

# Manitowoc

## TRADITIONAL CRANE

## PARTS MANUAL

This manual has been prepared for and is considered part of

Model

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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# MANITOWOC ENGINEERING CO.

A division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin 54220

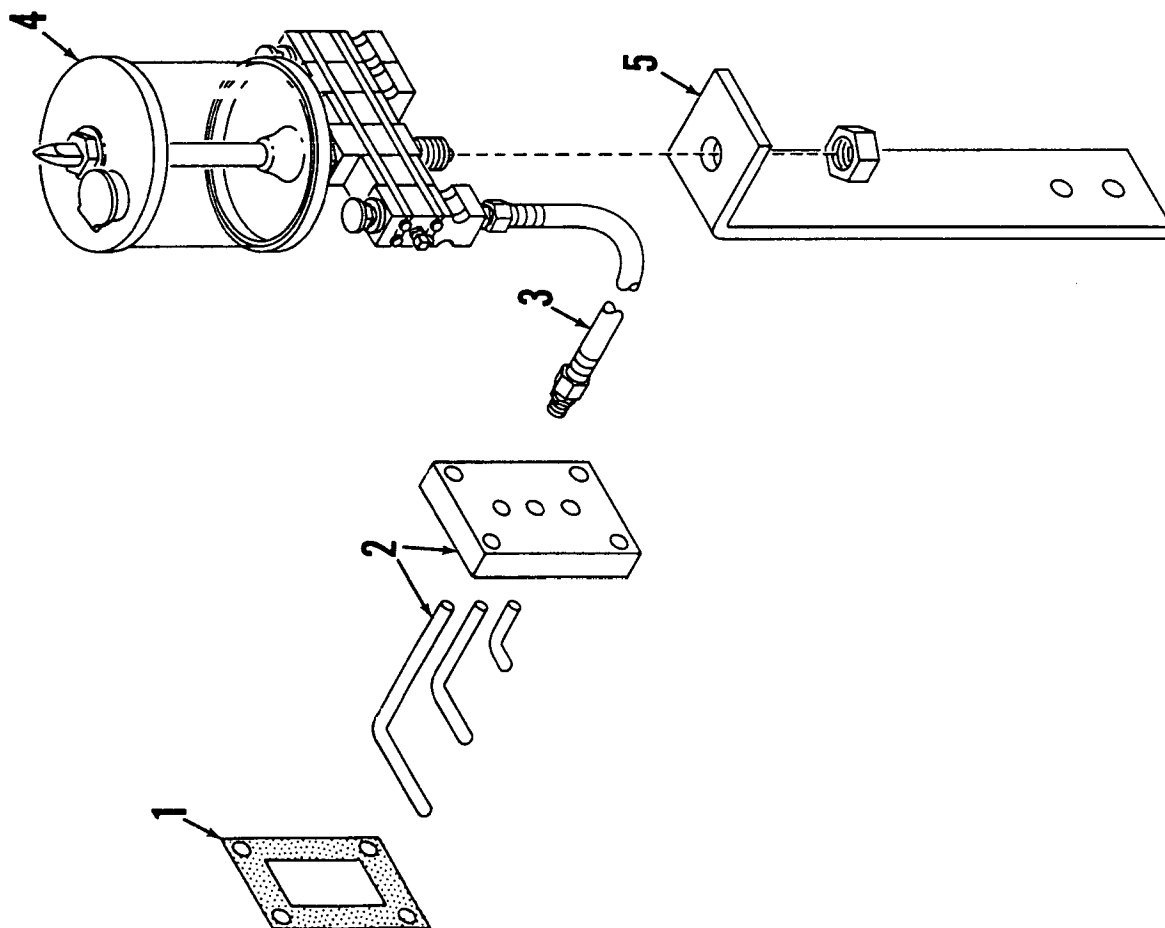
## WEIGHTS

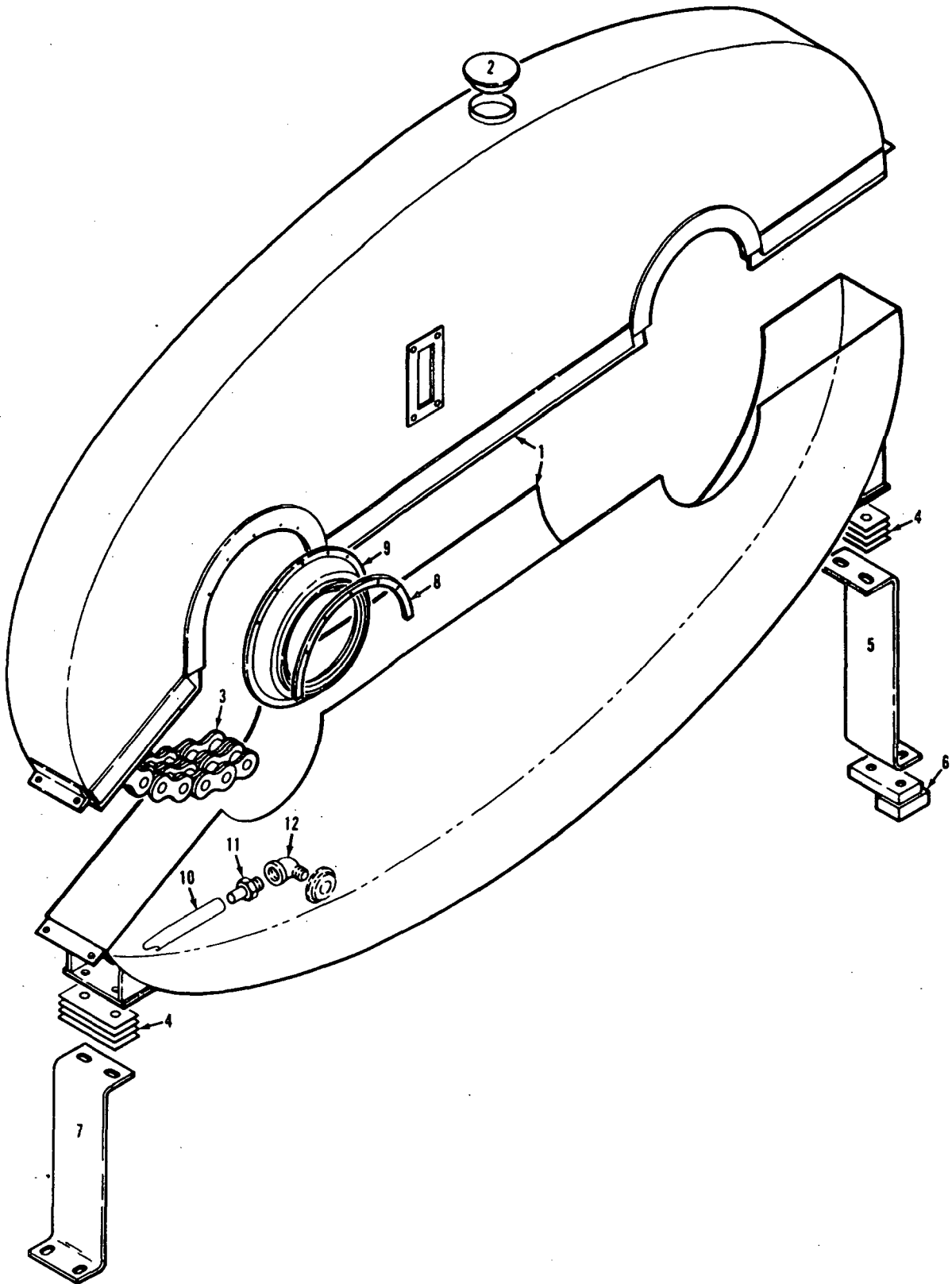
4600 SERIES I w/NO. 40 BOOM

DESCRIPTION	APPROX. WEIGHT (IN LBS.)
DRAGLINE - w/100' No. 40 boom, 55,000# counterweight, mast and back-hitch, 26'-1" crawlers w/60" treads, single front and rear drums, std. swing, mast hoist, Cummins KTA-1150-C525 engine for hoist. Cummins N-855-C235 engine for swing and travel, mast hoist rope, single sheave upper boom point, wire rope guide, revolving fairlead, and drag interlock. . . . .	384,105*
CLAMSHELL - w/100' No. 40 boom, 87,000# counterweight, heavy duty mast and backhitch w/mast sheave for clamshell, 26'-1" crawlers w/60" treads, single front and rear drums w/41" dia. laggings for both drums, std. swing, mast hoist, Cummins KTA-1150-C525 engine for hoist, Cummins N-855-C235 engine for swing and travel, mast hoist rope, double sheave upper boom point, wire rope guide and tagline. . . . .	424,670*
UPPERWORKS - w/Cummins KTA-1150-C525 and Cummins N-855-C235 engines, (Dragline) std. swing, mast hoist, single front and rear drums, and drag interlock; <u>LESS</u> boom, mast and backhitch, counterweights, wire rope guide and catwalk. . . . .	133,205*
UPPERWORKS - w/Cummins KTA-1150-C525 and Cummins N-855-C235 engines, (Clamshell) std. swing, mast hoist, single front and rear drums w/41" dia. laggings for both drums; <u>LESS</u> boom, mast and backhitch, counterweights, wire rope guide and catwalk . . . . .	136,925*
UPPERWORKS (DRAG) as above, w/mast and backhitch, mast hoist rope and carbody; <u>LESS</u> crawlers. . . . .	200,515*
UPPERWORKS (CLAM) as above, w/heavy duty mast and backhitch, mast hoist rope and carbody; <u>LESS</u> crawlers . . . . .	210,335*
CARBODY - w/roller path, ring gear and king pin; <u>LESS</u> crawlers. . . . .	55,160
CRAWLERS, 26'1" w/60" treads. . . . .	53,595 each
<b>REMOVABLE COUNTERWEIGHTS</b>	
Rear Cwt . . . . .	32,000
* Rear Cwt . . . . .	10,000
Lower Center. . . . .	36,000
Lower Right . . . . .	9,500
Lower Left. . . . .	9,500

\*Modify upperworks weight for optional power plants by adding 600# for GM 12V-71N Vicon, and deducting 470# for Cat. D-379 Vicon.

(Cont'd).





42250E2

MATERIAL LIST ON BACK

INTERLOCK CHAIN CASE

50274-1 Cont.	REV. R	MODEL 4600
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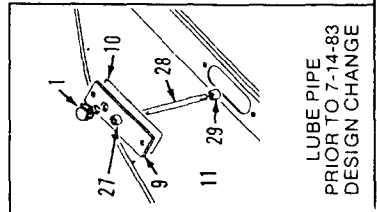
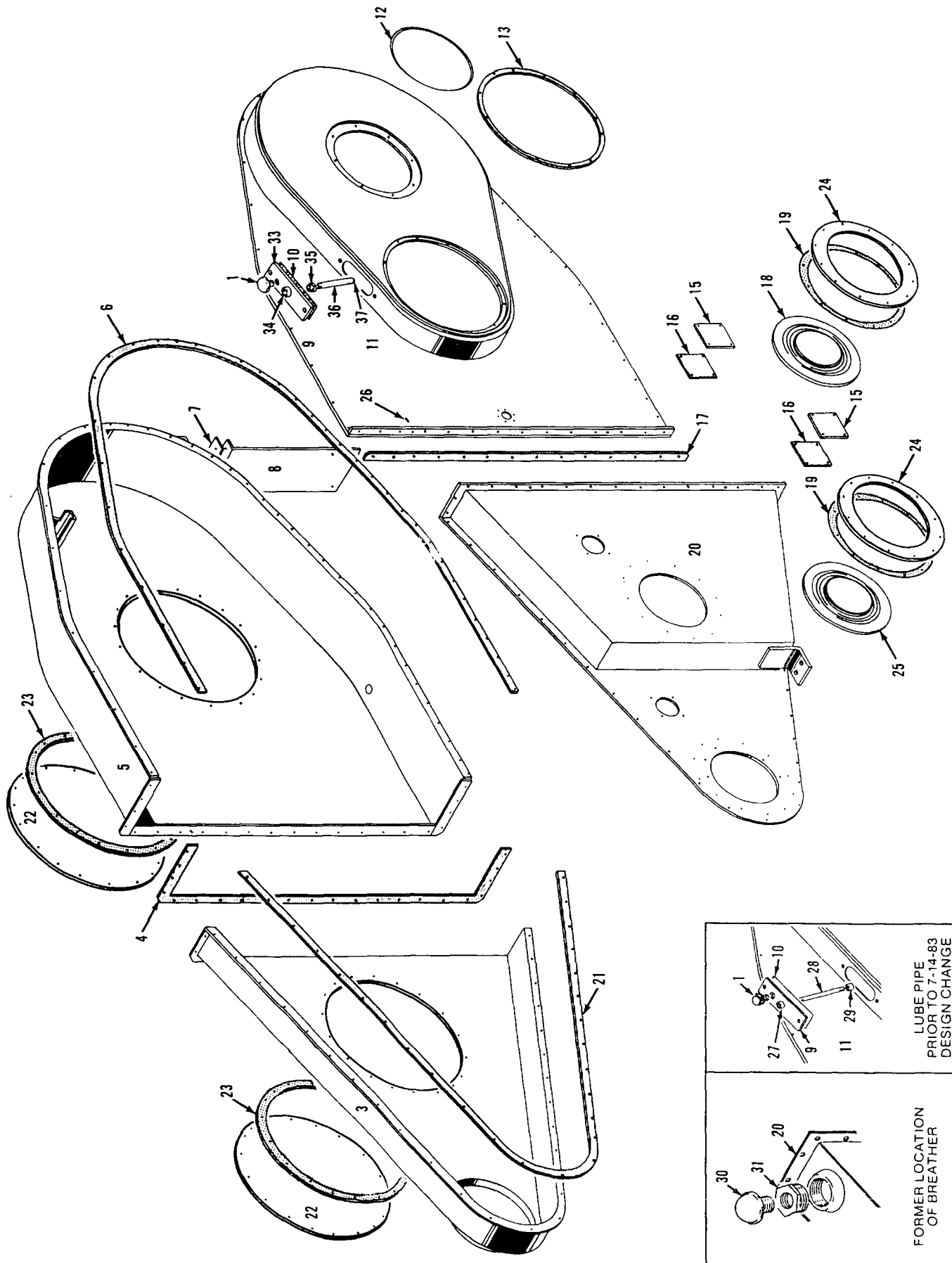
CAB (DUAL ENGINES OR SINGLE ENGINE W/DUAL CONVERTERS) (66 TOOTH FRONT DRUM GEAR)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
	31843-6		ROOF, Left Front (Complete) w/capscrews, hex nuts and lockwashers (See Notes 3, 6 and 8)	
23	632687	1	PANEL, Roof	
24	395102	1	DOOR, Roof w/hinges	
24	395014		DOOR, Roof w/hinges (Mach. w/boom stop)	
25	395115	1	DOOR, Roof w/hinges	
26	31843-2	1	FRAME, Roof	
	31842-6	1	ROOF, Right Front (Complete) w/capscrews, hex nuts and lockwashers (See Notes 3, 6, and 8)	
27	395103	1	DOOR, Roof w/hinges	
27	395122		DOOR, Roof w/hinges (Mach. w/boom stop)	
28	31842-2	1	FRAME, Roof	
29	395115	1	DOOR, Roof w/hinge	
30	632686	1	PANEL, Roof	
	32164-6	1	ROOF, Right Front (Complete) w/capscrews, hex nuts and lockwashers (Mach. w/Wide Split Front Drum)	
27	395055	1	DOOR, Roof w/hinges	
27	395013	1	DOOR, Roof w/hinges (Mach. w/Boom Stop)	
28	32164-2	1	FRAME, Roof	
29	395115	1	DOOR, Roof w/hinge	
30	632686	1	PANEL, Roof	
31	70825	2	SUPPORT, Right Front Roof Door w/capscrews and lockwashers	
32	32008	1	EXTENSION, Right Front Roof w/capscrew, hex nut and lockwasher	
33	75122	As Req	SHIM	
34	23997	1	EXTENSION, Right Rear Roof w/capscrew, hex nut and lockwasher	
35	23998	1	PANEL, Right Rear w/stove bolts, hex nuts and lockwashers	
36	19509	1	GLASS, Window (See Note 7)	
17	605301	1	CHANNEL, Rubber (Specify 5'2" or 1.575m)	
37	23988	1	DOOR, Rear Right w/stove bolts, hex nuts and lockwashers	
	71001	1	CATCH, Door w/mach. screw, hex nut and lockwasher (See Note 7)	
38	475273	2	HANDLE, Outside (See Note 7)	
	475001	2	HANDLE, Inside	
	510163	2	LOCK	
	620531	4	SCREW (No. 10-24 UNC 2A x 3/4" Lg. Flt. Hd. Self Tap)	
	710747	4	WASHER, Shakeproof (3/16" CSK.)	
39	94093	1	PANEL, Rear Right w/stove bolts, hex nut and lockwasher	
40	181637	1	SHUTTER, Radiator w/hook, chain, stove bolts, pins, cotter pins, machine screws, hex nuts, flatwashers and lockwashers (See Note 7)	
41	140308	1	SHEET, Closing w/stove bolts, hex nuts and lockwashers (See Note 7)	
42	71909	1	POST, Door w/stove bolts, hex nuts and lockwashers (See Note 7)	
	23729-6	1	DOOR, Right Side w/stove bolts, hex nuts and lockwashers	
43	23729-2	1	PANEL, Rear	
44	395104	1	PANEL, Front	
45	23723	1	PANEL, Right Center w/stove bolts, hex nuts and lockwashers	
46	95156	1	PANEL, Center (Louvered) w/stove bolts, hex nuts and lockwashers	
47	90354	1	PANEL, Side w/stove bolts, hex nuts and lockwashers	
48	161628	1	LADDER w/capscrews, hex nuts and lockwashers	
49	24859	1	PANEL, Rear Left w/stove bolts, hex nuts and lockwashers (See Note 11)	

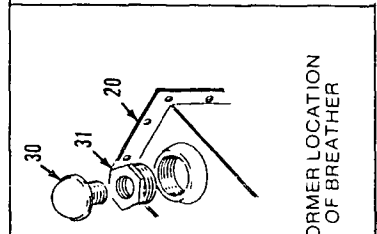
REV. R	50274-1 Cont.
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PLEASE GIVE MACHINE S/N W/ORDER

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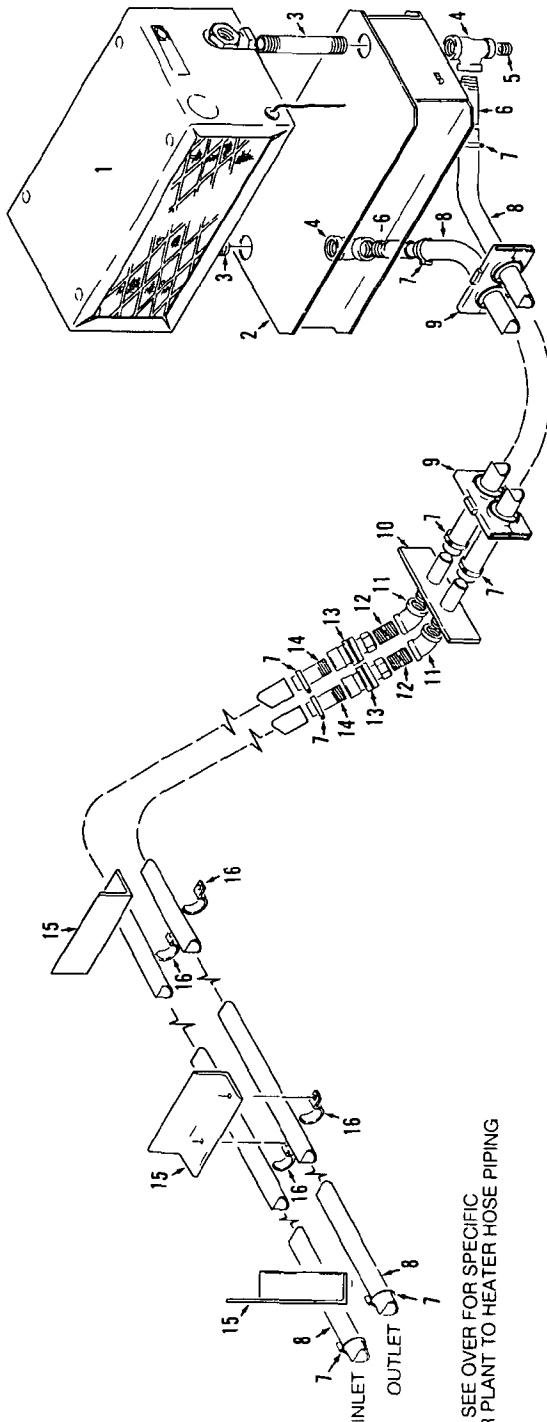
LUBE PIPE  
PRIOR TO 7-14-83  
DESIGN CHANGE



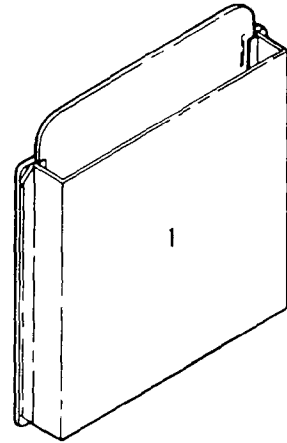
FORMER LOCATION  
OF BREATHER

MATERIAL LIST ON BACK

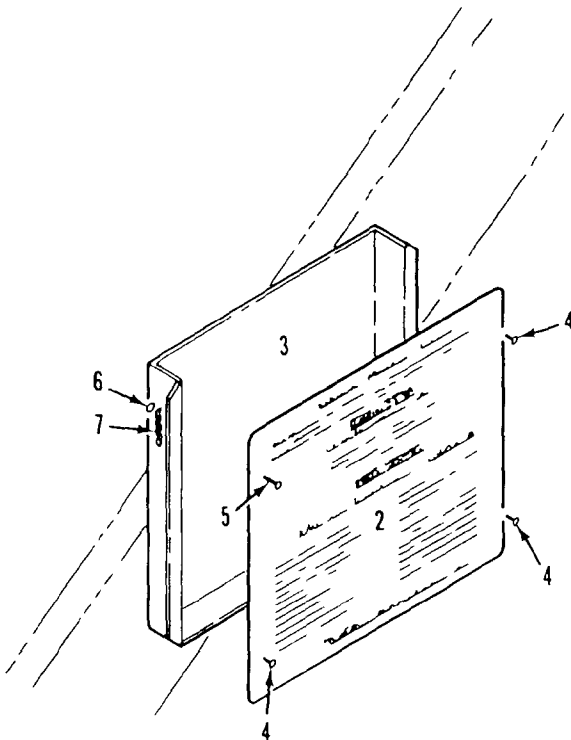
CHAIN CASE



SEE OVER FOR SPECIFIC  
POWER PLANT TO HEATER HOSE PIPING



LOCATED IN PILOT HOUSE  
(ON RIGHT SIDE WALL)



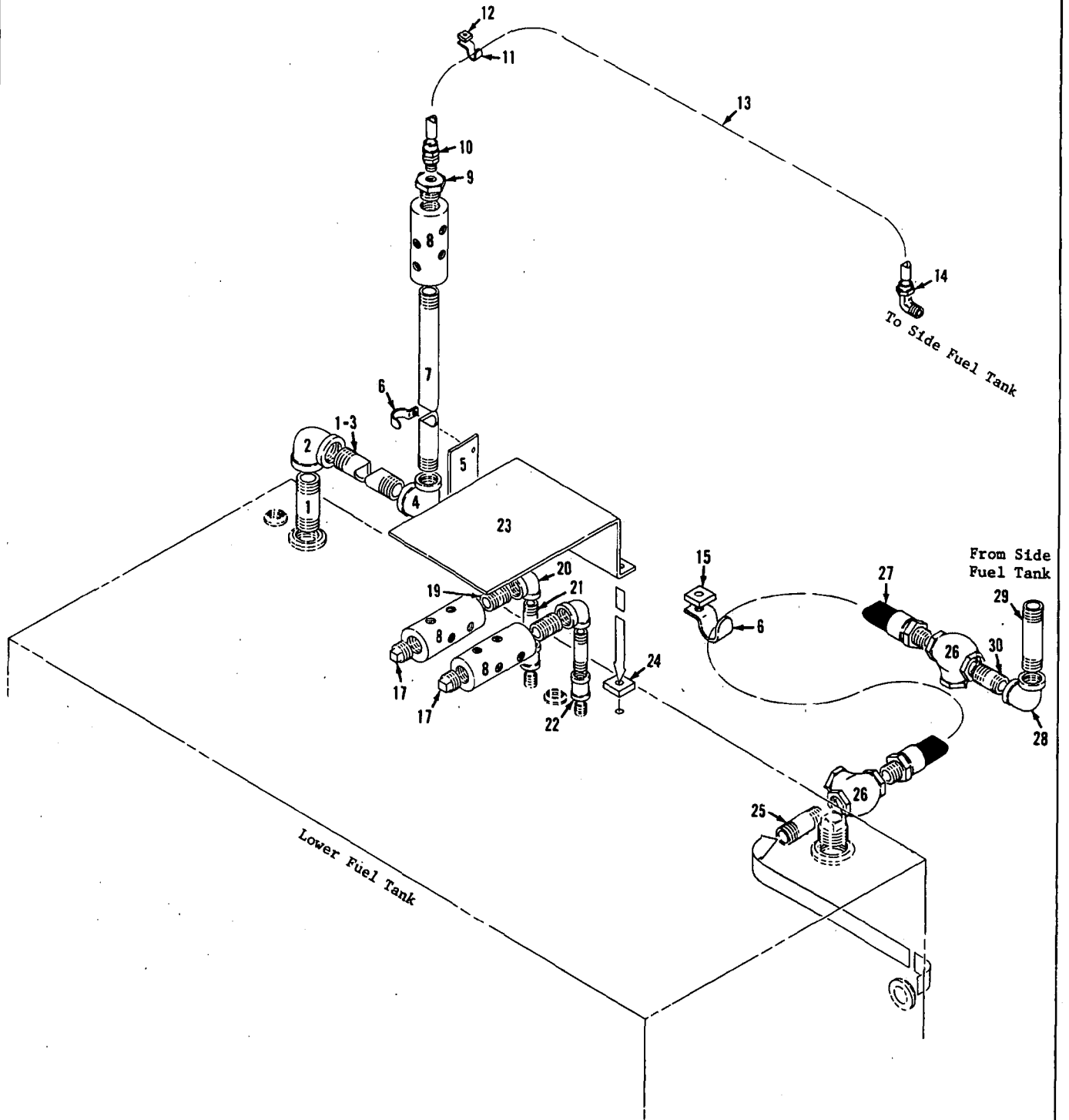
LOCATED IN MACHINERY CAB  
(ON A FRAME LEG)

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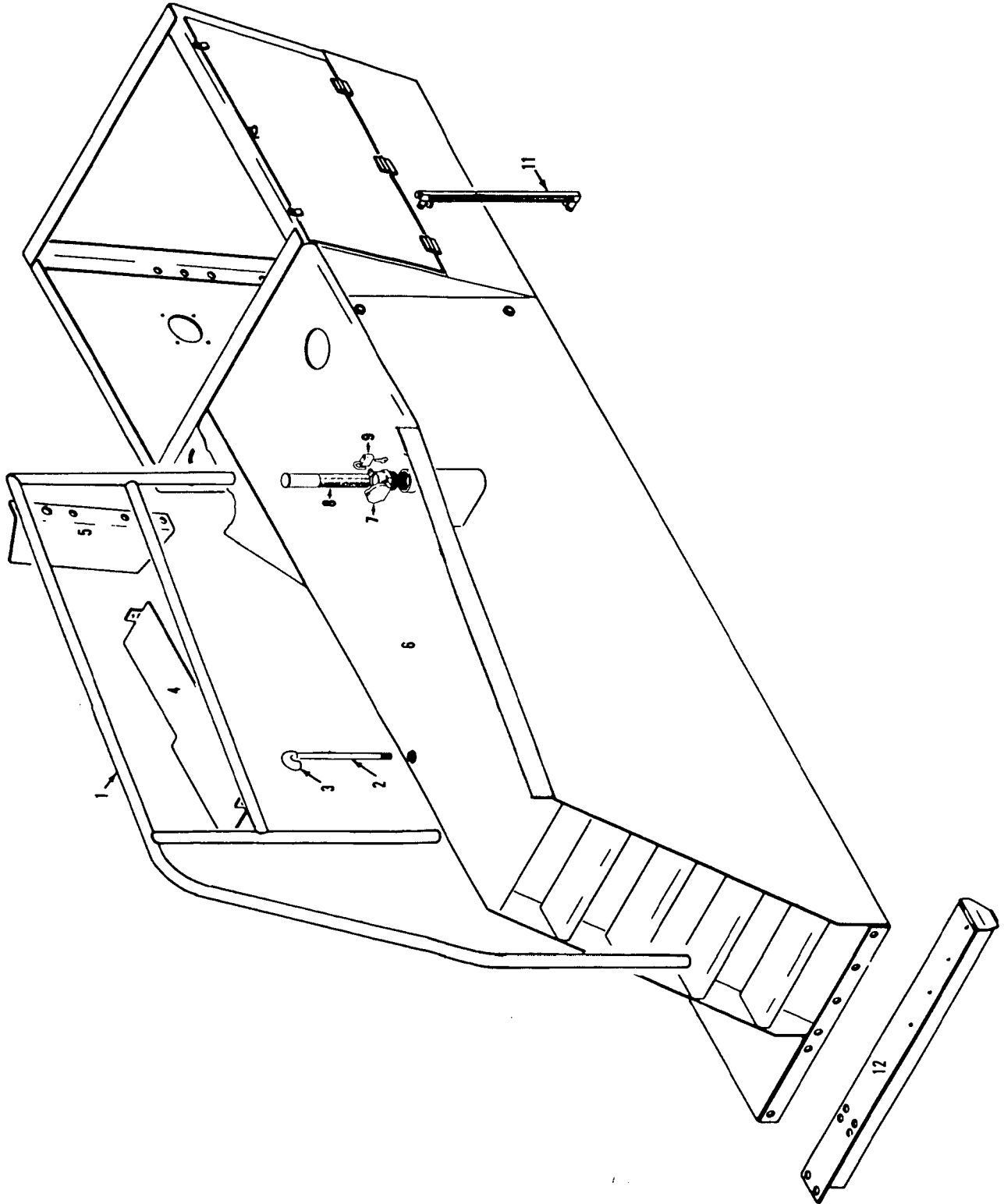
MATERIAL LIST ON BACK

CAPACITY CHART & MANUAL HOLDERS

MASTER



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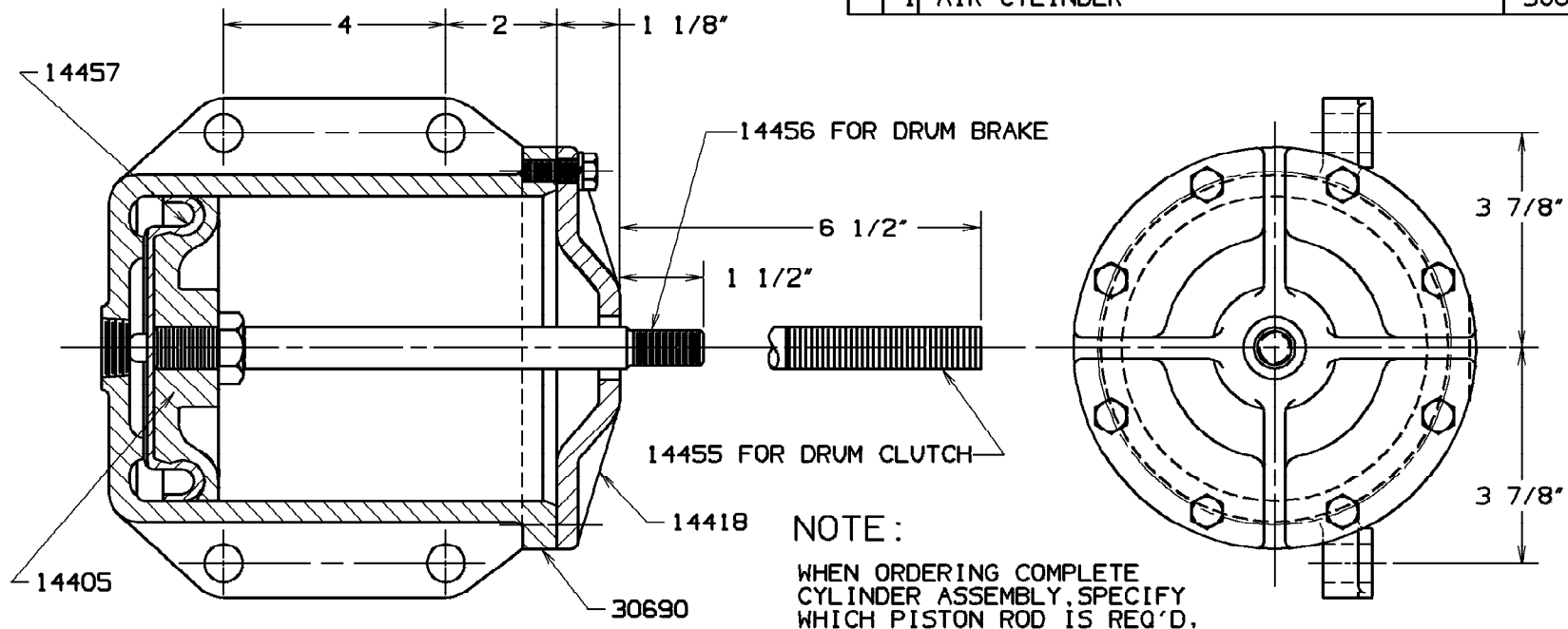
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MATERIAL LIST ON BACK

FUEL TANK AND PILOT HOUSE SUPPORT

BILL OF MATERIAL								ASSEMBLIES USED ON	
ITEM NO.	QTY. REQ'D	SECTION	DESCRIPTION	LENGTH		MATERIAL	CODE NO. OR DWG. NO.		
				FT.	IN.				
	1		PISTON				14405	41043	
	1		AIR CYLINDER COVER				14418	41044	
	1		PISTON ROD FOR DRUM CLUTCH				14455	41201	
	1		PISTON ROD FOR DRUM BRAKE				14456	41096	
	1		SNAP ON PACKING CUP				14457	50139	
	1		AIR CYLINDER				30690	41207	
								41802	
								41803	
								49661	



REVISIONS

10-8-81 DCB  
 REDRAW CADAM  
 CK. NJK  
 APP. TLP  
 11-6-81 RRE  
 A ADDED

A CODE NO.  
 21359-2 WITH ROD 14455  
 21359-3 WITH ROD 14456

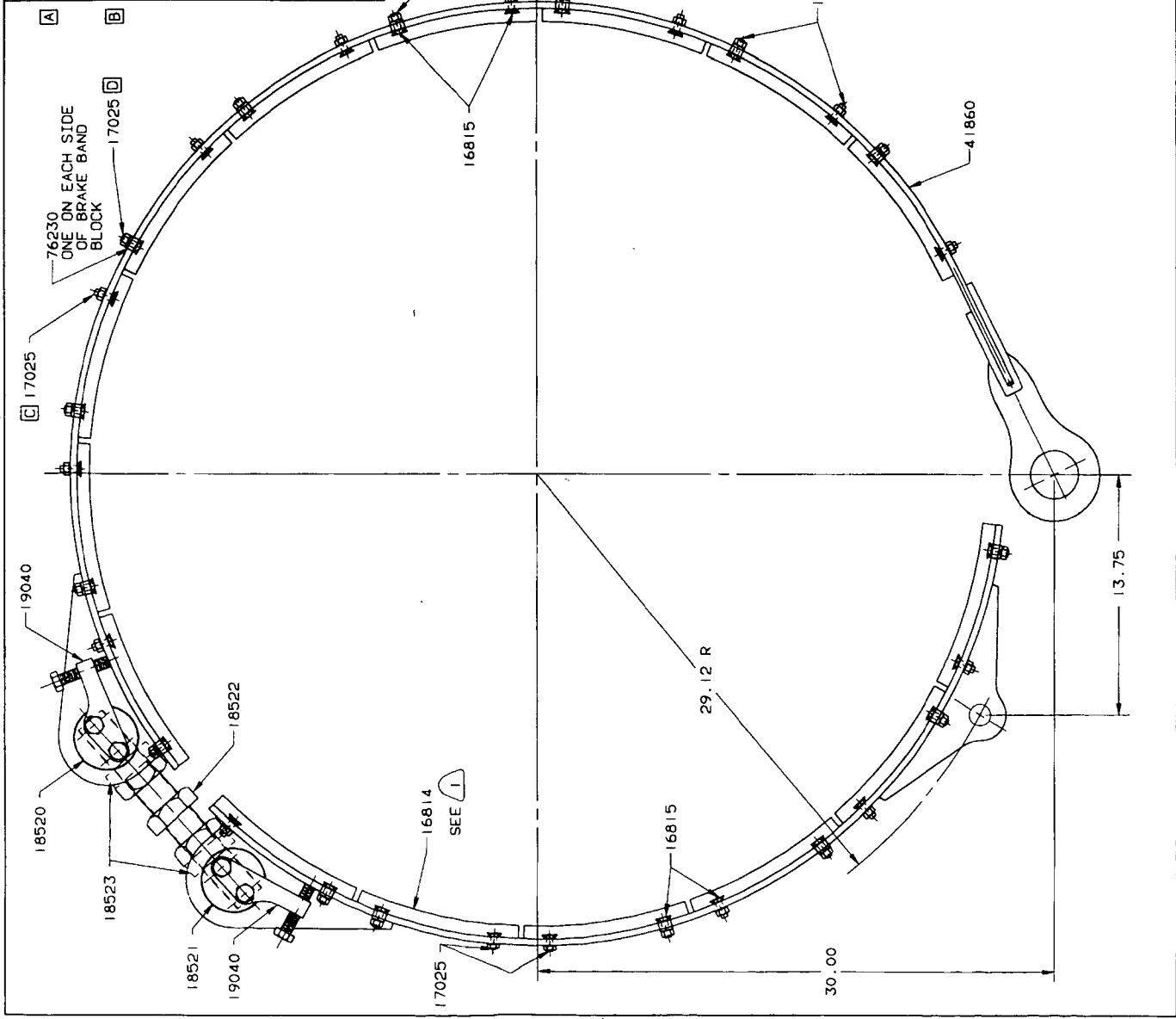
DATE  
 2-7-47

SCALE 3/4" = 1"	DR. RAL	CK. JK	APP	DWG. NO. 21359	<b>Manitowoc Cranes, Inc.</b> Manitowoc, Wisconsin	NO. 4500	5 1/2" X 6" AIR CYLINDER ASSEMBLY WITH "SNAP ON" PACKING CUP	PATTERN NO.	SEE NOTE	DWG. NO. 21359
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DO NOT SCALE THIS DRAWING

REV	DATE	DESCRIPTION	BY	CHKD	ASSEMBLIES USED ON
1					41861 49783
2					42274 49784
3					43095 60277
4					43205
5					48830
6					49308
7					49309
8					49661
9					49736
10					49737

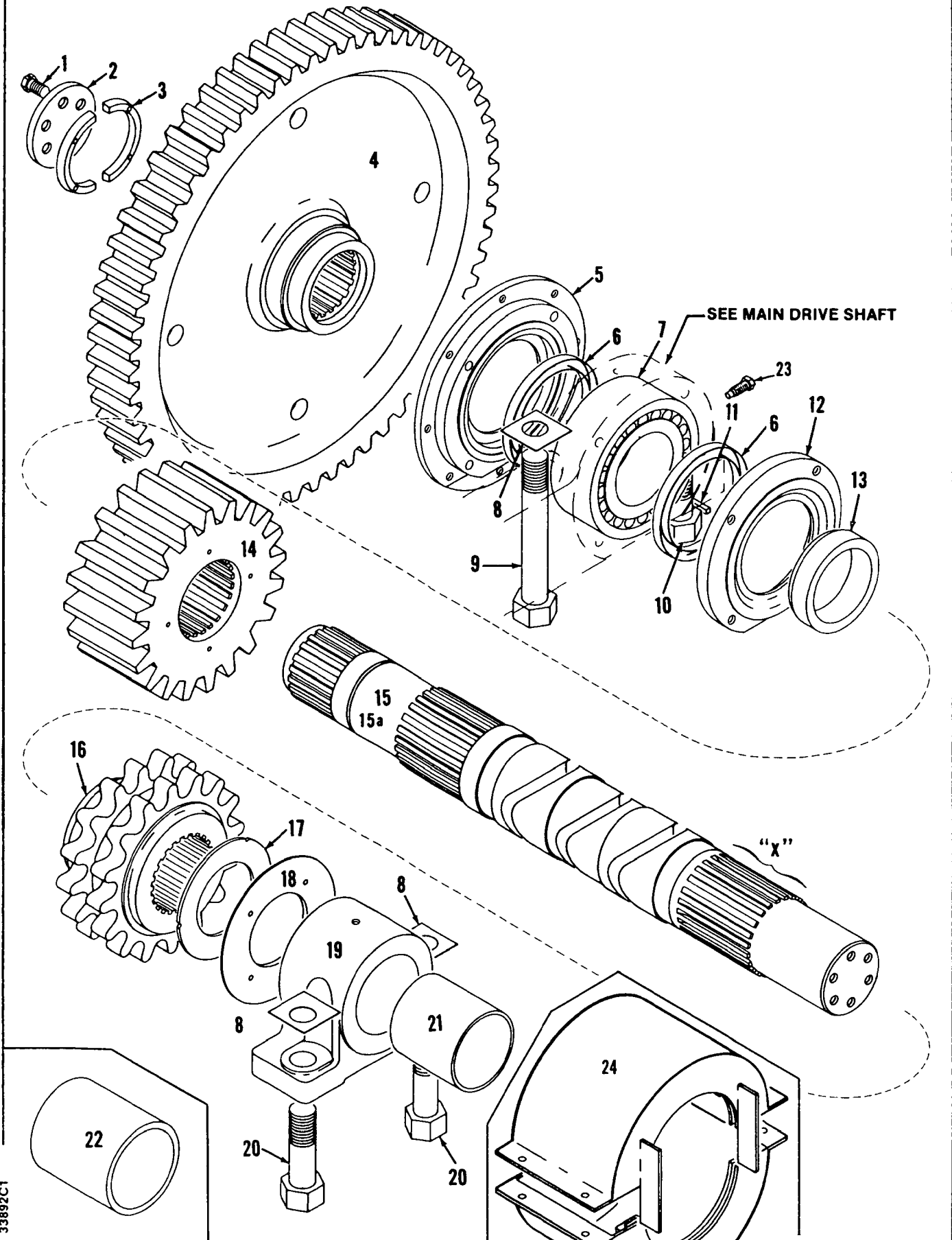
REV	DATE	DESCRIPTION	BY	CHKD	MATERIAL	QTY	UNIT
1		50KEEPER BOLT (KEY LOCK)			14463		
2		15BRAKE LINING BLOCK (KEY LOCK)			16814	1	
3		30KEEPER			16815		
4		10KEEPER BOLT (KEY LOCK)			17025		
5		1PIN-R.H. THREAD			18520		
6		1PIN-L.H. THREAD			18521		
7		1ADJUSTING BOLT			18522		
8		2ADJUSTING BOLT SPACER			18523		
9		2BRAKE BAND SUPPORT			19040		
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 1000 W. WISCONSIN ST., MILWAUKEE, WISCONSIN 53233  
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MATERIAL LIST ON BACK

COUNTERSHAFT

41861-1 Cont.	REV. R	MODEL 4500-4600
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LEFT FRONT DRUM BRAKE  
(MACH. W/66 TOOTH FRONT DRUM GEAR)  
(SPLIT DRUM OR 30" or 43" WIDE SINGLE DRUM)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
43	21359	1	CYLINDER, Air w/rod 14456	
44	21364	1	SUPPORT, Air cylinder	
46	2619	1	WASHER	
47	16849	1	SUPPORT, Guide	
48	146478	1	PAD, Mounting (see Note 2)	
49	14962	1	GASKET	
50	143738	1	COVER, w/mach. screws and lockwashers	
NOTE 1: Spring 2774 is of 5/16" wire. Previous spring before design change of June 26, 1978, was 2766 of 1/4" wire.				
NOTE 2: Prior to design change of August 8, 1979, the following were used -				
32A	22966	1	BRACKET, Guide w/capscrews and lockwashers	
48A	139540	1	PAD, Mounting	
0-71, (Ref. 21359)				
				REV. R
				41861 - 1

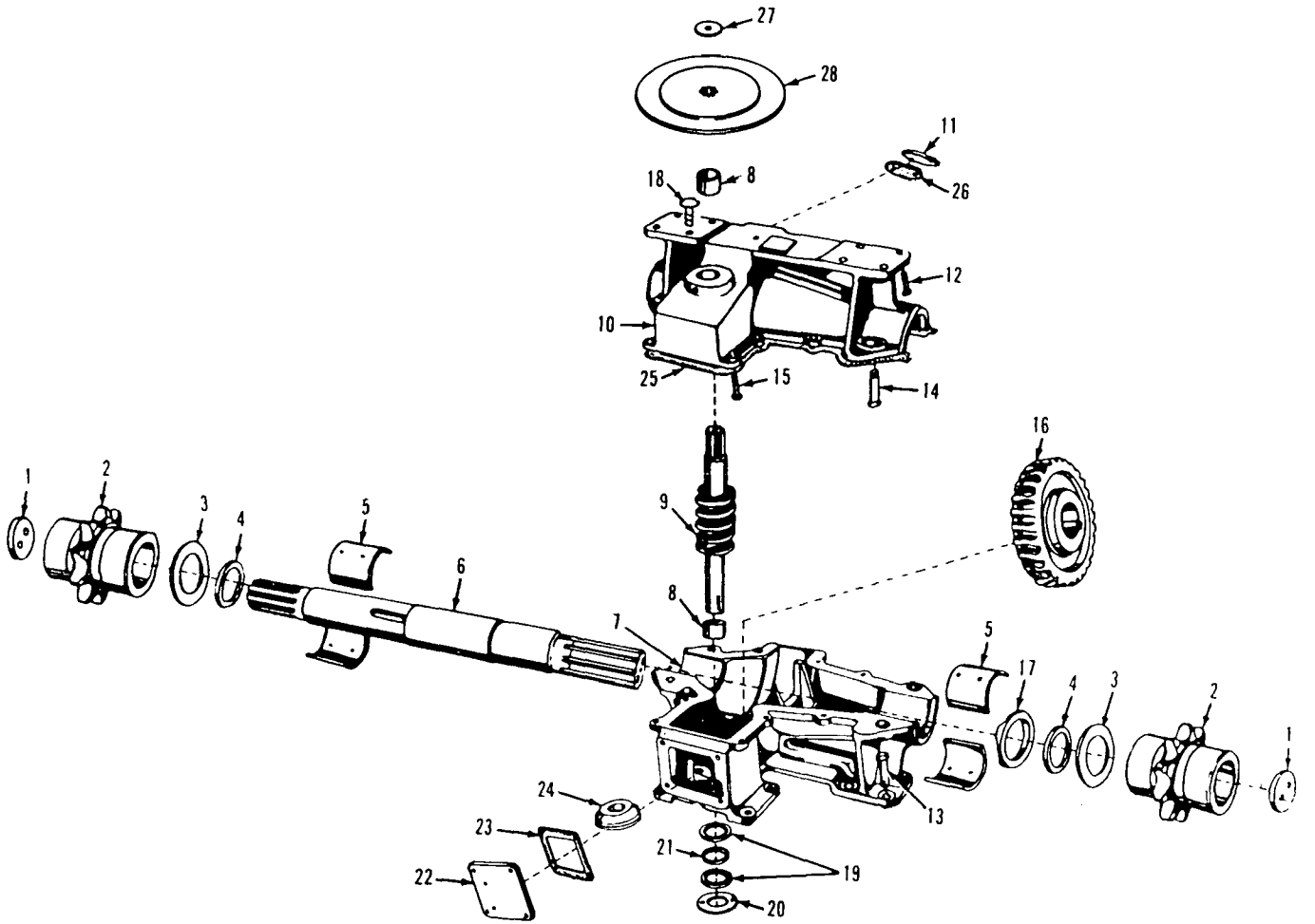
PLEASE GIVE MACHINE S/N W/ORDER

CPT

Run as Front

41861-RI cont'd

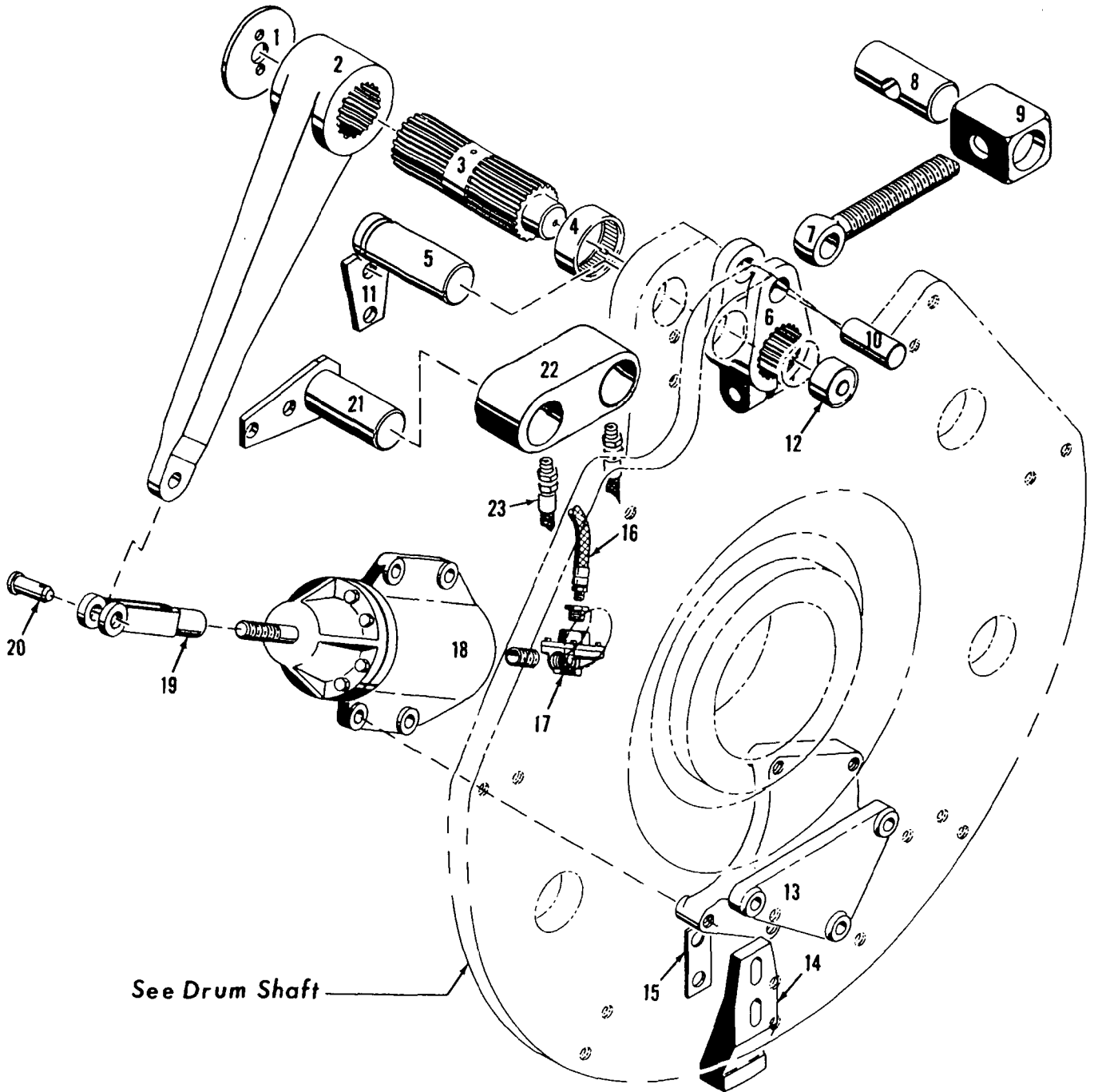
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MATERIAL LIST ON BACK

MAST HOIST REDUCTION GEAR



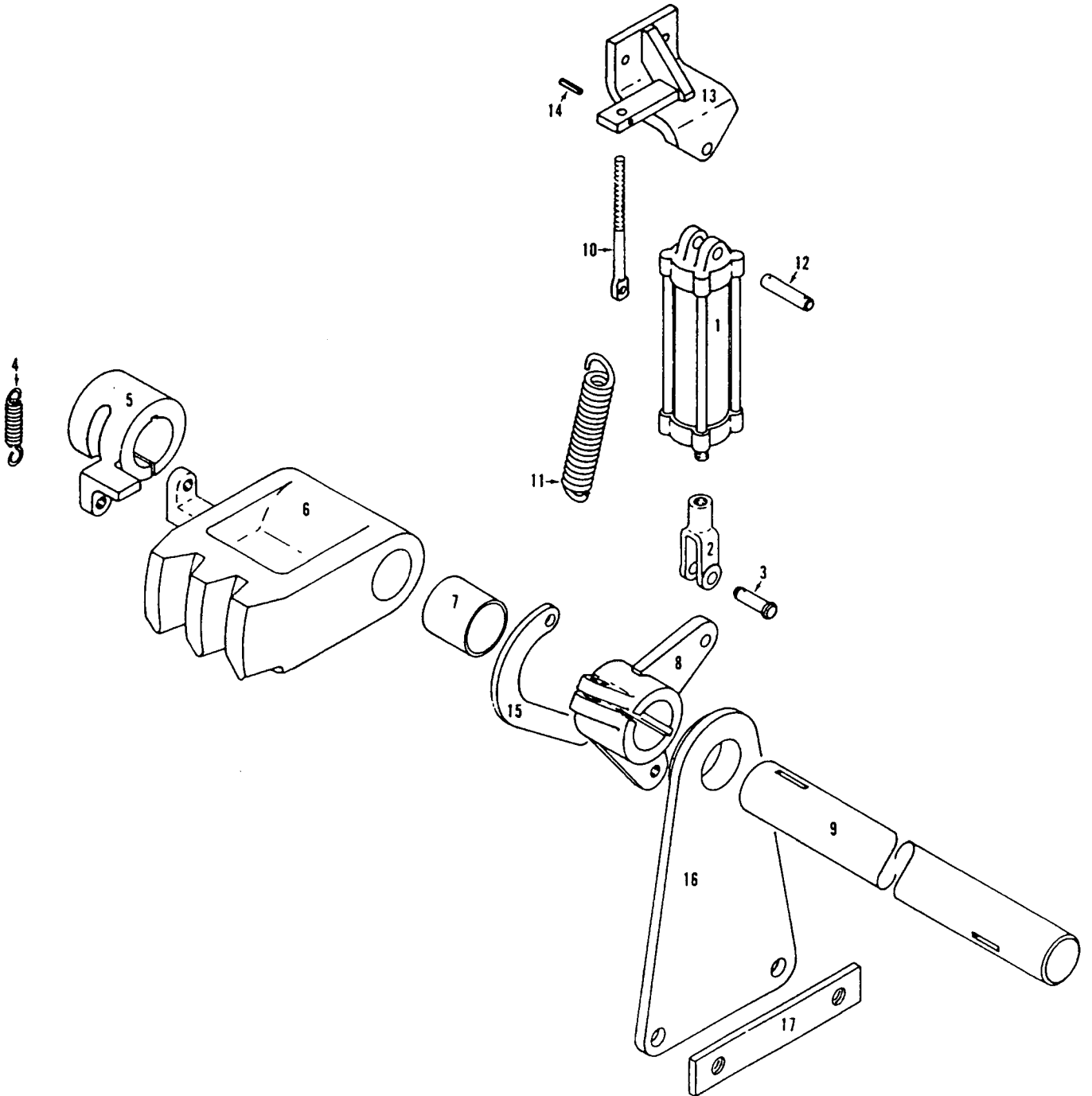
See Drum Shaft







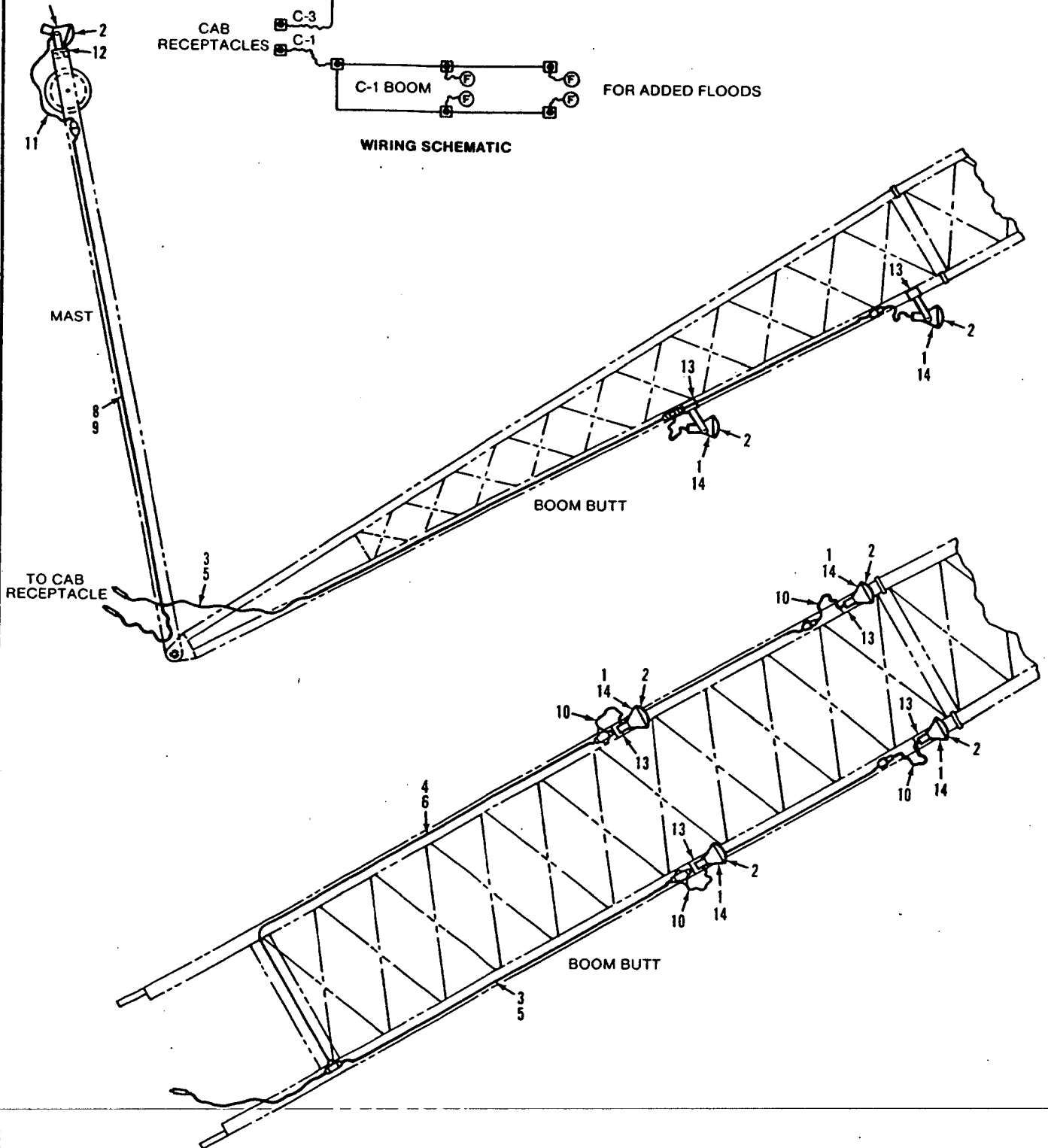
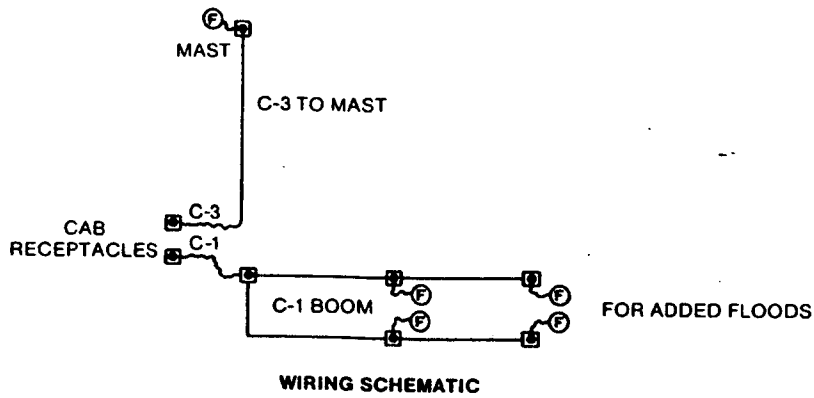
MASTER



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MATERIAL LIST ON BACK

SWING LOCK CONTROL



41086A1

MATERIAL LIST ON BACK

BOOM & MAST LIGHTS

50496-1 con't.	REV. E	MODEL 4600
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CAB WIRING

Run as Front

MASTER

50496-E1 Con't.

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
65	296416		WIRE, (#12 Strd. Type TW Black - 45' or 13.714 m.)	
66	296498		WIRE, (#12 Strd. Type TW Green - 15' or 4.570 m.)	
67	296509		WIRE, (#12 Strd. Type TW Red - 30' or 9.144 m.)	
68	144769	1	COVER	
69	304568	1	CAP, Plug	
70	667495	10	STRAP, Quad (#1701)	
71	589786	1	RECEPTACLE (Hubbell Brown #5262 Pol.)	
72	617789	75	SCREW, Mach. (3/16" x 1")	
73	710301	75	LOCKWASHER (3/16")	
74	710302	225	LOCKWASHER (1/4")	
75	617829	125	SCREW, Mach. (1/4" x 3/4")	
76	617827	100	SCREW, Mach. (1/4" x 1/2")	
77	617830	7	SCREW, Mach. (1/4" x 1")	
78	546055	75	NUT, Hex (3/16")	
81	304509	1	CAP (Hubbell #7535)	
82	589774	1	RECEPTACLE (Twistlock #7535)	
83	570105	1	PLATE, Single Receptacle (#423)	
85	268536	2	BOX, Galv. square outlet (4")	
86	378607	1	COVER, Square outlet box (4")	
87	453212	1	FUSE, (Glass 20 Amp. Type SFE-20)	
88	646364	1	SOCKET, Lamp (Protex #717)	
89	471682		CONNECTOR, Cord (Pyle Nat'l. #DB-3)	
90			BLOCK, Fuse (1 Pole)	
91	296560		CABLE (Drib-4)	
92	371819		CORD (Tirex #14-4/c. Type "S")	
93	378956	as req.	PLATE, Cover (When Ref. #95 & #99 Not Used)	
94	456753	as req.	GASKET (W/Cover Plate #378956)	
95	589620	as req.	RECEPTACLE	
96	617830	8	SCREW, Mach. (1/4" - 20 x 1")	
97	546052	8	NUT, Hex (1/4" - 20)	
98	710302	8	LOCKWASHER (1/4")	
99	455548	as req.	GASKET	
100	594850	1	RESISTOR (30 V. System Only)	
103	147352	2	PAD, Mounting	
104	147353	1	PAD, Mounting	
105	147354	1	PAD, Mounting	
106	147355	15	PAD, Mounting	
107	147356	2	PAD, Mounting	
108	147357	1	PAD, Mounting	
109	147358	1	PAD, Mounting (not shown)	
110	268531	1	BOX, Switch	
111	363657	1	ELBOW, 90° (1/2")	
112	364189	1	CONNECTOR, Thinwall Offset (1/2")	
113	364191	2	CONNECTOR, Thinwall (1/2")	
114	378613	1	COVER, Blank	
115	456767	1	ASSEMBLY, Gasket (1/2")	
116	543174	1	NIPPLE (1/2" x 1-1/8")	
117	543194	1	NIPPLE, Close (1/2")	
118	548555	1	NUT, Lock (1/2")	

REV. E	50496-1 con't.
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PLEASE GIVE MACHINE S/N W/ORDER

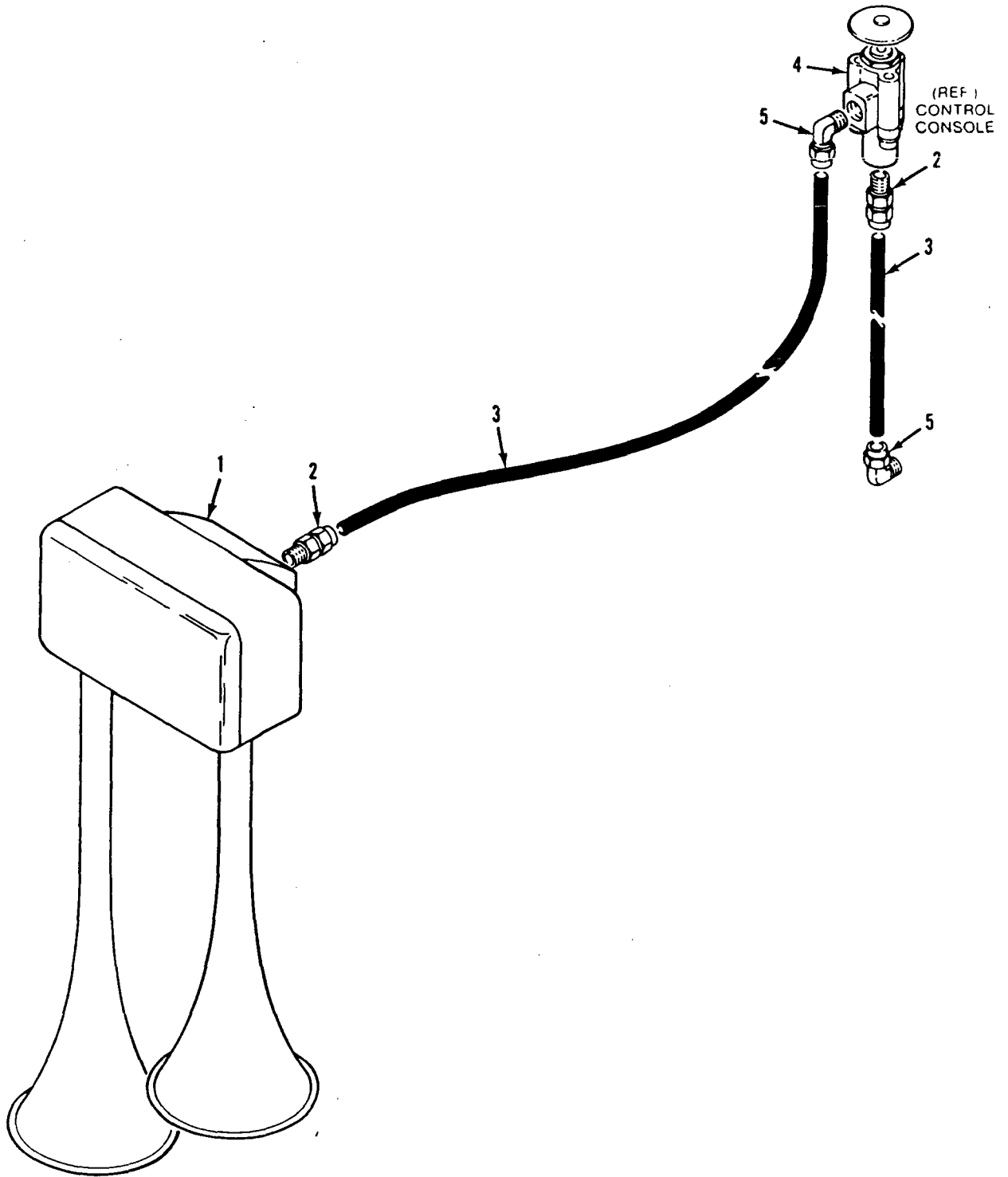
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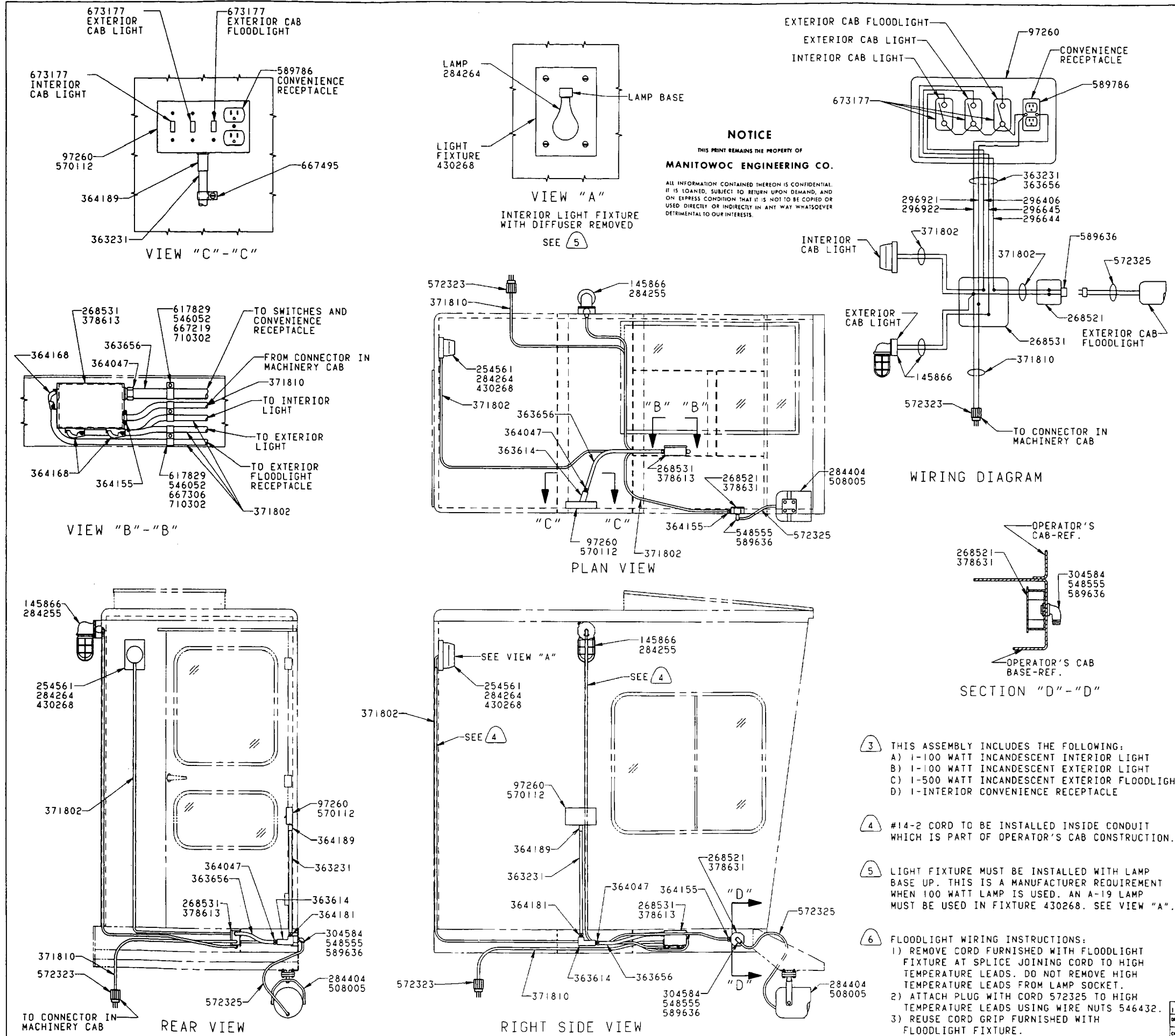
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(REF.)  
CONTROL  
CONSOLE

BELOW OPERATORS CAB





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 ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR  
 USED DIRECTLY OR INDIRECTLY IN ANY WAY WHATSOEVER  
 DETRIMENTAL TO OUR INTERESTS.

BILL OF MATERIAL					
ITEM NO.	QTY.	DESCRIPTION	MATERIAL	QTY. OF DVS. NO.	MATERIAL
1	1	BOX-ELECTRICAL		97260	
1	1	EXTERIOR LIGHT SUB-ASSEMBLY		145866	
4		.250-20UNC-2A X 1.00 LG. STOVE BOLT		254561	
1	1	BOX-OCTAGON		268521	
1	1	BOX-JUNCTION		268531	
1	1	BULB-100 WATT-120 VOLT-A21		284255	
1	1	BULB-100 WATT-120 VOLT-A19		284264	
1	1	BULB-500 WATT-120 VOLT		284404	
		#14 WIRE-RED		296406	1
		#14 WIRE-YELLOW		296644	1
		#14 WIRE-BLUE		296645	1
		#14 WIRE-BLACK		296921	1
		#14 WIRE-WHITE		296922	1
1	1	CAP		304584	
		.50 CONDUIT-THINWALL		363231	1
1	1	.50 CONDUIT-LB WITH COVER		363614	1
		.50 CONDUIT-LIQUID TIGHT		363656	1
2	2	.50 CONNECTOR-LIQUID TIGHT STR.		364047	1
		.50 CONNECTOR-STRAIGHT		364155	1
3	3	.50 CONNECTOR-90		364168	1
1	1	.50 CONNECTOR-THINWALL-STRAIGHT		364181	1
1	1	.50 CONNECTOR-THINWALL-OFFSET		364189	1
		#14-2 PORTABLE CORD		371802	1
		#14-3 PORTABLE CORD		371810	1
1	1	COVER-BLANK		378613	
1	1	COVER-BLANK		378631	
		LIGHT FIXTURE		430268	
1	1	FLOODLIGHT FIXTURE		508005	
		.250-20UNC-28 HEX NUT		546052	1
		WIRENUT		546432	1
1	1	.50 LOCKNUT		548555	
1	1	PLATE		570112	
1	1	PLUG WITH 6 FOOT CORD		572325	
1	1	PLUG		572323	
1	1	RECEPTACLE-90°		589636	
1	1	RECEPTACLE-DUPLEX		589786	
		.250-20UNC-2A X .75 LG. RD. HD. BOLT		617829	1
		STRAP-SINGLE		667206	1
2	2	.50 STRAP-LIQUID TIGHT		667219	
		STRAP-DUPLEX		667306	1
2	2	.50 STRAP-THINWALL		667495	
3	3	SWITCH-TOGGLE S.P.S.T.		673177	
		TERMINAL-RING		680500	1
2	2	TERMINAL-SPLICING		680558	
		.25 LOCKWASHER		710302	1

- 3 THIS ASSEMBLY INCLUDES THE FOLLOWING:  
 A) 1-100 WATT INCANDESCENT INTERIOR LIGHT  
 B) 1-100 WATT INCANDESCENT EXTERIOR LIGHT  
 C) 1-500 WATT INCANDESCENT EXTERIOR FLOODLIGHT  
 D) 1-INTERIOR CONVENIENCE RECEPTACLE

- 4 #14-2 CORD TO BE INSTALLED INSIDE CONDUIT WHICH IS PART OF OPERATOR'S CAB CONSTRUCTION.

- 5 LIGHT FIXTURE MUST BE INSTALLED WITH LAMP BASE UP. THIS IS A MANUFACTURER REQUIREMENT WHEN 100 WATT LAMP IS USED. AN A-19 LAMP MUST BE USED IN FIXTURE 430268. SEE VIEW "A".

- 6 FLOODLIGHT WIRING INSTRUCTIONS:  
 1) REMOVE CORD FURNISHED WITH FLOODLIGHT FIXTURE AT SPLICE JOINING CORD TO HIGH TEMPERATURE LEADS. DO NOT REMOVE HIGH TEMPERATURE LEADS FROM LAMP SOCKET.  
 2) ATTACH PLUG WITH CORD 572325 TO HIGH TEMPERATURE LEADS USING WIRE NUTS 546432.  
 3) REUSE CORD GRIP FURNISHED WITH FLOODLIGHT FIXTURE.

- 1 MATERIAL AS REQUIRED.
- 2 THIS ASSEMBLY DESIGNED FOR USE WITH MACHINERY CAB LIGHTING ASSEMBLY 50496.

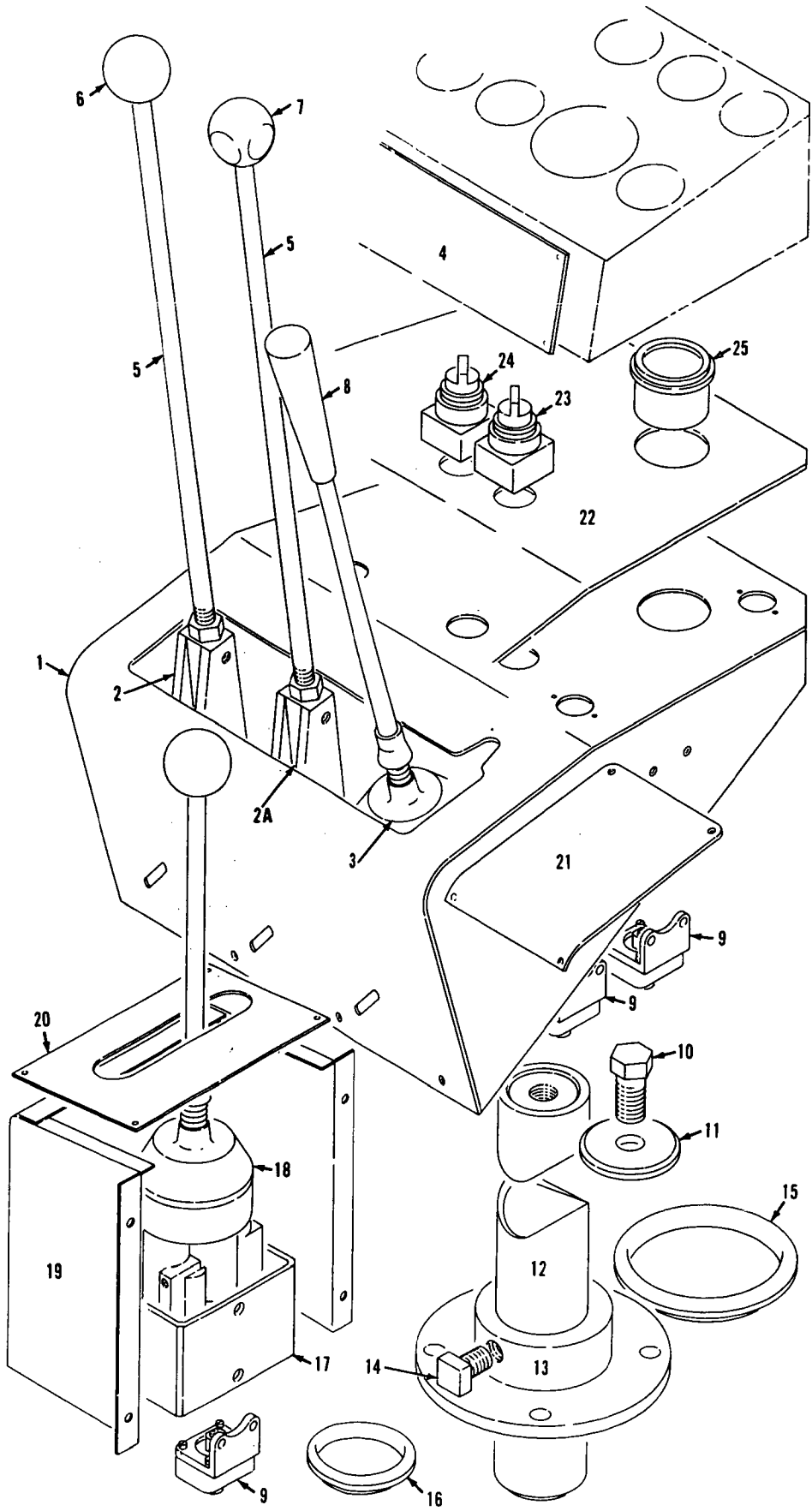
SUPERSEDES 190869 OF 3-4-81 FOR MODELS 4600 SERIES 1 AND 3		DATE 7-28-83
MANIWOC ENGINEERING CO. LIGHTING ASSEMBLY-OPERATOR'S CAB		PATTERN NO.
120 VOLT A.C.-NON MARINE		CODE NO.
MODEL 4600 SERIES 1 AND 3 1-500 W. INCAND. FLOODLIGHT		190869
ON FRONT OF CAB		

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Manitowoc, Wisconsin

MASTER



19087981

MATERIAL LIST ON BACK

Control Console

NOTE A FOR CONV. DRIVEN IND. BOOM HOIST ONLY.

NOTE A FOR M-4600-SI W/OPTIONAL INSTRUMENT PANELS.

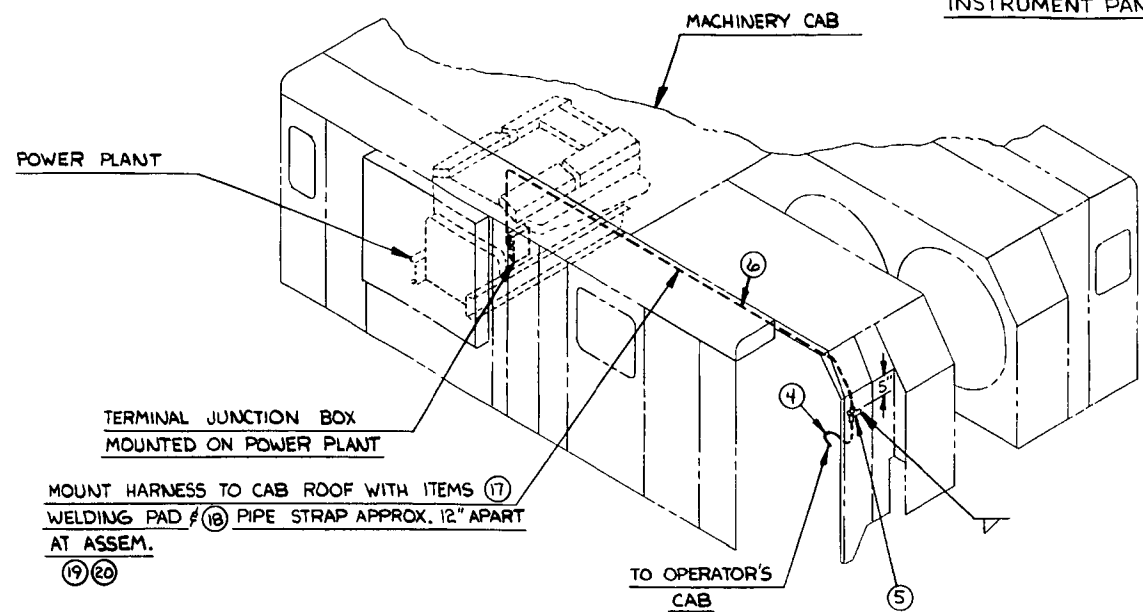
NOTE A IDENTIFY ALL WIRES THE SAME AS SHOWN ON TERMINAL STRIPS. FOR SINGLE POWER PLANT MACHINES LEAVE THE LETTERS "F" & "R" OFF ANY WIRES INDICATED.

NOTE A FOR WIRING NOT SHOWN SEE INSTRUMENT PANELS.

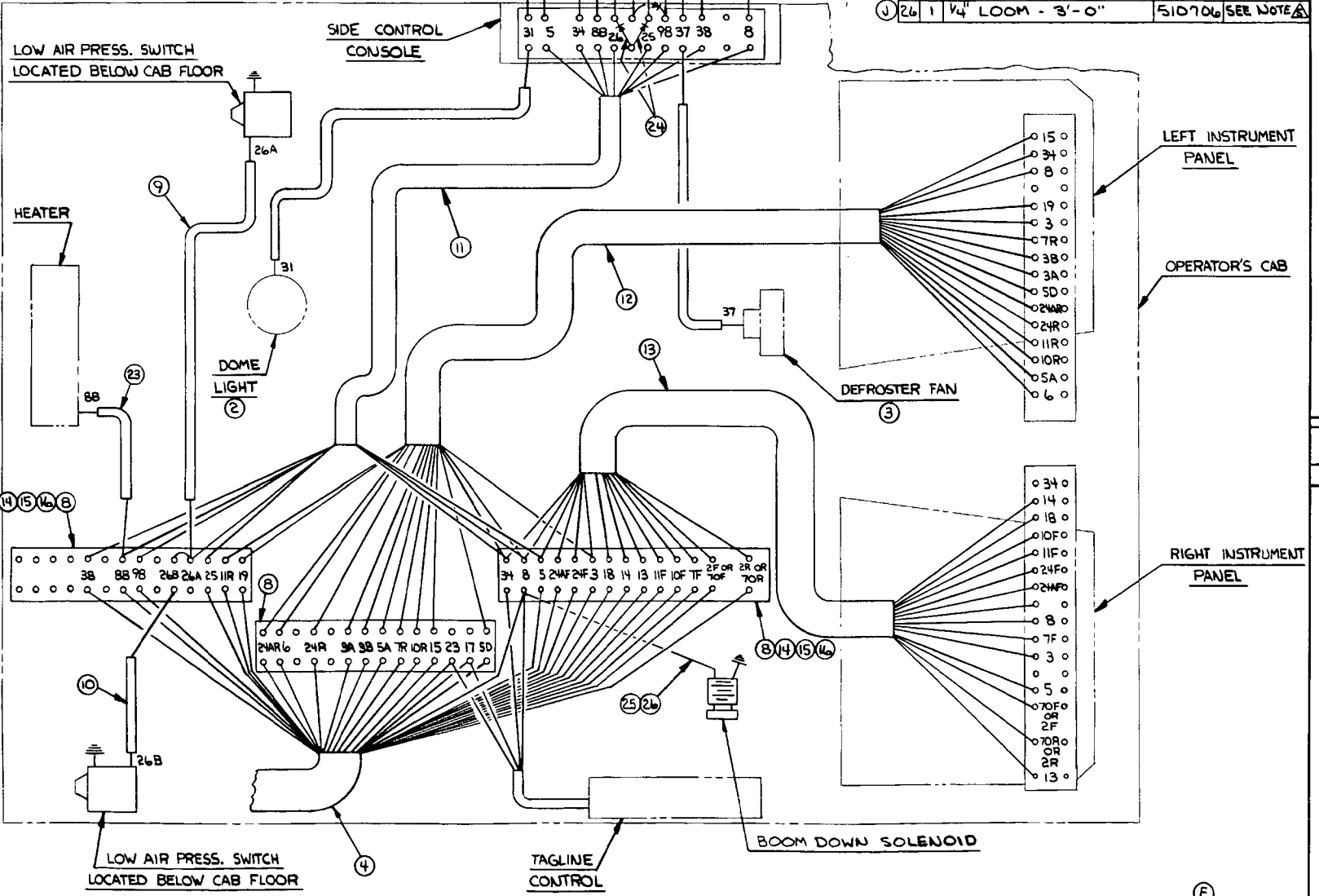
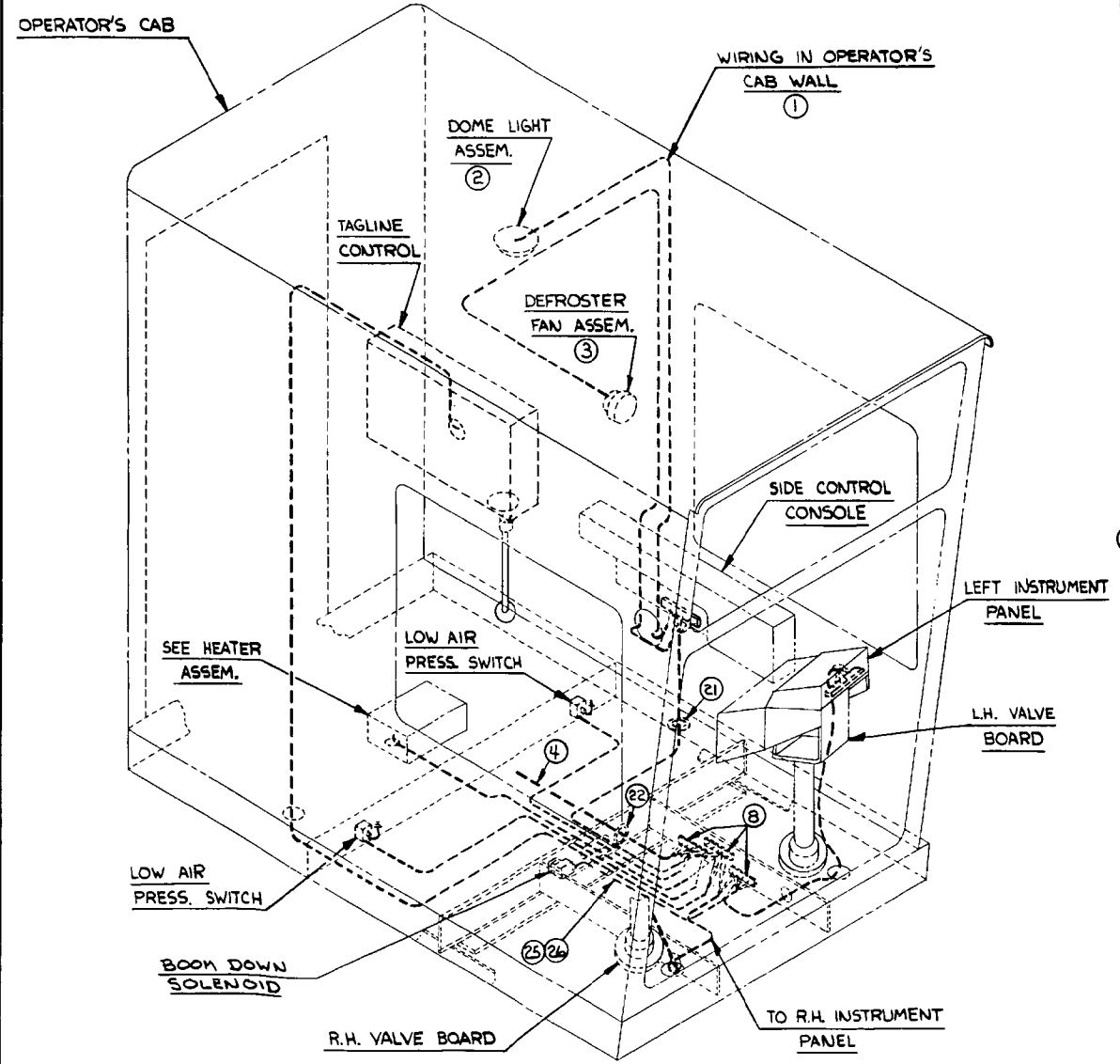
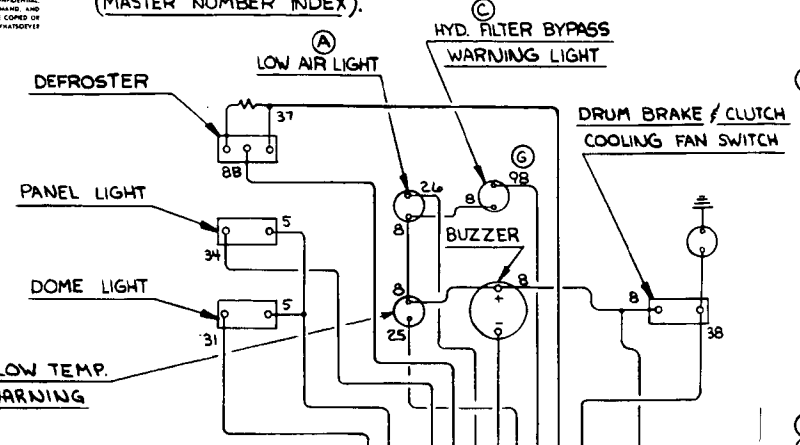
NOTE A FOR WIRE IDENTIFICATION NUMBERS SEE CHART #5605 (MASTER NUMBER INDEX).

NOTICE THE HEREINAFTER IS THE PROPERTY OF MANITOWOC ENGINEERING CO. ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND IS LOANED SUBJECT TO STRICT NON-DISCLOSURE AND USE DIRECTLY OR INDIRECTLY IN ANY MANNER WITHOUT PERMISSION IS PROHIBITED.

BILL OF MATERIAL						REVISIONS
ITEM NO.	DESCRIPTION	QUANTITY	MATERIAL	CODE NO. OR DWS. NO.	REMARKS	
1	1	1	WIRING IN PILOT HOUSE WALL	97159		
2	1	1	DOME LIGHT ASSEM.	142933		
3	1	1	FAN ASSEMBLY	142932		
4	1	1	CABLE HARNESS	477301		
5	1	1	BRACKET	142922		
6	1	1	CABLE HARNESS	477303		
7	15	15	IDENTIFICATION TAGS	306008	SEE NOTE A	
8	3	3	TERMINAL STRIP	667742		
9	1	1	1 COND. CABLE #14 WIRE	371829	(4'-0")	
10	1	1	1 COND. CABLE #14 WIRE	371829	(7'-0")	
11	1	1	8 COND. CABLE #16 WIRE	371899	(6'-0")	
12	1	1	24 COND. CABLE #16 WIRE	371851	(4'-0")	
13	1	1	24 COND. CABLE #16 WIRE	371851	(6'-0")	
14	12	12	#8-32UNC. x 3/4" LG. SCREW	616427		
15	12	12	#8 LOCKWASHER	710319		
16	12	12	#8-32UNC. HEX. NUT	546050		
17	20	20	WELDING PAD	554113		
18	24	24	1/2" PIPE STRIP	667219		
19	20	20	1/4" 20UNC. x 1/2" LG. SCREW	622351		
20	20	20	1/4" LOCKWASHER	710302		
21	1	1	GROMMET	472020		
22	1	1	GROMMET 6 1/2" LG.	472038		
23	1	1	1 COND. CABLE #14 WIRE	371829	(3'-0")	
24	3	3	DIODE	363105		
25	1	1	1 COND. CABLE-6'-0"	371829	SEE NOTE A	
26	1	1	1/4" LOOM - 3'-0"	510706	SEE NOTE A	



MOUNT HARNESS TO CAB ROOF WITH ITEMS (17) WELDING PAD & (18) PIPE STRAP APPROX. 12" APART AT ASSEM. (19) (20)



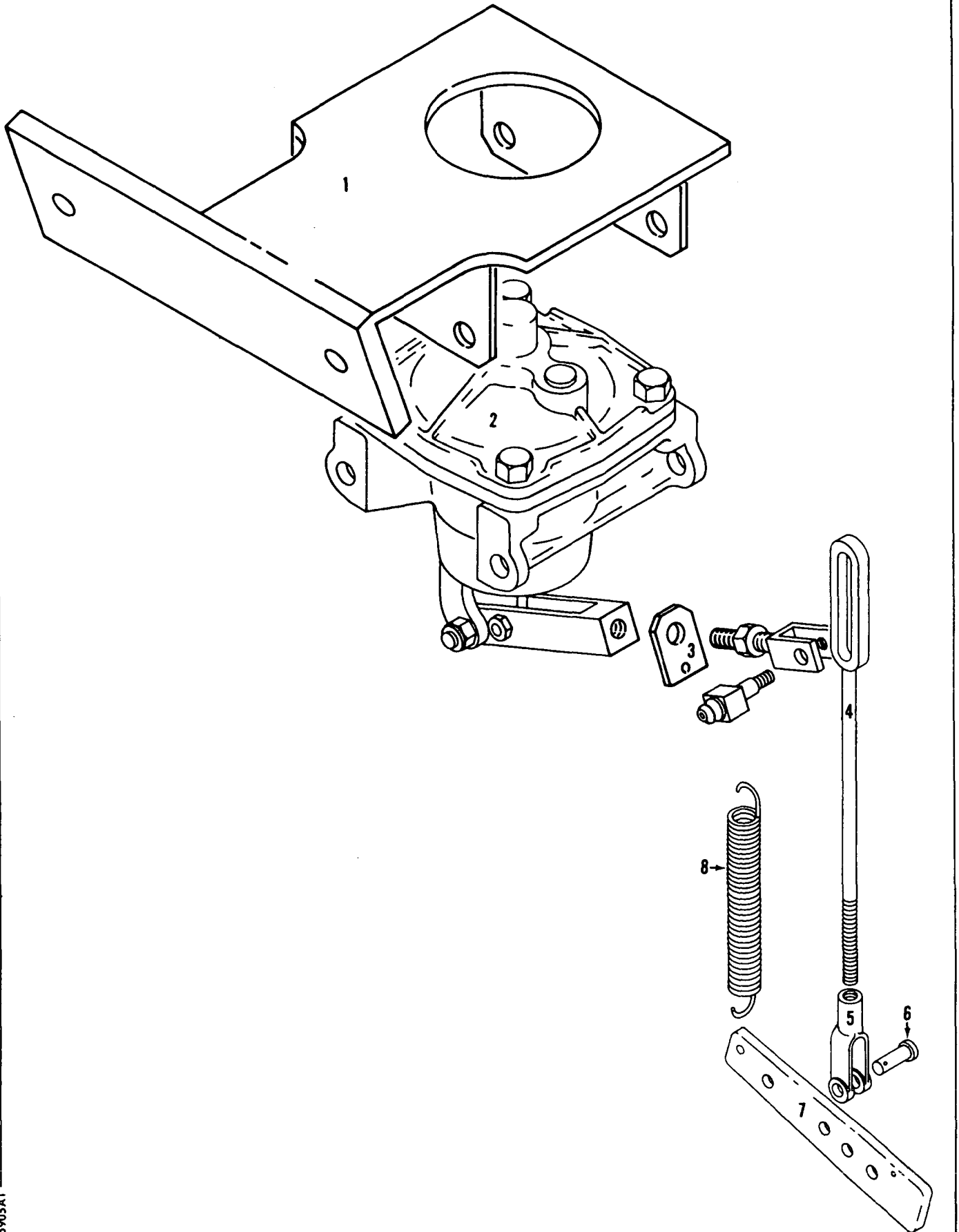
SCALE	1" = 1'-0"	DATE	8-17-78
DESIGNED BY	J.C.S.	DRAWN BY	C.W.H.
CHECKED BY		DATE	
MANITOWOC ENGINEERING CO.		OPERATOR'S CAB W/PEDESTAL MOUNTED VALVE BOARD WIRING TO POWER PLANT	
MODEL 4600 SERIES 1E3		SEE NOTE A	
DWS. NO. 190885		DWS. NO. 190885	

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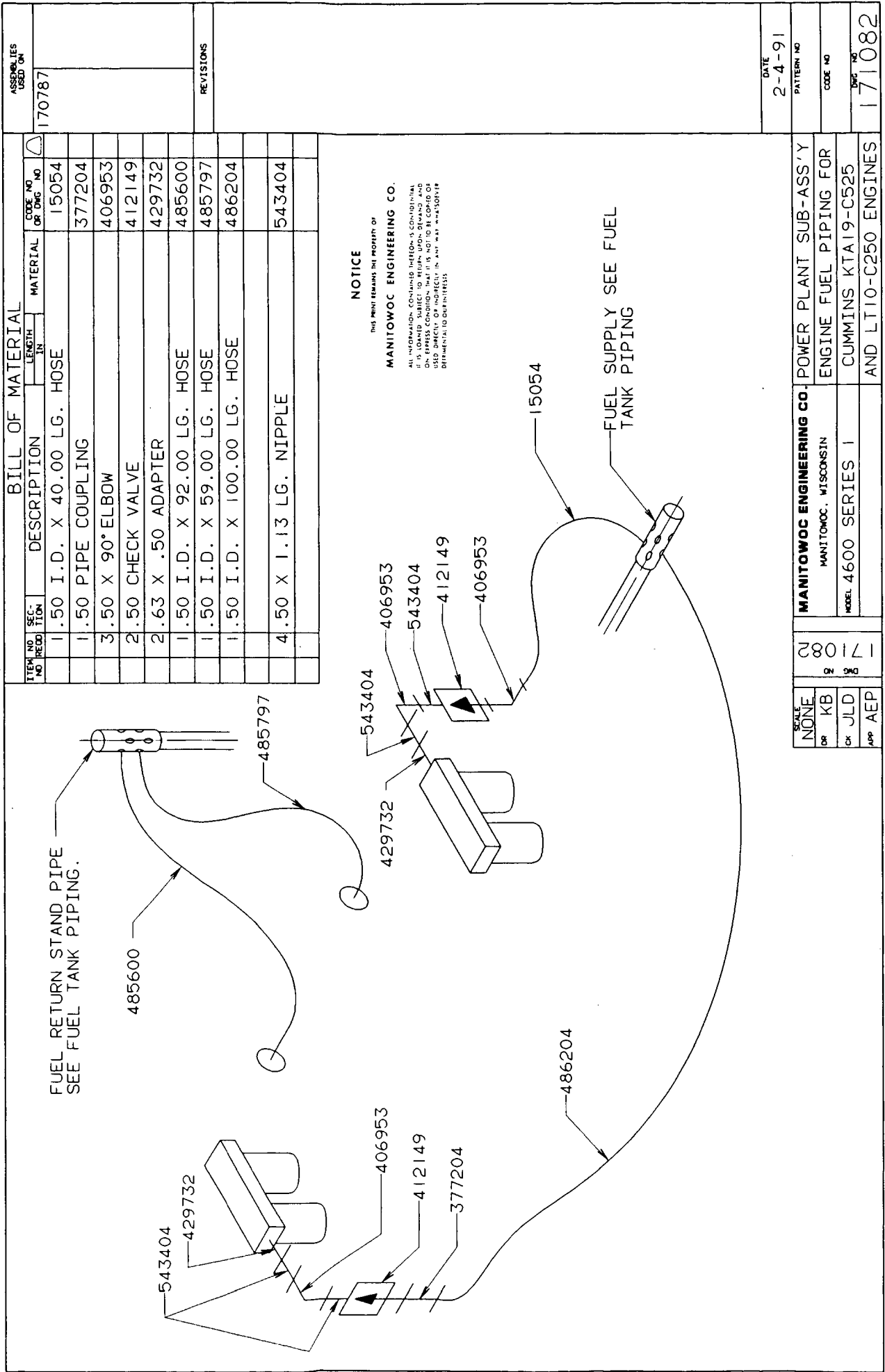


95905A1

MATERIAL LIST ON BACK

THROTTLE CONTROL

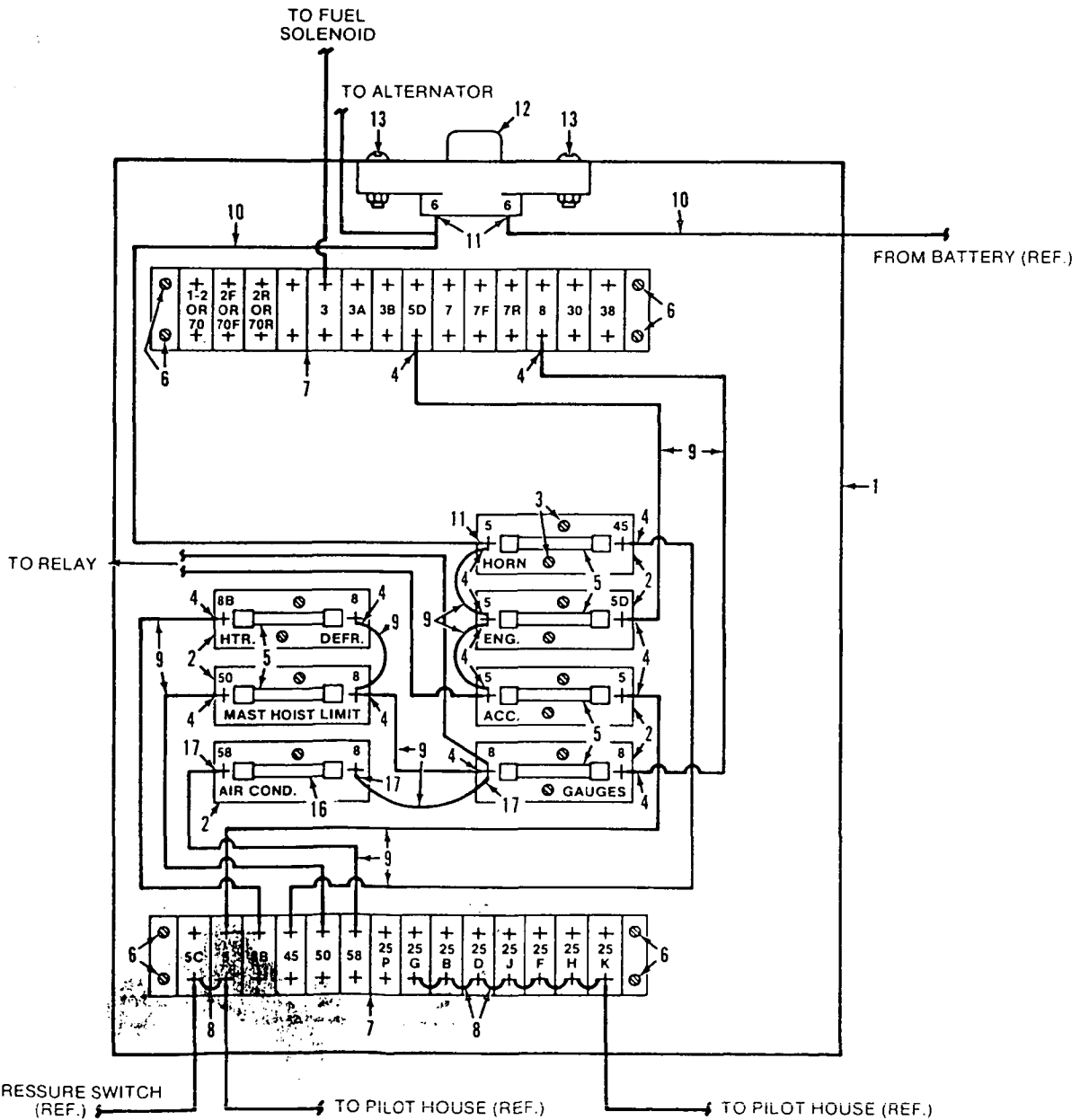
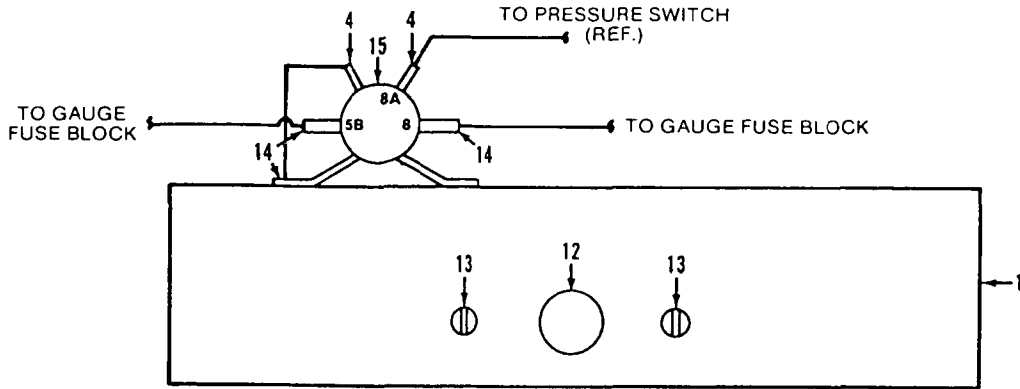




BILL OF MATERIAL				ASSEMBLIES USED ON	
ITEM NO.	SEC-TION	DESCRIPTION	LENGTH IN	MATERIAL	CODE NO OR DNG NO
1	1.50	I.D. X 40.00 LG. HOSE			15054
1	1.50	PIPE COUPLING			377204
3	3.50	X 90° ELBOW			406953
2	2.50	CHECK VALVE			412149
2	2.63	X .50 ADAPTER			429732
1	1.50	I.D. X 92.00 LG. HOSE			485600
1	1.50	I.D. X 59.00 LG. HOSE			485797
1	1.50	I.D. X 100.00 LG. HOSE			486204
4	4.50	X 1.13 LG. NIPPLE			543404

DATE	2-4-91
PATTERN NO	
CODE NO	
DNG NO	171082

SCALE	NONE
OR	KB
OR	JLD
APP	AEP
CN	80
2	98
1	17
<b>MANITOWOC ENGINEERING CO.</b> POWER PLANT SUB-ASS'Y MANITOWOC, WISCONSIN ENGINE FUEL PIPING FOR MODEL 4600 SERIES 1 CUMMINS KTA19-C525 AND LT10-C250 ENGINES	

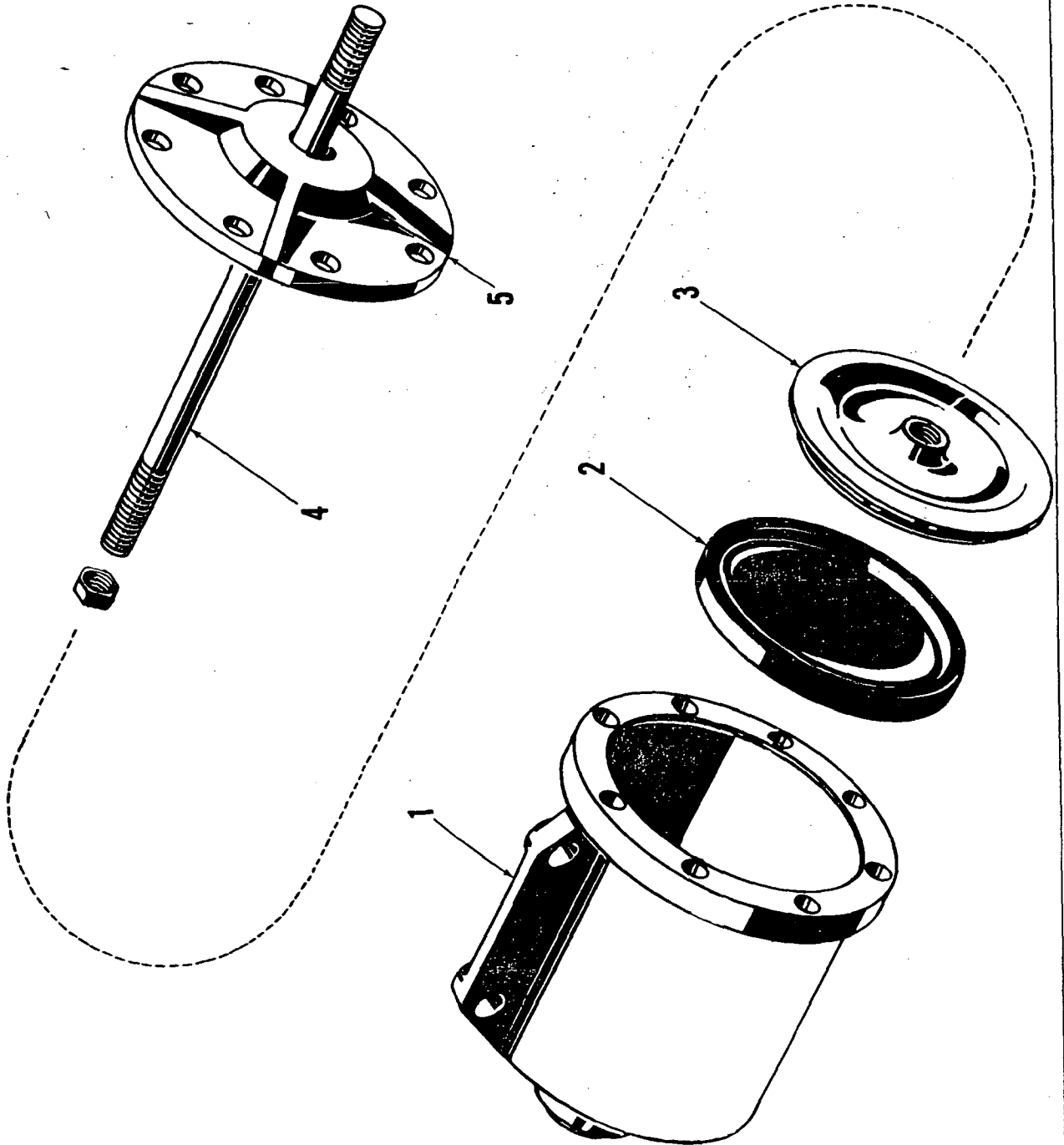


184041A1

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ILLUST. No. 20729 -A-1

MATERIAL LIST ON BACK

AIR CYLINDER

207291.

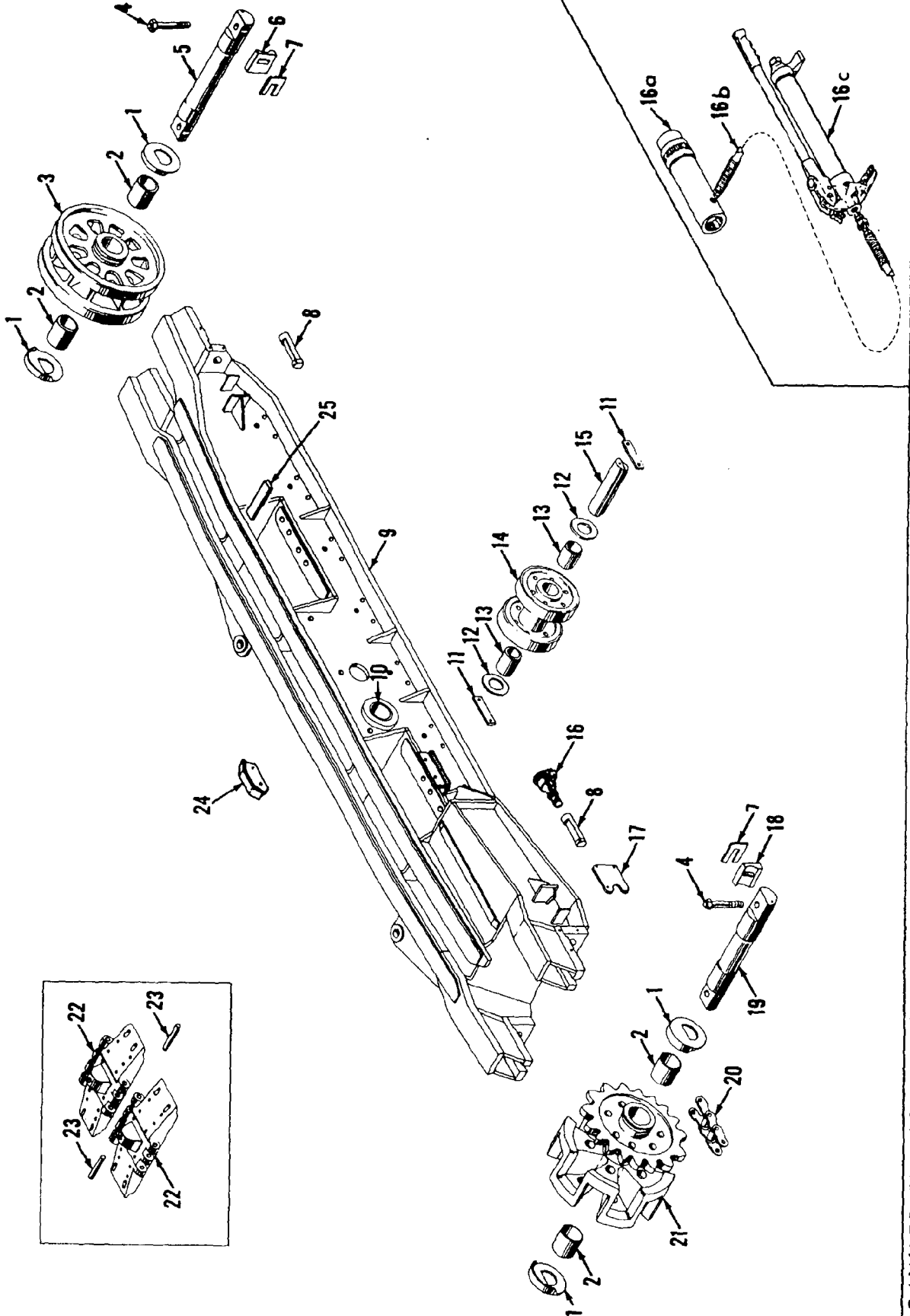
MAR 5 1955

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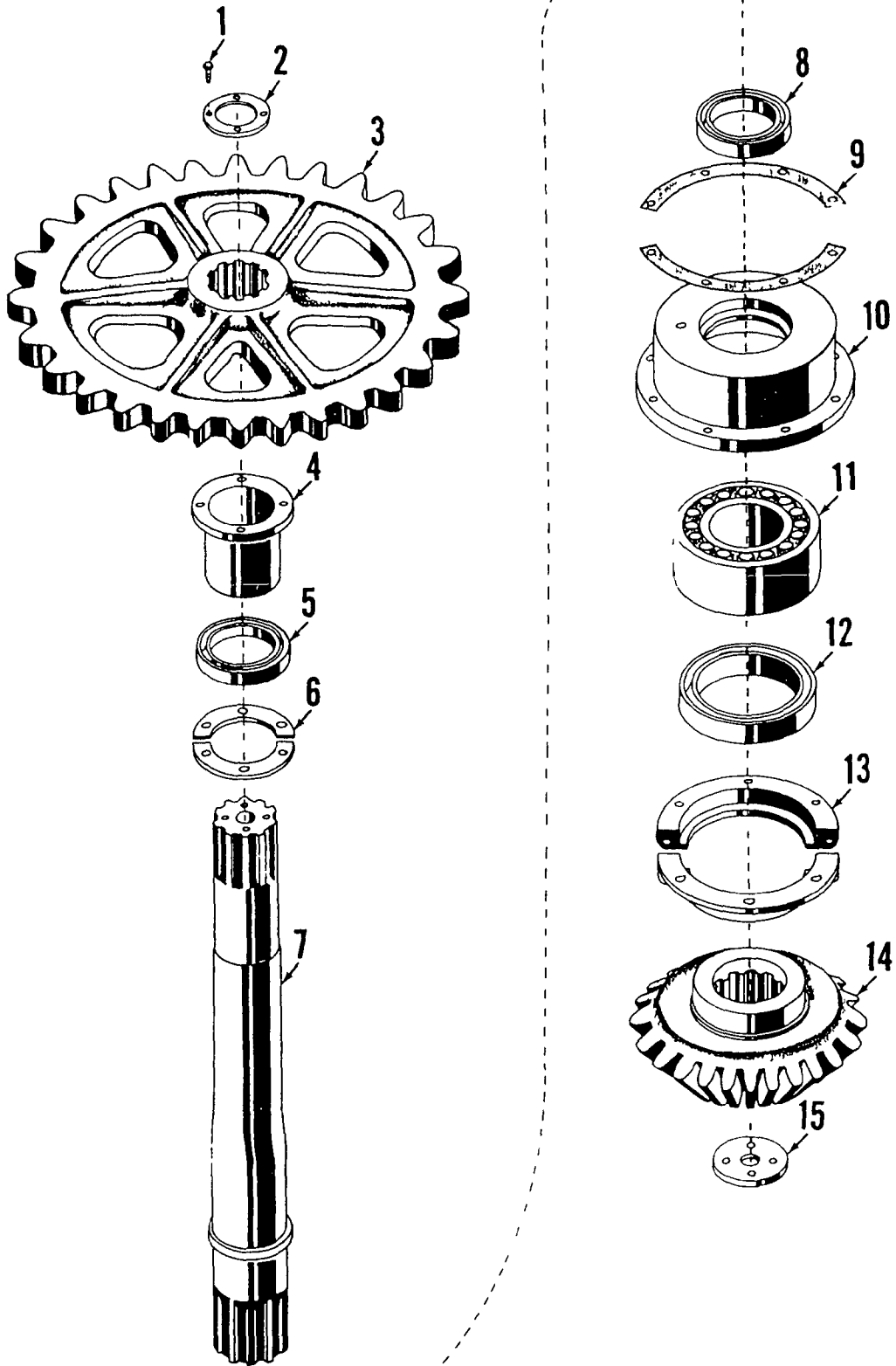
MASTER



42763D1

MATERIAL LIST ON BACK

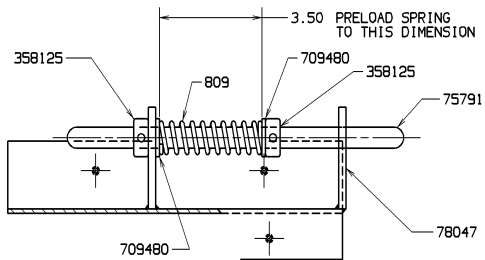
CRAWLER FRAME ASSEMBLY



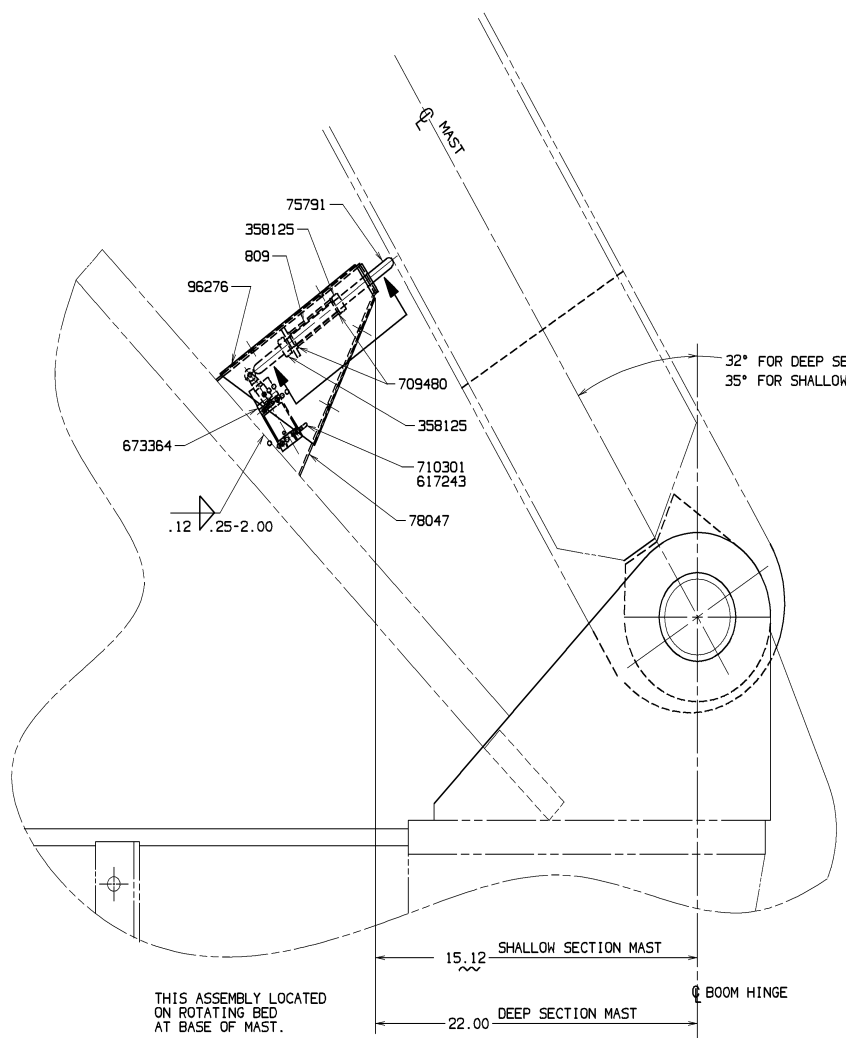
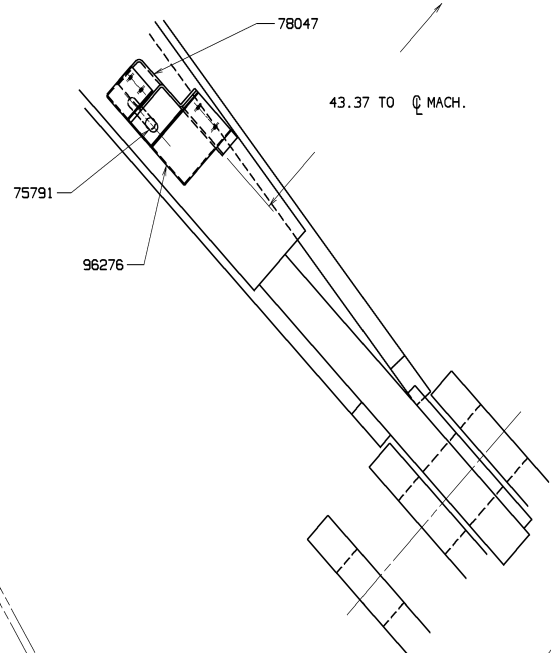
ILLUST No 31253-A-1

MATERIAL LIST ON BACK

VERTICAL TRAVEL SHAFT ASSEMBLY

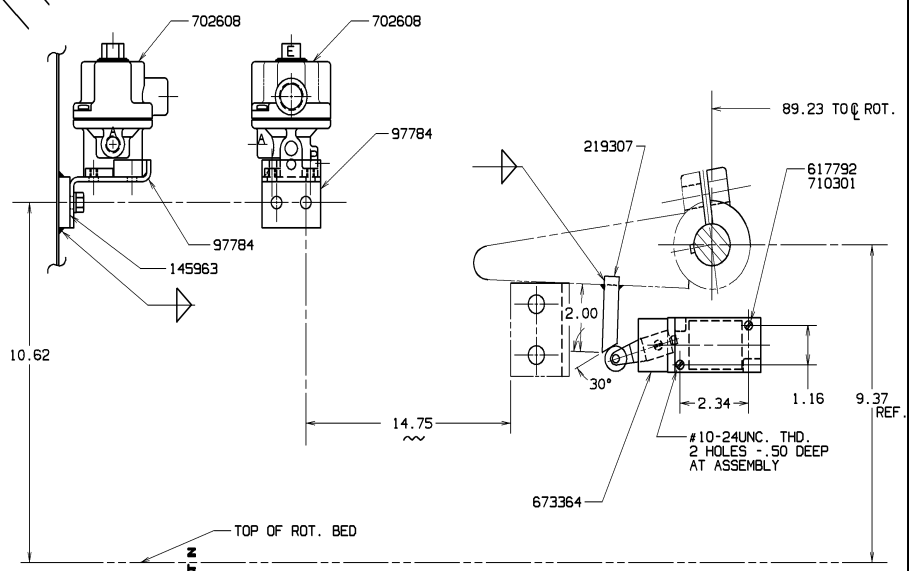


SECTION A - A  
SCALE : 6 = 1 FT.



THIS ASSEMBLY LOCATED ON ROTATING BED AT BASE OF MAST.

15.12 SHALLOW SECTION MAST  
22.00 DEEP SECTION MAST  
BOOM HINGE



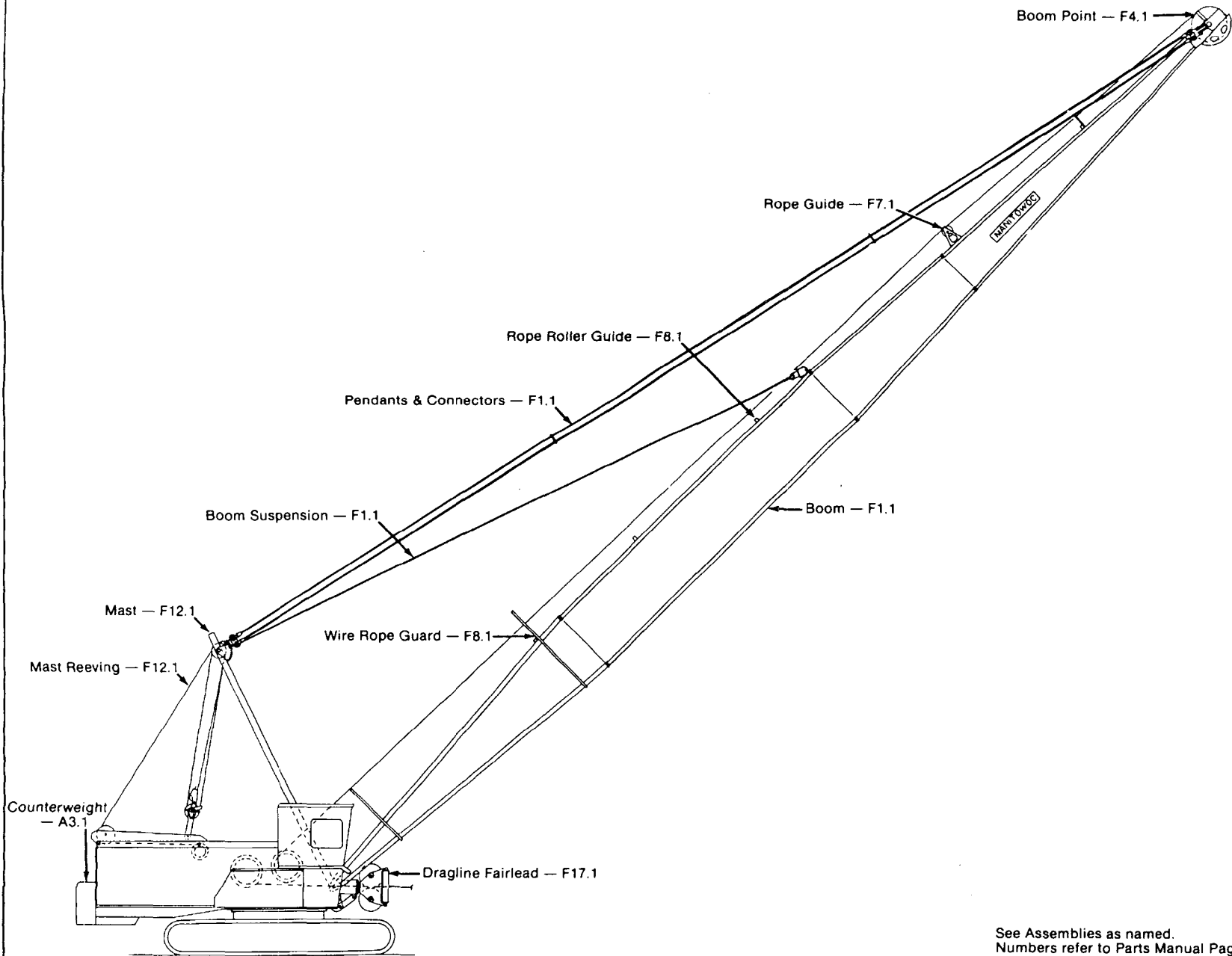
THIS ASSEMBLY LOCATED AT MAST HOIST SLIDE PINION SHAFT  
SCALE : 6 = 1 FT

BILL OF MATERIAL					ASSEMBLIES USED ON
ITEM NO.	REV.	DESCRIPTION	MATERIAL	QTY. REQ. OR DIM. NO.	
1		SPRING		809	
1		ACTUATOR ROD		75791	
1		BRACKET		78047	
1		COVER		96276	
1		BRACKET		97784	
1		MOUNTING PAD		145963	
1		.50 X .50 X 2.25 M.S. BAR		219307	
2		.625 SET COLLAR		358125	
2		#10-32 UNF. X .75 LG. RD. HD. SCREW		617243	
2		#10-24UNC. X 1.50 LG. SCREW		617792	
2		LIMIT SWITCH		673364	
1		SOLENOID (N.C.)		702608	
2		.625 WASHER		709480	
4		#10 LOCKWASHER		710301	

- ① FOR AIR PIPING SCHEMATIC DIAGRAM, SEE CHART 6333 SHEET 22.
- ② ALLOW .12 TRAVEL TO ACTIVATE LIMIT SWITCH W/MAST IN ITS MAXIMUM POSITION

SUPERSEDES DNG. 33138 DATED 4-30-82

DATE	10-9-84
PATTERN NO.	
MANUFACTURED BY	Manitowoc Crane, Inc. Manitowoc, Wisconsin
DESIGNER	TJC
CHECKER	CWH
ITEM NO.	33138
DESCRIPTION	AUTOMATIC MAST STOP ASSEMBLY
REV.	1
DATE	10-9-84



See Assemblies as named.  
Numbers refer to Parts Manual Page.

F1.1

MODEL 4600 S1

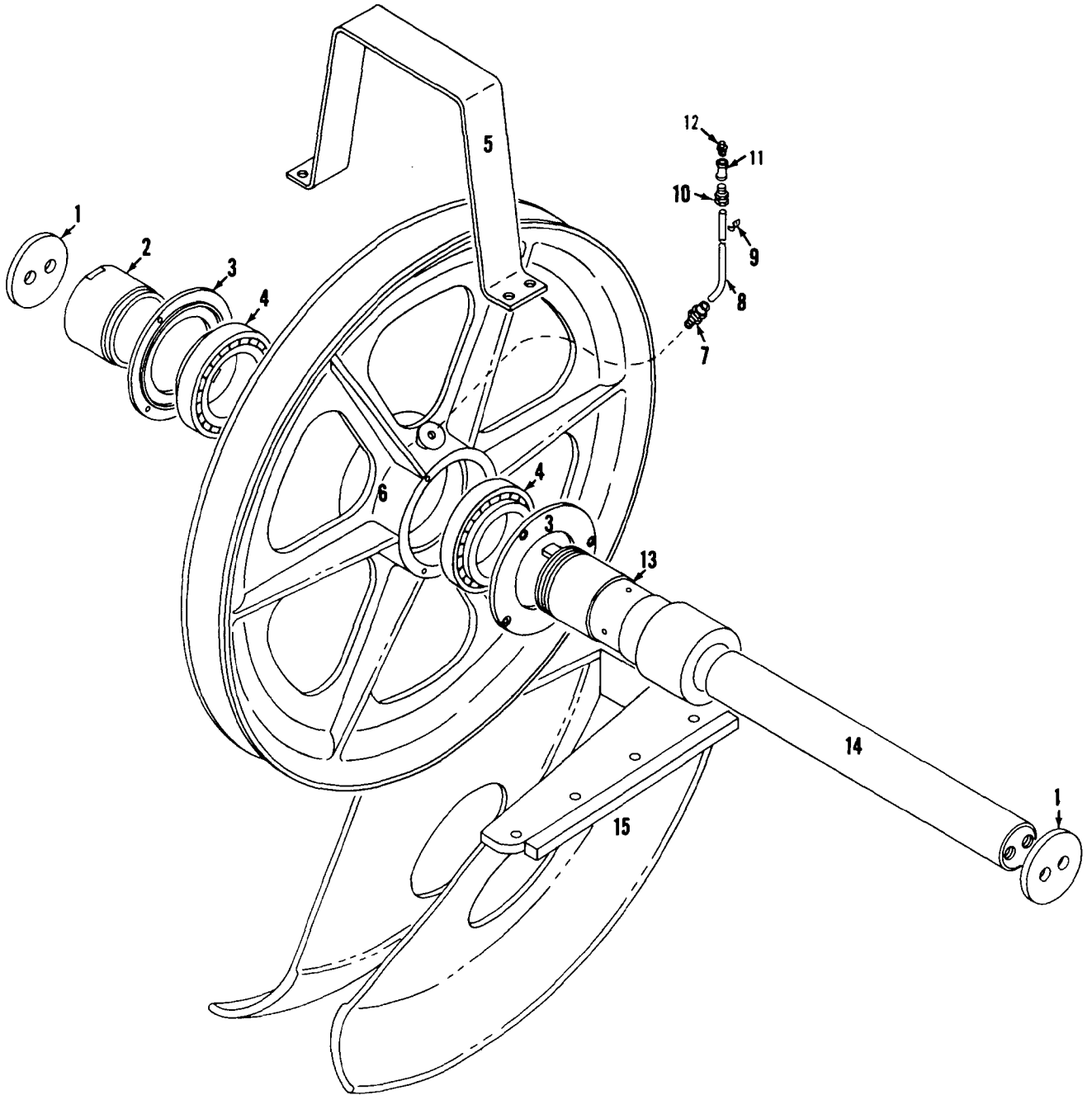
ARRGT. BOOM No. 40

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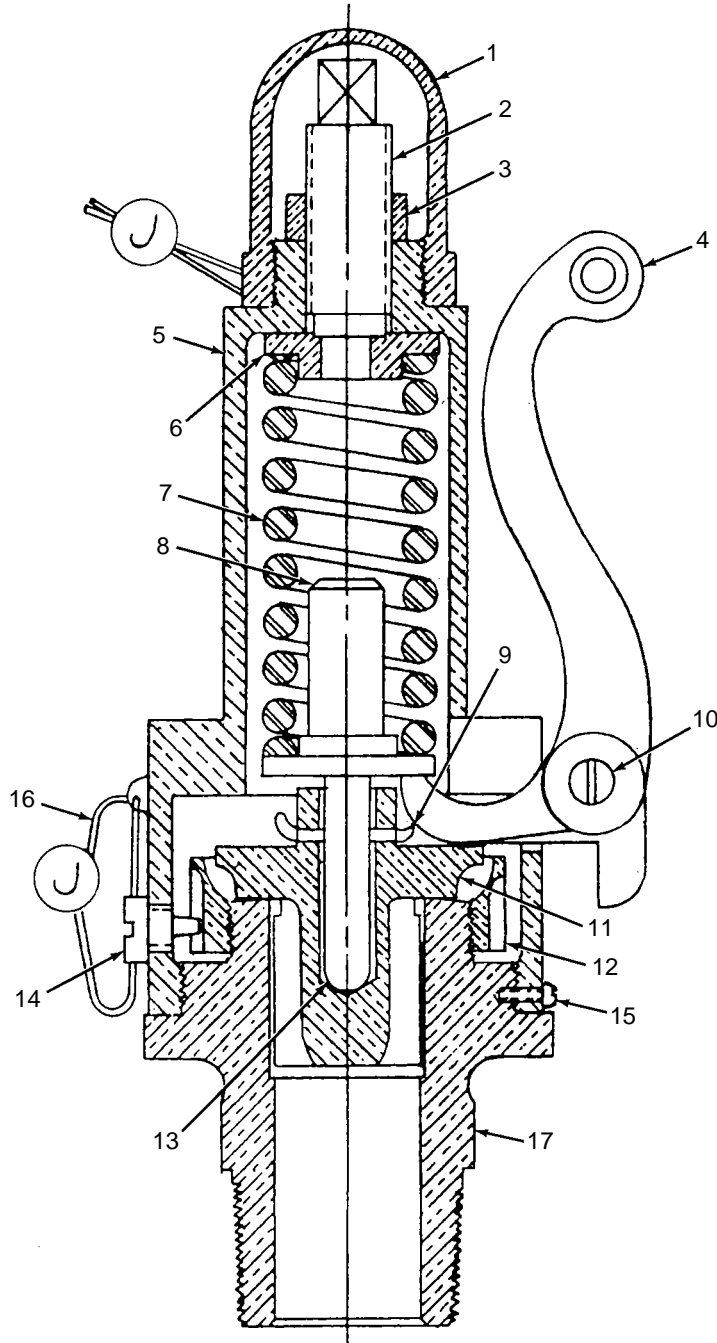


96155A1

MATERIAL LIST ON BACK

BOOM POINT

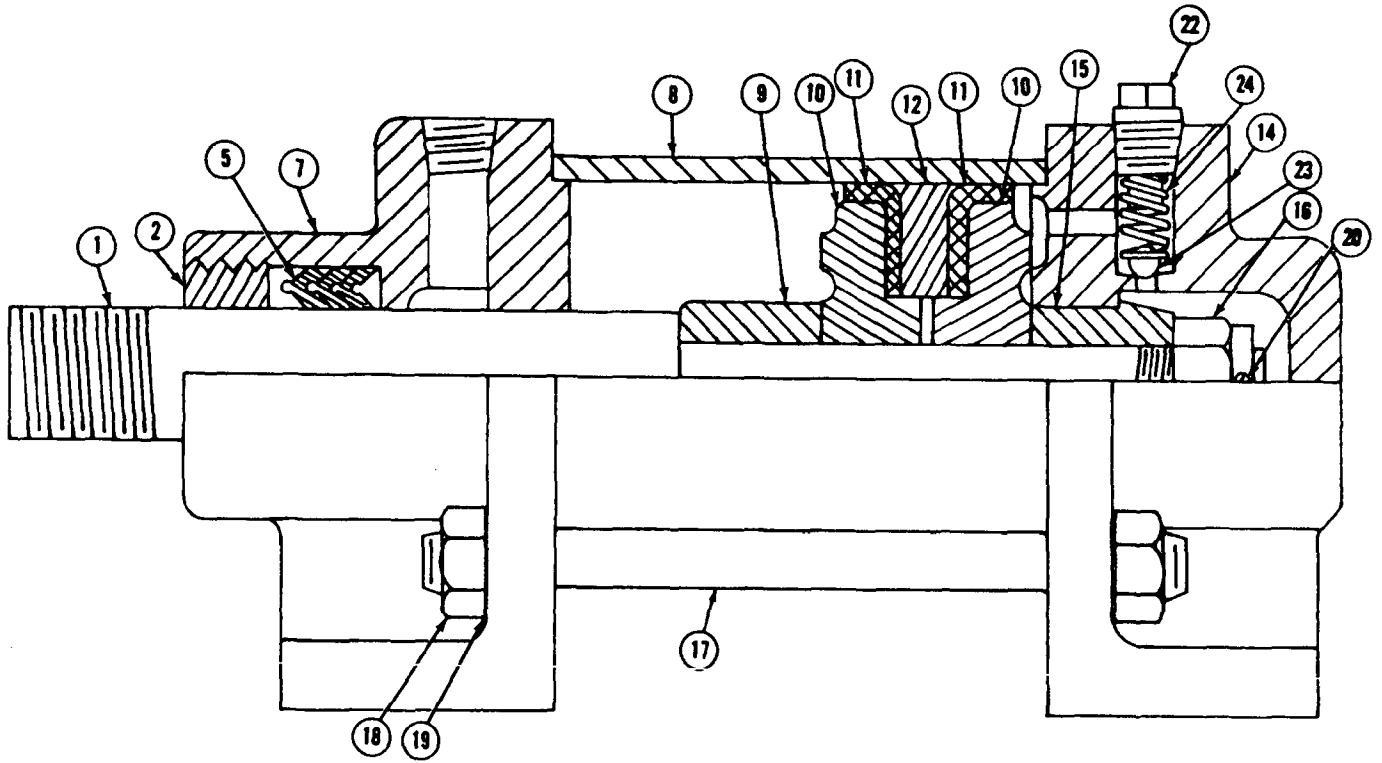
O-Number



ASSEMBLY	REVISION
<b>O-156</b>	<b>D</b>

**SAFETY VALVE**

MASTER



0-300 Cont.	REV. A	MODEL 390-390-4600
-------------	-----------	-----------------------

CONTROL VALVE  
(MANITOWOC #702594-WILLIAMS #WM-607H-C1C)  
(MANITOWOC #702595-WILLIAMS #WM-607H-C3C)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
50		1	WASHER	4-W-76
51		1	SCREW	1348
52		3	SCREW, Adjusting	16-W-22
<p>NOTE: Parts marked * are available in a repair kit Williams #R-607-S.</p> <p>Repair kit for Barrier Plate Assembly Williams #R-1355.</p> <p>This valve weighs 3 lbs. 8 oz.</p>				

Run as front

MASTER

0- Cont.

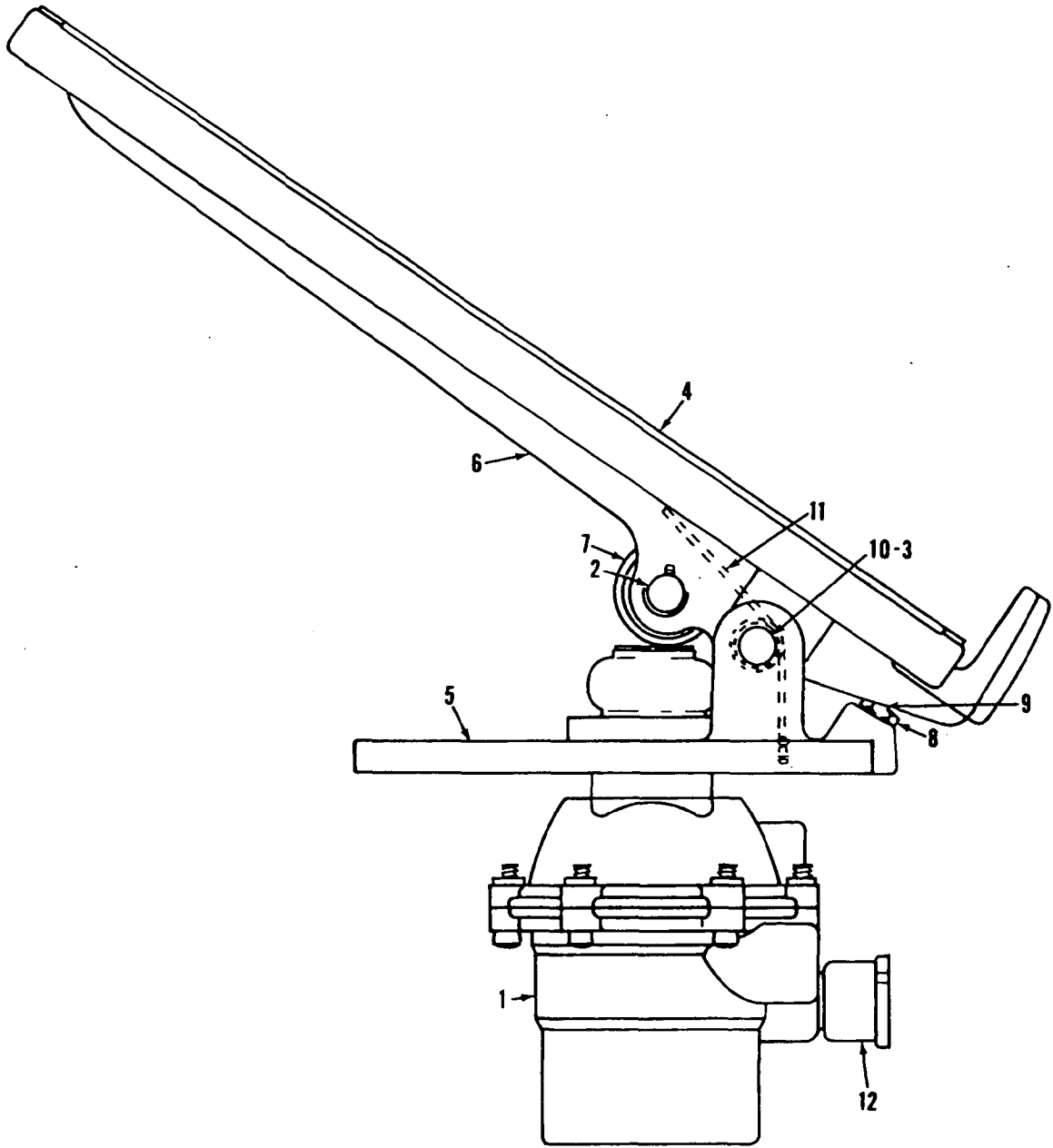
REV. A	0 - 300
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Manitowoc, Wisconsin

MASTER



0-308

MATERIAL LIST ON BACK

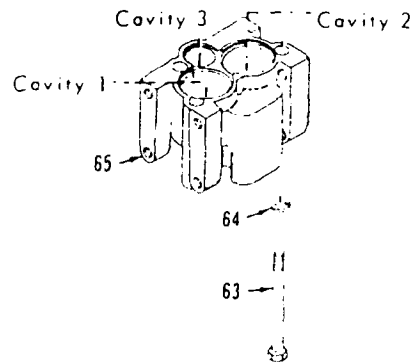
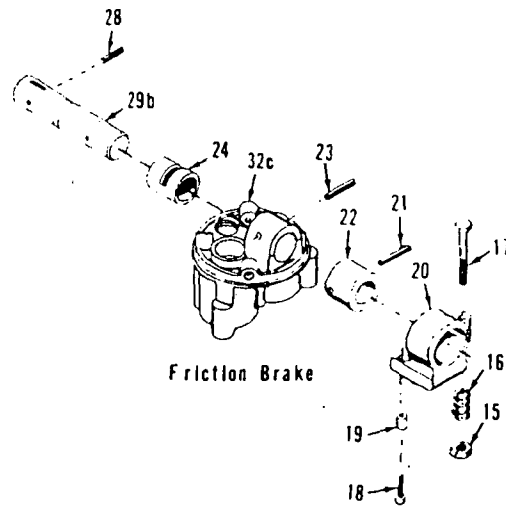
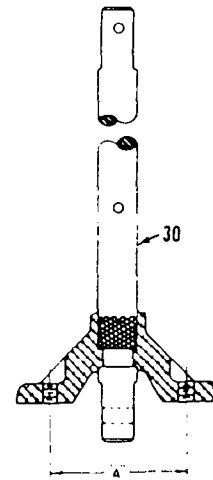
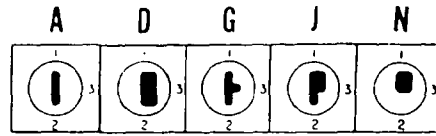
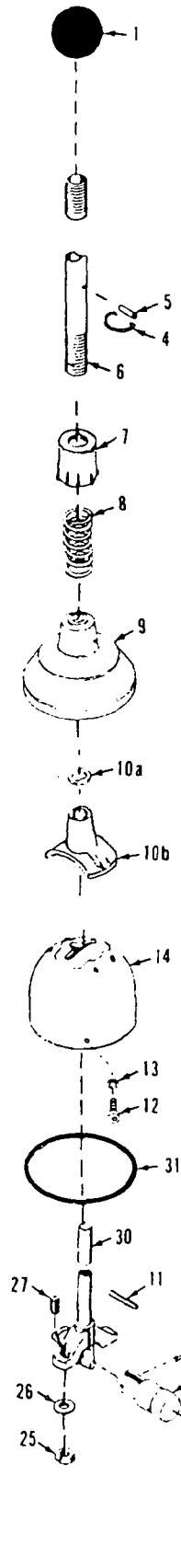
THROTTLE VALVE

0-308

MANITOWOC ENGINEERING CO.

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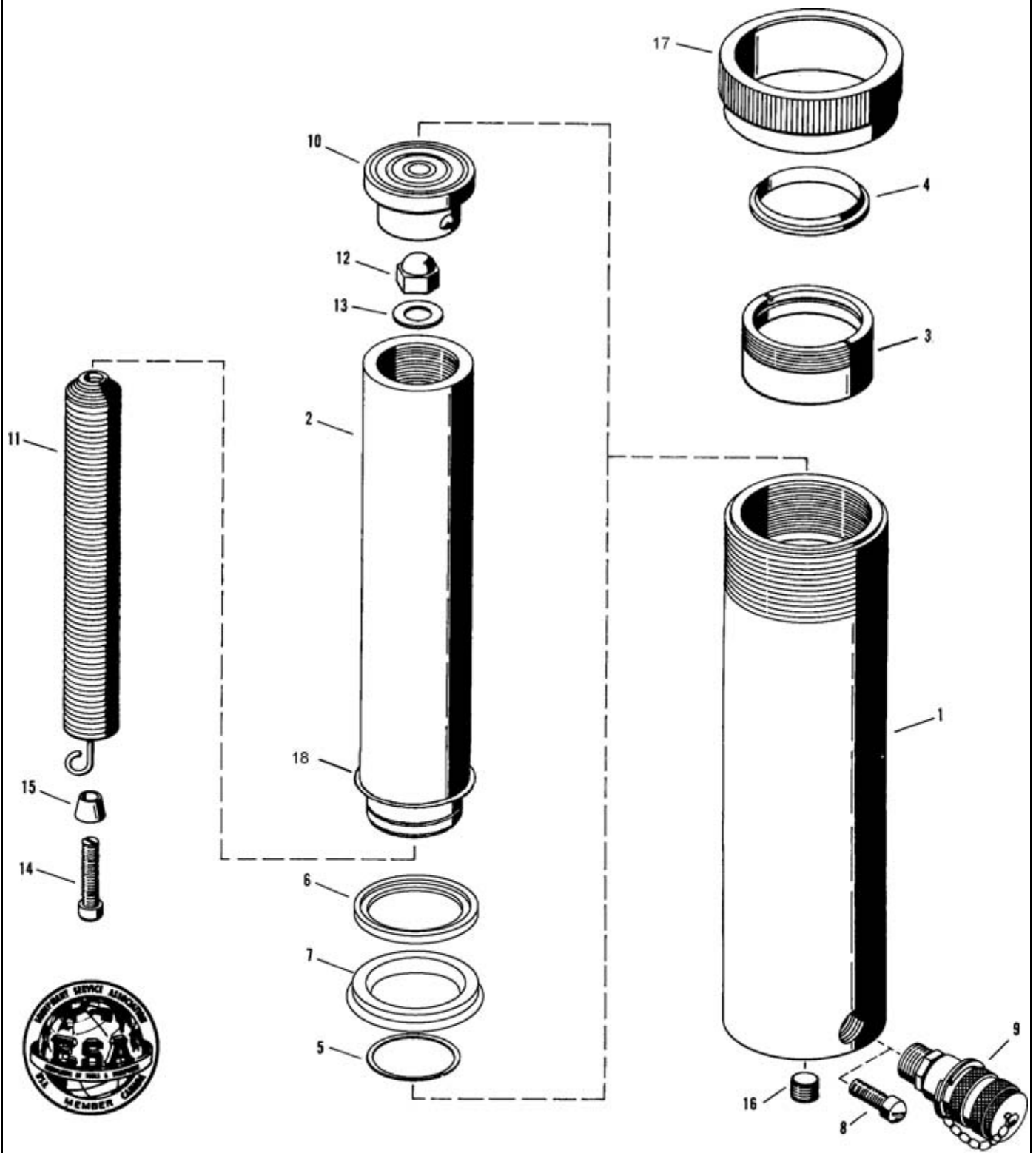
Manitowoc, Wisconsin



0-441-2B

MATERIAL LIST ON BACK

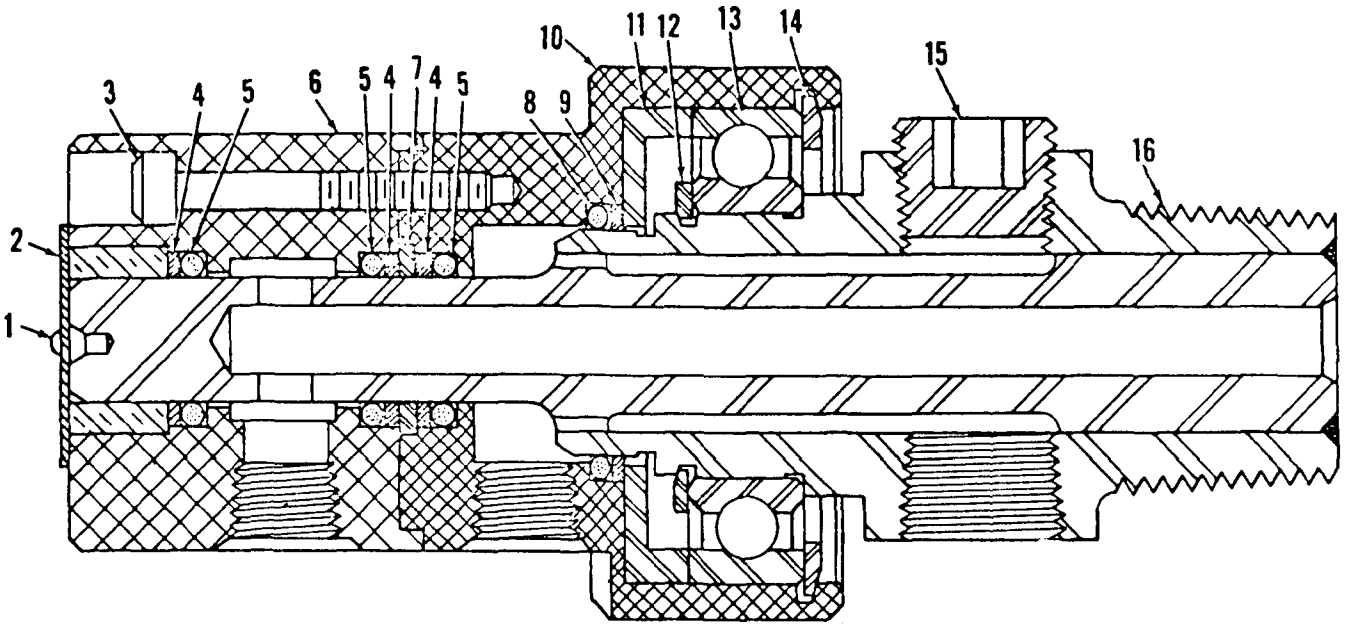
FLEXAIR VALVE OPERATING MECHANISM



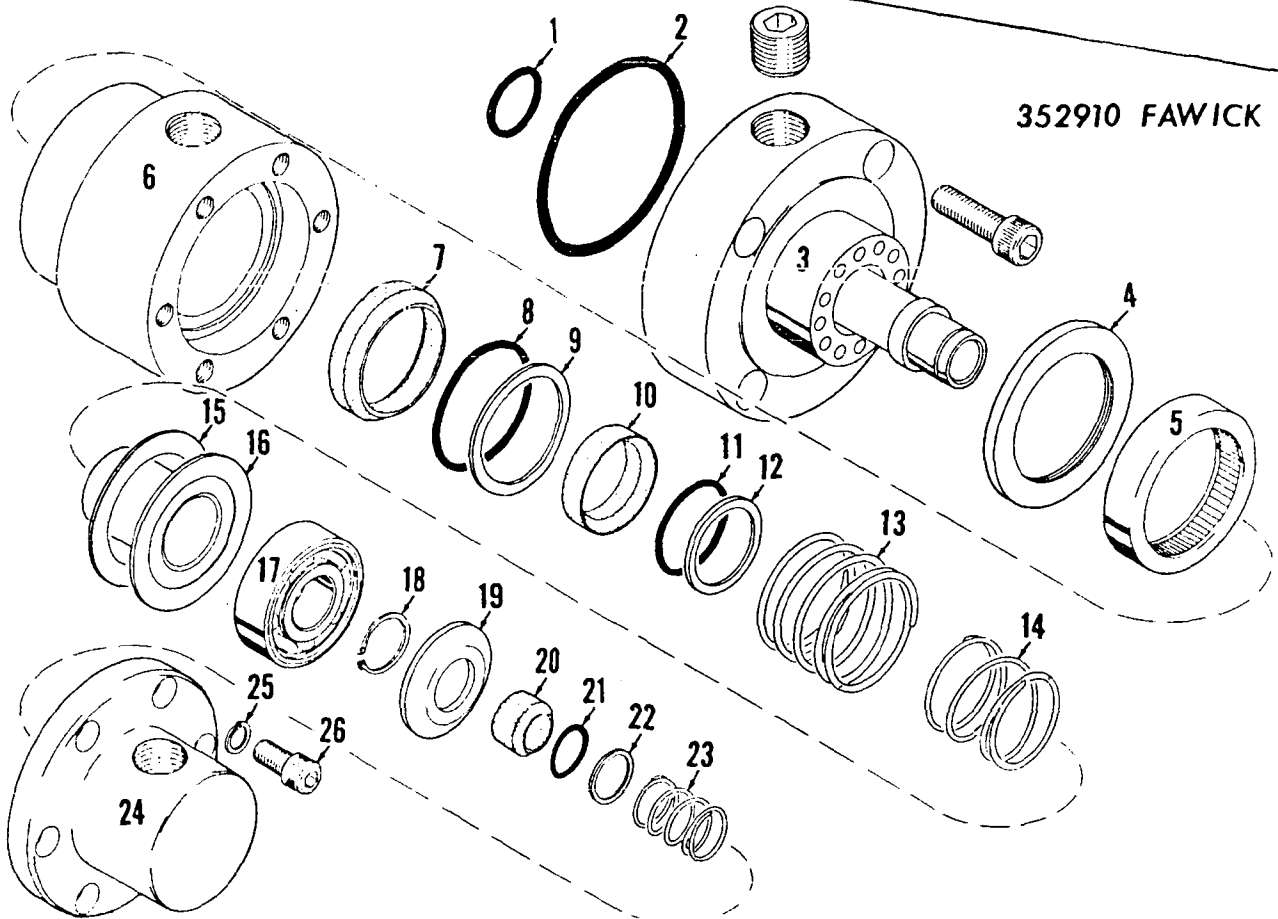
385653

ASSEMBLY	REVISION
O-471	E

RUN AS FROM MASTER



700705 DEUBLIN



352910 FAWICK

0-92A1

0-92A1

MATERIAL LIST ON BACK

SWIVEL UNION ASSEMBLY

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