

TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL

MAINTENANCE MANUAL

INCLUDING REPAIR PARTS

RAMP, MOBILE LOADING

BROOKS & PERKINS MODEL SASYR-
1692/8736-6LO (NSN 3990-01-059-0104)

MAGLINE MODEL MDS-16-96-36-6F-CS
(NSN 3990-01-026-1575)

WARNING

The Mobile Ramp is restricted to speeds not to exceed 25 MPH. The ramp must be loaded onto a suitable conveyance for movement over public highways.

The total rated capacity of the Mobile Ramp (both models) is 16,000 lbs. Care should be taken to note the weight of each forklift to be used on the Mobile Ramp.

CAUTION

Be sure to read *all* of the product information and specification data *before* you operate your Mobile Dock.

Leave pump release valve in the "open" position at all times while ramp is in use to prevent hydraulic system damage.

Ramp should be left in the lowered position with the release valve open when it is not in use.

Before traveling on the Mobile Ramp, be sure the hydraulic pump handle is properly stowed.

TECHNICAL MANUAL

No. 10-3990-200-12&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 8 August 1980

Operator's and Organizational Maintenance Manual

Including Repair Parts

FOR

RAMP, MOBILE LOADING

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(NSN 3990-01-059-0104)

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REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Tank-Automotive Materiel Readiness Command, ATTN: DRSTA-MBS, Warren, Michigan 48090. A reply will be furnished direct to you.

Page

CHAPTER	1.	INTRODUCTION	
Section	I.	General	1-1
	II.	Description and data	1-1
CHAPTER	2.	BROOKS AND PERKINS MODEL SASYR-1692/8736-6LO OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, REPAIR PARTS LIST	
Section	I.	Operating instructions	2-1
	II.	Maintenance and repair instructions	2-2
	III.	Repair parts list	2-7
CHAPTER	3.	MAGLINE MODEL MDS-16-96-C-36-6F-CS OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, REPAIR PARTS LIST	
Section	I.	Operating instructions	3-1
	II.	Maintenance and repair instructions	3-3
	III.	Repair parts list	3-4
APPENDIX	A.	STOCKED AND AUTHORIZED PARTS FOR MAGLINE MODEL MDS-16-96-36-6F-CS	A-1
	B.	MILSTRIP REQUISITION FOR CCE (NON-NSN)	B-1

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Maintenance Forms and Records

Operational Maintenance and Historical Records will be maintained as required by the current TM 38-750.

1-2. Destruction to Prevent Enemy Use

Refer to TM 750-244-3 for procedures covering destruction of equipment to prevent enemy use.

1-3. Administrative Storage

Refer to TM 740-90-1 for instructions covering administrative storage of equipment.

1-4. Equipment Improvement Recommendations (EIR)

Equipment Improvement Recommendations (SF 368, Quality Deficiency Report) will be submitted in accordance with TM 38-750.

Section II. DESCRIPTION AND DATA

1-6. Brooks & Perkins Model SASYR-1692/8736-6LO

Size & Capacity

Length36 ft. W/6 ft. L.O.
 Width92 inches
 Capacity16,000 pounds
 Weight5200 pounds
 Height Adjustment45 to 65 inches
 Operating Temperatures . . . Minus 40°F.-Plus 200°F.

Pneumatic Requirements

Wheels: (Maintain 100 psi)

8 x 14.5-12 ply tubeless tire and T-600 rim.
 Automotive type axle with stepped spindles and tapered roller bearings.

Air Springs: (Maintain 45-55 psi)

An exclusive air cushioned suspension system for over-the-road towing at 25 mph maximum and 5 mph maximum cross-country.

Hydraulic System

Manually operated hydraulic pump actuating two 1½ in. bore cylinders which raise and lower the RAMP to achieve a car height of 45 to 65 in. The pump contains a pressure relief valve to limit maximum system pressure and a restrictor valve for controlled slow lowering of RAMP.

Steel Grating

Self cleaning, open grid, serrated edge grating with synthetic baked epoxy coatings. Three grating sections 26½ in. wide x 1- in. high x 30 ft. long.

Frame

All aluminum side-girder and cross I-beam construction-MIG continuous seam welded— 12 in. high curbs-diamond treadplate approaches.

Tow Bar

Heavy duty, square, tubular steel bar with dual self contained, quick detachable tie-down bolts, stored beneath RAMP when not in use.

Safety Features

Safety chain and hooks to secure RAMP to dock
 Slow lowering, restricted return flow, of RAMP
 Pressure relief valve to protect hydraulic system
 Balanced design for easier positioning and handling
 Beveled edge approach aprons to minimize load jarring
 12 in. high safety curbs
 Reflectors on four corners for night illumination
 Failsafe rubber stops (in case air-springs are punctured)

1-7. Magline Mobile Dock Model MDS-16-96-36-6F-CS

Size & Capacity

Length36 ft. w/6 ft. L.O.
 Width96 inches
 Capacity16,000 LBS

Miscellaneous Components

Welded frame ramp assembly
 Grating (ramp surface) is mechanically fastened and is replaceable
 Wheel yoke assembly
 Wheels, Pneumatic or Moldon Rubber tires
 Hydraulic elevating system
 Detachable towing bar
 Safety lock chain assembly

CHAPTER 2

BROOKS & PERKINS MODEL SASYR-1692/8736-6LO

OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, REPAIR PARTS LIST

Section I. OPERATING INSTRUCTIONS

2-1. Towing

- a. Remove tow-bar from storage position under ramp.
- b. Prop up ramp so that towing end is off the ground.
- c. Lower tow bar onto "approach plate" and insert both T-bolts into respective keyed holes (T-nuts UP)
- d. Turn T-bolts 90° so that cross pin is secured into detent groove. Pull up on T-bolt and tighten T-nut until secured. Repeat to tighten second T-bolt and nut securely. Recheck first T-bolt for tightness.
- e. Hitch eye of tow-bar to towing vehicle.
- f. Check pump release valve—turn knob counterclockwise-OPEN. LEAVE PUMP RELEASE VALVE IN "OPEN" POSITION AT ALL TIMES WHILE TOWING.
- g. Maximum Towing Speed
Primary and secondary roads - 25 mph - Cross country - 5 mph
- h. Tow ramp to loading area.

2-2. Positioning for Use

- a. CLOSE pump release valve (*Hand turn knob clock wise*).
- b. Pump handle to raise RAMP about 2" higher than vehicle or dock floor.
- c. Move ramp into position so ramp apron overlaps floor fully to the bulkhead.
- d. OPEN pump release valve turning knob in *counter clockwise* direction, allowing ramp apron to settle down onto floor.
- e. LEAVE PUMP RELEASE-VALVE IN "OPEN" POSITION AT ALL TIMES WHILE RAMP IS IN USE TO PREVENT HYDRAULIC

SYSTEM DAMAGE.

- f. Secure ramp to vehicle or dock with safety chains.

2-3. Removing From "In Use" Position

- a. Disconnect safety chains.
- b. CLOSE pump release valve (*Hand-turn knob clock wise*).
- c. Pump handle to raise Ramp apron above vehicle floor level.
- d. Roll Ramp away from vehicle.
- e. OPEN pump release valve (*Hand-turn knob counter clockwise*). RAMP SHOULD BE LEFT IN LOWERED POSITION WITH RELEASE VALVE OPEN AT ALL TIMES WHEN RAMP IS NOT IN USE TO PREVENT HYDRAULIC SYSTEM DAMAGE.

2-4. Caution—Important

- a. Pump release valve must be OPEN at all times except when raising the RAMP.
- b. RAMP must be in full lowered position when checking or filling hydraulic oil in pump reservoir. Use only hydraulic oil for replenishment.
- c. Check pneumatic tires and air spring at least once a month or whenever necessary to assure the correct inflation pressures.
- d. If wheel bearings are submerged in water immediately clean bearing and repack with fresh wheel bearing grease.
- e. Store pump handle in tubular retainer on outside of ramp when it is not being used.
- f. The Undercarriage must not be in a load bearing condition when the RAMP is being used for loading or unloading.

Section II. MAINTENANCE AND REPAIR INSTRUCTIONS

IMPORTANT

Keep the Pump Release Valve Open at all times except when elevating the Ramp.

Towing speeds

25MPH Max.-Primary and secondary roads

5MPH Max.-Crosscountry

If wheel bearings are submerged under water where contamination can enter, remove and clean bearings immediately and repack bearings with wheel bearing grease.

2-5. Periodic Maintenance

a. Hydraulic System. If signs of a leak are found or if there is a noticeable decrease in pump pressure, CHECK PUMP FLUID LEVEL. TO CHECK PUMP FLUID LEVEL-

(1) Make certain RAMP is in lowered position with pump release valve OPEN so that fluid in cylinders can be forced back into the pump.

(2) Remove pipe plug-NOT ACORN NUT-and with a clean stick check oil level through pipe plug hole. Refill to ¼ in. of top if level is below 4 inches from top.

(3) Use only hydraulic oil MIL-H-5606 or equivalent.

(4) Replace pipe plug.

Note

Pipe plug is a vented plug and if lost must be replaced with a vented plug or reduced pump output will occur.

(5) To drain pump, disconnect hose at pump, close pump release valve, actuate pump handle until all oil is removed. Refill per (2), (3) and (4) above.

b. Wheels.

(1) Check tire pressure as often as required to maintain 90 to 100 psi in both tires.

(2) Once a year check wheel bearing for sufficient grease. Replenish only with WHEEL BEARING GREASE. SPINDLE-NUT TIGHTENING-tighten with wrench, back off with wrench, hand tighten, line up groove in nut with hole and apply cotter pin. Be sure dust caps are replaced.

c. Air Springs.

(1) Check tube pressure every 60 days or as often as necessary to maintain 45 to 55 psi in both air springs.

(2) Be sure valve stem caps are replaced after checking or adding air.

c. Undercarriage pivot Pins. Add grease every 100 miles or at least every 6 months, at center of tubes (2) surrounding pivot-pins (2) Use Molybdenum Disulfide type of grease. Oil can points in two places; 1. At pump handle socket pivot pins (2) 2. At upper and lower pivot pins on each hydraulic cylinder.

d. Tighten loose nuts and bolts.

2-6. Instructions For Mounting Tire and Rim Assembly of Cast Spoke Wheels

a. Place rim on wheel with valve facing out and halfway between two spokes. Make sure driver does not ride on spoke ends.

b. Place two clamps in position on alternate spokes, side of clamp marked "Wheel" next to spoke and side of clamp marked "Rim" next to rim, flat face of clamp out. Run nuts up snug against clamps so that clamps are in contact with wheel and rim (no torque). Place remaining clamps in position and run nuts up snug, as before.

c. Starting with any spoke as number one using a torque wrench, tighten the nuts to 20 FP of torque each, in the following order-No. 1 -3-5-2-4. Continue around the wheel in the same order, increasing the torque each time around by 10 FP, until all nuts are torqued to 90 FP.

2-7. Check and Re-Torque All Clamps at 50, 150 and 300 Miles

a. Under normal operating conditions, the clamps tend to seat themselves in the first 50 to 150 miles with a noticeable drop in torque. To prevent slippage, all clamps *must* be checked and nuts re-torqued to 90 FP after the first 50 and 150 miles of operation. To further insure against any loosening, another torque check should be made at 300 miles.

b. Except in cases of extreme operating conditions clamps should remain tight from this point on, and require only an occasional visual check.

2-8. Repair Parts Installation for Hydraulic Hand Pump

(Fig. 2-1)

Remove hydraulic pump from RAMP for all repairs. Remove vented pipe plug from top cover and invert pump until oil is drained. After repairs are made, replenish oil in reservoir (% inch of top) and *replace vented pipe plug.*

a. Pump Piston. (Fig. 2-1)

(1) Remove two pin rings 17 from pins 16 and 19, pull pins from body and remove handle socket.

(2) Remove packing nut 20. Insert pin 19 into

top of piston and pull straight out of base. Discard piston arm assembly.

(3) Install new piston arm assembly 21 using *extreme caution* to assure cup on end of piston does not fold back over when it enters its chamber and is pressed downwards.

(4) Replace packing nut 20 securely. Re-insert pins 16 and 19 and position two pin rings 17 properly in their grooves for re-installation of handle socket 18.

b. Release Valve.

(1) Loosen packing nut 25 and unscrew complete assembly from body. Unscrew packing nut from stem and remove packing.

(2) Replace with new packing and reverse procedure to reassemble.

NOTE

Relationship of lever to stem must be maintained as received.

c. Reservoir seal.

(1) Loosen acorn nut 14 and remove reservoir tube 11 and separate seals 8 and 15. Discard seals 8 and 15.

(2) Remove any foreign particles from inside of tube and body of pump.

(3) Add tube gaskets 8 (2 places) and rod washer 15, position parts back in place and tighten lightly.

(4) Position top cover 13 radially so that the filler hole is positioned directly above pressure relief valve 10. Tighten acorn nut 14 securely.

d. Ball Checks.

(1) Remove port adapter 1 with socket wrench to prevent crushing walls. Remove two balls, two springs and 'O' rings and discard them.

(2) Check ball seats and remove any foreign particles before balls are replaced. Seat each new ball into its respective seat by tapping lightly with a brass punch.

(3) Install new balls and springs as shown. Add new "O" ring 2 and re-install port adapter 1 and tighten with socket wrench.

When repairs are completed, fill pump reservoir to within ¼ inch of top, install vented pipe plug into filler hole, close release valve 23 and pump handle rapidly until a tablespoon of oil is pumped out of the port to assure no air is trapped between two ball checks and pump is operable. REINSTALL ONTO RAMP.

10213 PUMP

ITEM NO.		DESCRIPTION	QTY REQ'D
1	18634	Port Adapter	1
*2	14610	"O" Ring	1
*3	02185	Spring	1
*4	03010	Ball	1
*5	11160	Spring	1
*6	02675	Ball	1
7	60503	Base	1
*8	18636	Gasket	2
9	18631	Adapter	1
10	07403	Pressure Relief Valve	1
11	63566	Reservoir Tube	1
12	63577	Stud	1
13	18633	Cover	1
14	26465	Acorn Nut	1
*15	63203	Washer	1
16	10860	Pin	1
17	12415	Pin Ring	3
18	62386	Handle Socket	1
19	07834	Pin	1
20	60599	Packing Nut	1
*21	81108	Piston Arm	1
22	26793	Set Screw	1
23	06667	Release Lever	1
24	01290	Packing Nut	1
*25	04520	Packing	1
26	63717	Release Screw	1
27		Repair Kit	1

* Indicates items included in Repair Kit No. 10246

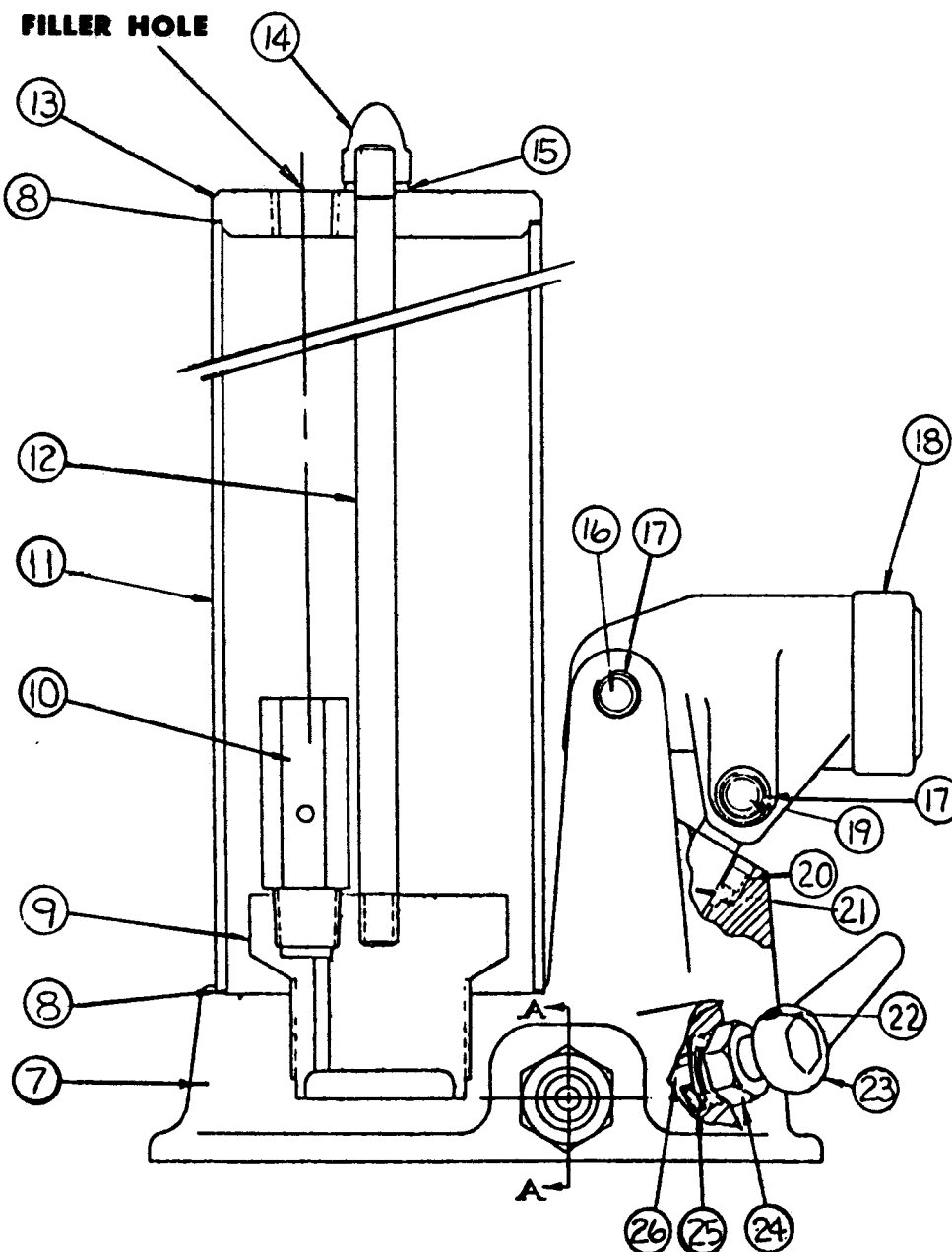
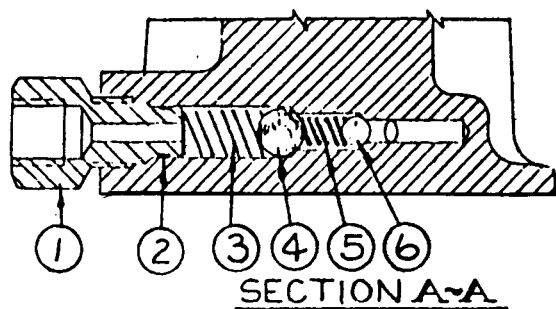


Figure 2-1. Pump

2-9. Repair Parts Installation For Hydraulic Cylinder

(Fig. 2-2)

Remove the cylinders from the RAMP for all repairs.

a. Pull out piston-rod until it is fully extended. Unscrew guide 7 from tube and pull piston and rod and guide out of tubing. Lay upon a clean surface.

b. Remove hex jam nut 2, washer 3 cup seal 4 and bearing spacer 5. Discard cup seal 4 and bearing spacer 5.

c. Add new bearing spacer 5 and new cup seal 4 and reinstall washer 3 and jam nut 2. Tighten jam nut 2 securely.

d. Remove retaining ring 9 and slide bearing guide 8 off of end of rod.

e. Add new bearing guide 8 and reinstall retaining ring 9.

f. Slide piston cup end carefully into cylinder bore. Be sure cup seal is not bent back over.

g. Screw guide assembly back into cylinder tube securely. Slide rod back and forth to be sure cylinder is operating correctly. REINSTALL ONTO RAMP.

No. 10210 CYLINDER

ITEM NO.		DESCRIPTION	QTY REQ'D
1	Non-Serviceable	Tube & Cylinder Assy	1
2	18960	Hex Jam Nut	1
3	13260	Washer - Cup Retainer	1
*4	13290	Cup	1
*5	63710	Bearing - Spacer	1
6	63711	Spacer	1
7	63713	Guide	1
*8	63714	Bearing Guide	1
9	63715	Retainer	1
10	63716	Rod - Piston	1
11		Repair Kit	-

*Indicates items included in Repair Kit. No. 10245

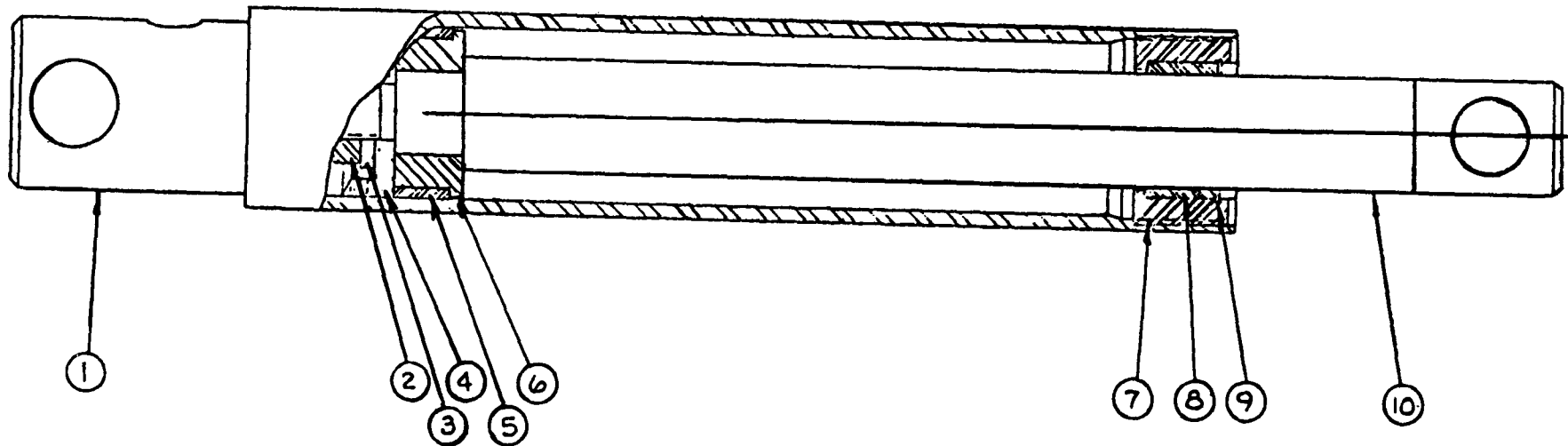


Figure 2-2. Cylinder

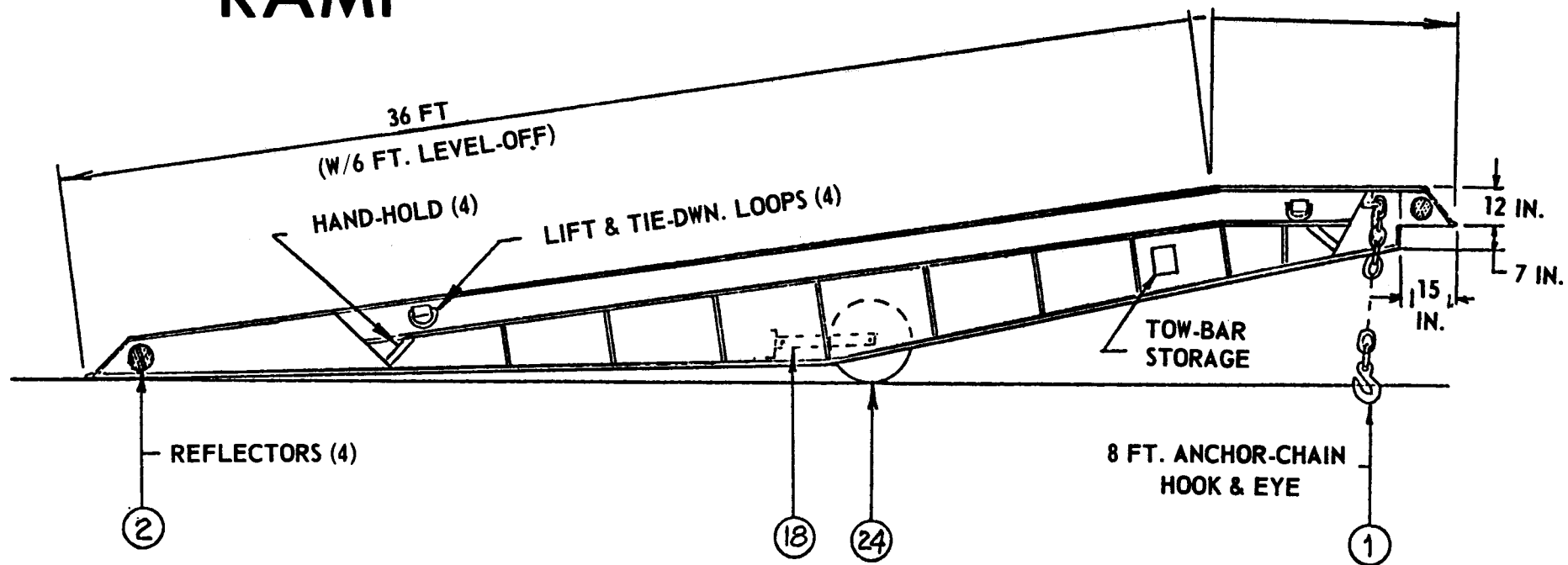
SECTION III. REPAIR PARTS LIST

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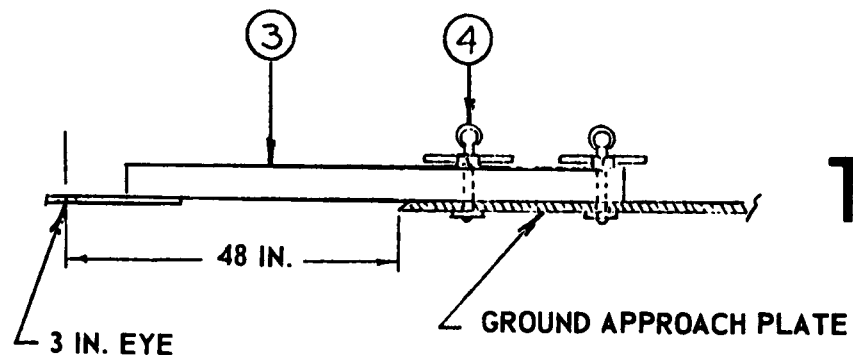
ITEM	REQ'D	B & P NO.	FSCM
1	2	10239	81868
2	4	5953T14	39428
2A	4	MS-24662-228	96906
3	1	10220	81868
4	2	10224	81868
5	2	10228	81868
6	4	MS-24665-360	96906
7	2	10236	81868
8	10	10248	81868
9	10	10241	81868
10	2	10242	81868
11	2	MS-24665-625	96906
12	2	10251	81868
13	2	10249	81868
14	2	LM67048*	60038
15	2	10240	81868
15A	2	25520*	60038
15B	2	67010	60038
16	2	25580	60038
17	2	442251-S60*	80201
18	1	10225	81868
19	4	10229	81868
20	4	MS-24665-430	96906
21	8	MS-51967-23	96906
22	8	MS-35338-146	96906
23	8	MS-90725-190	96906
24A	2	121678320	73842
24B	2	473046500	73842
24C	2	208041600	73842
25	1	10213	81868
25A	1	10246	81868
26	1	10243	81868
27	1	10232	81868
28	2	MS-2091-4-4S	01276
29	2	10210	81868
29A	1	10245	81868
30	2	10235	81868
31	2	10234	81868
32	1	10233	81868
33	1	MS-20913-2S	96906
34	48	10237	81868
35	3	10231	81868
36	48	10209	81868
37	96	MS-51967-2	96906
38	96	MS-35338-139	96906
39	4	MS-90725-60	96906
40	4	MS-35338-141	96906
41	2	7008	72413
42	2	0009	72413
43	1	MS-51865-9C	96906
44	1	10244	81868
45	2	MS-15001-2	96906
46	2	10251	81868
47	2	MS-9072-5-68	96906
48	2	MS-35338-141	96906
49	2	MS-51967-8	96906

*NATIONAL NUMBER

RAMP

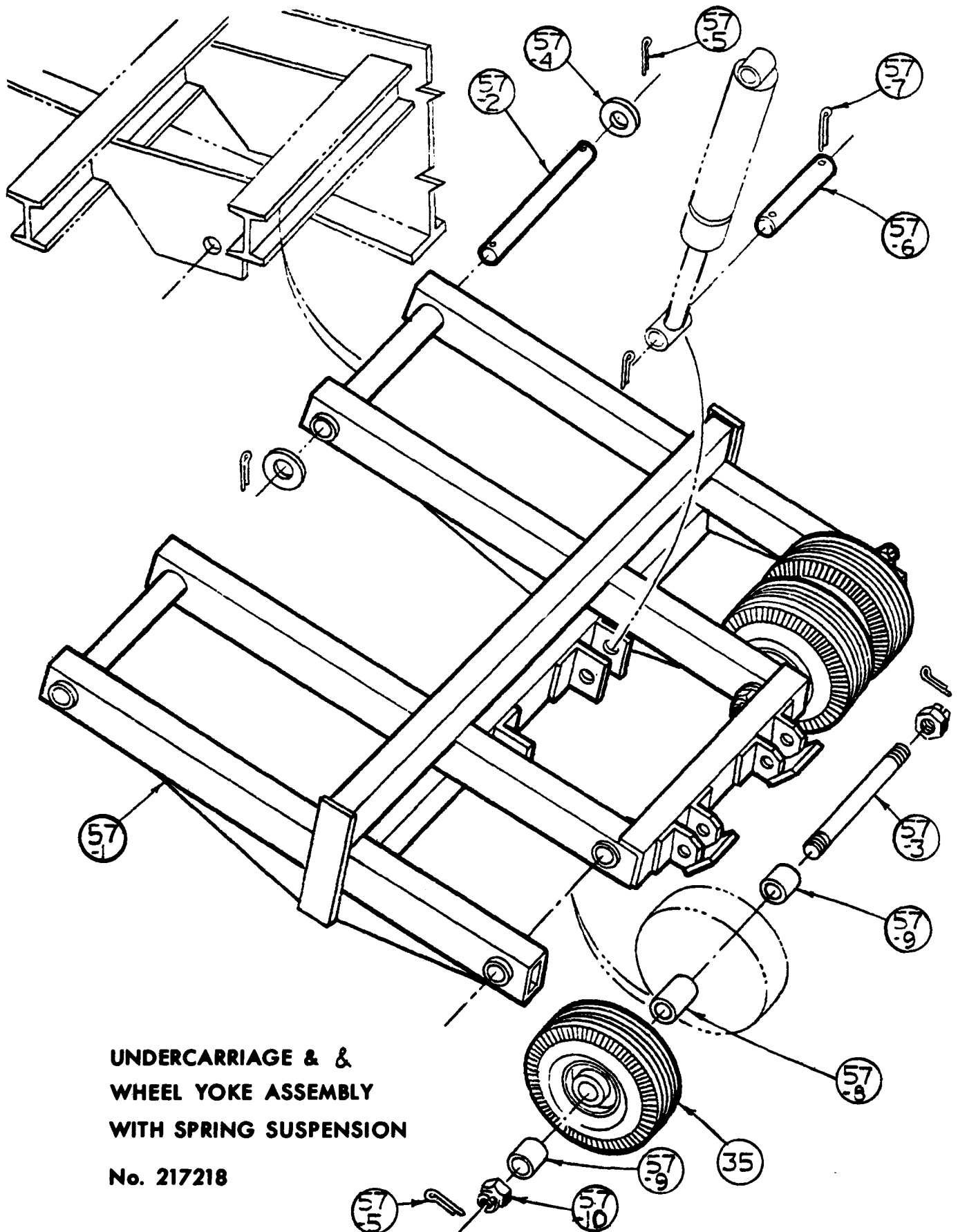


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TOW-BAR

Figure 2-3. Ramp tow-bar.



**UNDERCARRIAGE &
WHEEL YOKE ASSEMBLY
WITH SPRING SUSPENSION**

No. 217218

Figure 2-4. Undercarriage assembly.

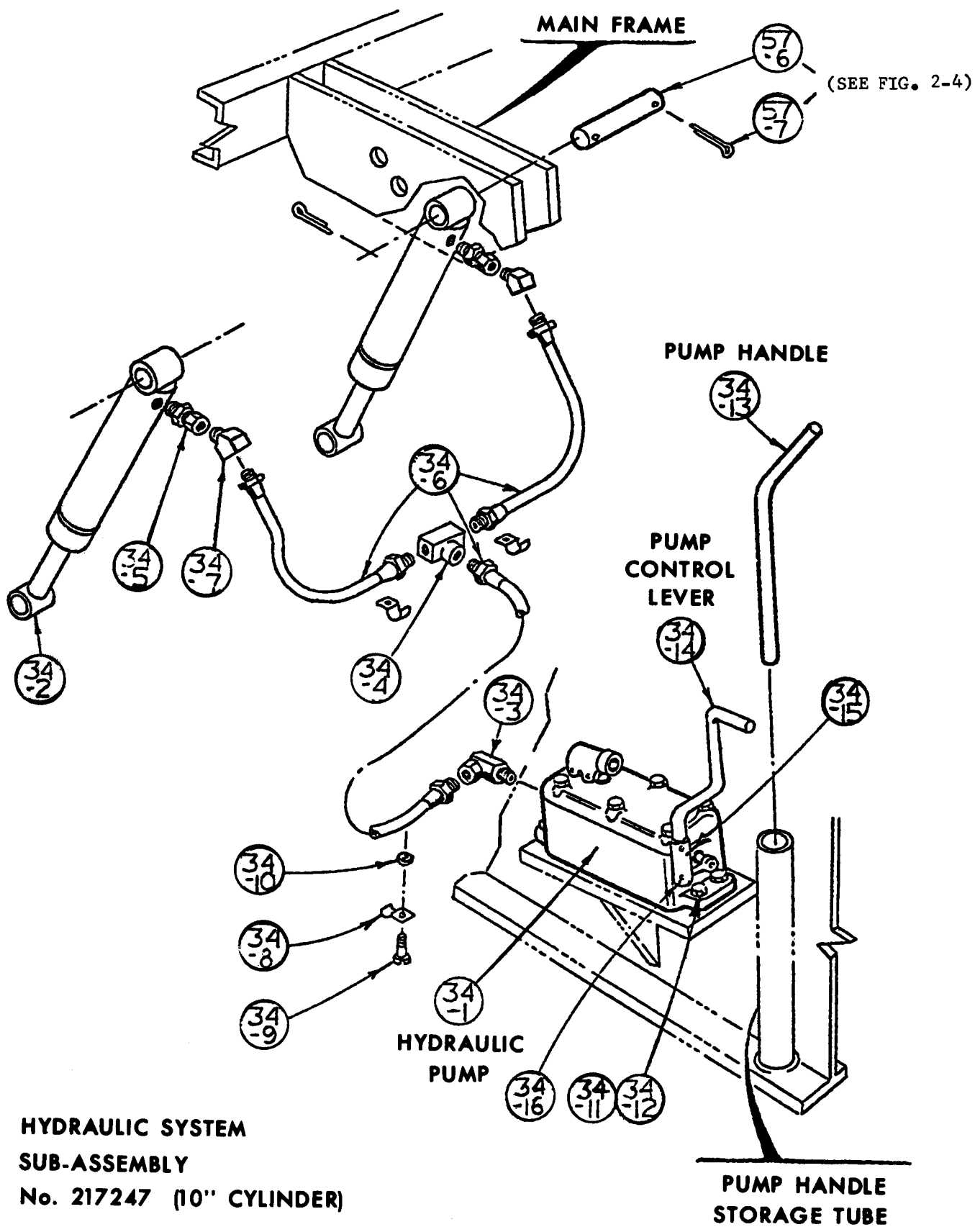
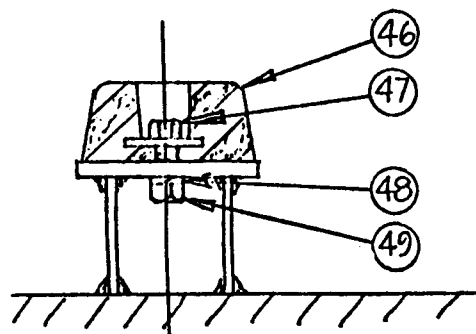
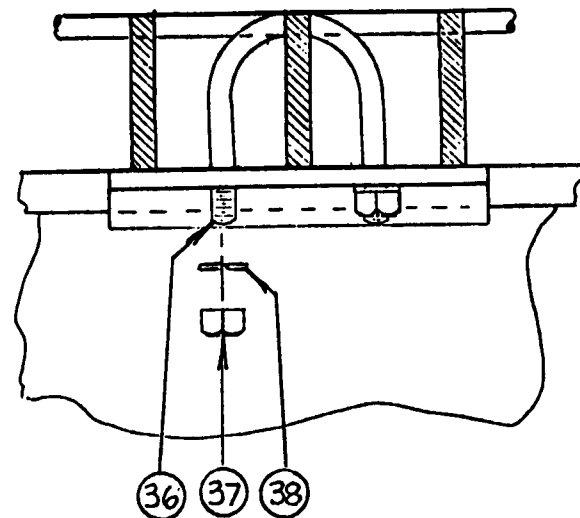
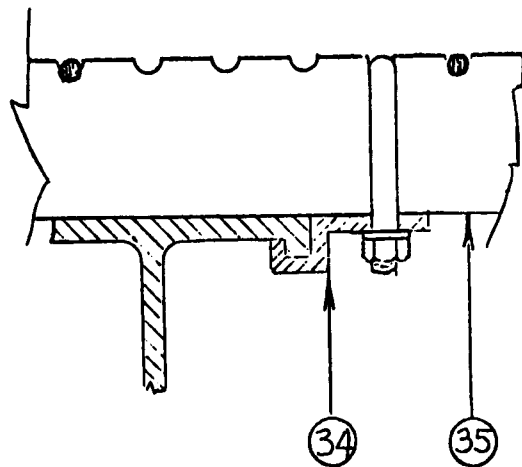
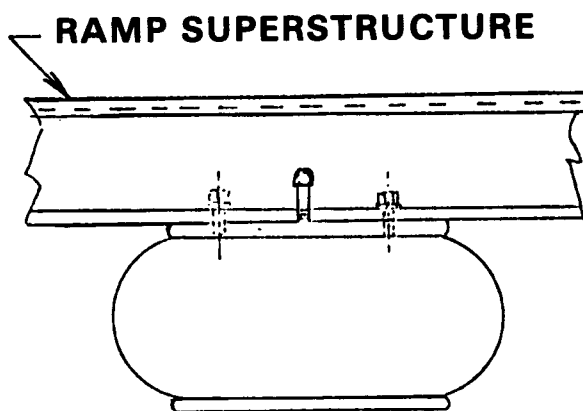


Figure 2-5. Hydraulic system.

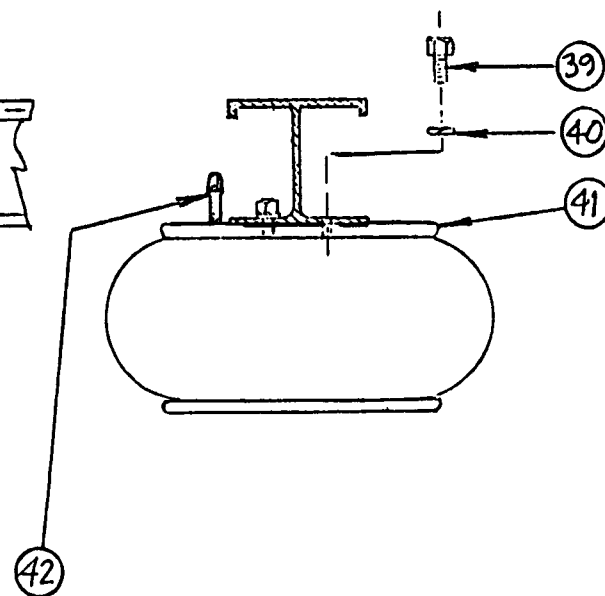
**GRATING
HOLD DOWN**



**UNDERCARRIAGE
RUBBER-STOP**



RAMP SUPERSTRUCTURE



AIR-SPRING MOUNTING

Figure 2-6. Air-spring mounting.

CHAPTER 3

MAGLINE MODEL MDS-16-96-C-36-6F-CS

OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, REPAIR PARTS LIST

Section I. OPERATING INSTRUCTIONS

IMPORTANT NOTICE

To maintain the oil level in the hydraulic system, the Breather Plug on the top of the pump reservoir has been replaced with a temporary solid shipping plug.

With the ramp in the operating position remove the solid plug and replace with the Breather Plug which is packed in the parts container attached to ramp.

Certain items as listed have to be assembled to the MOBIL-DOCK after it is received from the manufacturer. These items are shipped in a separate carton securely attached to the ramp. Remove and open the carton, check the contents, the following items are included:

Item One—Spring loaded safety chains 2 with hooks and slotted angle brackets.

Attach and fasten securely one angle bracket to each side of the ramp at the high end. Holes in the ramp sides are provided and fasteners are installed and secured to an anchor nut plate mounted on the inboard surface of the ramp side. See figure 3-1.

NOTE

Stowage provisions are incorporated on the upper right hand side of the ramp for the safety chains. This would only be required when transport of the ramp on public highways would require removal of safety chains to conform with the 96 inch overall width limitation.

Item Two—Hydraulic Pump Handle 1 painted red. Storage for the pump handle is provided on the left side of the ramp next to the hydraulic pump. See Figure 3-1.

In addition to the above two items a tow bar device is banded to the grating deck surface. Remove this device and stow in the compartment located on the

upper left hand side of the ramp until required for transport.

CARE and CAUTION should be taken to insure that all fasteners and hardware are tight and secure to provide the proper attachment of the spring loaded safety chains.

3-1. Operation Instructions*a. Towing.*

(1) Tow your mobile loading ramp with the quick detaching tow bar which is stored in the compartment on the upper left side of the ramp.

(2) Block up or elevate the ground end of the ramp and position the tow bar over the beveled edge of the deck plate making sure the clamp bracket #39-4, (fig. 3-5), is under the plate.

(3) After engaging the center tow bar block in the 2" X 3" hole in the ramp deck, push the hand knob locking hoods down through the ¾ x 5½ slotted hole in the ramp deck.

(4) Rotate the hand knob locking hooks one quarter turn, align locking hooks with the two ¾ dia. holes in the ramp deck, and lift upward to engage hooks in holes. Rotate hand knob #39-6 clockwise to secure—make sure hand knob is tightened to point where lock washer is in under slight compression.

(5) Rotate locking handle #39-3 to secure clamp bracket to plate edge. Retighten the hand knob until lock washer is fully compressed.

(6) Attach the hitch eye of the tow bar to the towing vehicle.

(7) After the ramp is located and before placing the ramp in service at the carrier or dock, remove the tow bar from the towing vehicle and ramp deck. Stow the tow bar in the storage compartment on the left side of the ramp until it is needed again for towing the ramp.

b. Elevate.

(1) Elevate your ramp with the recessed pump located on the left side of the ramp.

(2) Remove the pump lever handle (painted red) from the storage tube provided on the side of the ramp and insert into the socket at the top of the pump.

(3) Close the pump control valve (painted red) by turning the handle at the end of the pump clockwise.

(4) Actuate the pump with the lever handle until desired ramp level is obtained.

c. Position.

(1) Position your ramp so that its forward apron overlaps the floor of the truck, rail car or platform that is being serviced.

(2) The apron stops should be against the outer edges or door rails of the vehicle or platform.

CAUTION

Do not attempt to back the vehicle being loaded into the ramp since the ramp is designed for easy manual positioning. The ramp is balanced for easy positioning by first elevating the ramp to fully raised position.

d. Lower.

(1) Lower your ramp by opening the pump control valve slowly.

(2) Closing the pump control will stop the ramp in any position.

CAUTION

Always leave the pump control valve in an open position when the ramp is being used. This prevents the load from being transferred to the hydraulic system and tires. (If the valve is accidentally closed, the overload by-pass safety valve will release when a load passes over the ramp.)

e. Lock.

(1) Be sure to lock your ramp in position with the two spring loaded safety chains. Fasten the hooks to floor or frame members of carrier.

(2) Pull the loose chain over the slotted angle, stretching the spring enough to hold the hook in position. The spring should be under tension at all times to assure that the hook is properly secured to the frame members.

f. Use of Ramp. The loaded end of the power lift truck should always be toward the elevated end of the ramp and the lift raised high enough to avoid contact with the ramp deck.

g. Maintain.

(1) Avoid ramp downtime by observing the MOBIL-DOCK mobile loading ramp maintenance instructions outlined in Section III.

(2) Never exceed the rated load capacity.

(3) Stow ramp and check stowing procedures before permitting movement of loaded vehicles.

CAUTION

Before traveling on ramp, store pump handle in storage tube.

h. Stowing Procedures.

(1) Check left side of ramp to see that the quick detaching trailer hitch is properly stored in the compartment and ready for use.

(2) Check the left side of ramp for hydraulic lift pump operator lever handle and see that it is properly stowed in the tubular recessed compartment.

(3) Check tires for proper inflation which is 100 psi for the 21" x 6.90-10 ply tire.

(4) Check safety chains to see that they are properly stowed and in working order. For short hauls or off highway transport, chains may be joined together over the top of the ramp to prevent dragging on the ground. For transport on public highways remove bolts securing chain assembly to ramp and stow chains in compartment on right side of ramp. *Always return bolt to securing position and tighten in captive nut to avoid loss in transporting.*

(5) Inspect unit carefully for grease or hydraulic leaks and any visual signs of damaged components.

3-2. Operating Instructions for Coil Spring Suspension System

Unit as received by customer will be in disengaged condition. To engage springs for distance towing, the following steps are necessary.

a. Pump ramp up to its highest level.

b. Pull out handle No. 58-7 to disengage anchor pin No. 58-6 (see Fig. 3-3).

c. Pull lever assembly No. 59-2 and raise springs into position to engage locator saddle in main frame weldment.

d. Push pump control lever No. 14 (see fig. 2-5), allow ramp to settle onto springs and close pump control lever.

e. Push in on handle No. 58-7 and engage anchor pins No. 58-6 (fig. 3-3) both sides). This step may require a slight raising or lowering of ramp to permit easy engagement of both anchor pins No. 58-6 located on each side of the ramp.

f. Push pump control lever and allow ramp to settle on Spring and Pilot Assembly.

g. Ramp is now ready for distance towing or rough terrain towing. **TO DISENGAGE SUSPENSION AND PREPARE RAMP FOR LOADING-UNLOADING POSITION.**

h. Close pump control lever, and pump handle, raising ramp until springs are free of load.

i. Disengage anchor pins No. 58-6.

j. Continue to pump handle, raising ramp until Spring and Pilot Assembly falls free.

k. Push anchor pins No. 58-6, with 58-10 attached, to a return position. Caution: pins will not return fully due to safety device incorporated to assure proper transport condition. DO NOT AT-

TEMPT TO FORCE FULL RETURN.

l. Ramp is now ready for loading-unloading operation.

Section II. MAINTENANCE AND REPAIR INSTRUCTIONS

3-3. Oil Reservoir

Keep the oil reservoir (located at the top of the pump) filled with #10 W high-detergent motor oil or hydraulic fluid. Do *not* use brake fluid as it dissolves the sizing in the packing and will result in ram leakage. To prevent damage to the pump and over-flowing, fill the oil reservoir only when the ramp is in the lowered position.

3-4. Line Bleeding

After filling the oil reservoir it will generally be necessary to bleed the hydraulic system of air. Slightly loosen the line nut at one of the rams and pump slowly until all traces of air in the oil disappears. Tighten the line nut and refill the reservoir. It may be necessary to repeat this operation several times to completely remove air from the system.

3-5. Pump Overload valve

The pump overload adjustment has been set at the factory to maintain the ramp in an elevated position when there is no load on the ramp. *Should the ramp have a tendency to settle*, this may be corrected by turning the overload valve adjustment set screw one-quarter turn clockwise to increase the relief pressure. Remove the six cover bolts and cover the top of the pump to locate the adjustment screw.

3-6. Pump Removal

It is recommended that the pump be removed and returned to the factory for servicing. First disconnect the line to the ramp at the pump. Service charges are commensurate with repairs required. Exchange pumps should be ordered at once to reduce "down time".

3-7. Tire Inflation

The correct air pressure for the 21" x 6.90 - 10 ply pneumatic tires is 100 lbs. Be sure to release all air from the tire before attempting tire removal.

3-8. Wheel Bearings

The wheels have been packed at the factory with waterproof automotive grease. They should be greased moderately every six months by manual repacking. Care should be taken not to overfill with grease as this could cause a pressure buildup which might rupture the bearing seals.

3-9. Wheel Nuts

The wheel nuts are torqued to 85-95 ft-lbs. when installed at the factory. If any maintenance is required that removes the wheels this 85-95 ft-lbs. torque must be achieved in the reassembly of the wheel nuts.

3-10. Coil Spring Suspension System

Spring & Pilot Assembly support rod No. 58-5 to be lubricated externally at all pivot points with a good grade oil and kept free of road dirt to enable unit to fall freely. Spring Pilots No. 58-1. and -2 to be greased with a cup or fiber grease to permit free sliding and minimize possible rust. Drain hole on bottom of lower pilot No. 58-1 to be kept free of road dirt, ice, and all foreign matter. Springs can be removed for inspection or replacement by allowing Spring & Pilot Assembly to drop free as explained in Operating Instructions. Lift out upper Spring Pilot Assembly and lift springs off lower pilot. Locator saddle should be kept clean and free of road dirt, ice, or any foreign matter which may be a deterrent to proper alignment of anchor pins No. 58-6.

MAGLINER MOBIL-DOCK MOBILE LOADING RAMP

SUB-ASSEMBLY	ITEM OR INDEX NO.	PART NUMBER	PART NAME (NOMENCLAURE OR DESCRIPTION)	NO. REQ'D PER UNIT
1-MAIN FRAME SUB-ASSEMBLY FIGURE 3-1		217047	WELDMENT-MDS-16-96C-36-6F-CS	1 UNIT
	31		GRATING 240" LG. GW-175 X 27-5/8"	2 PCS.
	31A		GRATING 240" LG., GW-175 X 27-5/8" (MODIFIED PER DWG. 217402-1)	1 PC.
	32		GRATING 70" LG., GW-175 X 27-5/8"	3 PCS.
	33		GRATING 35" LG., GW175 X 27-5/8"	3 PCS.
	40		GRATING CLAMP #217197	46 PCS.
	42		5/16 FLAT WASHER COMML.	46 PCS.
	43		5/16-18 UNC LOCKNUT	46 PCS.
	47		5/16-18 UNC -2-1/2 HX. HD. CAP SCR.	46 PCS.
	53		LIFT RING ASSY. #P-48B7796	4 PCS.
	54		ANCHOR PLATE #P-54B6236	4 PCS.
	55		3/8-16 UNC X 1-1/2 HX. HD. CAP SCR. COMML.	8 PCS.
	56		3/8-16 UNC LOCKNUT	8 PCS.
	74		REFLECTOR, RED, #4030-21	2 PCS.
	75		REFLECTOR, AMBER, #4030-31	2 PCS.
	76		NO. 10 PAN HD. X 5/8"-SELF TAPPING	4 PCS.
2-UNDERCARRIAGE SUB-ASSEMBLY FIGURE 2-4	57	217047	YOKE ASSEMBLY, DUAL WHEEL, 217218	1 UNIT
	-1	217218	WHEEL YOKE-WELDMENT, 217220	1 PC.
	-2		PIVOT SHAFT (1-3/8 X 22-1/2), 217224	2 PCS.
	-3		AXLE SHAFT 1-3/8 X 23", 217226	2 PCS.
	-4		FLAT WASHER, 1-3/8" DIA. COMML.	4 PCS.
	-5		COTTER PIN, 3/16 X 3-1/4" LG.	8 PCS.
	-6		CYLINDER PIN, 217398	4 PCS.
	-7		COTTER PIN, 3/16 X 1-1/2	8 PCS.
	-8		SPACER, 1-5/8 X 4-5/8, 217240-2	2 PCS.
	-9		SPACER, 1-5/8 X 4-7/8, 217240-1	4 PCS.
	-10		CASTELLATED NUT, 1-3/8 NF12	4 PCS.
	35	217047	HUB AND WHEEL, W/TIRE, 6.90 X 6.00-9 COMP.	4 PCS.
	35A		HUB, #5084 W/1-3/8 X 1-3/8 TRB &SEALS	4 PCS.
	35B		BEARING, 1-3/8 X 1-3/8 TRB	8 PCS.
	35BS		SEALS, 1-3/8 C.R. W1-16284	8 PCS.
	35C		TIRE & TUBE 6.90 X 6.00-9, 21" DIA. 10 PLY	4 PCS.
	35D		WHEEL ONLY, #5197	4 PCS.
3-SPRING SUSPENSION GEN. ARRANGEMENT FIGURE 3-3	58	217047	SPRING & PILOT ASSY., 217420	2 PCS.
	-1	217420	SPRING PILOT, LOWER END, 217205	2 PCS.
	-2		SPRING PILOT, UPPER END, 217206	2 PCS.
	-3		SPRING, COIL #584	2 PCS.
	-4		PIN, ROLL 1/4" DIA. X 2" LG., COMML.	2 PCS.
	-5		SUPPORT ROD, SPRING, 217222	1 PC.
	-6		ANCHOR PIN, UPPER PILOT, 217225	2 PCS.
	-7		HANDLE, ANCHOR PIN, 217177	2 PCS.
	-8		STOP, ANCHOR PIN, 217179	2 PCS.
	-9		RETAINER ROD, 217223-3	1 PC.
	-10		1/4-20 NC X 1-3/4" LG. ROUND HEAD MACHINE SCREW WITH NUT, COMML.	2 PCS.

MAGLINE MOBIL-DOCK MOBILE LOADING RAMP-CONTINUED

	ITEM OR INDEX NO.	SUB-ASSEMBLY	PART NAME (NOMENCLATURE OR DESCRIPTION)	NO. REQ'D PER UNIT
4-LEVER ASSY.	59	217047	LEVER ASSY. TO RAISE SPRING & SADDLE ASSY. 127281	1 PC.
FIGURE 3-3	-1	217281	VINYL GRIP, 1-1/8 ID	1 PC.
	-2		HANDLE, 1-1/8" X 22-1/2	1 PC.
	-3		BRACKET, ASSY.	1 PC.
	-4		1/4-20 NC HEX LOCK NUT, COMM.	5 PCS.
	-5		1/4-20 NC X 1-3/4 LG. HEX HEAD CAP SCREW	1 PC.
	-6		3/16 X 1-3/4 "S" HOOK	3 PCS.
	-7		NO. 2 STRAIGHT LINK CHAIN 3-1/2" LONG	1 PC.
	-8		1/4-20 NC X 1 LG. HEX HEAD CAP SCREW	4 PCS.
	-9		NO. 2 STRAIGHT LINK CHAIN 27" LG.	1 PC.
5-SAFETY CHAIN SUB-ASSEMBLY	38	217047	SAFETY CHAIN & ANCHOR ASSY., COMPLETE, 217419	2 UNITS
FIGURE 3-1	-1	217419	ANCHOR NUT PLATE ASSY., 217394	2 PCS.
	-2A		CHAIN ANCHOR, R.H. 295924-1	1 PC.
	-2B		CHAIN ANCHOR, L.H. 295924-2	1 PC.
	-3		HEX. HD. CAPSCREW, 1/2-13 NC X 1-1/2 COMML.	4 PCS.
	-4 THRU -9		CHAIN ASSY. COMPLETE WITH SPRING	2 PCS.
	-8 AND -9		SPRING & "S" HOOK ASSY. ONLY	2 PCS.
6-HYDRAULIC SYSTEM SUB-ASSEMBLY	34	217047	HYDRAULIC SYSTEM SUB-ASSEMBLY P.N. 217247	1 UNIT
FIGURE 2-5	-1	217247	HYDRAULIC PUMP, #HP-5002-51-01 POWER PACKER WITH INTERNAL RELIEF	1 PC.
	-1A		PUMP REPAIR KIT, KH-2000	1 PC.
	-2		HYDRAULIC CYLINDERS, 217115	2 PCS.
	-2A		CYLINDER REPAIR KIT, SA-150-K	2 PCS.
	-B		GLAND NUT AND WIPER RING SA-150-NW	2 PCS.
	-2C		V-PACKING SET, SA-150-P	2 PCS.
	-2D		RING WASHER, SA-150-R	2PCS.
	-3		RESTRICTING ADAPTOR UNION, 3/8"	1 PC.
	-4		FEMALE TEE, 3/8"	1 PC.
	-5		MALE ADAPTOR UNION, 3/8"	2 PCS.
	-6		HYDRAULIC HOSE, 3/8" X 48"	3 PCS.
	-7		45° STREET ELL	2 PCS.
	-8		CLIP FASTENER, 1/2 EMT, #4176	5 PCS.
	-9		1/4-20 X 1" RD. HD. MACH. SCR. COMML.	5 PCS.
	-10		1/4-20 LOCKNUT	5 PCS.
	-11		5/16-18 UNC X 1" HX. HD. CAP SCREW COMML.	4 PCS.
	-12		5/16-18 UNC LOCKNUT	4 PCS.
	-13		HANDLE, PUMP	1 PC.
	-14		CONTROL LEVER, PUMP, #217153	1 PC.
	-15		COUPLING, CONTROL LEVER, #217154	1 PC.
-16			ROLL PIN, 1/8" X 13/16 COMML.	2 PCS.
7-TOW BAR SUB-ASSEMBLY	39	217047	TOW BAR ASSY., COMPLETE 217214	1 UNIT
FIGURE 3-5	-3	217214	LOCKING HADLE ASSY.	1 PC.
	-4		CLAMP BRACKET AND NUT ASSY.	1 PC.
	-5		T-CLAMP SCREW ASSY., 217215	1 PC.
	-6		LOCK KNOB, THREADED, 217216	1 PC.
	-7		3/4" LOCK WASHER, (COMML.)	1 PC.
	-8		3/4" PLAIN WASHER, (COMML.)	1 PC.
	-9		1/4" ROLL PIN, 1" LG. (COMML.)	1 PC.

FIGURE 3-1. GENERAL ARRANGEMENT-MOBILE-DOCK.
(LOCATED IN BACK OF MANUAL)

UNDERCARRIAGE ASSEMBLY

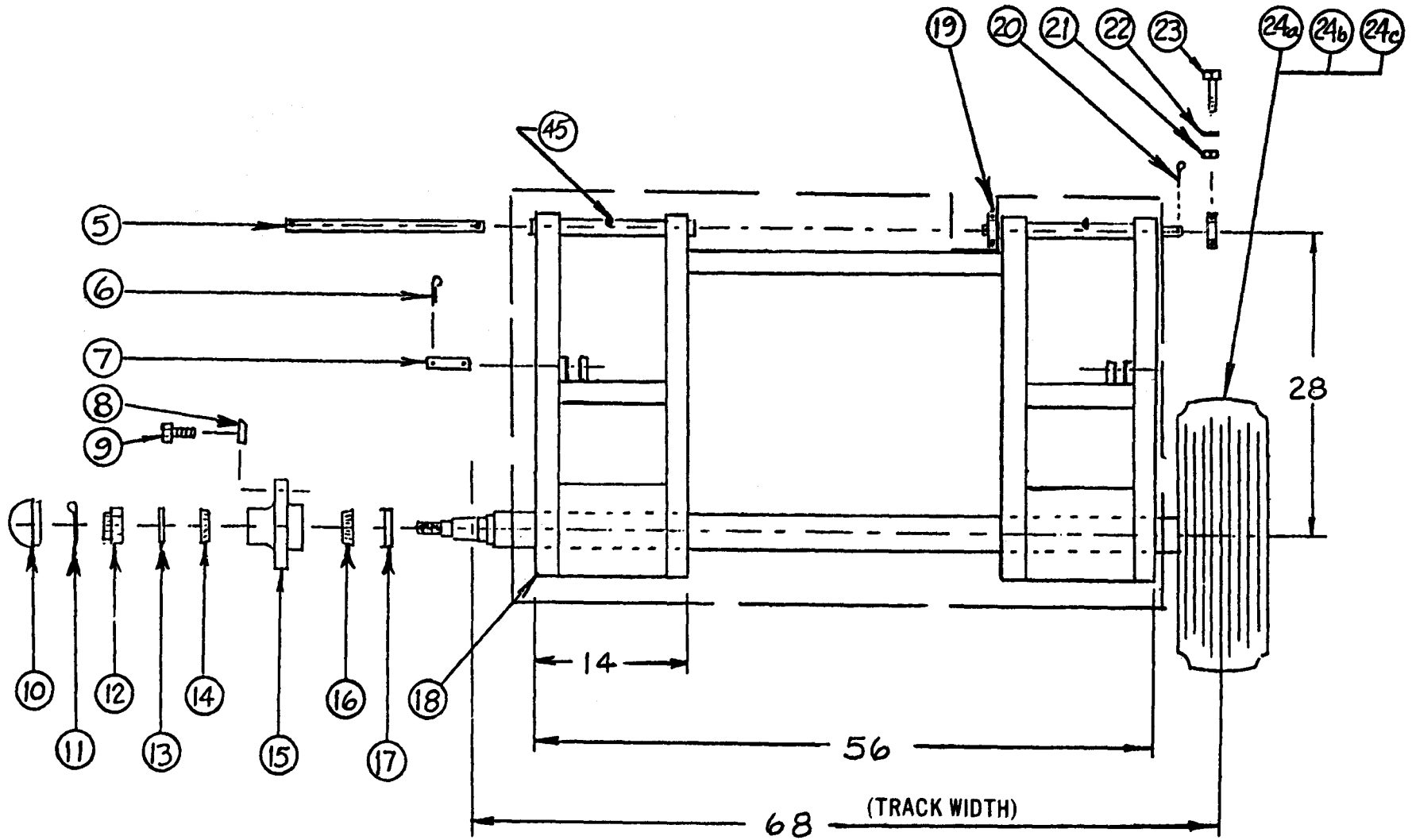
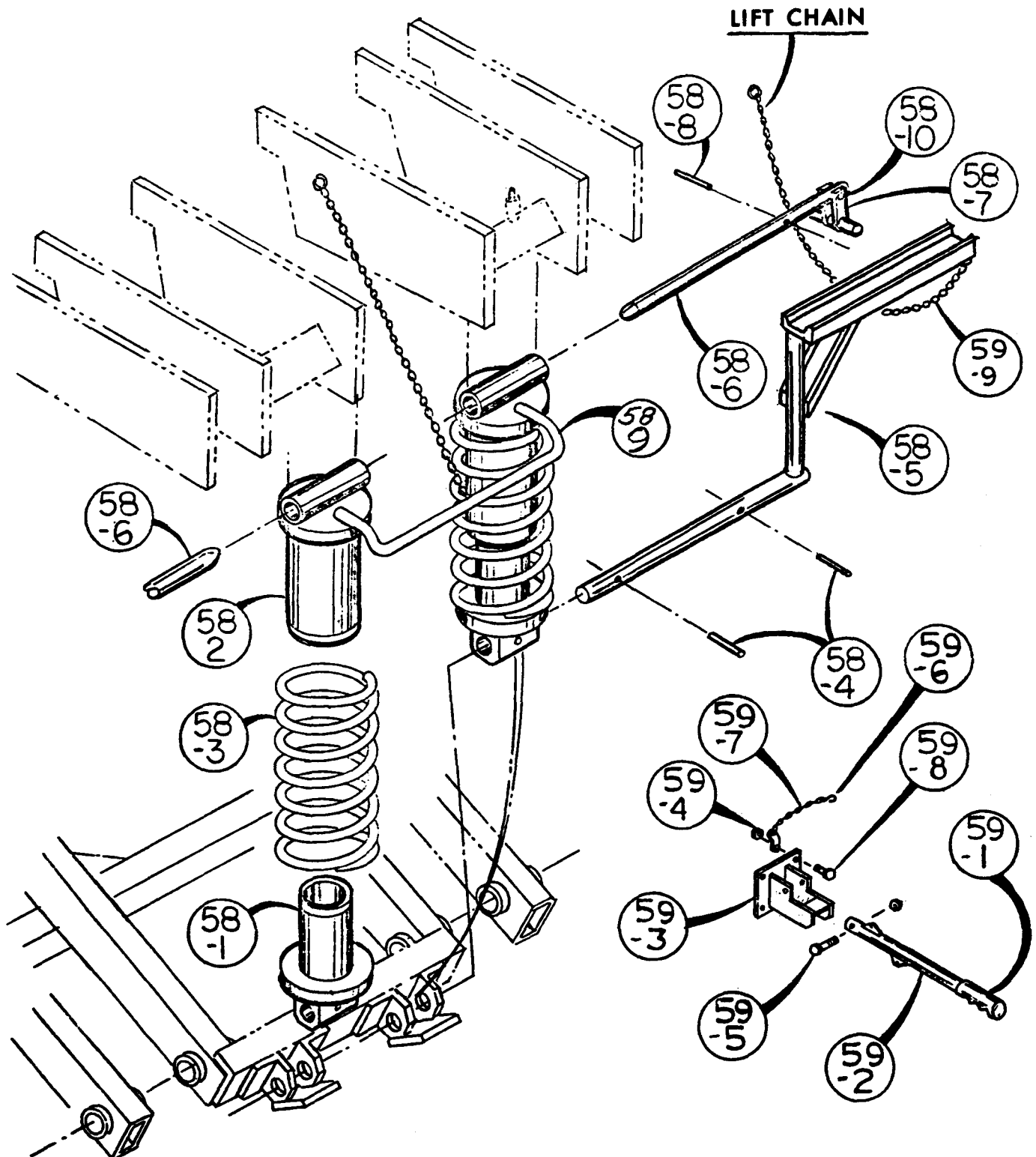


Figure 3-2 Undercarriage assembly



SPRING & PILOT
ASSEMBLY 217420

LEVER ASSY. 217281-D ITEM 59

3-3. Spring and pilot.

HYDRAULIC SYSTEM

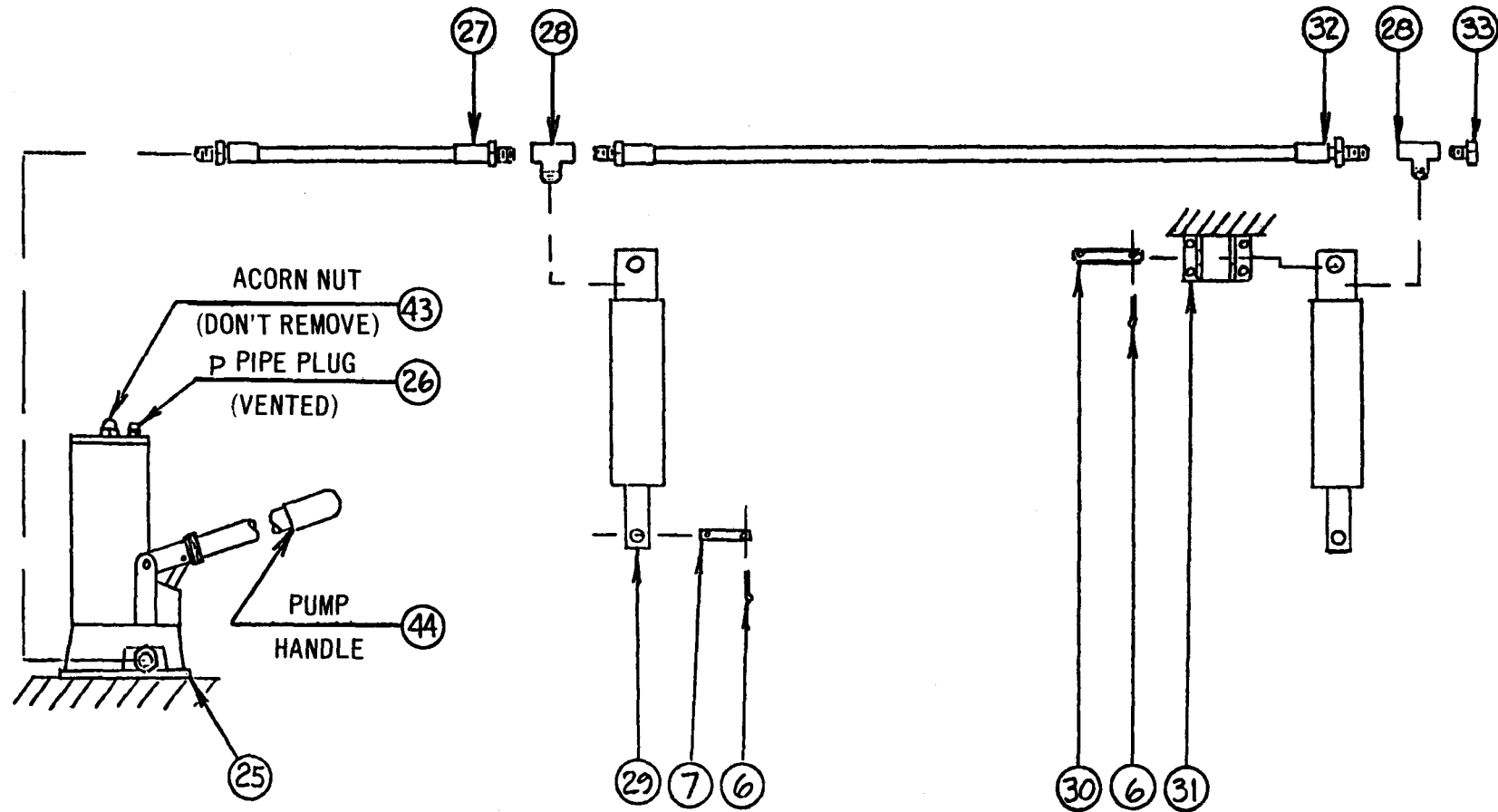
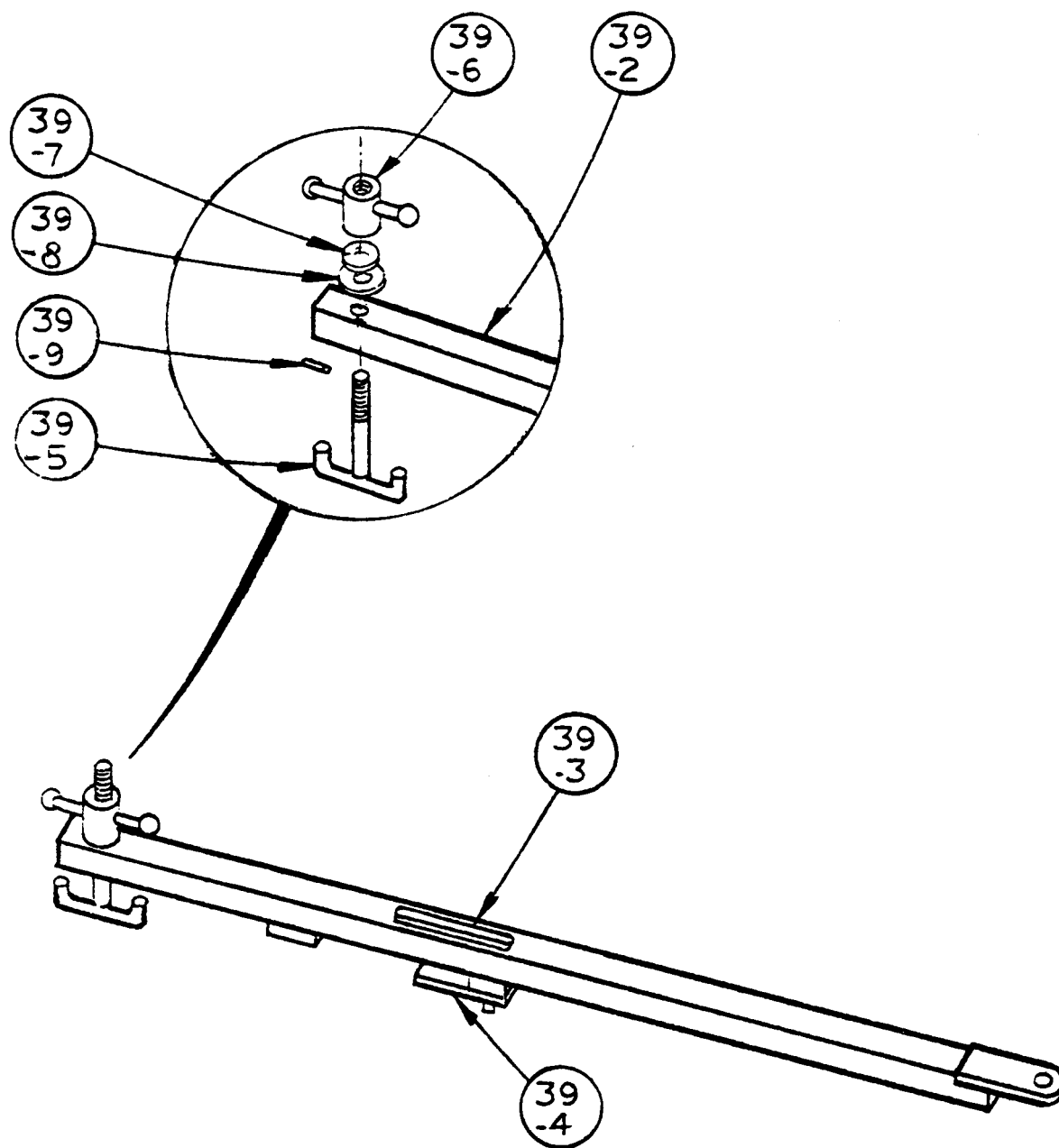


Figure 3-4. Hydraulic system.



TOW BAR
ASSEMBLY
No. 217214

Figure 3-5. Tow bar.

APPENDIX A

STOCKED AND AUTHORIZED PARTS

FOR

MAGLINE MODEL MDS-16-96-36-6F-CS

THE FOLLOWING LIST CONTAINS ITEMS THAT ARE STOCKED AND AUTHORIZED FOR MAINTENANCE SUPPORT OF THE MAGLIN MODEL MOBILE DOCK. IT IS SEQUENCED BY PART NUMBER IN ALPHA-NUMERIC ORDER.

P/N	DESCRIPTION (NSN)	SMR CODE	FSCM
HP-5002-51-01	PUMP, HYDRAULIC HANDLE (NSN 4320-01-012-9264)	PAOFF	07505
KH-2000	REPAIR KIT, PUMP (NSN 4940-00-186-3199)	PAOFF	26953
LM-4851A	BEARING, ROLLER TAPERED (NSN 3110-00-995-6821)	PAOZZ	60038
LM48510	CUP, TAPERED ROLLER (NSN 3110-00-586-8306)	PAOZZ	60038
LM-48548	BEARING, ROLLER TAPERED (NSN 3110-00-995-6821)	PAOZZ	60038
LM 48548	CONE & ROLLERS (NSN 3110-00-586-8305)	PAOZZ	60038
SA-150-K	KIT, CYLINDER REPAIR	PAOZZ	83205
SA-150-NW	GLAND, NUT & WIPER	PAOZZ	83205
SA-150-P	V-PACKING	PAOZZ	83205
W-16284	SEAL	PAOZZ	51829
ZZI550	INNERTUBE, PNEUMATIC (NSN 2610-00-497-6930)	PAOZZ	81348
199210700	TUBE, IND BUB	PAOZZ	73482
210090-855	TIRE	PAOZZ	73482
217047	RAMP, MOBILE LOADING (NSN 3990-01-026-1575)		83205
217115	CYLINDER, HYDRAULIC	PAOFZ	83205
217153	LEVER, MANUAL CONTROL (NSN 3040-01-054-5076)	PAOZZ	83205
217154	COUPLING, SHAFT, RIG (NSN 3010-01-054-2965)	PAOZZ	83205
217197	STRAP, RETAINING (NSN 5340-01-055-4418)	PAOZZ	83205
217215	T-CLAMP ASSY (NSN 5306-01-080-9167)	PAOZZ	83205
217216	KNOB, LOCK-THRD (NSN 5355-01-054-8279)	PAOZZ	83205
217419	CHAIN ASSY W/SPRING	PAOZZ	83205
4C-6MS-36	HOSE, HYDRAULIC	PAOZZ	80713
4C-6MS-48	HOSE, HYDRAULIC (NSN 4720-01-055-8679)	PAOZZ	80713
4030-21	REFLECTOR	PAOZZ	92986
4030-31	REFLECTOR, AMBER	PAOZZ	92986
5081	BOLT, RIBBED SHOULDER (NSN 5306-01-055-6876)	PAOZZ	94189
5082	NUT, WHEEL (NSN 5310-00-119-2090)	PAOZZ	94189
5084	HUB	PAOZZ	94189
509880	TIRE, PNEUMATIC (NSN 2610-00-050-9880)	PAOFL	81348
5197	WHEEL	PAOZZ	33195
5197	WHEEL	PAOZZ	94189
584	SPRING, COIL	PAOZZ	83205
6FT-6F-6F	TEE, PIPE	PAOZZ	80713
6M6UFS	COUPLING, PIPE (NSN 4730-00-119-9861)	PAOZZ	80713
6RMA-6UFS	ADAPTOR, RESTRICTING (NSN 4730-01-0767260)	PAOZZ	80713
6.90X6.00-9	FLAT, INNERTUBE (NSN 2640-00-797-0509)	PAOZZ	70622

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Chief of Staff

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4-6	Routing Identifier Code	A02 - Overseas
7	Media/Status Code	Always S9C
8-22	FSCM and Part Number	
23-24	Unit of Issue	
25-29	Quantity	
30-43	Document Number	
44	Demand Code	
45-50	Supplementary Address	
51	Signal Code	
52-53	Fund Code	
54-56	Distribution Code CC-54	"F" for CONUS; see AR 725-50 for OCONUS
	CC-55-56	Weapon System Code
57-59	Project Code	CCE (DSS) Code
60-61	Priority Code	
62-64	Required Delivery Date	
65-66	Advice Code	

B-1

INSTRUCTIONS

This form will only be used in those cases where the manufacturer's code and part number exceed the spaces allocated in card columns 8 - 22 of the requisition.

<u>COLUMN CARD</u>	<u>DESCRIPTION OF DATA</u>	<u>MANDATORY ENTRY FOR CCE</u>
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4 - 6	Routing Identifier Code	Always S9C
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8 - 22	FSCM and Part Number	Leave Blank Enter in Block 1 under Identification Data
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25 - 29	Quantity	
30 - 43	Document Number	
44	Demand Code	
45 - 50	Supplementary Address	
51	Signal Code	
52 - 53	Fund Code	
54 - 56	Distribution Code CC-54	"F" for CONUS. (See AR 725-50 for overseas).
	CC-56	Weapon System Code
57 - 59	Project Code	Appropriate CCE Project Code
60 - 61	Priority Code	
62 - 64	Required Delivery Date	
65 - 66	Advice Code	
67 - 80		Blank

IDENTIFICATION DATA -Lower half of DD Form 1348-6, complete blocks 1 thru 9.

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B-2

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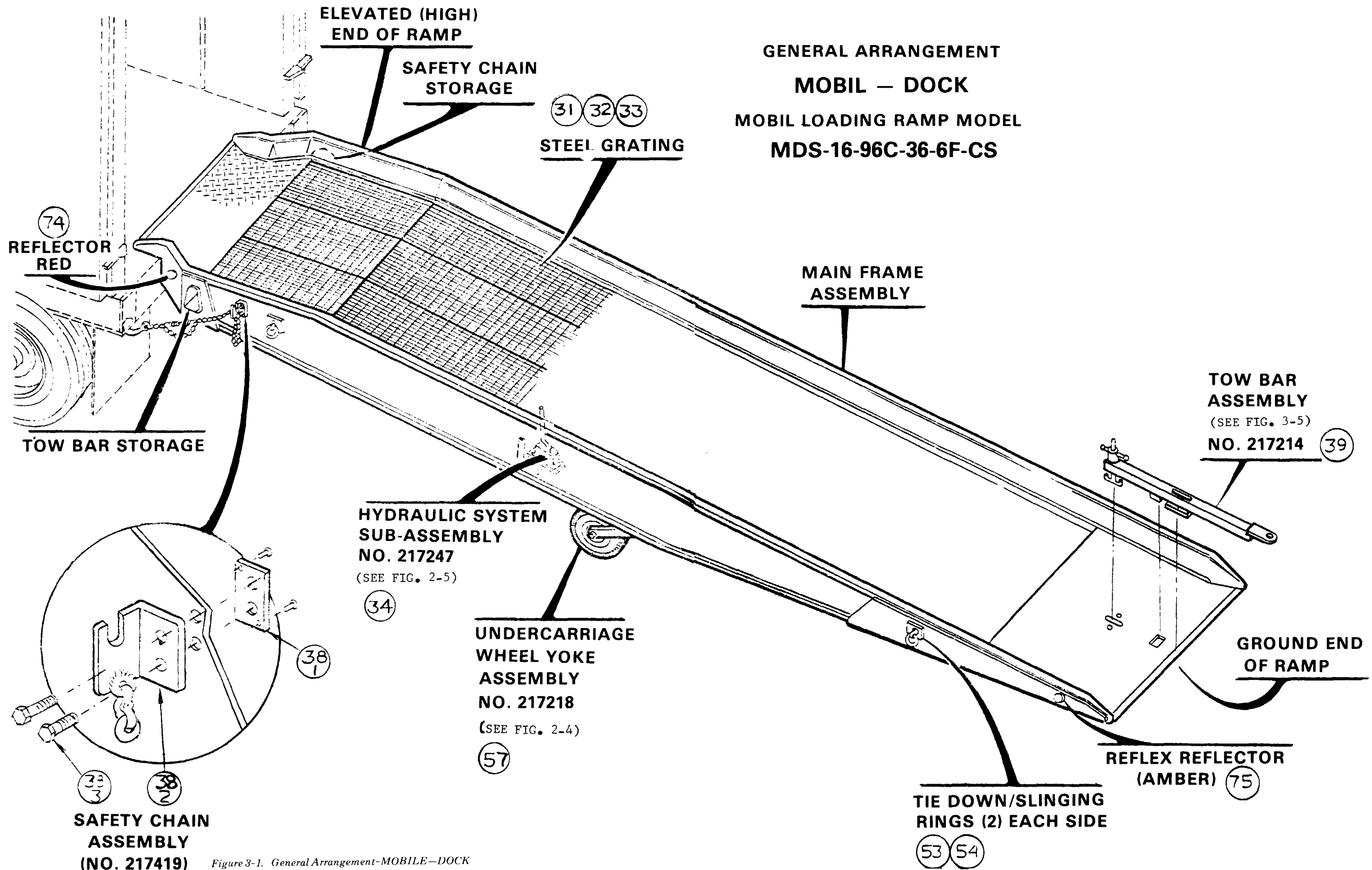


Figure 3-1. General Arrangement-MOBILE—DOCK

