

Manitowoc

TRADITIONAL CRANE

PARTS MANUAL

This manual has been prepared for and is considered part of

4600

Model

46152

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.

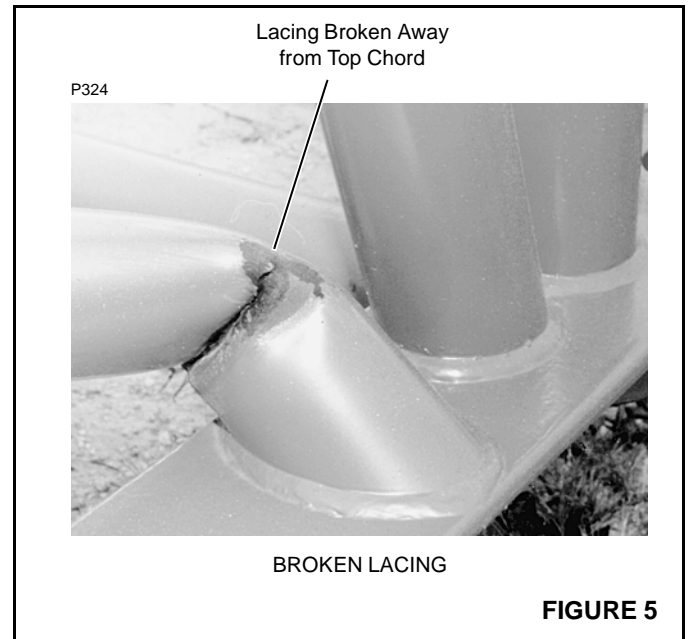
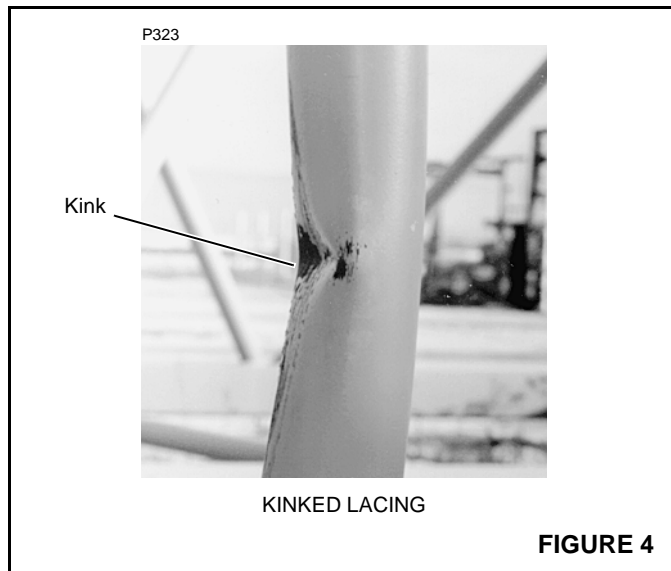
Corrosion and abrasion must not be deeper than 10 percent of the wall thickness, the angle thickness, or the plate thickness.

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.*

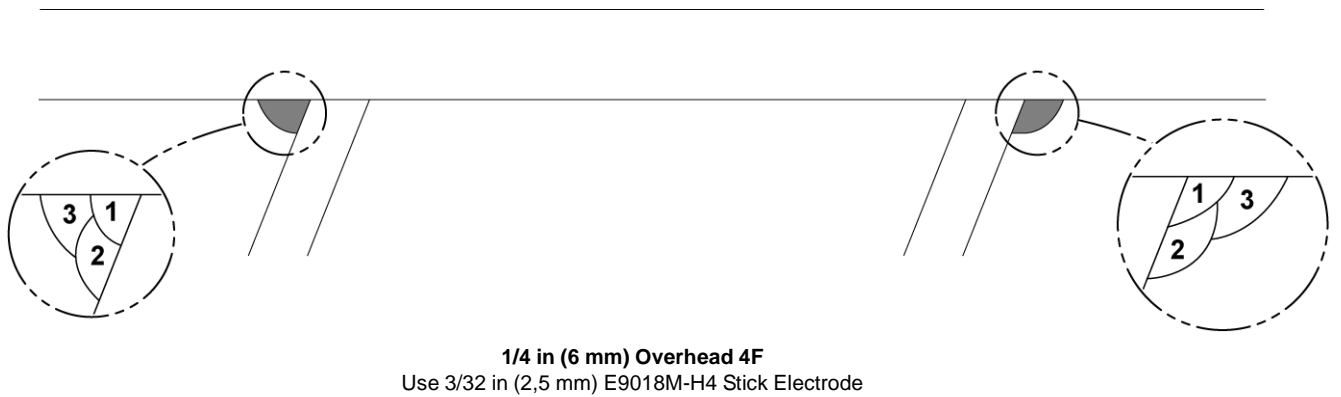
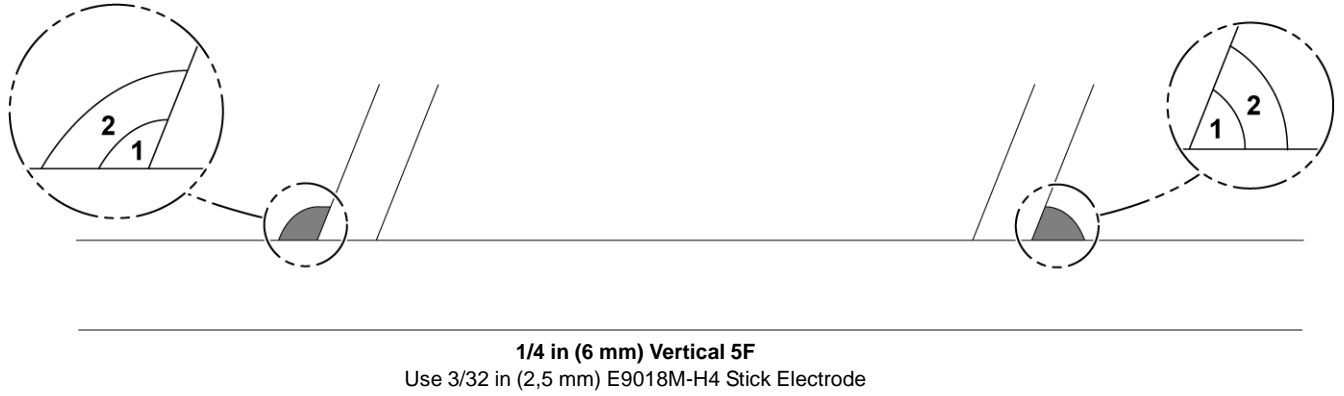
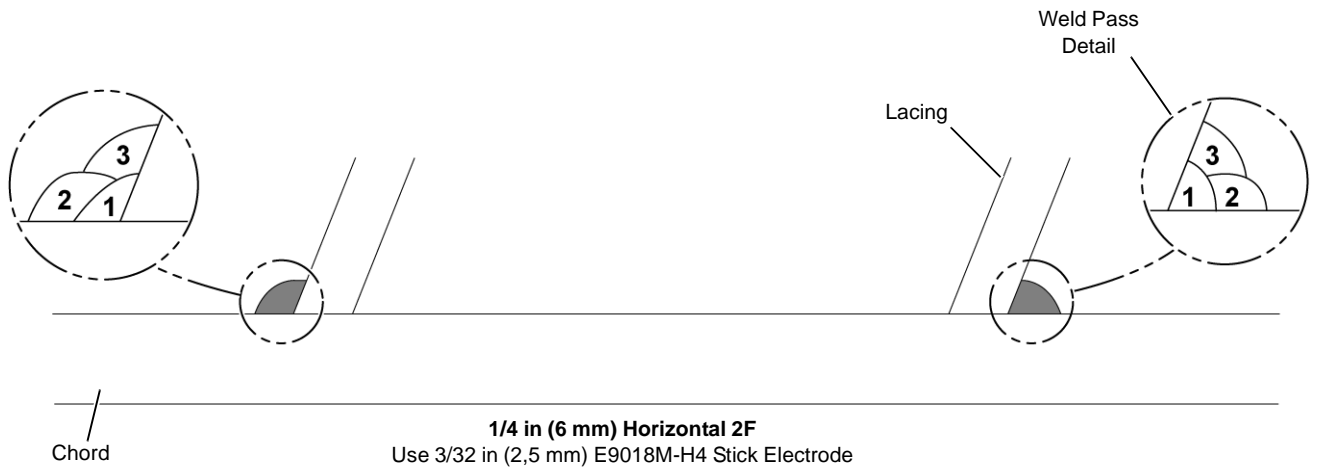


FIGURE 16

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Manitowoc, Wisconsin

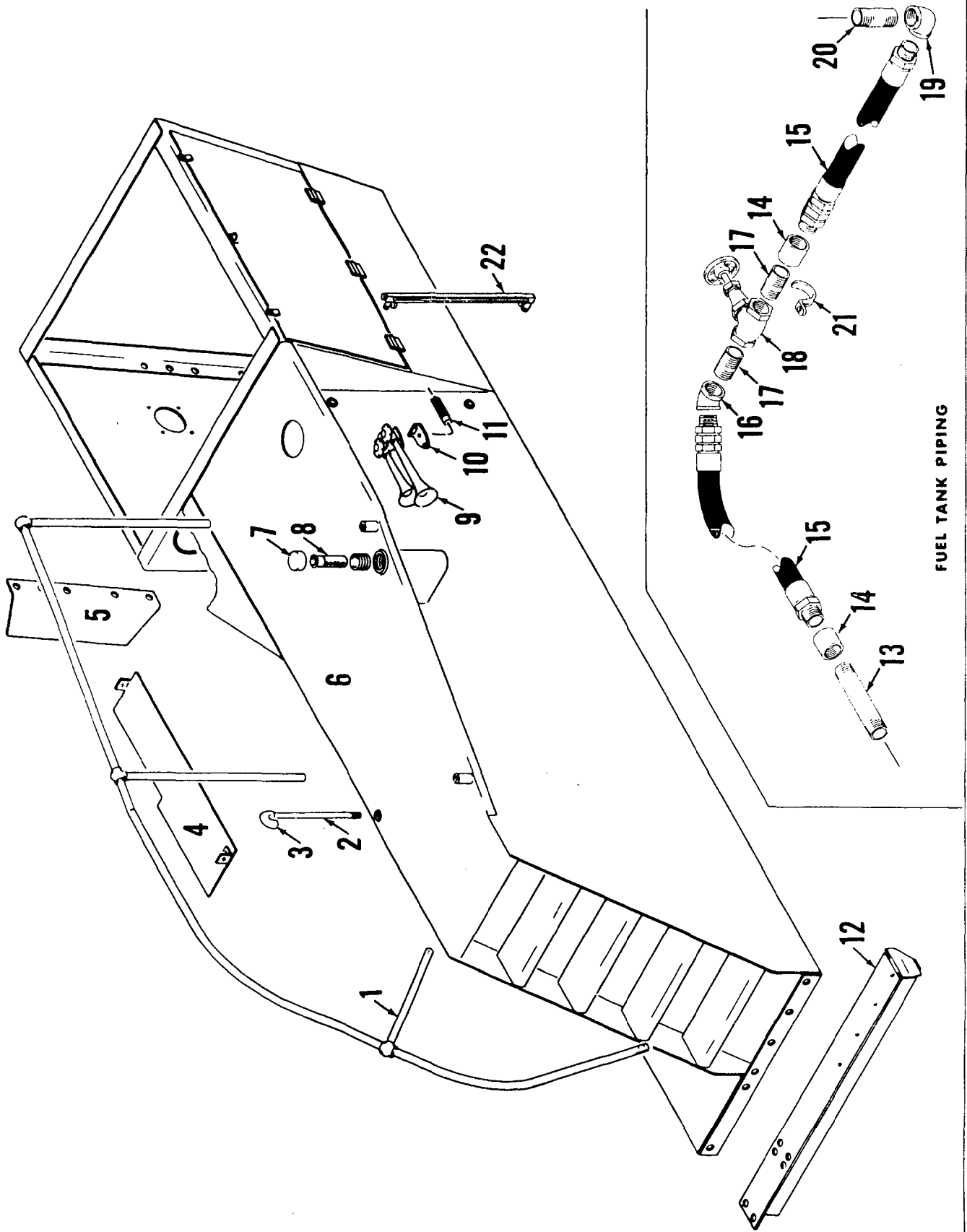
WEIGHTS

MODEL 4600

DESCRIPTION	APPROX. WEIGHT
·ROTATING BED w/Main Drive Shaft, Countershaft & Components	
less Engine, Drums and Counterweights	77,616 Lbs.
FRONT DRUM (For any combination)	12,097 Lbs.
REAR DRUM (For any combination)	15,632 Lbs.
LAGGINGS (Optional)	1,800 Each
COUNTERWEIGHT FOR LIFTCRANE	*112,000 Lbs.
COUNTERWEIGHT FOR STANDARD SHOVEL	* 55,000 Lbs.
COUNTERWEIGHT FOR STRIPPING SHOVEL	* 71,000 Lbs.
COUNTERWEIGHT FOR DRAGLINE W/120' BOOM	* 65,000 Lbs.
COUNTERWEIGHT FOR DRAGLINE W/140' BOOM	* 87,000 Lbs.
MAIN DRIVE SHAFT ASSEMBLY	5,532 Lbs.
COUNTERSHAFT ASSEMBLY	1,994 Lbs.
CARBODY w/Travel Shafts, Steering Clutches and Travel Locks, less Crawlers, Ring Gear and Kingpin.	46,284 Lbs.
RING GEAR AND ROLLER PATH	8,174 Lbs.
KINGPIN	1,482 Lbs.
CRAWLER - 22' w/48" Shoes and 17 links chain w/Outside drive	38,360 Each
CRAWLER - 22' w/60" Shoes and 17 links chain w/Outside drive	42,056 Each
CRAWLER - 26' w/48" Shoes and 17 links chain w/Outside drive	47,630 Each
CRAWLER - 26' w/60" Shoes and 17 links chain w/Outside drive	52,067 Each
CRAWLER SHOE - 60" w/2 Pins (See Carbody Assm. for Qty.)	460 Lbs.
CRAWLER SHOE - 48" w/2 Pins (See Carbody Assm. for Qty.)	376 Lbs.
CRAWLER CHAIN - For use with 26' Crawlers	1,498 Lbs.
CRAWLER CHAIN - For use with 22' Crawlers	1,183 Lbs.
ENGINE - Tandem Engines - Cummins	
w/Engine Bed - less Radiator	18,022 Lbs.
ENGINE - Tandem Engines G.M.	15,894 Lbs.
RADIATOR - Tandem Cummings Engines	1,380 Lbs.
RADIATOR - Tandem G.M. Engines	1,720 Lbs.
LIGHT PLANT w/Base and Hook	2,000 Lbs.
STANDARD WIRING - Dragline and Shovel	87 Lbs.
AWNING ASSEMBLY	175 Lbs.
PILOT HOUSE	1,110 Lbs.
PILOT HOUSE SUPPORT including 560 Gal. Fuel Tank and Steps	2,395 Lbs.
MAST - 24' w/Sheaves and Components	7,424 Lbs.
MAST - 30' w/Sheaves and Components	8,782 Lbs.
COMPRESSOR - Tandem Engine	1,024 Lbs.
BACKHITCH ASSEMBLY - 10 Part Line	2,400 Lbs.
BACKHITCH ASSEMBLY - 12 Part Line	2,860 Lbs.
BOOM BUTT - 45' Steel #33 Boom	8,800 Lbs.
BOOM BUTT - 25' Steel #33 Boom	6,600 Lbs.
BOOM TOP - 38' Aluminum w/Sheaves and Components #33 Boom	5,280 Lbs.
INSERT - 37' Aluminum #33 Boom	3,500 Lbs.
INSERT - 20' Aluminum #33 Boom	2,200 Lbs.
BOOM BUTT - #7 Boom	8,150 Lbs.
BOOM TOP - w/Cable Guide, Boom Point, Sheaves & Components #7 Boom	11,000 Lbs.
BOOM INSERT - 20' w/Cable Guide #7 Boom	3,200 Lbs.
BOOM INSERT - 40' w/Cable Guide #7 Boom	5,700 Lbs.
FAIRLEAD ASSEMBLY	3,958 Lbs.

*REFER TO SPECIALITY BILL FOR COUNTERWEIGHT FURNISHED

MASTER



FUEL TANK PIPING

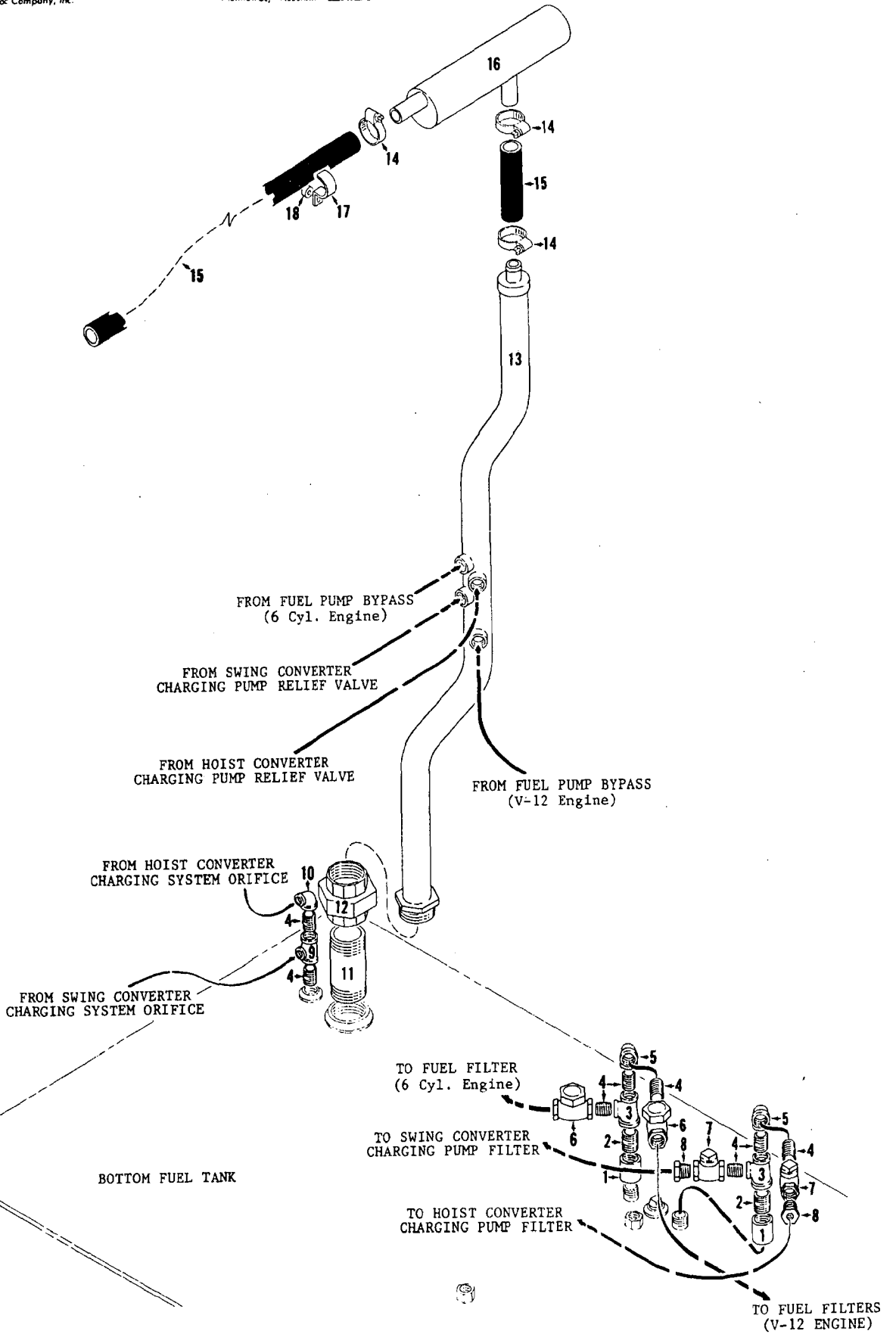
FUEL TANK AND PILOT HOUSE SUPPORT

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32412A3

MATERIAL LIST ON BACK

VENT PIPING

42206-1 Cont.	REV. K	MODEL 4600
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PILOT HOUSE

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
6	43127	1	<u>ROOF WINDOW INSTALLATION (SEE NOTE)</u> 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)	
			<u>FRONT WINDOW HOIST</u>	
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	
			<u>MIRROR FOR VIEWING IND. BOOM HOIST DRUM</u>	
	137847	1	ASSEMBLY, Mirror	
41	532712	1	MIRROR	
42	137846	1	ARM, Mirror W/capscrew, hex nut and lockwasher	
43	140554	1	SUPPORT, Mirror	
			<u>NOTE: Previous Installation</u>	
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)	

REV. K	42206 - 1
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PLEASE GIVE MACHINE S/N W/ORDER

Run as Front

MASTER

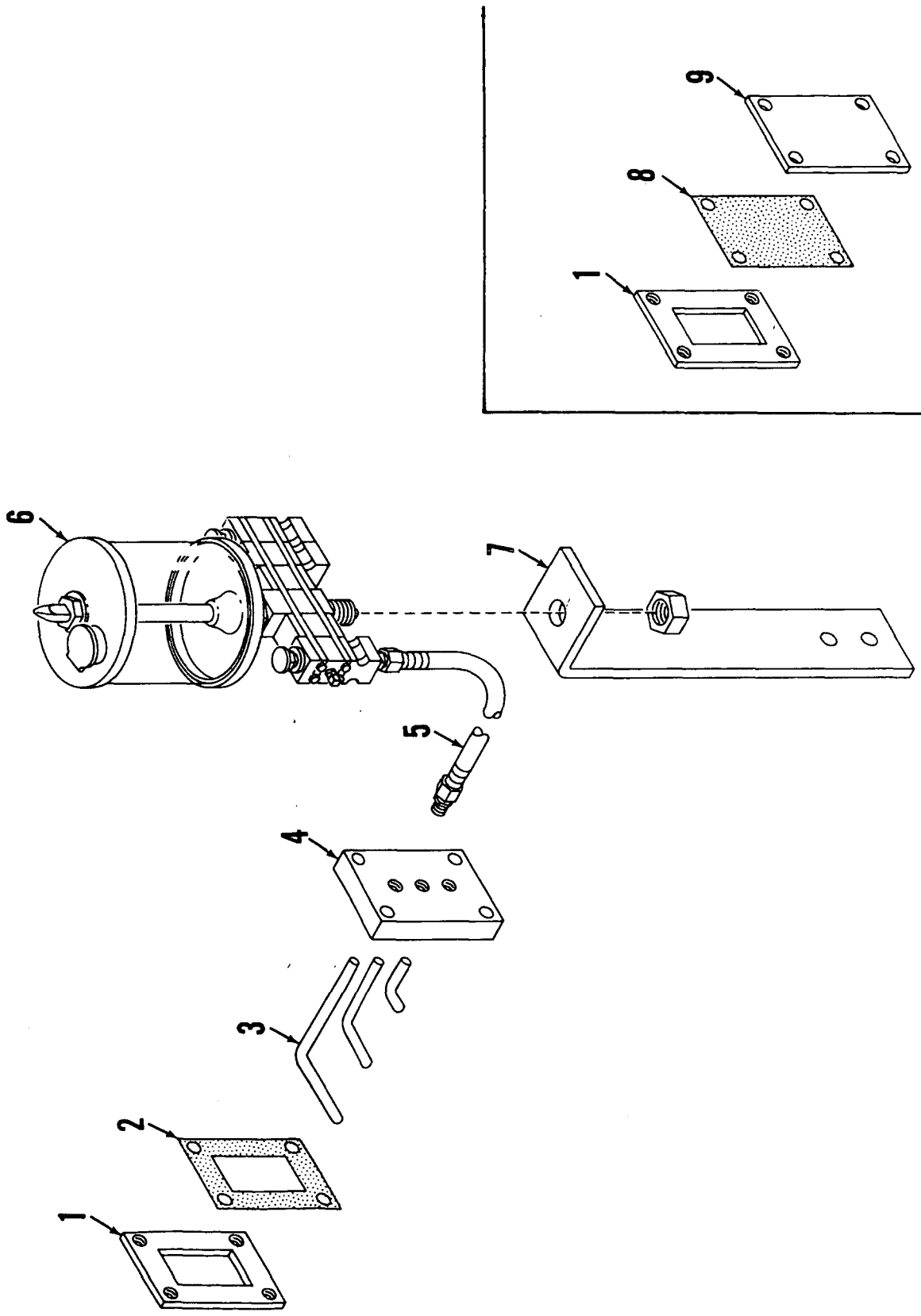
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MASTER

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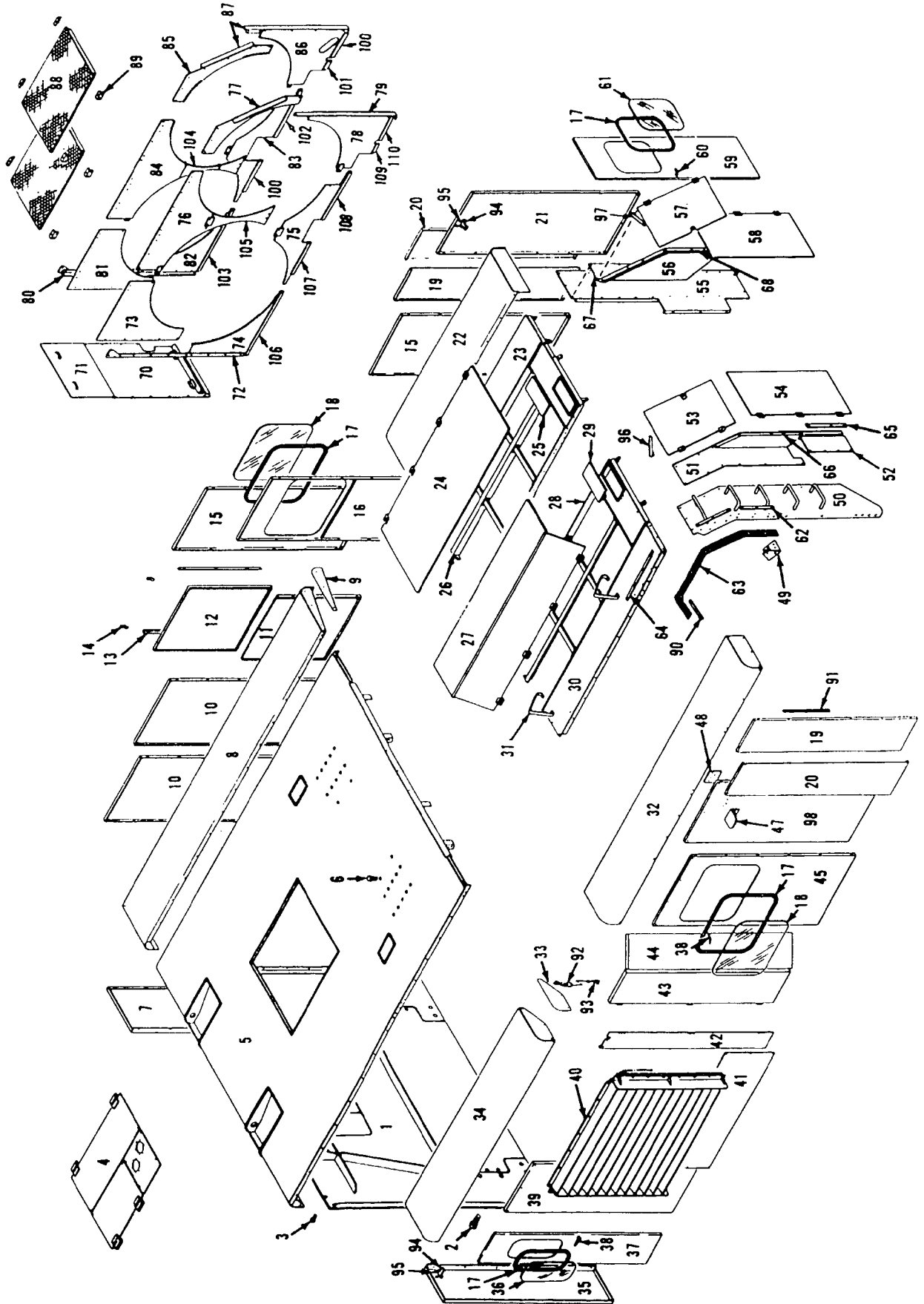
ILLUST. No. 42250-A-3

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LUB. SYSTEM - INTERLOCK CHAIN CASE

42250 A3

MASTER

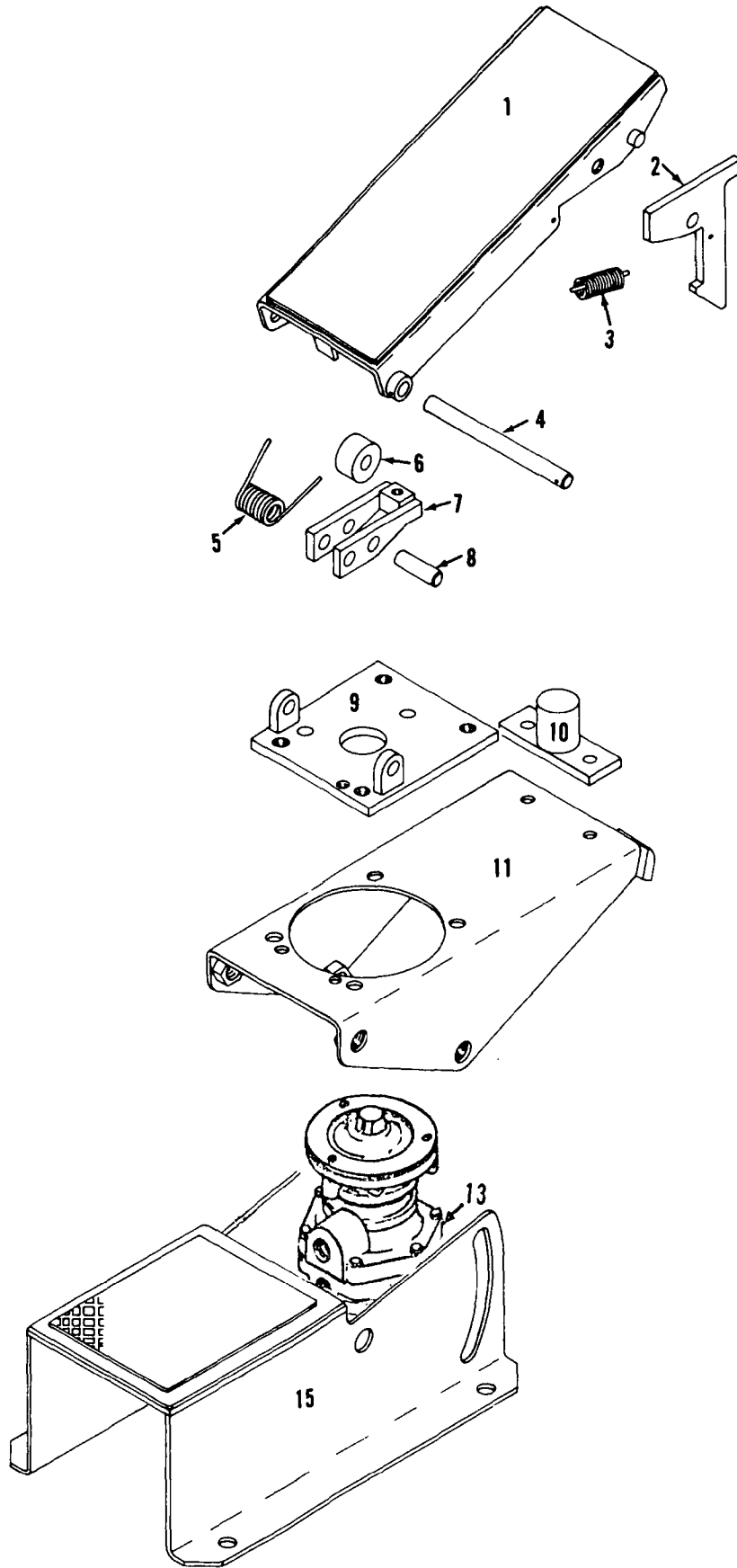


GROUP B - Upperworks Machinery

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MASTER

32026 F1

32026F1

MATERIAL LIST ON BACK

TREADLE VALVE

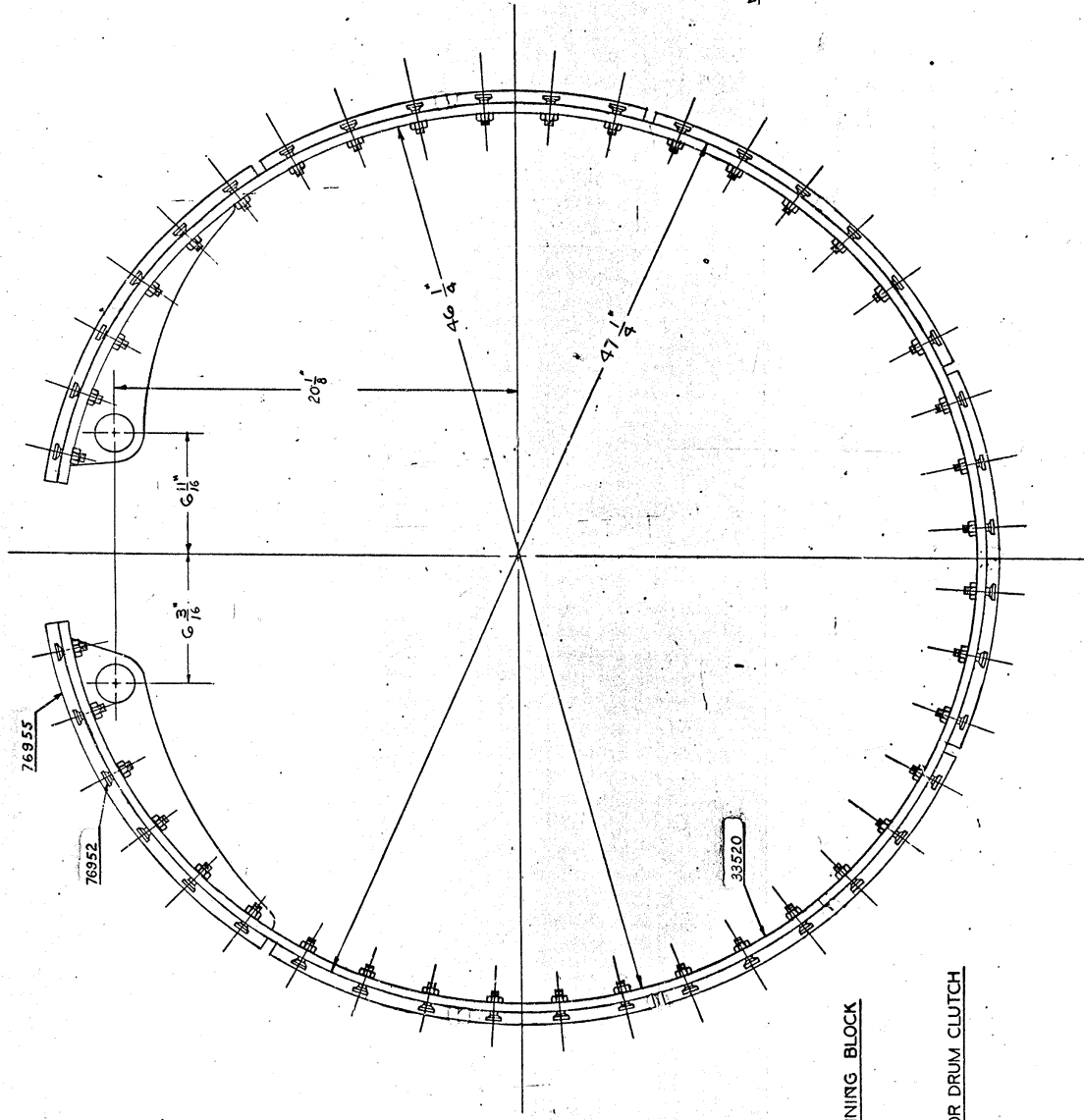
ASSEMBLIES
USED ON
50451
50477
50393
65534

33522

NOTE 1
THIS ASSEMBLY IS USED FOR MACHINES
WITH CONTINUOUS LINING AND BOLT
ATTACHMENT.
FOR BAND WITH
CONTINUOUS LINING AND
BOLT ATTACHMENT SEE DUG. 3331.

Ⓐ SUPERSEDED BY 182345
SUPERSEDES # 33280

MANITOWOC ENGINEERING WORKS	
REVISED DATE 7-25-78 (22)	MODEL 4600
CLUTCH BAND	
ASSEMBLY	
FOR 7 1/2" BAND see NOTE 1	
DATE 8-1-44	MATERIAL 5" 1'-0"
DESIGNED BY J.E.A.	33522



AMT.	NO.	TITLE
71	76955	CLUTCH LINING BLOCK
84	76952	BOLT
1	33520	7 1/2" BAND FOR DRUM CLUTCH

33522

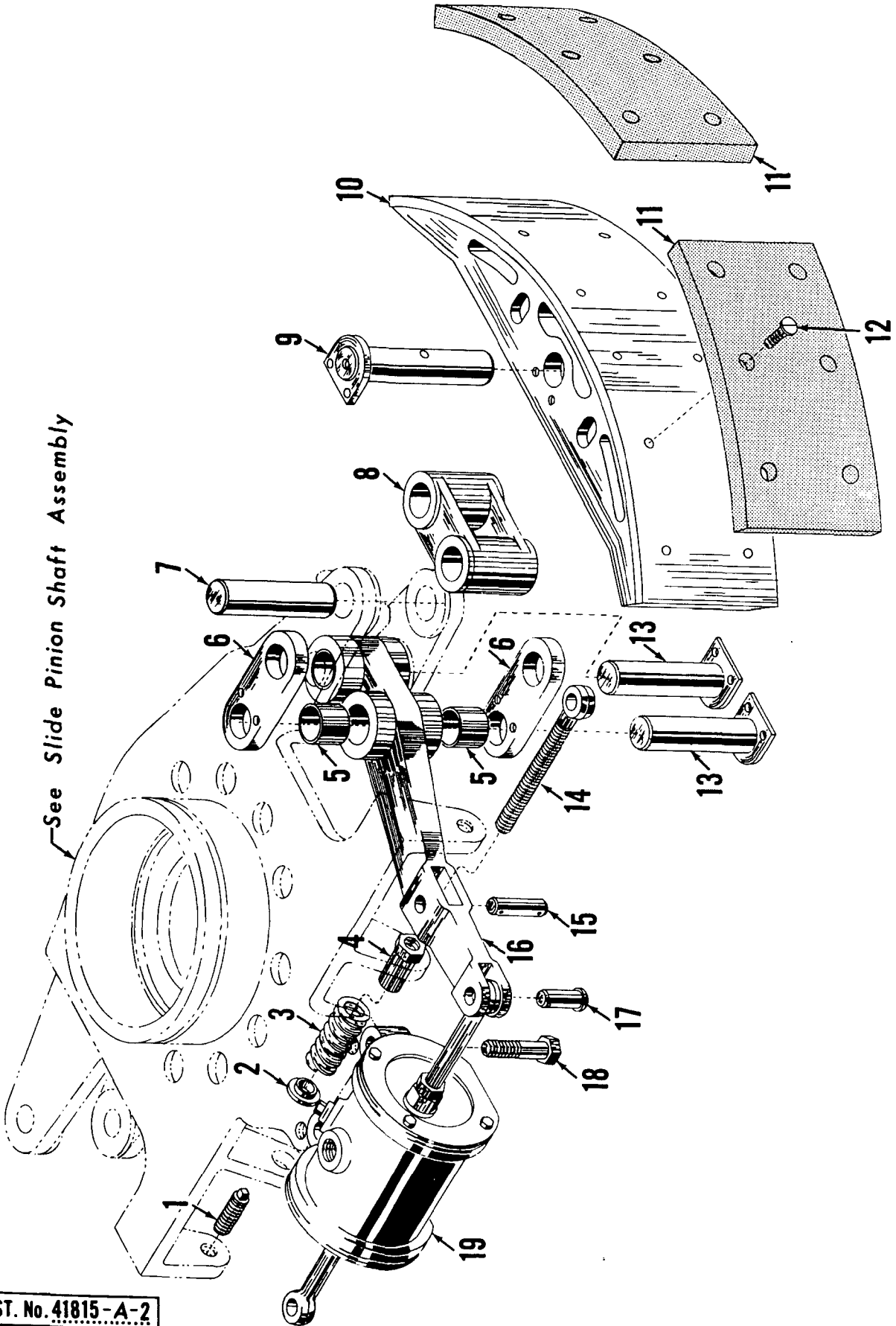
DO NOT SCALE THIS DRAWING

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See Slide Pinion Shaft Assembly



ILLUST. No. 41815-A-2

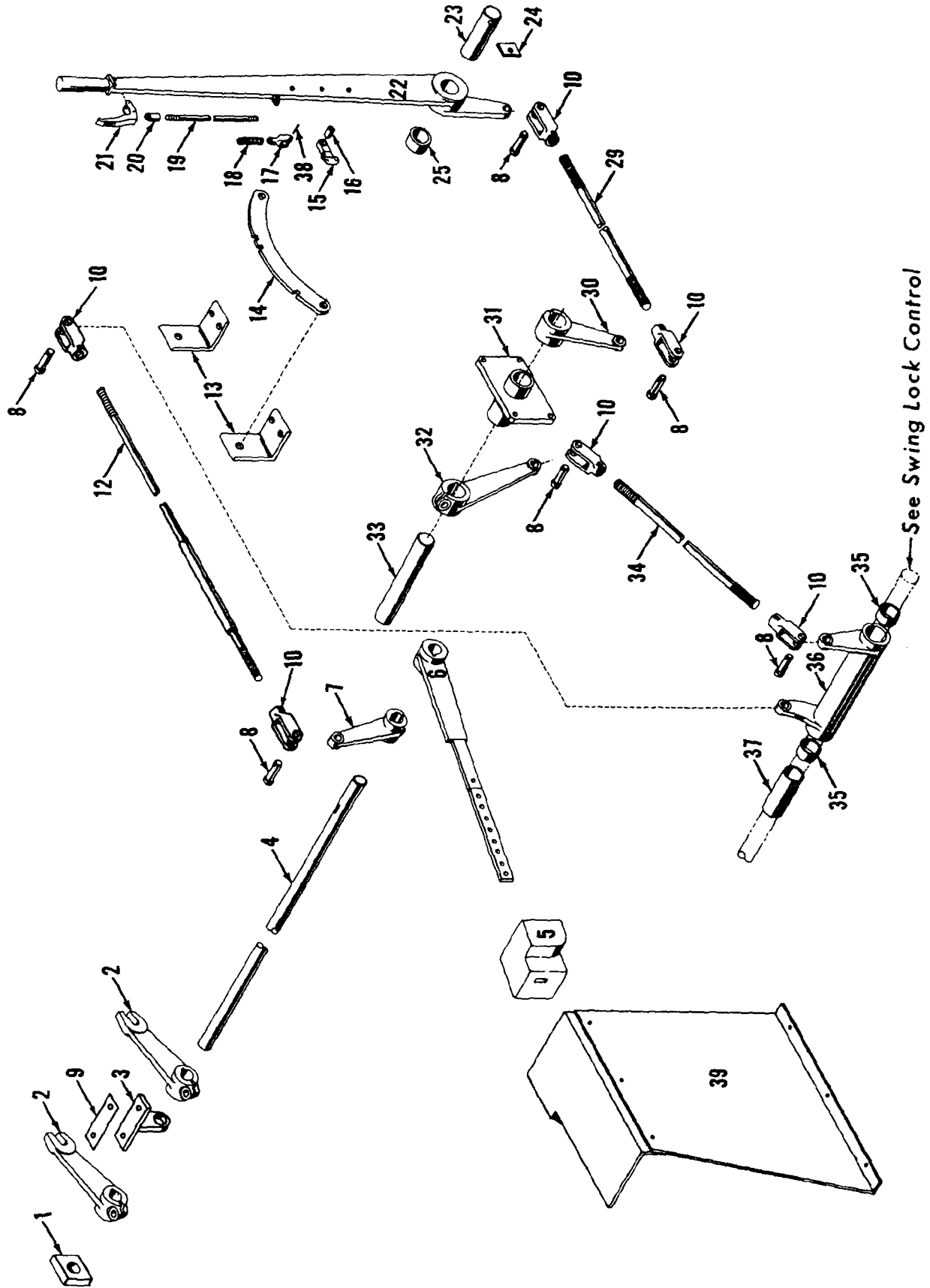
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SWING BRAKE ASSEMBLY

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See Swing Lock Control

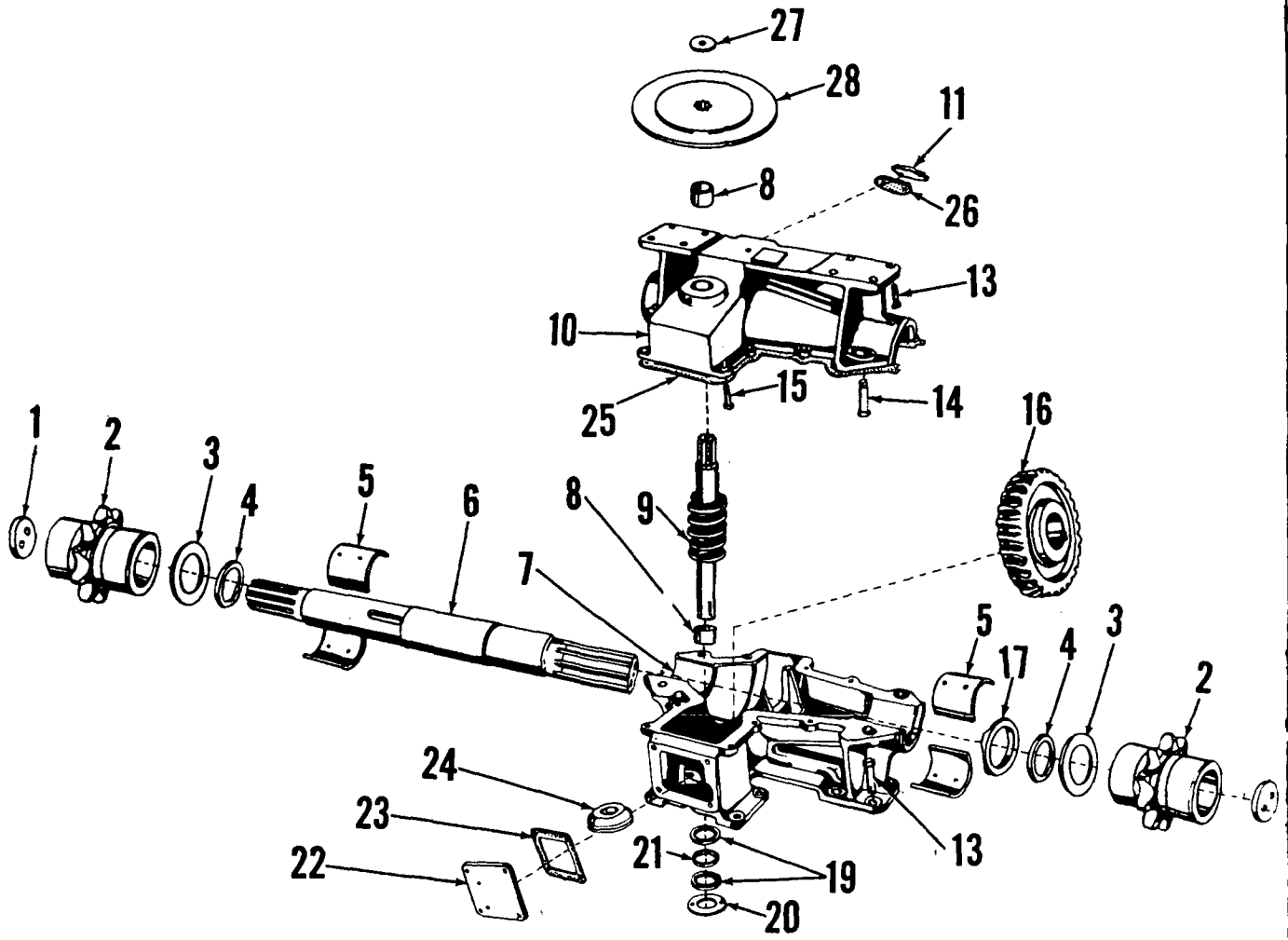
4225201

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SLIDE PINION CONTROL



MASTER

43143 A1

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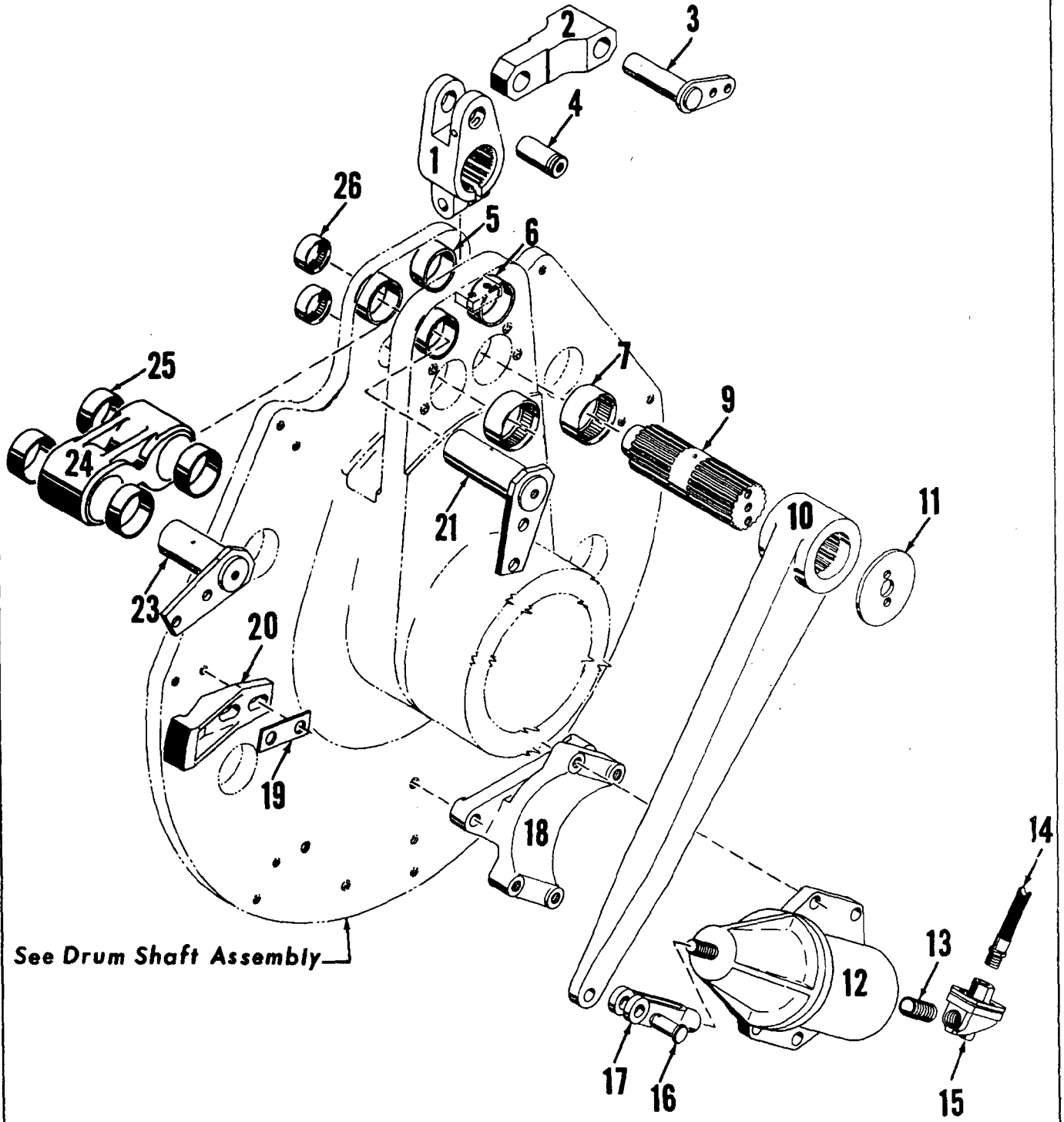
BOOM HOIST

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See Drum Shaft Assembly

RIGHT DRUM CLUTCH

50326A3

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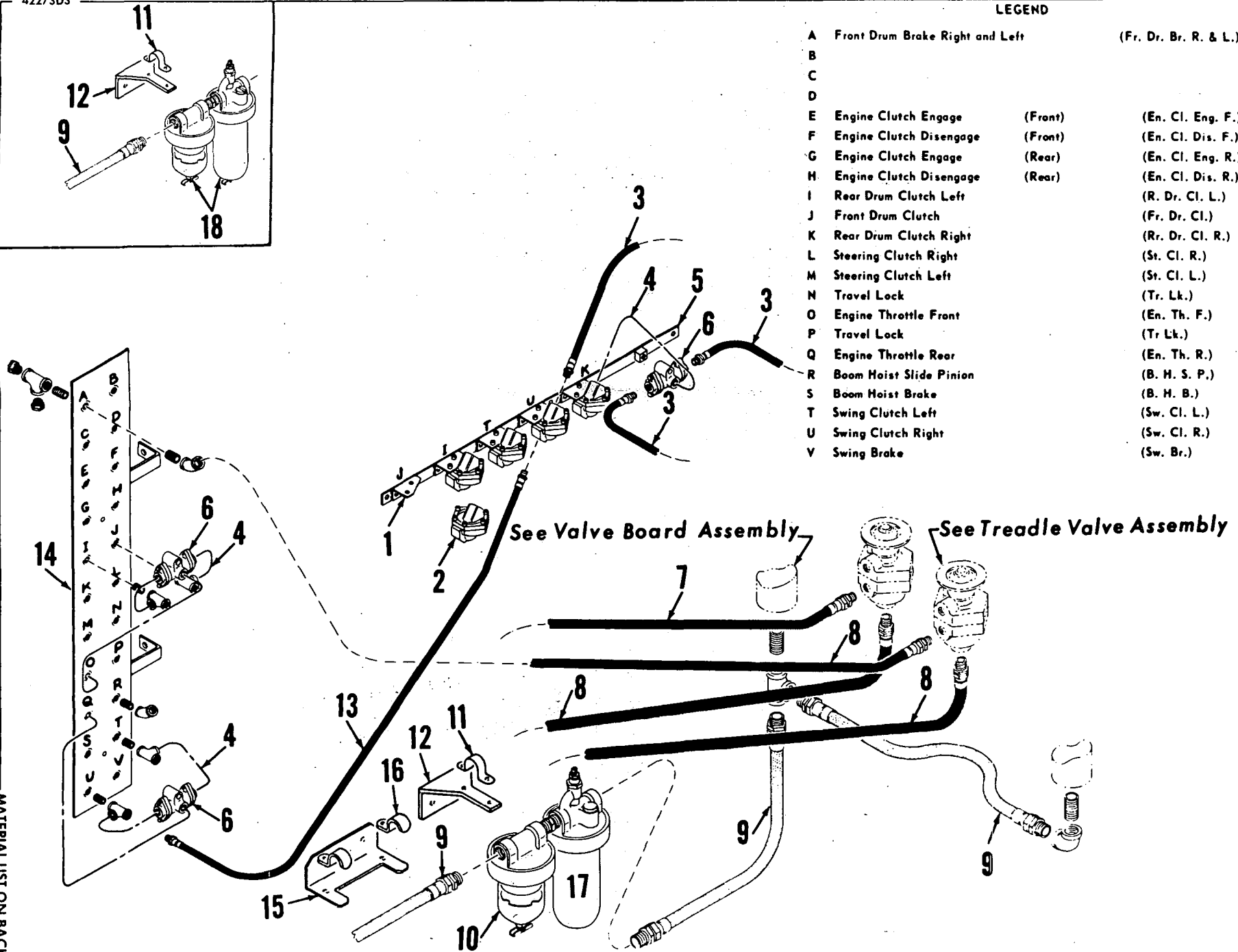
LEGEND

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.)

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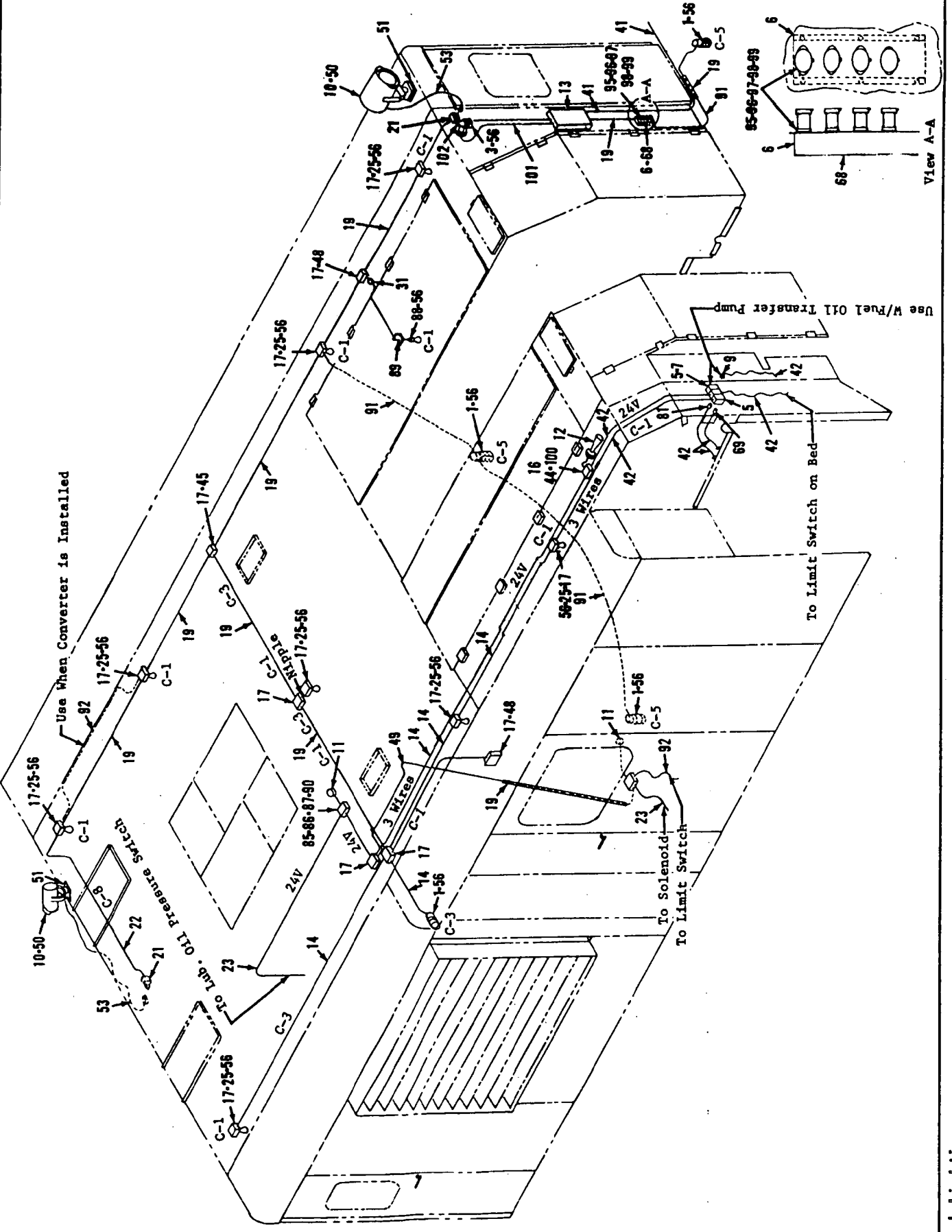
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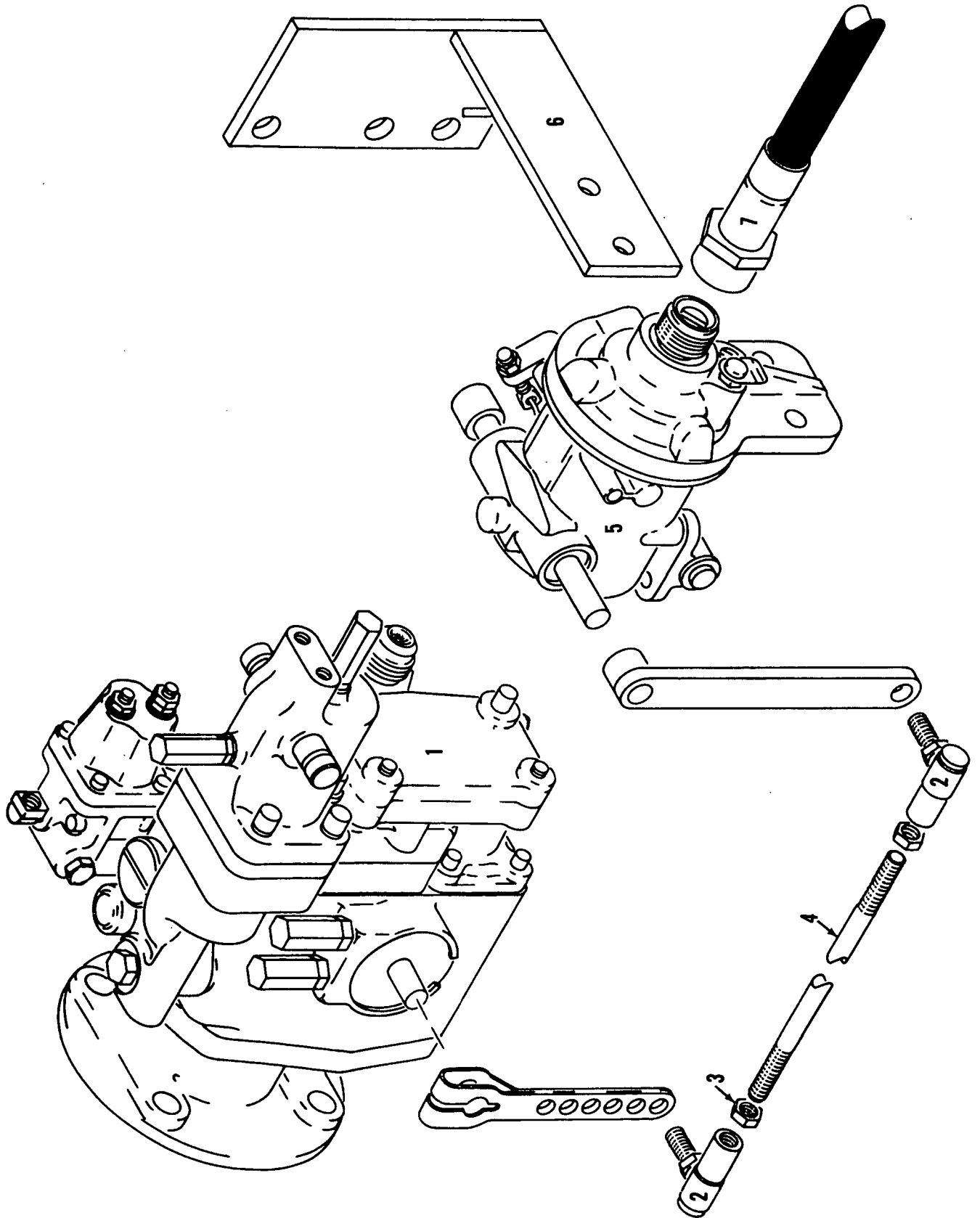
AIR CONTROL PIPING



5049601

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Cab Lighting



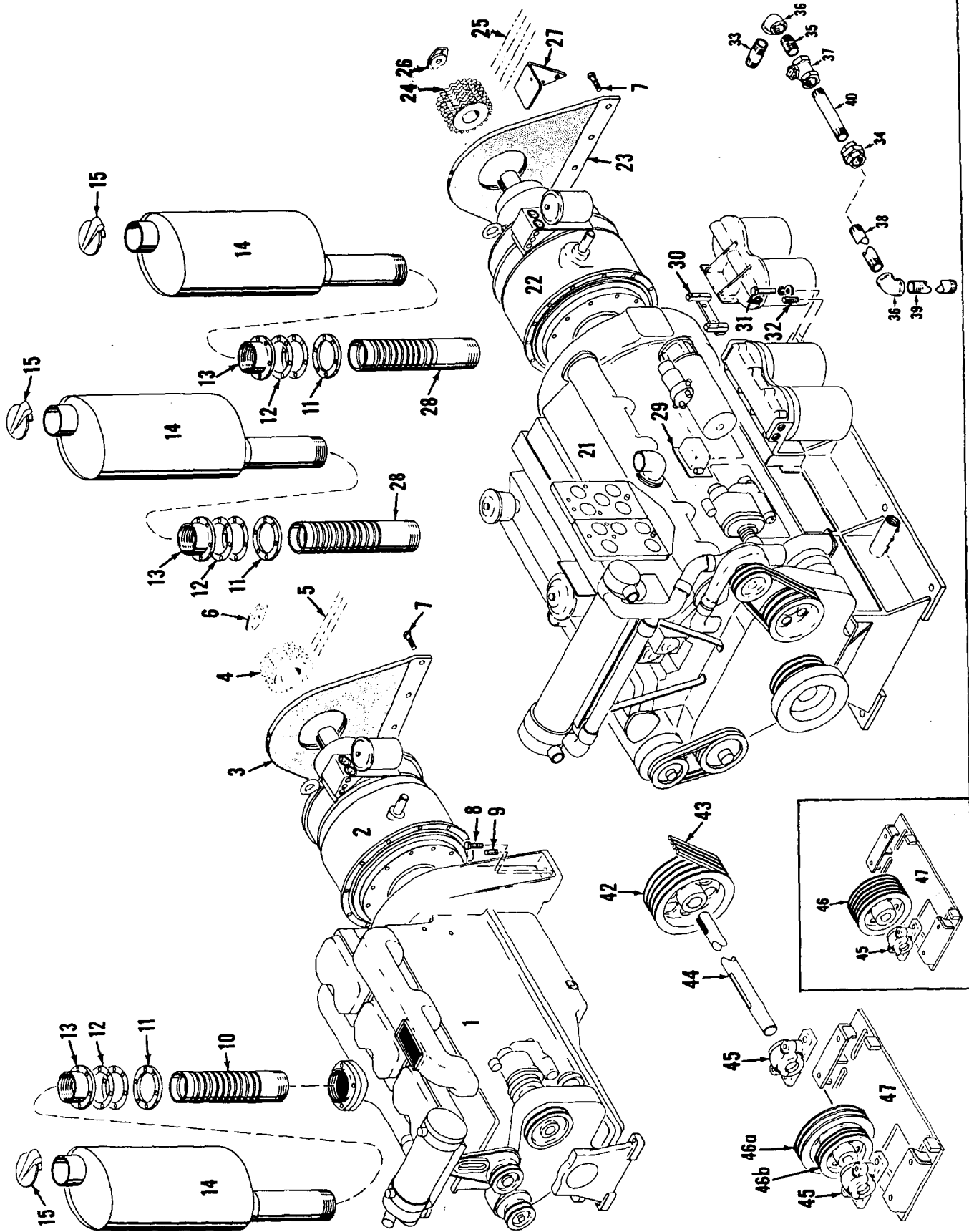
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50431A2

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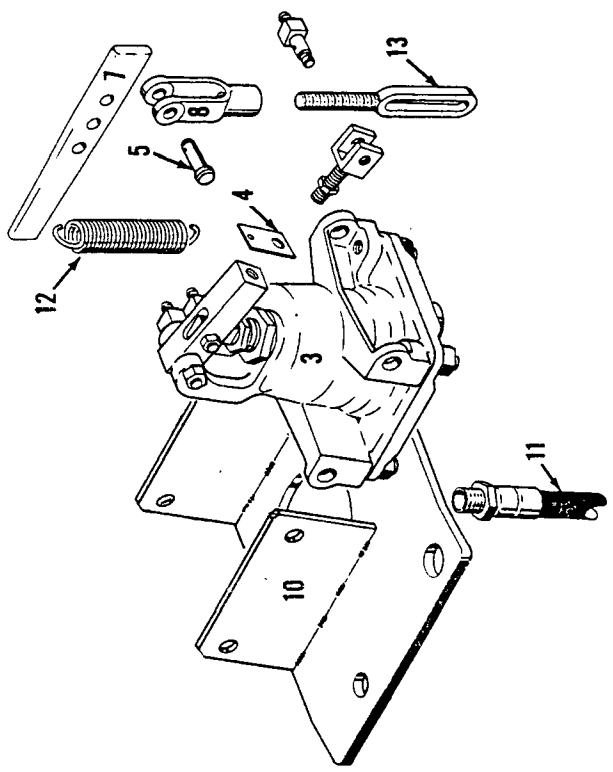
POWER PLANT

50431 A2

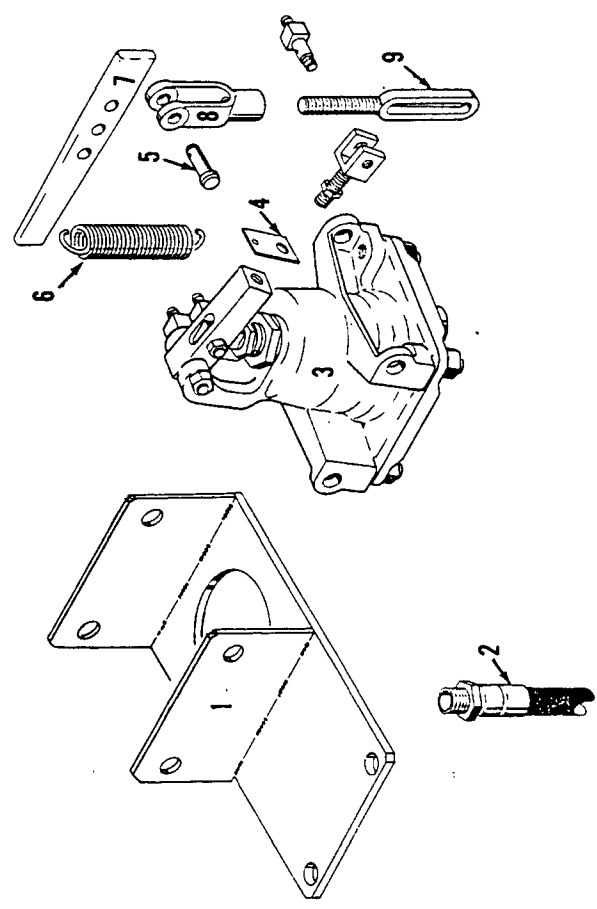
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Front Engine



Rear Engine

50363B7

MATERIAL LIST ON BACK

ENGINE CONTROL

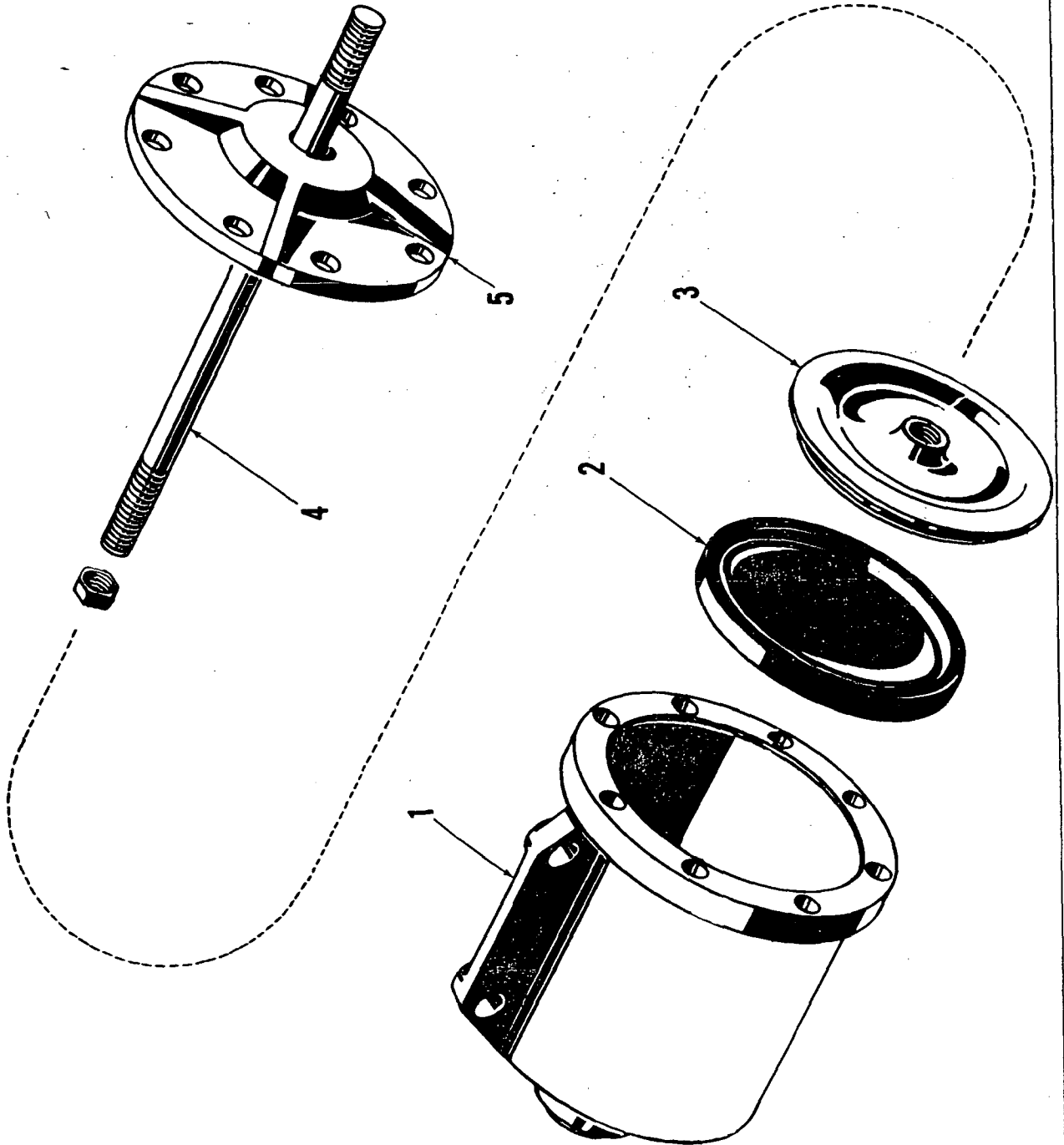
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AIR CYLINDER

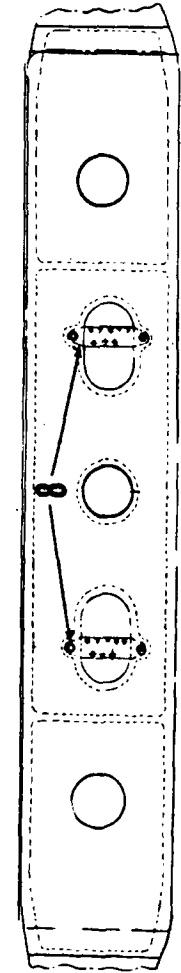
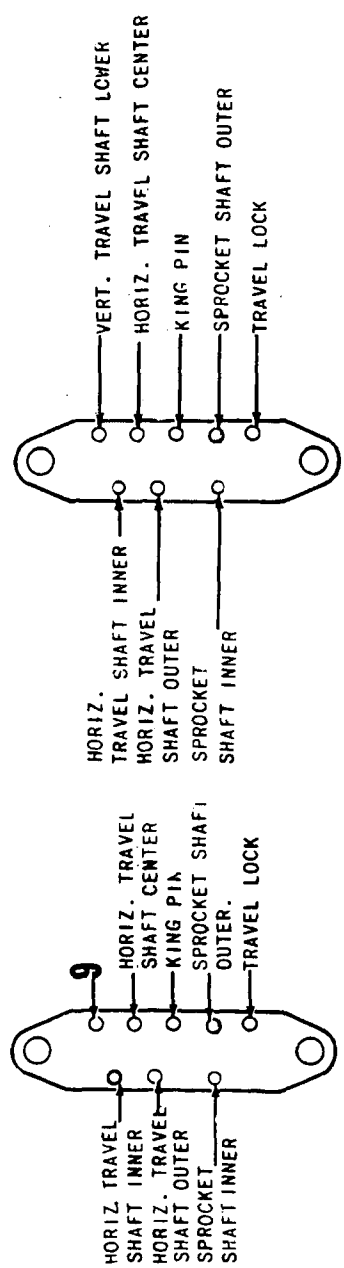
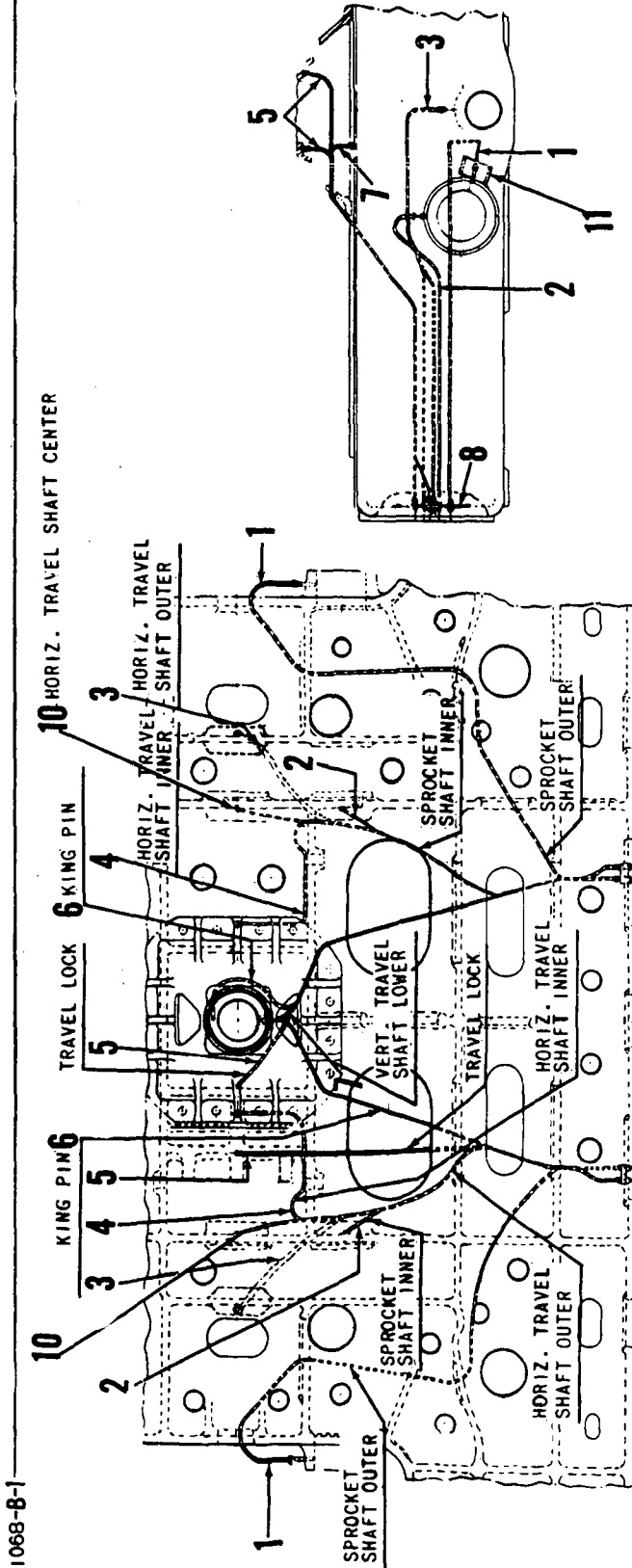
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LUBRICATION PIPING ASSEMBLY CARBONY

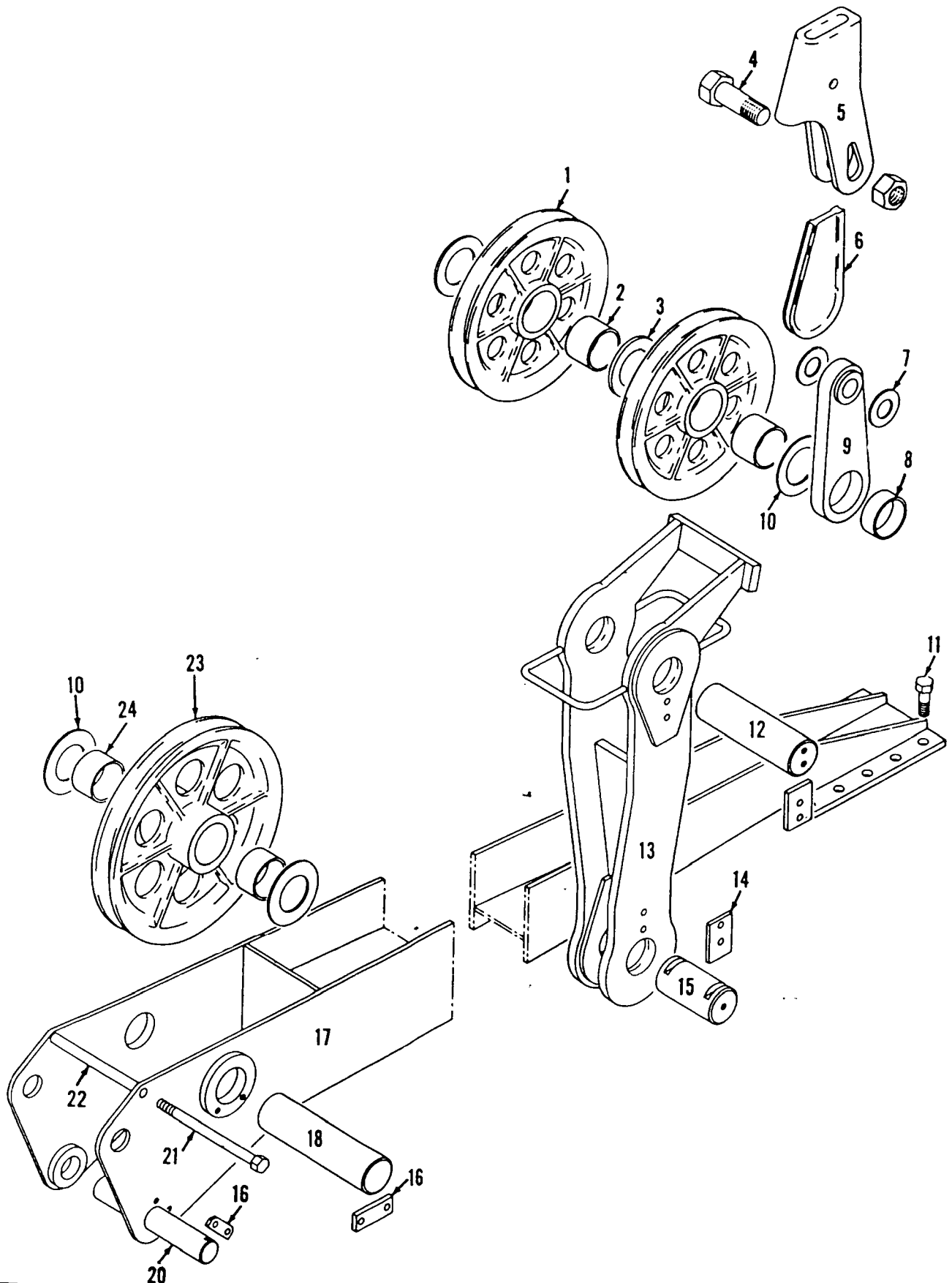
GROUP F - Attachments

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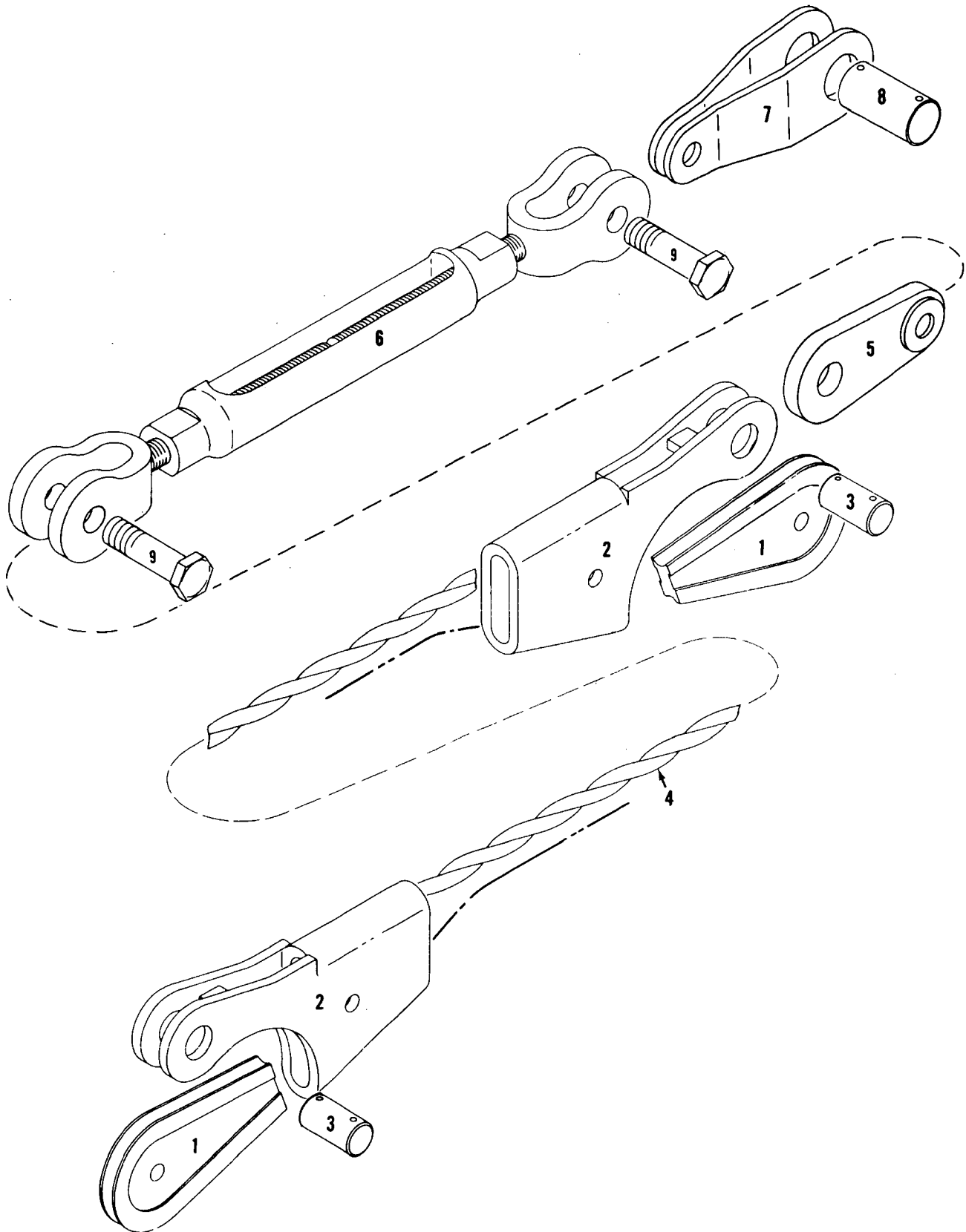


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BACK HITCH

4320



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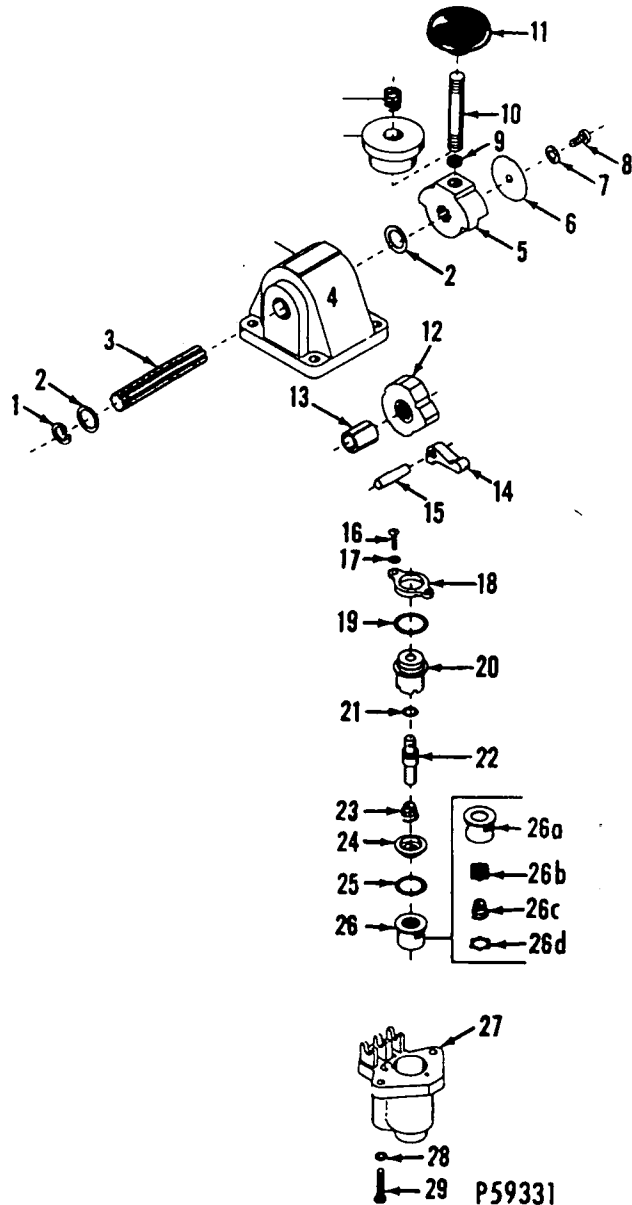
50294-C3

50294C3

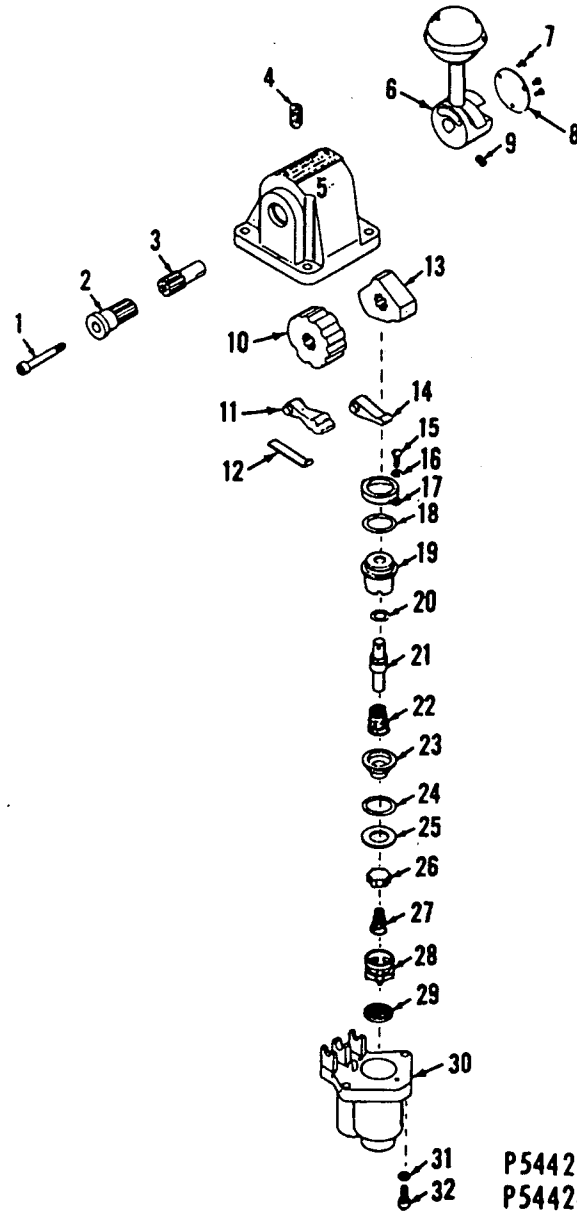
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BOOM SUSPENSION

0-69



P59331
P59333



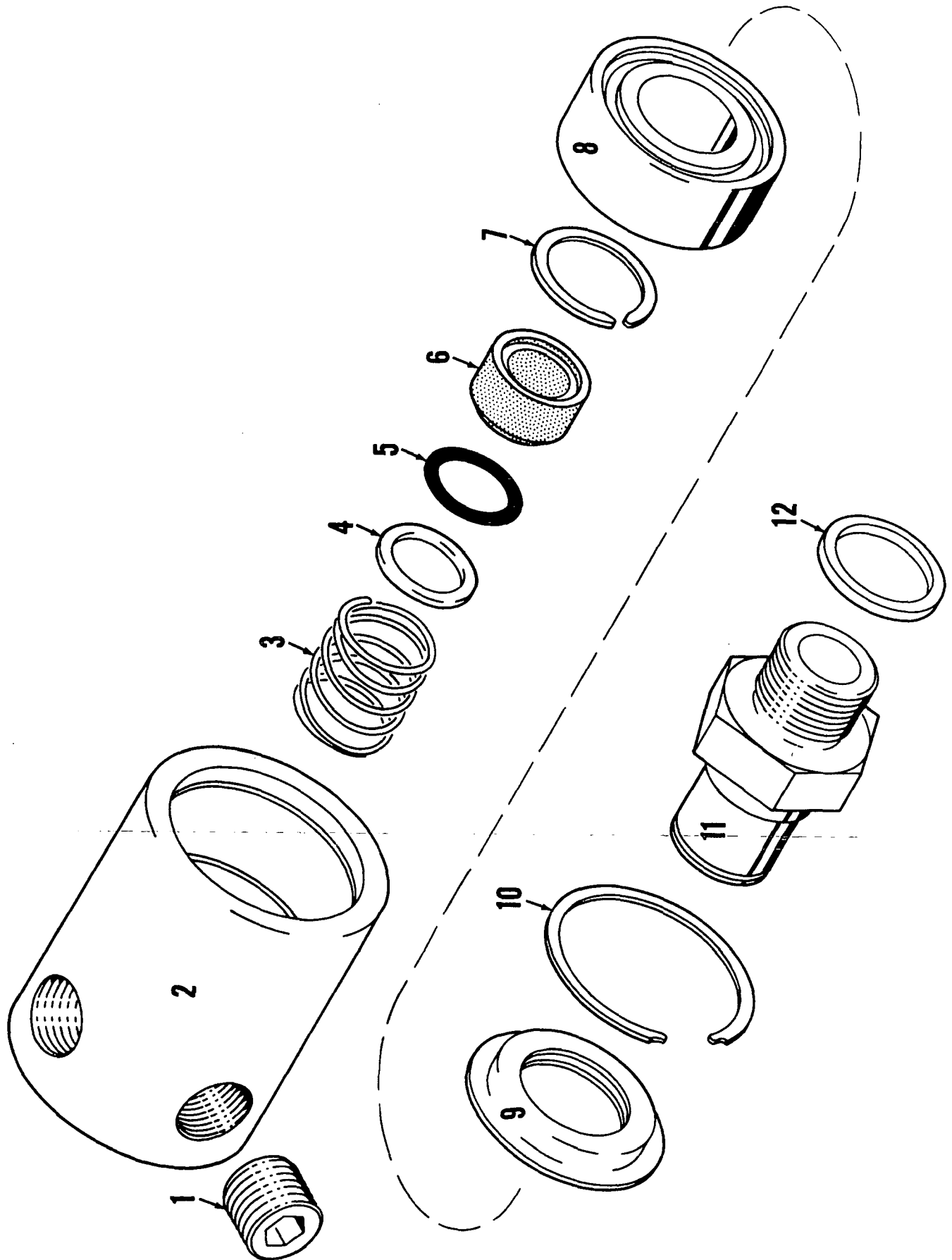
P54424-0101
P54424-0301

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SWIVEL UNION

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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



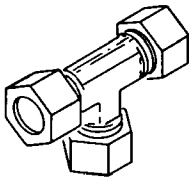
NUT

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



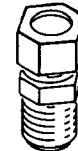
UNION

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



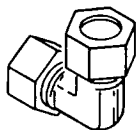
FEMALE CONNECTOR

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



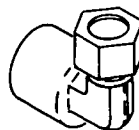
MALE CONNECTOR

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



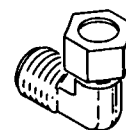
UNION ELBOW

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



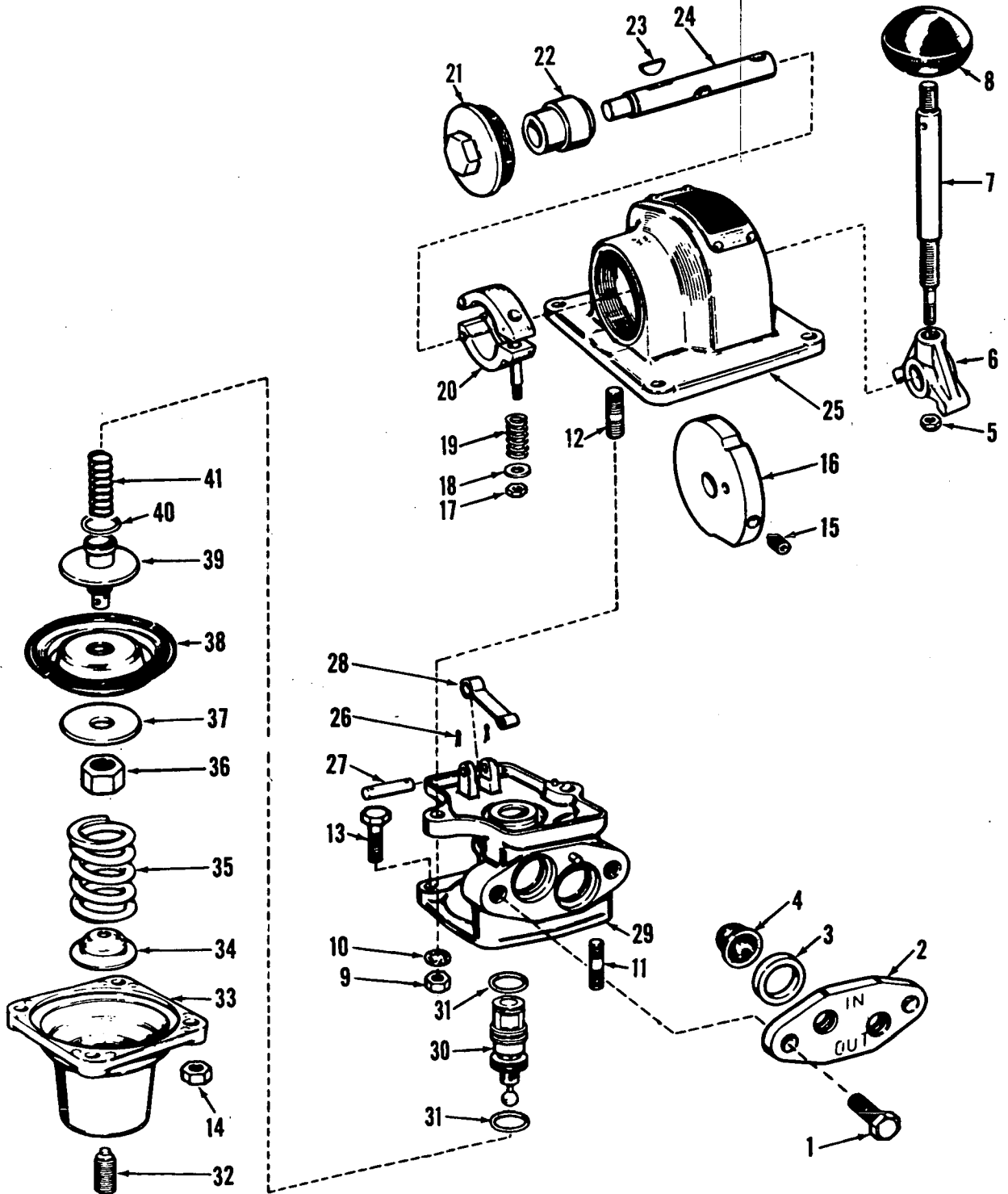
MALE ELBOW

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

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O-275

MATERIAL LIST ON BACK

MASTER

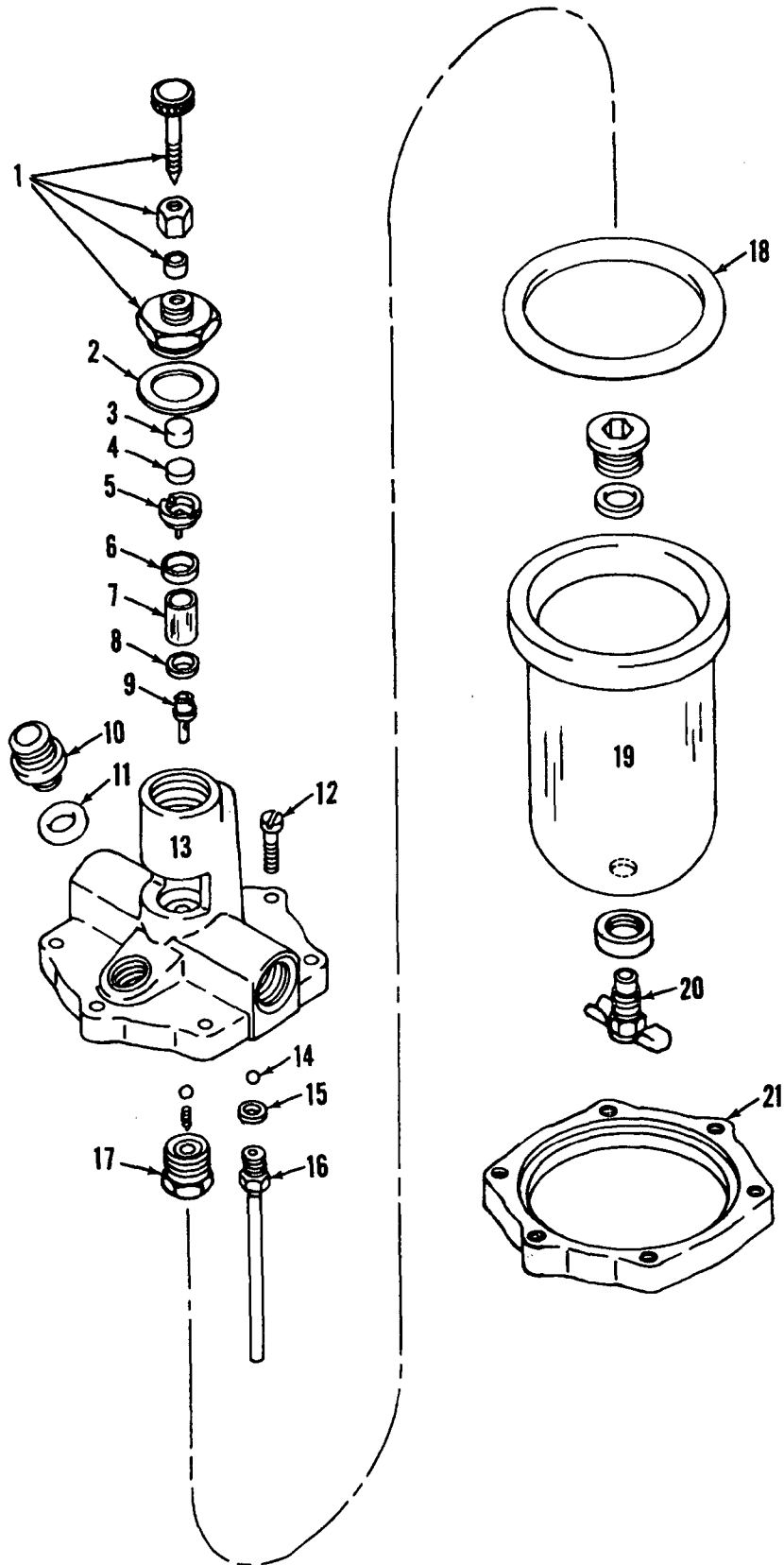
0-373

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin

MASTER



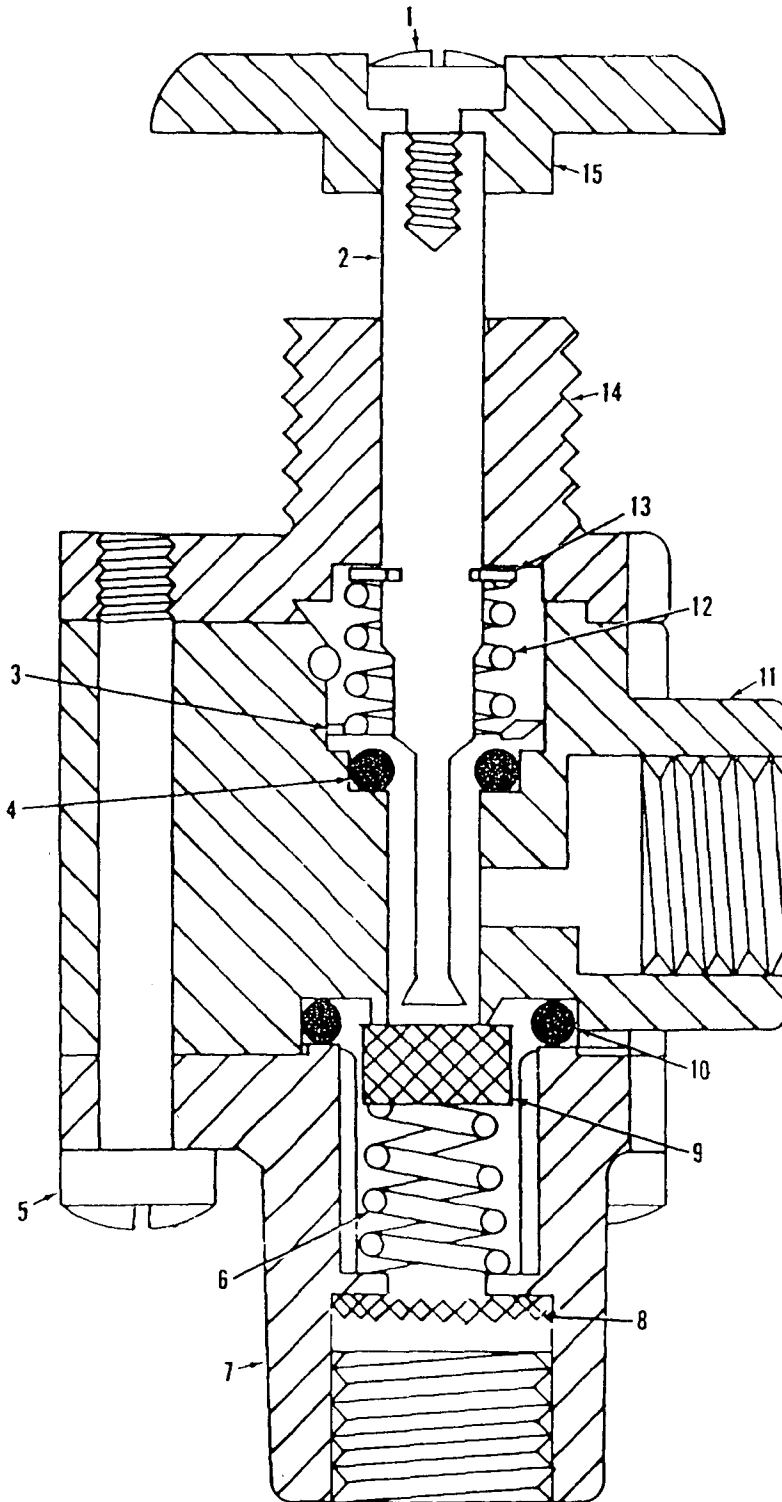
0-291

MATERIAL LIST ON BACK

LUBRICATOR

162.0

MASTER



0-415-1 Cont	REV. B	MODEL 2000-4600 Incl., 6400, 36' P.R., 60' P.R., S.C.-240
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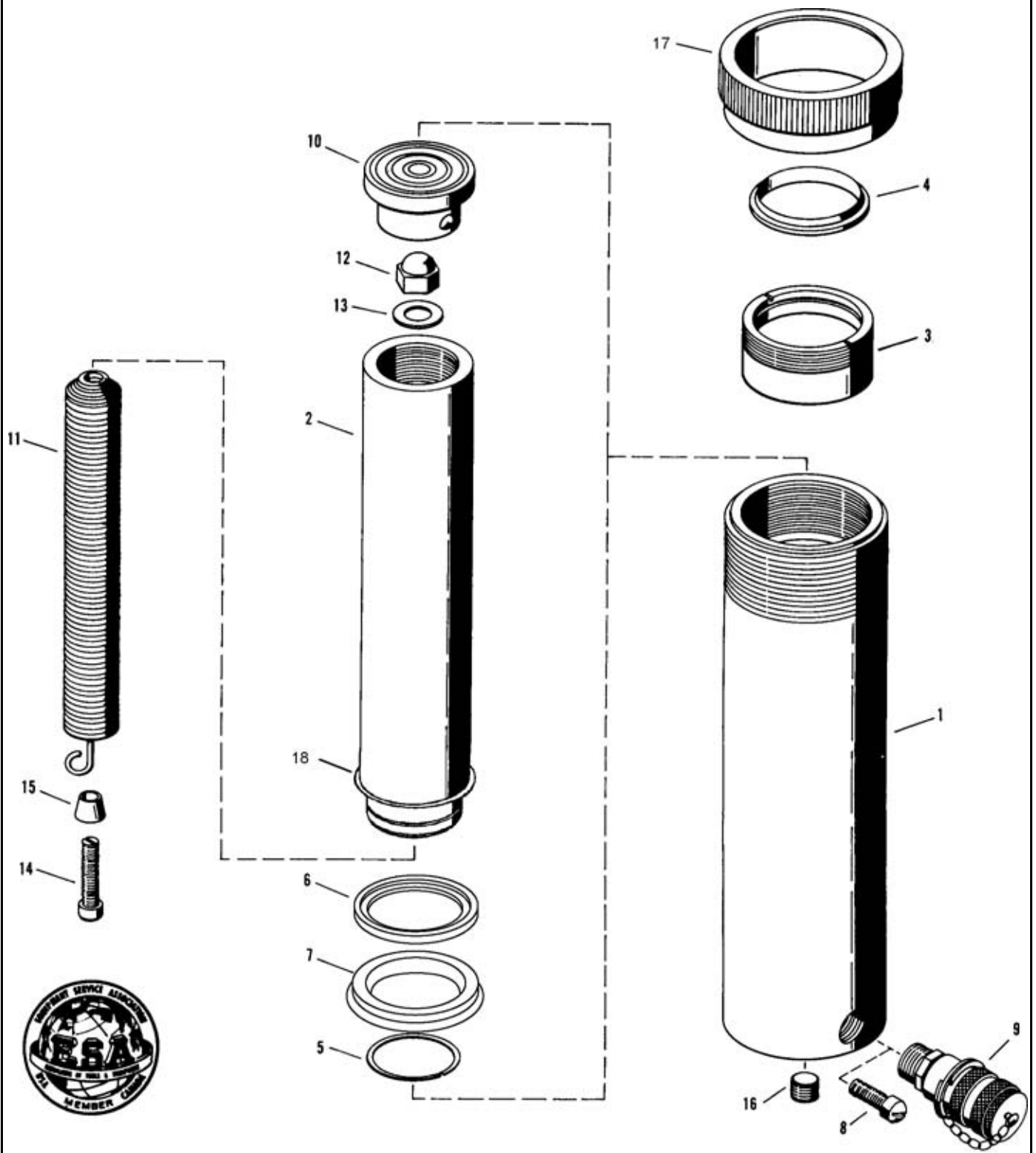
(MANITOWOC #717268 - SPRAGUE #MA-100-60 W/GCr - 851-1.5)
(MANITOWOC #717269 - SPRAGUE #MA-100-70 W/GCr - 856 - 4) SEE NOTE 1
(MANITOWOC #717270 - SPRAGUE #MA-100-105 W/GCr- 856 - 4)

REF. NO.	PART NUMBER	QUANTITY REQUIRED	DESCRIPTION OF PART	VENDORS PART NO.
			<p>The vendor is Sprague Devices, Inc., Michigan City, Indiana. Please so specify if ordering from Manitowoc Engineering Co.</p> <p><u>NOTE 1:</u> Manitowoc Aluminum bodied wiper motors 717268, 717269, 717270 supersede brass bodied wiper motors 717212, 717210, 717203 respectively. All parts listed above can be used to repair the previously used brass bodied motors.</p> <p>* Parts included in Sprague Repair Kit #43.</p> <p>** The suffix - 1.5 or -4 denotes the length in inches that the shaft extends from the motor.</p> <p>*** The suffix -60, -70, -105 designates degree of wiper swing.</p>	

Run as a Front
MASTER

0-415-B1 Cont

REV. B	0-415-1
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385653

ASSEMBLY	REVISION
O-471	E

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