



# TRADITIONAL CRANE PARTS MANUAL

This manual has been prepared for and is considered part of

**4000W**

Model

**40303**

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.*

**MANITOWOC CRANES, INC.**

2401 South 30th Street • PO Box 70

Manitowoc, WI 54221-0070

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## B. Ordering Lacings without Lacing Drawings

The parts order must contain the following information to ensure that Manitowoc provides you with the correct lacings:

1. Crane serial number (can be found on builders plate in operator's cab.)
2. Boom or jib identification number.
3. Quantity, lacing location, and lacing number.
4. Boom or jib component name (butt, insert, or top) and part number.

**NOTE:** To obtain the lacing location and number, view the boom or the jib from the butt end looking forward. Identify the side on which the damaged lacing is located: left side, top side, right side, or bottom side. Count each lacing up to and including the damaged lacing, starting with **first lacing nearest butt end** of the component as shown in Figure e3.

Do not count a diagonal lacing as the first lacing. Identify diagonal lacing separately; lower end diagonal lacing or upper end diagonal lacing.

## ASSISTANCE

If you are in doubt as to which lacings to order, DO NOT GUESS. Contact your nearest Manitowoc distributor for assistance; doing so may prevent the wrong parts from being shipped.

**EXAMPLE:** Assume you have a number 22 boom and the lacings with circled numbers in Figure 3 are damaged. Your parts order should be similar to the following example:

Crane Serial Number: **00000** (from builders plate).

Boom Identification Number: **#22 Boom**

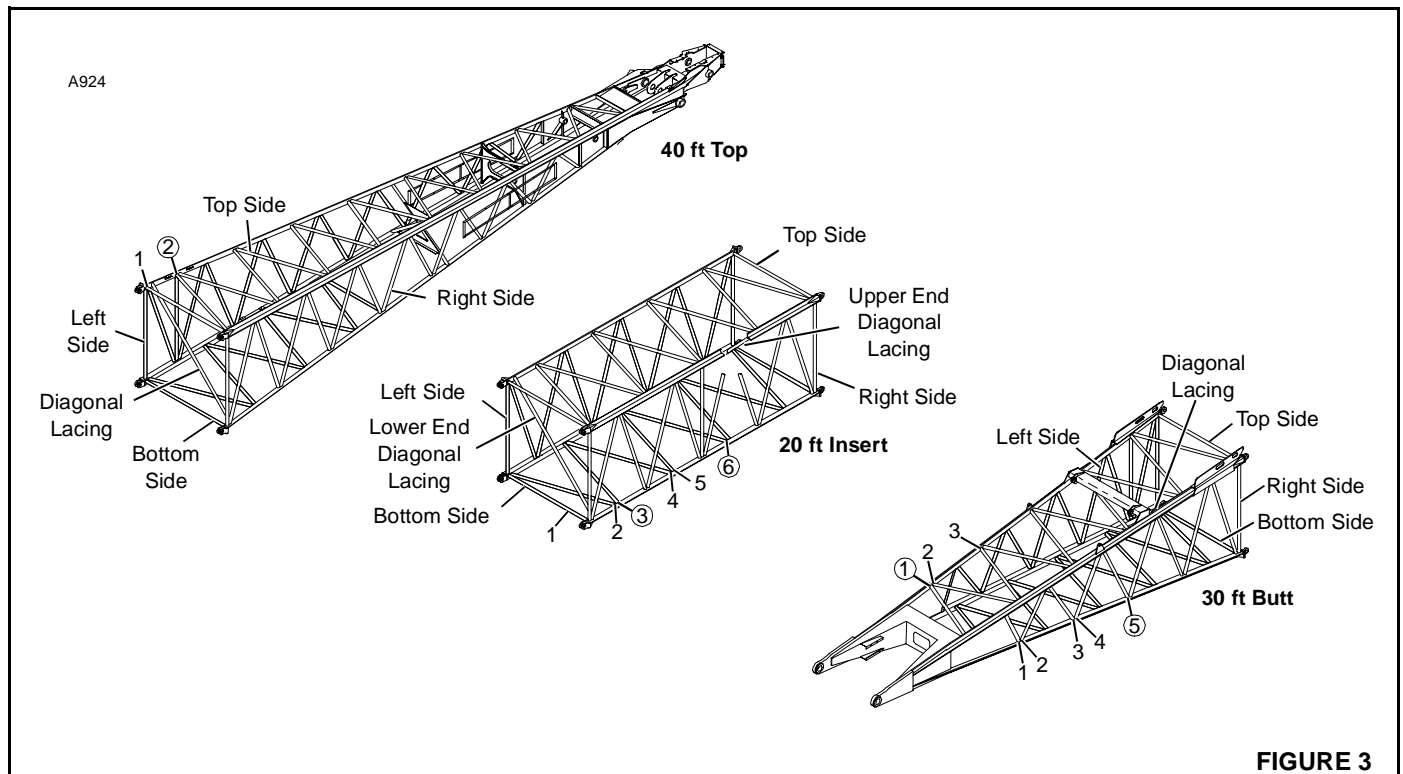
Required:

- 1 each Top Side Lacing (1) for 30 ft Butt 48153-9
- 1 each Right Side Lacing (5) for 30 ft Butt 48153-9
- 1 each Bottom Side Lacing (3) for 20 ft Insert 33426-3
- 1 each Bottom Side Lacing (6) for 20 ft Insert 33426-3
- 1 each Top Side Lacing (2) for 40 ft Top 50453-2

Quantity	Lacing Location	Lacing Identification Number	Component Name and Part Number
1	Top Side	(1)	30 ft Butt 48153-9
1	Right Side	(5)	30 ft Butt 48153-9
1	Bottom Side	(3)	20 ft Insert 33426-3
1	Bottom Side	(6)	20 ft Insert 33426-3
1	Top Side	(2)	40 ft Top 50453-2

## WELDING INSTRUCTIONS

Each lacing order is shipped with welding instructions and a copy of Form 00SPFM006 which identifies the chord and lacing material.



**FIGURE 3**

**PARTS MANUAL ALPHABETICAL INDEX  
GROUP A - Rotating Structure**

DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
"A" Frame	42959	-	07/22/66	05/06/77	A0101
Cab	33760	A2	07/18/66	03/24/82	A0201
Cab	33760	S1	07/18/66	08/13/81	A0201
Chain & Gear Case	43331	E1	07/22/64	10/06/81	A0401
Chain & Gear Case	43331	F2	07/22/64	07/30/93	A0401
Counterweight & Cab Rear	43904	L1	07/15/66	04/21/86	A0301
Counterweight Handling	48191	-	10/30/67	03/24/75	A0302
Guards	42329	I1	01/20/62	03/28/72	A0501
Insulated Door	32696	D1	10/31/62	03/01/77	A0204
Platform	42880	I1	02/21/62	08/24/76	A0701
Rotating Bed/Hoist Frame/Transporter Platform	42163	F2	01/29/68	10/17/79	A0102
Rotating Bed/Hoist Frame/Transporter Platform	42163	T1	04/23/63	10/17/79	A0102
Windshield Wiper/Defogger	32842	G1	01/31/64	02/03/78	A0210

33760-1 Cont.	REV. S	MODEL 4000T-4000W
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CAB  
(SLOPING ROOF)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
28	138440	1	SHEET, Right Front Lower Closing W/stovebolts, hex nut and lockwasher (Use W/Catwalk only)	
31	73227	1	GLASS, Window	
30	605301	1	CHANNEL, Rubber (11'0" - 3.353 m)	
32	97029	1	SASH, Front Window W/hinges (See Note 1)	
33	18972	1	GLASS, Window	
30	605301	1	CHANNEL, Rubber (6'3" - 1.905 m)	
	42313-6	1	PANEL, Right Side (Complete) W/mach. screw, capscrew, stovebolts, hex nuts and lockwasher	
34	632652	1	PANEL, Front	
37	632653	1	PANEL, Upper	
43	587072	1	RAIL, Door	
44	207247	1	STOP, Door	
45	632651	1	PANEL, Center	
46	31590	1	CABINET, Tool	
47	632656	1	GUIDE, Door	
48	42313-2	1	PANEL, Rear	
35	17864	2	RAIL, Hand W/hex nuts	
36	17834	1	GLASS, Window	
30	605301	1	CHANNEL, Rubber (7'4" - 2.236 m)	
38	16031	1	AWNING, Door W/stovebolts, hex nuts and lockwashers	
39	17836	1	GLASS, Window	
30	605301	1	CHANNEL, Rubber (9'5" - 2.870 m)	
40	31631	1	DOOR, Right (See Sheet #2)	
41	70876	1	BAR, Filler (not used W/catwalk)	
	93557	1	CLOSING SHEET ASSEMBLY, Right Rear W/capscrews, elastic stop nuts and chain	
42	140175	1	DOOR	
68	482058	3	HINGE, Concealed	
49	94012	1	SHEET, Closing	
67	510183	1	LOCK	
51	32807	1	EXTENSION, Cab W/mach. screws and lockwashers	
50	32823	1	SHUTTER, Radiator W/pins, cotter pins, capscrews, hex nuts and lockwashers	
52	77158	1	PANEL, Right Rear W/mach. screw, hex nut and lockwasher	
53	91878	1	CLOSING SHEET, Bottom Right Front W/capscrew, hex nut and lockwasher (W/out catwalk)	
53	71299	1	CLOSING SHEET, Bottom Right Front W/capscrews, hex nuts and lockwashers (W/catwalk)	
54	91877	1	CLOSING SHEET, Bottom Right Rear W/capscrew, hex nut and lockwasher	
55	91879	1	CLOSING SHEET, Vertical W/capscrew, hex nut and lockwasher	
	180160-6	1	PANEL, Inner Right W/mach. screws, capscrews, stovebolts, hex nut and lockwasher	
57	632693	1	SHEET, Lower	
58	632692	1	SHEET, Front	
59	180160-2	1	SHEET, Front	
56		1	DOOR W/hinge	
60	633214	1	FRAME, Window	
62	633213	1	SHEET, Upper	

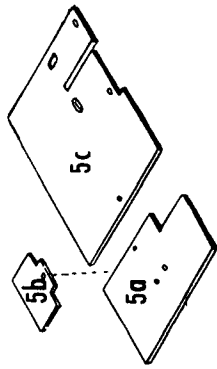
REV. S	33760-1 Cont.
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Run as Front

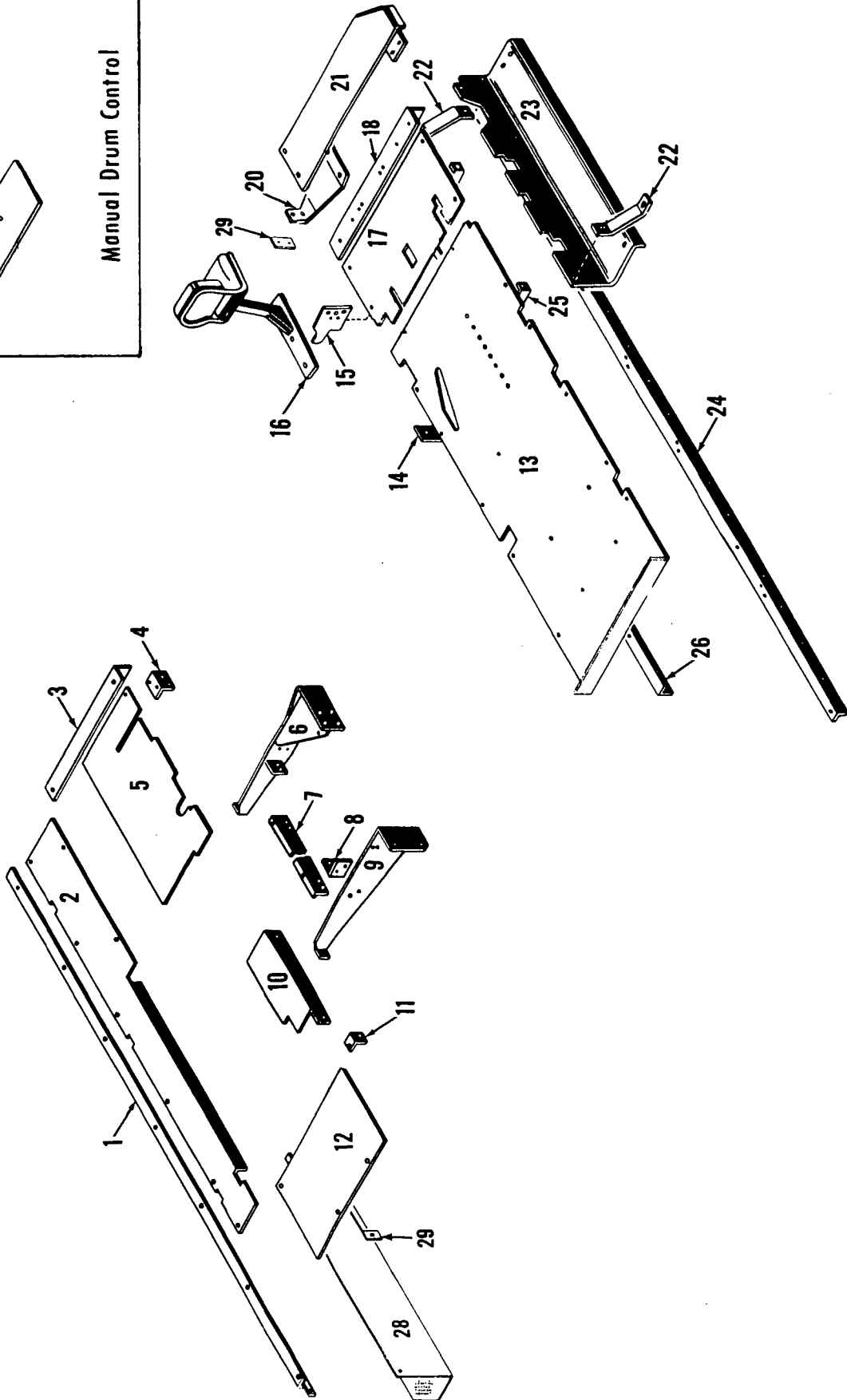
W/OER

33760 S1 Cont'd. -1

MASTER



Manual Drum Control



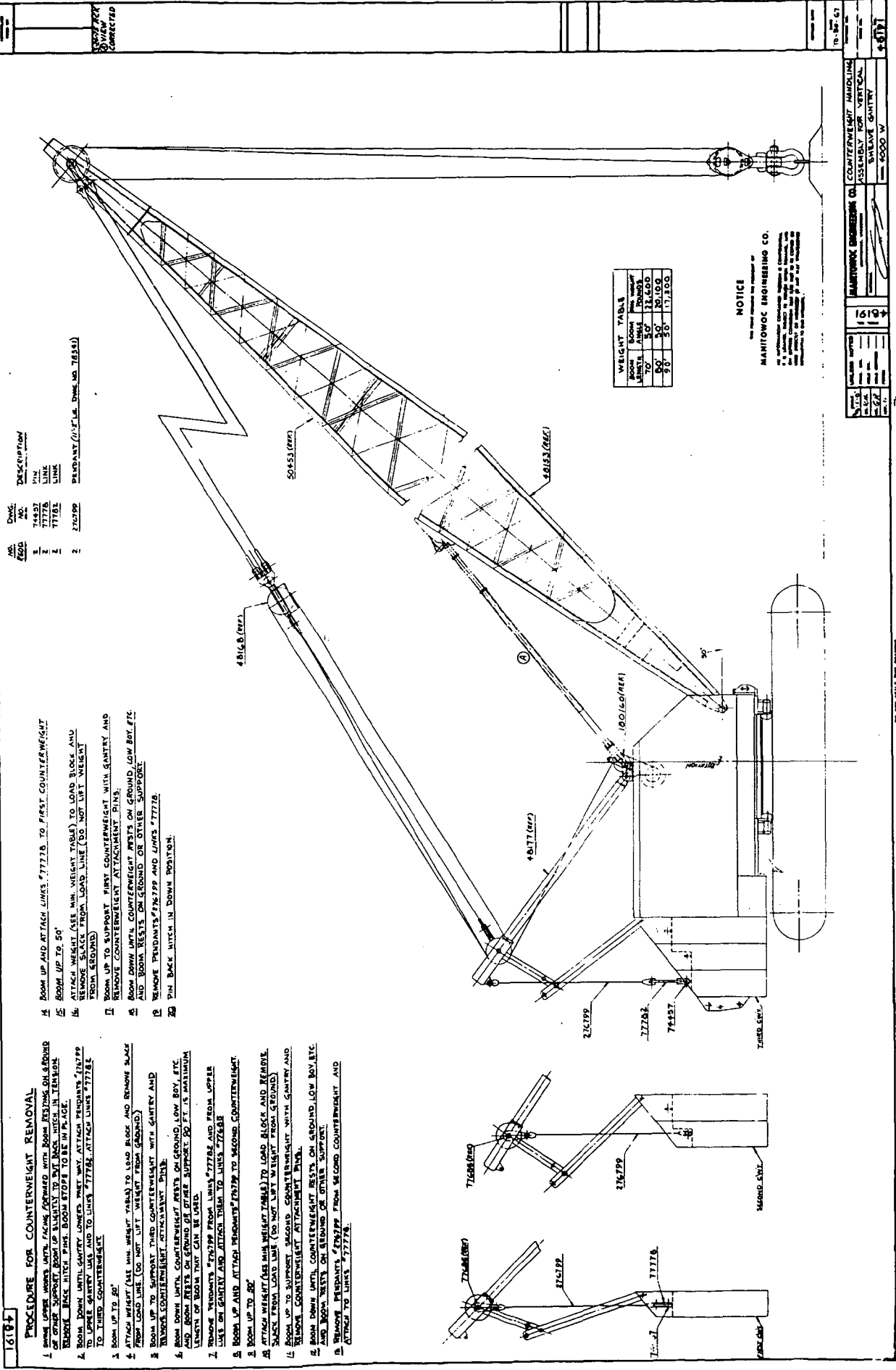
42880F1

MATERIAL LIST ON BACK

PLATFORM

42880 F1

# MASTER



NO.	QTY.	DESCRIPTION
1	1	4814.B (REF)
2	1	50453 (REF)
3	1	48112 (REF)
4	1	48113 (REF)
5	1	216199
6	1	117782
7	1	714187
8	1	716199
9	1	716200
10	1	716201
11	1	716202
12	1	716203
13	1	716204
14	1	716205
15	1	716206
16	1	716207
17	1	716208
18	1	716209
19	1	716210
20	1	716211
21	1	716212
22	1	716213
23	1	716214
24	1	716215
25	1	716216
26	1	716217
27	1	716218
28	1	716219
29	1	716220
30	1	716221
31	1	716222
32	1	716223
33	1	716224
34	1	716225
35	1	716226
36	1	716227
37	1	716228
38	1	716229
39	1	716230

ROOM	BOOM	MIN. WEIGHT
117782	117782	17,100
714187	714187	17,100
216199	216199	17,100
117782	117782	17,100
714187	714187	17,100
216199	216199	17,100

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- 16187**
- PROCEDURE FOR COUNTERWEIGHT REMOVAL**
1. FROM LOWER LEVEL, FACE FORWARD WITH BOOM RESTING ON GROUND OR OTHER SUPPORT. BOOM UP SLIGHTLY TO THE BACK NUTCH IN TENON. REMOVE BACK NUTCH PIN. BOOM STOP TO BE IN PLACE.
  2. FROM DOWN LEVEL, GANTY LOWERS FIRST WAY. ATTACH PENDANTS #120799 TO LOWER GANTY WALK AND TO LINKS #77718. ATTACH LINKS #77718 TO THIRD COUNTERWEIGHT.
  3. BOOM UP TO 90°.
  4. ATTACH WEIGHT (SEE MIN. WEIGHT TABLE) TO LOAD BLOCK AND REMOVE SLACK FROM LOAD LINE (DO NOT LIFT WEIGHT FROM GROUND).
  5. BOOM UP TO SUPPORT THIRD COUNTERWEIGHT WITH GANTY AND REMOVE COUNTERWEIGHT ATTACHMENT PIN.
  6. FROM DOWN LEVEL, COUNTERWEIGHT RESTS ON GROUND, LOW BOY, ETC. AND BOOM RESTS ON GROUND OR OTHER SUPPORT. DO IT'S MAXIMUM LENGTH OF BOOM THAT CAN BE USED.
  7. REMOVE PENDANTS #120799 FROM LINKS #77718 AND FROM UPPER LINKS ON GANTY AND ATTACH THEM TO LINKS #77718.
  8. BOOM UP AND ATTACH PENDANTS #120799 TO SECOND COUNTERWEIGHT.
  9. BOOM UP TO 90°.
  10. ATTACH WEIGHT (SEE MIN. WEIGHT TABLE) TO LOAD BLOCK AND REMOVE SLACK FROM LOAD LINE (DO NOT LIFT WEIGHT FROM GROUND).
  11. REMOVE COUNTERWEIGHT ATTACHMENT PIN.
  12. FROM DOWN LEVEL, COUNTERWEIGHT RESTS ON GROUND, LOW BOY, ETC. AND BOOM RESTS ON GROUND OR OTHER SUPPORT.
  13. REMOVE PENDANTS #120799 FROM SECOND COUNTERWEIGHT AND ATTACH TO LINKS #77718.

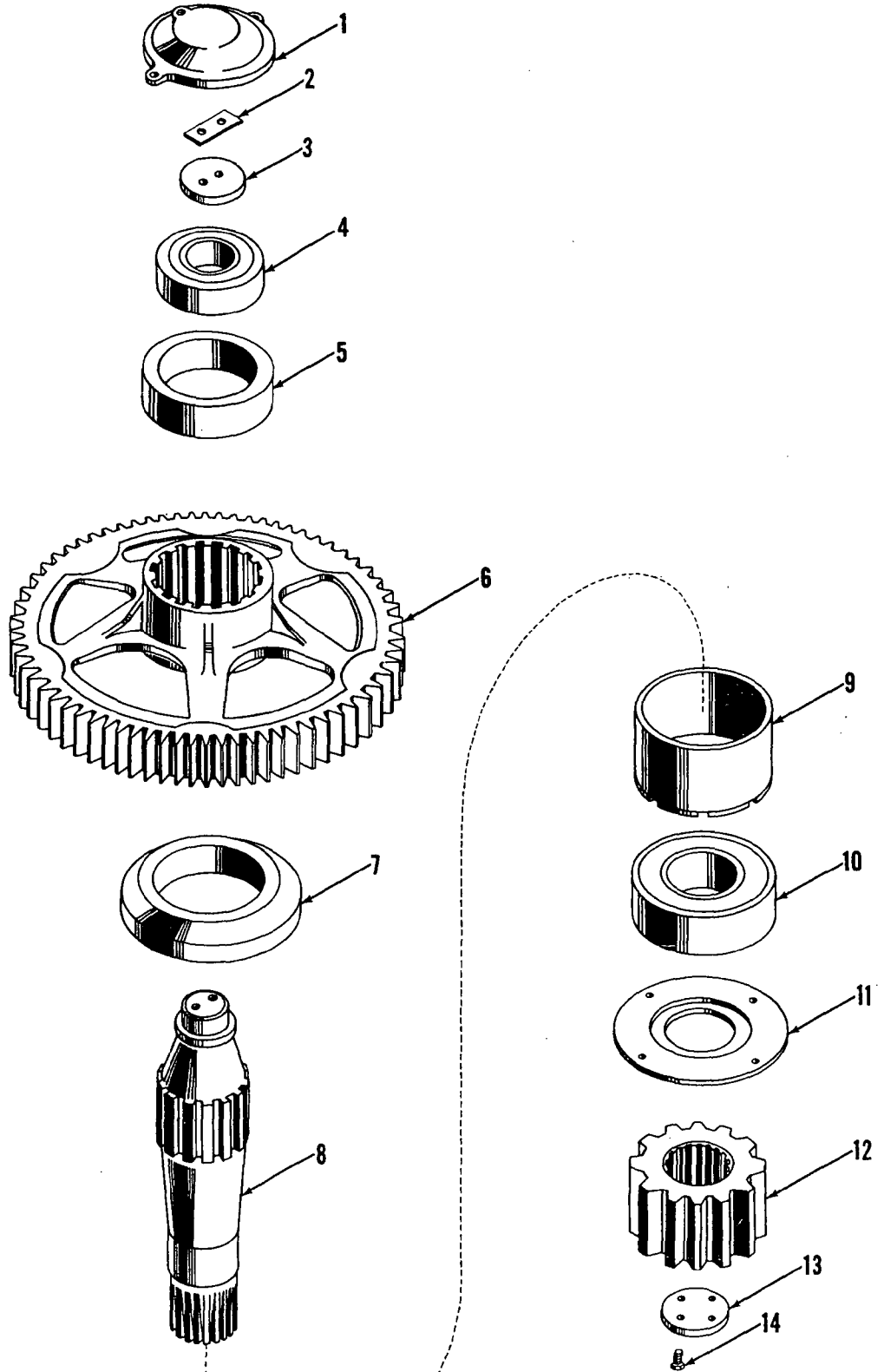
DATE	16187
BY	16187
CHECKED	16187
APPROVED	16187
MANITOWOC ENGINEERING CO.	COUNTERWEIGHT HOISTING ASSEMBLY FOR VERTICAL SHAFT GANTY
ROOM W	ROOM W
10-26-51	

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MASTER

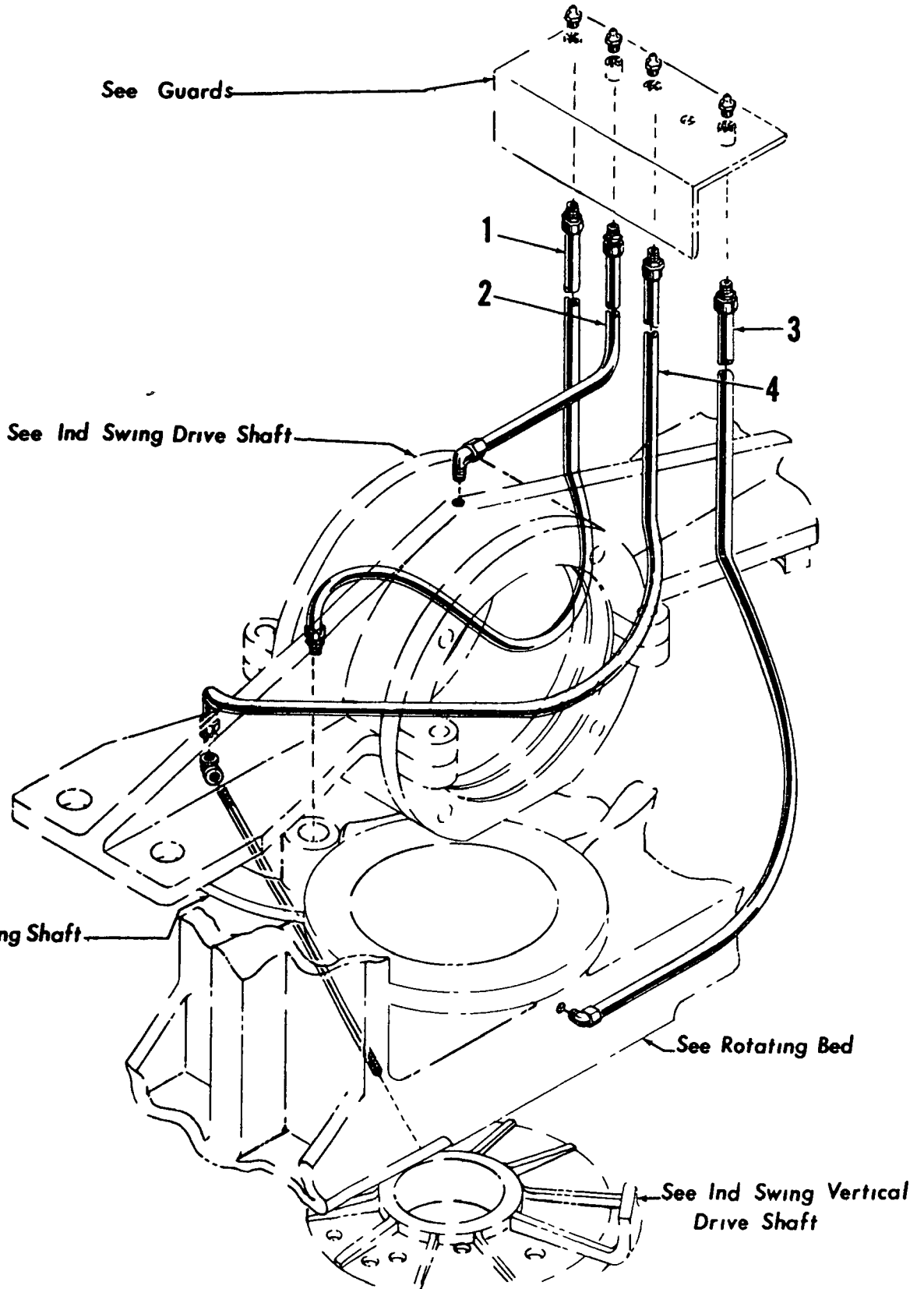


ILLUST. No. 23688-A-1

MATERIAL LIST ON BACK

SWING SHAFT

MASTER

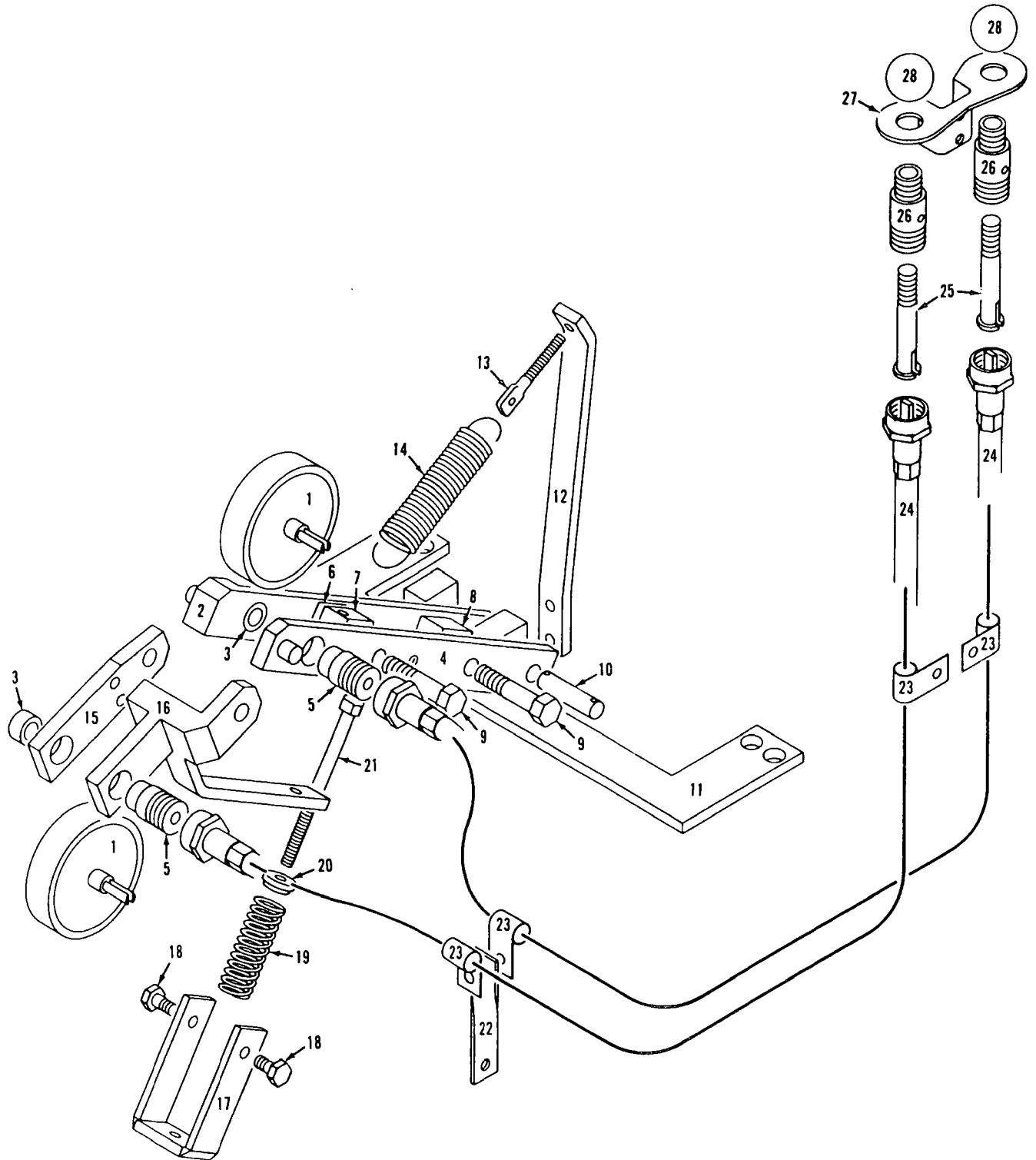


315 4 B 2

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MATERIAL LIST ON BACK

IND SWING LUB PIPING



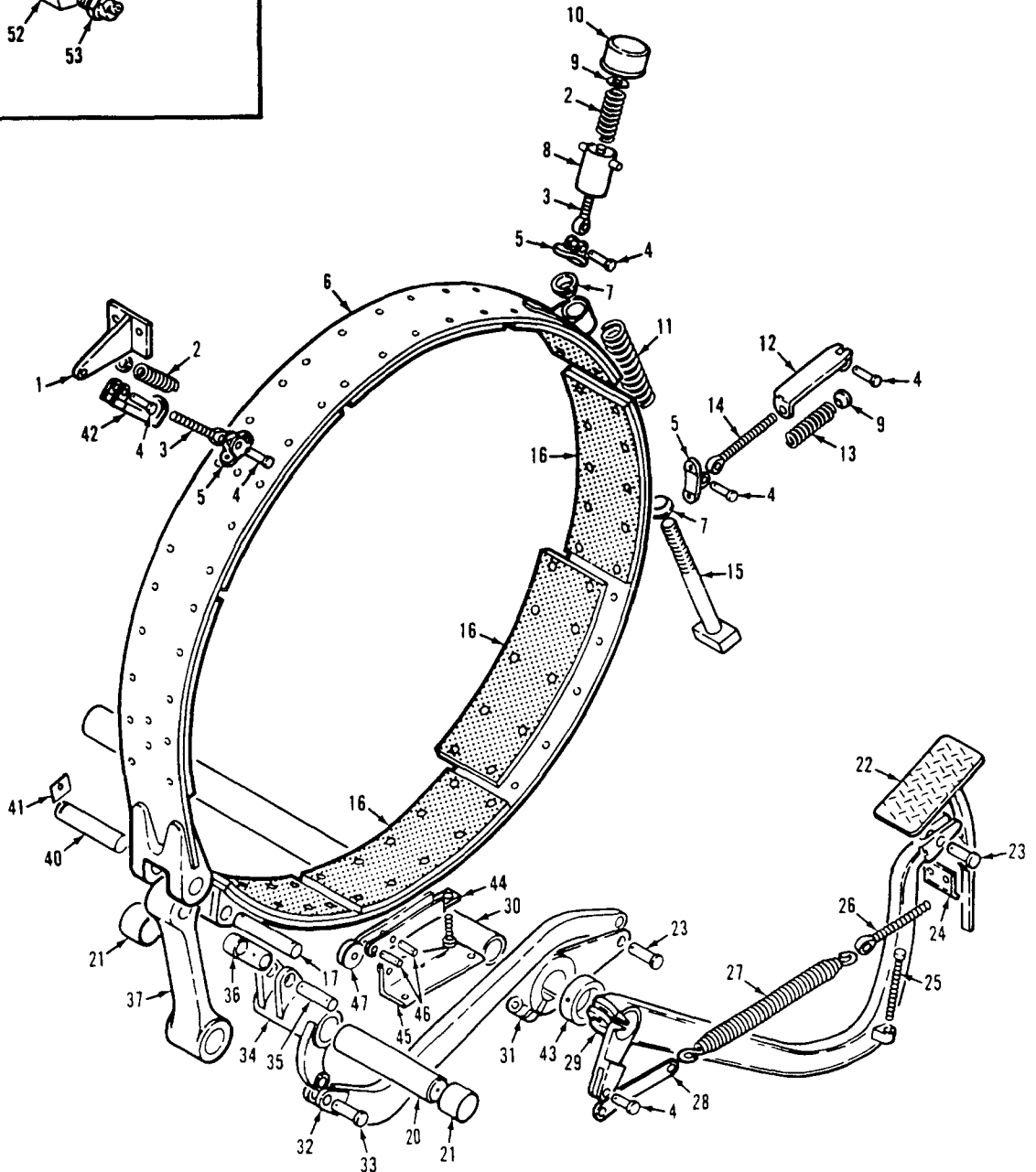
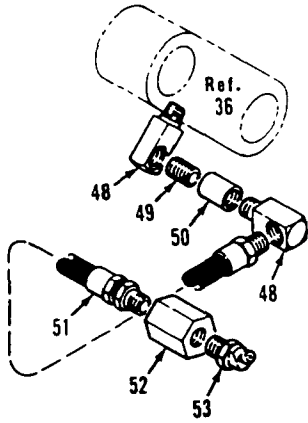
33135B1

MATERIAL LIST ON BACK

DRUM ROTATION INDICATOR

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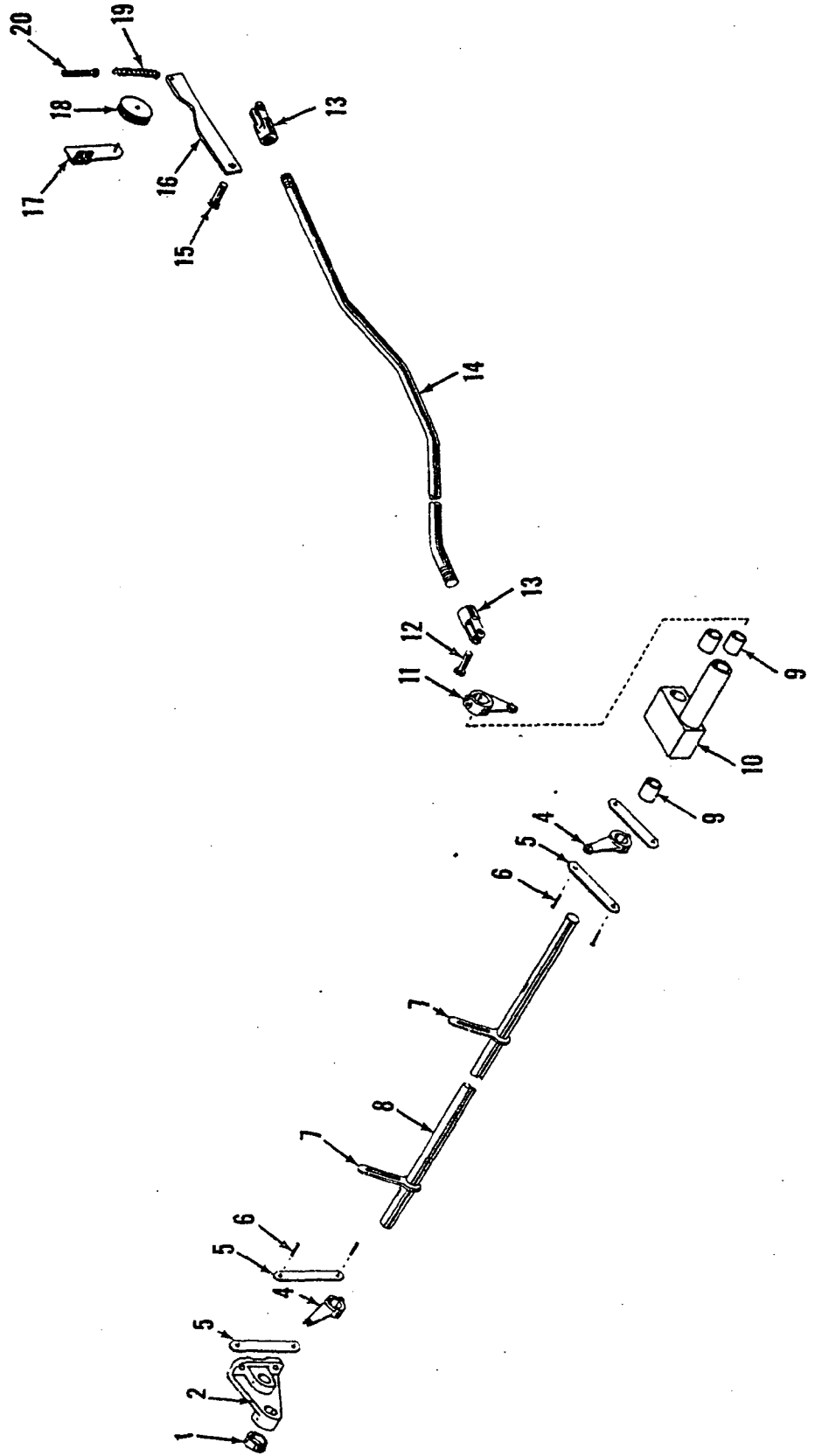
Manitowoc, Wisconsin



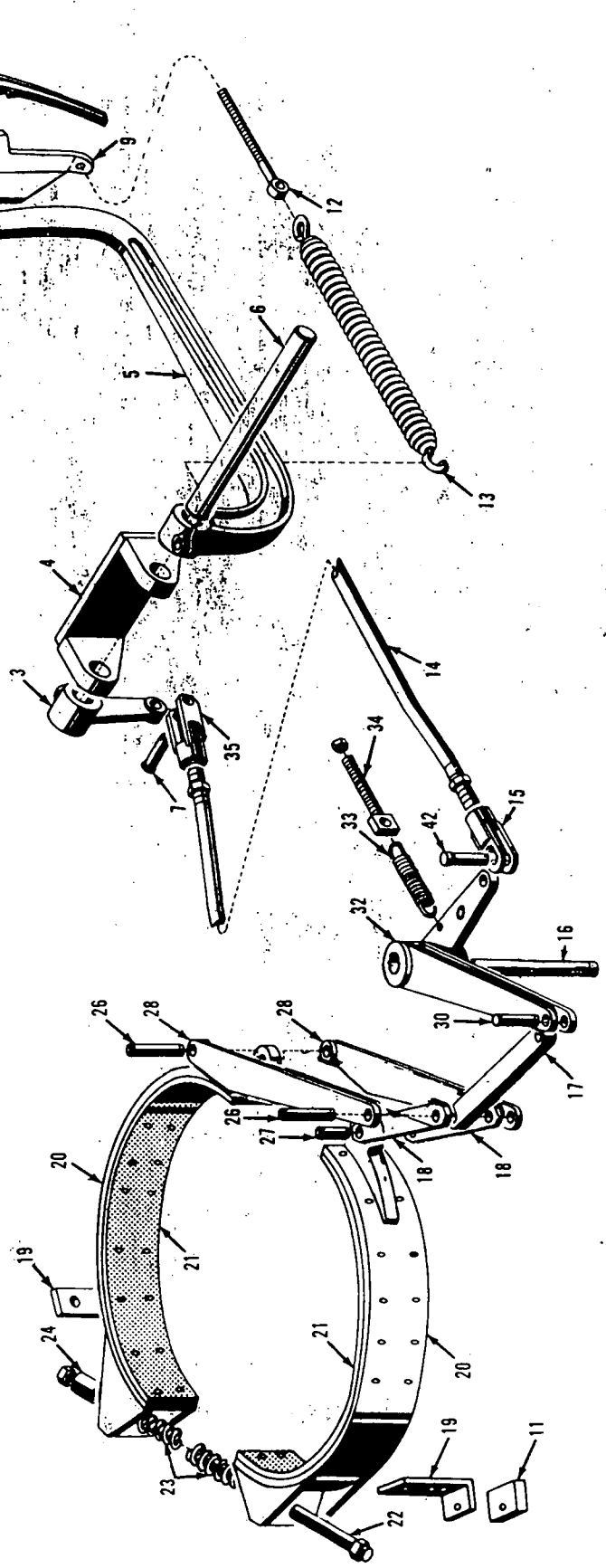
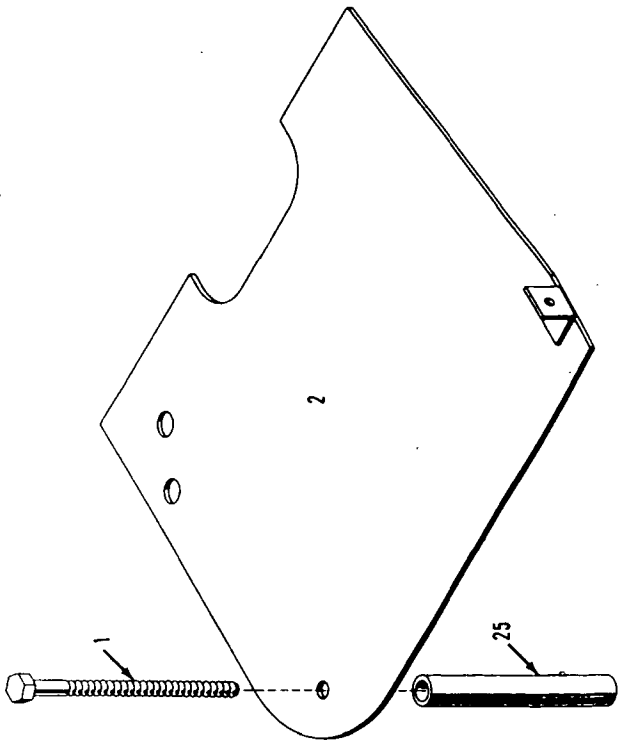
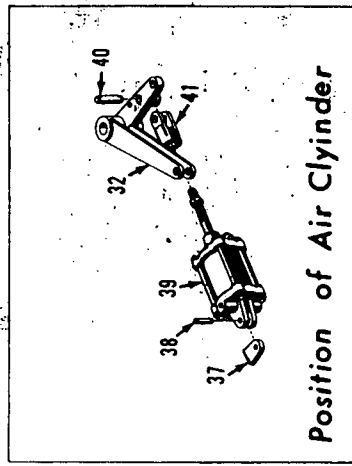
42183C1

MATERIAL LIST ON BACK

RIGHT DRUM BRAKE



MASTER



42394C1

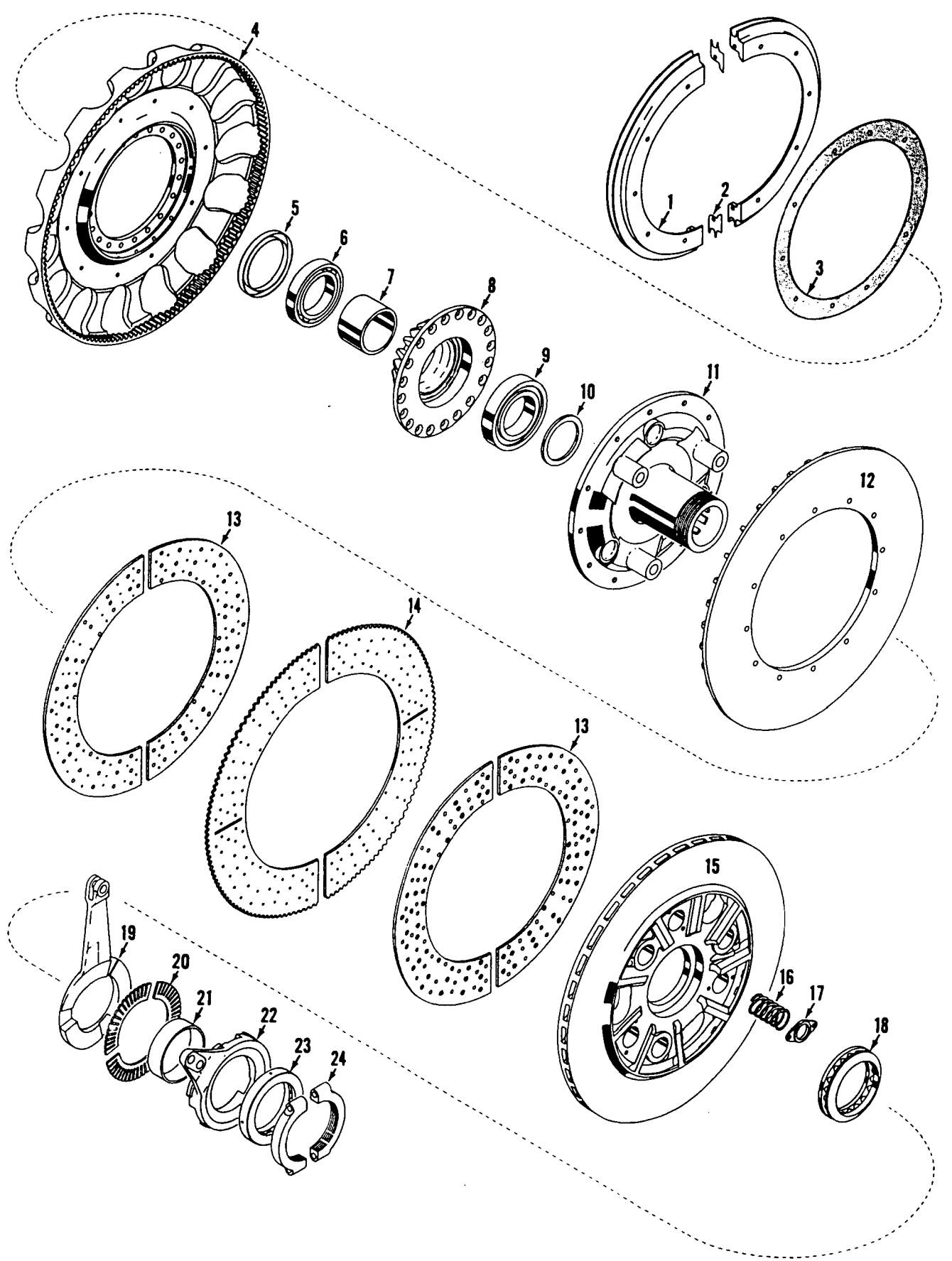
MATERIAL LIST ON BACK

SWING BRAKE

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43132A2

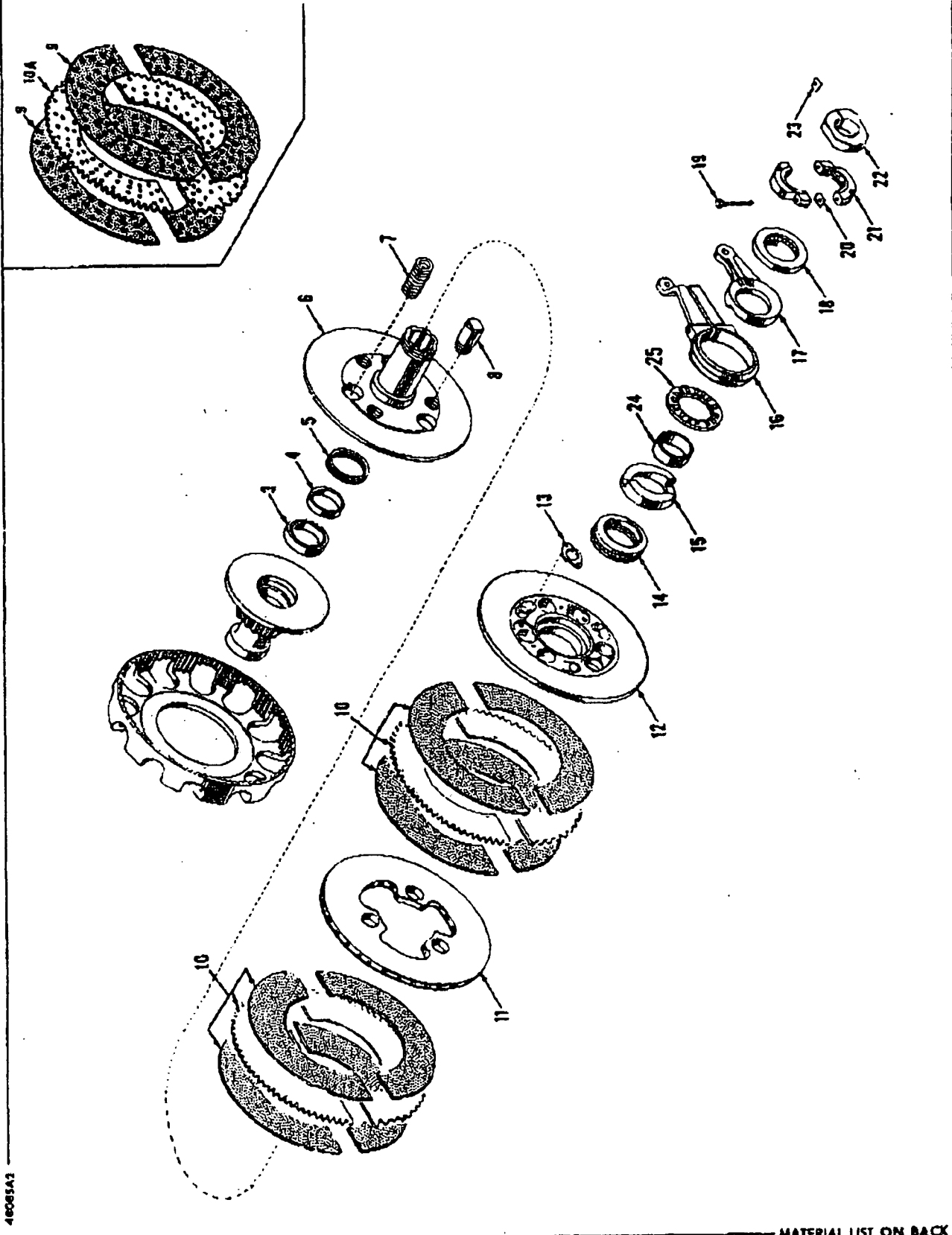
MATERIAL LIST ON BACK

MAIN DRIVE CLUTCH

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40085A3

MATERIAL LIST ON BACK

IND. SWING CLUTCH

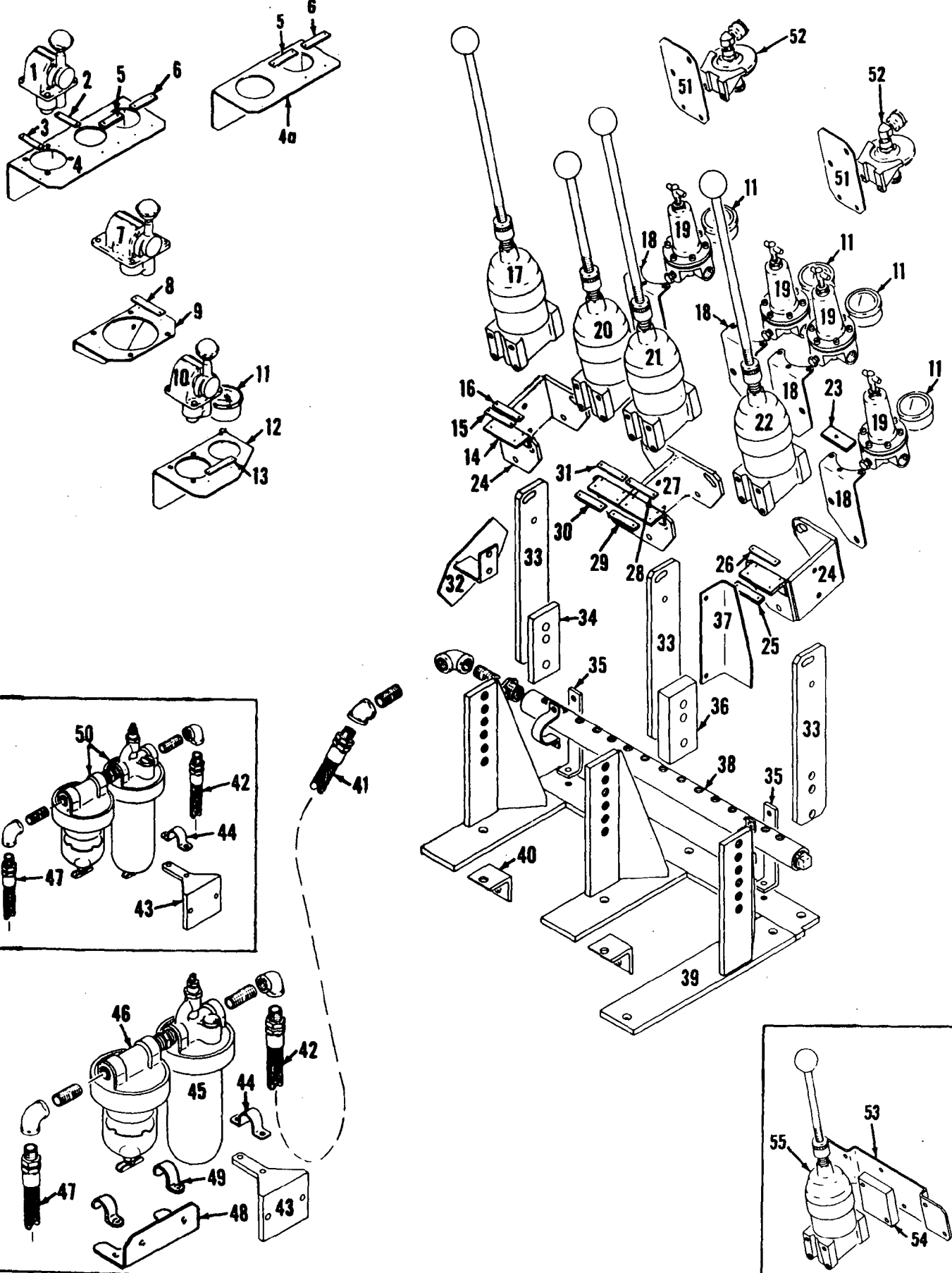
GROUP C - Air Components & Electrical

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VALVE BOARD

MATERIAL LIST ON BACK

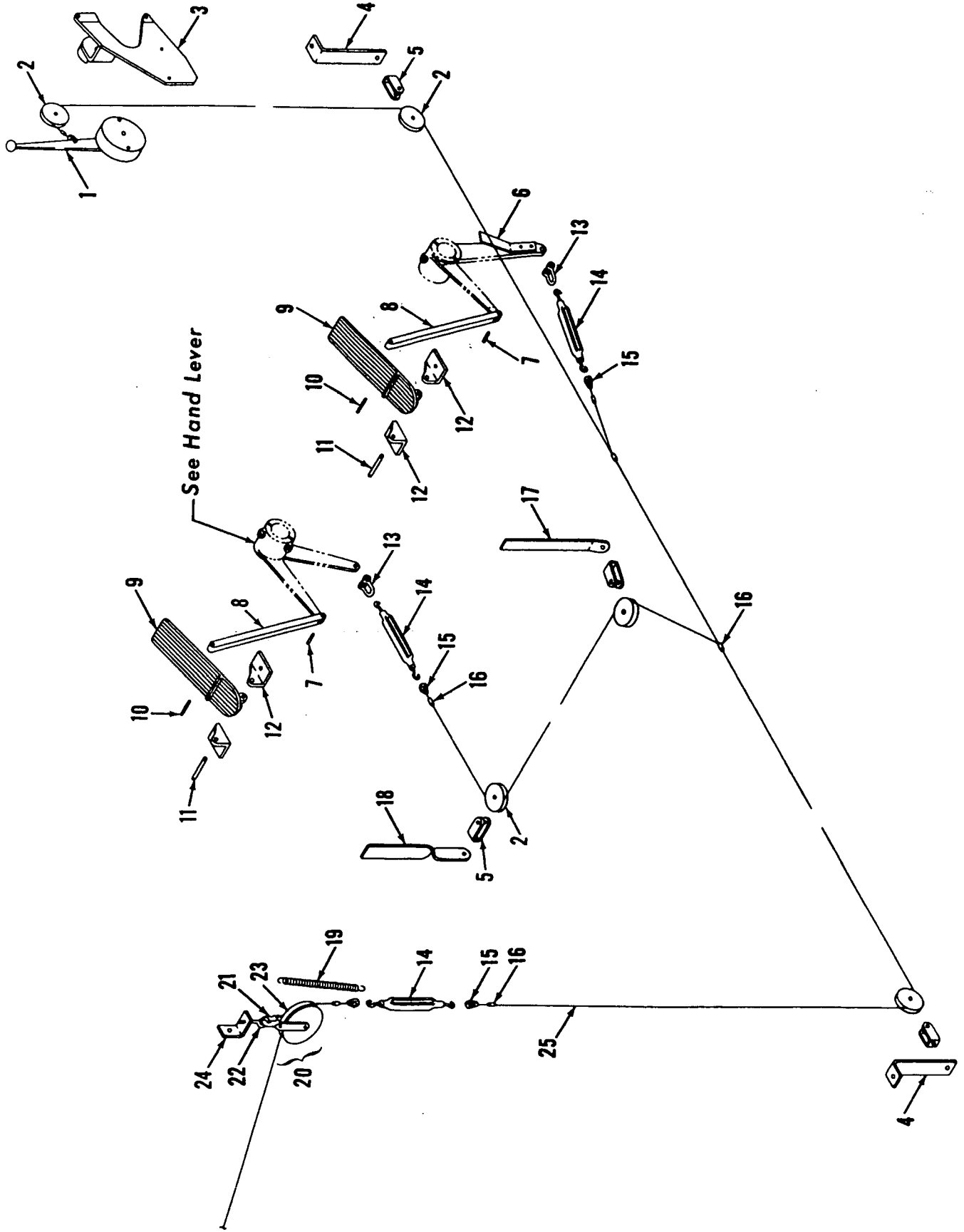
42953 E1

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MASTER

324 A1

32498A1

MATERIAL LIST ON BACK

ENGINE CONTROL

MOTOR

42958-1 Cont.	REV. F	MODEL 3000W-3600-3900-3900W-4000-4000W
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FRONT CONVERTER MANUAL CONTROL

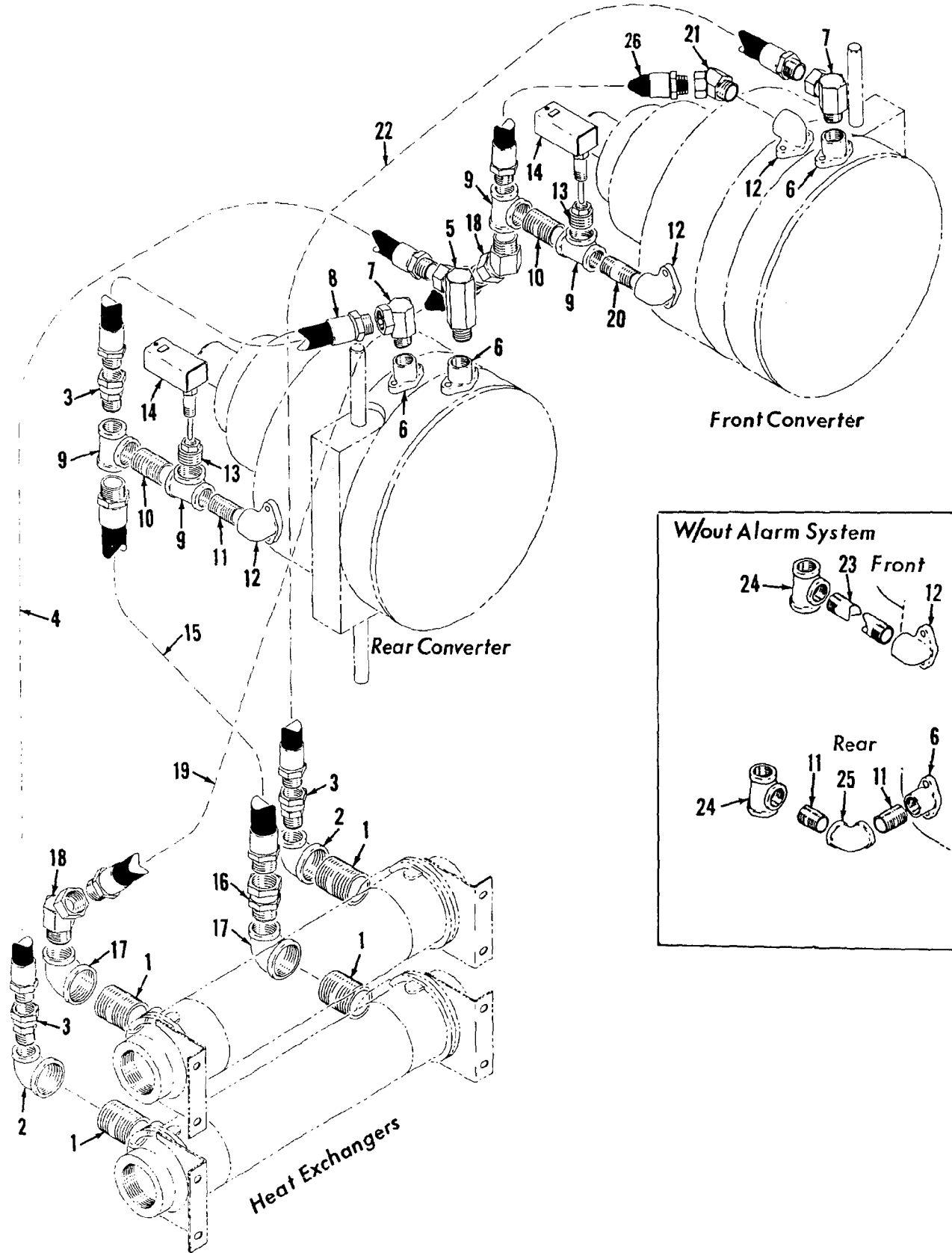
Run as Front

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
30	96322	1	LEVER, Hand (Air Control Power Load Lowering)	
30A	93777	1	LEVER, Hand (Air Control Power Load Lowering) (Superseded by #96322)	
30A	93739	1	LEVER, Hand (Air Control Power Load Lowering) (Superseded by #93777)	
30	96323	1	LEVER, Hand (Electric Control Power Load Lowering)	
30A	93778	1	LEVER, Hand (Electric Control Power Load Lowering) (Superseded by #96323)	
30A	24899	1	LEVER, Hand (W/Boom Hoist Control)	
NOTE 1: As shown above for levers #96319, 96322, and 96323. For levers #93735, 90195, 93777, 93739, 93778 and 24899 delete parts #140334, 143985, 138577 and use the following: (See boxed items)				
4	140197	1	PIN W/cotter pin	
21A	140884	1	PIN W/cotter pin	
22A	18937	1	BAR, Roller	
23	10222	1	WASHER	
27A	229	1	SPRING	
Use one of the following as checked - 96322, 93777, 93739, 96323, 93778, 24899				

Fl Cont.

REV. F	42958 - 1
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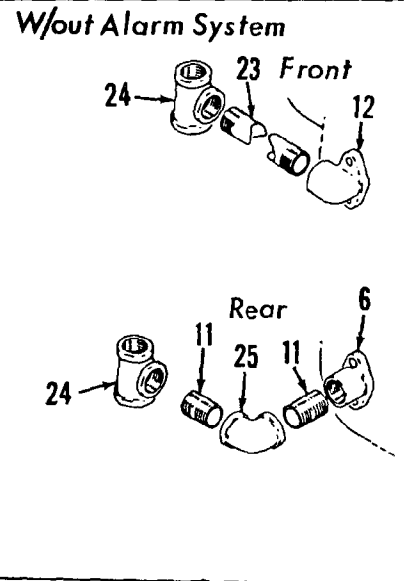
PLEASE GIVE MACHINE S/N W/ORDER



Front Converter

Rear Converter

Heat Exchangers



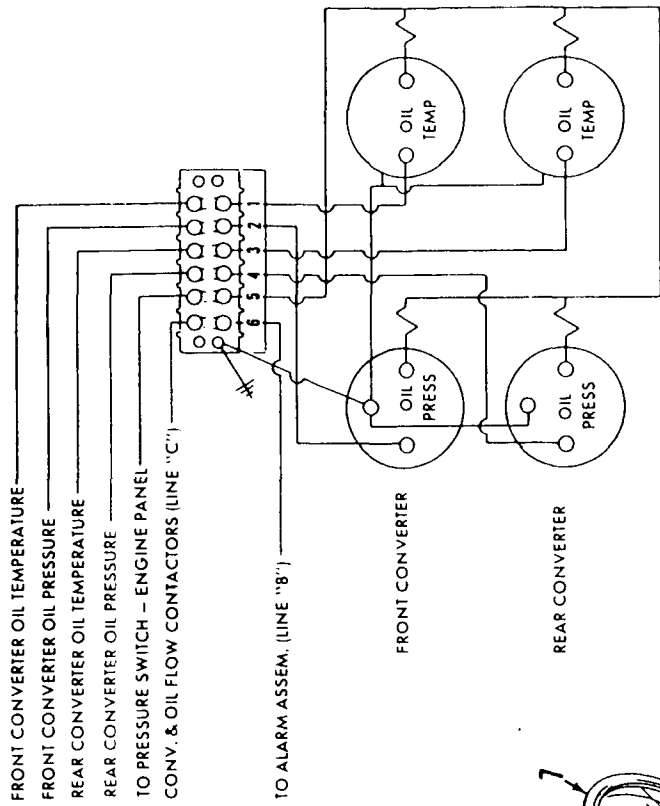
MASTER

43894-A3 Back

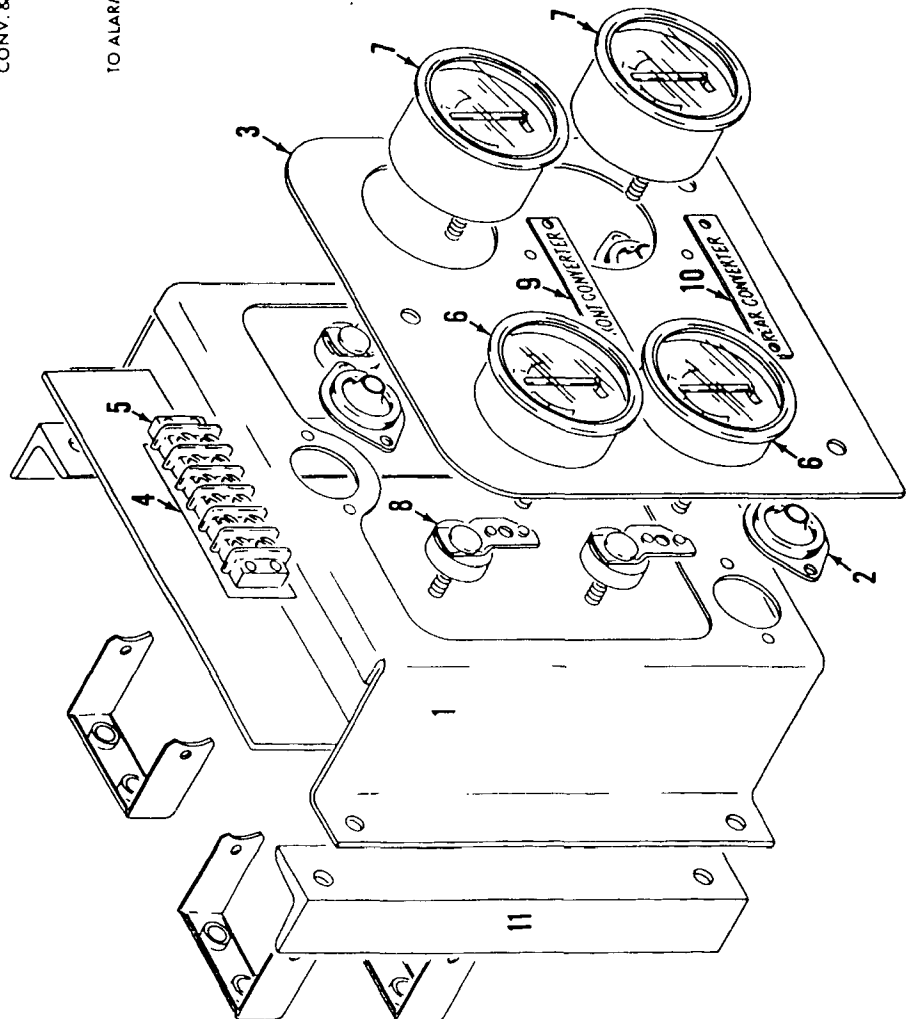
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MATERIAL LIST ON BACK

CONVERTER COOLING PIPING



WIRING DIAGRAM REAR VIEW  
NEGATIVE OR POSITIVE GROUND



INSTRUMENT PANEL

MATERIAL LIST ON BACK

MASTER

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GROUP E - Lower Structure & Control

32233-1 Cont.	REV. B	MODEL 3900-4000
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LUBRICATING PIPING  
(CARBODY)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
7			<u>SPRING THRUST WASHER-RIGHT</u>	
	696216	1	TUBE, Copper (3/8" O.D.) (Specify Length)	
	429020	1	EXTENSION (1/8")	
	429373	1	ELBOW (3/8" x 1/8")	
	429367	2	CONNECTOR (3/8" x 1/4")	
	429010	1	GR. FITTING (1/4")	
	543564	1	NIPPLE (1/4" x 3")	
	377202	2	COUPLING (1/4")	
8			<u>SPRING THRUST WASHER-LEFT</u>	
	696216	1	TUBE, Copper (3/8" O.D.) (Specify Length)	
	429020	1	EXTENSION (1/8")	
	429373	1	ELBOW (3/8" x 1/8")	
	429367	2	CONNECTOR (3/8" x 1/4")	
	429010	1	GR. FITTING (1/4")	
	543564	1	NIPPLE (1/4" x 3")	
	377202	2	COUPLING (1/4")	
9			<u>TRAVEL SHAFT OUTER-LEFT</u>	
	696216	1	TUBE, Copper (3/8" O.D.) (Specify Length)	
	429020	1	EXTENSION (1/8")	
	429373	1	ELBOW (3/8" x 1/8")	
	429367	2	CONNECTOR (3/8" x 1/4")	
	429010	1	FITTING, Grease (1/4")	
	543564	1	NIPPLE (1/4" x 3")	
	377202	2	COUPLING (1/4")	
10			<u>TRAVEL SHAFT OUTER-RIGHT</u>	
	696216	1	TUBE, Copper (3/8" O.D.) (Specify Length)	
	429020	1	EXTENSION (1/8")	
	429373	1	ELBOW (3/8" x 1/8")	
	429367	2	CONNECTOR (3/8" x 1/4")	
	429010	1	FITTING, Grease (1/4")	
	543564	1	NIPPLE (1/4" x 3")	
	377202	2	COUPLING (1/4")	
11			<u>TRAVEL SHAFT (OUTER BEARING) (ONE EACH SIDE)</u>	
	429032	2	BUSHING, Reducing (1/4" x 1/8")	
	429000	2	GR. FITTING (1/8")	
12			<u>TRAVEL SHAFT (PILOT BEARING) (ONE EACH SIDE)</u>	
	429032	2	BUSHING, Reducing (1/4" x 1/8")	
	429000	2	GR. FITTING (1/8")	
13	23935	1	SUPPORT W/capscrews, hex nuts and lockwashers	

0-147

REV. B	32233 - 1
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PLEASE GIVE MACHINE S/N W/ORDER

RUN AS FRONT

32233 B1 Cont.

42396-2 Cont	REV C	MODEL 3000W-3400-3600-3900-3900W-4000W
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STEERING CONTROL  
(CARBODY)

REF NO	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO
11	647552	1	SPACER	
12	548632	1	NUT, Hex	
14	22924	1	YOKE, Plunger	
<u>FOR AIR TRAVEL LOCKS PRIOR TO DESIGN CHANGE OF SEPT 21, 1966</u>				
22	18843	1	GASKET	
23	18840	1	HEAD, Plunger Shaft W/capscrews and flatwasher (see note 1)	
24	552686	2	PACKING, Vee Block	
25	18838	1	BASE W/mach screw, jam nut and lockwasher	
26	18839	1	COVER	
27	543442	1	NIPPLE	
28	18841	1	GUIDE W/capscrews, hex nuts and lockwashers	
NOTE 1 Per design change of Oct 16, 1961, capscrew and washer deleted Part #18840 grooved for snap ring #596663				
NOTE 2 For machine W/Manual Travel Lock Control, delete Ref Nos 7, 27, and 28, and plug air passage with 1/4" pipe plug				

REV C	42396 - 2
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PLEASE GIVE MACHINE S/N W/ORDER

MASTER

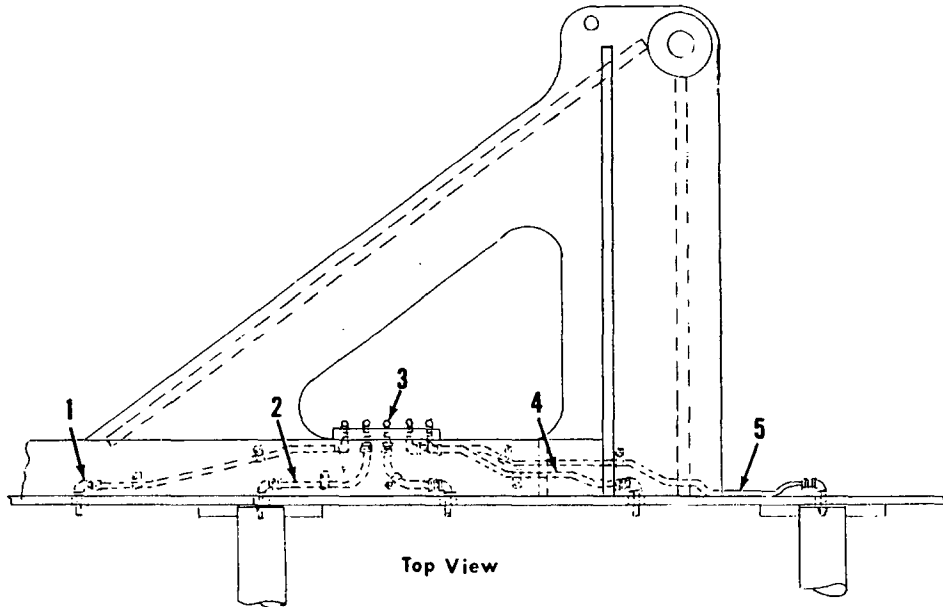
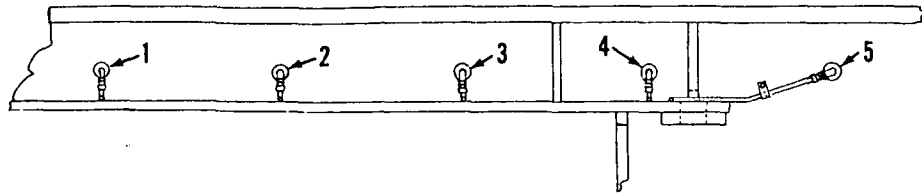
RU FRONT

42396 Cont

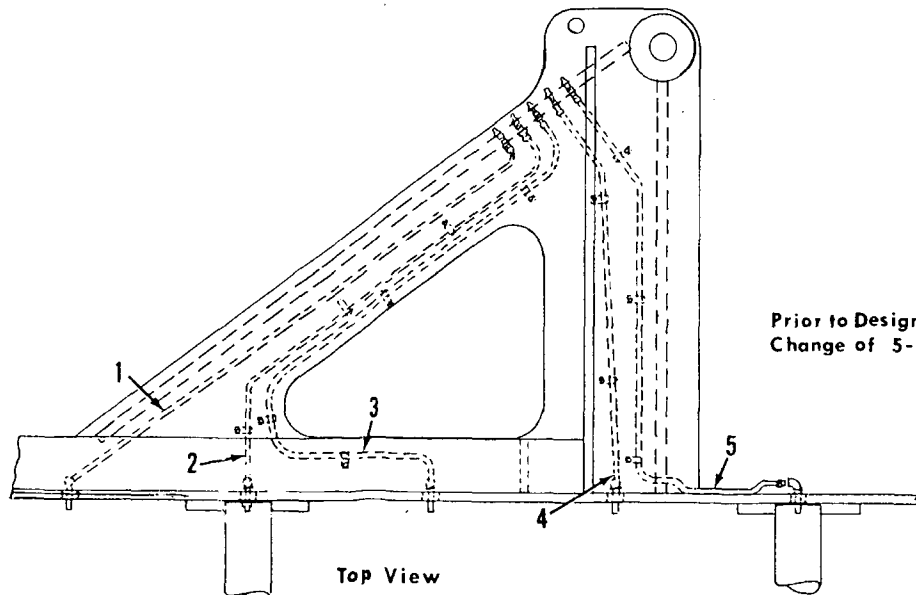
MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



Top View



Prior to Design Change of 5-18-71

Top View

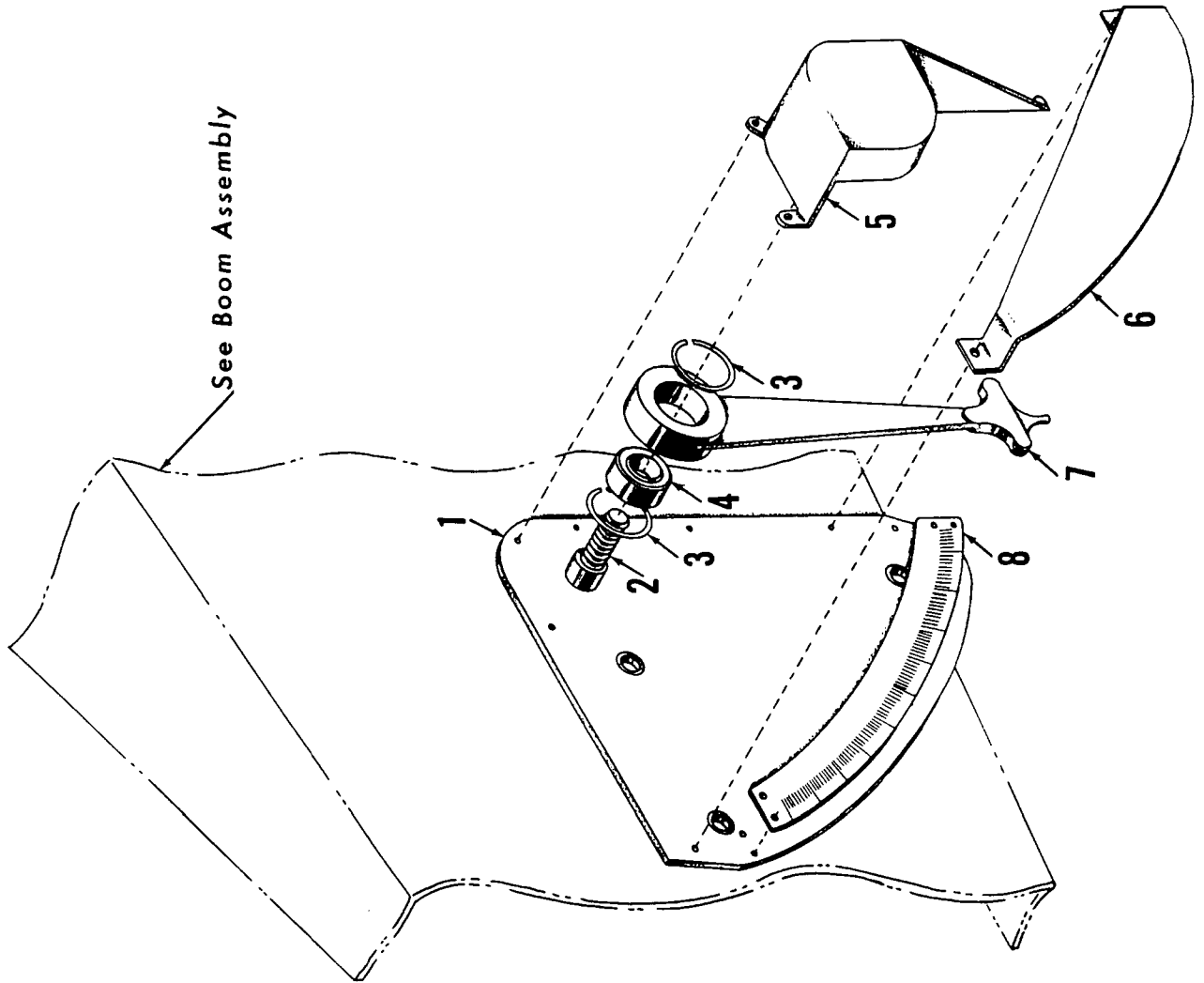
18023982

MATERIAL LIST ON BACK

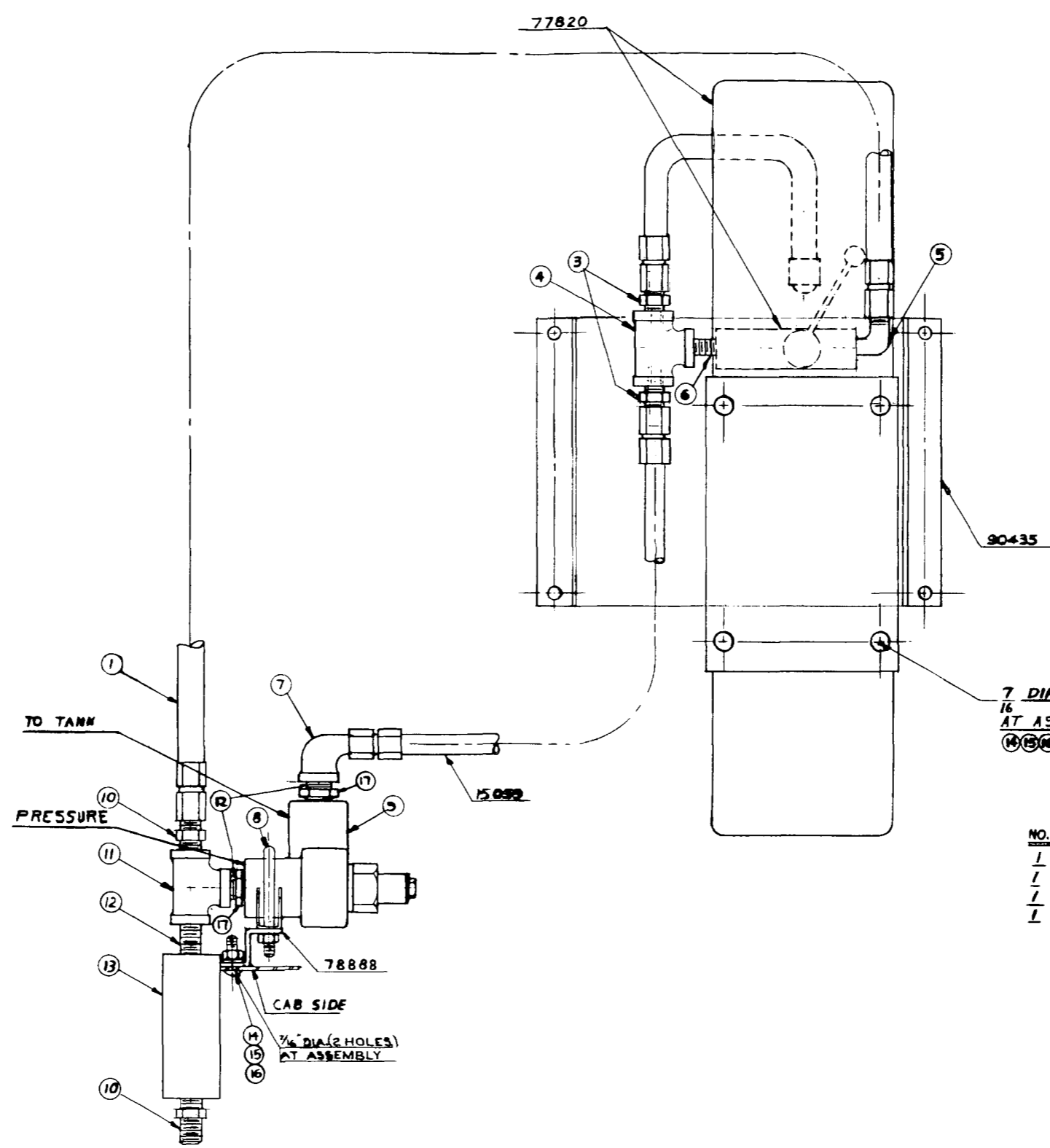
CRAWLER LUB. PIPING

MASTER

18023982



D E A B C



BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	CODE NO	REMARKS
1	1	3/8" ID HOSE 34' LONG	486016	
3	2	3/8" x 1/4" REDUCE BUSHINGS	288 608	
4	11	3/8" TEE STD.	679 302	
5	1	3/8" x 1/4" x 90° ELBOW	429 603	
6	1	3/8" CLOSE NIPPLE	543 403	
7	1	3/8" x 1/4" x 90° ELBOW	406 503	
8	1	1 1/2" MUFFLER CLAMP	545 396	
D 9	1	RELIEF POPPET VALVE WJ-SO	702 541	
10	2	3/8" x 3/4" MALE CONNECTION TUBE TO PUMP TUBE	429 563	
11	1	3/8" TEE	429 655	
12	3	3/8" x 1 1/4" NIPPLE	429 654	
13	1	CONTROL VALVE	702 528	
A 14	16	3/8" x 1/4" N.C. 3/4" OVEN HD. BOLT	254 563	
B 15	16	3/8" - 16 N.C. HEX. NUT	546 054	
C 16	16	3/8" LOCKWASHER	710 304	
E 17	2	1/2" x 3/8" BUSHING	429 167	

7 DIA (4-HOLES)  
16  
AT ASSEMBLY  
(4)(5)(6)

NO. REQD.	DRWG. NO.	DESCRIPTION
1	77820	POWER PUMP
1	90435	GUARD
1	15099	HOSE
1	78888	BRACKET

NOTICE  
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MANITOWOC ENGINEERING CO.  
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IT IS LOANED, SUBJECT TO RETURN UPON DEMAND, AND  
ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR  
USED DIRECTLY OR INDIRECTLY IN ANY WAY WHATSOEVER  
DETRIMENTAL TO OUR INTERESTS.

ASSEMBLED  
USED ON

43818  
33817  
33750  
33031  
33598  
380553  
48014  
386178

4-10-68 L.A.E.  
4-9-70 A.A.S.  
4-10-70 WJ-38  
ADDED

DRWG. NO.  
33898

ISSUED DATE  
DATE  
7-18-67

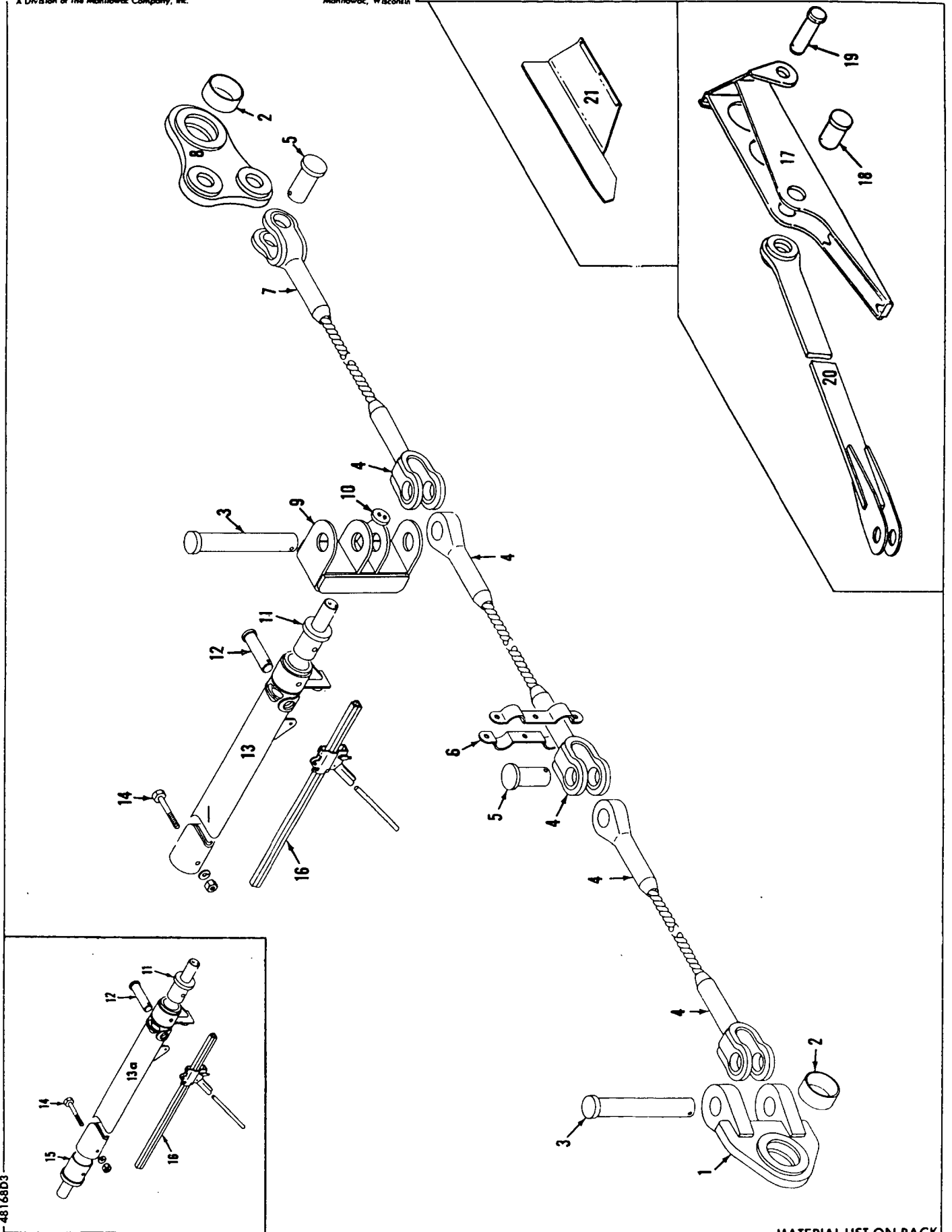
PATTERN NO.  
CODE NO.  
DRWG. NO.  
33898

MANITOWOC ENGINEERING CO.  
POWER & CONTROL ASSEMBLY  
FOR ELECTRIC / HYDRAULIC  
GANTRY LIFTING DEVICE  
MODEL 3900T - 4000 T-4400W

MANITOWOC ENGINEERING CO.

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Manitowoc, Wisconsin



48168D3

MATERIAL LIST ON BACK

PENDANTS & CONNECTIONS

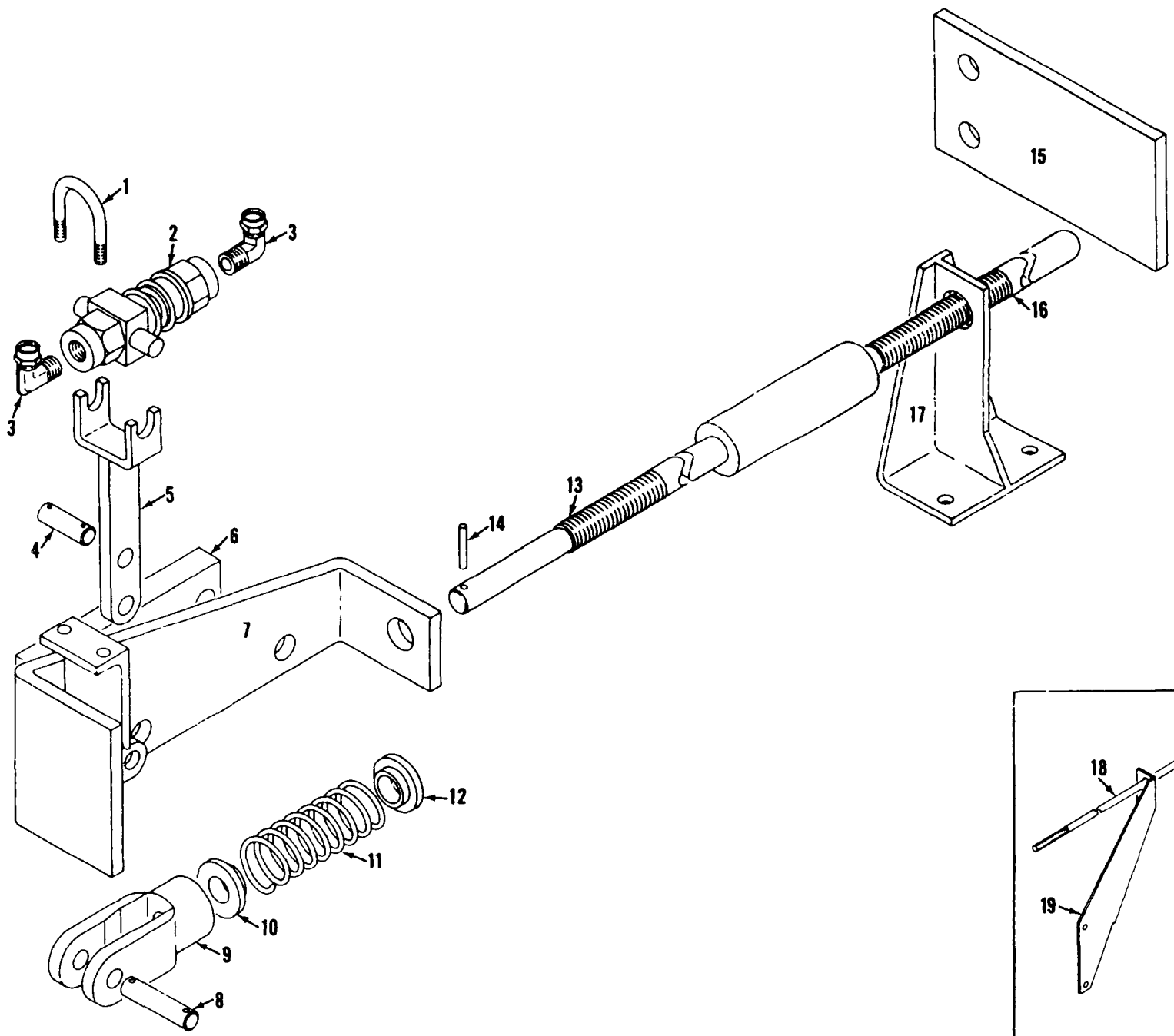
48222A1

48222A1

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Manitowoc, Wisconsin



MATERIAL LIST ON BACK

BOOM STOP

**A**

**A** NOTE:  
SET SCREWS TO BE REMOVED  
FROM BOTH BEARINGS.

**B**

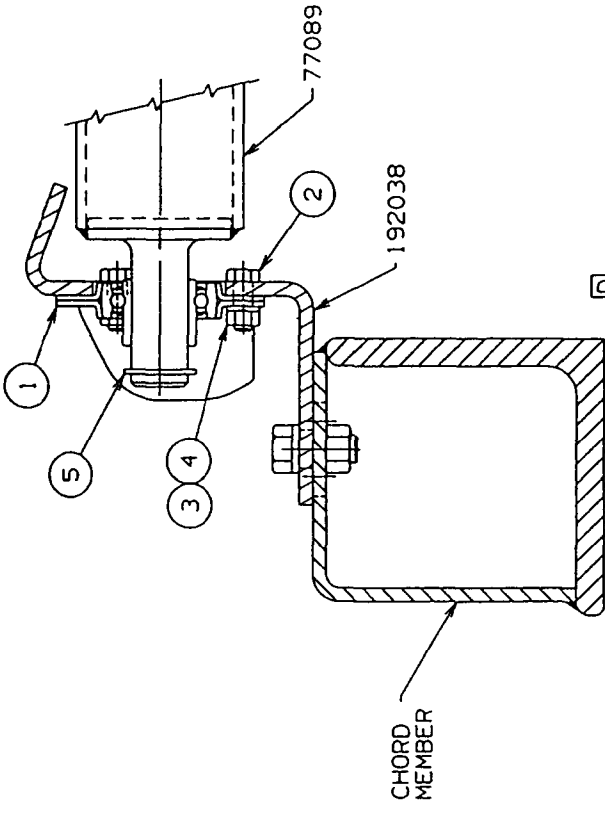
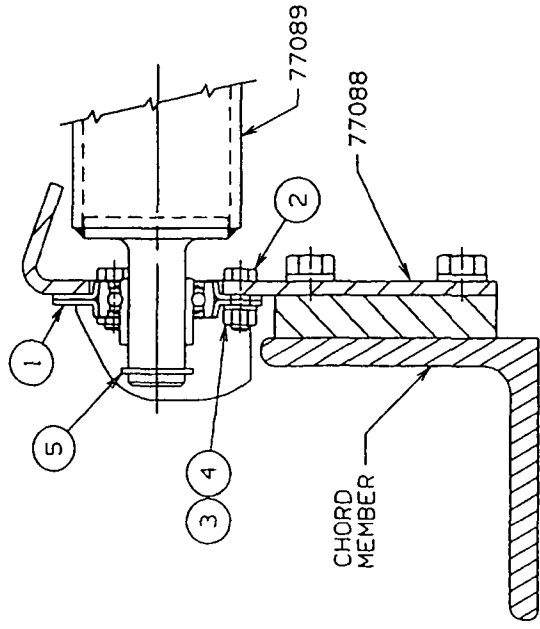
**B** 1 BEARING BRACKET 192038  
REO'D FOR USE ON INSERTS  
33426, 50609, 623525, 623526,  
623527, 623528, 623529, 623530,  
623531, 623532, 623533, 623534,  
623535, 623536, 623537, 623538,  
623545, 623564, 623579, 623580,  
& 623586 WITH TIMBER BRACKETS

**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 FT  
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

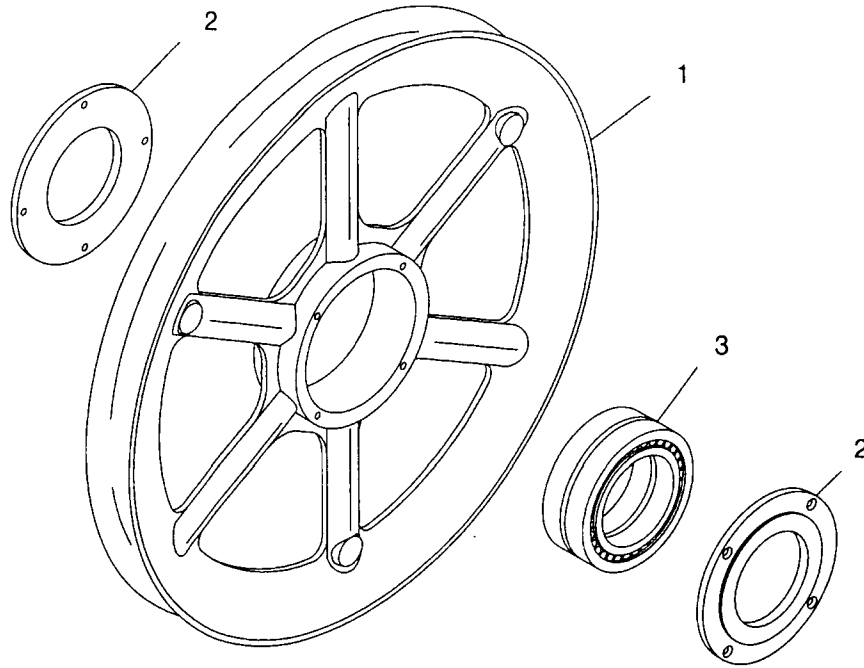
PATTERN NO.

DWG. NO.  
77090

DO NOT SCALE THIS DRAWING

# MANITOWOC ENGINEERING CO.

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**MODEL**

888

**SHEAVE**  
(for 1-1/8" diameter rope)

ITEM	PART #	QTY.	DESCRIPTION OF PART
	<b>91130-1</b>	<b>1</b>	<b>SHEAVE ASSEMBLY</b>
1	91129	1	SHEAVE (casting)
	429000	1	FITTING, Grease (1/8")
2	75599	2	PLATE, Retaining
	617648	4	CAPSCREW, Flat Head (5/16-18 UNC-2A x 3/4" long) (see Note)
3	224150	1	BEARING
	<b>91130-3</b>	<b>1</b>	<b>SHEAVE ASSEMBLY</b>
1	97188	1	SHEAVE (fabrication)
2	75599	2	PLATE, Retaining
	617648	4	CAPSCREW, Flat Head (5/16-18 UNC-2A x 3/4" long) (see Note)
3	224150	1	BEARING

**Note:** Apply LOCTITE #242 (MEC 622293) to both screw and hole threads at assembly.

**PLEASE GIVE MACHINE SERIAL NUMBER WITH ORDER**

ASSEMBLY <b>091130</b>	REVISION <b>A</b>
---------------------------	----------------------

**SHEAVE**



0-69 - 1 Cont.	REV. C.	MODEL 2300-4600 Incl.
----------------	---------	-----------------------

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
--------	-----------

PLEASE GIVE MACHINE S/N W/ORDER

Run as front

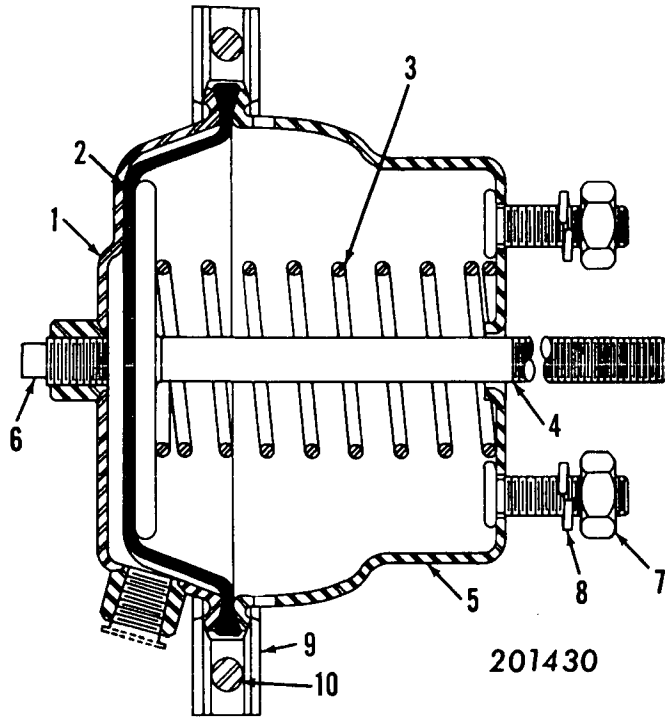
MASTER

0-69 Cont.

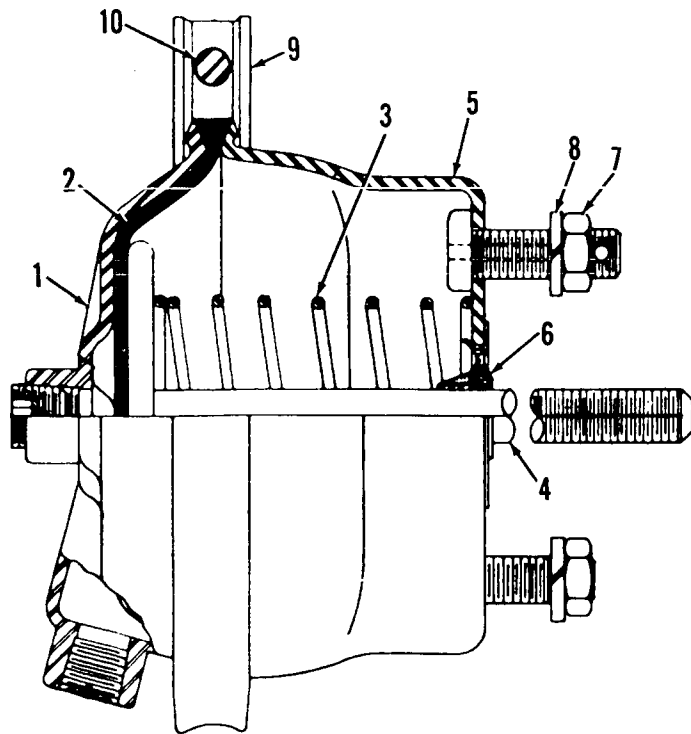
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201430

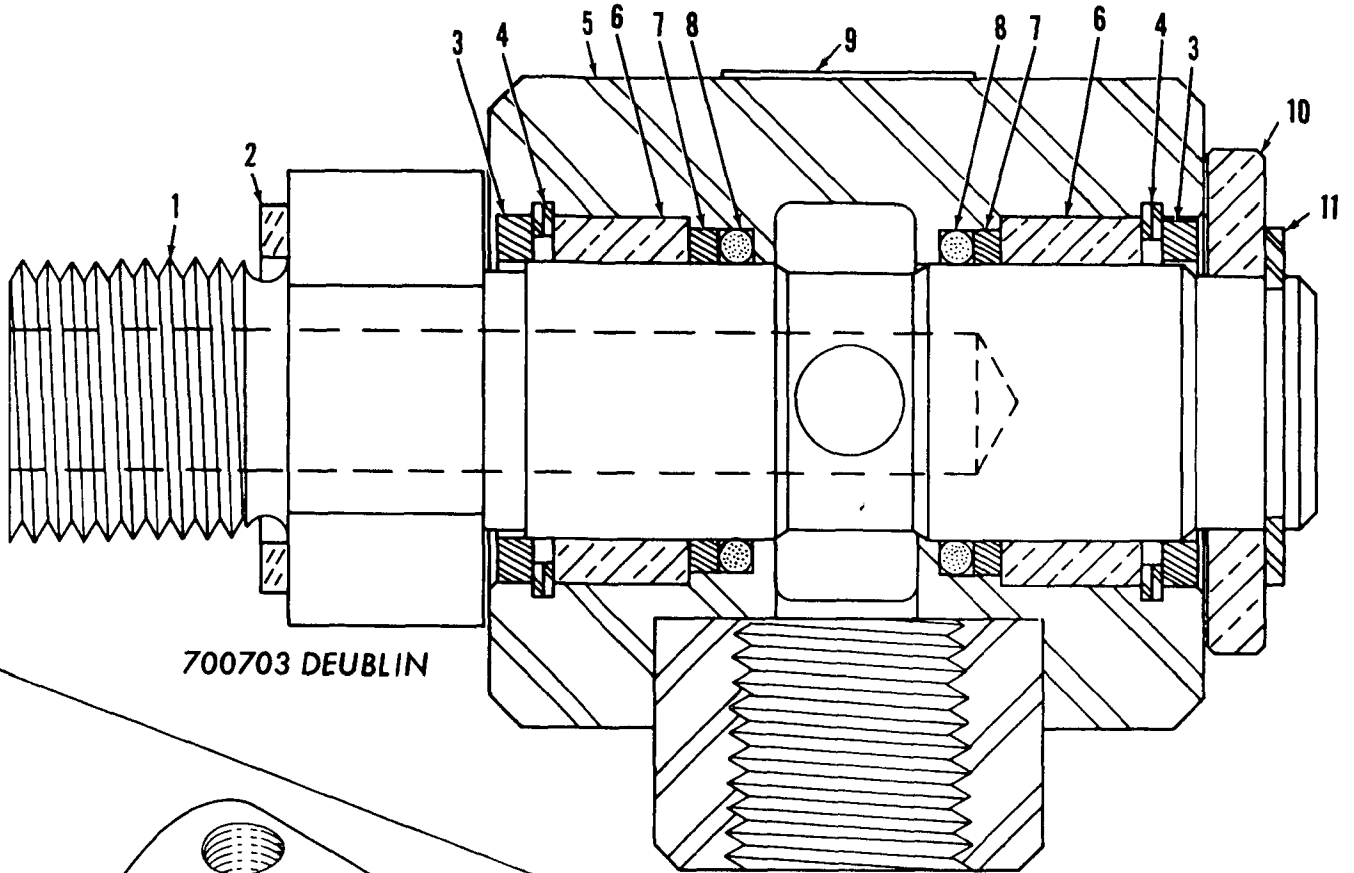


714557

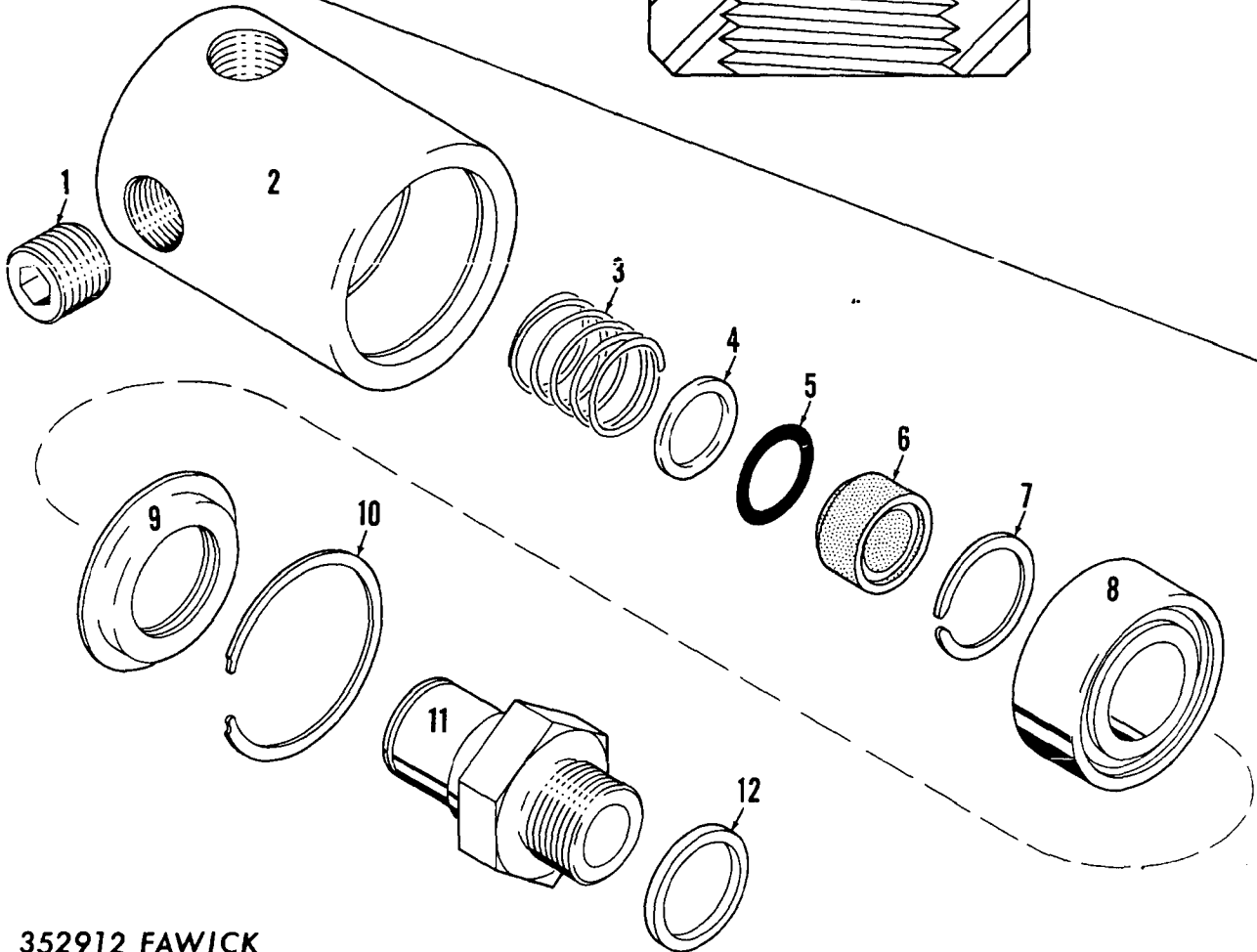
MASTER

0123A1

MASTER



700703 DEUBLIN



0-157A1

0-157A1

352912 FAWICK

MATERIAL LIST ON BACK

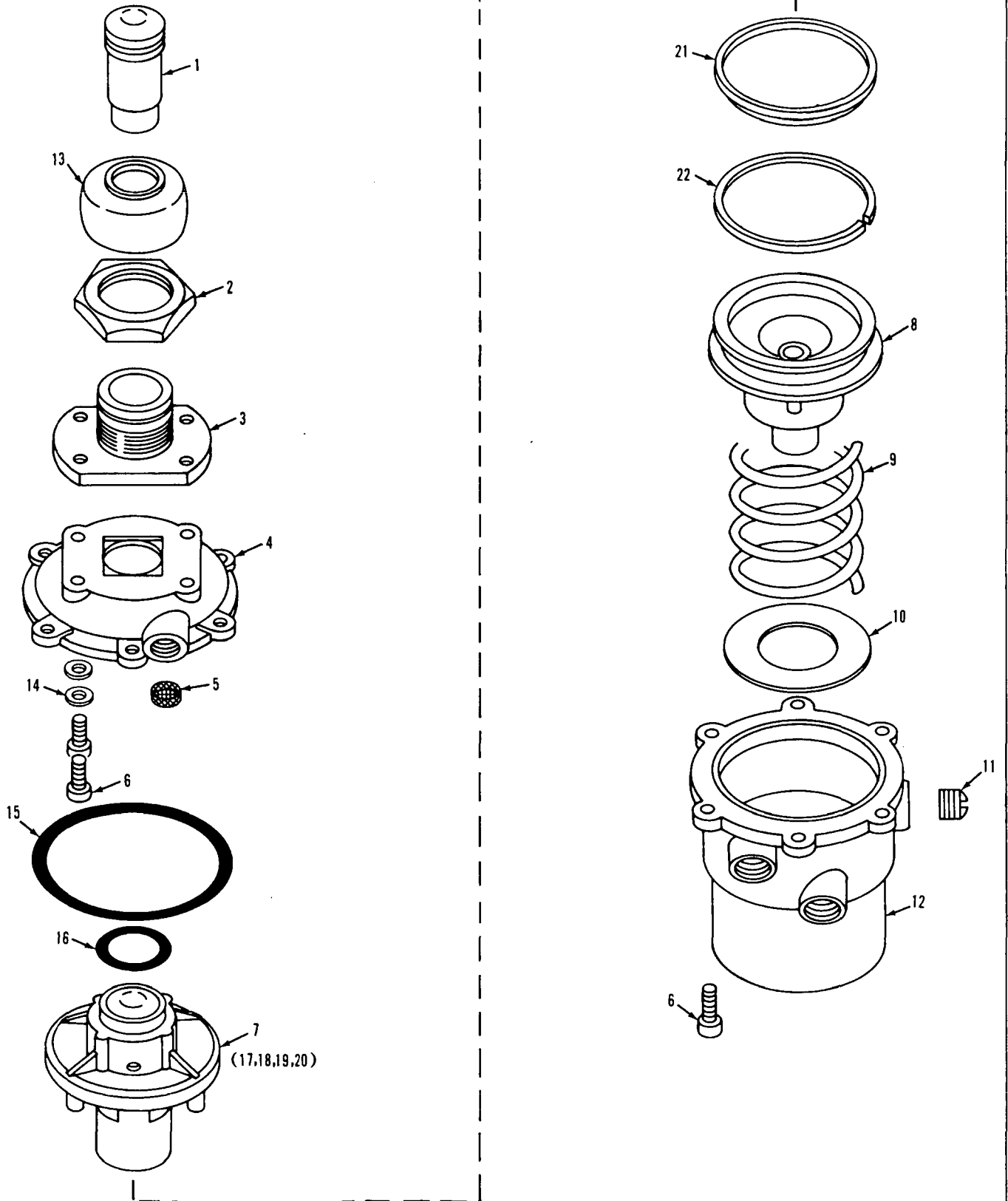
SWIVEL UNION

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MASTER

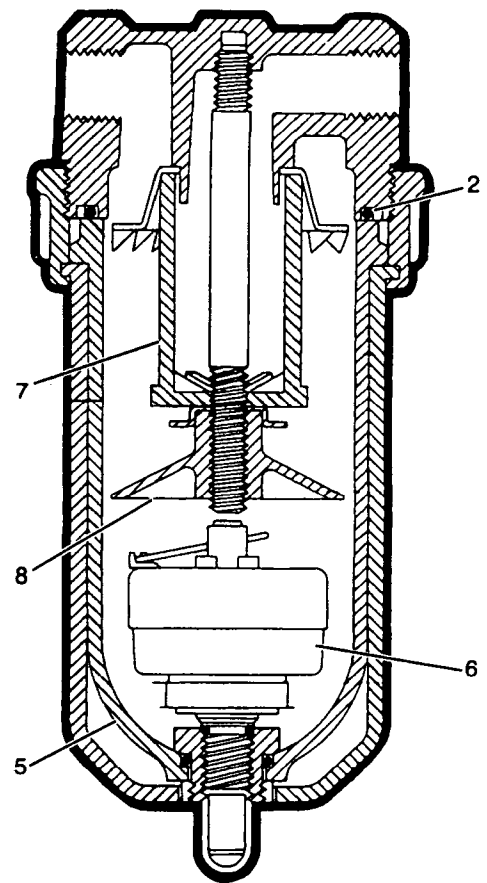
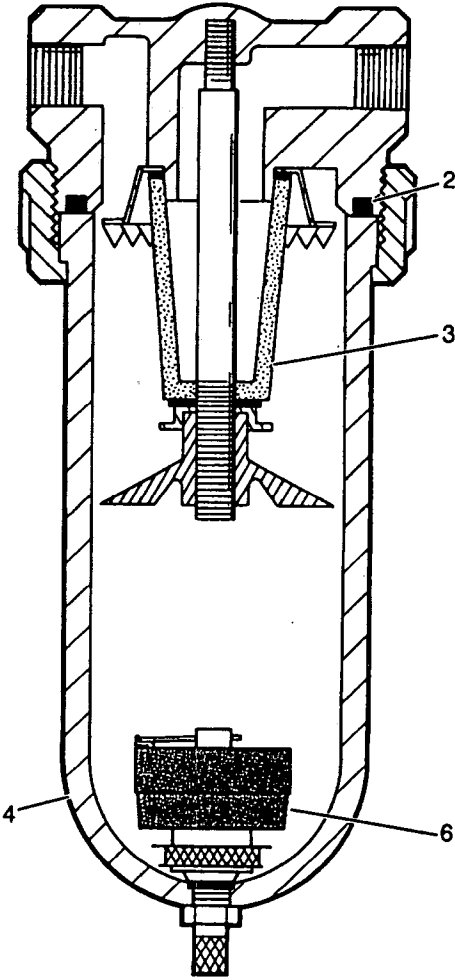
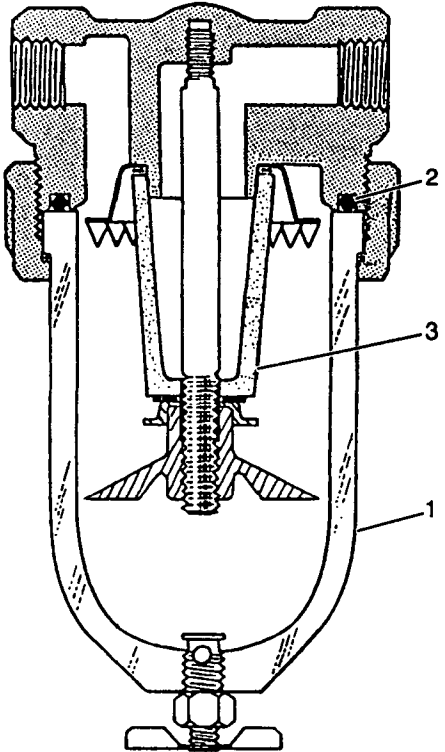


0-247-1B

MATERIAL LIST ON BACK

Control Valve

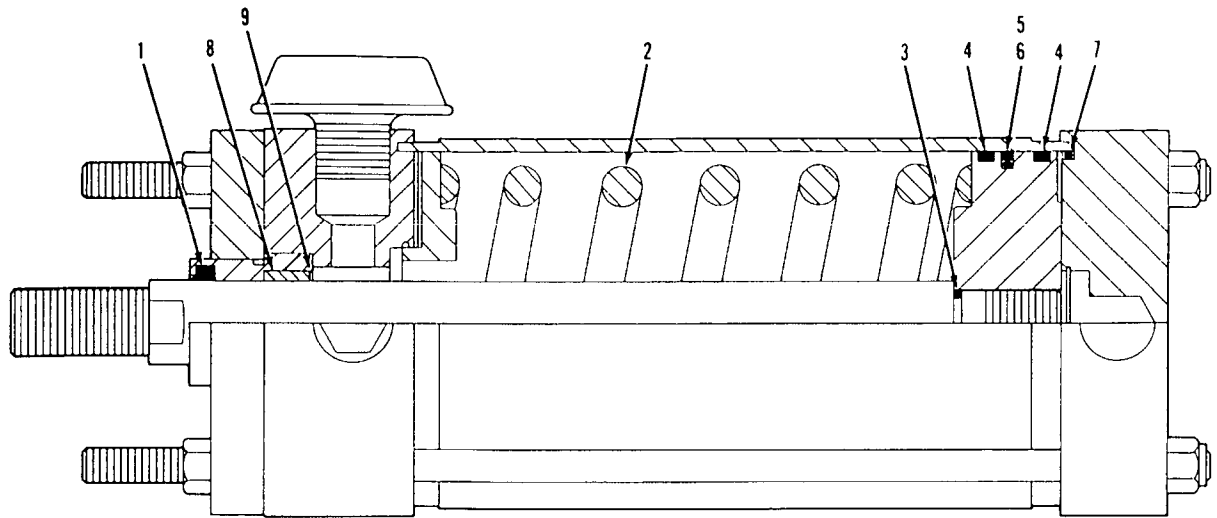
ILLUST. O-289 B1



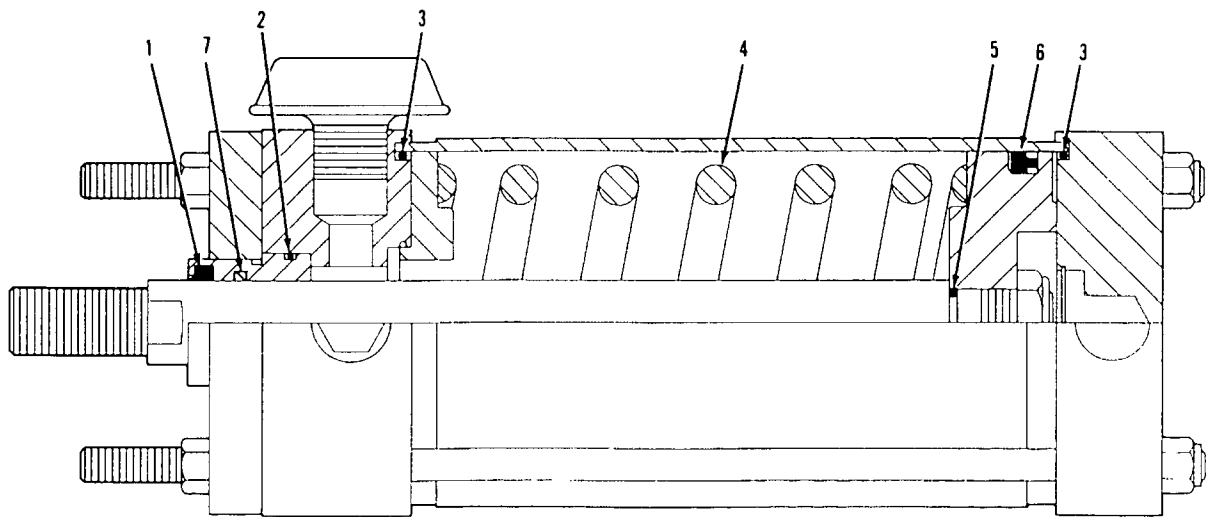
ASSEMBLY  
O-289

REVISION  
C

AIR LINE FILTER



CURRENT PRODUCTION



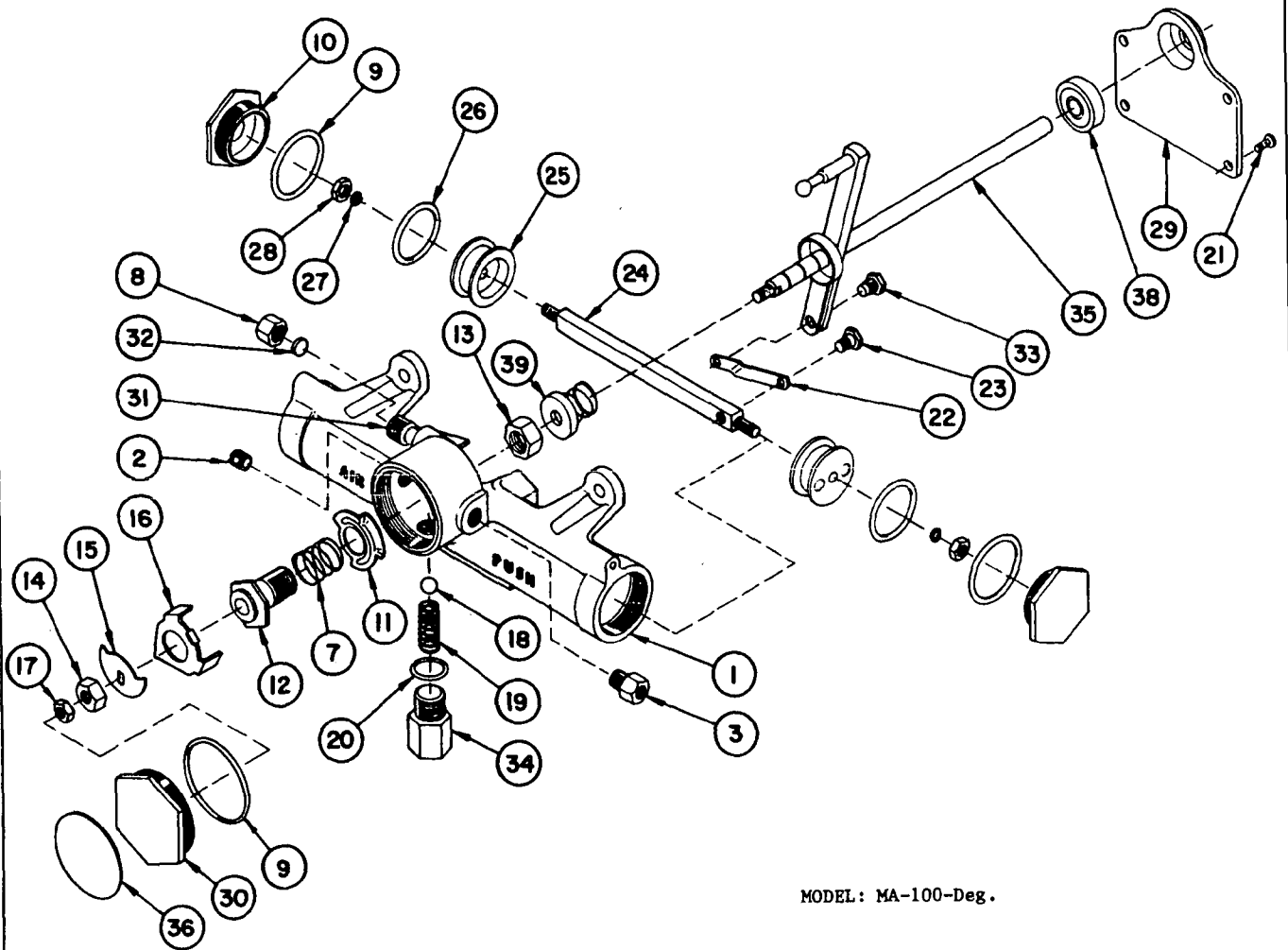
PAST PRODUCTION

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Manitowoc, Wisconsin

MASTER



MODEL: MA-100-Deg.

O-41581

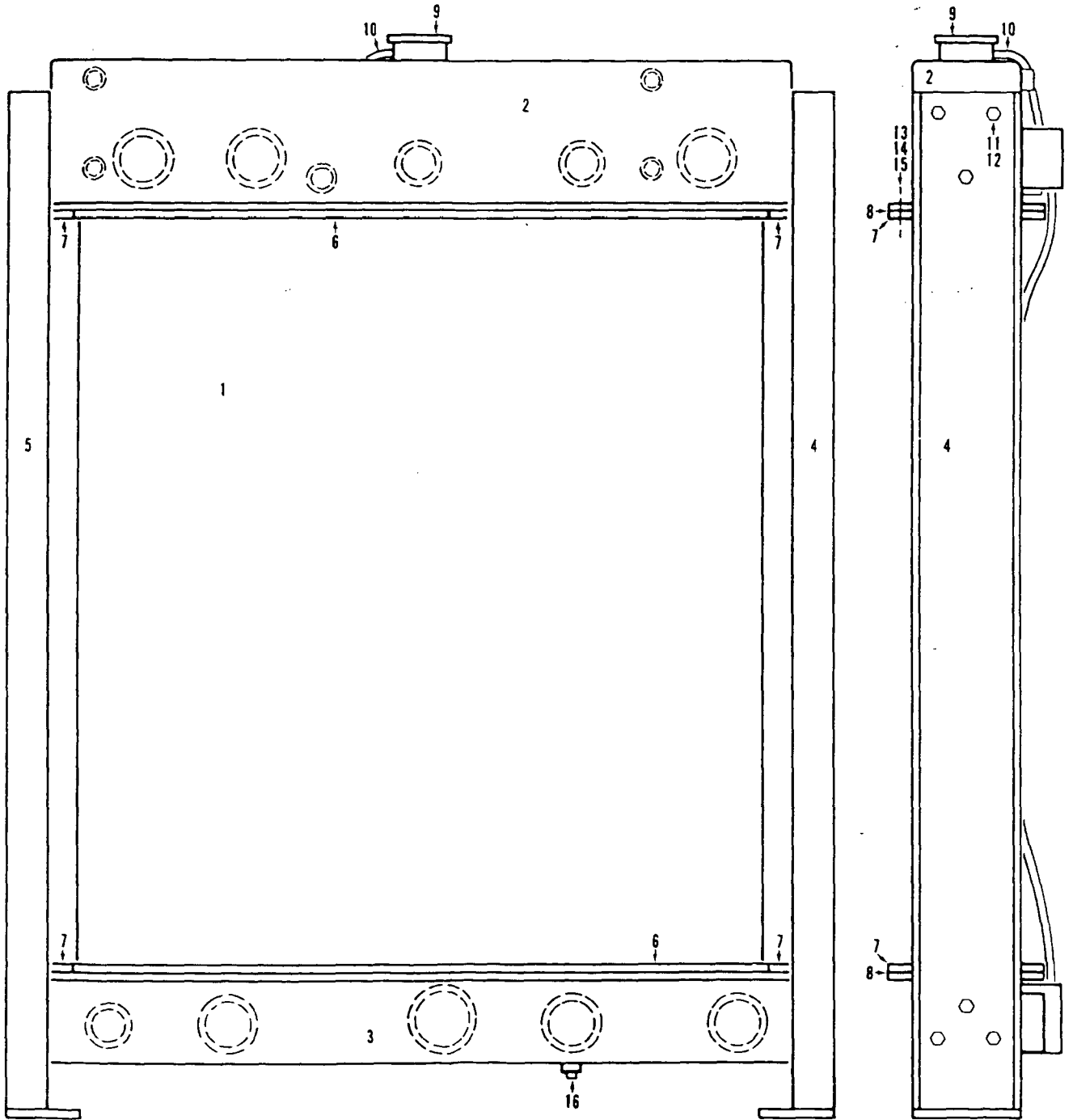
MATERIAL LIST ON BACK

WINDSHIELD WIPER MOTOR

MANITOWOC ENGINEERING CO.

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Manitowoc, Wisconsin



0-45181

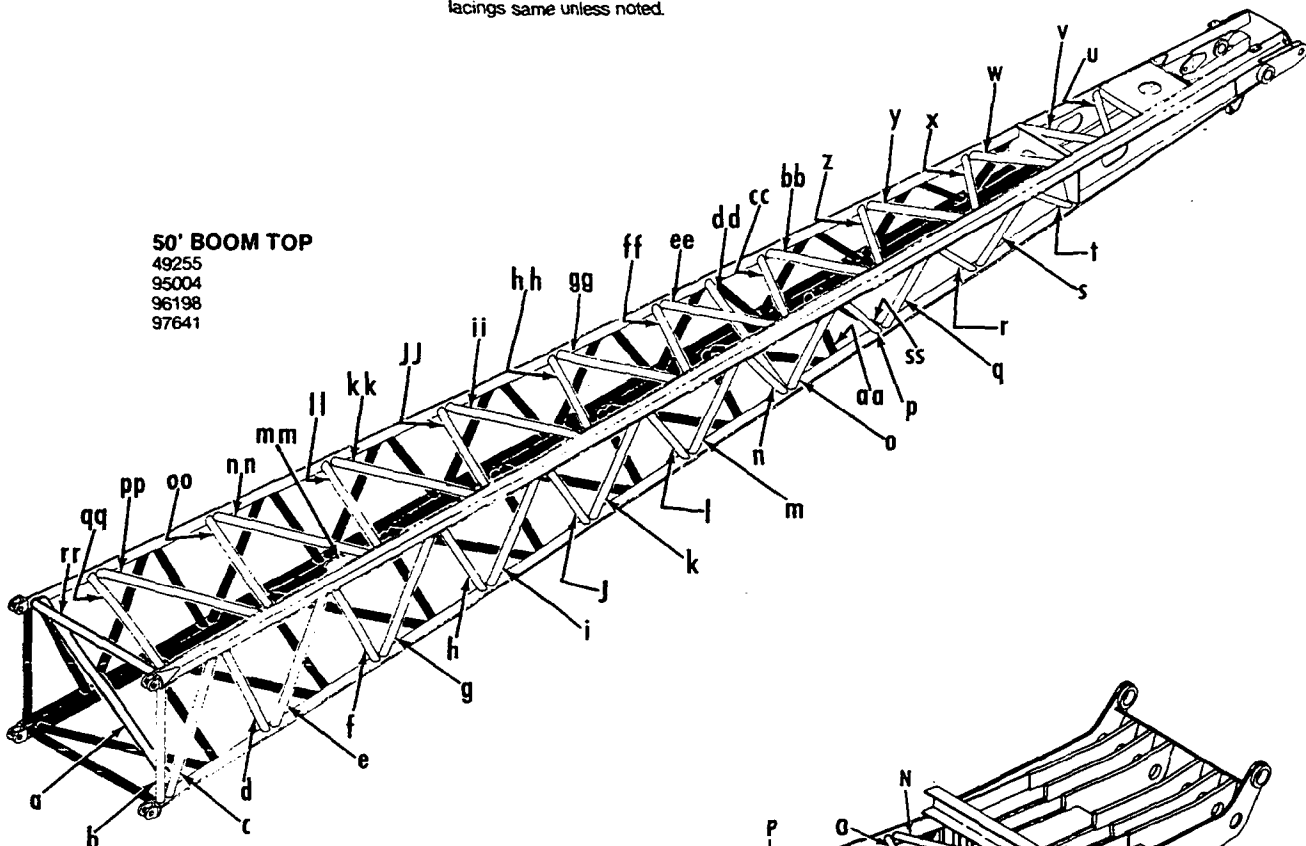
MATERIAL LIST ON BACK

RADIATOR

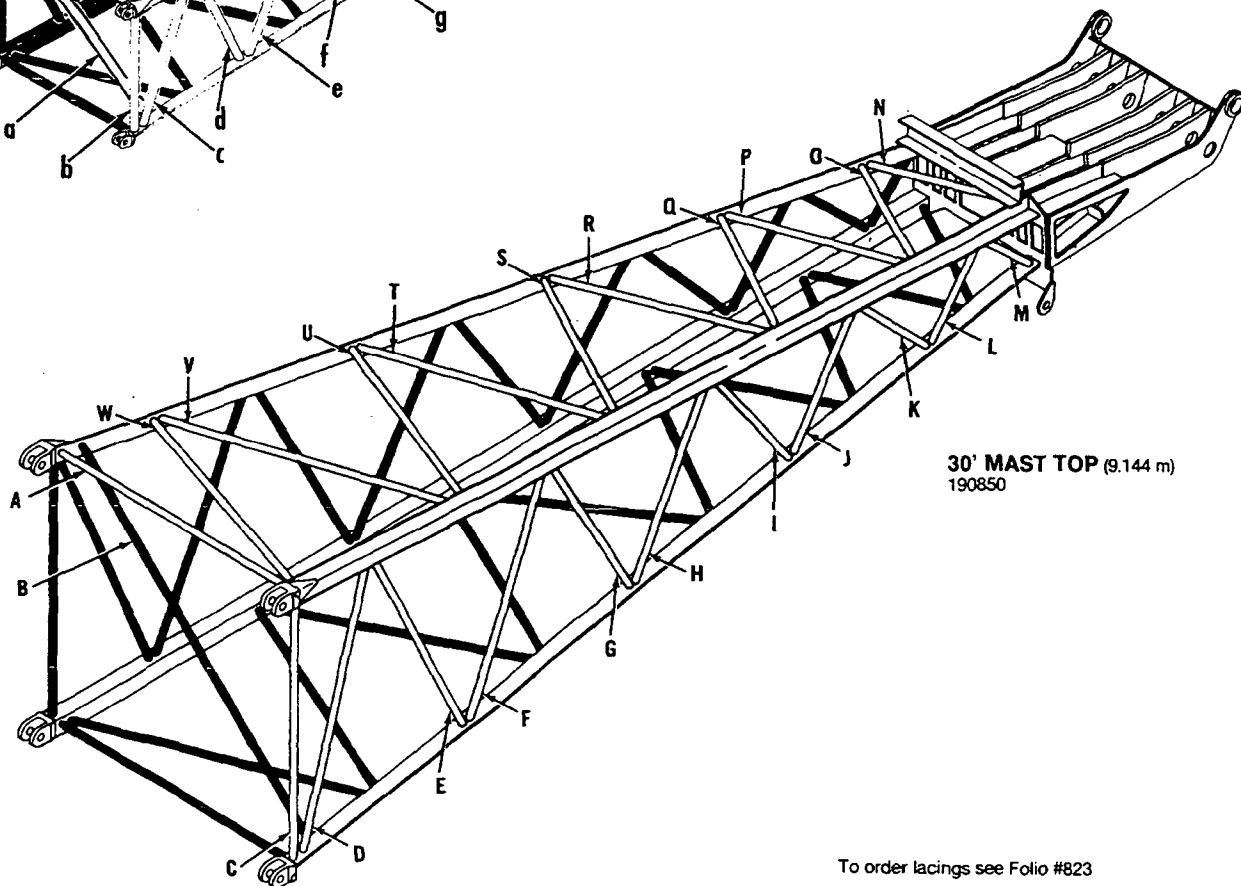
**BOOMS #22 & 22A TOP SECTIONS**

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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