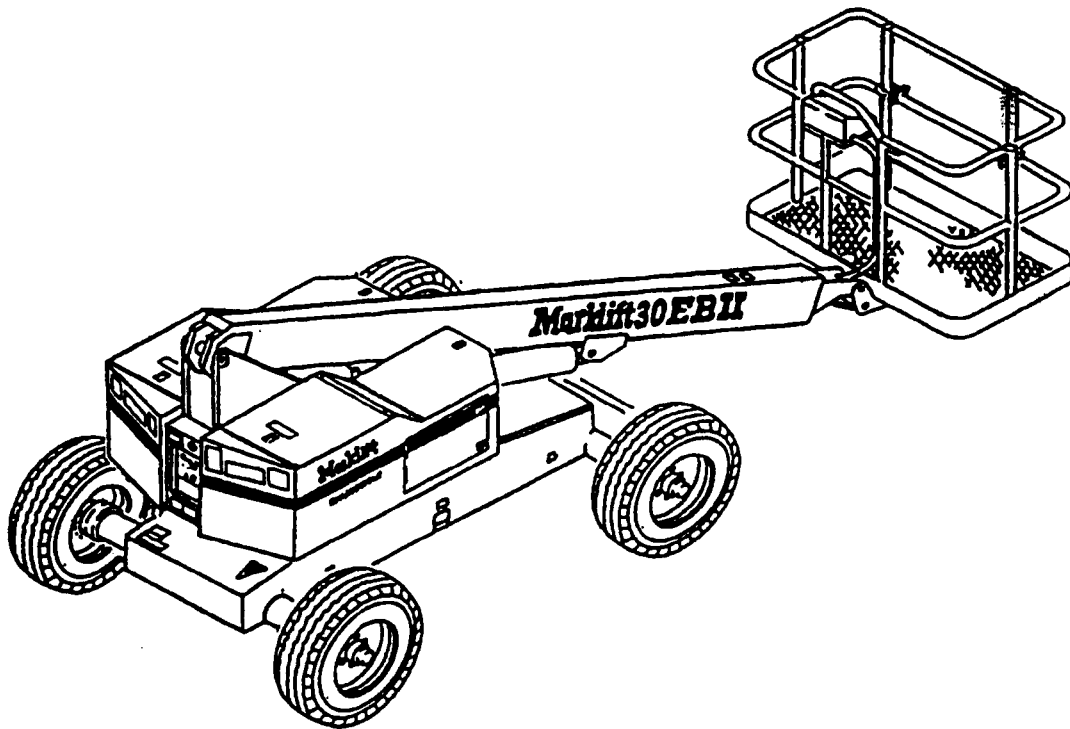


The Marklifts.[®]

A Product of Mark Industries

SELF-PROPELLED BOOM OPERATION MAINTENANCE AND PARTS MANUAL (30EB II MODEL)



FIRST EDITION: JULY 1989



Mark Industries

P.O. Box 2255
Brea, California 92622
205 South Puente Street, Brea, California 92621
(714) 879-6275, FAX (714) 879-8884

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controller while the wheel is next to a visual marker on the ground. A good slowing and braking distance would be 3 feet measured from the marker to the center line of the same wheel after the unit has completely stopped. Adjust the needle valve on the parking brakes to achieve this distance. Repeat this procedure, driving in both directions until the **MARKLIFT** comes to a complete stop within 18' to 24'. The deceleration valves have been set at the factory and should not be readjusted without first consulting the **MARK INDUSTRIES** Customer Service Engineering Department. It is best to completely open the needle valve if the unit is to be used in a facility that has very steep slopes or inclines. However, very abrupt stops can be expected on flat surfaces if the drive controller is quickly released or returned to a neutral position.

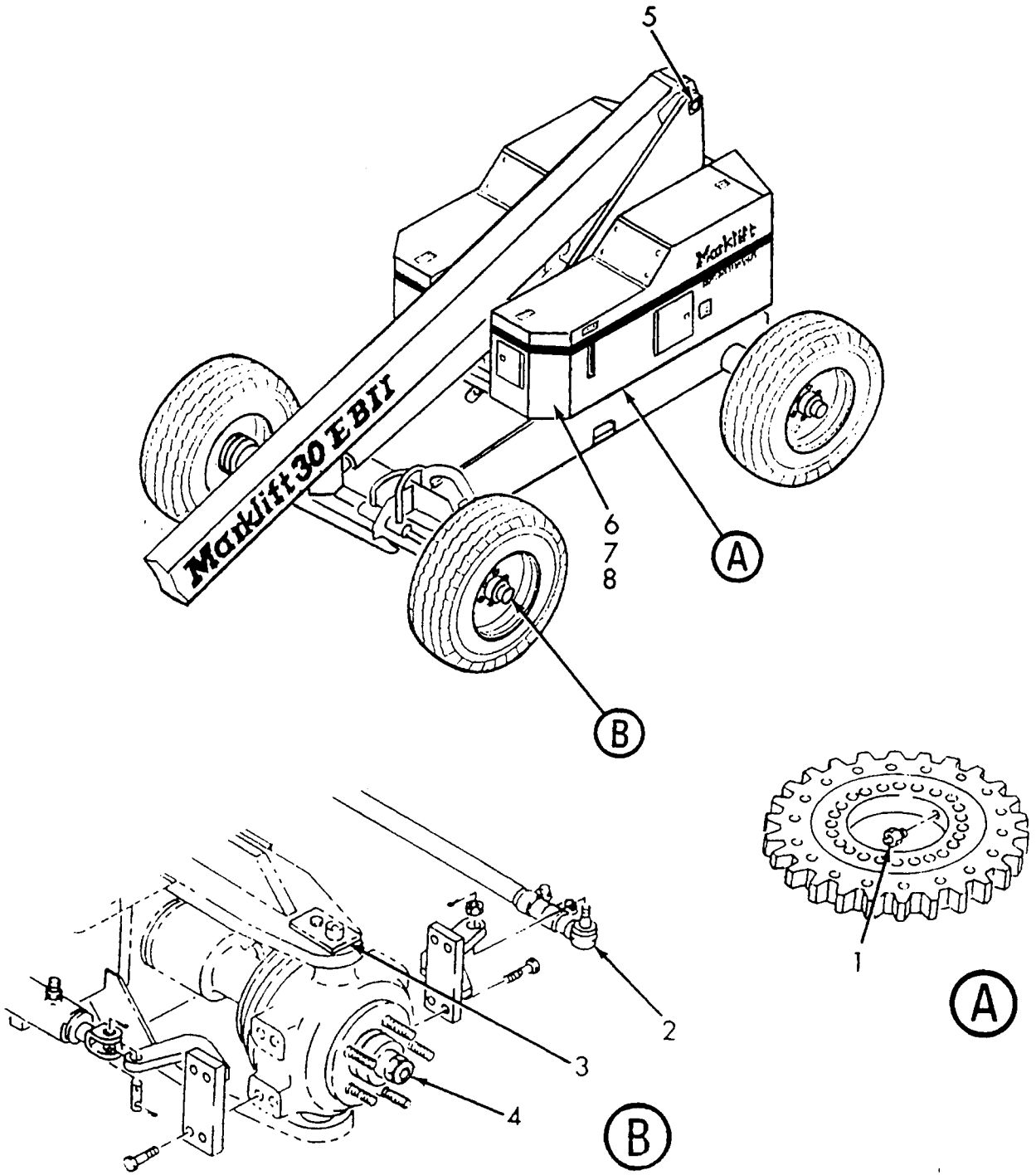


| DECAL P/N | DECAL DESCRIPTION 30EB II | ASSEMBLY(LOCATION) | QTY |
|------------------|--|---------------------------|------------|
| 67640 | Decal Set | All Standard Decals | 1 |
| 2003 | Battery Water | Final Assy | 1 |
| 2017 | Hydraulic System | Final Assy | 2 |
| 20410 | Mark Industries Logo | Final Assy | 1 |
| 20411 | Stripe Square End | Final Assy | 4 |
| 20419 | Danger, Keep Clear | Final Assy | 2 |
| 20420 | Tire Pressure 75 PSI | Final Assy | 2 |
| 20460 | Ground Control | Ground Control Box | 1 |
| 20461 | Forward Arrow | Final Assy | 1 |
| 20462 | Forward Arrow Aft | Final Assy | 1 |
| 20495 | Emergency Ground Control | Final Assy | 1 |
| 20508 | Transportation | Final Assy | 2 |
| 20660 | I.D. Plate | Final Assy | 1 |
| 20661 | ANSI A92 | Final Assy | 1 |
| 20662 | Patent No. Plate | Final Assy | 1 |
| 20859 | Caution Aerial Operating and Instructions | Final Assy | 1 |
| 20860 | General Checkout and Operating Instructions | Final Assy | 1 |
| 2022 | Load Capacity 500 Lbs | Final Assy | 1 |
| 20896 | Brake | Final Assy | 1 |
| 20871 | "30" | Final Assy | 2 |
| 21235 | Emergency Descent | Final Assy | 1 |
| 20408 | MARKLIFT | Final Assy | 2 |
| 21237 | Grease Fitting | Final Assy | 2 |
| 22385 | Caution, Attach Safety Belt | Final Assy | 1 |
| 22386 | D-Ring, Attach Safety Belt | Final Assy | 2 |



Lubrication Instructions

30 EB II



MARKLIFT SERVICE MAINTENANCE CHECKLIST

MODEL NUMBER _____ SERIAL NUMBER _____ DATE SOLD _____

DATE IN SERVICE _____ OPTIONS _____ WARRANTY PERIOD _____

APPLIES TO MODELS WITH ENGINES ONLY

CODE:
 C - CHECKED
 A - ADJUSTED
 R - REPAIRED
 N - NEW PART
 X - NEEDS REPAIR

| OIL CHANGE OIL FILTER AM FILTER HYDRAULIC OIL CHANGE HYDRAULIC OIL FILTER WHEEL BEARING PACK DRIVE MOTION PUMP MOTION ELECTRICAL CONTROLS TRANSDIFF OIL CHANGE TIME UP SPARK PLUGS GENERATOR VOLTAGE REGULATOR BATTERY STARTER POINTS / CONDENSER HYDRAULIC SYSTEM LEV CYLINDER LFT CYLINDER LFT CLUMBER SEALS HYD CONTROL VALVE HYDRAULIC PUMP ROTARY MANIFOLD LFT ROLLERS HYDRAULIC HOSES BRAKES | PREVENTIVE MAINT. | ELECTRICAL | HYDRAULIC | FUEL | STEER | TIRE MAJ. |
|---|-------------------|------------|-----------|------|-------|-----------|
| FUEL SYSTEM CARBURATION FUEL PUMP STEERING STEERING HOSES STEERING GEAR STEER CYLINDER DRIVE TIRES STEER TIRES ENGINE OVERHAUL DRIVE AXEL OVERHAUL | MISC. | | | | | |

| DATE | REMARKS | DATE | REMARKS |
|------|---------|------|---------|
| | | | |
| | | | |
| | | | |

AGENCY

REMARKS

1. PART NUMBER

STEP 1. Locate Section and Figure number within the table of contents and each Section page.

STEP 2. Match your required part with the illustration page.

STEP 3. Refer to the item number on the detail part list page.

STEP 4. Part number is located in the part number column. Order by using that part number.

2. TO ORDER:

By Phone: Service Department

(800) 448-MARK

or

(714) 879-MARK

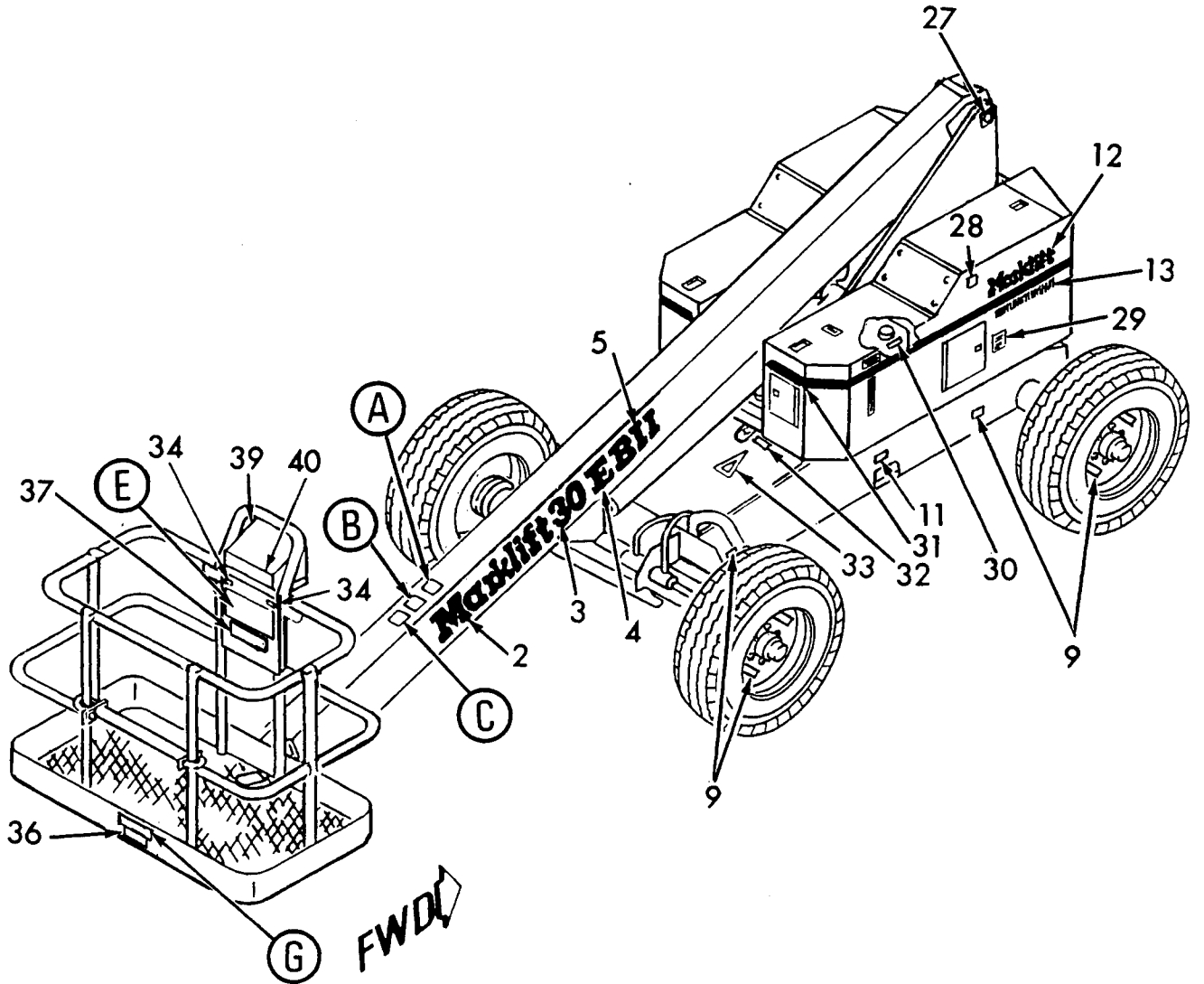
By Fax: (714) 879-8884

By Mail: Attention Service Department

MARK INDUSTRIES
Post Office Box 2255
Brea, California 92622

**MARK INDUSTRIES**

P.O. Box 2255
Brea, California 92622
205 South Puente Street, Brea, California 92621
(714)879-6275, FAX (714)879-8885



ATTACH YOUR SAFETY BELT FIRST!
CAUTION OPERATING THIS MACHINE WITHOUT CORRECT SAFETY BELT ATTACHMENT
 COULD RESULT IN DEATH OR SERIOUS INJURY **CAUTION**
 27383

(G)

35



| ITEM | PART NUMBER | DESCRIPTION | UNIT PER ASSY. |
|------|---------------|---------------------------------------|----------------|
| | | 1234567 | |
| 26 | 13210-08-0534 | .ASSEMBLY, HOSE | 1 |
| 27 | 13210-08-0520 | .ASSEMBLY, HOSE | 1 |
| 28 | 13213-04-1600 | .ASSEMBLY, HOSE | 1 |
| 29 | 13213-10-1200 | .ASSEMBLY, HOSE | 2 |
| 30 | 13210-04-0750 | .ASSEMBLY, HOSE (Option) (See Item 6) | 1 |
| 31 | 13210-04-0770 | .ASSEMBLY, HOSE (Option) (See Item 6) | 1 |
| 32 | 13210-10-0320 | .ASSEMBLY, HOSE (Option) (See Item 6) | |
| 33 | 13210-10-0340 | .ASSEMBLY, HOSE (Option) (See Item 6) | 1 |
| 34 | 13210-10-0120 | .ASSEMBLY, HOSE | 1 |
| 35 | 13213-04-0200 | .ASSEMBLY, HOSE | 1 |
| 36 | 13213-08-0204 | .ASSEMBLY, HOSE | 1 |
| 37 | 13215-10-0080 | .ASSEMBLY, HOSE (180°) | 1 |
| 38 | 13211-06-0720 | .ASSEMBLY, HOSE | 1 |
| 39 | 13210-08-0234 | .ASSEMBLY, HOSE | 1 |
| 40 | 13210-12-0544 | .ASSEMBLY, HOSE | 1 |
| 41 | 13210-10-0510 | .ASSEMBLY, HOSE | 1 |
| 42 | 13213-06-0204 | .ASSEMBLY, HOSE | 1 |
| 43 | 13213-06-0180 | .ASSEMBLY, HOSE | 1 |
| 44 | 13210-04-0810 | .ASSEMBLY, HOSE | 1 |
| 45 | 13213-06-0950 | .ASSEMBLY, HOSE | 1 |
| 46 | 13213-06-0970 | .ASSEMBLY, HOSE | 1 |
| 47 | 13213-06-0720 | .ASSEMBLY, HOSE | 1 |
| 48 | 13214-04-0270 | .ASSEMBLY, HOSE (Optional) | 1 |
| 49 | 13216-04-0284 | .ASSEMBLY, HOSE (Optional) | 1 |

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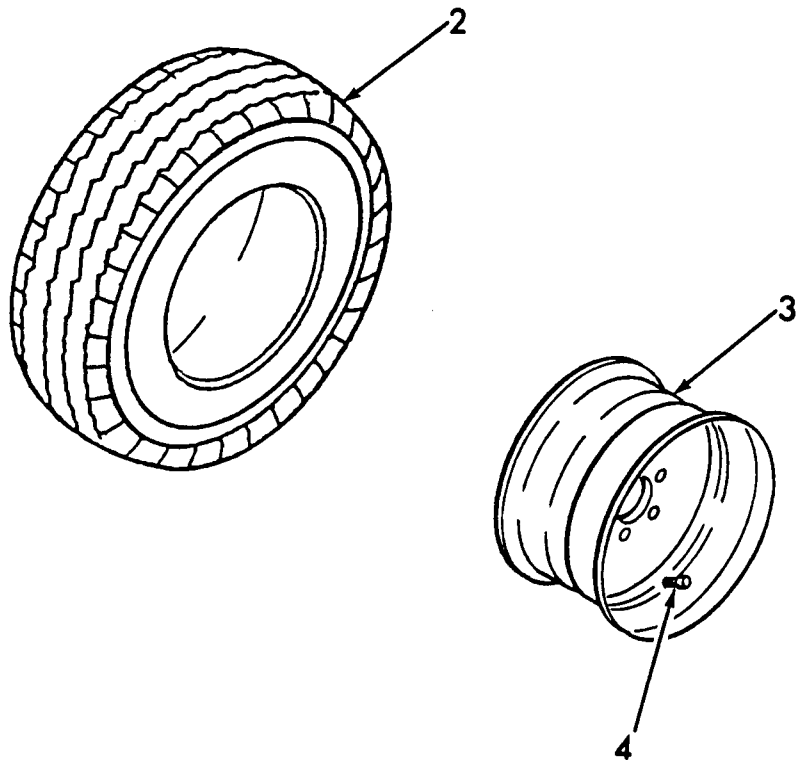
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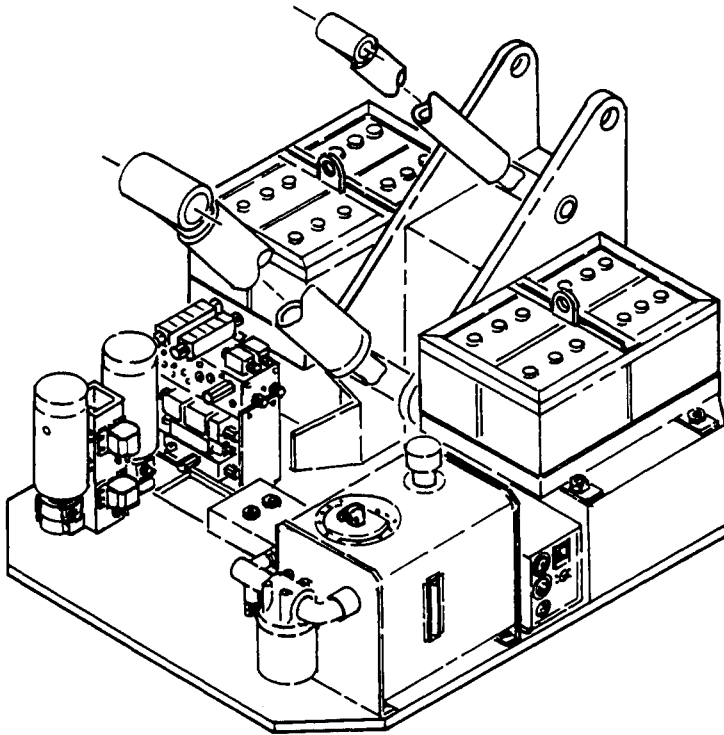
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TIRE & WHEEL ASSEMBLY (30 EBII)



| ITEM | PART NUMBER | DESCRIPTION | UNIT PER ASSY. |
|------|-------------|---|----------------|
| | | 1234567 | |
| -1 | 24055 | ASSEMBLY, TIRE & WHEEL (See Sect. 3, Fig. 1 for NHA) | REF |
| 2 | 30357 | .TIRE | 1 |
| 3 | 30356 | .WHEEL | 1 |
| 4 | 2252 | .STEM, VALVE | 1 |



THIS SECTION 4 CONTAINS THE FOLLOWING FIGURES:

| <u>FIG. NO.</u> | <u>TITLE</u> |
|-----------------|-----------------------------------|
| 1 | TURRET ASSEMBLY |
| 2 | MASTER LEVELING CYLINDER ASSEMBLY |
| 3 | HYDRAULIC TANK ASSEMBLY |
| 4 | ROTATION GEARBOX ASSEMBLY |
| 5 | DRIVE BLOCK ASSEMBLY |
| 6 | HYDRAULIC PUMP AND MOTOR ASSEMBLY |
| 7 | HYDRAULIC PUMP AND MOTOR ASSEMBLY |
| 8 | CONTROL VALVE ASSEMBLY |
| 9 | EMERGENCY DESCENT VALVE ASSEMBLY |
| 10 | LIFT CYLINDER ASSEMBLY |
| 11 | LOWER CONTROL PANEL ASSEMBLY |
| 12 | HYDRAULIC TANK SUB-ASSEMBLY |



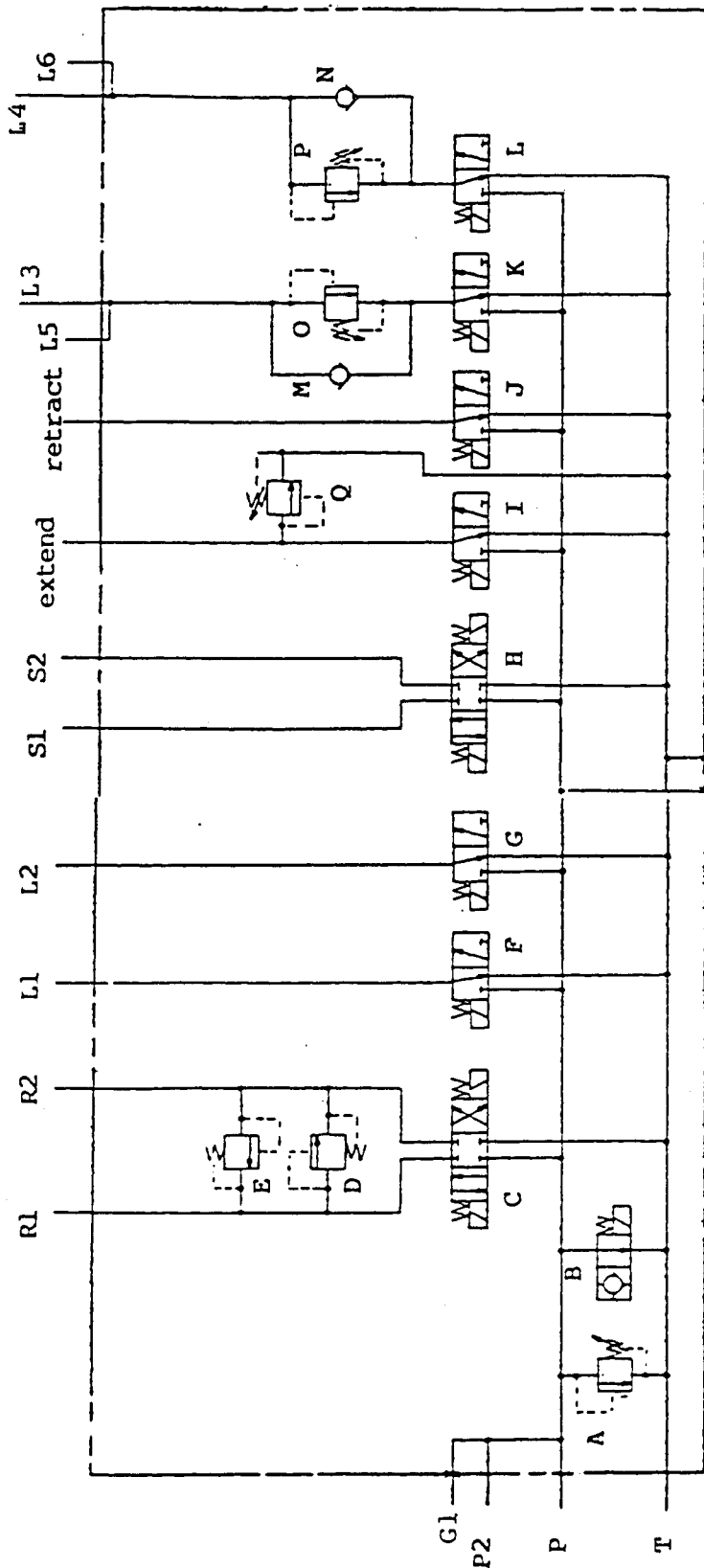
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ILLUSTRATED
PARTS CATALOG

HYDRAULIC TANK ASSEMBLY (30EB11)

PARTS
SECT. 4
FIG. 3
PAGE 2

| ITEM | PART NUMBER | DESCRIPTION | UNIT PER ASSY. |
|------|-------------|---|----------------|
| 12 | 81234 | . ADAPTER, TANK | 2 |
| 13 | 23915 | . SUB-ASSEMBLY, HYDRAULIC TANK (See Sect. 4 Fig. 12 for Details) | 1 |



| | | | | | |
|----|-----------------|-------|------|------------------|-------|
| A. | MAIN RELIEF | 66927 | I. | EXTEND VALVE | 66923 |
| B. | UNLOADING VALVE | 66920 | J. | RETRACTION VALVE | 66923 |
| C. | ROTATION D.C.V. | 81169 | K. | LEVELING | 66923 |
| D. | ROTATION RELIEF | 66922 | L. | LEVELING | 66923 |
| E. | ROTATION RELIEF | 66922 | M. | LEVELING CHECK | 66674 |
| F. | LIFT VALVE | 66923 | N. | LEVELING CHECK | 66674 |
| G. | LOWER VALVE | 66923 | O-P. | LEVELING RELIEF | 66922 |
| H. | STEERING D.C.V. | 81169 | Q. | EXTEND RELIEF | 66922 |

30 EBII CONTROL VALVE
 (P/N 81180)



LIFT CYLINDER ASSEMBLY (30 EBII)

| ITEM | PART NUMBER | DESCRIPTION | UNIT PER ASSY. |
|------|-------------|--|----------------|
| | | 1234567 | |
| -1 | 23932 | ASSEMBLY, LIFT CYLINDER (See Sect. 4, Fig. 1 for NHA) | REF |
| 2 | 20348 | .ORIFICE, BLEED DOWN | 1 |
| 3 | 80060-05 | .NUT | 1 |
| 4 | 50900 | .ELBOW | 1 |
| 5 | 80012-09 | .ELBOW | 2 |
| -6 | 23790 | .SUB-ASSEMBLY, LIFT CYLINDER (See Sect. 4, Fig. 11 for Details) | 1 |
| 7 | 80012-09 | ..ELBOW | 1 |
| 8 | 80062-05 | ..SLEEVE | 2 |
| 9 | 80060-05 | ..NUT | 2 |
| 10 | 26361 | ..TUBING, HYDRAULIC | 1 |
| 11 | 80004-09 | ..CONTRACTOR | 1 |
| 12 | 81006 | ..CARTRIDGE, OVERCENTER | 2 |
| 13 | 21445 | ..VALVE BLOCK, BOOM CYLINDER | 1 |
| -14 | 65506 | ..O-RING | 1 |
| 15 | 61918 | ..SCREW, CAP | 4 |
| 16 | 63302 | ..WASHER, LOCK | 4 |
| 17 | 63402 | ..WASHER, FLAT | 4 |
| 18 | 23789 | ..CYLINDER, LIFT | 1 |
| 19 | 67121 | ..BUSHING, D.U. | 4 |
| 20 | | ..ROD | 1 |
| 21 | | ..SCREW, CAP | 1 |
| 22 | | ..CAP | 1 |
| 23 | | ..HEAD | 1 |
| 24 | | ..PISTON | 1 |
| 25 | | ..NUT, LOCK | 1 |
| -26 | 66895 | ..KIT, SEAL | 1 |



FINAL BOOM ASSEMBLY (30 EBII)

| ITEM | PART NUMBER | DESCRIPTION 1234567 | UNIT PER ASSY. |
|------|-------------|------------------------------------|----------------------|
| 27 | 23162 | .PAD, WEAR | 2 |
| 28 | 61805 | .SCREW, CAP (attaching part) | 4 |
| 29 | 70107 | .SWITCH, LIMIT | 1 |
| 30 | 70148 | .ARM, LEVER | 1 |
| 31 | 62615 | .SCREW, MACHINE (attaching part) | 2 |
| 32 | 63313 | .WASHER, LOCK (attaching part) | 2 |
| 33 | 2768-270 | .CABLE, ELECTRICAL | 1 |
| 34 | 2806 | .RELIEF, STRAIN | 1 |
| 35 | 22373 | .COVER, ACCESS | 1 |
| 36 | 60322 | .SCREW, CAP (attaching part) | 4 |
| 37 | 22585 | .BRACKET, MOUNTING STATIONARY (RH) | 1 |
| 38 | 22586 | .BRACKET, MOUNTING STATIONARY (LH) | 1 |
| 39 | 60501 | .SCREW, CAP (attaching part) | 4 |
| 40 | 63401 | .WASHER, FLAT (attaching part) | 4 |
| 41 | 61312 | .NUT, LOCK (attaching part) | 4 |



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PARTS CATALOG

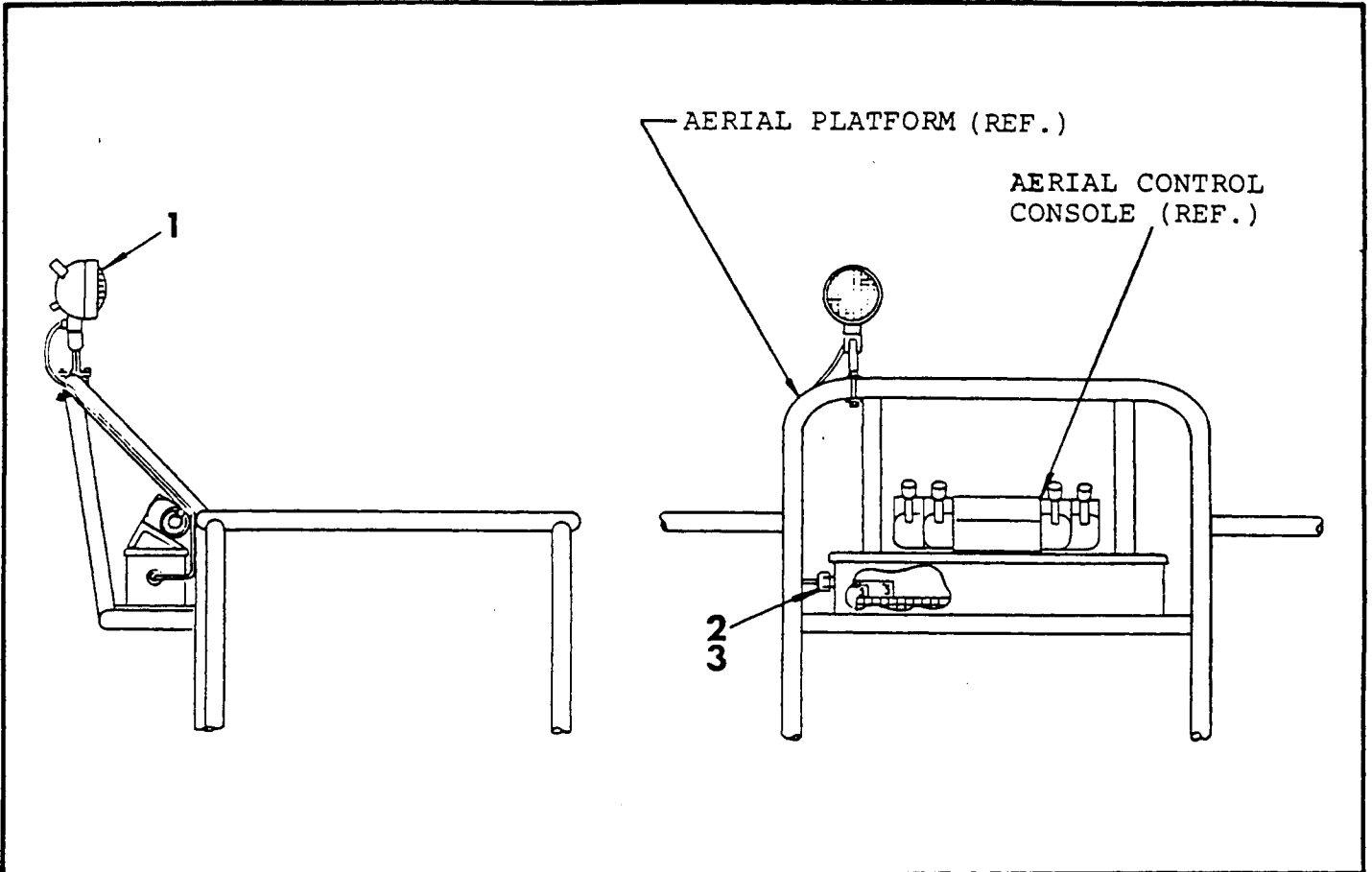
EXTENSION CYLINDER ASSEMBLY (30 EBII)

PARTS
SECT.5
FIG. 4
PAGE 3

| ITEM | PART NUMBER | DESCRIPTION | UNIT PER ASSY. |
|------|-------------|----------------------|----------------|
| 27 | | 1234567 ...O-RING | 1 |
| 28 | | ...RING, WEAR | 2 |
| 29 | | ...SEAL, A.Q. SQUARE | 1 |
| 30 | | ...O-RING | 1 |



12 VOLT PLATFORM WORKLIGHT



| ITEM | PART NUMBER | DESCRIPTION | UNIT PER ASSY. |
|------|-------------|------------------------|----------------|
| | | 1234567 | |
| - | 20139 | 12V PLATFORM WORKLIGHT | 1 |
| -1 | 20862 | WORKLIGHT | 1 |
| -2 | 2522 | STRAIN RELIEF | 1 |
| -3 | 141 | LOCK NUT | 1 |



PRINCIPLES OF OPERATION

These brakes are spring-set, hydraulically released, multi-disc brakes. They are used primarily for holding loads, vehicles, conveyors, etc. in place when the hydraulic drive system is shut down or fails. Although the brakes are rated at 3,000 psi, they only require from 100 psi to 220 psi to make them function normally. The exact pressure required for operation is dependent upon the number of springs used to generate the torque necessary to hold the designed load. Thus, a brake with a full compliment of springs, will generate the highest level of torque and require approximately 220 psi to fully release the brake and provide adequate running clearance for the individual discs. A brake with 1/2 of the full spring compliment will have 1/2 as much torque and will require only 100 psi

to fully release the brake. Consult catalog to choose the torque which best suits your design parameters.

It is very important to remember that any pressure on the brake's release piston will directly effect the level of torque.

Two application examples:

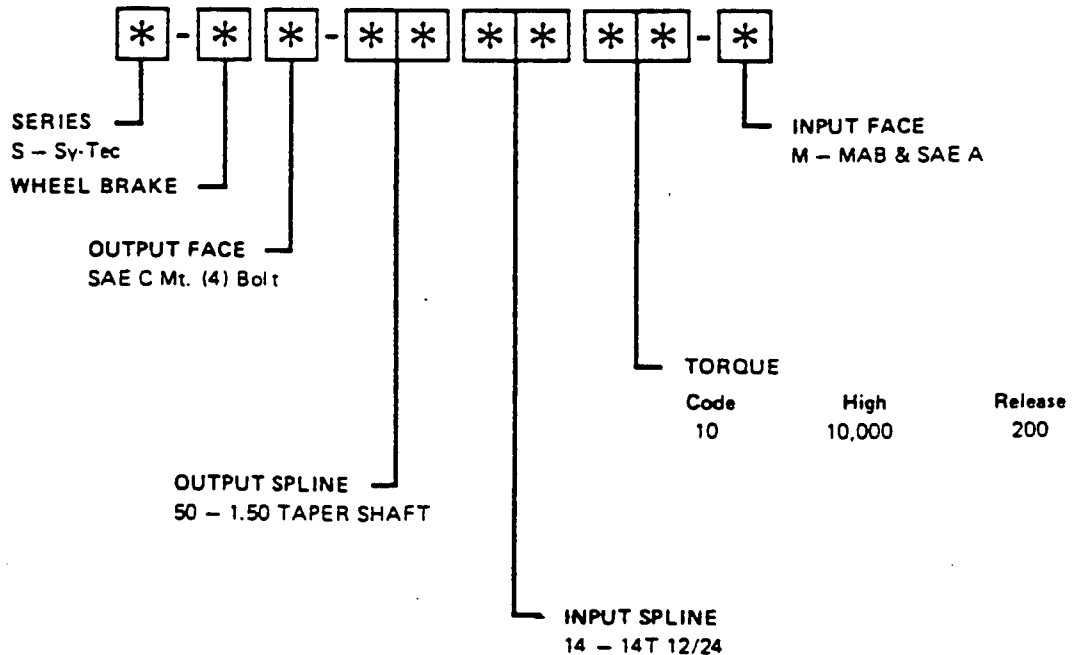
1. The brake has a release pressure of 200 psi. The actuation pressure is provided by a charge pump. During certain phases of the machine's operation, the charge pump pressure dips from 200 psi to 100 psi. At 200 psi, the brake runs free (zero torque) but at 100 psi the brake will generate slightly less than half of its rated torque. The brake will drag - failure may occur. In this case, a brake should be

selected which has a lower release pressure.

2. A brake has a release pressure of 200 psi. The system is set up to hold a load when a variable pump is shifted into neutral. Everything is running fine until the filter clogs, causing a build-up of back pressure in the return line to the tank. At a pressure of 60 psi, the brake will lose 25% of its holding torque; thus the load may slip. The situation can be corrected by replacing the filter or adding an extra margin of safety to your required brake torque in the initial design.

These brakes are designed to give thousands of trouble-free hours of service when set up correctly in the hydraulic circuit.

DESCRIPTION OF MODEL NUMBERS



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