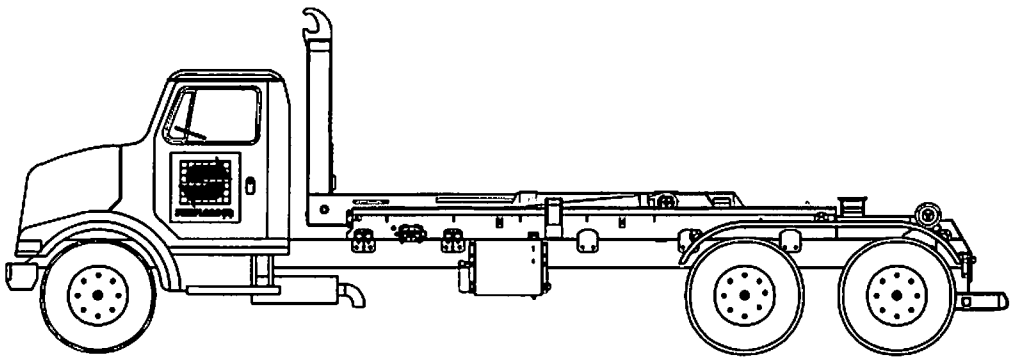
SWAPLOADER®
U.S.A. LTD.

Model SL-375

Parts and Operations Manual



Hoist Serial Number: _____

SWAPLOADER U.S.A., LTD.
1800 N.E. BROADWAY AVENUE
DES MOINES, IA 50313

WARRANTY REGISTRATION CARD

Model_____

Serial No._____

MOUNTED ON VEHICLE: Manufacturer _____

Model _____

Year _____

Wheel Base _____

Chassis Serial #_____

PTO Type _____

PTO Ratio _____

DISTRIBUTOR: Name (print)_____

Address _____

City, State, Zip_____

The unit has been checked and serviced according to the Pre-delivery inspection report. The proper mechanical operation of the unit as described in the written operational instructions provided by SwapLoader U.S.A., Ltd. has been discussed with the customer.

_____ Date Installed_____

Customer Name

_____ Date Inspected_____

Address

_____

City, State, Zip

_____ _____

Customer Signature Distributor Signature

Type of Application SwapLoader hoist will be used in:

☐ Waste Industry	☐ Landscaping	☐ Public Works
☐ Construction	☐ Tree/Nursery	☐ General Construction
☐ Recycling	☐ Roofing	☐ Other_____

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-375 HOIST INSTALLATION

Conducted by: _____ **Date:** _____

Dealer: _____

Customer: _____

I. RECORD THE FOLLOWING INFORMATION:

SwapLoader Model SL-375 Hoist:
Serial No.: _____

Truck Chassis:
Identification No.: _____
GVW: _____
CA (Cab to Axle/ Tandem): _____
Distance From Center Line of Rear Axle/Tandem to Rear of Hoist: _____

PTO:
Make: _____
Model: _____
Serial No.: _____
% of Engine RPM: _____

Hydraulic Pump:
Make: _____
Model: _____
Serial No.: _____

II. INSTALLATION TO CHASSIS

Were there any problems bolting the hoist to the truck chassis with the parts provided?

_____ YES _____ NO

If yes, please describe _____

_____

_____

_____ All bolts checked for proper tightness.
_____ Please include photos of the hoist installed on the truck chassis. Be sure to include at least one photo from each side.

III. CONTROLS

_____ Controls easy to reach from driver's seat.
_____ Movement of controls correct per installation instructions.

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-375 HOIST INSTALLATION

IV. HYDRAULICS INSTALLATION

_____ Correct hydraulic oil level in reservoir
_____ Check for leaks
Any abnormal noise during operation: _____ YES _____ NO
If yes, explain: _____

WITH ENGINE OPERATING @ 1000 RPM, RECORD THE FOLLOWING INFORMATION:

Cycle time for dump mode: Up _____ Sec. Down _____ Sec.
Cycle time for load/unload mode: Unload _____ Sec. Load _____ Sec.
Filter pressure _____ PSI.
Main pressure, controls in neutral _____ PSI.
Main relief pressure when extending jib cylinders (bottomed out)_____PSI.
Main relief pressure when extending lift cylinders (bottomed out)_____PSI.

NOTE: Connect pressure gauge to fitting provided on inlet section of Hyd. Control Valve (Ref. Pt. No. 10P37 fitting on Hyd. Pump Circuit Drawing No. 90H56).

V. OPERATION

_____ Jib operates freely in both directions.
_____ Jib cannot be extended or retracted when raised in dump position or when pivot joint is tilted in unload position. Both safety hooks are fully engaged when jib is extended.
_____ Parts and operators manuals in cab.
_____ Lubricate sliding jib and all grease zerks per installation instructions.

VI. DECAL

_____ All safety decals and product decals installed per Drawing 41H55.

ADDITIONAL COMMENTS:

_____

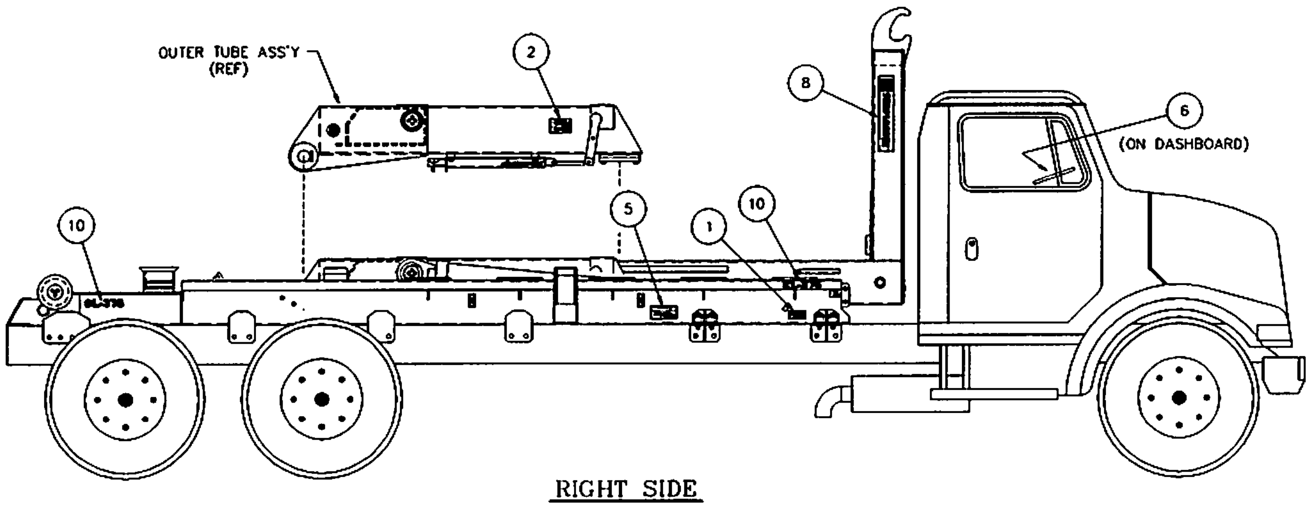
_____

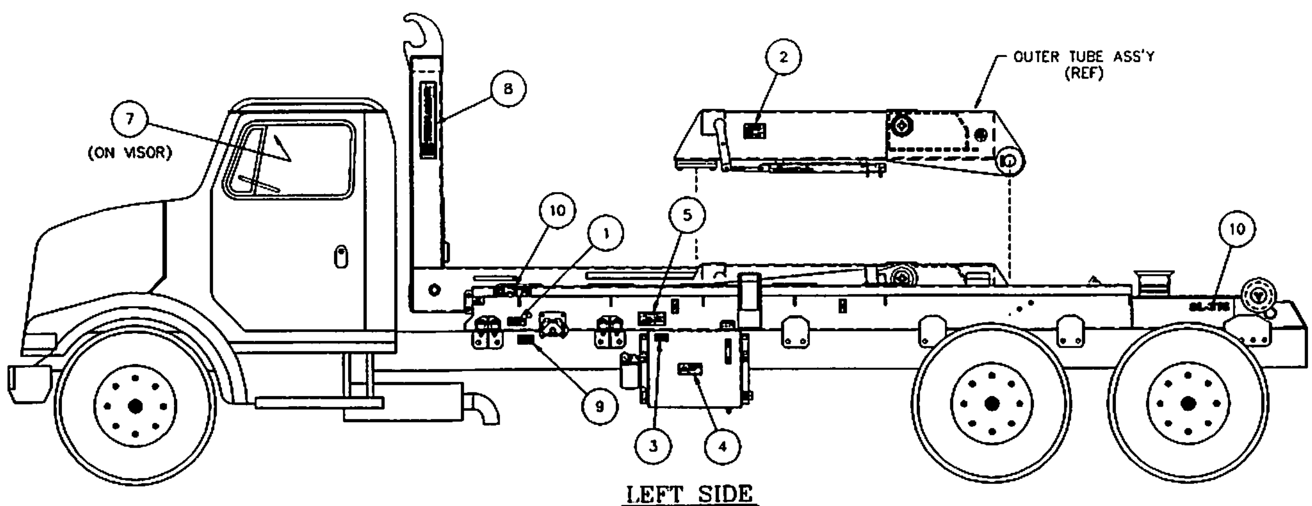
_____

SEND COMPLETED FORM TO:

SwapLoader U.S.A., Ltd.
1800 NE Broadway Avenue
Des Moines, IA 50313

RETAIN ONE COPY FOR YOUR FILE.





MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. - lb. PER EACH	REMARKS
1	2	90P07	OPR & SERV MANUAL		
2	2	90P08	HOIST - BODY SPEC		
3	ONE	90P09	HYD OIL SPEC		
4	ONE	90P10	HYD OIL FLAMMABLE		
5	2	90P11	HOIST FALLING		
6	ONE	90P12	LEVER CONTROL		
7	ONE	90P13	SAFETY INSTRUCTIONS		
8	3	90P14	SWAPLOADER - JB		
9	ONE	90P18	RELIEF VALVE		
10	4	90P54	SL-375		
					TOTAL

NO.	REVISION	DATE	BY

GENERAL NOTES

1. ANY ALTERATION OR REPAIR OF SWAPLOADER EQUIPMENT MUST BE AUTHORIZED IN WRITING BY SWAPLOADER USA, LTD. AND MUST BE CARRIED OUT BY QUALIFIED PERSONNEL. ANY MODIFICATION OF EQUIPMENT OR USE OF THAT EQUIPMENT OTHER THAN AS SHOWN WITHOUT APPROVAL IN WRITING BY SWAPLOADER USA, LTD. WILL VOID ALL WARRANTIES.
2. THIS DRAWING IS THE PROPERTY OF SWAPLOADER USA, LTD. AND IS LOANED TO THE RECIPIENT IN CONFIDENCE.
3. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

SWAPLOADER U.S.A. LTD.

DETAILED BY: 8/15/96 R.S.
CHECKED BY: 8/27/96 TJW
PRINT DISTRIBUTION

TITLE: DECAL ASSEMBLY

CUSTOMER

SCALE: 3/8 = 12 | MODEL No.: SL-375 | DRAWING No.: 41H56

SHOP
FILE
TOTAL

TABLE OF CONTENTS

INTRODUCTION

SWAPLOADER U.S.A., LTD.

TO THE CUSTOMER

Your new SwapLoader was carefully designed and manufactured to give years of dependable service. To keep it operating efficiently, read the instructions in this manual thoroughly. It contains detailed descriptions and instructions for the efficient operation and maintenance of your SwapLoader. Each section is clearly identified so you can easily find the information that you need. Read the Table of Contents to learn where each section is located. All instructions are recommended procedures only.

Throughout this manual you will come across **"Dangers," "Warnings,"** or **"Cautions"** which will be carried out in bold type and preceded by the symbol as indicated to the left. Be certain to carefully read the message that follows to avoid the possibility of personal injury or machine damage.

Record your SwapLoader serial number in the appropriate space provided on the title page. Your SwapLoader dealer needs this information to give you prompt, efficient service when you order parts. It pays to rely on an authorized SwapLoader Distributor for your service needs. For the location of the Distributor nearest you, contact SwapLoader.

NOTE: It is SwapLoader's policy to constantly strive to improve SwapLoader products. The information, specifications, and illustrations in this publication are based on the information in effect at the time of approval for printing and publishing. SwapLoader therefore reserves the right to make changes in design and improvements whenever it is believed the efficiency of the unit will be improved without incurring any obligations to incorporate such improvement in any unit which has been shipped or is in service. It is recommended that users contact an authorized SwapLoader Distributor for the latest revisions.

LIMITED WARRANTY STATEMENT

Effective October 1, 2004

SwapLoader U.S.A., Ltd., (SwapLoader), warrants to the original purchaser of any new SwapLoader product for a period of thirty-six (36) months from the date of Retail Sale by an authorized SwapLoader distributor or service center, that such products are free of defects in material and workmanship. SwapLoader will, at its discretion, either repair the defective parts or replace them with equivalent parts, subject to the conditions below unless deferred warranty is approved by SwapLoader U.S.A., Ltd.

- Replacement or repair of parts will be provided for 36 months on SwapLoader products, subject to any applicable federal, state or local taxes. Labor charges authorized by the SwapLoader Warranty Department are covered for a period of 90 days from the date of Retail Sale by an authorized SwapLoader Distributor or service center.

- Defective parts must be reported to SwapLoader within 30 days of discovery on a SwapLoader warranty claim report form.

- Warranty Registration Card must be returned within 15 days of Retail Sale of SwapLoader hoist to SwapLoader, Des Moines, Iowa. If unit has not been registered, then the warranty start date will revert to the original factory invoice date.

- Warranty shall not apply if the equipment is operated at capacities in excess of factory recommendations.

- The warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear and tear, accident, mishap, untrained operators, or improper or unintended use. The owner has the obligation of performing routine care and maintenance duties as stated in SwapLoader's written instructions, recommendations, and specifications. Any damage resulting from owner/ operator failure to perform such duties shall void the coverage of this warranty. The cost of labor and supplies associated with routine maintenance will be paid by the owner.

- In no event will SwapLoader, the SwapLoader distributor or any company affiliated with SwapLoader be liable for business interruptions, costs of delay, or for any special, indirect, incidental or consequential costs or damages. Such costs may include, but are not limited to loss of time, loss of revenue, loss of use, wages, salaries, commissions, lodging, meals, towing, hydraulic fluid, travel, mileage, or any other incidental costs.

- SwapLoader is not responsible for the removal or replacement of accessories (fenders, toolbox, etc.).

- Warranty service must be performed by a distributor or service center authorized by SwapLoader to sell and/or service SwapLoader products, which will use only new or remanufactured parts or components furnished by SwapLoader U.S.A., Ltd.

- Warranty is expressly void if seal on the main relief control valve has been broken.

- SwapLoader will ship the replacement part by the most economical, yet expedient means possible. Expedited freight delivery will be at the expense of the owner.

- Warranty is expressly void if serial number plate or stamping is tampered with.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT THERE ARE NO WARRANTIES MADE BY THE MANUFACTURER OR ITS AGENTS, REPRESENTATIVES OR DISTRIBUTORS, EITHER EXPRESSED, IMPLIED, OR IMPLIED BY LAW, EXCEPT THOSE EXPRESSLY STATED ABOVE IN THIS STANDARD LIMITED WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. THE MANUFACTURER AND ITS AGENTS, REPRESENTATIVES AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

SAFETY SUGGESTIONS

1. Do not operate or service this equipment until you have been properly trained and instructed in its use and have read the operation and service manual.

2. Do not operate this equipment on uneven ground.

3. Do not drive with the container in a dump position or with the hook to the rear.

4. Do not exceed 1,500 Engine RPM when operating the Power Take Off (P.T.O.). Never leave the P.T.O. in gear while transporting.

5. The hoist must be used with containers that properly fit the hook and rear holddowns. The container specifications must match the hoist specifications.

6. Keep the containers and hoist in good working order. **DO NOT** use if repairs are needed. Perform periodic inspections and maintenance as required by the maintenance section of the operator's manual.

7. Make sure work area is clear of people and obstacles prior to dumping or unloading containers. SwapLoader strongly recommends that a back up alarm be installed on the truck chassis. The operation of the hook hoist is that the truck is backed up to the body to pick it up and so there is a potential pinch point between the body and the hook.

8. Any container which is on the hoist **MUST** be unloaded prior to performing any repairs or maintenance to the hoist. Also, **DO NOT** allow any person to work on or be under the hoist in a raised position without first installing adequate safety blocks to eliminate all possibility of the hoist accidentally lowering. SwapLoader strongly recommends that if possible the container should be dismounted from the hoist prior to performing any maintenance to the hoist.

9. It is the responsibility of the owner and/or installer to insure that any additional safety devices required by state or local codes be installed on the SwapLoader Hoist and/or Truck Chassis.

INSTALLATION

INITIAL INSPECTION

When the SwapLoader hoist is received from the factory, you should inspect the hoist for damage which may have occurred in shipment. If damage has occurred, you should contact the shipper immediately.

You should then check the hoist to insure you have received all the parts as indicated by the Packing List and the Ship Loose Box List.

If you have any problems, shortages, or questions, please contact SwapLoader U.S.A., Ltd. immediately.

GENERAL INSTALLATION PROCEDURE

The installation of the SwapLoader on a truck chassis will generally follow these steps:

1. Install hoist assembly onto truck chassis.

2. Mount the hydraulic control valve to the hoist and install the hydraulic plumbing from the control valve to the hydraulic cylinders. Then install the control levers in the cab and route the control cables (or air lines if you have air shift controls) to the hydraulic control value assembly.

3. Install the hydraulic tank, hydraulic filter, and hydraulic plumbing between the hydraulic tank and the control valve assembly.

4. Select and install the P.T.O. on the truck transmission. This can be done prior to mounting the hoist assembly.

5. Install the hydraulic pump and the plumbing from the pump to the hydraulic tank and control valve assembly.

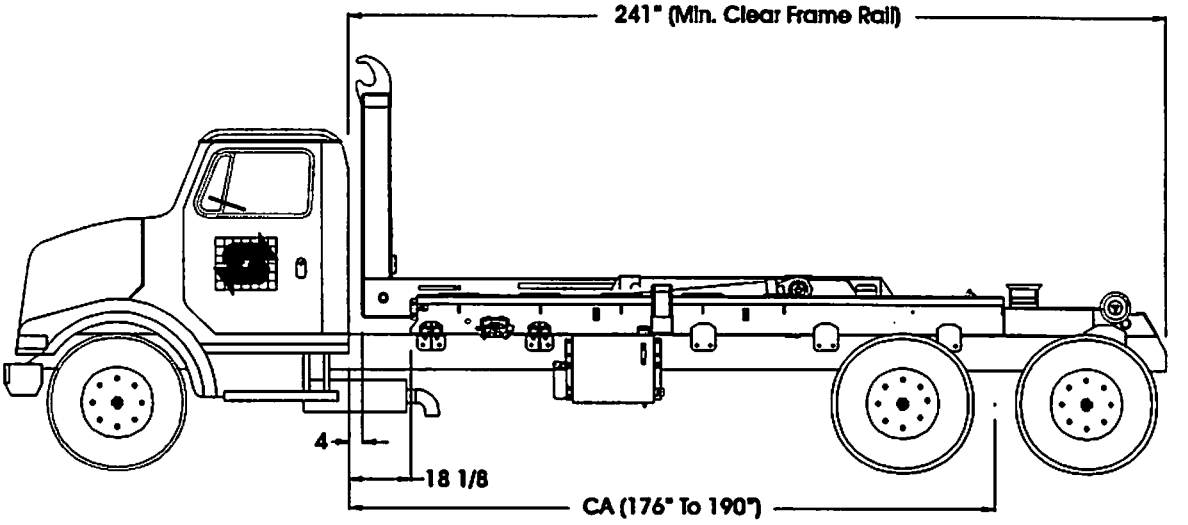
6. Fill the hydraulic tank with oil, bleed the air from the pump suction line, and start up the unit.

Although SwapLoader attempts to include the mounts and attaching fasteners with each hoist unit, your particular installation may require some additional mounts or modifications. If you have problems with your installation, please contact SwapLoader at 1-888-767-8000, as we may be aware of another customer who has installed a SwapLoader on a similar truck chassis.

HOIST INSTALLATION TO TRUCK CHASSIS

1. Place the hoist assembly on the truck chassis the Model SL-375 hoist is to be installed on. The truck chassis should meet the following minimum specifications:

   RBM for each frame channel: 2,000,000 in.-lb.
   Total RBM: 4,000,000 in.-lb.
   Minimum clear frame rail for mounting: 241" (See Figure)
   Front Axle Cap: 12,000 lb. (Min)
   Total Rear Axle Capacity: 34,000 lb. (Min)
   CA Dim: 176" to 190" (190" preferred)



Note: The above specifications are a minimum requirement. It is the responsibility of the owner/operator to ensure the completed chassis meets or exceeds all federal, state, and local regulations. Also, the hoist should not be used to lift and haul any load that exceeds the load rating of any of the individual components of the completed chassis (tires, axles, suspension, etc.)

The clear frame dimensions indicated in the picture above allows for the overall length of the hoist plus 5 inches for cab clearance and rear light bar mounting. Extra frame length may be needed to allow for mounting additional accessories (e.g. Stablizer, Cab Guard, Tarper, etc.). For example, check to make sure that when mounting a stabilizer enough of the truck mainframe extends behind the rear tandem axle to insure that the stabilizer roller when in the raised position does not interfere with the differential housing on the rear tandem axle. On a truck with a long CT, check that the hoist and the light kit are positioned far enough back to eliminate any interferance between the fender and the light kit. You should also consider the final weight distribution with regard to the bridge code when positioning the hoist.

2. There are three types of mount brackets used on the Model SL-375 hoist. They are the front spring mount bracket assembly (Pt. No. 40H31), the middle mount bracket (Pt. No. 81H23), and the rear mount bracket (Pt. No. 81H24). Locate the mount brackets on the side of the hoist as indicated on the mainframe sub-assembly drawing (Drawing No. 41H05) in the Parts List section of this manual. Evenly space the mount brackets as much as possible while allowing for mounting the control valve assembly and the hydraulic tank. You should consult the truck chassis supplier for any limitations regarding drilling mount holes in the truck chassis frame rails. Typically, the holes must be at least 2 3/4" from the top of the truck chassis rails. See Figs. B & C for illustration of bracket mounting.

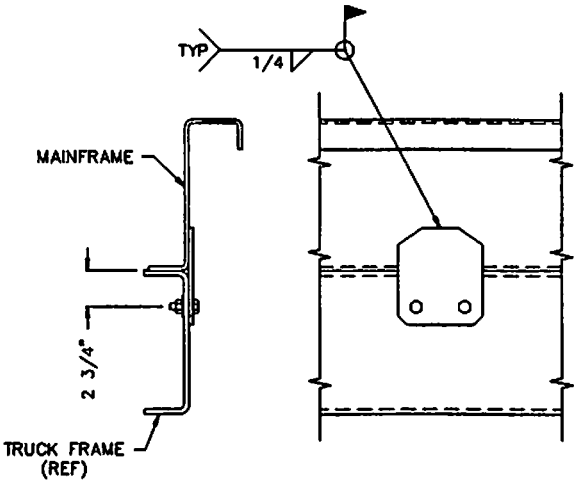


FIG B

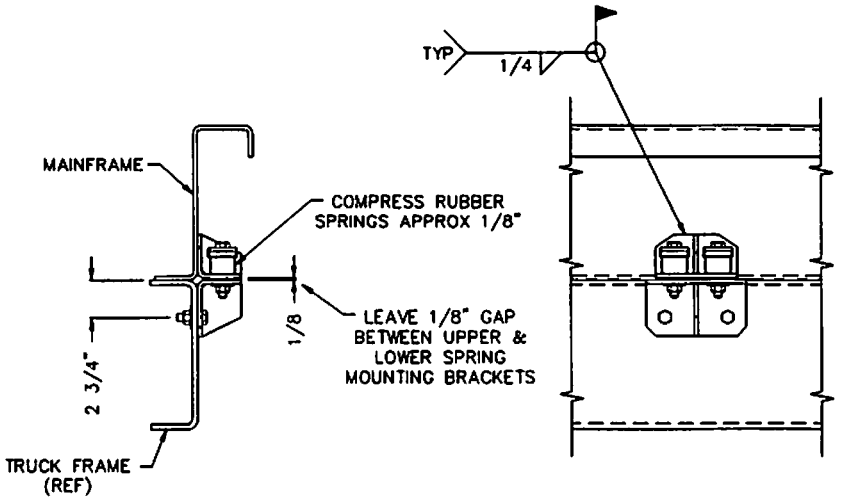


FIG C

Once the locations of the mount bracket have been determined, use the mount brackets as a template for marking the mounting holes in the truck chassis frame rails. Drill the 21/32 diameter holes required and attach the brackets to the truck chassis with the 5/8 inch diameter bolts, washers, and locking hex nuts provided. Torque to 220 ft. lbs. Please note the mounting clearance on the front spring mount bracket assembly indicated on Fig. C.

3. Weld the mount brackets to the hoist mainframe as indicated on Drawing No. 41H05.

You may need to modify the mount brackets or add shim plates to allow for variances in the width of truck chassis as well as to allow for top rivets, stepped channels, etc.

Note: Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

Note: The hoist mainframe is made from high strength low alloy steel. Use an appropriate welding process.

CONTROLS INSTALLATION - MANUAL

1. Attach the valve mount bracket (Pt. No. 41H01) to the mainframe as indicated on Drawing No. 90H57 (Manual Control Assembly) with the fasteners provided.

2. Mount the hydraulic control valve assembly (Pt. No. 20P88) to the valve mount bracket as shown on Drawing No. 90H57 (Manual Control Assembly) with the fasteners provided.

3. Install the hydraulic adapters and connect the hydraulic tubing (Pt. Nos. 12P05 and 12P06) and the hydraulic hose assemblies (Pt. Nos. 11P98 and 11P99) to the control valve assembly as indicated on Drawing No. 90H55. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box.

4. Determine the best location in the cab for the control levers (Pt. No. 20P08). The location should be such that the controls can be easily reached while operating the truck. A control lever console (Pt. No. 20P09) is provided to facilitate the mounting of the control levers.

5. Assemble and install the control lever console. Typically the console is fastened to the floor of the cab and the control cables are routed through additional holes drilled in the floor. Your particular installation may require that additional brackets be fabricated or other modifications made.

6. Attach the control cables to the control levers and route the cable through the holes in the cab. Install the control levers in the console. Levers should be installed such that when the levers are pushed forward the control cable is extended. See Drawing No. 90H57 (Manual Control Assembly) for control lever orientation.

7. Route the cables to the control valve location and attach them to the control valve with the bonnet connection kits provided (Pt. No. 20P10). The control cables supplied are 96 inches long. Your particular mounting may require different length control cables which can be purchased locally. Take proper care when routing the control cables, as a good cable path is essential for a properly operating system. Keep bends in the cable path to a minimum and be as generous as possible. Under no circumstances should any bend be tighter than an 8" radius. Protect the cable from heat above 225 degrees F. and avoid hot areas such as exhaust pipes, etc.. Protect the cable from physical damages such as pinching or crushing, and do not use cable supports which may crush or deform the cable. Allow room for flexing where the cable is attached to moving parts of the equipment, so that the cable is neither kinked nor stretched.

CONTROLS INSTALLATION - AIR SHIFT (OPTION)

1. Attach the valve mount bracket (Pt. No. 41H01) to the mainframe as indicated on Drawing No. 90H58 (Air Control Assembly) with the fasteners provided.

2. Mount the hydraulic control valve assembly (Pt. No. 90H59) to the valve mount bracket as shown on Drawing No. 90H58 (Air Control Assembly) with the fasteners provided.

3. Install the hydraulic adapters and connect the hydraulic tubing (Pt. Nos. 12P05 and 12P06) and the hydraulic hose assemblies (Pt. Nos. 11P98 and 11P99) to the control valve assembly as indicated on Drawing No. 90H55. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box.

4. Determine the best location in the cab for the control handle assembly (Pt. No. 20P72). The location should be such that the controls can be easily reached while operating the truck. A control handle console (Pt. No. 51H27) is provided to facilitate the mounting of the control handles.

5. Install the air fittings and hose as shown on Drawing No. 90H60 (Air Circuit, Control Valve). An air pressure protection valve (Pt. No. 20P74) is provided so you can tap into the truck's air supply without jeopardizing the integrity of the air system. The air hose is provided in a bulk length which you can cut to length as required for running the air lines. Take care in routing the air lines and avoid hot areas such as exhaust pipes, etc.

HYDRAULIC TANK INSTALLATION

1. Select a location to mount the hydraulic tank. Reference Drawing No. 90H54 (Hydraulic Assembly-Final) for the suggested location of the hydraulic tank to the rear of the control valve assembly on the left-hand side of the truck. The hydraulic hoses have been sized for the tank to be mounted in this general area. The tank can be located on the right-hand side or behind the cab, if necessary, which means longer hoses may be required.

2. Drill four (4) holes for 5/8 inch diameter bolts (provided) in the mount angle of the hydraulic tank (two per angle) and the frame rails of the truck chassis. Mount the hydraulic tank and install the hydraulic filter. Install the hydraulic return hose and the hose barb fitting between the filter and the control valve assembly as shown on Drawing No. 90H37. The hose length can be shortened if necessary. Secure the hose to the barb fittings with the hose clamps provided.

P.T.O. SELECTION

The next step is to select and install a direct drive type P.T.O. to the transmission. Please contact your local truck equipment representative for the correct unit sized on the following criteria:

Hydraulic Pump Displacement:	3.83 CID
Main Relief Press Setting:	3500 PSI
P.T.O. Torque Required:	200 ft.-lbs. (See Note 1)
Power at 1500 RPM:	57 H.P. (See Note 1)

Hydraulic Pump Rotation: L.H. As provided (See Note 2). The hydraulic pump rotation can be reversed to R.H. by a qualified hydraulic technician.

Ratio of Pump RPM to Engine RPM: 80% to 100%

NOTE 1: P.T.O. torque and power requirements are based on the unit operating at main relief pressure. Normal operating pressure will be less.

NOTE 2: P.T.O. output rotation will need to be R.H. (clockwise) as viewed looking at output flange of P.T.O. for a L.H. Pump.

NOTE 3: Do not operate pump at speeds over 1500 R.P.M.

NOTE 4: Always disengage the P.T.O. after each operating cycle.

PUMP INSTALLATION

1. Install the hydraulic pump to the P.T.O. (Bolts are not provided).

2. Install the hydraulic fittings into ports on the hydraulic pump as shown on Drawing No. 90H56 (Hydraulic Sub-Assembly, Pump Circuit).

3. Connect the suction hose assembly to the hydraulic tank (1 1/2" I.D. hose) and route to the hydraulic pump in as short and straight line as possible. Be sure to route the hose clear of exhaust components and of the drive shaft. Extra hose is provided so the hose can be shortened to an appropriate length. Install the hose on the hose barb fittings at the tank and at the pump and secure with the hose clamps provided.

   NOTE: Prior to startup, this hose must be filled with oil.

4. The pressure hose from the hydraulic pump to the control valve assembly is not supplied with the hoist as it must be made to the proper length. This hose must be purchased from a local hydraulic hose assembly supplier per the following specification:

Hose I.D.:	3/4 inch
Working Pressure:	3500 PSI
Hose Fitting Threads:	SAE 37° (JIC) 1 1/16-12

5. Install the pressure hose as indicated. Tie up the pressure and suction hoses as necessary. Again, be sure the hoses are routed to avoid exhaust components and to stay clear of the drive shaft.

START UP PROCEDURE

1. Fill the hydraulic tank with hydraulic oil (see oil specification in Maintenance Section.)

2. Prime the pump by loosening the clamp on the suction hose at the pump. Pull the hose back off the fitting till the air is bled from the line. Push the hose back on the fitting and retighten the clamp.

3. Engage the P.T.O. and run the pump at idle (700 to 900 RPM). Operate the cylinders at full stroke five to ten times to bleed the air from the lines and cylinders. The cylinders were filled with oil during testing at the factory, but some seepage may have occurred during shipping and installation. Refill the hydraulic tank, if needed, during this sequence and do not let the pump run without oil.

4. Check for leaks and tighten fittings as necessary.

5. Verify the movement of the control levers corresponds to the movement of the cylinders. Per Fig. A.

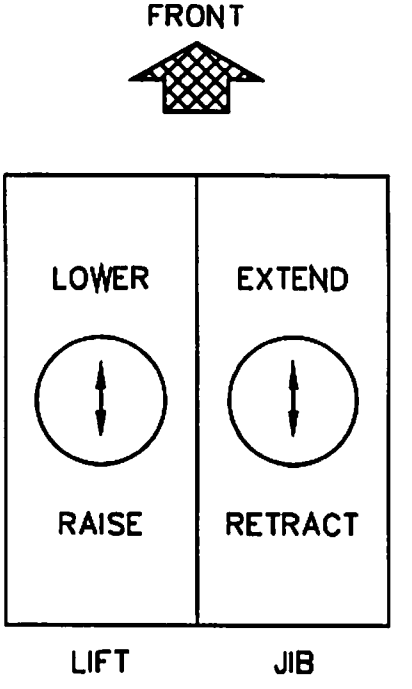


FIG A

6. Install all safety decals and product decals per Drawing No. 41H55 after final installation and painting have been completed.

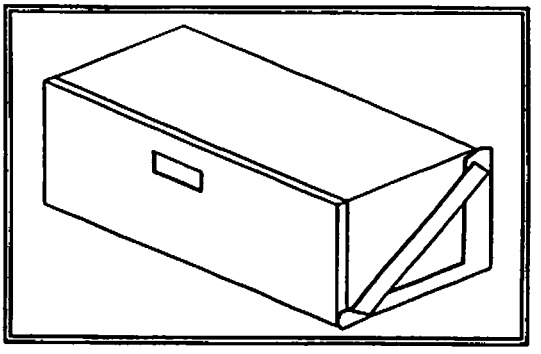
7. Fill out pre-delivery checklist and warranty card and mail to SwapLoader U.S.A., Ltd.

NOTE: Failure to fill out and return warranty card within 15 days of installation may possibly void the warranty.

CAUTION: The SwapLoader hoist must be used with bodies or containers that properly fit the front hook and the rear hold-downs. If possible, pick up one of the containers that will actually be used with the SwapLoader hoist and verify the following:

- Outside dimensions of the long sills match the guiding rollers on the hoist.
- The front hook dimensions are correct for the hoist.
- The rear hold-downs of the container latch into the hold-downs on the hoist.
- Check for any interference between the container and any part of the hoist (i.e.: Hydraulic tank, hydraulic tubing or hose, hydraulic valve, etc.)

SWAPLOADER®
U.S.A. LTD.



TOOLBOX

Aluminum (10H92) / Steel (11H12)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting toolbox installation.

2. Position toolbox brackets [Part No. 10H88] on truck chassis. (NOTE: toolbox has an envelope of 18"x18"x36". See Fig. 1 for hole dimensions.)

3. Mark position of mounting holes through brackets onto truck chassis. Remove brackets and drill 9/16" dia. holes.

4. Mount toolbox brackets using fasteners provided (See Fig. 1).

5. Position toolbox [Part No. 90P27 or 90P37] on brackets. (NOTE: toolbox hinge should be on the forward, bottom edge.)

6. Mark position of mounting holes through brackets onto toolbox. Remove toolbox and drill 9/16" dia. holes.

7. Mount toolbox to brackets using fasteners provided (See Fig. 1).

TOOLBOX
Aluminum (10H92) / Steel (11H12)

MATERIAL LIST				
ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	2	10H88	18" TOOLBOX BRACKET	11.34
2	2	22H71	TOOLBOX RUBBER SPACER (ALUMINUM TOOLBOX ONLY)	.27
3	1		18 X 18 X 36 TOOLBOX	
		90P27	ALUMINUM TOOLBOX	50.00
		90P37	STEEL TOOLBOX	72.00
4	8	00784	1/2 DIA. FLAT WASHER H.T.	.07
5	4	00P15	1/2-13 UNC X 1-3/4 HEX HEAD BOLT	.23
6	8	00P35	1/2-13 UNC METAL LOCKING NUT	.15
7	4	00P75	1/2-13 UNC X 1-1/2 SOCKET BUTTON HEAD BOLT	.12
8	4	00P76	1/2 DIA.NYLON FLAT WASHER (ALUMINUM TOOLBOX ONLY)	-
			ALUMINUM TOOLBOX TOTAL	76.38
			STEEL TOOLBOX TOTAL	97.84

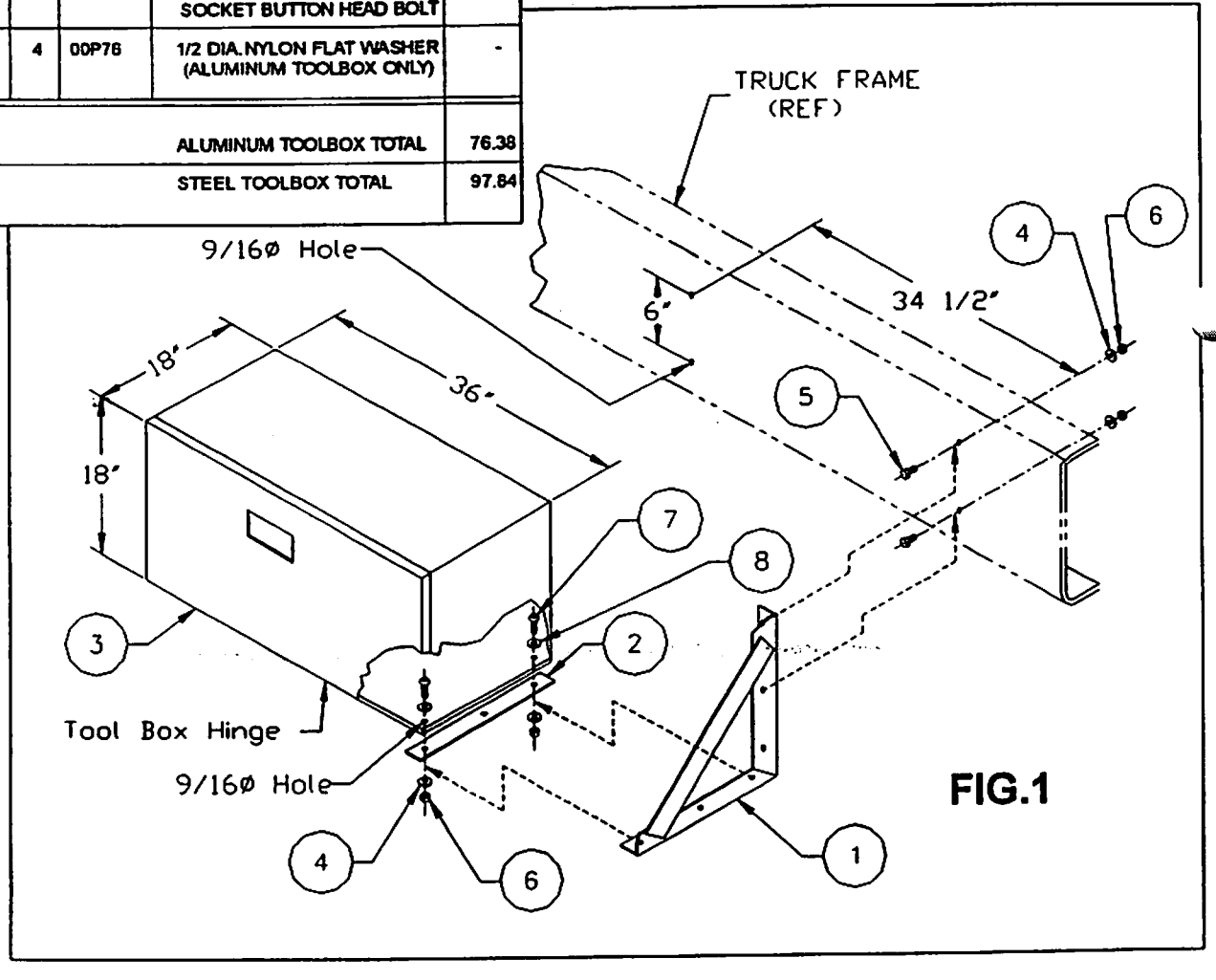


FIG.1

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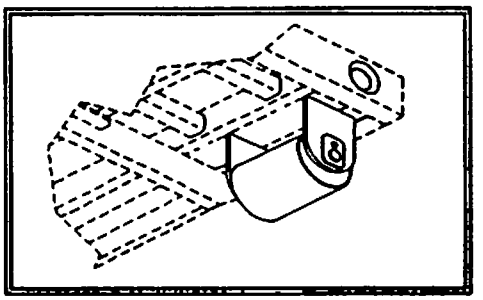

ROLLER & ROLLER MOUNT

(10H90 & 10H91)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting the roller and roller mount installation.
2. Locate position for roller mount brackets [Part No. 32H03] between cross sills of the container. Rollers should be positioned as far back and as wide as possible for stability. For hoist and folding bumper clearance, do not place brackets any closer than 11" to the subframe longsill (See Fig.1). Also, the roller axle center line should be approximately 1-11/16" below the bottom of the subframe longsill for roller clearance (See Fig. 1).

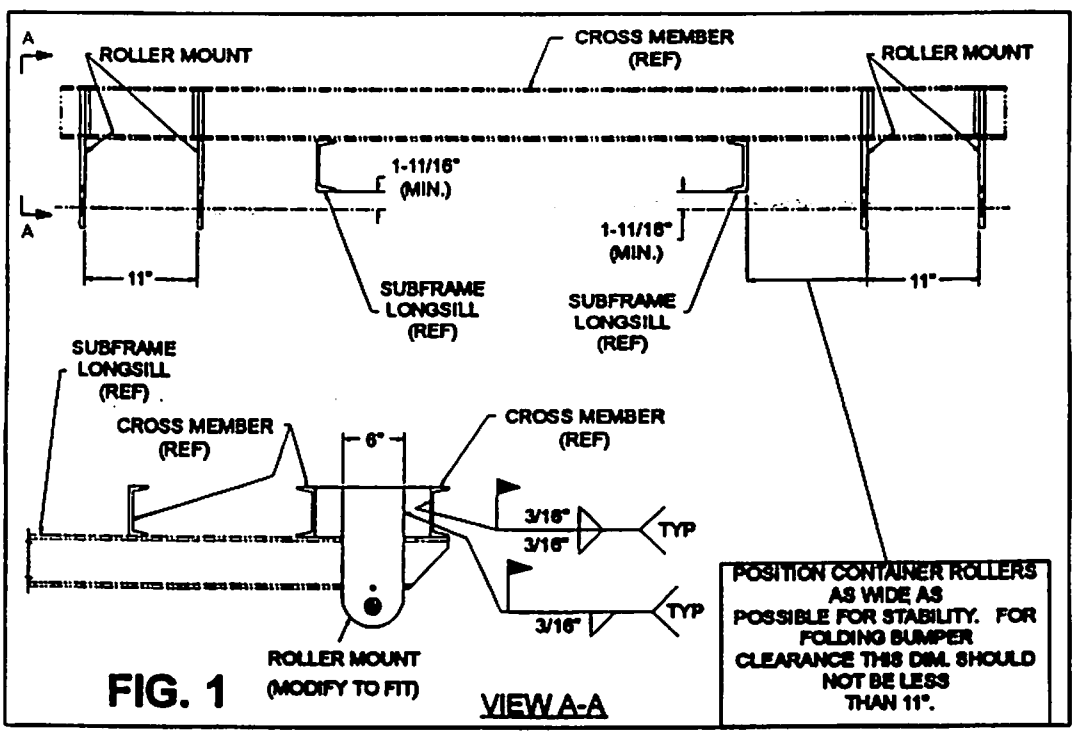

FIG. 1

ROLLER & ROLLER MOUNT
(10H90 & 10H91)

INSTALLATION INSTRUCTIONS (continued)

3. Some modification to the roller mount bracket may be required for the roller mount to fit properly. If the existing container cross members are wider than 6", a fabricated support member of 1/2" plate or thicker will need to be added (See Fig. 2).

4. Once the mount brackets are located on the container, weld the roller mount brackets in place (See Fig. 1).

5. Install the roller [Part No. 10H12] between the brackets with the roller axle [Part No.10H31] and the fasteners provided (See Fig. 3). Grease the rollers before use.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	4	32H03	ROLLER EAR	11.95
2	2	10H12	ROLLER WDMT.	39.78
3	2	10H31	ROLLER AXLE WDMT.	7.28
4	2	00P62	3/8-16 UNC X 1 BOLT	.05
5	2	90P03	1/8 NPT GREASE ZERK	.01
6	2	00755	3/8 DIA. LOCK WASHER	.01
7	2	00P36	3/8 DIA. WASHER H.T.	.10
			TOTAL	142.26

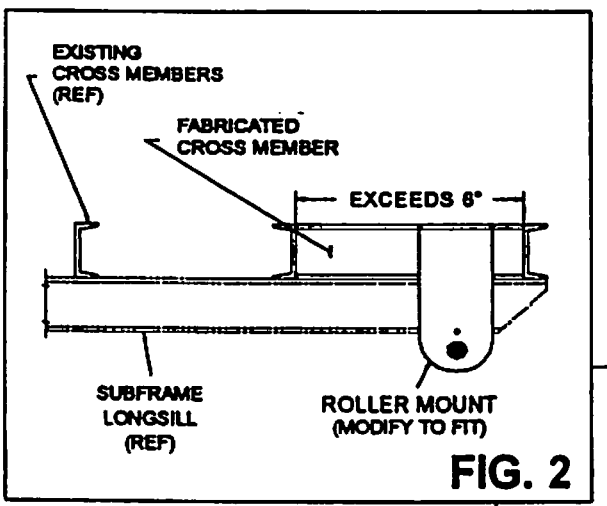

FIG. 2

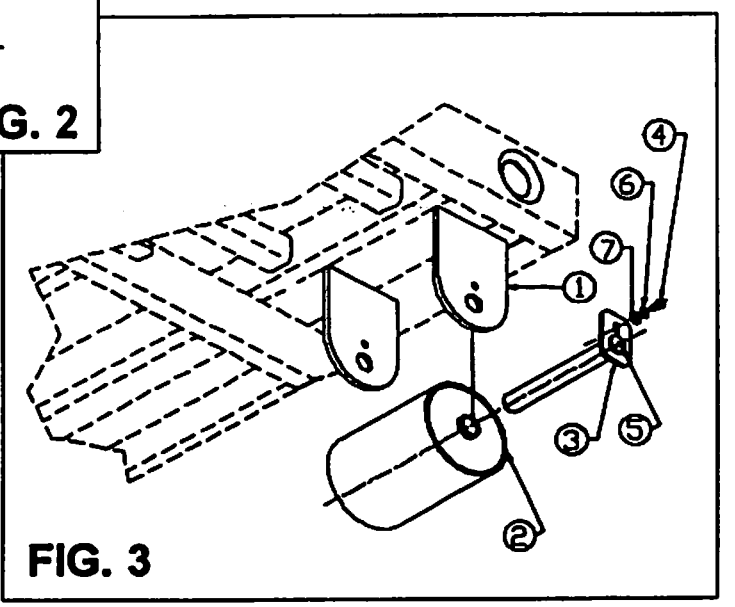

FIG. 3

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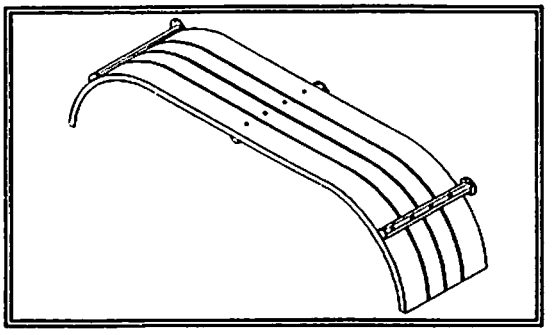


FENDER ASSEMBLY, TANDEM AXLE

Steel (11H14)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting fender installation.

2. Center fender above tire using block to maintain the proper height. Fender should be approximately 6" above tire to allow for suspension movement (See Fig. 1). A maximum width of 48" from center of the truck to the outside edge of the fender should be maintained (See Fig. 2).

3. Place fender bracket weldments [Part No. 10H74] on fender. Position the brackets to avoid any mounting obstacles on hoist and/or truck chassis.

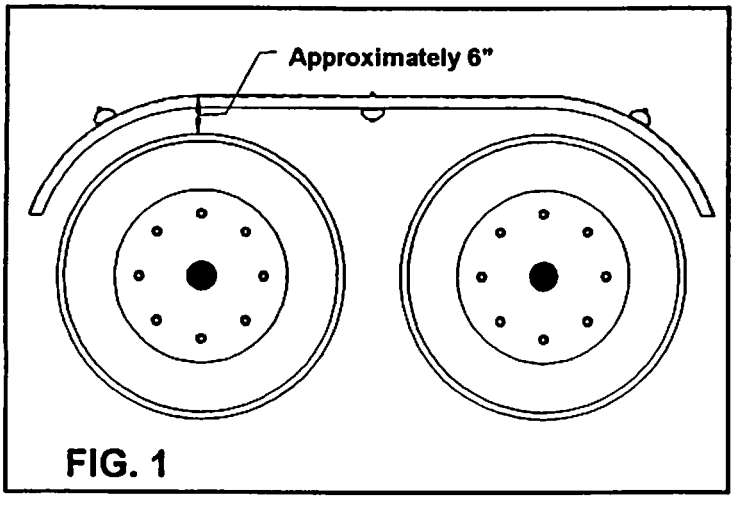


FIG. 1

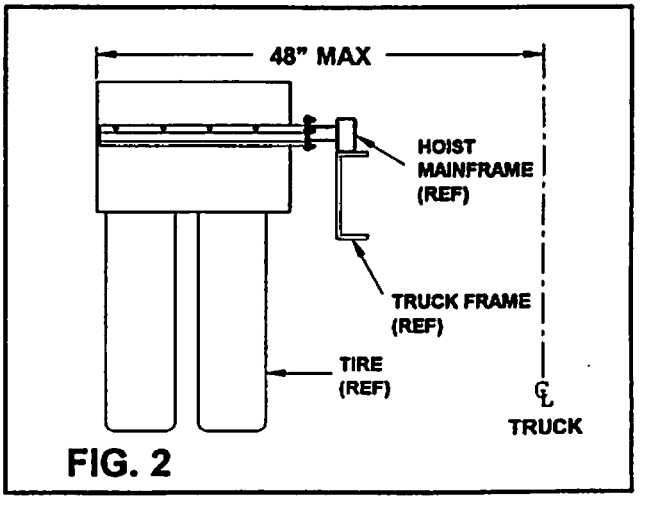


FIG. 2

11/02/99

FENDER ASSEMBLY, TANDEM AXLE

Steel (11H14)

INSTALLATION INSTRUCTIONS (continued)

4. Mark mounting holes through the fender bracket weldment onto the fender. Remove the bracket and drill 7/16" dia. Holes in fender (See FIG. 3).

5. Attach fender bracket weldments to fender using fasteners provided.

6. Weld mounting plates [Part No. 21H37] to fender tubes [Part No. 21H61].

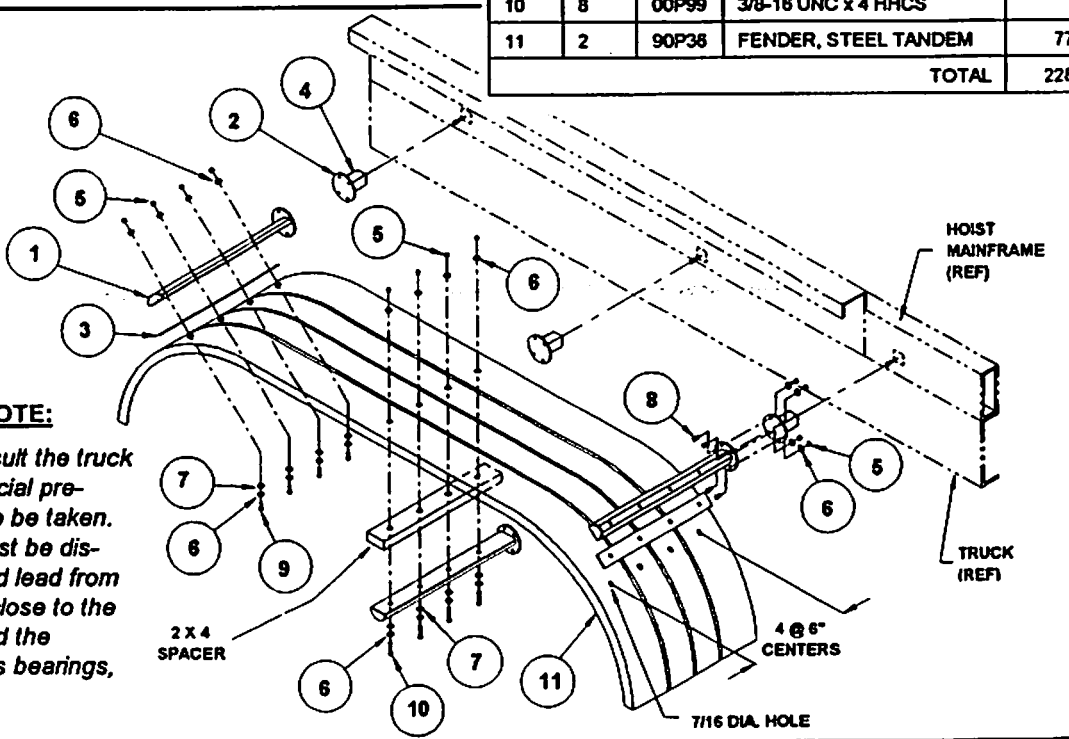
7. Position fender tubes with mount plates on hoist mainframe; align with fender bracket weldments. (NOTE: Fender tube length may need to be modified to fit specific application.)

8. Weld fender tubes to hoist mainframe. If attaching the fender tubes to the truck chassis, an additional mount plate may need to be fabricated so the assembly can be bolted to the truck chassis.

9. Attach fender bracket weldment [Part No. 10H74] to mounting plate [Part No. 21H37] using fasteners provided (See FIG. 3).

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	6	10H74	FENDER BRACKET WDMT.	8.05
2	6	21H37	MOUNTING PLATE	1.09
3	6	21H42	RUBBER SPACER	.85
4	6	21H61	FENDER TUBE	1.26
5	48	00P34	3/8-16 UNC LOCKING NUT	.02
6	72	00771	3/8 DIA. FLAT WASHER	.05
7	24	00P78	3/8 DIA. NYLON WASHER	-
8	24	00P44	3/8-16 UNC X 1-1/2 HHCS	.07
9	16	01P21	3/8-16 UNC X 2-1/2 HHCS	.09
10	8	00P99	3/8-16 UNC x 4 HHCS	.11
11	2	90P36	FENDER, STEEL TANDEM	77.00
			TOTAL	228.86



ADDITIONAL NOTE:

Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

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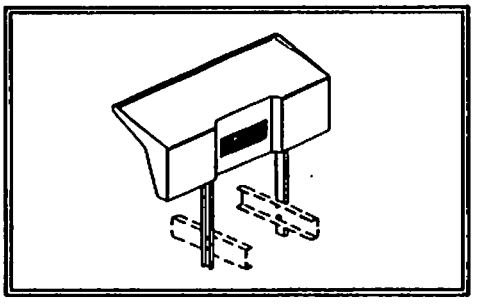

CAB GUARD ASSEMBLY

(50H99)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting cab guard installation.
2. Position cab guard weldment [Part No. 50H95] on frame with sufficient clearance between cab and cab guard (See Fig.1).
3. Determine location for mounting holes. Mounting holes should not be located within 2-3/8" of the truck frame edge (See Fig. 1). Drill 21/32" dia. mount holes through cab guard channels.

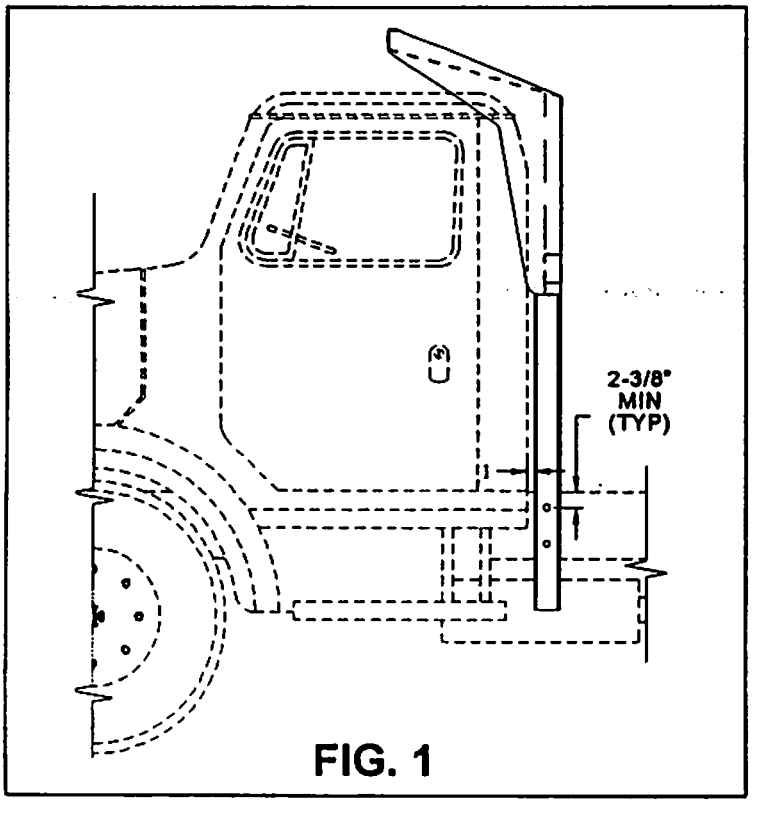

FIG. 1

CAB GUARD ASSEMBLY
(50H99)

INSTALLATION INSTRUCTIONS (continued)

4. Mark mounting holes through the cab guard weldment onto truck frame. Remove cab guard weldment and drill 21/32" dia. holes in truck frame.

5. Attach cab guard weldment to truck frame using fasteners provided (See Fig. 2).

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	50H95	CAB GUARD WDMT.	295.36
2	4	00P69	5/8-11 X 2 HHCS	.33
3	4	00P55	5/8-11 LOCKING HEX NUT	.18
4	4	00785	5/8 DIA. WASHER HT.	.08
			TOTAL	292.72

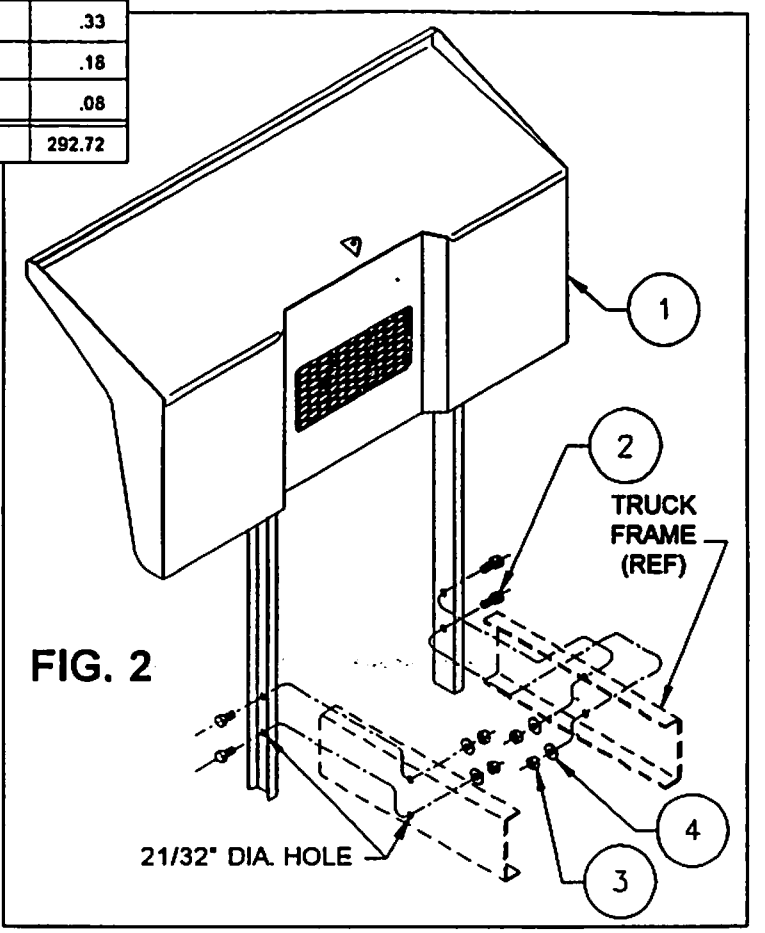

FIG. 2

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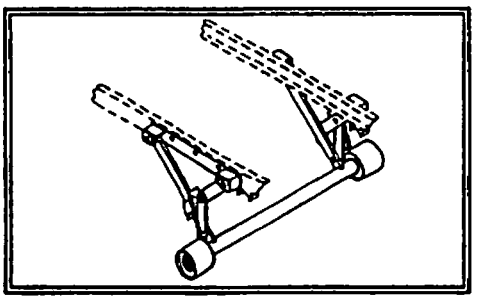

BUMPER ASSEMBLY, DROP DOWN
(51H11)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation. Typically, a drop down bumper is needed when the rear of the container extends beyond the back of the truck such that the distance between the truck bumper and container rear exceeds 24" (See Fig. 1).Office of Motor Carrier Safety (OMCS) Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 1).

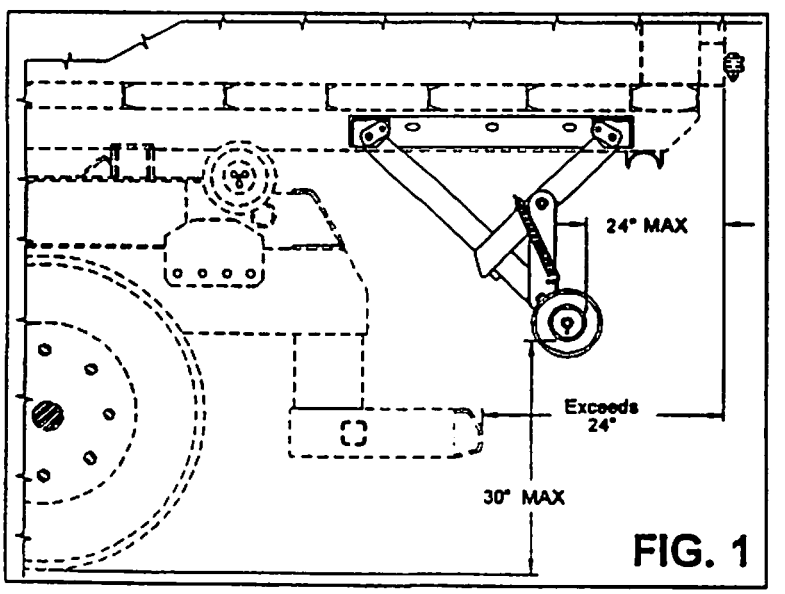

FIG. 1

BUMPER ASSEMBLY, DROP DOWN (51H11)

INSTALLATION INSTRUCTIONS (continued)

2. Position drop down bumper on the longsills of the sub-frame (See Fig. 2 & 3). The mount brackets [Part No. 51H17] need to be positioned correctly to allow for sufficient room for bumper cradles [Part No. 51H19] (See Fig.2). Weld mount brackets onto the longsills of the sub-frame.

3. Position bumper cradles [Part No. 51H19] on the longsills of the sub-frame. Check bumper cradles for squareness with respect to each other. The bumper tube [Part No.51H16] should come to rest within the bumper cradles when the container rests on the ground (See Fig. 2 & 3). Weld bumper cradles into place on longsills.

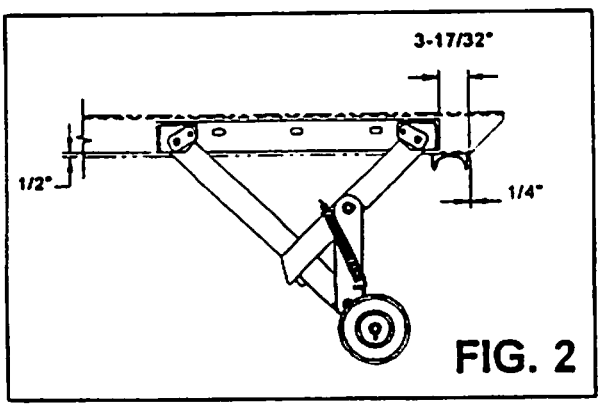

FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. During installation of the bumper, check to make sure that the position of the bumper does not interfere with the loading and unloading of truck bodies.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	51H12	LONG PIVOT ARM R.H.	16.08
2	1	51H13	LONG PIVOT ARM L.H.	16.08
3	1	51H14	SHORT PIVOT ARM R.H.	8.89
4	1	51H15	SHORT PIVOT ARM L.H.	8.89
5	1	51H16	BUMPER TUBE	113.05
6	2	51H17	MOUNT BRACKET	19.94
7	4	51H18	BUMPER PIN	1.12
8	2	51H19	BUMPER CRADLE	1.64
9	2	51H20	BUMPER ROLLER	27.07
10	6	01P06	3/4-10 SLOTTED HEX NUT	.22
11	6	00786	3/4 DIA. FLAT WASHER HT	.10
12	6	00P98	5/32 DIA. X 1-1/2 COTTER PIN	.01
13	4	00P03	3/8-16 X 3/4 HHCS	.11
14	4	00755	3/8 DIA. LOCK WASHER	.05
15	10	90P20	1/4-28 GREASE ZERK	.01
16	2	90P33	1-1/8 OD X 10 SPRING	.60
			TOTAL	268.69

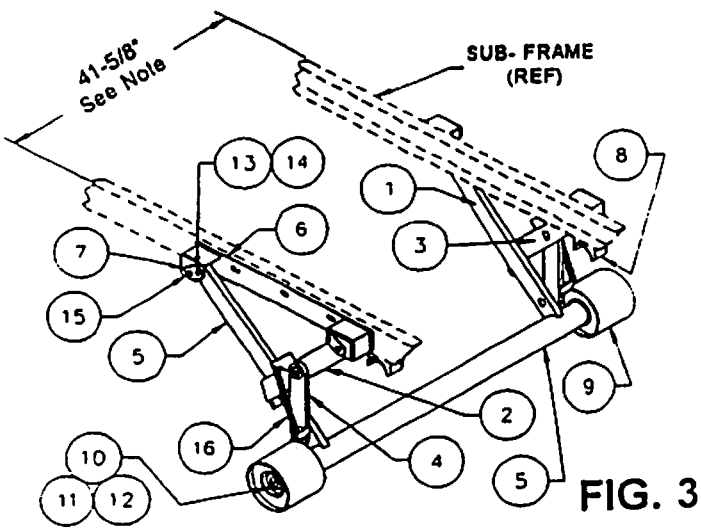

FIG. 3

Note: If width of the Longsills is under 41-5/8", add shims under the 51H17 brackets to get the dimension.

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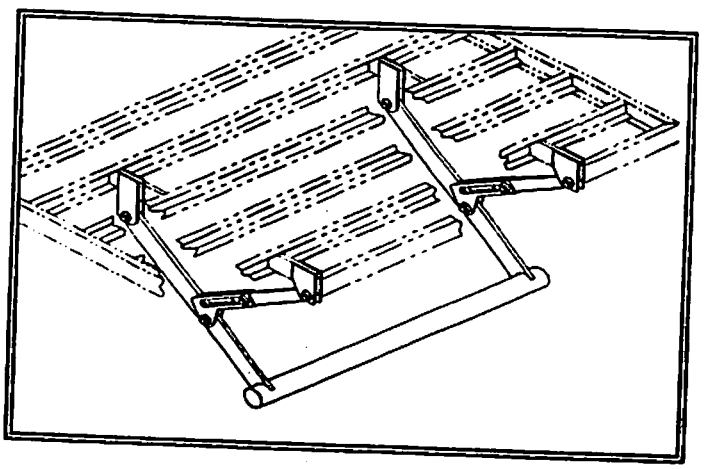


FOLDING BUMPER
(51H44)

FOLDING BUMPER
(51H44)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation. Typically, a folding bumper is needed when the rear of the container extends beyond the back of the truck such that the distance between the truck bumper and container rear exceeds 24" (See Fig. 1). Office of Motor Carrier Safety (OMCS) Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 1). The folding bumper will need to be used in conjunction with the Roller Assembly [10H90] and Roller Mount Brackets Assembly [10H91] for the container to function properly.

2. Locate the best position for the support bars between the cross members. Fabricate four support bars out of 4" x 1" bar cut to the length needed to fit between the cross members (See Fig. 3). Figure 3 shows a width dimension of 56-1/2". This width can be adjusted if interference occurs with other items on the container, but cannot exceed the width of the bumper tube. Weld the four bars between the cross members.

3. Weld the front [62H87] and rear [62H88] brackets to the support bars. Be sure to maintain the dimensions as indicated so that the bumper folds properly (See Fig. 2 & 3).

4. Weld the Pivot arms [62H84] to the Bumper Tube Weldment [51H46]. Be sure to maintain the width dimension that was used to locate the support bars in Step 2.

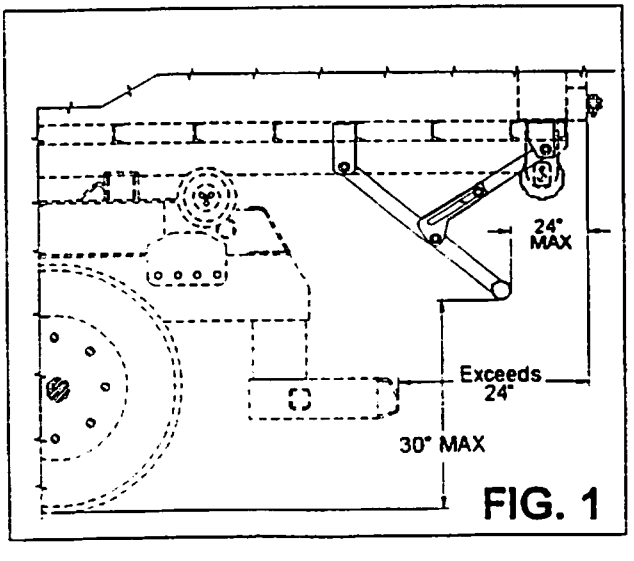


FIG. 1

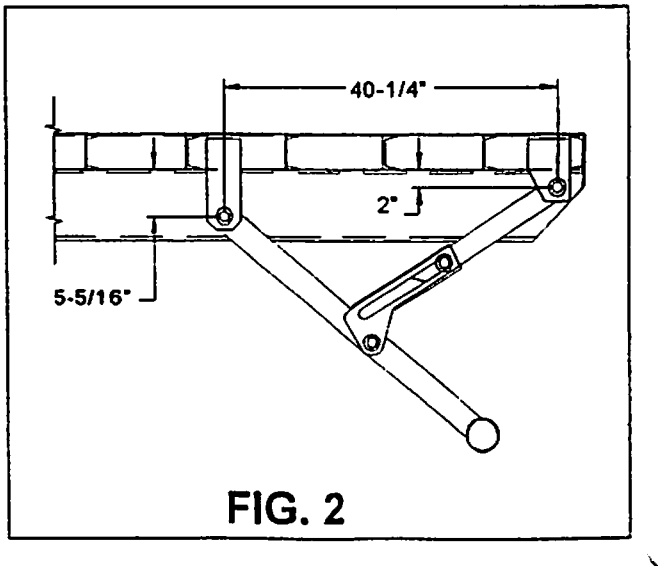


FIG. 2

5. Assemble the Bumper Assembly to the Front and Rear Brackets (See Fig. 3). Refer to the Typical Bolted Connection (See Fig. 4) for all connections.

6. Raise the bumper into the folded position several times to ensure the mechanism works smoothly and freely.

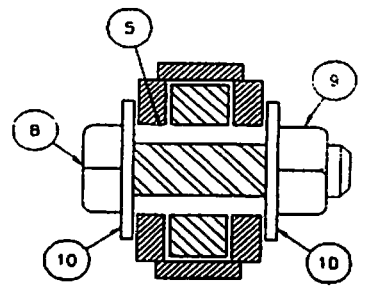
MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	2	51H45	SLIP BRACKET WDMT.	9.17
2	1	51H46	BUMPER TUBE WDMT.	47.83
3	2	62H84	PIVOT ARM	24.79
4	2	62H85	SLIDE ARM	10.67
5	8	62H86	BUSHING	.39
6	4	62H87	FRONT BRACKET	4.45
7	4	62H88	REAR BRACKET	3.16
8	8	01P15	3/4-10 X 3 HHCS GR-8	.56
9	8	00P72	3/4-10 LOCKING HEX NUT	.20
10	16	00774	3/4 DIA. FLAT WASHER	.05
			TOTAL	177.53

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. During installation of the bumper, check to make sure that the position of the bumper does not interfere with the loading and unloading of truck bodies.



TYPICAL BOLTED CONNECTION

FIG. 4

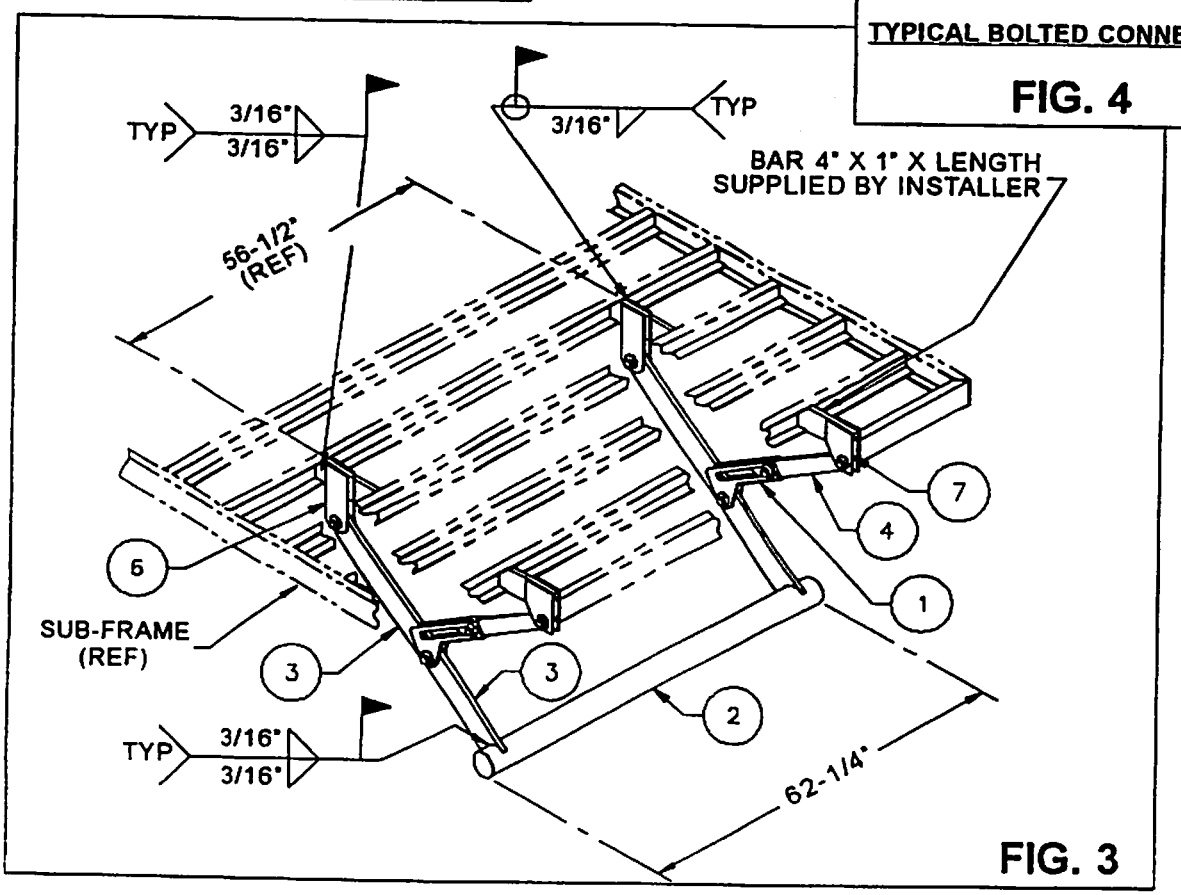


FIG. 3

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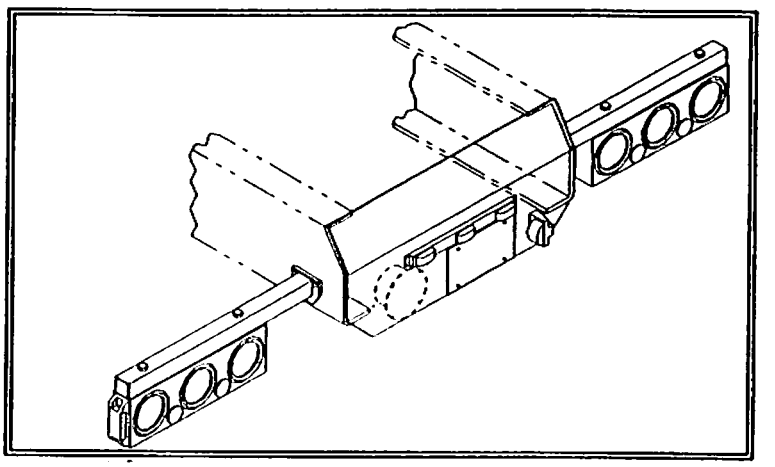

REAR LIGHT BAR ASSEMBLY

(51H68)

08/21/00

REAR LIGHT BAR ASSEMBLY
(51H68)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting rear light bar installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). This step may have already been preformed if a bumper was previously installed.

3. Position center plate [Part No. 63H08] on the rear of the main frame. Weld center plate to truck frame (See Fig. 2 & Additional Notes).

4. Position stub light bar weldment [Part No. 51H69] on truck frame. Stub light bar weldment should be as high and as far back as possible on the truck frame to avoid interference with the bumper and fenders. It may be necessary to modify the stub light bar weldment to avoid interference. Drill mounting holes as required and mount using fasteners provided (See Fig. 3).

5. Attach the tail light module to the stub light bar weldments with the fasteners provided (See Fig 3).

6. Mount the identification light bar at top center of the center plate [Part No. 63H08] using the fasteners provided (See Fig. 3).

7. Mount license lamp right of the license plate (See Fig. 2) using the fasteners provided (See Fig. 3).

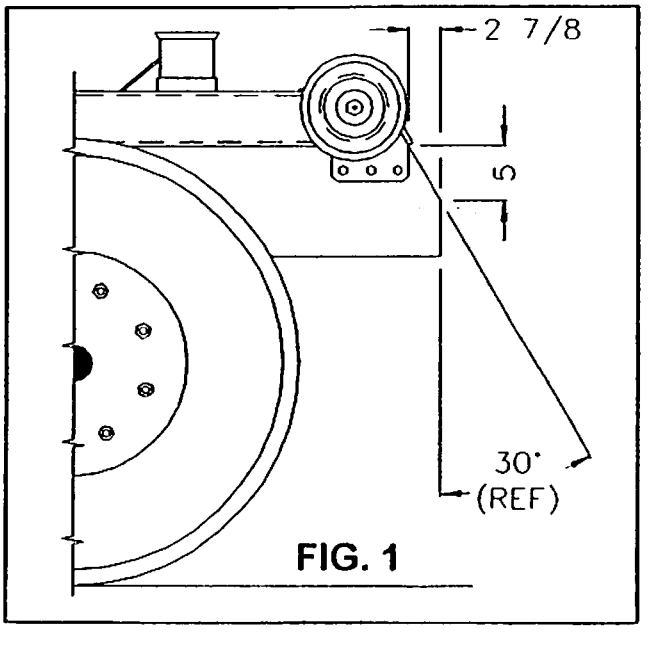

FIG. 1

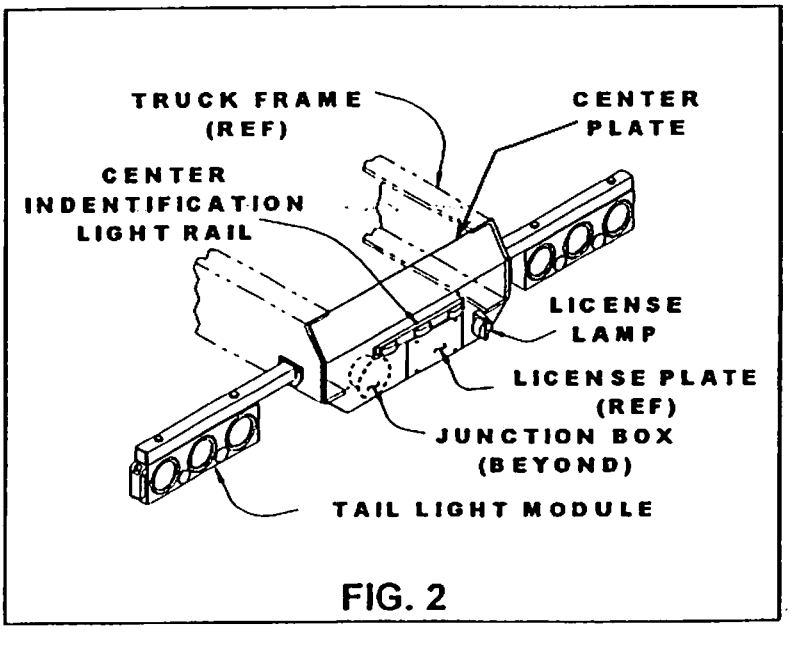

FIG. 2

08/21/00

REAR LIGHT BAR ASSEMBLY
(51H68)

8. Mount junction box on the back left side of center plate (See Fig. 2), using the fasteners provided (See Fig. 3).

9. Route all wire harnesses into the junction box. Wire harnesses must enter the junction box through a compression fitting (Based on the size of the wire harness, choose a compression fitting with an appropriately sized grommet). Make wiring connections in junction box with wire harness from truck cab as indicated on wiring diagram (See Fig.4).

MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. - lb. PER EACH
1	2	51H69	STUB LIGHT BAR WDMT.	7.87
2	ONE	63H08	CENTER PLATE	27.33
3	6	00P44	3/8-16 x 1 1/2 HHCS	0.07
4	6	00P34	3/8-16 LOCKING HEX NUT	0.02
5	6	00771	3/8 DIA FLAT WASHER	0.01
6	4	01P18	5/8-11 x 3 HHCS	0.35
7	8	00P81	#8-32 x 1 RND HD SCR	-
8	8	00P82	#8-32 HEX NUT	-
9	8	00P83	#8 LOCK WASHER	-
10	ONE	40P26	LIGHT KIT ASSEMBLY	23.00
11	REF	40P27	LEFT TAIL LIGHT MODULE WITH HARNESS	-
12	REF	40P28	RIGHT TAIL LIGHT MODULE WITH HARNESS	-
13	REF	40P29	SIDE MARKER LAMP	-
14	REF	40P30	STOP, TURN, & TAIL LAMP	-
15	REF	40P31	BACK-UP LAMP	-
16	REF	40P32	LICENSE LAMP ASSEMBLY (WITHOUT HARNESS)	-
17	REF	40P33	LICENSE LAMP	-
18	REF	40P34	LICENSE LAMP HARNESS	-
19	REF	40P35	IDENTIFICATION LIGHT BAR RAIL	-
20	REF	40P36	ID LIGHT BAR LAMP	-
21	REF	40P37	ID LIGHT BAR HARNESS	-
22	REF	40P38	JUNCTION BOX ASSEMBLY	-
			TOTAL	68.07

ADDITIONAL NOTES:

Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

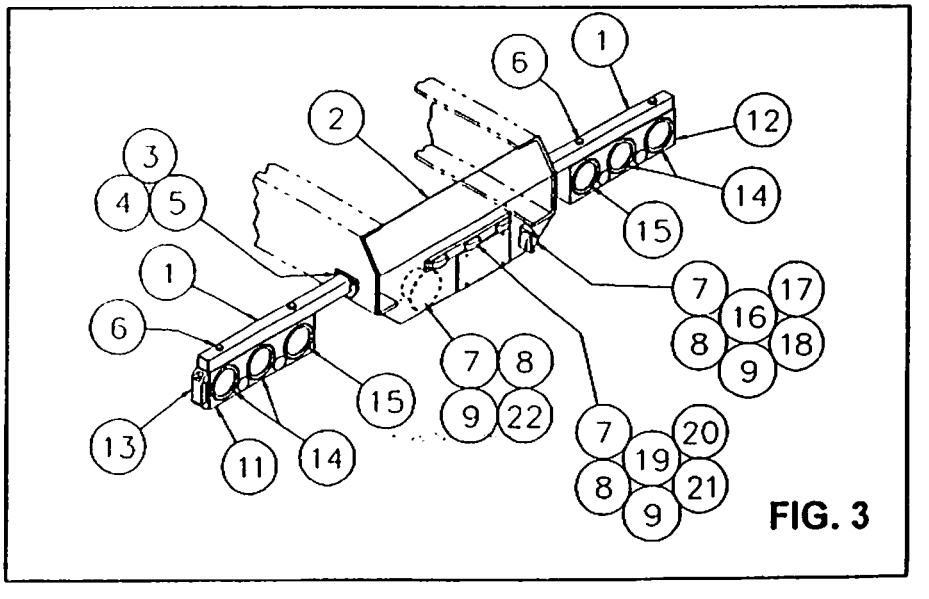

FIG. 3

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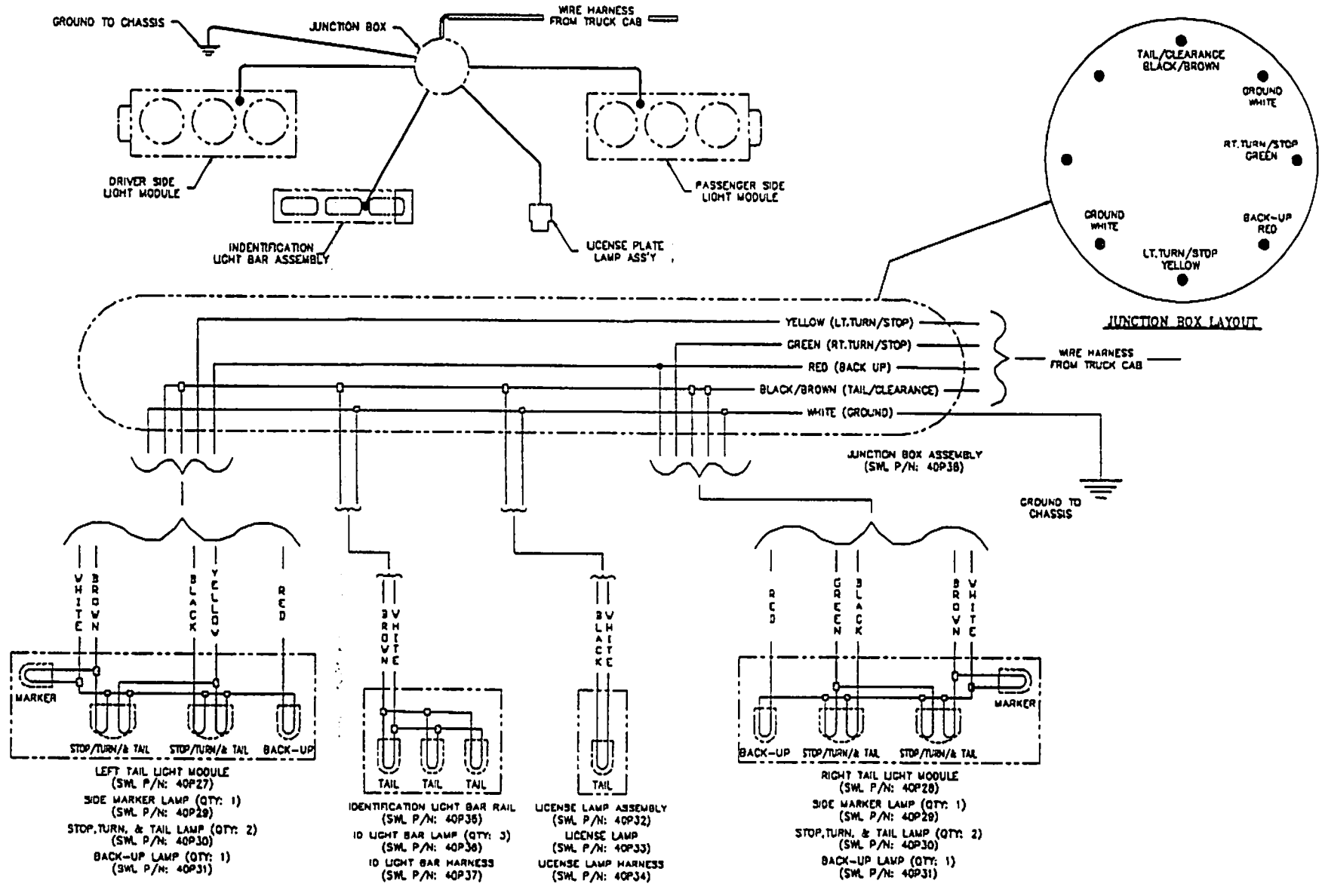
1800 N.E. Broadway Ave., Box D, Des Moines, Iowa 50316-0386 U.S.A. LTD.
Phone/Fax (515) 266-3042 Toll Free 888-767-8000 swapldr@netins.net

08/21/00

WIRE DIAGRAM



08/21/00

Fig. 4

SWAPLOADER®
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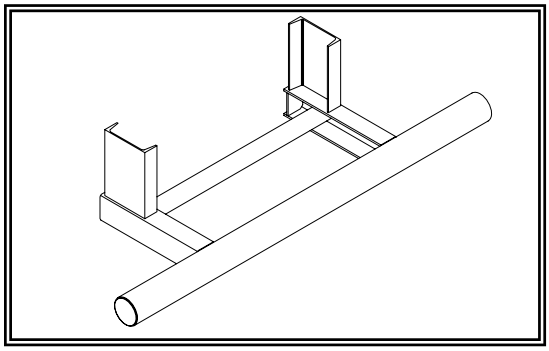

REAR BUMPER ASSEMBLY

(52H11)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). These dimensions will facilitate the mounting of the rear light assembly if it is also being mounted.

3. Measure the distance from the bottom of the truck frame to the ground (NOTE: This should be performed on a level surface). Based this measurement and the dimensions in Fig. 1, the vertical channel [P/N: 63H94] may need to be modified in length to meet the Office of Motor Carrier Safety (OMCS) regulations. Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 2). Once the length has been determined for the vertical channels, weld them to the truck frame (See additional notes on next page).

4. Center the bumper weldment [P/N: 52H12] on the vertical channels [P/N: 63H94]. Position rear of bumper from rear of the hoist as indicated by the bumper location chart. This is crucial in order to ensure that the container longsills do not contact the bumper during the dump cycle (See Fig. 1 & 2).

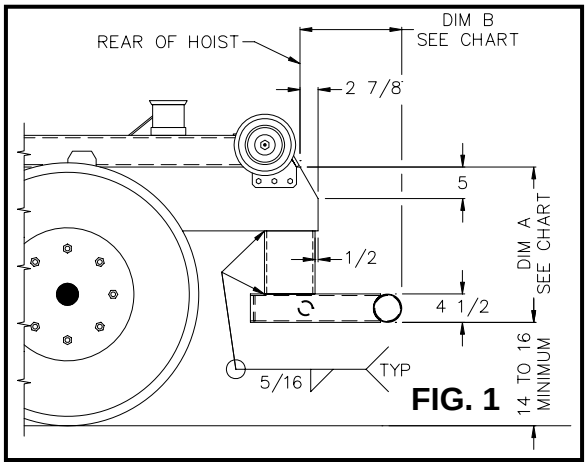

FIG. 1

BUMPER LOCATION CHART

DIM. A	DIM B. (Max)							
	SL-95	SL-145	SL-180	SL-220/222 & SL-240	SL-2418	SL-330 & SL-400	SL-375/405 & SL-505/545	SL-650
24 5/8"	13 1/2	15 3/4	15 1/4	17	14 1/4	14	16 1/2	19 1/4
22 5/8"	12 1/4	14 1/2	14	15 3/4	13	12 3/4	15	
20 5/8"	11	13	12 3/4	14 1/4	11 3/4			
18 5/8"	9 3/4	11 3/4	11 1/2					

01FEB06

REAR BUMPER ASSEMBLY
(52H11)

INSTALLATION INSTRUCTIONS (continued)

5. Weld the bumper weldment to the vertical channels (See Fig. 1 & 3).

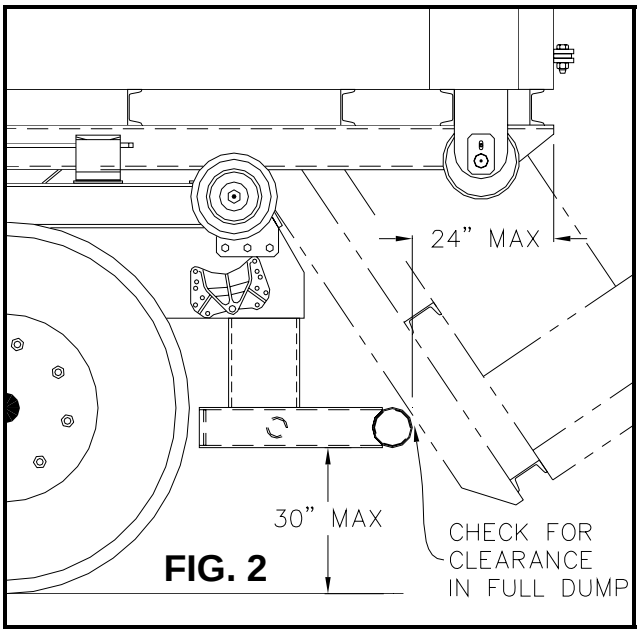

FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. All welds should be done utilizing a low hydrogen welding process.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	52H12	REAR BUMPER WDMT	95.66
2	2	63H94	VERTICAL CHANNEL	9.58
			TOTAL	114.82

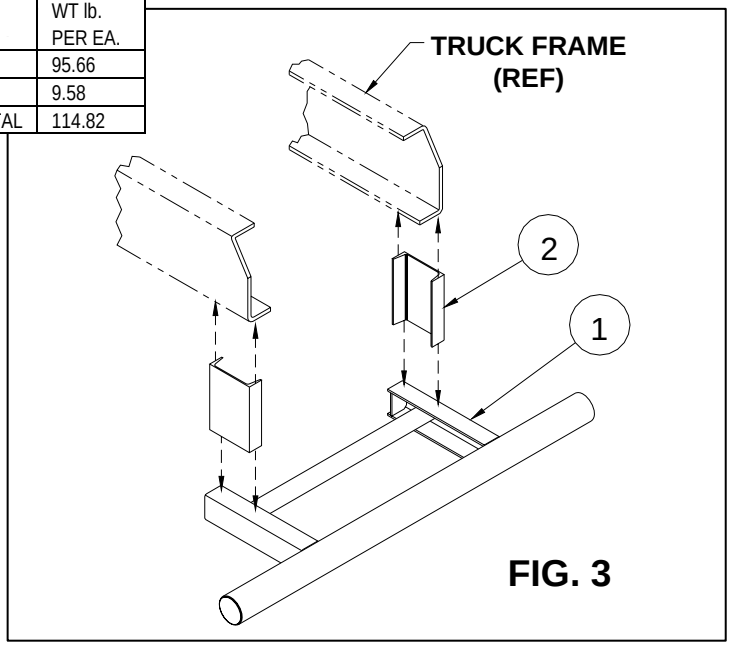

FIG. 3

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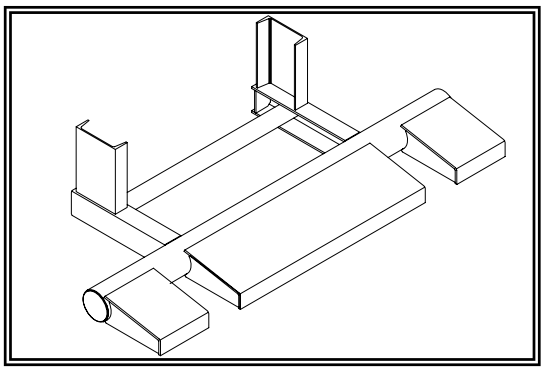
U.S.A. LTD.



REAR BUMPER ASS'Y w/ EXTENSIONS

(52H11 with 52H13 Extensions)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). These dimensions will facilitate the mounting of the rear light assembly if it is also being mounted.

3. Measure the distance from the bottom of the truck frame to the ground (NOTE: This should be performed on a level surface). Based this measurement and the dimensions in Fig. 1, the vertical channel [P/N: 63H94] may need to be modified in length to meet the Office of Motor Carrier Safety (OMCS) regulations. Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 2). Once the length has been determined for the vertical channels, weld them to the truck frame (See additional notes on next page).

4. Center the bumper weldment [P/N: 52H12] with factory installed extensions [P/N: 52H13] on the vertical channels [P/N: 63H94]. Position rear of bumper from rear of the hoist as indicated by the bumper location chart. This is crucial in order to ensure that the container longsills do not contact the bumper during the dump cycle (See Fig. 1 & 2).

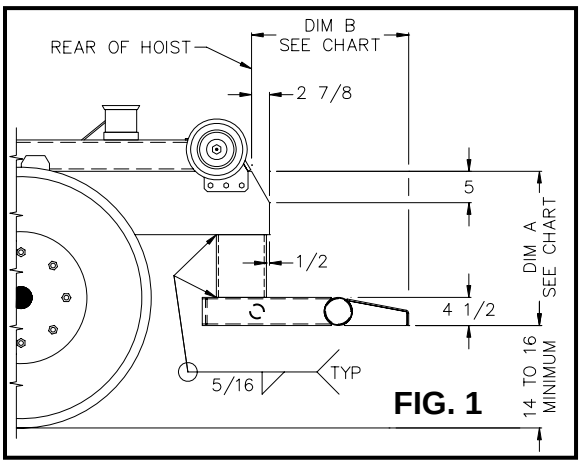


FIG. 1

BUMPER LOCATION CHART								
DIM. A	DIM B. (Max)							
	SL-95	SL-145	SL-180	SL-220/222 & SL-240	SL-2418	SL-330 & SL-400	SL-375/405 & SL-505/545	SL-650
24 5/8"	19 3/4	22 1/2	21 3/4	25 1/4	21 3/4	21 1/2 *	24 1/4 *	27 1/4
22 5/8"	18 1/2	21	20 1/2	23 3/4	20 1/2	20 *	22 3/4 *	
20 5/8"	17 1/4	19 1/2	19 1/4	22 1/4	19 1/4			
18 5/8"	16	18 1/4	18					

* Dimensions assume 6" tall longsills. For 8" tall longsills add 2 ¼" to the dimension shown.

01FEB06

REAR BUMPER ASS'Y w/ EXTENSIONS
(52H11 with 52H13 Extensions)

INSTALLATION INSTRUCTIONS (continued)

5. Weld the bumper weldment to the vertical channels (See Fig. 1 & 3).

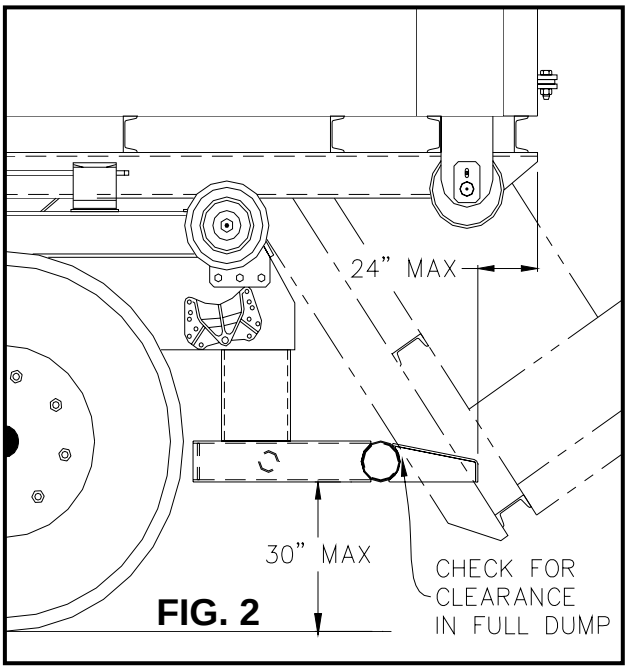


FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. All welds should be done utilizing a low hydrogen welding process.

MATERIAL LIST				
ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	52H12	REAR BUMPER WDMT	95.66
2	2	63H94	VERTICAL CHANNEL	9.58
3	1	52H13	REAR BUMPER EXTENSIONS	58.42
			TOTAL	173.24

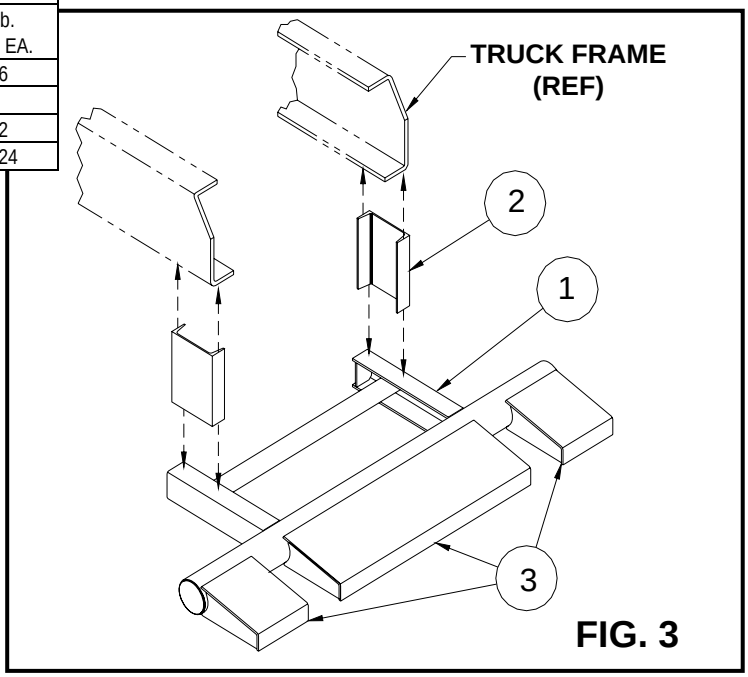


FIG. 3

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CONTAINER VARIABILITY SYSTEM ASSEMBLY
(42H70)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting the C.V.S. installation.

2. Attach the base plate bracket [Part No. 86H76 to the C.V.S. sub-assembly [Part No. 12H01] with fasteners provided (See drawing 42H70).

3. Position the C.V.S. sub-assembly with attached base plate bracket on the side of the mainframe z-channel (See drawing 42H70). Drill the necessary 13/32 Dia. holes into the z-channel using the C.V.S. sub-assembly with attached base plate bracket as the pattern to aid in locating hole placement. To allow for C.V.S. sub-assembly [Part No. 12H01] fastener clearance some notching of the z-channel lip may be necessary.

4. Attach the C.V.S. sub-assembly and base plate bracket to the mainframe z-channel with fasteners provided (See drawing 42H70).

5. Drain hydraulic oil level in the tank to just below the 1 1/4" NPT Port.

6. Remove the 90 degree hydraulic fitting [Part No. 11P07] that connects the upper hydraulic steel tubing to the top bulkhead fitting (See drawing 90H55). Replace with a swivel tee hydraulic fitting [Part No. 12P44] and retighten the hydraulic fittings (See drawing 90H88).

7. Remove the 1 1/4" NPT plug from the hydraulic tank. Install hydraulic fittings 12P20 & 12P92 as shown and tighten (See drawing 90H88).

8. Install the two 90 degree hydraulic fitting [Part No. 12P69] into the hydraulic valve on the 12H01 C.V.S. sub-assembly and tighten (See drawing 90H88).

9. Attach the hydraulic hose [Part No. 12P93] between the C.V.S. hydraulic valve and swivel tee hydraulic fitting [Part No. 12P44], and tighten (See drawing 90H88).

10. Determine the length of hose required to route the C.V.S. hydraulic valve to the hydraulic tank; the hydraulic hose [Part No. 12P93] may need shortened prior to final installation (See drawing 90H88) especially if excess length exists. The hydraulic hose [Part No. 12P93] comes with a reusable fitting that can be removed for purposes of shortening the hose. Remove the reusable fitting and shorten hose assembly as required. After hose has been shortened, lubricate the insert threads of the fitting and the I.D. of the hose (See Fig. 1). Measure 1 3/16 inches from the end of the hose and mark the hose for the socket depth. Screw the hose into the socket (left-hand thread) to the depth marked on the hose. Screw the insert into the socket until the insert touches the socket. Clean the inside of the hose assembly by either clean compressed air through it or by flushing it.

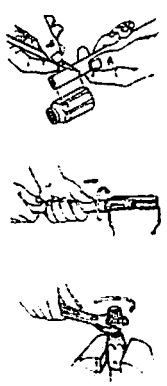


Figure 1

11. Once the 12P93 hose length is adjusted, install between the C.V.S. hydraulic valve and the hydraulic tank fittings (See drawing 90H88), and tighten.

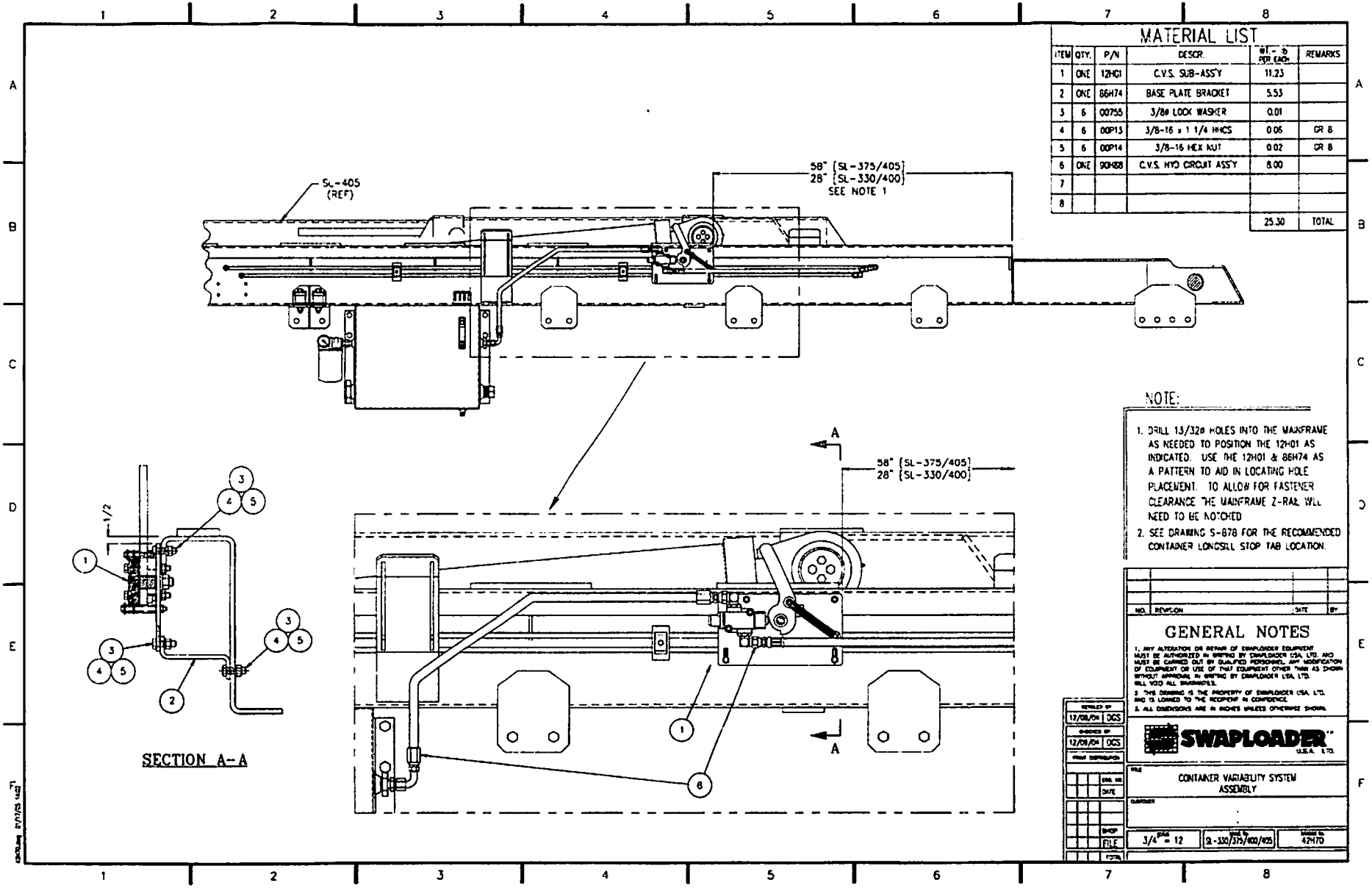
12. Remove the 90 degree hydraulic fitting [Part No. 11P06] that connects from the upper bulkhead fitting inside the mainframe to the 12P03 hydraulic hose that runs to the jib lockout valve (See drawing 90H55 & 90H88 – *Note 3*).

13. Replace with hydraulic fittings [Part No. 12P69 & 13P04] and relief valve assembly [Part No. 21P93] and tighten (See drawing 90H88).

14. Refill hydraulic tank to proper fluid level.

15. Verify that the C.V.S. is operating properly. Start the truck, engage the P.T.O., and then retract the jib cylinder full stroke. Next, while extending the jib cylinder back out have someone push or rotate the C.V.S. lever arm forward (toward the back of the truck cab). The C.V.S. is operating properly when the jib cylinder stops extending by rotating the C.V.S. lever arm forward.

16. Containers to be used in conjunction with the C.V.S. need modified by adding a stop tab to the side of the container longsill (See drawing S-878). Dimensions given are a recommendation only. When modifying containers for use with the C.V.S. it is the primary responsibility of the installer to verify that adequate rear end overhang and full latch plate engagement into body locks exists for each container.



MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. - lb PER EACH	REMARKS
1	ONE	12H01	C.V.S. SUB-ASS'Y	11.23	
2	ONE	86H74	BASE PLATE BRACKET	5.53	
3	6	00755	3/8ø LOCK WASHER	0.01	
4	6	00P13	3/8-16 x 1 1/4 HHCS	0.06	GR 8
5	6	00P14	3/8-16 HEX NUT	0.02	GR 8
6	ONE	90H88	C.V.S. HYD CIRCUIT ASS'Y	8.00	
7					
8					
				25.30	TOTAL

NOTE:

1. DRILL 13/32ø HOLES INTO THE MAINFRAME AS NEEDED TO POSITION THE 12H01 AS INDICATED. USE THE 12H01 & 86H74 AS A PATTERN TO AID IN LOCATING HOLE PLACEMENT. TO ALLOW FOR FASTENER CLEARANCE THE MAINFRAME Z-RAIL WILL NEED TO BE NOTCHED
2. SEE DRAWING S-878 FOR THE RECOMMENDED CONTAINER LONGSILL STOP TAB LOCATION.

NO.	REVISION	DATE	BY

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CHECKED BY	12/09/04	DCS
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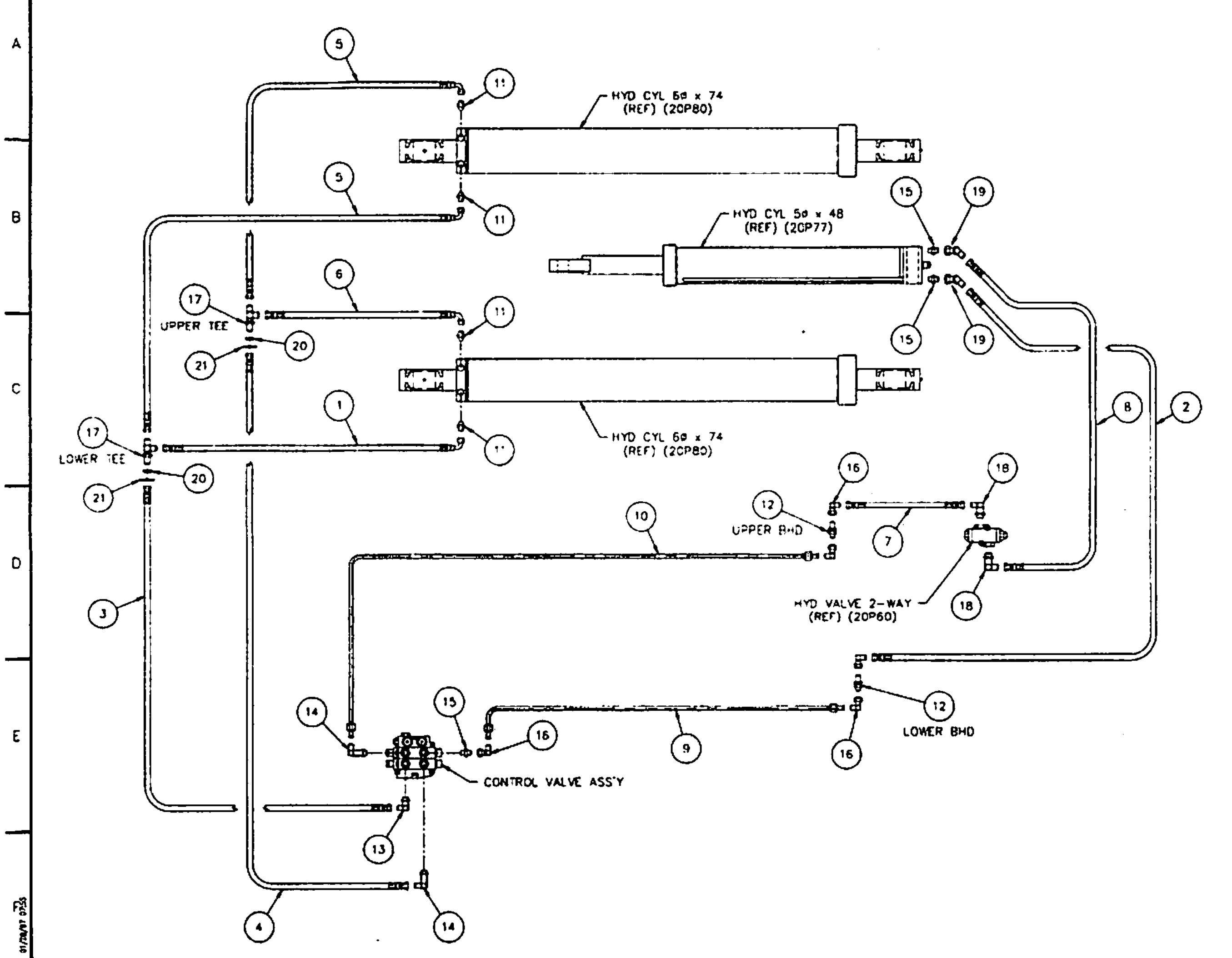
DWG. NO.		
DATE		
SHOP		
FILE		

SWAPLOADER U.S.A. LTD.

TITLE: CONTAINER VARIABILITY SYSTEM ASSEMBLY

CUSTOMER:

SCALE	USED ON	MATERIAL NO.
3/4" = 12	SL-330/375/400/405	42H70



MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. - lb. PER EACH	REMARKS
1	ONE	11P96	HOSE ASS'Y 1/2 H.P. x 23	1.21	
2	ONE	11P97	HOSE ASS'Y 1/2 H.P. x 148	5.07	
3	ONE	11P98	HOSE ASS'Y 1/2 H.P. x 28	1.37	
4	ONE	11P99	HOSE ASS'Y 1/2 H.P. x 33	1.52	
5	2	12P01	HOSE ASS'Y 1/2 H.P. x 50	2.04	
6	ONE	12P02	HOSE ASS'Y 1/2 H.P. x 24	1.24	
7	ONE	12P03	HOSE ASS'Y 1/2 H.P. x 21	1.15	
8	ONE	12P04	HOSE ASS'Y 1/2 H.P. x 123	4.30	
9	ONE	12P05	HYD TUBING - REAR LOWER	4.67	
10	ONE	12P06	HYD TUBING - REAR UPPER	4.86	
11	4	10P39	ADP, HYD M JIC / O-RING STR	.40	6400-8
12	2	11P02	ADP, HYD M JIC BHD UNION	.40	2700-LN-10
13	ONE	11P04	ADP, HYD M JIC / O-RING 90°	.40	6801-10
14	2	11P05	ADP, HYD M JIC / O-RING 90° EXT	.40	6801 LN-10
15	3	11P06	ADP, HYD M JIC / O-RING STR	.30	6400-10
16	5	11P07	ADP, HYD M JIC / FM JIC SWIVEL 90°	.40	6500-10
17	2	11P27	ADP, HYD M JIC BHD RUN TEE	.40	2704-LN-10
18	2	12P07	ADP, HYD M JIC / O-RING 90°	.40	6801-10-12
19	2	12P09	ADP, HYD FM JIC SWIVEL / M JIC 45°	.30	6502-10
20	2	83H24	BKHD ADP BUSHING	.22	6801-10-12
21	2	00782	7/8ø FLAT WASHER	.11	6502-10
				38.93	TOTAL

NO	REVISION	DATE	BY
D	REPLACED 11P04 WITH 11P06 & 11P07	1/28/97	R.S.
C	REV HOSE ROUTE TO 6"ø CYL	4/17/96	R.S.
	11P96 LENGTH WAS 22		
B	REPLACED 11P05 & 11P07 WITH 11P04,	4/21/95	R.S.
	ADDED 83H24 & 00782, SHORTEN		
	12P06 & 12P05, 12P02 LENGTH WAS 23		
A	12P08 REPLACED BY 11P06	12/7/94	R.S.

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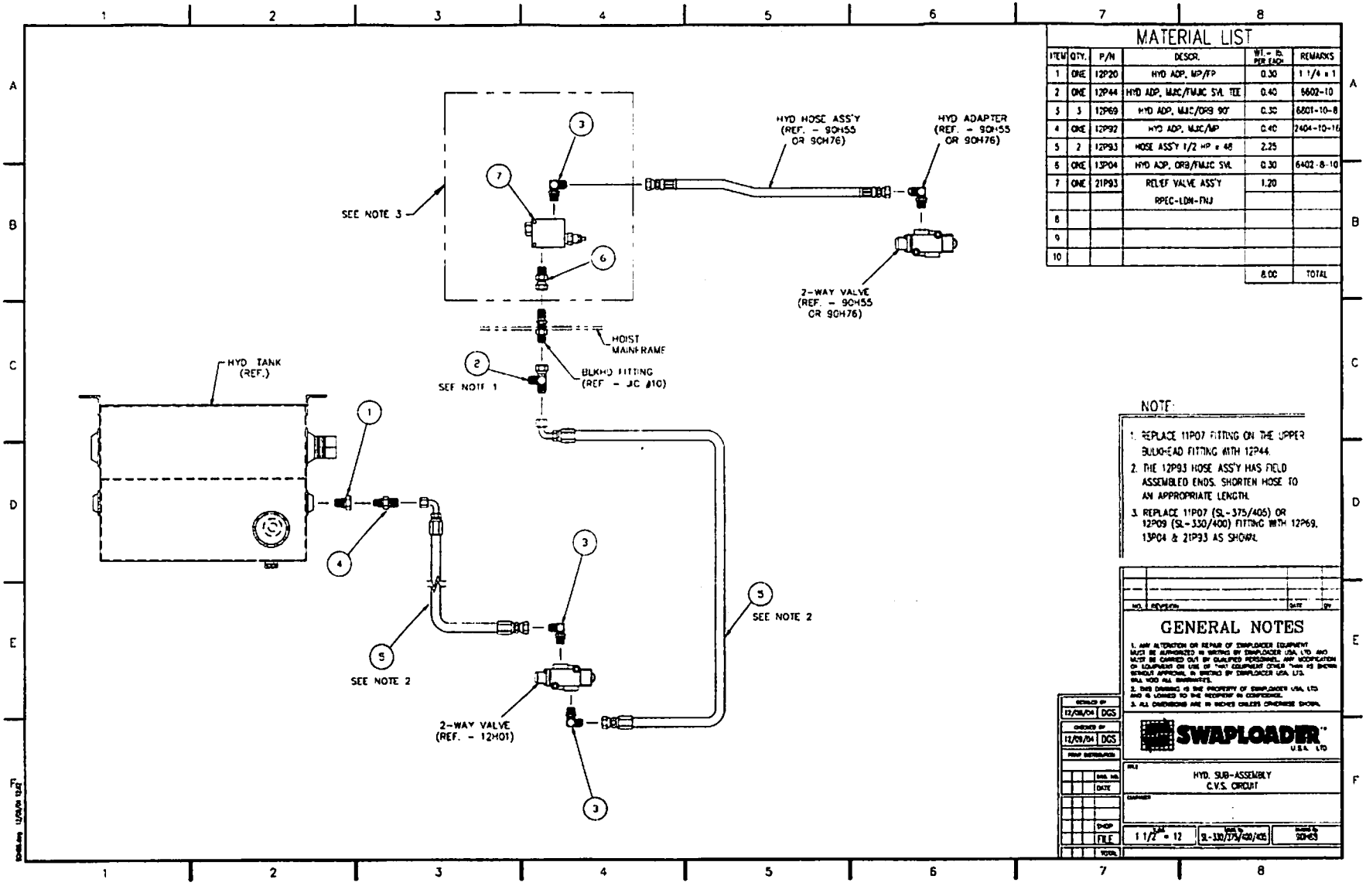
DETAILED BY: 12/8/94 R.S.
CHECKED BY: 1/28/97 L.B

SWAPLOADER U.S.A. LTD.

TITLE: HYDRAULIC SUB-ASSEMBLY CYLINDER CIRCUIT

SCALE: 3/4" = 12 | MODEL No. SL-405 | DRAWING No. 90455 D



MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. - lb. PER EACH	REMARKS
1	ONE	12P20	HYD ADP, MP/FP	0.30	1 1/4 x 1
2	ONE	12P44	HYD ADP, MJIC/FMJIC SVL TEE	0.40	6602-10
3	3	12P69	HYD ADP, MJIC/ORB 90°	0.30	6801-10-8
4	ONE	12P92	HYD ADP, MJIC/MP	0.40	2404-10-16
5	2	12P93	HOSE ASS'Y 1/2 HP x 48	2.25	
6	ONE	13P04	HYD ADP, ORB/FMJIC SVL	0.30	6402-8-10
7	ONE	21P93	RELIEF VALVE ASS'Y RPEC-LDN-FNJ	1.20	
8					
9					
10					
				8.00	TOTAL

NOTE:

1. REPLACE 11P07 FITTING ON THE UPPER BULKHEAD FITTING WITH 12P44.
2. THE 12P93 HOSE ASS'Y HAS FIELD ASSEMBLED ENDS. SHORTEN HOSE TO AN APPROPRIATE LENGTH.
3. REPLACE 11P07 (SL-375/405) OR 12P09 (SL-330/400) FITTING WITH 12P69, 13P04 & 21P93 AS SHOWN.

NO.	REVISION	DATE	BY

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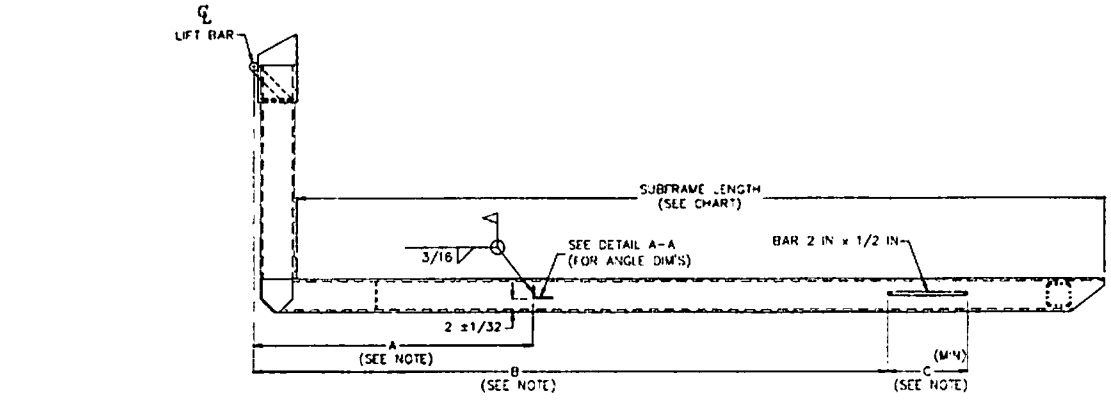
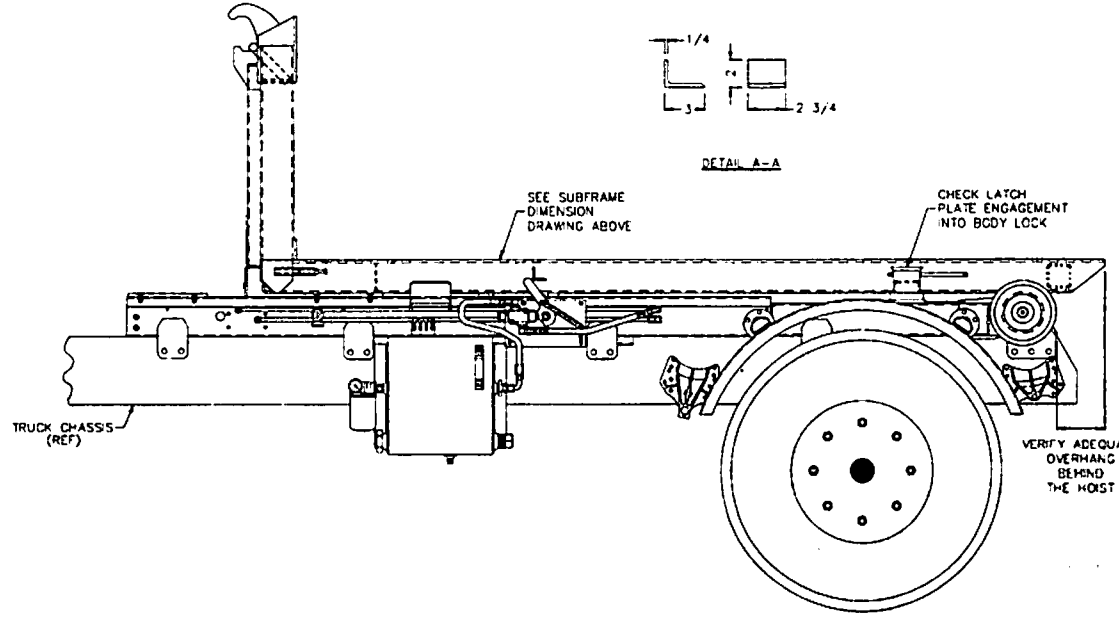
SWAPLOADER USA, LTD

HYD. SUB-ASSEMBLY C.V.S. CIRCUIT

SCALE	SHEET SIZE	DRAWING NO.
1 1/2 = 12	SL-330/375/400/405	90H55



HOIST	SUBFRAME LENGTH	A	B	C
SL-145	10'	40"	95"	12"
	11'	52"	95"	18"
SL-180	12'	55"	95"	12"
	13'	67"	95"	18"
SL-220/222	14'	74 1/2"	124 5/8"	12"
	16'	98 1/2"	124 5/8"	18"
SL-240	12'	58 1/2"	112 5/8"	12"
	13'	70 1/2"	112 5/8"	18"
SL-330/400	12'	75 1/4"	125"	12"
	13'	75 1/4"	125"	12"
SL-375	17'	90"	150"	24"
	18'	102"	150"	36"
SL-405	15'	64"	134"	12"
	16'	76"	134"	24"



NOTE:

1. DIMENSIONS GIVEN ARE RECOMMENDATIONS ONLY. IT IS THE RESPONSIBILITY OF THE CONTAINER VARIABILITY SYSTEM INSTALLER TO VERIFY THAT ADEQUATE REAR END OVERHANG AND LATCH PLATE ENGAGEMENT INTO BODY LOCK EXISTS

NO.	REVISION	DATE	BY
A	ADDED SL-180 SPECS	29SEP05	DGS

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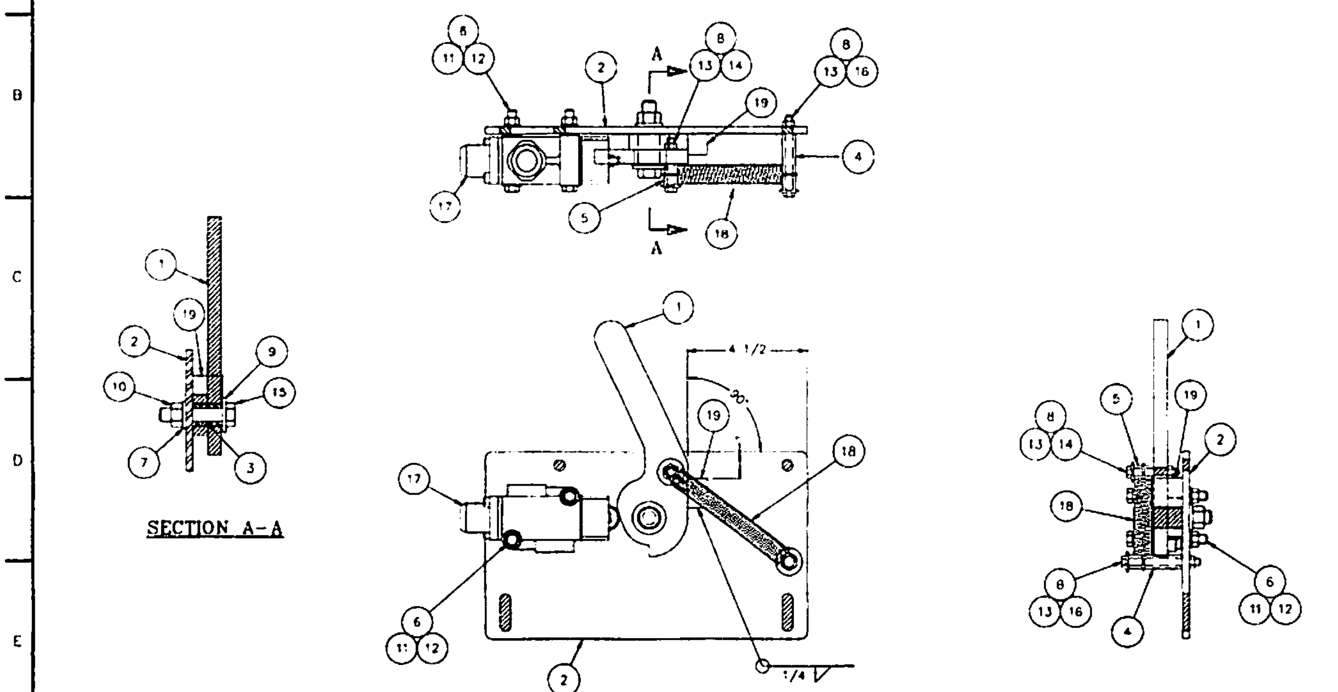
SWAPLOADER USA LTD

SUBFRAME MODIFICATIONS FOR CONTAINER VARIABILITY SYSTEM

3/4 plus = 12	CVS	S-878 A



MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. - lb. PER EACH	REMARKS
1	ONE	12H02	LEVER ARM WDMT	1.98	
2	ONE	23H70	BASE PLATE	5.81	
3	ONE	23H73	LEVER ARM SLEEVE	0.09	
4	ONE	23H74	LONG SPRING SLEEVE	0.08	
5	ONE	23H75	SHORT SPRING SLEEVE	0.03	
6	2	00752	5/16ø LOCK WASHER	0.01	
7	ONE	00760	1/2ø LOCK WASHER	0.02	
8	2	00770	1/4ø FLAT WASHER	0.0'	
9	ONE	00772	1/2ø FLAT WASHER	0.02	
10	ONE	00P02	1/2-13 HEX NUT	0.06	GR 8
11	2	00P19	5/16-18 x 2 3/4 HHCS	0.06	GR 8
12	2	00P20	5/16-18 HEX NUT	0.01	GR 8
13	2	00P51	1/4-20 METAL LOCKING NUT	0.01	GR C
14	ONE	00P74	1/4-20 x 1 3/4 HHCS	0.03	GR 8
15	ONE	01P40	1/2-13 x 2 1/2 HHCS	0.19	GR 8
16	ONE	01P41	1/4-20 x 2 3/4 HHCS	0.04	GR 8
17	ONE	21P28	HYD VALVE	2.20	
18	ONE	90P84	11/16ø x 5 SPRING	0.30	
19	ONE	24H23	LEVER STOP	0.18	
				11.23	TOTAL

NO.	REVISION	DATE	BY

GENERAL NOTES

1. ANY ALTERATION OR REPAIR OF SWAPLOADER EQUIPMENT MUST BE AUTHORIZED IN WRITING BY SWAPLOADER USA, LTD. AND MUST BE CARRIED OUT BY QUALIFIED PERSONNEL. ANY MODIFICATION OF EQUIPMENT OR USE OF THAT EQUIPMENT OTHER THAN AS SHOWN WITHOUT APPROVAL IN WRITING BY SWAPLOADER USA, LTD. WILL VOID ALL WARRANTIES.
2. THIS DRAWING IS THE PROPERTY OF SWAPLOADER USA, LTD. AND IS LOANED TO THE RECIPIENT IN CONFIDENCE.
3. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

SWAPLOADER USA LTD

DETAILED BY: 06/24/04 DGS
CHECKED BY: 06/28/04 DGS

CONTAINER VARIABILITY SYSTEM
SUB-ASSEMBLY

SCALE: 3" = 12 | SL-145 | 12H01

SHOP | FILE | TOTAL

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-375 HOIST INSTALLATION

Conducted by: _____ **Date:** _____

Dealer: _____

Customer: _____

I. RECORD THE FOLLOWING INFORMATION:

SwapLoader Model SL-375 Hoist:
Serial No.: _____

Truck Chassis:
Identification No.: _____
GVW: _____
CA (Cab to Axle/ Tandem): _____
Distance From Center Line of Rear Axle/Tandem to Rear of Hoist: _____

PTO:
Make: _____
Model: _____
Serial No.: _____
% of Engine RPM: _____

Hydraulic Pump:
Make: _____
Model: _____
Serial No.: _____

II. INSTALLATION TO CHASSIS

Were there any problems bolting the hoist to the truck chassis with the parts provided?

_____ YES _____ NO

If yes, please describe _____

_____

_____

_____ All bolts checked for proper tightness.
_____ Please include photos of the hoist installed on the truck chassis. Be sure to include at least one photo from each side.

III. CONTROLS

_____ Controls easy to reach from driver's seat.
_____ Movement of controls correct per installation instructions.

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-375 HOIST INSTALLATION

IV. HYDRAULICS INSTALLATION

_____ Correct hydraulic oil level in reservoir
_____ Check for leaks
Any abnormal noise during operation: _____ YES _____ NO
If yes, explain: _____

WITH ENGINE OPERATING @ 1000 RPM, RECORD THE FOLLOWING INFORMATION:

Cycle time for dump mode: Up _____ Sec. Down _____ Sec.
Cycle time for load/unload mode: Unload _____ Sec. Load _____ Sec.
Filter pressure _____ PSI.
Main pressure, controls in neutral _____ PSI.
Main relief pressure when extending jib cylinders (bottomed out)_____PSI.
Main relief pressure when extending lift cylinders (bottomed out)_____PSI.

NOTE: Connect pressure gauge to fitting provided on inlet section of Hyd. Control Valve (Ref. Pt. No. 10P37 fitting on Hyd. Pump Circuit Drawing No. 90H56).

V. OPERATION

_____ Jib operates freely in both directions.
_____ Jib cannot be extended or retracted when raised in dump position or when pivot joint is tilted in unload position. Both safety hooks are fully engaged when jib is extended.
_____ Parts and operators manuals in cab.
_____ Lubricate sliding jib and all grease zerks per installation instructions.

VI. DECAL

_____ All safety decals and product decals installed per Drawing 41H55.

ADDITIONAL COMMENTS:

_____

_____

_____

SEND COMPLETED FORM TO: **SwapLoader U.S.A., Ltd.**
1800 NE Broadway Avenue
Des Moines, IA 50313

RETAIN ONE COPY FOR YOUR FILE.

OPERATION

OPERATING INSTRUCTIONS

During all operations of the SwapLoader, the speed of the engine should be maintained at 1,000 to 1,200 RPM, assuming the ratio of the Power Take Off is about 100%.

Depress the clutch and, after 2 seconds, switch on the P.T.O. Then, smoothly release the clutch: the pump should be running.

LOADING A CONTAINER

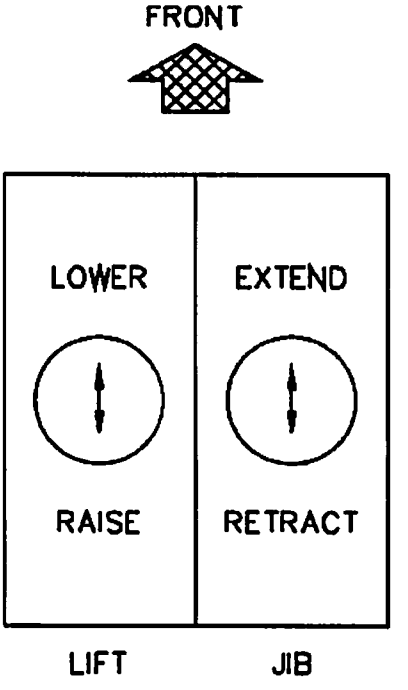
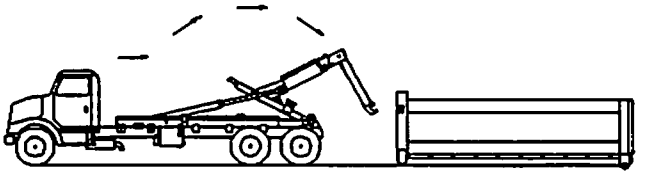
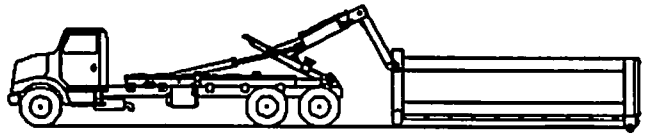


FIG A

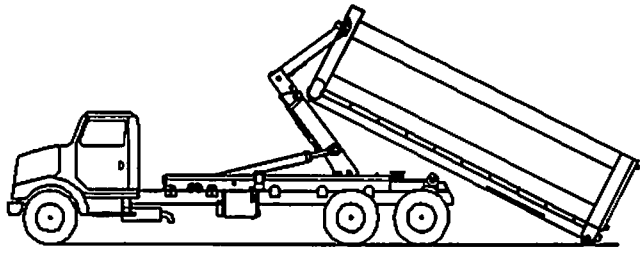
1. Retract the jib (right control lever backward). Then, tilt the arm backward (left control lever backward.) See Fig. A.



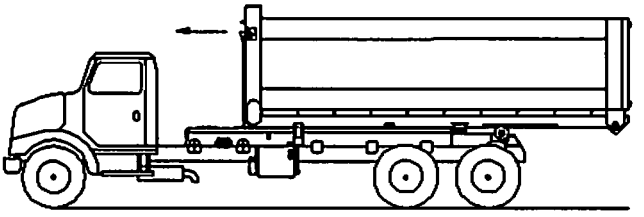
2. Move the truck backwards until the hook engages the curved lifting bar of the container. **NEVER EXTEND THE JIB** to reach the proper catching height, rather tilt the arm.



3. Cycle the arm forward (left control lever forward), making sure the curved lifting bar is securely attached to the hook. Release the brakes of the truck and steer to correctly align the truck with the container. Watch the container rails to see that they come to rest centered on the rear rollers. Do not extend the jib during lifting.



4. When the container is resting on the frame, move the jib forward all the way to ensure the container is held in the body locks (right control lever forward).



DUMPING

1. Again move the jib forward (right control forward) to ensure that the container is locked.

2. Extend the main lift cylinders (left control backward). **DO NOT RETRACT THE JIB WHILE DUMPING. Retracting the jib during dumping may unlock the mechanical jib latches which could allow the container to crash down onto the hoist and/or abruptly unload.**

PLACING A CONTAINER ON THE GROUND

1. Move the sliding jib all the way back (right control backward) until mechanical jib latches unlock.

2. Tilt the arm backwards (left control backward). When the container touches the ground, release the brakes to free the truck for forward movement caused by the container.

WARNING:

1. **DON'T OVER SPEED THE PUMP 1,500 RPM MAXIMUM.**

2. **DON'T DUMP ON UNEVEN GROUND.**

3. **DON'T DRIVE WITH THE CONTAINER IN THE DUMPED POSITION OR WITH THE HOOK TILTED BACK.**

MAINTENANCE

WEEKLY SERVICE - (50 OPERATIONS)

1. Lubricate with grease (Refer to Lubrication Diagram)
   - Lifting hook on jib
   - Jib slide - top, bottom, and side guides
2. Check hydraulic oil level
3. Check hydraulic hose and fittings for leaks. Also check hydraulic hose for wear. Repair and/or retighten as necessary.

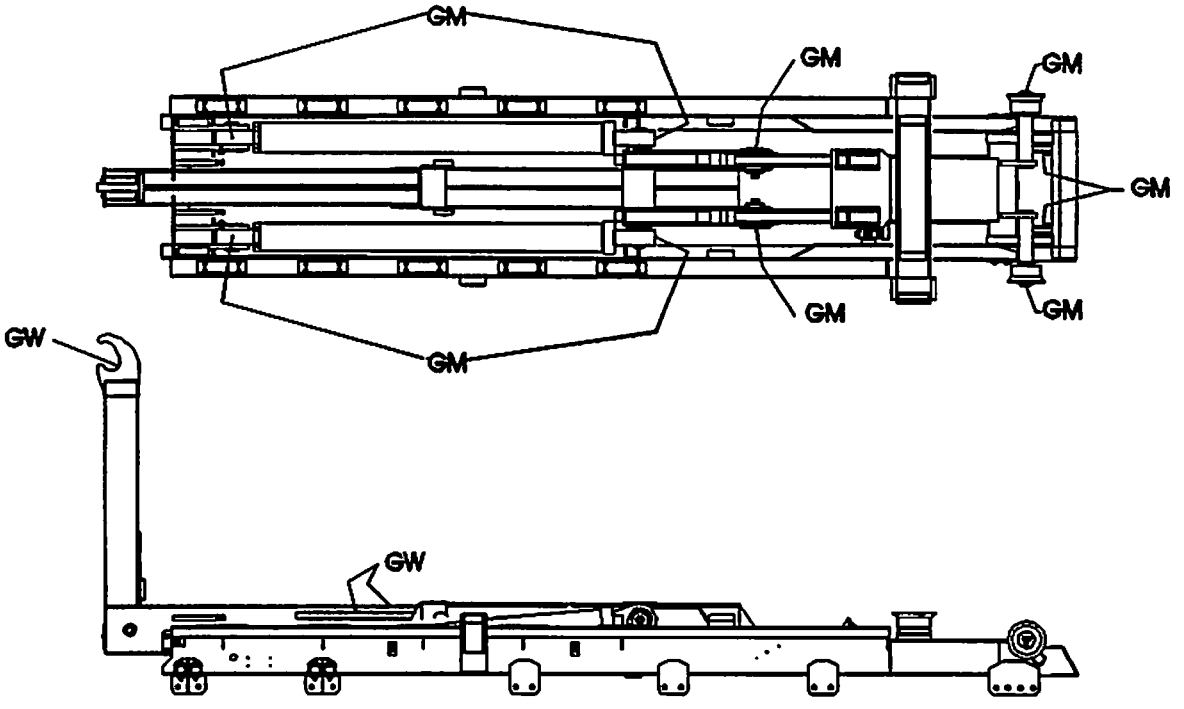
MONTHLY SERVICE - (200 OPERATIONS)

1. Lubricate with grease (Refer to Lubrication Diagram)
   - Fittings on lift cylinders (quantity: 4)
   - Front pins on rear pivot joint weldment (quantity: 2)
   - Fittings on rear pivot pins, and rollers (quantity: 4)
2. Check all bolts and retighten as required.
3. Check adjustments on safety lock mechanism. Grease slide tube if necessary.

YEARLY SERVICE

1. Change hydraulic oil, replace hydraulic filter element, and wash out suction strainer.
2. Check main relief valve setting.

LUBRICATION DIAGRAM



LEGEND
GM = Grease Monthly
GW = Grease Weekly

HYDRAULIC OIL SPECIFICATIONS

Type: High Pressure (Anti-Wear) Hydraulic
ISO Viscosity Grade: 46 Viscosity,
SUS at 100 Degree F: 194-236

AMOCO
AMOCO AW 46

ARCO
Duro AW 46

Chevron
AW Hydraulic Oil 46

Cities Service
AW Hydraulic Oil 46

Conoco
Super Hydraulic Oil 46

Exxon
Nuto H 46

Gulf
Harmony 46 AW

Kendall
Kenoil R & O AW-46

Keystone
KLC-5

Lubriplate
HO-1

Mobil
DTE 25

Phillips
Magnus A Oil 46

Shell
Tellus 46

Sun
Sun Vis 747 (821 WR)

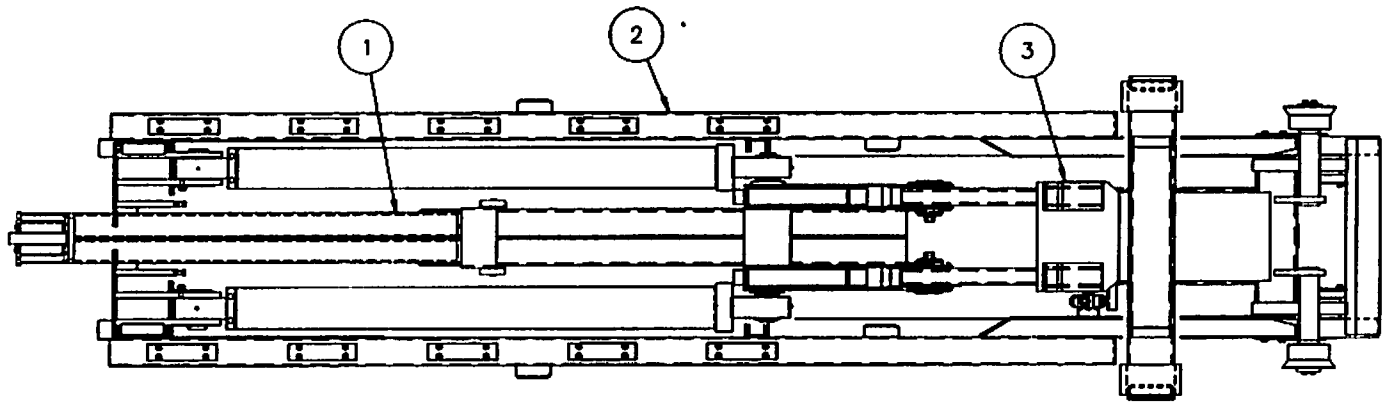
Texaco
Rando Oil HD 46

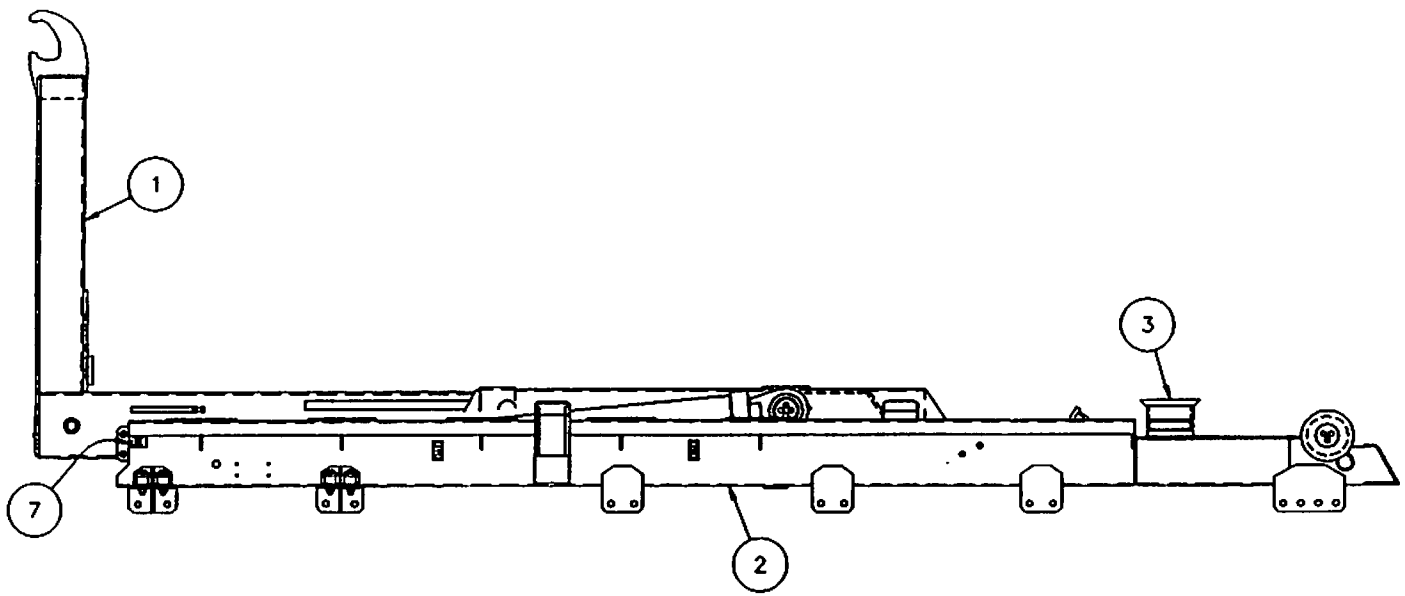
Union
Unax AW 46

GENERAL MAINTENANCE PARTS LIST

PT. NO.	DESCRIPTION
20P80	**HYDRAULIC CYLINDER 6ϕ X 74**
20P93	SEAL KIT, HYDRAULIC CYLINDER
20P28	HYDRAULIC VALVE CARTRIDGE, COUNTERBALANCE
	* * * * * * * *
20P46	**HYDRAULIC CYLINDER 5ϕ X 52**
20P48	SEAL KIT, HYDRAULIC CYLINDER
21P17	HYDRAULIC VALVE CARTRIDGE, COUNTERBALANCE
	* * * * * * * *
20P87	**HYDRAULIC PUMP, GEAR (3.83 CID, L.H. ROT.)**
20P41	SEAL KIT, HYDRAULIC PUMP
	* * * * * * * *
20P61	**HYDRAULIC FILTER, 70 GPM**
20P66	HYDRAULIC FILTER ELEMENT
20P64	INDICATOR GAUGE, FILTER
	* * * * * * * *
20P86	**HYDRAULIC TANK, 30 GALLON LS**
21P16	STRAINER, TANK MOUNTED - 50 GPM
20P96	SIGHT GAUGE, HYDRAULIC TANK
20P97	BREATHER CAP ASS'Y, HYDRAULIC TANK
	* * * * * * * *
20P88	**HYDRAULIC CONTROL VALVE, 2 SEC.**
21P04	HYDRAULIC VALVE CARTRIDGE, RELIEF (3500 PSI)

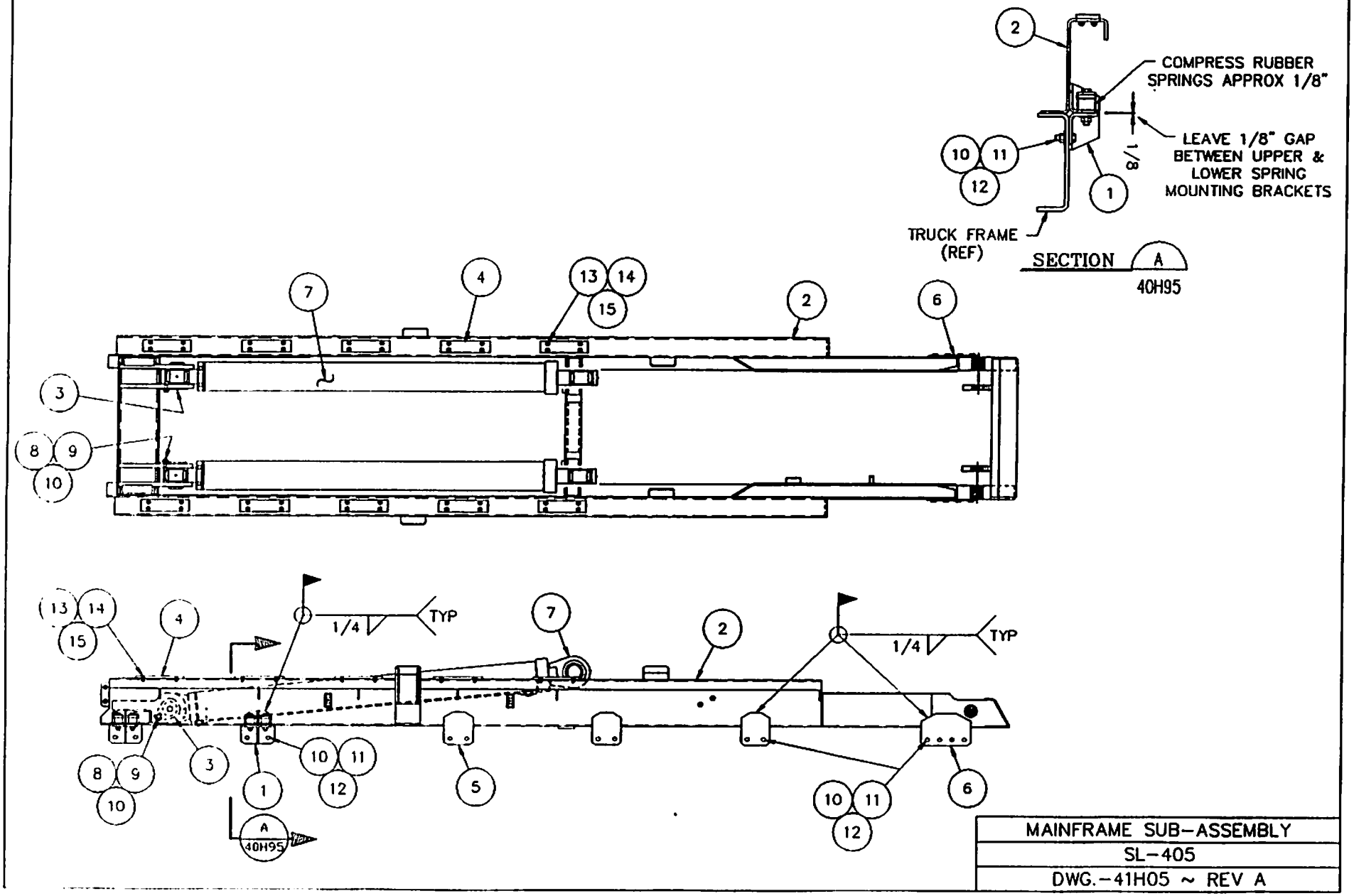
PARTS LIST





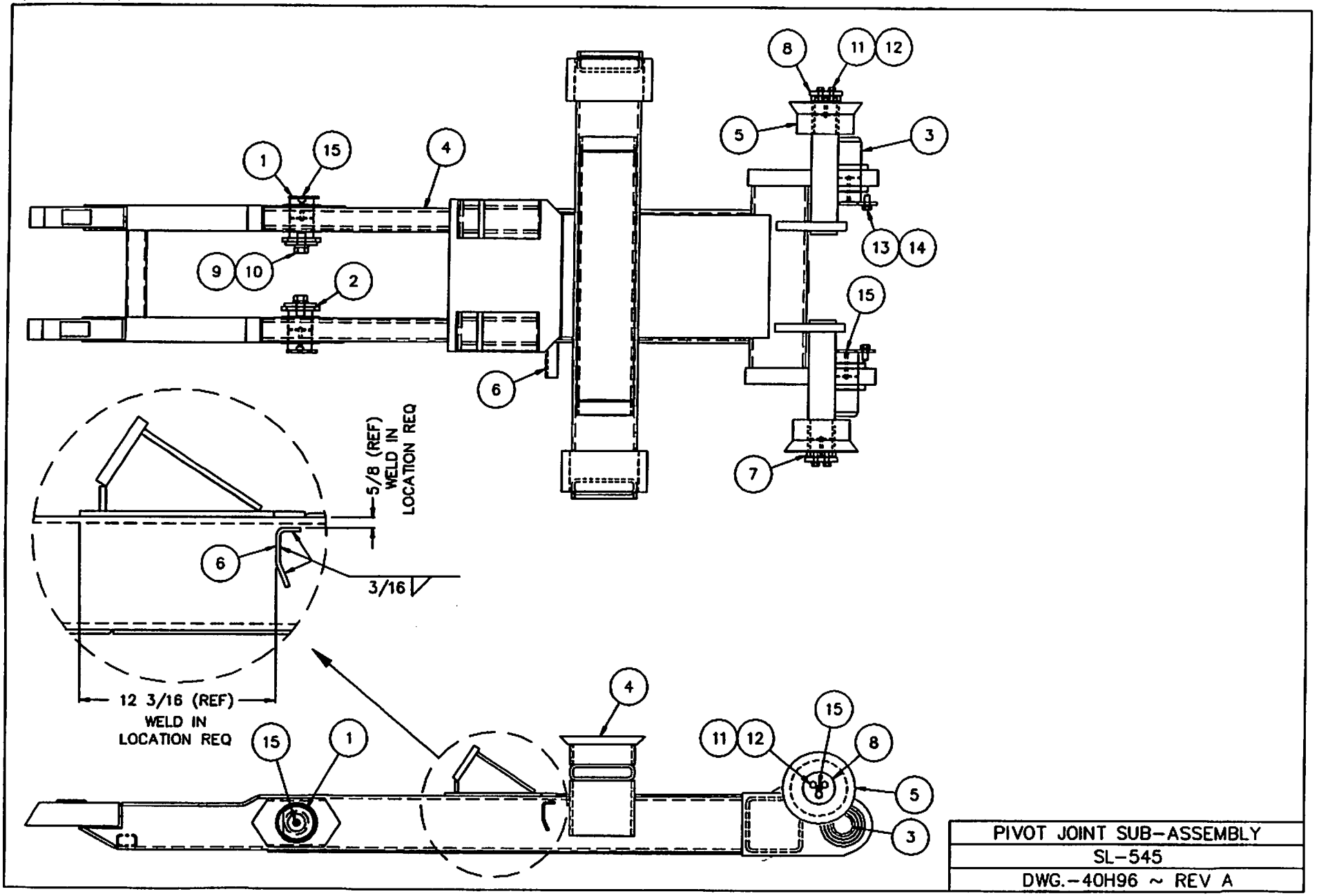
SL-375 HOIST, BASE ASSEMBLY
SL-375
DWG.-41H57

SL-375 HOIST, BASE ASSEMBLY DWG.-41H57					REVISION
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	41H53	TELESCOPIC JIB SUB-ASS'Y	2026.45	
2	ONE	41H05	MAINFRAME SUB-ASS'Y	2961.63	
3	ONE	40H96	PIVOT JOINT SUB-ASS'Y	1154.70	
4	ONE	41H55	DECAL ASS'Y	-	NOT SHOWN
5	ONE	41H59	PARTS & OPER MANUAL	-	
6	ONE	90H54	BASE HYDRAULIC ASS'Y	197.09	NOT SHOWN
7	ONE	90P47	SERIAL TAG	.01	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
				6339.88	TOTAL



MAINFRAME SUB-ASSEMBLY
SL-405
DWG.-41H05 ~ REV A

		MAINFRAME SUB-ASSEMBLY DWG.-41H05			REVISION A
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	4	40H31	SPRING MOUNTING BRACKET	13.05	
2	ONE	40H77	MAINFRAME WDMT	1507.49	
3	2	40H83	MAINFRAME PIN WDMT	18.66	
4	10	61H78	12" WEAR BLOCK	.71	
5	6	81H23	FRONT BRACKET	5.53	
6	2	81H24	REAR BRACKET	9.26	
7	2	20P80	HYD CYL 6ø x 74	640.00	
8	2	00P56	5/8-11 x 1 1/2 HHCS	.29	GR-8
9	2	00767	5/8ø LOCK WASHER	.08	
10	30	00785	5/8ø FLAT WASHER HT	.08	F-436
11	28	00P69	5/8-11 x 2 HHCS	.33	GR-8
12	28	00P55	5/8-11 LOCKING HEX NUT	.18	GR-C
13	40	00755	3/8ø LOCK WASHER	.05	
14	40	00P14	3/8-16 HEX NUT	.05	GR-8
15	40	00P68	3/8-16 x 1 1/4 FL HD SCR	.11	BRASS
16					
17					
18					
19					
20					
21					
22					
				2961.63	TOTAL



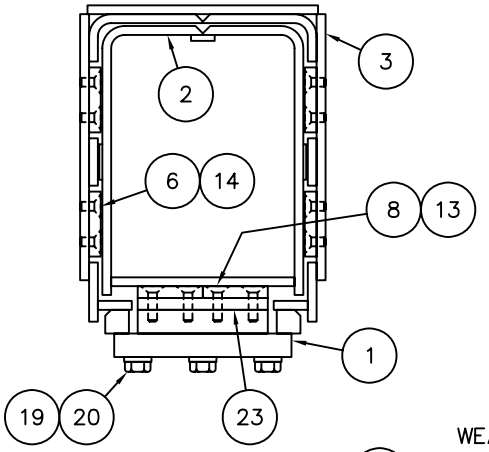
PIVOT JOINT SUB-ASSEMBLY
SL-545
DWG.-40H96 ~ REV A

		PIVOT JOINT SUB-ASSEMBLY DWG.-40H96			REVISION A
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	2	40H70	PIVOT PIN WDMT	11.42	
2	2	40H71	PIN CAP WDMT	2.25	
3	2	40H84	MAIN PIVOT PIN WDMT	17.64	
4	ONE	40H85	PIVOT JOINT WDMT	998.59	
5	2	40H93	ROLLER ASS'Y	41.42	
6	ONE	81H70	SAFETY VALVE RAMP	1.45	
7	2	83H10	ROLLER SPACER	.92	
8	2	83H11	ROLLER RETAINER	1.61	
9	2	00P87	1-8 x 2 HHCS	.70	GR-8
10	2	00P88	1ø LOCK WASHER	.13	
11	6	00P01	1/2-13 x 1 1/2 HHCS	.21	GR-8
12	6	00760	1/2ø LOCK WASHER	.07	
13	2	00P56	5/8-11 x 1 1/2 HHCS	.29	GR-8
14	2	00767	5/8ø LOCK WASHER	.08	
15	6	90P03	1/8 NPT ZERK STR	.01	
16					
17					
18					
19					
20					
21					
22					
				1154.70	TOTAL

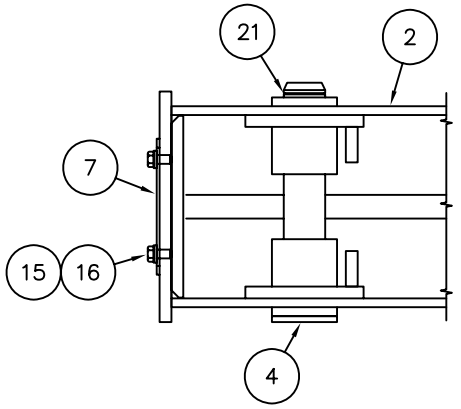
PT-41H53.DWG 11/12/08 10:34

DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

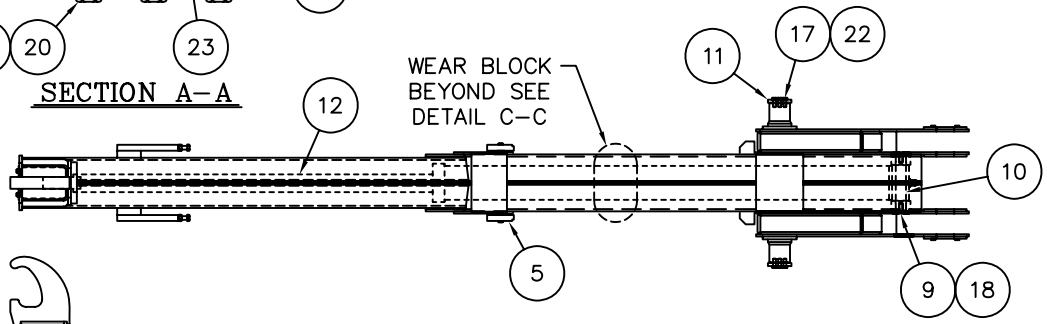
NOTE:
LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY



SECTION A-A



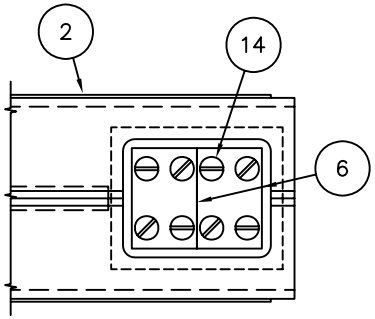
SECTION B-B



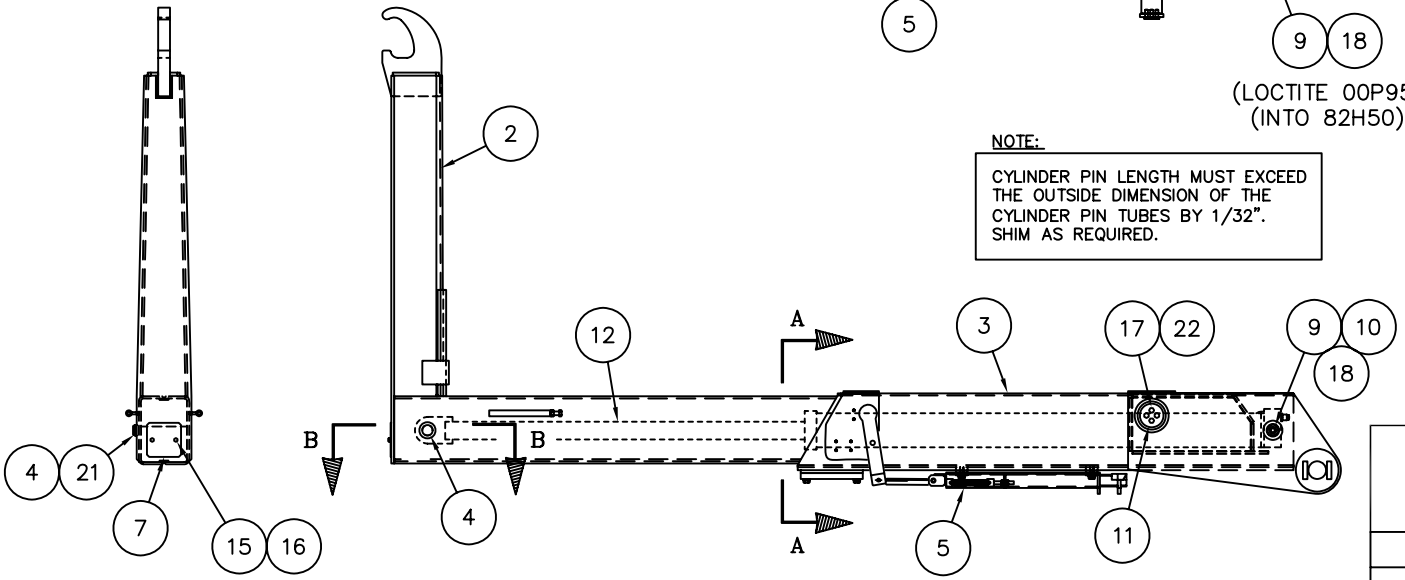
(LOCTITE 00P95)
(INTO 82H50)

NOTE:

CYLINDER PIN LENGTH MUST EXCEED THE OUTSIDE DIMENSION OF THE CYLINDER PIN TUBES BY 1/32". SHIM AS REQUIRED.



DETAIL C-C



REV 'C' FOR SERIAL NUMBERS:
M00270 & NEWER FOR SL-505
K00223 & NEWER FOR SL-375
TELESCOPIC JIB SUB-ASSEMBLY
SL-505 & SL-375
DWG.-41H53 ~ REV D

TELESCOPIC JIB SUB–ASSEMBLY
DWG.–41H53

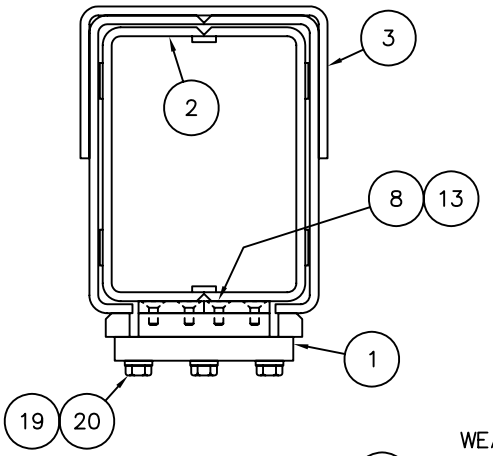
REVISION
D

ITEM	QTY.	P/N	DESCR.	WT.– lb. PER EACH	REMARKS
1	ONE	40H44	CLAMP PLATE WDMT	29.97	
2	ONE	43H15	JIB WDMT	732.46	
3	ONE	42H73	OUTER TUBE WDMT	746.77	
4	ONE	40H69	1 3/4ø CYL PIN WDMT	7.03	
5	ONE	40H72	SAFETY LATCH ASS'Y	96.67	
6	6	60H11	WEAR BLOCK	0.26	
7	ONE	62H11	JIB COVER PLATE	1.13	
8	2	80H35	CLAMP LINER	7.02	
9	2	81H20	CYLINDER PIN CAP	0.40	
10	ONE	82H50	1 3/4ø CYLINDER PIN	6.52	
11	2	82H51	CYLINDER RETAINER	1.64	
12	ONE	21P76	HYD CYL 4–1/2ø x 52	341.10	
13	8	00P58	3/8–16 x 1 1/2 FL HD SCR	0.12	BRASS
14	24	00P79	3/8–16 x 3/4 FL HD SCR	0.09	BRASS
15	2	00P03	3/8–16 x 3/4 HHCS	0.11	GR–8
16	2	00755	3/8ø LOCK WASHER	0.05	
17	8	00P31	1/2–13 x 1 1/4 HHCS	0.20	GR–8
18	2	00P95	5/8–11 x 1 1/4 FL HD SOC SCR	0.23	GR–8
19	6	00P69	5/8–11 x 2 HHCS	0.33	GR–8
20	6	00767	5/8ø LOCK WASHER	0.08	
21	ONE	00P97	EXT RET RING FOR 1 3/4ø	0.01	
22	8	01P30	1/2ø DISC–LOCK WASHER	0.02	
23	ONE	87H52	CLAMP PLATES SPACER	4.02	
24					
25					
26					
				1993.48	TOTAL

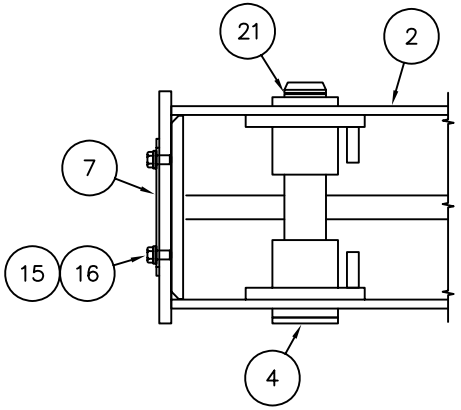
PT-41H53-REV A.DWG 08/26/08 11:23

DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

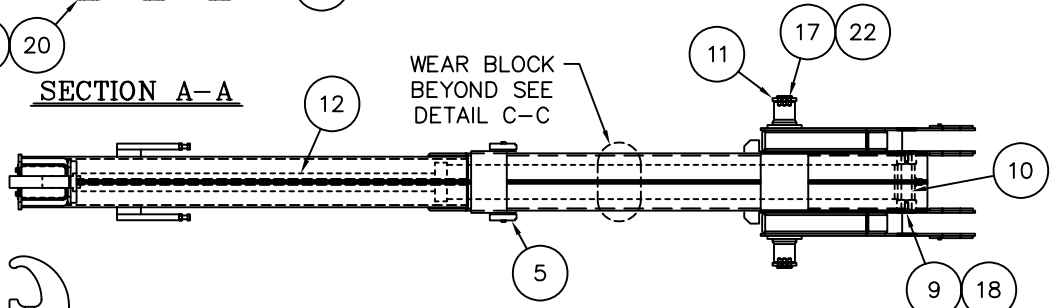
NOTE:
LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY



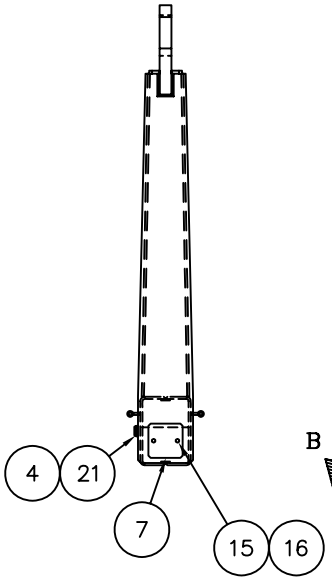
SECTION A-A

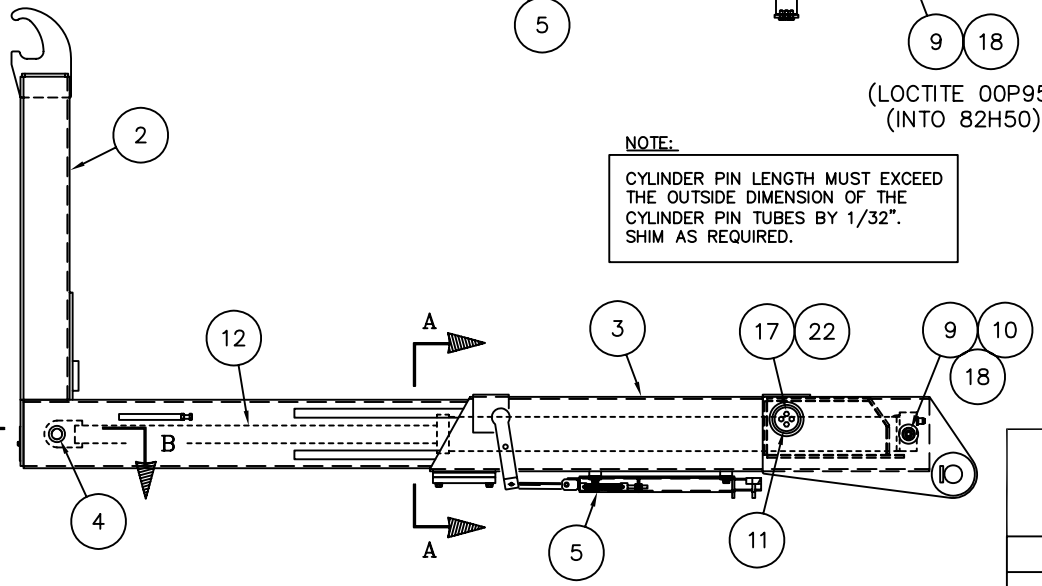


SECTION B-B

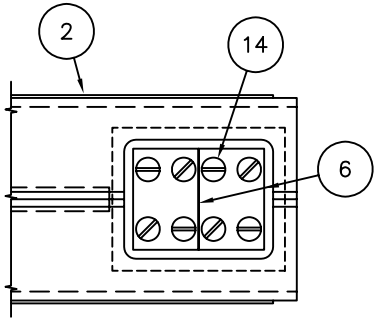


(LOCTITE 00P95)
(INTO 82H50)





NOTE:
CYLINDER PIN LENGTH MUST EXCEED THE OUTSIDE DIMENSION OF THE CYLINDER PIN TUBES BY 1/32". SHIM AS REQUIRED.

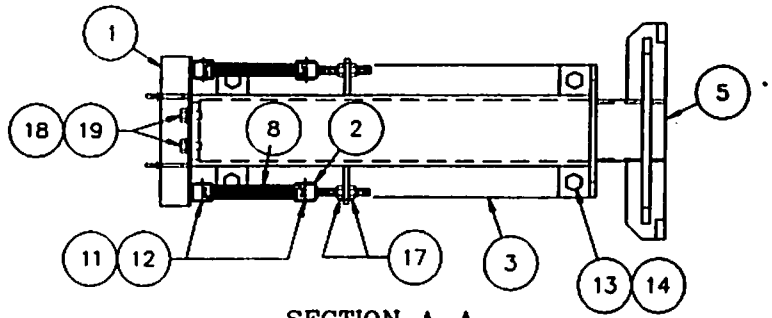


DETAIL C-C

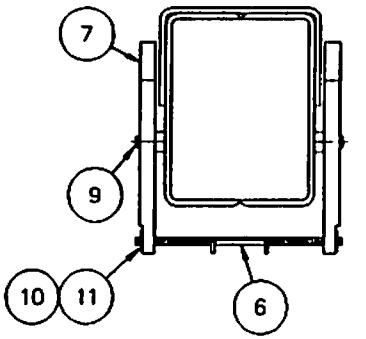
FOR SERIAL NUMBERS:
M00269 & OLDER FOR SL-505
K00222 & OLDER FOR SL-375

TELESCOPIC JIB SUB-ASSEMBLY
SL-505 & SL-375
DWG.-41H53 ~ REV A

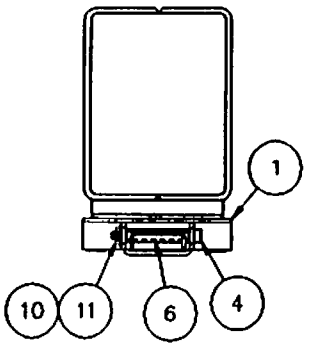
TELESCOPIC JIB SUB–ASSEMBLY DWG.–41H53					REVISION A
ITEM	QTY.	P/N	DESCR.	WT.– lb. PER EACH	REMARKS
1	ONE	40H44	CLAMP PLATE WDMT	29.97	
2	ONE	41H13	JIB WDMT	740.64	
3	ONE	40H64	OUTER TUBE WDMT	733.76	
4	ONE	40H69	1 3/4ø CYL PIN WDMT	7.03	
5	ONE	40H72	SAFETY LATCH ASS'Y	96.67	
6	2	60H11	WEAR BLOCK	0.26	
7	ONE	62H11	JIB COVER PLATE	1.13	
8	2	80H35	CLAMP LINER	7.02	
9	2	81H20	CYLINDER PIN CAP	0.40	
10	ONE	82H50	1 3/4ø CYLINDER PIN	6.52	
11	2	82H51	CYLINDER RETAINER	1.64	
12	ONE	20P46	HYD CYL 5ø x 52	385.00	
13	8	00P58	3/8–16 x 1 1/2 FL HD SCR	0.12	BRASS
14	8	00P79	3/8–16 x 3/4 FL HD SCR	0.09	BRASS
15	2	00P03	3/8–16 x 3/4 HHCS	0.11	GR–8
16	2	00755	3/8ø LOCK WASHER	0.05	
17	8	00P31	1/2–13 x 1 1/4 HHCS	0.20	GR–8
18	2	00P95	5/8–11 x 1 1/4 FL HD SOC SCR	0.23	GR–8
19	6	00P69	5/8–11 x 2 HHCS	0.33	GR–8
20	6	00767	5/8ø LOCK WASHER	0.08	
21	ONE	00P97	EXT RET RING FOR 1 3/4ø	0.01	
22	8	01P30	1/2ø DISC–LOCK WASHER	0.02	
				2026.05	TOTAL



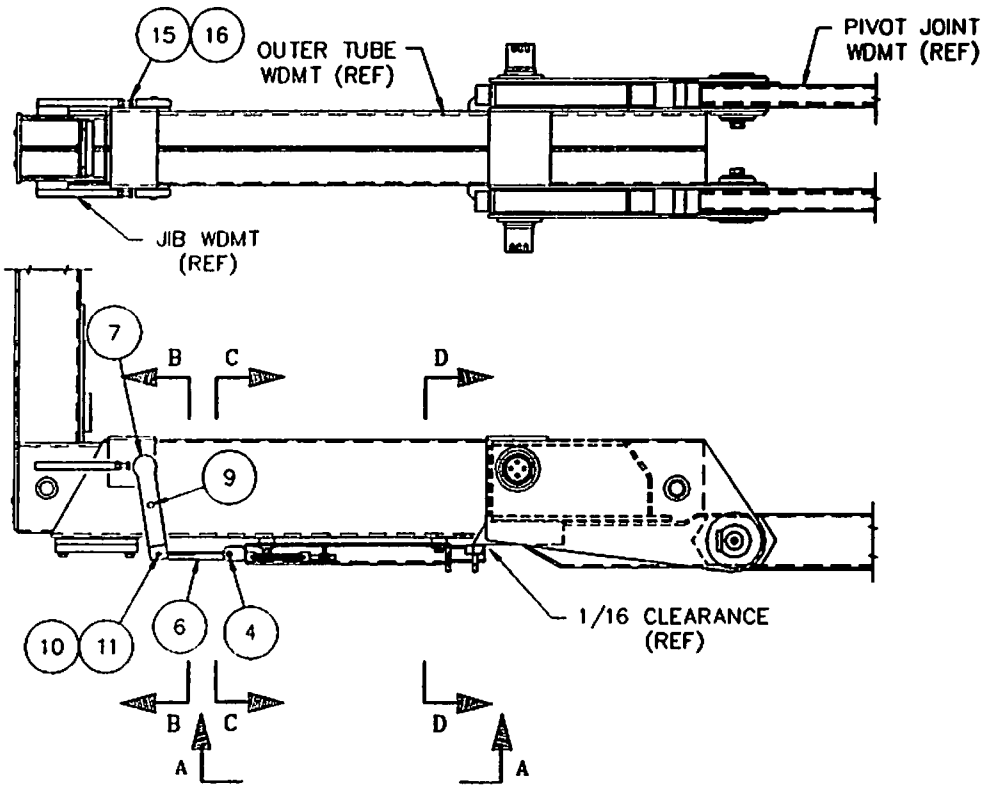
SECTION A-A

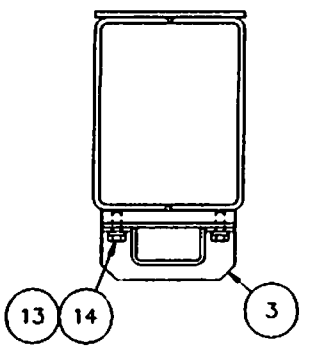


SECTION B-B



SECTION C-C

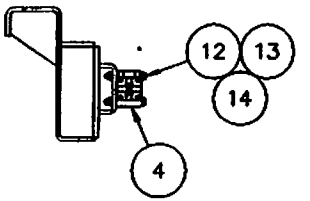




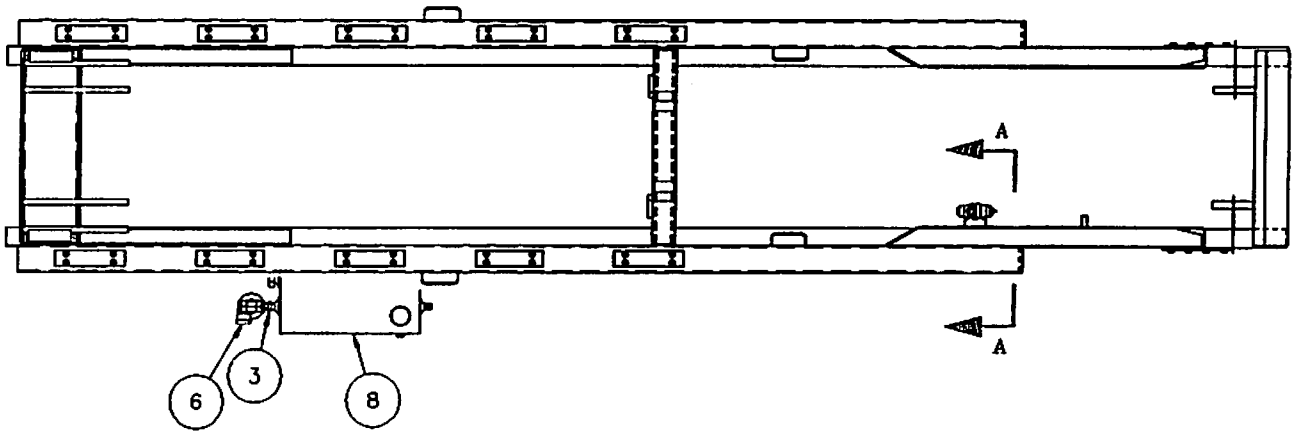
SECTION D-D

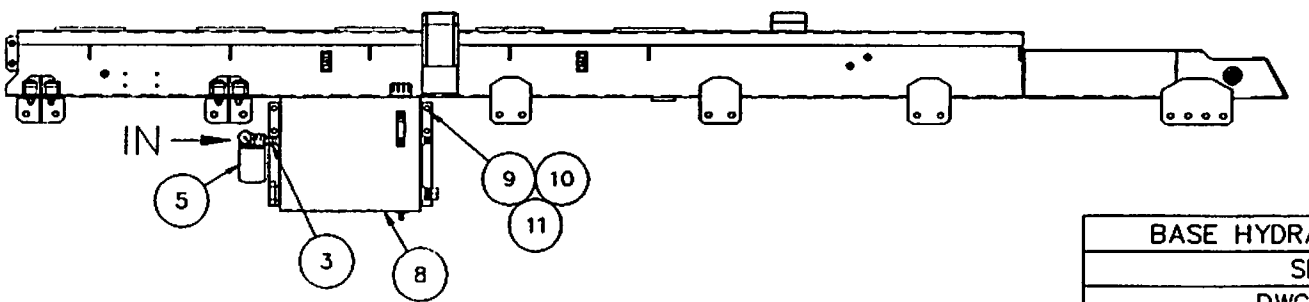
SAFETY LATCH ASSEMBLY
SL-545
DWG.-40H72 ~ REV A

		SAFETY LATCH ASSEMBLY DWG.-40H72			REVISION A
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	40H37	SPRING MOUNT	2.88	
2	2	40H38	TAKE UP	.32	
3	ONE	40H40	SAFETY LATCH TUBE	35.26	
4	ONE	40H42	CONNECTION BAR PIN	.34	
5	ONE	40H74	INNER TUBE	30.70	
6	ONE	40H75	CONNECTION BAR	4.35	
7	2	81H51	RELEASE LEVER	8.68	
8	2	90P04	7/8ø x 6 SPRING	.38	
9	2	00P28	EXT RET RING FOR 3/4ø	.01	
10	3	00772	1/2ø FLAT WASHER	.07	
11	7	00P26	1/8ø x 1 COTTER PIN	.01	
12	4	00P94	3/8ø x 1 1/2 CLV PIN	.05	
13	4	00767	5/8ø LOCK WASHER	.08	
14	4	00P56	5/8-11 UNC x 1 1/2 HHCS	.29	GR-8
15	2	00P24	5/8-11 UNC HEX NUT	.18	GR-8
16	2	01P09	5/8-11 UNC x 2 1/2 HHCS	.38	GR-8
17	4	00P02	1/2ø HEX NUT	.15	GR-8
18	2	00P09	1/2-13 UNC x 1 HHCS	.19	GR-8
19	2	00760	1/2ø LOCK WASHER	.07	
20					
21					
22					
				96.51	TOTAL



SECTION A–A





BASE HYDRAULIC ASSEMBLY
SL–405
DWG.–90H54

		BASE HYDRAULIC ASSEMBLY DWG.-90H54			REVISION
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	90H55	HYD SUB-ASS'Y CYL CIRCUIT	40.05	SHOWN NOT
2	ONE	90H56	HYD SUB-ASS'Y PUMP CIRCUIT	16.60	SHOWN NOT
3	ONE	11P78	ADP, HYD PIPE NIPPLE	.70	5404-20
4	ONE	20P60	HYD VALVE	5.20	
5	ONE	20P61	HYD FILTER	4.50	
6	ONE	20P64	FILTER INDICATOR GAUGE	-	
7	ONE	20P87	HYD PUMP, GEAR	54.00	SHOWN NOT
8	ONE	20P86	HYD TANK - 30 GAL	73.00	
9	4	00785	5/8ø FLAT WASHER HT	.08	F-436
10	4	00P55	5/8-11 LOCKING HEX NUT	.18	GR-C
11	4	00P69	5/8-11 x 2 HHCS	.33	GR-8
12	2	00755	3/8ø LOCK WASHER	.05	
13	2	00P14	3/8-16 HEX NUT	.10	GR-8
14	2	01P01	3/8-16 x 3 1/4 HHCS	.19	GR-8
15					
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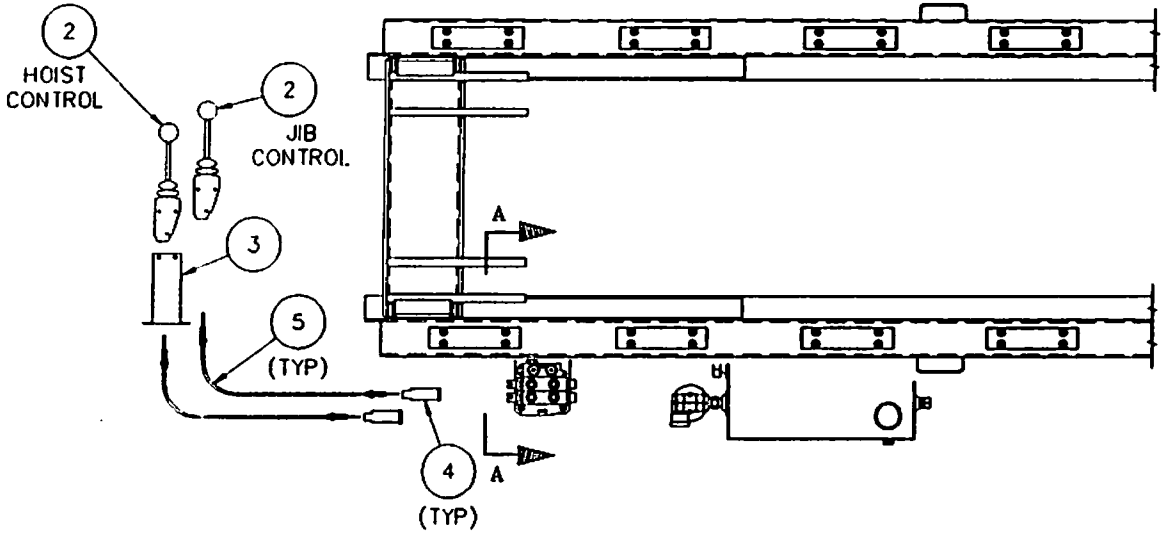
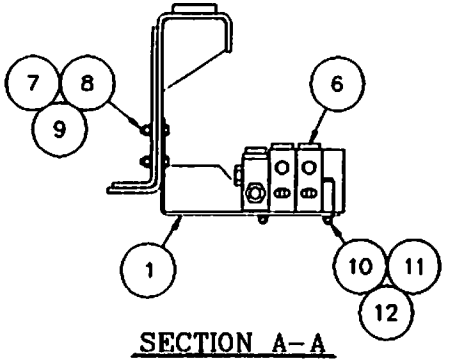
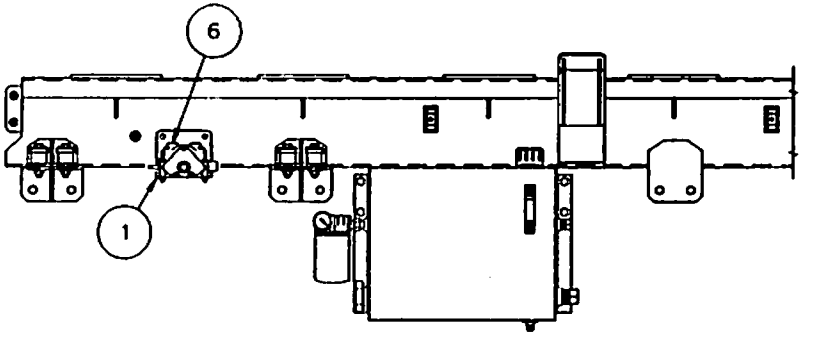
22					
				197.09	TOTAL





SECTION A-A



MANUAL CONTROL ASS'Y 2 SECTION
SL-405
DWG.-90H57

		MANUAL CONTROL ASS'Y 2 SECTION DWG.-90H57			REVISION
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	41H01	VALVE MOUNT BRACKET WDMT	7.12	
2	2	20P08	REMOTE VALVE CONTROL HANDLE	2.80	
3	ONE	20P09	CONTROL HANDLE MOUNT CONSOLE	4.05	
4	2	20P10	BONNET CONNECTION KIT	.50	
5	2	20P40	CONTROL CABLE 96" LG	2.00	
6	ONE	20P88	HYD VALVE ASS'Y	27.00	
7	4	00755	3/8ø LOCK WASHER	.05	
8	4	00P14	3/8-16 HEX NUT	.10	GR-8
9	4	00P44	3/8-16 x 1 1/2 HHCS	.14	GR-8
10	3	00752	5/16ø LOCK WASHER	.04	
11	3	00P20	5/16-18 HEX NUT	.09	GR-8
12	3	00P19	5/16-18 x 2 3/4 HHCS	.13	GR-8
13					
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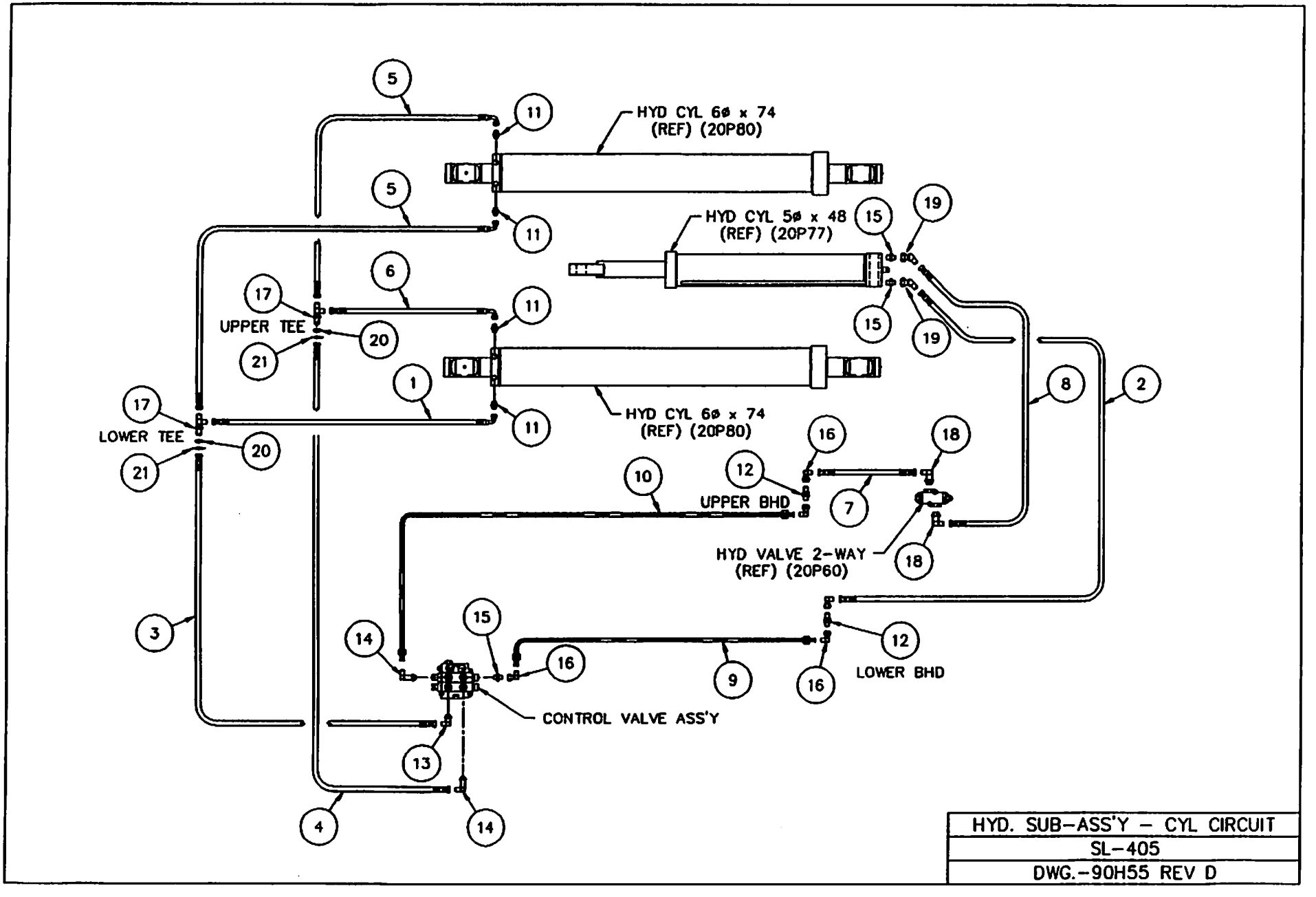
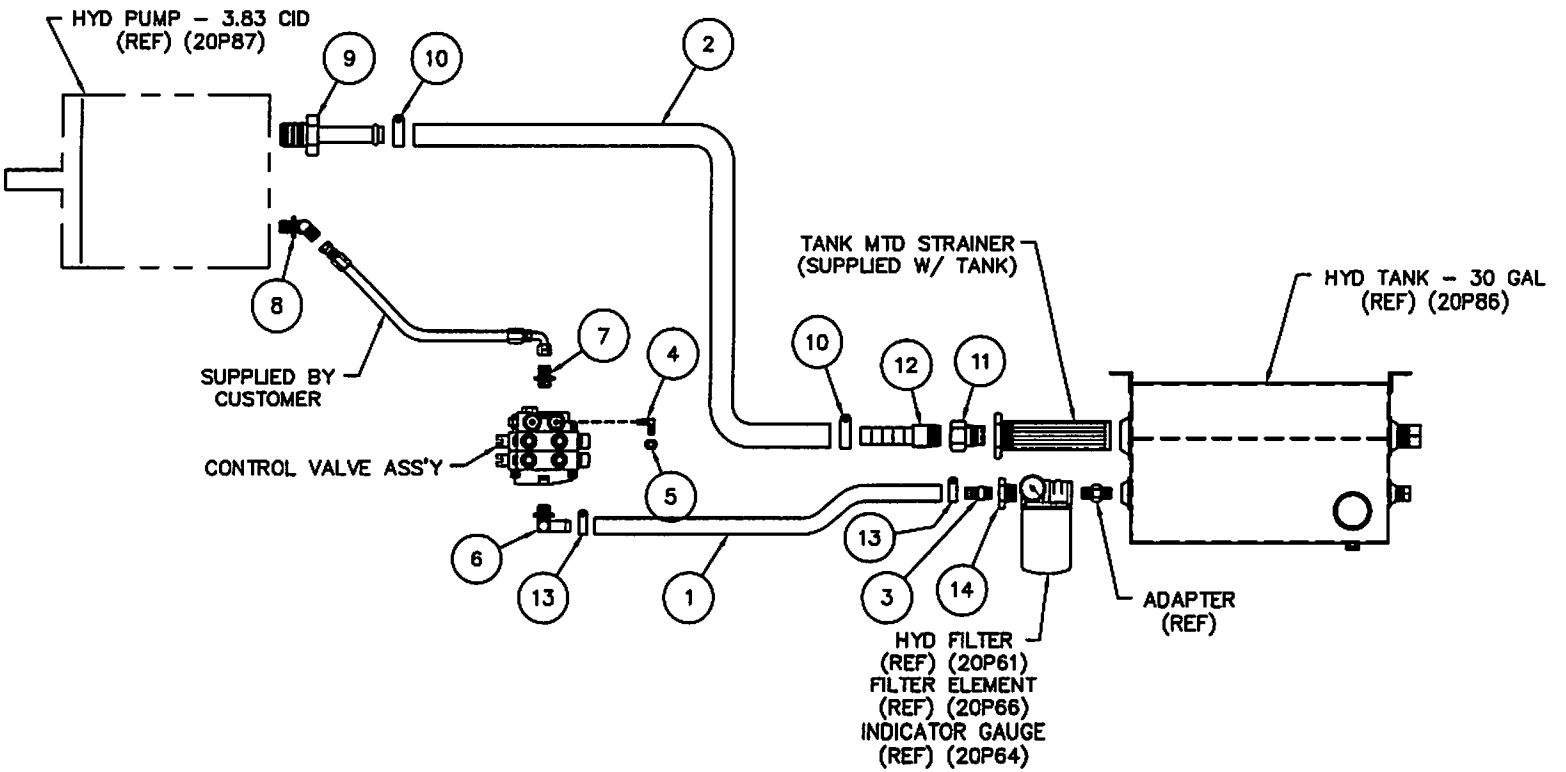
22					
				50.71	TOTAL



HYD. SUB-ASS'Y - CYL CIRCUIT
SL-405
DWG.-90H55 REV D

		HYDRAULIC SUB-ASSEMBLY – CYLINDER CIRCUIT DWG.-90H55			REVISION D
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	11P96	HOSE ASS'Y 1/2 H.P. x 22	1.18	
2	ONE	11P97	HOSE ASS'Y 1/2 H.P. x 148	5.07	
3	ONE	11P98	HOSE ASS'Y 1/2 H.P. x 28	1.37	
4	ONE	11P99	HOSE ASS'Y 1/2 H.P. x 33	1.52	
5	2	12P01	HOSE ASS'Y 1/2 H.P. x 50	2.04	
6	ONE	12P02	HOSE ASS'Y 1/2 H.P. x 24	1.24	
7	ONE	12P03	HOSE ASS'Y 1/2 H.P. x 21	1.15	
8	ONE	12P04	HOSE ASS'Y 1/2 H.P. x 123	4.30	
9	ONE	12P05	HYD TUBING – REAR LOWER	4.67	
10	ONE	12P06	HYD TUBING – REAR UPPER	4.86	
11	4	10P39	ADP, HYD M JIC / O-RING STR	.40	6400-8
12	2	11P02	ADP, HYD M JIC BHD UNION	.40	2700-LN-10
13	ONE	11P04	ADP, HYD M JIC / O-RING 90°	.40	6801-10
14	2	11P05	ADP, HYD M JIC / O-RING 90° EXT	.40	6801-LN-10
15	3	11P06	ADP, HYD M JIC / O-RING STR	.30	6400-10
16	5	11P07	ADP, HYD M JIC / FM JIC SWIVEL 90°	.40	6500-10
17	2	11P27	ADP, HYD M JIC BHD RUN TEE	.40	2704-LN-10
18	2	12P07	ADP, HYD M JIC / O-RING 90°	.40	6801-10-12
19	2	12P09	ADP, HYD FM JIC SWIVEL / M JIC 45°	.30	6502-10
20	2	83H24	BKHD ADP BUSHING	.22	
21	2	00782	7/8ø FLAT WASHER	.11	
22					
				38.93	TOTAL



HYD. SUB–ASS'Y – PUMP CIRCUIT
SL–405
DWG.–90H56 ~ REV A

		HYDRAULIC SUB-ASSEMBLY - PUMP CIRCUIT DWG.-90H56			REVISION A
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	12P31	HOSE 1 LP x 30	1.65	
2	ONE	11P71	HOSE ASS'Y 1 1/2 LP X 120	9.60	
3	ONE	12P19	ADP, HYD HOSE INS. / MP	.30	ST-10
4	ONE	10P37	ADP, HYD M JIC / M PIPE 90°	.30	2501-4-4
5	ONE	10P38	ADP, HYD JIC CAP	.10	304-C-4
6	ONE	12P26	ADP, HYD HOSE INS. / ORB 90°	.60	4601-16-12
7	ONE	10P90	ADP, HYD M JIC / O-RING STR	.40	6400-12
8	ONE	10P91	ADP, HYD M JIC / O-RING 45°	.50	6802-12-16
9	ONE	11P72	ADP, HYD O-RING HOSE INSERT	.40	4604-24-20
10	2	11P77	T-BOLT CLAMP, 2ø	.15	TBC-200
11	ONE	12P48	ADP, HYD MP / FP RED.	.60	2 x 1 1/2
12	ONE	11P95	KING NIPPLE, 1 1/2ø	.40	STC-20
13	2	10P21	T-BOLT CLAMP, 1 1/2ø	.10	TBC-150
14	ONE	12P20	ADP, HYD MP / FP RED.	.30	1 1/4 x 1
15					
16					
17					
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20					
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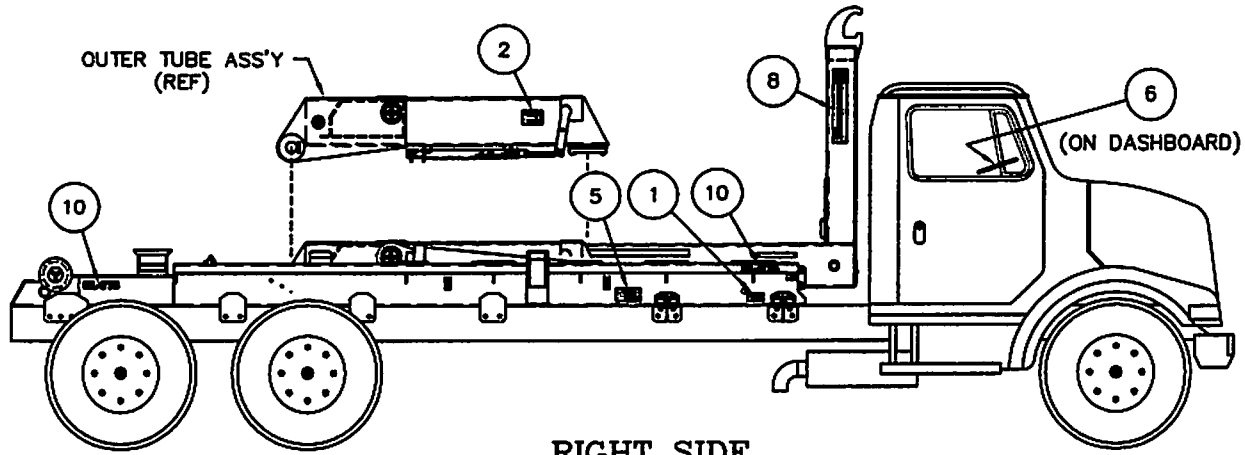
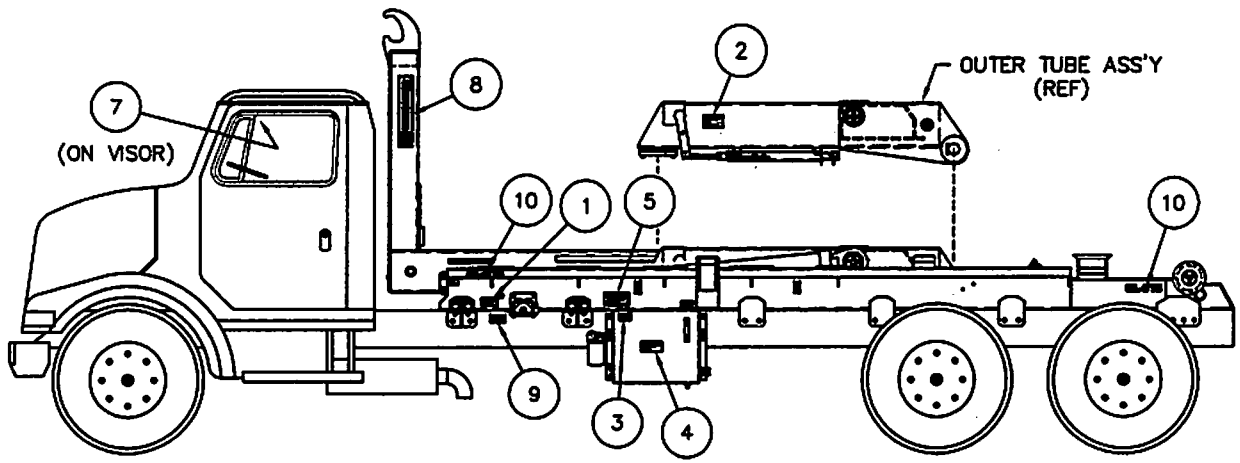
22					
				15.85	TOTAL



RIGHT SIDE



LEFT SIDE

DECAL ASSEMBLY
SL-375
DWG.-41H55

DECAL ASSEMBLY DWG.–41H55					REVISION
ITEM	QTY.	P/N	DESCR.	WT.– lb. PER EACH	REMARKS
1	2	90P07	OPR & SERV MANUAL		
2	2	90P08	HOIST – BODY SPEC		
3	ONE	90P09	HYD OIL SPEC		
4	ONE	90P10	HYD OIL FLAMMABLE		
5	2	90P11	HOIST FALLING		
6	ONE	90P12	LEVER CONTROL		
7	ONE	90P13	SAFETY INSTRUCTIONS		
8	3	90P14	SWAPLOADER – JIB		
9	ONE	90P18	RELIEF VALVE		
10	4	90P54	SL–375		
11					
12					
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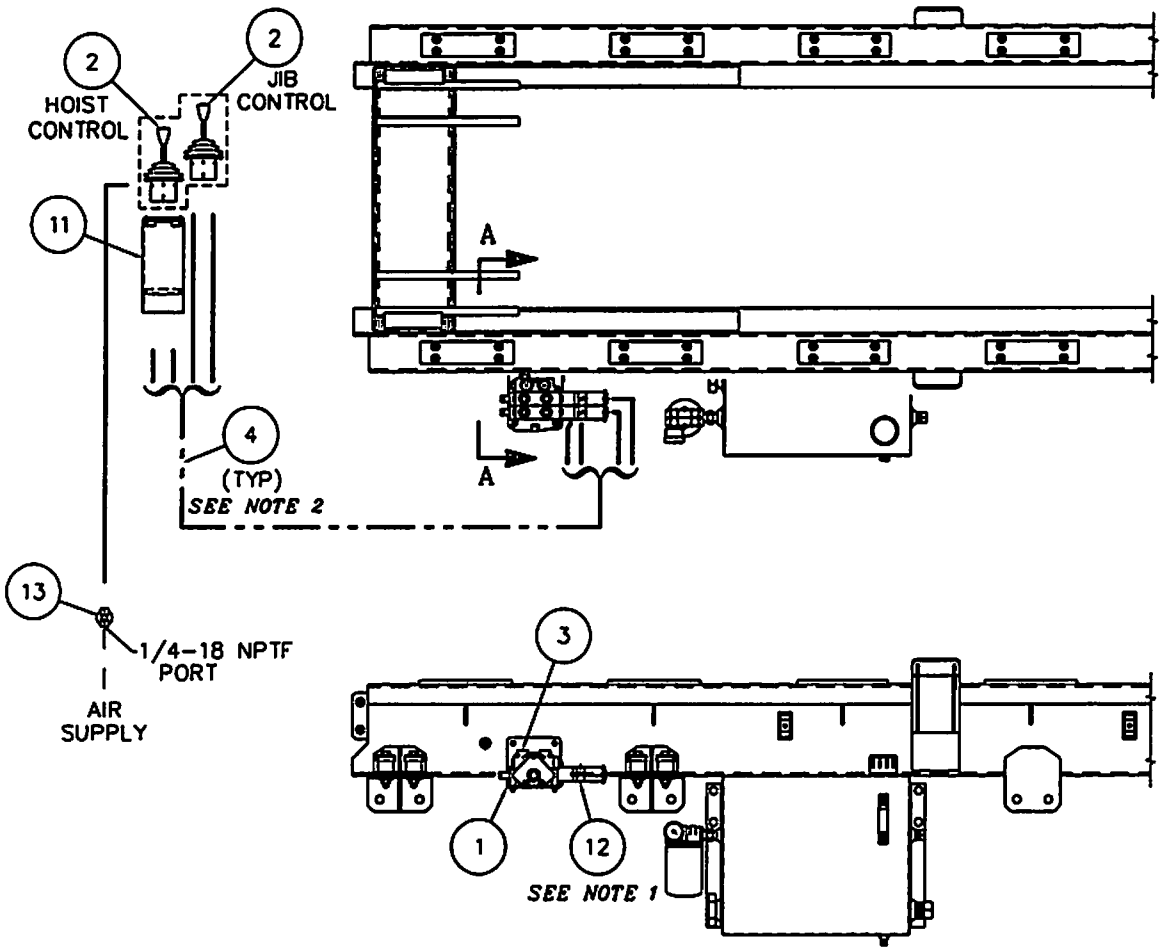
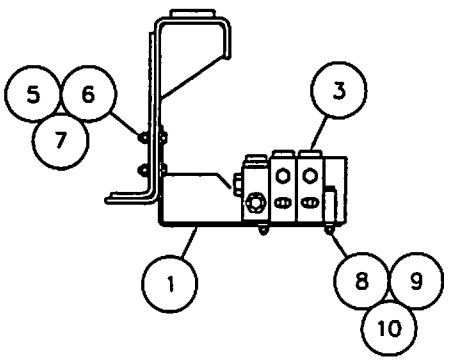
16					
17					
18					
19					
20					
21					
22					
					TOTAL

OPTIONS





SECTION A–A

NOTE:

1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

AIR CONTROL ASS'Y 2 SECTION
SL-405
DWG.-90H58 ~ REV. B

AIR CONTROL ASS'Y 2 SECTION DWG.-90H58					REVISION B
ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	41H01	VALVE MOUNT BRACKET	7.12	
2	ONE	20P72	CONTROL HANDLE ASS'Y	1.60	
3	ONE	20P88	HYD VALVE ASS'Y	27.00	
4	ONE	12P94	AIR LINE KIT	1.40	
5	4	00755	3/8ø LOCK WASHER	.01	
6	4	00P14	3/8-16 HEX NUT	.02	GR-8
7	4	00P44	3/8-16 x 1 1/2 HHCS	.07	GR-8
8	3	00752	5/16ø LOCK WASHER	.01	
9	3	00P20	5/16-18 HEX NUT	.01	GR-8
10	3	00P19	5/16-18 x 2 3/4 HHCS	.06	GR-8
11	ONE	51H27	AIR CONTROL CONSOLE ASS'Y	6.23	
12	2	20P95	HYD VALVE SECT. AIR SHIFT KIT	1.42	
13	ONE	20P74	AIR PRESS. PROTECTION VALVE	.59	WM778A
14					
15					
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20					
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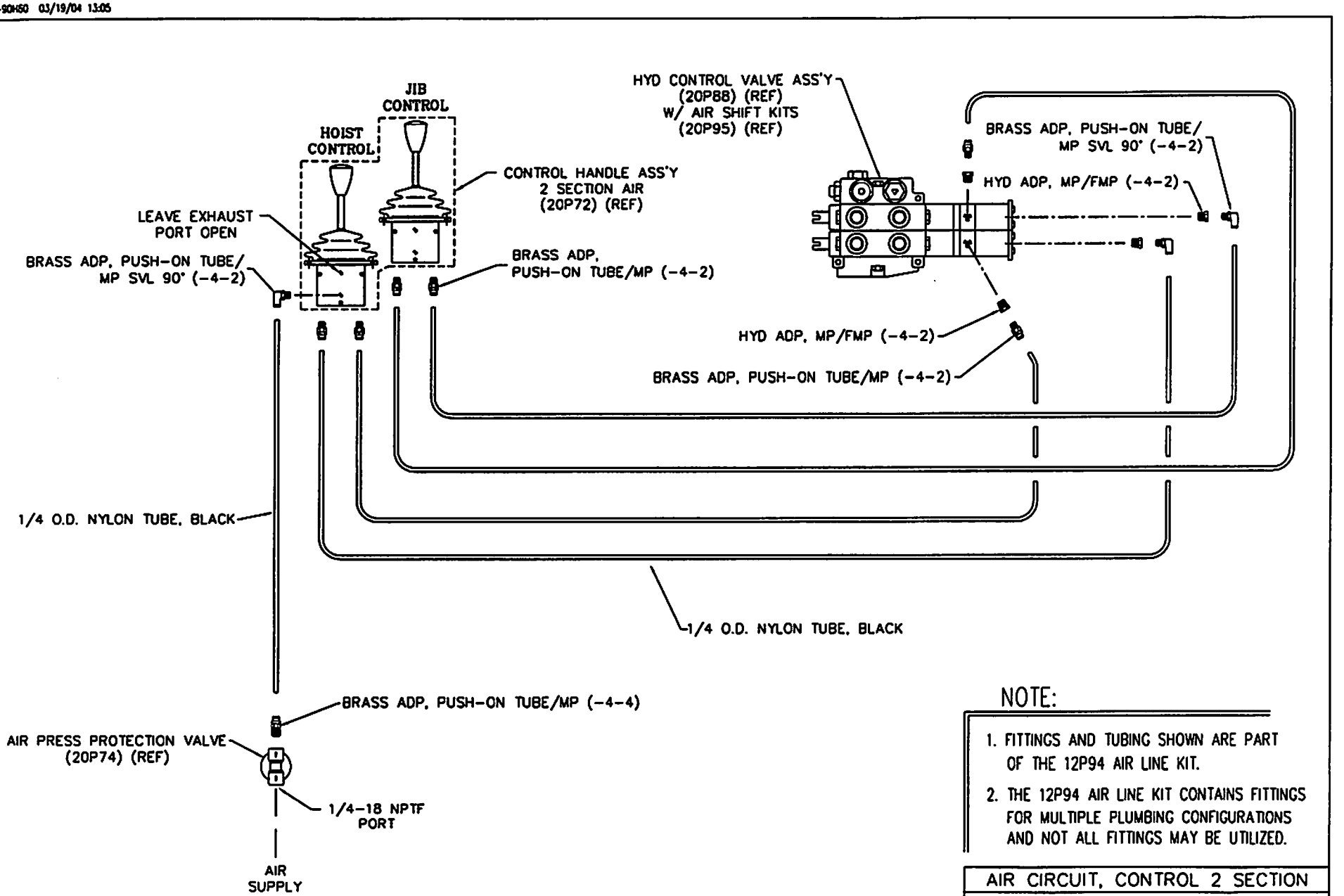
22					
				47.42	TOTAL



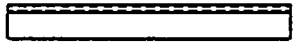
NOTE:

1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

AIR CIRCUIT, CONTROL 2 SECTION
SL-405
DWG.-90H60 ~ REV. A

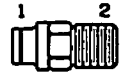
MATERIAL LIST

QTY : ONE
PT No. : 1094P56-01 [LEGRIS] OR EQUIV.
DESCRIPTION : 1/4ø O.D. x 0.040 WALL NYLON TUBE, BLACK
MATERIAL : NYLON '11'

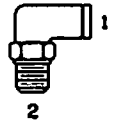


QTY : ONE
PT No. : 1A-078 [FREELIN-WADE] OR EQUIV.
DESCRIPTION : 1/2ø O.D. x 3/8ø I.D. SPIRAL WRAP, BLACK
MATERIAL : LOW DENSITY POLYETHYLENE

QTY : 9
PT No. : 12-425-0418 [NORGREN] OR EQUIV.
DESCRIPTION : BRASS ADP, PUSH-IN/MP (-4-2)
THD 1 : 1/4ø TUBE O.D.
THD 2 : 1/8 NPT



QTY : ONE
PT No. : 12-425-0428 [NORGREN] OR EQUIV.
DESCRIPTION : BRASS ADP, PUSH-IN/MP (-4-4)
THD 1 : 1/4ø TUBE O.D.
THD 2 : 1/4 NPT



QTY : 4
PT No. : 12-447-0418 [NORGREN] OR EQUIV.
DESCRIPTION : BRASS ADP, PUSH-IN/MP 90° SVL (-4-2)
THD 1 : 1/4ø TUBE O.D.
THD 2 : 1/8 NPT

QTY : 6
PT No. : 5408-4-2 [TOMPKINS] OR EQUIV.
DESCRIPTION : HYD ADP, MP/FMP (-4-2)
THD 1 : 1/4 NPT
THD 2 : 1/8 NPT

HYD FITTING ABBREVIATIONS
BHD - BULKHEAD
FMJC - FEMALE 37° JC
FMP - FEMALE PIPE
INS - INSERT OR BARB
L - LONG
LL - EXTRA LONG
MJC - MALE 37° JC
MP - MALE PIPE
ORB - STR THREAD O-RING BOSS
SVL - SWIVEL

NOTE:

1. THE 12P94 AIR LINE KIT TO BE PACKAGED IN PLASTIC BAG.
2. PT. No. 12P94 TO APPEAR ON PACKAGING.

AIR LINE KIT
ASSEMBLY
DWG.-12P94

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