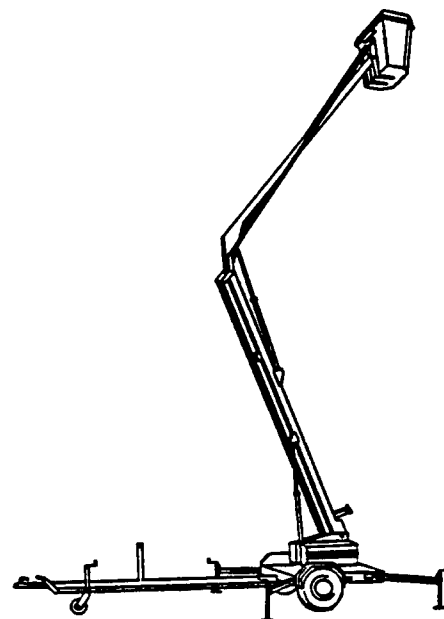


MARKLIFT®

TRAILER MOUNTED KNUCKLE BOOM (MODEL TM 32)

OPERATION MAINTENANCE AND PARTS HANDBOOK



Mark Industries

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TABLE OF CONTENTS

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM (TM32) OPERATION MAINTENANCE AND PARTS HANDBOOK

	<u>PAGE</u>
INTRODUCTION	i
SPECIFICATIONS	ii
STANDARD FEATURES & OPTIONS.	iii
RECORD OF REVISIONS.	iv
WARRANTY	v
NEW EQUIPMENT CONDITION REPORT	vi
 <u>OPERATION</u>	
1. PRE-START CHECK & SETTING UP	1
2. OPERATION.	3
3. EMERGENCY POWER AND STOWING & TOWING	5
4. BATTERY CHARGING	7
SAFETY	8
WARNING AND CAUTION DECALS	13
 <u>MAINTENANCE</u>	
1. DAILY CHECKS	15
2. WEEKLY CHECKS.	15
3. 6 MONTH CHECKS	15
4. 12 MONTH CHECKS.	15

TABLE OF CONTENTS

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)
OPERATION MAINTENANCE AND PARTS HANDBOOK

<u>SCHEMATICS</u>	<u>PAGE</u>
WIRING DIAGRAM	17
TRAILER WIRING DIAGRAM	19
HYDRAULIC SCHEMATIC.	21
 <u>PARTS</u>	
ILLUSTRATED PARTS LIST INDEX	i

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM

(TM32)

OPERATION MAINTENANCE AND PARTS HANDBOOK

The purpose of this Handbook is to provide the customer with operation maintenance and parts information that will enhance the reliable performance of the Trailer Mounted Knuckle Boom. Schematic information is also furnished.

WARNING: IMPROPER USAGE OF THIS MACHINE MAY RESULT IN SERIOUS PERSONNEL INJURY. TO PROTECT YOURSELF AND THE EQUIPMENT, STUDY THIS HANDBOOK BEFORE STARTING OPERATIONS.

The serial number and model ID Plate can be found inside the hydraulic power pack compartment side of the turret.

The serial number must be used when ordering parts. This will help our Parts Department in giving prompt and accurate service.

If additional information or service is needed, we urge the customer to contact his local dealer. If this is not possible, please get in touch with the Mark Industries Service Department.

All Marklifts are tested and operated to assure their proper operating condition before shipment. At this time all necessary adjustments are made and an overall physical inspection is conducted. After the unit is delivered, some pre-start checks and inspections are required prior to putting the unit in service. These functions are outlined in the operation section of this Handbook.

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

STANDARD FEATURES

Emergency lowering both at ground and bucket.
Emergency free wheeling valve on turret rotation.
Lockable storage compartment.
Unit inoperable unless outriggers are extended
and locked.

OPTIONS

Rotating amber beacon.
Movement warning horn.

MANUFACTURERS' LIMITED WARRANTY

Mark Industries makes no warranty, express or implied, on any product manufactured or sold by Mark Industries except for the following limited warranty against defects in materials and workmanship on products manufactured by Mark Industries.

Mark Industries warrants the products manufactured by Mark Industries to be free from defects in material and workmanship under normal use and service for a period of six (6) months from the date of shipment. This limited warranty does not extend to any product of another manufacturer or to any part, component, accessory or attachment not manufactured by Mark Industries. The warranty, if any, with respect to any product of another manufacturer or to any part, component, accessory or attachment not manufactured by Mark Industries is limited to the warranty, if any, extended to Mark Industries by the manufacturer of the other product, part, component, accessory or attachment.

This limited warranty does not extend to any product (or any part or parts of any product) which has been subject to improper use or application, misuse, abuse, operation beyond its rated capacity, repair or maintenance except in accordance with the sales and service manuals and special instructions of Mark Industries, or modification without the prior written authorization of Mark Industries (whether by the substitution of nonapproved parts or otherwise).

The sole obligation and liability of Mark Industries under this limited warranty (and the exclusive remedy for any purchaser, owner or user of Mark Industries products) is limited to the repair or replacement, at the option of Mark Industries, of any product (or any part or parts of any product) manufactured by Mark Industries which, within six (6) months from the date of shipment, shall have been returned to the Mark Industries facility in Carson, California (or any other location within the United States as shall be designated by Mark Industries), at no expense to Mark Industries, and demonstrated to the satisfaction of Mark Industries as being defective in material or workmanship.

To make a claim under this limited warranty, contact Mark Industries or the Mark Industries distributor from whom the product was originally purchased. A statement giving the model and serial number of the allegedly defective product, the date and a description of the alleged defect, the date of the purchase and proof of the purchase and purchase date must accompany the returned product (or any part or parts of any product). Any product (or any part or parts of any product) determined by Mark Industries to be defective will be repaired or replaced, at the option of Mark Industries, free of charge, f.o.b. Carson, California. No credit will be given for any allegedly defective product (or any part or parts of any product) not returned to Mark Industries.

There are no other warranties, express or implied, in addition to this limited warranty. **This limited warranty is exclusive and in lieu of all other warranties, express or implied (in fact or by operation of law or otherwise), including the implied warranties of merchantability and fitness for a particular purpose.**

Mark Industries shall not be liable for any special, indirect or consequential damages. Further, no representation or warranty made by any person, including any representative of Mark Industries, which is inconsistent or in conflict with, or in addition to the terms of the foregoing limited warranty (or the limitations of the liability of Mark Industries as set forth above) shall be binding upon Mark Industries unless reduced to writing and approved by an officer of Mark Industries.

Tires, batteries, filter elements and electrical components are specifically excluded from this limited warranty.



Mark Industries
Agricultural and Industrial Equipment Division
P.O. Box 1120, Long Beach, Ca. 90801
213-630-2004 Telex 194-402

NEW EQUIPMENT CONDITION REPORT

(WARRANTY REGISTRATION)

TM32	YES	NO
1. CAPACITY DECAL IS _____		
2. ALL APPLICABLE WARNING DECALS ARE INSTALLED		
3. ROTATION FREE WHEELING WORKS		
4. OPERATORS INSTRUCTIONS ARE PROPERLY INSTALLED		
5. OPERATION MAINTENANCE AND PARTS HANDBOOK RECEIVED		
6. ALL CONTROLS (UPPER & LOWER) ARE IDENTIFIED & OPERATE PROPERLY		
7. STOP SWITCHES OPERATE PROPERLY		
8. CONDITION OF PLATFORM		
9. FRONT & REAR OUTRIGGERS WORK		
10. TOW BAR HAND BRAKE OPERATES PROPERLY		
1. LIMIT SWITCHES OPERATE PROPERLY		
12. HYDRAULIC CYLINDERS ARE FREE OF LEAKS		
13. HYDRAULIC CYLINDER RODS ARE FREE OF PAINT/SCRATCHES		
14. HYDRAULIC PUMP IS FREE OF LEAKS		
15. ROTATION ACTUATOR FUNCTIONS PROPERLY		
16. LUG NUTS ON WHEELS ARE TORQUED AT _____ FT. LBS.		
17. BATTERY FLUID LEVEL IS FULL		
18. HYDRAULIC HOSES & FITTINGS ARE TIGHT & FREE OF LEAKS		
19. AIR PRESSURE IN TIRES IS _____ PSI		
20. HYDRAULIC OIL LEVEL IS _____		
21. EMERGENCY POWER FUNCTIONS PROPERLY		
22. HYDRAULIC TANK AND FITTINGS FREE OF LEAKS		
23. ALL ELECTRICAL CONNECTIONS ARE TIGHT		
24. BATTERY CHARGER FUNCTIONS		
25. PLATFORM EMERGENCY LOWERING CABLE & ROD LINKAGE OPERATES PROPERLY (ADJUST IF NECESSARY)		

ODEL NUMBER _____ SERIAL NUMBER _____

OPTIONS _____

INSPECTOR # _____

ADDRESS

CITY

STATE

ZIP CODE

()

AREA CODE

TELEPHONE NUMBER

DATE OF INVOICE _____ DATE SHIPMENT RECEIVED _____

DATE UNIT PUT INTO SERVICE _____

☐ UNIT WILL BE USED IN RENTAL FLEET

☐ UNIT WILL BE SOLD; THE INITIAL WORK APPLICATION WILL BE:

INSPECTION _____	GEN'L MAINTENANCE _____	PAINTING/SANDBLASTING _____
MINING _____	HEATING/AIR COND. _____	STEEL FABRICATION _____
WELDING _____	CARPENTRY _____	RIGGING _____
CONSTRUCTION _____	PLUMBING _____	ROOFING _____
SCAFFOLDING _____	ELECTRICAL _____	GLAZING _____
MECHANICAL _____	SPRINKLER _____	OTHER _____

COMMENTS:

INSPECTION COMPLETED BY:

(Please print legibly)

WARRANTY WILL BE VOID UNLESS THIS INSPECTION REPORT IS POSTMARKED TO MARK INDUSTRIES
NOT MORE THAN 14 DAYS FROM DATE SHIPMENT RECEIVED

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

1. PRE-START CHECK

- A. WHEELS - Check wheel nuts for tightness and tire pressure. 2.9 BAR (42 P.S.I.)
- B. HYDRAULIC FLUID - Oil level must cover the base of the Filler Cap Strainer with the machine level and in the travelling condition.
- C. BATTERY FLUID - The Battery plates must be covered-add distilled water.
- D. LIMIT SWITCHES - Check for proper operation.

2. SETTING UP

- A. Extend outriggers - by lifting sprung hook and pulling outrigger out at the same time. (SEE PARTS FIG. 5 - ITEMS 1 & 10)

WARNING - Ensure that the outriggers are fully extended and the spring hook is securely home - a red line on the outrigger indicates the fully extended position.
- B. Wind down the front jacks first to take the weight off the jockey wheel. (SEE PARTS FIG. 2 - ITEM 8)
- C. Lower each of the jacks in turn until the weight is spread evenly, then level up the machine using the level gauges provided at each side of the machine. The wheels can be lifted up off the ground in complete safety.

WARNING - The jacks are designed to operate on a hard surface. For soft ground conditions, advice should be obtained as to the type of supports which should be used under the jacks to spread the load in a safe manner.

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

3. OPERATION

- A. Switch on the power at master switch located at lower control station (red knob) (SEE PARTS FIG. 6 - ITEM 49)
- B. Remove the locking pin from the tow bar support. (SEE PARTS FIG. 2 - ITEM 13)
- C. Switch lower controls to "BASE" and raise the lower boom, marked "BOT RAM - UP" on the control console. This will elevate the boom to allow entry into the working platform.
- D. Switch lower control to "PLAT" and then climb onto the platform. Raise the platform by using the control switch marked "TOP RAM - UP"

WARNING - Before raising, ensure that there are no overhead obstructions or cables.

- E. The platform can now be raised, lowered, or turned in any direction as required by turning the controls as indicated.

NOTE (1) Use the "TOP RAM" for raising and lowering.

Use the "BOT RAM" only for positioning:-

"UP" - gives greater outreach
"DOWN" - Retracts the platform
into the center of the
machine.

- (2) The machine is capable of carrying 400lbs in the total area of movement controlled by the limit switches.

(3) The machine is designed for use as an access platform. Excessive use, or unduly prolonged operation could overtax the batteries and overheat the motor.

4. EMERGENCY- IN THE EVENT OF LOSS OF POWER, LOWERING OF PLATFORM MAY BE ACCOMPLISHED BY PULLING EMERGENCY CABLE.

(SEE PARTS FIG. 7 - ITEM 16)

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

5. EMERGENCY POWER

BOOMS If the control units do not function then the valves and the pump motor can be operated manually. (SEE PARTS FIG. 6 - ITEMS 2 & 3)

TURRET Turret motion can also be obtained by the above manual system or by opening the Valve handle above the actuator in the center of the turret platform and pulling the boom around manually. (SEE PARTS FIG. 6 - ITEM 19)

6. STOWING

- A. Lift up the foldaway boom support.
- B. Lower the jockey wheel - ensure it is clear of the brake rod.
- C. Standing on the trailer deck, lower the "BOT. RAM" onto the support, taking care to centralise the boom above the support.
- D. Replace the locking pin in the boom support for towing.
- E. Raise the rear jacks, swing upside down and lock in position.
- F. Raise front jacks and stow the outriggers ensuring that the spring plunger hook is properly engaged into the hole provided in the outrigger.

WARNING - An outrigger which is not properly stowed could become a hazard should it come loose when towing.

7. TOWING

- A. Using the jockey wheel to raise or lower the tow-

bar coupling, position the machine above the car towing Ball.

- B. Apply the handbrake. Lower down onto the car towing Ball by lowering the jockey winding handle.
- C. Retract the jockey wheel and clamp to the maximum upward position.
- D. Release the handbrake.
- E. Plug in light receptacle - check that the lights of both car and trailer operate correctly.

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

8. BATTERY CHARGING

- A. The batteries are capable of providing sufficient power for a normal days work, assuming use is intermittent and some time is used for travelling.
- B. The batteries should be recharged every night no matter how little they have been used. The charger protects the batteries from overcharging.
- C. To charge, plug the charging plug into the socket under the Left hand corner of the Battery cover. (SEE FIG. 8 - ITEM 16)
- D. Plug in charger to your outlet or extention lead. If charger fails to operate, check circuit breakers and reset if necessary. Push reset button to start operation.

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

Every operator of the MARKLIFT TM32 must know, understand and follow the safety rules set forth herein.

1. The MARKLIFT TRAILER MOUNTED Aerial Lift is a personnel lifting device, and it is essential that it be properly maintained and operated to perform all functions with maximum safety and efficiency.
2. The operation of any new and unfamiliar equipment can be hazardous in the hands of untrained operators. Only trained operators must be assigned to operate the MARKLIFT TM32.
3. It is the responsibility of the operator to be familiar with this handbook and to follow all recommendations made. Never exceed manufacturer's recommended platform load capacity of 400 lbs.
4. Although the MARKLIFT TM32 conforms to specified ANSI & OSHA requirements, it is the responsibility of the owner to instruct the operators with safety requirements made not only by Mark Industries, but by the various safety boards in your area, as additional requirements set forth by ANSI & OSHA.
5. The MARKLIFT TM32 is a non-insulated personnel carrier and must not be operated within 10 feet of a 50,000 volt line. (See page 11 & 12 articles)
6. Remember, the load capacity of the MARKLIFT TM32 is total combined weight of personnel and tools, fixtures, accessories, etc.

7. Always distribute load evenly over platform floor area.
8. It is recommended that head gear (Hard Hats) be worn by all personnel in the work platform.
9. Under no condition should horseplay be tolerated. Report any misuse of equipment to the proper personnel.
10. The MARKLIFT TM32 structure must not be used as a welding ground. Disconnect battery leads prior to performing any welding operations.
11. DO NOT lean over platform bucket to perform work.
12. DO NOT use ladders or scaffolding on the platform to obtain greater height.
13. Battery sulphuric acid can cause a serious burn. Flush away acid with water.
14. Hydrogen and oxygen gases are produced during normal battery operation. This gas mixture can explode if flames or sparks are near battery vents.
15. DO NOT override any hydraulic, mechanical, or electrical safety devices.
16. DO NOT work on platform if your physical condition is such that you feel dizzy or unsteady in any way.
17. DO NOT jump start other vehicles using MARKLIFT TM32 battery.
18. Units shall be repaired immediately when damaged or weakened from any cause. They shall NOT be used until repairs are completed.

19. Employees shall NOT work on units when exposed to high winds, storms, or when they are covered with ice or snow (until all ice and snow has been removed).
20. Where moving vehicles are present, the work area shall be marked with warnings such as flags, roped off areas, or other effective means of traffic control shall be provided.
21. Unstable objects such as barrels, boxes, loose brick, tools, debris, shall not be allowed to accumulate on the work platform.
22. The MARKLIFT TM32 platform is equipped with a safety belt ring. A body belt must be worn with the safety strap attached.
23. DO NOT affix any extensions or fabrications to the platform.

TITLE 8 **DIVISION OF INDUSTRIAL SAFETY**
 (Register 71, No. 30—7-28-73)

358.38.113

Article 86. Provisions for Preventing Accidents

Article 86. Provisions for Preventing Accidents Due to Proximity to Overhead Lines

2946. Provisions for Preventing Accidents Due to Proximity to Overhead Lines. (a) **General.** No person, firm, or corporation, or agent of same, shall require or permit any employee to perform any function in proximity to energized high-voltage lines; to enter upon any land, building, or other premises and thereto engage in any excavation, demolition, construction, repair, or other operation; or to erect, install, operate, or store in or upon such premises any tools, machinery, equipment, materials, or structures (including scaffolding, house moving, well drilling, pile driving, or hoisting equipment) unless and until danger from accidental contact with said high-voltage lines has been effectively guarded against.

(b) **Clearances or Safeguards Required.** Except where electrical distribution and transmission lines have been de-energized and visibly grounded or effective barriers have been erected to prevent physical and arcing contacts with the high-voltage lines, the following provisions shall be met:

(1) **Over Lines.** The operation, erection, or handling of tools, machinery, apparatus, supplies, or materials, or any part thereof, over energized high-voltage lines shall be prohibited.

(2) **Equipment and Materials in Use.** The operation, erection, or handling of tools, machinery, equipment, apparatus, materials, or supplies, or any part thereof within the minimum clearances from energized lines set forth in Table X shall be prohibited.

Table X
Required Clearances from Overhead High-Voltage Lines

<i>Nominal voltage (Phase to Phase)</i>	<i>Minimum Required Clearance (Feet)</i>
750 - 50,000	10
over 50,000 - 75,000	11
over 75,000 - 125,000	13
over 125,000 - 175,000	15
over 175,000 - 250,000	17
over 250,000 - 370,000	21
over 370,000 - 550,000	27
over 550,000 - 1,000,000	42

(3) **Transportation or Transit.** The transportation or transit of any tool, machinery, equipment, or apparatus, or the moving of any house or other building in proximity to overhead high-voltage lines shall be expressly prohibited if at any time during such transportation or transit such tool, machinery, equipment, apparatus, or building, or any part thereof, can come closer to high-voltage lines than the minimum clearances set forth in Table Y.

358.38.114

INDUSTRIAL RELATIONS

TITLE 8

(Register 72, No. 30—7-28-73)

Article 86. Provisions for Preventing Accidents

Except where the boom of boom-type equipment is lowered and no load is imposed thereon, the equipment in transit shall conform to the minimum required clearances set forth in Table X.

Table Y
Required Clearances from Energized High-Voltage Conductors
(While in Transit)

<i>Nominal Voltage (Phase to Phase)</i>	<i>Minimum Required Clearance (Feet)</i>
750— 50,000	6
over 50,000— 345,000	10
over 345,000— 750,000	16
over 750,000— 1,000,000	20

(4) **Storage.** The storage of tools, machinery, equipment, supplies, materials, or apparatus under, by, or near energized high-voltage lines is hereby expressly prohibited if at any time during such handling or other manipulation it is possible to bring such tools, machinery, equipment, supplies, materials, or apparatus, or any part thereof, within the minimum required clearances from high-voltage lines as set forth in Table X.

(c) The specified clearance shall not be reduced by movement due to any strains impressed (by attachments or otherwise) upon the structures supporting the high-voltage line or upon any equipment, fixtures, or attachments thereon.

(d) Insulated cage-type boom guards, boom stops, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the required clearances set forth in Table X.

(e) Any overhead conductor shall be considered to be energized unless and until the person owning or operating such line verifies that the line is not energized, and the line is visibly grounded at the work site.

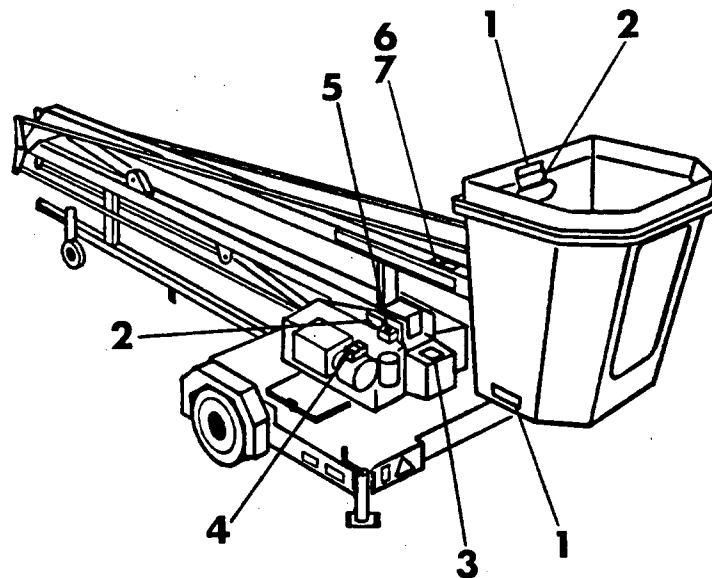
2947. Warning Signs Required. The owner, agent, or employer responsible for the operations of equipment shall post and maintain in plain view of the operator and driver on each crane, derrick, power shovel, drilling rig, hay loader, hay stacker, pile driver, or similar apparatus, a durable warning sign legible at 12 feet reading: "Unlawful To Operate This Equipment Within 10 Feet Of High-Voltage Lines of 50,000 Volts Or Less."

In addition to the above wording, the following statement in small lettering shall be provided on the warning sign: "For Minimum Clearances of High-Voltage Lines In Excess of 50,000 Volts, See Article 86, Title 8, High-Voltage Electrical Safety Orders."

MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(TM32)

Be completely familiar with all warning and caution decals that are posted on the unit.

Keep in mind to be alert and use common sense and judgment in responding to dangerous situations and conditions that might develop during unit operation.



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	20545	LOAD CAPACITY 400 LBS (EVENLY DISTRIBUTED LOAD)	4
2	94025	OPERATION - EMERGENCY LOWERING - PULL RED EMERGENCY CABLE	2
3	2003	IMPORTANT - CHECK BATTERY WATER LEVEL AT LEAST ONCE A WEEK	1
4	94027	EMERGENCY POWER	1
5	5300	EMERGENCY STOP KNOB (ALSO LOCATED IN PLATFORM UNDER CONTROLS)	2

- | | | | |
|---|-------|--|---|
| 6 | 20417 | DANGER - YOU MUST NOT OPERATE
MACHINE UNLESS YOU ARE QUALIFIED
BY TRAINING AND EXPERIENCE IN
THE SAFE OPERATION OF THIS
MACHINE. | 1 |
| 7 | 20418 | DANGER - ELECTROCUTION HAZARD
THIS MACHINE IS NOT INSULATED | 1 |

TRAILER MOUNTED KNUCKLE BOOM
(TM32)

MAINTENANCE

1. DAILY CHECKS

- A. Hydraulic Fluid - Fill with the machine standing on level ground and in the towing condition. The oil should cover the bottom of the Filler Cap Strainer.

USE GM TRANS FLUID TYPE "B" WITH DEXRON

- B. Check the battery acid level - Fill with distilled water as required.
- C. Wheels - Check tire pressure - inflate to 2.9 BAR (42 P.S.I.)

2. WEEKLY CHECKS

- A. Greasing - Give 2 shots of general purpose grease to each of the greasing nipples.
- B. Check Tie Rods and booms for damage.
- C. Check outriggers, jacks, locking pins and tires.
- D. Check trailer handbrake.

3. 6 MONTH CHECKS

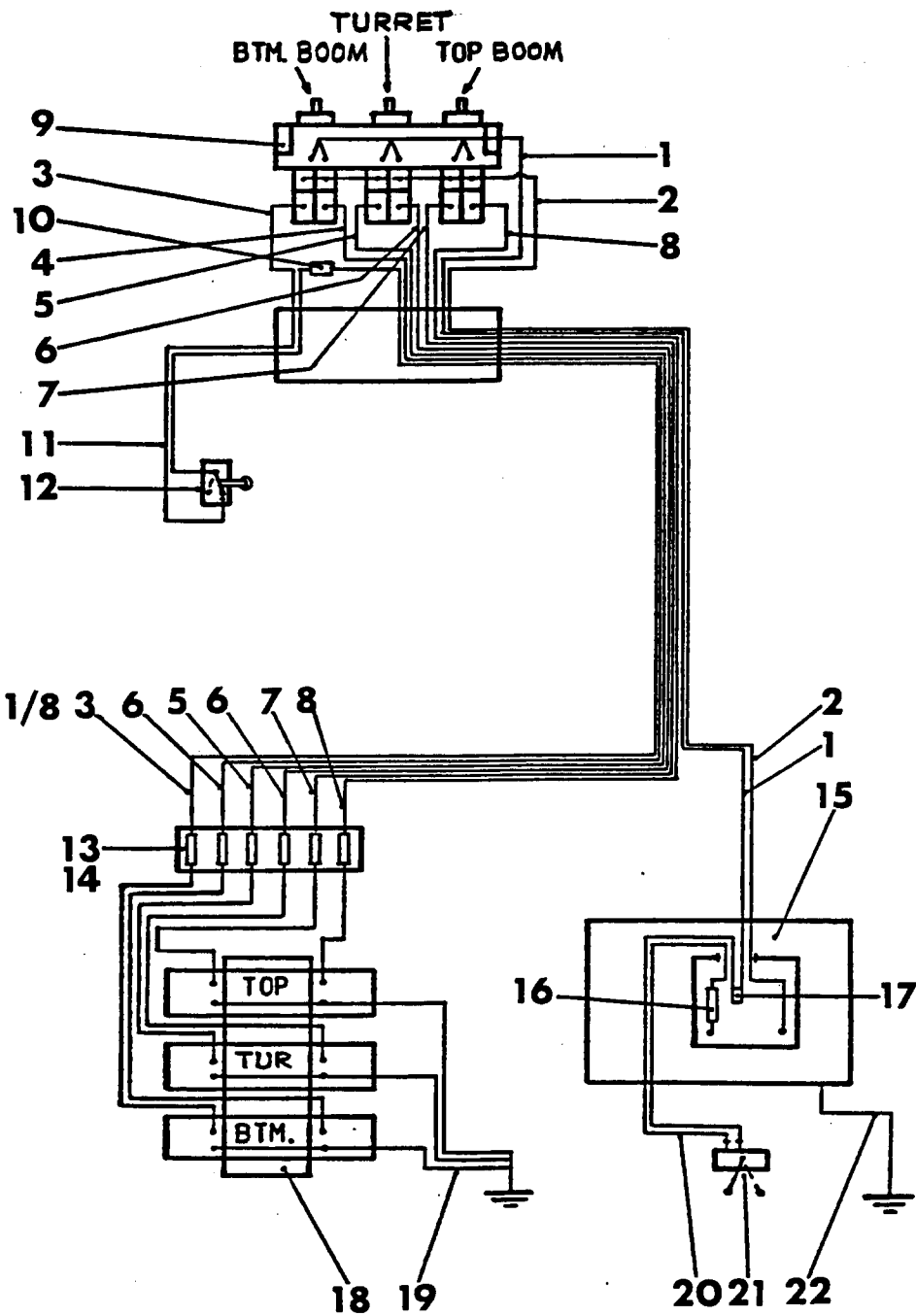
- A. Check each of the Pins and Shafts for corrosion or wear.
- B. Adjust brakes at the drum to take up slack.

4. 12 MONTH CHECKS

- A. Flush out Hydraulic fluid and replace the two Filter Elements.
- B. Check the oil pump relief valve pressure, by

attaching pressure gage to tee fitting
at pump pressure outlet. Setting should
be 2100 lbs./sq. in.

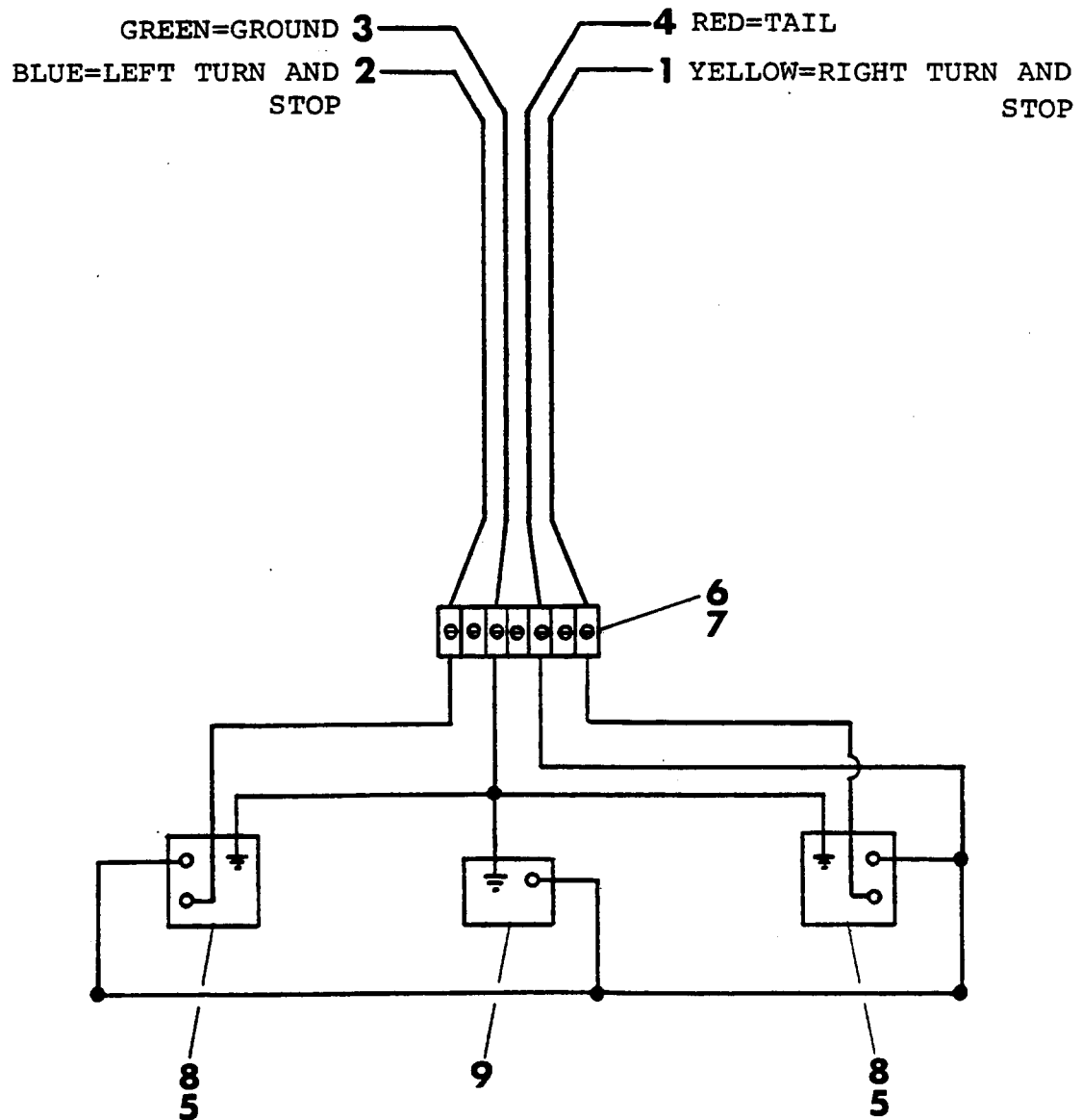
C. Check brake linings for wear.



<u>ITEM</u>	<u>PART No.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1/8	BN2100	8 Core Cable	12.2M
1.	"	Cable No. 1	-
2.	"	" No. 2	-
3.	"	" No. 3	-
4.	"	" No. 4	-
5.	"	" No. 5	-
6.	"	" No. 6	-
7.	"	" No. 7	-
8.	"	Cable Yellow - Green	
9.	E22000	Control Unit Complete	1
10.	BN2203	Cable Connector	1
11.	BN2102	Twin Core Cable	1M
12.	E24012	Limit Switch (Wired Closed)	1
13.	E24005	Fuse Block	1
14.	BN2400	Spare Fuse 8 Amp - (Continental Type)	6
15.		Solenoid Box - Power Unit	1
16.	BN2403	Spare Fuse 17 Amp (Glass Auto)	1
17.	BN2203	Cable Connector	1
18.	V22000	Solenoid Valve Block	1
19.	-	Ground Cable - Valve Block	3
20.	BN2102	Twin Core Cable	0.6M
21.	4018	Master Switch (Red Knob)	1
22.	E44003	Motor Ground Cable	0.14M

TRAILER WIRING DIAGRAM (MODEL TM32)

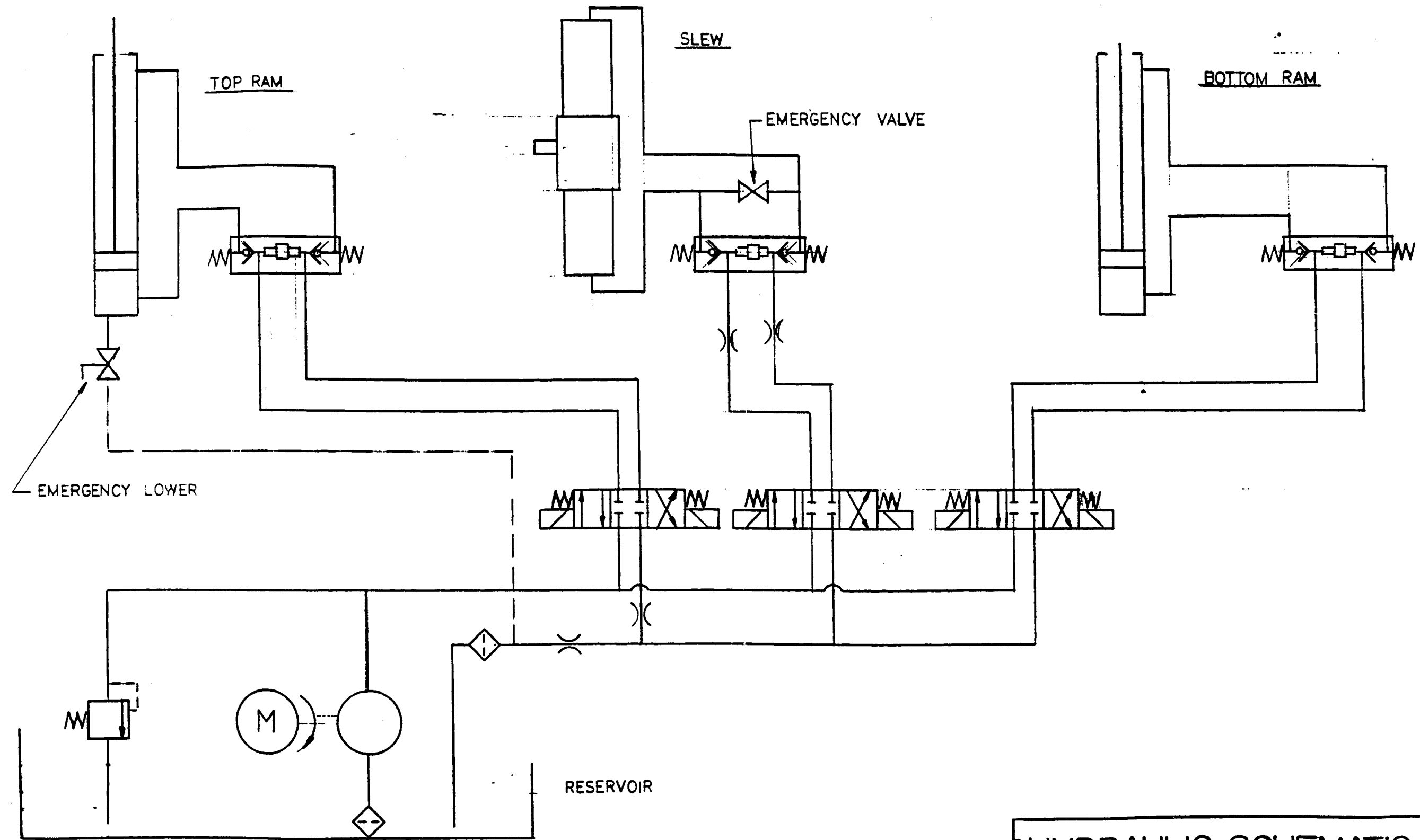
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TRAILER WIRING DIAGRAM (MODEL TM32)

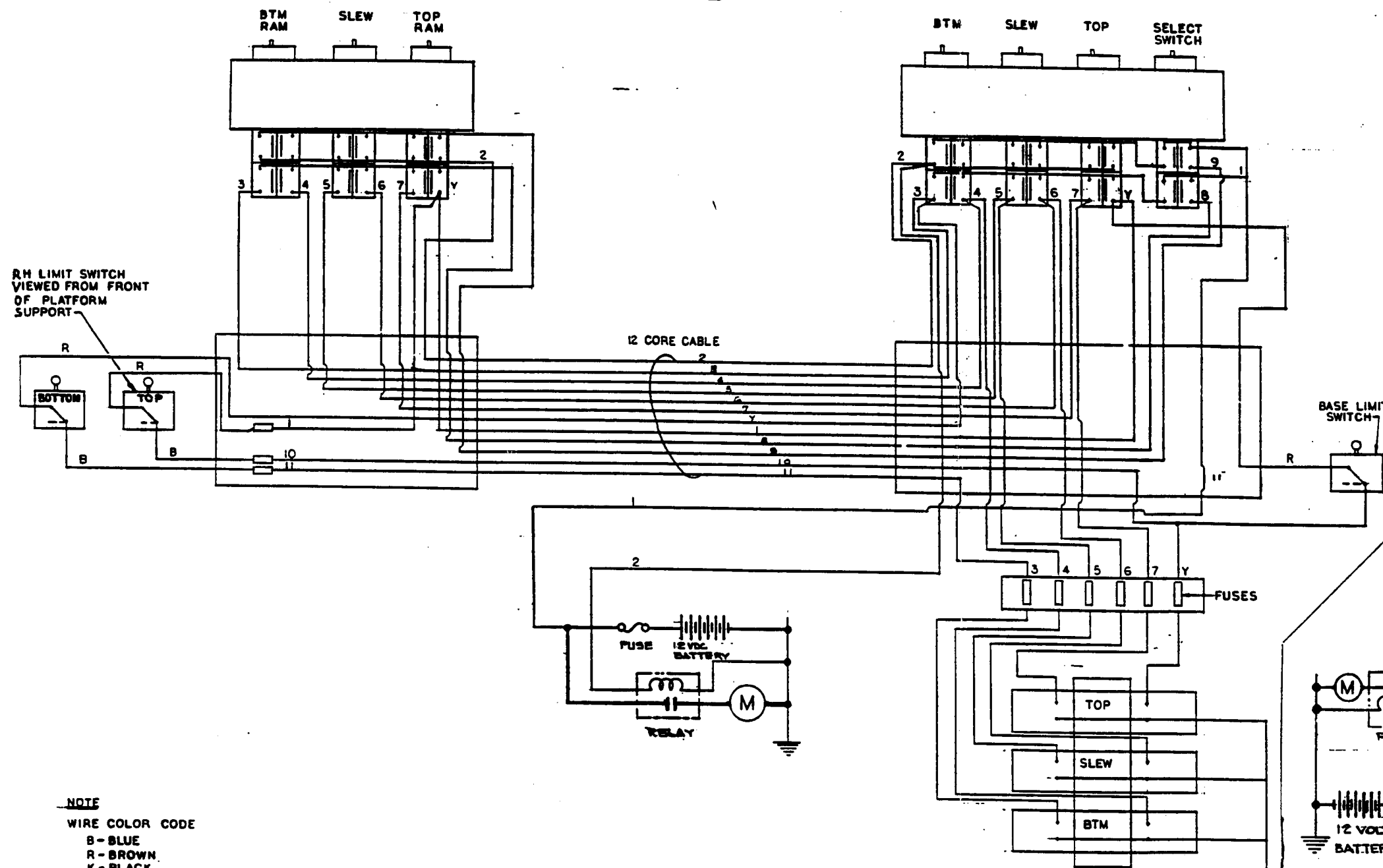
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<u>ITEM</u>	<u>PART NO.</u>		<u>QTY.</u>
1.	BN2110	Single Cable - Yellow	0.7M
2.	BN2106	Single Cable - Blue	0.7M
3.	BN2108	Single Cable - Green	0.7M
4.	BN2109	Single Cable - Red	2.1M
5.	BF318A	No8 X ½ Self Tapping Screw	6
6.	BN2204	7 Way Connector Block	1
7.	BF314C	No4 X ¾ Self Tapping Screw	2
8.	E24007	Rear/Indicator Light-Complete	2
	BN2501	Bulb-12v 21/5W Tw/Con-st/tail	2
	BN2502	Bulb-12v 21w S. Con-Indicator	2
9.	E24008	Rear License Plate Light-complete	1
	BN2503	Bulb 12V 5W S./Con. Small Bayonet	2



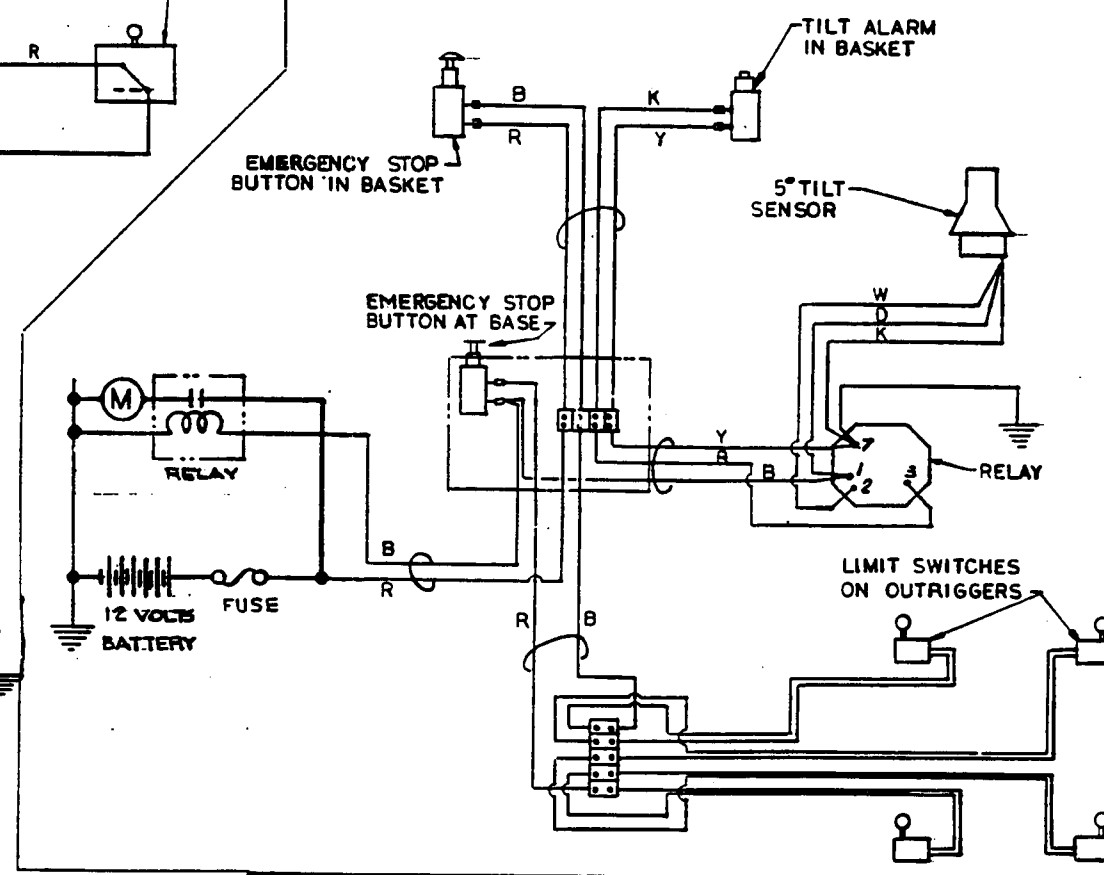
HYDRAULIC SCHEMATIC KNUCKLE BOOM		
SIZE C	DWG. NO SK-345	REV. -

CONTROL CIRCUIT



NOTE
WIRE COLOR CODE
 B - BLUE
 R - BROWN
 K - BLACK
 Y - GREEN YELLOW
 W - WHITE
 D - RED

EMERGENCY CONTROL CIRCUIT



ELECTRICAL SCHEMATIC
 KNUCKLE BOOM

SIZE D DWG. NO SK-344

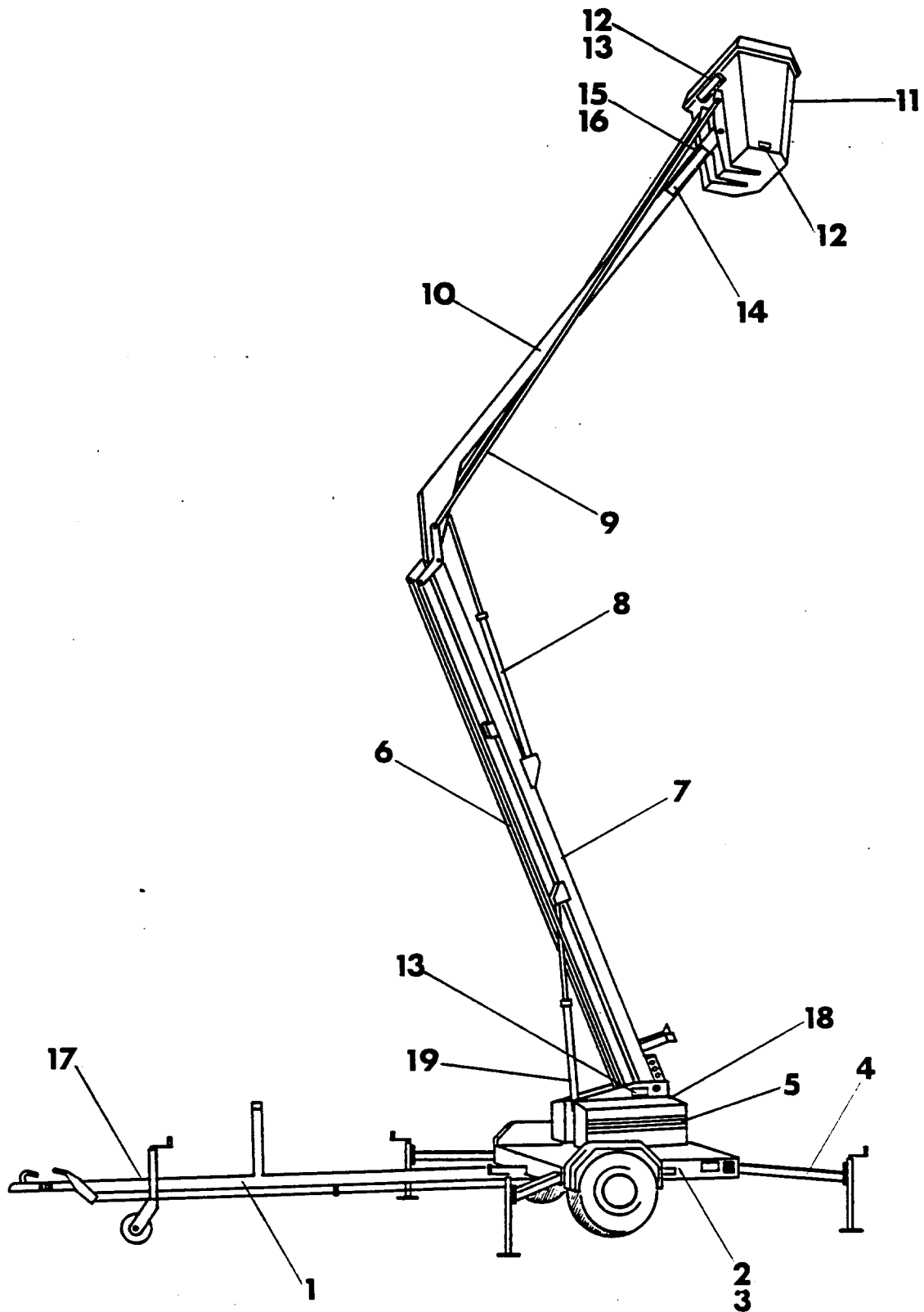
MARKLIFT TRAILER MOUNTED KNUCKLE BOOM
(MODEL TM32)

INDEX

<u>FIG. NO.</u>	<u>TITLE</u>	<u>PAGE</u>
1	FINAL ASSEMBLY	1
2	TOW BAR ASSEMBLY	3
3	CHASSIS ASSEMBLY	5
4	DECK ASSEMBLY	7
5	OUTRIGGER ASSEMBLY	9
6	TURRET ASSEMBLY	11
7	PLATFORM ASSEMBLY	16
8	BATTERY ASSEMBLY	18
9	BATTERY COVER ASSEMBLY	20
10	HYDRAULIC TANK COVER ASSEMBLY	21
11	VALVE COVER ASSEMBLY	22
12	TURRET HYDRAULICS	23
13	HYDRAULIC POWER PACK AND VALVES & MANIFOLD ASSEMBLIES	26
14	BOTTOM STABILIZER ROD ASSEMBLY	28
15	TOP CYLINDER ASSEMBLY	29
16	TOP ADJUSTABLE STABILIZER ROD ASSEMBLY	31

FIGURE 1 - FINAL ASSEMBLY

1



ITEM	PART NUMBER	DESCRIPTION	QTY
1-		FINAL ASSEMBLY	1
-1	T13000	TOW BAR ASSEMBLY (SEE FIG. 2)	1
-2	T14001	CHASSIS ASSEMBLY (SEE FIG. 3)	1
-3	T14000	DECK ASSEMBLY (SEE FIG. 4)	1
-4	T13001	OUTRIGGER ASSEMBLY (SEE FIG. 5)	4
-5	S51002	TURRET ASSEMBLY (SEE FIG. 6)	1
-6	D13001	BOTTOM STABILIZER ROD ASSEMBLY (SEE FIG. 14)	2
-7	A52002	BOTTOM BOOM WELDMENT (DWG 3040)	1
-8	R11000	TOP CYLINDER ASSEMBLY (SEE FIG 15)	1
-9	D13000	TOP ADJUSTABLE STABILIZER ROD ASSEMBLY (SEE FIG. 16)	2
-10	A52003	TOP BOOM WELDMENT (DWG NO. 3041)	1
-11		PLATFORM ASSEMBLY (SEE FIG. 7)	1
-12	20545	DECAL - "LOAD CAPACITY 400 LBS" (EVENLY DISTRIBUTED LOAD)	4
-13	94029	DECAL - OPERATION	2
-14	94025	DECAL - "MARK TM32"	2
-15	20417	DECAL - DANGER DO NOT OPERATE	1
-16	20418	DECAL - DANGER ELECTROCUTION HAZARD	1
-17	94030	PLACARD - VEHICLE WEIGHT	1
-18	2003	DECAL - "IMPORTANT CHECK BATTERY WATER LEVEL AT LEAST ONCE A WEEK"	1
-19	R21003	BOTTOM CYLINDER (DWG NO. 3023)	1

FIGURE 2 - TOW BAR ASSEMBLY

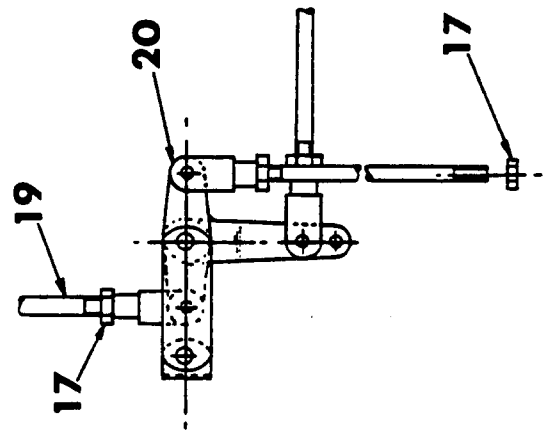
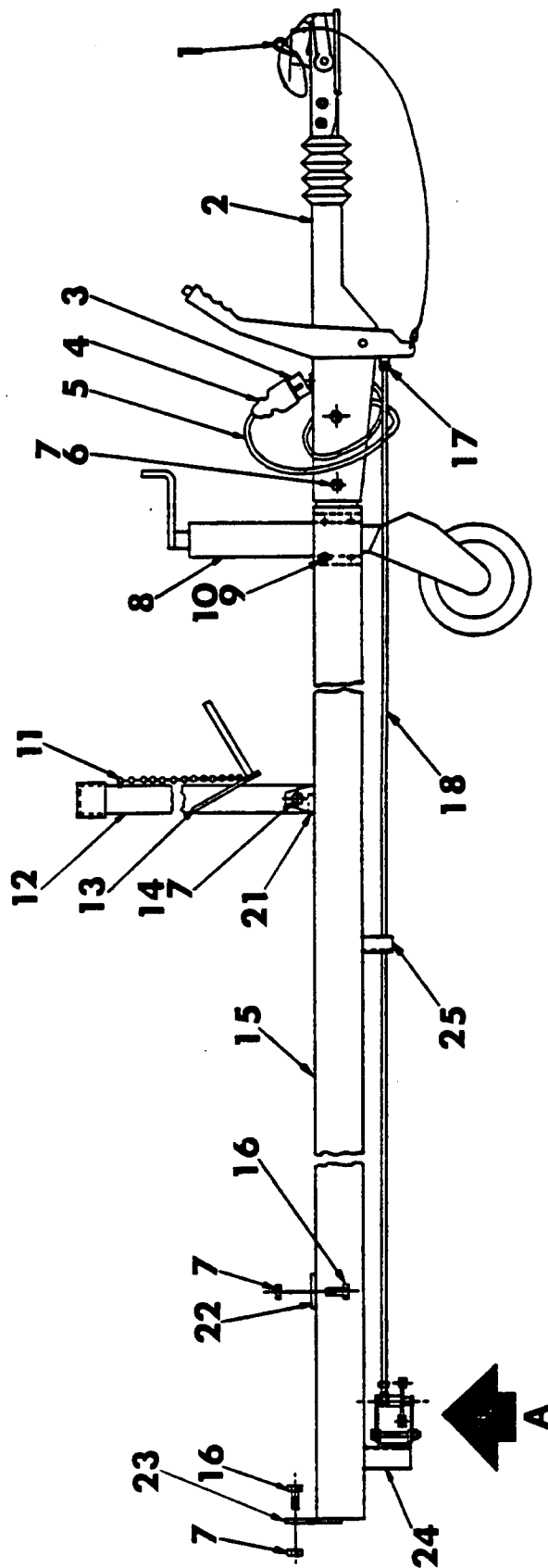


FIGURE 2 - TOW BAR ASSMEBLY

4

ITEM	PART NUMBER	DESCRIPTION	QTY
2-	T13000	TOW BAR ASSEMBLY (DWG NO. 3020)	1
-1	T24004	BREAKAWAY CABLE	1
-2	T23000	HYDRAULIC COUPLING	1
-3	E24002	PLUG HOLDER	1
-4		TRAILER PLUG	1
-5	BN2101	TRAILER CABLE	1
-6	BA17F0	HEX BOLT - 1/2UNC X 4	2
-7	BC17F2	NYLOCK NUT - 1/2UNC	7
-8	T34004	JOCKEY WHEEL	1
-9	BA17E0	HEX BOLT - 3/8UNC X 4	4
-10	BC17E1	HEX NUT - 3/8UNC	4
-11	B03400	CHAIN - 10" LONG	1
-12	T64000	BOOM SUPPORT (DWG NO. 1077)	1
-13	T54007	LOCKING PIN (DWG NO. 1057)	1
-14	BA17FM	HEX BOLT - 1/2UNC X 3	1
-15	T52004	TOW BAR (DWG NO. 3019)	1
-16	BA17FD	HEX BOLT - 1/2UNC X 1	4
-17	BC12D1	HEX NUT - 5/16UNF	6
-18	T54005	BRAKE ROD (DWG NO. 1029)	1
-19	T54008	TRAILER BRAKE ROD (DWG NO. 1030)	2
-20	T23005	BRAKE COMPENSATOR	1
-21	T54013	TOW BAR BRACKET (DWG NO. 1066)	2
-22	T54011	TOW BAR MOUNTING PLATE (DWG NO. 1068)	1
-23	T54015	END MOUNTING PLATE (DWG NO. 1075)	1
-24	T54014	BRAKE COMPENSATOR BRACKET (DWG NO. 1076)	1
-25	T54012	BRAKE ROD SUPPORT (DWG NO. 1067)	1

FIGURE 3 - CHASSIS ASSEMBLY

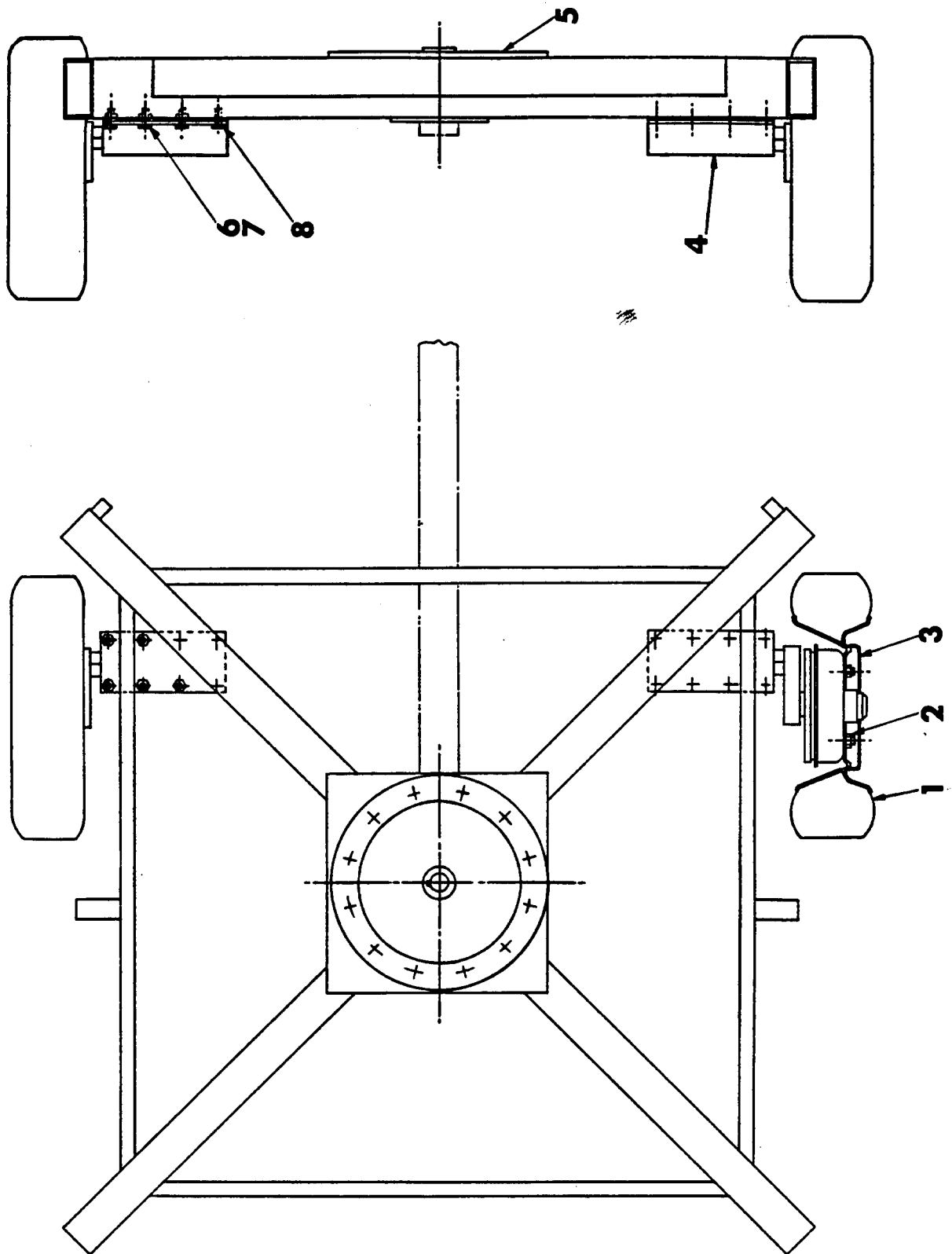


FIGURE 3 - CHASSIS ASSEMBLY

6

ITEM	PART NUMBER	DESCRIPTION	QTY
3-	T14001	CHASSIS ASSEMBLY (DWG NO. 4013)	1
-1	T22005	WHEEL & TIRE - 155SR X 13SP4	2
		BOLT - 4 - 1/2 - 5 1/2 PCD	
-2	BC33F4	WHEEL NUT - 1/2	8
-3	T24001	HUBCAP - 13"	2
-4	T22003	INDESPENSION SUSPENSION UNIT - 1 TON CAPACITY WITH 8" DIA. BRAKES (REF. X 245)	1 PR.
-5	T51001	TRAILER CHASSIS (DWG NO. 4009)	1
-6	BC17E2	NYLOCK NUT - 1/2 UNC	10
-7	BA17FE	HEX BOLT - 1/2 UNC X 1 1/4	10
-8	BA17FC	HEX SCREW - 1/2 UNC X 3/4	6

FIGURE 4 - DECK ASSEMBLY

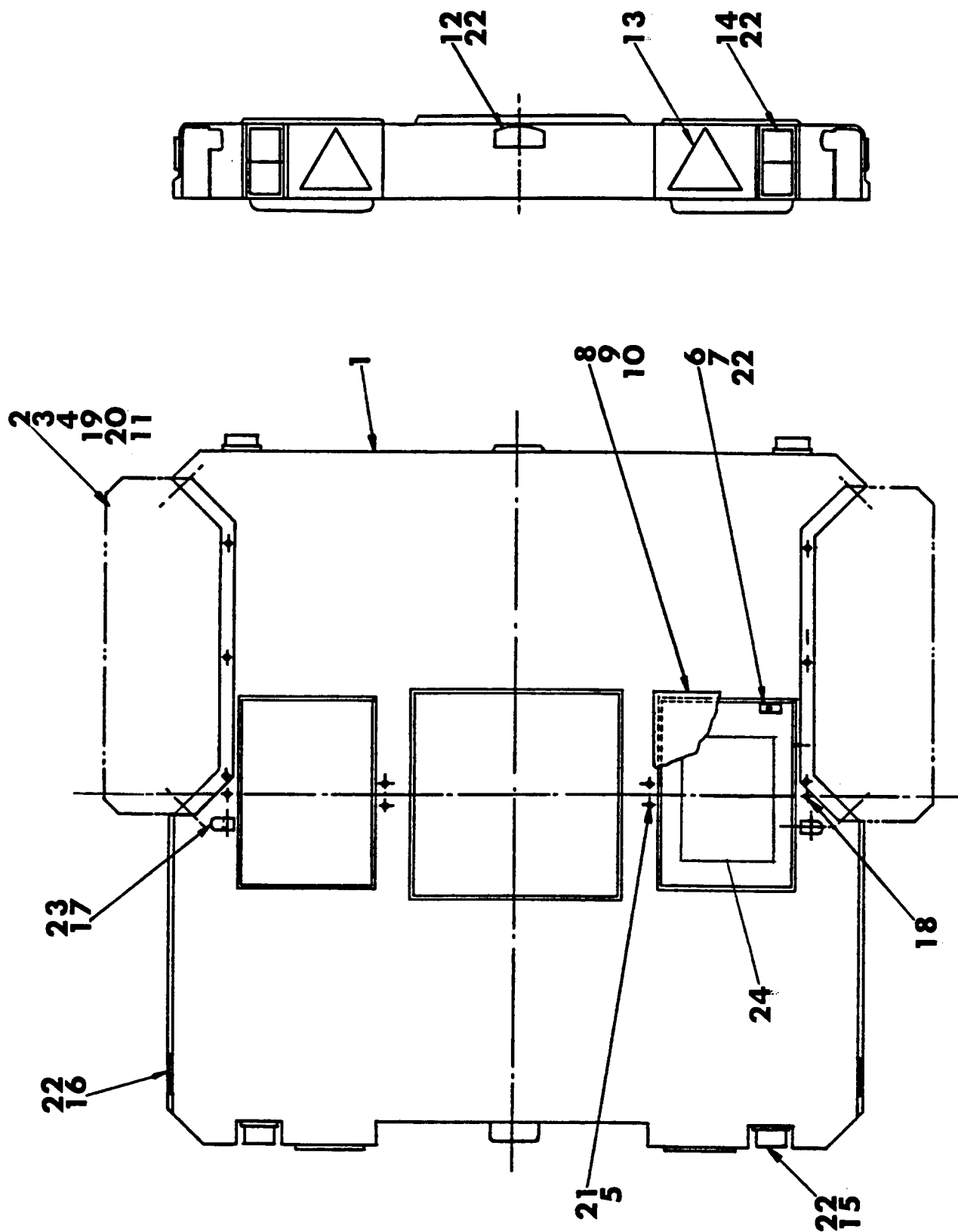
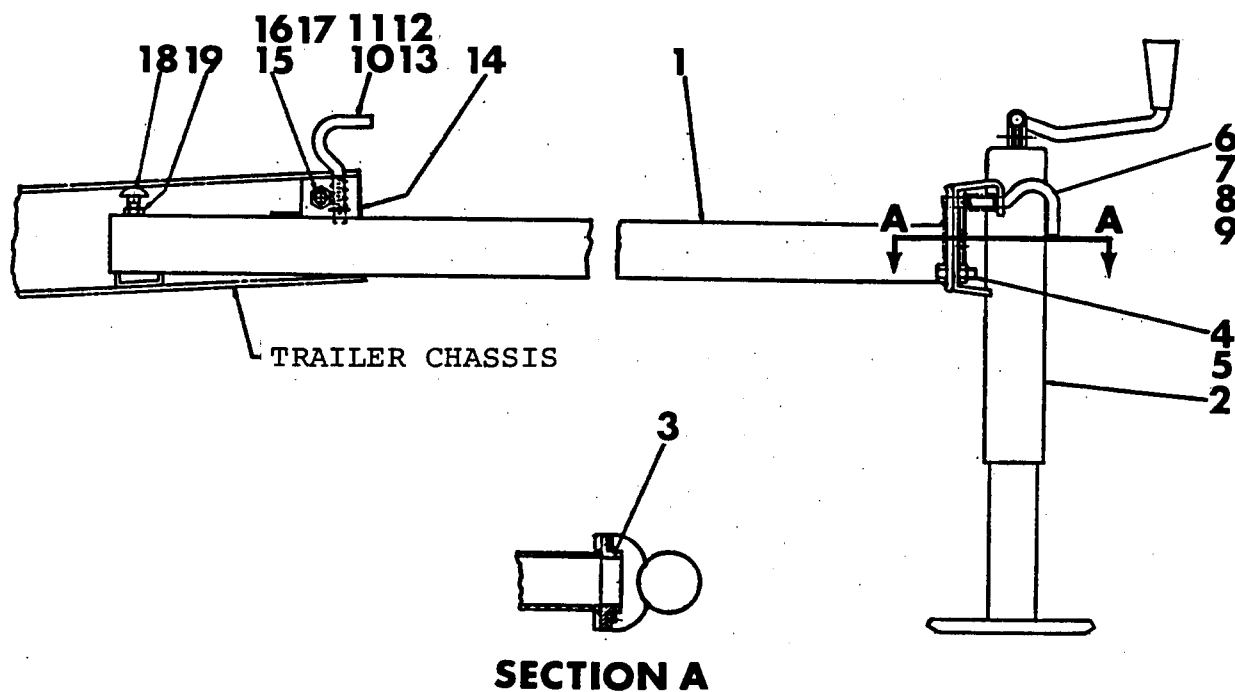


FIGURE 4 - DECK ASSEMBLY

ITEM	PART NUMBER	DESCRIPTION	QTY
4-	T14000	DECK ASSEMBLY (DWG NO. 4015)	1
-1	T31000	GRP DECK (DWG NO. 4014)	1
-2	T32000	MUDGUARD (DWG NO. 3021)	2
-3	T54004	MUDFLAP STAY (DWG NO. 1080)	2
-4	T34000	MUDFLAP (DG NO. 1081)	2
-5	BJB3BJ	"U" BOLT (DWG NO. 1031)	2
-6	C54008	BRACKET - B/LOCK KEY (DWG NO. 1036)	1
-7	BL2400	BUDGET LOCK KEY (DWG NO. 1056)	1
-8	T33000	DECK COVER (DWG NO. 2021)	2
-9	T54009	COVER LOCKING PLATE (DWG NO. 1034)	2
-10	T54010	DECK COVER CLIP (DWG NO. 1035)	2
-11	BD31C0	FLAT WASHER - 1/4	10
-12	E24008	LICENSE PLATE LIGHT	1
-13	E24009	TRIANGLE REFLECTOR	2
-14	E24007	INDICATOR LIGHT	2
-15	E24006	FRONT MARKER LIGHT	2
-16	E24010	SIDE REFLECTOR	2
-17	T24002	LEVELING GAUGE	2
-18	BL1400	ANTILUCE FASTENER	2
-19	BA37CC	HEX BOLT - 1/4 UNC X 3/4	10
-20	BC37C1	HEX NUT - 1/4 UNC	10
-21	BC32B1	HEX NUT - 3/16	4
-22	BF318A	SELF TAPPING SCREW NO. 8 X 1/2	18
-23	BF314C	SELF TAPPING SCREW NO. 4 X 3/4	4
-24		LESTER BATTERY CHARGER - TYPE 24LC15CVRT - 24 VOLTS	1

FIGURE 5 - OUTRIGGER ASSEMBLY

9



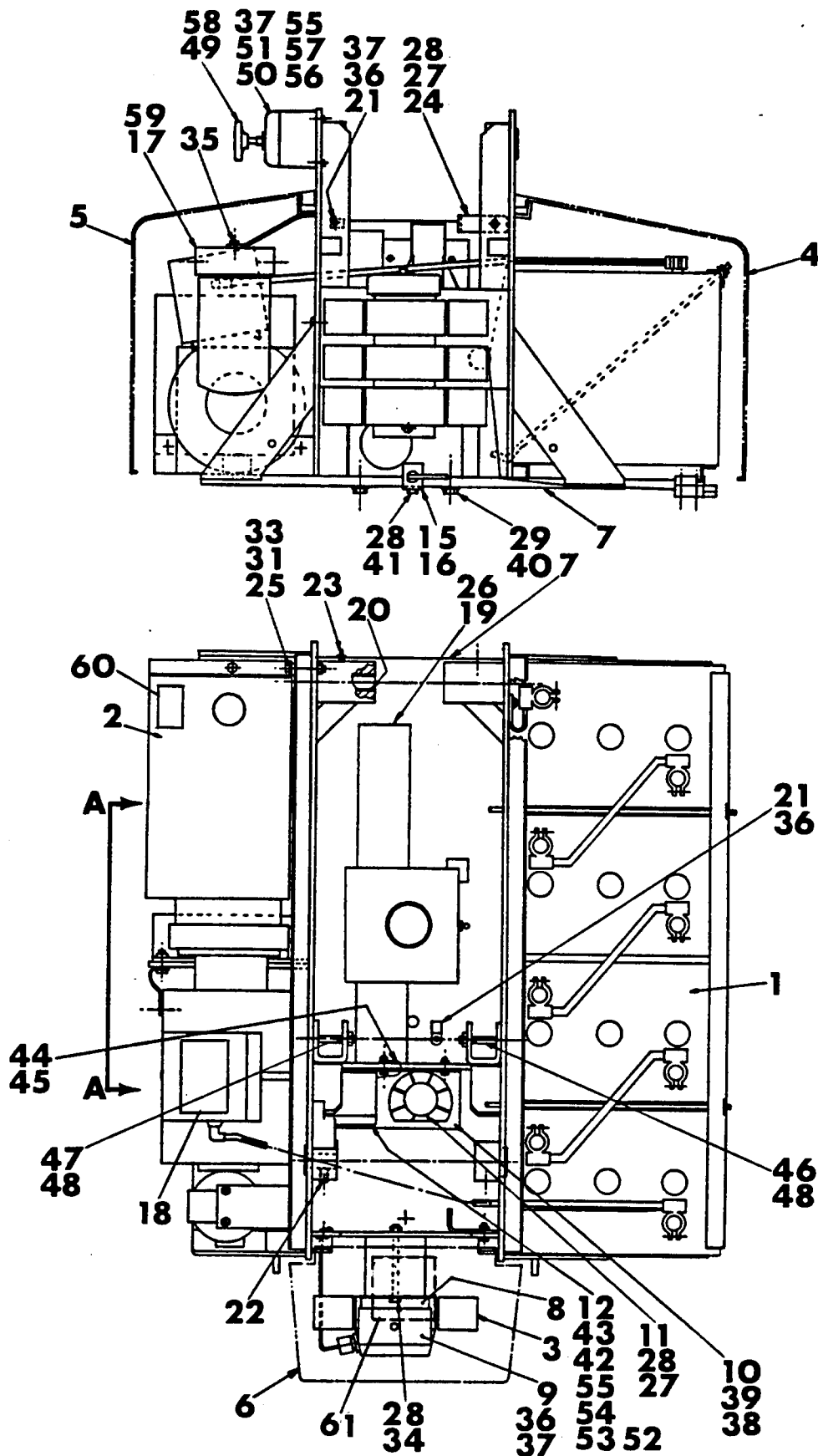
ITEM	PART NUMBER	DESCRIPTION	QTY
5-	T13001	OUTRIGGER ASSEMBLY (DWG NO. 3017)	1
-1	T53001	OUTRIGGER (DWG NO. 3018)	1
-2	T33002	SWIVEL JACK	1
-3	T34001	CIRCLIP - (PART OF ITEM 2)	1
-4	BA37EC	HEX BOLT - 3/8 UNC X 3/4 (USE ON FRONT JACKS ONLY)	1
-5	BC37E2	NYLOCK NUT - 3/8 (USE ON FRONT JACKS ONLY)	1
-6	*T34002	HOO K PIN	1
-7	*T34003	HOO K SPRING	1
-8	*BD31EO	HOO K WASHER	1
-9	*BM11AD	ROLL PIN - 1/8 x 1	1
-10	**T34002	HOO K PIN	1
-11	**T34003	HOO K SPRING	1
-12	**BD31EO	HOO K WASHER	1
-13	**BM11AD	ROLL PIN - 1/8 X 1	1
-14	T54005	OUTRIGGER SHOE (DWG NO. 1041)	1

FIGURE 5 - OUTRIGGER ASSEMBLY

10

ITEM	PART NUMBER	DESCRIPTION	QTY
-15	BA17FN	HEX BOLT - 1/2 UNC X 3 1/2	1
-16	BE17FI	HEX NUT - 1/2	1
-17	BD37FO	WASHER - 1/2	1
-18	BJA1EJ	COACH BOLT - M10 X 50	1
-19	BC11E1	HEX NUT - M10	1
<p>* PLUNGER KITS SUPPLIED WITH ITEM 2. USE (2) FRONT JACK KITS FOR OUTRIGGER LOCKS.</p> <p>**PLUNGER KIT 500-103. USE (2) KITS FROM FRONT JACKS. (2) KITS ONLY TO BE ORDERED.</p>			

FIGURE 6 - TURRET ASSEMBLY



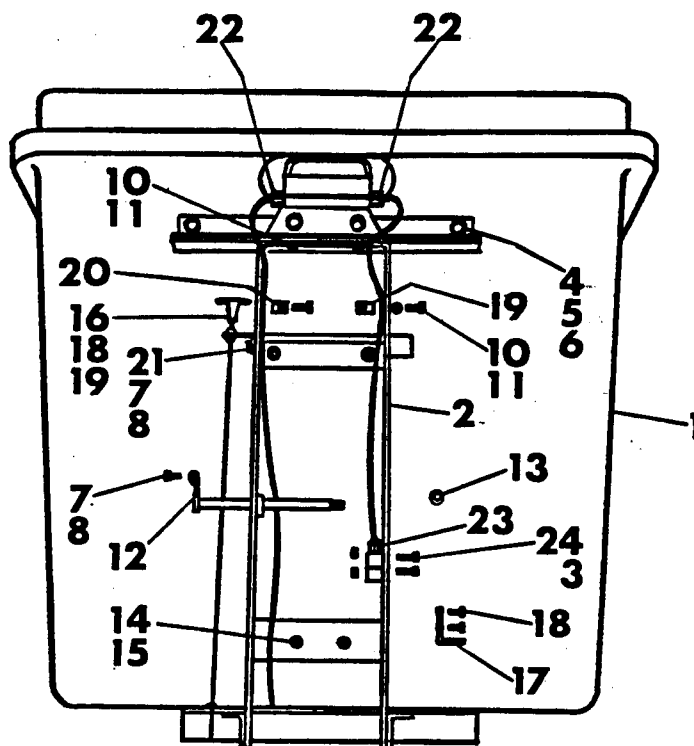
ITEM	PART NUMBER	DESCRIPTION	QTY
6 -	S51002	TURRET ASSEMBLY (DWG NO. 4018)	1
-1	E52000	BATTERY ASSEMBLY (DWG NO. 3024) (SEE FIG. 8)	1
-2		HYDRAULIC POWER PACK ASSEMBLY (SEE FIG. 13)	1
-3	V23011	VALVES & MANIFOLD ASSEMBLY (DWG NO. 2023) (SEE FIG. 13)	1
-4	S13000	BATTERY COVER ASSEMBLY (DWG NO. 2027) (SEE FIG. 9)	1
-5	S13001	HYDRAULIC TANK COVER ASSEMBLY (DWG NO. 2028) (SEE FIG. 10)	1
-6	S13002	VALVE COVER ASSEMBLY (DWG NO. 2029) (SEE FIG. 11)	1
-7	S51001	TURRET WELDMENT (DWG NO. 4017)	1
-8	S54001	FUSE BOX BRACKET (DWG NO. 1192)	1
-9	E24005	FUSE BLOCK	1
-10	S54002	LEVEL SWITCH MOUNTING BRACKET (DWG NO. 1193)	1
-11		LEVEL SWITCH - SUPPLIED BY MARK INDUSTRIES	1
-12	E43003	RELAY BOX (DWG NO. 1255)	1
-13	S64000	POWERPACK ANGLE (DWG NO. 1194)	1
-14	S64001	MOTOR GROUND LEAD (DWG NO. 1195)	1
-15	S54003	ANTILUCE BRACKET (DWG NO. 1199)	1
-16	BL1400	ANTILUCE FASTENING	1
-17	V23002	OIL FILTER COMPLETE - UCC PART NO. UC- MX-1518-4-10	1
-18	94027	DECAL - EMERGENCY POWER	1
-19	R21000	TURRET ACTUATOR - SINGLE OUTPUT SHAFT ACTUATOR TO GIVE 5000 LB IN TORQUE AT 1500 PSI 370° ROTATION FITTED WITH BLEED SCREWS.	1
-20	FBAKLF	BUSHING	2
-21	BH2401	CABLE CLIP - 3/8	1
-22	BE27FD	GRUBSCREW - 1/2UNC X 1	2
-23	BK12C1	GREASE NIPPLE - 1/4UNF	1

ITEM	PART NUMBER	DESCRIPTION	QTY
-24	S54004	HOSE GUIDE BRACKET (DWG NO. 1037)	1
-25	C54007	SPACER (DWG NO. 1032)	2
-26	BK1263	90° GREASE NIPPLE - 1/4UNF	1
-27	BA37DA	HEX BOLT - 1/4UNC X 3/4	4
-28	BC37D1	HEX NUT - 1/4UNC	5
-29	BA31ED	HEX SETSCREW - M10 X 25	6
-30	BA37ED	HEX BOLT - 3/8UNC X 1	2
-31	BC37E1	HEX NUT - 3/8UNC	4
-32	BD31E0	WASHER - 3/8	1
-33	BA3EJ	HEX BOLT - 3/8UNC X 2	2
-34	BA37CN	HEX BOLT - 1/4UNC X 3 1/2	2
-35	BA31DB	HEX SETSCREW - M8 X 15	2
-36	BB32BA	ROUND HEAD SCREW - 10UNF X 1/2	4
-37	BC32B1	HEX NUT - 10UNF	5
-38	BA37DC	HEX BOLT - 5/16UNC X 3/4	2
-39	BL37D1	HEX NUT - 5/16UNC	2
-40	BD32E0	SPRING WASHER - 10mm	4
-41	BA37CD	HEX BOLT - 1/4UNC X 1	1
-42	BC32BE	CAP HEAD BOLT - 10UNF X 1 1/4	2
-43	BC32B1	HEX NUT - 10UNF	2
-44	BN2200	GROUND RING TERMINAL - 1/4	3
-45	BD35C0	STAR WASHER - 1/4	1
-46	BE17FL	CSK SOCKET BOLT - 1/2UNC X 2 3/4	1
-47	BA37FL	HEX HEAD BOLT - 1/2UNC X 2 3/4	1
-48	BC37F2	NYLOCK NUT - 1/2UNC	2
-49	4018	EMERGENCY STOP SWITCH - SUPPLIED BY MARK INDUSTRIES	1
-50	E43002	TERMINAL BOX (DWG NO. 1253)	1
-51	BB32BD	CH HEAD SCREW - 10UNF	2
-52	E43004	RELAY BOX 2 - HOLE BASE (DWG NO. 1260)	1
-53	E43005	2 HOLE FRONTPLATE	1
-54	BN2303	RUBBER GROMMET	2
-55	BN2304	HARD PLASTIC BLANKING PLUG	1

ITEM	PART NUMBER	DESCRIPTION	QTY
-56	E43006	TERMINAL BOX BASE (DWG NO. 1261)	1
-57	E43007	TERMINAL BOX COVER	1
-58	5300	EMERGENCY STOP KNOB - SUPPLIED BY MARK INDUSTRIES	1
-59	V23003	REPLACEMENT FILTER	1
-60	2017	DECAL - HYDRAULIC SPEC.	1
-61	2003	DECAL - "IMPORTANT CHECK BATTERY WATER LEVEL AT LEAST ONCE A WEEK"	1

FIGURE 7 - PLATFORM ASSEMBLY

16

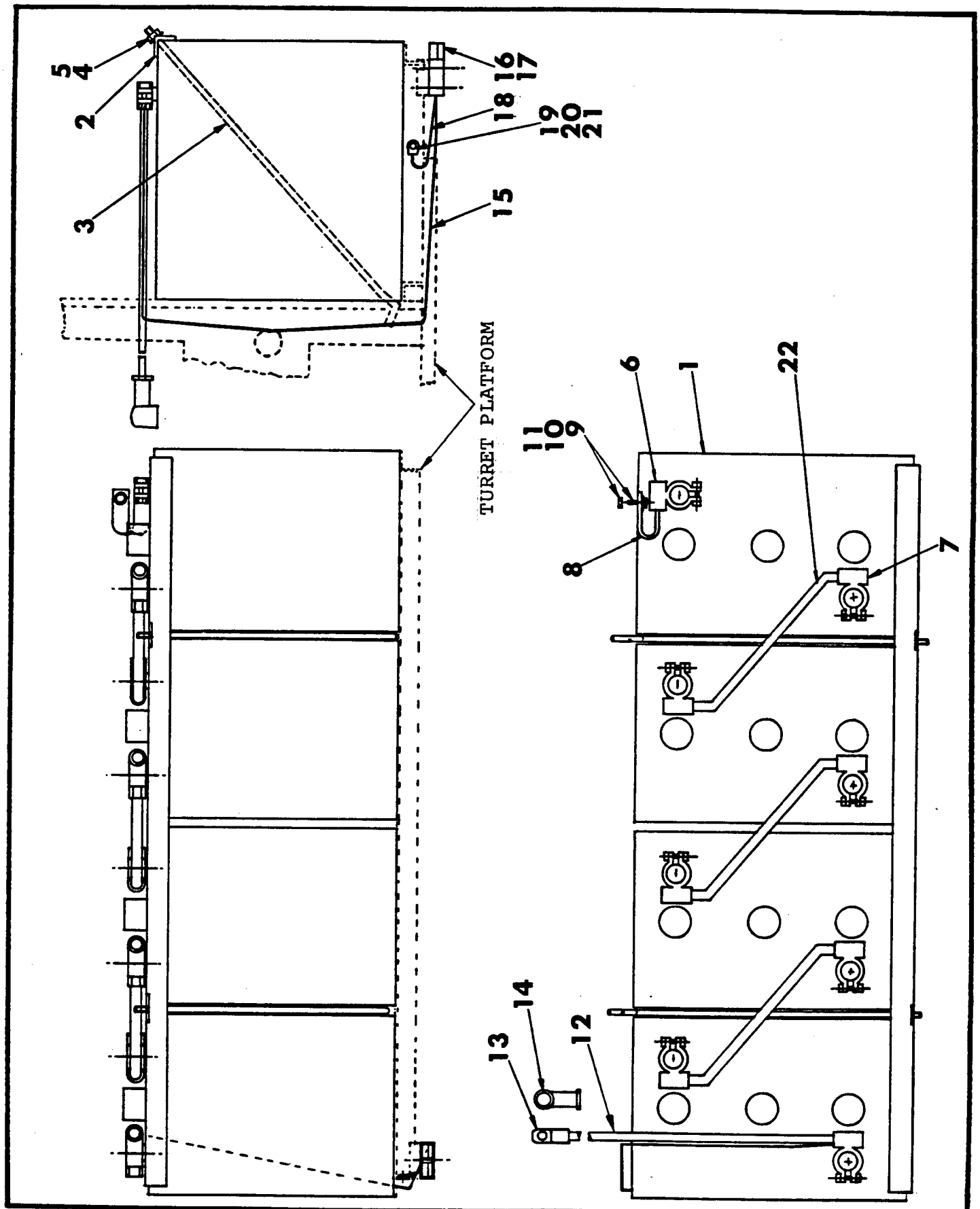


ITEM	PART NUMBER	DESCRIPTION	QTY
7-		PLATFORM ASSEMBLY	1
-1	P31001	GRP PLATFORM	1
-2	P52003	PLATFORM SUPPORT	1
-3	BC31B1	HEX NUT-M5	2
-4	B131EC	HEX BOLT-M10x20	5
-5	BC31E1	HEX NUT-M10	5
-6	BC31E0	WASHER-M10	5
-7	BA31EC	HEX BOLT-M8x20	7
-8	BC31D1	HEX NUT-M8	7
-9	BC31D0	WASHER-M8	5
-10	BA31CB	HEX SCREW-M6x17	8
-11	BC31C1	HEX NUT-M6	8
-12	C54004	PIVOT PIN	1
-13	BC31G2	NYLOCK NUT - M16	1
-14	BJB3EK	"U" BOLT SAFETY ANCHOR	1

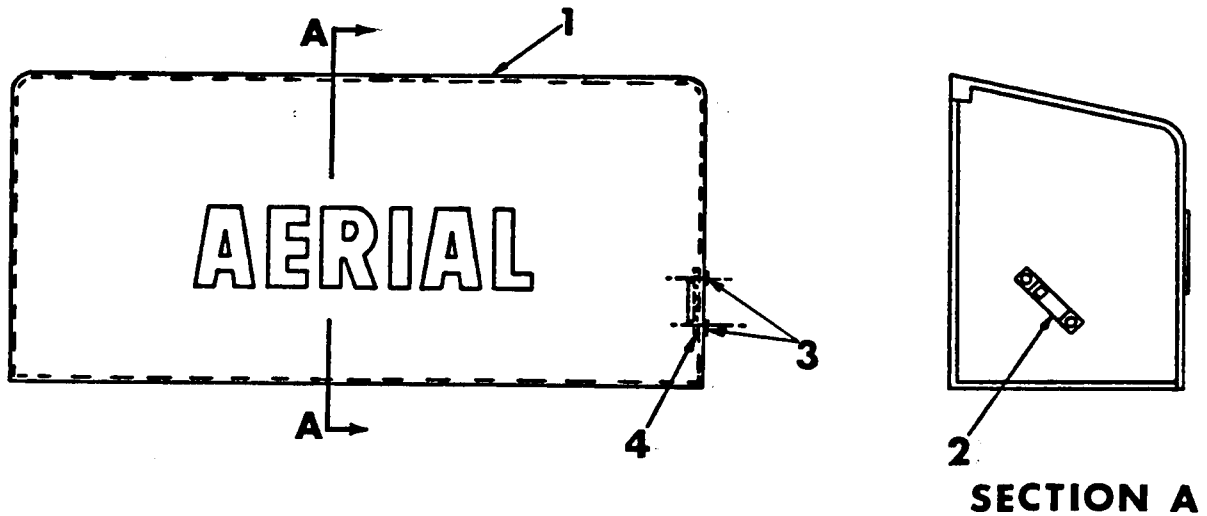
ITEM	PART NUMBER	DESCRIPTION	QTY
-15	BC31E1	HEX NUT -M10	4
-16	V23009	EMERGENCY CABLE - COMPLETE	1
-17	E54003	LIMIT SWITCH BRACKET	1
-18	BA31BA	HEX SCREW - M5 X 10	6
-19	BH2400	CABLE CLIP - 1/4	5
-20	BH2401	CABLE CLIP - 3/8	2
-21	V5400	EMERGENCY CABLE BRACKET	1
-22	BN2302	CABLE GLAND - P20	4
-23	BN2300	CABLE GLAND - P16	1
-24	BA31BF	SCREW - M5X35	2

FIGURE 8 - BATTERY ASSEMBLY

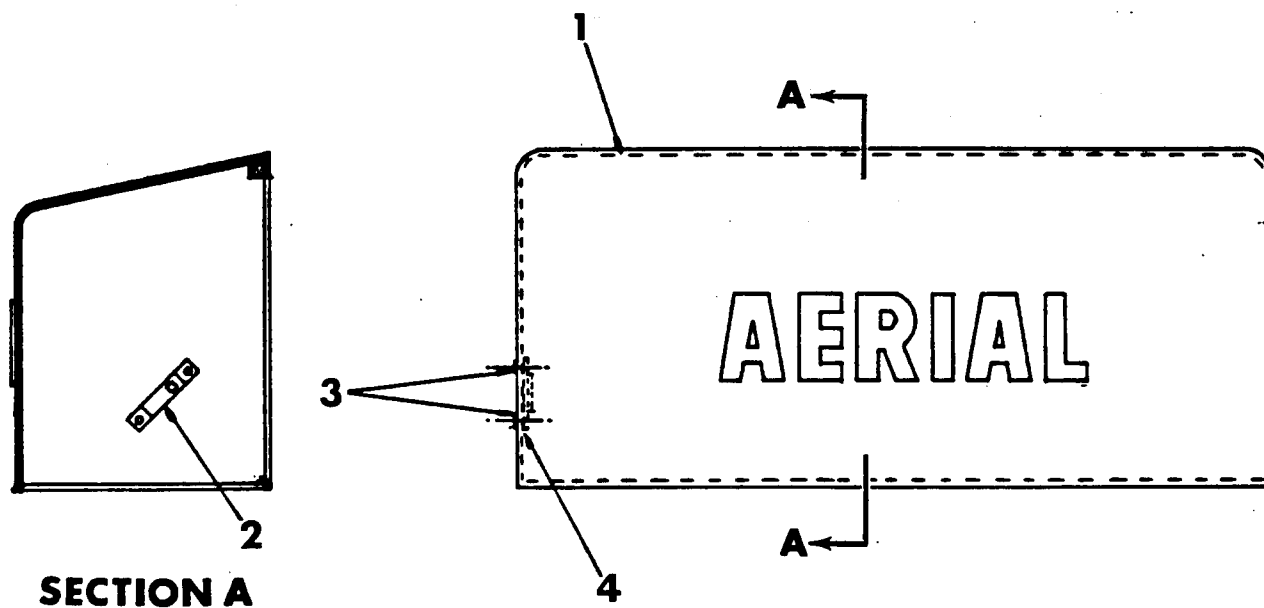
18



ITEM	PART NUMBER	DESCRIPTION	QTY
8-	E52000	BATTERY ASSEMBLY (DWG NO. 3024)	1
-1	E23000	TRACTION BATTERY - 6 VOLT SEMI TYPE CXL	4
-2	E54000	BATTERY CLAMP (DWG NO. 1064)	1
-3	E54001	CLAMP STAY (DWG NO. 1038)	2
-4	BC32C1	NUT - 1/4 UNF	2
-5	BD31CO	WASHER - 1/4 UNF	2
-6	BN2206	BATTERY TERMINAL (NEGATIVE)	4
-7	BN2205	BATTERY TERMINAL (POSITIVE)	4
-8	E44002	GROUND LEAD (DWG NO. 1087)	1
-9	BA37DC	HEX SCREW - 5/16 UNC X 3/4	1
-10	BC37D1	HEX NUT - 5/16 UNC	1
-11	BC31DO	WASHER - 5/16	1
-12	E44001	CABLE TO MOTOR (DWG NO. 1088)	1
-13	BN2201	RING TERMINAL - 8MM	1
-14	BN2207	RUBBER BOOT	1
-15	BN2112	CHARGING CABLE (RED) (DWG NO. 1089)	1
-16		CHARGING SOCKET (PART OF ITEM 3, FIG.7)	1
-17	BF318A	SELF TAPPING SCREW - NO.8 X 1/2	2
-18	BN2113	CHARGING CABLE - BLACK DWG NO. 1090)	1
-19	BN2200	RING TERMINAL - 6MM	1
-20	BA32BA	HEX SCREW - 3/16 UNF X 3/8	1
-21	BC32B1	HEX NUT - 3/16 UNF	1
-22	E44002	BATTERY CONNECTING CABLE (DWG NO. 1091)	3



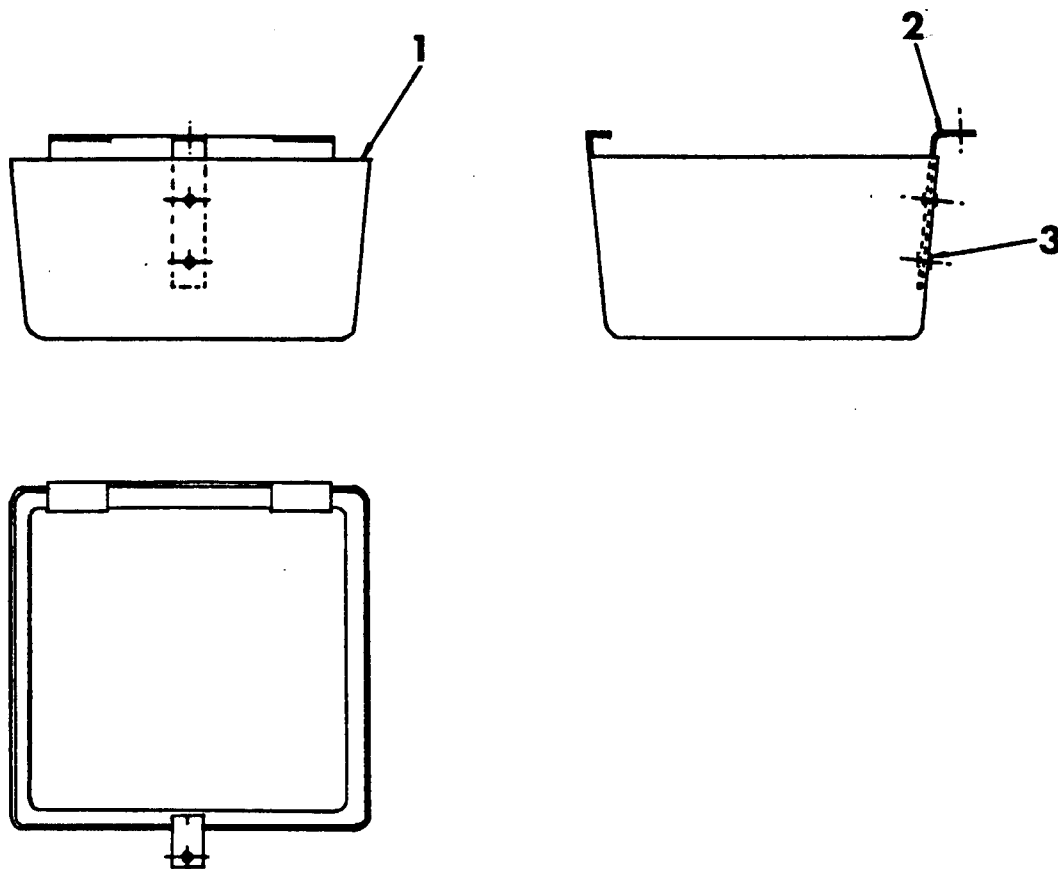
ITEM	PART NUMBER	DESCRIPTION	QTY
9-	S13000	BATTERY COVER ASSEMBLY (DWG NO. 2027)	1
-1	S33000	GRP BATTERY COVER	1
-2	BL2401	R.H. BUDGET LOCK - 7/8 BRASS TONGUE	1
-3	BG2ABB	ALUMINIUM RIVET - 3/16 X 5/8	2
-4	BD11BO	WASHER - 3/16	2



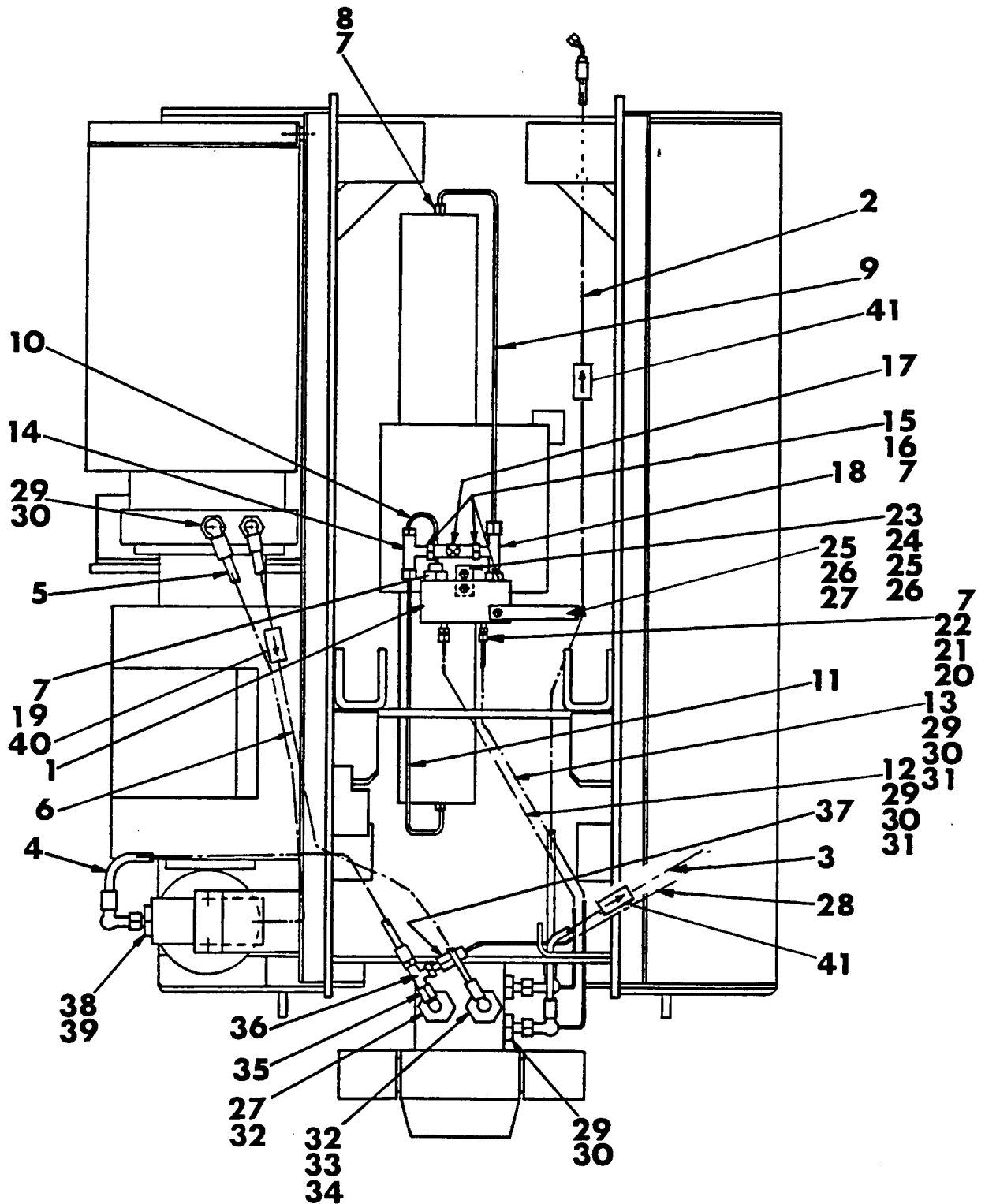
ITEM	PART NUMBER	DESCRIPTION	QTY
10-	S13001	HYDRAULIC TANK COVER ASSEMBLY (DWG NO. 2028)	1
-1	S33001	GRP HYDRAULIC TANK COVER (DWG NO. 2011)	1
-2	BL2402	L.H. BUDGET LOCK - 7/8 BRASS TONGUE	1
-3	BG2ABB	ALUMINUM RIVET - 3/16 X 5/8	2
-4	BD11BO	WASHER - 3/16	2

FIGURE 11 - VALVE COVER ASSEMBLY

22



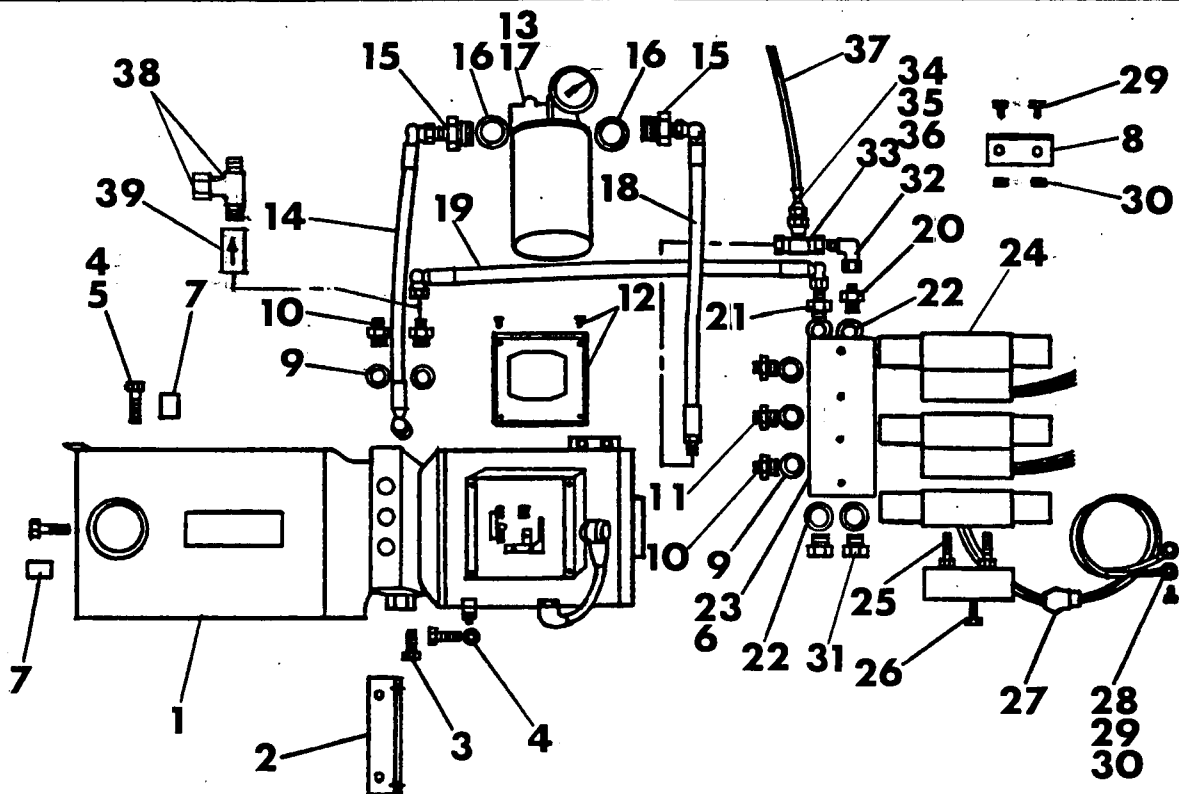
ITEM	PART NUMBER	DESCRIPTION	QTY
11-	S13002	VALVE COVER ASSEMBLY (DWG NO. 2029)	1
-1	S33002	GRP VALVE COVER (DWG NO. 2012)	1
-2	S6400	VALVE COVER CLIP (DWG NO. 1065)	1
-3	BG2ABB	ALUMINUM RIVET - 3/16 X 5/8	1



ITEM	PART NUMBER	DESCRIPTION	QTY
12-	S12000	TURRET HYDRAULICS (DWG NO. 3039)	1
-1	V23000	DOUBLE PO CHECK VALVE MOVEMENT OF PISTON REDUCED TO 0.010	1
-2	HPCCH8	BOTTOM CYLINDER HOSE	2
-3	HPBCAG	TOP CYLINDER HOSE	2
-4	HPHCD1	FILTER HOSE	1
-5	HPBCC6	FILTER TO TANK HOSE	1
-6	HPBCD8	PUMP TO VALVE HOSE	1
-7	HJ3CHO	COPPER WASHER - 1/4 BSP	8
-8	HM3CBO	MALE/FEMALE BRASS ADAPTER - 1/4 BSP X 3/16	2
-9	HKDBC9	BUNDY TUBE ASSEMBLY - 3/16	1
-10	HKDBA4	BUNDY TUBE ASSEMBLY - 3/16	1
-11	HKDBC7	BUNDY TUBE ASSEMBLY - 3/16	1
-12	HKDBC7	BUNDY TUBE ASSEMBLY - 3/16	1
-13	HKDBD3	BUNDY TUBE ASSEMBLY - 3/16	1
-14	HMLBBA	TEE - 3/16 X 3/16 X 1/8 BSP	1
-15	HD1ACO	MALE/MALE ADAPTER - 1/4 BSP X 1/8 BSP	3
-16	HJ3CHO	COPPER WASHER - 1/8 BSP	3
-17	V23001	NEEDLE VALVE - 1/4	1
-18	HMLABA	TEE - 1/8 BSP X 3/16 BUNDY X 1/8 BSP	1
-19	HM3CBO	MALE BUNDY ADAPTER - 1/4 X 3/16	1
-20	HM4CBO	FEMALE BUNDY ADAPTER - 1/4 X 3/16	2
-21	S34000	RESTRICTOR WASHER (DWG NO. 1198)	2
-22	HD1CCO	MALE/MALE ADAPTER - 1/4 BSP (DWG NO. 1197)	2
-23	R54000	P.O. CHECK MOUNTING PLATE (DWG NO. 1045)	1
-24	BA31FC	HEX SET BOLT - M12 X 20	1
-25	HA37CJ	HEX BOLT - 1/4 UNC X 2	2
-26	HC37C1	HEX NUT - 1/4 UNC	2
-27	RS4002	HOSE GUARD (DWG NO. 1048)	1
-28	V23009	EMERGENCY RELEASE VALVE HOSE	1
-29	HS1ECO	MALE/MALE ADAPTER - 1/4 JIC X 3/8 BSP	8

ITEM	PART NUMBER	DESCRIPTION	QTY
-30	HH0003	DOWTY SEAL - 3/8	8
-31	HM1BC0	ADAPTER - 3/16 BUNDY X 1/4 JIC	2
-32	HH0004	DOWTY SEAL - 1/2	4
-33	S44000	MALE/FEMALE ADAPTER/RESTRICTOR - 1/2 BSP X 1/4 JIC	1
-34	HS1FC0	MALE/MALE ADAPTER/RESTRICTOR-1/2 BSP X 1/4 JIC	1
-35	HS1CC0	FEMALE ELBOW - 1/4 JIC	1
-36	HS1CCA	MALE TEE - 1/4 X 1/4 JIC X 1/8 BSP	1
-37	HE1CA0	TUBE ADAPTER - 1/8 BSP FEMALE X 1/4	1
-38	HS1HC0	MALE/MALE ADAPTER - 3/4 BSP X 1/4 JIC	2
-39	HH0006	DOWTY SEAL - 3/4	2
-40		ARROW IN-LINE FILTER - MODEL 9052 - 25 MICRON - 1/4 NPT	1
-41		CHECK VALVE WITH NO.69 ORIFICE	2

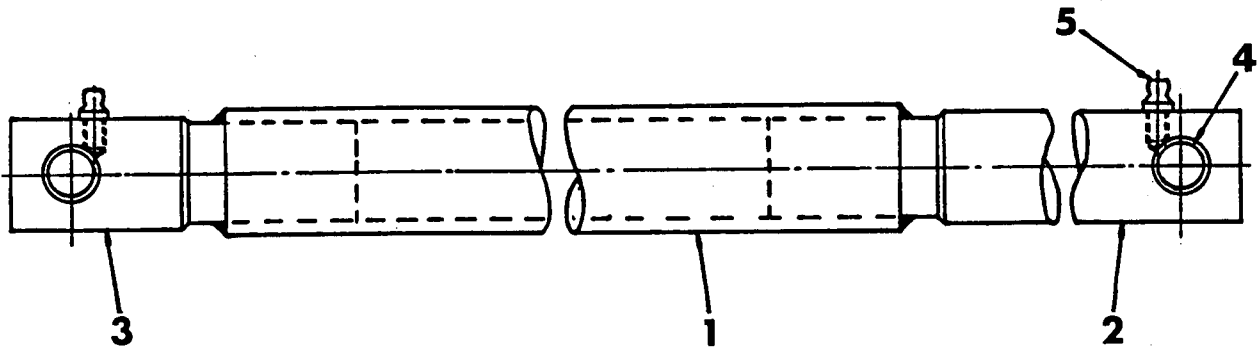
FIGURE 13 - HYDRAULIC POWER PACK AND
VALVES & MANIFOLD ASSEMBLIES



ITEM	PART NUMBER	DESCRIPTION	QTY
13-		HYDRAULIC POWER PACK AND VALVES & MANIFOLD ASSEMBLIES	1
-1	R22001	24 VOLT HYDRAULIC POWER PACK	1
-2	R54001	MOUNTING BRACKET	1
-3	BA31ED	HEX SETSCREW - M10 X 25	4
-4	BC31E1	HEX NUT - M10	4
-5	BA31EJ	BOLT - M10 X 50	2
-6	BA11CN	HEX BOLT - M6 X 90	2
-7	C54007	SPACER	2
-8	E54002	FUSE MOUNTING BRACKET	1
-9	HH0003	DOWTY SEAL - 3/8	8
-10	HD1CE0	ADAPTER - 1/4-3/8M.M.	6
-11	V34000	RESTRICTOR ADAPTER - 1/4-3/8M.M.	2
-12		SOLENOID COVER (PART OF ITEM 1)	1
		SELF TAPPING SCREW (PART OF ITEM 1)	4
-13	BA31EB	HEX SCREW - M8 X 15	2

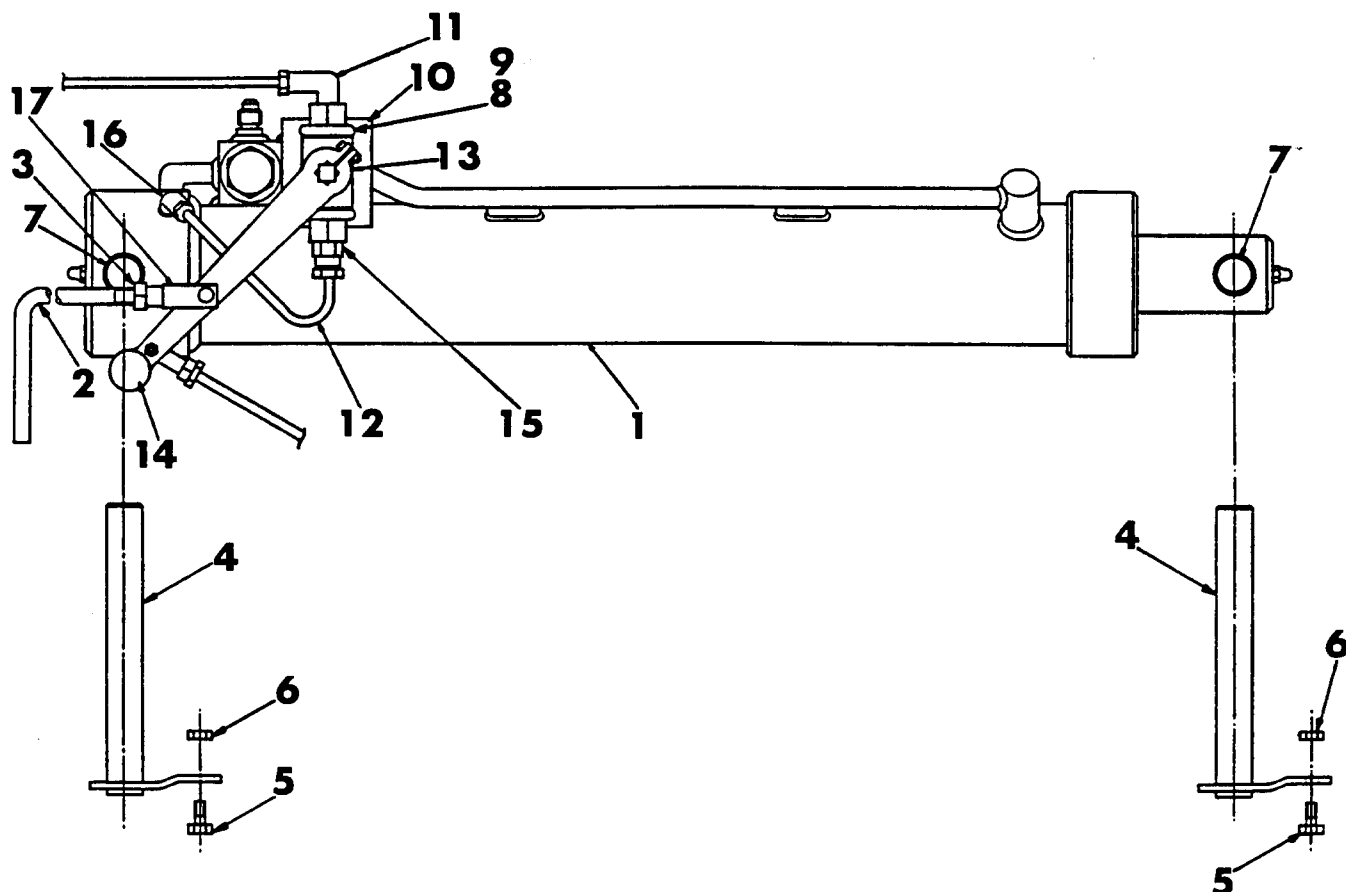
**FIGURE 13 - HYDRAULIC POWER PACK AND
VALVES & MANIFOLD ASSEMBLIES**

ITEM	PART NUMBER	DESCRIPTION	QTY
-14	HABCC7	FILTER HOSE TO TANK - 1/4	1
-15	HD1CH0	ADAPTER - 3/4-1/4BSP M.M.	2
-16	HH0006	DOWTY SEAL - 3/4	2
-17	V23002	FILTER - COMPLETE	1
	V23003	REPLACEMENT ELEMENT	1
-18	HAFCD0	VALVE HOSE TO FILTER - 1/4	1
-19	HABCD8	VALVE HOSE TO PUMP - 1/4	1
-20	HD1CF0	ADAPTER - 1/4-1/2BSP	1
-21	V34001	RESTRICTOR ADAPTER - 1/4-1/2	1
-22	HH0004	DOWTY SEAL - 1/2	4
-23	V23005	3-WAY VALVE BLOCK	1
-24	V23006	SOLENOID VALVE	3
-25	BE11BF	CAPSCREW - M5 X 35	12
-26	BE1 BF	CAPSCREW - X 35	6
-27	BN2300	GLAND - P16M	3
-28	BN2200	GROUND RING TERMINAL - 6M.M.	2
-29	BA31BA	HEX SCREW - M5 X 10	3
-30	BC31B1	HEX NUT - M5	3
-31	HH1004	HEX PLUG - 1/2BSP	2
-32	HF1CC0	90° ELBOW - 1/4BSP M.F.	1
-33	HB1CCC	TEE - 1/4-1/4-1/4	1
-34	HM3CC0	NYLON ADAPTER - 1/4BSP M.	1
-35	HM5C00	NYLON NUT - 1/4	1
-36	HM6C00	NYLON OLIVE - 1/4	1
-37		NYLON TUBE - 1/4	1
-38		PRESSURE GAUGE TEE AND CAP	1
-39		ARROW IN-LINE FILTER - MODEL 9052 - 25 MICRON - 1/4 NPT	1



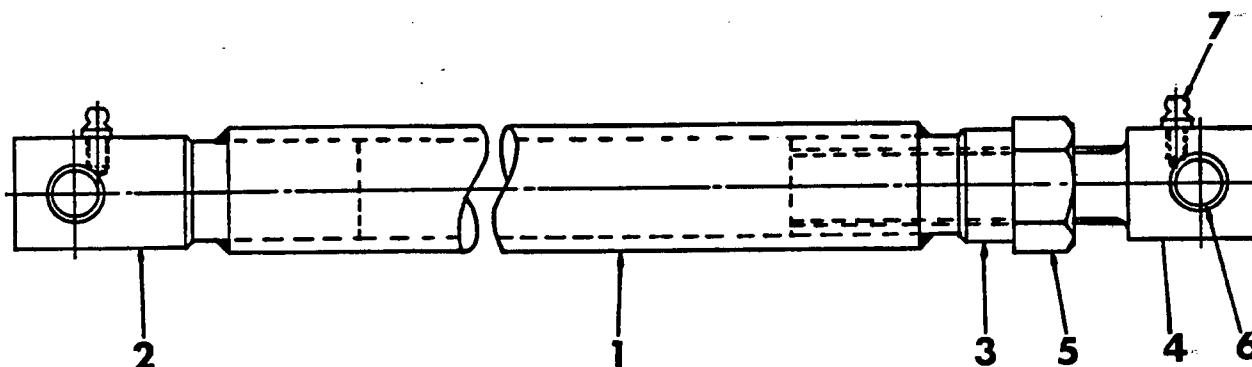
ITEM	PART NUMBER	DESCRIPTION	QTY
14-	D13001	BOTTOM STABILIZER ROD ASSEMBLY (DWG NO. 2037)	1
-1	D54002	TIE ROD TUBE (DWG NO. 1246)	1
-2	D54003	LONG ROD END (DWG NO. 1251)	1
-3	D54004	SHORT ROD END (DWG NO. 1247)	1
-4	FBAFJB	BUSHING - 08D X 10	4
-5	BK12C1	STRAIGHT GREASE NIPPLE	2

FIGURE 15 - TOP CYLINDER ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY
15-	R11000	TOP CYLINDER ASSEMBLY (DWG NO. 4021)	1
-1	R21004	TOP CYLINDER (DWG NO. 3022)	1
	R21003	BOTTOM CYLINDER (DWG NO. 3023)	
-2	V54002	VALVE PUSH ROD (DWG NO. 1101)	1
-3	BC32D1	HEX NUT - 5/16UNF	1
-4	C54013	LOCK PIN (DWG NO. 1024/1061)	2
-5	BA37DC	HEX BOLT - 5/16UNC X 3/4	2
-6	BC37D1	NUT - 5/16UNC	2
-7	FBAKJC	BUSHING - 11D X 14	5
-8	C54012	"U" BOLT (DWG NO. 1084)	2
-9	BC32B1	HEX NUT - 3/16UNF	4
-10	V54003	EMERGENCY VALVE MOUNTING BRACKET (DWG NO. 1085)	1

ITEM	PART NUMBER	DESCRIPTION	QTY
-11	HM2AC0	MALE NYLON ELBOW - 1/8 BSP X 1/4	1
-12	HKDBA5	BUNDY TUBE ASSEMBLY - 3/16	1
-13	V23008	EMERGENCY VALVE - 1/8 BSP	1
-14		EMERGENCY VALVE HANDLE DRILLING (DWG NO. 1256)	1
-15	HM3AB0	MALE BUNDY ADAPTER - 1/8 BSP X 3/16	1
-16	HM2AB0	MALE BUNDY ELBOW - 1/8 BSP X 3/16	1
-17	T23004	CLEVIS - 5/16UNF	1



ITEM	PART NUMBER	DESCRIPTION	QTY
16--	D13000	TOP ADJUSTABLE STABILIZER ROD ASSEMBLY (DWG NO. 2038)	1
-1	D54005	TIE ROD TUBE (DWG NO. 1250)	1
-2	D54004	SHORT ROD END (DWG NO. 1247)	1
-3	D54007	SCREWED COLLAR (DWG NO. 1249)	1
-4	D54006	SCREWED ROD END (DWG NO. 1248)	1
-5	BC17J1	HEX NUT - 3/4 UNC	1
-6	FBAFJB	BUSHING - 08D X 10	4
-7	BK1ZC1	STRAIGHT GREASE NIPPLE	2