

# Manitowoc

## TRADITIONAL CRANE PARTS MANUAL

This manual has been prepared for and is considered part of

**3900**

Model

**39303**

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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## Corrosion and Abrasion

Refer to Figure 3.

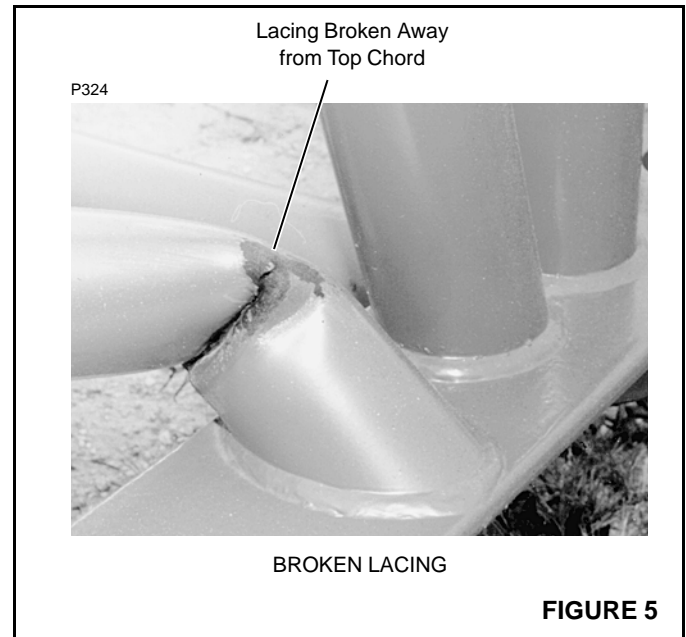
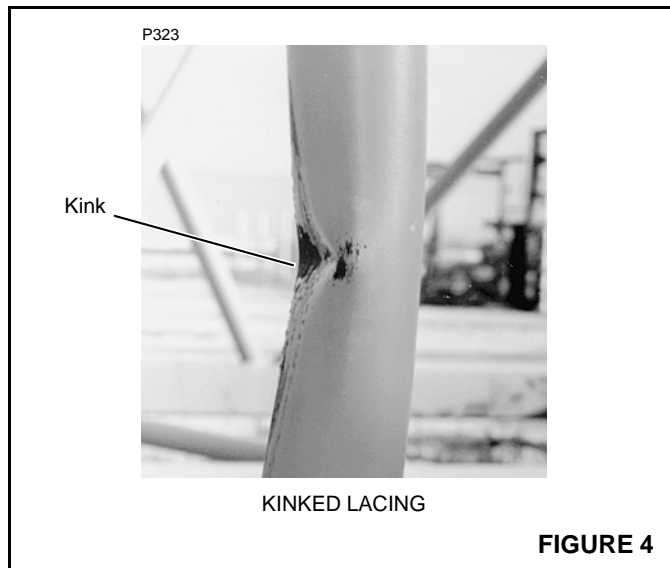
Corrosion and abrasion must not be deeper than 10 percent of the wall thickness, the angle thickness, or the plate thickness.

## Kinks

Refer to Figure 4.

Kinked lacings must be replaced; *do not bend kinked lacings back into alignment.*

If any chord or platework is kinked, contact Manitowoc Crane Care for approved repair instructions. *Do not bend kinked chords or platework back into alignment.*



## Cracks and Breaks

Refer to Figure 5.

Cracked and broken lacings must be replaced; *do not attempt to repair cracked or broken lacings.*

If any chord or platework is cracked or broken, contact Manitowoc Crane Care for approved repair instructions. *Do not attempt to repair cracked or broken chords or platework.*

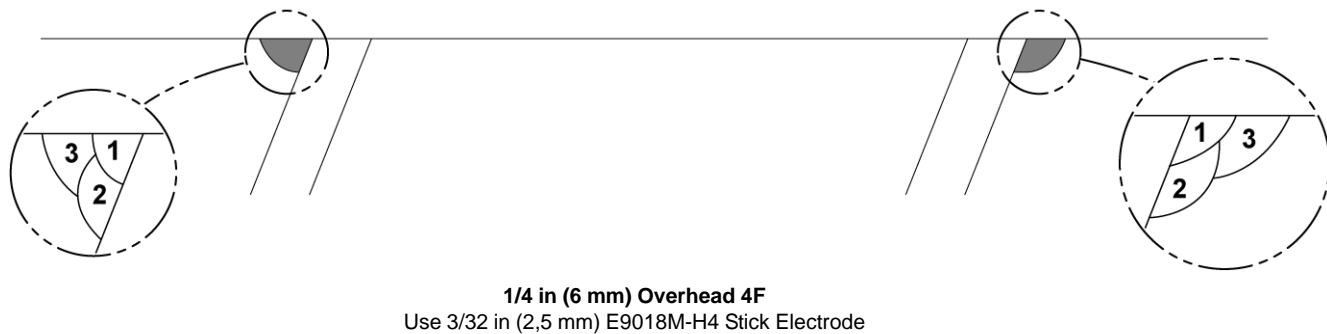
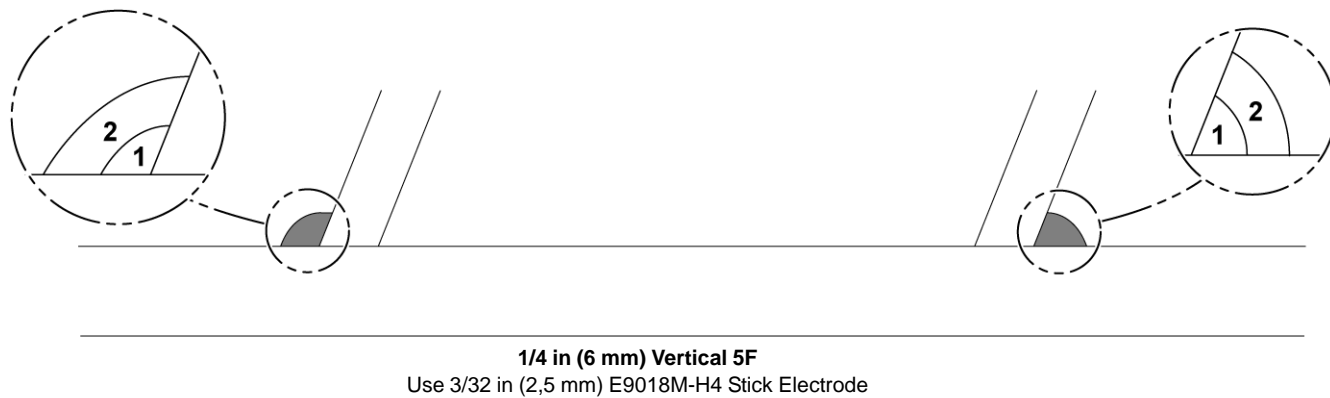
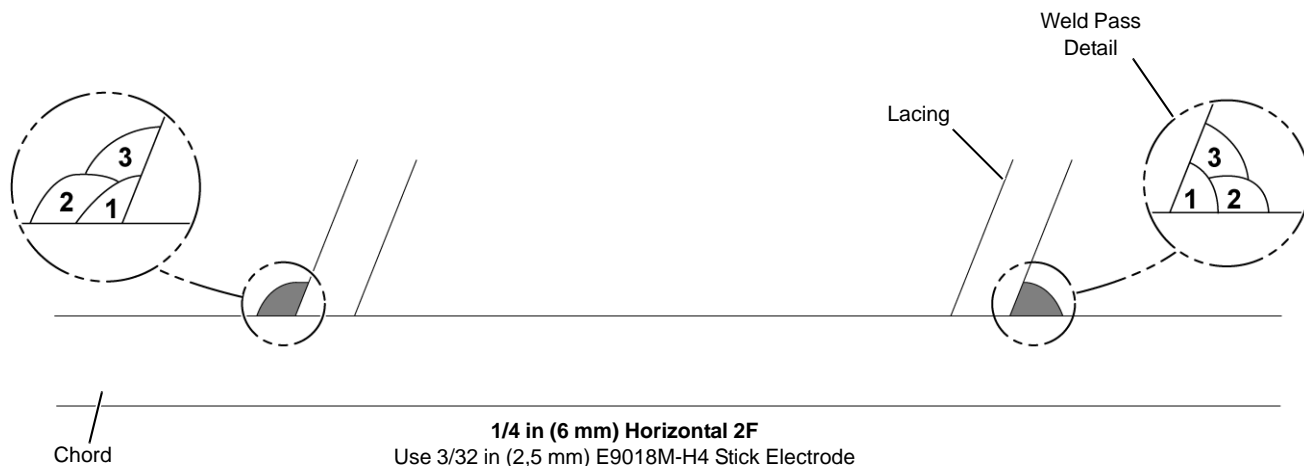


FIGURE 16

# adjustments . . . . . instructions

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*Manitowoc, Wisconsin*

### WEIGHTS

### MODEL 3900

#### 65 to 80 TON CAPACITY

Description	Approx. Weight	
<b>LIFTCRANE</b> - ("A" machine) w/38" treads, counterweight, 140'		
No. 4 boom, 60 Ton gantry & back hitch, Block, Ind. boom hoist . . . . .	190,550 Lbs.	
<b>LIFTCRANE</b> - ("B" machine) w/48" treads, counterweight, 140'		
No. 4 boom, 80 Ton gantry & back hitch, Block, Ind. boom hoist, Ind. swing . . . . .	206,826 Lbs.	
<b>UPPER WORKS</b> - ("A" machine) w/Ind. boom hoist. Less counterweight, boom, gantry & back hitch and block . . . . .	48,840 Lbs.	
<b>UPPER WORKS</b> - ("B" machine) w/Ind. boom hoist. Less counterweight, boom, gantry & back hitch, block and ind. swing . . . . .	53,553 Lbs.	
<b>CARBODY</b> w/Roller path, ring gear & king pin, less crawlers . . . . .	30,720 Lbs.	
<b>CRAWLER</b> - 20' 4" long w/48" treads (Double weight for two) . . . . .	23,620 Lbs.	
<b>CRAWLER</b> - 20' 4" long w/38" treads (Double weight for two) . . . . .	19,317 Lbs.	
<b>SELF REMOVING CWT.</b> (1 Pc. or 2 Pc. combination) . . . . .	50,645 or 58,500 Lbs.	
<b>SELF REMOVING CWT.</b> (Outer section of 2 Pc.) . . . . .	23,000 or 26,500 Lbs.	
 <b>BOOM NO. 4 (65 TON)</b>		
Boom Base - 65 Ton . . . . .	3,540 Lbs.	
Boom Top - 65 Ton (equipped) . . . . .	4,345 Lbs.	
10' Insert - parallel . . . . .	1,110 Lbs.	
15' Insert - parallel . . . . .	1,430 Lbs.	
20' Insert - parallel . . . . .	1,890 Lbs.	
25' Insert - cambered . . . . .	2,200 Lbs.	
30' Insert - cambered . . . . .	2,870 Lbs.	
40' Insert - cambered . . . . .	3,420 Lbs.	
45' Insert - cambered . . . . .	4,100 Lbs.	
50' Insert - cambered . . . . .	4,750 Lbs.	
10' Insert - tapered . . . . .	1,150 Lbs.	
25' Insert - tapered-deep parallel . . . . .	2,490 Lbs.	
10' Insert - deep parallel . . . . .	1,190 Lbs.	
15' Insert - deep parallel . . . . .	1,750 Lbs.	
20' Insert - deep parallel . . . . .	2,110 Lbs.	
 <b>BOOM NO. 5 (80 TON)</b>		
Boom Base - 80 Ton (35' Long) . . . . .	5,500 Lbs.	
Boom Top - 80 Ton (35' Long - equipped) . . . . .	6,350 Lbs.	
10' Insert - parallel (80 Ton) . . . . .	1,270 Lbs.	
30' Insert - parallel (80 Ton) . . . . .	3,200 Lbs.	
 <b>GANTRY &amp; BACK HITCH STRAPS (65 Ton) . . . . .</b>		<b>1,480 Lbs.</b>
<b>GANTRY &amp; BACK HITCH STRAPS (80 Ton) . . . . .</b>		<b>4,340 Lbs.</b>
<b>TAGLINE - Model 1248 . . . . .</b>		<b>670 Lbs.</b>
<b>JIB - 15' w/Strut, less cable . . . . .</b>		<b>1,250 Lbs.</b>
<b>JIB - 20' w/ Strut, less cable . . . . .</b>		<b>1,450 Lbs.</b>
<b>JIB - 30' w/ Strut, less cable . . . . .</b>		<b>1,750 Lbs.</b>
<b>JIB - 50' Sectional w/Strut, less cable . . . . .</b>		<b>3,500 Lbs.</b>
<b>10' Insert for Sectional Jib . . . . .</b>		<b>250 Lbs.</b>
<b>BLOCK ASSEMBLY w/ sheaves and weights . . . . .</b>		<b>1,200 Lbs.</b>
<b>DRAGLINE FAIRLEAD w/ Guide roller, strut &amp; dirt pan . . . . .</b>		<b>1,850 Lbs.</b>
<b>DRAGLINE FAIRLEAD w/Cheek plates, strut &amp; dirt pan . . . . .</b>		<b>1,800 Lbs.</b>
<b>IND. BOOM HOIST INSTEAD OF STANDARD - ADD (Note: Already figured in Upper Works) . . . . .</b>		<b>1,414 Lbs.</b>
<b>IND. SWING &amp; SWING LOCK ASSEMBLY . . . . .</b>		<b>1,947 Lbs.</b>

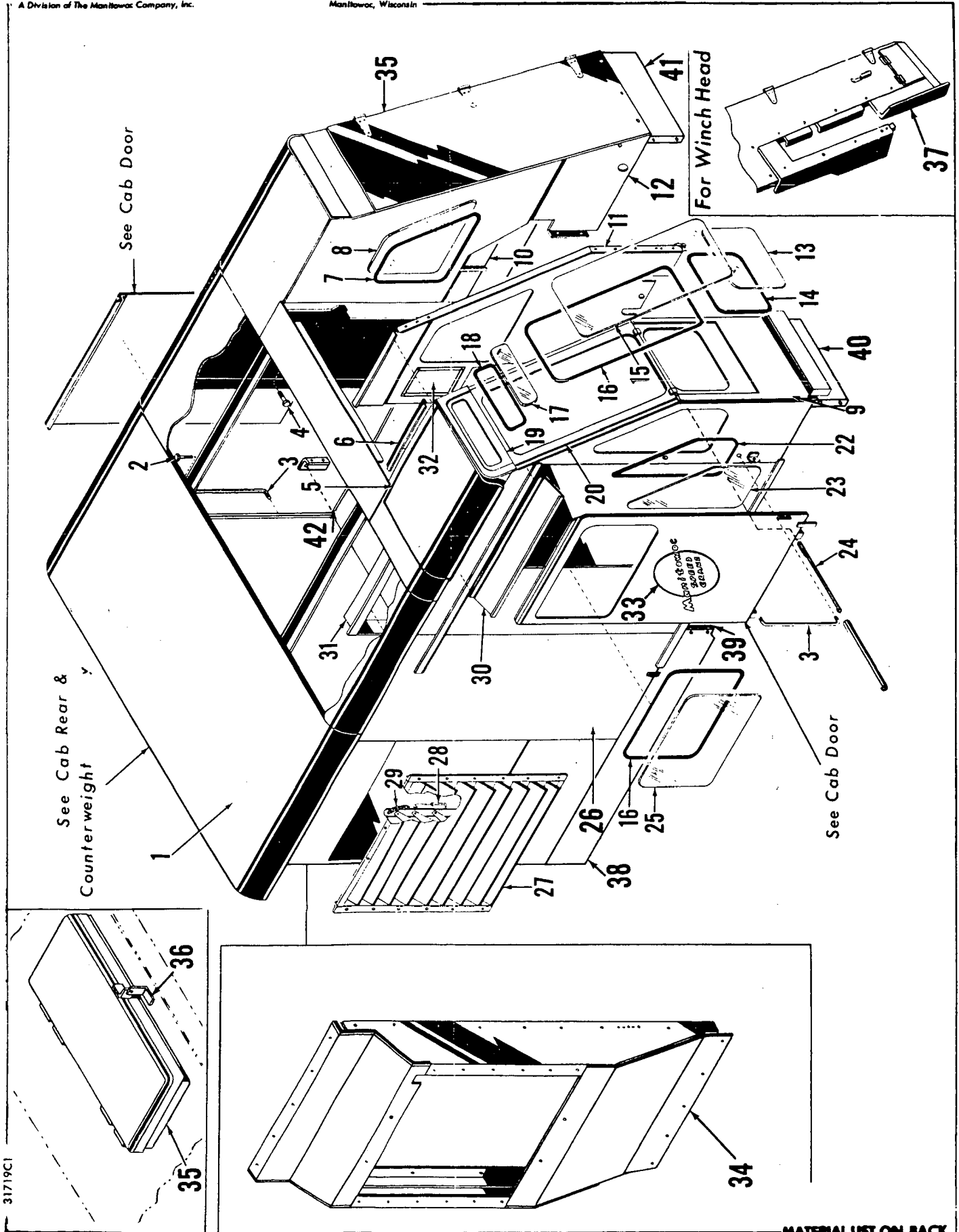
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31719C1

MATERIAL LIST ON BACK

CAB

MASTER

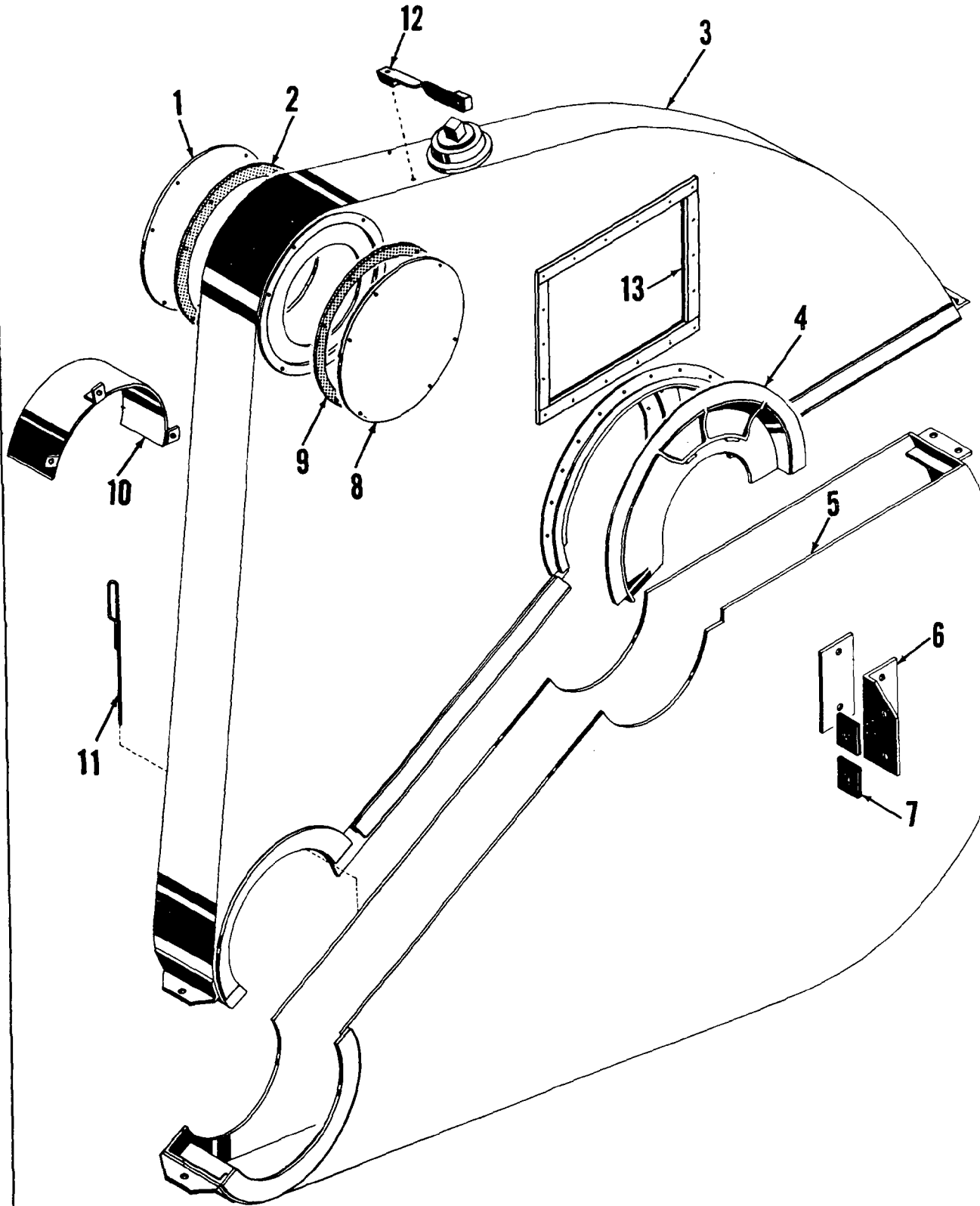
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41 949 B1

41 949 B1

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GEAR CASE

42014-1 Cont.	REV. K	MODEL 3000-3100-3400-3600-3900
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PLATFORM

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
26	23378	1	ANGLE W/capscrews, hex nuts and lockwashers	
27	23381	1	PLATE, Floor W/capscrews, hex nuts and lockwashers	
28	19760	1	ANGLE, Floor W/capscrews and lockwashers (For Ind. Swing)	
29	19749	1	PLATE, Left Inner Front (Air Control) W/capscrews, hex nuts, cut washers and lockwashers	
30	21726	1	GUARD, Brake Pedal (M3000-3100)	
31	19939	1	PLATE, Left Middle Inner Floor W/capscrews, hex nuts and lockwashers	
32	19940	1	CLIP, Floor Plate (Ind. Swing)	
33	77094	1	STEP W/capscrews, hex nuts and lockwashers	
34	136092	1	BRACE W/capscrews, hex nuts and lockwashers	
			NOTE 1: Mach. W/Spring applied, air released parking brake w/air service brake, delete Ref. Nos. 3 and 5 and use the following:	
35	182152	1	SUPPORT W/capscrews and lockwashers	
			NOTE 2: Part #31965 or 163087 (see Note 4) for use w/manual or air applied non-toggle drum brake.	
			NOTE 3: Part #190730 for use w/air applied toggle type drum brakes and cannot be used w/manual slide pinion, manual swing brake or ind. swing control.	
			NOTE 4: After 12-19-83 design change on Model 3900 with DRUM BRAKE PEDAL LOCK (see page B12.3) delete 31965 and use . . .	
21	163087	1	SUPPORT W/capscrews, set screws, hex nuts, jam nuts, lockwashers and grease fittings	

Run as Front

PLEASE GIVE MACHINE S/N W/ORDER

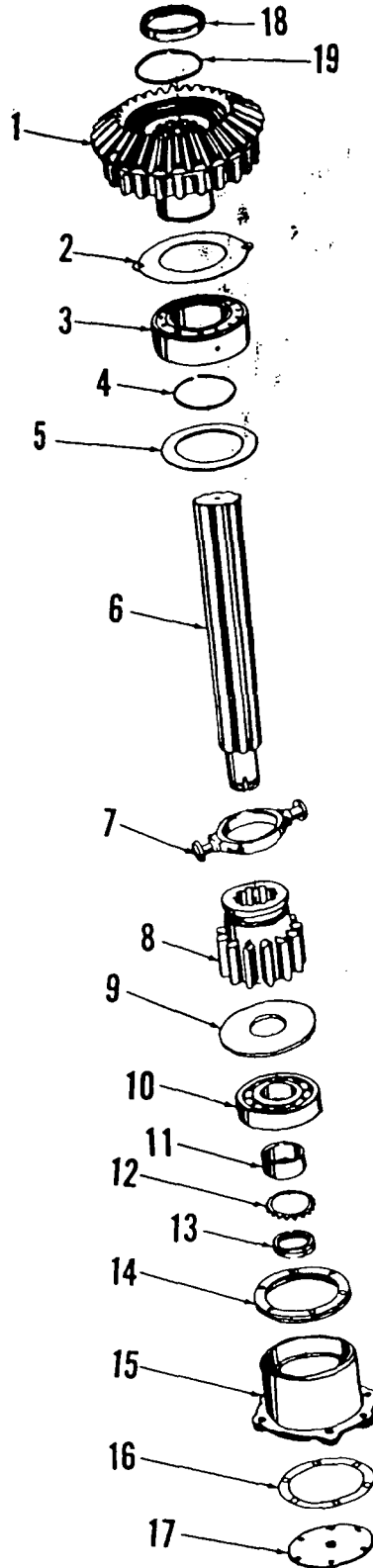
REV. K	42014 - 1
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ILLUST. No. 20004-A-1

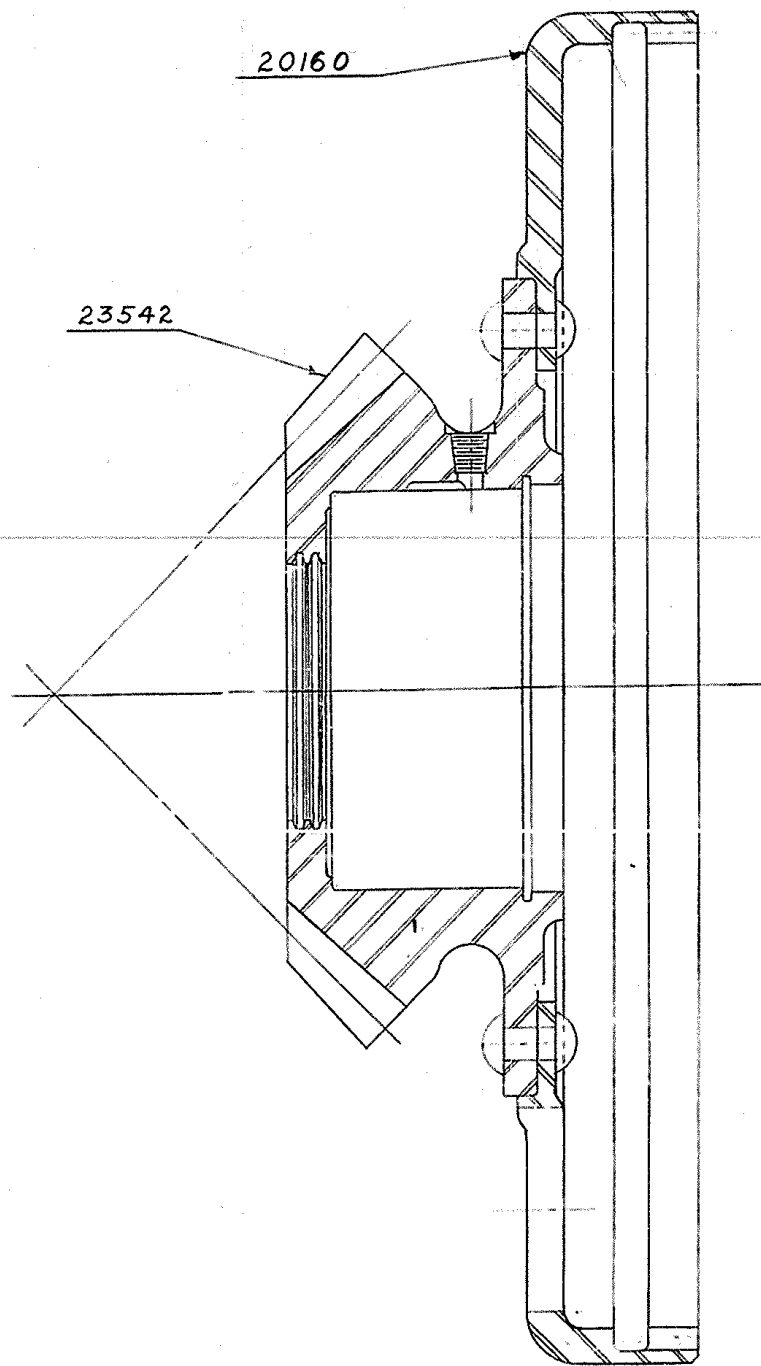
MATERIAL LIST ON BACK

SLIDE PINION SHAFT

23543

ASSEMBLIES  
USED ON

41933  
50370



QUAN.	NO.	DESCRIPTION
1	20160	CLUTCH SPIDER
1	23542	CLUTCH GEAR

PART DEPT. NOTE:  
THIS SUB-ASSEMBLY IS INTERCHANGEABLE  
WITH SUB-ASSEMBLY 23226-INDIVIDUAL  
PARTS ARE NOT.

(A) SUPERSEDED BY 95528  
SUPERSEDES 23226

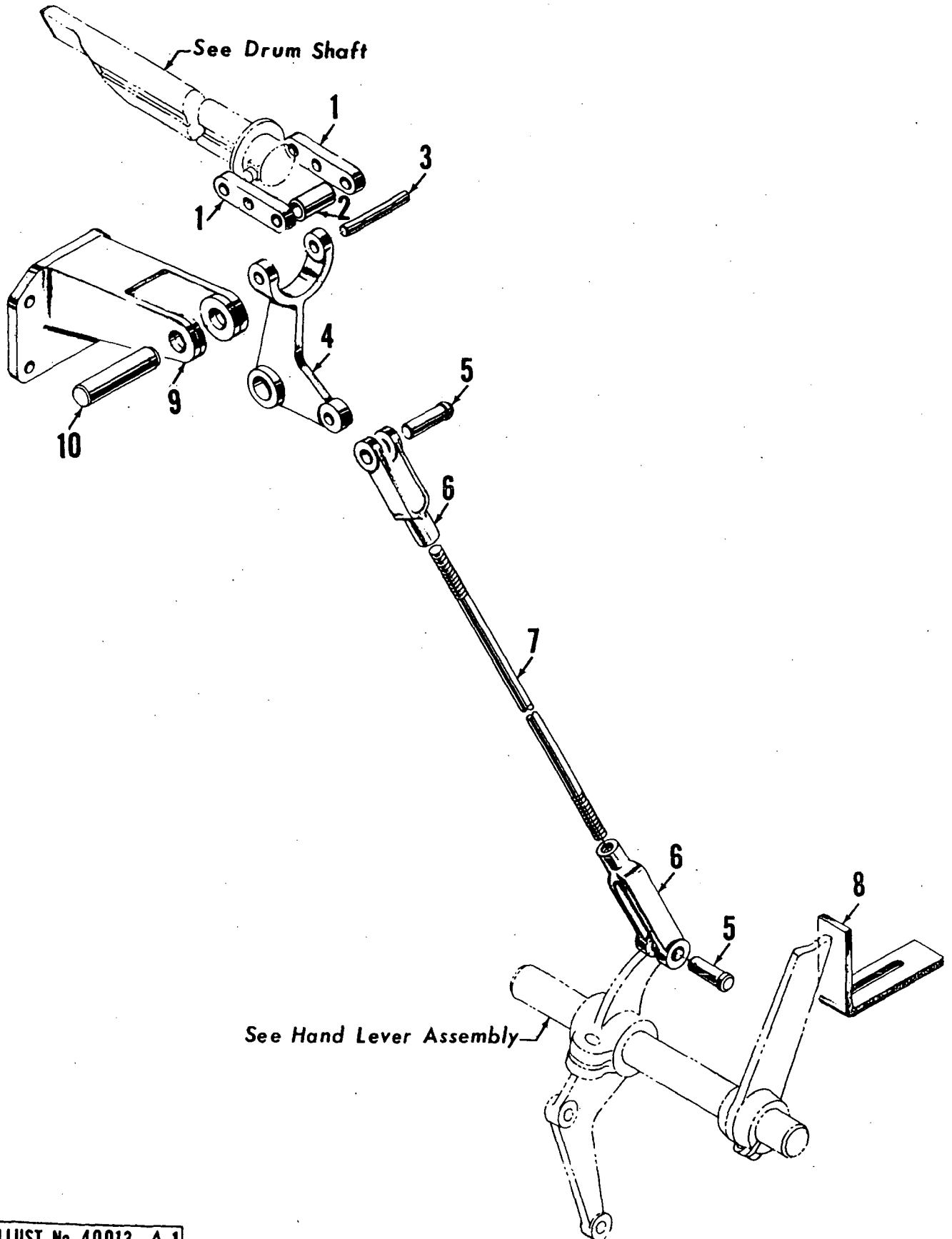
MANITOWOC ENGINEERING CORP. MANITOWOC, WISCONSIN		
REVISED DATE 7-14-75-JWS	SPEEDCRANE—MODEL 3000-3500-3900	
(A) NOTE ADDED	CLUTCH SPIDER AND GEAR	
	SUB-ASSEMBLY	
	FOR IND. BOOM HOIST	
DATE 3-18-57	SCALE 6"=1'-0"	PATTERN NO.
DR. <i>JMP</i>	MATERIAL	CODE NO.
CK. <i>LMP</i>		DWG. NO. 23543
TR.		

DO NOT SCALE THIS DRAWING

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See Drum Shaft

See Hand Lever Assembly

ILLUST. No. 40013-A-1

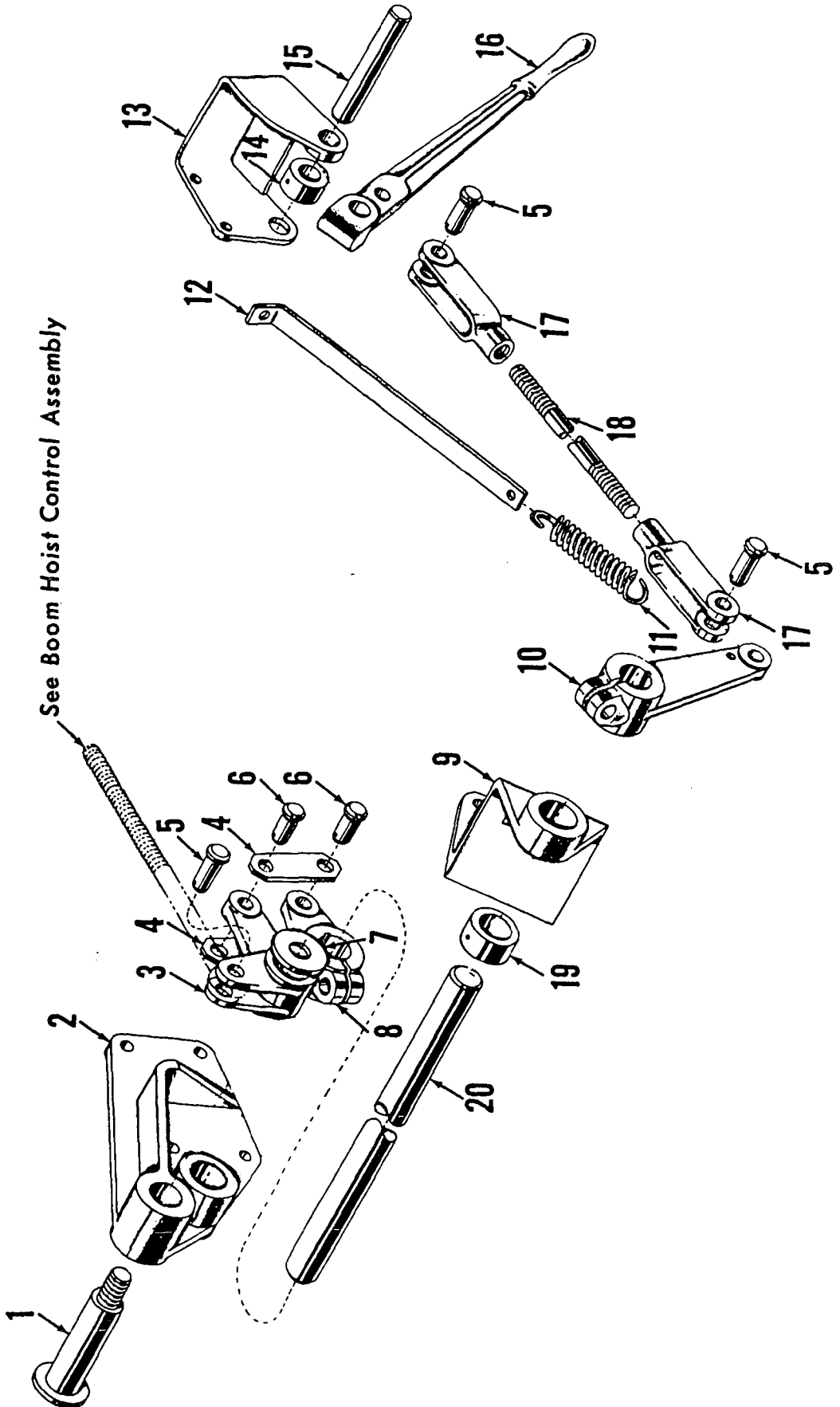
MATERIAL LIST ON BACK

RIGHT DRUM CLUTCH CONTROL

MASTER

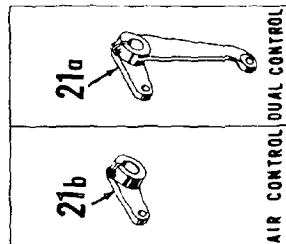
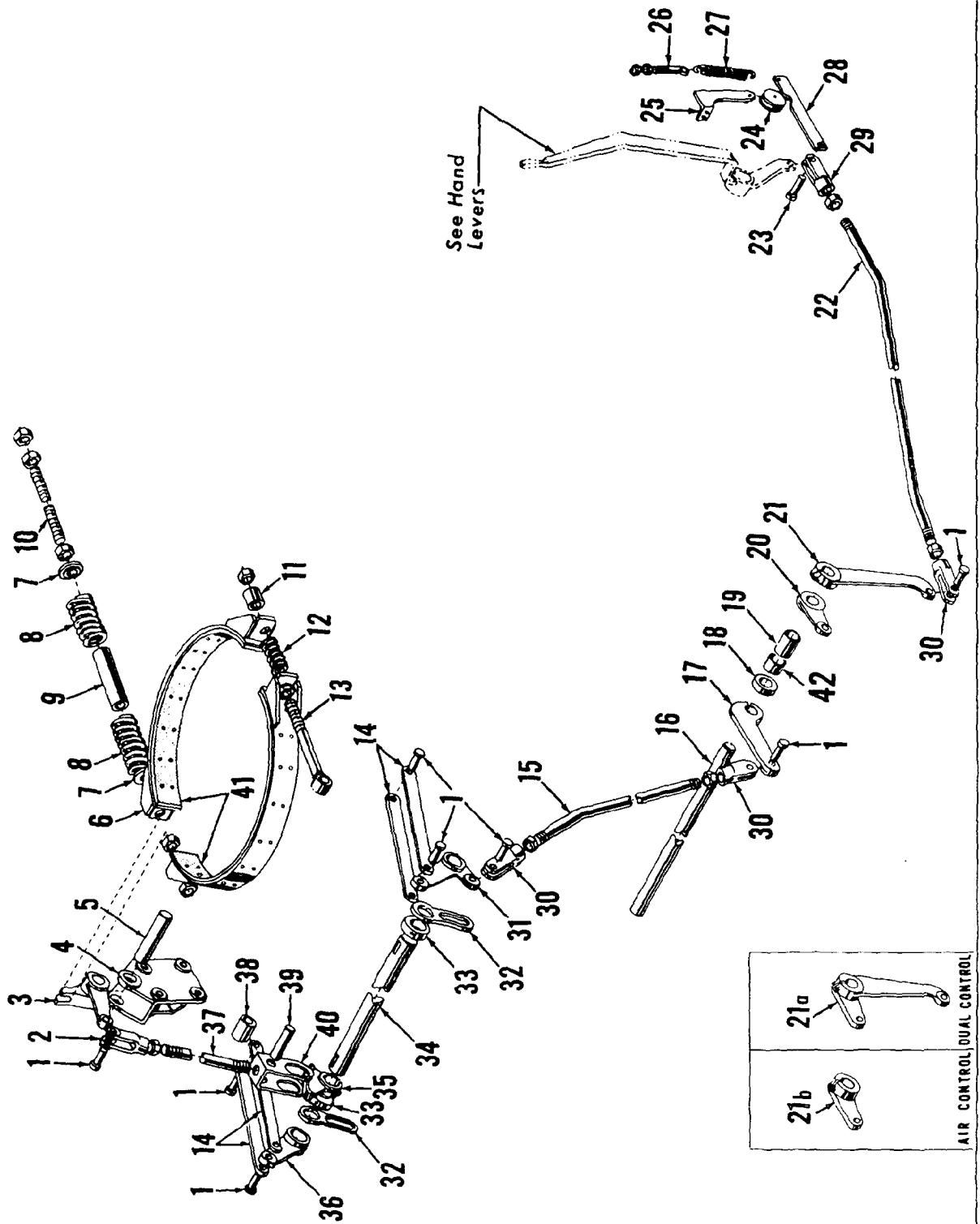
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MASTER



AUXILIARY BOOM HOIST EMERGENCY BRAKE

713 77 C1



41727B1

41933-1 Cont.	REV. B	MODEL 3000-3900 Incl.
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IND. BOOM HOIST DRIVE SHAFT

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
50	19779	1	GUARD, Right	
51	18266	1	SUPPORT W/capscrews and lockwashers	
52	18267	1	SUPPORT W/capscrews and lockwashers	
53	19780		GUARD, Left	
	23543	2	SPIDER AND GEAR ASSEMBLY	
33	20160	2	SPIDER, Clutch W/rivets	
38	23542	2	PINION, Bevel	

Run as Front

MASIEK

41933 B1 Cont'd.

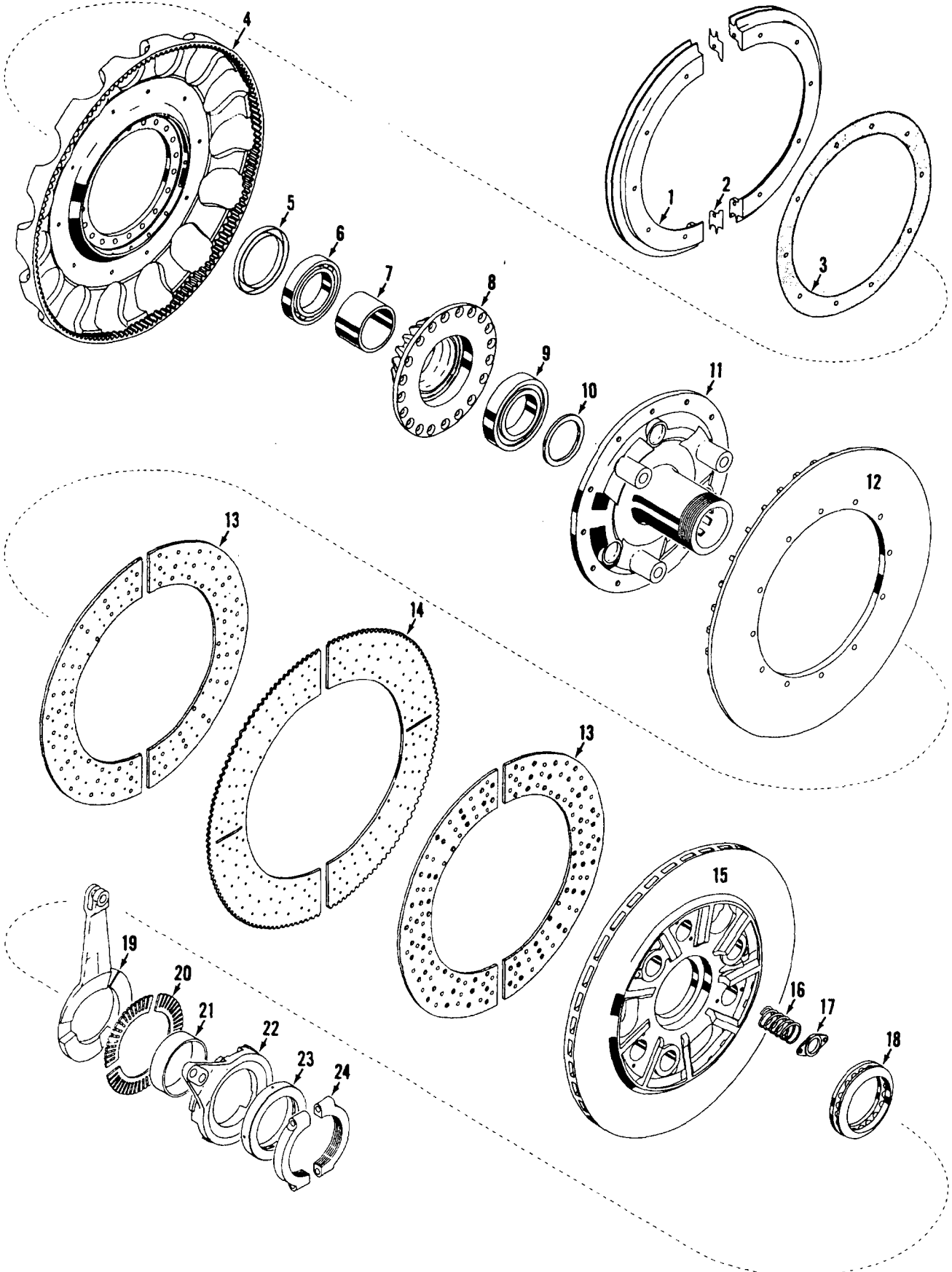
REV. B	41933 - 1
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MASTEK

MAIN DRIVE CLUTCH

43132A2

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**PARTS MANUAL ALPHABETICAL INDEX**  
**Group C - Air Components & Electrical**

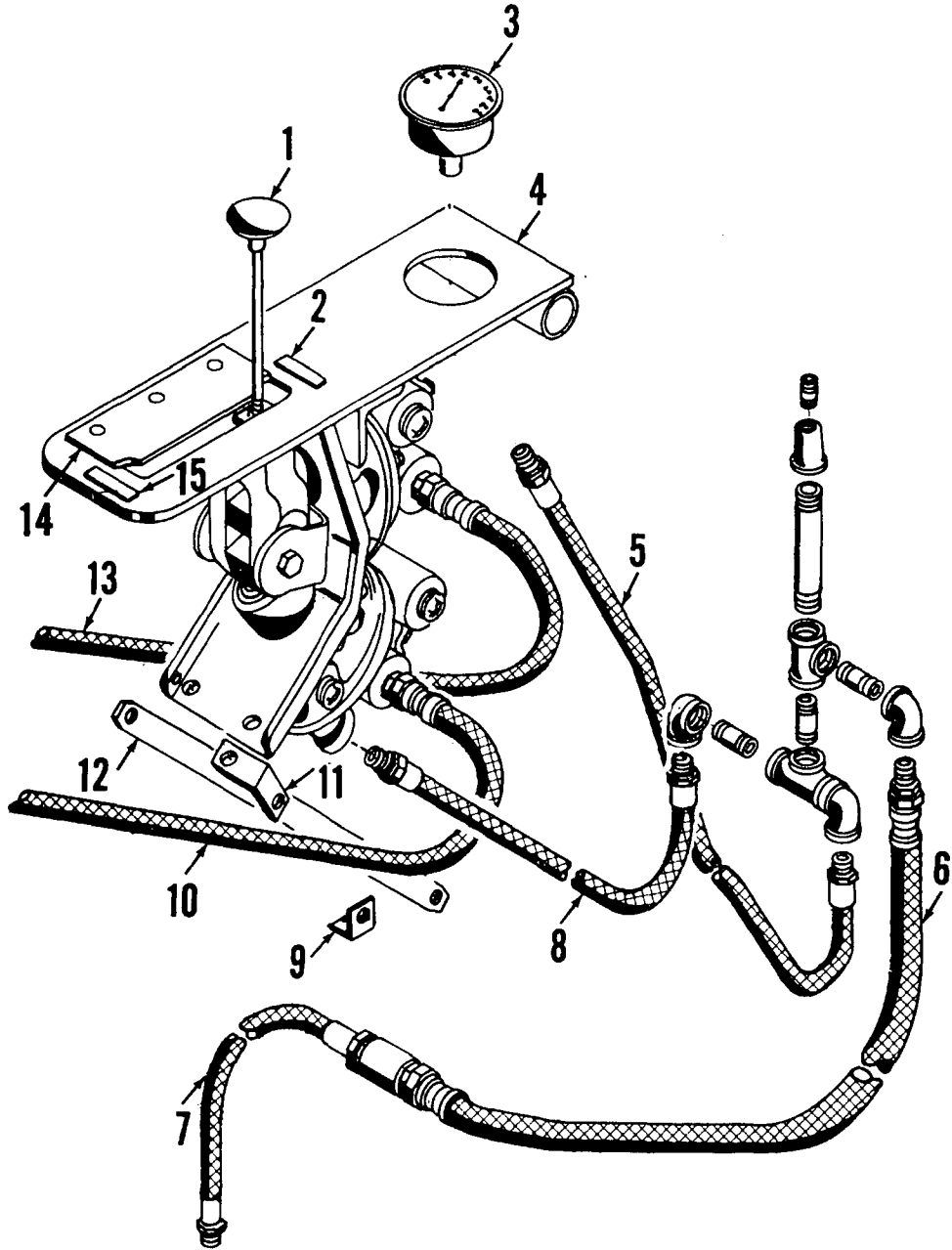
<b>DESCRIPTION</b>	<b>PUBLICATION</b>	<b>REV</b>	<b>START DATE</b>	<b>END DATE</b>	<b>GROUP</b>
Boom & Mast Lighting	31117	A1	10/30/50	01/12/51	C1201
Cab Lighting	31116	A1	10/30/50	01/22/52	C1301
Compressor & Piping	32082	B1	01/12/58	01/13/61	C0101
Control Console	32102	A1	10/15/58		C0201
Light Plant - Alternator - Generator	31104	D1	09/07/56	05/03/68	C1101

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32102 A-1

ILLUST. No. 32102-A-1

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VALVE BOARD ASSEMBLY

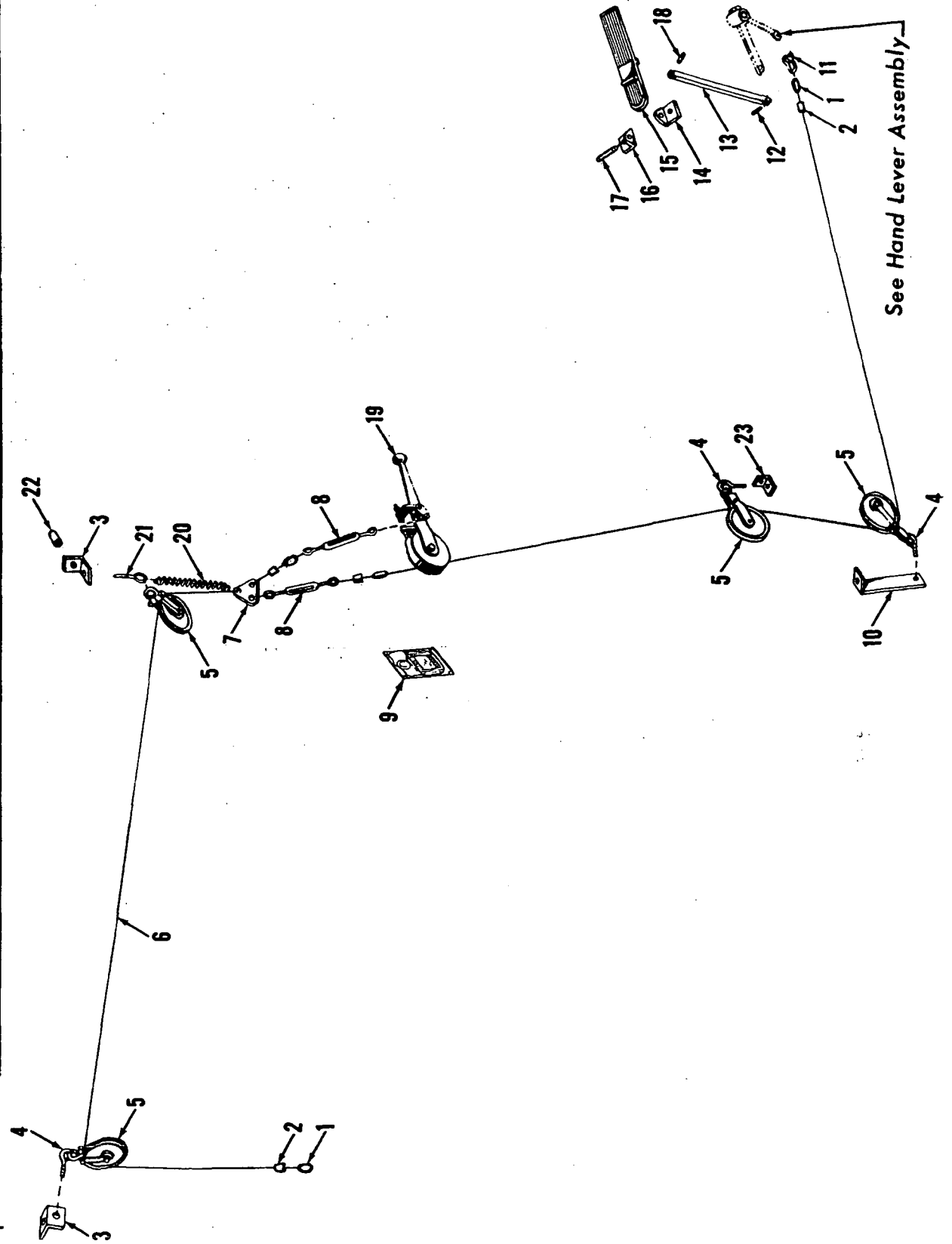
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MANILA

30268-B-1



See Hand Lever Assembly

GOVERNOR CONTROL ASSEMBLY

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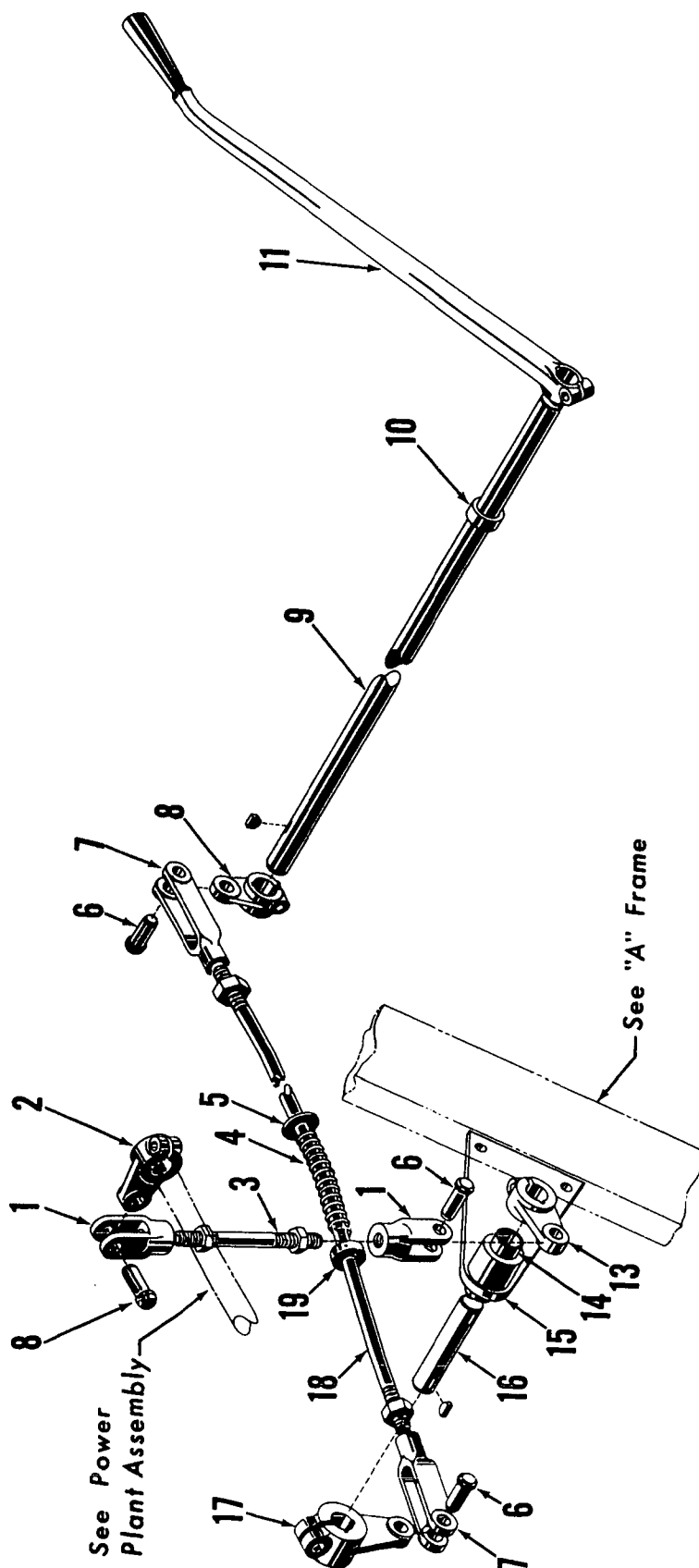
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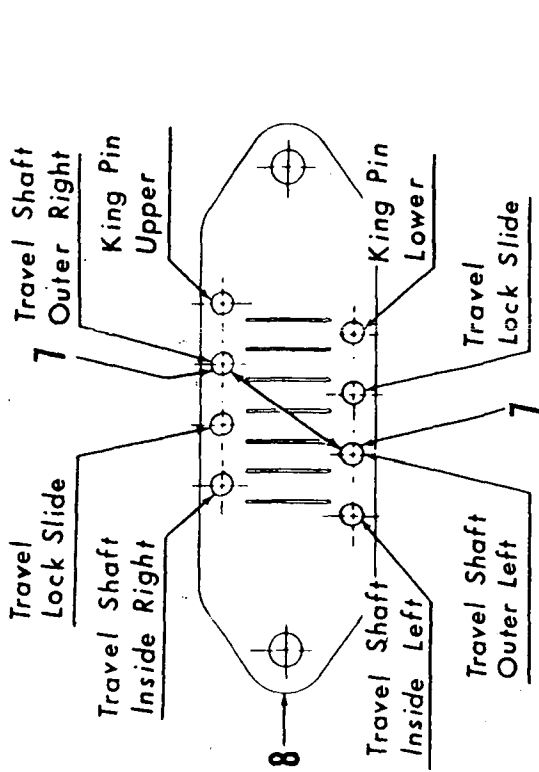
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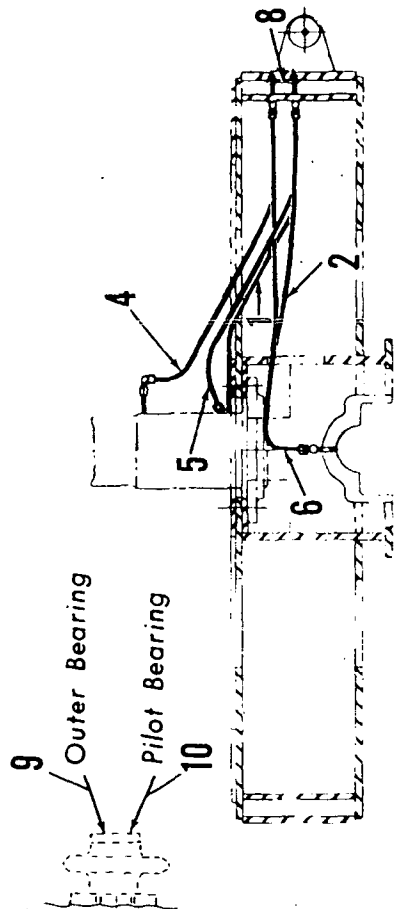
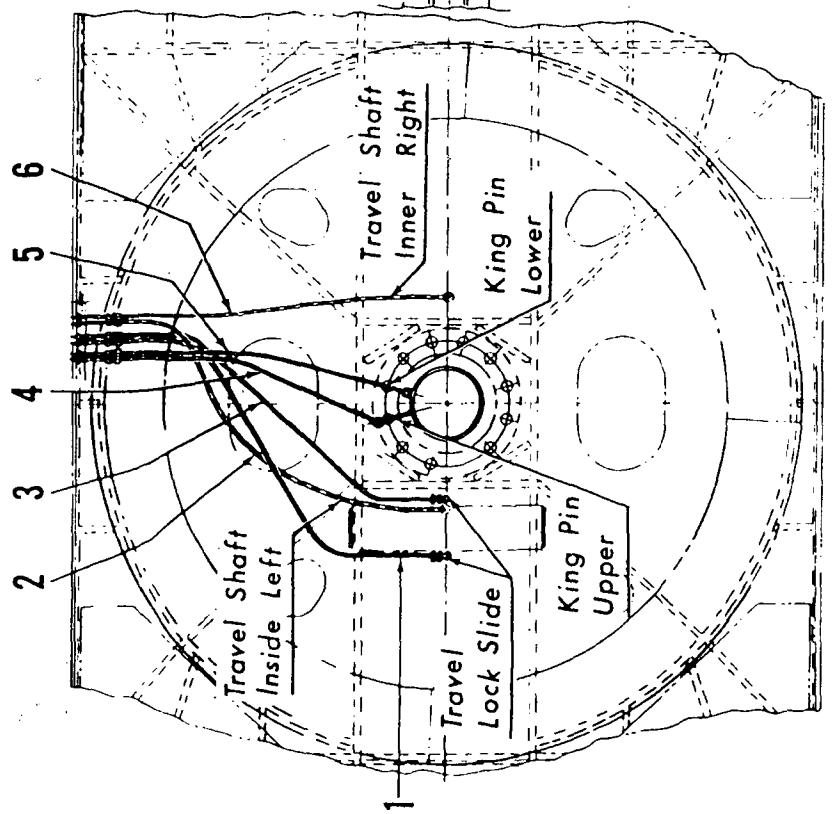
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ENGINE CLUTCH CONTROL



Note:  
Not used on 3000,  
3500 & 3900 Models



Parts Drawing Only

MASTER

40218-2 Cont.	REV. D	MODEL 3000W-3400-3500-3600-3900-4000W
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STEERING CONTROL  
(CARBODY)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
<u>FOR AIR TRAVEL LOCKS PRIOR TO DESIGN CHANGE OF SEPT. 21, 1966</u>				
22	18843	1	GASKET	
23	18840	1	HEAD, Plunger Shaft W/capscrew and flatwasher (see note 1)	
24	552686	2	PACKING, Vee, Block	
25	18838	1	BASE W/mach. screw, jam nut and lockwasher	
26	18839	1	COVER	
27	543442	1	NIPPLE	
28	18841	1	GUIDE W/capscrews, hex nuts and lockwashers	
NOTE 1: Per design change of Oct. 16, 1961, capscrew and washer deleted. Part #18840 grooved for snap ring #596663.				
NOTE 2: For machines W/manual Travel Lock Control, delete Ref. Nos. 7, 27 and 28 and plug air passage with 1/2" pipe plug.				
<u>MODEL 3000 ELECTRIC CRANE</u>				
13	18732	1	SHAFT, Plunger	
14	20028	1	YOKE, Plunger	
<u>MODEL 3500 LCH.</u>				
13	19373	1	SHAFT, Plunger (W/Manual Travel Locks)	
14	20028	1	YOKE, Plunger (W/Manual Travel Locks)	
	23679	1	SHAFT, Plunger (W/Air Travel Locks)	
13	70651	1	SHAFT, Plunger	
8	548696	1	NUT, Hex	
9	709771	2	WASHER, Flat	
11	647552	1	SPACER	
12	548632	1	NUT, Hex	
14	22924	1	YOKE, Plunger	

Run as Front

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40218 D2 Cont'd.

REV. D	40218 - 2
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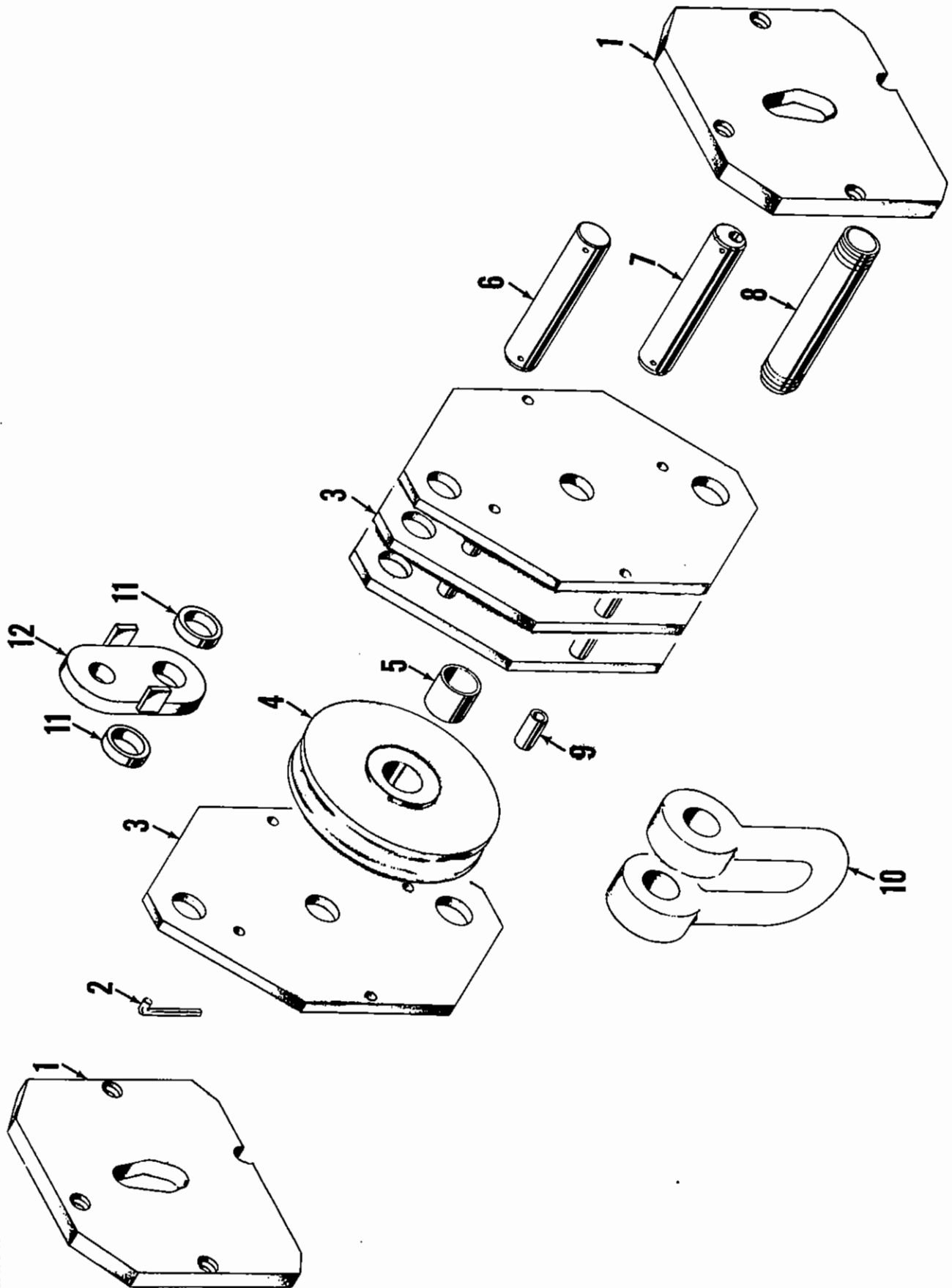
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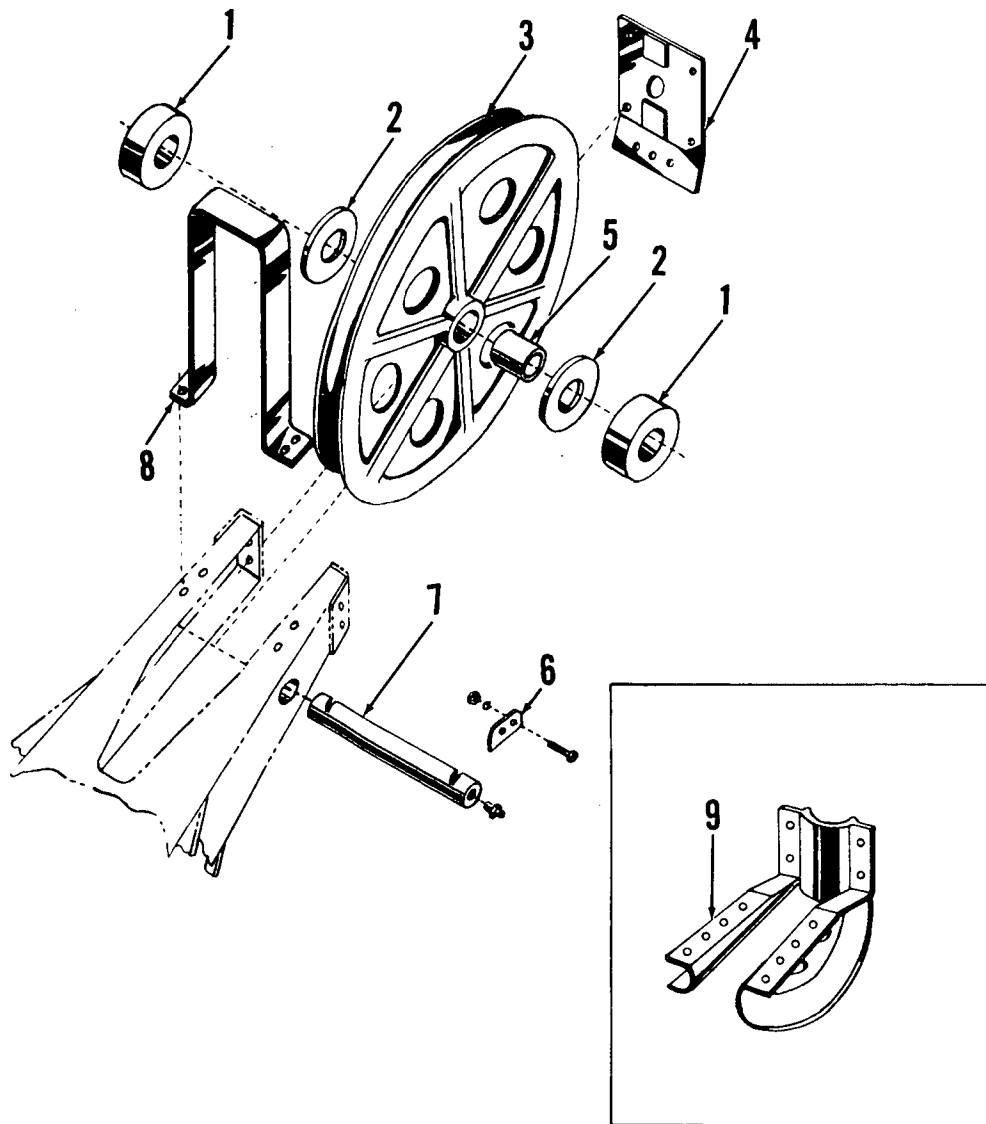
MATERIAL LIST FOR THIS ASSEMBLY WILL BE FOUND ON BACK OF THIS PAGE

LOWER BLOCK ASSEMBLY

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ILLUST. No. 31504-A-1

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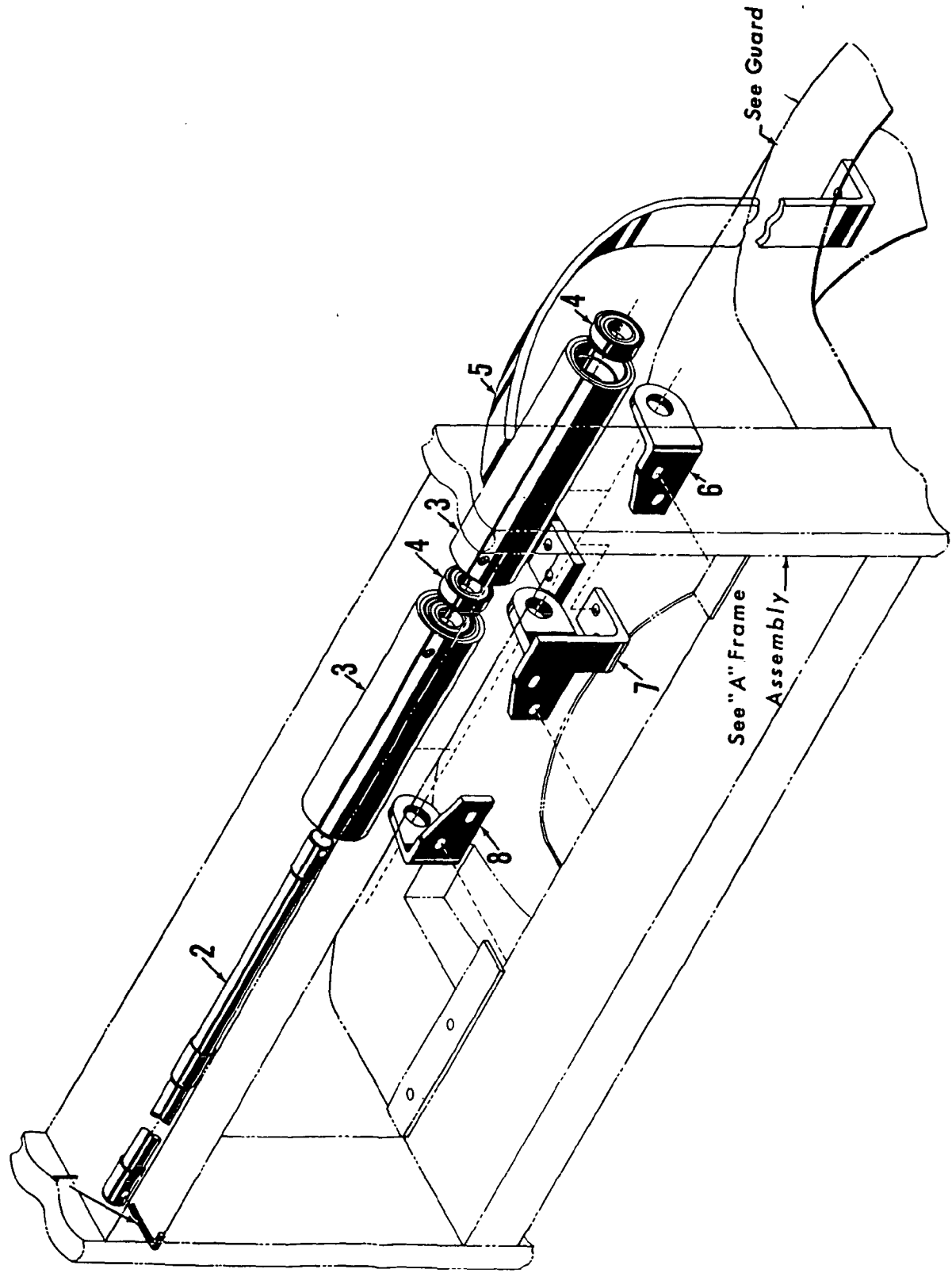
UPPER BOOM POINT

31504 A1

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ROPE GUARD ROLLER

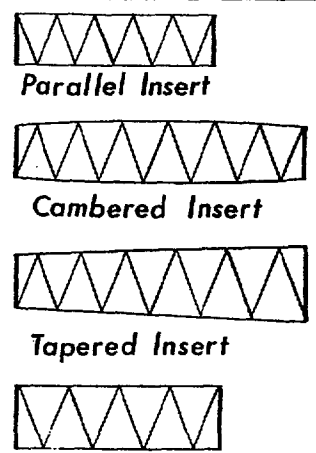
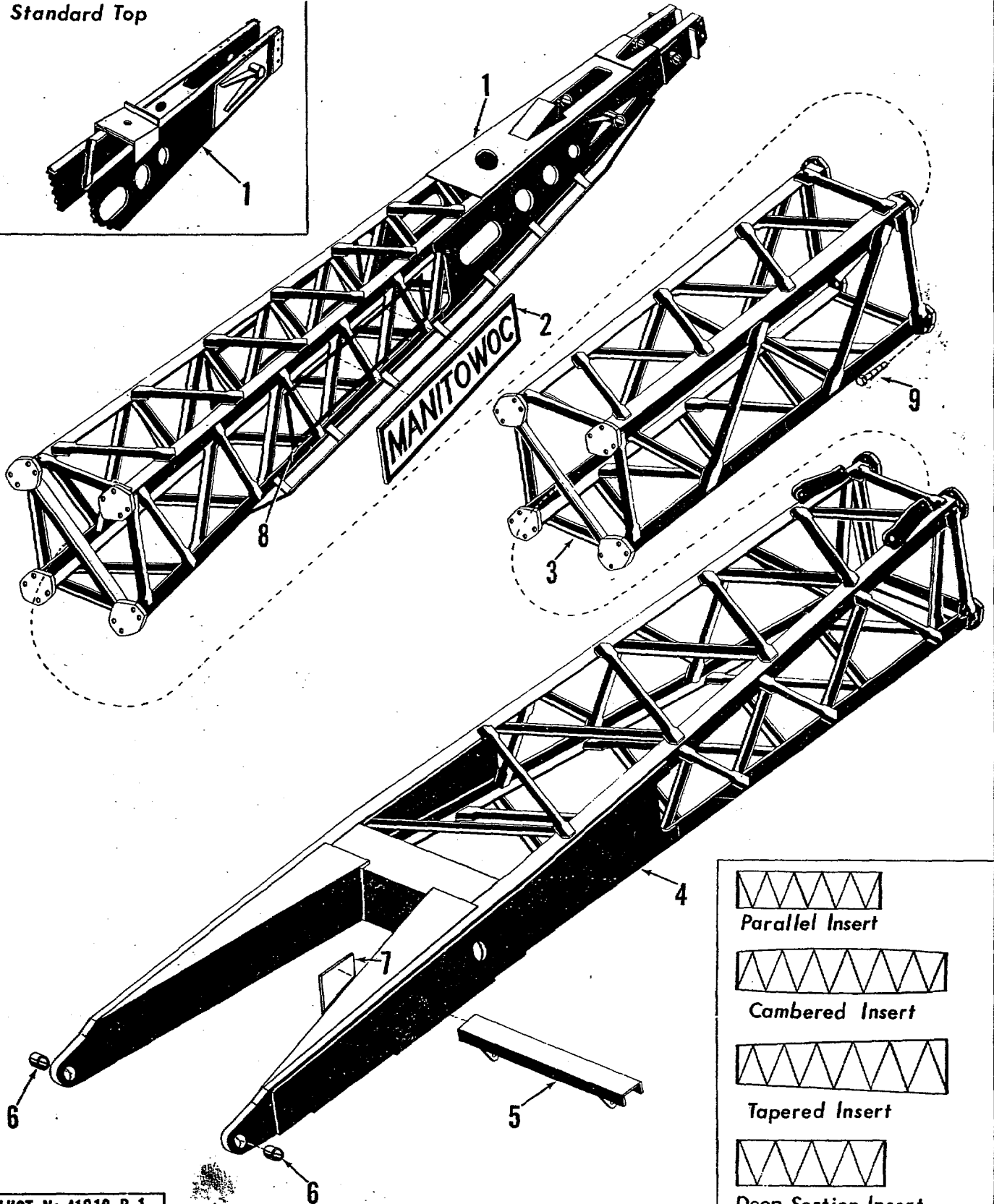
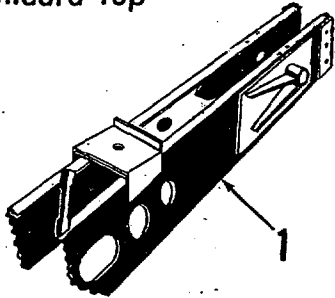
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## Standard Top



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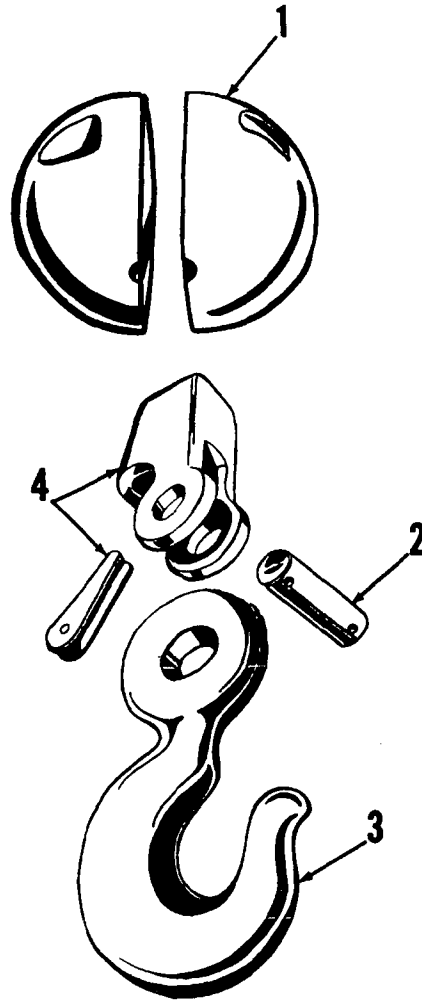
BOOM ASSEMBLY

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MASTER



70403 A1

ILLUST. No. 70403-A-1

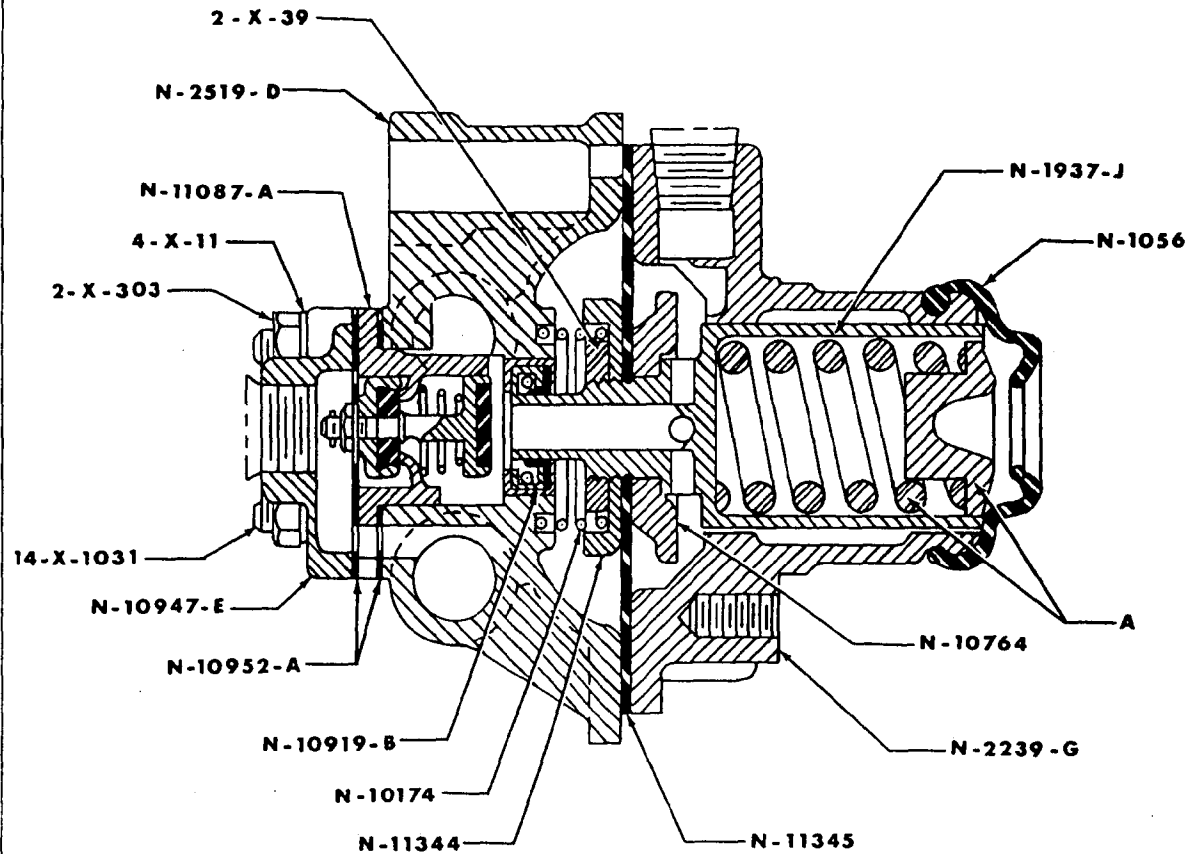
MATERIAL LIST ON BACK

HOOK AND WEIGHT BALL

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MIDLAND VALVE	WHERE USED	"A"	CODE NUMBER	RN-10-G REPAIR KIT
N 3440		N 12316	703913	702434
N 3440 W/BRACKET	SWINGERS	N 12316 A	702418	702434
N 3440A W/BRACKET	CROWD & RETRACT	N 12316 A	702419	702434
N 3440B W/BRACKET	DRUM CLUTCHES & SWING BRAKE	N 12316 A	702420	702434

"A" SPRING ASSEMBLY (ORDER FROM ABOVE)

- |             |                      |             |                      |
|-------------|----------------------|-------------|----------------------|
| * N 1056    | BOOT                 | N 10947 E   | INLET COVER          |
| N 1937 J    | PISTON               | * N 10952 A | GASKET               |
| N 2239 G    | VALVE COVER          | * N 11087 A | INLET VALVE ASSEMBLY |
| N 2519 D    | BODY                 | * N 11344   | WASHER               |
| N 10174     | VALVE RELEASE SPRING | * N 11345   | DIAPHRAGM            |
| N 10764     | DIAPHRAGM WASHER     | 2 X 39      | NUT                  |
| * N 10919 B | SEAL                 | 2 X 303     | NUT                  |
| 14 X 1031   | STUD                 | 4 X 11      | LOCKWASHER           |

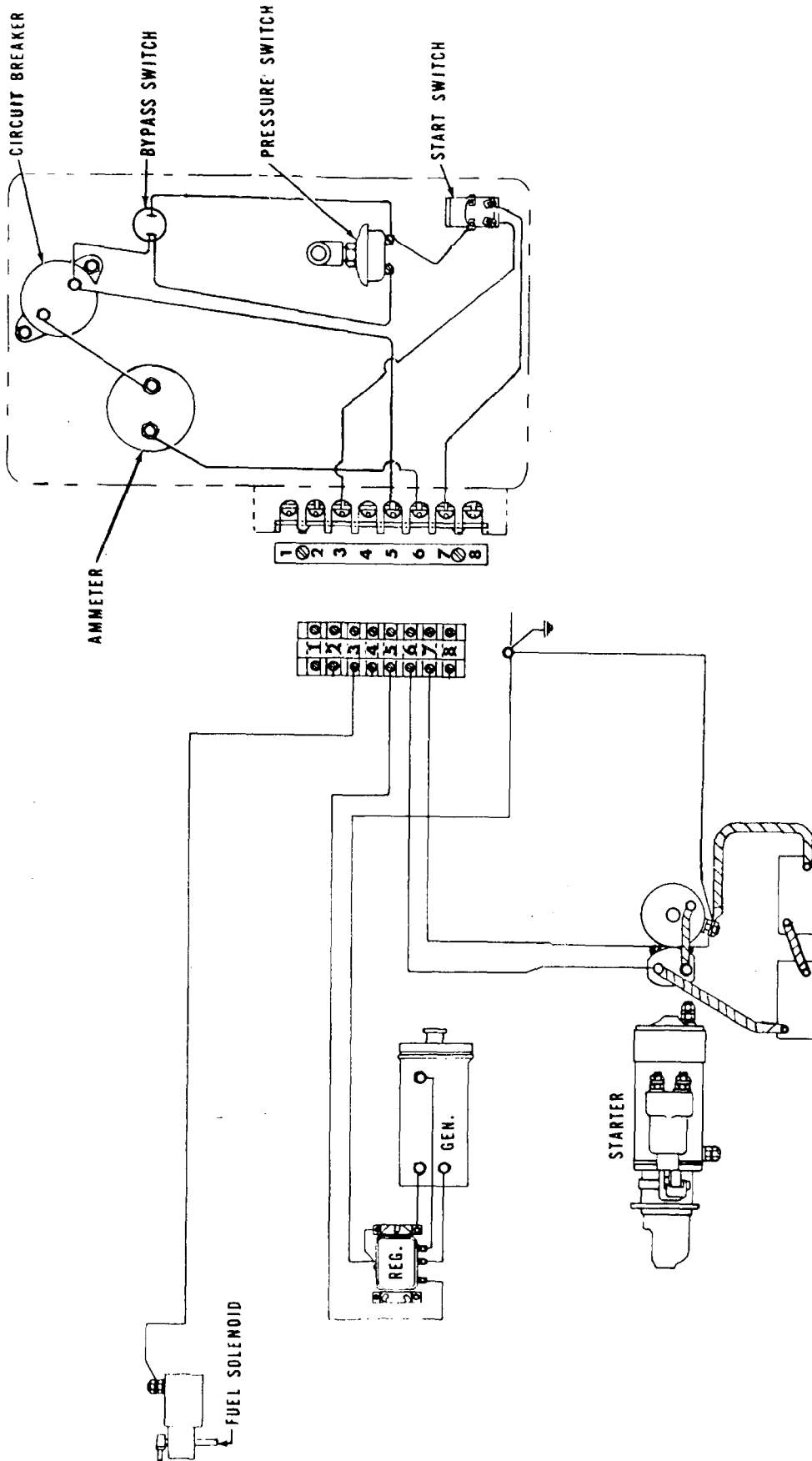
\* PARTS FURNISHED IN RN-10-G REPAIR KIT.

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MASTER



0-241B

MATERIAL LIST ON BACK

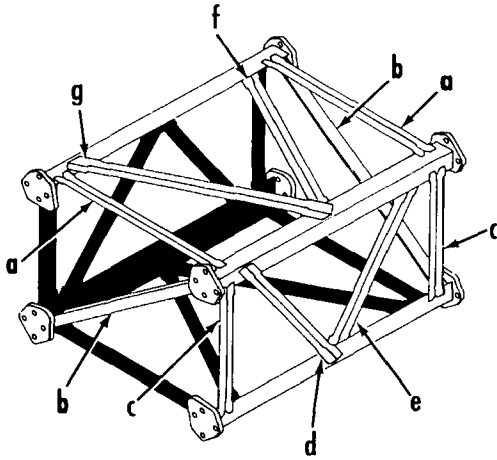
ENGINE WIRING DIAGRAM - CUMMINS

MANITOWOC ENGINEERING CO.

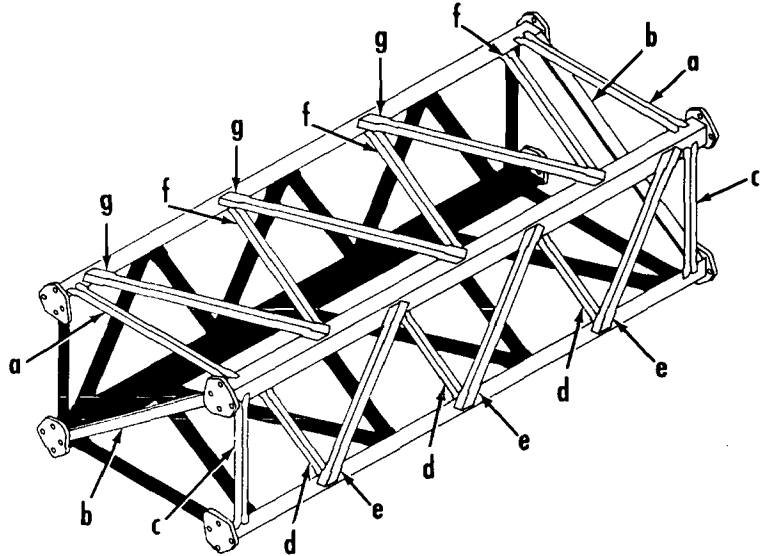
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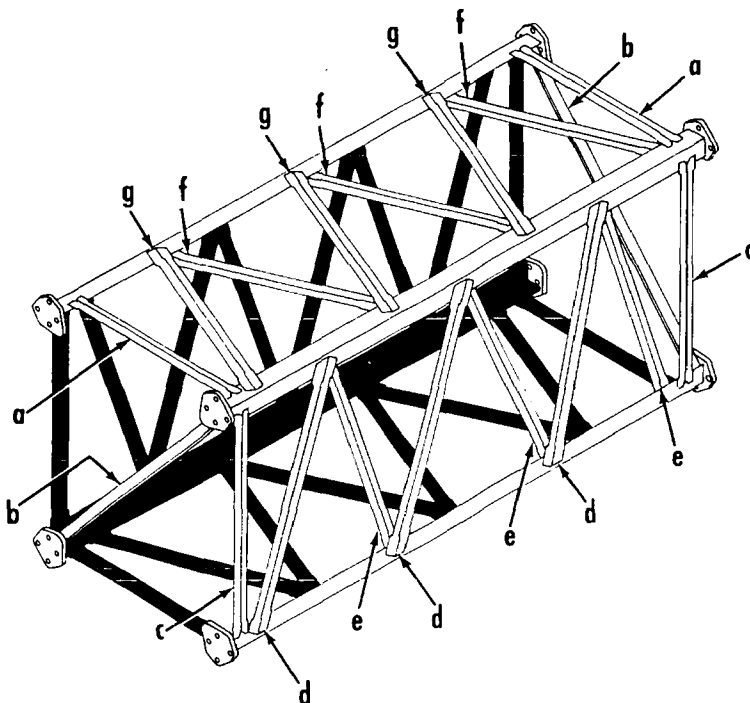
Boom #4  
Left Side and Bottom Lacings Black  
Opposite Lacings Same Unless Noted.



5' Insert  
#21458



10' Insert  
#30758



10' Insert  
#31167

When ordering give the insert  
number and lacing letter --  
Example - Lacing #31167-E

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