

Lull[®]

Illustrated Parts Manual

***Model
422***

10709897

S/N 102 to 186

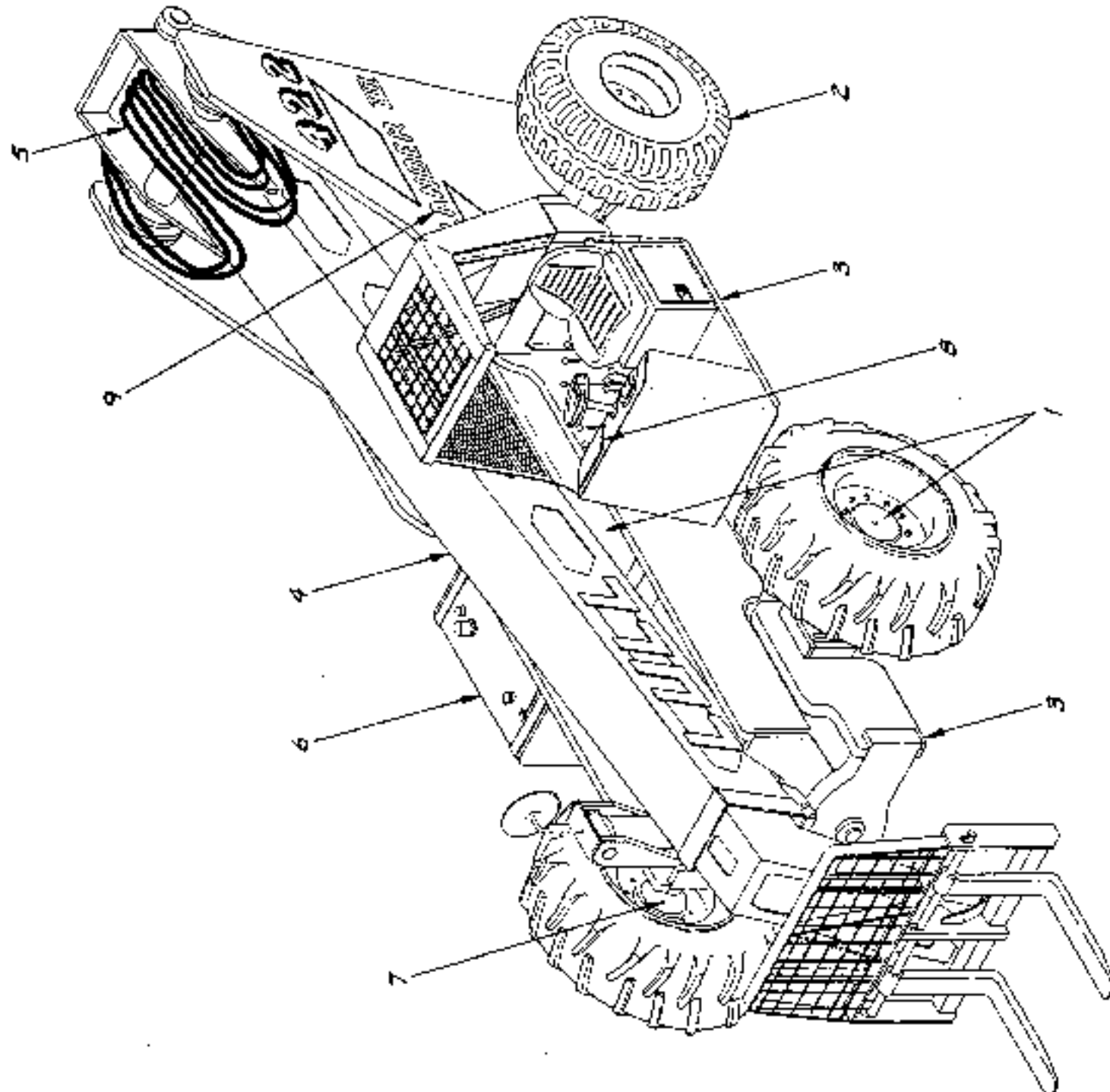
October 1980 - December 1982

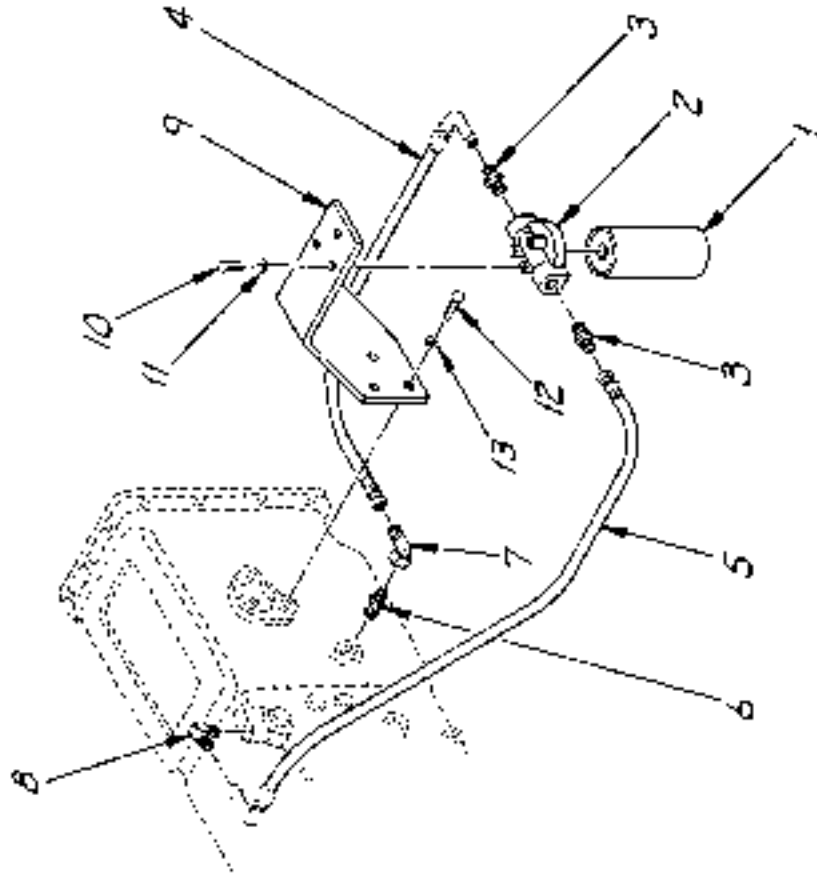
ANSI

JLG[®]

ITEM NO.	ASSEMBLY NUMBER	DESCRIPTION
1	19051	DRIVE TRAIN ASSEMBLY
	19052	TRANSMISSION FILTER ASS'Y
	19053	THROTTLE & E.S.O. ASSEMBLY
	19054	EXHAUST ASSEMBLY
	19055	AIR CLEANER ASSEMBLY
2	19056	STEER AXLE ASS'Y
	19057	STEER AXLE CYLINDER ASS'Y
3	19058	MAIN FRAME ASSEMBLY
	19059	OPERATOR'S PLATFORM
	19060	INSTRUMENT PANEL ASS'Y
4	19061	TELESCOPIC BOOM
5	19062	UPPER HYDRAULIC'S
	19063	HOIST CYLINDER ASSEMBLY
	19064	BOOM EXTENSION CYLINDER
	19065	MASTER CARRIAGE TILT CYL.
	19066	CARRIAGE TILT CYLINDER
6	19067	LOWER HYDRAULIC'S
	19068	FRAME TILT CYLINDER ASS'Y
	19069	BOOM CONTROL LEVERS
	19070	THREE SPOOL CONTROL
7	19071	BRAKE ASSEMBLY
8	19072	WIRING HARNESS ASSY
	19073	WIRING DIAGRAM
9	19074	DECAL LOCATION
10	19075	LUBRICATION SCHEDULE
	19076	STANDARD FORK CARRIAGE
	19077	TOW PACKAGE ASSEMBLY
	19078	
	19079	
	19080	

WILL	Engineering Co., Inc.	BY PAUL WILCOX'S BLUE
DESIGNED BY KEFF. DAUG	S/N 101 THRU	
LUBRICATION		
FINAL ASSEMBLY		
MODEL 422		
	REV. C	
	QUANTITY	19050





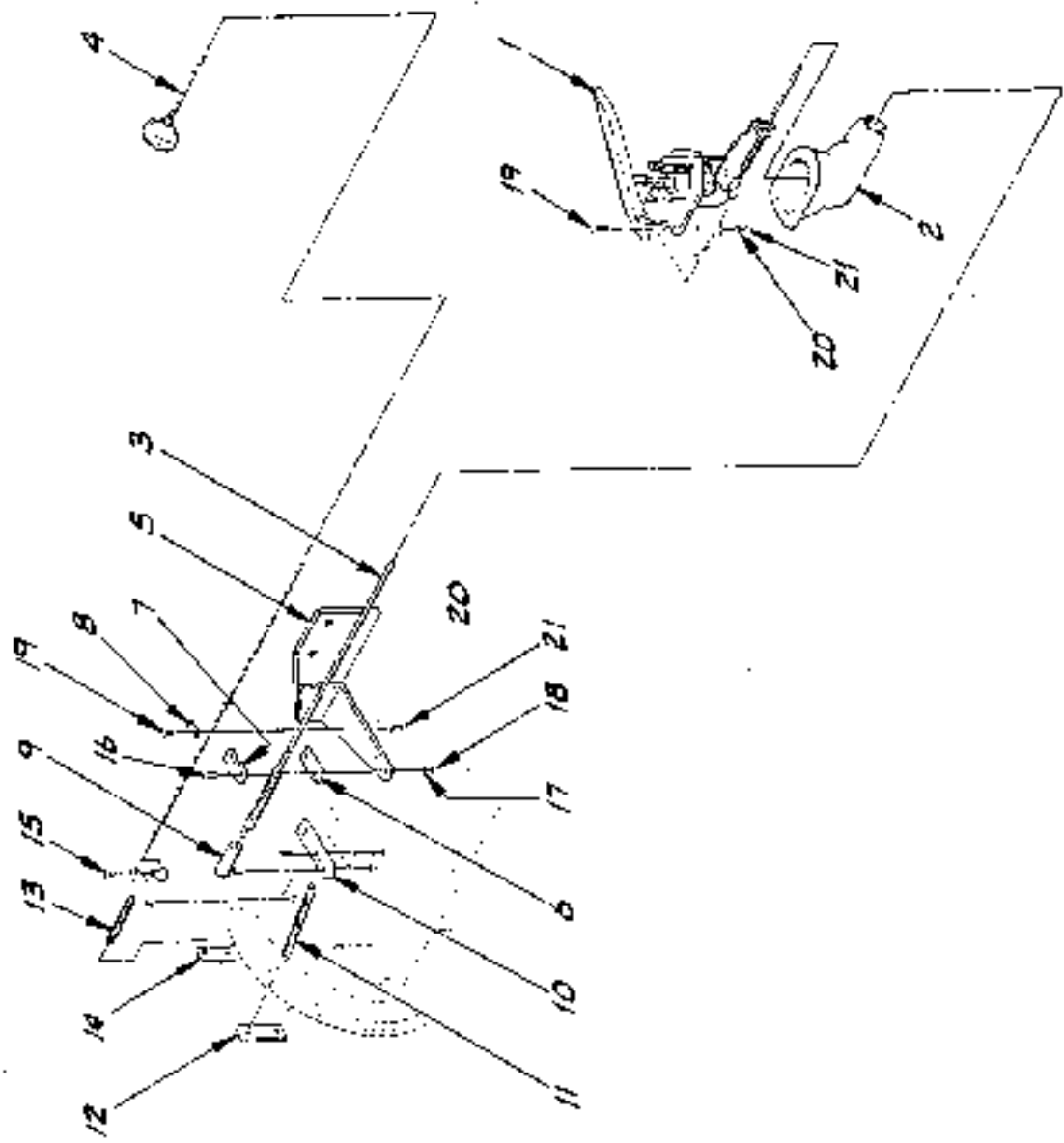
ITEM	PART NO	DESCRIPTION	REQ.
13	COM'L	LOCKWASHER, 7/16"	3
12	COM'L	BOLT, HX. 7/16" - 14 NC x 1 1/4"	3
11	COM'L	LOCKWASHER, 5/16"	3
10	COM'L	BOLT, HX. 5/16" - 18 NC x 1"	3
9	180508	FILTER SUPPORT BRKT.	1
8	P16952	90° MALE ELBOW	1
7	P21579	90° MALE ELBOW, SW.	1
6	P18944	CONNECTOR, O-RING	1
5	P21637	HYD. HOSE, 1/2" x 10"	1
4	P21636	HYD. HOSE, 1/2" x 18"	1
3	P18996	CONNECTOR, O-RING	2
2	P19132	FILTER BASE	1
1	P19133	FILTER, TRANSMISSION	1

WLL Engineering Co., Inc.
 ST. PAUL, MINNESOTA 55129

DRAWN BY: **JEFF DAUG** SIN 101 THRU
 DRAWING TITLE

TRANSMISSION FILTER ASSEMBLY
 MODEL 422

SCALE **B**
 QUANTITY 19052



ITEM	PART NO.	DESCRIPTION	REQ.
21	COM'L	NUT, HX 1/4-20 NC	5
20	COM'L	LOCKWASHER, 1/4"	5
19	COM'L	BOLT, HX 1/2"-20 NC x 3/4"	5
18	COM'L	NUT, HX #10-24 NC	2
17	COM'L	LOCKWASHER, #10	2
16	COM'L	SCREW, RD. HD. #10-24 x 1/2"	2
15	P20455	CABLE STOP SHUT-OFF	1
14	177854	SPRING ANCHOR	1
13	P17337	SPRING, SHORT	1
12	177704	SPRING ANCHOR	1
11	P15274	SPRING, LONG	1
10	17771A	EXTENSION, THROTTLE	1
9	P10505	BALL JOINT	1
8	P12497	CLIP, SHUT-OFF CABLE	1
7	P17678	CLAMP, THROTTLE CABLE	1
6	P19128	SHIM, CLAMP	1
5	188888	CABLE MOUNT BRACKET	1
4	P13445	CABLE, ENGINE SHUT-OFF	1
3	P19264	CABLE, THROTTLE	1
2	P19258	RUBBER BOOT	1
1	P19263	ACCELERATOR PEDAL	1

WILL

Engineering Co., Inc.

ST. PAUL,
MINNESOTA
55121

DRAWN BY
JEFF DAUB

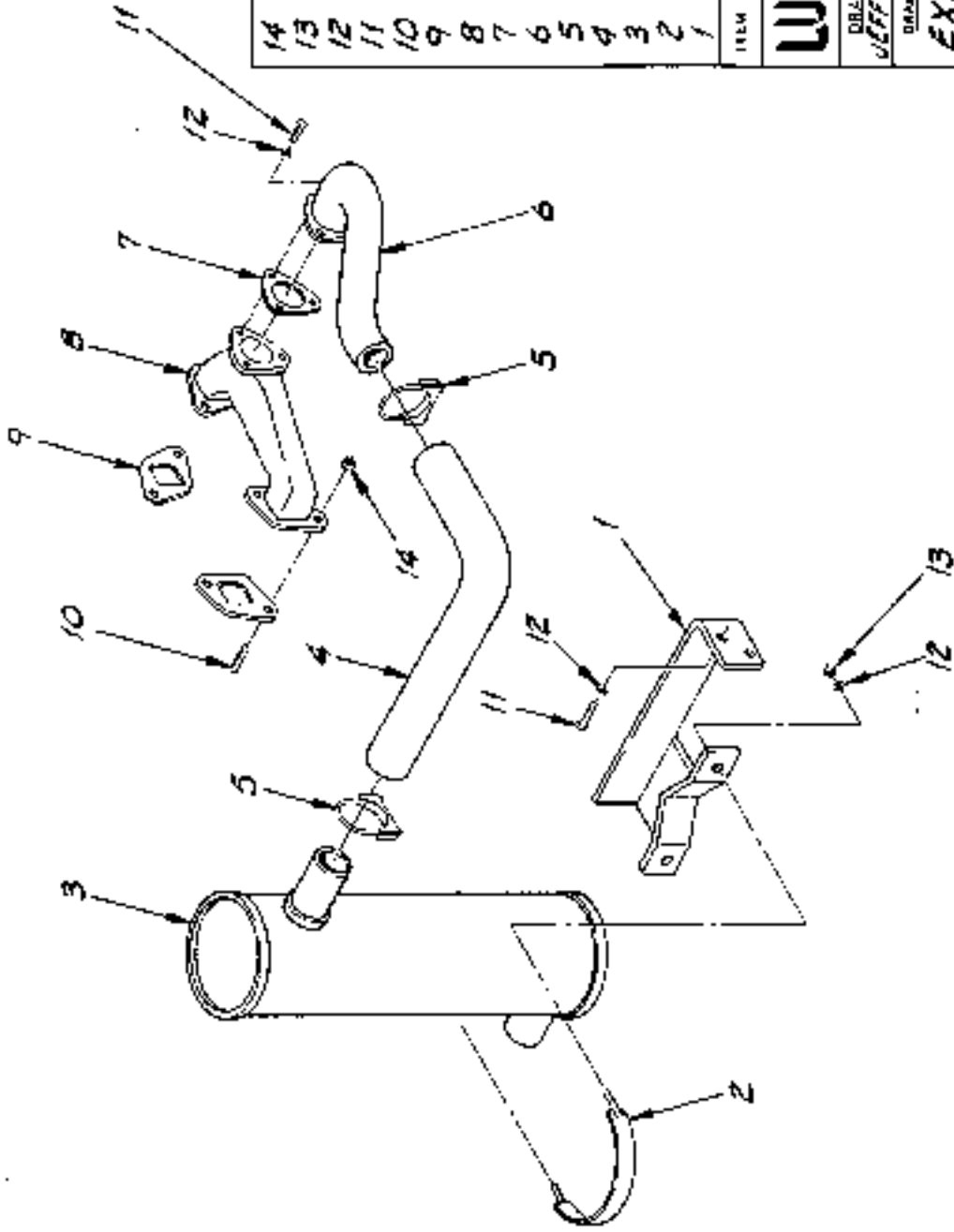
S/N 101 THRU

DRAWING TITLE

THROTTLE AND ENGINE
SHUT-OFF ASSEMBLY
MODEL 422

SCALE **B**

DRAWING NO.
19053



ITEM	PART NO.	DESCRIPTION	QTY.
14	COM'L	NUT, HX 3/8"-24 NF	4
13	COM'L	NUT, HX 3/8"-16 NC	2
12	COM'L	LOCKWASHER, 3/8"	7
11	COM'L	BOLT, HX 3/8"-16 NCx1	5
10	P22214	STUD	4
9	P22170	GASKET, MANIFOLD	2
8	P22198	EXHAUST MANIFOLD	1
7	P22197	GASKET, ELBOW	1
6	P22361	EXHAUST ELBOW	1
5	P12169	MUFFLER CLAMP	2
4	P21684	EXHAUST PIPE	1
3	P21675	MUFFLER	1
2	19012A	MUFFLER STRAP	1
1	190098	MUFFLER BRACKET	1

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ST. PAUL,
MINNESOTA
55129

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SIN 101 THRU

DRAWING TITLE

**EXHAUST SYSTEM
ASSEMBLY
MODEL 422**

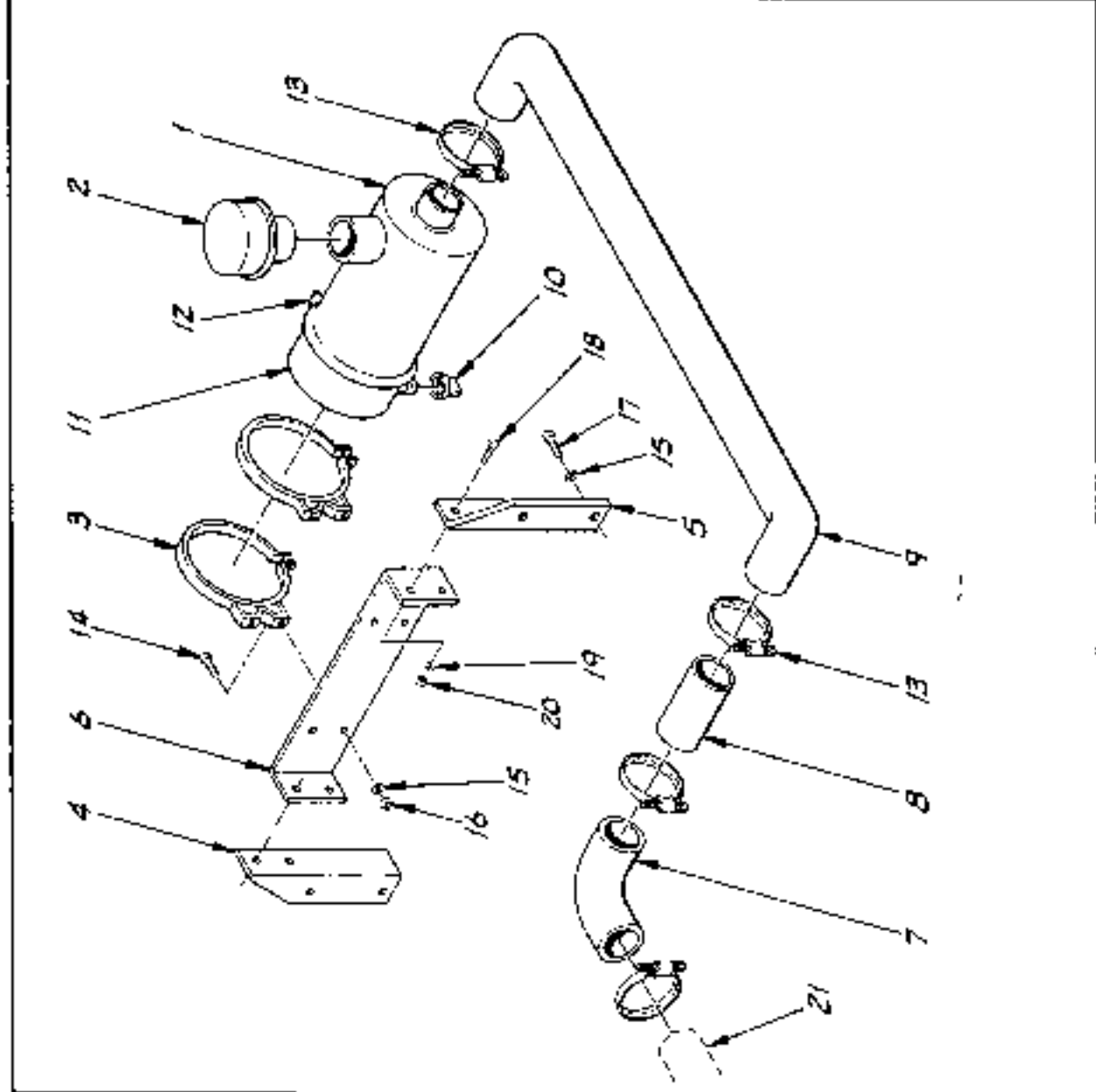
SCALE
8

DRAWING NO.
19056

REF	PIZ179	FILTER ELEMENT	REQ.
24	P22173	GASKET, FRONT	1
23	P22172	GASKET, CENTER	1
22	P22171	GASKET, REAR	1
21	P22199	INTAKE MANIFOLD	1
20	COM'L	NUT, HX 1/4"-20 NC	4
19	COM'L	LOCKWASHER, 1/4"	4
18	COM'L	BOLT, HX 1/4"-20 NC x 1"	4
17	COM'L	BOLT, HX 5/16"-24 NF x 1"	4
16	COM'L	NUT, HX 5/16"-18 NC	4
15	COM'L	LOCKWASHER, 5/16"	4
14	COM'L	BOLT, HX 5/16"-18 NC x 1"	4
13	P10001	HOSE CLAMP	4
12	P20905	CLAMP, AIR CLEANER	1
11	P19727	VACUATOR CUP	1
10	P20342	VACUATOR VALVE	1
9	P21683	RUBBER ELBOW	1
8	1834721	TUBE EXTENSION	1
7	P19873	90° RUBBER ELBOW	1
6	190388	MOUNTING PLATE	1
5	190378	L.H. SUPPORT BRACKET	1
4	190368	R.H. SUPPORT BRACKET	1
3	P12165	MOUNTING BAND	2
2	P12164	RAIN CAP	1
1	P12163	AIR CLEANER, COMPLETE	1

LULL Engineering Co., Inc.
 ST. PAUL, MINNESOTA 55101
 DRAWN BY: JEFF DAUB
 BRANDING TITLE: SIN 101 THRU

AIR CLEANER ASSEMBLY
 MODEL 422
 SCALE: B
 DRAWING NO.: 19055

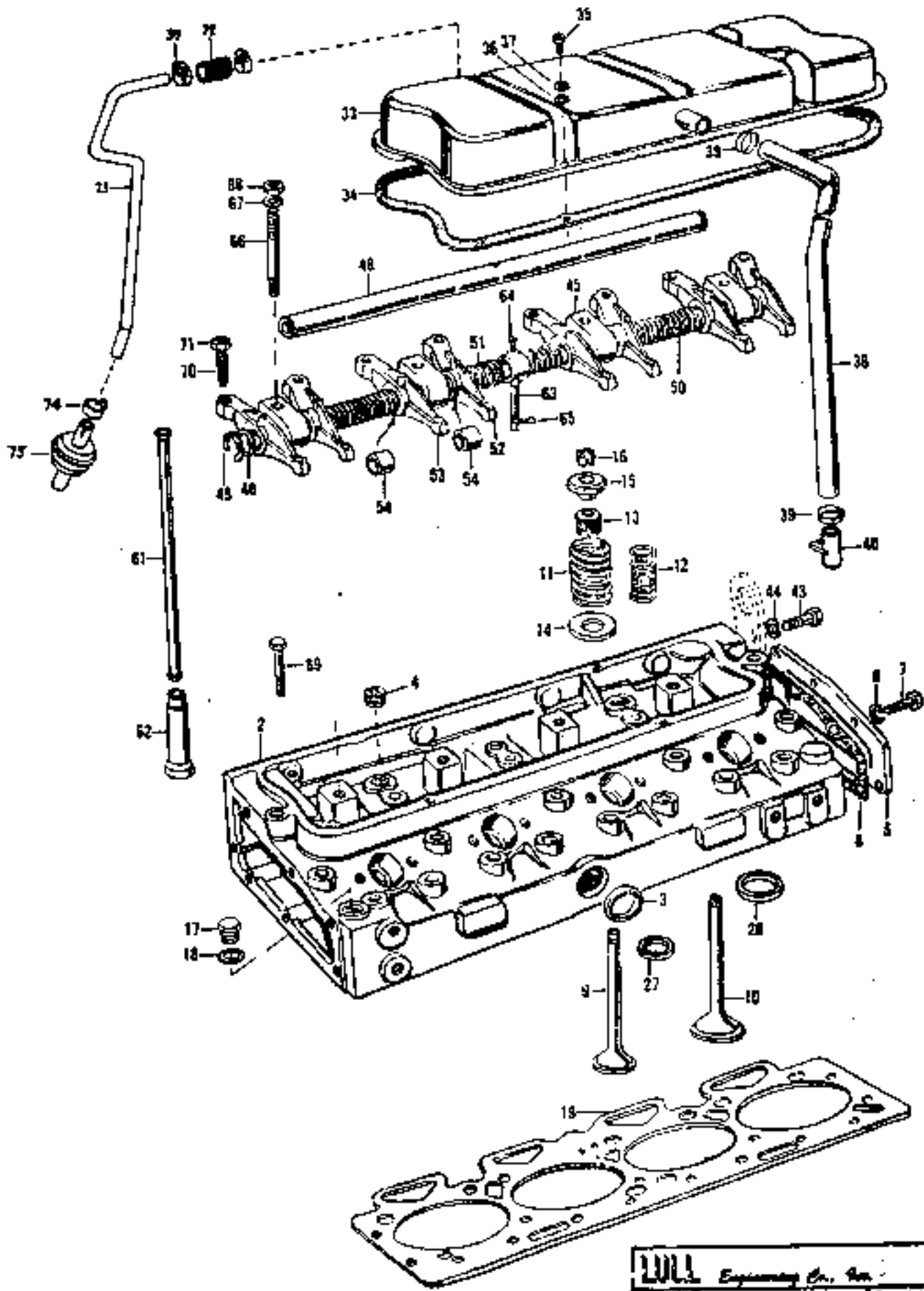


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* For S/N 169, 171-173, 175-177, 181, 182, 184 & 186 ONLY

WILL Engineering Co., Inc. <small>INCORPORATED</small>	
INDEX OF PARTS	
422 CHASSIS	
PART NUMBER	
1835	



WILL Engineering Co., Inc. CHICAGO, ILL.		U.S. PAT. OFFICE REGISTERED TRADE MARK
CYLINDER HEAD & ROCKERSHAFT		PUBLIC FIG. 1
		1836

CYLINDER HEAD, COVER, VALVES AND ROCKERSHAFT

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22051	Head Assembly, Cylinder (Incl. Items 3 thru 18)	1
3	P22006	Plug (1-1/4" Cup Type)	1
4	P22052	Plug (1/2" - 14 Hex., Sckt. Hd.)	2
5	P22053	Cover, Rear	1
6	P22169	Gasket, Rear Cover	1
7	Com'l.	Bolt (5/16 x 3/4" NF, Hex.)	6
8	Com'l.	Washer (5/16" Lock)	6
9	P22062	Valve, Intake (Std)	4
9	P22063	Valve, Intake (+.003")	x
9	P22064	Valve, Intake (+.015")	x
9	P22065	Valve, Intake (+.030")	x
10	P22066	Valve, Exhaust (Std.)	4
10	P22067	Valve, Exhaust (+.003")	x
10	P22068	Valve, Exhaust (+.015")	x
10	P22069	Valve, Exhaust (+.030")	x
11	P22061	Spring, Valve (Outer)	8
12	P22060	Spring, Valve (Inner)	8
13	P22091	Seal, Valve Stem	8
14	P22058	Washer, Valve Spring	8
15	P22057	Cap, Intake Valve Spring	8
16	P22056	Lock, Valve (Set of 2)	4
17	P22054	Plug, Top Face	1
18	P22055	Washer (5/8" Aluminum)	1
19	P22167	Gasket, Cylinder Head	1
27	P22070	Insert (Intake)	4
28	P22071	Insert (Exhaust)	4
33*	P22072	Cover, Cylinder Head	1
34*	P22167	Gasket, Cylinder Head Cover	1
35	P22074	Screw, Cylinder Head Cover	4
36	Com'l.	Washer (1/4 x 9/16 x 1/16")	4
37	Com'l.	Washer (1/4" Lock)	4
38	P22090	Pipe, Breather	1
39	P13613	Clamp, Hose	2
40	P22091	Bracket, Breather Pipe	1
43	Com'l.	Bolt (3/8 x 7/8" NF, Hex.)	4
44	Com'l.	Washer (3/8" Lock)	4
45	P22075	Bracket, Rockershaft	4
46*	P22076	Rockershaft	1
48	Com'l.	Washer (3/4 x 15/16 x 3/32")	2
49	P22078	Ring, Snap	2
50	P22079	Spring, Rockershaft (Long)	2
51	P22080	Spring, Rockershaft (Short)	2
52	P22081	Lever, Right Hand (Incl. Item 54)	4
53	P22082	Lever, Left Hand (Incl. Item 54)	4
54	P22083	Bushing, Lever	1

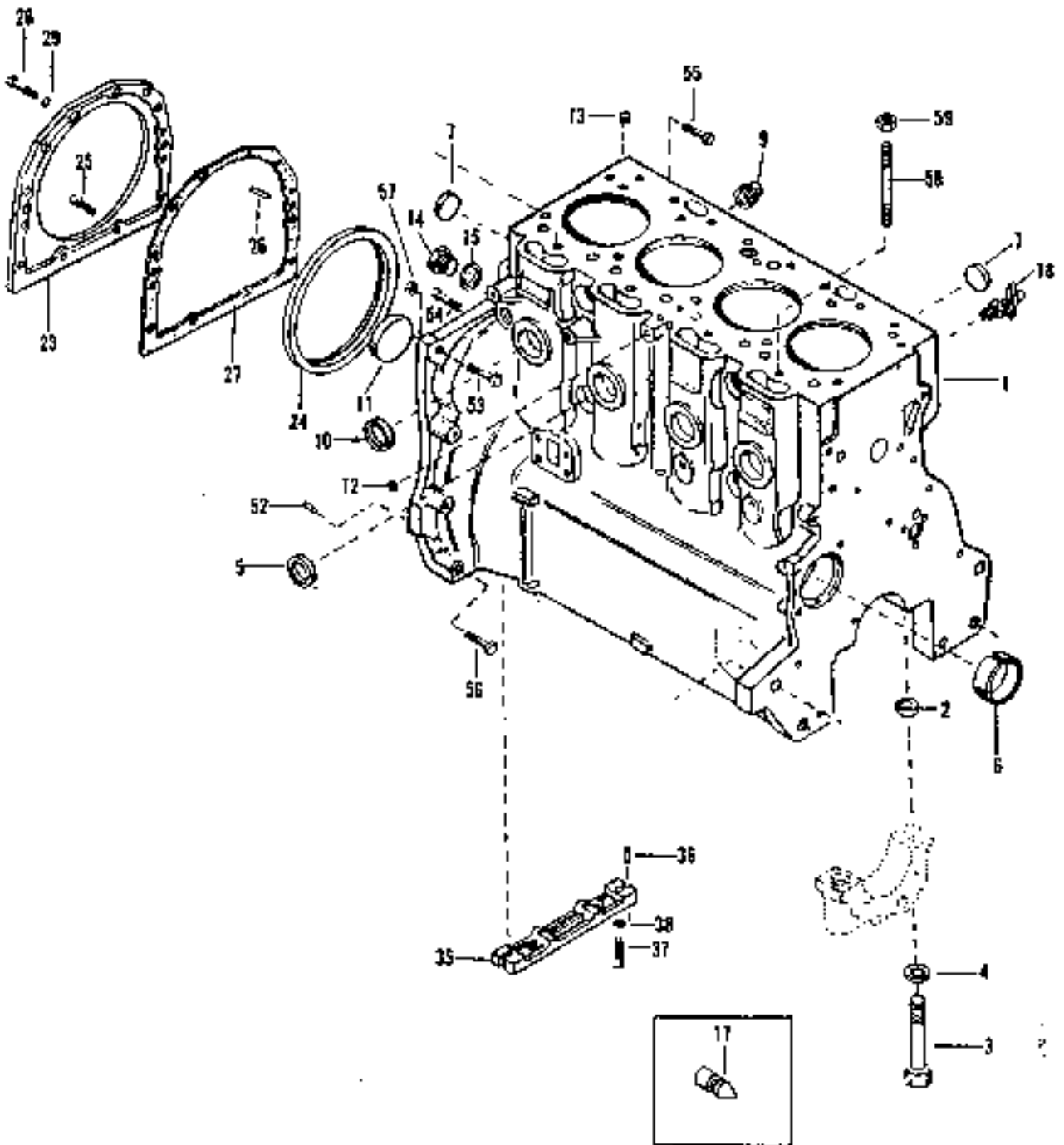
<u>ITEM</u>	<u>PART. NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
61	P22084	Rod, Push	8
62	P22085	Tappet, Valve	8
63	P22086	Oil Line, Rockershaft	1
64		Screw (#10 - 32 x 7/16" Hex.)	1
65	P22087	"O" Ring (1/4" I.D. x 1/4")	1
66	P22088	Stud (7/16" NF x 2-1/2")	4
67	Com'l.	Washer (7/16 x 7/8 x 3/32")	4
68	Com'l.	Nut (7/16" NF, Hex., Lock)	4
69	Com'l.	Bolt (1/2 x 4-1/8" NF, Hex.)	12
69	Com'l.	Bolt (1/2 x 3-1/2" NF, Hex.)	6
69	Com'l.	Bolt (1/2 x 4-15/16" NF, Hex.)	2
70	P22089	Screw, Tappet Adjusting	8
71	Com'l.	Nut (3/8" NF, Hex.)	8
72	P22092	Hose, Breather	1
73	P22093	Extension, Breather Pipe	1
74	P22094	Clip	1
75	P22095	Breather	1

* For S/N 102 & 106 Use as Follows:

Item #33 P22073
Item #34 P22194
Item #46 P22077

WLL <i>Engineering Co., Inc.</i>		100 100 100
CYLINDER HEAD & ROCKERSHAFT, CON'T	PUBLICATION NUMBER	
	1837	

CYLINDER BLOCK



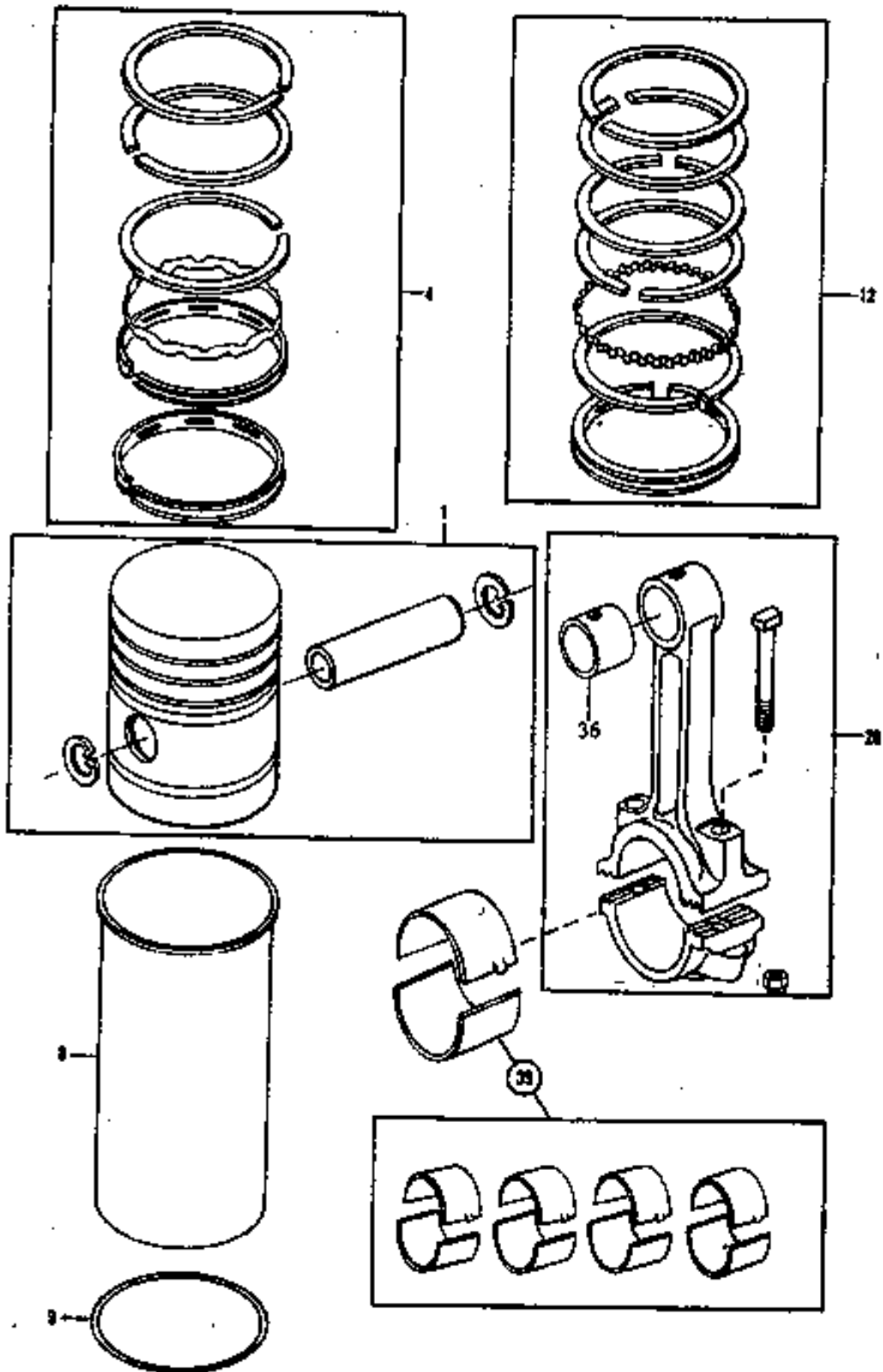
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22002	Block Assembly (Short) See Note	1
2	P22003	Dowel, Main Bearing Cap	10
3	Com'l.	Bolt (5/8 x 3-3/4" NF, Hex.)	10
4	Com'l.	Washer, Bearing Cap Bolt	10
5	P22005	Plug (1-3/8" Cup Type)	4
6	P22004	Bushing, Camshaft	1
7	P22006	Plug (1-1/4" Cup Type)	6
9	P22012	Plug (3/4 - 14 Sq. Hd.)	4
10	P22007	Plug (1-1/2" Cup Type)	4
11	P22008	Plug, Camshaft Hole (3" Cup Type)	1
12	P22009	Plug (1/4" Cup Type)	1
13	P22010	Plug (5/16" Cup Type)	1
14	P22011	Plug (7/8" NF, Sckt. Hd.)	1
15	P22013	Washer (29/32 x 1-1/8 x 3/32" Copper)	1
17*	P22014	Pointer, Timing Pin	1
18	P22015	Drain, Cylinder Block	1
23	P22017	Housing, Rear Oil Seal	1
24	P22018	Seal, Housing	1
25	Com'l.	Screw (5/16 x 1" NF, Sckt. Hd.)	2
26	P22019	Dowel, Oil Seal Housing	2
27	P22192	Gasket, Housing to Block	1
28	Com'l.	Bolt (5/16 x 1" NF, Hex.)	10
29	Com'l.	Washer (5/16" Flat)	10
35	P22020	Bridge, Block to Pan	1
36	P22188	Gasket, Bridge	2
37	Com'l.	Screw (1/4 x 3/4" NF, Phil. Hd.)	2
38	Com'l.	Washer (1/4" Flat)	2
52	Com'l.	Dowel, Engine to Transmission	2
53	Com'l.	Bolt (7/16 x 1-3/4" NC, Hex.)	1
54	Com'l.	Bolt (3/8 x 1-3/4" NF, Hex.)	3
55	Com'l.	Bolt (7/16 x 2" NC, Hex.)	1
56	Com'l.	Bolt (7/16 x 2-1/4" NC, Hex.)	5
57	Com'l.	Nut (7/16" NC, Hex.)	1
58	P22021	Stud (1/2 x 4-1/2" NF)	2
59	Com'l.	Nut (1/2" NF, Hex.)	2

* For S/N 102 & 106 Use P22015

NOTE: Short Engine includes Stripped Block, Pistons, Rings, Connecting Rods, Connecting Rod Bearings, Crankshaft and Crankshaft Bearings.

UNL Engineering Co., Inc.		42 Penn. Avenue 0821
CYLINDER BLOCK		PUBLICATION NUMBER 1838

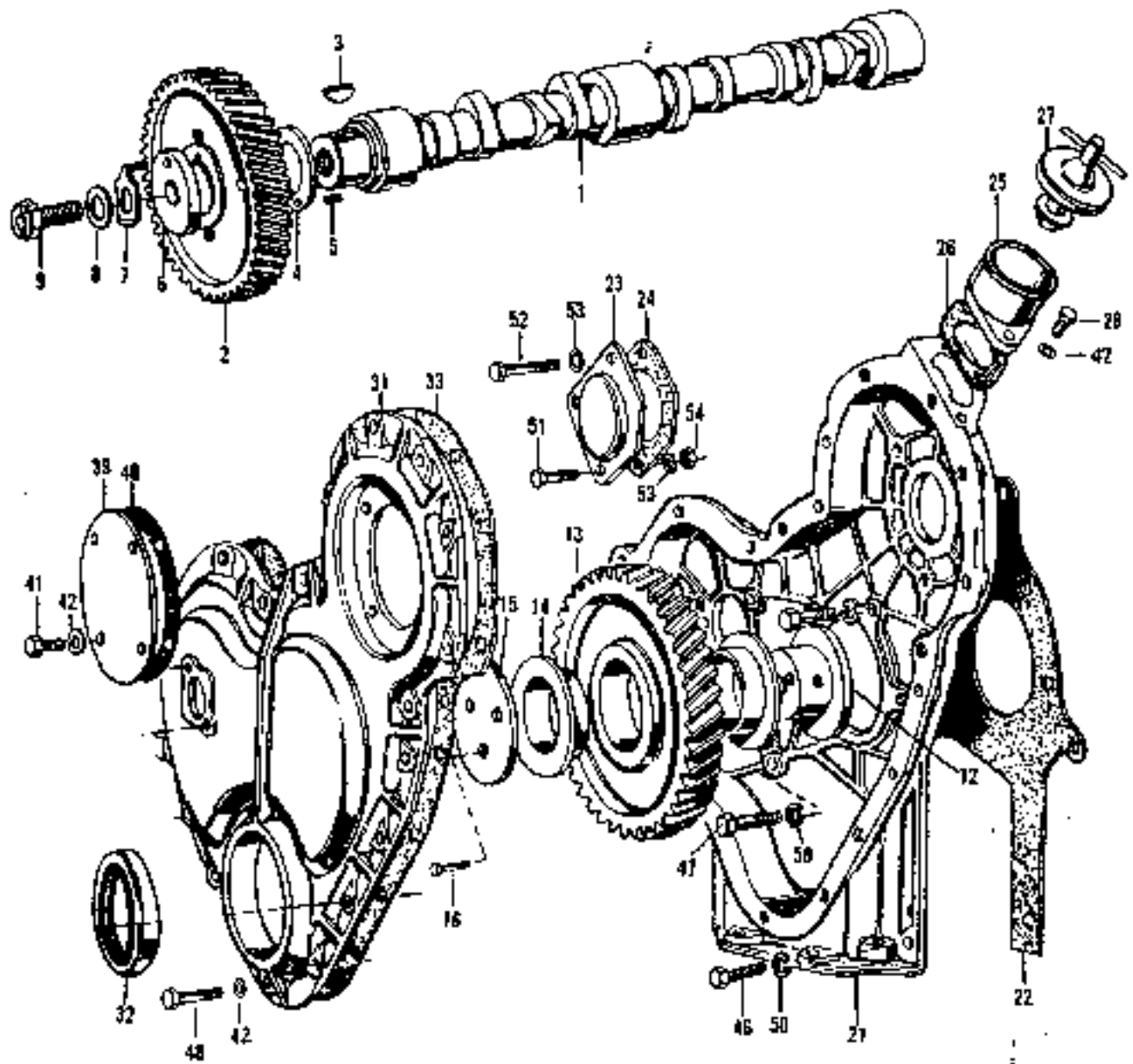
PISTONS AND RINGS, CONNECTING RODS AND BEARINGS



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22022	Piston Assembly	4
4	P22023	Ring Set, Single Piston	4
8	P22025	Liner, Cylinder (Standard)	4
8	P22026	Liner, Cylinder (+.010")	4
8	P22027	Liner, Cylinder (+.040")	4
9	P22028	Shim, Liner	4
12	P22024	Ring Set, Piston (Re-Ring)	4
26	P22029	Rod Assembly, Connecting	4
35	P22030	Insert Set, Connecting Rod Bearing (Std.)	1
35	P22031	Insert Set, Connecting Rod Bearing (-.010")	1
35	P22032	Insert Set, Connecting Rod Bearing (-.020")	1
35	P22033	Insert Set, Connecting Rod Bearing (-.030")	1

WILL <i>Engineering Co. Inc.</i>		ST PAUL, MINNESOTA 61129
WINDMILL	RINGS, PISTONS, & CONNECTING RODS	PUBLICATION NUMBER 1839

CAMSHAFT, TIMING GEARS AND HOUSING



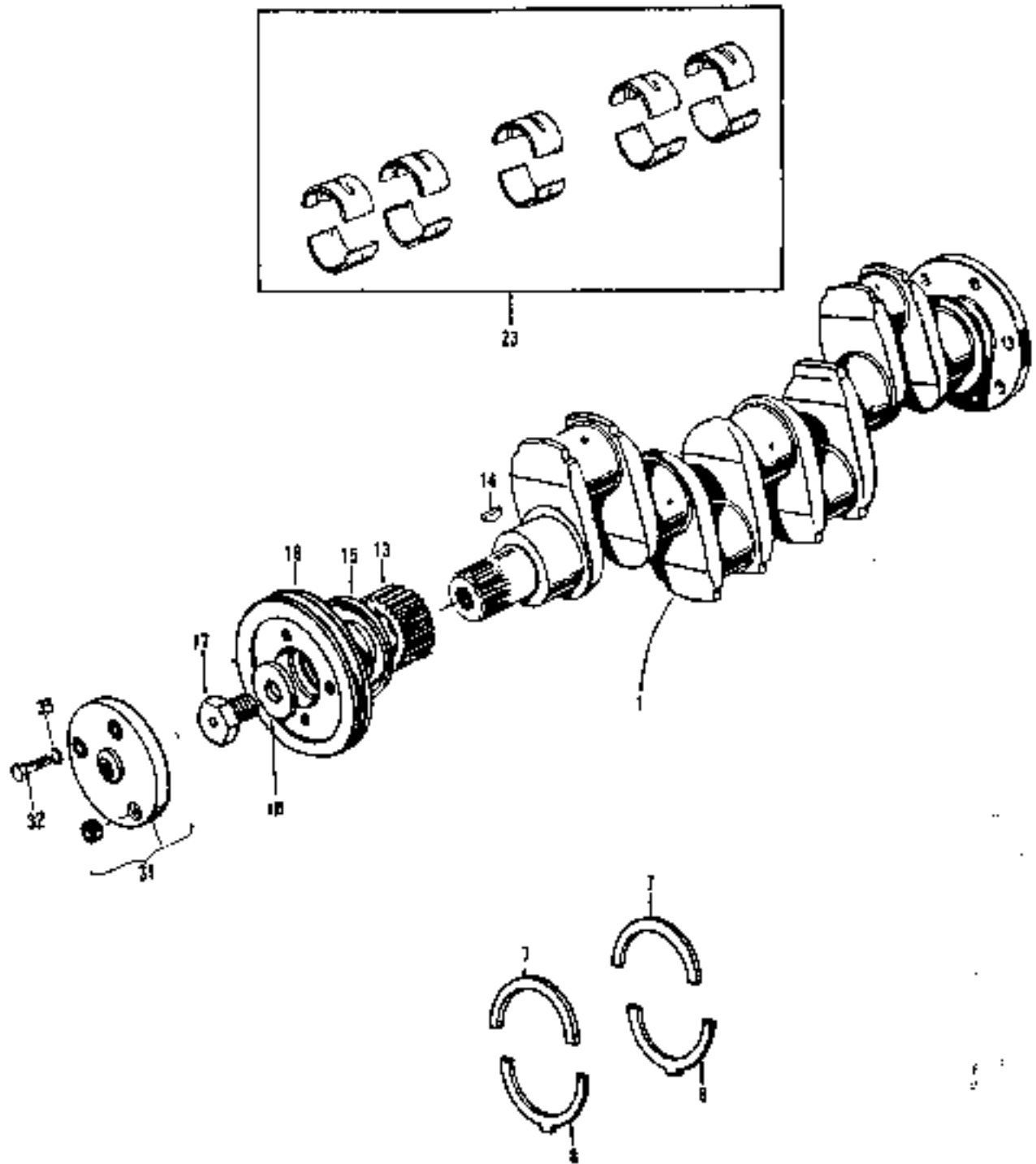
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22096	Camshaft	1
2*	P22097	Gear, Camshaft Timing	1
3	P22044	Key, Gear to Camshaft	1
4	P22099	Washer, Gear to Camshaft	1
5	P22100	Dowel, Camshaft Washer	1
6	P22101	Washer, Timing Gear, Front	1
7	P22102	Washer, Tab	1
8	P22103	Washer, Retaining Bolt	1
9	P22104	Bolt, Gear Retaining	1
12	P22105	Hub, Idler Gear	1
13	P22106	Gear Assembly, Idler	1
15	P22107	Plate, Idler Gear	1
16	Com'l.	Bolt (3/8 x 2-1/2" NF, Hex.)	3
21	P22108	Housing, Timing Gear	1
22	P22180	Gasket, Timing Gear, Housing to Block	1
23	P22109	Plate, Hydraulic Pump Hole Cover	1
24	P22193	Gasket, Blanking Plate	1
25*	P22110	Filler, Oil	1
26	P22189	Gasket, Oil Filler Housing	1
27*	P22112	Cap, Oil Filler	1
28	Com'l.	Bolt (5/16 x 3/4" NF, Hex.)	2
31	P22114	Cover, Timing Gear Housing (Incl. Item 32)	1
32	P22115	Seal, Oil	1
33	P22182	Gasket, Cover to Housing	1
39	P22116	Cover, Inspection	1
40	P22181	Gasket, Inspection Cover	1
41	Com'l.	Bolt (5/16 x 1/2" NF, Hex.)	4
42	P22117	Washer (5/16 x 9/16 x 1/16" Aluminum)	10
46	Com'l.	Bolt (5/16 x 7/8" NF, Hex.)	22
47	Com'l.	Bolt (5/16 x 1" NF, Hex.)	1
48	Com'l.	Bolt (5/8 x 2-1/2" NF, Hex.)	4
50	Com'l.	Washer (5/16" Lock)	23
51	Com'l.	Bolt (3/8 x 1-3/4" NC, Hex.)	1
52	Com'l.	Bolt (3/8 x 2-1/2" NC, Hex.)	2
53	Com'l.	Washer (3/8" Lock)	3
54	Com'l.	Nut (3/8" NC, Hex.)	1

* For S/N 102 & 106 Use as Follows:

Item #2 P22098
Item #25 P22111
Item #27 P22113

WILL Engineering Co., Inc.		ST. PAUL, MINNESOTA 6171
CAMSHAFT & TIMING GEARS		PUBLICATION NUMBER 1840

CRANKSHAFT AND BEARINGS



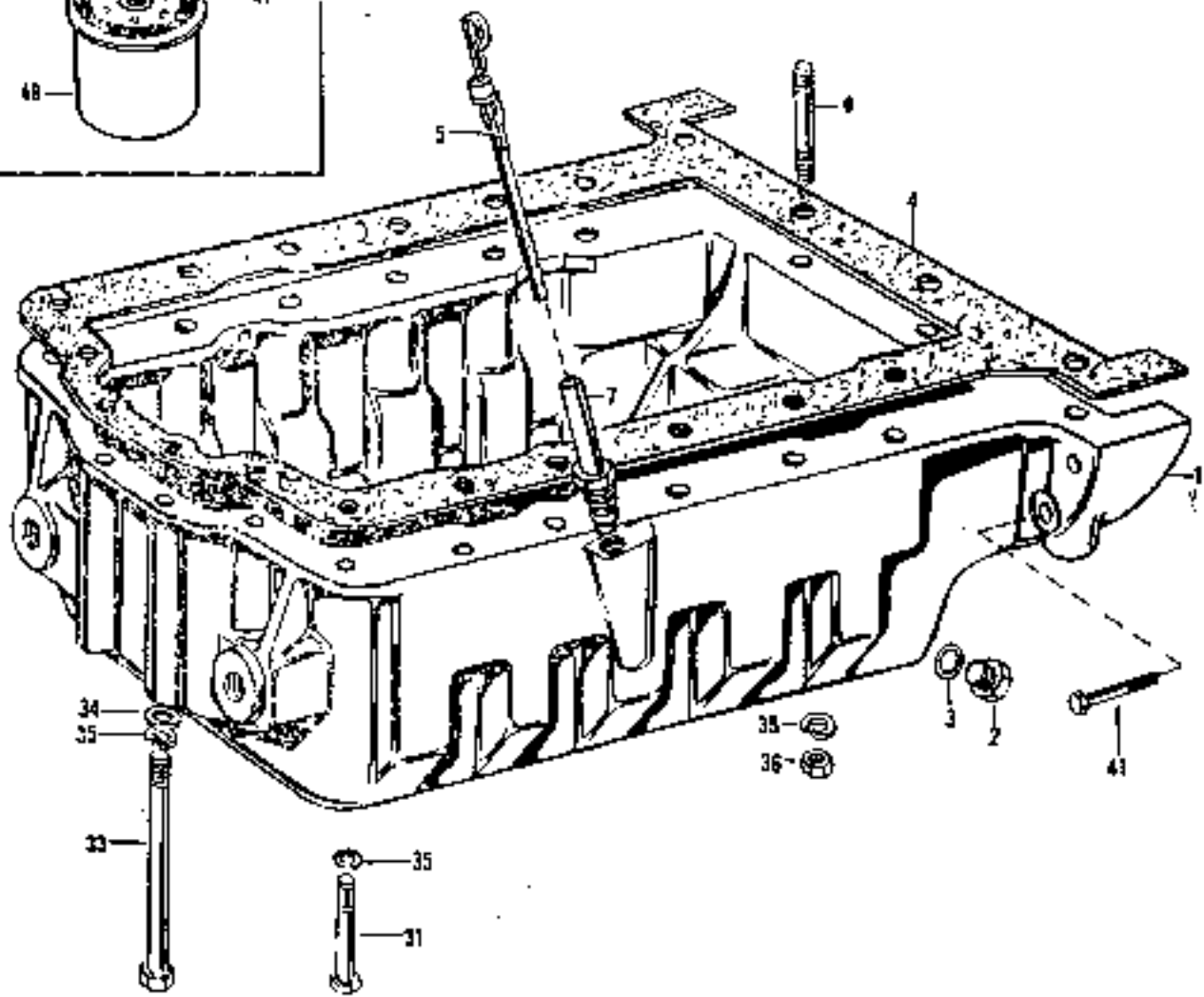
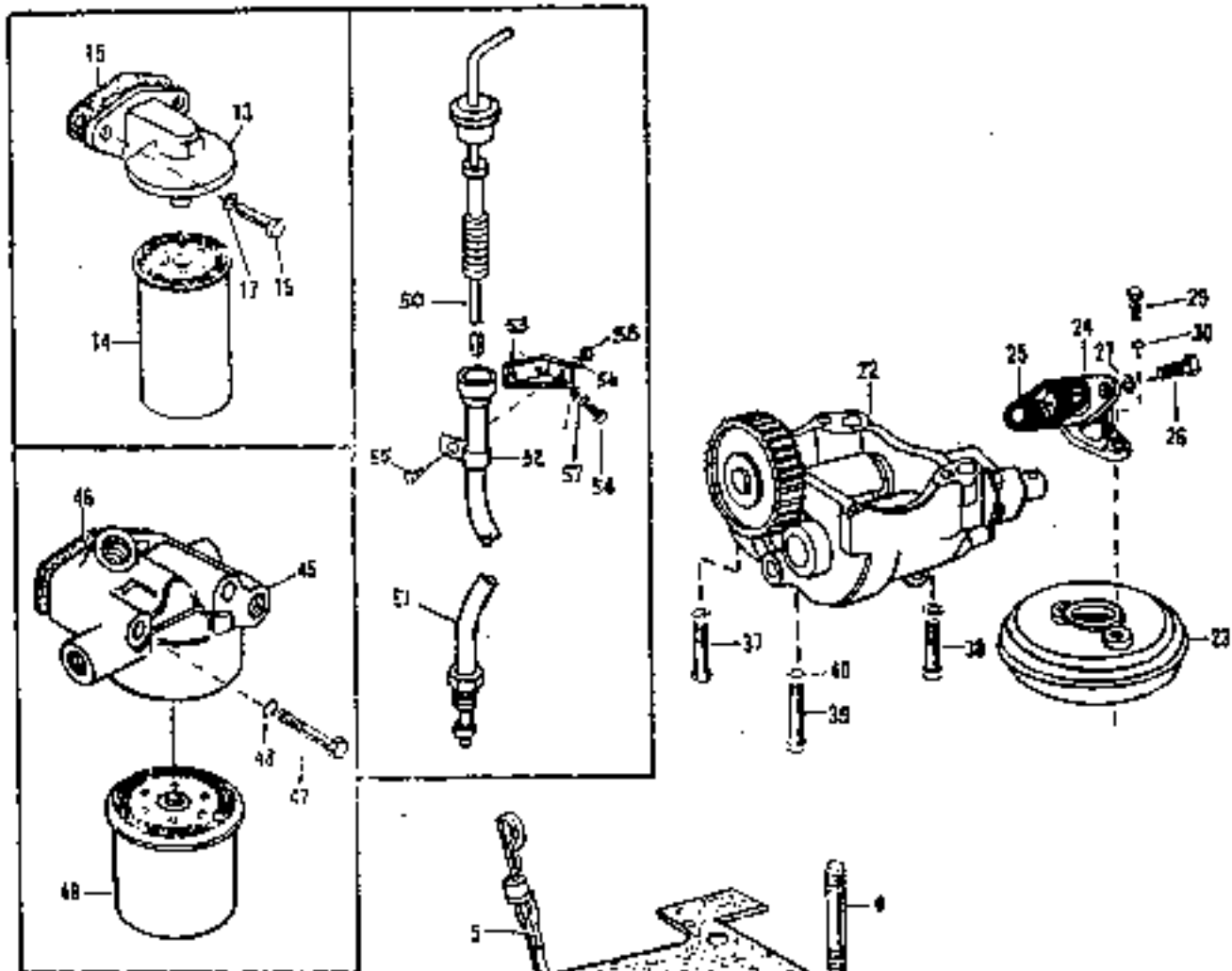
<u>ITEM</u>	<u>PART. NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22034	Kit, Crankshaft and Bearings	1
7	P22039	Washer, Thrust, Top (Std.)	2
7	P22040	Washer, Thrust, Top (+.007")	x
8	P22041	Washer, Thrust, Bottom (Std.)	2
8	P22042	Washer, Thrust, Bottom (+.007")	x
13	P22043	Gear, Crankshaft	1
14	P22044	Key, Gear	1
15*	P22045	Flange, Thrower	1
16*	P22047	Pulley, Crankshaft	1
17	P22049	Bolt, Pulley	1
18	P22050	Washer, Bolt	1
23	P22035	Insert Set, Main Bearing (Std.)	1
23	P22036	Insert Set, Main Bearing (-.010")	1
23	P22037	Insert Set, Main Bearing (-.020")	1
23	P22038	Insert Set, Main Bearing (-.030")	1
31	P22338	Adapter, Propshaft to Crankshaft Pulley	1
32	Com'l.	Bolt (3/8 x 1-1/4" NC, Hex.)	4
33	Com'l.	Washer (3/8" Lock)	4

* For S/N 102 & 106 Use as Follows:

Item #15 P22046
Item #16 P22048

WLL <i>Engineering Co., Inc.</i>		ST. PAUL, MINNESOTA U.S.A.
<small>© 1964 WLL</small> CRANKSHAFT & MAIN BEARINGS	PUBLICATION NUMBER 1841	

OIL PAN, PUMP AND FILTER



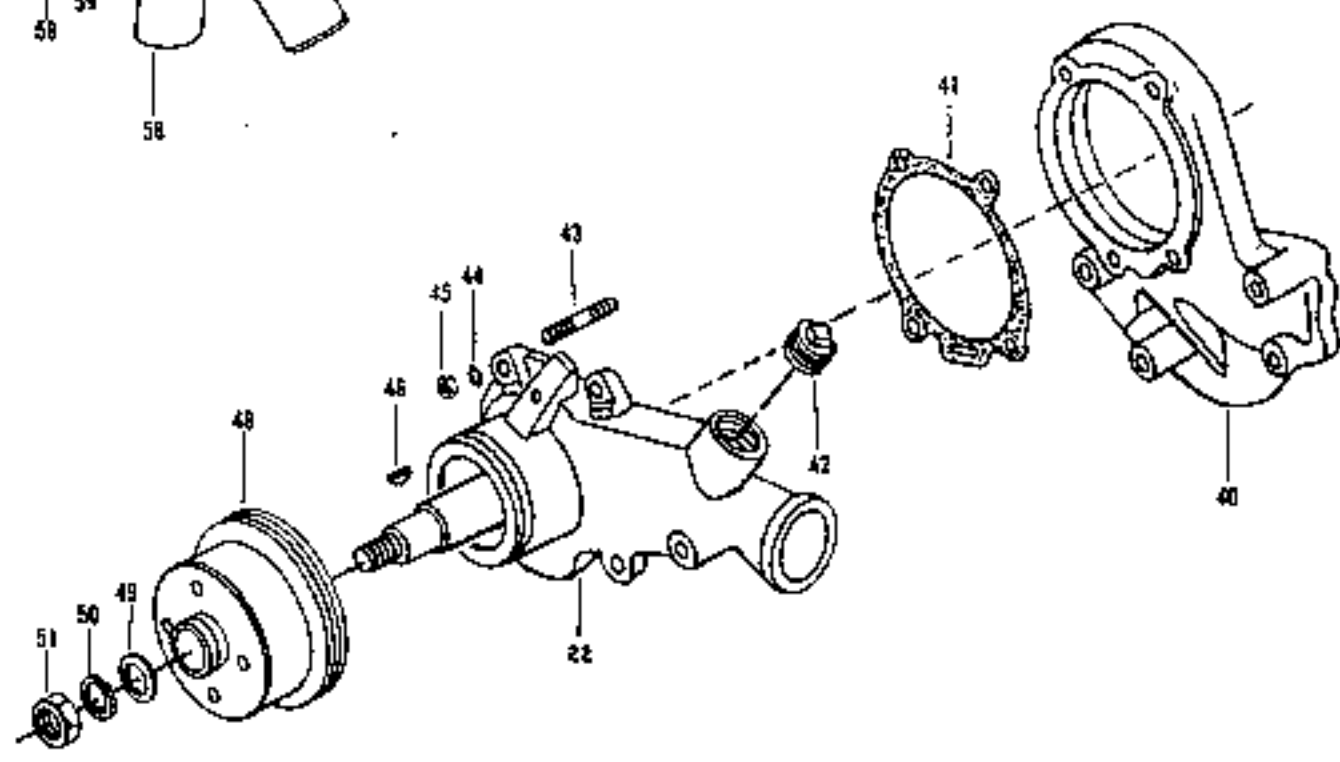
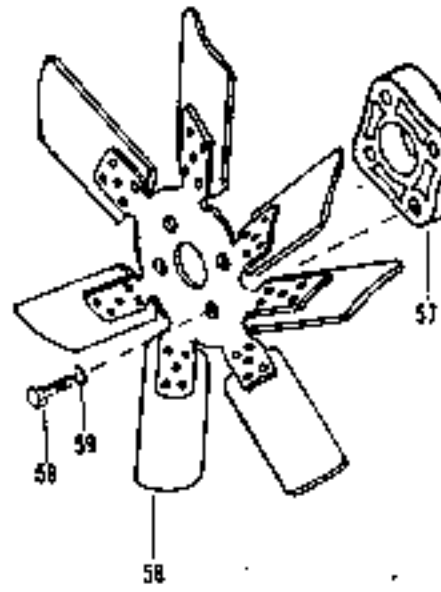
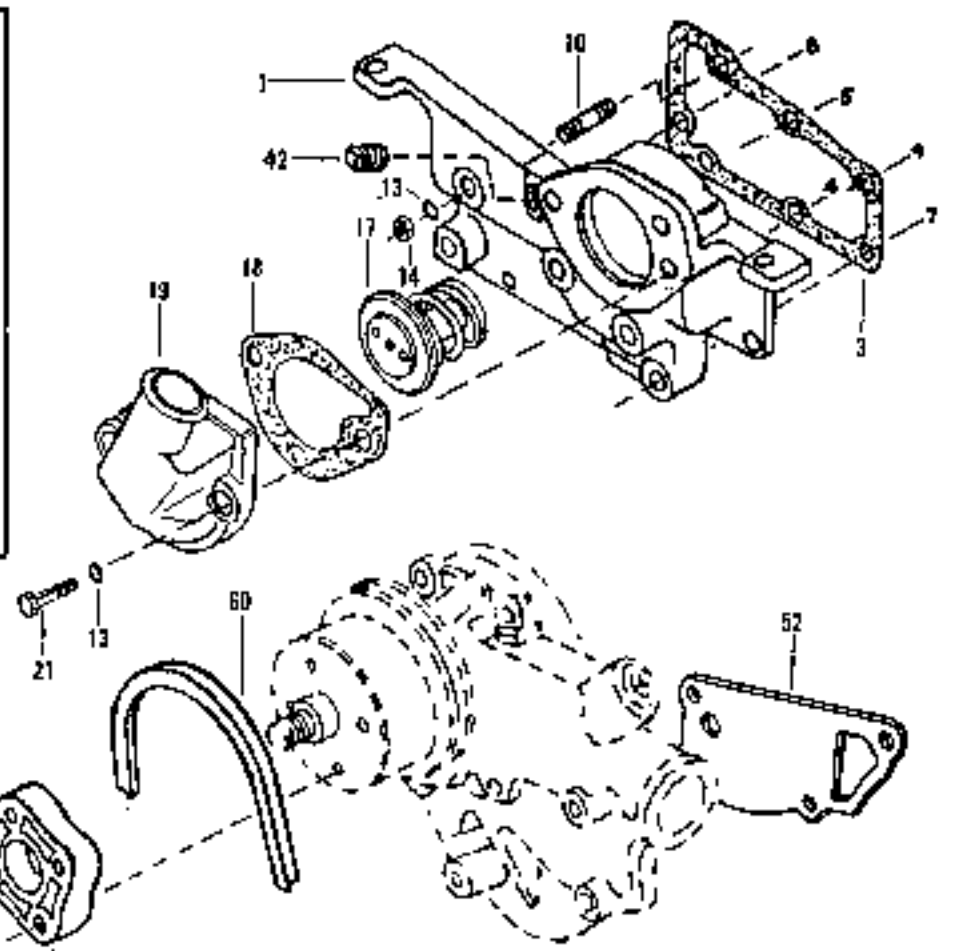
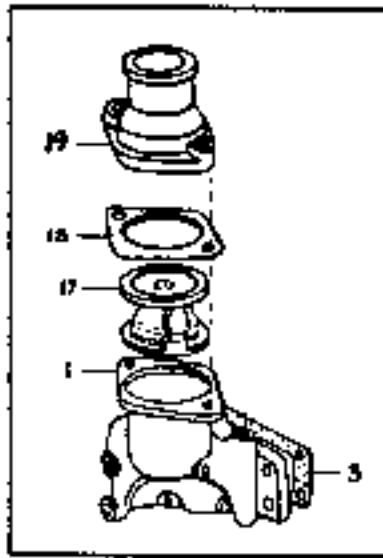
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22118	Pan, Oil	1
2	P22119	Plug, Pan	1
3	P22166	Gasket, Plug	1
4	P22183	Gasket, Oil Pan	1
5	P22120	Dipstick, Oil Level	1
7	P22122	Tube, Dipstick	1
9	P22131	Stud (5/16" NF x 3-15/16")	2
13	P22126	Head, Filter	1
14	P20995	Filter, Oil	1
15	P22191	Gasket, Filter	1
16	Com'l.	Bolt (7/16 x 1-1/4" NF, Hex.)	2
17	Com'l.	Washer, Bolt	2
22	P22128	Balancer Assembly	1
23	P22129	Strainer Assembly, Oil	1
24	P22130	Connection, Strainer	1
25	P22190	Gasket, Connection	1
26	Com'l.	Screw (5/16 x 2-1/4" NF, Hex.)	2
27	Com'l.	Washer (5/16" Lock)	2
29	Com'l.	Bolt (1/4 x 5/8" NF, Hex.)	2
30	Com'l.	Washer (1/4" Lock)	2
31	Com'l.	Bolt (5/16 x 3-1/4" NF, Hex.)	12
33	Com'l.	Bolt (5/16 x 5-1/2" NF, Hex.)	6
34	Com'l.	Washer (5/16 x 5/8 x 5/64")	7
35	Com'l.	Washer (5/16" Lock)	20
36	Com'l.	Nut (5/16" NF, Hex.)	2
37	Com'l.	Bolt (3/8 x 2-1/2" NF, Hex.)	2
38	Com'l.	Bolt (3/8 x 3" NF, Hex.)	1
39	Com'l.	Bolt (3/8 x 5-1/4" NF, Hex.)	1
40	Com'l.	Washer (3/8" Lock)	4
41	Com'l.	Bolt (7/16 x 2-5/8" NC, Hex.)	4
41	Com'l.	Bolt (7/16 x 1-3/4" NC, Hex.)	2

For S/N 102 & 106 only, use as follows for oil filter & dipstick.

45	P22127	Head Assembly, Filter	1
46	P22195	Gasket, Head to Block	1
47	Com'l.	Bolt, Filter Head to Block (7/16 x 4-1/2" NF, Hex.)	2
48	Com'l.	Washer, Bolt (7/16" Lock)	2
49	P20995	Filter (Spin-On)	1
50	P22121	Dipstick Assembly	1
51	P22123	Tube Assembly, Dipstick	1
52	P22124	Clip, Dipstick Tube	1
53	P22125	Bracket, Dipstick Tube Support	1
54	Com'l.	Bolt, Bracket (1/4 x 5/8" NF, Hex.)	2
55	Com'l.	Bolt, Tube Support (1/4 x 5/8" NF, Hex.)	1
56	Com'l.	Washer, Tube Support (1/4 x 9/16 x 1/16")	2
57	Com'l.	Washer (1/4" Lock)	3
58	Com'l.	Nut, Bolt (1/4" NF, Hex.)	1

WILL Engineering Co., Inc.		ST. PAUL, MINNESOTA 1972
www.will.com	PUBLICATION NUMBER	
OIL PAN PUMP, & FILTER	1842	

WATER OUTLET AND PUMP



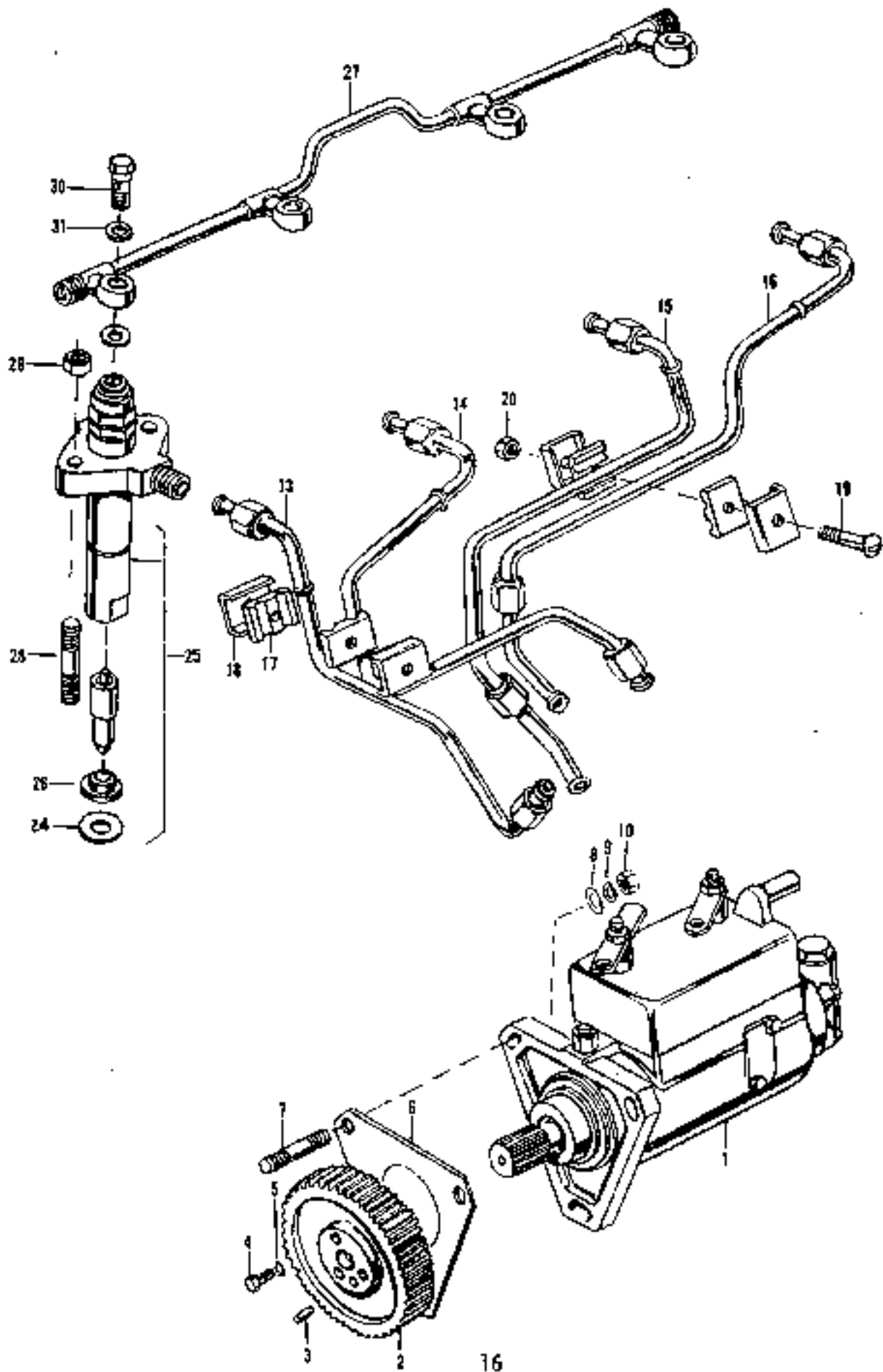
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1*	P22132	Body, Water Outlet	1
3	P22174	Gasket, Outlet Body	1
4	Com'l.	Bolt (5/16 x 7/8" NF, Hex.)	2
5	Com'l.	Bolt (5/16 x 2-1/2" NF, Hex.)	
6	Com'l.	Washer (5/16" Lock)	3
8	Com'l.	Bolt (3/8 x 1-3/4" NF, Hex.)	1
9	Com'l.	Bolt (3/8 x 2-1/2" NF, Hex.)	1
10	Com'l.	Stud (3/8 x 2-9/16" NF)	1
13	Com'l.	Washer (3/8" Lock)	6
14	Com'l.	Nut (3/8" NF, Hex.)	1
17	P22134	Thermostat	1
18*	P22175	Gasket, Thermostat Housing	1
19*	P22135	Connection, Thermostat Housing	1
21	Com'l.	Bolt (3/8 x 1-1/2" NF, Hex.)	2
22	P22137	Pump Assembly	1
40	P22138	Body, Rear Half	1
41	P22184	Gasket, Body Halves	1
42	P22052	Plug (1/2" P.T. Sq. Hd.)	1
43	P22139	Std (5/16" x 1-3/8" NF)	4
44	Com'l.	Washer (5/16" Lock)	4
45	Com'l.	Nut (5/16" NF, Hex.)	4
46	P22140	Key, Shaft	1
48	P22141	Pulley, Pump and Fan Drive	1
49	Com'l.	Washer (5/8" Flat)	1
50	Com'l.	Washer (5/8" Lock)	1
51	Com'l.	Nut (5/8" NF, Hex.)	1
52	P22185	Gasket, Pump to Block	1
56	P22142	Fan, Cooling	1
57	P22143	Extension, Pulley	1
58	Com'l.	Bolt (5/16 x 1-3/4" NF, Hex.)	4
59	Com'l.	Washer (5/16" Lock)	4
60	P20867	Belt	1

* For S/N 102 & 106 Use as Follows:

Item #1 P22133
Item #18 P22196
Item #19 P22136

WIL Engineering Co., Inc.		<small>25 PAUL HARRISON BLVD</small>
WATER PUMP & OUTLET	PUBLICATION NUMBER 1843	

FUEL INJECTION PUMP

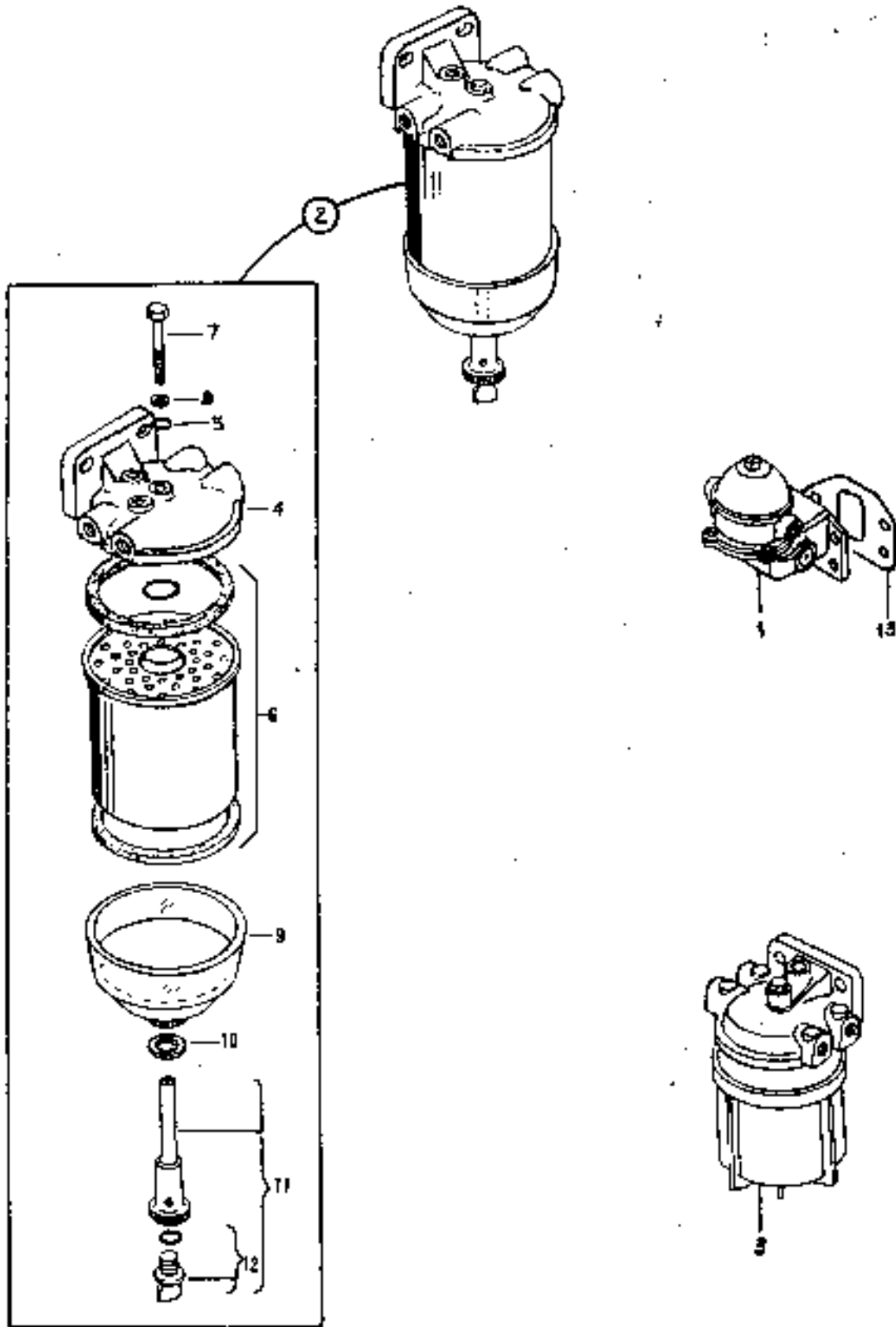


<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1*	P22144	Pump Assembly, Injection	1
2	P22146	Gear, Pump Drive	1
3	P22147	Dowel, Gear	1
4	Com'l.	Bolt (5/16 x 3/4" NF, Hex.)	3
5	Com'l.	Washer (5/16" Lock)	3
6	P22187	Gasket, Injection Pump	1
7	P22139	Stud (5/16" NF x 1-3/8")	3
8	Com'l.	Washer (5/16" Flat)	3
9	Com'l.	Washer (5/16" Lock)	3
10	Com'l.	Nut (5/16" NF, Hex.)	3
13*	P22148	Line Assembly, Injection, #1 Cylinder	1
14*	P22149	Line Assembly, Injection, #2 Cylinder	1
15*	P22150	Line Assembly, Injection, #3 Cylinder	1
16*	P22151	Line Assembly, Injection, #4 Cylinder	1
17	P22156	Damper, Injection Lines	4
18	P22157	Plate, Damper	4
19	Com'l.	Screw (#10 - 32 x 1" Rd. Hd. Sltd.)	2
20	Com'l.	Nut	2
24	P22165	Washer, Injection Nozzle	2
25*	P22158	Injector	4
26	P22164	Shield, Injector	4
27	P22160	Line, Leak-Off	1
28	P22161	Stud (5/16" NF x 1-9/16")	8
29	Com'l.	Nut (5/16" NF, Hex.)	8
30	P22162	Bolt (Banjo)	4
31	P22163	Washer	8

* For S/N 102 & 106 Use as Follows:


Item #1	P22145
Item #13	P22152
Item #14	P22153
Item #15	P22154
Item #16	P22155
Item #25	P22159

WILL Engineering Co., Inc.		ST. PAUL, MINNESOTA 1927
FUEL INJECTION LINES		PUBLICATION NUMBER 1844



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22200	Fuel Pump Assembly	1
2*	P22201	Fuel Filter Assembly	1
3	P22203	Pre Filter Assembly (Water Trap)	1
4	P22220	Head, Fuel Filter	1
5	P22221	"O" Ring, Head Bolt Seal	1
6*	P22001	Filter Element w/Gasket & "O" Ring	1
7	Com'l.	Bolt (1/4 x 2" NC, Hex.)	1
8	Com'l.	Washer (1/4" Flat)	1
9	P22222	Glass Bowl	1
10	P22223	Rubber Washer	1
11	P22224	Stud (Incl. Item 12)	1
12	P22225	Plastic Screw w/Rubber Washer	1
13	P22186	Gasket, Fuel Pump	1

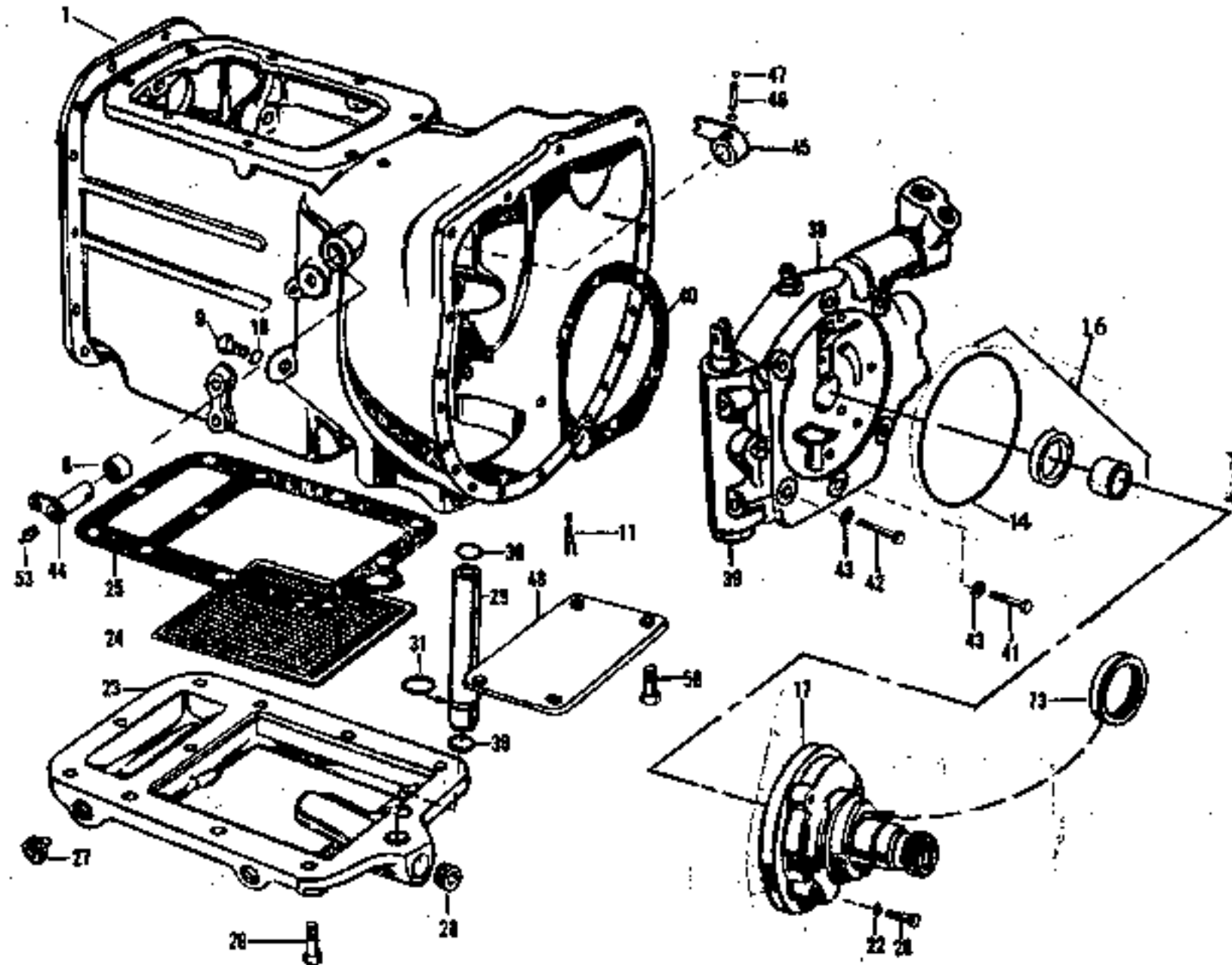
* Use P22202, Fuel Filter Assembly
and P21001, Fuel Filter Element
for S/N 102 & 106 only (Filter not shown)

		<small>ST. PAUL, MINNESOTA 1950</small>
FUEL PUMP & FILTER		PUBLICATION NUMBER 1845

TRANSMISSION CASE AND VALVE

Funk Reverser Transmission and gear box
C-3 Teanny
80w-90 in gear box

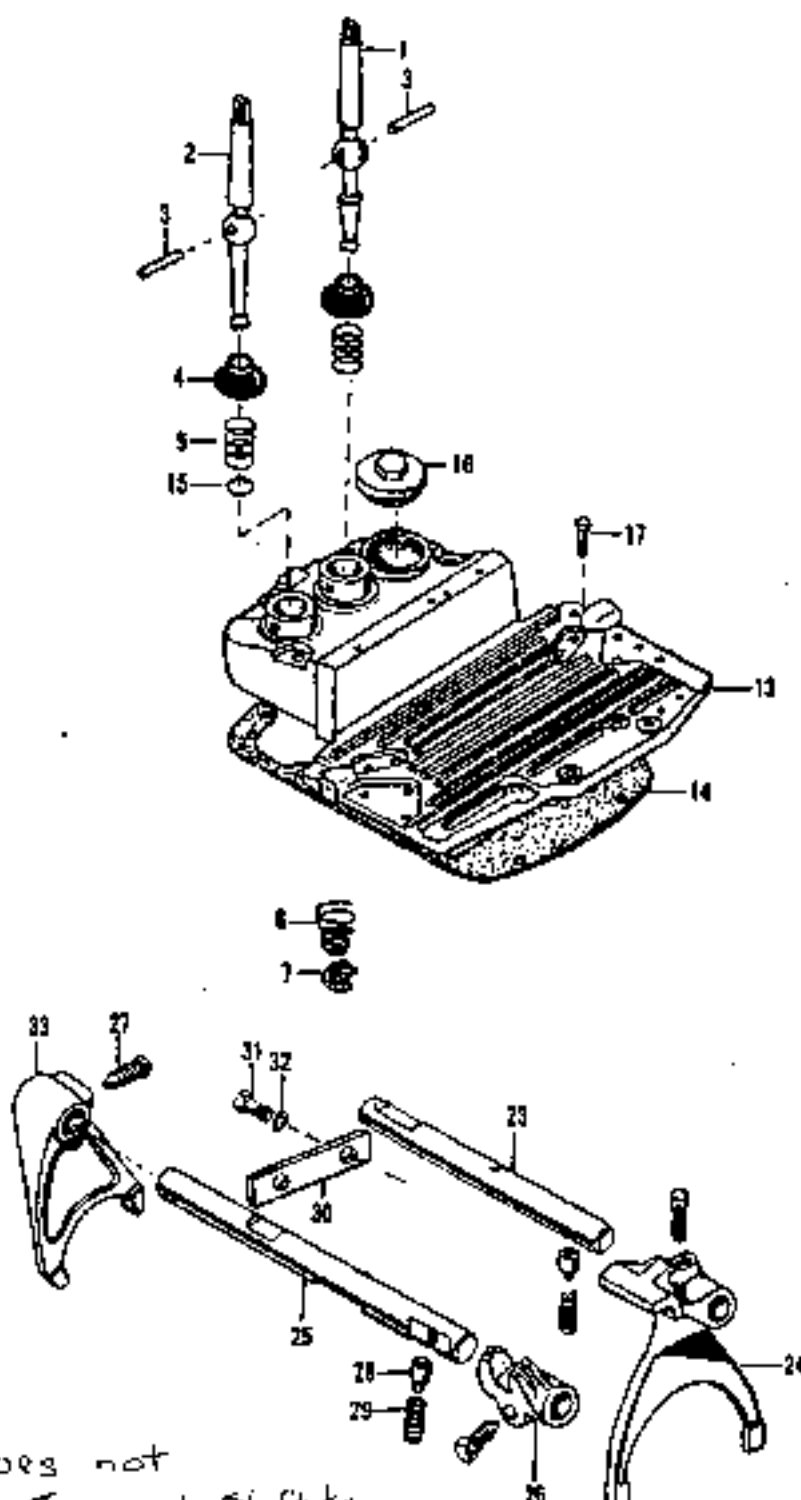
Check Teanny Cold, engine off, Level surface



This complete assembly use C-3

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22226	Case Assembly	1
8	P22227	Bearing (Needle)	2
9	P22228	Cap, Filler	1
10	P22229	"O" Ring, Filler Cap	1
11	Com'l.	Pin (3/16 x 1" Cotter)	1
12	P22230	Pump Assembly, Oil (Incl. Item 13)	1
13	P22231	Seal	1
14	P22248	Gasket, Oil Pump	1
16	P22607	Pump Kit	1
17			
20	Com'l.	Bolt (5/16 x 1-3/4" NC, Hex.)	4
22	Com'l.	Washer (5/16" Sealing)	4
23	P22234	Sump, Oil	1
24	P22235	Screen, Oil Sump	1
25	P22249	Gasket	1
26	Com'l.	Bolt (7/16 x 1-3/8" NC, Hex.)	11
27	P22236	Plug, Drain	1
28	P22237	Plug, Oil Sump	2
29	P22238	Tube, Suction	1
30	P22239	"O" Ring, Tube	2
31	P22240	"O" Ring	1
38	P22241	Distributor Assembly	1
39	P22242	Valve Assembly	1
40	P22250	Gasket, Oil Distributor	1
41	Com'l.	Bolt (3/8 x 2" NC, Hex.)	4
42	Com'l.	Bolt (3/8 x 2-1/2" NC, Hex.)	2
43	Com'l.	Washer (3/8" Sealing)	6
44	P22243	Shaft	1
45	P22244	Lever	1
46	P22245	Pin, Headless	1
47	P22246	Ring, Snap	2
48	P22247	Cover	1
50	Com'l.	Bolt (5/8 x 1" NC, Hex.)	2
53	P15272	Grease Fitting (1/4" Drive)	1

LOLL Engineering Co. Inc.		ST. PAUL, MINNESOTA 1947
TRANSMISSION CASE & CONTROL VALVE	PUBLICATION NUMBER 1846	



If Shifter does not
Shift properly, Ex. want shift to
neutral

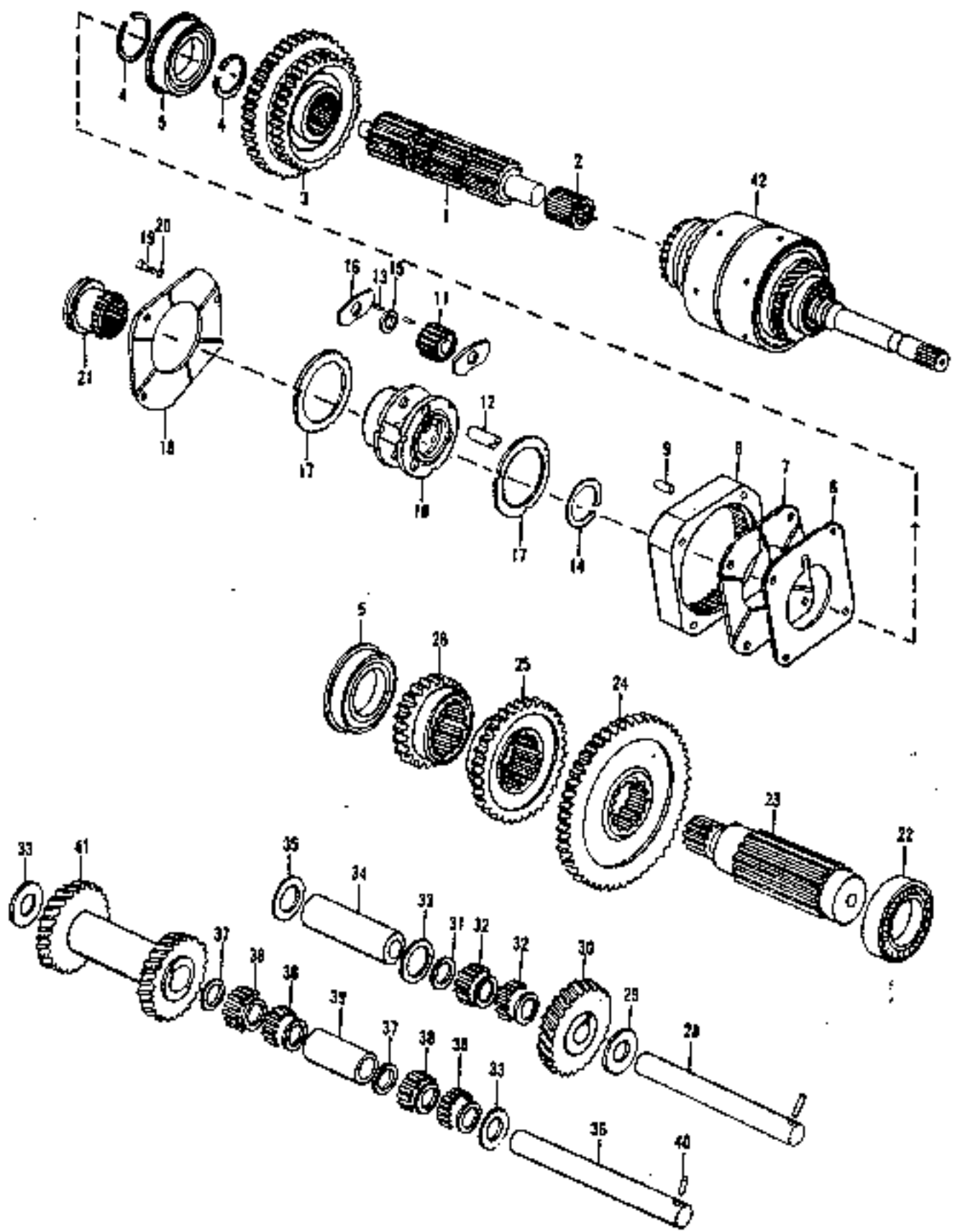
Internally: Bent Forks or
unsynchronized Rails

Externally: Make all external Adj. first.

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22252	Lever, Gear Shift	1
2	P22253	Lever, Planetary Shift	1
3	P22254	Pin, Lever	2
4	P22255	Cover, Lever	2
5	P22256	Spring, Shifter Boot	2
6	P22257	Spring, Gear Shifter	1
7	P22258	Seat, Gear Shift Lever Spring	1
13	P22261	Support, Gear Shift Lever	1
14	P22251	Gasket, Support	1
15	P22259	"O" Ring, Shift Lever	1
16	P22260	Plug, Filler (2-5/16" Dia.)	1
17	Com'l.	Bolt, Support to Transmission (7/16 x 1-1/4" NC, Hex.)	2
17	Com'l.	Bolt, Support to Transmission (7/16 x 2" NC, Hex.)	2
17	Com'l.	Bolt, Support to Transmission (7/16 x 3" NC, Hex.)	2
23	P22263	Rail, Intermediate and High	1
24	P22264	Fork, Intermediate and High	1
25	P22265	Rail, Shifter, Planetary	1
26	P22267	Selector, Planetary	1
27	P22271	Screw, Fork (3/8" NF, Dog Pt. Sw. Hd.)	3
28	P22268	Plunger, Shift Rail	1
29	P22269	Spring, Shifter Rail	2
30	P22270	Plate, Gear Shift Lever Stop	2
31	Com'l.	Bolt, Stop Plate (3/8 x 3/4" NC, Hex.)	2
32	Com'l.	Washer, Stop Plate (3/8" Lock)	2
33	P22266	Fork, Planetary Shift	1

LULL <i>Engineering Co., Inc.</i>		<small>ST. PAUL, MINNESOTA 1912</small>
<small>WASHERS</small>	GEAR SHIFT GROUP	PUBLICATION NUMBER 1847

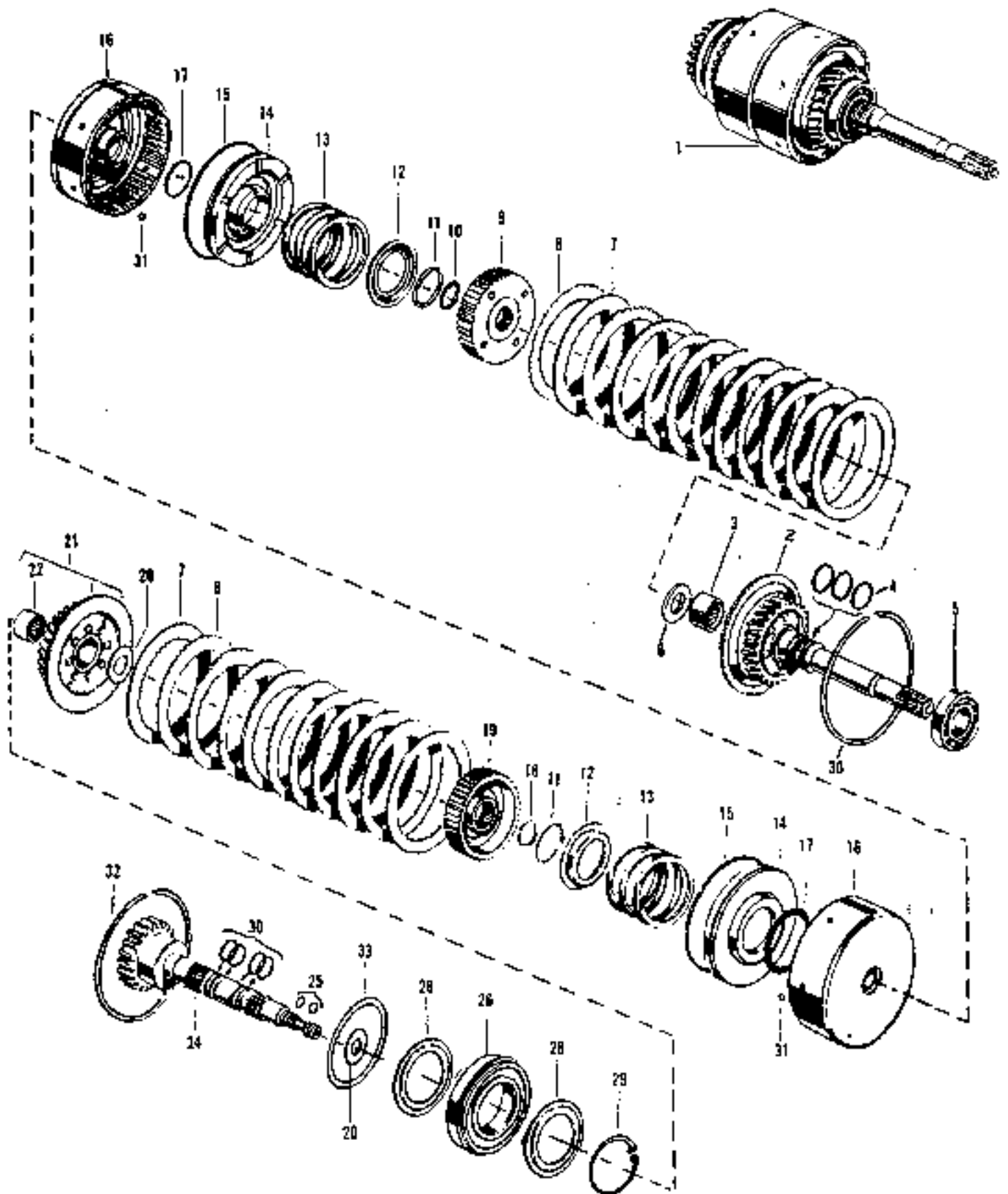
INSTANT REVERSE TRANSMISSION



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22272	Shaft, Main (22 Teeth, 18 Splines)	1
2	P22273	Bearing, Pilot Main Shaft (Roller)	1
3	P22274	Gear, Main Shaft, Intermediate and High (47 - 30 Teeth)	1
4	P22275	Ring, Snap, Rear Bearing (External)	2
5	P22276	Bearing, Ball	2
6	P22277	Shim, Planetary	1
7	P22278	Plate, Front Cover	1
8	P22279	Gear, Planetary Ring	1
9	P22280	Pin, Dowel (3/8 x 1-1/8")	2
10	P22281	Carrier, Planetary Pinion	1
11	P22282	Pinion, Planetary	3
12	P22283	Shaft, Planetary Pinion	3
13	P22284	Roller, Pinion (16 Per Path)	96
14	P22285	Ring, Snap (External)	1
15	P22286	Washer, Roller, Planetary Pinion	3
16	P22287	Washer, Pinion Thrust	6
17	P22288	Washer, Gear Thrust	2
18	P22289	Plate, Rear Cover	1
19	Com'l.	Bolt (3/8 x 2-7/8" NC, Hex.)	4
20	Com'l.	Washer (3/8" Lock)	3
21	P22290	Coupler, Planetary Shift	1
22	P22291	Bearing, Countershaft, Front (Ball)	1
23	P22292	Countershaft (17 - 21 Teeth)	1
24	P22293	Gear, Countershaft Driven (45 Teeth)	1
25	P22294	Pinion, High (39 Teeth - 17 Splines)	1
26	P22295	Pinion, Intermediate (22Teeth - 17 Splines)	1
28	P22296	Shaft, Idler Gear (3/4 x 8-25/32")	1
29	P22297	Washer, Idler Gear (Inner)	1
30	P22298	Gear, Idler (28 Teeth)	1
31	P22299	Spacer, Bearing, Idler Shaft (3/4 x 1-7/64 x 1/16")	3
32	P22300	Bearing, Idler Shaft & Countershaft	100
33	P22301	Washer, Thrust, Idler & Countershafts (57/64 x 1-3/4 x 1/16")	3
34	P22302	Spacer, Idler Gear	1
35	P22303	Washer, Spacer, Idler Gear	1
36	P22304	Countershaft (13/16 x 8-25/32")	1
37	P22305	Washer, Countershaft Bearing (55/64 x 1-5/32 x 1/16")	6
39	P22306	Spacer, Countershaft Bearing (7/8 x 1-1/8 x 3-1/16")	1
40	P10375	Pin, Shaft (1/4 x 1" Roll)	2
41	P22307	Gear (25-27 Teeth)	1
42	P22308	Shaft and Clutch Assembly	1

WIL <i>Engineering Co., Inc.</i>		<small>ST. PAUL, MINNESOTA 1927</small>
<small>WARRANTY</small>	PUBLICATION NUMBER	
GEAR GROUP, INTERNAL	1848	

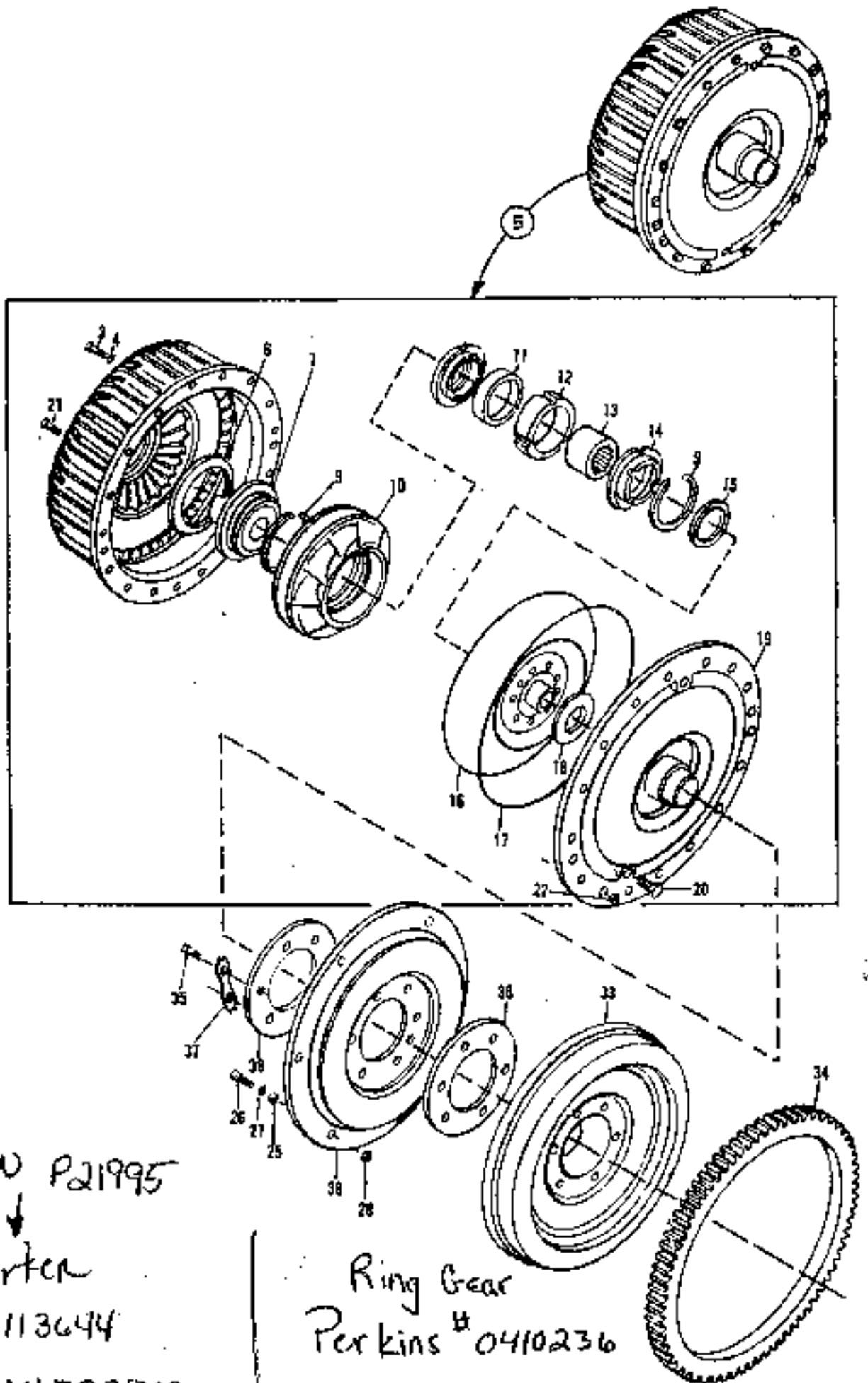
Funk Reverser SHAFT AND CLUTCH ASSEMBLY



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22308	Shaft and Clutch Assembly	1
2	P22309	Shaft, Input Gear (Incl. Item 3,4,5)	1
3	P22310	Bearing (Needle)	1
4	P22311	Ring (1-3/8 x 3/32")	3
5	P22312	Bearing, Input Shaft	1
6	P22301	Washer, Thrust	1
7	P22313	Plate (Internal Spline)	12
8	P22314	Plate (External Spline)	12
9	P22315	Hub (45 Ext. and 20 Int. Teeth)	1
10	P22316	Ring, Snap	1
11	P22317	Ring, Snap	2
12	P22318	Retainer, Clutch Spring	2
13	P22519	Spring, Clutch	2
14	P22320	Piston, Clutch	2
15	P22321	"O" Ring, Seal	2
16	P22322	Cylinder (Incl. Item 17)	2
17	P22323	"O" Ring	1
18	P22324	Ring, Snap	1
19	P22325	Hub, Clutch (45 Ext. and 22 Int. Teeth)	1
20	P22326	Washer, Thrust	2
21	P22327	Gear (Incl. Item 22)	1
22	P22328	Bearing	1
24	P22329	Shaft Assembly, Output (Incl. Item 25)	1
25	P22330	Ring (5/8 x 3/32")	1
26	P22331	Bearing, Output Shaft	1
28	P22332	Slinger	2
29	P22333	Ring, Snap	1
30	P22334	Ring (1-1/16 x 3/32")	4
31	P22335	Ball (1/4" Dia.)	2
32	P22336	Ring, Snap	2
33	P22337	Shim (3-15/16 x 4-5/8 x 1/64")	A/R

WILL <i>Engineering Co., Inc.</i>		29, Canal BIRMINGHAM, ALABAMA
SHAFT & CLUTH GROUP		PUBLICATION NUMBER 1849

TOQUE CONVERTER



Lull P/N P21995

↓
Starter

Delco # 1113644

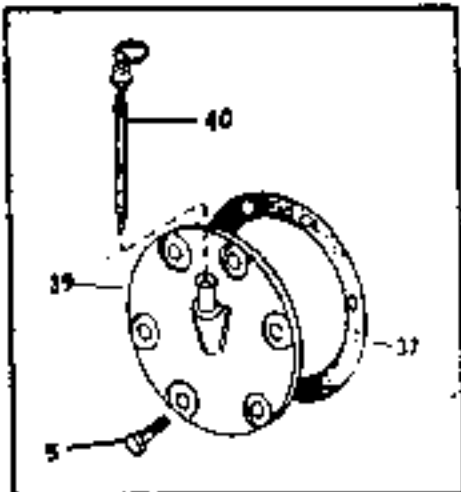
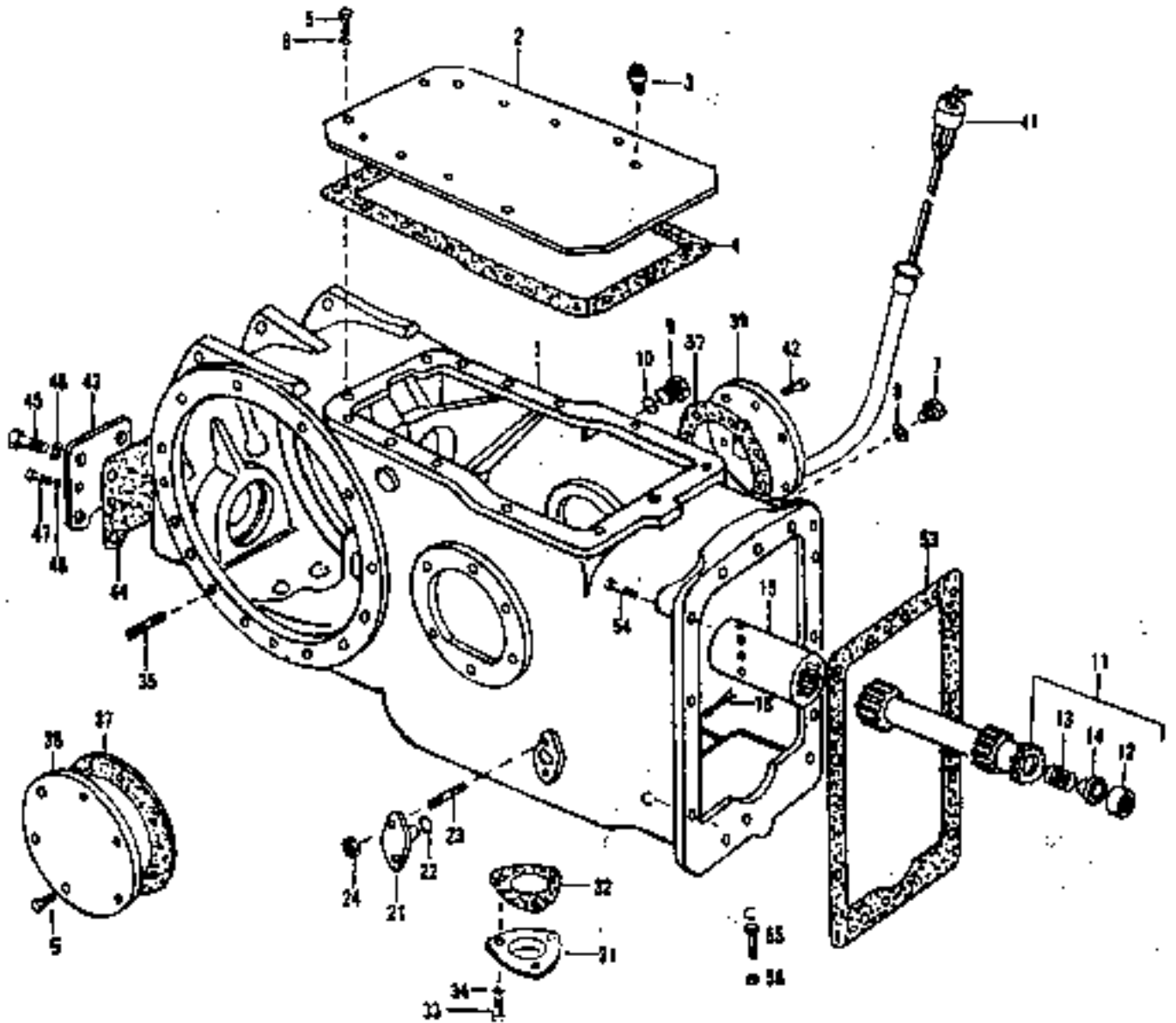
Perkins # NA003702

Ring Gear
Perkins # 0410236

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22339	Converter Assembly, Torque	1
3	Com'l.	Bolt (1/4 x 5/8" NC, Hex.)	8
4	Com'l.	Washer (1/4" Lock)	8
5	P22340	Housing, Impeller (Incl. Items 3, 4, 6 & 7)	1
6	P22341	Ring, Sealing	1
7	P22342	Hub, Impeller	1
9	P22343	Ring, Snap	2
10	P22344	Stator Assembly	1
11	P22345	Clutch Assembly	1
12	P22346	Race, Outer	1
13	P22347	Race, Inner	1
14	P22348	Washer, Thrust	2
15	P22349	Washer, Thrust	2
16	P22350	Turbine Assembly	1
17	P22351	Gasket, Converter Cover (Outer)	1
18	P22352	Washer, Turbine Thrust	1
19	P22353	Cover Assembly	1
20	P22354	Plug, Cover (1/8 - 27 P.T.)	2
21	P22355	Bolt, Cover Retaining	18
22	Com'l.	Nut, Bolt (5/16" NF, Hex., Lock)	18
25	P22356	Spacer, Converter to Drive Plate	6
26	Com'l.	Screw (5/16 x 1-1/8" NF, Hex. Skt. Hd.)	6
27	Com'l.	Washer (5/16")	6
28	Com'l.	Nut, Converter Mounting (5/16" NF, Hex., Lock)	6
33	P22205	Flywheel (Incl. Item 34)	1
34	P22206	Ring, Starter	1
35	Com'l.	Bolt (1/2 x 1-1/2" NF, Hex.)	6
36	P22208	Shim, Flywheel to Crankshaft	2
37	P22209	Tabwasher	3
38	P22204	Plate, Converter Drive	1
39	P22207	Plate, Drive Plate Retaining	1


WILL Engineering Co., Inc.		<small>ST. PAUL, MINN.</small>
DESCRIPTION	PUBLICATION	
TORQUE CONVERTER	NUMBER	
	1850	

DIFFERENTIAL HOUSING

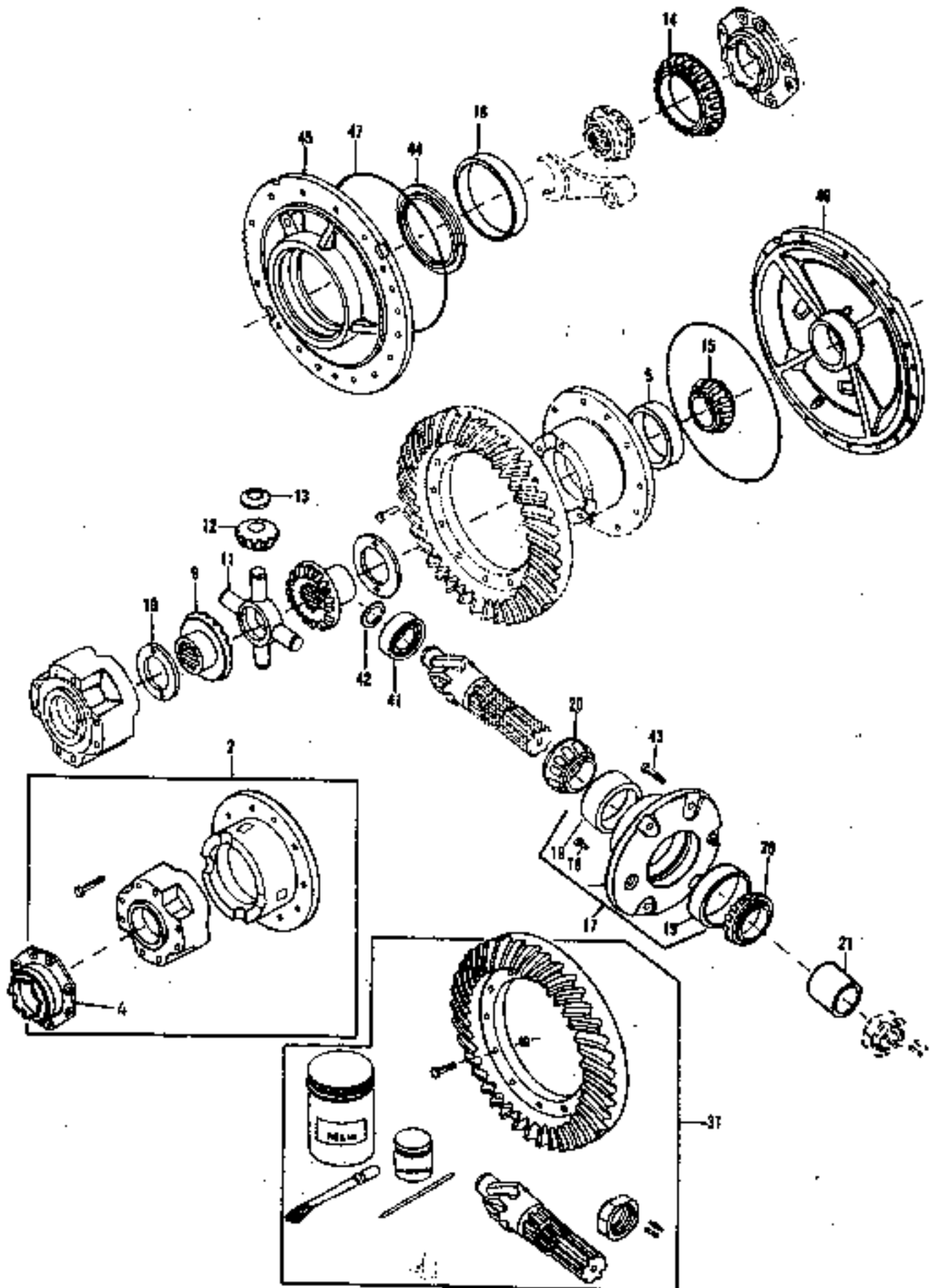


This assembly use 80-90w

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22360	Housing, Differential	1
2	P22362	Cover, Differential Housing	1
3	P22363	Breather Assembly	1
4	P22361	Gasket, Differential Cover	1
5	Com'1.	Bolt, Cover to Differential Housing (7/16 x 7/8" NC, Hex.)	25
6	Com'1.	Washer, Cover to Differential Housing (7/16" Lock)	13
7	P22364	Plug, Housing Drain	1
8	P22365	Washer, Plug	1
9	P22366	Plug, Housing	1
10	P22367	Washer, Plug	2
11	P22370	Shaft Assembly, Rear Drive (Incl. Items 12, 13 & 14)	1
12	P22373	Bearing, Shaft	1
13	P22371	Spring, Shaft	1
14	P22372	Abutment, Shaft	1
15	P22369	Coupling, Rear Drive	1
16	Com'1.	Cotter Pin (3/16 x 2-1/2")	1
21	P22377	Pin, Pump Support	2
22	P22378	"O" Ring, Pump Support Pin	2
23	P22379	Stud (5/16 NC - NF x 1-1/16")	4
24	Com'1.	Nut (5/16" NF, Hex.)	4
31	P22380	Housing Cover, Bottom	1
32	P22381	Gasket, Cover Plate	1
33	Com'1.	Bolt (5/16 x 5/8" NC, Hex.)	3
34	Com'1.	Washer (5/16" Lock)	3
35	P22388	Stud, Housing (1/2" NC - NF x 2-3/8")	30
36	P22382	Side Cover, Housing, Plain	1
37	P22383	Gasket, Cover	2
38	P22385	Side Cover and Tube Assembly, Oil Filler	1
39	P22384	Side Cover with Dipstick Access	1
40	P22386	Dipstick, Oil Level (Short)	1
41	P22387	Dipstick, Oil Level (Long)	1
43	P22374	Cover	1
44	P22375	Gasket, Cover	1
45	Com'1.	Bolt, Cover (1/2 x 7/8" NC, Hex.)	4
46	Com'1.	Washer, Cover Bolt (1/2" Lock)	4
47	Com'1.	Bolt, P.T.O Cover (7/16 x 7/8" NC, Hex.)	2
48	Com'1.	Washer, Cover Bolt (7/16" Lock)	2
53	P22368	Gasket, Differential Housing to Transmission	1
54	Com'1.	Bolt (7/16 x 2-1/4" NC, Hex.)	5
55	Com'1.	Bolt (7/16 x 1-7/8" NF, Hex.)	11
56	Com'1.	Nut (7/16" NF, Hex.)	11

		<small>ST. PAUL, MINNESOTA 1954</small>
DIFFERENTIAL HOUSING		PUBLICATION NUMBER 1851

DIFFERENTIAL



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
4	P22595	Cap, Coupling	1
2	P22389	Case Assembly (Matched) Incl. Item 4	1
5	P22390	Cup, Bearing, Case	1
9	P22391	Gear, Side (14 Teeth, 39 Splines)	2
10	P22392	Washer, Thrust (3 x 4-5/32 x 1/16")	2
11	P22393	Cross, Pinion	1
12	P22394	Pinion (3-25/64" Dia.)	4
13	P22395	Washer, Thrust (1 x 2" Cupped)	4
14	P22396	Cone, Case (Left)	1
15	P22397	Cone, Case (Right)	1
16	P22398	Cup, Bearing, Carrier Plate (Left)	1
17	P22399	Sleeve Assembly, Drive Pinion Bearing	1
18	P22400	Pin, Dowel, Sleeve Locating	1
19	P22401	Cup, Bearing	2
20	P22402	Cone, Driving Pinion Bearing	2
21	P22403	Spacer, Pinion (3/4 x 2-3/8 x 2-3/8")	1
31	P22404	Gear and Pinion (Matched Set)	1
41	P22405	Bearing, Pinion Pilot	1
42	P22406	Ring, Snap, Bearing Retaining	1
43	Com'l.	Bolt, Bearing Sleeve (9/16 x 1-1/4" NC, Hex)	6
44	P22407	Shim, Bearing Pre-Load (.029" - .031")	x
44	P22408	Shim, Bearing Pre-Load (.034" - .036")	x
44	P22409	Shim, Bearing Pre-Load (.039" - .041")	x
44	P22410	Shim, Bearing Pre-Load (.044" - .046")	x
44	P22411	Shim, Bearing Pre-Load (.049" - .051")	x
45	P22412	Plate, Differential Carrier (Left)	1
46	P22413	Plate, Differential Carrier (Right)	1
47	P22414	"O" Ring, Carrier Plate	4

WILL Engineering Co., Inc.		ST. PAUL, MINNESOTA 1921
DIFFERENTIAL, INTERNAL	PARTS LIST NUMBER 1852	

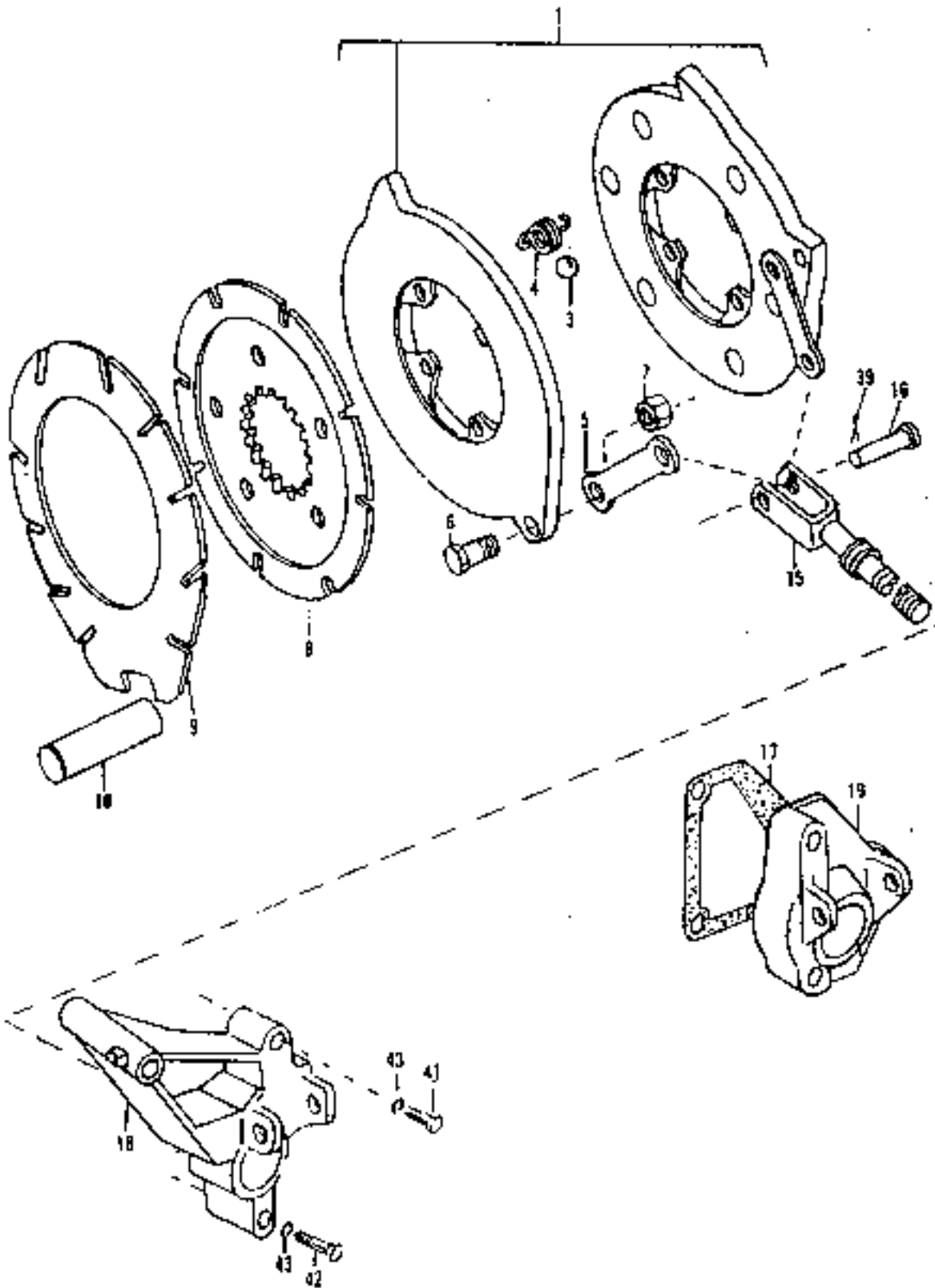
<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
P22415	Housing, Axle (Left)	1
P22416	Housing, Axle (Right)	1
P22417	Plug, Drain (1/2" P.T. Sq. Hd.)	2
P22418	Seal, Axle Shaft	2
P22419	Cup, Axle Shaft Bearing	2
P22420	Shim, Axle Bearing (.005")	x
P22421	Shim, Axle Bearing (.010")	x
P22422	Shim, Axle Bearing (.015")	x
Com'l.	Screw (5/16 x 13/16" NF, Flat Sckt. Hd.)	4
P22423	Shaft, Front Axle	2
P22425	Cover Assembly, Front Axle Drive (Incl. Items 21, 22 & 23)	2
P22427	Cup, Bearing	2
P22429	Seal, Oil	2
P22430	Plug, Drain	2
P22431	Axle, Wheel	2
P22432	Shield, Dust	2
P22433	Wheel Lug	16
P22435	Cone, Cover	2
P22437	Ring, Snap	2
P22438	Carrier, Planetary Pinion	2
P22440	Pinion, Planetary	6
P22441	Shaft, Planetary	6
P22442	Roller (29 Per Path)	348
P22443	Washer, Roller Spacer (1-3/64 x 1-17/64 x 1/16")	6
P22444	Washer, Thrust	8
P22445	Washer, Thrust	4
P22446	Pin, Pinion (Spirol)	6
P22447	Bushing, Carrier	2
P22449	Cone, Front Axle	2
P22451	Gear, Axle Shaft Sun	2
P22452	Gear, Planetary Ring	2
P22453	Gasket, Ring Gear	4
Com'l.	Bolt (7/16 x 3-7/8" NF, Hex.)	24
Com'l.	Washer (7/16" Lock)	24
Com'l.	Nut (7/16" NF, Hex.)	24
Com'l.	Bolt (1/2 x 1-7/8" NC, Hex.)	16

* For S/N 102 & 106 Use as Follows:

Item #11	P22424
Item #20	P22426
Item #21	P22428
Item #27	P22436
Item #32	P22439
Item #40	P22448
Item #41	P22450
Item #28	P22437

WILL Engineering Co., Inc.		ST. PAUL, MINNESOTA 1951
FRONT AXLE ASSEMBLY		PUBLICATION NUMBER 1853

DISC BRAKES



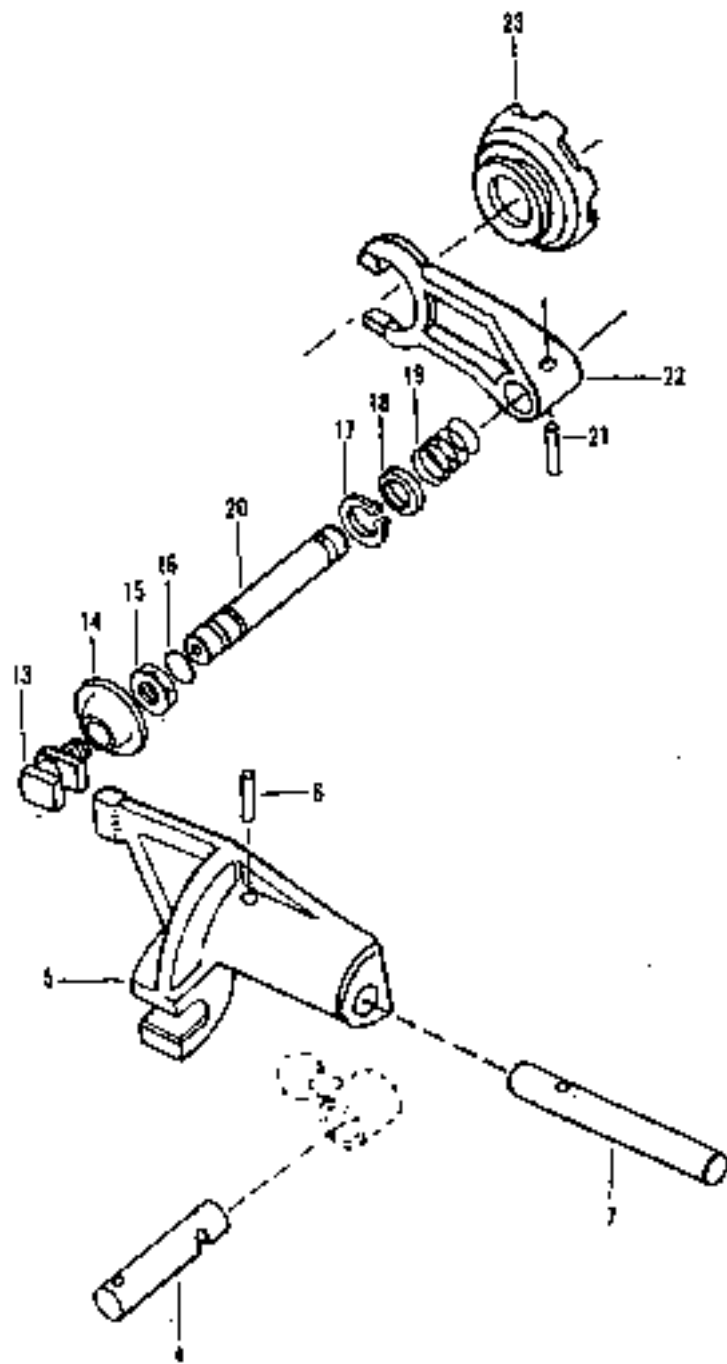
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P22455	Actuator Assembly, Brake (Incl. Items 3 thru 7)	2
3	P22456	Ball (7/8")	6
4	P22457	Spring, Return	4
5	P22458	Link	2
6	P22459	Pin, Pivot	2
7	P22460	Nut	2
8	P22461	Disc (Friction)	10
9	P22462	Disc (Intermediate)	6
10	P22463	Pin, Reaction	2
15	P22464	Rod, Brake	2
16	P22465	Pin, Rod	2
17	P22466	Gasket, Bracket	2
18*	P22467	Bracket, Brake Lever (Left)	1
19*	P22468	Bracket, Brake Lever (Right)	1
39	Com'l.	Cotter Pin (5/32 x 1-1/4")	2
41	Com'l.	Bolt (3/8 x 2-1/4" NC, Hex.)	4
42	Com'l.	Bolt (3/8 x 2-3/4" NC, Hex.)	2
43	Com'l.	Washer (3/8" Lock)	6

For S/N 102 Use As Follows:

Item #18 P22485
Item #19 P22484


WIL <i>Engineering Co., Inc.</i>		ST. PAUL, MINNESOTA 1927
DISC BRAKE ASSEMBLY	PUBLICATION NUMBER 1854	

DIFFERENTIAL LOCK



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
4	P22502	Pin, Handle Pivot	1
5	P22503	Lever	1
6	P25504	Pin (3/16 x 1-1/4" Groove)	1
7	P22505	Shaft, Lever	1
13*	P22506	Clevis, Differential Lock	1
14	P22507	Boot, Clevis	1
15	Com'l.	Jam Nut (7/16" NE)	1
16	P22508	Seal, Shaft	1
17	P22509	Ring, Spring Retaining	1
18	P22510	Washer	1
19	P22511	Spring	1
20	P22512	Shaft	1
21	P10378	Pin (1/4 x 1-1/2" Roll)	1
22	P22513	Fork	1
23	P22514	Coupler, Fork	1

* For S/N 102 Use P22515

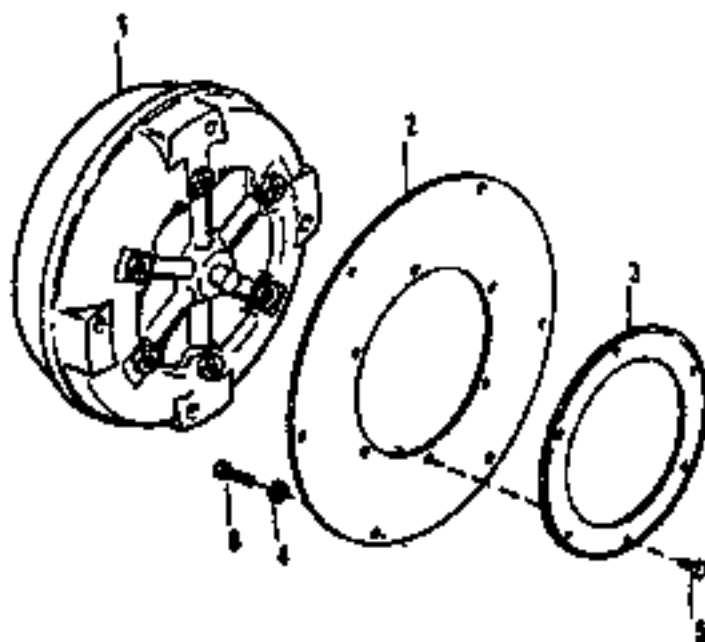
 Engineering Co., Inc.		<small>ST. PAUL MINNESOTA 1942</small>
DIFFERENTIAL LOCK ASSEMBLY		PUBLICATION NUMBER 1855

PARTS NOT ILLUSTRATED

Gasket Set, Top Overhaul	P22176
*Gasket Set, Top Overhaul	P22177
Gasket Set, Bottom Overhaul	P22178
*Gasket Set, Bottom Overhaul	P22179
Starter	P22554
*Starter	P22555
Starter Solenoid	P22556
*Starter Solenoid	P22557
Alternator (37 amp.)	P22558
*Alternator (61 amp.)	P22559
Glow Plug (Heater)	P22210

* For S/N 102 & 106 only

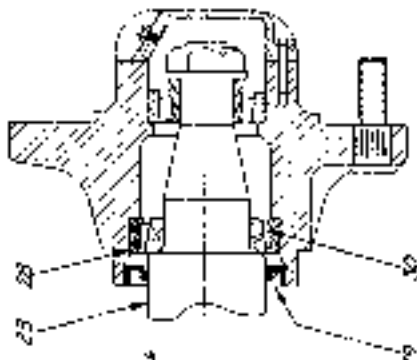
TORQUE CONVERTER



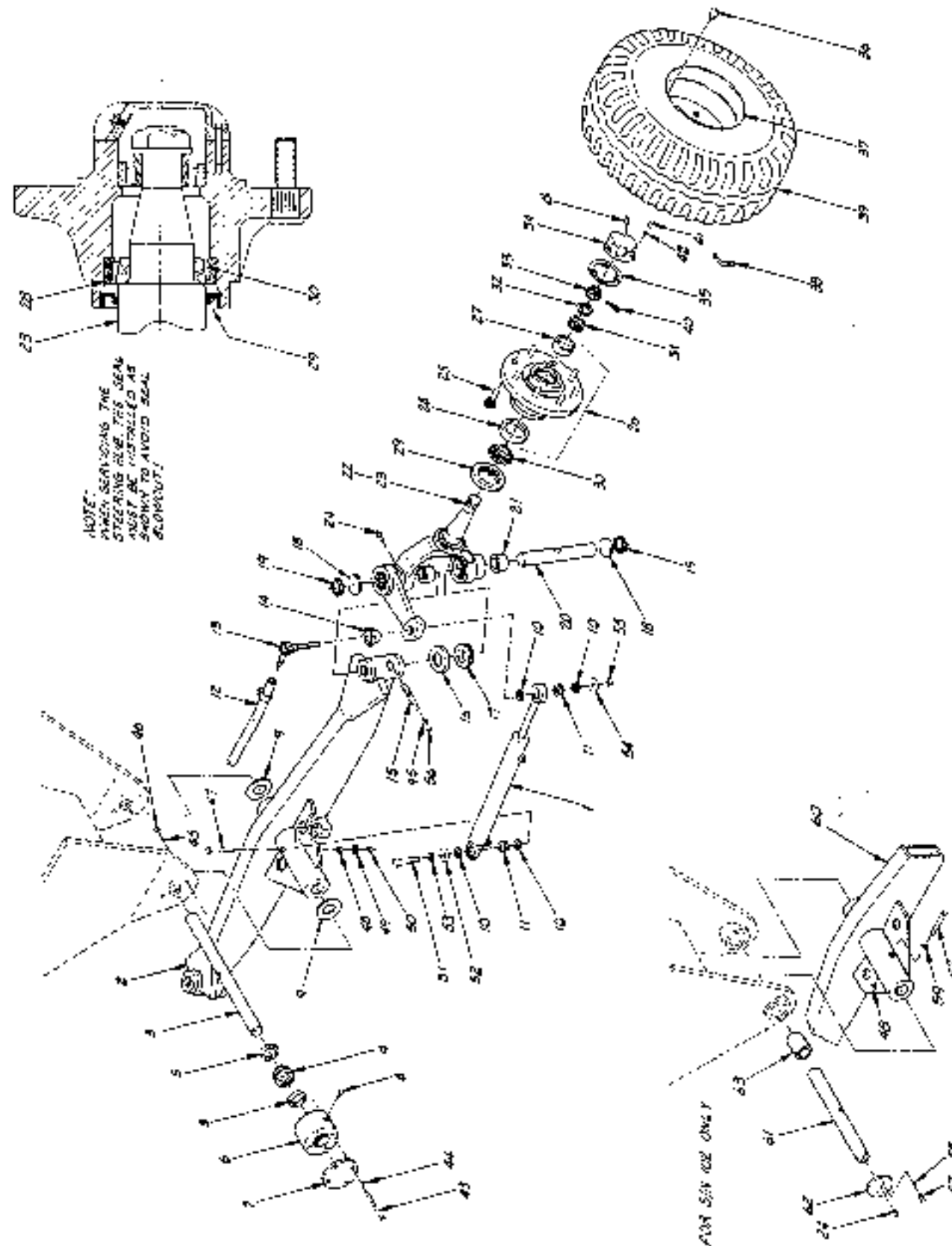
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	P25450	Converter Assembly, Torque	1
2	P25451	Plate, Drive	1
3	P25452	Plate, Reinforcement	1
4	P25675	Washer, Drive Plate	6
5	P13515	Bolt (3/8 X 1/2 NF, Hex, Lock, Grade 8)	6
6	P25660	Bolt (M8 - 1.25 X 25mm Hex.)	6

S/N 169, 171-173, 175-177, 181, 182, 184 & 186 ONLY.

WILL Engineering Co., Inc.	
TORQUE CONVERTER	
1856	



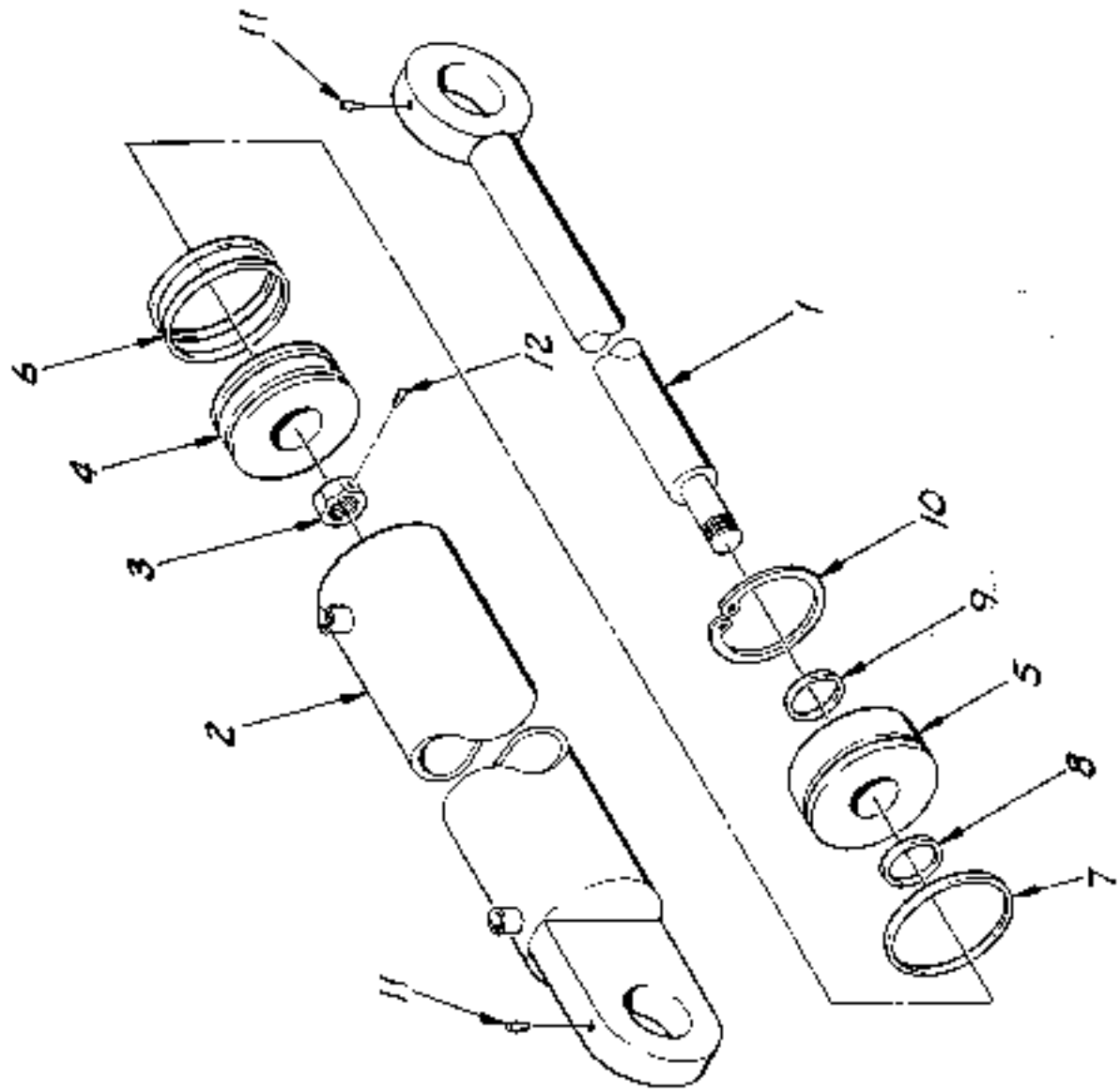
NOTE:
 WHEN SEALING THE
 STEERING KNUCKLE SEAL
 MUST BE INSTALLED AS
 SHOWN TO AVOID SEAL
 GLOTTING.



FOR USE ONLY

62	62309	WASHER
61	62308	WASHER
60	62307	WASHER
59	62306	WASHER
58	62305	WASHER
57	62304	WASHER
56	62303	WASHER
55	62302	WASHER
54	62301	WASHER
53	62300	WASHER
52	62299	WASHER
51	62298	WASHER
50	62297	WASHER
49	62296	WASHER
48	62295	WASHER
47	62294	WASHER
46	62293	WASHER
45	62292	WASHER
44	62291	WASHER
43	62290	WASHER
42	62289	WASHER
41	62288	WASHER
40	62287	WASHER
39	62286	WASHER
38	62285	WASHER
37	62284	WASHER
36	62283	WASHER
35	62282	WASHER
34	62281	WASHER
33	62280	WASHER
32	62279	WASHER
31	62278	WASHER
30	62277	WASHER
29	62276	WASHER
28	62275	WASHER
27	62274	WASHER
26	62273	WASHER
25	62272	WASHER
24	62271	WASHER
23	62270	WASHER
22	62269	WASHER
21	62268	WASHER
20	62267	WASHER
19	62266	WASHER
18	62265	WASHER
17	62264	WASHER
16	62263	WASHER
15	62262	WASHER
14	62261	WASHER
13	62260	WASHER
12	62259	WASHER
11	62258	WASHER
10	62257	WASHER
9	62256	WASHER
8	62255	WASHER
7	62254	WASHER
6	62253	WASHER
5	62252	WASHER
4	62251	WASHER
3	62250	WASHER
2	62249	WASHER
1	62248	WASHER

ILL Illustration of the part shown in this drawing.
 PART NO. 101 THRU
 AREA STEER AXLE
 ASSEMBLY
 AUG 68 422



ITEM	PART NO.	DESCRIPTION	REQ.
12	COM'L	SET SCREW, C.P. 1/4"-20NC	1
11	P16611	GREASE ZERK	2
10	P19418	SNAP RING	1
9	P19417	SEAL, ROD	1
8	P19416	WIPER	1
7	P11425	O-RING	1
6	P19419	SEAL, PISTON	2
5	189688A	GLAND	1
4	18967A	PISTON	1
3	16649A	LOCKNUT	1
2	189588	TUBE WELDMENT	1
1	189498	ROD WELDMENT	1

LULL

Engineering Co., Inc.

ST. PAUL,
MINNESOTA
55121

DRAWN BY
JEFF. DAUB

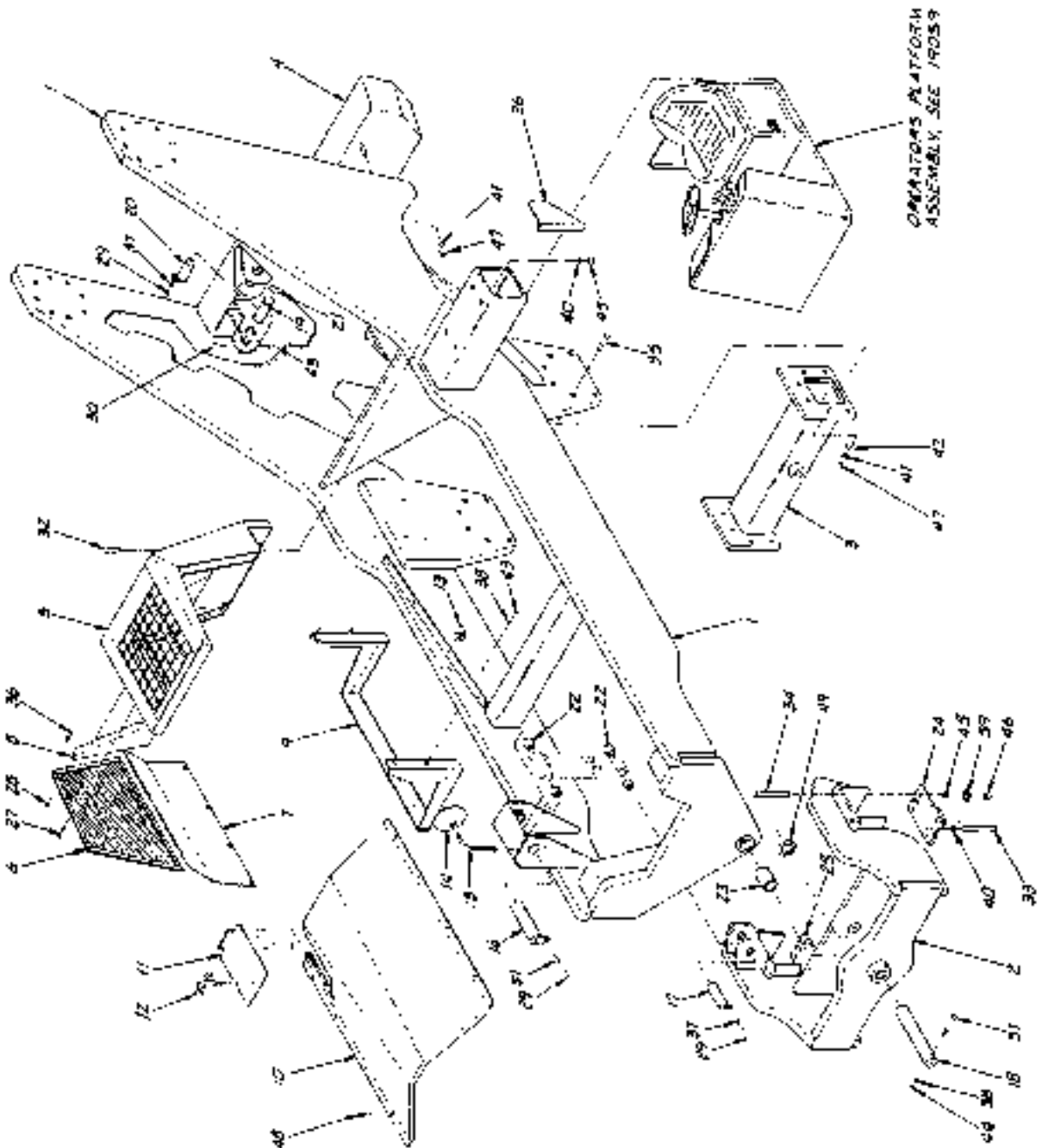
S/N 102 THRU

DRAWING TITLE

STEER CYLINDER
ASSEMBLY
MODEL 422

SCALE 8

DRAWING NO.
19057



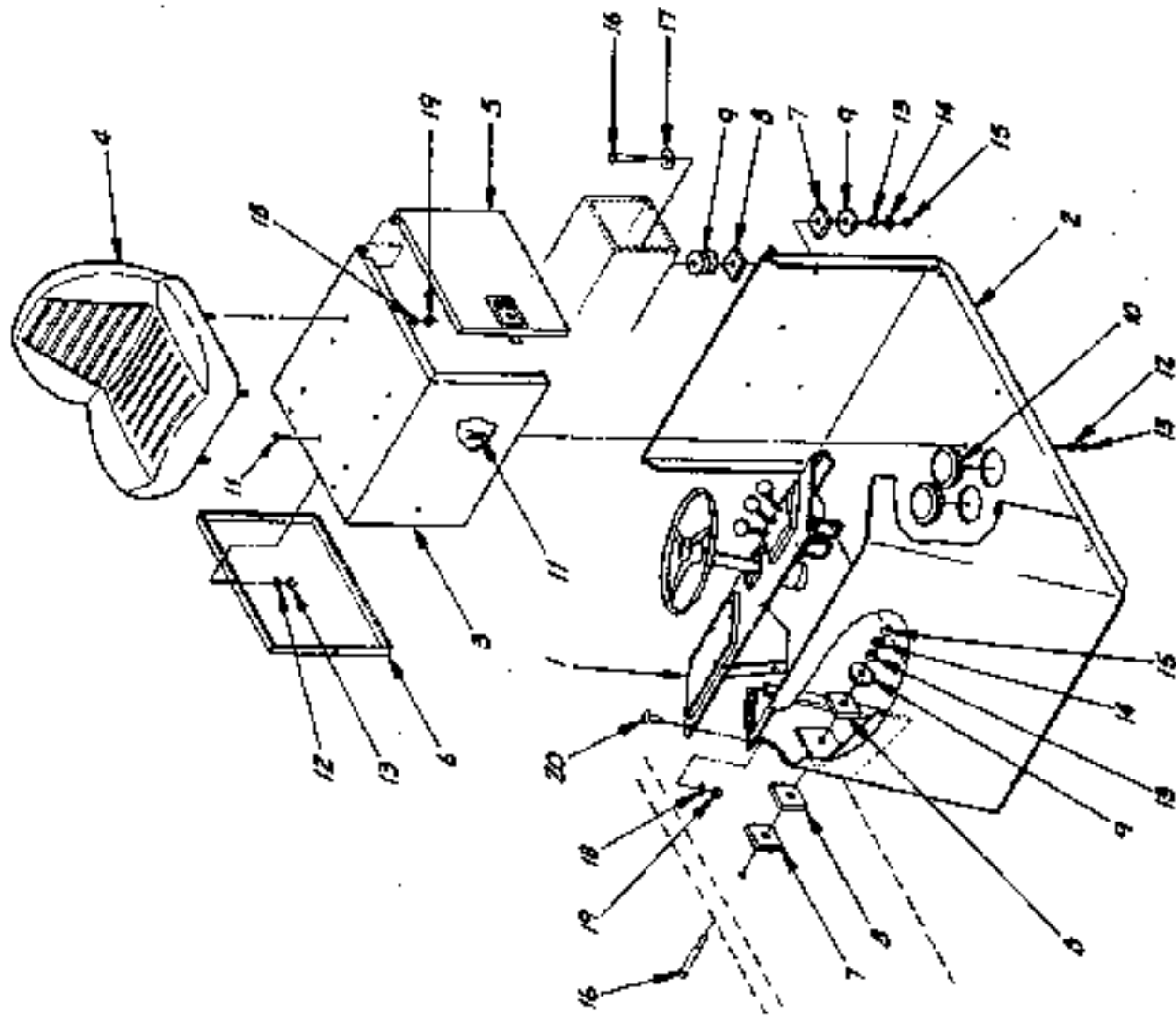
Part No.	Part Name	Qty
1	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
2	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
3	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
4	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
5	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
6	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
7	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
8	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
9	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
10	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
11	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
12	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
13	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
14	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
15	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
16	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
17	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
18	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
19	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
20	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
21	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
22	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
23	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
24	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
25	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
26	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
27	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
28	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
29	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
30	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
31	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
32	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
33	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
34	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
35	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
36	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
37	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
38	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
39	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
40	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
41	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
42	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
43	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
44	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
45	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
46	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
47	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
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51	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
52	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
53	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
54	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
55	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
56	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
57	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
58	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
59	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
60	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
61	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
62	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
63	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
64	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
65	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
66	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
67	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
68	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
69	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
70	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
71	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
72	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
73	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1
74	PLATE, BRASS, 1/2" X 1/2" X 1/8"	1

ALU Exploding G. To

NO. 10000 01/N 001 TURU

MAIN FRAME ASSEMBLY ALBU 422

79058



ITEM	QTY	DESCRIPTION	REQ.
20	COM'L		
19	COM'L	SCREW, R.D. 5/8"-18 NC x 3/4"	7
18	COM'L	NUT, HN. 5/8"-18 NC	12
17	COM'L	LOCKWASHER, 5/16"	12
16	COM'L	FLATWASHER, 3/8"	1
15	COM'L	BOLT, HN. 5/8"-16 NC x 3"	4
14	COM'L	JAM NUT, HN. 5/8"-16 NC	6
13	COM'L	STARWASHER, 3/8"	6
12	COM'L	NUT, HN. 3/8"-16 NC	13
11	COM'L	LOCKWASHER, 3/8"	9
10	COM'L	BOLT, HN. 5/8"-16 NC x 1"	9
9	PI/186	ACCESS COVER	2
8	PI/398	FLATWASHER	44
7	153624	RUBBER MOUNTING PAD	44
6	153644	STEEL MOUNTING PAD	44
5	162828	BAFFLE	1
4	163708	DOOR W/ LOCK	1
3	PI7762	SEAT	1
2	15758C	SEAT STAND	1
1	15830D	PLATFORM	1
1	19060	INSTRUMENT PANEL	1

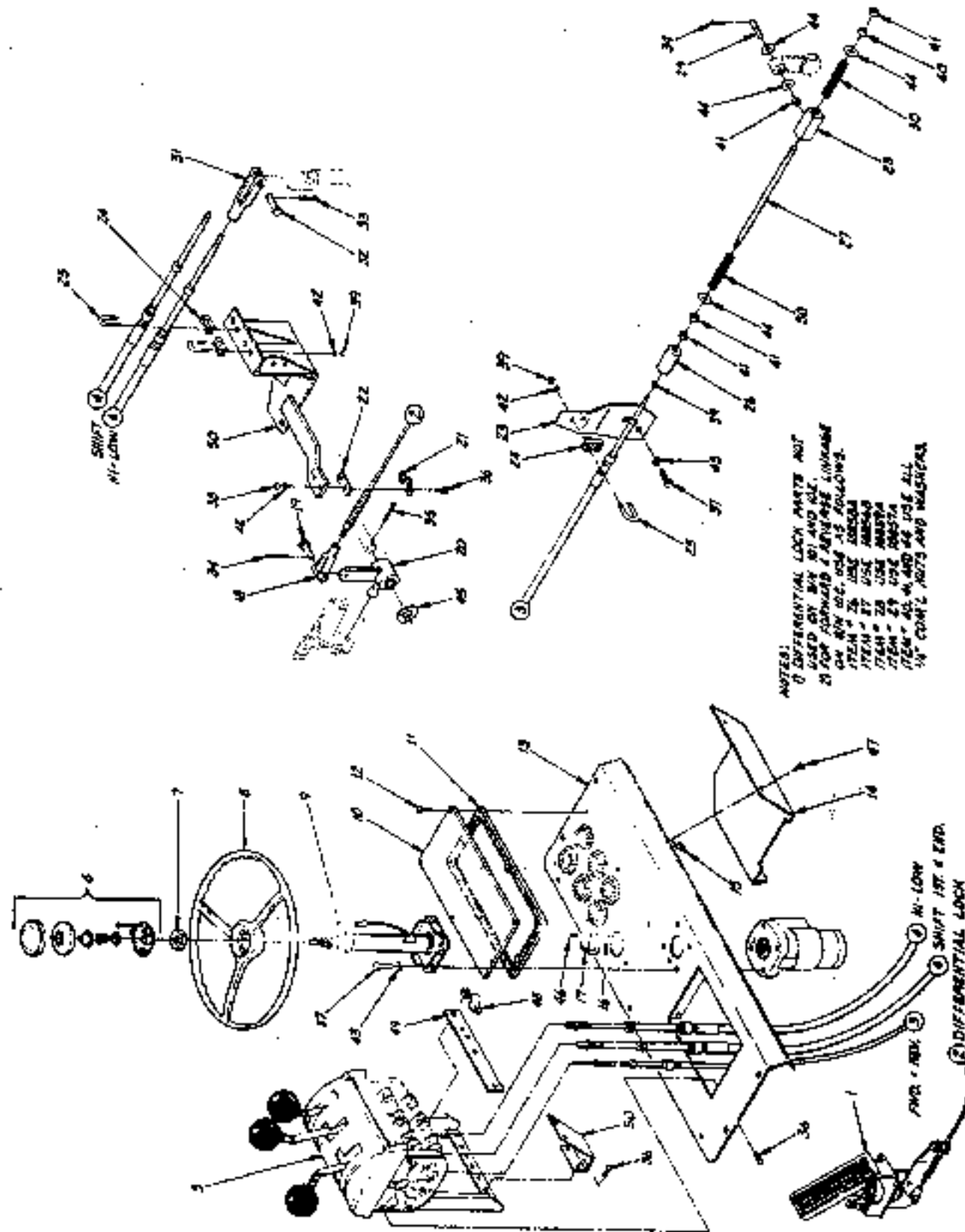
WILL Engineering Co., Inc.
 57 MAIN STREET
 CHICAGO, ILL.

DATE: 5/11/101 THRU
 DRAWING NO. 19059

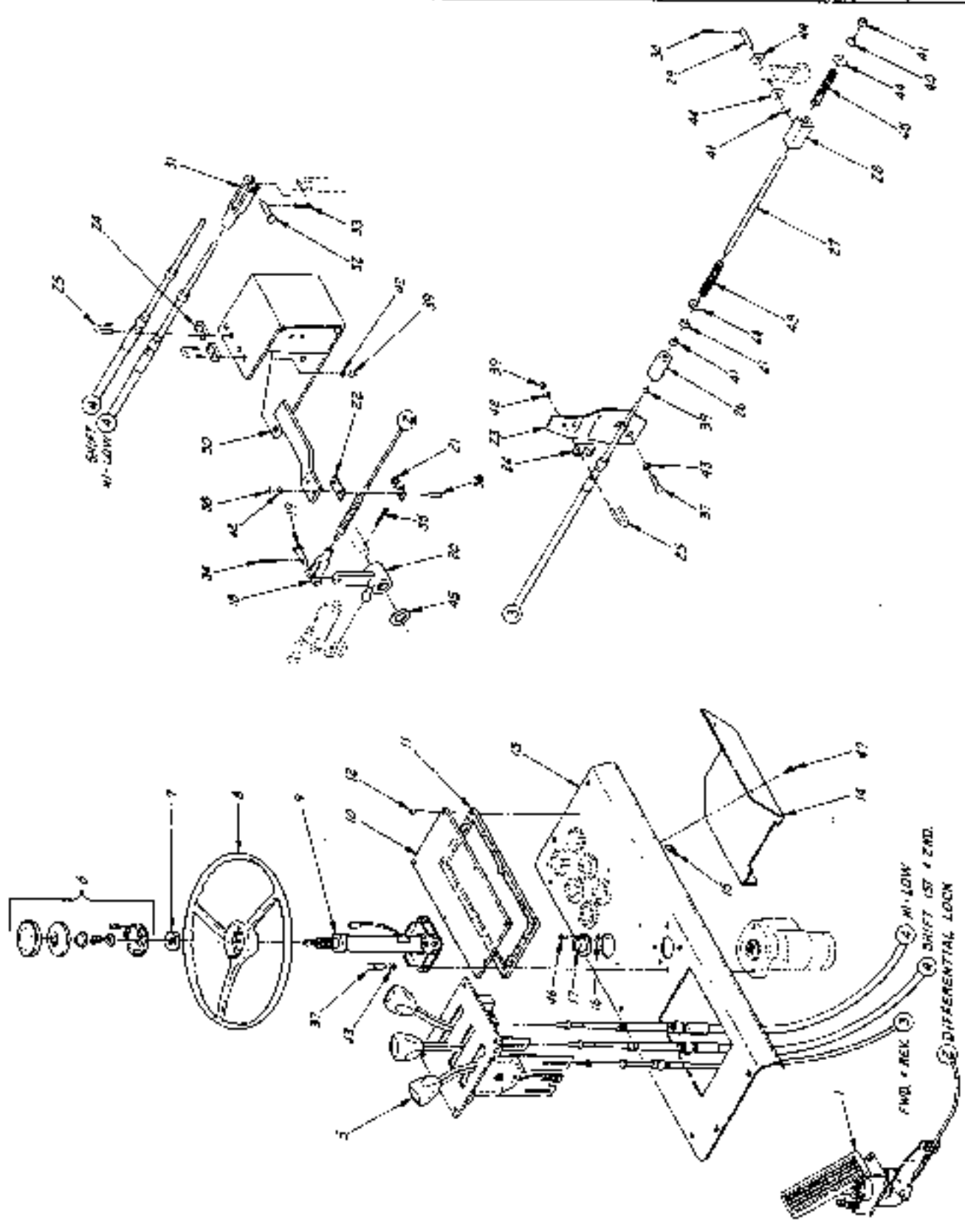
OPERATOR'S PLATFORM ASSEMBLY
 MODEL 422

SCALE: C

40	UPPING BRACKET	EXTENSION BRACKET
41	UPPING BRACKET CLAMP	UPPING BRACKET CLAMP
42	CLAMP	CLAMP
43	SCREEN, 2 1/2" x 3" x 1/8"	SCREEN, 2 1/2" x 3" x 1/8"
44	COMB 1	COMB 1
45	COMB 2	COMB 2
46	COMB 3	COMB 3
47	COMB 4	COMB 4
48	COMB 5	COMB 5
49	COMB 6	COMB 6
50	COMB 7	COMB 7
51	COMB 8	COMB 8
52	COMB 9	COMB 9
53	COMB 10	COMB 10
54	COMB 11	COMB 11
55	COMB 12	COMB 12
56	COMB 13	COMB 13
57	COMB 14	COMB 14
58	COMB 15	COMB 15
59	COMB 16	COMB 16
60	COMB 17	COMB 17
61	COMB 18	COMB 18
62	COMB 19	COMB 19
63	COMB 20	COMB 20
64	COMB 21	COMB 21
65	COMB 22	COMB 22
66	COMB 23	COMB 23
67	COMB 24	COMB 24
68	COMB 25	COMB 25
69	COMB 26	COMB 26
70	COMB 27	COMB 27
71	COMB 28	COMB 28
72	COMB 29	COMB 29
73	COMB 30	COMB 30
74	COMB 31	COMB 31
75	COMB 32	COMB 32
76	COMB 33	COMB 33
77	COMB 34	COMB 34
78	COMB 35	COMB 35
79	COMB 36	COMB 36
80	COMB 37	COMB 37
81	COMB 38	COMB 38
82	COMB 39	COMB 39
83	COMB 40	COMB 40
84	COMB 41	COMB 41
85	COMB 42	COMB 42
86	COMB 43	COMB 43
87	COMB 44	COMB 44
88	COMB 45	COMB 45
89	COMB 46	COMB 46
90	COMB 47	COMB 47
91	COMB 48	COMB 48
92	COMB 49	COMB 49
93	COMB 50	COMB 50
94	COMB 51	COMB 51
95	COMB 52	COMB 52
96	COMB 53	COMB 53
97	COMB 54	COMB 54
98	COMB 55	COMB 55
99	COMB 56	COMB 56
100	COMB 57	COMB 57



UML Engineering Co., Inc.
 314 101 THRU
 INSTRUMENT PANEL
 ASSEMBLY
 MODEL 422

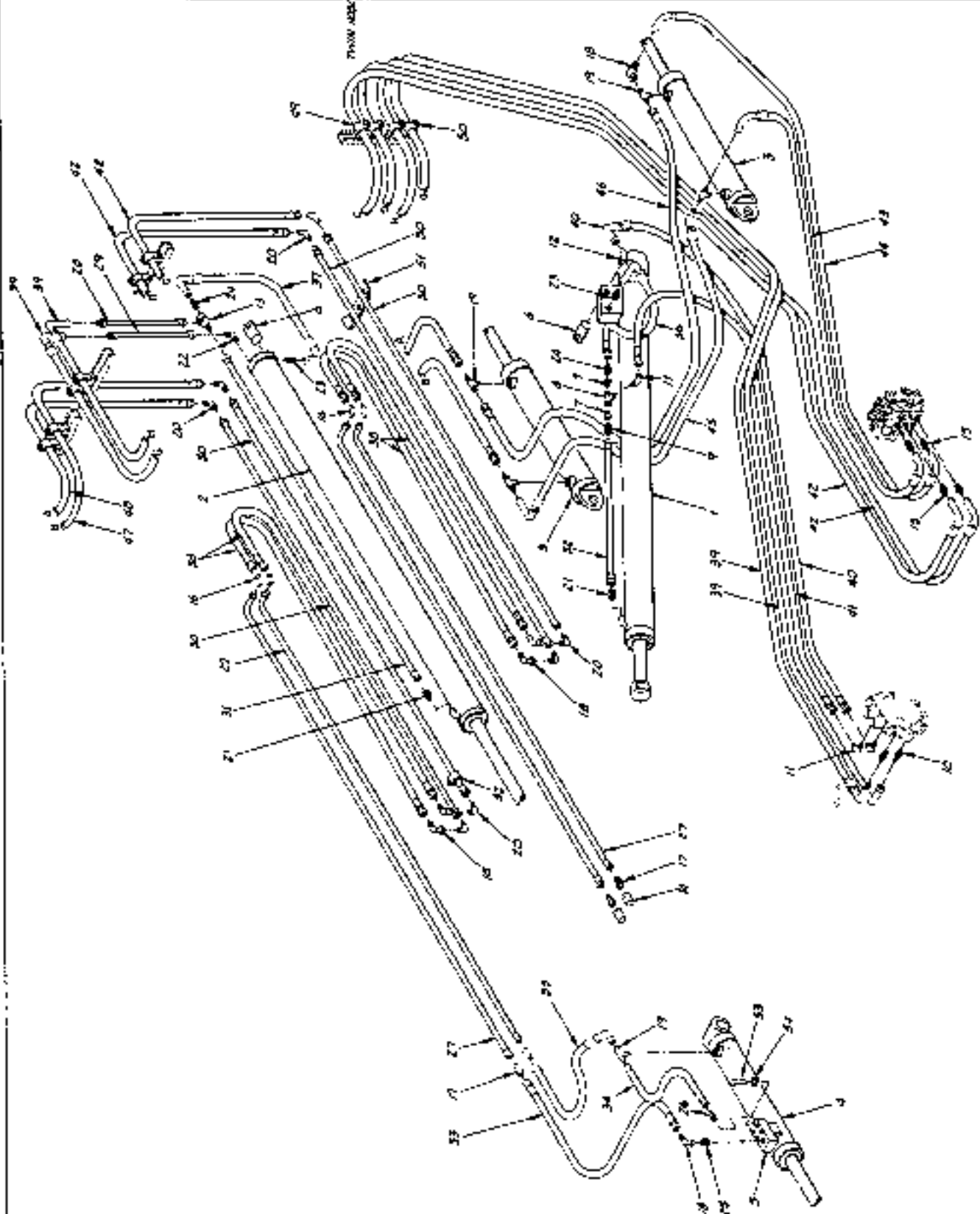


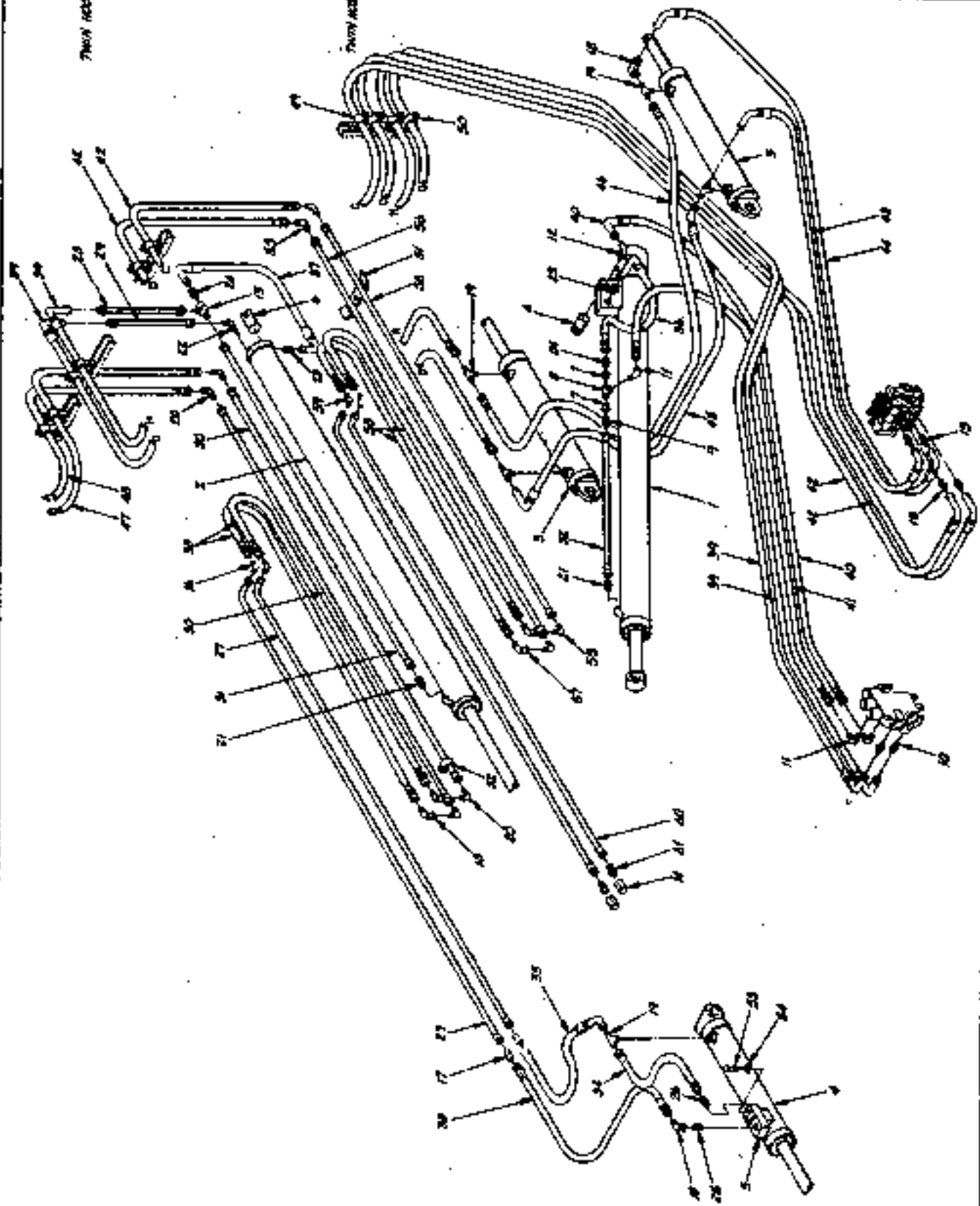
QTY	PART NO.	DESCRIPTION	UNIT
1	19007	GRINDS	
47	19008	SCREW, PH. #10-22x1 1/2	
48	19009	SCREW, PH. #10-22x1 1/2	
49	19010	FLAT WASHER, 1/2	
50	19011	FLAT WASHER, 1/2	
51	19012	LOCK WASHER, 1/2	
52	19013	LOCK WASHER, 1/2	
53	19014	WASHER, 1/2	
54	19015	WASHER, 1/2	
55	19016	WASHER, 1/2	
56	19017	WASHER, 1/2	
57	19018	WASHER, 1/2	
58	19019	WASHER, 1/2	
59	19020	WASHER, 1/2	
60	19021	WASHER, 1/2	
1	19022	CLIPS, AX	
1	19023	CLIPS, AX	
1	19024	CLIPS, AX	
1	19025	CLIPS, AX	
1	19026	CLIPS, AX	
1	19027	CLIPS, AX	
1	19028	CLIPS, AX	
1	19029	CLIPS, AX	
1	19030	CLIPS, AX	
1	19031	CLIPS, AX	
1	19032	CLIPS, AX	
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1	19046	CLIPS, AX	
1	19047	CLIPS, AX	
1	19048	CLIPS, AX	
1	19049	CLIPS, AX	
1	19050	CLIPS, AX	
1	19051	CLIPS, AX	
1	19052	CLIPS, AX	
1	19053	CLIPS, AX	
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1	19098	CLIPS, AX	
1	19099	CLIPS, AX	
1	19100	CLIPS, AX	

UNL Engineering Co., Inc.
 514 133 7470
 INSTRUMENT PANEL
 ASSEMBLY
 ANSDCL 422

QTY	ITEM NO.	DESCRIPTION	UNIT
1	10001	STAINLESS, 1/4"	
1	10002	ADULT, 40" X 1/2" X 1/2"	
1	10003	TUBE CLAMP	
1	10004	TUBE CLAMP	
1	10005	TUBE CLAMP	
1	10006	TUBE CLAMP	
1	10007	TUBE CLAMP	
1	10008	TUBE CLAMP	
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1	10100	TUBE CLAMP	

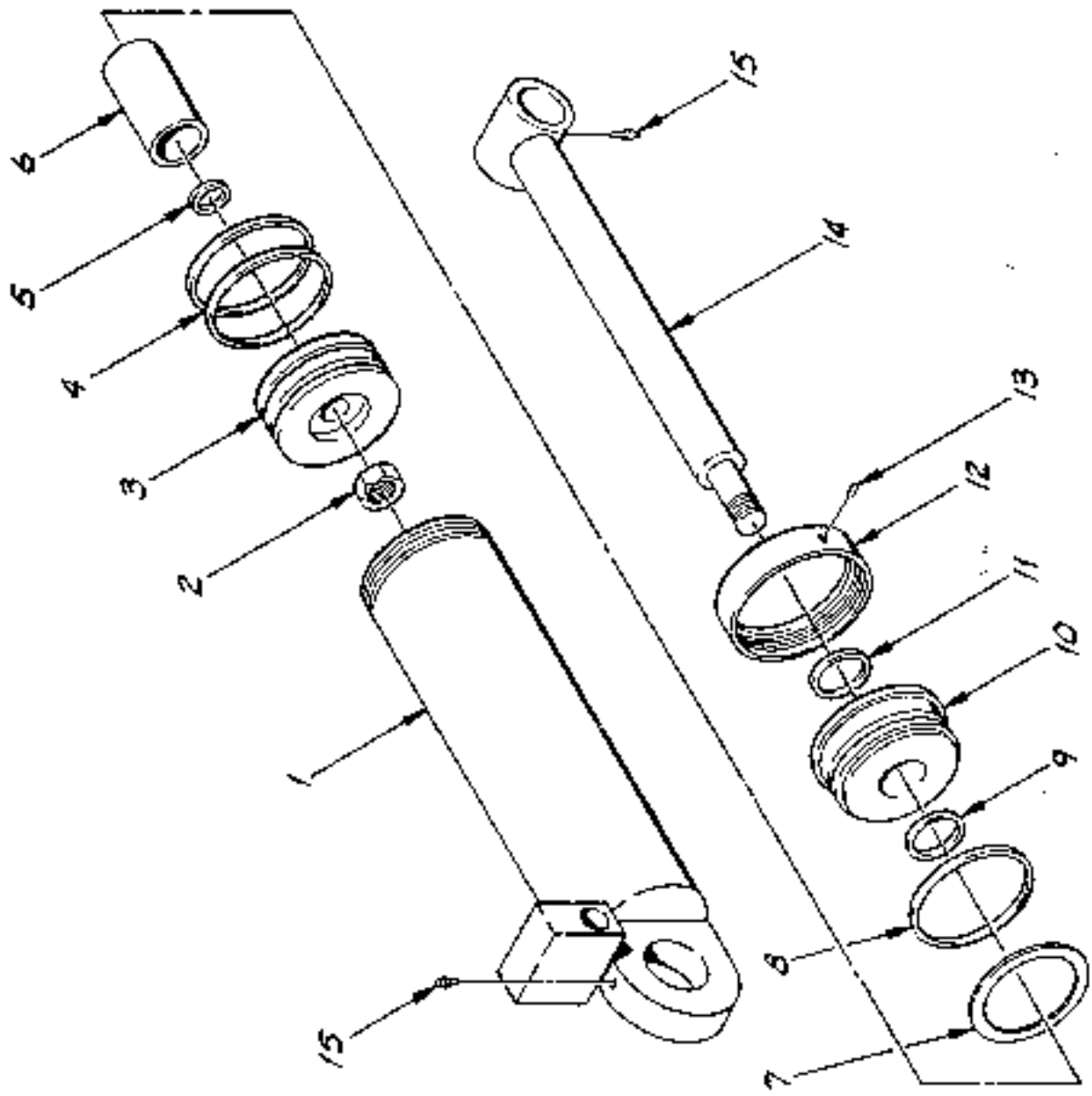
WIL Engineering Co., Inc.
 10001
 UPPER HYDRAULIC ASSEMBLY MODEL 422





61	ADAPTER	UNION, ALUMINUM
62	ADAPTER	UNION, ALUMINUM
63	ADAPTER	UNION, ALUMINUM
64	ADAPTER	UNION, ALUMINUM
65	ADAPTER	UNION, ALUMINUM
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97	ADAPTER	UNION, ALUMINUM
98	ADAPTER	UNION, ALUMINUM
99	ADAPTER	UNION, ALUMINUM
100	ADAPTER	UNION, ALUMINUM

Part No. _____
 Quantity _____
 Description _____
 APPROVED _____
 DATE _____
 UPPER HYDRAULIC ASSEMBLY
 MODEL 42E
 702-7-1



REF	PART NO.	DESCRIPTION	REQ.
15	P20825	SEAL KIT	1
14	P16611	GREASE ZERK	2
13	P20849	SHAFT WELDMENT	1
12	P19208	LOCKSCREW	1
11	P19227	RETAINING NUT	1
10	P20050	DUST SEAL	1
9	P20850	END GLAND	1
8	P20046	URETHANE U-CUP	1
7	P19229	O-RING, END GLAND	1
6	P20056	BACK-UP RING	1
5	P20851	STROKE BLOCK	1
4	P19231	O-RING, PISTON	1
3	P19232	URETHANE U-CUP	2
2	P19233	PISTON	1
1	P19234	LOCKNUT	1
	P20848	TUBE WELDMENT	1

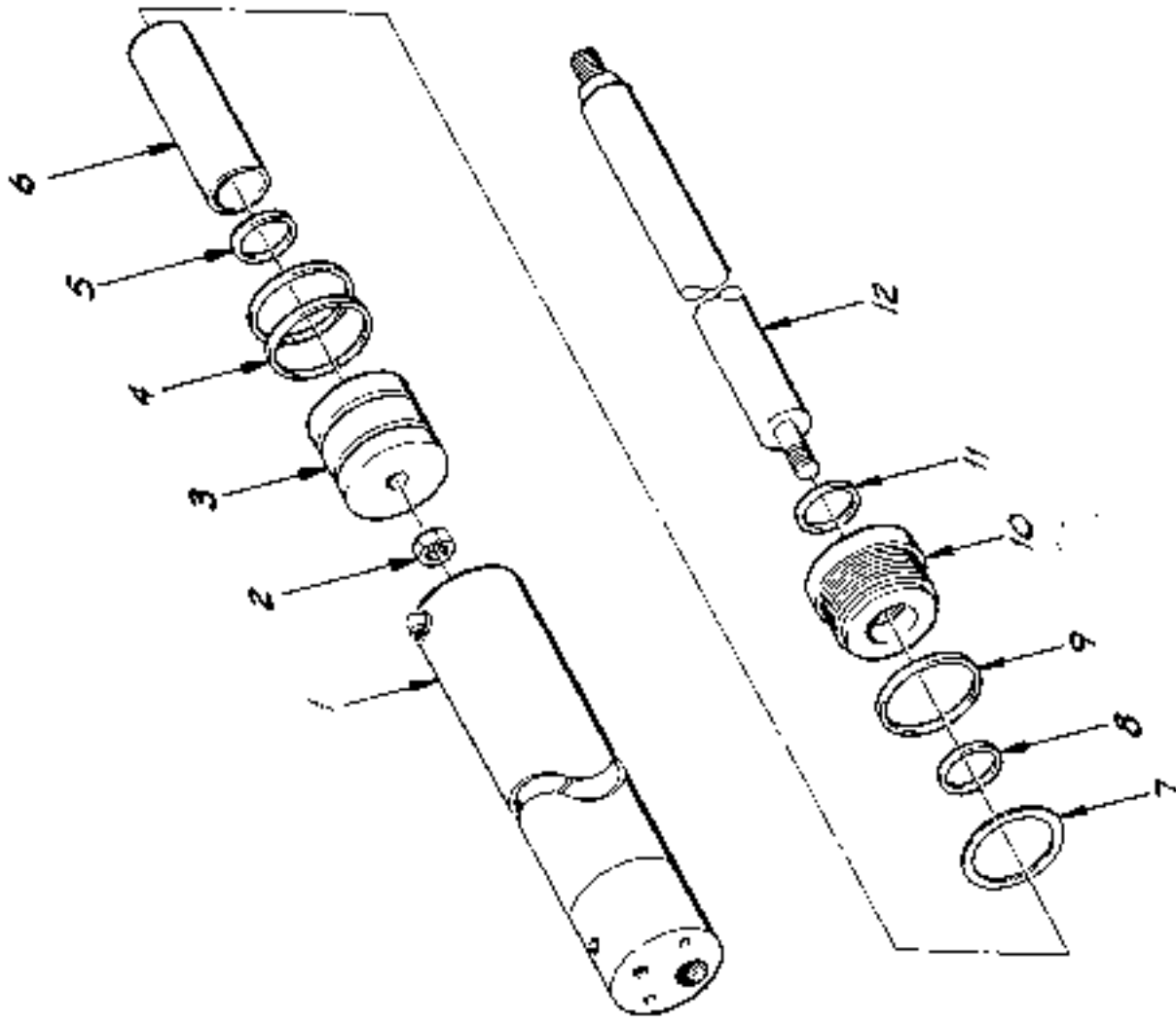
LULL Engineering Co., Inc.
 ST. PAUL, MINNESOTA 55121

DRAWN BY: JEFF ZAUB
 CHECKED BY: LULL

S/N 101 THRU

HOIST CYLINDER ASSEMBLY
 MODEL 422

P19936
 REAM B
 DRAWING NO. 19063



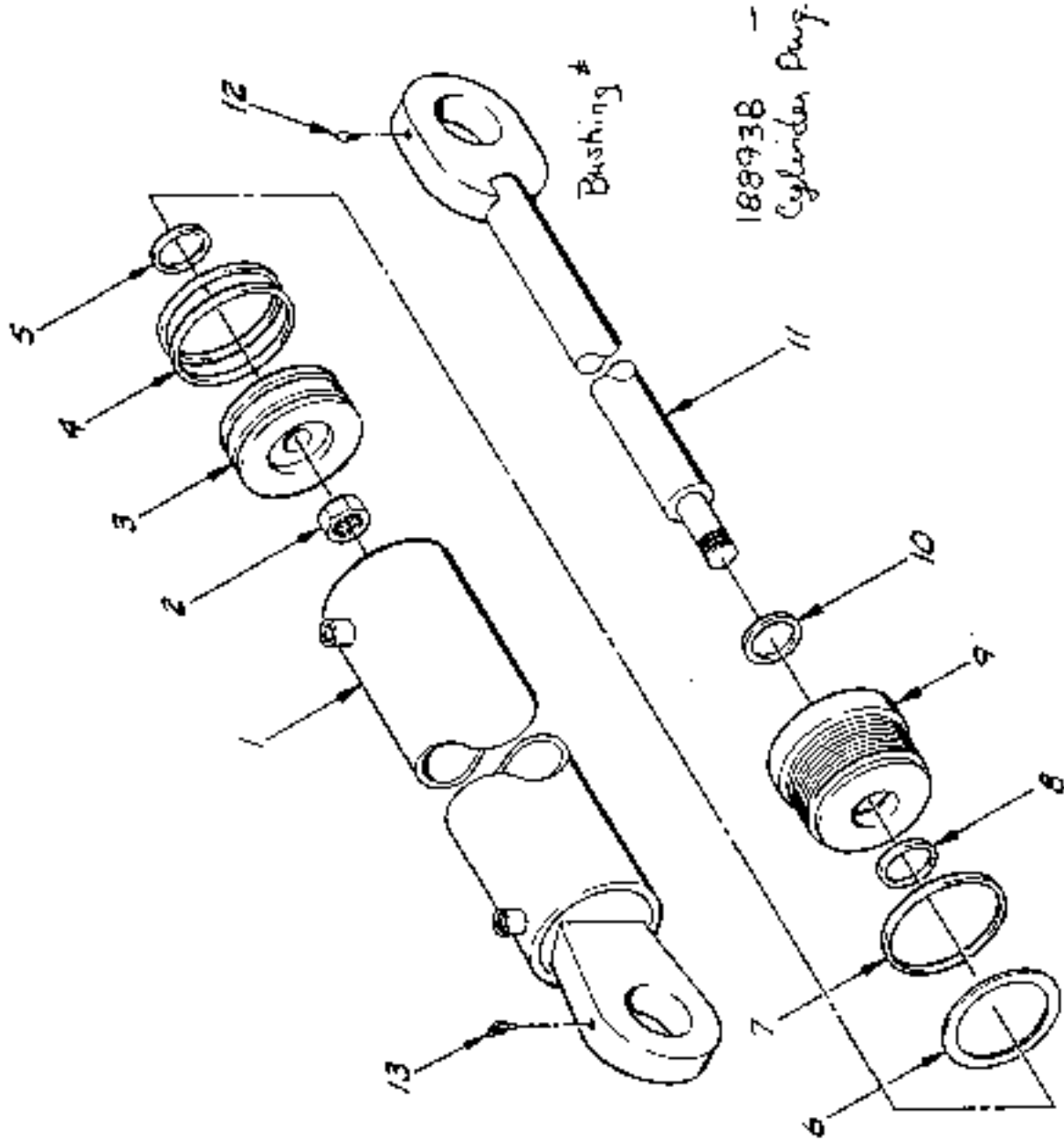
REF	PART NO.	DESCRIPTION	REQ.
12	P20826	SEAL KIT	1
11	P20838	SHAFT	1
10	P20048	DUST SEAL	1
9	P20829	END GLAND	1
8	P20062	O-RING, END GLAND	1
7	P20043	URETHANE U-CUP	1
6	P20052	BACK-UP RING	1
5	P20839	STROKE BLOCK	1
4	P20059	O-RING, PISTON	1
3	P20045	URETHANE U-CUP	2
2	P20828	PISTON	1
1	P20085	LOCKNUT	1
	P20837	TUBE WELDMENT	1

LULL Engineering Co., Inc.
ST. PAUL, MINNESOTA 55121

DRAWN BY: JEFF DAUB
S/N 101 THRU

DRAWING TITLE:
**BOOM EXTENSION
CYLINDER ASSEMBLY
MODEL 422**

P19939
SCALE: 3/8
DRAWING NO.: 19064



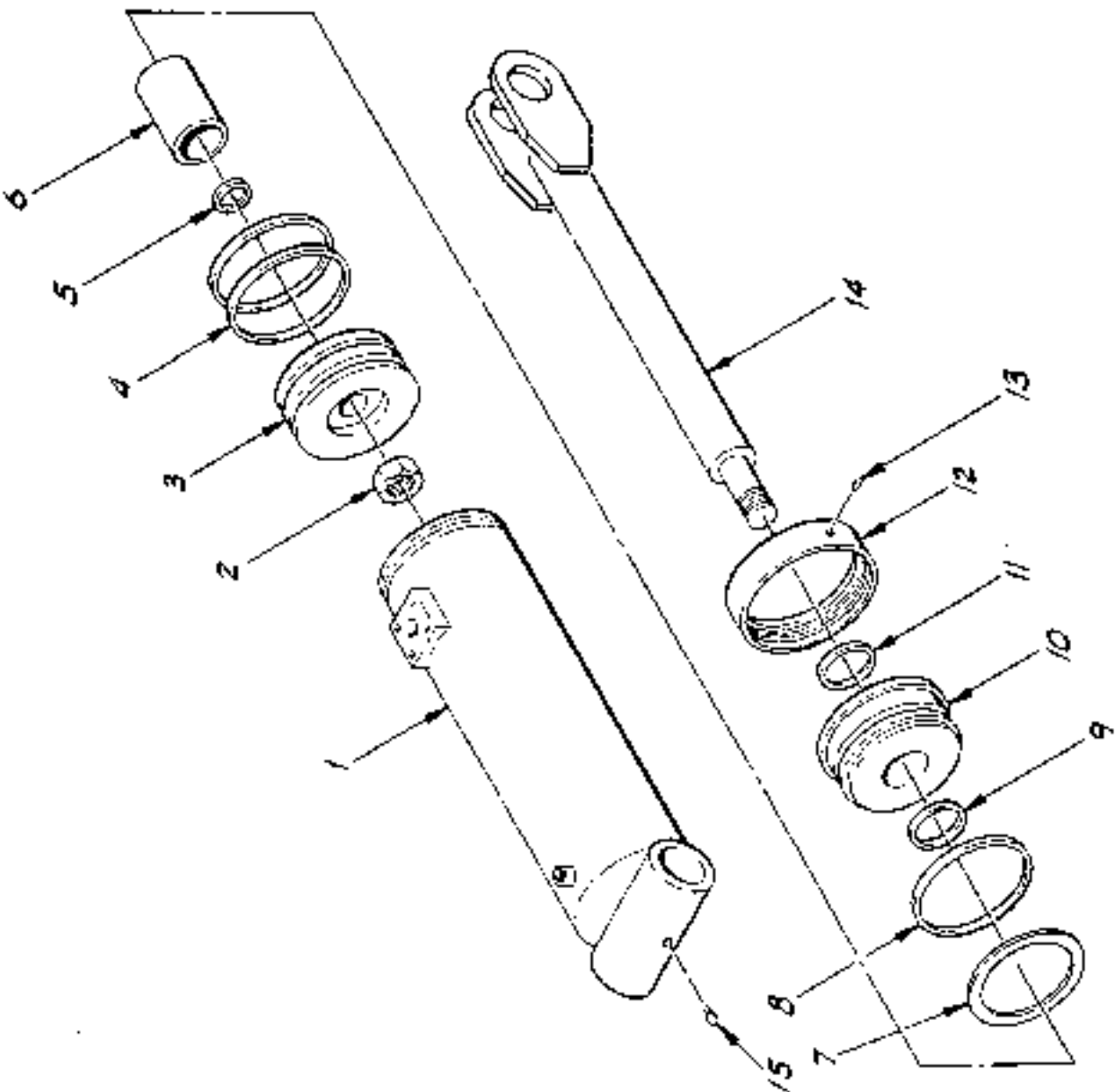
REF	PART NO.	DESCRIPTION	REQ.
13	P20118	SEAL KIT	1
12	P15337	GREASE ZERK, 45°	1
11	P16611	GREASE ZERK	1
10	P20126	SHAFT WELDMENT	1
9	P20051	DUST SEAL	1
8	P20127	END GLAND	1
7	P20042	URETHANE U-CUP	1
6	P20053	O-RING, END GLAND	1
5	P20053	BACK-UP RING	1
4	P20059	O-RING, PISTON	2
3	P20046	URETHANE U-CUP	1
2	P20128	PISTON	1
1	P20085	LOCKNUT	1
	P20125	TUBE WELDMENT	1

LULL Engineering Co., Inc.
 ST. PAUL, MINN. 55104
 55121

DRAWN BY: **JEFF DAUB**
 QUANTITY: **SIN 101 THRU**

MASTER CARRIAGE TILT
 CYLINDER ASSEMBLY
 MODEL 422

P21685
 SCALE: **8**
 DRAWING NO. **19065**

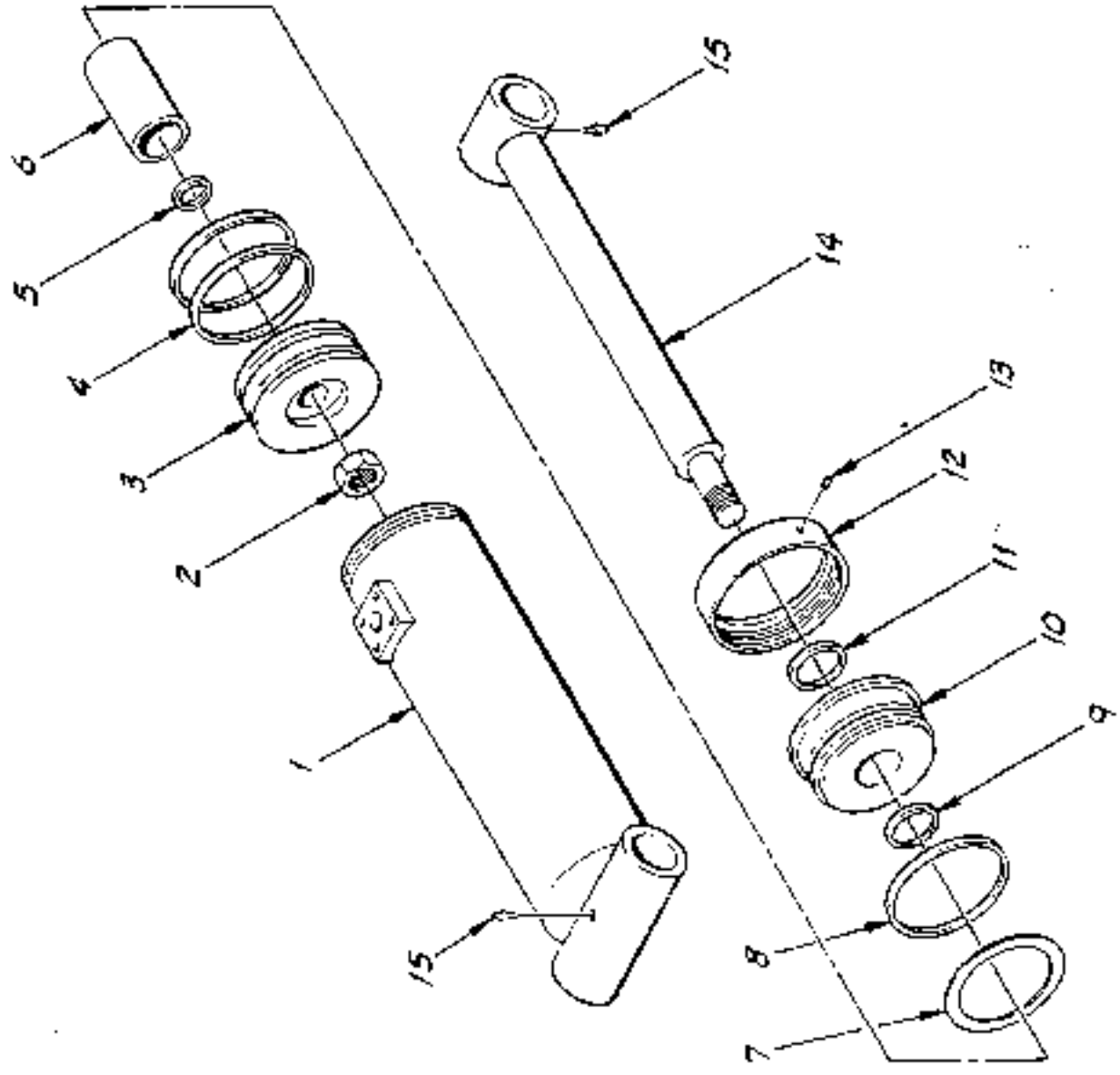


REF	ITEM	PART NO.	DESCRIPTION	REQ.
15	15	P19522	SEAL KIT	1
14	14	P16611	GREASE ZERK	1
13	13	P20845	SHAFT WELDMENT	1
12	12	P19208	LOCKSCREW	1
11	11	P19207	RETAINING NUT	1
10	10	P19241	DUST SEAL	1
9	9	P20088	END GLAND	1
8	8	P19242	URETHANE U-CUP	1
7	7	P19211	O-RING, END GLAND	1
6	6	P20055	BACK-UP RING	1
5	5	P19245	STROKE BLOCK	1
4	4	P19214	O-RING, PISTON	2
3	3	P19215	URETHANE U-CUP	1
2	2	P19216	PISTON	1
1	1	P19217	LOCKNUT	1
		P20844	TUBE WELDMENT	1

LULL Engineering Co., Inc.
 ST. PAUL, MINNESOTA 55121

DRAWN BY: JEFF DALB
 CHECKED BY: S/N 101 THRU
 DRAWING TITLE: CARRIAGE TILT CYLINDER ASSEMBLY
 MODEL 422

SCALE: B
 DRAWING NO.: P19941
 REVISED: 19066



REF	PART NO.	DESCRIPTION	REQ.
15	P19523	SEAL KIT	1
14	P16611	GREASE ZERK	2
13	P20124	SHAFT WELDMENT	1
12	P19208	LOCKSCREW	1
11	P19207	RETAINING NUT	1
10	P19209	DUST SEAL	1
9	P20840	END GLAND	1
8	P19210	URETHANE U-CUP	1
7	P19211	O-RING, END GLAND	1
6	P20055	BACK-UP RING	1
5	P20842	STROKE BLOCK	1
4	P19216	O-RING, PISTON	1
3	P19215	URETHANE U-CUP	2
2	P19216	PISTON	1
1	P19217	LOCKNUT	1
	P20123	TUBE WELDMENT	1

LULL Engineering Co., Inc.
ST. PAUL, MINNESOTA 55117

DRAWN BY
JEFF DAUB
DRAWING TITLE
S/N 101 THRU

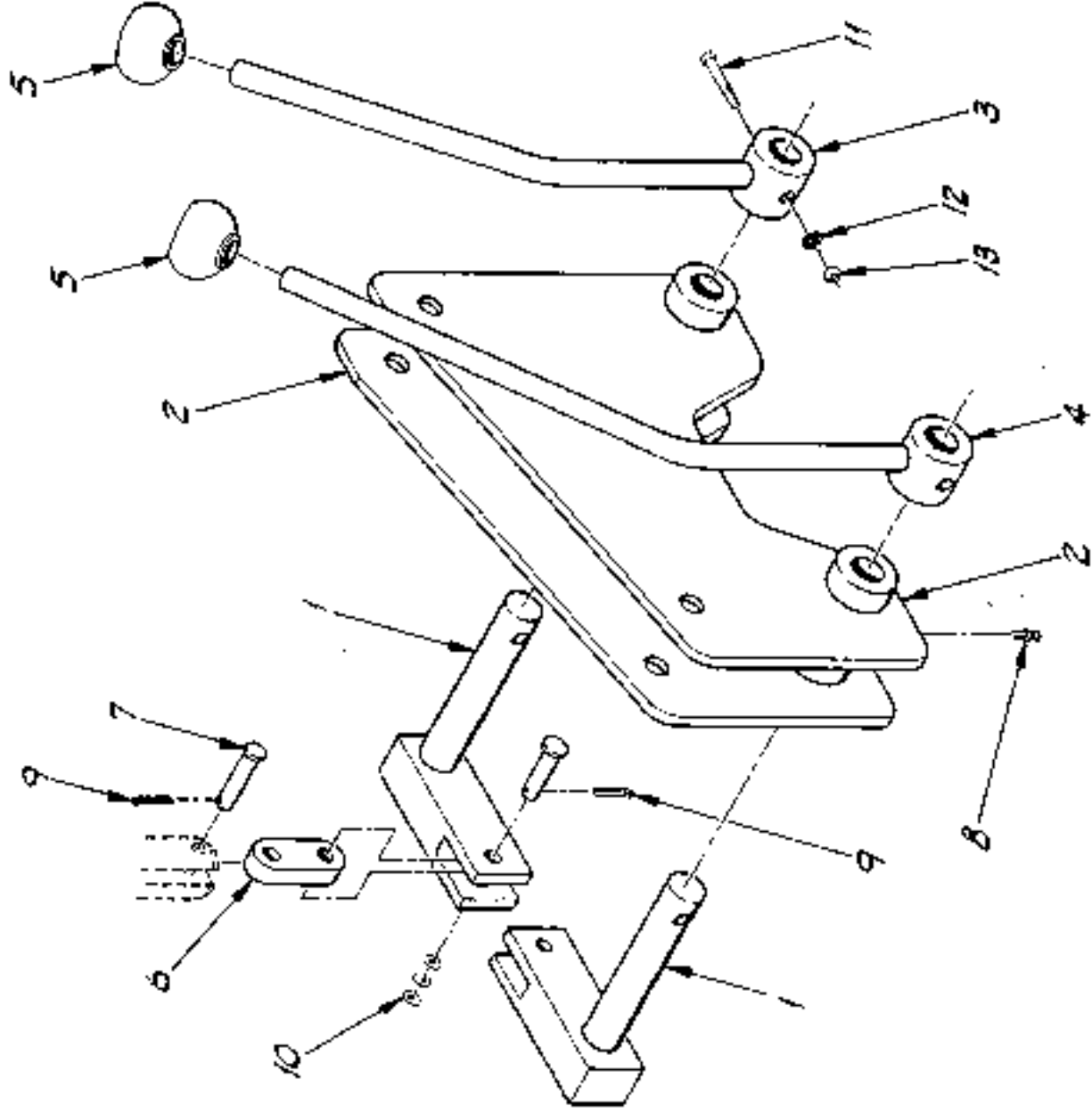
FRAME TILT CYLINDER
ASSEMBLY
MODEL 422

P21686

SCALE
8

DRAWING NO.
19068

NOTE: FOR S/N 101-106, & 109,
LEVER AND SHAFT MUST
BE PURCHASED TOGETHER.



ITEM	PART NO	DESCRIPTION	REQ.
13	COM'L	NUT, HX 5/16"-11 NC	2
12	COM'L	STARWASHER, 5/16"	2
11	COM'L	BOLT, HX 5/16"-11 NC x 1/2"	2
10	COM'L	FLATWASHER, 3/16"	6
9	COM'L	COTTER PIN 3/32" x 1/2"	4
8	P16611	GREASE ZERK	2
7	P19849	CLEVIS PIN	2
6	18886A	LINK, PIVOT SHAFT	2
5	P18721	XNOB	2
4	19169B	HANDLE, EXTENSION	1
3	19168B	HANDLE, HOIST	1
2	18876B	SUPPORT BASE	1
1	18882B	PIVOT SHAFT	2

WILL

Engineering Co., Inc.

ST. PAUL,
MINNESOTA
55121

DRAWN BY
JEFF DAUS

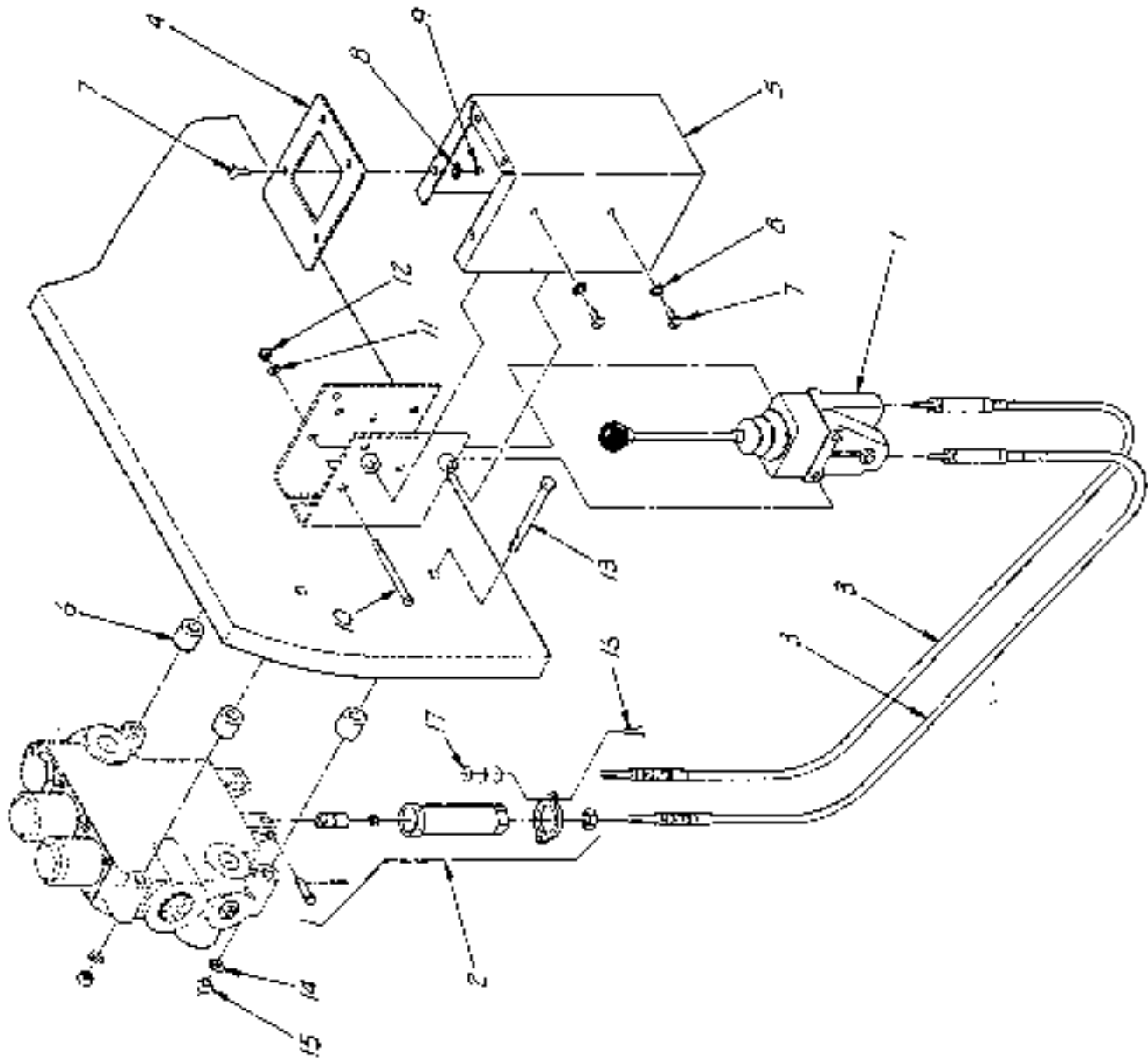
S/N 101 THRU

DRAWING TITLE

**BOOM CONTROL LEVER
ASSEMBLY
MODEL 422**

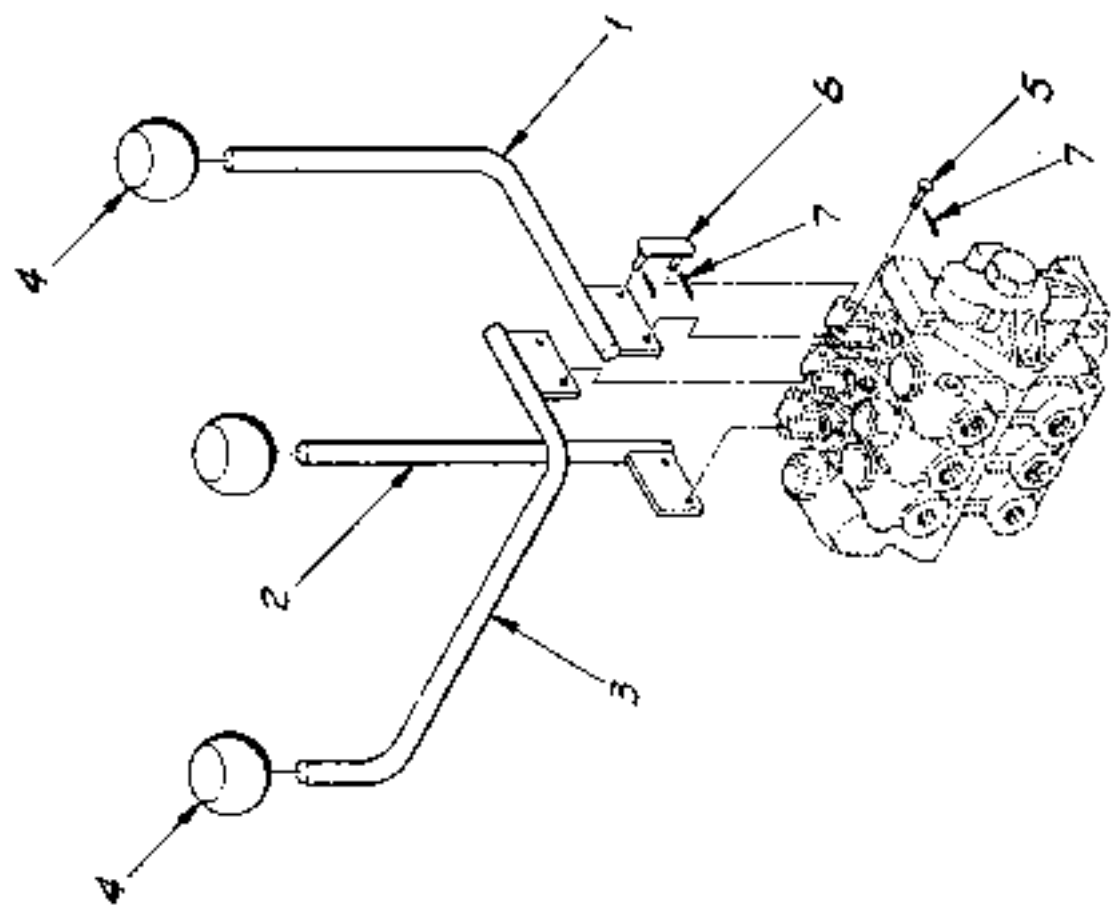
SCALE **B**
DRAWING NO.

19069



QTY	Part No.	Description	NO.
17	COM'L	FLAT WASHER, 1/4"	4
16	COM'L	BOLT, HK, 1/4-20 NC x 1"	4
15	COM'L	NUT, HK, 3/8-16 NC	3
14	COM'L	LOCKWASHER, 3/8"	3
13	COM'L	BOLT, HK, 3/8-16 NC x 1 1/4"	3
12	COM'L	NUT, HK, 5/8-18 NC	3
11	COM'L	LOCKWASHER, 5/8"	3
10	COM'L	BOLT, HK, 5/8-18 NC x 1 1/4"	4
9	COM'L	NUT, HK, 10-24 NC	4
8	COM'L	STAR WASHER, #10	8
7	COM'L	SCREW, RD, #10-24 x 5/8"	8
6	178464	SPACER	3
5	P21797	COVER, JOYSTICK	1
4	P21795	TRIM PLATE	1
3	P21795	CABLE	2
2	P21793	ADAPTER KIT	2
1	P21793	JOYSTICK CONTROL	1

LULL Engineering Co., Inc.
 51700, MISSOURI, U.S.A.
 DIVISION OF
 SINCORP
 135, 137 THRU
 BCOM CONTROL LEVER
 ASSEMBLY
 MODEL 422
 PART NO. 19069-1



ITEM	PART NO.	DESCRIPTION	REQ.
7	COM'L	COTTER PIN 1/16" x 1"	9
6	PR505	PIN LINK	3
5	70512	CLEVIS PIN	3
4	H18721	KNOB, HANDLE.	3
3	190198	VALVE HANDLE, CARR TILT	1
2	190178	VALVE HANDLE, FRAME	1
1	190158	VALVE HANDLE, AUXILIARY	1

LULL

Engineering Co., Inc.

ST. PAUL,
MINNESOTA
55121

DRAWN BY
JEFF DAUB

S/N 101 THRU

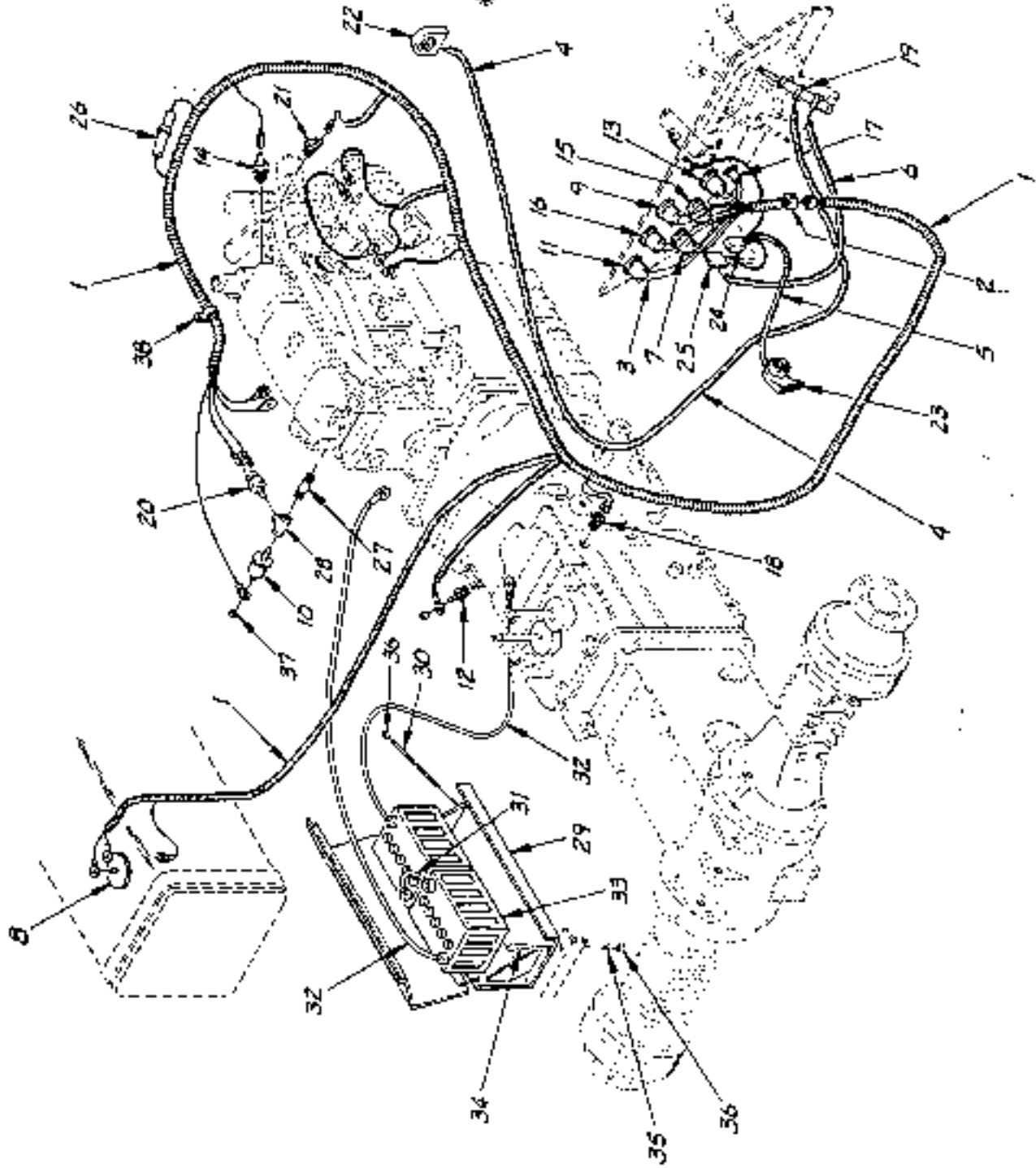
CHANGING TITLE

THREE SPOOL CONTROL
HANDLE ASSEMBLY
MODEL 422

FORM B

DRAWING NO.

19070



QTY	PART NO	DESCRIPTION	REQ.
38	P17553	CLAMP, LOOM	1
37	COM'L	NUT, HX. 10-32 NF	1
36	COM'L	NUT, HX. 9/16-18 NC	6
35	COM'L	LOCKWASHER, 5/16"	6
34	COM'L	BOLT, HX. HD. 9/16-18 NC x 1	4
33	P19076	BATTERY, 6 VOLT	2
32	P18122	BATTERY CABLE 10"	1
31	P21722	BATTERY CABLE 58"	2
30	177864	HOLD DOWN ROD	2
29	177800	BATTERY BOX	1
28	P10200	TEE	1
27	P10757	NIPPLE	1
26	P19103	FUSE, SFE 30 AMP	4
25	P19076	FUSE BLOCK	1
24	P18709	HORN RELAY	1
23	P18707	HORN	1
22	P18774	BACK-UP ALARM	1
21	P22210	GLOW PLUG, HEATER	1
20	P20078	SWITCH, OIL PRESS.	1
19	P21726	SWITCH, REVERSE	1
18	P18673	SWITCH, NEUTRAL START	1
17	P20978	SWITCH, IGNITION	1
16	P18733	GAUGE, HOURMETER	1
15	P18732	GAUGE, AMMETER	1
14	P18813	SENDER, WATER TEMP	1
13	P18735	GAUGE, WATER TEMP	1
12	P19472	SENDER, TRANS. OIL	1
11	P18734	GAUGE, TRANS. OIL	1
10	P18731	SENDER, OIL PRESS.	1
9	P18730	GAUGE, OIL PRESSURE	1
8	P18729	SENDER, FUEL	1
7	P18728	GAUGE, FUEL	1
6	189874	HARNES. REV. SWITCH	1
5	189884	HARNES. HORN	1
4	P21712	HARNES. BACK-UP	1
3	P19284	HARNES. GAUGES - UP	1
2	P17982	HARNES. UPPER	1
1	P21656	HARNES. LOWER	1

LULL Engineering Co., Inc.
 21 PAUL
 WILSON'S
 STY

DESIGNED BY
 JEFF BAUER

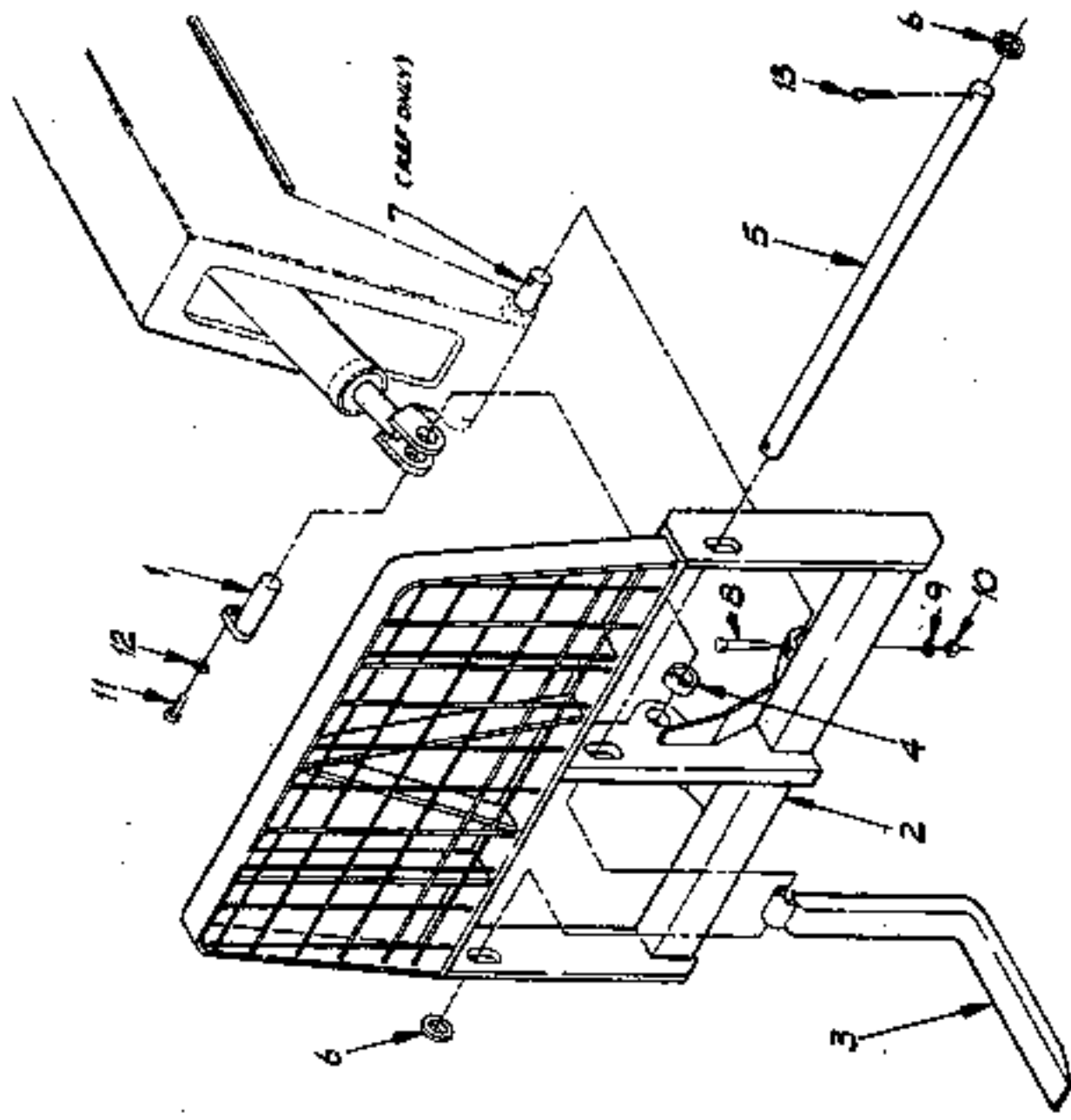
DATE
 S/N 101 THRU

**WIRING HARNESS
 ASSEMBLY**

MODEL 422

CLASS C
 Drawing No.
 19072

* USE P21700 FOR S/N 101-104, 106 -



13	COM'L	COTTER PIN 1/8 DIA X 2 LG	2
12	COM'L	LOCKWASHER 3/8	1
11	COM'L	BOLT, HEX 3/8-16 X 1 1/2	1
10	COM'L	NUT, HEX 3/8-16 NC	1
9	COM'L	LOCKWASHER 1/2	1
8	COM'L	BOLT, HEX 3/8-16 X 1 1/4 GR. 5	OFF
7	157234	PIN, CARRIAGE	2
6	151294	FLAT WASHER	1
5	151344	FORK SHAFT	1
4	162674	BLUSHING	2
3	16511C	42" PALLET FORK	1
2	151430	50" STANDARD CARRIAGE	1
1	151254	PIN, CARRIAGE	1

LUUL

Manufacturing Co., Inc.

SIN 101 THRU

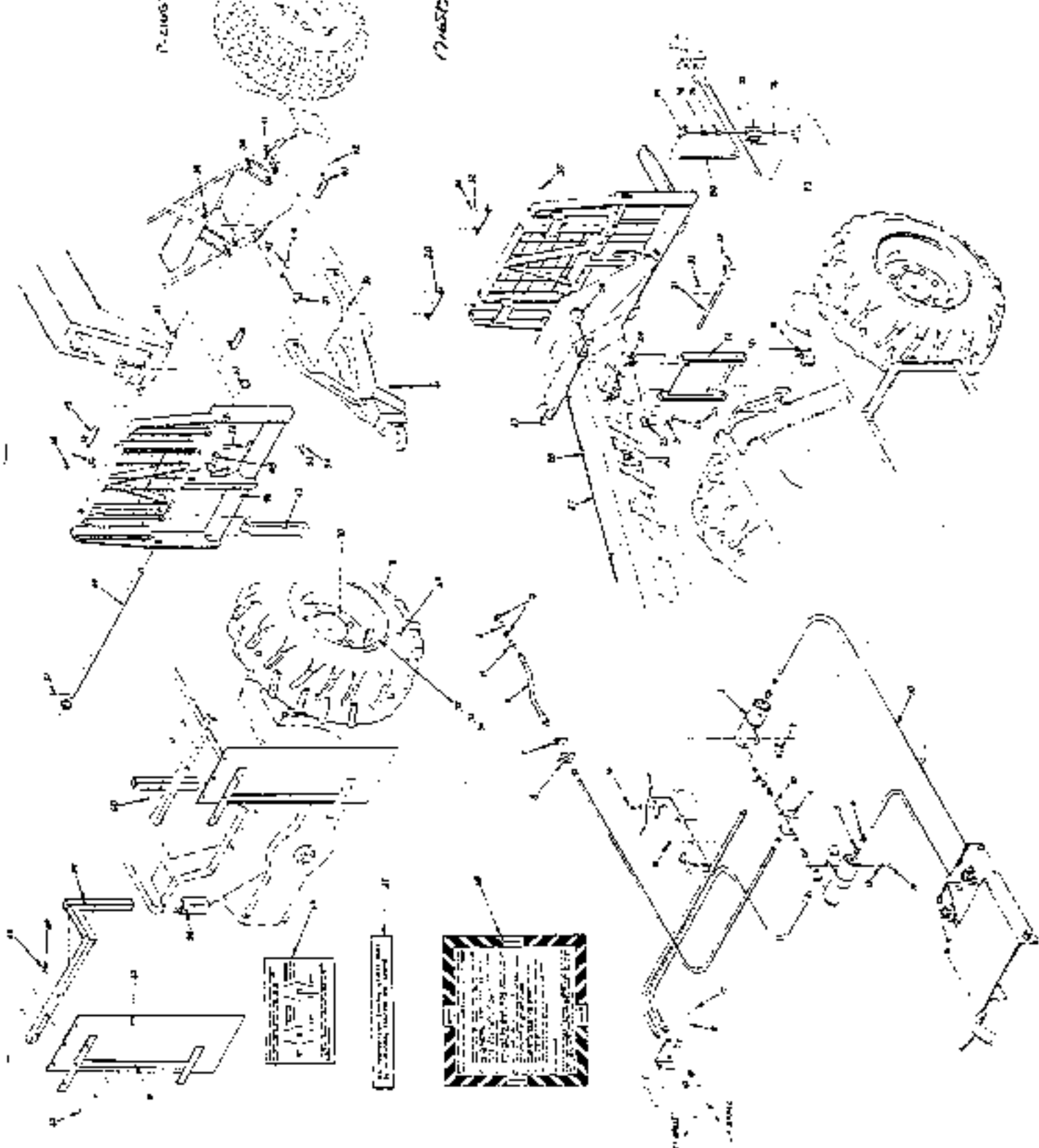
50" STANDARD CARRIAGE
ASSEMBLY

B

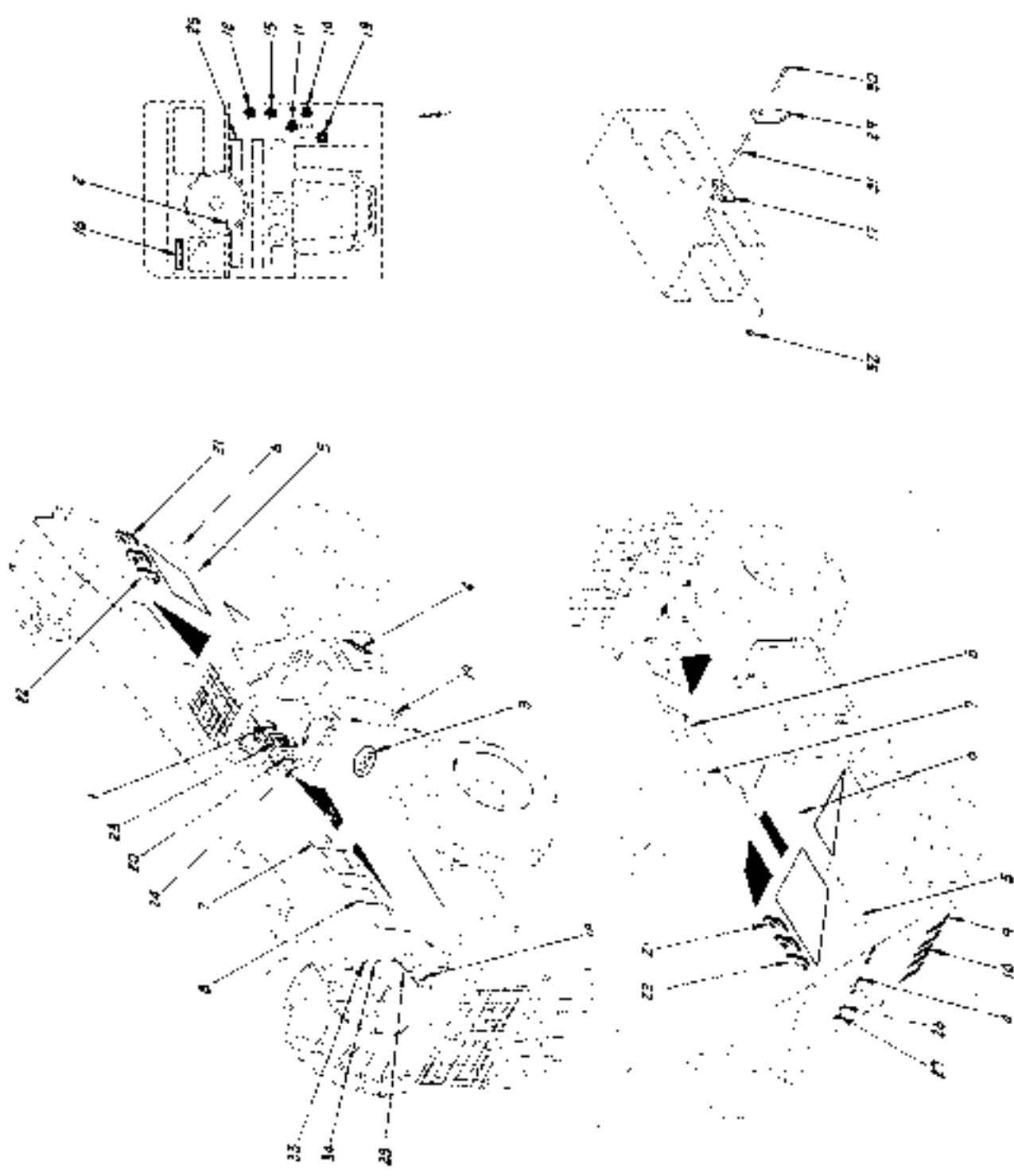
MODEL 422

19076

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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TITLE _____
 DATE _____
 DRAWN BY _____
 CHECKED BY _____
 APPROVED BY _____
 PART NO. _____
 QUANTITY _____
 UNIT _____
 TOTAL _____
 SCALE _____
 SHEET NO. _____
 OF _____
 PROJECT NO. _____
 DRAWING NO. _____



1	BASE	35	COIL DRIVE SOLID #4 1/2
2	BASE MANUFACTURE	36	COIL DRIVE SOLID #4 1/2
3	BASE LETTER 'L' LARGE	37	COIL DRIVE SOLID #4 1/2
4	BASE LETTER 'L' MEDIUM	38	COIL DRIVE SOLID #4 1/2
5	BASE LETTER 'L' SMALL	39	COIL DRIVE SOLID #4 1/2
6	BASE LETTER 'L' LARGE	40	COIL DRIVE SOLID #4 1/2
7	BASE LETTER 'L' MEDIUM	41	COIL DRIVE SOLID #4 1/2
8	BASE LETTER 'L' SMALL	42	COIL DRIVE SOLID #4 1/2
9	BASE LETTER 'L' LARGE	43	COIL DRIVE SOLID #4 1/2
10	BASE LETTER 'L' MEDIUM	44	COIL DRIVE SOLID #4 1/2
11	BASE LETTER 'L' SMALL	45	COIL DRIVE SOLID #4 1/2
12	BASE LETTER 'L' LARGE	46	COIL DRIVE SOLID #4 1/2
13	BASE LETTER 'L' MEDIUM	47	COIL DRIVE SOLID #4 1/2
14	BASE LETTER 'L' SMALL	48	COIL DRIVE SOLID #4 1/2
15	BASE LETTER 'L' LARGE	49	COIL DRIVE SOLID #4 1/2
16	BASE LETTER 'L' MEDIUM	50	COIL DRIVE SOLID #4 1/2
17	BASE LETTER 'L' SMALL	51	COIL DRIVE SOLID #4 1/2
18	BASE LETTER 'L' LARGE	52	COIL DRIVE SOLID #4 1/2
19	BASE LETTER 'L' MEDIUM	53	COIL DRIVE SOLID #4 1/2
20	BASE LETTER 'L' SMALL	54	COIL DRIVE SOLID #4 1/2
21	BASE LETTER 'L' LARGE	55	COIL DRIVE SOLID #4 1/2
22	BASE LETTER 'L' MEDIUM	56	COIL DRIVE SOLID #4 1/2
23	BASE LETTER 'L' SMALL	57	COIL DRIVE SOLID #4 1/2
24	BASE LETTER 'L' LARGE	58	COIL DRIVE SOLID #4 1/2
25	BASE LETTER 'L' MEDIUM	59	COIL DRIVE SOLID #4 1/2
26	BASE LETTER 'L' SMALL	60	COIL DRIVE SOLID #4 1/2
27	BASE LETTER 'L' LARGE	61	COIL DRIVE SOLID #4 1/2
28	BASE LETTER 'L' MEDIUM	62	COIL DRIVE SOLID #4 1/2
29	BASE LETTER 'L' SMALL	63	COIL DRIVE SOLID #4 1/2
30	BASE LETTER 'L' LARGE	64	COIL DRIVE SOLID #4 1/2
31	BASE LETTER 'L' MEDIUM	65	COIL DRIVE SOLID #4 1/2
32	BASE LETTER 'L' SMALL	66	COIL DRIVE SOLID #4 1/2
33	BASE LETTER 'L' LARGE	67	COIL DRIVE SOLID #4 1/2
34	BASE LETTER 'L' MEDIUM	68	COIL DRIVE SOLID #4 1/2

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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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