



# TRADITIONAL CRANE PARTS MANUAL

This manual has been prepared for and is considered part of

**4600**

Model

**460080**

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

Phone: 920-684-6621 • Fax: 920-683-6278

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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**

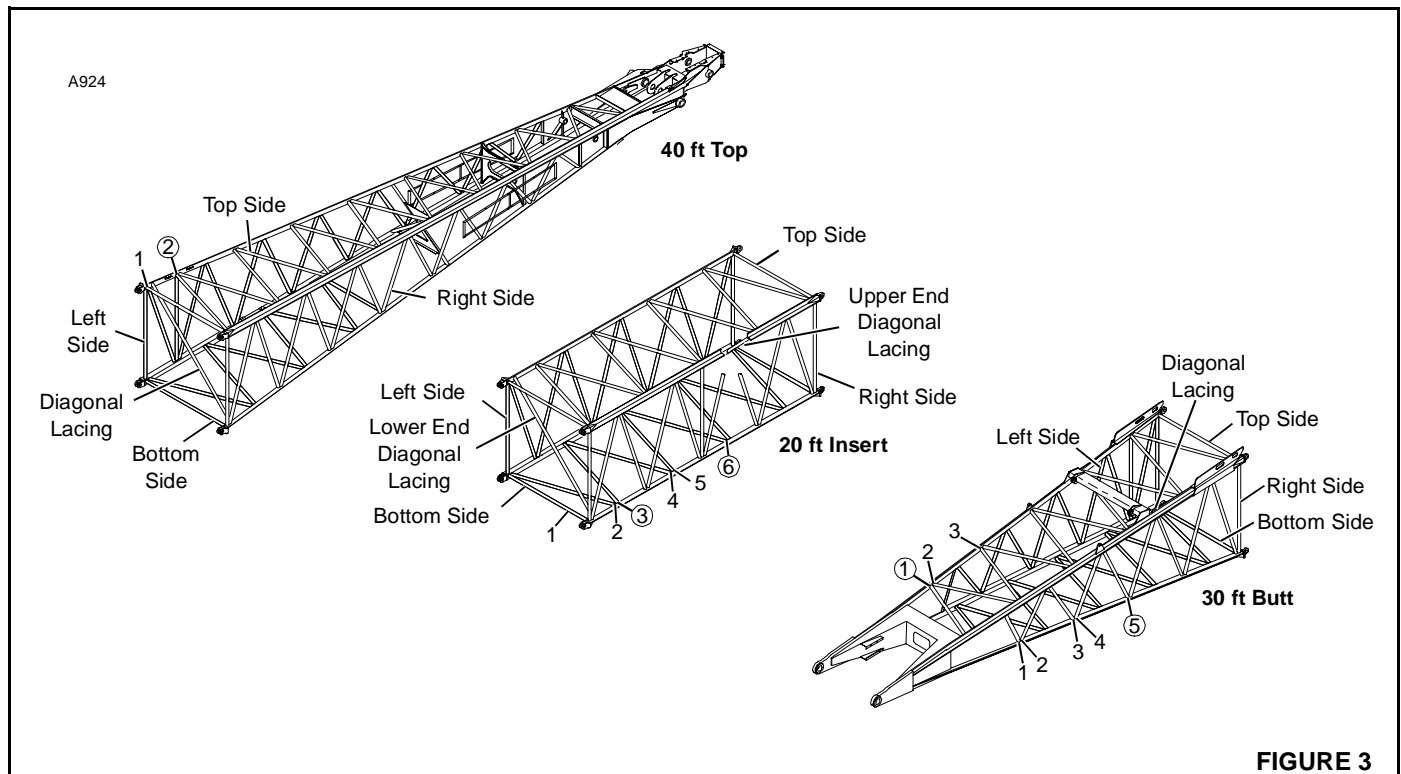
Required:

- 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.



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

DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
"A" Frame	49658	H1	09/22/72	12/15/80	A0101
Cab	65151	I1	02/02/73	06/24/86	A0201
Cab Heater/Air Conditioner	65587	-	03/01/77	05/05/81	A0209
Catwalk	190674	A1	01/16/78	05/04/81	A0801
Catwalk	65860	C1	09/06/78	05/21/91	A0801
Chain & Gear Case	190685	-	02/10/78	08/16/90	A0401
Chain & Gear Case	49798	E1	07/03/73	10/05/90	A0401
Chart Holder	93994	D1	04/30/85	11/15/90	A0212
Chart Holder	95639	-	04/30/85	08/07/90	A0212
Counterweight & Cab Rear	191276	D1	01/20/82		A0301
Fuel Tank	182242	-	03/28/74	08/15/85	A0601
Nameplate/Decal Location	166447	D1	01/12/86	10/11/93	A0213
Operator's Station/Pilothouse	65763	-	02/17/88	05/12/97	A0202
Operator's Station/Pilothouse	65763	A2	01/16/78	02/17/88	A0202
Operator's Station/Pilothouse	65763	E1	01/16/78	02/17/88	A0202
Pilothouse Support	65182	I1	03/18/81	07/07/81	A0203
Pilothouse Support	65909	A1	12/28/79	12/19/84	A0203
Platform	65861	B1	09/06/78	07/29/81	A0701
Rotating Bed Lubrication Piping	49853	-	06/14/73	09/26/76	A0104
Rotating Bed Lubrication Piping	65140	-	01/06/73	10/02/81	A0104
Rotating Bed/Hoist Frame/Transporter Platform	65086	L1	10/12/72	07/21/82	A0102
Windshield Wiper/Defogger	180880	-	04/21/70		A0210
Windshield Wiper/Defogger	180880	-	08/04/76		A0210
Windshield Wiper/Defogger	190248	E1	12/17/75	03/02/84	A0210

65086-1 Cont.	REV. L	MODEL 4600 S4, S5
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ROTATING BED

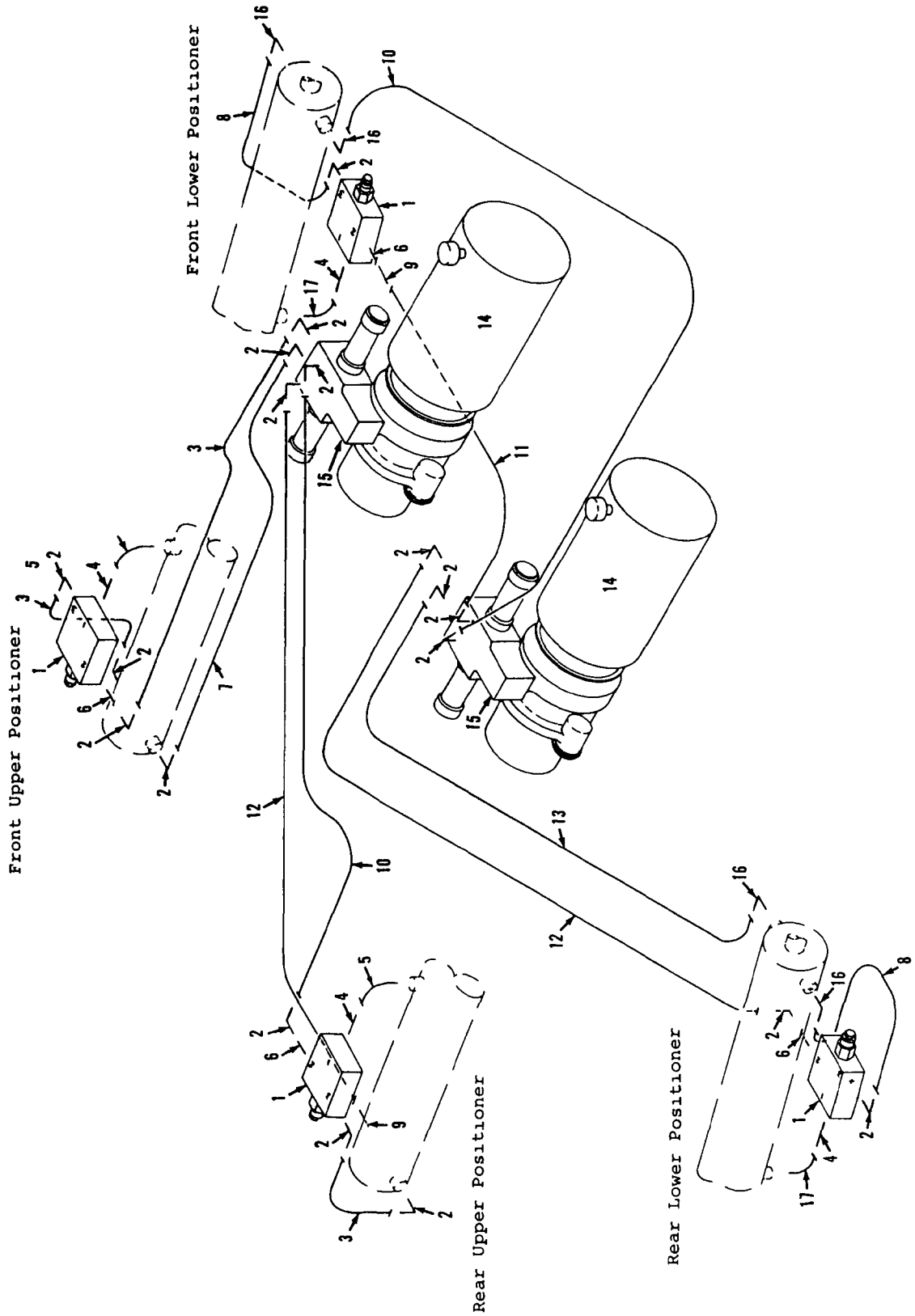
MASTER

Run as Front

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
50	140756	6	PLATE, End W/capscrews and lockwashers	
	181764	2	ROLLER ASSEMBLY	
51	596084	8	RING, Nilos	
52	225540	4	BEARING (Set of two W/spacer)	
53	140718	4	ROLLER, Front House	
56	140735	4	SLEEVE	
57	49628	2	SUPPORT, Front Roller	
58	140727	4	PIN, Front Roller	
54	225218	4	LOCKNUT	
55	225170	4	LOCKWASHER	
59	140843	2	SPACER	
60	140848	2	PLATE, Keeper W/capscrews and lockwashers	
61	94330	2	SHAFT, Pivot	
62	141910	1	COVER W/capscrews and lockwashers	
63	141911	1	GASKET (1/16" Vellumoid)	
64	144359	1	PLATE, Cover W/capscrews and lockwashers	
65	145635	1	COVER W/capscrews and lockwashers	
66	145636	1	GASKET	
			<u>NOTE 1:</u> Capscrews w/Housing #181744 are #613813, 3/4" - 10 x 1 3/4" Grade 5. Torque to 250 foot pounds.	
			<u>NOTE 2:</u> Machine w/out air joint, cover opening in Ref. #28 with the following:	
67	146995	1	COVER w/capscrews and lockwashers	
68	16149	1	GASKET	
			<u>NOTE 3:</u> Machine w/out travel, cover openings in bed w/the following: (Weld in place)	
69	143221	1	COVER	
70	147010	1	COVER	
71	146993	1	COVER	
72	146992	1	COVER	
			<u>NOTE 4:</u> If converting S/N 460001 - 460049 incl. to a Series 5 machine, Rotating Bed #65085, Ref. #1, must be modified per Drwg. #420317.	
			<u>NOTE 5:</u> Install washer 140845 with relief facing roller.	
				REV. L
				65086-1

PLEASE GIVE MACHINE S/N W/ORDER

65086-1 Cont'd.



65182E1

MATERIAL LIST ON BACK

Cab Positioner Hyd Piping

65763-1 Cont.	REV. E	MODEL 4600 S4 - 6000W
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OPERATOR'S CAB

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
	95652	1	MAT ASSEMBLY, Floor	
46	95702	1	MAT, Floor	
47	139954	2	BINDING, Mat	
48	95702	1	BINDING, Mat	
49	350326	2	BUTTON, Closure Plug (See Note 2)	
50	71450	2	PAD, Mounting	
51	147377	1	COVER w/mach. screws	
52	147378	1	COVER w/mach. screws	
	137669	1	SHADE, Roof Window (Not Shown)	
	492120	As Req'd	Insulation, Fiberglass (Not Shown)	
<p>NOTE 1: Ladder 182611 (16" step) has been replaced w/160106 (24" step) to comply w/current codes. When replacing Ladder, one (1) additional mounting pad 71450 (Ref. 50) will be required for installation of wider Ladder.</p>				
<p>NOTE 2: Machines before 11-25-81 design change use 350321 Closure Plug Button.</p>				

Run as Front

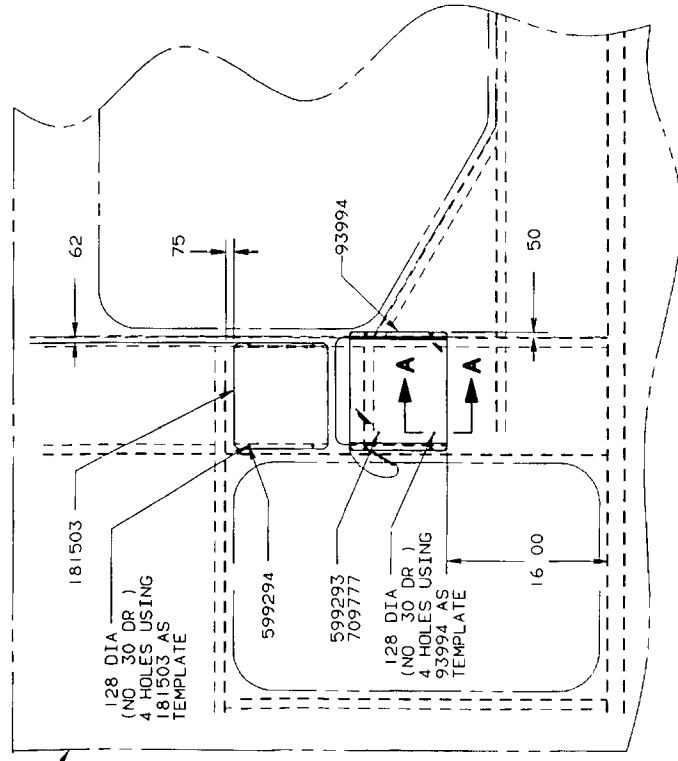
65763 E1 Cont'd

REV. E	65763 - 1
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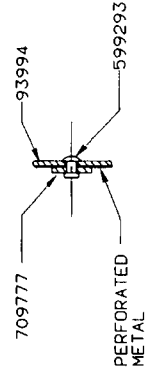
PLEASE GIVE MACHINE S/N W/ORDER

QTY	REV	DATE	DESCRIPTION	UNIT	MATERIAL	QTY	REV	DATE	DESCRIPTION
1			CHART HOLDER ASSEMBLY			1			93994
1			BUILDERS PLATE			1			181503
4			125 DIA BLIND RIVET (.06 TO .12)			4			599293
4			125 DIA BLIND RIVET (.18 TO .25)			4			599294
4			125 WASHER			4			709777

STAMP DATA ON BUILDERS PLATE 181503 AND INSTALL AFTER FINAL PAINTING OF THE CAB INTERIOR



VIEW SHOWING INSIDE LEFT REAR OPERATORS CAB



SECTION A - A  
SCALE 12 I FT

NOTICE  
MANITOWOC ENGINEERING CO

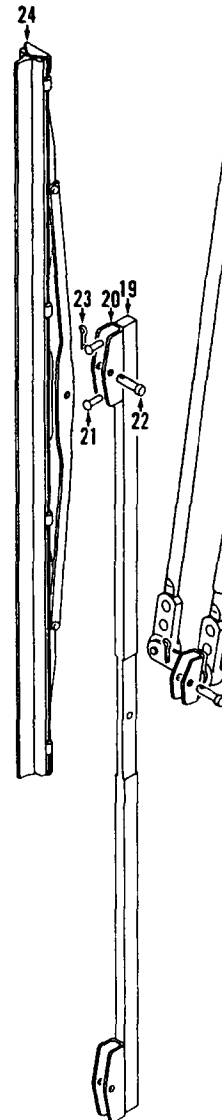
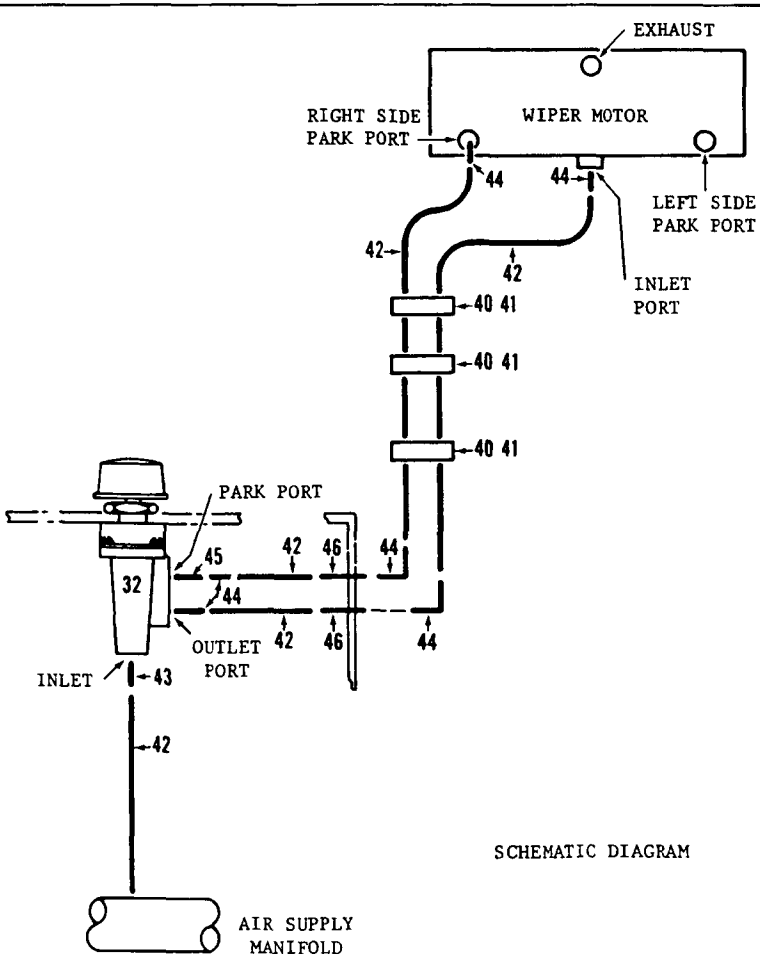
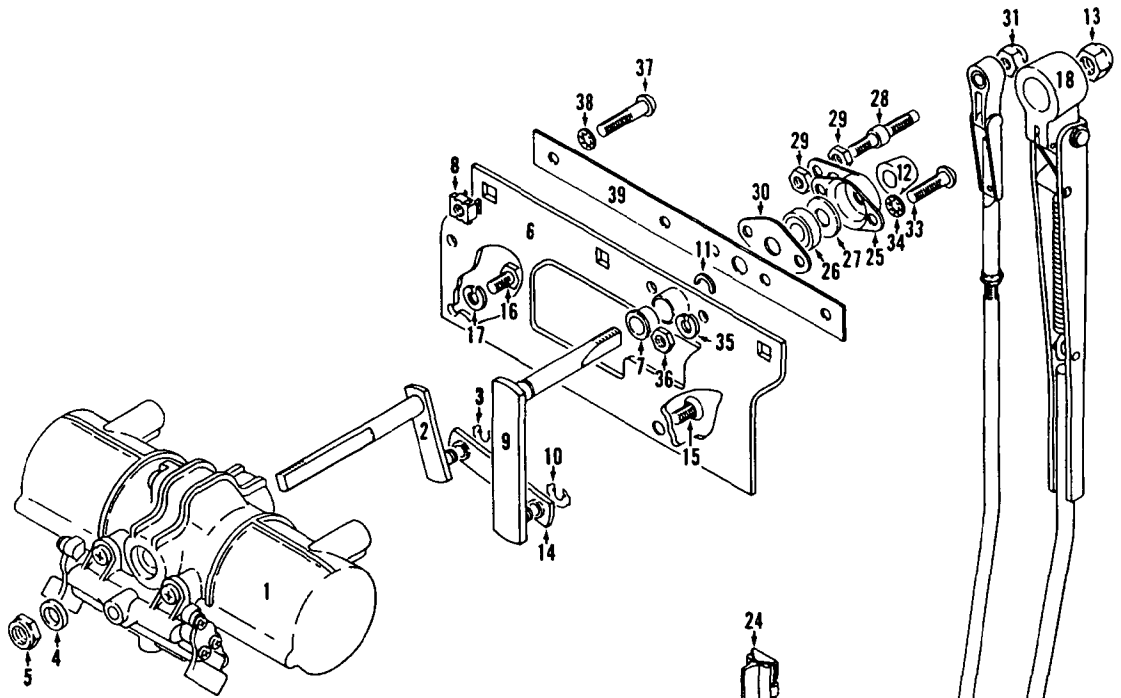
SUPERSEDES 95639 OF 3-20-90

REV	1	1.50 FT	MANITOWOC ENGINEERING CO	CAB SUB ASSEMBLY	8 7 90
DR	DC	MANITOWOC	ISSUES	HOLDER FOR CAPACITY	
DR	DC	SCALE: 1/8" = 1"	3900 3950W 3950D	CHARTS AND SERVICE	
APP	SCALE: 1/4" = 1"	4100 4600 S4 6000W		MANUAL	95639

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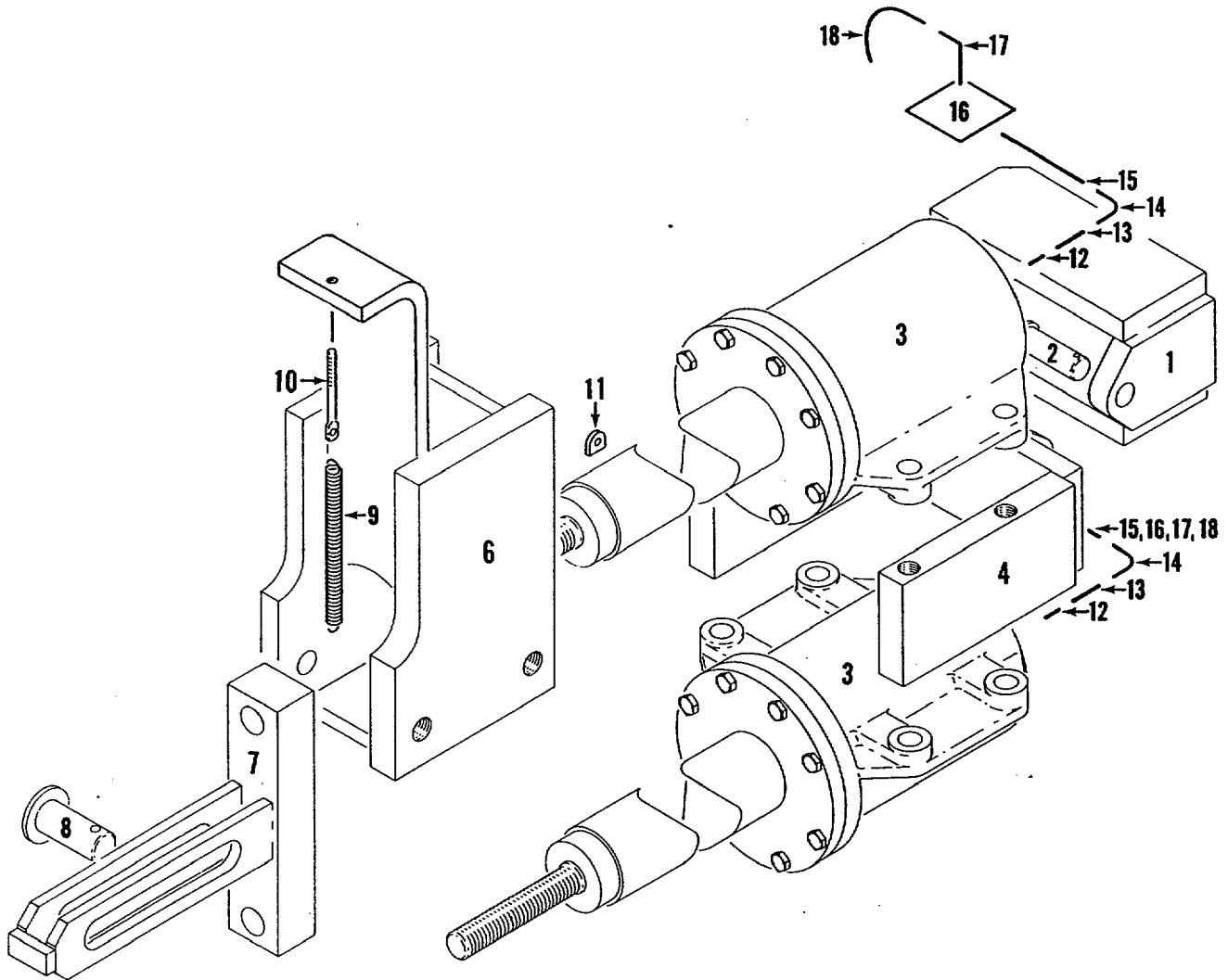
MATERIAL LIST ON BACK

WINDSHIELD WIPER

**PARTS MANUAL ALPHABETICAL INDEX**  
**Group B - Upperworks Machinery**

DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
Boom Hoist Chain Case	190184	D1	12/09/77	01/04/79	B0212
Boom Hoist Chain Case	95823	A1	02/11/76		B0212
Boom Hoist Control, Independent	163669	A	04/16/84	04/16/84	B0204
Boom Hoist Control, Independent	190815	D1	06/28/78	06/03/87	B0204
Boom Hoist Control, Independent	93059	F1	07/30/81	04/19/84	B0204
Boom Hoist Control, Independent	93560	K1	12/27/70	08/07/85	B0204
Boom Hoist Hydraulic Motor	182591	D1	08/20/75	01/14/85	B0205
Boom Hoist Hydraulic Motor	94879	-	08/14/73		B0205
Boom Hoist Hydraulic Piping	163135	-	12/19/83	02/20/92	B0209
Boom Hoist Hydraulic Piping	163136	-	12/19/83	01/31/92	B0209
Boom Hoist Hydraulic Piping	191438	A1	06/30/81	12/19/83	B0209
Boom Hoist Hydraulic Pump Drive	183358	-	10/17/77		B0206
Boom Hoist Pawl	182481	B1	03/26/75	01/06/84	B0211
Boom Hoist, Independent	65087	Q1	07/24/72	03/24/92	B0202
Countershaft, Drum Drive	33892	E1	12/07/67	02/27/85	B0501
Drum Brake - Front	31497	-	03/09/56		B0603
Drum Brake - Front	31497	-	11/11/82	05/04/92	B0603
Drum Brake - Front	49783	F1	05/11/73	05/18/83	B0603
Drum Brake - Front	49784	E1	05/14/73	05/18/83	B0603
Drum Brake Booster/Parking Brake	42768	E1	02/22/71	05/18/83	B0604
Drum Brake Booster/Parking Brake	93251	-	01/29/70	03/04/82	B0604
Drum Rotation Indicator - Front and Rear	182768	D1	02/05/76	01/08/79	B0607
Drum Rotation Indicator - Front and Rear	182769	D1	03/10/76	01/08/79	B0607
Drum Rotation Indicator - Front and Rear	95822	B1	02/11/76	02/14/86	B0607
Drum Shaft - Front	50922	D2	10/29/87		B0601
Drum Shaft - Front	50922	P1	10/29/87		B0601
Foot Pedals	182297	F1	05/21/74	02/08/82	B1202
Independent Swing Auxiliary Brake	184004	B1	05/01/79	09/30/81	B0404
Lubrication Pump & Piping (Sump)	66189	-	07/24/86	04/15/91	B1401
Main Drive Shaft	49645	D1	08/09/73	04/08/76	B1301
Rear or Rear Auxiliary Drum	22635	C1	11/04/56	06/06/88	B0801
Rear or Rear Auxiliary Drum	50927	-	10/29/87		B0801
Rear or Rear Auxiliary Drum	50927	-	10/29/87	11/18/04	B0801
Rear or Rear Auxiliary Drum Brake	160277	A1	12/27/81	05/18/83	B0803
Rear or Rear Auxiliary Drum Brake	49308	G1	02/22/71	05/04/92	B0803
Rear or Rear Auxiliary Drum Control/Band	182345	-	07/25/74	05/12/95	B0802
Rear or Rear Auxiliary Drum Parking Brake	33749	G1	02/22/71	06/02/80	B0804
Slide Pinion Shaft (Intermediate Travel or Swing Shaft)	181754	A1	07/17/72	05/16/75	B1601
Swing Lock Control	182394	E1	08/29/74	06/29/82	B1701
Swing Shaft	91301	E1	03/07/66	04/09/86	B1901
Swing Shaft - Intermediate	21629	C1	03/22/48	12/12/72	B1902
Travel Drive	65095	-	09/11/72	11/29/79	B2001
Travel Drive Control/Brake	184084	C1	09/06/79	09/24/84	B2003
Travel Drive Piping	163134	-	12/19/83	01/08/92	B2004
Travel Drive Piping	49770	G1	06/29/76	12/10/79	B2004
Travel Drive Transmission	182880	B1	06/30/76	04/24/84	B2002
Travel Drive Transmission	49630	A2	07/18/72	08/20/82	B2002
Travel Drive Transmission	49630	I1	03/06/81		B2002
Travel Drive Transmission	49630	J1	06/23/81	08/20/82	B2002
Travel Drive Transmission	65094	G1	09/08/72	07/28/82	B2002

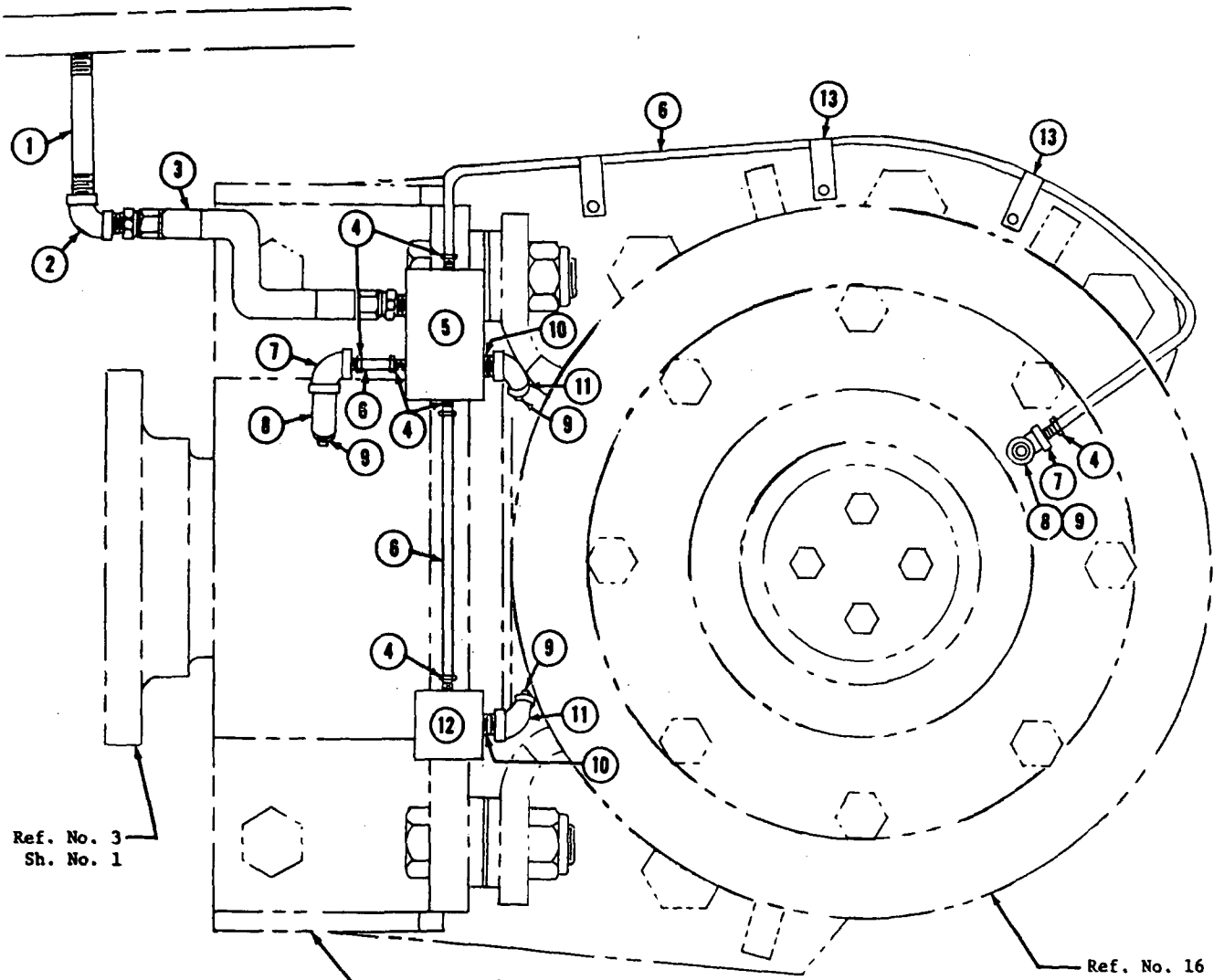
MASTER



33749E1

MATERIAL LIST ON BACK

DRUM BRAKE



Ref. No. 3  
Sh. No. 1

Ref. No. 6  
Sh. No. 1

Ref. No. 16  
Sh. No. 1

49630A2

49630A2

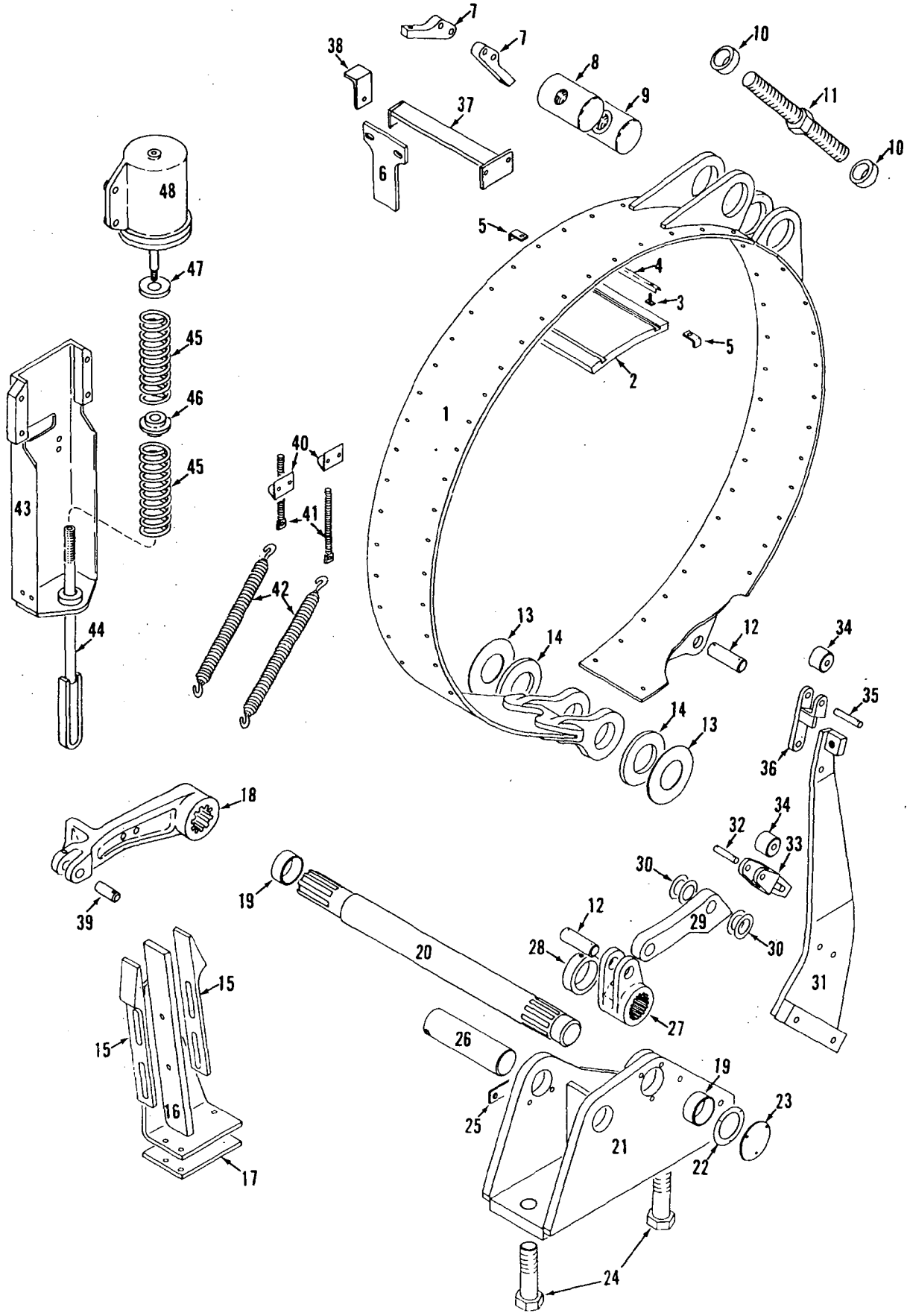
MATERIAL LIST ON BACK

LUB. PIPING

MANITOWOC ENGINEERING CO.

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Manitowoc, Wisconsin



49783C1

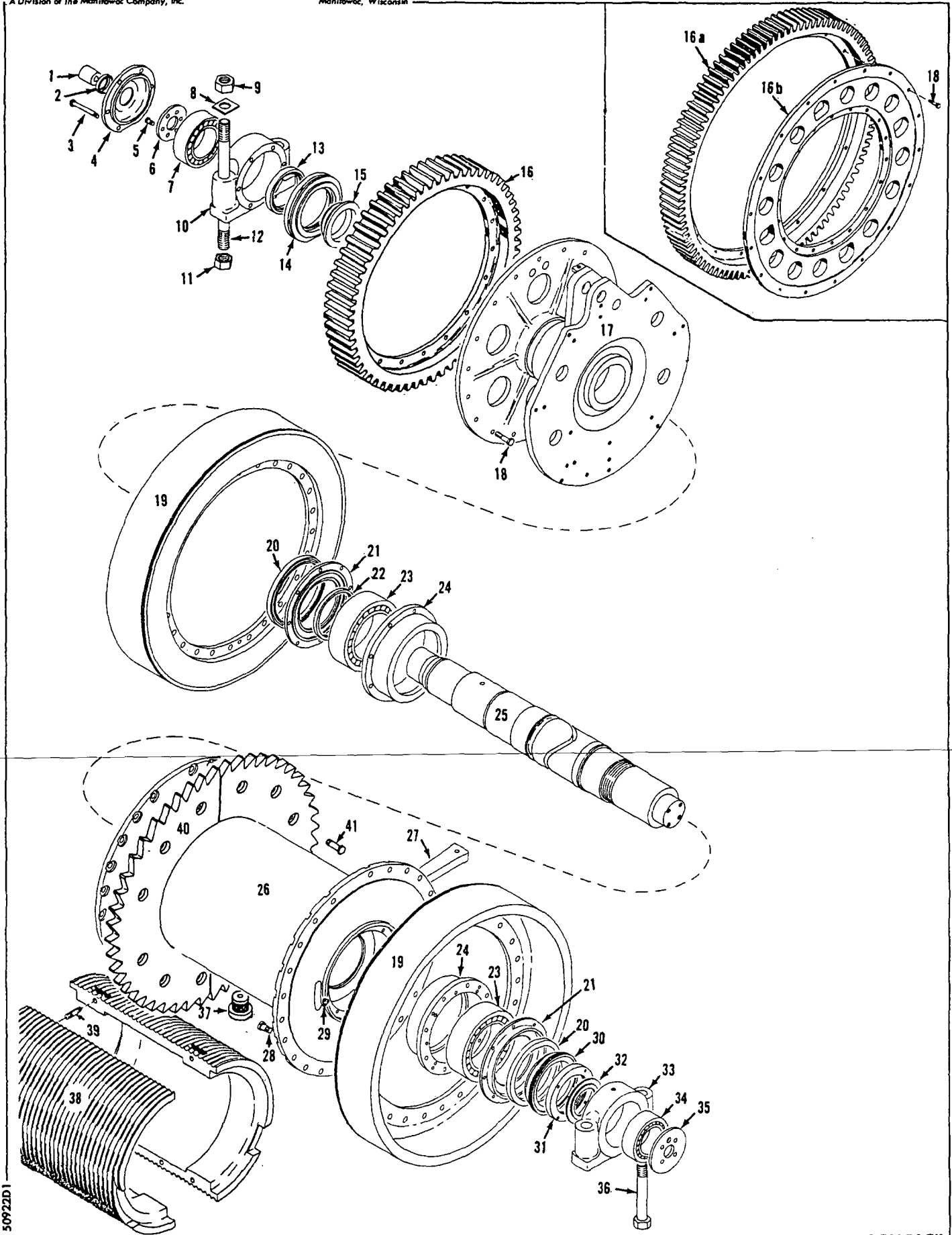
MATERIAL LIST ON BACK

LEFT FRONT DRUM BRAKE

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



50922D1

MATERIAL LIST ON BACK

FRONT DRUM SHAFT

65087-1 Cont.	REV. Q	MODEL 4600 S4, 6000W, 6000 S2, 60' PLATFORM RINGER
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BOOM HOIST

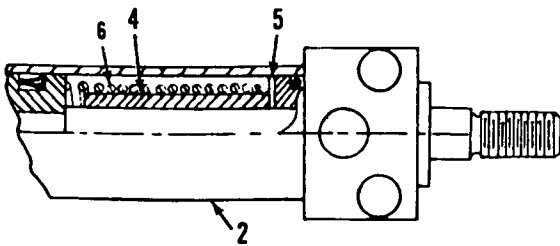
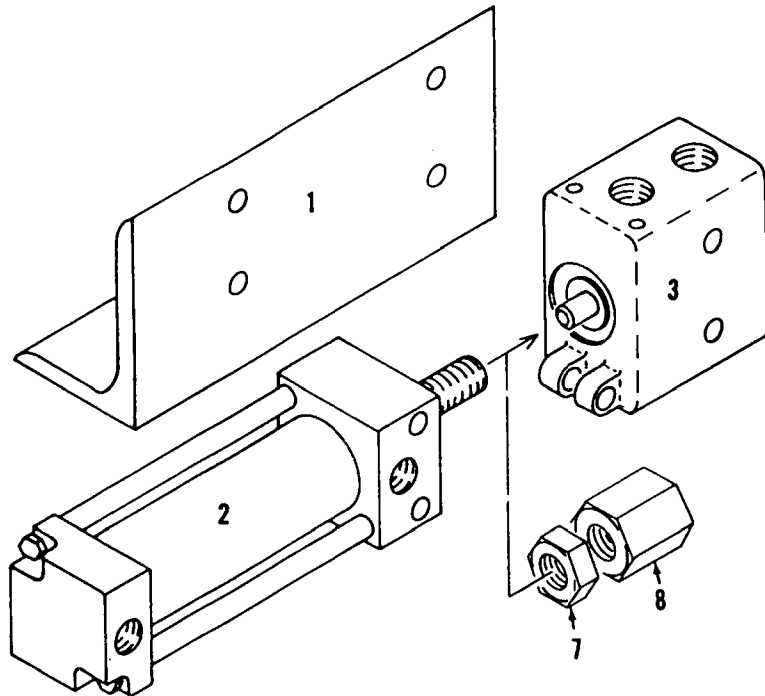
REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
45	140797	1	GASKET	
46	140682	1	COVER, Bearing w/capscrews and lockwashers	
47	78870	1	PLATE, End	
	612661	2	CAPSCREW, Hex (5/8" - 11 UNC - 2A x 1-1/2" Lg.)	
	710307	2	LOCKWASHER (5/8")	
48	97220	1	DRUM, Brake (See Note 4)	
49	97221	1	DRUM, Brake (See Note 4)	
50	79001	1	SPACER	
51	597020	1	RING, "O"	
52	136025	1	RETAINER, Bearing w/capscrews and lockwashers	
53	136027	1	GASKET	
54	622606	2	SEAL, Oil	
55	225454	1	BEARING, Roller	
56	136026	1	FLANGE, Grease seal	
57	166286	1	SHAFT, Worm	
58	76868	1	FLANGE, Grease seal	
59	225364	1	BEARING, Roller	
60	597002	1	RING, "O"	
61	622645	2	SEAL, Oil	
62	76939	1 set	SHIM (.080" set)	
63	76881	1	RETAINER, Bearing w/capscrews and lockwashers	
64	140804	1	COUPLING (Delete when reduction is used - See B2.7)	
65	182591	1	MOTOR, Hydraulic (See Note 2)	
66	429644	4	COUPLER, Quick (for air lines)	
67	146443	1	COVER (Added Aug., 1979)(See Note 5) (See Note 6)	
	612553	4	CAPSCREW, Hex (1/2" - 13 UNC - 2A x 1" lg.)	
	709150	4	LOCKWASHER (1/2")	
68	146444	1	GASKET (Added Aug., 1979)	
69	596200	1	RING, Retaining (machines after 2-6-84 revision)	
			<u>NOTE 1:</u> Ref. Nos. 2, 3, 4, 5, changed per design change of Jan. 12, 1976, to enlarge access hole to inspect worm gear. Access hole is now 16" x 7-3/4". Previous access hole was 16" x 5-1/4" and used the following parts:	
2	94296	1	GASKET	
3	181773	1	COVER w/capscrews and lockwashers	
4	140803	1	GASKET	
5	140802	1	COVER w/capscrews and lockwashers	
			Cover #182688 has different hole spacings on each end than cover #181773.	
			<u>NOTE 2:</u> Prior to design change of June 29, 1976, the following was used on Model 4600 S4.	
65	536262	1	MOTOR, Hydraulic	

Run as Front

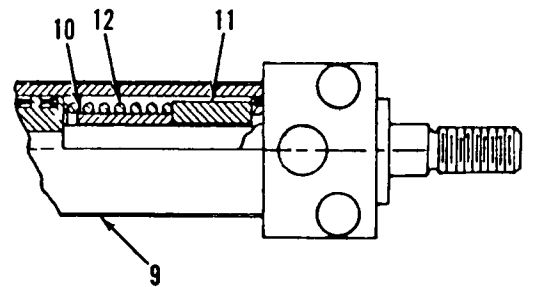
65087 Q1 Cont. (1)

REV.	Q	65087-1 Cont.
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PLEASE GIVE MACHINE S/N W/ORDER



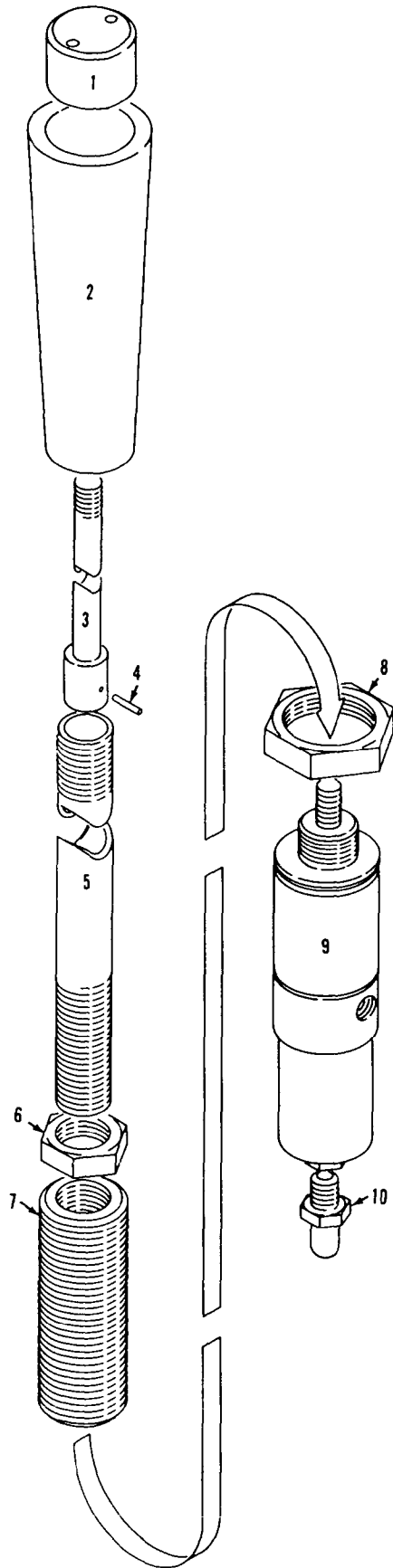
HYDRAULIC CYLINDER 147767



HYDRAULIC CYLINDER 163682

93059D1

MASTER



95823A1

MATERIAL LIST ON BACK

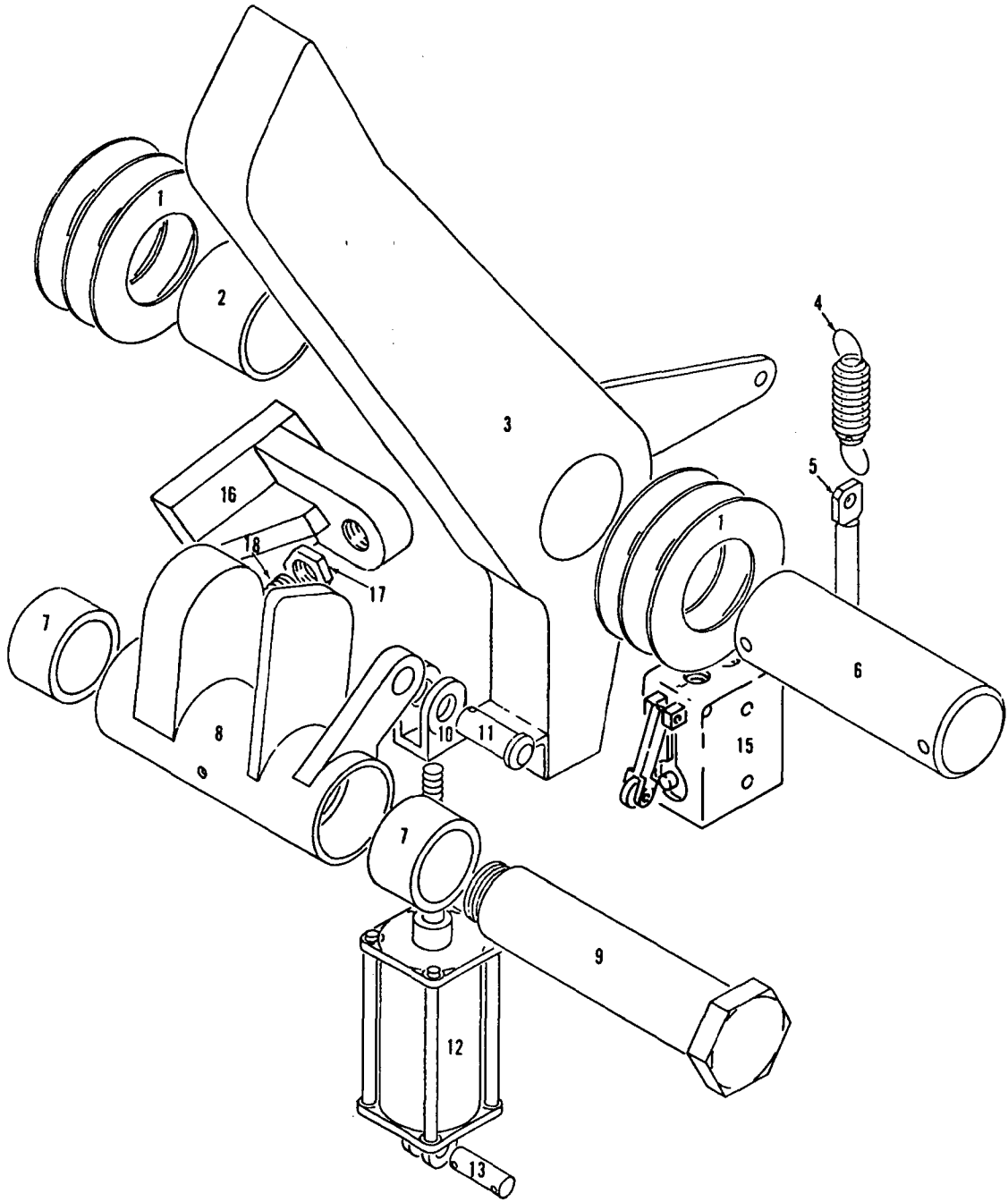
Boom Hoist Rotation Indicator Hand Lever



MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



182481A1

MATERIAL LIST ON BACK

BOOM HOIST PAWL

183358

# MASTER

-82.6-82.9-D41-

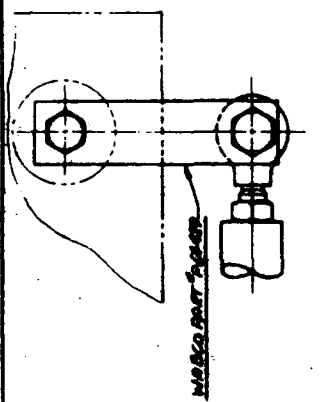
REV. NO.	DATE	DESCRIPTION
1	10-72-77	183358
2		66432
3		66432

BILL OF MATERIAL	
QTY	DESCRIPTION
1	AIR POSITIONER 715572
1	POSITIONER BRACKET 715573

8-22-78 J.M. DELETED

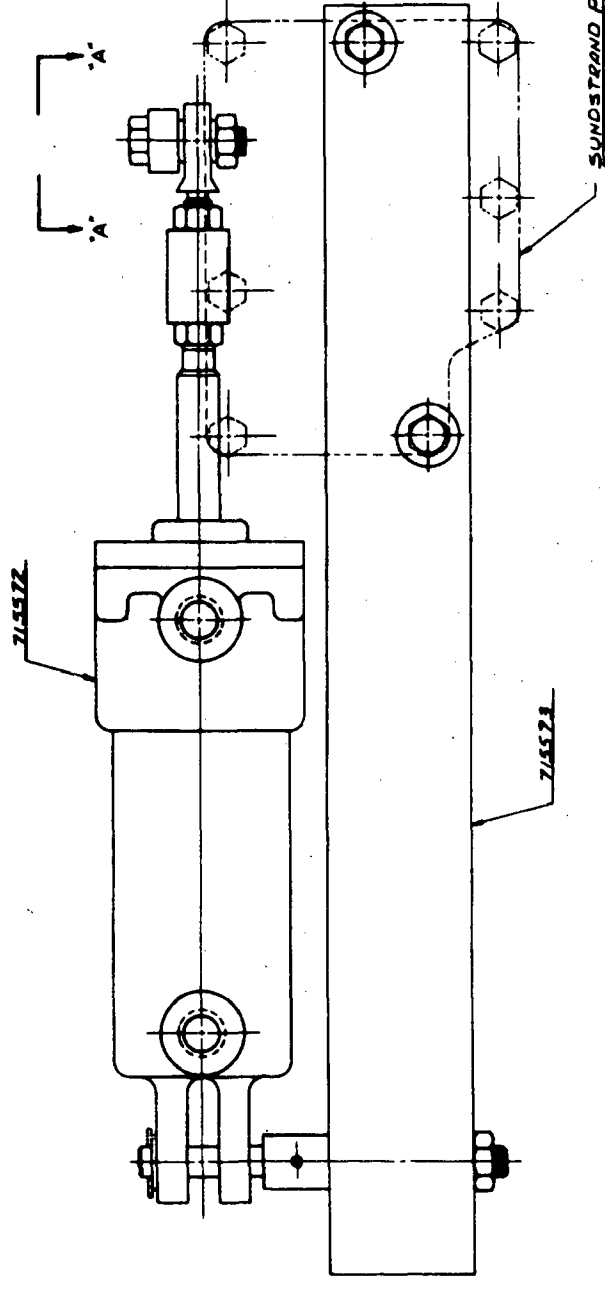
183358

NOTE: POSITIONER OPERATES FROM 20-70 P.S.I.



VIEW A-A  
TYPICAL FOR PUMP MODELS  
23 1 2 5

VIEW B-B  
TYPICAL FOR PUMP MODELS  
2 4 7 8 6



SUNSTRAND PUMP DISPLACEMENT CONTROL VALVE - REF.

NOTICE  
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OF MARITONOC ENGINEERING CO.

DESIGNER	DATE
W.M.P.S.	10-72-77
DR. CAH	
WORKS ALL	
SUPERSEDES 181945, 182682, 182682	
MARITONOC ENGINEERING CO. AIR POSITIONER ASSEMBLY FOR SUNSTRAND PUMPS	

DO NOT SCALE THIS DRAWING

82.6-82.9-D41

CPT

190815-1 Cont.	REV. D	MODEL 4600 S4, 6000W, 6000 S2, 7000
----------------	-----------	--

HYD. BOOM HOIST BRAKE

RUN AS A FRONT

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
			NOTE 2: On machines with caliper brake Assm. delete Ref. #2 Guard 49970, Ref. #3 Support 140769, Ref. #3 Pad 142228, Ref. #5 Support 142227 and Add -	
2	167229	1	GUARD, w/capscrews, hex nuts and lockwashers	
3	167228	1	SUPPORT	
4	167227	1	PAD, Mounting	
5	167226	1	SUPPORT w/capscrews and lockwashers	
			0-71, 93560	
				REV. D
				190815 - 1

190815 DI Cont'd.

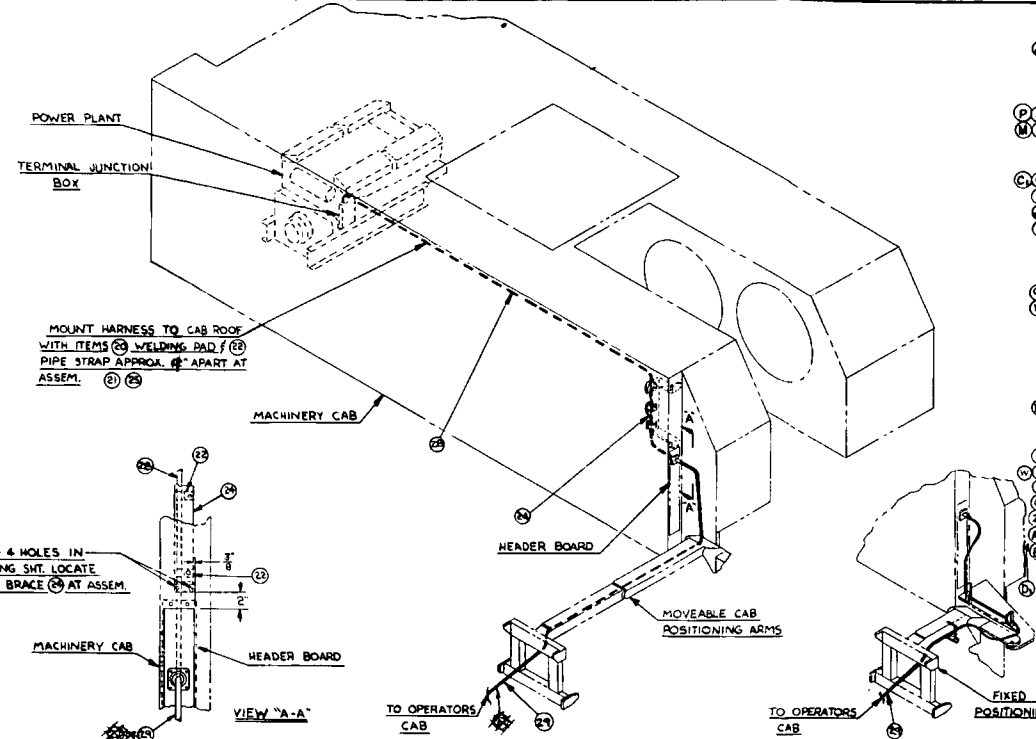
PLEASE GIVE MACHINE S/N W/ORDER

00000

6E

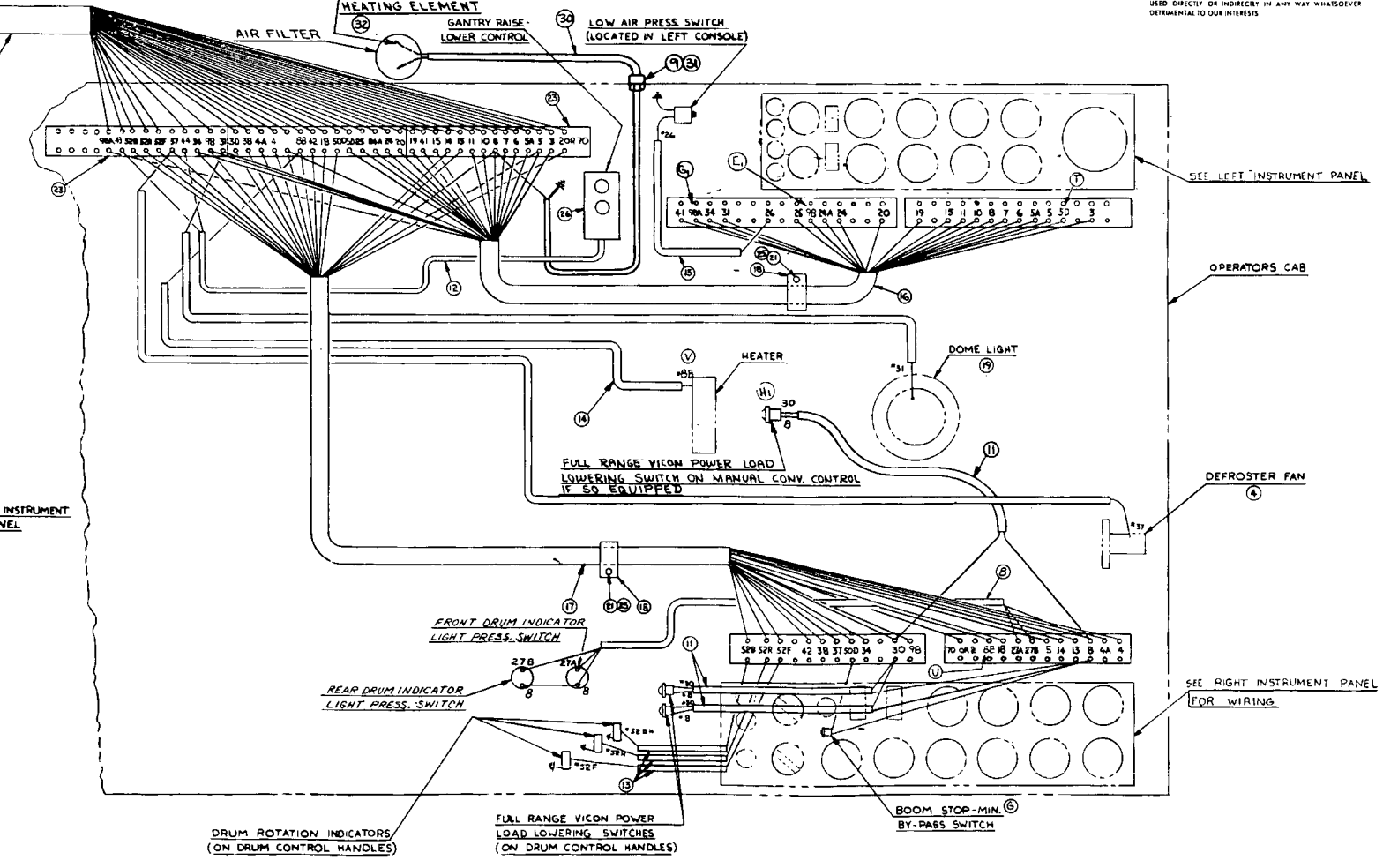
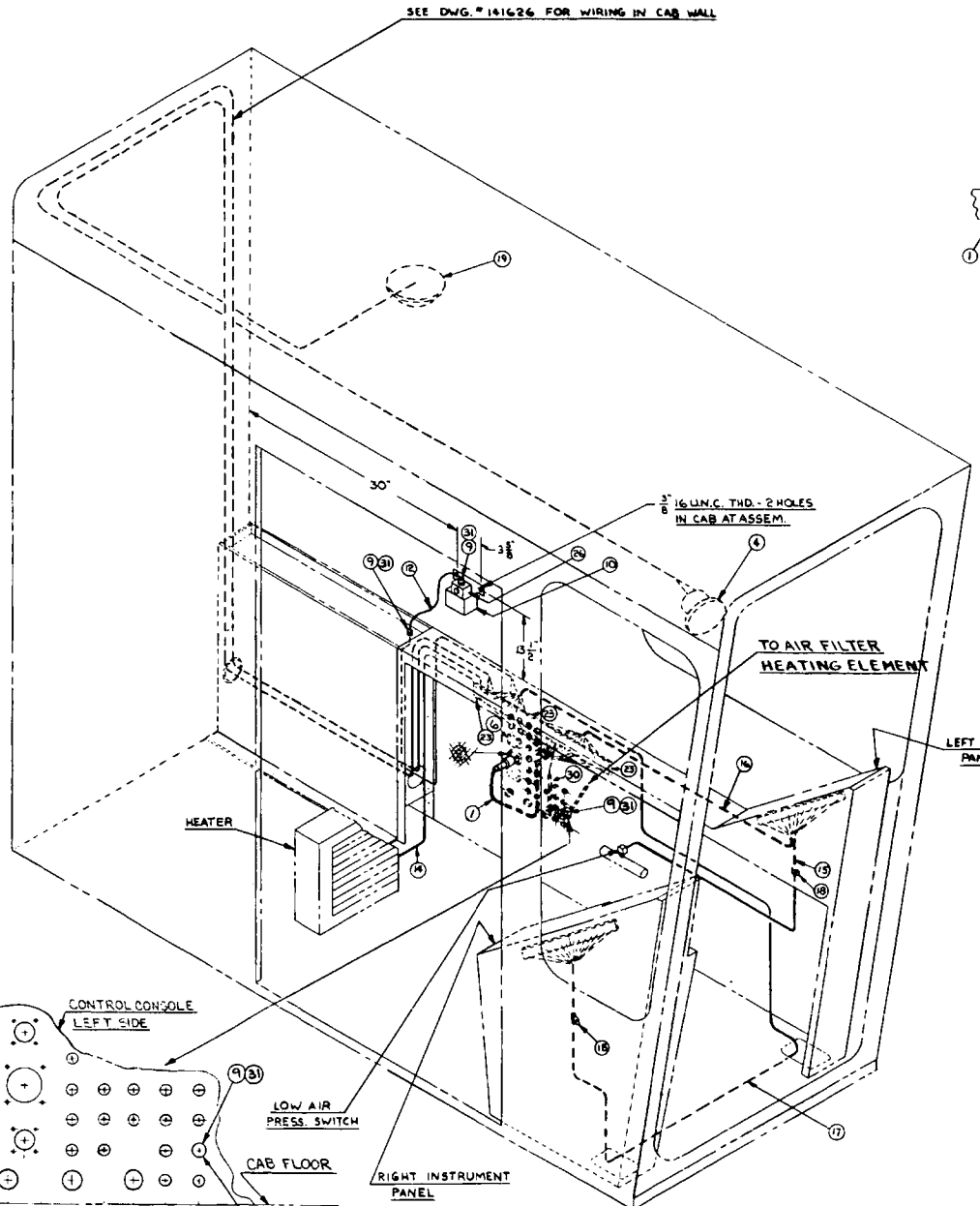
-C33

- NOTE 1**  
IDENTIFY ALL WIRES THE SAME AS SHOWN ON TERMINAL STRIPS.
- NOTE 2**  
FOR WIRING NOT SHOWN SEE INSTRUMENT PANEL ASSEM.
- NOTE 3**  
FOR MACH'S. W/FULL RANGE VICON POWER LOAD LOWERING ASSIST.
- NOTE 4**  
FOR MACH'S. W/DRUM ROTATION INDICATORS.
- NOTE 5**  
FOR ELEC. WIRING IDENTIFICATION NUMBERS SEE CHART NO. 5405 (MASTER NUMBERING INDEX).
- NOTE 6**  
FOR MACH'S. W/OUT AIR CONDITIONER ADD:  
1 143712 COVER
- NOTE 7**  
FOR MACH'S. W/OUT MOVEABLE CAB SUPPORT ASSEM. ADD:  
1 143712 COVER
- NOTE 8**  
FOR MACH'S. W/MOVEABLE CAB SUPPORT
- NOTE 9**  
FOR MACH'S. W/STO. DE LEFT ELEV. OPER. CAB W/ W/RED CAB SUPPORT
- NOTE 10**  
USE TWO WIRES ON TERMINALS \*5A & 6 FROM JUNCTION BOX ON POWER PLANT TO AMMETER GAUGE.



BILL OF MATERIAL					
QTY	DESCRIPTION	ITEM NO.	MATERIAL	QTY	REMARKS
1	CABLE HARNESS	477300			
2	BRACKET	143452			
3	WIRING IN PILOT HOUSE WALL	141626			
4	DEFROSTER FAN	180880			
5	COVER	143712			
6	COVER	143713			SEE NOTE 1
7	IDENTIFICATION TAGS	306008			SEE NOTE 1
8	3 COND. CABLE #16 WIRE	371804			
9	GRIP LOAD CONNECTOR	471682			
10	GANTRY CONTROL SUPPORT	138907			
11	3 COND. CABLE #18 WIRE	371827			SEE NOTE 1
12	3 COND. CABLE #18 WIRE 4' LG.	371827			ADDED
13	2 COND. CABLE #18 WIRE 4' LG.	371827			SEE NOTE 1
14	1 COND. CABLE #14 WIRE 8' LG.	371829			
15	1 COND. CABLE #14 WIRE 4' LG.	371829			
16	1 37 COND. CABLE #16 WIRE 7' LG.	291090			
17	1 37 COND. CABLE #16 WIRE 11' LG.	291090			
18	2 STRAP	349008			
19	1 DOME LIGHT	507568			
20	20 WELDING PAD	554113			
21	22 1/2\"/>				

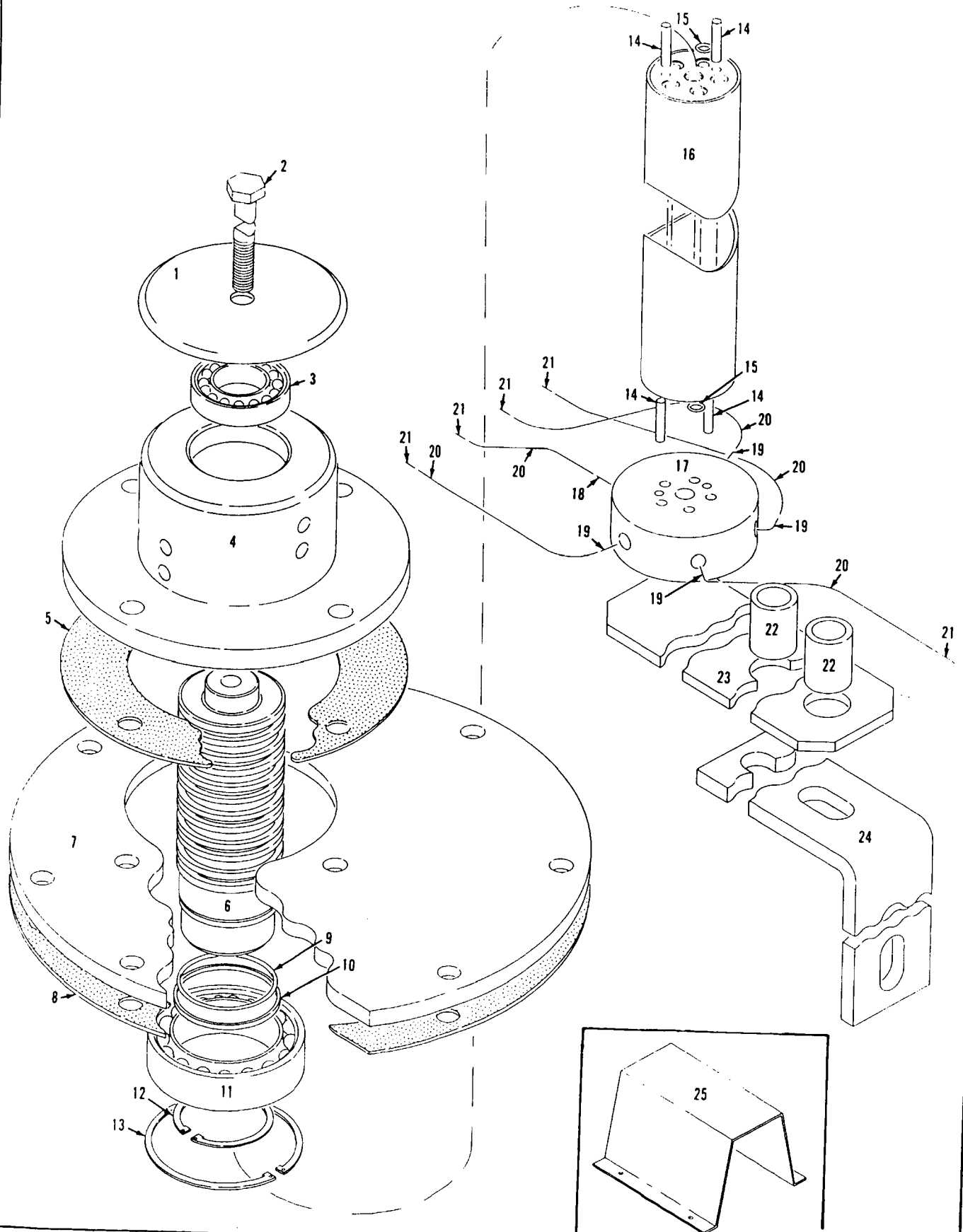
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PARTIAL VIEW  
SCALE: 3"-1'-0"  
ENLARGE EXISTING HOLE TO 7/8" DIA.

SUPERSEDES DWS # 49864		DATE 2-27-76	
BY JCS	MANITOWOC ENGINEERING CO.	DIAGRAMS-WIRING	PROJECT NO.
BY WH	MODEL 4600 SERIES 4	INSTRUMENTS/CONTROLS	CODE NO.
		GENERAL ARRANGEMENT	DWG. NO. 65460
		(24 VOLT) UNIV. CAB	

MASTER



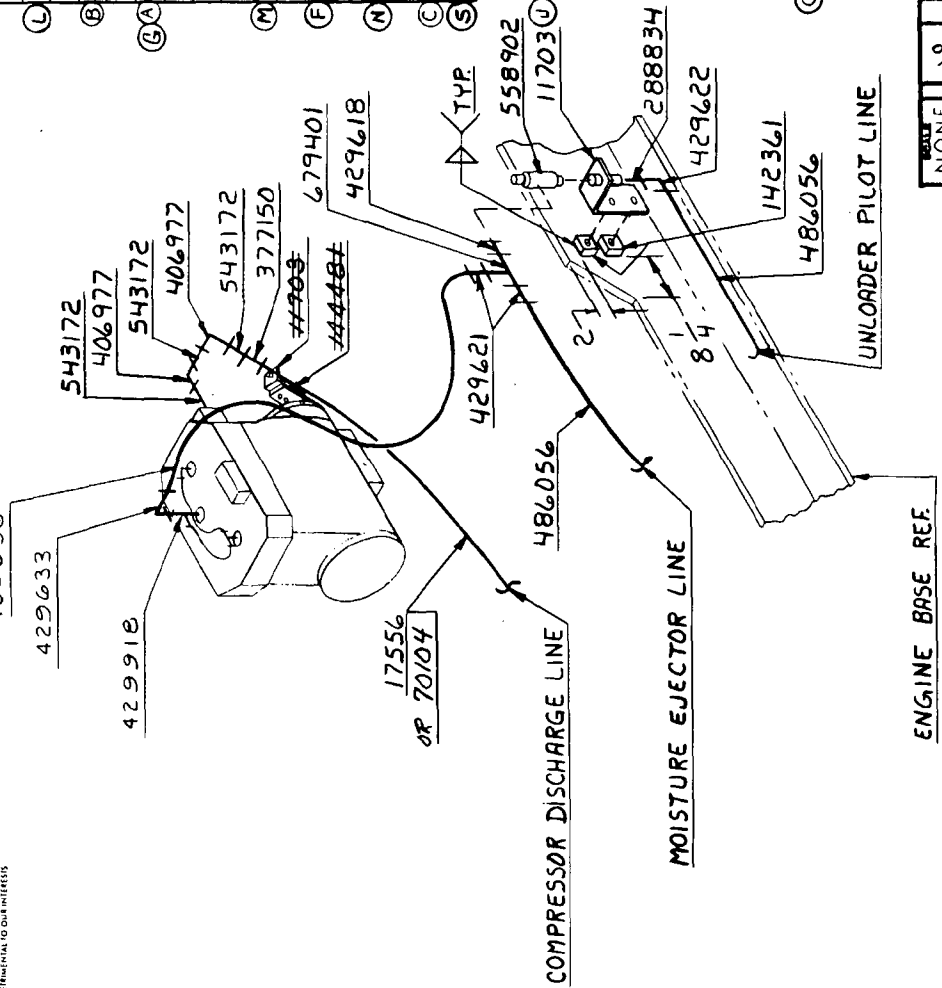
65912A1

MATERIAL LIST ON BACK

Air Joint

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ITEM NO.	QTY	DESCRIPTION	BILL OF MATERIAL		REMARKS	ASSEMBLED USED ON
			LIBRITY PT. INCL.	MATERIAL		
1		BRACKET		11703		65595
1		SUPPORT		14448		65229
1		1 I.D. X 8 FT. I.L.G. HOSE		17556	SERIES 4 ONLY	65967
2		MOUNTING PAD		142361		65970
1		1/2 X 1/4 NUT BUSHING		288834		61868
1		PIPE COUPLING 1 x 3/4		377150		
2		3/4 X 90° ELBOW		406977		
1		3/8 X 1/4 CONNECTOR		429618		
1		1/4 HEX. NIPPLE		429621		
2		3/8 X 1/4 MALE CONNECTOR		429622		
1		3/8 X 1/8 MALE CONNECTOR		429633		
1		1/4 TUBE X 1/8 PIPE TEE		429918		
AS REQD		3/8 PLASTIC TUBE		486056		
1		3/8 X 1/4 MALE ELBOW		429622		
1		3/4 X 3 LG. NIPPLE		542993		
1		3/4 X 5 LG. NIPPLE		542997		
1		PILOT UNLOADER		558902		
3		NIPPLE 3/4 X 1/8		543172		
1		1/4 TEE		679401		
AS REQD		3/8 COPPER TUBE		696216		
1		1 I.D. X 78 LG. HOSE		70104	SERIES 1 & 3	

NOTE 1  
 OPERATING PRESSURE TO BE SET AT 120 ± 12 P.S.I.  
 FOR SERIES 4 ONLY

NOTE 2  
 FOR ADDITIONAL PIPING SEE AIR TANK  
 AND PIPING ASSY.

NOTE 3  
 OPERATING PRESSURE TO BE SET AT 105 ± 12 P.S.I.  
 FOR SERIES 1 & 3 ONLY

DATE	6-1-77
PATTERN NO.	
CODE NO.	
DRAWING NO.	96516

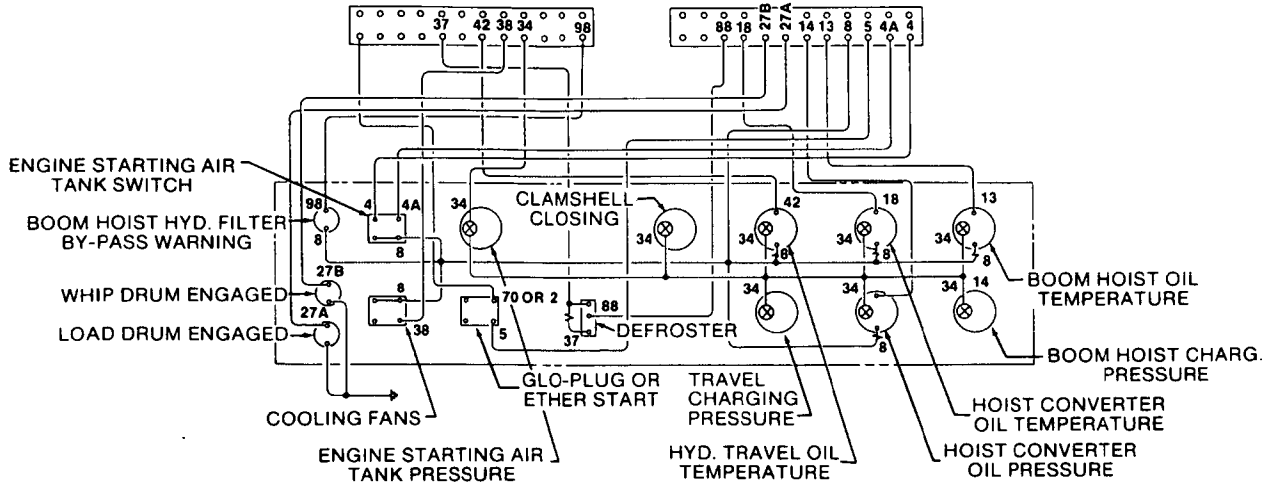
SCALE	NONE
DR. R.L.K.	9
CHK. J.D.W.	15
APP. G.M.P.	19

MANTOWOC ENGINEERING CO.	POWER PLANT SUB-ASSY
MANTOWOC, WISCONSIN	COMPRESSOR - ENG. MTD
MODEL 4600 SERIES 1,3,4	30 CFM FOR CUMMINS

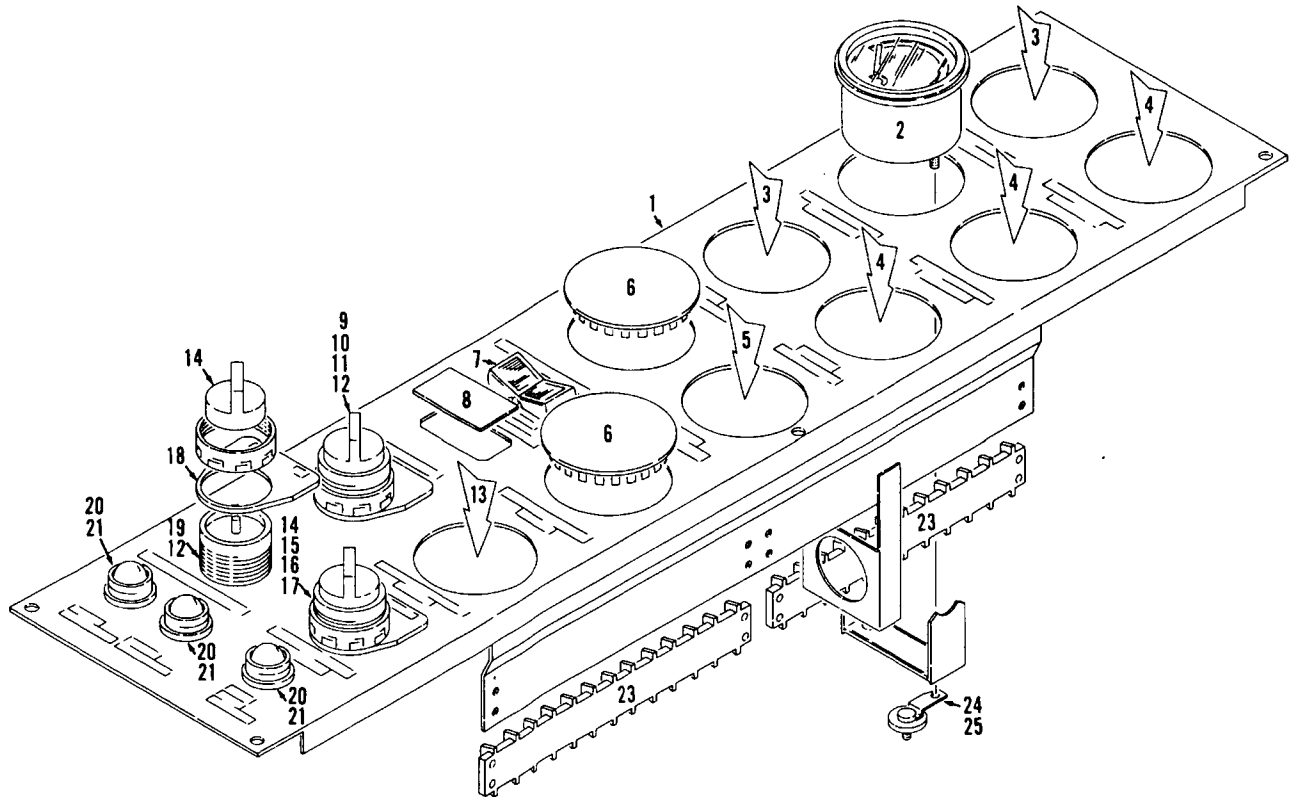
0-72,0-147

-C.I.-





WIRING DIAGRAM (REAR VIEW)



190215D1

MATERIAL LIST ON BACK

INSTRUMENT PANEL

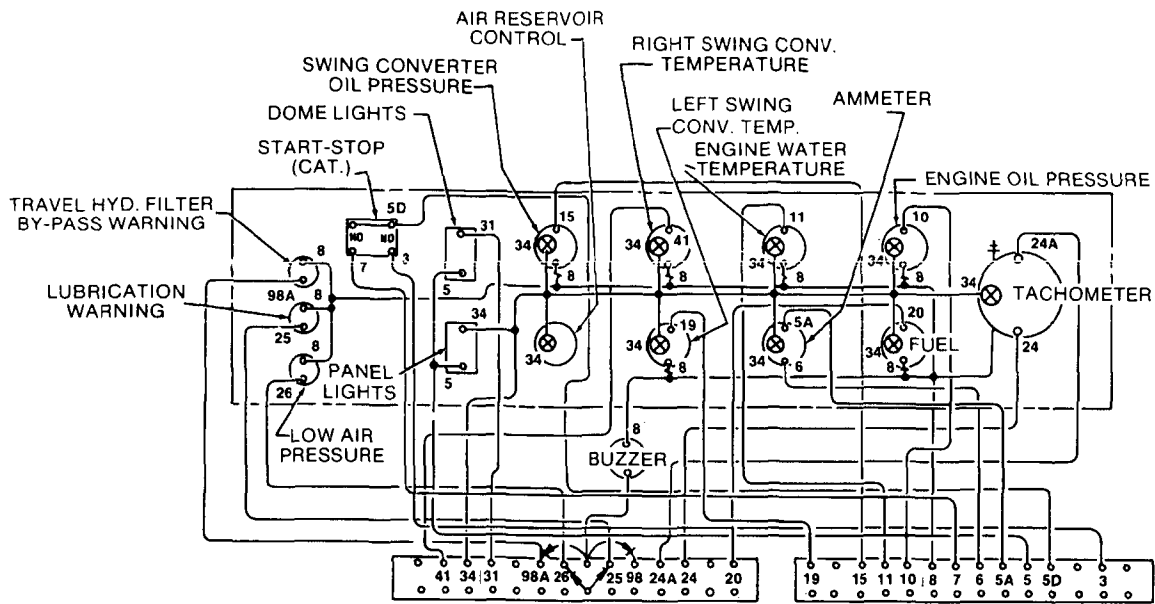
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below

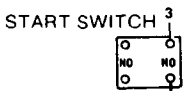


- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

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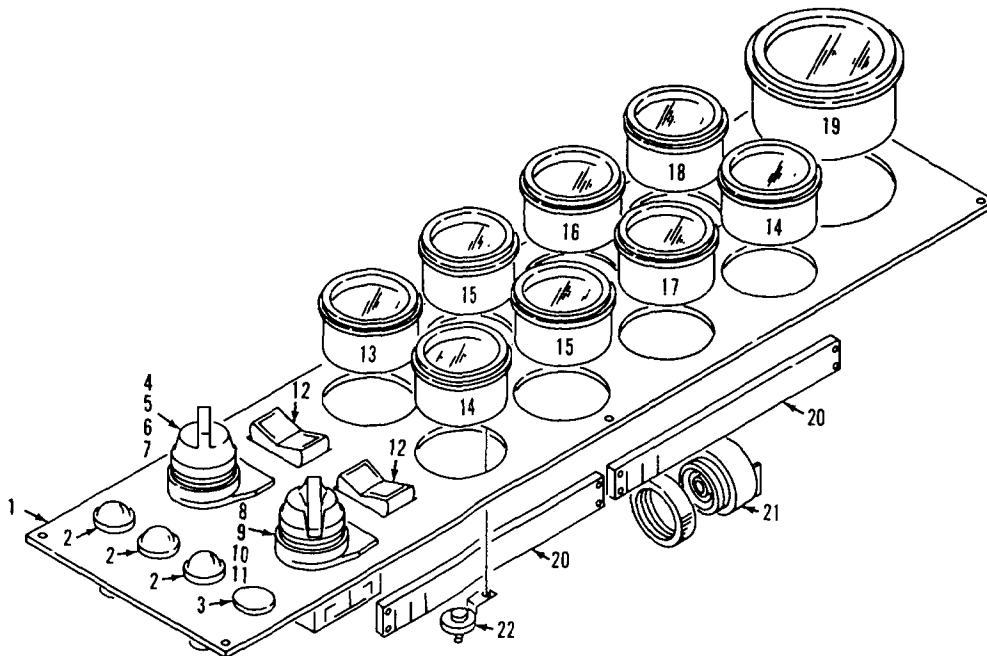


WIRING DIAGRAM (REAR VIEW)



RUN-STOP SWITCH 5D

CUMMINS POWER PLANT

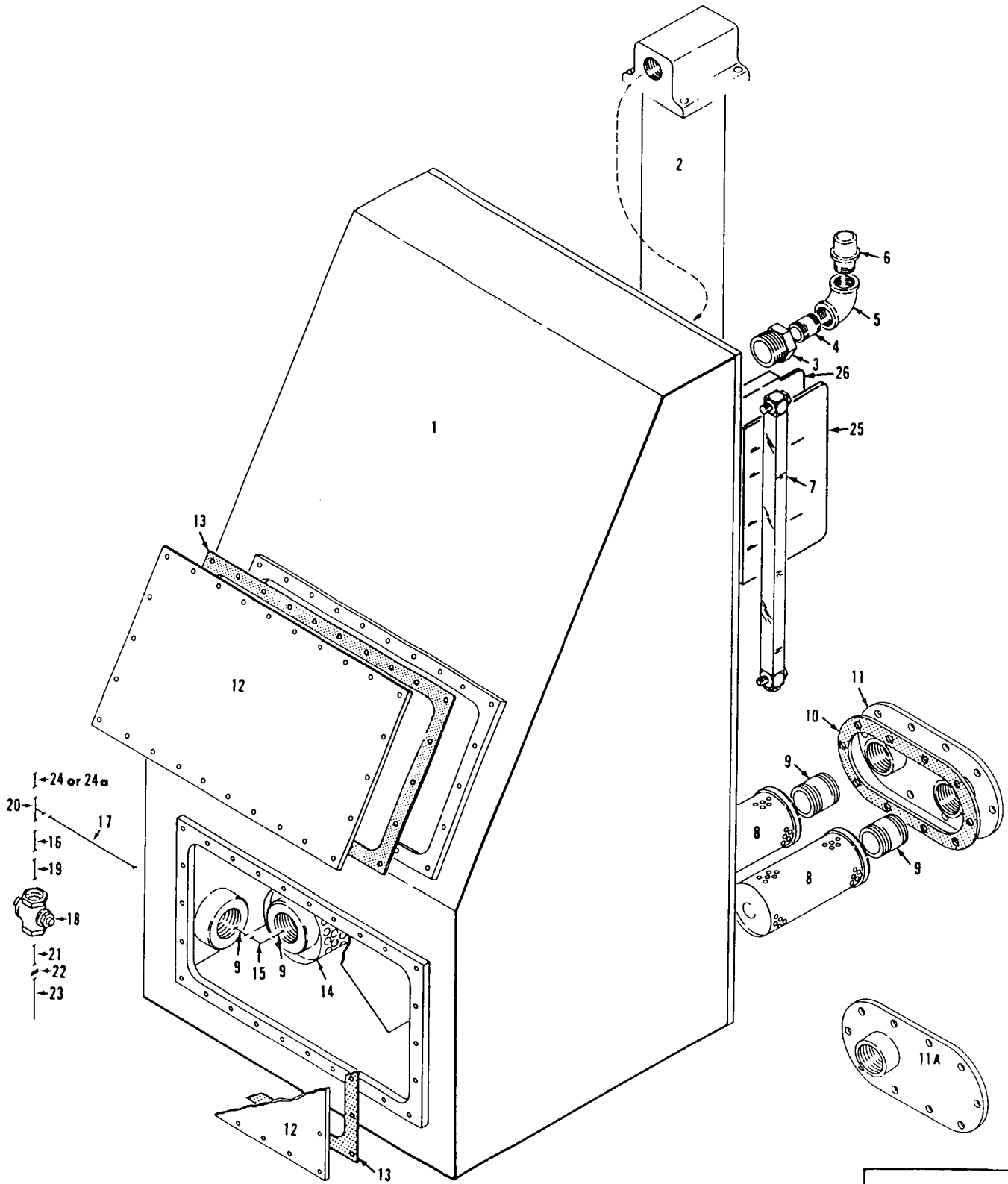


190217 E1

MATERIAL LIST ON BACK

INSTRUMENT PANEL

MASTER



4973901

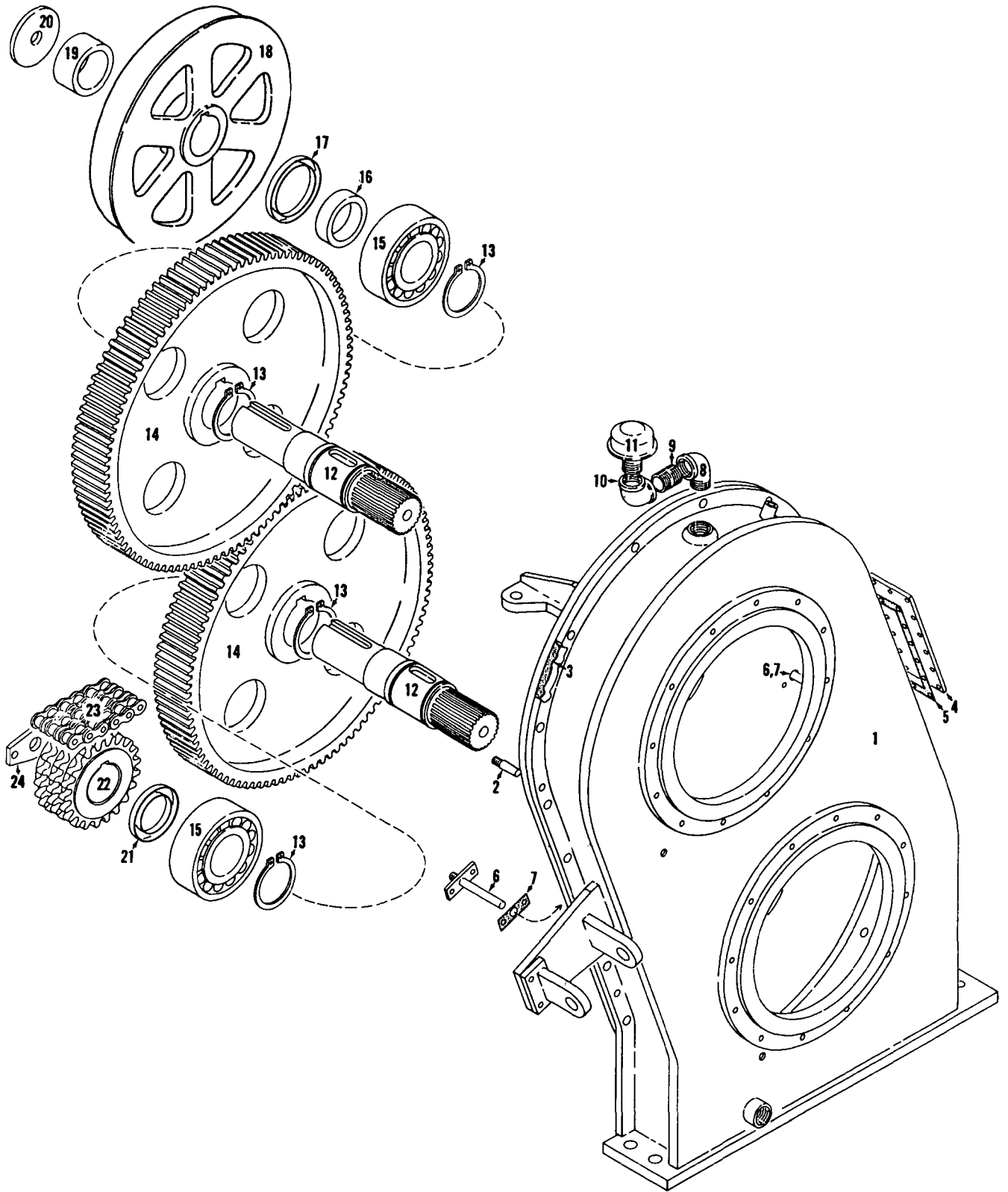
MATERIAL LIST ON BACK

HYDRAULIC TANK

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



MASTER

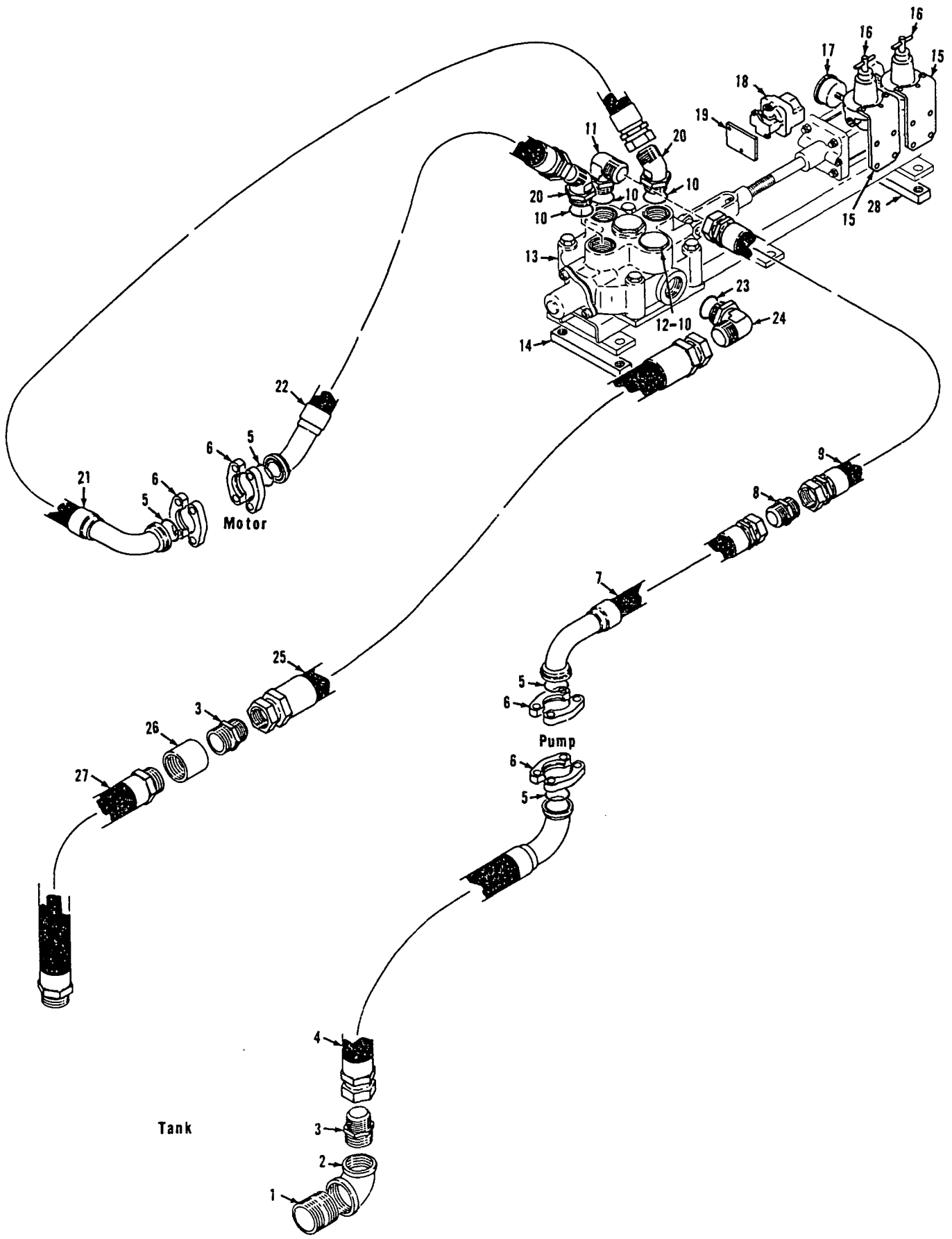
65106 A3

65106A3

MATERIAL LIST ON BACK

SWING REVERSING CASE

MASTER

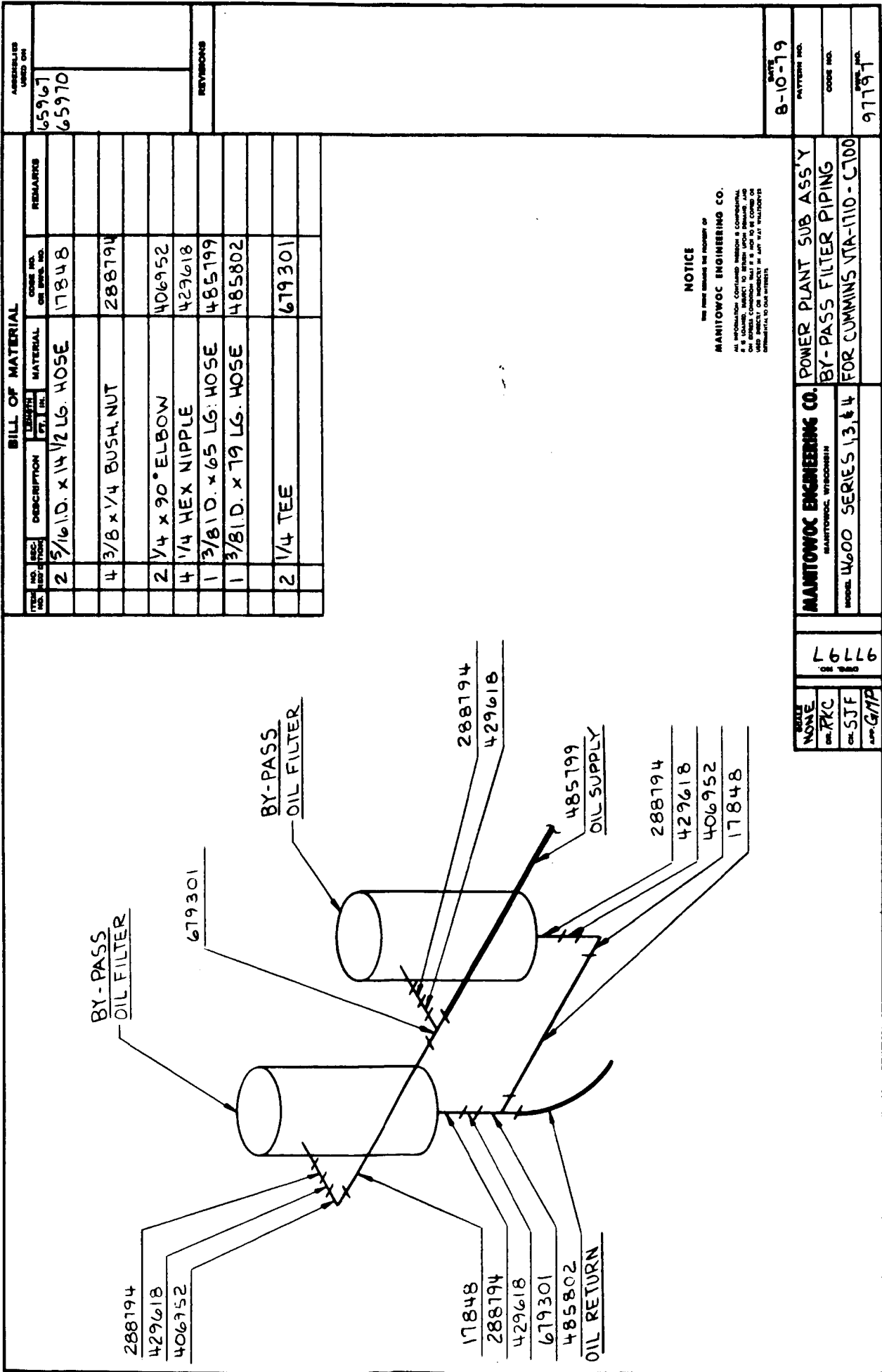


65225C1

MATERIAL LIST ON BACK

POWER LOAD LOWERING

9779



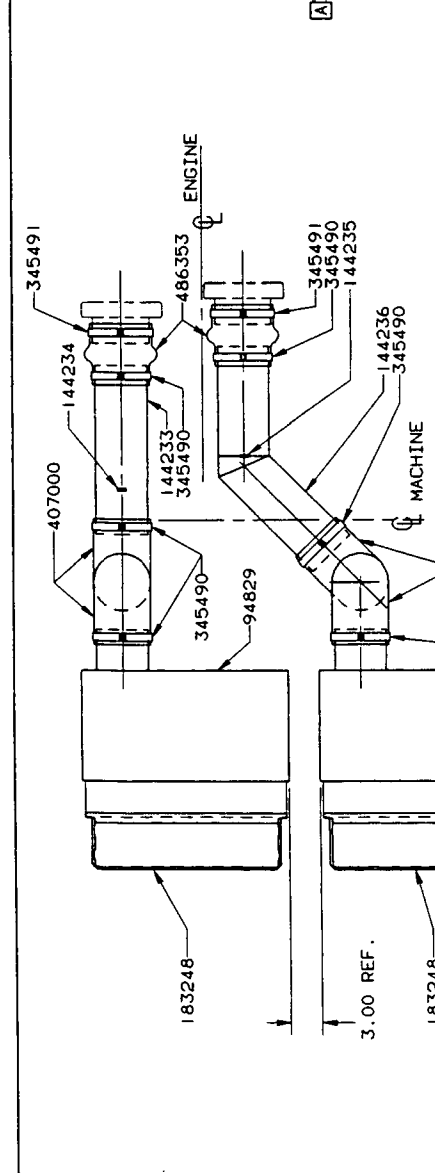
BILL OF MATERIAL				REMARKS	AMOUNTS USED ON
ITEM NO.	QTY	DESCRIPTION	MATERIAL	QTY	DATE
2	5/16 I.D. x 1/4 LG. HOSE	17848		65961	
4	3/8 x 1/4 BUSH, NUT	288794		65970	
2	1/4 x 90° ELBOW	406952			
4	1/4 HEX NIPPLE	429618			
1	3/8 I.D. x 65 LG. HOSE	485799			
1	3/8 I.D. x 79 LG. HOSE	485802			
2	1/4 TEE	679301			

DATE	9779
BY	RKC
CHECKED	STJ
APP. G/MP	
MANITOWOC ENGINEERING CO.	POWER PLANT SUB ASS'Y
MANITOWOC, WISCONSIN	BY-PASS FILTER PIPING
MODELS 14600 SERIES 1,3,6,4	FOR CUMMINS VTA-1110-CJ00

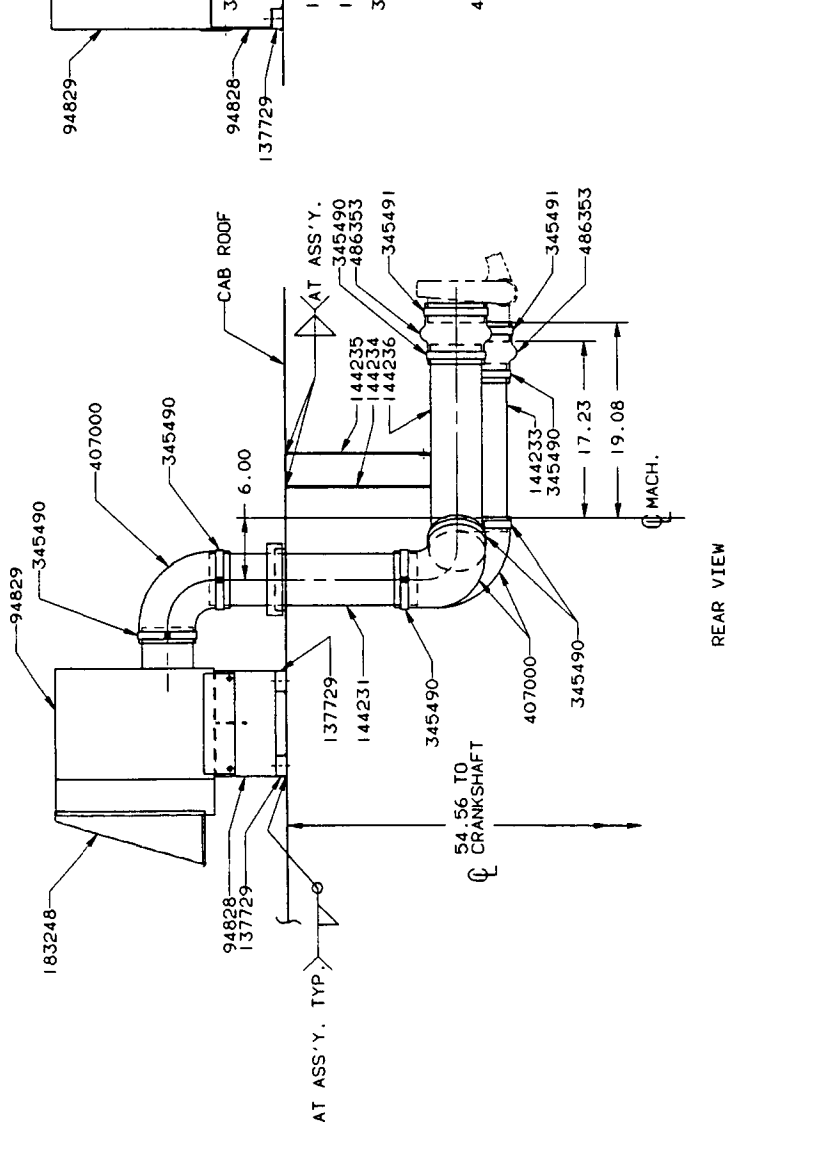
ITEM NO.	REV.	DESCRIPTION	MATERIAL	QTY	UNIT	ASSEMBLIES USED ON
2		SUPPORT				652229
2		FARR AIR CLEANER				94828
1		HOSE CLAMP - 5.25 TO 5.60				345490
8		MOUNTING PAD				137729
1		AIR CLEANER TUBE				144231
1		AIR CLEANER TUBE				144232
1		AIR CLEANER TUBE				144233
1		SUPPORT				144234
1		SUPPORT				144235
2		HOSE CLAMP - 5.75 TO 6.10				345491
2		RAIN GUARD				183248
4		5.00 I.D. RUBBER ELBOW				407000
2		HUMP HOSE 5.50 TO 5.00				486353
1		AIR CLEANER TUBE				144236

REVISIONS:  
 7-29-77 KGB  
 [A] WAS 347056  
 3-17-86 RKC  
 REDRAW CADAM  
 CK HLW  
 APP. GMP

DOC. NO.  
 183025

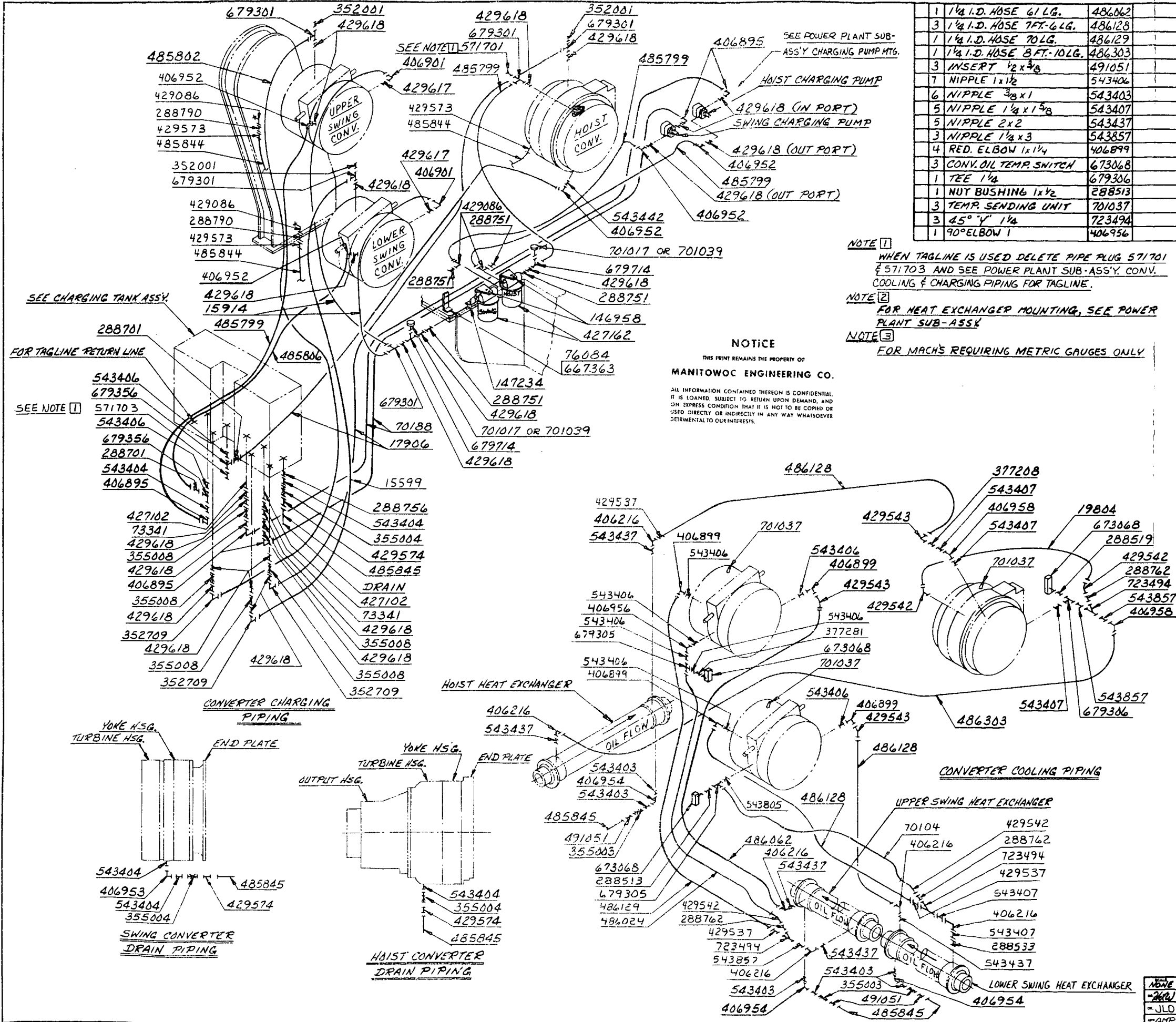


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RIGHT SIDE VIEW

FORMERLY WAS 182108	POWER PLANT SUB-ASS'Y.
MANTOWOC ENGINEERING CO.	FARR AIR CLEAN. TWO STAGE
DR. RLK	AUTOPAMIC. FOR CUM. VTA
DES. JDW	1710-C700 ENG. LOW PROFILE
APP. GMP	



1	1/4 I.D. HOSE 6 LG.	486062
3	1/4 I.D. HOSE 7 FT. 6 LG.	486128
1	1/4 I.D. HOSE 70 LG.	486129
1	1/4 I.D. HOSE 8 FT. 10 LG.	486303
3	INSERT 1/2 x 3/8	491051
7	NIPPLE 1 x 1/2	543406
6	NIPPLE 3/8 x 1	543403
5	NIPPLE 1/4 x 1 3/8	543407
5	NIPPLE 2 x 2	543437
3	NIPPLE 1/4 x 3	543857
4	RED. ELBOW 1 x 1/4	406899
3	CONV. OIL TEMP SWITCH	673068
1	TEE 1/4	679306
1	NUT BUSHING 1 x 1/2	288513
3	TEMP. SENDING UNIT	701037
3	45° Y 1/4	723494
1	90° ELBOW 1	406956

**NOTE 1**  
WHEN TAGLINE IS USED DELETE PIPE PLUG 571701 & 571703 AND SEE POWER PLANT SUB-ASSY. CONV. COOLING & CHARGING PIPING FOR TAGLINE.

**NOTE 2**  
FOR HEAT EXCHANGER MOUNTING, SEE POWER PLANT SUB-ASSY.

**NOTE 3**  
FOR MACHS REQUIRING METRIC GAUGES ONLY

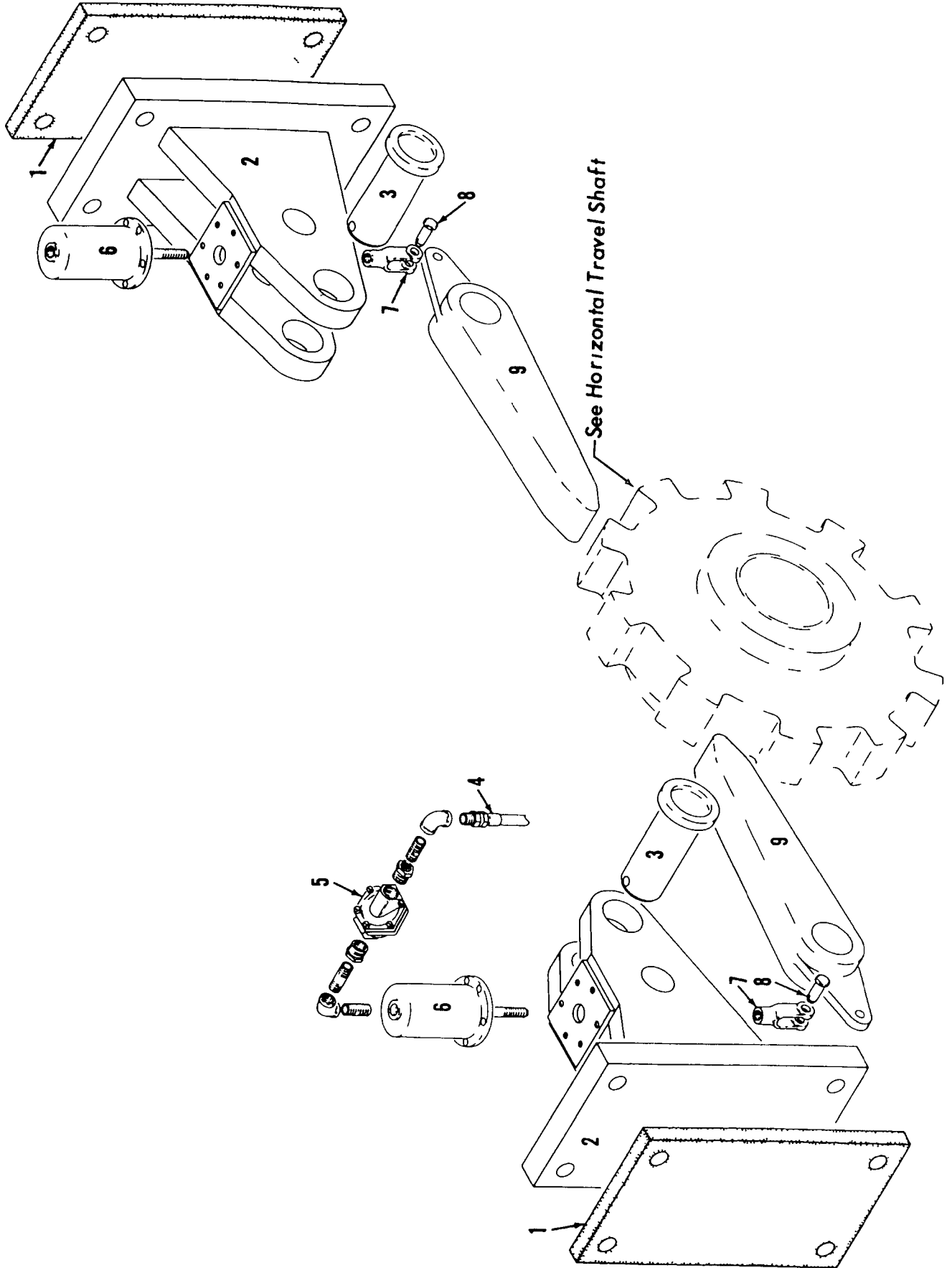
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BILL OF MATERIAL				REVISIONS
QTY	DESCRIPTION	MATERIAL	QTY	REVISIONS
<b>CONVERTER CHARGING PIPING</b>				
2	3/8 I.D. HOSE 57 LG.	15914		65970
1	3/8 I.D. HOSE 76 LG.	15549		66061
2	3/8 I.D. HOSE 9 FT. 4 LG.	17906		65113
2	1/2 I.D. HOSE 9 FT. 4 LG.	70188		
2	FILTER ADAPTER	73341		
2	SUPPORT	76384		
2	BRACKET	146958		
1	BRACKET	147234		
2	NUT BUSHING 1/4 x 1/8	288790		
2	NUT BUSHING 1/2 x 1/4	288701		
4	NUT BUSHING 3/8 x 1/4	288751		
1	NUT BUSHING 1 x 1/2	288756		
3	BLEEDER VALVE	352031		
3	ORIFICE	352709		
3	STEAM COCK 1/2	355004		
5	STEAM COCK 1/4	355008		
3	3/8 I.D. PLASTIC TUBING	485344		
5	90° ELBOW 1/2 x 1/4	406895		
2	90° ELBOW 1/2 x 1/8	406901		
5	90° ELBOW 1/4	406952		
1	90° ELBOW 1/2	406953		
2	FILTER SCREEN	427102		
2	OIL FILTER	427162		
4	90° ST. ELBOW 1/4 BRASS	429086		
3	INSERT 1/2 x 1/2	429574		
2	ADAPTER 1/8	429617		
23	ADAPTER 1/4	429618		
4	3/8 I.D. HOSE 65 LG.	485799		
1	3/8 I.D. HOSE 6 FT. 7 LG.	485802		
1	3/8 I.D. HOSE 60 LG.	485806		
1	1/2 I.D. PLASTIC TUBING	485845		
2	PRESSURE SENDING UNIT	701017		
5	NIPPLE 1/2 x 1/8	543404		
2	NIPPLE 1 x 1/2	543406		
2	PRESSURE SENDING UNIT	701039	SEE NOTE: 3	
1	NIPPLE 1/4 x 1 1/2	543442		
3	INSERT 1/8 x 3/8	429573		
1	PIPE PLUG 1/4	571701	SEE NOTE: 1	
1	PIPE PLUG 1/2	571703	SEE NOTE: 1	
4	PIPE STRAP DUPLEX	667363		
5	TEE 1/4	679301		
2	TEE 1 x 1/2 x 1/2	679356		
2	TEE 1/2 x 1/4 x 1/8	679714		
<b>CONVERTER COOLING PIPING</b>				
1	PIPE COUPLING 1 x 1/2	377281		
2	TEE 1	679305		
1	NIPPLE 1 x 3	543805		
1	1 I.D. HOSE x 33 LG.	19804		
1	1 I.D. HOSE 6 FT. 6 LG.	70104		
1	NUT BUSHING 1/4 x 1/2	288519		
3	NUT BUSHING 1/2 x 1	288762		
1	1 I.D. HOSE x 61 LG.	486024		
3	STEAM COCK 3/8	355003		
1	COUPLING 1/4	377288		
3	UNION ADAPTER 1/4 x 1/4	429537		
6	90° ELBOW 2 x 1/4	406216		
3	90° ELBOW 3/8	406954		
2	90° ELBOW 1/4	406958		
1	NUT BUSHING 2 x 1/4	288533		
4	45° UNION ELBOW 1 x 1	429542		
3	45° UNION ELBOW 1/4 x 1/4	429543		
1/2	I.D. PLASTIC TUBING	485845		
<b>CONVERTER CHARGING PIPING</b>				
FIRST ON S.O. 4678 FORMERLY WAS 49760				
<b>MANITOWOC ENGINEERING CO.</b>				
POWER PLANT SUB-ASSY CONV. COOLING & CHARGING PIPING FOR HOIST & SWING CONV. W/PISTON RING SEAL.				
4600 SERIES 4				
DATE: 9-11-80				
DRAWING NO: 191298				

MANITOWOC ENGINEERING CO

A Division of The Manitowoc Company, Inc

Manitowoc, Wisconsin



See Horizontal Travel Shaft

MASTER

33048A1

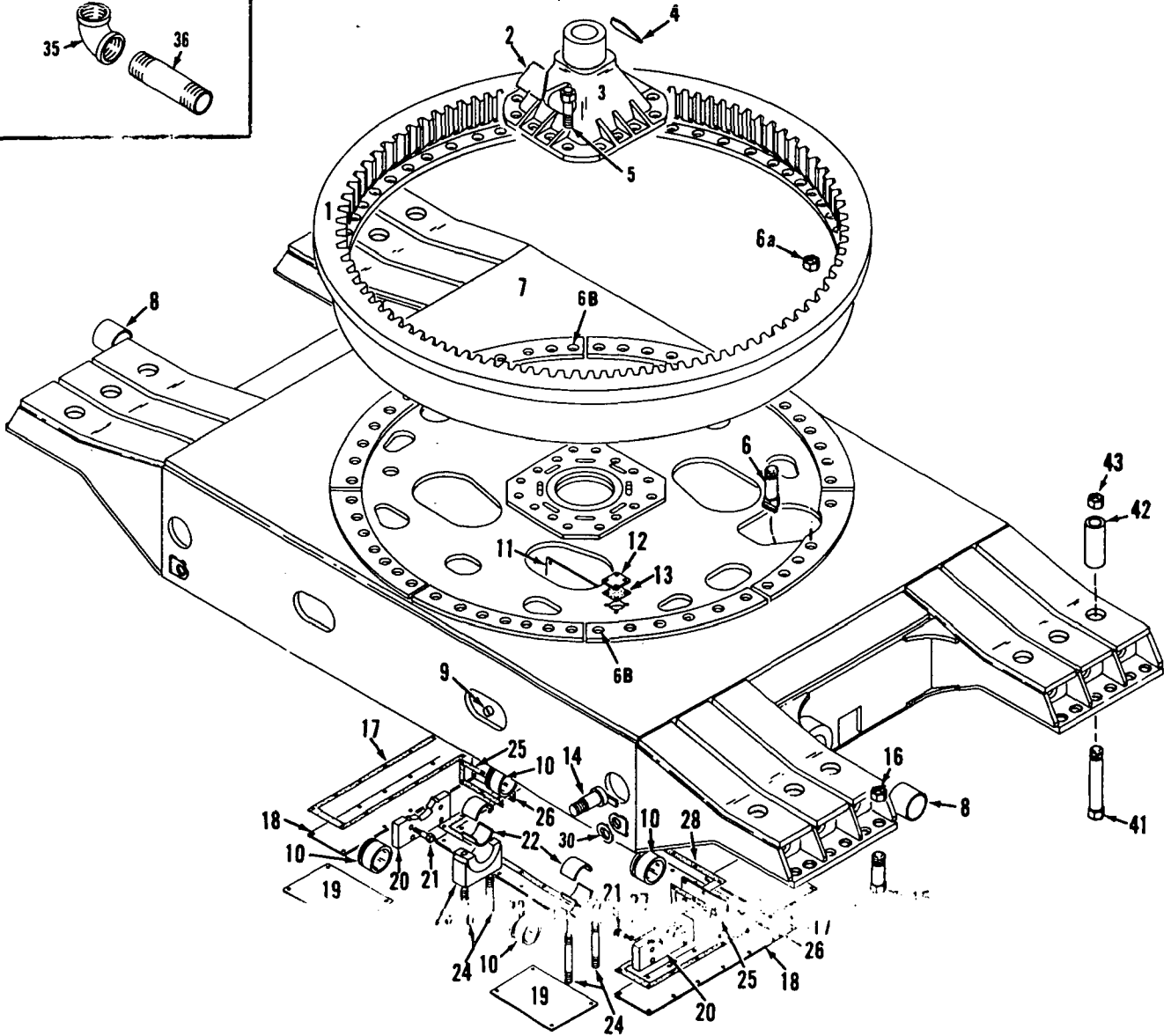
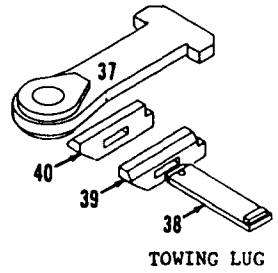
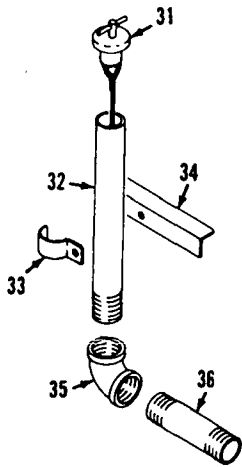
MATERIAL LIST ON BACK

TRAVEL LOCK

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin

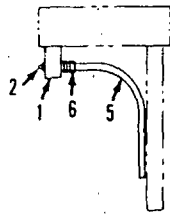


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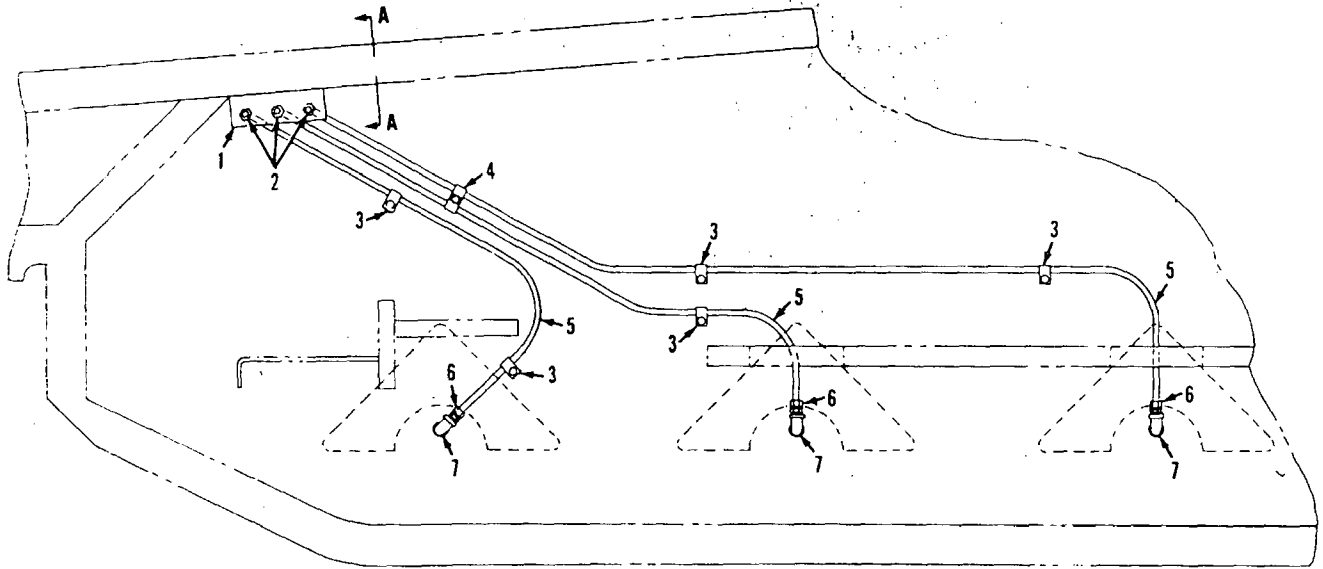
65071G1

MATERIAL LIST ON BACK

CARBODY



Section "A-A"



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

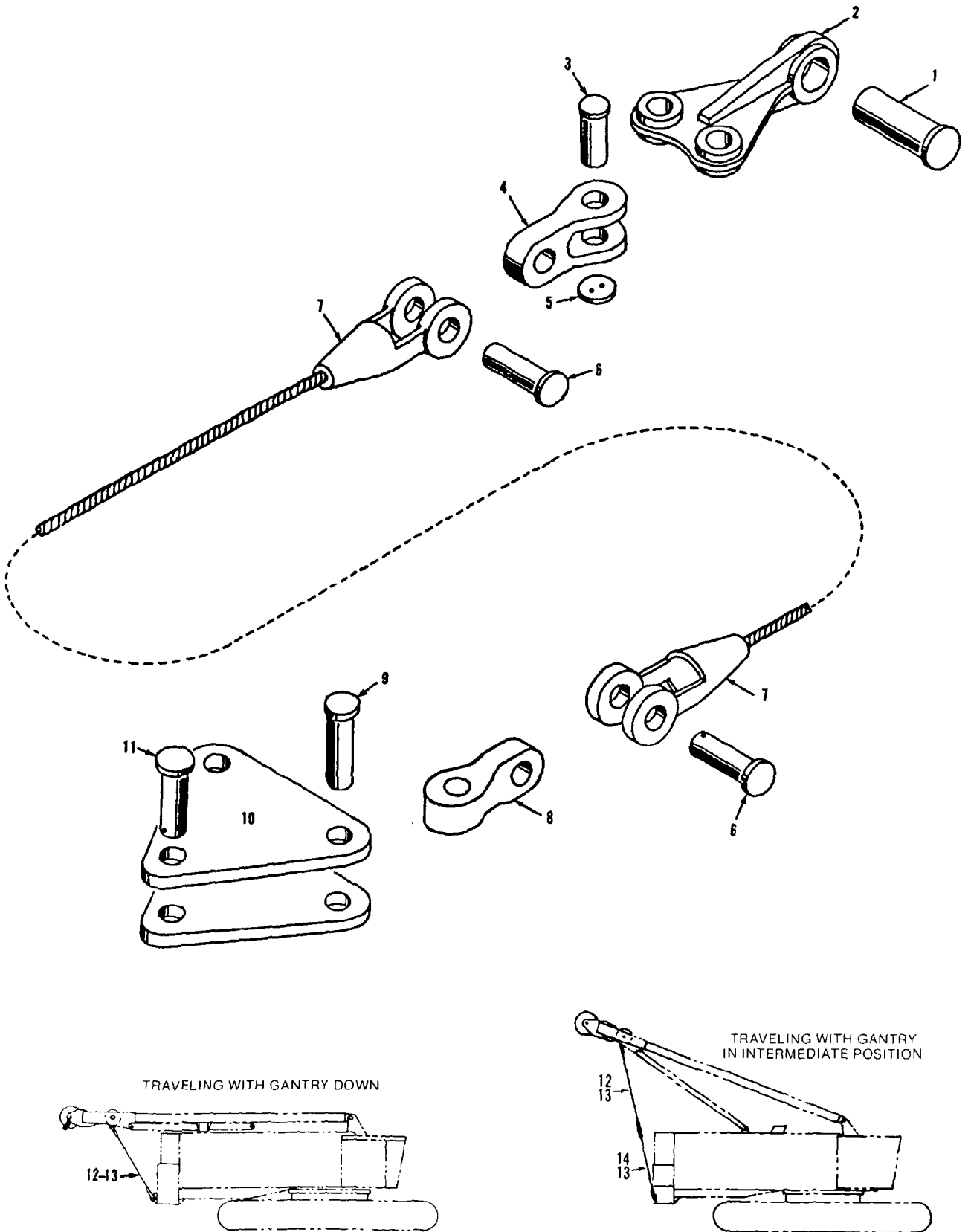
DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
Backhitch & Gantry	66115	B1	12/18/80	05/16/91	F1001
Block Travel Limiter	163614	-	06/17/88	11/11/98	F1602
Block Travel Limiter	164674	A1	12/20/84	04/05/94	F1602
Block Travel Limiter	168090	-	09/23/88	09/27/95	F1602
Block Travel Limiter	168090	-	09/23/88	05/09/96	F1602
Boom	65234	B2	12/04/73	04/18/86	F0101
Boom	65234	C1	12/04/73	04/18/86	F0101
Boom	65234	E3	12/04/73	04/18/86	F0101
Boom	65234	J4	12/04/73	04/18/86	F0101
Boom Angle Indicator	22334	B1	01/07/52	09/20/85	F1101
Boom Point	94395	A1	10/06/72	11/09/72	F0401
Boom Stop, Clutch Throw-Out	191212	-	08/08/80	11/13/80	F0201
Boom Stop, Mechanical	190059	D1	09/09/74	11/24/80	F0202
Equalizer/Pull-Out	181787	B1	08/16/72	10/27/80	F0601
Gantry Lifting Device	65197	C1	07/19/73	06/29/84	F1002
Hook & Weight Ball	97302	C1	09/08/78	01/09/81	F1401
Jib Rope Guide/Roller	75251	-	03/05/65	06/01/67	F1303
Load Indicator	170847	-	11/12/90	02/22/91	F1102
Lower Block	182406	G1	10/25/79	07/24/81	F1501
Lower Block	184198	D1	03/13/80	12/14/84	F1501
Lower Block	419858	-	04/25/78		F1501
Upper Block - Anchor Joint	164674	A1			F1601
Wire Rope Guide	181794	D1	09/20/72	05/09/80	F0701
Wire Rope Guide	181858	A1	02/03/73	04/13/73	F0701
Wire Rope Roller Guide	73907	D1	12/06/62	09/13/79	F0801

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Manitowoc, Wisconsin 54220

F1.1

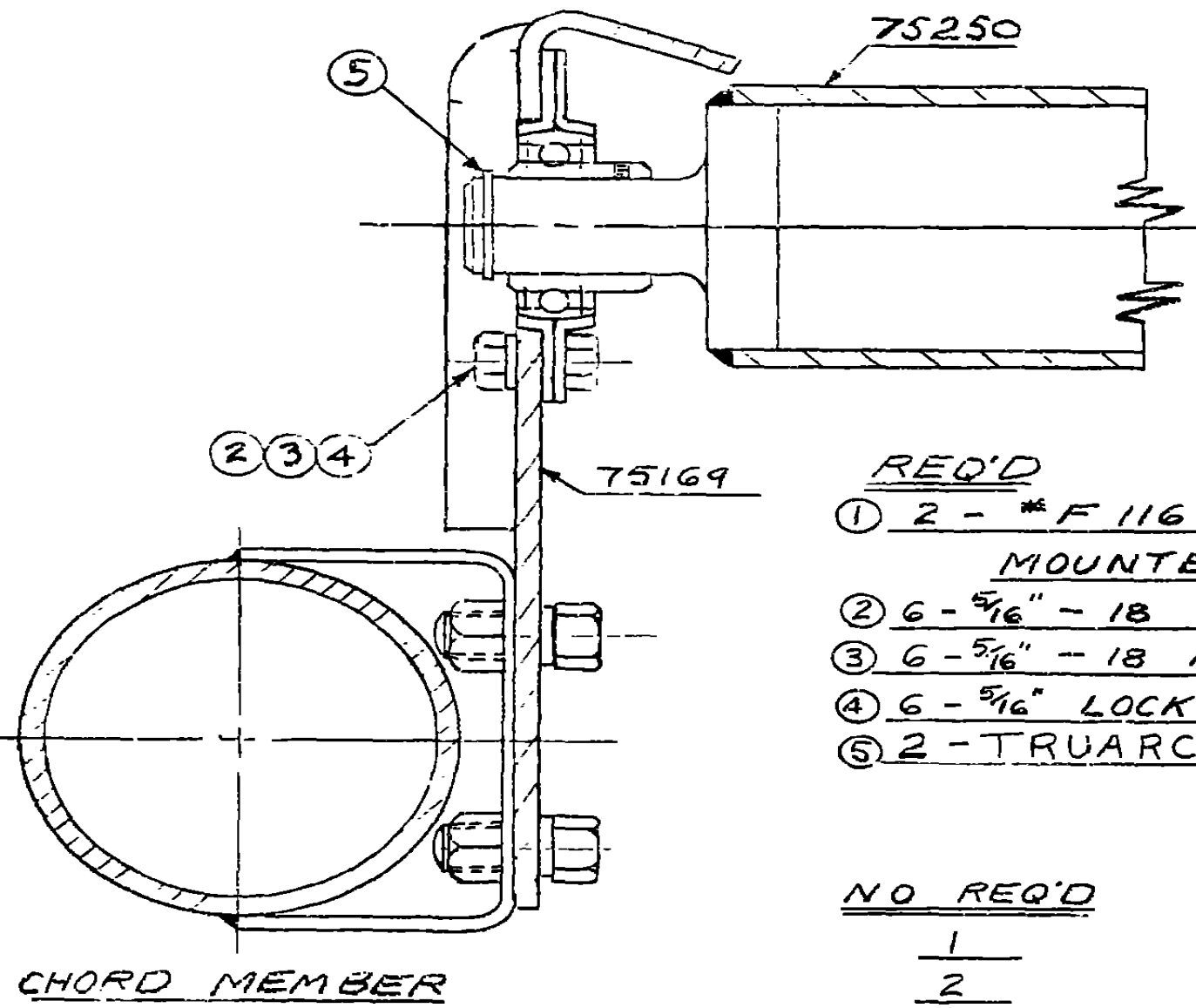


65234B3

MATERIAL LIST ON BACK

PENDANTS and CONNECTIONS

DWG. NO. 75251	WIRE ROPE GUIDE	SCALE 6"=1'-0"	UNLESS NOTED	MANITOWOC ENGINEERING CO. MANITOWOC, WISCONSIN	DATE 6-1-67
CODE NO.	ROLLER ASSEMBLY	DR. R/J/L	FRACT. DIM. _____		REVISD DATE
PATTERN NO.	FOR #16 BOOM	CK. E.G.T.	HOLE DIA. _____	MATERIAL	
	MODEL 2900	APP.	HOLE CENTERS _____		
			FINISH _____		



NOTE:  
SET SCREWS TO BE  
REMOVED FROM BOTH  
BEARINGS

<u>REQ'D</u>	<u>CODE NO.</u>
① 2 - # F 116 NICE FLANGE MOUNTED BEARING	224218
② 6 - 5/16" - 18 N.C. - 7/8" HEX SCREW	612404
③ 6 - 5/16" - 18 N.C. HEX NUT	546053
④ 6 - 5/16" LOCKWASHER	710303
⑤ 2 - TRUARC RETAINER RINGS	596823

<u>NO REQ'D</u>	<u>DWG NO</u>	<u>TITLE</u>
1	75250	ROLLER
2	75169	BRG. BRACKET

182340  
181869  
42802  
42886

ASSEMBLIES  
USED ON  
DWG. NO.  
75251

SUPERSEDES 75251 OF 3-5-65

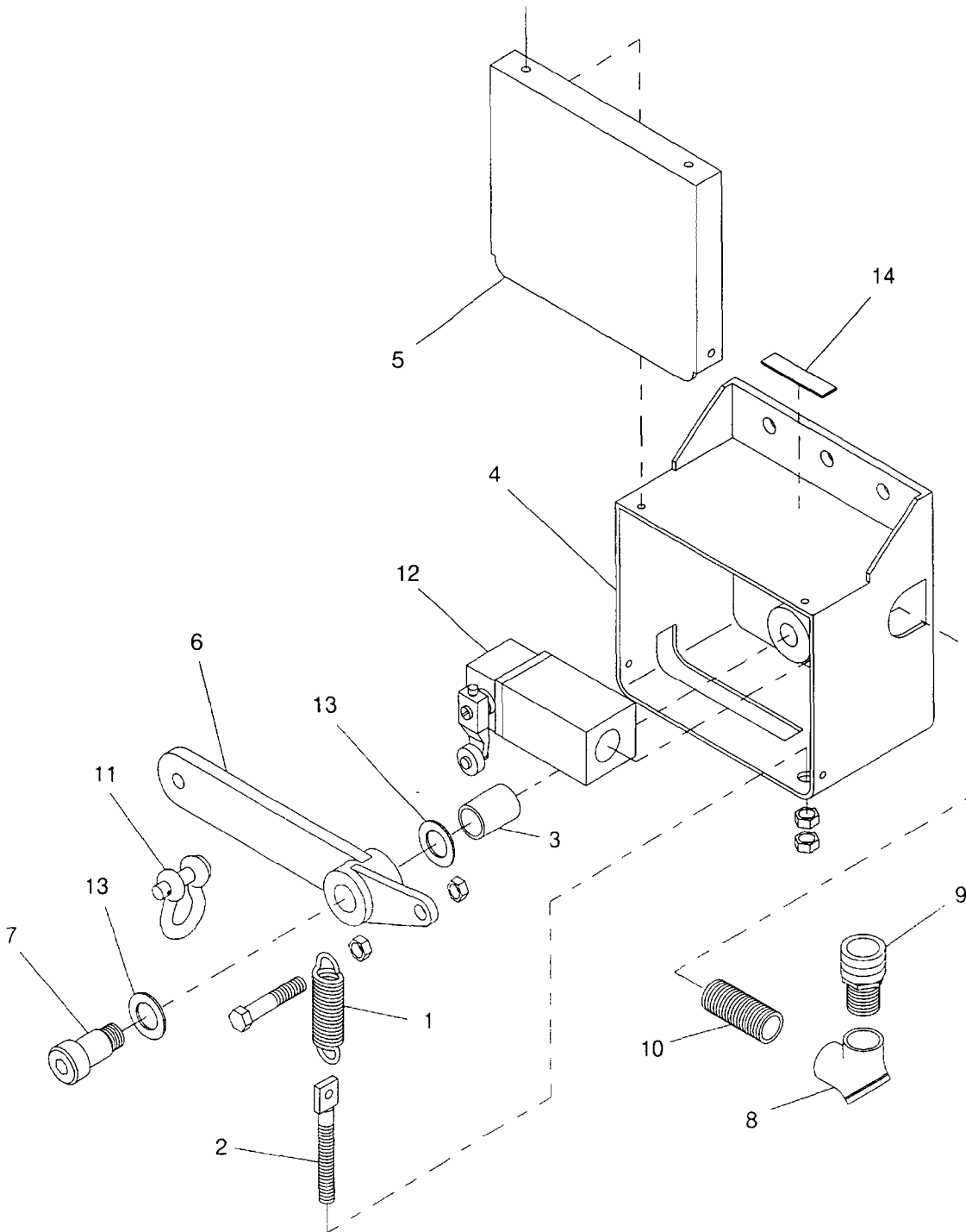


ILLUSTRATION  
164674 A

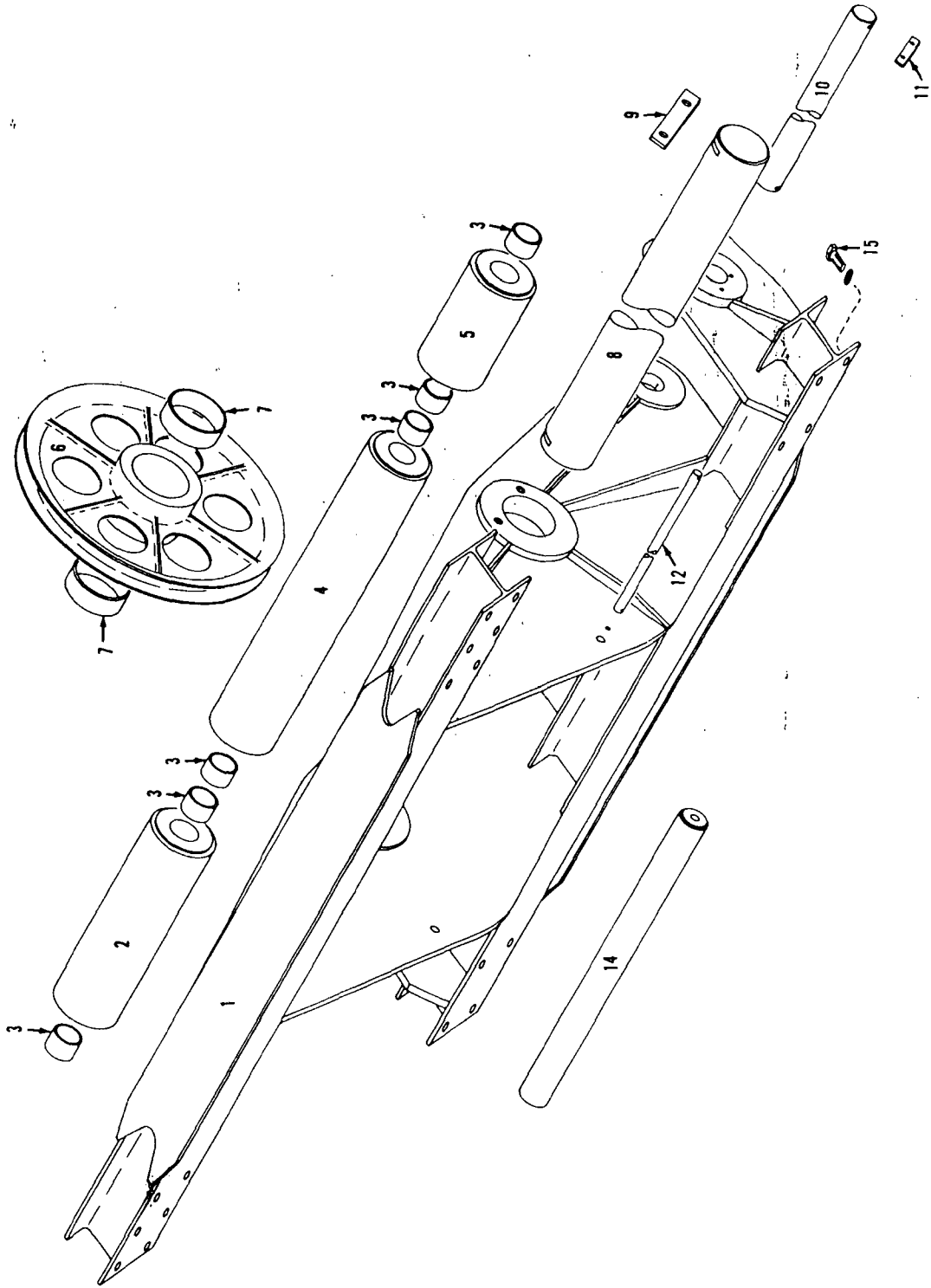
ASSEMBLY  
**164674**

**SWITCH, BLOCK-UP LIMIT**

MANITOWOC ENGINEERING CO.

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Manitowoc, Wisconsin



METTER

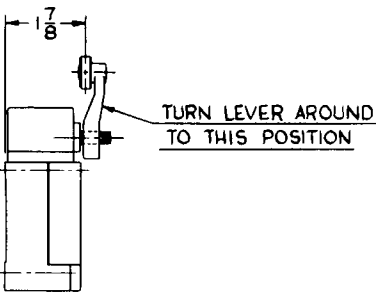
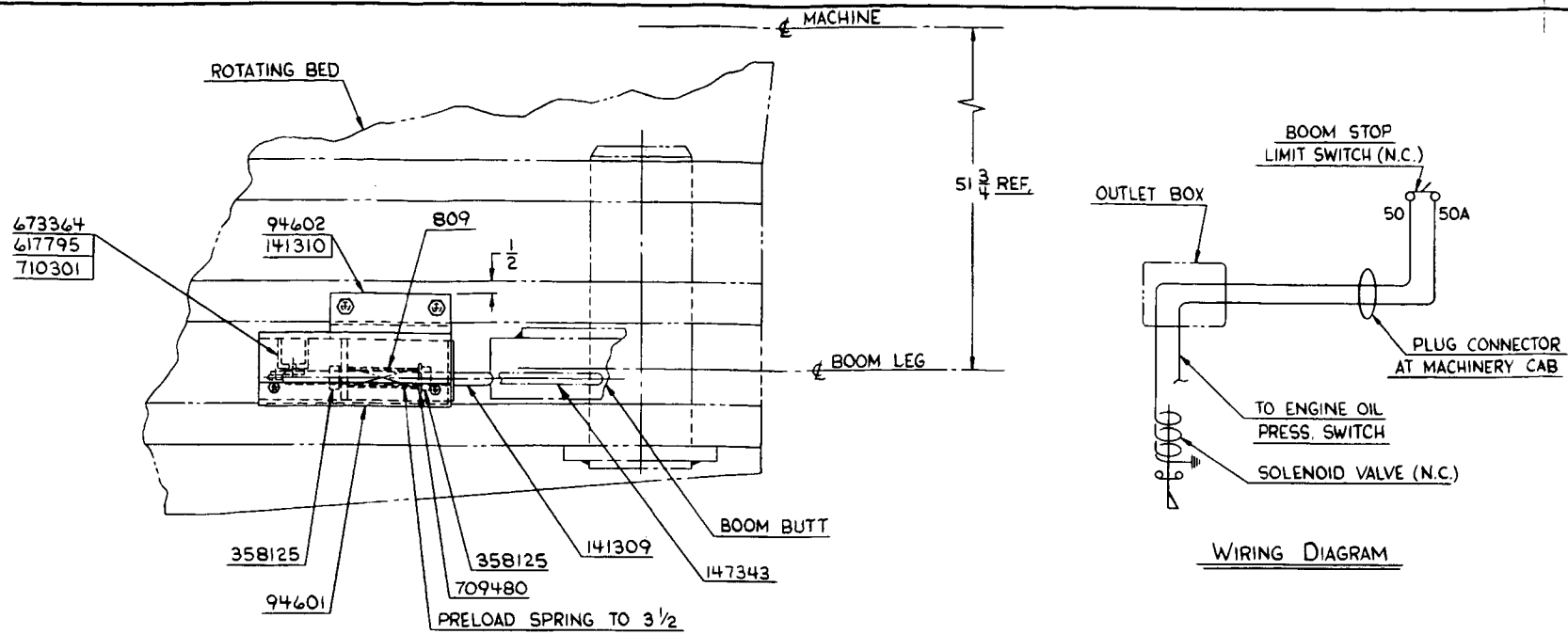
181794B1

MATERIAL LIST ON BACK

WIRE ROPE GUIDE

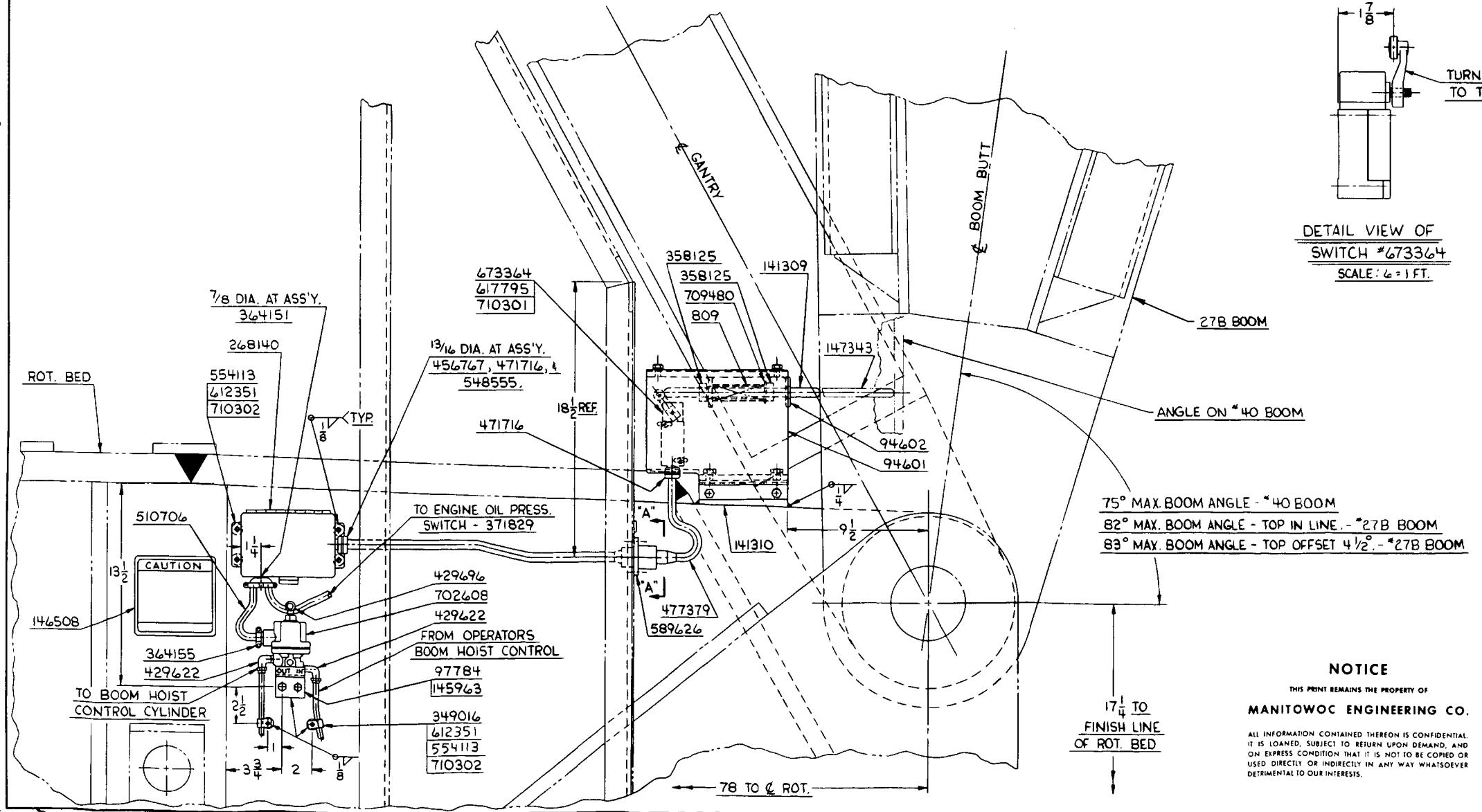
WIRING IDENTIFICATION NUMBERS

50 - BOOM STOP LIMIT SWITCH TO SOLENOID VALVE.  
50A - 24 VOLT POWER SUPPLY TO LIMIT SWITCH.

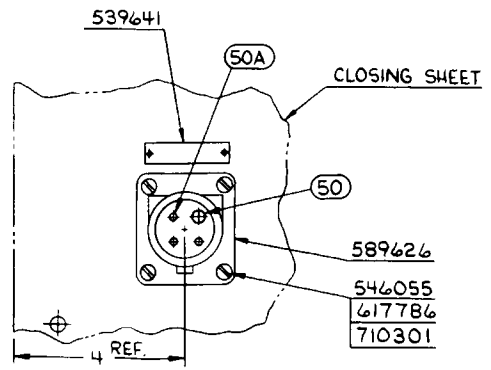


BILL OF MATERIAL						REVISIONS
ITEM NO.	QTY	DESCRIPTION	LENGTH	MATERIAL	CODE NO. OR DWG NO.	REMARKS
1		SPRING			809	
1		COVER			94601	
1		BRACKET			94602	
1		BRACKET			97784	
1		ACTUATOR			147343	40 BOOM ONLY
1		ACTUATOR			141309	27 BOOM ONLY
1		MOUNTING PAD			141310	
1		MOUNTING PAD			145963	
1		CAUTION DECAL			146508	
1		OUTLET BOX			268140	
2		STRAP			349016	
2		5/8 SET COLLAR			358125	
1		BX DUPLEX CONNECTOR			364151	
1		BX STRAIGHT CONNECTOR			364155	
15'		#14-1 TYPE 50 CORD			371829	
2		3/8 x 1/4 MALE ELBOW			429622	
1		1/8 STREET ELBOW			429696	
1		GASKET			456767	
2		CORD GRIPPER			471716	
1		PIGTAIL - 2 FT. LG.			477379	REF. 94886
1		1/4 I.D. LOOM (1 FT. O LG.)			510706	
1		NAMEPLATE			539641	
4		#10-24 UNC. HEX. NUT			546055	
1		LOCK NUT			548555	
6		MOUNTING PAD			554113	
1		FEMALE RECEPTACLE			589626	
6		1/4-20 UNC. 1/2 LG. HEX. SCR.			612351	
4		#10-24 UNC. 1/2 LG. MACH. SCR.			617786	RD. HD.
2		#10-24 UNC. 2 LG. MACH. SCR.			617795	RD. HD.
1		LIMIT SWITCH			673364	SEE DETAIL
1		SOLENOID VALVE (N.C.)			702608	
1		5/8 WASHER			709480	
6		#10 LOCKWASHER			710301	
6		1/4 LOCKWASHER			710302	

REVISIONS  
11-13-80 DWB  
(A) ADDED



NOTE 1  
ALLOW 1/8 TRAVEL TO ACTIVATE LIMIT SWITCH BEFORE BOOM IS IN ITS MAXIMUM POSITION.



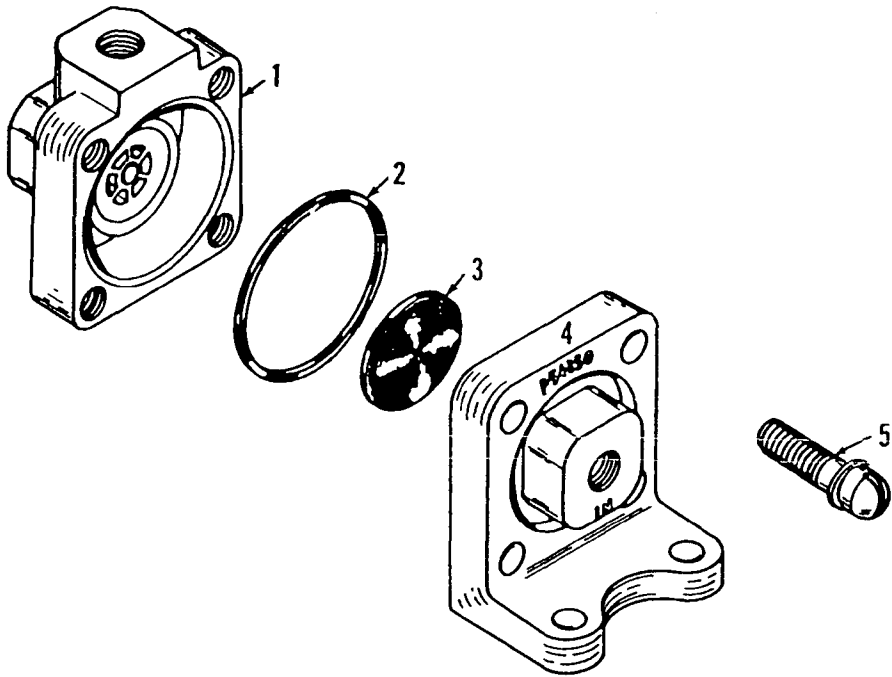
VIEW "A-A"  
SCALE: 6=1 FT.

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SUPERSEDES DWG. # 181944

SCALE 3=1 FT. OR TJC OR CWH APP	DWG NO 191212	MANITOWOC ENGINEERING CO. MANITOWOC, WISCONSIN MODEL: 4600 SERIES 4, 4600 SERIES 5	BOOM STOP ASSEMBLY AUTOMATIC (ELEC. TO AIR) FOR # 27B BOOM AND #40 BOOM(B)	DATE 8-8-80	PATTERN NO. CODE NO. 191212
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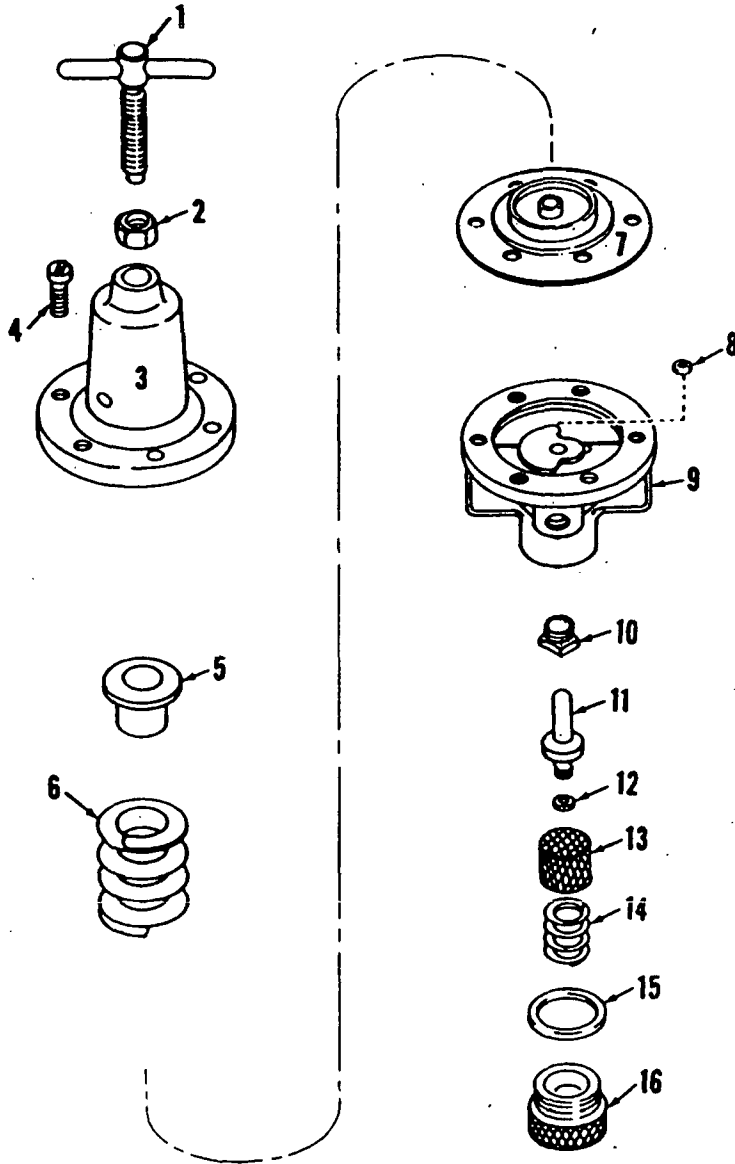


1-63B1

0-63B1

MATERIAL LIST ON BACK

SHUTTLE VALVE ASSEMBLY

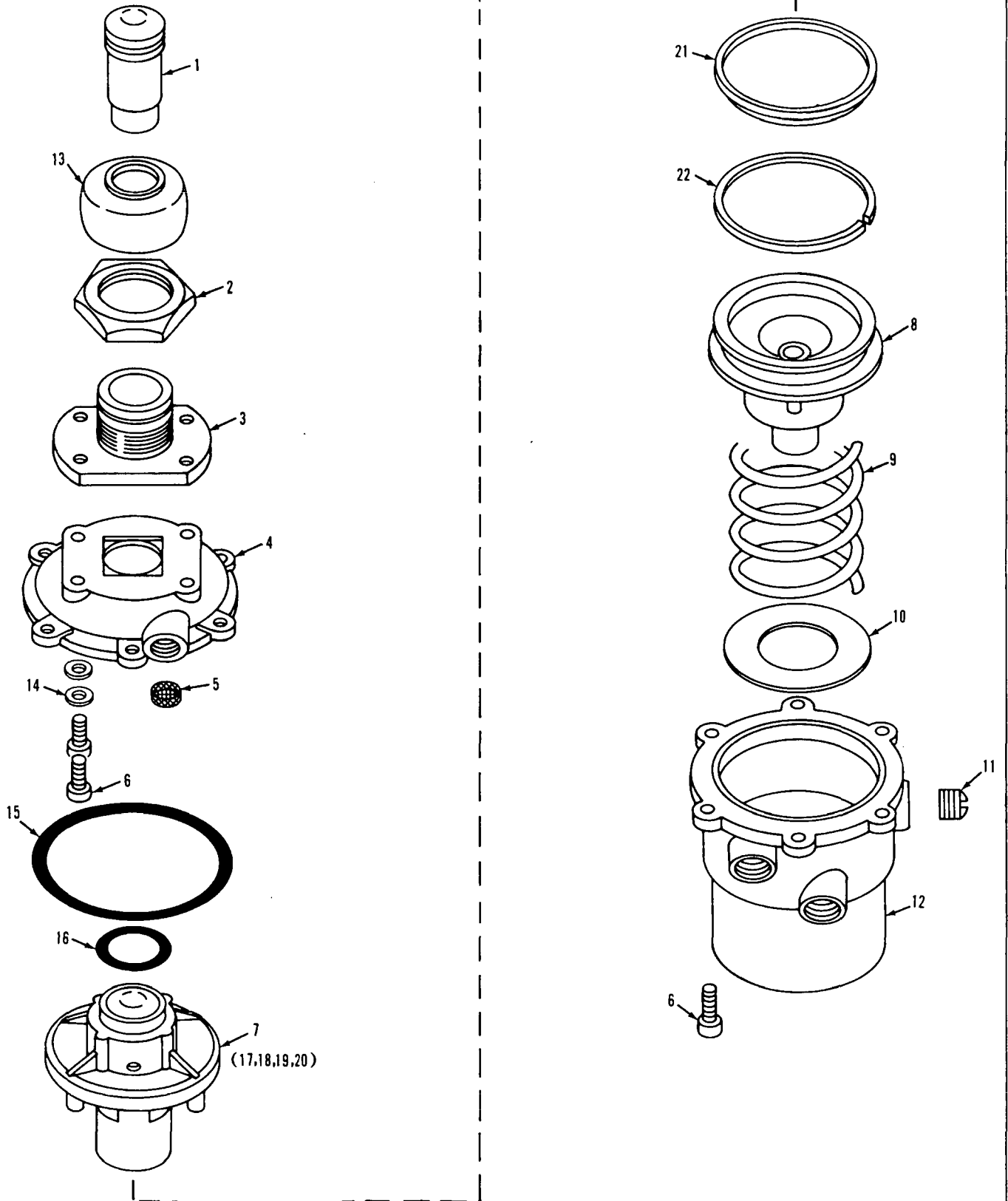


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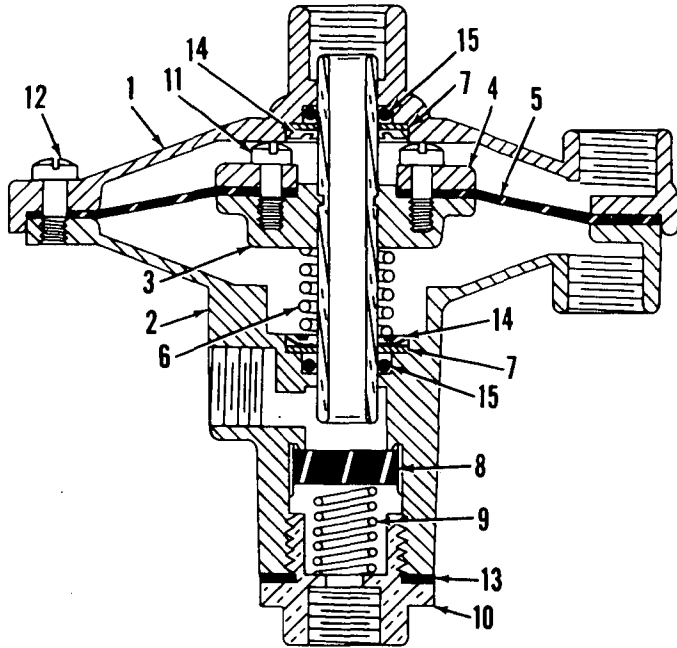
MASTER



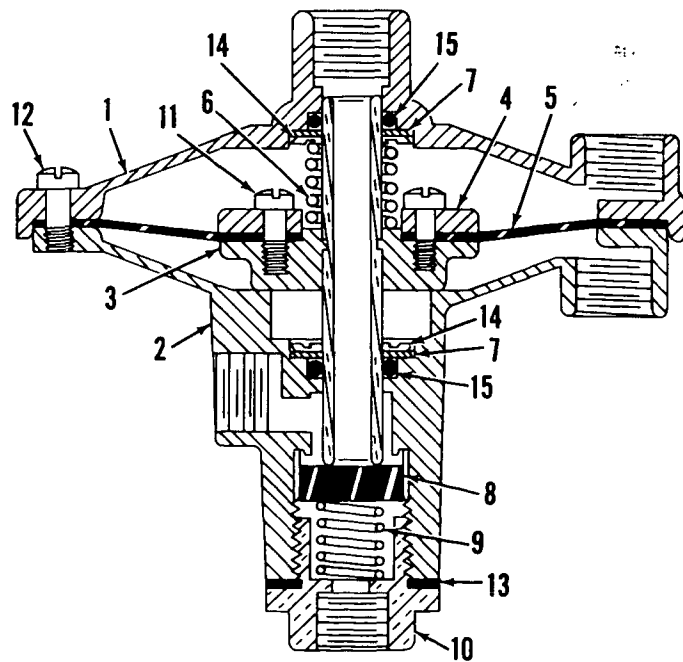
0-247-18

MATERIAL LIST ON BACK

Control Valve



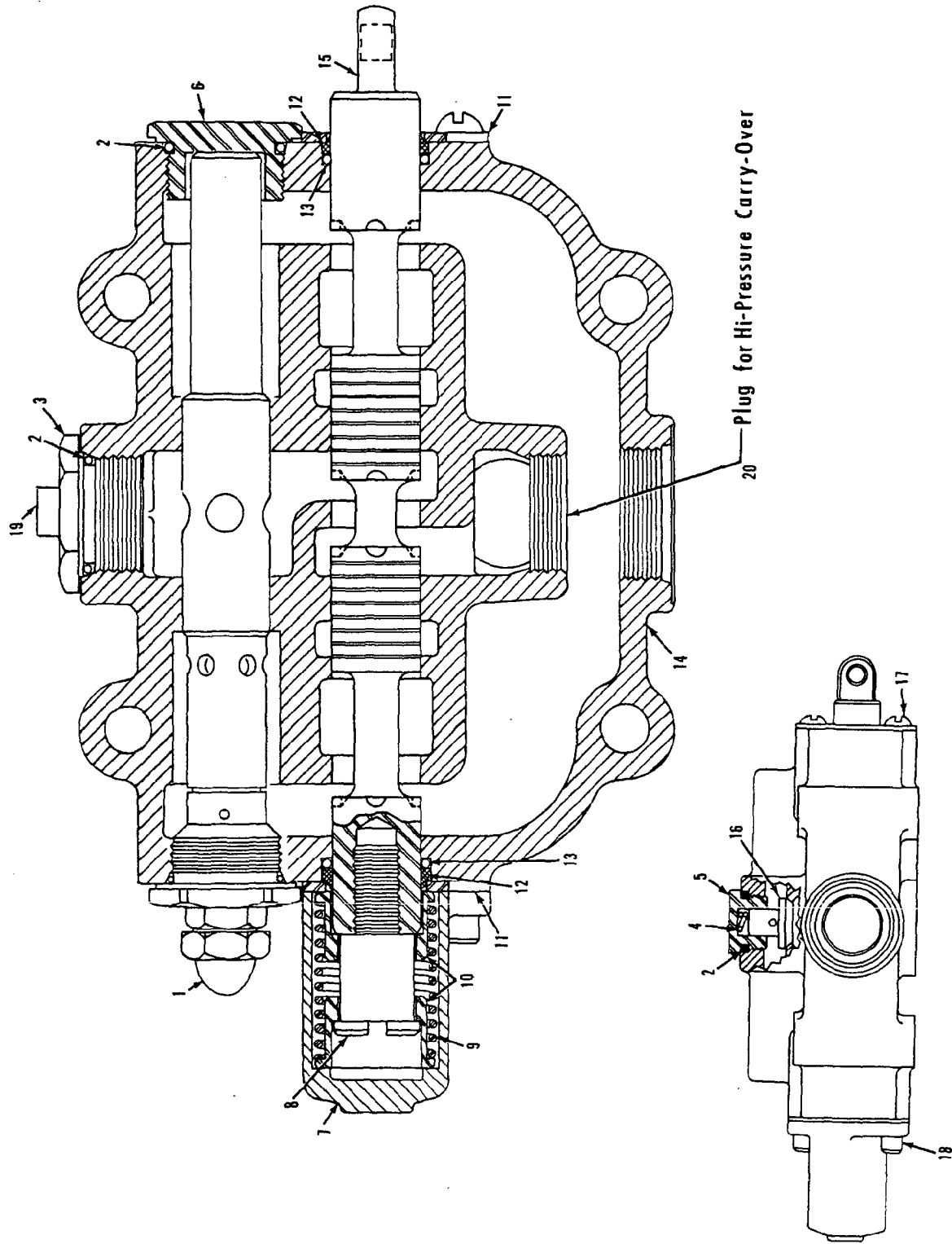
Normally Closed



Normally Open

MASTER

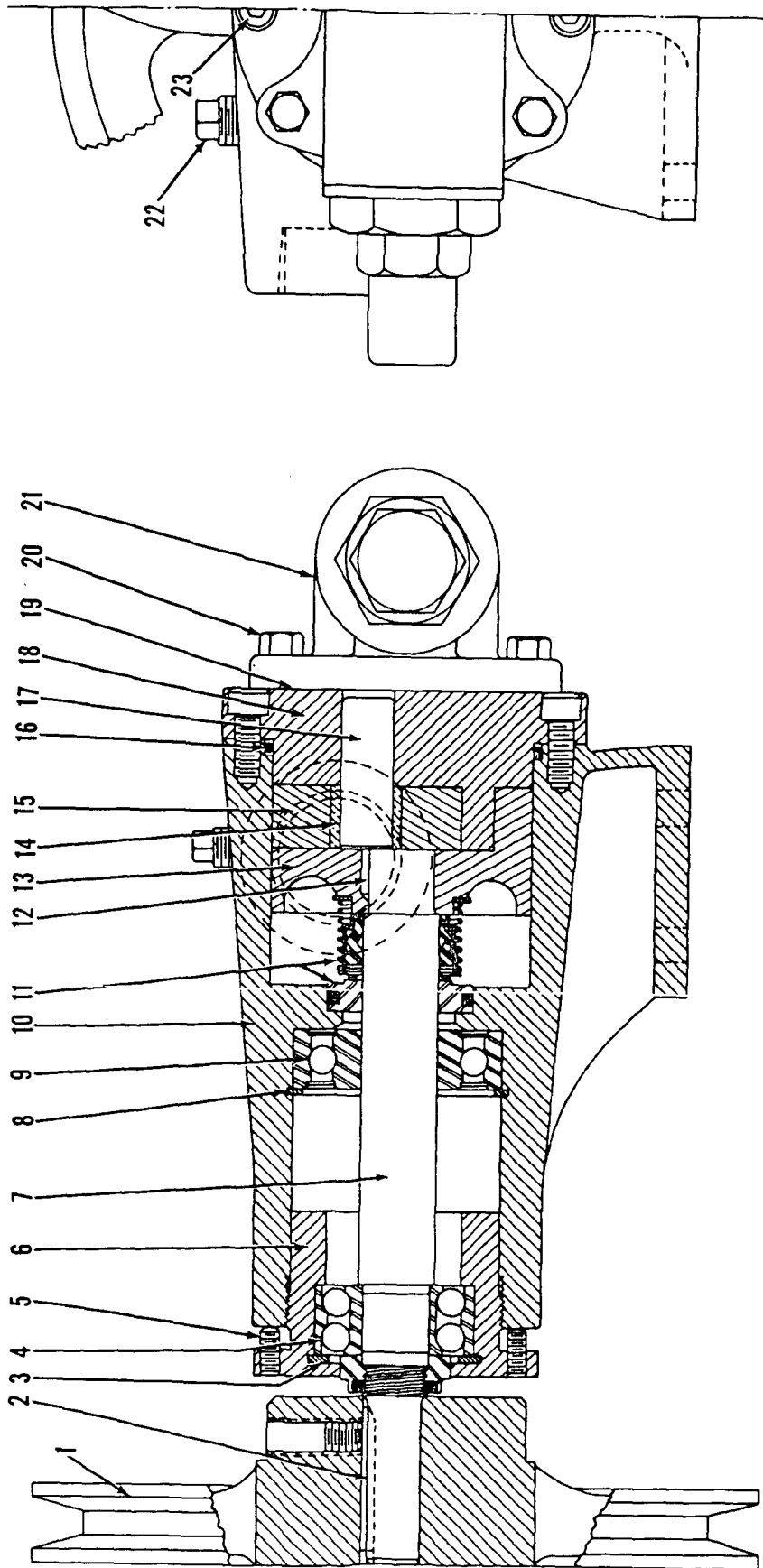
MASTER



0-311-1C

\*RIAL LIST ON BACK

CONTROL VALVE



43051B7

MATERIAL LIST ON BACK

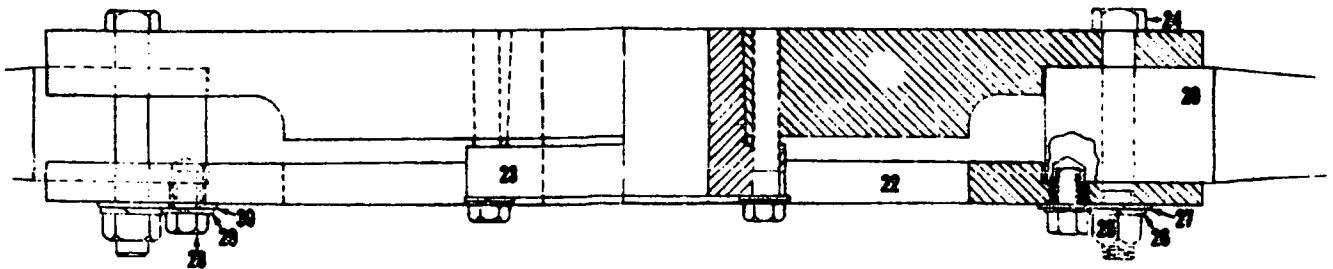
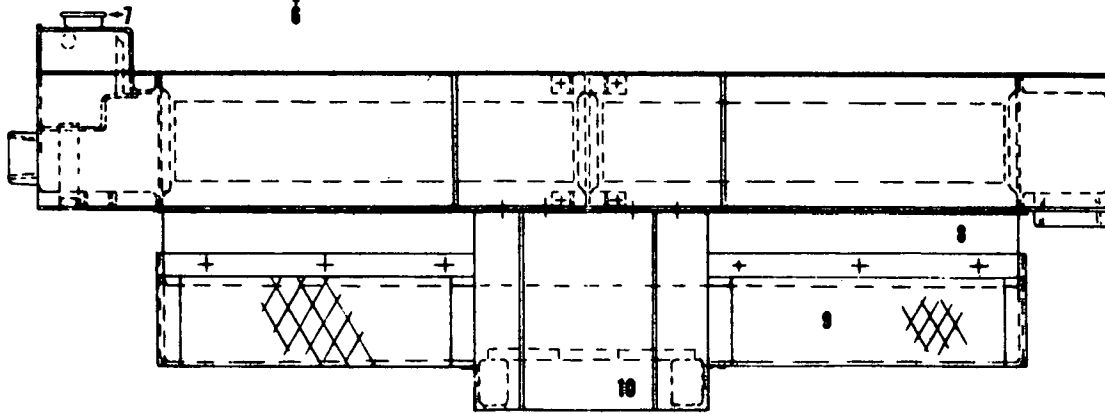
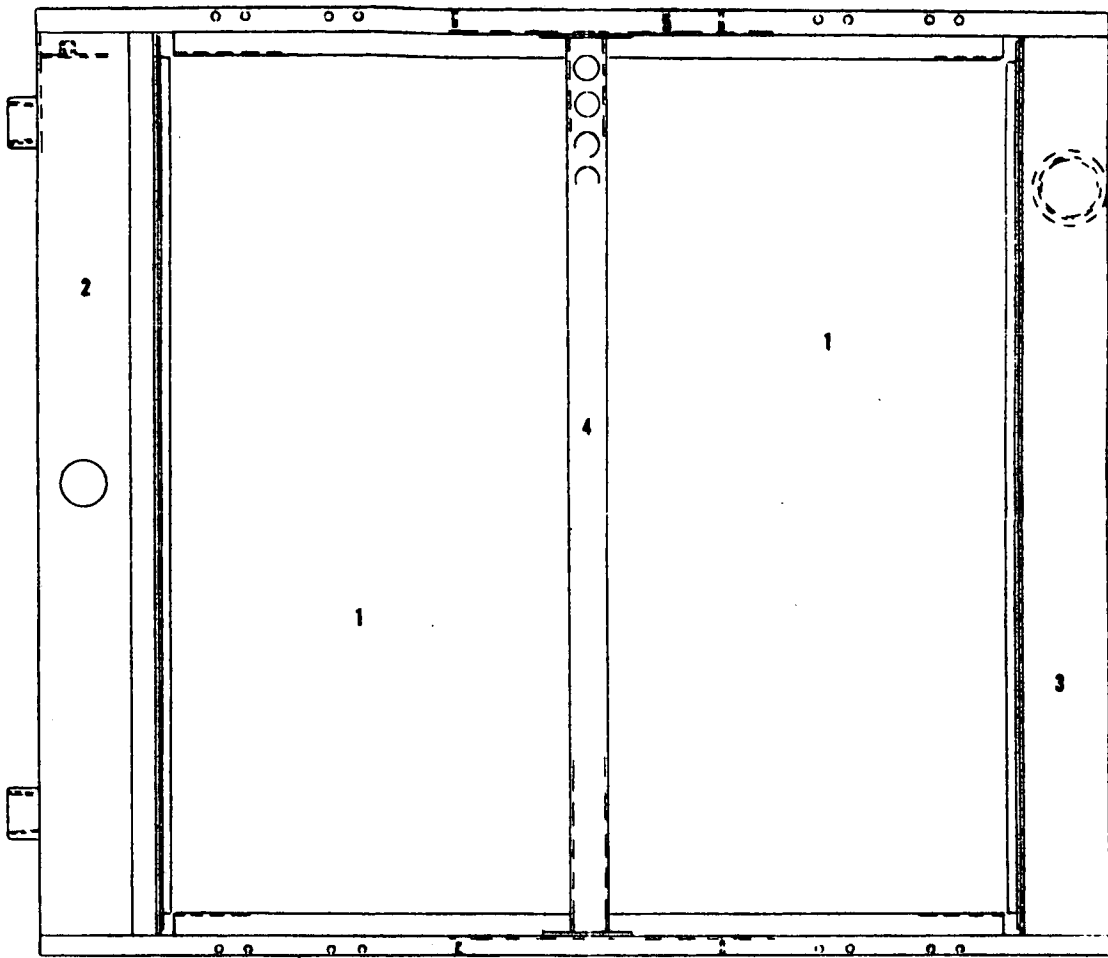
OIL PUMP

0-407 B7

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Manitowoc, Wisconsin



FAN AND HUB ASSEMBLY

0-428

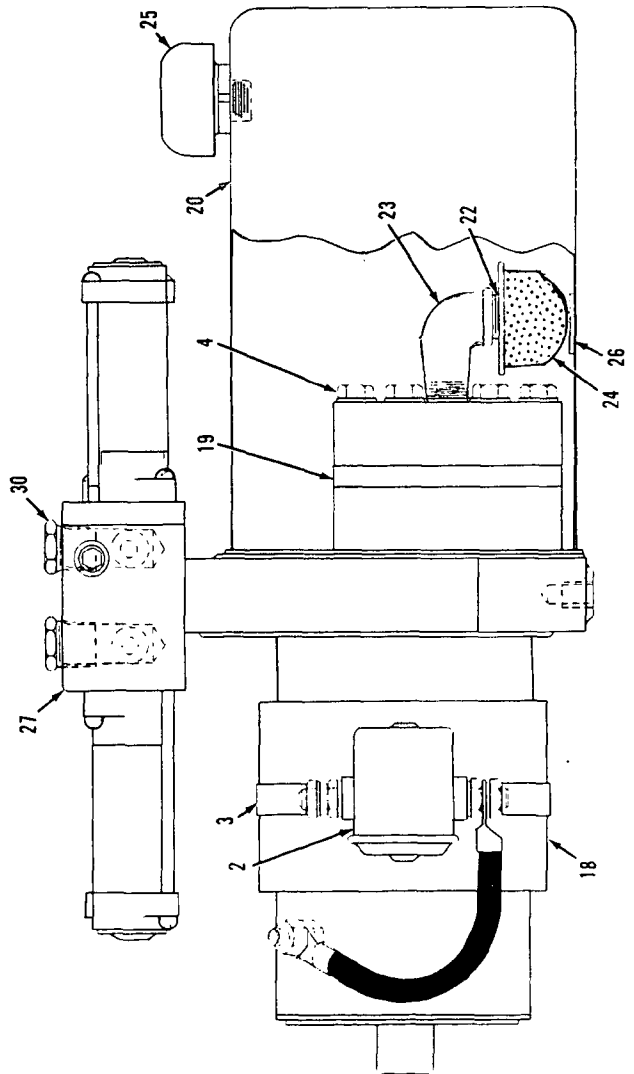
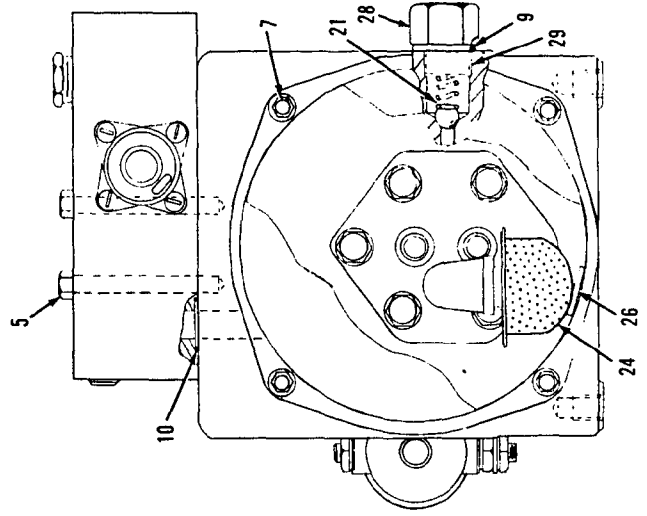
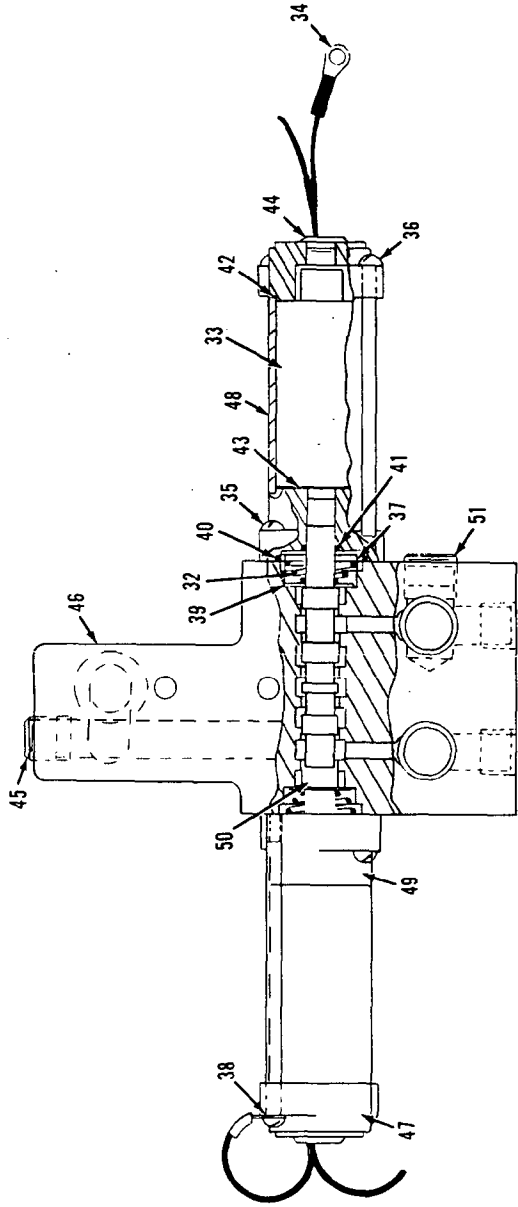
MATERIAL LIST ON BACK

RADIATOR

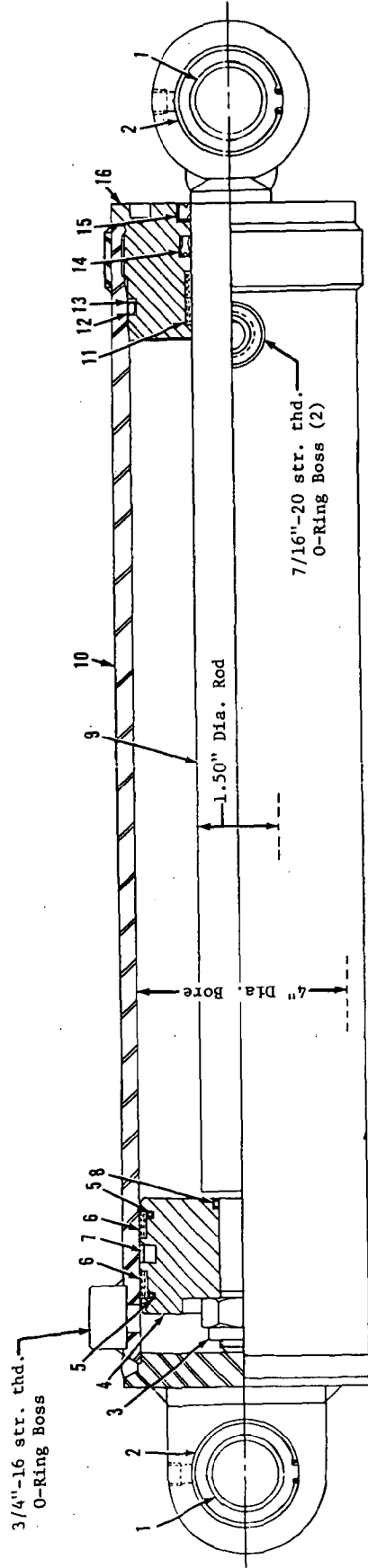
MOSTER

0-428

MASTER



MASTER



0-475-1A

MATERIAL LIST ON BACK

Hyd. Cylinder

## **PARTS DRAWINGS REFERENCE**

**20729  
21359  
22635  
33019  
93059  
93251  
93560  
94879  
95822  
163669  
182297  
182343  
182873  
182880  
183210  
190217**

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