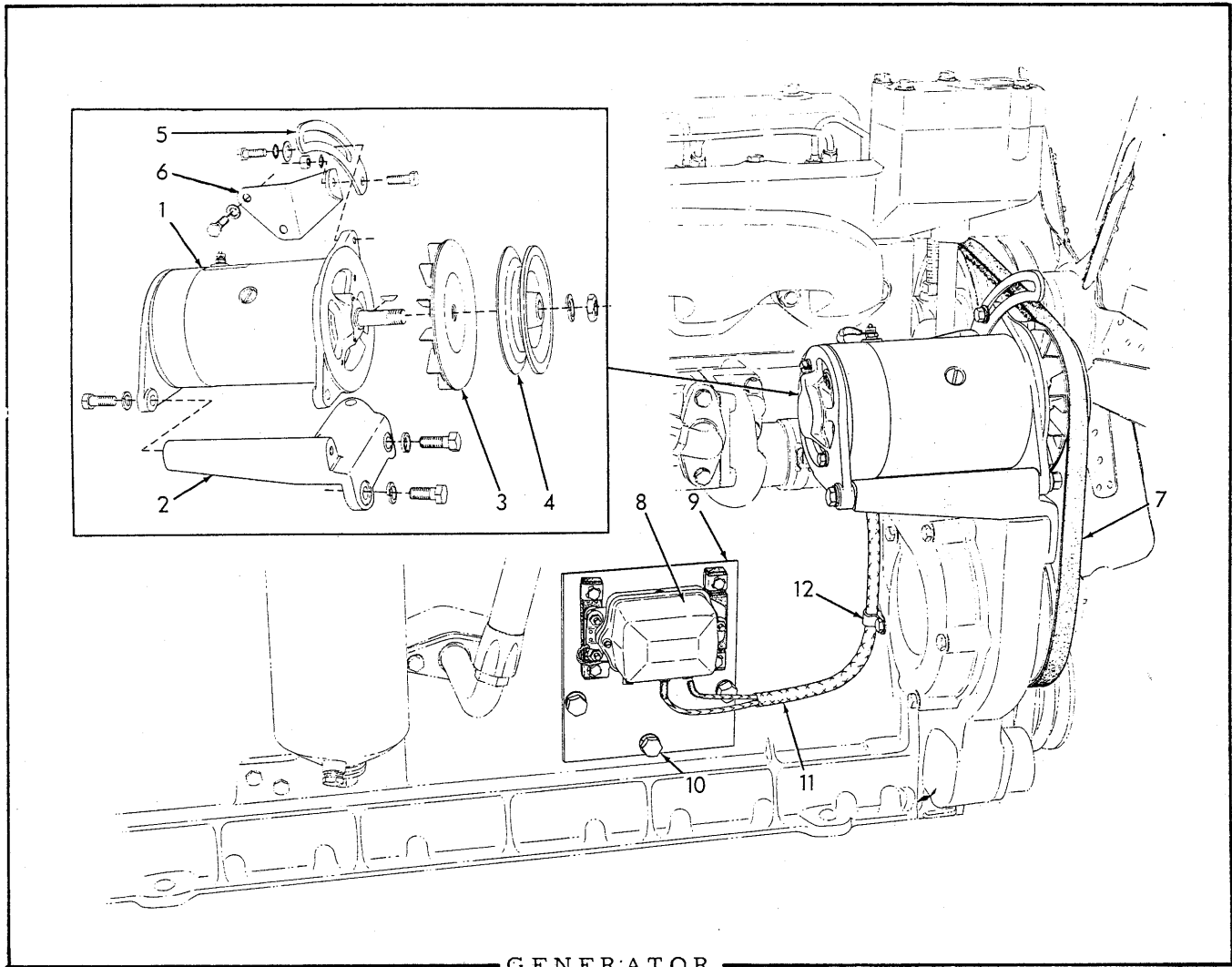
USAGE: Graders prior to serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4348207	1	GENERATOR (Includes Key, Nut and Washer for pulley) (Delco-Remy # 1105976. Order service parts from local United Motors Service agency)
2	4348145	1	BRACKET, generator mounting
	906695	3	CAPSCREW, 3/8"NC 3-1/4"
	904206	3	LOCKWASHER, 3/8"
3	4348276	1	CAPSCREW, generator hinge (7/16"NF x 8-5/8")
	904207	1	LOCKWASHER, 7/16"
	910986	1	NUT, 7/16"NF
4	-----	1	FAN, generator cooling (Order Fan 4374148)

(Continued)

GENERATOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	4373121	1	BAFFLE, generator cooling fan
6	4347998	1	PULLEY
7	4348163	1	LINK, belt adjustment
	915408	1	CAPSCREW, 3/8"NC x 3/4"
	903772	1	CAPSCREW, 5/16"NC x 1"
	900817	1	WASHER, plain, U.S. std., 3/8"
	904205	2	LOCKWASHER, 5/16"
	904206	1	LOCKWASHER, 3/8"
	911025	1	NUT, 5/16"NC
8	4348164	1	BRACKET, belt adjustment link (Used prior to engine #45-1257)
		1	BRACKET, belt adjustment link (Effective with engine #45-1257)
	903771	2	CAPSCREW, 5/16"NC x 7/8"
	904205	2	LOCKWASHER, 5/16"
9	4347818	1	BELT, generator and water pump
10	081154	1	REGULATOR, voltage and current (Delco-Remy #1119177. Was formerly #1118793. Order service parts from local United Motors Service agency)
	912178	4	CAPSCREW, 1/4"NF x 1-1/2"
	904204	4	LOCKWASHER, 1/4"
	911040	4	NUT, 1/4"NF
11	084798	1	PLATE, regulator mounting
12	035221	3	CAPSCREW, 1/2"NC x 1"
	904208	3	LOCKWASHER, 1/2"
13	084802	1	HARNESS, generator to regulator (2 cables)



GENERATOR

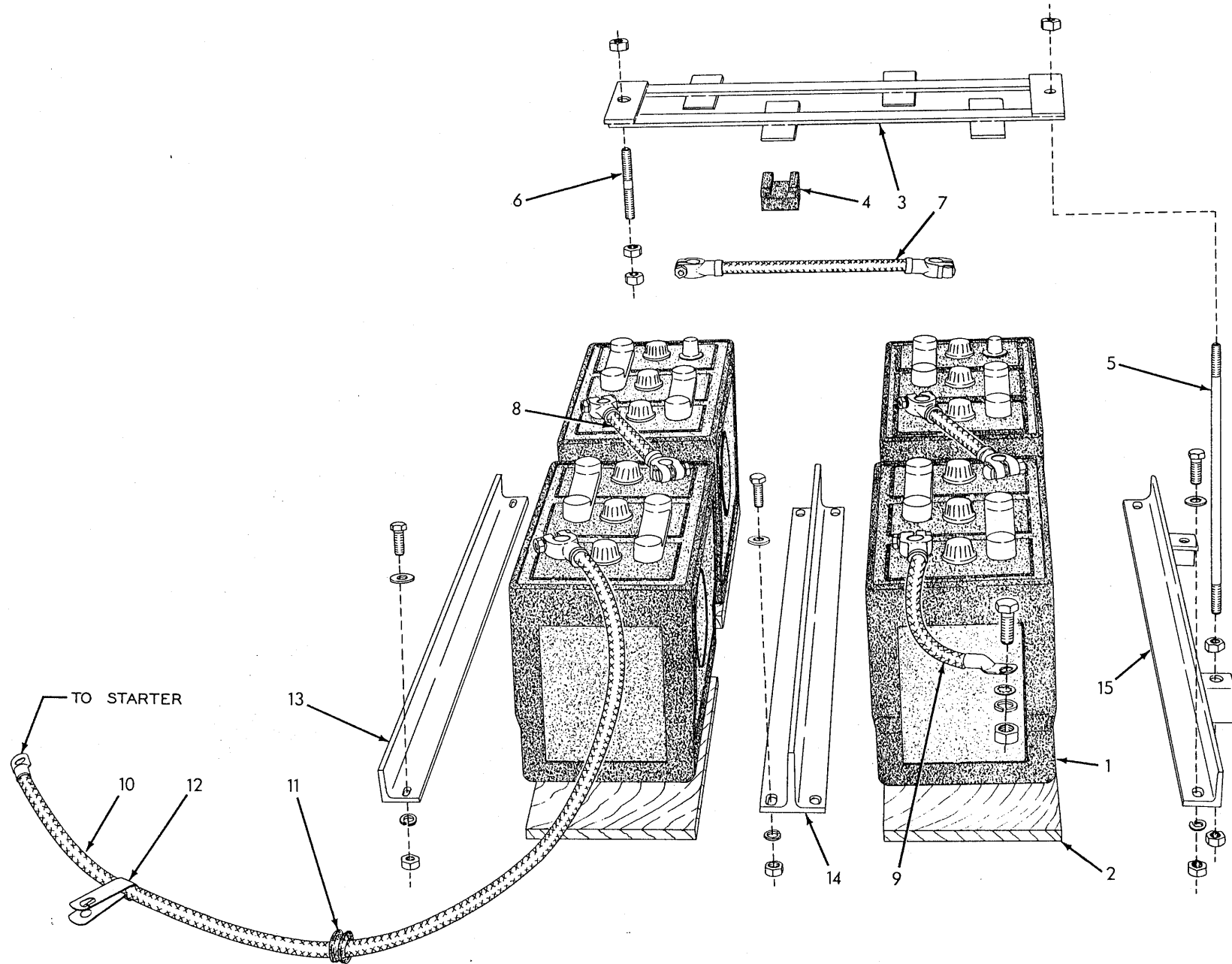
USAGE: Effective with grader serial No. 1780

ITEM	PART NO.	QTY.	DESCRIPTION
1	4338021	1	GENERATOR (Includes Key, Nut and Washer for pulley)(Delco-Remy #1105215. Order service parts from local United Motors Service agency)
	904706	2	CAPSCREW, 7/16"NC x 1-1/4"
	904207	2	LOCKWASHER, 7/16"
2	4336172	1	BRACKET, generator mounting
	915666	2	CAPSCREW, 1/2"NC x 1-3/8"
	913717	1	CAPSCREW, 1/2"NC x 1-1/8"
	904208	3	LOCKWASHER, 1/2"
3	4374148	1	FAN, generator cooling
4	4347998	1	PULLEY

(Continued)

GENERATOR (Continued)

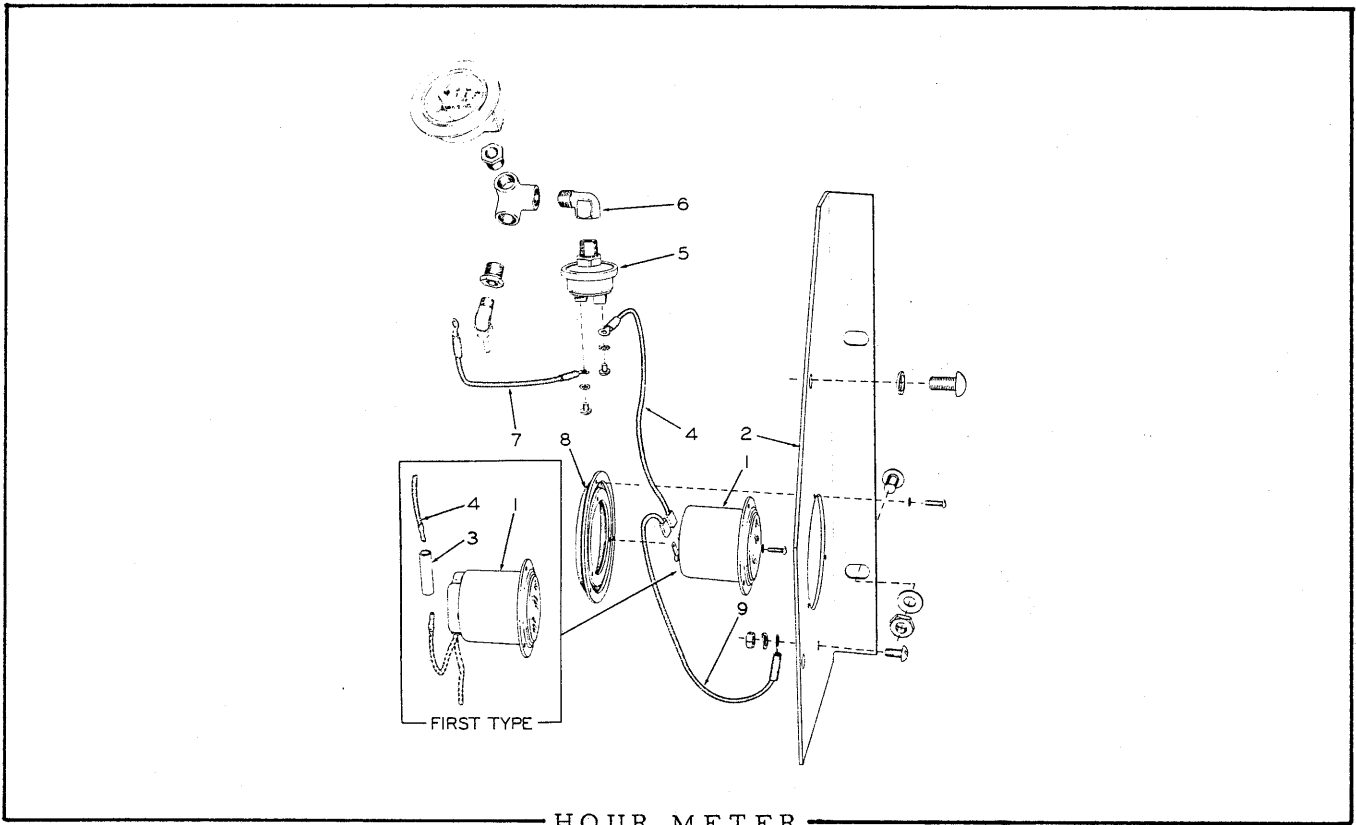
ITEM	PART NO.	QTY.	DESCRIPTION
5	4336177	1	BRACE, belt adjustment
	903629	2	CAPSCREW, 3/8"NC x 3/4"
	900817	1	WASHER, plain, U. S. std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	910324	1	NUT, 3/8"NC
6	4336173	1	BRACKET, belt adjustment brace
	903630	2	CAPSCREW, 3/8"NC x 1"
	904206	2	LOCKWASHER, 3/8"
7	4336629	1	BELT, generator and water pump
8	081154	1	REGULATOR, voltage and current (Delco-Remy #1119177. Order service parts from local United Motors Service agency)
	912178	4	CAPSCREW, 1/4"NF x 1-1/2"
	904204	4	LOCKWASHER, 1/4"
	911040	4	NUT, 1/4"NF
9	084798	1	PLATE, regulator mounting
10	035221	3	CAPSCREW, 1/2"NC x 1"
	904208	3	LOCKWASHER, 1/2"
11	096595	1	HARNESS, generator to regulator (2 cables)
12	040796	1	CLIP, harness supporting



BATTERIES AND CABLES

BATTERIES AND CABLES

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	4	BATTERY, storage, 6 volt, 25 plates (Autolite #5AA-172. Order from local battery dealer)
2	-----	4	BOARD, battery (Procure locally)
3	085949	2	HOLD-DOWN, battery
4	085897	16	BLOCK, battery hold-down (rubber)
5	056641	2	STUD, battery hold-down, front (11" long)
	911026	6	NUT, 3/8"NC
6	086248	2	STUD, battery hold-down, rear (2-3/4" long)
	911026	6	NUT, 3/8"NC
7	086565	1	CABLE, battery connecting (11" long)
8	086564	2	CABLE, battery connecting (8" long)
9	086562	1	CABLE, battery to ground (24" long)(Used prior to grader #1464)
	096597	1	CABLE, battery to ground (8" long)(Effective with grader #1464)
	903638	1	CAPSCREW, 1/2"NC x 1-1/4"
	906961	1	LOCKWASHER, internal teeth, 1/2"
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
10	086563	1	CABLE, battery to starting motor (48" long)
11	605164	2	GROMMET, cable protecting (1 additional used on graders prior to #1464)
12	051311	1	CLIP, cable supporting (5/8" diam., 17/32" bolt-hole)
13	086254	1	ANGLE, battery supporting, rear
	903630	2	CAPSCREW, 3/8"NC x 1"
	911115	2	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
14	086259	1	TEE, battery supporting
	903630	4	CAPSCREW, 3/8"NC x 1"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
15	086255	1	ANGLE, battery supporting, front
	903630	2	CAPSCREW, 3/8"NC x 1"
	911115	2	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC



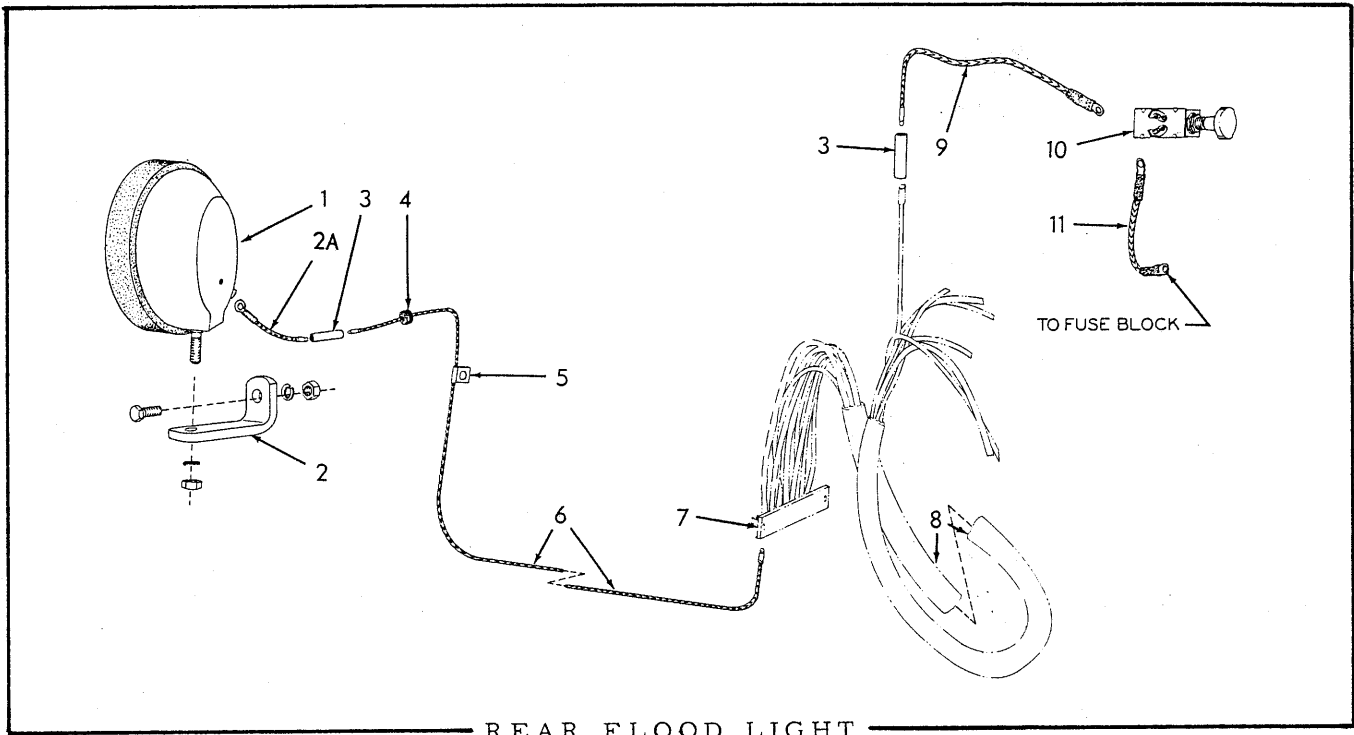
USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	623889	1	METER, hour (24 volt)(See NOTE below)(If for graders prior to #2056 also order 2 CABLE 630917)
	903752	3	SCREW, machine, #6-32NC x 1/2"
	912729	3	LOCKWASHER, internal teeth, #6
	914089	1	SCREW, machine, 1/4"NF x 1/2"
	904204	1	LOCKWASHER, 1/4"
	911040	1	NUT, 1/4"NF
			} Ground cable terminal
<u>NOTE:</u> Meter carries manufacturer's warranty and in case of failure should be returned to John W. Hobbs Corporation, Springfield, Illinois for service.			
2	079415	1	PANEL, mounting (Replaces standard PANEL 078913)
	900593	4	SCREW, machine, 3/8"NC x 3/4"
	904206	2	LOCKWASHER, 3/8"
	911115	2	WASHER, plain, SAE std., 3/8"
	911034	2	NUT, jam, 3/8"NC
3	048142	1	CONNECTOR, meter cable (Used prior to grader #2056)
4	099219	1	CABLE, meter to pressure switch (28" long)(Used prior to grader #2056)
	630917	1	CABLE, meter to pressure switch (8" long)(Effective with grader #2056)

(Continued)

HOUR METER (Continued)

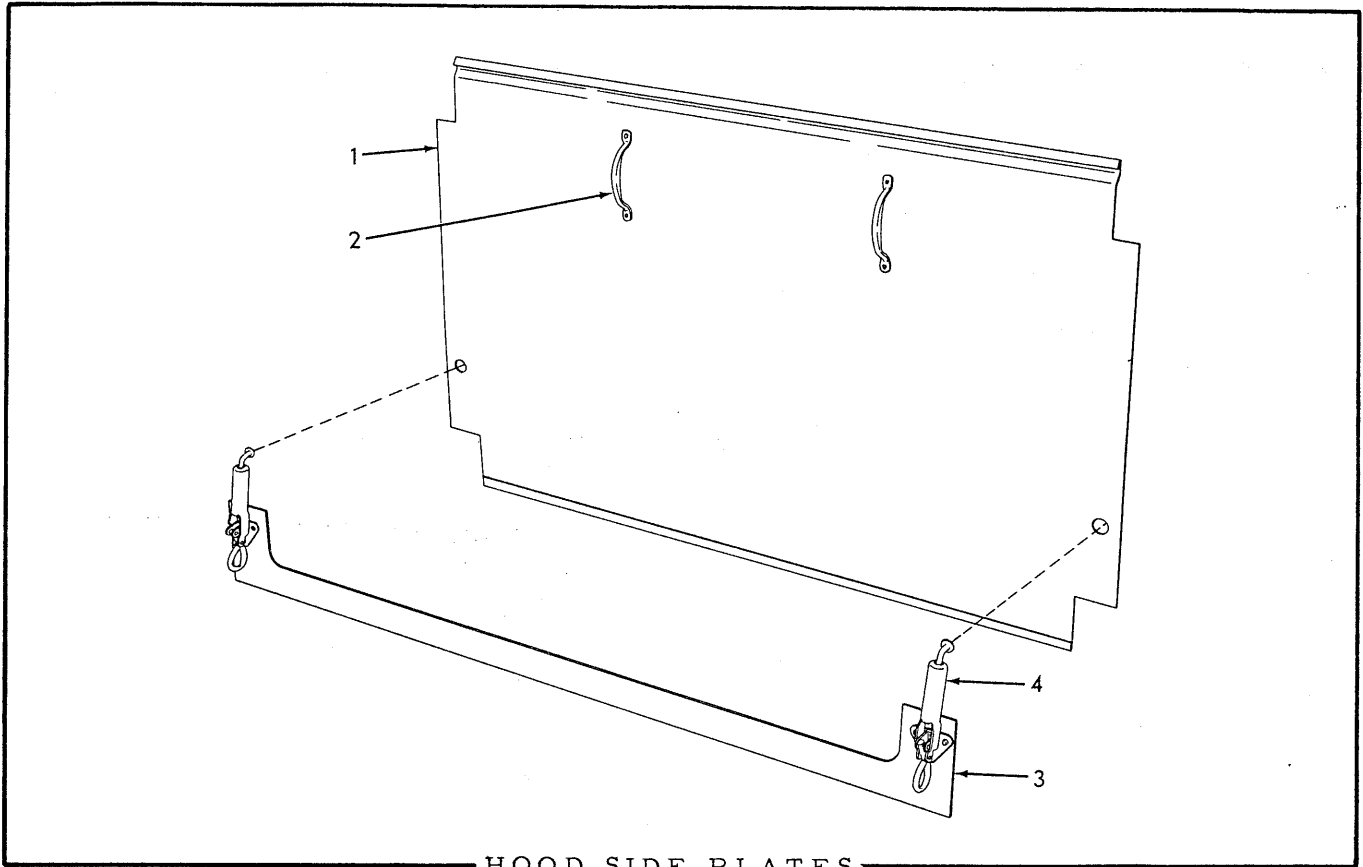
ITEM	PART NO.	QTY.	DESCRIPTION
5	050288	1	SWITCH, pressure
6	078926	1	ELBOW, 90°, 1/4"NPT male and female, short type
	913498	1	ELBOW, pipe, side outlet, 1/4"NPT
	901825	2	BUSHING, pipe reducing, 1/4"NPT to 1/8"NPT
	915557	1	ELBOW, Sealastic, 90°, 1/8" tube, 1/8"NPT (For oil pressure gauge line on graders prior to #1852)
	919093	1	ELBOW, flare type, 90°, 1/8" tube, 1/8"NPT male (For oil pressure gauge line on graders #1852 and up)
7	093272	1	CABLE, pressure switch to ammeter
8	066467	1	DAMPER, vibration
	903752	3	SCREW, machine, #6-32NC x 1/2"
	912729	3	LOCKWASHER, internal teeth, #6
9	630917	1	CABLE, meter to ground (8" long)(Effective with grader #2056)



REAR FLOOD LIGHT

USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	086566	1	LIGHT ASSEMBLY (See page 263 for parts)(Used prior to grader #1826. Order LIGHT ASSEMBLY 621429 and 1 each 904208 LOCKWASHER, 911043 NUT)
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
	621429	1	LIGHT ASSEMBLY (See page 264 for parts)(Effective with grader #1826)
	910244	1	WASHER, plain, SAE std., 1/2"
	904208	1	LOCKWASHER, 1/2"
2	911043	1	NUT, 1/2"NF
	087802	1	BRACKET, mounting (Used prior to grader #1826)
	621903	1	BRACKET, mounting (Effective with grader #1826)
	903630	1	CAPSCREW, 3/8"NC x 1"
2A	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
	621892	1	CABLE, flood light to connector (4" long)
3	048142	2	CONNECTOR, cable
4	083987	1	GROMMET, cable supporting
5	200479	7	CLIP, cable supporting
6	089453	1	CABLE, flood light to junction block (145" long)
7	-----	1	BLOCK, junction (See LIGHTS, HORN AND WIRING)
8	-----	1	HARNES, wiring (See LIGHTS, HORN AND WIRING)
9	068367	1	CABLE, switch to connector (9" long)
10	605411	1	SWITCH, push-pull
11	051006	1	CABLE, switch to fuse block (4-1/2" long)



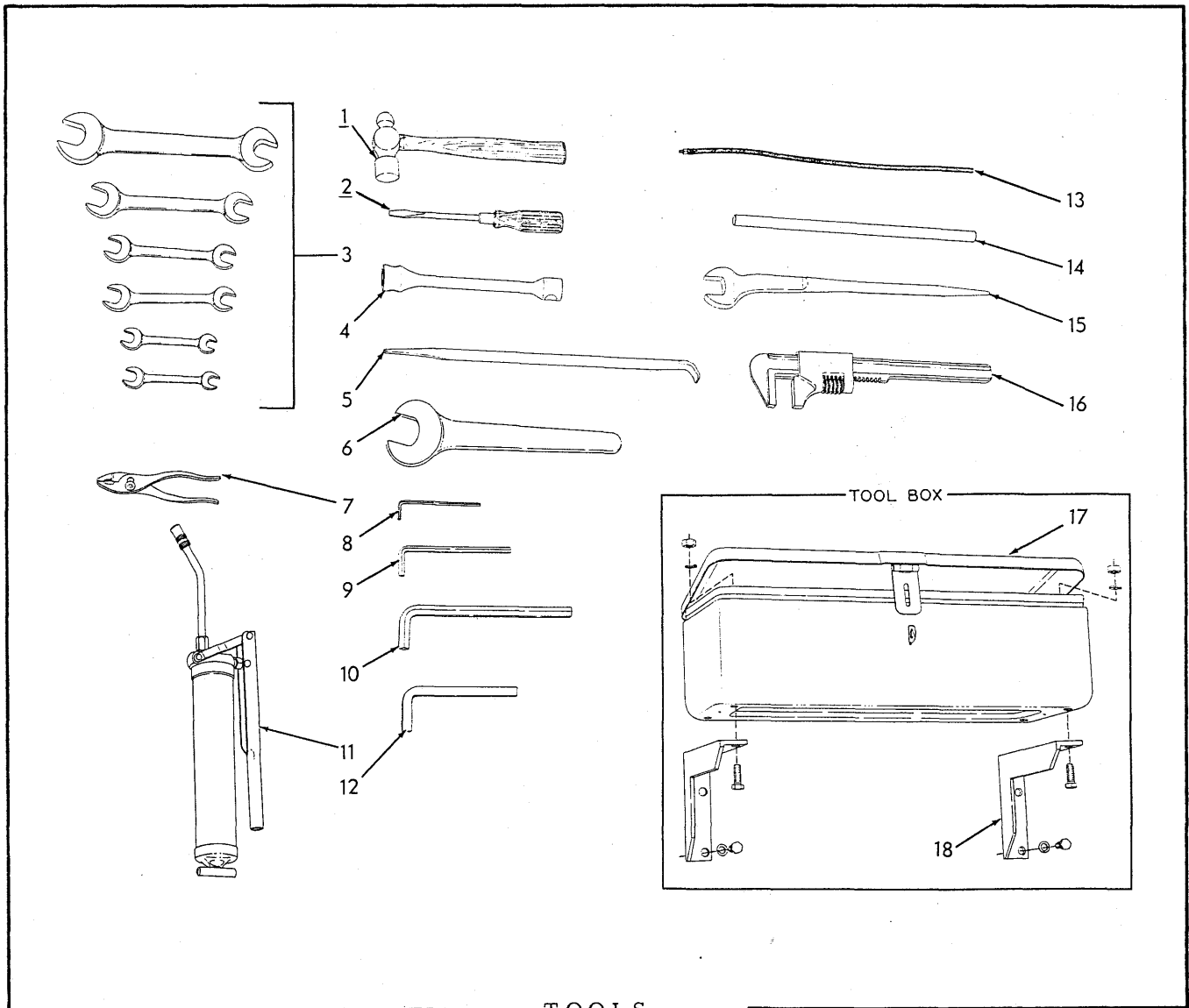
HOOD SIDE PLATES

USAGE: Special equipment

* Standard graders.

** Graders equipped with early type hydraulic snow plow controls.

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	089287	1	1	PLATE ASSEMBLY, hood, left side (Includes item 2)
	089287	1	-	PLATE ASSEMBLY, hood, right side (Includes item 2)
	092914	-	1	PLATE ASSEMBLY, hood, right side (Includes item 2)
2	032834	4	4	HANDLE, lifting
	900764	8	8	RIVET, fl-hd., 3/16" x 1/2"
3	089272	1	1	PLATE, fastening, left side (Includes two of item 4) (Welds to frame)
	089272	1	-	PLATE, fastening, right side (Includes two of item 4) (Welds to frame)
	092830	-	1	PLATE, fastening, right side (Includes one of item 4) (Welds to frame)
4	033060	4	4	FASTENER, hold-down
	914007	12	12	RIVET, fl-hd., 3/16" x 5/8"



TOOLS

ITEM PART NO. QTY. DESCRIPTION

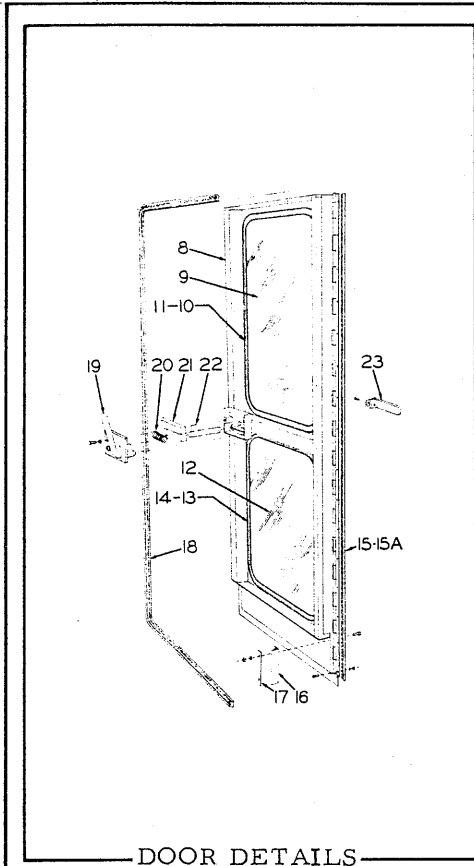
NOTE: For a complete line of service tools for the Allis-Chalmers Diesel Engine, consult Kent-Moore Organization, 1501 South Jackson Street, Jackson, Michigan.

-	089712	1	TOOL SET (Consists of items 1 thru 18)
1	012387	1	HAMMER, ballpeen, 1 lb.
2	036268	1	SCREWDRIVER, 9-3/4" long
3	012377	1	WRENCH KIT (6 WRENCHES 7/16" to 1-1/4" in a cloth case)
4	603723	1	WRENCH, socket, tire rim nut
5	605206	1	TOOL, tire
6	083346	1	WRENCH, power steering cylinder packing nut (1-5/8" opening)

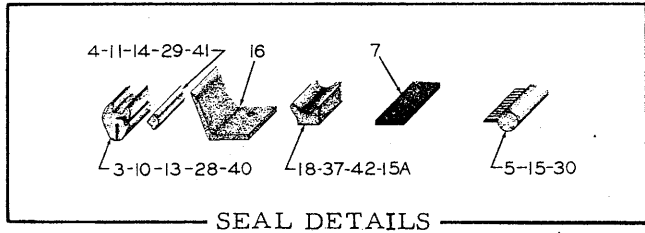
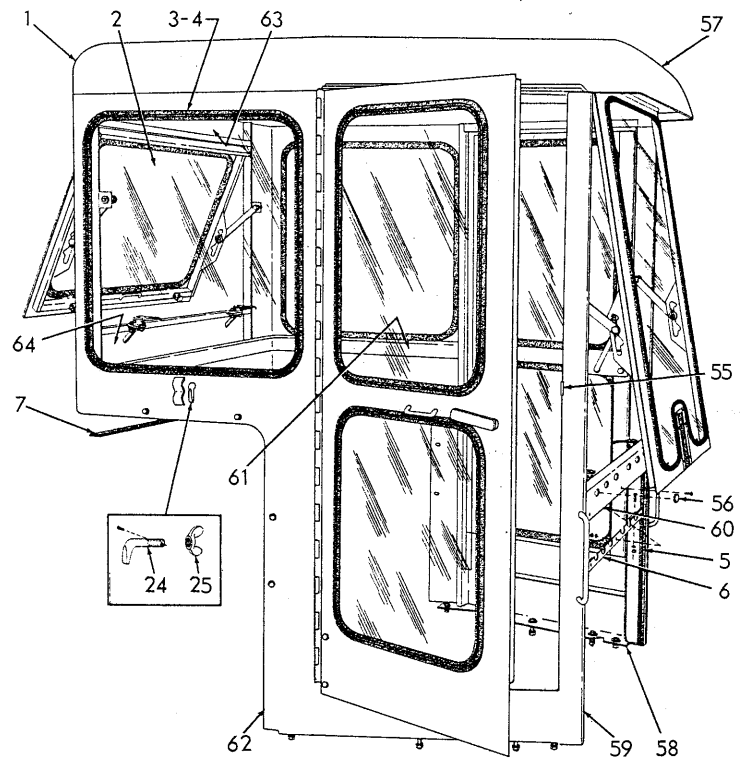
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TOOLS (Continued)

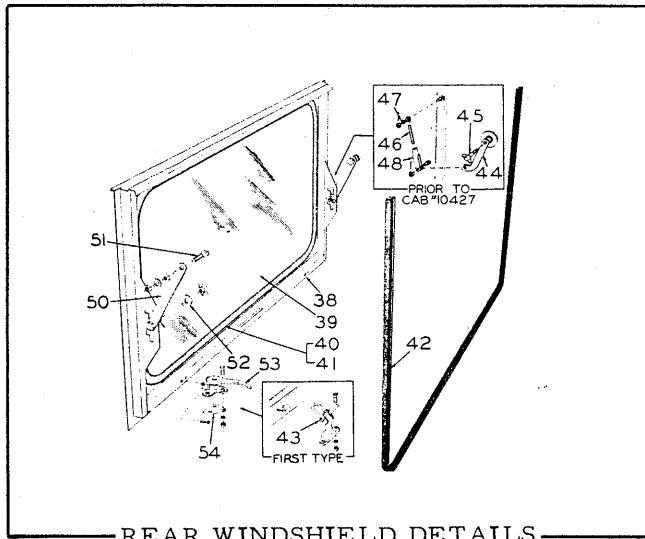
ITEM	PART NO.	QTY.	DESCRIPTION
7	012389	1	PLIERS, slip joint, 6"
8	912785	1	KEY, socket screw, hexagonal, long, 3/16"
9	912787	1	KEY, socket screw, hexagonal, long, 5/16"
10	912485	1	KEY, socket screw, hexagonal, long, 9/16"
11	073735	1	GUN, grease (Serviced only as a unit)
12	043769	1	WRENCH, drain and filling plugs (90°, 1/2" square)
13	605230	1	HOSE, bleeding, hydraulic brakes
14	083319	1	TUBE, oil filler, power steering housing
15	912554	1	WRENCH, structural, offset, 1-7/64" opening
16	912486	1	WRENCH, automotive, adjustable, 15"
17	604943	1	BOX, tool
	903630	4	CAPSCREW, 3/8"NC x 1"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
18	051196	2	BRACKET, supporting
	903629	4	CAPSCREW, 3/8"NC x 3/4"
	904206	4	LOCKWASHER, 3/8"



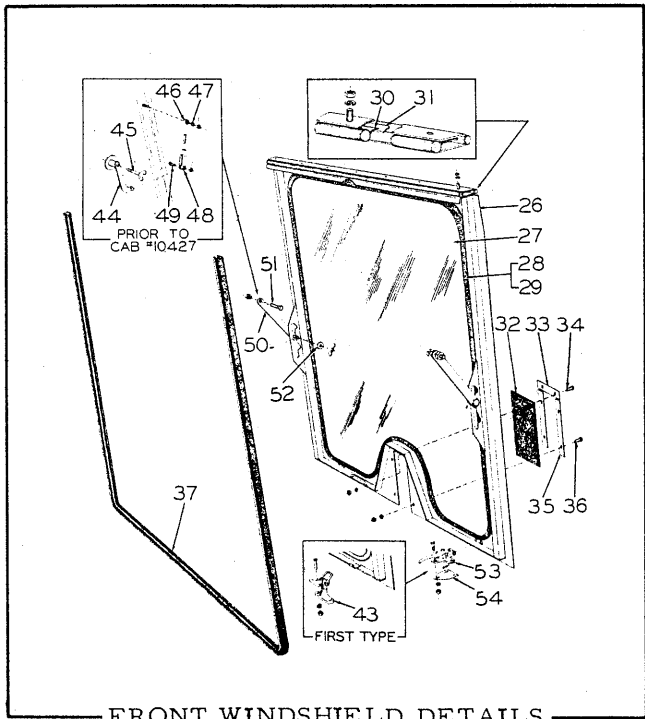
DOOR DETAILS



SEAL DETAILS



REAR WINDSHIELD DETAILS



FRONT WINDSHIELD DETAILS

CAB

C A B

USAGE: Special equipment

* Integral type. Used prior to October 1961
 ** Knock-down type. Effective October 1961

ITEM	PART NO.	QTY.		DESCRIPTION		
		*	**			
1	090454	1	-	BODY (Used prior to cab #10427)	} Stripped of all removable parts	
	091442	1	-	BODY (Used on cab #10427 thru #18199)		
	621374	1	-	BODY (Effective with cab #18200)		
		903630	6	-	CAPSCREW, 3/8"NC x 1" (2 additional required prior to cab #10427)	
		911115	12	-	WASHER, plain, SAE std., 3/8" (4 additional required prior to cab #10427)	
		904206	6	-	LOCKWASHER, 3/8" } (2 additional req'd prior to cab #10427)	
		911026	6	-	NUT, 3/8"NC	
		915636	4	-	CAPSCREW, 1/2"NC x 1-5/8"	
		900818	4	-	WASHER, plain, U. S. std., 1/2"	
		904208	4	-	LOCKWASHER, 1/2"	
	911028	4	-	NUT, 1/2"NC		
2	090187	2	2	GLASS, side panel		
3	077974	2	2	SEAL, side panel glass		
4	077979	2	2	STRIP, expanding, side panel glass seal		
5	078250	2	-	SEAL, door frame		
	904516	12	-	SCREW, drive, #6 x 1/4"		
	633492	-	2	SEAL, door frame		
6	090644	1	-	ANGLE, front panel attachment		
	632536	-	1	ANGLE, front panel attachment		
	903772	2	2	CAPSCREW, 5/16"NC x 1"		
	904205	2	2	LOCKWASHER, 5/16"		
	911025	2	2	NUT, 5/16"NC		
7	090308	1	-	STRIP, sealing, rear panel to fuel tank		
	633531	-	1	SEAL, rear panel to fuel tank, center piece		
	633532	-	2	SEAL, rear panel to fuel tank, end piece		
8	084869	1	-	DOOR, left (Used prior to cab #10427)		
	091353	1	-	DOOR, left (Effective with cab #10427)		
	633937	-	1	DOOR, left (Used prior to cab #19675)		
	632529	-	1	DOOR, left (Effective with cab #19675)		
	084870	1	-	DOOR, right (Used prior to cab #10427)		
	091354	1	-	DOOR, right (Effective with cab #10427)		
	633938	-	1	DOOR, right (Used prior to cab #19675)		
	632530	-	1	DOOR, right (Effective with cab #19675)		
		905656	32	32	CAPSCREW, 1/4"NC x 5/8"	} Not used with DOORS 632529 and 632530
		904204	32	32	LOCKWASHER, 1/4"	
	911024	32	32	NUT, 1/4"NC		

NOTE: All doors listed above are stripped of all removable parts

(Continued)

C A B (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
9	078268	2	2	GLASS, door, upper
10	078257	2	2	SEAL, door upper glass
11	078254	2	2	STRIP, expanding, door upper glass seal
12	078269	2	2	GLASS, door, lower
13	077783	2	2	SEAL, door lower glass
14	077765	2	2	STRIP, expanding, door lower glass seal
15	078251	2	-	SEAL, door back
15A	633493	-	2	SEAL, door back
16	091405	2	2	SEAL, door back (5-7/8" long)(Effective with cab #10427)
17	091404	2	2	RETAINER, door back seal
	903626	4	4	CAPSCREW, 5/16"NC x 3/4" } Effective with cab #10427
	904205	4	4	LOCKWASHER, 5/16" }
	911025	4	4	NUT, 5/16"NC }
18	091644	2	2	SEAL, door flange (118-1/4" long)
19	084875	1	1	HANDLE ASSEMBLY, inside, right door
	084876	1	1	HANDLE ASSEMBLY, inside, left door
	911168	4	4	CAPSCREW, 5/16"NF x 7/8"
	904205	4	4	LOCKWASHER, 5/16"
20	085016	2	2	SPRING, door latching bolt
	900817	-	4	WASHER, plain, U. S. std., 3/8"
21	084879	1	1	BOLT, right door latching
	084880	1	1	BOLT, left door latching
22	084877	1	1	SHAFT, right outside door handle
	084878	1	1	SHAFT, left outside door handle
23	084874	2	-	HANDLE, outside
	907610	2	-	SCREW, machine, fil-hd., 5/16"NC x 1"
	633484	-	2	HANDLE, outside
	915935	-	2	PIN, roll, 5/16" x 1-1/4"
24	085558	2	2	HOOK, door hold-back
	906759	2	2	SCREW, drive, #4 x 1/4"
25	085559	2	2	NUT, wing, 5/8"NC
26	090146	1	-	FRAME, front windshield (Used prior to cab #10427)
	091400	1	1	FRAME, front windshield (Used on integral cab #10427 thru 18199 and prior to knockdown cab #19675)
	621380	1	1	FRAME, front windshield (Effective with integral cab #18200 and knockdown cab #19675)
	077508	7	7	SCREW, truss-hd., 1/4"NC x 5/8"
	904204	7	7	LOCKWASHER, 1/4"
	911024	7	7	NUT, 1/4"NC

NOTE: Each windshield frame listed above is stripped of all removable parts

(Continued)

C A B (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION	
		*	**		
27	090188	1	1	GLASS, front windshield	
28	079920	2	2	SEAL, front windshield glass	
29	090613	1	1	STRIP, expanding, front windshield glass seal	
30	091408	1	1	SEAL, front windshield frame hinge	} Effective with cab #10427
31	091407	1	1	RETAINER, hinge seal	
32	090637	1	1	SEAL, steering wheel shaft opening	
33	090635	1	1	RETAINER, top, steering wheel shaft seal (4" long)	
34	077508	2	2	SCREW, truss-hd., 1/4"NC x 5/8"	
	904204	2	2	LOCKWASHER, 1/4"	
	911024	2	2	NUT, 1/4"NC	
35	090634	2	2	RETAINER, side, steering wheel shaft seal (6-1/2" long)	
36	077508	4	4	SCREW, truss-hd., 1/4"NC x 5/8"	
	904204	4	4	LOCKWASHER, 1/4"	
	911024	4	4	NUT, 1/4"NC	
37	090617	1	1	SEAL, front windshield	
38	087843	1	-	FRAME, rear windshield (Used prior to cab #10427)	
	091401	1	1	FRAME, rear windshield (Used on integral cab #10427 thru #18199 and prior to knockdown cab #19675)	
	621375	1	1	FRAME, rear windshield (Effective with integral cab #18200 and knockdown cab #19675)	
<u>NOTE:</u> Each windshield frame listed above is stripped of all removable parts					
39	078267	1	1	GLASS, rear windshield	
40	078258	1	1	SEAL, rear windshield glass	
41	078252	1	1	STRIP, expanding, rear windshield glass seal	
42	090616	1	1	SEAL, rear windshield	
43	057138	4	4	LATCH ASSEMBLY, windshield (Serviced only as a unit) (Used prior to integral cab #18200 and knock-down cab #19675)	
	903630	8	8	CAPSCREW, 3/8"NC x 1"	
	904206	8	8	LOCKWASHER, 3/8"	
	911026	8	8	NUT, 3/8"NC	
<u>NOTE:</u> Items 44 thru 49 are used prior to cab #10427					
44	057149	2	-	ARM, windshield adjustment, left	
	057150	2	-	ARM, windshield adjustment, right	
45	058263	4	-	WINGSCREW, windshield adjustment arm	
46	057148	4	-	BOLT, eye, windshield adjustment	
	911053	4	-	NUT, castle, 3/8"NF	
	900801	4	-	PIN, cotter, 3/32" x 3/4"	

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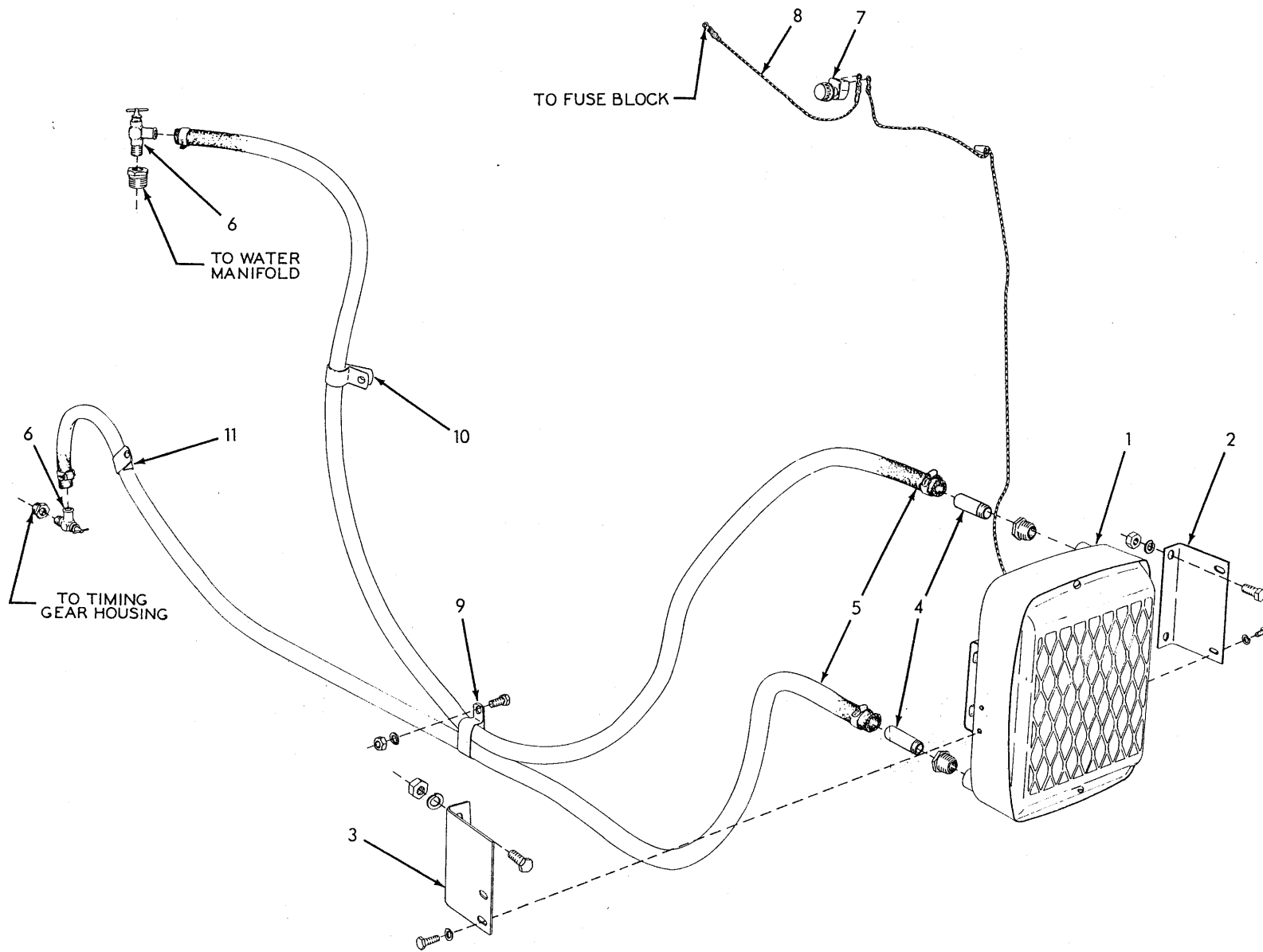
C A B (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
47	078264	4	-	WASHER, windshield eye bolt
48	917664	4	-	YOKE, rod end, adjustable, 3/8"NF
49	011258	4	-	CAPSCREW, windshield adjustment yoke
	911053	4	-	NUT, castle, 3/8"NF
	900801	4	-	PIN, cotter, 3/32" x 3/4"
<u>NOTE:</u> Items 50 thru 52 are effective with cab #10427				
50	091402	4	4	ARM, windshield adjustment
	915018	4	4	NUT, wing, 1/2"NC
	906759	4	4	SCREW, drive, #4 x 1/4"
51	089900	4	4	CAPSCREW, windshield adjustment arm
	911043	6	6	NUT, 1/2"NF
	910244	2	2	WASHER, plain, SAE std., 1/2"
52	091406	4	4	SPACER, windshield adjustment arm
53	621441	2	2	LATCH ASSEMBLY, windshield, left (Serviced only as a unit)
				(Effective with integral cab #18200 and knock-down cab #19675)
53	621442	2	2	LATCH ASSEMBLY, windshield, right (Serviced only as a unit)
				(Effective with integral cab #18200 and knock-down cab #19675)
	916532	20	20	SCREW, machine, 1/4"NC x 3/4"
	904204	20	20	LOCKWASHER, 1/4"
	911024	16	16	NUT, 1/4"NC
54	633920	8	8	SHIM, windshield latch (Use as req'd)(Effective with integral cab #18200 and knock-down cab #19675)
55	633545	-	2	PLATE, striker, door latch
	910271	-	4	CAPSCREW, flat-hd., 1/4"NC x 5/8"
	914194	-	4	LOCKWASHER, int-ext-tooth, 1/4"
	911024	-	4	NUT, 1/4"NC
56	621444	6	6	PLUG, button (Effective with cab #18200)
57	632533	-	1	TOP WELDMENT
	918249	-	27	SCREW, truss-hd., 5/16"NC x 3/4"
	903626	-	4	CAPSCREW, hex-hd., 5/16"NC x 3/4"
	904205	-	27	LOCKWASHER, 5/16"NC x 3/4"
	911025	-	27	NUT, 5/16"NC
58	632527	-	1	FRAME, left door
	903626	-	6	CAPSCREW, 5/16"NC x 3/4"
	904205	-	6	LOCKWASHER, 5/16"
	911025	-	6	NUT, 5/16"NC
	915636	-	2	CAPSCREW, 1/2"NC x 1-5/8"
	900818	-	2	WASHER, plain, U. S. std., 1/2"
	904208	-	2	LOCKWASHER, 1/2"
	911028	-	2	NUT, 1/2"NC
59	632528	-	1	FRAME, right door
	903626	-	6	CAPSCREW, 5/16"NC x 3/4"
	904205	-	6	LOCKWASHER, 5/16"
	911025	-	6	NUT, 5/16"NC
	915636	-	2	CAPSCREW, 1/2"NC x 1-5/8"
	900818	-	2	WASHER, plain, U. S. std., 1/2"
	904208	-	2	LOCKWASHER, 1/2"
	911028	-	2	NUT, 1/2"NC

(Continued)

C AB (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
60	{ 633936	- 1	PANEL, front (Used prior to cab #19675)
		- 1	PANEL, front (Effective with cab #19675)
	903626	- 4	CAPSCREW, 5/16"NC x 3/4"
	904205	- 4	LOCKWASHER, 5/16"
	911025	- 4	NUT, 5/16"NC
61	{ 633941	- 1	PANEL, rear quarter, left (Used prior to cab #19675. For door with piano hinge)
		- 1	PANEL, rear quarter, left (Effective with cab #19675)
	903630	- 2	CAPSCREW, 3/8"NC x 1"
	911115	- 4	WASHER, plain, SAE std., 3/8"
	904206	- 4	LOCKWASHER, 3/8"
	911026	- 4	NUT, 3/8"
	62	{ 633942	- 1
- 1			PANEL, rear quarter, right (Effective with cab #19675)
903630		- 4	CAPSCREW, 3/8"NC x 1"
911115		- 8	WASHER, plain, SAE std., 3/8"
911026		- 4	NUT, 3/8"NC
63	632535	- 1	PANEL, rear upper
	903626	- 4	CAPSCREW, 5/16"NC x 3/4"
	904205	- 4	LOCKWASHER, 5/16"
	911025	- 4	NUT, 5/16"NC
64	{ 633939	- 1	PANEL, rear lower (Used prior to cab #19675)
		- 1	PANEL, rear lower (Effective with cab #19675)
	903626	- 4	CAPSCREW, 5/16"NC x 3/4"
	904205	- 4	LOCKWASHER, 5/16"
	911025	- 4	NUT, 5/16"NC

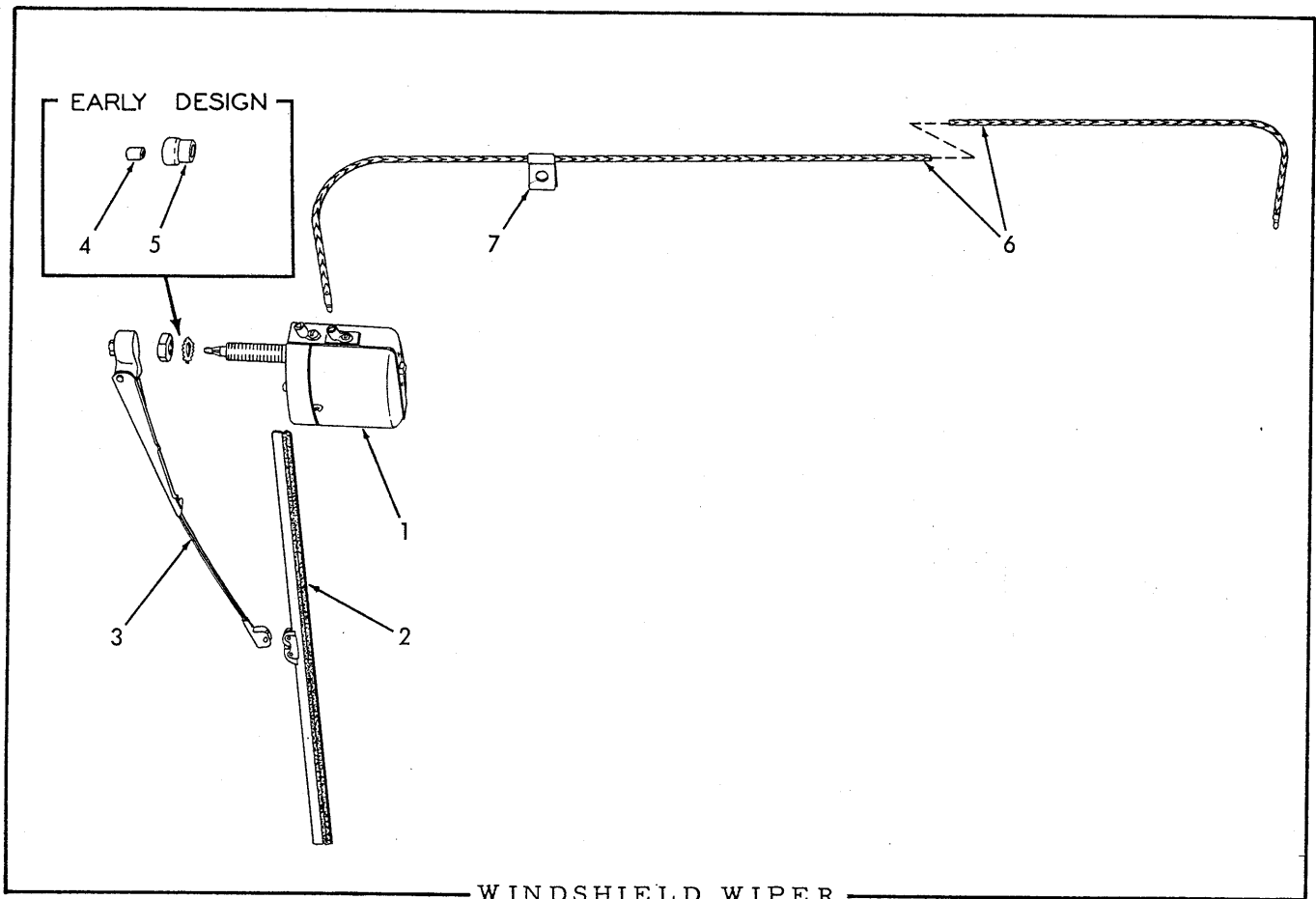


CAB HEATER

CAB HEATER

USAGE: Special equipment

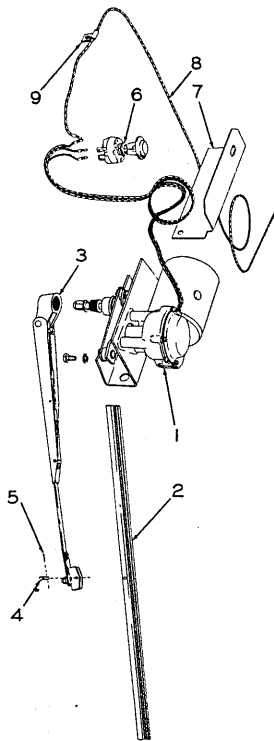
ITEM	PART NO.	QTY.	DESCRIPTION
1	088968	1	HEATER ASSEMBLY (Model US2-24V. Order service parts from Perfection Division of Hupp Corporation, 1135 Ivanhoe Road, Cleveland 10, Ohio)
	905656	4	CAPSCREW, 1/4"NC x 1/2"
	904204	4	LOCKWASHER, 1/4"
2	079412	1	BRACKET, mounting, left
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
3	079413	1	BRACKET, mounting, right
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
4	054033	2	NIPPLE, hose connection
	904271	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
5	078548	2	HOSE, heater (75" long)
	921911	4	CLAMP, hose, 11/16" to 1-1/4" diam.
6	605525	2	VALVE, water shut-off (angle type, 3/8"NPT)
	904271	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
	904239	1	BUSHING, pipe reducing, 3/4"NPT to 3/8"NPT
7	605521	1	SWITCH, rheostat type (2 speed. Includes fuse)
8	074887	1	CABLE, switch to fuse block (14" long)
9	060525	1	CLIP, hose supporting (For two 1" diam. lines, 13/32" bolt-hole)
	903630	1	CAPSCREW, 3/8"NC x 1"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
10	041303	1	CLIP, hose supporting (1" diam., 13/32" bolt-hole)
11	055536	1	CLIP, hose supporting (1" diam., 17/32" bolt-hole)



WINDSHIELD WIPER

USAGE: Special Equipment. Used prior to October 1961

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	MOTOR, windshield wiper (American Bosch Model WWA-24C-347. Has built-in switch. Order service parts from nearest authorized service agency)(Order WIPER GROUP 628869)
	914666	1	LOCKWASHER, external teeth, 7/16"
	910876	1	NUT, jam, 7/16"NF
2	605409	1	BLADE, wiping
3	098449	1	ARM, wiping blade
4	056125	1	NUT, retaining, wiping blade arm (Used prior to May 1959)
5	056126	1	ADAPTER, wiping blade arm (Used prior to May 1959)
6	077445	1	CABLE (86" long)
7	238136	2	CLIP, cable supporting (3/16" diam., 9/32" bolt-hole)

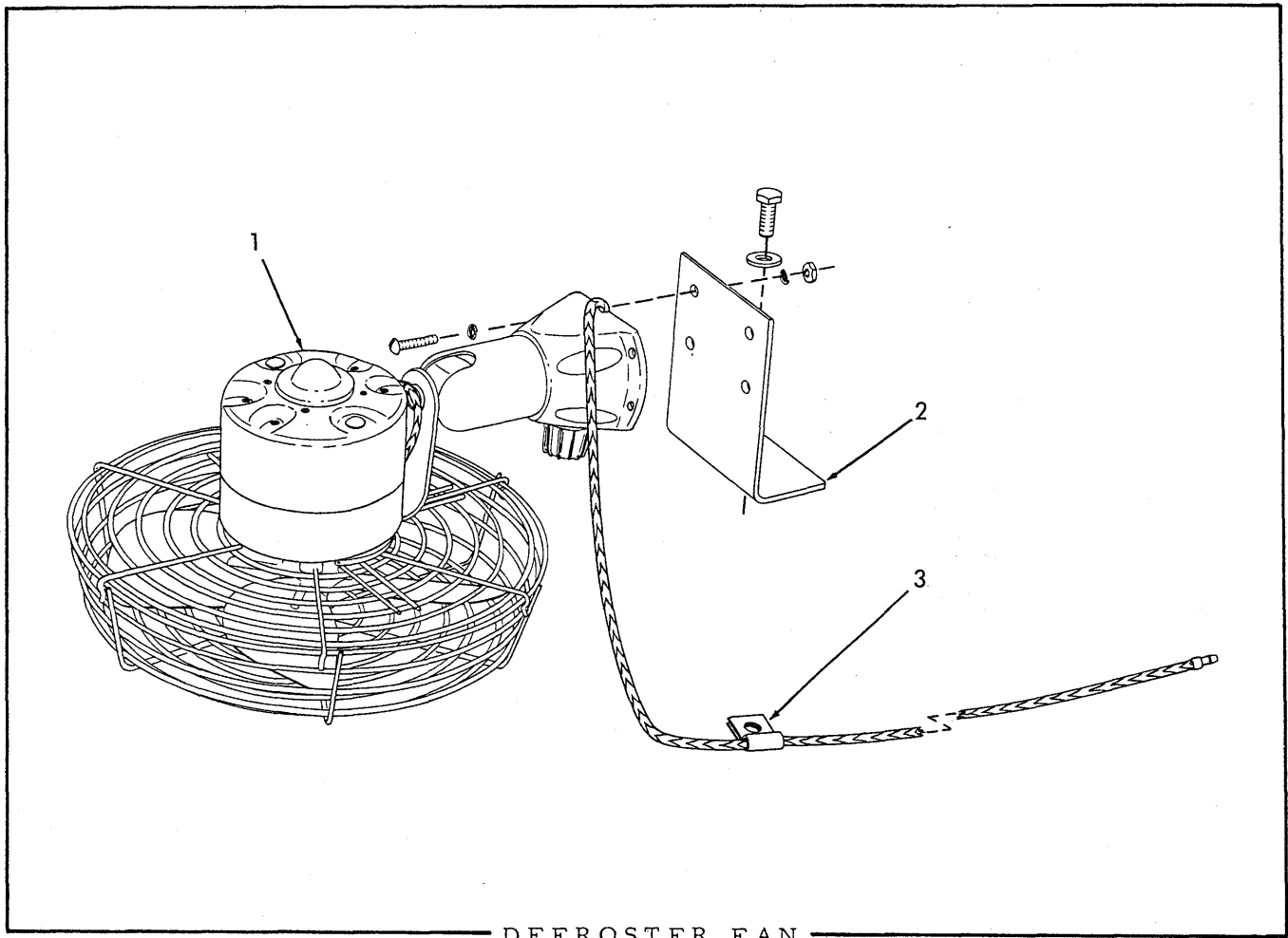


WINDSHIELD WIPER

USAGE: Special equipment. Effective October 1961

ITEM	PART NO.	QTY.	DESCRIPTION
1	628507	1	MOTOR, windshield wiper (American Bosch Model WWC-24J-2624-106. Includes Adapter, Washer and Nut. Order service parts from nearest authorized service agency)
	911101	2	CAPSCREW, 1/4"NF x 1/2"
	904204	2	LOCKWASHER, 1/4"
2	628523	1	BLADE, wiping (20" long)
3	628522	1	ARM ASSEMBLY, wiping blade (Includes items 4 and 5)
4	62582	1	PIN, clevis, blade attaching
5	61910	1	PIN, cotter
6	628508	1	SWITCH ASSEMBLY, motor (Includes mounting nuts)
7	629042	1	BRACKET, switch mounting
8	077445	1	CABLE (86" long)
9	238136	1	CLIP, cable supporting (3/16" diam., 9/32" bolt-hole)

} Order service parts from local ANCO dealer. Vendor's Nos. are listed



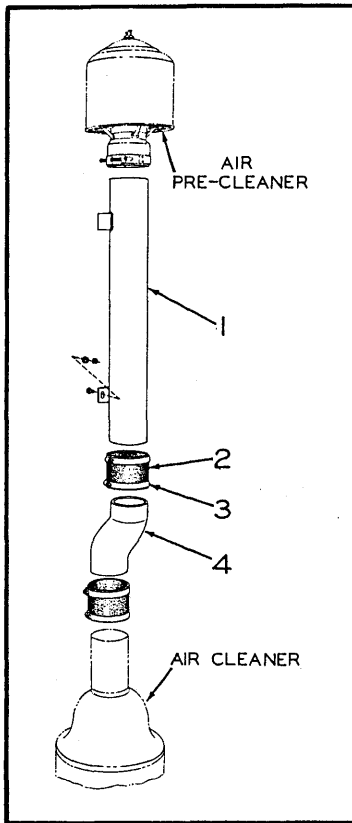
DEFROSTER FAN

USAGE: Special equipment. For use with cab installation

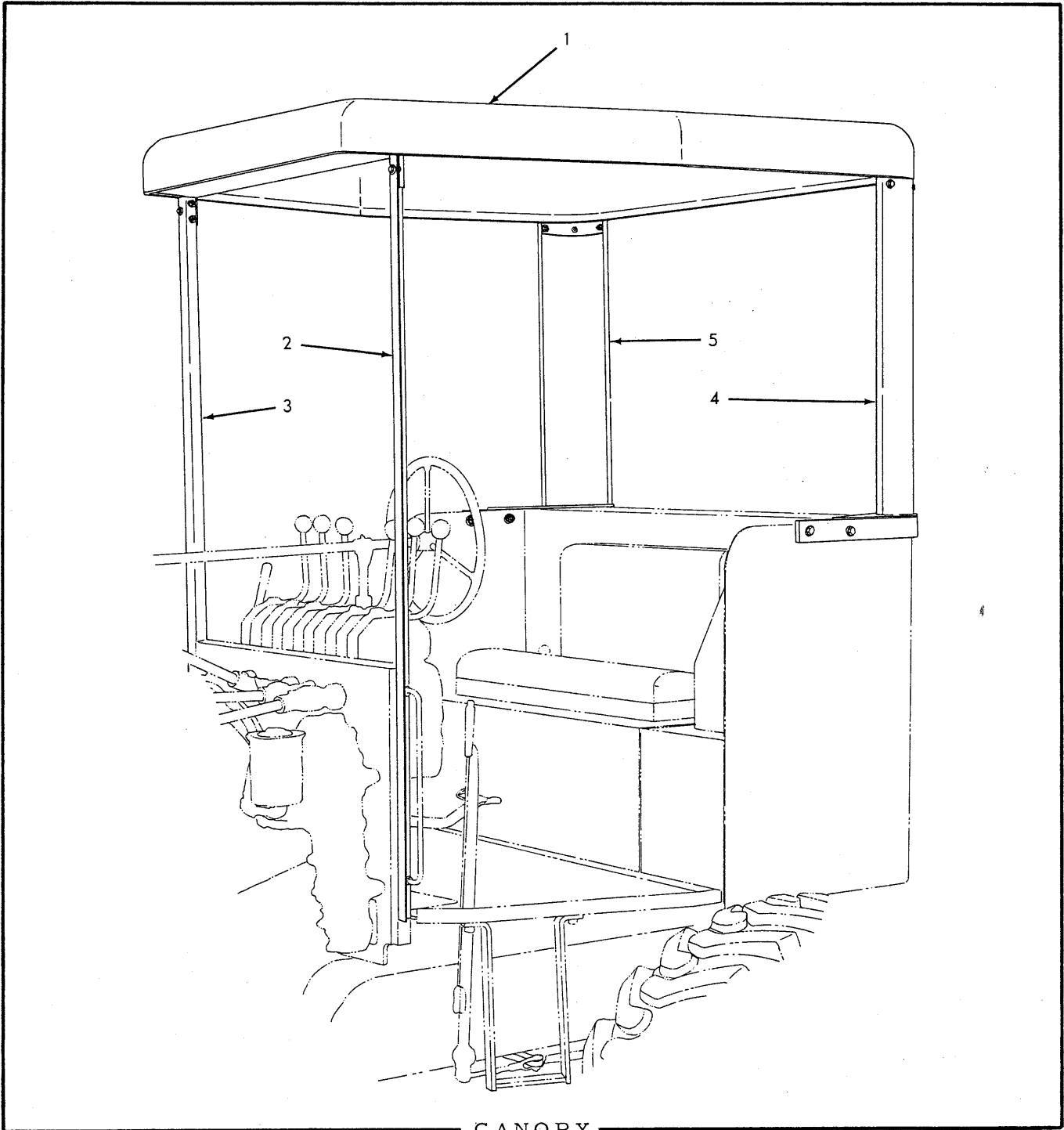
ITEM	PART NO.	QTY.	DESCRIPTION
1	089283	1	FAN ASSEMBLY (Includes motor, guard, pedestal, switch and wiring)(Model No. 96-24A. Order service parts from Perfection Division of Hupp Corporation, 1135 Ivanhoe Road, Cleveland 10, Ohio
	900555	4	SCREW, machine, rd-hd., #8-32NC x 3/4"
	906964	4	LOCKWASHER, #8
	907154	4	NUT, #8-32NC
2	080772	1	BRACKET, fan mounting
	-----	1	CAPSCREW, 1/4"NC x 5/8" (See CAB)
	911114	1	WASHER, plain, SAE std., 1/4"
3	238136	1	CLIP, fan cable (3/16" diam., 9/32" bolt-hole)

AIR PRE-CLEANER EXTENSION

USAGE: Special equipment. For oil-bath cleaner only. Applicable only to graders equipped with cab



ITEM	PART NO.	QTY.	DESCRIPTION
1	089979	1	TUBE, extension
	903629	2	CAPSCREW, 3/8"NC x 3/4"
	911115	2	WASHER, plain, SAE std., 3/8"
	911026	2	NUT, 3/8"NC
2	084421	2	HOSE, extension tube
3	921916	4	CLAMP, hose, adjustable, 3-13/16" to 4-3/4" diam.
4	089982	1	ELBOW, extension tube



CANOPY

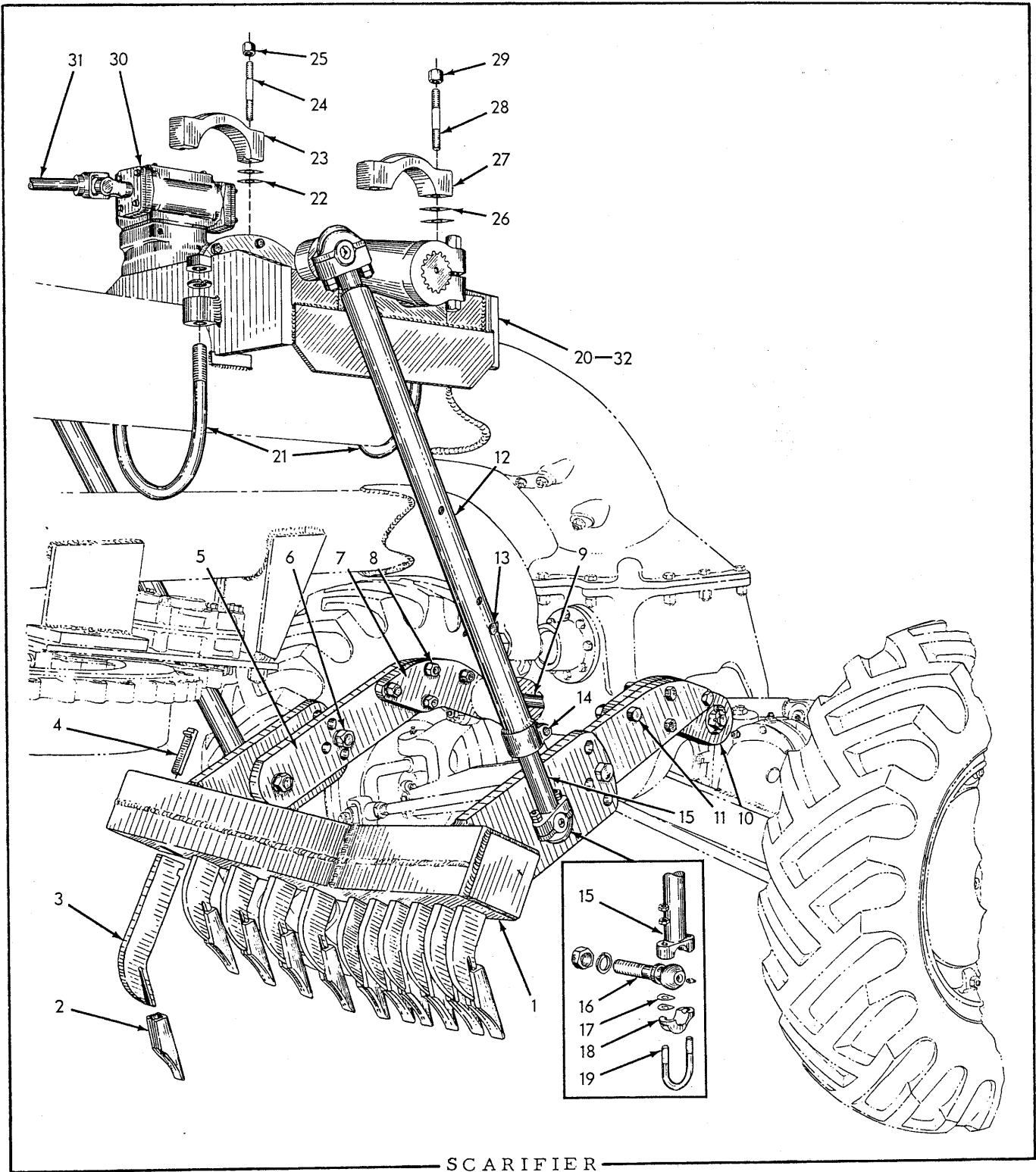
USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	TOP, canopy (Not available)
	903630	12	CAPSCREW, 3/8"NC x 1"
	904206	12	LOCKWASHER, 3/8"
	911026	12	NUT 3/8"NC
2	079219	1	POST, top supporting, left front

(Continued)

CANOPY (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
3	079220	1	POST, top supporting, right front
4	091675	1	POST, top supporting, left rear
	910245	2	CAPSCREW, 3/8"NC x 1-3/8"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
5	091676	1	POST, top supporting, right rear
	910245	2	CAPSCREW, 3/8"NC x 1-3/8"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC



SCARIFIER

USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	058753	1	FRAME (Includes item 16)
2	062160	11	TOOTH, scarifier

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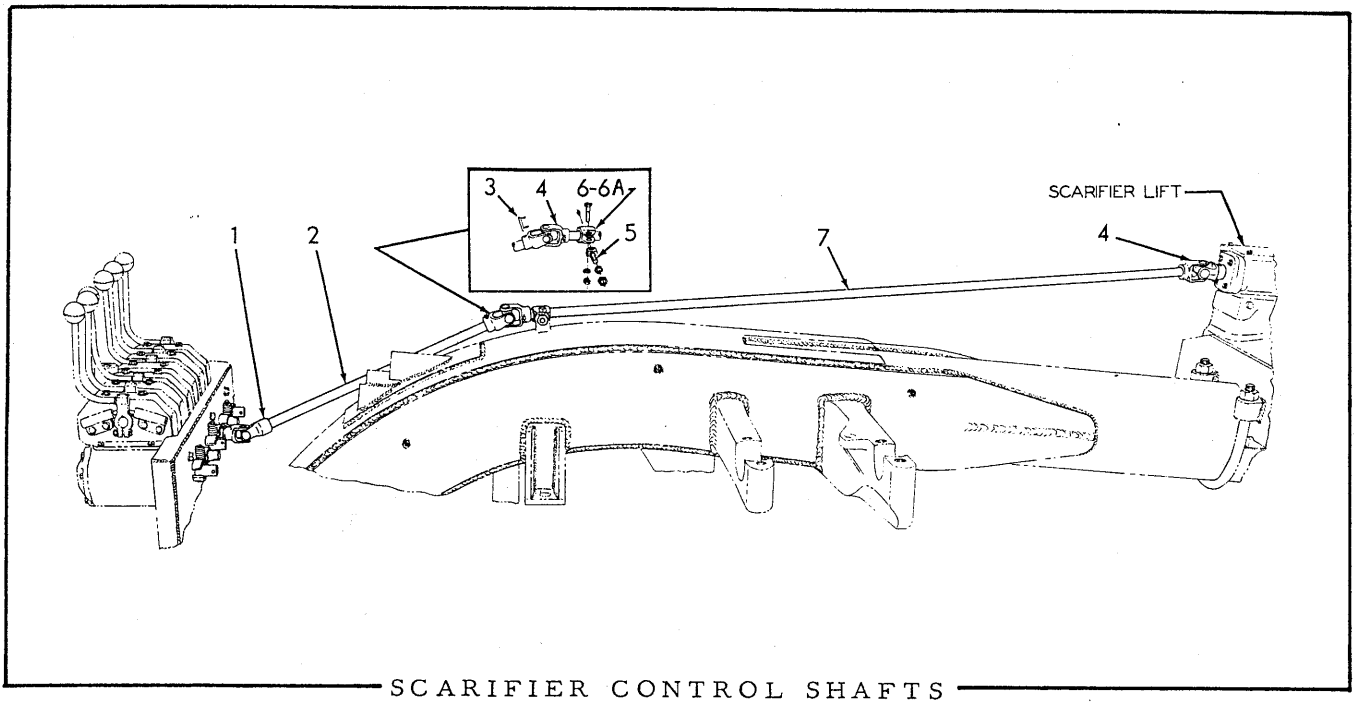
SCARIFIER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
3	062159	11	SHANK, scarifier tooth
4	602522	11	KEY, shank retaining
5	058751	2	ARM, frame adjustment
6	053251	2	CAPSCREW, 1-1/4"NF x 4-1/2"
	904210	2	LOCKWASHER, 1-1/4"
	913097	2	NUT, 1-1/4"NF
7	056927	1	HUB, frame, left
8	036546	4	CAPSCREW, 1"NF x 4-1/4"
	910916	4	LOCKWASHER, 1"
	911047	4	NUT, 1"NF
9	056919	1	SHAFT, frame hub pivot
	912841	2	NUT, slotted, 1-1/4"NF
	904381	2	PIN, cotter, 3/16" x 2-1/4"
10	056928	1	HUB, frame, right
11	036546	4	CAPSCREW, 1"NF x 4-1/4"
	910916	4	LOCKWASHER, 1"
	911047	4	NUT, 1"NF
12	087798	2	LINK, scarifier lift
13	602224	2	PIN, coupling, lift link and rod
	617855	2	CLIP, retaining
14	037573	2	CAPSCREW, lift link clamping (5/8"NC x 2-3/4")
	904209	2	LOCKWASHER, 5/8"
	911029	2	NUT, 5/8"NC
15	603419	2	ROD, lift link
16	058752	2	PIN, ball, scarifier lift
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	904210	2	LOCKWASHER, 1-1/4"
	913097	2	NUT, 1-1/4"NF
17	053992	32	SHIM, lift link cap (Use as req'd)
18	053986	4	CAP, lift link
19	605665	4	U-BOLT
	911049	16	NUT, jam, 5/8"NF
20	080680	1	SUPPORT, scarifier lift
21	082484	2	U-BOLT
	904210	4	LOCKWASHER, 1-1/4"
	900375	4	NUT, 1-1/4"NC
22	061181	6	SHIM, left bearing cap (1/32" thick. Use as req'd)
	061182	10	SHIM, left bearing cap (.013" thick. Use as req'd)
23	601288	1	CAP, worm gear shaft left bearing
24	050913	2	STUD (3/4"NF x 5-3/16")
25	012767	2	NUT, high, 3/4"NF

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SCARIFIER (Continued)

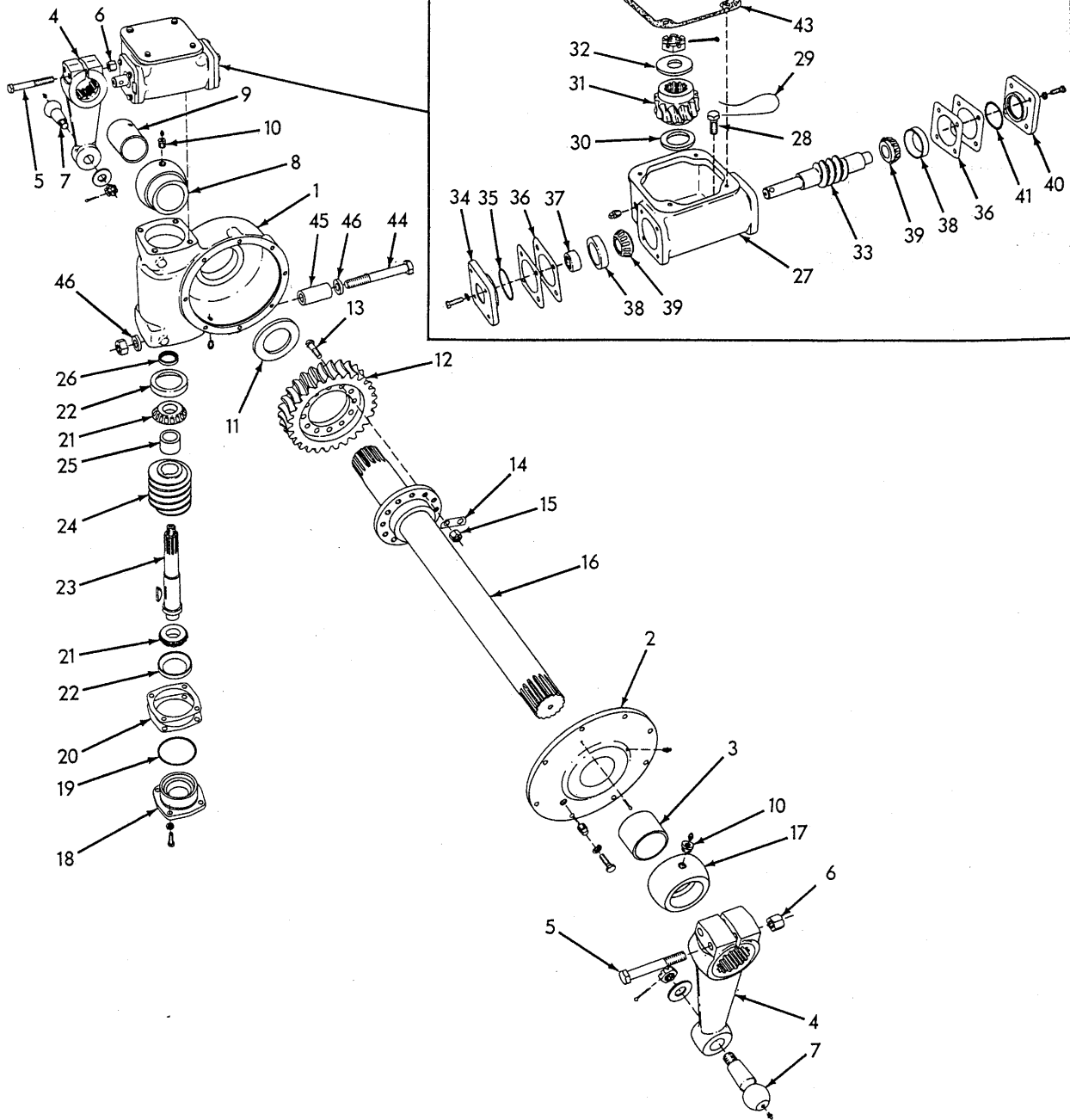
ITEM	PART NO.	QTY.	DESCRIPTION
26	061179	10	SHIM, right bearing cap (.013" thick. Use as req'd)
	061180	6	SHIM, right bearing cap (1/32" thick. Use as req'd)
27	601717	1	CAP, worm gear shaft right bearing
28	050905	2	STUD (3/4"NF x 4-11/16")
29	012767	2	NUT, high, 3/4"NF
30	-----	-	LIFT ASSEMBLY (See page 305 for parts)
31	-----	-	CONTROL SHAFTS (See page 303 for parts)
32	-----	-	TRANSFER (See INSTRUCTION PLATES AND TRANSFERS)



SCARIFIER CONTROL SHAFTS

USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	053123	1	JOINT ASSEMBLY, universal (See page 243 for parts)
	911273	1	KEY, #127 woodruff, 1/4" x 2-1/8"
	911159	1	WASHER, plain, SAE std., 1"
2	076193	1	SHAFT, scarifier control, rear (26-5/8" long)
3	601935	5	PIN, control shaft universal joint (3/8" x 2")
	900805	10	PIN, cotter, 1/8" x 3/4"
4	053121	2	JOINT ASSEMBLY, universal (See page 243 for parts)
5	602328	1	BOLT, eye, control shaft bearing
	904209	1	LOCKWASHER, 5/8"
	911029	1	NUT, 5/8"NC
6	622063	1	BEARING ASSEMBLY, control shaft (Includes item 6A)
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	904541	1	CAPSCREW, 1/2"NC x 1-3/4"
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
6A	622062	1	BUSHING, control shaft bearing
7	097947	1	SHAFT, scarifier control, front (75" long)



SCARIFIER LIFT

SCARIFIER LIFT

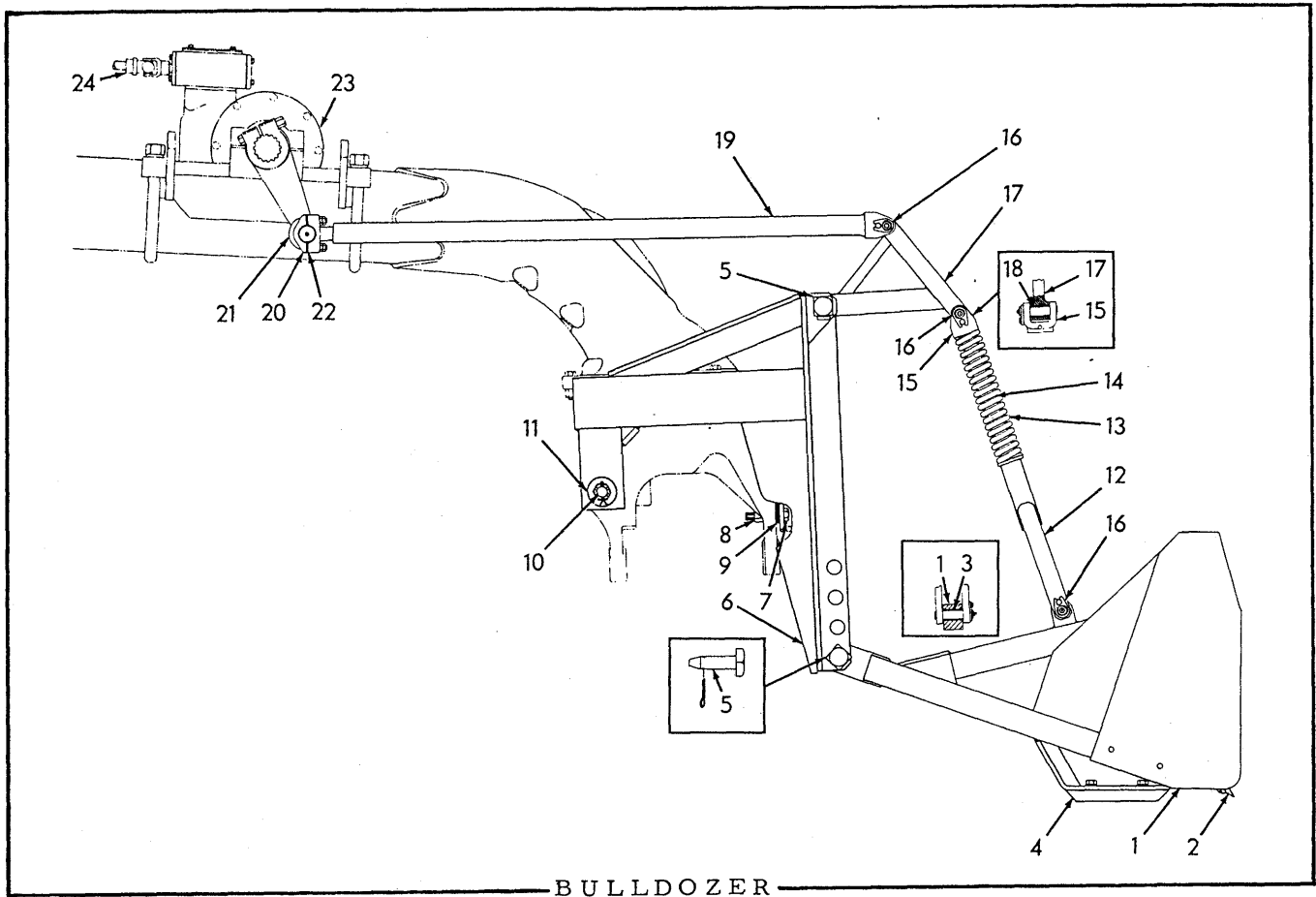
USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
-	092786	1	HOUSING ASSEMBLY (Consists of items 1 thru 3, 8 thru 16 and 18 thru 43)
1	080574	1	HOUSING, worm gear
	912725	1	PLUG, pipe, 1/2"NPT
2	080780	1	COVER ASSEMBLY, worm gear housing (Includes item 3 and cotter PIN indented below)
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	900806	1	PIN, cotter, 1/8" x 1"
	903639	8	CAPSCREW, 1/2"NC x 1-1/2"
	904208	8	LOCKWASHER, 1/2"
	912725	1	PLUG, pipe, 1/2"NPT
3	085545	1	BUSHING, worm gear housing cover
4	087808	2	CRANK, scarifier lift
5	051655	4	CAPSCREW, 3/4"NF x 5-1/4"
6	012767	4	NUT, high, 3/4"NF
7	601972	2	PIN, ball, lift crank
	900808	2	PIN, cotter, 1/8" x 1-1/2"
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	900822	2	WASHER, plain, U.S. std., 1"
	911174	2	NUT jam, slotted, 1"NF
8	085247	1	BEARING ASSEMBLY, worm gear shaft, left (Includes item 9)
9	085248	1	BUSHING, worm gear shaft left bearing
10	605307	2	NIPPLE, lubricating (Also serves as bearing anchor)
	914465	2	FITTING, lubricating, straight, 1/8"NPT
11	085549	1	WASHER, thrust
12	085574	1	GEAR, worm (aluminum)(Scarifier prior to #870)
	094913	1	GEAR, worm (steel)(Effective with scarifier #870)
13	095314	12	CAPSCREW
14	085551	6	LOCK, nut
15	072366	12	NUT, high, 5/8"NF
16	088104	1	SHAFT, worm gear
17	605328	1	BEARING, worm gear shaft, right
18	092024	1	CAP, worm shaft bearing
	903793	4	CAPSCREW, 5/8"NC x 2"
	904209	4	LOCKWASHER, 5/8"
19	079446	1	O-RING, bearing cap (Effective April 1957)
20	075602	6	SHIM, bearing adjusting (.010" thick. Use as req'd)
	075603	6	SHIM, bearing adjusting (.002" thick. Use as req'd)
21	075142	2	CONE ASSEMBLY, worm shaft bearing

(Continued)

SCARIFIER LIFT (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
22	075143	2	CUP, worm shaft bearing
23	080690	1	SHAFT, worm
24	085387	1	WORM, (steel)(Used prior to scarifier #870)
	094917	1	WORM (bronze)(Effective with scarifier #870)
	911238	1	KEY, #U woodruff, 7/16" x 2-3/4"
25	080686	1	SPACER, worm shaft bearing
26	078502	1	SEAL, oil, worm shaft
27	080579	1	HOUSING, input worm
	912725	1	PLUG, pipe, 1/2"NPT
28	023619	4	CAPSCREW (drilled-hd., 5/8"NC x 1-1/2")
29	023633	2	WIRE, locking (1/16" x 12")
30	080684	1	WASHER, thrust, input worm gear
31	078033	1	GEAR, input worm
32	080685	1	WASHER, retaining, input worm gear
	912624	1	NUT, jam, slotted, 1-1/8"NF
	900813	1	PIN, cotter, 3/16" x 2"
33	081972	1	WORM, input
34	092026	1	CAP, input worm rear bearing
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
	904206	4	LOCKWASHER, 3/8"
35	092011	1	O-RING, bearing cap (Effective April 1957)
36	075134	2	SHIM, bearing adjusting (.003" thick. Use as req'd)
	075135	6	SHIM, bearing adjusting (.010" thick. Use as req'd)
37	057848	1	SEAL, oil, input worm
38	604383	2	CUP, input worm bearing
39	604382	2	CONE ASSEMBLY, input worm bearing
40	092025	1	CAP, input worm front bearing
	910211	4	CAPSCREW, 3/8"NC x 1-1/8"
	904206	4	LOCKWASHER, 3/8"
41	092011	1	O-RING, bearing cap (Effective April 1957)
42	080682	1	COVER, input worm housing
	903630	4	CAPSCREW, 3/8"NC x 1"
	904206	4	LOCKWASHER, 3/8"
43	080683	1	GASKET, input worm housing cover
44	080781	1	CAPSCREW, worm gear housing anchor (1"NC x 7-1/2")
	911032	1	NUT, 1"NC
45	080681	1	SPACER, housing anchor screw
46	083318	2	WASHER, plain, housing anchor screw



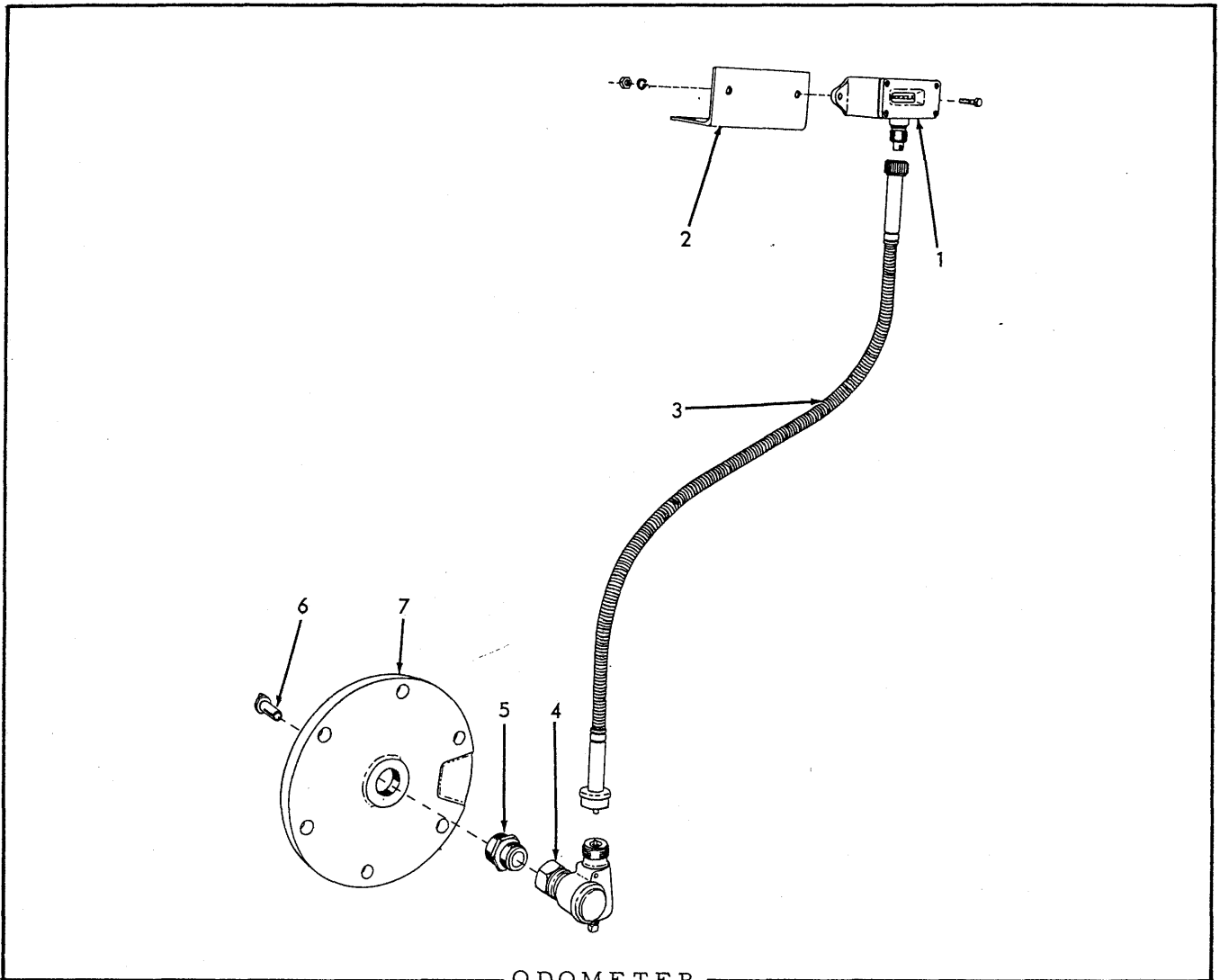
USAGE: Special equipment. For graders equipped with scarifier control

ITEM	PART NO.	QTY.	DESCRIPTION
1	090327	1	MOLDBOARD ASSEMBLY (Includes items 2 and 3)
2	611561	1	EDGE, cutting
	915206	13	BOLT, plow, 1/2"NC x 1-3/4"
	904208	13	LOCKWASHER, 1/2"
	911028	13	NUT, 1/2"NC
3	606811	2	BUSHING, moldboard
4	611554	2	SHOE, wear
	906709	4	CAPSCREW, 3/4"NC x 1-3/4"
	904369	4	LOCKWASHER, 3/4"
5	611250	4	PIN, pivot
	901348	4	PIN, cotter, 3/8" x 2-1/2"
6	611256	1	FRAME, push
7	085026	4	CAPSCREW, 7/8"NF x 4-1/2"
8	070400	4	NUT, high, 7/8"NF
9	611261	16	SHIM, spacing (1/16" thick. Use as req'd)

(Continued)

BULLDOZER (Continued)

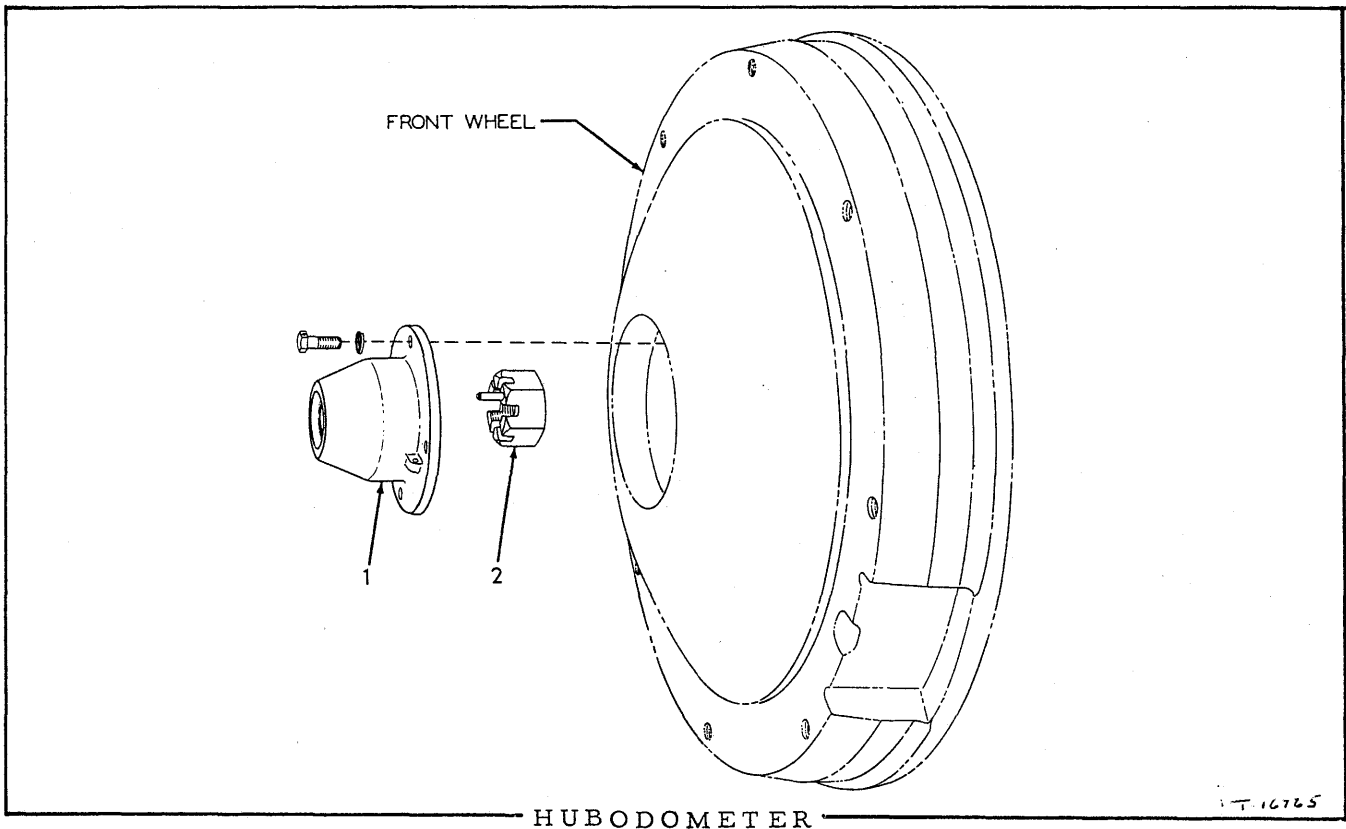
ITEM	PART NO.	QTY.	DESCRIPTION
10	611288	1	SHAFT, push frame
	911061	2	NUT, slotted, 1-1/4"NC
	918392	2	PIN, cotter, 7/32" x 2-1/2"
11	611289	2	BUSHING, push frame shaft
12	611569	2	TUBE, moldboard lift
13	611580	2	SPRING, bumper
14	611570	2	SHAFT, moldboard lift
15	612044	2	CLEVIS, moldboard lift shaft
16	609898	6	PIN, moldboard lift
	914465	6	FITTING, lubricating, straight, 1/8"NPT
	903629	6	CAPSCREW, 3/8"NC x 1-3/4"
	904206	6	LOCKWASHER, 3/8"
17	611566	2	BELLCRANK ASSEMBLY (Includes item 18)
18	606811	4	BUSHING, bellcrank
19	089788	2	ROD, moldboard lift
20	053986	2	CAP, moldboard lift rod
21	605665	2	U-BOLT
	911049	8	NUT, jam, 5/8"NF
22	053992	16	SHIM, moldboard lift rod cap (Use as req'd)
23	-----	-	LIFT ASSEMBLY (See page 305 for parts)
24	-----	-	CONTROL SHAFTS (See page 303 for parts)



ODOMETER

USAGE: Special equipment. Also see page 310

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	ODOMETER (registers miles)(Discontinued)
	-----	1	ODOMETER (registers kilometers)(Not available. Replace with design shown on page 310) ¹
	912327	2	CAPSCREW, 1/4"NC x 7/8"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
2	084916	1	BRACKET, mounting
3	605220	1	SHAFT ASSEMBLY, flexible (27" long)(Consists of 1 housing and 1 cable. Serviced only as a unit)
4	058980	1	ANGLE JOINT ASSEMBLY (Serviced only as a unit)
5	605221	1	SLEEVE, angle joint adapting
6	605222	1	TIP, angle joint driving
7	605056	1	COVER, rear axle cross shaft bearing (Used in place of standard COVER 066751)



USAGE: Special equipment. Effective January 1960. Replaces ODOMETER used for registering kilometers shown on page 309

ITEM	PART NO.	QTY.	DESCRIPTION
1	099846	1	HUBODOMETER (Registers kilometers. For 9.00-24 tires only)
	099847	1	HUBODOMETER (Registers kilometers. For 13.00-24 tires only)
	903775	4	CAPSCREW, 3/8"NC x 7/8"
	904206	4	LOCKWASHER, 3/8"
2	620011	1	NUT ASSEMBLY, hubodometer drive (Includes drive pin)

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