

# Manitowoc

## TRADITIONAL CRANE

## PARTS MANUAL

This manual has been prepared for and is considered part of

**3900**

Model

**39708**

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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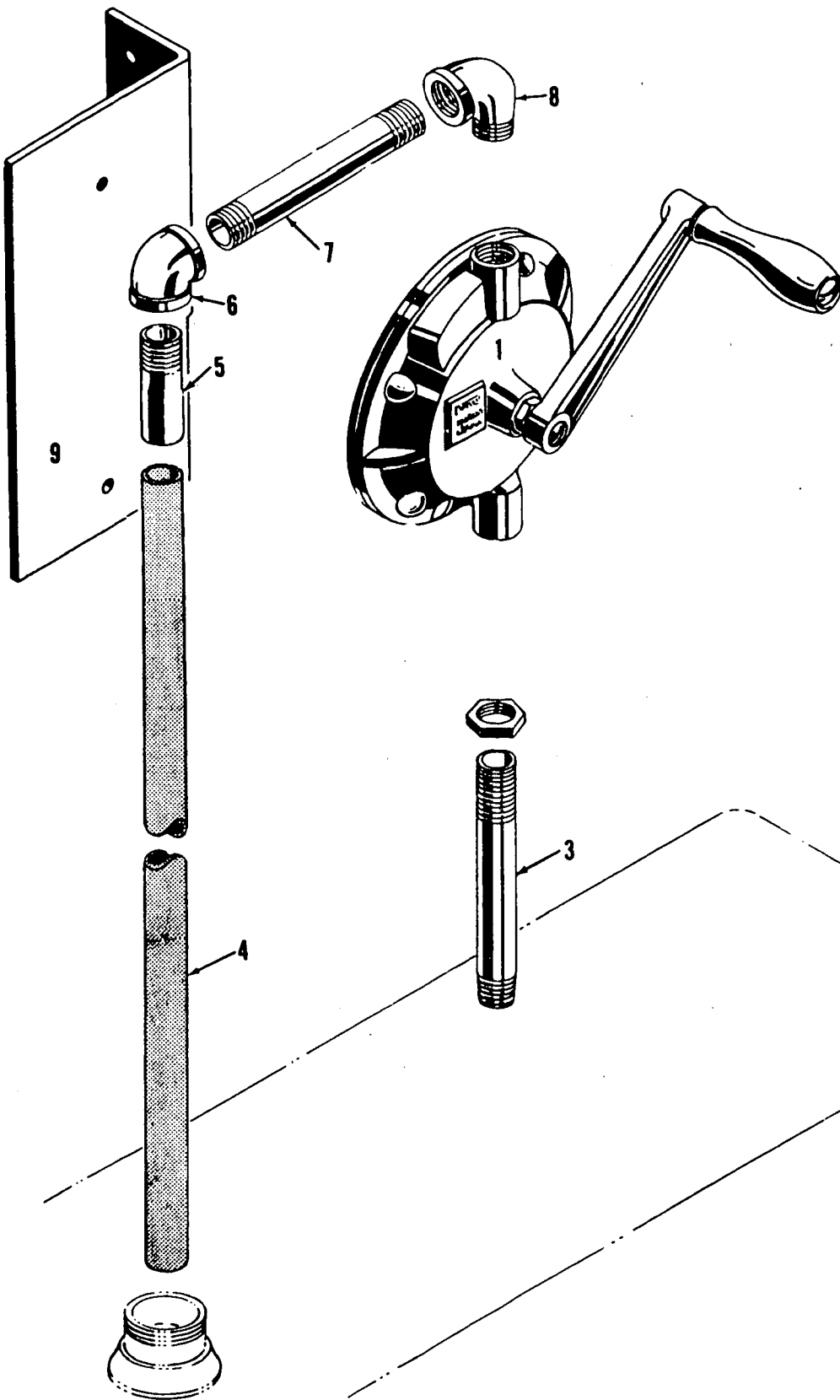
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MANITOWOC

23415E1

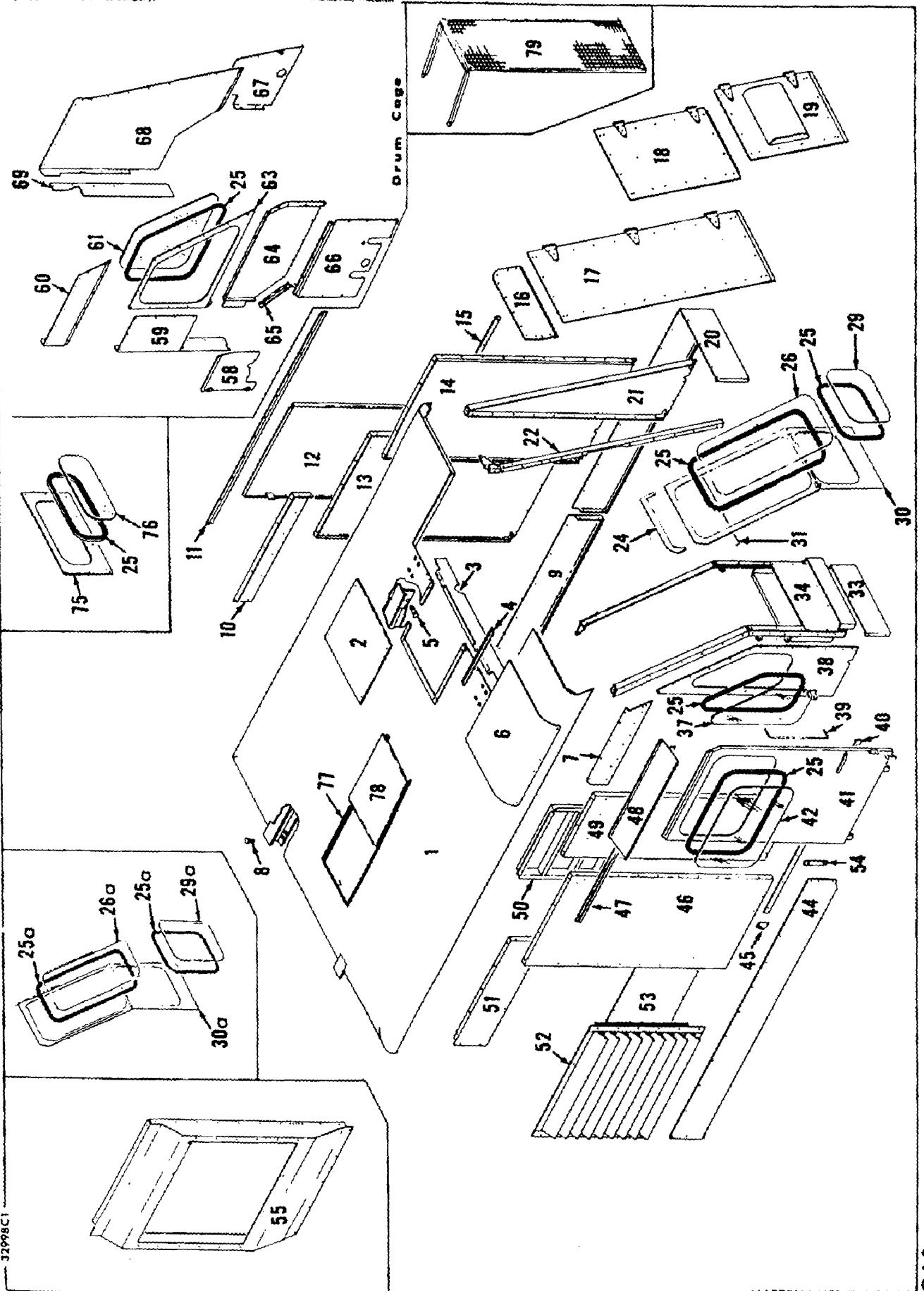
MATERIAL LIST ON BACK

FUEL TRANSFER PUMP

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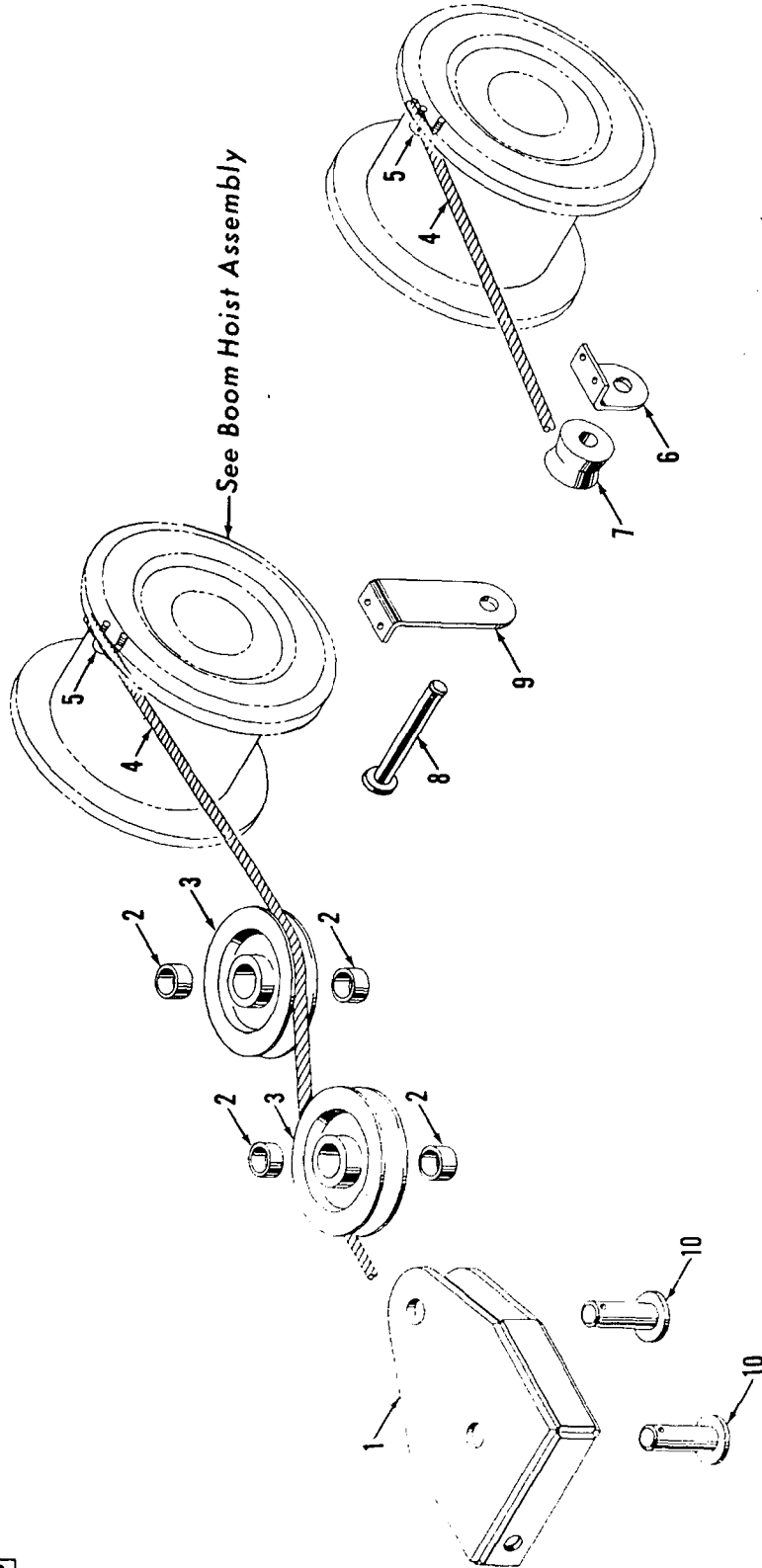


MASTER

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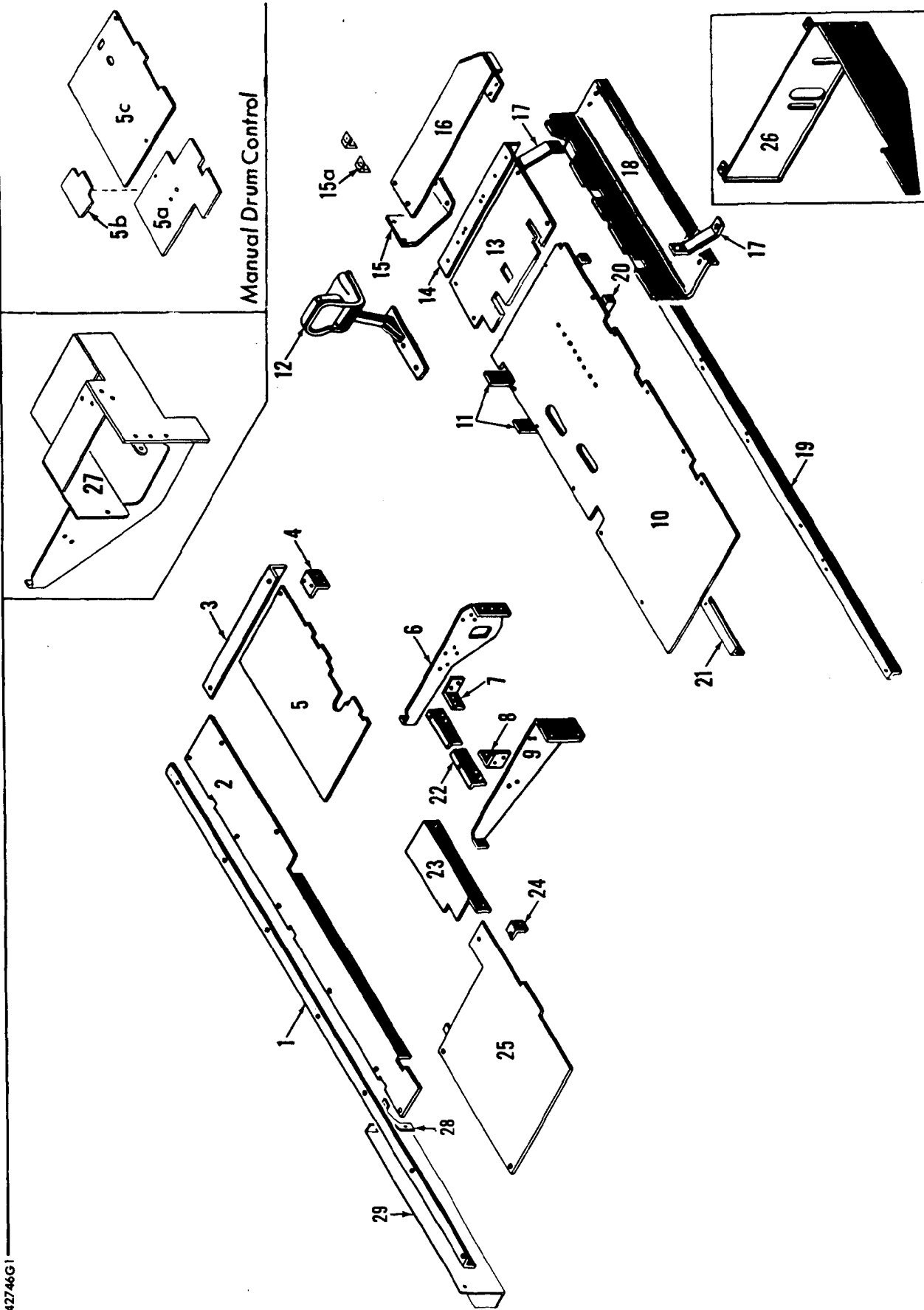


ILLUST. No. 42405-B-2

MATERIAL LIST ON BACK

COUNTERWEIGHT HANDLING

MASTER



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

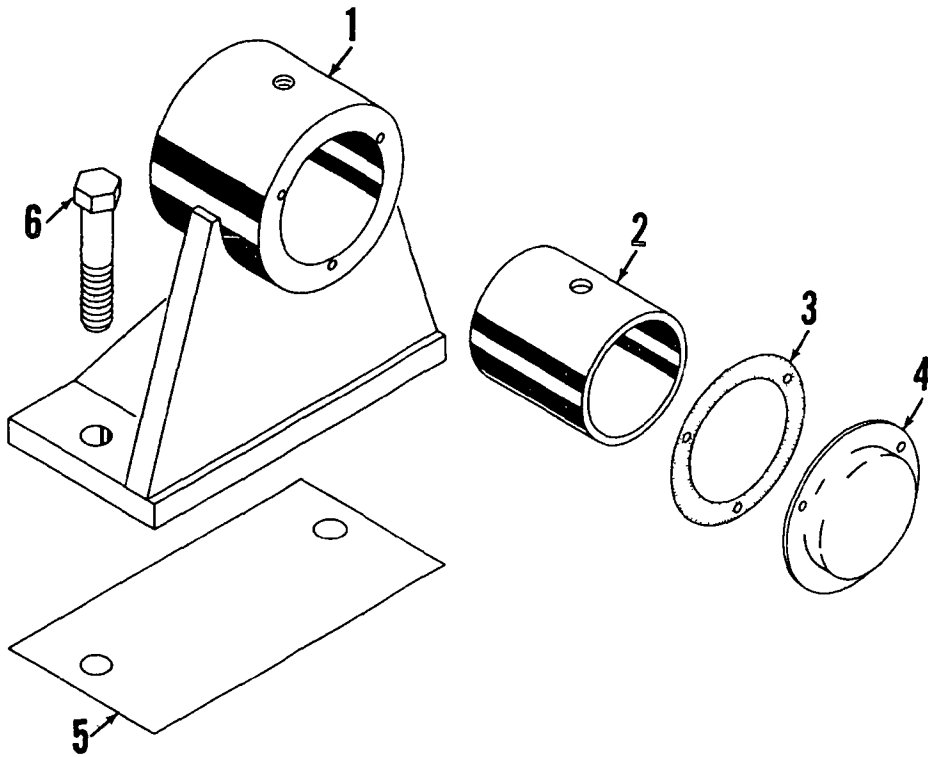
| DESCRIPTION   | PUBLICATION | REV | START DATE | END DATE | GROUP |
|---|-------------|-----|------------|----------|-------|
| Boom Hoist Auxiliary Brake                              | 43054       | D1  | 04/18/63   | 10/08/65 | B0210 |
| Boom Hoist Control, Independent                         | 42106       | C1  | 04/22/59   | 07/12/67 | B0204 |
| Boom Hoist Control, Independent                         | 42106       | E2  | 04/22/59   | 02/01/73 | B0204 |
| Boom Hoist Drive Shaft, Independent                     | 41933       | P1  | 10/24/60   | 11/14/89 | B0207 |
| Boom Hoist, Independent                                 | 41482       | I1  | 05/09/55   | 04/30/68 | B0202 |
| Drum Brake - Front                                      | 42622       | A1  | 12/28/60   |          | B0603 |
| Drum Brake - Front                                      | 42623       | E1  | 12/28/60   | 04/01/77 | B0603 |
| Drum Brake Booster/Parking Brake                        | 41719       | E1  | 03/17/55   | 12/17/74 | B0604 |
| Drum Shaft - Front                                      | 22596       | A   | 09/03/52   | 10/08/81 | B0601 |
| Drum Shaft - Front                                      | 42348       | H1  | 03/22/60   | 07/03/74 | B0601 |
| Drum Shaft - Front                                      | 42348       | D2  | 01/07/59   | 07/03/74 | B0601 |
| Foot Pedals   | 24873       | C1  | 10/30/62   | 09/19/73 | B1202 |
| Hand Levers   | 32739       | A1  | 02/06/63   |          | B1201 |
| Independent Swing Control                               | 41609       | F1  | 08/06/62   | 01/13/84 | B0403 |
| Independent Swing Guards & Lubrication Piping           | 31574       | C1  | 04/16/54   | 11/03/72 | B0405 |
| Independent Swing Guards & Lubrication Piping           | 31574       | C2  | 04/16/54   | 11/03/72 | B0405 |
| Independent Swing Outboard Bearing                      | 23806       | A1  | 06/18/58   | 05/23/85 | B0406 |
| Independent Swing Shaft, Horizontal                     | 42866       | B1  | 01/25/62   | 02/13/78 | B0401 |
| Independent Swing Shaft, Horizontal                     | 42866       | C2  | 01/25/62   | 07/13/78 | B0401 |
| Independent Swing Shaft, Vertical                       | 23439       | D1  | 07/11/56   | 04/12/85 | B0402 |
| Lubrication Pump & Piping (Sump)                        | 33242       | D1  | 04/05/65   | 05/20/77 | B1401 |
| Lubrication Pump & Piping (Sump)                        | 43307       | F1  | 10/22/65   | 04/13/70 | B1401 |
| Main Drive Shaft  | 43132       | F1  | 08/19/63   | 09/17/76 | B1301 |
| Main Drive Shaft  | 43132       | F2  | 09/19/63   | 05/06/74 | B1301 |
| Main Drive Shaft  | 43132       | C3  | 08/09/63   | 07/13/78 | B1301 |
| Main Drive Shaft Control                                | 32340       | D1  | 08/15/60   | 03/02/84 | B1302 |
| Main Drive Shaft Control                                | 42565       | C1  | 06/28/60   | 02/18/75 | B1302 |
| Slide Pinion Control                                    | 42702       | A1  | 08/22/61   | 08/31/71 | B1602 |
| Slide Pinion Shaft (Intermediate Travel or Swing Shaft) | 90467       | C1  | 04/22/64   | 04/18/72 | B1601 |
| Swing Brake Control                                     | 42658       | E1  | 11/15/63   | 03/19/79 | B1802 |
| Swing Lock Control                                      | 40341       | G1  | 11/20/40   | 12/26/69 | B1701 |
| Swing Shaft   | 22880       | J1  | 01/26/54   | 04/12/85 | B1901 |

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23806 A-1

ILLUST No 23806-A-1

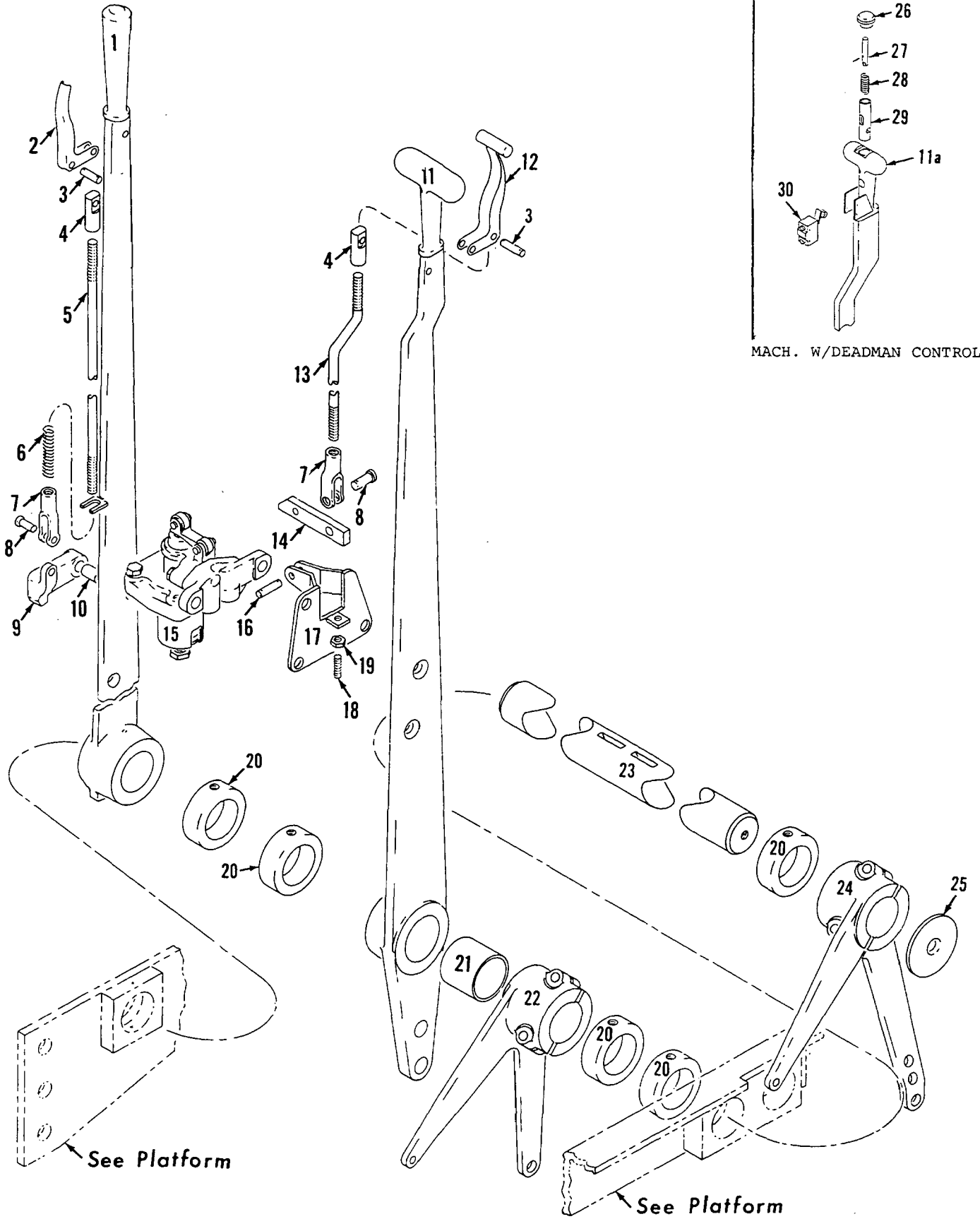
MATERIAL LIST ON BACK

OUTBOARD BEARING

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MACH. W/DEADMAN CONTROL

See Platform

See Platform

HAND LEVERS

MATERIAL LIST ON BACK

32739A1

32739A1

CPT

|               |        |                         |
|---------------|--------|-------------------------|
| 41482-1 Cont. | REV. I | MODEL 3000 - 3900 INCL. |
|---------------|--------|-------------------------|

IND. BOOM HOIST

| REF. NO.   | PART NUMBER | QUANTITY REQUIRED | DESCRIPTION OF PART                      | VENDORS PART NO. |
|--|-------------|-------------------|--|------------------|
| 46   | 22317       | 1                 | ADAPTER w/capscrews and gr. fitting      |                  |
| 47   | 622507      | 2                 | SEAL, Oil                                |                  |
| 48   | 22344       | 1                 | ADAPTER                                  |                  |
| 49   | 19300       | 1                 | SPACER                                   |                  |
| 50   | 19301       | 1                 | SLINGER, Oil                             |                  |
| 51   | 22702       | 1                 | PLATE, Cover w/capscrews and lockwashers |                  |
| 52   | 17651       | 1                 | GASKET                                   |                  |
| 53   | 12782       | 1                 | COVER w/capscrews and lockwashers        |                  |
| 57   | 596666      | 1                 | GASKET, "O" Ring                         |                  |
| 58   | 596744      | 1                 | GASKET, "O" Ring                         |                  |
| 59   | 18427       | 1                 | PLATE, Lubricating instructions          |                  |
| 62   | 12387       | 1                 | WEDGE (7/8" cable)                       |                  |
| 62   | 12388       | 1                 | WEDGE (1" cable)                         |                  |
| 62   | 1171        | 1                 | WEDGE (3/4" cable)                       |                  |
| <u>FOR M-3000-3100-3400-3900A W/AIR CONTROL SWING CLUTCHES</u> |             |                   |  |                  |
| 55   | 257195      | 12                | BOLT, Coupling                           |                  |
| 60   | 257170      | 3                 | BOLT, Coupling                           |                  |
| 61   | 257177      | 1                 | BOLT, Coupling                           |                  |
| <u>FOR M-3600-3900B W/AIR CONTROL SWING CLUTCHES</u>           |             |                   |  |                  |
| 55   | 257195      | 16                | BOLT, Coupling                           |                  |
| <u>FOR MACHINES W/MANUAL CONTROL SWING CLUTCHES</u>            |             |                   |  |                  |
| 55   | 257195      | 15                | BOLT, Coupling                           |                  |
| 60   | 257160      | 1                 | BOLT, Coupling                           |                  |

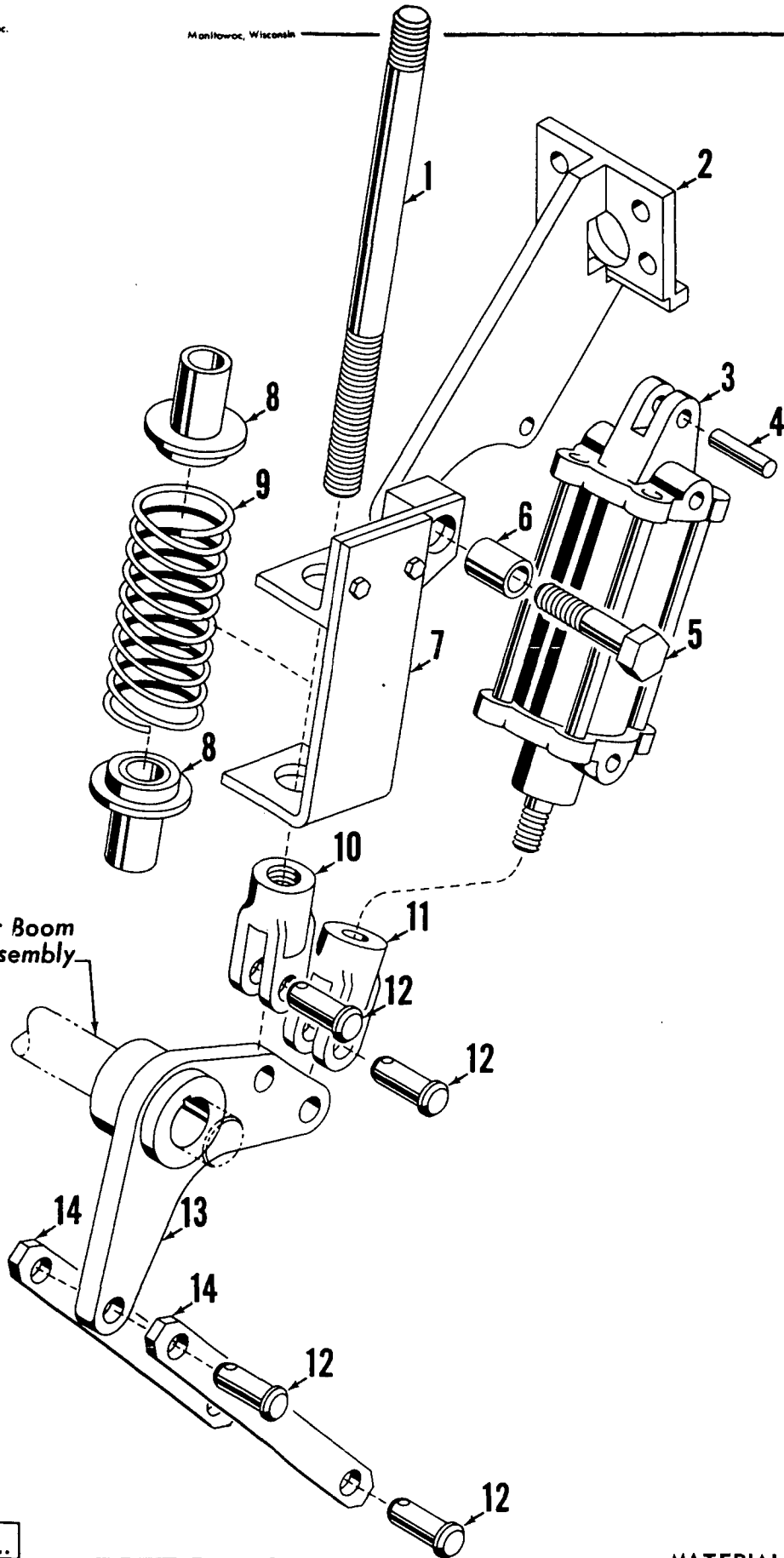
Run as a Front

41482 I

PLEASE GIVE MACHINE S/N W/ORDER

|        |           |
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| REV. I | 41482 - 1 |
|--------|-----------|

MASTER



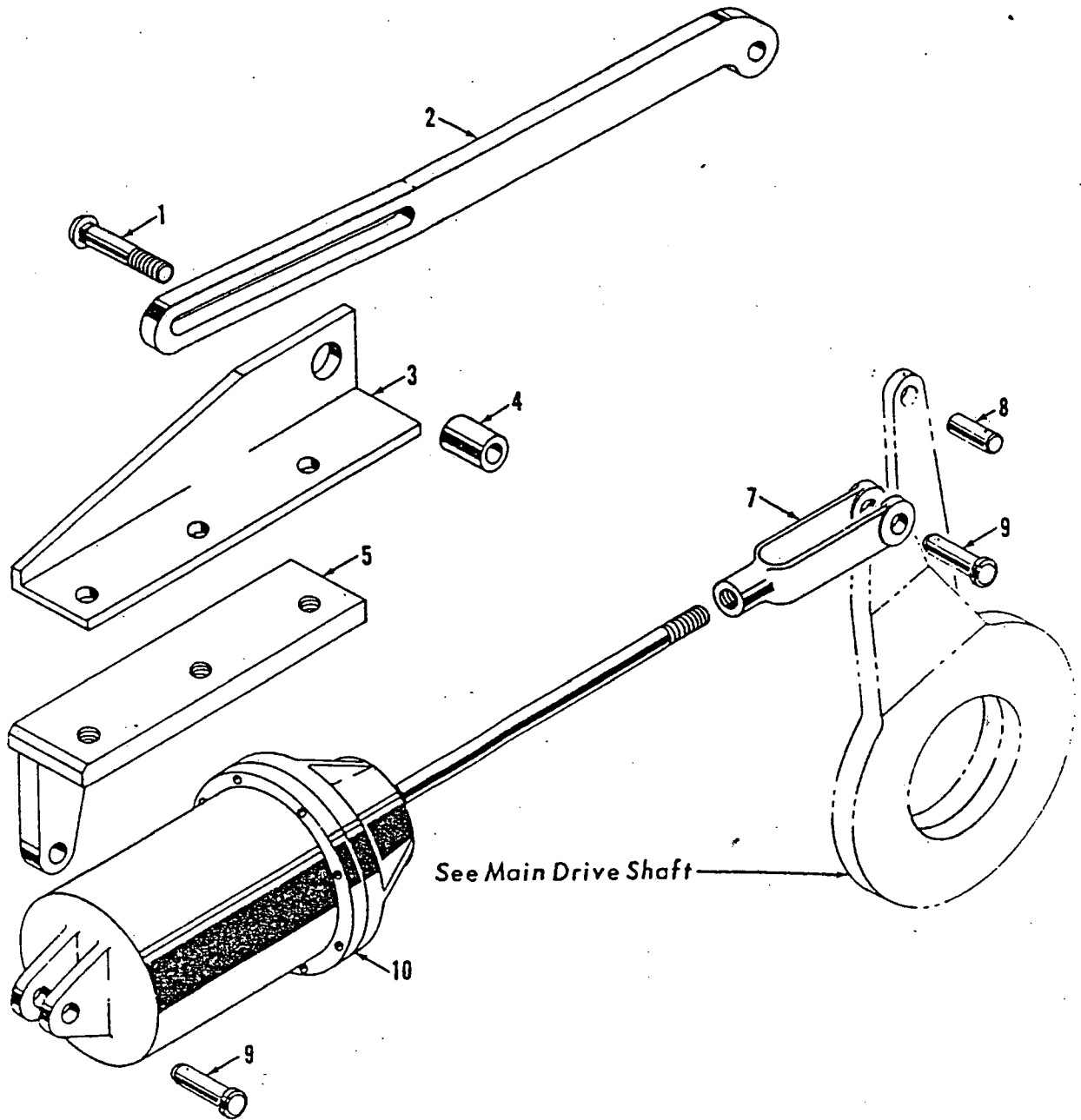
See Independent Boom Hoist Control Assembly

42106 A1

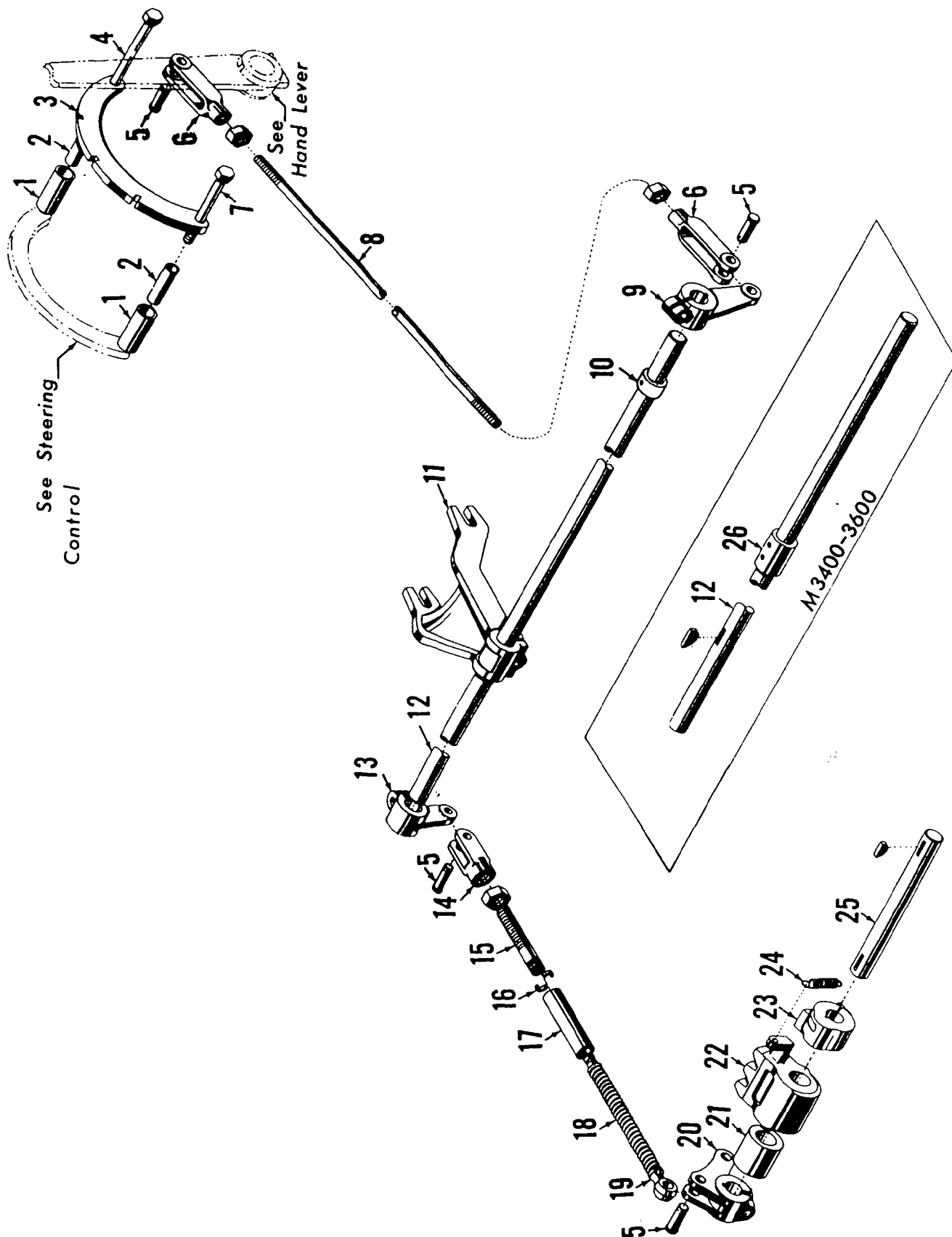
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12702 A1

42702 A1

|               |           |   |
|---------------|-----------|---|
| 43132-1 cont. | REV.<br>F | MODEL<br>3000W-3100-3400-3600-3900-3900T-3900W-4000-4000W |
|---------------|-----------|---|

MAIN DRIVE SHAFT  
(VICON)

| REF. NO.  | PART NUMBER | QUANTITY REQUIRED | DESCRIPTION OF PART  | VENDORS PART NO. |
|---|-------------|-------------------|--|------------------|
| 34  | 21733       | 1                 | COVER, Bearing w/capscrews, hex nuts, lockwashers and gr. fitting            |                  |
|   | 257202      | 2                 | BOLT, Coupling   |                  |
| 35  | 22482       | 1                 | HOUSING, Bearing w/capscrews, hex nuts and lockwashers                       |                  |
| 36  | 224909      | 1                 | BEARING, Roller  |                  |
| 37  | 15535       | 1 set             | SHIM (1/16" set)   |                  |
| 38  | 21734       | 1                 | COVER, Bearing w/capscrews, hex nuts, lockwashers and gr. fitting            |                  |
|   | 257202      | 2                 | BOLT, Coupling   |                  |
| 39  | 15548       | 1                 | SPACER   |                  |
| 40  | 15551       | 1                 | NUT, Split w/capscrews and elastic stop nuts                                 |                  |
| 41  | 73236       | 1                 | SPACER   |                  |
| 45  | 224323      | 1                 | BEARING, Ball  |                  |
| 46  | 20163       | 1                 | HOUSING, Bearing w/gr. fitting (M3000-3600 incl.)                            |                  |
| 46  | 23697       | 1                 | HOUSING, Bearing w/gr. fitting (M3900-3900W-3900T-4000-4000W)                |                  |
| 47  | 11535       | 1                 | NUT, Lock  |                  |
| 48  | 11536       | 1                 | PLATE, Locking w/capscrews (See Note 2)                                      |                  |
| 49  | 10526       | 1                 | COVER, Bearing w/capscrews and lockwashers (See Note 2)                      |                  |
| 50  | 71084       | 2                 | BOLT, Coupling w/elastic stop nut (Housing No. 23697-M3900-3900T-4000-4000W) |                  |
| 50  | 12020       | 1                 | BOLT, Coupling w/hex nuts (Housing No. 23697-M3900W)                         |                  |
| 50  | 71084       | 1                 | BOLT, Coupling w/elastic stop nut (Housing No. 23697-M3900W)                 |                  |
| 50  | 16786       | 2                 | BOLT, Coupling w/elastic stop nut (Housing No. 20163)                        |                  |
| 55  | 596934      | 1                 | RING, Spirolox   |                  |
| <u>THE FOLLOWING PARTS ARE FOR CRANE, DRAG, CLAM TRENCH HOE ONLY. FOR SHOVEL CLUTCH SEE SH. NO. 3</u> |             |                   |  |                  |
| 42  | 18872       | 1                 | GUARD, Spline  |                  |
| 43  | 18731       | 1                 | SPACER   |                  |
| 44  | 10525       | 1                 | COVER, Bearing w/capscrews and lockwashers                                   |                  |
| <u>FOR INDEPENDENT SWING (NOT INCL. M3900T)</u>   |             |                   |  |                  |
| 51  | 24718       | 1                 | SPROCKET, Drive (bolt to outer sprocket) (46T.)                              |                  |
| 52  | 256245      | 6                 | BOLT, Coupling   |                  |
|   | 548367      | 6                 | NUT, Elastic Stop  |                  |
| 51  | 91684       | 1                 | SPROCKET, Drive (bolt to outer sprocket) (71T.)                              |                  |
| 52  | 257247      | 6                 | BOLT, Coupling   |                  |
|   | 548367      | 6                 | NUT, Hex   |                  |
| <u>FOR CHAIN DRIVEN IND. BOOM HOIST (NOT INCL. M3900T)</u>  |             |                   |  |                  |
| 51  | 90618       | 1                 | SPROCKET, Drive (1-1/2"P. - 2 strand 59T) (bolt to outer sprocket)           |                  |
| 52  | 257247      | 6                 | BOLT, Coupling   |                  |
|   | 548367      | 6                 | NUT, Elastic stop  |                  |
| 51  | 90637       | 1                 | SPROCKET, Drive (1-1/4"P. - 2 strand 45T) (bolt to outer sprocket)           |                  |
| 52  | 257247      | 6                 | BOLT, Coupling   |                  |
|   | 548367      | 6                 | NUT, Elastic Stop  |                  |

|           |               |
|-----------|---------------|
| REV.<br>F | 43132-1 cont. |
|-----------|---------------|

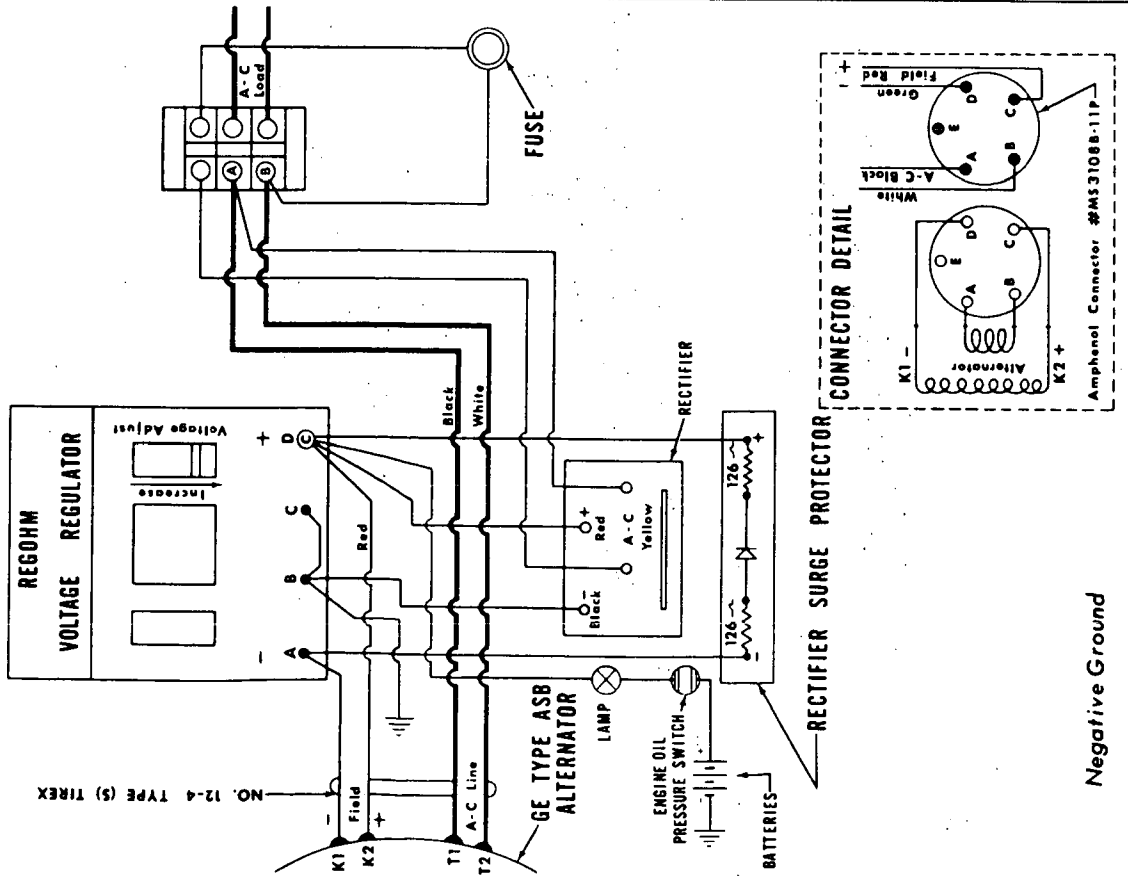
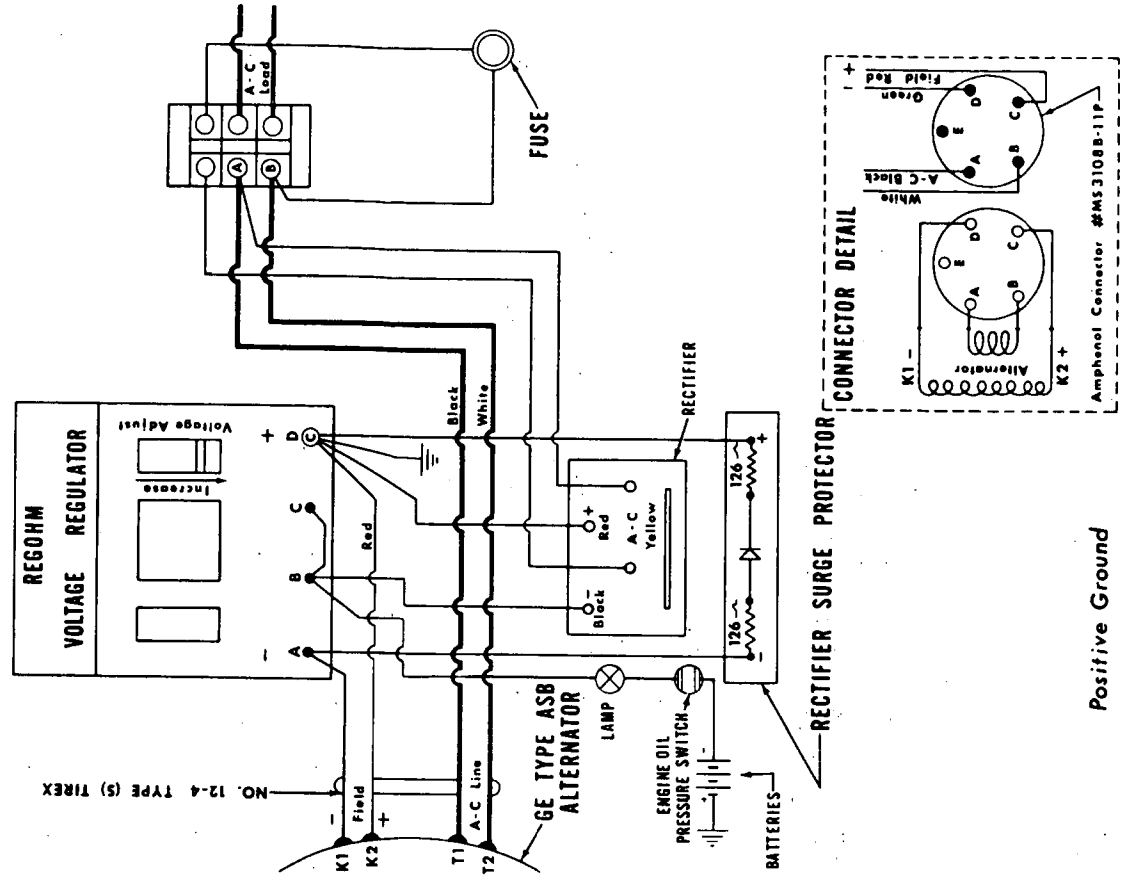
PLEASE GIVE MACHINE S/N W/ORDER

CPT  
Run as a Front  
43132 Fl Cont -1

GROUP C - Air Components & Electrical

MASTER

33579A1



|               |           |                                 |
|---------------|-----------|---------------------------------|
| 42878 -1Cont. | REV.<br>F | MODEL<br>Vicon 3000-4000W Incl. |
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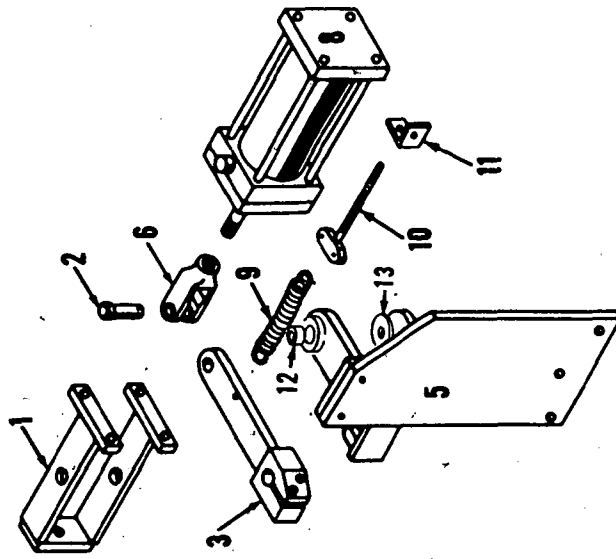
VALVE BOARD

| REF. NO.  | PART NUMBER | QUANTITY REQUIRED | DESCRIPTION OF PART   | VENDORS PART NO. |
|---|-------------|-------------------|---|------------------|
| 42  | 667227      | 2                 | STRAP, Pipe   |                  |
| 43  | 73366       | 1                 | BRACKET W/capscrews, hex nuts and lockwashers (W/filter and injector)   |                  |
| 44  | 73368       | 1                 | CLAMP W/capscrews, hex nuts and lockwashers   |                  |
| 45  | 427069      | 1                 | <p><u>INSTALLATION PRIOR TO DESIGN CHANGE OF 6/12/67</u></p> <p>FILTER AND LUBRICATION</p> <p>NOTE: Lines to and from control valves are plastic tube. (See Sheet #0-147.)</p> <p><u>HOSE LIST FOR PRIOR INSTALLATION:</u></p> <p>15599 HOSE, Flex (6'4" long)</p> <p>15914 HOSE, Flex (4'9" long)</p> <p>3412 HOSE, Flex (10-1/2" long)</p> <p>15099 HOSE, Flex (2'0" long)</p> <p>3603 HOSE, Flex (3'6" long)</p> <p>17848 HOSE, Flex (1'2-1/2" long)</p> |                  |
| Use Sheet #0-69, 0-96, 0-117B, 0-147, 0-441 and 0-176 or 0-289, (0-290) |             |                   |   |                  |
|   |             |                   |   | REV.<br>F        |
|   |             |                   |   | 42878 - 1        |

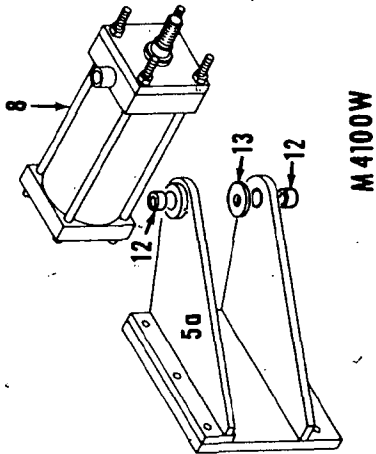
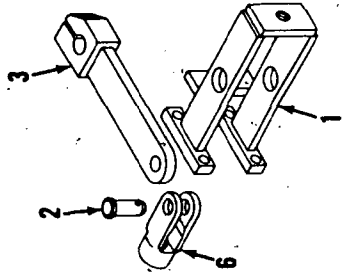
PLEASE GIVE MACHINE S/N W/ORDER

Run as Front  
42878 F1

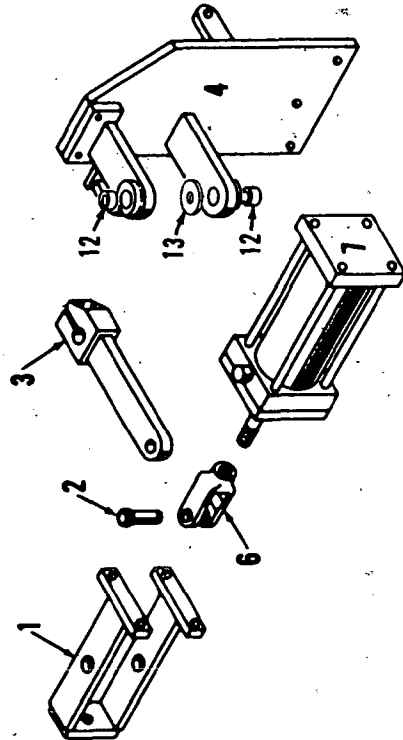
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M 3000 - 4000W INCL.



M 4100W



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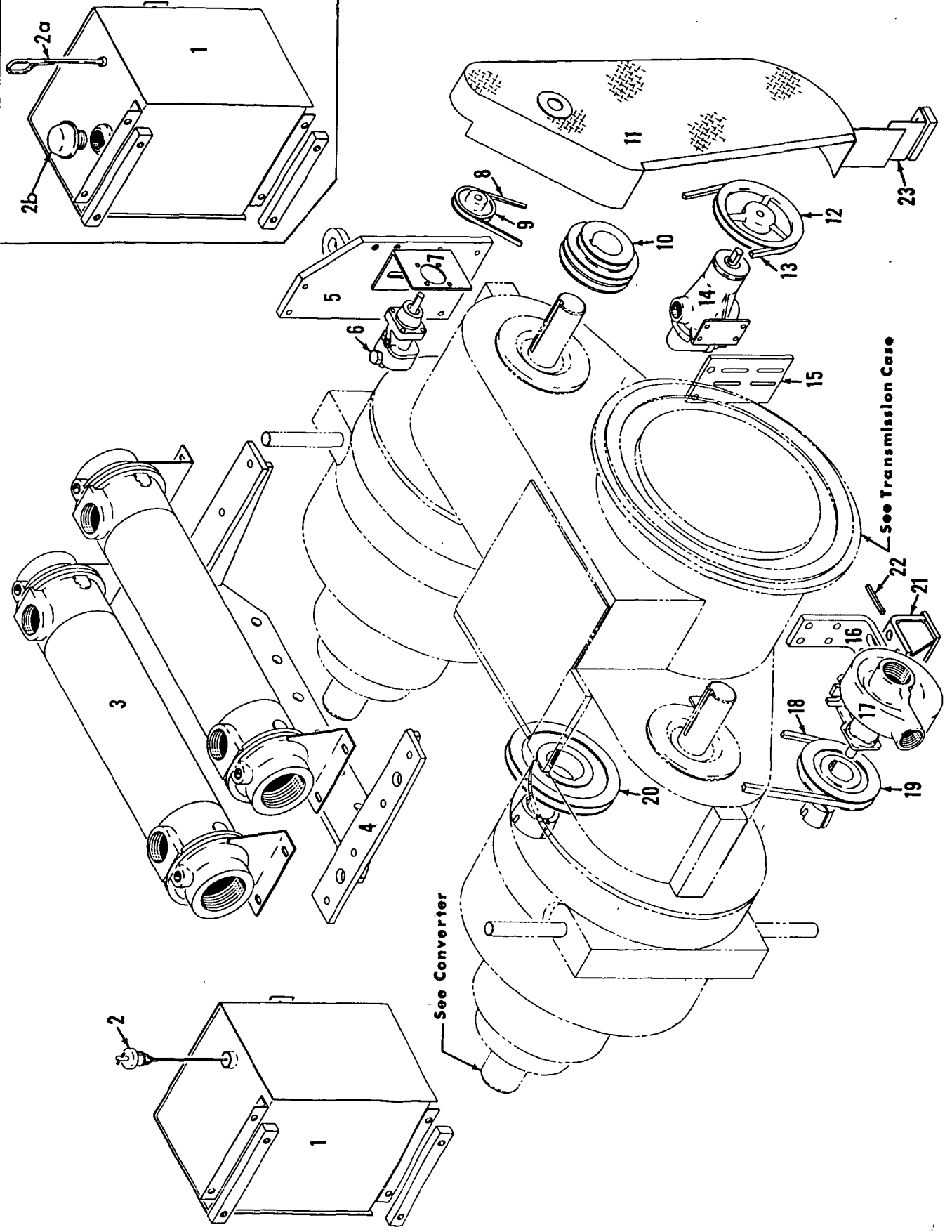
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See Transmission Case

See Converter

CONVERTER COOLING AND MOUNTING

MATERIAL LIST ON BACK

43051D1

4 1/2 3/4 5 1/2 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

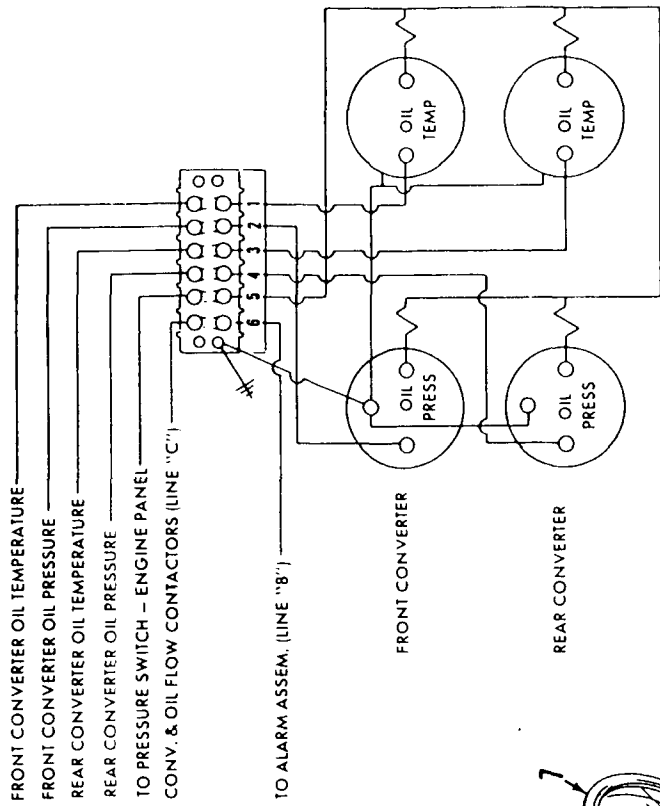
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| 43051-5Cont. | REV.<br>E | MODEL<br>3000-4000 VICON INCL. |
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LUBRICATION PIPING

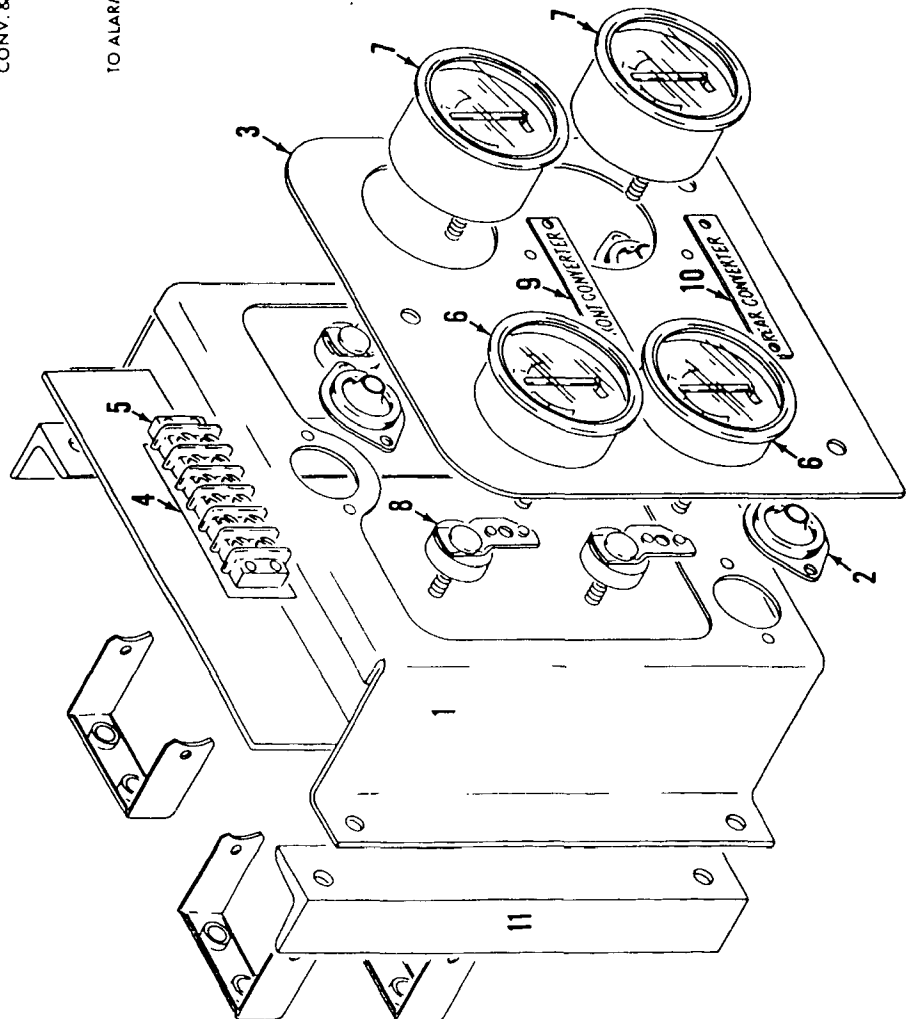
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| REF. NO. | PART NUMBER | QUANTITY REQUIRED | DESCRIPTION OF PART  | VENDORS PART NO. |
|----------|-------------|-------------------|--|------------------|
| 50       | 429555      | 1                 | MACHINES W/OUT OIL TRAP UNDER PUMP<br>UNION, 90° Swivel Adapter (1" Male NPT 1" Female NPSM) |                  |
| 51       | 571705      | 1                 | MACHINES W/OUT FORCED OIL LUBRICATION TO CONVERTERS<br>PLUG (1")                             |                  |
| 52       | 427090      | 1                 | FILTERS WITH 3/4" NPT PORTS<br>FILTER, Oil (3/4" NPT ports)                                  |                  |
| 53       | 73396       | 1                 | BRACKET W/mach. screws, hex nuts and lockwashers   |                  |
| 54       | 543740      | 1                 | NIPPLE (3/4" x 1 1/2")   |                  |
| 55       | 679304      | 1                 | TEE (3/4")   |                  |
| 56       | 288751      | 1                 | BUSHING (3/4" x 1/2")  |                  |
| 57       | 543402      | 2                 | NIPPLE, Close (1/2")   |                  |
| 58       | 406952      | 2                 | ELBOW (1/2")   |                  |
|          |             |                   | *Items 24 and 25 are not used with 3900T and 3900W   |                  |
|          |             |                   | NOTE: For machines W/out alarm system, omit Ref. #27 and one Ref. #15.                       |                  |
|          |             |                   | Use Sheet #0-147   |                  |
|          |             |                   | REV.<br>E  | 43051 - 5        |

PLEASE GIVE MACHINE S/N W/ORDER



WIRING DIAGRAM REAR VIEW  
 NEGATIVE OR POSITIVE GROUND



INSTRUMENT PANEL

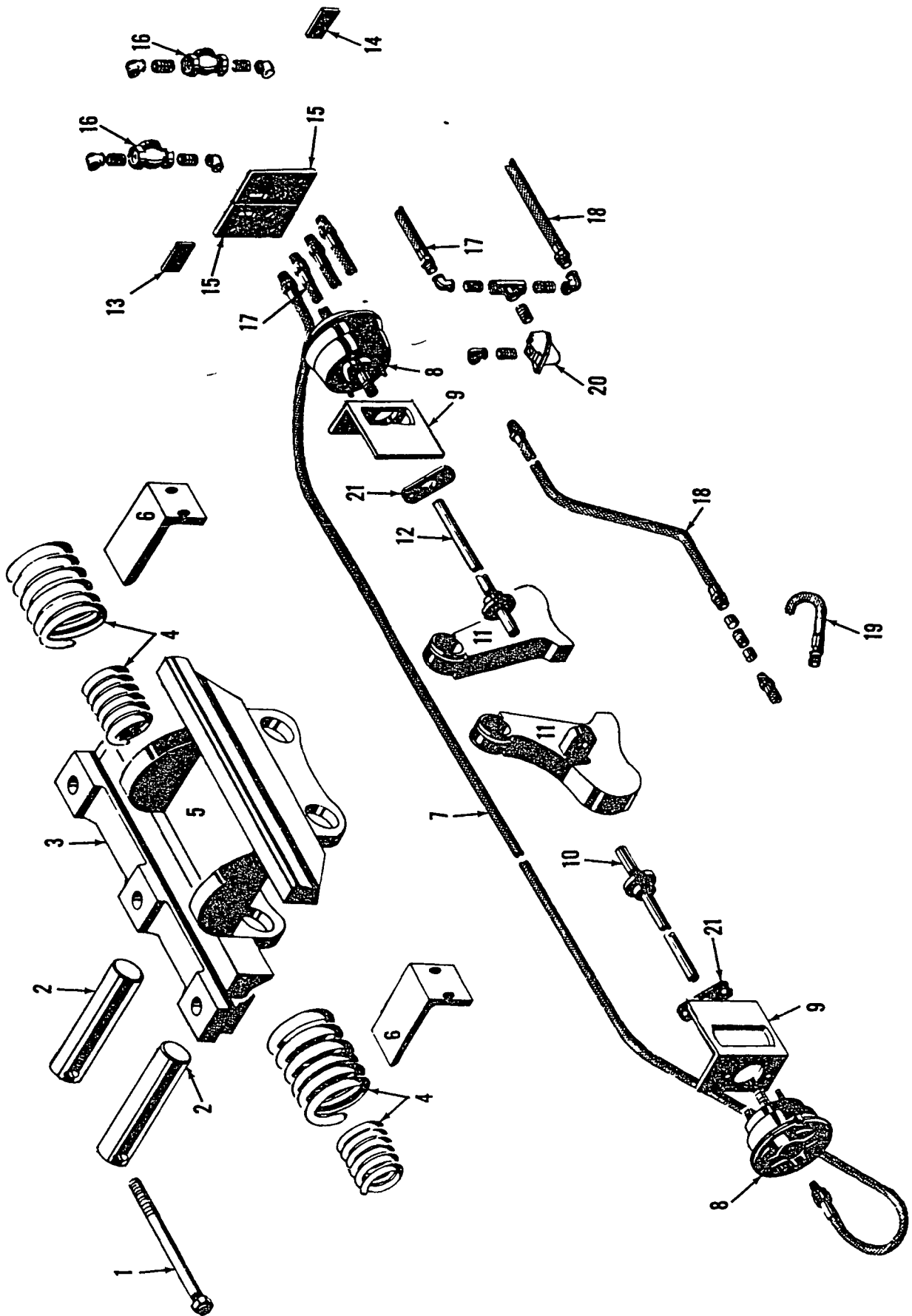
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9007 61

MASTER



31743C1

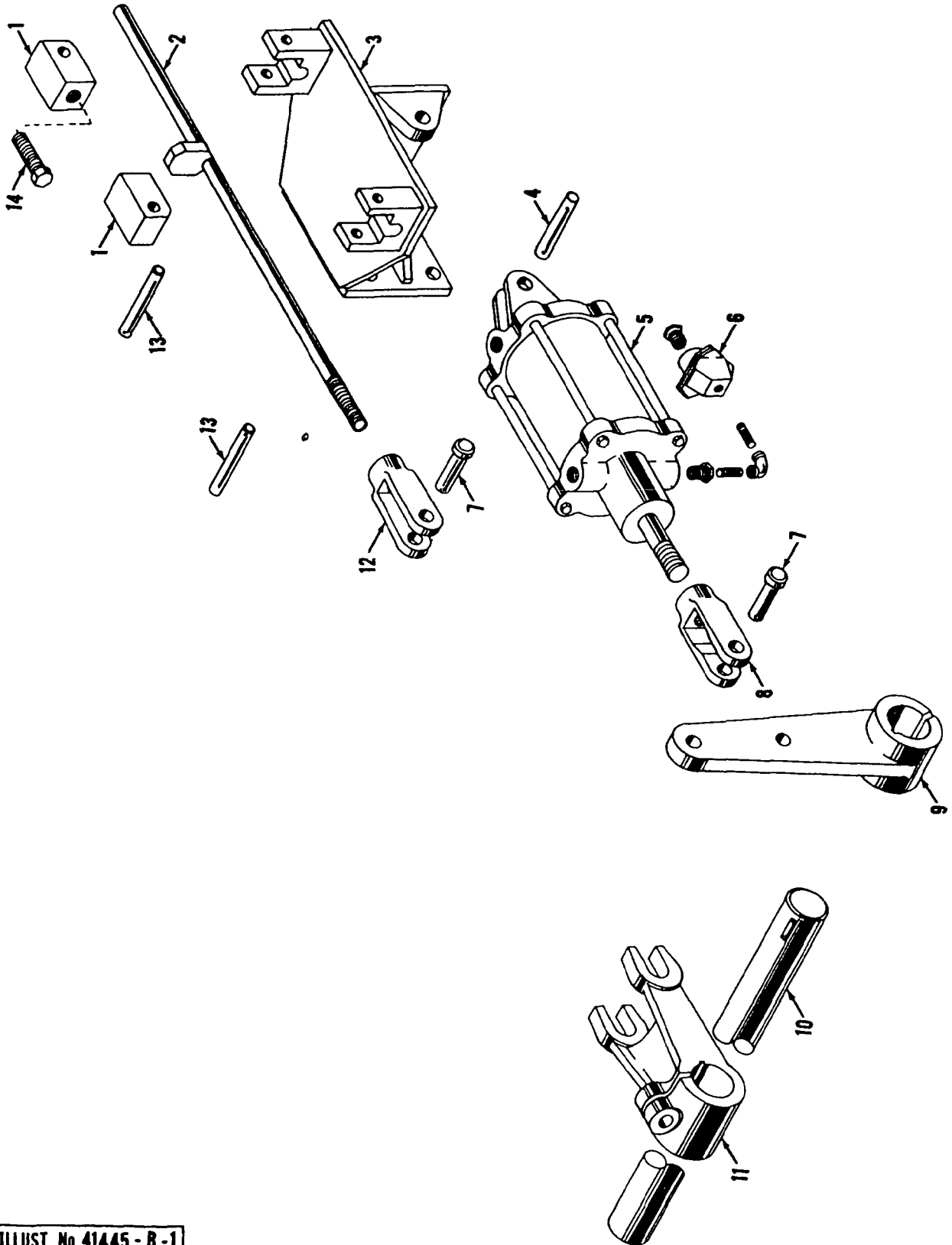
MATERIAL LIST ON BACK

TRAVEL LOCKS

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Back

ILLUST No 41445-B-1

MATERIAL LIST ON BACK

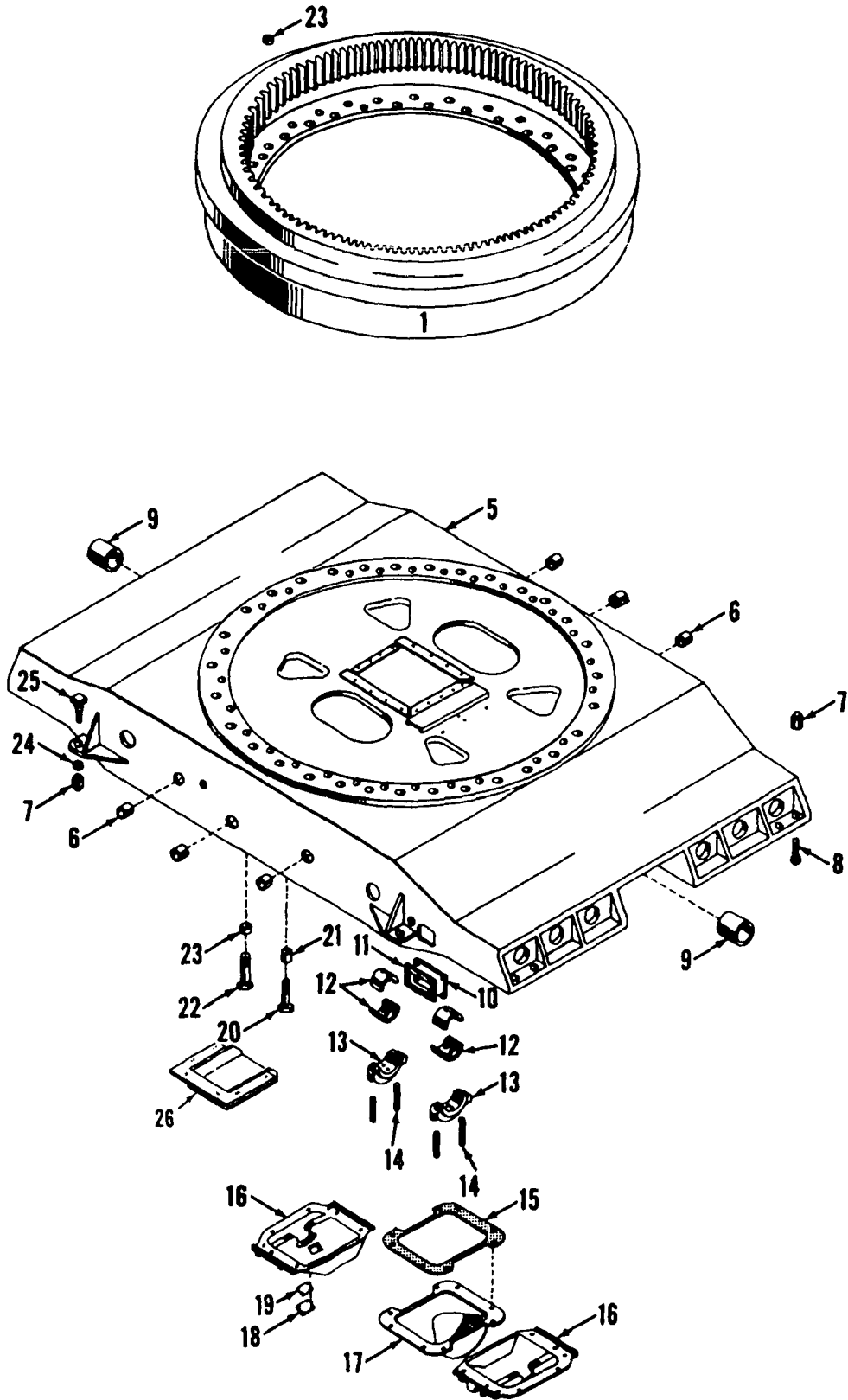
STEERING CONTROL ASSEMBLY - ROTATING BED

17 20  
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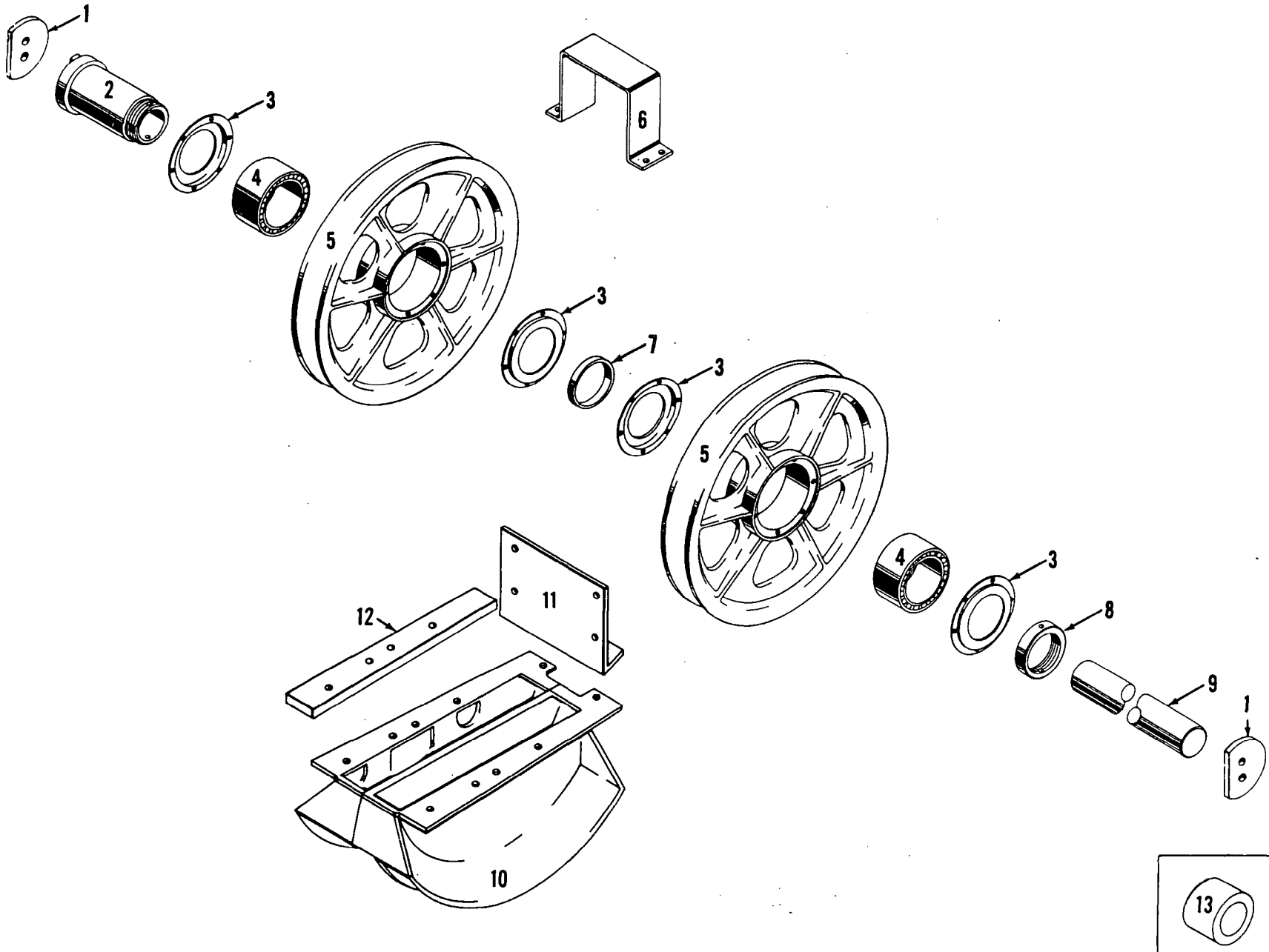
Manitowoc, Wisconsin



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MATERIAL LIST ON BACK



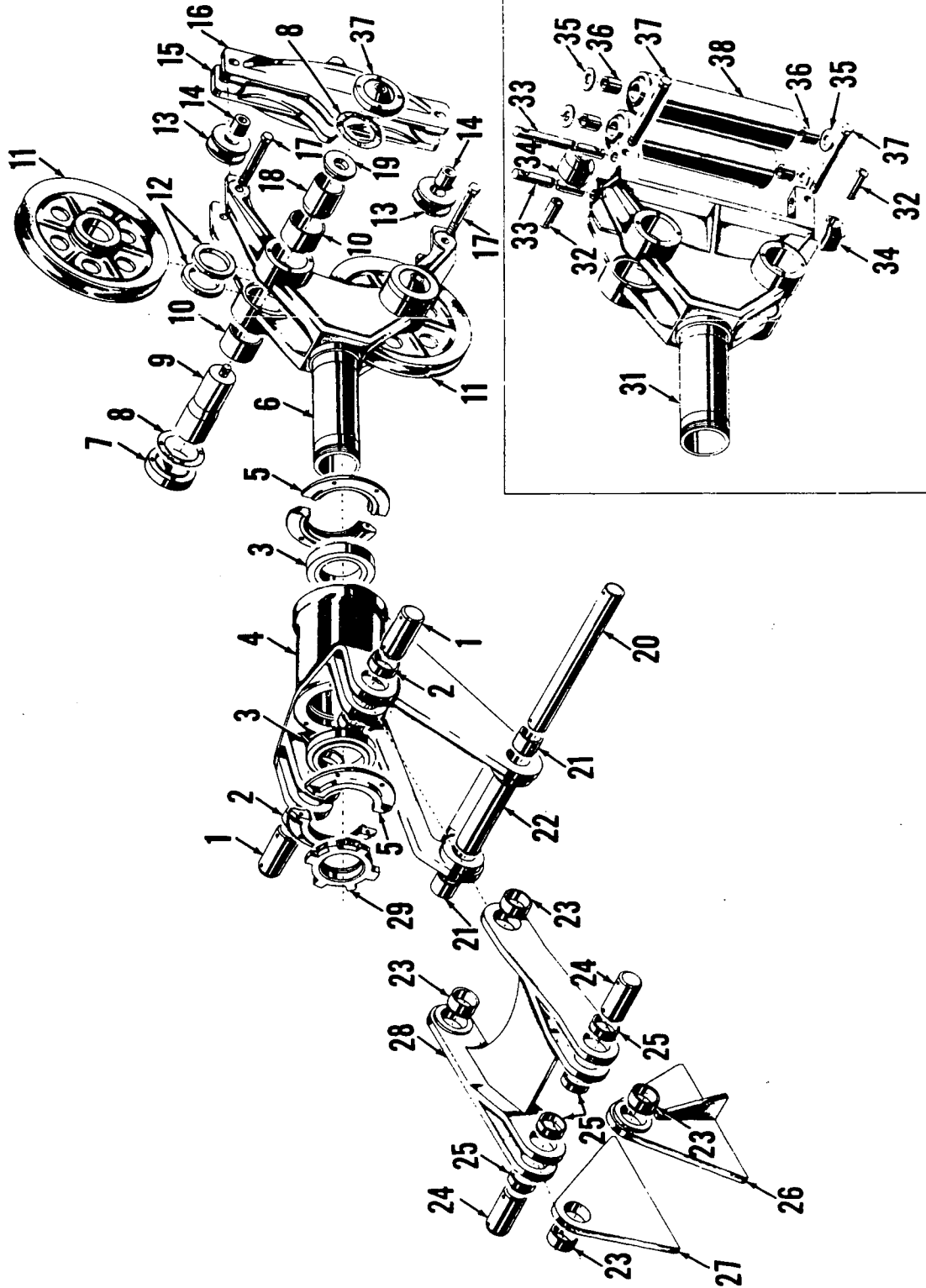
MATERIAL LIST ON BACK

UPPER BOOM POINT SHAFT

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With Guide Rollers

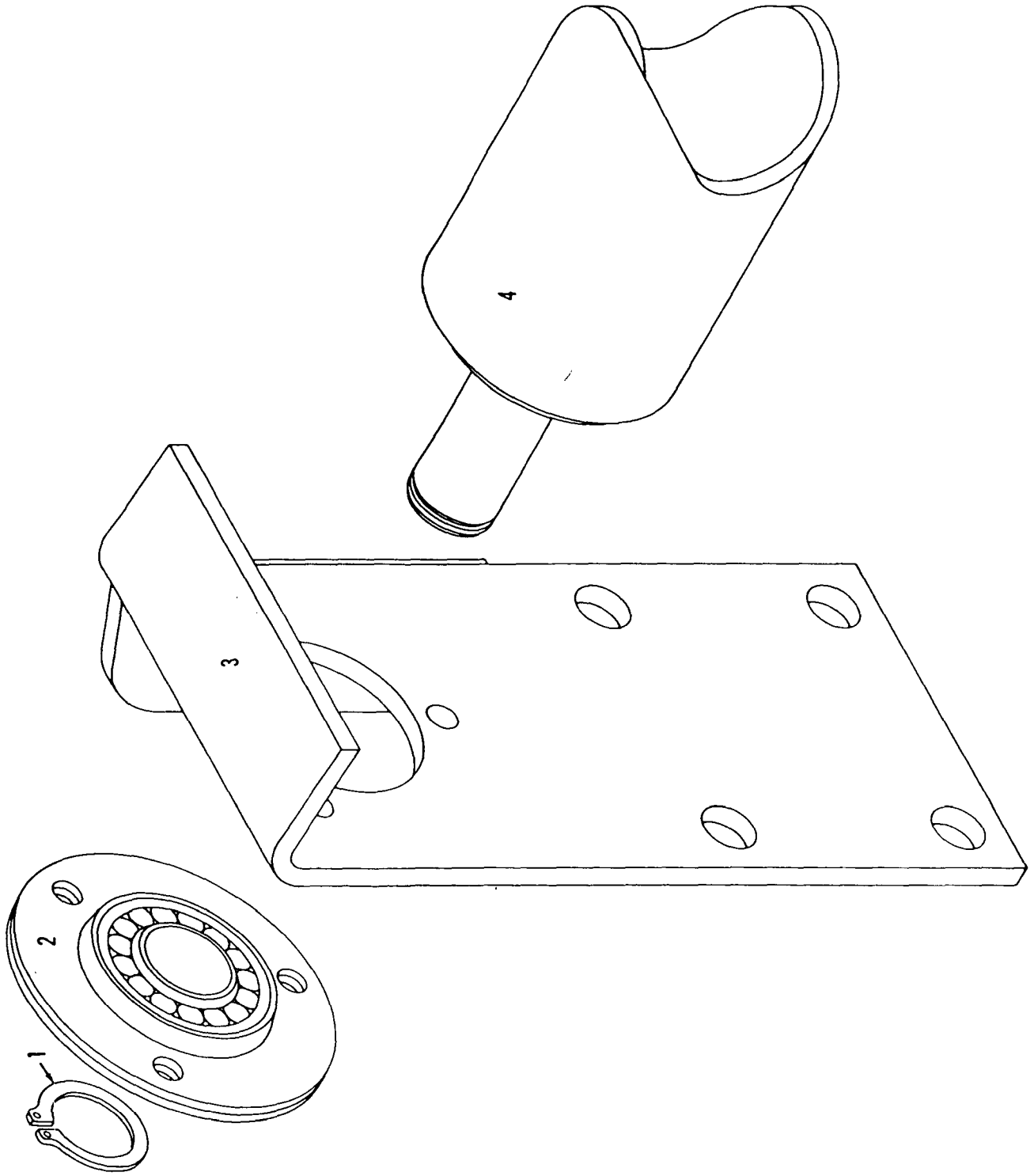
ILLUST. No. 41537-C-1

MATERIAL LIST ON BACK

FAIRLEAD



MASTER



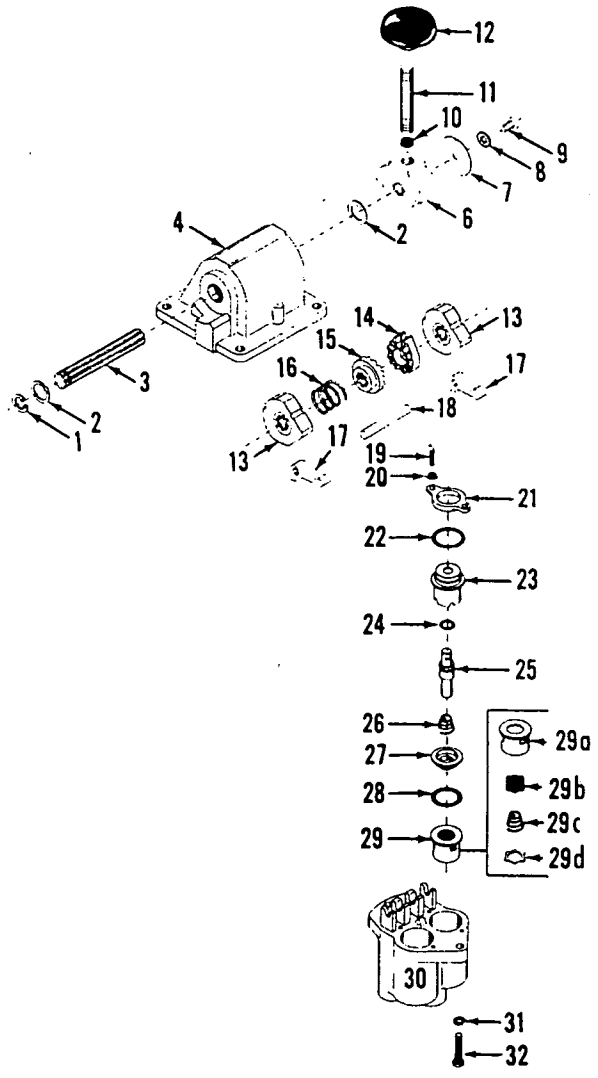
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MATERIAL LIST ON BACK

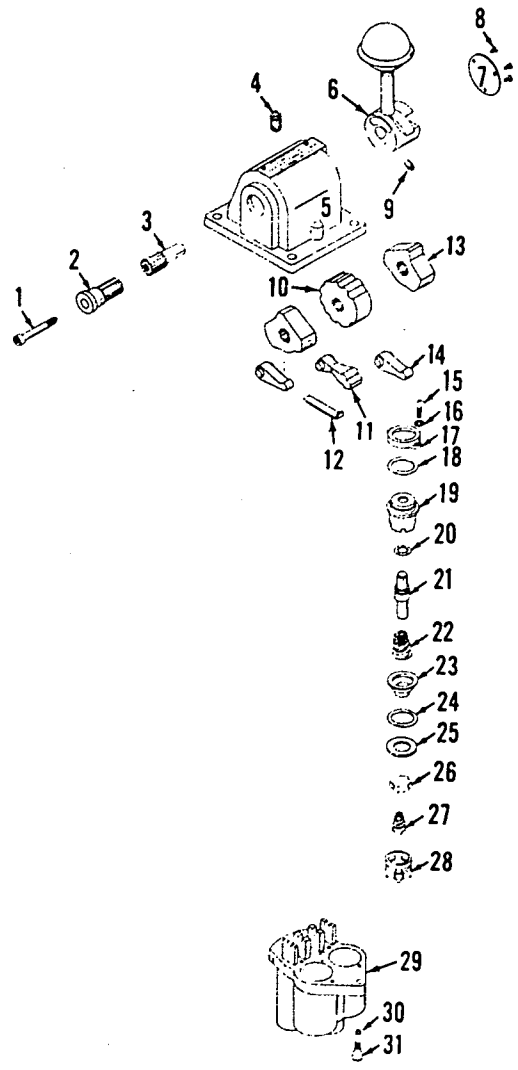
CABLE ROLLER GUIDE ASSEMBLY

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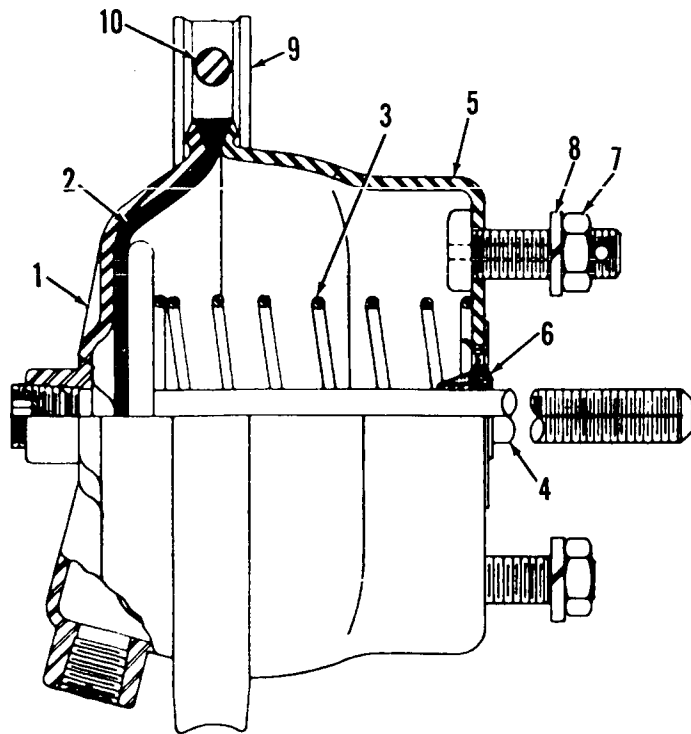
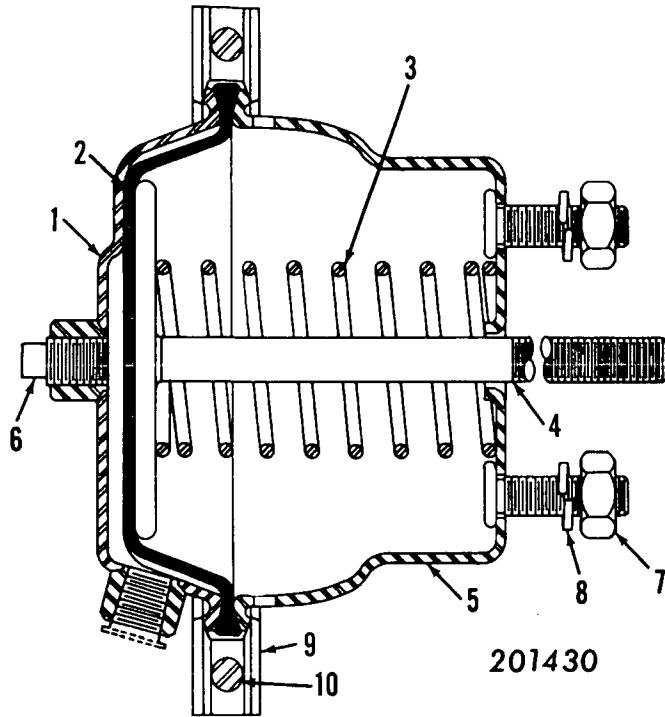
MATERIAL LIST ON BACK

CONTROL VALVE

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MASTER

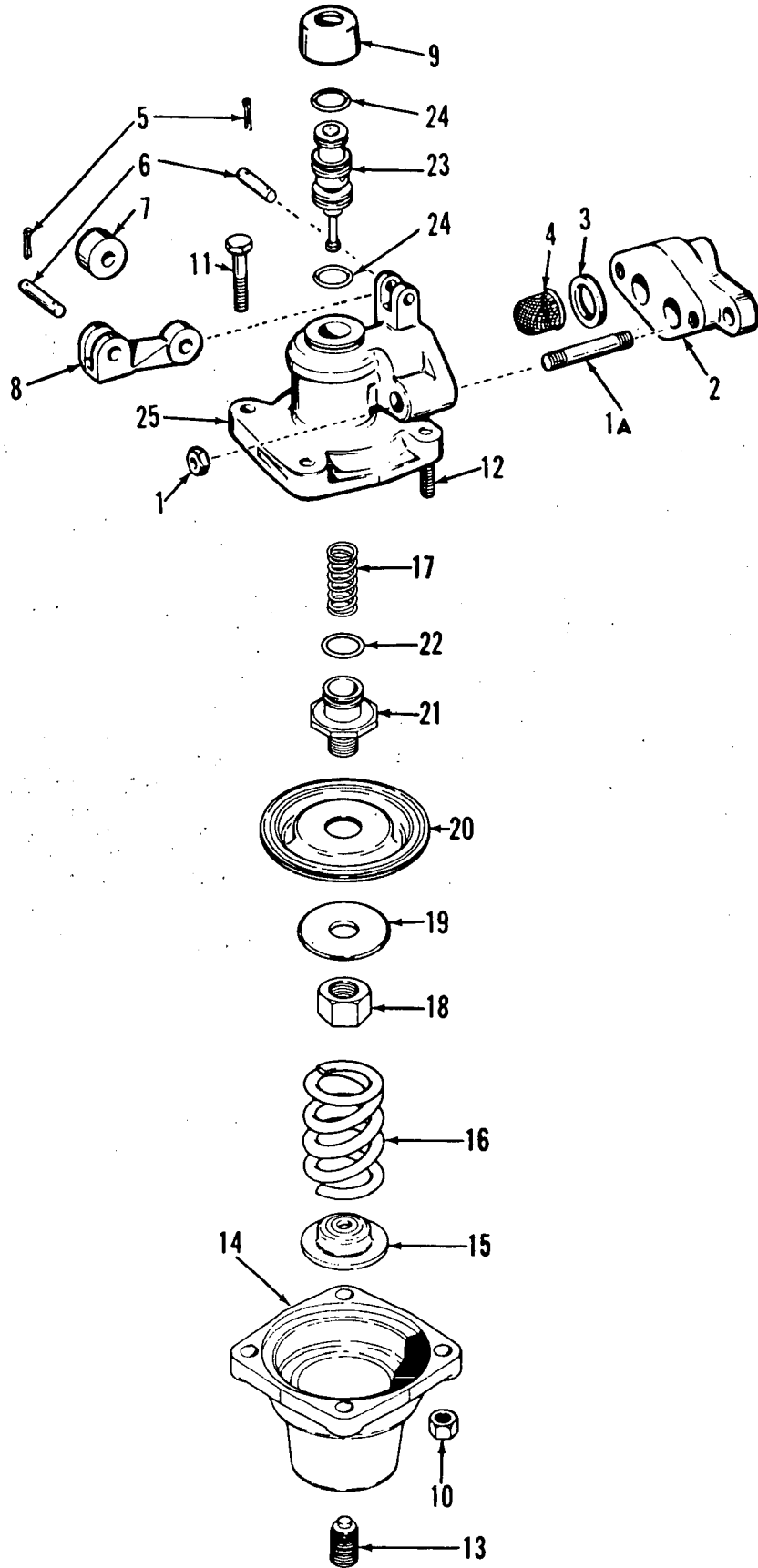
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MASTER

VALVE ASSEMBLY

0243

MATERIAL LIST ON BACK

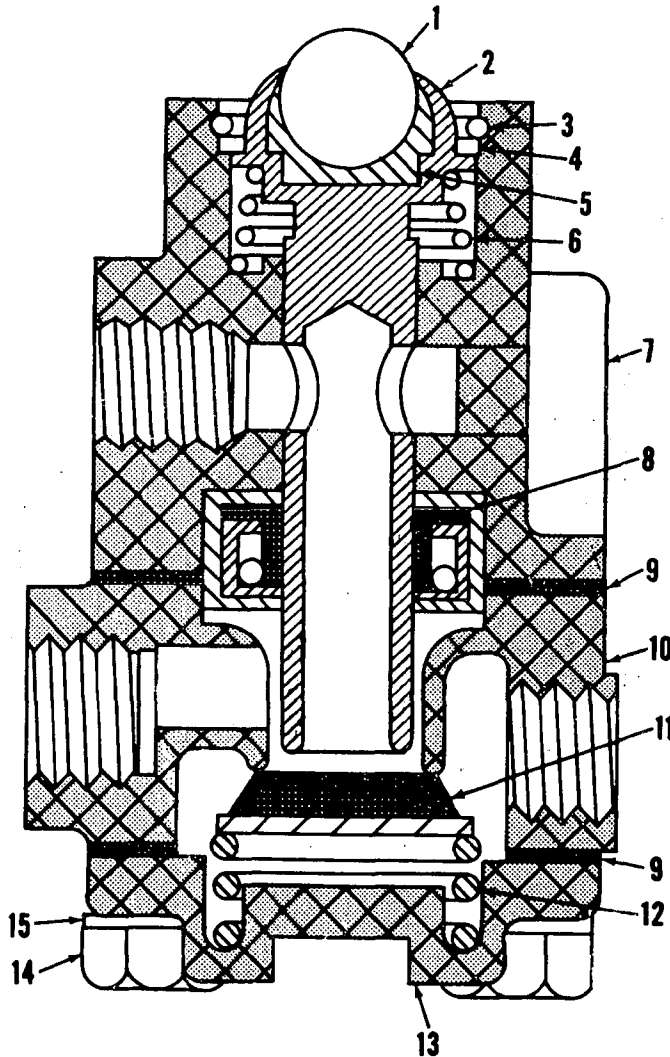
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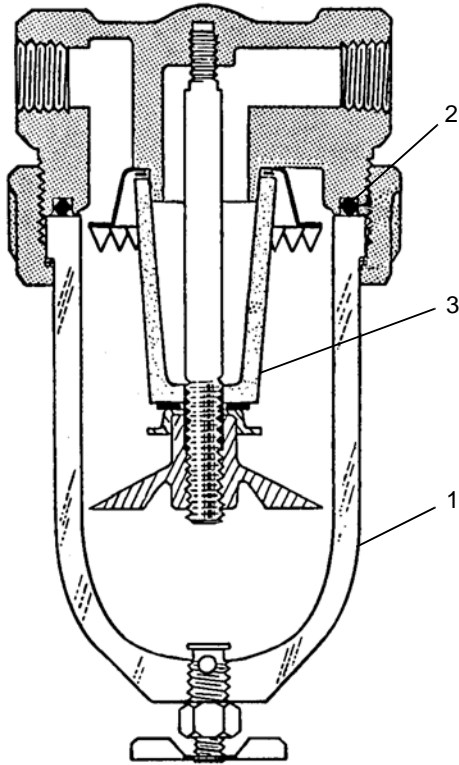
MASTER



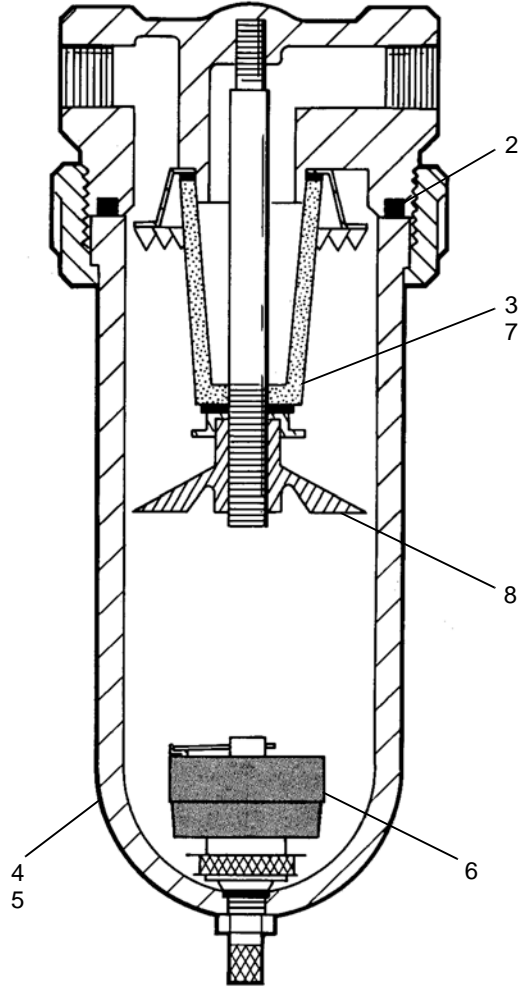
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MATERIAL LIST ON BACK



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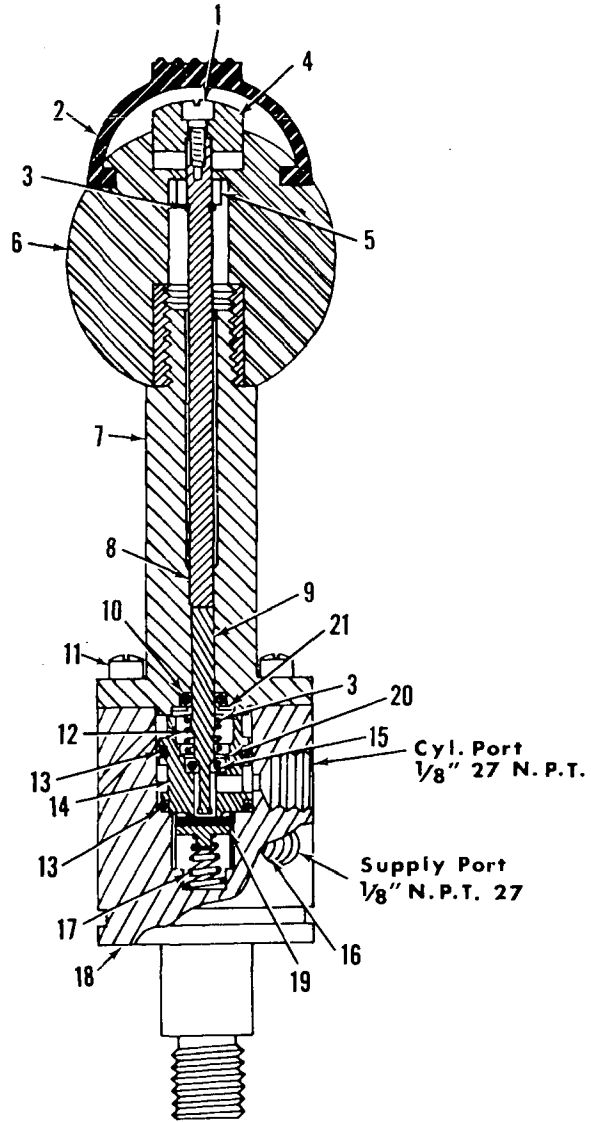
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|              |          |
|--------------|----------|
| ASSEMBLY     | REVISION |
| <b>O-289</b> | <b>F</b> |

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|              |           |  |
|--------------|-----------|--|
| 0-415-1 Cont | REV.<br>B | MODEL<br>2000-4600 Incl., 6400, 36' P.R., 60' P.R., S.C.-240 |
|--------------|-----------|--|

(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

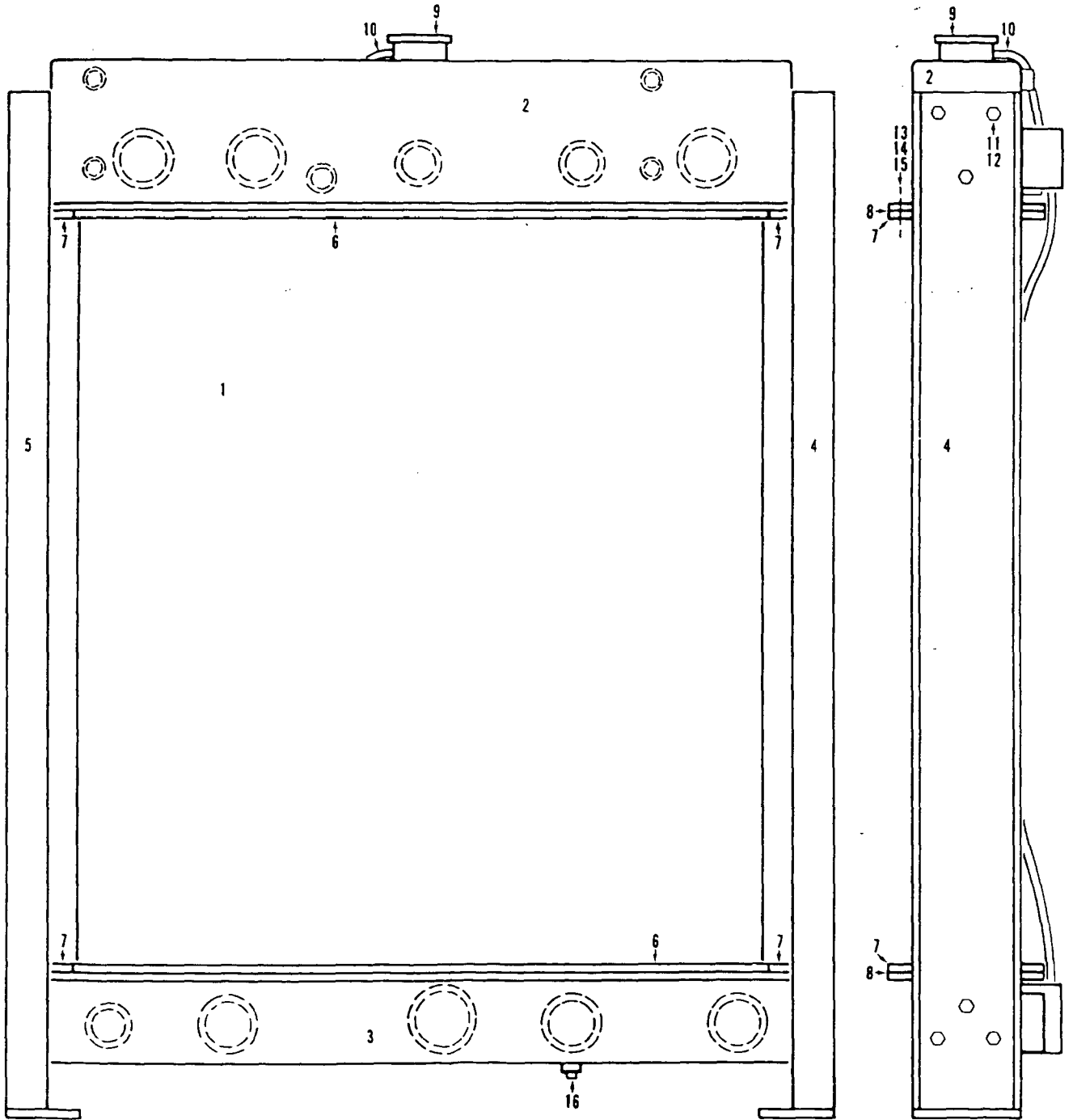
|           |         |
|-----------|---------|
| REV.<br>B | 0-415-1 |
|-----------|---------|

PLEASE GIVE MACHINE S/N W/ORDER

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0-45181

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RADIATOR

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