

Lull[®]

Illustrated Parts Manual

***Model
400B***

10709906

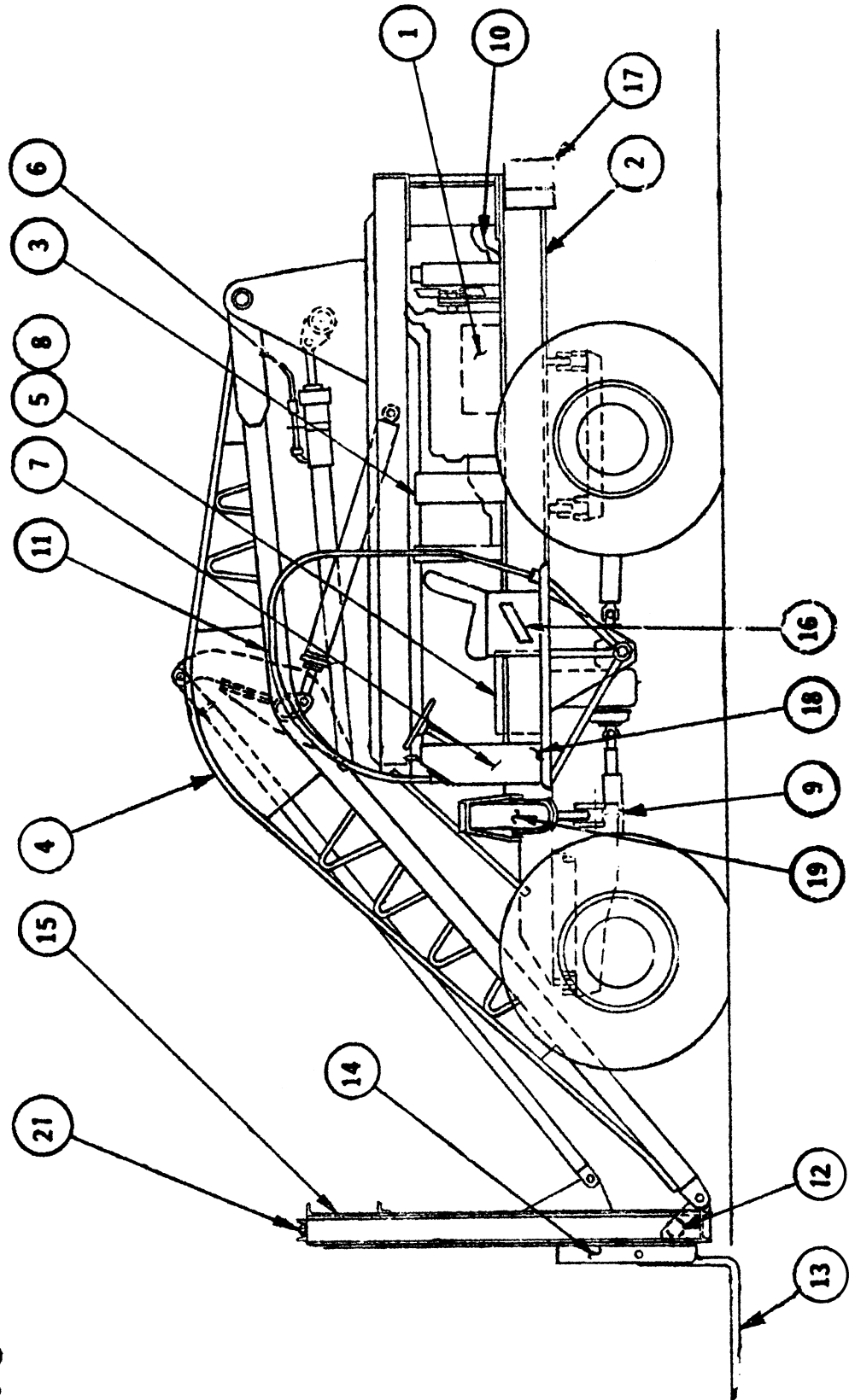
May 2000

ANSI

JLG[®]

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

GENERAL ASSEMBLY
MODEL 400B
15230 (GAS)
15232 (DIESEL)



15230
15232

LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

GENERAL ASSEMBLY
 MODEL 400B
 15230(GAS)
 15232(DIESEL)

ITEM	PART	SEE ASS'Y	DESCRIPTION	ENGINE
1		15234	Drive Train	225 CHRYSLER
		15417	Drive Train	283 WAUKESHA
2		15235	Tilt Frame Ass'y.	225 & 283
		15436	Non-Tilt Frame Ass'y.	225 & 283
3		15236	Upright Installation Ass'y	225 & 283
4		15237	Loader Ass'y	225 & 283
5		14494	Hydraulic Ass'y (Pump To Valves)	225 & 283
6		15239	Hydraulic Ass'y,(Loader)	225 & 283
7		15682	Operators Platform Ass'y	225 & 283
8		14498	Fuel Tank Ass'y	225 CHRYSLER
		14705	Fuel Tank Ass'y	283 WAUKESHA
9		15509	Drive Shafts & Axles Ass'y	225 & 283
10		15241	Wiring & Electrical Comp. Ass'y	225 CHRYSLER
		16367	Wiring & Electrical Comp. Ass'y	283 WAUKESHA
11		14560	Overhead Guard Ass'y	225 & 283
12		15229	Spindle Ass'y	225 & 283
		14073	Roller Ass'y	225 & 283
13	16511		Forks	225 & 283
14		15681	Standard Carriage	225 & 283
15		15243	Tower Ass'y	225 & 283
16		14613	Paint Decals & Instructions	225 & 283
17		16326	Counterweight	225 & 283
18		14614	Miscellaneous Greese & Lubrication	225 & 283
19		15242-1	Hydraulic Ass'y (Frame Tilt)	225 & 283
20		16087	Hydraulic Ass'y (Load Sensing)	225 & 283
21		16118	Hose Kit & Sheave Assembly	225 & 283

15230
 15232

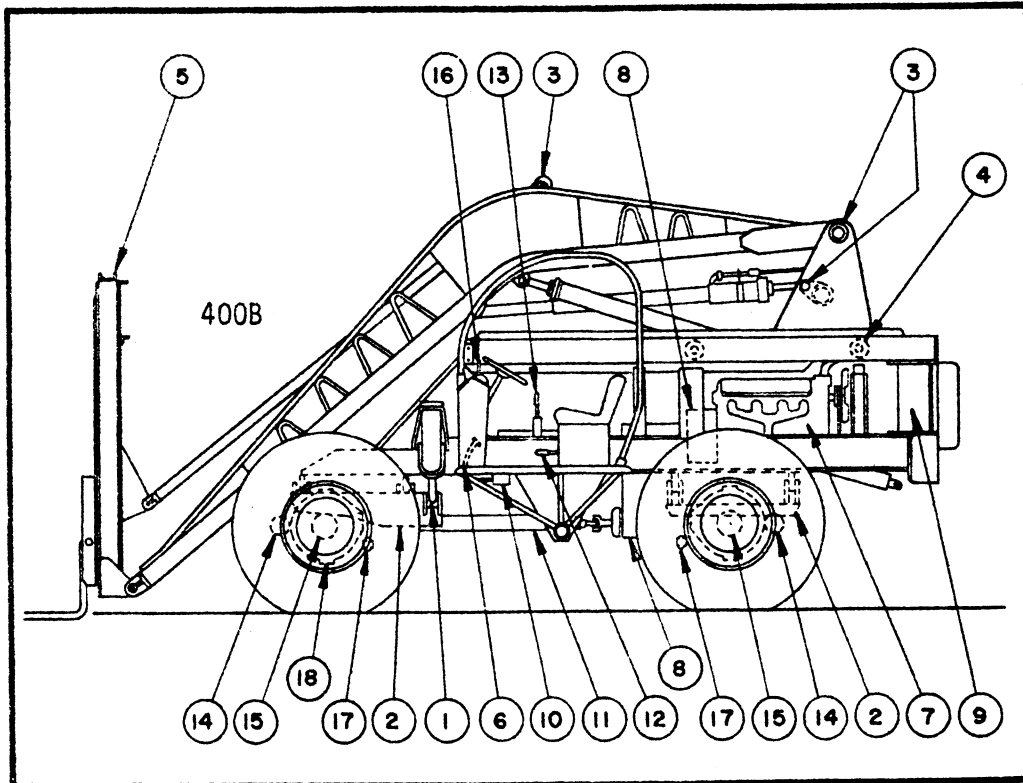
LULL Engineering Company, Inc.

3045 HIGHWAY 13, ST. PAUL, MINNESOTA 55121 • AREA CODE 612 TEL. 454-4300

ITEM	PART	LUBRICANT	SERVICE	CHANGE
1	Side Tilt Cylinder Pins	Super Permalube Grease	Daily	---
2	Oscillation Frames	Super Permalube Grease	Daily	---
3	Lift Arm, Tilt Linkage			
	Toggle & Cylinder Pivots	Super Permalube Grease	Daily	---
4	Transverse Frame Rollers	Super Permalube Grease	Daily	---
5	Tower	Super Permalube Grease	Daily	---
6	Brake Pivot Shaft	Super Permalube Grease	Daily	---
7	Engine: Below 32° F.	AMOCO 200 SAE 10W	Daily	100 Hrs.
	Above 32° F.	AMOCO 200 SAE 30	Daily	100 Hrs.
	Oil Filter Element			300 Hrs.
	Air Cleaner: Dry	Dump Dust Cover	Daily	As Req.
	Radiator	Perma-Guard Anti-Freeze	Daily	Yearly
	Battery	Distilled Water	Daily	---
8	Torque Converter & Transmission	Allison Type C3	Daily	300 Hrs.
	Transmission Filter Element			300 Hrs.
9	Hydraulic Tank	Rykon Oil No. 21	Daily	Yearly
10	Brake Cylinder	Brake Fluid	Weekly	---
11	Drive Shaft	Super Permalube Grease	Weekly	---
12	Axle Disconnect	Super Permalube Grease	Weekly	---
13	Emergency Brake	Super Permalube Grease	Weekly	---
	Emergency Brake	AMOCO 200 SAE 20	Weekly	---
14	Front & Rear Steering Cyl. Pivots	Super Permalube Grease	Weekly	---
15	Axle Ball Joints	Super Permalube Grease	Weekly	---
16	Forward & Reverse Controls	Super Permalube Grease	Weekly	---
17	Tie Rod Ends	Super Permalube Grease	Weekly	---
18	Axles - Diff. & Planetary Hubs:			
	Below 32° F.	American MP Gear SAE 80	Monthly	Yearly
	Above 32° F.	American MP Gear SAE 90	Monthly	Yearly

TIRE PRESSURES - 50 Lbs.

NOTE: USE AMERICAN OIL CO. LUBRICANTS SHOWN OR EQUAL



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3045 HIGHWAY 13
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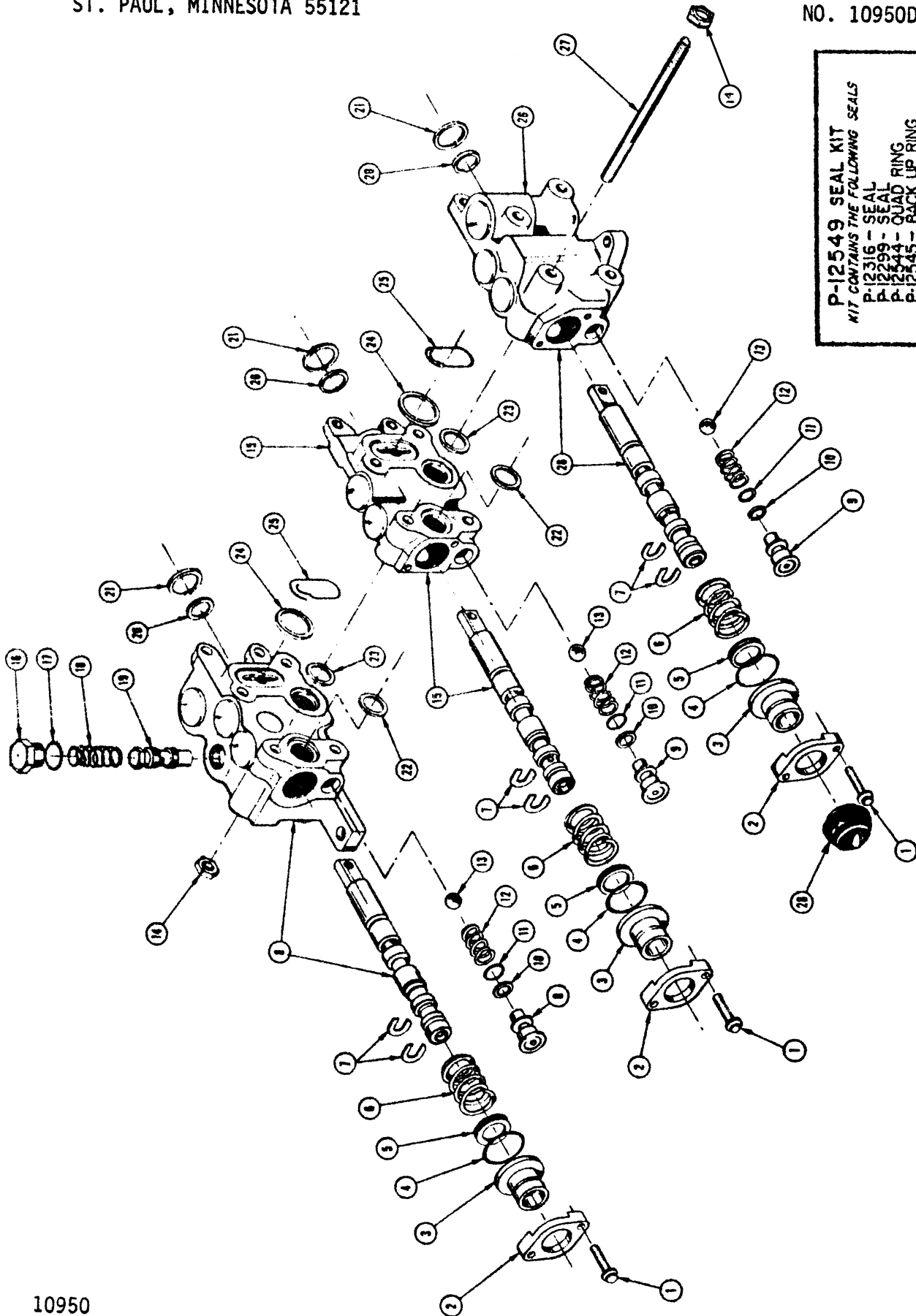
MISCELLANEOUS GREASE & LUBRICANTS
MODEL 400B
NO.14614

ITEM	PART	DESCRIPTION	QTY
1	P17563	Engine Oil (225 Chrysler) AMOCO 200 SAE 10W30 (MIL-L-2104B) Rated By API For S-D Service	5 Qts.
	P18969	(283 Waukesha Diesel) AMOCO 300 SAE 30-S-3 (MIL-L-45199B or MIL-L-2104C) Rated By API For C-D Service	11 Qts.
2	P17564	Power Shift Transmission Oil AMCO Dextron AFT (See Lube Chart)	20 Qts.
3	P12089	Oil Filter(225 Chrysler)	1
	P19513	(283 Waukesha)	1
4	P15261	Fuel Filter (225 Chrysler)	1
	P17316	(283 Waukesha)	1
5	P16947	Cooling System Anti-Freeze	12 Qts.
6	P17566	Hydraulic Oil	25 Gal.
7		Gasoline	20 Gal.
8	P16686	Brake Fluid	3/4 Qt.
9	P17565	Axle-Differential (American MP Gear-SAE-90)	11 PTS.
10	P17565	Axle Planetary Ends (Am. MP Gear-SAE-90)	5 PTS.
11	P19133	Transmission Filter	1
12	P15050	Reservior Breather	1
13	P13586	Hydraulic Reservior Filter Element	1

For Recommended Service, See Lube Chart

LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
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VALVE ASSEMBLY
 MODEL 400B
 NO. 10950D (P-12904)



P-12549 SEAL KIT
 KIT CONTAINS THE FOLLOWING SEALS

P-12316	- SEAL
P-12299	- SEAL RING
P-12544	- QUAD UP RING
P-12545	- BACK RING
P-12301	- RETAINER SEAL
P-12300	- O-RING
P-12304	- BACK UP RING
P-12305	- BACK UP RING
P-12314	- QUAD RING
P-12313	- O RING

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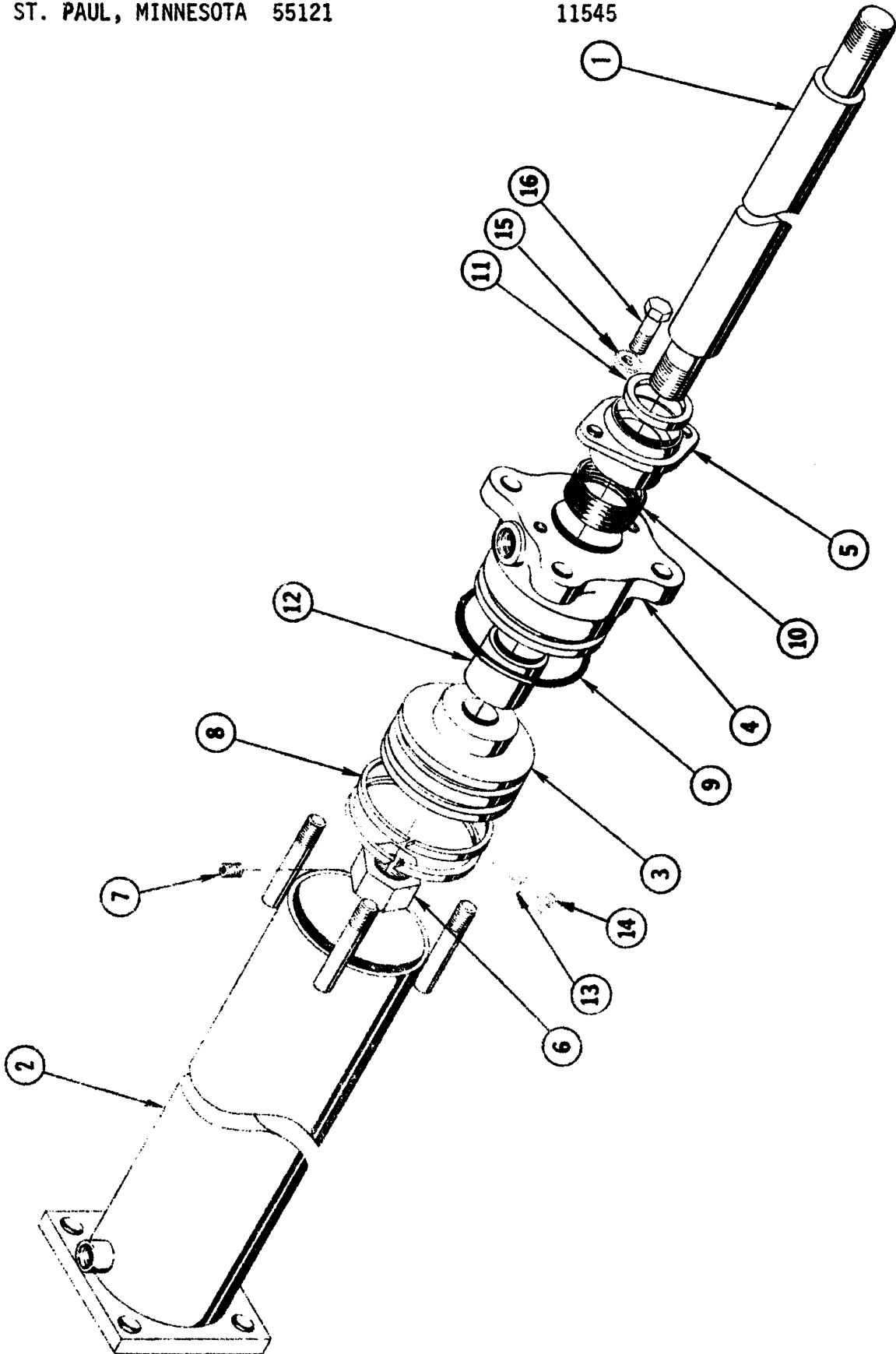
VALVE ASSEMBLY
MODEL 400B
NO. 10950D (P-12904)

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>ASSEMBLY NO.</u>	<u>DESCRIPTION</u>	<u>NO. REQ.</u>
1	P-12311		Screw	10
2	P-12312		Retainer	5
3	P-12310		Sleeve	5
4	*P-12313		O-Ring	5
5	*P-12314		Quad Ring	5
6	P-12315		Spring	5
7	P-12309		C-Washer	10
8	P-12546		Section & Spool	1
9	P-12306		Plug	5
10	*P-12305		Back Up Ring	5
11	*P-12304		O-Ring	5
12	P-12303		Spring	5
13	P-12302		Ball	5
14	P-12307		Nut	8
15	P-12547		Section & Spool	3
16	P-12285		Plug	1
17	P-12295		O-Ring	1
18	P-12296		Spring	1
19	P-12541		Valve Control	1
20	*P-12544		Quad Ring	5
21	*P-12545		Back Up Ring	5
22	*P-12316		Seal	4
23	*P-12300		Seal	4
24	*P-12299		Seal	4
25	*P-12301		Retainer	4
26	P-12548		Section & Spool	1
27	P-12543		Stud	4
28	P-13317		Dust Cover	5

* Included in P-12549 Seal Kit.

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TRANSVERSE CYLINDER ASSEMBLY
MODEL 400B
11545



11545

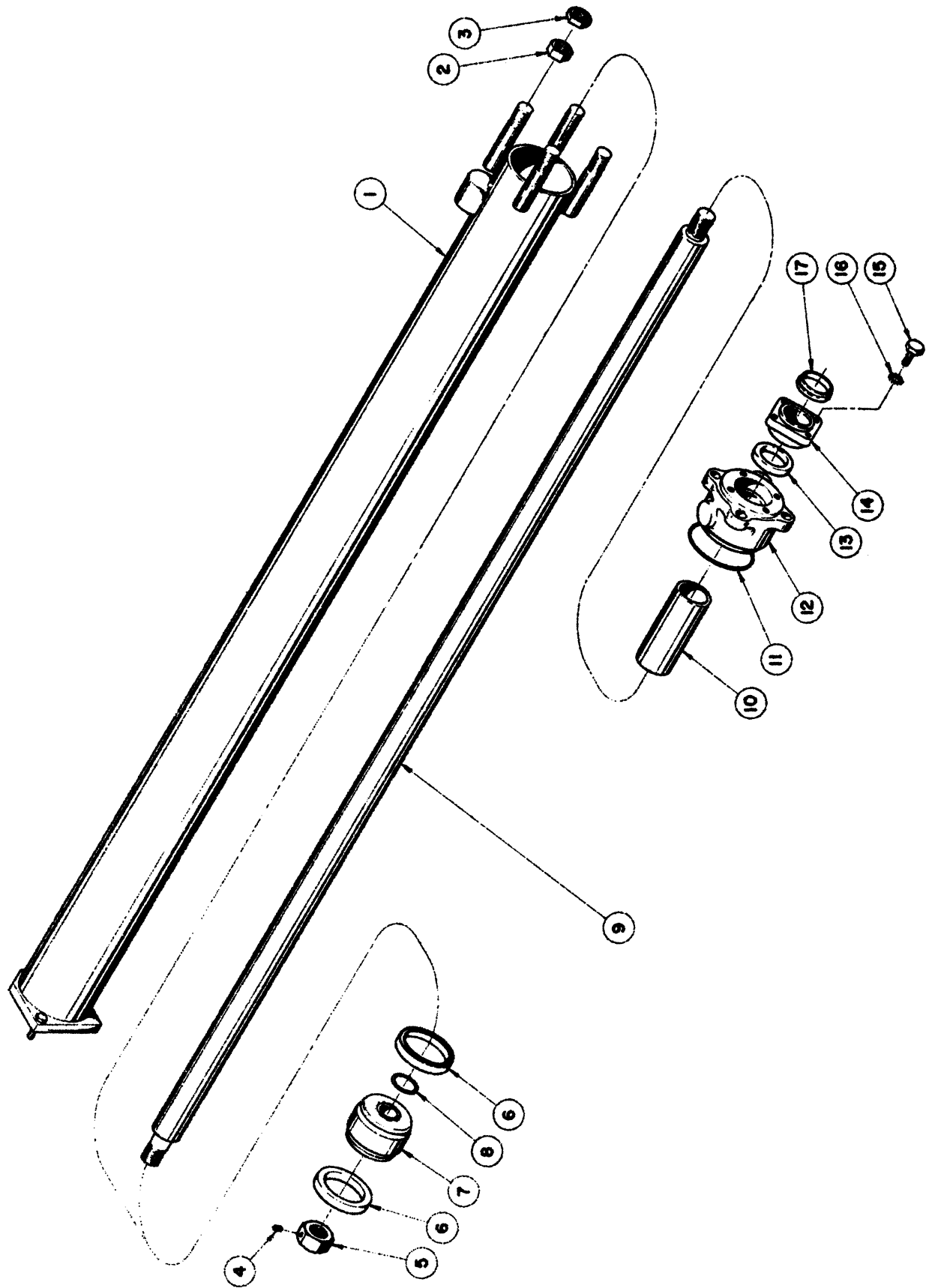
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TRANSVERSE CYLINDER ASSEMBLY
MODEL 400B
11545

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	11074		Piston Rod	1
2	11075		Cylinder Tube	1
3	551		Piston	1
4	1028		Head	1
5	1032		Gland	1
6	222		Nut (Special)	1
7	Com'1		Setscrew 1/4-20 N.C. X 3/8" Lg.	1
8	P11346		Ring Ass'y	2
9	P10314		O-Ring	1
10	P10306		V-Packing	1
11	P10308		Kozure, Wiper	1
12	N-10229		Spacer	1
13	Com'1		Nut, Full 1/2 N.F.	4
14	Com'1		Nut, Jam 1/2 N.F.	4
15	Com'1		Lockwasher, Shakeproof	2
16	Com'1		Capscrew 3/8 N.C. X 1" Lg.	2

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TOWER CYLINDER ASS'Y
MODEL 400B
NO. 14135



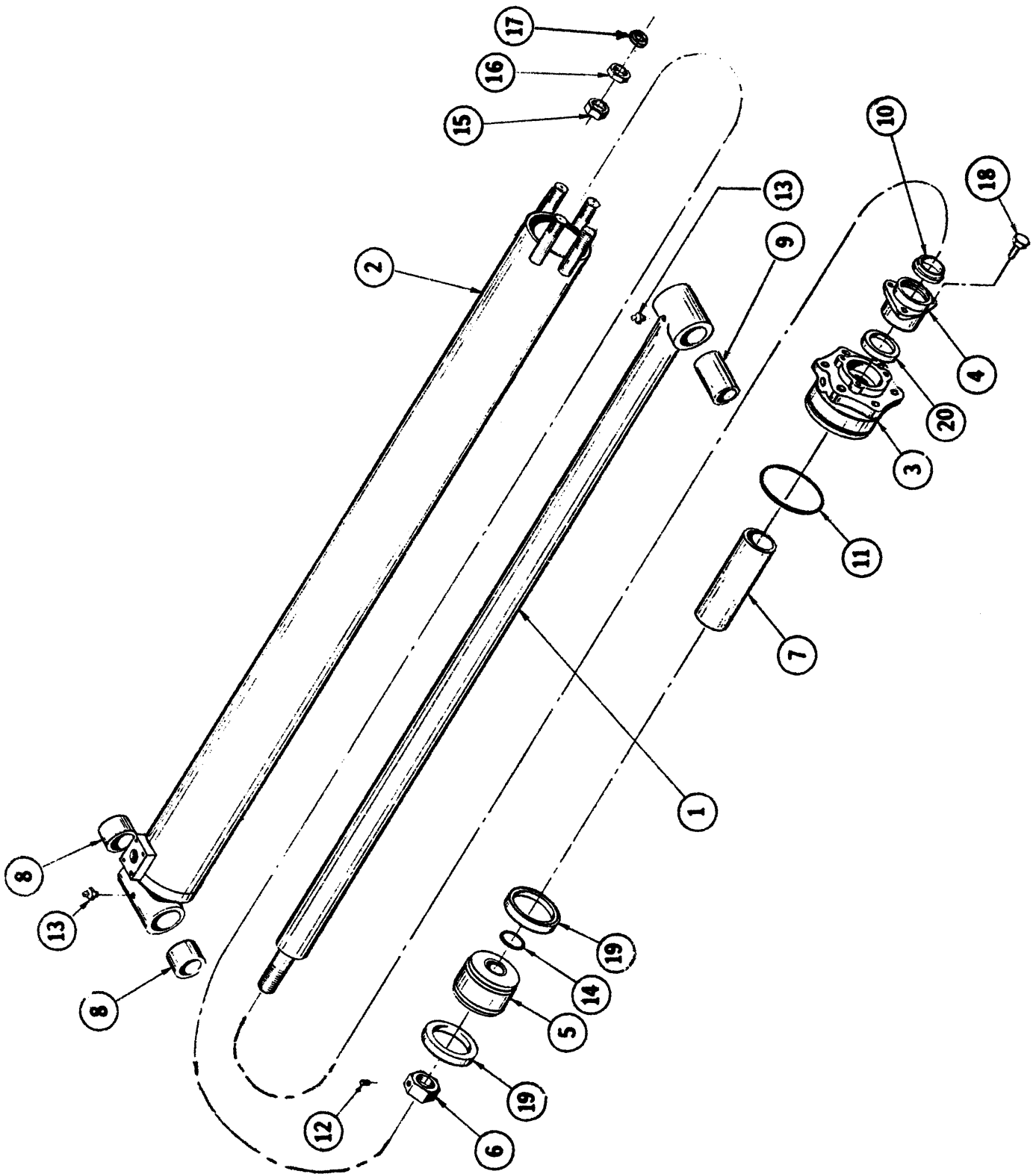
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TOWER CYLINDER ASSEMBLY
MODEL 400B
NO. 14135

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14128		Cylinder Tube	1
2	Com'l		Nut, Hex 7/16-20 N.F.	4
3	Com'l		Nut, Jam 7/16-20 N.F.	4
4	Com'l		Set Screw, 1/4-20 N.C., Cup Pt.	1
5	222		Nut, Piston	1
6	P17549		Seal, Piston	2
7	14139		Piston	1
8	P13452		O-Ring	1
9	14136		Rod, Piston	1
10	14140		Spacer	1
11	P10315		O-Ring	1
12	14137		Head	1
13	P17550		Seal, Rod	1
14	14138		Gland	1
15	Com'l		Cap Screw 5/16-18 N.C. X 1" Lg.	4
16	Com'l		Washer, Shakeproof	4
17	P17551		Wiper	1

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HOIST CYLINDER ASS'Y.
MODEL 400B
14476



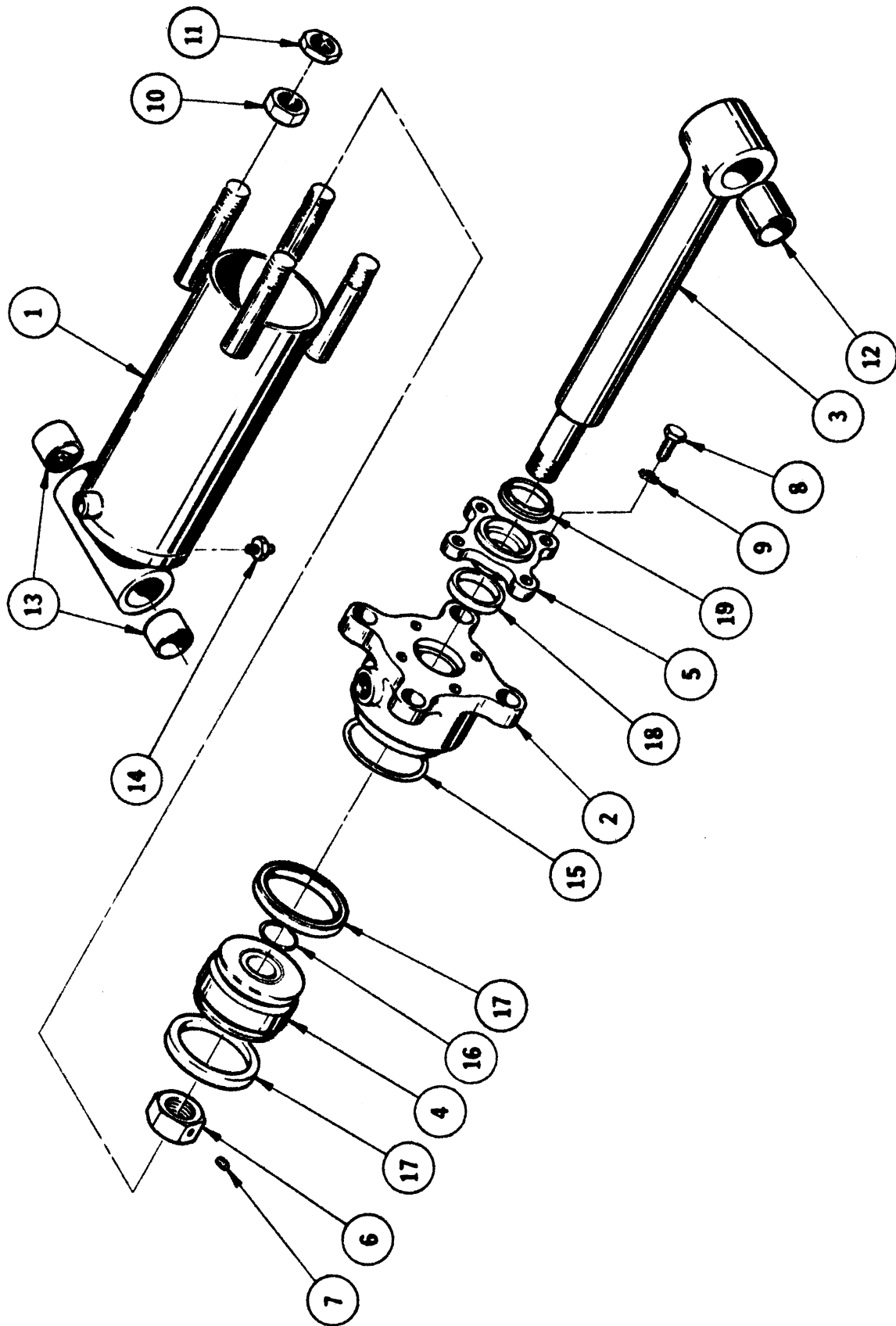
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HOIST CYLINDER ASSEMBLY
MODEL 400B
14476

ITEM	PART	SEE ASS'y	DESCRIPTION	QTY
1	14043		Rod, Piston	1
2	14477		Tube Cylinder	1
3	545		Head	1
4	14013		Gland	1
5	14010		Piston	1
6	215		Nut, Piston	1
7	14032		Spacer	1
8	4873		Bushing	2
9	3304		Bushing	1
10	P17459		Wiper, Rod	1
11	P10316		O-Ring	1
12	Com'l		Set Screw 1/4-20 N.C. X 3/8" Lg.	1
13	Com'l		Zerk	2
14	P11576		O-Ring	1
15	Com'l		Nut, Hex 1/2 N.F.	4
16	Com'l		Nut, Jam 1/2 N.F.	4
17	Com'l		Lockwasher, Shakeproof	4
18	Com'l		Cap Screw 5/16 N.C. X 1" Lg.	4
19	P17457		Seal Piston	2
20	P17458		Seal Rod	1

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TILT FRAME CYLINDER ASSEMBLY
MODEL 400B
NO. 14481



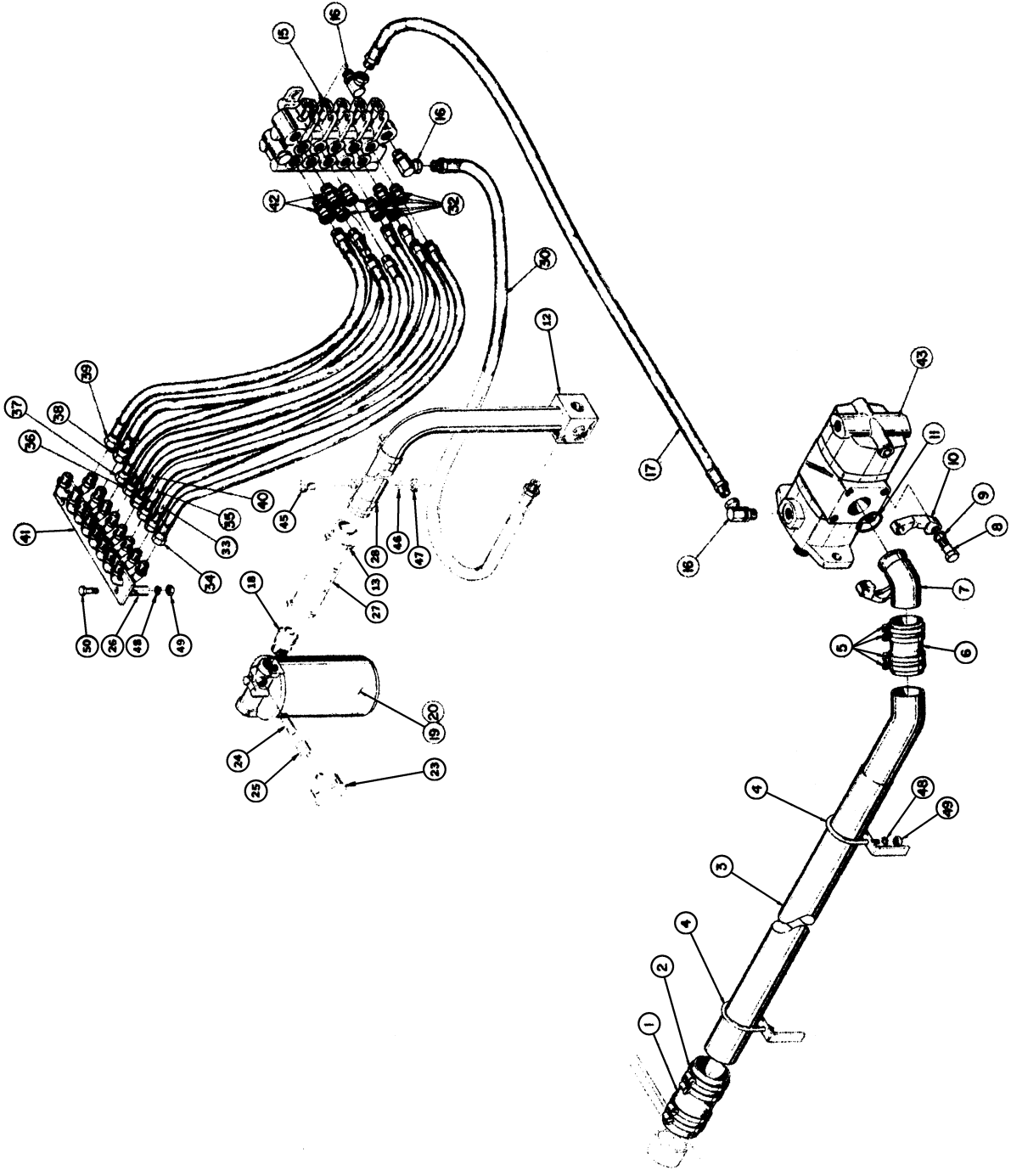
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TILT FRAME CYLINDER ASSEMBLY
MODEL 400B
14481

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14482		Tube Weldment	1
2	545		Head	1
3	13686		Rod	1
4	14009		Piston	1
5	14013		Gland	1
6	215		Nut	1
7	Com'1		Setscrew 1/4-20 N.C. X 3/8" Lg.	1
8	Com'1		Capscrew 5/16-18 N.C. X 1" Lg.	4
9	Com'1		Lockwasher, Shakeproof 5/16"	4
10	Com'1		Nut, Hex 1/2-20 N.F.	4
11	Com'1		Nut, Jam 1/2-20 N.F.	4
12	13691		Bushing	1
13	4873		Bushing	2
14	P16611		Zerk, Str. 1/8 N.P.T.	1
15	P10316		O-Ring	1
16	P11576		O-Ring	1
17	P17457		Seal, Piston	2
18	P17458		Seal, Rod	1
19	P17459		Wiper, Rod	1

LULL ENGINEERING COMPANY, INC.
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HYDRAULIC ASSEMBLY (PUMP TO VALVES)
MODEL 40JB
14494-1 S/N 2100 & UP



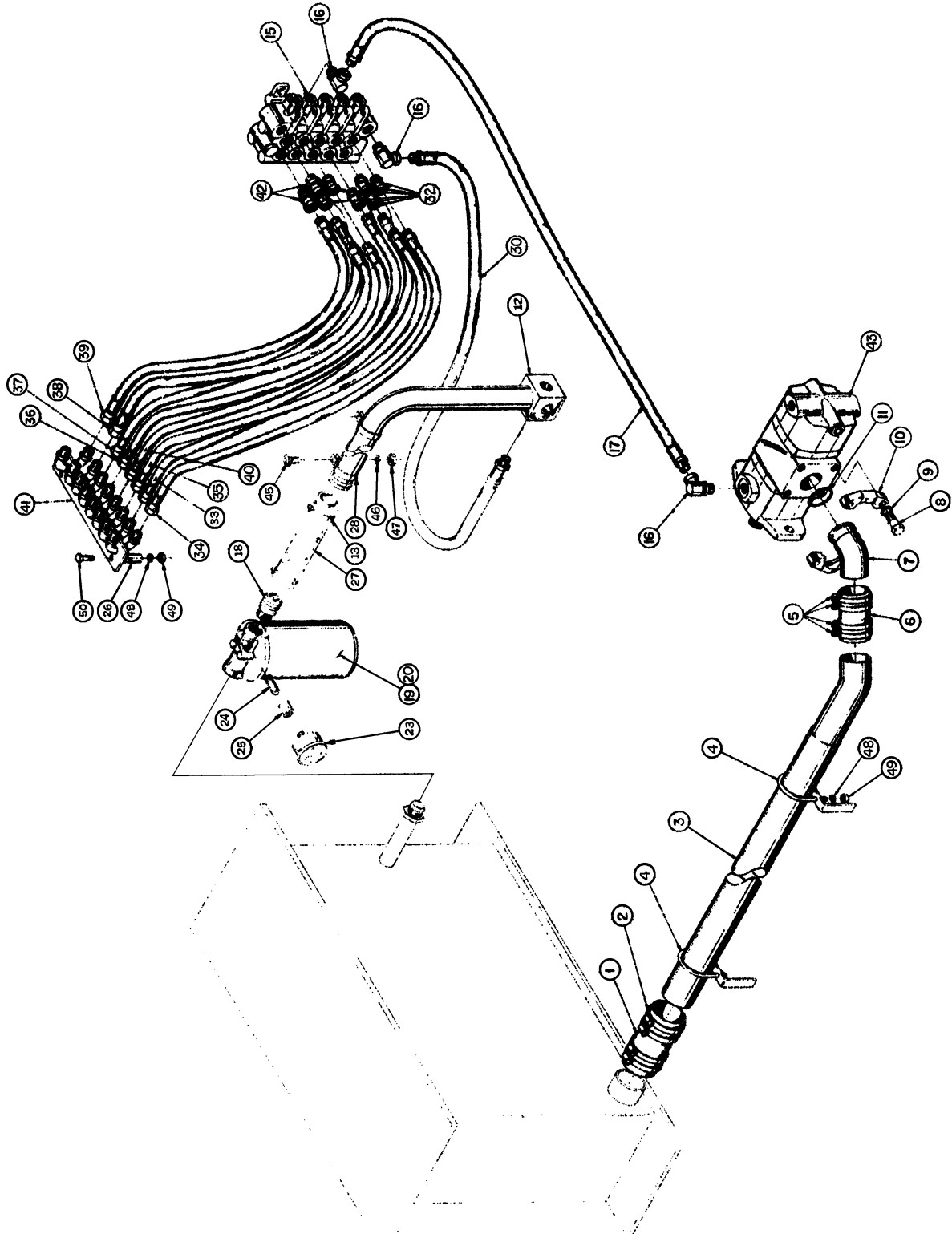
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HYDRAULIC ASSEMBLY (PUMP TO VALVES)
 MODEL 400B
 14494-1 S/N 2100 & UP

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P20475		Hose, 3" I.D. X 4" LG.	1
2	P11124		Clamp	4
3	14765		Suction Tube	1
4	P17834		U-Clamp	2
5	P10553		Clamp	4
6	P20474		Hose, 2½" I.D. X 4" LG.	1
7	16290		Elbow Weldment	1
8	P17836		Capscrew 1/2-13 N.C. X 1 1/2" Lg. (Gr. 8)	4
9	Com'l		Lockwasher 1/2"	4
10	P17672		Flange	2
11	P12971		O-Ring	1
12	P19140		Manifold, Return	1
13	P10600		Clamp	2
14				
15	10950		Valve Control	1
16	P12906		Adapter	3
17	P14983		Hose	1
18	P18142		Nipple, Swagged	1
19	P13586		Element	1
20	P13587		Filter	1
21				
22	N-10721		Spacer 3/4" Str. Pipe X 1/2" Lg. (Diesel Only)	2
23	P13588		Guage	1
24	Com'l		Nipple (Diesel Only)	1
25	P10665		Coupling (Diesel Only)	1
26	N-10345		Spacer (Diesel Only)	2
27	P17840		Hose	1
28	P17593		Clamp	2
29				
30	P11178		Hose	1
31				
32	P12908		Fitting	6
33	P10272		Hose	1
34	P12945		Hose	1
35	P10453		Hose	1
36	P15117		Hose	1
37	P12944		Hose	1
38	P12943		Hose	1
39	P10456		Hose	1
40	P13342		Hose	1
41	P19274		Hose Terminal	1
42	P12907		Fitting	2
43	P18128		Pump (P13770 Flow Control)	1
44				
45	Com'l		Capscrew 5/16-18 N.C. X 1" Lg.	2
46	Com'l		Lockwasher 5/16"	2
47	Com'l		Nur, Hex 5/16-18 N.C.	2
48	Com'l		Lockwasher	2
49	Com'l		Nut, Hex 3/8-16 N.C.	2
50	Com'l		Capscrew 3/8-16 N.C. X 2" Lg. (Gas)	2
	Com'l		Capscrew 3/8-16 N.C. X 5" Lg. (Diesel)	2

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HYDRAULIC ASSEMBLY (PUMP TO VALVES)
MODEL 400B
14494



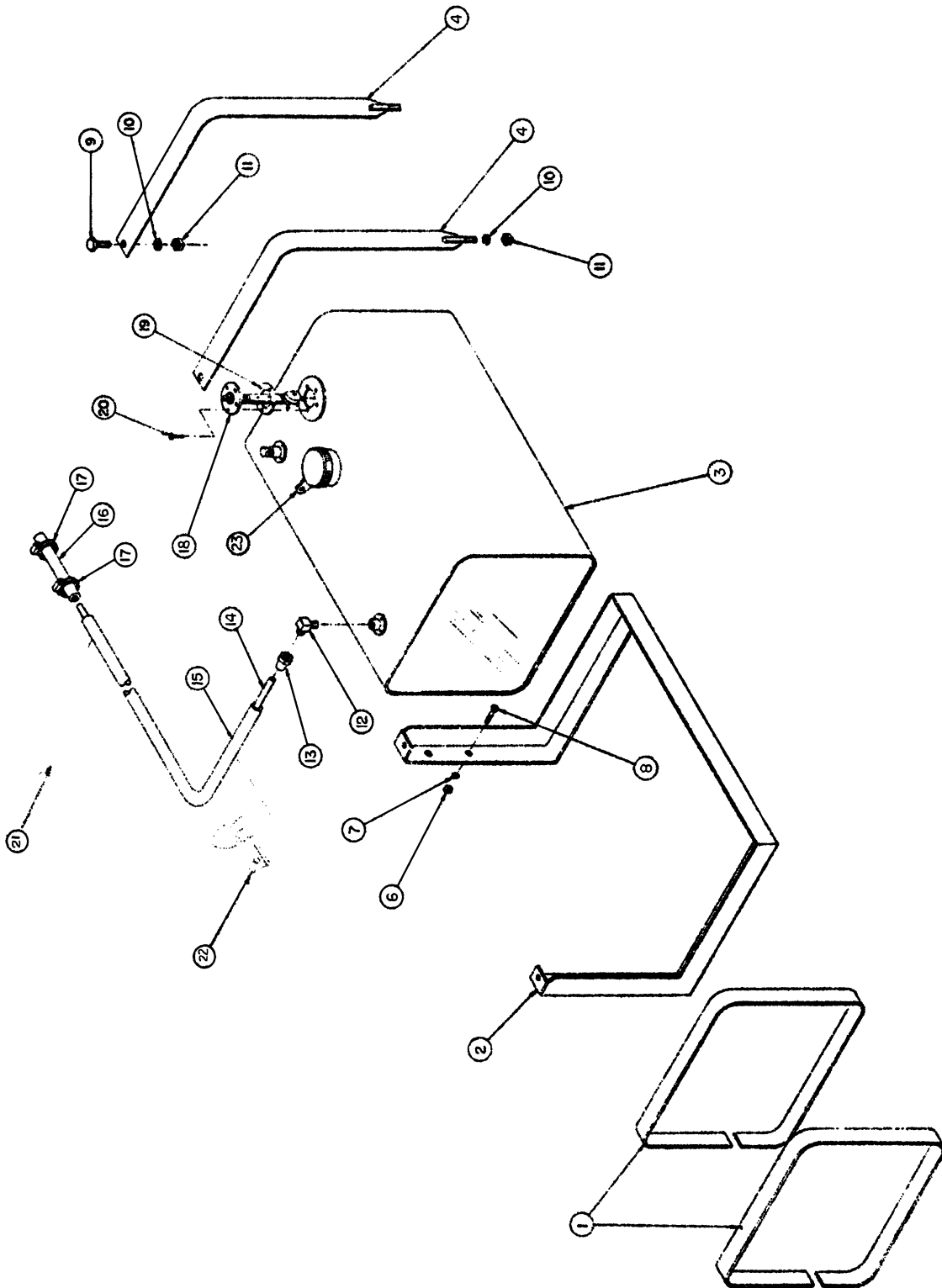
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HYDRAULIC ASSEMBLY (PUMP TO VALVES)
 MODEL 400B
 14494

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P17842		Hose	1
2	P11124		Clamp	4
3	14765		Suction Tube	1
4	P17834		U-Clamp	2
5	P10553		Clamp	4
6	P17841		Hose	1
7	14312		Elbow Weldment	1
8	P17836		Capscrew 1/2-13 N.C. X 1 1/2" Lg. (Gr. 8)	4
9	Com'l		Lockwasher 1/2"	4
10	P17672		Flange	2
11	P12971		O-Ring	1
12	P19140		Manifold, Return	1
13	P10600		Clamp	2
14				
15		P12904	Valve Control	1
16	P12906		Adapter	3
17	P14983		Hose	1
18	P18142		Nipple, Swagged	1
19	P13586		Element	1
20	P13587		Filter	1
21				
22	N-10721		Spacer 3/4" Str. Pipe X 1/2" Lg. (Diesel Only)	2
23	P13588		Guage	1
24	Com'l		Nipple (Diesel Only)	1
25	P10665		Coupling (Diesel Only)	1
26	N-10345		Spacer (Diesel Only)	1
27	P17840		Hose	1
28	P17593		Clamp	2
29				
30	P11178		Hose	1
31				
32	P12908		Fitting	6
33	P10272		Hose	1
34	P12945		Hose	1
35	P10453		Hose	1
36	P15117		Hose	1
37	P12944		Hose	1
38	P12943		Hose	1
39	P10456		Hose	1
40	P13342		Hose	1
41	P19274		Hose Terminal	1
42	P12907		Fitting	2
43		P18192	Pump (P13770 Flow Control)	1
44				
45	Com'l		Capscrew 5/16-18 N.C. X 1" Lg.	2
46	Com'l		Lockwasher 5/16"	2
47	Com'l		Nur, Hex 5/16-18 N.C.	2
48	Com'l		Lockwasher	2
49	Com'l		Nut, Hex 3/8-16 N.C.	2
50	Com'l		Capscrew 3/8-16 N.C. X 2" Lg. (Gas)	2
	Com'l		Capscrew 3/8-16 N.C. X 5" Lg. (Diesel)	2

LULL ENGINEERING COMPANY, INC.
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FUEL TANK ASSEMBLY
MODEL 400B (GAS)
14498



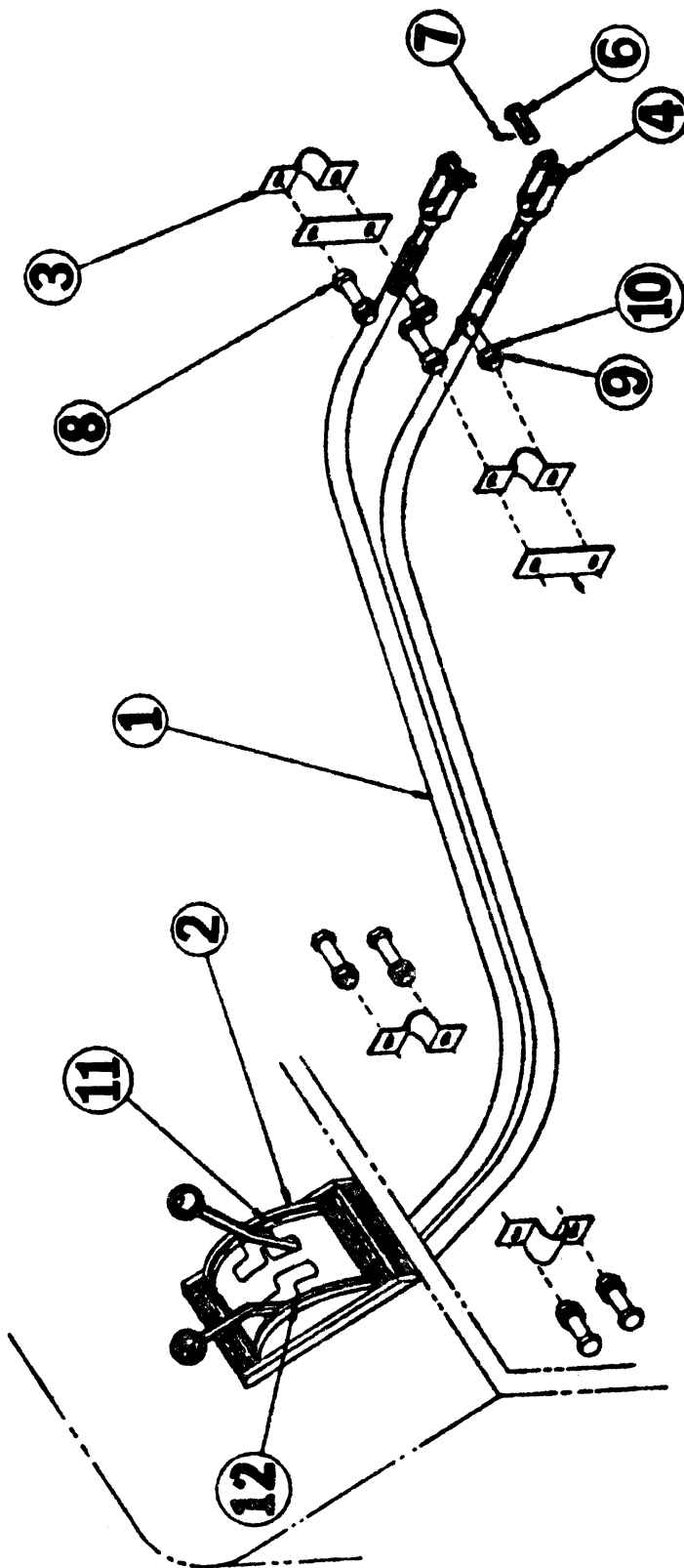
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3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FUEL TANK ASSEMBLY
MODEL 400B (GAS)
14498

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P10521		Tank Webbing	2
2	8700		Bracket Weldment	1
3	P11401		Fuel Tank	1
4	3530		Strap Weldment	2
5				
6	Com'l		Full Nut, 5/16-18 N.C.	4
7	Com'l		Lockwasher 5/16"	4
8	Com'l		Capscrew, Flathead 5/16-18 N.C. X 2" Lg.	4
9	Com'l		Capscrew 1/4-20 N.C. X 3/4" Lg.	2
10	Com'l		Lockwasher 1/4"	4
11	Com'l		Full Nut 1/4-20 N.C.	4
12	P15304		Fitting	1
13	P15311		Fitting	1
14	P14057		Tubing 5/16"	100"
15	P16727		Loom	99"
16	P16665		Hose	4
17	P14047		Hose Clamp	2
18	P12964		Sender, Fuel Gauge	1
19	P16125		Gasket	1
20	Com'l		Screw 10/24 N.C. X 1/2" Lg.	5
21	P17553		Clamp	2
22	P16658		Clip	2
23	P12182		Fuel Cap	1

LULL ENGINEERING COMPANY, INC.
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SHIFTING CONTROL ASSEMBLY
MODELS 844 TT - 34 Ft.
4D4B-23, 22 1/2, 34, 41 1/2 E.L.
400B
NO. 14552D



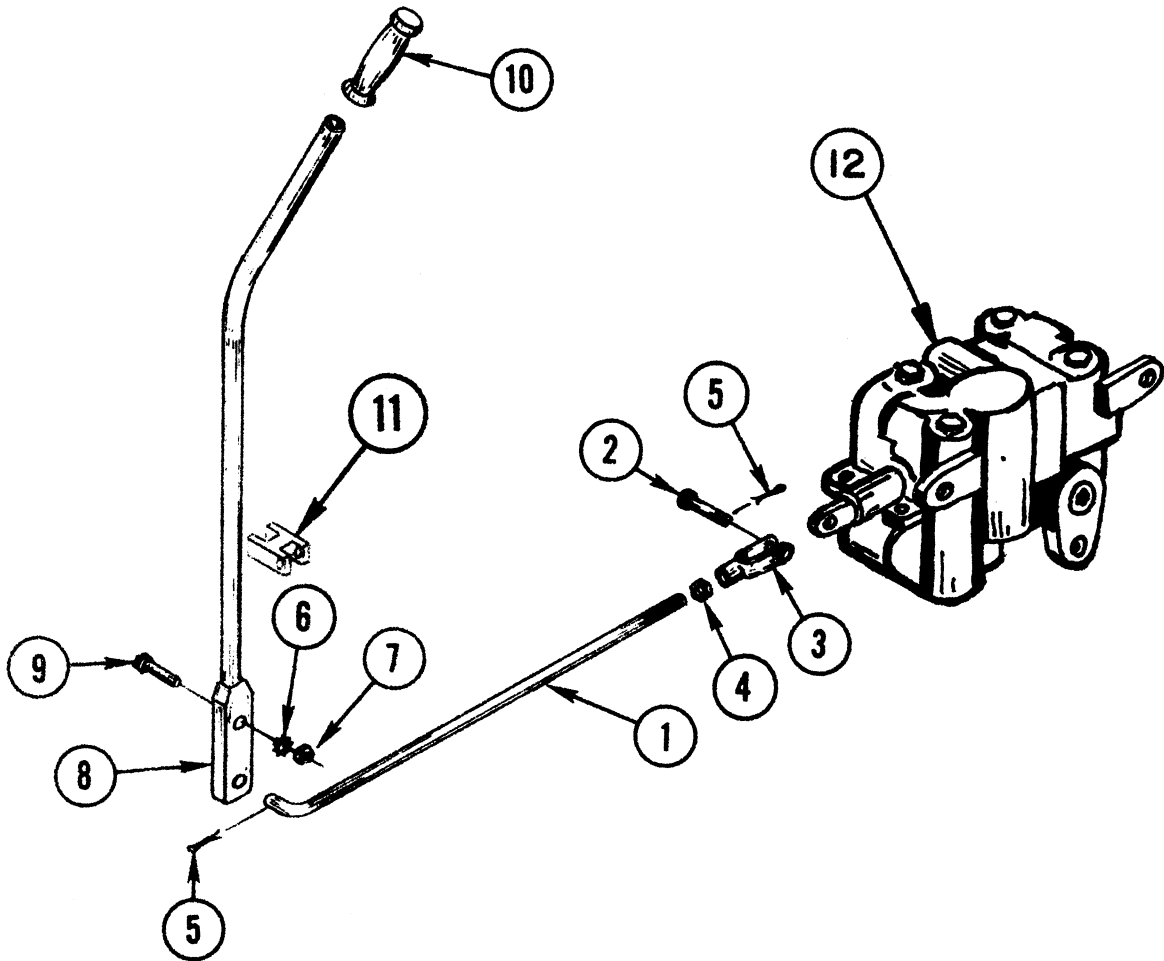
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SHIFTING CONTROL ASSEMBLY
MODELS 844 TT - 34 Ft.
4D4B-23, 22 1/2, 34, 41 1/2 Ft.
400B - 34, 21, Ft.
NO. 14552D

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY.
1	P17591		Cable, Control	2
2	P17589		Control, Shifting	1
3	P17678		Clamps	4
4	P17679		Clevis 1/4-28 UNF-3/8 Pin Hole	2
5				
6	COM'L		Clevis, Pin, 3/8" x 1"	2
7	COM'L		Cotter Key, 1/8" x 1"	2
8	COM'L		Capscrew, 10-32 x 7/8" Long	8
9	COM'L		Nut	8
10	COM'L		Lockwasher, Spring, 10-32	8
11	REF.		Decal, Shift Patern	
2	REF.		Decal, Forward, Neutral, Reverse	
3				
14				
15	P19128		Shim	2

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3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

SIDE TILT CONTROL ASSEMBLY
MODEL 400B
NO. 14554



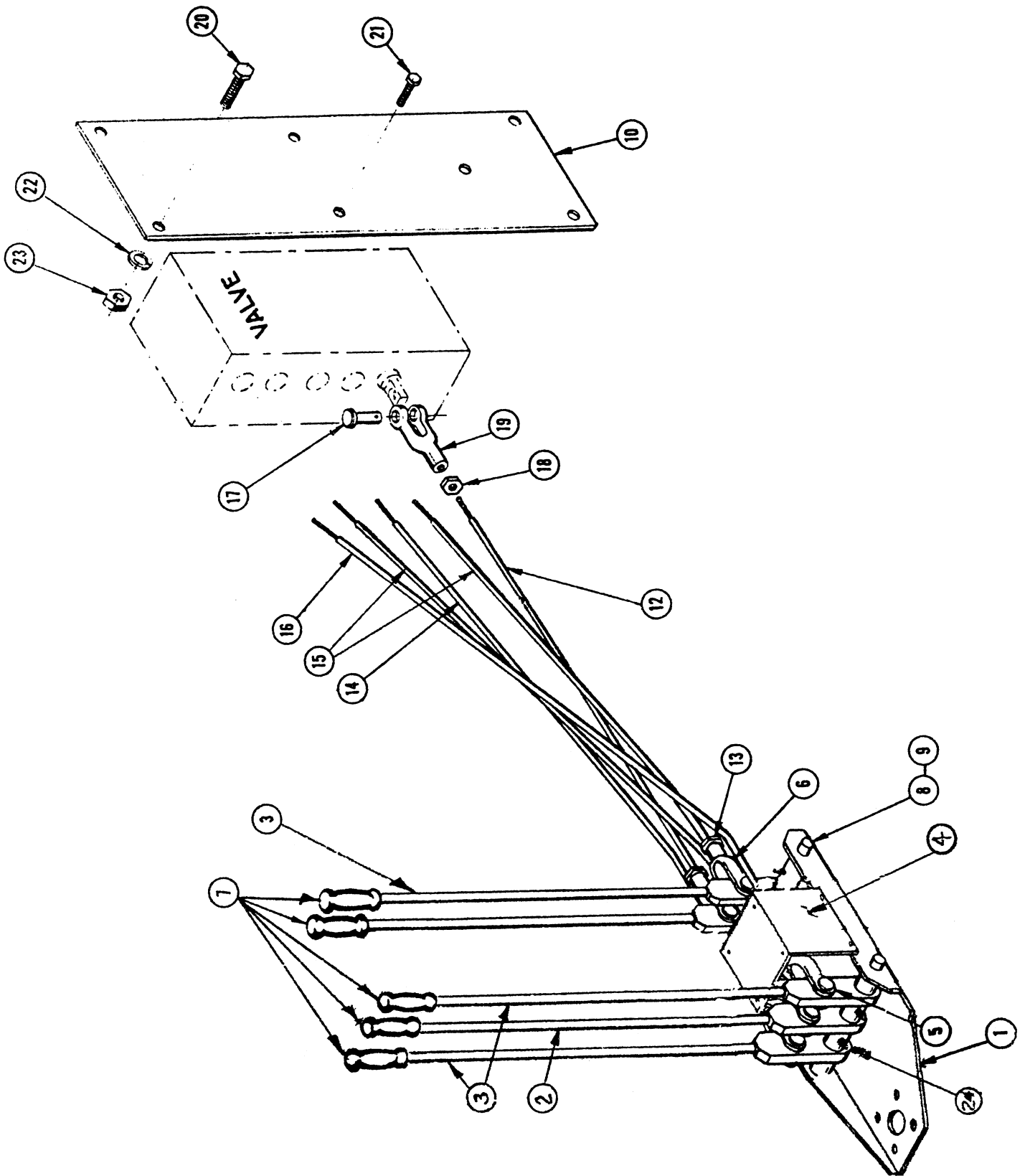
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

SIDE TILT CONTROL ASSEMBLY
MODEL 400B
NO. 14554

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14607		Valve Connector Link	1
2	P-10512		Clevis Pin	1
3	P-10193		Clevis	1
4	COM'L		Nut, 3/8-24 NF Hex Jam	1
5	COM'L		Cotter Pin, 1/8 x 7/8	2
6	COM'L		Shakeproof Washer, 3/8	1
7	COM'L		Nut, 3/8-24 NF Hex	1
8	3481		Side Tilt Lever	1
9	COM'L		Capscrew, 3/8-24 NF x 2 1/4 Hex Hd.	1
10	P-10194		Rubber Grip	1
11	8702		Lock	1
12		P-13005	Valve Ass'y	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

VALVE CONTROL ASSEMBLY
MODEL 400B
NO. 14555



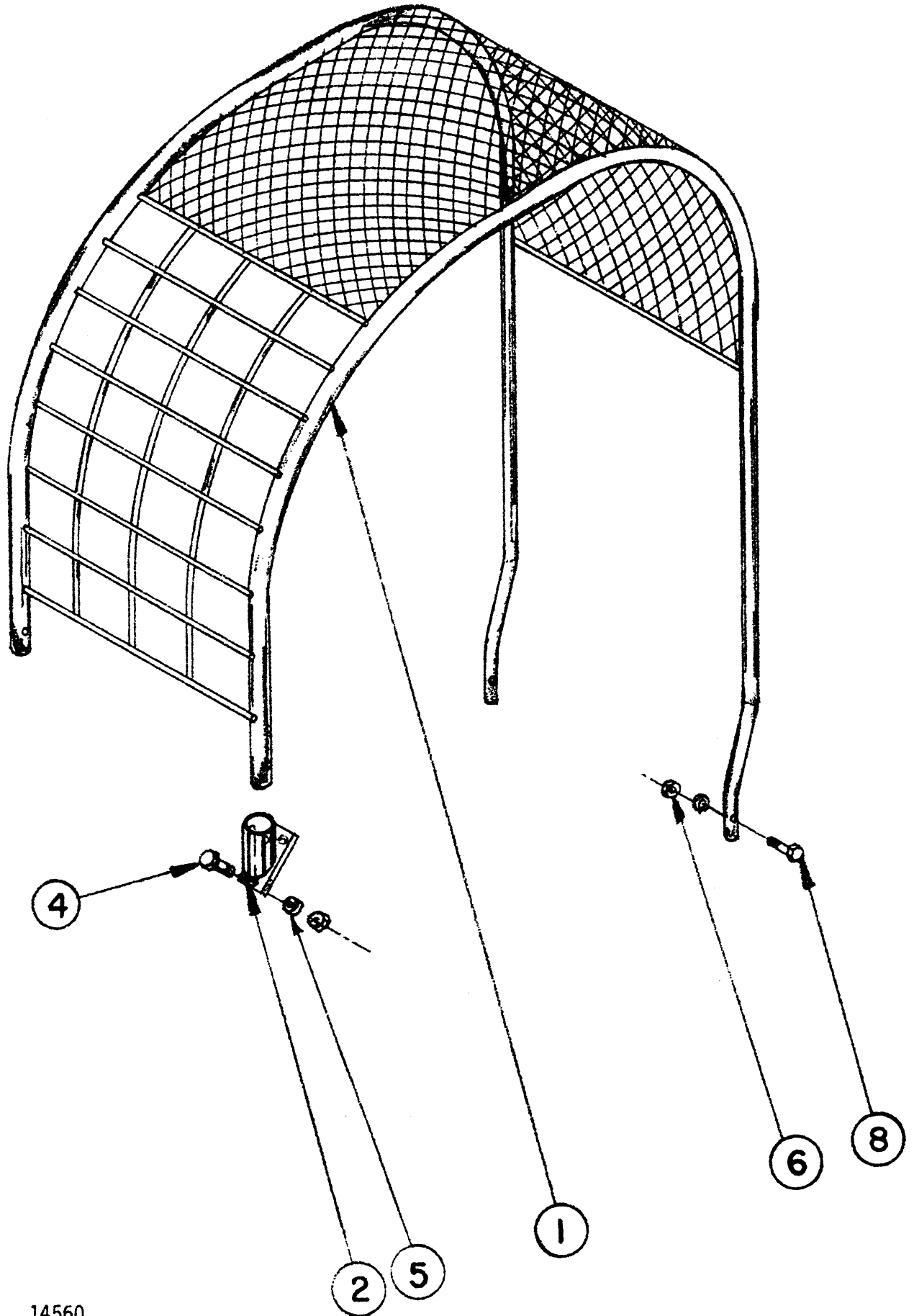
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

VALVE CONTROL ASSEMBLY
MODEL 400B
NO. 14555

ITEM NO.	PART NO.	ASSEMBLY NO.	DESCRIPTION	QTY
1	14549		Valve Handle Bracket	1
2	14761		Valve Control Handle	1
3	14760		Valve Control Handle	4
4	14883		Plate	1
5	P10514		Clevis Pin	5
6	P10333		Clevis	5
7	P10012		Rubber Handle Grip	5
8	14550		Pivot Shaft	2
9	14762		Pivot Spacer	1
10	10976		Valve Plate	1
11				
12	14567		Rod	1
13	Com'1		Jam Nut, 1/2" - 20 N.F.	5
14	14565		Rod	1
15	14566		Rod	2
16	14568		Rod	1
17	P10040		Clevis Pin	5
18	Com'1		Jam Nut, 3/8" - 24 N.F.	5
19	P10193		Clevis	5
20	Com'1		Bolt, 1/2" N.C. x 1-1/4"	4
21	Com'1		Bolt, 3/8" N.C. x 1-1/4"	3
22	Com'1		Lockwasher, 1/2"	4
23	Com'1		Nut, 1/2" N.C.	4
24	Com'1		Zerk, 1/4" - 28 N.F. - 2B, Straight	6

WILL ENGINEERING COMPANY, INC.
1001 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

OVERHEAD GUARD ASSEMBLY
MODEL 400B
NO. 14560



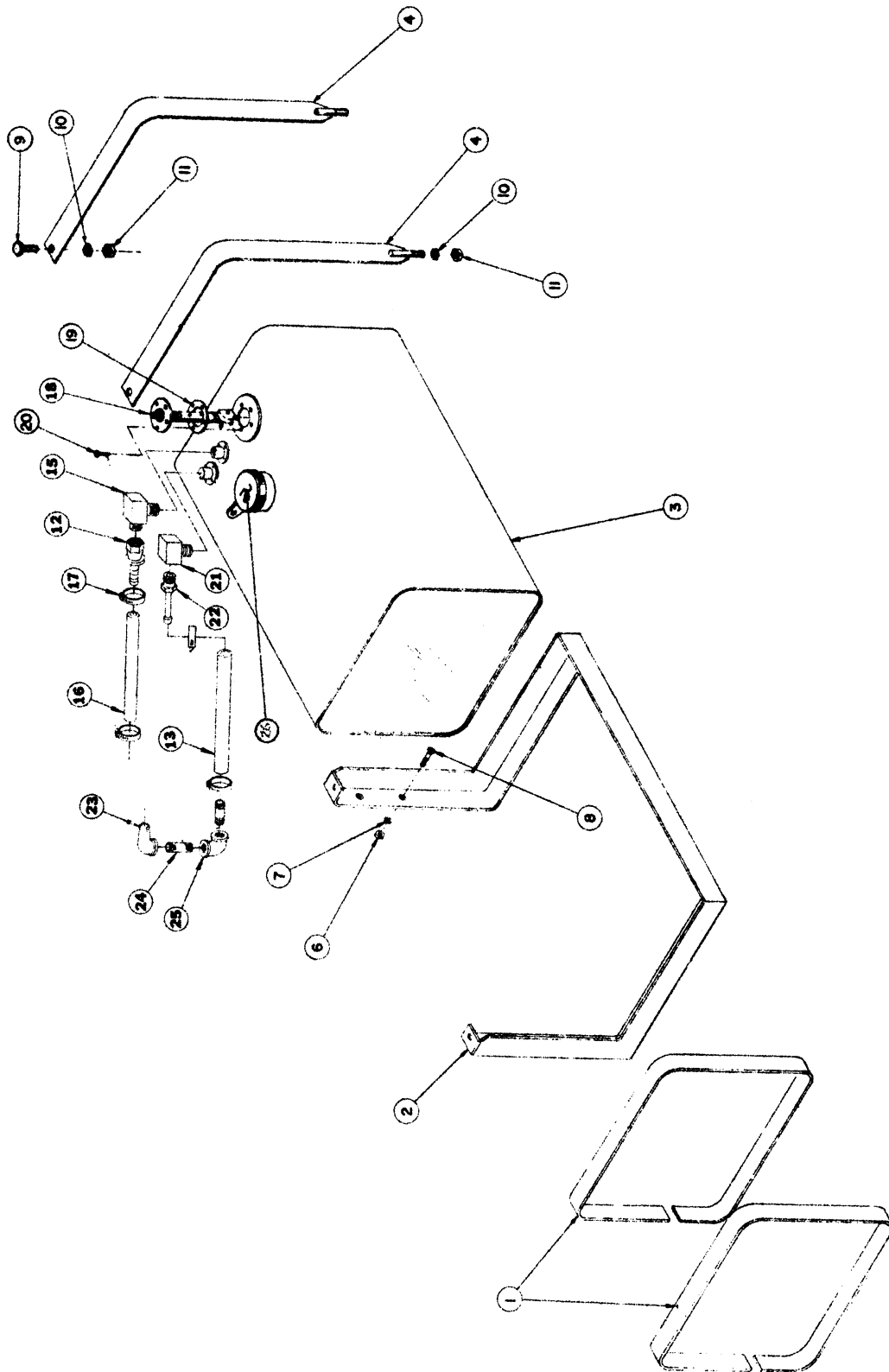
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

OVERHEAD GUARD ASSEMBLY
MODEL 400B
NO. 14560

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	2193		Guard	1
2	14536		Front Guard Mount	2
3				
4	Com'1		Capscrew, 1/4 N/C x 3/4 lg.	4
5	Com'1		Lockwasher 1/4"	6
6	Com'1		Nut, 1/4 N.C.	6
7				
8	Com'1		Capscrew, 1/4" N.C. X 1 3/4" Lg.	2

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FUEL TANK ASSEMBLY
MODEL 400B (DIESEL)
14705



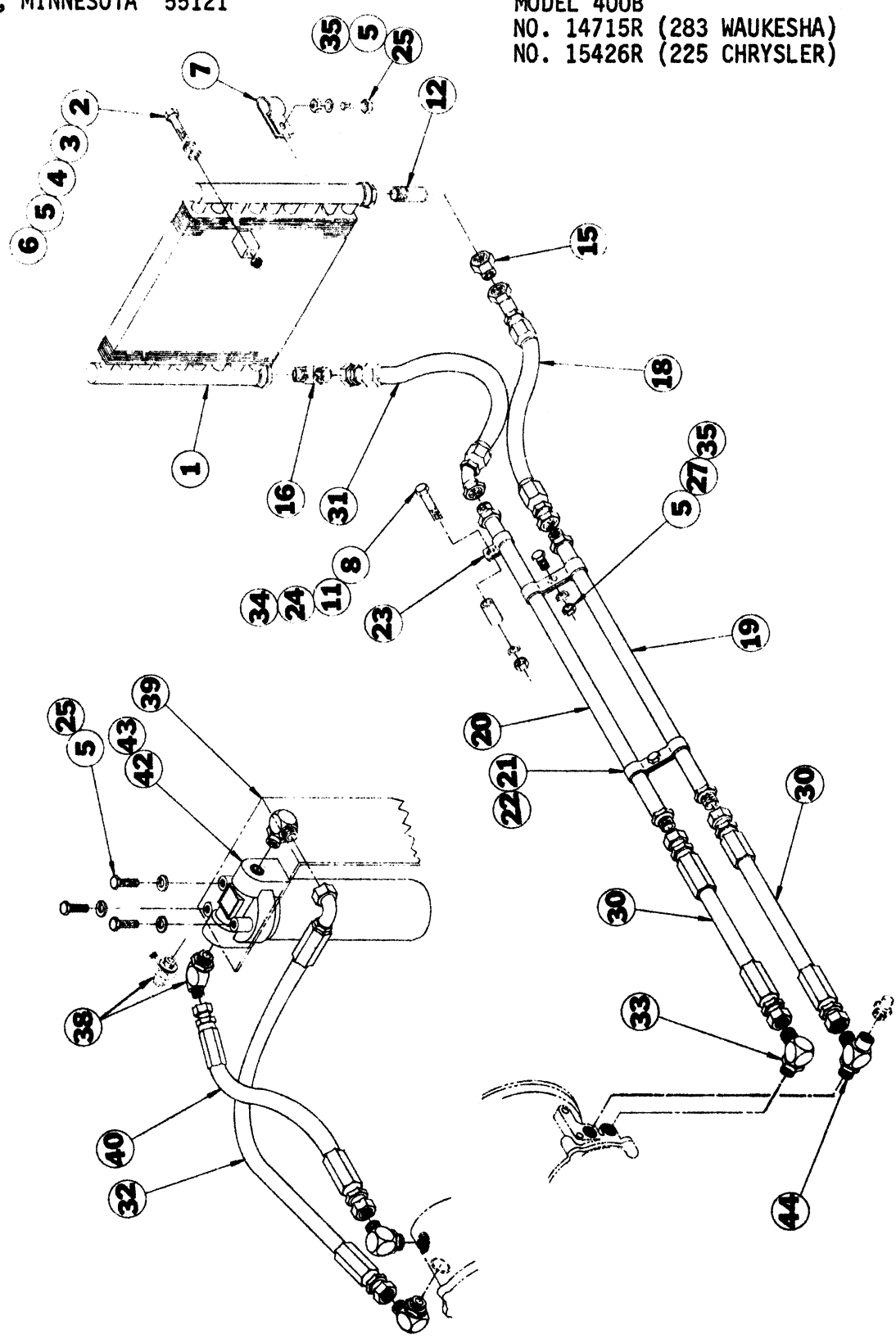
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FUEL TANK ASSEMBLY
MODEL 400B (DIESEL)
14705

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P10521		Gas Tank Webbing	2
2	8700		Bracket Weldment	1
3	P11401		Fuel Tank	1
4	3530		Strap Weldment	2
5				
6	Com'l		Full Nut 5/16-18 N.C.	4
7	Com'l		Lockwasher 5/16"	4
8	Com'l		Capscrew, Flathead 5/16-18 N.C. X 2" Lg.	4
9	Com'l		Capscrew 1/4-20 N.C. X 3/4" Lg.	2
10	Com'l		Lockwasher 1/4"	4
11	Com'l		Full Nut 1/4-20 N.C.	4
12	P13617		Fitting	1
13	P13741		Hose	1
14				
15	P15304		Fitting 90° Elbow	1
16	P17210		Hose	1
17	P14047		Hose Clamp	4
18	P12964		Sender Fuel Gauge	1
19	P16125		Gasket	1
20	Com'l		Screws 10/24 X 1/2" Lg.	5
21	P13611		Fitting Elbow	1
22	P13617		Fitting	1
23	P10201		Elbow	1
24	P10757		Nipple	2
25	P10223		90° Elbow	1
26	P12182		Fuel Cap	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TRANSMISSION COOLER ASSEMBLY &
REMOTE FILTER ASSEMBLY
MODEL 400B
NO. 14715R (283 WAUKESHA)
NO. 15426R (225 CHRYSLER)



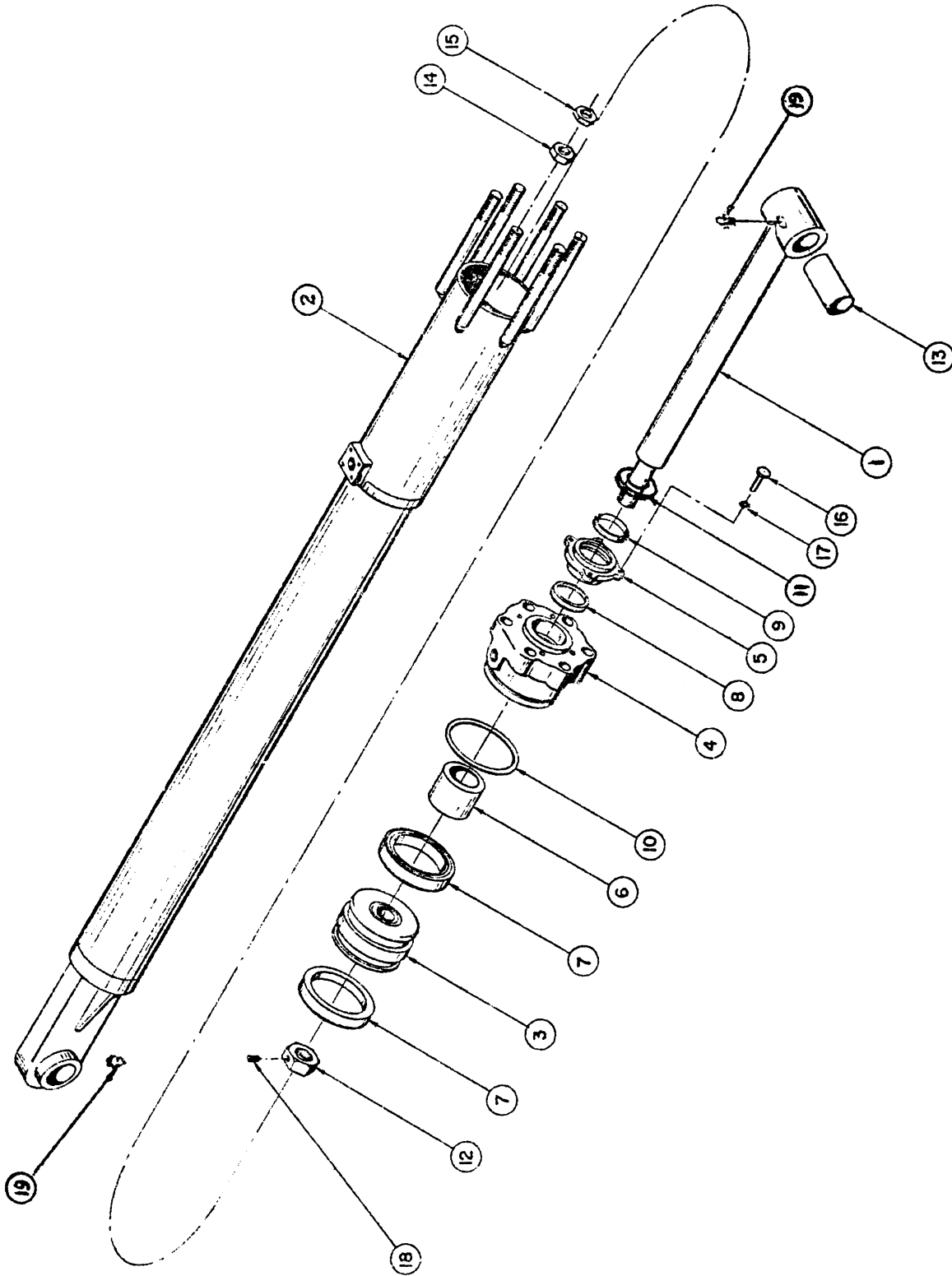
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

TRANSMISSION COOLER & REMOTE FILTER ASS'Y
 MODEL 400B
 NO. 14715R (283 WAUKESHA)
 NO. 15426R (225 CHRYSLER)

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P17598		Cooler	1
2	P17724		Mount, Rubber	2
3	P17725		T-Nut	2
4	Com'l		Bolt, Hex 5/16-18 N.C. X 2 1/2" Lg.	2
5	Com'l		Lockwasher, Spring 5/16"	9
6	Com'l		Washer, Flat 5/16"	2
7	P17593		Clamp	2
8	Com'l		Lockwasher, Spring	1
9				
10				
11	Com'l		Nut, 3/8-16 N.C.	1
12	P10821		Nipple (283 Waukesha)	1
	P10819		Nipple (225 Chrysler)	1
13				
14				
15	P17791		Adapter	1
16	P17792		Elbow 45°	1
17				
18	P19489		Hose (283 Waukesha)	1
	P17790		Hose (225 Chrysler)	1
19	P17812		Tube	1
20	P17813		Tube	1
21	6611B		Clamp	2
22	6610B		Clamp	2
23	P17809		Clamp	1
24	N-1026C		Spacer	1
25	Com'l		Bolt, Hex 5/16-18 N.C. X 3/4" Lg.	5
26				
27	Com'l		Capscrew, 5/16-18 N.C. X 1" Lg.	2
28				
29				
30	P17799		Hose 14" Lg.	2
31	P19499		Hose 38" Lg. (283 Waukesha)	1
	P18120		Hose 27" Lg. (225 Chrysler)	1
32	P18841		Hose 24" Lg.	1
33	P17802		Elbow 90°	4
34	Com'l		Capscrew, 3/8-16 N.C. X 1 3/4" Lg.	1
35	Com'l		Nut, Hex 5/16-18 N.C.	4
36				
37				
38	P14147		Elbow 45° (283 Waukesha)	1
	P17805		Adapter (225 Chrysler)	1
39	16408A		Bracket (283 Waukesha)	1
	16405		Bracket (225 Chrysler)	1
40	P19130		Hose, 23" Lg.	1
41				
42	P19132		Filter Base For S/N 2001 & 2002	1
43	P19133		Filter Element See P17841. Ass'y.	1
44	P17738		Tee	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TILT CYLINDER ASS'Y.
MODEL 400B
14777



14777

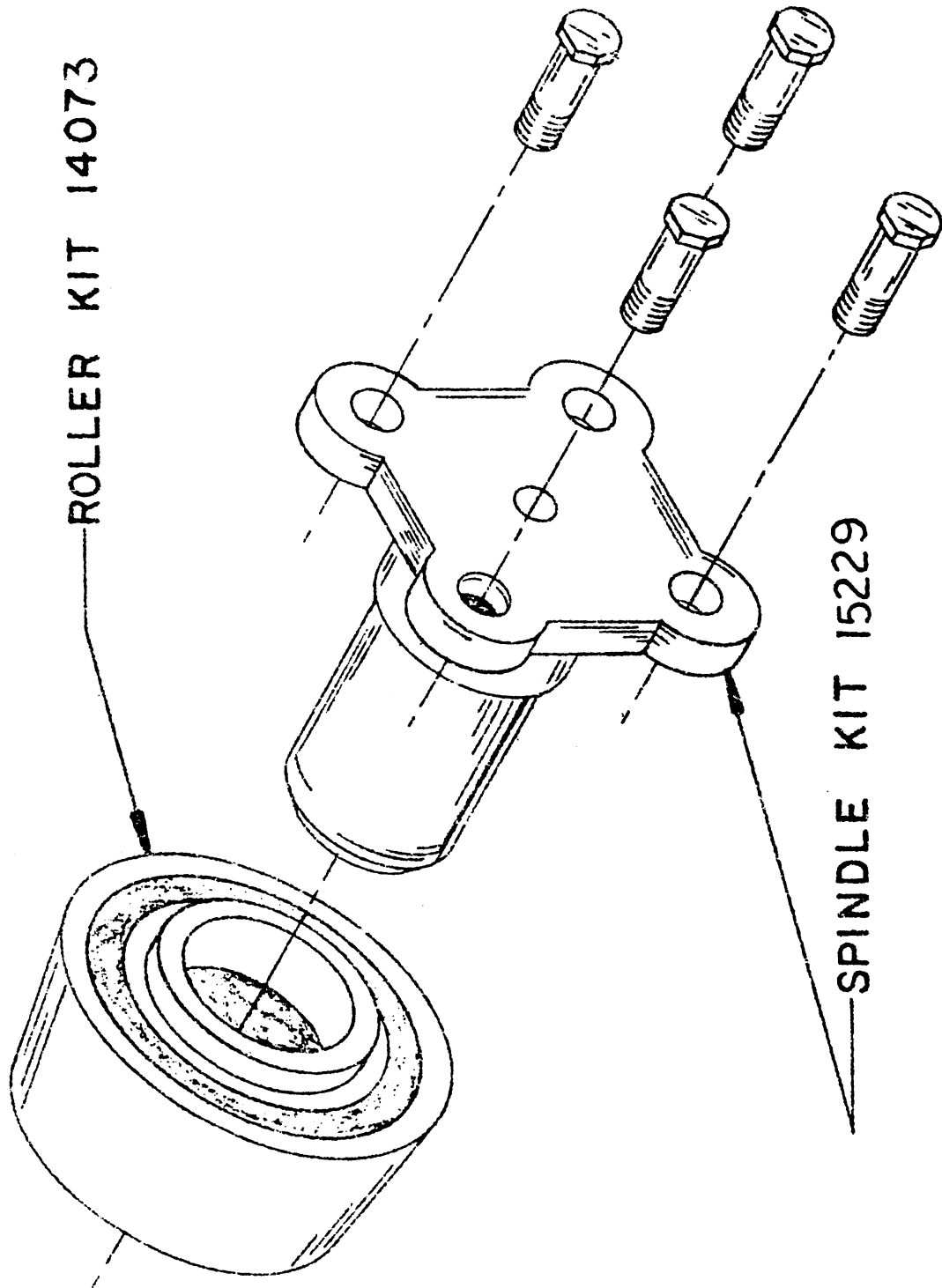
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TILT CYLINDER ASSEMBLY
MODEL 400B
14777

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14818		Rod Weldment	1
2	14780		Tube Weldment	1
3	14149		Piston	1
4	548		Head	1
5	14090		Gland	1
6	14778		Spacer	1
7	P17532		Seal, Piston	2
8	P17530		Seal, Rod	1
9	P17531		Wiper	1
10	P10318		O-Ring, Head	1
11	P11576		O-Ring, Piston	1
12	215		Nut	1
13	14583		Bushing	2
14	Com'1		Nut, Hex Hd. 1/2-18 N.F.	6
15	Com'1		Nut, Jam	6
16	Com'1		Capscrew 3/8-16 N.C.	3
17	Com'1		Lockwasher, Shakeproof	3
18	Com'1		Setscrew, 1/4-20 N.C. X 3/8 Lg.	1
19	Com'1		Zerk	2

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TOWER CARRIAGE SPINDLE & ROLLER KIT
MODEL 400B
15229 & 14073



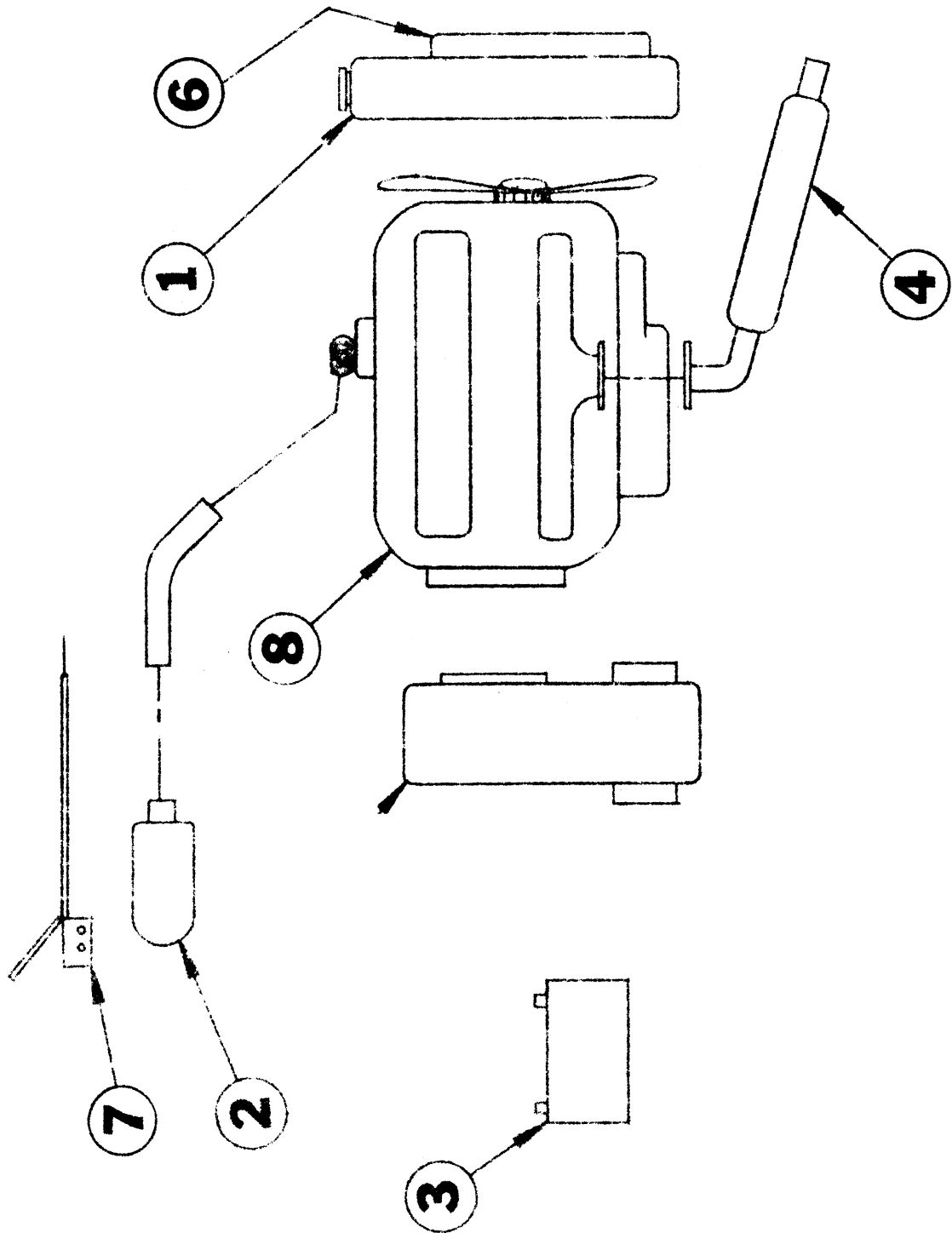
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TOWER CARRIAGE SPINDLE & ROLLER KIT
MODEL 400B
15229 & 14073

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
	14073		Roller Kit	1
			Consists Of:	
	6860		Roller	4
	15229		Spindle Kit	1
			Consists Of:	
	15072		Spindle	4
	Com'1		Star Washer 7/16"	16
	Com'1		Capscrew 7/16-14 N.C. X 1 1/4" Lg.	16
	P15223		Shim 1/32" Thick	
	P15238		Shim 1/64" Thick	

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

DRIVE TRAIN ASSEMBLY
MODEL 400B
NO. 15234 (225 CHRYSLER)
NO. 15417 (283 WAUKESHA)



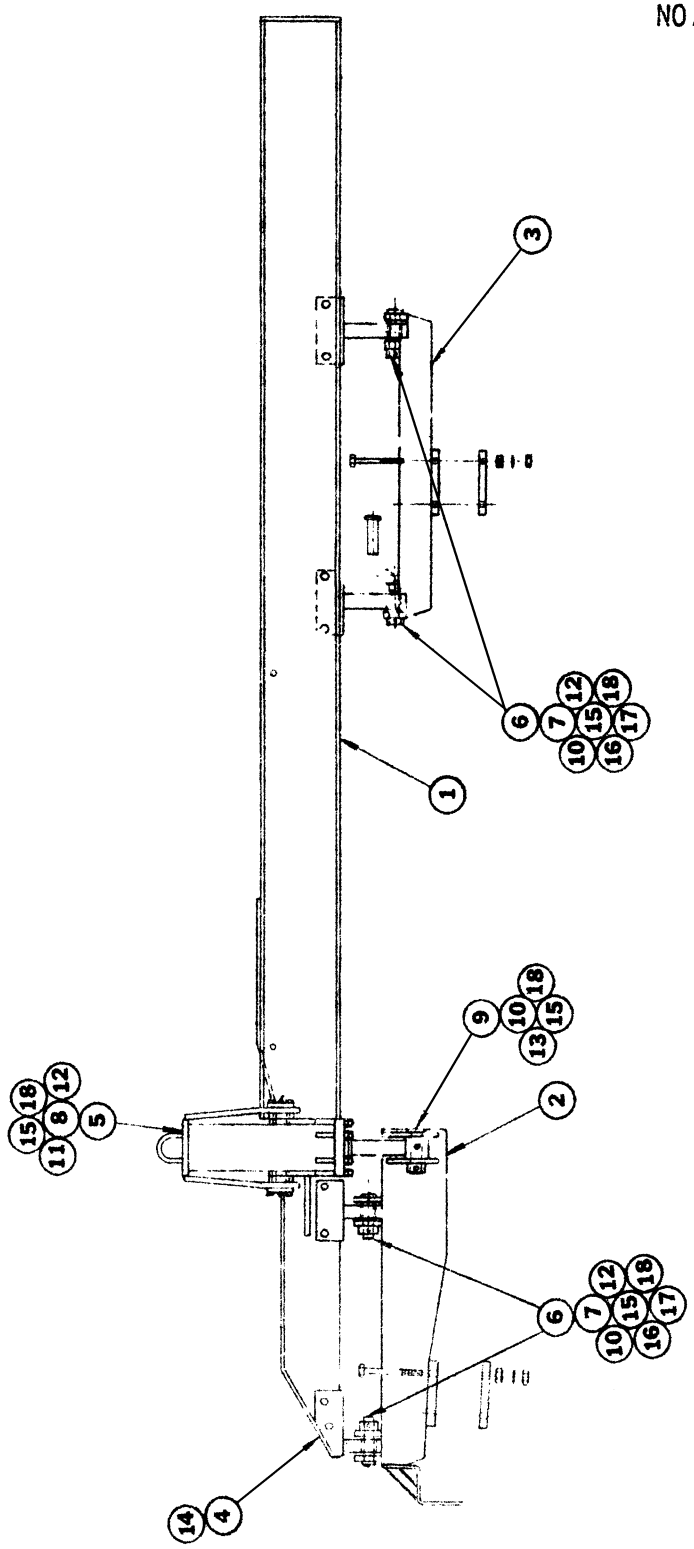
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

DRIVE TRAIN ASSEMBLY
 MODEL 400B
 NO. 15234 (225 CHRYSLER)
 NO. 15417 (283 WAUKESHA)

ITEM	PART	SEE ASS'Y	DESCRIPTION	ENGINE
1	16608		Radiator Ass'y	225
	16607		Radiator Ass'y	283
2	16606		Air Cleaner Ass'y	225
	16605		Air Cleaner Ass'y	283
3	16604		Battery Box Ass'y	225
	16603		Battery Box Ass'y	283
4	16602		Exhaust System Ass'y	225
	16601		Exhaust System Ass'y	283
5	16600		Transmission & Support Ass'y	225 & 283
			(For Internal Transmission Parts, See Appendix)	
6	14715		Transmission Cooler Ass'y	283
	15426		Transmission Cooler Ass'y	225
7	15270		Throttle Ass'y For Proper S/N	225
	16345		Throttle Ass'y For Proper S/N	283
	16178		Throttle Ass'y For Proper S/N	225 & 283
8	P17985		Engine Ass'y (SEE APPENDIX)	225
	P17743		Engine Ass'y (SEE APPENDIX)	283

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

MAIN FRAME ASSEMBLY
MODEL 400B
NO. 15235D (TILT)
NO. 1543 D (NON-TILT)



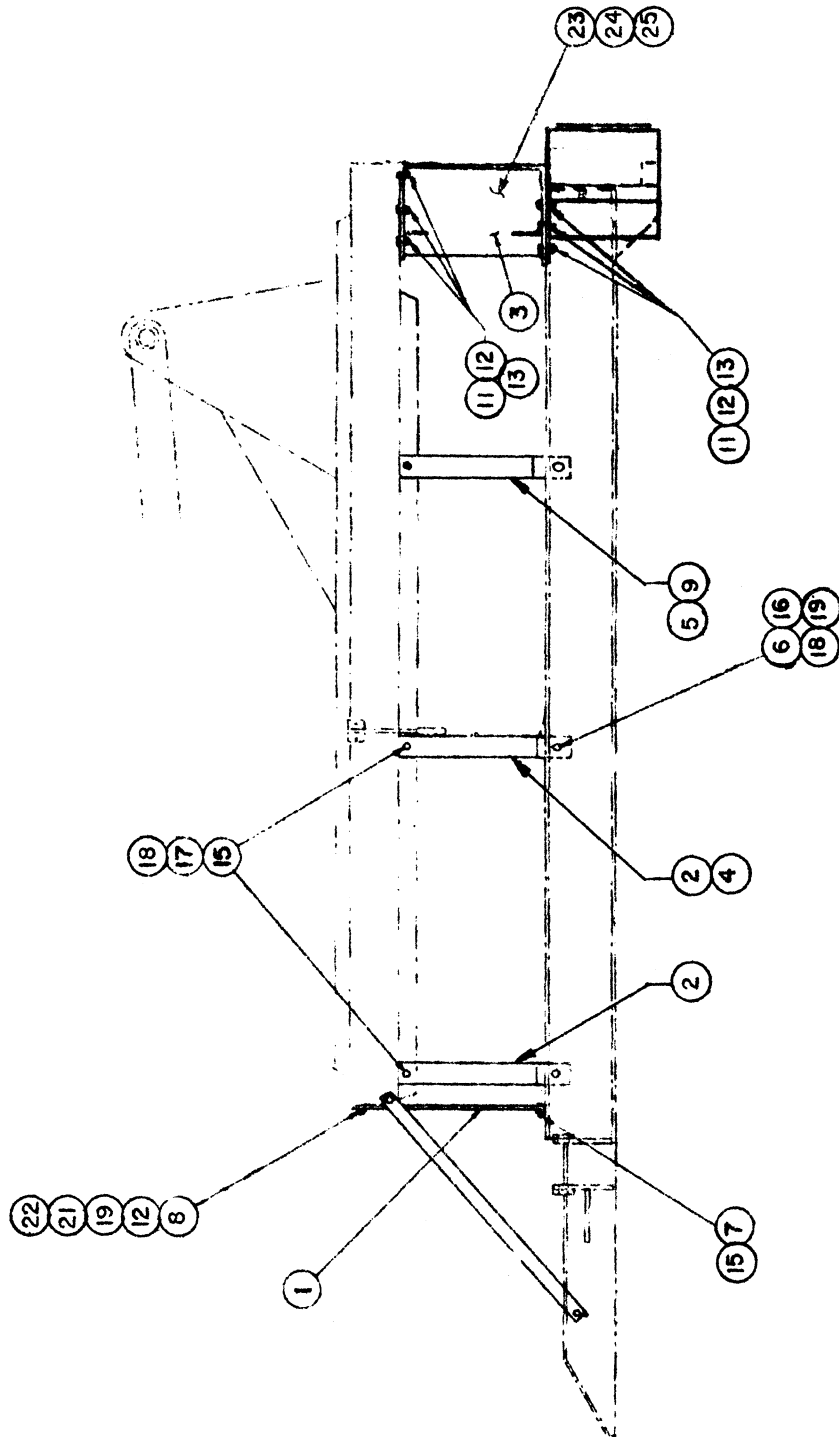
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

MAIN FRAME ASSEMBLY
 MODEL 400B
 NO. 15235D (TILT)
 NO. 1543 D (NON-TILT)

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14829R		Main Frame Weldment (Gas - Tilt Frame)	1
	14829-1R		Main Frame Weldment (Diesel - Tilt Frame)	1
	14830		Main Frame Weldment (Gas - Non-Tilt Frame)	1
	14830-1R		Main Frame Weldment (Diesel - Non-Tilt Frame)	1
2	14880		Frame, Front Oscill (Tilt Only)	1
3	13704		Frame, Rear Oscill	1
4	13714		Shield (Tilt Only)	1
5		14481	Cylinder Ass'y	2
6	5272A		Pivot Pin (Tilt Frame)	4
	5272A		Pivot Pin (Non-Tilt Frame)	2
7	6532		Bushing (Tilt Frame)	4
	6532		Bushing (Non-Tilt Frame)	2
8	13703A		Pin, Upper (Tilt Only)	2
9	6531A		Pin, Lower (Tilt Only)	2
10	com'l		Bolt, 3/8 N.C. X 2 1/2" Lg. (Tilt Frame)	6
	Com'l		Bolt, 3/8 N.C. X 2 1/2" Lg. (Non-Tilt Frame)	4
11	Com'l		Bolt, 3/8 N.C. X 2 3/4" Lg. (Tilt Only)	2
12	Com'l		Zerk, 1/8 N.P.T. Str. (Tilt Frame)	6
	com'l		Zerk, 1/8 N.P.T. Str. (Non-Tilt Frame)	4
13	Com'l		Zerk, 1/8 N.P.T. X 90" (Tilt Only)	2
14	Com'l		Drive Screw 1/4 X 1/2" Self tapping (Tilt Only)	6
15	Com'l		Nut, 3/8 N.C. (Tilt Frame)	8
	Com'l		Nut, 3/8 N.C. (Non-Tilt Frame)	4
16	Com'l		Lockwasher 3/8"	4
17	4586		Collar	4
18	P19481		Retaining Ring (Tilt Only)	8

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3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

UPRIGHT INSTALLATION ASSEMBLY
MODEL 400B
15236



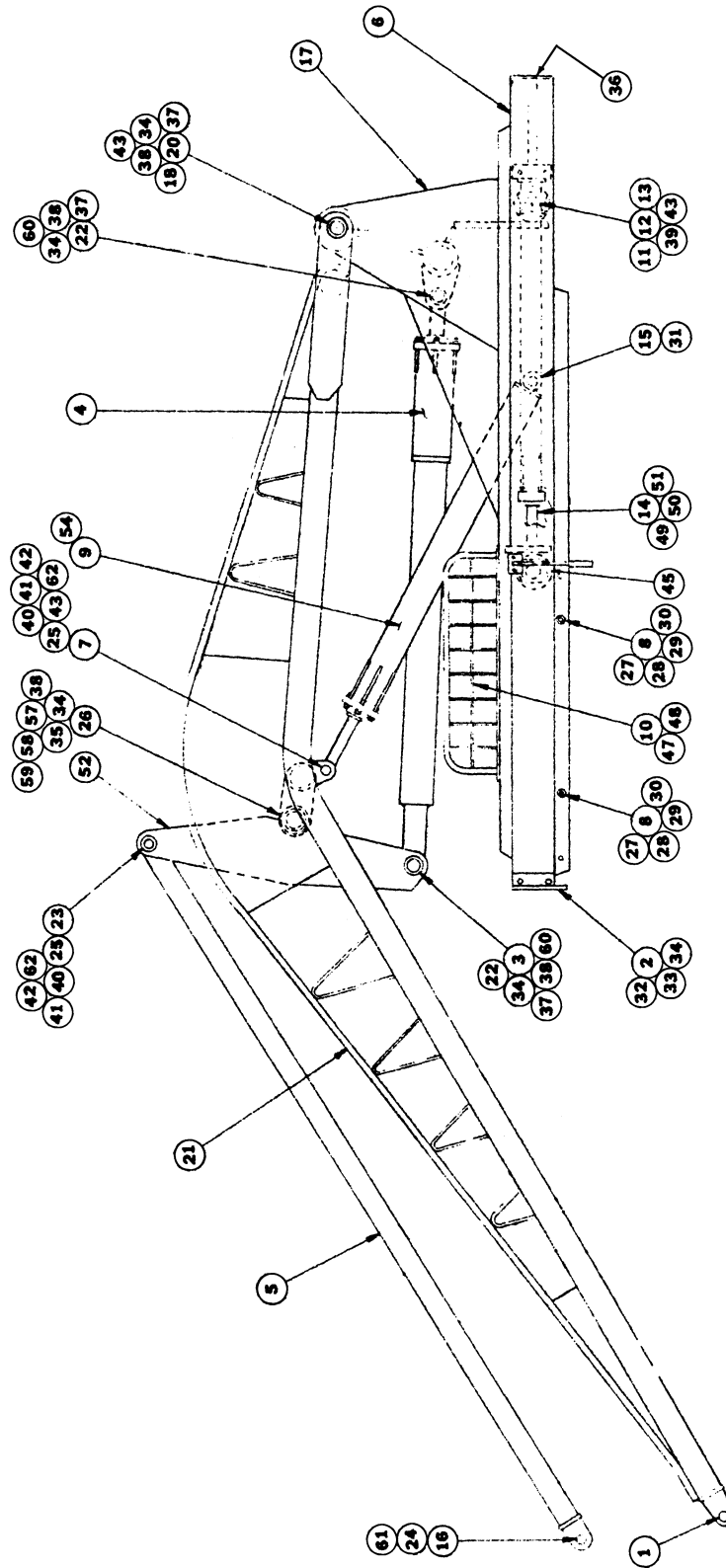
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

UPRIGHT INSTALLATION ASSEMBLY
 MODEL 400B
 15236

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14875		X Brace	2
2	11589		Upright Supports	3
3	15369		Tank, Hydraulic	1
4	14894		Upright Support, Air Cleaner	1
5	15408		Upright Support, R.H. Side, Rear	1
6	N-10373		Shear Block	6
7	P13518		Capscrew, Hex Hd. 5/8 N.C. X 1 1/4" Lg. (Gr. 5)	2
8	P13519		Capscrew, Hex Hd. 5/8 N.C. X 1 1/2" Lg. (Gr. 5)	2
9	15410		Upright Support, L.H. Side, Rear	1
10				
11	P17671		Nut, 1/2 N.C. (Gr. 5)	12
12	Com'1		Lockwasher 1/2"	13
13	P17658		Capscrew, Hex Hd. 1/2 N.C. X 1 3/4" Lg. (Gr.8)	12
14				
15	Com'1		Washer, Shakeproof 5/8"	8
16	P17669		Capscrew, Hex Hd. 5/8 N.F. X 2 1/2" Lg. (Gr. 5)	6
17	P17670		Capscrew, Hex Hd. 5/8 N.F. X 3 1/4" Lg. (Gr. 5)	6
18	P17665		Nut, Full 5/8 N.F. (Gr. 5)	12
19	Com'1		Lockwasher 5/8"	8
20				
21	P17668		Capscrew, Hex Hd. 1/2 N.F. X 2" Lg. (Gr. 5)	1
22	Com'1		Nut, 1/2 N.F. (Gr. 5)	1
23	P13595		Drain Cock	1
24	P15050		Filter Cap	1
25	Com'1		Plug 1/8 N.P.T.	2

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

LOADER ASSEMBLY
MODEL 400B
15237



LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

LOADER ASSEMBLY
 MODEL 400B
 15237

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	7072		Pivot Pin	2
2	6901		Front Frame Bracket	1
3	14848B		Pin	1
4		14777D	Tilt-Cyl. Ass'y	1
5	14855C		Front Parrell	1
6	14873D		Transfer Frame	1
7	5565A		Pivot Pin, Hoist Cylinder	2
8	11153		Truss Rod	2
9		14476D	Hoist Cylinder Ass'y	2
10	8789		Operator Side Shield	1
11	6902		Bushing	4
12	15073C		Spindle	4
13	6826		Rollar	4
14		11545C	Transverse Cylinder Ass'y	1
15	14849B		Pin, Hoist Cylinder	2
16	6964A		Pin	1
17	14836R		Transfer Carriage	1
18	14859B		Pivot Shaft	1
19				
20	6423A		Bushing	2
21	14799R		Lift Arm	1
22	12290		Collar	2
23	14845		Pin, Toggle	1
24	1150A		Collar	1
25	2561		Collar	3
26	7784		Bushing, Toggle Pivot	2
27	Com'1		Full Nut 5/8-11 N.C.	4
28	Com'1		Jam Nut 5/8-11-N.C.	4
29	Com'1		Lockwasher, Shakeproof 5/8	4
30	Com'1		Lockwasher, 5/8	20
31	Com'1		Screw, Flathead 3/8-16 N.C. X 1 1/2" Lg.	2
32	P17692		Capscrew 1/2-20 N.F. X 1 1/2" Lg. (Gr. 5)	4
33	Com'1		Nut 1/2-20 N.F.	4
34	Com'1		Lockwasher 1/2	9
35	14763A		Pin, Toggle Pivot	1
36	Com'1		Capscrew 5/8-11 N.C. X 2 1/4" Lg.	2
37	Com'1		Capscrew 1/2-13 N.C. X 3 1/2 Lg.	4
38	Com'1		Nut, 1/2-13 N.C.	5
39	Com'1		Capscrew, 5/8-11 N.C. X 1 3/4" Lg.	16
40	Com'1		Capscrew 3/8-16 N.C. X 2 1/2" Lg.	3
41	Com'1		Nut 3/8-16 N.C.	7
42	Com'1		Lockwasher 3/8"	8
43	Com'1		Zerk 1/8 N.P.T. (Str.)	6
44				
45	Com'1		Zerk 1/8 N.P.T. X 90°	2
46				
47	Com'1		Capscrew 5/16-18 N.C. X 1" Lg.	3
48	Com'1		Lockwasher 5/16"	3
49	Com'1		Nut, Full 1"-14 N.F.	1

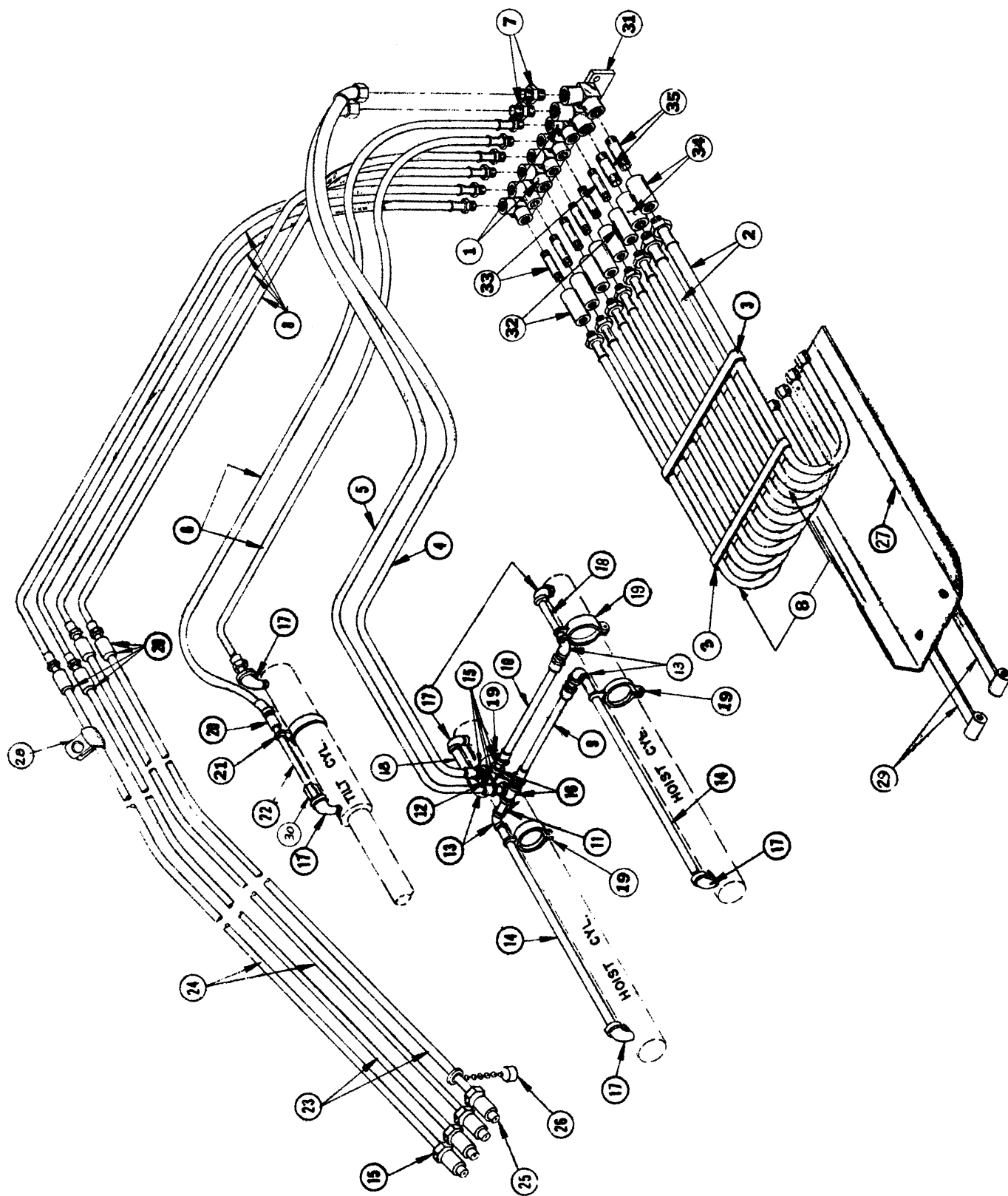
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

LOADER ASSEMBLY
MODEL 400B
15237

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
50	Com'l		Nut, Jam 1"-14 N.F.	1
51	Com'l		Lockwasher, Shakeproof 1"	1
52	14542		Toggle Weldment	1
53				
54	4873		Bushing	2
55				
56				
57	Com'l		Bolt, 1/2-13 N.C. X 4" Lg.	1
58	3965		Collar	1
59	P19477		Retaining Ring	1
60	P19479		Retaining Ring	2
61	P19480		Retaining Ring	1
62	P19481		Retaining Ring	3

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HYDRAULICS (LOADER ASSEMBLY)
MODEL 400B
15239D



LULL ENGINEERING COMPANY, INC,
3045 HIGHWAY 13
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HYDRAULICS (LOADER ASSEMBLY)
MODEL 400B
15239D

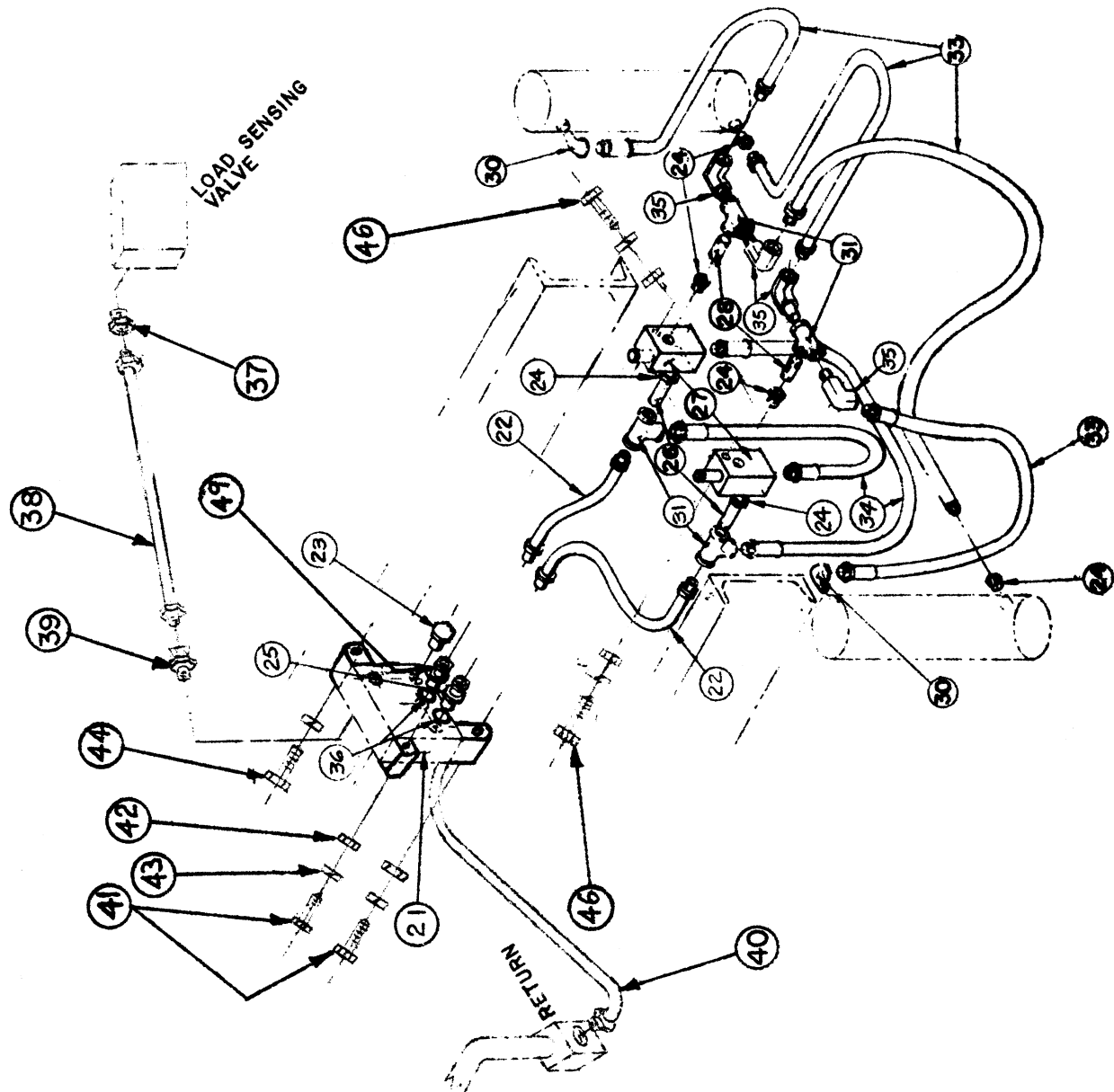
ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P18177		Female Elbow	2
2	P17175		Hose	2
3	1149		Hose Strap	2
4	P15070		Hose	1
5	P17176		Hose	1
6	P11397		Hose	2
7	P12969		Fitting	2
8	P11538		Hose	10
9	P12518		Hose	1
10	P11308		Hose	1
11	P10794		Nipple	1
12	P10884		Nipple	1
13	P10225		Elbow	4
14	N-10183		Pipe	2
15	P10120		Bushing	8
16	P10107		Tee	2
17	P10117		Street Ell.	6
18	P10888		Pipe	2
19	8967		Cylinder Clamp	4
20	P10328		Coupling	5
21	8971		Clamp (Not Used With Load Sensing Valve)	1
22	N-10569		Pipe	1
23	N-10167		Pipe	2
24	N-10168		Pipe	2
25	P11354		Coupling, Male	4
26	P10326		Dust Cap	4
27	8935		Hose Support	1
28	6611		Clamp	6
29	13967		Link, Hose Support	2
30	15109		Restrictor	1
31	15702B		Juntion Block	1
32	P10328		Coupling	6
33	N-10716		Pipe	6
34	P10260		Coupling	2
35	N-10717		Pipe	2

ITEM	PART	SEE ASS'Y.	DESCRIPTION	QTY
1	*P19122		Harness, Lower Wire (SEE NOTE)	1
2	*16567B		Lower Terminal Conversion Kit (SEE NOTE)	1
3	*16567-1B		Upper Terminal Conversion Kit (SEE NOTE)	1
4	**P18813		Water Temp. Sender	1
5	**P19472		Oil Temp. Sender for S/N 2036 & UP	1
6	**P20346		Fuel Sender, Use P18729 for S/N 2001 thru 2035	1
7	**P18731		Eng. Oil Press. Sender	1
8	P19105		Press. Switch (For Back Up-Alarm)	1
9	P19284		Harness, Gauges Ground	1
10				
11	P19204		Voltage Regulator	1
12	P19838		Nut, 10-32 N.F. Left Hand Thread	1
13				
14	P18673		Switch, Neutral Start	1
15	P19103		Fuses, SFE 30-AMP	1
16	P17752		Fuse Holder, Battery Draw With Buss Bar	1
17	***P13774		Alarm, Back-Up	1
18	15536		Bracket, Fuse Holder (Use 14660B for S/N 2001 thru 2003)	1
19	P19102		Harness, Back-Up Alarm	1
20	Com'1		Bolt, Hex Head 1/4-20 N.C. X 1/2" Lg.	2
21	Com'1		Nut, Hex 1/4-20 N.C.	2
22	Com'1		Lockwasher, Spring 1/4"	2
23	P19783		Harness, Neutral Start Switch to Starter	1
24	P19784		Harness, Back-Up Alarm Pressure Switch to Fuse Block	1
25	P19785		Harness, Fuse Block to Starter	1
26	***17026A		Bracket, Back-Up Alarm	1
27	*P19123		Harness, Upper Wire (SEE NOTE)	1
28	Com'1		Bolt, Hex Head, 1/2-20 N.F. X 1/2" Lg.	2
29	Com'1		Lockwasher, Spring 1/2"	2
30	Com'1		Nut, Hex 1/2-20 N.F.	2
31	**P18735		Water Temp. Gauge	1
32	**P18734		Trans. Oil Temp. Gauge	1
33	**P18728		Fuel, Gauge	1
34	**P18730		Eng. Oil Press. Gauge	1
35	P18733		Hour Meter, Gauge	1
36	P18732		Ammeter, Gauge	1
37	Com'1		Screw, Round Hd. 10-24 N.C. X 1/2" Lg.	4
38	Com'1		Lockwasher, Spring 10	4
39	Com'1		Nut, Hex 10-24 N.C.	4
40	P19101		Harness, Horn	1
41	REF		Kit, Horn Switch	1
42	P15093		Elbow, 1/8 NPT X 45 Degree	1
43	P10201		Elbow, 1/8 NPT X 90 Degree	1
44	P13707		Horn	1
45	P13709		Relay, Horn	1
46				
47	REF-15682		Switch, Ignition	1
48	P19096		Fuse, 3 Holder	1
49	P18079		Adhesive	A/R

NOTE: * For repair, S/N 2001 Thru 2013, a terminal conversion kit (either item #2 for lower harness or item #3 for upper harness) must be purchased together with harness. Kit is NOT required when both an upper & lower harness are purchased together.
 ** For repair, S/N 2001 Thru 2035, gauges & senders must be purchased together.
 *** For repair, S/N 2001 thru 2123, back-up alarm & bracket must be purchased together.

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13,
ST. PAUL, MINNESOTA 55121

FRAME TILT HYD. ASS'Y.
MODEL 400B
15242-1



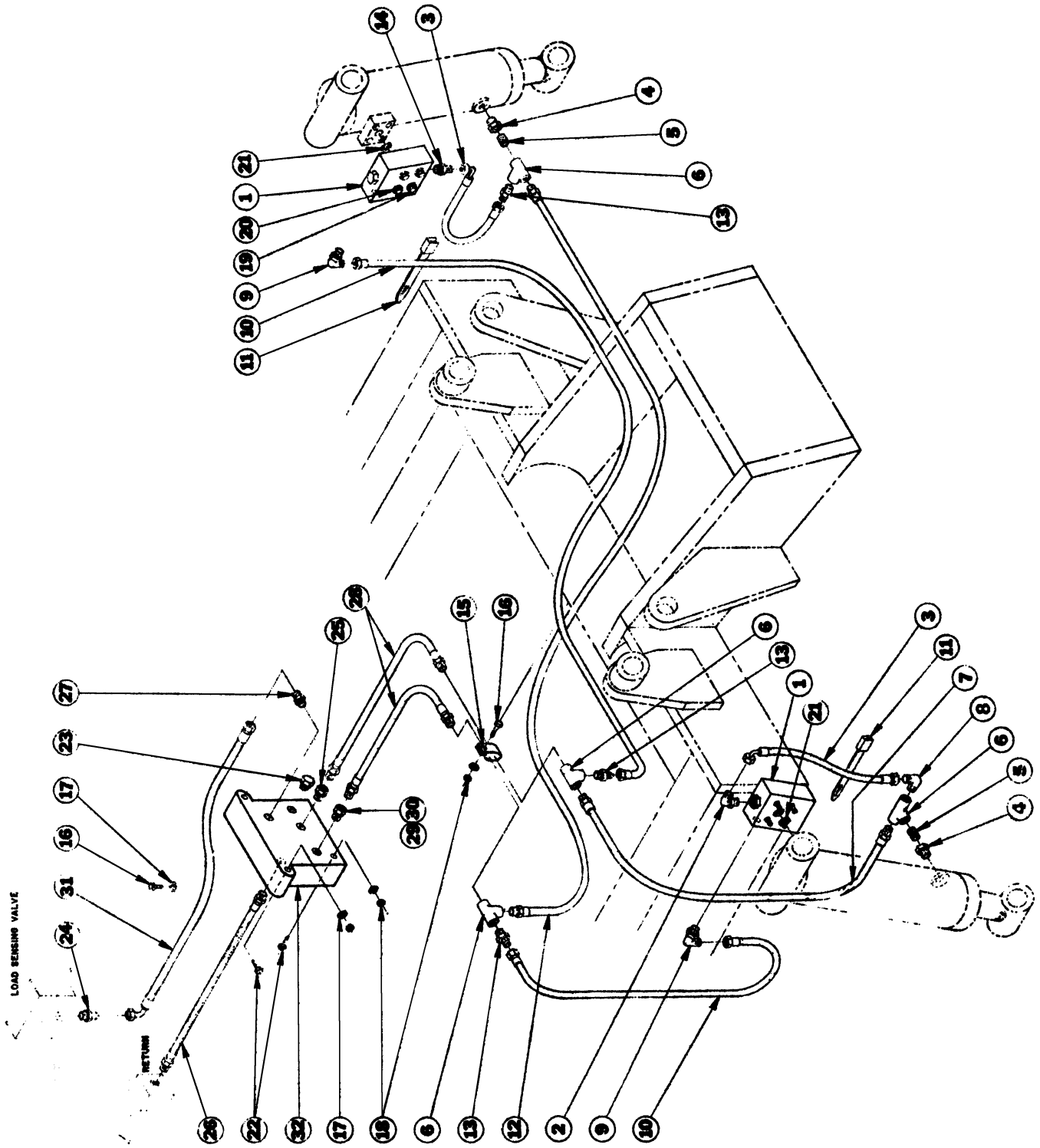
ENCL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13,
 ST. PAUL, MINNESOTA 55121

FRAME TILT HYD. ASSY.
 MODEL 400B
 NO. 15242D -1

ITEM NO.	PART NO.	SEE ASS'Y.	DESCRIPTION	QTY.
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21		P13005	Valve Control	1
22	P10476		Hose 1/4 x 44" Lg.	2
23	P15447		Plug	1
24	P10691		Reducer	6
25	P15464		Fitting	1
26	P10063		Nipple	2
27	P13713		Safety Valve	2
28	P15502		Nipple	2
29				
30	P15582		Street Ell	2
31	P15554		Tee	4
32				
33	P14652		Hose 1/4 x 23" Lg.	4
34	P11646		Hose 1/4 x 17" Lg.	2
35	P10216		Fitting	4
36	P10271		O-Ring	2
37	P18997		Connector	1
38	P19491		Hose	1
39	P15406		Connector	1
40	P10267		Hose	1
41	COM'L		Capscrew 3/8 - 16N.C. x 1-1/2" Lg.	2
42	COM'L		Nut 3/8 - 16N.C.	4
43	COM'L		Lockwasher 3/8	5
44	COM'L		Capscrew 3/8 - 16N.C. x 1" Lg.	1
45				
46	COM'L		Capscrew 3/8 - 16N.C. x 2-3/4" Lg.	2
47				
48				
49	16569A		Fitting Assy.	1
50				

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FRAME TILT HYDRAULICS ASS'Y
MODEL 400B
NO. 15242-2
S/N 2073 & UP



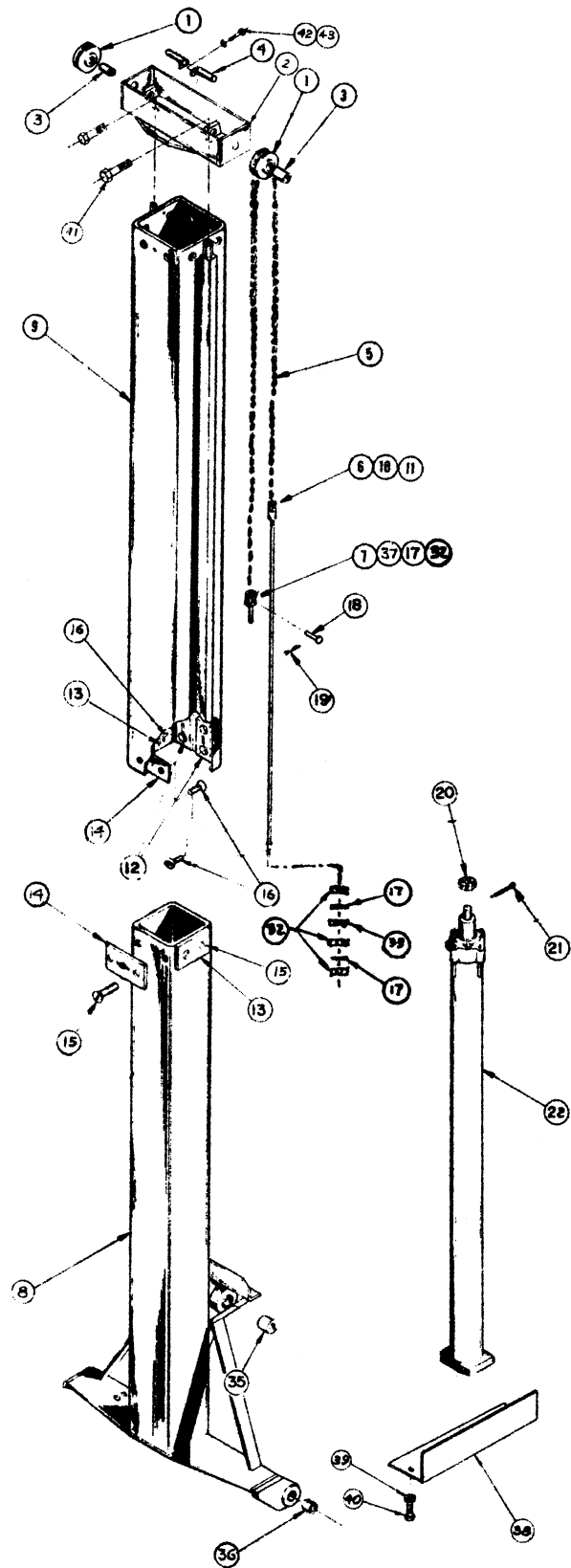
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FRAME TILT HYDRAULICS ASS'Y
MODEL 400B
NO. 15242-2 S/N 2073 & UP

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P17686		Valve, Counter Balance	2
2	P19248		Elbow 90°	1
3	P20449		Hose	2
4	P10691		Reducer	2
5	P16965		Closed Nipple	2
6	P15554		Tee	4
7	P14652		Hose	1
8	P18945		Elbow 90°	1
9	P18935		Elbow 90°	2
10	P19889		Hose	2
11	P17987		Tyrap	2
12	P10476		Hose	1
13	P19062		Connector	3
14	P18960		O-Ring Connector	1
15	P17593		Clamp	1
16	Com'1		Bolt, 3/8-16 N.C. X 1" LG.	2
17	Com'1		Lockwasher, 3/8"	4
18	Com'1		Nut, Hex 3/8"-16 N.C.	3
19	Com'1		Bolt, 5/16"-18 N.C. X 2" LG.	8
20	Com'1		Lockwasher, 5/16"	8
21	P15026		O-Ring	2
22	Com'1		Bolt, 3/8"-16 N.C. X 1½" LG.	2
23	P15447		Plug	1
24	P18944		Fitting	1
25	16569A		Fitting Assembly	1
26	P10274		Hose	1
27	P15406		Connector	1
28	P10474		Hose	2
29	P15464		Fitting	1
30	P10271		O-Ring	1
31	P17958		Hose	1
32	P13005		Valve, Control	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TOWER ASSEMBLY
MODEL 400B
15243D



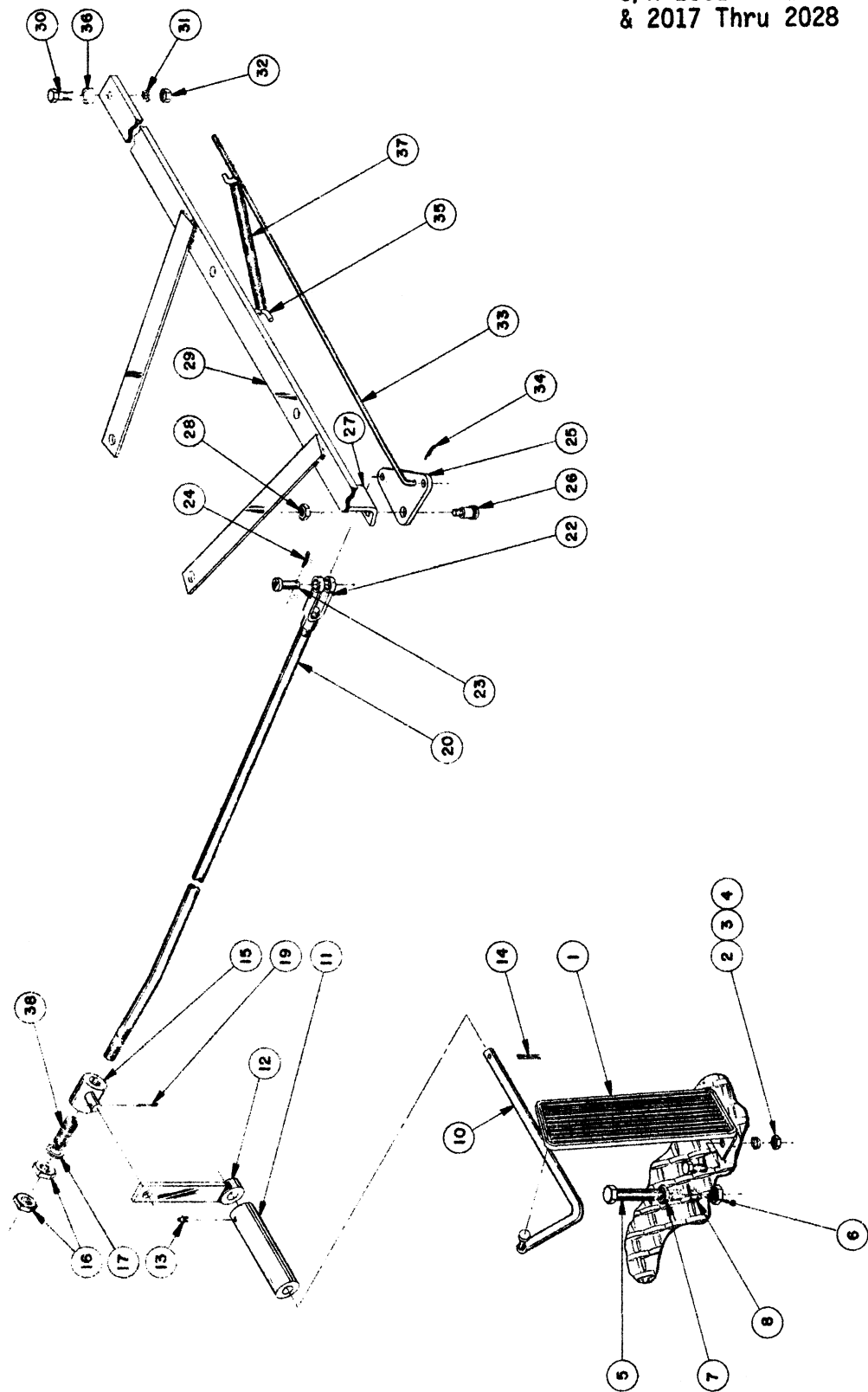
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

TOWER ASSEMBLY
 MODEL 400B
 15243D

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	14979		Chain Pulley	2
2	14978C		Chain Pulley Bracket	1
3	7965		Bushing	2
4	14992B		Pivot Pin	2
5	P17947		Chain 65" Long	2
6	15025B		Chain Link	2
7	15055B		Chain Anchor	2
8	14122D		Upright Frame Weldment	1
9	14995D		Yoke Weldment	1
10	Com'l		Washer, Starlock 1/2"	2
11	Com'l		Hex, Nut 1/2-20 N.F.	4
12	14132		Bronze, Wear Plate	2
13	14133		Bronze, Wear Plate	4
14	6911		Bronze, Wear Plate	3
15	P17561		Capscrew, Flat Head 1" Lg.	10
16	P17676		Capscrew, Flat Head 3/4" Lg.	8
17	Com'l		Washer, Starlock 5/8"	6
18	P17979		Anchor	4
19	Com'l		Cotter Pin 1/16 X 3/4" Lg.	2
20	Com'l		Hex. Cast Nut 1"-12 N.F.	1
21	Com'l		Cotter Pin 1/8 X 2" Lg.	1
22		14135	Tower Cyl. Ass'y	
23				
24				
25				
26				
27				
28				
29				
30				
31				
32	Com'l		Jam Nut, 5/8-18 N.F.	8
33	P20419		Wheel Nut, 5/8 N.F. 45 Degree Taper	2
34		16180C	Hydraulics Tower	
		16181C	Hydraulics Tower (With Safety Valve)	
35	6974		Bushing	2
36	7338		Bushing	2
37	Com'l		Hex Nut 5/8-18 N.F.	2
38	14341B		Cover Plate	1
39	Com'l		Washer, Springlock 5/8"	2
40	Com'l		Capscrew 5/8-11 N.C. X 1" Lg.	2
41	Com'l		Capscrew 5/8-11 N.C. X 2" Lg.	2
42	Com'l		Capscrew 3/8-16 N.C. X 3/4" Lg.	2
43	Com'l		Washer 3/8	2

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

THROTTLE ASSEMBLY
MODEL 400B (225 CHRYSLER)
15270
S/N 2001 Thru 2013, 2015,
& 2017 Thru 2028

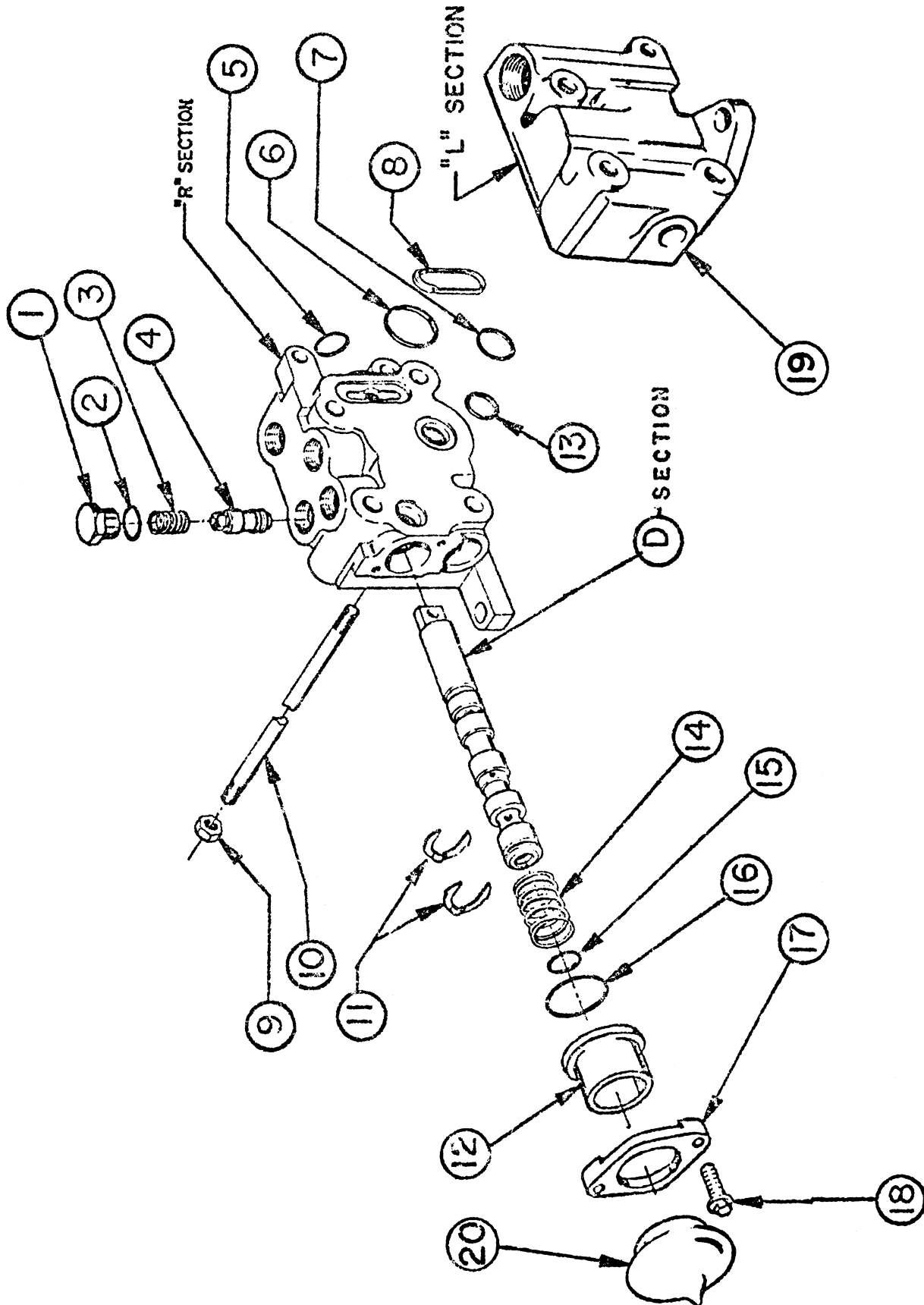


LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNEOSTA 55121

THROTTLE ASSEMBLY
 MODEL 400B
 225 CHRYSLER
 15270

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P17737		Gas Pedal	1
2	Com'l		Capscrew 1/4-20 N.C. X 3/4" Lg.	2
3	Com'l		Lockwasher 1/4"	2
4	Com'l		Nut, Full 1/4-20 N.C.	2
5	Com'l		Capscrew, Hex Hd. 1/2-13 N.C. X 3 1/2" Lg.	1
6	Com'l		Nut, Full 1/2-13 N.C.	1
7	Com'l		Nut, Jam 1/2-13 N.C.	1
8	Com'l		Lockwasher 1/2"	1
9				1
10	16074A		Pivot Rod	1
11	15218		Bearing Sleeve	1
12	15547A		Lever	1
13	Com'l		Zerk, Str. 1/4-28 N.F.	1
14	Com'l		Roll Pin 1/8 X 1" Lg.	1
15	14544		Sleeve	1
16	Com'l		Nut, Jam 5/16-24 N.F.	2
17	Com'l		Lockwasher, Shakeproof 5/16"	2
18				1
19	Com'l		Cotter Key 1/8 X 5/8" Lg.	1
20	15221		Rod	1
21				
22	P10043		Clevis	1
23	P10042		Pin	1
24	Com'l		Cotter Key 3/32 X 1" Lg.	1
25	15215		Bell Crank	1
26	P19301		Shoulder Screw	1
27	15214		Pivot Bracket	1
28	Com'l		Nut, Hex 5/16-18 N.F.	1
29	13698		Support	1
30	Com'l		Bolt 3/8-16 N.C. X 1 1/2" Lg.	2
31	Com'l		Lockwasher 3/8	2
32	Com'l		Nut, Hex 3/8-16 N.C.	2
33	15223		Lever	1
34	Com'l		Cotter , Key 3/32 X 3/4" Lg.	1
35	15219		Spring Clip	1
36	14738		Spacer	1
37	P15274		Spring	1
38	14561		Spring	1

FOR S/N 2001 Thru 2013, 2015,
 & 2017 Thru 2028



ELL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13,
ST. PAUL, MINNESOTA 55121

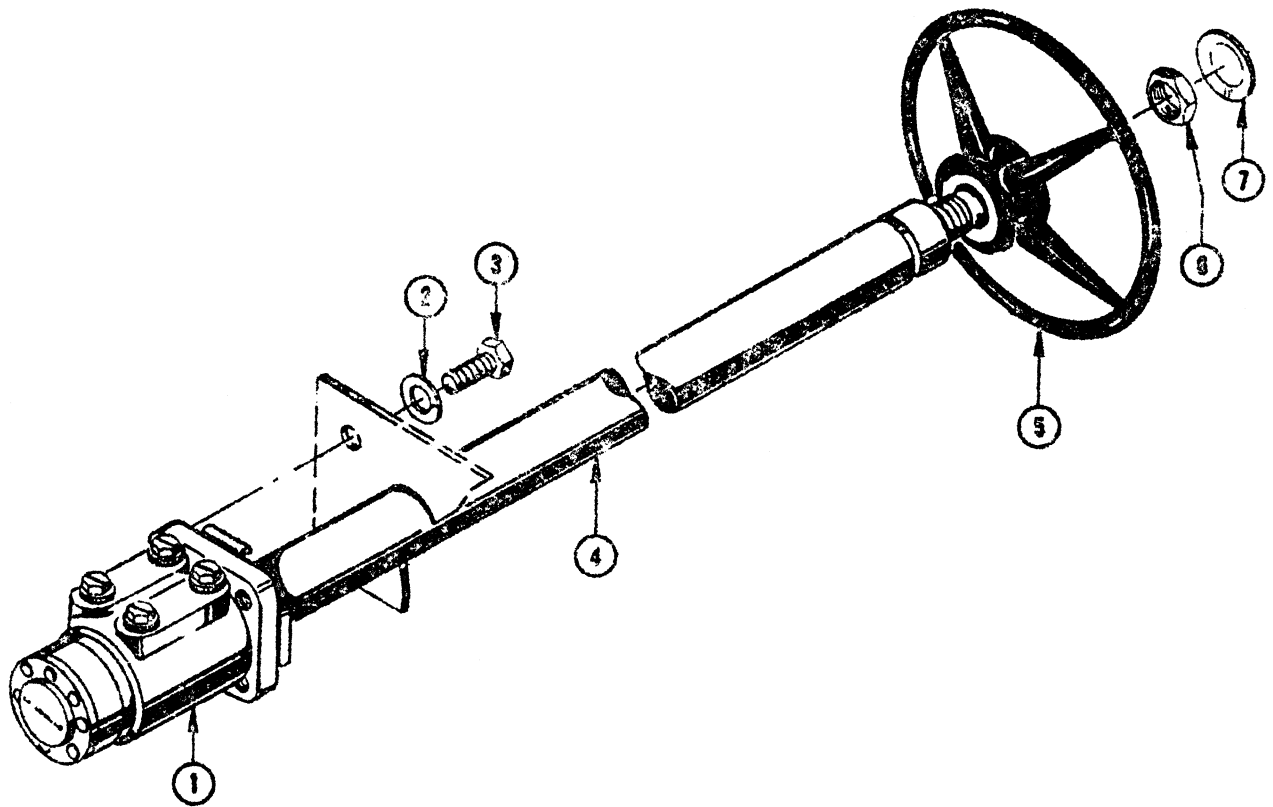
SIDE TILT VALVE ASS.*Y.
MODEL 400B
NO. 15415A (P-13005)

ITEM NO.	PART NO.	ASSEMBLY NO.	DESCRIPTION	NO. REQ.
1	P-12285		Plug	1
2	P-12295		O-Ring	1
3	P-12296		Spring	1
4	P-12297		Control Valve	1
5	P-12298		O-Ring	1
6	*P-12299		Seal	1
7	*P-12300		Seal	1
8	*P-12301		Retainer	1
9	P-12307		Nut	4
10	P-12308		Stud	4
11	P-12309		Washer "C"	2
12	P-12310		Sleeve	1
13	*P-12316		Seal	1
14	P-12315		Spring	1
15	*P-12314		Quad Ring	1
16	*P-12313		O-Ring	1
17	P-12312		Retainer	1
18	P-12311		Screw	1
19	P-13339		"L" Section	1
20	P-13317		Dust Cap	1

* Included in P-12549 Seal Kit.

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

ORBITROL STEERING ASSEMBLY
MODEL 400B
15437C



LOLL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13,
ST. PAUL, MINNESOTA 55121

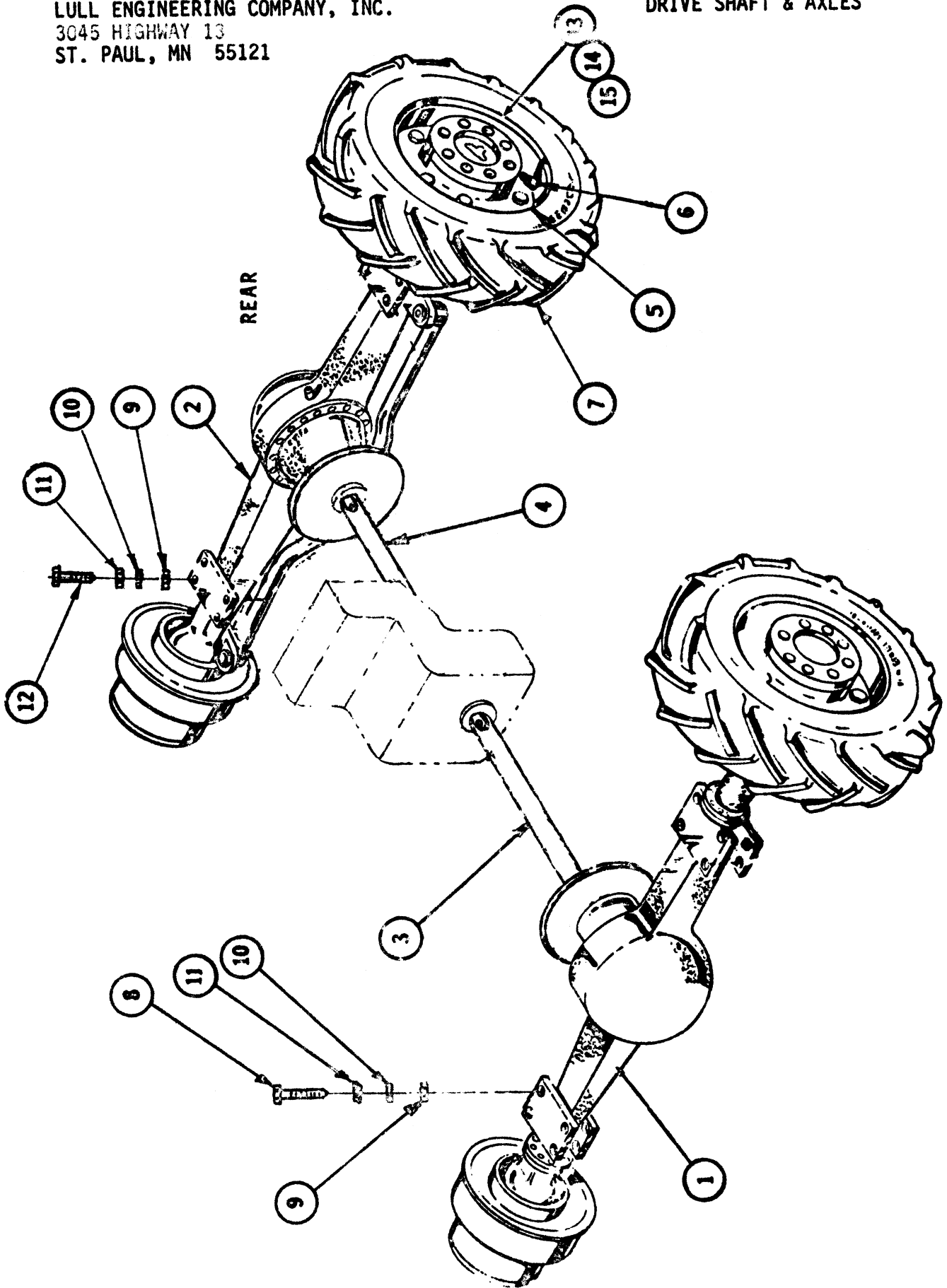
ORBITROL STEERING ASS'Y.
MODEL 400B
15437C

<u>ITEM</u> <u>NO.</u>	<u>PART</u> <u>NO.</u>	<u>ASSEMBLY</u> <u>NO.</u>	<u>DESCRIPTION</u>	<u>NO.</u> <u>REQ.</u>
1	* P19293		Orbitrol	1
2	COM'L		Lockwasher, 3/8	2
3	COM'L		Capscrew, 3/8 x 1 1/2 N.C.	2
4	P-13008		Steering Column	1
5	P-13006		Steering Wheel	1
6	P-13009		Nut	1
7	P-16186		Cap, Wheel	1

* Use P13608 For S/N 2001 To 2003, 2006, 2009 & 2010

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MN 55121

DRIVE SHAFT & AXLES



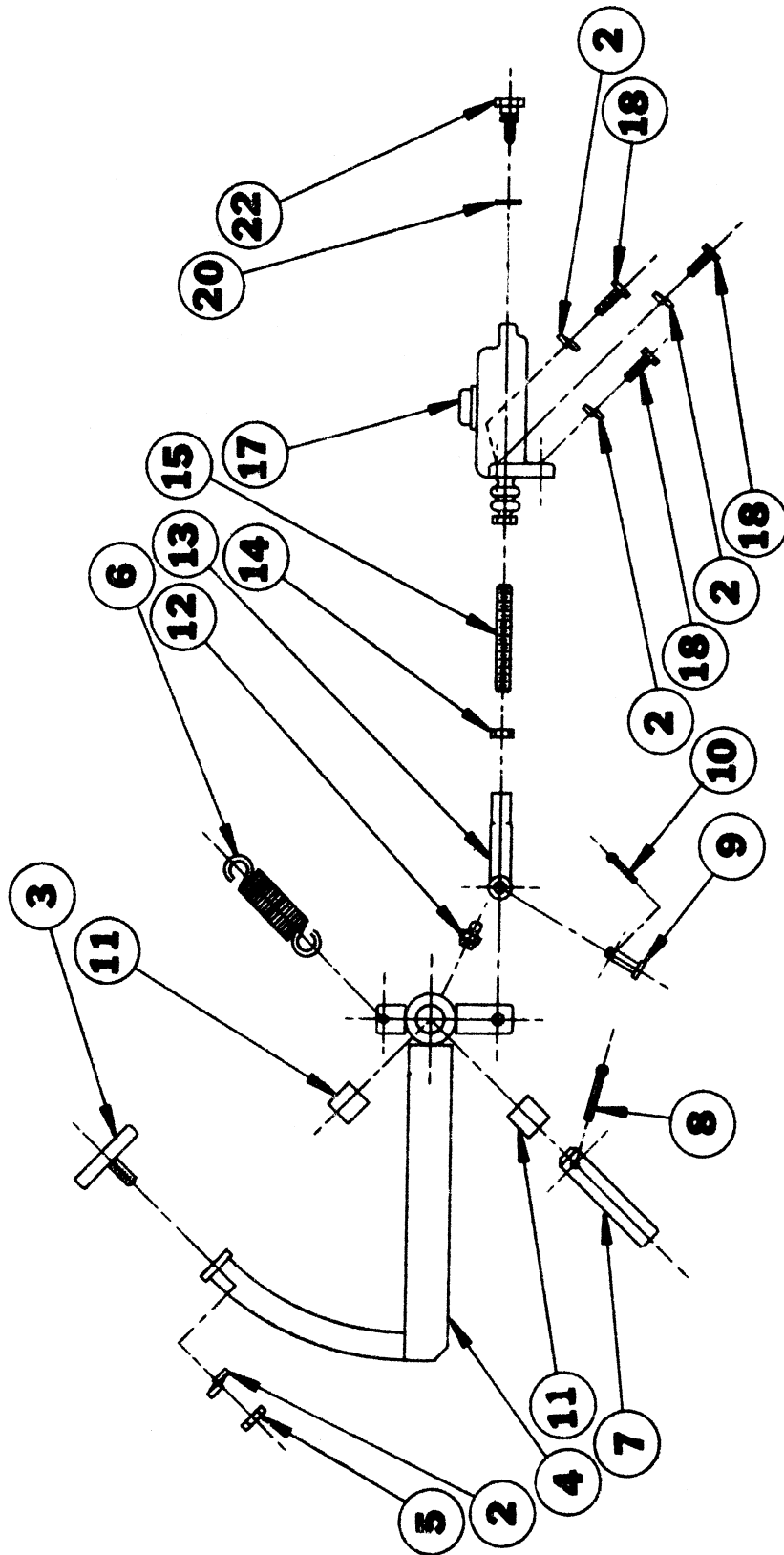
LULL ENGINEERING COMPANY, INC.
3045 Highway 13
St. Paul, Minnesota 55121

DRIVE SHAFT & AXLES

ITEM	PART NO.	DESCRIPTION	QTY.
1	P18068	Axle, Front (See Appendix for Breakdown)	1
2	P18069	Axle, Rear (See Appendix for Breakdown)	1
3	P17901	Drive Shaft, Front	1
	P18749	Cross & Bearing - Axle Side	-
	P17734	Cross & Bearing - Trans. Side	-
4	P19902	Drive Shaft, Rear	1
	P18749	Cross & Bearing - Axle Side	-
	P17739	Cross & Bearing - Trans. Side	-
5	12749C	Wheel	4
6	P13673	Valve Stem	4
7	P13020	Tire, 12.00 X 24 8 Ply	4
8	P00793	Bolt, Hx., 3/4"-16 X 8" GR 8	8
9	P01586	Nut, Jam 3/4"-16	16
10	P01536	Nut, Hx. 3/4"-16	16
11	P01364	Starwasher, 3/4 Ext.	16
12	P00781	Bolt, Hx. 3/4"-16 X 3" GR 8	8
13	P16439	Lock Ring	4
14	P17260	Flange	4
15	P16441	O-Ring	4

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MN 55121 55121

BRAKE & MASTER CYLINDER ASSEMBLY



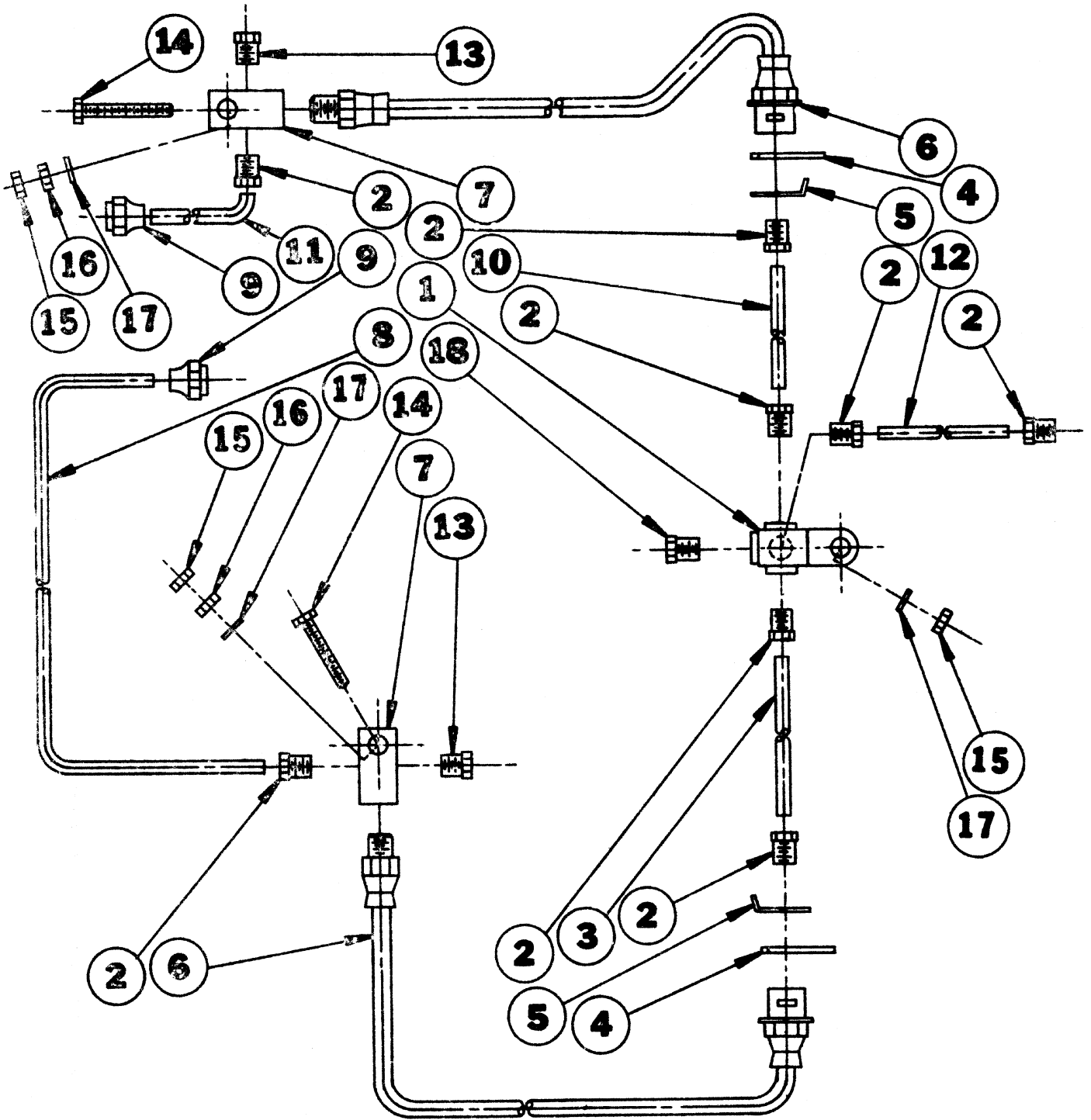
LULL ENGINEERING COMPANY, INC.
3045 Highway 13
ST. PAUL, MINNESOTA 55121

BRAKE & MASTER CYLINDER ASSEMBLY

<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1			
2	Com'1	Lockwasher, Spring, 3/8"	4
3	P17733	Foot Pad	1
4	15585B	Brake Pedal	1
5	Com'1	Nut, Hex, 3/8 - 24 N.F.	1
6	P10581	Spring	1
7	3458A	Pin, Pedal Pivot	1
8	Com'1	Pin, Cotter, 1/8" X 1 3/8 Long	1
9	P10053	Pin, Clevis, 7/16	1
10	Com'1	Pin, Cotter, 3/32 X 1" Long	1
11	7122A	Bushing	2
12	Com'1	Zerk, 1/8" N.P.T. Str.	1
13	P19081	Clevis, 7/16	1
14	Com'1	Nut, Jam, 7/16 - 20 N.F.	1
15	15676A	Rod, Brake, 7/16-20	1
16			
17	P18129	Master Cylinder	1
18	Com'1	Cap Screw, 3/8-16 N.C. X 1" Long	3
19			
20	P12506	Gasket	1
21			
22	P20415	Fitting	1

LULL ENGINEERING COMPANY, INC.
3045 Highway 13
ST. PAUL, MINNESOTA 55121

BRAKE LINE ASSEMBLY



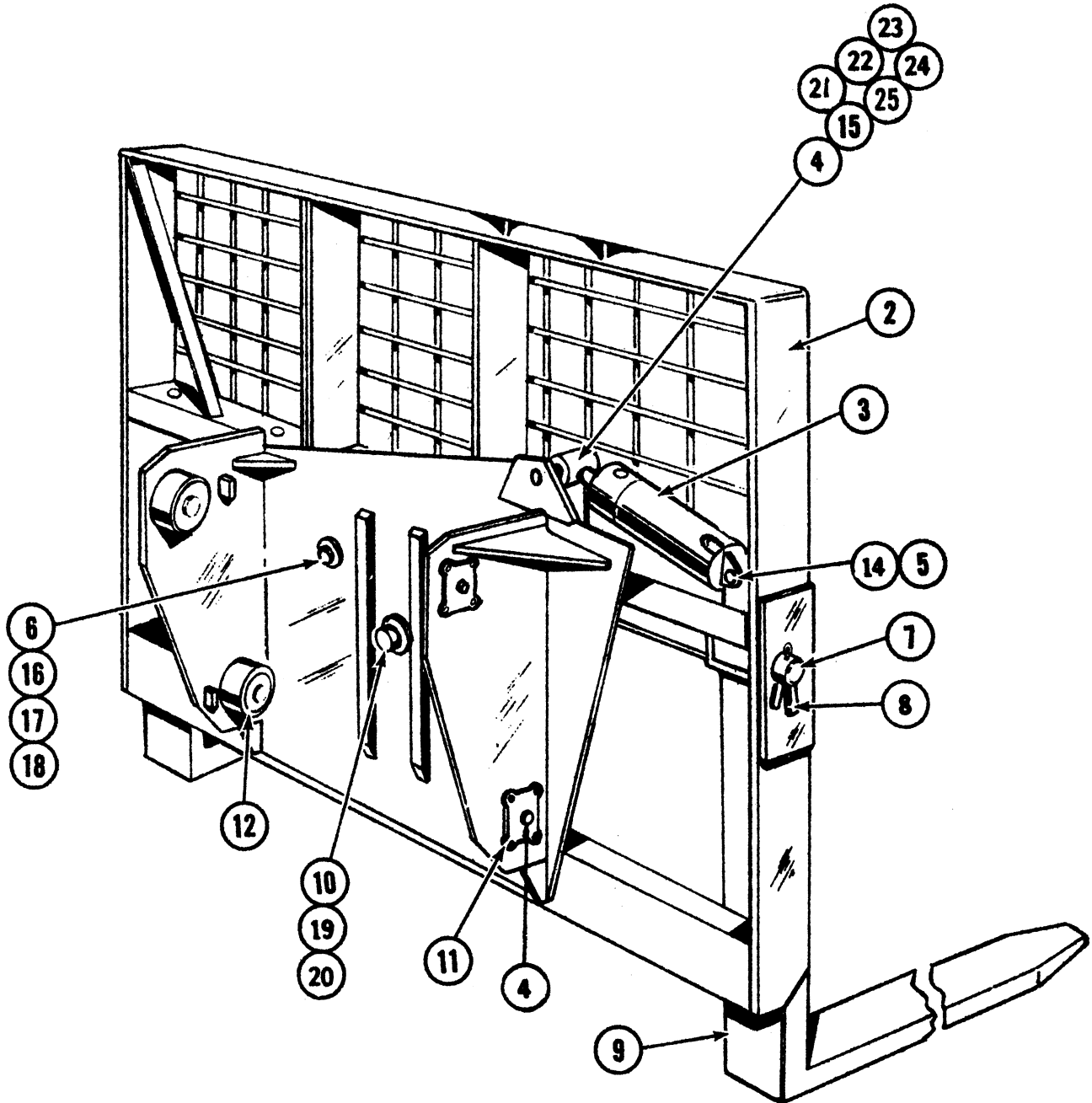
LULL ENGINEERING COMPANY, INC.
 3045 Highway 13
 ST. PAUL, MINNESOTA 55121

BRAKE LINE ASSEMBLY

ITEM	PART	DESCRIPTION	QTY.
1	P11706	Tee	1
2	P11712	Connector Nut	8
3	Com'1	Tubing (Front) 1/4" O.D. X 46 1/2 Long	1
4	11902A	Bracket	2
5	P11715	Clip	2
6	P11705	Hose, Brake Line, 17" Long	2
7	P11704	Junction Block	2
8	Com'1	Tubing (Front) 1/4" O.D. X 13 1/2" Long	1
9	P15310	Connector Nut	2
10	Com'1	Tubing (Rear), 1/4" O.D. X 45" Long	1
11	Com'1	Tubing (Rear) 1/4" O.D. X 16 1/2" Long	1
12	Com'1	Tubing (To Master Cylinder) 1/4" O.D. X 38" Long	1
13	P19095	Plug	2
14	Com'1	Capscrew, 5/16"-18 N.C. X 1 1/2" Long	2
15	Com'1	Nut, Hex, 5/16 - 18 N.C.	3
16	Com'1	Nut, Jam, 5/16 - 18 N.C.	2
17	Com'1	Washer, Shake Proof, 5/16"	3
18	P11726	Plug	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FORK CARRIAGE ASSEMBLY
MODEL 400B
NO. 15681A



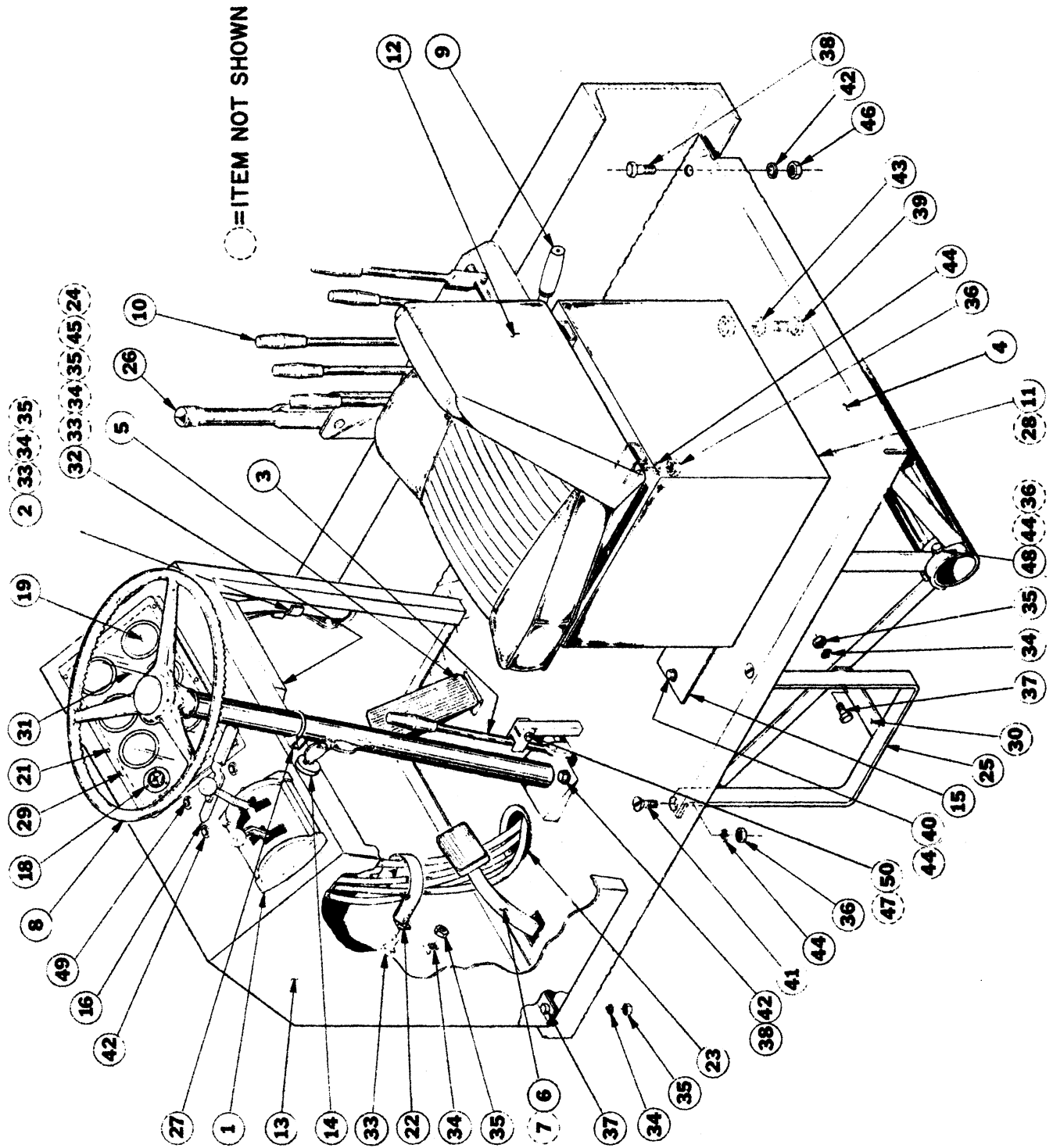
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

FORK CARRIAGE ASSEMBLY
MODEL 400B
NO. 15681A

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1				
2	11744		Carriage	1
3	6320		Cylinder Assembly	1
4	Com'1		Grease Fitting, 1/8 NPT X 90°	8
5	6459		Pin	1
6	10180		Washer	2
7	11369		Shaft	1
8	Com'1		Cotter Pin, 3/8 Dia. X 2 1/2"	2
9	16511		Fork	2
10	6326		Washer	1
11	15229		Spindle	4
12	14073		Roller	4
13				
14	Com'1		Cotter Pin, 3/16 Dia. X 1 1/4"	1
15	15191		Pin	1
16	Com'1		Nut, 7/8-9 N.C.	2
17	Com'1		Bolt, 7/8-9 N.C. X 2 1/4 Long	2
18	Com'1		Washer, Shakeproof 7/8"	2
19	222		Special Nut	1
20	Com'1		Setscrew, 1/4 N.C. X 3/8 Cup Pt.	1
21	Com'1		Capscrew, Hex Hd., 3/8-18 N.C. X 3/4" Lg.	1
22	Com'1		Washer, Plain, 3/8	1
23	Com'1		Capscrew, Hex Hd., 5/16-18 N.C. X 2" Lg.	1
24	Com'1		Lockwasher, 5/16	1
25	Com'1		Nut, 5/16-18 N.C.	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

OPERATORS PLATFORM ASSEMBLY
MODEL 400B
NO. 15682R



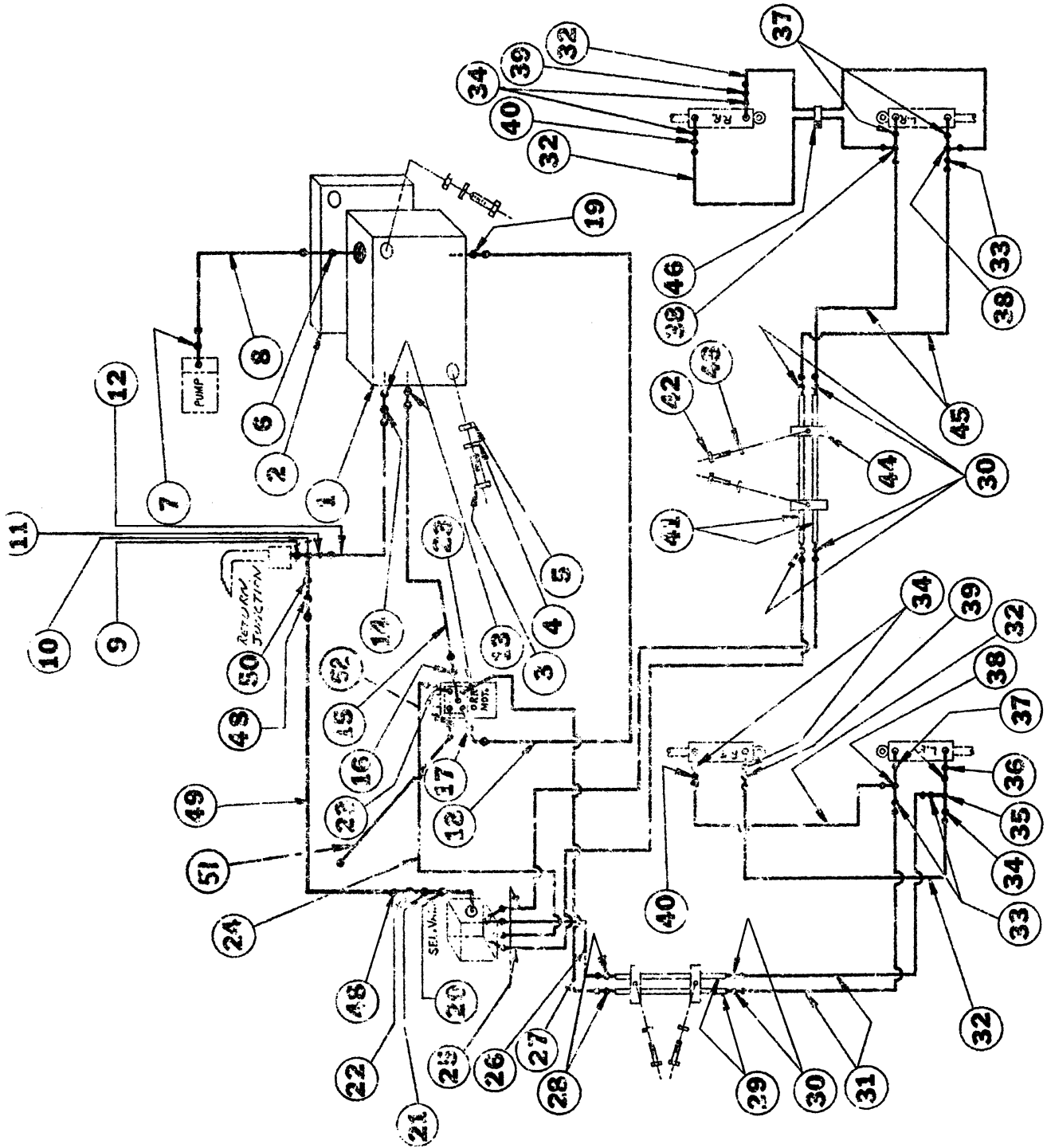
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

OPERATORS PLATFORM ASSEMBLY
 MODEL 400B
 NO. 15682D

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1		14552	Shifting Control Ass'y	1
2	P17593		Clamp	1
3		14554	Side Tilt Control Ass'y	1
4	15670		Platform	1
5		16178	Trottle Ass'y (CHECK FOR S/N)	1
6		15581	Brake & Master Cylinder Ass'y	1
7		15582	Brake & Line Ass'y	1
8		15437	Orbitrol Steering Ass'y	1
9		16337	Disconnect Ass'y	1
10		14555	Valve Control Ass'y	1
11	14262D		Seat Stand & Tool Box	1
12	P17742		Seat With Rails	1
13	14240		Panel, Instrument	1
14	P11092		Ignition Switch	1
15	6578		Inspection Cover	1
16		P13714	Valve, Steering Selector Ass'y	1
17	P-17826		Choke Cable (NOT SHOWN) For 225 Crysler only	1
18	REF		Level (See 14613)	1
19	REF		Guage & Senders (See 15241 & 16367)	
20				
21	P19424		Screw, Botton Head Socket, 1/4"-20 N.C. X 1" Lg.)6	
22	15125		Hydraulic Hose Strap	1
23	14697		Hose Grommet	1
24	P19254		Speed Nut	2
25	11680		Step	1
26		16365	Hand Brake Ass'y	1
27	P17765		Clamp	1
28	14535		Cover, Tool Box	1
29	P19536		Gasket, Vandle Guard	1
30	8803		Support	1
31	16538		Shield, Vandle Guard	1
32	14250		Cover, Bottom Instrument Panel	1
33	Com'l		Bolt, 1/4-20 N.C. X 1/2" Lg.	5
34	Com'l		Lockwasher 1/4"	11
35	Com'l		Nut, 1/4-20 N.C.	11
36	Com'l		Nut, 5/16-18 N.C.	8
37	Com'l		Capscrew, Hex Hd., 1/4-20 N.C. X 1" Lg.	5
38	Com'l		Capscrew, Hex Hd., 3/8-16 N.C. X 1 3/4" Lg.	6
39	Com'l		Capscrew, Hex Hd., 1/2-13 N.C. X 1 1/4" Lg.	4
40	Com'l		Capscrew, Hex Hd., 5/16-18 N.C. X 1/2" Lg.	1
41	Com'l		Capscrew, Flat Hd., 5/16-18 N.C. X 1 1/4" Lg.	2
42	Com'l		Lockwasher, 3/8"	10
43	Com'l		Lockwasher, 1/2"	4
44	Com'l		Lockwasher, 5/16"	9
45	Com'l		Screw, Rd. Hd., 10-24 X 1/2" Lg.	4
46	Com'l		Hex Nut, 3/8-16 N.C.	4
47	Com'l		Jam Nut 5/16-20 N.C.	2
48	Com'l		Capscrew, Hex Hd., 5/16-18 N.C. X 1" Lg.	2
49	Com'l		Capscrew, Hex Hd., 3/8-16 N.C. X 3/4" Lg.	4
50	Com'l		Capscrew, Hex Hd., 5/16-20 N.C. X 1 1/2" Lg.	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HYDRAULIC SCHEMATIC
LOAD SENSING & STEERING
MODEL 400B S/N 2004, 2005, 2007,
2008, 2011 & UP
16087C



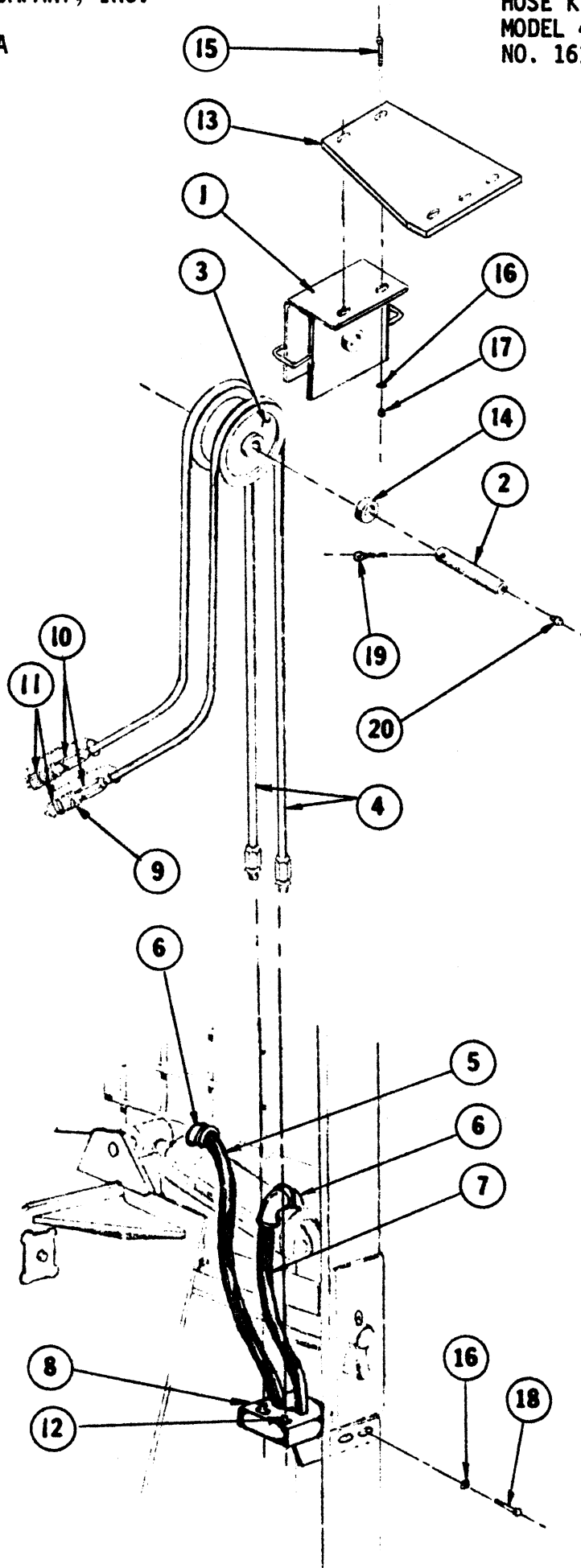
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

HYDRAULIC SCHEMATIC
 LOAD SENSING & STEERING
 MODEL 400B
 NO. 16087C

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P19292		Valve	1
2	16693A		Rubber Pad	1
3	Com'l		Bolt, Hex 5/16-18 N.C. X 31/8 Lg. (Gr. 2)	2
4	Com'l		Lockwasher 5/16"	2
5	Com'l		Nut, Hex 5/16-18 N.C.	2
6	P15451		Elbow, 90° Swivel	1
7	P12970		Connector O-Ring	1
8	P14983		Hose 3/4 X 39" Lg.	1
9	P16965		Nipple 1/4"	1
10	P10198		Tee 1/4"	1
11	P18939		Connector	1
12	P18879		Hose	1
13	P19478		Connector	2
14	P18957		Elbow 90° Swivel	1
15	P19490		Hose	1
16	P19415		Connector	1
17	P19414		Check Valve	1
18	P17079		Hose	1
19	P19537		Connector	1
20	P16430		Elbow 90°	1
21	P13979		Adapter	1
22	P13617		Fitting	1
23	P12510		Fitting	2
24	P10452		Hose 3/8 X 34" Lg.	1
25	P13695		Hose 3/8 X 62" Lg.	2
26	P11139		Hose 3/8 X 48" Lg.	1
27	P13442		Hose 3/8 X 23" Lg.	1
28	P10225		90° Str. Ell.	2
29	N10321		Tube	2
30	P10328		Coupling	6
31	P19512		Hose 3/8 X 30" Lg.	2
32	P19510		Hose 1/4 X 35" Lg.	4
33	P10118		45° Str. Ell.	3
34	P10691		Reducer	5
35	P10184		Tee	1
36	P10116		90° Str. Ell.	2
37	P10898		Nipple	4
38	P15120		Tee	3
39	P10216		45° Str. Ell.	2
40	P10157		90° Str. Ell.	2
41	N10315		Tube	2
42	Com'l		Bolt, Hex 5/16-18 N.C. X 1" Lg.	4
43	Com'l		Lockwasher 5/16	4
44	7731		Clamp	4
45	P11525		Hose 3/8 X 28" Lg.	2
46	P17810		Clamp	1
47		15437C	Steering, Orbitrol	1
48	P10553		Clamp	2
49	P17210		Hose	1
50	P 13619		Fitting	1
51	P 11139		Hose	1
52	P 15107		Adapter	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA

HOSE KIT & SHEAVE ASSEMBLY
MODEL 400B
NO. 16118A



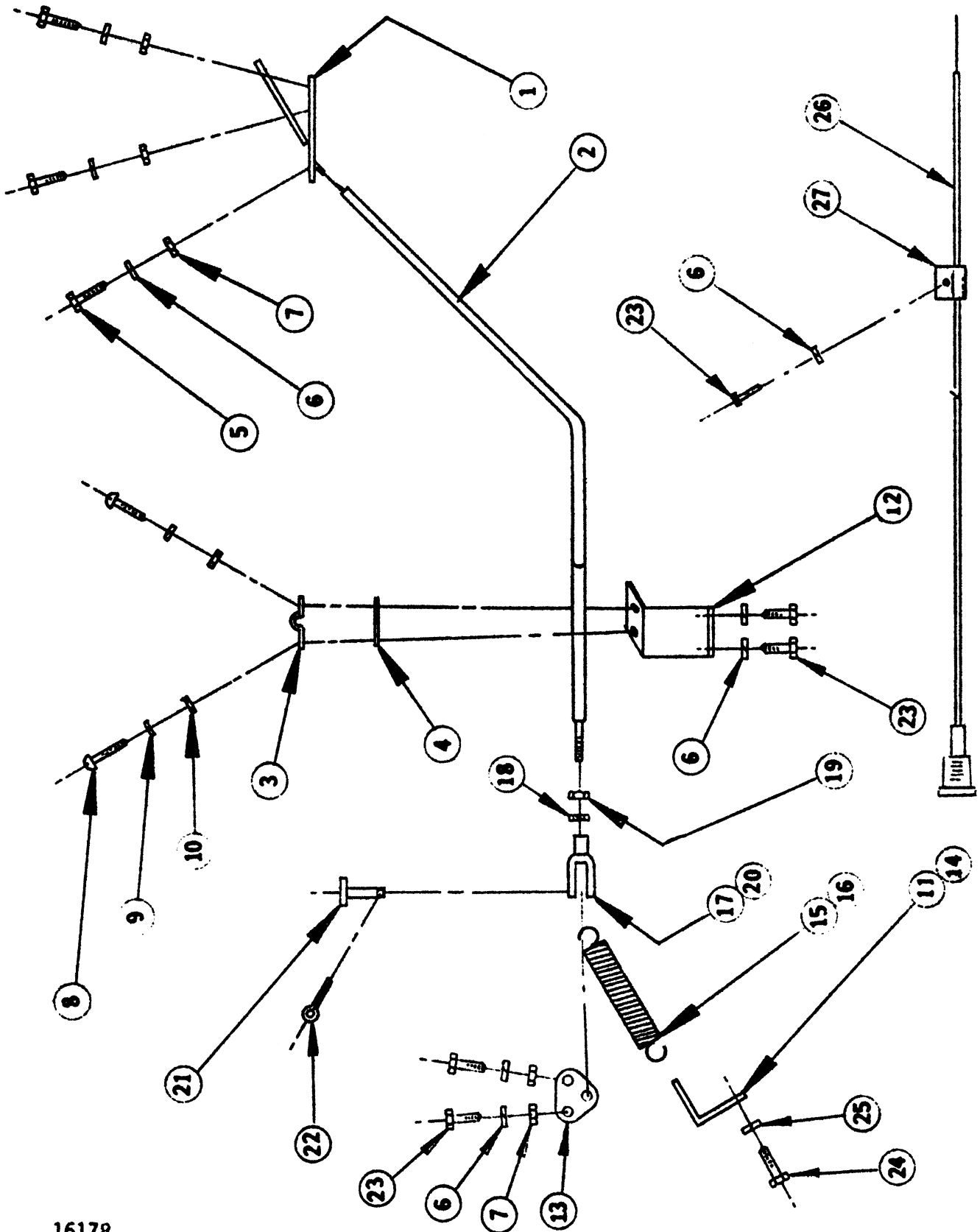
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HOSE KIT & SHEAVE ASSEMBLY
MODEL 400B
NO. 16118A

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	16114B		Hose Pulley Bracket	1
2	16117A		Shaft	1
3	16115B		Pulley Weldment	2
4	P13767		Hose, 3/8 SWB X 212" MTM	2
5	P11646		Hose, 1/4 SWB X 17" MTSM	1
6	P10156		Street Elbow, 1/4 X 90°	3
7	P11647		Hose, 1/4 SWB X 8 3/4M To SM	1
8	1157B		Hose Junction Bracket	1
9	P10120		Reducer, 1/2 To 3/8	2
10	P10324		Male Coupling	2
11	P10325		Dust Cap	2
12	P10554		Pipe Plug, Square Head, 1/4" Std.	2
13	16563B		Extension Plate	1
14	9324A		Bushing	2
15	Com'1		Capscrew, 3/8 X 1 1/4" Lg.	5
16	Com'1		Lockwasher, 3/8	7
17	Com'1		Hex Nut, 3/8-16	5
18	Com'1		Capscrew, 3/8-16 X 3/4"	2
19	Com'1		Cotter Pin 1/8" Dia X 1"	1
20	Com'1		Zerk 1/8"	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

THROTTLE ASSEMBLY
MODEL 844 & 400B
NO. 16178B
844-S/N 195, 196, 216, 220 & UP
400B-S/N 2014, 2016, 2029 & UP



16178

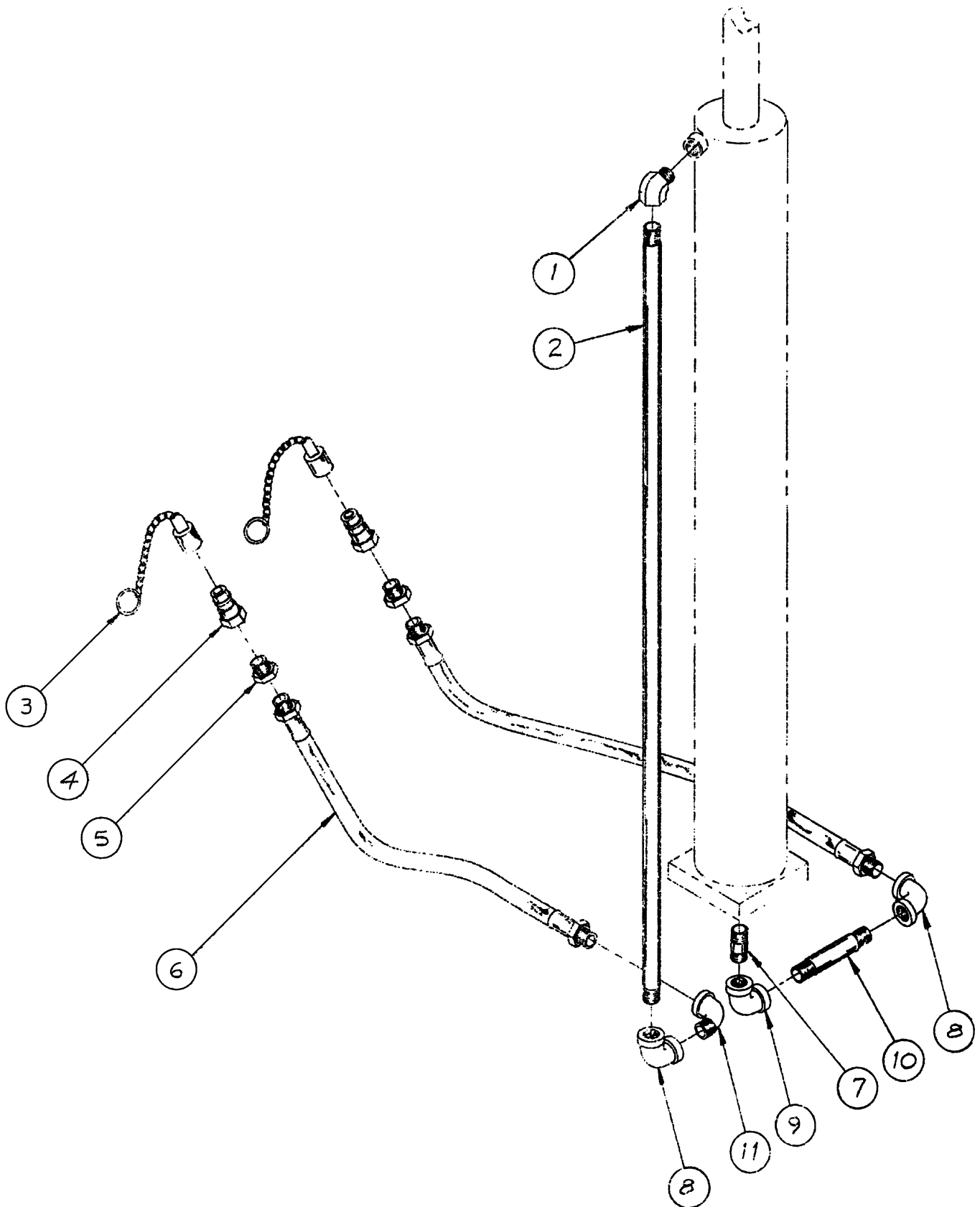
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

THROTTLE ASSEMBLY
 MODEL 844 & 400B
 NO. 16178B
 844-S/N 195,196,216,220 & UP
 400B-S/N 2014,2016,2029 & UP

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY.	ENGINE
1	P19263		Pedal	1	A11
2	P19264		Cable	1	A11
3	P17678		Clamp	1	A11
4	P19128		Shim	1	A11
5	Com'l		Capscrew 1/4-20 N.C. X 1 1/4" Lg.	3	A11
6	Com'l		Lockwasher 1/4" (225 Chrysler, 7 Req.)	4	A11
7	Com'l		Nut, Full 1/4-20 N.C. (225 Chrysler, 5 Req.)	3	A11
8	Com'l		Screw, Rd. Hd. Slotted 10-24 N.C. X 3/4" Lg.	2	A11
9	Com'l		Lockwasher #10	2	A11
10	Com'l		Nut, Full 10-24 N.C.	2	A11
11	13758		Anchor (318 Chrysler, 2 Req.)	1	A11
12	16174		Bracket	1	318
	16173		Bracket	1	283
	16177		Bracket	1	225
13	18119A		Bell Crank	1	225
14	16595		Anchor	1	225
15	P15274		Spring	1	318 & 225
16	P17337		Spring	1	318 & 283
17	P10505		Ball Joint	1	318 & 225
18	Com'l		Lockwasher, Shakeproof 1/4"	1	318 & 225
19	Com'l		Nut, Jam 1/4-28 N.F.	1	318 & 225
20	P10508		Clevis	1	283
21	P10512		Pin	1	283
22	Com'l		Cotter Pin 3/32 X 3/4" Lg.	1	283
23	Com'l		Capscrew 1/4-20 N.C. X 1/2" Lg.(283, 1 Req.)	4	225 & 283
24	Com'l		Capscrew 3/8-16 N.C. X 3/4 Lg.	1	225 & 283
25	Com'l		Lockwasher 3/8	1	225 & 283
26	P13445		Cable, Emergency Shut Off	1	283
27	P12497		Clip, Cable	1	283

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HYDRAULICS TOWER ASSEMBLY
MODEL 400B
16180C



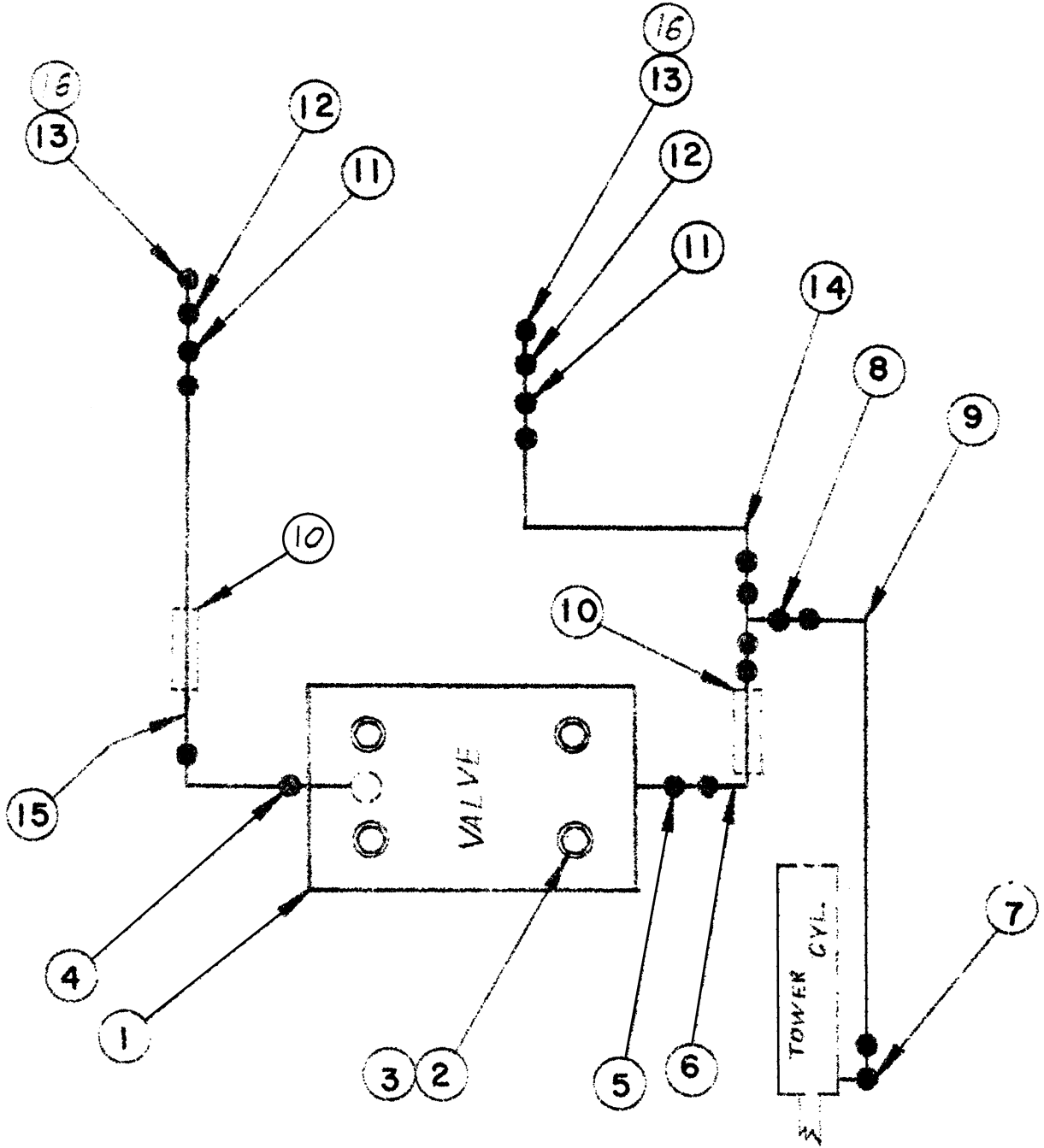
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HYDRAULICS, TOWER ASSEMBLY
MODEL 400B
16180C

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P17361		45° Elbow	1
2	P12982		Pipe	1
3	P10325		Dust Cap	2
4	P11353		Coupling	2
5	P10120		Bushing	2
6	P13342		Hose	2
7	P10788		Nipple	1
8	P15562		Elbow 90°	2
9	P15566		Elbow	1
10	P15497		Nipple	1
11	P15563		Street Elbow	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HYDRAULIC SCHEMATIC, TOWER & HOSES
FOR OPTIONS
MODEL 400B
NO. 16181A



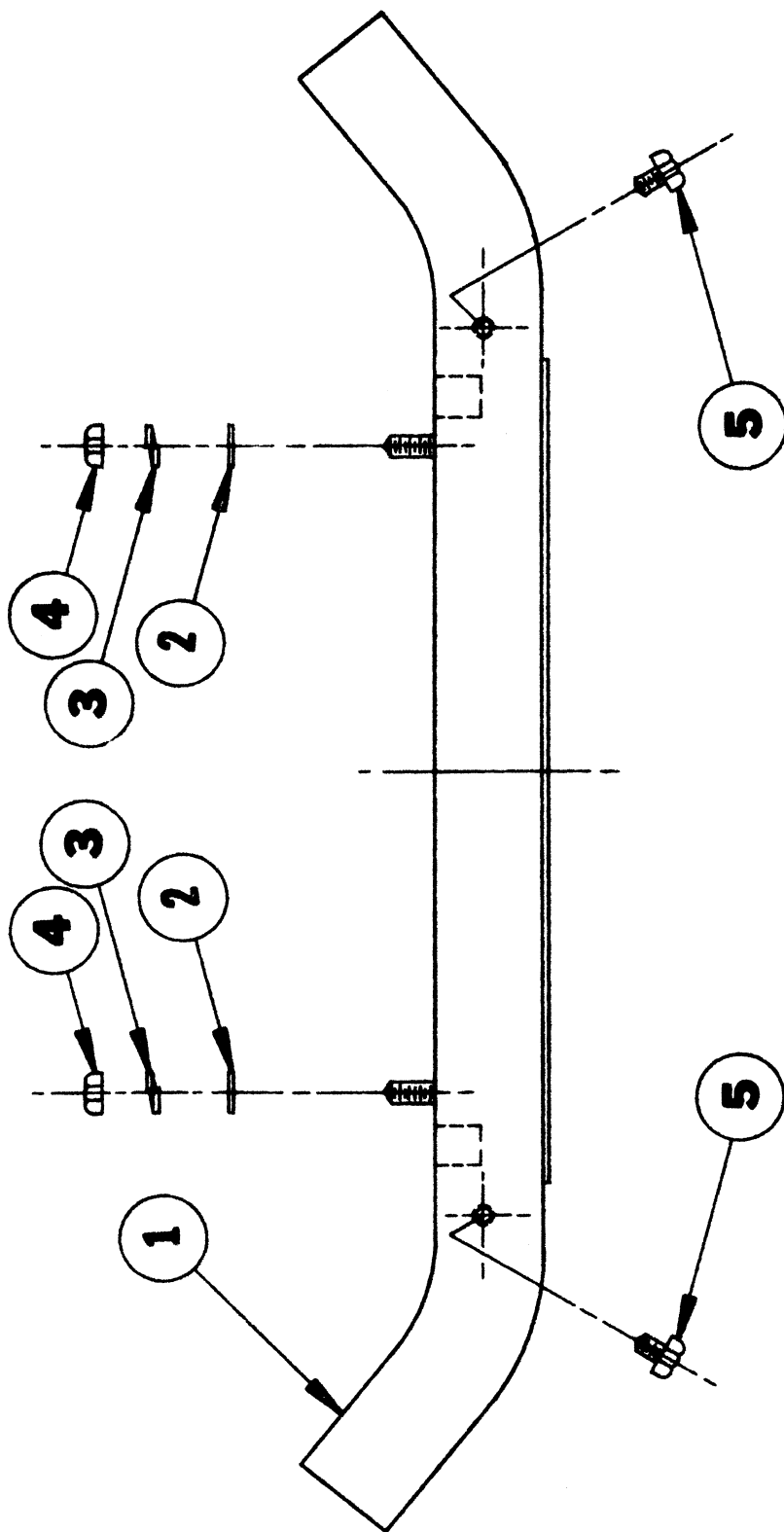
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

HYDRAULIC SCHEMATICS TOWER & HOSES
FOR OPTIONS
MODEL 400B
NO. 16181A

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	P17846		Safety Valve	1
2	Com'l		Bolt, Hex 5/16"-18 N.C. X 2" Lg.	4
3	Com'l		Lockwasher, Shakeproof 5/16"	4
4	P19413		90° Elbow	1
5	P19415		Connector Str.	1
6	P18869		Hose 1/4 X 16" Lg.	1
7	P18943		45° Elbow	1
8	P18995		Tee	1
9	P19421		Hose	1
10	P19063		Hose Protection	32"
11	P18938		Connector, Male	2
12	P10120		Reducer Bushing	2
13	P11355		Male Disconnect	2
14	P19738		Hose 3/8 X 33" Lg.	1
15	P19739		Hose 3/8 X 33" Lg.	1
16	P10326		Dust Cap	2

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

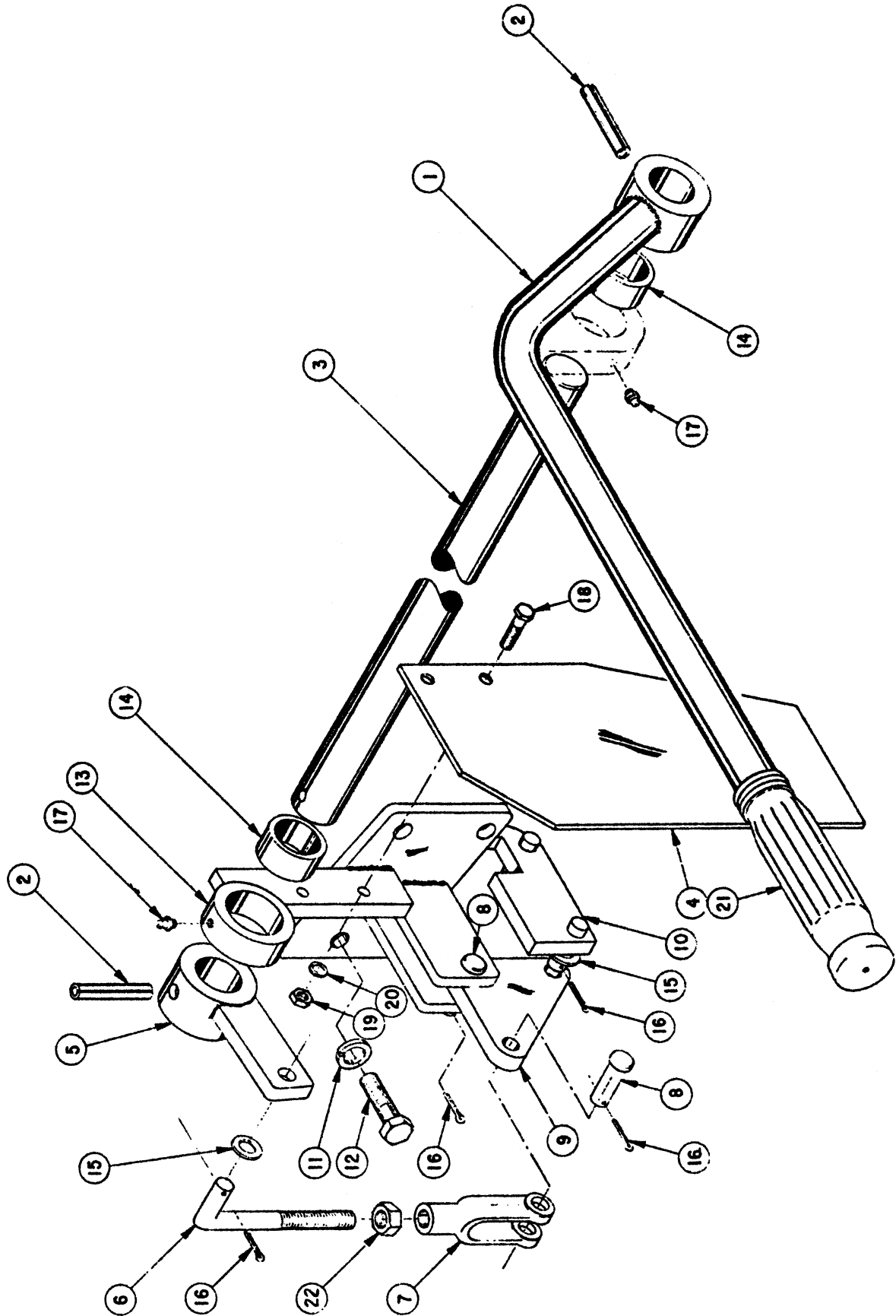
COUNTERWEIGHT ASSEMBLY



LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

COUNTERWEIGHT

ITEM	PART	DESCRIPTION	QTY
1	15356	Counterweight	1
2	Com'l	Nut, Hex 1 1/8"-7 N.C.	2
3	Com'l	Washer, Plain 1 1/8"	2
4	Com'l	Lockwasher 1 1/8"	2
5	Com'l	Bolt, Hex 1"-8 N.C. X 1" Lg.	2



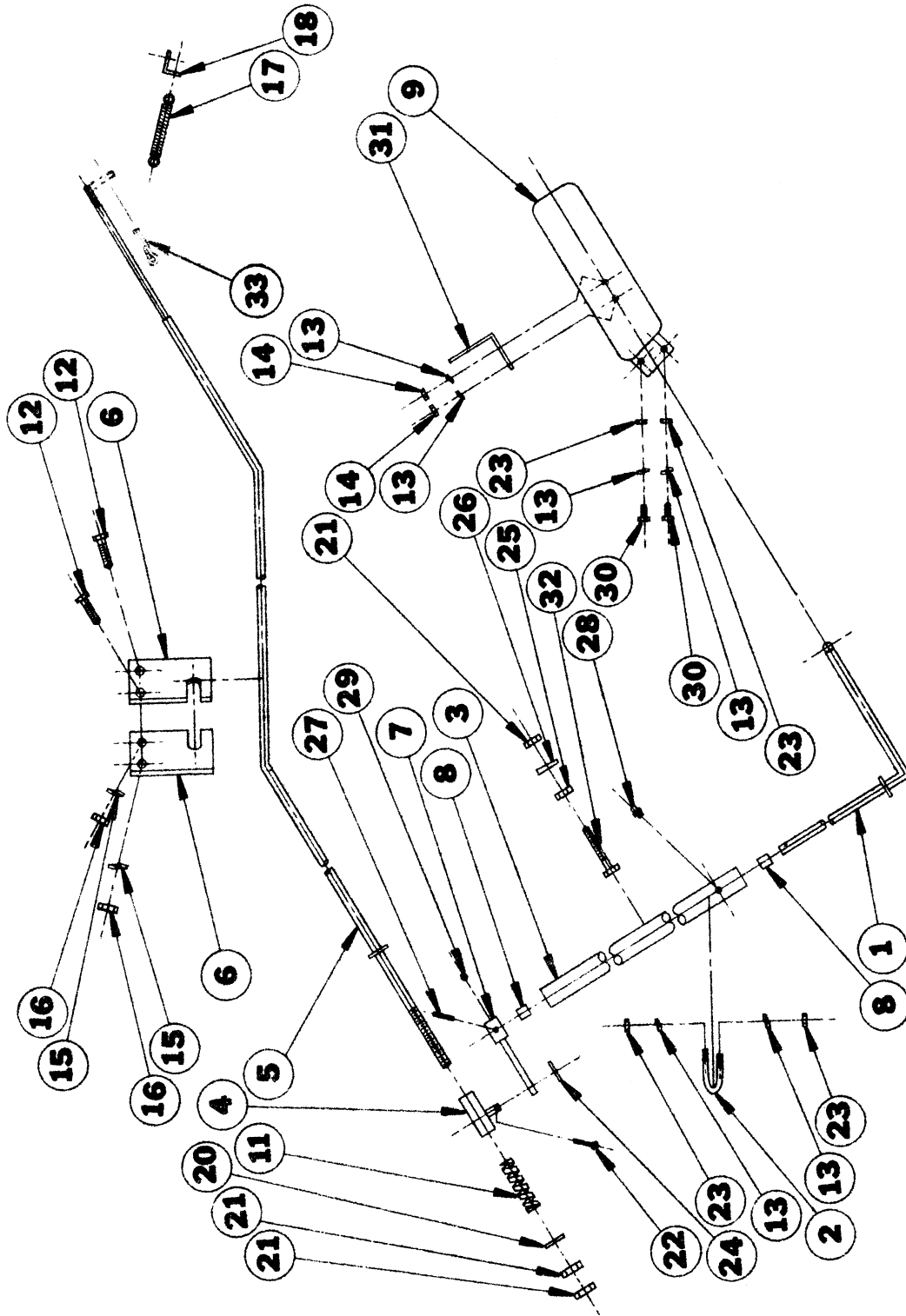
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

DISCONNECT ASSEMBLY

ITEM NO.	PART NO.	ASSEMBLY NO.	DESCRIPTION	QTY.
1	14520		Handle Lever	1
2	P10383		Roller Pin	2
3	14515		Shaft Disconnect	1
4	14453		Shield	1
5	14516		Lever	1
6	14522		Rod	1
7	P10333		Clevis	1
8	P15331		Pin, Disconnect Link	2
9	14524		Bellcrank, Disconnect	1
10	14526		Stop Link Assembly	1
11	Com'1		Lockwasher, 3/8"	3
12	Com'1		Capscrew, 3/8 - 16 x 1-1/4"	3
13	14454		Bracket Assembly	1
14	7327		Bushing	2
15	Com'1		Washer, Flat 3/8"	5
16	Com'1		Cotter Key, 1/8" x 7/8"	7
17	Com'1		Grease Fitting, 1/8" NPT	2
18	Com'1		Capscrew, 1/4" - 20 NC x 7/8"	2
19	Com'1		Nut, 1/4" - 20 NC	2
20	Com'1		Lockwasher, 1/4"	2
21	14692		Grip	1
22	Com'1		Nut, 3/8" - 24 NF	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

THROTTLE ASSEMBLY
MODEL 400B (283 WAUKESHA)
NO. 16345A
S/N 2001 Thru 2013, 2015,
& 2017 Thru 2028



LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

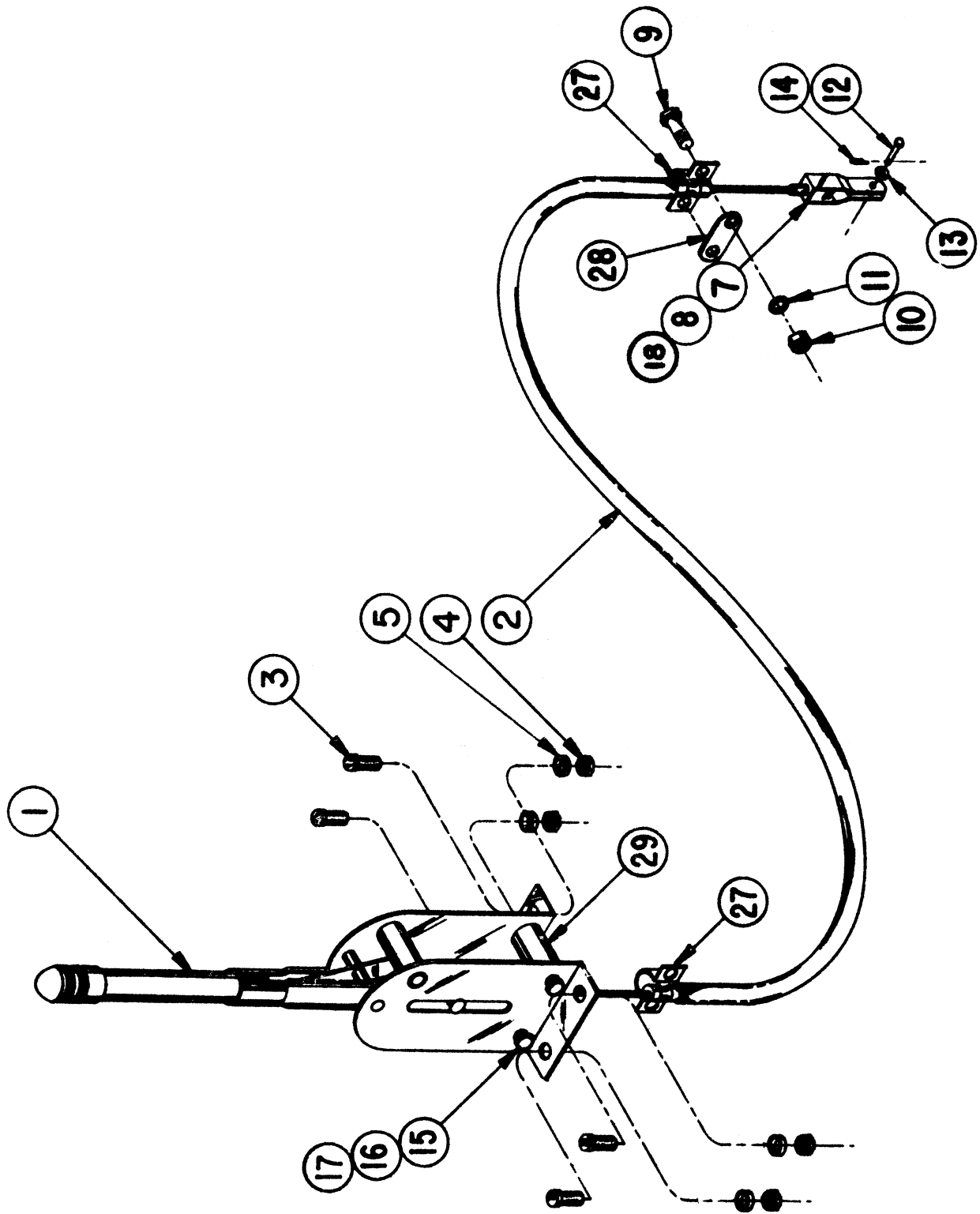
THROTTLE ASSEMBLY
 MODEL 400B
 NO. 16345A

ITEM	PART	SEE ASS'Y	DESCRIPTION	QTY
1	16103A		Pivot Rod, Throttle	1
2	15542A		U-Bolt, Bearing Sleeve	1
3	16110C		Bearing Sleeve	1
4	15544A		Sleeve Weldment	1
5	16285C		Throttle Rod	1
6	15546A		Bracket, Throttle Rod	2
7	15547A		Primary Lever	1
8	15924A		Bushing, Bearing Sleeve	2
9	14531B		Gas Pedal	1
10				
11	P19187		Spring, .066 O.D. X 3" Lg.	1
12	Com'1		Capscrew, Hx Hd. 5/16" N.C. X 1 1/4" Lg.	2
13	Com'1		Lockwasher 1/4" Shakeproof	6
14	Com'1		Jam Nut, 1/4" N.F.	2
15	Com'1		Lockwasher, 5/16" Shakeproof	2
16	Com'1		Nut, Full 5/16" N.C.	2
17	P17337		Spring, Short	1
18	13758A		Clip	1
19				
20	Com'1		Washer, Flat, Std. 3/8"	1
21	Com'1		Nut, Full 3/8" N.C.	3
22	Com'1		Cotter Pin 1/8" X 3/4"	1
23	Com'1		Jam Nut 1/4" N.C.	4
24	Com'1		Washer, Flat Std. 5/16"	1
25	Com'1		Nut, Jam 3/8 N.C.	1
26	Com'1		Washer, Bevel 3/8	1
27	Com'1		Roll Pin, 1/8" Dia. X 1" Lg.	1
28	Com'1		Zerk, Greasing Fitting 1/8" N.P.T. Straight	1
29	Com'1		Set Screw 1/4-20 N.C.	1
30	Com'1		Capscrew 1/4"-20 N.C. X 3/4"	2
31	15549A		Accelerator Stop	1
32	Com'1		Capscrew Hx Hd. 3/8"-16 N.C. X 2 1/4" Lg.	1
33	Com'1		Cotter Pin 3/32" X 3/4" Lg.	2

FOR S/N 2001 Thru 2013, 2015,
 & 2017 Thru 2028

LULL ENGINEERING COMPANY, INC.
3045 Highway 13
ST. PAUL, MINNESOTA 55121

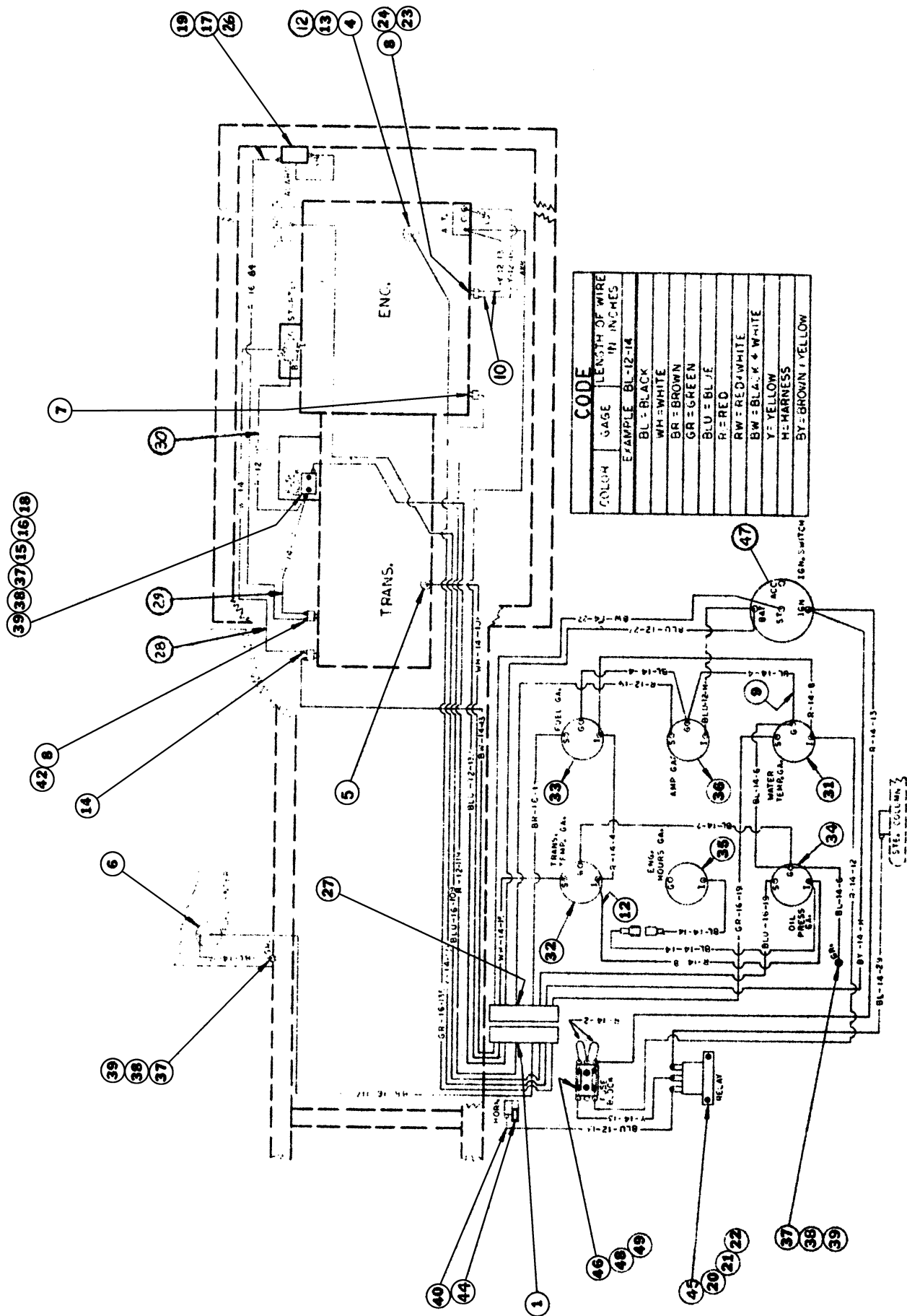
EMERGENCY HAND BRAKE
AND CABLE ASSEMBLY



LULL ENGINEERING COMPANY, INC.
 3045 Highway 13
 ST. PAUL, MINNESOTA 55121

EMERGENCY HANDLE & CABLE ASSEMBLY

ITEM	PART	DESCRIPTION	QTY.
1	P17604	Hand Brake	1
2	P18127	Cable	1
3	Com'l	Capscrew, 5/16-18 NC X 1" Long	4
4	Com'l	Nut, Hex, 5/16-18 NC	6
5	Com'l	Washer, Spring Lock, 5/16	6
6			
7	P17594	Clevis	1
8	Com'l	Nut, 3/8-24 NF	1
9	Com'l	Capscrew, 3/8-16 NC X 1 1/4" Long	2
10	Com'l	Nut, 3/8-16 NC	2
11	Com'l	Washer, Spring Lock, 3/8	2
12	Com'l	Pin, Clevis, 3/8 X 1" Long	1
13	Com'l	Washer, Flat, 3/8"	1
14	Com'l	Pin, Cotter, 1/8 X 3/4" Long	1
15	Com'l	Washer, Spring Lock, 5/16"	2
16	Com'l	Bolt, 5/16-18 NC X 1 3/4 Long	2
17	Com'l	Nut, 5/16-18 NC	2
18	Com'l	Nut, Jam, 3/8-24 NF	1
19			
20			
21			
22			
23			
24			
25			
26			
27	P17595	Clamp	2
28	P17596	Spacer, Link	2
29	P17597	Spacer	2



CODE	GAGE	LENGTH OF WIRE IN INCHES
EXAMPLE	BL-12-14	
	BL = BLACK	
	WH = WHITE	
	BR = BROWN	
	GR = GREEN	
	BLU = BLUE	
	R = RED	
	RW = RED/WHITE	
	BW = BLACK & WHITE	
	Y = YELLOW	
	H = HARNESS	
	BY = BROWN / YELLOW	

LULL ENGINEERING COMPANY, INC.
 3045 Highway 13
 ST. PAUL, MINNESOTA 55121

WIRING & ELECTRIC COMPONENT ASSEMBLY
 MODEL 400B
 NO. 16367 D (283 Waukesha)

ITEM	PART	ASSEMBLY	DESCRIPTION	QTY.
1	*P19435		Harness, Lower Wire	1
2	*16567B		Lower Terminal Conversion Kit	1
3	*16567-1B		Upper Terminal Conversion Kit	1
4	**P18813		Water Temp. Sender	1
5	**P19472		Oil Temp. Sender (For S/N 220 & UP)	1
6	**P20346		Fuel Sender (Use P18729 for S/N Thru 219)	1
7	**P18731		Engine Oil Press. Sender	1
8	P19105		Press. Switch (For Back-up Alarm)	2
9	P19284		Harness, Gauges Ground	1
10	P19529		Harness, Switch to Alternator	1
11				
12	P19838		Nut, 10-32 NF., Left Hand	1
13	P10691		Reducer, 3/8 to 1/4 NPT	1
14	P18673		Switch, Neutral Start	1
15	P19103		Fuses, SEE 30-AMP	2
16	P17752		Fuse Holder, Battery Draw with Buss Bas	1
17	***P13774		Alarm, Back-up	1
18	16273A		Bracket, Fuse Holder	1
19	P19102		Harness, Back-up Alarm	1
20	Com'l		Bolt, Hex Head 1/4-20 N.C. X 1/2 Lg.	2
21	Com'l		Nut, Hex 1/4-20 N.C.	2
22	Com'l		Lockwasher, Spring, 1/4	2
23	P10757		Nipple	1
24	P10223		90 Degree Elbow	1
25				
26	***17026A		Bracket, Back-Up Alarm	1
27	*P19099		Harness, Upper Wire	1
28				
29				
30				
31	**P18735		Water, Temp. Gauge	1
32	**P18734		Trans. Oil Temp. Gauge	1
33	**P18728		Fuel, Gauge	1
34	**P18730		Engine Oil Press. Gauge	1
35	P18733		Hour Meter, Gauge	1
36	P18732		Ammeter, Gauge	1
37	Com'l		Screw, Round Head, 10-24 N.C. X 1/2 Lg.	4
38	Com'l		Lockwasher, Spring 10	4
39	Com'l		Nut, Hex 10-24 N.C.	4
40	P19101		Harness, Horn	1
41	REF	16341	Kit, Horn Switch	1
42	P15093		Elbow, 1/8 NPT X 45 Degree	1
43				
44	P13707		Horn	1
45	P13709		Relay, Horn	1
46	P19104		Fuse, SFE 20 AMP	2
47	REF	15516	Switch, Ignition	1
48	P19096		Fuse, 3 Holder	1
49	P18079		Adhesive	A/R

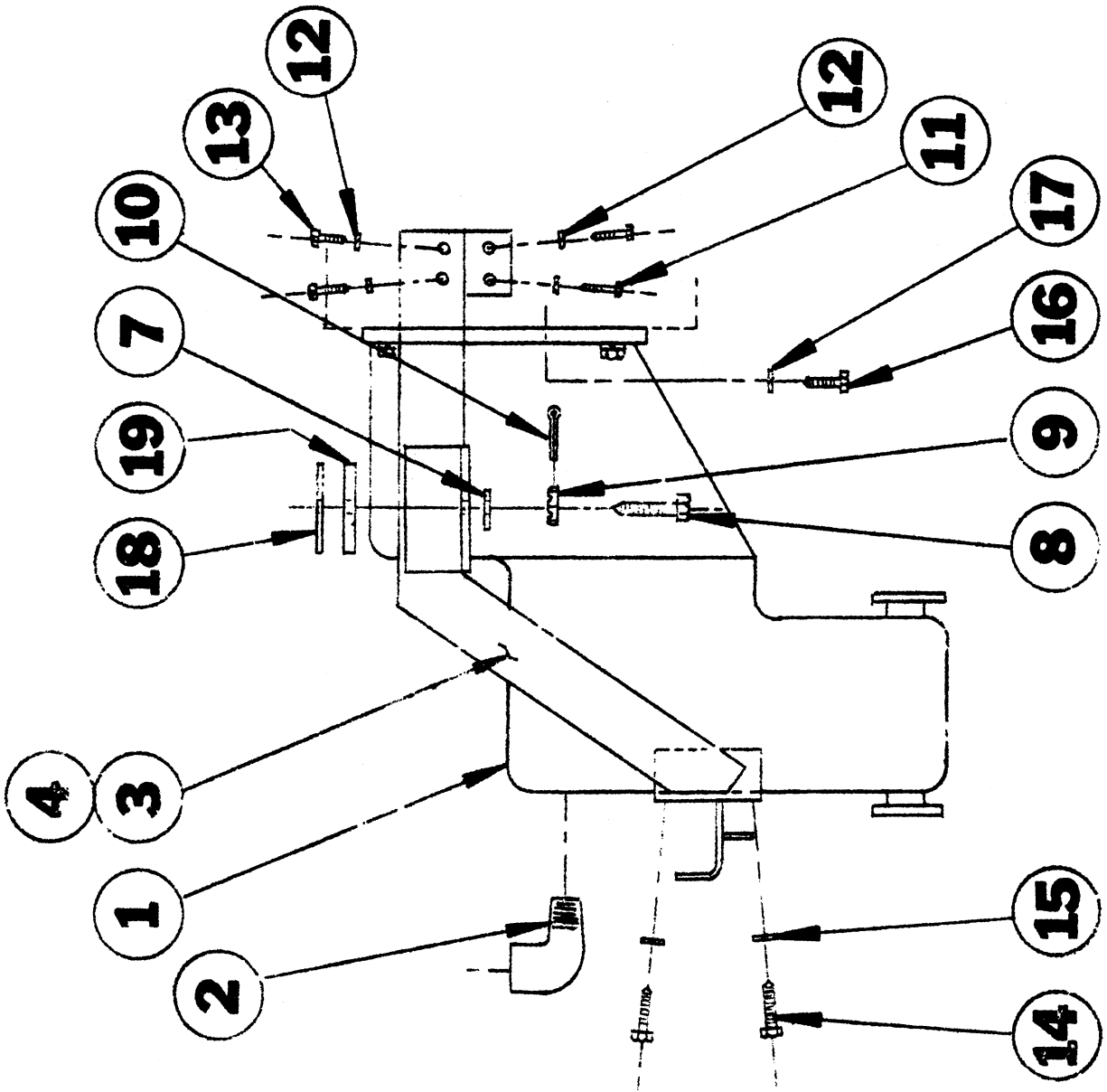
NOTE: *For repair, S/N 2001 thru 2013, a terminal conversion kit (either item #2 for lower harness or item #3 for upper harness) must be purchased together with harness. Kit is NOT required when both an upper & lower harness are purchased together.

16367 **For repair, S/N 2001 thru 2035, gauges & senders must be purchased together.

***For repair, S/N 2001 thru 2123, back-up alarm & bracket must be purchased together.

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

TRANSMISSION SUPPORT ASSEMBLY
MODEL 400B
NO. 16600A



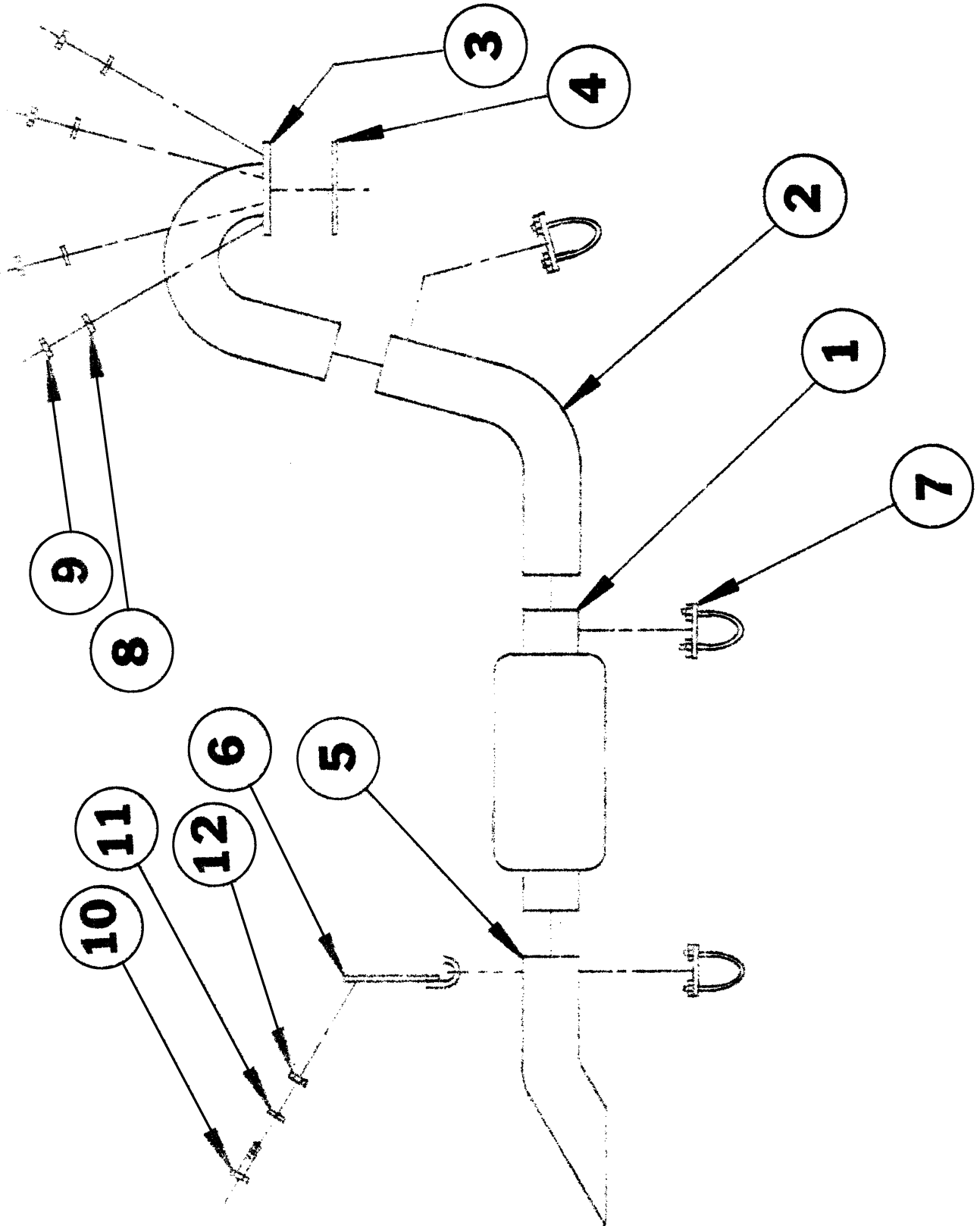
LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

TRANSMISSION SUPPORT ASSEMBLY
 MODEL 400B
 NO. 16600A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	P17829		Transmission (Also See Appendix)	1
2	P10231		90° Street Elbow	1
3	16502		R.H. Support Bracket	1
4	16501		L.H. Support Bracket	1
5				
6				
7	13534		Rubber Mounting	2
8	P18023		Bolt, Hex 3/4-16 N.F. X 2 3/4" Lg. (Gr. 5)	2
9	Com'l		Nut, Castelated 3/4-16 N.F. (Gr. 5)	2
10	Com'l		Cotter Pin 1/8" X 1" Lg.	2
11	P17836		Bolt, Hex 1/2-13 N.C. X 1 1/2" Lg. (Gr. 8)	4
12	Com'l		Lockwasher 1/2"	8
13	P17667		Bolt, Hex 1/2-13 N.C. X 2" Lg. (Gr. 8)	4
14	P17250		Bolt, Hex 5/8"-11 N.C. X 1 1/2" Lg. (Gr. 8)	4
15	Com'l		Lockwasher 5/8"	4
16	P15126		Bolt, Hex 3/8"-16 N.C. X 1 1/2" Lg. (Gr. 5)	11
17	Com'l		Lockwasher 3/8"	11
18	11615		Plate (Motor Mount, Rear)	1
19	11620		Pad (Motor Mount, Rear)	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

EXHAUST SYSTEM ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16601A



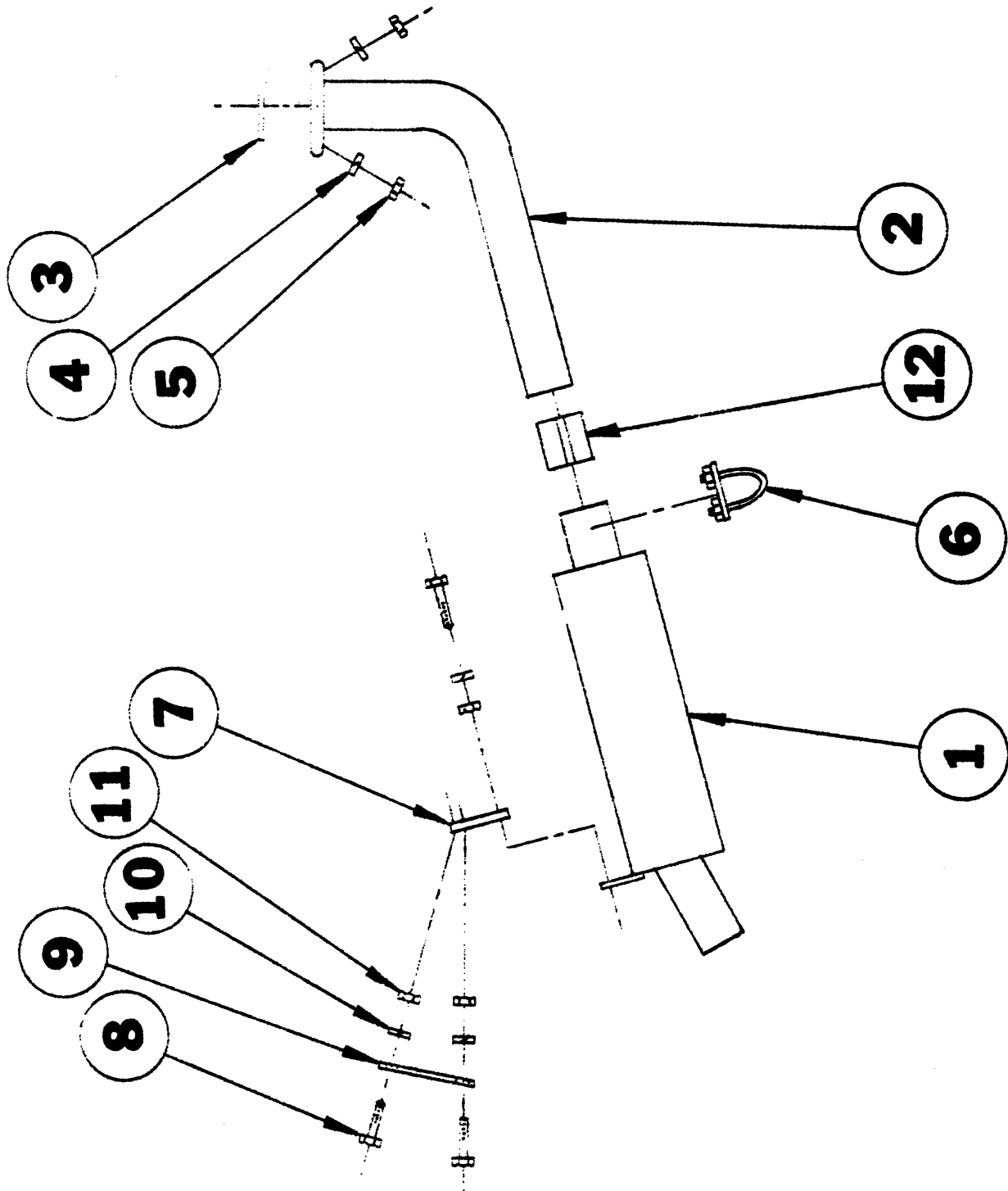
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

EXHAUST SYSTEM ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16601A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	P14149		Muffler	1
2	P14150		Pipe	1
3	16086		Elbow	1
4	P16912		Gasket	1
5	P14148		Tail Pipe	1
6	P13340		Hanger Bracket	1
7	P17169		Clamp	3
8	Com'1		Lockwasher 3/8"	4
9	Com'1		Nut, Hex 3/8-24 N.F.	4
10	Com'1		Bolt, Hex Hd. 3/8-16 N.C. X 1½ Lg.	1
11	Com'1		Lockwasher 3/8"	1
12	Com'1		Nut, Hex 3/8-16 N.C.	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

EXHAUST SYSTEM ASSEMBLY
MODEL 400B
225 CHRYSLER
NO. 16602A



LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

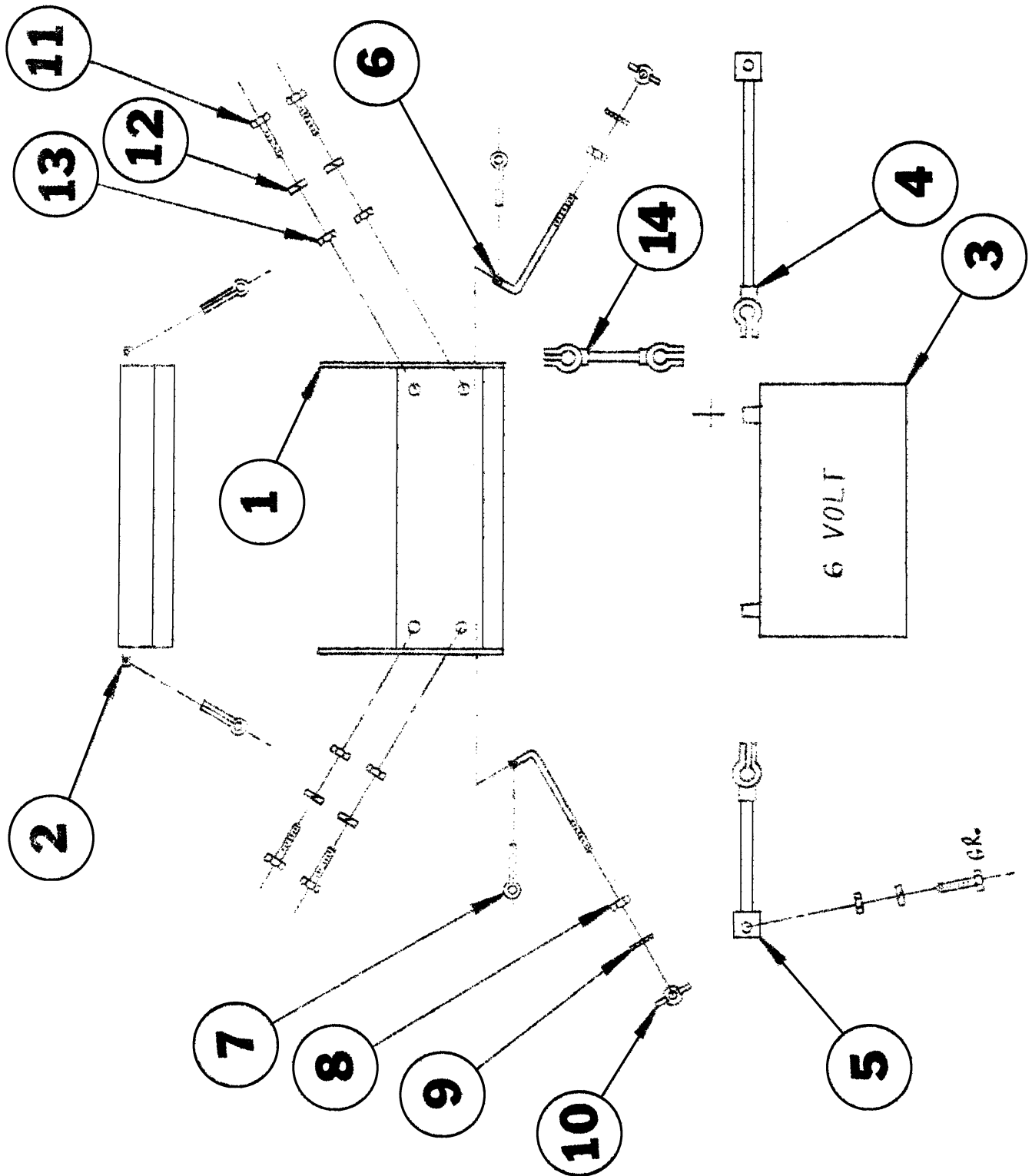
EXHAUST SYSTEM ASSEMBLY
MODEL 400 B
225 CHRYSLER
NO. 16602A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	P18199		Muffler	1
2	*16619		Exhaust Pipe (See Note)	1
3	P13025		Gasket	1
4	Com'1		Lockwasher 1/2"	2
5	Com'1		Nut, 1/2-13 N.C.	2
6	P10548		Clamp	1
7	16077		Flexable Link	1
8	Com'1		Bolt, Hex 3/8-16 N.C. X 1 1/4" Lg.	3
9	16078		Support Plate	1
10	Com'1		Lockwasher 3/8"	3
11	Com'1		Nut, Hex 3/8-16 N.C.	3
12	16694A		Exhaust Pipe Spacer	1

Note: *FOR S/N 2001 Thru 2015 USE 11642

SOLE ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

BATTERY BOX ASS'Y
MODEL 400B
283 WAUK.
NO. 16603A



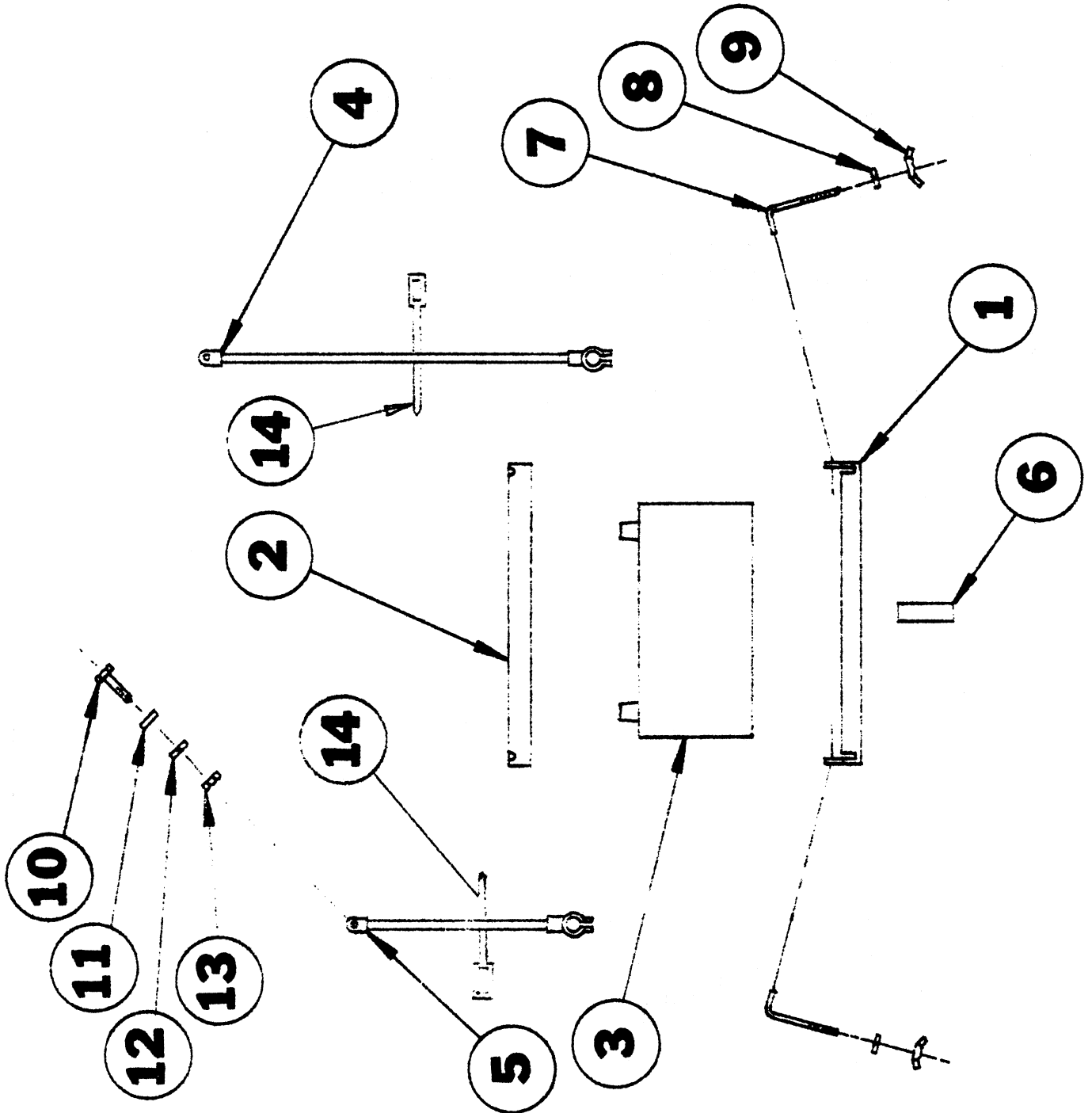
ELL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

BATTERY BOX ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16603A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	16344		Battery Box	1
2	16355		Cover	1
3	P19076		Battery	2
4	P13447		Cable (Pos)	1
5	P16691		Cable (Neg)	1
6	16357		Hold Down Rod	2
7	Com'l		Cotter Pin 1/8" X 3/4" Lg.	4
8	Com'l		Nut, Hex 5/16-18 N.C.	2
9	Com'l		Lockwasher, Shakeproof 5/16"	2
10	Com'l		Wingnut 5/16-18 N.C.	2
11	Com'l		Bolt, Hex 3/8-16 N.C. X 1" Lg.	5
12	Com'l		Lockwasher 3/8"	5
13	Com'l		Nut, Hex 3/8-16 N.C.	5
14	P18122		Cable (Connect 2-6Volt Bat. in Series)	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
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BATTERY BOX ASSEMBLY
MODEL 400B
225 CHRYSLER
NO. 16604A



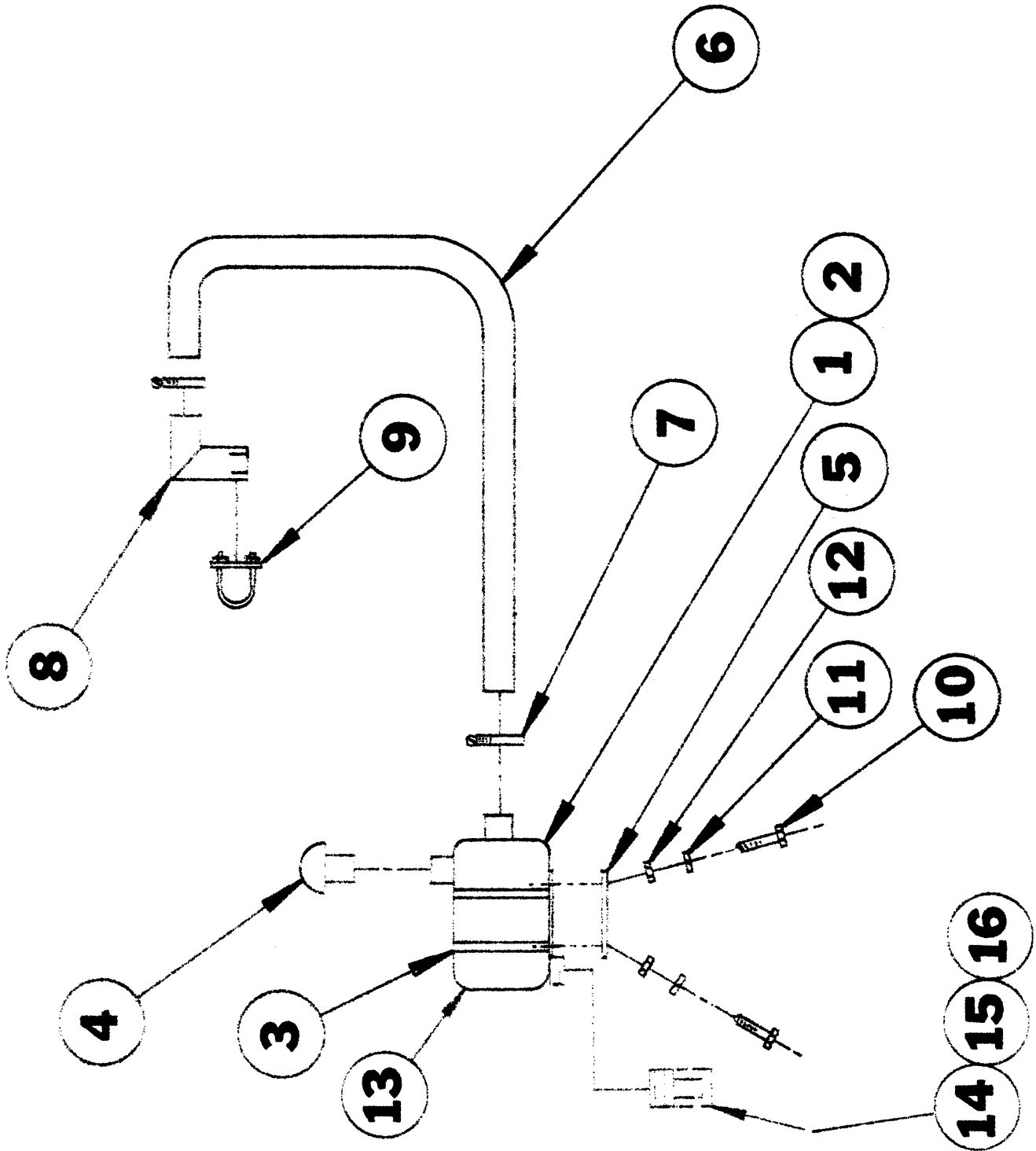
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

BATTERY BOX ASSEMBLY
MODEL 400B
225 CHRYSLER
NO. 16604A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	15263		Box	1
2	3546		Cover	1
3	P11056		Battery	1
4	P13447		Cable (Pos)	1
5	P16691		Cable (Neg)	1
6	16079		Brace	1
7	15271		Hold Down	2
8	Com'l		Lockwasher 1/4"	2
9	Com'l		Wingnut 1/4-20 N.C.	2
10	Com'l		Bolt, Hex 5/16-18 N.C. X 1" Lg.	1
11	Com'l		Washer, Plain 5/16"	1
12	Com'l		Lockwasher, 5/16"	1
13	Com'l		Nut, Hex 5/16-18 N.C.	1
14	P17990		Ty-Rap	2

LEWIS ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

AIR CLEANER ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16605A



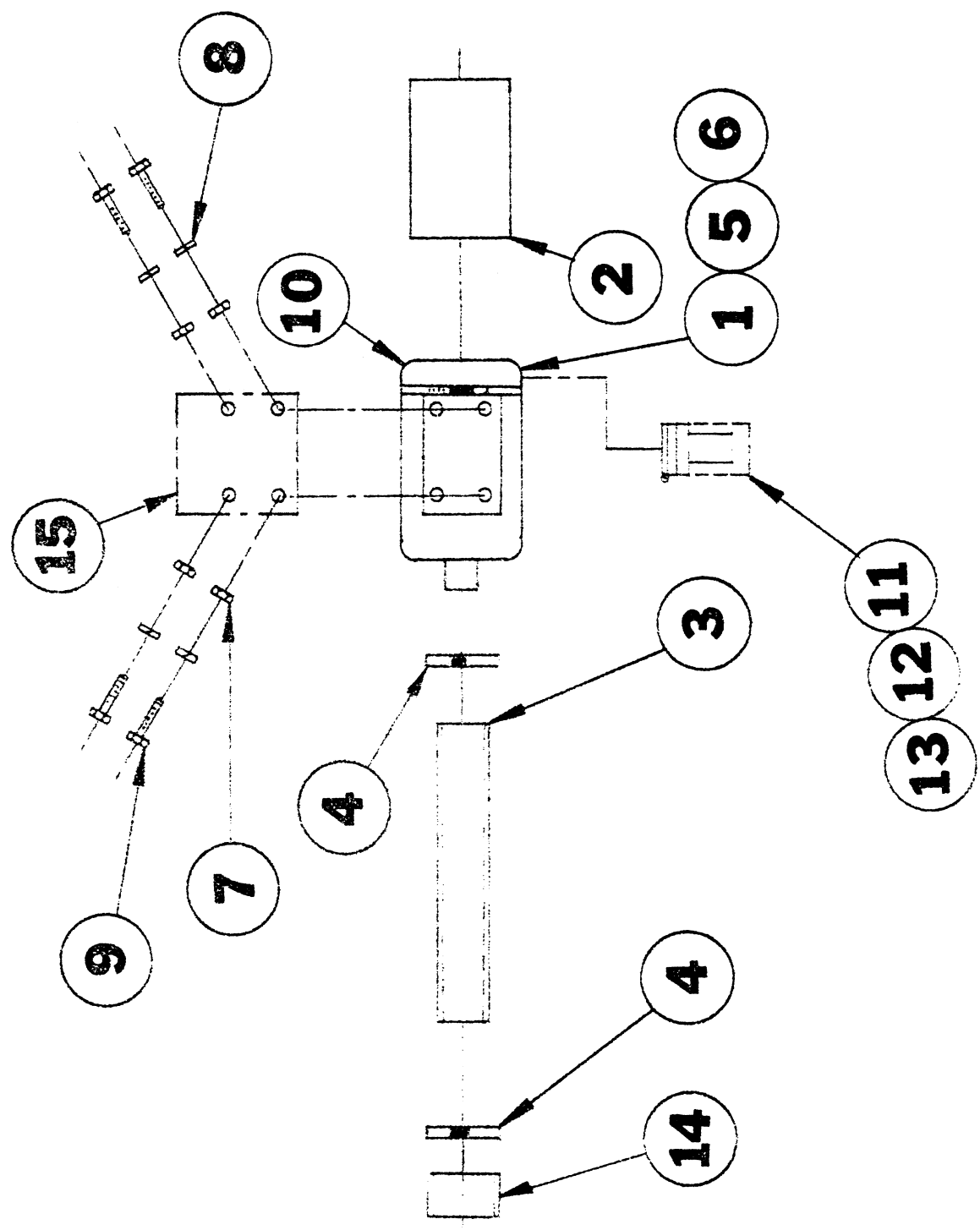
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

AIR CLEANER ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16605A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	P17135		Air Cleaner	1
2	P17276		Element	1
3	P17137		Band	2
4	P17136		Cap	1
5	15642		Bracket	1
6	P18037		Hose	1
7	P10553		Clamp	2
8	13458		Elbow	1
9	P17169		Clamp	1
10	Com'l		Bolt, Hex 5/16-18 N.C. X 3/4" Lg.	4
11	Com'l		Lockwasher 5/16"	4
12	Com'l		Nut, Hex 5/16-18 N.C.	4
13	P19728		Vacuator Cup Ass'y	1
14	P20342		Vacuator Valve (Rubber)	1
15	P20343		Clamp	1
16	P20344		Guard	1

LULL ENGINEERING COMPANY, INC.
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AIR CLEANER ASS'Y
MODEL 400B
225 CRY.
NO. 16606A



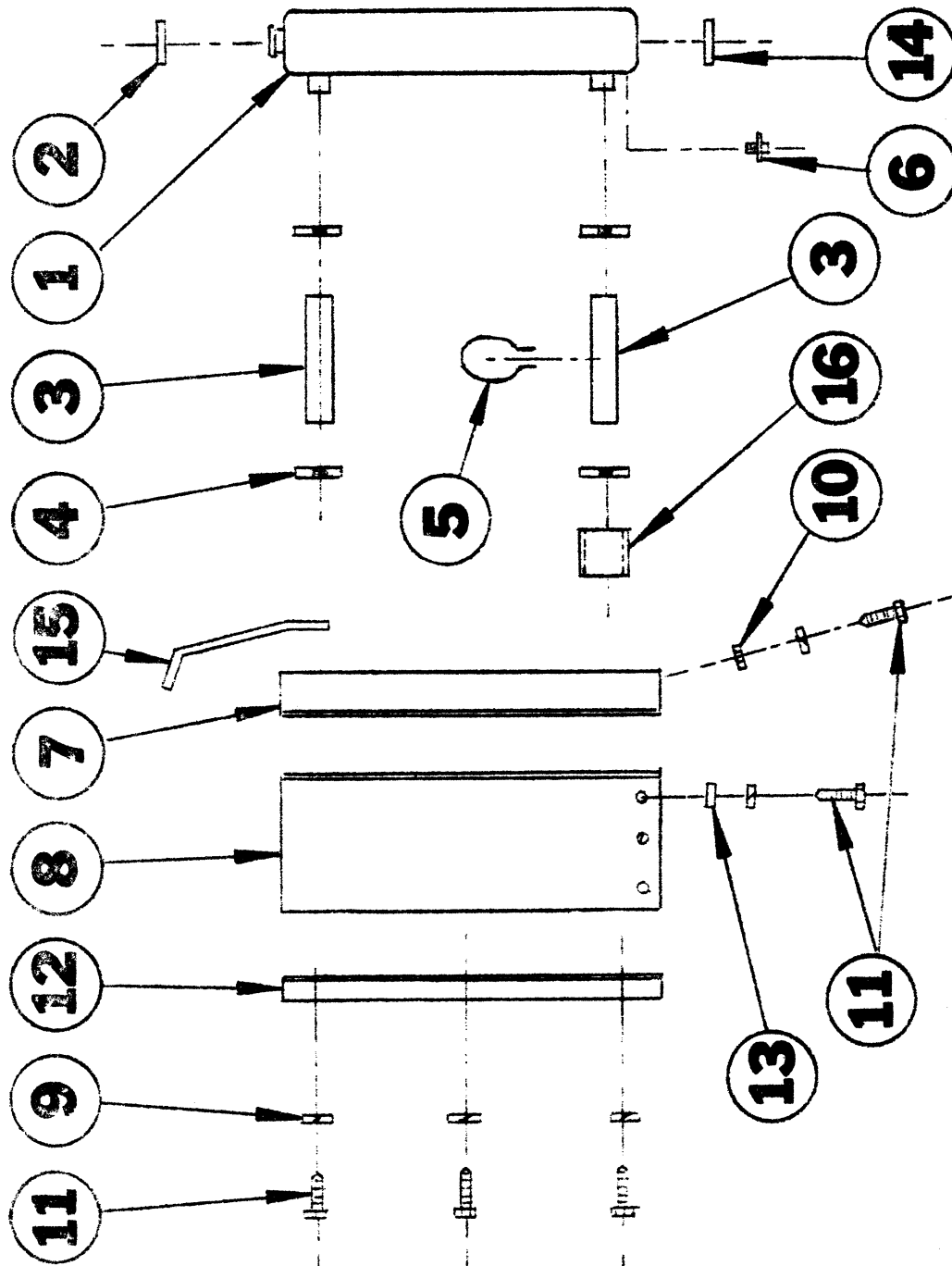
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3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

AIR CLEANER ASSEMBLY
MODEL 400B
225 CHRYSLER
NO. 16606A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	P12163		Air Cleaner	1
2	P12179		Filter Element	1
3	15274A		Hose (28" Lg.)	1
4	P10270		Clamps	2
5	P12165		Band	2
6	P12164		Air Stack	1
7	Com'1		Hex Nut 5/16-18 N.C.	4
8	Com'1		Lockwasher 5/16"	4
9	Com'1		Bolt, Hex 5/16-18 N.C. X 1" Lg.	4
10	P19727		Vacuator Cup with Sleeve	1
11	P20342		Vacuator Valve (Rubber)	1
12	P20343		Clamp, Vacuator Guard	1
13	P20344		Guard, Vacuator Valve	1
14	15275		Spacer	1
15	14893		Support	1
16	P20384		Pre-Cleaner (Optional)	1

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
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RADIATOR ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16607A



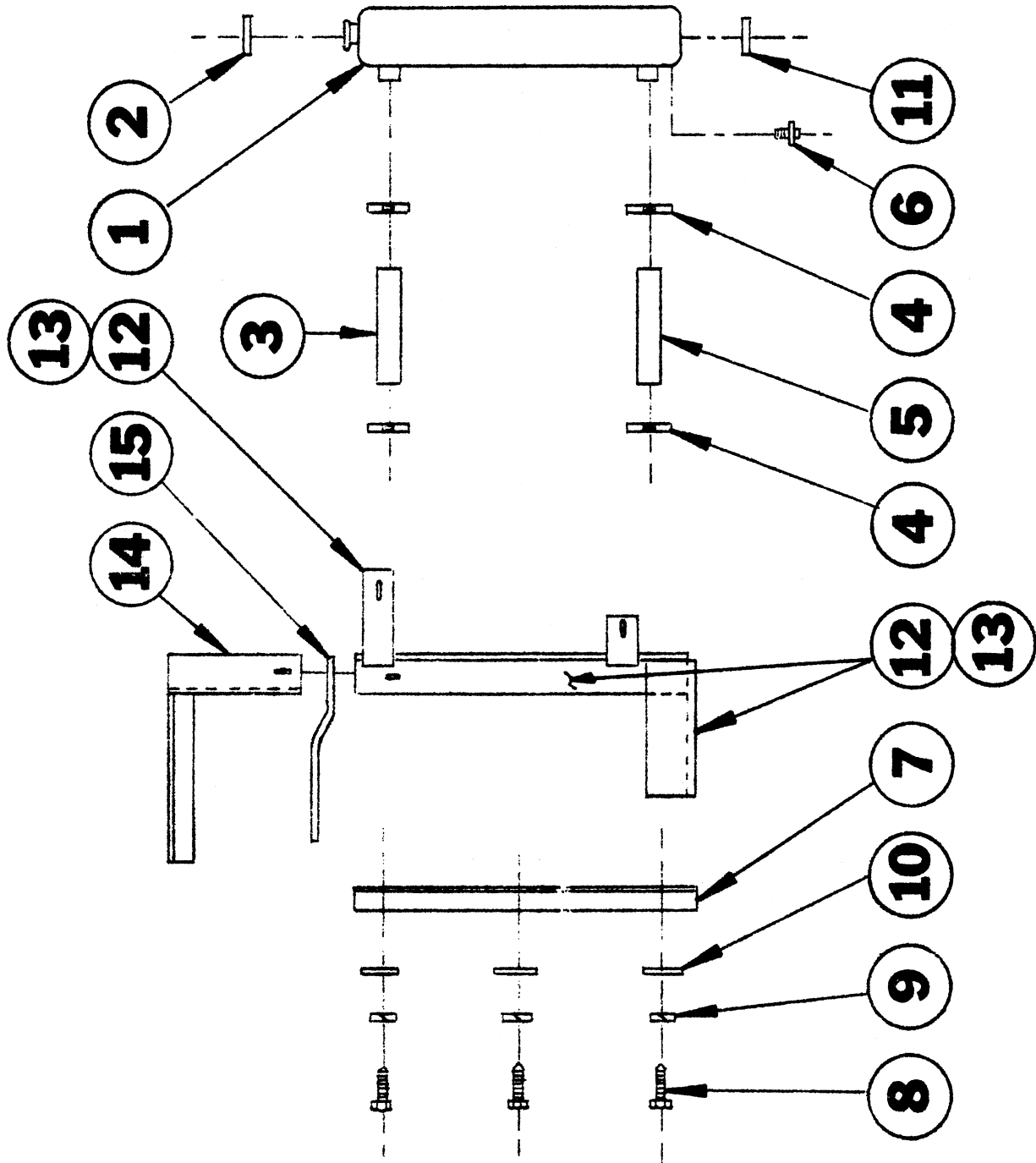
W. L. ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

RADIATOR ASSEMBLY
MODEL 400B
283 WAUKESHA
NO. 16607A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	P17876		Radiator	1
2	P13544		Radiator Cap	1
3	P17682		Hose	2
4	P10270		Clamp	4
5	15310		Hose Holder	1
6	P16675		Drain Cock	1
7	14726		Radiator Support	1
8	16102		Shroud, Extention	1
9	Com'1		Lockwasher 1/4"	2
10	Com'1		Nut, Hex 1/4-20 N.C.	2
11	Com'1		Bolt, Hex 1/4-20 N.C. X 1/2" Lg.	2
12	P17774		Shroud	1
13	Com'1		Washer, Plain 1/4"	6
14	13544		Shock Resistor	2
15	16107		Bracket, Upper	2
16	P19075		Spacer, Lower Hose	1

LULL ENGINEERING COMPANY, INC.
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RADIATOR ASSEMBLY
MODEL 400B
225 CHRYSLER
NO. 16608A



LULL ENGINEERING COMPANY, INC.
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ST. PAUL, MINNESOTA 55121

RADIATOR ASSEMBLY
MODEL 400B
225 CHRYSLER
NO. 16608A

ITEM	PART	SEE ASSEMBLY	DESCRIPTION	QTY
1	14766		Radiator	1
2	P13544		Radiator Cap	1
3	P18011		Hose, Upper	1
4	P10270		Clamp	4
5	P18012		Hose, Lower	1
6	P16675		Drain Cock	1
7	14773		Shroud	1
8	Com'1		Bolt, Hex Hd. 1/4" N.C. X 1/2" Lg.	6
9	Com'1		Lockwasher 1/4"	6
10	Com'1		Washer, Plain 1/4"	6
11	11586		Pad	2
12	14827		Support, L.H	1
13	14828		Support, R.H	1
14	15127		Top Support, L.H	1
15	15129		Top Support, R.H	1

LULL ENGINEERING COMPANY, INC.
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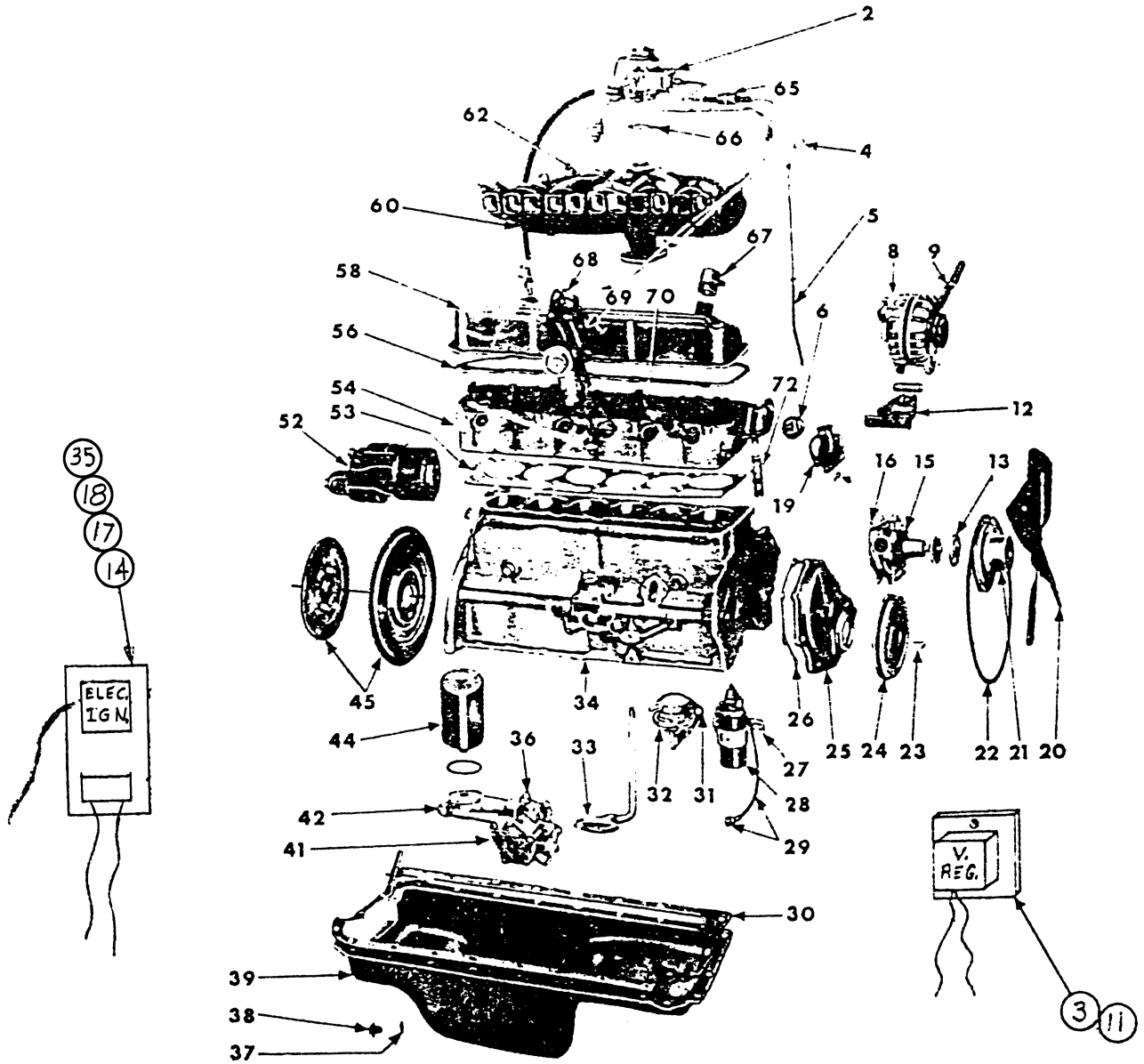
225 CHRYSLER
P17985

INDEX OF PARTS

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LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

EXTERNAL ENGINE PARTS
225 CHRYSLER



LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

EXTERNAL ENGINE PARTS
 225 CHYSLER

ITEM	PART	DESCRIPTION	QTY
1			
2	P13549	Carburator	1
3	P19204	Voltage Regulator	1
4	P13550	Dipstick, Oil	1
5	P16895	Tube, Dipstick	1
6	P13553	Thermostat	1
7			
8	Ref	Alternator (See Page 9)	
9	P20157	Alternator Adjusting Strap	1
10			
11	P19830	Harness, Voltage Regulator	1
12	P17003	Bracket	1
13	P20159	Spacer	1
14	P19722	Electronic Ignition	1
15	P17006	Water Pump	1
16	P20158	Gasket, Water Pump	1
17	P19829	Harness, Electronic Ignition	1
18	P19750	Resistor	1
19	P20160	Gasket, Water Outlet	1
20	P13045	Fan	1
	P13051	Pulley	1
22	P13041	Belt	1
23	P20161	Key	1
24	P15268	Damper	1
25	P17019	Timing Cover	1
26	P17020	Gasket, Timing Cover	1
27	P20162	Bracket, Ignition	1
28	P12683	Coil	1
29	P20163	Cable	1
30	P20164	Gasket, Oil Pan	1
31	P20165	Gasket, Fuel Pump	1
	P13043	Fuel Pump	1
	P20166	Strainer, Oil Pump (Pipe Included)	1
34	P20167	Block (Piston & Rings Included)	1
35	P19749	Harness, Electronic Ignition	1
36	P20168	Gasket, Oil Pump	1
37	P20169	Gasket, Oil Plug	1
38	P20170	Oil Plug	1
39	P20171	Oil Pan	1
40			
41	P17017	Oil Pump	1
42	P20172	Cap, Oil Pump	1
43	P19720	Flywheel Housing (Not Shown)	1
44	P12089	Filter, Oil	1
45	P16893	Flywheel & Ring Gear (For Funk Trans.)	1
45	P21764	Flywheel & Ring Gear (For Clark Trans)	1

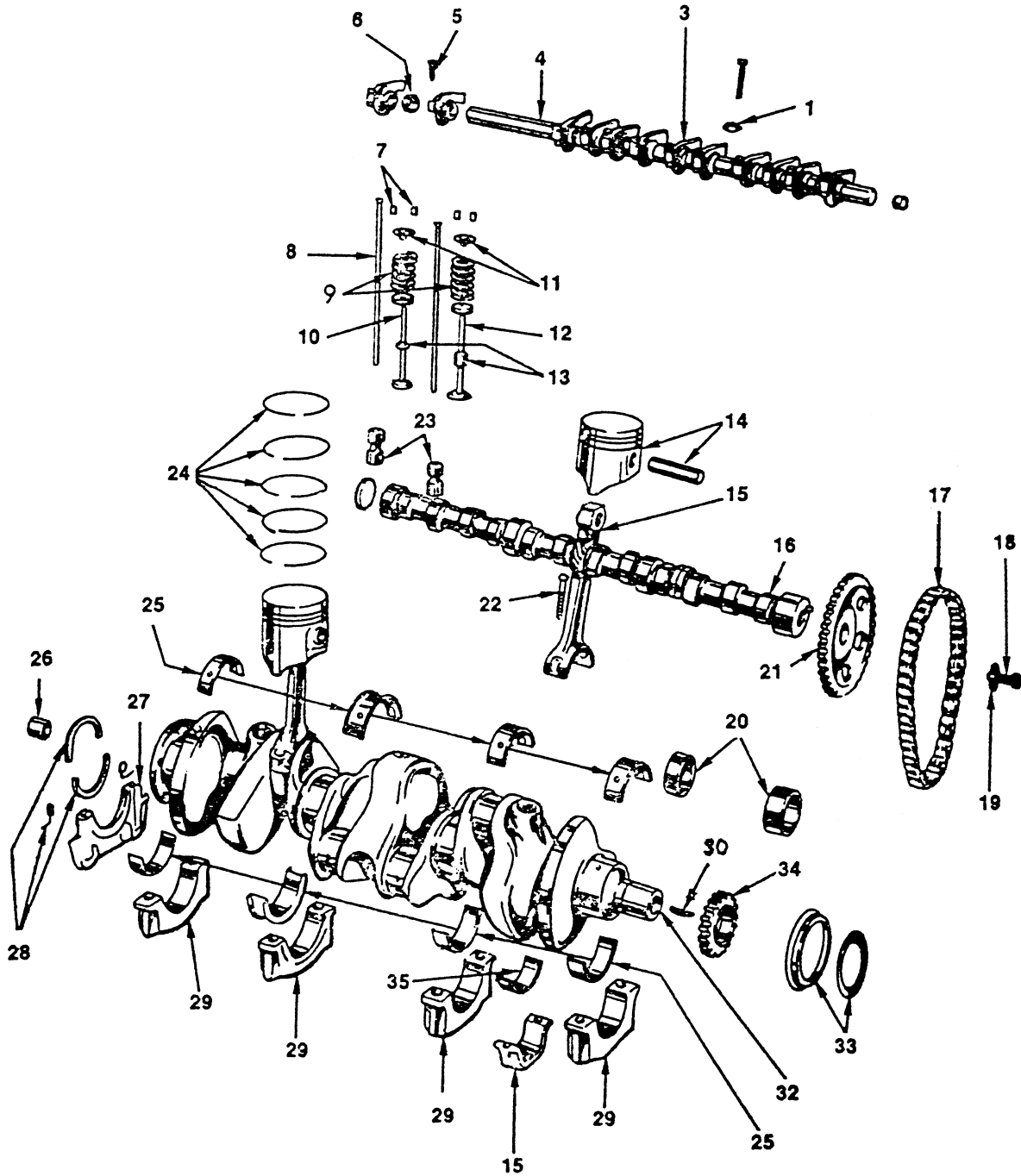
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

EXTERNAL ENGINE PARTS
225 CHRYSLER

ITEM	PART	DESCRIPTION	QTY
51			
52	P17856	Starter (See Page 11)	1
53	P20184	Gasket, Cylinder Heads	1
54	P20185	Head, Cylinder	1
56	P16879	Gasket, Valve Cover	1
57			
58	P20186	Valve Cover	1
59			
60	P17023	Manifold, Exhaust	1
61			
62	P17022	Manifold, Intake	1
63			
64			
65	P15267	Filter, Fuel	1
66	P17932	Gasket, Carburetor	1
67	P17126	Air Cleaner	1
68	P13561	Spark Plug Cables	1
69	Ref	Distributor, (See Page 7)	1
70	P20187	Spark Plug	6
71			
72	P20188	Hose	1
73			

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
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INTERNAL ENGINE PARTS
225 CHRYSLER



LULL ENGINEERING COMPANY, INC.
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INTERNAL ENGINE PARTS
 225 CHRYSLER

ITEM	PART	DESCRIPTION	QTY
1	P20195	Retainer (End & Intermediate)	6
	P20196	Retainer (Center)	1
2			
3	P20197	Rocker Valve	12
4	P20198	Shaft, Valve Rocker	1
5	P20199	Screw	12
6	P20200	Spacer	6
7	P19666	Lock, Valve Spring Ret. (Intake)	12
	P20201	Lock, Valve Spring Ret. (Exhaust)	12
8	P20202	Rod, Valve Push	12
9	P19669	Spring	12
10	P20203	Valve, Intake (Std.)	6
	P20204	Valve, Intake (.005 O/S)	6
	P20205	Valve, Intake (.015 O/S)	6
	P20206	Valve, Intake (.030 O/S)	6
11	P20207	Retainer (Intake)	12
	P19667	Retainer (Exhaust)	12
12	P20208	Valve, Exhaust (Std.)	6
	P20209	Valve, Exhaust (.005 O/S)	6
	P20210	Valve, Exhaust (.015 O/S)	6
	P20211	Valve, Exhaust (.030 O/S)	6
13	P19665	Shield (Intake)	6
	P20212	Shield (Exhaust)	6
14	P20213	Piston W/Pin (Std.)	6
	P20214	Piston W/Pin (.005 O/S)	6
	P20215	Piston W/Pin (.020 O/S)	6
	P20216	Piston W/Pin (.040 O/S)	6
	P20217	Piston W/Pin (.060 O/S)	6
15	P20218	Rod, Connecting	6
16	P20219	Camshaft	1
17	P20220	Chain, Timing	1
18	P20221	Screw	1
19	P20222	Washer	1
20	P20223	Bearing (No. 1 - Std.)	1
	P20224	Bearing (No. 1 - .010 O/S)	1
	P20225	Bearing (No. 2 - Std.)	1
	P20226	Bearing (No. 2 - .010 O/S)	1
	P20227	Bearing (No. 3 - Std.)	1
	P20228	Bearing (No. 3 - .010 O/S)	1
	P20229	Bearing (No. 4 - Std.)	1
	P20230	Bearing (No. 4 - .010 O/S)	1
21	P20231	Sprocket, Camshaft	1
22	P20232	Bolt	12
23	P20333	Tappet, Valve (Std.)	12
	P20234	Tappet, Valve (.001 O/S)	12
	P20235	Tappet, Valve (.008 O/S)	12
	P20236	Tappet, Valve (.030 O/S)	12
24	P20237	Ring Set (Std. to .009 O/S)	1
	P20238	Ring Set (.020 to .029 O/S)	1
	P20239	Ring Set (.040 to .049 O/S)	1

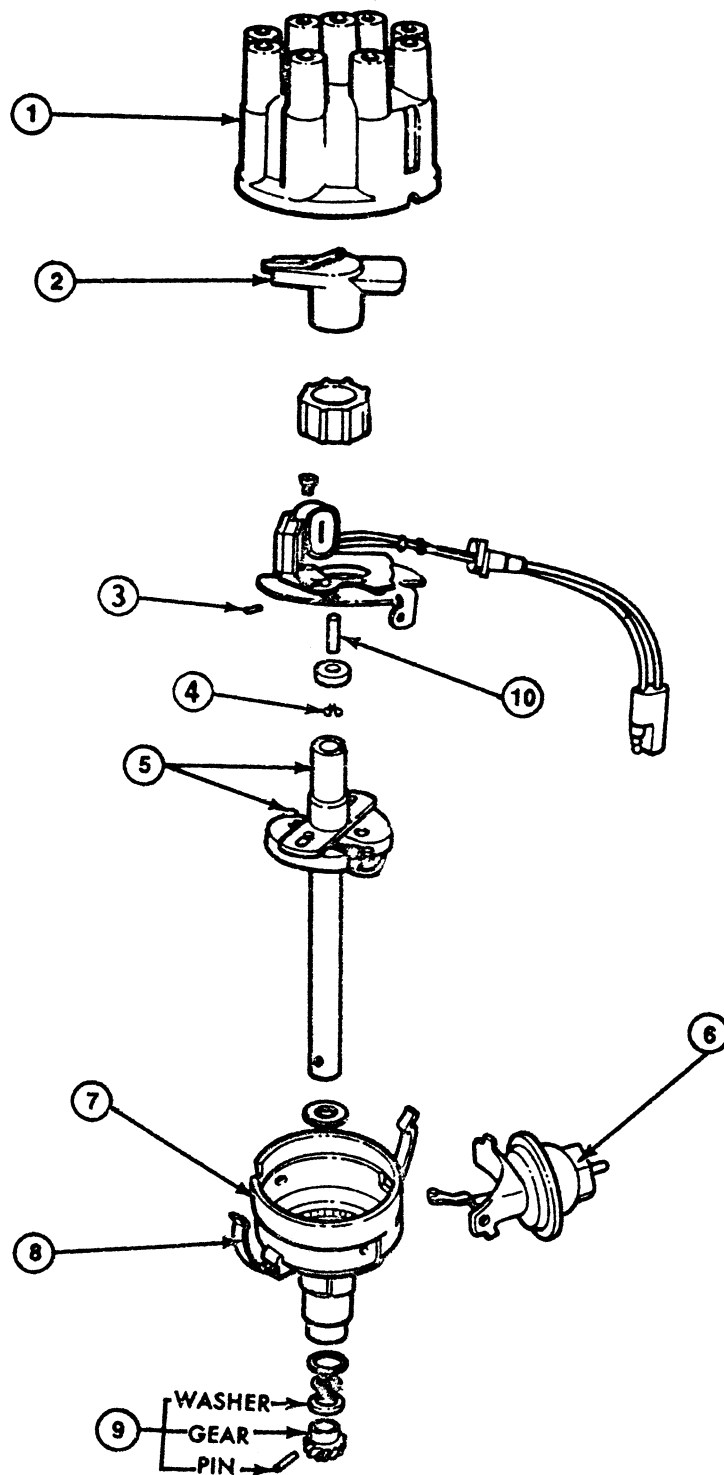
LULL ENGINEERING COMPANY, INC
 3045 HIGHWAY 13
 ST. PAUL, MINNESOTA 55121

INTERNAL ENGINE PARTS
 225 CHRYSLER

ITEM	PART	DESCRIPTION	QTY
25	P20240	Bearing Pkg. (No. 1 - Std.)	1
	P20241	Bearing Pkg. (No. 1 - .001 U/S)	1
	P20242	Bearing Pkg. (No. 1 - .001 U/S)	1
	P20243	Bearing Pkg. (No. 1 - .003 U/S)	1
	P20244	Bearing Pkg. (No. 1 - .010 U/S)	1
	P20245	Bearing Pkg. (No. 1 - .012 U/S)	1
	P20246	Bearing Pkg. (No. 2 & 4 - Std.)	2
	P20247	Bearing Pkg. (No. 2 & 4 - .001 U/S)	2
	P20248	Bearing Pkg. (No. 2 & 4 - .002 U/S)	2
	P20249	Bearing Pkg. (No. 2 & 4 - .003 U/S)	2
	P20250	Bearing Pkg. (No. 2 & 4 - .010 U/S)	2
	P20251	Bearing Pkg. (No. 2 & 4 - .012 U/S)	2
	P20252	Bearing Pkg. (No. 3 - Std.)	1
	P20253	Bearing Pkg. (No. 3 - .001 U/S)	1
	P20254	Bearing Pkg. (No. 3 - .002 U/S)	1
	P20255	Bearing Pkg. (No. 3 - .003 U/S)	1
	P20256	Bearing Pkg. (No. 3 - .010 U/S)	1
	P20257	Bearing Pkg. (No. 3 - .012 U/S)	1
26	P19640	Bushing, Crankshaft	1
27	P20258	Retainer	1
28	P20259	Seal & Retainer	2
29	P20260	Cap (No. 1 & 2)	2
	P20261	Cap (No. 3)	1
	P20262	Cap (No. 4)	1
30	P19635	Key	1
31			
32	P20263	Crankshaft	1
33	P20264	Seal	1
34	P20265	Sprocket	1
35	P20266	Bearing, Conn. Rod (Std.)	12
	P20267	Bearing, Conn. Rod (.001 U/S)	12
	P20268	Bearing, Conn. Rod (.002 U/S)	12
	P20269	Bearing, Conn. Rod (.003 U/S)	12
	P20270	Bearing, Conn. Rod (.010 U/S)	12
	P20271	Bearing, Conn. Rod (.012 U/S)	12

LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
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DISTRIBUTOR
225 CHRYSLER
P13028



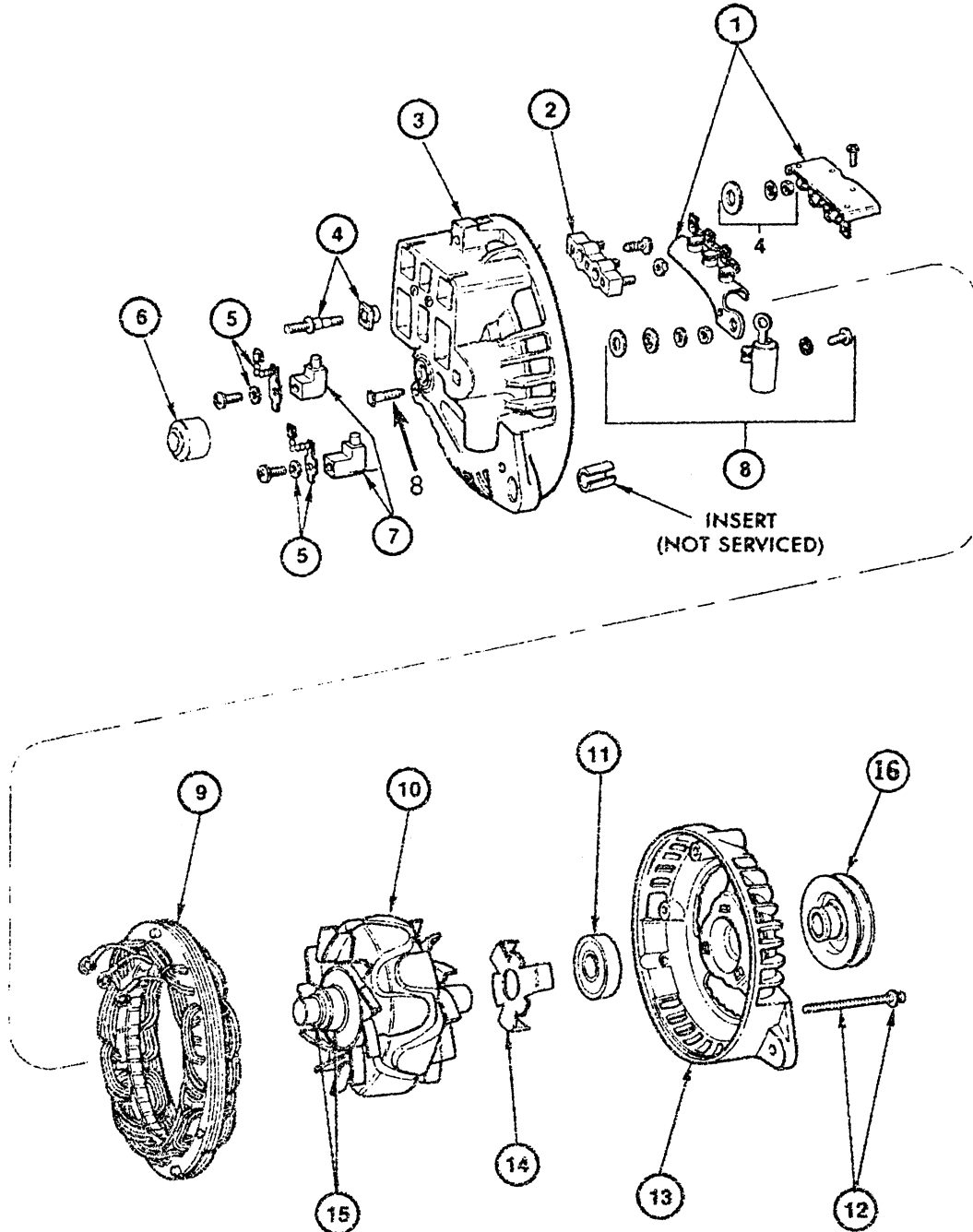
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

DISTRIBUTOR
225 CHRYSLER
P13028

ITEM	PART	DESCRIPTION	QTY
1	P13033	Cap	1
2	P17297	Rotor	1
3	P19541	Pin	1
4	P19539	Snap Ring	1
5	P20278	Governor Ass'y	1
6	P20279	Vacuum Control	1
7	P20281	Housing W/Bearings	1
8	P19546	Spring, Cap Attachment	2
9	P20282	Gear & Pin Pkg.	1

LULL ENGINEERING COMPANY, INC.
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ALTERNATOR
225 CHRYSLER
P17700



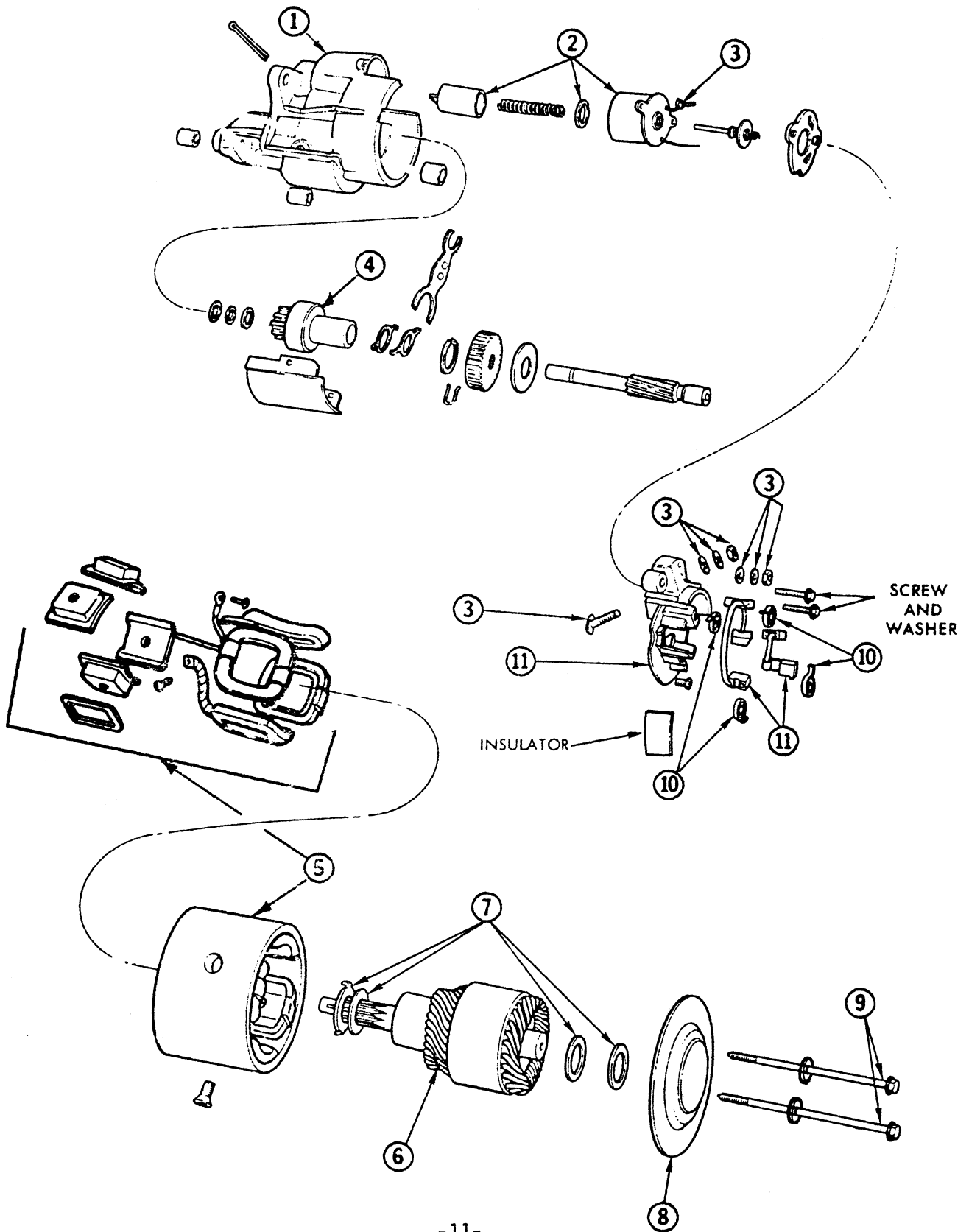
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

ALTERNATOR
225 CHRYSLER
P17700

ITEM	PART	DESCRIPTION	QTY
1	P19551	Heat Sink and Battery Pkg. Positive	1
	P19552	Heat sink and Battery Pkg. Negative	1
2	P19553	Insulator	1
3	P19554	Shield, Rectifier End	1
4	P19555	Terminal, Battery Positive Heat Sink	1
5	P19556	Brush, Washer And Terminal Pkg.	1
6	P19557	Bearing, Rectifier End Shield	1
7	P19558	Holder, Brush Axial	1
	P19559	Holder, Brush Radial	1
8	P19560	Capacitor and Insulator Pkg.	1
9	P19561	Stator	1
10	P19562	Rotor	1
11	P19563	Bearing, Drive End Shield	1
12	P19564	Screw, Frame	3
13	P19565	Shield, Drive End	1
14	P19566	Plate, Drive End Bearing Retainer	1
15	P19567	Slip Ring And Retainer Pkg.	1
16	P20283	Pulley	1

LULL ENGINEERING COMPANY, INC.
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STARTER
225 CHRYSLER
P17856



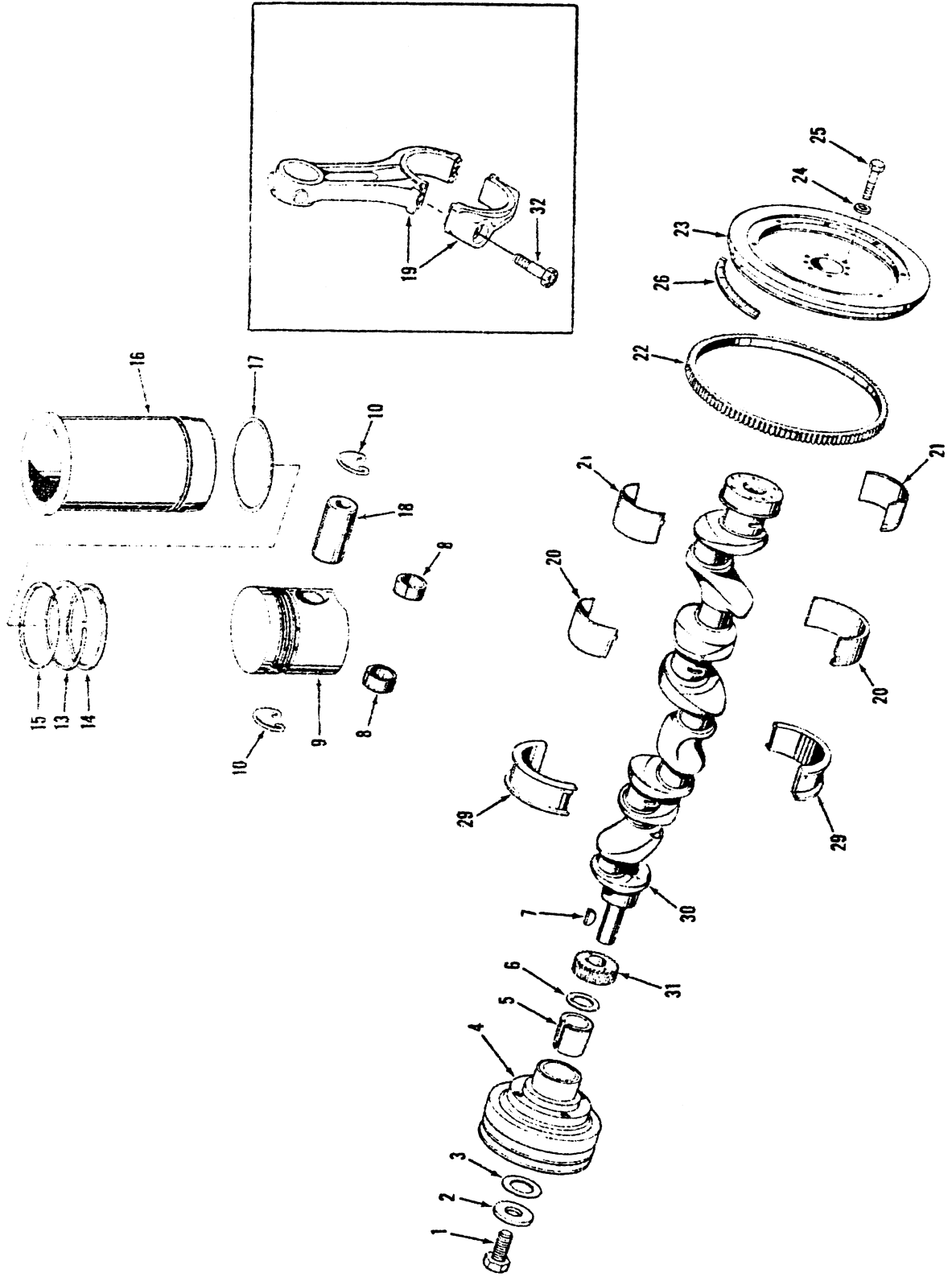
LULL ENGINEERING COMPANY, INC.
3045 HIGHWAY 13
ST. PAUL, MINNESOTA 55121

STARTER
225 CHRYSLER
P17856

ITEM	PART	DESCRIPTION	QTY
1	P20173	Housing	1
2	P20174	Solenoid Pkg.	1
3	P20175	Stud & Seal Pkg.	1
4	P20176	Clutch	1
5	P20177	Coil Pkg. Field	1
6	P20178	Armature	1
7	P20179	Thrust Washer Pkg.	1
8	P20180	Head	1
9	P20181	Bolt	2
10	P20182	Spring Pkg. Brush	1
11	P20183	Brush Pkg.	1

INDEX OF PARTS

<u>PARTS</u>	<u>PAGE</u>	<u>PARTS</u>	<u>PAGE</u>
Alternator	18	Pistons	1
Arms Rocker	7	Pulley Camshaft	1
Bearings	1	Pump, Water	19
Breatner	7	Starter	4
Camshaft	3	Starter Switch	4
Connecting Rods	1		
Gear Cover	15		
Cover, Rocker Arm	7		
Crankcase (Left Side)	10		
Crankcase (Right Side)	9		
Crankshaft	1		
Cylinder Head	5		
Exhaust Manifold	17		
Fan	19		
Fuel Filter	21		
Lube Filter	14		
Flywheel Housing	4		
Fuel Pump	22		
Thermostat	19		
Injection Pump	23		
Intake Manifold	17		
Oil Pan	13		
Oil Pump	11		
Parts Not Illustrated	25		



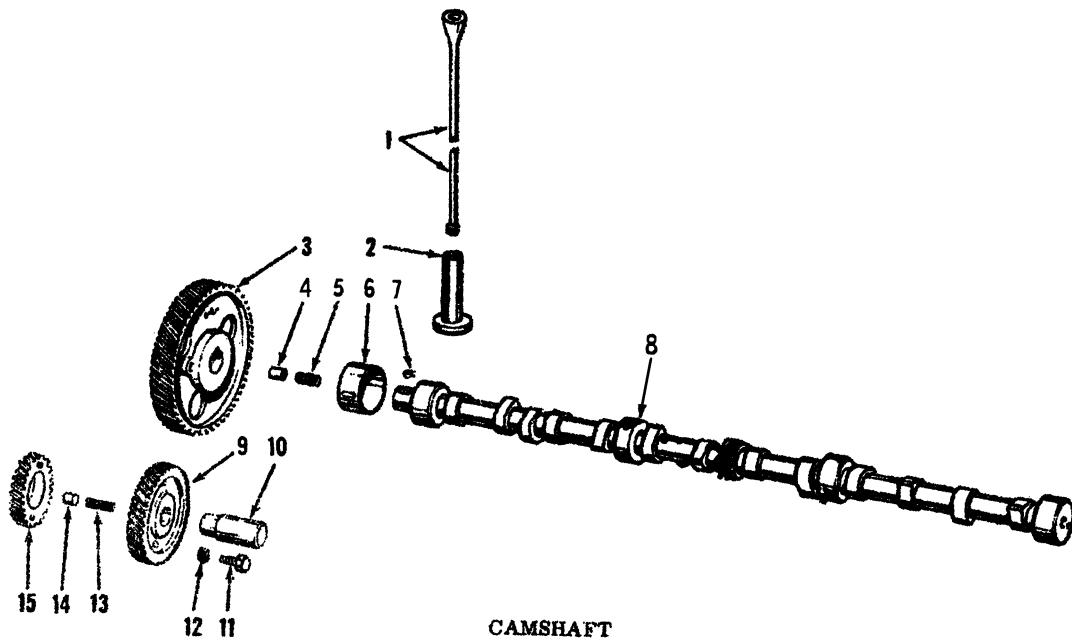
CRANKSHAFT, PISTONS, CONNECTING RODS, BEARINGS & PULLEY

LULL ENGINEERING COMPANY, INC.
 3043 HIGHWAY 13
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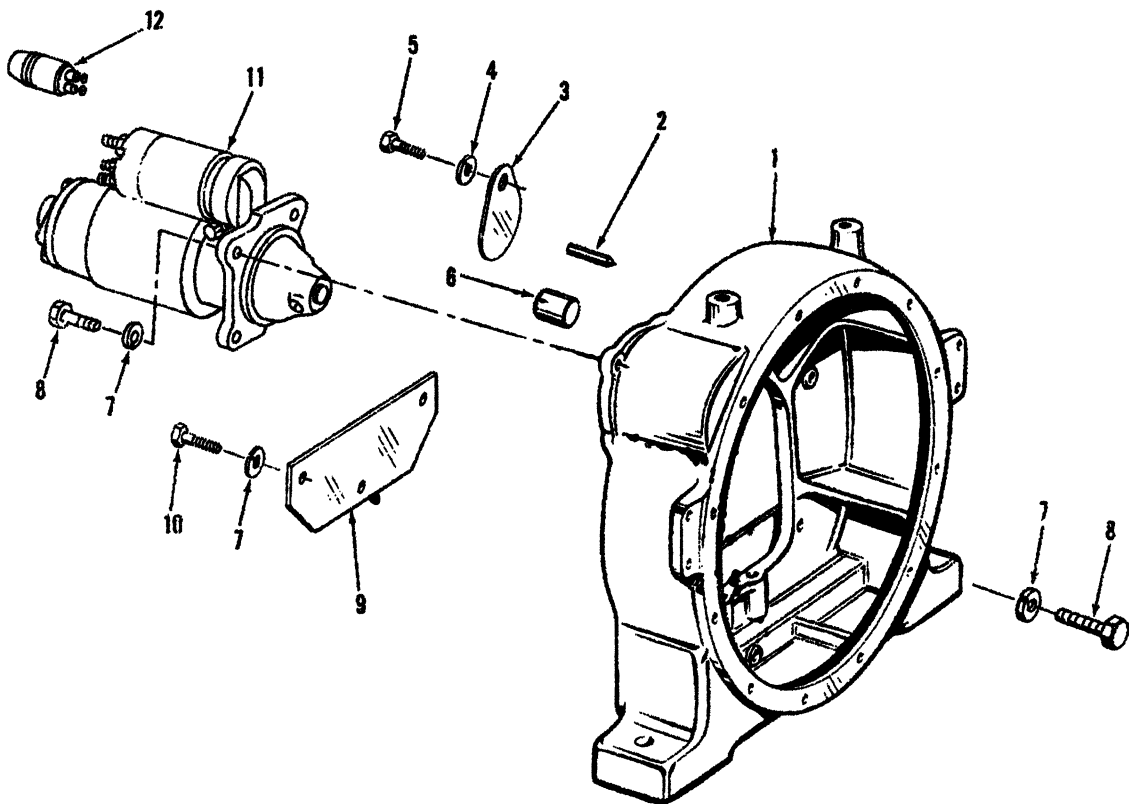
WAUKESHA VRD 283

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	Comm	Screw (3/4" x 1-3/4" NF Hex Hd)	1
2	P18005	Washer Flat	1
3	P18006	Gasket	1
4	P17820	Pulley Crankshaft	
5	P17821	Taper, Crankshaft Pulley	1
6	P18200	Gasket	1
7	P18201	Key, Woodruff	1
8	P18202	Bushing, Piston Pin	12
9	P18203	Piston	6
10	P18204	Retainer, Piston Ring	12
11			
12			
13	P18205	Ring, Piston, Compression	6
14	P18206	Ring, Piston Oil	6
15	P18207	Ring, Piston Top Compression	6
16	P18208	Sleeve, Cylinder	6
17	P18209	Ring, Backing, Cylinder Sleeve	12
18	P18210	Pin Piston	6
19	P18211	Rod, Connecting (Includes 8,20,32)	6
19	P18212	Rod, Connecting (Includes 8, 32)	6
20	P18213	Bearing, Connecting Rod	12
21	P18214	Main Bearing	12
22	P18215	Ring Gear, Flywheel	1
23	P18216	Flywheel Assy (Includes #22)	1
24	P18217	Washer Flat	6
25	P18218	Bolt, Flywheel	6
26	P18219	Strip, Timing	1
27			
28			
29	P18220	Bearing, Main, Thrust	2
30	P18221	Crankshaft	1
31	P18222	Gear, Crankshaft	1
32	P18223	Screw, Cap	12

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18224	Rod, Push	12
2	P18225	Valve Lifter	12
3	P18226	Gear Camshaft	1
4	P18227	Button, Thrust	1
5	P18228	Spring Thrust Button	1
6	P18229	Bushing, Camshaft	4
7	P18230	Key, Woodruff	1
8	P18231	Camshaft Assy (Includes 3, 7)	1
8	P18232	Camshaft	1
9	P18233	Gear, Idler	1
9	P18234	Gear, Idler Assy (Includes 11,12,15)	1
10	P18235	Spindle, Idler Gear	1
11	P18236	Screw, Cap, Hex Head	2
12	P18237	Washer, Shakenroof	2
13	P18238	Spring, Idler Gear Plunger	1
14	P18239	Plunger, Idler Gear	1
15	P18240	Gear, Injection Pump Drive	1



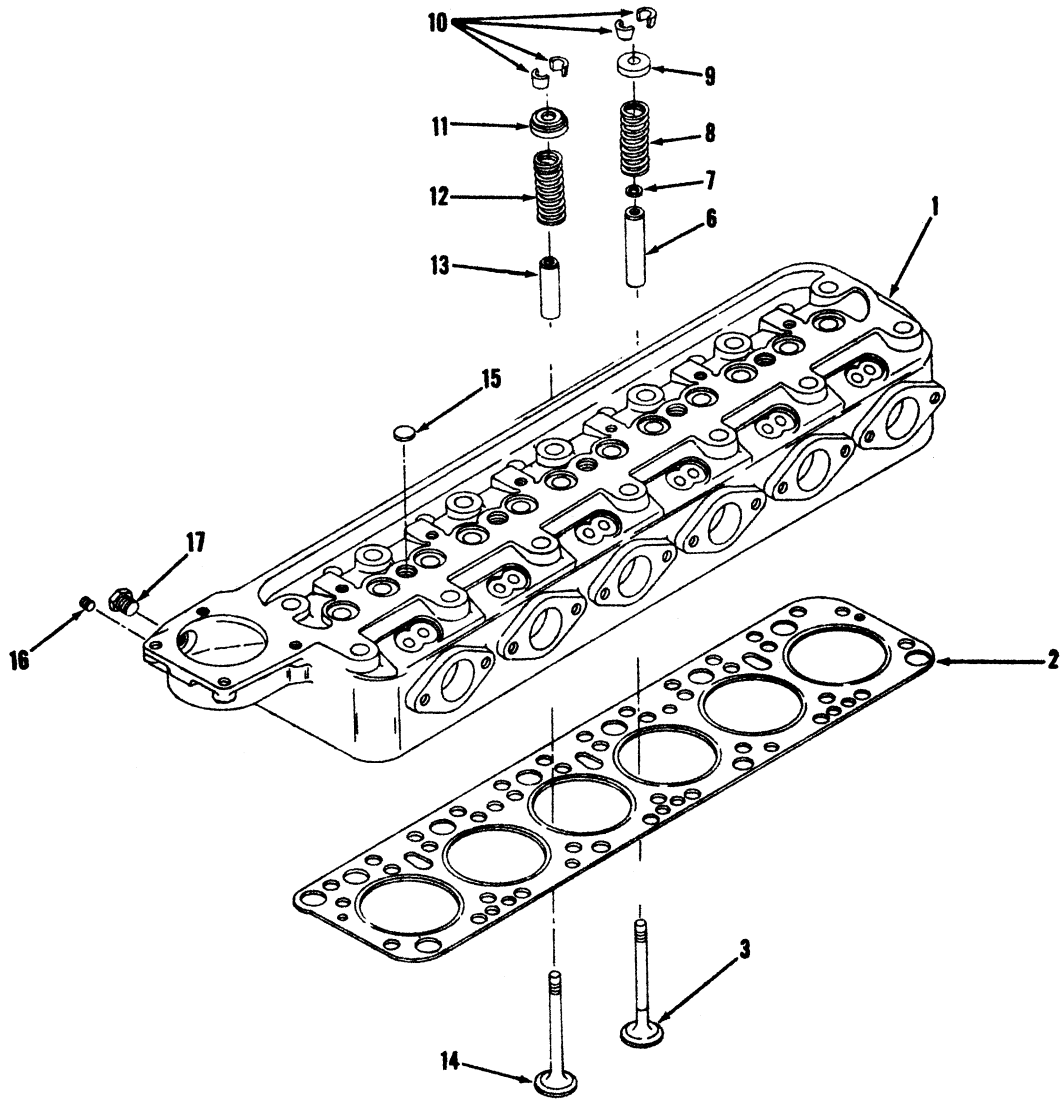
REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18241	Flywheel Housing	1
2	P18242	Timing Pointer	1
3	P18243	Cover, Timing Hole	1
4	P18244	Washer, Lock	1
5	P18245	Screw, Cap, Hex Head	1
6	P18246	Pin Dowel	2
7	P18247	Washer, Lock	13
8	P18248	Screw, Cap, Hex Head	8
9	P18249	Dust Plate	1
10	P18250	Screw, Cap, Hex Head	2
11	P17321	Starter	1
12	P12634	Switch, Key Start	1



FLYWHEEL HOUSING, STARTER & SWITCH

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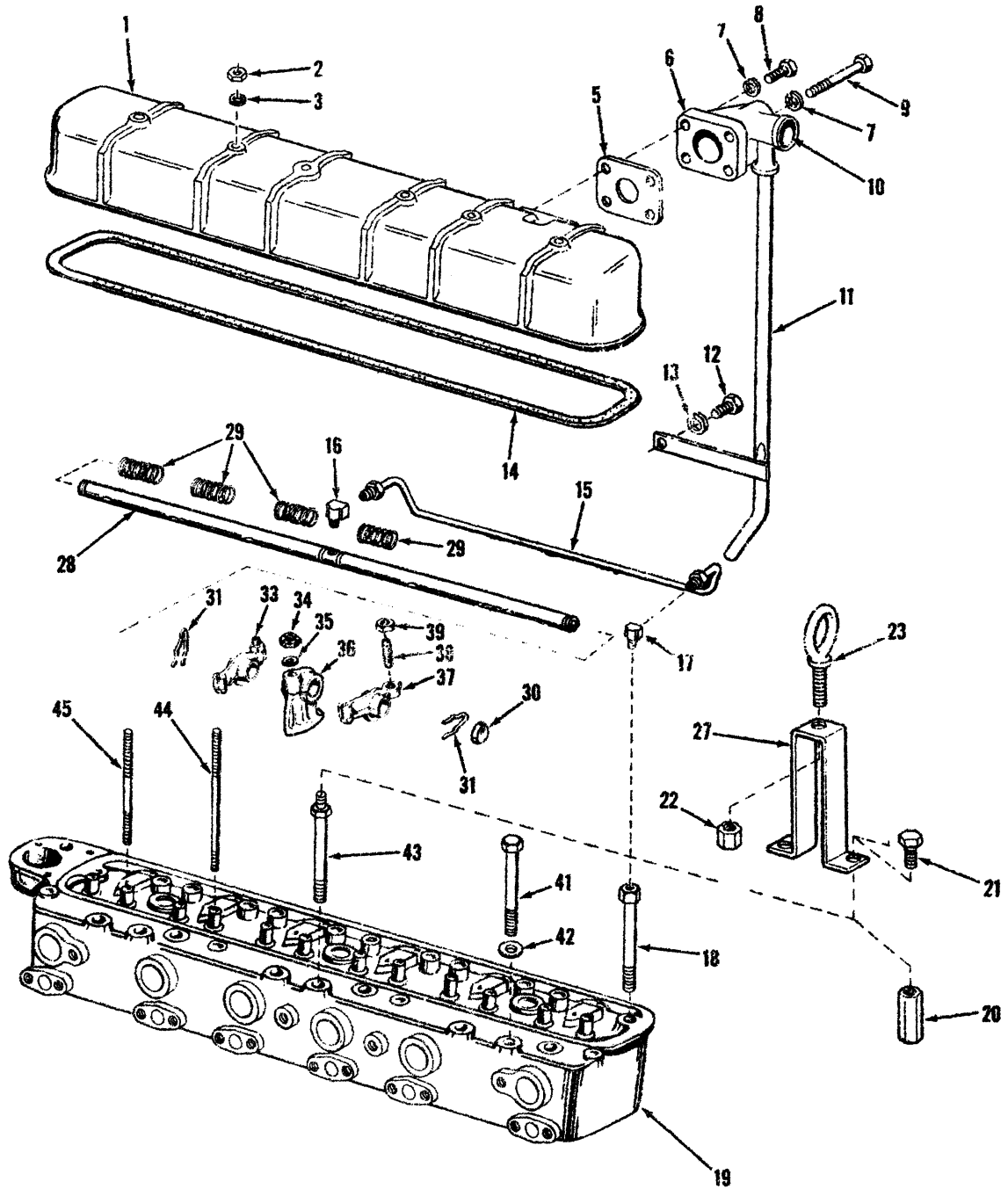
WAUKESHA VRD 283



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ST. PAUL, MN 55121

WAUKESHA VRD 283

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18252	Head, Cylinder (Includes 4,6,13,15 & 16)	1
1	P18253	Head, Cylinder (Includes 3,6-17)	1
2	P17963	Gasket, Cylinder Head	1
3	P18254	Valve, Intake	6
4			
5			
6	P18255	Guide, Intake Valve	6
7	P18256	Seal, Valve Stem	12
8	P18257	Spring, Intake Valve	6
9	P18258	Retainer, Valve Spring	6
10	P18259	Taper Valve	24
11	P18258	Retainer, Valve Spring	6
12	P18257	Spring, Exhaust Valve	6
13	P18255	Guide, Exhaust Valve	6
14	P18260	Valve, Exhaust	6
15	P18261	Plug, Pipe	5
16	P18262	Plug, Pipe	1
17	P18263	Plug, Pipe	1



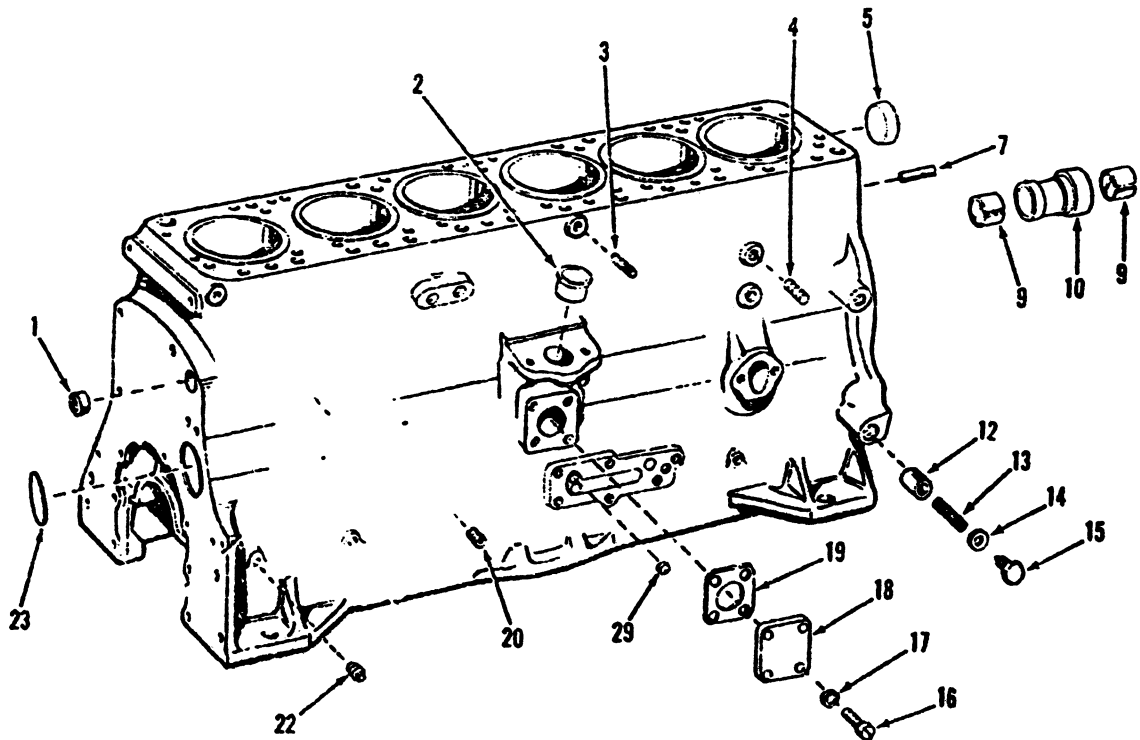
ROCKER ARMS - ROCKER ARM COVER & BREATHER

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 ST. PAUL, MINN 55121

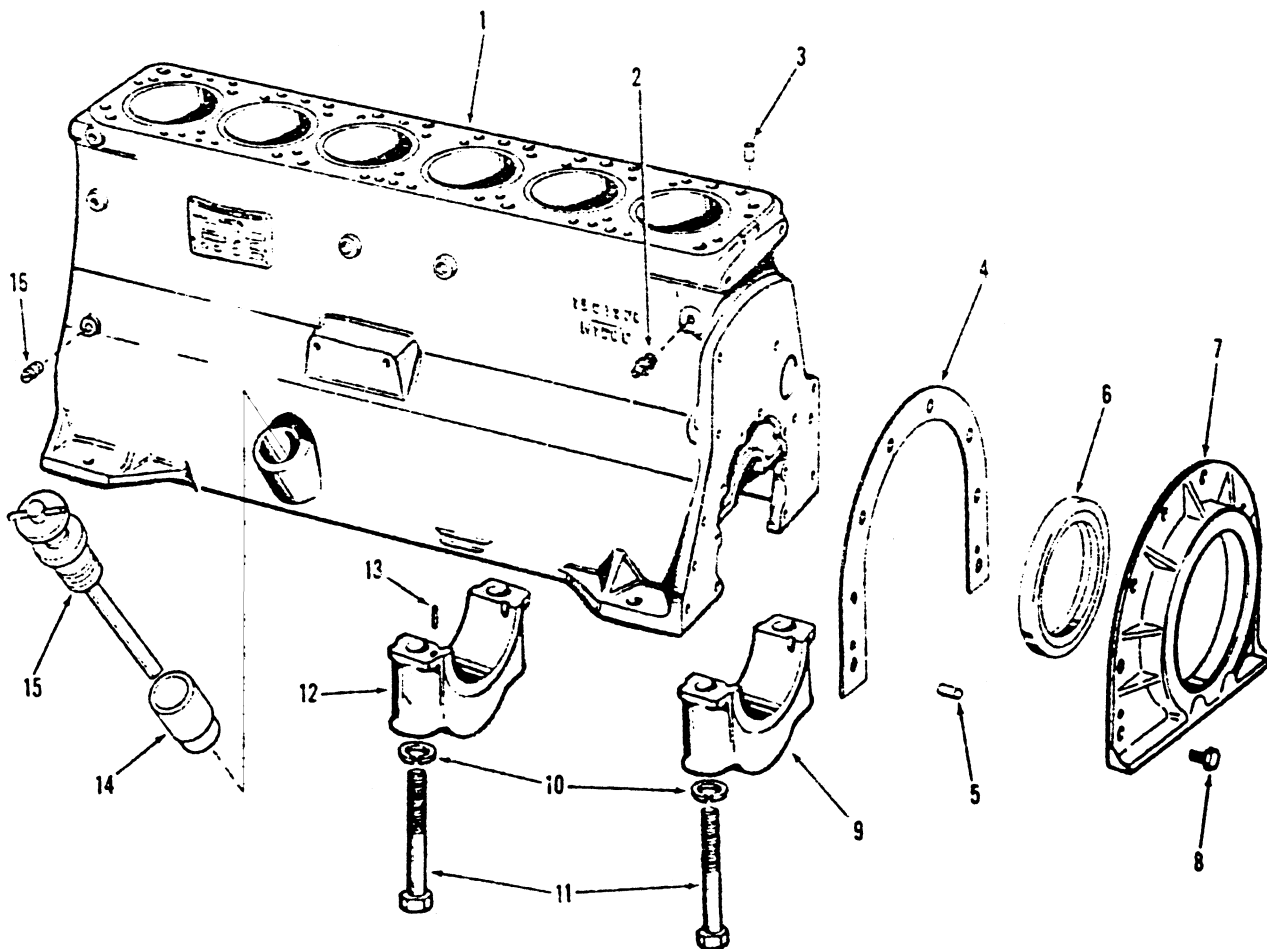
WAUKESHA VRD 283

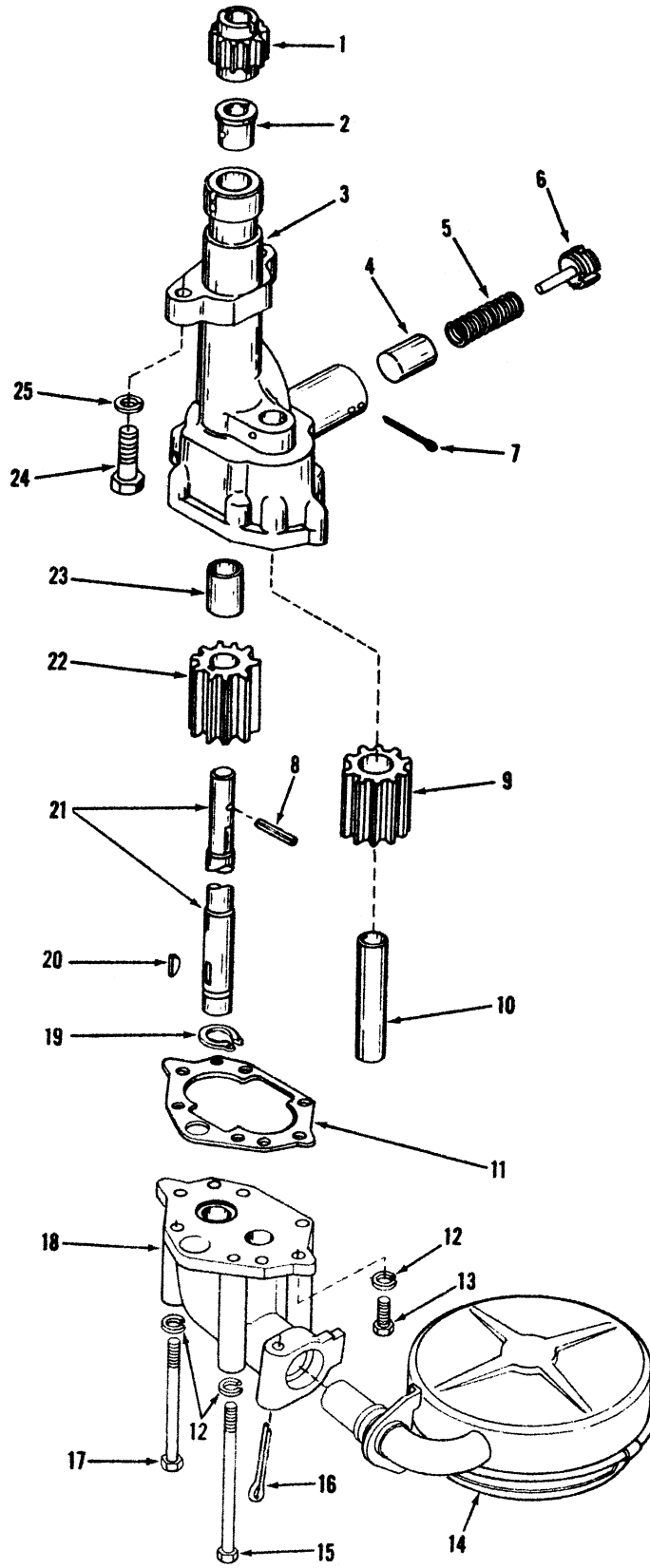
REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18264	Cover, Rocker Arm	1
2	P18265	Nut, Hex	6
3	P18266	Washer, Flat	6
4		Not Required VRD 283	
5	P18267	Gasket	1
6	P18268	Flange, Breather	1
7	P18269	Washer, Lock	4
8	P18236	Screw, Hex Head	2
9	P18270	Screw, Hex Head	2
10	P18271	Plug	1
11	P18272	Tube, Breather	1
12	P18273	Screw, Hex Head	1
13	P18247	Washer, Lock	1
14	P17964	Gasket	1
15	P18274	Line Oil Assy	1
16	P18275	Elbow, Inverted	1
17	P18275	Elbow, Inverted	1
18	P18276	Screw, Cap, Cylinder Head	1
19	P18252	Head, Cylinder	1
20	P18277	Coupling	2
21	P18278	Screw, Hex Head	2
22	P18279	Nut, Hex	1
23	P18280	Bolt, Eye	1
24			
25			
26			
27	P18281	Lifting Bracket	1
28	P18282	Rocker Arm Shaft Assy. (Includes 29-31, 33, 36-39)	1
28 A	P18283	Rocker Arm Shaft Assy (Includes 30)	1
29	P18284	Spring	4
30	P18285	Plug, Cup	2
31	P18286	Cotter, Rocker Arm Shaft	4
32		Not Required VRD 283	
33	P18287	Rocker Arm Assy. RH (Includes 38,39)	6
34	P18465	Nut, Hex	6
35	P18247	Washer, Lock	6
36	P18288	Support, Rocker Arm	6
37	P18289	Rocker Arm Assy LH (Includes 38,39)	6
38	P18290	Screw, Adjusting	12
39	P18291	Nut, Hex	12
40		Not Required VRD 283	
41	P18292	Screw, Cylinder Head Cap	11
42	P18293	Washer, Cylinder Head	14
43	P18294	Screw, Cylinder Head Cap	2
44	P18295	Stud, Rocker Arm Support	2
45	P18296	Stud, Rocker Arm Cover	4

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18297	Plug, Cup	1
2	P18298	Plug, Dist. Hole	1
3	P18299	Stud	1
4	P18300	Stud	2
5	P18301	Plug, Cup	1
6			
7	P18302	Tube, Oil, Timing Gears	1
8			
9	P18303	Busning, Idler Gear	2
10	P18304	Sleeve, Idler Gear Assy. (Includes 9)	1
11			
12	P18305	Plunger, Oil Relief Valve	1
13	P18306	Spring, Oil Relief Valve	1
14	P18307	Washer, Copper	1
15	P18308	Screw, Oil Relief Valve	1
16	P18309	Screw, Fil. Head	4
17	P18310	Washer, Copper	4
18	P18311	Plate, Cover	1
19	P18312	Gasket, Cover	1
20	P18313	Plug, Pipe. Allen Headless	1
21			
22	P18314	Plug, Pipe, Square Head	1
23	P18315	Expansion Plug	1
24			
25			
26			
27			
28			
29	P18316	Plug, Cup	1



REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18317	Crankcase Assy.	1
2	P18318	Plug, Pipe, Countersunk Headless	1
3	P18319	Pin, Dowel	2
4	P18320	Gasket, Oil Retainer	1
5	P18321	Pin, Dowel	2
6	P18322	Seal, Oil Rear	1
7	P18323	Retainer, Rear Oil Seal	1
8	P18324	Screw, Cap, Hex Head	8
9	P18325	Cap, Main Bearing	6
10	P18326	Washer, Lock	14
11	P18327	Screw, Main Bearing Cap	14
12	P18328	Cap, Main Bearing, Thrust	1
13	P18329	Pin, Dowel	14
14	P18330	Pipe, Oil Filter	1
15	P18331	Oil Gauge	1
16	P18332	Plug, Pipe, Slotted Head	6

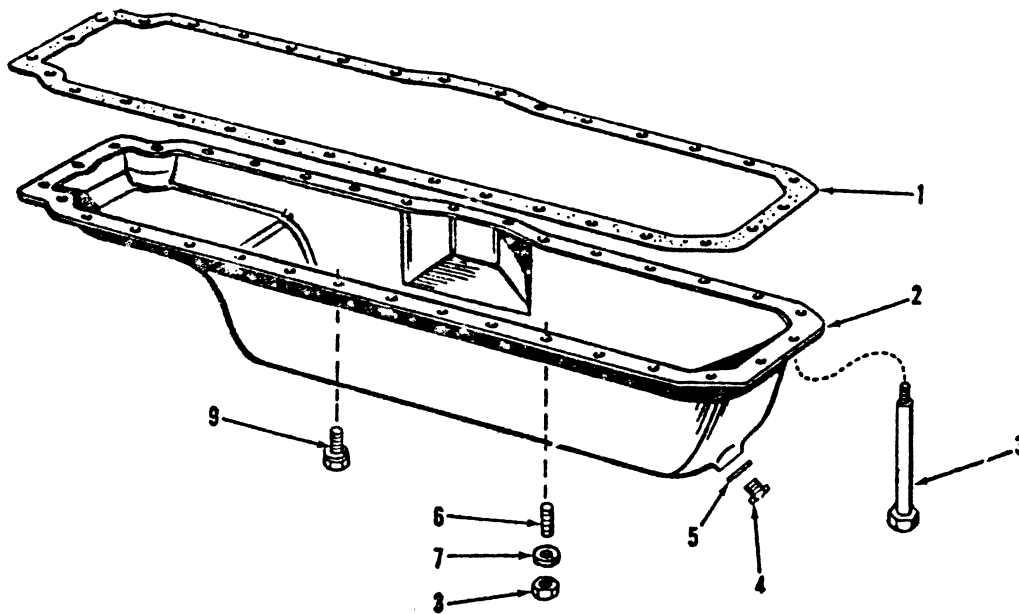




OIL PUMP

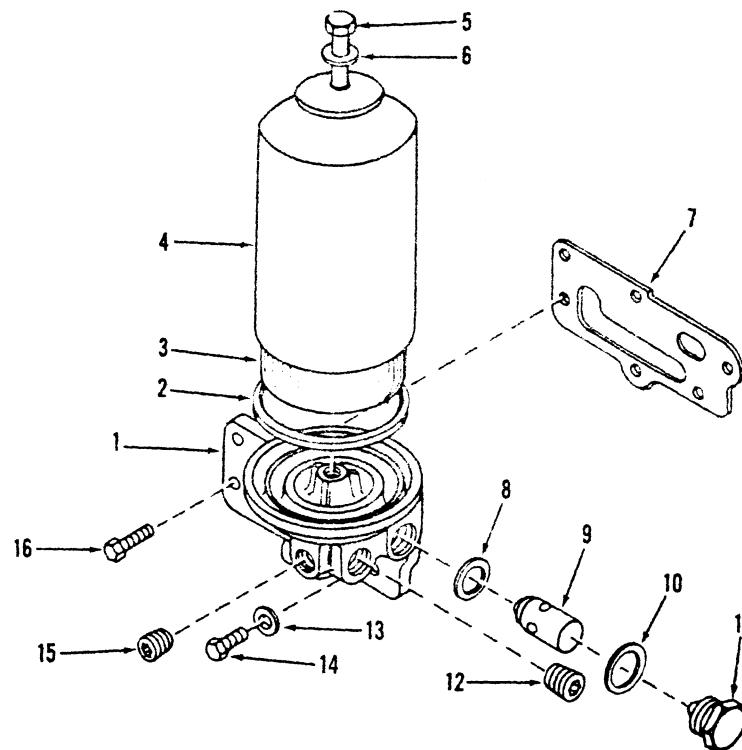
REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
	P18339	Pump; Oil Assy. (Includes 1-23)	1
1	P18340	Gear, Oil Pump Drive	1
2	P18341	Bushing, Oil Pump Body, Upper	1
3	P18342	Oil Pump Body Assy. (Includes 2 & 23)	1
4	P18343	Plunger, Relief Valve	1
5	P18344	Spring, Relief	1
6	P18345	Screw, Adjustment	1
7	P18346	Pin, Cotter	1
8	P18347	Pin, Roll	1
9	P18348	Gear, Oil Pump Idler	1
10	P18349	Shaft, Oil Pump Idler	1
11	P18350	Gasket, Oil Pump	1
12	P18269	Washer, Lock	6
13	P18236	Screw, Hex Head	4
14	P18351	Float, Oil Screen	1
15	P18352	Screw, Cap, Hex. Head	1
16	P18353	Pin, Cotter	1
17	P18354	Screw, Cap, Hex Head	1
18	P18355	Cover, Oil Pump	1
19	P18356	Ring, Retaining	1
20	P18357	Key, Woodruff	1
21	P18358	Shaft, Oil Pump Drive	1
21	P18359	Driveshaft, Oil Pump Assy. (Includes 19-22)	1
22	P18360	Gear, Oil Pump, Driven	1
23	P18361	Bushing, Oil Pump, Lower	1
24	P18362	Screw, Cap, Hex Head	2
25	P18247	Washer, Lock	2

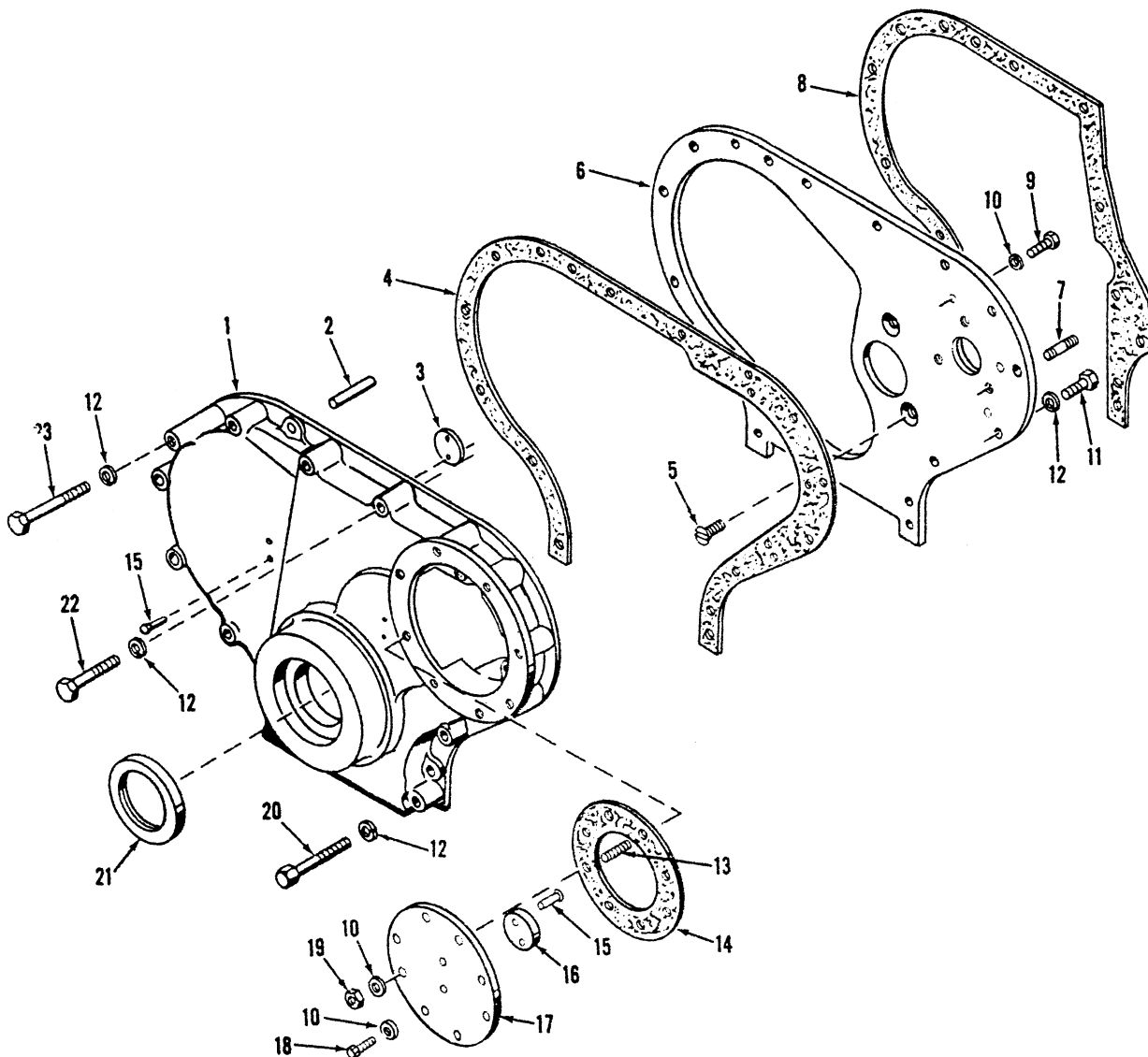
REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P17967	Gasket Oil Pan	1
2	P18333	Oil Pan	1
3	P18334	Bolt, Oil Pan	2
4	P18335	Plug, Oil Pan Drain	1
5	P18336	Gasket	1
6	P18337	Stud, Oil Pan	10
7	P18244	Washer, Lock	10
8	P18338	Nut, Hex	10
9	P18324	Screw, Cap, Hex Head	21



OIL PAN

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
		Oil Filter Assy.	1
1	P18363	Base; Oil Filter	1
2	P18364	Gasket, Filter Shell	1
3	P17317	Element, Oil Filter (Includes 2)	1
4	P18080	Shell Assy	1
5	P18081	Gasket, Center Bolt	1
6	P18082	Bolt, Center	1
7	P18366	Gasket, Filter Base	1
8	P18367	Seal	1
9	P18368	Valve, By-Pass	1
10	P18369	Washer, Copper	2
11	P18370	Plug, Relief Valve	2
12	P18318	Plug, Pipe	2
13	P18371	Washer, Brass	1
14	P18372	Screw; Cap Hex Head	1
15	P18373	Plug, Pipe	1
16	P18374	Screg, Hex Head	5





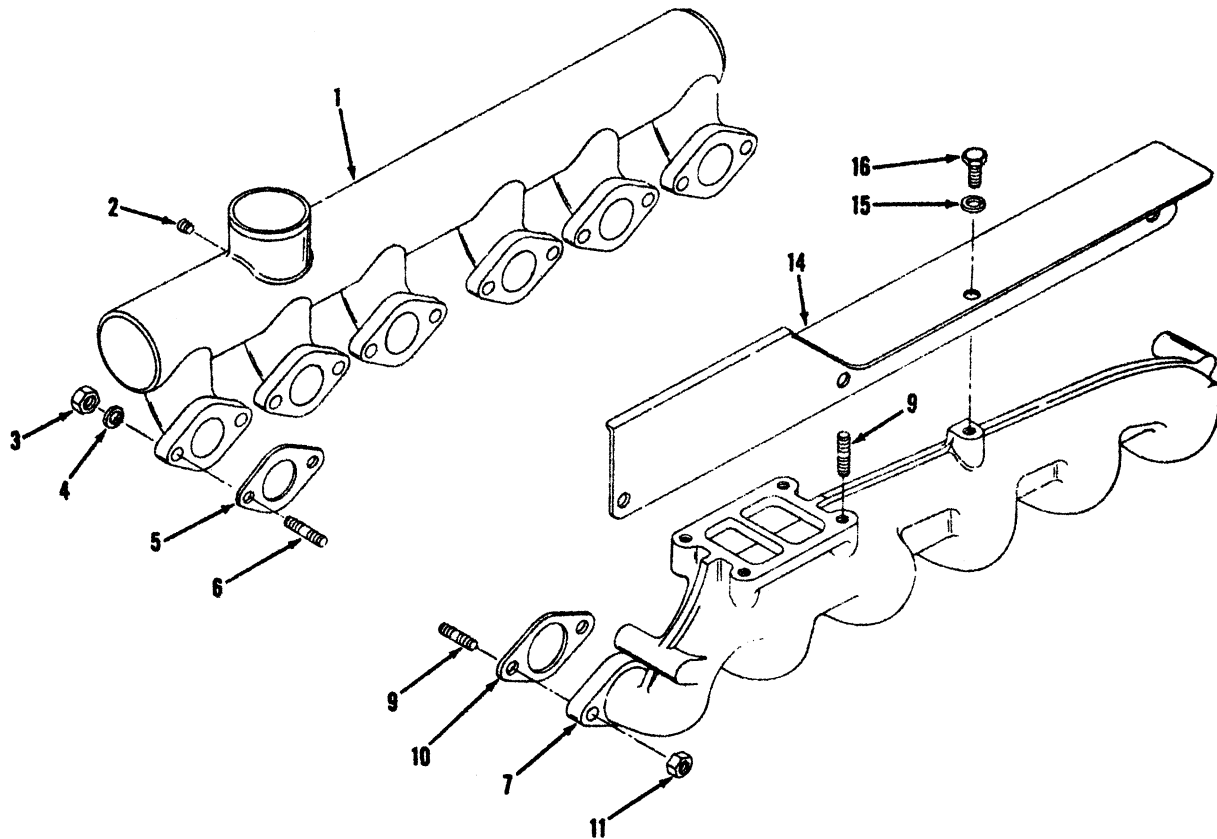
GEAR COVER

LULL ENGINEERING COMPANY, INC.
 3045 HIGHWAY 13
 ST. PAUL, MN 55121

WAUKESHA VRD 283

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18375	Gear Cover Assy. (Includes 3, 15,21)	1
2	P18391	Pin Dowel	2
3	P18376	Button, Thrust	2
4	P17966	Gasket, Gear Cover	1
5	P18377	Screw, Flat Head	2
6	P18378	Front Plate Assy (Includes 7)	1
7	P18379	Stud, Fuel Injection Pump	3
8	P18380	Gasket, Front Plate	1
9	P18381	Screw, Cap, Hex Head	3
10	P18382	Washer, Copper	11
11	P18383	Screw, Cap, Hex Head	5
12	P18244	Washer, Lock	15
13	P18337	Stud	1
14	P17968	Gasket, Injection Pump Gear Cover	1
15	P18384	Rivet, Countersunk Head	6
16	P18385	Button, Front	1
17	P18386	Fuel Pump Cover Assy. (Includes 15,16)	1
18	P18387	Screw, Cap, Hex Head	7
19	P18338	Nut, Hex	1
20	P18388	Screw, Cap, Hex Head	8
21	P17608	Seal, Shaft Oil	1
22	P18389	Screw, Cap, Hex Head	1
23	P18390	Screw, Cap, Hex Head	1

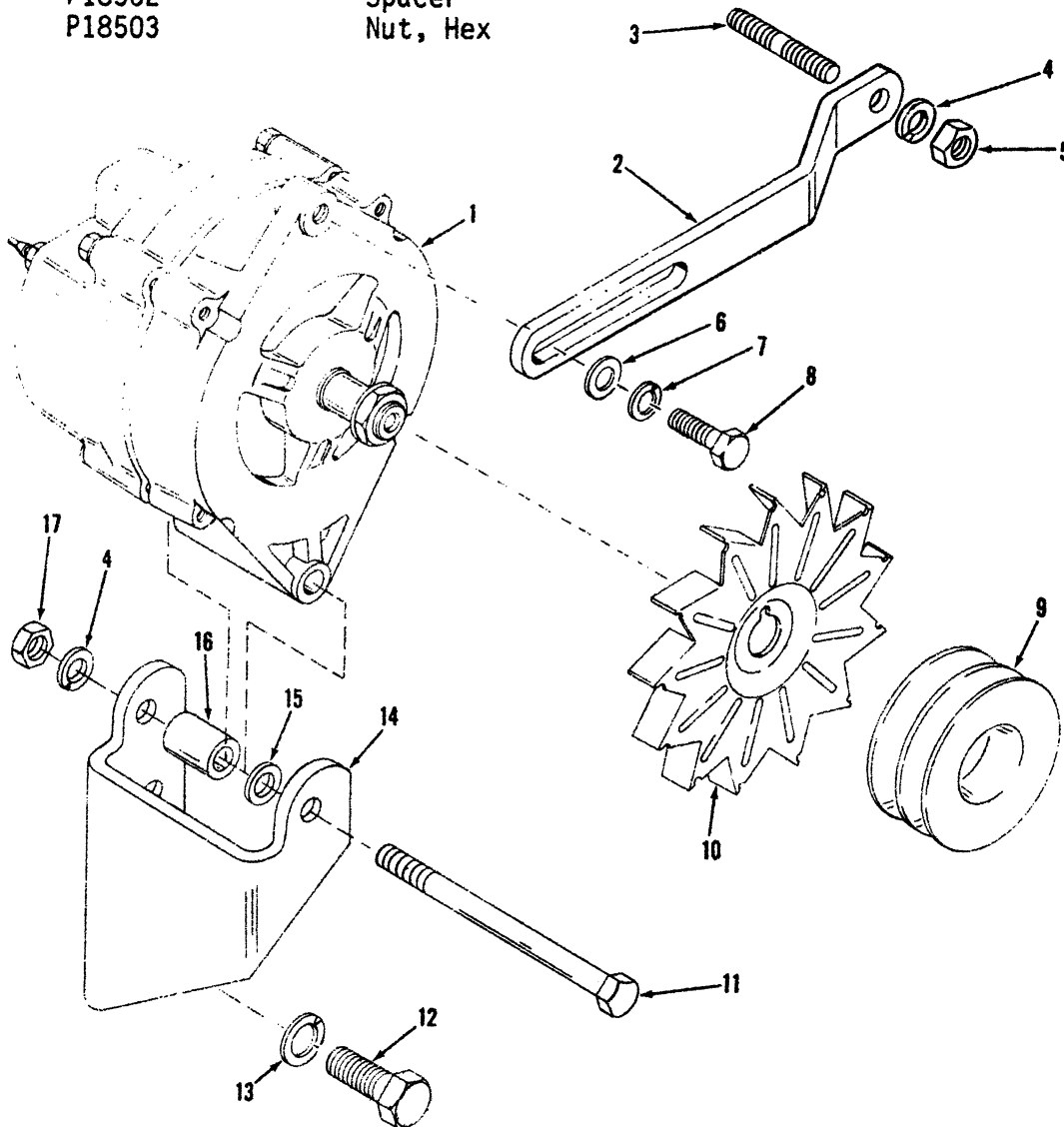
REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
	P18399	Exhaust Manifold Assy. (Includes 7,9,14-16)	1
1	P18392	Manifold, Intake	1
2	P18313	Plug, Pipe, Allen Head	1
3	P18265	Nut, Hex	12
4	P18247	Washer, Lock	12
5	P18393	Gasket, Intake Manifold	6
6	P18394	Stud	12
7	P18395	Manifold, Fxhaust	1
8			
9	P18394	Stud	16
10	P18396	Gasket, Exhaust Manifold	6
11	P18397	Nut, Hex	12
12			
13			
14	P18398	Shield, Heat	1
15	P18247	Washer, Lock	4
16	P18273	Screw, Hex Head	4

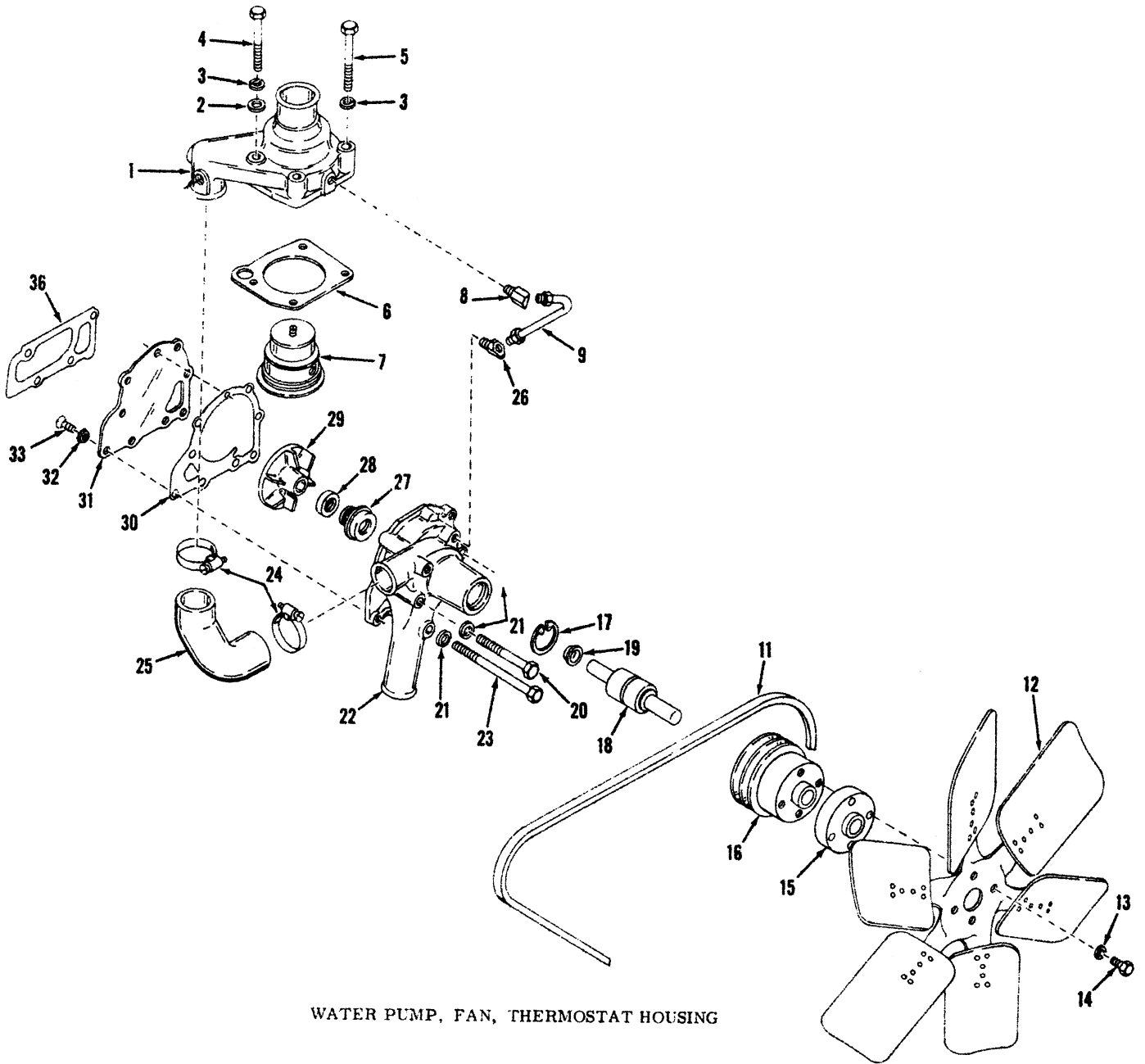


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WAUKESHA VRD 283

REF. NO.	PART NO.	DESCRIPTION	QTY
1	P19844	Alternator	1
2	P18492	Strap, Adjusting	1
3	P18493	Stud	1
4	P18247	Lockwasher	2
5	P18265	Nut, Hex	1
6	P18494	Washer, Flat	1
7	P18244	Washer	2
8	P18495	Screw, Hex. Hd.	1
9	P18491	Pulley	1
10	P18496	Fan	1
11	P18497	Screw, Hex Hd.	1
12	P18498	Screw, Hex. Hd.	2
13	P18499	Lockwasher	2
14	P18500	Bracket	1
15	P18501	Washer, Flat	4
16	P18502	Spacer	1
17	P18503	Nut, Hex	1

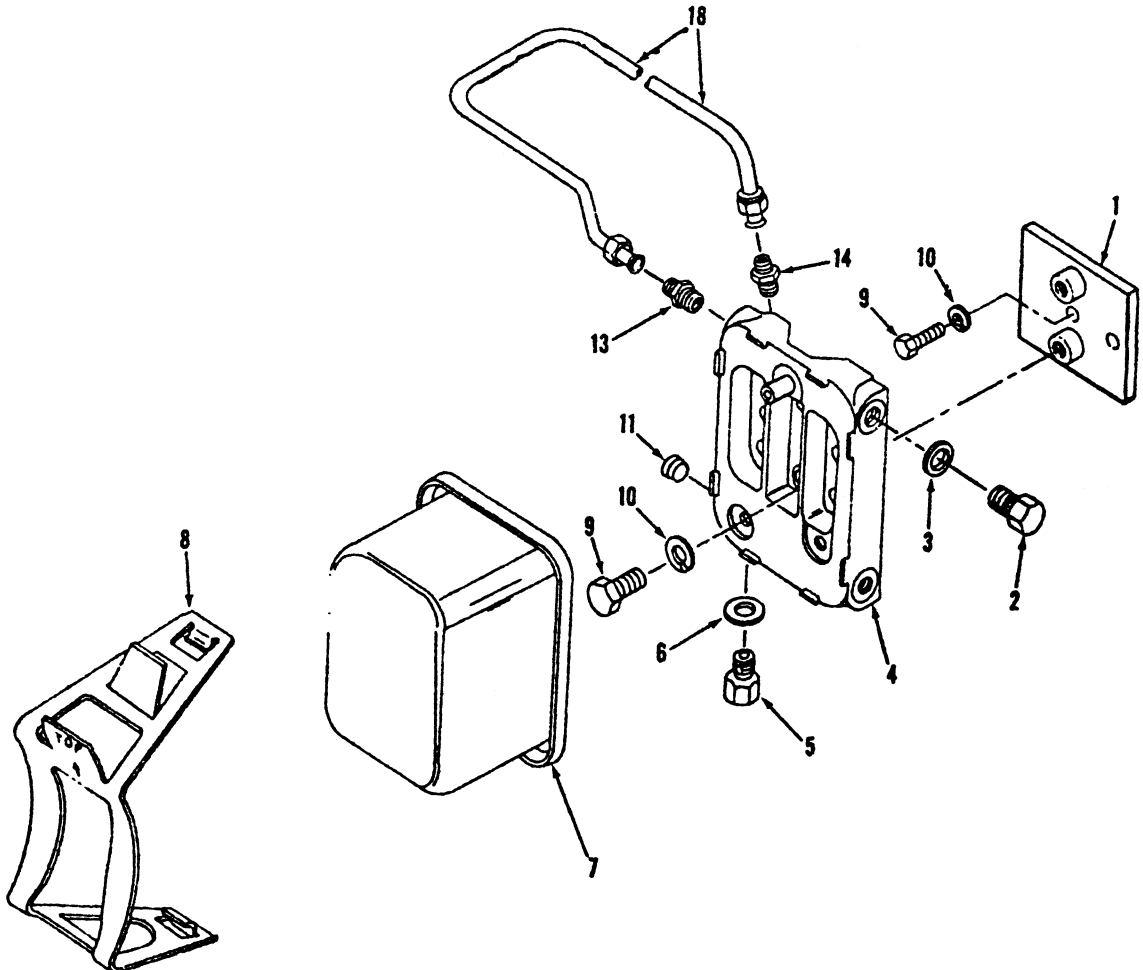




WATER PUMP, FAN, THERMOSTAT HOUSING

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
	P17437	Water Pump Assy. (Includes 16-19, 22, 27-33)	1
1	P18400	Housing, Thermostat	1
2	P18401	Washer, Flat	1
3	P18402	Washer, Lock	4
4	P18403	Screw, Cap	1
4	P18404	Screw, Cap	3
5			
6	P18405	Gasket, Thermostat Housing	1
7	P18406	Thermostat	1
8	P18407	Elbow, Inverted	1
9	P18408	Vent Line Assy.	1
10	P18409	Screw, Cap	2
11	P17323	Belt, Water Pump (Set of Two)	1
12	P17320	Blade-Fan	1
13	P18244	Washer, Lock	4
14	P18410	Screw, Cap	4
15	P18411	Spacer, Fan Blade	1
16	P18412	Pulley, Water Pump	1
17	P18413	Ring, Retaining	1
18	P18414	Shaft, Water Pump (Includes 19)	1
19	P18415	Slinger, Oil	1
20	P18416	Screw, Cap	1
21	P18247	Washer, Lock	4
22	P18417	Body, Water Pump	1
23	P18418	Screw, Cap	1
24	P18419	Clamp, Hose	2
25	P18017	Hose Assy.	1
26	P18420	Elbow, Inverted	1
27	P18421	Seal, Water Pump	1
28	P18422	Seat, Water Pump Seal	1
29	P18423	Impeller, Water Pump	1
30	P18424	Gasket	1
31	P18425	Cover, Water Pump	1
32	P18426	Washer, Shakeproof	3
33	P18427	Screw, Flat Head	5
34			
35			
36	P18428	Gasket, Water Pump	1

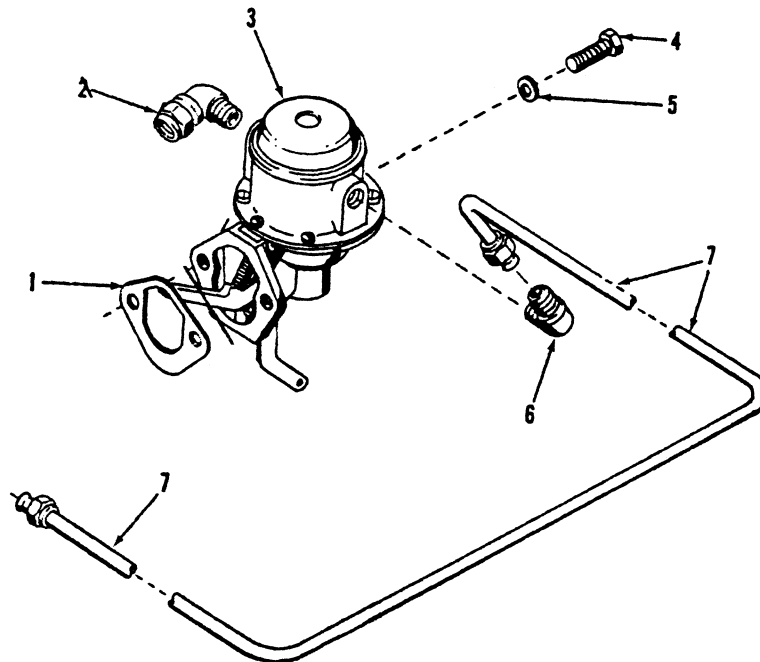
REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
	P18440	Base Assy. (Includes 2-6, 11)	1
	P17412	Base Assy. (Includes 1-11)	1
1	P18429	Bracket, Fuel Filter	1
2	P18430	Plug, Filter Vent	1
3	P18431	Washer, Seal	1
4	P18432	Base	1
5	P18433	Plug, Filter Drain	1
6	P18434	Washer, Seal	1
7	P17316	Element	1
8	P18435	Clamp, Spring	1
9	P18248	Screw, Hex Head	4
10	P18247	Washer, Lock	4
11	P18436	Plug, Pipe	1
12			
13	P18437	Connector, Body	1
14	P18438	Connector	1
15			
16			
17			
18	P18439	Fuel Line Assy	1

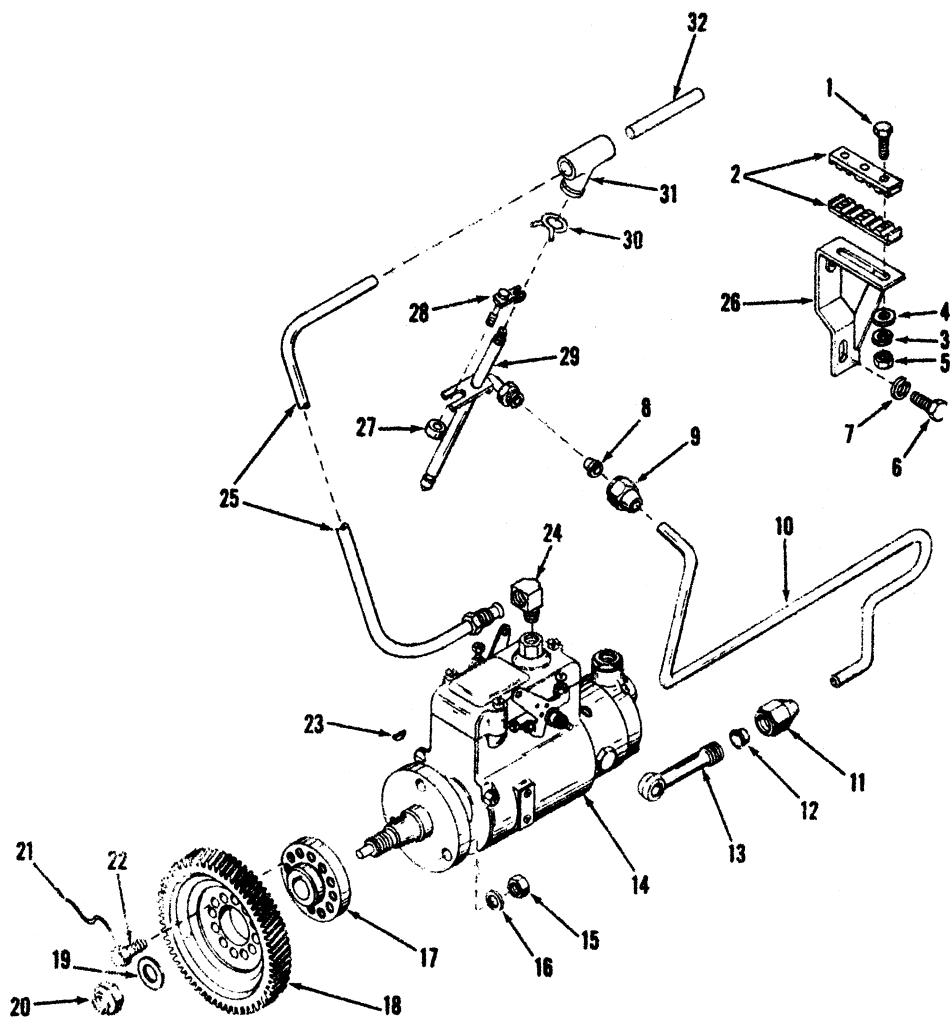


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WAUKESHA VRD 283

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18441	Gasket, Fuel Pump	1
2	P18442	Elbow	1
3	P17573	Pump, Fuel	1
4	P18443	Screw, Cap, Hex Head	2
5	P18382	Washer, Copper	2
6	P18444	Elbow	1
7	P18445	Fuel Line Assy.	1





INJECTION PUMP

LULL ENGINEERING COMPANY, INC.
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 ST. PAUL, MINN 55121

WAUKESHA VRD 283

REF. NO.	PART NO.	DESCRIPTION	QTY. REQ.
1	P18446	Screw, Cap, Hex Head	3
	P18447	Screw, Cap, Hex Head	3
2	P18448	Clamp, Injection Tube	4
3	P18269	Washer, Lock	6
4			
5	P18449	Nut, Hex	6
6	P18450	Screw, Cap, Hex Head	1
7	P18247	Washer, Lock	1
8	P18451	Ferrule	6
9	P18452	Nut, Injector	6
10	P18453	Injection Lines Assy. (Set of 6)	1
	P18454	Tube Assy #1 (Includes 8,9,11,12)	1
	P18455	Tube Assy #2 (Includes 8,9,11,12)	1
	P18456	Tube Assy #3 (Includes 8,9,11,12)	1
	P18457	Tube Assy #4 (Includes 8,9,11,12)	1
	P18458	Tube Assy #5 (Includes 8,9,11,12)	1
	P18459	Tube Assy #6 (Includes 8,9,11,12)	1
11	P18460	Nut, Fuel Injection Tube	6
12	P18461	Ferrule	6
13	P18462	Connector, Fuel Tube	6
14	P18463	Pump Injection	1
15	P18464	Nut, Flex-Loc	3
16	P18465	Washer, Flat	3
17	P18466	Hub, Fuel Pump Gear	1
18	P18467	Gear, Fuel Pump	1
19	P18468	Washer, Flat	1
20	P18469	Nut, Flex-Loc	1
21	P18470	Wire, Lock	1
22	P18471	Screw, Cap, Hex Head	2
23	P18472	Key, Woodruff	1
24	P18407	Elbow, Inverted	1
25	P18473	Line, Leak-off, Pump to No.1 Injector	1
26	P18474	Bracket	1
27	P18475	Spacer, Injector Nozzle	6
28	P18476	Nozzle, Clamp Assy.	6
29	P18477	Nozzle Assy.	6
30	P18478	Clamp Leak-Off	6
31	P18479	Boot, Leak-Off	6
32	P18480	Leak-Off Line Assy. (Includes 30,31)	1
	P18481	Line, Leak-Off	5

PARTS NOT ILLUSTRATED

Short Block	P-18251
Quick Start Kit	P-17155
Refill Cylinders (Quick Start)	P-17703
Complete Gasket Set	P-18482
Single Piston Ring	P-18483
Plastic Tube, Quick Start	P-18435

SPEC 5800, 6037 & 7201

FUNK TRANSMISSION-INDEX

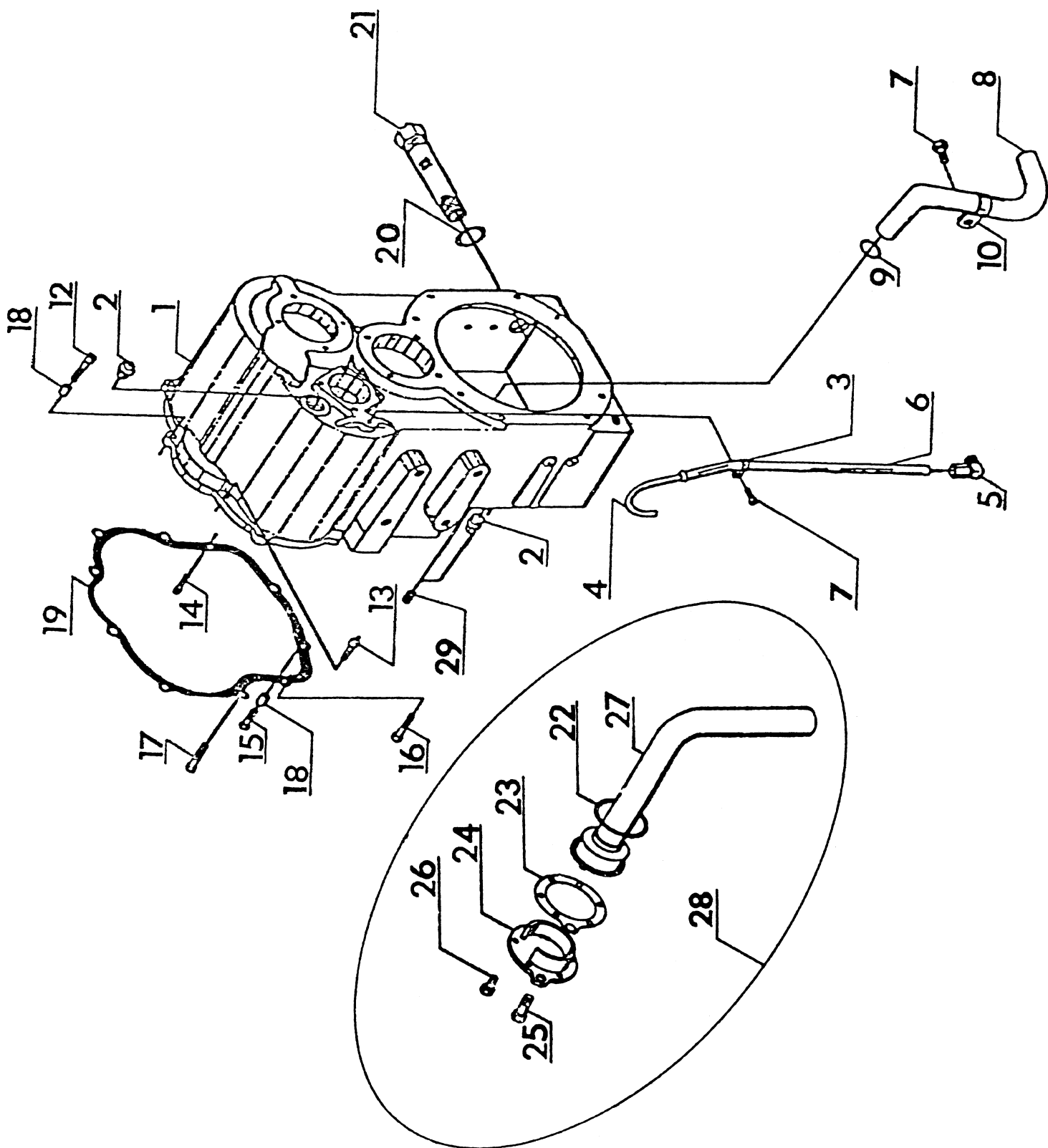
844 S/N 101 THRU 439, 441, 442, 626, 632
634, 636, 638, 639, 642, 653, 660 & 661

400B S/N 2001 THRU 2156

4D4B S/N 1101 THRU

<u>ASSEMBLY</u>	<u>PUBLICATION NO.</u>
Main Case Assembly	1800
Oil Strainer Assembly	1800-A
Output Group Assembly	1801
Output Retainer Assembly	1801-A
Clutch Assembly, 1st Stage	1802
Clutch Assembly, 2nd Stage	1803
Clutch Assembly, 3rd Stage	1804
Remote Oil Filter - Spec 5800 ONLY	1805
Brake Assembly - Spec 5800 ONLY	1805-A
Front Cover Assembly	1812
Pump Assembly	1813
Valve Control Assembly	1814
Yoke Group Assembly	1815
Drive Plate Assembly	1815-A
Remote Oil Filter Assembly	1816
Converter Assembly - Spec 5800 & 7201	1817
Converter Assembly - Spec 6037	1818

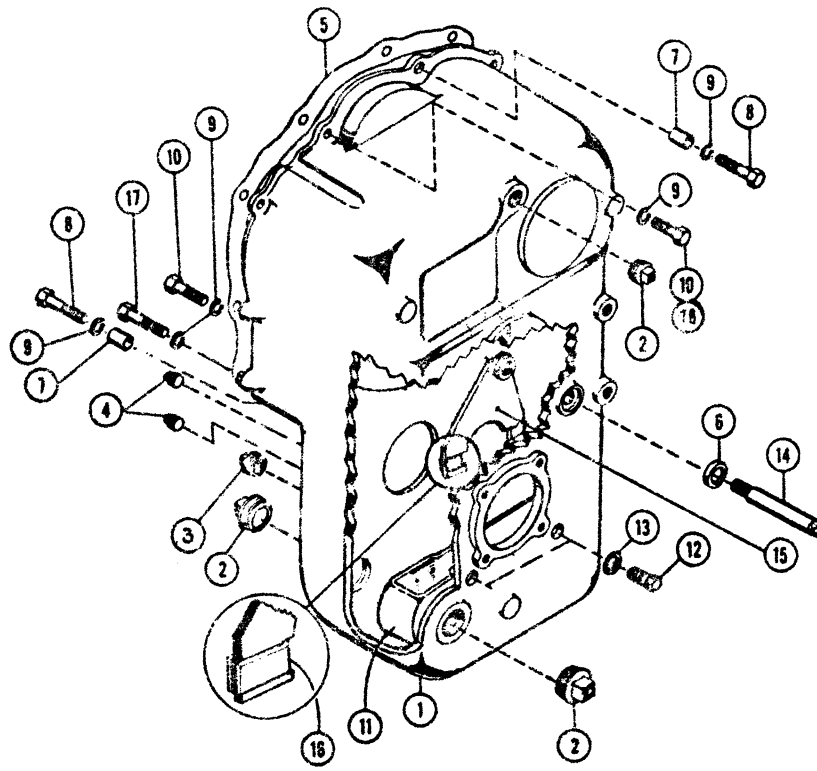
LULL <i>Engineering Co., Inc.</i>		ST. PAUL, MINNESOTA 55121
<small>DRAWING TITLE</small>		PUBLICATION NUMBER
INDEX OF PARTS FUNK TRANSMISSION		1799



MAIN CASE
 ASSEMBLY

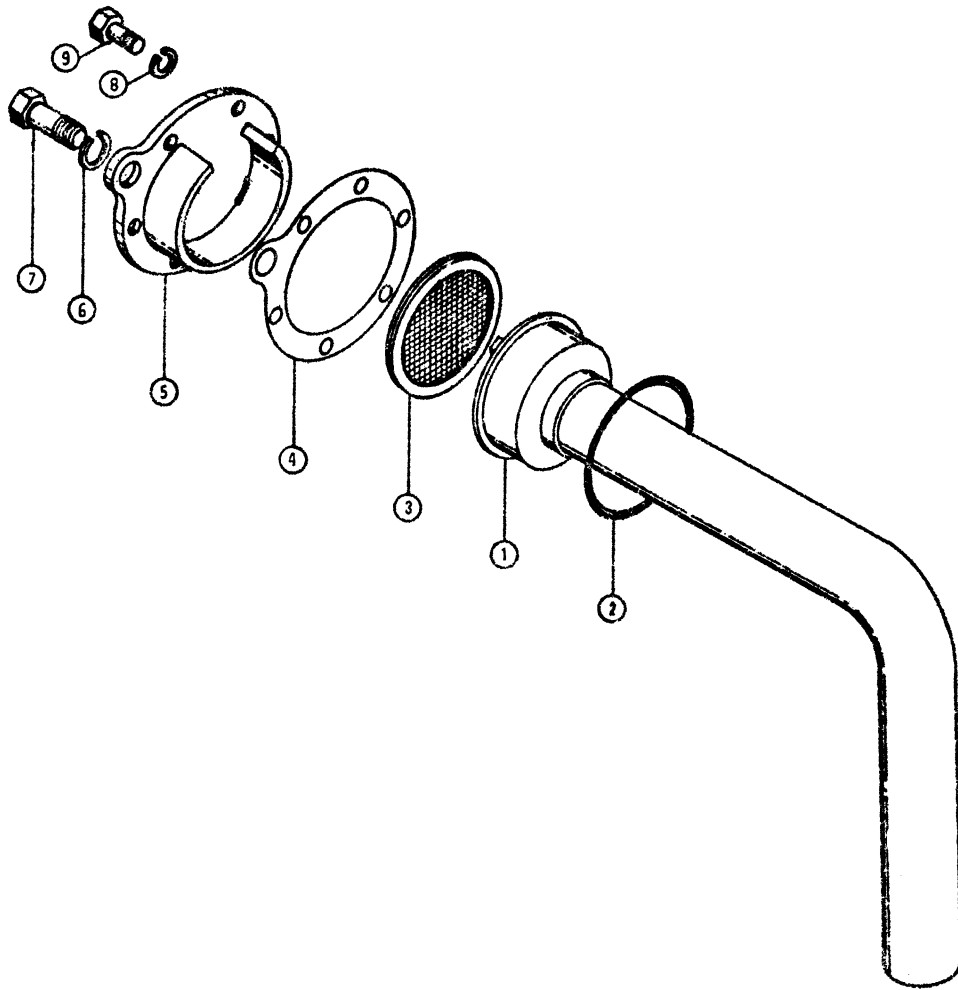
1807

ITEM	PART NO.	DESCRIPTION		QTY.
	P20860	Main Case Group Assy.	Spec 7711A & 8239A	1
	P24572	Main Case Group Assy.	Spec 7711B & 8239B & 9673	1
1	P20861	Main Case	Spec 7711A & 8239A	1
	P24571	Main Case	Spec 7711B & 8239B & 9673	1
2	P18565	Pipe Plug		2
3	P24542	Clamp, Dipstick	Spec 7711B & 8239B & 9673	1
4	P24544	Dipstick	Spec 7711B & 8239B & 9673	1
5	P24540	90° Elbow, Male	Spec 7711B & 8239B & 9673	1
6	P24545	Tube, Dipstick	Spec 7711B & 8239B & 9673	1
7	P22788	Capscrew	Spec 7711B & 8239B & 9673	2
8	P24568	Tube, Suction	Spec 7711B & 8239B & 9673	1
9	P24583	Retaining Ring	Spec 7711B & 8239B & 9673	1
10	P24543	Clamp, Tube	Spec 7711B & 8239B & 9673	1
11				1
12	P19790	Capscrew	Spec 7711A & 8239A	1
	P24595	Capscrew	Spec 7711B & 8239B & 9673	1
13	P19791	Capscrew	Spec 7711A & 8239A	3
	P24596	Capscrew	Spec 7711B & 8239B & 9673	3
14	P18573	Capscrew		3
15	P18571	Capscrew		1
16	P22792	Capscrew		1
17	P18580	Capscrew		1
18	P18570	Locating Bushing		2
19	P18568	Gasket, Main Case		1
20	P20863	Gasket, Suction Screen		1
21	P20862	Suction Screen	Spec 7711A & 8239A	1
	P24534	Suction Screen	Spec 7711A & 8239A & 9673	1
22	P18649	O-Ring, Strainer	Spec 7711A & 8239A	1
23	P18651	Gasket, Strainer	Spec 7711A & 8239A	1
24	P24581	Cover, Strainer	Spec 7711A & 8239A	1
25	P22793	Capscrew	Spec 7711A & 8239A	1
26	P18542	Capscrew	Spec 7711A & 8239A	6
27	P24580	Tube, Suction	Spec 7711A & 8239A	1
28	P20864	Oil Strainer Assembly	Spec 7711A & 8239A	1
29	P18567	Pipe Plug		2

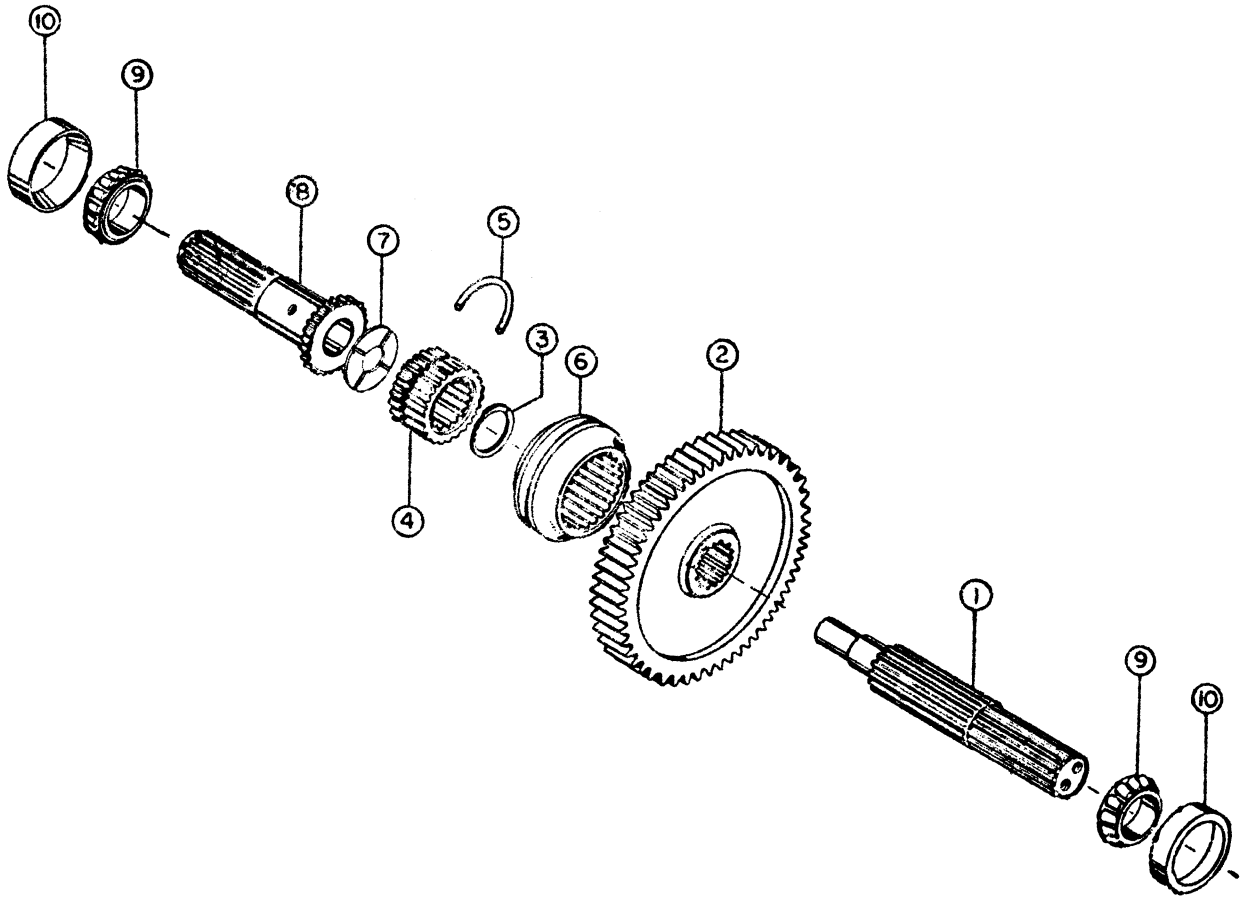


ITEM	PART NO.	DESCRIPTION	QTY.
	P18563	Main Case Assembly Spec 5800, 6037 & 7201	1
1.	P18564	Main Case	1
2.	P18565	Plug	3
3.	P18566	Drain Plug (Magnet)	1
4.	P18567	Plug	2
5.	P18568	Gasket	1
6.	P18569	Seal	1
7.	P18570	Bushing	2
8.	P18571	Capscrew	1
9.	P18572	Lockwasher	10
10.	P18573	Capscrew	4
11.	P19789	Oil Trough	1
12.	P19790	Capscrew	1
13.	P18576	Washer	2
14.	P18577	Shaft	1
15.	P18578	Fork	1
16.	P18579	Clip	2
17.	P18580	Capscrew	1
18.	P19791	Capscrew	3

LULL Engineering Co., Inc.		ST. PAUL MINNESOTA 65121
DRAWING TITLE	MAIN CASE & OIL STRAINER ASSEMBLY	PUBLICATION NUMBER 1800

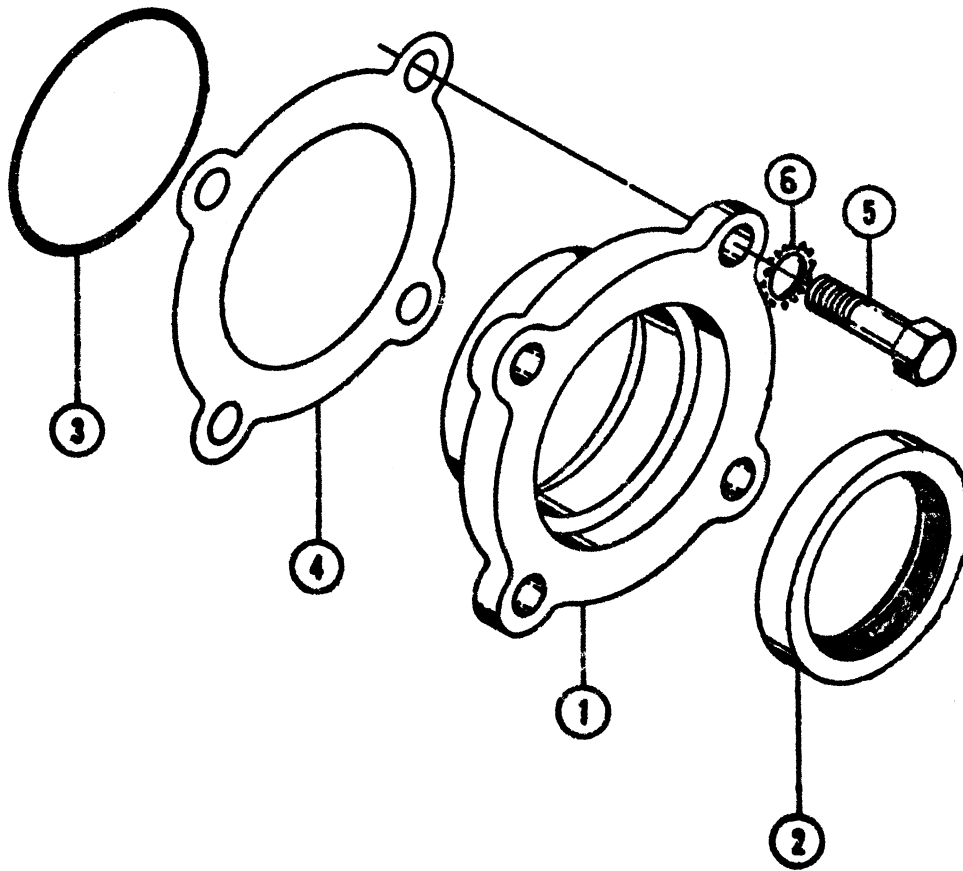


ITEM	PART NO.	DESCRIPTION	QTY.
	P18647	Oil Strainer Assembly Spec 5800, 6037 & 7201	1
1.	P18648	Oil Strainer	1
2.	P18649	O-Ring	1
3.	P18650	Screen	1
4.	P18651	Gasket	1
5.	P18652	Oil Strainer Cover	1
6.	P18572	Lockwasher, 1/2"	1
7.	P22793	Capscrew, 1/2" - 13 x 2-1/2" Lg.	1
8.	P18713	Lockwasher, 5/16"	6
9.	P18542	Capscrew, 5/16" - 18 x 7/8" Lg.	6

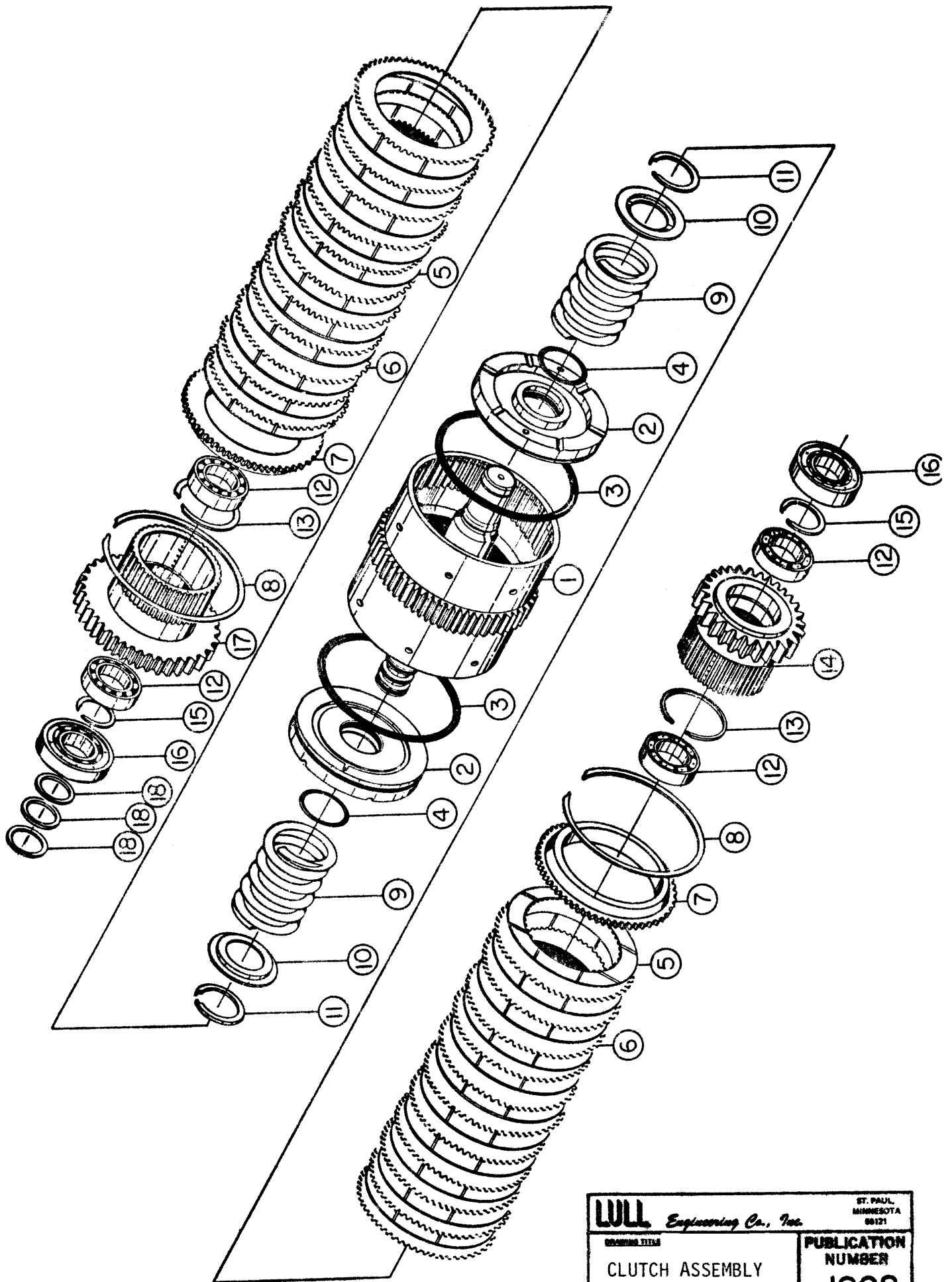


ITEM	PART NO.	DESCRIPTION	QTY.
	P18636	Output Group Assembly Spec 5800, 6037 & 7201	1
1.	P18637	Asm. Shaft	1
2.	P18638	Gear, Output	1
3.	P18639	Ring, Retainer	1
4.	P18640	Hub Disc.	1
5.	P18641	Ring, Detent	1
6.	P18642	Collar, Shifting	1
7.	P18643	Washer, Thrust	1
8.	P18644	Asm. Shaft	1
9.	P18645	Cone, Bearing	2
10.	P18646	Cup, Bearing	2

LOLL Engineering Co., Inc.		ST. PAUL MINNESOTA 56121
DRAWING TITLE OUTPUT & OUTPUT RETAINER ASSEMBLY		PUBLICATION NUMBER 1801

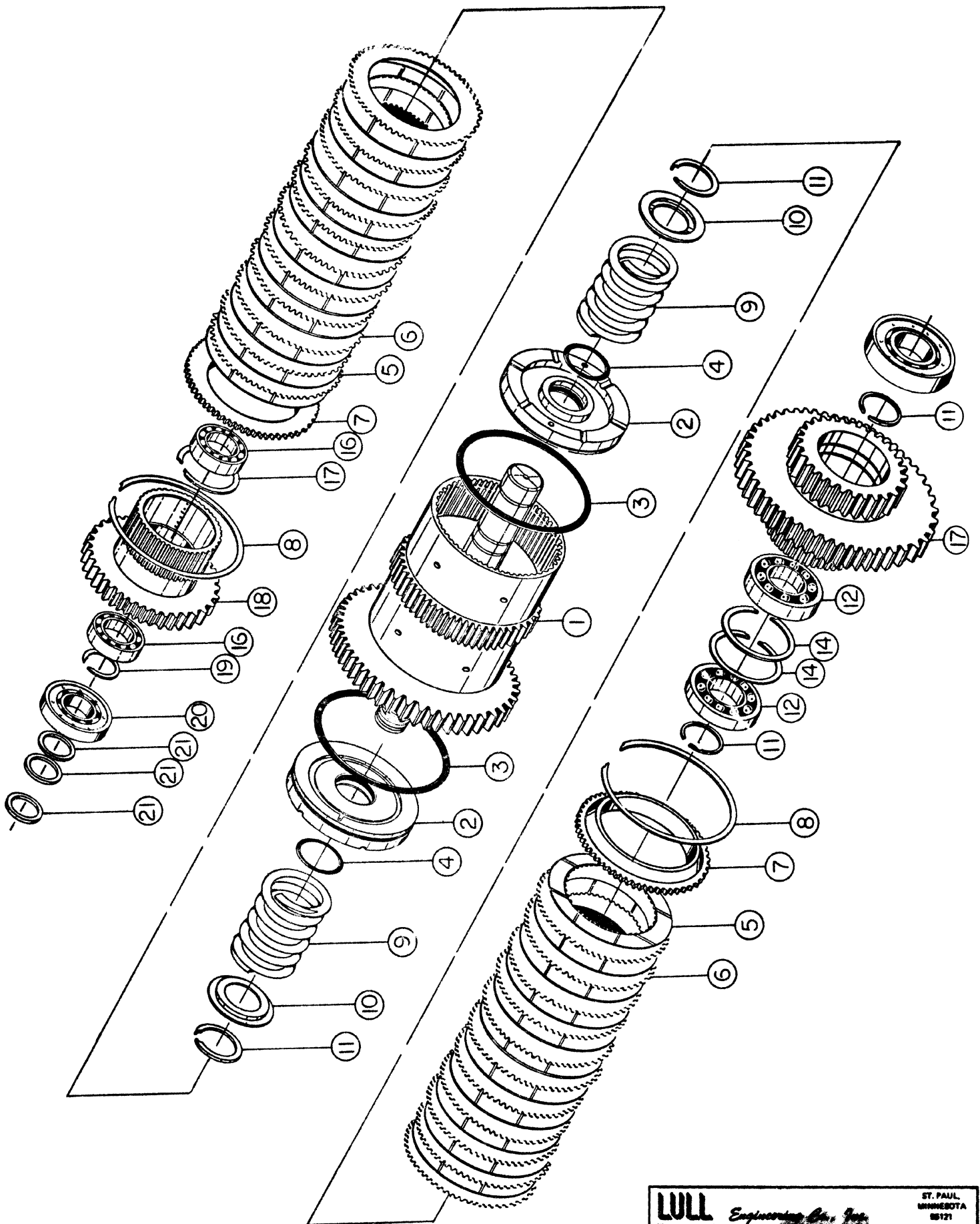


ITEM	PART NO.	DESCRIPTION	QTY.
	P18678	Retainer Assembly, Output Group	1
1.	P18679	Bearing Retainer	1
2.	P18680	Oil Seal	1
3.	P18681	O-Ring	1
4.	P18682	Shim, Bearing Retainer	1
5.	Com'1	Capscrew, Hex., 1/2" - 13 x 1-1/4" Long	1
6.	Com'1	Star Washer, Ext. 1/2"	4



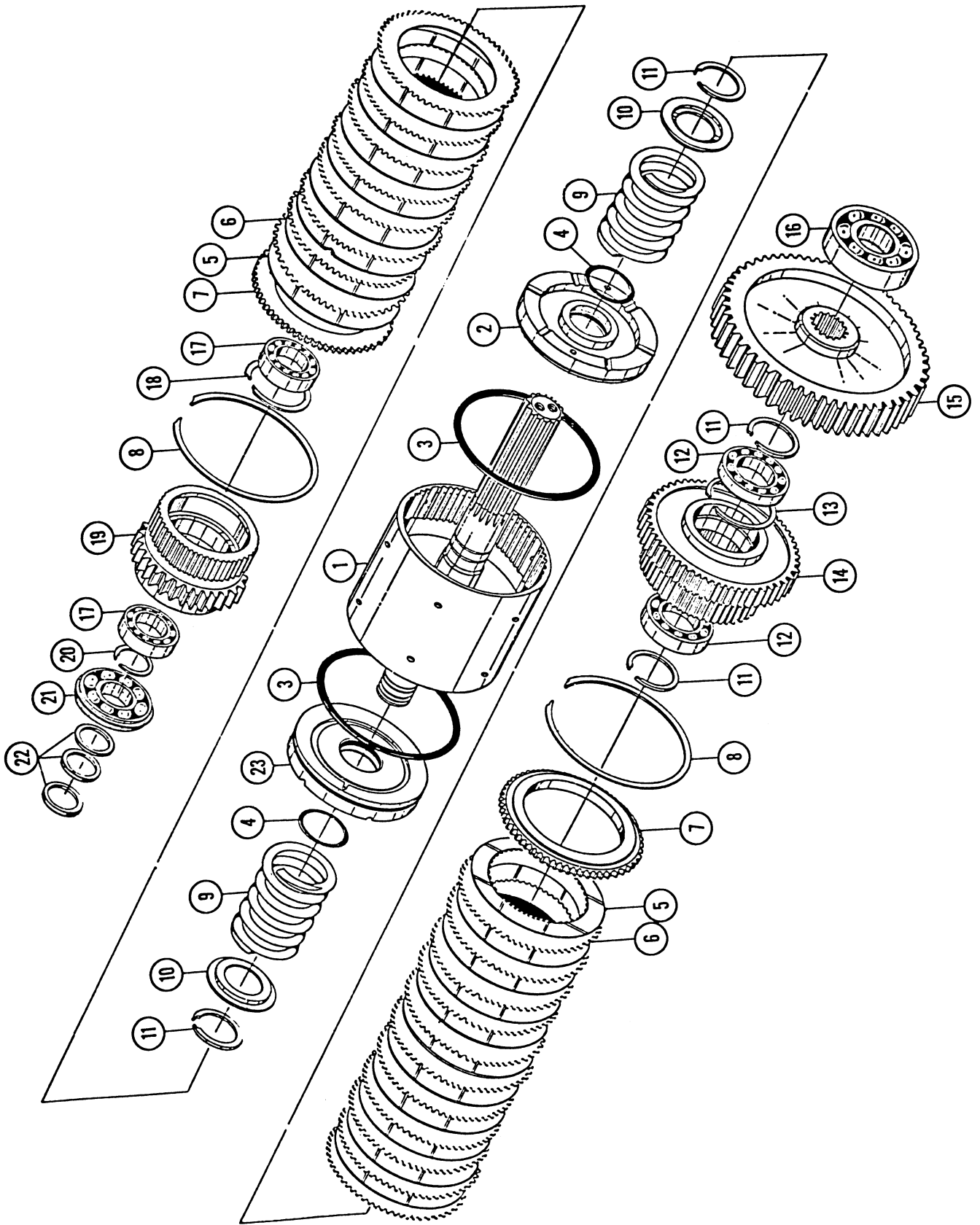
LULL Engineering Co., Inc.		ST. PAUL, MINNESOTA 55121
DRAWING FILE		PUBLICATION NUMBER
CLUTCH ASSEMBLY 1st STAGE		1802

ITEM	PART NO.	DESCRIPTION	QTY.
	P18603	Clutch Assembly, 1ST Stage (Spec 7201 & 5800)	1
	P19817	Clutch Assembly, 1ST. Stage (Spec 6037)	
1.	P18604	Clutch, 1ST. Stage	1
2.	P18605	Piston, Clutch	2
3.	P18606	Ring, Seal	2
4.	P18607	O-Ring, Piston	2
5.	P18608	Plate, Clutch	22
6.	P18609	Plate, Separator	22
7.	P18610	Retainer, Clutch Plate	2
8.	P18611	Snap Ring	2
9.	P18612	Clutch Spring	2
10.	P18613	Retainer, Clutch Spring	2
11.	P18614	Ring, Retainer	2
12.	P18615	Bearing	4
13.	P18616	Ring, Retainer	2
14.	P18617	Asm. Gear & Hub	1
15.	P18618	Retaining Ring	2
16.	P18619	Bearing, Roller	2
17.	P18627	Asm. Gear & Hub (Used with P18603 Ass'y.)	1
	P19763	Asm. Gear & Hub (Used with P19818 Ass'y.)	1
18.	P18620	Ring, Seal	3

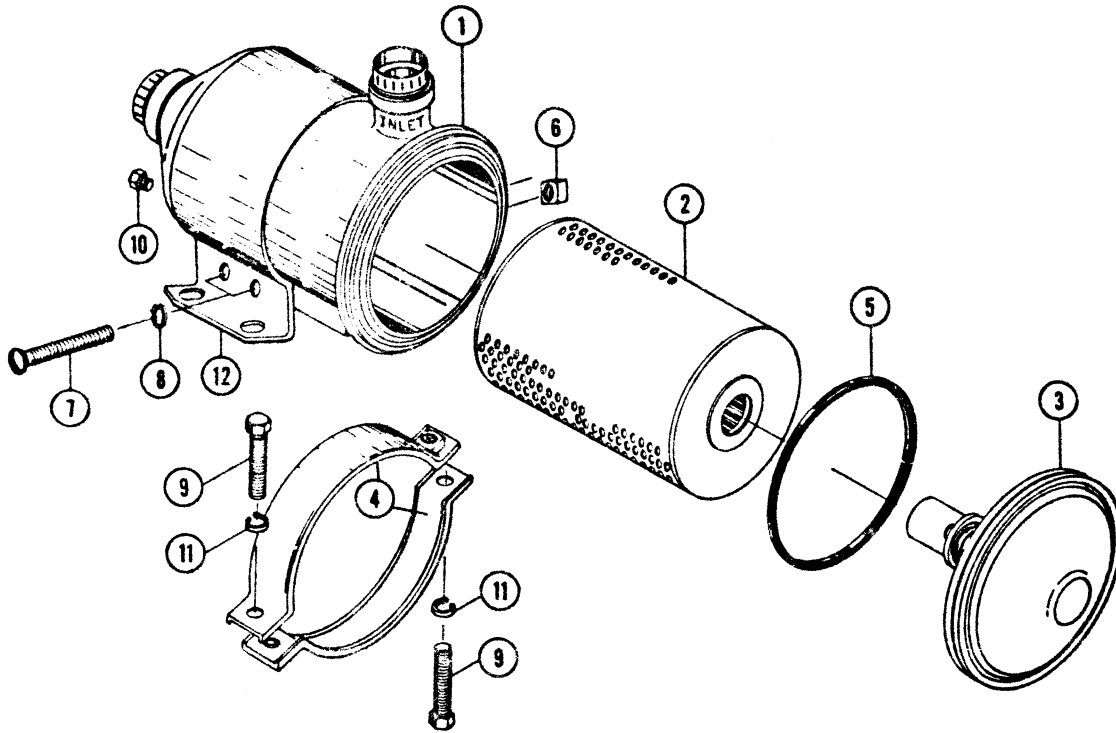


LULL <i>Engineering Co., Inc.</i>		ST. PAUL MINNESOTA 55121
DRAWING TITLE CLUTCH ASSEMBLY 2nd STAGE		PUBLICATION NUMBER 1803

ITEM	PART NO.	DESCRIPTION	QTY.
	P18621	Clutch Assembly, 2ND Stage (Spec 7201 & 5800)	1
	P19819	Clutch Assembly, 2ND Stage (Spec 6037)	1
1.	P18622	Clutch, 2ND Stage (Used with P18621 Ass'y.)	1
	P19819	Clutch, 2ND Stage (Used with P19818 Ass'y.)	1
2.	P18605	Piston, Clutch	2
3.	P18606	Ring, Seal	2
4.	P18607	O-Ring, Piston	2
5.	P18608	Plate, Clutch	22
6.	P18609	Plate, Seperator	22
7.	P18610	Retainer, Clutch Plate	2
8.	P18611	Snap Ring	2
9.	P18612	Clutch Spring	2
10.	P18613	Retainer, Clutch Spring	2
11.	P18614	Ring, Retainer	4
12.	P18623	Bearing	2
13.	P18624	Asm. Gear & Hub	1
14.	P18625	Ring, Retainer	2
15.	P18626	Bearing, Roller	1
16.	P18615	Bearing	2
17.	P18616	Ring, Retainer	1
18.	P18627	Asm. Gear & Hub (Input Side)	1
19.	P18618	Ring, Retainer	1
20.	P18619	Bearing, Roller	1
21.	P18620	Ring, Seal	3



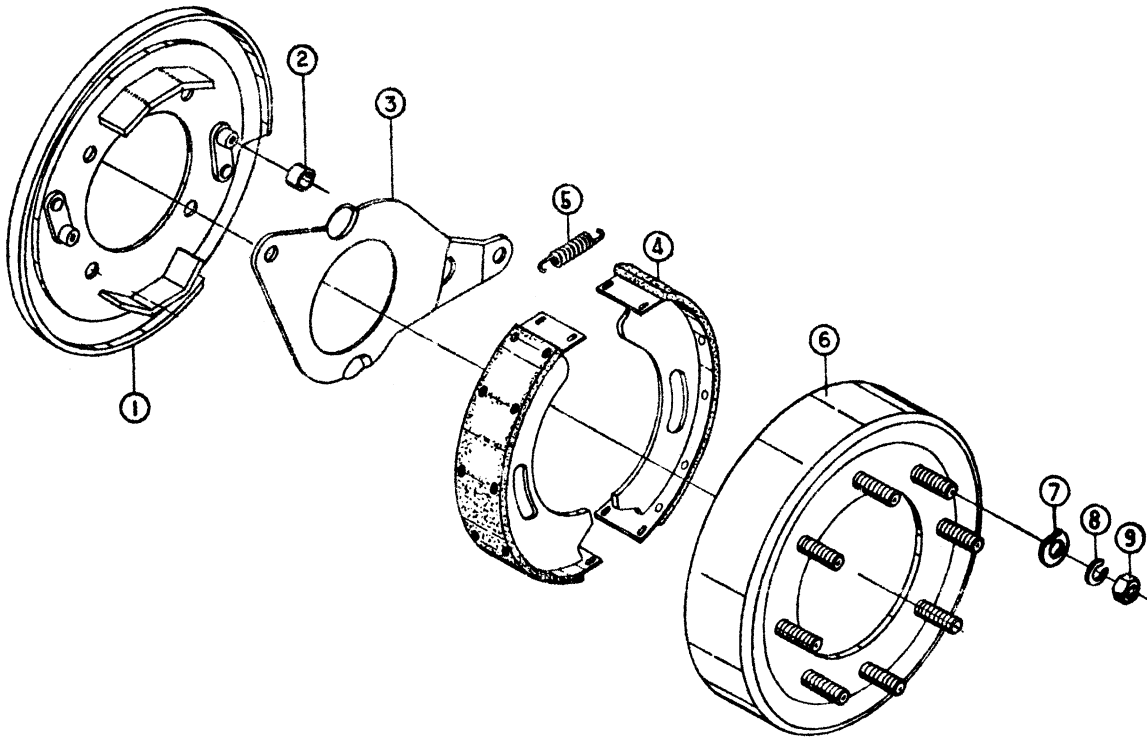
ITEM	PART NO.	DESCRIPTION	QTY.
	P18628	Clutch Assembly, 3RD Stage (Spec 5800, 6037 & 7201)	
1.	P18629	Clutch, 3RD Stage	1
2.	P18605	Piston, Clutch	1
3.	P18606	Ring, Seal	2
4.	P18607	O Ring, Piston	2
5.	P18608	Plate, Clutch	19
6.	P18609	Plate, Seperator	19
7.	P18610	Retainer, Clutch Plate	2
8.	P18611	Snap Ring	2
9.	P18612	Clutch Spring	2
10.	P18613	Retainer, Clutch Spring	2
11.	P18614	Ring, Retainer	4
12.	P18633	Bearing	2
13.	P18630	Ring	1
14.	P18631	Asm. Gear & Hub	1
15.	P18632	Gear	1
16.	P18626	Bearing, Roller	1
17.	P18615	Bearing	2
18.	P18616	Ring	1
19.	P18634	Asm. Gear & Hub	1
20.	P18618	Ring, Retainer	1
21.	P18619	Bearing, Roller	1
22.	P18620	Ring, Seal	3
23.	P18635	Piston, Clutch	1



ITEM	PART NO.	DESCRIPTION	QTY.
	P17814	Remote Oil Filter Assy.* Spec 5800 ONLY	1
1	P18707	Case	1
2	P17815	Element	1
3	P18708	Cover & By-Pass Valve	1
4	P18709	Clamp Ring	1
5	P18710	Gasket	1
6	P18711	Sq. Hd. Nut	2
7	P18712	Screw	2
8	P18713	Lockwasher	2
9	P18714	Cap screw	2
10	P18715	Plug	1
11	P18716	Lockwasher	2
12	P18717	Bracket	1

* USED ON 844 S/N 101 THRU 112,114 & 115

LULL <i>Engineering Co., Inc.</i>		ST. PAUL, MINNESOTA 55121
DRAWING TITLE OIL FILTER & BRAKE ASSEMBLY SPEC 5800 ONLY		PUBLICATION NUMBER 1805



ITEM	PART NO.	DESCRIPTION	QTY.
	P18690	Brake Assembly * Spec 5800 ONLY	1
1.	P18691	Backing Plate	1
2.	P18692	Spacer	1
3.	P18693	Bell Crank	1
4.	P18694	Brake Shoe	2
5.	P18695	Return Spring	2
6.	P18696	Brake Drum	1
7.	P18697	Washer, Clipped	8
8.	Com'1	Lockwasher, 3/8" Med. Spring	8
9.	Com'1	Nut, 3/8" - 24 Hex Full	8

* USED ON 844 S/N 101 THRU 112,114 & 115

1805-A

FUNK TRANSMISSION BREAKDOWN

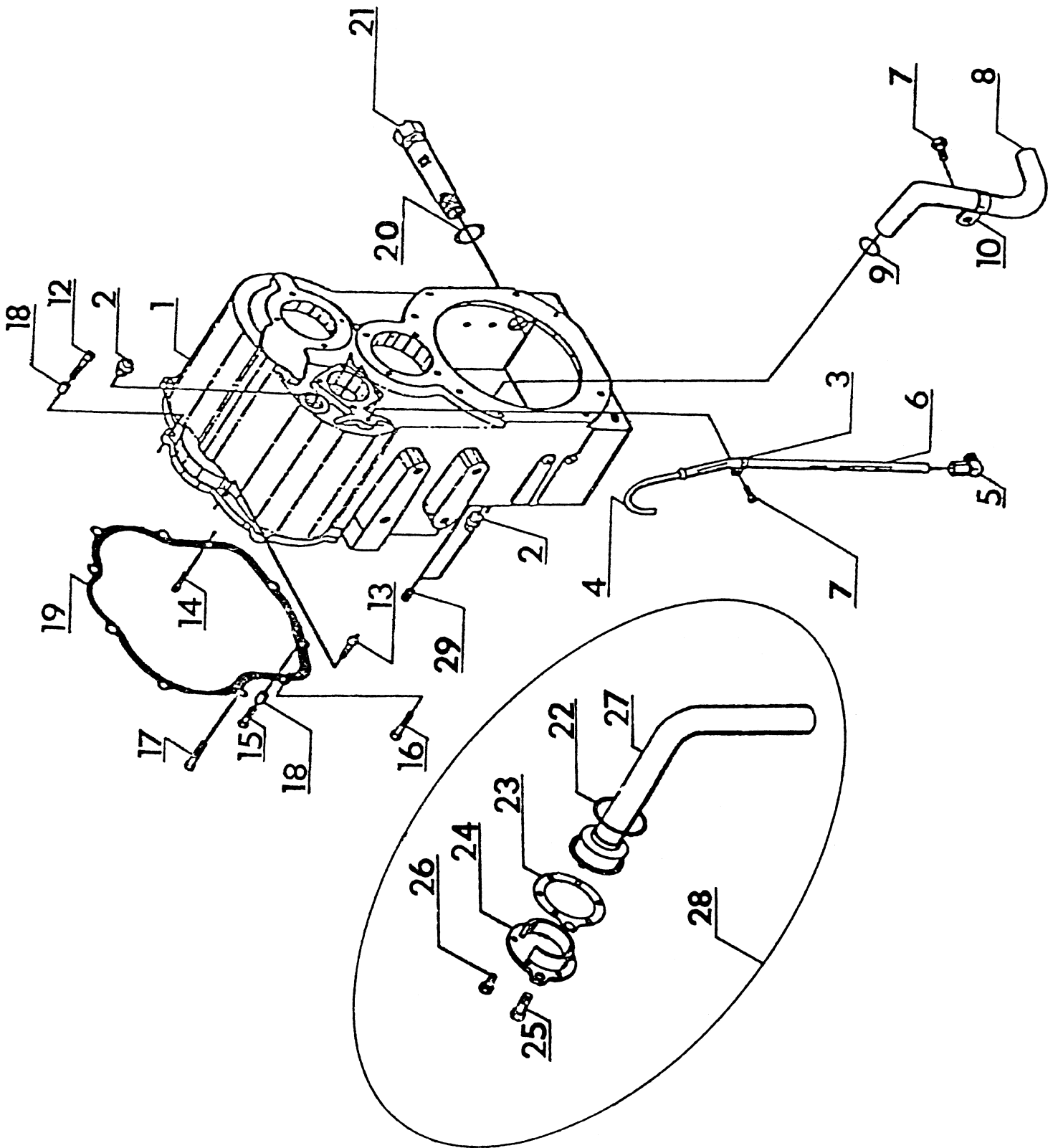
Spec #7711, 8239 & 9673 Transmission Variations

844 S/N 440, 443 THRU
(Except S/N 626, 632, 634, 636, 638, 639, 642, 653, 660 & 661)

400B S/N 2157 THRU

INDEX OF PARTS

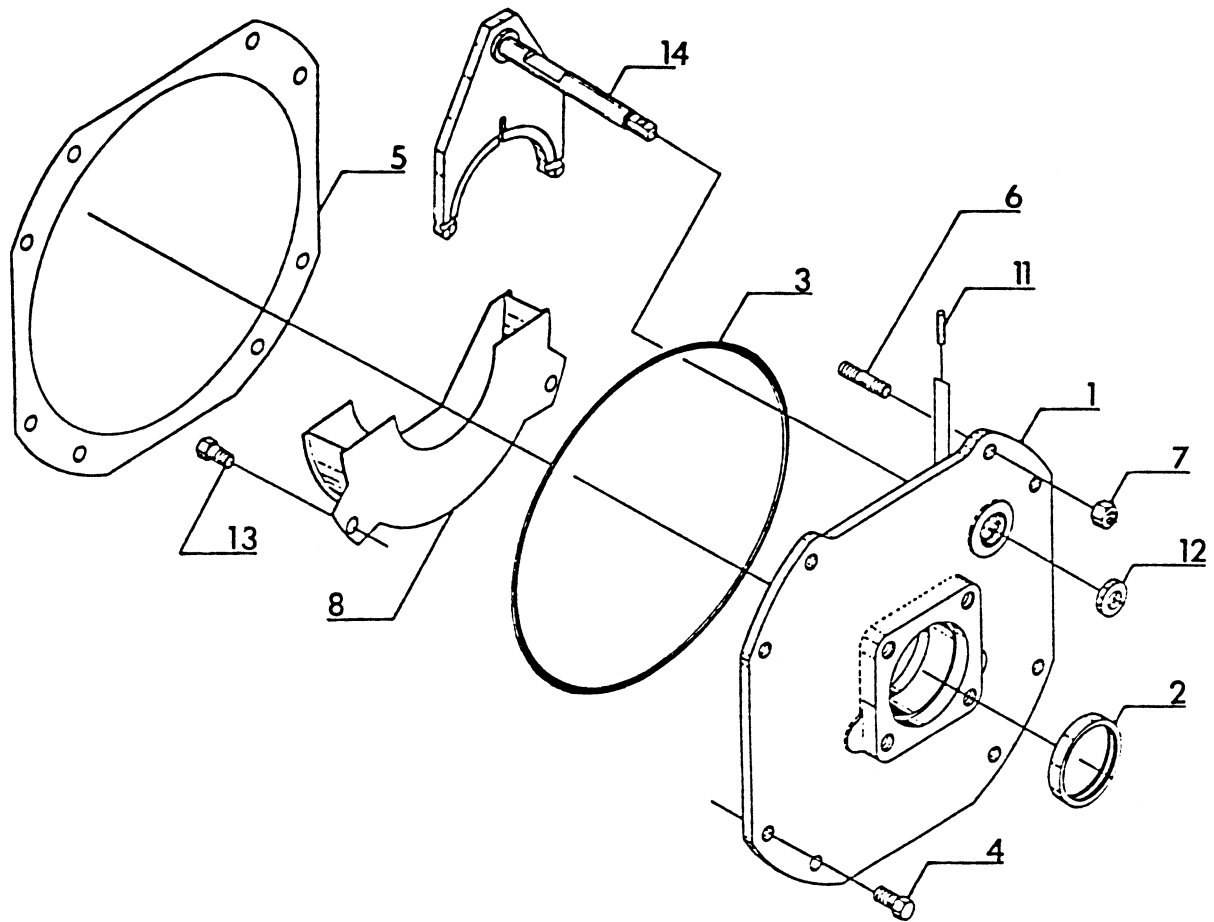
<u>ASSEMBLY</u>	<u>PUBLICATION NO.</u>
Main Case Assembly	1807
Output Group Assembly	1808
Output Retainer Assembly	1808
Clutch Assembly, 1st Stage	1809
Clutch Assembly, 2nd Stage	1810
Clutch Assembly, 3rd Stage	1811
Front Cover Assembly	1812
Pump Assembly	1813
Valve Control Assembly	1814
Yoke Group Assembly	1815
Drive Plate Assembly	1815
Remote Oil Filter Assembly	1816
Parking Brake Assembly - Spec 9673C	1816
Conver Assembly - Spec 8239 & 9673	1817
Conver Assembly - Spec 7711A	1818
Converter Assembly - Spec 7711B & 9673	1819
Converter Assembly - Spec 9673C	1819-1



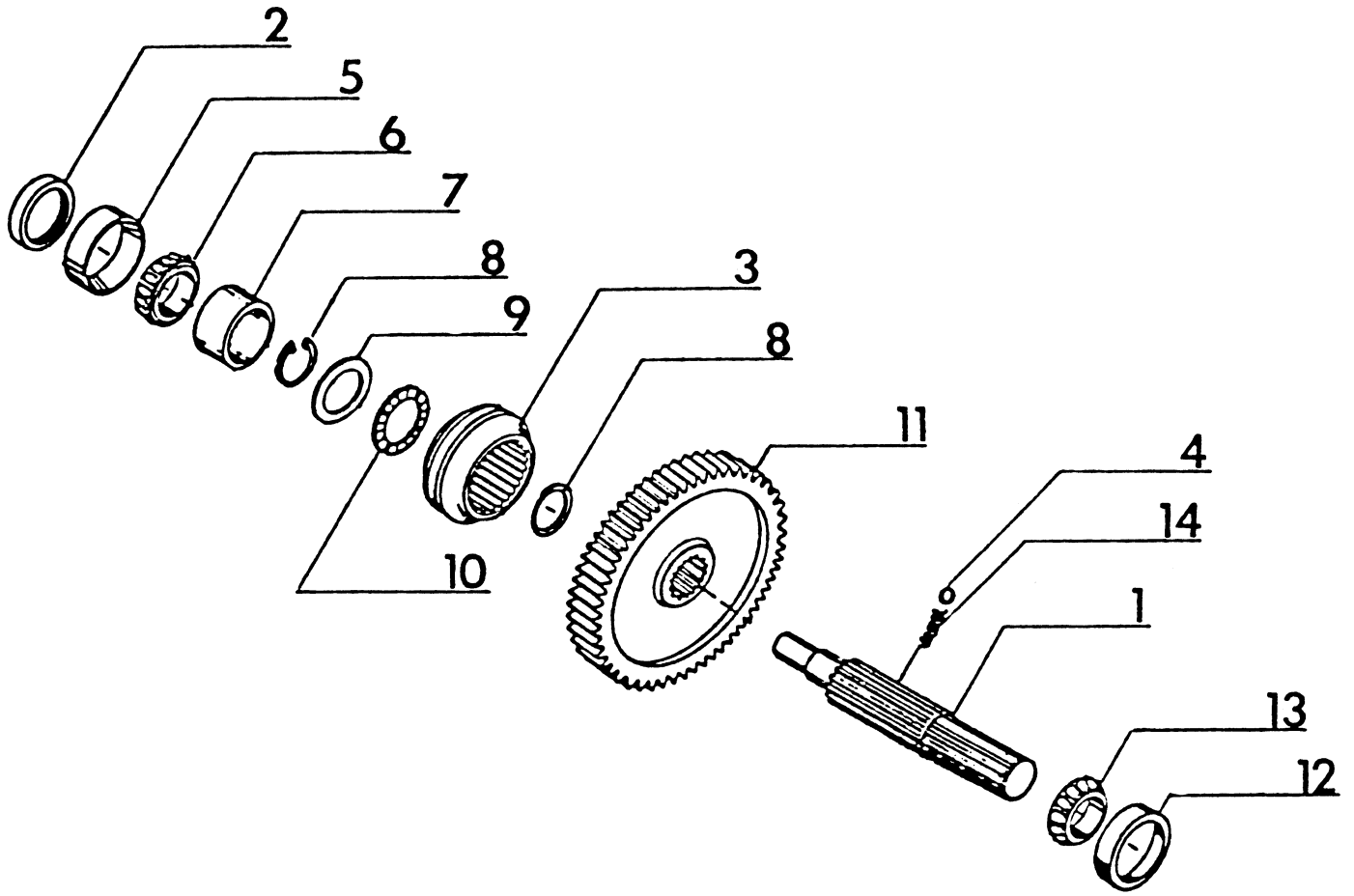
MAIN CASE
 ASSEMBLY

1807

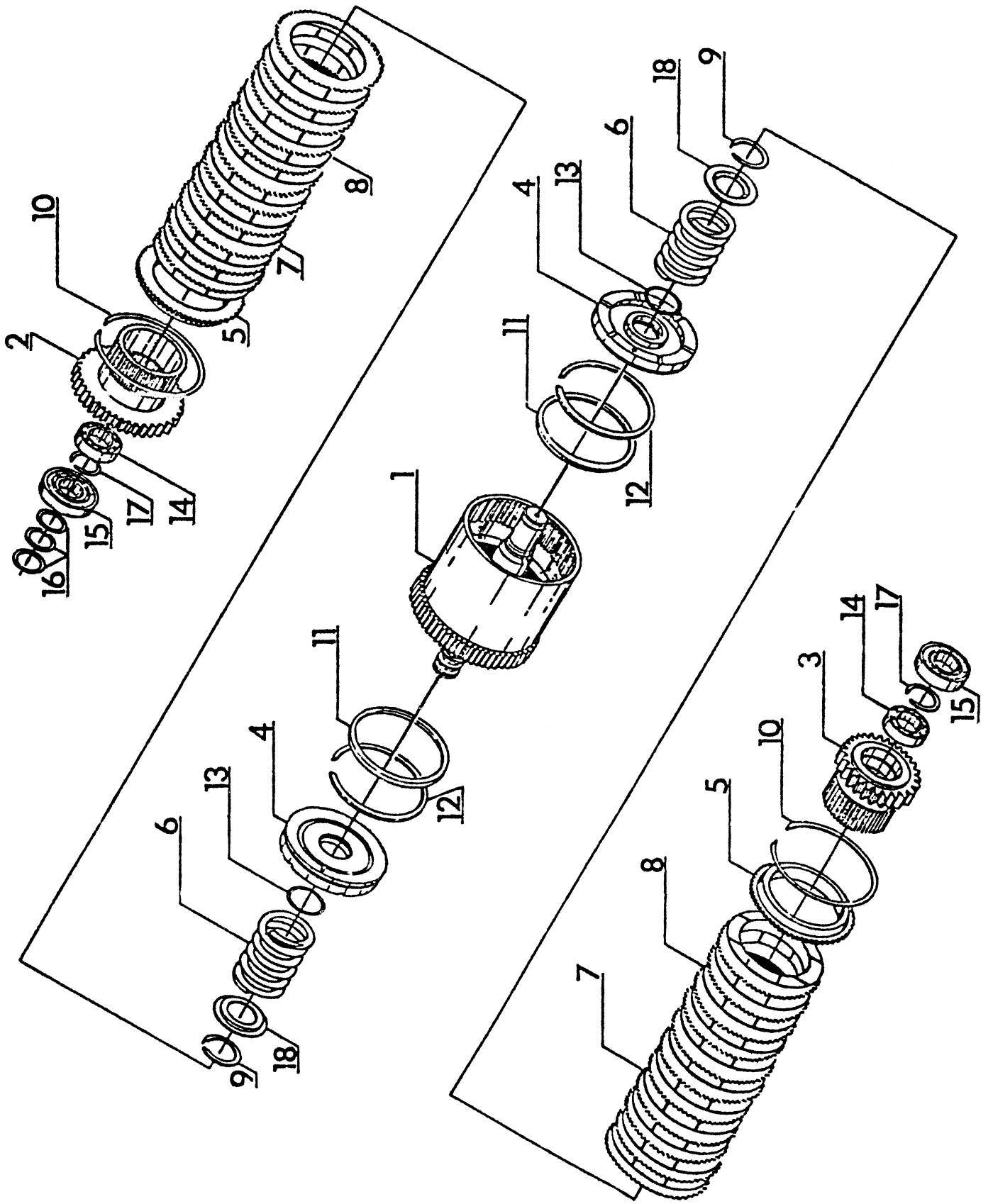
ITEM	PART NO.	DESCRIPTION	QTY.	
	P20860	Main Case Group Assy.	Spec 7711A & 8239A	1
	P24572	Main Case Group Assy.	Spec 7711B & 8239B & 9673	1
1	P20861	Main Case	Spec 7711A & 8239A	1
	P24571	Main Case	Spec 7711B & 8239B & 9673	1
2	P18565	Pipe Plug		2
3	P24542	Clamp, Dipstick	Spec 7711B & 8239B & 9673	1
4	P24544	Dipstick	Spec 7711B & 8239B & 9673	1
5	P24540	90° Elbow, Male	Spec 7711B & 8239B & 9673	1
6	P24545	Tube, Dipstick	Spec 7711B & 8239B & 9673	1
7	P22788	Capscrew	Spec 7711B & 8239B & 9673	2
8	P24568	Tube, Suction	Spec 7711B & 8239B & 9673	1
9	P24583	Retaining Ring	Spec 7711B & 8239B & 9673	1
10	P24543	Clamp, Tube	Spec 7711B & 8239B & 9673	1
11				1
12	P19790	Capscrew	Spec 7711A & 8239A	1
	P24595	Capscrew	Spec 7711B & 8239B & 9673	1
13	P19791	Capscrew	Spec 7711A & 8239A	3
	P24596	Capscrew	Spec 7711B & 8239B & 9673	3
14	P18573	Capscrew		3
15	P18571	Capscrew		1
16	P22792	Capscrew		1
17	P18580	Capscrew		1
18	P18570	Locating Bushing		2
19	P18568	Gasket, Main Case		1
20	P20863	Gasket, Suction Screen		1
21	P20862	Suction Screen	Spec 7711A & 8239A	1
	P24534	Suction Screen	Spec 7711A & 8239A & 9673	1
22	P18649	O-Ring, Strainer	Spec 7711A & 8239A	1
23	P18651	Gasket, Strainer	Spec 7711A & 8239A	1
24	P24581	Cover, Strainer	Spec 7711A & 8239A	1
25	P22793	Capscrew	Spec 7711A & 8239A	1
26	P18542	Capscrew	Spec 7711A & 8239A	6
27	P24580	Tube, Suction	Spec 7711A & 8239A	1
28	P20864	Oil Strainer Assembly	Spec 7711A & 8239A	1
29	P18567	Pipe Plug		2



ITEM	PART NO.	DESCRIPTION	QTY.	
	P20641	Output Group Retainer Assy.	Spec 7711A & 8239A	1
	P24573	Output Group Retainer Assy.	Spec 7711B,8239B,9673	1
1	P20745	Cap, Output Retainer	Spec 7711A & 8239A	1
	P24570	Cap, Output Retainer	Spec 7711B,8239B, 9673	1
2	P18680	Oil Seal		1
3	P20752	O-Ring		1
4	P20753	Capscrew		6
5	P20758	Shim Pack		1
	P24564	Shim - .001		A/R
	P24565	Shim - .005		A/R
	P24566	Shim - .015		A/R
6	P20767	Stud		2
7	P20813	Nut		2
8	P20814	Oil Trough	Spec 7711A & 8239A	1
	P24569	Oil Trough	Spec 7711B,8239B,9673	1
9	P20421	Capscrew		3
10	P20422	Dynaseal Washers		3
11	P20423	Powell Pin		2
12	P20424	Oil Seal		1
13	P24592	Capscrew	Spec 7711B,8239B,9673	2
14	P20865	Fork Shaft	Spec 7711A & 8239A	1
	P24567	Fork Shaft	Spec 7711B, 8239B & 9673	1
	P25407	Fork Shaft	Spec 9673C	1

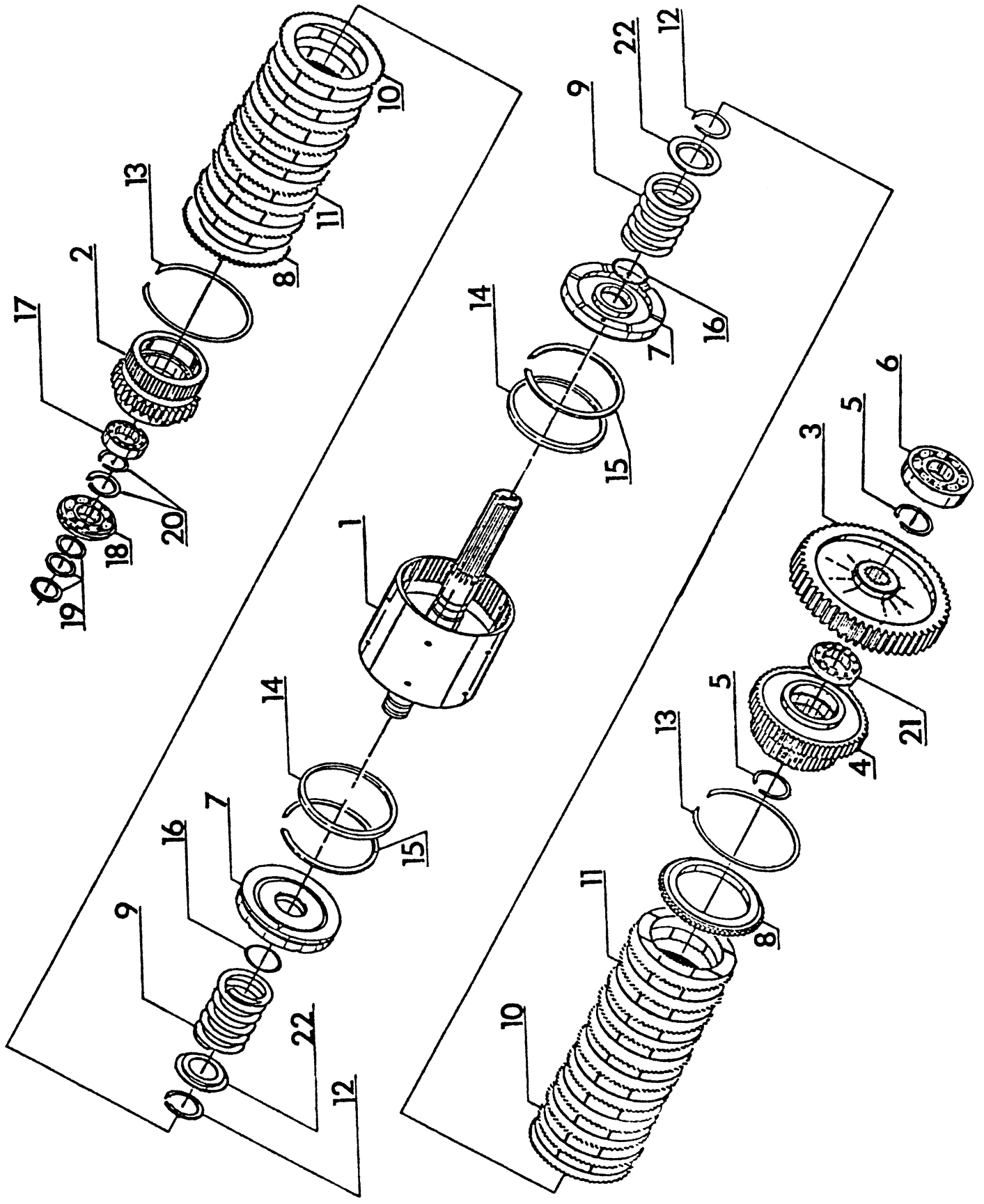


ITEM	PART NO.	DESCRIPTION	QTY
	P20629	Output Group Assembly Spec 7711, 8239 & 9673	1
1	P20656	Output Shaft	1
2	P20710	Oil Seal	1
3	P20658	Shift Collar	1
4	P20659	Ball	3
5	P20667	Cup Bearing	1
6	P20668	Cone Bearing	1
7	P20690	Spacer	1
8	P20685	Snap Ring	2
9	P20686	Thrust Washer	1
10	P20688	Thrust Bearing	1
11	P20722	Output Gear	1
12	P20705	Cup Bearing	1
13	P20709	Cone Bearing	1
14	P20728	Spring	3

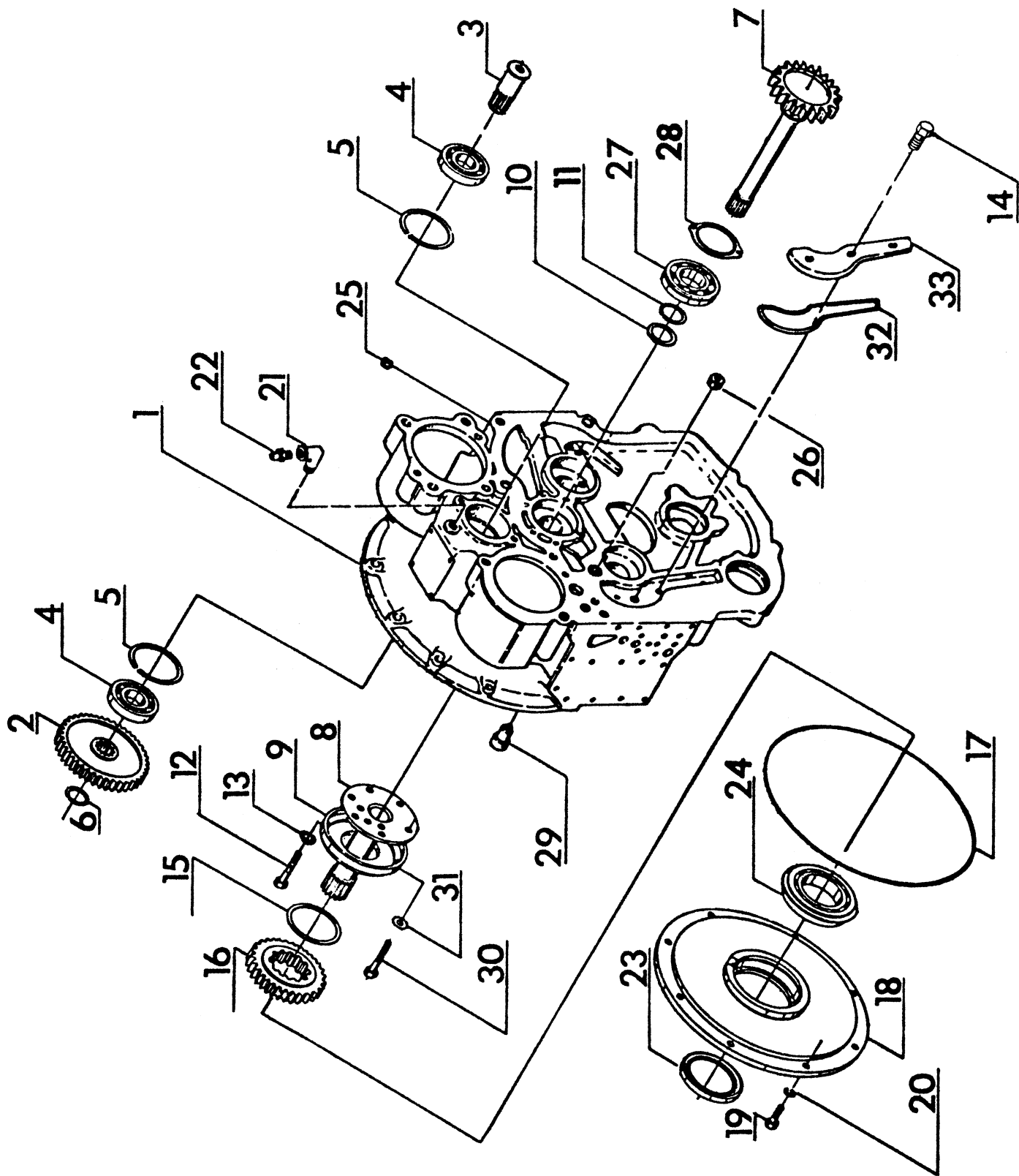


ITEM	PART NO.	DESCRIPTION	QTY.
	P24518	Clutch Assy., 1st Stage	1
	P20517	Clutch Assy., 1st Stage	1
	P20521	Clutch Assy., 1st Stage	1
	P24575	Clutch Assy., 1st Stage	1
	P26890	Clutch Assy., 1st Stage	1
1	P26887	Shaft	1
	P24574	Shaft	1
2	P20642	Gear & Hub	1
	P20573	Gear & Hub	1
3	P20578	Gear & Hub	1
4	P20591	Piston, Clutch	2
	P26886	Piston, Clutch	2
5	P20592	Retainer Plate	2
6	P20599	Belleville Spring	8
7	P18608	Clutch Plate	12
8	P18609	Separator Plate	12
9	P20605	Retaining Ring	2
10	P18611	Snap Ring	2
11	P25400	Ring Seal, Incl. Back-Up Ring	2
	P26878	Ring Seal	2
12	P25400	Back-Up Ring, Incl. Ring Seal-Not Used	2
13	P20612	O-Ring	2
	P26876	O-Ring	2
14	P24451	Bearing	2
15	P24450	Roller Bearing	2
16	P18620	Ring Seal	3
	P26882	Ring Seal	3
17	P18618	Retaining Ring	2
18	P20625	Spring Retainer	2

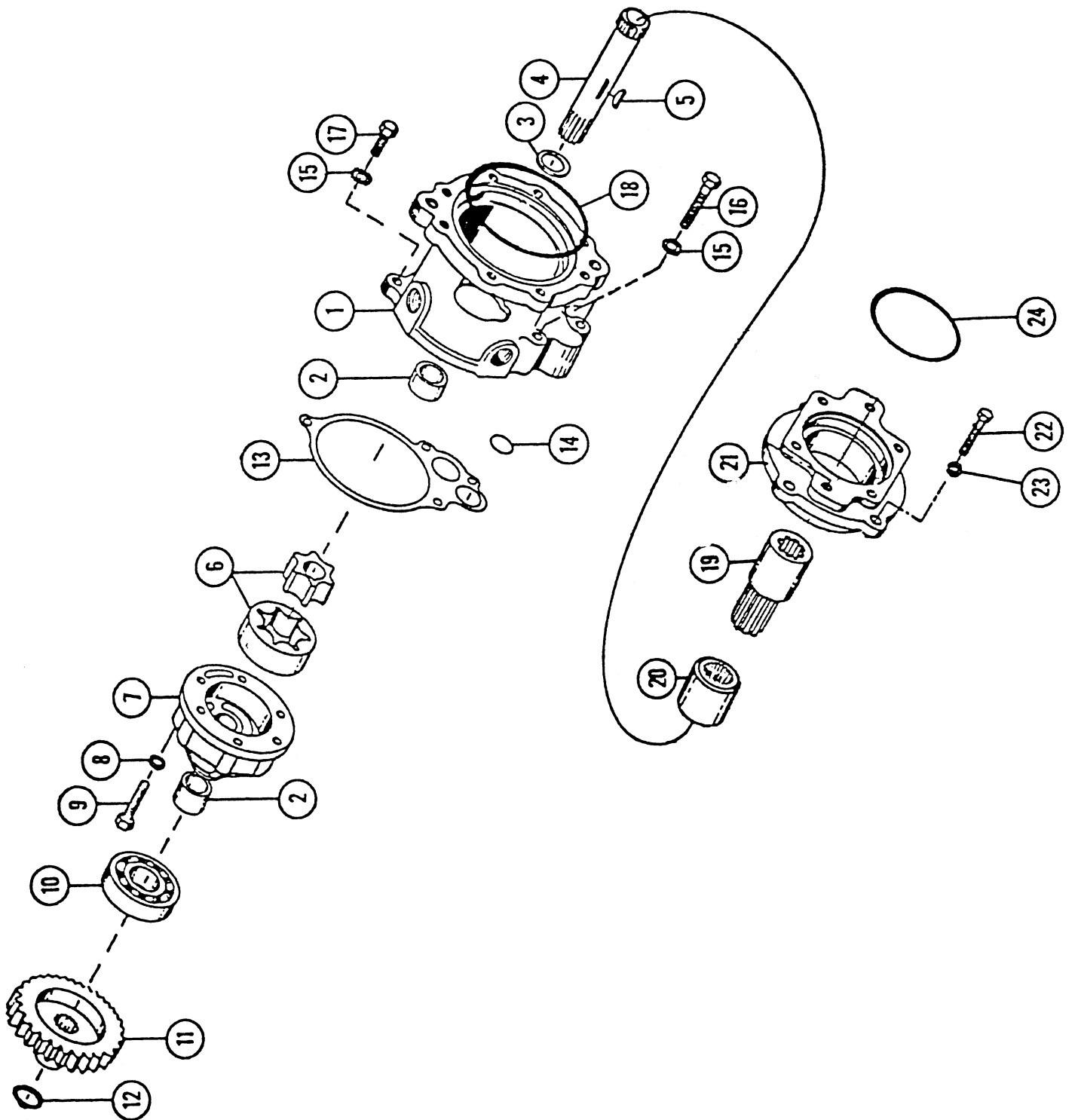
ITEM	PART NO.	DESCRIPTION	QTY.
	P24519	Clutch Assy., 2nd Stage	Spec 8239A 1
	P20626	Clutch Assy., 2nd Stage	Spec 8239B & 9673 1
	P20628	Clutch Assy., 2nd Stage	Spec 7711A 1
	P24578	Clutch Assy., 2nd Stage	Spec 7711B 1
	P26891	Clutch Assy., 2nd Stage	Spec 9673D 1
1	P20646	Shaft	Spec 7711A & 8239A 1
	P24577	Shaft	Spec 7711B, 8239B & 9673 1
	P26888	Shaft	Spec 9673D 1
2	P20669	Gear & Hub	1
	P26884	Gear & Hub	Spec 9673D 1
3	P20573	Gear & Hub	Spec 7711 1
	P20642	Gear & Hub	Spec 8239 & 9673 1
	P26885	Gear & Hub	Spec 9673D 1
4	P20591	Piston, Clutch	2
5	P18609	Seperator Plate	12
6	P20599	Belleville Spring	8
7	P20592	Retainer Plate	2
8	P20602	Clutch Plate	12
9	P20605	Retaining Ring	2
10	P18611	Snap Ring	2
11	P25400	Ring Seal, Including Back-Up Ring	2
12	P25400	Back-Up Ring, Including Ring Seal	2
13	P20612	O-Ring	2
14	P24451	Bearing	1
15	P24450	Bearing	1
16	P22741	Bearing	2
17	P20670	Bearing	1
18	P18620	Ring Seal	3
19	P18614	Retaining Ring	2
20	P18618	Retaining Ring	1
21	P20625	Retaining Ring	2



ITEM	PART NO.	DESCRIPTION	QTY.	
	P24538	Clutch Assy., 3rd Stage	Spec 7711A & 8239A	1
	P20672	Clutch Assy., 3rd Stage	Spec 7711B, 8239B & 9673	1
	P26892	Clutch Assy., 3rd Stage	Spec 9673D	1
1	P20673	Shaft	Spec 7711A & 8239A	1
	P24576	Shaft	Spec 7711B, 8239B & 9673	1
	P26889	Shaft	Spec 9673D	1
2	P20678	Gear & Hub		1
3	P20682	Gear, Hi Range		1
4	P20683	Gear & Hub		1
5	P18614	Retaining Ring		2
6	P20670	Bearing		1
7	P20591	Piston, Clutch		2
8	P20592	Retainer Plate, Clutch		2
9	P20599	Belleville Spring		8
10	P20602	Clutch Plate		10
11	P18609	Seperator Plate		10
12	P20605	Retaining Ring		2
13	P18611	Snap Ring		2
14	P25400	Ring Seal, Including Back-Up Ring		2
15	P25400	Back-Up Ring, Including Ring Seal		2
16	P20612	O-Ring		2
17	P24451	Bearing		1
18	P24450	Bearing		1
19	P18620	Ring Seal		3
20	P18618	Retaining Ring		2
21	P22741	Bearing		1
22	P20625	Spring Retainer		2



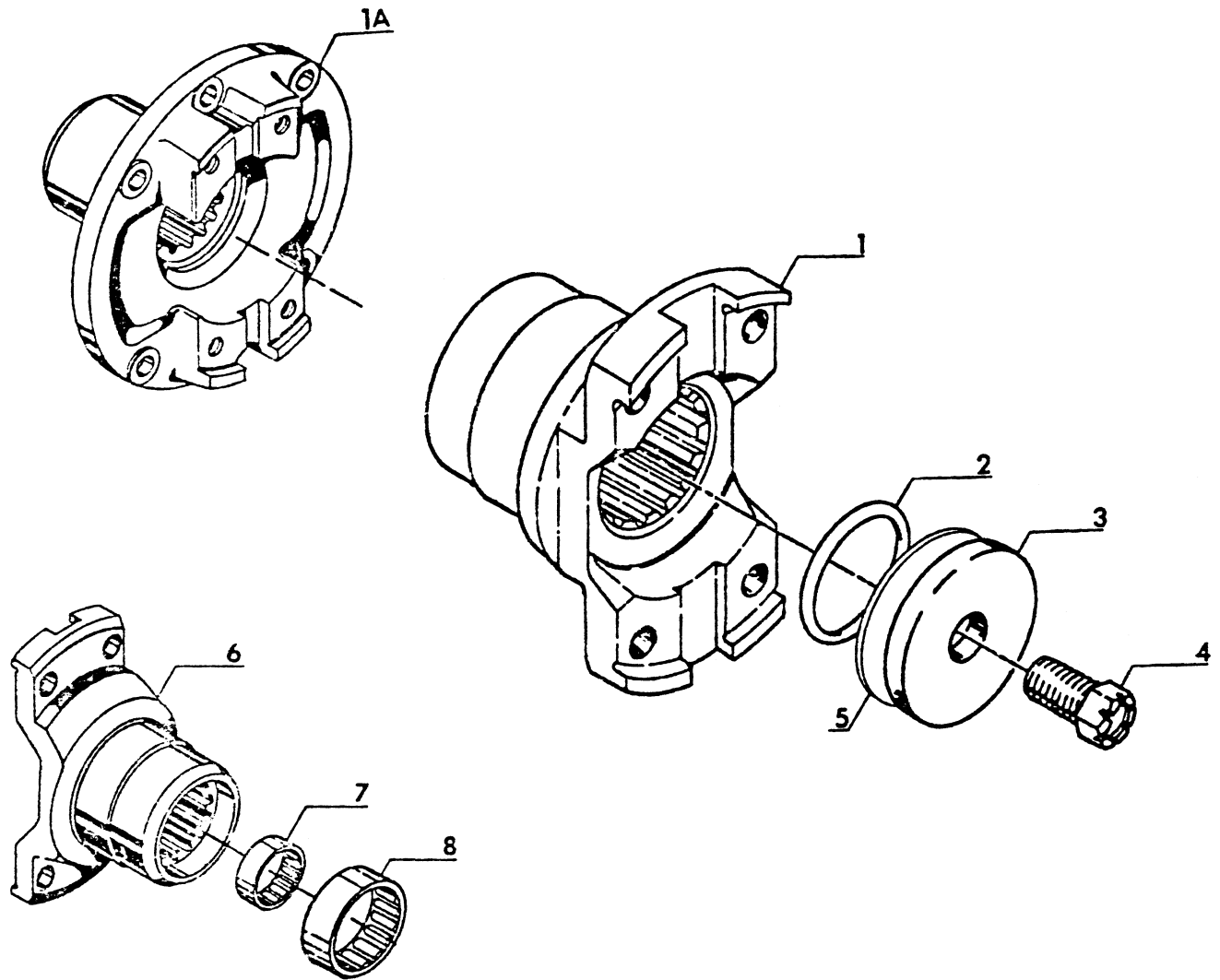
ITEM	PART NO.	DESCRIPTION	QTY.
	P19433	Front Cover Assembly	Spec 6037 1
	P24531	Front Cover Assembly	Spec 8239A 1
	P24523	Front Cover Assembly	Spec 8239B & 9673 1
	P18505	Front Cover Assembly	Spec 7201 & 5800 1
	P24532	Front Cover Assembly	Spec 7711A 1
	P24524	Front Cover Assembly	Spec 7711B 1
1	P18506	Front Cover	Spec 6037, 7201 & 5800 1
	P24521	Front Cover	Spec 7711A & 8239A 1
	P24525	Front Cover	Spec 7711B, 8239B & 9673 1
2	P18507	Gear	1
3	P18508	Shaft	1
4	P18509	Bearing	2
5	P18510	Ring Retainer	2
6	P18511	Ring Retainer	1
7	P18512	Input Shaft	Spec 5800, 7201, 8239, & 9673 1
	P19754	Input Shaft	Spec 6037 & 7711A 1
	P24537	Input Shaft	Spec 7711B 1
	P26880	Input Shaft, 24T	Spec 9673D 1
8	P18516	Tube	1
	P19443	Tube	Spec 6037 & 7711A ONLY 1
9	P18517	Cover Plate	1
10	P19755	Ring Seal	1
	P26883	Ring Seal	Spec 9673D 1
11	P18514	Snap Ring	1
	P26877	Snap Ring	Spec 9673D 1
12	P18518	Capscrew	6
13	P18519	Lockwasher	6
14	P19758	Capscrew	1
15	P19444	Washer Thrust Pump	1
16	P18524	Input Hub Gear	1
17	P18525	Gasket	Spec 6037, 7201, & 5800 1
	P24582	Gasket, Plastic Strip	Spec 7711, 8239, & 9673 1
18	P18526	Bearing Retainer	1
19	P18529	Capscrew	7
20	P18530	Lockwasher	7
21	P18531	Elbow	1
22	P18532	Breather	1
	P12034	Breather	Spec 7711, 8239, & 9673 1
	P25444	Breather	Spec 9673C 1
23	P18528	Oil Seal	1
24	P18527	Bearing	1
25	P18672	Plug	1
26	P19759	Plug	1
27	P18513	Bearing	1
	P26879	Bearing	Spec 9673D 1
28	P18522	Bearing Retainer	Spec 7711A & 8239A ONLY 1
	P24579	Bearing Retainer	Spec 1
	P26881	Bearing Retainer	Spec 9673D 1
29	P19760	Regulator Valve	1
30	P18520	Capscrew	4
31	P18521	Starwasher	4
32	P19756	O-Ring	1
33	P19757	Oil Passage Cover	1



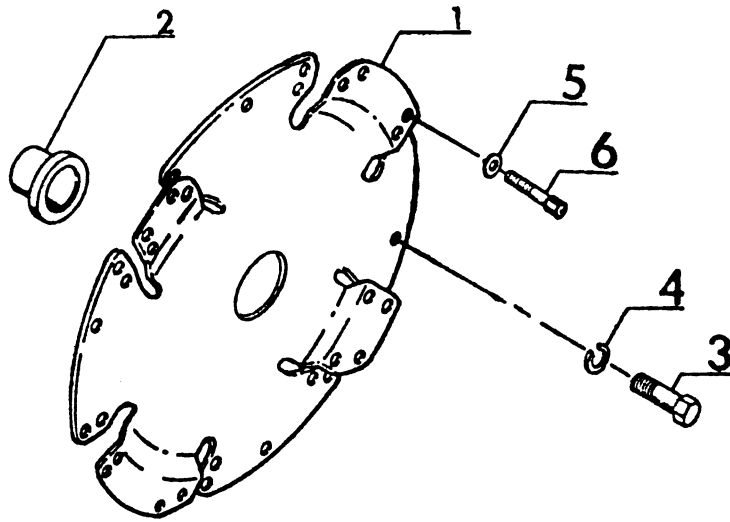
ITEM	PART NO.	DESCRIPTION	QTY.
	P18004	Pump Assembly (Use P18581 For Spec 5800)	1
1	P18582	Housing	1
2	P19826	Bearing (Use P18583 For Spec 5800)	2
3	P18584	Thrust Washer	1
4	P19827	Drive Shaft (Use P18585 For Spec 5800)	1
5	P19828	Key, Woodruff (Use P18586 For Spec 5800)	1
6	P18587	Gerotor	1
7	P18588	Pump Retainer	1
8	P18702	Starwasher, Ext. 5/16"	6
9	P18589	Capscrew	6
10	P18590	Bearing	1
11	P18591	Gear	1
12	P18592	Retaining Ring	1
13	P18593	Gasket	1
14	P18594	O-Ring	1
15	P18703	Starwasher, 3/8"	4
16	P18595	Capscrew	3
17	P18596	Capscrew	1
18	P18597	O-Ring	1
19	P18598	Adaptor Sleeve, "B"	1
20	P18599	Sleeve Spacer	1
21	P18600	Adaptoe Plate	1
22	P18573	Capscrew	4
23	P18572	Lockwasher	4
24	P18602	O-Ring	1

ITEM	PART NO.	DESCRIPTION	QTY.
	P18653	Valve Control Assy. Spec 5800, 6037, 7201, 7711A, 8239A	1
	P24530	Valve Control Assy. Spec 7711B, 8239B, 9673	1
1	P18654	Body, Control Valve, Spec 7711A, 8239A, 6037, 7201, 5800	1
	P24529	Body, Control Valve, Spec 7711B, 8239B, 9673	1
2	P18675	Gasket, Valve Body	1
3	P18676	Spring, Detent	2
4	P18677	Ball	2
5	P22796	Capscrew	12
6	P22799	Flat Washer	15
7	P18672	Plug, Pipe	4
8	P18518	Capscrew	3
9	P19825	45° Elbow, Street	1
10	P19105	Switch, Reverse Alar m - See Note	1
11	P19822	Pin, Use P18657, Snap Ring For Spec 5800	1
12	P18665	Plug	2
13	P18666	O-Ring	3
14	P19823	Stem, Forward - Reverse	1
15	P18668	Oil Seal	2
16	P18669	Roll Pin	1
17	P19824	Stem, Spec 5800, 6037 & 7201	1
	P24522	Stem, Spec 7711, 8239 & 9673	1
18	P18671	Plug	1
19	P18662	Spring, Regulator-Spec 7711A, 8239A, 6037, 7201 & 5800 ONLY	1
20	P18673	Switch, Neutral Safety	1
21	P18674	Spacer, Spring	A/R
22	P18658	Valve, Pump	1
23	P18656	Spring, Accumulator	1
24	P18655	Valve Modulator, Spec 7711A, 8239A, 6037, 7201, 5800	1
	P24527	Valve Modulator, Spec 7711B, 8239B, 9673	1
25	P18663	Valve, Regulator, Spec 7711A, 8239A, 6037, 7201, 5800	1
	P24528	Valve, Regulator, Spec 7711B, 8239B, 9673	1
26	P24526	Cap, Regulator, Spec 7711B, 8239B, 9673	1
27	P24599	Washer, Spec 7711B, 8239B, 9673	1
28	P18659	Spring, Pump Valve	1
29	P18661	O-Ring	1
30	P18660	Plug, Pump Valve	1
31	P18664	Dowel Pin	1

NOTE: There is no port on valve for reverse alarm switch on transmission Spec 5800.



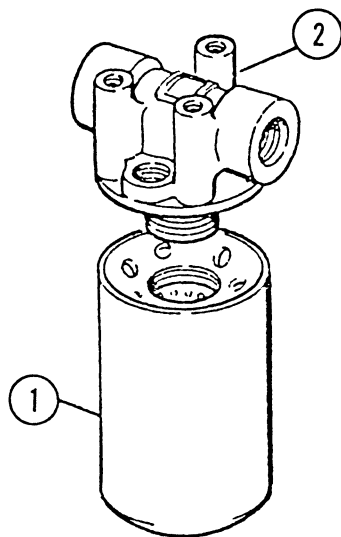
ITEM	PART NO.	DESCRIPTION	QTY.
	P18683	Yoke Group Assembly Spec 5800, 6037 & 7201	1
	P20426	Yoke Group Assembly Spec 7711, 8239 & 9673	1
	P25409	Yoke Group Assembly Spec 9673C only	1
1	P18684	Yoke Flange, Front	1
1A	P25410	Yoke Flange, Front Spec 9673C only	1
2	P18685	O-Ring	1
3	P18686	Washer Spec 5800, 6037 & 7201	1
	P20427	Washer Spec 7711, 8239 & 9673	1
4	P20428	Bolt, Special	1
5	P19820	Shim Package (not shown)	1
6	P20429	Yoke Flange, Rear	1
7	P24457	Bearing	1
8	P24458	Bearing	1



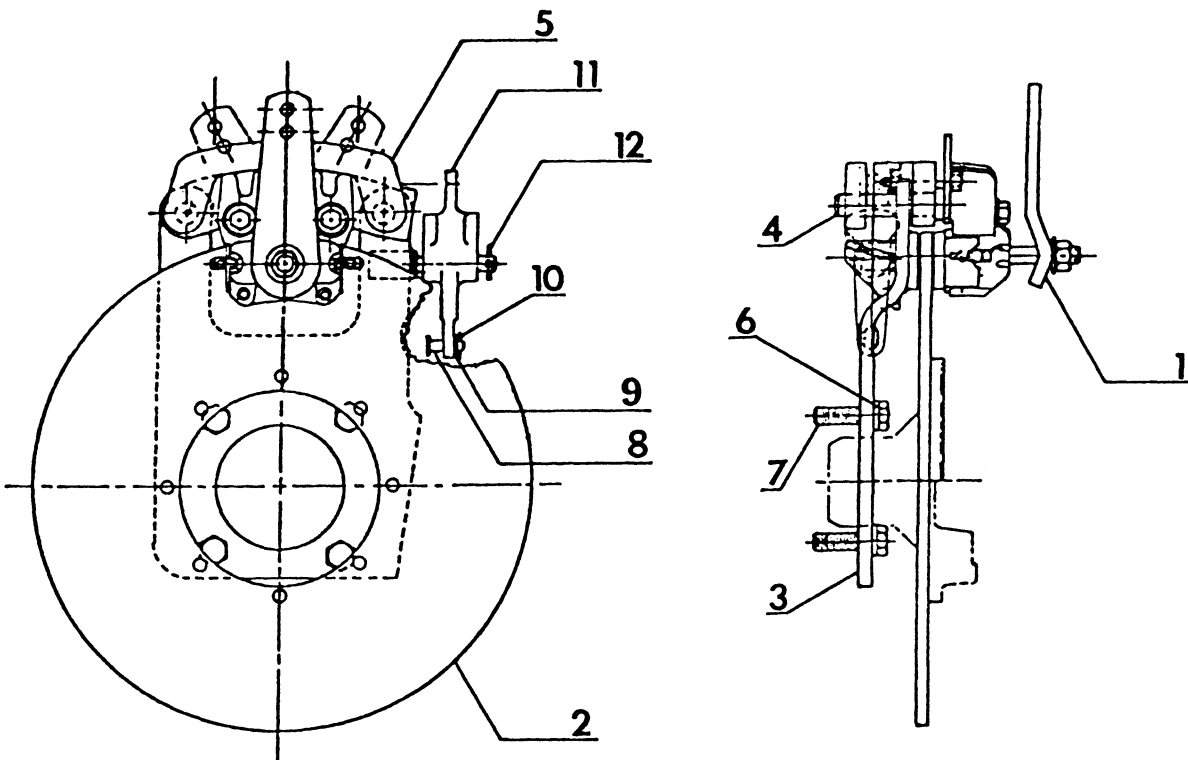
ITEM	PART NO.	DESCRIPTION	QTY.
		Drive Plate Assembly (Incl. Item 2)	
1		CHRYSLER ENGINES	
	P20968	Spec 5800, 7201 & 8239	1
	P20969	Spec 6037 & 7711	1
		WAUKESHA ENGINES	
	P20968	Spec 5800	1
	P19278	Spec 6037 & 7711A	1
	P22802	Spec 7711B & 9673	1
		DETROIT ENGINES	
	P19441	Spec 7201, 8239 & 9673	1
		DEUTZ ENGINES	
P19278	Spec 7711A	1	
P22802	Spec 7711B & 9673		
	DEERE ENGINES		
P20968	Spec 8239	1	
P22647	Spec 9673	1	
2	P25406	Sleeve Hub - DEERE (DEUTZ Use P25405)	1
3	P18536	Capscrew, 3/8-16 NC x 3/4	8
4	P18530	Lockwasher, 3/8 Medium Spring	8
5	P18537	Washer, Half Round	8
	P22799	Washer, Flat	8
6	P18538(B)	Capscrew, Socket Hd., 5/16-24 NF x 2 3/4 (Nylock)	8
	P19438(C)	Capscrew, Socket Hd., 5/16-24 NF x 1 1/4 (Nylock)	8

NOTES:

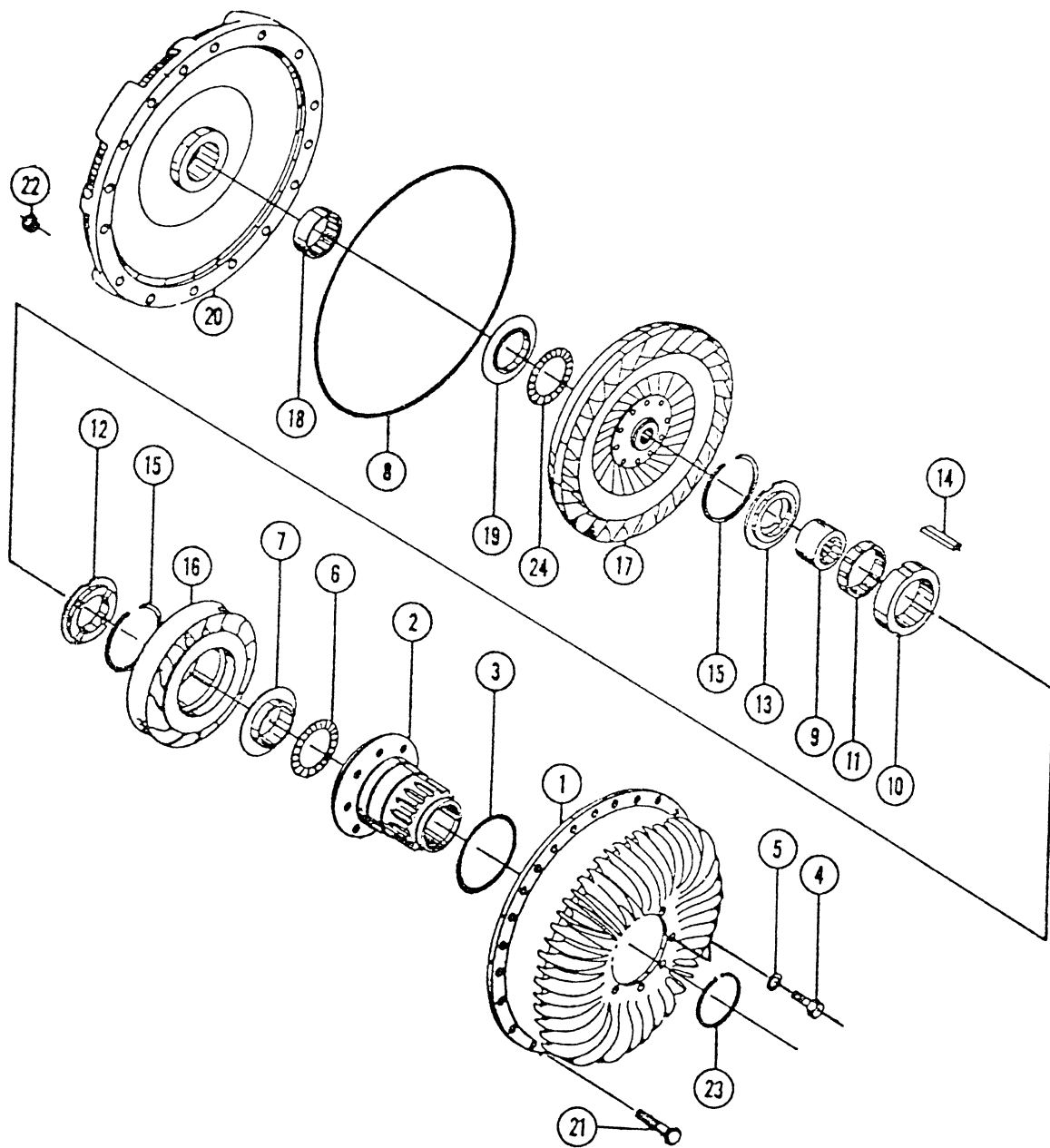
- A) Items 3 Thru 6 Are Used to Bolt Drive Plate to Converter.
- B) Used With 12 3/4" Converter.
- C) Used With 11 3/4" Converter.



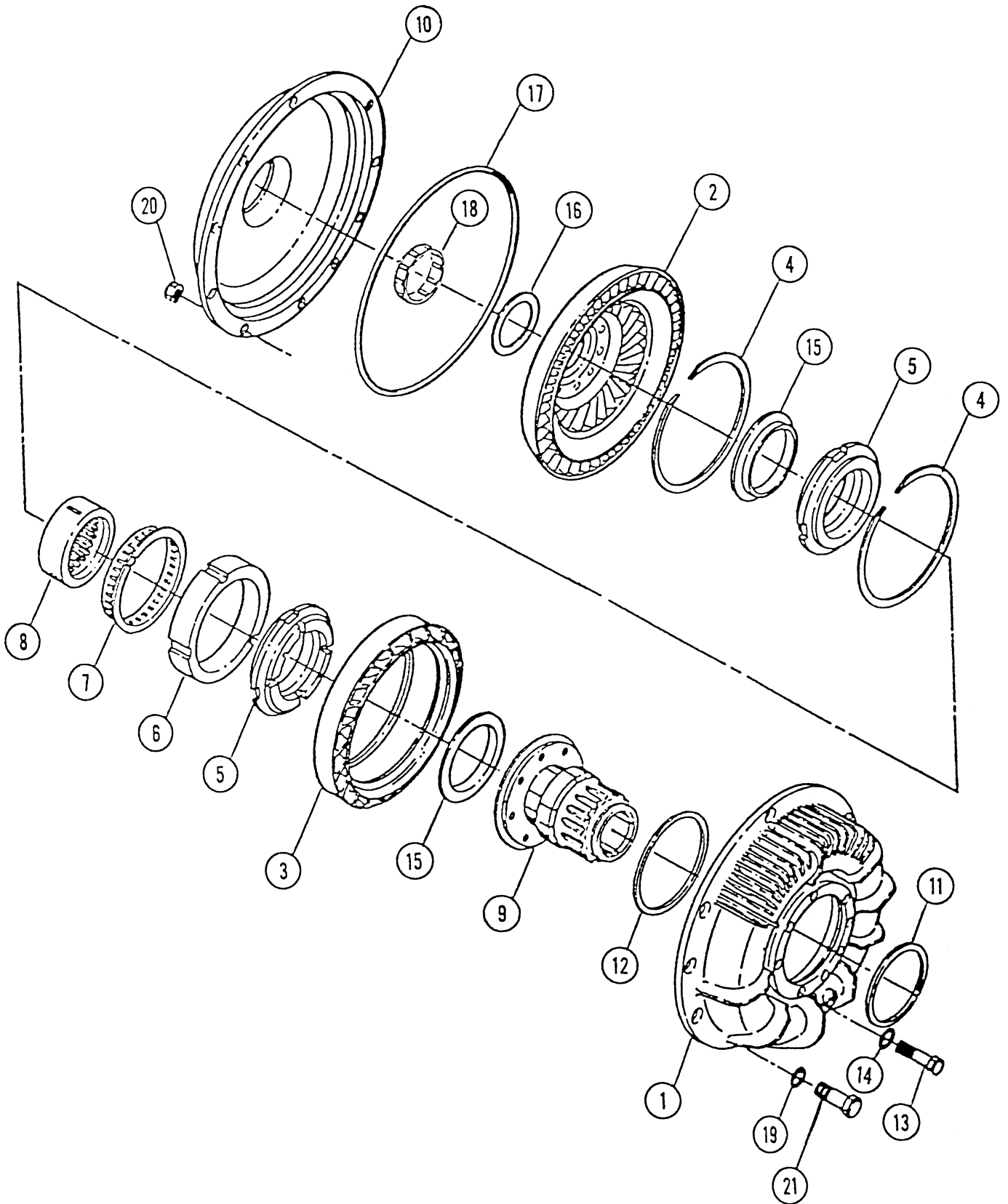
ITEM	PART NO.	DESCRIPTION	QTY.
	P19132	Remote Filter & Base Assembly	1
1.	P19133	Filter	1
2.	P19821	Base	1



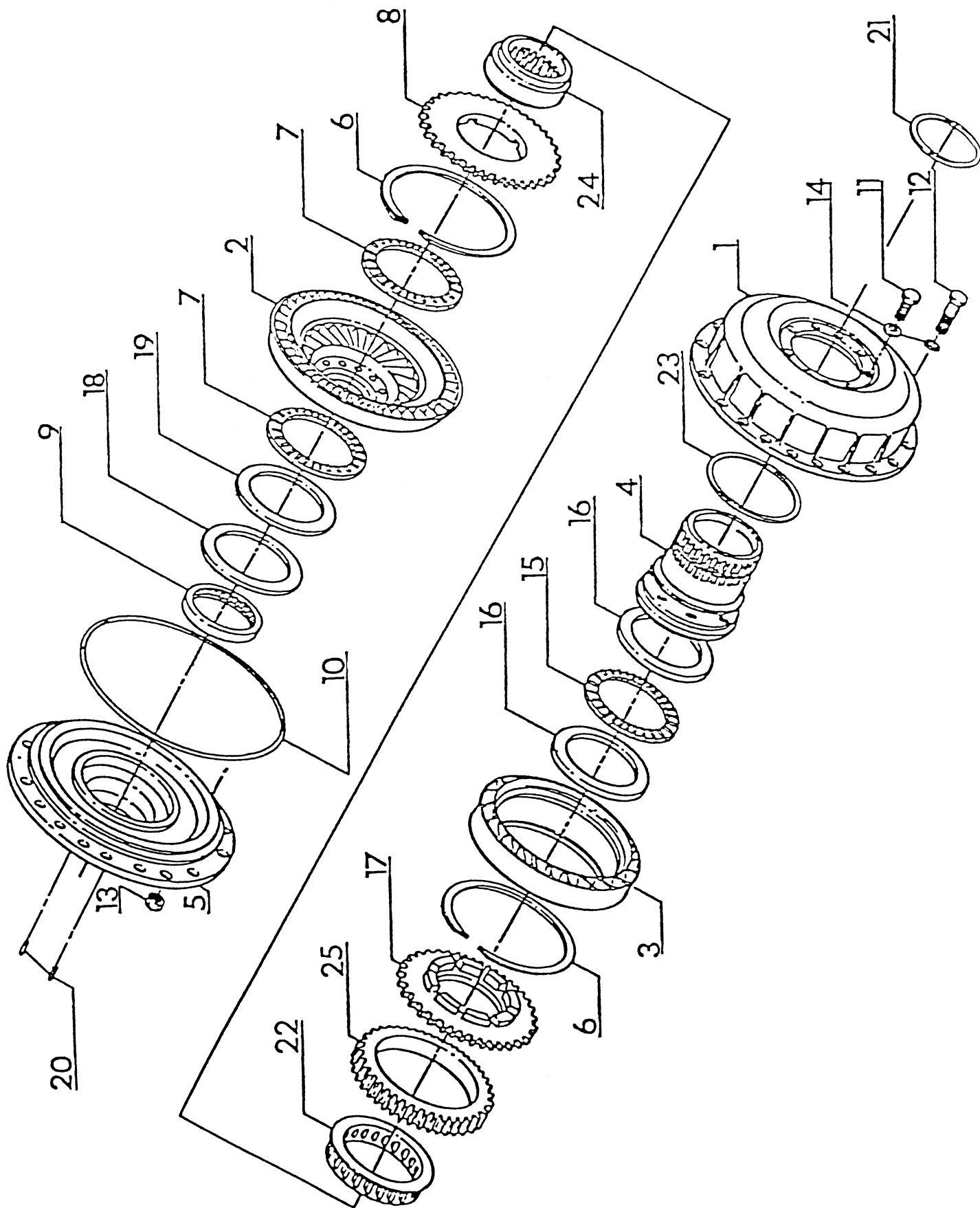
ITEM	PART NO.	DESCRIPTION	QTY.
1	P24539	Brake Caliper W/Pads	1
2	P25075	Disc. Brake	1
3	P25402	Mounting Bracket	1
4	P25424	Pin	2
5	P25403	Retainer, Pin	1
6	P18572	Lockwasher	4
7	P18573	Capscrew	4
8	P25423	Clevis Pin	1
9	P25427	Flatwasher	1
10	P25425	Cotter Pin	1
11	P25404	Lever, Disconnect	1
12	P25426	Cotter Pin	1
13	P24602	Spring, Short	2
14	P24601	Spring, Long	1
15	P26210	Brake Pad Kit	1



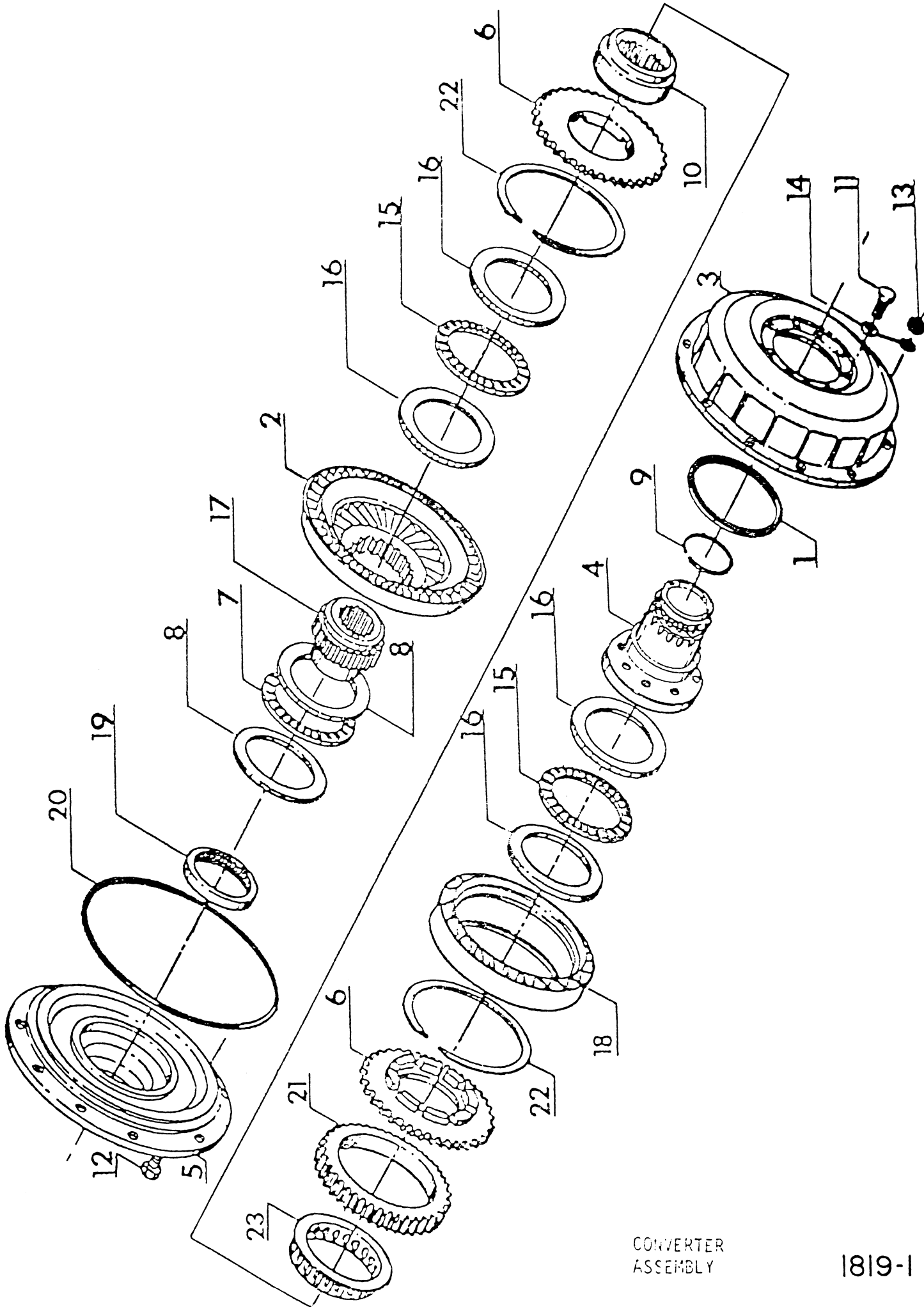
ITEM	PART NO.	DESCRIPTION	QTY.
	P17773	Converter Assembly Spec 5800	1
	P19439	Converter Assembly Spec 7201	1
	P20647	Converter Assembly Spec 8239A & 8239B Spec 9673 (Detroit Only)	1
1	P18539	Impeller	1
2	P18540	Hub	1
	P20734	Hub (Use w/P20647 Assy. Only)	1
3	P18541	O-Ring	1
4	P18542	Capscrew	12
5	P18543	Seal Washer	12
6	P18544	Bearing	2
7	P18545	Thrust Washer, Rear	1
8	P18546	O-Ring Gasket	1
9	P18547	Inner Race Clutch	1
10	P18548	Outer Race Clutch	1
11	P18549	Clutch Sprag	1
12	P18550	Clutch Retainer, Rear	1
	P20736	Clutch Retainer, Rear (Use W/P20647 Assy.Only)	1
13	P18551	Clutch Retainer, Front	1
14	P18552	Key, Square	4
15	P18553	Snap Ring	2
16	P18554	Stator	1
17	P19762	Turbine	1
18	P18556	Bearing	1
19	P18557	Thrust Washer	1
20	P18558	Front Cover (Use W/P17773 Assy. Only)	1
	P19761	Front Cover	1
21	P18559	Capscrew	16
22	P18560	Flanged Nut	16
23	P18561	Ring Seal (Use W/P17773 Assy. ONLY)	1
	P19466	Ring Seal	1
24	P20742	Bearing	1



ITEM	PART NO.	DESCRIPTION	QTY.
	P19434	Converter Assembly	1
		Spec 6037 & 7711A	
1	P19454	Impeller	1
2	P19457	Turbine	1
3	P19450	Stator	1
4	P19451	Retaining Ring	2
5	P19449	Retainer, Stator	2
6	P19446	Outer Race	1
7	P19447	Clutch Sprag	1
8	P19448	Inner Race	1
9	P19452	Hub, Impeller	1
10	P19459	Converter Cover	1
11	P19466	Seal Ring	1
12	P19453	Seal Ring	1
13	P19455	Capscrew	8
14	P19456	Lockwasher	8
15	P19458	Thrust Washer	2
16	P20649	Thrust Washer	1
17	P19460	O-Ring	1
18	P19467	Bearing	1
19	P19464	Washer	10
20	P19462	Lock Nut	10
21	P19461	Capscrew	10



ITEM	PART NO.	DESCRIPTION	QTY.
	P22803	Conveter Assembly	1
		Spec 7711B & 9673	
1	P24506	Impeller	1
2	P24508	Turbine	1
3	P22727	Stator	1
4	P24507	Impeller Hub	1
5	P22731	Cover	1
6	P22774	Retaining Ring	2
7	P22756	Thrust Bearing	2
8	P22729	Retainer	1
9	P22750	Bearing	1
10	P22730	Seal	1
11	P22789	Capscrew	8
12	P22790	Capscrew	12
13	P18560	Nut, Hex	12
14	P22799	Flatwasher	20
15	P18544	Thrust Bearing	1
16	P22758	Thrust Race	2
17	P22733	Retainer	1
18	P22759	Thrust Race	1
19	P22760	Thrust Race	1
20	P24470	Roll Pin	2
21	P19466	Ring Seal	1
22	P18549	Clutch Sprag	1
23	P22762	O-Ring	1
24	P24509	Race, Inner	1
25	P22728	Race, Outer	1



CONVERTER
ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
	P22803	Complete Converter Assembly Spec 9673C	1
1	P22762	O-Ring	1
2	P25414	Turbine	1
3	P25433	Impeller	1
4	P25434	Hub, Impeller	1
5	P22731	Cover	1
6	P25416	Clutch Retainer	2
7	P22756	Thrust Bearing	1
8	P22760	Thrust Race	2
9	P18561	Ring Seal	1
10	P24509	Inner Race	1
11	P22789	Capscrew	8
12	P18518	Capscrew	12
13	P25430	Nut, Hx.	12
14	P22648	Flatwasher	20
15	P25431	Thrust Bearing	2
16	P25417	Thrust Washer	4
17	P25435	Hub, Turbine	1
18	P25418	Stator	1
19	P22750	Bearing	1
20	P22730	Seal	1
21	P25413	Outer Race	1
22	P25408	Retaining Ring	2
23	P18549	Clutch Sprag	1

SERVICE PARTS
 NO. 53186, NO. 53187
 PS-1200 PLANETARY STEERING AXLE ASSEMBLY

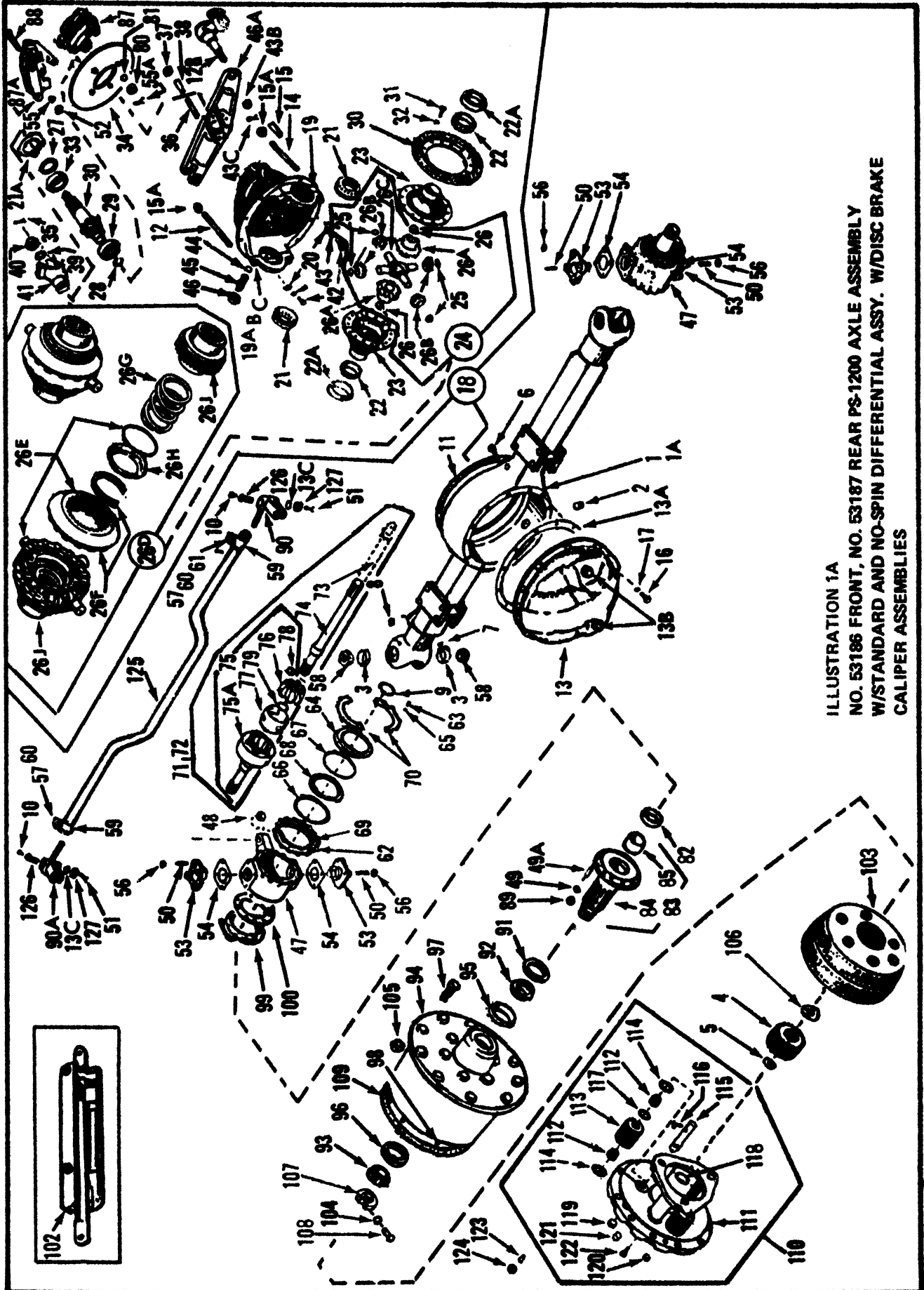


ILLUSTRATION 1A
 NO. 53186 FRONT, NO. 53187 REAR PS-1200 AXLE ASSEMBLY
 W/STANDARD AND NO-SPIN DIFFERENTIAL ASSY. W/DISC BRAKE
 CALIPER ASSEMBLIES

NO. 53187 PS-1200 PLANETARY
STEERING AXLE ASSY. W/STANDARD
DIFFERENTIAL ASSEMBLY

NO. 53186 PS-1200 PLANETARY
STEERING AXLE ASSY. W/NO-SPIN
DIFFERENTIAL ASSEMBLY

ITEM	DESCRIPTION	QUANTITY		PART NO.
		A	B	
	COMPLETE PS-1200 PLANETARY STEERING AXLE ASSEMBLY (Front)			
	W/NO-SPIN DIFFERENTIAL ASSEMBLY, W/HEAVY DUTY 22°			
	BALL ENDS	1		P-18068
	COMPLETE PS-1200 PLANETARY STEERING AXLE ASSEMBLY (Rear)			
	W/STANDARD DIFFERENTIAL ASSEMBLY, W/HEAVY DUTY 22°			
	BALL ENDS		1	P-18069
1	Axle Housing Weldment (Front)	1		P-19296
1A	Axle Housing Weldment (Rear)		1	P-19297
2	Plug – Magnetic Drain 1/2"-14	1	1	P-13780
3	Cup – Bearing	4	4	P-19298
4	Gear – Sun	2	2	P-13782
5	Ring – Retaining	2	2	P-13783
6	Vent – Axle Air	1	1	P-13784
7	Plug – Ball End Grease, 3/8" NPT	2	2	P-13785
8	Fitting – Lubrication, 1/8" NPT Straight	2	2	P-13786
9	Seal – Oil, Axle Shaft	2	2	P-13787
10	Fitting – Grease, 1/4"-28 (Tie Rod)	2	2	P-13788
**11	Gasket – Differential Carrier	1	1	P-13789
12	Stud – Carrier Mounting, 7/16"-14 X 7/16"-20 X 1.88"	6	6	P-17535
13	Cover – Differential Assembly	1	1	P-13791
**13A	Gasket – Differential Cover	1	1	P-19299
13B	Plug – Square Socket, 3/4"-14 (Steel)	2	2	P-19300
13C	Washer – Flat, 5/8"	2	2	P-19306
14	Stud – Carrier Mounting, 7/16"-14 X 7/16"-20 X 2.25"	4	4	P-13795
15	Dowel – Tapered, Carrier Mounting	4	4	P-19307
15A	Locknut – Carrier Mounting, 7/16"-14 (Grade 8)	10	10	P-17537
16	Bolt – Differential Cover Mounting, 7/16"-20 X 1.00", Hex, (Grade 5PH)	10	10	P-19308
17	Lockwasher – Differential Cover Mounting Bolt, 7/16", P, Regular			
	Spring	10	10	P-13797
18	Complete Carrier Assembly (6.17:1 Ratio) – Consists of Indented Items			

NO. 53187 PS-1200 PLANETARY
STEERING AXLE ASSY. W/STANDARD
DIFFERENTIAL ASSEMBLY

NO. 53186 PS-1200 PLANETARY
STEERING AXLE ASSY. W/NO-SPIN
DIFFERENTIAL ASSEMBLY

ITEM	DESCRIPTION	QUANTITY		PART NO.
		A	B	
	19 thru 23, 26D thru 46A	1		P-19342
18	Complete Carrier Assembly (6.17:1 Ratio) – Consists of Indented Items			
	19 thru 26C, 27 thru 46A		1	P-19343
19	Carrier Housing & Cap Assembly	1	1	P-13799
19A	Bolt – Hex, 5/8" - 11 X 3.25" (Grade 8PH)	4	4	P-19309
19B	Dowel	4	4	P-13803
19C	Lockwasher, 5/8", P, Regular Spring	4	4	P-13804
20	Lock – Differential Bearing Adjusting Nut	2	2	P-13805
21	Locknut – Differential Side Bearing	2	2	P-13806
21A	Gasket	1	1	P-13794
22	Cone – Differential Side	2	2	P-17185
22A	Cup – Differential Side	2	2	P-17186
23	Differential Case & Cover Assembly	1	1	P-13808
24	Complete Differential Assembly – Standard, Consists of Indented			
	Items 25 thru 26C		1	P-17142
25	Washer – Thrust		4	P-17144
26	Washer – Thrust		2	P-17145
26A	Gear – Side		2	P-19310
26B	Gear – Pinion		4	P-19311
26C	Spider		1	P-19312
26D	Complete No-Spin Differential Assembly – Consists of Indented Items			
	26E thru 26J	1		P-19344
26E	Spider Assembly – Consists of Spider, Center Cam, Snap Ring			
	which are not serviced separately	1		P-19345
26F	Clutch & Holdout Ring Assembly – Consists of Clutch Member			
	& Holdout Ring which are not serviced separately	2		P-19346
26G	Spring	2		P-19347
26H	Spring Retainer	2		P-19348
26J	Side Gear	2		P-19349
27	Seal Oil	1	1	P-13841
28	Ring – Lock	1	1	P-13811

NO. 53187 PS 1200 PLANETARY
STEERING AXLE ASSEMBLY W/STANDARD
DIFFERENTIAL ASSEMBLY

NO. 53186 PS 1200 PLANETARY
STEERING AXLE ASSY. W/NO-SPIN
DIFFERENTIAL ASSEMBLY

ITEM	DESCRIPTION	QUANTITY		PART NO.
		A	B	
29	Bearing – Roller, Pinion Shaft (Rear)	1	1	P-13812
30	Ring Gear & Pinion Assembly (6.17:1 Ratio)	1	1	P-13813
31	Bolt – Hex, Differential Ring Gear, 1/2" - 20 X 2.00" (Grade 7)	12	12	P-13814
32	Lockwasher – Ring Gear Bolt, 1/2", P, Heavy Spring	12	12	P-13815
33	Bearing – Ball, Pinion Shaft (Front)	1	1	P-13816
34	Disc – Brake	1	1	P-19350
35	Cotter Pin – Pinion Nut, 1/8" X 1.75"	1	1	P-13818
36	Stud – Steering Cylinder & Caliper Mounting Bracket, 5/8"-11 & 5/8" 18 X 2.53"	6	6	P-19351
37	Nut – Hex, 5/8" - 18 (Grade 2Z)	6	6	P-13820
38	Dowel – Tapered	6	6	P-13821
39	Washer	1	1	P-13822
40	Nut – Pinion, 1 1/8"-18, Hex	1	1	P-13823
41	Yoke – Brake	1	1	P-19352
42	Bolt – Bearing Adjusting Nut Lock, 5/16"- 18 X 0.62" (Grade 5PH)	2	2	P-19313
43	Lockwasher, Lock Bolt, 5/16", P, Regular Spring	2	2	P-13826
43B	Locknut, 1/2" - 20 (Grade 8)	4	4	P-13842
43C	Cotter Pin, 1/8" X 1.25", P	4	4	P-13835
44	Pad – Thrust	1	1	P-13827
45	Screw – Thrust Pad	1	1	P-13828
46	Nut – Thrust Pad Screw, 7/8"-14 Jam	1	1	P-13829
46A	Stud & Caliper Mounting Assembly (Front)	1	1	P-19353
47	Housing – Steering Knuckle (LH & RH)	2	2	P-19314
48	Bushing – Housing, Steering Knuckle (LH & RH)	2	2	P-19315
49	Washer – Clipped, 7/16"	24	24	P-19355
49A	Stud – Spindle to Knuckle, 7/16"-14 & 7/16"-20 X 2.00"	24	24	P-13833
50	Stud – Trunnion to Knuckle, 1/2"-13 & 1/2"-20 X 2.00"	16	16	P-13834
51	Cotter Pin, 1/8" X 1.25" Long (Tie Rod Bolt)	2	2	P-13835
52	Locknut, 1/2"-13 (Grade 8)	2		P-19356
53	Trunnion	4	4	P-19317

NO. 53187 PS-1200 PLANETARY
STEERING AXLE ASSY. W/STANDARD
DIFFERENTIAL ASSEMBLY

NO. 53186 PS-1200 PLANETARY
STEERING AXLE ASSY. W/NO-SPIN
DIFFERENTIAL ASSEMBLY

ITEM	DESCRIPTION	QUANTITY		PART NO.
		A	B	
54	Shim – Knuckle Bearing (.005" Thick)	AR	AR	P-13839
54	Shim – Knuckle Bearing (.010" Thick)	AR	AR	P-13840
55	Washer – Flat	2		P-19357
55A	Cotter Pin, 1/8" X 1.50" P	2	2	P-19358
56	Locknut, 1/2"-20 (Grade 8)	16	16	P-13842
57	Lockwasher, 5/8", P, Regular Spring (Tie Rod Clamp Bolt)	2	2	P-13843
58	Cone – Bearing	4	4	P-19318
59	Clamp – Tie Rod	2	2	P-13845
60	Bolt – Hex Head, 5/8"-11 X 2.25" Long (Grade 5PH), (Tie Rod Clamp Mounting)	2	2	P-19319
61	Nut – Hex, 5/8"-11 (Grade 2P) (Tie Rod Clamp Bolt)	2	2	P-13847
62	Gasket – Knuckle	2	2	P-13848
63	Bolt – Retainer, 5/16"-18 X 0.62" (Grade 2PH)	24	24	P-19321
64	Ring – Split Retainer	2	2	P-19322
65	Lockwasher – Retainer, 5/16", Z, Heavy Spring	26	26	P-13851
66	Seal – Felt, Steering Ball	2	2	P-19323
67	Spring – Ball Seal	2	2	P-19324
68	Seal – Oil, Ball End	2	2	P-19325
69	Flange	2	2	P-19326
70	Ring – Retainer Half	4	4	P-19327
71	Complete Shaft & U-Joint Assembly (LH) – Consists of Indented Items			
	73 & 75	1	1	P-13858
72	Complete Shaft & U-Joint Assembly (RH) – Consists of Indented Items			
	74 & 75	1	1	P-13859
73	Shaft – Long (37.06")	1	1	P-13860
74	Shaft – Short (30.68")	1	1	P-13861
75	Complete U-Joint Assembly – Consists of Indented Items 75A thru 79	1	1	P-13857
75A	Bell – Outer Race	1	1	P-13862
76	Race – Inner	1	1	P-13863
77	Cage, U-Joint	1	1	P-13864
78	Ball, U-Joint	6	6	P-13865
79	Ring – Snap	1	1	P-13866

NO. 53187 PS-1200 PLANETARY
STEERING AXLE ASSY. W/STANDARD
DIFFERENTIAL ASSEMBLY

NO. 53186 PS-1200 PLANETARY
STEERING AXLE ASSY. W/NO-SPIN
DIFFERENTIAL ASSEMBLY

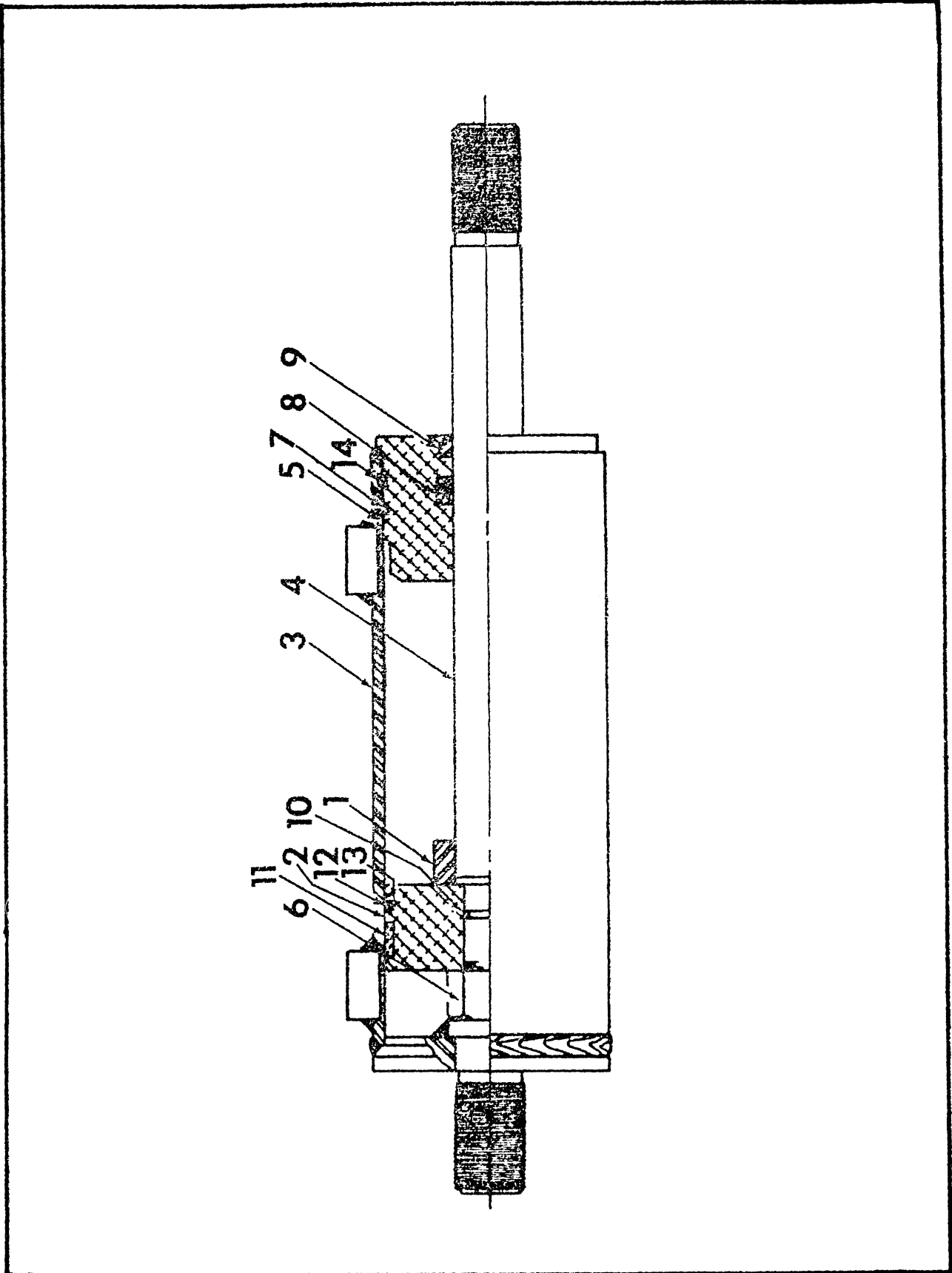
ITEM	DESCRIPTION	QUANTITY		PART NO.
		A	B	
80	Nut-Heavy, Hex, Slotted, 5/8"-11 (Grade 2P)	2	2	P-19359
81	Washer, 21/32" X 3/8" X 3/16"	2	2	P-19360
82	Seal - Oil	2	2	P-13869
83	Complete Spindle Assembly (LH & RH) Consists of indented items 84,85	2	2	P-13870
84	Spindle Only	2	2	P-13871
85	Bushing - Spindle (LH & RH)	2	2	P-13872
87	Complete Caliper Assy. - See pages 35A, 36A	1	1	P-19145
87A	Complete Caliper Assy. - (Mechanical)-See pages 41A, 42A	1		P-19146
88	Bolt	2		P-19361
89	Locknut - Spindle to Flange, 7/16"-20 (Grade 8)	24	24	P-13876
90	Clevis (LH) - Tie Rod End	1	1	P-13877
90A	Clevis (RH) - Tie Rod End	1	1	P-13878
91	Seal - Oil	2	2	P-13879
92	Cone - Bearing (Inner)	2	2	P-13880
93	Cone - Bearing (Outer)	2	2	P-13881
	Complete Hub Assembly (LH & RH) Consists of indented items 94-98	2	2	P-19362
94	Hub Only	2	2	P-13883
95	Cup - Bearing (Inner)	2	2	P-13886
96	Cup - Bearing (Outer)	2	2	P-13887
97	Stud - Wheel	20	20	P-13888
98	Stud-Hub to Drive Flange, 7/16"-14X7/16"-20X1.75"	24	24	P-13889
99	Oil Deflector	2	2	P-19363
100	Spacer	2	2	P-19364
102	Hydraulic Strg. Cylinder (Cross) 4-5/8" Stroke, 17 7/16" Collapsed			
	Length - See pages 37A, 38A -#53003 thru S/N 003165	2	2	P 19389
102	Hydraulic Strg. Cylinder (Lantex) 4-5/8" Stroke, 17-7/16" Collapsed			
	Length - See pages 39A, 40A, -#507068 S/N 003166 & up.	2	2	P-19383
103	Ring Gear	2	2	P-19330
104	Lockwasher, 5/16" Heavy Spring	2	2	P-13804
105	Nut - Wheel, 3/4"-16	20	20	P-13894
106	Spacer - Ring	2	2	P-13895
107	Locknut - Bearing, 2 3/4" - 16	2	2	P-13896
108	Bolt - hex, 5/16"-24 X 2.25" (Grade 5PH)	2	2	P-19331

NO. 53187 PS 1200 PLANETARY
STEERING AXLE ASSY. W/STANDARD
DIFFERENTIAL ASSEMBLY

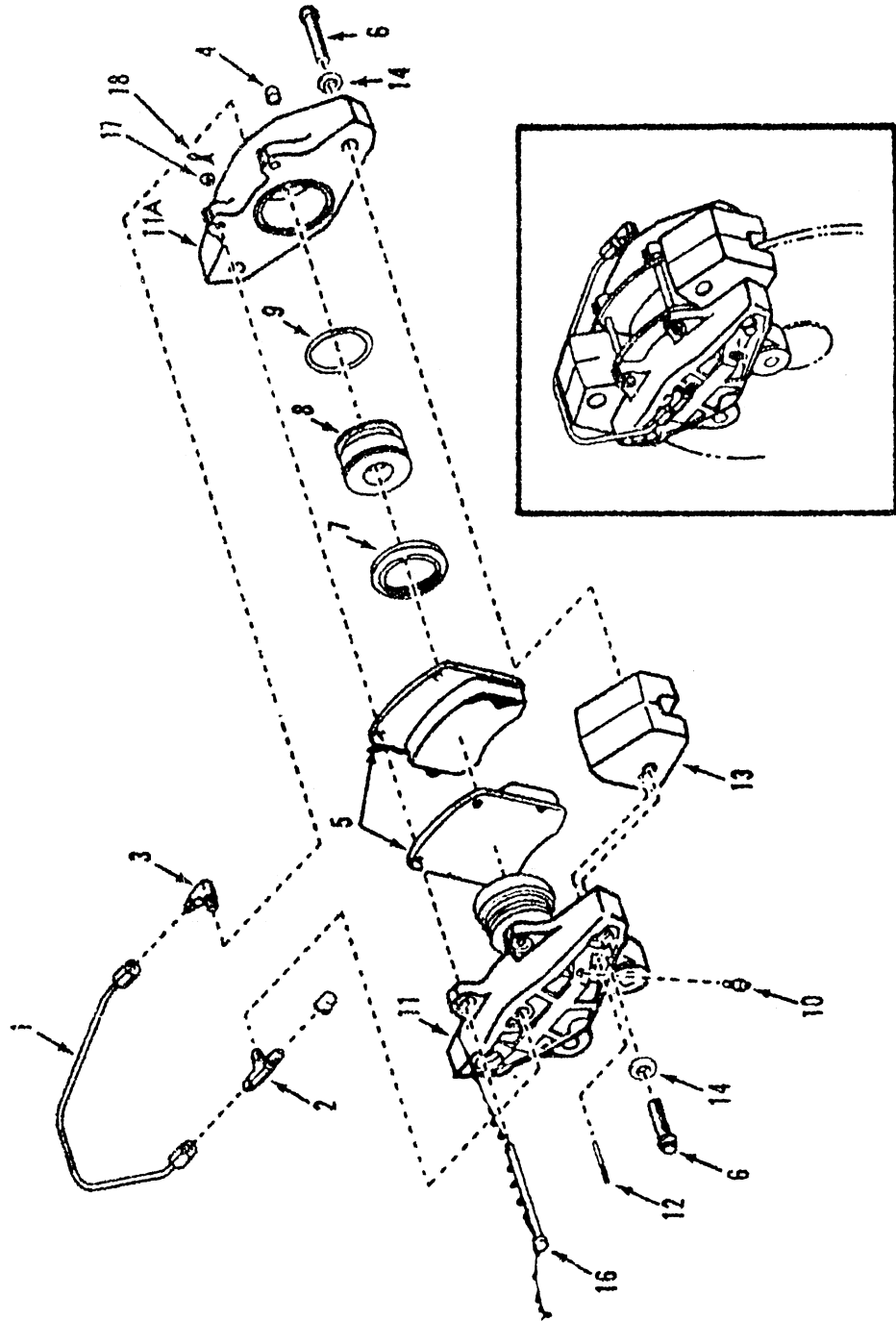
NO. 53186 PS-1200 PLANETARY
STEERING AXLE ASSY. W/NO-SPIN
DIFFERENTIAL ASSEMBLY

ITEM	DESCRIPTION	QUANTITY		PART NO.
		A	B	
**109	Gasket – Drive Flange	2	2	P-13898
110	Complete Drive Flange & Planetary Gear Assembly –Consists of Indented			
	Items 111 thru 122	2	2	P-19332
111	Drive Flange Only	2	2	P-19333
112	Needle Bearing (50 Quantity Per Gear)	300	300	P-13901
113	Planet Gear	6	6	P-13902
114	Washer – Spacer	12	12	P-13903
115	Pin – Planet Gear	6	6	P-19334
116	Pin – Spring, 3/16" X 1.50"	6	6	P-19335
117	Spacer – Planet Gear	6	6	P-13906
118	Washer–Thrust	2	2	P-19336
119	Plug – Square Socket Pipe, 1/2"-14C	2	2	P-19337
120	Plug – Pipe, 1/8" NPT	2	2	P-13867
121	Plug – Magnetic Drain, 1/2"-14	2	2	P-13780
122	Fitting – Relief	2	2	P-13868
*122A	Name Plate (Lull) – Drive Flange & Planetary Gear Assembly	2	2	P-19338
*122B	Screw – Machine (Name Plate Mounting) , #10 - 32 X 0.31" C	4	4	P-19339
123	Dowel – Tapered	24	24	P-13910
124	Locknut, 7/16" - 20 (Grade 8)	24	24	P-13911
125	Tie Rod	1	1	P-13912
126	Stud – Special	2	2	P-19339
127	Nut – Slotted Head, 5/8"-11 (Grade 2P) (Tie Rod)	2	2	P-13914
128	Socket Assembly	4	4	P-13915
*	Name Plate (Axle Housing)	1	1	P-19340
*	Drive Screws (Axle Nameplate Mounting), # 2 X 1/4"	4	4	P-13917
*	Bearing Set (Consists of Items 22, 22A, 29, 33)	1	1	P-13919
*	NOT ILLUSTRATED ITEMS			
**	Customer may substitute silicone adhesive/sealant equal or equivalent to RTV-782 Dow Corning in place of gasket			
*	Label – Gear Lube	3	3	P-19314
*	Fitting (No. 507081 Disc Brake Caliper Assembly)	2	2	
*	Bleed Screw (No. 507081 Disc Brake Caliper Assembly)	2	2	
LH	- Left Hand			
	RH - Right Hand			
	AR -As Required			
	Assy - Assembly			

SERVICE PARTS
P19383 & P19366
HYDRAULIC STEERING CYLINDER (LANTEX)

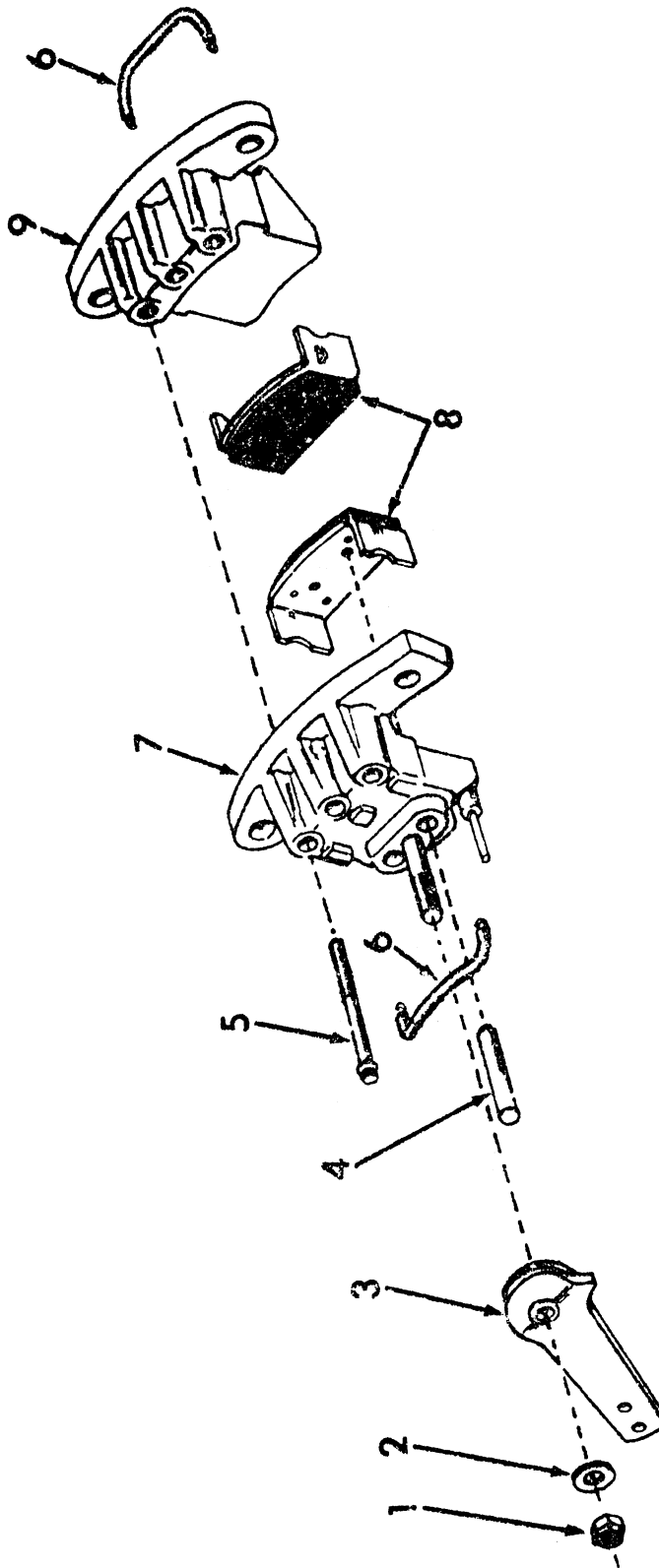


SERVICE PARTS
P19145 DISC BRAKE CALIPER ASSEMBLY - BRAKE FLUID



P19145 BRAKE CALIPER ASSEMBLY

ITEM	DESCRIPTION	QUANTITY				PART NO.
		A	B	C	D	
	COMPLETE BRAKE CALIPER ASSEMBLY (RED TAG					
	BRAKE FLUID) NOTE: QUANTITY INDICATED IS					
	FOR ONE COMPLETE BRAKE CALIPER ASSEMBLY					
	(LH) OR (RH)	1				P-19145
1	Transfer Line Assembly	1				P-19166
2	Tee-Male Branch	1				P-19168
3	Elbow - Male	1				P-19167
4	Reducer	2				P-19179
5	Pad & Holder Assembly	2				P-19159
6	Screw, 12 PT., 7/16" - 14 X 1.50"	4				P-19181
7	Dust Boot	2				P-19162
8	Piston	2				P-19163
9	O-Ring	2				P-19164
10	Bleeder Valve	4				P-19161
11	Housing Piston with Ears	1				P-19158
11A	Housing Piston without Ears	1				P-19157
12	Pin - Drive Lock	2				P-19180
13	Spacer	2				P-19160
14	Washer, Flat, Screw Backup	4				P-19182
* 15	Bleeder Valve	2				P-19178
16	Pin - Pad Retainer	2				P-19176
17	Washer - Flat	2				P-19165
18	Pin - Cotter	2				P-19177
*	Label Brake Fluid, Red Tag	1				
*	NOT ILLUSTRATED ITEMS					
LH	Left Hand					
RH	Right Hand					



DISASSEMBLY

Remove 1/2" locknut (item 1), 1/2" flat washer (item 2), lever arm (item 3) from stud. Remove springs (item 6) from brake clip on sides of pad and holder assemblies (item 8). Slide pins out (item 4) from housing (item 7, 9). To separate housing (item 7, 8) remove three flanged bolts (item 5).

REASSEMBLY

Reassemble in reverse order of disassembly.

The parts information in this publication is based on data available at the time it was printed. Because of continual improvement and advancing product design, your vehicle may not be identical to the parts information shown. Whenever there is a question, obtain the latest parts information available from your local dealer. JLG Industries, Inc. continually updates these publications electronically within our *OnLine Services*.



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