TRADITIONAL CRANE PARTS MANUAL

This manual has been prepared for and is considered part of

4600
Model

46146
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

05/29/09

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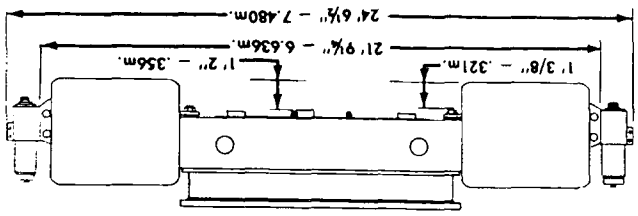
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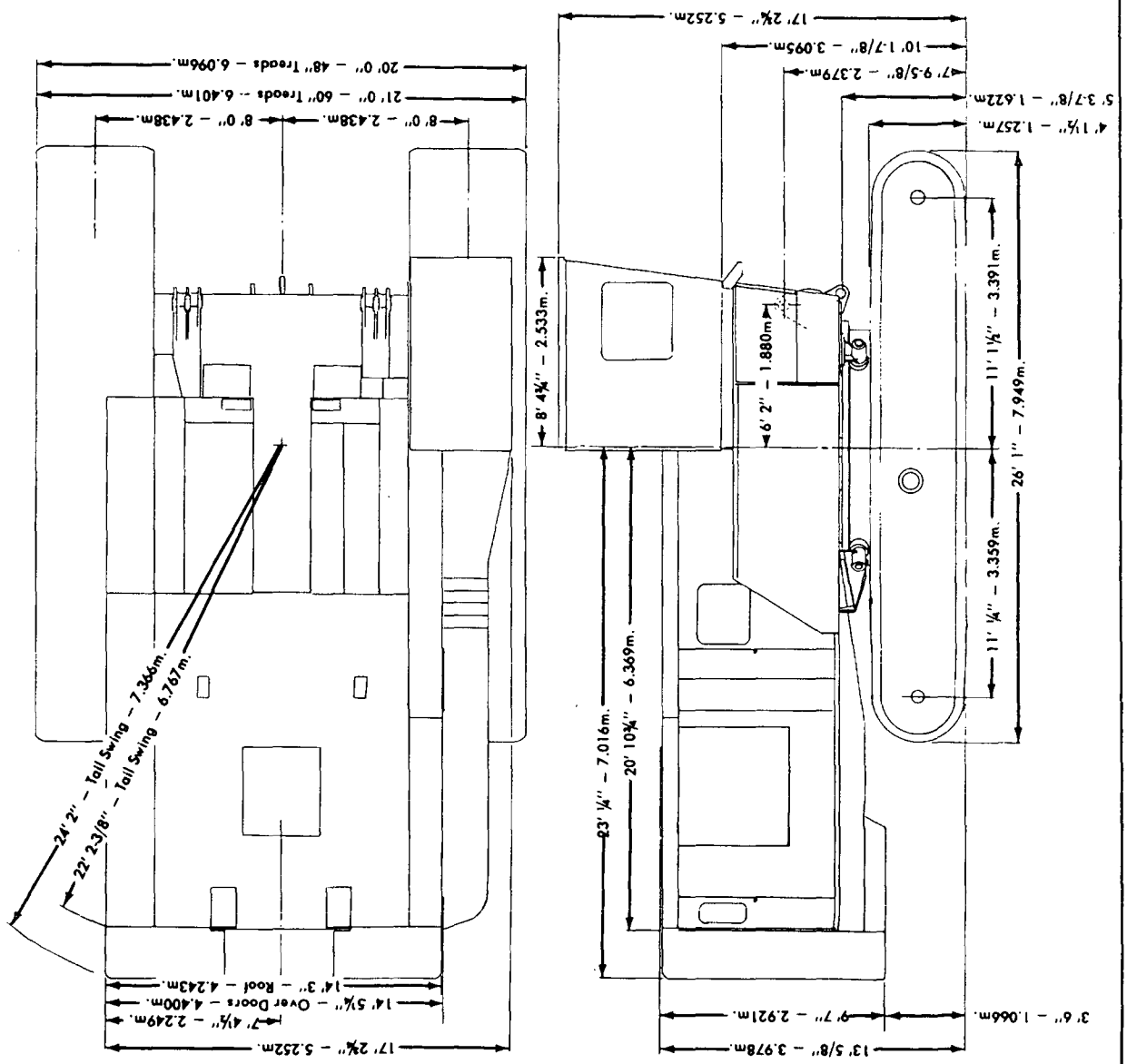


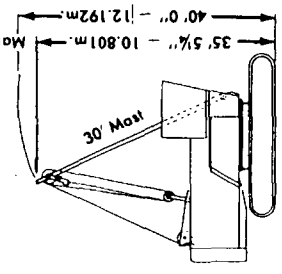
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2-18-71
10-14-70
6-30-65
Drwg. Date 3-30-61





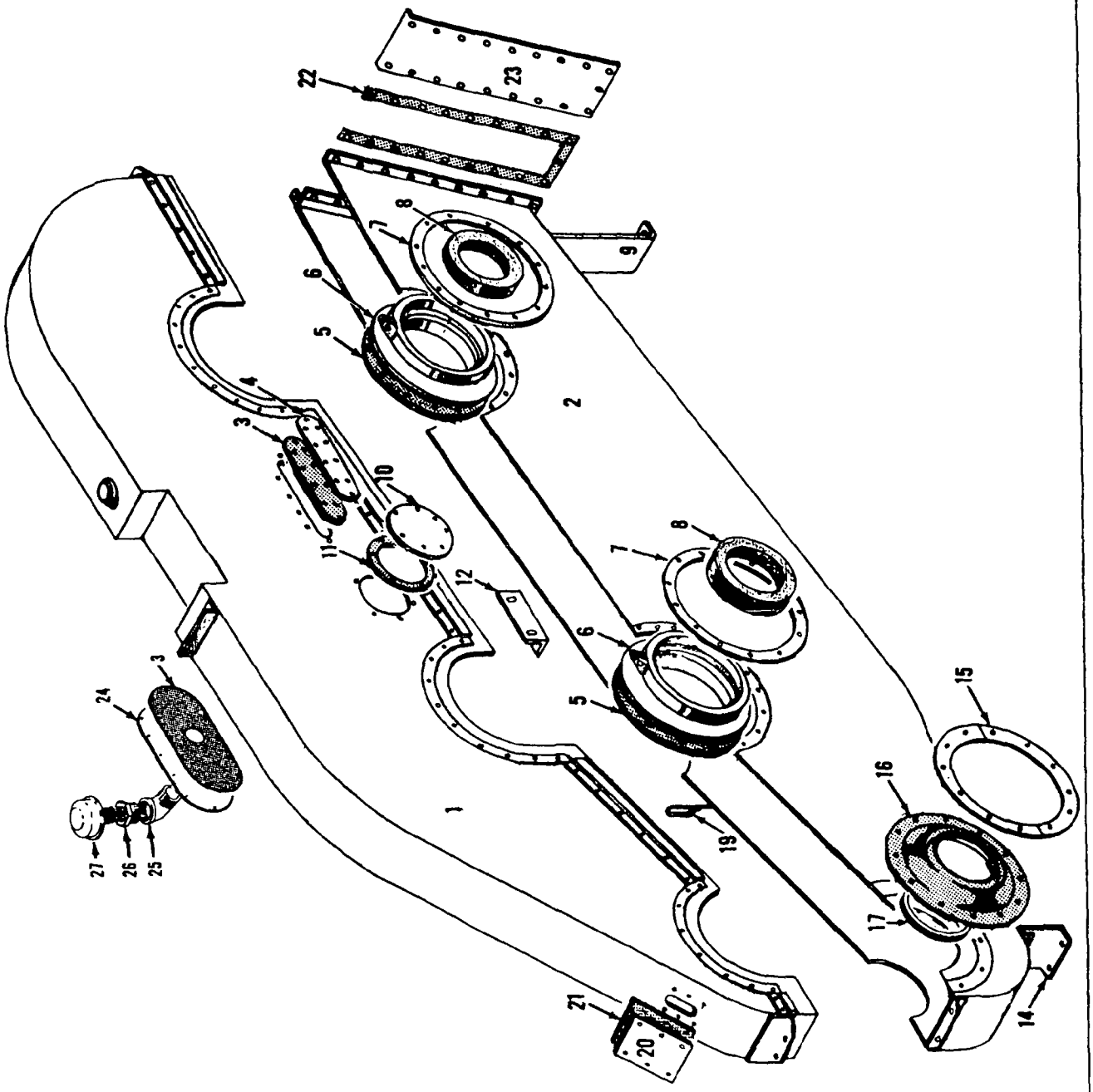


OUTLINE DIMENSIONS

M4600

MANITOWOC ENGINEERING CO.

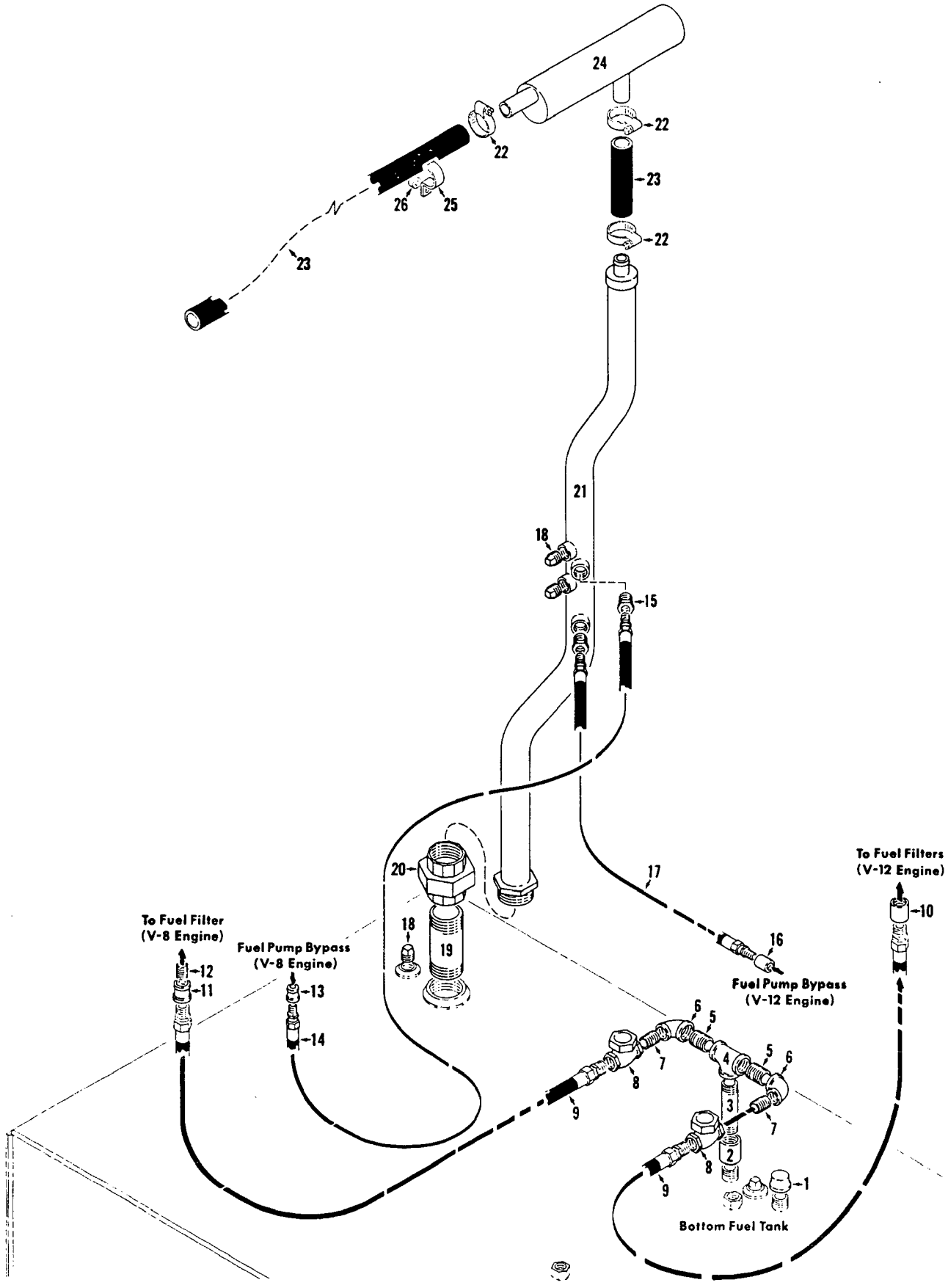
A Division of The Manitowoc Company, Inc. Manitowoc, Wisconsin



DRUM GEAR CASE

MATERIAL LIST ON BACK

31226G1


24
22
22
23
26
25
23
22
21
18
15
20
18
19
17
To Fuel Filters
(V-12 Engine)
10
To Fuel Filter
(V-8 Engine)
12
11
Fuel Pump Bypass
(V-8 Engine)
13
14
16
Fuel Pump Bypass
(V-12 Engine)
6
5
7
8
9
4
3
2
1
Bottom Fuel Tank

42206-1 Cont.	REV. K	MODEL 4600

PILOT HOUSE

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
			ROOF WINDOW INSTALLATION (SEE NOTE)	
6	43127	1	HOUSE, Pilot W/eye bolts, stove bolts, hex nuts and lockwashers	
30	90164	1	FRAME, Window	
36	74520	1	COVER, Window	
32	74519	1	GLASS, Window (28" x 44" - 7.12 m x 1.117 m)	
31	605301	1	CHANNEL, Rubber (Specify 11'8" or 3.556 m)	
			FRONT WINDOW HOIST	
37	607813	2	BALANCER, Sash	
38	70841	2	SUPPORT, Balancer W/mach. screws, hex nuts and lockwashers	
39	71519	1	SUPPORT, Lever W/capscrews, hex nuts and lockwashers	
40	70843	1	LEVER, Position Lever (Left Side Only)	
	612557	1	CAPSCREW	
			MIRROR FOR VIEWING IND. BOOM HOIST DRUM	
	137847	1	ASSEMBLY, Mirror	
41	532712	1	MIRROR	
42	137846	1	ARM, Mirror W/capscrew, hex nut and lockwasher	
43	140554	1	SUPPORT, Mirror	
			NOTE: Previous Installation	
30	23964	1	COAMING AND COVER, Window	
32	70833	1	GLASS, Window (20" x 30" - .508 m x .762 m)	
31	605301	1	CHANNEL, Rubber (Specify 8'0" or 2.438 m)	

Run as Front

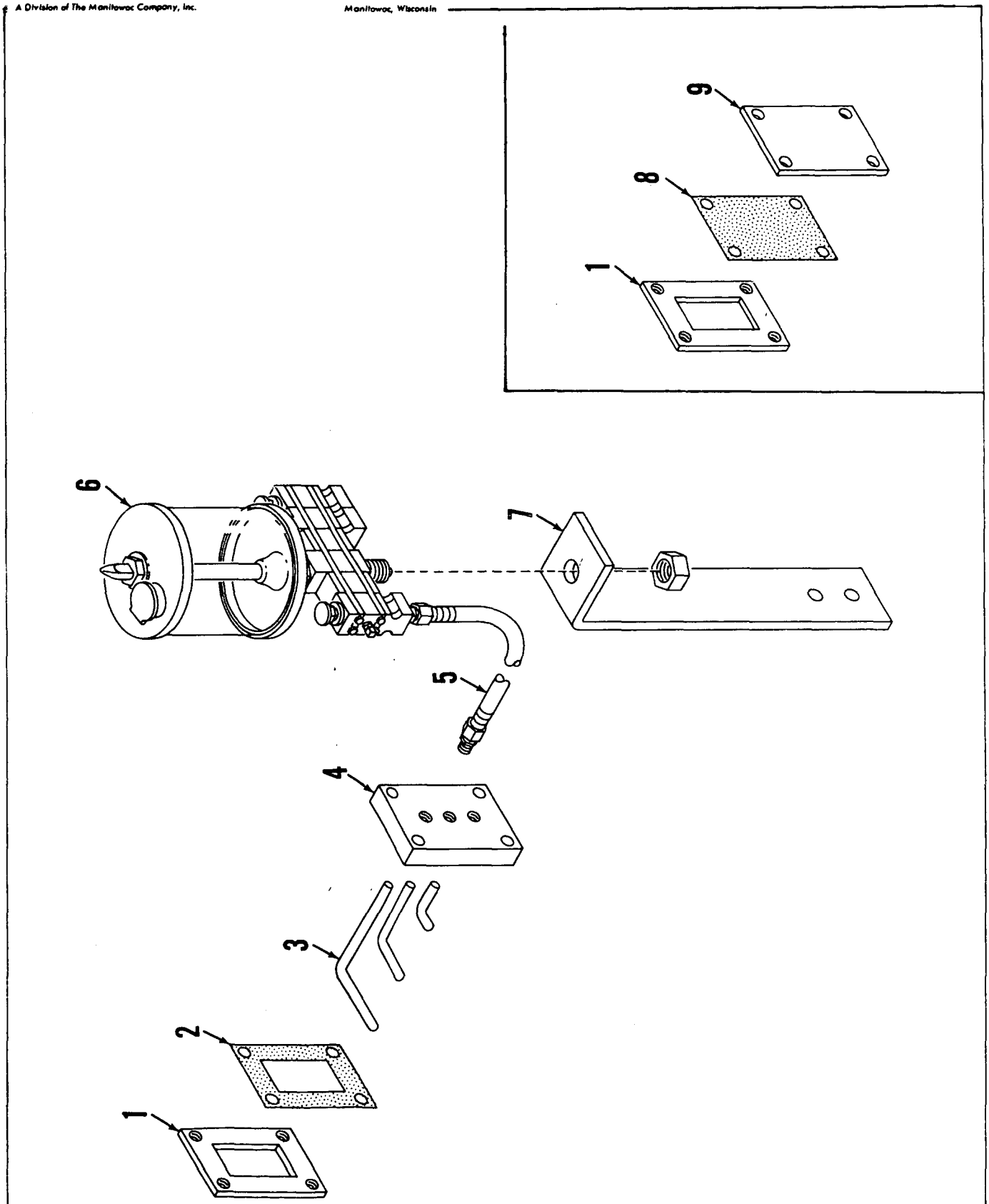
MASTER

42206 K1 Cont'd.

MASTER

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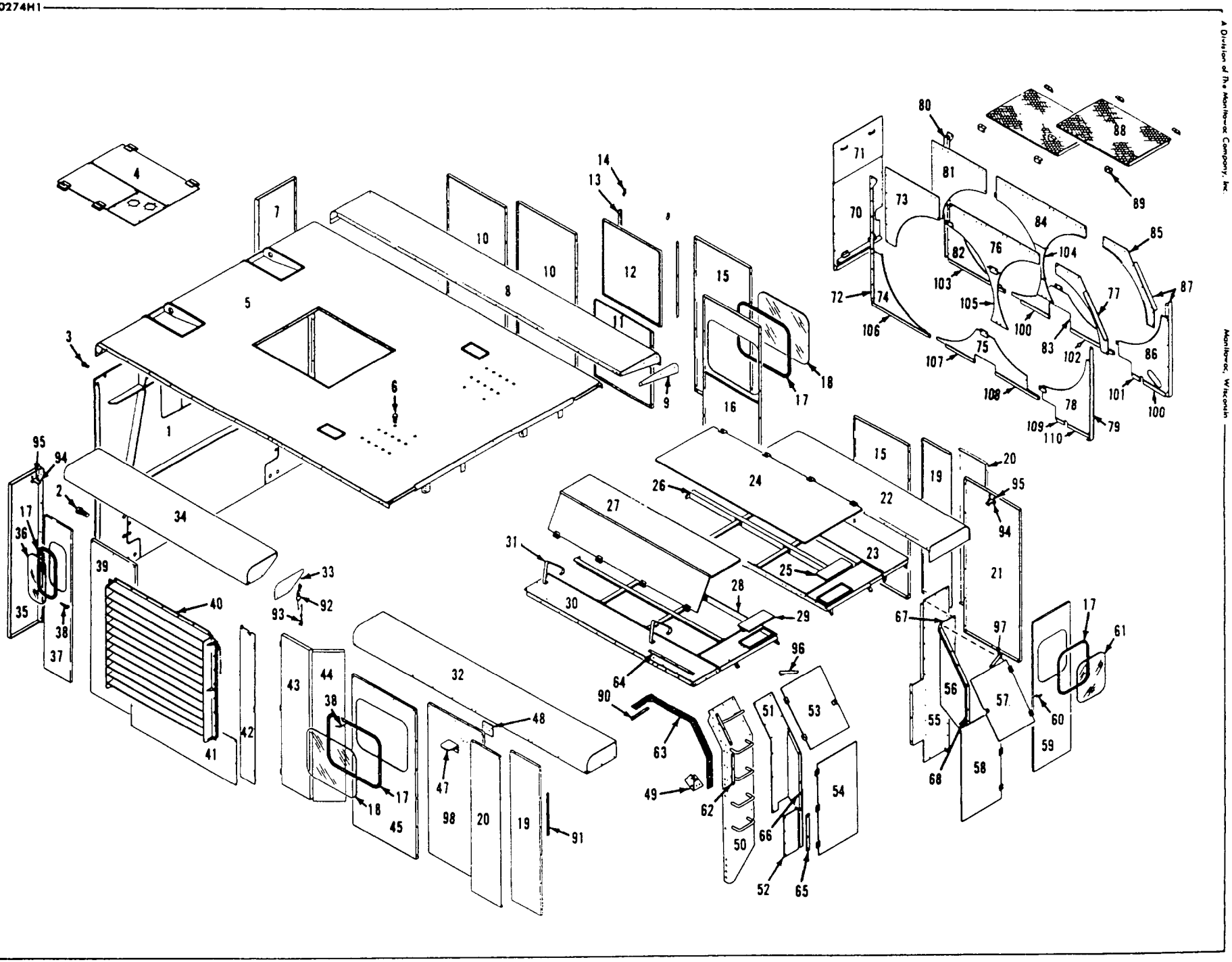
ILLUST. No. 42250-A-3

MATERIAL LIST ON BACK

LUB. SYSTEM - INTERLOCK CHAIN CASE

42250 A3

50274H1



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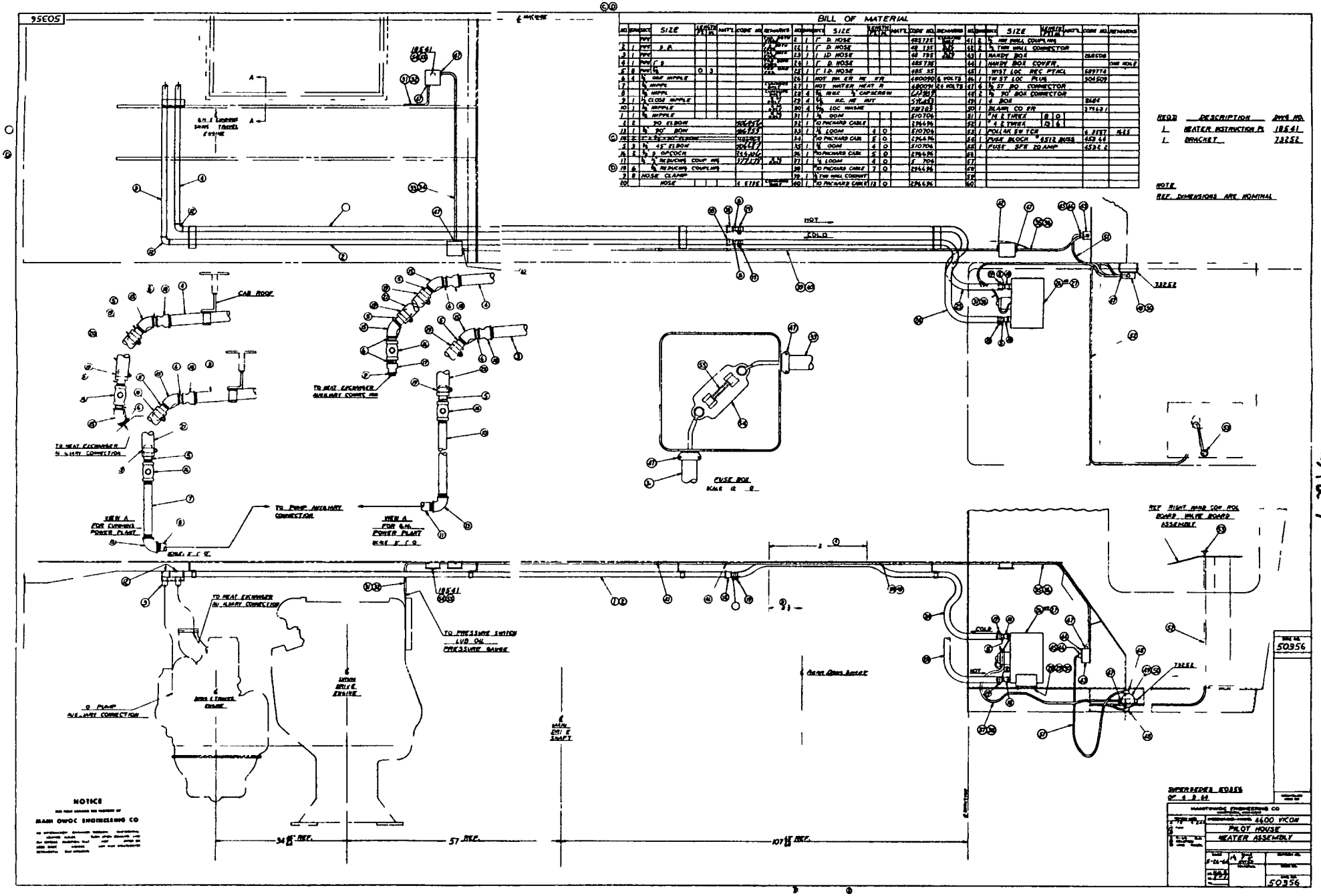
Manitowoc, Wisconsin

MATERIAL LIST ON BACK

CAB

50356

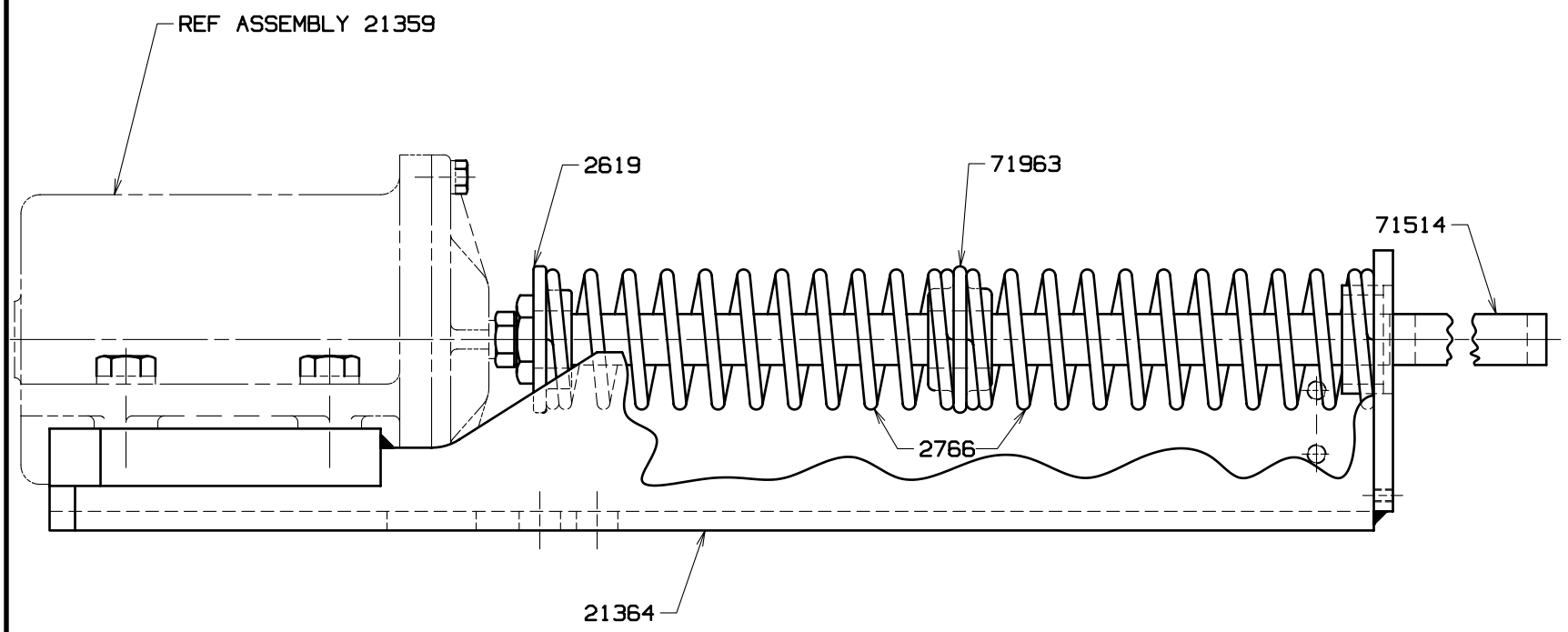
MASTER



-A29-

BILL OF MATERIAL

ITEM NO.	NO. REQD	SECTION	DESCRIPTION	LENGTH IN.	MATERIAL	CODE NO. OR DWG. NO
A	1		WASHER			2619
	2		SPRING			2766
	1		PISTON ROD EXTENSION			71514
B	1		WASHER			71963
	1		CYLINDER SUPPORT			21364



ASSEMBLIES USED ON

41802
41803
41861
49308
49661
49784

REVISIONS

7-21-60 PD
A WAS 3 REQ'D
B ADDED
12-16-82 WNM
REDRAW CADAM
CK FJZ
APP RJS

DATE 9-15-59

PATTERN NO.

SCALE 6=1FT
DR. MFB
CK. DCM
APP

DWG. NO. 23984

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin

MODEL 4500, 4600

AIR CYLINDER
SUPPORT ASSEMBLY

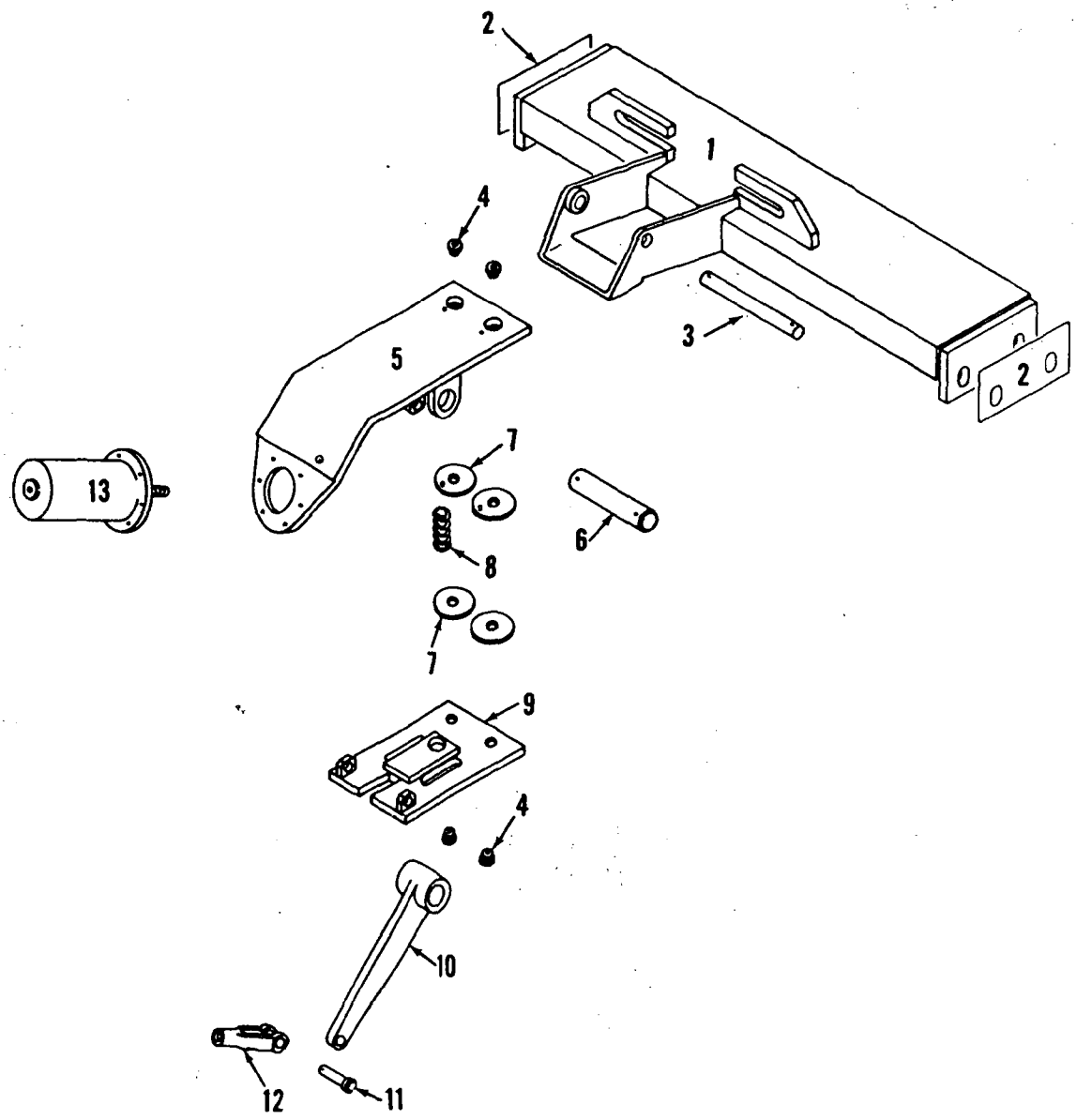
DWG. NO. 23984

DO NOT SCALE THIS DRAWING

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MASTER



AUXILIARY MAST HOIST BRAKE ASSEMBLY

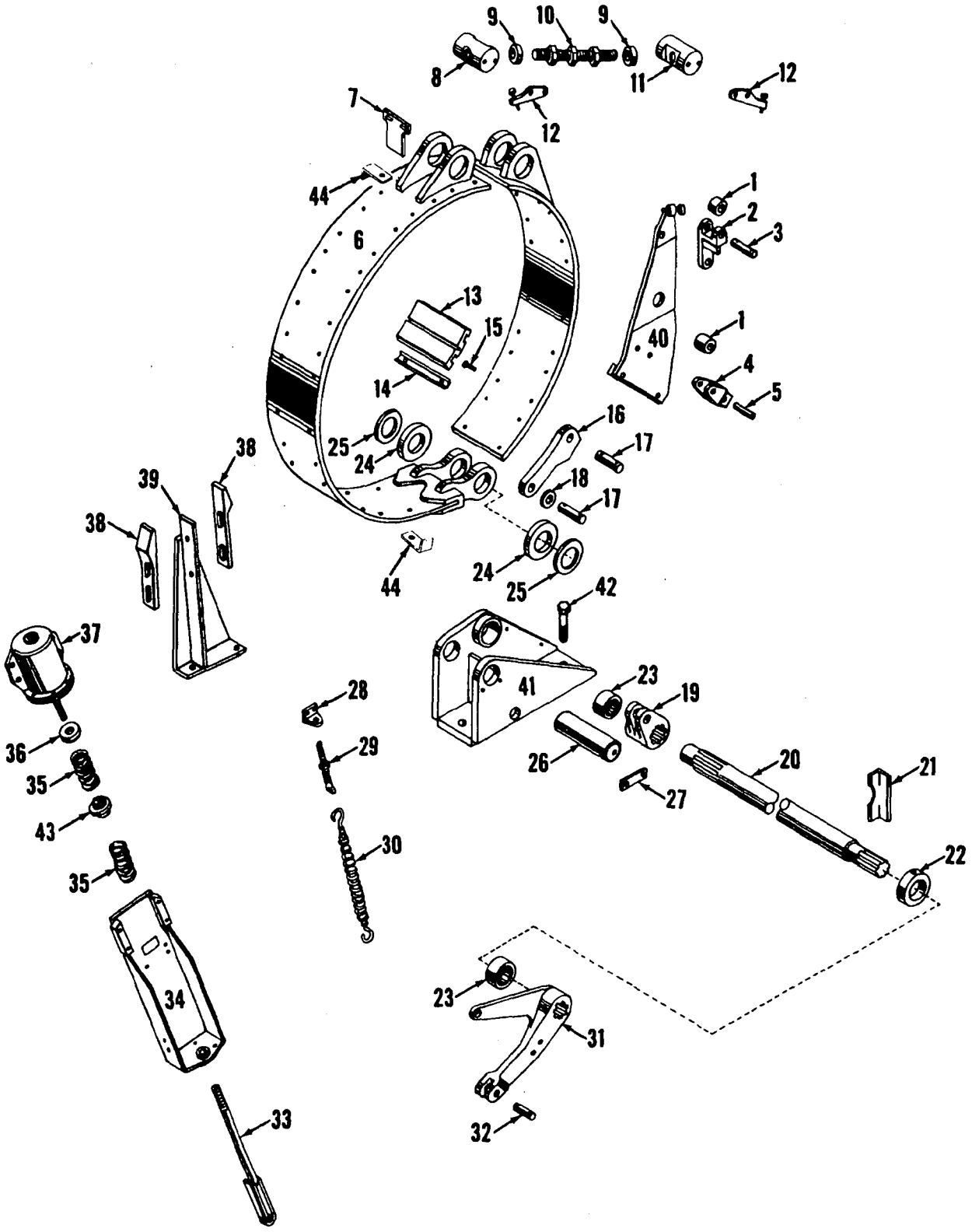
3309981

MATERIAL LIST ON BACK

MASTER

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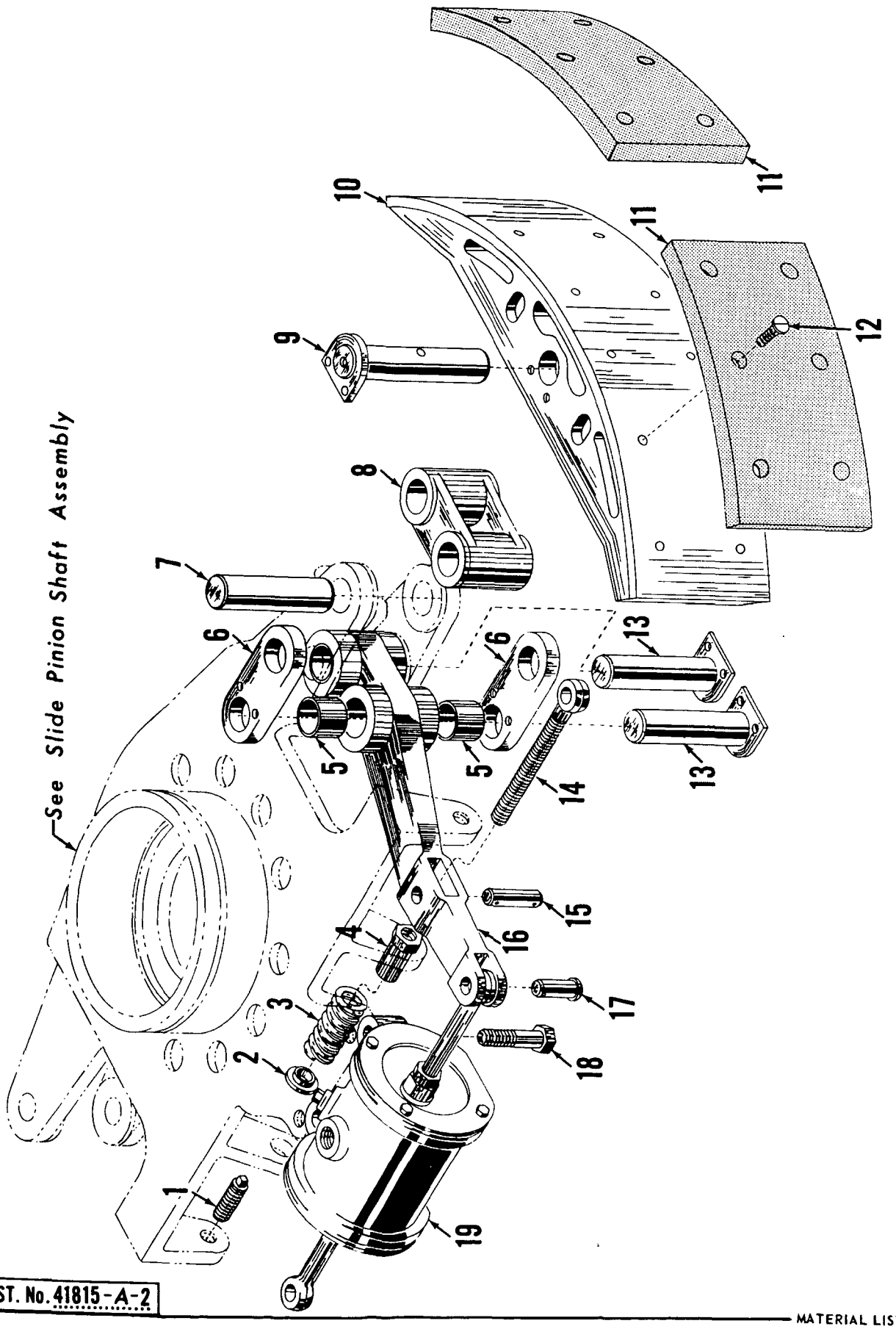
FRONT DRUM BRAKE

MATERIAL LIST ON BACK

41802E1

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ILLUST. No. 41815-A-2

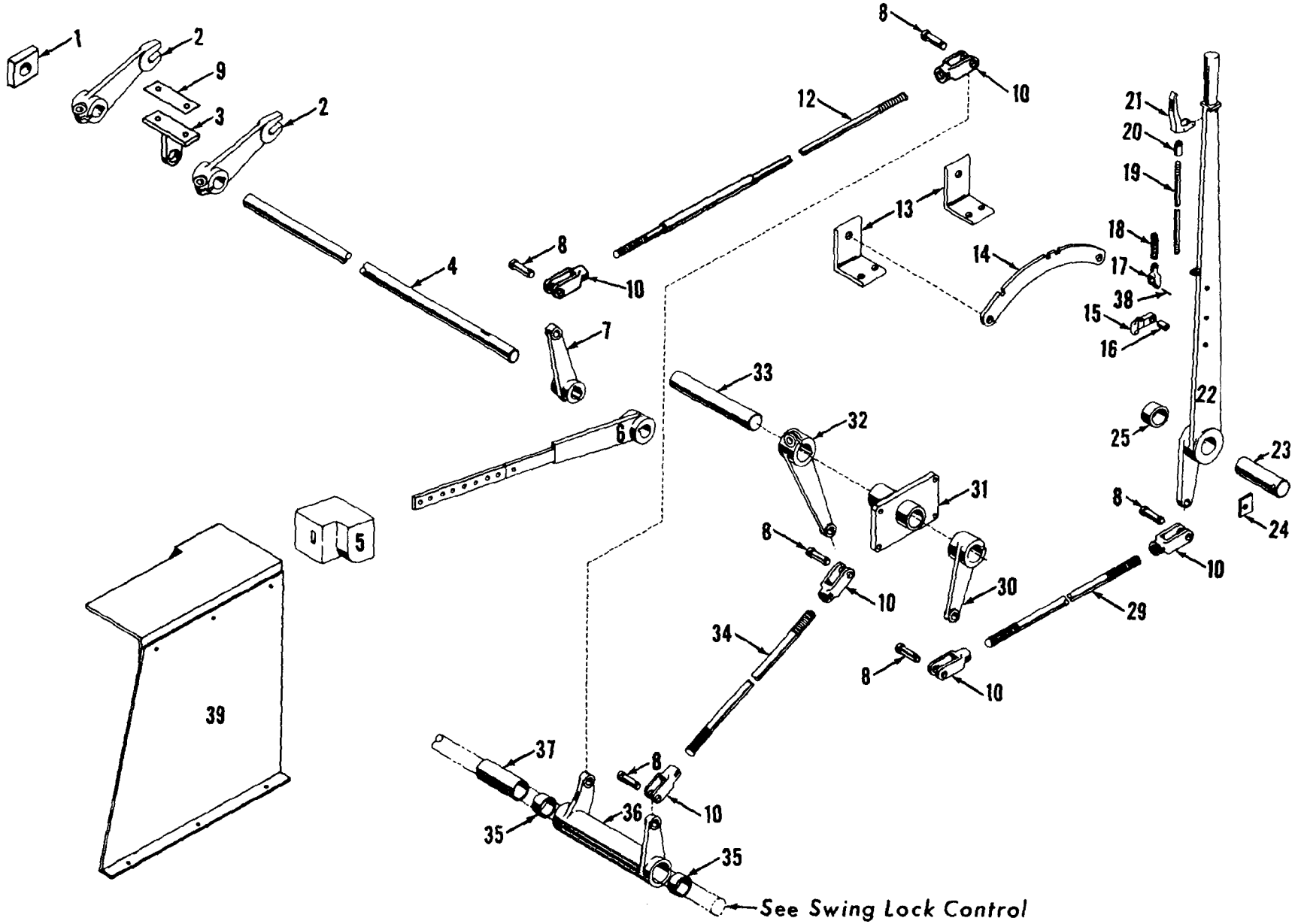
MATERIAL LIST ON BACK

SWING BRAKE ASSEMBLY

42252 D1

MASTER

42252D1



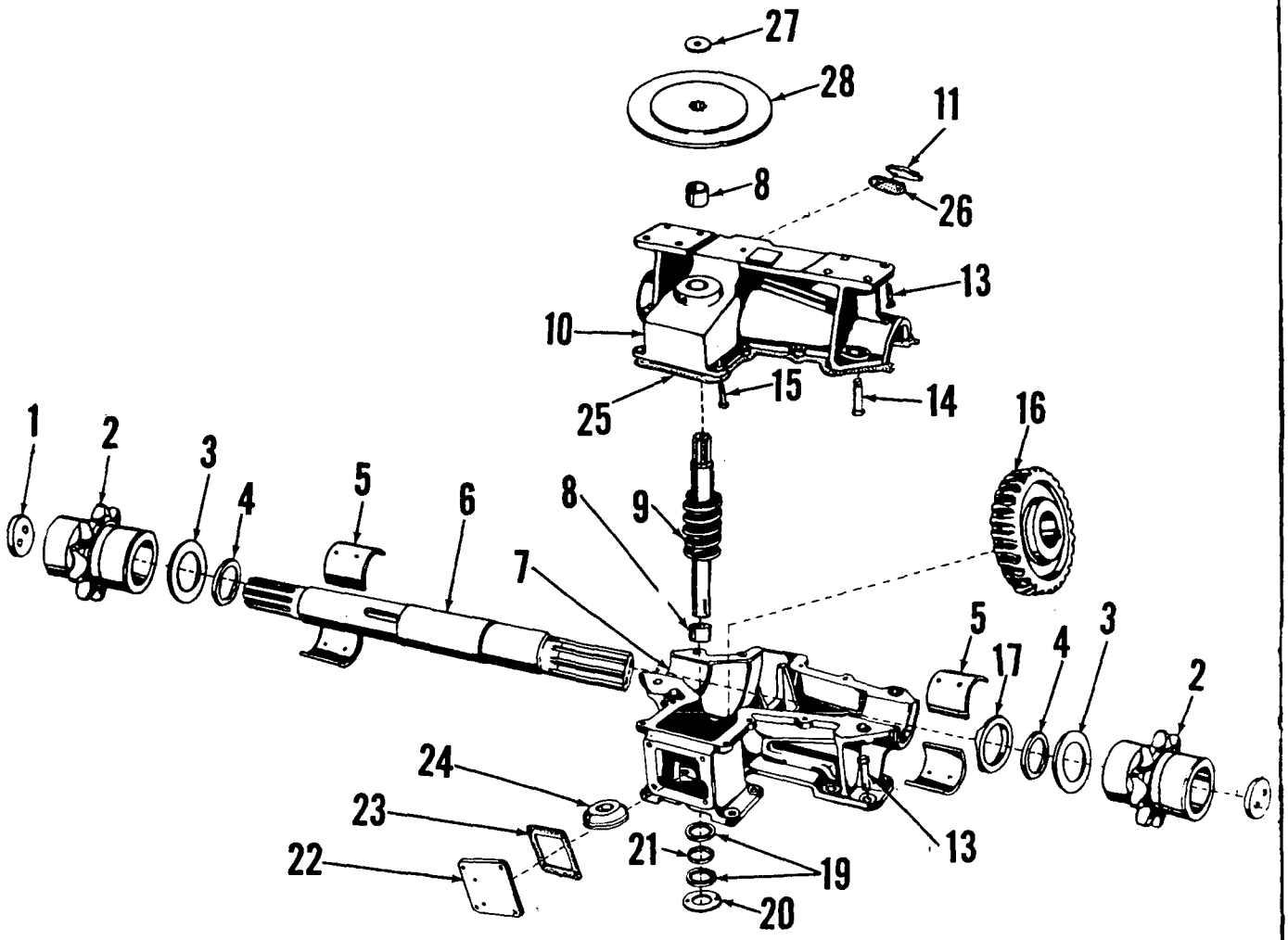
MATERIAL LIST ON BACK

SLIDE PINION CONTROL

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



MASTER

43143A1

BOOM HOIST

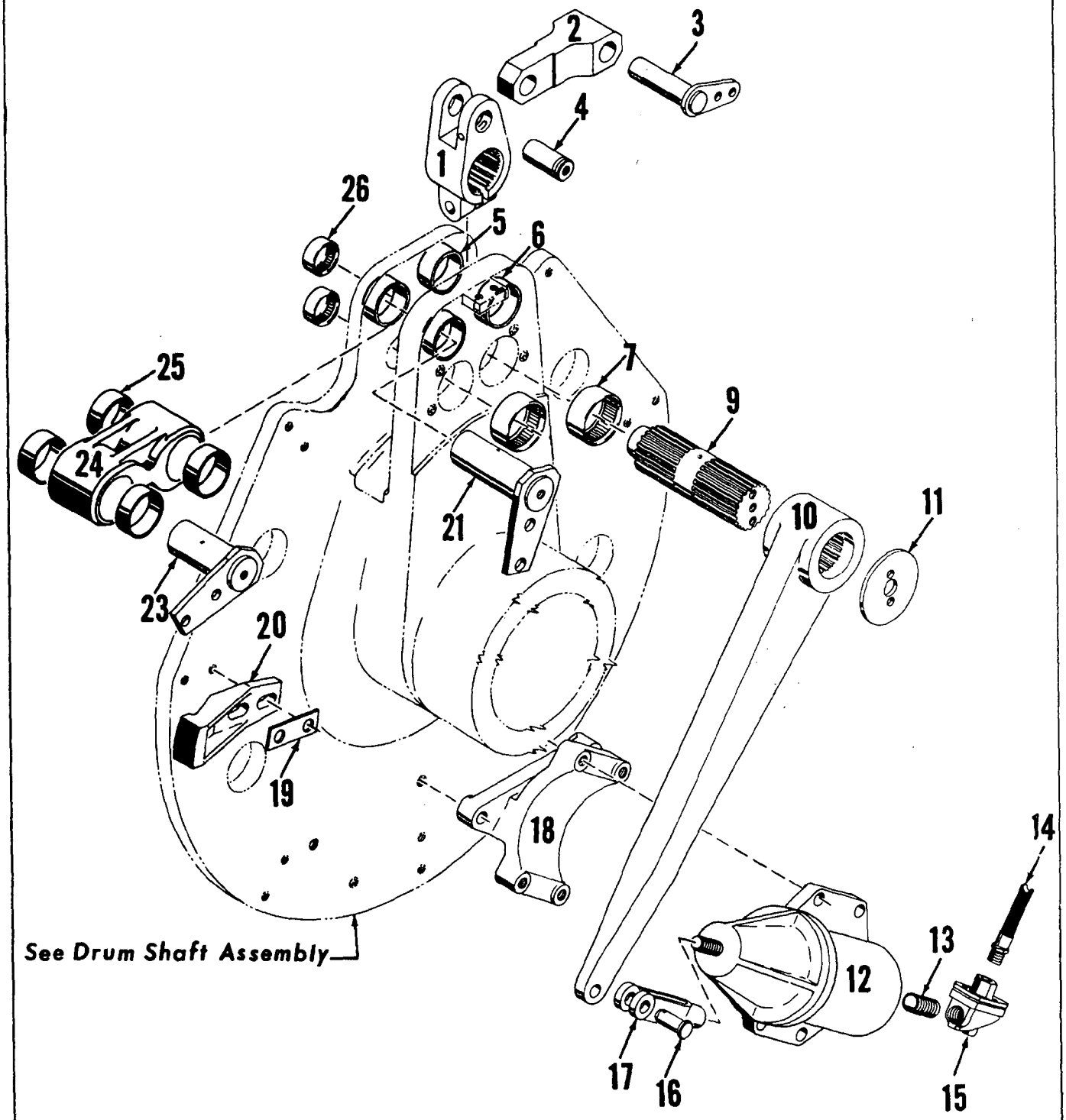
MATERIAL LIST ON BACK

43143 91

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MASTER

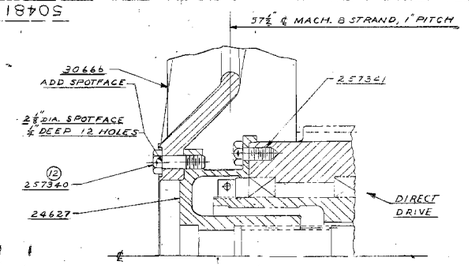


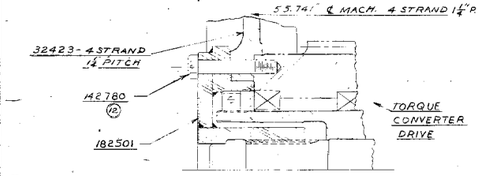
RIGHT DRUM CLUTCH

50326A3

MATERIAL LIST ON BACK

18405



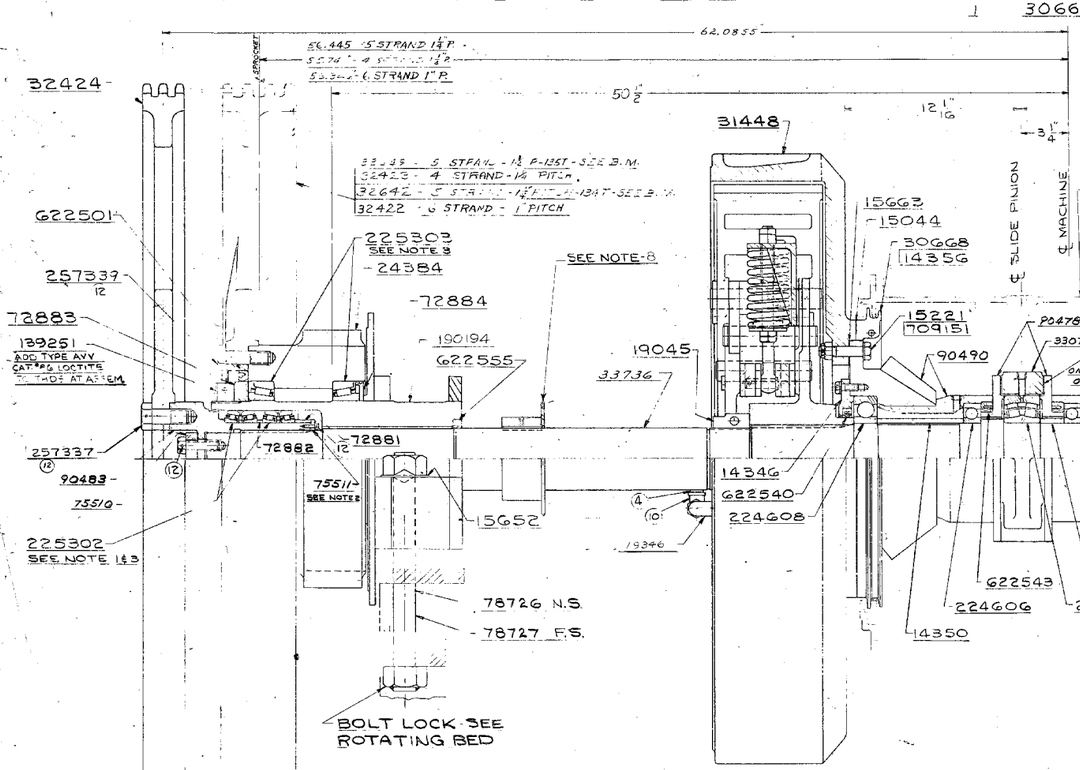


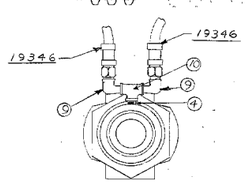
FOR SINGLE ENGINE ONLY

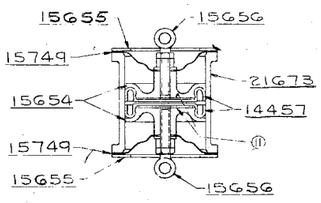
NO. REQD.	DWG. NO.	TITLE
8	10226	PIN
4	10512	PIN
2	14346	BEARING COVER
2	10478	BEARING COVER
1	14349	SPACER
2	14350	SPACER
4	14356	GASKET
4	19346	FLEX. AIR HOSE
8	14457	PACKING CUP
64	14463	KEEPER BOLT
2	15044	GASKET
28	15221	BOLT
1	15446	SPLIT NUT
2	15652	NUT LOCK
8	15654	PISTON
8	15655	SEAL RETAINER
8	15656	EYE BOLT
2	15663	GASKET
16	15668	CLUTCH BLOCK "KEY-LOK"
32	15669	KEEPER
16	15674	KEEPER PLATE
8	15676	PIN
8	15677	PIN
8	15679	PIN
1	75510	END PLATE
16	15681	CONNECTING LINK
8	15742	CONNECTING LINK
4	15747	PIN
8	15749	DUST SEAL
8	15779	EYE BOLT
8	15780	CLUTCH ADJ. SLEEVE
8	19995	CLUTCH SHOE STOP
8	16894	CLUTCH SHOE STOP
1	33649	SPROCKET-5 STRAND-1¼ P.-CAT D398 ONLY
8	18065	PIN
8	18592	SPRING WASHER
1	32422	SPROCKET-6 STRAND-1" P.-OPTIONAL
1	19045	SPLIT NUT
32	19133	BUSHING
8	19442	SPRING
1	32423	SPROCKET-4 STRAND 1¼ P.-OPTIONAL
2	90490	BEVEL PINION SUB-ASSEM.
8	21671	CLUTCH LEVER
4	21673	5½" AIR CYLINDER
4	21695	CLUTCH SPRING BRACKET
1	24384	DRIVE PINION
1	90483	ADAPTOR-TANDEM ENG. ONLY
1	182501	ADAPTOR-SINGLE ENG. ONLY
1	24627	ADAPTOR-SINGLE ENG. ONLY
1	33075	HOUSING
2	30668	OIL SLING
1	30666	SPROCKET-8 STRAND-1" P. - SINGLE ENG. ONLY -
2	30823	CLUTCH SPIDER
8	31406	CLUTCH SHOE
2	31448	CLUTCH DRUM
1	33736	MAIN DRIVE SHAFT
1	32642	SPROCKET-5 STRAND-1¼ P.-13 4T-STD & CAT D379
1	32424	SPROCKET-TANDEM ENG. ONLY-8 STRAND-1" P.-16 8T
1	190194	LEFT BEARING
1	72881	SPACER-TANDEM ENG. ONLY
1	72882	SPACER-TANDEM ENG. ONLY
1	72883	SPACER
1	72884	SPACER
1	75511	RETAINING RING-TANDEM ENG. ONLY
1	139251	ADJUSTING NUT
2	78726	COUPLING BOLT
2	78727	COUPLING BOLT
1	75532	SHIM
2	224606	BALL BEARING
2	224608	BALL BEARING
1	225260	ROLLER BEARING
2	225302	ROLLER BEARING-TANDEM ENG. ONLY
2	225303	ROLLER BEARING
8	257337	COUPLING BOLT
8	142780	COUPLING BOLT-SINGLE ENG. ONLY
8	257339	COUPLING BOLT
12	257340	COUPLING BOLT - SINGLE ENG. ONLY
8	257341	COUPLING BOLT SINGLE ENG ONLY
1	700705	ROTATING UNION
4	702465	OIL SEAL NOT REQUIRED WHEN USING 24627 OR 182501 ADAPTORS.
28	709151	WASHER
(B) 2	622470	OIL SEAL SEE NOTE 10
(C) 2	622471	OIL SEAL SEE NOTE 10
(D) 1	622750	OIL SEAL SEE NOTE 10
2	622501	OIL SEAL NOT REQUIRED WHEN USING 24627 OR 182501 ADAPTORS.
2	622540	OIL SEAL
2	622543	OIL SEAL
1	622555	OIL SEAL
1	702466	QUICK RELEASE VALVE

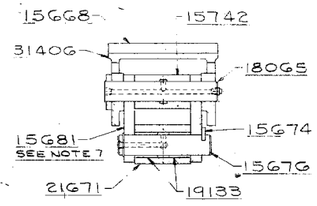
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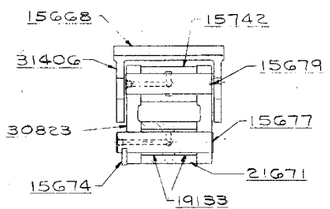
ITEM NO	NO REQ	DESCRIPTION	CODE NO	REMARKS
1				
2				
3	2	⅜ - ½ " BUSHING	2½ 794	
4	1	⅛" CLOSE NIPPLE	4-434-12	
(A) 5	4	⅜" EX. STR. NIPPLE	542117	(A)
6				
7	4	¾" STREET ELBOW	406348	
8	4	⅜ to ¾" NUT BUSHING	288751	
9	2	¼ x 90° ST. ELL. BRASS	429086	
10	1	½ TEE	4-114-31	
11	8	66" OA x ⅜" DIA. SHT - MC	633155	
12	5	#16 GA. IRON WIRE		

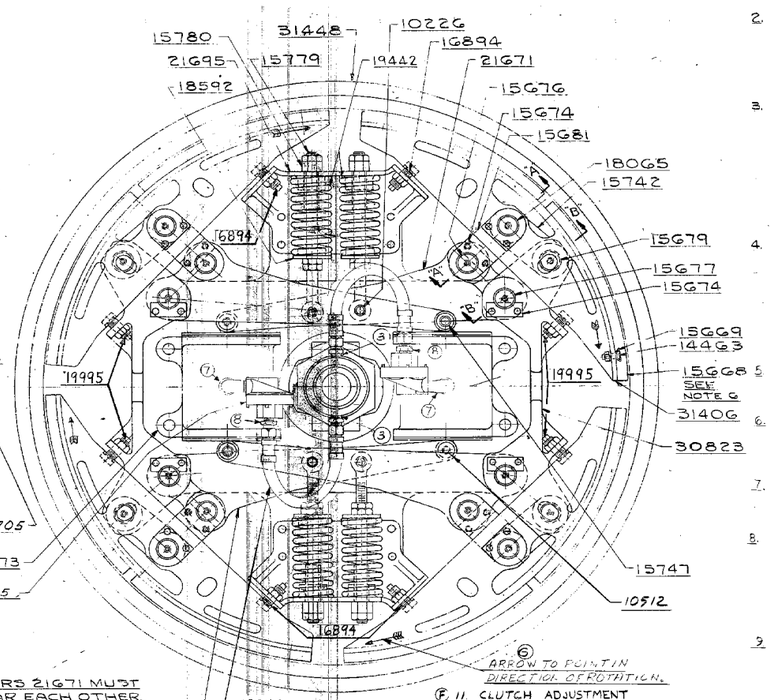












LEVERS 21671 MUST CLEAR EACH OTHER. TRIM TO GIVE CLEARANCE IF NECESSARY.

VIEW SHOWING PIPING FOR QUICK RELEASE VALVES

NOTES

1. EXERCISE CARE IN ASSEMBLING BEARINGS 225302. TIMKEN SPACERS & BEARING COMPONENTS ARE NOT INTERCHANGEABLE.
2. THE ONLY FUNCTION OF THIS BEARING RETAINER IS TO HOLD THE BEARINGS IN PLACE ON THE ADAPTOR. DO NOT APPLY UNDUE FORCE WHEN TIGHTENING CAPSCREWS.
3. BEARING SET-UP BEARINGS 225303, TAKE UP ON 72884 UNTIL F ROTATING 24384 UNTIL BEARINGS BIND SLIGHTLY IN ROTATION. BACK OFF TO GIVE .003" TO .005" END PLAY & LOCK. BEARINGS 225302, ROTATE BEARINGS WHILE CLAMPING UP THROUGH CONES TO ASSURE PROPER SEATING OF ROLLERS.
4. PACK BEARINGS WITH HIGH GRADE LIME BASE GREASE BEFORE ASSEMBLY.
5. 17477-⅛ OVERSIZE "KEY-LOK" BLOCK IS AVAILABLE TO REPLACE 15668.
6. TO COMPENSATE FOR WEAR IN DRUM & LINING, SPECIAL LINKS 18089 ARE AVAILABLE TO REPLACE LINKS 15681.
7. ALL PARTS ARE SYMMETRICAL ABOUT VERTICAL CENTER-LINE IN END VIEW.
8. KEYWAY RETAINED FOR FIELD REPLACEMENT.

DWG. NO. 50481

(5) 9. BEARING MARKED "THRUST HERE" ON THE OUTER RACE MUST BE INSTALLED WITH MARKING AGAINST BEVEL PINION 33072 SHOWN ON SUB-ASSEMBLY 90490. IF BEARING IS NOT MARKED ON EITHER SIDE BEARING MAY BE INSTALLED IN EITHER DIRECTION AS SHOWN.

(5) 10. FOR FIELD REPLACEMENT OF OIL SEALS USE:

ORIGINAL SEAL	REPLACEMENT SEAL
622540	622470
622543	622471
622555	622750

(6) ARROW TO POINT IN DIRECTION OF ROTATION.

(F) 11. CLUTCH ADJUSTMENT

A. ADJUST CLUTCH ADJ SLEEVE (15780) TO OBTAIN 1/16 IN CLEARANCE BETWEEN LINING AND DRUM FLANGE BALANCE 1/16 IN. CLEARANCE AT ENDS OF SHOE WITH SHOE STOP BOLTS (19995)

B. BACK OFF CLUTCH ADJ. SLEEVE (15780) TO REMOVE ANY PLAY FROM THE LINKAGE.

C. REPEAT A & B FOR REMAINING SHOES

D. REMOVE THE PIPE PLUG FROM EACH AIR CYLINDER. CENTER BOTH PISTONS IN THE HOLE, USING THE HEX NUT ON PISTON (15654). LEAVE A 1/16 IN GAP BETWEEN PACKING CUPS (14457).

E. ADJUST RETURN SPRINGS (19442) TO A LENGTH OF 5½ INCHES, USING THE JAM NUT ON EYEBOLT (15779).

SUPERSEDES DWG 50481 OF 5-6-77

MANITOWOC ENGINEERING CO. MANITOWOC, WISCONSIN

REVISED DATE	SPEEDCRANE - MODEL 4600
6-30-77 UCS (5) WAS 543816	MAIN DRIVE SHAFT ASSEMBLY
7-18-78 RVP ADDED (6)(7)	FOR TANDEM & SINGLE ENG
8-6-79 GLP (6) NOTE ADDED (5) 7-705 ADDED	DATE 5-6-77 · SCALE 3" = 1'-0" · PATTERN NO. · MATERIAL · CODE NO. · DR. MHJ · APP. · DWG. NO. 50481

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41085

OPTIONAL

1. FUEL OIL TRANSFER PUMP SWITCH & RECEPTACLE SEE DWG. "70305
2. WATER TEMP. & OIL PRESS SEE DWG. 70304
3. WINCO GENERATOR VOLTAGE REGULATION ASSEMBLY SEE DWG. 31819
4. GENERAL ELECTRIC TYPE ASB 5 KVA ALTERNATOR ASSEM. SEE DWG. 32191
5. GENERAL ELECTRIC 2 KVA & 3 KVA ALTERNATOR ASSEMBLY SEE DWG 42951
6. ~~HEATER HOUSING ASSEMBLY SEE DWG. 31820~~
7. ~~HEATER HOUSING ASSEMBLY SEE DWG. 31820~~
8. HEATER HOUSING ASSEMBLY SEE DWG. 31820

ITEM NO	QUAN	DESCRIPTION	CODE NO
78	75	5/16" HEX NUT	546055
79	1	GRIPPER CORD	471715
80	1	1/2" 90° ELL.	407014
81	1	CAP HUBBELL "7507	304509
82	1	RECEPT TWISLOCK "7535	589774
83	1	PLATE SING RECEPT. "423	570105
84			
85	2	BOX OUTLET SQUARE 4" GALV.	268536
86	1	4" SQUARE OUTLET BOX COVER	378607
87	2	FUSE GLASS 20 AMP TYPE SFE-20	453212
88	1	PROTEX LAMP SOCKET "717	646364
89	1	DB-3 CORD CONNECTOR	471682
90	1	TWO POLE LITTLEFUSE BLOCK	
91	2	8 FT. PIGTAIL	477350
92	6	6 FT. PIGTAIL	477351
93			
94			
95			

BILL OF MATERIAL

SYM BOL	ITEM NO	QUAN	DESCRIPTION	CODE NO.
⊗	1	3	R & S - V.T. FIXTURE NO 4930A	430291
	2			
⊗	3	2	R&S-V.T. FIXTURE NO 6253A	430292
◉	4	2	~~R&S-V.T. RECEPT. NO 447~~	~~539765~~
U	5	5	BOX-HANDY-GALV. APPLETON "4 SSL-1/2	268504
⊗	6	2	R&S-V.T. FIXTURE NO RS-6321-A-5 V	
L	7	1	RUBBER SOCKET-PROTEX "717	646364
C	8	1	CONDULET-GALV 1/2" NO LR-17	363612
TS	9	5	SWITCH-TOGGLE-FLUSH-HUBBELL "1801	673177
P	10	2	STURDILITE MODEL-120-300	507464
PB	11	2	PUSH BUTTON-EDWARDS "1785	293112
H	12	1	HORN SPARTON V-116-6 VOLT	485367
	13	1	PANEL-WADSWORTH 8 CKT NTP-308-L	556212
	14	10 FT	CONDUIT-THIN WALL 1/2" STL.	363231
	15	FT.	CONDUIT-RIGID 1/2"	363201
U	16	2	BOX-OUTLET-GALV 1/2" KO 3 1/16"	268526
U	17	14	BOX-OUTLET-GALV 1/2" KO 4"	268521
	18	1	SQUARE 'D' LOAD CENTER	275208
	19	20FT	CONDUIT-THIN WALL 3/4"	363232
◉	20	1	RECEPT-W.T. WITH SW. R.S. "478	589775
◉	21	4	RECEPT.-230-FR-19 JOY	589619
	22			
	23	20 FT.	3/8" LOOM	510703
	24	6	CONNECTOR - THIN WALL 3/4"	364182
	25	7	JOY VIBRATION RESISTANT LAMP SOCKETS "S-2371	
	26	A/R	1/4" LOOM.	510706
	27	1	600V-CORD CONNECTOR HUBBELL	364015
	28	50	BUSHING-FIBRE-ANTI-SHORTS	296750
	29	10	BUSHING-CONDUIT 1/2"	288363
	30	1	DUPLEX RECEPTACLE PLATE	570111
	31	1	CAP ATTACHMENT-PLUG HUBBELL "3754	304542
	32	3	~~R&S PLUG "432~~	~~572253~~
S	33	1	LIGHT PLANT-HOBART 1KE-5KW SINGLE BRASH 230 VOLT MANUAL CONTROL SW IN L.	746182
	34	4	CLAMP-PIPE-1 HOLE 1"	667015
	35	9FT	CONDUIT-FLEX-GREENFIELD 1"	363307
	36	25	CONNECTOR-BX 3/8" STRAIGHT	364155
	37	18	CONNECTOR-BX 3/8" ANGLE 90°	364163
	38	2	CONNECTOR-GREENFIELD 1" 4" STRAIGHT	364177
	39	6	CONNECTOR-THIN-WALL 1/2"	364181
	40	2	CONNECTOR-DUPLEX 3/8"	364151
	41			
	42	66 FT	CORD-TIREX "14-2 TYPE S	371892
	43	13'	CORD-TIREX "6-2 TYPE S	371821
	44	1	COVER-OUTLET BOX 3 1/16"	371632
	45	1	COVER-OUTLET BOX 4"	372631
	46	1	COVER-CONDULET 1/2"	378617
	47	90 FT	BX-12-2 CABLE	296757
	48	2	COVER-4" DUPLEX RECEPT.	378623
		85 FT.	BX "12-3 CABLE	296525
	50	20 FT.	#10 AUTO IGNITION CABLE GREEN	
	51	20 FT.	#10 AUTO IGNITION CABLE BROWN	
	52	6	FUSE-PLUG 20AMP-125V.	453155
	53			
	54	12	GRIPS-CORD 08-9 PYLE NATL.	471715
	55	8 FT.	~~#16-2 RED "TIREX~~	~~371835~~
	56	15	LAMP-50W-120V ROUGH SERVICE	294086
	57	2	LUGS-COPP. SOLD. 70 AMP.	511603
	58	1	R&S HALF SHADE "0660	624809
	59	3	PLATE-HANDY BOX SWITCH "423	570107
	60	1	SOCKET-ALUMINUM "4200	646303
	61	100	STRAPS-CABLE CAT "44545 3/8"	667206
	62	5	STRAPS-CABLE-DUPLEX "4754 3/8"	667306
	63	70	TERMINALS-WIRE "31015 AMP	680500
	64	25 FT	WIRE #12 ST. TYPE TW WHITE	297600
	65	33 FT	WIRE #12 ST TYPE TW BLACK	296416
	66	15 FT	WIRE #12 ST. TYPE TW GREEN	296438
	67	30 FT	WIRE #12 ST TYPE TW RED	296509
	68	15 FT	CABLE OHFA-3	296307
	69	1	CAP PLUG	304568
	70	10	1/2" QUAD STRAP "1701	667495
	71	1	RECEPT. HUBB. BROWN POLARIZED "5262	589786
	72	75	3/16"x1" MACH. SCREW	617789
	73	75	3/16" LOCKWASHER	710301
	74	225	1/4" LOCKWASHER	710302
	75	125	1/4"x 3/4" R.H. MACH. SCREW	617823
	76	100	1/4"x 1" R.H. MACH. SCREW	617827
	77	7	1/4" x 1" R.H.. MACH. SCREW	617830

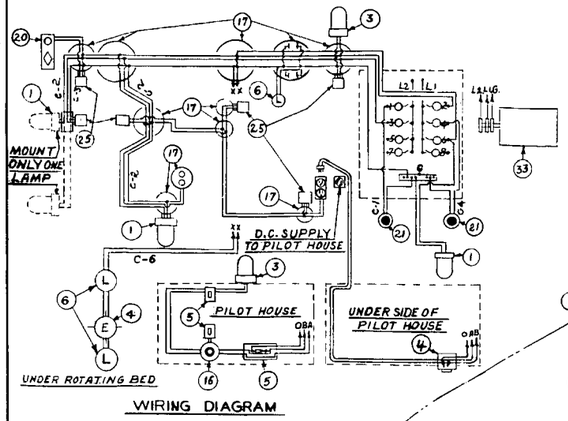
ASSEMBLIES USED ON

NOTE 6 ADDED ITEM 18 ADDED 11-2-62 EJ

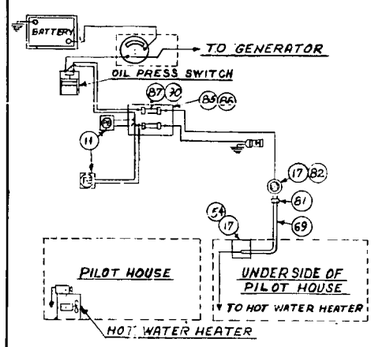
ITEMS 10 & 21 RELOCATED IN PILOT HOUSE 15 8 75

DELETED 6-26-62

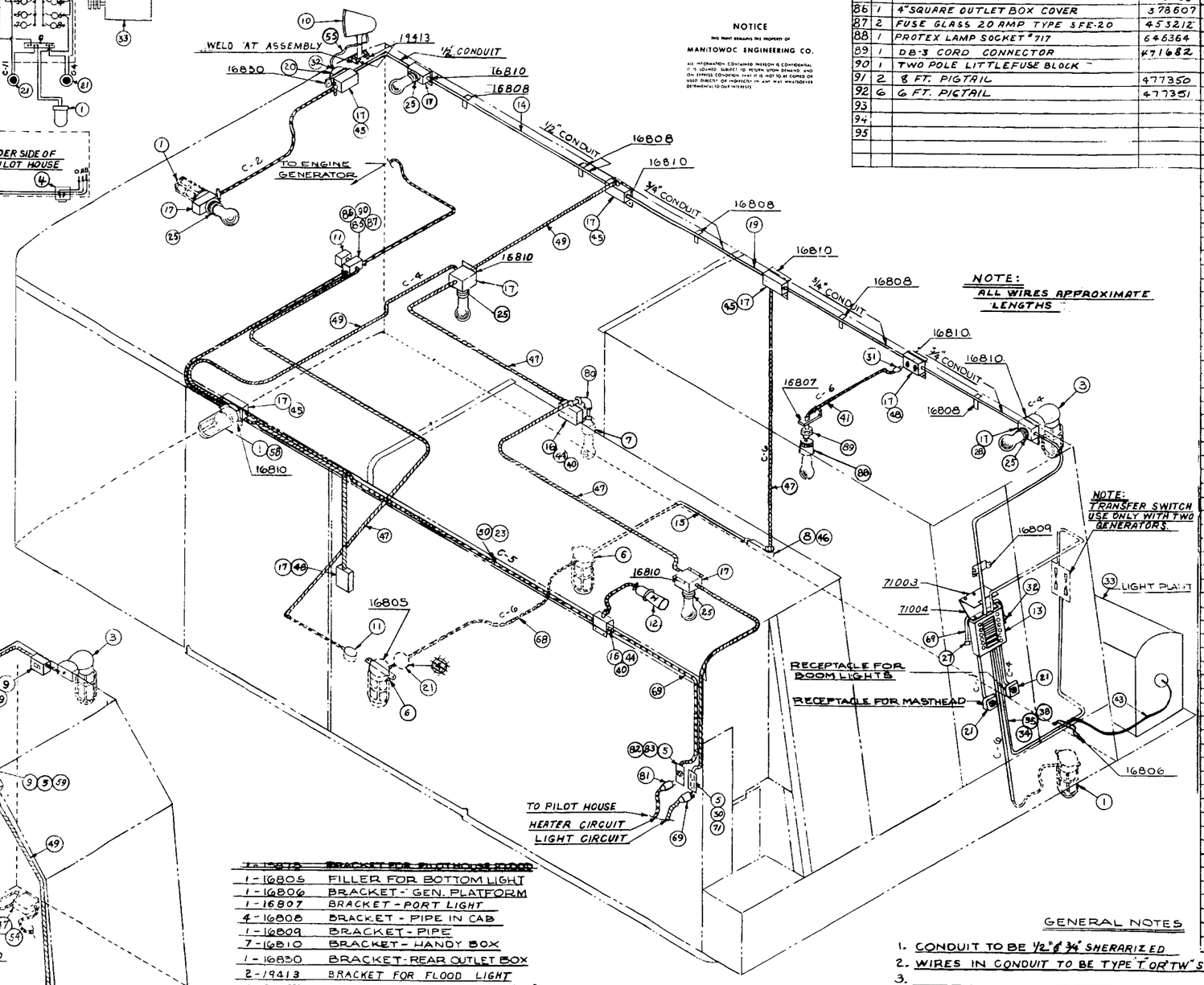
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WIRING DIAGRAM

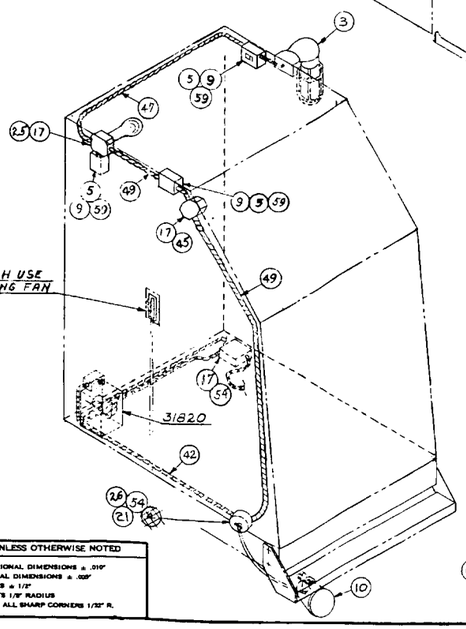


6V. ALARM CIRCUIT
BATTERY POWER AUXILIARIES



NOTE:
ALL WIRES APPROXIMATE LENGTHS

NOTE:
TRANSFER SWITCH USE ONLY WITH TWO GENERATORS.



NOTE:
STARTING SWITCH USE WITH DRUM COOLING FAN MOTOR

~~1-16870~~	~~BRACKET FOR PILOTHOUSE HEATER~~	
1-16805	FILLER FOR BOTTOM LIGHT	
1-16806	BRACKET - GEN. PLATFORM	
1-16807	BRACKET - PORT LIGHT	
4-16808	BRACKET - PIPE IN CAB	
1-16809	BRACKET - PIPE	
7-16810	BRACKET - HANDY BOX	
1-16830	BRACKET - REAR OUTLET BOX	
2-19413	BRACKET FOR FLOOD LIGHT	
1 70326	EXTENDED ROOF STAIR LIGHT BR'KT.	FOR EXTENDED CAB ONLY
1 70327	EXTENDED ROOF GENERATOR BR'KT.	FOR EXTENDED CAB ONLY
1-71003	VOLTMETER SHIELD	FOR 5 K.W. THYRITE GENERATOR ONLY
1-71004	VOLTMETER SUPPORT	FOR 5 K.W. THYRITE GENERATOR ONLY
1-73252	BRACKET	
1-73253	BRACKET	
1-73254	BRACKET	
1-73255	BRACKET	
1-73256	BRACKET	

FINISH NOTES	UNLESS OTHERWISE NOTED
/ INDICATES SURFACES TO BE FINISHED ONLY.	FRACTIONAL DIMENSIONS ± .010"
√ WITH TYPE NUMBER INDICATES TYPE OF FINISH REQUIRED.	DECIMAL DIMENSIONS ± .005"
	ANGLES ± 1/2°
	FILLETS 1/8" RADIUS
	BREAK ALL SHARP CORNERS 1/32" R.

DO NOT SCALE THIS DRAWING

GENERAL NOTES

1. CONDUIT TO BE 1/2" & 3/4" SHERARIZED
2. WIRES IN CONDUIT TO BE TYPE "T" OR "TW" STRANDED
3.
4. NO. 14-2 TYPE-S-TIREX TO BE USE BETWEEN CAB & PILOT HOUSE.
5. ITEM "55-" 18-2 RED TIREX TO BE USE BETWEEN CAB & PILOT HOUSE
6. WHEN 2KVA & 3KVA ALTERNATOR ASSEMBLY 42951 IS USED, ADD ITEM 18, ADD 4 TO QUANTITY OF ITEMS 74-76. REWIRE WITH 2 KVA ALTERNATOR FOR CAB LIGHTS AND 3 KVA ALTERNATOR FOR BOOM & MASTHEAD LIGHTS.

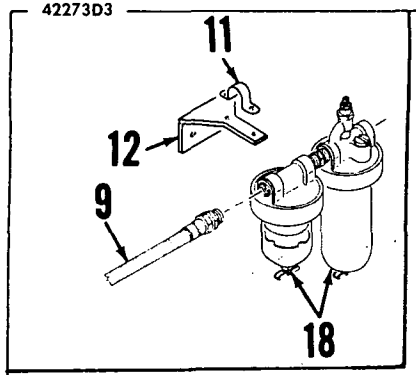
NOTE
FOR WIRING DIAGRAM OF CRANE BOOM & MASTHEAD LIGHTS SEE DRAWING 41086. FOR WIRING DIAGRAM OF SHOVEL BOOM & MASTHEAD LIGHTS SEE DRAWING 41087

SUPERSEDES 50065 — SUPERSEDED BY 42184 & 50936

MANITOWOC ENGINEERING WORKS
MANITOWOC, WISCONSIN

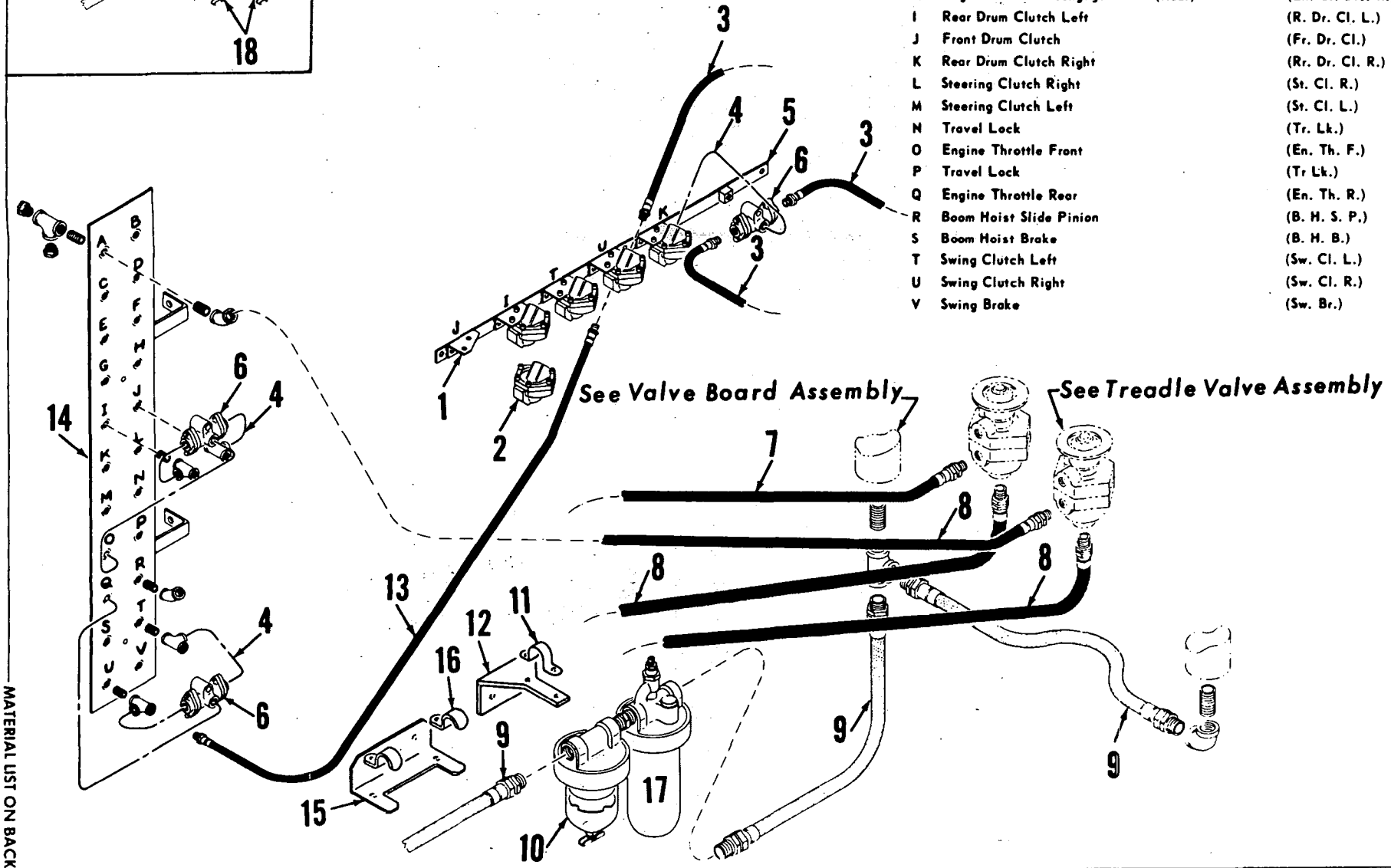
REVISED DATE 5-3-55 19413-ADDED 7-14-55 SEE RECORD PRINT	SPEEDCRANE—MODEL 4500
4-5-57 JH. (A) ADDED	WIRING DIAGRAM FOR CAB & PILOT HOUSE LIGHTS - SEE NOTE 6
12-8-58 JHH (B) ADDED 2-7-62 RJD (C) ADDED 2-16-62 EJH/ 2-21-62 EJH/ 3-1-62 EJH/ 3-5-62 EJH/ 3-9-62 EJH/ 3-27-62 EJH	DATE 10-30-50 · MATERIAL · SCALE 3/8" = 1'-0" · PART OR DWG. NO. 41085

42273D3



LEGEND

A	Front Drum Brake Right and Left		(Fr. Dr. Br. R. & L.)
B			
C			
D			
E	Engine Clutch Engage	(Front)	(En. Cl. Eng. F.)
F	Engine Clutch Disengage	(Front)	(En. Cl. Dis. F.)
G	Engine Clutch Engage	(Rear)	(En. Cl. Eng. R.)
H	Engine Clutch Disengage	(Rear)	(En. Cl. Dis. R.)
I	Rear Drum Clutch Left		(R. Dr. Cl. L.)
J	Front Drum Clutch		(Fr. Dr. Cl.)
K	Rear Drum Clutch Right		(Rr. Dr. Cl. R.)
L	Steering Clutch Right		(St. Cl. R.)
M	Steering Clutch Left		(St. Cl. L.)
N	Travel Lock		(Tr. Lk.)
O	Engine Throttle Front		(En. Th. F.)
P	Travel Lock		(Tr Lk.)
Q	Engine Throttle Rear		(En. Th. R.)
R	Boom Hoist Slide Pinion		(B. H. S. P.)
S	Boom Hoist Brake		(B. H. B.)
T	Swing Clutch Left		(Sw. Cl. L.)
U	Swing Clutch Right		(Sw. Cl. R.)
V	Swing Brake		(Sw. Br.)



MATERIAL LIST ON BACK

AIR CONTROL PIPING

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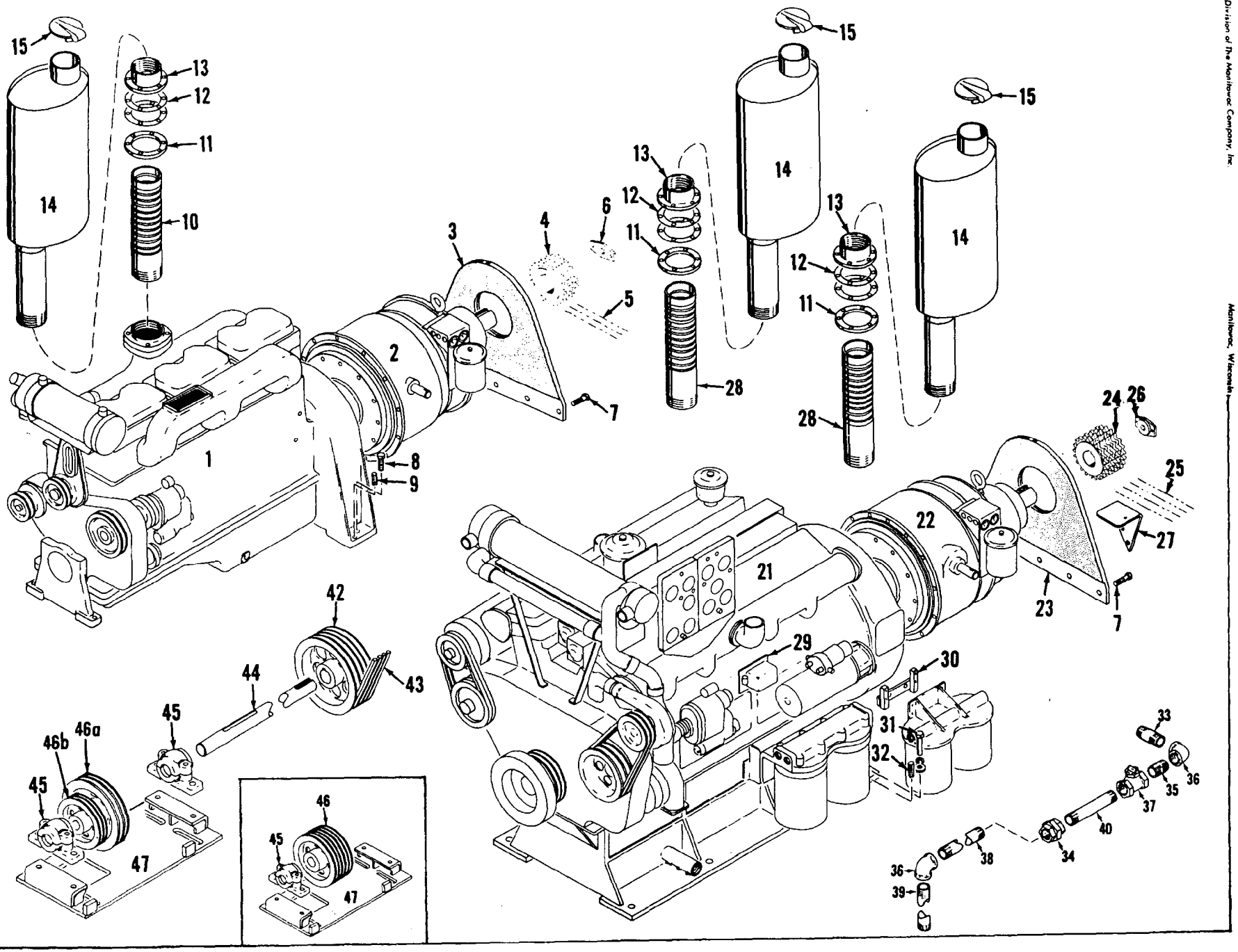
PARTS MANUAL ALPHABETICAL INDEX
Group D - Power Components

DESCRIPTION	PUBLICATION	REV	START DATE	END DATE	GROUP
Power Plant	50431	G1	11/29/66	06/13/77	D0101
Power Plant	50431	I2	11/29/66	06/13/77	D0101
Power Plant	50431	A3	11/29/66	06/13/77	D0101
Power Plant	50431	A4	11/29/66	06/08/76	D0101
Power Plant	50431	A5	11/29/66	06/13/77	D0101
Power Plant	50431	A6	11/29/66	06/13/76	D0101
Power Plant	50431	C7	11/29/66	06/13/77	D0101
Power Plant	50431	B9	11/29/66	06/13/77	D0101
Power Plant	50431	B10	11/29/66	06/13/77	D0101
Power Plant	43121	G2	03/05/68	07/04/76	D0101
Power Plant	43121	A3	07/28/63	07/01/69	D0101

50431A2

MASTER

50431A2



MATERIAL LIST ON BACK

POWER PLANT

MANITOWOC ENGINEERING CO.

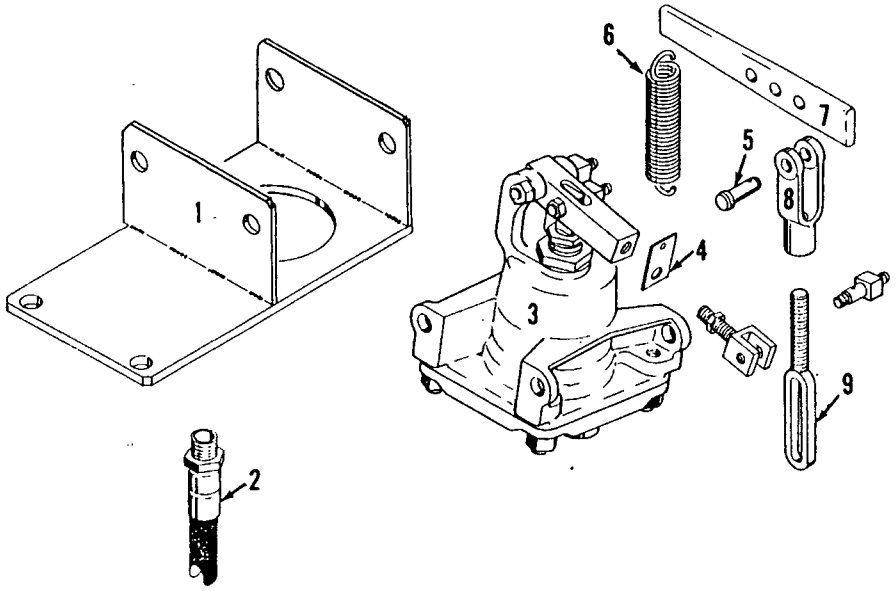
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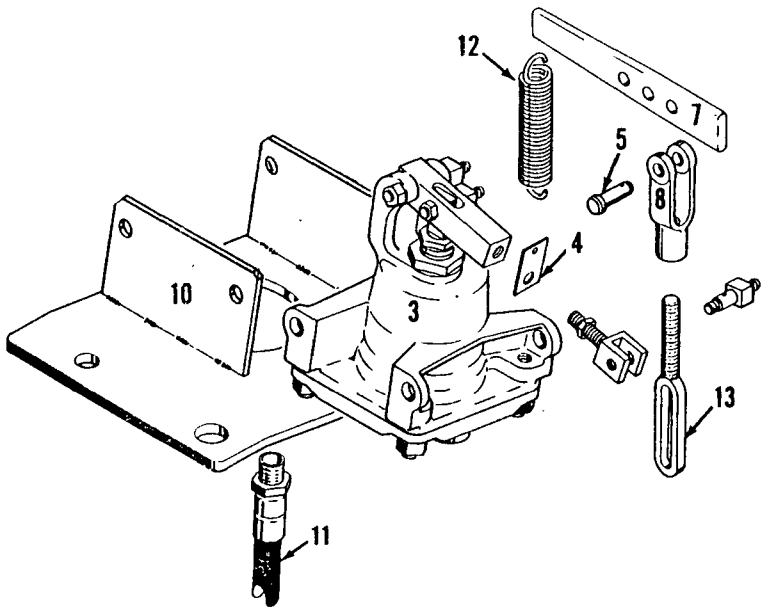
50363B7

MASTER

50363B7



Rear Engine



Front Engine

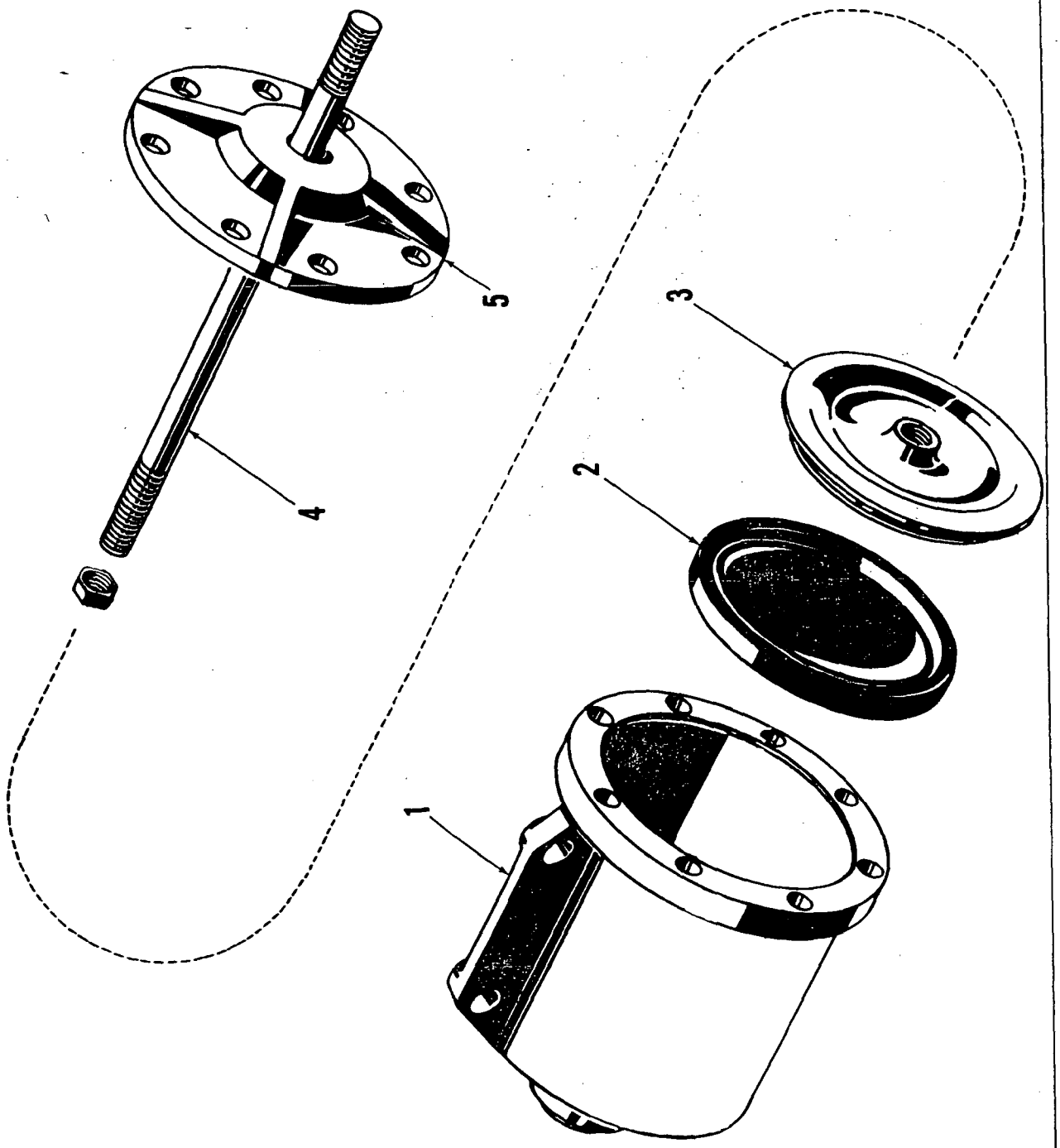
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MATERIAL LIST ON BACK

ENGINE CONTROL



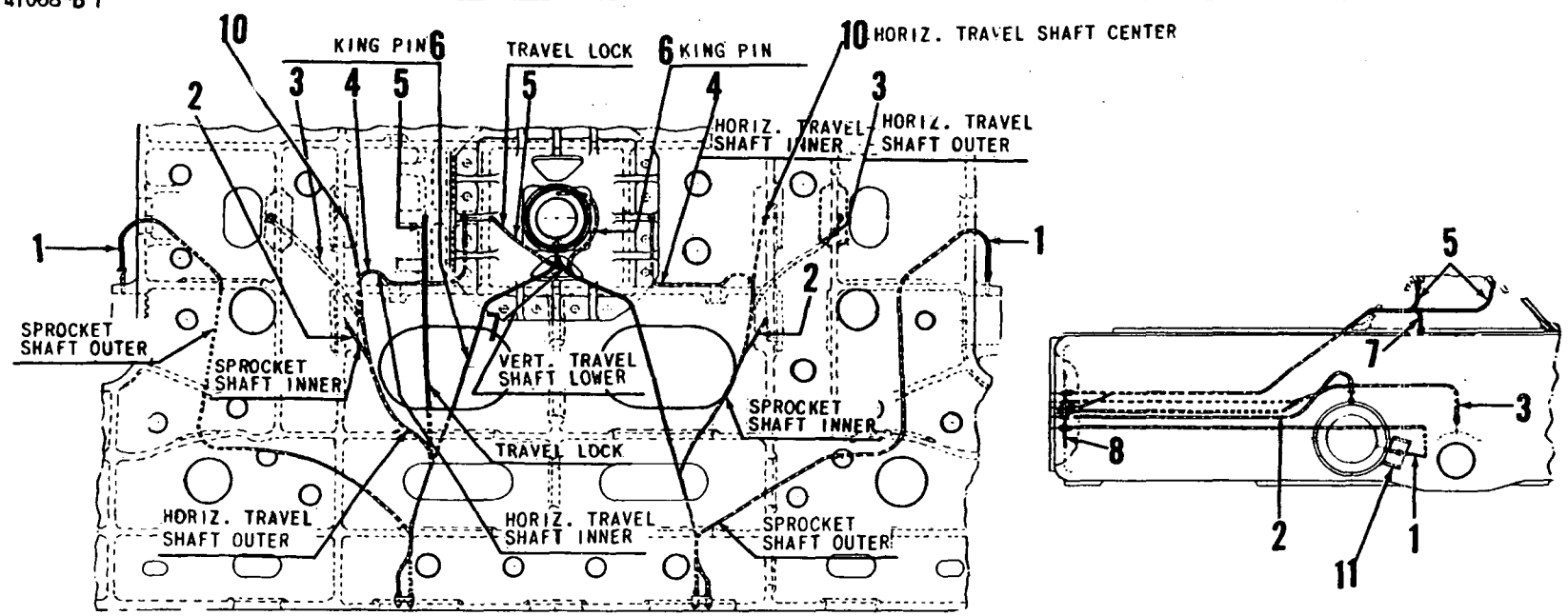
ILLUST. No. 20729 -A-1

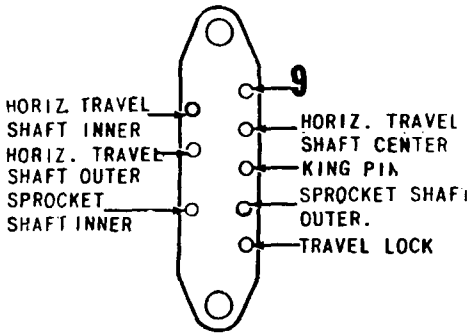
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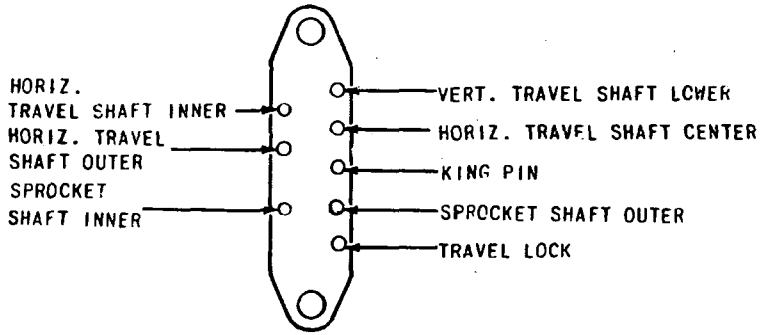
AIR CYLINDER

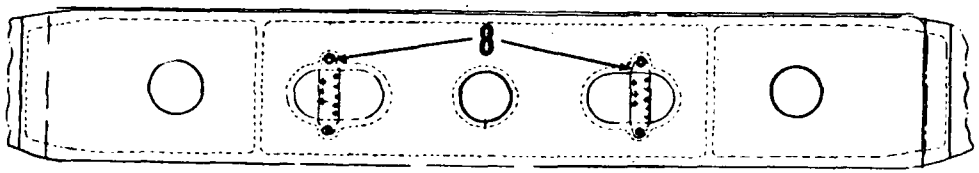
20729-1

41068-B-1









MATERIAL LIST ON BACK

LUBRICATION PIPING ASSEMBLY CARBODY

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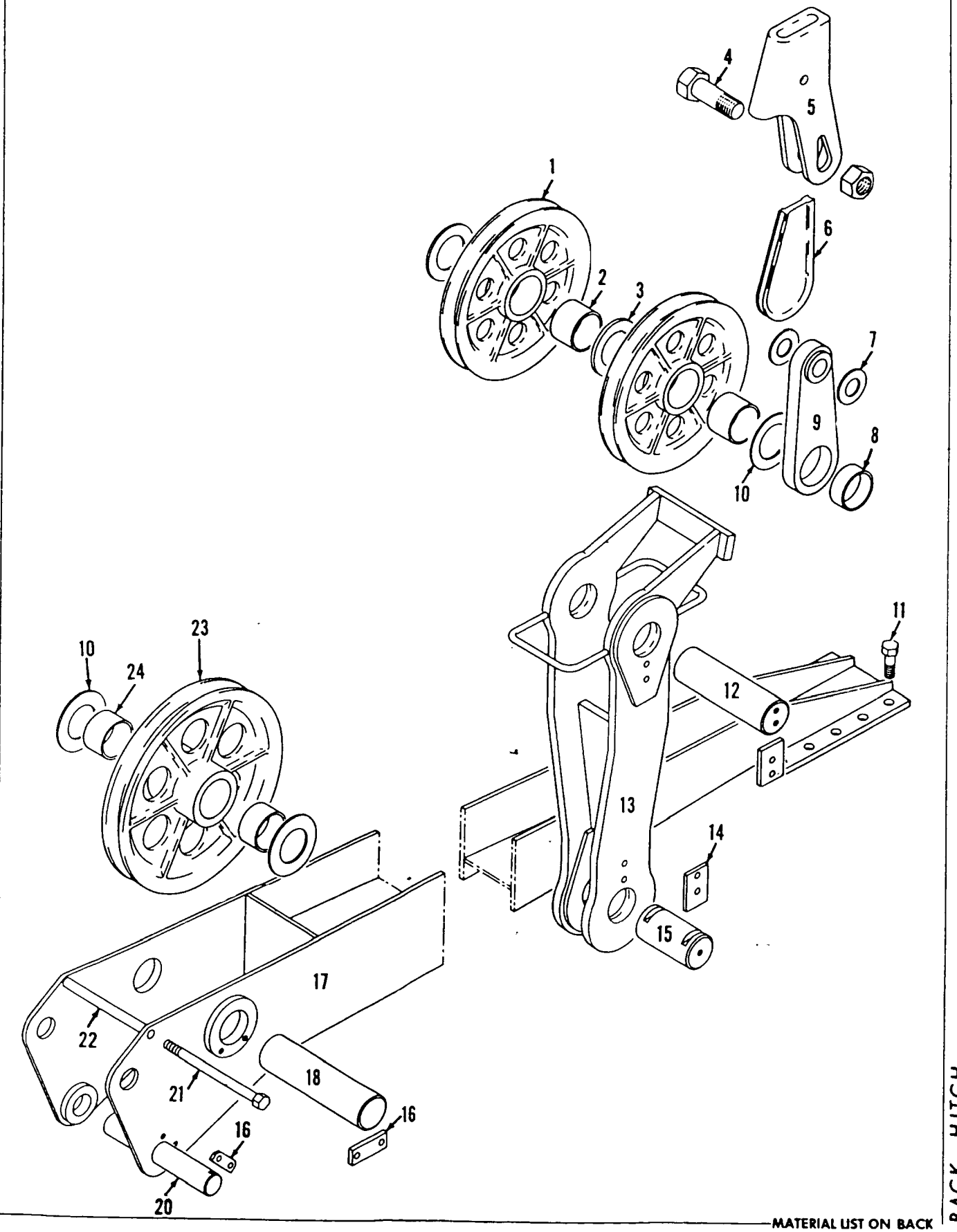
Manitowoc, Wisconsin

GROUP F - Attachments

MANITOWOC ENGINEERING CO.

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MASTER

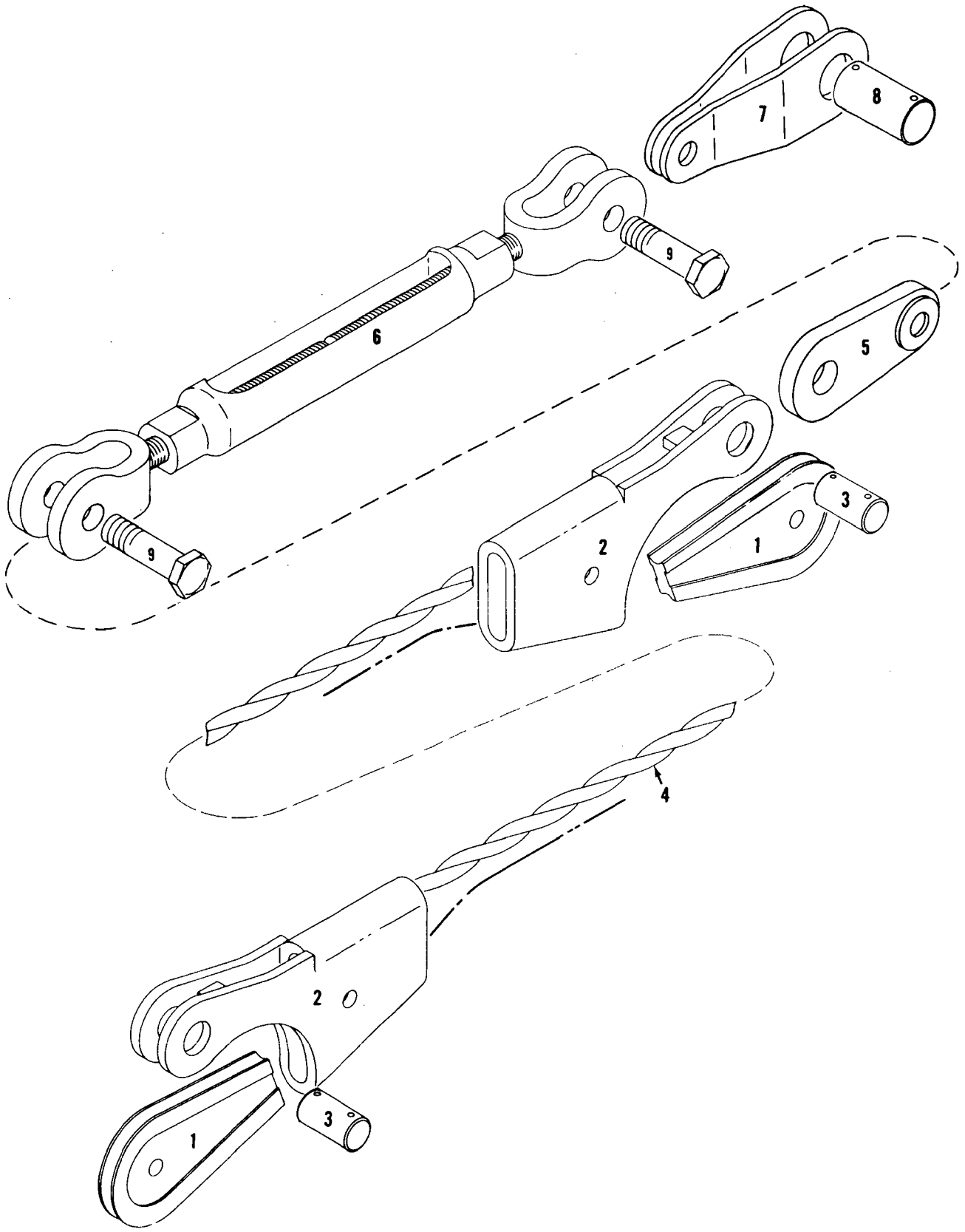


43201C2

MATERIAL LIST ON BACK

BACK HITCH

4320



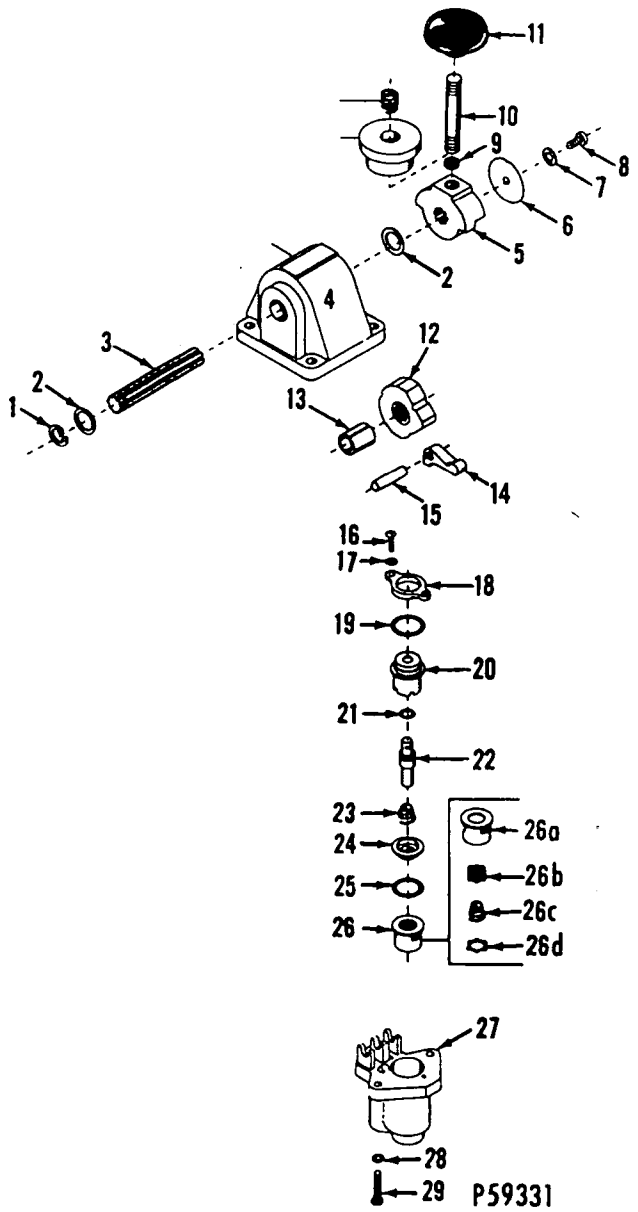
MASTER

50294-C3

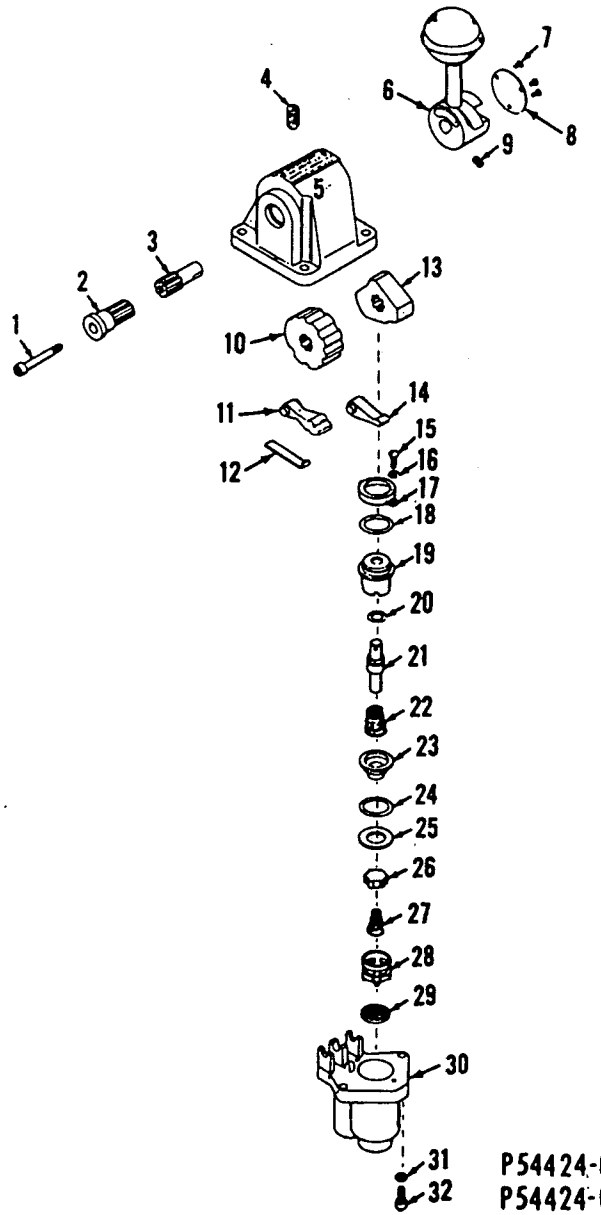
50294C3

MATERIAL LIST ON BACK

BOOM SUSPENSION



P59331
P59333



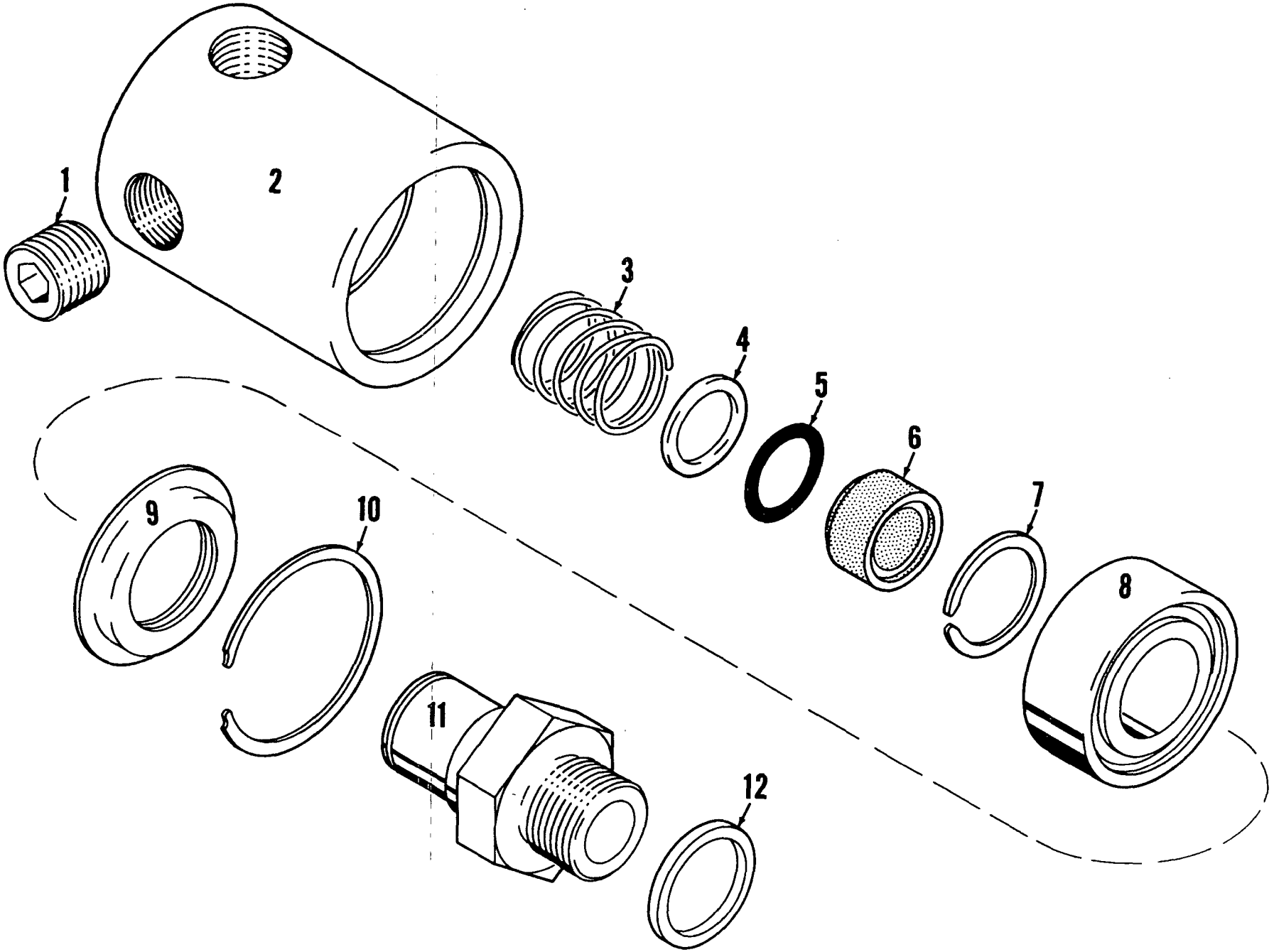
P54424-0101
P54424-0301

MATERIAL LIST ON BACK

CONTROL VALVE

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MASTER



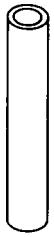
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Manitowoc, Wisconsin

MATERIAL LIST ON BACK

SWIVEL UNION



TUBING (soft copper)

Code No.	Tube O.D.
696205	3/16
696210	1/4
696214	5/16
696216	3/8
696218	1/2
696219	5/8
696220	3/4



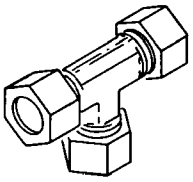
NUT

Code No.	Tube O.D.
424603	3/8
424604	1/2
424605	3/4
424633	5/16
424634	1/4
424635	3/16



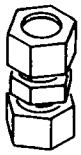
FERRULE

Code No.	Tube O.D.
424600	1/4
424601	3/4
424602	3/8
424616	5/16
424617	1/2
424618	1/8
424619	3/16



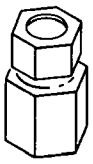
UNION TEE

Code No.	Tube O.D.
429315	1/4
429316	3/8
429317	5/16



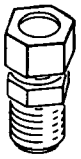
UNION

Code No.	Tube O.D.
429349	3/8
429361	1/4
429362	1/2
429397	5/16



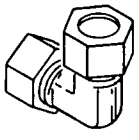
FEMALE CONNECTOR

Code No.	Tube O.D.	Pipe Thread
429312	3/16	1/8
429407	1/4	1/8
429830	1/4	1/4



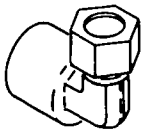
MALE CONNECTOR

Code No.	Tube O.D.	Pipe Thread
429324	3/4	3/4
429328	3/8	1/2
429351	5/16	1/8
429358	1/2	3/4
429359	1/2	3/8
429363	1/4	1/8
429364	1/4	1/4
429365	3/16	1/8
429366	3/8	1/8
429367	3/8	1/4
429368	3/8	3/8



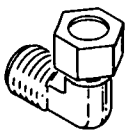
UNION ELBOW

Code No.	Tube O.D.
429372	3/8
429378	1/2
429381	1/4



FEMALE ELBOW

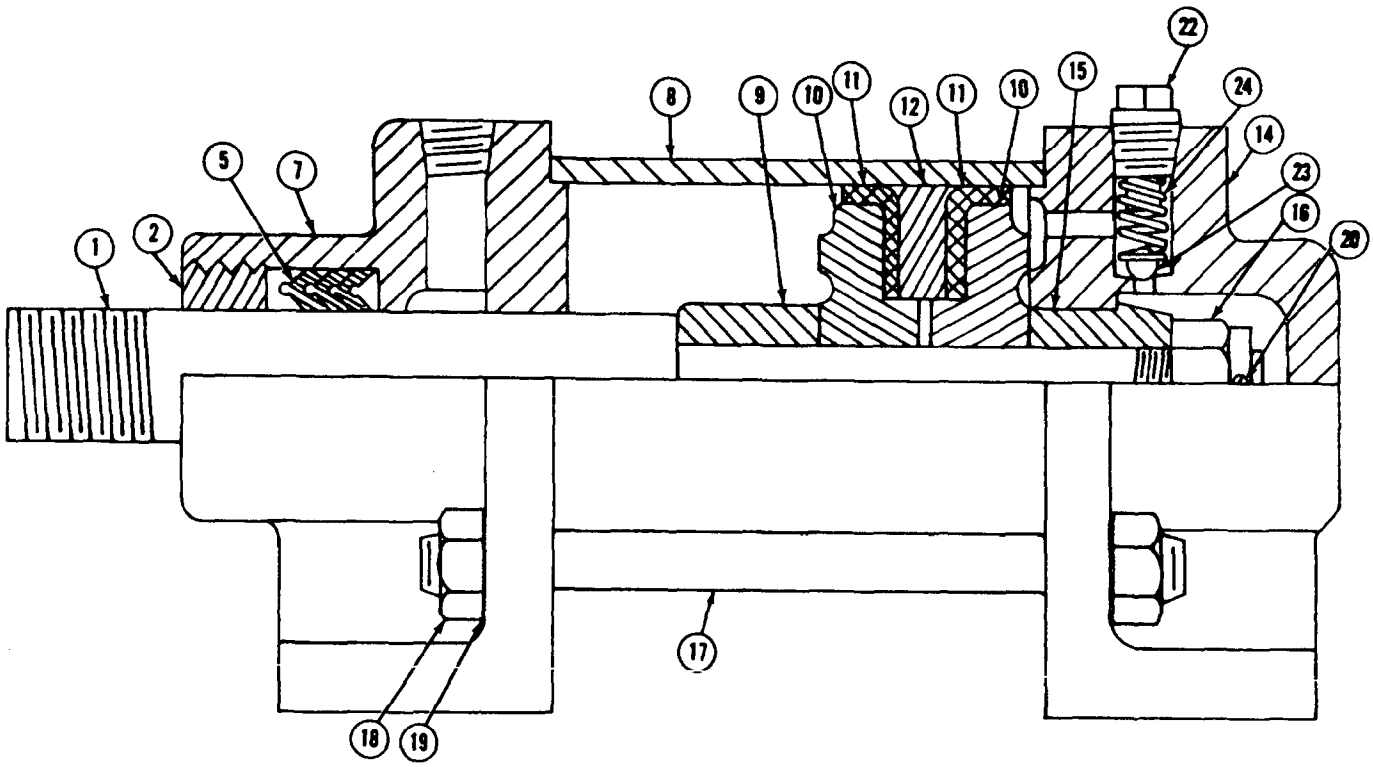
Code No.	Tube O.D.	Pipe Thread
429066	1/4	1/8
429825	1/4	1/4



MALE ELBOW

Code No.	Tube O.D.	Pipe Thread
429371	1/2	1/2
429373	3/8	1/8
429374	1/4	1/4
429375	3/8	1/4
429376	1/2	3/8
429380	1/4	1/8
429384	3/8	1/2
429385	5/16	1/8
429386	3/16	1/8
429401	1/2	3/4
429422	3/8	3/8
429453	3/4	3/4

MASTER

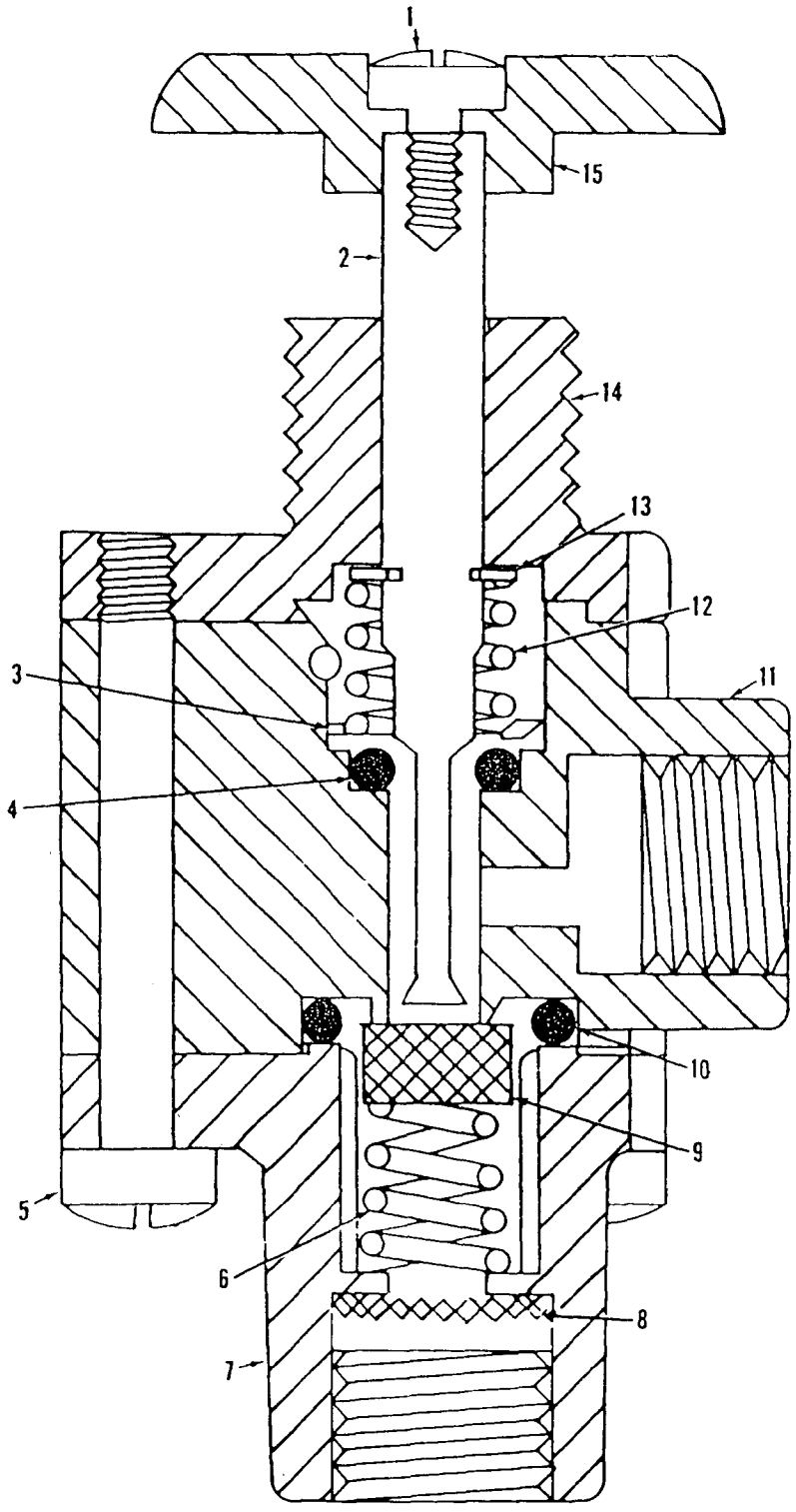


AIR CYLINDER ASSEMBLY

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc. Manitowoc, Wisconsin

MASTER

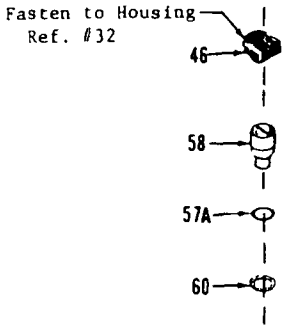


CONTROL VALVE

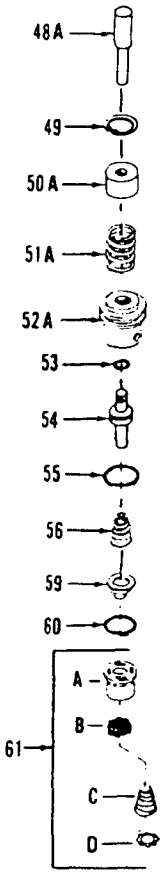
0-302

MATERIAL LIST ON BACK

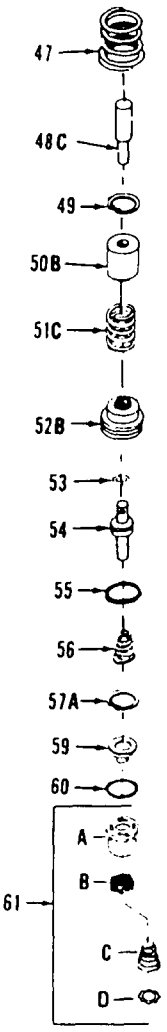
Cavity Plugged



3 Way Valve



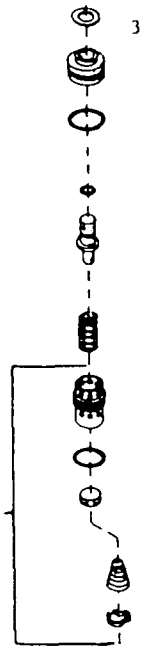
Modulating Valve



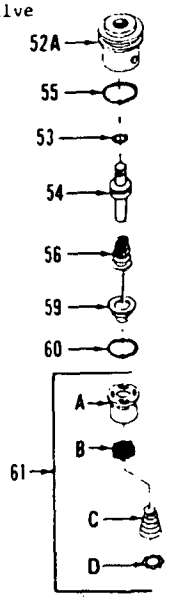
REPAIR AND CONVERSION KITS

Obsolete

3 Way Valve

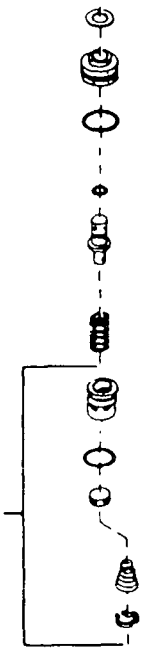


Replace With

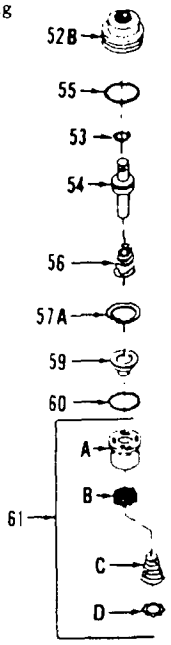


Obsolete

Modulating Valve

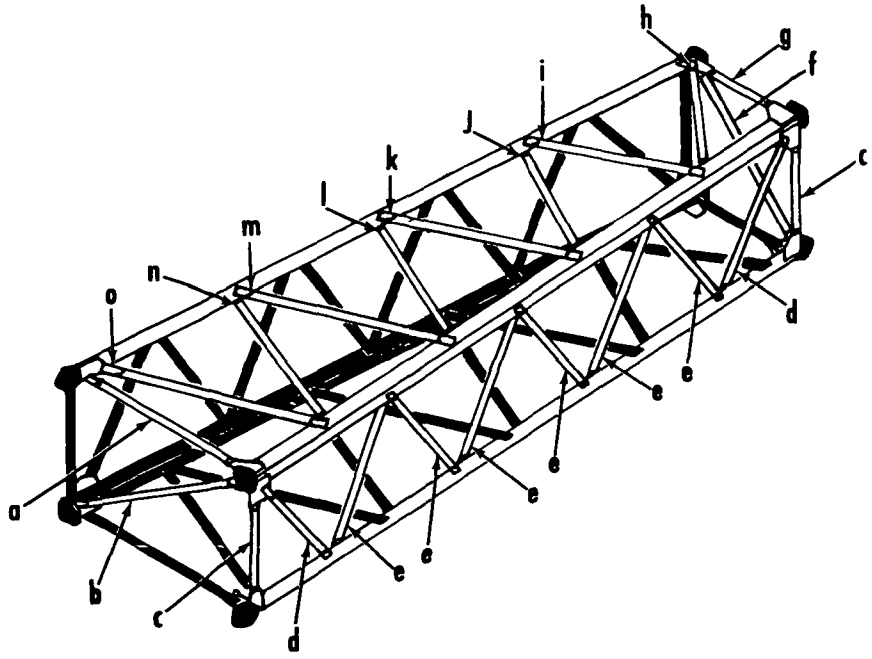


Replace With

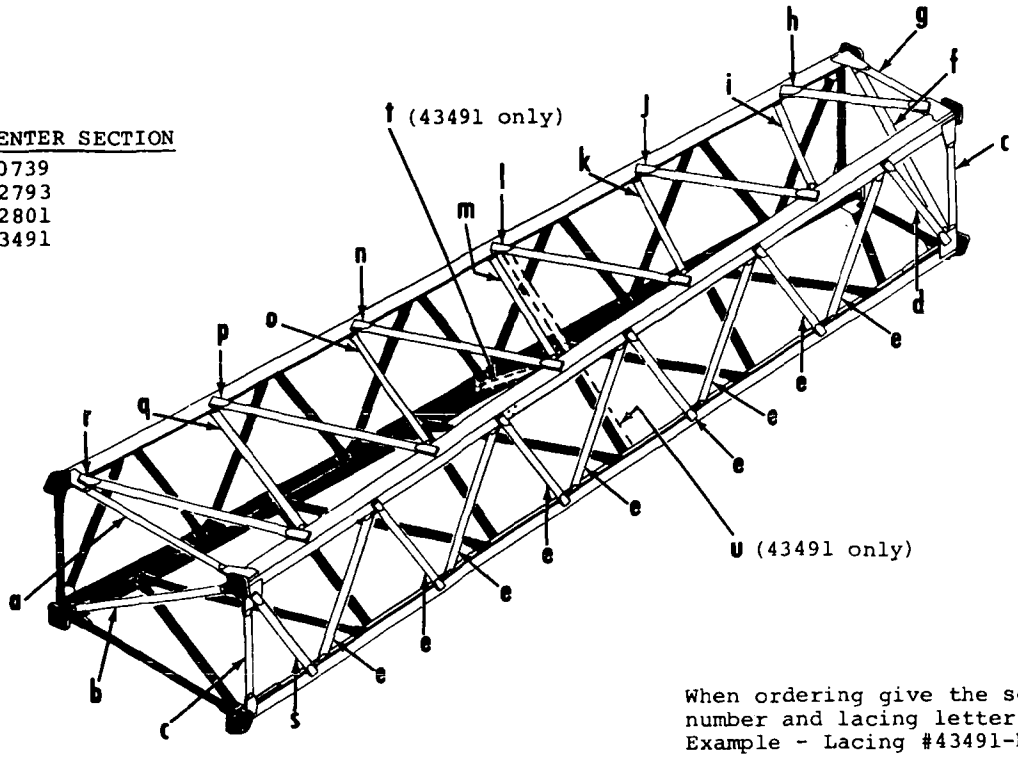


Boom #30-#31-#32-#33
Left Side and Bottom Lacings Black
Opposite Lacings Same Unless Noted

27' CENTER SECTION
#43175



37' CENTER SECTION
#40739
#42793
#42801
#43491



When ordering give the section number and lacing letter - Example - Lacing #43491-E

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