

Parts
Catalog
for
D
(Gasoline)
MOTOR
GRADER



Milwaukee, Wisconsin, U.S.A.

Litho in U.S.A.

FORM 0667884-1
REPLACES 626069

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.

ADDITIONAL PUBLICATIONS AVAILABLE
FOR
MODEL D GRADER

FORM NO.	DESCRIPTION	SERIAL NO.
<u>Parts Catalog</u>		
626019	Cab Glass - - - - -	All
3033033	TL-D Loader (Allis-Chalmers) - - - - -	All
626063	277- D358A Snowplow - - - - -	All
<u>Operating Instructions and Field Maintenance Manual</u>		
626142	D - - - - -	Pr S/N 5425
626103	D - - - - -	S/N 5425-5886
630505	D - - - - -	S/N 5887-up
<u>Service Manual</u>		
626153	Complete - - - - -	S/N 5679-5886
664045	Electrical System - - - - -	All
665158	Hydraulic System - - - - -	S/N 5887-up
665426	Moldboard, Drawbar, Circle and Scarifier - - - - -	S/N 5887-up
665105	Steering, Front Wheels, Axle and Wheel Lean - - - - -	S/N 5887-up
664028	Tandems and Brakes - - - - -	All

NOTE: All are English language printings. Order from local
ALLIS-CHALMERS Dealer

IMPORTANT

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

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

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

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

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.

INSTRUCTIONS FOR ORDERING PARTS

Order parts from the dealer covering the local territory.

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

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

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

Confirm all telephone or telegraph orders in writing.

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

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

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

When broken goods are received, a full description of the damage should be made by the carrier agent on the freight bill. If this description is insisted upon, full damage can always be collected from the transportation company.

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

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

The information contained herein is general in nature and is not intended for specific application purposes. Allis-Chalmers reserves the right to make changes in specifications shown herein or add improvements at any time without notice or obligation.

MODEL IDENTIFICATION

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

MODEL SYMBOL	ENGINE MODEL	DESCRIPTION
D	{ W- Graders prior S/N 3370 WD-45- Graders S/N 3370 thru 5424 17- Graders S/N 5425 and up (Model 17 engine is also known as the G226) }	Gasoline engine driven grader

RECORD YOUR SERIAL NUMBERS BELOW

GRADER SERIAL NO. _____

ENGINE SERIAL NO. _____

SERIAL NUMBER LOCATIONS

- MODEL SERIAL NO: On plate attached to the right side of the frame near the operator's platform.
- ENGINE SERIAL NO: Stamped on the right side of the engine block near the carburetor. The letter "G" or "M" after the engine serial number indicates that the engine uses gasoline as fuel while the letter "K" or "S" indicates that it is equipped to operate on low-grade fuels.

ALPHABETICAL INDEX

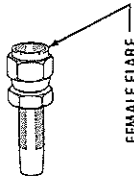
Air Cleaner - - - - -	89 thru 98	Filter	
Batteries and Cables -	268,269,270,280,281	Engine Oil - - - - -	39,40
Belt, drive - - - - -	101,143,214,216,218	Fuel - - - - -	87
Brake Control - - - - -	130	Power Steering - - - - -	145
Brakes		Flywheel - - - - -	23,25
Parking - - - - -	132	Frame - - - - -	135
Transmission - - - - -	129	Front Axle - - - - -	155
Wheel - - - - -	177	Front Wheel Lean - - - - -	157,163
Cab - - - - -	291,293	Front Wheels - - - - -	173
Cab Heater - - - - -	298,300	Fuel Lines - - - - -	87
Camshaft - - - - -	28	Fuel Tank - - - - -	87
Canopy - - - - -	290	Gauges	
Carburetor - - - - -	56 thru 64	Air Restriction Indicator - - - - -	96,98
Chain - - - - -	139	Ammeter - - - - -	255,259
Choke Control - - - - -	52,53	Engine Oil Level - - - - -	14,16
Clutch - - - - -	108 thru 111	Engine Oil Pressure - - - - -	255,259
Clutch Control - - - - -	113	Engine Temperature - - - - -	255,259
Connecting Rod - - - - -	21	Hour Meter - - - - -	262,264,266
Conversion Tables - - - - -	11	Odometer - - - - -	261
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Cylinder Block - - - - -	14,17	Generator - - - - -	274,276
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Cylinder Liner - - - - -	21	Governor - - - - -	50
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Brake Wheel - - - - -	179	Horn - - - - -	285,286,287
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Scarifier Lift - - - - -	303,307	Hour Meter - - - - -	262,264,266
Shiftable Moldboard - - - - -	185	Hydraulic Controls - - - - -	223 thru 233
Wheel Lean - - - - -	157,163	Hydraulic Motor - - - - -	195,199
Defroster Fan - - - - -	288,289	Hydraulic Pump and Drive - - - - -	214,216,218
Distributor - - - - -	44	Ignition - - - - -	42,44
Elements		Instruments - - - - -	255,259
Air Cleaner - - - - -	96,98	Lights	
Engine Oil Filter - - - - -	39,40	Head - - - - -	247,250
Power Steering - - - - -	145	Instrument - - - - -	259
Engine - - - - -	12,13	Stop - - - - -	247,253
Engine Clutch - - - - -	108 thru 111	Tail - - - - -	247,253
Engine Clutch Control - - - - -	113	Lights and Wiring - - - - -	247,250,253,259
Fan - - - - -	101	Magneto - - - - -	42

ALPHABETICAL INDEX

Manifold		Starting Motor	268, 269, 270
Exhaust	56 thru 64	Steering	145, 149
Intake	56 thru 64	Switches	
Water	102	Heater	298, 300
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Assembly	181 thru 191	Hour Meter	262, 266
Circle	187, 191, 193, 195, 199	Ignition	255, 270
Circle Lock	194	Light	247, 250
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Rocker Arms	31, 33	Water Pump	101
Scarifier	303, 307	Wheel Rim Adapter	175
Seat	242	Wheels	173, 174
Spark Plug	42, 44	Windshield Wiper	282, 284

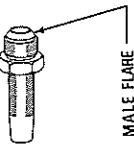
NIPPLES

TYPE A



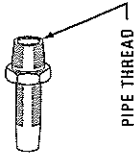
FEMALE FLARE

TYPE B



MALE FLARE

TYPE C

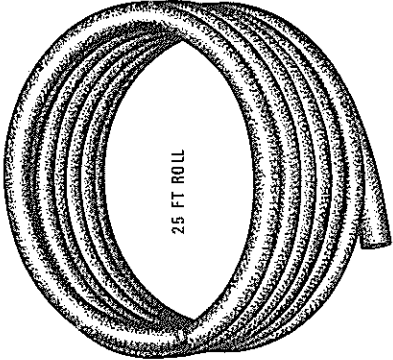


PIPE THREAD

SOCKET



HOSE



25 FT ROLL

HOSE PARTS

T-30944

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

HOSE ASSEMBLY NO. (See NOTE)	BULK HOSE LENGTH (25' roll)	HOSE LENGTH (inches)	NIPPLE (#1 end)		NIPPLE (#2 end)		SOCKET (both ends)	NIPPLE FLANGE		CRIMPED-TYPE HOSE (See NOTE)
			Including SOCKET	NIPPLE only	Type	Including SOCKET	NIPPLE only	Type	Part No.	Dim
620582	919156	33-3/4	920838	919074	C	920865	919081	E	919076	
620583	919156	33-1/2	920850	920303	A	920838	919074	C	919076	
621551	920728	86-1/2	921033	921034	A	921033	921034	A	919282	
622993	920726	13-7/8	920851	921046	A	920851	921046	A	919469	
	920726	89-3/8	920851	921046	A	920851	921046	A	919469	645394
	920726	81-7/8	920851	921046	A	920851	921046	A	919469	645395
	920726	13-7/8	920866	919473	E	920866	919473	E	919469	645413
	919218	25-1/2	920850	920303	A	920865	919081	E	919076	649622
	919218	20-3/4	920850	920303	A	920865	919081	E	919076	649623

6

PACKAGED PARTS

PACKAGE NO.	DESCRIPTION
-----	ADAPTER KIT, wheel rim (See page 175)
-----	BEARING SETS, main (See CRANKSHAFT)
-----	CRANKSHAFT KITS (See CRANKSHAFT)
-----	GASKET SETS, carburetor overhaul (See CARBURETOR section)
233239	GASKET SETS, cylinder head overhaul
4	226477 PACKING, rocker cover stud (Not for Model W engine)
2	229337 GASKET } Discard. Not
2	229338 RETAINER } for D Graders
1	229406 GASKET, cylinder head
1	229958 GASKET SET, manifold
1	232449 GASKET, rocker cover
1	233209 GASKET, carburetor
2	233216 GASKET, water manifold (Early units only)
1	233218 GASKET, thermostat housing (Not for early units)
226638	GASKET SET, engine overhaul
2	203036 GASKET, rear bearing cap
1	203061 GASKET, water pump to block
1	203176 GASKET, oil pump cover (Early units only)
1	205834 SEAL, magneto drive shaft (Early units only)
1	210158 GASKET, thermostat cover
1	218604 GASKET, push rod cover (Early units only)
1	226117 GASKET, distributor housing cover (Not for early units)
4	226477 PACKING, rocker cover stud (Not for Model W engine)
1	226620 SEAL, crankshaft, front
2	227120 SEAL, crankshaft, rear (Early units only)
1	229406 GASKET, cylinder head
1	229958 GASKET SET, manifold
1	230643 GASKET, thermostat (Not for early units)
1	232449 GASKET, rocker cover
1	233209 GASKET, carburetor
1	233211 GASKET, distributor base (Not for early units)
1	233214 GASKET, timing gear cover
1	233215 GASKET, governor cover
2	233216 GASKET, water manifold
1	233217 GASKET, distributor drive housing
1	233218 GASKET, thermostat housing (Not for early units)
1	233228 GASKET, oil filter base (Early units only)
2	233602 GASKET, oil sump, side
2	236660 GASKET, oil sump, end
229860	GASKET SET, oil sump
2	203036 GASKET, rear bearing cap (Early units)
2	233602 GASKET, side
6	229177 CLIP (Discard. Not used on D graders)
2	229178 GASKET, rear bearing cap (Late units)
2	236660 GASKET, end

PACKAGED PARTS

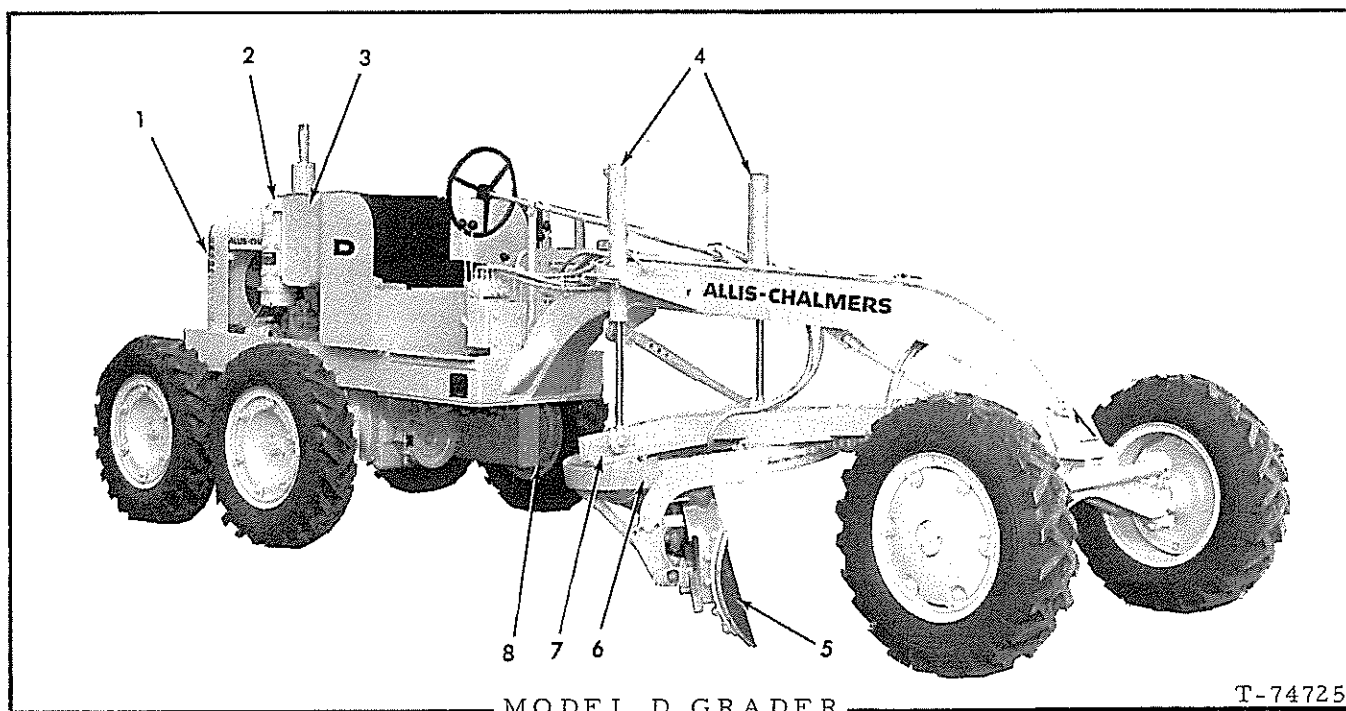
PACKAGE NO.	DESCRIPTION
4997615	GENERATOR SERVICE PACKAGE (Replacement for original GENERATOR ASSY. 090831)
1	1100046 GENERATOR
1	1944437 FAN, generator cooling
2	1947345 PLATE, cover
2	1947346 GASKET, cover plate
2	120228 BOLT
2	9421424 LOCKWASHER
1	1947348 BAND, regulator mounting
1	132938 SCREW
1	120614 NUT
1	1947347 BRACKET, adjusting
1	120706 BOLT
1	9421423 LOCKWASHER
2	1917571 LEAD ASSEMBLY
1	1946356 BUSHING PACKAGE
1	809062 PIN, dowel
1	DR-7383 INSTRUCTION SHEET

NOTE: Part Nos. listed above are "Delco-Remy" identities. All service and replacements to be procured thru local United Motors Service agency.

246428	GENERATOR SERVICE PACKAGE (Replacment for original GENERATOR ASSY. 229479)
1	1100368 GENERATOR
1	1944437 FAN, generator cooling
2	1947345 PLATE, cover
2	1947346 GASKET, cover plate
2	120228 BOLT
2	9241424 LOCKWASHER
1	1947348 BAND, regulator mounting
1	132938 SCREW
1	120614 NUT
1	1947347 BRACKET, adjusting
1	120706 BOLT
1	9421423 LOCKWASHER
2	1917571 LEAD ASSEMBLY
1	1946356 BUSHING PACKAGE
1	809062 PIN, dowel
1	DR-7383 INSTRUCTION SHEET

NOTE: Part Nos. listed above are "Delco-Remy" identities. All service and replacements to be procured thru local United Motors Service agency.

-----	MOTOR KITS (See PISTON AND CYLINDER LINER)
-----	REPAIR KIT, brake master cylinder (See page 180)
-----	REPAIR KITS, carburetor (See CARBURETOR section)
-----	RING SET, piston (See PISTON AND CYLINDER LINER)
-----	SEAL KIT, power steering (See page 141)
-----	SEAL KIT, water pump (See WATER PUMP AND FAN)
-----	SEAL SET, crankshaft (See CRANKSHAFT)
-----	TRANSFER SET (See PAINTING AND MARKING)



1. Radiator
2. Air Cleaner
3. Fuel Tank
4. Moldboard Lift Cylinders

5. Moldboard
6. Circle
7. Drawbar
8. Tandem

CONVERSION TABLES

DECIMAL AND METRIC EQUIVALENTS OF FRACTIONS OF AN INCH

Inches				Inches			
Fractions	Decimals	*Nom. Dec.	Milli-meters	Fractions	Decimals	*Nom. Dec.	Milli-meters
1/64	.015625	.02	.397	33/64	.515625	.52	13.097
1/32	.03125	.03	.794	17/32	.53125	.53	13.494
3/64	.046875	.05	1.191	35/64	.546875	.55	13.891
1/16	.0625	.06	1.588	9/16	.5625	.56	14.288
5/64	.078125	.08	1.984	37/64	.578125	.58	14.684
3/32	.09375	.09	2.381	19/32	.59375	.59	15.081
7/64	.109375	.11	2.778	39/64	.609375	.61	15.478
1/8	.125	.12	3.175	5/8	.625	.62	15.875
9/64	.140625	.14	3.572	41/64	.640625	.64	16.272
5/32	.15625	.16	3.969	21/32	.65625	.66	16.669
11/64	.171875	.17	4.366	43/64	.671875	.67	17.066
3/16	.1875	.19	4.763	11/16	.6875	.69	17.463
13/64	.203125	.20	5.159	45/64	.703125	.70	17.859
7/32	.21875	.22	5.556	23/32	.71875	.72	18.256
15/64	.234375	.23	5.953	47/64	.734375	.73	18.653
1/4	.250	.25	6.350	3/4	.750	.75	19.050
17/64	.265625	.27	6.747	49/64	.765625	.77	19.447
9/32	.28125	.28	7.144	25/32	.78125	.78	19.844
19/64	.296875	.30	7.541	51/64	.796875	.80	20.241
5/16	.3125	.31	7.938	13/16	.8125	.81	20.638
21/64	.328125	.33	8.334	53/64	.828125	.83	21.034
11/32	.34375	.34	8.731	27/32	.84375	.84	21.431
23/64	.359375	.36	9.128	55/64	.859375	.86	21.828
3/8	.375	.38	9.525	7/8	.875	.88	22.225
25/64	.390625	.39	9.922	57/64	.890625	.89	22.622
13/32	.40625	.41	10.319	29/32	.90625	.91	23.019
27/64	.421875	.42	10.716	59/64	.921875	.92	23.416
7/16	.4375	.44	11.113	15/16	.9375	.94	23.813
29/64	.453125	.45	11.509	61/64	.953125	.95	24.209
15/32	.46875	.47	11.906	31/32	.96875	.97	24.606
31/64	.484375	.48	12.303	63/64	.984375	.98	25.003
1/2	.500	.50	12.700	1	1.000	1.00	25.400

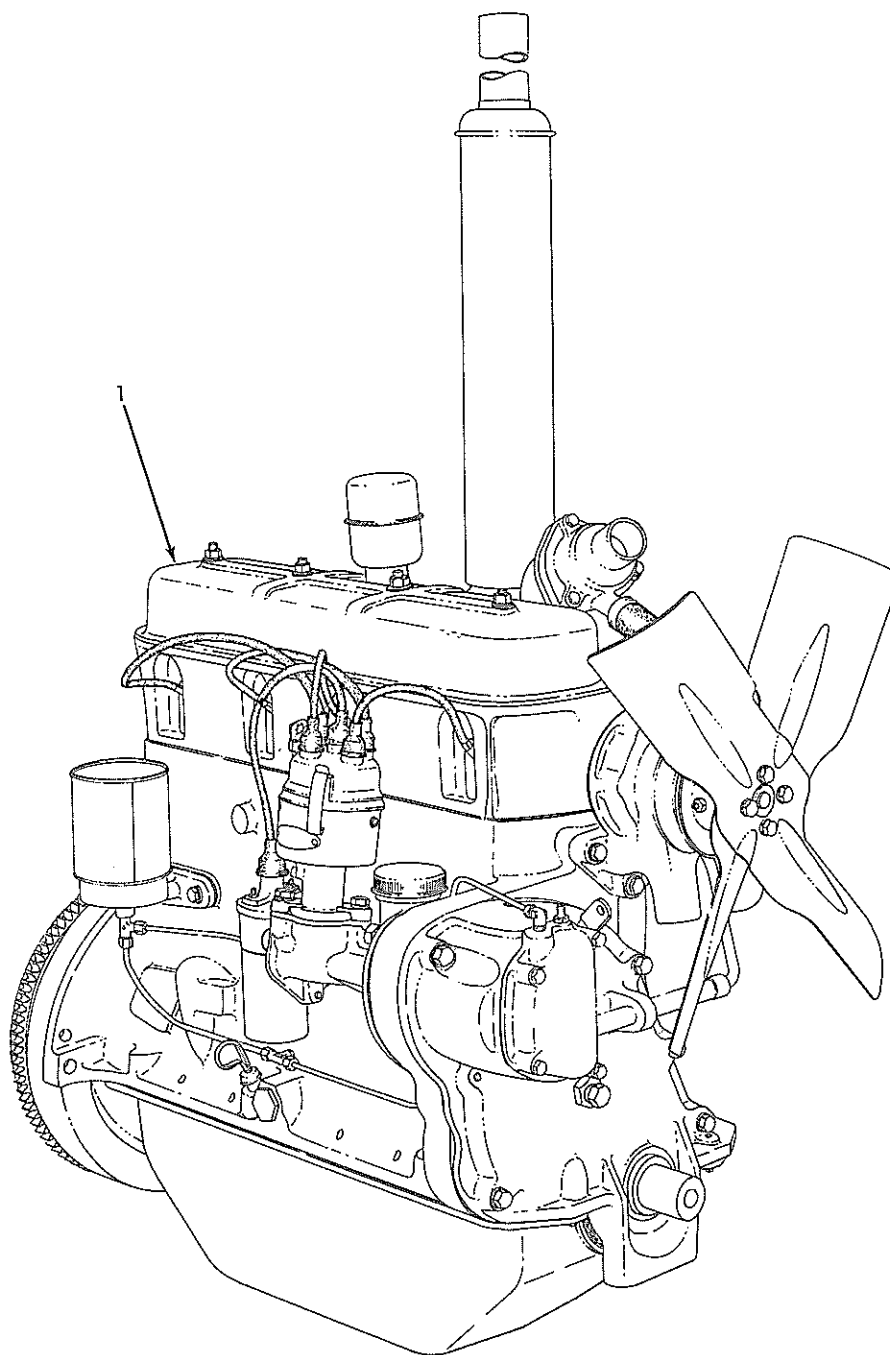
VOLUME AND WEIGHT CONVERSION CONSTANTS — U.S. TO METRIC

Pints x .4732 = Liters
 Quarts x .9463 = Liters
 Gallons x 3.7853 = Liters
 Pounds x .4536 = Kilograms
 Cubic Yards x .7645 = Cubic Meters

LENGTH CONVERSION CONSTANTS — U.S. TO METRIC

Inches x 25.400 = Millimeters
 Inches x .0254 = Meters
 Feet x .3048 = Meters
 Statute Miles x 1.60935 = Kilometers

*Nominal decimals are used in place of fractions of an inch, with exception of such items as bolts, screws, washers, tubing, wire, etc.



ENGINE ASSEMBLY (Model WD-45)

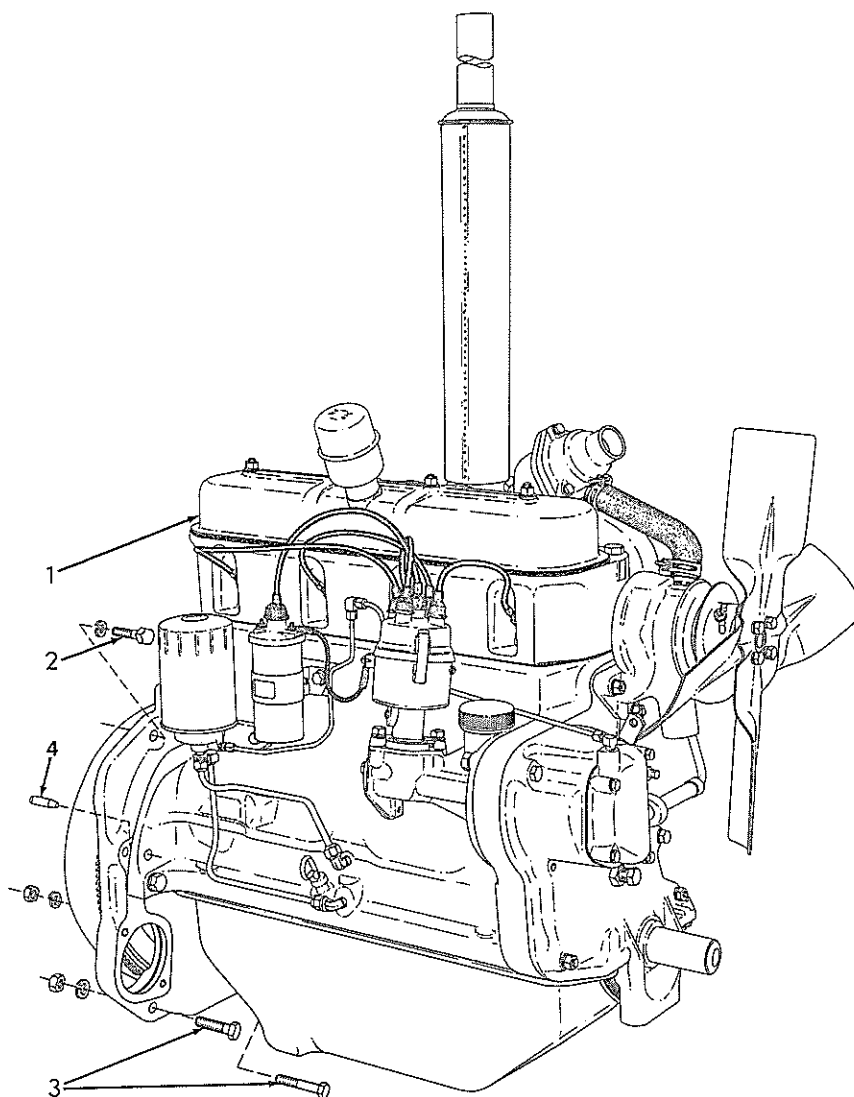
T-12019

USAGE: Graders serial No. 3370 thru 5424

ITEM	PART NO.	QTY.	DESCRIPTION
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1	079777	1	ENGINE ASSEMBLY (Includes carburetor, distributor, coil, fan, oil filter, muffler and clutch. For burning gasoline. Compression ratio 6.45 to 1)
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NOTE: Complete Engine Assembly is not available for graders prior to serial No. 3370



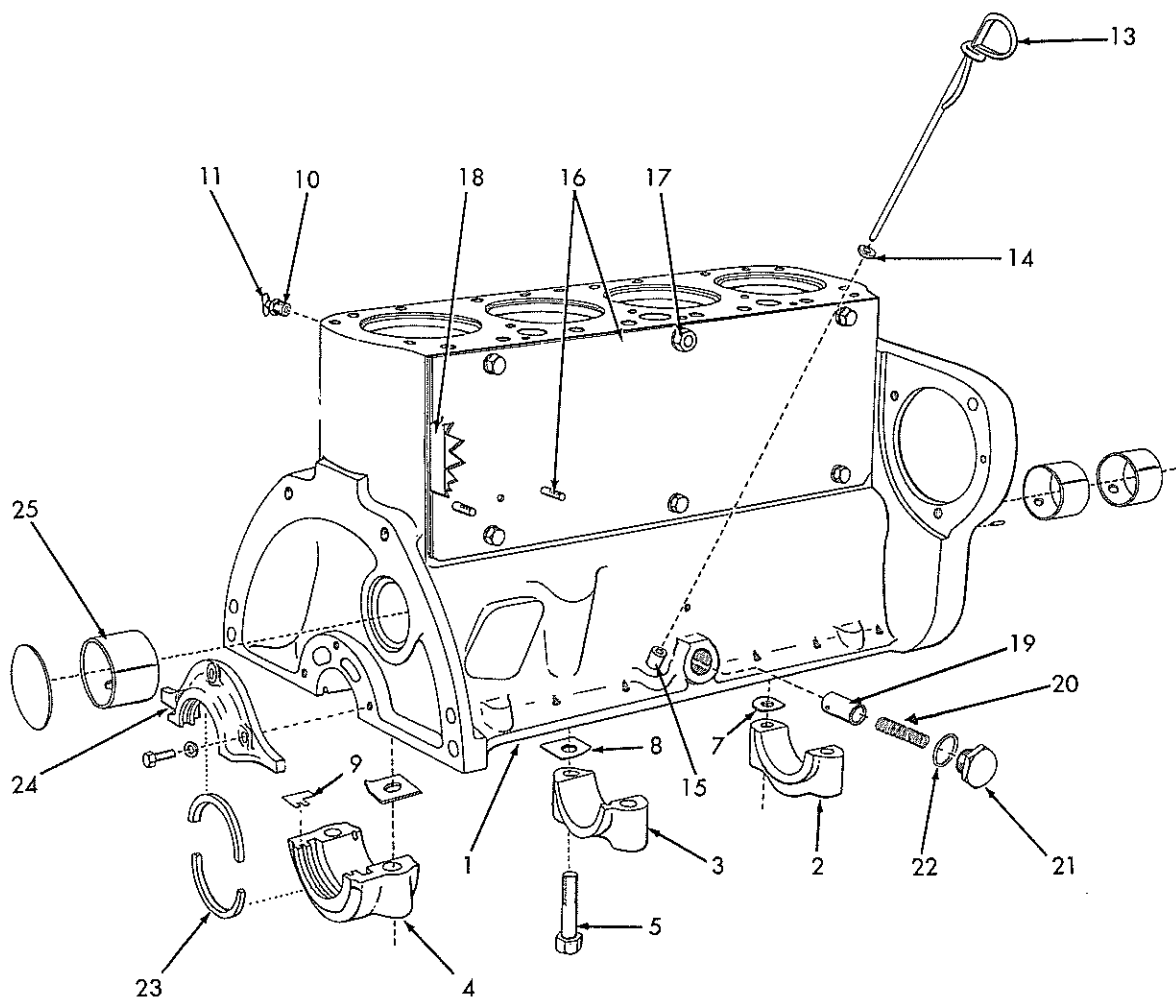
ENGINE ASSEMBLY (Model 17)

T-19574

USAGE: Graders serial No. 5425 and up

ITEM PART NO. QTY. DESCRIPTION

1	096017	1	ENGINE ASSEMBLY (Includes carburetor, distributor, coil, fan, oil filter, muffler and clutch. For burning gasoline. Compression ratio 7.25 to 1)(If for graders prior to #6159 also order cable type CHOKE CONTROL shown on page 53)
2	035190	1	CAPSCREW, 1/2"NC x 1-1/2"
3	921556	2	CAPSCREW, 1/2"NC x 2"
	028979	1	CAPSCREW, 1/2"NC x 2-1/2"
	012871	1	CAPSCREW, 1/2"NC x 2-3/4"
	904208	5	LOCKWASHER, 1/2"
	911028	4	NUT, 1/2"NC
4	202532	1	PIN, dowel, engine to transmission (1 additional used prior to grader #5711)
	647445	1	STUD, dowel, engine to transmission (Effective with grader #5711)



CYLINDER BLOCK

T-912

USAGE: Graders prior to serial No. 5425 (Model W and WD-45 engines)

ITEM PART NO. QTY. DESCRIPTION

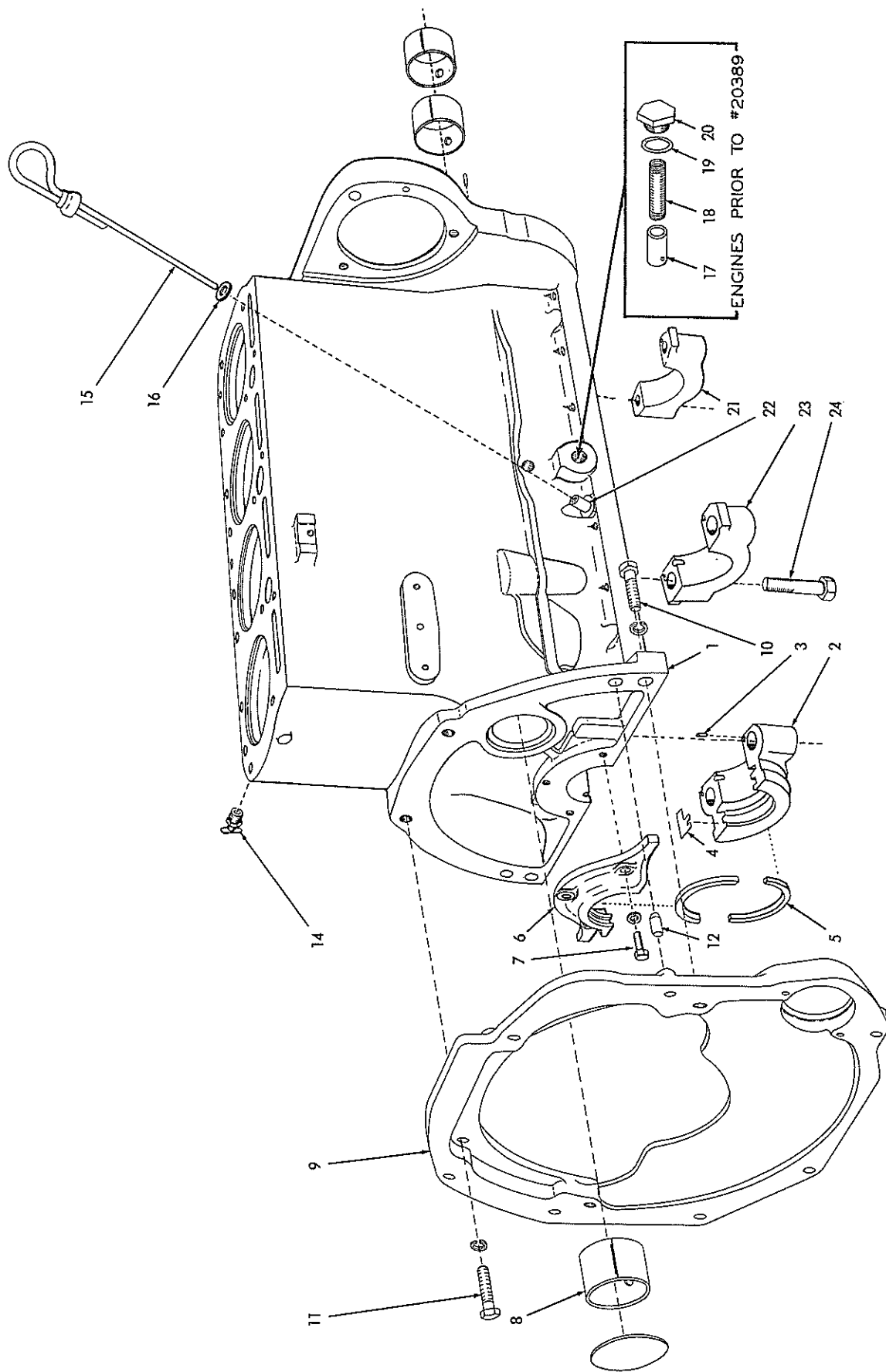
1	227049	1	BLOCK ASSEMBLY, cylinder (Includes items 2 thru 10 and PLUG indented below)(If for graders prior to #3370 also order item 26)
	910121	1	PIN, groove, 5/32" x 1/2" (dowel for timing gear cover)
	910011	1	PLUG, expansion, 2-1/2" diam. (camshaft hole)
2	203157	1	CAP, front bearing
3	203021	1	CAP, center bearing
4	203020	1	CAP, rear bearing
5	226152	6	CAPSCREW, bearing cap
7	227149	2	SHIM, laminated, front bearing cap

(Continued)

CYLINDER BLOCK (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
8	204721	4	□ SHIM, laminated, center and rear bearing cap
9	203036	2	□ GASKET, rear bearing cap
10	201671	1	COCK, water drain (3/8"NPT. Includes item 11)(Used prior to engine #45-46967)
	918849	1	COCK, water drain (1/4"NPT)(Effective with engine #45-46967)
11	209359	1	STEM, water drain cock (For COCK 201671 only)
13	230066	1	ROD ASSEMBLY, oil level gauge. (Includes item 14)
14	204014	1	SEAL, oil level gauge rod
15	230331	1	BUSHING oil level gauge rod
16	203904	1	COVER, push rod
17	203201	1	STUD (3/8"NC x 1-1/8")
	900367	1	NUT, 3/8"NC
	903629	5	CAPSCREW, 3/8"NC x 3/4"
	904206	6	LOCKWASHER, 3/8"
18	218604	1	□ GASKET, push rod cover
19	203129	1	PLUNGER, oil pressure relief valve
20	229181	1	SPRING, oil pressure relief valve
21	226408	1	PLUG, oil pressure relief valve
22	226012	1	GASKET, oil pressure relief valve plug
23	-----	2	SEAL, oil (See CRANKSHAFT)
24	203042	1	RETAINER, crankshaft rear oil seal
	903771	3	CAPSCREW, 5/16"NC x 7/8"
	904205	3	LOCKWASHER, 5/16"
25	-----	3	BUSHING, camshaft (See CAMSHAFT)
26	227137	1	BAFFLE, oil, cylinder head (For use when replacing cylinder block on graders prior to #3370)(Not illustrated)

Used on graders prior to #3370 only (Model W engine)



T-19588

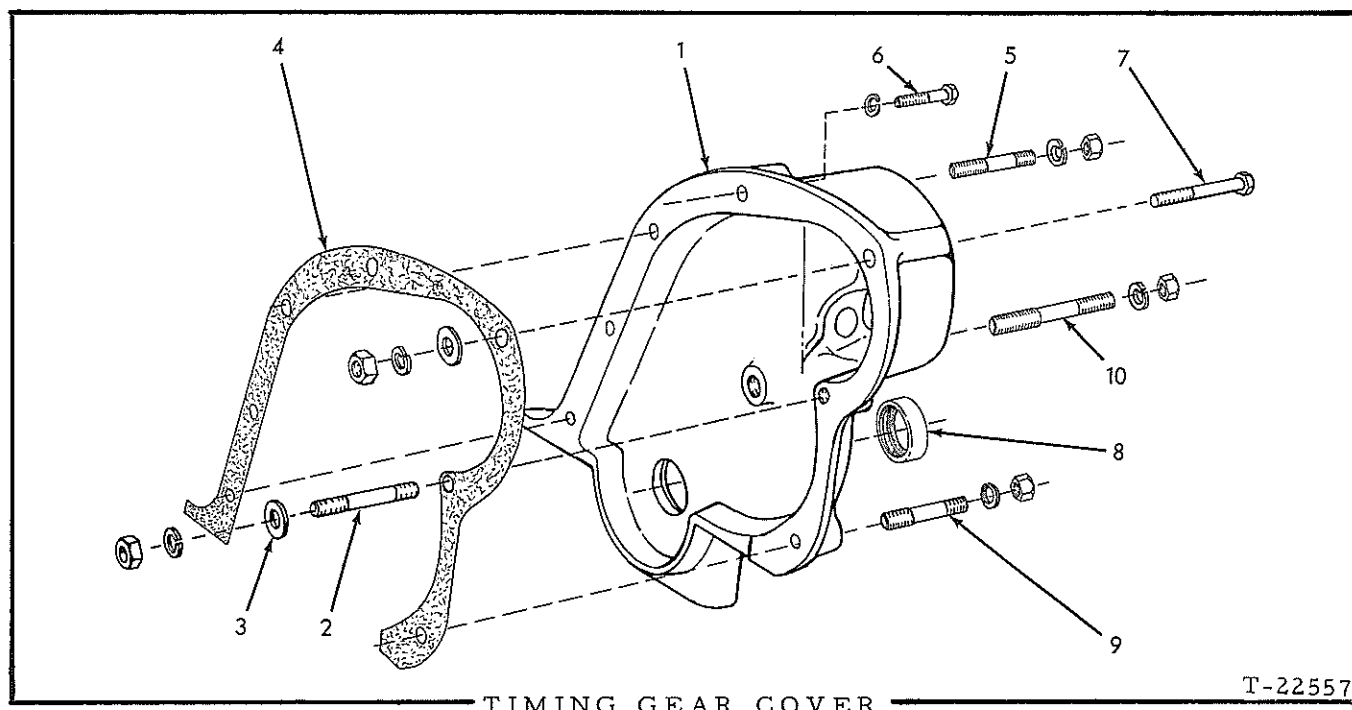
CYLINDER BLOCK (Second type)

CYLINDER BLOCK

USAGE: Graders serial No. 5425 and up (Model 17 engine)

ITEM	PART NO.	QTY.	DESCRIPTION
1	232594	1	BLOCK ASSEMBLY, cylinder (Includes items 2, 3, 8, 21, 23 and 24; also 1 PLUG 910011)(Used prior to engine #20389)
	232545	1	BLOCK ASSEMBLY, cylinder (Includes items 2, 3, 8, 21, 23 and 24; also 1 PLUG 910011)(Effective with engine #20389)
	910011	1	PLUG, expansion, 2-1/2" diam. (camshaft hole)
2	229171	1	CAP, rear bearing
3	229370	6	PIN, dowel, bearing cap
4	229178	2	□ GASKET, rear bearing cap
5	-----	2	SEAL, oil (See CRANKSHAFT)
6	229179	1	RETAINER, crankshaft rear oil seal
7	229715	3	CAPSCREW, drilled head, 5/16"NC x 7/8"
	904205	3	LOCKWASHER, 5/16"
8	-----	3	BUSHING, camshaft (See CAMSHAFT)
9	096010	1	ADAPTER ASSEMBLY, engine to transmission (Includes item 12)
10	035733	2	CAPSCREW, 1/2"NC x 1-3/8"
11	921556	2	CAPSCREW, 1/2"NC x 2"
	904208	4	LOCKWASHER, 1/2"
12	202532	2	PIN, dowel, engine adapter
14	918849	1	COCK, water drain (1/4"NPT)(Early units)
	919840	1	PLUG, pipe, hex-hd., 1/4"NPT (Late units)
15	230066	1	ROD ASSEMBLY, oil level gauge (Includes item 16)
16	204014	1	SEAL, oil level gauge rod
17	203129	1	PLUNGER, oil pressure relief valve
18	229181	1	SPRING, oil pressure relief
19	226012	1	GASKET, oil pressure relief valve plug
20	226408	1	PLUG, oil pressure relief valve
21	229173	1	CAP, front bearing
22	230331	1	BUSHING, oil level gauge rod
23	229172	1	CAP, center bearing
24	229174	6	CAPSCREW, bearing cap

} Used prior to engine #20389



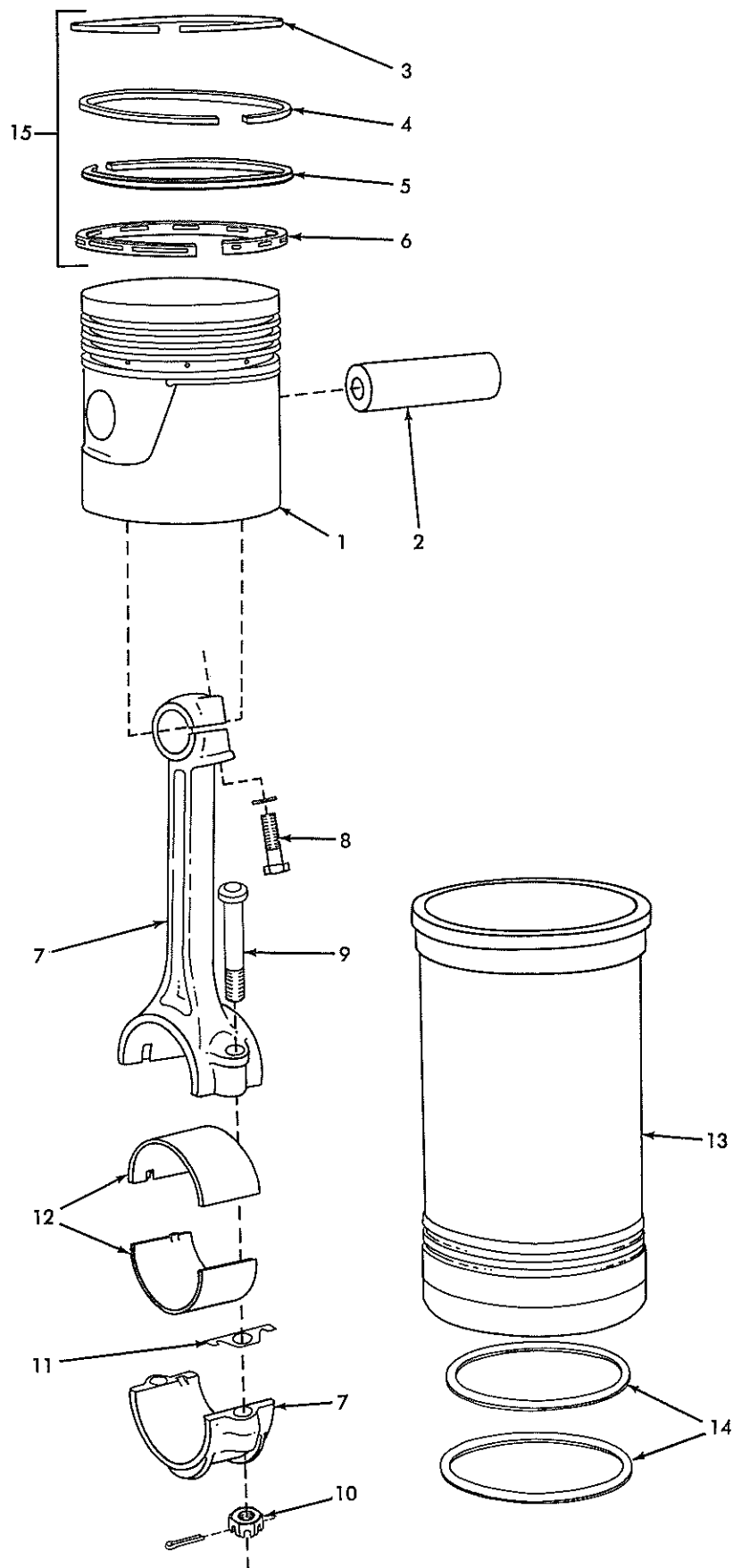
* Graders prior to serial No. 5425 (Model W and WD45 engines)
 ** Graders serial No. 5425 and up (Model 17 engine)

ITEM	PART NO.	QTY. * **		DESCRIPTION
1	224915	1	1	COVER, timing gear (If for Model W engines prior to #269166 also order SEAL 226620)
2	226115	1	-	STUD, gear cover (3/8"NC x 2-3/4"
	229706	-	1	STUD, gear cover (3/8"NC x 3-1/8")
	904206	1	1	LOCKWASHER, 3/8"
	910324	1	1	NUT, 3/8"NC
				} Also attaches distributor drive housing
3	225771	2	2	WASHER, plain
4	233214	1	1	GASKET, cover to cylinder block
5	228394	1	1	STUD, gear cover
	904206	1	1	LOCKWASHER, 3/8"
	910324	1	1	NUT, 3/8"NC
6	227307	2	2	CAPSCREW, gear cover (3/8"NC x 1-3/4")
	904206	2	2	LOCKWASHER, 3/8"
7	919015	1	1	CAPSCREW, gear cover (3/8"NC x 3-1/2") (Also attaches distributor drive housing)
	904206	1	1	LOCKWASHER, 3/8"
	900367	1	1	NUT, 3/8"NC
8	-----	1	1	SEAL, oil (See CRANKSHAFT AND FLYWHEEL)

(Continued)

TIMING GEAR COVER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
9	227307	1	-	CAPSCREW, gear cover (3/8"NC x 1-3/4")
	904206	1	-	LOCKWASHER, 3/8"
	230392	-	1	STUD, gear cover (2-1/2" long)
	904206	-	1	LOCKWASHER, 3/8"
	910324	-	1	NUT, 3/8"NC
10	905667	1	-	CAPSCREW, gear cover (3/8"NC x 3")(Also attaches generator bracket)
	904206	1	-	LOCKWASHER, 3/8"
	234226	-	1	STUD, gear cover (4" long)
	904206	-	1	LOCKWASHER, 3/8"
	910324	-	1	NUT, 3/8"NC



PISTON, CONNECTING ROD AND CYLINDER LINER

T-37249

PISTON, CONNECTING ROD AND CYLINDER LINER

* Model W engine (Graders prior to serial No. 3370)
 ** Model WD-45 engine (Graders serial No. 3370 thru 5424)
 *** Model 17 engine (Graders serial No. 5425 and up)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
					<u>NOTE:</u> Each piston assembly listed below includes fitted piston pin
1	217311	4	-	-	PISTON ASSEMBLY (5.5 to 1 ratio. For gasoline. Standard on engines prior to #283022)
	224917	4	-	-	□PISTON ASSEMBLY (5.75 to 1 ratio. For gasoline. Standard on engines #283022 and up)
	224754	4	-	-	□PISTON ASSEMBLY (6.6 to 1 ratio. For gasoline at high altitude)
	223505	4	-	-	PISTON ASSEMBLY (4.5 to 1 ratio. For low-grade fuel at low altitude)
	223507	4	4	-	PISTON ASSEMBLY (5.25 to 1 ratio in Model W engine (For low-grade fuel at high altitude); 7.2 to 1 ratio in Model WD-45 engine (For gasoline at high altitude))
	226346	-	4	-	□PISTON ASSEMBLY (6.45 to 1 ratio. For gasoline at low-altitude)
	229718	-	-	4	□PISTON ASSEMBLY (7.25 to 1 ratio. For gasoline at low-altitude)
	226268	-	4	4	□PISTON ASSEMBLY (4.75 to 1 ratio. For low-grade fuel at low altitude)
	230577	-	-	4	□PISTON ASSEMBLY (8.25 to 1 ratio. For gasoline at high altitude)
	226537	-	4	4	PISTON ASSEMBLY (5.25 to 1 ratio. For low-grade fuel at high altitude)
	226622	-	4	4	□PISTON ASSEMBLY (5.83 to 1 ratio. For low-grade fuel at very high altitude)
2	203052	4	4	4	□PIN, piston
3	203050	4	4	-	RING, compression (top groove)
	230086	-	-	4	□RING, compression (top groove)
4	203050	4	4	-	RING, compression (2nd groove)
	229537	-	-	4	□RING, compression (2nd groove)
5	203809	4	4	-	RING, compression (3rd groove)
	229537	-	-	4	□RING, compression (3rd groove)
6	229538	4	4	4	□RING, oil control
7	232569	4	4	4	ROD ASSEMBLY, connecting(Includes items 8 thru 10)

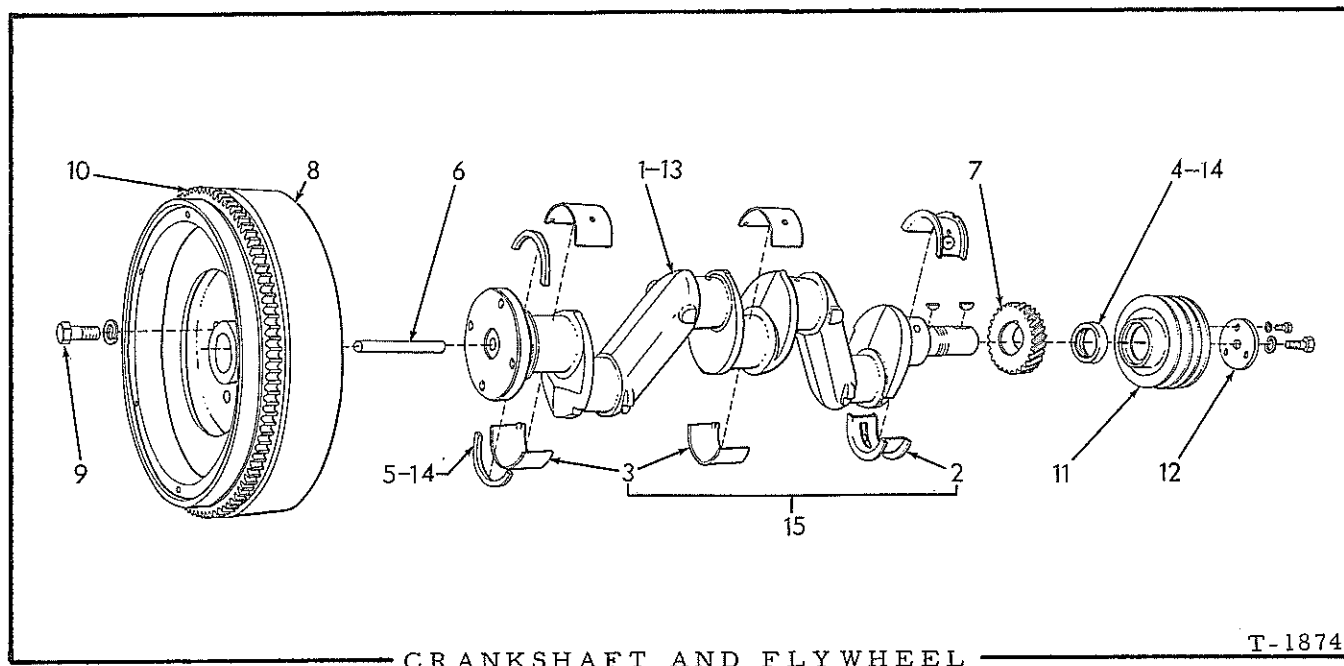
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PISTON, CONNECTING ROD AND CYLINDER LINER (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
8	203188	4	4	4	CAPSCREW, piston pin retaining (Not used on Model 17 engines #20389 and up)
	232443	-	-	4	CAPSCREW, piston pin retaining (Effective with engine #20389)
	904206	4	4	4	LOCKWASHER, 3/8"
9	224620	8	8	8	BOLT, connecting rod cap (If for Model W engines prior to #232044 also order NUT 915652)
10	915652	8	8	8	NUT, connecting rod bolt (self-locking, 7/16"NF)
	900802	8	-	-	PIN, cotter, 3/32" x 1" (Engines prior to #232044 only)
11	204720	8	-	-	□SHIM, connecting rod
12	231125	4	4	4	□BEARING, connecting rod (two halves-std. size)
	231126	4	4	4	BEARING, connecting rod (two halves - .001" undersize)
	231127	4	4	4	BEARING, connecting rod (two halves - .0025" undersize)
	223624	4	4	-	BEARING, connecting rod (two halves - .005" undersize)
	223625	4	4	-	BEARING, connecting rod (two halves - .020" undersize)
	223626	4	4	-	BEARING, connecting rod (two halves - .040" undersize)
	223627	4	4	-	BEARING, connecting rod (two halves - .0425" undersize)
	223628	4	4	-	BEARING, connecting rod (two halves - .045" undersize)
13	207435	4	4	4	□LINER, cylinder
14	227500	8	8	8	□RING, packing, cylinder liner
15	230091	-	-	1	□RING SET, piston (Sufficient for entire engine; items 3 thru 6)

NOTE: Each MOTOR KIT listed below includes full set of pistons, pins, rings, cylinder liners and packing rings

--	283616	1	-	-	MOTOR KIT (Includes PISTON ASSEMBLY 224917)
--	283615	1	-	-	MOTOR KIT (Includes PISTON ASSEMBLY 224754)
--	283605	1	1	1	MOTOR KIT (Includes PISTON ASSEMBLY 229718)
--	283618	-	1	-	MOTOR KIT (Includes PISTON ASSEMBLY 226346)
--	283619	-	1	1	MOTOR KIT (Includes PISTON ASSEMBLY 226622)
--	283617	-	1	1	MOTOR KIT (Includes PISTON ASSEMBLY 226268)
--	283730	-	-	1	MOTOR KIT (Includes PISTON ASSEMBLY 230577)



USAGE: Graders prior to serial No. 5425 (Model W and WD-45 engines)

ITEM PART NO. QTY. DESCRIPTION

1	-----	1	□CRANKSHAFT (Order item 13)
2	228604	2	□BEARING, half, front main (standard size)
	229913	2	□BEARING, half, front main (.0025" undersize)
	213354	2	□BEARING, half, front main (.040" undersize)
	223550	2	□BEARING, half, front main (.0425" undersize)
3	228603	4	□BEARING, half, center and rear main (standard size)
	229912	4	□BEARING, half, center and rear main (.0025" undersize)
	213355	4	□BEARING, half, center and rear main (.040" undersize)
	215276	4	□BEARING, half, center and rear main (.0425" undersize)
4	226620	1	□SEAL, front
5	227120	2	□SEAL, rear (half only)
6	204061	1	□WICK, oiling, pilot bearing
7	203033	1	GEAR, timing (1-1/2" bore)(Model W engine, also Model WD-45 engines prior to #45-8961)
	230217	1	□GEAR, timing (1-5/8" bore)(Model WD-45 engines #45-8961 and up)
	910184	1	□KEY, #8 woodruff, 5/32" x 3/4"

(Continued)

CRANKSHAFT AND FLYWHEEL (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
8	226765	1	FLYWHEEL ASSEMBLY (Includes item 10)
9	223527	4	CAPSCREW, 1/2"NF x 1-1/8"
	904208	1	LOCKWASHER, 1/2"
10	208132	1	GEAR, flywheel ring
11	080518	1	PULLEY, crankshaft
	905126	1	KEY, #15 woodruff, 1/4" x 1"
12	060695	1	PLATE, pulley retaining
	911106	1	CAPSCREW, 5/8"NF x 1-1/4"
	904209	1	LOCKWASHER, 5/8"
	903775	3	CAPSCREW, 3/8"NC x 7/8"
	904206	3	LOCKWASHER, 3/8"

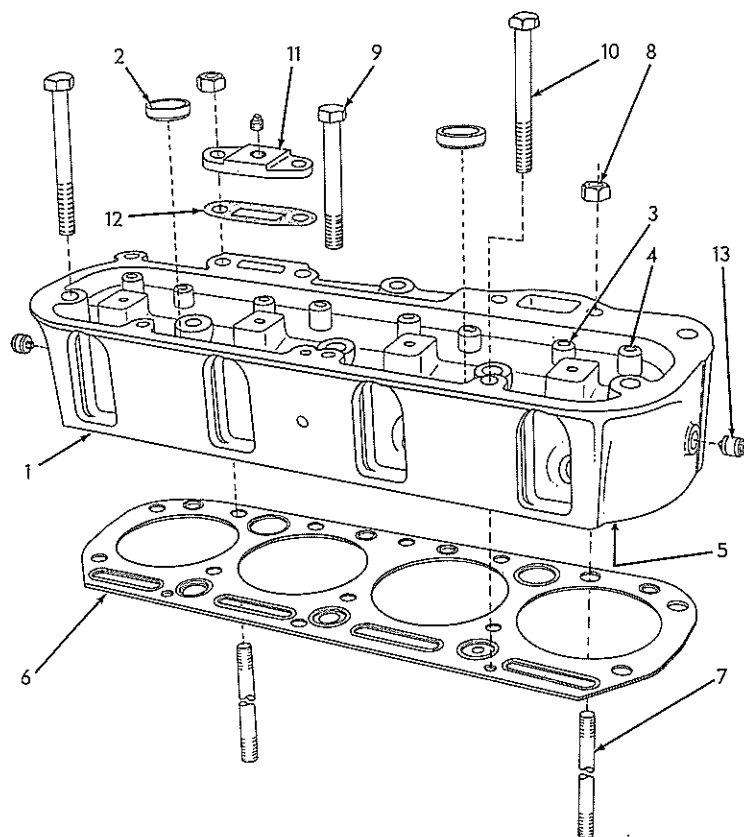
NOTE: Each Crankshaft Kit listed below includes set of connecting rod bearings, main bearings and shims, crankshaft gear, gear key and oiling wick

13	230006	1	CRANKSHAFT KIT (Model W engine)
	230003	1	CRANKSHAFT KIT (Model WD-45 engine)
14	226640	1	SEAL SET, crankshaft (Items 4 and 5)

NOTE: Each Bearing Set listed below includes upper and lower main bearings for entire engine (items 2 and 3)

15	228620	1	BEARING SET, main (standard size)
	229914	1	BEARING SET, main (.0025" undersize)
	213556	1	BEARING SET, main (.040" undersize)
	223561	1	BEARING SET, main (.0425" undersize)





CYLINDER HEAD

T-22558

- * Model W engines prior to serial No. 289000
- ** Model W engines serial No. 289000 and up; also Model WD-45 engines
- *** Model 17 engine (Graders serial No. 5425 and up)

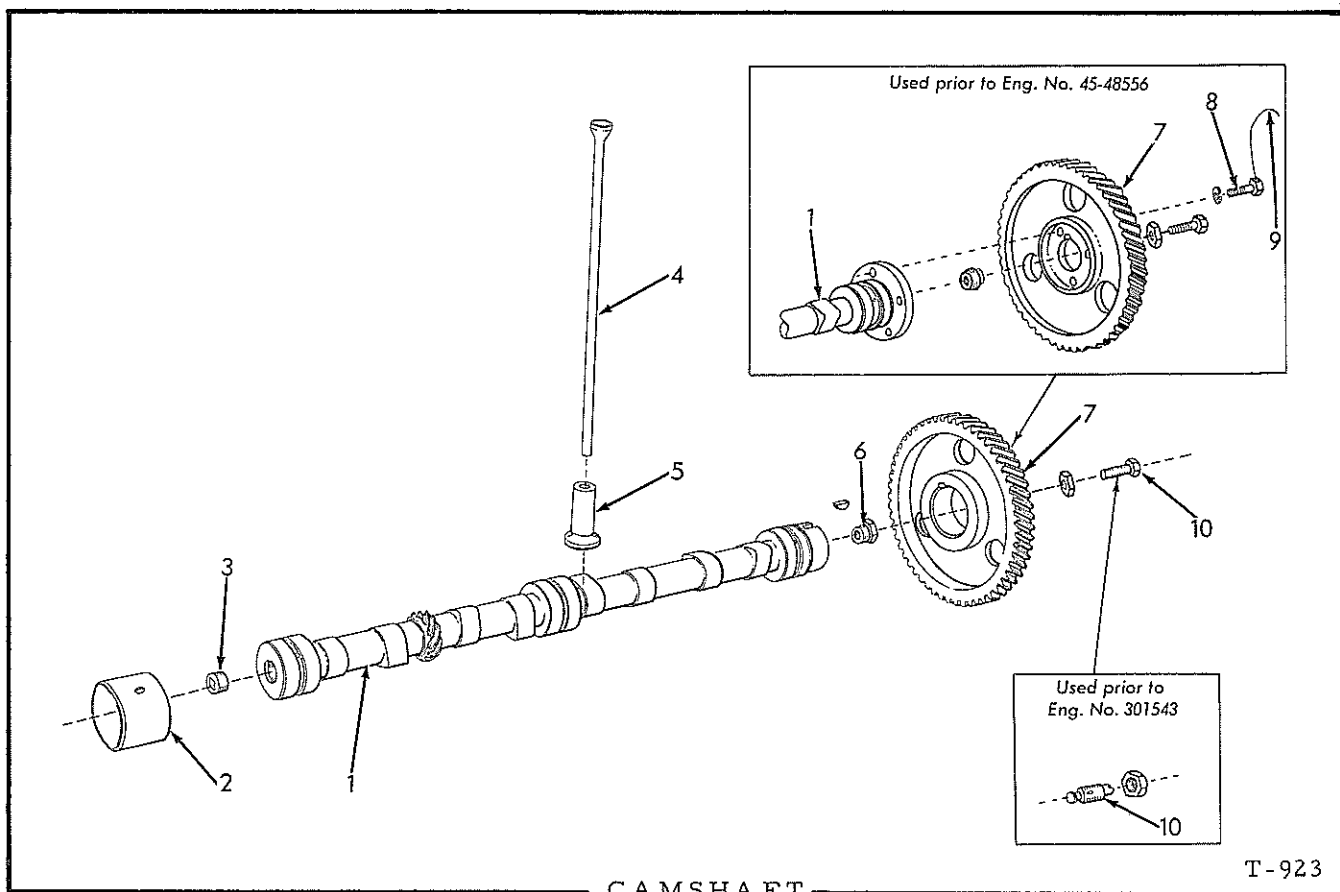
ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	-----	1	-	-	HEAD ASSEMBLY (Order HEAD ASSY. 241524, 1 each TUBE 226251, COVER 225021, COVER 225017, HOUSING 225012; 2 STUDS 224729; 3 each STUD 224998, CAPSCREW 224731; 4 each PLUG 232560, SUPPORT 225019, STUD 224733; 6 each STUD 229339, NUT 229340; 7 CAPSCREWS 236531)
	-----	-	1	-	HEAD ASSEMBLY (Order HEAD ASSY. 241524, 2 WASHERS 911381, 4 PLUGS 232560, 6 STUDS 229339 and 6 NUTS 229340)
	241524	-	-	1	HEAD ASSEMBLY (Includes items 2 thru 5 and 13)
2	224526	2	2	-	PLUG, water hole
	230357	-	-	2	PLUG, water hole
3	-----	4	4	4	GUIDE, intake valve
4	-----	4	4	4	GUIDE, exhaust valve
5	-----	4	4	4	SEAT, exhaust valve

See VALVES AND
ROCKER ARMS

(Continued)

CYLINDER HEAD (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
6	229406	1	1	1	□ GASKET, cylinder head
7	203004	8	-	-	STUD, cylinder head (1/2" x 4-3/8")
	203003	4	-	-	STUD, cylinder head (1/2" x 5") (Also attach water manifold)
	224729	-	2	4	STUD, cylinder head (1/2" x 5-7/8")
	207151	3	-	-	STUD, cylinder head (3/8" x 4-1/8")
	224998	-	3	-	STUD, cylinder head (3/8" x 5")
8	207132	3	3	-	NUT, cylinder head stud (3/8"NF)
	207152	3	3	-	WASHER, plain
	203461	12	2	4	NUT, cylinder head stud (1/2"NF)
	235793	12	-	-	WASHER, plain
9	224731	-	3	3	CAPSCREW, cylinder head (1/2"NC x 4")
	236531	-	7	5	CAPSCREW, cylinder head (1/2"NC x 4-3/4")
10	229410	-	-	3	CAPSCREW, cylinder head (7/16"NC x 4-1/2")
11	225021	-	1	-	COVER, water hole (Also see CAB HEATER for special cover)
	229409	-	-	1	COVER, water hole
	905261	-	-	1	PLUG, pipe, 1/2"NPT (Removed when cab heater is installed)
12	233216	-	1	1	□ GASKET, water hole cover
13	233155	-	-	2	PLUG ASSEMBLY, clean-out (Effective with engine #20389)



* Model W engines; also WD-45 engines prior to serial No. 45-48556

** Model WD-45 engines serial No. 45-48556 and up
 Δ Model 17 engines prior to serial No. 20389

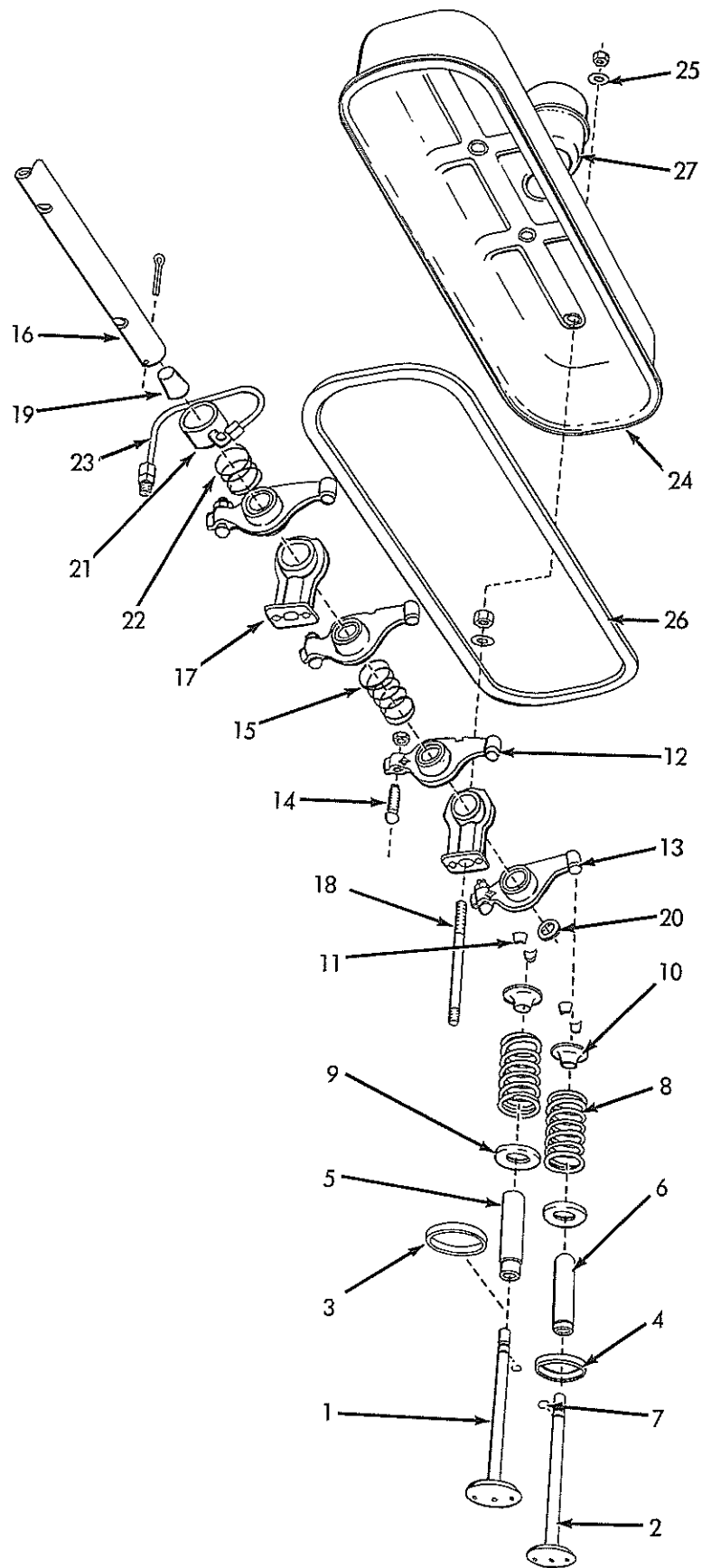
ΔΔ Model 17 engines serial No. 20389 and up.

ITEM	PART NO.	QUANTITY				DESCRIPTION
		*	**	Δ	ΔΔ	
1	203027	1	-	-	-	CAMSHAFT
	-----	-	1	1	-	CAMSHAFT (Order CAMSHAFT 236580, GEAR 232436, PIN 921460)
	236580	-	-	-	1	CAMSHAFT
2	229953	3	3	2	3	BUSHING (std. size)
	229955	3	3	2	3	BUSHING (.0025" undersize)
	229952	-	-	1	-	BUSHING, center (std. size)
	229954	-	-	1	-	BUSHING, center (.0025" undersize)
3	904260	1	-	-	-	PLUG, rear (Model W engine only)
	227302	-	1	1	-	PLUG, rear
	917148	-	-	-	1	BALL, steel, 9/16" diam.
4	203018	8	8	8	8	ROD, push
5	203017	8	8	8	8	TAPPET, valve

(Continued)

CAMSHAFT (Continued)

ITEM	PART NO.	QUANTITY				DESCRIPTION
		*	**	Δ	ΔΔ	
6	203031	1	-	-	-	PLUG, front thrust (Engines prior to #301543)
	225689	1	1	1	1	PLUG, front thrust (Not used on Model W engines prior to #301543)
7	203028	1	-	-	-	GEAR, timing
	227038	-	1	1	1	GEAR, timing
	910184	-	1	1	1	KEY, #8 woodruff, 5/32" x 3/4"
8	224568	3	-	-	-	CAPSCREW, attaching, timing gear
	904206	3	-	-	-	LOCKWASHER, 3/8" (Effective with engine #226750)
9	-----	1	-	-	-	WIRE, locking (1/16" x 8") (Used prior to engine #226750)
10	205807	1	-	-	-	SCREW ASSEMBLY, front thrust (Includes plunger, spring, pin and nut) (Used prior to engine #301543)
	225688	1	1	1	1	SCREW, front thrust (Not used on Model W engines prior to #301543)
	910345	1	1	1	1	NUT, jam, 5/8"NF



T-917

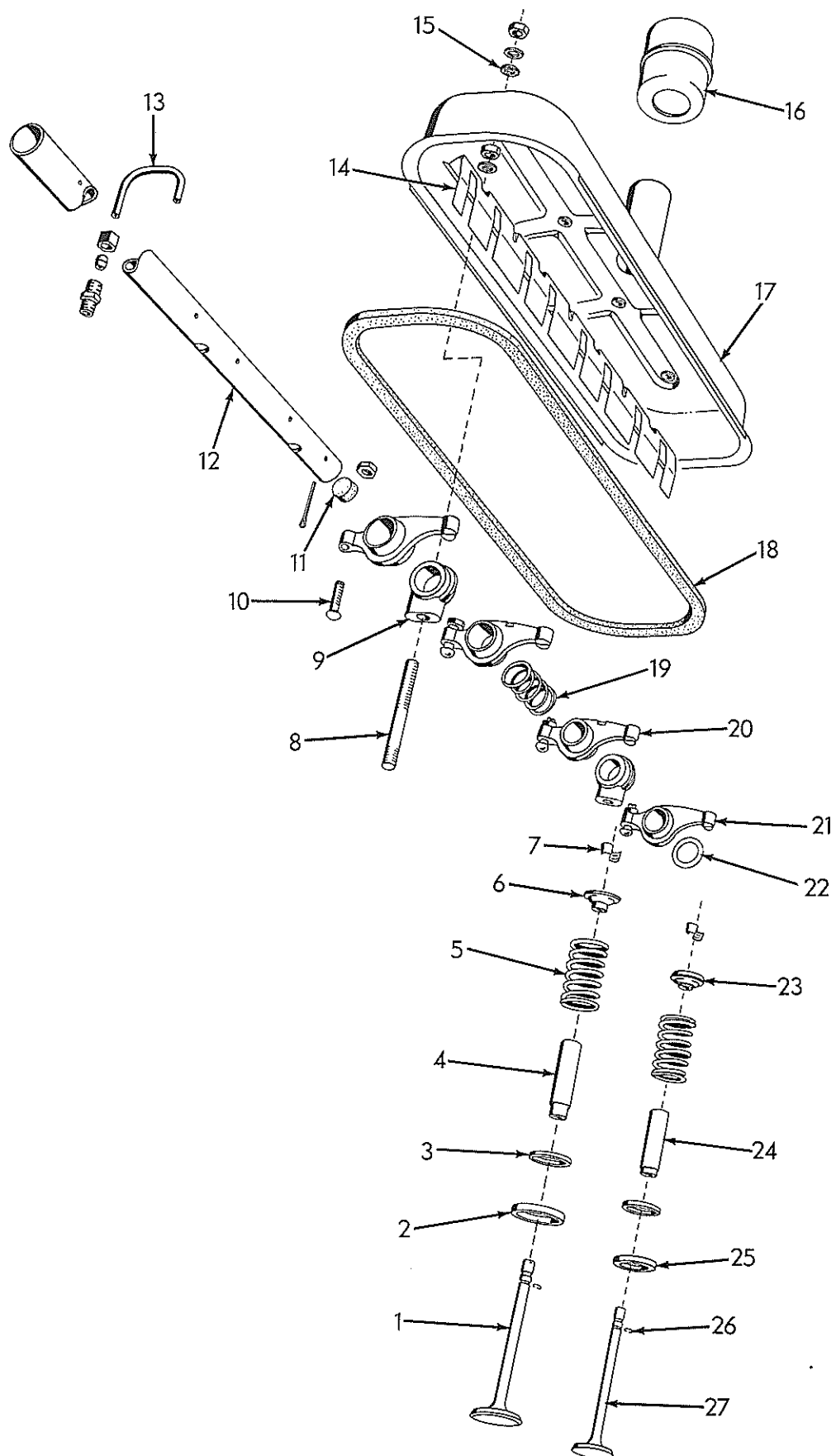
VALVES AND ROCKER ARMS (First type)

VALVES AND ROCKER ARMS

USAGE: Model W engines prior to serial No. 289000

ITEM	PART NO.	QTY.	DESCRIPTION	
1	209132	4	VALVE, intake	
2	241527	4	VALVE, exhaust	
3	220476	4	SEAT, intake valve (For service only. Installation requires machining of counterbore in head)	
4	241528	4	SEAT, exhaust valve (standard size)	
	241538	4	SEAT, exhaust valve (oversize)	
5	241536	4	GUIDE, intake valve	
6	229911	4	GUIDE, exhaust valve	
7	204801	8	RING, snap, valve stem	
8	206879	8	SPRING, valve	
9	206876	8	SEAT, valve spring	
10	209099	8	RETAINER, valve spring	
11	209103	16	LOCK, half, valve spring retainer	
12	209862	4	ARM ASSEMBLY, rocker, intake valve	} Each includes item 14. Bushing is not serviced separately.
13	208049	4	ARM ASSEMBLY, rocker, exhaust valve	
14	203132	8	SCREW, valve adjustment	
	912794	8	NUT, jam, 3/8"NF	
15	203011	2	SPRING, rocker shaft, long	
16	-----	1	SHAFT ASSEMBLY, rocker (Order SHAFT ASSEMBLY 225893, TUBE 225020 and SPRING 203011)	
	900807	2	PIN, cotter, 1/8" x 1-1/4"	
17	211413	4	SUPPORT, rocker shaft	
18	225728	4	STUD, rocker shaft support	
	910123	4	NUT, 3/8"NF	
	911115	4	WASHER, plain, SAE std., 3/8"	
19	212004	2	STOPPER, rocker shaft (cork)	
20	203009	2	WASHER, rocker shaft	
21	203010	1	COLLAR, rocker shaft oiling	
22	203091	2	SPRING, rocker shaft, short	
23	206861	1	TUBE, rocker oiling	
	910129	1	ELBOW, male, compression, 3/16" tube, 1/8"NPT (Includes NUT and SLEEVE listed below)	
	910126	1	CONNECTOR, male, compression, 3/16" tube, 1/8"NPT (Includes NUT and SLEEVE listed below)	
	912064	2	NUT, compression fitting, 3/16" tube	
	912367	2	SLEEVE, compression fitting, 3/16" tube	

(Continued)



VALVES AND ROCKER ARMS (Second type)

T-20567

VALVES AND ROCKER ARMS (Continued)

USAGE: Model W engines prior to serial No. 289000

ITEM	PART NO.	QTY.	DESCRIPTION
24	204832	1	COVER, rocker (Used without breather on graders prior to #1001)
	203155	1	COVER, rocker (Used with breather cap on graders #1001 and up)
	910123	4	NUT, 3/8"NF
25	913544	4	WASHER, plain (steel)
26	232449	1	□ GASKET, rocker cover
27	203196	1	CAP, breather (Effective with grader #1001)

VALVES AND ROCKER ARMS

USAGE: Model W engines serial No. 289000 and up: also all Model WD-45 and 17 engines

* Model W and WD-45 engines (Graders prior to serial No. 5425)
 ** Model 17 engine (Graders serial No. 5425 and up)

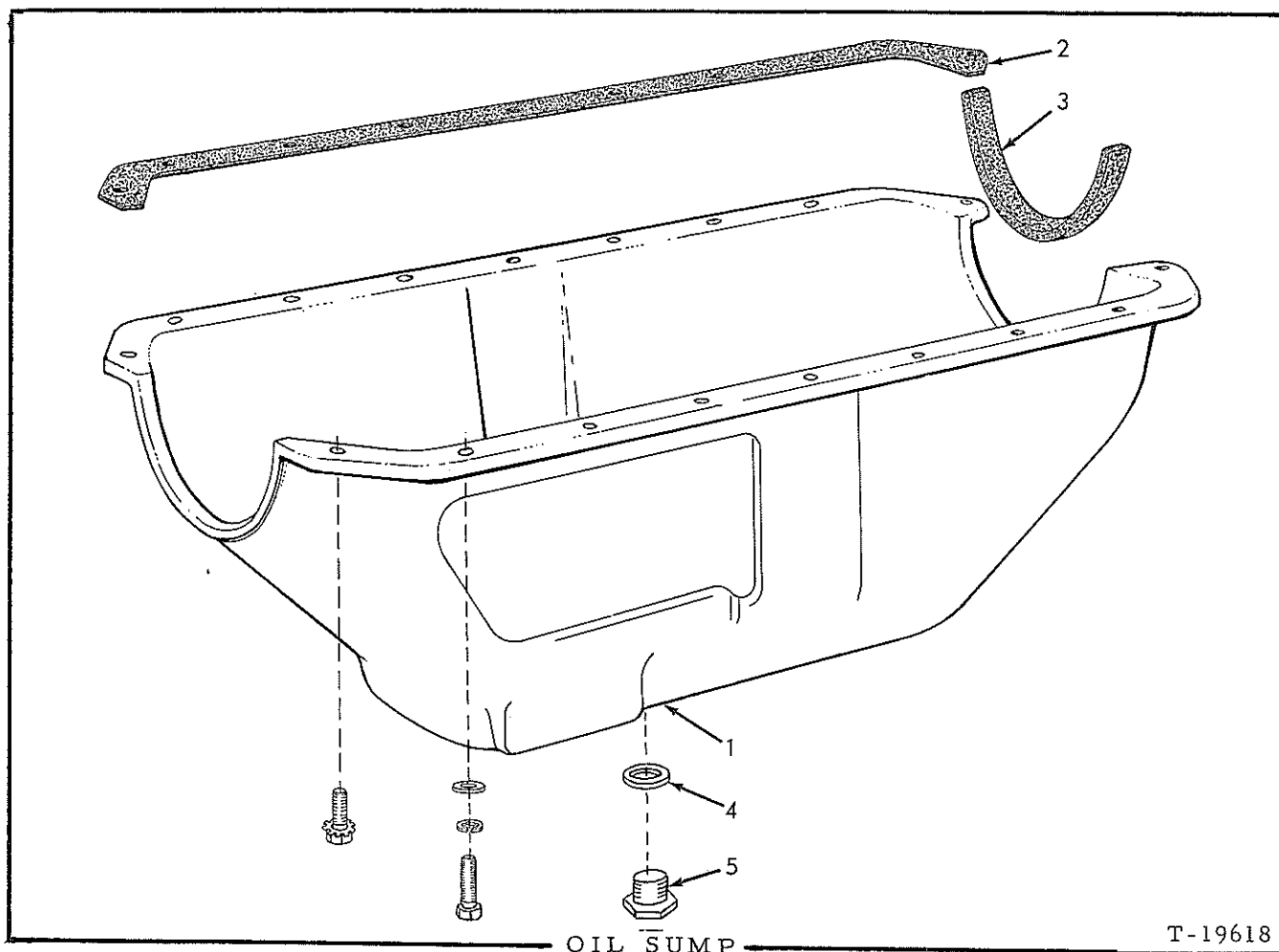
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	209132	4	-	VALVE, intake
	241535	-	4	VALVE, intake
2	220476	4	-	SEAT, intake valve
	229904	-	4	SEAT, intake valve
3	206876	8	8	SEAT, valve spring
4	241536	4	4	GUIDE, intake valve
5	206879	8	8	SPRING, valve
6	209099	4	4	RETAINER, intake valve spring
7	209103	16	16	LOCK, half, valve spring retainer
8	225728	4	-	STUD, rocker shaft support and cover (4-13/16" long) (Used with rocker COVER 203155)
	224733	4	4	STUD, rocker shaft support and cover (3-7/8" long) (Used with rocker COVER 225017)
	910123	8	8	NUT, 3/8"NF
	911115	8	8	WASHER, plain, SAE std., 3/8"
9	225019	4	4	SUPPORT, rocker shaft
10	203132	8	8	SCREW, valve adjustment
	912794	8	8	NUT, jam, 3/8"NF
11	212004	2	2	STOPPER, rocker shaft (cork)

(Continued)

VALVES AND ROCKER ARMS (Continued)

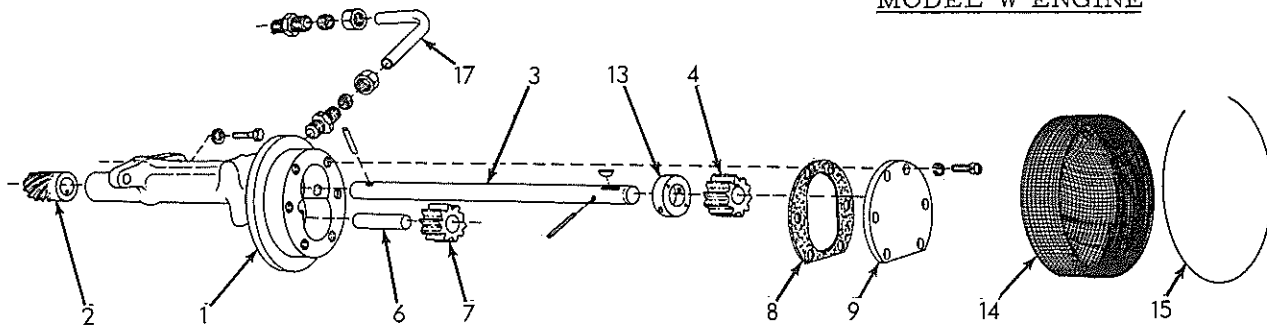
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
12	225893	1	1	SHAFT ASSEMBLY, rocker (Includes item 11 and cotter pins indented below)
	900807	2	2	PIN, cotter, 1/8" x 1-1/4"
13	225020	1	-	TUBE, rocker oiling
	910126	1	-	CONNECTOR, male, compression, 3/16" tube, 1/8"NPT (Includes NUT and SLEEVE listed below)
	912064	1	-	NUT, compression fitting, 3/16" tube
	912367	1	-	SLEEVE, compression fitting, 3/16" tube
	227636	-	1	TUBE, rocker oiling
	913526	-	1	NUT, inverted flare, 3/16" tube
14	226761	1	1	BAFFLE, oil (Used prior to 17 engine #20389)
	232926	-	1	BAFFLE, oil (Effective with engine #20389)
15	913544	4	-	WASHER, rocker cover (steel)(Model W engine only)
	226477	4	4	PACKING, rocker cover stud (Not used on Model W engine)
16	203196	1	1	CAP, breather
17	203155	1	-	COVER, rocker (high-type)(Used on Model W engines #301394 thru #305569)
	225017	1	-	COVER, rocker (low-type)(Not used on Model W engines #301394 thru #305569)
	229408	-	1	COVER, rocker
18	232449	1	1	GASKET, rocker cover
19	203011	3	3	SPRING, rocker shaft
20	209862	4	4	ARM ASSEMBLY, rocker, intake valve
21	208049	4	4	ARM ASSEMBLY, rocker, exhaust valve
22	203009	2	2	WASHER, rocker shaft
23	209099	4	-	RETAINER, exhaust valve spring (Used only on Model W engines prior to #299173)
	224926	4	4	ROTO-CAP exhaust valve spring (Not used on Model W engines prior to #299173)
24	229911	4	4	GUIDE, exhaust valve
25	241528	4	4	SEAT, exhaust valve, (standard size)
	241538	4	4	SEAT, exhaust valve, (oversize)
26	204801	8	8	RING, snap, valve stem (Not used on Model 17 engines serial No. 20389 and up)
27	241527	4	4	VALVE, exhaust

Each includes item 10.
Bushing is not serviced separately.



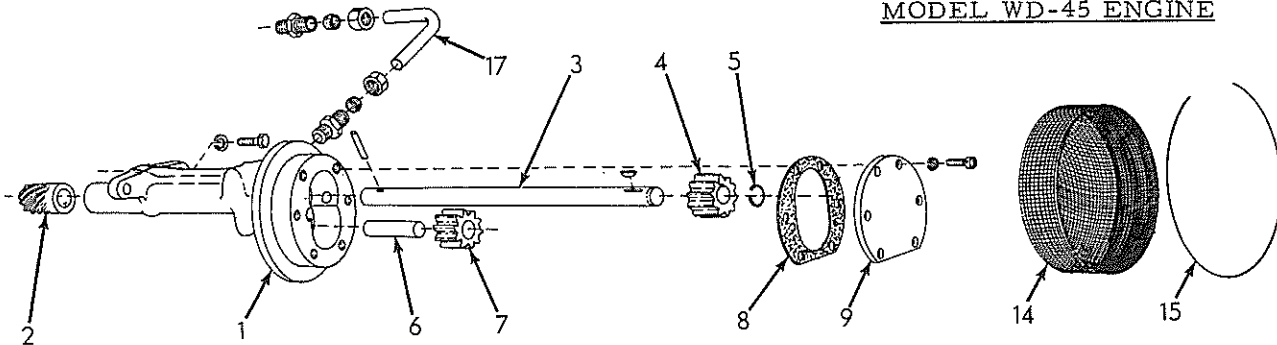
ITEM	PART NO.	QTY.	DESCRIPTION
1	229334	1	SUMP, oil (If for Model W engines prior to #274626 also order items 4 and 5)
	920997	16	CAPSCREW, 5/16"NC x 3/4" (Includes lockwasher)
	914392	2	CAPSCREW, 5/16"NC x 1"
	904205	2	LOCKWASHER, 5/16"
	901165	2	WASHER, plain, U.S. std., 5/16"
			} Also attach generator bracket
2	233602	2	□ GASKET, side
3	236660	2	□ GASKET, end
4	226012	1	GASKET, oil drain plug (Not used on Model W engines prior to #274626)
5	{ 901653	2	PLUG, oil drain (3/8"NPT) (Model W engines prior to #274626)
	{ 226408	1	PLUG, oil drain (Not used on Model W engines prior to #274626)

MODEL W ENGINE



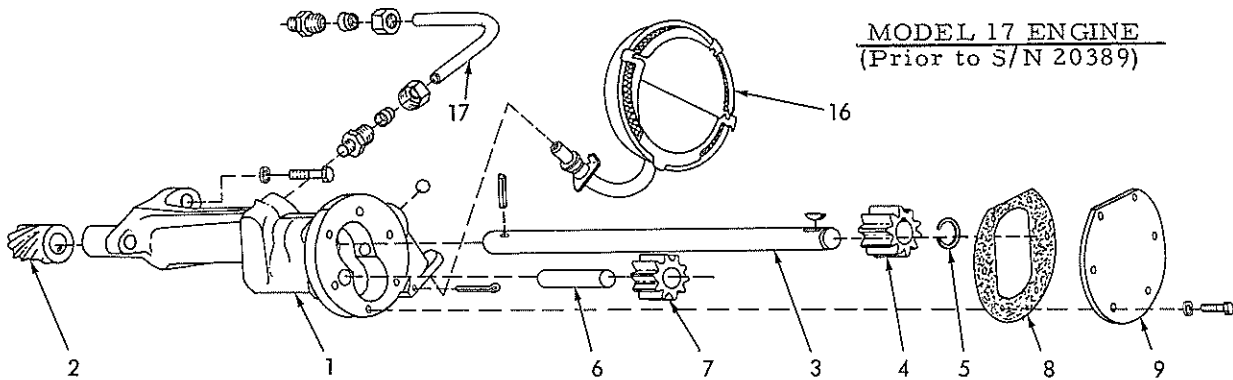
T-41822

MODEL WD-45 ENGINE



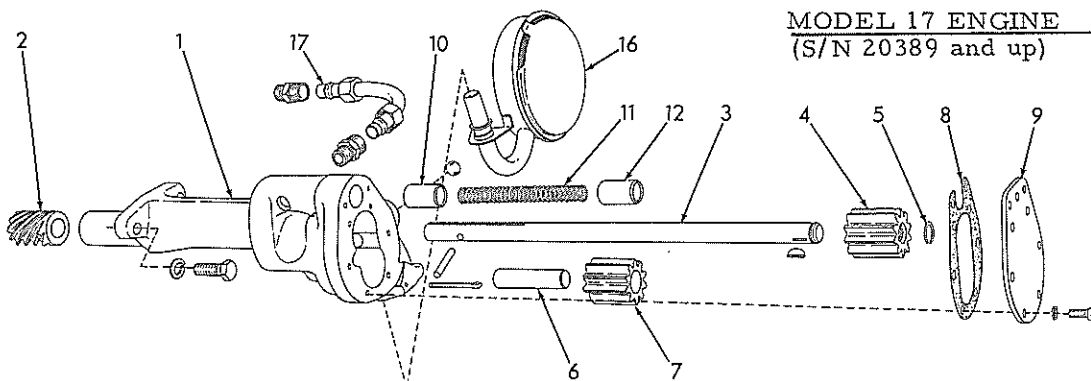
T-41821

MODEL 17 ENGINE (Prior to S/N 20389)



T-41820

MODEL 17 ENGINE (S/N 20389 and up)



T-24149

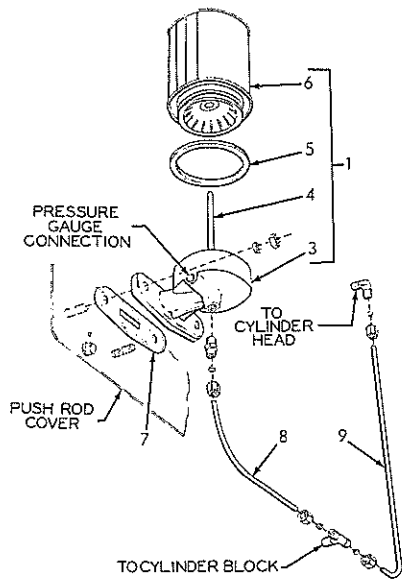
OIL PUMP

OIL PUMP

* Model W engines
 ** Model WD-45 engines
 Δ Model 17 engines prior to serial No. 20389
 ΔΔ Model 17 engines serial No. 20389 and up

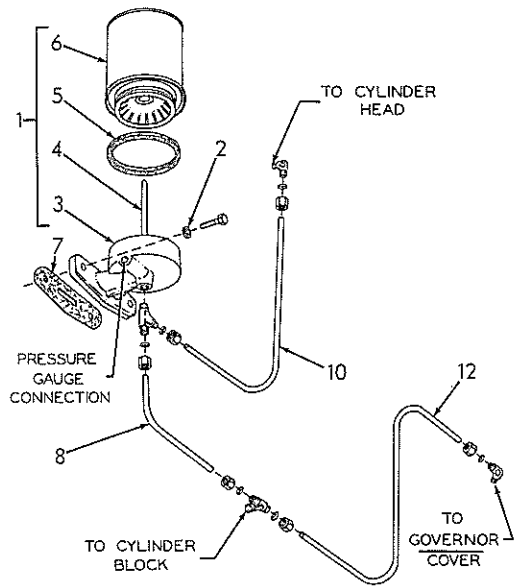
ITEM	PART NO.	QUANTITY				DESCRIPTION
		*	**	Δ	ΔΔ	
-	-----	1	1	1	-	PUMP ASSEMBLY (Order PUMP ASSY. 232554 and GEAR 203100. If for W or WD-45 engine also order item 16)
	232554	-	-	-	1	PUMP ASSEMBLY (Consists of items 1 and 3 thru 12)
	903772	2	2	2	2	CAPSCREW, 5/16"NC x 1"
	904205	2	2	2	2	LOCKWASHER, 5/16"
1	203181	1	-	-	-	BODY
	-----	-	1	-	-	BODY (Order BODY 229910 and item 16)
	-----	-	-	1	1	BODY (Not serviced separately)
	917579	-	-	1	1	BALL, steel, 7/16" diam.
2	203100	1	1	1	-	GEAR, pump drive (10 spiral teeth)
	232436	-	-	-	1	GEAR, pump drive (9 spiral teeth)
	921460	1	1	1	1	PIN, spring, 3/16" x 15/16"
3	203168	1	-	-	-	SHAFT, drive
	226389	-	1	1	1	SHAFT, drive
4	203169	1	-	-	-	GEAR, drive shaft
	212435	-	1	1	1	GEAR, drive shaft
	910173	1	1	1	1	KEY, #2 woodruff, 3/32" x 1/2"
5	226388	-	1	1	1	RING, snap, drive shaft
6	203171	1	-	-	-	SHAFT, idler gear
	212442	-	1	1	1	PIN, idler gear
7	203170	1	-	-	-	GEAR, idler
	212436	-	1	1	1	GEAR, idler
8	203176	1	1	1	-	□ GASKET, body cover
	232434	-	-	-	1	GASKET, body cover
9	203175	1	1	1	-	COVER, body
	232435	-	-	-	1	COVER, body
	901781	6	6	6	8	SCREW, machine, fil-hd., #10-32NF x 1/2"
	904203	6	6	6	8	LOCKWASHER, #10
10	232431	-	-	-	1	PLUNGER, pressure relief valve
11	232433	-	-	-	1	SPRING, relief valve
12	232432	-	-	-	1	SLEEVE, spring retaining
13	203173	1	-	-	-	COLLAR, drive shaft
	910190	1	-	-	-	PIN, straight, 3/16" x 1-3/16"
14	203182	1	1	-	-	SCREEN, oil
15	023756	1	1	-	-	WIRE, attaching (1/16" x 26")
16	229541	-	-	1	1	SCREEN, oil
	900807	-	-	1	1	PIN, cotter, 1/8" x 1-1/4"
17	230806	1	1	1	1	TUBE, discharge
	915263	2	2	2	2	CONNECTOR, compression, 7/16" tube, 1/4"NPT male (Includes NUT and SLEEVE listed below)
	912844	2	2	2	2	NUT, compression fitting, 7/16" tube
	911436	2	2	2	2	SLEEVE, compression fitting, 7/16" tube

MODEL W ENGINE



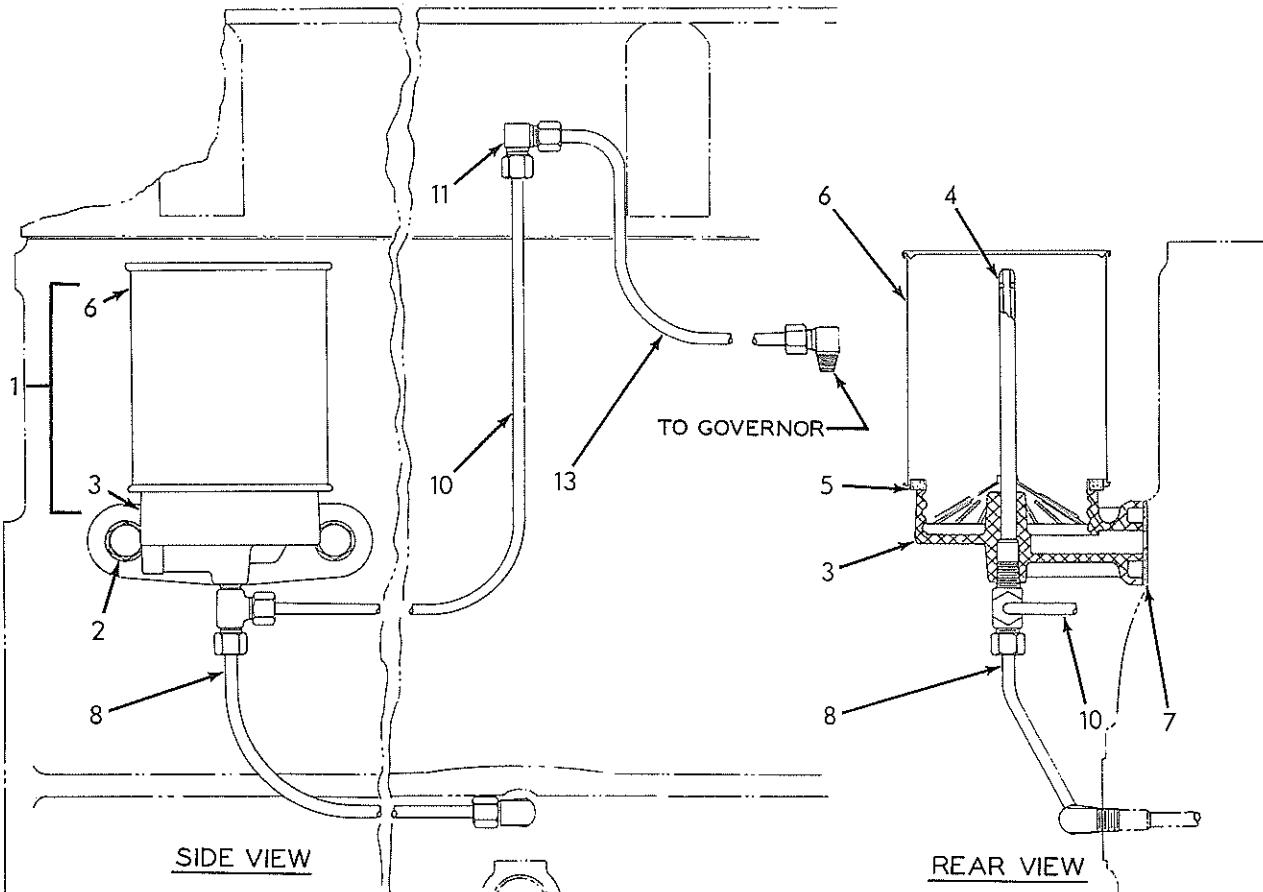
T-1877

MODEL WD-45 ENGINE



T-41823

MODEL 17 ENGINE



OIL FILTER (First type)

T-19617

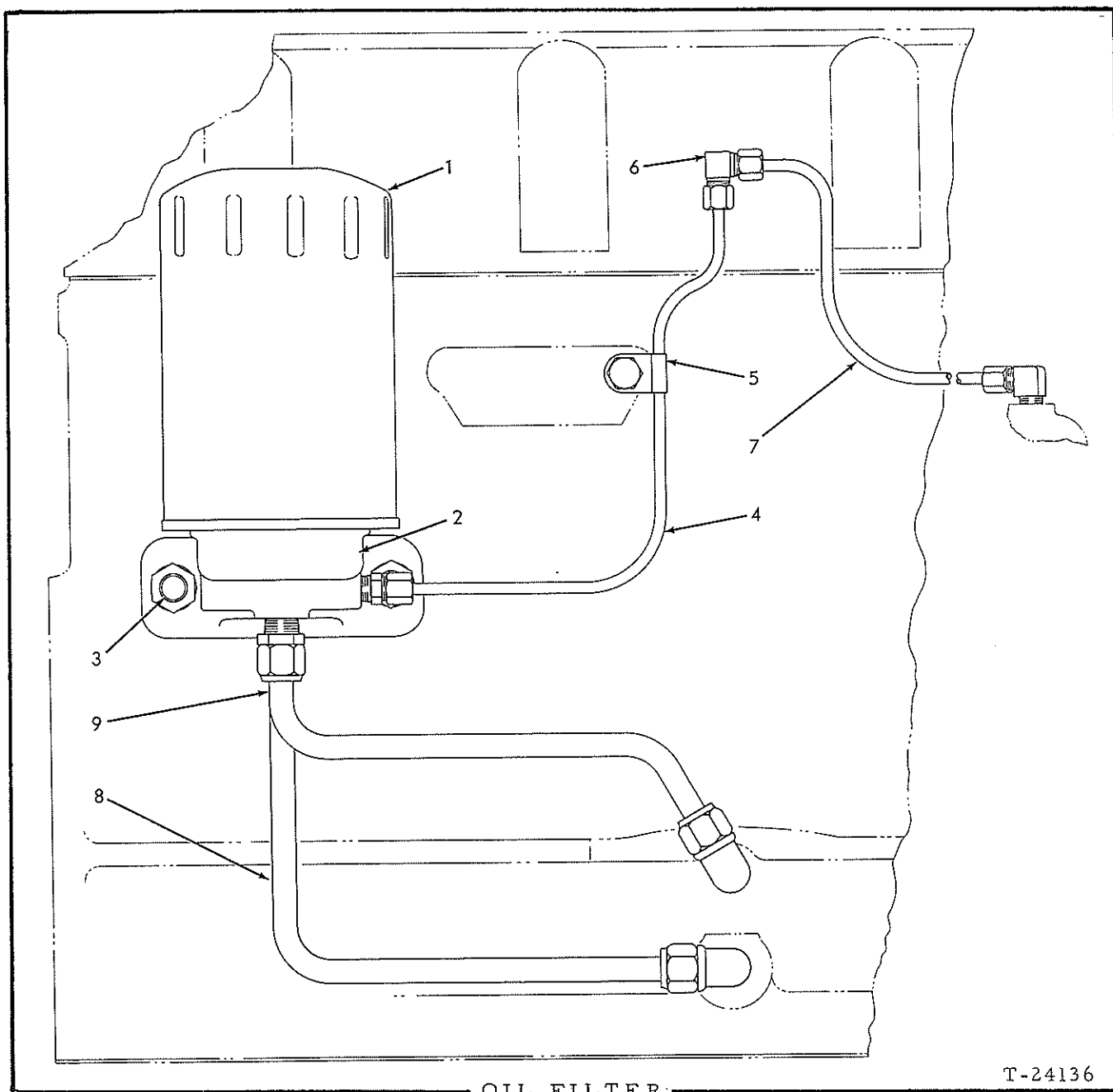
OIL FILTER

USAGE: Model W and WD-45 engines; also Model 17 engines prior to serial No. 20389

* Model W engine
 ** Model WD-45 engine
 *** Model 17 engine

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	228915	1	1	1	FILTER ASSEMBLY (Consists of items 3 thru 6)
	900366	2	-	-	NUT, 5/16"NC
	904205	2	-	-	LOCKWASHER, 5/16"
	903772	-	2	2	CAPSCREW, 5/16"NC x 1"
2	206782	-	2	2	WASHER, copper
3	233522	1	1	1	BASE, filter
4	203899	1	1	1	TUBE, filter base
5	232523	1	1	1	GASKET, filter element
6	240912	1	1	1	ELEMENT ASSEMBLY, (Includes item 5)
7	233228	1	1	1	□GASKET, filter base
8	203901	1	-	-	TUBE, cylinder block to filter
	226255	-	1	1	TUBE, cylinder block to filter
	910130	1	1	-	TEE, compression, 3/16"tube, 1/8"NPT male side
	910129	-	-	1	ELBOW, compression, 3/16"tube, 1/8"NPT male side
	910126	1	-	-	CONNECTOR, compression, 3/16"tube, 1/8"NPT male side
	910961	-	1	1	TEE, compression, 3/16"tube, 1/8"NPT male end
	912064	3	4	3	NUT, compression fitting, 3/16" tube
	912367	3	4	3	SLEEVE, compression fitting, 3/16" tube
9	203902	1	-	-	TUBE, cylinder block to head
	910129	1	-	-	ELBOW, compression, 3/16" tube, 1/8"NPT male (Includes NUT and SLEEVE listed below)
	912064	1	-	-	NUT, compression fitting, 3/16" tube
	912367	1	-	-	SLEEVE, compression fitting, 3/16" tube
10	226251	-	1	1	TUBE, filter to cylinder head
	910129	-	1	-	ELBOW, compression, 3/16" tube, 1/8"NPT male (Includes NUT and SLEEVE listed below)
	912064	-	1	-	NUT, compression fitting, 3/16" tube
	912367	-	1	-	SLEEVE, compression fitting, 3/16" tube
11	231585	-	-	1	TEE, cylinder head tube (Includes NUTS and SLEEVES indented below)
	912064	-	-	2	NUT, compression fitting, 3/16" tube
	912367	-	-	2	SLEEVE, compression fitting, 3/16" tube
12	226256	-	1	-	TUBE, cylinder block to governor cover
	910129	-	1	-	ELBOW, compression, 3/16" tube, 1/8"NPT male (Includes NUT and SLEEVE listed below)
	912064	-	1	-	NUT, compression fitting, 3/16" tube
	912367	-	1	-	SLEEVE, compression fitting, 3/16" tube
13	229402	-	-	1	TUBE, cylinder head to governor
	910129	-	-	1	ELBOW, compression, 3/16" tube, 1/8"NPT male (Includes NUTS and SLEEVE listed below)
	912064	-	-	1	NUT, compression fitting, 3/16" tube
	912367	-	-	1	SLEEVE, compression fitting, 3/16" tube

Each includes NUTS and SLEEVES listed below



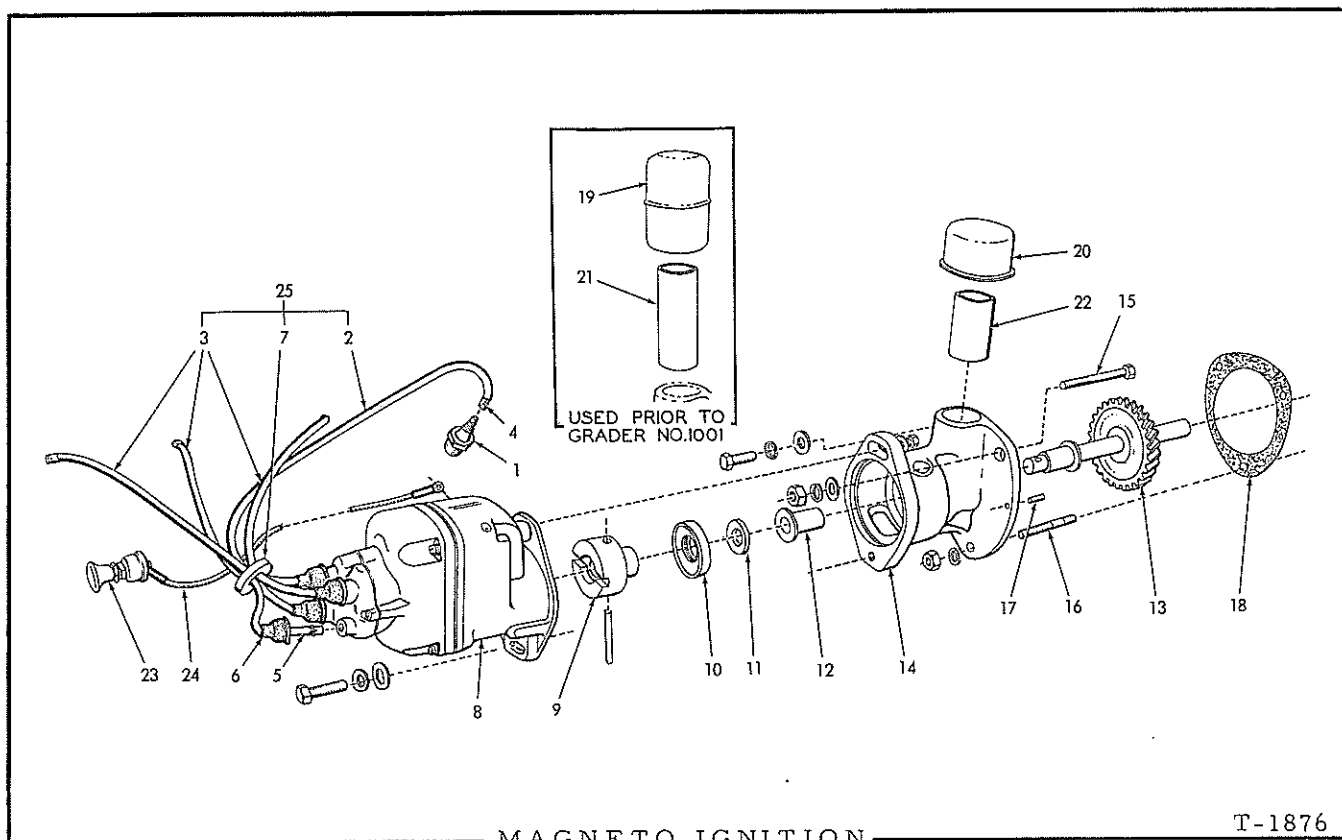
USAGE: Model 17 engines serial No. 20389 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	237000	1	FILTER ASSEMBLY, oil (Includes instruction transfer)
2	232426	1	BASE, oil filter
3	229474	2	STUD, base to block
	904207	2	LOCKWASHER, 7/16"
	912201	2	NUT, 7/16"NC
4	232424	1	TUBE, oil, filter to head
	910126	1	CONNECTOR, compression, 3/16" tube, 1/8"NPT male (Includes NUT and SLEEVE listed below)
	912064	1	NUT, compression fitting, 3/16" tube
	912367	1	SLEEVE, compression fitting, 3/16" tube

(Continued)

OIL FILTER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	232422	1	CLIP, oil tube supporting
6	231585	1	TEE, oil tube (Includes NUTS and SLEEVES indented below)
	912064	2	NUT, compression fitting, 3/16" tube
	912367	2	SLEEVE, compression fitting, 3/16" tube
7	229402	1	TUBE, oil, cylinder head to governor
	910129	1	ELBOW, compression, 3/16" tube, 1/8"NPT male (Includes NUT and SLEEVE listed below)
	912064	1	NUT, compression fitting, 3/16" tube
	912367	1	SLEEVE, compression fitting, 3/16" tube
8	232425	1	TUBE, oil, filter supply
	917948	1	CONNECTOR, compression, 3/8" tube, 1/4"NPT male (Includes NUT and SLEEVE listed below)
	917817	1	ELBOW, compression, 3/8" tube, 1/4"NPT male (Includes NUT and SLEEVE listed below)
	917810	2	NUT, compression fitting, 3/8" tube
	917807	2	SLEEVE, compression fitting, 3/8" tube
9	232423	1	TUBE, oil return, filter to block
	917948	1	CONNECTOR, compression, 3/8" tube, 1/4"NPT male (Includes NUT and SLEEVE listed below)
	917817	1	ELBOW, compression, 3/8" tube, 1/4"NPT male (Includes NUT and SLEEVE listed below)
	917810	2	NUT, compression fitting, 3/8" tube
	917807	2	SLEEVE, compression fitting, 3/8" tube



USAGE: Model W engine (Graders prior to serial No. 3370)

ITEM PART NO. QTY. DESCRIPTION

1	224990	4	PLUG, spark (A-C)	Cool type for heavy engine loads
	225000	4	PLUG, spark (Champion)	
	225010	4	PLUG, spark (Autolite)	
	224991	4	PLUG, spark (A-C)	Hot type for light engine loads
	225001	4	PLUG, spark (Champion)	
	227043	4	PLUG, spark (Autolite)	

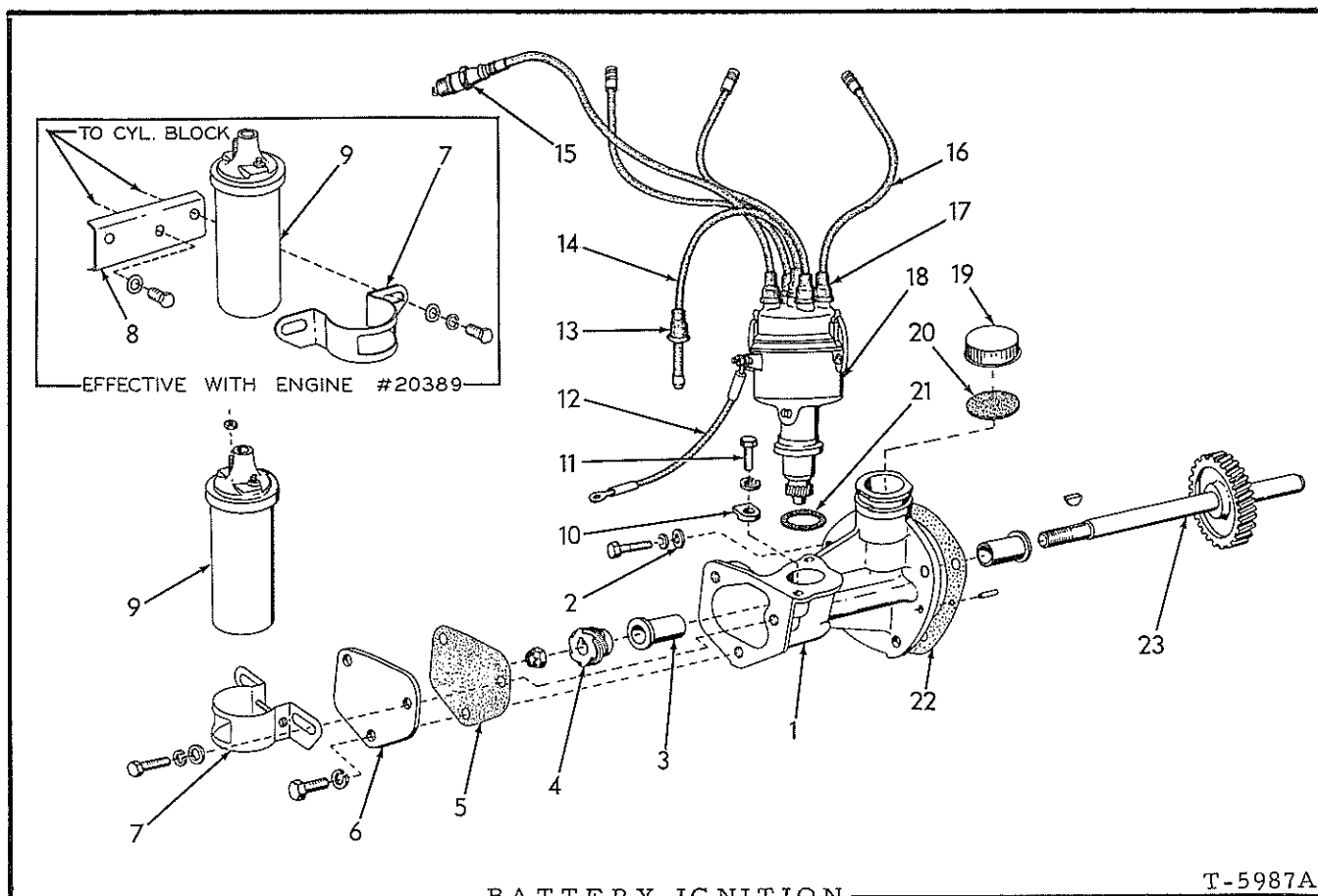
NOTE: Each spark plug listed above includes gasket

2	225745	1	CABLE ASSEMBLY, spark plug, No. 1 cylinder (18-1/2")	Includes items 4 thru 6
3	225746	3	CABLE ASSEMBLY, spark plug, No. 2, 3, and 4 cylinders (13")	
4	206518	4	TERMINAL, spark plug cable (plug end)	
5	912803	4	TERMINAL, spark plug cable (magneto end)	
6	225484	4	NIPPLE, spark plug cable	
7	203203	1	RETAINER, spark plug cable	
8	236684	1	MAGNETO ("Fairbanks-Morse" FMX4B3. Was formerly FMJ4B3. Order parts from nearest authorized "Fairbanks-Morse" agency)	
	903631	2	CAPSCREW, 3/8"NC x 1-1/4"	
	904206	2	LOCKWASHER, 3/8"	
	911115	2	WASHER, plain, SAE std., 3/8"	

(Continued)

MAGNETO IGNITION (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
9	203527	1	COUPLING, magneto drive
	910134	1	PIN, straight, 1/4" x 2-1/8"
10	205834	1	□SEAL, magneto drive shaft
11	203084	1	WASHER, magneto drive shaft
12	203124	2	BUSHING, magneto drive shaft
13	-----	1	SHAFT ASSEMBLY (See GOVERNOR)
14	203526	1	BRACKET, magneto
	903630	1	CAPSCREW, 3/8"NC x 1"
	904206	1	LOCKWASHER, 3/8"
	911115	1	WASHER, plain, SAE std., 3/8"
15	-----	1	CAPSCREW, NUT and LOCKWASHER
16	-----	1	STUD, NUT and LOCKWASHER
			} See TIMING GEAR COVER
17	910146	1	PIN, dowel (1/4" x 3/4", round end)
18	233217	1	□GASKET, magneto bracket
19	203196	1	CAP, oil filler and breather (Used prior to grader #1001)
20	207552	1	CAP, oil filler (Used on graders #1001 and up)
21	203067	1	TUBE, oil filler (Used prior to grader #1001)
22	200219	1	TUBE, oil filler (Used on graders #1001 and up)
23	213140	1	SWITCH, magneto ground
24	-----	1	CABLE, switch to magneto (Furnished only as part of complete wiring harness. See GENERATOR)
25	225747	1	CABLE SET, spark plug (Includes items 2, 3, and 7)



BATTERY IGNITION

T-5987A

USAGE: Graders serial No. 3370 and up

* Model WD-45 engine

** Model 17 engine prior to serial No. 20389

*** Model 17 engine effective with serial No. 20389

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	226100	1	1	1	HOUSING ASSEMBLY, distributor drive (Includes item 3)
	910146	1	1	1	PIN, straight, round end, 1/4" x 3/4"
	903630	1	1	1	CAPSCREW, 3/8"NC x 1"
	904206	1	1	1	LOCKWASHER, 3/8"
2	225771	1	1	1	WASHER, plain
3	226236	2	2	2	BUSHING, drive housing
4	225078	1	1	1	GEAR, distributor drive
	910173	1	1	1	KEY, #2 woodruff, 3/32" x 1/2"
	915652	1	1	1	NUT, self-locking, 7/16"NF
5	226117	1	1	1	□ GASKET, distributor housing cover
6	226116	1	1	1	COVER, distributor housing
	903626	3	3	3	CAPSCREW, 5/16"NC x 3/4"
	904205	3	3	3	LOCKWASHER, 5/16"
	910335	2	2	-	WASHER, plain, SAE std., 5/16"
7	225606	1	1	1	CLAMP ASSEMBLY, ignition coil (Includes screw and nut. Serviced only as a unit)
	905661	-	-	2	CAPSCREW, 5/16"NC x 5/8"
	904205	-	-	2	LOCKWASHER, 5/16"
	910335	-	-	2	WASHER, plain, SAE std., 5/16"

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BATTERY IGNITION (Continued)

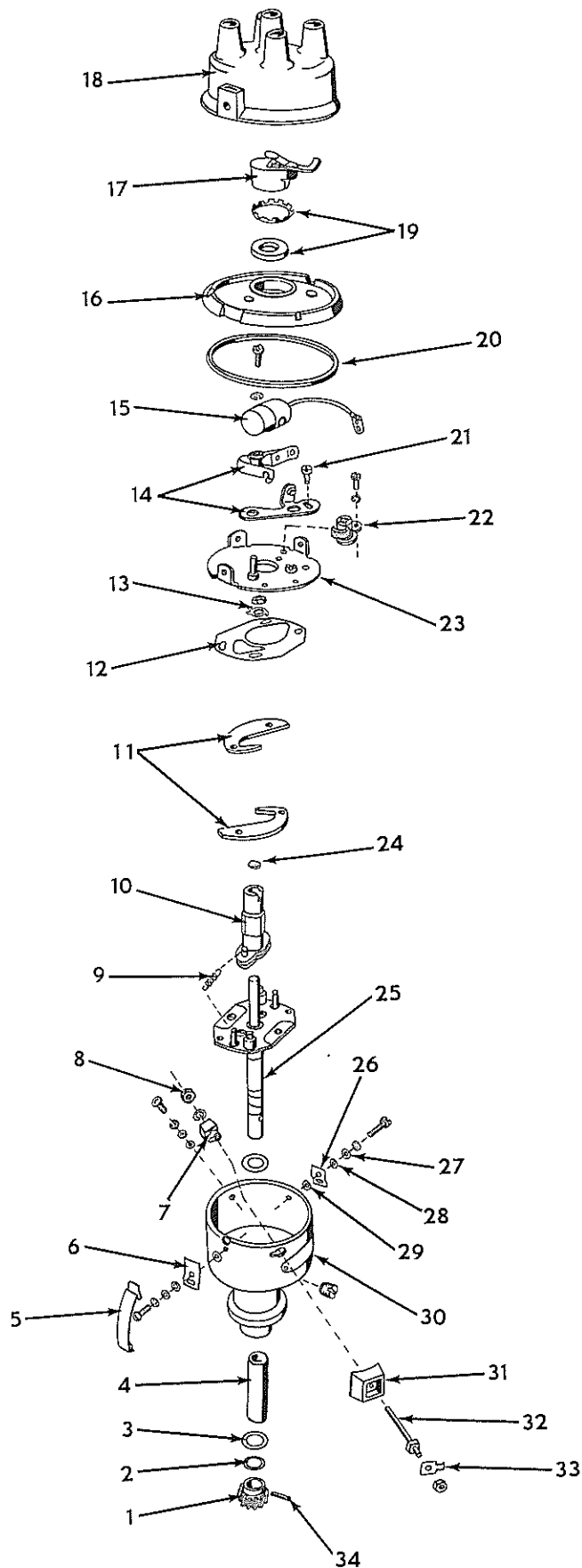
ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
8	229517	-	-	1	BRACKET, coil mounting
	903629	-	-	1	CAPSCREW, 3/8"NC x 3/4"
	911115	-	-	1	WASHER, plain, SAE std., 3/8"
9	247333	1	-	-	COIL ASSEMBLY, ignition(Includes item 7)
	4515665	-	1	1	COIL ASSEMBLY, ignition (Includes item 7)
10	225344	2	2	2	CLAMP, distributor retaining
11	226683	2	2	2	CAPSCREW, retaining clamp (Includes lockwasher)
12	208337	1	-	-	CABLE, primary, distributor to coil
	228131	-	1	1	CABLE, primary, distributor to coil
13	225073	1	1	1	NIPPLE, coil cable
14	-----	1	1	1	CABLE, secondary, coil to distributor (Order item 24)
15	224990	4	4	-	PLUG, spark (A-C)
	225000	4	4	-	PLUG, spark (Champion)
	225010	4	4	-	PLUG, spark (Autolite)
	232560	-	-	4	PLUG, spark (3/4" reach)(A-C)
	232977	-	-	4	PLUG, spark (3/4" reach)(Champion)
	224991	4	4	-	PLUG, spark (A-C)
	225001	4	4	-	PLUG, spark (Champion)
	227043	4	4	-	PLUG, spark (Autolite)
	232616	-	-	4	PLUG, spark (3/4" reach)(A-C)
	232978	-	-	4	PLUG, spark (3/4" reach)(Champion)
16	-----	2	2	2	CABLE, spark plug (9" long)
	-----	1	1	1	CABLE, spark plug (13" long)
	-----	1	1	1	CABLE, spark plug (17-1/2" long)
17	225484	5	5	5	NIPPLE, distributor cable
18	226021	1	-	-	DISTRIBUTOR ASSEMBLY (Order DISTRIBUTOR ASSY. 231769)
	229515	-	1	-	DISTRIBUTOR ASSEMBLY (Order DISTRIBUTOR ASSY. 231769)
	231769	-	-	1	DISTRIBUTOR ASSEMBLY
19	226376	1	1	1	CAP, oil filler (Includes item 20)
20	226374	1	1	1	GASKET, oil filler cap
21	233211	-	-	1	□GASKET, distributor base
22	233217	1	1	1	□GASKET, distributor drive housing
23	-----	1	1	1	SHAFT ASSEMBLY, drive (See GOVERNOR)
24	229867	1	1	1	CABLE SET (Includes items 13, 14, 16 and 17)(Not illustrated)

For gasoline

For low-grade fuel

Order item 24

See page 47 for parts



DISTRIBUTOR PARTS

T-3489

DISTRIBUTOR PARTS

* 226021 DISTRIBUTOR ASSEMBLY.
 ** 229515 DISTRIBUTOR ASSEMBLY.
 *** 231769 DISTRIBUTOR ASSEMBLY. } See page 44

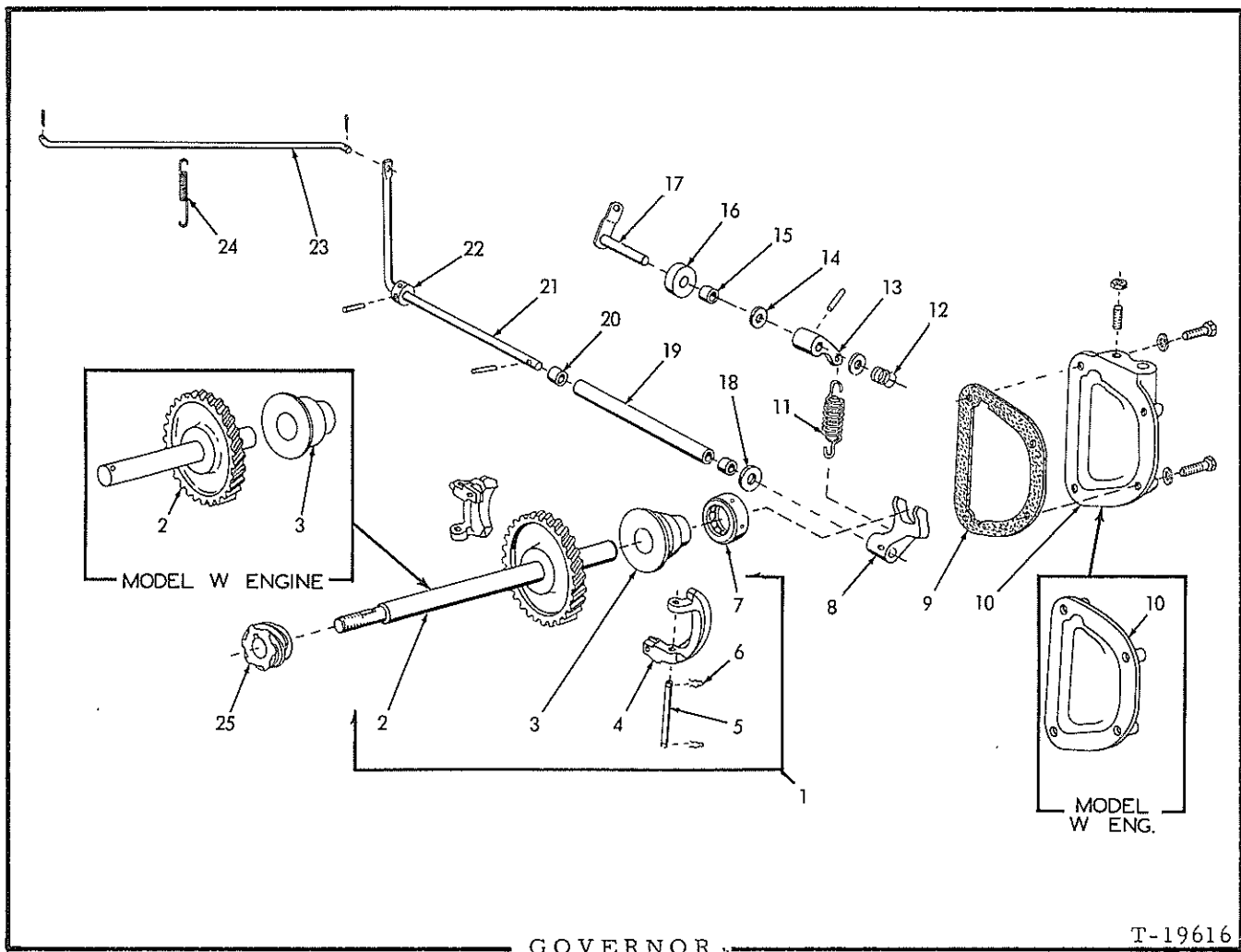
ITEM	PART NO.	QUANTITY	DESCRIPTION
		* ** ***	
1	226019	1 1 1	GEAR (12 teeth)
2	225797	- - -	SHIM, driven gear (.005" thick. Use as req'd)
3	225796	2 2 2	WASHER, thrust
4	225773	1 1 1	BUSHING
5	225774	2 2 2	CLIP, cap retaining
6	225775	1 1 1	SUPPORT, cap retaining clip, long
7	225793	1 1 1	INSULATOR, primary terminal stud, inside
8	917385 906964	1 1 1 1 1 1	NUT, primary terminal stud, inside LOCKWASHER, #8
9	225788	2 - -	SPRING, advance weight
	229516	- 2 -	SPRING, advance weight
	232829	- - 2	SPRING, advance weight
10	225783	1 1 -	CAM ASSEMBLY, circuit breaker (Serviced only as a unit)
	232827	- - 1	CAM ASSEMBLY, circuit breaker (Serviced only as a unit)
11	225787	4 2 -	WEIGHT, timing advance
	232828	- - 2	WEIGHT, timing advance
12	225789 910251	1 1 1 2 2 2	PLATE, weight retaining NUT, #10-32NF
13	922711	2 2 2	WASHER, weight retaining plate nut
14	225785	1 1 1	POINT SET, breaker (Serviced only as a unit)
15	225739 915966 906964	1 1 1 1 1 1 1 1 1	CONDENSER SCREW, machine, #8NC x 3/16" LOCKWASHER, #8
16	225734	1 1 1	COVER ASSEMBLY, circuit breaker (Includes items 19 and 20)
17	225736	1 1 1	ROTOR
18	225733	1 1 1	CAP ASSEMBLY (Includes center contact button)
19	225781	1 1 1	SEAL KIT, camshaft (1 seal and 1 retainer)
20	225735	1 1 1	GASKET, distributor cap
21	225786	1 1 1	SCREW, distributor point locking

(Continued)

DISTRIBUTOR PARTS (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
22	225740	1	1	-	LUBRICATOR, breaker cam
	915966	1	1	-	SCREW, machine, #8NC x 3/16"
	906964	1	1	-	LOCKWASHER, #8,
23	225778	1	1	1	PLATE ASSEMBLY, breaker point (Serviced only as a unit)
	912731	1	1	1	SCREW, machine, #8NC x 5/16"
	900553	2	2	2	SCREW, machine, #8NC x 1/2"
	912739	3	3	3	LOCKWASHER, #8
24	225784	1	1	1	WICK, camshaft oiling
25	226020	1	1	-	SHAFT ASSEMBLY (Serviced only as a unit)
	232826	-	-	1	SHAFT ASSEMBLY (Serviced only as a unit)
26	225776	1	1	1	SUPPORT, cap retaining clip, short
27	225780	3	3	3	RETAINER, breaker point plate screw gasket
28	225779	3	3	3	GASKET, breaker point plate screw
29	225777	2	2	2	GASKET, cap retaining clip support
30	225772	1	1	1	HOUSING ASSEMBLY (Includes item 4 and PLUG indented below)
	910230	1	1	1	PLUG pipe, slotted-hd., 1/8"NPT
31	225794	1	1	1	INSULATOR, primary terminal stud, outside
32	225791	1	1	1	STUD, primary terminal
	907154	1	1	1	NUT, #8NC
33	225795	1	1	1	LOCK, primary terminal outside nut
34	225798	1	1	1	PIN, driven gear

MEMO



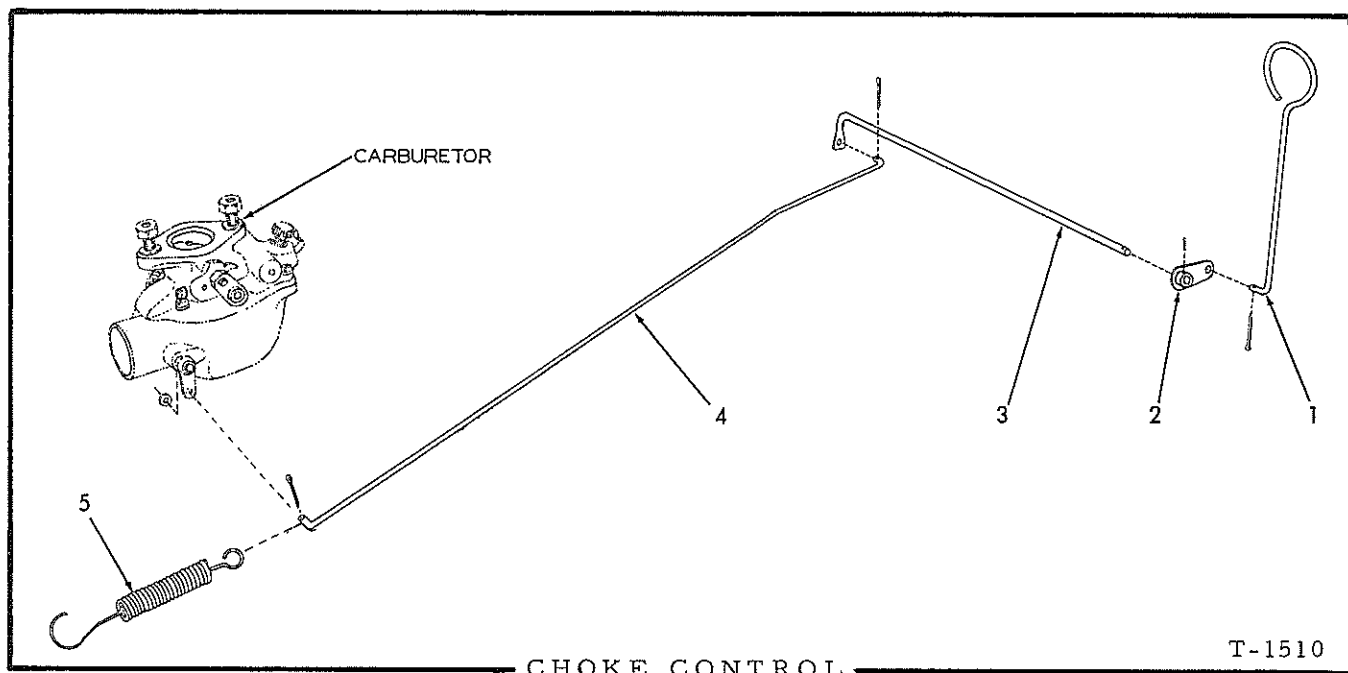
* Model W engine (Graders prior to serial No. 3370)
 ** Model WD-45 engine (Graders serial No. 3370 thru 5424)
 *** Model 17 engine (Graders serial No. 5425 and up)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	217050	1	-	-	GOVERNOR ASSEMBLY (Consists of items 2 thru 7)
	225077	-	1	1	GOVERNOR ASSEMBLY (Consists of items 2 thru 7)
2	217051	1	-	-	SHAFT ASSEMBLY
	225074	-	1	1	SHAFT ASSEMBLY
3	217054	1	-	-	CARRIER, thrust bearing
	226237	-	1	1	CARRIER, thrust bearing
4	229980	2	2	2	WEIGHT ASSEMBLY (Includes wear pin. Serviced only as a unit)
5	211368	2	2	2	PIN, weight pivot

(Continued)

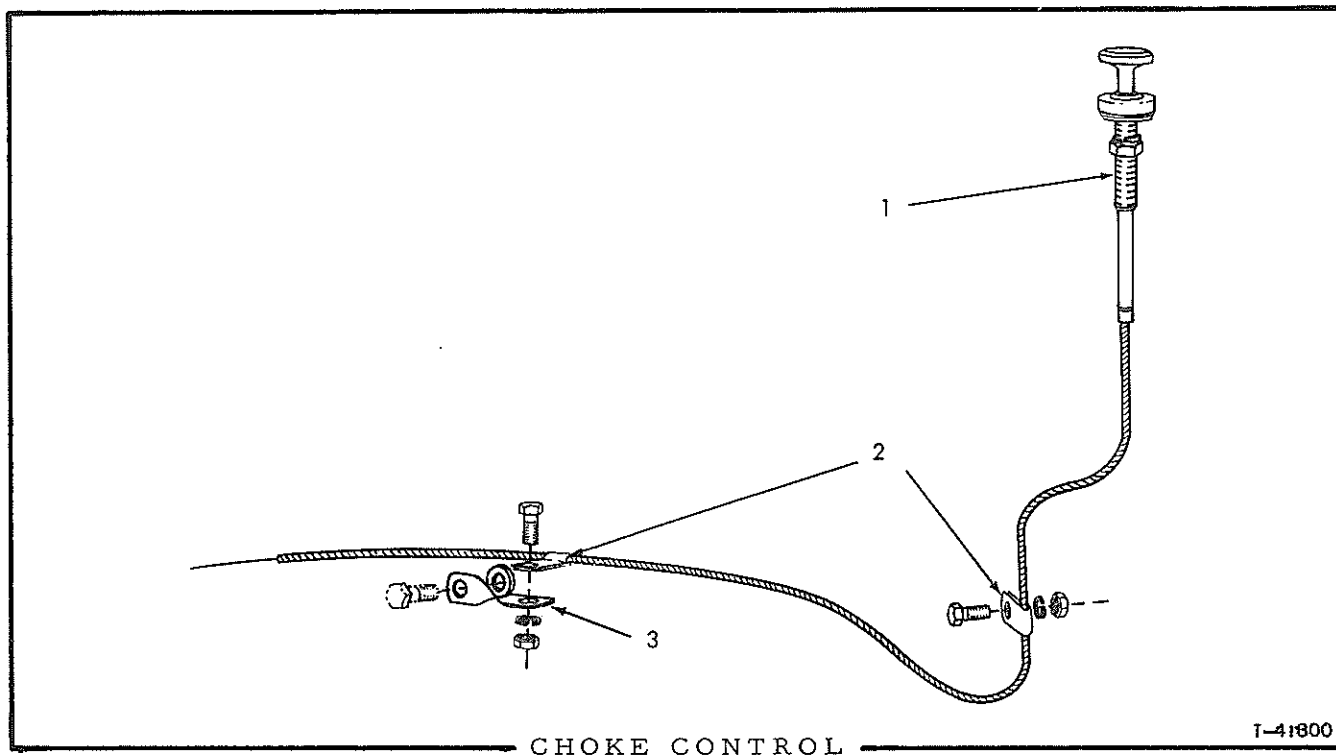
GOVERNOR (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
6	207719	4	4	4	CLIP, spring, weight pivot pin
7	215242	1	1	1	BEARING, ball, weight thrust
8	203094	1	1	1	LEVER, forked
	901357	1	1	1	PIN, taper, #0 x 3/4"
9	233215	1	1	1	□ GASKET, governor cover
10	-----	1	-	-	COVER, governor (Order COVER 229230, 1 WASHER 206782 1 CAPSCREW 910196, 1 PLUG 901651 and 2 CAPSCREWS 905818)
	905658	4	-	-	CAPSCREW, 1/4"NC x 1-1/4"
	904204	4	-	-	LOCKWASHER, 1/4"
	229230	-	1	1	COVER, governor
	921382	-	2	2	CAPSCREW, 1/4"NC x 1-1/4"
	921383	-	2	2	CAPSCREW, 1/4"NC x 1-1/2"
	230308	-	4	4	WASHER, plain (copper)
	917099	-	1	1	SETSCREW, hex-socket, cup-pt., 5/16"NC x 1"
	914321	-	1	1	NUT, jam, 5/16"NC
11	220702	1	1	-	SPRING ASSEMBLY
	229519	-	-	1	SPRING ASSEMBLY
					Each includes plunger. Serviced only as a unit.
12	208662	1	1	1	SPRING, control shaft
13	208817	1	1	1	LEVER, control
	901357	1	1	1	PIN, taper, #0 x 3/4"
14	208564	1	1	-	WASHER, control shaft (leather)
	208566	2	2	2	WASHER, control shaft (steel)
15	203097	1	1	1	BUSHING, control shaft
16	206072	1	1	1	SEAL, oil, control shaft
17	226627	1	1	-	SHAFT, control
	229231	-	-	1	SHAFT, control
18	218445	-	-	-	WASHER, cross shaft (.018" thick. Use as required)
	208566	-	-	-	WASHER, cross shaft, (.037"thick. Use as required)
	218444	-	-	-	WASHER, cross shaft (1/16" thick. Use as required)
19	203096	1	1	1	TUBE, cross shaft
20	203097	2	2	2	BUSHING, cross shaft
21	203095	1	1	1	SHAFT, operating
22	203098	1	1	1	COLLAR, cross shaft
	901357	1	1	1	PIN, taper, #0 x 3/4"
23	237203	1	1	1	LINK, carburetor
	900970	2	2	2	PIN, cotter, 1/16" x 1/2"
24	203208	1	-	-	SPRING, carburetor link (Used prior to engine #244001)
25	-----	-	1	1	GEAR, distributor drive (See BATTERY IGNITION)



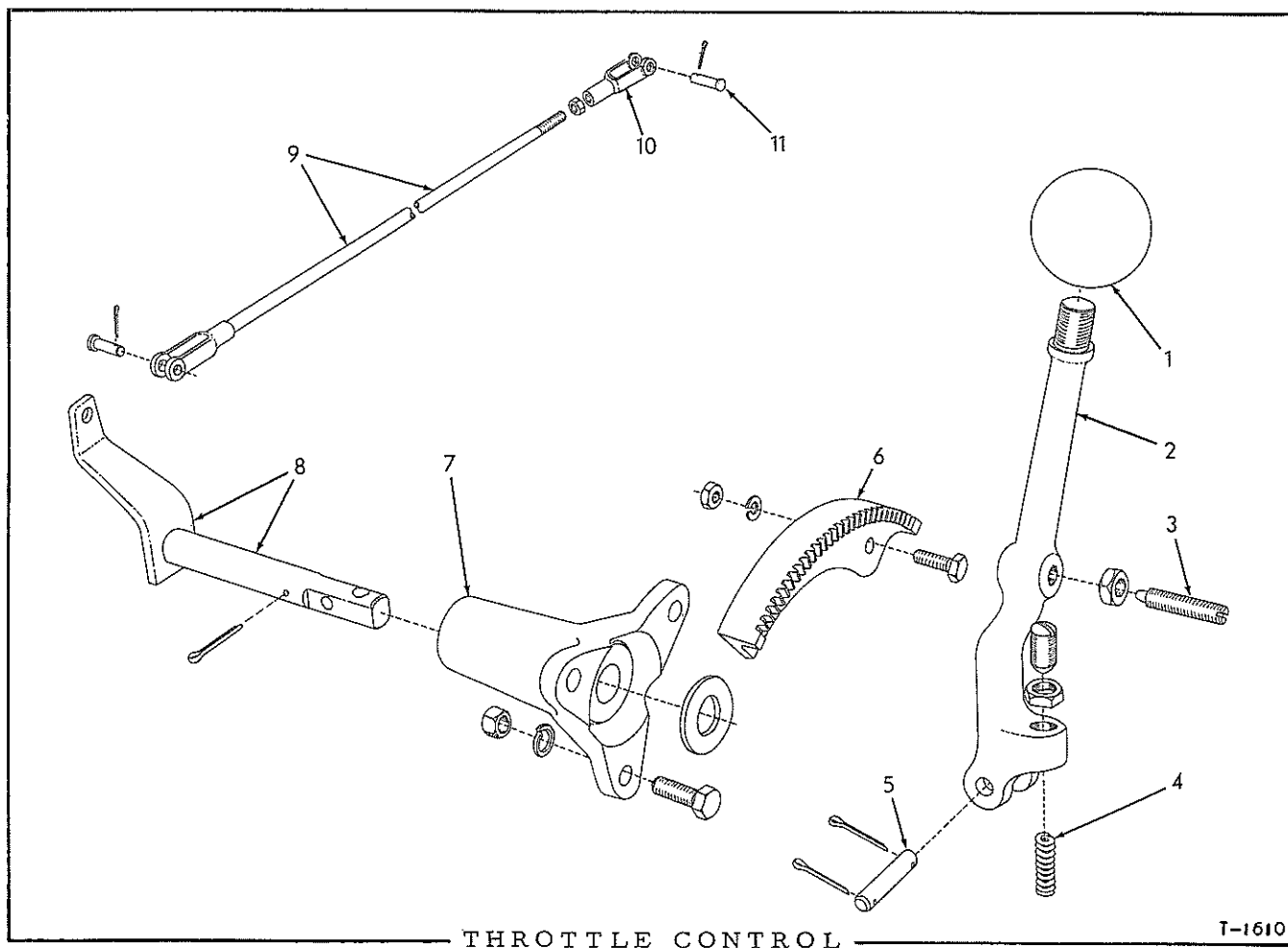
USAGE: Graders prior to serial No. 6159

ITEM	PART NO.	QTY.	DESCRIPTION
1	057339	1	ROD, operating
	900970	1	PIN, cotter, 1/16" x 1/2"
2	211786	1	LEVER, operating rod
	912384	1	PIN, groove, 3/32" x 1/2"
3	057340	1	ROD, cross (Used prior to grader #5425)
	095929	1	ROD, cross (Effective with grader #5425)
4	057341	1	ROD, cross rod to carburetor (Graders prior to #5425)
	-----	1	ROD, cross rod to carburetor (straight)(Graders #5425 thru #5678)(Discontinued)
	620273	1	ROD, cross rod to carburetor (bent) (Graders #5679 and up)
	900970	2	PIN, cotter, 1/16" x 1/2"
	906938	1	WASHER, plain
5	210742	1	SPRING, choke lever



USAGE: Graders serial No. 6159 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	641329	1	CONTROL, flexible cable
	911041	1	NUT, 3/8"NF
	904206	1	LOCKWASHER, 3/8"
2	200479	2	CLIP, cable supporting
	913017	1	CAPSCREW, 3/8"NF x 1"
	904206	1	LOCKWASHER, 3/8"
	911041	1	NUT, 3/8"NF
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
3	083530	1	BRACKET, cable supporting
	912476	1	WASHER, spacing



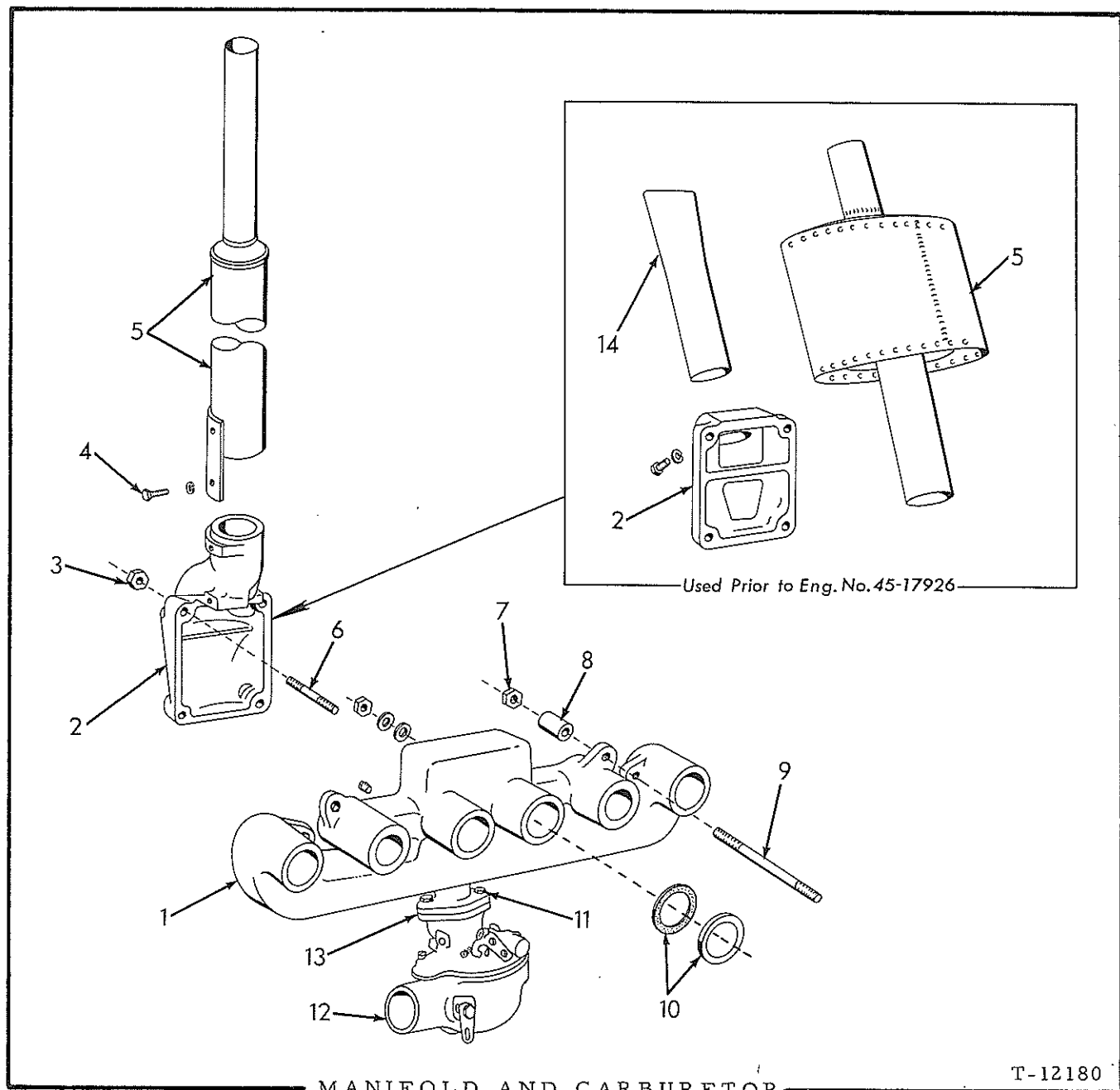
ITEM PART NO. QTY. DESCRIPTION

1	091862	1	KNOB, throttle lever
2	605988	1	LEVER, throttle
	914480	1	SETSCREW, slotted head, oval point, 7/16"NF x 3/4"
	910876	1	NUT, jam, 7/16"NF
3	605984	1	SETSCREW, locking, throttle lever
	906652	1	NUT, jam, 5/16"NC
4	051986	1	SPRING, throttle lever
5	605983	1	PIN, pivot, throttle lever
	900801	2	PIN, cotter, 3/32" x 3/4"
6	605986	1	QUADRANT
	912789	2	CAPSCREW, 1/4"NF x 3/4"
	904204	2	LOCKWASHER, 1/4"
	911040	2	NUT, 1/4"NF
7	060978	1	BRACKET
	913017	3	CAPSCREW, 3/8"NF x 1"
	904206	3	LOCKWASHER, 3/8"
	911041	3	NUT, 3/8"NF
	910255	1	WASHER, plain, SAE std., 3/4"

(Continued)

THROTTLE CONTROL (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
8	060979	1	SHAFT, throttle lever
	900807	1	PIN, cotter, 1/8" x 1-1/4"
9	{ 059616	1	ROD, control (Used prior to grader #5425)
	{ 095653	1	ROD, control (Effective with grader #5425)
	911040	1	NUT, 1/4"NF
10	628737	1	YOKE, control rod
11	628738	2	PIN, control rod yoke
	900970	2	PIN, cotter, 1/16" x 1/2"



MANIFOLD AND CARBURETOR
(For gasoline and low-grade fuels)

T-12180

USAGE: Standard on graders prior to serial No. 866; used thereafter on graders prior to serial No. 5425 if burning low-grade fuel (Model W and WD-45 engine)

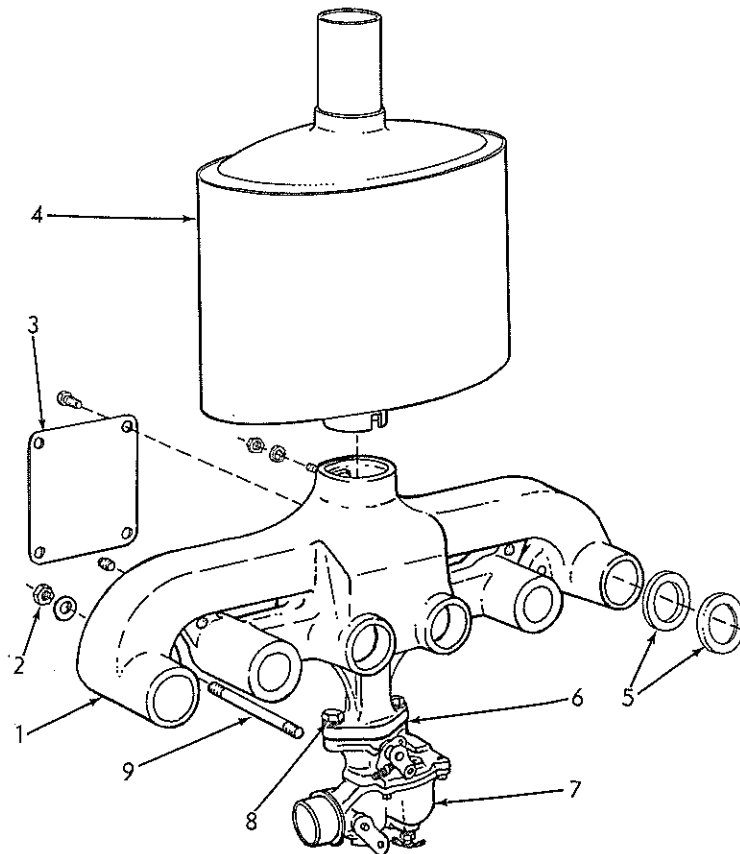
ITEM	PART NO.	QTY.	DESCRIPTION
1	229940	1	MANIFOLD ASSEMBLY, (Includes PLUG indented below)
	901651	1	PLUG, pipe, 1/8"NPT
2	203178	1	COVER, manifold (For burning gasoline)
	203179	1	COVER, manifold (For burning low-grade fuels)
	229950	1	COVER, manifold (Model WD-45 engines #45-17926 and up. When making first replacement also order CAPSCREW 229922)

Model W engines and
Model WD-45 engines
prior to #45-17926

(Continued)

MANIFOLD AND CARBURETOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION	
3	239400	4	NUT, manifold cover stud	
4	226169	2	CAPSCREW, muffler retaining (3/8"NC) (Original equipment)	Model WD-45 engines #45-17926 and up only
	904206	2	LOCKWASHER, 3/8"	
	229922	2	CAPSCREW, muffler retaining (7/16"NC) (Service replacement only)	
	904207	2	LOCKWASHER, 7/16"	
5	212479	1	MUFFLER, exhaust (Special equipment for Model W engines and Model WD-45 engines prior to #45-17926)	
	905661	1	CAPSCREW, 5/16"NC x 5/8"	
	904205	1	LOCKWASHER, 5/16"	
	229531	1	MUFFLER, exhaust (Standard equipment on Model WD-45 engines #45-17926 and up)	
6	238118	4	STUD, manifold cover (3/8"NC x 1-5/8")	
7	239400	6	NUT, manifold stud	
	911115	4	WASHER, plain, SAE std., 3/8" (For two center studs only)	
8	203161	4	SPACER, manifold stud nut	
9	203072	6	STUD, manifold (3/8"NC x 4-7/16")	
10	229958	1	□ GASKET SET, manifold to head (6 gaskets and 6 retainers)	
11	230917	2	STUD, carburetor attaching (5/16"NC x 1-5/16")	
	900366	2	NUT, 5/16"NC	
	904205	2	LOCKWASHER, 5/16"	
12	213348	1	CARBURETOR (Zenith. See page 67 for parts. Optional with 222089)	Model W engine
	222089	1	CARBURETOR (Marvel-Schebler. See page 71 for parts. Optional with 213348)	
	226275	1	CARBURETOR (Marvel-Schebler, See page 75 for parts) (Original equipment on Model WD-45 engines. Order CARBURETOR 239961 and cable type CHOKE CONTROL shown on page 53)	
13	233209	1	□ GASKET, carburetor to manifold	
14	203180	1	PIPE, exhaust (Standard on Model W engines and Model WD-45 engines prior to #45-17926)	
	905661	1	CAPSCREW, 5/16"NC x 5/8"	
	904205	1	LOCKWASHER, 5/16"	



MANIFOLD AND CARBURETOR
(For gasoline)

T-2572

USAGE: Standard equipment on graders serial No. 866 thru 3369.(Model W engines)

ITEM PART NO. QTY. DESCRIPTION

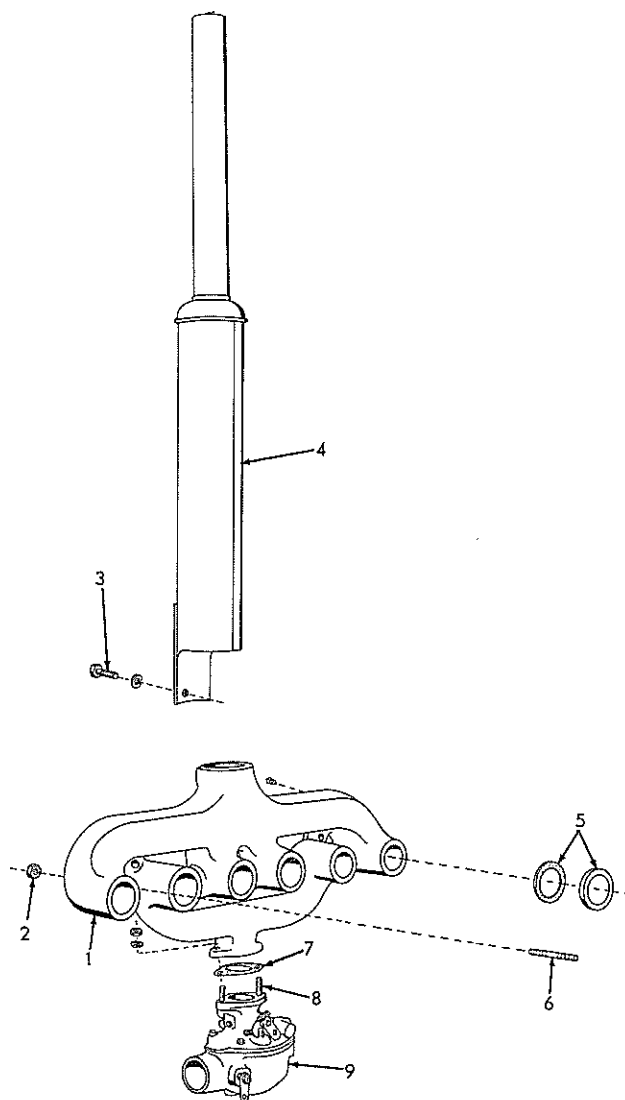
1	224782	1	MANIFOLD ASSEMBLY, intake and exhaust (Includes PLUG 901651)
	901651	1	PLUG, pipe, 1/8"NPT
	903627	2	CAPSCREW, 3/8"NC x 1/2"
	904206	2	LOCKWASHER, 3/8"
2	239400	6	NUT, manifold stud
	911115	6	WASHER, plain, SAE std., 3/8"
3	212767	1	COVER, exhaust manifold (Used on graders prior to #1001)
	903629	4	CAPSCREW, 3/8"NC x 3/4"
4	210137	1	MUFFLER, exhaust
	910574	1	BOLT, machine, 3/8"NC x 1" (Includes nut)
	904206	1	LOCKWASHER, 3/8"
5	229958	1	□ GASKET SET, manifold to head (6 gaskets and 6 retainers)
6	233209	1	□ GASKET, carburetor to manifold

(Continued)

MANIFOLD AND CARBURETOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
7	213348	1	CARBURETOR (Zenith. See page 67 for parts)(Optional with 222089)
	222089	1	CARBURETOR (Marvel-Schebler See page 71 for parts)(Optional with 213348)
8	230917	2	STUD (5/16"NC x 1-5/16")
	900366	2	NUT, 5/16"NC
	903771	2	CAPSCREW, 5/16"NC x 7/8" (Late engines)
	904205	2	LOCKWASHER, 5/16"
9	203072	6	STUD, manifold (3/8"NC x 4-7/16")

} Early engines only



MANIFOLD AND CARBURETOR
(For gasoline)

T-10481

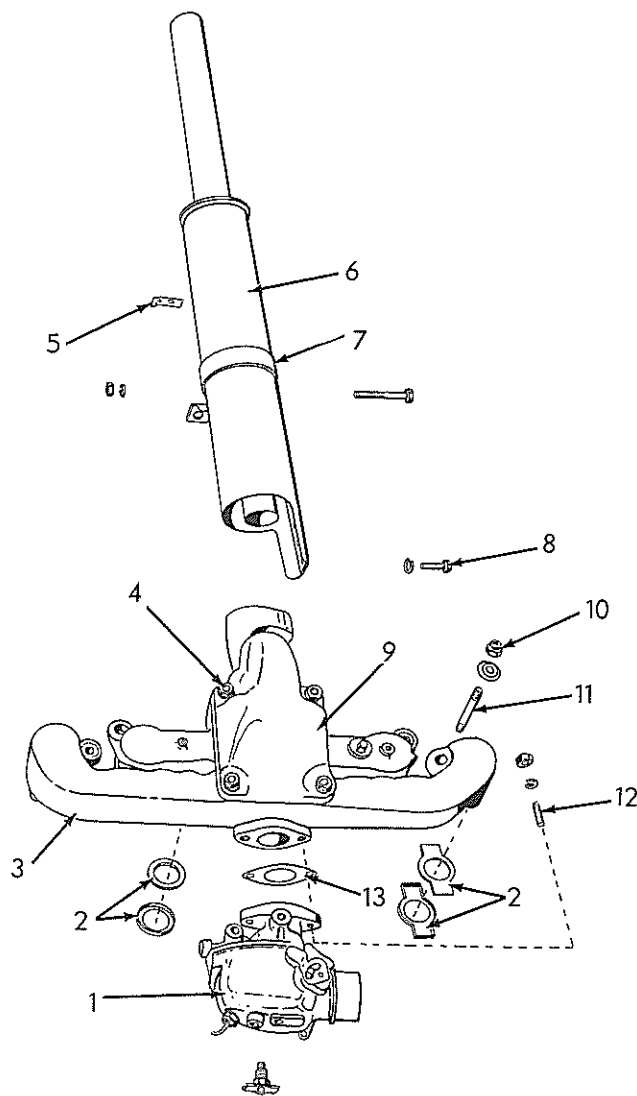
USAGE: Standard equipment on graders serial No. 3370 thru 5424 (Model WD-45 engine)

ITEM	PART NO.	QTY.	DESCRIPTION
1	229416	1	MANIFOLD ASSEMBLY, intake and exhaust (Includes
	901651	1	PLUG indented below)
			PLUG, pipe, 1/8"NPT
2	239400	6	NUT, manifold stud
3	226169	2	CAPSCREW, muffler retaining
	904206	2	LOCKWASHER, 3/8"
4	229531	1	MUFFLER, exhaust

(Continued)

MANIFOLD AND CARBURETOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	229958	1	☐ GASKET SET, manifold to head (6 gaskets and 6 retainers)
6	203072	6	STUD, manifold (3/8"NC x 4-7/16")
7	233209	1	☐ GASKET, carburetor to manifold
8	230917	2	STUD, carburetor attaching (5/16"NC x 1-5/16")
	904205	2	LOCKWASHER, 5/16"
	900366	2	NUT, 5/16"NC
9	226275	1	CARBURETOR (Marvel-Schebler See page 75 for parts) (Discontinued. Order CARBURETOR 239961 and cable type CHOKE CONTROL shown on page 53)



MANIFOLD AND CARBURETOR
(For low-grade fuels)

T-8466

USAGE: Graders serial No. 5425 and up (Model 17 engine)(Production discontinued)

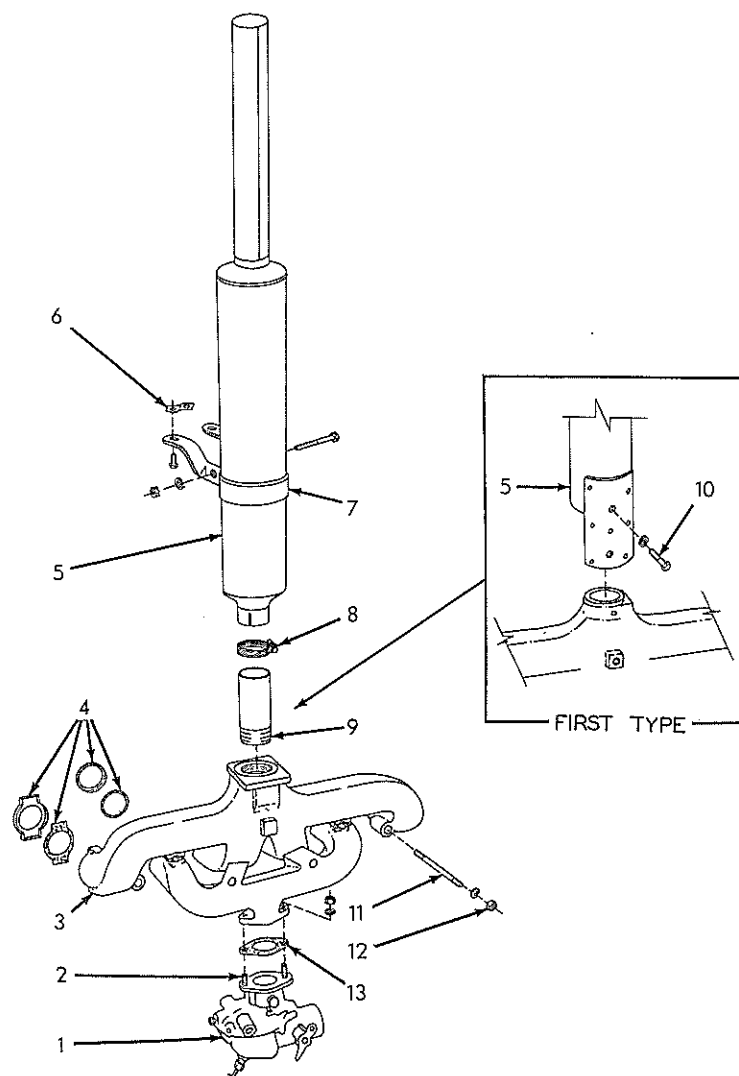
ITEM PART NO. QTY. DESCRIPTION

1	229342	1	CARBURETOR ASSEMBLY (Zenith. See page 79 for parts) (Used prior to engine #20389)
	231431	1	CARBURETOR ASSEMBLY (Marvel-Schebler. See page 75 for parts)(Used on engines #20389 and up. Order CARBURETOR 239961 and cable type CHOKE CONTROL shown on page 53)
2	229958	1	□ GASKET SET, manifold to head (6 gaskets and 6 retainers)
3	229940	1	MANIFOLD ASSEMBLY, intake and exhaust (Includes PLUG indented below)
	901651	1	PLUG, pipe, 1/8"NPT

(Continued)

MANIFOLD AND CARBURETOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
4	229969	4	CAPSCREW, cover retaining
	904206	4	LOCKWASHER, 3/8"
5	229534	2	NUT, supporting bracket screw (Engines prior to #20389)
6	229531	1	MUFFLER, exhaust
7	229532	1	BRACKET, muffler supporting (Engines prior to #20389)
	918989	2	SCREW, thread-cutting, hex-hd., 5/16"NC x 5/8"
	903635	1	CAPSCREW, 3/8"NC x 2-1/2"
	904206	1	LOCKWASHER, 3/8"
	910324	1	NUT, 3/8"NC
8	229922	2	CAPSCREW, muffler retaining
	904207	2	LOCKWASHER, 7/16"
9	229950	1	COVER, exhaust manifold
10	229340	8	NUT, manifold stud (elastic stop, 7/16"NF)
11	229339	6	STUD, manifold
	911381	6	WASHER, plain, 15/32"I. D.
12	230917	2	STUD, carburetor attaching
	904205	2	LOCKWASHER, 5/16"
	900366	2	NUT, 5/16"NC
13	233209	1	□ GASKET, carburetor to manifold



MANIFOLD AND CARBURETOR
(For gasoline)

T-41825

USAGE: Graders serial no. 5425 and up (Model 17 engine)

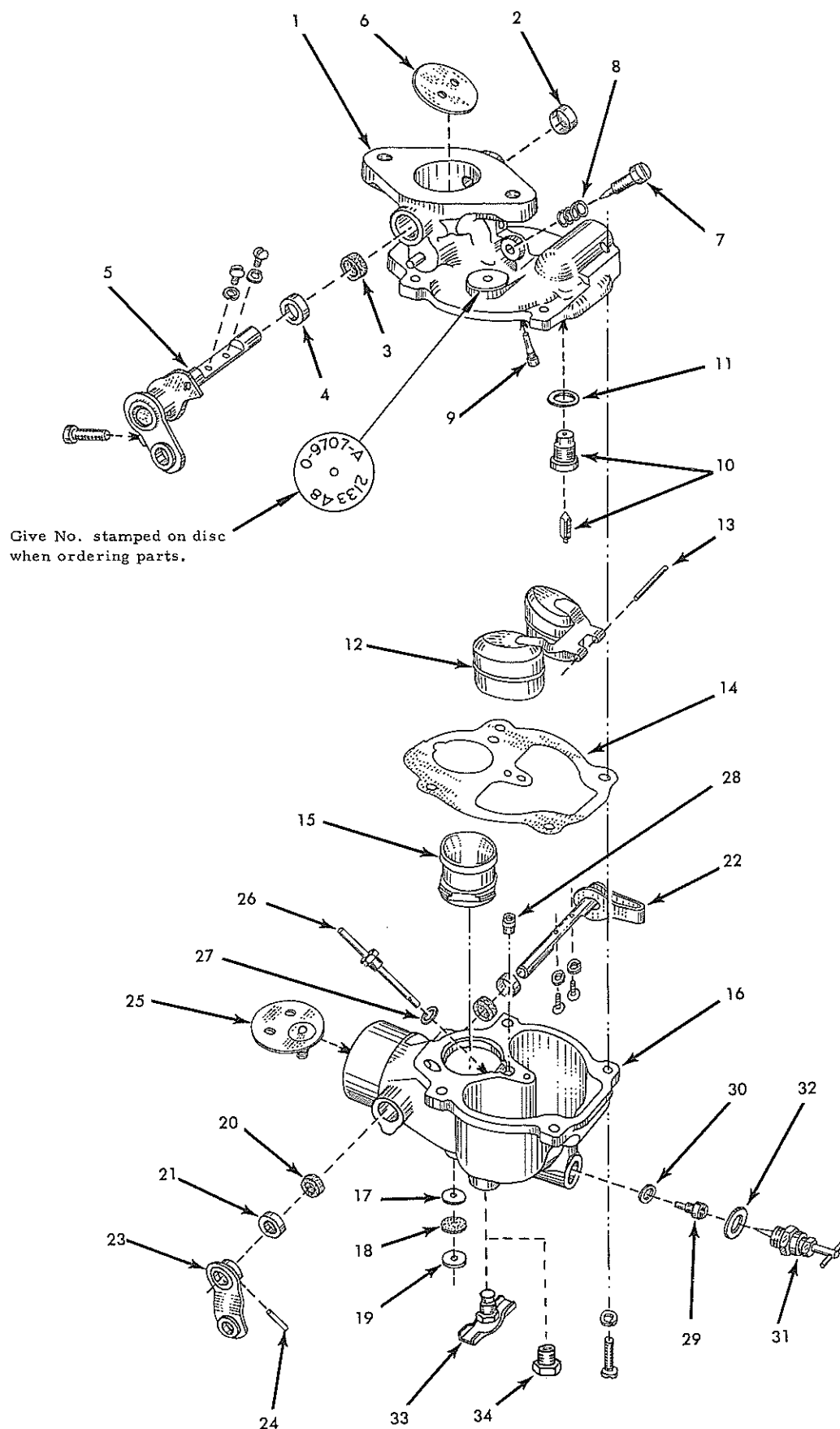
ITEM PART NO. QTY. DESCRIPTION

1	229342	1	CARBURETOR ASSEMBLY (Zenith. See page 79 for Parts)(Used prior to engine #20389)
	231431	1	CARBURETOR ASSEMBLY (Marvel-Schebler. See page 75 for parts)(Effective with engine #20389 but later discontinued on grader #6159. Order CARBURETOR 239961 and cable type CHOKE CONTROL shown on page 53)
	239961	1	CARBURETOR ASSEMBLY (Marvel-Schebler. See page 83 for parts)(Graders #6159 and up)
2	230917	2	STUD, carburetor attaching
	904205	2	LOCKWASHER, 5/16"
	900366	2	NUT, 5/16"NC

(Continued)

MANIFOLD AND CARBURETOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
3	229416	1	MANIFOLD ASSEMBLY, intake and exhaust (Includes PLUG indented below)(Graders prior to #5856)
	901651	1	PLUG, pipe, 1/8"NPT
	230807	1	MANIFOLD, intake and exhaust (Graders #5856 and up)
4	229958	1	□ GASKET SET, manifold (6 gaskets and 6 retainers)
5	229531	1	MUFFLER, exhaust (3-1/4"diam.)(Used prior to grader #5856)
	234494	1	MUFFLER, exhaust (4-1/4 diam.)(Graders #5856 and up)
6	229534	2	NUT, supporting bracket screw (Engines prior to #20389)
7	229532	1	BRACKET, muffler supporting (Engines prior to #20389)
	918989	2	SCREW, thread-cutting, hex-hd., 5/16"NC x 5/8"
	903635	1	CAPSCREW, 3/8"NC x 2-1/2"
	904206	1	LOCKWASHER, 3/8"
	910324	1	NUT, 3/8"NC
8	245444	1	CLAMP ASSEMBLY, muffler (Includes bolt and nut)(Graders #5856 and up)
9	234541	1	PIPE, exhaust manifold (Graders #5856 and up)
10	229922	2	CAPSCREW, muffler retaining (Graders prior to #5856)
	904207	2	LOCKWASHER, 7/16"
11	229339	6	STUD, manifold
	911998	6	WASHER, plain
12	229340	6	NUT, manifold stud (elastic stop, 7/16"NF)
13	233209	1	□ GASKET , carburetor to manifold



T-289

CARBURETOR ASSEMBLY 213348

CARBURETOR ASSEMBLY 213348
(Zenith)

USAGE: See pages 56 and 58

ITEM	PART NO.	QTY.	DESCRIPTION
1	225881	1	BODY ASSEMBLY, throttle (Includes 1 priming plug, 1 throttle stop pin, 1 name plate, 1 float bracket and items 2 thru 6)
2	224027	1	PLUG, cup, throttle shaft hole
3	224053	1	PACKING, throttle shaft
4	223974	1	RETAINER, throttle shaft packing
5	223795	1	SHAFT ASSEMBLY, throttle (Includes 1 lever, 1 taper pin and 1 SCREW 915662)
	915662	1	SCREW, machine, fil-hd., #8-36NF x 5/8"
6	224411	1	PLATE, throttle
	915663	2	SCREW, machine, brass, #5-40NC x 3/16"
	915664	2	LOCKWASHER, #5
7	223814	1	SCREW, idling adjustment
8	223946	1	SPRING, idling adjustment screw
9	223879	1	JET, idling (size 12)
10	223914	1	VALVE ASSEMBLY, fuel (size 35)(Consists of 1 needle, 1 seat and item 11. Serviced only as a unit)
11	224151	1	O GASKET, fuel valve
12	223920	1	FLOAT, fuel valve
13	230746	1	PIN, fuel valve float
14	223987	1	O GASKET, fuel bowl
15	223809	1	VENTURI (size 18)
16	223773	1	BOWL ASSEMBLY, fuel (Includes choke locating pin, choke stop pin, and items 17 thru 21)
	907676	4	SCREW, machine, fil-hd., #10-32NF x 5/8"
	904203	4	LOCKWASHER, #10
17	224049	1	WASHER, air intake drain
18	224055	1	PACKING, air intake drain (felt)
19	227106	1	PLUG, expansion, air intake drain hole
20	224053	2	PACKING, choke shaft
21	223974	2	RETAINER, choke shaft packing
22	223943	1	SHAFT ASSEMBLY, choke (Includes friction lever. Serviced only as a unit)
			O Components of item 35

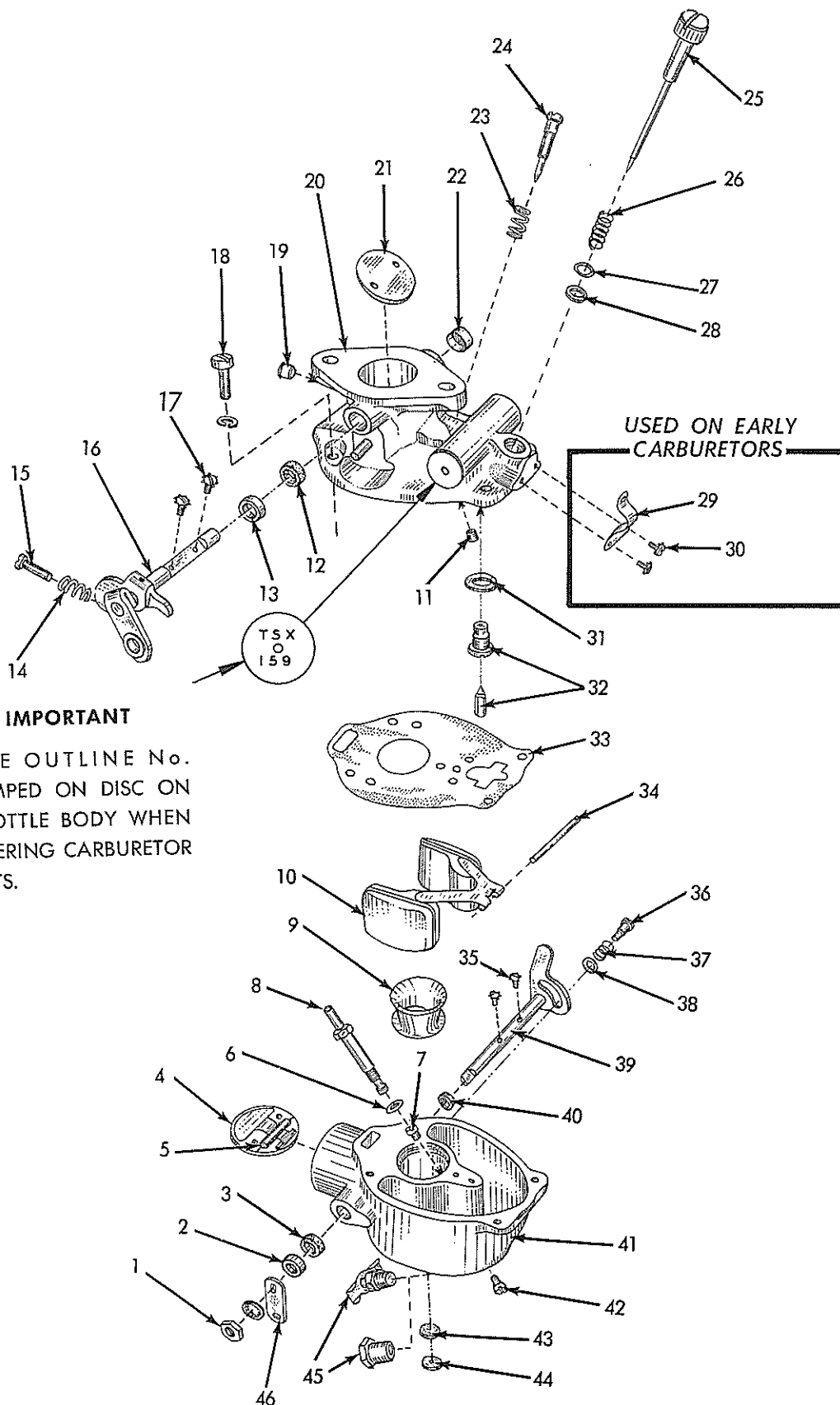
(Continued)

CARBURETOR ASSEMBLY 213348 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
23	224019	1	LEVER, choke
24	224059	1	PIN, taper
25	223926	1	PLATE ASSEMBLY, choke (Includes poppet valve. Serviced only as a unit)
	915663	2	SCREW, machine, brass, #5-40NC x 3/16"
	915664	2	LOCKWASHER, #5
26	223893	1	JET, discharge (size 50)
27	224162	1	□GASKET, discharge jet
28	223906	1	VENT, well (size 22)
29	223860	1	JET, main (size 27)
30	224153	1	□GASKET, main jet
31	223897	1	NEEDLE ASSEMBLY, main jet adjustment (Serviced only as a unit)
32	224152	1	□GASKET, main jet needle
33	915514	1	COCK, fuel bowl drain
34	224061	1	PLUG, fuel bowl drain
35	224008	1	GASKET SET, (Includes items 11, 14, 27, 30 and 32)(Not illustrated)
			□Components of item 35

} Optional

MEMO



IMPORTANT

GIVE OUTLINE No.
STAMPED ON DISC ON
THROTTLE BODY WHEN
ORDERING CARBURETOR
PARTS.

CARBURETOR ASSEMBLY 222089
(Marvel-Schebler)

USAGE: See pages 56 and 58

ITEM	PART NO.	QTY.	DESCRIPTION
1	219996	1	NUT, retaining, choke shaft lever
	909367	1	LOCKWASHER, int-tooth, 1/4"
2	219968	1	RETAINER, choke shaft packing
3	219969	1	PACKING, choke shaft
4	224885	1	PLATE ASSEMBLY, choke (Includes flapper valve and item 5)
5	226483	1	SPRING, choke plate
6	219999	1	GASKET, discharge nozzle
7	219991	1	JET, main
8	219990	1	NOZZLE, discharge
9	219989	1	VENTURI
10	219985	1	FLOAT, fuel valve
11	220006	1	JET, idling
12	219969	1	PACKING, throttle shaft (felt)(Used prior to 1951)
	224949	1	SEAL, throttle shaft (rubber)(Used after 1950)
13	219968	1	RETAINER, throttle shaft packing
14	219977	1	SPRING, throttle lever stop screw
15	220000	1	SCREW, stop, throttle lever
16	219970	1	SHAFT ASSEMBLY, throttle (Includes 1 lever, 1 stop, and items 14 and 15)
17	219973	2	SCREW, throttle plate (Includes lockwasher)
18	219972	4	SCREW, fuel bowl (Includes lockwasher)
19	219974	1	PLUG, throttle body (Screw type)(Used prior to 1950)
	800465	1	PLUG, throttle body (Drive type)(Used after 1949)
20	219993	1	BODY ASSEMBLY, throttle (Includes 1 name plate, 1 throttle stop pin, 1 float bracket, and items 12, 13, 16, 17, 19, 21 and 22)
21	219971	1	PLATE, throttle
22	219992	1	CUP, throttle shaft hole
23	219978	1	SPRING, idling adjustment needle
24	219987	1	NEEDLE, idling adjustment
25	224855	1	NEEDLE ASSEMBLY, main jet adjustment
			Components of item 48

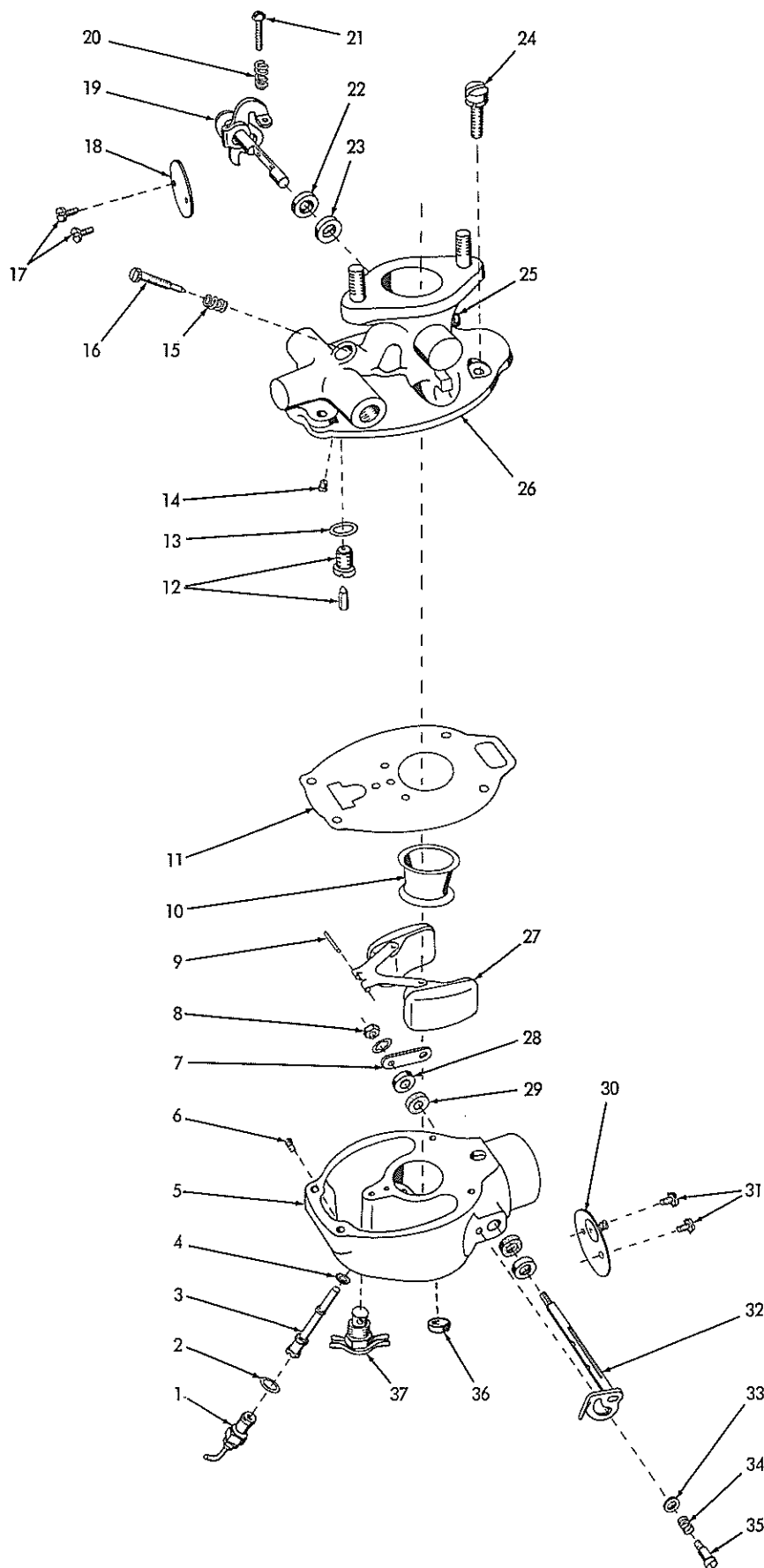
(Continued)

CARBURETOR ASSEMBLY 222089 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
26	224854	1	SPRING, main jet adjustment needle
27	219994	1	WASHER, main jet adjustment needle
28	219995	1	□GASKET, main jet adjustment needle
29	219981	1	RATCHET, main jet adjustment needle (Early units only)
30	219973	2	SCREW, (Includes lockwasher)
31	219998	1	GASKET, fuel valve
32	244912	1	□VALVE ASSEMBLY, fuel (Consists of 1 needle, 1 seat and item 31) (Serviced only as a unit)
33	219976	1	□GASKET, fuel bowl
34	219986	1	□PIN, fuel valve float
35	219973	2	□SCREW, choke plate (Includes lockwasher)
36	219975	1	SCREW, choke friction lever
37	219979	1	□SPRING, choke friction lever
38	219997	1	WASHER, choke friction lever
39	219983	1	SHAFT ASSEMBLY, choke (Includes friction lever)
40	219969	1	□PACKING, choke shaft
41	219966	1	BOWL ASSEMBLY, fuel (Includes items 2, 3, and 42)
42	224967	1	PLUG, fuel bowl (Used after 1950)
43	219967	1	STRAINER, air intake drain (felt)
44	220004	1	PLUG, expansion, air intake drain
45	915514	1	COCK, fuel bowl drain
	224061	1	PLUG, fuel bowl drain
			} Optional
46	231433	1	LEVER, choke shaft
47	220009	1	GASKET SET, (Includes items 6, 28, 31, and 33; also new carburetor flange gasket)(Not illustrated)
48	220010	1	REPAIR KIT (Includes items 2, 3, 6, 7, 11, 12, 16, 17, 22, 24, 28, 32 thru 35, 37 and 40; also new carburetor flange gasket)(Not illustrated)
			□Components of item 48)

Discontinued in
year 1948

MEMO



CARBURETOR ASSEMBLIES 226275 and 231431

T-24160

CARBURETOR ASSEMBLIES 226275 and 231431
(Marvel-Schebler)

USAGE: See pages 56, 60, 62 and 64

ITEM	PART NO.	QTY.	DESCRIPTION
1	226479	1	NEEDLE and SEAT ASSEMBLY, main adjustment
2	226466	1	GASKET, main adjustment needle seat
3	226460	1	NOZZLE
4	226468	1	GASKET, nozzle
5	226449	1	BOWL ASSEMBLY (Includes items 28, 29 and 36)
6	226469	1	□JET, power (Not used on alcohol carburetor)
7	231433	1	LEVER, choke
8	219996	1	NUT, choke shaft
	909367	1	LOCKWASHER, internal-teeth, cd. -pltd., 1/4"
9	226457	1	□SHAFT, float lever
10	226448	1	VENTURI
11	226452	1	GASKET, fuel bowl
12	226458	1	□VALVE ASSEMBLY, float (Includes seat and gasket)
13	219998	1	GASKET, valve float
14	220006	1	□JET, idling
15	219978	1	SPRING, idle adjustment needle
16	219987	1	□NEEDLE, idle adjustment
17	226444	2	□SCREW, throttle plate (Includes lockwasher)
18	226443	1	PLATE, throttle
19	231437	1	□SHAFT ASSEMBLY, throttle (Includes lever, pin, spring screw and bushing)
20	219977	1	SPRING, throttle stop
21	220000	1	SCREW, stop, throttle
22	226447	1	□RETAINER, seal throttle shaft
23	226446	1	□SEAL, throttle shaft
24	226451	4	SCREW, bowl (Includes lockwasher)
25	800465	1	PLUG, drive (Date plate)
26	-----	1	BODY ASSEMBLY (Not serviced separately)
27	226456	1	FLOAT and LEVER ASSEMBLY

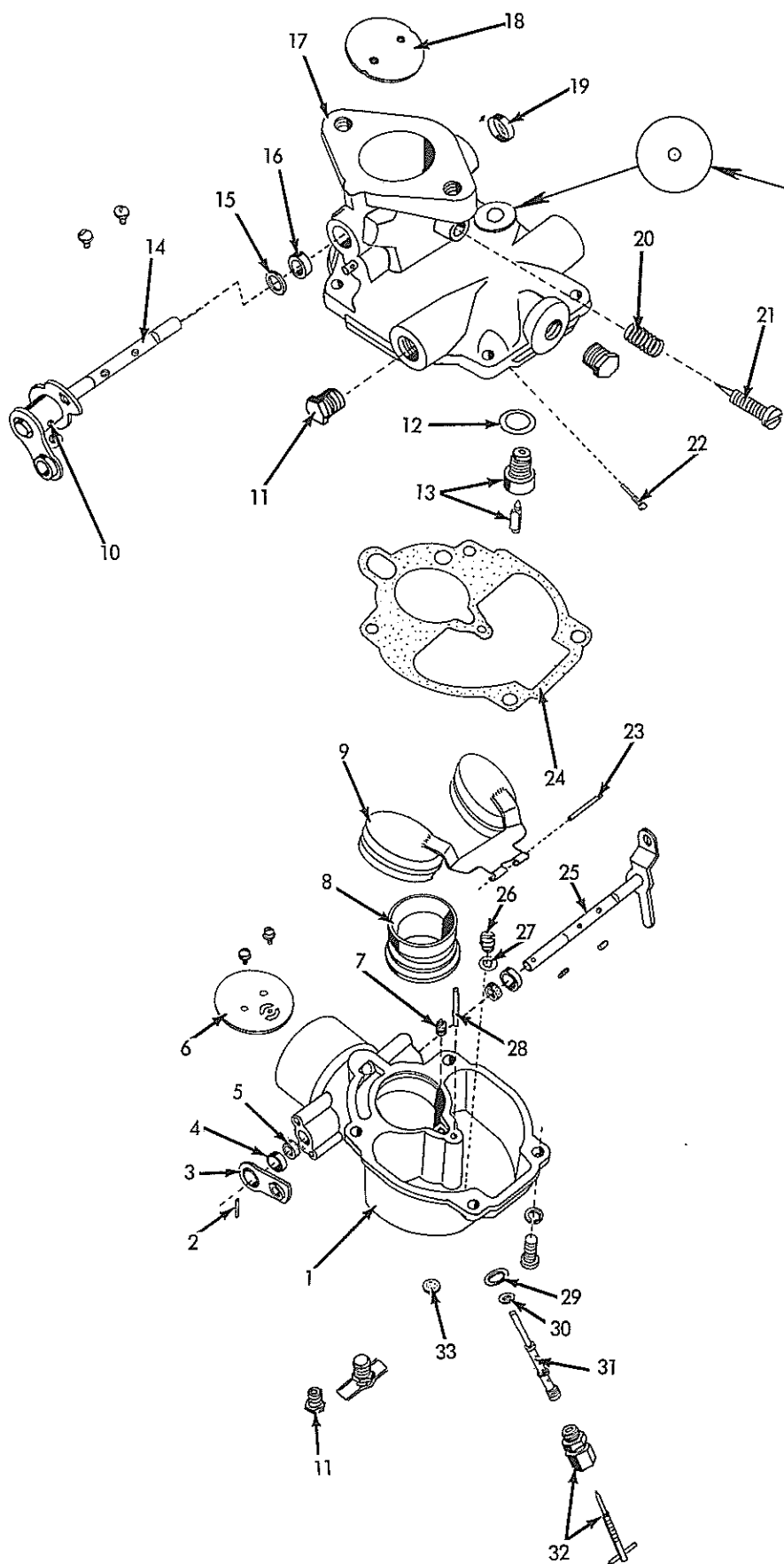
□Components of item 39

(Continued)

CARBURETOR ASSEMBLIES 226275 and 231431 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
28	219968	2	□RETAINER, packing, choke shaft
29	219969	2	□PACKING, choke shaft
30	226453	1	PLATE ASSEMBLY, choke (Includes poppet valve, spring and retainer)
31	226444	2	□SCREW, choke plate (Includes lockwasher)
32	226455	1	SHAFT ASSEMBLY, choke
33	219997	1	WASHER, choke friction lever
34	219979	1	□SPRING, choke friction lever
35	219975	1	SCREW, choke friction lever
36	219967	1	STRAINER
37	915514	1	COCK, drain, fuel bowl
38	226470	1	□GASKET SET (Includes items 2, 4, 11, and 13; also new carburetor flange gasket)(Not illustrated)
39	231439	1	CARBURETOR KIT, (Includes items 6, 9, 12, 14, 16, 17, 19, 22, 23 28, 29 31, 34 and 38)(Not illustrated)
			□Components of item 39

MEMO



IMPORTANT
GIVE OUTLINE No.
STAMPED ON DISC ON
THROTTLE BODY WHEN
ORDERING CARBURETOR
PARTS.

CARBURETOR ASSEMBLY 229342

T-8717

CARBURETOR ASSEMBLY 229342
(Zenith)

USAGE: See pages 62 and 64

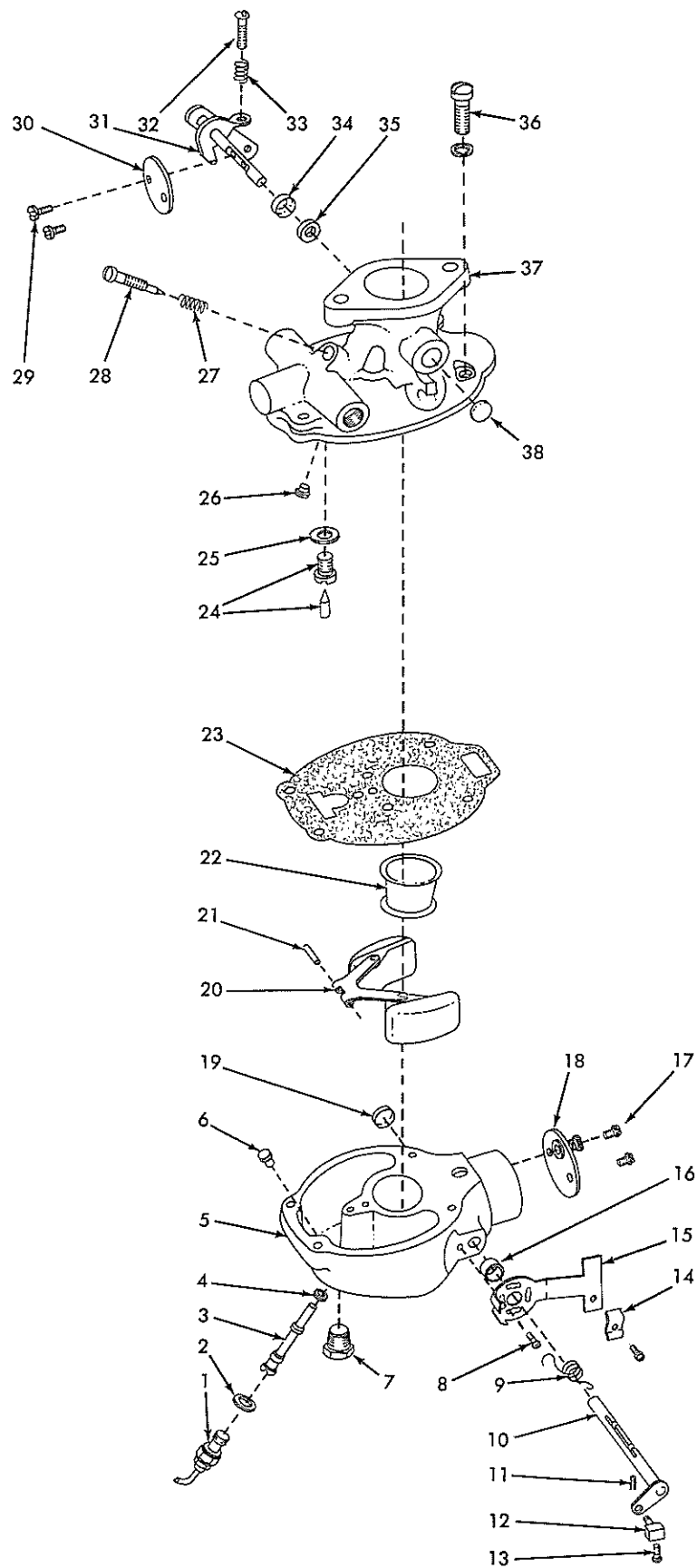
ITEM	PART NO.	QTY.	DESCRIPTION
1	230384	1	BOWL ASSEMBLY, fuel (Includes items 4, 5, 28 and 33)
	915514	1	COCK, drain, 1/8"NPT (Used with low-grade fuel only. See item 11)
	917074	4	□SCREW, machine, fil-hd., #12-24NC x 5/8"
	906965	4	□LOCKWASHER, #12
2	224059	1	PIN, taper, choke lever
3	227109	1	LEVER, choke
4	223974	2	□RETAINER, choke shaft packing
5	224053	2	□PACKING, choke shaft
6	227108	1	PLATE, choke
	915663	2	□SCREW, machine, brass, #5-40NC x 3/16"
	915664	2	□LOCKWASHER, #5
7	230389	1	□JET, well vent (size 32)
8	230386	1	VENTURI (size 19)
9	227103	1	FLOAT, fuel level
10	224059	1	PIN, taper, throttle lever
11	224061	3	PLUG, fuel bowl drain (1 less used with low-grade fuel)
12	224152	1	□GASKET, fuel valve
13	223909	1	□VALVE ASSEMBLY, fuel (size 40)(Consists of 1 needle, 1 seat and item 12. Serviced only as a unit)
14	230967	1	SHAFT ASSEMBLY, throttle (Includes 1 lever, 1 SCREW 915662 and item 10)
	915662	1	SCREW, machine, fil-hd., #8-36NF x 5/8"
15	227098	1	□RETAINER, throttle shaft seal
16	227097	1	□SEAL, throttle shaft
17	230381	1	BODY ASSEMBLY, throttle (Includes 1 priming plug, 1 throttle stop pin, 1 name plate, 1 float bracket and item 10, 2 of item 11, items 14, 15, 16 and 18 thru 21)
18	227099	1	PLATE, throttle
	915663	2	□SCREW, machine, brass, #5-40NC x 3/16"
	915664	2	□LOCKWASHER, #5
19	224027	1	□PLUG, cup, throttle shaft hole
20	223946	1	SPRING, idle adjusting needle
			□Components of item 34

(Continued)

CARBURETOR ASSEMBLY 229342 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
21	227119	1	□NEEDLE, idle adjusting
22	223881	1	□JET, idling (size 16)
23	230746	1	□PIN, float
24	227104	1	□GASKET, fuel bowl
25	227107	1	SHAFT ASSEMBLY, choke (Includes friction lever, Serviced only as a unit)
26	223860	1	□JET, main (size 27)
27	224153	1	□GASKET, main jet
28	230385	1	TUBE, idle filler
29	224144	1	□GASKET, discharge jet
30	224152	1	□GASKET, main jet
31	230388	1	□JET, main discharge (size 70)
32	227110	1	NEEDLE ASSEMBLY, main jet adjustment (Serviced only as a unit)
33	227106	1	□PLUG, fuel bowl drain
34	230390	1	REPAIR KIT, (includes items 4, 5, 7, 12, 13, 15, 16, 19, 21 thru 24, 26, 27, 29, 30, 31, 33 and hardware indented under items 1, 6 and 18) (Not illustrated)
			□Components of item 34

MEMO



CARBURETOR ASSEMBLY 239961

T-41824

CARBURETOR ASSEMBLY 239961
(Marvel-Schebler)

USAGE: See page 64

ITEM	PART NO.	QTY.	DESCRIPTION
1	226479	1	NEEDLE and SEAT ASSEMBLY, main adjustment
2	226466	1	GASKET, seat, main adjustment
3	226460	1	NOZZLE
4	226468	1	GASKET, nozzle
5	-----	1	BOWL (Not serviced separately)
6	226469	1	☐ JET, power
7	224061	1	PLUG, drain
8	4046824	1	SCREW, choke bracket
9	4046828	1	SPRING, choke return
10	1119445	1	SHAFT ASSEMBLY, choke
11	222069	1	SPRING, swivel retaining
12	237177	1	SWIVEL, choke shaft
13	222045	1	SCREW, choke shaft swivel
14	237169 901211	1 1	CLIP, choke bracket SCREW, machine, fil-hd., #8-32NC x 3/8"
15	237168	1	BRACKET ASSEMBLY, choke (Includes items 8 and 14)
16	219969	1	☐ PACKING, choke shaft
17	226444	2	☐ SCREW, choke plate (Includes lockwasher)
18	226453	1	PLATE ASSEMBLY, choke (Includes poppet valve, spring and retainer)
19	219992	1	CUP, closure, choke shaft hole
20	226456	1	FLOAT and LEVER ASSEMBLY
21	226457	1	☐ SHAFT, float lever
22	226448	1	VENTURI
23	226452	1	GASKET, fuel bowl
24	226458	1	☐ VALVE ASSEMBLY, float (Includes seat and gasket)
25	219998	1	GASKET, valve float
26	220006	1	☐ JET, idling
27	219978	1	SPRING, idle adjustment needle
28	219987	1	☐ NEEDLE, idle adjustment

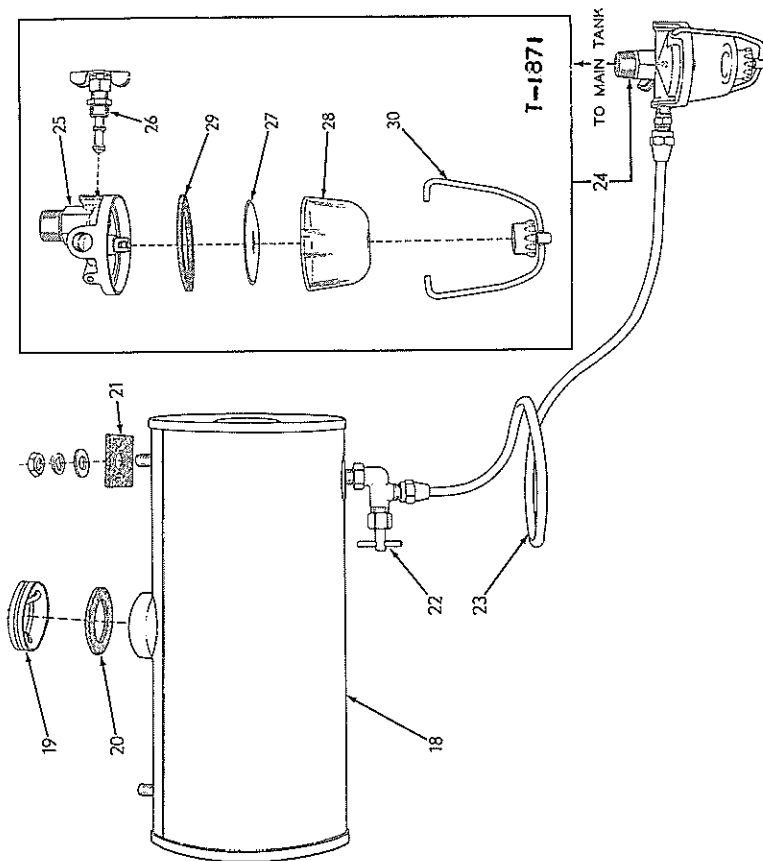
☐Components of item 40

(Continued)

CARBURETOR ASSEMBLY 239961 (Continued)

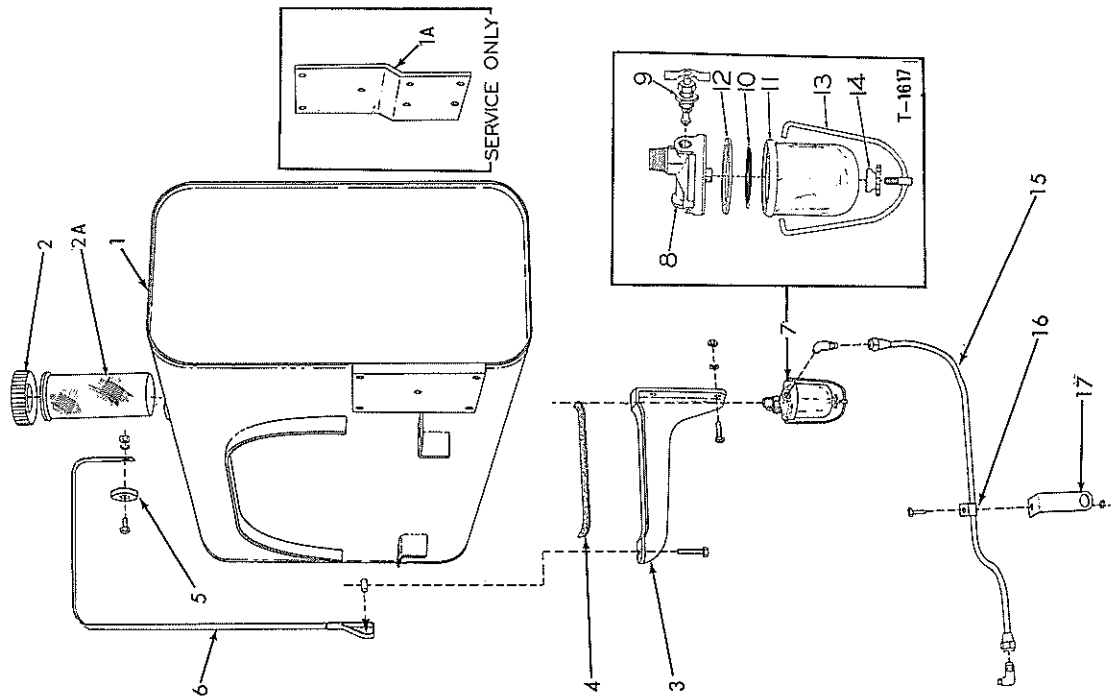
ITEM	PART NO.	QTY.	DESCRIPTION
29	4054544	2	SCREW, throttle plate (Includes lockwasher)
30	226443	1	PLATE, throttle
31	231437	1	☐ SHAFT ASSEMBLY, throttle (Includes items 32 and 33)
32	220000	1	SCREW, stop, throttle
33	219977	1	SPRING, throttle stop
34	226447	1	☐ RETAINER, throttle shaft seal
35	226446	1	☐ SEAL, throttle shaft
36	226451	4	SCREW, bowl (Includes lockwasher)
37	-----	1	BODY (Not serviced separately)
38	240952	1	PLUG, throttle shaft hole
39	226470	1	☐ GASKET SET (Includes items 2, 4, 23 and 25; also new carburetor flange gasket) (Not illustrated)
40	231439	1	CARBURETOR KIT (Includes items 6, 16, 17, 21, 24, 26, 28, 31, 34, 35 and 39)(Not illustrated)
			☐ Components of item 40

MEMO



PRIMING FUEL TANK

T-1624



MAIN FUEL TANK

T-1616, 1617

FUEL TANK AND FILTERS

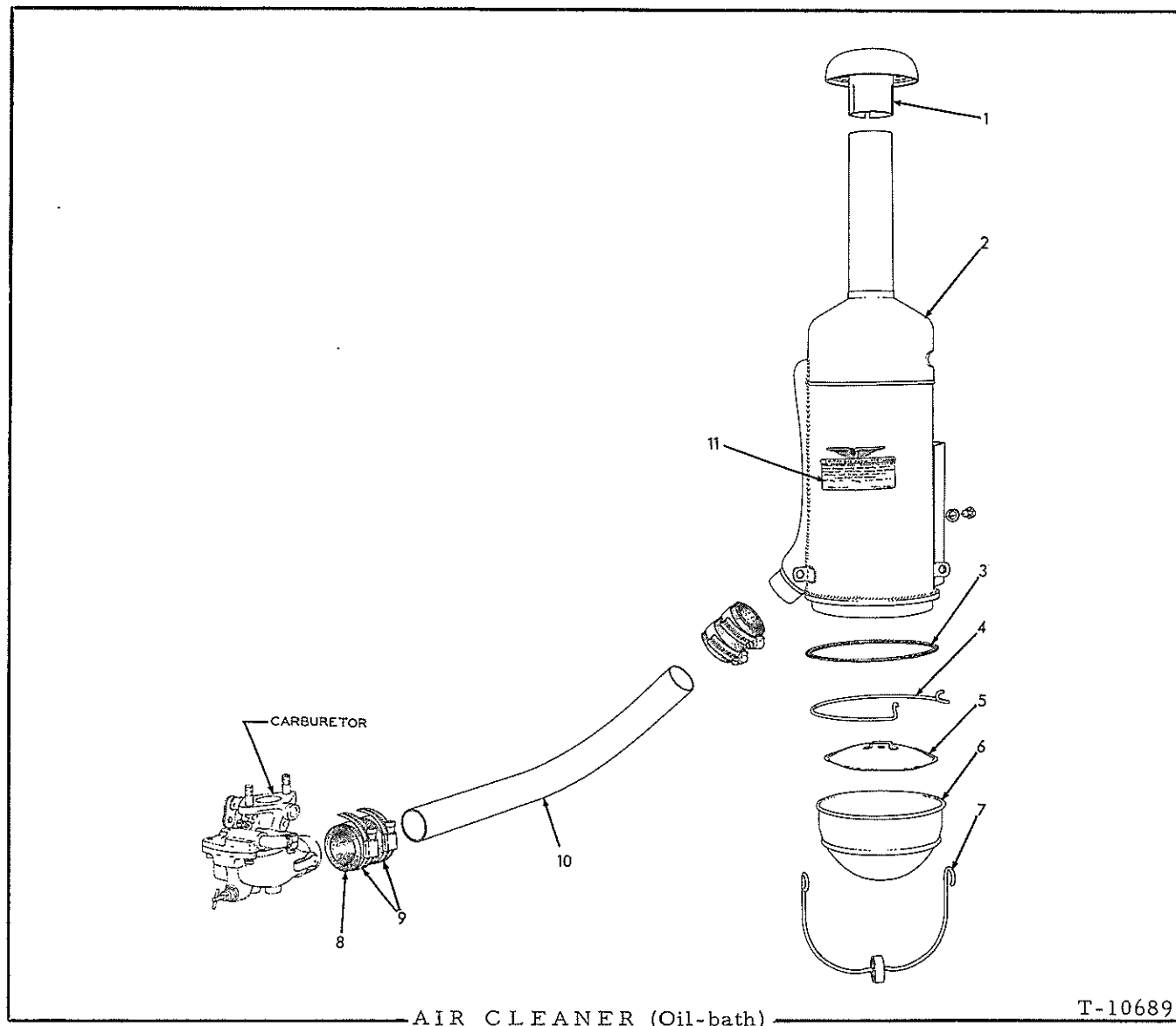
FUEL TANK AND FILTERS

ITEM	PART NO.	QTY.	DESCRIPTION
1	073474	1	TANK ASSEMBLY (Includes item 2)(Used prior to grader #5271;also on later units when equipped with "Allis-Chalmers" TL-D Loader)
	-----	1	TANK ASSEMBLY (Includes item 2)(Graders #5271 thru #6169 except when equipped with "Allis-Chalmers" TL-D Loader. Order TANK ASSEMBLY 651082 and parts listed under item 1A)
	651082	1	TANK ASSEMBLY (Includes items 2 and 2A)(Effective with grader #6170 except when equipped with "Allis-Chalmers" TL-D Loader)
1A	639487	1	BRACKET air cleaner adapting (Not original equipment. See item 1)
	903629	3	CAPSCREW 3/8"NC x 3/4"
	904206	3	LOCKWASHER, 3/8"
2	206622	1	CAP ASSEMBLY, fuel tank (Includes GASKET 208065)
	208065	1	GASKET, fuel tank cap
2A	651081	1	STRAINER, fuel (Effective with grader #6479 except on units equipped with "Allis-Chalmers" TL-D Loader)
3	-----	2	BRACKET, fuel tank mounting (Graders prior to #1118)(Discontinued)
	073473	2	BRACKET, fuel tank mounting (Graders #1118 and up)
	913014	4	CAPSCREW, 3/8"NF x 1-1/8"
	904206	4	LOCKWASHER 3/8"
	911041	4	NUT, 3/8"NF
4	066502	2	CUSHION, fuel tank (webbing, 1/8" x 1-3/8" x 9")
5	066503	2	BLOCK, spacing, fuel tank
6	073467	2	STRAP, fuel tank retaining
	910922	2	CAPSCREW, 3/8"NF x 3/4"
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
	904281	2	CAPSCREW, 3/8"NC x 2-1/4"
	900405	2	NUT, square, 3/8"NC
7	237946	1	FILTER ASSEMBLY, fuel (Consists of items 8 thru 14)(Also see item 24)
8	-----	1	HEAD (Not serviced separately)
9	223255	1	VALVE ASSEMBLY, shut-off (Serviced only as a unit)
10	208325	1	SCREEN, sediment
11	237947	1	BOWL, glass (Standard)
	217264	1	BOWL, metal (Special)
12	208137	1	GASKET, sediment bowl
13	223248	1	BAIL ASSEMBLY (Includes item 14)
14	044925	1	CUP ASSEMBLY (Includes nut)
15	066505	1	TUBE ASSEMBLY, filter to carburetor (Includes 2 NUT 910139)(Used prior to grader #5425)
	910139	2	NUT, short, 5/16" tube
	910140	2	ELBOW, flare type, 5/16" tube, 1/8"NPT
	095654	1	TUBE ASSEMBLY, filter to carburetor (Includes nuts)(Effective with grader #5425)
	919767	2	ELBOW, flare type, 5/16" tube, 1/8"NPT

(Continued)

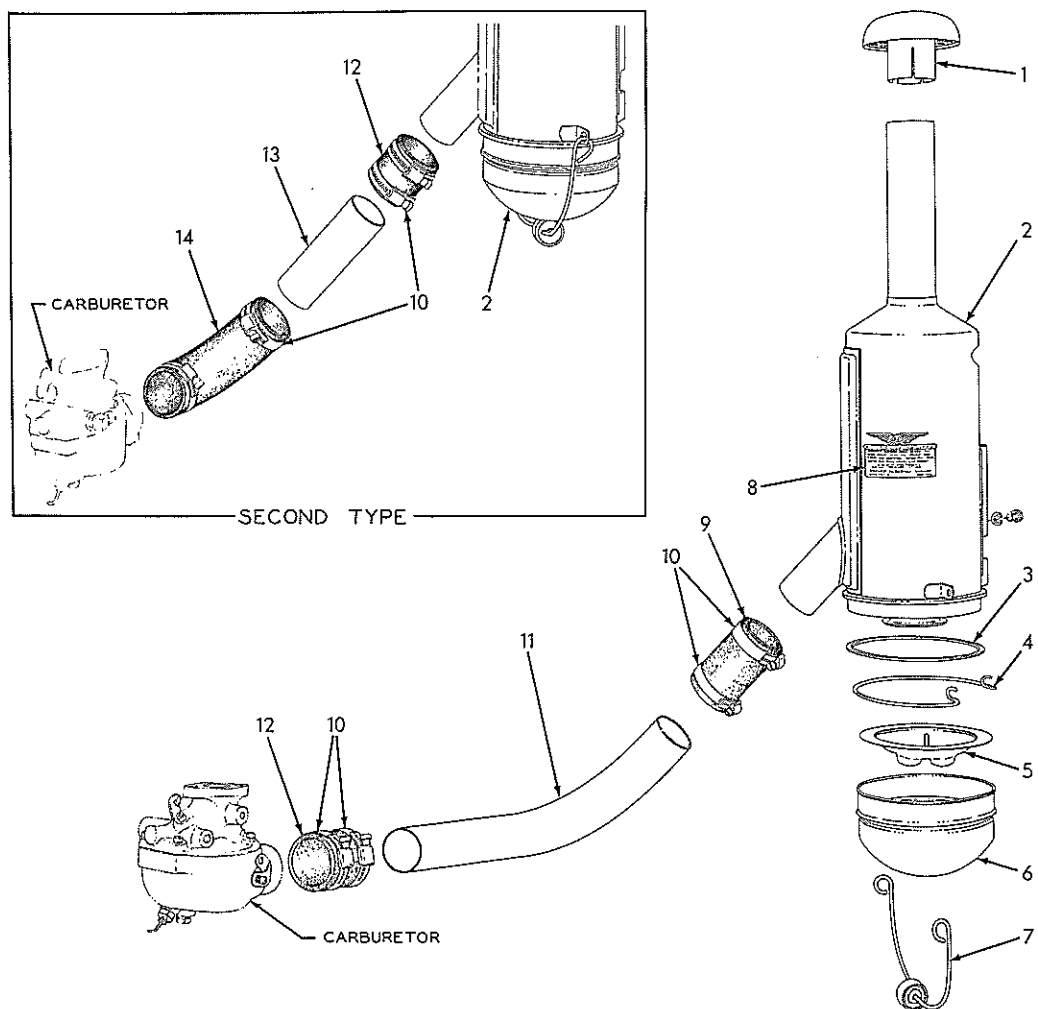
FUEL TANK AND FILTERS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
16	051348	1	CLIP, fuel tube (5/16" diam., 9/32" bolt-hole) (Used prior to grader #5425)
	912789	1	CAPSCREW, 1/4"NF x 3/4"
	904204	1	LOCKWASHER, 1/4"
	911040	1	NUT, 1/4"NF
17	060982	1	ANGLE, clip supporting (Used prior to grader #5425)
			<u>NOTE:</u> The following parts comprise the Auxiliary Fuel Supply system furnished as special equipment to provide gasoline starting for operation with low-grade fuel
18	226233	1	TANK ASSEMBLY, priming fuel (Includes item 19)
	911025	2	NUT, 5/16"NC
	904205	2	LOCKWASHER, 5/16" } I additional used prior to grader #5271
19	204827	1	CAP ASSEMBLY, priming fuel tank (Includes item 20)
20	202963	1	GASKET, fuel tank cap
21	202670	2	STRIP, cushion, priming fuel tank (1 additional used prior to grader #5271)
22	204815	1	VALVE, fuel shut-off
23	212502	1	TUBE ASSEMBLY, tank to filter (Includes NUTS)
	910138	2	NUT, flare type, short, 1/4" tube
	910141	1	CONNECTOR, flare type, 1/4" tube, 1/8"NPT male
24	239167	1	FILTER ASSEMBLY, fuel (Includes items 25 thru 30)
25	-----	1	HEAD (Not serviced separately)
26	223255	1	VALVE ASSEMBLY, shut-off (Serviced only as a unit)
27	235555	1	SCREEN, filter
28	{ 237945	1	BOWL, glass (Standard)
	{ 218683	1	BOWL, metal (Special)
29	208362	1	GASKET, sediment bowl
30	223247	1	BAIL ASSEMBLY (Includes bail cup)



USAGE: Graders prior to serial No. 3370 except when equipped with "Allis-Chalmers" TL-D Loader

ITEM	PART NO.	QTY.	DESCRIPTION
1	208222	1	CAP air cleaner stack
2	-----	1	CLEANER ASSEMBLY, air (Includes items 3 thru 7)(Order CLEANER ASSEMBLY 226265)
	035979	4	CAPSCREW, 3/8"NF x 5/8"
	904206	4	LOCKWASHER, 3/8"
3	210317	1	GASKET, oil cup
4	211693	1	RING, retaining, oil cup baffle
5	211694	1	BAFFLE, oil cup
6	211695	1	CUP ASSEMBLY, oil (Includes items 4 and 5)
7	224907	1	BAIL ASSEMBLY, oil cup (Includes roller)
8	059756	2	HOSE air cleaner tube
9	921913	4	CLAMP, hose, 1-13/16" to 2-3/4" diam.
10	059757	1	TUBE, air cleaner to carburetor
11	-----	1	TRANSFER instruction (See PAINTING AND MARKING)



AIR CLEANER (Oil-bath)

T-10690

USAGE: Graders serial No. 3370 thru 6170 except when equipped with "Allis-Chalmers" TL-D Loader

* Graders prior to serial No. 5271

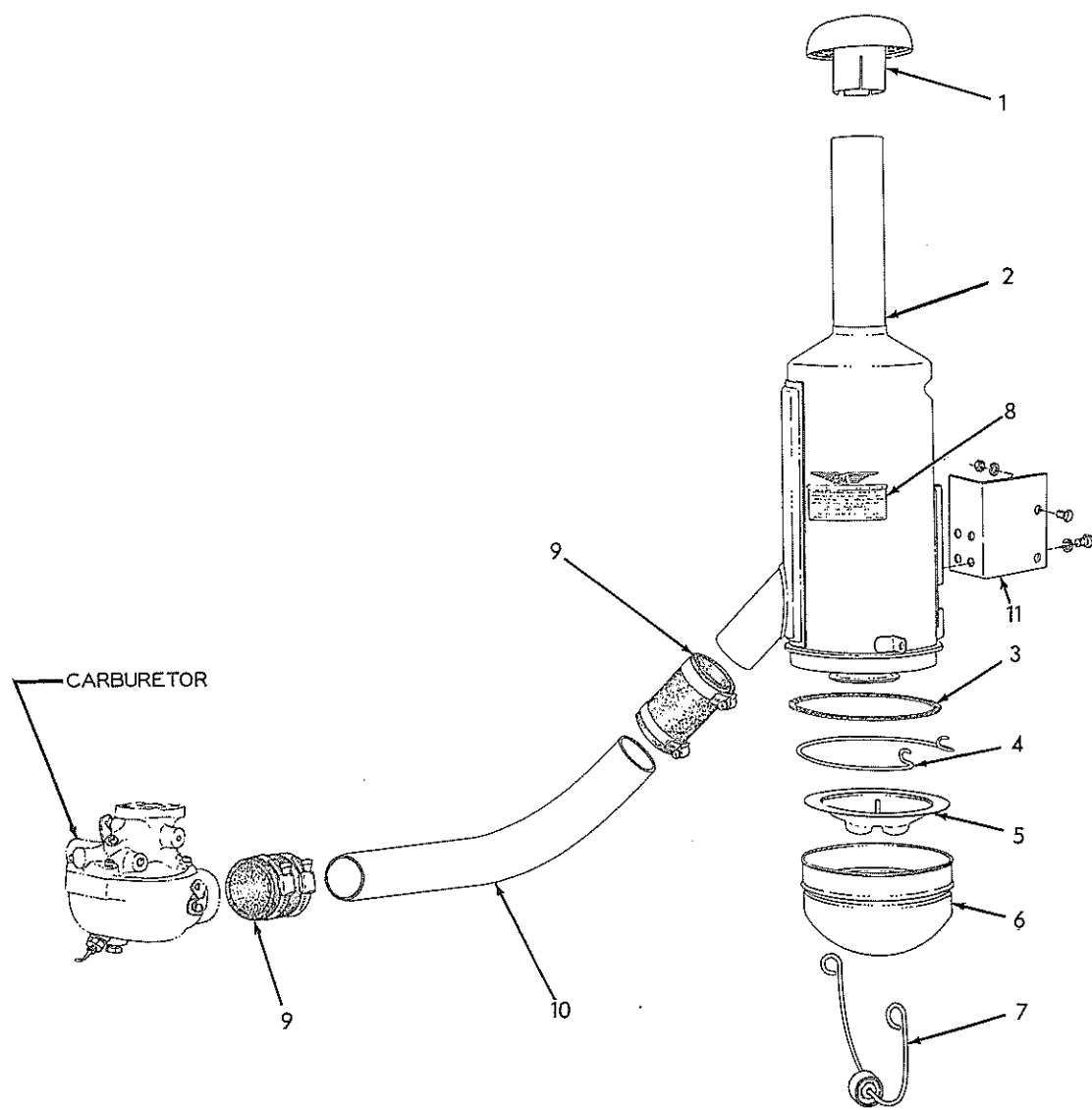
** Graders serial No. 5271 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	208222	1	1	CAP, air cleaner stack
2	226265	1	1	CLEANER ASSEMBLY, air (Includes items 3 thru 7)
	912742	4	4	CAPSCREW, 3/8"NF x 1/2"
	904206	4	4	LOCKWASHER, 3/8"
3	210317	1	1	GASKET, oil cup
4	211693	1	1	RING, retaining, oil cup baffle
5	226474	1	1	BAFFLE, oil cup
6	226481	1	1	CUP ASSEMBLY, oil (Includes items 4 and 5)
7	226475	1	1	BAIL ASSEMBLY, oil cup (Includes roller)

(Continued)

AIR CLEANER (Oil-bath)(Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
8	-----	1 1	TRANSFER, instruction (See PAINTING AND MARKING)
9	081361	1 -	HOSE, air cleaner tube, upper (3-1/2" long)
10	921913	4 4	CLAMP, air cleaner tube hose (1-13/16" to 2-3/4" diam.)
11	081362	1 -	TUBE, air cleaner to carburetor (When making first replacement on graders prior to #3808 also order 1 HOSE 081361)
12	079743	1 1	HOSE, air cleaner tube (2-1/4" long)
13	{ 090074	- 1	TUBE, air cleaner to carburetor (5-5/8" long)(Graders prior to #5425)
	{ 095652	- 1	TUBE, air cleaner to carburetor (6-1/8" long)(Graders #5425 and up)
14	090073	- 1	HOSE, air cleaner tube



AIR CLEANER (Oil-bath)

T-24162

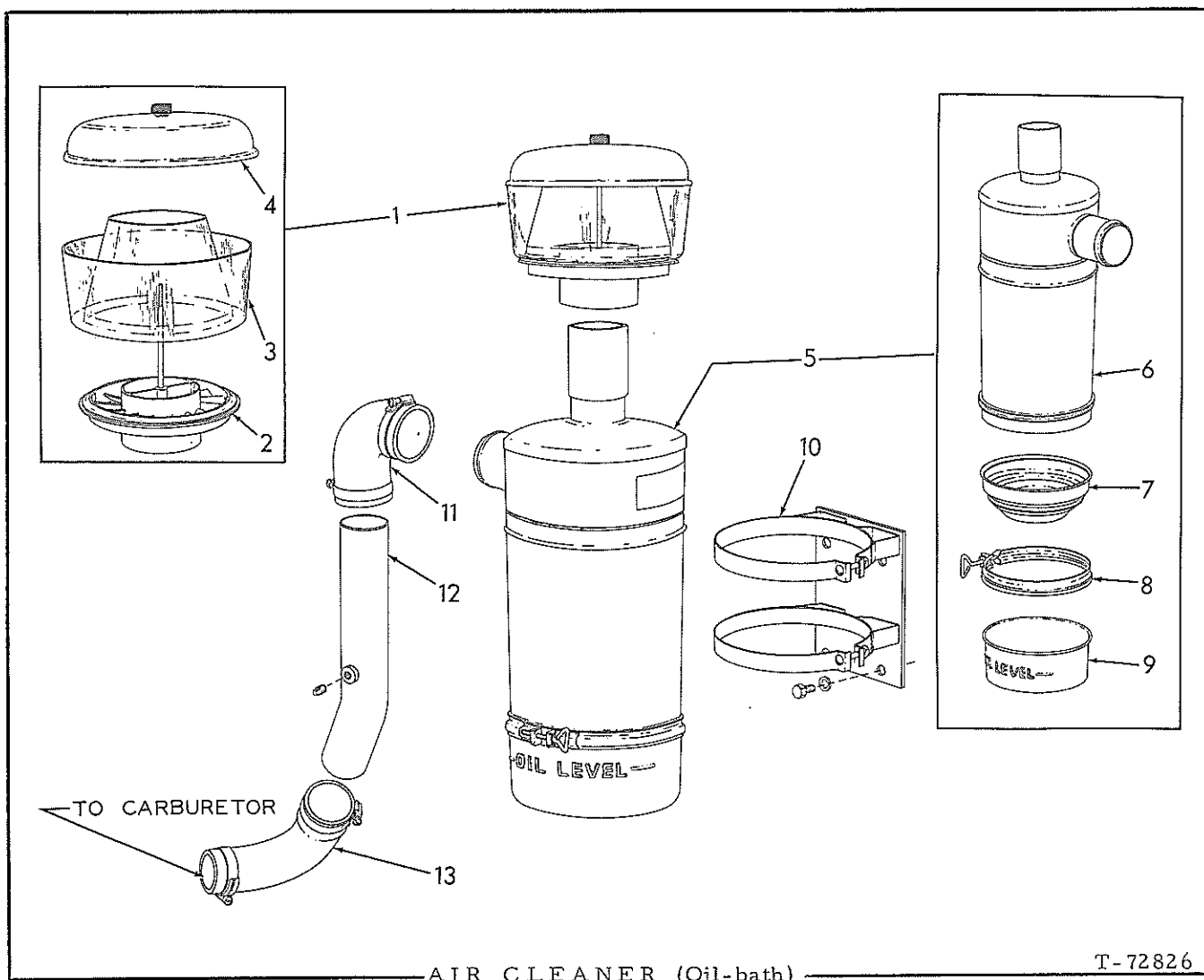
USAGE: All graders equipped with "Allis-Chalmers" TL-D Loader

ITEM	PART NO.	QTY.	DESCRIPTION
1	208222	1	CAP, air cleaner stack
2	226265	1	CLEANER ASSEMBLY, air (Includes items 3 thru 7)
	035979	4	CAPSCREW, 3/8"NF x 5/8"
	904206	4	LOCKWASHER, 3/8"
3	210317	1	GASKET, oil cup
4	211693	1	RING, retaining, oil cup baffle
5	226474	1	BAFFLE, oil cup
6	226481	1	CUP ASSEMBLY, oil (Includes items 4 and 5)

(Continued)

AIR CLEANER (Oil-bath)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
7	226475	1	BAIL ASSEMBLY, oil cup (Includes roller)
8	-----	1	TRANSFER, instruction (See PAINTING AND MARKING)
9	081361	2	HOSE, air cleaner tube
	921913	4	CLAMP, hose, 1-13/16" to 2-3/4" diam.
10	081362	1	TUBE, air cleaner to carburetor
11	096930	1	BRACKET, air cleaner mounting
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC



USAGE: Optional equipment for graders serial No. 6171 and up. Not for units equipped with "Allis-Chalmers" TL-D Loader.

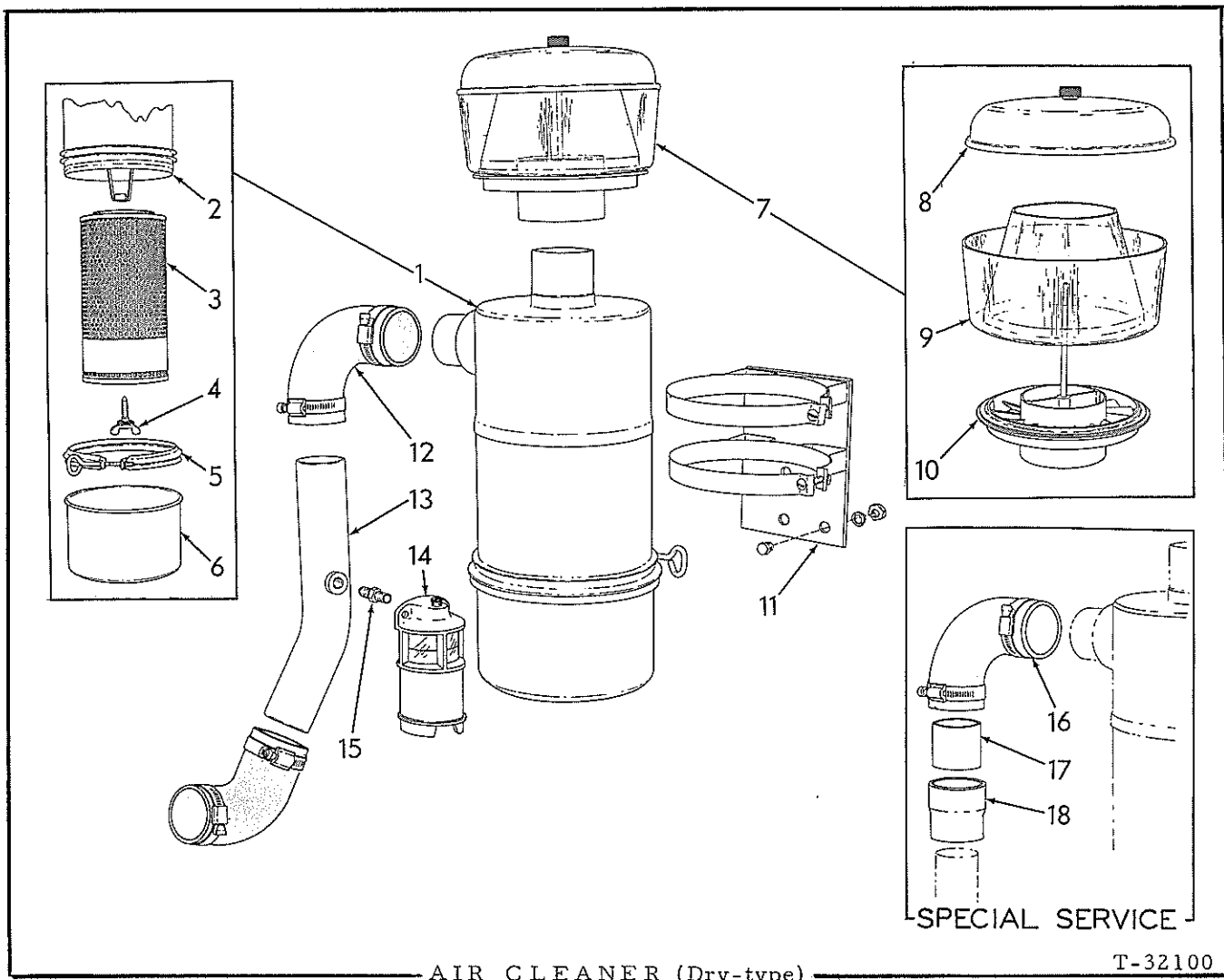
ITEM	PART NO.	QTY.	DESCRIPTION
1	655289	1	PRE-CLEANER ASSEMBLY, air (Consists of items 2 thru 4)
2	657284	1	SLEEVE ASSEMBLY, pre-cleaner (Includes stud)
3	629117	1	BOWL, pre-cleaner
4	629118	1	COVER ASSEMBLY, pre-cleaner (Includes nut)
5	655468	1	CLEANER ASSEMBLY, air (Includes items 6 thru 9)
6	-----	1	BODY, air cleaner (Not serviced separately)
7	656649	1	CUP ASSEMBLY, air cleaner, inner (Includes gasket)
8	656643	1	CLAMP ASSEMBLY, air cleaner, oil cup (Includes screw)
9	1123855	1	CUP, air cleaner, outer

(Continued)

AIR CLEANER (Oil-bath)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
10	655287	1	BRACKET, mounting
	903628	4	CAPSCREW, 3/8"NC x 5/8"
	904206	4	LOCKWASHER, 3/8"
11	235371	1	HOSE, upper
	921913	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.
12	639171	1	TUBE
	901651	1	PLUG, pipe, 1/8"NPT
13	639715	1	HOSE, lower
	921913	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.

NOTE: See PAINTING AND MARKING for instruction transfer applied to cleaner.



USAGE: Optional equipment for graders serial No. 5271 thru 6170. Not for units equipped with "Allis-Chalmers" TL-D Loader.

ITEM PART NO. QTY. DESCRIPTION

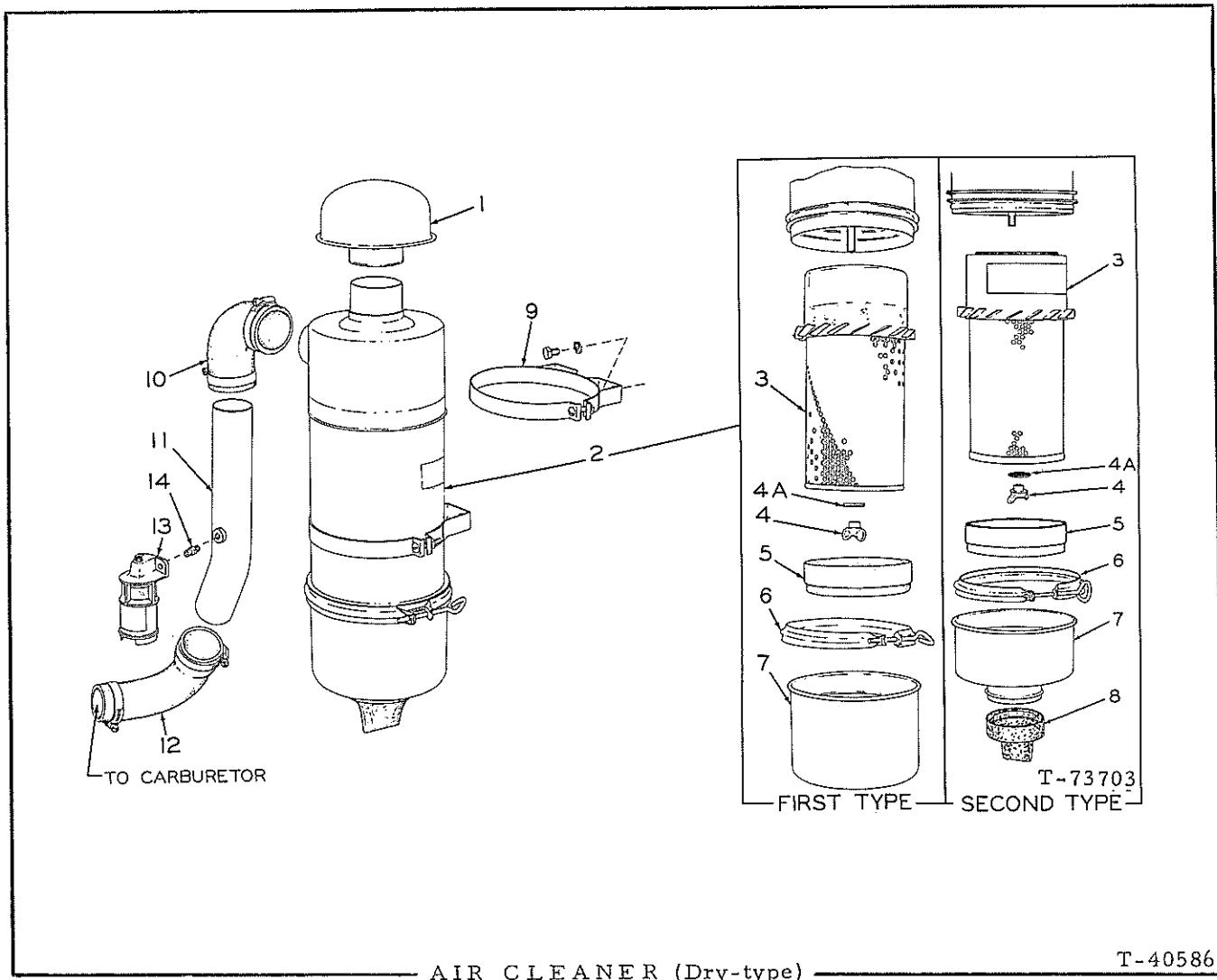
1	-----	1	CLEANER ASSEMBLY, air (Consists of items 2 thru 6)(Order CLEANER ASSEMBLY 659389, rain CAP 3024261 and items 16, 17 and 18)
2	629120	1	BODY, air cleaner
3	629121	1	ELEMENT, air cleaner
4	629122	1	BOLT ASSEMBLY, element retaining (Includes gasket)
5	629123	1	CLAMP ASSEMBLY, air cleaner cup (Includes screw)
6	629124	1	CUP, air cleaner
7	624796	1	PRE-CLEANER ASSEMBLY, air (Consists of items 8 thru 10)
8	629118	1	COVER ASSEMBLY, pre-cleaner (Includes nut)
9	629117	1	BOWL, pre-cleaner

(Continued)

AIR CLEANER (Dry-type)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
10	629119	1	SLEEVE ASSEMBLY, pre-cleaner (Includes stud)
11	624762	1	PLATE, mounting
	903629	4	CAPSCREW, 3/8"NC x 3/4"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
12	090073	2	HOSE, tube connecting
	921913	4	CLAMP, hose, 1-13/16" to 2-3/4" diam.
13	629822	1	TUBE, air cleaner to carburetor
14	631564	1	INDICATOR ASSEMBLY, air restrictor (Serviced only as a unit)
15	622447	1	FITTING, connector (Includes filter)
<u>NOTE:</u> Items listed below are for use with service replacement air cleaner only. See item 1.			
16	235371	1	HOSE, upper
	921913	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.
17	665811	1	TUBE, adapting
18	665812	1	HOSE, intermediate
	921913	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.

NOTE: See PAINTING AND MARKING for instruction transfer
applied to cleaner



USAGE: Graders serial No. 6171 and up except when equipped with "Allis-Chalmers" TL-D Loader. Also see page 94 for optional oil-bath cleaner.

* Graders prior to serial No. 6696
 ** Graders serial No. 6696 and up

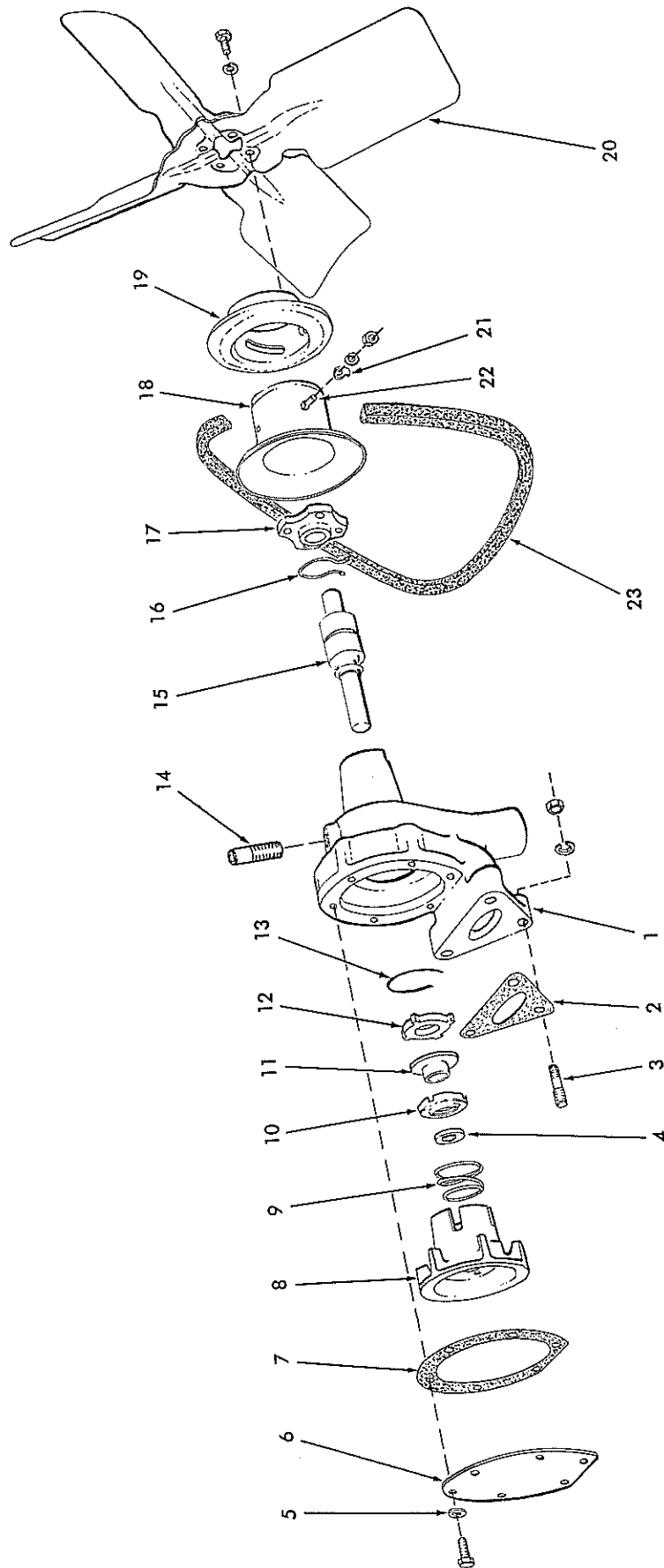
ITEM	PART NO.	QTY. * **	DESCRIPTION
1	3024261	1 1	CAP, rain
2	-----	1 -	CLEANER ASSEMBLY, air (Order CLEANER ASSY. 659389)
	659389	- 1	CLEANER ASSEMBLY, air (Includes items 3 thru 8)
3	639050	1 -	ELEMENT, air cleaner
	243163	- 1	ELEMENT, air cleaner
			Each includes item 4A
4	239517	1 1	NUT ASSEMBLY, element retaining (Includes item 4A)
4A	-----	1 1	GASKET, element retaining nut
5	640658	1 1	BAFFLE, air (rubber)

(Continued)

AIR CLEANER (Dry-type)(Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
6	640657	1	1	CLAMP ASSEMBLY, sediment cup (Includes screw)
7	640659	1	-	CUP, sediment
	662255	-	1	CUP, sediment
8	3042943	-	1	VALVE, unloading
9	622619	2	2	BAND, mounting
	903627	4	4	CAPSCREW, 3/8"NC x 1/2"
	904206	4	4	LOCKWASHER, 3/8"
10	235371	1	1	HOSE, upper
	921913	2	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.
11	639717	1	1	TUBE
	901651	1	1	PLUG, pipe, 1/8"NPT (Not used when Air Restriction Indicator is installed)
12	639715	1	1	HOSE, lower
	921913	2	2	CLAMP, hose, 1-13/16" to 2-3/4" diam.
13	631564	1	1	INDICATOR ASSEMBLY, air restriction (Serviced only as a unit) (Special equipment)
14	622447	1	1	FITTING, connector, restriction indicator (Includes filter)

NOTE: See PAINTING AND MARKING for instruction transfer applied to cleaner.



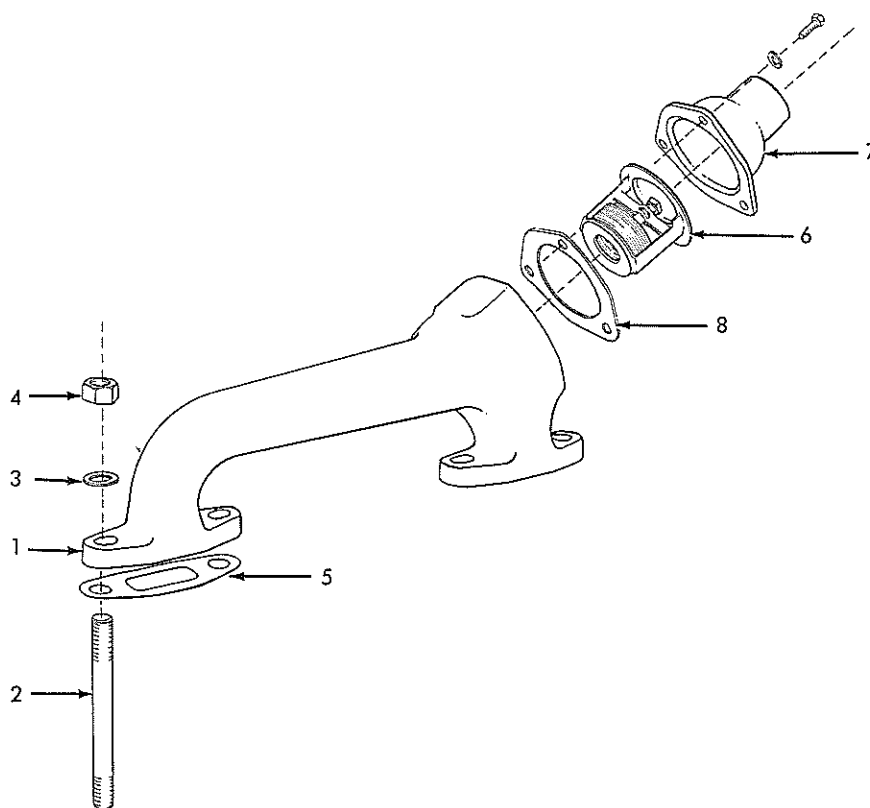
WATER PUMP AND FAN

T-19620

WATER PUMP AND FAN

ITEM	PART NO.	QTY.	DESCRIPTION
-	250396	1	PUMP ASSEMBLY, water (Consists of all items listed below except 2, 3, 20, 23 and 24)
	910245	2	CAPSCREW, 3/8"NC x 1-3/8"
	904206	2	LOCKWASHER, 3/8"
			} Used prior to grader #5425
1	226314	1	BODY, water pump
2	203061	1	□ GASKET, pump to cylinder block
3	227390	1	STUD, pump attaching (Used prior to grader #5425)
	904206	1	LOCKWASHER, 3/8"
	910324	1	NUT, 3/8"NC
	230302	3	STUD, pump attaching (Effective with grader #5425)
	904206	3	LOCKWASHER, 3/8"
	910324	3	NUT, 3/8"NC
4	207824	1	□ RING, clamp, water pump shaft seal
5	230308	6	WASHER, cover capscrew
6	210829	1	COVER, pump body
	916284	6	CAPSCREW, 1/4"NC x 1/2"
7	210830	1	□ GASKET, pump body cover
8	210831	1	IMPELLER, water pump
9	207825	1	□ SPRING, pump shaft seal
10	207826	1	□ GUIDE, pump shaft seal spring
11	207823	1	□ SEAL, water pump shaft (rubber)
12	207827	1	□ WASHER, pump shaft seal (carbon)
13	207828	1	□ RING, snap, impeller seal retaining
14	-----	1	PIPE, water by-pass (See WATER OUTLET CONNECTION)
15	207822	1	BEARING ASSEMBLY, water pump (Includes shaft and slinger)
16	207829	1	□ RING, snap, pump body
17	233697	1	HUB, pulley
18	229840	1	FLANGE, pulley, rear half
19	207831	1	FLANGE, pulley, front half
20	235753	1	BLADE ASSEMBLY, fan
	905661	4	CAPSCREW, 5/16"NC x 5/8"
	904205	4	LOCKWASHER, 5/16"
21	203135	2	WASHER, flange locking screw
22	203141	2	SCREW, flange locking
	904204	2	LOCKWASHER, 1/4"
	900365	2	NUT, 1/4"NC
23	209824	1	BELT, fan and generator driving (Used prior to grader #5425)
	604929	1	BELT, fan and generator driving (Effective with grader #5425)
24	225750	1	SEAL KIT (Includes items 2, 4, 7, 9 thru 13 and 16) (Not illustrated)

□ Components of item 24



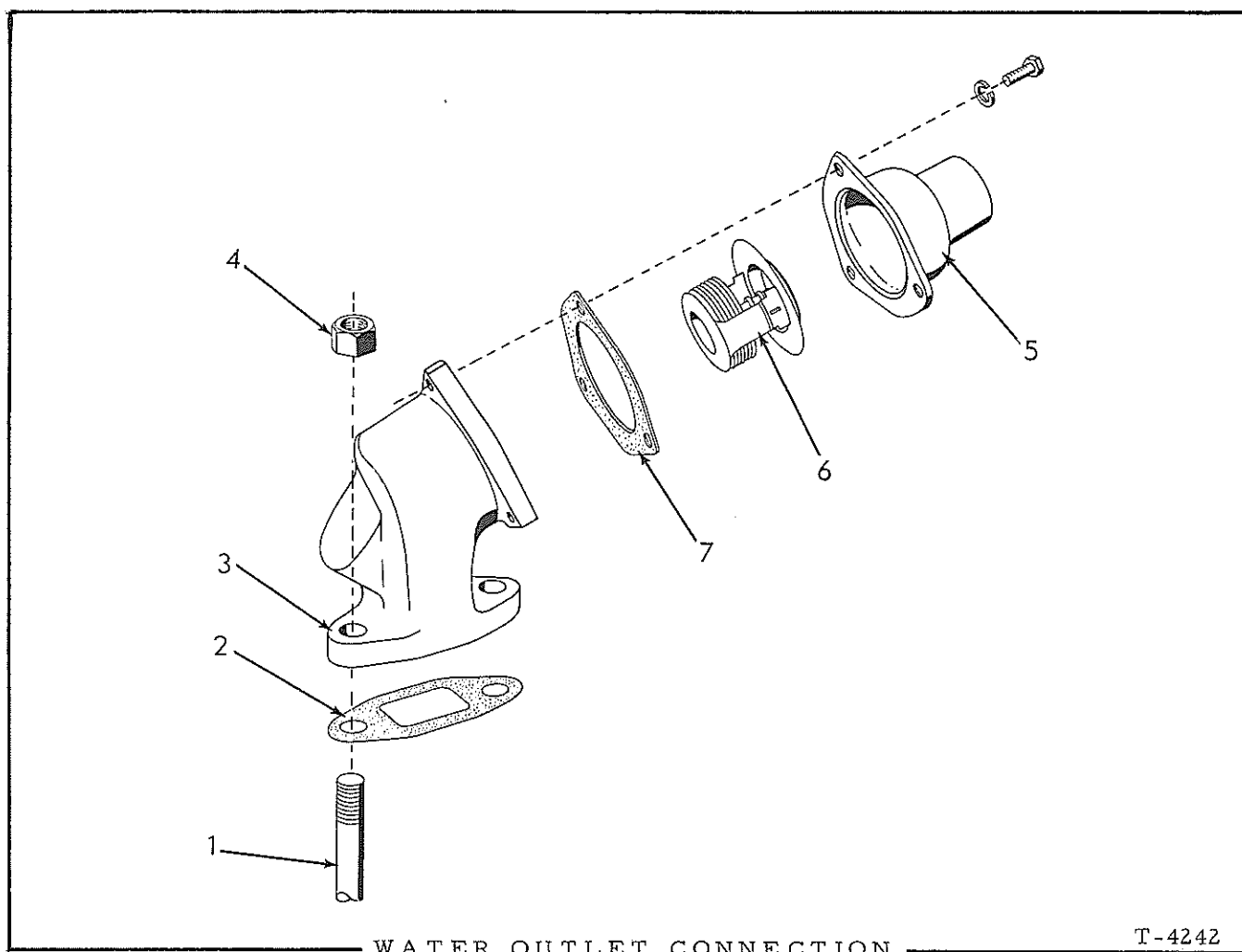
WATER MANIFOLD

T-914

USAGE: Model W engines prior to No. 289000

ITEM PART NO. QTY. DESCRIPTION

1	210156	1	MANIFOLD, water	} See CYLINDER HEAD
2	-----	4	STUD	
3	-----	4	WASHER	
4	-----	4	NUT	
5	233216	2	□GASKET, manifold to cylinder head	
6	210157	1	THERMOSTAT	
7	231441	1	COVER, thermostat (When making first replacement also order 3 CAPSCREWS 905658)	
	905656	3	CAPSCREW, 1/4"NC x 5/8" (For original cover)	
	905658	3	CAPSCREW, 1/4"NC x 1-1/4" (For replacement cover)	
	904204	3	LOCKWASHER, 1/4"	
8	210158	1	□GASKET, thermostat cover	

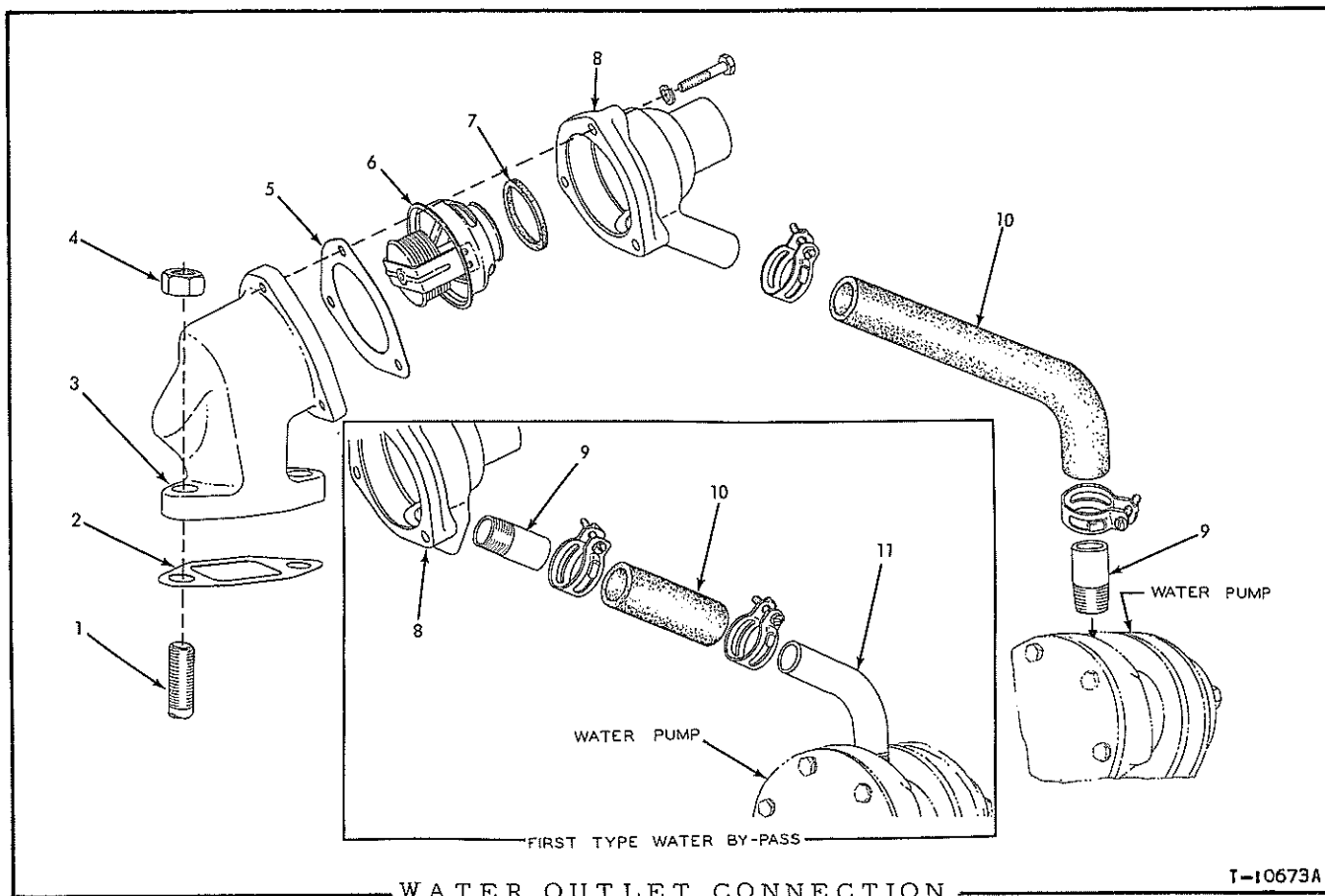


WATER OUTLET CONNECTION

T-4242

USAGE: Effective with engine No. 289000 but later discontinued on grader serial No. 3370 (Model W engine)

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	2	STUD (See CYLINDER HEAD)
2	233218	1	□GASKET, thermostat housing
3	225012	1	HOUSING, thermostat
4	-----	2	NUT (See CYLINDER HEAD)
5	231441	1	COVER, thermostat (When making first replacement also order 3 CAPSCREWS 905658)
	905656	3	CAPSCREW, 1/4"NC x 5/8" (For original cover)
	905658	3	CAPSCREW, 1/4"NC x 1-1/4" (For replacement cover)
	904204	3	LOCKWASHER, 1/4"
6	210157	1	THERMOSTAT
7	210158	1	□GASKET, thermostat cover



USAGE: Graders serial No. 3370 and up (Model WD-45 and 17 engines)

ITEM PART NO. QTY. DESCRIPTION

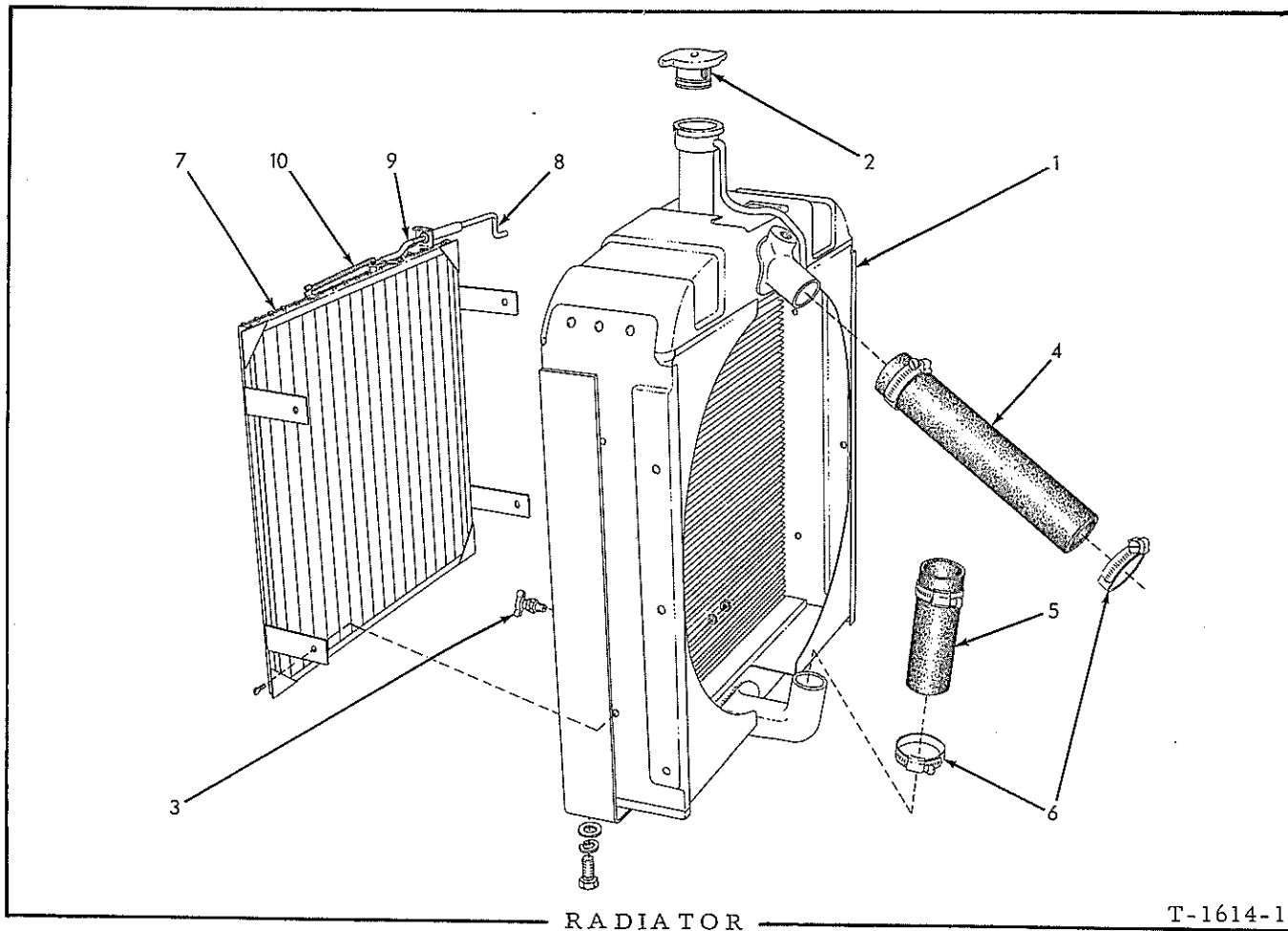
1	-----	2	STUD (See CYLINDER HEAD)
2	233218	1	□ GASKET, thermostat cover
3	225012	1	HOUSING, thermostat
4	-----	2	NUT (See CYLINDER HEAD)
5	210158	1	□ GASKET, thermostat cover
6	228543	1	THERMOSTAT KIT (Includes item 7) (For gasoline. Opens at 160°)
	229927	1	THERMOSTAT KIT (Includes item 7) (For low-grade fuel. Opens at 180°)
7	230643	1	□ GASKET, thermostat
8	231440	1	COVER, thermostat
	905658	3	CAPSCREW, 1/4"NC x 1-1/4"
	904204	3	LOCKWASHER, 1/4"
9	226315	1	PIPE, water by-pass

(Continued)

WATER OUTLET CONNECTION (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
	226316	1	HOSE, water by-pass pipe' (Model WD-45 engines prior to #45-50789)
10	227018	1	HOSE, water by-pass pipe (Model WD-45 engines #45-50789 and up; also all Model 17 engines)
	911301	2	CLAMP, hose, 3/4" diam.
11	-----	1	PIPE, water by-pass (Standard)(Model WD-45 engines prior to #45-50789. Order 1 PIPE 226315 and 1 HOSE 227018)

NOTE: See page 300 for special water by-pass pipe and hose used
with Cab Heater



ITEM PART NO. QTY. DESCRIPTION

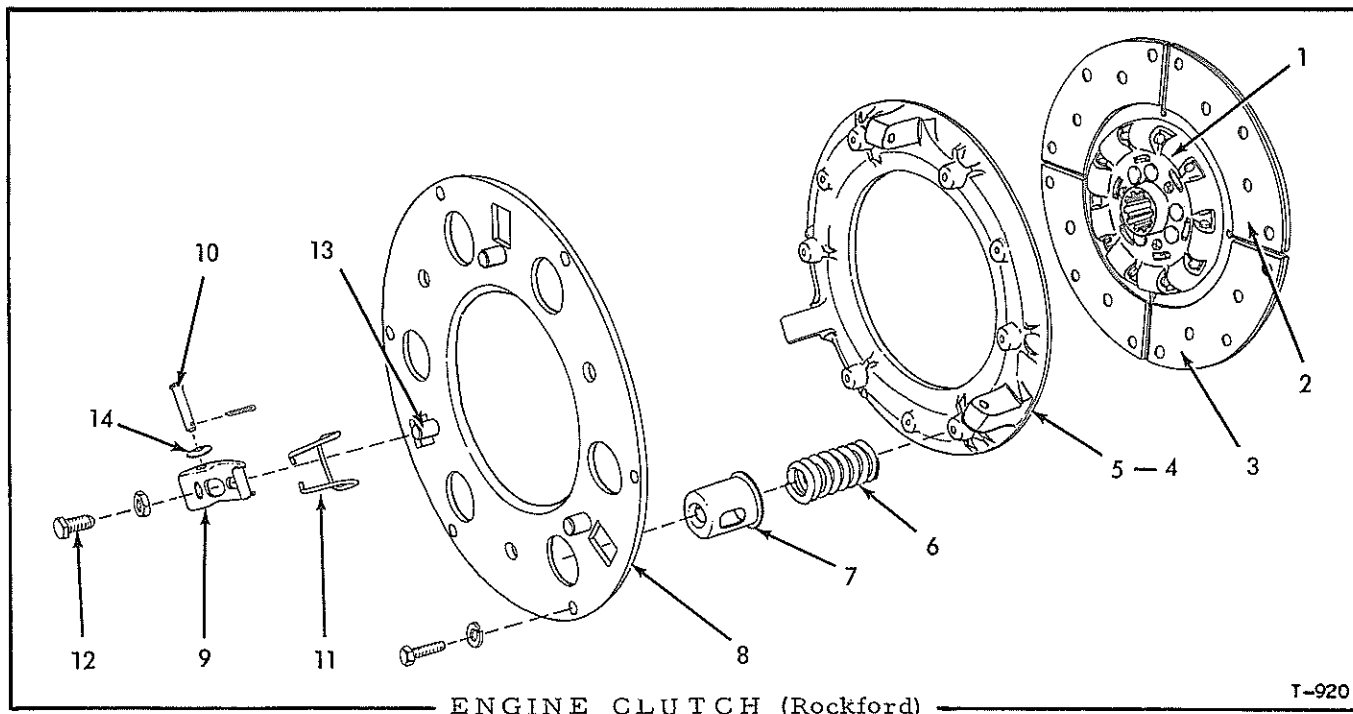
NOTE: See INSTRUMENTS for water temperature gauge

1	{	228587	1	RADIATOR ASSEMBLY (Has short filler-neck. Includes item 2) (Used prior to grader #5271)
		655407	1	RADIATOR ASSEMBLY (Has long filler-neck. Includes item 2) (Effective with grader #5271)
		911980	2	CAPSCREW, 1/2"NC x 7/8"
		904208	2	LOCKWASHER, 1/2"
		910244	2	WASHER, plain, SAE std., 1/2"
2		228817	1	CAP
3	{	201671	1	COCK, drain, 3/8"NPT (Used prior to grader #4781)
		912319	1	COCK, drain, 1/4"NPT (Effective with grader #4781)
4	{	233153	1	HOSE, upper (10" long) (Used prior to grader #1372)
		225007	1	HOSE, upper (9" long) (Effective with graders #1372 thru #3369)
		226307	1	HOSE, upper (8-1/8" long) (Effective with grader #3370)
5		203090	1	HOSE, lower

(Continued)

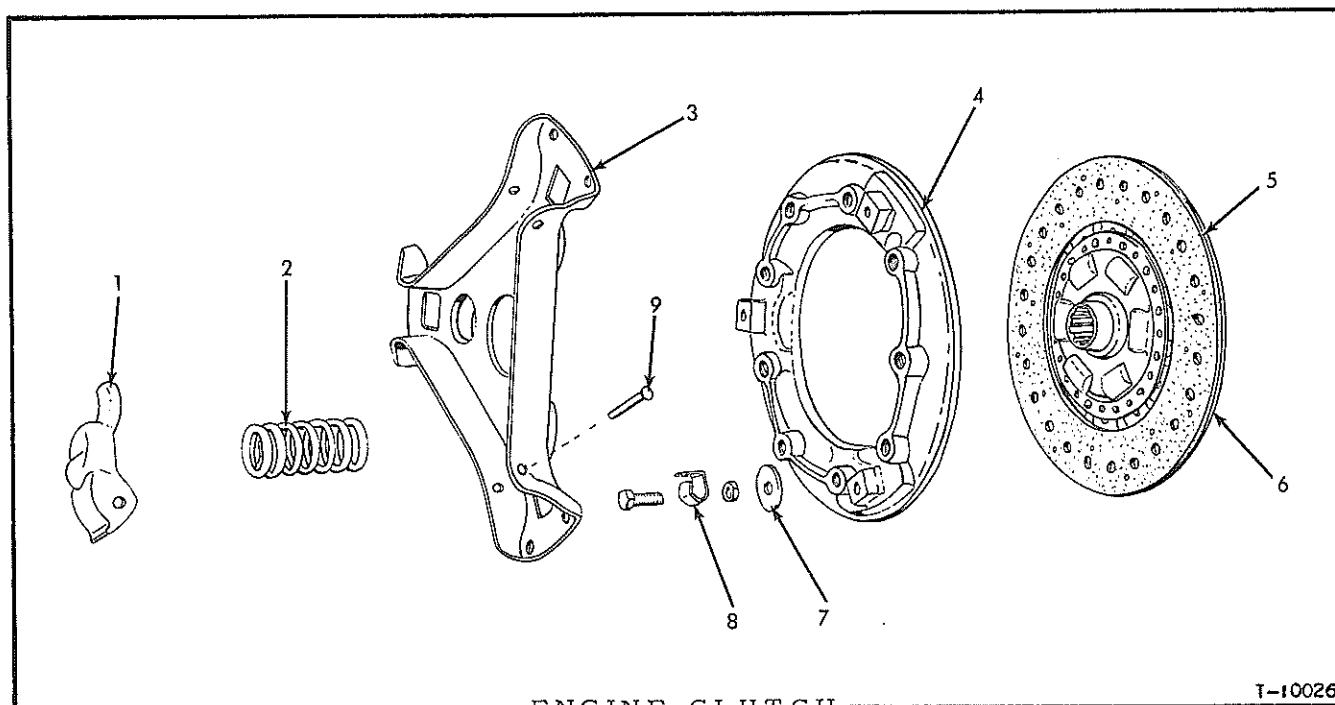
RADIATOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
6	921912	4	CLAMP, hose, 1-1/16" to 2" diam.
<u>NOTE:</u> The following items are special equipment			
7	211054	1	SHUTTER ASSEMBLY (For standard graders prior to #5271; also for graders prior to June 1960 when equipped with "Allis-Chalmers" TL-D Loader
	622137	1	SHUTTER ASSEMBLY (For graders equipped with "Allis-Chalmers" TL-D Loader after May 1960)
	622134	1	SHUTTER ASSEMBLY (For standard graders #5271 and up)
Includes items 8 thru 10			
	900574	4	SCREW, machine, 1/4"NC x 1/2"
	904204	4	LOCKWASHER, 1/4"
	911024	4	NUT, 1/4"NC
8	213286	1	CRANK, shutter control (3" long)(For SHUTTERS 211054 and 622137 only)
	094874	1	CRANK, shutter control (8"long)(For SHUTTERS 094211 and 622134 only)
9	212786	1	ROD, shutter control
10	212382	1	SPRING, shutter control



USAGE: Graders prior to serial No. 5419 excluding Nos. 3370 thru 3416

ITEM	PART NO.	QTY.	DESCRIPTION
1	226764	1	DISC ASSEMBLY, driven (Includes items 2 and 3. No other components are serviced)
2	----- 911005	4 10	FACING, driven disc (1/8" thick)(Order item 15) RIVET, tubular, brass, fl-hd., 3/16" x 5/16"
3	----- 911005	4 10	FACING, driven disc (5/32" thick)(Order item 15) RIVET, tubular, brass, fl-hd., 3/16" x 5/16"
4	-----	1	PLATE ASSEMBLY, pressure (Consists of items 5 thru 14)(Order PLATE ASSEMBLY 230506)
5	208286	1	PLATE, pressure
6	204843	6	SPRING, pressure plate
7	204844	6	CUP, pressure plate spring
8	208296 903771 904205	1 6 6	PLATE ASSEMBLY, back (Includes item 13) CAPSCREW, 5/16"NC x 7/8" LOCKWASHER, 5/16"
9	208290	3	LEVER, release
10	208292 904001	3 3	PIN, release lever PIN, cotter, 3/32" x 1/2"
11	208293	3	SPRING, release lever
12	204846 910329	3 3	SCREW, release lever adjusting NUT, jam, 3/8"NF
13	208288	3	SEAT, release lever adjusting screw
14	225656	3	WASHER, release lever pin
15	226767	1	FACING KIT (Includes 8 facings and 24 rivets)(Not Illustrated)

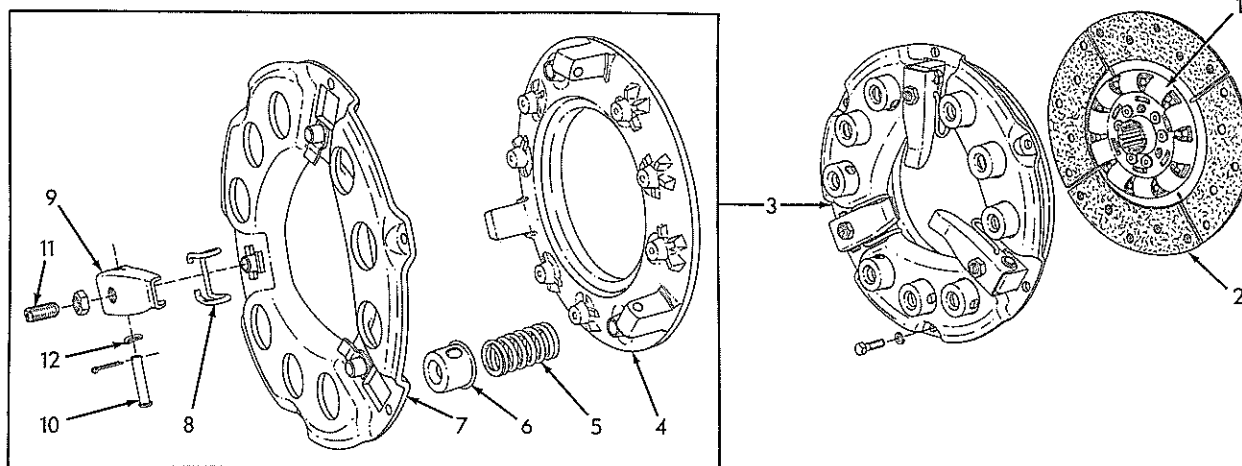


ENGINE CLUTCH
(Auburn)

T-10026

USAGE: Graders serial No. 3370 thru 3416 only

ITEM	PART NO.	QTY.	DESCRIPTION
1	226206	3	LEVER, release
2	226205	3	SPRING, pressure plate
3	226202	1	BRACKET, pressure plate
4	226200	1	PLATE ASSEMBLY, pressure (Includes items 1, 2, 3, 7, 8, 9 and hardware indented below)
	916206	3	CAPSCREW, 5/16"NF x 7/8"
	916207	3	NUT, 5/16"NF
	226201	1	PLATE, pressure
5	226182	1	DISC ASSEMBLY, driven (Includes item 6)
6	226420	1	FACING KIT, clutch driven disc (Consists of FACINGS and RIVETS)
7	226203	3	WASHER, release lever
8	226204	3	CLIP, pressure plate return
9	209230	3	PIN, release lever



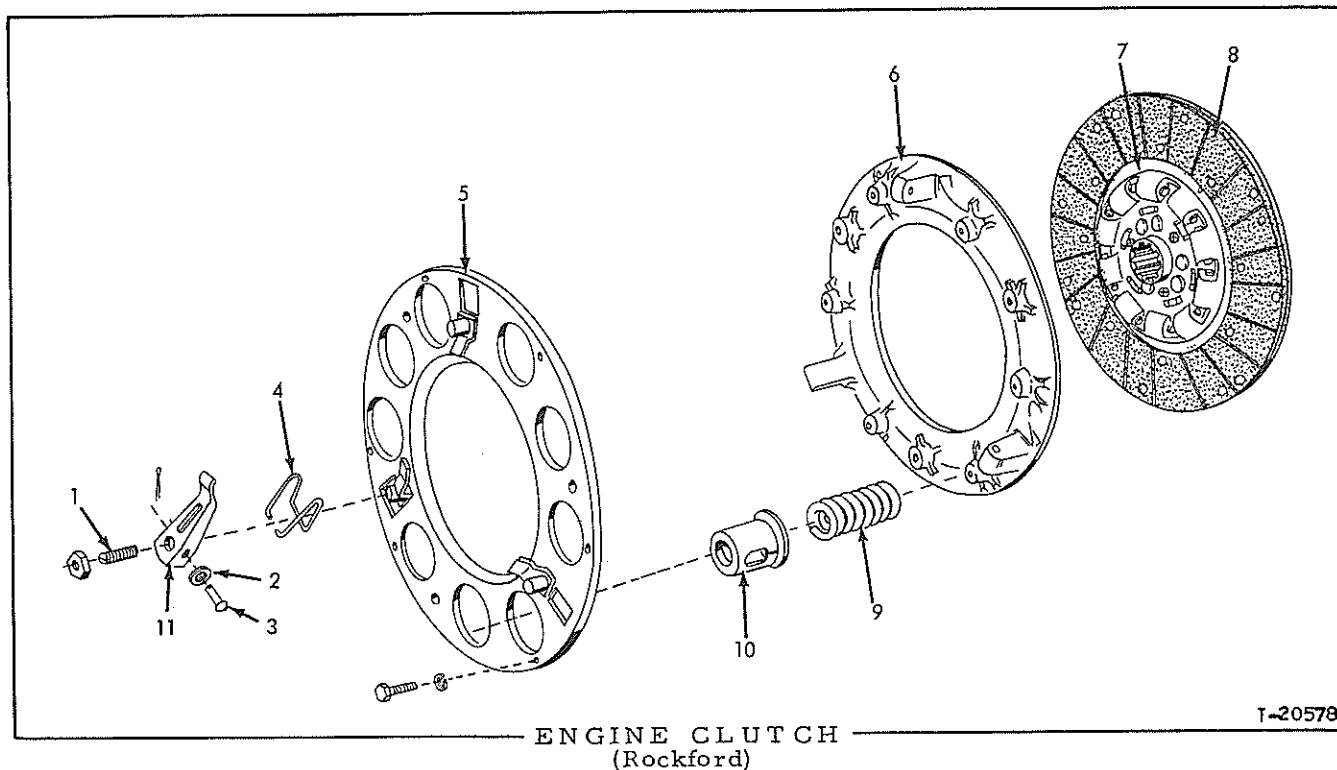
ENGINE CLUTCH
(Rockford)

T-22562

USAGE: Graders serial No. 5419 thru 5424 only

ITEM PART NO. QTY. DESCRIPTION

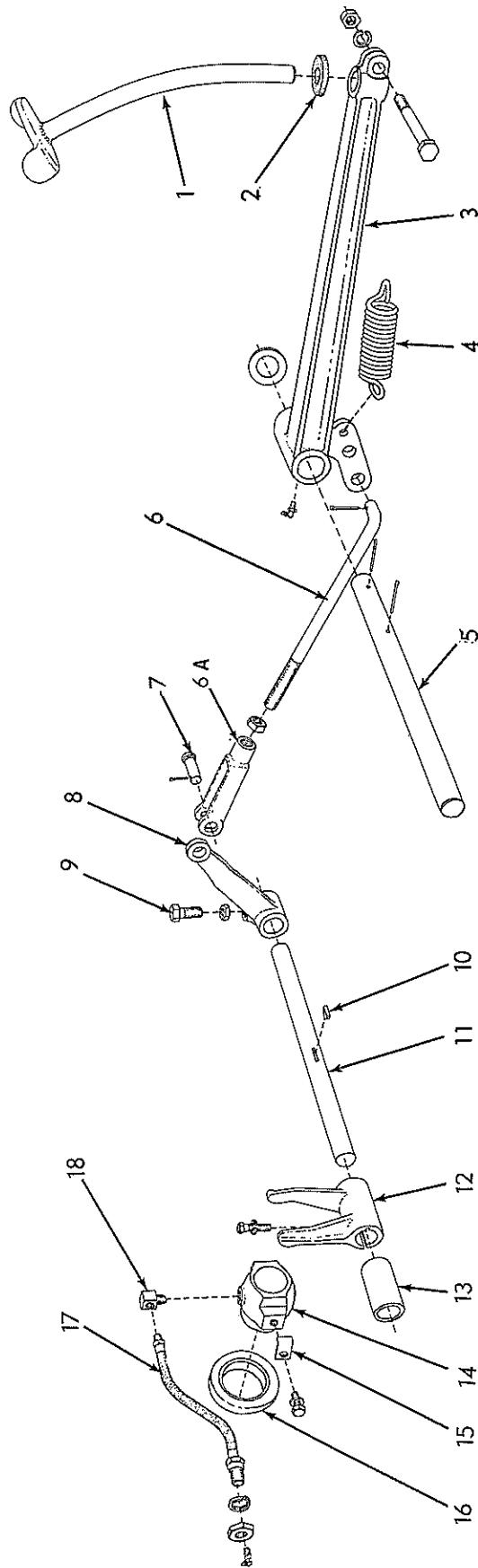
1	226764	1	DISC ASSEMBLY, driven (Includes item 2. No other components are serviced)
2	-----	4	FACING, disc (1/8" thick) (Order item 13)
	911005	10	RIVET, tubular, brass, fl-hd., 3/16" x 5/16"
	-----	4	FACING, disc (5/32" thick) (Order item 13)
	911005	10	RIVET, tubular, brass, fl-hd., 3/16" x 5/16"
3	230506	1	PLATE ASSEMBLY, pressure (Consists of items 4 thru 11)
	903771	6	CAPSCREW, 5/16"NC x 7/8"
	904205	6	LOCKWASHER, 5/16"
4	230423	1	PLATE, pressure
5	230391	9	SPRING, pressure plate
6	230356	9	CUP, pressure plate spring
7	230428	1	PLATE ASSEMBLY, back (Serviced only as a unit)
8	230361	3	SPRING, release lever
9	230380	3	LEVER, release
10	229603	3	PIN, release lever
	900942	3	PIN, cotter, 3/32" x 5/8"
11	229601	3	SCREW, release lever adjusting
	910876	3	NUT, jam, 7/16"NF
12	229814	3	WASHER, release lever pin
13	226767	1	FACING KIT (Includes 8 Facings and 24 Rivets)(Not Illustrated)



USAGE: Graders serial No. 5425 and up

ITEM PART NO. QTY. DESCRIPTION

-	229344	1	PLATE ASSEMBLY, pressure (Includes items 1 thru 6 and 9 thru 11)
	903775	6	CAPSCREW, 3/8"NC x 7/8"
	904206	6	LOCKWASHER, 3/8"
1	229601	3	SCREW, release lever adjusting
	910876	3	NUT, jam, 7/16"NF
2	229814	3	WASHER, release lever pin
3	229603	3	PIN, release lever
	900942	3	PIN, cotter, 3/32" x 5/8"
4	229604	3	SPRING, release lever
5	229595	1	PLATE ASSEMBLY, back (Serviced only as a unit)
6	229602	1	PLATE, pressure
7	232912	1	DISC ASSEMBLY, driven (Includes item 8)
8	232872	1	FACING KIT, clutch driven disc (Includes facings and RIVETS indented below)
	233470	20	RIVET, tubular, steel, fl-hd., 3/16" x 5/16"
9	228947	9	SPRING, pressure plate
10	204844	9	CUP, pressure plate spring
11	229600	3	LEVER, release



T-1609

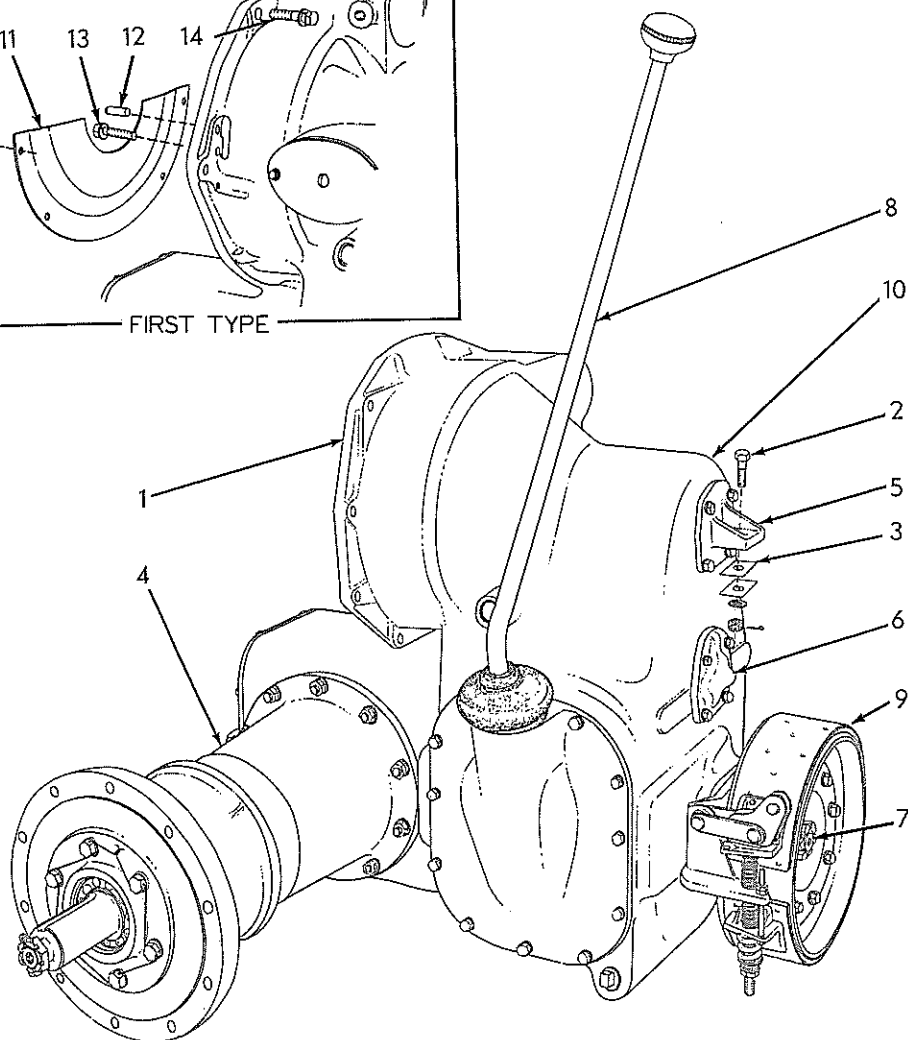
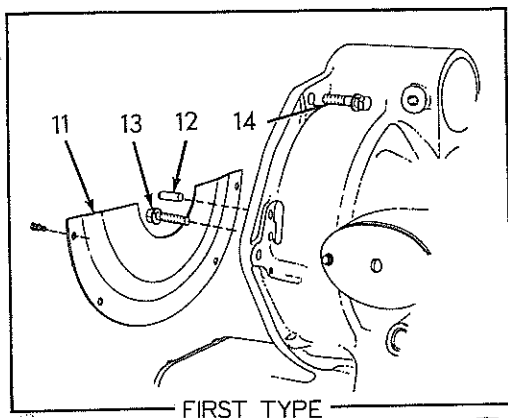
ENGINE CLUTCH CONTROL

ENGINE CLUTCH CONTROL

* Graders prior to serial No. 5425

** Graders serial No. 5425 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	065855	1	1	PEDAL, clutch operating
2	605785	1	1	BUMPER, clutch pedal arm (rubber)
3	065856	1	1	LEVER, clutch pedal
	650344	-	1	LEVER, clutch pedal (For units equipped with "Allis-Chalmers" TL-D Loader)
	915019	-	1	FITTING, lubricating, 90°, 1/4"NF taper thd.
	911849	1	1	CAPSCREW, 1/2"NF x 2"
	904208	1	1	LOCKWASHER, 1/2"
	911043	1	1	NUT, 1/2"NF
4	051193	1	1	SPRING, pedal retracting
5	065853	1	1	SHAFT, pedal lever (Not for graders equipped with Wheel Brakes)
	067839	1	1	SHAFT, pedal lever (Special equipment. For graders equipped with Wheel Brakes)
	904381	1	1	PIN, cotter, 3/16" x 2-1/4"
	911159	1	1	WASHER, plain, SAE std., 1"
	900811	1	1	PIN, cotter, 3/16" x 1-1/2"
6	068313	1	-	ROD, clutch control
	094963	-	1	ROD, clutch control
	900806	1	1	PIN, cotter, 1/8" x 1"
	911049	1	1	NUT, jam, 5/8"NF
6A	628730	1	1	YOKE, control rod
7	052671	1	1	PIN, control rod yoke
	900806	1	1	PIN, cotter, 1/8" x 1"
8	065854	1	1	LEVER, clutch shifter
9	228248	1	1	SETSCREW, clutch shifter lever
	911036	1	1	NUT, jam, 5/8"NC
10	036997	1	1	KEY, clutch shifter shaft
11	065852	1	1	SHAFT, clutch shifter
12	057232	1	-	FORK, clutch shifter
	095566	-	1	FORK, clutch shifter
	904744	1	1	CAPSCREW, 7/16"NC x 1-1/2"
	904207	1	1	LOCKWASHER, 7/16"
13	061046	2	2	BUSHING, clutch shifter shaft
14	202530	1	-	SHIFTER, clutch
	241874	-	1	SHIFTER, clutch
15	203623	1	-	CLIP, retaining, clutch shifter fork
	903629	1	-	CAPSCREW, 3/8"NC x 3/4"
	904206	1	-	LOCKWASHER, 3/8"
16	204829	1	-	BEARING, ball, clutch shifter
	235079	-	1	BEARING, ball, clutch shifter
17	605782	1	-	HOSE, lubricating, clutch shifter
	911036	1	-	NUT, jam, 5/8"NC
	904209	1	-	LOCKWASHER, 5/8"
	915275	1	-	FITTING, lubricating, 67-1/2°, 1/8"NPT
18	605794	1	-	ELBOW, clutch shifter hose



TRANSMISSION AND REAR AXLE

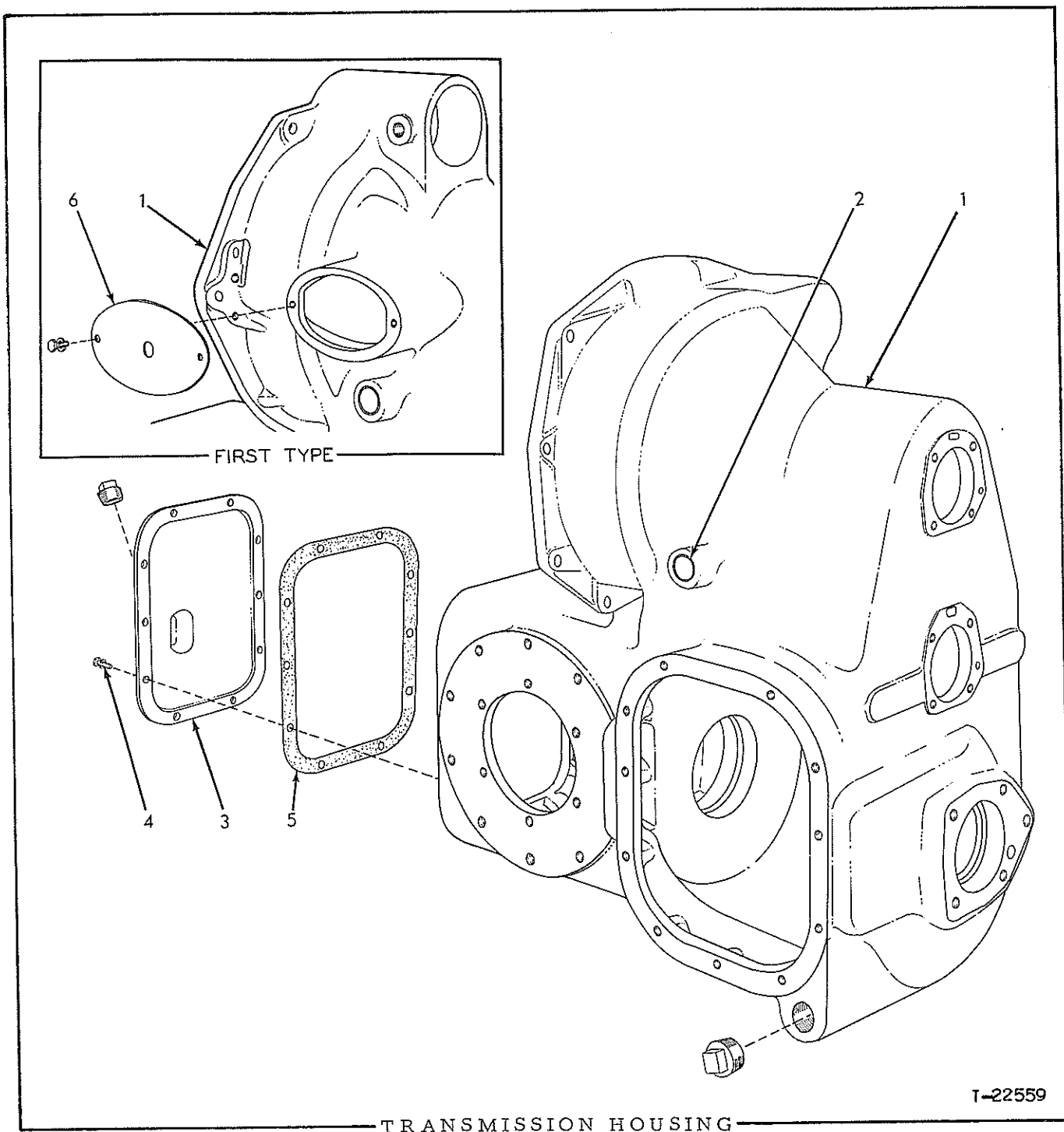
T-19624

* Graders prior to serial No. 5425
 ** Graders serial No. 5425 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	059995	1	-	TRANSMISSION AND REAR AXLE ASSEMBLY (Consists of items 4 thru 10)
	095949	-	1	TRANSMISSION AND REAR AXLE ASSEMBLY (Consists of items 4 thru 10)
2	012466	1	1	CAPSCREW, transmission mounting
	910244	1	1	WASHER, plain, SAE std., 1/2"
	910867	1	1	NUT, slotted, 1/2"NF
	910147	1	1	PIN, cotter, 3/32" x 1-1/8"
3	059832	8	8	SHIM, alignment (Use as req'd)
4	-----	-	-	See REAR AXLE Section

TRANSMISSION AND REAR AXLE (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
5	-----	-	-	See TOP SHAFT Section
6	-----	-	-	See INTERMEDIATE SHAFT Section
	-----	-	-	See REVERSE SHAFT Section
7	-----	-	-	See PINION SHAFT Section
8	-----	-	-	See GEAR SHIFT Section
9	-----	-	-	See BRAKE Section
10	-----	-	-	See TRANSMISSION HOUSING Section
11	205586	1	-	COVER, flywheel
	905661	4	-	CAPSCREW, 5/16"NC x 5/8"
	904205	4	-	LOCKWASHER, 5/16"
12	202532	2	-	PIN, dowel, clutch housing
13	921556	2	-	CAPSCREW, engine attaching (1/2"NC x 2")
	904208	2	-	LOCKWASHER, 1/2"
14	035236	2	-	CAPSCREW, engine attaching (1/2"NC x 1-3/4")
	904208	2	-	LOCKWASHER, 1/2"



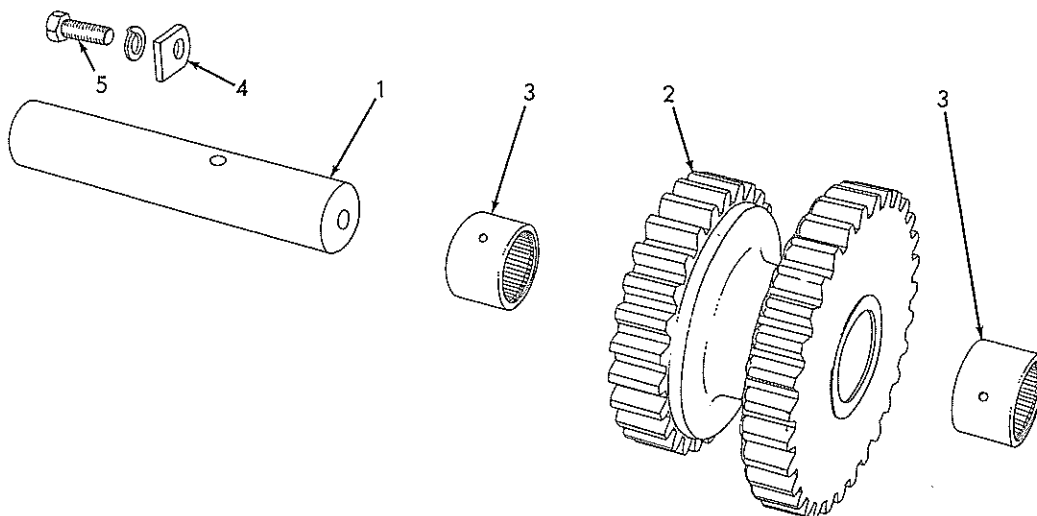
* Graders prior to serial No. 5425
 ** Graders serial No. 5425 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	059918	1 -	HOUSING ASSEMBLY, transmission (Includes item 2)
	096787	- 1	HOUSING ASSEMBLY, transmission (Includes item 2)
	912768	1 1	PLUG, pipe, 1"NPT

(Continued)

TRANSMISSION HOUSING (Continued)

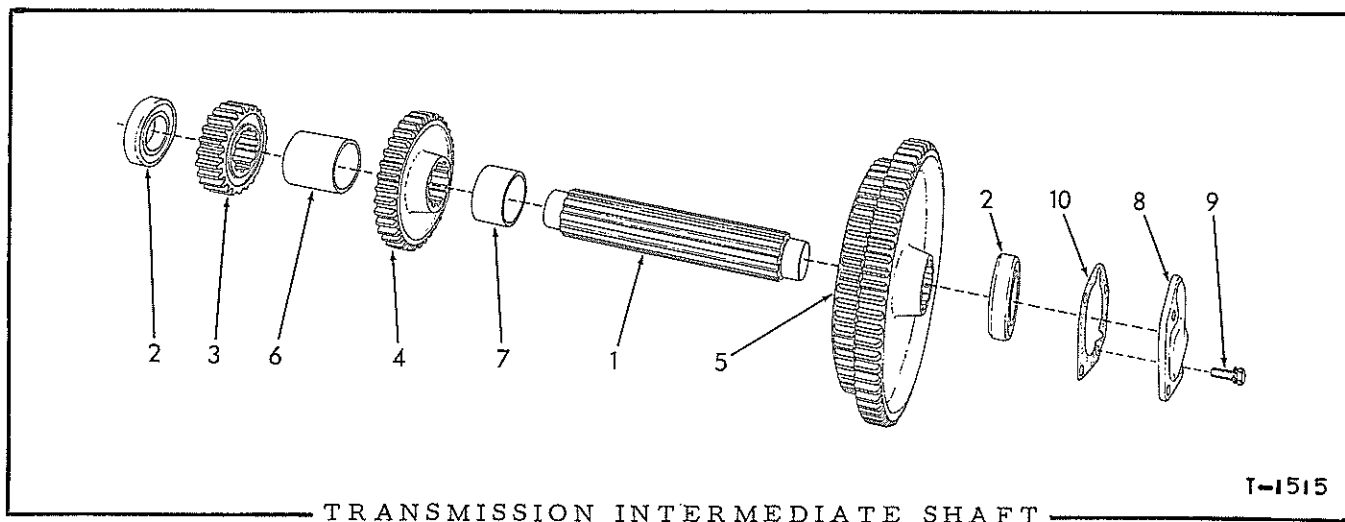
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
2	-----	2	2	BUSHING, transmission housing (See ENGINE CLUTCH CONTROL)
3	059931	1	1	PLATE, cover, rear
	912768	1	1	PLUG, pipe, 1"NPT
4	035439	10	10	CAPSCREW, 3/8"NC x 1"
	904206	10	10	LOCKWASHER, 3/8"
5	059932	1	1	GASKET, rear cover plate
6	059964	1	-	COVER, clutch adjustment access hole
	905655	2	-	CAPSCREW, 1/4"NC x 1/2"
	904204	2	-	LOCKWASHER, 1/4"



TRANSMISSION REVERSE SHAFT

T-1872

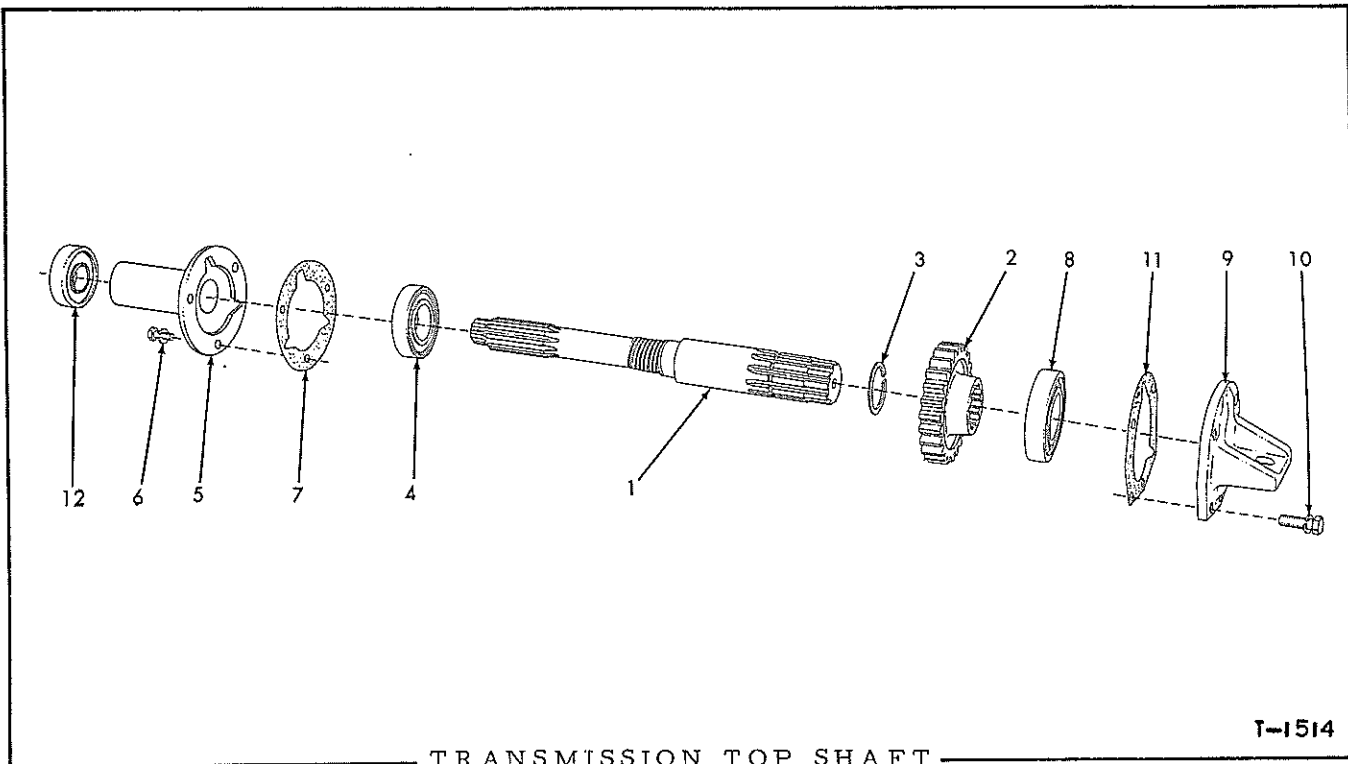
ITEM	PART NO.	QTY.	DESCRIPTION
1	059940	1	SHAFT
2	059941	1	GEAR (26 and 31 teeth)
3	604435	2	BEARING, needle, reverse gear
4	059939	1	LOCK, reverse gear shaft
5	035439	1	CAPSCREW, 3/8"NC x 1"
	904206	1	LOCKWASHER, 3/8"



ITEM PART NO. QTY. DESCRIPTION

1	059930	1	SHAFT
2	066742	2	BEARING, ball
3	059928	1	GEAR (23 teeth)
4	059962	1	GEAR (34 teeth)
5	059957	1	GEAR (53 and 64 teeth)
6	059927	1	SPACER, gear (2-15/32" long)
7	059961	1	SPACER, gear (1-3/8" long)
8	059955	1	*CAP, front bearing
9	035439	4	*CAPSCREW, 3/8"NC x 1"
	904206	4	*LOCKWASHER, 3/8"
10	059956	1	GASKET, front bear cap

*Not used with Auxiliary Creeper Transmission. See page 123.

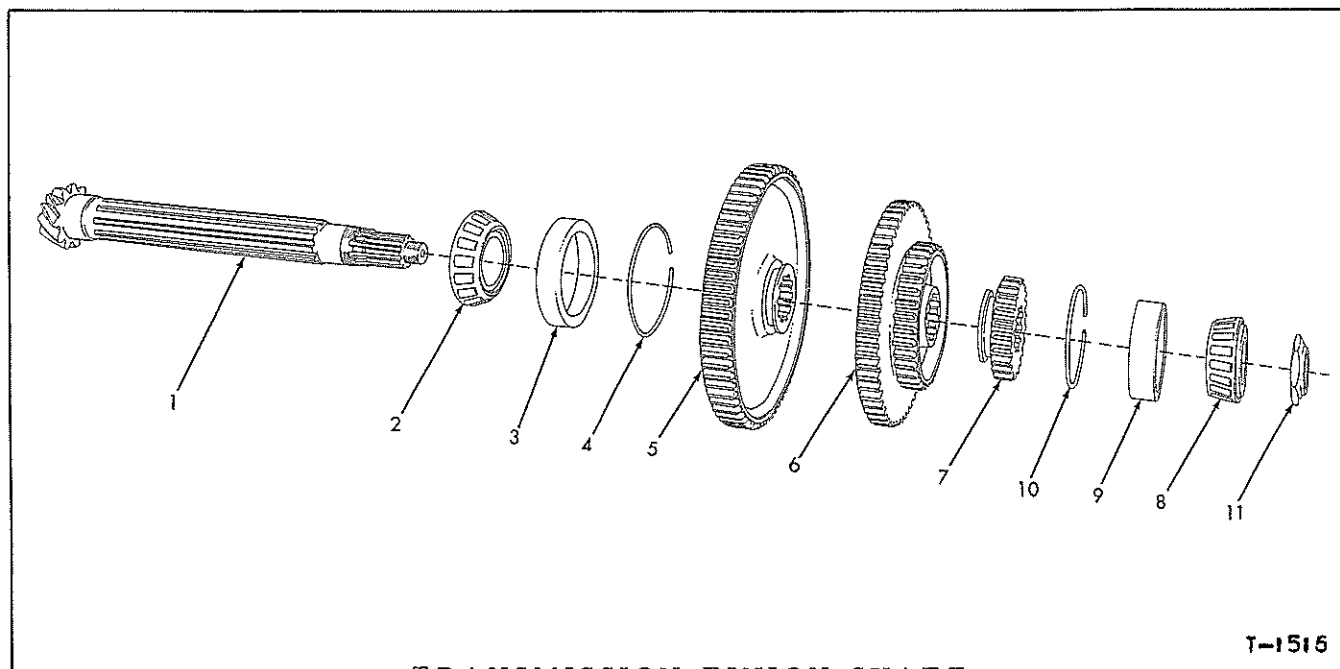


TRANSMISSION TOP SHAFT

ITEM PART NO. QTY. DESCRIPTION

1	{	061044	1	*SHAFT (Used prior to grader #5425)
		095816	1	*SHAFT (Effective with grader #5425)
2		059959	1	*GEAR (24 teeth)
3		059960	1	*RING, snap, gear retaining
4		4253907	1	BEARING, ball, intermediate
5	{	061043	1	CAP, intermediate bearing (Used prior to grader #5425)
		096789	1	CAP, intermediate bearing (Effective with grader #5425)
6		035439	3	CAPSCREW, 3/8"NC x 1"
		904206	3	LOCKWASHER, 3/8"
7		059923	1	GASKET, intermediate bearing cap
8		066742	1	*BEARING, ball, front
9		059958	1	*CAP, front bearing
10		035439	4	*CAPSCREW, 3/8"NC x 1"
		904206	4	*LOCKWASHER, 3/8"
11		059956	1	GASKET, front bearing cap
12	{	205756	1	BEARING, ball, rear (In flywheel)(Used prior to grader #5425)
		226859	1	BEARING, ball, rear (In flywheel)(Effective with grader #5425)

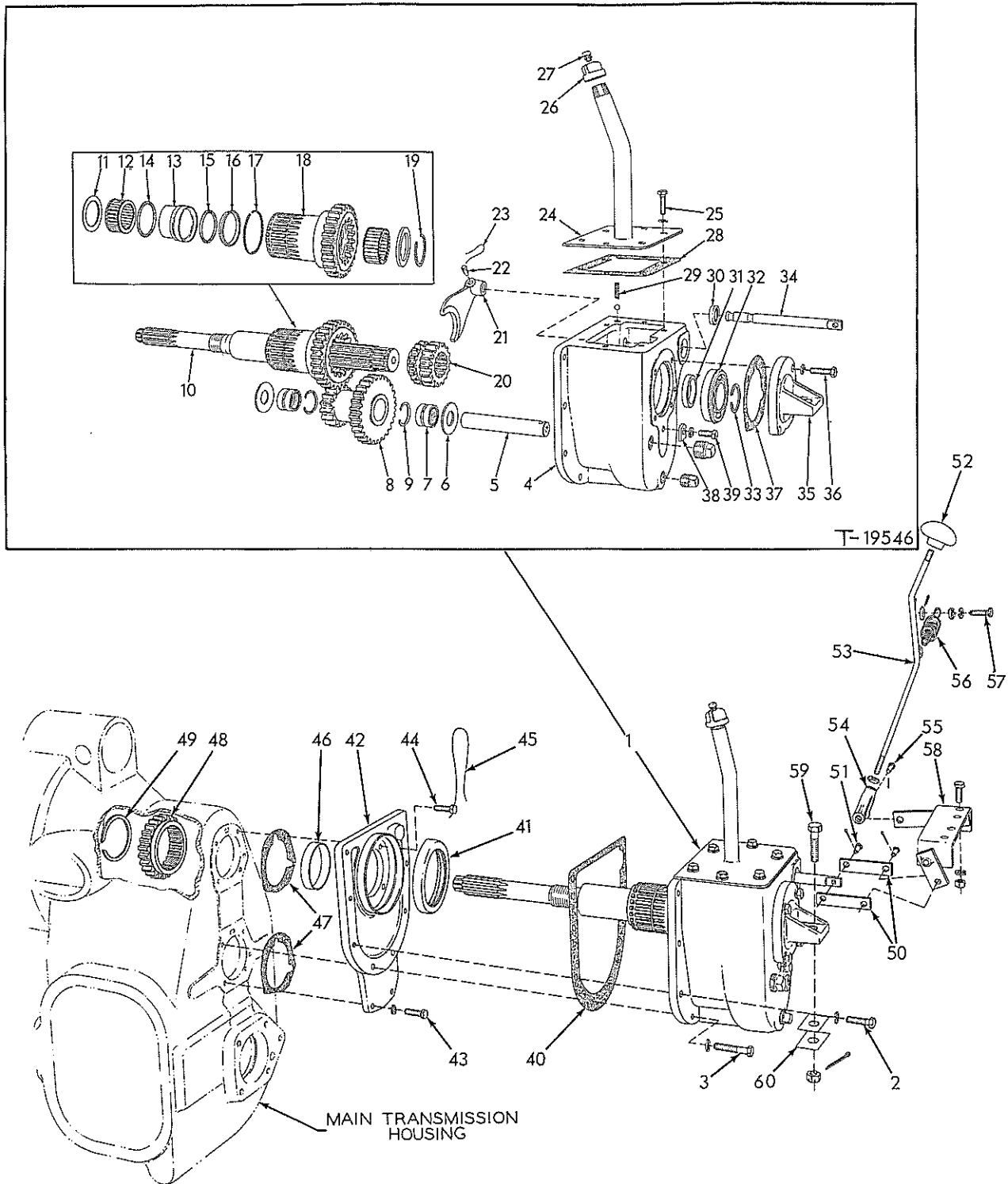
*Not used with Auxiliary Creeper Transmission.
See page 123.



TRANSMISSION PINION SHAFT

T-1516

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	SHAFT, pinion (Serviced only with matched bevel gear. Order GEAR SET 077951)
2	059934	1	CONE ASSEMBLY, pinion shaft bearing, rear
3	059935	1	CUP, pinion shaft bearing, rear
4	059936	1	RING, snap, rear pinion shaft bearing
5	059938	1	GEAR (64 teeth)
6	059942	1	GEAR (53 and 34 teeth)
7	059943	1	GEAR (23 teeth)
8	059954	1	CONE ASSEMBLY, pinion shaft bearing, front
9	066741	1	CUP, pinion shaft bearing, front
10	059937	1	RING, snap, front pinion shaft bearing
11	059946	1	NUT, adjusting, front pinion shaft bearing



AUXILIARY CREEPER TRANSMISSION

T-19545

AUXILIARY CREEPER TRANSMISSION

USAGE: Special equipment. Provides additional range of speeds one-third of standard

ITEM PART NO. QTY. DESCRIPTION

1	088166	1	TRANSMISSION ASSEMBLY, auxiliary (Consists of items 4 thru 39) (For graders prior to serial No. 5425)
	096687	1	TRANSMISSION ASSEMBLY, auxiliary (Consists of items 4 thru 39) (For graders serial No. 5425 and up)
2	013058	5	CAPSCREW, 3/8"NC x 1-1/4"
3	013059	2	CAPSCREW, 3/8"NC x 2"
	904206	7	LOCKWASHER, 3/8"
4	088151	1	HOUSING, transmission
	912725	1	PLUG, pipe, 1/2"NPT (drain)
	912726	1	PLUG, pipe, 3/4"NPT (filler)
5	088162	1	SHAFT, bottom
6	098571	2	WASHER, bottom shaft
7	093901	2	BEARING, roller, bottom shaft gear
8	088160	1	GEAR, bottom shaft
9	095868	2	RING, snap, bottom shaft gear
10	088155	1	SHAFT, top (20-7/8" long)(For graders prior to serial No. 5425)
	096686	1	SHAFT, top (22" long)(For graders serial No. 5425 and up)
11	088513	2	WASHER, top shaft
12	508828	2	BEARING, roller, top shaft gear
13	-----	1	SPACER, top shaft gear bearing (plain type)(Used prior to grader #6542. Order SPACER 650511 and items 14, 15 and 16)
	650511	1	SPACER, top shaft gear bearing
14	654803	1	O-RING, bearing spacer (outer)
15	654804	1	O-RING, bearing spacer (inner)
16	650510	1	RING, bearing spacer
17	090485	1	RING, snap, top shaft gear
18	088157	1	GEAR, top shaft
19	050293	1	RING, snap, top shaft
20	088158	1	GEAR, sliding, top shaft
21	088163	1	FORK, shifting
22	202864	1	SETSCREW
23	023633	1	WIRE, locking, 1/16" x 12"
24	645725	1	COVER, top
25	035244	6	CAPSCREW, 3/8"NC x 3/4"
	904206	6	LOCKWASHER, 3/8"
26	656580	1	CAP, filler pipe

Effective with grader #6542

(Continued)

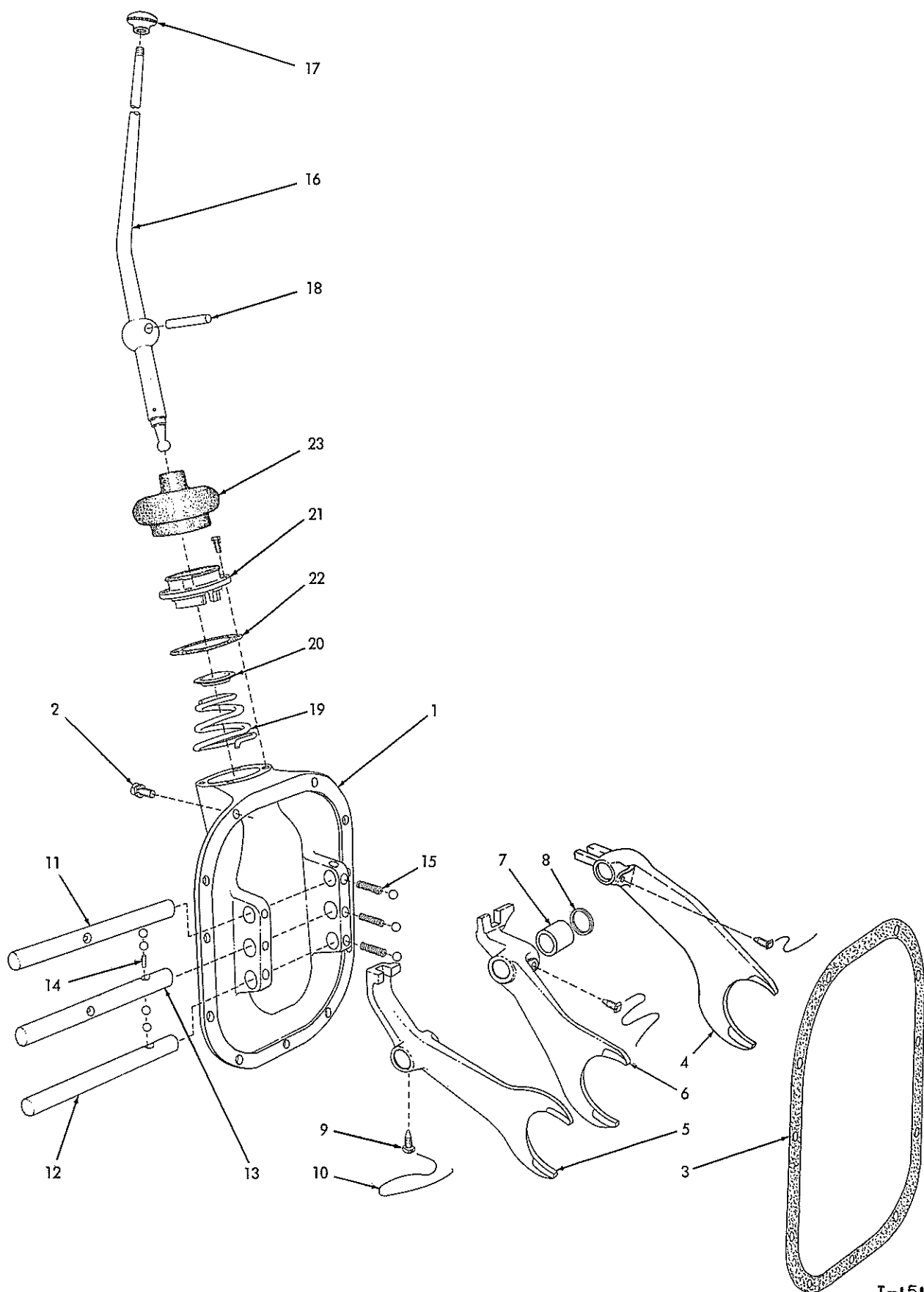
AUXILIARY CREEPER TRANSMISSION (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
27	634161	1	VENT, filler pipe
28	088164	1	GASKET, top cover
29	224925	1	SPRING, shifting fork shaft locking ball
30	088778	1	SEAL, oil, shifting fork shaft
31	088514	1	WASHER, bearing spacing
32	088551	1	BEARING, ball, top shaft
33	051344	1	RING, snap, top shaft
34	088154	1	SHAFT, shifting fork
	905360	1	BALL, steel, 3/8" diam.
35	088153	1	CAP, top shaft
36	013058	4	CAPSCREW, 3/8"NC x 1-1/4"
	904206	4	LOCKWASHER, 3/8"
37	088152	1	GASKET, top shaft cap
38	059939	1	LOCK, bottom shaft
39	035439	1	CAPSCREW, 3/8"NC x 1"
	904206	1	LOCKWASHER, 3/8"
40	088150	1	GASKET, auxiliary transmission to adapter
41	095160	1	SEAL, oil (7/16" wide)(Used prior to grader #6542)
	654805	1	SEAL, oil (5/8" wide)(Effective with grader #6542)
42	654809	1	ADAPTER ASSEMBLY (Includes item 46)(If for graders prior to #6542 also order SEAL 654805)
43	013058	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	LOCKWASHER, 3/8"
44	045617	4	CAPSCREW, drilled-hd., 3/8"NC x 1-1/4"
45	023756	1	WIRE, locking, 1/16" x 26"
46	088149	1	SLEEVE, pilot
47	059956	2	GASKET, adapter to main transmission housing
48	088156	1	GEAR, coupling (24 teeth)
49	088735	1	RING, snap, gear retaining
50	089668	2	LINK, control
51	627451	2	PIN, control link
	900942	2	PIN, cotter, 3/32" x 5/8"
52	202862	1	KNOB, control rod
53	650323	1	ROD, control
	911048	1	NUT, jam, 3/8"NF
54	628736	1	YOKE, control rod

(Continued)

AUXILIARY CREEPER TRANSMISSION (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
55	078810	1	PIN, control rod
	900942	1	PIN, cotter, 3/32" x 5/8"
56	043881	1	SPRING, control rod
57	650341	1	CAPSCREW, control rod spring
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
	911115	1	WASHER, plain, SAE std., 3/8"
	900801	1	PIN, cotter, 3/32" x 3/4"
58	089669	1	BRACKET AND LEVER, control
	913017	2	CAPSCREW, 3/8"NF x 1"
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
59	012466	1	CAPSCREW, transmission mounting
	910867	1	NUT, slotted, 1/2"NF
	910147	1	PIN, cotter, 3/32" x 1-1/8"
60	059832	8	SHIM, alignment (Use as required)

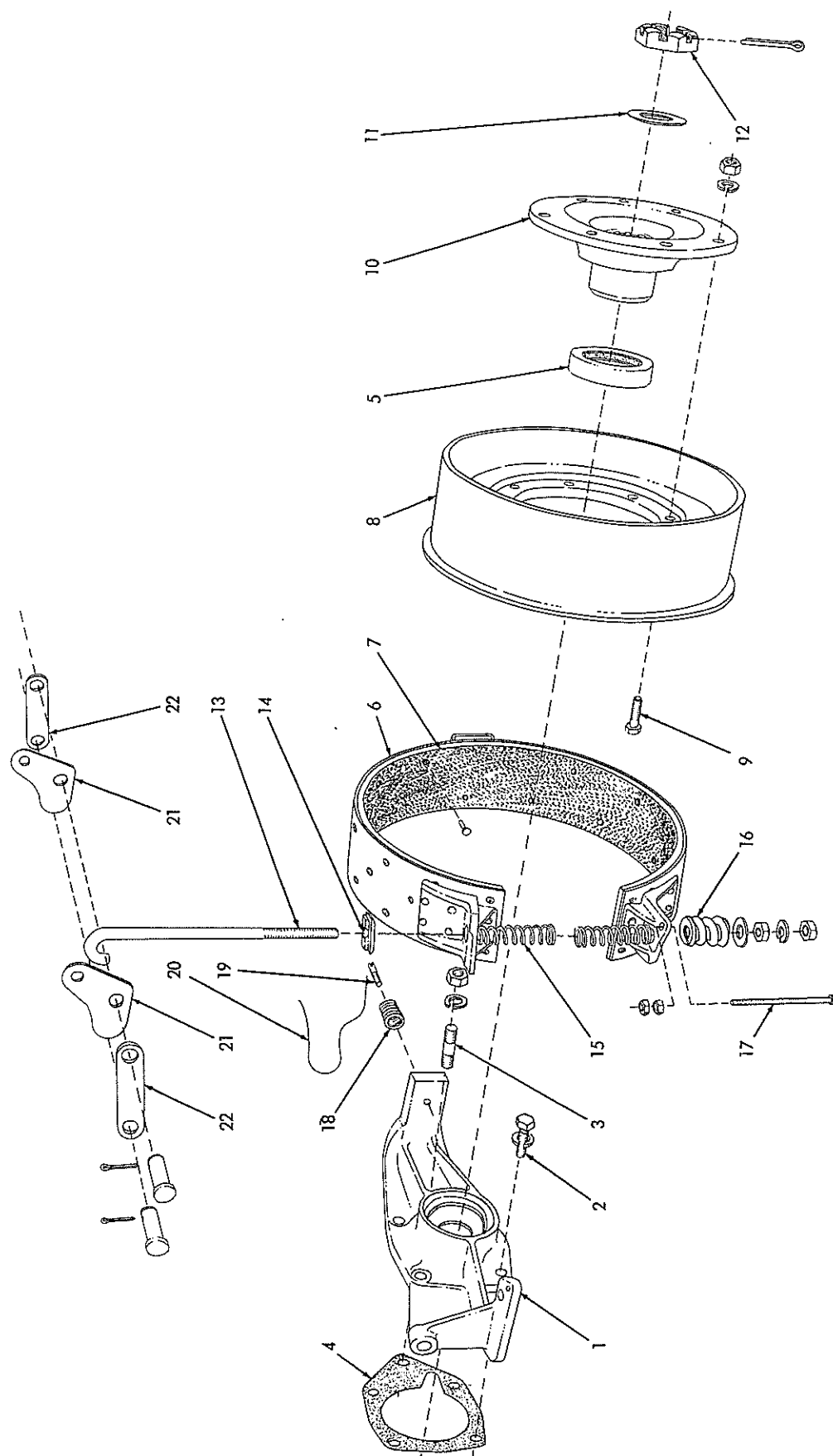


T-1518

GEAR SHIFT

GEAR SHIFT

ITEM	PART NO.	QTY.	DESCRIPTION
1	059976	1	COVER, gear shift
2	035439	11	CAPSCREW, 3/8"NC x 1"
	904206	11	LOCKWASHER, 3/8"
3	059977	1	GASKET, gear shift cover
4	059989	1	FORK, first and reverse
5	059986	1	FORK, second and third
6	059988	1	FORK, fourth
7	068922	1	SPACER, shifting fork
8	097464	1	WASHER, spacing (Use as req'd)
9	202864	3	SETSCREW, shifting fork
10	023633	3	WIRE, locking (1/16" x 12")
11	059990	1	ROD, gear shifting, first and reverse
12	059985	1	ROD, gear shifting, second and third
13	059987	1	ROD, gear shifting, fourth
14	059996	1	PIN, interlocking, shifting rod
	905361	4	BALL, steel, 7/16" diam.
15	059994	3	SPRING, shifting rod interlock
	905361	3	BALL, steel, 7/16" diam.
16	059963	1	LEVER, shifting
17	202862	1	KNOB, shifting lever
18	059993	1	PIN, shifting lever
19	059991	1	SPRING, shifting lever
20	059992	1	WASHER, shifting lever spring
21	073303	1	RETAINER, shifting lever
	905656	4	CAPSCREW, 1/4"NC x 5/8"
	904204	4	LOCKWASHER, 1/4"
22	059965	1	GASKET, gear shifting lever retainer
23	069920	1	BOOT, gear shifting lever

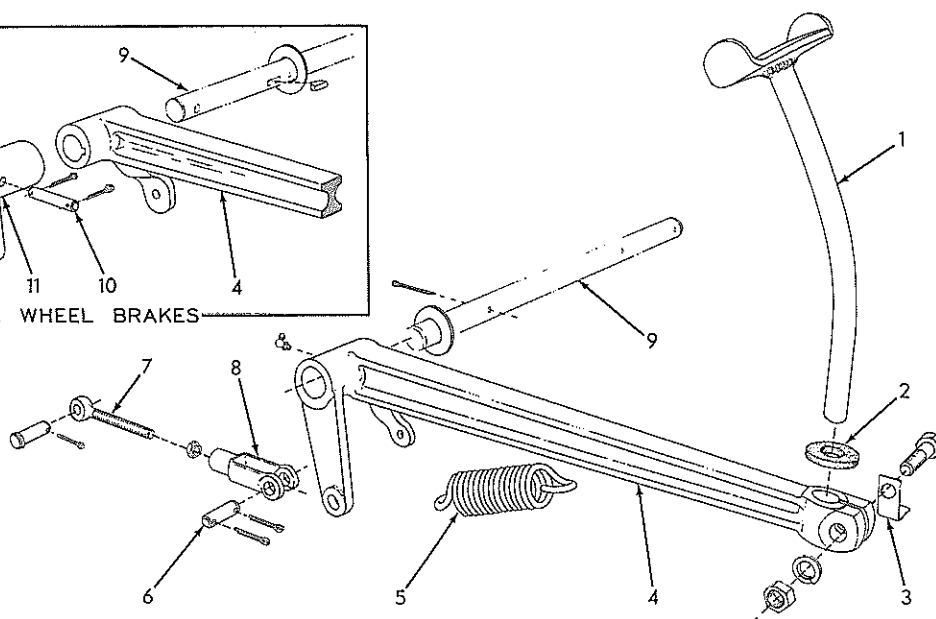
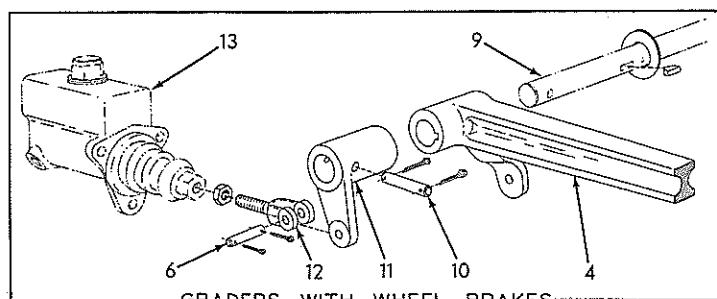


1-1517

TRANSMISSION BRAKE

TRANSMISSION BRAKE

ITEM	PART NO.	QTY.	DESCRIPTION
1	059945	1	BRACKET, mounting
2	035061	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
3	059982	1	STUD (1/2" diam.)
	904208	1	LOCKWASHER, 1/2"
	911043	1	NUT, 1/2"NF
4	059944	1	GASKET, mounting bracket
5	059947	1	SEAL, oil, mounting bracket
6	059948	1	BAND ASSEMBLY (Includes item 7)
7	066856	1	LINING, band
	911004	28	RIVET, tubular, brass, flat-hd., 9/64" x 3/8"
8	059949	1	DRUM, brake
9	012992	8	CAPSCREW, 3/8"NF x 1-1/4"
	904206	8	LOCKWASHER, 3/8"
	911041	8	NUT, 3/8"NF
10	059951	1	FLANGE, drum mounting
11	059953	1	WASHER, flange retaining
12	059952	1	NUT, slotted
	900808	1	PIN, cotter, 1/8" x 1-1/2"
13	059974	1	BOLT, band adjustment
	910244	1	WASHER, plain, SAE std., 1/2"
	904207	1	LOCKWASHER, 7/16"
	914879	2	NUT, jam, 7/16"NC
14	059973	1	SHOE, cam lever
15	059975	2	SPRING, band expanding
16	059979	1	SPRING, band adjustment bolt
17	059978	1	SCREW, band supporting
	911024	2	NUT, 1/4"NC
18	059981	1	SPRING, band centering
19	059980	1	SCREW, band centering
20	023633	1	WIRE, locking, 1/16" x 12"
21	059969	2	LEVER, cam (When special Wheel Brakes are installed this part is assembled in reverse of position illustrated)
22	059971	2	LINK, operating (Not used when grader is equipped with special Wheel Brakes)
	083122	2	LINK, operating (For graders with special Wheel Brakes)
	917648	2	PIN, yoke, 1/2" diam.
	900806	2	PIN, cotter, 1/8" x 1"



T-1508

BRAKE CONTROL

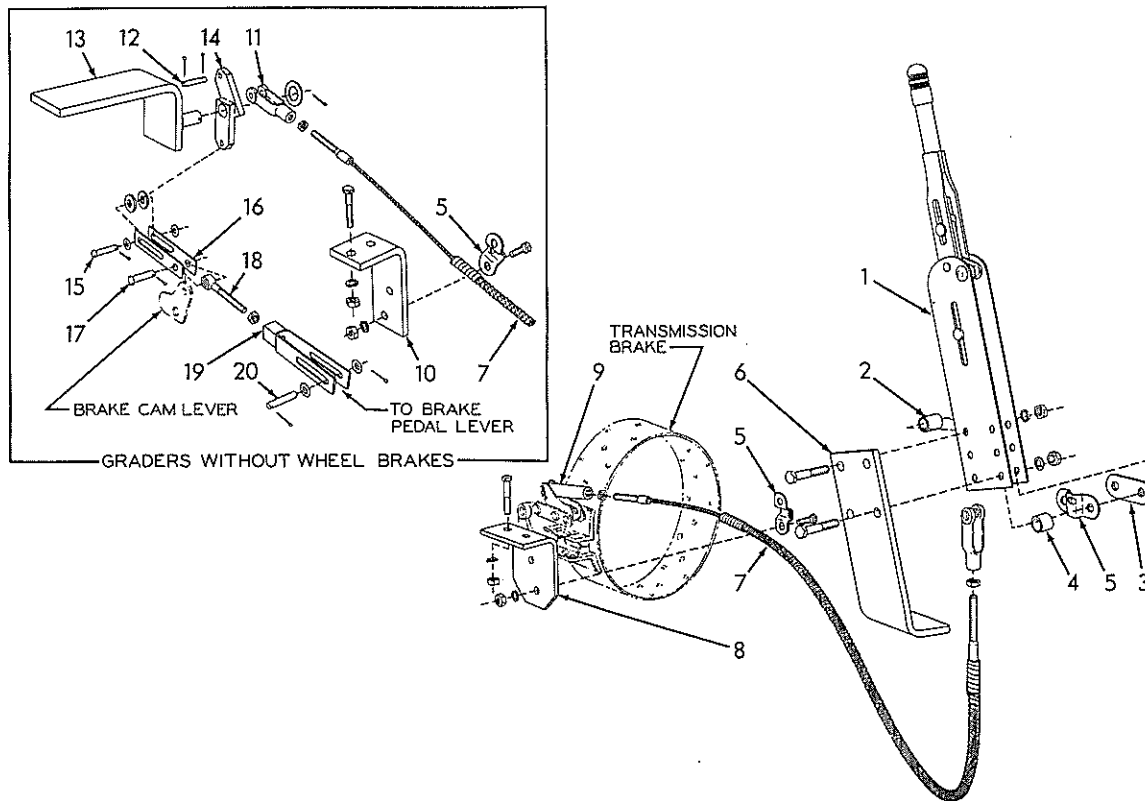
* Graders not equipped with special Wheel Brakes
 ** Graders equipped with special Wheel Brakes

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	065855	1	1	PEDAL, operating lever
2	605785	1	1	BUMPER, pedal (rubber)
3	068372	1	1	ANGLE, operating, stop light switch
4	065857	1	-	LEVER, operating pedal
	915019	1	-	FITTING, lube, 90°, 1/4"NF taper thd.
	067849	-	1	LEVER, operating pedal
	911159	1	1	WASHER, plain, SAE std., 1"
	900811	1	1	PIN, cotter, 3/16" x 1-1/2"
	911849	1	1	CAPSCREW, 1/2"NF x 2"
	904208	1	1	LOCKWASHER, 1/2"
	911043	1	1	NUT, 1/2"NF
	905126	-	1	KEY, # 15 woodruff, 1/4" x 1"

(Continued)

BRAKE CONTROL (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
5	051193	1	1	SPRING, pedal lever retracting
6	605983	1	1	PIN, adjusting yoke
	900801	2	2	PIN, cotter, 3/32" x 3/4"
7	080704	1	-	EYE-BOLT, brake operating
	911048	1	-	NUT, jam, 3/8"NF
	078810	1	-	PIN, yoke, 3/8" diam.
	900801	1	-	PIN, cotter, 3/32" x 3/4"
8	604718	1	-	YOKE, adjusting
9	-----	1	1	SHAFT (See ENGINE CLUTCH CONTROL)
10	601935	-	1	PIN, lever retaining
	900805	-	2	PIN, cotter, 1/8" x 1"
11	067840	-	1	LEVER, operating, master cylinder
12	067834	-	1	YOKE, operating, master cylinder
	911042	-	1	NUT, 7/16"NF
13	-----	-	1	MASTER CYLINDER (See WHEEL BRAKES)



T-27381

USAGE: Special Equipment

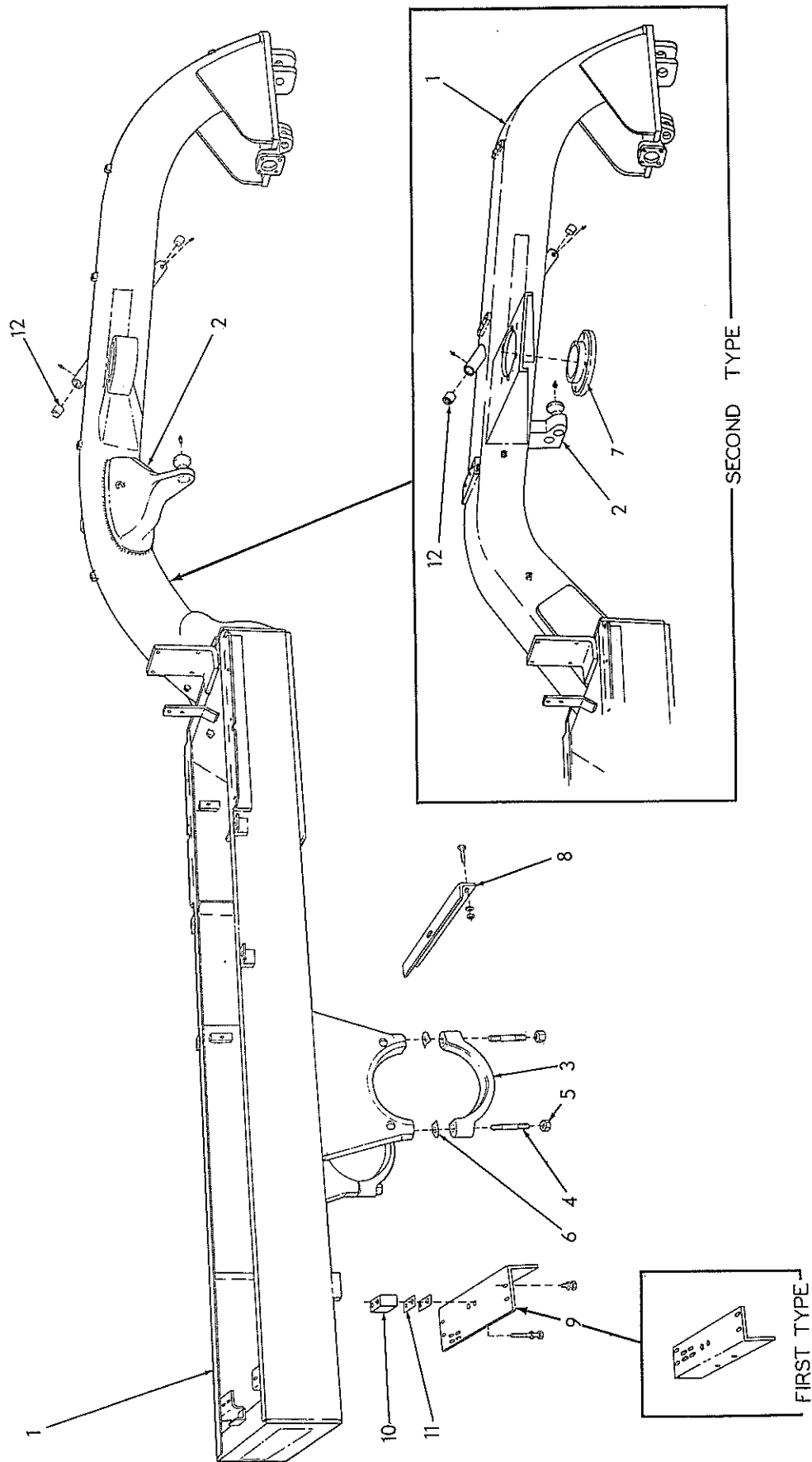
* For graders not equipped with special Wheel Brakes
 ** For graders equipped with special Wheel Brakes

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	083850	1	1	LEVER ASSEMBLY, operating (Serviced only as a unit)
	903774	4	4	CAPSCREW, 5/16"NC x 2"
	904205	4	4	LOCKWASHER, 5/16"
	911025	4	4	NUT, 5/16"NC
2	083847	2	2	SPACER, lever mounting (1" long)
3	083851	1	1	SPACER, cable clamp
4	083849	2	2	SPACER, lever mounting (5/8" long)
5	083848	2	2	CLAMP, cable supporting
	903772	2	-	CAPSCREW, 5/16"NC x 1"
	903771	-	2	CAPSCREW, 5/16"NC x 7/8"
	904205	2	2	LOCKWASHER, 5/16"
	911025	2	2	NUT, 5/16"NC
6	083653	1	1	BRACKET, lever mounting (Welded to frame)

(Continued)

PARKING BRAKE (Continued)

ITEM	PART NO.	QTY. * **		DESCRIPTION
7	088170	1	-	CABLE ASSEMBLY (50-1/4" long. Includes housing)
	083651	-	1	CABLE ASSEMBLY (45-1/2" long. Includes housing)
	628736	1	1	YOKE, rod end (adjustable, 3/8"NF)
	911048	2	2	NUT, jam, 3/8"NF
8	083654	-	1	BRACKET, cable supporting
	046321	-	2	CAPSCREW, 5/16"NC x 1-1/2"
	904205	-	2	LOCKWASHER, 5/16"
	911025	-	2	NUT, 5/16"NC
9	083652	-	1	LINK, operating cable
	078810	-	1	PIN, yoke (3/8" diam.)
	900801	-	1	PIN, cotter, 3/32" x 3/4"
10	088171	1	-	ANGLE, cable supporting
	905664	2	-	CAPSCREW, 5/16"NC x 1-3/4"
	904205	2	-	LOCKWASHER, 5/16"
	911025	2	-	NUT, 5/16"NC
11	604718	1	-	YOKE, operating cable, lower end
12	605983	1	-	PIN, cable lower yoke
	900801	2	-	PIN, cotter, 3/32" x 3/4"
13	088177	1	-	ANGLE, supporting, lower lever (Welded to frame)
	910255	1	-	WASHER, plain, SAE std., 3/4"
	900807	1	-	PIN, cotter, 1/8" x 1-1/4"
14	088172	1	-	LEVER, lower
15	630833	1	-	PIN, lower lever
	913755	2	-	WASHER, plain, 1"O.D.
	910335	2	-	WASHER, plain, SAE std., 5/16"
	900801	1	-	PIN, cotter, 3/32" x 3/4"
16	088169	2	-	PLATE, connecting
17	082875	1	-	PIN, eye bolt
	900942	1	-	PIN, cotter, 3/32" x 5/8"
18	080704	1	-	BOLT, eye
	911048	1	-	NUT, jam, 3/8"NF
19	088168	1	-	YOKE, pedal lever
20	605983	1	-	PIN, pedal lever
	910335	2	-	WASHER, plain, SAE std., 5/16"
	900801	2	-	PIN, cotter, 3/32" x 3/4"



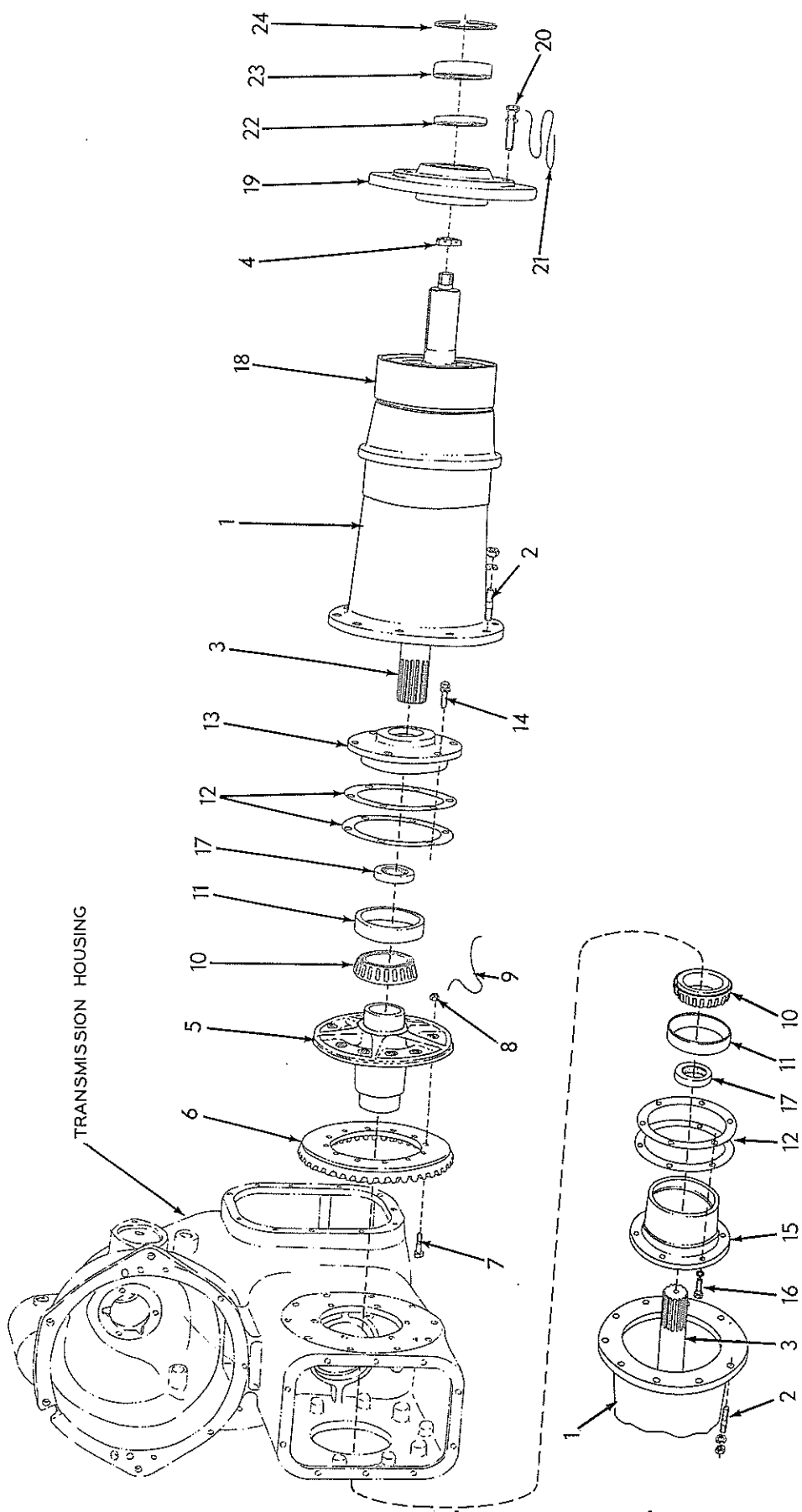
FRAME

1-22560

FRAME

ITEM	PART NO.	QTY.	DESCRIPTION
1	064450	1	FRAME ASSEMBLY (Includes items 2 thru 6)(Used prior to grader #5425. If required for graders prior to #1004 also order 1 PIN 073485, 1 SETSCREW 901279, 1 NUT 911034 and 1 FITTING 914465)
	658555	1	FRAME ASSEMBLY (Includes items 2 thru 7)(Effective with grader #5425. If for graders prior to #5887 also order 8 CAPSCREWS 013467)
	914465	3	FITTING, lubricating, straight, 1/8"NPT
2	095639	1	BRACKET, side shift (Requires welding to install)(Graders prior to #5887)
	620204	1	BRACKET, side shift (Requires welding to install)(Graders #5887 and up)
3	066179	2	CAP, trunnion (If for graders prior to #65 also order 2 STUDS 050913 with each cap)
4	050905	4	STUD (3/4"NF x 4-11/16")(Graders prior to #65)
5	050913	4	STUD (3/4"NF x 5-3/16")(Graders #65 and up)
5	012767	4	NUT, high, 3/4"NF
6	055062	24	SHIM, trunnion cap (Use as req'd)
7	658497	2	SOCKET, lift cylinder (Requires welding to install)(Graders #6715 and up)
8	055412	1	ANGLE, engine front support
	911849	2	CAPSCREW, 1/2"NF x 2"
	910244	2	WASHER, plain, SAE std., 1/2"
	911043	2	NUT, 1/2"NF
9	065846	1	ANGLE, engine rear support (Used prior to grader #5425)
	098745	1	ANGLE, engine rear support (Not for units with power steering)
	661221	1	ANGLE, engine rear support (For units with power steering)
	903638	4	CAPSCREW, 1/2"NC x 1-1/4"
	910244	4	WASHER, plain, SAE std., 1/2"
10	065842	1	BLOCK, engine mounting
	905668	2	CAPSCREW, 1/2"NC x 3-1/4"
	904208	2	LOCKWASHER, 1/2"
11	203159	5	SHIM, engine aligning (.010" thick. Use as req'd)
	203165	5	SHIM, engine aligning (.015" thick. Use as req'd)
12	076160	2	BUSHING, steering shaft

NOTE: See PAINTING AND MARKING for transfers applied to frame

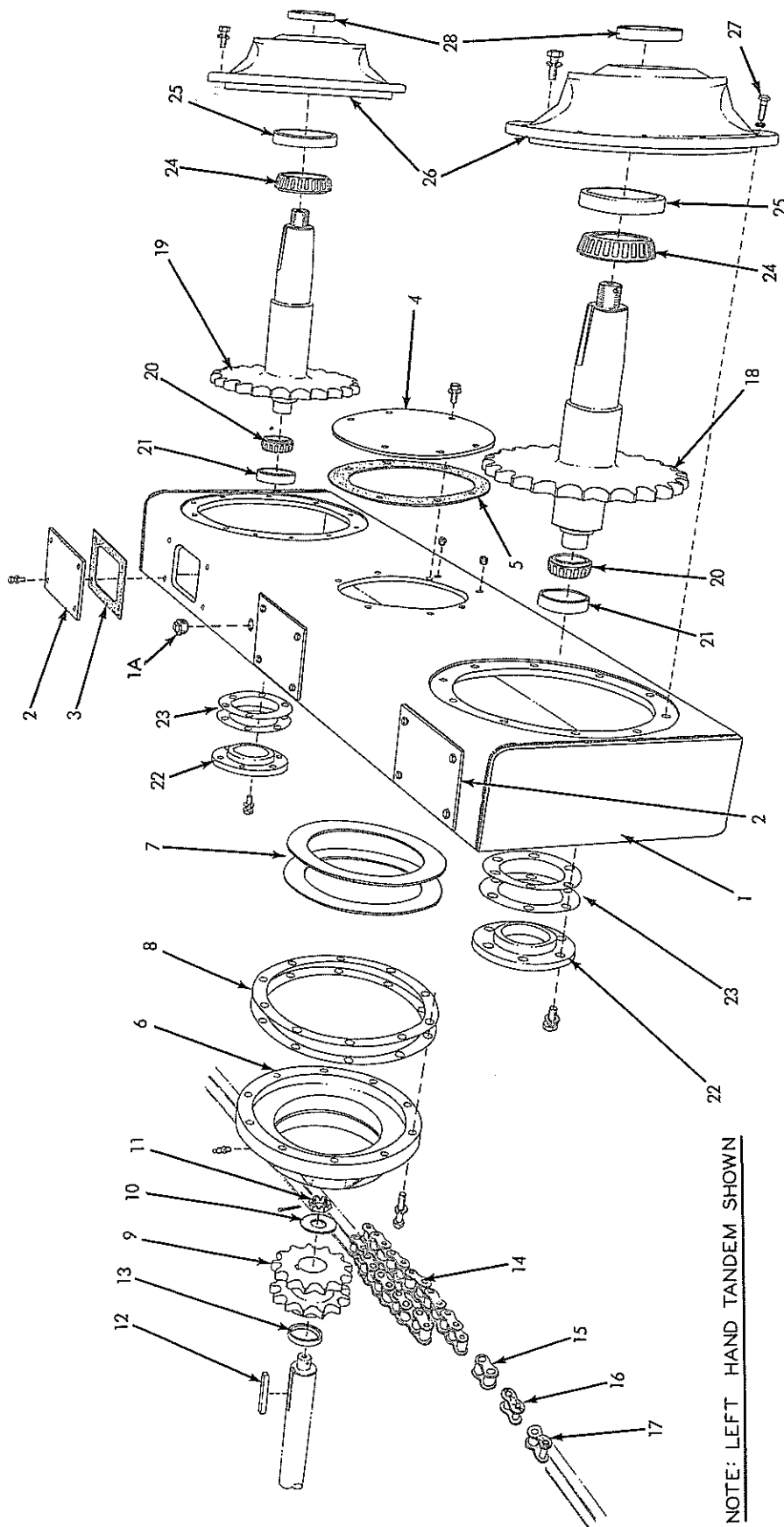


T-1512

REAR AXLE

REAR AXLE

ITEM	PART NO.	QTY.	DESCRIPTION
1	076382	2	HOUSING (If for grader prior to #1700 also order 1 CAP 076381, 6 CAPSCREWS 041266 and 6 LOCKWASHERS 904209)
2	059914	20	STUD (1/2"NC x 1/2"NF x 2-1/4")
	904208	20	LOCKWASHER, 1/2"
	911043	20	NUT, 1/2"NF
3	081148	2	SHAFT
4	-----	-	NUT, shaft (See TANDEMS)
5	059921	1	HUB, bevel gear
6	-----	1	GEAR, bevel (Serviced only with matched pinion shaft. Order GEAR SET 077951)
7	063994	12	CAPSCREW (7/16"NF x 1-1/2", drilled end)
8	063995	12	NUT (castle, 7/16"NF)
9	023633	6	WIRE, locking (1/16" x 12")
10	210732	2	CONE ASSEMBLY, bevel gear hub bearing
11	061090	2	CUP, bevel gear hub bearing
12	{ 059915	4	SHIM, bearing adjusting (.010" thick. Use as req'd)
	{ 067276	2	SHIM, bearing adjusting (.007" thick. Use as req'd)
	{ 059916	4	SHIM, bearing adjusting (.004" thick. Use as req'd)
13	059922	1	CAGE, bevel gear hub right bearing
14	041250	6	CAPSCREW, 7/16"NC x 1-1/4"
	904207	6	LOCKWASHER, 7/16"
15	059917	1	CAGE, bevel gear hub left bearing
16	041250	6	CAPSCREW, 7/16"NC x 1-1/4"
	904207	6	LOCKWASHER, 7/16"
17	068513	2	SEAL, oil, bearing cage
18	054297	2	BUSHING, housing
19	{ 054301	2	CAP, housing end (Used prior to grader #1700)
	{ 076381	2	CAP, housing end (Effective with grader #1700)
20	{ 054069	12	CAPSCREW, 1/2"NC x 2" } Used prior to
	{ 904208	12	LOCKWASHER, 1/2" } grader #1700
	{ 041266	12	CAPSCREW, 5/8"NC x 2" } Effective with
	{ 904209	12	LOCKWASHER, 5/8" } grader #1700
21	023756	2	WIRE, locking (1/16" x 26")
22	054295	2	SEAL, oil, housing end cap
23	054073	2	BEARING, ball, housing end cap
24	054296	2	RING, snap, housing end cap bearing



NOTE: LEFT HAND TANDEM SHOWN

T-1521

TANDEMS

TANDEMS

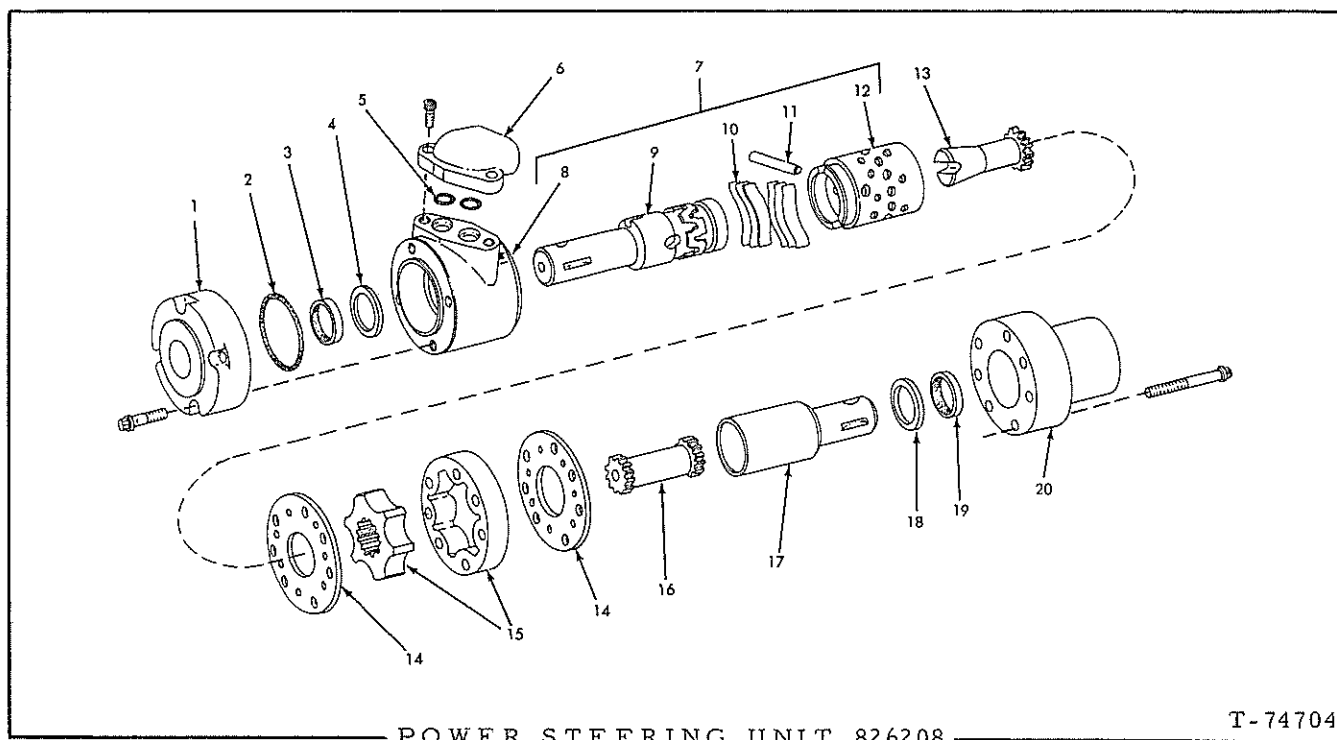
* Graders prior to serial No. 5889
 ** Graders serial No. 5889 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	054776	2	-	CASE, tandem (Used prior to grader #5425)
	086760	2	2	CASE, tandem (Effective with grader #5425)
	901652	4	4	PLUG, pipe, 1/4"NPT
1A	051094	2	2	PLUG, vent (3/4"NPT)
2	054755	6	6	COVER, case access hole, top
	903775	24	24	CAPSCREW, 3/8"NC x 7/8"
	904206	24	24	LOCKWASHER, 3/8"
3	054756	6	6	GASKET, top access hole cover
4	054757	2	2	COVER, case access hole, side
	903775	12	12	CAPSCREW, 3/8"NC x 7/8"
	904206	12	12	LOCKWASHER, 3/8"
5	054758	2	2	GASKET, side access hole cover
6	054774	2	2	HUB, case
	924864	12	12	CAPSCREW, 1/2"NC x 2-1/4"(upper)
	924865	8	8	CAPSCREW, Nylok, 1/2"NC x 2-1/4"(lower)
	904208	20	20	LOCKWASHER, 1/2"
	914465	2	2	FITTING, lubricating, straight, 1/8"NPT
7	054764	4	4	WASHER, hub thrust
8	054766	18	18	SHIM, case hub (.010" thick. Use as req'd)
	054763	14	14	SHIM, case hub (.005" thick. Use as req'd)
	647947	4	4	SHIM, case hub (.003" thick. Use as req'd)
9	054768	2	-	SPROCKET, drive (13-tooth)(Graders prior to #5425)
	086758	2	-	SPROCKET, drive (11-tooth)(Effective with grader #5425)
	646974	-	2	SPROCKET, drive (9-tooth)
10	040101	2	2	WASHER
11	058028	2	2	NUT (slotted)
	900808	2	2	PIN, cotter, 1/8" x 1-1/2"
12	054344	2	-	KEY, drive sprocket
	646973	-	2	KEY, drive sprocket
13	054754	2	2	SPACER, drive sprocket
14	054767	4	-	CHAIN, driving (52 links. Includes item 16)(Graders prior to #5425)
	086759	4	-	CHAIN, driving (51 links. Includes item 17)(Effective with grader #5425)
	623645	-	4	CHAIN, driving (42 links. Includes item 16)
15	064565	-	-	LINK, roller, driving chain service (1-1/4" pitch)
	623646	-	-	LINK, roller, driving chain service (1-1/2" pitch)

(Continued)

T A N D E M S (Continued)

ITEM	PART NO.	QTY. * **		DESCRIPTION
16	064564	-	-	LINK, connecting, driving chain service (1-1/4" pitch)
	623647	-	-	LINK, connecting, driving chain service (1-1/2" pitch)
17	064566	-	-	LINK, offset, driving chain (Includes connecting pin and cotter pin. Use to alter length of chain 1-1/4")
	624428	-	-	LINK, offset, driving chain (2 pitches. Used to alter length of chain 1-1/2". Requires use of extra connecting link)
18	054761	2	-	SHAFT AND SPROCKET, front wheel
	623654	-	2	SHAFT AND SPROCKET, front wheel
19	054762	1	-	SHAFT AND SPROCKET, right rear wheel
	623652	-	1	SHAFT AND SPROCKET, right rear wheel
	068418	1	-	SHAFT AND SPROCKET, left rear wheel (Has tapped holes for driving odometer)
	623650	-	1	SHAFT AND SPROCKET, left rear wheel (Has tapped holes for driving odometer)
20	209889	4	4	CONE ASSEMBLY, wheel shaft inner bearing
21	209890	4	4	CUP, wheel shaft inner bearing
22	054765	4	4	RETAINER, wheel shaft inner bearing (See page 261 for special re- tainer used when ODOMETER is installed)
	916311	24	24	CAPSCREW, 1/2"NC x 1-1/4"
	904208	24	24	LOCKWASHER, 1/2"
23	054752	32	32	SHIM, wheel shaft bearing (.010" thick. Use as req'd)
	054753	32	32	SHIM, wheel shaft bearing (.005" thick. Use as req'd)
24	066128	4	4	CONE ASSEMBLY, wheel shaft outer bearing
25	066129	4	4	CUP, wheel shaft outer bearing
26	054775	4	4	RETAINER, wheel shaft outer bearing
	083096	4	4	RETAINER, wheel shaft outer bearing (For graders equipped with special Wheel Brakes)
27	913033	24	24	CAPSCREW, 1/2"NC x 1-1/8"
	904208	40	40	LOCKWASHER, 1/2"
	643392	16	16	CAPSCREW, Nylok, 1/2"NC x 1-1/8"
28	048703	4	4	SEAL, oil, wheel shaft

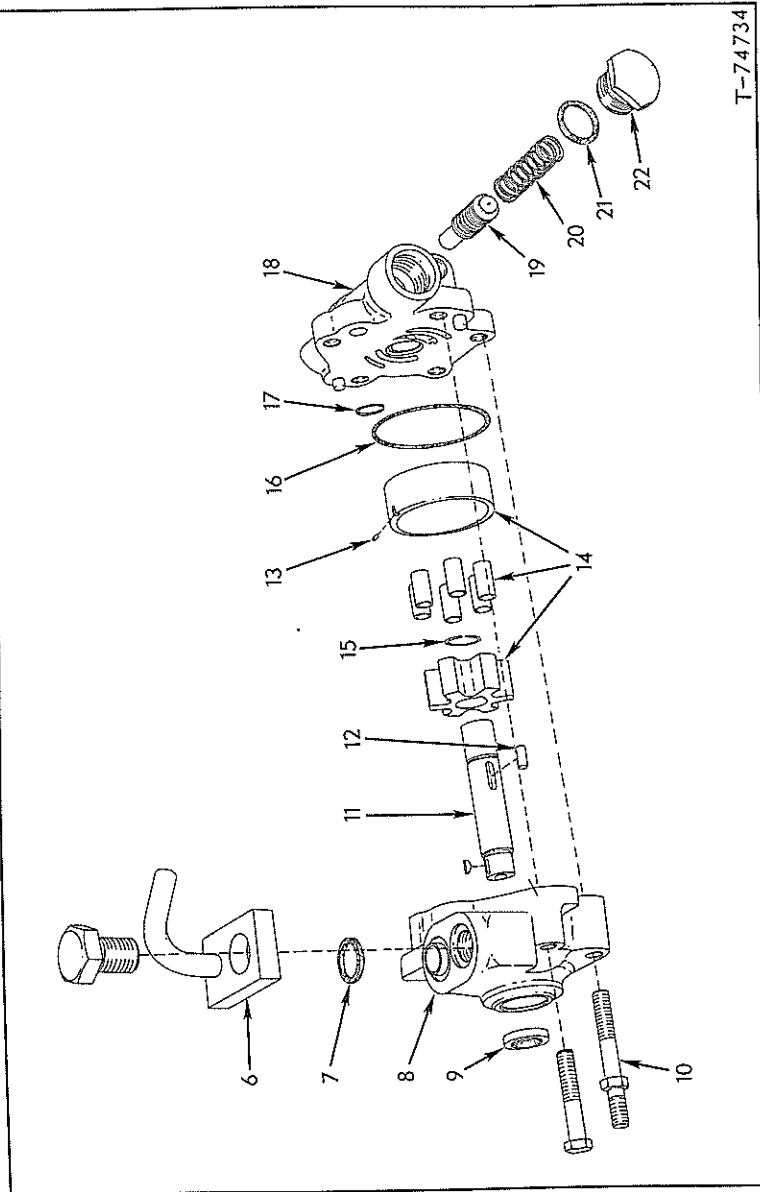


POWER STEERING UNIT 826208

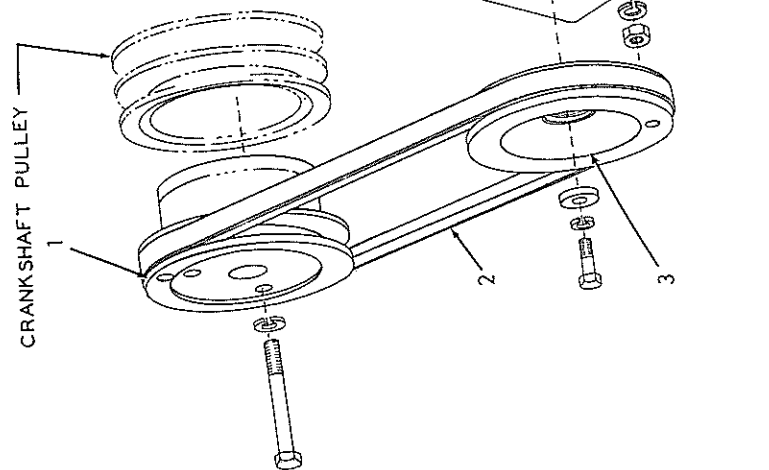
T-74704

USAGE: See page 145

ITEM	PART NO.	QTY.	DESCRIPTION
1	826265	1	CAP, control end
	922425	4	SCREW, 12-point, 1/4"NC x 1"
2	-----	1	□O-RING, end cap (Order item 21)
3	-----	1	□SEAL, control spool (Order item 21)
4	826266	4	WASHER, control spool seal
5	-----	2	□O-RING, port block (Order item 21)
6	826271	1	BLOCK, port
	912264	2	CAPSCREW, hex-socket-hd., 5/16"NC x 1"
7	826272	1	HOUSING ASSEMBLY (Items 8 thru 12)
8	-----	1	HOUSING, main (Order item 7)
9	-----	1	SPOOL, control (Order item 7)
10	239197	6	SPRING, spool centering
11	239196	1	PIN, cross
12	-----	1	SLEEVE, control (Order item 7)
13	826263	1	DRIVE, control end
14	239178	2	PLATE, wear
15	826262	1	ROTOR SET (Serviced only as a unit)
16	826264	1	DRIVE, power shaft
17	826270	1	SHAFT, power
18	826266	1	WASHER, power shaft seal
19	-----	1	□SEAL, power shaft (Order item 21)
20	826269	1	HOUSING, power end
	922424	7	SCREW, 12-point, 1/4"NC x 2"
21	826273	1	SEAL KIT (Consists of items 2, 3, 5 and 19)(Not illustrated)
			□Components of item 21



T-74734



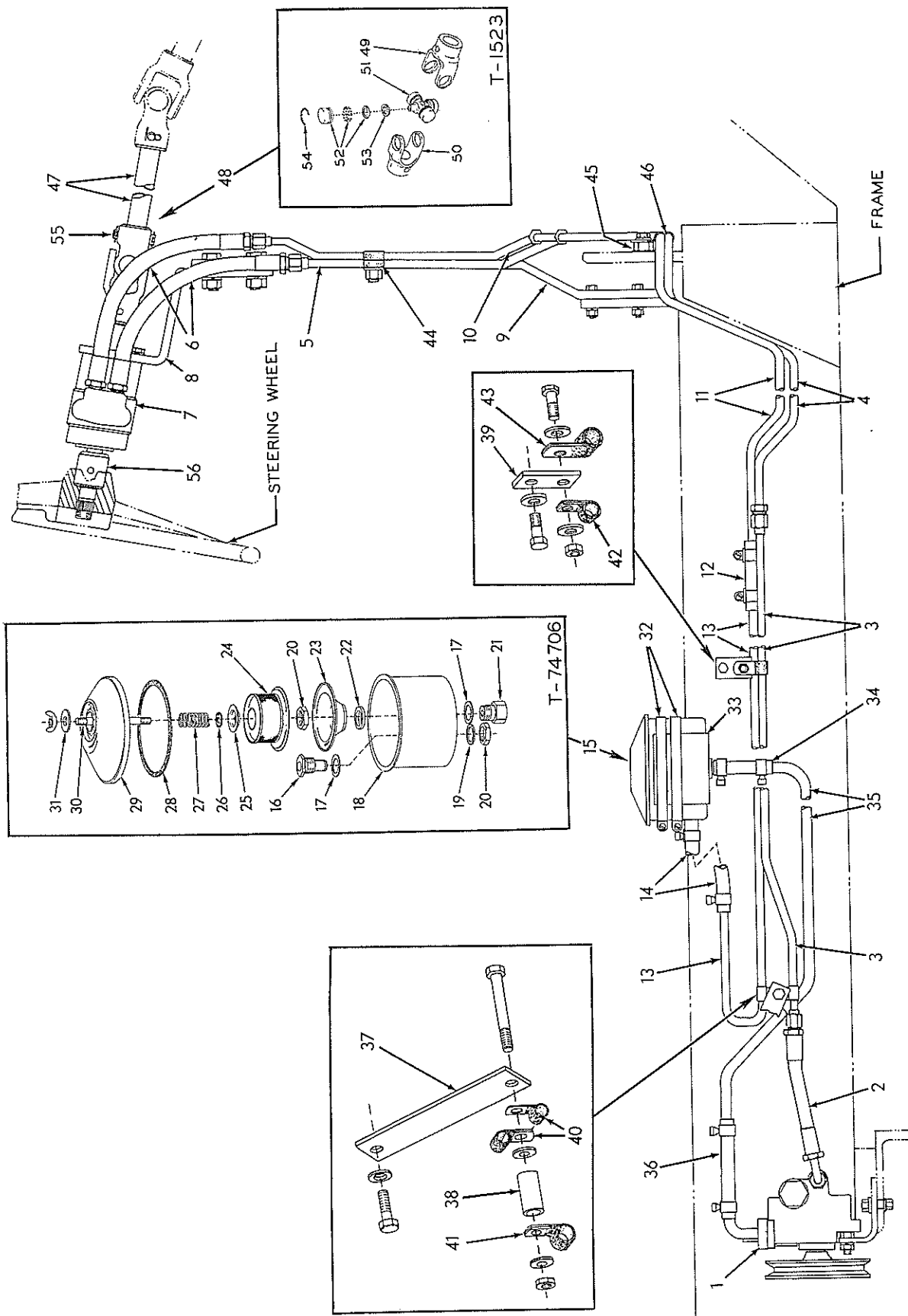
T-74703

POWER STEERING PUMP AND DRIVE

POWER STEERING PUMP AND DRIVE

USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	661171	1	PULLEY, pump driving
	920275	3	CAPSCREW, 3/8"NC x 3"
	904206	3	LOCKWASHER, 3/8"
2	043385	1	BELT, pump driving
3	660856	1	PULLEY, pump
	914392	1	CAPSCREW, 5/16"NC x 1"
	904205	1	LOCKWASHER, 5/16"
	660885	1	WASHER, plain
4	660812	1	BRACKET, pump mounting
	914847	2	CAPSCREW, 3/8"NC x 1-1/2"
	044973	4	WASHER, plain
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
5	661093	1	PUMP ASSEMBLY (Consists of items 6 thru 22)
	911041	3	NUT, 3/8"NF
	904206	3	LOCKWASHER, 3/8"
6	665912	1	FLANGE, outlet
	925969	1	CAPSCREW, 3/4"NF x 1"
7	665913	1	GASKET, outlet flange
8	665914	1	BODY ASSEMBLY (Includes bushing)
9	665919	1	SEAL, drive shaft
10	665911	3	STUD, pump mounting
11	665918	1	SHAFT, drive
	905119	1	KEY, #3 woodruff, 1/8" x 1/2"
12	665917	1	PIN, drive shaft
13	665915	1	PIN, dowel, cam insert
14	665916	1	CAM INSERT ASSEMBLY (1 CAM, 1 ROTOR and 6 ROLLERS. Serviced only as a unit)
15	665923	1	RING, snap, rotor retaining
16	925968	1	O-RING, pump cover (large)
17	237248	1	O-RING, pump cover (small)
18	665924	1	COVER ASSEMBLY (Includes bushing and dowels)
	910948	2	CAPSCREW, 3/8"NC x 2"
19	665922	1	VALVE ASSEMBLY, pressure relief (Includes 1 spring and 2 balls)
20	665921	1	SPRING, pressure relief valve
21	923810	1	O-RING, relief valve cap
22	665920	1	CAP, relief valve



T-74702

POWER STEERING

POWER STEERING

USAGE: Special equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	PUMP AND DRIVE (See page 143 for details)
2	661055	1	HOSE, pressure line, rear (See HOSE PARTS)
3	661064	1	TUBE ASSEMBLY, pressure line, rear section (Includes nuts)
4	661035	1	TUBE ASSEMBLY, pressure line, intermediate section (Includes nuts)
5	661826	1	TUBE ASSEMBLY, pressure line, front section (Includes nuts)
6	661049	2	HOSE, steering unit (See HOSE PARTS)
7	826208	1	POWER STEERING UNIT (See page 141 for parts)
	905123	1	KEY, woodruff #9, 3/16" x 3/4"
	914392	3	CAPSCREW, 5/16"NC x 1"
	904205	3	LOCKWASHER, 5/16"
8	660851	1	BRACKET, mounting, steering unit
	916313	2	CAPSCREW, 1/2"NC x 1-3/4"
	904208	2	LOCKWASHER, 1/2"
	911028	2	NUT, 1/2"NC
9	660028	1	SUPPORT, steering shaft
	913607	2	CAPSCREW, 1/2"NF x 1-5/8"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
10	661825	1	TUBE ASSEMBLY, return line, front section (Includes nuts)
11	661083	1	TUBE ASSEMBLY, return line, intermediate section (Includes nut)
12	-----	1	HOSE, return line (3-1/2" long) (Order item 57)
	921910	2	CLAMP, hose, 7/16" to 25/32" diam.
13	661066	1	TUBE, return line, rear section
14	-----	1	HOSE, return line (16" long) (Order item 57)
	921910	2	CLAMP, hose, 7/16" to 25/32" diam.
15	661092	1	RESERVOIR ASSEMBLY, oil (Consists of items 16 thru 31)
16	665862	1	CONNECTOR, reservoir outlet
17	665860	2	WASHER, reservoir (fibre)
18	665865	1	RESERVOIR
19	665861	1	WASHER, reservoir (steel)
20	647455	2	NUT, reservoir
21	665863	1	BOLT, reservoir
22	665864	1	WASHER, reservoir bolt

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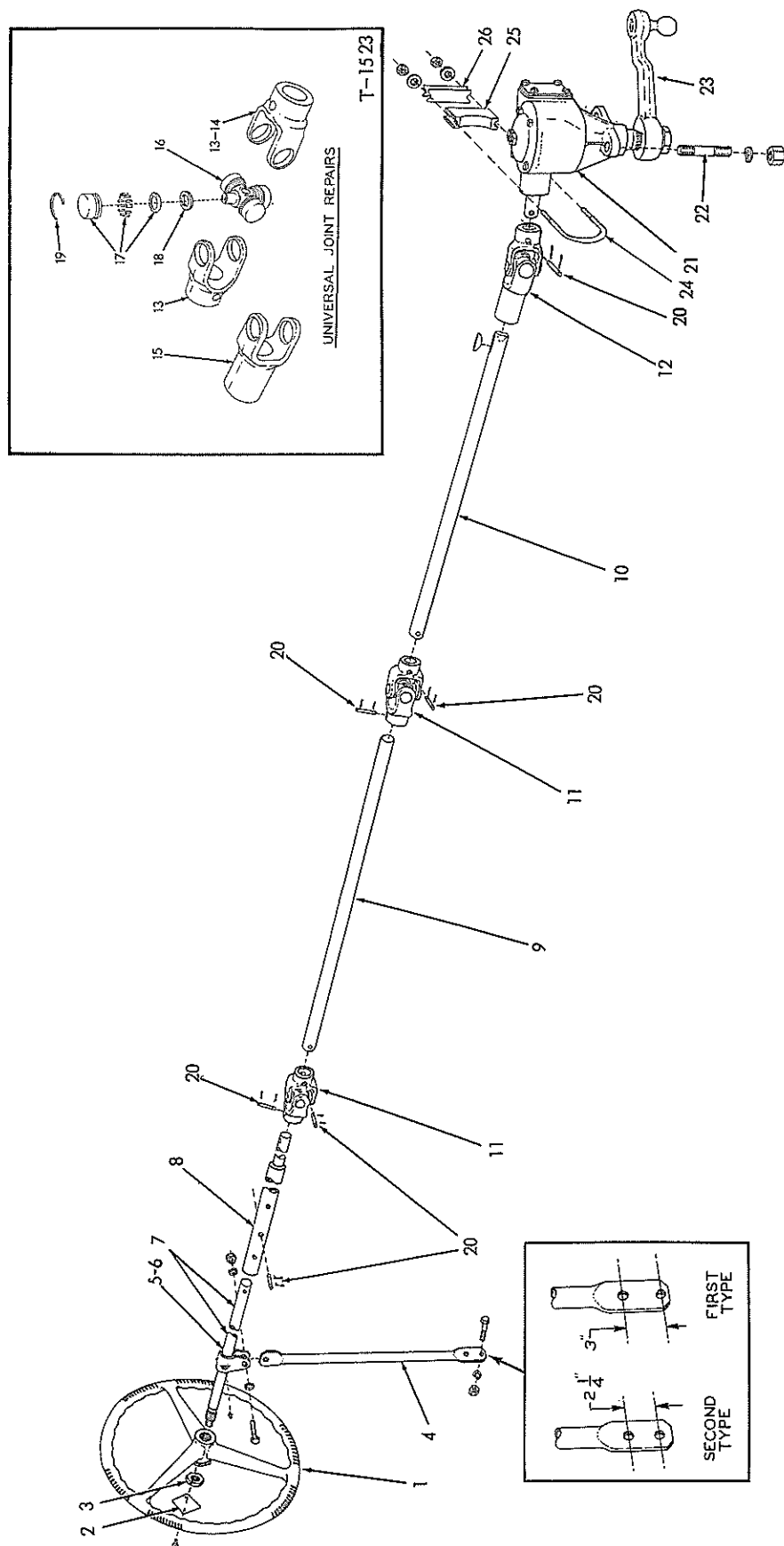
POWER STEERING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
23	665866	1	SUPPORT, reservoir filter
24	665873	1	FILTER, reservoir
25	665867	1	CAP, reservoir filter
26	665868	1	GASKET, reservoir filter cap
27	665869	1	SPRING, reservoir filter
28	665874	1	GASKET, reservoir cover
29	665870	1	COVER ASSEMBLY, reservoir (Includes item 28)
30	665872	1	STUD, reservoir cover
	918468	1	NUT, wing, 5/16"NC
31	665871	1	WASHER, reservoir cover nut
32	921919	2	CLAMP, reservoir mounting
33	660832	1	BRACKET, reservoir mounting (Requires welding to frame)
34	-----	1	HOSE, reservoir return line (3" long)(Order item 58)
	921910	2	CLAMP, hose, 7/16" to 25/32" diam.
35	661005	1	TUBE, reservoir return line
36	-----	1	HOSE, reservoir return line (5" long)(Order item 58)
	921910	2	CLAMP, hose, 7/16" to 25/32" diam.
37	660907	1	PLATE, tube supporting
	915406	1	CAPSCREW, 1/4"NC x 3/4"
	911114	1	WASHER, plain, SAE std., 1/4"
38	661210	1	SPACER, tube supporting, clip
	918594	1	CAPSCREW, 1/4"NC x 2-1/4"
	911114	3	WASHER, plain, SAE std., 1/4"
	911024	1	NUT, 1/4"NC
39	657521	1	LUG, tube supporting clip
	915406	1	CAPSCREW, 1/4"NC x 3/4"
	911114	1	WASHER, plain, SAE std., 1/4"
40	639314	2	CLIP, tube supporting (3/8" diam., 13/32" bolt-hole)
41	094527	1	CLIP, tube supporting (1/2" diam., 13/32" bolt-hole)
42	040338	1	CLIP, tube supporting (3/8" diam., 9/32" bolt-hole)
	915406	1	CAPSCREW, 1/4"NC x 3/4"
	911114	2	WASHER, plain, SAE std., 1/4"
	911024	1	NUT, 1/4"NC
43	033043	1	CLIP, tube supporting (7/16" diam., 13/32" bolt-hole)

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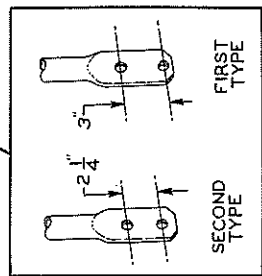
POWER STEERING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
44	040795	2	CLIP, tube supporting (7/16" diam., 13/32" bolt-hole)
	916311	1	CAPSCREW, 1/2"NC x 1-1/4"
	910244	2	WASHER, plain, SAE std., 1/2"
	911028	1	NUT, 1/2"NC
45	647418	1	NUT, clip supporting (Requires welding to frame)
46	040811	1	CLIP, tube supporting (For two 3/8" diam. lines, 17/32" bolt-hole)
	916270	1	CAPSCREW, 3/8"NC x 1/2"
	911115	1	WASHER, plain, SAE std., 3/8"
47	661106	1	SHAFT, steering (44-1/2" long)
48	661029	1	JOINT ASSEMBLY, universal (Consists of items 49 thru 54)
	915523	1	PIN, spring, 5/16" x 1-1/2"
49	645051	1	YOKE, universal joint (1" bore)
50	661028	1	YOKE, universal joint (7/8" bore)
51	645053	1	SPIDER KIT, universal joint (Includes items 52 thru 54)
52	-----	4	BEARING, universal joint (Order item 51)
53	645096	4	SEAL, universal joint (rubber)
54	645097	4	RING, snap, universal joint bearing
55	601935	1	PIN, coupling (3/8" x 2")
	900805	2	PIN, cotter, 1/8" x 3/4"
56	826202	1	SHAFT, steering wheel
	915523	1	PIN, spring, 5/16" x 1-1/2"
57	920388	-	HOSE, low pressure, 3/8" I. D. ; 25 ft. roll
58	920721	-	HOSE, low pressure, 1/2" I. D. ; 25 ft. roll
			} Use as req'd



UNIVERSAL JOINT REPAIRS

T-1523



T-1509

STEERING

STEERING

ITEM	PART NO.	QTY.	DESCRIPTION
1	229677	1	WHEEL, steering (straight bore)(Used prior to grader #5802)
	912343	1	PIN, taper, 3/8" x 2"
	639984	1	WHEEL, steering (splined bore)(Effective with grader #5802)
2	246724	1	EMBLEM, trademark (Effective with grader #5802)
	918698	2	SCREW, thread-cutting, #8 x 1/2"
3	208584	1	NUT, steering wheel shaft (Effective with grader #5802)
4	065894	1	SUPPORT, steering shaft (Graders prior to #3248)
	079604	1	ΔSUPPORT, steering shaft (Graders #3248 and up)
	913607	2	CAPSCREW, 1/2"NF x 1-5/8"
	904208	2	LOCKWASHER, 1/2"
	911043	2	NUT, 1/2"NF
5	624761	1	ΔBEARING ASSEMBLY, wheel shaft (Includes item 6)
	903640	1	ΔCAPSCREW, 1/2"NC x 2"
	910244	2	ΔWASHER, plain, SAE std., 1/2"
	904208	1	ΔLOCKWASHER, 1/2"
	911028	1	ΔNUT, 1/2"NC
	914465	1	ΔFITTING, lubricating, straight, 1/8"NPT
6	622062	1	BUSHING, wheel shaft bearing (Effective with grader #5907)
7	068463	1	ΔSHAFT, wheel (22" long)(Used prior to grader #5802)
	620041	1	ΔSHAFT, wheel (21-3/4" long)(Effective with grader #5802)
8	068465	1	SHAFT, coupling (42-1/2" long)
9	065893	1	SHAFT, control (28-1/4" long)
10	054731	1	SHAFT, control (21" long)
	911273	1	KEY, woodruff #127, 1/4" x 2-1/8"
11	053121	2	JOINT ASSEMBLY, universal (Consists of items 13 and 16 thru 19) (Used prior to grader #6363. Order JOINT ASSEMBLY 645181)
	645181	2	*JOINT ASSEMBLY, universal (Consists of items 13 and 16 thru 19) (Graders #6363 and up)
12	055691	1	JOINT ASSEMBLY, universal (Consists of items 14 thru 19)(Used prior to grader #6413. Order JOINT ASSEMBLY 645130)
	645130	1	*JOINT ASSEMBLY, universal (Consists of items 14 thru 19)
13	053119	4	YOKE, universal joint (1" plain bore)(For JOINT 053121 only)
	645051	4	YOKE, universal joint (1" plain bore)(For JOINT 645181 only)
14	054936	1	YOKE, universal joint (7/8" plain bore)(For JOINT 055691 only)
	645133	1	YOKE, universal joint (7/8" plain bore)(For JOINT 645130 only)
			*These joints have marking "NP" on each yoke
			ΔNot used on units equipped with power steering

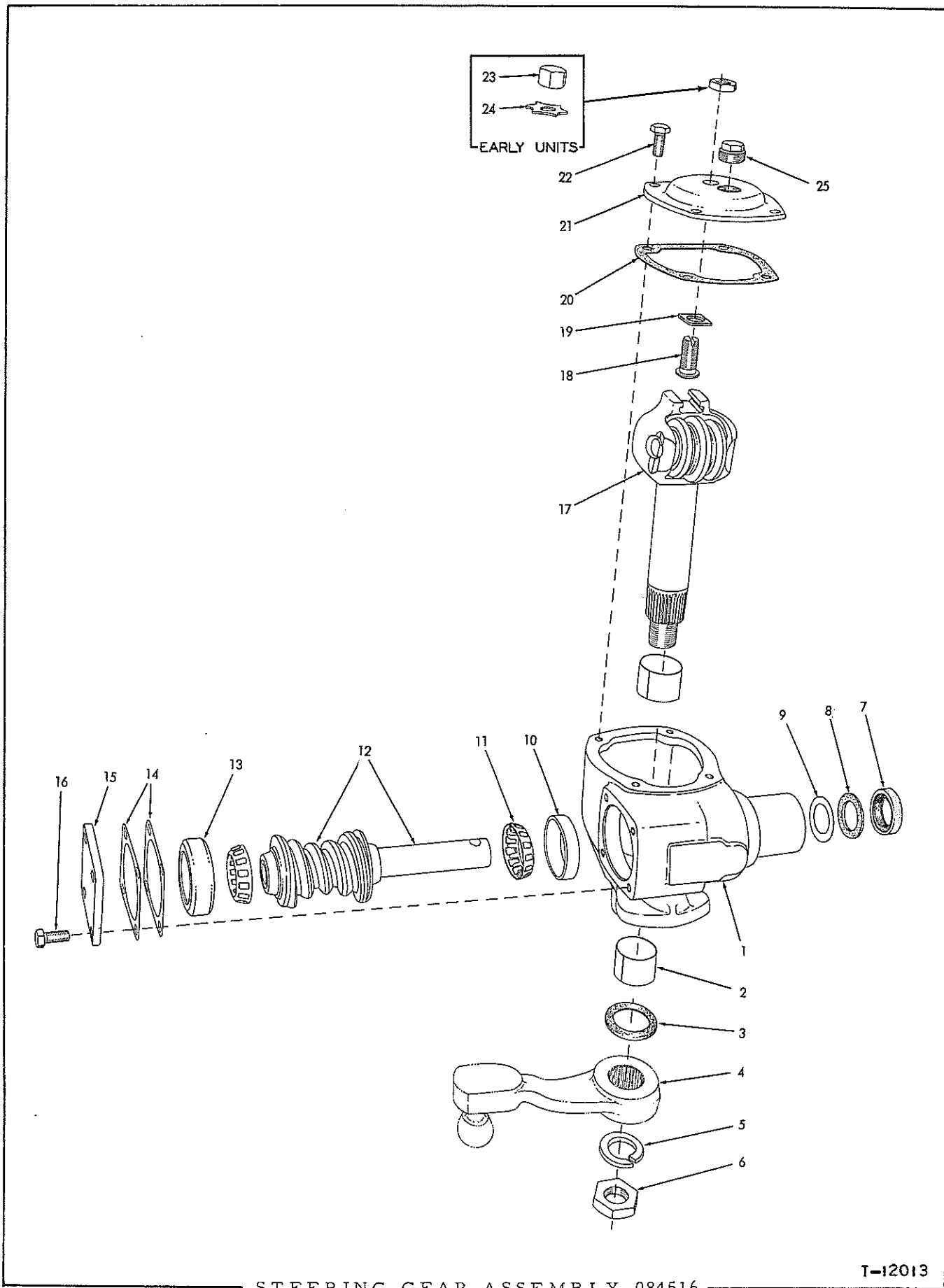
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STEERING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
15	{ 053122	1	YOKE, universal joint (1-1/8" bore. Keywayed)(For JOINT 055691 only)
	{ 645131	1	YOKE, universal joint (1-1/8" bore, keywayed)(For JOINT 645130 only)
16	{ 053120	3	SPIDER KIT, universal joint (Includes items 17, 18 and 19)(For JOINT 053121 and 055691 only)
	{ 645053	3	SPIDER KIT, universal joint (Includes items 17, 18 and 19)(For JOINTS 645181 and 645130 only)
17	-----	12	BEARING, universal joint (Order item 16)
18	{ 055733	12	WASHER, sealing, universal joint (For JOINT 053121 and 055691 only)
	{ 645096	12	SEAL, rubber, universal joint (For JOINTS 645181 and 645130 only)
19	{ 053240	12	RING, snap, universal joint bearing (For JOINTS 053121 and 055691 only)
	{ 645097	12	RING, snap, universal joint bearing (For JOINTS 645181 and 645130 only)
20	601935	6	PIN, coupling (3/8" x 2")
	900805	12	PIN, cotter, 1/8" x 3/4"
21	084516	1	GEAR ASSEMBLY, steering (See page 153 for parts)
22	063978	2	STUD (5/8" diam.)
	904209	2	LOCKWASHER, 5/8"
	911029	2	NUT, 5/8"NC
23	069224	1	ARM, steering
24	657702	1	U-BOLT, steering gear
	092665	2	WASHER, plain
	911025	2	NUT, 3/8"NC
25	657705	1	BLOCK, steering gear
26	{ 657703	5	SHIM, steering gear block (.010" thick)
	{ 657704	2	SHIM, steering gear block (.062" thick)

Use as
req'dEffective with
grader #6687

MEMO



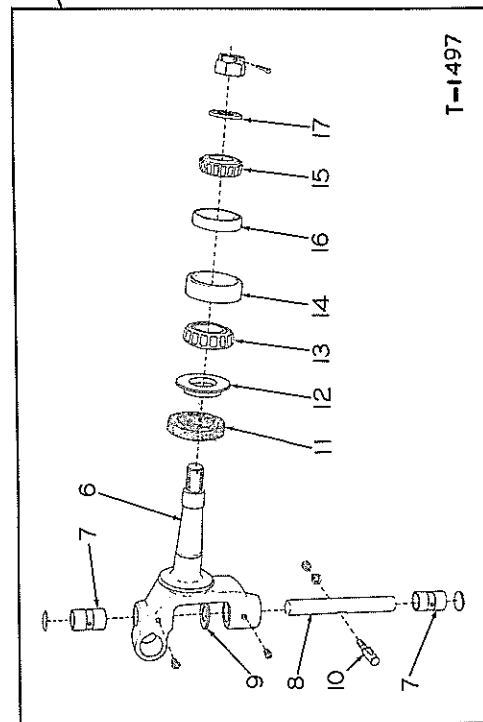
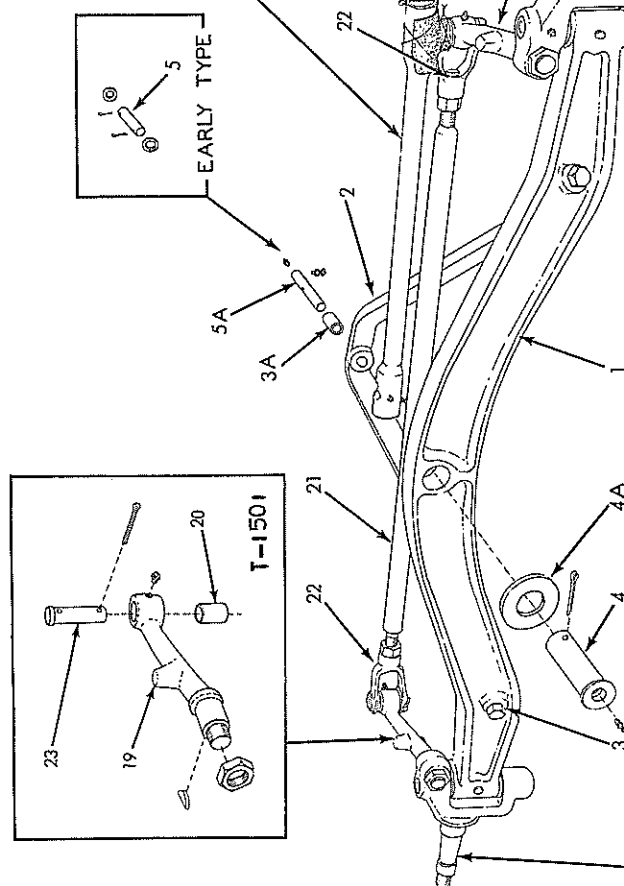
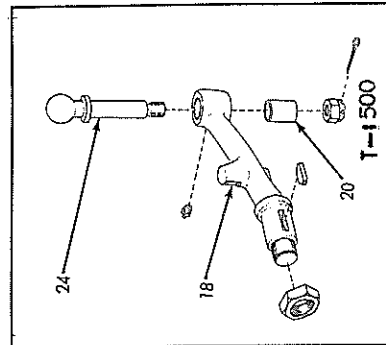
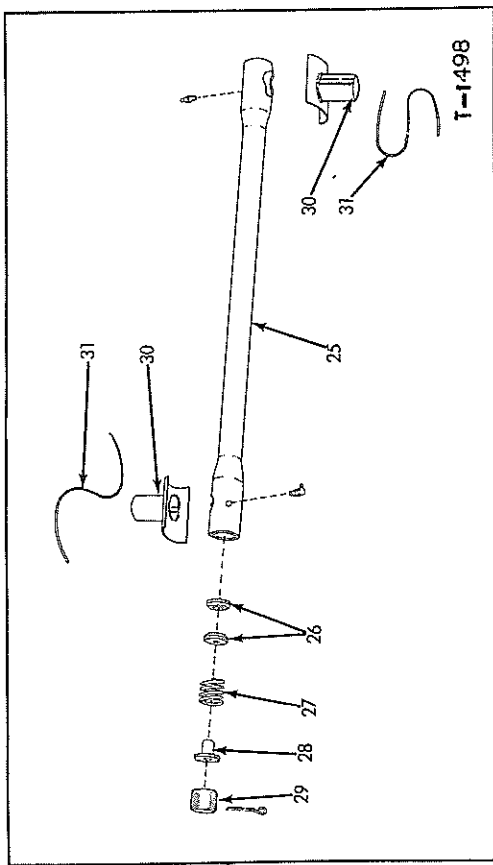
STEERING GEAR ASSEMBLY 084516

T-12013

STEERING GEAR ASSEMBLY 084516

USAGE: See page 149

ITEM	PART NO.	QTY.	DESCRIPTION
1	063979	1	HOUSING ASSEMBLY (Includes items 2 and 10)
2	064788	2	BUSHING, housing
3	064429	1	SEAL, oil, arm shaft
4	-----	1	ARM (Must be ordered separately. See STEERING group)
5	905347	1	LOCKWASHER, 7/8"
6	604083	1	NUT
7	621743	1	SEAL, oil, worm shaft
8	604077	1	GASKET, worm shaft oil seal
9	604213	1	WASHER, worm shaft oil seal
10	604079	1	RING, worm rear bearing
11	604078	2	ROLLER ASSEMBLY, worm bearing
12	064432	1	WORM ASSEMBLY (Includes shaft. Serviced only as a unit)
13	604080	1	RING, worm front bearing
14	621744	2	SHIM, housing front cover (.002" thick. Use as req'd)
	604062	5	SHIM, housing front cover (.010" thick. Use as req'd)
	604063	2	SHIM, housing front cover (.005" thick. Use as req'd)
15	604059	1	COVER, front
16	064426	4	CAPSCREW, 5/16"NC x 3/4" (Used prior to May 1960)
	621745	4	CAPSCREW, 5/16"NC x 7/8" (Effective May 1960)
17	069567	1	SHAFT ASSEMBLY (Includes roller tooth. Serviced only as a unit)
18	-----	1	SCREW, adjusting, steering arm shaft (Grooved type. Used on early units only. Order SCREW 621742)
	621742	1	SCREW, adjusting, steering arm shaft (Not grooved. Used on late units only)
	913830	1	NUT, jam, 1/2"NF
19	064428	1	WASHER, thrust
20	064430	1	GASKET, housing top cover
21	064431	1	COVER, top
22	064427	4	CAPSCREW, 5/16"NC x 5/8"
23	-----	1	NUT, locking, shift adjusting screw (Early units only)(Order item 18)
24	-----	1	PLATE, locking nut (Early units only)(Order item 18)
25	096844	1	PLUG, oil filling hole



T-1496

FRONT AXLE

FRONT AXLE

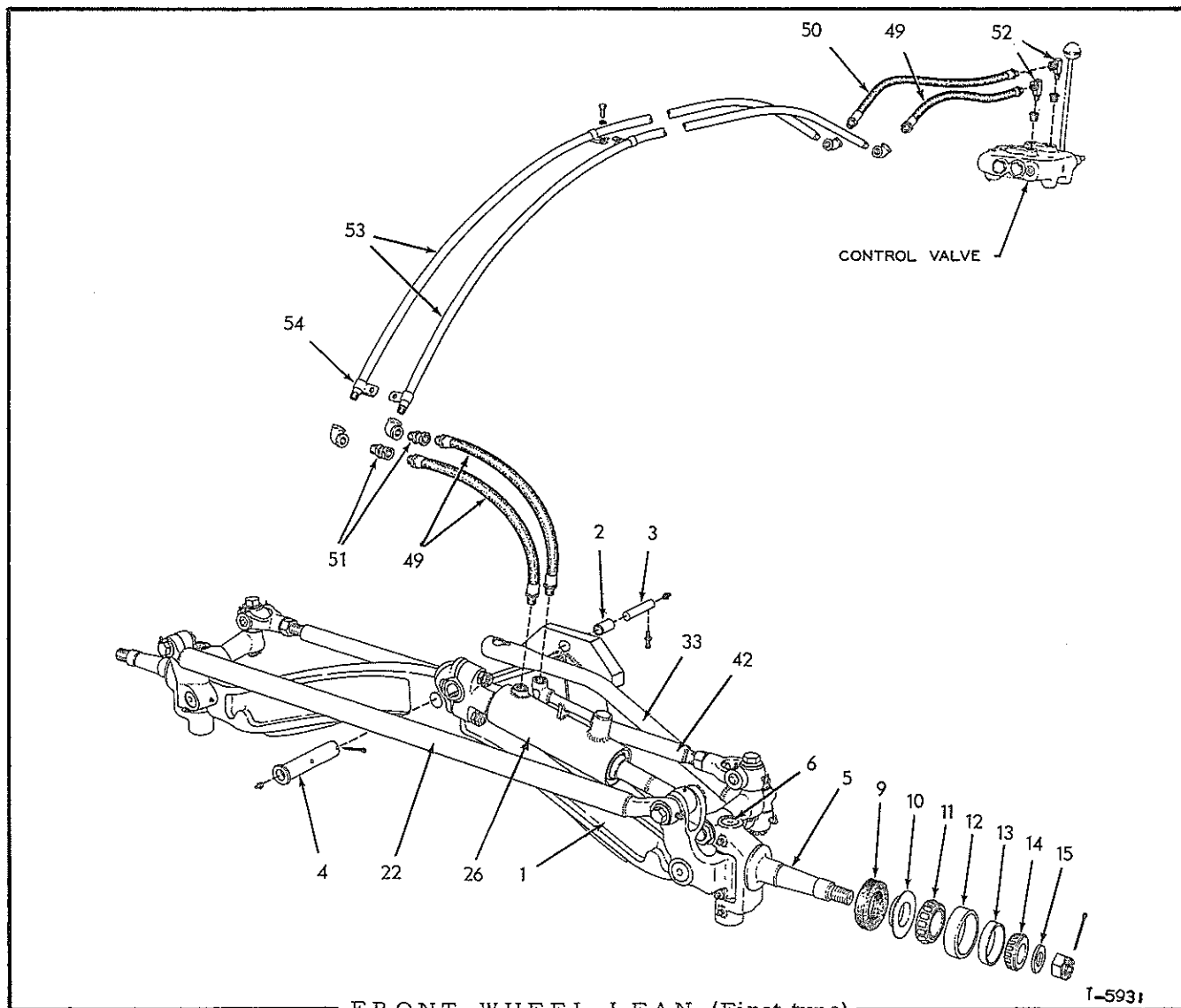
USAGE: Standard equipment. See FRONT WHEEL LEAN for optional axle.

ITEM	PART NO.	QTY.	DESCRIPTION
1	061450	1	AXLE, front (Used prior to grader #4216)
	082707	1	AXLE, front (Effective with grader #4216)
2	073484	1	ROD ASSEMBLY, radius (Includes item 3A)
3	070299	2	CAPSCREW, 5/8"NF x 4"
	072366	2	NUT, high, 5/8"NF
3A	606009	1	BUSHING, radius rod (Effective with grader #1025)
4	055609	1	PIN, axle pivot (1-1/8" diam.)(Used prior to grader #4216)
	900811	1	PIN, cotter, 3/16" x 1-1/2"
	914465	1	FITTING, lubricating, straight, 1/8"NPT
	082739	1	PIN, axle pivot (1-3/4"diam.)(Effective with grader #4216)
	910024	1	PIN, cotter, 3/16" x 2-1/2"
	914465	1	FITTING, lubricating, straight, 1/8"NPT
4A	082738	1	SPACER, pivot pin (Effective with grader #4216)
5	604117	1	PIN, radius rod (Used prior to grader #1004)
	910255	2	WASHER, plain, SAE std., 3/4"
	900811	2	PIN, cotter, 3/16" x 1-1/2"
5A	073485	1	PIN, radius rod (Effective with grader #1004)
	901279	1	SETSCREW, sq-hd., cup-pt., 3/8"NC x 1-1/4"
	911034	1	NUT, jam, 3/8"NC
	914465	1	FITTING, lubricating, straight, 1/8"NPT
6	223735	2	SPINDLE ASSEMBLY (Includes item 7)
	910006	4	PLUG, expansion, 1-1/4"
	914465	4	FITTING, lubricating, straight, 1/8"NPT
7	200048	4	BUSHING, spindle
8	200046	2	PIN, spindle
9	200049	2	WASHER, spindle pin
10	200047	2	STUD, spindle pin retaining
	904206	2	LOCKWASHER, 3/8"
	911041	2	NUT, 3/8"NF
11	200050	2	WASHER, spindle (felt)
12	205430	2	WASHER, retaining, felt washer
13	210548	2	CONE ASSEMBLY, spindle inner bearing
14	210550	2	CUP, spindle inner bearing
15	210549	2	CONE ASSEMBLY, spindle outer bearing
16	210551	2	CUP, spindle outer bearing

(Continued)

FRONT AXLE (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
17	200103	2	WASHER, spindle end
	911057	2	NUT, castle, 1"NF
	900809	2	PIN, cotter, 1/8" x 1-3/4"
18	061295	1	ARM ASSEMBLY, left spindle (Includes item 20)
	911051	1	NUT, jam, 1"NF
	905128	1	KEY, #17 woodruff, 7/32" x 1-1/8"
	914465	1	FITTING, lubricating, straight, 1/8"NPT
19	061296	1	ARM ASSEMBLY, right spindle (Includes item 20)
	911051	1	NUT, jam, 1"NF
	905128	1	KEY, #17 woodruff, 7/32" x 1-1/8"
	914465	1	FITTING, lubricating, straight, 1/8"NPT
20	061288	2	BUSHING, spindle arm
21	603966	1	ROD, tie
	911046	2	NUT, 7/8"NF
22	208227	2	FORK, tie rod
23	224375	1	PIN, tie rod right fork
	900812	1	PIN, cotter, 3/16" x 1-3/4"
24	201881	1	PIN, tie rod left fork
	911055	1	NUT, castle, 5/8"NF
	900808	1	PIN, cotter, 1/8" x 1-1/2"
25	061287	1	LINK, drag (Includes items 26 thru 29)
	915276	1	FITTING, lubricating, 90°, 1/8"NPT
	914465	1	FITTING, lubricating, straight, 1/8"NPT
26	066592	4	SEAT, drag link
27	066591	2	SPRING, drag link
28	066590	2	PLUG, limit, drag link
29	066589	2	PLUG, drag link adjusting
	904003	2	PIN, cotter, 1/8" x 2-1/4"
30	204160	2	BOOT, drag link
31	023756	2	WIRE, attaching (1/16" x 26")



USAGE: Special equipment on graders prior to serial No. 4216

ITEM	PART NO.	QTY.	DESCRIPTION
1	081668	1	AXLE ASSEMBLY, front (Includes item 2)(When required for graders prior to #3750 also order items 20A and 20B)
2	606009	1	BUSHING, front axle radius rod pivot
3	073485	1	PIN, front axle radius rod
	901279	1	SETSCREW, sq-hd., cup-pt., 3/8"NC x 1-1/4"
	911034	1	NUT, jam, 3/8"NC
	914465	1	FITTING, lubricating, straight, 1/8"NPT
4	055609	1	PIN, front axle pivot
	900811	1	PIN, cotter, 3/16" x 1-1/2"
	914465	1	FITTING, lubricating, straight, 1/8"NPT

(Continued)

FRONT WHEEL LEAN (First type)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	223735	2	SPINDLE ASSEMBLY, front wheel (Includes item 6)
	910006	4	PLUG, expansion, 1-1/4"
	914465	4	FITTING, lubricating, straight, 1/8"NPT
	911057	2	NUT, castle, 1"NF
	900809	2	PIN, cotter, 1/8" x 1-3/4"
6	200048	4	BUSHING, front wheel spindle
7	076511	2	PIN, front wheel spindle (loose fit)(Used prior to grader #3754)
	906743	2	SETSCREW, sq-hd., dog-pt., 3/8"NC x 1"
	911034	2	NUT, jam, 3/8"NC
	081738	2	PIN, front wheel spindle (press fit)(Effective with grader #3754)
8	200049	2	WASHER, spindle thrust
9	200050	2	WASHER, spindle (felt)
10	205430	2	WASHER, felt washer retaining
11	210548	2	CONE ASSEMBLY, spindle inner bearing
12	210550	2	CUP, spindle inner bearing
13	210551	2	CUP, spindle outer bearing
14	210549	2	CONE ASSEMBLY, spindle outer bearing
15	200103	2	WASHER, spindle end
16	-----	1	KNUCKLE ASSEMBLY, left (Used with loose-fit spindle pin prior to grader #3754)(Order 1 KNUCKLE ASSEMBLY 081988 and 1 PIN 081738)
	081988	1	KNUCKLE ASSEMBLY, left (Includes 2 BUSHING 081540. Requires press-fit spindle pin)(Effective with grader #3754)
	912808	2	FITTING, lubricating, straight, 1/4"NF
	910007	2	PLUG, expansion, 1-3/8" diam. (Used prior to grader #3942)
17	-----	1	KNUCKLE ASSEMBLY, right(Used with loose-fit spindle pin prior to grader #3754)(Order 1 KNUCKLE ASSEMBLY 081990 and 1 PIN 081738)
	081990	1	KNUCKLE ASSEMBLY, right(Includes 2 BUSHING 081540. Requires press-fit spindle pin)(Effective with grader #3754)
	912808	2	FITTING, lubricating, straight, 1/4"NF
	910007	2	PLUG, expansion, 1-3/8" diam. (Used prior to grader #3942)
18	053926	4	SEAL, dust, wheel lean knuckle bearing(Used prior to grader #3711)
19	080474	4	BEARING, needle, wheel lean knuckle(Used prior to grader #3711)
	081540	4	BUSHING, wheel lean knuckle (Effective with grader #3711)
20	-----	2	PIN, pivot, wheel lean knuckle (loose fit)(Used prior to grader #3750. Order items 20A and 20B)
	-----	2	PIN, pivot, wheel lean knuckle (press fit)(Used on graders #3750 thru #3941. Order items 20A and 20B)
20A	082209	2	PIN, pivot, wheel lean knuckle (Effective with grader #3942)
	913472	4	NUT, jam, slotted, 3/4"NF
	910320	4	PIN, cotter, 5/32" x 1-1/2"
20B	082202	4	WASHER, wheel lean knuckle pin (Effective with grader #3942)

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FRONT WHEEL LEAN (First type)(Continued)

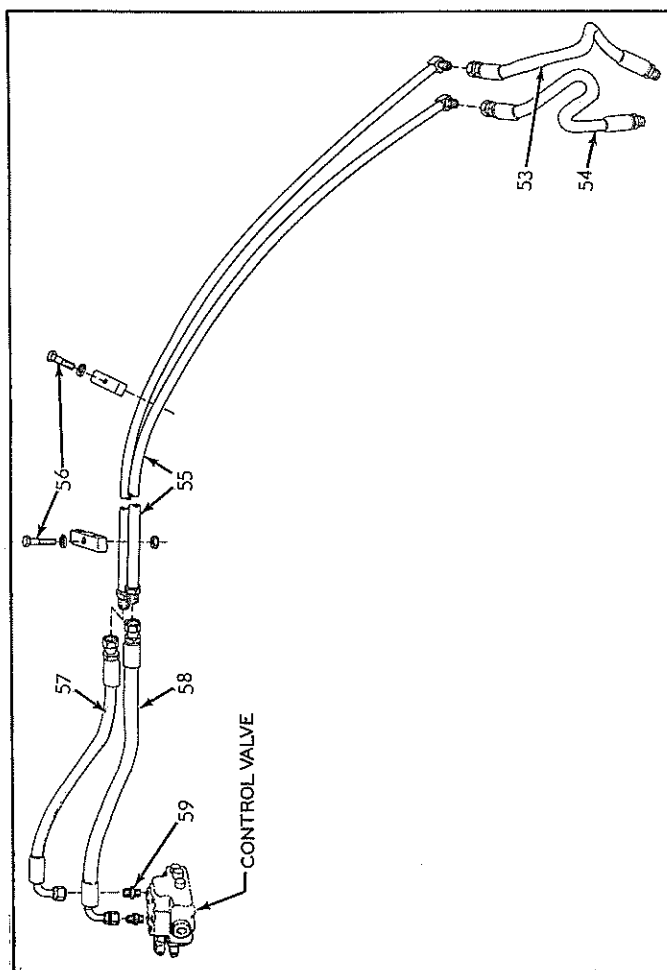
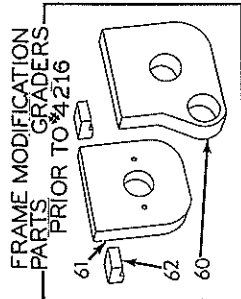
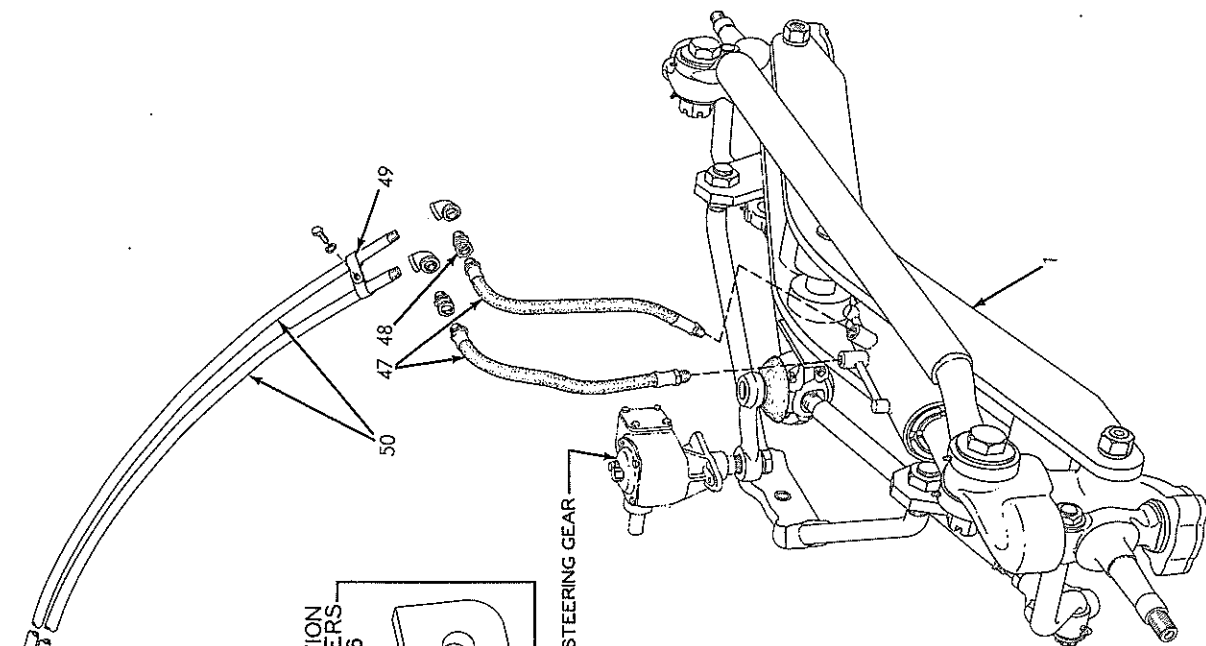
ITEM	PART NO.	QTY.	DESCRIPTION
21	076542	2	PIN, retaining, knuckle pivot pin (Used prior to grader #3750)
	911026	2	NUT, 3/8"NC
	904206	2	LOCKWASHER, 3/8"
22	080190	1	LINK, connecting, wheel lean knuckles
	915091	2	FITTING, lubricating, 90°, 1/4"NF
23	076504	2	BUSHING, connecting link
24	076503	1	CAPSCREW, connecting link, right (3/4"NF x 2-5/8")
	910255	2	WASHER, plain, SAE std., 3/4"
	913472	1	NUT, jam, slotted, 3/4"NF
	900807	1	PIN, cotter, 1/8" x 1-1/4"
25	076522	1	CAPSCREW, connecting link, left (3/4"NF x 4-1/2")
	910255	2	WASHER, plain, SAE std., 3/4"
	913472	1	NUT, jam, slotted, 3/4"NF
	900807	1	PIN, cotter, 1/8" x 1-1/4"
26	081823	1	CYLINDER ASSEMBLY, wheel lean (HYDRECO or HUSCO furnished optionally. See pages 168 and 169 for parts)
	912808	2	FITTING, lubricating, straight, 1/4"NF
28	053992	8	SHIM, cylinder ball cap (Use as required)
29	053986	1	CAP, cylinder ball
30	605665	1	U-BOLT, cylinder ball cap
	911049	4	NUT, jam, 5/8"NF
31	079265	1	BALL, cylinder anchor (Used prior to grader #3640 only)
	905126	1	KEY, #15 woodruff, 1/4" x 1"
32	054182	1	RING, snap, cylinder anchor ball retaining (Used prior to grader #3640 only)
33	080860	1	LINK ASSEMBLY, drag (Includes items 34 thru 38) (If for graders prior to #3659 also order 1 CAPSCREW 080863)
	915276	1	FITTING, lubricating, 90°, 1/8"NPT
	915019	1	FITTING, lubricating, 90°, 1/4"NF (3 used on grader prior to #3659)
34	066590	1	PLUG, limit, drag link
35	066591	1	SPRING, drag link
36	066592	2	SEAT, drag link
37	066589	1	PLUG, drag link adjustment
	904003	1	PIN, cotter, 1/8" x 2-1/4"
38	076518	2	BUSHING, drag link swivel yoke (Used prior to grader #3659)
	080857	2	BEARING, needle, drag link swivel yoke
	052662	2	SEAL, dust, swivel yoke bearing
39	204160	1	BOOT, drag link
40	023756	1	WIRE, attaching (1/16" x 26")
41	076515	3	BUSHING, drag link and tie rod capscrews

Effective with
grader #3659

(Continued)

FRONT WHEEL LEAN (First type)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
42	079494	1	ROD, tie
	911046	2	NUT, 7/8"NF
43	080862	2	SWIVEL ASSEMBLY, tie rod (Includes item 44)
	912808	4	FITTING, lubricating, straight, 1/4"NF (Used prior to grader #3659)
	915019	2	FITTING, lubricating, 90°, 1/4"NF
44	076518	4	BUSHING, tie rod swivel yoke (Used prior to grader #3659)
	080857	4	BEARING, needle, tie rod swivel yoke
	052662	4	SEAL, dust, swivel yoke bearing
			Effective with grader #3659
45	076510	1	ARM, right spindle
	911051	1	NUT, jam, 1"NF
	905128	1	KEY, #17 woodruff, 7/32" x 1-1/8"
46	076509	1	ARM, left spindle
	911051	1	NUT, jam, 1"NF
	905128	1	KEY, #17 woodruff, 7/32" x 1-1/8"
47	080863	1	CAPSCREW, tie bar swivel, left side(thin-head, 3/4"NF x 4-1/2")
	076522	1	CAPSCREW, tie bar swivel, right side(thick-head, 3/4"NF x 4-1/2")
	910255	2	WASHER, plain, SAE std., 3/4"
	913472	1	NUT, jam, slotted, 3/4"NF
	900807	1	PIN, cotter, 1/8" x 1-1/4"
48	076514	1	CAPSCREW, drag link swivel (3/4"NF x 3-3/4")
	910255	2	WASHER, plain, SAE std., 3/4"
	913472	1	NUT, jam, slotted, 3/4"NF
	900807	1	PIN, cotter, 1/8" x 1-1/4"
49	069716	3	HOSE (16-1/4" long)
50	079055	1	HOSE (21" long)
51	069710	2	UNION, adapting, cylinder hose
52	069715	2	UNION, elbow, valve hose
	904271	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
53	076502	2	PIPE, valveto cylinder
	901692	2	ELBOW, pipe, 45°, 3/8"NPT
	901678	2	ELBOW, pipe 90°, 3/8"NPT
54	076498	8	CLIP, pipe retaining
	903629	3	CAPSCREW, 3/8"NC x 3/4"
	904206	3	LOCKWASHER, 3/8"
55	-----	1	BLOCK (Requires welding to front of grader frame)(Used prior to grader #3640. Order BLOCK 080467)
	080467	1	BLOCK (Requires welding to front of grader frame)(Effective with grader #3640)



SECOND TYPE PIPING

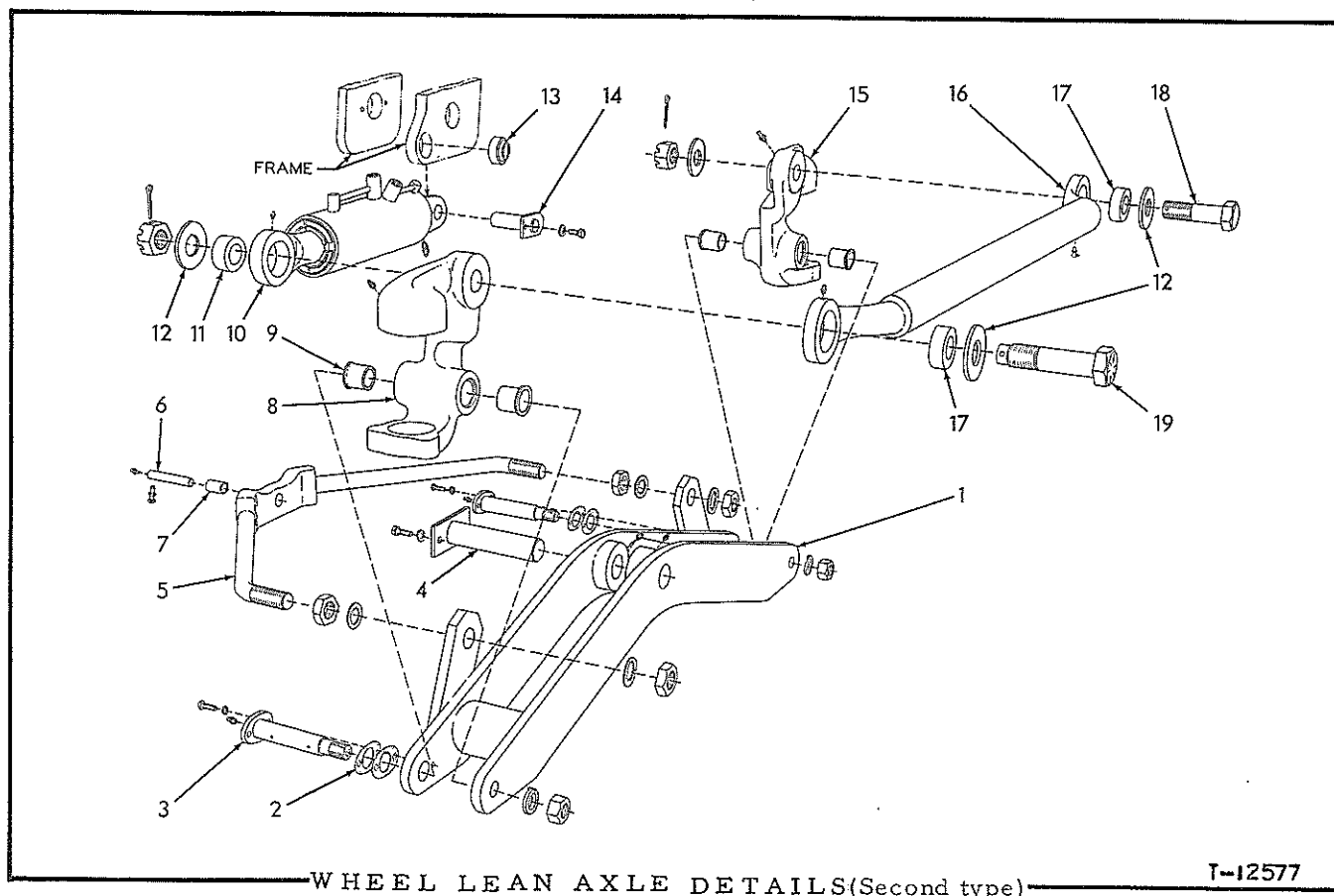
FRONT WHEEL LEAN (Second type)

FRONT WHEEL LEAN (Second type)

USAGE: Special Equipment on graders No. 4216 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	082119	1	AXLE, front
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	915274	1	FITTING, lubricating, 45°, 1/8"NPT
2	052960	10	SHIM, knuckle pivot bolt (Use as req'd)
3	082111	2	BOLT, pivot wheel lean knuckle
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	910916	2	LOCKWASHER, 1"
	911047	2	NUT, 1"NF
	913014	4	CAPSCREW, 3/8"NF x 1-1/8"
	904206	4	LOCKWASHER, 3/8"
4	082123	1	PIN, front axle pivot
	903630	2	CAPSCREW, 3/8"NC x 1"
	911115	2	WASHER, plain, SAE std., 3/8"
5	082755	1	ROD ASSEMBLY, radius (Includes item 7)
	917802	4	LOCKWASHER, internal tooth, 1-1/4"
	912251	4	NUT, jam, 1-1/4"NF
6	073485	1	PIN, front axle radius rod
	901279	1	SETSCREW, sq-hd., cup-pt., 3/8"NC x 1-1/4"
	911034	1	NUT, jam, 3/8"NC
	914465	1	FITTING, lubricating, straight, 1/8"NPT
7	082766	1	BUSHING, radius rod

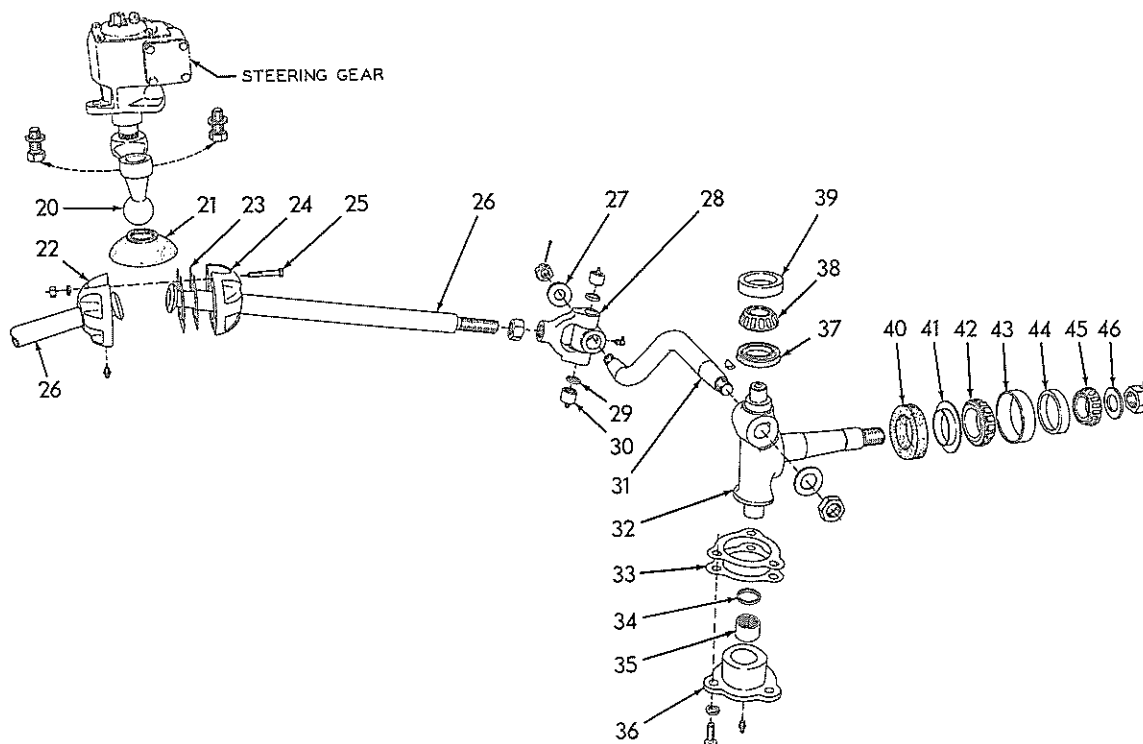
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FRONT WHEEL LEAN (Second type)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
8	082122	1	KNUCKLE ASSEMBLY, right (Includes item 9)
	914465	1	FITTING, lubricating, straight, 1/8"NPT
9	079123	4	BUSHING, wheel lean knuckle(Straight type)(Used prior to grader #4616)
	084629	4	BUSHING, wheel lean knuckle(Shoulder type)(Effective with grader #4616)
10	082106	1	CYLINDER ASSEMBLY, wheel lean (See page 170 for parts)
	912808	1	FITTING, lubricating, straight, 1/4"NF
11	082176	1	SPACER, connecting link capscrew (1" long)
12	054899	4	WASHER, connecting link capscrew
13	078852	1	BEARING, cylinder pivot pin
	915274	1	FITTING, lubricating, 45°, 1/8"NPT (Screws into frame)
14	082155	1	PIN, pivot wheel lean cylinder
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	911115	1	WASHER, plain, SAE std., 3/8"
15	082121	1	KNUCKLE ASSEMBLY, left (Includes item 9)
	914465	1	FITTING, lubricating, straight, 1/8"NPT
16	082113	1	LINK, connecting, wheel lean knuckles
	912808	1	FITTING, lubricating, straight, 1/4"NF
	918186	1	FITTING, lubricating, 45°, 1/4"NF
17	601966	2	SPACER, connecting link capscrew (3/4" long)
18	082175	1	CAPSCREW, left connecting link
	911061	1	NUT, slotted, 1-1/4"NC
	901344	1	PIN, cotter, 1/4" x 2"

(Continued)



WHEEL LEAN STEERING LINKAGE DETAILS (Second type) T-12578

FRONT WHEEL LEAN(Second type)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
19	082174	1	CAPSCREW, right connecting link
	911061	1	NUT, slotted, 1-1/4"NC
	901344	1	PIN, cotter, 1/4" x 2"
20	082152	1	ARM, steering (Replaces standard ARM 069224)
	912078	2	CAPSCREW, 3/4"NC x 1" (arm stop)
	904369	2	LOCKWASHER, 3/4"
21	604289	1	SHIELD, steering arm ball pin (neoprene)
22	653877	1	CAP, steering arm ball pin, right
	914465	1	FITTING, lubricating, straight, 1/8"NPT
23	604290	18	SHIM, ball pin cap (Use as req'd)
24	653879	1	CAP, steering arm ball pin, left
25	046419	4	CAPSCREW, ball pin cap (3/8"NF x 2")
	904206	4	LOCKWASHER, 3/8"
	911041	4	NUT, 3/8"NF
26	097126	2	LINK, drag
	911046	2	NUT, 7/8"NF
27	602068	2	WASHER, spindle arm (plain)
	912331	2	NUT, slotted, 3/4"NF
	900807	2	PIN, cotter, 1/8" x 1-1/4"
28	080862	2	SWIVEL ASSEMBLY, drag link (Each consists of 1 yoke, 1 swivel, 1 pin and items 29 and 30)
	915019	2	FITTING, lubricating, 90°, 1/4"NF
29	052662	2	SEAL, oil, drag link swivel
30	080857	4	BEARING, needle, drag link swivel yoke
31	082679	2	ARM, steering, front wheel spindle
	905126	2	KEY, #15 woodruff, 1/4" x 1"
	911116	2	WASHER, plain, SAE std., 7/8"
	914101	2	NUT, jam, 7/8"NF
32	{ 082101	1	SPINDLE, left front wheel
	082102	1	SPINDLE, right front wheel
	911057	2	NUT, castle, 1"NF
	900809	2	PIN, cotter, 1/8" x 1-3/4"
33	{ 078854	2	SHIM, needle bearing retainer (.005" thick. Use as req'd)
	082108	16	SHIM, needle bearing retainer (.010" thick. Use as req'd)
34	053243	2	SEAL, dust, spindle needle bearing
35	604435	2	BEARING, needle, wheel spindle, lower
36	082107	2	RETAINER, spindle needle bearing
	914465	2	FITTING, lubricating, straight, 1/8"NPT
	903638	6	CAPSCREW, 1/2"NC x 1-1/4"
	904208	6	LOCKWASHER, 1/2"

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FRONT WHEEL LEAN(Second type)(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION	
37	082179	2	SEAL, dust, spindle upper bearing	
38	604382	2	CONE ASSEMBLY, spindle upper bearing	
39	604383	2	CUP, spindle upper bearing	
40	200050	2	WASHER, spindle (felt)	
41	205430	2	WASHER, felt washer retaining	
42	210548	2	CONE ASSEMBLY, spindle inner bearing	
43	210550	2	CUP, spindle inner bearing	
44	210551	2	CUP, spindle outer bearing	
45	210549	2	CONE ASSEMBLY, spindle outer bearing	
46	200103	2	WASHER, spindle end	
47	069716	3	HOSE (16-1/4" long)	Used for graders prior to #5887
48	069710	2	UNION, adapting, cylinder hose	
49	076498	8	CLIP, pipe retaining	
	903629	3	CAPSCREW, 3/8"NC x 3/4"	
	904206	3	LOCKWASHER, 3/8"	
50	076502	2	PIPE, valve to cylinder	
	901692	2	ELBOW, pipe, 45°, 3/8"NPT	
	901678	2	ELBOW, pipe, 90°, 3/8"NPT	
51	079055	1	HOSE (21" long)	
	069715	2	UNION, elbow, valve hose (Used prior to grader #5378)	
	904271	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT	
52	090623	2	UNION, straight, valve hose (Effective with grader #5378)	Used for graders #5887 and up
	901723	2	ELBOW, street, 90°, 3/8"NPT	
	901765	1	COUPLING, pipe, 3/8"NPT	
	901489	1	NIPPLE, pipe, 3/8"NPT x 1"	
53	649636	1	HOSE, front (16-3/4" long) (See HOSE PARTS)	
54	649637	1	HOSE, front (16" long) (See HOSE PARTS)	
55	623577	2	TUBE, valve to cylinder	
56	623355	4	CLAMP, tube supporting	
	910211	3	CAPSCREW, 3/8"NC x 1-1/8"	
	903632	1	CAPSCREW, 3/8"NC x 1-1/2"	
	904206	4	LOCKWASHER, 3/8"	
57	649622	1	HOSE, rear (28-3/4" long) (See HOSE PARTS)	
58	649635	1	HOSE, rear (29-1/4" long)(See HOSE PARTS)	
59	621811	2	CONNECTOR, rear hose (restricted)	

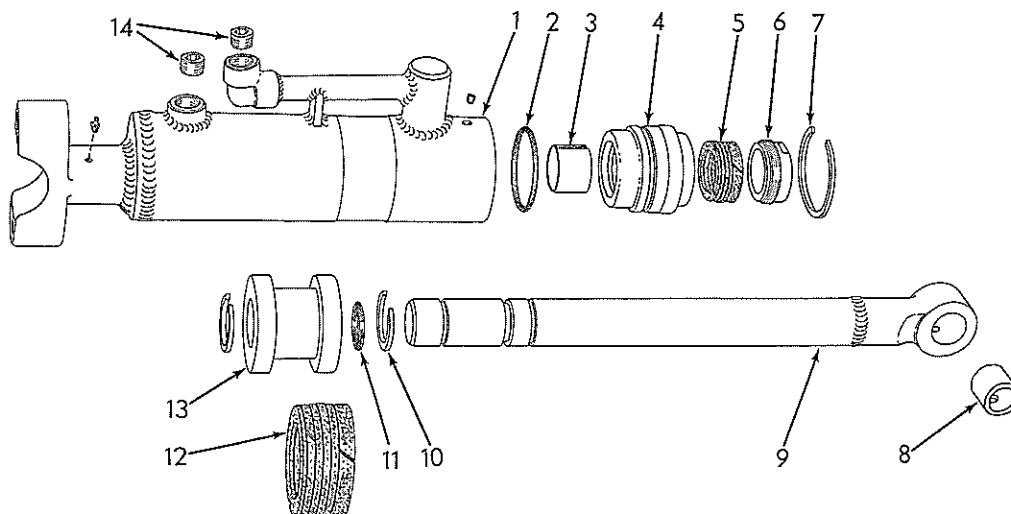
(Continued)

FRONT WHEEL LEAN (Second type)(Continued)

ITEM PART NO. QTY. DESCRIPTION

NOTE: The parts listed below are required to modify frames on graders prior to Serial No. 4216 to accomodate the new type Front Wheel Lean. Installation requires burning off the old axle bosses on the frame and welding in the new bosses.

60	082814	1	BOSS, front axle pivot
61	082815	1	BOSS, front axle pivot
62	082287	2	BLOCK, axle stop



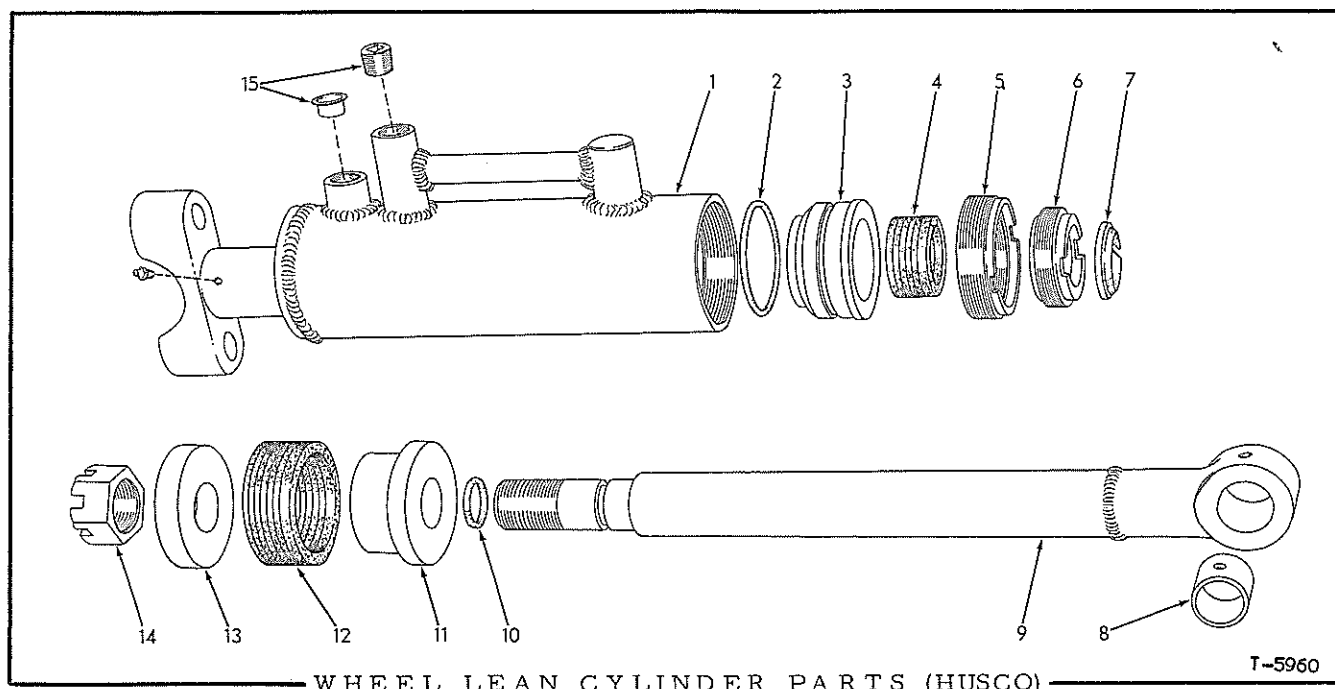
WHEEL LEAN CYLINDER PARTS (HYDRECO)

T-5934

USAGE: Graders prior to serial No. 4216. Parts for the interchangeable HUSCO Cylinder Assemblies are listed on page 169. See page 157 for complete Cylinder Assembly

* 4-1/4" stroke cylinder (Early units)
 ** 3-5/8" stroke cylinder (Late units)

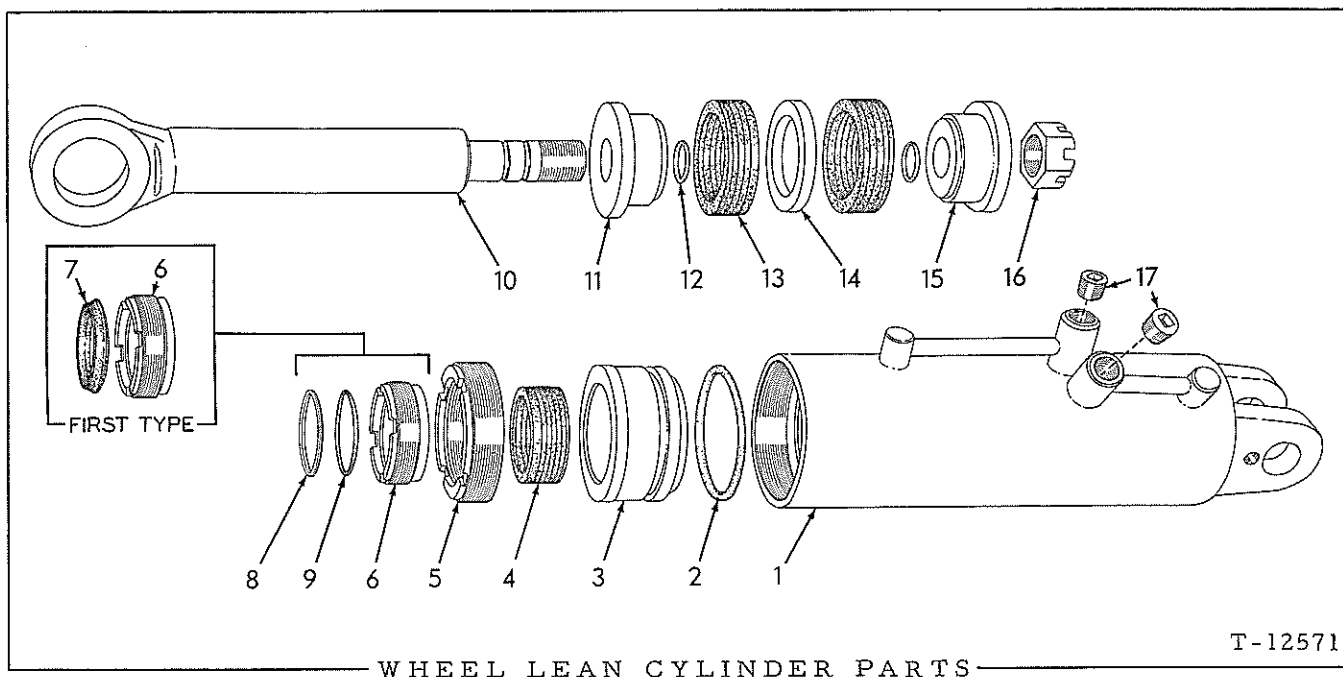
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	079689	1	1	TUBE, cylinder
	915794	1	1	SETSCREW, socket-hd., cup-pt., 1/4"NC x 1/4"
	912808	1	1	FITTING, lubricating, straight, 1/4 NF
2	923814	1	1	O-RING, stuffing box
3	069922	1	1	BUSHING, stuffing box
4	073844	1	-	BOX ASSEMBLY, stuffing (2-5/16" long. Includes item 3)
	081838	-	1	BOX ASSEMBLY, stuffing (2-5/8" long. Includes item 3)
5	079202	1	1	PACKING ASSEMBLY, stuffing box (5 split rings)
6	069924	1	1	NUT, stuffing box packing
7	069923	1	1	RING, snap, stuffing box
8	076521	1	1	BUSHING, piston rod
9	079337	1	-	ROD ASSEMBLY, piston (15-3/4" long. Includes item 8)
	081840	-	1	ROD ASSEMBLY, piston (16-1/16" long. Includes item 8)
10	069926	2	2	RING, snap, piston retaining
11	923575	1	1	O-RING, piston
12	066784	1	1	PACKING ASSEMBLY, piston (6 split rings)
13	073845	1	1	PISTON
14	-----	2	2	PLUG, shipping (Not serviced)



USAGE: Graders prior to serial No. 4216. Parts for the interchangeable HYDRECO Cylinder Assemblies are listed on page 168. See page 157 for complete Cylinder Assembly.

* 4-1/4" stroke cylinder (Early units)
 ** 3-5/8" stroke cylinder (Late units)

ITEM	PART NO.	QTY.		DESCRIPTION
1	079803	1	-	TUBE, cylinder (Barrel is 9-13/16" long)
	081824	-	1	TUBE, cylinder (Barrel is 9-3/16" long)
	912808	1	1	FITTING, lubricating, straight, 1/4"NF
2	923814	1	1	O-RING, stuffing box
3	079810	1	1	BOX, stuffing
4	080005	1	1	PACKING ASSEMBLY, stuffing box (7 rings)
5	079812	1	1	NUT, stuffing box retaining
6	079811	1	1	NUT, packing adjustment
7	080006	1	1	STRIP, piston rod wiping
8	076521	1	1	BUSHING, piston rod
9	079807	1	-	ROD ASSEMBLY, piston (15-3/4" long. Includes item 8)
	081821	-	1	ROD ASSEMBLY, piston (16-1/16" long. Includes item 8)
10	923574	1	1	O-RING, piston
11	079808	1	1	PISTON
12	080004	1	1	PACKING ASSEMBLY, piston (7 rings)
13	079809	1	1	WASHER, piston
14	914576	1	1	NUT, slotted, 1"NC
15	-----	2	2	PLUG, shipping (Not serviced)



USAGE: Graders serial No. 4216 and up. See page 163 for listing of complete Cylinder Assembly.

ITEM	PART NO.	QTY.	DESCRIPTION
1	083553	1	TUBE, cylinder
2	923830	1	O-RING, stuffing box
3	083551	1	BOX, stuffing
4	083552	1	PACKING ASSEMBLY, stuffing box
5	083554	1	NUT, stuffing box retaining
6	083555	1	NUT, packing adjustment (Used prior to February 1958)
	083637	1	NUT, packing adjustment (Effective February 1958)
7	-----	1	STRIP, piston rod wiping (Used prior to February 1958. Order items 6, 8, & 9)
8	080283	1	RING, piston rod wiping (Effective February 1958)
9	923579	1	O-RING, piston rod (Effective February 1958)
10	083560	1	ROD, piston
11	083548	1	PISTON, front
12	923575	2	O-RING, piston
13	083547	2	PACKING ASSEMBLY, piston
14	083558	1	WASHER, piston
15	083546	1	PISTON, rear
16	912841	1	NUT, slotted, 1-1/4" NF
17	-----	2	PLUG, shipping (Not serviced)

TIRES, TUBES AND RIMS
(Not Illustrated)

* Tube type. Standard equipment prior to January 1962
** Tubeless. Standard equipment effective January 1962

ITEM PART NO. QTY. * ** DESCRIPTION

NOTE: Order from local tire dealer

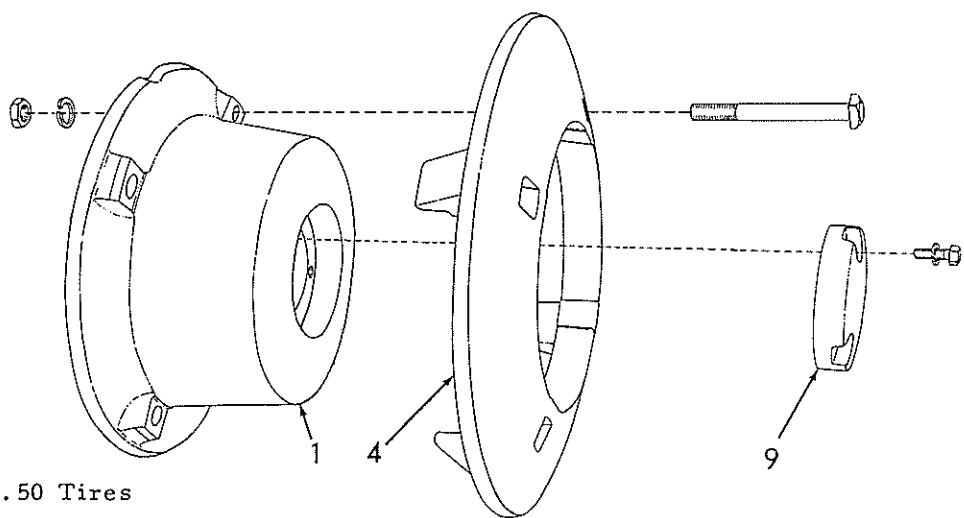
For Front Wheels

1	{	-----	2	-	RIM, pneumatic tire, drop-center, 4.00E-16" (Goodyear No. 902 or Firestone No. 81DC5) (Used with 6.50 tire)
		-----	2	2	RIM, pneumatic tire, drop-center, 5.50F-20" (Kelsey-Hayes No. 3641) (Used with 7.50 tire)
		-----	2	-	RIM, pneumatic tire, flat-base, 6.00-20" (Goodyear No. 860 or Firestone No. 237R5-1) (Used with 7.50 and 8.25 tires)
		-----	-	2	RIM, pneumatic tire, flat-base, 6.00-20" (Goodyear No. 6020 JMD) (Used with 8.25 tires)
2	{	-----	2	-	TIRE, pneumatic road grader, ribbed tread, 6.50-16"
		-----	2	2	TIRE, pneumatic road grader, ground grip, 7.50-20"
		-----	2	-	TIRE, pneumatic truck, ground grip, 8.25-20"
3	{	-----	2	-	TUBE, pneumatic tire, 6.50-16", with TR-215 or TR-217 valve
		-----	2	-	TUBE, pneumatic tire, 7.50-20", with TR-215 or TR-217 valve
		-----	2	-	TUBE, pneumatic tire, 8.25-20", with TR-218 valve
4	{	-----	-	2	VALVE, rim, TR-618 (For drop-center rim)
		-----	-	2	VALVE, rim (Goodyear No. 91-460E) (For flat-base rim)

For Rear Wheels

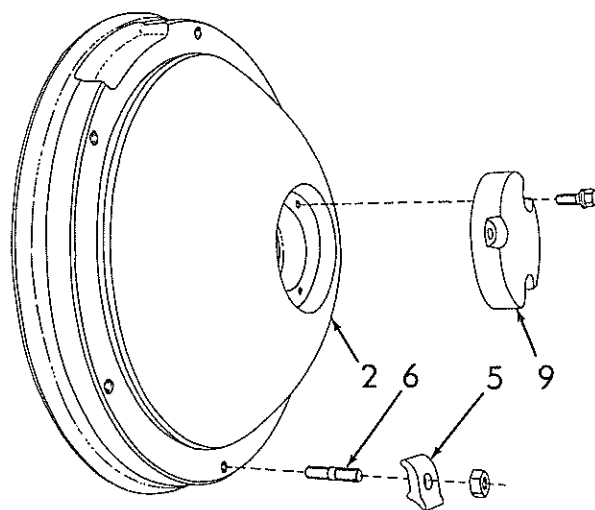
5	{	-----	4	4	RIM, pneumatic tire, drop-center, 5.50F-20" (Goodyear No. 916) (Used with 7.50 tire)
		-----	4	-	RIM, pneumatic tire, flat-base, 6.00-20" (Goodyear No. 860 or Firestone No. 237R5-1) (Used with 7.50 and 8.25 tires)
		-----	-	4	RIM, pneumatic tire, flat-base, 6.00-20" (Goodyear No. 6020JMD) (Used with 8.25 tires)
6	{	-----	4	4	TIRE, pneumatic road grader, ground grip, 7.50-20"
		-----	4	-	TIRE, pneumatic truck, ground grip, 8.25-20"
7	{	-----	4	-	TUBE, pneumatic tire, 7.50-20", with TR-215 or TR-217 valve
		-----	4	-	TUBE, pneumatic tire, 8.25-20", with TR-218 valve
8	{	-----	-	4	VALVE, rim, TR-618 (For drop-center rim)
		-----	-	4	VALVE, rim (Goodyear No. 91-460E) (For flat-base rim)

NOTE: Graders equipped with drop-center rims may be converted to use flat-base rims by using a special rim adapter. When this change is desired, order ADAPTER KIT 069014 which provides material for one (1) wheel. See page 175



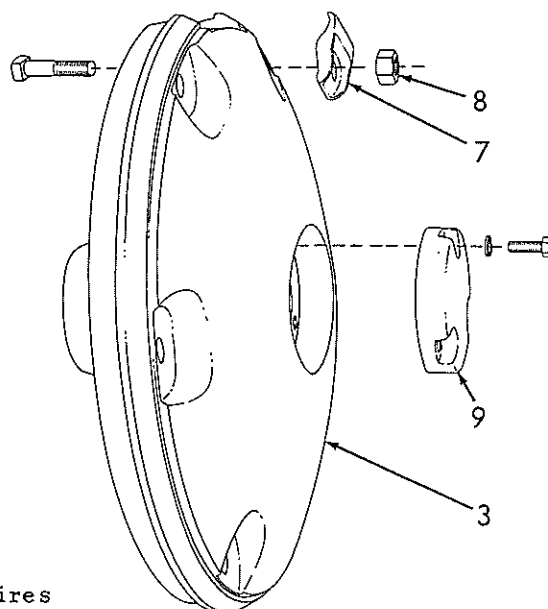
For 6.50 Tires

T-1502



For 7.50 Tires

T-1619



For 7.50 and 8.25 Tires

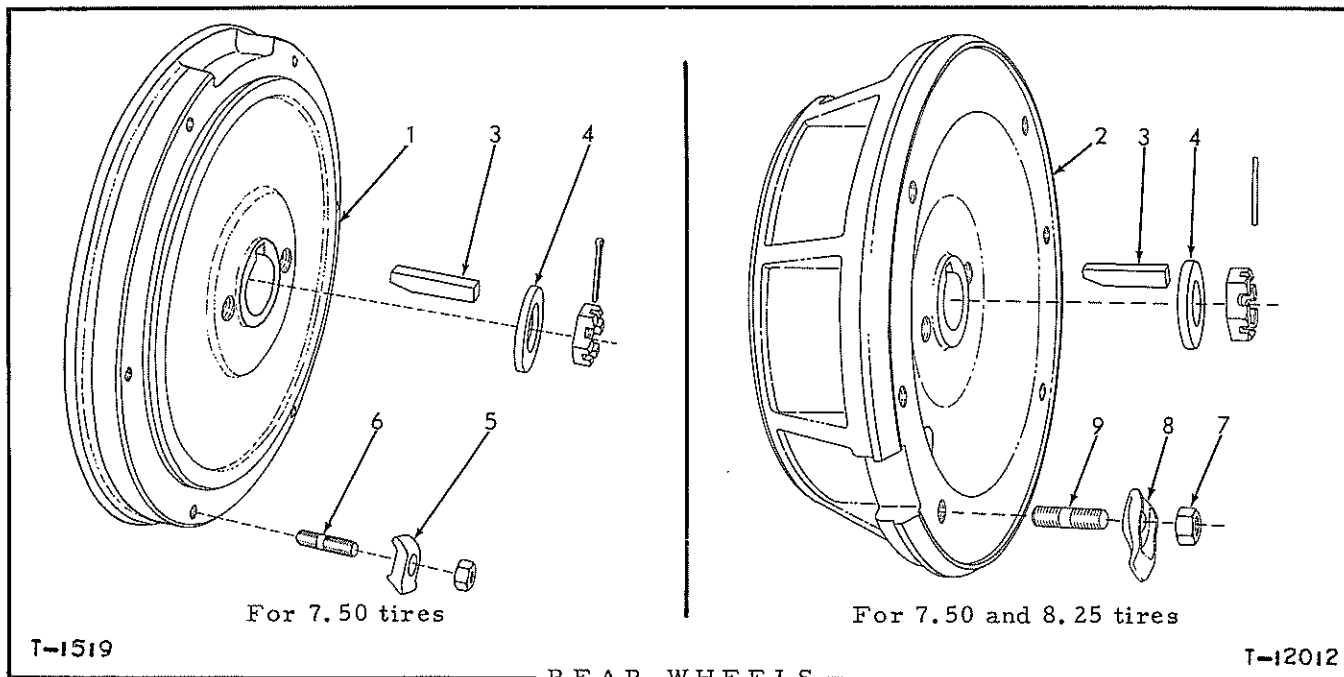
T-11290

FRONT WHEELS

FRONT WHEELS

* Standard on graders prior to serial No. 5983. For 6.50 tires
 ** Standard on graders serial No. 5983 and up. Optional on
 prior units. For 7.50 tires when using drop-center rims.
 *** Special equipment. For 7.50 and 8.25 tires when using flat-
 base rims.

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	603952	2	-	-	WHEEL, front
	914465	2	-	-	FITTING, lubricating, straight, 1/8"NPT (Early units)
2	068056	-	2	-	WHEEL, front
3	079635	-	-	2	WHEEL, front
4	603953	2	-	-	RING, rim clamping
	913270	8	-	-	BOLT, machine, 5/8"NC x 5-1/2"
	904209	8	-	-	LOCKWASHER, 5/8"
	911036	8	-	-	NUT, jam, 5/8"NC
5	054883	-	12	-	CLAMP, wheel rim
6	054882	-	12	-	STUD (1/2" diam.)
	907517	-	12	-	NUT, cd-pltd., 1/2"NC
7	604361	-	-	12	CLAMP, wheel rim
	913956	-	-	12	BOLT, machine, 5/8"NC x 2-1/2"
8	601405	-	-	12	NUT, wheel rim bolt
9	603954	2	2	2	CAP, hub
	903630	6	6	6	CAPSCREW, 3/8"NC x 1"
	904206	6	6	6	LOCKWASHER, 3/8"

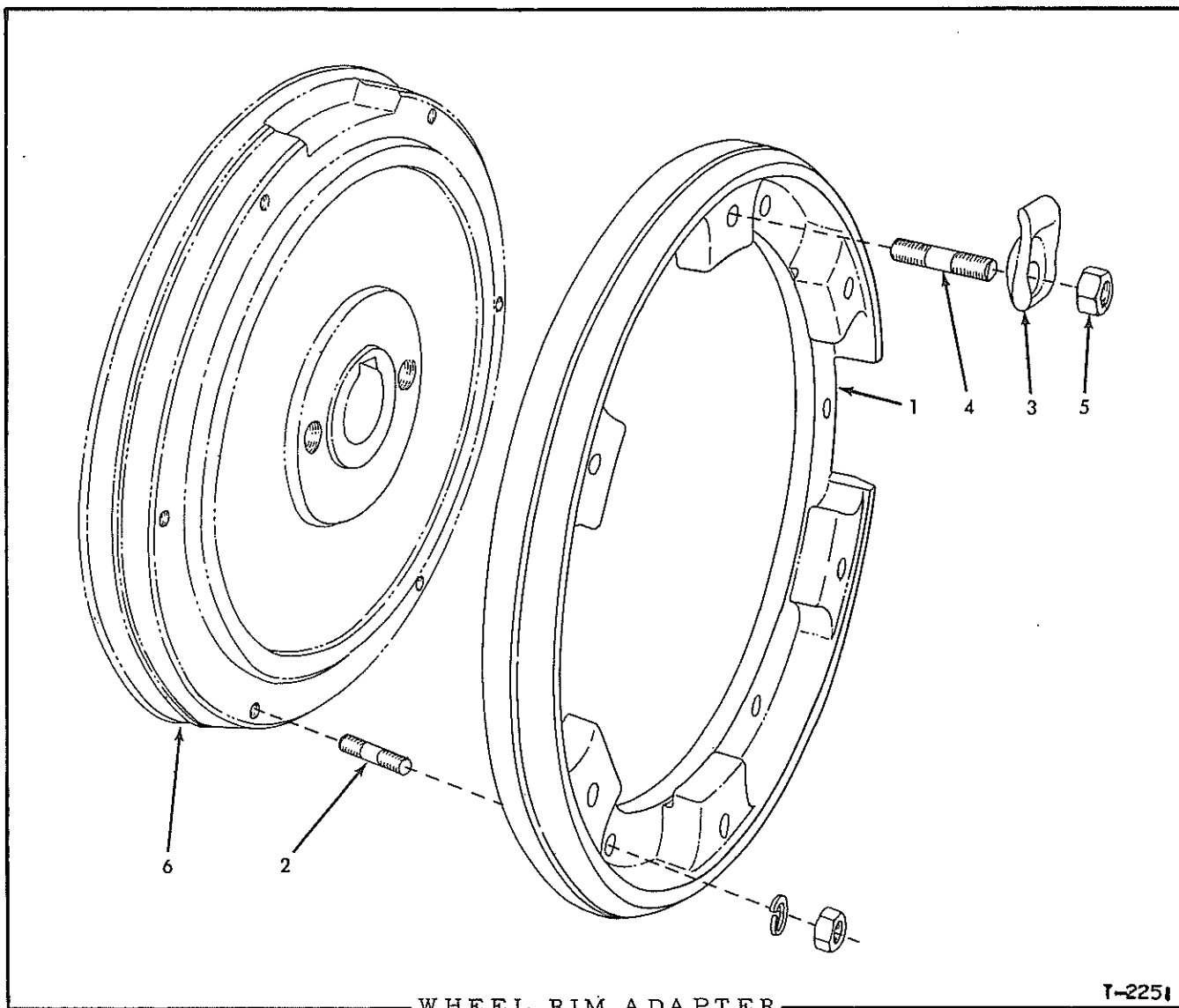


REAR WHEELS

* Standard Equipment. For 7.50 tires when used with drop-center rims.

** Special Equipment. For 7.50 and 8.25 tires when used with flat-base rim.

		QUANTITY		DESCRIPTION
ITEM	PART NO.	*	**	
1	054886	4	-	WHEEL, rear (Used prior to grader #5172)
	083403	4	-	WHEEL, rear (Provides 2" wider tread to permit use of tire chains)(Effective with grader #5172)
	082990	4	-	WHEEL, rear (Has drum for special wheel brakes)
2	079636	-	4	WHEEL, rear (Used prior to grader #4853)
	083386	-	4	WHEEL, rear (Provides 2" wider tread to permit use of tire chains)(Effective with grader #4853)
	083393	-	4	WHEEL, rear (Has drum for special wheel brakes)
3	054888	4	4	KEY, rear wheel
4	053606	4	4	WASHER, rear wheel retaining
	913527	4	4	NUT, jam, slotted, 1-1/2"NF
	900813	4	4	PIN, cotter, 3/16" x 2"
5	054883	24	-	CLAMP, wheel rim
6	054882	24	-	STUD (1/2"NC x 2-1/8")
	907517	24	-	NUT, cd-pltd., 1/2"NC
7	601405	-	24	NUT, wheel rim
8	604361	-	24	CLAMP, wheel rim
9	913956	-	24	BOLT, machine, 5/8"NC x 2-1/2" (Used with WHEEL 079636 only)
	090418	-	24	STUD, rim clamp (Used with WHEELS 083386 and 083393)

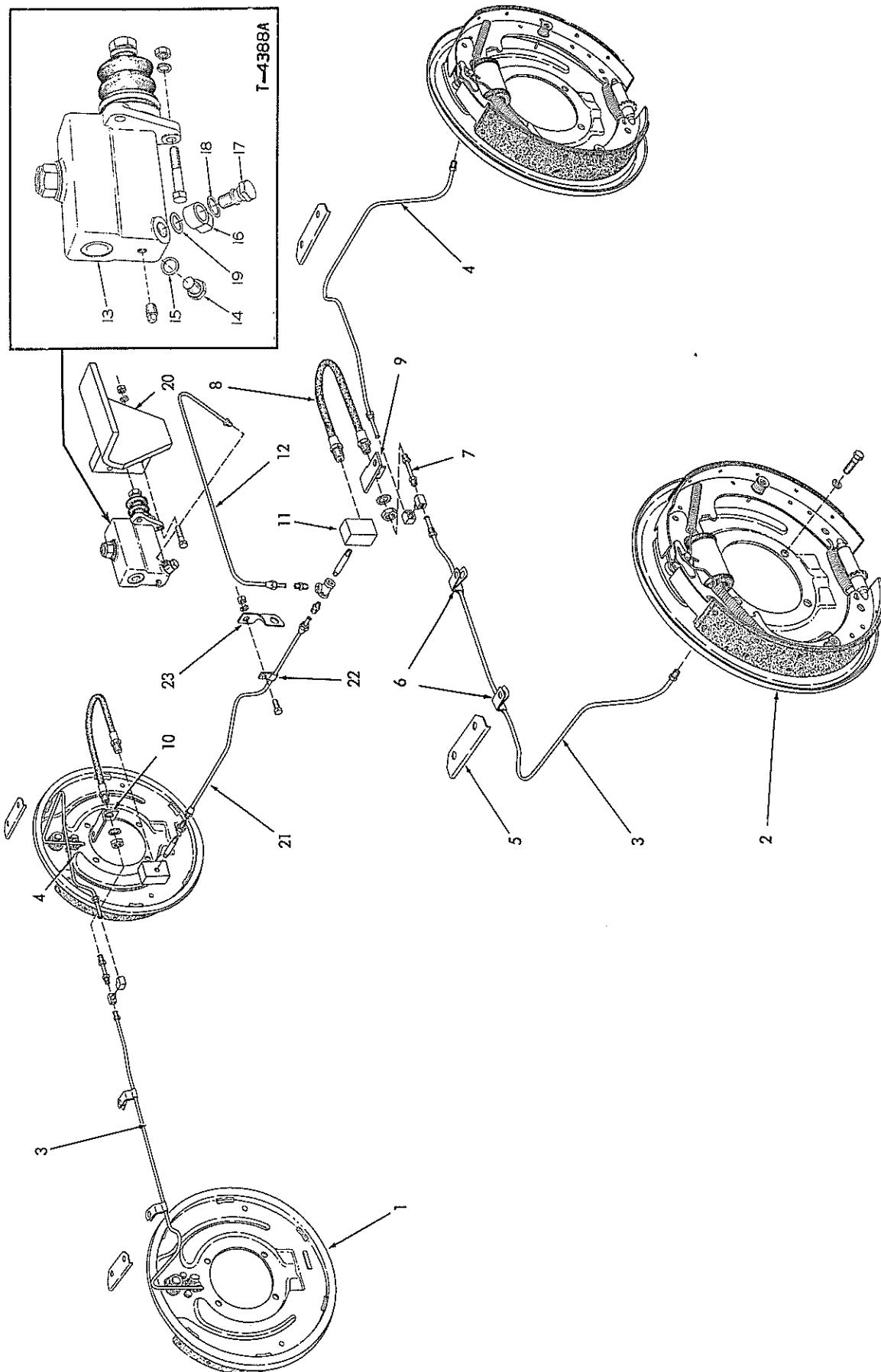


USAGE: Special equipment. Required to mount flat-base rims in place of standard drop-center rims when using 7.50-20" tires.

ITEM PART NO. QTY. DESCRIPTION

NOTE: Quantities indicated are for one wheel only. Order as required

-	069014	1	ADAPTER KIT (Consists of items 1, 3, 4 and 5)
1	068972	1	ADAPTER, flat base rim
2	054882	6	STUD (1/2" diam.)
	904208	6	LOCKWASHER, 1/2"
	907517	6	NUT, cd-pltd., 1/2"NC
3	604361	6	CLAMP, wheel rim
4	603488	6	STUD (5/8" diam.)
5	601405	6	NUT, plated, 5/8"NC
6	-----	-	WHEEL, front or rear



T-4388A

T-19508

WHEEL BRAKES

WHEEL BRAKES

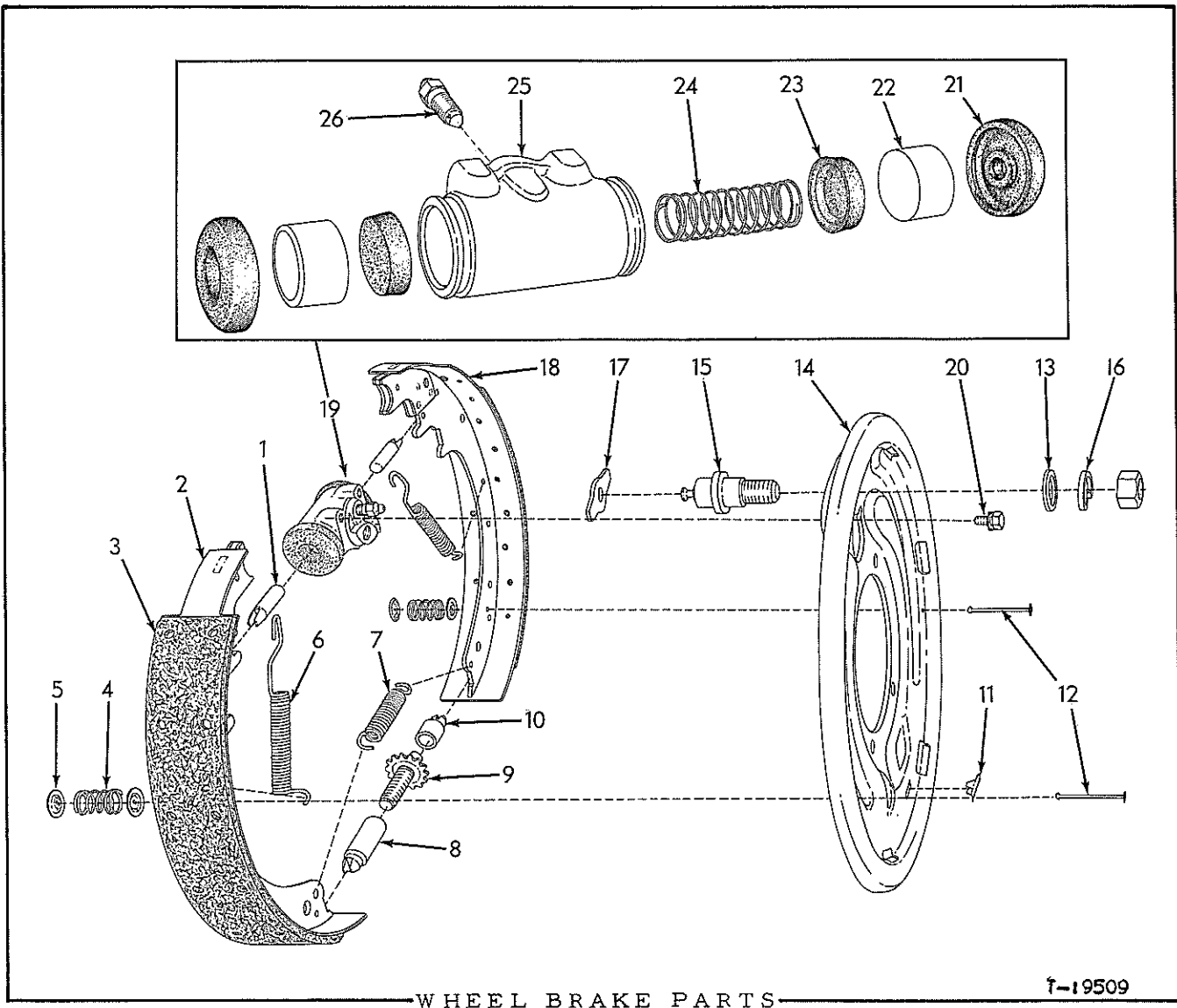
USAGE: Special Equipment

ITEM	PART NO.	QTY.	DESCRIPTION
1	083401	2	BRAKE ASSEMBLY, left wheels (See page 179 for parts)
	913033	8	CAPSCREW, 1/2"NC x 1-1/8"
	904208	8	LOCKWASHER, 1/2"
2	083402	2	BRAKE ASSEMBLY, right wheels (See page 179 for parts)
	913033	8	CAPSCREW, 1/2"NC x 1-1/8"
	904208	8	LOCKWASHER, 1/2"
3	083600	2	TUBE ASSEMBLY, rear brakes (Each includes 2 NUTS 913536)(To be formed at assembly)
	913536	4	NUT, inverted flare type, 1/4" tube
	915841	2	TEE, inverted flare type, 1/4" tube, 1/8"NPT male
	915842	2	ELBOW, inverted flare type, 1/4" tube, 1/8"NPT male
4	083601	2	TUBE ASSEMBLY, front brakes (Each includes 2 NUTS 913536)(To be formed at assembly)
	913536	4	NUT, inverted flare type, 1/4" tube, 1/8"NPT male
5	067836	4	SHIELD, brake tubes
6	067835	4	CLIP, supporting, brake tubes
7	068479	2	TUBE ASSEMBLY, tee to hose (Each includes 2 NUTS 913536)
	913536	4	NUT, inverted flare type, 1/4" tube, 1/8"NPT male
8	600675	2	HOSE, connecting, brake tubes (17-1/4" long)
	910543	2	LOCKWASHER, external teeth, 5/8"
	911049	2	NUT, jam, 5/8"NF
9	067837	1	BRACKET, hose supporting, right side
10	067838	1	BRACKET, hose supporting, left side
11	083140	2	BLOCK, hose connecting (welded to frame)
	901470	2	NIPPLE, pipe, 1/8"NPT x 2-1/2"
12	083564	1	TUBE ASSEMBLY, master cylinder (Includes 1 NUT 910136 and 1 NUT 913536)
	910136	1	NUT, flare type, long, 1/4" tube
	913536	1	NUT, inverted flare type, 1/4" tube, 1/8"NPT male
	901702	1	TEE, pipe, 1/8"NPT
	910141	1	CONNECTOR, flare type, 1/4" tube, 1/8"NPT male
13	067005	1	CYLINDER ASSEMBLY, master (See page 180 for parts)
	901651	1	PLUG, pipe, 1/8"NPT
	911848	3	CAPSCREW, 3/8"NF x 2"
	904206	3	LOCKWASHER, 3/8"
	911041	3	NUT, 3/8"NF
14	067508	1	PLUG, master cylinder outlet
15	067507	1	GASKET, master cylinder outlet plug
16	059229	1	CONNECTOR, master cylinder
17	059224	1	SCREW
18	059225	1	GASKET, attaching screw

(Continued)

WHEEL BRAKES (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
19	059220	1	GASKET, master cylinder connector
20	083563	1	BRACKET, master cylinder mounting (Requires welding to frame)
21	083565	1	TUBE ASSEMBLY, master cylinder to left brakes (Includes 2 NUTS 910136)
	910136	2	NUT, flare type, long, 1/4" tube
	910141	1	CONNECTOR, flare type, 1/4" tube, 1/8"NPT male
	913036	1	CONNECTOR, flare type, 1/4" tube, 1/8"NPT female
22	235794	1	CLIP, tube supporting
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
23	083530	1	BRACKET, clip attaching



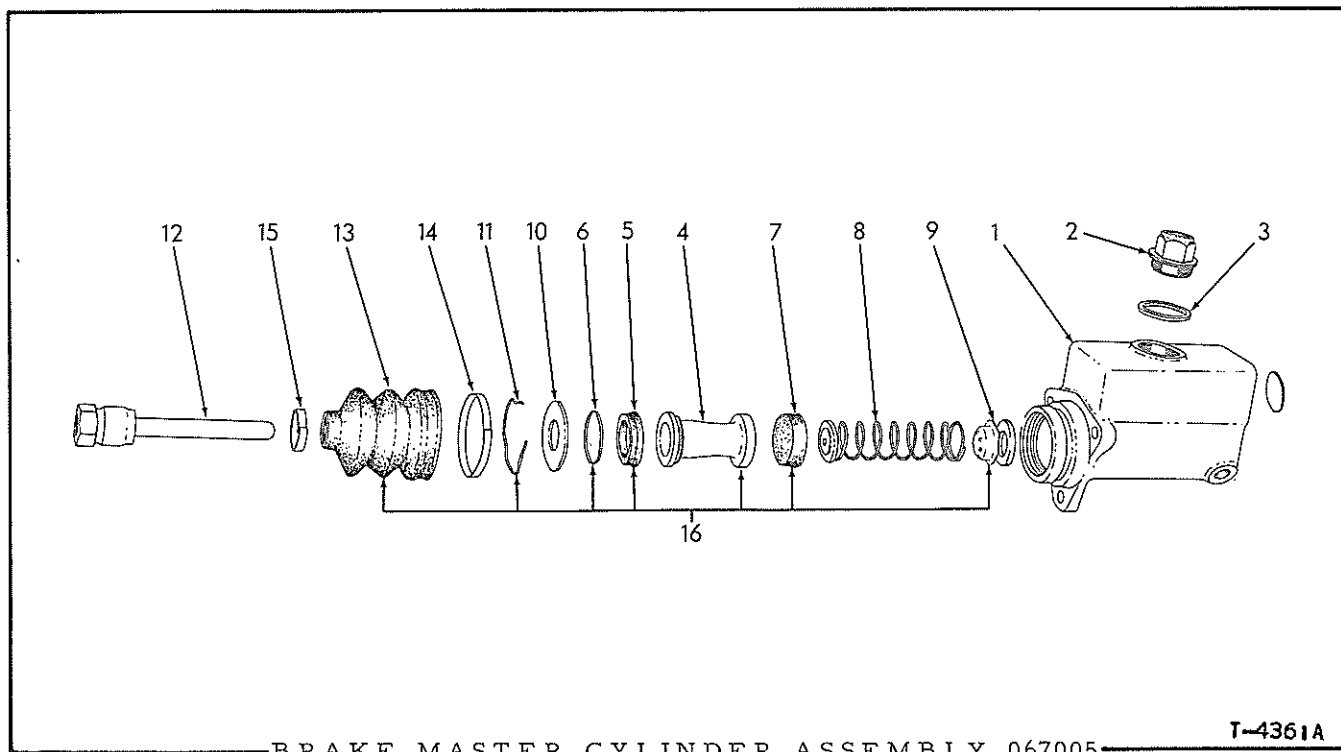
7-19509

WHEEL BRAKE PARTS

USAGE: See page 177

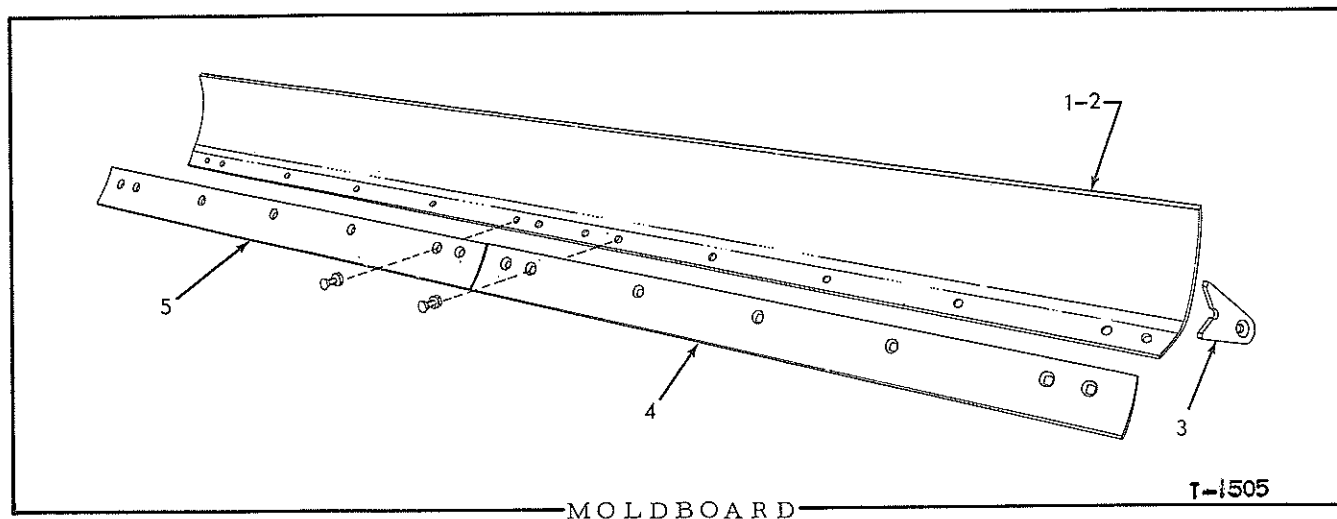
* 083401 BRAKE ASSEMBLY (left wheels)
 ** 083402 BRAKE ASSEMBLY (right wheels)

ITEM	PART NO.	QTY. * **		DESCRIPTION
<u>NOTE:</u> Quantities indicated are for one (1) Brake Assembly only				
1	087444	1	1	LINK, brake cylinder
2	087449	1	1	SHOE ASSEMBLY, rear (Includes lining)
3	094337	1	1	LINING KIT (Consists of 4 linings and 44 rivets. Complete set for two wheels)
4	087438	2	2	SPRING, shoe retaining
5	087439	4	4	CUP, shoe retaining spring
6	087443	2	2	SPRING, shoe retracting, upper
7	087440	1	1	SPRING, shoe retracting, lower
8	087446	1	1	NUT, brake adjustment
9	087448	1	1	SCREW, brake adjustment
10	087447	1	1	SOCKET, brake adjustment
11	087437	1	1	COVER, back plate adjustment hole
12	087441	2	2	PIN, shoe retaining
13	087452	1	1	WASHER, spring anchor pin
14	088644	1	1	PLATE, back
15	087451	1	1	PIN, spring anchor
16	059041	1	1	LOCKWASHER, 3/4"
	911045	1	1	NUT, 3/4"NF
17	087442	1	1	PLATE, guide, brake shoe
18	087450	1	1	SHOE ASSEMBLY, front (Includes lining)
19	088673	1	-	CYLINDER ASSEMBLY, left brake (Consists of items 21 thru 26)
	088674	-	1	CYLINDER ASSEMBLY, right brake (Consists of items 21 thru 26)
20	087445	2	2	SCREW ASSEMBLY (Includes lockwasher)
21	095248	2	2	BOOT, brake cylinder
22	095249	2	2	PISTON, brake cylinder
23	095250	2	2	CUP, brake cylinder (rubber)
24	095251	1	1	SPRING, brake cylinder
25	-----	1	1	CYLINDER (Not serviced separately)
26	095252	1	1	SCREW, bleed, brake cylinder



USAGE: See page 177

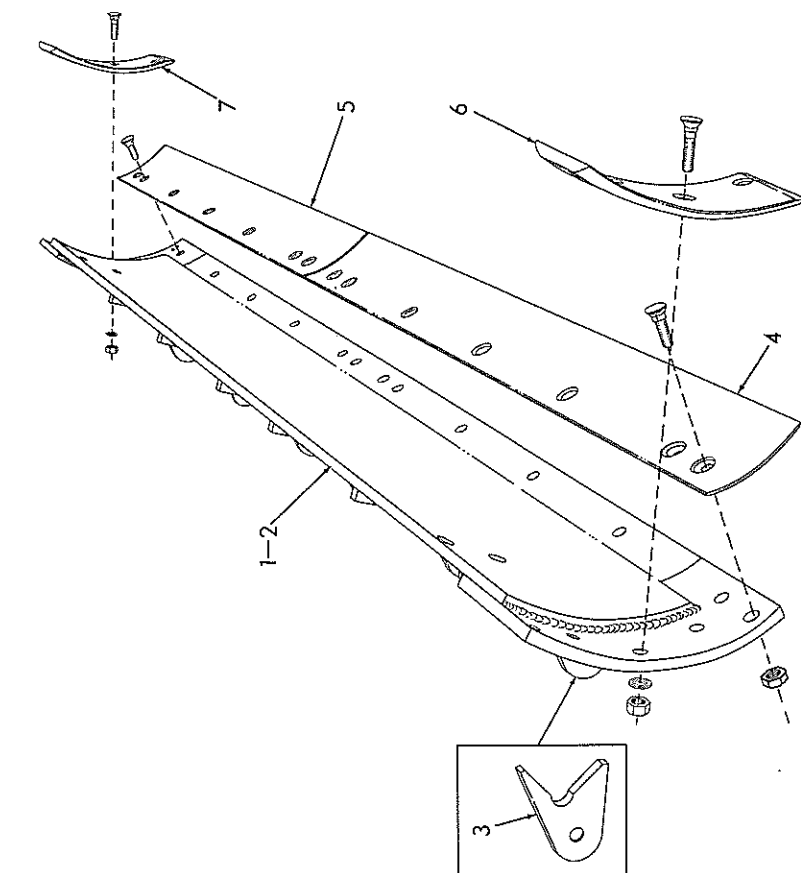
ITEM	PART NO.	QTY.	DESCRIPTION
1	067495	1	TANK, supply
	910006	1	PLUG, expansion, 1-1/4" diam. (Early units only)
2	074349	1	CAP ASSEMBLY, filler (Serviced only as a unit)
3	076486	1	GASKET, filler cap
4	-----	1	□PISTON (Not serviced separately. Order item 16)
5	067608	1	□CUP, secondary
6	067609	1	□RING, secondary cup retaining (Used on early units only)
7	067492	1	□CUP, primary
8	067493	1	SPRING ASSEMBLY, piston return (Includes end washer. Serviced only as a unit)
9	091602	1	□VALVE AND SEAT ASSEMBLY, check (Serviced only as a unit)
10	067490	1	PLATE, piston stop
11	067488	1	□WIRE, piston stop plate retaining
12	067486	1	ROD, push
13	067487	1	□BOOT, push rod
14	067489	1	STRAP, boot retaining (large)(Early units only)
15	059222	1	STRAP, boot retaining (small)(Early units only)
16	067498	1	REPAIR KIT (Consists of items 4 thru 7, 9, 11 and 13)
			□Indicates components of item 16



* Standard equipment - 10 foot
 ** Special equipment - 12 foot
 *** Special equipment - 14 foot

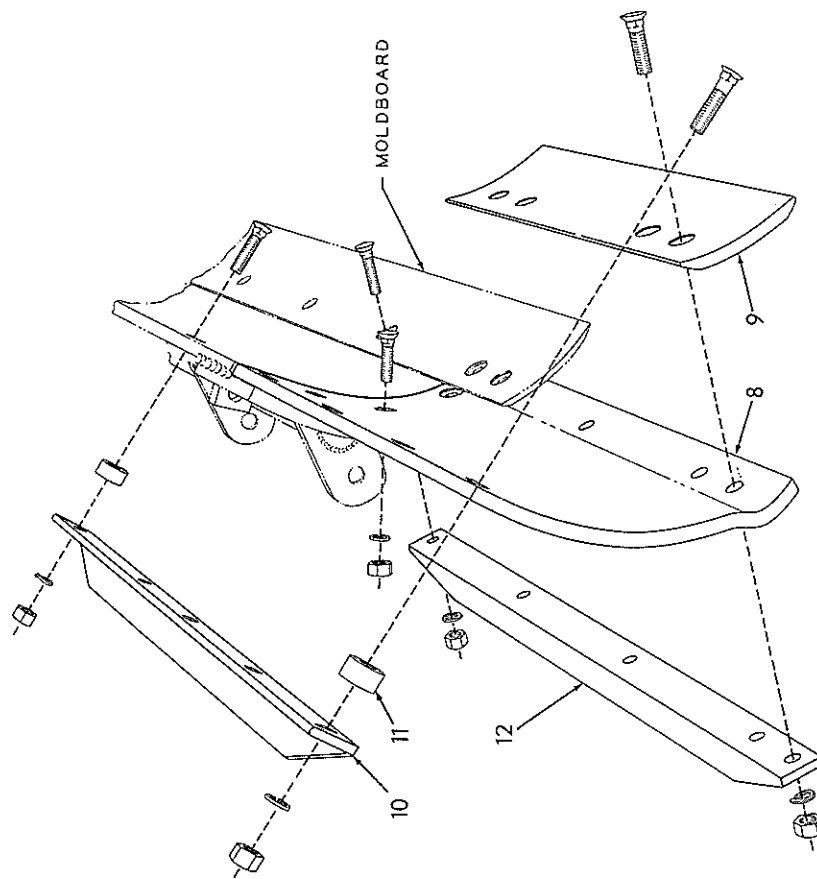
ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
NOTE: See pages 183 and 185 for optional moldboards					
1	055505	1	-	-	MOLDBOARD ASSEMBLY (10 ft.)(Consists of parts listed below)
	067390	-	1	-	MOLDBOARD ASSEMBLY (12 ft.)(Consists of parts listed below)
	068884	-	-	1	MOLDBOARD ASSEMBLY (14 ft.)(Consists of parts listed below)
2	061421	1	-	-	MOLDBOARD ONLY (10 ft. Includes item 3)
	067389	-	1	-	MOLDBOARD ONLY (12 ft. Includes item 3)
	068853	-	-	1	MOLDBOARD ONLY (14 ft. Includes item 3)
3	055486	6	6	6	BRACKET, moldboard attaching (Requires welding to moldboard)
4	601531	1	-	-	EDGE, cutting, left hand (5 ft. section)
	601533	-	1	-	EDGE, cutting, left hand (6 ft. section)
	601535	-	-	1	EDGE, cutting, left hand (7 ft. section)
	914484	7	-	-	BOLT, plow, 5/8"NC x 2"
	911633	-	8	9	BOLT, plow, 5/8"NC x 2-1/4"
	911029	7	8	9	NUT, 5/8"NC
5	601530	1	-	-	EDGE, cutting, right hand (5 ft. section)
	601532	-	1	-	EDGE, cutting, right hand (6 ft. section)
	601534	-	-	1	EDGE, cutting, right hand (7 ft. section)
	914484	7	-	-	BOLT, plow, 5/8"NC x 2"
	911633	-	8	9	BOLT, plow, 5/8"NC x 2-1/4"
	911029	7	8	9	NUT, 5/8"NC

NOTE: See PAINTING AND MARKING for transfer



1-5938

MOLDBOARD



1-5939

MOLDBOARD EXTENSIONS

MOLDBOARD (Extension type)

USAGE: Special equipment. Permits use of End Bits or Moldboard Extensions.

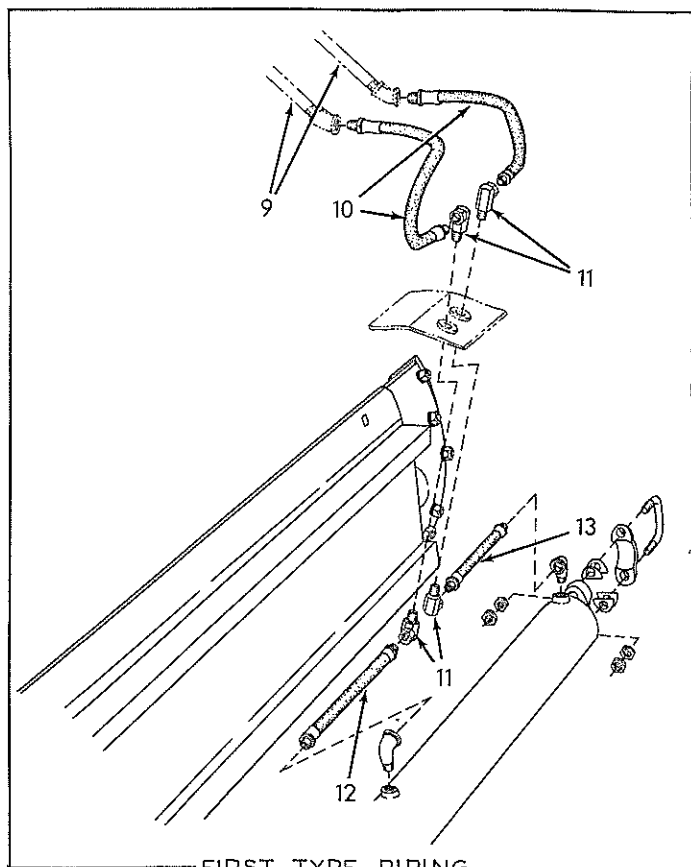
ITEM PART NO. QTY. DESCRIPTION

1	079143	1	MOLDBOARD ASSEMBLY (Consists of items 2 thru 7)
2	079146	1	MOLDBOARD (10 ft.)(Includes item 3)
3	055486	6	BRACKET, attaching (Requires welding to moldboard)
4	601530	1	EDGE, cutting, right hand (5 ft. section)
	914484	7	BOLT, plow, 5/8"NC x 2"
	911029	7	NUT, 5/8"NC
5	601531	1	EDGE, cutting, left hand (5 ft. section)
	914484	7	BOLT, plow, 5/8"NC x 2"
	911029	7	NUT, 5/8"NC
6	079154	1	BIT, end, right hand
	911633	4	BOLT, plow, 5/8"NC x 2-1/4"
	904209	4	LOCKWASHER, 5/8"
	911029	4	NUT, 5/8"NC
7	079151	1	BIT, end, left hand
	911633	4	BOLT, plow, 5/8"NC x 2-1/4"
	904209	4	LOCKWASHER, 5/8"
	911029	4	NUT, 5/8"NC

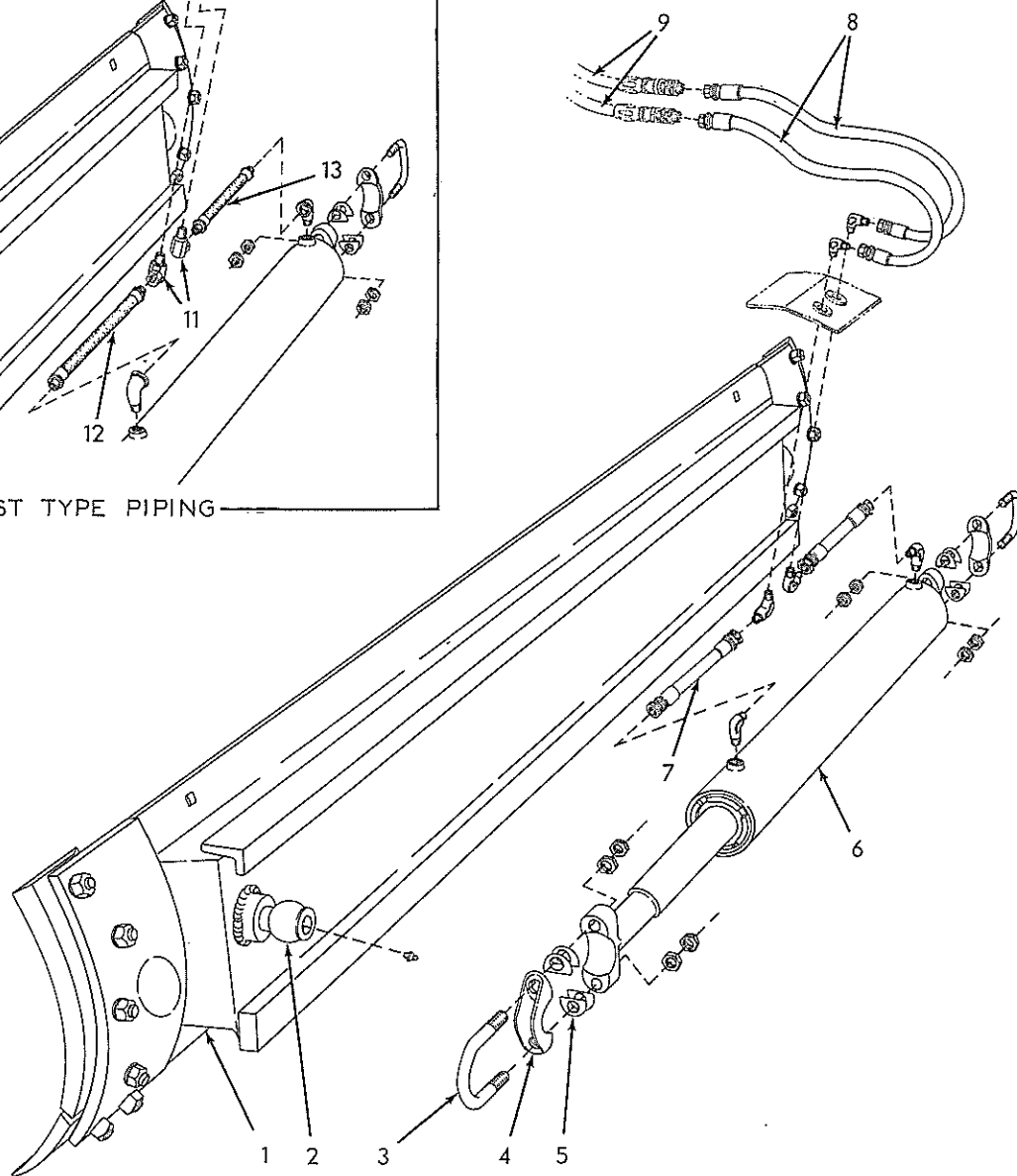
NOTE: Items 8 thru 12 comprise the Moldboard Extension attachments which can be installed in place of the End Bits listed above

8	{	079162	1	EXTENSION, moldboard, right hand
		079161	1	EXTENSION, moldboard, left hand
		911633	6	BOLT, plow, 5/8"NC x 2-1/4"
		904209	6	LOCKWASHER, 5/8"
		911029	6	NUT, 5/8"NC
9		601603	2	EDGE, cutting
		913648	6	BOLT, plow, 5/8"NC x 2-3/4"
		904209	6	LOCKWASHER, 5/8"
		911029	6	NUT, 5/8"NC
10	{	079164	1	ANGLE, top reinforcing, right hand
		079163	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
11		602449	8	SPACER, top reinforcing angle
12	{	079166	1	ANGLE, bottom reinforcing, right hand
		079165	1	ANGLE, bottom reinforcing, left hand
		913648	4	BOLT, plow, 5/8"NC x 2-3/4"
		904209	4	LOCKWASHER, 5/8"
		911029	4	NUT, 5/8"NC

NOTE: See PAINTING AND MARKING for transfer



FIRST TYPE PIPING



SHIFTABLE MOLDBOARD DETAILS

T-30945

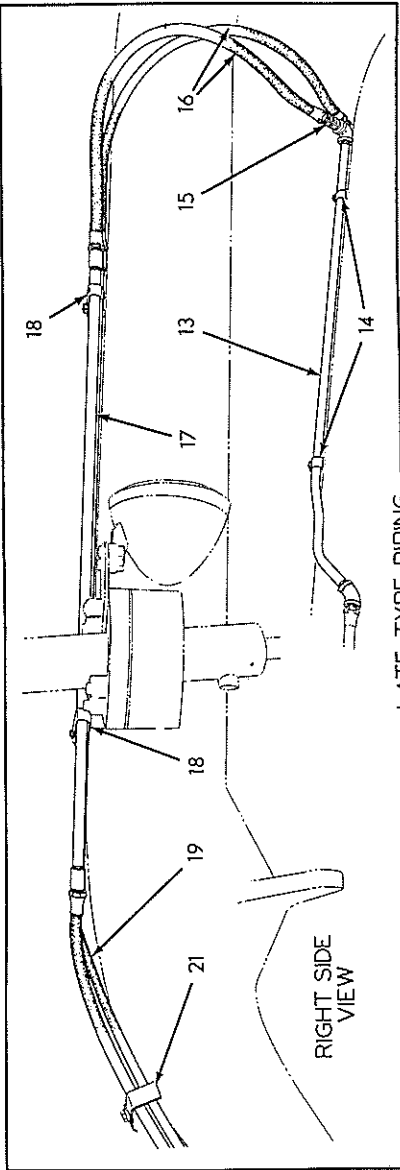
SHIFTABLE MOLDBOARD DETAILS

USAGE: Special equipment. See pages 187 and 191

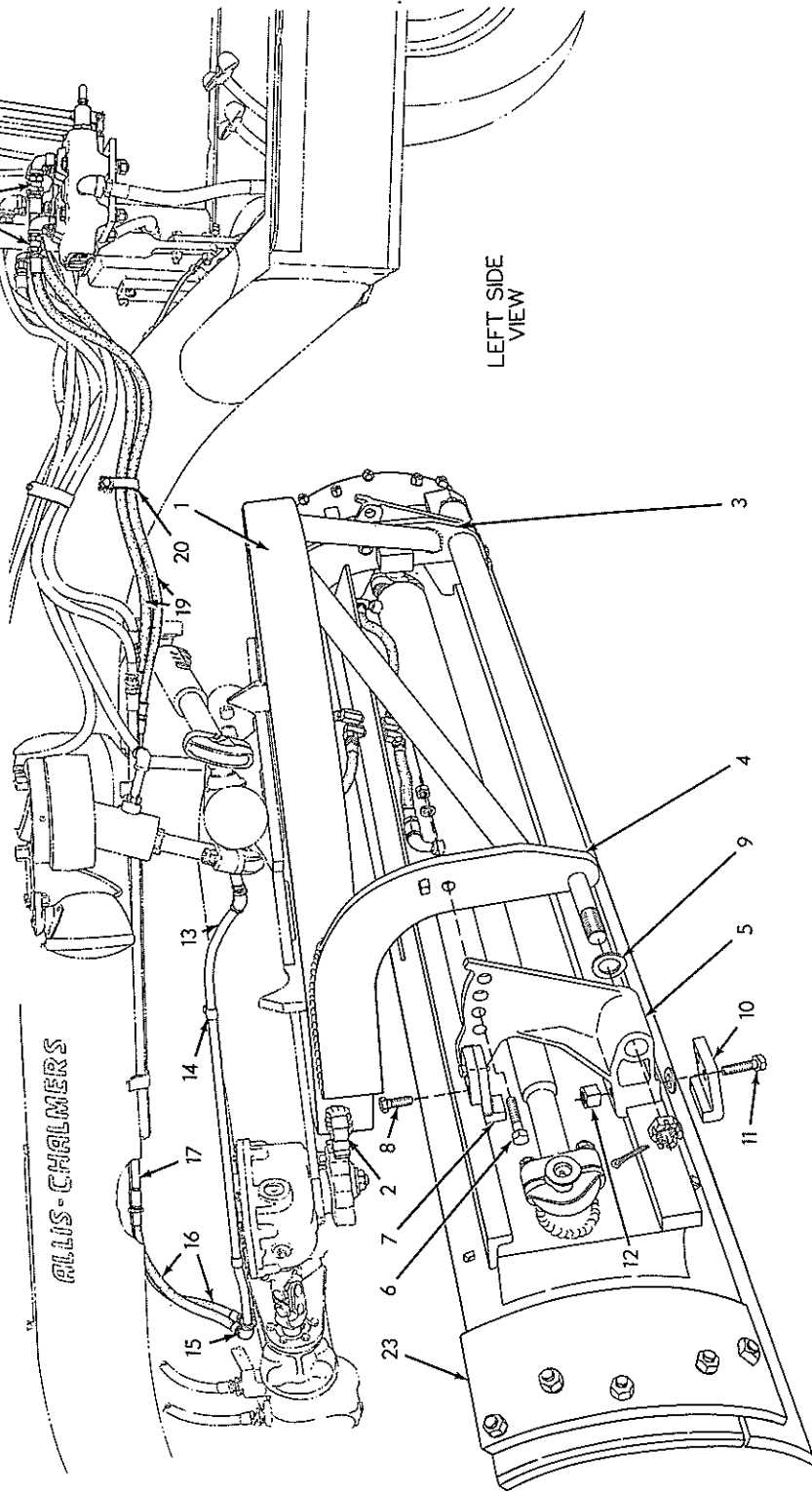
* Graders prior to serial No. 5887
 ** Grader serial No. 5887 and up

ITEM	PART NO.	QTY. * **		DESCRIPTION
<u>NOTE:</u> See pages 181 and 183 for end bits and cutting edges used with moldboards.				
1	082688	1	1	MOLDBOARD ASSEMBLY (10 ft. Includes cutting edges and end bits. See NOTE above)
	085483	1	1	MOLDBOARD ASSEMBLY (12ft. Includes cutting edges and end bits. See NOTE above)
	083264	1	1	MOLDBOARD ONLY (10 ft. Includes item 2)
	085540	1	1	MOLDBOARD ONLY (12 ft. Includes item 2)
2	082532	1	1	BALL, shifting cylinder (Requires welding to moldboard)
	914465	1	1	FITTING, lubricating, straight, 3/8"NPT
3	605665	2	2	U-BOLT, cylinder end cap
	911049	8	8	NUT, jam, 5/8"NF
4	053986	2	2	CAP, cylinder end
5	053992	16	16	SHIM, cylinder end cap (Use as required)
6	096096	1	1	CYLINDER ASSEMBLY, moldboard (See page 189 for parts)(If for graders prior to #5462; also order 2 HOSE 081228)
7	649639	-	2	HOSE, lower (See HOSE PARTS)
	919206	-	4	ELBOW, flare type, 1/2" tube, 3/8"NPT male
8	649631	-	2	HOSE connecting (See HOSE PARTS)
	919206	-	2	ELBOW, flare type, 1/2" tube, 3/8"NPT male
9	-----	2	-	PIPE, oil (See page 187)
	-----	-	2	HOSE (See page 191)
10	079055	2	-	HOSE, pipe to adapter (21" long)
11	081230	4	-	UNION, hose adapting (90°)
12	081227	1	-	HOSE, adapter to cylinder (19" long)(Used prior to grader #5462)
	081228	1	-	HOSE, adapter to cylinder (17" long)(Effective with grader #5462)
	901723	1	-	ELBOW, street, 90°, 3/8"NPT
13	082605	1	-	HOSE, adapter to cylinder (13" long)(Used prior to grader #5462)
	081228	1	-	HOSE, adapter to cylinder (17" long)(Effective with grader #5462)
	901723	1	-	ELBOW, street, 90°, 3/8"NPT

NOTE: See PAINTING AND MARKING for transfers applied to moldboard



LATE TYPE PIPING



ALLIS-CHALMERS

1-13076

SHIFTABLE MOLDBOARD (First Type)

SHIFTABLE MOLDBOARD

USAGE: Special equipment on graders prior to serial No. 5887

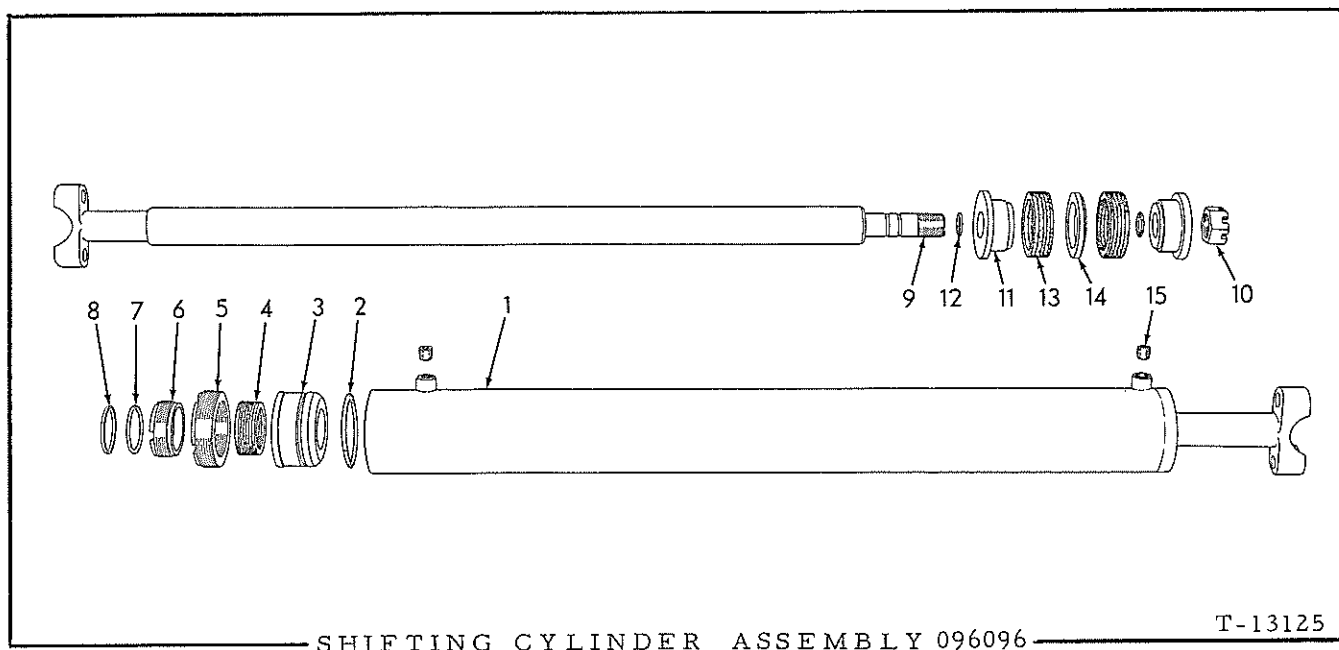
* Graders prior to serial No. 5586
 ** Graders serial No. 5586 thru No. 5886

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	090222	1	1	CIRCLE, moldboard (Includes items 3 , 4 and NUTS 912841 indented below)(For units equipped with manual circle turn)
	657255	1	1	CIRCLE, moldboard (Includes items 2 thru 4 and NUTS 912841 indented below)(For units equipped with power circle turn)
	915276	1	1	FITTING, lubricating, 90°, 1/8"NPT
	912841	2	2	NUT, slotted, 1-1/4"NF
	901344	2	2	PIN, cotter, 1/4" x 2"
2	078434	3	3	SEGMENT, circle rack (8 teeth)(Requires welding to circle)
3	082548	1	1	ARM, right (Requires welding to circle)
4	656852	1	1	ARM, left (Requires welding to circle)
5	082225	1	1	BRACKET, moldboard pitch, left side
	082226	1	1	BRACKET, moldboard pitch, right side
6	070285	2	2	CAPSCREW, 3/4"NF x 3"
	904369	2	2	LOCKWASHER, 3/4"
	911045	2	2	NUT, 3/4"NF
7	081170	2	2	GUIDE, moldboard slide
8	035440	4	4	CAPSCREW, 5/8"NC x 1-1/2"
9	082604	4	4	WASHER, moldboard support spacing
10	081175	2	2	BRACKET, moldboard slide
	915874	16	16	WASHER, spacing
11	604930	4	4	CAPSCREW, 3/4"NF x 5"
12	012767	4	4	NUT, high, 3/4"NF
13	082617	1	-	PIPE, oil, lower left
	097156	-	1	PIPE, oil, lower left
	-----	1	-	PIPE, oil, lower right (Order PIPE 097156)
	097487	-	1	PIPE, oil, lower right
	901692	2	2	ELBOW, pipe, 45°, 3/8"NPT
	901678	2	2	ELBOW, pipe, 90°, 3/8"NPT
14	076498	4	4	CLIP, pipe supporting (11/16" diam., 13/32" bolt-hole)
	903629	2	2	CAPSCREW, 3/8"NC x 3/4"
	904206	2	2	LOCKWASHER, 3/8"
15	069710	2	2	UNION, hose adapting
16	081227	2	-	HOSE, pipe connecting (19" long)
	081218	-	2	HOSE, pipe connecting (32" long)

(Continued)

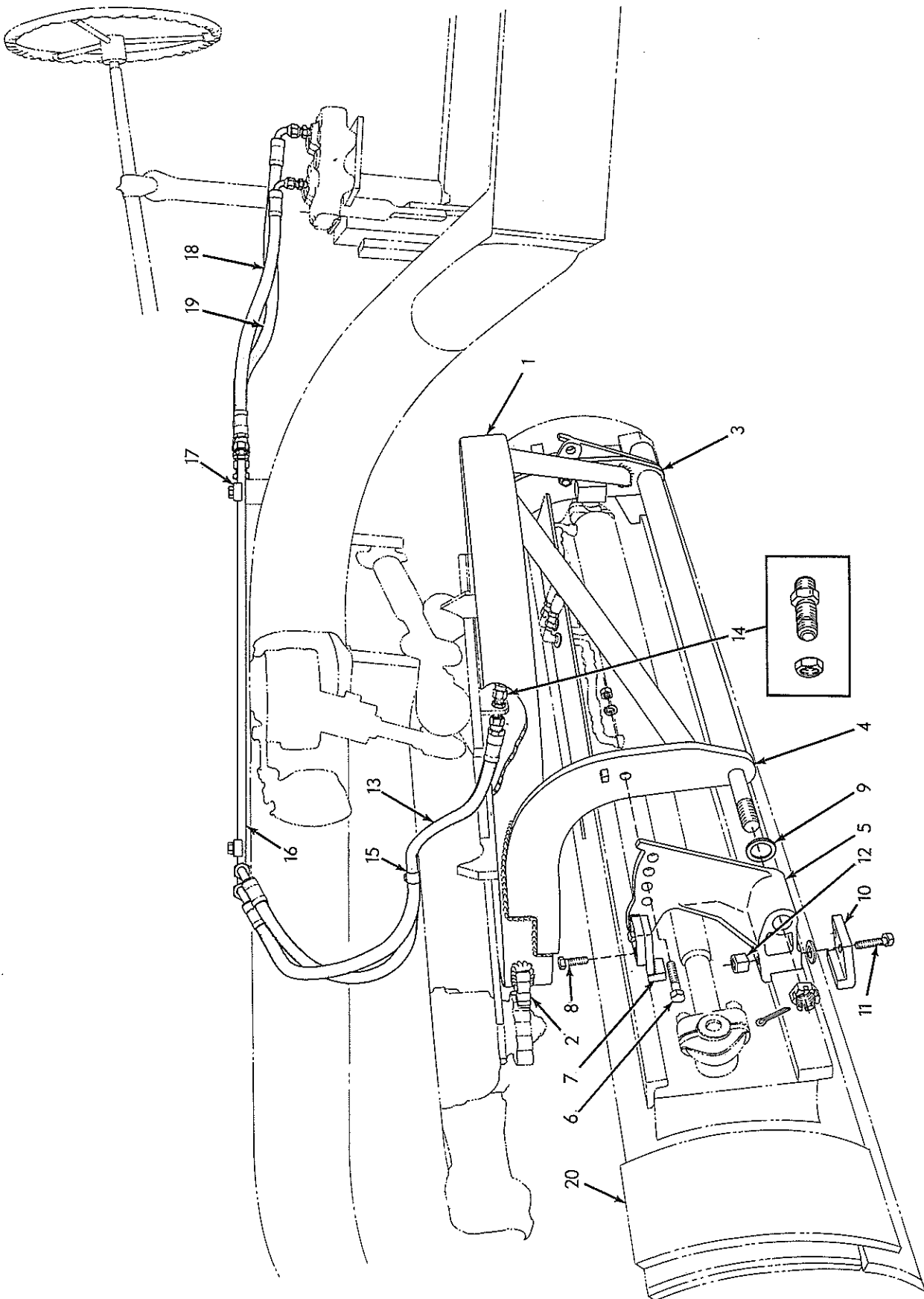
SHIFTABLE MOLDBOARD (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
17	-----	1	-	PIPE, oil, upper (Siameez type. Welded to frame)(Order 2 PIPES 097155, 2 CLIPS 097157, 2 HOSES 081218, 2 CAPSCREWS 903630 and 2 WASHERS 900817)
	097155	-	2	PIPE, oil, upper
	901765	4	4	COUPLING, pipe, 3/8"NPT
18	097157	-	2	CLIP, pipe supporting (For two 1 1/16" diam. lines, 13/32" bolt-hole)
	903630	-	2	CAPSCREW, 3/8"NC x 1"
	900817	-	2	WASHER, plain, U. S. std., 3/8"
19	079056	2	2	HOSE, connecting (41" long)
20	065394	1	-	CLIP, hose supporting (For two 3/4" diam. hoses, 13/32" bolt-hole)
	903629	1	-	CAPSCREW, 3/8"NC x 3/4"
	904206	1	-	LOCKWASHER, 3/8"
21	081748	-	1	STRAP, hose retaining
	-----	-	1	CAPSCREW
	-----	-	1	WASHER
				} See MOLDBOARD LIFT
22	090623	1	1	UNION, hose adapting, moldboard extension line (restricted)
	069710	1	1	UNION, hose adapting, moldboard retraction line (not restricted)
	904271	2	-	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT (Used prior to grader #5378)
	901723	2	2	ELBOW, street, 90°, 3/8"NPT
	901765	1	1	COUPLING, pipe, 3/8"NPT
	901489	1	1	NIPPLE, pipe, 3/8"NPT x 1"
				} Effective with grader #5378
23	-----	-	-	MOLDBOARD (See page 185)



USAGE: See page 185

ITEM	PART NO.	QTY.	DESCRIPTION
1	083641	1	TUBE, cylinder
2	923830	1	O-RING, stuffing box
3	083551	1	BOX, stuffing
4	083552	1	PACKING ASSEMBLY, stuffing box (7 rings)
5	083554	1	NUT, stuffing box retaining
6	083637	1	NUT, packing adjustment
7	923579	1	O-RING, piston rod
8	080283	1	RING, piston rod wiping
9	083639	1	ROD, piston (45-3/4" long)(Used prior to grader #5462)
	096097	1	ROD, piston (47-3/8" long)(Effective with grader #5462)
10	912841	1	NUT, slotted, 1-1/4"NF
11	083548	2	PISTON
12	923575	2	O-RING, piston
13	083547	2	PACKING ASSEMBLY, piston (5 rings)
14	083558	1	WASHER, piston
15	-----	2	PLUG, shipping



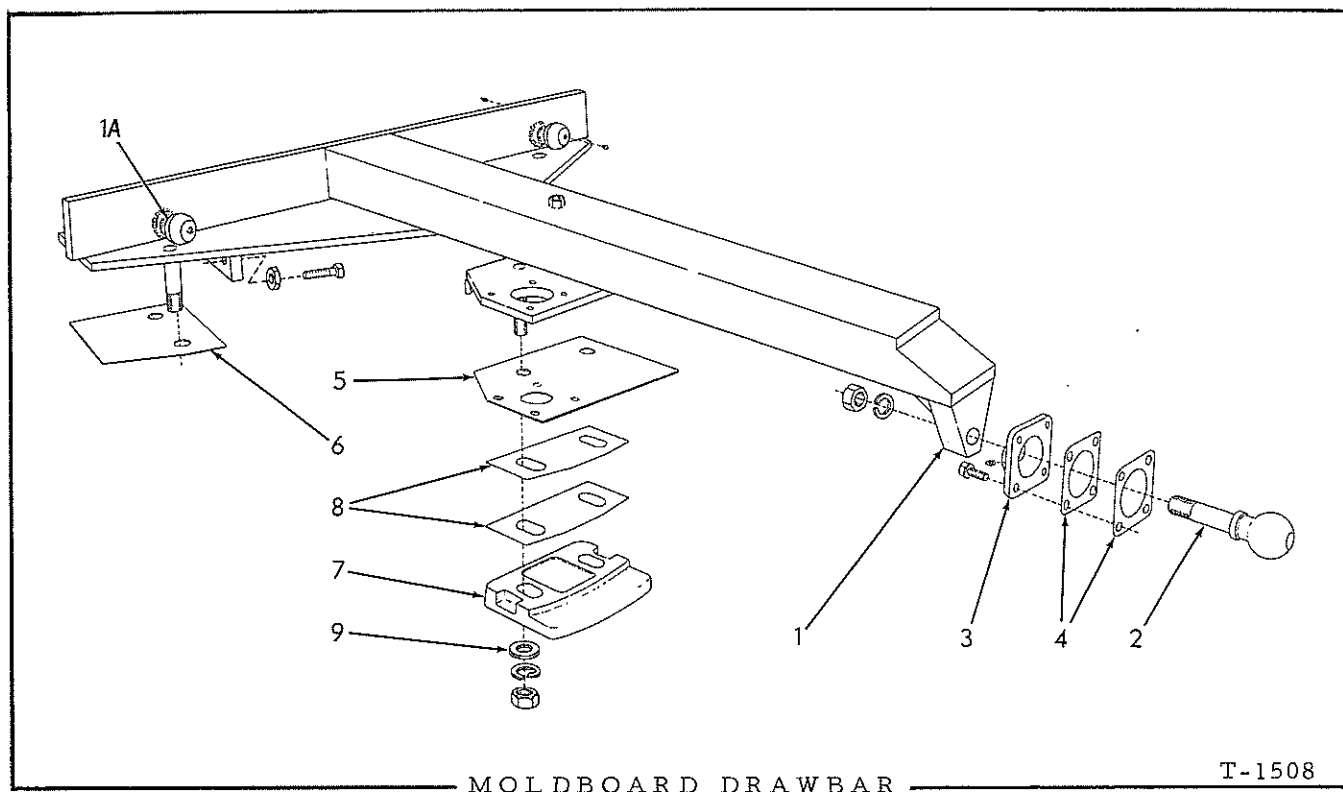
I-30937

SHIFTABLE MOLDBOARD (Second type)

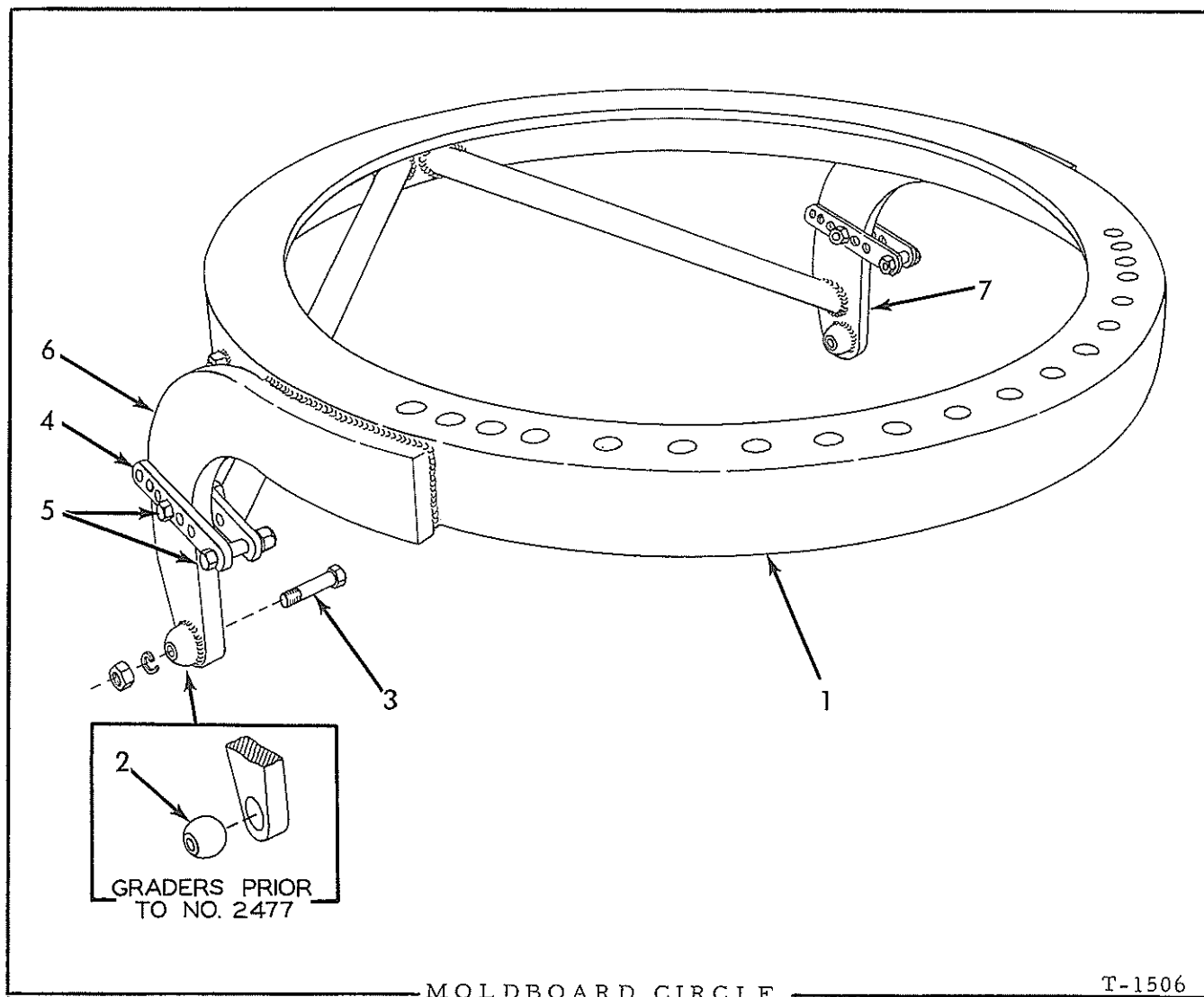
SHIFTABLE MOLDBOARD

USAGE: Special equipment on graders serial No. 5887 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	090222	1	CIRCLE, moldboard (Includes items 3, 4 and NUTS 912841 indented below)(For units equipped with manual circle turn)
	657255	1	CIRCLE, moldboard (Includes items 2 thru 4 and NUTS 912841 indented below)(For units equipped with power circle turn)
	915276	1	FITTING, lubricating, 90°, 1/8"NPT
	912841	2	NUT, slotted, 1-1/4"NF
	901344	2	PIN, cotter, 1/4" x 2"
2	078434	3	SEGMENT, circle rack (8 teeth)Requires welding to circle)
3	082548	1	ARM, right (Requires welding to circle)
4	656852	1	ARM, left (Requires welding to circle)
5	082225	1	BRACKET, moldboard pitch, left side
	082226	1	BRACKET, moldboard pitch, right side
6	070285	2	CAPSCREW, 3/4"NF x 3"
	904369	2	LOCKWASHER, 3/4"
	911045	2	NUT, 3/4"NF
7	081170	2	GUIDE, moldboard slide
8	913828	4	CAPSCREW, 5/8"NC 1-1/2"
9	082604	4	WASHER, moldboard support spacing
10	081175	2	BRACKET, moldboard slide
	915874	16	WASHER, plain (spacing)
11	604930	4	CAPSCREW, 3/4"NF x 5"
12	012767	4	NUT, high, 3/4"NF
13	649625	2	HOSE, front (See HOSE PARTS)
14	622836	2	ADAPTER, bulkhead (Includes nut)
15	094467	2	CLIP, hose retaining
	915408	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"
16	622835	2	TUBE, oil
17	623355	2	CLAMP, pipe retaining
	919224	1	CAPSCREW, 3/8"NC x 1-1/8"
	914847	1	CAPSCREW, 3/8"NC x 1-1/2"
	904206	2	LOCKWASHER, 3/8"
18	649634	1	HOSE, rear, left side (See HOSE PARTS)
	919063	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
19	649635	1	HOSE, rear, right side (See HOSE PARTS)
	919063	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
20	-----	-	MOLDBOARD (See page 185)

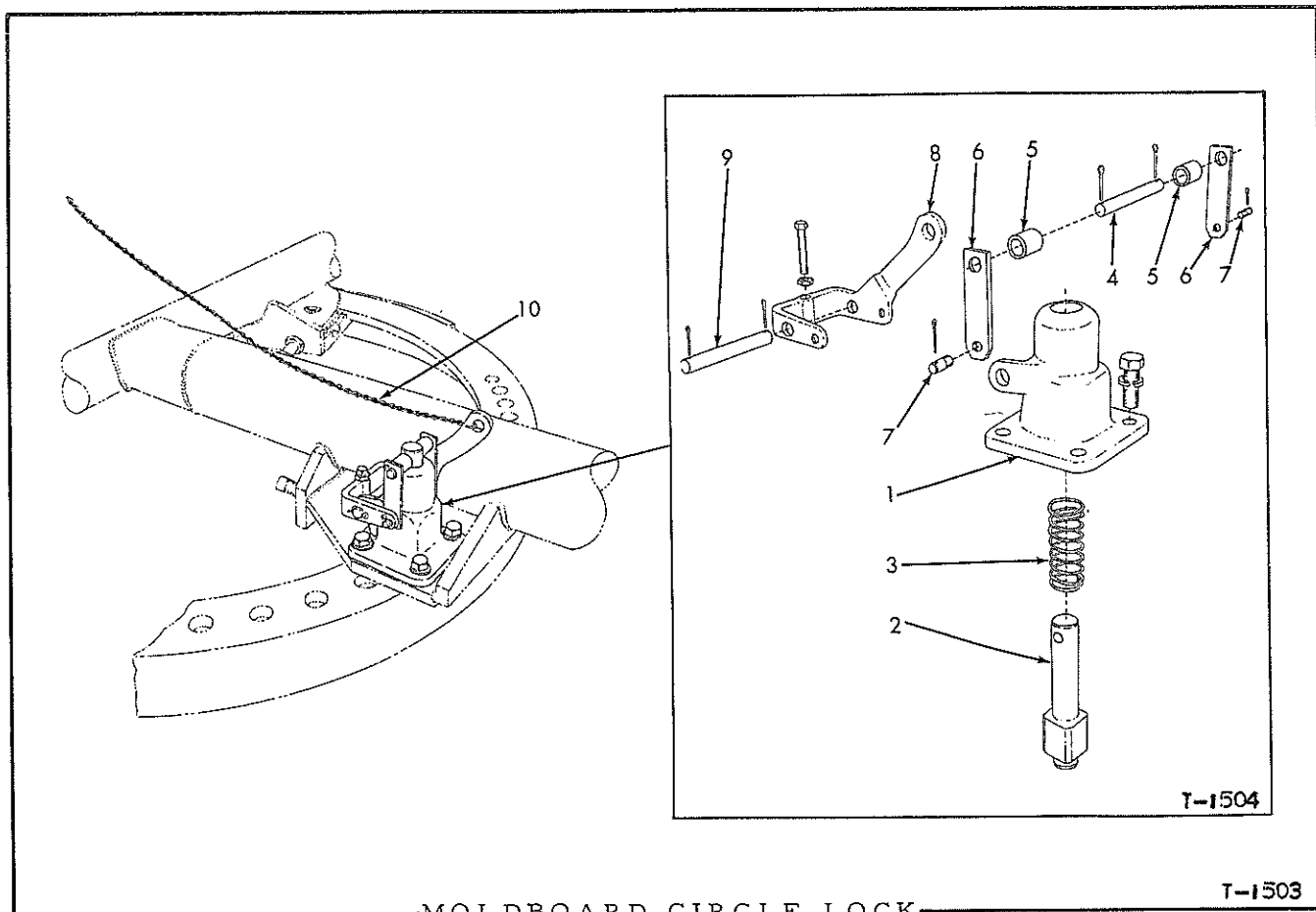


ITEM	PART NO.	QTY.	DESCRIPTION
1	622185	1	DRAWBAR, moldboard (Includes item 1A; also 6 NUTS 906441)(Also see POWER CIRCLE TURN for special drawbar)
	901267	6	SETSCREW, sq-hd., oval pt., 7/8"NC x 2-1/2"
	901421	6	NUT, jam, 7/8"NC
1A	643997	3	BALL, moldboard lift and side shift (Requires welding to drawbar)
	914465	3	FITTING, lubricating, straight, 1/8"NPT
2	603739	1	PIN, ball
	910916	1	LOCKWASHER, 1"
	911047	1	NUT, 1"NF
3	603836	1	CAP, ball pin
	916311	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	LOCKWASHER, 1/2"
	914465	1	FITTING, lubricating, straight, 1/8"NPT
4	603837	12	SHIM, ball pin adjusting (Use as req'd)
5	055485	1	PLATE, wear, front (Also see POWER CIRCLE TURN for special wear plate)
6	055484	2	PLATE, wear, rear
7	055482	3	GUIDE, circle
	914724	6	LOCKWASHER, 1-1/8"
	906441	6	NUT, 1-1/8"
8	055472	39	SHIM, circle guide (Use as req'd)
9	602663	6	WASHER, plain



ITEM	PART NO.	QTY.	DESCRIPTION
1	055502	1	CIRCLE (Includes items 6 and 7)(Also see POWER CIRCLE TURN and SHIFTABLE MOLDBOARD for special circles)
2	055475	2	BALL, connection (Required only for graders prior to #2477; welded to the circle on later units)
3	012526	2	CAPSCREW, moldboard attaching (3/4"NF x 3-1/4")
	904369	2	LOCKWASHER, 3/4"
	911045	2	NUT, 3/4"NF
4	055483	4	LINK, adjusting, moldboard pitch
5	070285	4	CAPSCREW, 3/4"NF x 3"
	904369	4	LOCKWASHER, 3/4"
	911045	4	NUT, 3/4"NF
6	082096	1	ARM, right
7	656829	1	ARM, left

} Require welding to Moldboard Circle



USAGE: Not required on units equipped with special Power Circle Turn

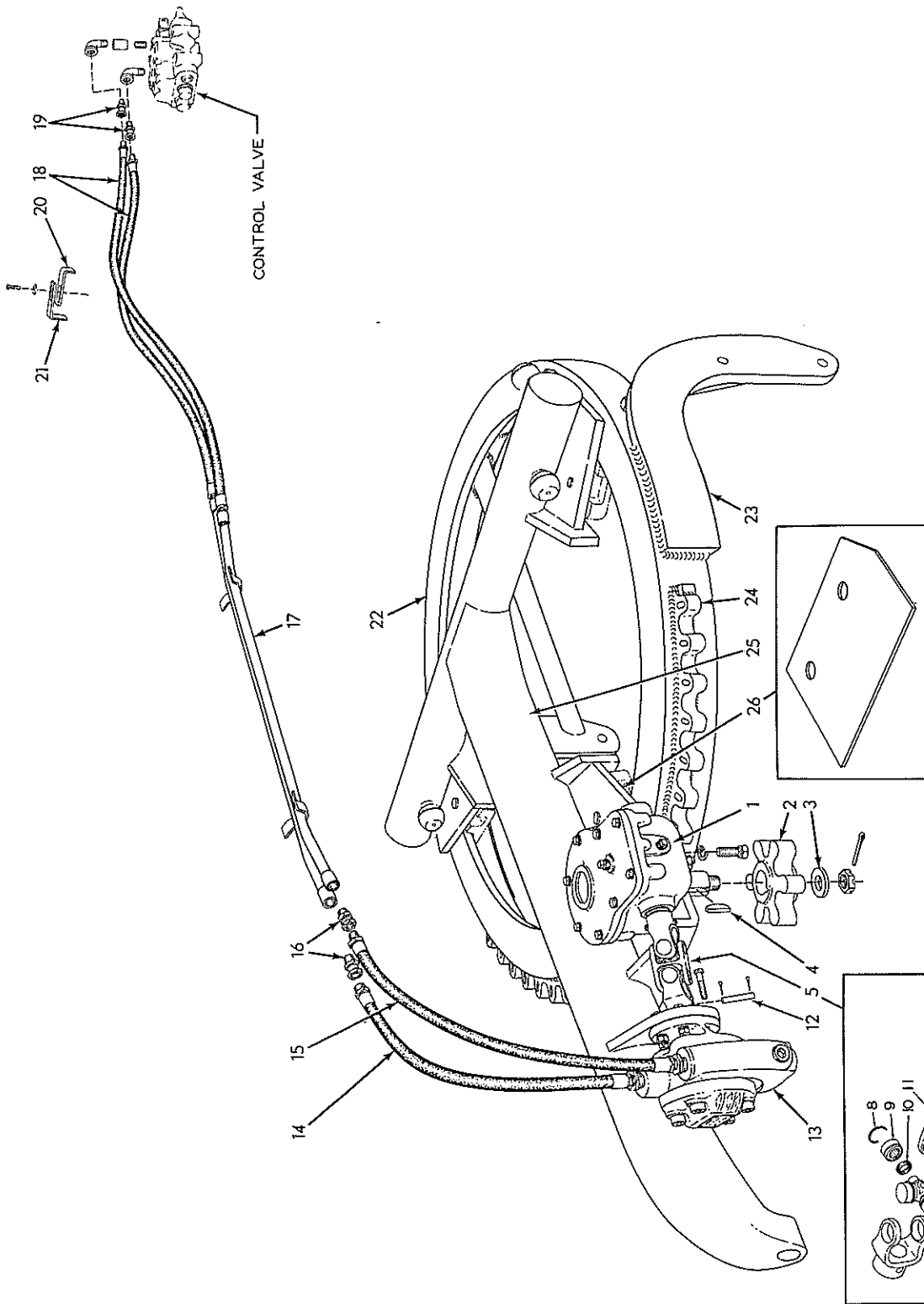
ITEM	PART NO.	QTY.	DESCRIPTION
1	055494	1	HOUSING
	916404	4	CAPSCREW, 5/8"NF x 1-1/4"
	904209	4	LOCKWASHER, 5/8"
2	055488	1	PIN, locking
3	055473	1	SPRING, locking pin
4	056128	1	PIN, link pivot
	910967	2	PIN, cotter, 1/8" x 7/8"
5	063134	2	SPACER, link
6	056130	2	LINK, locking pin
7	056132	2	STUD, locking pin link
	900805	2	PIN, cotter, 1/8" x 3/4"
8	055493	1	LEVER, locking pin
	902208	1	SETSCREW, sq-hd., oval-pt., 3/8"NC x 2"
	911034	1	NUT, jam, 3/8"NC
9	056131	1	PIN, lever pivot
	900806	2	PIN, cotter, 1/8" x 1"
10	060931	1	CHAIN, lock operating

POWER CIRCLE TURN

USAGE: Special equipment on graders prior to serial No. 5887

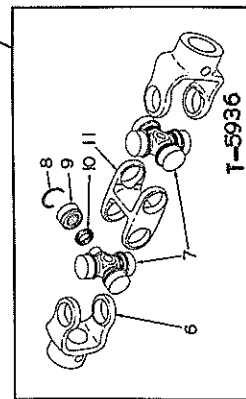
ITEM	PART NO.	QTY.	DESCRIPTION
1	078989	1	CIRCLE TURN ASSEMBLY (See page 201 for parts)(Order CIRCLE TURN ASSEMBLY 645057 and PINION 645059)
	919234	3	CAPSCREW, 5/8"NC x 1-5/8"
	904209	3	LOCKWASHER, 5/8"
2	078427	1	PINION
	911174	1	NUT, jam, slotted, 1"NF
	910148	1	PIN, cotter, 7/32" x 2"
3	602094	1	WASHER, pinion
4	078431	1	KEY, pinion
5 {	078432	1	JOINT ASSEMBLY, universal (Consists of items 6 thru 11)(Original equipment. Order JOINT ASSEMBLY 645054)
	645054	1	JOINT ASSEMBLY, universal (Consists of items 6 thru 11)(Service replacement. Has marking "NP" stamped on each yoke)
6 {	053119	2	YOKE, end, universal joint (For JOINT 078432 only)
	645051	2	YOKE, end, universal joint (For JOINT 645054 only)
7 {	053120	2	SPIDER KIT, universal joint (Includes items 8 thru 10)(For JOINT 078432 only)
	645053	2	SPIDER KIT, universal joint (Includes items 8 thru 10)(For JOINT 645054 only)
8 {	053240	8	RING, snap, universal joint bearing (For JOINT 078432 only)
	645097	8	RING, snap, universal joint bearing (For JOINT 645054 only)
9	-----	8	BEARING ASSEMBLY, universal joint (Order item 7)
10 {	055733	8	WASHER, sealing, universal joint bearing (For JOINT 078432 only)
	645096	8	SEAL, rubber, universal joint bearing (For JOINT 645054 only)
11 {	079418	1	YOKE, center, universal joint (For JOINT 078432 only)
	645052	1	YOKE, center, universal joint (For JOINT 645054 only)
12	601935	2	PIN, universal joint
	900805	4	PIN, cotter, 1/8" x 3/4"
13 {	078501	1	MOTOR ASSEMBLY, hydraulic (See page 203 for parts)(Used prior to grader #5871. Order MOTOR ASSEMBLY 095930, 1 each HOSE ASSY. 620582, HOSE ASSY. 620583, CONNECTOR 919063, ELBOW 919206 and 2 BUSHINGS 902071)
	095930	1	MOTOR ASSEMBLY, hydraulic (See page 204 for parts)(Effective with grader #5871)
	916273	6	CAPSCREW, 3/8"NC 1-3/4"
	904206	6	LOCKWASHER, 3/8"
	911026	6	NUT, 3/8"NC

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T-5935

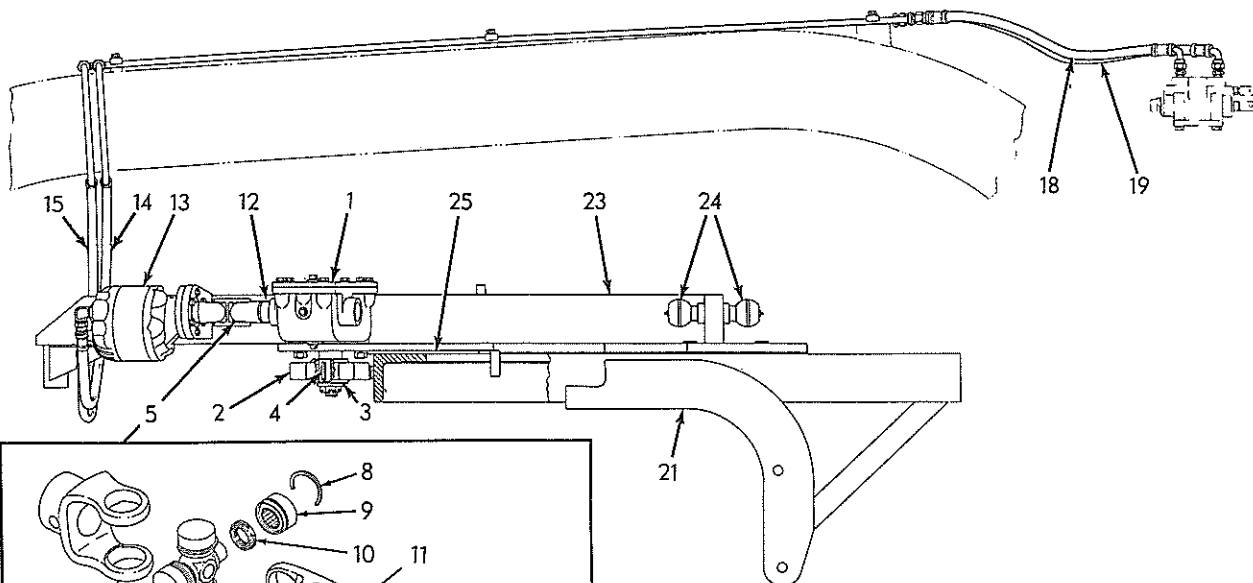
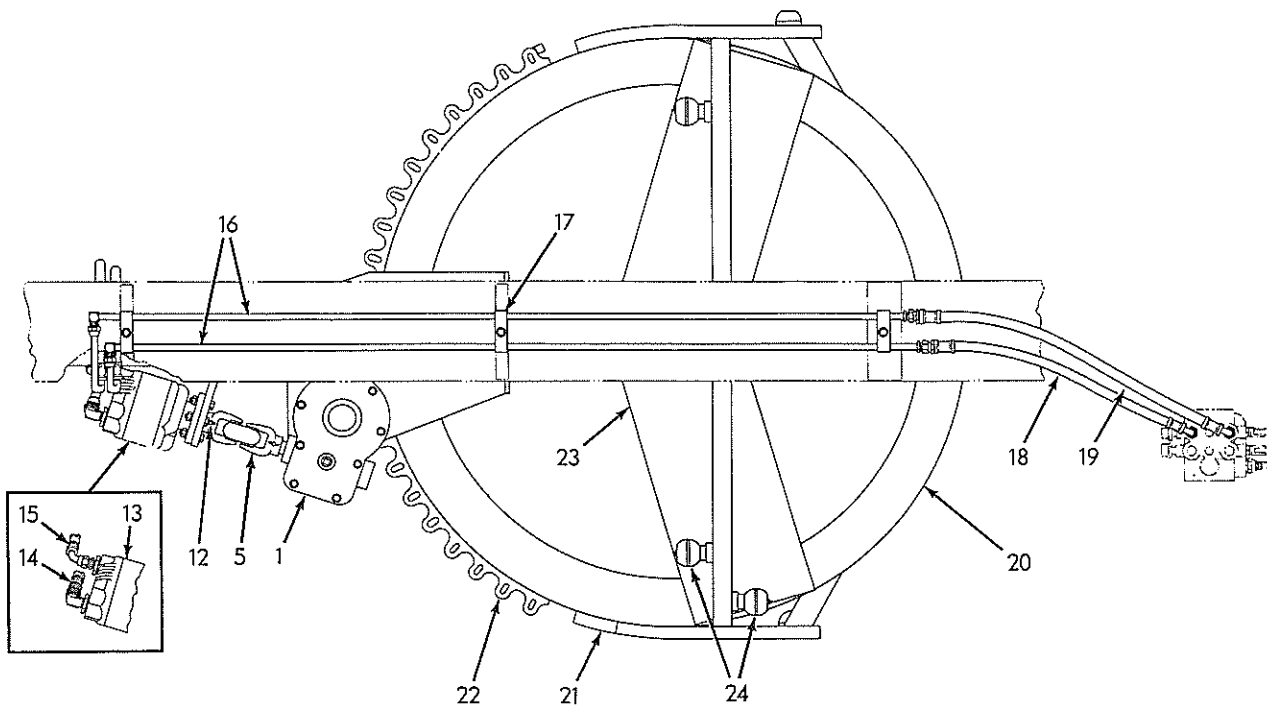
POWER CIRCLE TURN (First type)



T-5936

POWER CIRCLE TURN (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
14	079055	1	HOSE, front (21" long)(Graders prior to #5586)
	081218	1	HOSE, front (32" long)(Graders #5586 thru #5870)
	904239	1	BUSHING, pipe reducing, 3/4"NPT to 3/8"NPT
	620582	1	HOSE ASSEMBLY, front (See HOSE PARTS)(Graders #5871 thru #5886)
	902071	1	BUSHING, pipe reducing, 1"NPT to 3/8"NPT
	919063	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
15	069739	1	HOSE, front (24" long)(Graders prior to #5586)
	081218	1	HOSE, front (32" long)(Graders #5586 thru #5870)
	904239	1	BUSHING, pipe reducing, 3/4"NPT to 3/8"NPT
	620583	1	HOSE ASSEMBLY, (See HOSE PARTS)(Graders #5871 thru #5886)
	902071	1	BUSHING, pipe reducing, 1"NPT to 3/8"NPT
	919063	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
16	069710	2	UNION, adapting, front hose (Used prior to grader #5871)
17	079253	1	PIPE, motor to valve (Siameez type. Requires welding to frame) (Used prior to grader #5586)
	097155	2	PIPE, motor to valve (Effective with grader #5586)
	901765	4	COUPLING, pipe, 3/8"NPT
17A	097157	2	CLIP, pipe supporting (Effective with grader #5586)(Not illustrated)
	903630	2	CAPSCREW, 3/8"NC x 1"
	900817	2	WASHER, plain, U.S. std., 3/8"
18	079056	2	HOSE, rear (41" long)
19	069710	2	UNION, adapting, rear hose
	901723	2	ELBOW, street, 90°, 3/8"NPT
	904271	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT (Used prior to grader #5378)
	901765	1	COUPLING, pipe, 3/8"NPT
	901489	1	NIPPLE, pipe, 3/8"NPT x 1" } Effective with grader #5378
20	081730	1	STRAP, hose retaining
21	081748	1	STRAP, hose retaining
22	657307	1	CIRCLE, moldboard (Includes items 23 and 24)(Replaces standard CIRCLE 055502. Also see pages 187 and 191 for circle used with Hydraulically Shiftable Moldboard)
23	656829	1	ARM, left
	082096	1	ARM, right
			} Require welding to circle
24	078434	3	SEGMENT, circle rack (8 teeth)(Requires welding to circle)
25	645061	1	DRAWBAR, moldboard (Includes 6 NUTS 906441)(Replaces standard DRAWBAR 622185)
26	079187	1	PLATE, wear (Replaces standard PLATE 055485)



T-5936

POWER CIRCLE TURN (Second Type)

T-30933

POWER CIRCLE TURN

USAGE: Special equipment on graders serial No. 5887 and up. See NOTE below

ITEM	PART NO.	QTY.	DESCRIPTION
1	078989	1	CIRCLE TURN ASSEMBLY (See page 201 for parts)(Used prior to grader #6314 excluding #6227 and #6228. Order CIRCLE TURN ASSEMBLY 645057 and PINION 645059)
	645170	1	CIRCLE TURN ASSEMBLY (See page 201 for parts)(Used on graders #6314 thru #6378, including #6227 and #6228. Order CIRCLE TURN ASSEMBLY 645057)
	645057	1	CIRCLE TURN ASSEMBLY (See page 201 for parts)(Effective with grader #6379)
	919234	3	CAPSCREW, 5/8"NC x 1-5/8" } 2 additional used on graders #6379 and up
	904209	3	
2	078427	1	PINION (keywayed)(Used prior to grader #6314, excluding #6227 and #6228)
	645059	1	PINION (splined)(Effective with grader #6314 including #6227 and #6228)
	911174	1	NUT, jam, slotted, 1"NF
	910148	1	PIN, cotter, 7/32" x 2"
3	602094	1	WASHER, pinion
4	078431	1	KEY, pinion (Used prior to grader #6314 excluding #6227 and #6228)
5	078432	1	JOINT ASSEMBLY, universal (Consists of items 6 thru 11)(Used prior to grader #6457. Order JOINT ASSEMBLY 645054)
	645054	1	JOINT ASSEMBLY, universal (Consists of items 6 thru 11)(Effective with grader #6457. Has marking "NP" stamped on each yoke)
6	053119	2	YOKE, end, universal joint (For JOINT 078432 only)
	645051	2	YOKE, end, universal joint (For JOINT 645054 only)
7	053120	2	SPIDER KIT, universal joint (Includes items 8 thru 10)(For JOINT 078432 only)
	645053	2	SPIDER KIT, universal joint (Includes items 8 thru 10)(For JOINT 645054 only)
8	053240	8	RING, snap, universal joint bearing (For JOINT 078432 only)
	645097	8	RING, snap, universal joint bearing (For JOINT 645054 only)
9	-----	8	BEARING ASSEMBLY, universal joint (Order item 7)
10	055733	8	WASHER, sealing, universal joint bearing (For JOINT 078432 only)
	645096	8	SEAL, rubber, universal joint bearing (For JOINT 645054 only)
11	079418	1	YOKE, center, universal joint (For JOINT 078432 only)
	645052	1	YOKE, center, universal joint (For JOINT 645054 only)

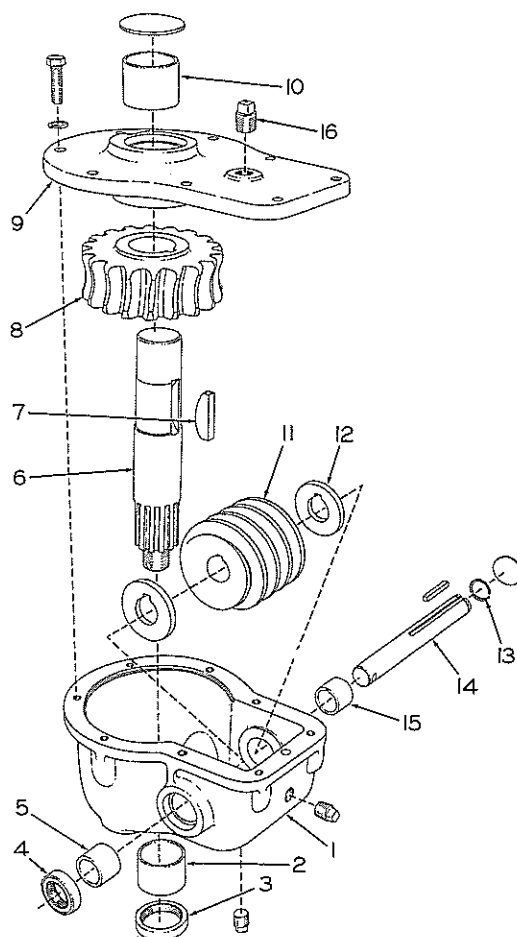
(Continued)

POWER CIRCLE TURN (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
12	601935	2	PIN, universal joint
	900805	4	PIN, cotter, 1/8" x 3/4"
13	095930	1	MOTOR ASSEMBLY, hydraulic (See page 204 for parts)
	902071	2	BUSHING, pipe reducing, 1"NPT to 3/8"NPT
	916273	6	CAPSCREW, 3/8"NC x 1-3/4"
	904206	6	LOCKWASHER, 3/8"
	911026	6	NUT, 3/8"NC
14	649633	1	HOSE, front (See HOSE PARTS)
	919206	1	ELBOW, flare type, 90°, 1/2"tube, 3/8"NPT male
15	649632	1	HOSE, front (See HOSE PARTS)
	919063	1	CONNECTOR, flare type, 1/2"tube, 3/8"NPT male
16	622688	2	TUBE, motor to valve
17	622680	3	CLAMP, tube retaining
	919224	2	CAPSCREW, 3/8"NC x 1-1/8"
	914847	1	CAPSCREW, 3/8"NC x 1-1/2"
	904206	3	LOCKWASHER, 3/8"
18	649634	1	HOSE, left rear (See HOSE PARTS)
	919063	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
19	649635	1	HOSE, right rear (See HOSE PARTS)
	919063	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
20	657307	1	CIRCLE, moldboard (Includes items 21 and 22)(Replaces standard CIRCLE 055502. Also see pages 187 and 191 for Circle used with Hydraulically Shiftable Moldboard)
21	{ 656829	1	ARM, left
	082096	1	ARM, right
22	078434	3	SEGMENT, circle rack (8 teeth)
23	645061	1	DRAWBAR, moldboard (Includes item 24)(Replaces standard DRAWBAR 622185)
24	643997	3	BALL, moldboard lift and side shift (Requires welding to drawbar)
	914465	3	FITTING, lubricating, straight, 1/8"NPT
25	079187	1	PLATE, wear (Replaces standard PLATE 055485)

Require welding to circle

NOTE: For convenience and economy of making installation of the Power Operated Circle Turn on graders in the field, KIT 622750 has been made available. This kit includes all required parts except the extra operating valve. It does not include the new drawbar or circle but provides instead all the necessary parts for reworking the drawbar and circle that are now on the grader. Instructions are included to cover the necessary welding work. Consult local Allis-Chalmers dealer for availability of additional operating valves.



CIRCLE TURN PARTS

T-5937

USAGE: Special equipment. See pages 195 and 199

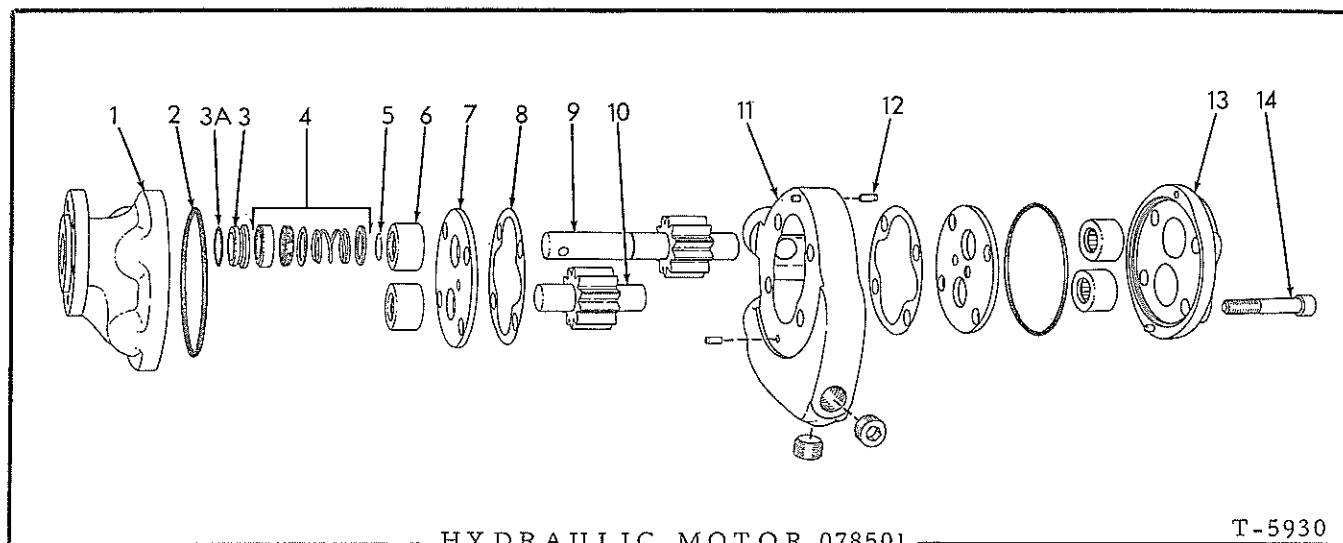
ITEM PART NO. QTY. DESCRIPTION

1	-----	1	HOUSING ASSEMBLY (Includes items 2 and 5)(Used prior to grader #6379. Order HOUSING ASSEMBLY 645056)
	645056	1	HOUSING ASSEMBLY (Includes items 2 and 5)(Effective with grader #6379)
	901653	2	PLUG, pipe, 3/8"NPT
	910014	1	PLUG, expansion, 1-1/2" diam.
2	078422	1	BUSHING, worm gear shaft
3	078502	1	SEAL, oil, worm gear shaft
4	603010	1	SEAL, oil, worm shaft
5	078424	1	BUSHING, worm shaft

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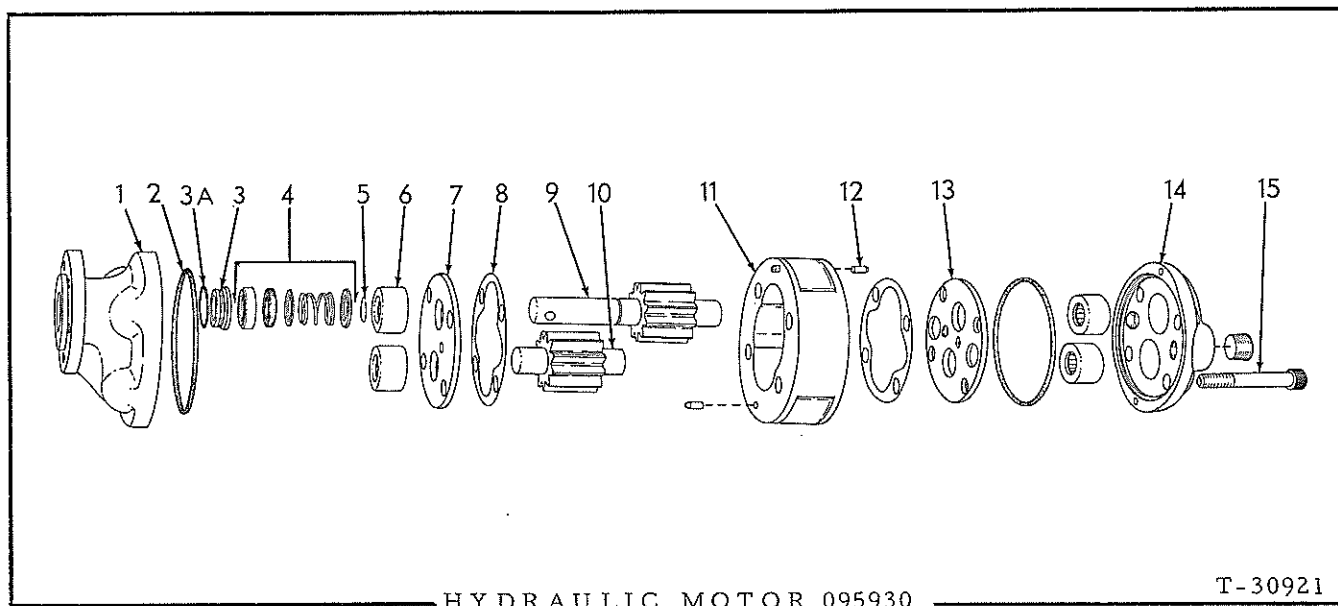
CIRCLE TURN PARTS (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
6	078435	1	SHAFT, worm gear (keywayed)(Used prior to grader #6314 excluding #6227 and #6228)
	645060	1	SHAFT, worm gear (splined)(Effective with grader #6314 including #6227 and #6228)
7	078431	1	KEY, worm gear
8	078425	1	GEAR, worm
9	079277	1	COVER ASSEMBLY (Includes item 10)
	910015	1	PLUG, expansion, 2-1/8" diam.
	903631	8	CAPSCREW, 3/8"NC x 1-1/4"
	904206	8	LOCKWASHER, 3/8"
10	078423	1	BUSHING, housing cover
11	078426	1	WORM
12	078419	2	WASHER, thrust
13	054182	1	RING, snap, worm shaft
14	078420	1	SHAFT, worm
	905857	1	KEY, straight, 1/4" x 1/4" x 1-3/4"
15	078424	1	BUSHING, worm shaft
16	605207	1	PLUG, vent



USAGE: For circle turn. See page 195

ITEM	PART NO.	QTY.	DESCRIPTION
1	3009546	1	COVER, driving end
2	923591	2	O-RING, end cover
3	3007752	1	SEAT ASSEMBLY, shaft seal (Includes item 3A)
3A	3029725	1	O-RING, seal seat
4	3007753	1	SEAL ASSEMBLY, shaft (Serviced only as a unit)
5	3003689	1	RING, snap, shaft seal
6	3025030	4	BEARING, needle
7	3003009	2	PLATE, wear
8	3003691	-	GASKET, shimming (.001" thick. Use as req'd)
	3003692	-	GASKET, shimming (.002" thick. Use as req'd)
9	079452	1	SHAFT ASSEMBLY, driving (Includes gear and snap rings. Serviced only as a unit)
10	079453	1	SHAFT ASSEMBLY, idling (Includes gear and snap rings. Serviced only as a unit)
11	079462	1	HOUSING, gear
	-----	2	PLUG, pipe, 3/4"NPT (For shipping purposes only)
12	3003002	4	PIN, dowel
13	3007756	1	COVER, end
14	3008617	4	CAPSCREW (socket-head, 5/8"NF x 3-1/2")



USAGE: For circle turn. See pages 195 and 199

ITEM	PART NO.	QTY.	DESCRIPTION
1	3009546	1	COVER, driving end
2	923591	2	O-RING, end cover
3	3007752	1	SEAT ASSEMBLY, shaft seal (Includes item 3A)
3A	3029725	1	O-RING, seal seat
4	3007753	1	SEAL ASSEMBLY, shaft (Serviced only as a unit)
5	3003689	1	RING, snap, shaft seal
6	3025030	4	BEARING, needle
7	3003009	1	PLATE, wear, front end
8	3003691	-	GASKET, shimming (.001" thick. Use as req'd)
	3003692	-	GASKET, shimming (.002" thick. Use as req'd)
9	624091	1	SHAFT ASSEMBLY, driving (Includes gear and snap rings. Serviced only as a unit)
10	624090	1	SHAFT ASSEMBLY, idling (Includes gear and snap rings. Serviced only as a unit)
11	624092	1	HOUSING, gear
12	3003002	4	PIN, dowel
13	624094	1	PLATE, wear, rear end
14	624093	1	COVER, end
	-----	2	PLUG, pipe, 1"NPT (For shipping purposes only)
15	3003010	4	CAPSCREW (socket-head, 5/8"NF x 4-1/2")

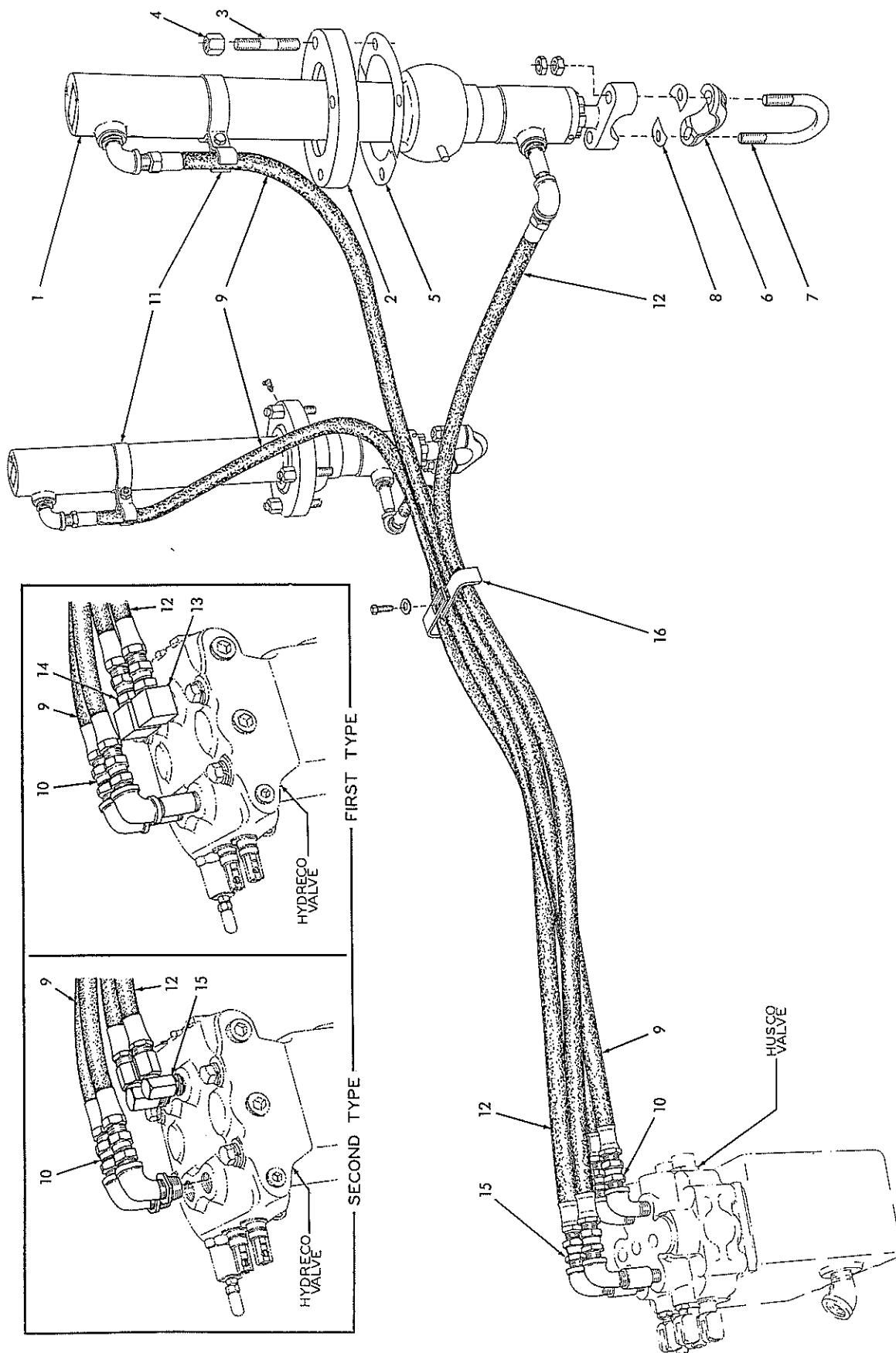
MOLDBOARD LIFT

USAGE: Graders prior to serial No. 5887

* Graders prior to serial No. 1001
** Graders serial No. 1001 thru 5886

ITEM	PART NO.	QTY. * **		DESCRIPTION
1	073848	2	2	CYLINDER ASSEMBLY, hydraulic (See page 210, 211 and 212 for parts)
2	065819	2	2	CAP, pivot
	915275	2	2	FITTING, lubricating, 65°, 1/8"NPT
3	065817	8	8	STUD, (5/8"NF x 3-1/2")
4	072366	8	8	NUT, high, 5/8"NF
5	065818	16	16	SHIM, pivot cap (1/32" thick. Use as required)
	639069	4	4	SHIM, pivot cap (.020" thick. Use as required)
6	053986	2	2	CAP, ball
7	605665	2	2	U-BOLT (5/8"NF)
	911049	8	8	NUT, jam, 5/8"NF
8	053992	16	16	SHIM, ball cap (1/32" thick. Used as required)
9	-----	2	-	HOSE, valve to cylinder, upper (Order HOSE 069711 and 2 BUSHINGS 904271)
	901724	2	-	ELBOW, street, 90°, 1/2"NPT
	069711	-	2	HOSE, valve to cylinder, upper (70" long)
	901723	-	2	ELBOW, street, 90°, 3/8"NPT
	904271	-	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
10	032031	2	-	UNION, adapting, upper hose (1/2"NPT)
	901679	2	-	ELBOW, pipe, 90°, 1/2"NPT
	901503	2	-	NIPPLE, pipe, 1/2"NPT x 2-1/2"
	069710	-	2	UNION, adapting, upper hose (3/8"NPT)
	901723	-	2	ELBOW, street, 90°, 3/8"NPT
	904271	-	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT (Used prior to grader #5378)
11	069709	4	4	CLAMP, cylinder, upper hose
	903775	2	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	2	LOCKWASHER, 3/8"
	911026	2	2	NUT, 3/8"NC
12	-----	2	-	HOSE, valve to cylinder, lower (Order HOSE 069712 and 2 BUSHINGS 904271)
	901504	2	-	NIPPLE, pipe, 1/2"NPT x 3"
	901679	2	-	ELBOW, pipe, 90°, 1/2"NPT
	069712	-	2	HOSE, valve to cylinder, lower (52" long)
	901493	-	2	NIPPLE, pipe, 3/8"NPT x 3"
	901678	-	2	ELBOW, pipe, 90°, 3/8"NPT
	904271	-	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
13	066475	2	-	ELBOW, lower hose (90°, 1/2" NPT male and female)
14	032031	2	-	UNION, adapting, lower hose (1/2"NPT)

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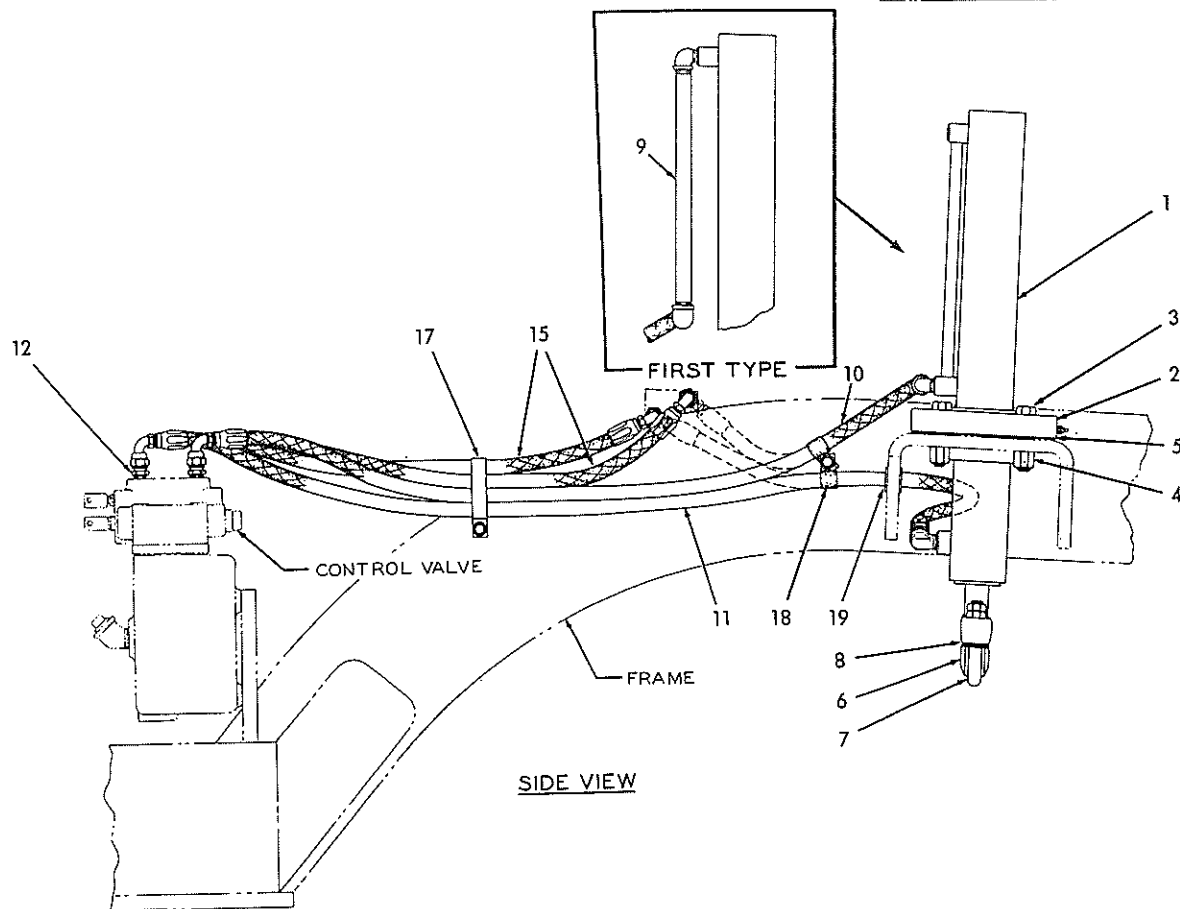
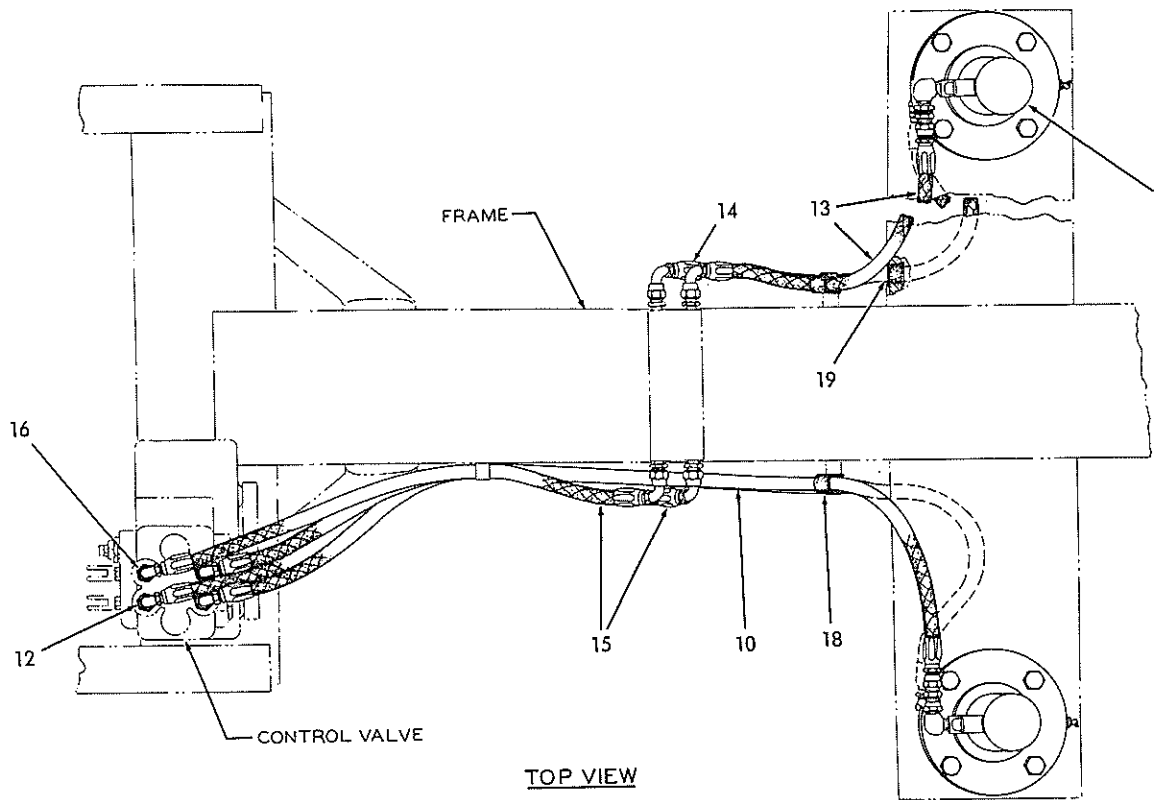


I-19634

MOLDBOARD LIFT (First type)

MOLDBOARD LIFT (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
15	069715	- 2	UNION, elbow, lower hose (Used prior to grader #5378)
	904271	- 2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
	090623	- 2	UNION, straight, lower hose(restricted) (Effective with grader #5378)
	901765	- 2	COUPLING, pipe, 3/8"NPT
	901489	- 2	NIPPLE, pipe, 3/8"NPT close
16	901723	- 2	ELBOW, street, 90°, 3/8"NPT
	-----	1 1	STRAP, hose retaining (one-piece type)(Used prior to grader #3835. Order 2 STRAPS 081730)
	081730	- 2	STRAP, hose retaining (Effective with grader #3835)
	903775	1 1	CAPSCREW, 3/8"NC x 7/8"
	900817	1 1	WASHER, plain, U.S. std., 3/8"



MOLDBOARD LIFT (Second type)

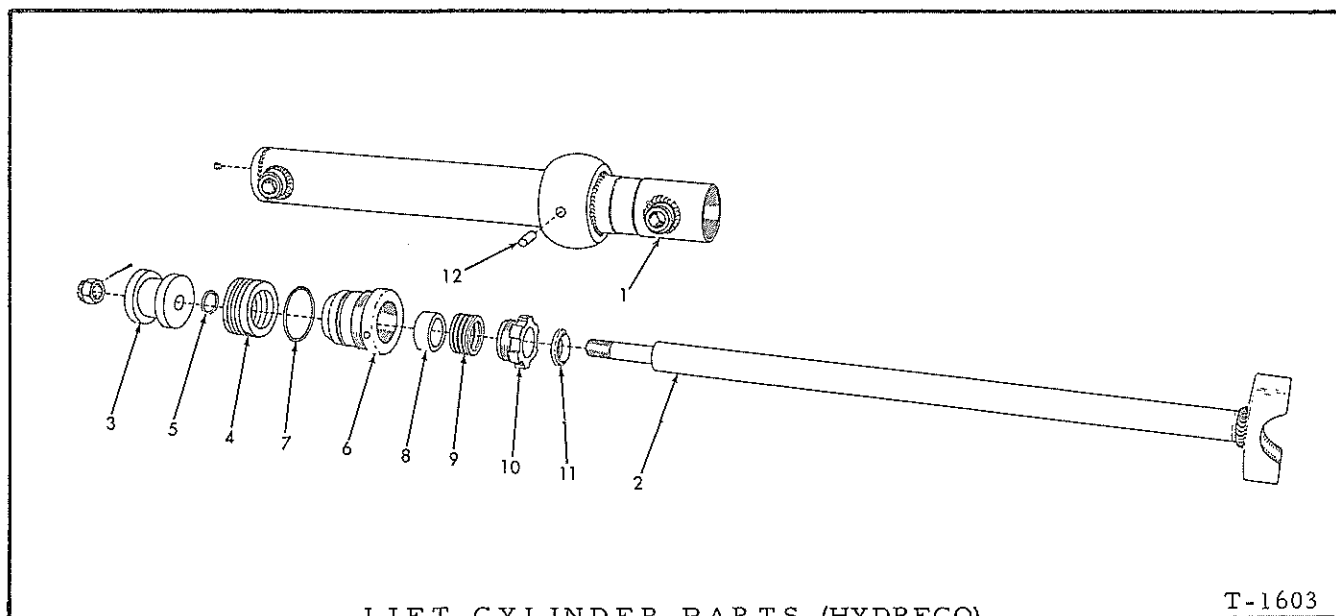
T-30934

MOLDBOARD LIFT

USAGE: Graders serial No. 5887 and up

* Graders prior to serial No. 5940
** Graders serial No. 5940 and up

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	073848	2	-	CYLINDER ASSEMBLY, hydraulic (See page 212 for parts) (Order CYLINDER ASSEMBLY 629729 and 2 ELBOWS 919206)
	629729	-	2	CYLINDER ASSEMBLY, hydraulic (See page 212 for parts)
2	065819	2	2	CAP, pivot
	915275	2	2	FITTING, lubricating, 65°, 1/8"NPT
3	013467	8	8	CAPSCREW, 5/8"NF x 3" (Graders prior to #6715)
	034440	-	8	CAPSCREW, 5/8"NF x 3-1/2" (Graders #6715 and up)
4	072366	8	8	NUT, high, 5/8"NF
5	065818	16	16	SHIM, pivot cap (1/32" thick. Use as req'd)
	639069	4	4	SHIM, pivot cap (.020" thick. Use as req'd)
6	053986	2	2	CAP, ball
7	605665	2	2	U-BOLT, 5/8" NF
	911049	8	8	NUT, jam, 5/8"NF
8	053992	16	16	SHIM, ball cap (1/32" thick. Use as req'd)
9	621676	2	-	NIPPLE, upper hose
	901724	2	-	ELBOW, street, 90°, 1/2"NPT
	901679	2	-	ELBOW, pipe, 90°, 1/2"NPT
10	649624	1	1	HOSE, right cylinder, upper (See HOSE PARTS)
	919128	1	-	CONNECTOR, flare type, 1/2" tube, 1/2"NPT male
	919206	-	1	ELBOW, flare type, 1/2" tube, 3/8"NPT male
	919063	1	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
11	649625	1	1	HOSE, right cylinder, lower (See HOSE PARTS)
	919195	1	-	ELBOW, flare type, 1/2" tube, 1/2"NPT male
	919206	-	1	ELBOW, flare type, 1/2" tube, 3/8"NPT male
12	621811	1	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male (restricted)
	649623	1	1	HOSE, left cylinder to frame, upper (See HOSE PARTS)
	919128	1	-	CONNECTOR, flare type, 1/2" tube, 1/2"NPT male
13	919206	-	1	ELBOW, flare type, 1/2" tube, 3/8"NPT male
	649622	1	1	HOSE, left cylinder to frame, lower (See HOSE PARTS)
	919195	1	-	ELBOW, flare type, 1/2" tube, 1/2"NPT male
14	919206	-	1	ELBOW, flare type, 1/2" tube, 3/8"NPT male
	649626	2	2	HOSE, frame to valve, left cylinder (See HOSE PARTS)
	919063	1	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male
15	621811	1	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male (restricted)
17	621543	1	1	CLIP, hose supporting (multiple. For 3/4" diam. hose)(Early units)
	644352	-	1	CLIP, hose supporting (multiple. For 7/8" diam. hose)(Late units)
	903629	1	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	1	LOCKWASHER, 3/8"
18	094467	4	4	CLIP, hose supporting (single, 3/4" diam.)(Early units)
	622922	-	4	CLIP, hose supporting (single, 7/8" diam.)(Late units)
	903629	2	2	CAPSCREW, 3/8"NC x 3/4"
	904206	2	2	LOCKWASHER, 3/8"
19	621542	2	2	GROMMET, lower hose (rubber)

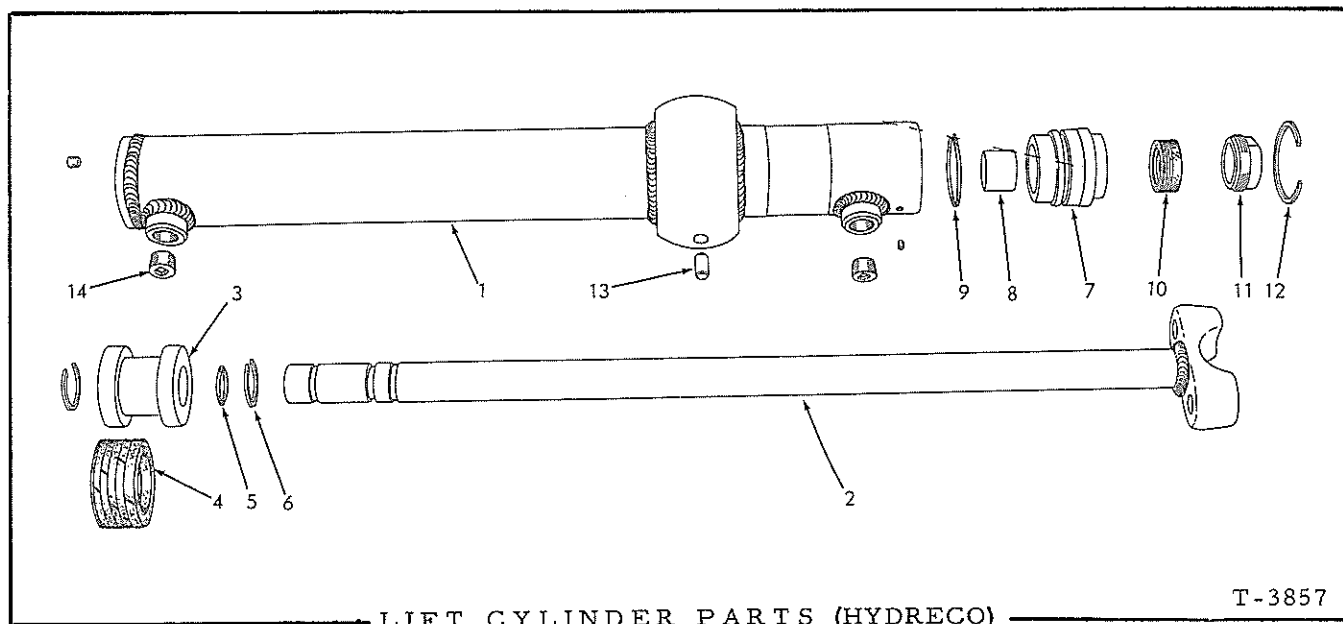


LIFT CYLINDER PARTS (HYDRECO)

T-1603

* Moldboard Lift Cylinder (Graders prior to #1002)
 ** Scarifier Lift Cylinder (Graders prior to #1447)

ITEM	PART NO.	QTY. * **	DESCRIPTION
<u>NOTE:</u> Quantities indicated are for one (1) cylinder only. See pages 205 and 303 for listing of complete Assemblies.			
1	066791	1 -	TUBE ASSEMBLY, cylinder, moldboard lift (Includes item 12)
	067347	- 1	TUBE ASSEMBLY, cylinder, scarifier lift (Includes item 12)
	910231	1 1	PLUG, pipe, ctsk-hd., 1/8"NPT
2	066815	1 1	ROD, piston
	911056	1 1	NUT, castle, 3/4"NF
	900802	1 1	PIN, cotter, 3/32" x 1"
3	066785	1 1	PISTON
4	066784	1 1	PACKING ASSEMBLY, piston (Serviced only as a unit)
5	923574	1 1	O-RING, piston
6	066819	1 1	BOX, stuffing
7	923814	1 1	O-RING, stuffing box
8	066817	1 1	BUSHING, stuffing box
9	066818	1 1	PACKING ASSEMBLY (Serviced only as a unit)
10	3003435	1 1	NUT, stuffing box packing
11	3003436	1 1	RING, wiper, piston rod
12	065823	1 1	PIN, cylinder guide



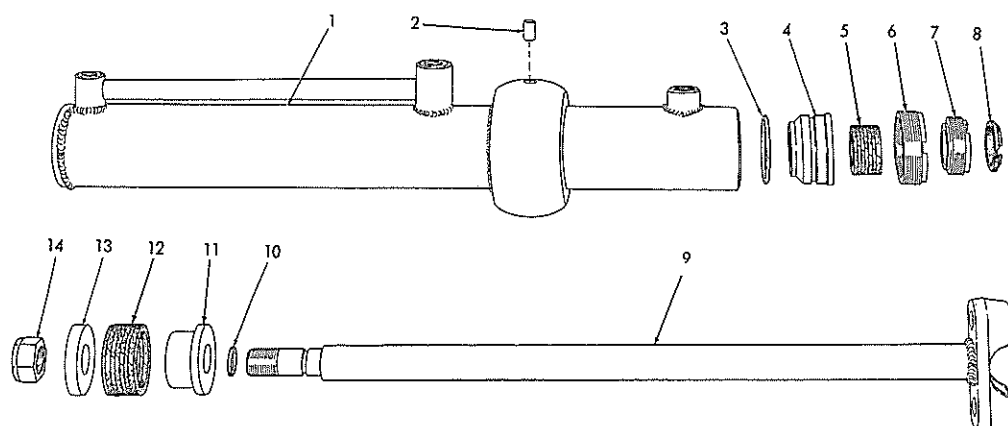
* Moldboard Lift Cylinder (Grader #1002 thru #3705)
 ** Scarifier Lift Cylinder (Grader #1447 thru #4067)

ITEM PART NO. QTY. * ** DESCRIPTION

NOTE: Parts for the interchangeable HUSCO Cylinder Assemblies are listed on page 212. See pages 205 and 303 for listing of complete Assemblies.

1	{	073846	1	-	TUBE ASSEMBLY, cylinder, (Includes item 13)
		073838	-	1	TUBE ASSEMBLY, cylinder, (Includes item 13)
	910231	1	1	PLUG, pipe, ctsk-hd., 1/8"NPT	
	915794	1	1	SETSCREW, socket-hd., cup-pt., 1/4"NC x 1/4"	
2	073849	1	1	ROD, piston	
3	073845	1	1	PISTON	
4	066784	1	1	PACKING ASSEMBLY, piston (Serviced only as a unit)	
5	923575	1	1	O-RING, piston	
6	069926	2	2	RING, snap, piston retaining	
7	073844	1	1	BOX ASSEMBLY, stuffing (Includes item 8)	
8	069922	1	1	BUSHING, stuffing box	
9	923814	1	1	O-RING, stuffing box	
10	079202	1	1	PACKING ASSEMBLY, stuffing box (5 split rings)	
11	069924	1	1	NUT, stuffing box packing	
12	069923	1	1	RING, snap, stuffing box	
13	065823	1	1	PIN, cylinder guide	
14	-----	2	2	PLUG, shipping (Remove and discard when installing)	

NOTE: Quantities indicated above are for one (1) cylinder only



LIFT CYLINDER PARTS (HUSCO)

T-11627

* Moldboard Lift Cylinder (Graders #3706 and up)

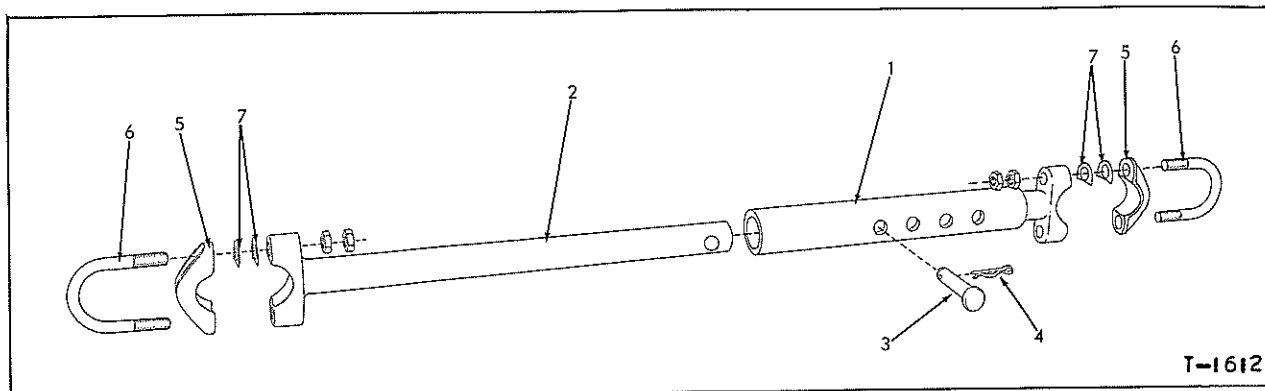
** Scarifier Lift Cylinder (Graders #4068 and up)

ITEM	PART NO.	QTY.	DESCRIPTION
		* **	

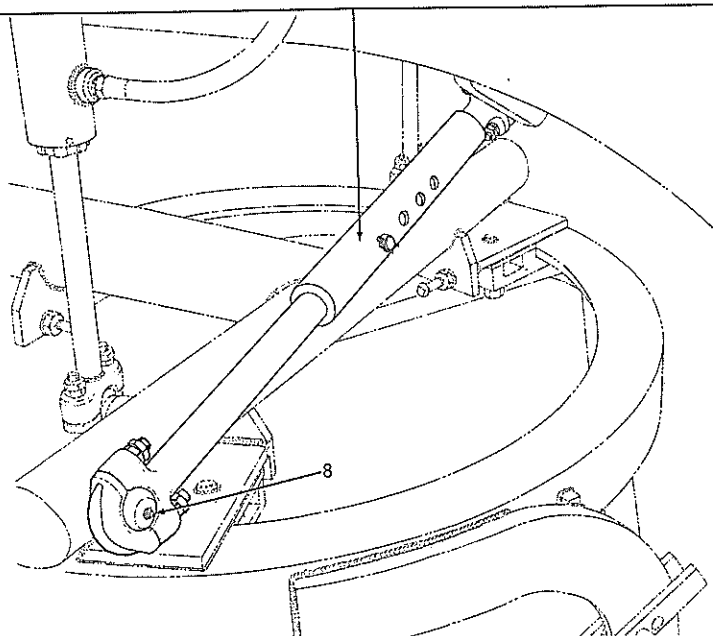
NOTE: Parts for the interchangeable HYDRECO Cylinder assemblies are listed on pages 210 and 211. See pages 205 209, 303, and 307 for listing of complete Assemblies.

1	{	079821	1	-	TUBE ASSEMBLY, cylinder (Includes item 2)(Graders prior to#5940)
		629727	1	-	TUBE ASSEMBLY, cylinder (Includes item 2)(Graders #5940 and up)
		080102	-	1	TUBE ASSEMBLY, cylinder (Includes item 2)
2		065823	1	1	PIN, cylinder guide
3		923814	1	1	O-RING, stuffing box
4		079810	1	1	BOX, stuffing
5		080005	1	1	PACKING ASSEMBLY, stuffing box (7rings)
6		079812	1	1	NUT, stuffing box retaining
7		079811	1	1	NUT, packing adjustment
8		080006	1	1	STRIP, piston rod wiping
9		079814	1	1	ROD, piston
10		923574	1	1	O-RING, piston
11		079808	1	1	PISTON
12		080004	1	1	PACKING ASSEMBLY, piston (7 rings)
13		079809	1	1	WASHER, piston
14		917777	1	1	NUT, self-locking, 1"NF

NOTE: Quantities indicated above are for one (1) cylinder only.



T-1612

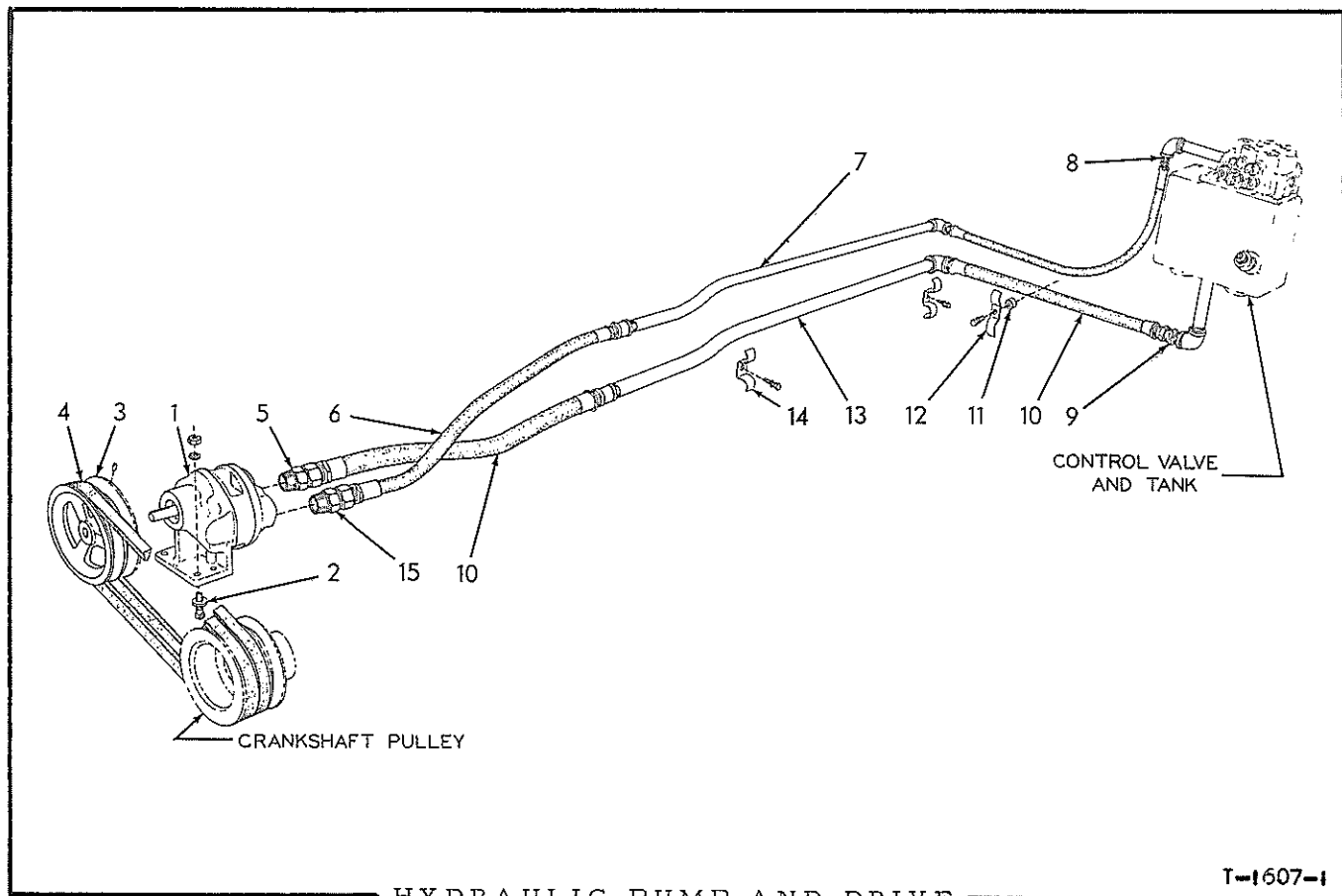


MOLDBOARD SIDE SHIFT

T-1611

ITEM PART NO. QTY. DESCRIPTION

1	061851	1	LINK
2	061852	1	ROD
3	602224	1	PIN, coupling
4	617855	1	CLIP, retaining, coupling pin
5	053986	2	CAP, socket
6	605665	2	U-BOLT (5/8"NF)
	911049	8	NUT, jam, 5/8"NF
7	053992	16	SHIM, socket cap adjusting (Use as req'd)
8	-----	1	FITTING, lubricating (See MOLDBOARD DRAWBAR)



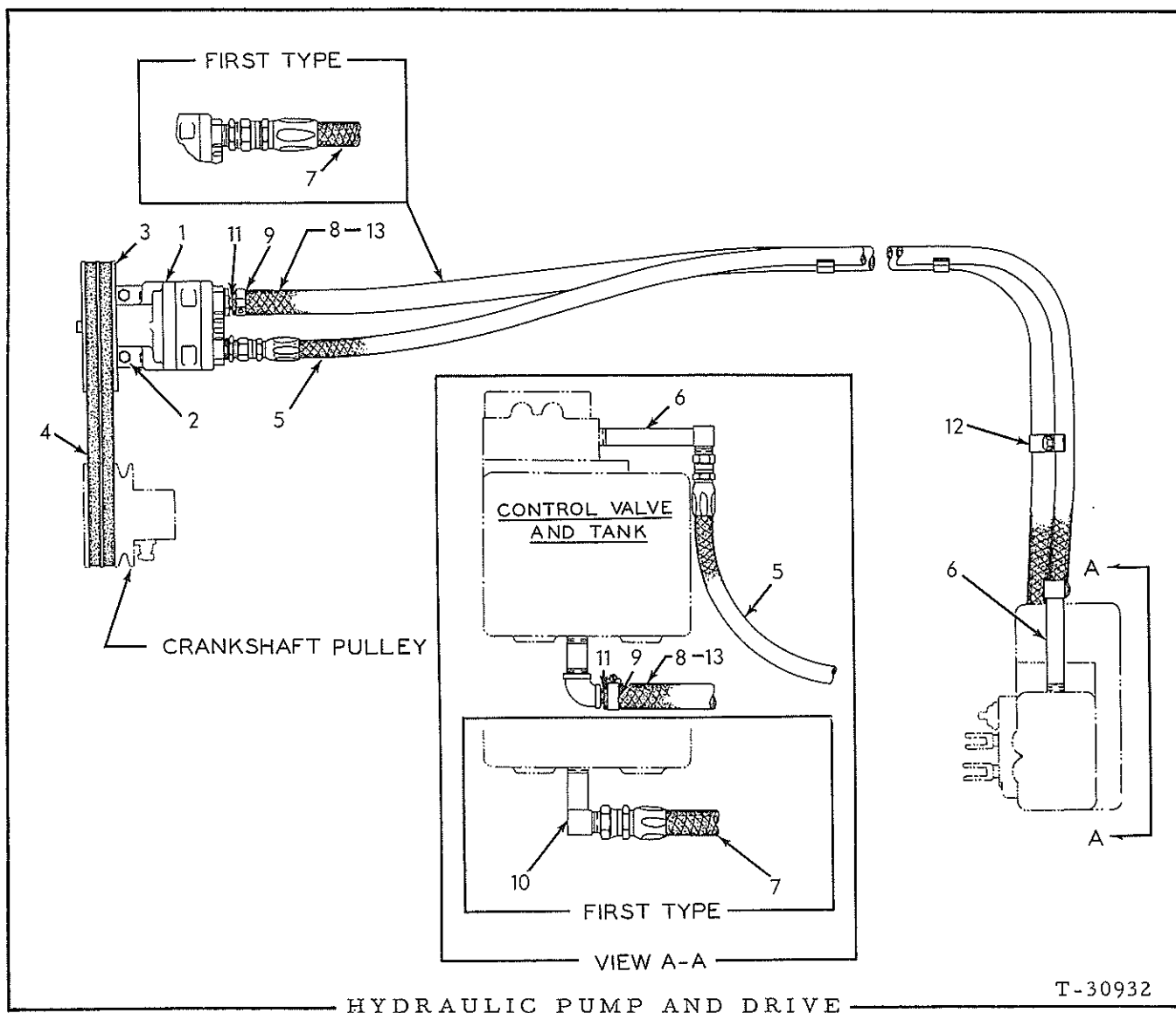
USAGE: Graders prior to serial No. 5887

ITEM	PART NO.	QTY.	DESCRIPTION
1	065896	1	PUMP ASSEMBLY (See page 220 for parts)(Used prior to grader #3056. Order PUMP ASSEMBLY 078180, UNION 032032 and UNION 078063)
	078180	1	PUMP ASSEMBLY (See page 221 for parts)(Effective with grader #3056)
2	903632	4	CAPSCREW, 3/8"NC x 1-1/2"
	044973	4	WASHER, plain
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
3	065889	1	PULLEY, pump drive (5-5/8" diam.)(Used prior to grader #5425)
	082609	1	PULLEY, pump drive (6-5/8" diam.)(Effective with grader #5425)
	912235	2	SETSCREW, socket-hd., cup-pt., 1/4"NC x 1/2"
4	043385	2	BELT, pump drive (Furnished in matched pairs)
5	066499	1	UNION, adapting, return line hose (3/4"NPT female, 1/2"NPT male)(Graders prior to #3056)
	032032	1	UNION, adapting, return line hose (3/4"NPT male and female)(Graders #3056 and up)

(Continued)

HYDRAULIC PUMP AND DRIVE (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
6	065829	2	HOSE, pressure line (1 less used when Auxiliary Control Valve is installed)
7	065882	1	PIPE, pressure line (Used prior to grader #5425)
	095670	1	PIPE, pressure line (Effective with grader #5425)
	901679	1	ELBOW, pipe, 90°, 1/2"NPT
	915757	1	COUPLING, pipe, extra strong, 1/2"NPT
8	032031	1	UNION, straight, pressure line front hose (1/2"NPT male and female)
	901504	1	NIPPLE, pipe, 1/2"NPT x 3" (Used with 2-plunger control valve on graders prior to #5378)
	901510	1	NIPPLE, pipe, 1/2"NPT x 6" (Used with 2-plunger control valve on graders #5378 thru #5887)
	901506	1	NIPPLE, pipe, 1/2"NPT x 4" (Used with 3-plunger control valve effective with grader #5378)
	901724	1	ELBOW, street, 90°, 1/2"NPT (Used with 3-plunger control valve on graders prior to #5378)
	901679	1	ELBOW, pipe, 90°, 1/2"NPT (Used on all graders except those prior to #5378 equipped with 3-plunger control valve)
9	032032	1	UNION, adapting, return line hose (3/4"NPT female, 3/4"NPT male)
	901680	1	ELBOW, pipe, 90°, 3/4"NPT
	901513	1	NIPPLE, pipe, 3/4"NPT x 3"
10	065827	2	HOSE, return line
11	073884	1	BLOCK, clamp spacing (Graders #3208 thru #3738)
12	065884	1	CLAMP, attaching, front pressure and return line hose
	903628	1	CAPSCREW, 3/8"NC x 5/8" (All graders except #3208 thru #3738)
	910245	1	CAPSCREW, 3/8"NC x 1-3/8" (Graders #3208 thru #3738)
	904206	1	LOCKWASHER, 3/8"
13	065883	1	PIPE, return line (Used prior to grader #5425)
	095671	1	PIPE, return line (Effective with grader #5425)
	915758	1	COUPLING, pipe, extra strong, 3/4"NPT
	901680	1	ELBOW, pipe, 90°, 3/4"NPT
14	065885	2	CLAMP, attaching, pressure and return line pipes
	903628	2	CAPSCREW, 3/8"NC x 5/8"
	904206	2	LOCKWASHER, 3/8"
15	032031	1	UNION, adapting, pressure line rear hose (1/2"NPT male and female) (Graders prior to #3056)
	078063	1	UNION, adapting, pressure line rear hose (3/4"NPT male, 1/2"NPT female) (Graders #3056 and up)



USAGE: Graders serial No. 5887 thru 6714

* Graders prior to serial No. 5974

** Graders serial No 5974 and up

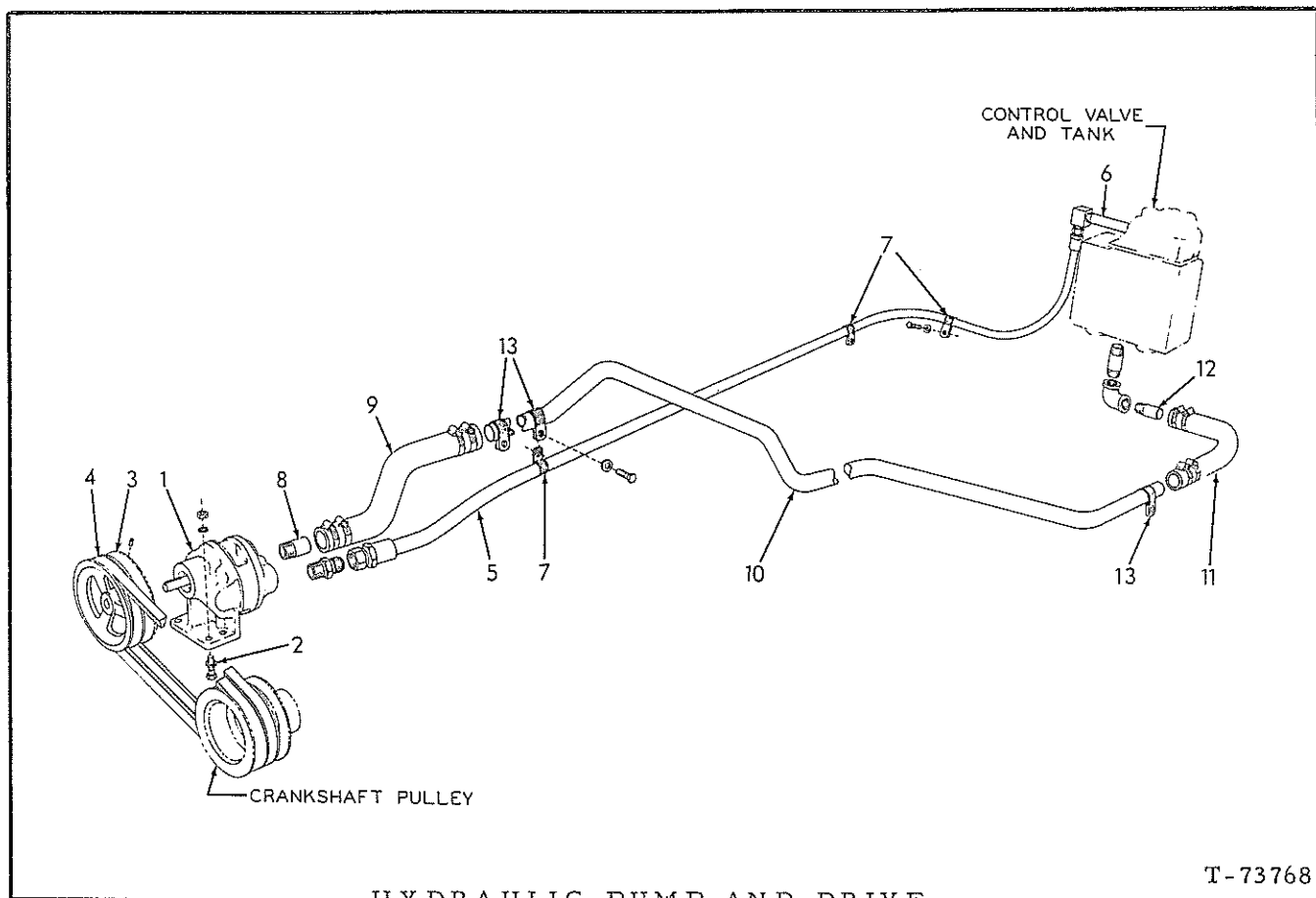
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	078180	1	1	PUMP ASSEMBLY, hydraulic (See page 221 for parts)
	903632	4	4	CAPSCREW, 3/8"NC x 1-1/2"
	044973	4	4	WASHER, plain
	904206	4	4	LOCKWASHER, 3/8"
2	911026	4	4	NUT, 3/8"NC
	082609	1	1	PULLEY, pump drive
	912235	2	2	SETSCREW, socket-hd., cup-pt., 1/4"NC x 1/2"
	043385	2	2	BELT, pump drive (Furnished in matched pairs)

(Continued)

HYDRAULIC PUMP AND DRIVE (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
5	645394	1	1	ΔHOSE, pressure line (See HOSE PARTS)
	921030	1	1	CONNECTOR, flare type, 5/8" tube, 3/4"NPT male
6	621658	1	1	ΔADAPTER, extension, pressure line hose
7	621551	1	-	HOSE ASSEMBLY, return line (See HOSE PARTS)
	919246	1	-	CONNECTOR, flare type, 1" tube, 3/4"NPT male
8	-----	-	1	HOSE, return line (90" long. Order item 13)
9	921911	-	2	CLAMP, hose, 11/16" to 1-1/4"
10	621579	1	-	ELBOW, extension, return line hose
11	629847	-	2	PIPE, return line hose (1/2"NPT x 1-1/2", threaded one end)
	901828	-	1	BUSHING, pipe reducing, 3/4"NPT to 1/2"NPT
	916149	-	1	ELBOW, pipe reducing, 90°, 3/4"NPT to 1/2"NPT
	901513	-	1	NIPPLE, pipe, 3/4"NPT x 3"
12	065884	3	3	CLAMP, hose supporting
	903628	3	3	CAPSCREW, 3/8"NC x 5/8"
	904206	3	3	LOCKWASHER, 3/8"
13	920728	-	-	HOSE, medium pressure, 7/8"I.D., 25 ft. roll (Use as required)

ΔNot used when special Auxiliary Control Valve is added on left side.



USAGE: Graders serial No. 6715 and up

ITEM PART NO. QTY. DESCRIPTION

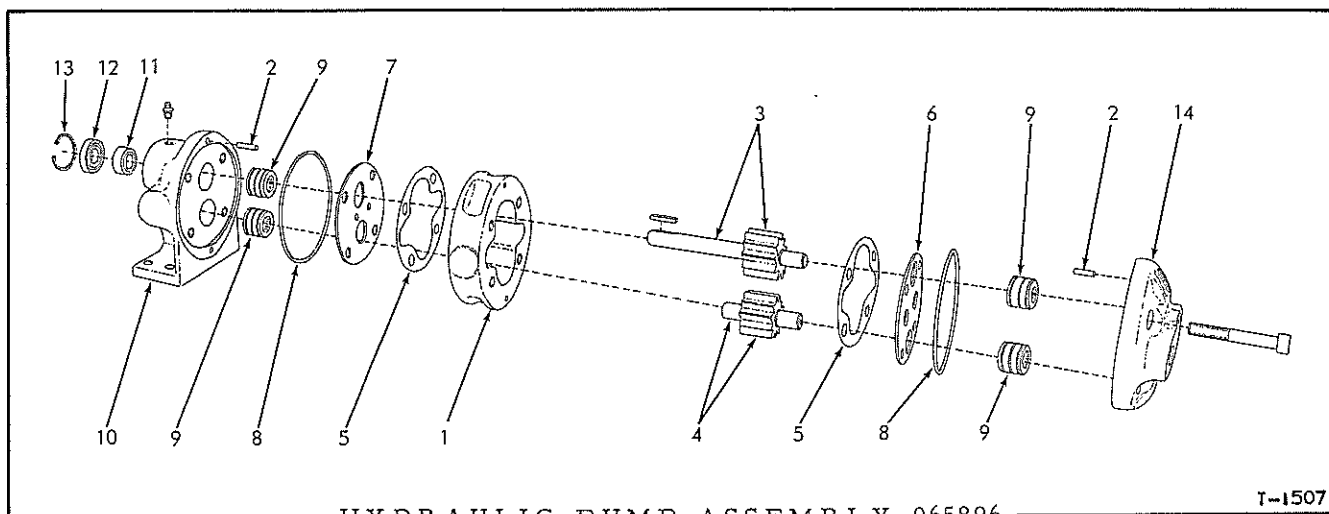
1	078180	1	PUMP ASSEMBLY, hydraulic (See page 221 for parts)
	903632	4	CAPSCREW, 3/8" NC x 1-1/2"
2	044973	4	WASHER, plain
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8" NC
3	082609	1	PULLEY, pump drive
	912235	2	SETSCREW, socket-hd., cup-pt., 1/4" NC x 1/2"
4	043385	2	BELT, pump drive (Furnished in matched pairs)
5	645394	1	*HOSE, pressure line (See HOSE PARTS)
	921030	1	CONNECTOR, flare type, 5/8" tube, 3/4" NPT male
6	621658	1	*ADAPTER, extension, pressure line hose
7	622992	3	CLIP, pressure line hose (7/8" diam., 13/32" bolt-hole)
	916268	2	CAPSCREW, 3/8" NC x 5/8"
	911115	2	WASHER, plain, SAE std., 3/8"
8	657369	1	PIPE, rear return line hose (3/4" NPT x 2-1/4", threaded one end)
9	664431	1	HOSE, return line, rear (13-3/4" long)
	921912	4	CLAMP, hose, 1-1/16" to 2" diam.
10	657371	1	TUBE, return line

* Not used when special Auxiliary Control Valve is added on left side

(Continued)

HYDRAULIC PUMP AND DRIVE (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
11	647326	1	HOSE, return line, front (20" long)
	921912	4	CLAMP, hose, 1-1/16" to 2" diam.
12	657369	1	PIPE, front return line hose (3/4" NPT x 2-1/4", threaded one end)
	901680	1	ELBOW, pipe, 90°, 3/4" NPT
	901513	1	NIPPLE, pipe, 3/4" NPT x 3"
13	638780	3	CLIP, return line tube (1" diam., 17/32" bolt-hole)
	916268	3	CAPSCREW, 3/8" NC x 5/8"
	911115	3	WASHER, plain, SAE std., 3/8"

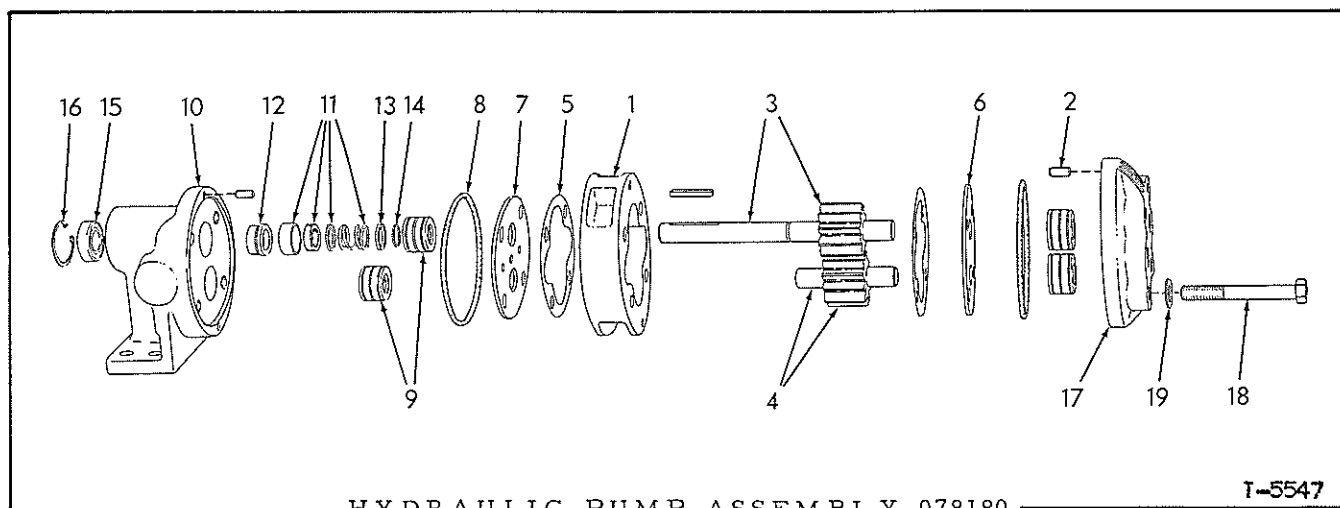


HYDRAULIC PUMP ASSEMBLY 065896

T-1507

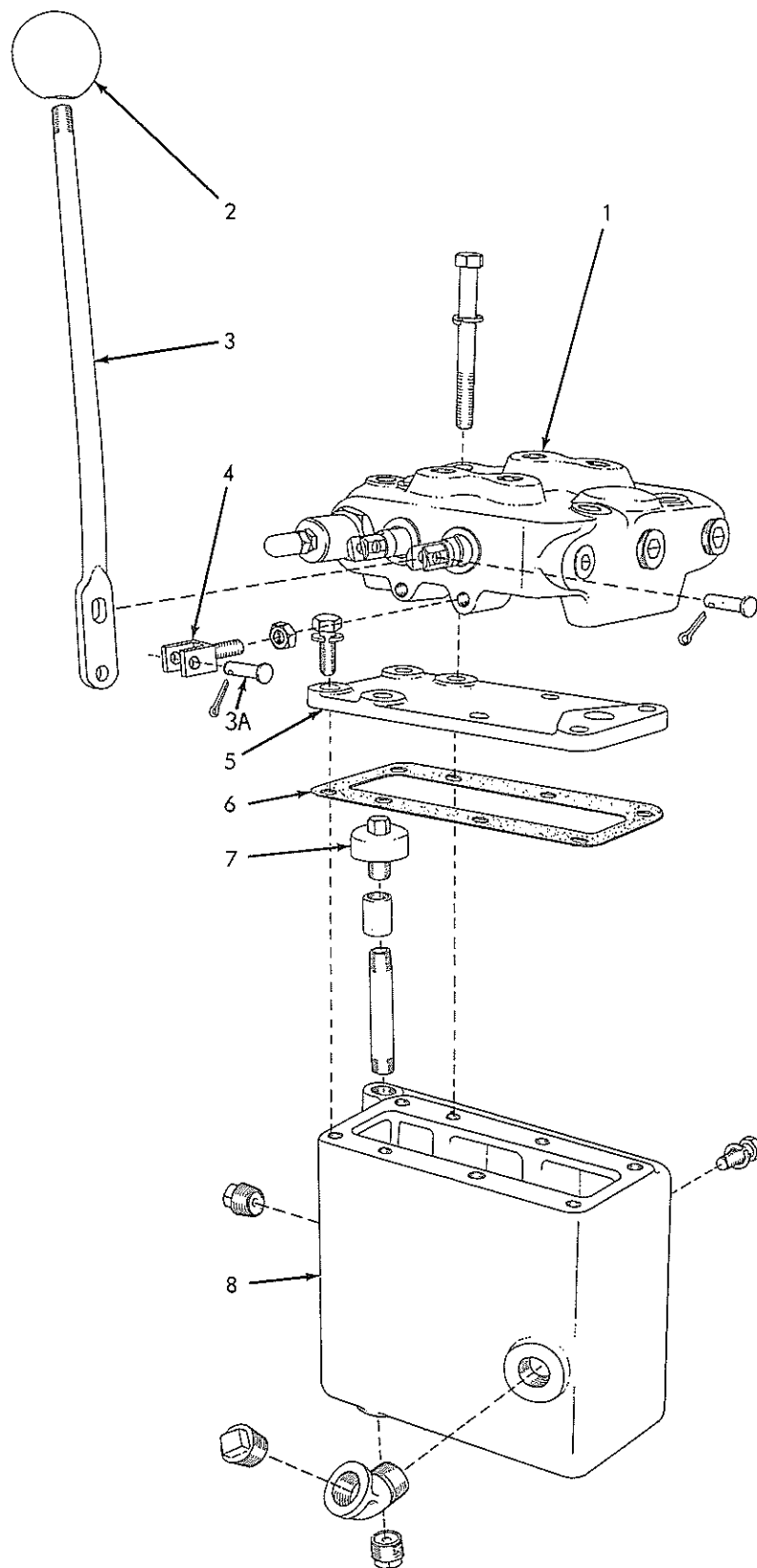
USAGE: See page 214

ITEM	PART NO.	QTY.	DESCRIPTION
1	066803	1	HOUSING
2	3015658	4	PIN, dowel, housing to covers
3	068204	1	SHAFT ASSEMBLY, drive (Includes GEAR and snap RINGS. Serviced only as a unit)
	915569	1	KEY, straight, 3/16" sq. x 1-1/8"
4	068205	1	SHAFT ASSEMBLY, driven (Includes GEAR and snap RINGS. Serviced only as a unit)
5	3015667	-	GASKET, shimming, gear clearance (.002" thick)
	3015666	-	GASKET, shimming, gear clearance (.001" thick)
} Use as required			
6	3015657	1	PLATE, wear, front
7	3015656	1	PLATE, wear, rear
8	923587	2	O-RING, housing
9	3015654	4	BEARING, roller
10	066807	1	COVER, rear
	914465	1	FITTING, lubricating, straight, 1/8"NPT
11	066805	1	SEAL, oil, drive shaft
12	066804	1	BEARING, ball, drive shaft
13	066808	1	RING, snap, bearing retaining
14	066801	1	COVER, front
	915571	4	CAPSCREW, socket head, 7/16"NF x 2-3/4"



USAGE: See pages 214, 216 and 218

ITEM	PART NO.	QTY.	DESCRIPTION
1	066803	1	HOUSING
2	3015658	4	PIN, dowel, housing to covers
3	078197	1	SHAFT ASSEMBLY, drive (Includes gear and snap rings. Serviced only as a unit)
	916024	1	KEY, straight, 3/16" sq. x 1-1/4"
4	078204	1	SHAFT ASSEMBLY, driven (Includes gear and snap rings. Serviced only as a unit)
5	3015667	-	GASKET, shimming, gear clearance (.002" thick. Use as req'd)
	3015666	-	GASKET, shimming, gear clearance (.001" thick. Use as req'd)
6	3015657	1	PLATE, wear, front
7	3015656	1	PLATE, wear, rear
8	923587	2	O-RING, housing
9	3015654	4	BEARING, roller
10	078199	1	COVER, rear
11	078201	1	SEAL ASSEMBLY, oil, drive shaft (Consists of 1 nose-piece, 1 packing, 1 washer and 1 spring. Serviced only as a unit)
12	3015651	1	SEAT, oil seal
13	3015887	1	WASHER, retaining, oil seal
14	3015653	1	RING, snap, retaining washer
15	3015650	1	BEARING, ball, drive shaft
16	066808	1	RING, snap, bearing retaining
17	3015662	1	COVER, front
18	078205	4	CAPSCREW, 7/16"NF x 3-1/4"
19	078206	4	WASHER, plain



HYDRAULIC CONTROLS (First type)

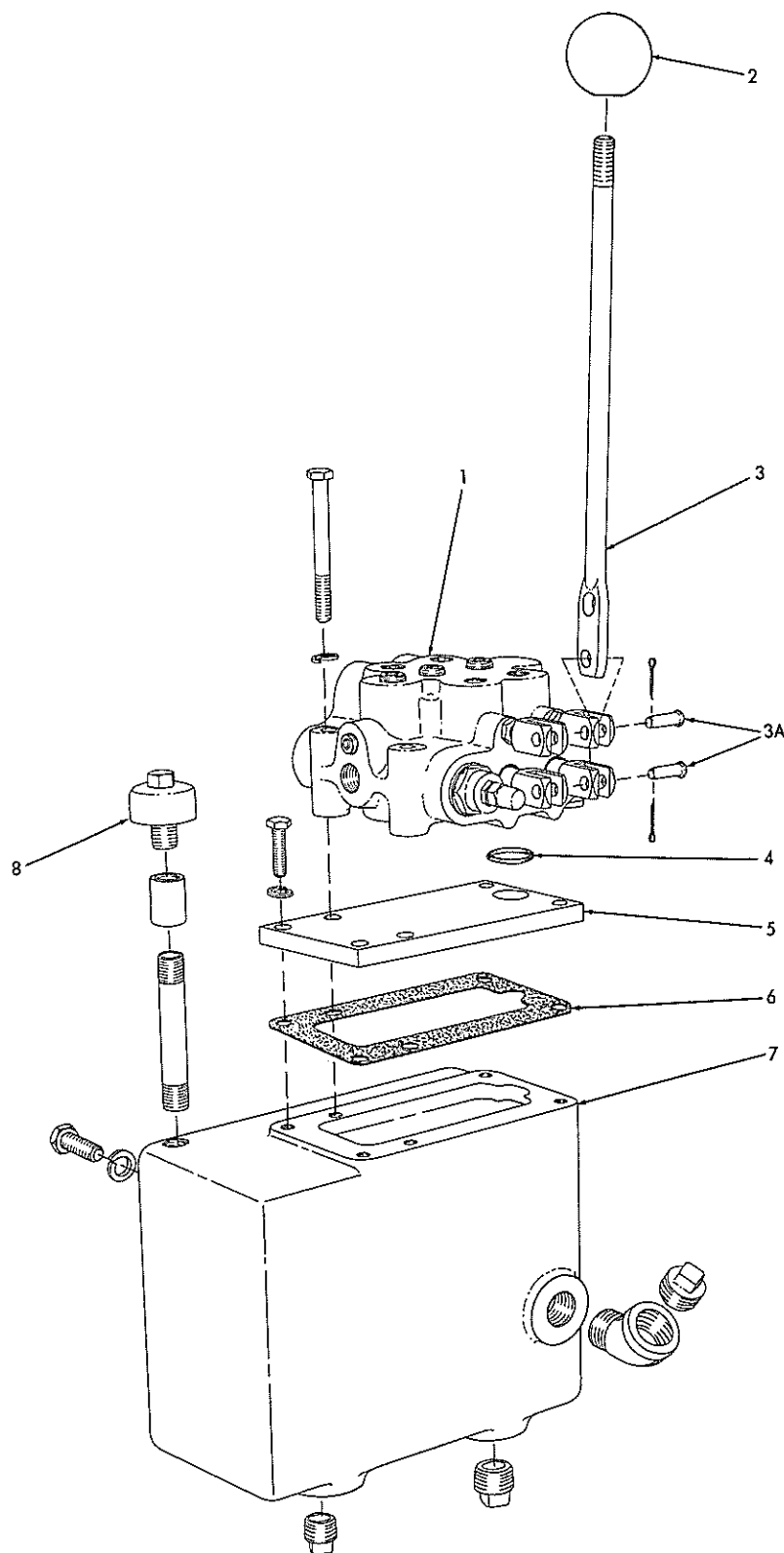
T-1505

HYDRAULIC CONTROLS

USAGE: Graders prior to serial No. 5378

* Standard graders (without special attachments)
 ** Graders equipped with a single special attachment. See page 227 for auxiliary hydraulic controls required when multiple special attachments are installed.

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	066077	1	-	VALVE ASSEMBLY, control (2-plunger type. See page 234 for parts)
	067188	-	1	VALVE ASSEMBLY, control (3-plunger type. See page 234 for parts)
	906702	4	4	CAPSCREW, 1/2"NC x 4-1/4"
	904208	4	4	LOCKWASHER, 1/2"
NOTE: When replacing Valve Assembly on early units also order item 4				
2	091862	2	3	KNOB, operating lever
3	065880	2	2	LEVER, moldboard lift control (12" long)
	658813	-	1	LEVER, auxiliary control (10" long)
3A	627451	4	6	PIN, control lever
	900942	4	6	PIN, cotter, 3/32" x 5/8"
4	065886	2	3	YOKE, operating lever (5/16"NC) (Early units)
	906652	2	3	NUT, jam, 5/16"NC
	084743	2	3	YOKE, operating lever (7/16"NC) (Late units)
	914879	2	3	NUT, jam, 7/16"NC
5	065892	1	1	COVER, oil supply tank (See page 227 for special cover plate used to mount the Auxiliary Hydraulic Control valve)
	903638	4	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	4	LOCKWASHER, 1/2"
6	065891	1	1	GASKET, oil supply tank cover
7	050748	1	1	BREATHER, oil supply tank
	901495	1	1	NIPPLE, pipe, 3/8"NPT x 4"
	901765	1	1	COUPLING, pipe, 3/8"NPT
8	065890	1	1	TANK, oil supply
	910023	1	1	ELBOW, street, 45°, 3/4"NPT
	912726	3	3	PLUG, pipe, 3/4"NPT
	903639	4	4	CAPSCREW, 1/2"NC x 1-1/2"
	904208	4	4	LOCKWASHER, 1/2"



HYDRAULIC CONTROLS (Second type)

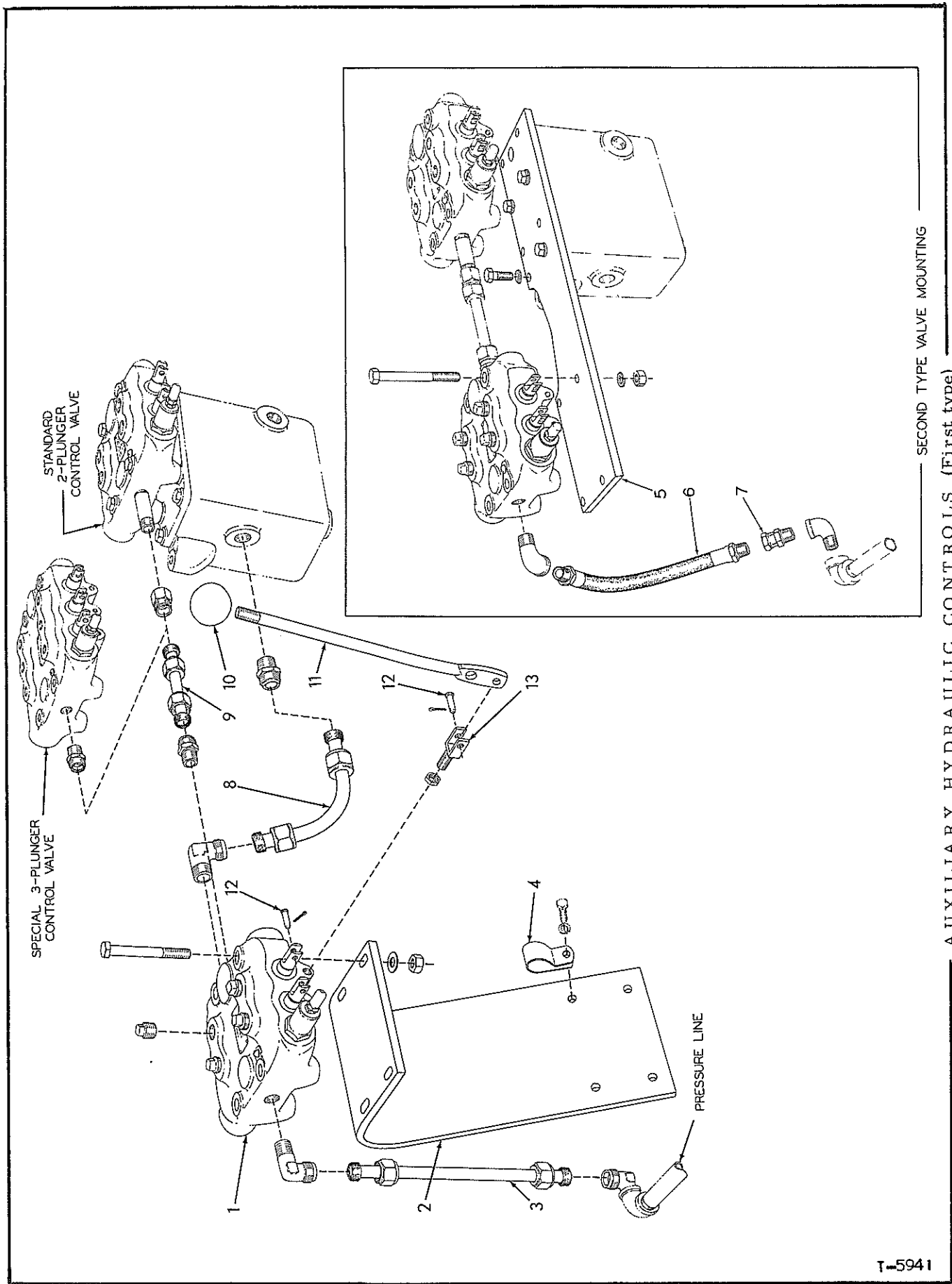
T-19630

HYDRAULIC CONTROLS

USAGE: Graders serial No. 5378 and up

- * Standard graders (without special attachments)
- ** Graders equipped with single special attachment. See page 231 and 233 for auxiliary hydraulic controls required when multiple special attachments are installed.

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	091009	1	-	VALVE ASSEMBLY, control (2-plunger type. See page 236 for parts)
	091010	-	1	VALVE ASSEMBLY, control (3-plunger type. See page 236 for parts)
	903776	4	4	CAPSCREW, 3/8"NC x 3-1/2"
	904206	4	4	LOCKWASHER, 3/8"
2	091862	2	3	KNOB, operating lever
3	065880	2	2	LEVER, moldboard lift control (12" long)
	658813	-	1	LEVER, auxiliary control (10" long)
3A	627451	4	6	PIN, control lever
	900942	4	6	PIN, cotter, 3/32" x 5/8"
4	923575	1	1	O-RING, control valve to cover
5	090954	1	1	PLATE, cover, oil supply tank (See page 231 and 233 for special cover plate used to mount the Auxiliary Hydraulic Control Valve)
	903631	2	-	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	-	LOCKWASHER, 3/8"
6	090955	1	1	GASKET, oil supply tank cover
7	090891	1	1	TANK, oil supply
	910023	1	1	ELBOW, street, 45°, 3/4"NPT
	912725	1	1	PLUG, pipe, 1/2"NPT
	912726	2	2	PLUG, pipe, 3/4"NPT
	903638	4	4	CAPSCREW, 1/2"NC x 1-1/4"
	904208	4	4	LOCKWASHER, 1/2"
8	050748	1	1	BREATHING, oil supply tank
	901495	1	1	NIPPLE, pipe, 3/8"NPT x 4"
	901765	1	1	COUPLING, pipe, 3/8"NPT



AUXILIARY HYDRAULIC CONTROLS

USAGE: Graders prior to serial No. 5378 when equipped with multiple special attachments.

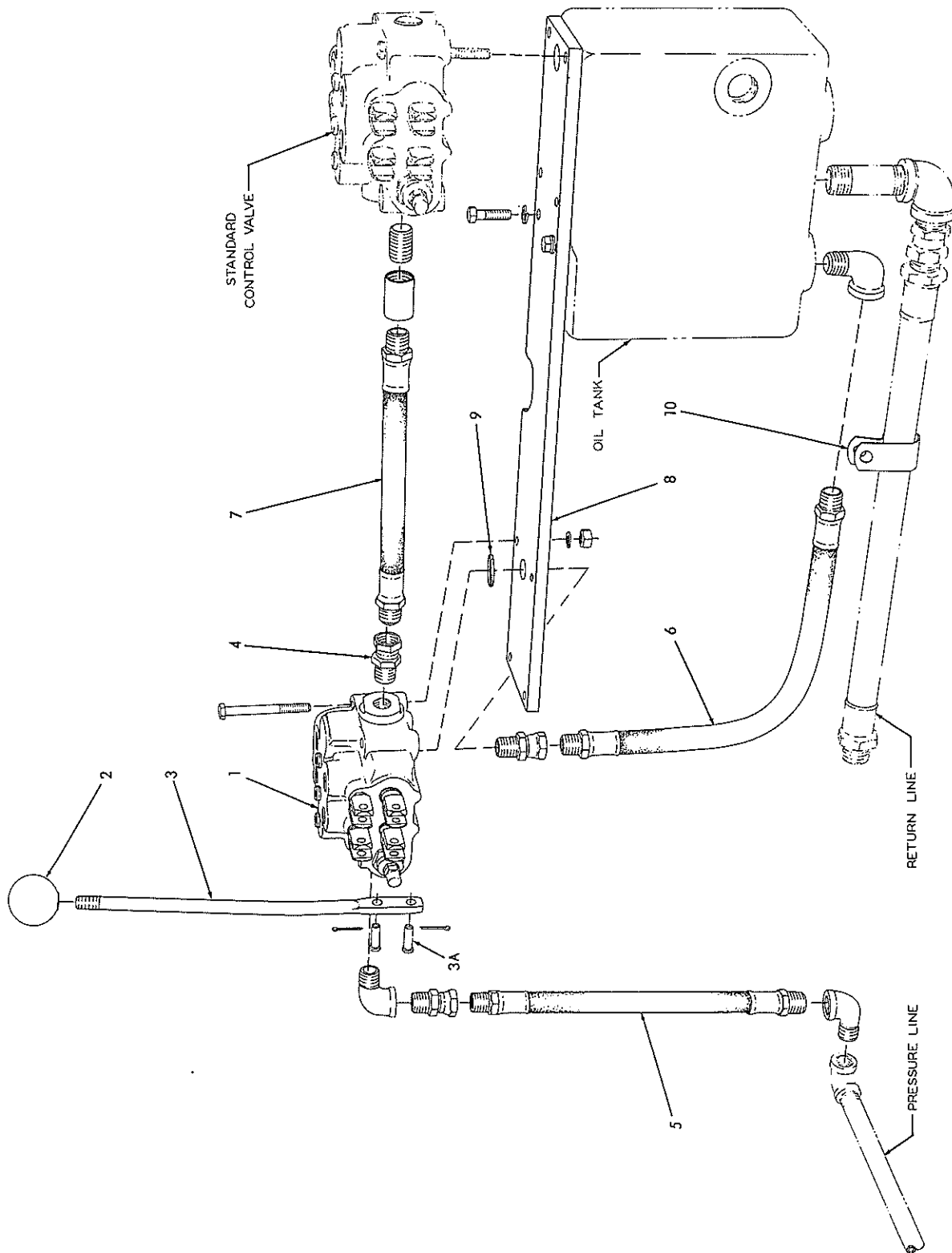
		* 2 - plunger valve (Illustrated)			
		** 3 - plunger valve (Not illustrated)			
ITEM	PART NO.	QTY.	* **	DESCRIPTION	
1	079167	1	-	VALVE, auxiliary control	} See page 234 for parts
	082644	-	1	VALVE, auxiliary control	
	906702	4	4	CAPSCREW, 1/2"NC x 4-1/4"	
	910244	4	4	WASHER, plain, SAE std., 1/2"	
	911028	4	4	NUT, 1/2"NC	
	912725	2	4	PLUG, pipe, 1/2"NPT	
<u>NOTE:</u> When making first replacement of complete Valve Assembly on early units, also order item 13.					
2	-----	1	-	BRACKET, valve mounting (Graders prior to #3739. Replace with PLATE 080742)	
	903631	4	-	CAPSCREW, 3/8"NC x 1-1/4"	
	904206	4	-	LOCKWASHER, 3/8"	
3	-----	1	-	TUBE, pressure line to valve (Graders prior to #3666. Order 1 HOSE 080421, 1 UNION 032031 and 2 ELBOWS 901724)	
	916232	2	-	ELBOW, Sealastic, 90°, 5/8" tube, 1/2"NPT male	
	916229	2	-	RING, Sealastic, 5/8" tube (Includes ferrule)	
	918565	2	-	NUT, Sealastic, 5/8" tube	
4	054034	1	1	CLIP, supporting, return line hose	
5	080742	1	-	PLATE, cover, valve mounting (Effective with grader #3739)(Replaces standard COVER 065892	
	082643	-	1	PLATE, cover, valve mounting (Replaces standard COVER 065892)	
	903638	4	4	CAPSCREW, 1/2"NC x 1-1/4"	
	904208	4	4	LOCKWASHER, 1/2"	
6	080421	1	1	HOSE, pressure line to valve (Effective with grader #3666)	
	901724	1	1	ELBOW, street, 90°, 1/2"NPT	
7	032031	1	1	UNION, hose adapting (Effective with grader #3666)	
	901724	1	1	ELBOW, street, 90°, 1/2"NPT	
8	079238	1	1	TUBE, valve return line	
	916233	1	1	ELBOW, Sealastic, 90°, 3/4" tube, 3/4"NPT male	
	915561	1	1	CONNECTOR, Sealastic, 3/4" tube, 3/4"NPT male	
	915558	2	2	RING, Sealastic, 3/4" tube (Includes ferrule)	
	918234	2	2	NUT, Sealastic, 3/4" tube	
9	079240	1	1	TUBE, valve connecting pressure line	
	916231	2	2	CONNECTOR, Sealastic, 5/8" tube, 1/2"NPT male (1 less used on graders equipped with 2-plunger type main control valve)	
	916234	1	1	CONNECTOR, Sealastic, 5/8" tube, 1/2"NPT female (Used only with 2-plunger type main control valve)	
	916229	2	2	RING, Sealastic, 5/8" tube (Includes ferrule)	
	918565	2	2	NUT, Sealastic, 5/8" tube	

(Continued)

AUXILIARY HYDRAULIC CONTROLS (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
10	091862	2	3	KNOB, operating lever
11	065880	1	1	LEVER, operating (12" long)
	658813	1	2	LEVER, operating (10" long)
12	627451	4	6	PIN, operating lever
	900942	4	6	PIN, cotter, 3/32" x 5/8"
13	065886	2	3	YOKE, operating lever (5/16"NC) (Used prior to grader #4460)
	906652	2	3	NUT, jam, 5/16"NC
	084743	2	3	YOKE, operating lever (7/16"NC) (Effective with grader #4460)
	914879	2	3	NUT, jam, 7/16"NC

MEMO



T-19629

AUXILIARY HYDRAULIC CONTROLS (Second type)

AUXILIARY HYDRAULIC CONTROLS

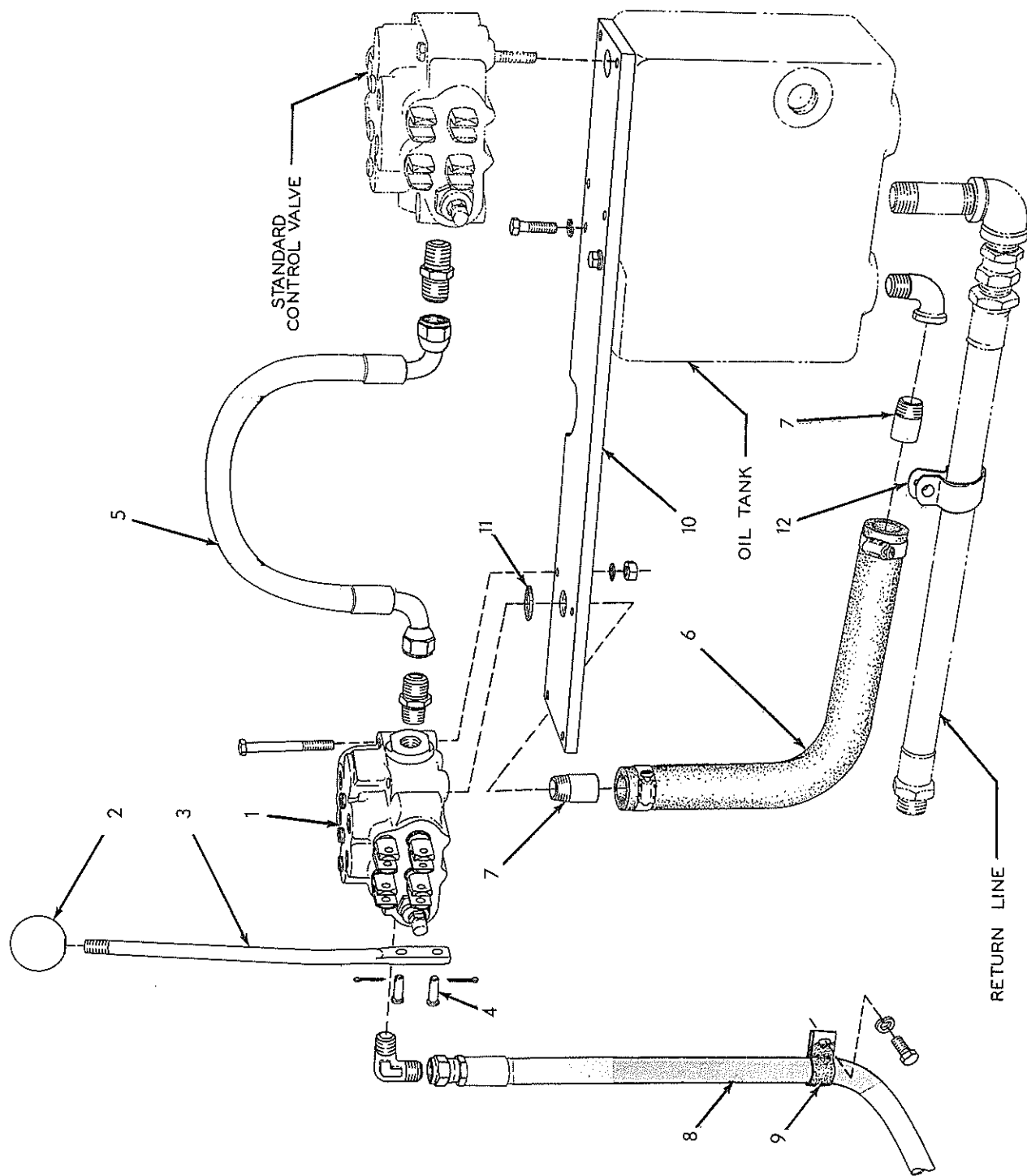
USAGE: Graders serial No. 5378 thru 5886 when equipped with multiple special attachments

				* 2-plunger valve (Illustrated)
				** 3-plunger valve (Not Illustrated)
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	091011	1	-	VALVE ASSEMBLY, auxiliary control (See page 236 for parts)
	091012	-	1	VALVE ASSEMBLY, auxiliary control (See page 236 for parts)
	906695	4	4	CAPSCREW, 3/8"NC x 3-1/4"
	904206	4	4	LOCKWASHER, 3/8"
	911026	4	4	NUT, 3/8"NC
2	091862	2	3	KNOB, operating lever
3	065880	1	1	LEVER, operating (12" long)
	658813	1	2	LEVER, operating (10" long)
3A	627451	4	6	PIN, operating lever
	900942	4	6	PIN, cotter, 3/32" x 5/8"
4	032031	3	3	UNION, straight, hose adapting
5	080421	1	1	HOSE, pressure line to valve
	901724	2	2	ELBOW, street, 90°, 1/2"NPT
6	091365	1	1	HOSE, valve return line
	901724	1	1	ELBOW, street, 90°, 1/2"NPT
7	091366	1	1	HOSE, valve connecting pressure line
	901766	1	1	COUPLING, pipe, 1/2"NPT
	901500	1	1	NIPPLE, pipe, 1/2"NPT x 1-1/8"
8	090957	1	-	PLATE, cover, valve mounting
	090956	-	1	PLATE, cover, valve mounting
	903631	2	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	2	LOCKWASHER, 3/8"
9	923575	1	1	O-RING, control valve to plate
10	054034	1	1	CLIP, supporting, return line hose

} Used only with 2-plunger control on right side

} Replaces standard PLATE 090954

} Used only with 2-plunger control on right side



I-30936

AUXILIARY HYDRAULIC CONTROL (Third type)

AUXILIARY HYDRAULIC CONTROLS

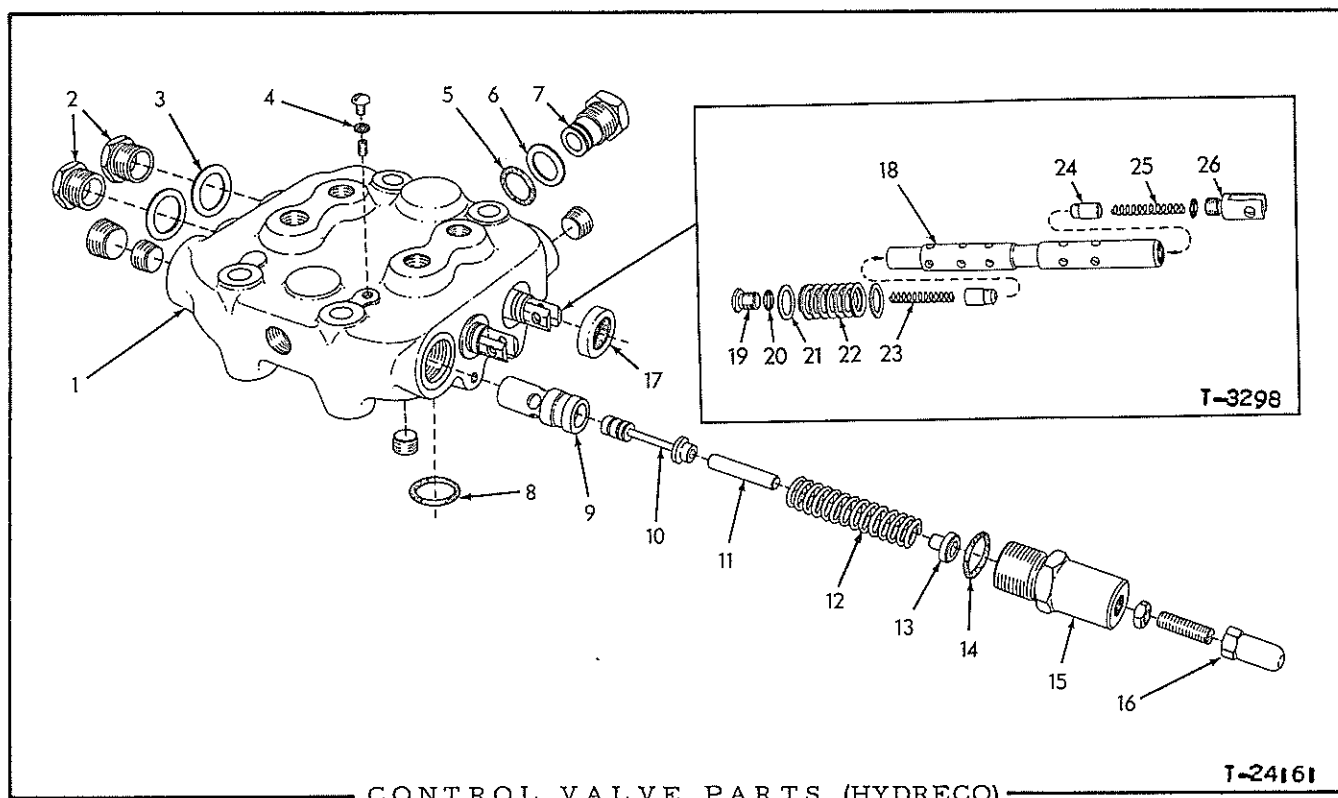
USAGE: Graders serial No. 5887 and up when equipped with multiple special attachments

* 2-Plunger Valve (Illustrated)
 ** 3-Plunger Valve (Not Illustrated)

ITEM	PART NO.	QTY. * **		DESCRIPTION
1	091011	1	-	VALVE ASSEMBLY, auxiliary control (See page 236 for parts)
	091012	-	1	VALVE ASSEMBLY, auxiliary control (See page 236 for parts)
	906695	4	4	CAPSCREW, 3/8"NC x 3-1/4"
	904206	4	4	LOCKWASHER, 3/8"
	911026	4	4	NUT, 3/8"NC
2	091862	2	3	KNOB, operating lever
3	065880	1	1	LEVER, operating (12" long)
	658813	1	2	LEVER, operating (10" long)
4	627451	4	6	PIN, operating lever
	900942	4	6	PIN, cotter, 3/32" x 5/8"
5	645413	1	1	HOSE, valve connecting (See HOSE PARTS)
	919472	2	2	CONNECTOR, flare type, 5/8" tube, 1/2"NPT male
6	622993	1	1	HOSE ASSEMBLY, valve return line (See HOSE PARTS) (Used prior to grader #5983)
	919472	1	1	CONNECTOR, flare type, 5/8" tube, 1/2"NPT male
	920662	1	1	ELBOW, flare type, 5/8" tube, 1/2"NPT male
	-----	1	1	HOSE, valve return line (18" long. Order item 13)(Effective with grader #5983)
7	921911	2	2	CLAMP, hose, 11/16" to 1-1/4" diam.
	629847	2	2	PIPE (1/2"NPT x 1-1/2", threaded one end)
	901724	1	1	ELBOW, street, 90°, 1/2"NPT
8	645395	1	1	HOSE, pump to valve (See HOSE PARTS)
	921030	1	1	CONNECTOR, flare type, 5/8" tube, 3/4"NPT male
	920662	1	1	ELBOW, flare type, 5/8" tube, 1/2"NPT male
9	622992	1	1	CLIP, hose supporting
	903628	1	1	CAPSCREW, 3/8"NC x 5/8"
	904206	1	1	LOCKWASHER, 3/8"
10	090957	1	-	PLATE, cover, valve mounting
	090956	-	1	PLATE, cover, valve mounting
	903631	2	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	2	LOCKWASHER, 3/8"
11	923575	1	1	O-RING, control valve to plate
12	054034	1	1	CLIP, supporting, return line hose
13	920728	-	-	HOSE, medium pressure, 7/8"I.D., 25 ft. roll (Use as req'd)

Replaces standard
Plate 090954

Used only with 2-plunger
valve on right side



CONTROL VALVE PARTS (HYDRECO)

USAGE: Graders prior to serial No. 5378

ITEM	PART NO.	QUANTITY				DESCRIPTION
		066077	067188	079167	082644	
1	-----	1	1	1	1	HOUSING (Not serviced separately. See NOTE below)
	909091	3	3	1	1	PLUG, pipe, hex-socket, 3/4"NPT
	908944	2	2	2	2	PLUG, pipe, hex-socket, 1/2"NPT
	915759	1	1	1	1	SCREW, machine, 1/4"NC x 1/4"
2	066774	2	3	2	3	CAP, plunger
3	3002755	2	3	2	3	GASKET, plunger cap
4	066772	1	1	1	1	GASKET (fibre)
5	923811	-	-	1	1	O-RING, pressure line adapter
6	3001731	-	-	1	1	GASKET, pressure line adapter
7	079318	-	-	1	1	ADAPTER, pressure line
8	923575	1	1	-	-	O-RING, housing
9	066781	1	1	1	1	SEAT, relief valve
	903835	1	1	1	1	SETSCREW, hex-socket, cup-pt., 1/4"NC x 3/8"
10	3014671	1	1	1	1	PLUNGER, relief valve
11	3026417	1	1	1	1	PIN, plunger stop
12	3026419	1	1	1	1	SPRING, relief valve

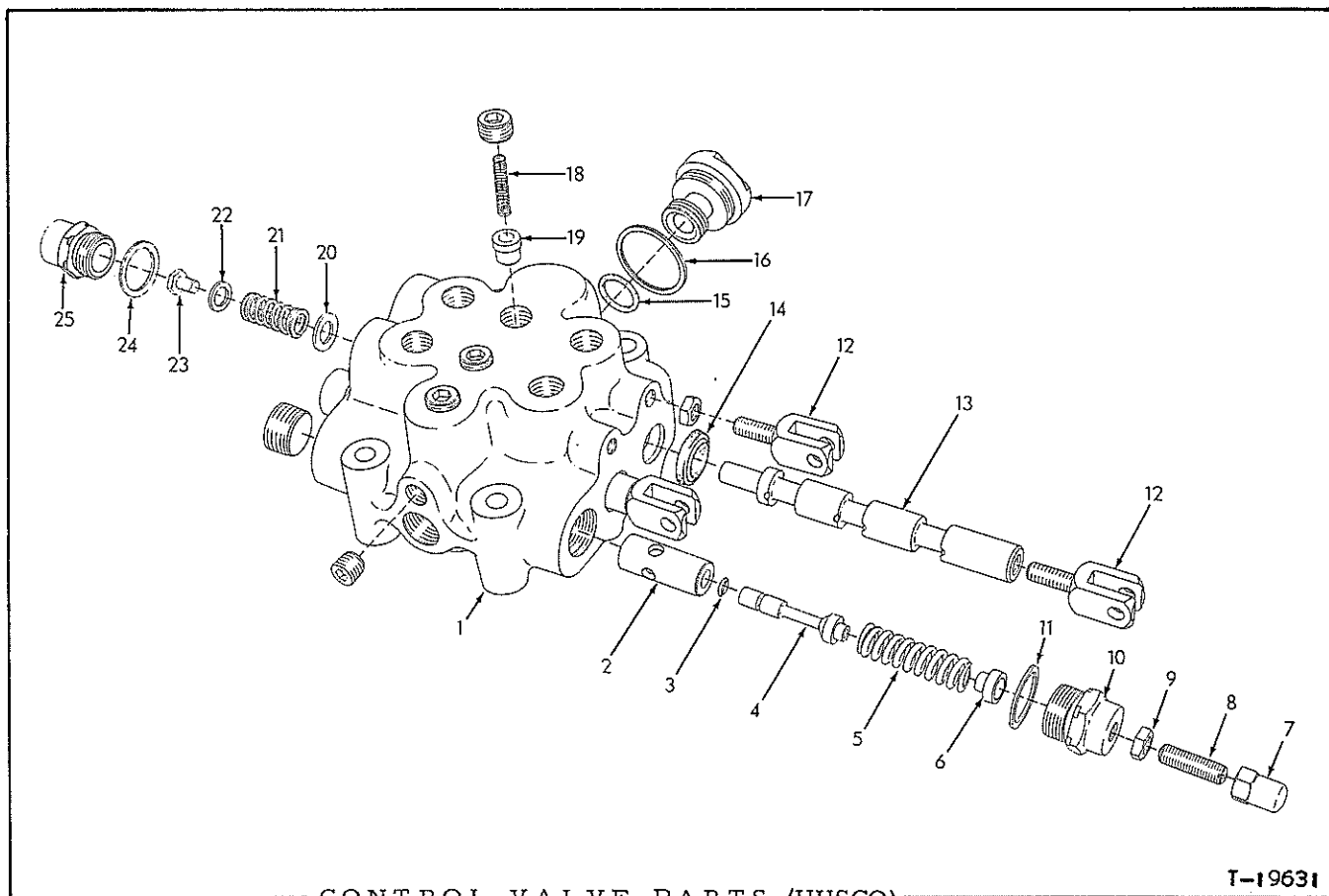
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CONTROL VALVE PARTS (HYDRECO) (Continued)

ITEM	PART NO.	QUANTITY				DESCRIPTION
		066077	067168	079167	082644	
13	066777	1	1	1	1	GUIDE, relief valve spring
14	923810	1	1	1	1	O-RING, relief valve cap
15	066776	1	1	1	1	CAP, relief valve
	921303	1	1	1	1	SETSCREW, slotted, oval-pt., 3/8"NF x 1-1/2"
	911048	1	1	1	1	NUT, jam, 3/8"NF
16	3002757	1	1	1	1	NUT, acorn, relief valve
17	3018622	2	3	2	3	SEAL, oil, operating plunger
18	-----	2	3	2	3	PLUNGER, operating (Not serviced separately. See NOTE below)
19	073618	2	3	2	3	CAP, operating plunger
20	923663	4	6	4	6	O-RING, operating plunger
21	073619	4	6	4	6	WASHER, plunger return spring
22	073620	2	3	2	3	SPRING, return, operating plunger
23	073617	2	3	2	3	SPRING, plunger front check valve
24	073622	4	6	4	6	PLUNGER, check valve
25	073616	2	3	2	3	SPRING, plunger rear check valve
26	073615	2	3	2	3	EYE, operating plunger

NOTE: Valve housings and plungers are not serviced separately due to the extremely close fit required for satisfactory operation. This can be achieved only by matching and lapping plungers and housings as a unit.

When the plunger clearances become excessive due to normal wear, the valve housings may be returned to the manufacturer for installation of oversize plungers at a nominal charge. Consult your local Allis-Chalmers dealer for shipping instructions. Do not return to Allis-Chalmers factory.



USAGE: Graders serial No. 5378 and up

ITEM	PART NO.	QUANTITY				DESCRIPTION
		091009	091010	091011	091012	
						091009 VALVE ASSEMBLY (See page 225)
						091010 VALVE ASSEMBLY (See page 225)
						091011 VALVE ASSEMBLY (See pages 231, 233)
						091012 VALVE ASSEMBLY (See pages 231, 233)
1	-----	1	1	1	1	HOUSING, (Not serviced. See NOTE below)
	907859	1	1	1	1	PLUG, pipe, hex-socket, 1/4"NPT
	907856	3	4	3	4	PLUG, pipe, hex-socket, 3/8"NPT
	909091	2	2	1	1	PLUG, pipe, hex-socket, 3/4"NPT
2	091703	1	1	1	1	SLEEVE, relief valve
3	091709	1	1	1	1	SEAL, relief valve sleeve
4	091702	1	1	1	1	POPPET, relief valve
5	091704	1	1	1	1	SPRING, relief valve
6	091705	1	1	1	1	CAP, relief valve spring
7	091708	1	1	1	1	NUT, acorn, relief valve screw
8	091706	1	1	1	1	SCREW, relief valve adjustment

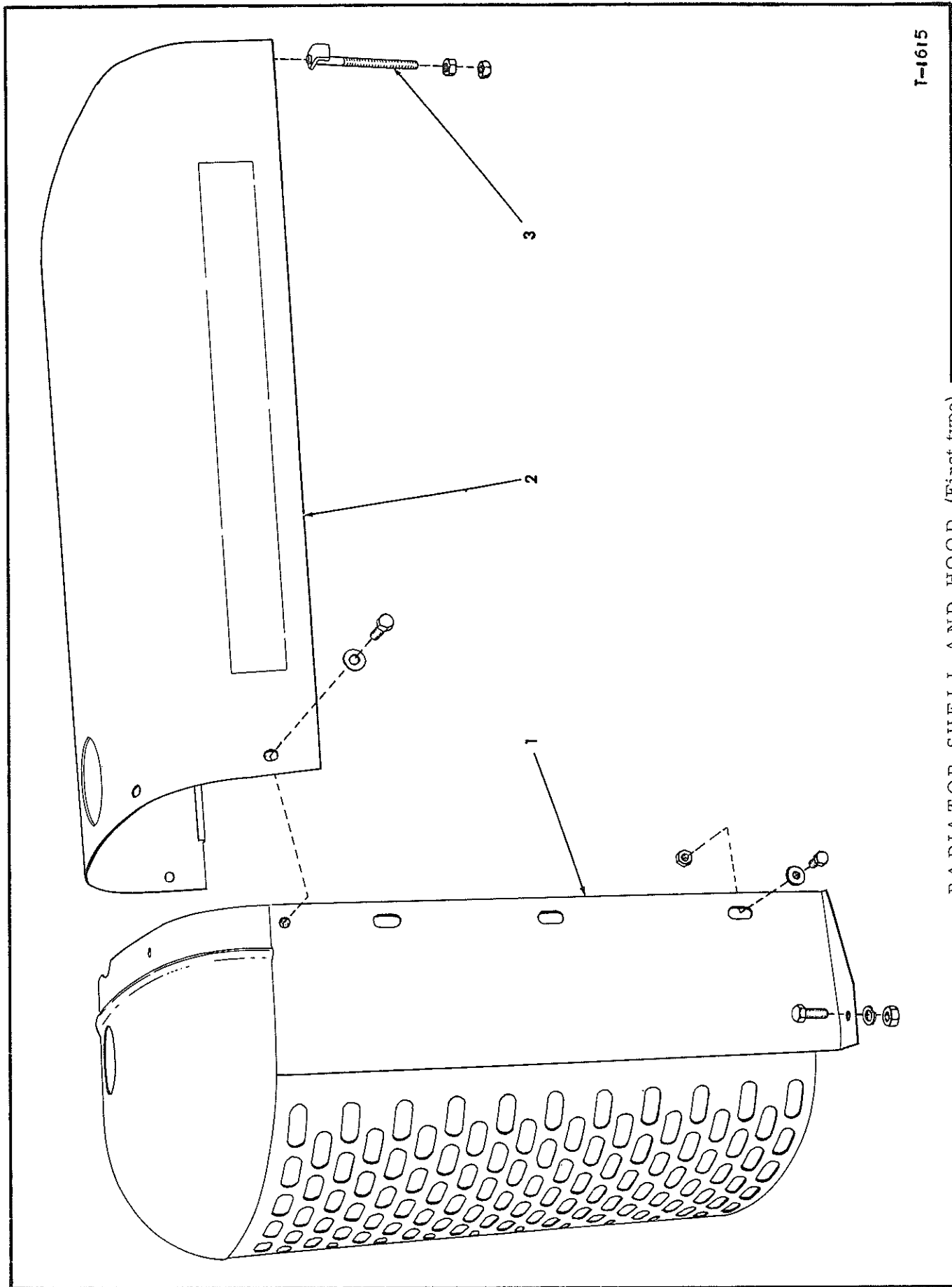
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CONTROL VALVE PARTS (HUSCO)(Continued)

ITEM	PART NO.	QUANTITY				DESCRIPTION
		091009	091010	091011	091012	
9	911048	1	1	1	1	NUT, relief valve adjustment screw (jam, 3/8"NF)
10	091710	1	1	1	1	PLUG, relief valve
11	091699	1	1	1	1	GASKET, relief valve plug
12	091694	4	6	4	6	STUD, clevis
	911034	2	3	2	3	NUT, jam, 3/8"NC
13	-----	2	3	2	3	PLUNGER (Not serviced. See NOTE below)
14	091695	2	3	2	3	SEAL, plunger wiping
15	923574	-	-	1	1	O-RING, carry-over
16	091740	-	-	1	1	GASKET, high-pressure carry-over
17	091739	-	-	1	1	CARRY-OVER, high-pressure
18	091712	2	3	2	3	SPRING, check valve
19	091711	2	3	2	3	POPPET, check valve
20	091697	2	3	2	3	WASHER, stop, operating plunger
21	091698	2	3	2	3	SPRING, return, operating plunger
22	091713	2	3	2	3	RETAINER, plunger return spring
23	091696	2	3	2	3	CAPSCREW, retaining, plunger return spring
24	091699	2	3	2	3	GASKET, plunger plug
25	091701	2	3	2	3	PLUG, operating plunger

NOTE: Valve housings and plungers are not serviced separately due to the extremely close fit required for satisfactory operation. This can be achieved only by matching and lapping plungers and housings as a unit.

When the plunger clearances become excessive due to normal wear, the valve housings may be returned to the manufacturer for installation of oversize plungers at a nominal charge. Consult your local Allis-Chalmers dealer for shipping instructions. Do not return to Allis-Chalmers factory.



T-1615

RADIATOR SHELL AND HOOD (First type)

RADIATOR SHELL AND HOOD

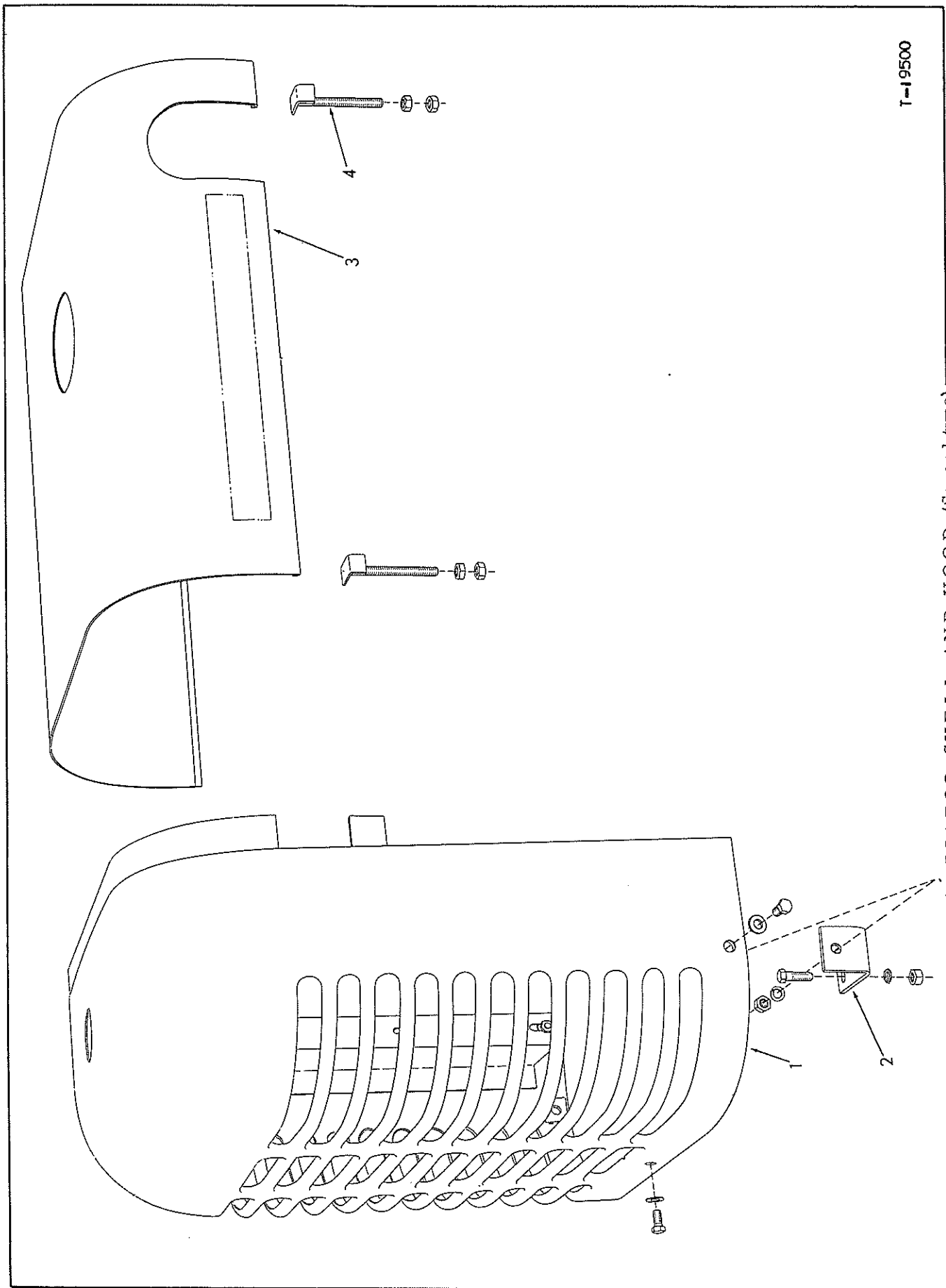
USAGE: Graders prior to serial No. 5271; also for later units when equipped with "Allis-Chalmers" TL-D Loader.

ITEM	PART NO.	QTY.	DESCRIPTION
------	----------	------	-------------

NOTE: See page 297 for listing of HOOD SIDE PLATES

1	066491	1	SHELL, radiator
	905660	6	CAPSCREW, 5/16"NC x 1/2"
	901165	6	WASHER, plain, U.S. std., 5/16"
	906652	6	NUT, 5/16"NC
	903775	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
2	066498	1	HOOD, engine (Graders prior to #866. For units burning gasoline)
	079833	1	HOOD, engine (Graders #866 thru #5424. For units burning gasoline)
	097029	1	HOOD, engine (Graders #5425 and up. For units burning gasoline)
	068309	1	HOOD, engine (Special. For graders prior to #3638 when equipped for burning low-grade fuel)
	081007	1	HOOD, engine (Special. For graders #3638 thru #5424 when equipped for burning low-grade fuel. Has hole for tubular muffler)
	905660	4	CAPSCREW, 5/16"NC x 1/2"
	901165	4	WASHER, plain, U.S. std., 5/16"
3	605956	2	BOLT, hood latching
	911026	4	NUT, 3/8"NC

NOTE: See PAINTING AND MARKING for transfers applied to Hood and Radiator Shell.



T-19500

RADIATOR SHELL AND HOOD (Second type)

RADIATOR SHELL AND HOOD

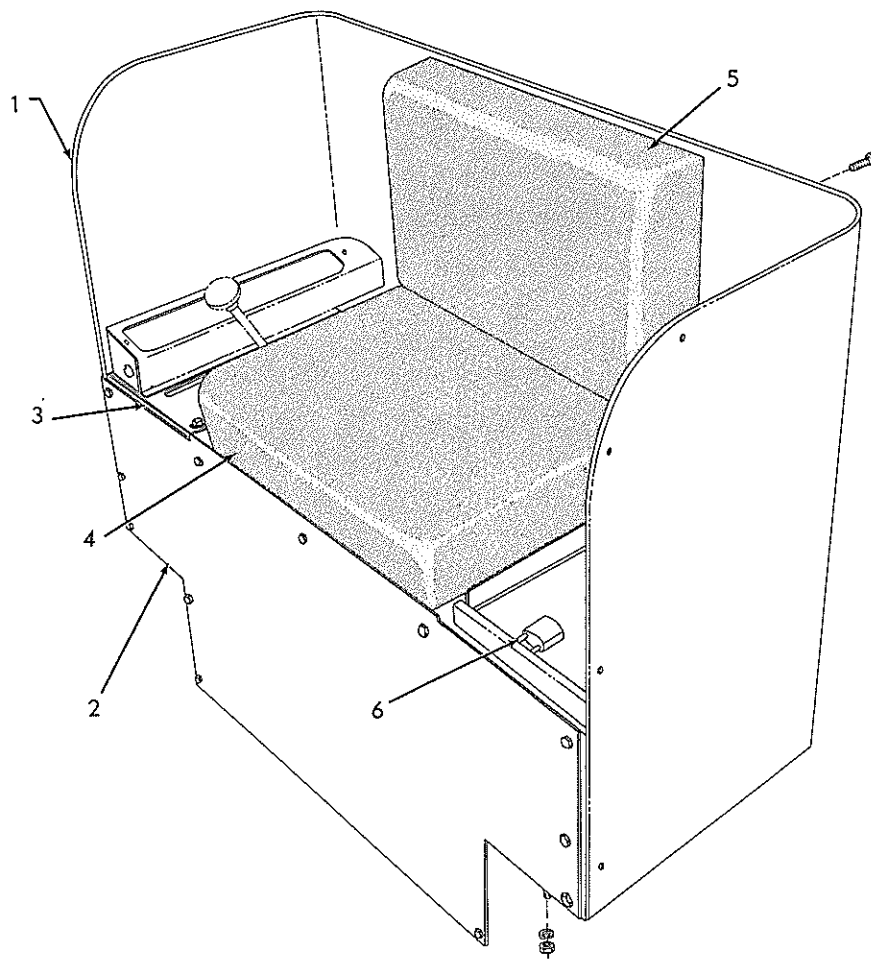
USAGE: Graders serial No. 5271 and up except when equipped with "Allis-Chalmers"
TL-D Loader

ITEM PART NO. QTY. DESCRIPTION

NOTE: See page 297 for listing of HOOD SIDE PLATES

1	088240	1	SHELL, radiator
	905660	6	CAPSCREW, 5/16"NC x 1/2" (shell to radiator)
	901165	6	WASHER, plain, U. S. std., 5/16"
	904205	6	LOCKWASHER, 5/16"
	906652	6	NUT, 5/16"NC
	903631	2	CAPSCREW, 3/8"NC x 1-1/4"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
	903627	1	CAPSCREW, 3/8"NC x 1/2"
	911115	3	WASHER, plain, SAE std., 3/8"
2	{ 087275	1	ANGLE, shell supporting, left
	{ 087276	1	ANGLE, shell supporting, right
	903630	4	CAPSCREW, 3/8"NC x 1"
	911115	4	WASHER, plain, SAE std., 3/8"
	911026	4	NUT, 3/8"NC
3	{ 087272	1	HOOD, engine (Used prior to grader #5425)
	{ 639720	1	HOOD, engine (Graders #5425 and up. For units burning gasoline)
	{ -----	1	HOOD, engine (Special. Effective with grader #5425. For units burning low-grade fuel)(Discontinued)
4	605956	4	BOLT, hood latching
	911026	6	NUT, 3/8"NC

NOTE: See PAINTING AND MARKING for transfers applied to hood and radiator shell



T-1522

SEAT

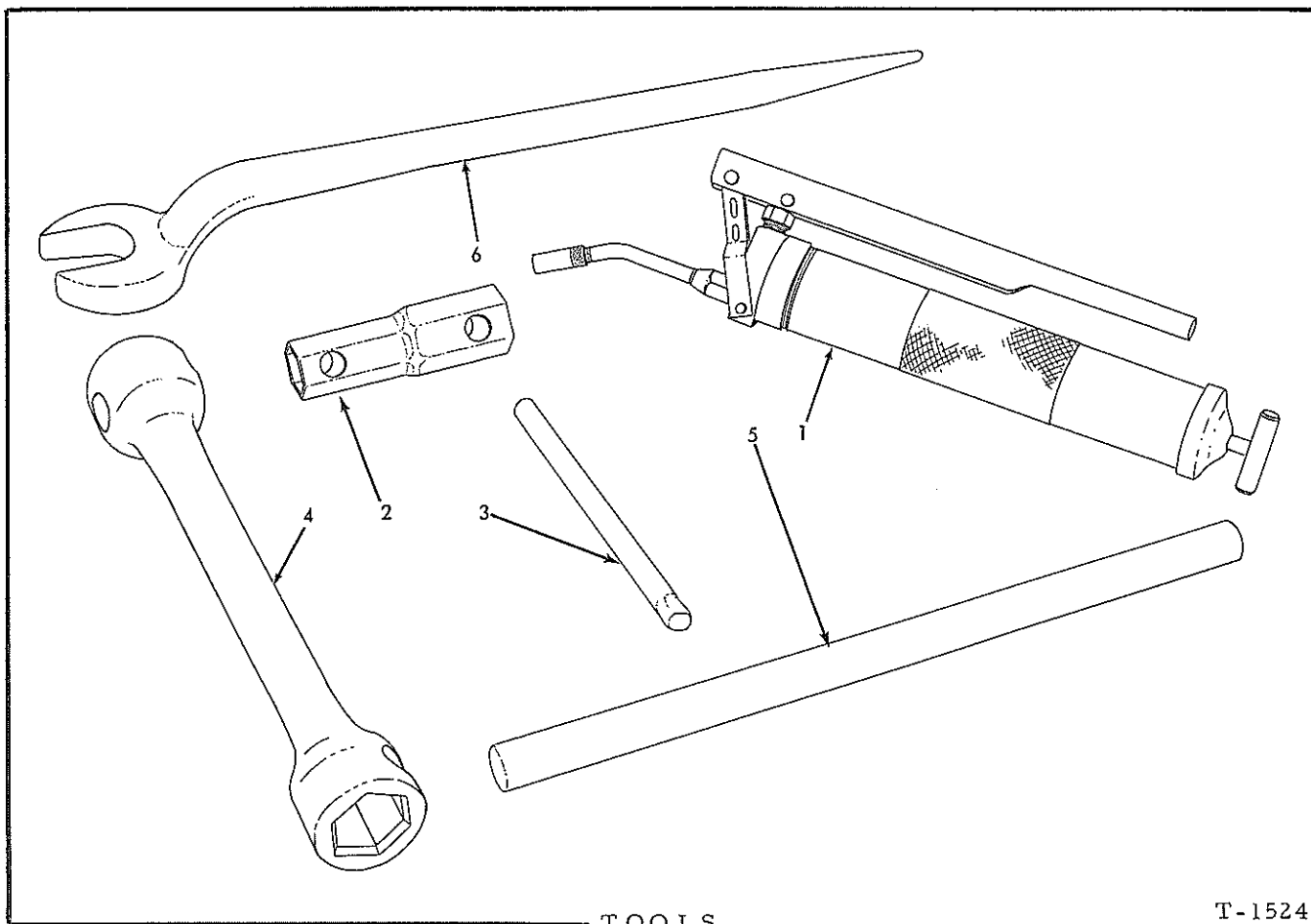
ITEM	PART NO.	QTY.	DESCRIPTION
1	055554	1	SEAT (Graders prior to #5271; also on later units when equipped with "Allis-Chalmers" TL-D Loader)
	091777	1	SEAT (Graders #5271 thru #5424 except when equipped with "Allis-Chalmers" TL-D Loader)
	638193	1	SEAT (Graders #5425 thru #6170 except when equipped with "Allis-Chalmers" TL-D Loader)
	641352	1	SEAT (Graders #6171 thru #6608 except when equipped with "Allis-Chalmers" TL-D Loader)
	658887	1	SEAT (Effective with grader #6609)
	913033	4	CAPSCREW, 1/2"NC x 1-1/8"
	910244	4	WASHER, plain, SAE std., 1/2"
	911028	4	NUT, 1/2"NC

(Continued)

SEAT (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
2	096066	1	PLATE, seat front
	096273	1	PLATE, seat front (Required to mount Cab Heater)
	903775	9	CAPSCREW, 3/8"NC x 7/8"
	910211	2	CAPSCREW, 3/8"NC x 1-1/8"
	911115	2	WASHER, plain, SAE std., 3/8"
	904206	11	LOCKWASHER, 3/8"
	911026	11	NUT, 3/8"NC
3	055582	1	GUIDE, gear shift lever (Graders prior to #5271)
	087278	1	GUIDE, gear shift lever (Graders #5271 thru #5424)
	092556	1	GUIDE, gear shift lever (Graders #5425 thru #6608)
	658710	1	GUIDE, gear shift lever (Grader #6609 and up)
	903775	5	CAPSCREW, 3/8"NC x 7/8"
	904206	5	LOCKWASHER, 3/8"
	911026	5	NUT, 3/8"NC
			} 1 less used on graders #6609 and up
4	659152	1	CUSHION, seat
5	055578	1	CUSHION, back
	914499	2	CAPSCREW, 3/8"NC x 1-5/8"
6	912484	1	PADLOCK

NOTE: See PAINTING AND MARKING for transfers applied to seat



TOOLS

T-1524

ITEM	PART NO.	QTY.	DESCRIPTION
1	073735	1	GUN, grease (Serviced only as a unit)
2	207466	1	WRENCH, spark plug
3	207467	1	HANDLE, spark plug wrench
4	603723	1	WRENCH, socket, rim nut
5	604048	1	HANDLE, rim nut socket wrench
6	912554	1	WRENCH, structural, 1-1/16" opening

PAINTING AND MARKING
(Not Illustrated)

ITEM	PART NO.	QTY.	DESCRIPTION
1	921094	-	ENAMEL, persian orange, quart can
	925109	-	ENAMEL, A-C yellow, quart can
2	921093	-	ENAMEL, persian orange, gallon can
	925110	-	ENAMEL, A-C yellow, gallon can
3	921092	-	ENAMEL, persian orange, 12-ounce pressurized spray-type can
	925108	-	ENAMEL, A-C yellow, 12-ounce pressurized spray type can
<u>NOTE:</u> Approximately 2 gallons required for spraying one coat			
4	068925	2	*TRANSFER, identification, "MODEL D" (6" x 8-3/4") (Applied to sides of seat. Used prior to approx. grader #5812)
5	661607	2	□TRANSFER, identification, "D" (3" x 6-1/4", pressure-sensitive) (Applied to sides of seat. Effective with approx. grader #5812)
6	924548	2	□TRANSFER, "ALLIS-CHALMERS" (1-1/4" x 20", pressure-sensitive) (Applied to sides of hood; also to rear of frame and sides of seat on early units)
	924552	2	□TRANSFER, "ALLIS-CHALMERS" (2-3/8" x 39", pressure-sensitive) (Applied to sides of frame)
7	924305	2	□TRANSFER, trademark (5-5/8" black and orange) (Applied to radiator shell and front of frame)
8	623490	2	TRANSFER, "ROLL-AWAY MOLDBOARD" (5-1/2" diam.) (Applied to moldboard)
9	621391	1	□TRANSFER, gear shift diagram (1-3/4" x 3", pressure-sensitive) (Applied to gear shift lever guide)
10	069351	1	*TRANSFER, grader check and lubrication guide (7" x 10") (Applied to inside of right seat side) (Used prior to grader #5425)
	630869	1	□TRANSFER, grader check and lubrication guide (7-1/2" x 11", pressure-sensitive) (Applied to inside of right seat side) (Effective with grader #5425)
11	621389	1	□TRANSFER, instruction, oil filter (1" x 3-1/4", pressure-sensitive) (Applied to engine oil filter) (Used prior to grader #5425)
12	658690	1	□TRANSFER, instruction, air cleaner (2-1/4" x 3-3/4" pressure-sensitive) (Applied to oil-bath cleaners only)
	638419	1	TRANSFER, instruction, air cleaner (1-3/4" x 3") (Applied to all dry-type air cleaners except 659389)
	661524	1	TRANSFER, instruction air cleaner (2-1/2" x 5", pressure-sensitive) (Applied to dry-type air cleaner 659389 only)
13	651894	1	TRANSFER, instruction air cleaner cartridge replacement (1-5/16" x 2-7/16") (Applied to air restriction indicator)

(Continued)

PAINTING AND MARKING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
14	067937	-	CEMENT, transfer application, 1/2-pint jar (Makes solution by adding 4 parts water. Required to apply transfers indicated by asterick (*) above)
15	623067	1	TRANSFER SET (Consists of 1 each TRANSFERS 658690, 621389 621391, 630869, 2 each TRANSFERS 661607, 924552, 924548 and 924305)

* Indicates permanent type transfer. See item 14

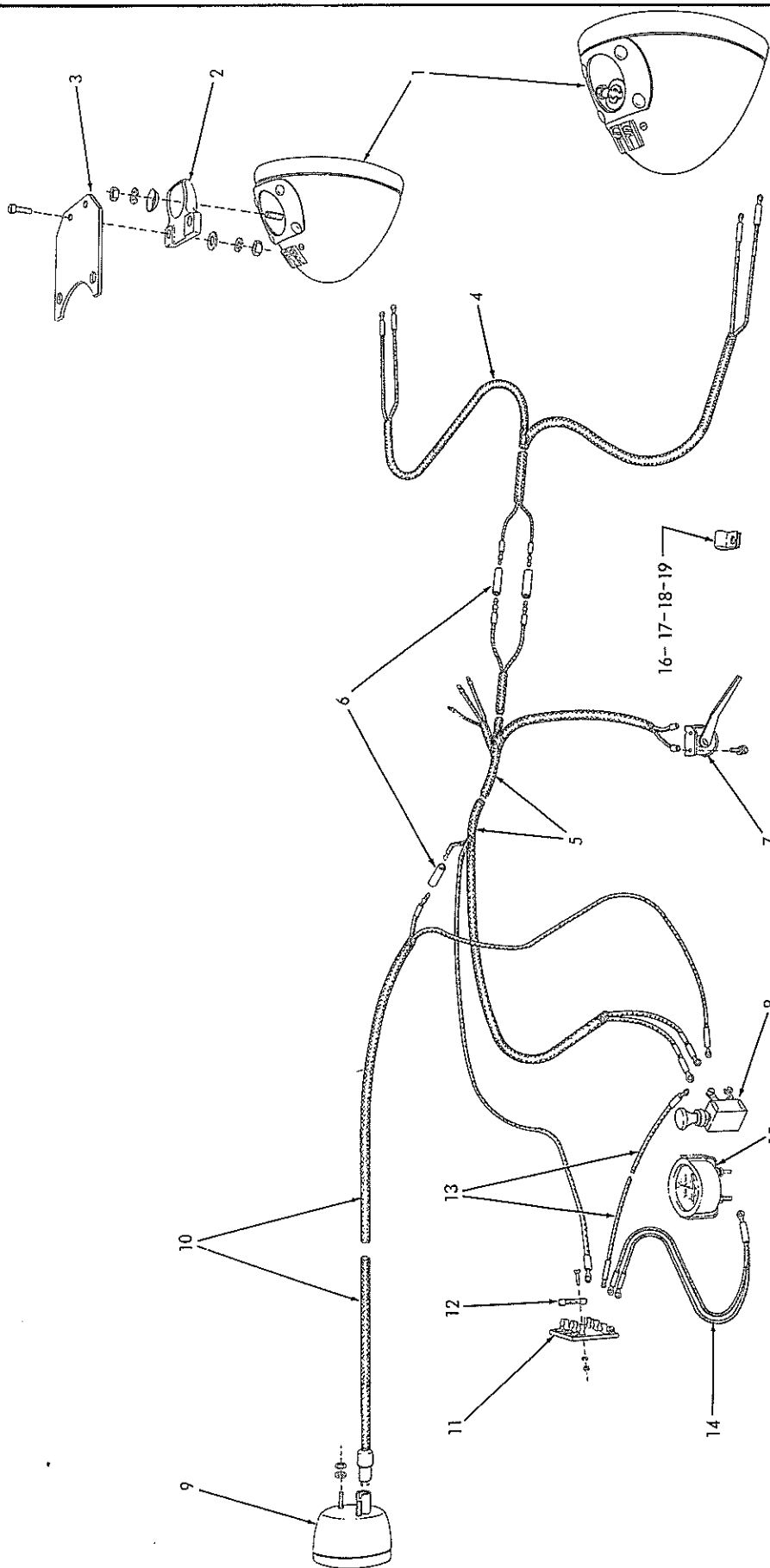
□ Components of item 15

LIGHTS AND WIRING

USAGE: Graders prior to serial No. 5887. Standard equipment.

ITEM	PART NO.	QTY.	DESCRIPTION
1	068383	2	LIGHT ASSEMBLY, head (6-volt. See page 251 for parts)(Original equipment on graders prior to #5425.) (Discontinued)
	638344	2	LIGHT ASSEMBLY, head (6-volt. See page 252 for parts)(Service replacement for graders prior to #5425.) (Discontinued)
	082860	2	LIGHT ASSEMBLY, head (12-volt. See page 251 for parts)(Original equipment on graders #5425 thru #5886. Order LIGHT ASSEMBLY 656529)
	638328	2	LIGHT ASSEMBLY, head (12-volt. See page 252 for parts)(Service replacement for graders #5425 thru #5886. Used prior to November 1967. Order LIGHT ASSEMBLY 656529)
	656529	2	LIGHT ASSEMBLY, head (12-volt. See page 252 for parts)(Service replacement for graders #5425 thru #5886. Effective November 1967)
<u>NOTE:</u> 6-volt Light Assemblies have been discontinued and are no longer available as complete units.			
2	075429	2	BRACKET, head light mounting
	903631	4	CAPSCREW, 3/8"NC x 1-1/4"
	900817	4	WASHER, plain, U.S. std., 3/8"
	904206	4	LOCKWASHER, 3/8"
	911026	4	NUT, 3/8"NC
3	068373	2	PLATE, head light mounting bracket
4	073770	1	HARNESS, main wiring, front section(39" long)
5	073769	1	HARNESS, main wiring, rear section (76" long)
6	048142	3	CONNECTOR, wiring harness
7	068385	1	SWITCH, stop light
	900558	2	SCREW, machine, #10-32NF x 1/2"
	904203	2	LOCKWASHER, #10
8	051195	1	SWITCH, lights (Includes operating knob)
9	068384	1	LIGHT ASSEMBLY, tail (6-volt. See page 254 for parts)(Original equipment on graders prior to #5425. Order LIGHT ASSEMBLY 630128)
	630128	1	LIGHT ASSEMBLY, tail (6-volt. See page 254 for parts)(Service replacement for graders prior to #5425)
	074893	1	LIGHT ASSEMBLY, tail (12-volt. See page 254 for parts)(Original equipment on graders #5425 thru #5886. Order LIGHT ASSEMBLY 630173)
	630173	1	LIGHT ASSEMBLY, tail (12-volt. See page 254 for parts)(Service replacement for graders #5425 thru #5886)
	911024	2	NUT, 1/4"NC
	904204	2	LOCKWASHER, 1/4"

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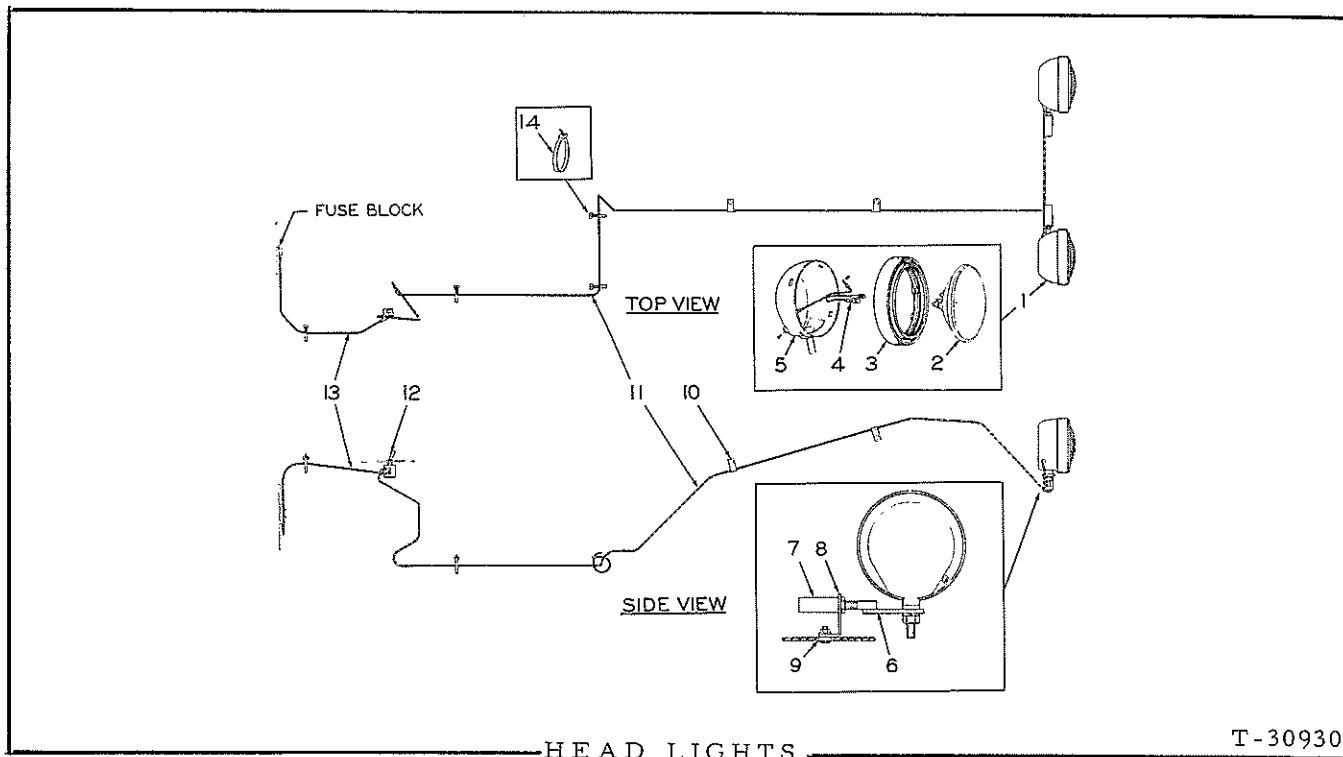


1-1879

LIGHTS AND WIRING (First type)

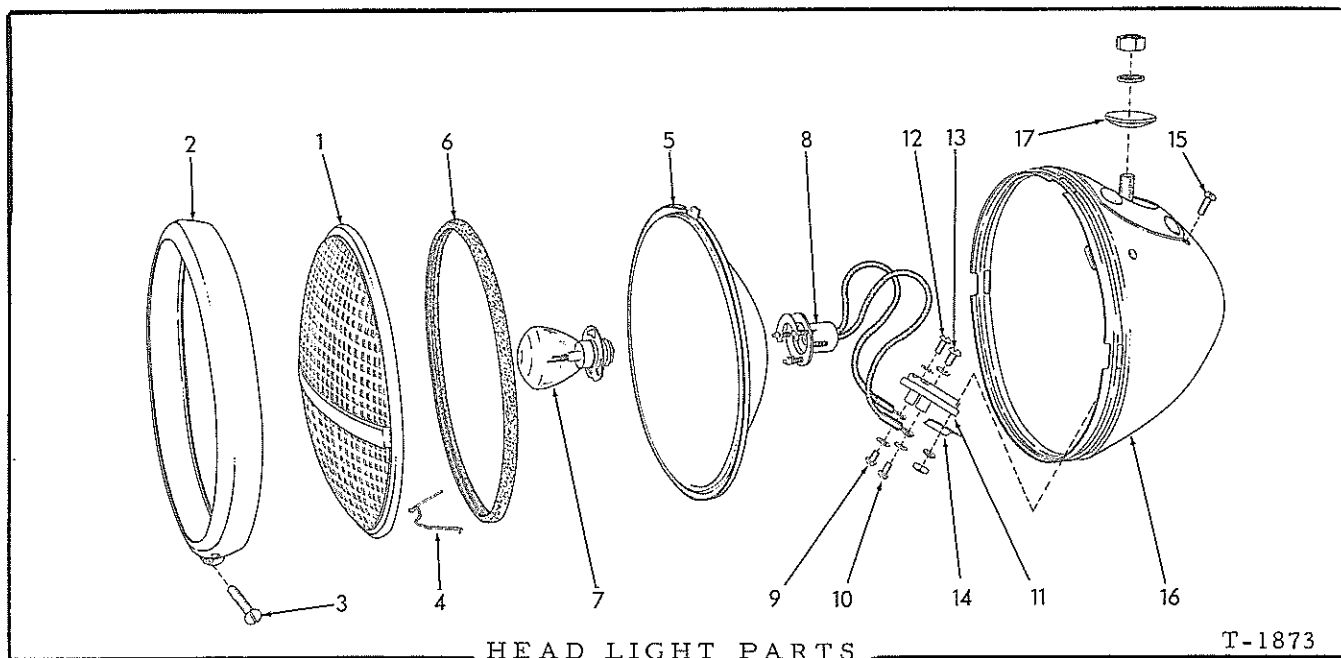
LIGHTS AND WIRING (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
10	068377	1	HARNESS, tail light wiring
11	066487	1	BLOCK, fuse
	900495	2	SCREW, machine, flat-hd., #6-32NC x 1/2"
	906963	2	LOCKWASHER, #6
	901309	2	NUT, #6-32NC
12	208960	3	FUSE, 20 ampere (1/4" x 1-1/4")
13	659155	1	CABLE, fuse block to light switch (33" long)
14	068374	1	CABLE, fuse block to ammeter (Used prior to grader #4988)
15	-----	1	AMMETER (See INSTRUMENTS)
16	040338	7	CLIP, wiring harness (3/8" diam., 9/32" bolt-hole)
	905655	7	CAPSCREW, 1/4"NC x 1/2"
	904204	7	LOCKWASHER, 1/4"
17	040796	4	CLIP, wiring harness (3/8" diam., 13/32" bolt-hole)
18	238136	1	CLIP, tail light harness (3/16" diam., 9/32" bolt-hole)
19	091046	1	CLIP, wiring harness (1/2" diam., 7/16" bolt-hole)
	903627	1	CAPSCREW, 3/8"NC x 1/2"
	904206	1	LOCKWASHER, 3/8"



USAGE: Graders serial No. 5887 and up. Special equipment.

ITEM	PART NO.	QTY.	DESCRIPTION
1	621854	2	LIGHT ASSEMBLY (Consists of items 2 thru 5)
	911043	2	NUT, 1/2"NF
	904208	2	LOCKWASHER 1/2"
2	621853	2	SEALED BEAM
3	621428	2	RETAINER, sealed beam (rubber)
4	621724	4	CABLE, head light
	912731	2	SCREW, terminal, #8-32NC x 5/16"
5	-----	2	SHELL, headlight (Not serviced separately)
	912731	2	SCREW, terminal, #8-32NC x 5/16"
6	621895	2	BRACKET, mounting
	911035	2	NUT, jam, 1/2"NC
7	080352	2	BLOCK, tapped (Requires welding to frame)
8	060982	2	ANGLE, cable supporting
9	238136	2	CLIP, headlight cable (9/32" bolt-hole)
	905655	2	CAPSCREW, 1/4"NC x 1/2"
	911114	2	WASHER, plain, SAE std., 1/4"
	911024	2	NUT 1/4"NC
10	073809	2	CLIP, headlight cable (13/32" bolt-hole)
11	659156	1	CABLE, headlights to switch
12	051195	1	SWITCH, push-pull (Includes knob)(Used prior to grader #6609)
	639726	1	SWITCH, toggle (Effective with grader #6609)
13	659155	1	CABLE, switch to fuse block
14	239726	4	TIE, cable supporting (Effective with grader #6609)

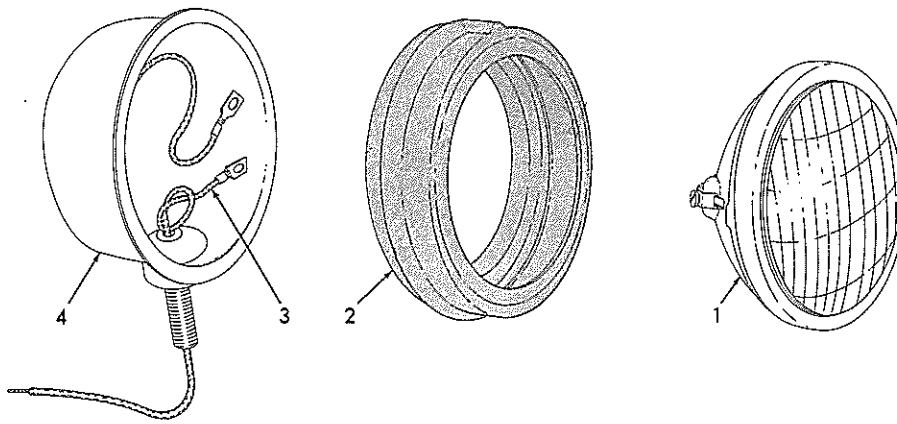


USAGE: Original equipment on graders prior to serial No. 5887.

068383 LIGHT ASSEMBLY (6-volt)
082860 LIGHT ASSEMBLY (12-volt) } See page 247

ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	LENS (glass)
2	033826	1	MOLDING
3	-----	1	SCREW, molding
4	050889	1	SPRING, lens retaining
5	068400	1	REFLECTOR ASSEMBLY (Includes item 6)
6	068421	1	GASKET, lens
7	068429	1	BULB, double contact, 32 c.p., 6-volt (Graders prior to #5425)
	083242	1	BULB, double contact, 32 c.p., 12-volt (Graders #5425 thru 5886)
8	068401	1	WIRING ASSEMBLY (Includes socket)
9	-----	1	SCREW, upper beam cable, #8-32NC x 1/4"
	912739	1	LOCKWASHER, internal teeth, #8
10	-----	1	SCREW, lower beam cable, #10-32NF x 1/4"
	909055	1	LOCKWASHER, internal teeth, #10
11	068402	1	PLATE ASSEMBLY, terminal (Includes items 12 and 13)
12	-----	1	SCREW, outside terminal, upper beam cable
	912739	1	LOCKWASHER, internal teeth, #8
13	-----	1	SCREW, outside terminal, lower beam cable
	909055	1	LOCKWASHER, internal teeth, #10
14	-----	2	CLIP, retaining, terminal plate
15	912731	2	SCREW, machine, #8-32NC x 5/16"
	915923	2	LOCKWASHER, external teeth, #8
	917385	2	NUT, #8-32NC
16	-----	1	BODY (not serviced separately)
17	053277	1	WASHER, headlight mounting
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC

NOTE: Items listed above without part No. are no longer available.



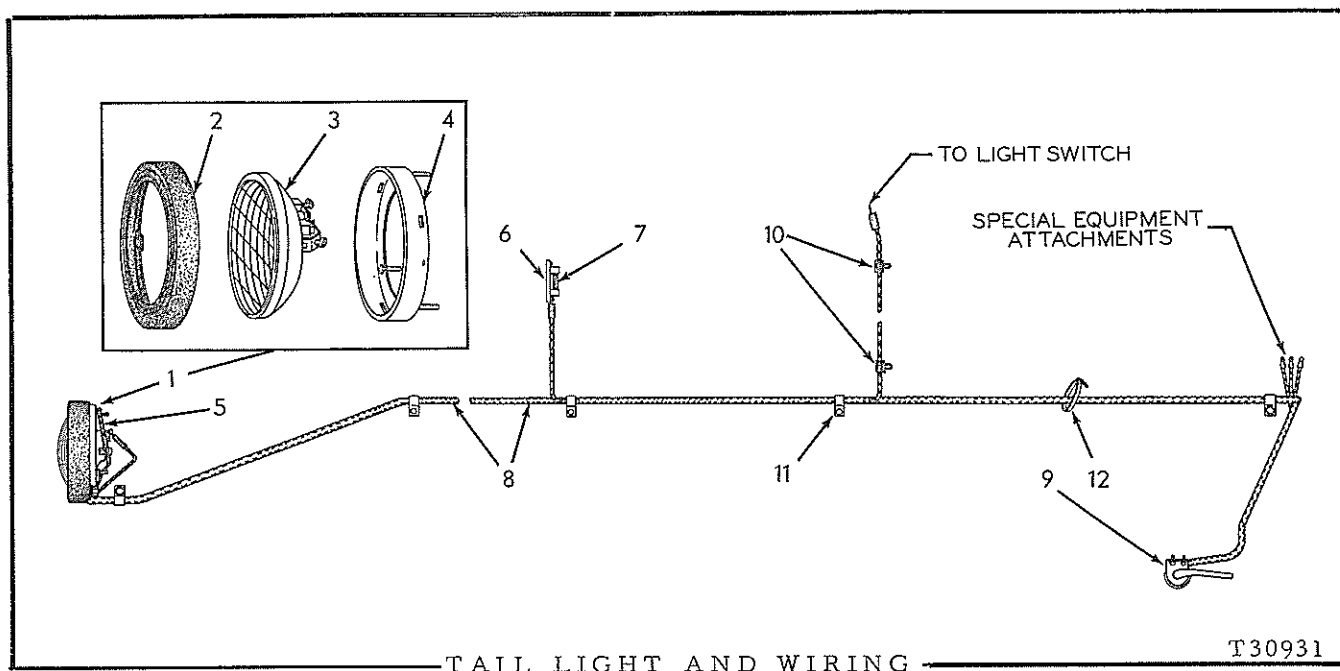
HEAD LIGHT PARTS

T-40520

USAGE: Service replacement for graders prior to serial No. 5887.

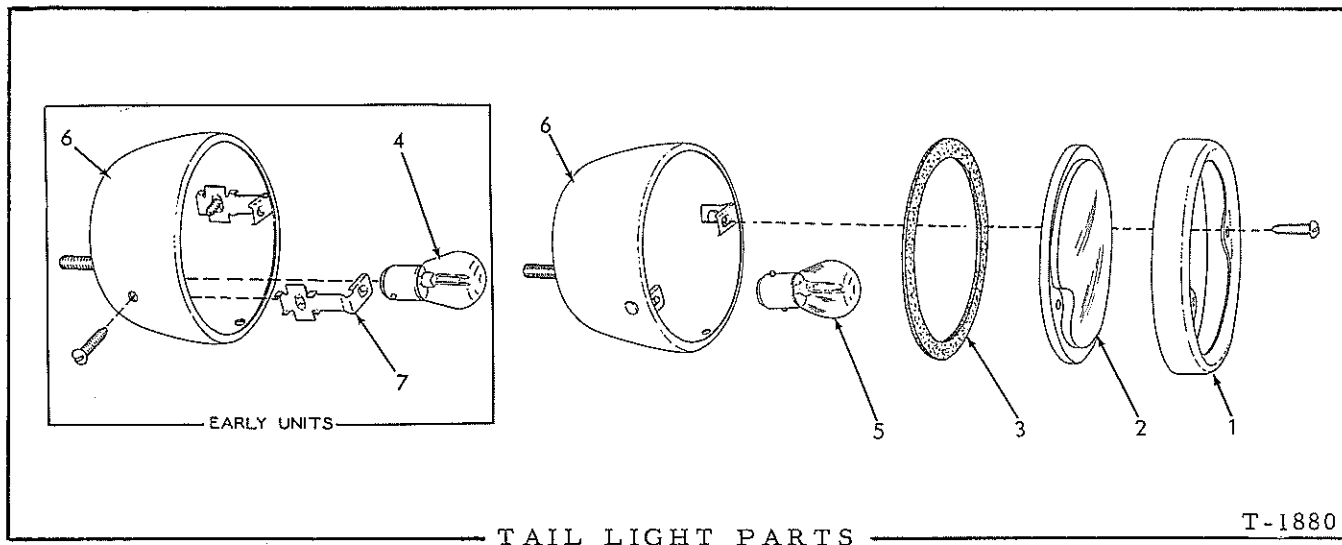
* 638344 LIGHT ASSEMBLY (6-volt)
 * 638328 LIGHT ASSEMBLY (12-volt)
 ** 656529 LIGHT ASSEMBLY (12-volt) } See page 247

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	232921	1	-	UNIT ASSEMBLY, sealed beam (6-volt)
	230232	1	-	UNIT ASSEMBLY, sealed beam (12-volt)
	651534	-	1	UNIT ASSEMBLY, sealed beam (12-volt)
2	638345	1	-	RING, rubber
	621821	-	1	RETAINER (rubber)
3	-----	1	-	CABLE (Discontinued)
4	-----	1	1	BODY (Not serviced separately)



USAGE: Graders serial No. 5887 and up. Standard equipment.

ITEM	PART NO.	QTY.	DESCRIPTION
1	622761	1	LIGHT ASSEMBLY, tail and stop (Includes items 2 thru 4)
	901310	3	NUT, #10-24NC
	904203	3	LOCKWASHER, #10
2	621821	1	RETAINER, lamp
3	644110	1	LAMP, sealed beam (red, dual filament, 12 volt)
4	621819	1	FRAME
5	624477	1	CABLE, ground (4-1/2" long)
6	066487	1	BLOCK, fuse
	900496	2	SCREW, machine, flt-hd., #6-32NC x 3/4"
	910243	2	WASHER, plain, SAE std., #10
	901309	2	NUT, #6-32NC
7	208960	3	FUSE, 20 ampere (1/4" x 1-1/4")
8	622762	1	HARNESS, wiring (Graders prior to #6609)
	658853	1	HARNESS, wiring (Graders #6609 and up)
9	648527	1	SWITCH, stop light
	900558	2	SCREW, machine, #10-32NF x 1/2"
	904203	2	LOCKWASHER, #10
	910251	2	NUT, #10-32NF
10	040796	2	CLIP, wiring harness (3/8" diam., 13/32" bolt-hole)
	903628	2	CAPSCREW, 3/8"NC x 5/8"
	911115	2	WASHER, plain, SAE std., 3/8"
11	040338	6	CLIP, wiring harness (3/8" diam., 9/32" bolt-hole)
	905655	6	CAPSCREW, 1/4"NC x 1/2"
	904204	6	LOCKWASHER, 1/4"
12	239726	1	TIE, harness supporting



USAGE: Graders prior to serial No.5887. See page 247

* Original equipment LIGHT ASSEMBLIES 068384 and 074893
 ** Service replacement LIGHT ASSEMBLIES 630128 and 630173

ITEM	PART NO.	QTY. * **	DESCRIPTION
1	068404	1 -	DOOR, lens retaining
	917883	2 -	SCREW, thread-cutting, rd-hd., #8 x 5/8"
2	068405	1 -	LENS (3-1/2" diam.)
	-----	- 1	LENS (3-11/16" diam.)(Discontinued)
	917883	- 1	SCREW, thread-cutting, rd-hd., #8 x 5/8"
3	068399	1 -	GASKET, (1/16" thick)
	629189	- 1	GASKET, (3/16" thick)
4	068430	1 -	BULB, 21 c.p. and 6 c.p., 6-volt (Early units only)
	081269	1 1	BULB, 21 c.p. and 6 c.p., 6-volt, offset locating prongs
5	081753	1 -	BULB, 21 c.p. and 6 c.p., 12-volt, offset locating prongs
	629191	- 1	BULB, 32 c.p. and 4 c.p., 12-volt, offset locating prongs
6	-----	1 1	BODY (Not serviced separately)
7	-----	2 -	SPEEDNUT (Discontinued)
	917883	2 -	SCREW, thread-cutting, rd-hd., #8 x 5/8"

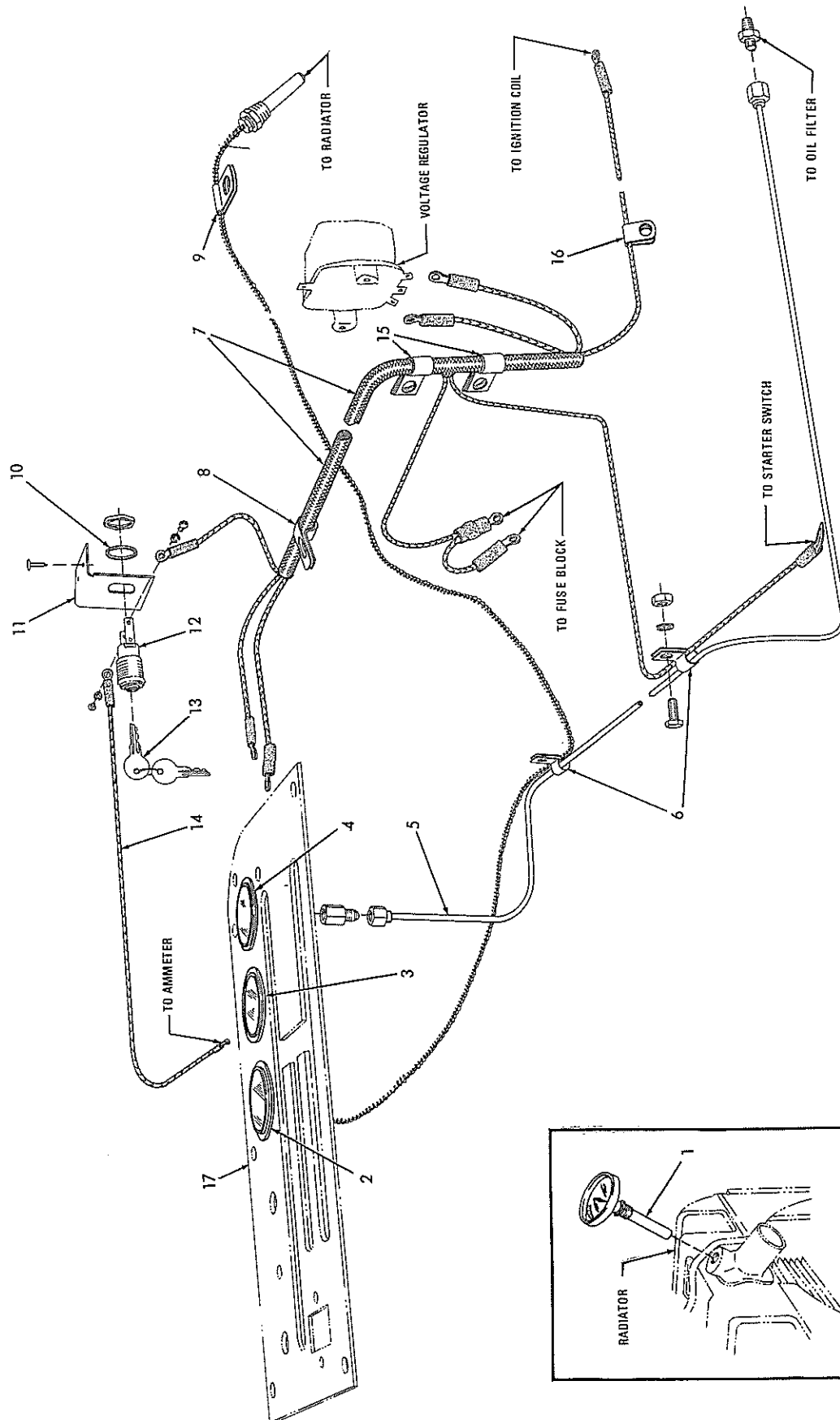
INSTRUMENTS

USAGE: Graders prior to serial No. 6609

* Graders prior to serial No. 3370
 ** Graders serial No. 3370 thru No. 5424
 *** Graders serial No. 5425 thru No. 6608

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
1	213675	1	1	1	GAUGE, engine temperature (Standard equipment on graders prior to #5271. Special equipment on later units when equipped with "Allis-Chalmers" TL-D Loader)
2	658369	-	1	1	GAUGE, engine temperature (Includes mounting clamp) (Effective with grader #5271)
3	658348	1	1	1	AMMETER (Includes mounting clamp)
4	206959	1	1	1	GAUGE, oil pressure (30 lb. Includes mounting clamp)(Used prior to grader #5679)
	658293	-	-	1	GAUGE, oil pressure (80 lb. Includes mounting clamp)(effective with grader #5679)
5	056634	1	1	-	TUBE ASSEMBLY, oil pressure gauge (Includes 2 NUTS 913676)
	913676	2	2	-	NUT, flare type, 3/16" tube
	913037	1	1	-	CONNECTOR, 45° flare type, 3/16" tube, 1/8"NPT female
	910905	1	1	-	CONNECTOR, 45° flare type, 3/16" tube, 1/8"NPT male
	095931	-	-	1	TUBE ASSEMBLY oil pressure gauge (Includes nuts)
	919827	-	-	1	CONNECTOR, 37° flare type, 3/16" tube, 1/8"NPT female
6	919244	-	-	1	CONNECTOR, 37° flare type, 3/16" tube, 1/8"NPT male
	238136	2	2	-	CLIP, oil pressure gauge tube (3/16" diam., 9/32" bolt-hole)
	040338	-	-	2	CLIP, wiring harness and instrument tubes (3/8" diam., 9/32" bolt-hole)
	903625	2	2	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	2	2	LOCKWASHER, 1/4"
	911024	2	2	2	NUT, 1/4"NC
7	-----	1	1	-	HARNESS, wiring (See GENERATOR)
	095939	-	-	1	HARNESS, wiring
8	051179	-	-	2	CLIP, wiring harness (3/8" diam., 15/32" bolt-hole)
9	073809	1	1	-	CLIP, temperature gauge tube (3/16" diam., 13/32" bolt-hole)
	223502	-	-	1	CLIP, temperature gauge tube (3/16" diam., 17/32" bolt-hole)
10	225527	-	1	1	WASHER, ignition switch
11	090064	-	1	1	BRACKET, ignition switch mounting
	910160	-	2	2	SCREW, thread-cutting, #10 x 1/2"

(Continued)

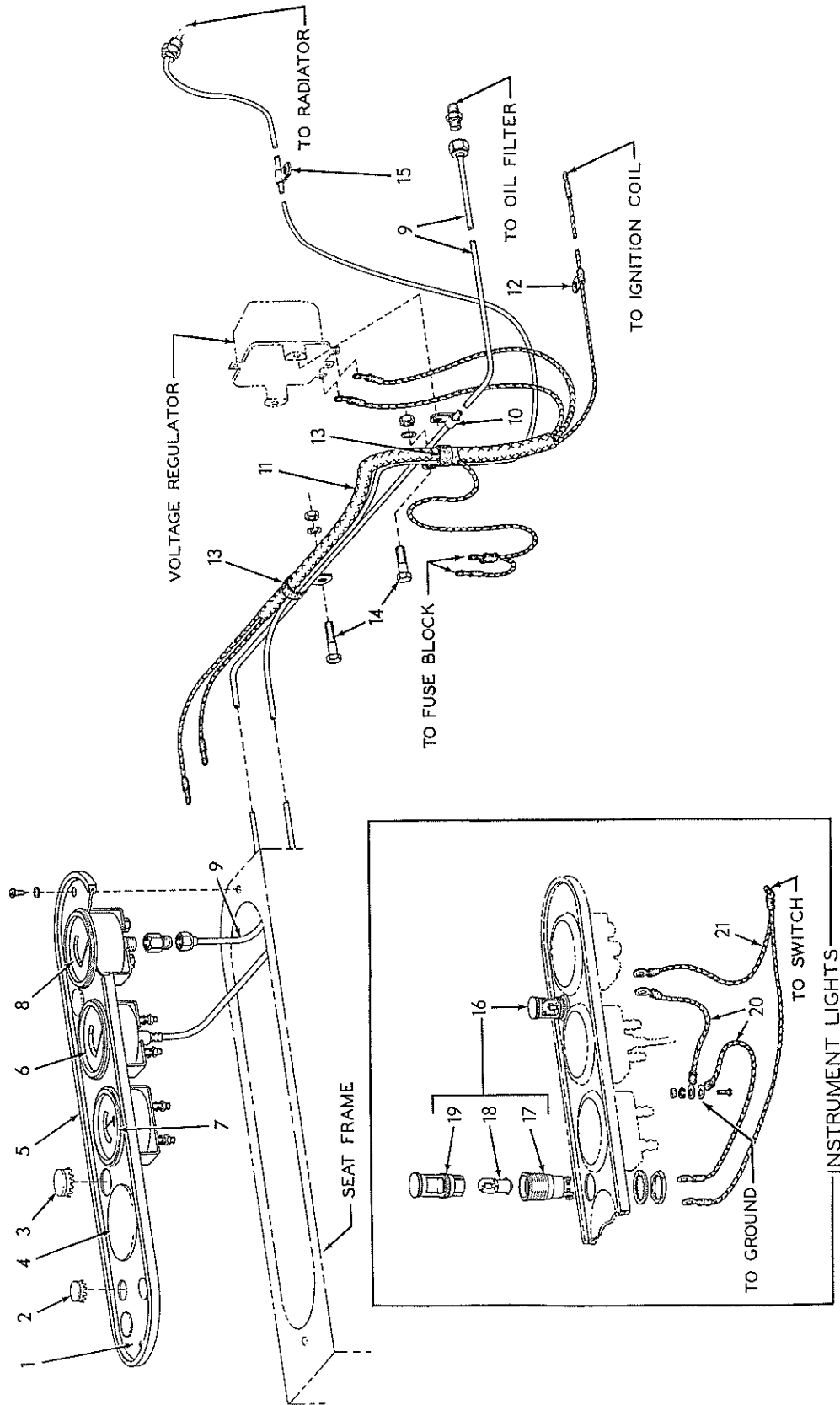


T-19586

INSTRUMENTS (First type)

INSTRUMENTS (Continued)

ITEM	PART NO.	QUANTITY			DESCRIPTION
		*	**	***	
12	225310	-	1	1	SWITCH ignition (Includes item 14)
	900546	-	2	2	SCREW, machine, #6NC x 1/4" (terminal)
	906963	-	2	2	LOCKWASHER #6
	915772	-	1	1	NUT, thin, 13/16" - 20 (mounting)
13	225603	-	2	2	KEY ignition switch
14	078694	-	1	1	CABLE, switch to ammeter (13" long)
15	091046	-	-	2	CLIP, wiring, harness (1/2" diam., 7/16" bolt-hole)
16	238136	-	-	1	CLIP, wiring harness coil cable (3/16" diam., 9/32" bolt-hole)
17	-----	-	-	-	GUIDE, gear shift lever (See SEAT)



T-73599

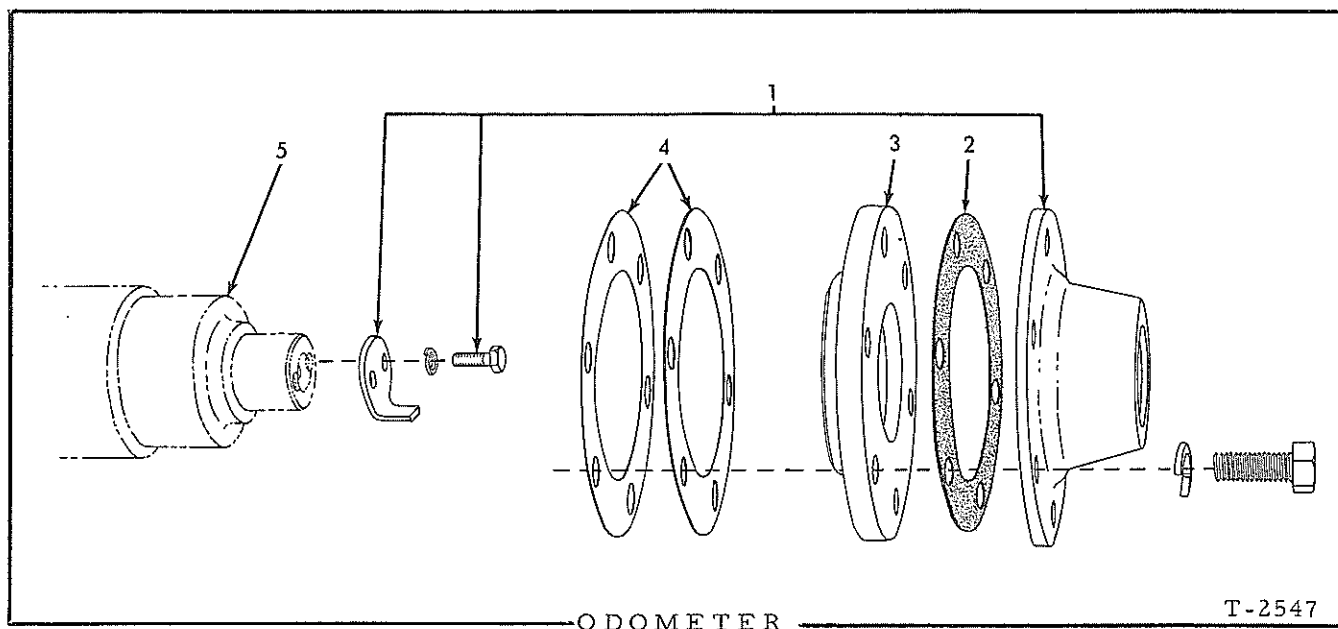
INSTRUMENTS (Second type)

INSTRUMENTS

USAGE: Graders serial No. 6609 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	658736	1	PANEL, instrument
	925085	2	SCREW, thread-cutting, hex-hd., cd-pltd., #10 x 1/2"
	917380	2	WASHER, plain, plated, 7/32"
2	922803	1	PLUG, button, cd.-pltd., 1/2" hole-diam.
3	921191	4	PLUG, button, cd.-pltd., 11/16" hole-diam.
4	921193	1	PLUG, button, cd.-pltd., 2-3/32" hole-diam.
5	658752	1	SEAL, weather, instrument panel
6	658369	1	GAUGE, engine temperature (Includes mounting clamp)
7	658348	1	AMMETER (Includes mounting clamp)
8	658293	1	GAUGE, engine oil pressure (Includes mounting clamp)
9	659109	1	TUBE ASSEMBLY, oil pressure gauge (Includes nuts)
	919827	1	CONNECTOR, flare type, 3/16" tube, 1/8"NPT female
	919244	1	CONNECTOR, flare type, 3/16" tube, 1/8"NPT male
10	644758	1	CLIP, oil pressure gauge tube (3/16" diam., 9/32" bolt-hole)
11	659108	1	HARNESS, wiring
12	238136	1	CLIP, wiring harness (3/16" diam., 9/32" bolt-hole)
13	094527	2	CLIP, wiring harness (1/2" diam., 13/32" bolt-hole)
14	903625	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
15	223502	1	CLIP, temperature gauge
			<u>NOTE:</u> Items listed below are special equipment
16	3023024	2	LIGHT ASSEMBLY, panel (Consists of items 17 thru 19)
17	-----	2	BASE ASSEMBLY (Not serviced separately)
18	3046487	2	BULB, incandescent, 12 volt
19	3037183	2	SHIELD, panel light
20	659154	2	CABLE, panel light to ground (6" long)
	903752	1	SCREW, machine, #6-32 x 1/2"
	906963	1	LOCKWASHER, #6
	901309	1	NUT, #6-32
21	659157	1	CABLE, switch to panel light

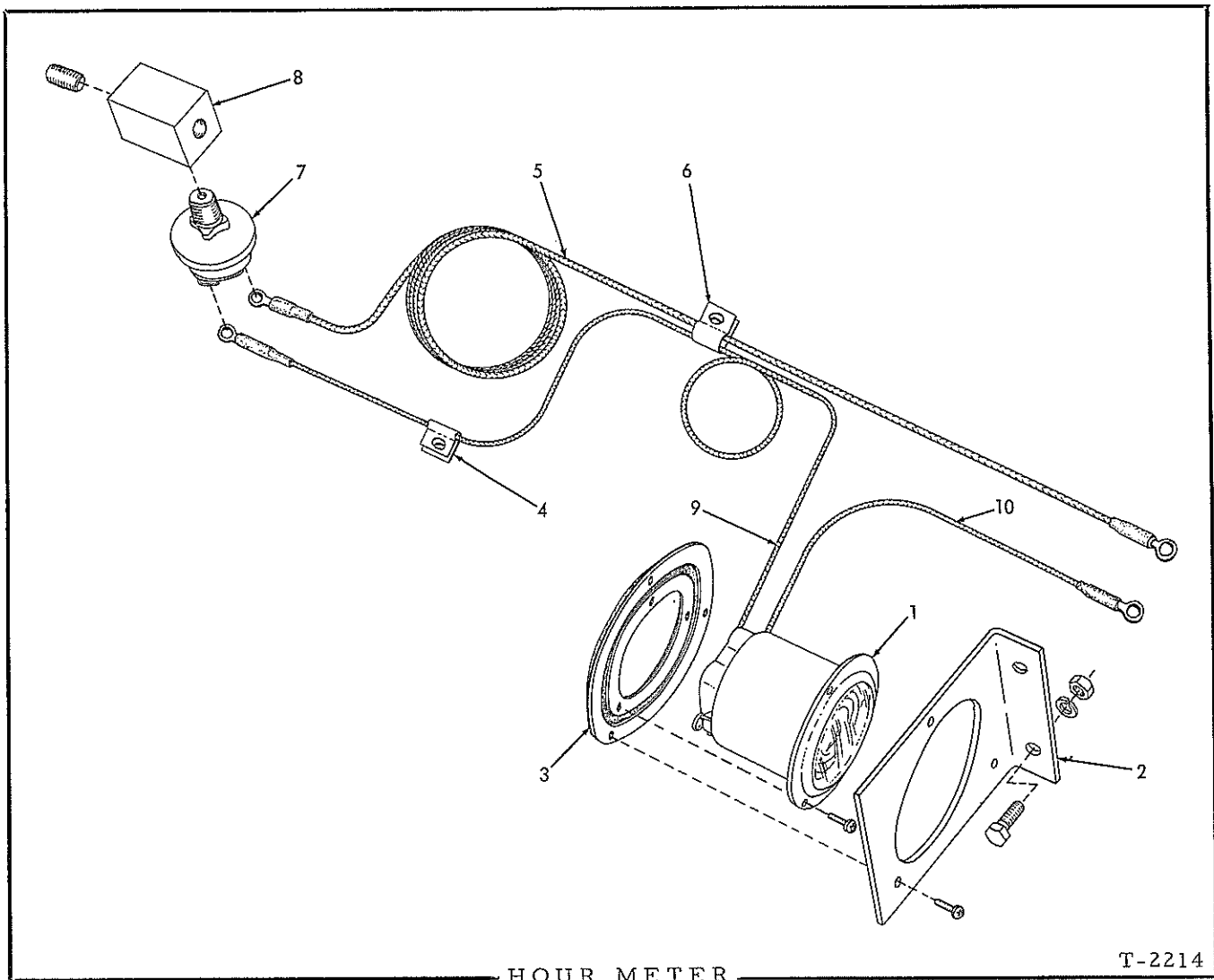
MEMO



USAGE: Special Equipment. Applicable to all graders.

ITEM PART NO. QTY. DESCRIPTION

1	{	068349	1	ODOMETER ASSEMBLY (registers miles)(Includes driving LUGS. Veeder-Root #W-74030-1. Order service parts from Veeder-Root Incorporated, Hartford, Connecticut)
		068954	1	ODOMETER ASSEMBLY (registers kilometers)(Includes driving LUGS. Veeder-Root #W-74030-1. Order service parts from Veeder-Root Incorporated, Hartford, Connecticut)
		903638	6	CAPSCREW, 1/2"NC x 1-1/4"
		904208	6	LOCKWASHER, 1/2"
2		645318	1	GASKET, odometer
3		068352	1	RETAINER, wheel shaft inner bearing
4	{	054752	16	SHIM, wheel shaft bearing adjustment (.010" thick. Use as req'd)
		054753	16	SHIM, wheel shaft bearing adjustment (.005" thick. Use as req'd)
5		-----	1	SPROCKET AND SHAFT, left rear wheel (See TANDEMS)



USAGE: Special equipment. Used on graders prior to serial No. 5425.

* Graders prior to serial No. 4332
 ** Graders serial No. 4332 thru 5424

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	-----	1	1	METER, hour (order METER 650299 and items 9 and 10)
	918210	3	3	SCREW, thread-cutting, #6 x 1/2" (Includes lockwasher)

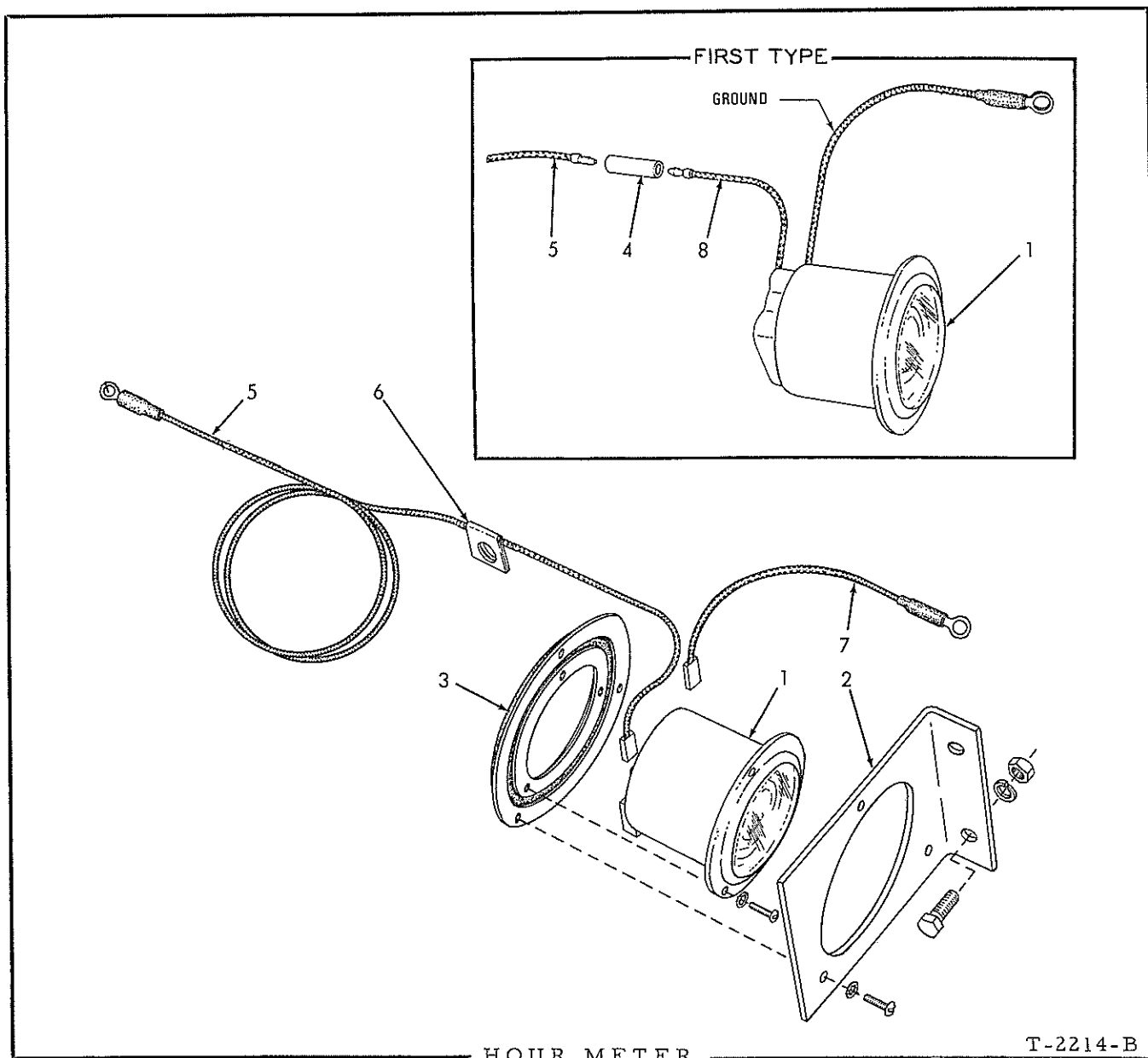
NOTE: Meter carries manufacturer's warranty and in case of failure should not be returned to Allis-Chalmers. Return "Hobbs" meter to nearest "Stewart-Warner" agency. Return "Hamilton" meter to Hamilton Watch Company, Industrial Products Division, Lancaster, Pa.

2	069317	1	1	BRACKET, mounting (If for graders prior to #803 also order 1 DAMPER 066467 and 6 SCREWS 918210)
	905656	1	1	CAPSCREW, 1/4"NC x 5/8"
	904204	1	1	LOCKWASHER, 1/4"
	911024	1	1	NUT, 1/4"NC

(Continued)

HOURL METER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
3	066467	1	1	DAMPER, vibration (Effective with graders #803)
	918210	3	3	SCREW, thread-cutting, #6 x 1/2" (Includes lockwasher)
4	238136	-	1	CLIP, cable supporting (9/32" bolt-hole)
	073809	-	1	CLIP, cable supporting (13/32" bolt-hole)
5	033025	1	-	CABLE, ammeter to pressure switch (52" long)
6	040338	1	-	CLIP, cable supporting (3/8" diam., 9/32" bolt-hole)
7	050288	1	-	SWITCH, pressure
8	068890	1	-	TEE, pressure switch (1/4"NPT female side, 1/8"NPT female ends)
	901467	1	-	NIPPLE, pipe, 1/8"NPT x 3/4"
NOTE: Items listed below are for the late type service replacement meter only, which uses detachable cables				
9	631759	1	1	CABLE, meter to pressure switch (26" long, spade terminal)
10	630738	1	1	CABLE, meter to ground (20" long, spade terminal)



USAGE: Special equipment. Effective with grader serial No. 5425. Used thru Dec. 14, 1966

* Graders prior to serial No. 6025
 ** Graders serial No. 6025 and up

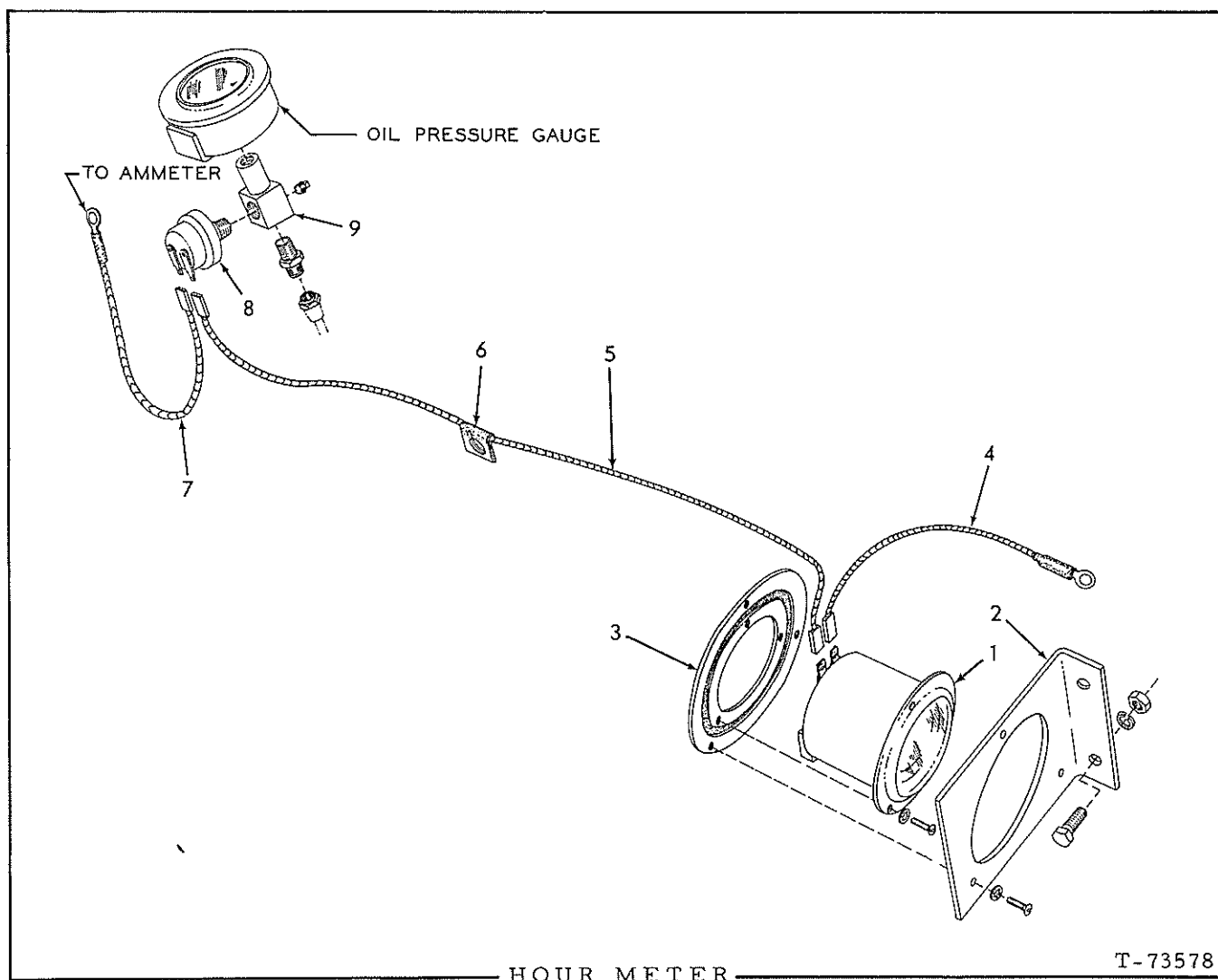
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	-----	1	-	METER, hour (order METER 650299 and items 7 and 8)
	650299	-	1	METER, hour
	918210	3	3	SCREW, thread-cutting, #6 x 1/2" (Includes lockwasher)

NOTE: Meter carries manufacturer's warranty and in case of failure should not be returned to Allis-Chalmers. Return "Hobbs" meter to nearest "Stewart-Warner" agency. Return "Hamilton" meter to Hamilton Watch Company, Industrial Products Division, Lancaster, Pa.

(Continued)

HOUR METER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
2	069317	1	1	BRACKET, mounting
	912327	2	2	CAPSCREW, 1/4"NC x 7/8"
	904204	2	2	LOCKWASHER, 1/4"
	911024	2	2	NUT, 1/4"NC
3	066467	1	1	DAMPER, vibration
	918210	3	3	SCREW, thread-cutting, #6 x 1/2" (Includes lockwasher)
4	048142	1	-	CONNECTOR, cable
5	099219	1	-	CABLE, meter to ignition switch (28" long)
	630626	-	1	CABLE, meter to ignition switch (34" long)
6	238136	2	2	CLIP, cable supporting
7	630917	-	1	CABLE, meter to ground (8" long)
8	631639	1	-	CABLE, meter connecting (7-1/2" long)(Used with item 4 when replacing first type meter with late type)



USAGE: Special equipment. Effective December 15, 1966.

ITEM	PART NO.	QTY.	DESCRIPTION
1	650299	1	METER, hour
	918210	3	SCREW ASSEMBLY, #6 x 1/2" (Includes lockwasher)

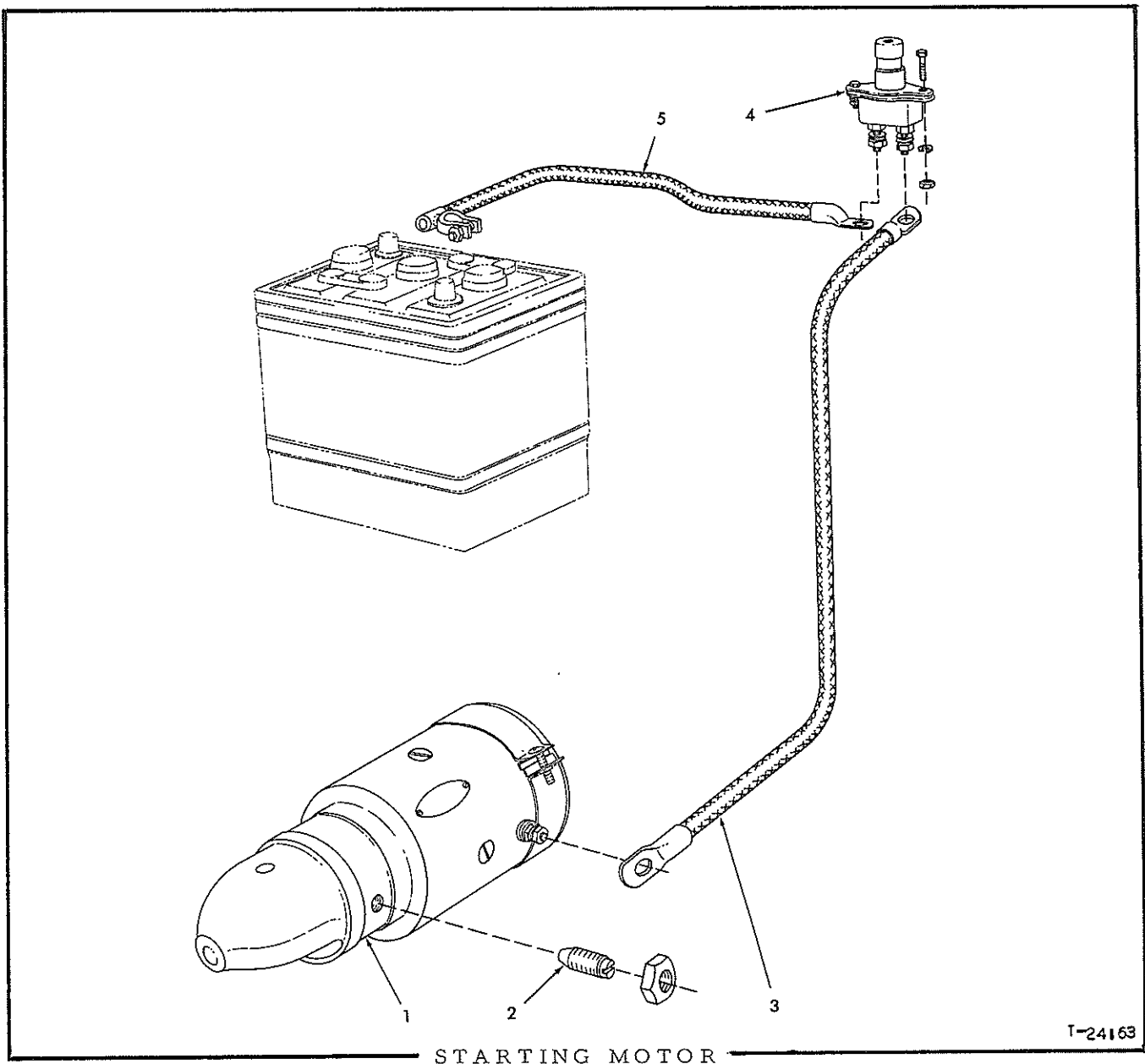
NOTE: Meter carries manufacturer's warranty and in case of failure should not be returned to Allis-Chalmers. Return "Hobbs" meter to nearest "Stewart-Warner" agency. Return "Hamilton" meter to Hamilton Watch Company, Industrial Products Division, Lancaster, Pa.

2	069317	1	BRACKET, mounting
	903625	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
3	066467	1	DAMPER, vibration
	918210	3	SCREW ASSEMBLY, #6 x 1/2" (Includes lockwasher)
4	630917	1	CABLE, meter to ground (8" long)

(Continued)

HOUR METER (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
5	659139	1	CABLE, meter to pressure switch (30" long)
6	073809	1	CLIP, cable supporting
7	641663	1	CABLE, pressure switch to ammeter (13-1/2" long)
8	640727	1	SWITCH, pressure
9	094450	1	TEE, pressure switch connection
	901651	1	PLUG, pipe, 1/8"NPT
	919244	1	CONNECTOR, flare type, 3/16" tube, 1/8"NPT male (Replaces CONNECTOR 919827 for oil pressure gauge line)



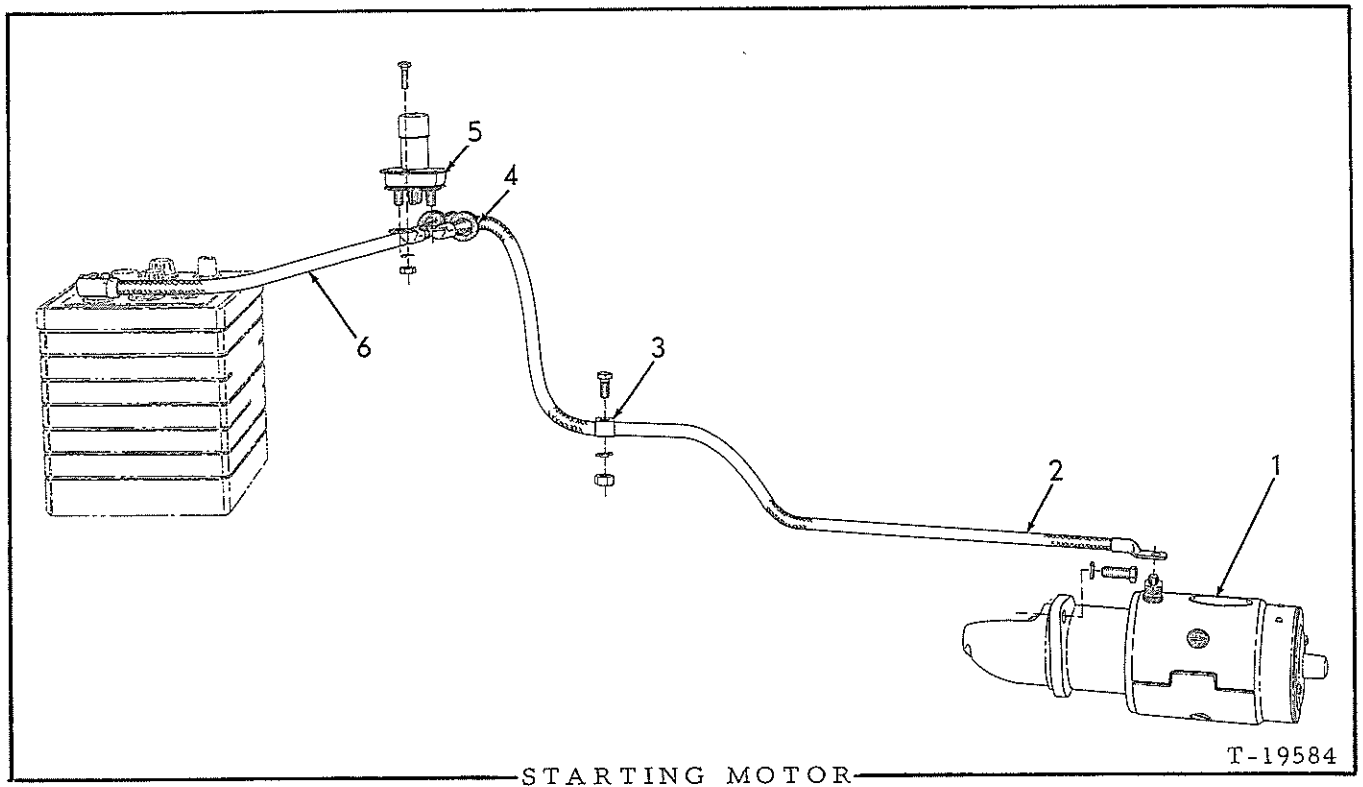
T-24163

STARTING MOTOR

USAGE: Graders prior to serial No. 5425 (Model W and WD-45 engines)

ITEM PART NO. QTY. DESCRIPTION

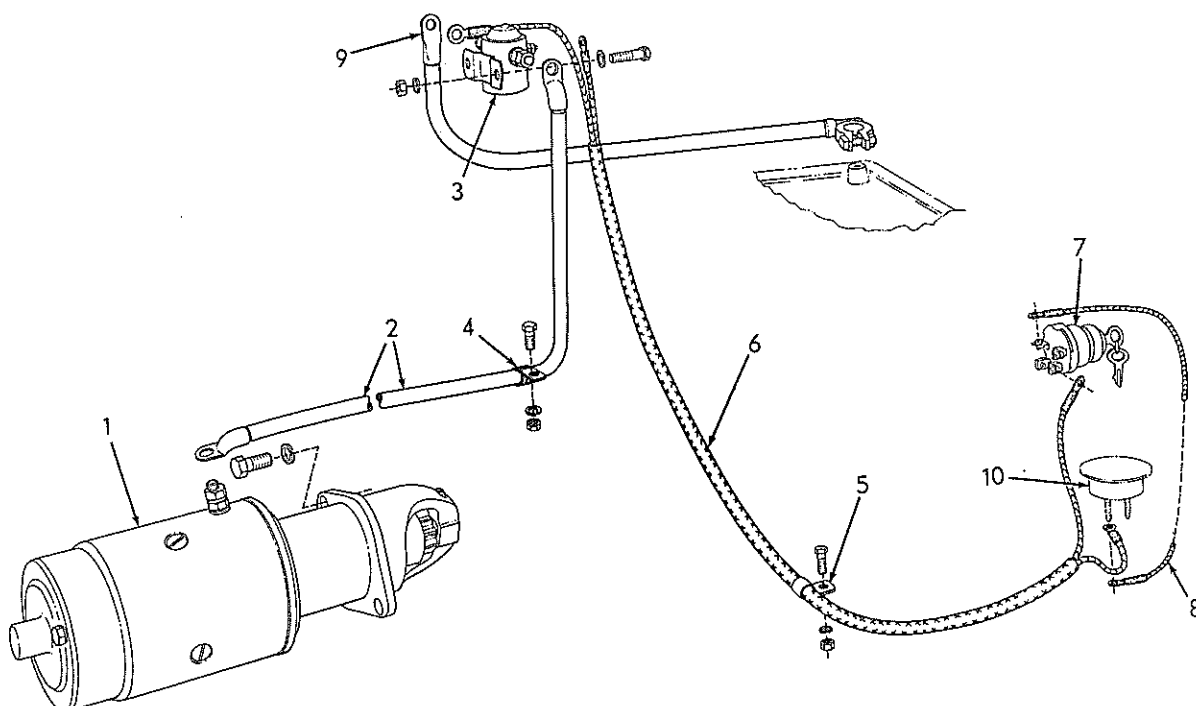
1	066654	1	MOTOR, starting (Delco-Remy #1107962. Order parts from local United Motors Service agency)
2	207872	1	SETSCREW
	911036	1	NUT, jam, 5/8"NC
3	066604	1	CABLE, starting motor to starter switch (22" long)
4	066835	1	SWITCH, starting motor
	903625	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
5	066653	1	CABLE, starter switch to battery (13" long)



USAGE: Graders serial No. 5425 thru No. 6608 (Model 17 engine)

ITEM PART NO. QTY. DESCRIPTION

1	229492	1	MOTOR ASSEMBLY, starting (See page 272 for parts)
	912187	2	CAPSCREW, 7/16"NC x 1"
	904207	2	LOCKWASHER, 7/16"
2	095993	1	CABLE, starter to switch
3	091046	1	CLIP, starter cable (1/2" diam., 7/16" bolt-hole)
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
4	040842	2	GROMMET, cable protecting (rubber)
5	066835	1	SWITCH, starter
	903625	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
6	087154	1	CABLE, starting switch to battery



T-73575

STARTING MOTOR

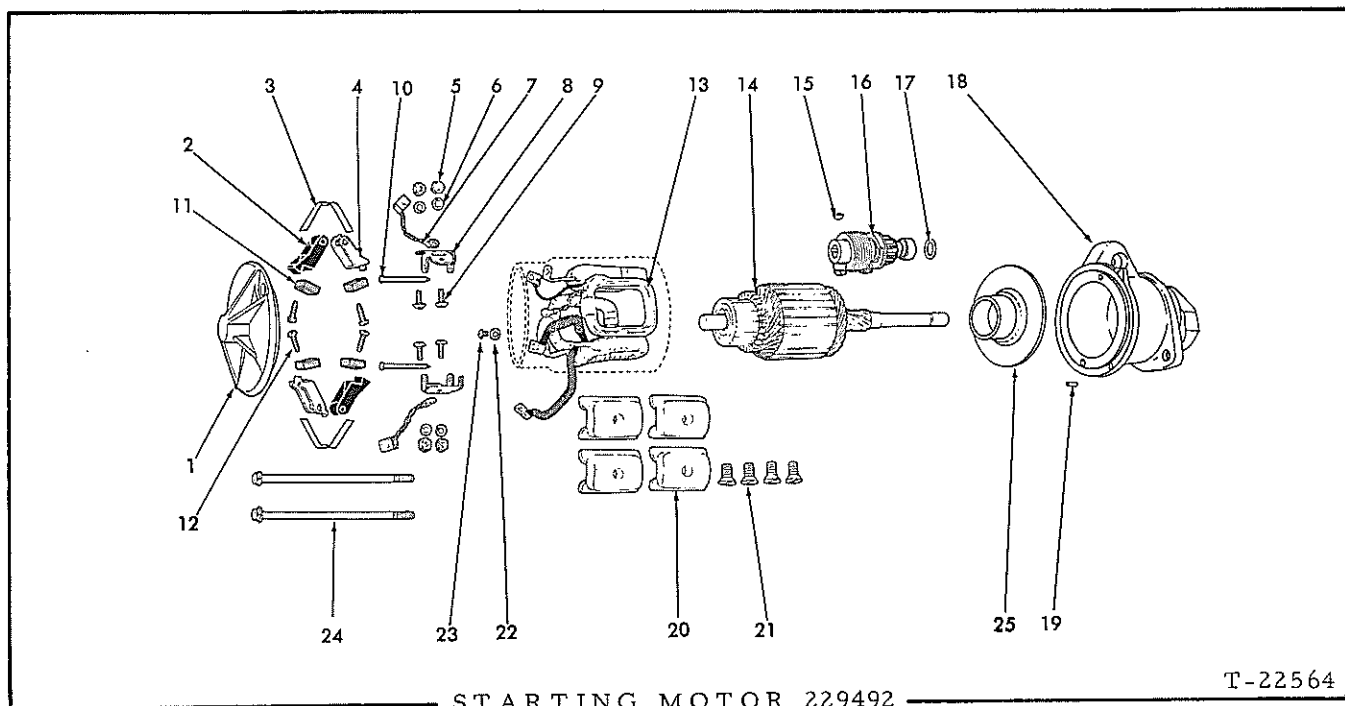
USAGE: Graders serial No. 6609 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	229492	1	MOTOR, starting (See page 272 for parts)
	912187	2	CAPSCREW, 7/16"NC x 1"
	904207	2	LOCKWASHER, 7/16"
2	639181	1	CABLE, magnetic switch to starter
3	237134	1	SWITCH ASSEMBLY, magnetic (Serviced only as a unit)
	912327	2	CAPSCREW, 1/4"NC x 7/8"
	911114	2	WASHER, plain, SAE std., 1/4"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC
4	094527	1	CLIP, cable (1/2" diam., 13/32" bolt-hole)
	903629	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
5	094527	2	CLIP, wiring harness
	903625	1	CAPSCREW, 1/4"NC x 3/4"
	904204	1	LOCKWASHER, 1/4"
	911024	1	NUT, 1/4"NC
6	658854	1	HARNESS, wiring, starting switch
7	649031	1	SWITCH, starting (Includes keys)

(Continued)

STARTING MOTOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
8	074887	1	CABLE, starting switch to ammeter (14" long)
9	639180	1	CABLE, battery to magnetic switch
10	-----	1	AMMETER (See INSTRUMENTS)



STARTING MOTOR 229492

T-22564

USAGE: See pages 269 and 270

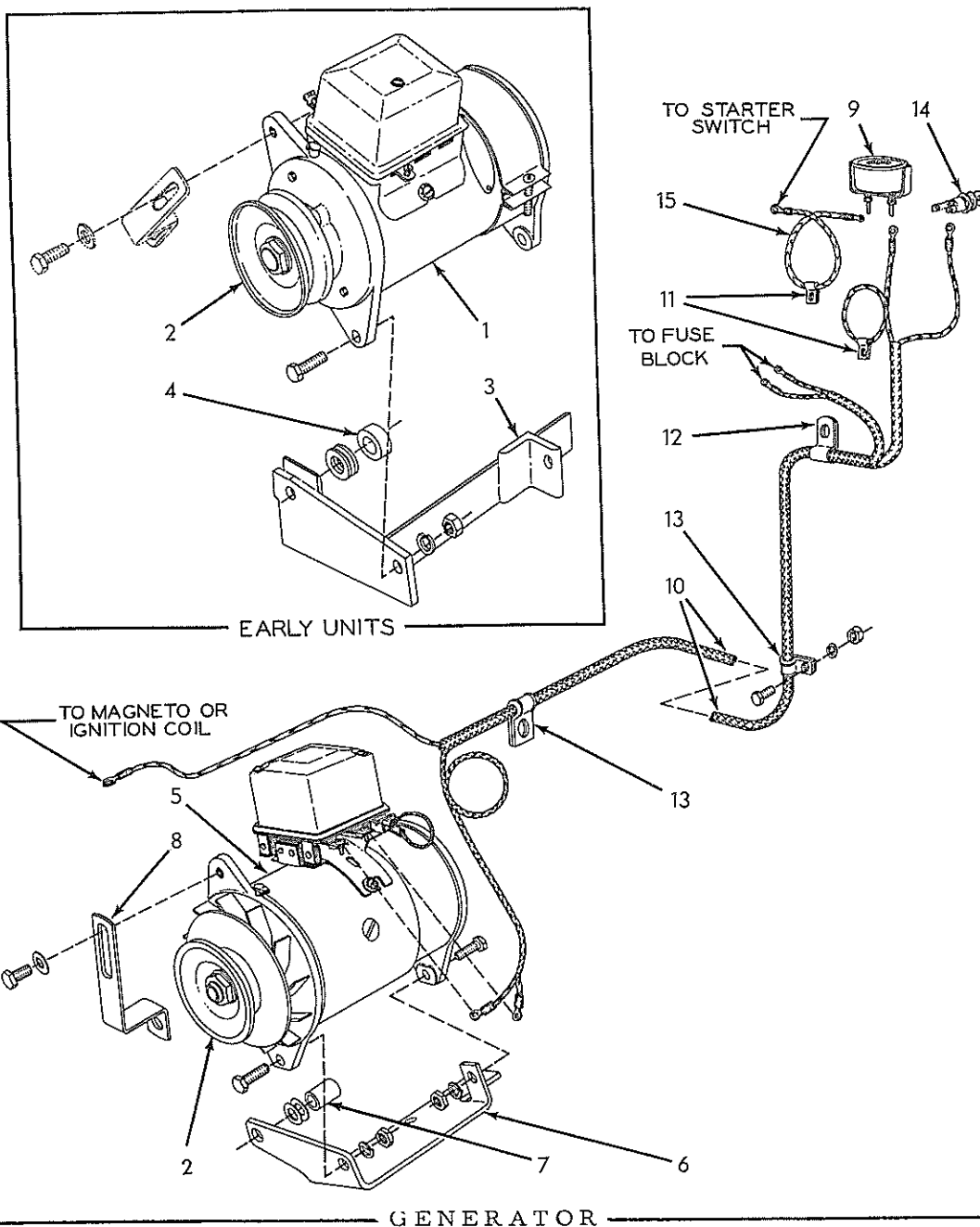
ITEM PART NO. QTY. DESCRIPTION

1	231330	1	FRAME ASSEMBLY, commutator (includes BUSHING)
	4044355	1	BUSHING, commutator frame
	4055869	1	WASHER, spacing
2	231319	2	HOLDER, insulated brush
3	231320	2	SPRING, brush
4	4055871	2	HOLDER, ground brush
5	916621	4	NUT, support screw (#10-24NC)
6	917365	4	LOCKWASHER, support screw (#10)
7	231316	2	WIRE, brush ground
8	231327	2	SUPPORT ASSEMBLY, brush holder (Includes items 5, 6, 7, 9 and 10)
9	916080	4	SCREW, brush holder support (#10-24NC x 1/2")
10	231315	2	PIN, support, brush holder
11	231291	4	BRUSH, starting motor
12	231322	4	SCREW, brush attaching
13	231354	1	COIL ASSEMBLY, field (Serviced only as a unit)
14	231332	1	ARMATURE, starting motor
15	917408	1	KEY, drive (#6 woodruff, 5/32" x 5/8")

(Continued)

STARTING MOTOR 229492 (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
16	231310	1	DRIVE ASSEMBLY (Serviced only as a unit)
17	231268	1	WASHER, thrust
18	{ 231356	1	HOUSING ASSEMBLY, drive (Includes BUSHING)
	{ 4042664	1	BUSHING, drive housing
19	231240	1	PIN, dowel (Drive End)
20	{ 231334	1	SHOE, pole
	{ 231317	3	SHOE, pole (One open end)
21	231265	4	SCREW, pole shoe
22	917365	1	LOCKWASHER, field wire screw (#10)
23	906820	1	SCREW, field wire attaching (#10-32NF x 5/16")
24	231321	2	BOLT, thru
25	{ 231258	1	PLATE ASSEMBLY, center bearing (Includes BUSHING)
	{ 900556	2	SCREW, machine, #10-32NF x 3/8"
	{ 231282	2	LOCKWASHER, #10
	{ 4044355	1	BUSHING, center bearing plate
-	231999	1	STUD, terminal (Not Illustrated)
	231272	2	WASHER, insulation
	231290	2	WASHER, insulation, 9/16" O.D.
	231355	1	WASHER, insulation
	900817	2	WASHER, plain, 3/8"
	916950	2	NUT, 3/8"
	916965	2	LOCKWASHER, 3/8"



T-24154

USAGE: Graders prior to serial No. 5425 (Model W and WD-45 engines)

* Graders prior to serial No. 4988

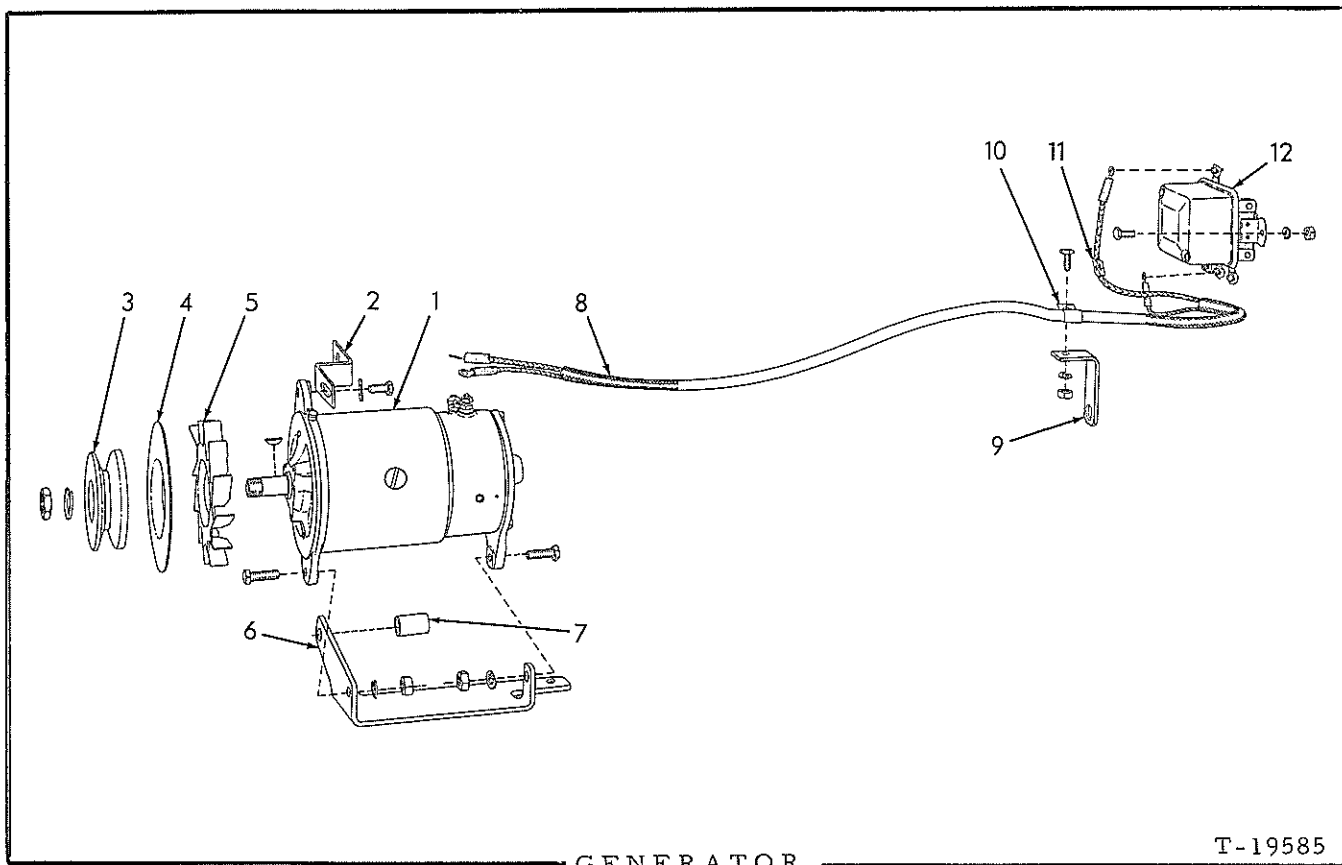
** Graders serial No. 4988 thru 5424

ITEM	PART NO.	QTY. * **	DESCRIPTION
1	211492	1 -	GENERATOR ASSEMBLY (Includes item 2. Delco-Remy #1101414. Was formerly Delco-Remy #1101373. Auto-Lite Model GGR-4802A was furnished as an alternate at factory's option on new graders only. Order parts from local authorized dealer)
	905662	2 -	CAPSCREW, 5/16"NC x 1-1/8"
	904205	2 -	LOCKWASHER, 5/16"
	911025	2 -	NUT, 5/16"NC

(Continued)

GENERATOR (Continued)

ITEM	PART NO.	QTY. * **		DESCRIPTION
2	208261	1	-	PULLEY, generator (For Delco-Remy unit only)
	213661	1	-	PULLEY, generator (For Auto-Lite unit only)
	-----	-	1	PULLEY, generator (Order from local United Motors Service agency) (See item 5)
3	-----	1	-	BRACKET, generator mounting (Used prior to grader #4967. Order items 6 and 7)
	900817	2	-	WASHER, plain, U.S. std., 3/8"
4	073884	1	-	BLOCK, spacing, generator bracket (9/16" thick) (Used prior to grader #4967)
5	-----	-	1	GENERATOR ASSEMBLY (Delco-Remy #1100032. Includes item 2. Order parts from local United Motors Service agency) (If complete unit requires replacement order GENERATOR SERVICE PACKAGE 4997615, REGULATOR 4044129 and PULLEY 4044617)
	903772	-	2	CAPSCREW, 5/16"NC x 1"
	904205	-	2	LOCKWASHER, 5/16"
	911025	-	2	NUT, 5/16"NC
6	227238	1	1	BRACKET, generator mounting (Effective with grader #4967)
	900817	2	2	WASHER, plain, U.S. std., 3/8"
7	043024	1	1	BLOCK, spacing, generator bracket (1" thick) (Effective with grader #4967)
8	209213	1	1	BRACE, generator
	903626	1	1	CAPSCREW, 5/16"NC x 3/4"
	901165	1	1	WASHER, plain, U.S. std., 5/16"
9	-----	1	1	AMMETER (See INSTRUMENTS)
10	056635	1	-	HARNESS, wiring (Used prior to grader #3370)
	078693	1	-	HARNESS, wiring (Effective with grader #3370)
	091190	-	1	HARNESS, wiring
11	200479	2	2	CLIP, cable (3/16" diam., 13/32" bolt-hole) (1 less used on graders prior to #3370)
12	051179	2	1	CLIP, wiring harness (3/8" diam., 15/32" bolt-hole) (1 less used on graders #3370 thru #4987)
13	040338	3	3	CLIP, wiring harness (3/8" diam., 9/32" bolt-hole)
	903625	2	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	2	LOCKWASHER, 1/4"
	911024	2	2	NUT, 1/4"NC
14	-----	1	1	SWITCH (See INSTRUMENTS)
15	068235	1	1	CABLE, starter switch to ammeter



GENERATOR

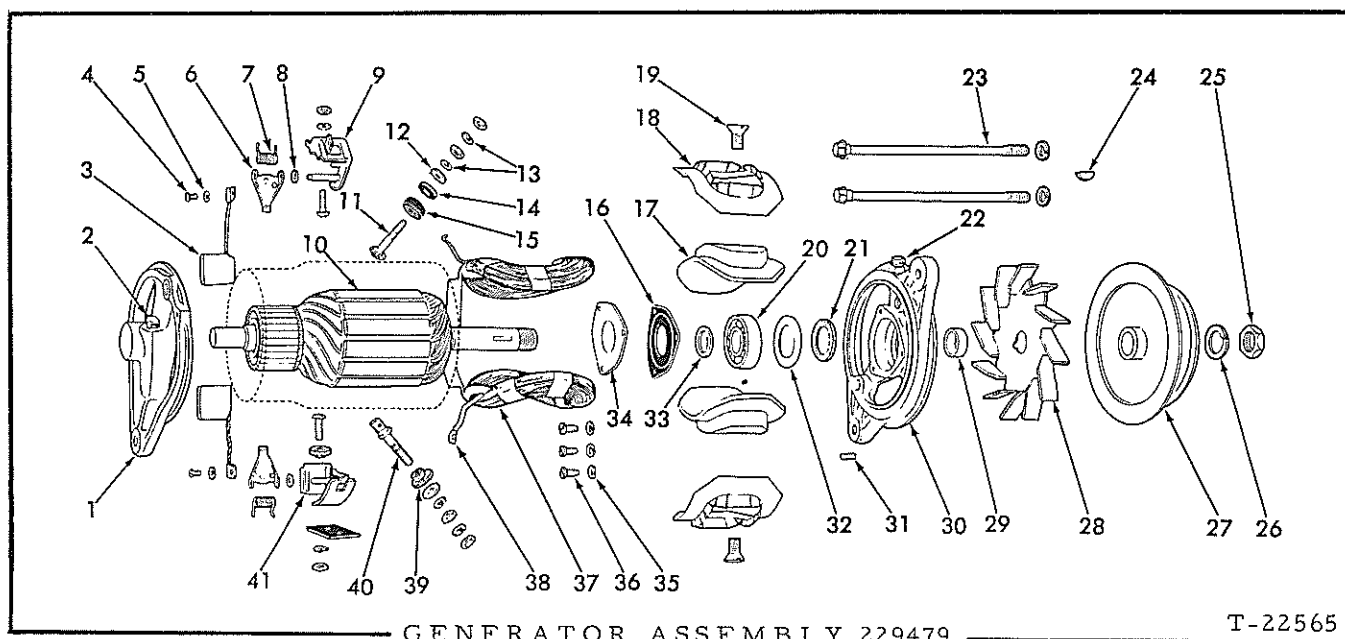
USAGE: Graders serial No. 5425 and up (Model 17 engine)

ITEM	PART NO.	QTY.	DESCRIPTION
1	229479	1	GENERATOR ASSEMBLY (Delco-Remy #1100305. See page 278 for parts)(If complete unit requires replacement order GENERATOR SERVICE PACKAGE 246428. See PACKAGED PARTS section for list of components furnished)
	905662	2	CAPSCREW, 5/16"NC x 1-1/8"
	904205	2	LOCKWASHER, 5/16"
	911025	2	NUT, 5/16"NC
2	098063	1	BRACE, generator
	903626	1	CAPSCREW, 5/16"NC x 3/4"
	901165	1	WASHER, plain, U.S. std., 5/16"
3	228599	1	PULLEY, generator
	905121	1	KEY, #5 woodruff, 1/8" x 5/8"
4	227468	1	BAFFLE, generator fan
5	227467	1	FAN, generator cooling
6	227238	1	BRACKET, generator mounting
7	227309	1	SPACER, generator bracket
8	095989	1	HARNESS, wiring, generator to regulator
9	060982	1	ANGLE, clip supporting

(Continued)

GENERATOR (Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
10	040338	1	CLIP, wiring harness (3/8" diam., 9/32" bolt-hole)
	903625	1	CAPSCREW, 1/4"NC x 3/4"
	904204	1	LOCKWASHER, 1/4"
	911024	1	NUT, 1/4"NC
11	238136	1	CLIP, wiring harness (3/16" diam., 9/32" bolt-hole)
12	229484	1	REGULATOR, voltage and current (Delco-Remy #1118993. Was formerly #1118779. Order parts from local United Motors Service agency)
	903625	2	CAPSCREW, 1/4"NC x 3/4"
	904204	2	LOCKWASHER, 1/4"
	911024	2	NUT, 1/4"NC



GENERATOR ASSEMBLY 229479

T-22565

USAGE: See page 276

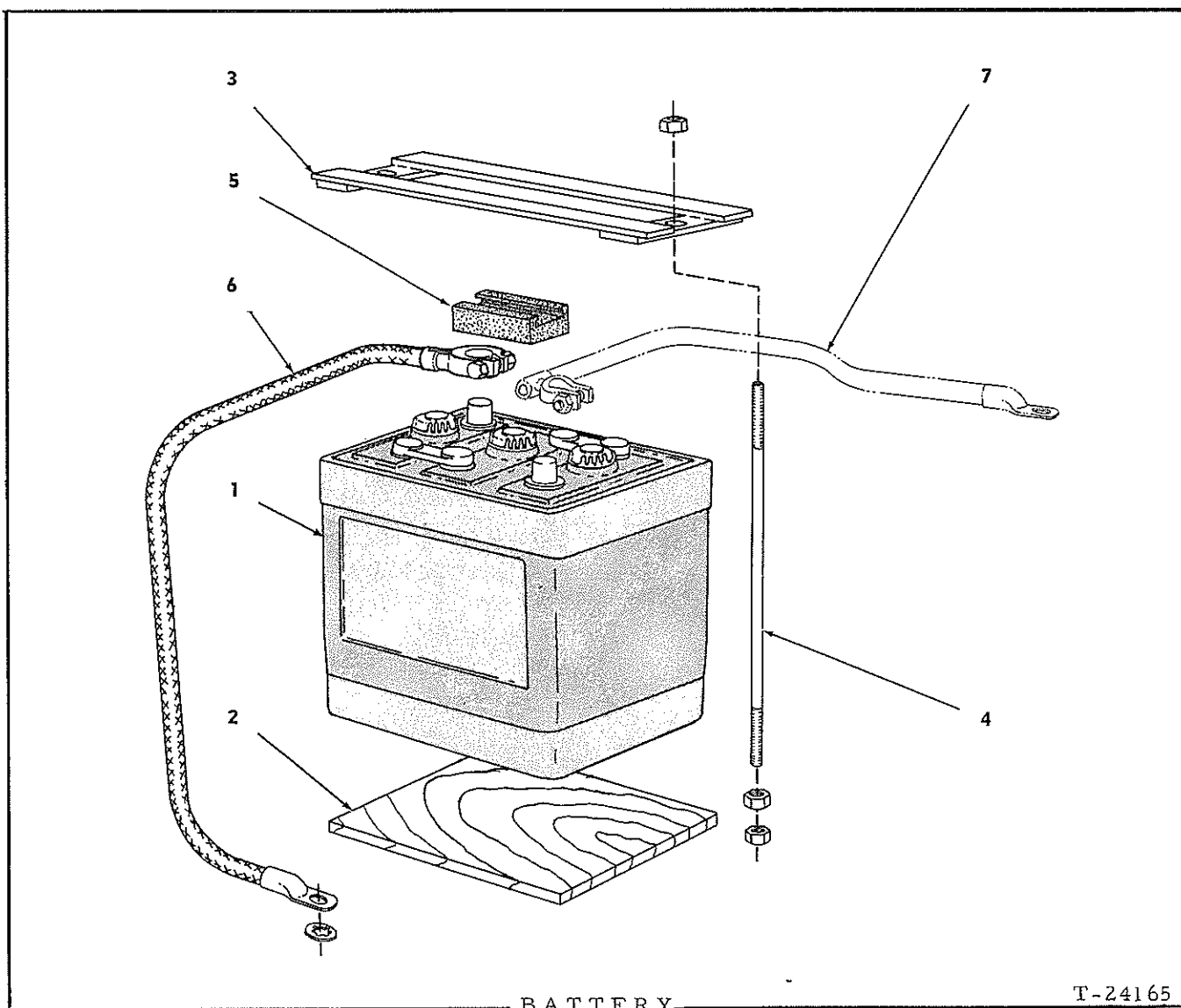
ITEM PART NO. QTY. DESCRIPTION

1	213326	1	FRAME ASSEMBLY, commutator end (Includes WICK, PIN, WASHER, CUP and item 2)
	231236	1	WICK, oil
	231239	1	PIN, dowel
	231324	1	WASHER, felt
	231325	1	CUP, felt washer
2	231280	1	OILER (Commutator end)
3	231998	2	BRUSH, generator
4	4132688	2	SCREW, brush wire
5	4042816	2	LOCKWASHER, brush wire screw
6	231276	2	ARM, brush
7	231303	2	SPRING, brush
8	231287	2	WASHER, spacing, brush arm
9	4055854	1	HOLDER ASSEMBLY, ground brush (Includes LOCKWASHER, NUT and SCREW)
	917450	1	SCREW, machine #12-24NC x 5/8"
	917389	1	LOCKWASHER, #12
	917376	1	NUT, #12-24NC
10	4044350	1	ARMATURE, generator
11	231309	1	STUD (Terminal "F")
	917376	2	NUT, #12-24NC
12	231283	2	WASHER, plain, terminal stud

(Continued)

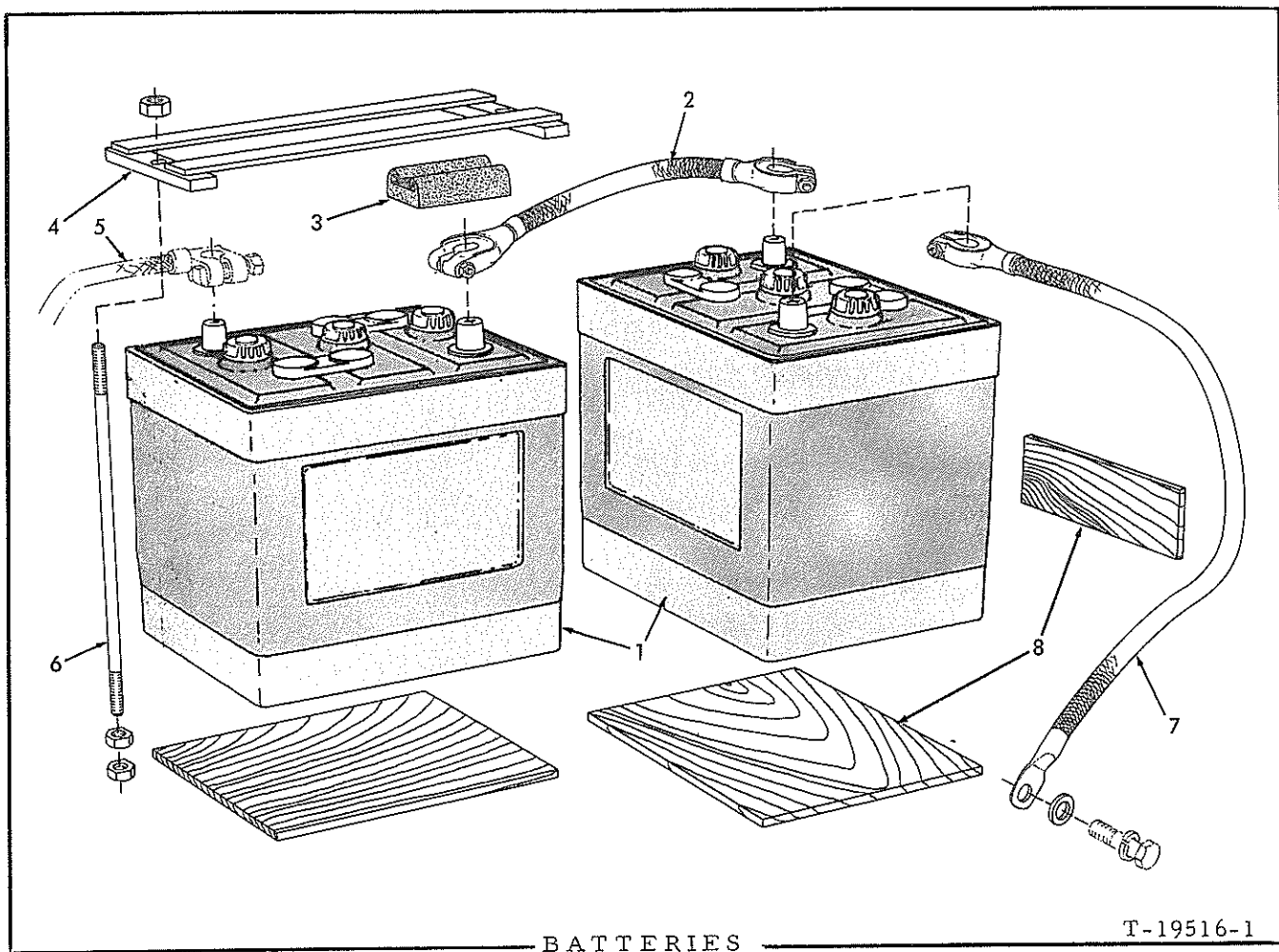
GENERATOR ASSEMBLY 229479(Continued)

ITEM	PART NO.	QTY.	DESCRIPTION
13	231289	2	LOCKWASHER, terminal stud
14	231271	1	WASHER, insulation (Terminal "F")
15	231285	1	BUSHING, insulation (Terminal "F")
16	4042832	1	GASKET, bearing retainer
17	231301	2	SHOE, pole
18	231300	2	INSULATOR, field coil
19	231265	2	SCREW, pole shoe
20	229508	1	BEARING, ball (Drive end)
21	231242	1	WASHER, felt
22	231281	1	OILER (Drive end)
23	231252	2	BOLT, thru
	910286	2	LOCKWASHER, heavy, 5/16"
24	905121	1	KEY, pulley and fan (#5 woodruff, 1/8" x 5/8")
25	4054799	1	NUT, shaft
26	917373	1	LOCKWASHER, shaft nut
27	-----	1	PULLEY, generator (See GENERATOR)
28	-----	1	FAN, generator (See GENERATOR)
29	231270	1	COLLAR, spacing (Drive end)
30	231295	1	FRAME KIT, drive end (Includes WICK 231261 and items 16, 22 and 34)
	231261	1	WICK, oil
31	231240	1	PIN, dowel (Drive end)
32	231256	1	PLATE, felt washer
33	231241	1	WASHER, spacing, inside (Drive end)
34	231296	1	PLATE, bearing retainer
35	231282	3	LOCKWASHER, bearing plate screw
36	231288	3	SCREW, bearing, retainer plate
37	231314	1	COIL ASSEMBLY, field
38	231234	1	CLIP, terminal to brush
39	231307	1	BUSHING, insulation (Terminal "A")
40	231308	1	STUD (Terminal "A")
	917376	2	NUT, #12-24NC
41	231312	1	HOLDER ASSEMBLY, insulated brush (Includes NUT, LOCKWASHER and SCREW)
	917450	1	SCREW, machine, #12-24NC x 5/8"
	917389	1	LOCKWASHER, #12
	917376	1	NUT, #12-24NC



USAGE: Graders prior to serial No. 5425

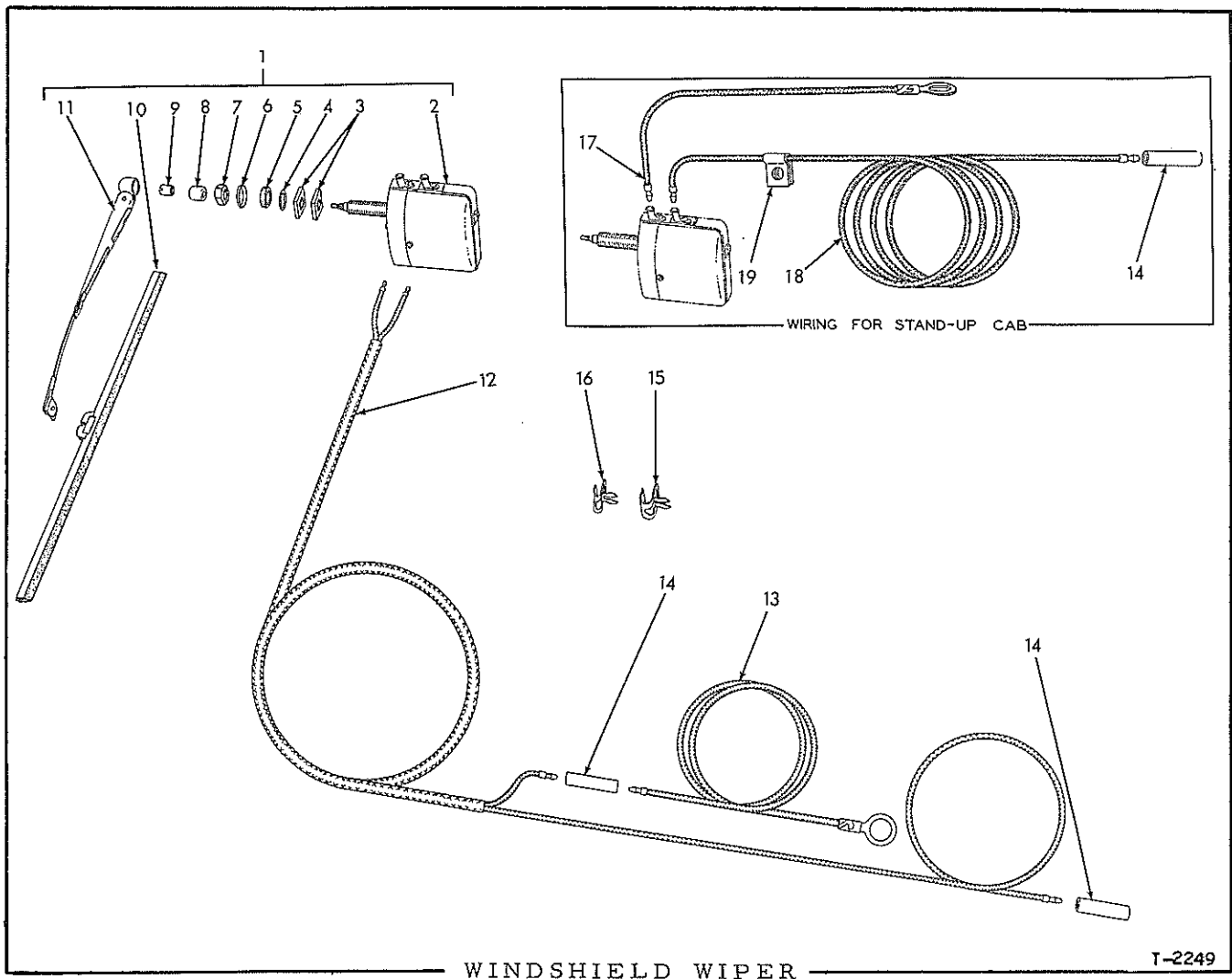
ITEM	PART NO.	QTY.	DESCRIPTION	
1	243476	1	BATTERY, storage, 6-volt, dry-charged (Requires 4.2 quarts electrolyte)	
1A	{ 243526	1	ELECTROLYTE ("Z" pack - 6.1 quarts)	} Not illustrated
	{ 243527	1	ELECTROLYTE ("F" pack - 5 gallons)	
1B	243528	1	HOSE, electrolyte dispensing (For use with 5-gal. pack)	
2	-----	1	BOARD (Procure locally)	
3	056183	1	HOLD-DOWN	
4	056641	2	STUD (3/8"NC x 11")	
	911026	6	NUT, 3/8"NC	
5	042534	2	BLOCK battery hold-down (rubber)	
6	086562	1	CABLE, battery to ground	
	906961	1	LOCKWASHER, internal teeth, 1/2"	
7	-----	1	CABLE, battery to switch (See STARTING MOTOR)	



USAGE: Graders serial No. 5426 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	243476	2	BATTERY, storage, 6-volt, dry-charged (Each requires 4.2 quarts electrolyte)
1A	243526	1	ELECTROLYTE ("Z" pack - 6.1 quarts)
	243527	1	ELECTROLYTE ("F" pack - 5 gallons)
1B	243528	1	HOSE, electrolyte dispensing (For use with 5 - gallon pack)
2	086565	1	CABLE, battery connecting
3	042534	4	BLOCK battery hold-down (rubber)
4	082168	2	HOLD-DOWN, battery
5	-----	-	CABLE, battery to switch (See STARTING MOTOR)
6	056641	4	STUD, battery hold-down (3/8"NC x 11")
	911026	12	NUT, 3/8"NC
7	050691	1	CABLE, battery to ground
	911115	1	WASHER, plain, SAE std., 3/8"
8	-----	-	BOARDS, battery spacing (Procure locally)

Not illustrated



USAGE: Special equipment. Used prior to September 1961.

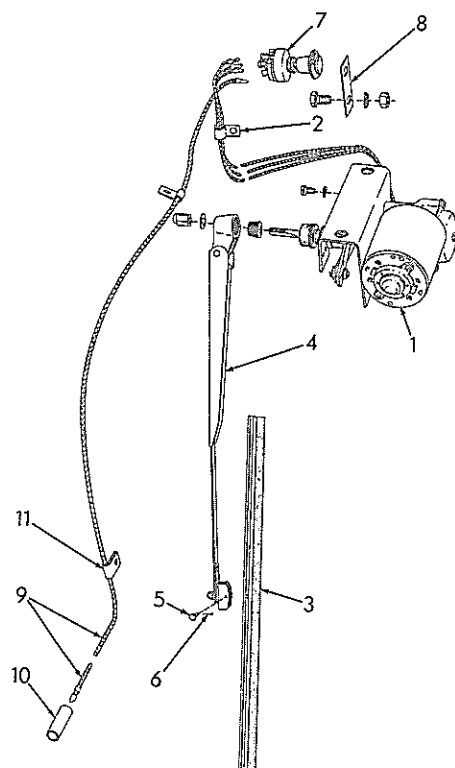
* For Vinylite Cab
 ** For Stand-up type Winter Cab

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	068356	1	1	WIPER ASSEMBLY, 6-volt (Consists of items 2 thru 11)(Used prior to grader #5425)
	-----	1	1	WIPER ASSEMBLY, 12-volt (Consists of items 2 thru 11) (Effective with grader #5425. Not available)
NOTE: Service replacements of items 2 thru 11 must be procured thru local American Bosch Service Stations. Vendor's part numbers are indicated.				
2	WWA-6C-300	1	1	MOTOR ASSEMBLY, 6-volt (Includes items 3 thru 7)(Used prior to grader #5425)
	IS-10-3M	1	1	MOTOR ASSEMBLY, 12-volt (Includes items 3 thru 7)(Effective with grader #5425)
3	NT 707	1	2	NUT, mounting (square)

(Continued)

WINDSHIELD WIPER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
4	WA 1177	1	1	LOCKWASHER, mounting nut
5	WA 7025	1	1	WASHER, mounting (rubber)
6	WA 7024	1	1	WASHER, cup
7	NT 1066	1	1	NUT, cup washer retaining (hex)
8	HP 723	1	1	ADAPTER, wiping arm
9	NT 1072	1	1	NUT, adapter retaining
10	BD 726	1	1	BLADE, wiping
11	LE 726	1	1	ARM, adjustable, wiping blade
12	068412	1	-	HARNESS, wiring (2 cables)
13	068441	1	-	CABLE, harness to ground (28" long)
14	048142	2	1	CONNECTOR, wiring harness
15	068449	4	-	CLIP, spring, wiring harness
16	068411	2	-	CLIP, spring, ground cable
17	068367	-	1	CABLE, motor to ground (9" long)
18	079354	-	1	CABLE, motor connecting (110" long)
19	238136	-	5	CLIP, cable supporting
	905665	-	3	CAPSCREW, 1/4"NC x 1/2"
	904204	-	3	LOCKWASHER, 1/4"
	911024	-	3	NUT, 1/4"NC



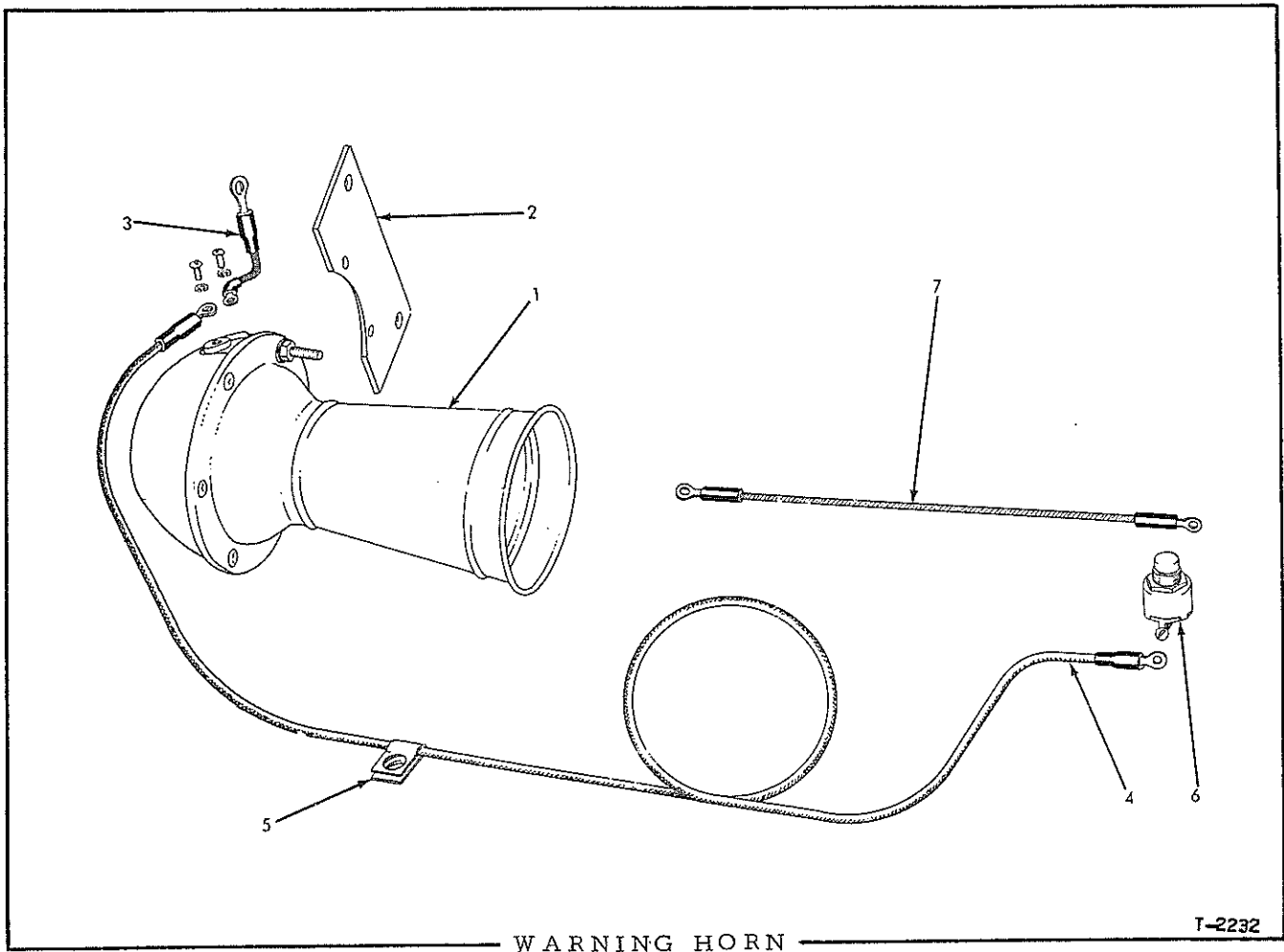
WINDSHIELD WIPER

T-33482

USAGE: Effective September 1961. Special equipment on graders equipped with stand-up type cab

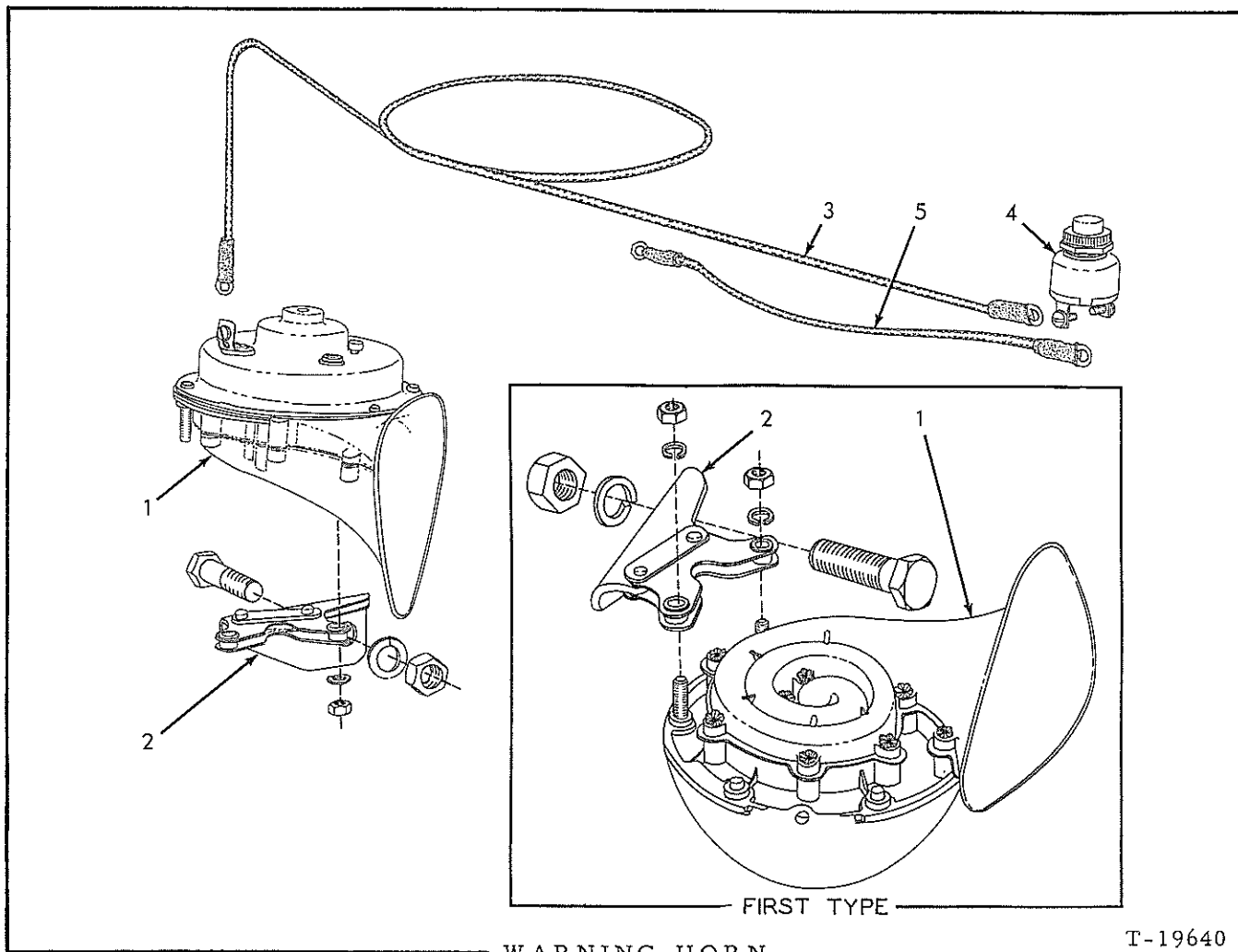
ITEM	PART NO.	QTY.	DESCRIPTION
1	659545	1	MOTOR, windshield wiper (American Bosch Model WWC-12K-2612-118. Includes Adapter, Washer and Nut. Order service parts from nearest authorized service agency)
	911101	2	CAPSCREW, 1/4"NF x 1/2"
	904204	2	LOCKWASHER, 1/4"
2	040338	1	CLIP, cable supporting
3	628866	1	BLADE, wiping
4	628867	1	ARM ASSEMBLY, wiping blade (Includes items 5 and 6)
5	62582	1	PIN, clevis, blade attaching
6	61910	1	PIN, cotter, clevis pin
7	628508	1	SWITCH ASSEMBLY, motor (Includes mounting nuts)
8	629070	1	BRACKET, switch mounting
	903628	1	CAPSCREW, 3/8"NC x 5/8"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
9	079354	1	CABLE, switch to connector (110" long)
10	048142	1	CONNECTOR (two-way)
11	238136	5	CLIP, cable supporting
	911101	3	CAPSCREW, 1/4"NF x 1/2"
	904204	3	LOCKWASHER, 1/4"
	911040	3	NUT, 1/4"NF

Order service parts
from local ANCO dealer



USAGE: Special equipment. Used on graders prior to serial No. 4025

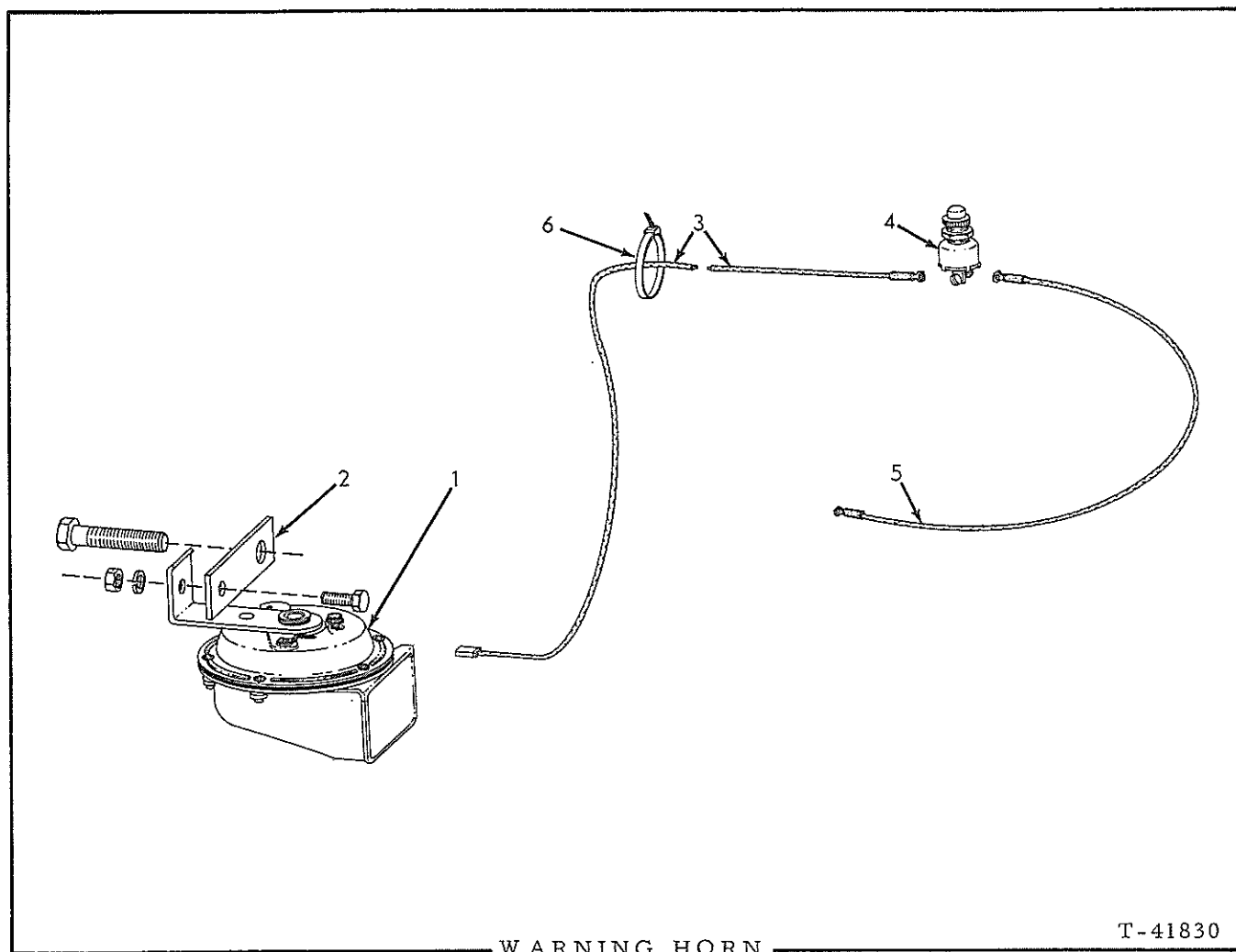
ITEM	PART NO.	QTY.	DESCRIPTION
1	-----	1	HORN ASSEMBLY, warning (Order HORN 4721568, BRACKET 081173 and attaching hardware)
2	-----	1	BRACKET, mounting (Not available)
3	068335	1	CABLE, horn to ground (4" long)
	900914	1	SCREW, machine, brass, #8-32NC x 1/4"
	906964	1	LOCKWASHER, #8
4	091181	1	CABLE, horn to switch (44" long)
	900914	1	SCREW, machine, brass, #8-32NC x 1/4"
	906964	1	LOCKWASHER, #8
5	044044	1	CLIP, cable supporting
6	031337	1	SWITCH, push button
7	068337	1	CABLE, switch to ammeter (11" long)



USAGE: Special equipment. Used on graders serial No. 4025 thru 6332.

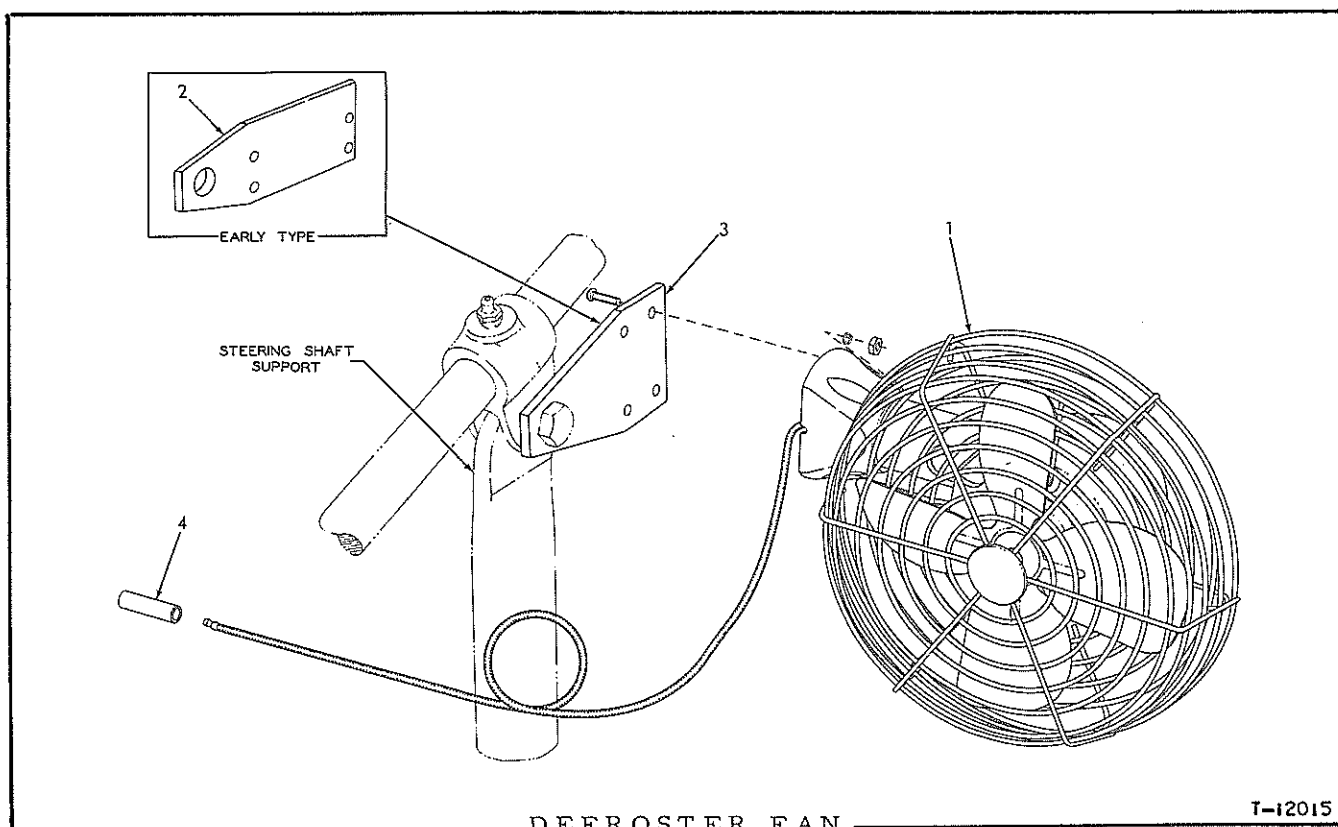
ITEM PART NO. QTY. DESCRIPTION

1	4721568	1	HORN ASSEMBLY (6-volt)(Used prior to grader #5425)
	-----	1	HORN ASSEMBLY (12-volt)(Effective with grader #5425)(Order 1 each HORN 3044471, CAPSCREW 903626, LOCKWASHER 904205, NUT 911025, PLATE 641694, CAPSCREW 903641 and CABLE 641692)
	906958	2	LOCKWASHER, 1/4"
	910267	2	NUT, jam, 1/4"NF
2	081173	1	BRACKET, mounting
	904541	1	CAPSCREW, 1/2"NC x 1-3/4" (Used prior to grader #5425)
	903641	1	CAPSCREW, 1/2"NC x 2-1/4" (Effective with grader #5425)
	904208	1	LOCKWASHER, 1/2"
	911028	1	NUT, 1/2"NC
3	091181	1	CABLE, horn to switch (44" long)
4	031337	1	SWITCH, push-button
5	068337	1	CABLE, switch to ammeter (11" long)



USAGE: Special equipment. Used on graders serial No. 6333 and up

ITEM	PART NO.	QTY.	DESCRIPTION
1	3044471	1	HORN (12-volt)
	903626	1	CAPSCREW, 5/16"NC x 3/4"
	904205	1	LOCKWASHER, 5/16"
	911025	1	NUT, 5/16"NC
2	641694	1	PLATE, mounting
	903641	1	CAPSCREW, 1/2"NC x 2-1/4"
3	641692	1	CABLE, horn to switch (46" long)
4	031337	1	SWITCH, push-button
5	068337	1	CABLE, switch to ammeter (11" long)
6	239726	1	TIE, cable supporting



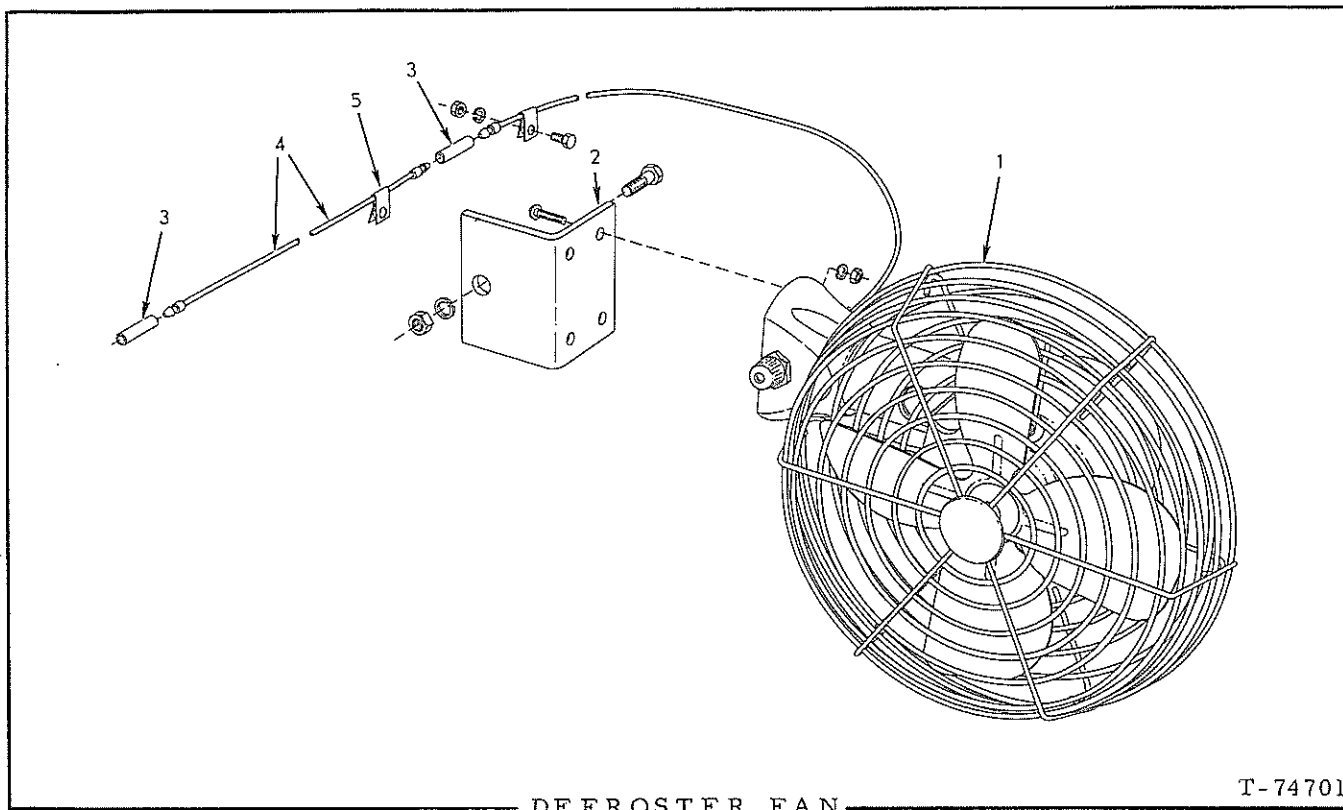
USAGE: Special equipment on units prior to May 1968. For use with Cab installations.

ITEM PART NO. QTY. DESCRIPTION

1	-----	1	FAN ASSEMBLY (Includes motor, fan, guard, pedestal, switch and wiring. Vendor's No. 91-7F)(Used prior to November 1953. Not available)
	901174	4	SCREW, machine, #10NC x 3/4"
	904203	4	LOCKWASHER, #10
	901310	4	NUT, #10NC
	-----	1	FAN ASSEMBLY (Includes 6-volt motor, guard, pedestal, switch and wiring. Vendor's No. 8249)(Effective November 1953 thru graders #5425. Not available)
	082674	1	FAN ASSEMBLY (Includes 12-volt motor, guard, pedestal, switch and wiring. Vendor's No. 96-14B)(For graders #5425 and up)
	900555	4	SCREW, machine, #8NC x 3/4"
	906964	4	LOCKWASHER, #8
	907154	4	NUT, #8NC

NOTE: Order fan parts from Perfection Division of Hupp Corporation, 1135 Ivanhoe Road, Cleveland 10, Ohio.

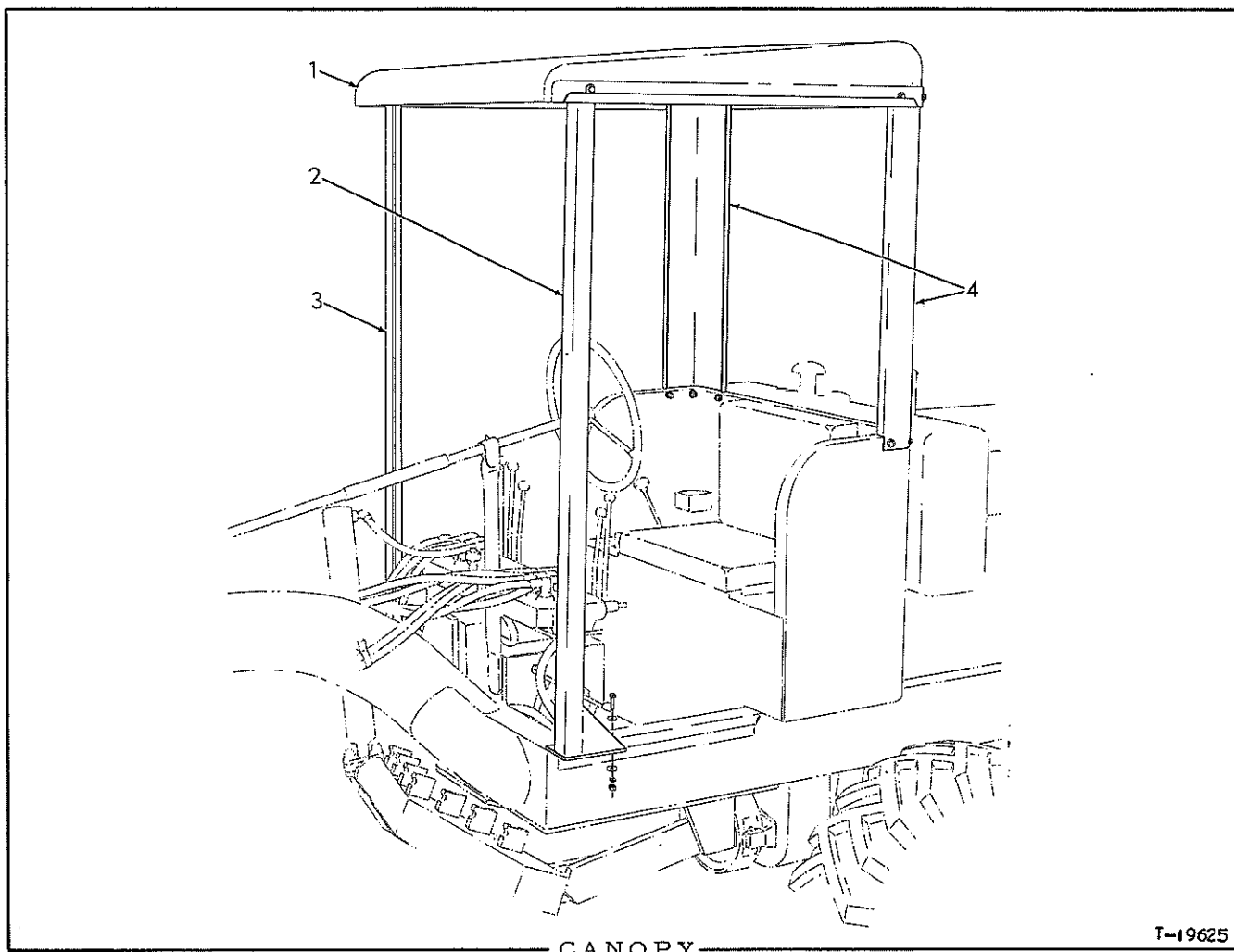
2	068391	1	BRACKET, fan mounting (Used prior to November 1953)
3	080756	1	BRACKET, fan mounting (Effective November 1953)
4	048142	1	CONNECTOR, wiring



USAGE: Special equipment. Mounts above cab windshield. For units with power steering.

ITEM PART NO. QTY. DESCRIPTION

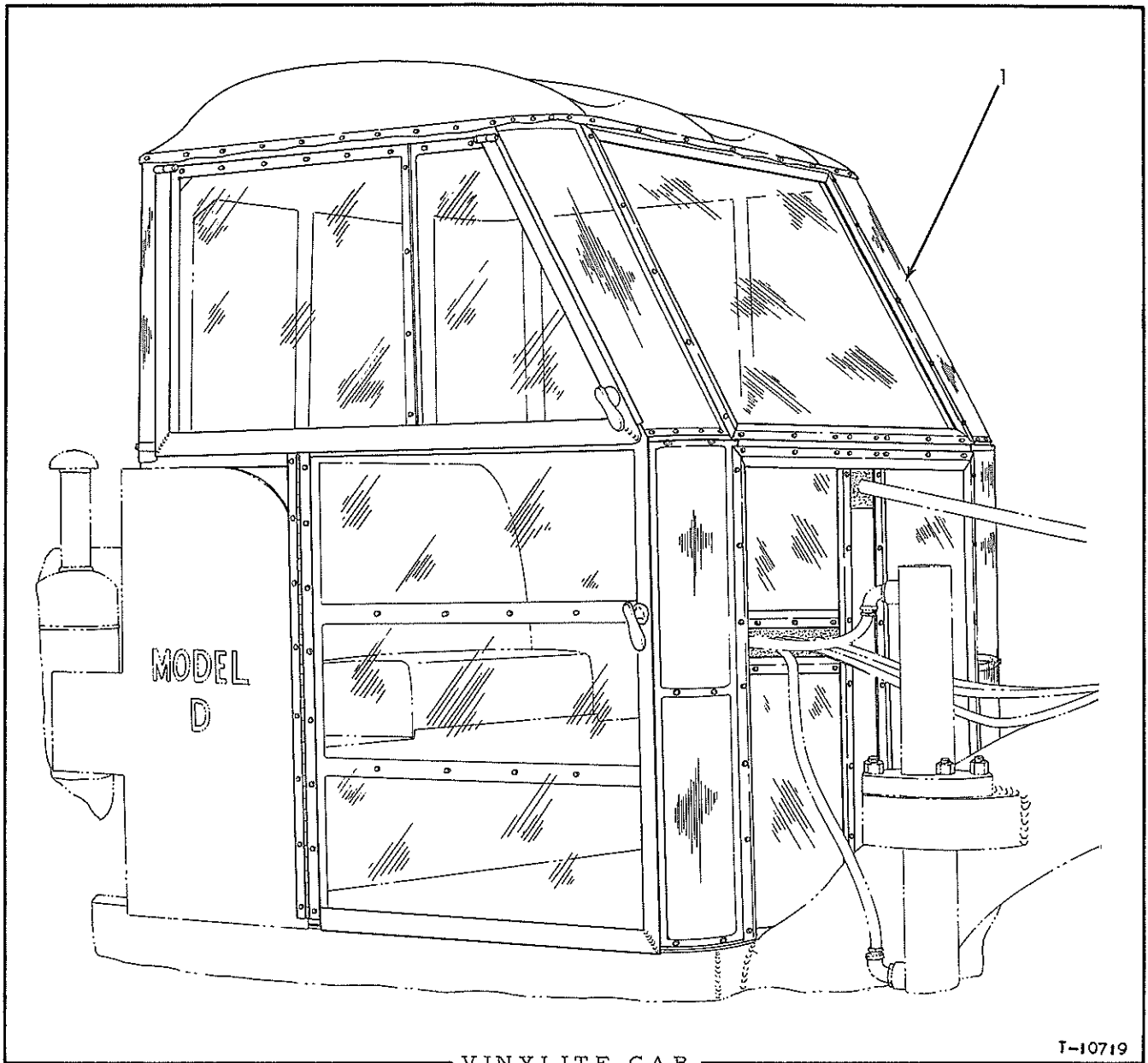
1	082674	1	FAN ASSEMBLY (Includes motor, guard, pedestal, switch and wiring. Vendor's No. 96-14B. Order parts from Perfection Division of Hupp Corporation, 1135 Ivanhoe Road, Cleveland 10, Ohio
	900555	4	SCREW, machine, #8NC x 3/4"
	906964	4	LOCKWASHER, #8
	907154	4	NUT, #8NC
2	665395	1	BRACKET, mounting
	916269	1	CAPSCREW, 3/8"NC x 7/8"
	904206	1	LOCKWASHER, 3/8"
	911026	1	NUT, 3/8"NC
3	048142	2	CONNECTOR, wiring
4	093194	1	CABLE (70" long)
5	238136	4	CLIP, cable supporting
	916284	3	CAPSCREW, 1/4"NC x 1/2"
	904204	3	LOCKWASHER, 1/4"
	911024	3	NUT, 1/4"NC



T-19625

USAGE: Special Equipment

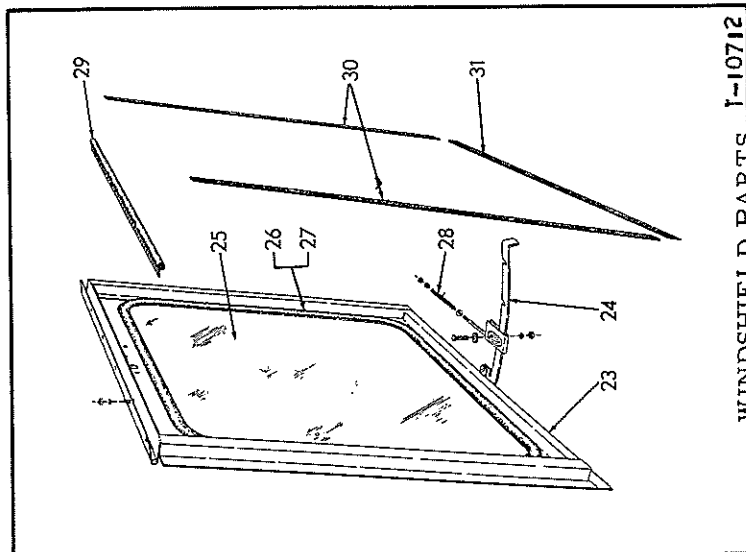
ITEM	PART NO.	QTY.	DESCRIPTION
1	088306	1	TOP, canopy
	903630	10	CAPSCREW, 3/8"NC x 1"
	911115	16	WASHER, plain, SAE std., 3/8"
	904206	10	LOCKWASHER, 3/8"
	911026	10	NUT, 3/8"NC
2	088307	1	POST, top supporting, left front
	903631	2	CAPSCREW, 3/8"NC x 1-1/4"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
3	088308	1	POST, top supporting, right front
	903631	2	CAPSCREW, 3/8"NC x 1-1/4"
	911115	4	WASHER, plain, SAE std., 3/8"
	904206	2	LOCKWASHER, 3/8"
	911026	2	NUT, 3/8"NC
4	088305	2	POST, top supporting, rear
	903630	6	CAPSCREW, 3/8"NC x 1"
	911115	12	WASHER, plain, SAE std., 3/8"
	904206	6	LOCKWASHER, 3/8"
	911026	6	NUT, 3/8"NC



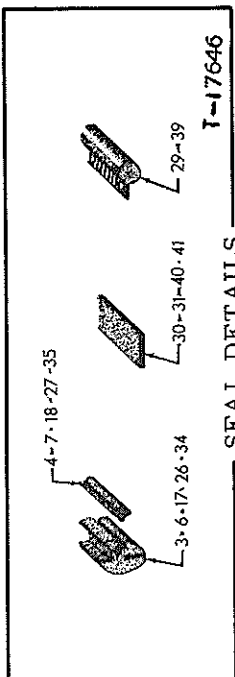
USAGE: Special Equipment. Used on early units only

ITEM PART NO. QTY. DESCRIPTION

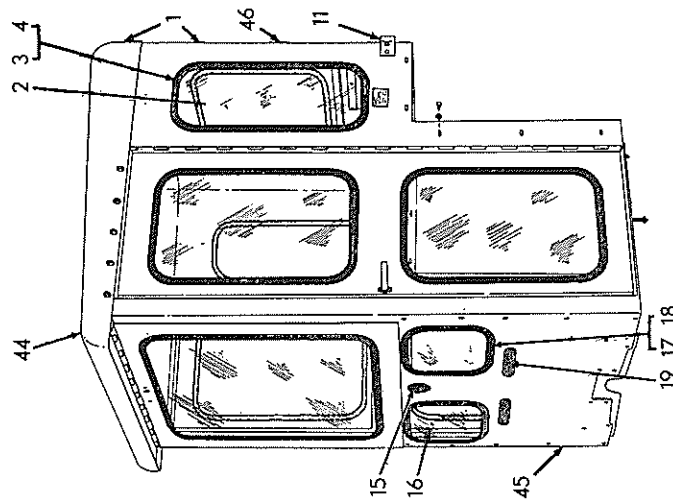
1	-----	1	CAB, enclosed detachable type (Order all repairs from the Campbell All-Weather Detachable Cab Co., Wauconda, Illinois or from the nearest authorized dealer)
912789	12		CAPSCREW, 1/4"NF x 3/4"
904204	12		LOCKWASHER, 1/4"
911040	12		NUT, 1/4"NF
913017	6		CAPSCREW, 3/8"NF x 1"
904206	6		LOCKWASHER, 3/8"
911115	6		WASHER, plain, SAE std., 3/8"
911041	6		NUT, 3/8"NF



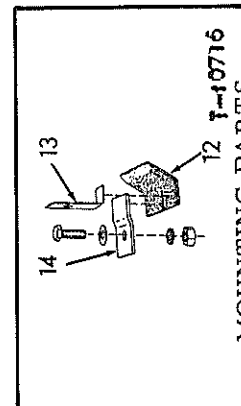
WINDSHIELD PARTS T-10712



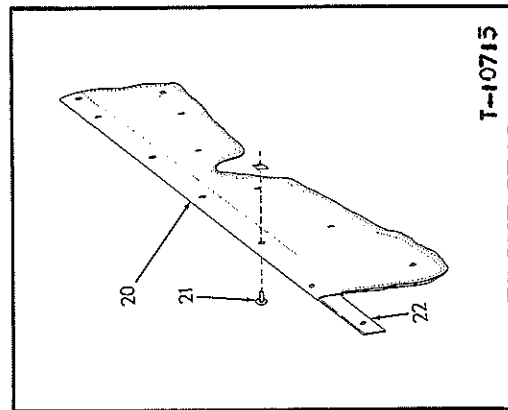
SEAL DETAILS T-17646



T-10711

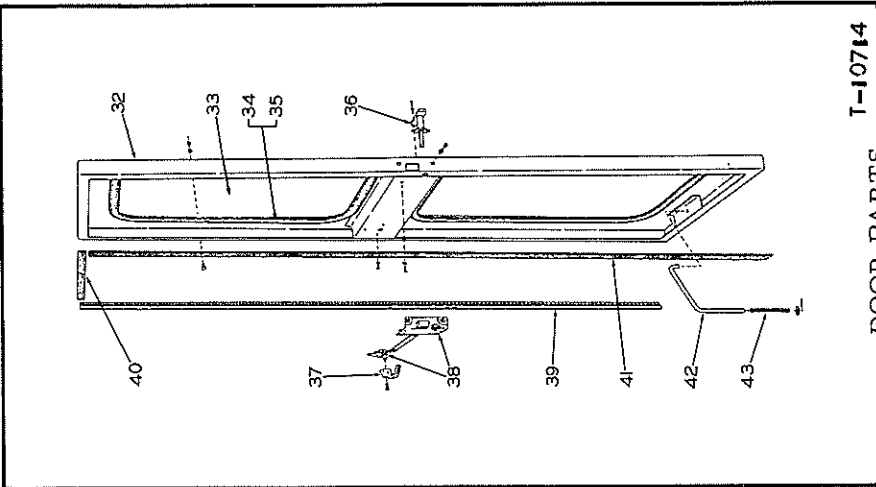


MOUNTING PARTS T-10716

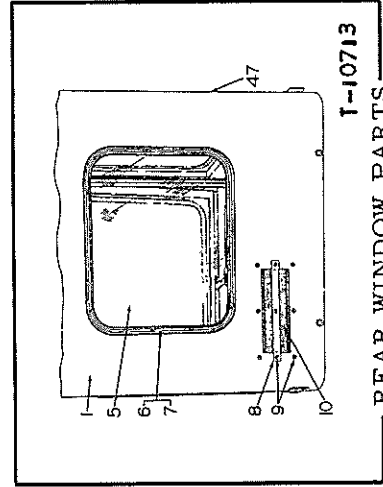


T-10715

FRONT SEAL



DOOR PARTS T-10714



T-10713

REAR WINDOW PARTS

CAB

CAB

USAGE: Special equipment. Inside height is 78-1/2" for stand-up operation.

* Integral type. Used prior to January 1962
 ** Knock-down type. Effective January 1962

ITEM	PART NO.	QTY. * **	DESCRIPTION
1	-----	1 -	BODY only (Not serviced separately)
	903631	6 -	CAPSCREW, 3/8"NC x 1-1/4"
	900817	6 -	WASHER, plain, U.S. std., 3/8"
	904206	6 -	LOCKWASHER, 3/8"
	911026	6 -	NUT, 3/8"NC
	905662	12 -	CAPSCREW, 5/16"NC x 1-1/8"
	901165	12 -	WASHER, plain, U.S. std., 5/16"
	904205	12 -	LOCKWASHER, 5/16"
	911025	12 -	NUT, 5/16"NC
2	079913	2 2	GLASS, body side panel
3	077977	2 2	SEAL, body side panel glass
4	077982	2 2	STRIP, expanding, side panel glass seal
5	079912	1 1	GLASS, rear window
6	079920	1 1	SEAL, rear window glass
7	079922	1 1	STRIP, expanding, window glass seal
8	{ 079970	3 3	STRAP, cover retaining, inside
	{ 079907	1 1	STRAP, cover retaining, outside
9	918156	9 9	SCREW, truss-head, 1/4"NC x 5/8"
	904204	9 9	LOCKWASHER, 1/4"
	911024	9 9	NUT, 1/4"NC
10	079964	1 1	COVER, rear loader control opening
11	{ -----	2 -	ANCHOR, door(Not available)
	{ 903630	4 -	CAPSCREW, 3/8"NC x 1"
	{ 904206	4 -	LOCKWASHER, 3/8"
	{ 911026	4 -	NUT, 3/8"NC
	{ 630126	- 2	ANCHOR, door
	{ 903625	- 4	CAPSCREW, 1/4"NC x 3/4"
	{ 911114	- 4	WASHER, plain, SAE std., 1/4"
	{ 904204	- 4	LOCKWASHER, 1/4"
	{ 911024	- 4	NUT, 1/4"NC
12	{ 079905	1 1	SEAL, cab to seat, left
	{ 079906	1 1	SEAL, cab to seat, right
13	{ 079943	2 2	CLIP, seal retaining, outside (long)(Used prior to cab #22227)
	{ 638117	- 2	CLIP, seal retaining, outside (short)(Effective with cab #22227)
14	079942	2 2	CLIP, seal retaining, inside
15	079903	1 1	SEAL, steering wheel opening (rubber)

(Continued)

CAB (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION	
		*	**		
16	079923	2	2	GLASS, body front panel	
17	077976	2	2	SEAL, body front panel glass	
18	077981	2	2	STRIP, expanding, front panel glass seal	
19	079897	2	2	SEAL, hydraulic hose opening (rubber)	
20	079952	1	1	SEAL, front panel, bottom (canvas)	
21	918156	7	12	SCREW, truss-head, 1/4"NC x 5/8"	
	916205	7	12	NUT, speed, 1/4"NC	
22	079901	1	1	RETAINER, front panel bottom seal	
23	079904	1	1	FRAME, windshield (Stripped of all removal parts. Includes item 24)	
	918156	6	6	SCREW, truss-head, 1/4"NC x 5/8"	
	904204	6	6	LOCKWASHER, 1/4"	
	911024	6	6	NUT, 1/4"NC	
24	-----	1	1	ARM, windshield regulating	
	910998	1	1	RIVET, 1/4" x 1/2"	
	046321	1	1	CAPSCREW, 5/16"NC x 1-1/2"	
	910335	1	1	WASHER, plain, SAE std., 5/16"	
	911025	1	1	NUT, 5/16"NC	
25	079914	1	1	GLASS, windshield	
26	079919	1	1	SEAL, windshield glass	
27	079921	1	1	STRIP, expanding, windshield glass seal	
28	079941	1	1	SPRING, windshield, regulating arm	
	911114	1	1	WASHER, plain, SAE std., 1/4"	
	911024	2	2	NUT, 1/4"NC	
29	079925	1	1	SEAL, windshield top	
30	079928	4	4	SEAL, windshield side	
31	079929	1	1	SEAL, windshield bottom	
32	080211	1	1	DOOR, left (62-1/4")(Used prior to cab #22227)	Stripped of all removable parts
	638115	-	1	DOOR, left (61")(Effective with cab #22227)	
	080212	1	1	DOOR, right (62-1/4")(Used prior to cab #22227)	
	638116	-	1	DOOR, right (61") (Effective with cab #22227)	
	903625	22	22	CAPSCREW, 1/4"NC x 3/4"	
	904204	22	22	LOCKWASHER, 1/4"	
	911024	22	22	NUT, 1/4"NC	
33	079918	4	4	GLASS, door	
34	079920	4	4	SEAL, door glass	
35	079922	4	4	STRIP, expanding, door glass seal	

(Continued)

C A B (Continued)

ITEM	PART NO.	QTY. * **	DESCRIPTION
36	079902	2 2	HANDLE, door, outside
	900558	4 4	SCREW, machine, #10-32NF x 1/2"
	916158	4 4	LOCKWASHER, ext-tooth, #12
37	079940	2 2	HANDLE, door, inside
	912226	2 2	SCREW, machine, fil-hd., 1/4"NC x 5/8"
38	079895	1 1	LOCK ASSEMBLY, left door (Serviced only as a unit)
	079894	1 1	LOCK ASSEMBLY, right door (Serviced only as a unit)
	901396	12 12	SCREW, machine, #12-24NC x 1/2"
	916158	12 12	LOCKWASHER, ext-tooth, #12
39	079924	2 2	SEAL, door back (63" long)(Used prior to cab #22227)
	638118	- 2	SEAL, door back (61-3/4" long)(Effective with cab #22227)
40	079927	2 2	SEAL, door top
41	079926	2 2	SEAL, door front (63" long)(Used prior to cab #22227)
	638112	- 2	SEAL, door front (61-3/4" long)(Effective with cab #22227)
42	080237	2 2	ROD, door retaining (Used prior to cab #22227)
	638119	- 2	ROD, door retaining (Effective with cab #22227)
	911115	2 2	WASHER, plain, SAE std., 3/8"
	900801	2 2	PIN, cotter, 3/32" x 3/4"
43	080239	2 2	SPRING, door retaining rod
44	630611	- 1	TOP WELDMENT
	918156	- 27	SCREW, truss-head, 1/4"NC x 5/8"
	904204	- 27	LOCKWASHER, 1/4"
	911024	- 27	NUT, 1/4"NC
45	630607	- 1	PANEL, front (Stripped of all removable parts)
	918156	- 12	SCREW, truss-head, 1/4"NC x 5/8"
	904204	- 12	LOCKWASHER, 1/4"
	911024	- 12	NUT, 1/4"NC
46	630603	- 1	PANEL, left side (63" door opening)(Used prior to cab #22227)
	638113	- 1	PANEL, left side (61-3/4" door opening)(Effective with cab #22227)
	630604	- 1	PANEL, right side (63" door opening)(Used prior to cab #22227)
	638114	- 1	PANEL, right side (61-3/4" door opening)(Effective with cab #22227)
	903631	- 6	CAPSCREW, 3/8"NC x 1-1/4"
	911115	- 6	WASHER, plain, SAE std., 3/8"
	904206	- 6	LOCKWASHER, 3/8"
	911026	- 6	NUT, 3/8"NC
	903626	- 10	CAPSCREW, 5/16"NC x 3/4"
	910335	- 10	WASHER, plain, SAE std., 5/16"
	904205	- 10	LOCKWASHER, 5/16"
	911025	- 10	NUT, 5/16"NC

(Continued)

C A B (Continued)

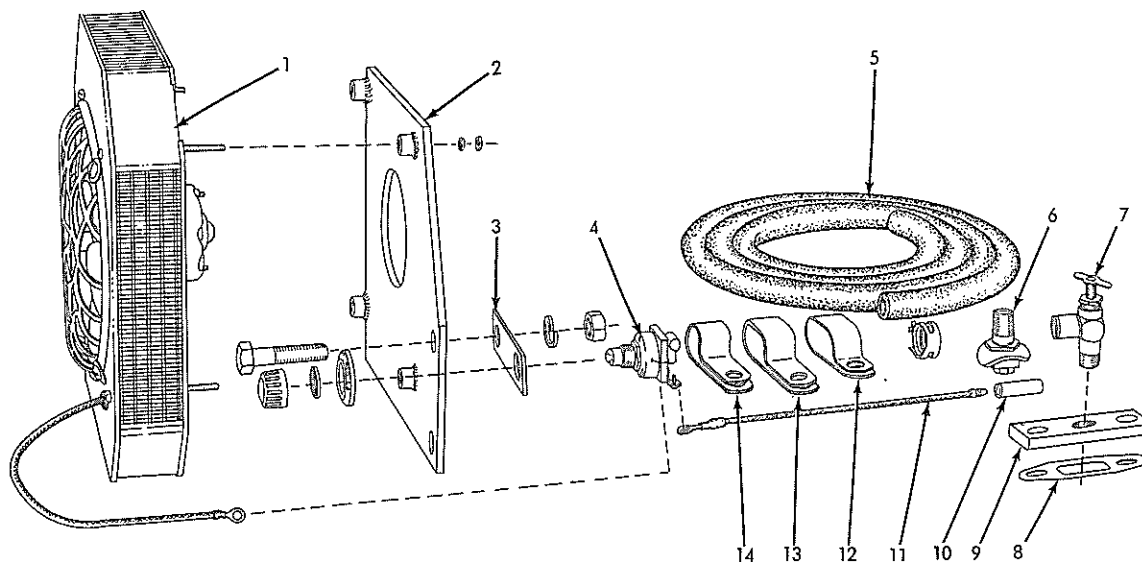
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
47	630608	-	1	PANEL, back (Stripped of all removable parts)
	918156	-	12	SCREW, truss-head, 1/4"NC x 5/8"
	904204	-	12	LOCKWASHER, 1/4"
	911024	-	12	NUT, 1/4"NC
	903626	-	2	CAPSCREW, 5/16"NC x 3/4"
	910335	-	2	WASHER, plain, SAE std., 5/16"
	904205	-	2	LOCKWASHER, 5/16"
	911025	-	2	NUT, 5/16"NC

HOOD SIDE PLATES
(Not illustrated)

USAGE: Special equipment

* Graders prior to serial No. 5425
** Graders serial No. 5425 and up

ITEM	PART NO.	QTY.		DESCRIPTION	
		*	**		
1	091903	1	-	PLATE ASSEMBLY, left side	For graders prior to #5271; also later units when equipped with "Allis-Chalmers" TL-D Loader
	091905	1	-	PLATE ASSEMBLY, right side	
	094143	1	-	PLATE ASSEMBLY, left side	For graders #5271 thru #5424 except when equipped with "Allis-Chalmers" TL-D Loader
	094144	1	-	PLATE ASSEMBLY, right side	
	095635	-	1	PLATE ASSEMBLY, left side	Not for graders equipped with "Allis-Chalmers" TL-D Loader
	095636	-	1	PLATE ASSEMBLY, right side (Units with oil-bath air cleaner)	
	642696	-	1	PLATE ASSEMBLY, right side (Units with dry-type air cleaner)	
<u>NOTE:</u> Each plate assembly listed above includes item 2 and 3					
2	032834	4	4	HANDLE, lifting	
	900764	8	8	RIVET, flat-hd., 3/16" x 1/2"	
3	033060	4	4	FASTENER	
	900764	12	12	RIVET, flat-hd., 3/16" x 1/2"	
4	-----	1	1	ANGLE, fastening, left side (Welded to frame)	
	-----	1	1	ANGLE, fastening, right side (Welded to frame)	
5	-----	1	-	PLATE, front closure, right side (Welded to frame. Used with PLATE ASSEMBLIES 091903 and 091905 only)	



CAB HEATER

T-2257

USAGE: Special equipment. Used on graders prior to serial No. 3204.

* Used prior to March 1953

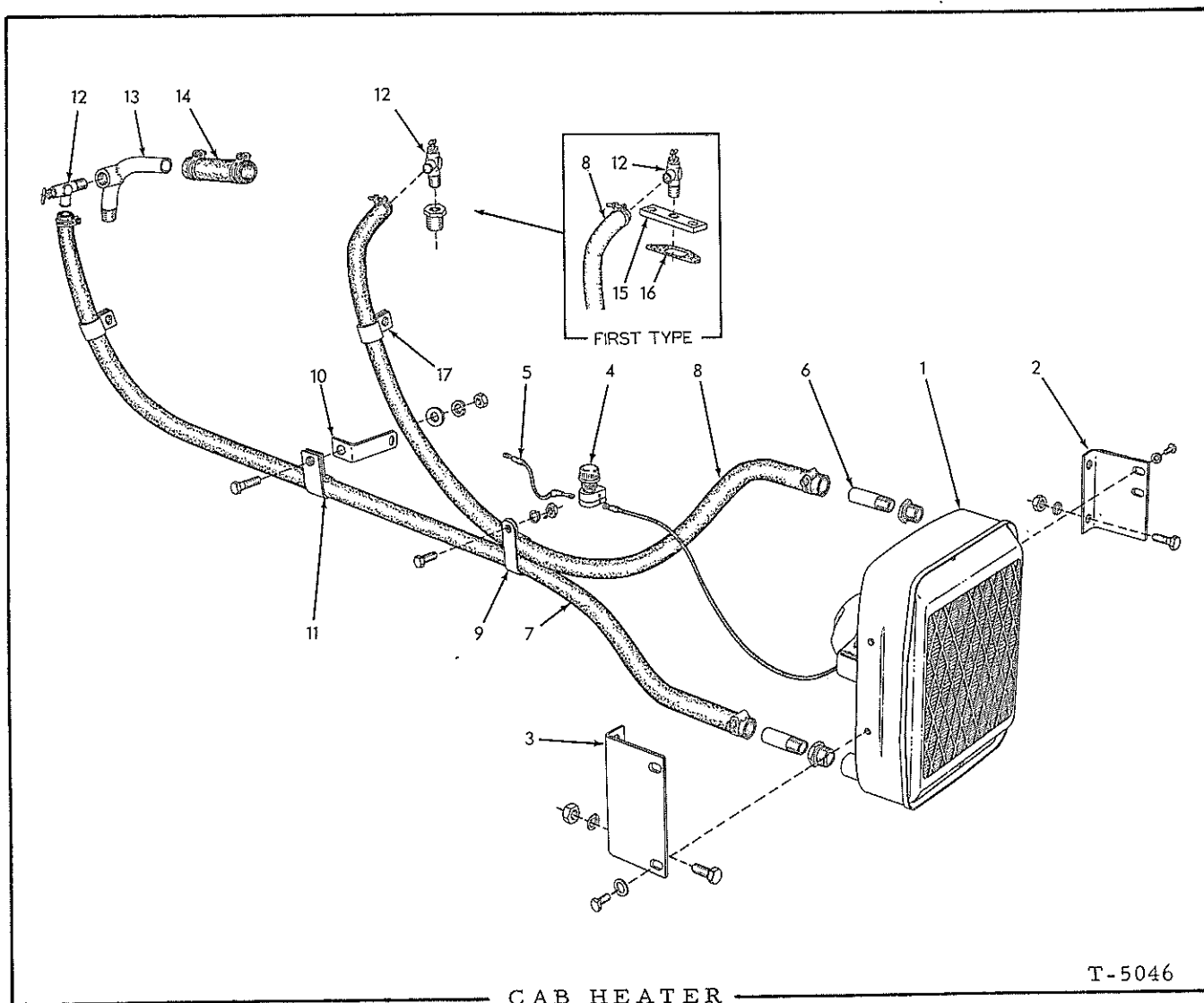
** Effective March 1953

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	-----	1	1	HEATER ASSEMBLY (Model FR-40-6V-P. Order parts from Perfection Division of Hupp Corp., 1135 Ivanhoe Road, Cleveland 10, Ohio)
	906957	4	4	LOCKWASHER, 1/4"
	901310	4	4	NUT, #10-24NC
2	-----	1	1	PLATE, heater mounting (Not available)
	911849	2	2	CAPSCREW, 1/2"NF x 2"
	904208	2	2	LOCKWASHER, 1/2"
	911043	2	2	NUT, 1/2"NF
3	068362	1	1	BAR, switch mounting
4	605521	1	1	SWITCH, rheostat type (Two-speed)
5	068363	2	1	HOSE, water (100" long)
	078548	-	1	HOSE, water inlet (75" long)
	921911	4	4	CLAMP, hose
6	068364	1	-	NIPPLE ASSEMBLY, water hose (Includes washer and nuts)

(Continued)

CAB HEATER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
7	605525	1	2	VALVE, water shut-off (angle type, 3/8"NPT)
8	233216	-	1	GASKET, connection plate
9	077280	-	1	PLATE, inlet hose valve connection (Replaces standard COVER 225021 on cylinder head)
10	048142	1	1	CONNECTOR, cable (2-wire type)
11	068367	1	1	CABLE, switch to ammeter (9" long)
12	068365	1	1	CLIP, hose supporting (For two 1" diam. lines, 17/32" bolt-hole)
	903629	1	1	CAPSCREW, 3/8"NC x 3/4"
	904206	1	1	LOCKWASHER, 3/8"
13	055991	1	-	CLIP, hose supporting (For two 1" diam. lines, 17/32" bolt-hole)
14	055536	-	2	CLIP, hose supporting (1" diam., 17/32" bolt-hole)



USAGE: Special equipment. Used on graders serial No. 3204 and up.

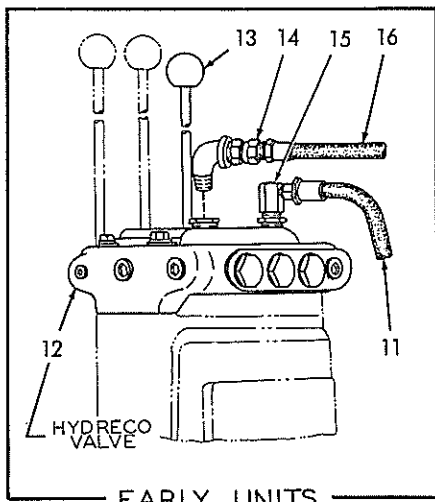
* Graders prior to serial No. 5425 (Model W and WD-45 engines)
 ** Graders serial No. 5425 and up (Model 17 engine)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	079408	1	-	HEATER ASSEMBLY (Model US2-6V. Order parts from Perfection Division of Hupp Corp., 1135 Ivanhoe Road, Cleveland 10, Ohio)
	082988	-	1	HEATER ASSEMBLY (Model US2-12V. Order parts from Perfection Division of Hupp Corp., 1135 Ivanhoe Road, Cleveland 10, Ohio)
	905656	4	4	CAPSCREW, 1/4"NC x 1/2"
	911114	4	4	WASHER, plain, SAE std., 1/4"

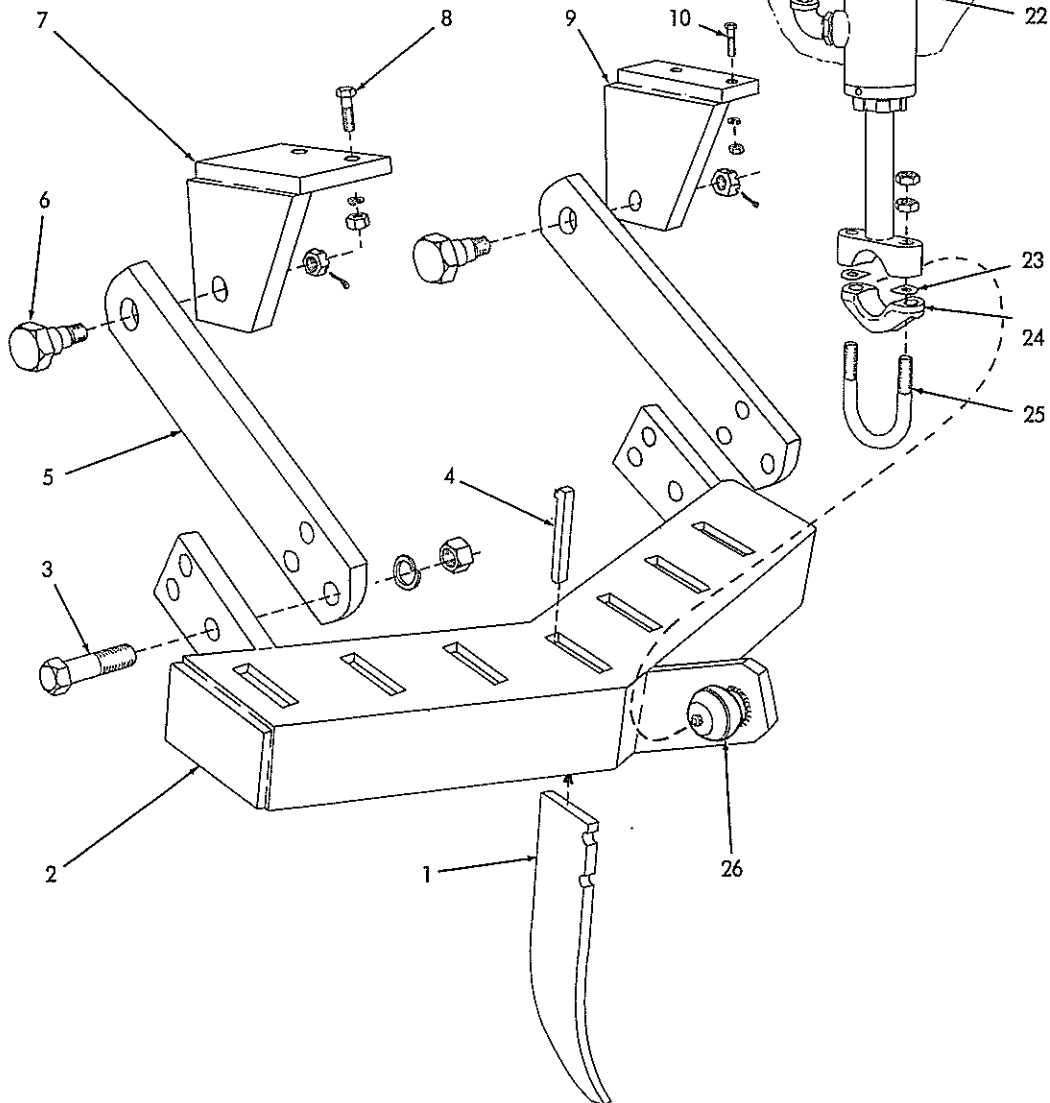
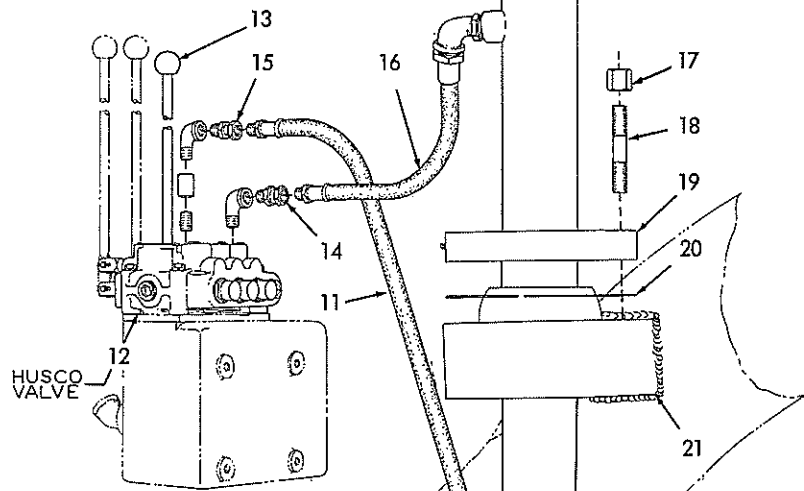
(Continued)

CAB HEATER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
2	079413	1	1	BRACKET, heater mounting, left
	903775	2	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	2	LOCKWASHER, 3/8"
	911026	2	2	NUT, 3/8"NC
3	079412	1	1	BRACKET, heater mounting, right
	903775	2	2	CAPSCREW, 3/8"NC x 7/8"
	904206	2	2	LOCKWASHER, 3/8"
	911026	2	2	NUT, 3/8"NC
4	079433	1	1	SWITCH, rheostat type
5	095860	1	1	CABLE, switch to ammeter (6" long)
6	054033	2	2	NIPPLE, hose connection (2" long)
	904271	2	2	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
7	078548	1	1	HOSE, heater to water pump (75" long)
	921911	2	2	CLAMP, hose, 11/16" to 1-1/4" diam.
8	079409	1	-	HOSE, heater to cylinder head (51" long)
	084228	-	1	HOSE, heater to cylinder head (63" long)
	921911	2	2	CLAMP, hose, 11/16" to 1-1/4" diam.
9	060525	1	1	CLIP, hose supporting (For two 1" diam. lines, 13/32" bolt-hole)
	903775	1	1	CAPSCREW, 3/8"NC x 7/8"
	904206	1	1	LOCKWASHER, 3/8"
	911026	1	1	NUT, 3/8"NC
10	060982	1	1	ANGLE, clip supporting
11	041303	1	2	CLIP, hose supporting (1" diam., 15/32" bolt-hole)
	903625	1	1	CAPSCREW, 1/4"NC x 3/4"
	900816	1	1	WASHER, plain, U.S. std., 1/4"
	904204	1	1	LOCKWASHER, 1/4"
	911024	1	1	NUT, 1/4"NC
12	605525	2	2	VALVE, water shut-off (angle type, 3/8"NPT)
	904271	-	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
13	079860	1	1	PIPE, water by-pass (Replaces standard PIPE 226315)
14	226316	1	1	HOSE, water by-pass tube (Replaces standard HOSE 227018)
	921911	2	2	CLAMP, hose, 11/16" to 1-1/4" diam.
15	077280	1	-	PLATE, inlet valve connection (Replaces standard COVER 225021 on cylinder head)
16	223216	1	-	GASKET, connection plate
17	055536	-	1	CLIP, hose supporting (1" diam., bolt-hole)



EARLY UNITS



SCARIFIER (First type)

T-1621

SCARIFIER

USAGE: Graders prior to serial No. 5887. Special equipment.

* Grader prior to serial No. 872
 ** Grader serial No. 872 thru 5886

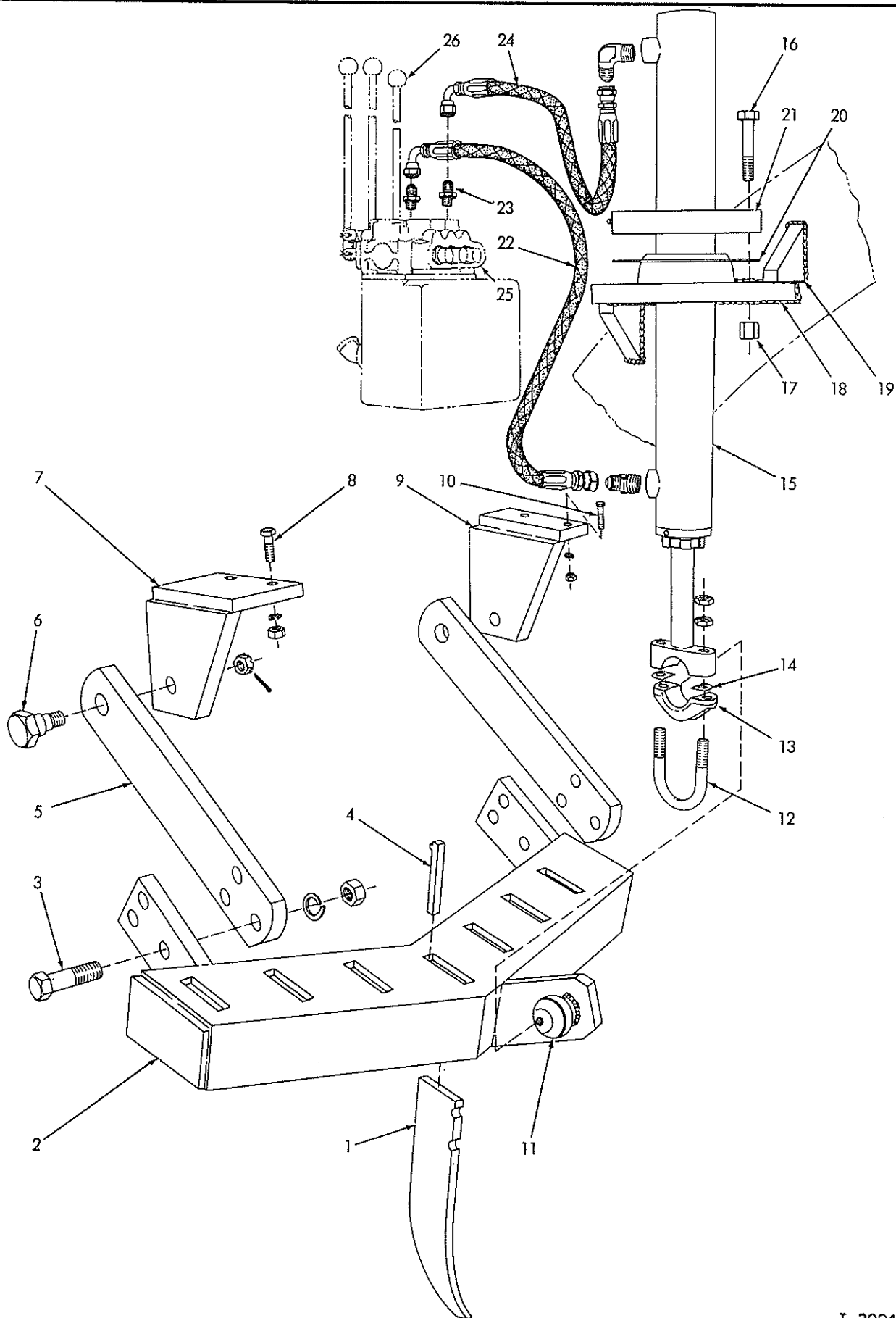
ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
1	601160	7	7	TOOTH
2	067306	1	1	FRAME (Includes item 26)
	914465	1	1	FITTING, lubricating, straight, 1/8"NPT
3	035420	4	4	CAPSCREW, 1"N x 3-1/4"
	910916	4	4	LOCKWASHER, 1"
	911047	4	4	NUT, 1"N
4	603247	7	7	KEY, tooth retaining
5	067460	2	2	BAR, frame pivot
6	064851	2	2	PIN, frame pivot
	902277	2	2	NUT, slotted, 1"NC
	900812	2	2	PIN, cotter, 3/16" x 1-3/4"
7	067301	1	1	BRACKET, frame pivot, right
8	012984	2	2	CAPSCREW, 3/4"N x 2-3/4"
	904369	2	2	LOCKWASHER, 3/4"
	911045	2	2	NUT, 3/4"N
9	067302	1	1	BRACKET, frame pivot, left
10	012984	2	2	CAPSCREW, 3/4"N x 2-3/4"
	904369	2	2	LOCKWASHER, 3/4"
	911045	2	2	NUT, 3/4"N
11	069739	1	1	HOSE, valve to cylinder, lower (24" long)(Used when control valve is mounted on right side. When required for graders prior to #872 also order 2 BUSHINGS 904271)
	069716	2	2	HOSE, valve to cylinder, lower (16-1/4" long)(Used when control valve is mounted on left side)
	901765	1	1	COUPLING, pipe, 3/8"NPT (For joining 069716 HOSES)
	901724	1	-	ELBOW, street, 90°, 1/2"NPT
	901723	-	1	ELBOW, street, 90°, 3/8"NPT
	904271	-	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
12	-----	1	1	VALVE (See HYDRAULIC CONTROLS)
13	-----	1	1	LEVER (See HYDRAULIC CONTROLS)
14	032031	1	-	UNION, adapting, cylinder upper hose (1/2"NPT) (Not Illustrated)
	901679	1	-	ELBOW, pipe, 90°, 1/2"NPT
	901503	1	-	NIPPLE, pipe, 1/2"NPT x 2-1/2"
	069710	-	1	UNION, adapting, cylinder upper hose (3/8"NPT)
	901723	-	1	ELBOW, street, 90°, 3/8"NPT
	904271	-	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT (Used prior to grader #5378)

(Continued)

SCARIFIER (Continued)

ITEM	PART NO.	QTY.		DESCRIPTION
		*	**	
15	066475	1	-	ELBOW, lower hose (90°, 1/2"NPT male and female) (Not Illustrated)
	901510	1	-	NIPPLE, pipe, 1/2"NPT x 6"
	901679	1	-	ELBOW, pipe, 90°, 1/2"NPT
	032031	1	-	UNION, straight, lower hose (1/2"NPT) (Not Illustrated)
	069715	-	1	UNION, 90° lower hose (3/8"NPT)(Used prior to grader #5378)
	904271	-	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
	090623	-	1	UNION, adapting, cylinder upper hose (restricted (Effective with grader #5378)
	901723	-	1	ELBOW, street, 90°, 3/8"NPT
	901765	-	1	COUPLING, pipe, 3/8"NPT
	901489	-	1	NIPPLE, pipe, 3/8"NPT close
16	069716	1	1	HOSE, valve to cylinder, upper (16-1/4" long)(Used when control valve is mounted on right side. When required for graders prior to #872 also order 2 BUSHINGS 904271)
	069739	1	1	HOSE, valve to cylinder, upper (24" long)(Used when control valve is mounted on left side)
	901724	1	-	ELBOW, street, 90°, 1/2"NPT
	901723	-	1	ELBOW, street, 90°, 3/8"NPT
	904271	-	1	BUSHING, pipe reducing, 1/2"NPT to 3/8"NPT
17	072366	4	4	NUT, pivot cap stud (high, 5/8"NF)
18	065817	4	4	STUD, pivot cap (5/8"NF x 3-1/2")
19	067321	1	1	CAP, cylinder pivot
	915275	1	1	FITTING, lubricating, 65°, 1/8"NPT
20	067297	8	8	SHIM, cylinder pivot cap (1/32" thick. Use as required)
	643627	4	4	SHIM, cylinder pivot cap (.020" thick. Use as required)
21	067320	1	1	BRACKET, cylinder supporting, (Welded to frame)
22	073842	1	1	CYLINDER ASSEMBLY (See pages 210, 211 and 212 for parts)
23	053992	8	8	SHIM, ball cap (1/32" thick. Use as req'd)
24	053986	1	1	CAP, ball
25	605665	1	1	U-BOLT (5/8"NF)
	911049	4	4	NUT, jam, 5/8"NF
26	643997	1	1	BALL (Requires welding to scarifier frame)

MEMO



SCARIFIER (Second type)

T-30940

SCARIFIER

USAGE: Graders serial No. 5887 and up. Special equipment.

ITEM	PART NO.	QTY.	DESCRIPTION
1	601160	7	TOOTH
2	067306	1	FRAME (Includes item 11)
	914465	1	FITTING, lubricating, straight, 1/8"NPT
3	035420	4	CAPSCREW, 1"N F x 3-1/4"
	910916	4	LOCKWASHER, 1"
	911047	4	NUT, 1"N F
4	603247	7	KEY, tooth retaining
5	067460	2	BAR, frame pivot
6	064851	2	PIN, frame pivot
	902277	2	NUT, slotted, 1"NC
	900812	2	PIN, cotter, 3/16" x 1-3/4"
7	067301	1	BRACKET, frame pivot, right
8	012984	2	CAPSCREW, 3/4"N F x 2-3/4"
	904369	2	LOCKWASHER, 3/4"
	911045	2	NUT, 3/4"N F
9	067302	1	BRACKET, frame pivot, left
10	012984	2	CAPSCREW, 3/4"N F x 2-3/4"
	904369	2	LOCKWASHER, 3/4"
	911045	2	NUT, 3/4"N F
11	643997	1	BALL (Requires welding to scarifier frame)
12	605665	1	U-BOLT, ball cap
	911049	4	NUT, jam, 5/8"N F
13	053986	1	CAP, ball
14	053992	8	SHIM, ball cap (1/32" thick. Use as required)
15	073842	1	CYLINDER ASSEMBLY (See page 212 for parts)
16	035306	4	CAPSCREW, 5/8"N F x 3-1/4"
17	072366	4	NUT, high, 5/8"N F
18	620205	1	PLATE, cylinder mounting (Welded to frame)
19	620206	2	GUSSET, mounting plate (Welded to frame)
20	067297	8	SHIM, cylinder pivot cap (1/32" thick. Use as required)
	643627	4	SHIM, cylinder pivot cap (.020" thick. Use as required)
21	067321	1	CAP, cylinder pivot
	915275	1	FITTING, lubricating, 65°, 1/8"NPT
22	649630	1	HOSE, valve to cylinder, lower (See HOSE PARTS)
	921038	1	ELBOW, flare type, 45°, 1/2" tube, 1/2"NPT male
23	621811	1	CONNECTOR, flare type, 1/2" tube, 3/8"NPT male (restricted)
24	649629	1	HOSE, valve to cylinder, upper (See HOSE PARTS)
	919063	1	CONNECTOR, flare type, 1/2" tube, 1/2"NPT male
	919195	1	ELBOW, flare type, 90°, 1/2" tube, 1/2"NPT male
25	-----	1	VALVE (See HYDRAULIC CONTROLS)
26	-----	1	LEVER (See HYDRAULIC CONTROLS)

TIRE PUMP
(Not illustrated)

USAGE: Special equipment

* Graders prior to serial No. 5425
** Graders serial No. 5425 and up

ITEM	PART NO.	QTY. * **	DESCRIPTION
1	090469	1 -	PUMP ASSEMBLY (Model #127-6 volt. Order parts from Johnson Service Co., 507 E. Michigan, Milwaukee 2, Wisconsin)
	076599	- 1	
2	-----	1 -	BRACKET, mounting (Welds to frame)(Not available)
	096221	- 1	
3	040758	1 1	GROMMET, cable protecting (rubber)
4	040796	1 -	CLIP, cable supporting (3/8" diam., 13/32" bolt-hole)
	048145	- 1	
5	051348	2 -	CLIP, cable supporting (5/16" diam., 9/32" bolt-hole)
	905656	2 -	
	904204	2 -	
	911024	2 -	
6	091046	- 1	CLIP, cable supporting (1/2" diam., 7/16" bolt-hole)

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