

# Manitowoc

## TRADITIONAL CRANE PARTS MANUAL

This manual has been prepared for and is considered part of

**4000W**

Model

**40352**

Serial Number

**GROUP A = Rotating Structure** (Includes rotating bed, operator's cab, cases, fuel tanks, transfer pump, counterweights, guards, platforms, catwalks, machinery enclosure, horn)

**GROUP B = Upperworks Machinery** (Includes front, rear, and auxiliary drums, boom hoist, swing and drive shafts, hand levers, foot pedals, control linkage, rotation indicators, upperworks hydraulic components, hydraulic piping, hydraulic oil reservoir, lubrication pump and piping, blowers)

**GROUP C = Air Components & Electrical** (Includes control console, air piping, electric wiring, auxiliary light plant and lighting, TV monitoring, compressor and air tank)

**GROUP D = Power Components - Upperworks** (Includes engine or motor, radiator, auxiliary power plant, take off converters and piping, controls, VICON power lowering, torque limiter, hydraulic pumps and piping, fuel piping, battery box)

**GROUP E = Lower Structure & Control** (Includes carbody, crawlers, travel shafts and control, steering travel locks, hydraulic travel, travel power outriggers, carrier, pedestal, lowerworks hydraulic piping, RINGER components, barge mounting and machinery, spud drums)

**GROUP F = Attachments** (Includes booms, jibs, masts, tower, wire rope guides, equalizer, gantry, fairlead, timber guards, boom angle indicator, block-up limit, tag line, hook block, weight ball, upper and lower boom point, wind speed indicator, crowd and retract dipper sticks, dippers, )

**O-NUMBER SECTION =** (Includes lacing drawings and purchased component parts drawings referenced in sections A through F)

*This manual is arranged in sections as listed above. Sections A through F are arranged by group numerical order with an index after each section tab. An alphabetical index for groups A Through F combined is located after the O-number Section. The O-number section is arranged in numerical order by O-number. Following this cover page are the Basic Specifications, Warranty Information, Tool List (if applicable) Outline Dimensions, Weights, and Dealer Listing.*

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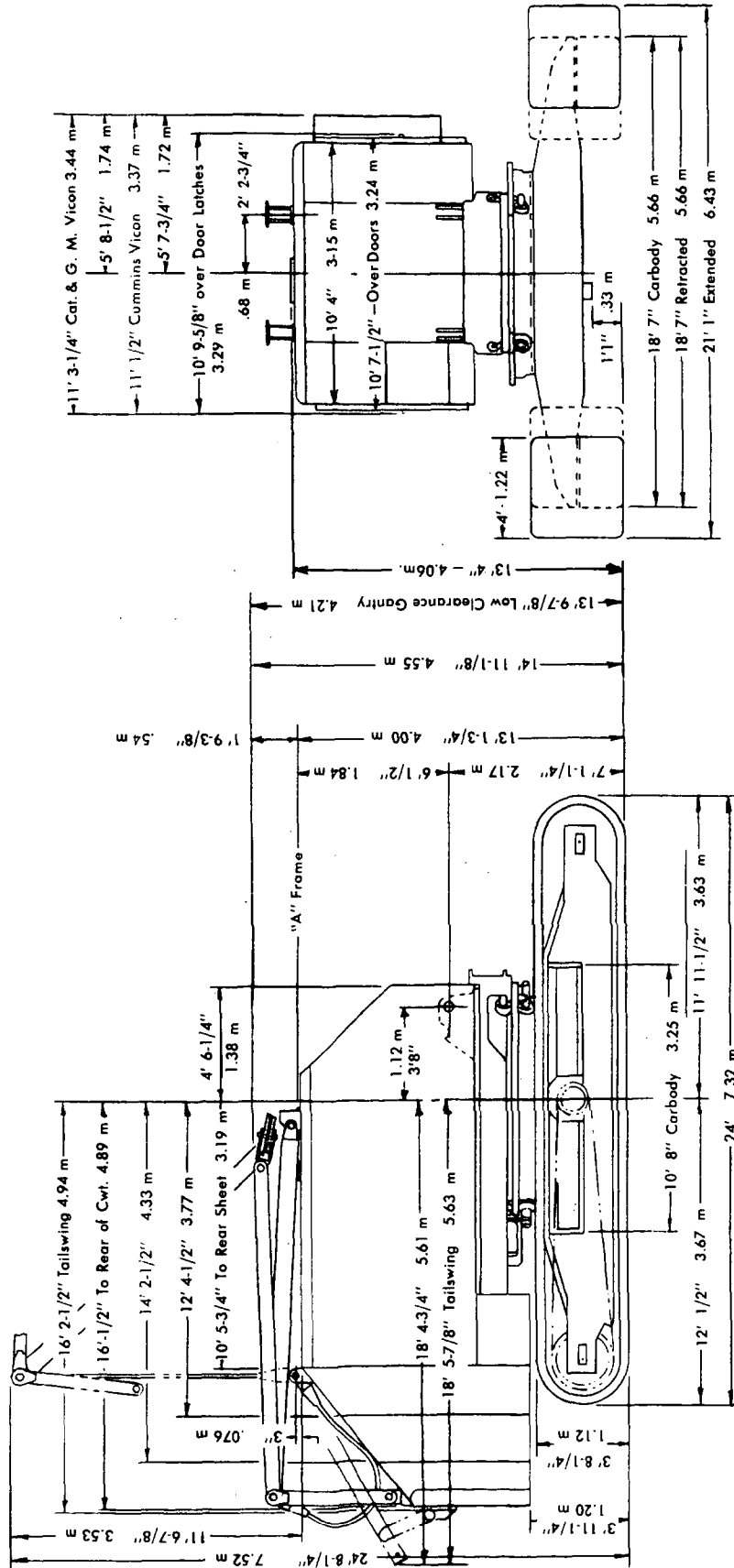
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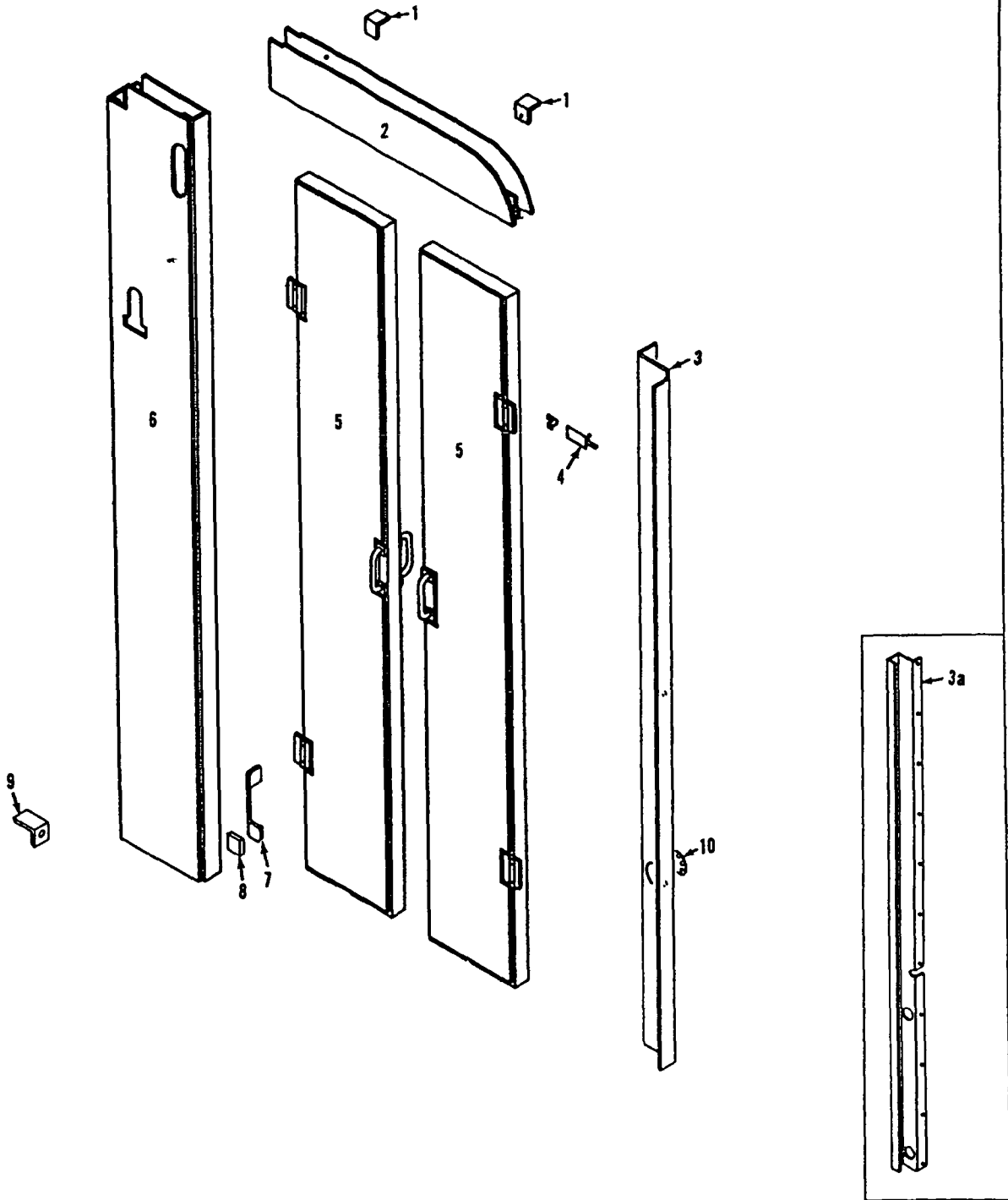
Manitowoc, Wisconsin



3-21-68  
2-27-67  
7-1-64  
Drwg. Date 11-29-63

90332

MASTER



42163-1 Cont.	REV. T	MODEL 4000, 4000W
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ROTATING BED

Run as Front

MASTER

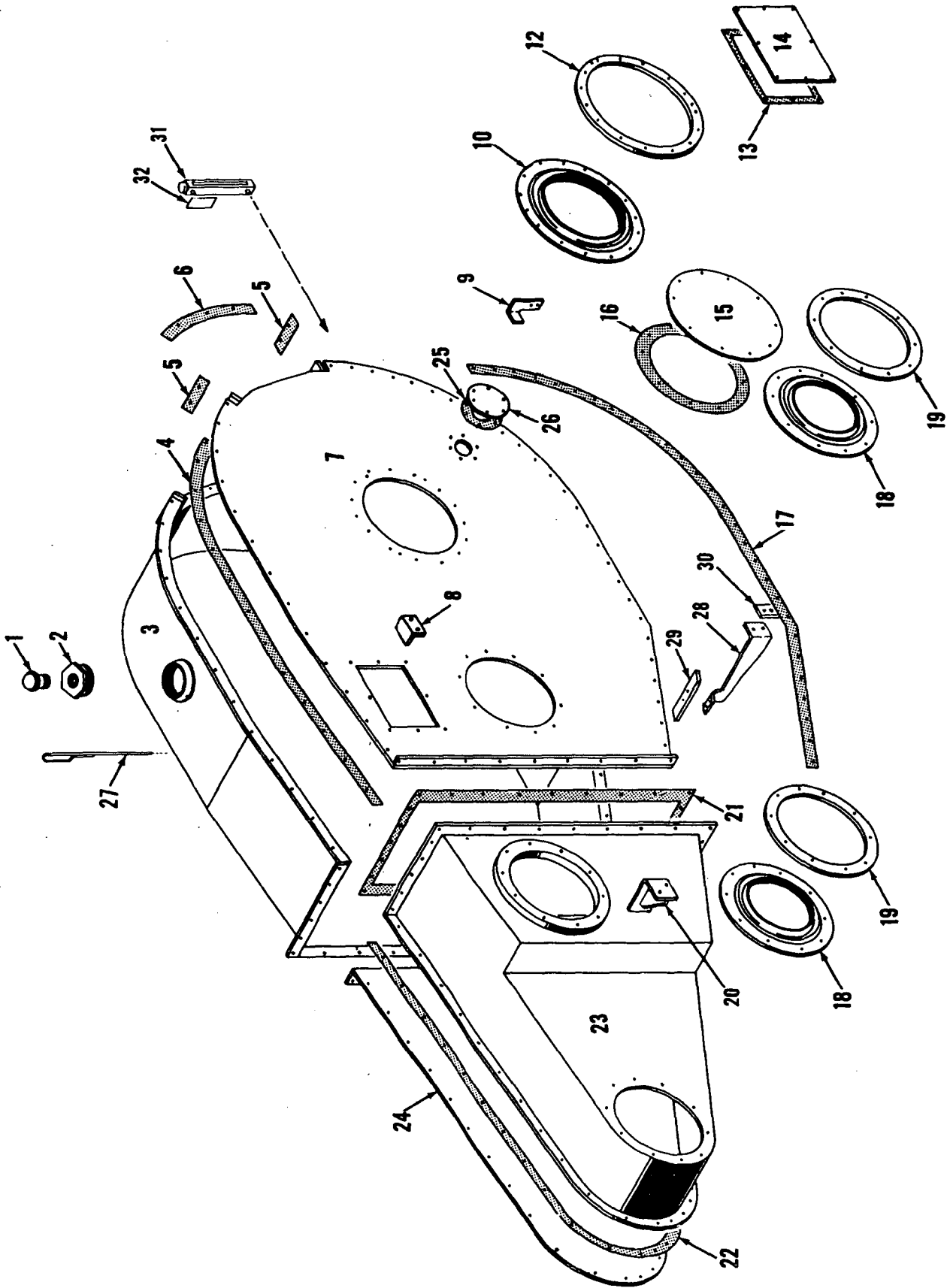
42163-1 Cont. 1

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
36	70912	1	COVER, W/capscrews and lockwashers	
37	141409	2	PIN, Boom Hinge W/grease fitting	
38	17578	1	COVER, Rear Housing W/capscrews and lockwashers	
39	71203	1	STICK, Dip	
40	17579	1	GASKET	
41	10493	1	GASKET (See Note 3)	
43	71349	1	GASKET (Machine W/out swing brake)	
45	72260	1	COVER W/capscrews and lockwashers	
46	72263	2	COVER (One shown) W/capscrews and lockwashers (Delete after 1/6/70 revision)	
47	72264	1	COVER W/capscrews and lockwashers	
48	74887	2	PLATE, Cover	
49	72985	1	PLATE, Cover	
50	74925	2	LUG, Load Block Hold Back (Optional)	
51	505803	1	LEVEL (Tower crane before and all mach. after 11/30/72 rev.)	
56	289564	2	BUSHING (2.012 x 2.254 x 1")	
57	289568	1	BUSHING (On right side of rotating bed) (3.261 x 3.502 x 1½")	
58	289565	1	BUSHING (On left side of rotating bed and in line with bushing Ref. #57) (2.509 x 2.754 x 1½")	
59	289594	3	BUSHING (1.512 x 1.754 x 1½") (These 3 bushings are in line) (Quantity had been 4 before 1/6/70 revision but this fourth had not been in line with the three)	
60	289563	1	BUSHING (1.268 x 1.503 x 1") (Quantity of 3 before 11/30/72 revision and quantity of 4 before 1/6/70 revision)	
			<u>NOTE 1:</u> For machines with Fuel Gauge and Filter after 3/21/73 design change (delete Ref. No. 44) . . .	
52	460324	1	GAUGE, Fuel	
53	94738	1	FILTER, Fuel	
54	304449	1	CAP, Filler	
			<u>NOTE 2:</u> Machine W/collector ring for "Hazardous Locations" delete Ref. No. 14 and add . . .	
14	181881	1	COVER (3 parts) W/gaskets 17584 (Ref. #19), 17582 (Ref. #20), 141134 (Ref. #42) and capscrews, hex nuts and lockwashers	
8	71636	1	GASKET	

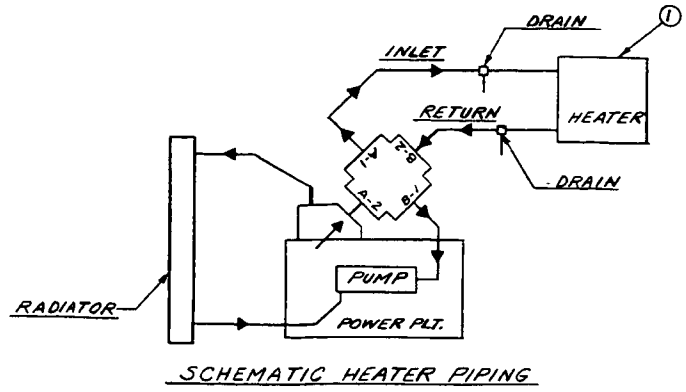
REV. T	42163-1 Cont.
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PLEASE GIVE MACHINE S/N W/ORDER

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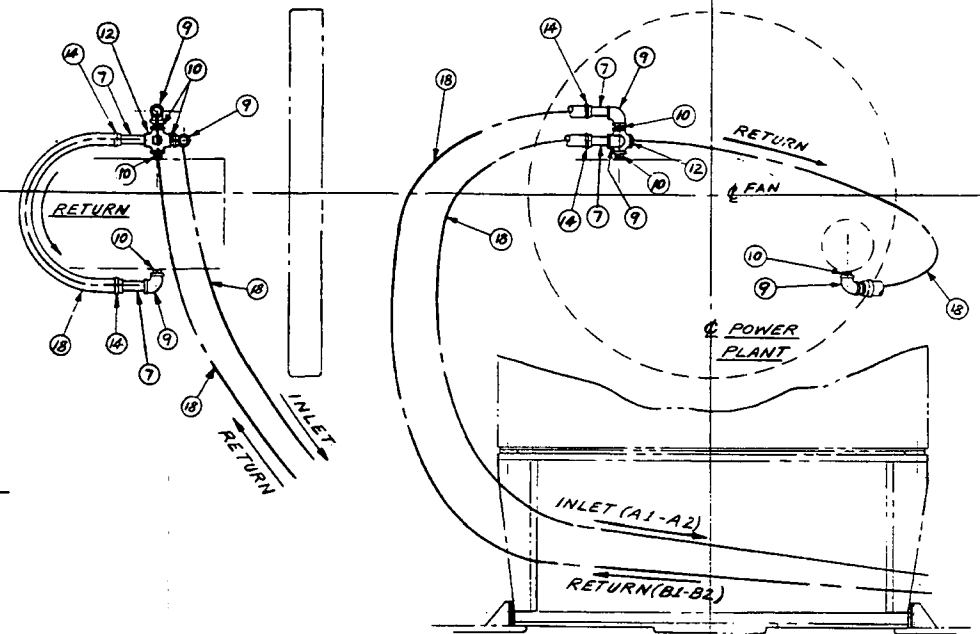


43331 C1

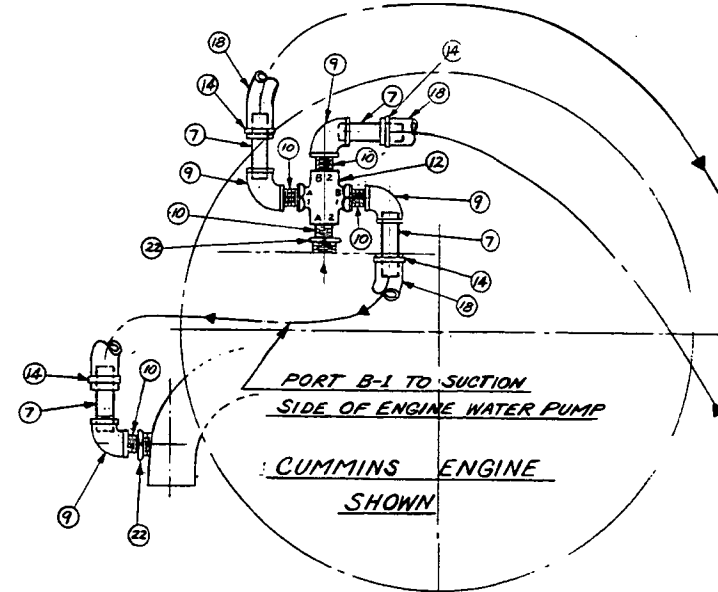


SCHEMATIC HEATER PIPING

**IMPORTANT ASSEMBLY NOTE:**  
 NO STEAM OR STOP COCKS ARE TO BE INSTALLED IN THE HEATER PIPING SYSTEM OTHER THAN ITEMS 12, 17, 25 AS SHOWN.



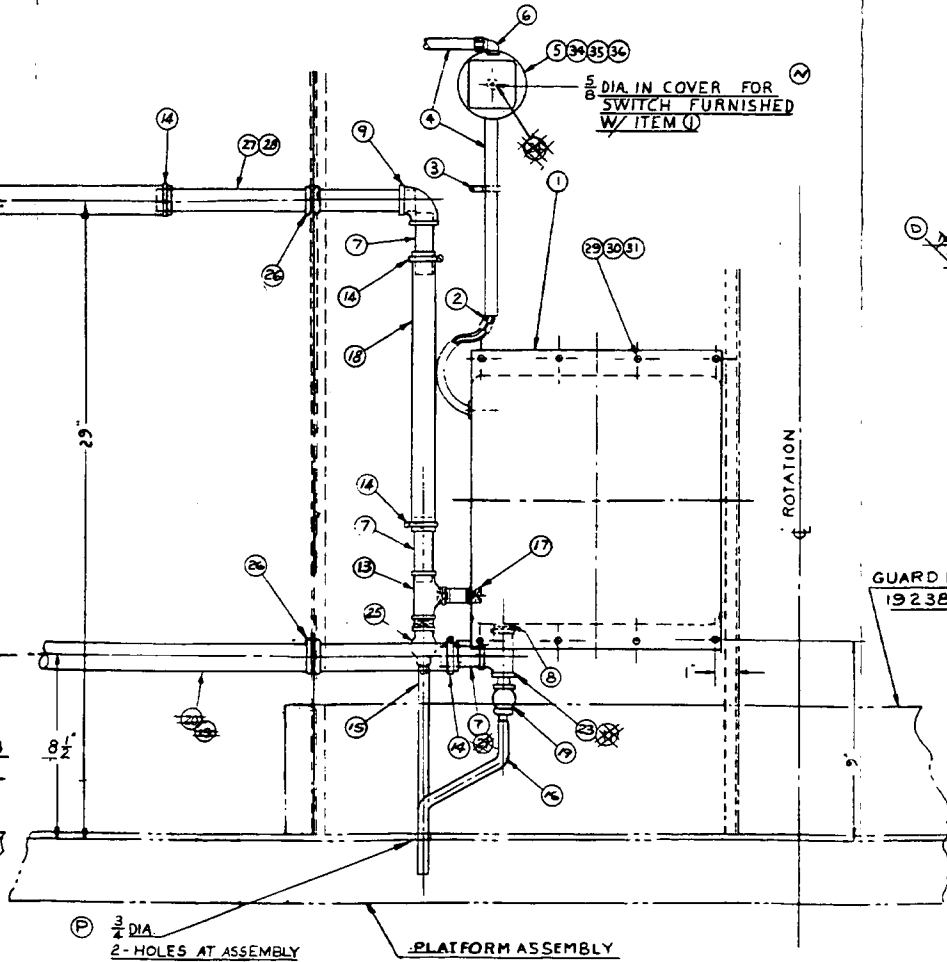
FITTINGS USED WITH CAT. & G.M. POWER PLANTS



PORT B-1 TO SUCTION SIDE OF ENGINE WATER PUMP  
 CUMMINS ENGINE SHOWN

FROM PORT A-1 TO CAB HEATER

RETURN LINE FROM CAB HEATER TO PORT B-2



NOTICE  
 THE NEW STAND BY DESIGN OF MANITOWOC ENGINEERING CO.

BILL OF MATERIAL						APPROVED
ITEM NO.	QTY	SIZE	MATERIAL	CODE NO.	REMARKS	USED ON
1	1	KYSOR M-1075 24V HTR	480016		W/SWITCH	
2	2	IGNITION CABLE	296696		ON HEATER	
3	3	STRAP	667204		ONE HOLE	
4	1	1/4" LOOM X12	510706			
5	1	HANDY BOX & COVER	268508			
6	1	CONNECTOR	364155			
7	7	1/2" X 3" LG. STD. PIPE	566120		THD. ONE END	
8	1	3/8" CLOSE NIPPLE	543403			
9	5	1/2" X 90° ELBOW	406953			
10	5	1/2" CLOSE NIPPLE	543404			
11	1	1/2" X 3" LG. STD. PIPE	566120			
12	1	HEATER DUAL SHUT-OFF COCK	138934			
13	1	1/2" X 1/2" X 3/8" TEE	679352			
14	8	HOSE CLAMP	345337			
15	1	1/2" PLASTIC HOSE	485845			
16	1	3/8" PLASTIC HOSE	485844			
17	1	3/8" X 1/2" LG. NIPPLE	543709			
18	1	3/4" I.D. HOSE	485505			
19	1	1/2" PETCOCK	355453			
20	1	1/2" X 3" LG. STD. PIPE	566120			
21	1	1/2" X 1/2" X 3/8" TEE	679352			
22	2	3/4" X 1/2" RED BUSHING	288753			
23	1	3/8" X 3/8" X 1/2" TEE	679348			
24	1	ROCKER SWITCH	673557			
25	1	1/2" PETCOCK	355454			
26	2	GROMMET	472025			
27	1	1/2" X 12" LG. STD. PIPE	565949		THD. ONE END	
28	1	1/2" X 12" LG. NIPPLE	543716		SEE NOTE 3	
29	8	1/4" - 20 NC X 1/2" LG. STOVE BOLTS	254549		OVEN HD.	
30	8	1/4" - 20 N.C. HEX. NUT	546052			
31	8	1/4" LOCKWASHER	710302			
32	1	3/8" B X CONNECTOR 90°	364168			
33	16	#14-1 TYREX CORD	371829			
34	1	15 AMP. FUSE	453230			
35	1	BLANK COVER	570103			
36	1	FUSE HOLDER	575502			
37						
38						
39						
40						
41						
42						

**NOTE 1 - IMPORTANT**  
 DO NOT USE EXCESSIVE FORCE IN APPLYING PIPE FITTING TO HEATER INLET & OUTLET. IF PIPE THREADS IN HEATER ARE OVERSIZE OR DEFECTIVE IN ANY WAY RETURN HEATER TO VENDOR FOR CORRECTION.

**NOTE 2**  
 FOR 12 VOLT APPLICATION SUBSTITUTE KYSOR 12 VOLT HEATER M.E.C. CODE NO. 480017 FOR ITEM 1

**NOTE 3**  
 WHEN GAS ENGINE WATER HEATER IS USED IN CONJUNCTION WITH CAB HEATER DELETE ITEM 27 & ADD ITEM 28. CONNECT ITEM 28 TO TEE ITEM 26 ON GAS WATER HEATER ASSEM. NO. 31135.

M.F.R.'S. RATING  
 48000 B.T.U.  
 523 C.F.M.

REDESIGNED AS 190144  
 SUPERSEDES 48762 OF 11-21-69

ALSO SUPERSEDES 180284 OF 8-10-71 FOR M-2900-NC. ONLY

SCALE	UNLESS NOTED
3" = 1'-0"	
LPW	
CHJ	
RJS	

48762	MANITOWOC ENGINEERING CO.
	CAB HEATER ASSEMBLY
	MODEL 2900-2900A, 2900B, 2900C, 2900D, 2900E, 2900F, 2900G, 2900H, 2900I, 2900J, 2900K, 2900L, 2900M, 2900N, 2900O, 2900P, 2900Q, 2900R, 2900S, 2900T, 2900U, 2900V, 2900W, 2900X, 2900Y, 2900Z

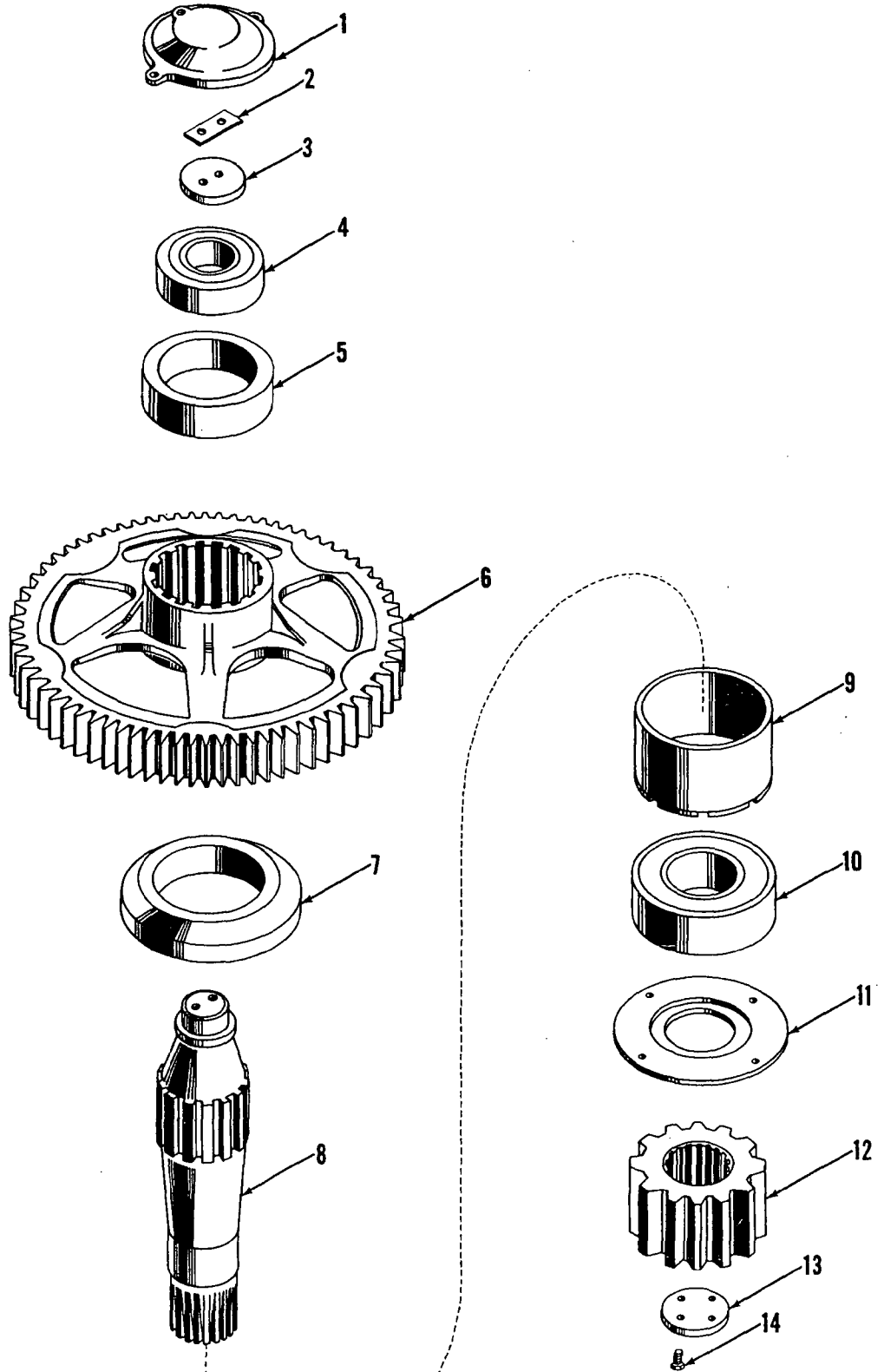
DES. NO.	48762
REVISED DATE	
DATE	6-16-70
PATTERN NO.	
CODE NO.	
DES. NO.	48762

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Manitowoc, Wisconsin

MASTER



ILLUST. No. 23688-A-1

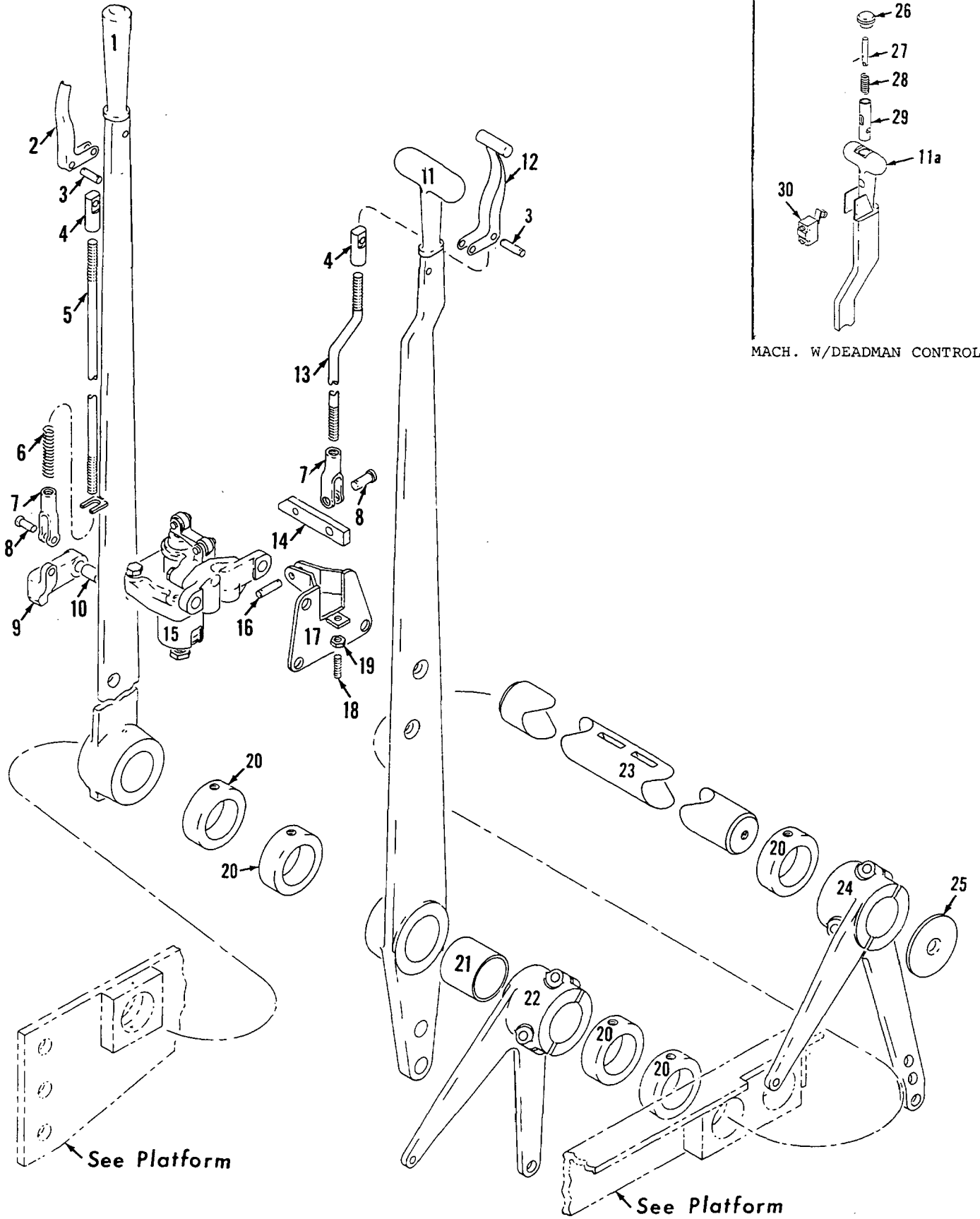
MATERIAL LIST ON BACK

SWING SHAFT

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Manitowoc, Wisconsin



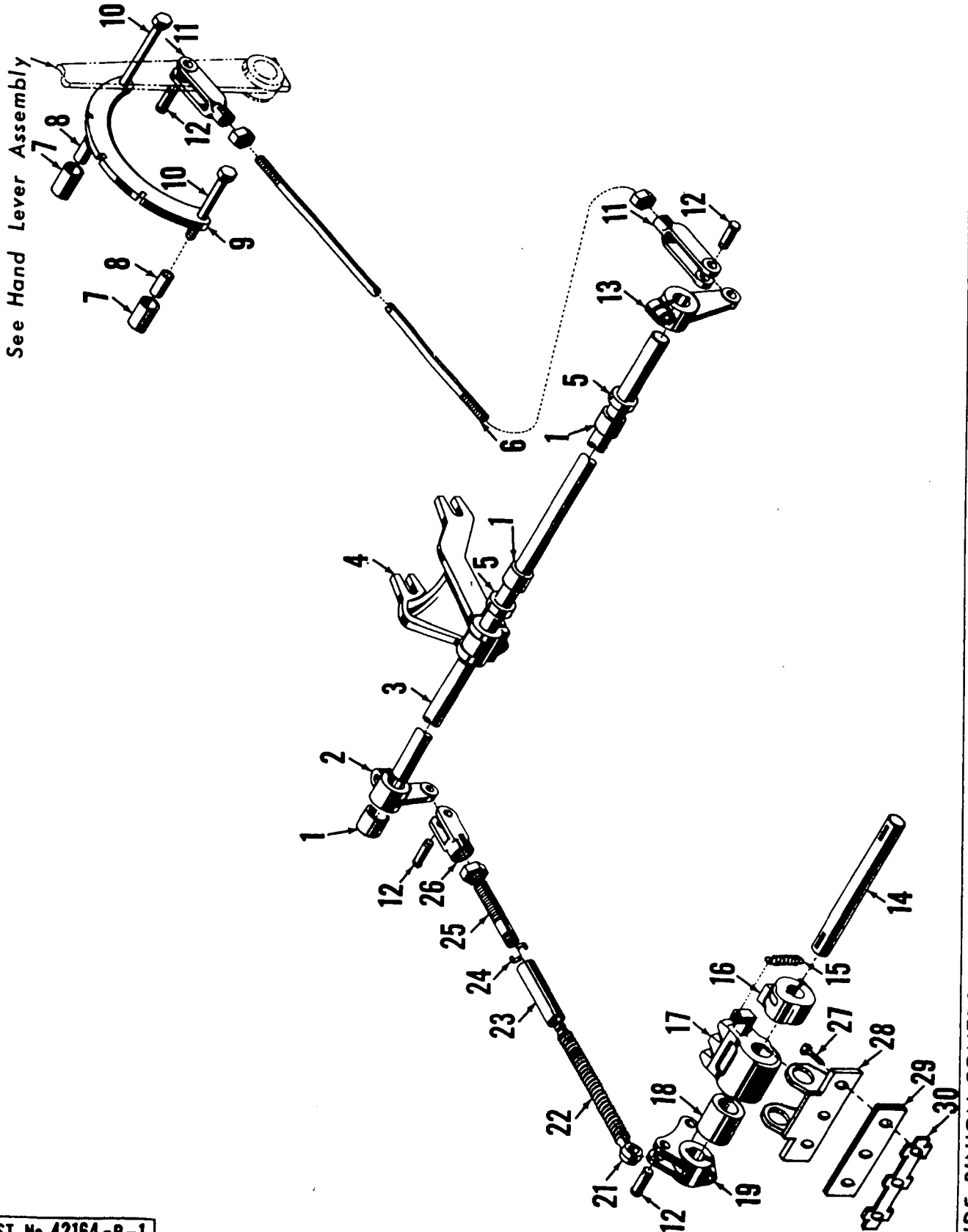
MACH. W/DEADMAN CONTROL

HAND LEVERS

MATERIAL LIST ON BACK

32739A1

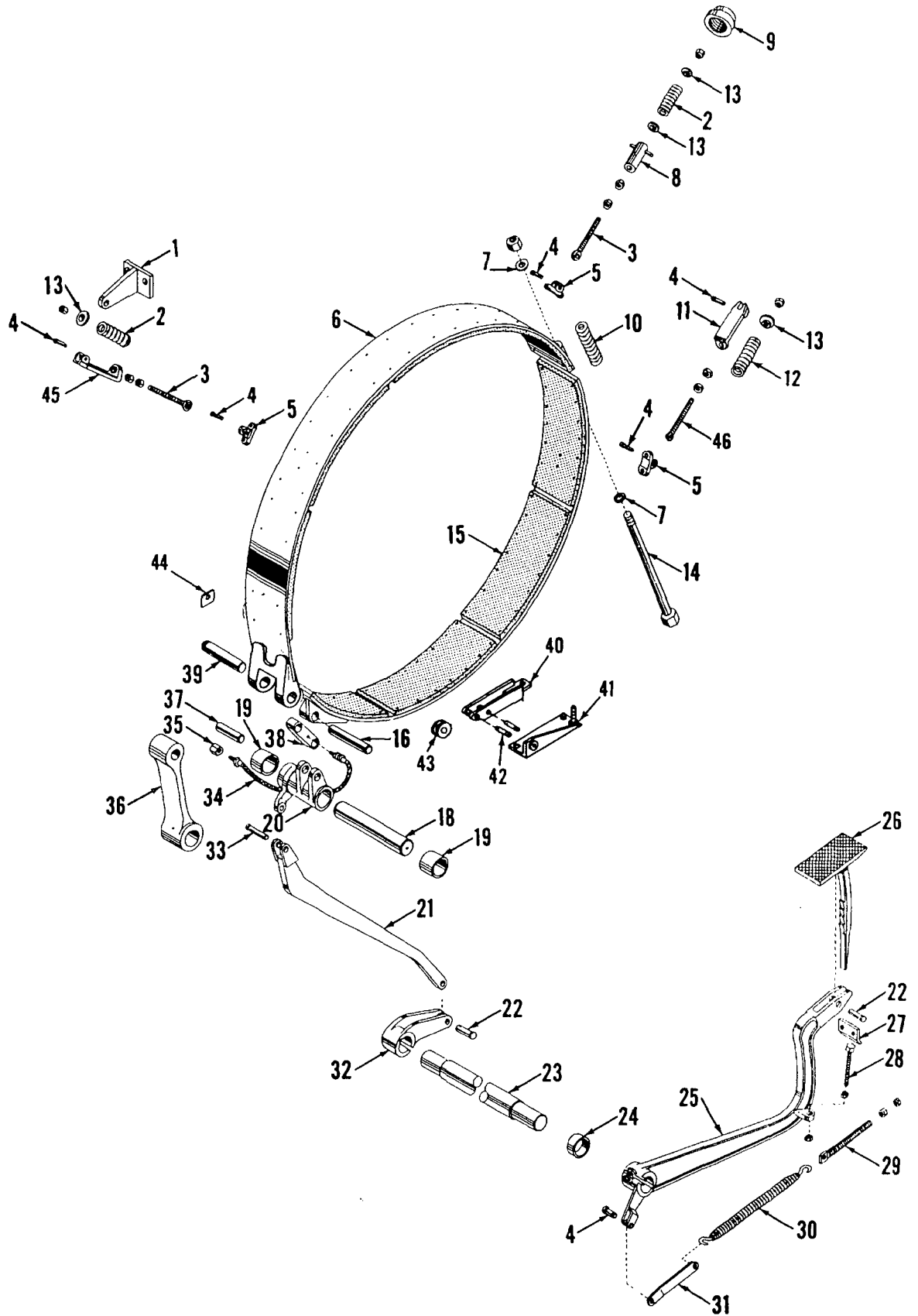
32739A1



See Hand Lever Assembly

MASTE

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42184C1

MATERIAL LIST ON BACK

LEFT DRUM BRAKE

4101 C1

42385-1 Cont	REV J	MODEL 3900-4000-4000 -4000W
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DRUM SHAFT (UNEQUAL DRUMS)  
(AIR CONTROL)  
(ROLLER BEARING DRUMS AND JOURNALS)

REF NO	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO
40	19385	1	REAR AUX DRUM W/OR W/OUT FRONT AUX DRUM OR WINCHHEAD (VICON)	
40	73285	1	SPROCKET W/capscrews and lockwashers (Mach W/Front Aux Drum or Winchhead)	
41	24740	1	SPACER (Mach W/Out Front Aux Door or Winchhead)	
42	19366	1	SPROCKET W/capscrews and (larger hub than shown and W/out small sprocket teeth)	
43	91345	1	GASKET	
43	90038	1	PIPE W/capscrews and lockwasher (W/shaft #33693)	
44	700703	1	PIPE W/capscrews and lockwashers (W/shaft #32137)	
44	352912	1	UNION, Swivel (Deublin #15-3) (Supersedes #35912)	
			UNION, Swivel (Fawick Rotorseal Type B)	
			<u>FOR WINCHHEAD OR FRONT AUX DRUM</u>	
40	19385	1	SPROCKET W/capscrews and lockwashers	
			<u>WEDGES AND LAGGING FOR LEFT DRUM</u>	
18	31082		LAGGING (21" Dia Plain) W/studs, hex nuts and lockwashers	
	31083		LAGGING (22" Dia 1-1/8" Gr ) W/studs, hex nut and lockwashers	
	31084		LAGGING (25" Dia 7/8" Gr ) W/studs, hex nuts and lockwashers	
	31085		LAGGING (25" Dia 1-1/8" Gr ) W/studs, hex nuts and lockwashers	
	31086		LAGGING (27" Dia 7/8" Gr ) W/studs, hex nuts and lockwashers	
	31668		LAGGING (27" Dia Plain) W/studs, hex nuts and lockwashers	
	31878		LAGGING (27" Dia 1" Gr ) W/studs, hex nuts and lockwashers	
	32746		LAGGING (27" Dia 1" Gr - Power Lowering) W/studs, hex nuts and lockwashers	
	33113		LAGGING (27" Dia 1-1/8" Gr ) W/studs, hex nuts and lockwashers	
	182214		LAGGING (27" Dia 3/4" Gr ) W/studs, hex nuts and lockwashers	
37	3947		WEDGE (7/8" wire rope)	
	10160		WEDGE (1" wire rope)	
	11966		WEDGE (1-1/8" wire rope)	
	72681		WEDGE (1-1/4" wire rope)	
	74543		WEDGE (3/4" wire rope)	
			<u>WEDGES AND LAGGINGS FOR RIGHT DRUM (SEE NOTE 1)</u>	
18	32288		LAGGING (24" Dia 1-1/4" Gr ) W/studs, hex nuts and lockwashers	
	32343		LAGGING (24" Dia 1-1/4" Gr ) W/studs, hex nuts and lockwashers and ferrule #424639	
	32636		LAGGING (24" Dia 1-1/4" Gr - Power Lowering) W/studs, hex nuts and lockwashers	
	32637		LAGGING (26" Dia 1" Gr - Power Lowering) W/studs, hex nuts and lockwashers	
	32655		LAGGING (26" Dia 1" Gr ) W/studs, hex nuts and lockwashers	
	32721		LAGGING (24" Dia 1" Gr - Power Lowering) W/studs, hex nuts and lockwashers	
	33133		LAGGING (27" Dia 1-1/8" Gr ) W/studs, hex nuts and lockwashers	
	180081		LAGGING (27" Dia 1-1/4" Gr ) W/studs, hex nuts and lockwashers	
	182213		LAGGING (27" Dia - 7/8" Gr ) W/studs, hex nuts and lockwashers	
37	71877		WEDGE (1" Cable)	
	71878		WEDGE (1-1/8" wire rope)	
	71879		WEDGE (1-1/4" wire rope)	
	71876		WEDGE (7/8" wire rope)	
	74544		WEDGE (3/4" wire rope)	

REV J	42385-1 Cont
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PLEASE GIVE MACHINE S/N W/ORDER

Run as Front

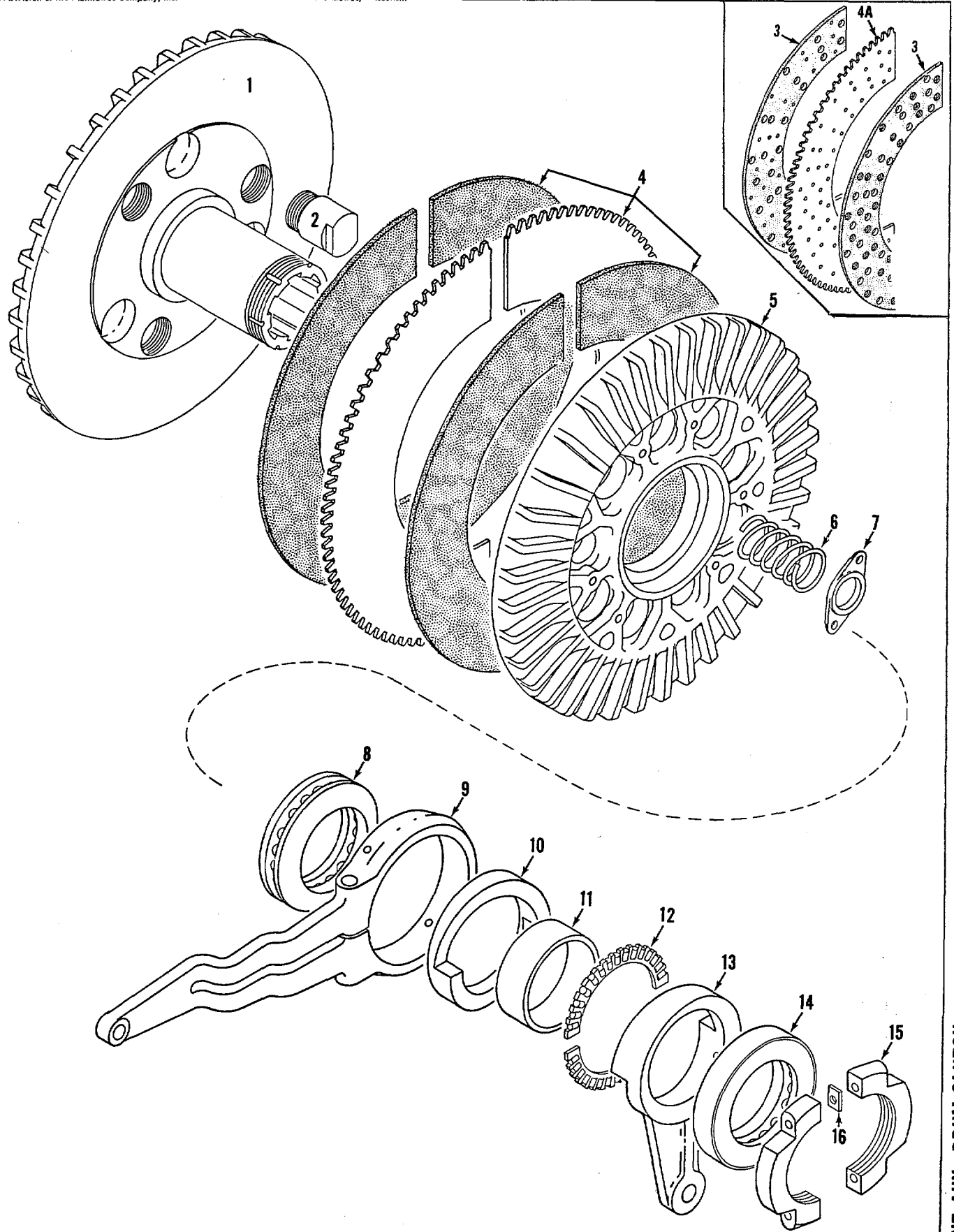
42385 J1 Cont'd

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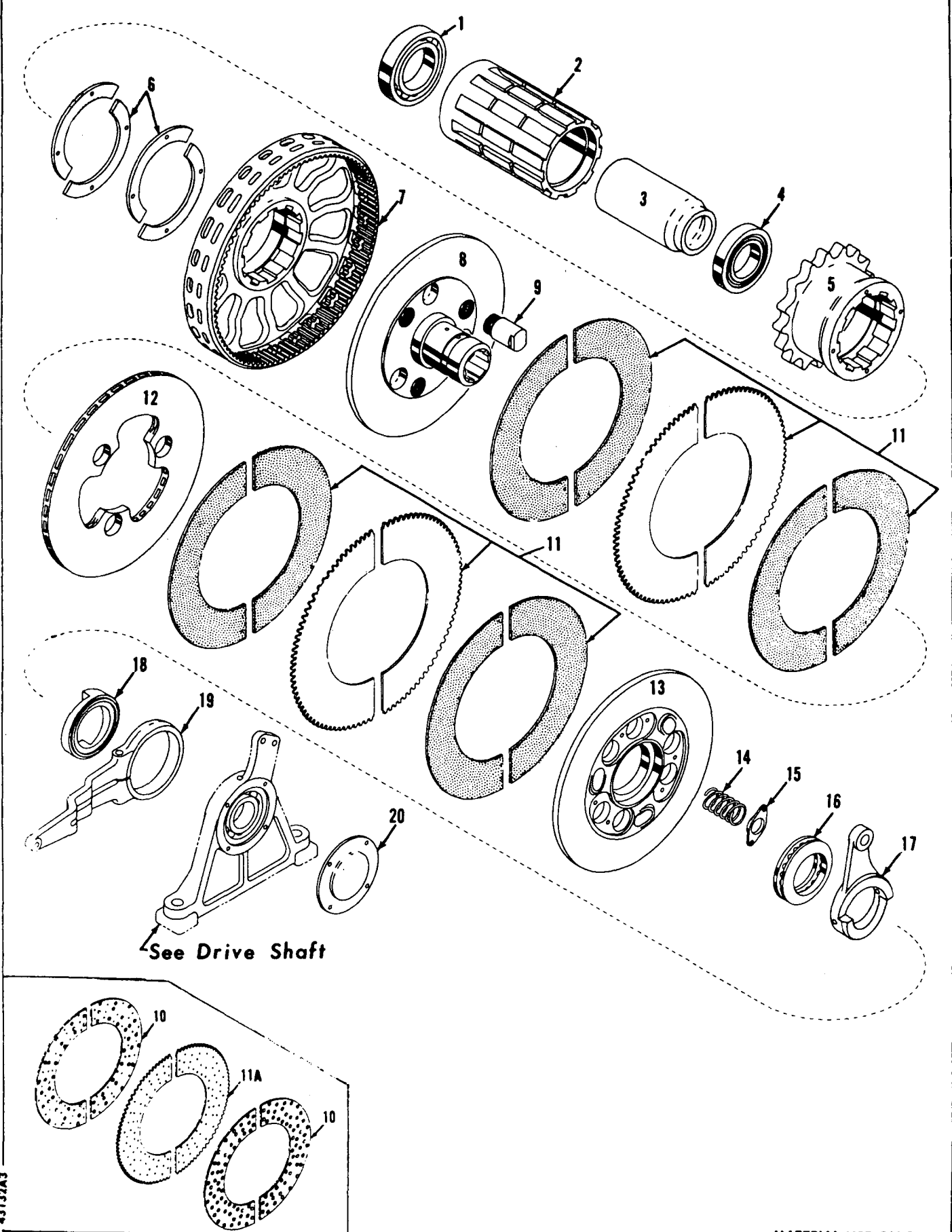
Manitowoc, Wisconsin



42407C2

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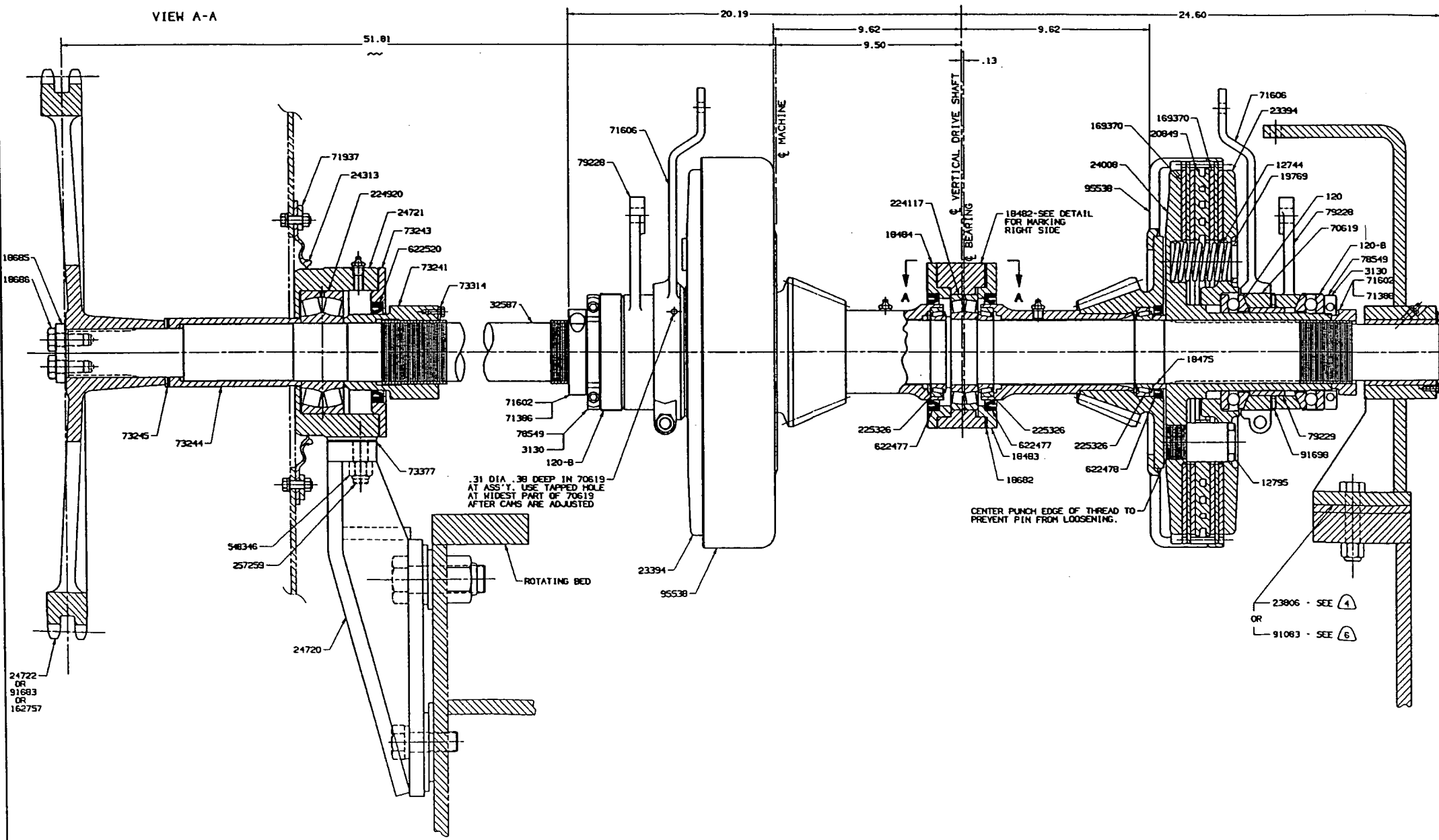
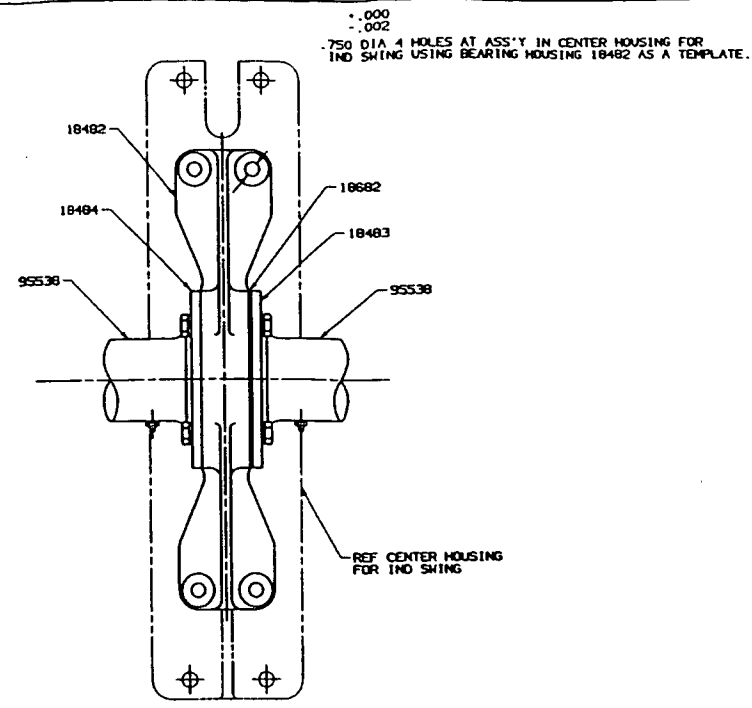
FRONT AUX. DRUM CLUTCH



43137A3

MATERIAL LIST ON BACK

MAIN DRIVE SHAFT



BILL OF MATERIAL			
QTY	DESCRIPTION	MATERIAL	REF. DES.
2	THRUST BALL BEARING	120	
2	THRUST BALL BEARING	120-B	
2	NUT KEEPER	3130	
6	SPRING	12744	
6	DRIVING PIN	12795	
2	SPACER	18475	
1	CENTER BEARING HOUSING	18482	11-14-89 LPH
1	BEARING COVER	18483	2) HAS 190828
1	BEARING COVER	18484	
1	SHIM	18682	
1	END PLATE	18685	
1	LOCKING PLATE	18686	
6	SPRING RETAINER	19769	
2	DRIVING DISC	20849	
2	MOVEABLE PLATE	23394	
1	OUTBOARD BEARING ASSEMBLY	23806	
2	STATIONARY PLATE	24008	
1	OIL SEAL	24313	
1	BEARING SUPPORT BRACKET	24720	
1	BEARING SUPPORT	24721	
1	SPROCKET 71 TOOTH	24722	
1	SHAFT	32587	
2	STATIONARY CAM	70619	
2	NUT	71386	
2	LOCK	71602	
2	CAM LEVER	71606	
1	OIL SEAL RETAINING RING	71937	
1	ADJUSTING NUT	73241	
1	BEARING COVER	73243	
1	SPACER	73244	
1	SHIM	73245	
1	NUT LOCK	73314	
1	SHIM	73377	
2	NUT	78549	
2	CAM AND LEVER	79228	
2	BUSHING	79229	
1	OUTBOARD BEARING ASSEMBLY	91083	
1	SPROCKET 37 TOOTH	91683	
2	THRUST BEARING	91698	
2	SPIDER/GEAR SUB-ASSEMBLY	95538	
1	SPROCKET 72 TOOTH - 1 PITCH	162757	
4	CLUTCH DISC SUB-ASSEMBLY	169370	
1	ROLLER BEARING	224117	
1	ROLLER BEARING	224920	
4	ROLLER BEARING	225326	
2	COUPLING BOLT	257259	
1	ROLLER CHAIN	334133	
1	ROLLER CHAIN	335089	
2	NUT	548346	
2	OIL SEAL	622477	
2	OIL SEAL	622478	
1	OIL SEAL	622520	

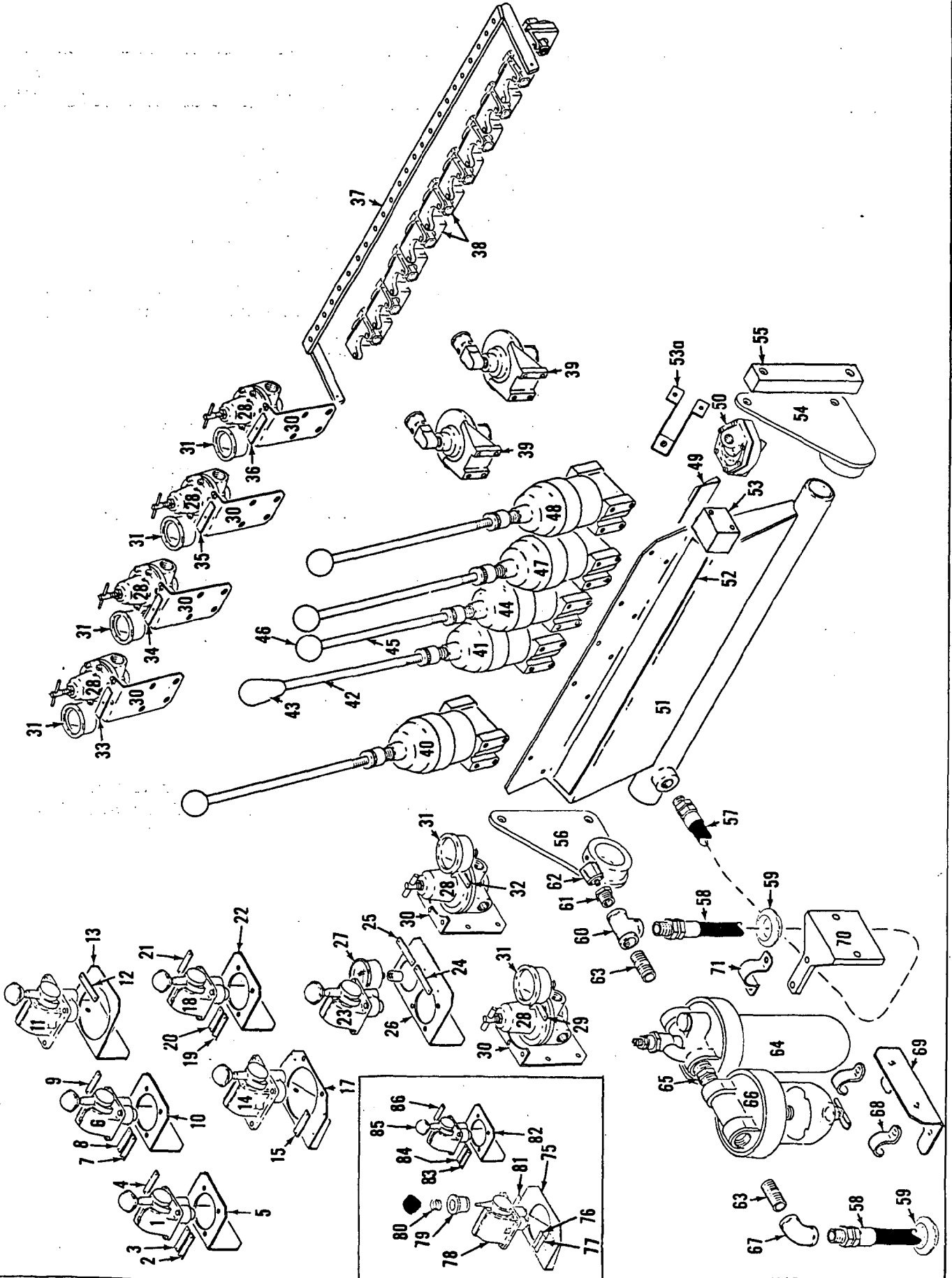
- 1) FOR MODEL 3900B, 3900H, & 4000H ONLY. SPROCKET RATIO: INDEPENDENT SWING SHAFT TO MAIN DRIVE SHAFT. NO OF TEETH: 37, RATIO: .522. 71, RATIO: 1.545.
- 2) 102 PITCHES - 1.25 PITCH, 2 STRAND - HIGH SPEED.
- 3) 106 PITCHES - 1.25 PITCH, 2 STRAND - STD SPEED.
- 4) H-4000 & H-3900H USE WITH WELDED ROT. BED.
- 5) 3900B, 3900H, & 4000H ONLY.
- 6) 3900H.
- 7) 3950HT.

23806 - SEE 4  
OR  
91083 - SEE 6

DO NOT SCALE THIS DRAWING

GROUP C - Air Components & Electrical

MASTER

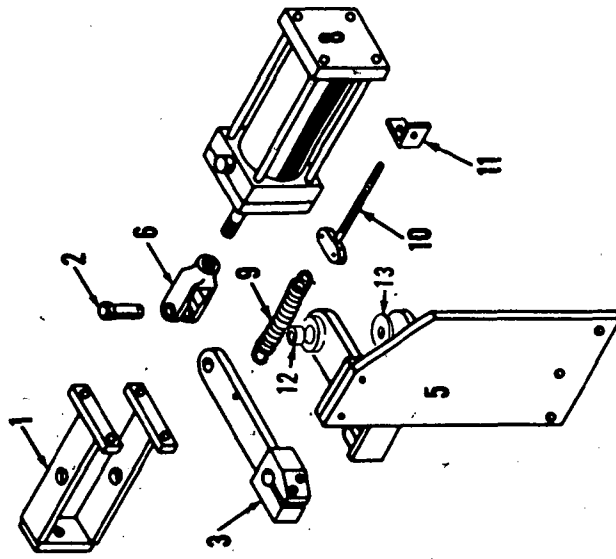


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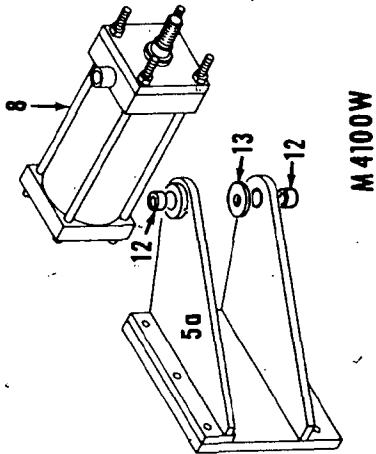
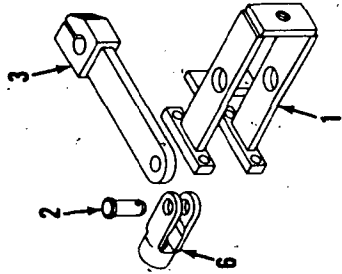
MATERIAL LIST ON BACK

CONTROL CONSOLE

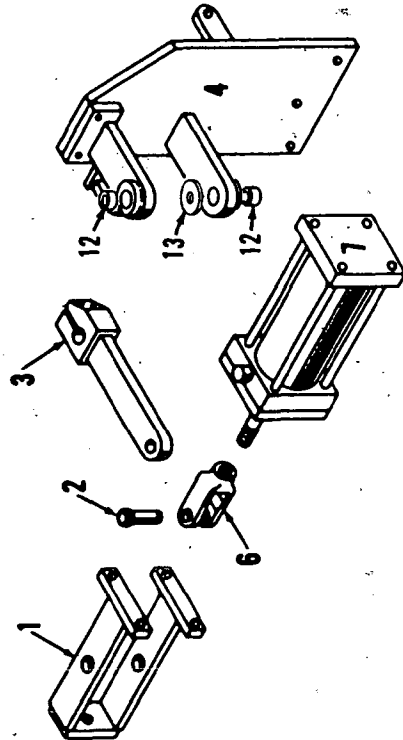
MASTER



M 3000 - 4000W INCL.



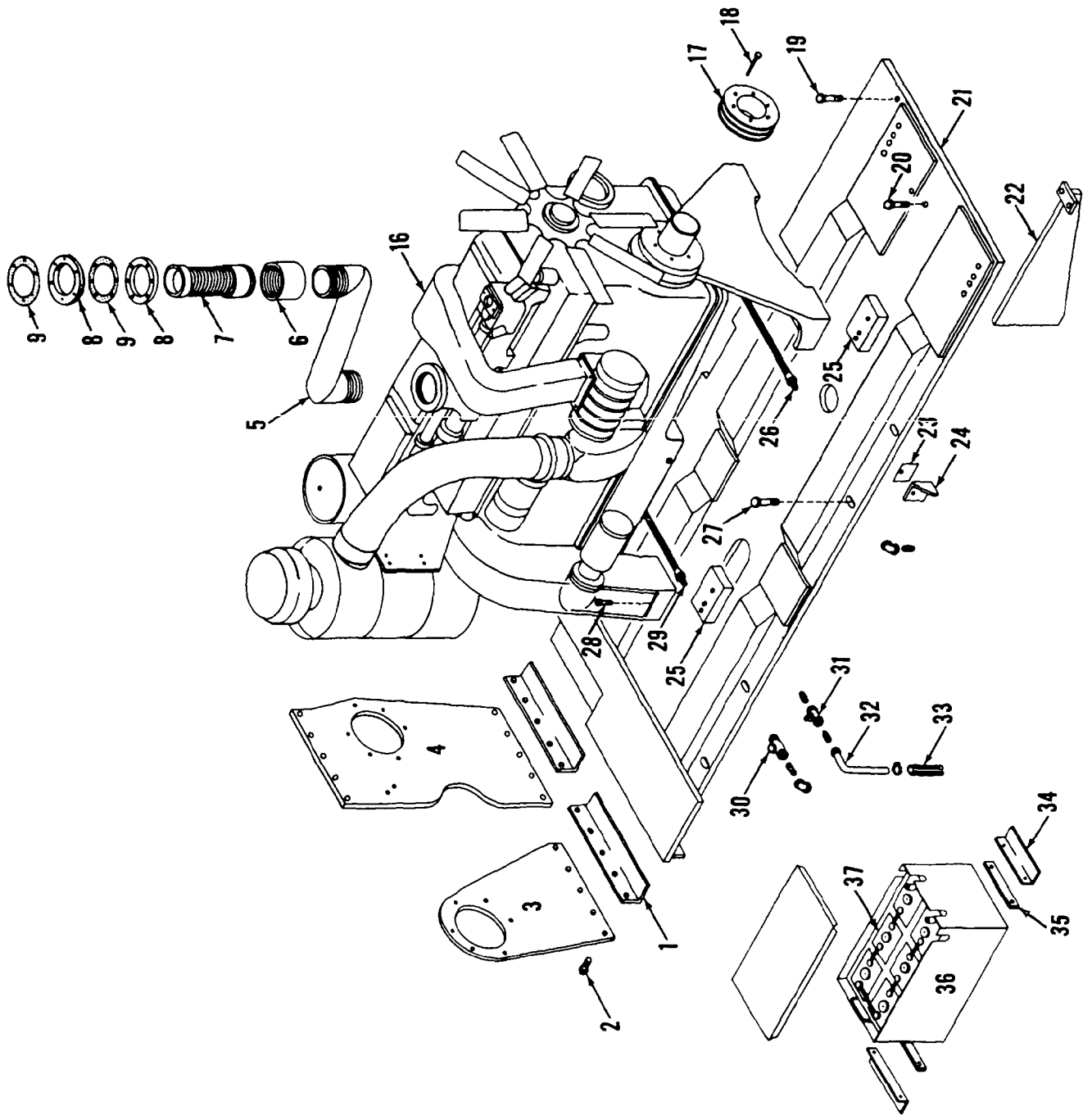
M 4100W



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Manitowoc, Wisconsin



4323381

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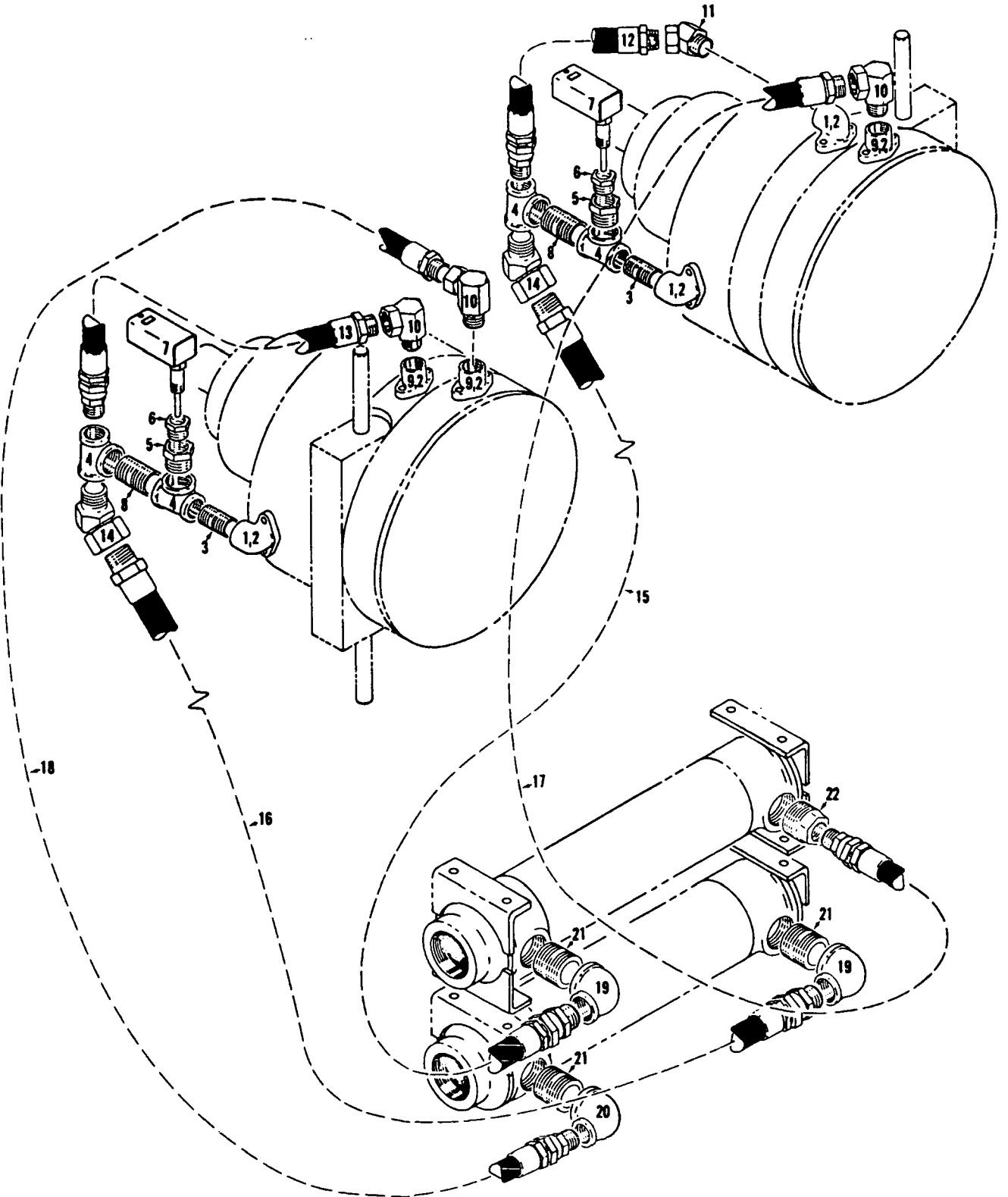
POWER PLANT

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin

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48648 A3

48648A3

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CONVERTER COOLING

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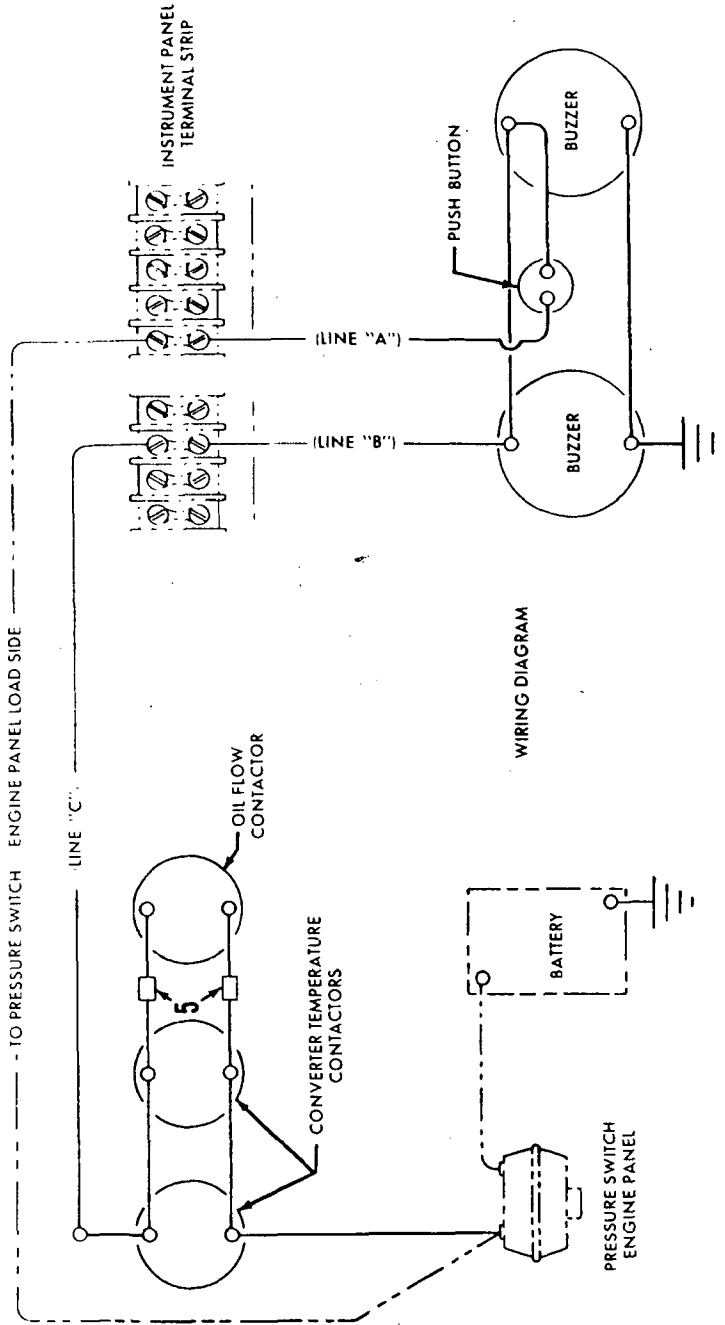
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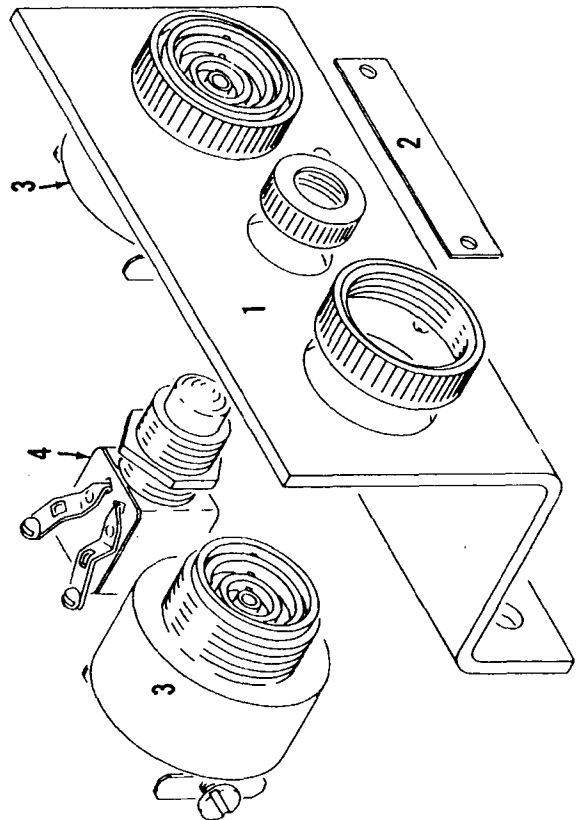
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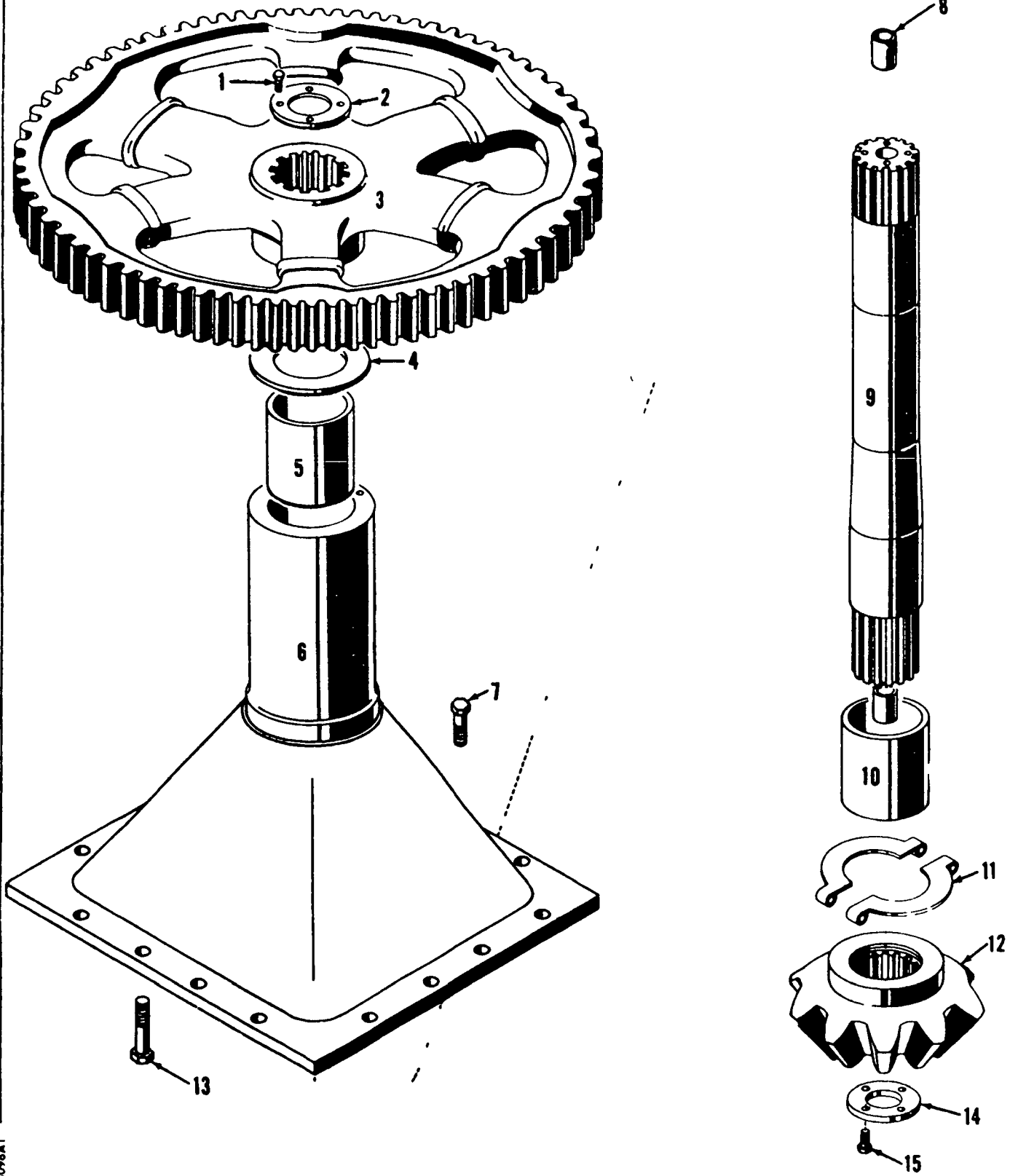
WIRING DIAGRAM



**PARTS MANUAL ALPHABETICAL INDEX**  
**Group E - Lower Structure & Control**

DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
Carbody	43369	J1	09/21/64	02/07/85	E0101
Carbody Lubrication Piping	32233	B1	08/07/59	08/03/83	E0102
Crawler Lubrication Piping	180239	E1	03/25/68	12/14/84	E0202
Crawler Lubrication Piping	180239	C2	03/25/68	04/25/85	E0202
Crawlers	43148	Q1	09/18/63	01/13/86	E0201
Horizontal Travel Shaft	32907	B1	09/04/63	02/14/84	E0401
King Pin & Vertical Travel Shaft	33098	E1	08/21/64	10/21/81	E0301
Steering Control	42396	E1	06/15/60	01/24/84	E0501
Steering Control	42396	C2	05/11/59	07/07/81	E0501
Travel Lock Control	31743	I1	08/19/69	07/30/81	E0601

MASTER



MATERIAL LIST ON BACK

KING PIN & VERTICAL TRAVEL SHAFT

33098 A/

33098A1

43148-1 Cont.	REV. Q	MODEL 4000W
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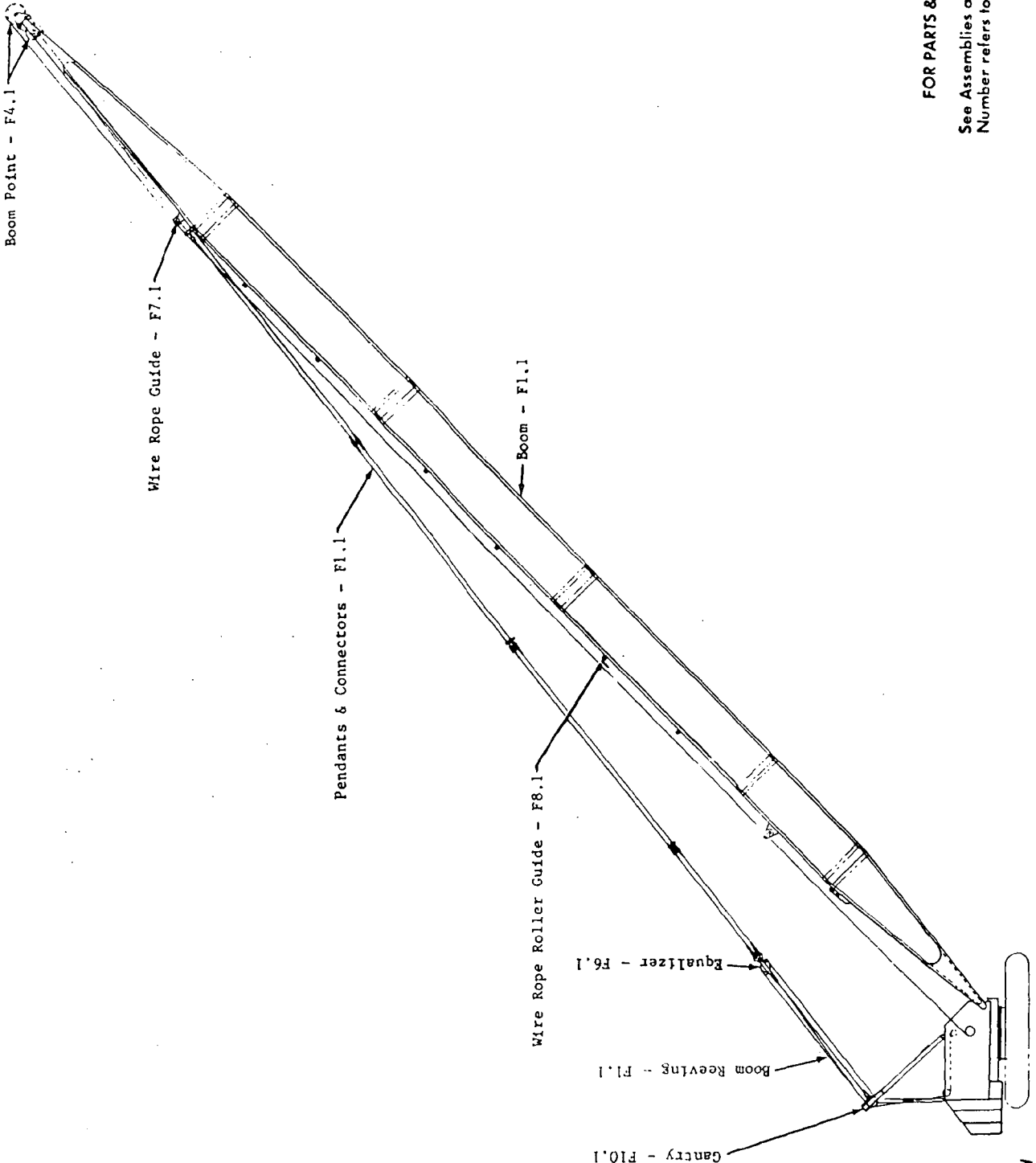
CRAWLERS (24'0")  
(QUANTITIES FOR BOTH CRAWLERS)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
37	40246	104	TREAD, Crawler (48")	
38	11978	208	PIN, Tread (See Note 3)	
43	74863	4	PLUNGER, Bumper	
44	74867	4	PLATE, Cover	
45	74864	4	BUMPER	
46	74862	4	CYLINDER, Bumper	
47	74865	4	SPACER	
48	74866	64	SHIM (Use as required)	
<p><u>NOTE 1:</u> Check machine or "Basic Specifications" page for proper chain identification.</p> <p><u>NOTE 2:</u> Bushings #10742, 10757, 17290 and 72090 to have grease groove open end facing centerline of crawler frame.</p> <p><u>NOTE 3:</u> Oversize pin #147302 (1-13/16" dia.) is available to replace pin 111978 (1-3/4" dia.)</p> <p><u>NOTE 4:</u> <u>REPLACEMENT CRAWLER CHAIN LINKS:</u>                       For 335377 chain use 509077 link                      For 335378 chain use 508982 link                      For 335379 chain use 509073 link</p> <p><u>NOTE 5:</u> Optional Roller, 73442 (forged)</p> <p>0-145-1 (Prior to 1967) 0-471 (1974 and on)</p>				
				REV. Q
				43148 - 1

PLEASE GIVE MACHINE S/N W/ORDER

**PARTS MANUAL ALPHABETICAL INDEX**  
**Group F - Attachments**

DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
Backhitch & Gantry	48177	C1	10/25/68	07/24/70	F1001
Boom	48168	A1	10/25/67	09/07/79	F0101
Boom	48168	B2	10/25/67	12/27/90	F0101
Boom	48168	F3	10/30/67	01/25/82	F0101
Boom	48168	F4	10/25/67	01/25/86	F0101
Boom Angle Indicator	22334	B1	01/07/52	09/20/85	F1101
Boom Point	91132	-	11/05/65	08/09/06	F0401
Boom Point	91132	D	11/05/65	03/15/00	F0401
Boom Stop, Clutch Throw-Out	48222	A1	04/18/68	04/30/80	F0201
Boom Stop, Mechanical	48179	A1	10/10/67	03/02/70	F0202
Equalizer/Pull-Out	180115	D1	10/13/67	06/07/84	F0601
Gantry Lifting Device	181193	G1	04/16/70	08/17/82	F1002
Guard Rollers On "A" Frame	180932	A1	08/20/69	07/16/70	F0901
Hook & Weight Ball	75345	C1	03/03/63	03/06/73	F1401
Jib	43730	-	10/07/65	02/25/98	F1301
Jib	78169	C1	12/30/66	08/02/84	F1301
Jib Backstay	48659	D1	04/22/69	09/18/84	F1302
Wire Rope Guide	33624	C1	01/07/66	06/30/76	F0701
Wire Rope Guide	33634	D1	01/20/66	09/10/80	F0701
Wire Rope Guide	77436	-	02/01/66	11/27/68	F0701
Wire Rope Roller Guide	77090	-	09/15/65	01/21/98	F0801
Wire Rope Roller Guide	77090	C1			F0801



FOR PARTS & ILLUSTRATIONS

See Assemblies as named.  
Number refers to Parts Manual Page

48168A1

4000W

48177-1Cont.	REV. C	MODEL 4000W
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GANTRY AND BACKHITCH

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
44	18251	2	WASHER (12 part line)	
51	136571	2	SPACER	
			<u>FOR TOWER CRANE ONLY (SEE NOTE 1)</u>	
50	180219	1	GUIDE, Right Wire Rope W/capscrews, hex nuts and lockwashers	
50	180220	1	GUIDE, Left Wire Rope W/capscrews, hex nuts and lockwashers	
			<u>TIE-DOWN TO 1ST OR 2ND COUNTERWEIGHT</u>	
46	79241	2	STRAP, Anchor	
47	79244	2	LUG, Tie	
	79276	2	BOLT	
48	12360	2	PIN, Tie-Down W/cotter pins	
			<u>TIE-DOWN TO CAB REAR</u>	
48	12360	2	PIN, Tie-Down W/cotter pins	
49	77747	2	STRAP, Anchor	
			NOTE 1: To secure gantry in position for Tower Operation use additional pair of Ref. #13, pin #138888, to pin Ref. #11, link #77751, to counterweight.	
			NOTE 2: For machines W/Rear Aux. Drum Ref. Nos. 23-30 Incl. and 4 of Ref. #19 are omitted. See "Wire Rope Guide and Gantry Support" page F8.1.	

Run as a Front

APR

48177 C1 Cont'd.

REV. C	48177 - 1
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PLEASE GIVE MACHINE S/N W/ORDER

A/B

A NOTE:

SET SCREWS TO BE REMOVED FROM BOTH BEARINGS.

B 1

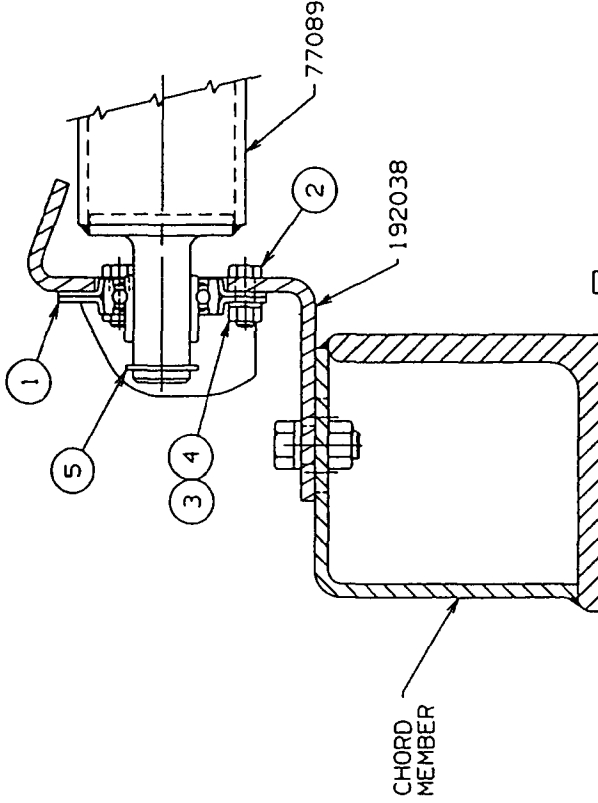
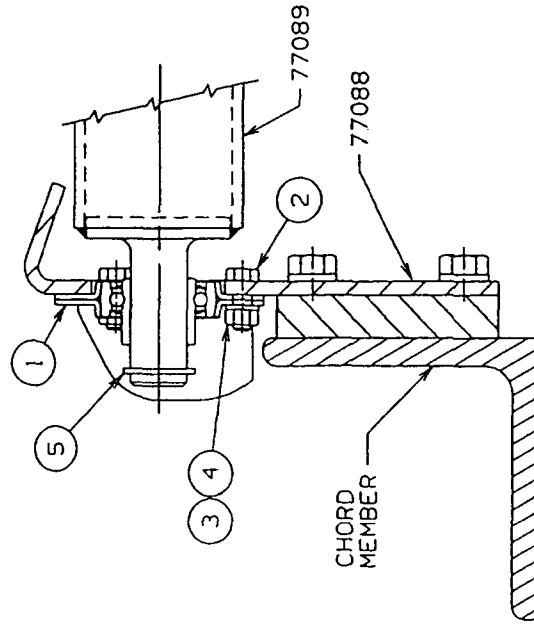
BEARING BRACKET 192038  
REO'D FOR USE ON INSERTS  
33426, 50609, 623525, 623526,  
623527, 623528, 623529, 623530,  
623531, 623532, 623533, 623534,  
623535, 623536, 623537, 623538,  
623545, 623564, 623579, 623580,  
& 623586 WITH TIMBER BRACKETS

BILL OF MATERIAL

ITEM NO.	SEC. NO.	DESCRIPTION	LENGTH IN.	MATERIAL	CORE NO. OR Dwg. No.	ASSEMBLIES USED ON
1	2	BEARING, #F116 "NICE"			224218	43698
2	6	SCR. HEX. HD. CAP .312-18UNC-2A X .88 LG.			612404	49368 49377 49727
3	6	NUT, HEX .312-18UNC-2B			546053	65173
4	6	WASHER, LOCK .312			710303	65156 49379
5	2	RING, RET. TRUARC			596823	65388
	1	ROLLER			77089	65415
	2	BEARING BRACKET			77088	
	2	BEARING BRACKET			192038	

OR

REVISIONS  
10-3-66 CEF  
A NOTE  
REVISED  
PC. S. ADDED  
1-29-68 LJE  
REVERSED  
POSITION  
OF HEX SCR  
7-19-82 CRP  
REDRAW CADAM  
CK:LS  
APP: PWR  
1-21-98 DM  
B/C ADDED  
D VIEW ADDED



SCALE  
5 = 1/4" = 1"

DR: RLT  
DC: EGT  
APP

77090

**Manitowoc Cranes, Inc.**  
Manitowoc, Wisconsin  
MOOD. 4000, 4000W

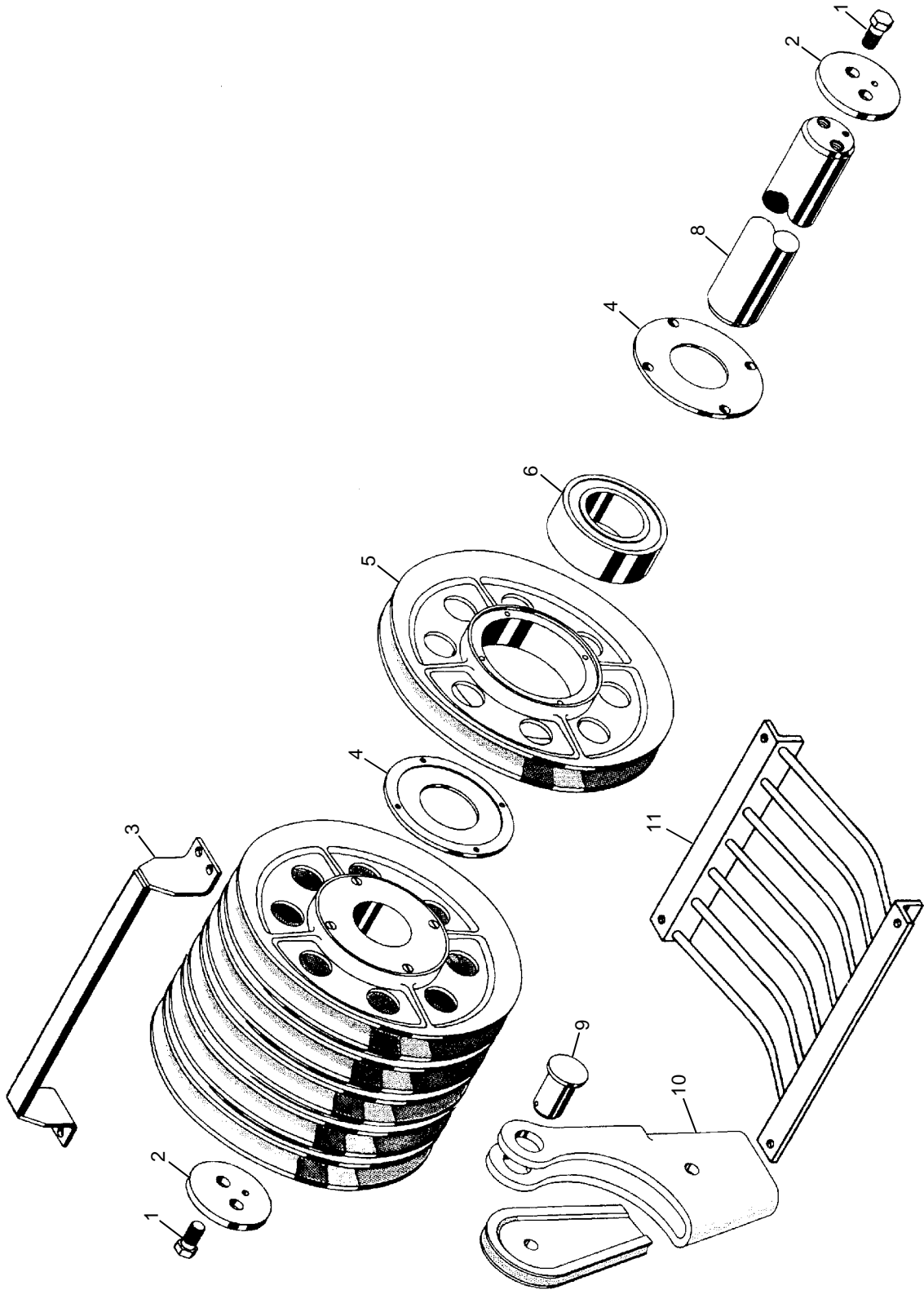
WIRE ROPE ROLLER  
GUIDE ASSEMBLY  
#22 BOOM

DATE  
9-15-65

PATTERN NO.

DWG. NO.  
77090

DO NOT SCALE THIS DRAWING



Eng Rev  
03-15-00

ASSEMBLY	REVISION
91132	D

BOOM POINT SHAFT, #22 & 22A BOOM

## O-NUMBER NUMERICAL INDEX

PUBLICATION	REV
0-63	C
0-64	B
0-69	C
0-71	-
0-72	B
0-96	C1
0-123	A1
0-123	A2
0-147	D2
0-148	-
0-156	D
0-157	C
0-173	A
0-243	A
0-243	A1
0-247	B
0-247	B1
0-284	A
0-286	A
0-288	C
0-289	F
0-290	F1
0-294	A
0-294	E
0-304	J1
0-307	-
0-307	F
0-337	B
0-340	E1
0-407	B
0-407	B1
0-441	A4
0-441	C2
0-451	AA1
0-451	CA1
0-451	DA1
0-471	A1
0-503	-
0-512	-

0-69 - 1 Cont.	REV. C.	MODEL 2300-4600 Incl.
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AIR CONTROL VALVE  
 (MANITOWOC #714493 - WESTINGHOUSE #P59331 NEW : P54424-0101 OLD) (2-HA-1)  
 (MANITOWOC #714418 - WESTINGHOUSE #P59333 NEW : P54424-0301 OLD) (2-HA-LR)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
13		1	CAM	P54192
14		1	FOLLOWER, Cam	P54197
15		2	SCREW, Truss Head	P49861-3
16		2	LOCKWASHER	506608
17		1	FLANGE, Valve Retaining	P54463
18	714504	1	RING, "0" (15/16" O.D.)*	P49708-16
19		1	GUIDE, Plunger	P54147
20	714506	1	RING, "0" (7/16" O.D.)*	P49708-11
21		1	PLUNGER, Valve	P54146
22	714525	1	SPRING, Exhaust Valve*	P54144
23		1	SEAT, Inlet Valve*	P54145
24	714441	1	RING, "0" (7/8" O.D.)*	P49708-115
25		1	WASHER	P53455-3
26	714442	1	VALVE, Inlet*	P5125
27	714526	1	SPRING, Inlet Valve	539115
28		1	SPACER, Valve	P54794
29		1	SCREEN	P54194
30		1	BODY	P54305
31		2	WASHER	506607
32		2	SCREW, Fillet Head	P49835

\*Recommended to be stocked at all times.

NOTE: Part numbers at right are Westinghouse. Please so specify if ordering.  
 Valve changed approx. July 1969. Check nameplate for identification of valve.

REV. C	0 - 69 -1
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PLEASE GIVE MACHINE S/N W/ORDER

Run as front

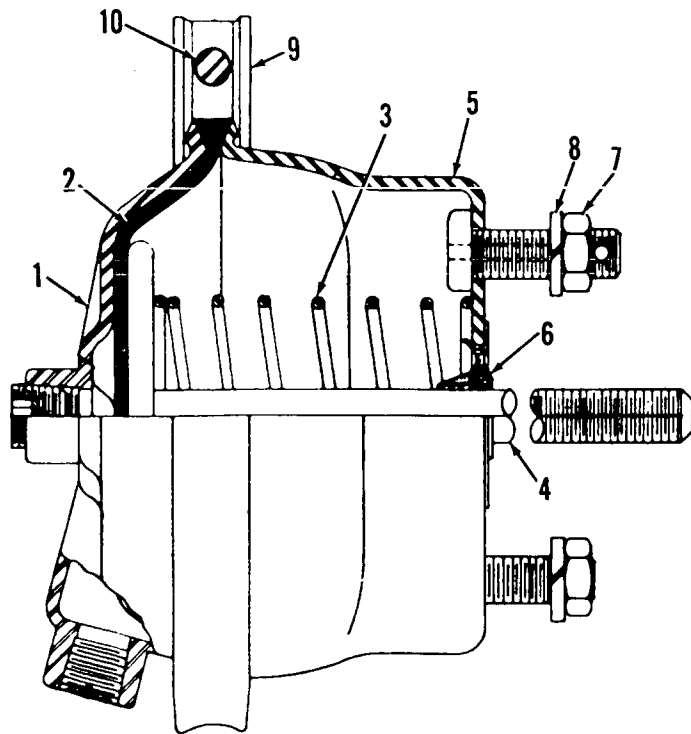
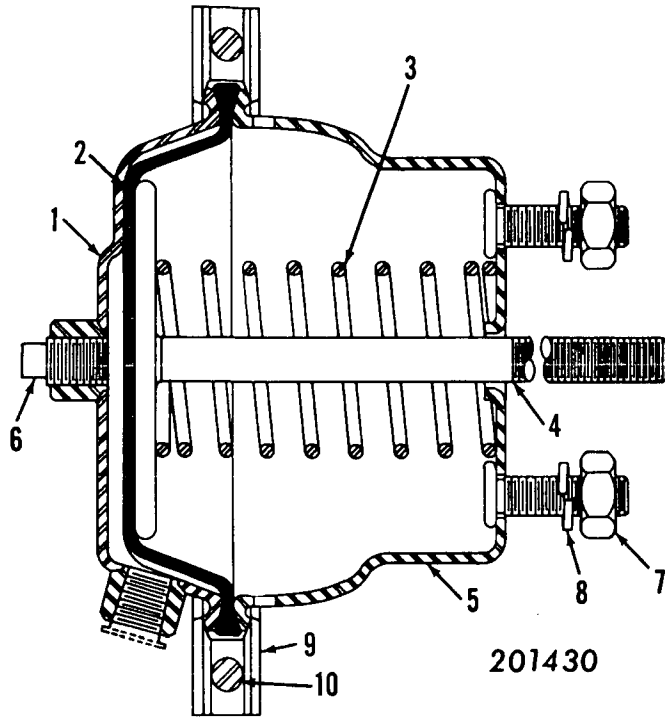
MASTER

0-69 Cont.

MANITOWOC ENGINEERING CO.

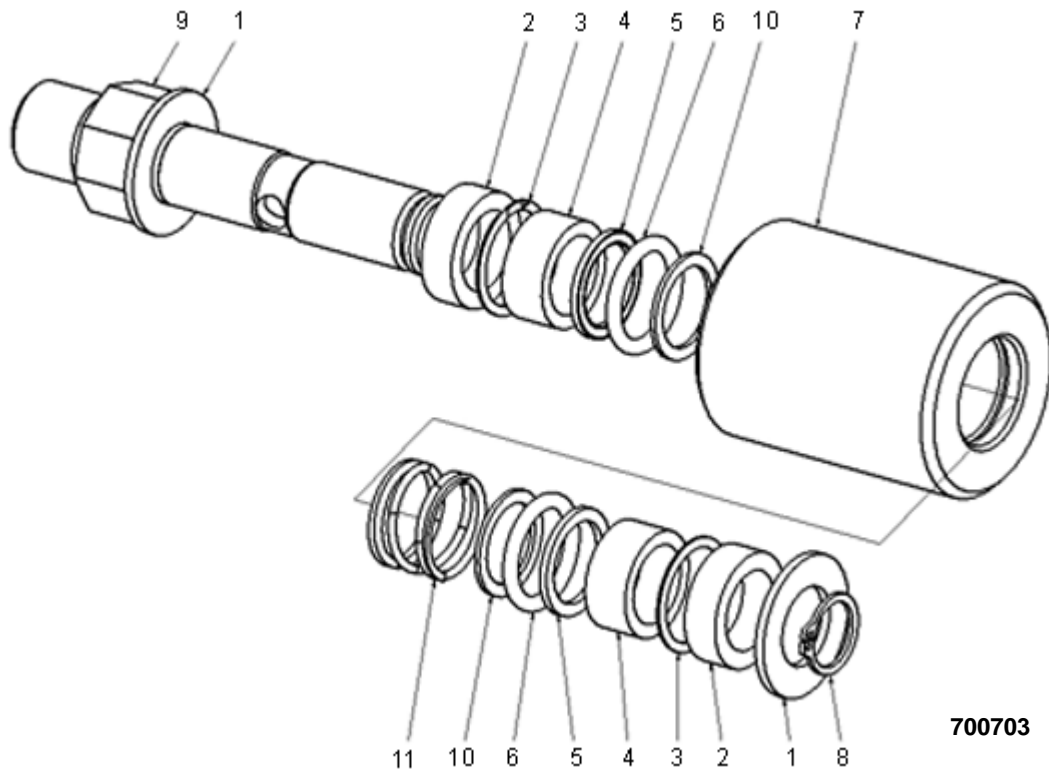
A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin

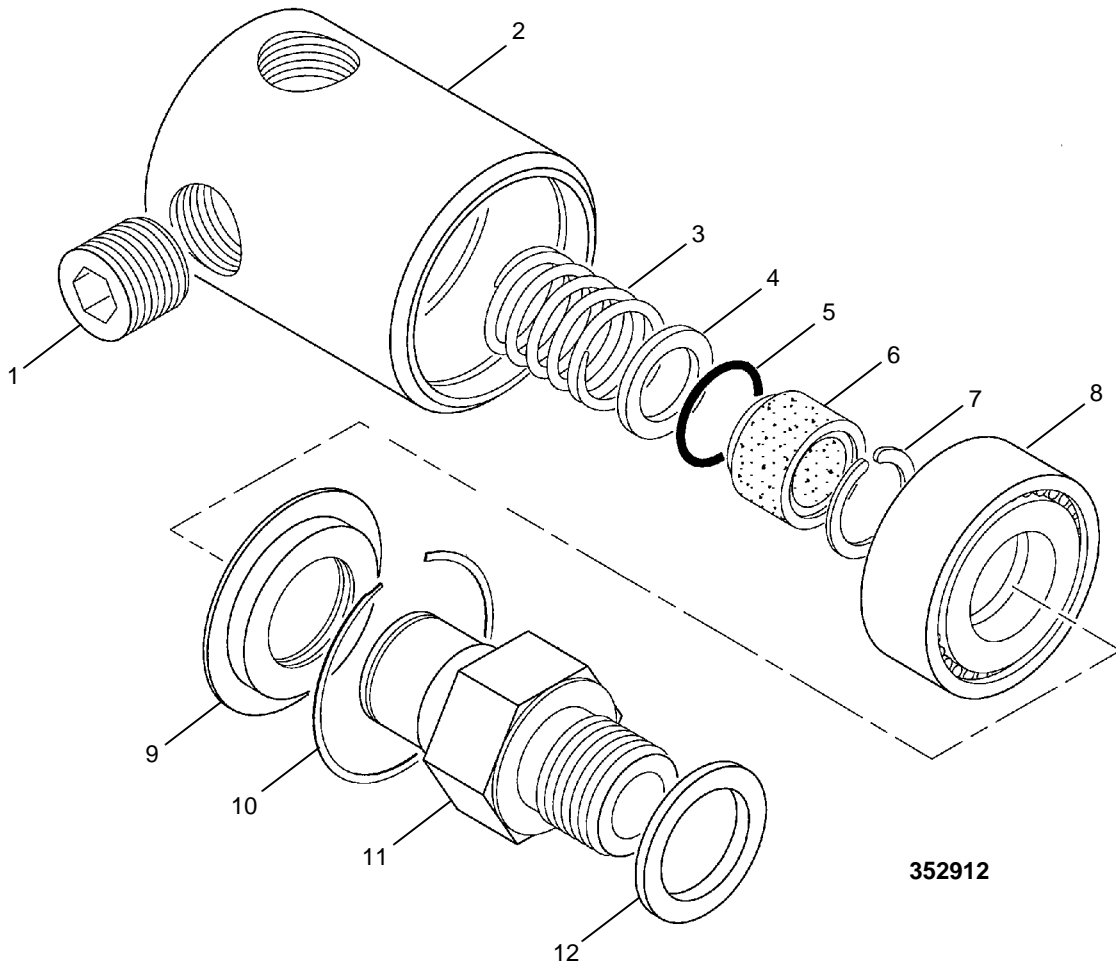


MASTER

0123A1



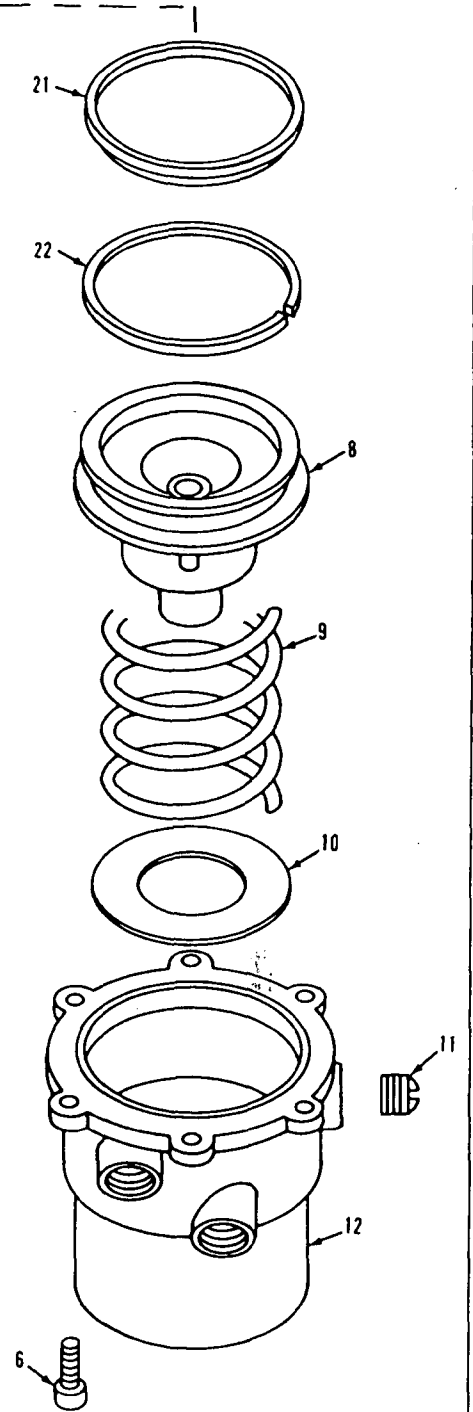
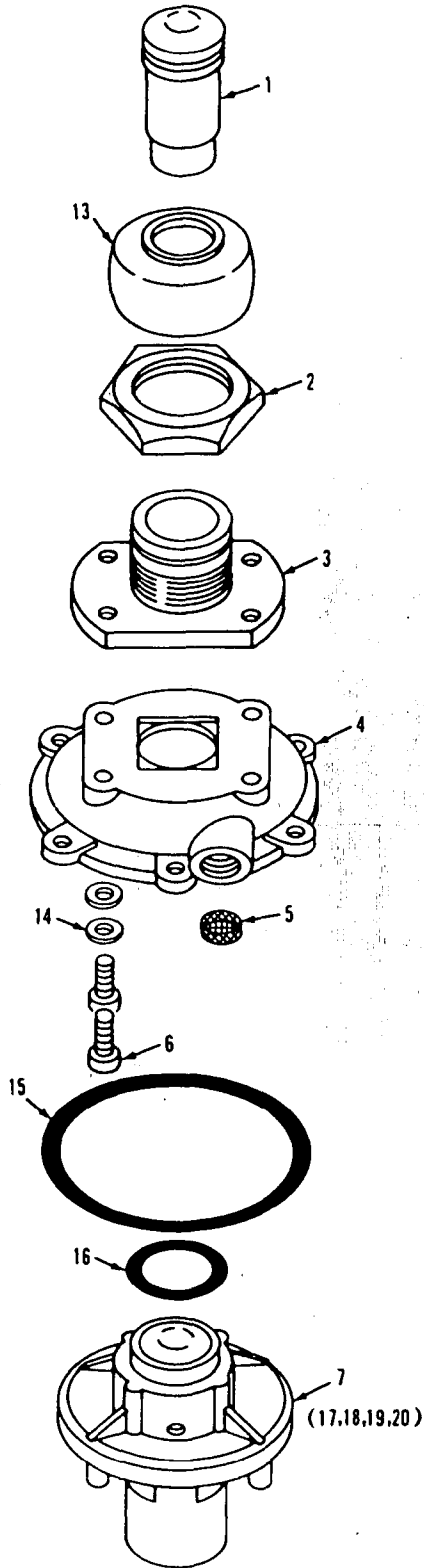
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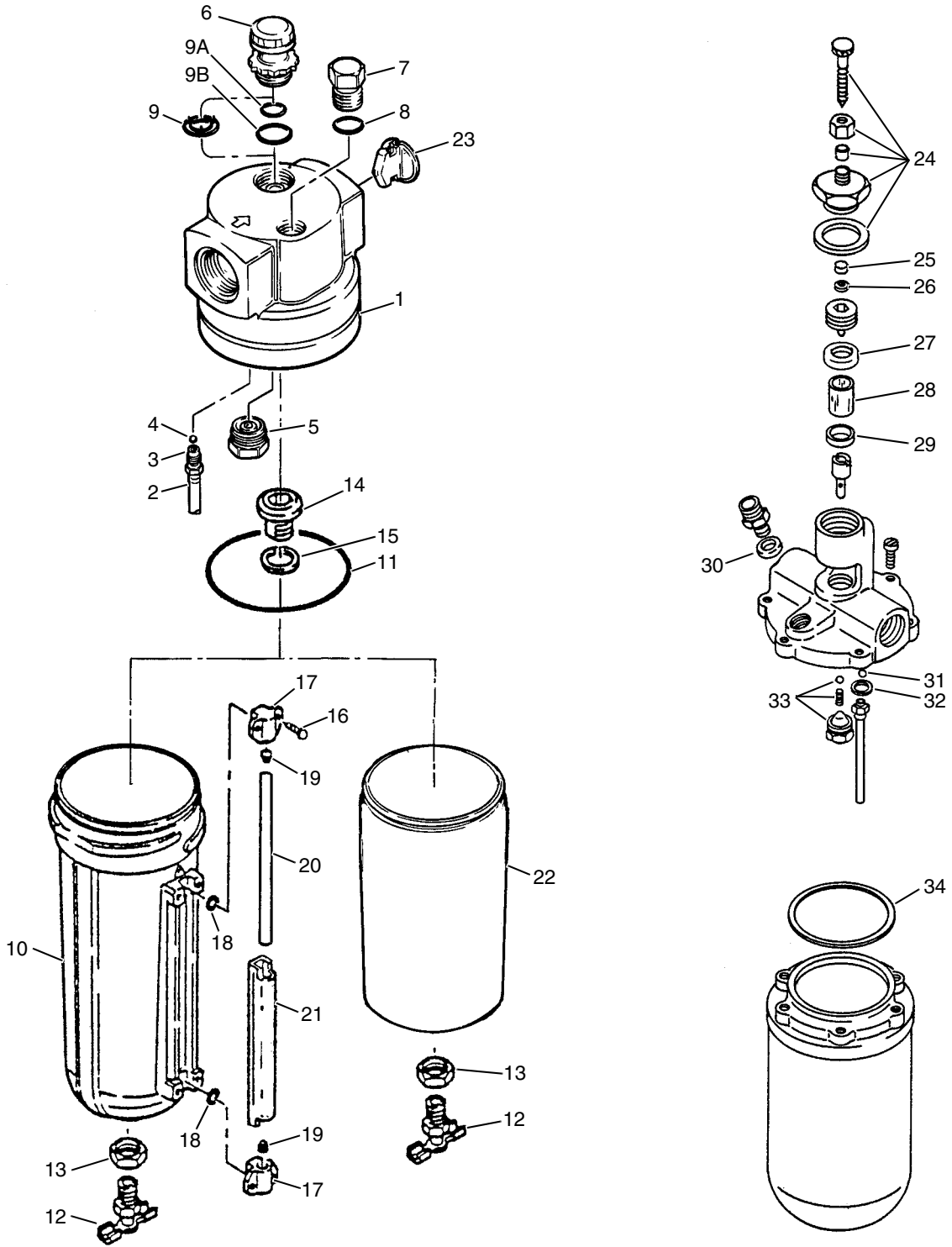


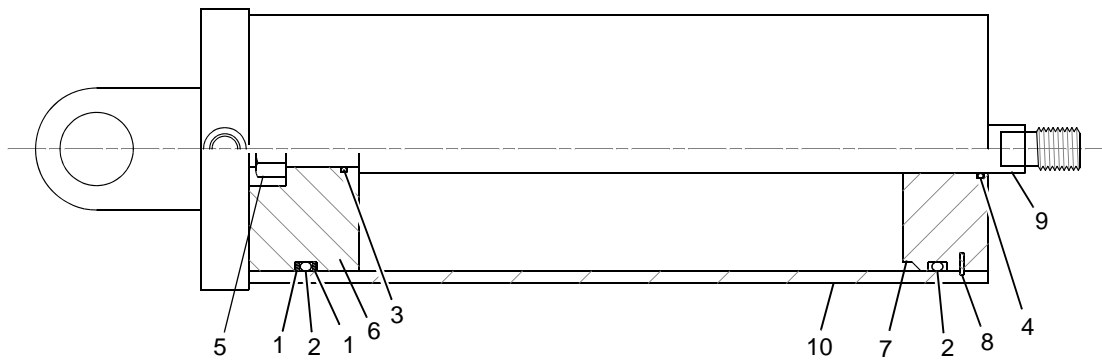
352912

ASSEMBLY	REVISION
<b>O-157</b>	<b>C</b>

MASTER

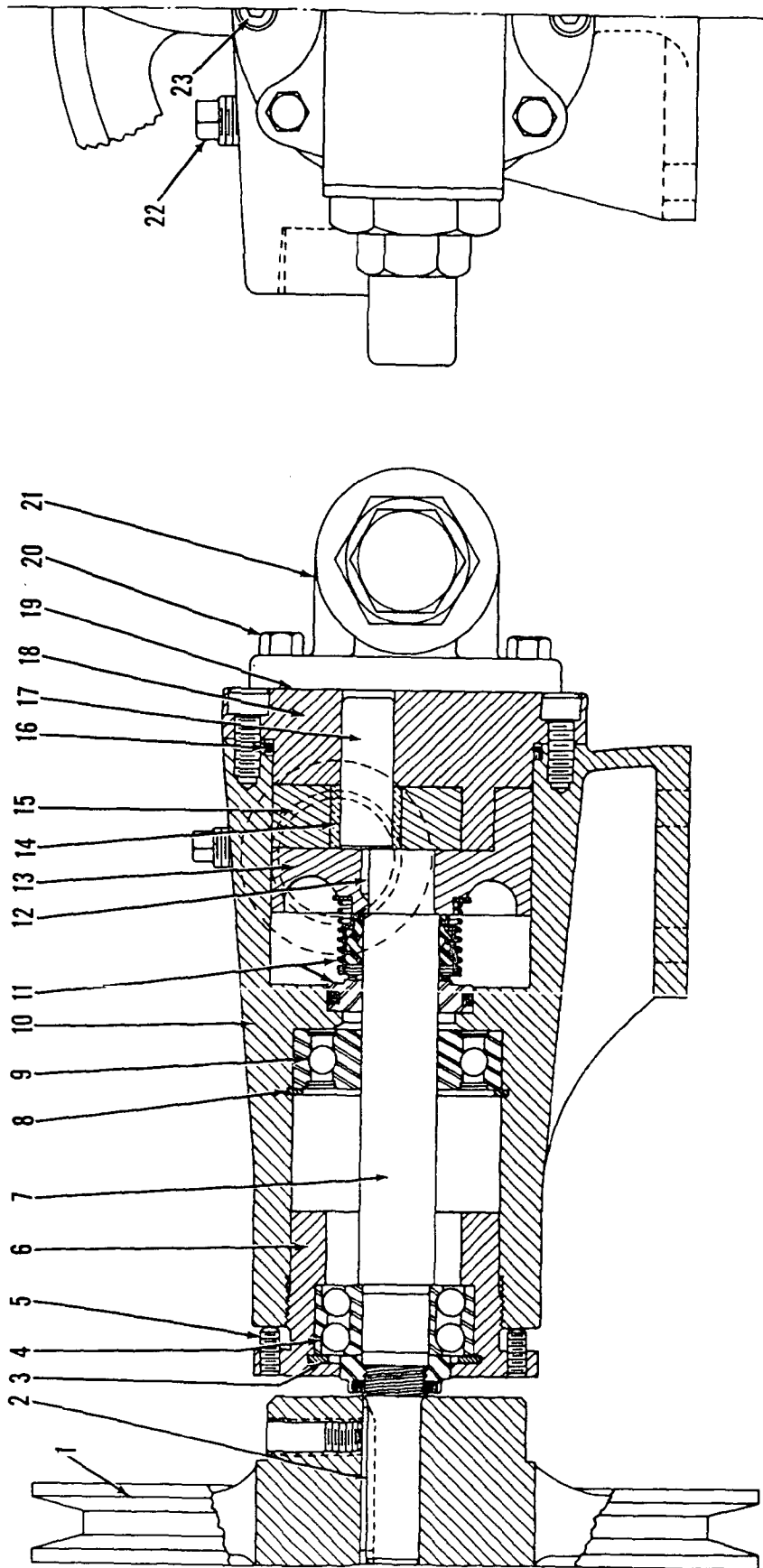






ASSEMBLY	REVISION
<b>O-307</b>	<b>F</b>

AIR CYLINDER



43051B7

MATERIAL LIST ON BACK

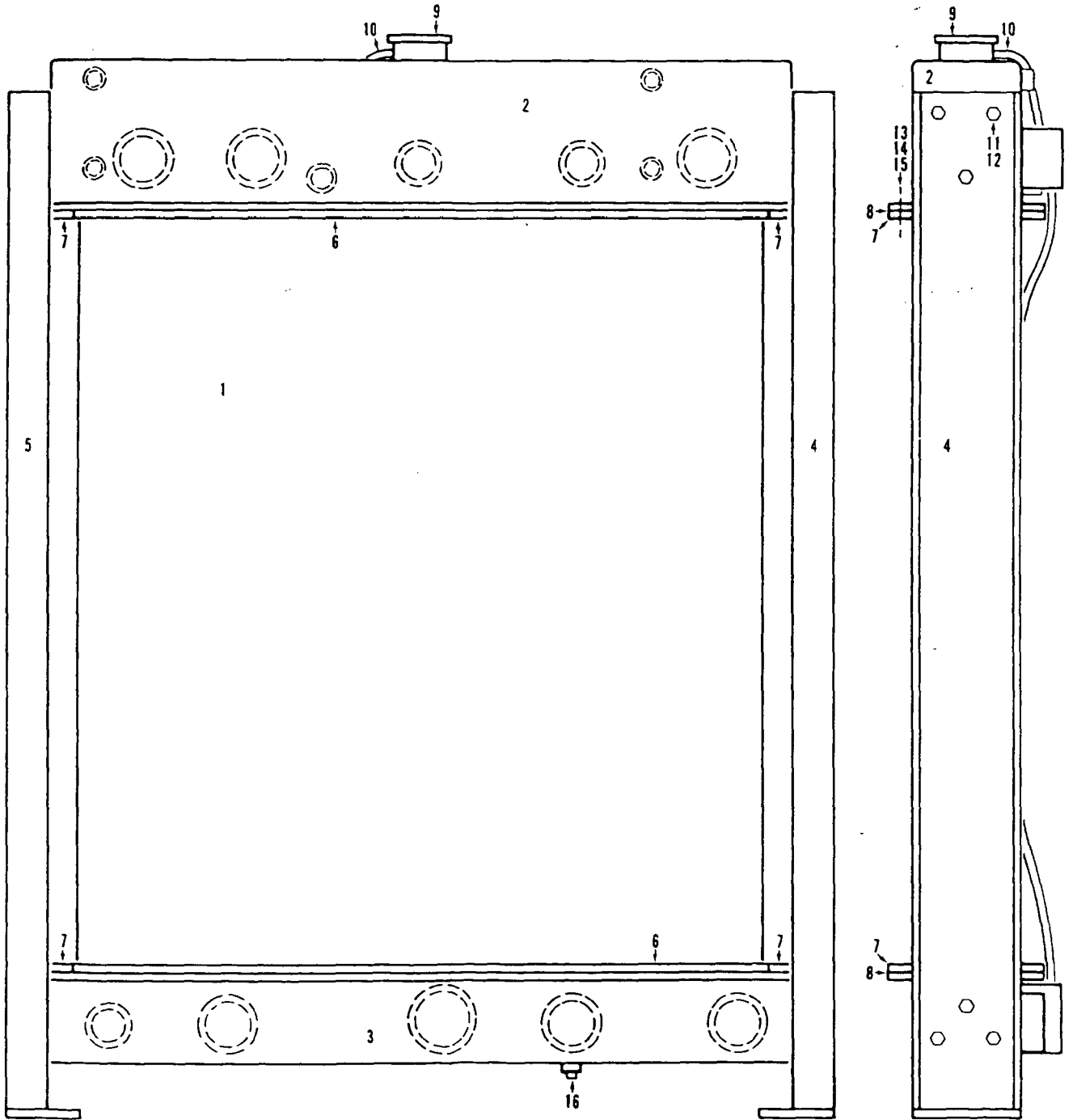
OIL PUMP

0-407 B7

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



0-45181

MATERIAL LIST ON BACK

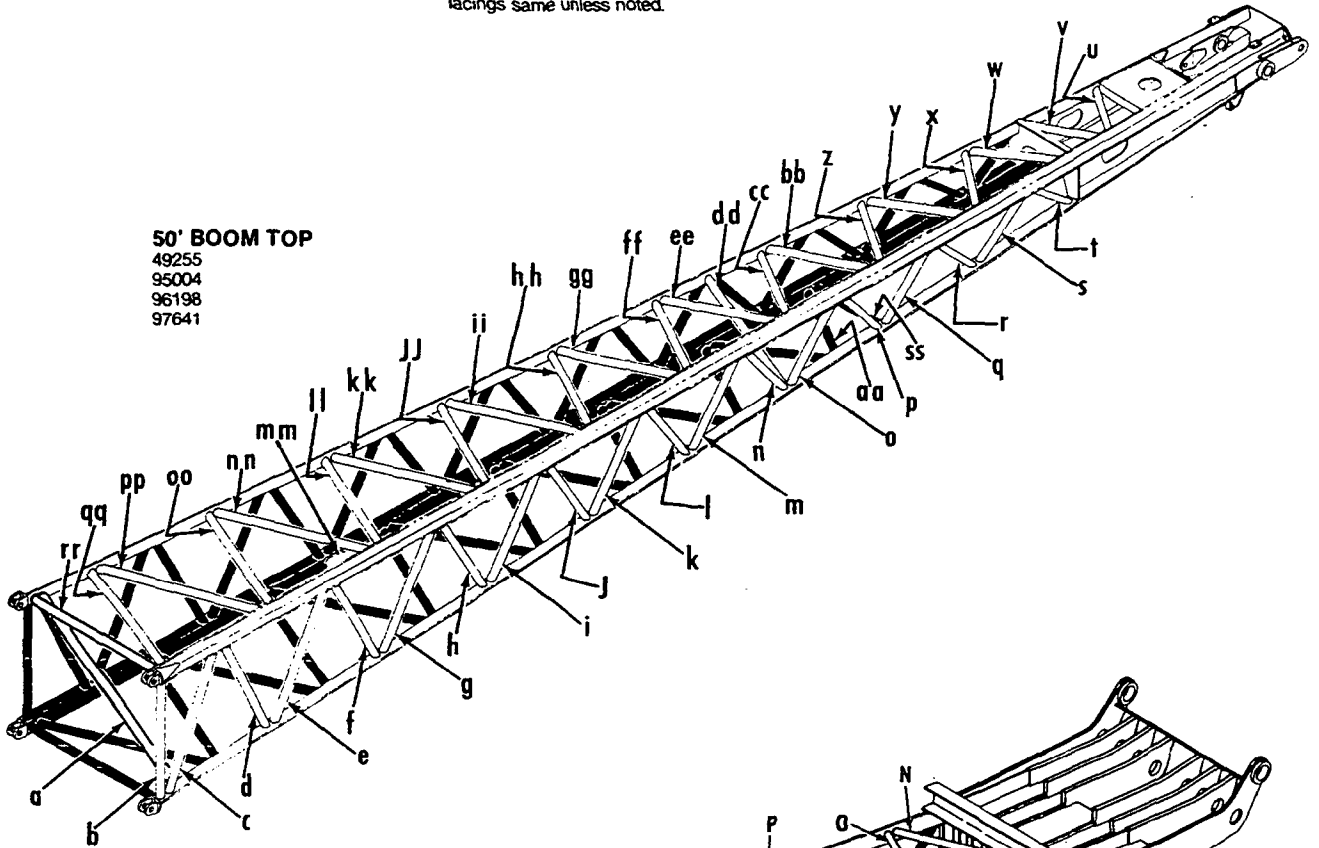
RADIATOR

**BOOMS #22 & 22A TOP SECTIONS**

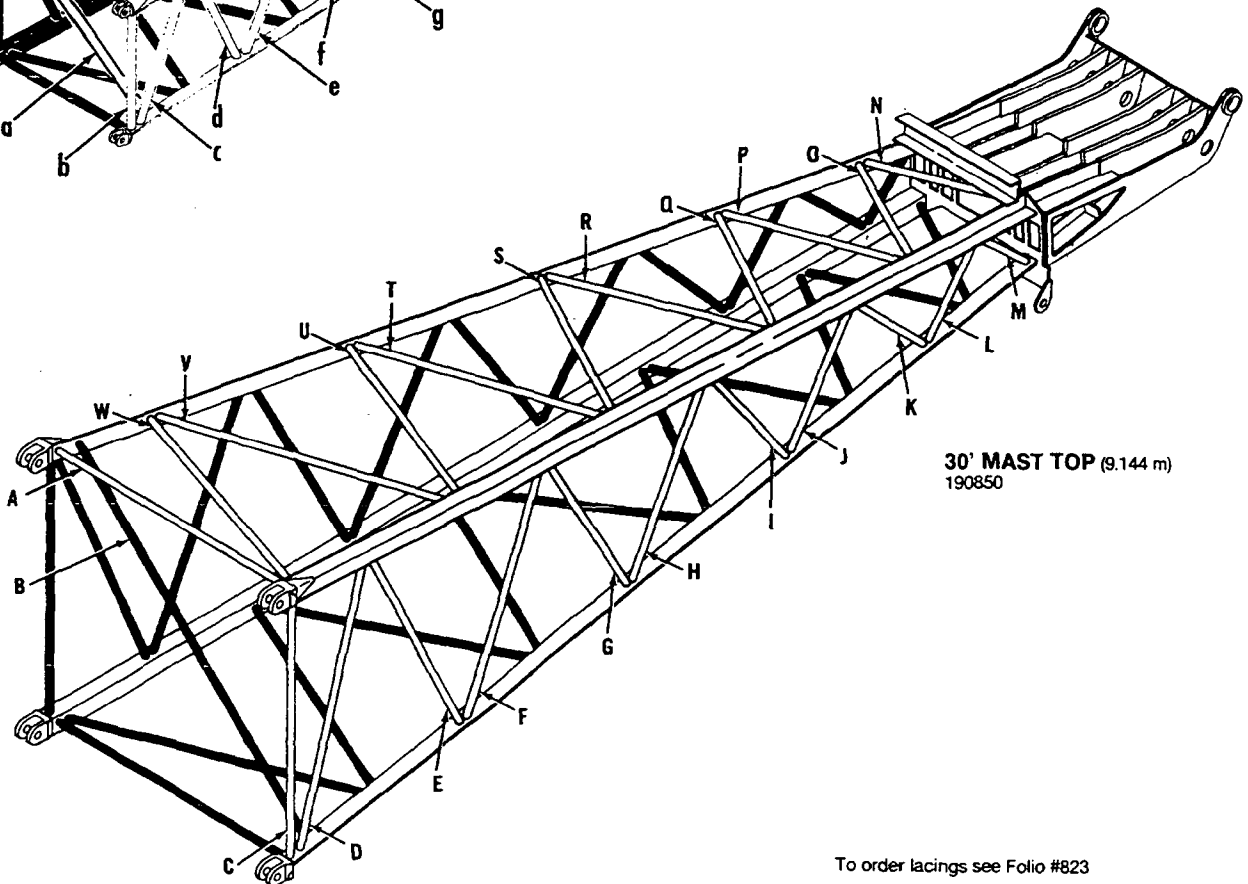
Left side and bottom lacings black. Opposite lacings same unless noted.

**50' BOOM TOP**

49255  
95004  
96198  
97641



**30' MAST TOP (9.144 m)**  
190850



To order lacings see Folio #823

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