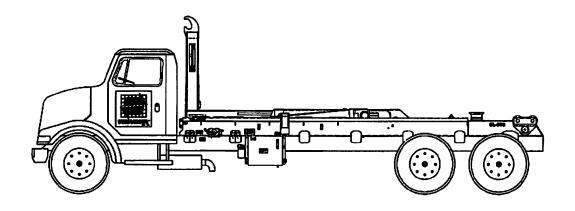


# **Model SL-655**

# Parts and Operations Manual



Hoist Serial Number:

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# **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 bolt 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. You 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.

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

# LIMITED WARRANTY STATEMENT

SwapLoader U.S.A., Ltd., (SwapLoader), warrants to the original purchaser of any new SwapLoader product shipped after October 1, 1999, for a period of thirty-six (36) months from the date of installation by an authorized SwapLoader distributor or service center, that such products are free of defects in material and workmanship. SwapLoader warrants to the original purchaser of any new product shipped before October 1, 1999, for a period of twenty-four (24) months from the date of installation 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.

Replacement or repair of parts will be provided for 36 months on SwapLoader products shipped on or after October 1, 1999 or for 24 months on SwapLoader products shipped prior to October 1, 1999, F.O.B. SwapLoader plant, subject to any applicable federal, state or local taxes. Labor charges are covered for a period of 90 days, whether shipped before or after October 1, 1999, from the date of installation 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 is valid only if the Warranty Registration card is returned within 15 days of installation of the SwapLoader hoist to SwapLoader, Des Moines, Iowa.

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

Warranty does not apply to defects caused by accident, misuse, alteration of design, improper installation or maintenance, repair, reinstallation, or any other cause beyond the control of SwapLoader.

Warranty as provided herein shall be the purchaser's exclusive and limited remedy, and SwapLoader shall in no event be liable for consequential or other damages.

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.

Customer is responsible for any freight, labor (beyond 90 days), or transportation charges incurred to repair the unit.

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.

# A

# **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. <u>DO NOT</u> 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 <u>MUST</u> be unloaded prior to performing any repairs or maintenance to the hoist. Also, <u>DO NOT</u> 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:

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.

 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 number and the hydraulic plumbing from the purpose.

Install the hydraulic pump and the hydraulic plumbing from the pump to the hydraulic tank and the 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 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 for the Model SL-655 hoist to be installed. The truck chassis should meet the following minimum specifications:

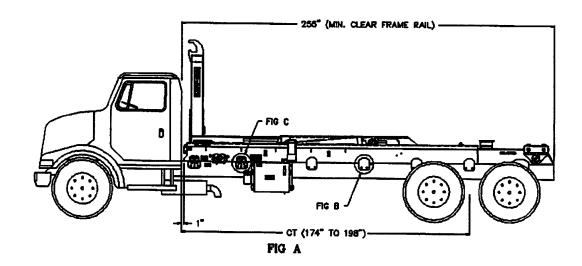
RBM for each frame channel: 2,750,000 in.-1b.

Total RBM: 5,500,00 in.-1b.

Minimum clear frame rail for mounting: 255" (See Fig. A)

Front Axle Cap: 18,000 lb. (Min)

Total Rear Axle Capacity: 44,000 lb. (Min) CT Dim: 174" to 198" (198" 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.)

Note: If a rear stabilizer is to be mounted to the unit, you should read the stabilizer installation section in this manual before cutting off any of the truck chassis frame rail.

There are three types of mount brackets used on the Model SL-655 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. 40H28) 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.

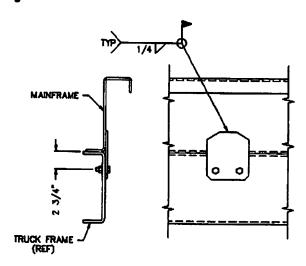


FIG B

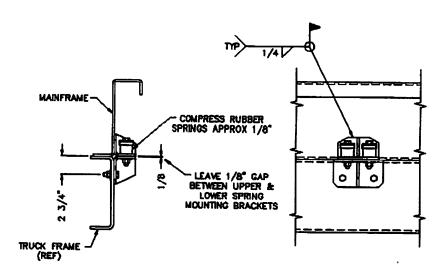


FIG C

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. 40H28.

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. 40H43) to the mainframe as indicated on Drawing No. 90H49 (Manual Control Assembly) with the fasteners provided.
- 2. Mount the hydraulic control valve assembly (Pt. No. 20P59) to the valve mount bracket as shown on Drawing No. 90H49 (Manual Control Assembly) with the fasteners provided.
- 3. Install the hydraulic adapters and connect the hydraulic tubing (Pt. Nos. 11P46 and 11P47) and the hydraulic hose assemblies (Pt. Nos. 11P56 and 11P57) to the control valve assembly as indicated on Drawing No. 90H36. 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 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. 90H49 (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. 20P65). The control cables supplied are 96 inches long. 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. 40H43) to the mainframe as indicated on Drawing No. 90H47 (Air Control Assembly) with the fasteners provided.
- 2. Mount the hydraulic control valve assembly (Pt. No. 90H41) to the valve mount bracket as shown on Drawing No. 90H47 (Air Control Assembly) with the fasteners provided.
- 3. Install the hydraulic adapters and connect the hydraulic tubing (Pt. Nos. 11P46 and 11P47) and the hydraulic hose assemblies (Pt. Nos. 11P56 and 11P57) to the control valve assembly as indicated on Drawing No. 90H36. 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. 20P73). The location should be such that the controls can be easily reached while operating the truck. You will need to fabricate some type of mounting bracket for the control handle assembly to support it and the air lines that will be running to and from the control valve.
- Install the air fittings and hose as shown on Drawing No. 90H44 (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. 90H35 (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 and hydraulic return hose assembly between the filter and the control valve assembly as shown on Drawing No. 90H37. The hose is provided with only one fitting installed so the hose can be shortened to an appropriate length.

## P.T.O. SELECTION

The next step is to select and install a drive line 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: 6.39 CID

Main Relief Press Setting: 3500 PSI

P.T.O. Torque Required: 360 ft-1bs (See Note 1)

Power at 1500 RPM: 85 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 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. The hydraulic pump provided with the SL-655 hoist is intended to be driven by a drive line shaft from the P.T.O. The drive line shaft on the mounting brackets for the pump are not provided. When mounting the pump, please follow these guidelines:
  - The pump counter line should be parallel with the P.T.O. shaft.
  - The angle of the drive line from the P.T.O. and pump shaft should be kept as small as possible.
- 2. Install the hydraulic fittings into ports on the hydraulic pump as shown on Drawing No. 90H37 (Hydraulic Sub-Assembly, Pump Circuit).
- 3. Connect suction hose assembly to the hydraulic tank (1 1/2" I.D. hose) and route to the pump as short and straight 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 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.

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. 4. This hose must be purchased from a local hydraulic hose assembly supplier per the following specification:

> Hose I.D.: 1 inch Working Pressure:

3500 PSI

Hose Fitting Threads: SAE 37° (JIC) 1 5/16-12

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

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

FRONT



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

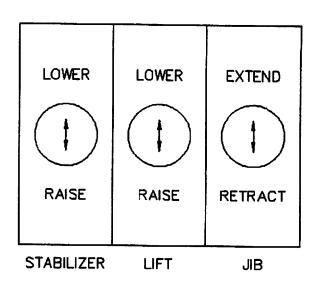


FIG A

- 6. Install all safety decals and product decals per Drawing No. 40H47 after final painting has been completed.
- 7. Fill out pre-delivery checklist.
- 8. Fill out warranty card.

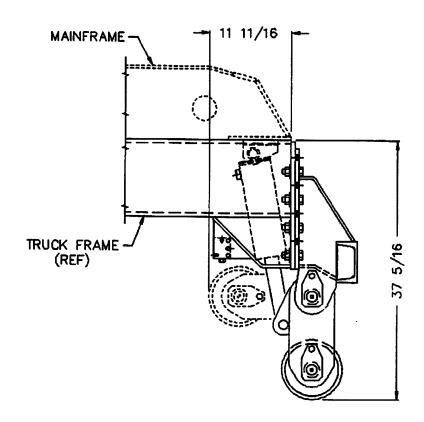
#### CAUTION:

The SwapLoader hoist must be used with 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:

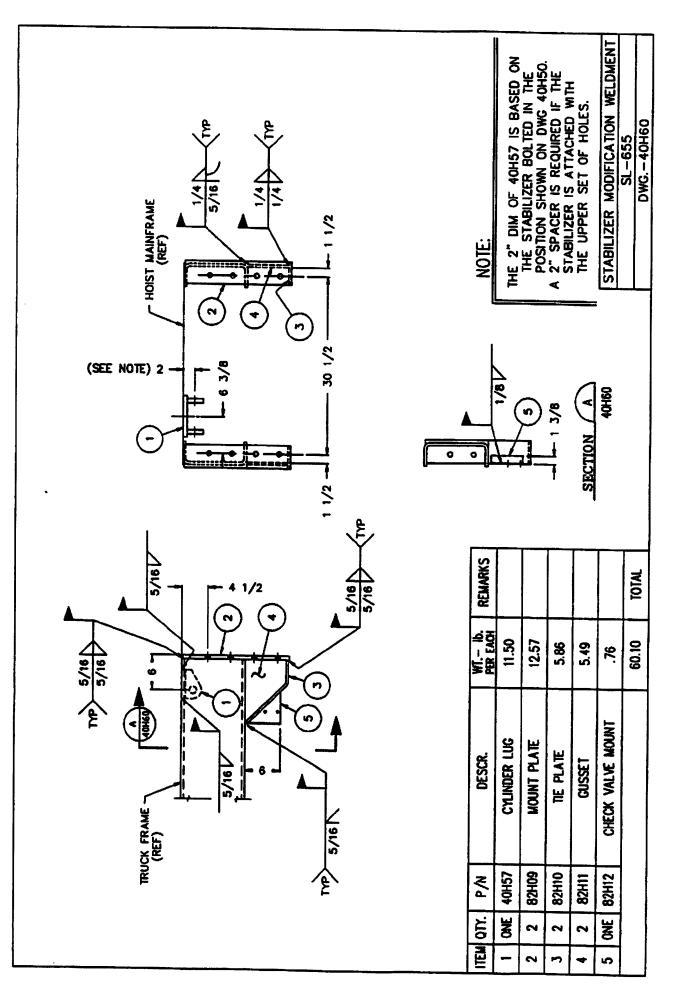
- Outside dimensions of the long sills match the guiding rollers on the hoist.
- The front hook dimensions are correct for the hoist.
- The rear hold-downs of the container latch into the hold-downs on the hoist.
- Check for any interference between the container and any part of the hoist (i.e.: Hydraulic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

# STABILIZER INSTALLATION (OPTION)

- 1. The hoist installation for a unit with the stabilizer option is much the same as that for the standard unit except that a three section hydraulic control valve is used. (See Drawing No. 90H50 for Manual Control or Drawing No. 90H48 for Air Controls for the correct installation and plumbing diagrams for a hoist with three control circuits.)
- 2. The following diagram gives the approximate position of the stabilizer roller from the top of the truck chassis frame rail with the mounts as provided by SwapLoader. When extended down, the roller should touch the ground only when the vehicle is loading a heavy container. Therefore, with the truck empty, leave 2 to 3 inches clearance between the ground and the roller.



Also, you will need to check that when the roller is up in the transport position it does not interfere with any part of the rear axle. If some interference will occur, you may need to slant the stabilizer mounting back from the vertical position until you leave sufficient clearance. This can be achieved by cutting the truck chassis frame rails off at an angle before installing the stabilizer mounts. Do not slant the mounting more than eight degrees.



3. Once the required position of the stabilizer has been determined, install the mounting plates as shown on Drawing No. 40H60 (Stabilizer Modification Wedment) on the following page. The weld size requirements are indicated on Drawing No. 40H60.

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 truck chassis frame rails are made from high strength low allow steel. Use an appropriate welding process.

Take care when installing the cylinder lug (Pt. No. 40H57) as the position of this item determines the final positions of the stabilizer roller. This item welds to the underside of the hoist mainframe. Spacers may be required to achieve the correct position. You should wait with installing this item until the stabilizer assembly is bolted on.

- 4. Install the stabilizer assembly with the fasteners provided as shown on Drawing No. 40H50 in the Parts List section of the manual.
- 5. Install the hydraulic adapters and hoses from the three section hydraulic control valve to the check valve and to the hydraulic cylinders shown on Drawing No. 90H51 (Hydraulic Subassembly Stabilizer Circuit). Tie up all loose hoses as required. Be sure the hoses are routed to avoid exhaust components and all moving components of the rear axles.
- 6. After the start up procedure has been completed on the hoist, verify the operation of the control lever in the cab with the diagram.

Operate the stabilizer through some cycles to remove the air from the hydraulic cylinder.



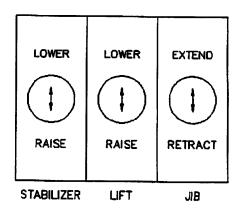


FIG A

# PREDELIVERY CHECK LIST SWAPLOADER U.S.A. LTD.

Deal		Date:
I.	RECORD THE FOLLOWING	INFORMATION:
	SwapLoader Hoist:	Model No.:
	Truck Chassis:	Identification No.: GVW: CA (Cab to Axle): Distance From Center Line of Rear Axle to Rear of Hoist:
	PTO:	Make: Model: Serial No.: % of Engine RPM:
	Hydraulic Pump:	Make: Model: Serial No.:
II.	INSTALLATION TO CHAS	
	If yes, please descr	1De
	All bolts check	ed for proper tightness.
	Please include Be sure to incl	photos of the hoist installed on the truck chassis. ude at least one photo from each side.
III.	CONTROLS	
	Controls easy to Movement of con-	o reach from diver's seat. trols correct per installation instructions.

Page	2
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:
	UpSec. DownSec.
	UpSec. DownSec.  Cycle time for load/unload mode:     UnloadSec. LoadSec.  Filter pressurePSI  Main pressure, controls in neutralPSI  Main moliof pressure
	Filter pressure PSI
	Main pressure, controls in neutralPSI
	Main relief pressure PSI Main pressure while extending lift cylinders (bottomed out) PSI
	main pressure while extending lift cylinders (bottomed out)PSI
٧.	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 40H47.
ADDIT	TION COMMENTS:

Send completed form to: SwapLoader U.S.A., Ltd. 1800 N.E. Broadway Avenue, Box D Des Moines, IA 50316-0386

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

- 1. Retract the jib (right control backward). Then, tilt the arm backward (left control backward center control if hoist is equipped with an additional circuit). See Fig. A.
- 2. Move the truck backwards until the hook engages the curved bar of the container. NEVER EXTEND THE JIB to reach the proper catching height, rather tilt the arm.
- 3. If you are lifting a heavy load which would lift the front end of the truck off the ground, then you must lower the stabilizer if the unit is equipped with one.



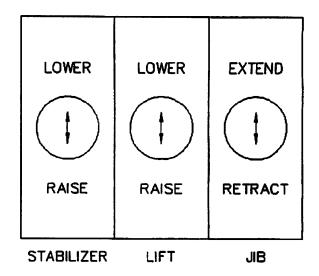


FIG A

- 4. Tilt the arm forward (left or center control forward), making sure the curved bar is securely attached to the hook. Release the brakes of the truck and steer to get the truck correctly aligned with the container. Watch the container rails which must come to rest centered on the rear rollers. Do not extend the jib during lifting.
- 5. When the container is resting on the frame, move the jib forward all the way to ensure the container is locked on (right control forward).
- 6. Raise the stabilizer and disengage the P.T.O.

#### **DUMPING**

- 1. Again move the jib forward (right control forward) to ensure that the container is locked.
- 2. Extend the main lift cylinders (left or center 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 or center control backward). When the container touches the ground, release the brakes to free the truck for forward movement caused by the container.

#### WARNING:





- 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
  - Lifting hook on jib
  - Jib slide top, bottom, and side guides
- 2. Check hydraulic oil level
- Check hydraulic hose and fittings for leaks. Also check hydraulic hose 3. for wear. Repair and/or retighten as necessary.

# MONTHLY SERVICE (200 OPERATIONS)

- 1. Lubricate with grease
  - Fittings on lift cylinders (quantity: 4)

  - Front pins on rear pivot joint weldment (quantity: 2)
     Fittings on rear pivot pin, roller mount assembly, and rollers (quantity:8)
- Check all bolts and retighten as required. 2.
- 3. Check adjustments on safety lock mechanism. Grease slide tube if necessary.

### YEARLY SERVICE

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

# 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

Keystone

KLC-5

ARCO

Duro AW 46

Lubriplate

HO-1

Chevron

AW Hydraulic Oil 46

Mobil 1

DTE 25

Cities Service

AW Hydraulic Oil 46

**Phillips** 

Magnus A 011 46

Conoco

Super Hydraulic Oil 46

Shell

Tellus 46

Exxon

Nuto H 46

Sun

Sun Vis 747 (821 WR)

Gulf.

Harmony 46 AW

Texaco

Rando Oil HD 46

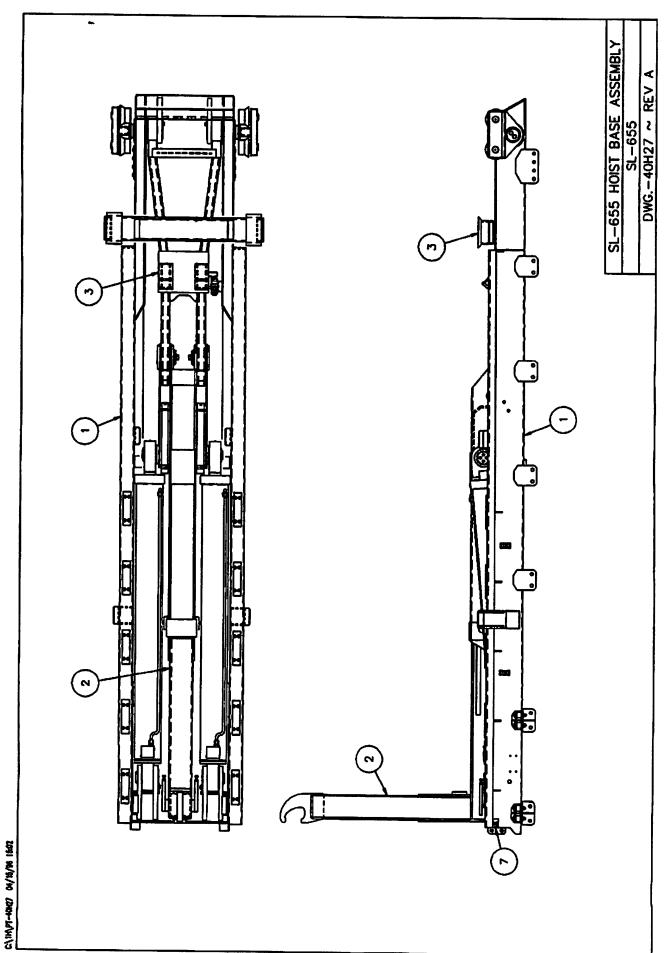
Kendall

Kenoil R & 0 AW-46

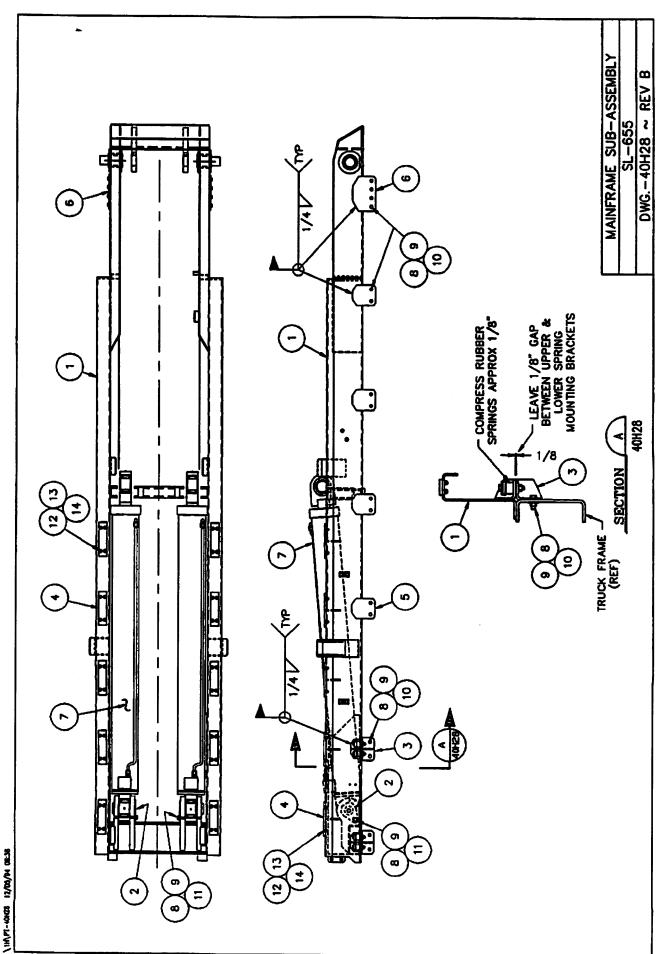
Union

Unax AW 46

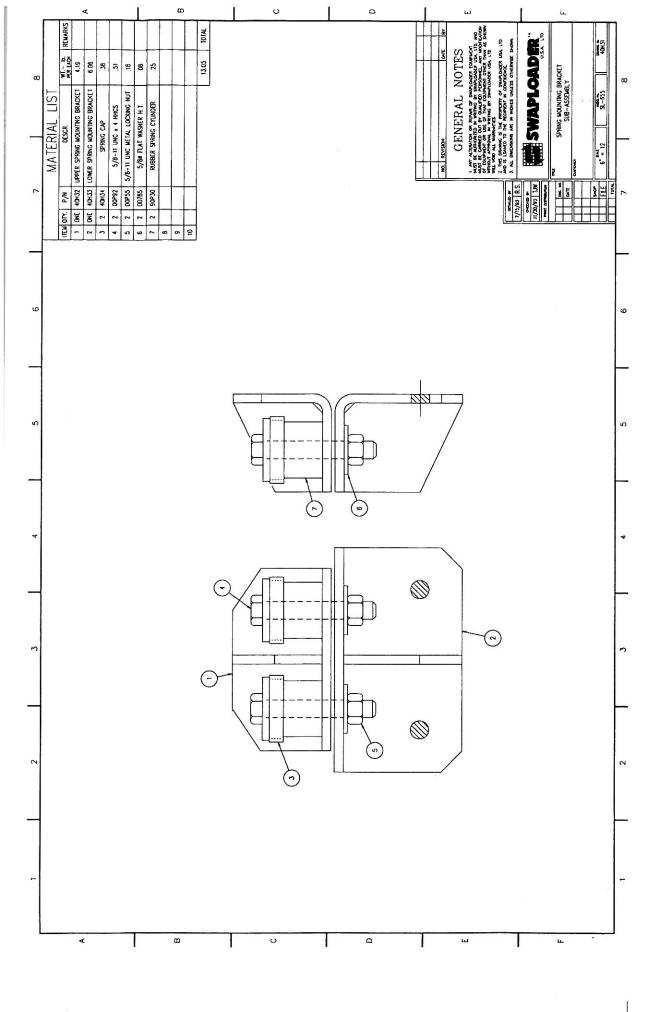
## PARTS LIST



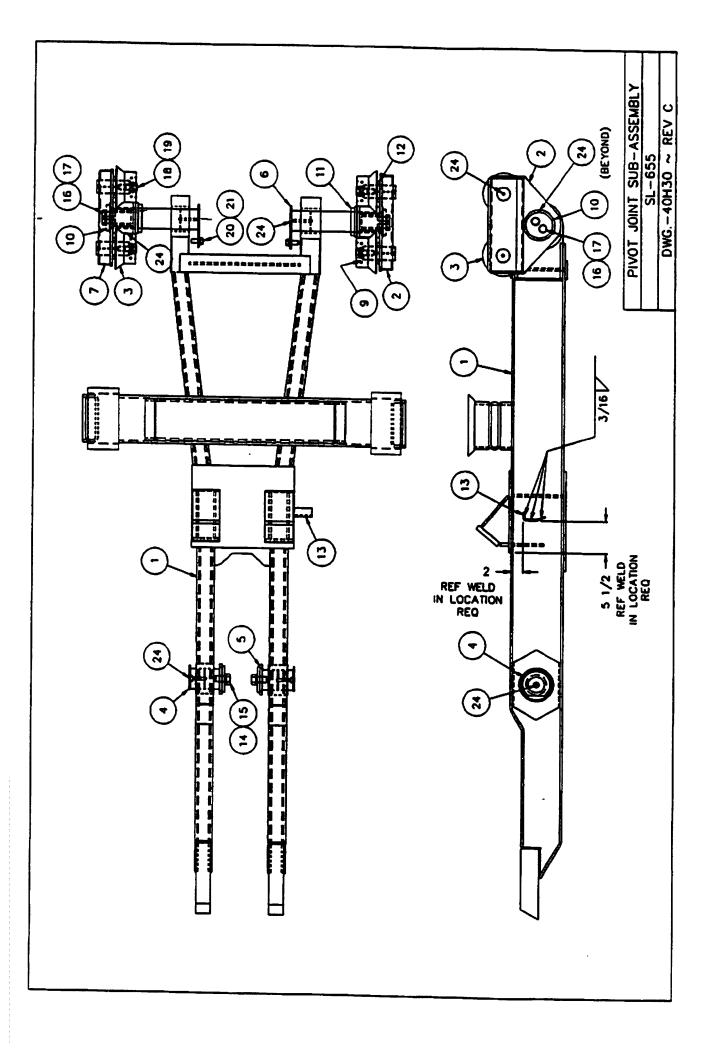
REVISION	REMARKS				NOT		NOT SHOWN												•					TOTAL
	WT Ib. Per each	3423.85	2298.28	1274.25	1	1	248.89	10.																7245.28
SL-655 HOIST BASE ASSEMBLY DWG40H27	DESCR.	MAINFRAME SUB-ASS'Y	A,SSY-BINS BIR DIAODSETEL	Y'ssa-Bus thou tovia	A,SSY TO330	PARTS & OPER MANUAL	BASE HYDRAULIC ASS'Y	SERIAL TAG													•			
SL-68	P/N	40H28	40H29	40H30	40H47	40H49	90H35	90P50																
	QTY.	ONE	ONE	ONE	ONE	ONE	ONE	ONE																
	IEV	1	2	3	4	2	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	



REVISION B	REMARKS								F-436	CR-8	CR-C			GR-8	BRASS									TOTAL
	WT.— Ib. Per each	1774.67	29.43	13.05	ır.	5.53	9.26	720.00	80.	Œ.	81.	90'	90.	90.	n.									3423.85
MAINFRAME SUB-ASSEMBLY DWG40H28	DESCR.	MAINFRAME WOMT	MAINFRAME PIN WOMT	SPRING MOUNTING BRACKET	12" WEAR BLOCK	FRONT BRACKET	REAR BRACKET	HYD CYL 86 x 87	5/80 FLAT WASHER HT	5/8-11 x 2 HHCS	5/8-11 LOCKING HEX NUT	5/80 LOCK WASHER	3/8¢ LOCK WASHER	3/8-16 HEX NUT	3/8-16 x 1 1/4 FL HD SCR									
MAI	P∕N	40H07	40H18	40H31	61H78	81H23	81H24	20P47	00785	69dD0	00P55	00767	00755	00P14	00P68									
	QTY.	ONE	7	7	01	8	2	2	¥	75	32	2	\$	9	\$									
	IEM	-	2	2	4	2	9	7	∞	6	2	=	12	13	=	15	91	17	18	19	20	21	22	



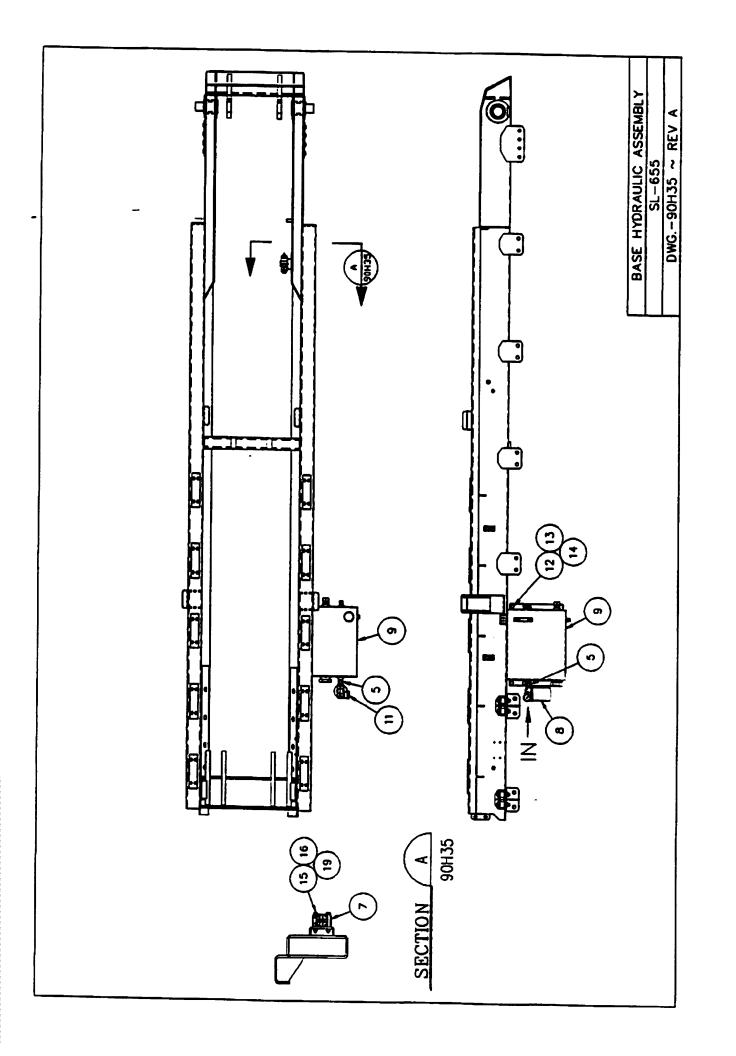
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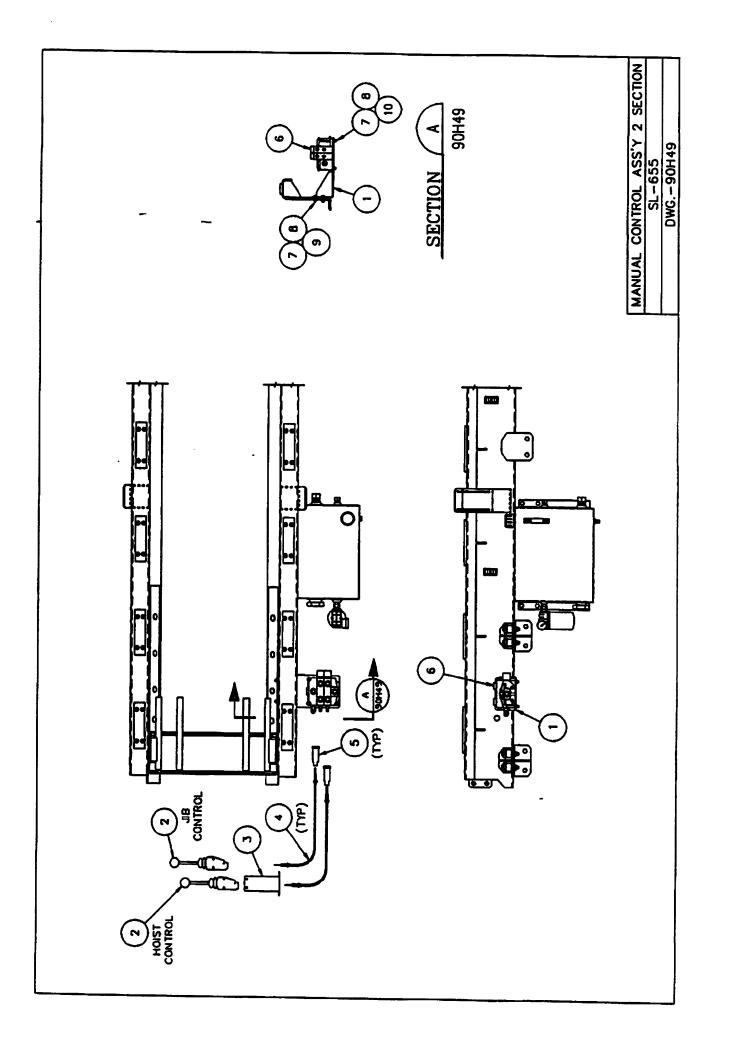
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REVISION	REMARKS				1										GR-8		GR-8		GR-8		GR-8			TOTAL
	WT. – Ib. PER EACH	940.26	57.77	17.90	16.07	2.73	44.08	57.77		.63	2.11	1.58	07.	1.45	02.	.13	17	01.	.48	11.	13.	80.	10.	1274.25
T JOINT SUB-ASSEMBLY DWG40H30	DESCR.	PIVOT JOINT WOMT	ROLLER MOUNT L.H. WOMT	ROLLER ASS'Y	TMOW NIG TOVIA	PIN CAP MOMT	MAIN PIYOT PIN WOMT	ROLLER MOUNT R.H. WOMT		ROLLER RETAINER	ROLLER MOUNT RETAINER	ROLLER MOUNT SPACER	ROLLER SPACER	SAFETY VALVE RAMP	1-8 x 2 HHCS	10 LOCK WASHER	3/4-10 x 1 3/4 HHCS	3/40 LOCK WASHER	7/8-9 x 1 1/2 HHCS	7/8¢ LOCK WASHER	5/8-11 x 1 3/4 HHCS	5/80 LOCK WASHER	1/8 NPT ZERK STR	
PIVOT	P/N	40H12	40H19	40H21	40H23	40H24	40H25	40H45		61H41	81H15	81H16	81H22	81H70	00P87	00P88	00P89	69/00	00P65	00P66	00P91	00767	90P03	
	OTY.	ONE	ONE	+	2	2	2	ONE		4	2	2	4	ONE	2	2	4	+	+	4	2	2	10	
	ITEM	-	2	3	þ	2	9	7	8	6	0	11	12	13	7	15	16	17	18	19	20	21	24	
1																								'

REVISION B	REMARKS													BRASS	BRASS	GR-8		GR-8	GR-8		CR-8			TOTAL
	WT.— Ib. Per each	798.56	948.02	97.15	29.97	6.43	.26	1.13	7.02	2.11	04.	5.75	385.00	.12	60°	11.	90.	.20	23.	20'	æ.	90.	10.	2298.68
TELESCOPIC JIB SUB-ASSMEBLY DWG40H29	DESCR.	TINOW BIL	OUTER TUBE WOMT	SAFETY LATCH ASS'Y	CLAMP PLATE WOMT	1 3/40 CYL PIN WOMT	WEAR BLOCK	JB COVER PLATE	CLAMP LINER	CYLINDER RETAINER	CYLINDER PIN CAP	1 3/46 CYLINDER PIN	HYD CYL 50 x 52	3/8-16 x 1 1/2 FL HD SCR	3/8-16 x 3/4 FL HD SCR	3/8-16 x 3/4 HHCS	3/8¢ LOCK WASHER	1/2-13 x 1 1/4 HHCS	5/8-11 x 1 1/4 FL HD SOC SCR	1/2# LOCK WASHER	5/8-11 x 2 HHCS	5/80 LOCK WASHER	EXT RET RING FOR 1 3/40	
TELL	P/N	40H01	40H02	40H35	40H44	40H48	60H11	62411	80H35	81H09	81H20	81H21	20P46	00P58	00P79	00003	00755	00P31	00995	09/00	69d00	79/00	00P97	
	OTY.	ONE	ONE	ONE	ONE	SKE SKE	2	ONE.	2	2	2	SE	SE SE	80	80	2	2	<b>&amp;</b>	2	80	9	9	S.	
	ITEM	_	2	2	4	5	9	7	æ	6	5	=	12	13	14	15	9	12	<b>8</b> 2	13	92	21	22	

REMSION A	REMARKS									8-XD	8-XD	GR-8												TOTAL
	WT Ib. PER EACH	69.50	6.93	¥£"	89'8	10	<b>20</b> °	10	90	67.	81.	8£.												96.99
SAFETY LATCH ASSEMBLY DWG40H35	DESCR.	SAFETY LATCH TUBE	CONNECTION BAR	CONNECTION BAR PIN	RELEASE LEVER	EXT RET RING FOR 3/40	1/20 FLAT WASHER	1/86 x 1 COTTER PIN	5/8¢ LOCK WASHER	5/8-11 UNC x 1 1/2 HHCS	5/8-11 UNC HEX NUT	5/8-11 UNC x 2 1/2 HHCS												
SA	₽À	40H36	40H41	40H42	15H18	8Z400	2//00	00P26	00767	00056	00P24	01P09												
	OTY.	ONE	ONE	ONE	2	7	3	3	4	4	2	2												
	ITEM	_	7	2	4	2	9	1	8	6	10	=	12	13	14	15	16	11	18	19	20	12	22	



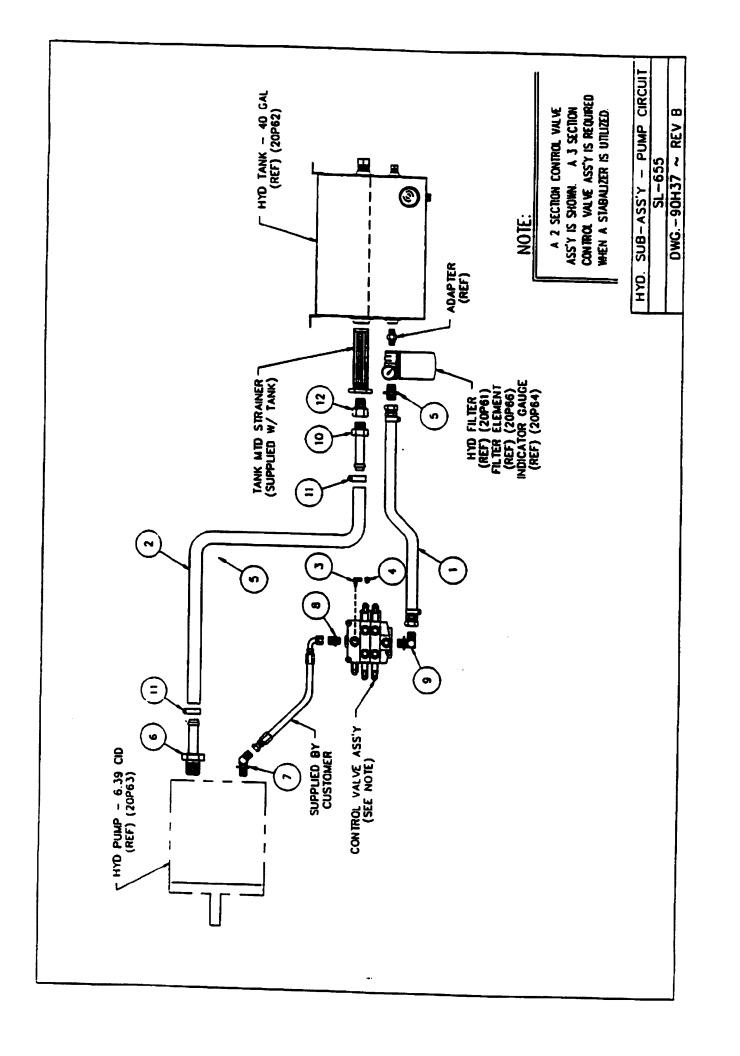
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REVISION	REMARKS		SHOW	NOT		5404-20					NOT		F-436	CR-C	CR-8		GR-8			GR-8				TOTAL
	WT.— IB. PER EACH		67.99	16.96		02.		5.20	4.50	87.00	63.50	1	80.	.18	.33	50.	.10			.19				248.89
E HYDRAULIC ASSEMBLY DWG90H35	DESCR.		HYD SUB-ASS'Y CYL CIRCUIT	HYD SUB-ASS'Y PUMP CIRCUIT		ADP, HYD PIPE NIPPLE		HJD VALVE	אגס טרובע	HYD TANK	HYD PUMP, GEAR	FILTER INDICATOR GAUGE	5/80 FLAT WASHER HT	2/8-11 FOCKING HEX NNT	5/8-11 x 2 HHCS	3/80 LOCK WASHER	3/8-16 HEX NUT			3/8-16 x 3 1/4 HHCS				
BASE	P/N		90H36	90H37		11P78		20P60	20P61	20P62	20P63	20P64	00785	90P55	69dD0	00755	00P14			01P01				
	QTY.		ONE	ONE		ONE		3NO	ONE	SE	ONE	ONE	4	4	+	2	2			2				
	ITEM	-	2	3	4	2	9	7	8	<b>o</b>	0	11	12	13	<b>*</b> -	15	91	17	18	19	20	21	22	



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REVISION	REMARKS								GR-8	CR-8	GR-8													TOTAL
-	WT Ib. Per each	13.13	2.80	4.05	2.00	.50	46.00	.05	01.	.14	.22													76.05
AL CONTROL ASS'Y 2 SECTION DWG90H49	DESCR.	VALVE MOUNT BRACKET WOMT	REMOTE VALVE CONTROL HANDLE	CONTROL HANDLE MOUNT CONSOLE	CONTROL CABLE 96" LG	BONNET CONNECTION KIT	HYD VALVE ASS'Y	3/8¢ LOCK WASHER	3/8-16 HEX NUT	3/8-16 x 1 1/2 HHCS	3/8-16 x 4 HHCS													
MANUAL	₹	40H43	20P08	20P09	20P40	20P65	20P59	00755	00P14	00P44	00P99													
	<u>9</u>	SK SK	2	ONE	2	2	ONE	7	7	4	3			-										
	ITEM	-	2	'n	4	2	9	7	8	6	10	=	12	13	4-	15	91	17	18	19	20	21	22	

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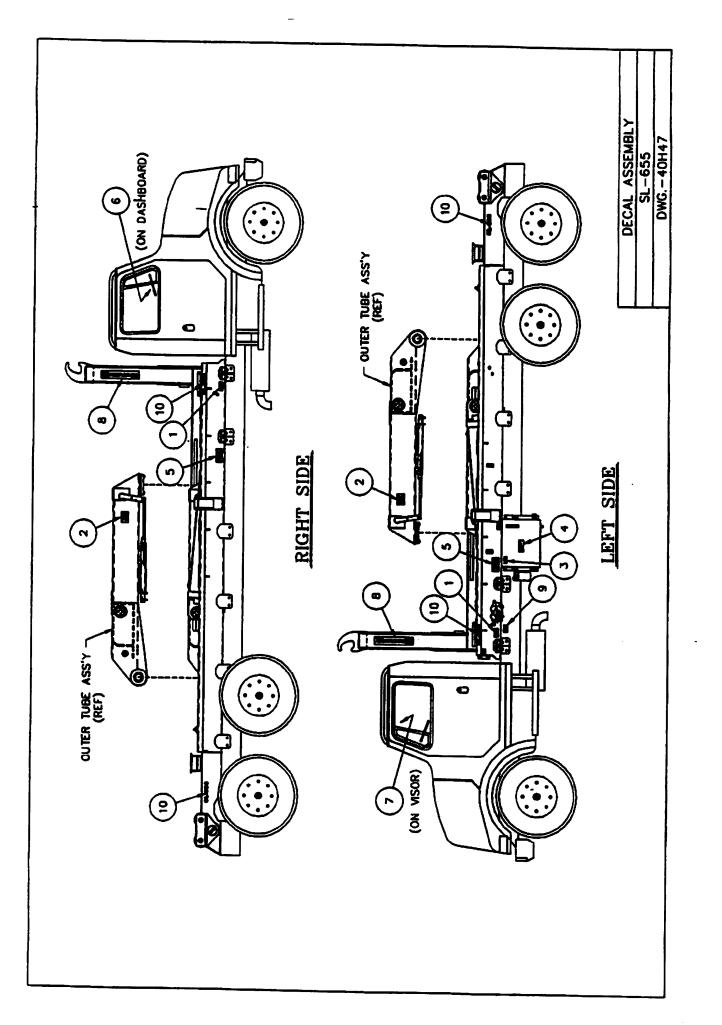
REVISION D	REMARKS											6400-12	2704-LN-12	21-TT-1089	6801-12	6400-12-10	6500-12	2700-LN-12						TOTAL
CIRCUIT	WT Ib. PER EACH	7.48	7.87	2.00	14.25	2.36	2.72	4.03	2.07	3.08	11.20	30	.40	04'	04	0£.	04'	.40						68.49
SUB-ASSEMBLY - CYLINDER DWG90H36	DESCR.	HYD TUBING - REAR LOWER	hyd Tubing — rear upper	HOSE ASS'Y 3/4 V.H.P. x 23	HOSE ASS'Y 3/4 V.H.P. x 192	HOSE ASS'Y 3/4 V.H.P. x 28	HOSE ASS'Y 3/4 V.H.P. x 33	HOSE ASS'Y 3/4 V.H.P. x 51	HOSE ASS'Y 3/4 V.H.P. x 24	HOSE ASS'Y 3/4 V.H.P. x 38	HOSE ASSY 3/4 V.H.P. x 150	AOP, HYO O-RING / M JIC STR	ADP, HYD M JIC BHD RUN TEE	ADP, HYD O-RING / 14 JIC 90' EXT	- ADP, HYD 0-RING / 14 JIC 90	AOP, HYD O-RING / M JIC STR	ADP, HYD IL JIC / FIN JIC SMINEL 90"	ADP, HYD M JC BHD UNION						
HYDRAULIC	P/N	11946	11P47	11P51	11P55	11P56	11P57	11P58	11P59	11967	11P68	10P90	11P61	11P62	10P36	11P64	11P65	11P66						
\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	OTY.	ONE	ONE	ONE	3NO	3KO	ONE	7	ONE	ONE	용	4	2	2	4	2	. 4	2						
	ITEM	1	2	3	4	2	9	7	89	6	5	=	12	13	14	15	16	17	18	19	20	21	22	



REVISION B	REMARKS			2501-4-4	304-C-4	2404-20-20	4604-24-20	6802-16	6400-16-12	6801-20-16	4404-24-24	TBC-200	5406-32-24										
CIRCUIT	WT Ib. PER EACH	3.76	9.60	8.	01.	07.	\$	8.	<del>Q</del> .	8.	.40	.15	.95										
SUB-ASSEMBLY - PUMP DWG90H37	DESCR.	HOSE ASS'Y 1 1/4 LP x 36	HOSE ASS'Y 1 1/2 LP X 120	ADP. HYD IN PIPE / M JC 90"	ADP, HYD JIC CAP	ADP, HYD M PIPE / M JIC STR	ADP, HYD O-RING HOSE INSERT	ADP, HYD O-RING / M JC 45"	ADP, HYD O-RING / M JIC STR	ADP, HYD O-RING / M JIC 90"	ADP, HYD M PIPE HOSE INSERT	T-BOLT CLAMP, 20	ADP, HYO MP / FP REDUCER										
HYDRAULIC	₹	11P69	11P71	10P37	10P38	10P86	11P72	10P31	11P74	11P75	11P76	11P77	11990										
17DR	97.	SE	SE SE	ONE	ONE	ONE	ONE	SE SE	ONE	S S	ONE	2	ONE										
	ITEM	-	2	2	4	S	9	7	80	6	2	=	12	13	14	15	16	11	18	19	20	21	22

TOTAL

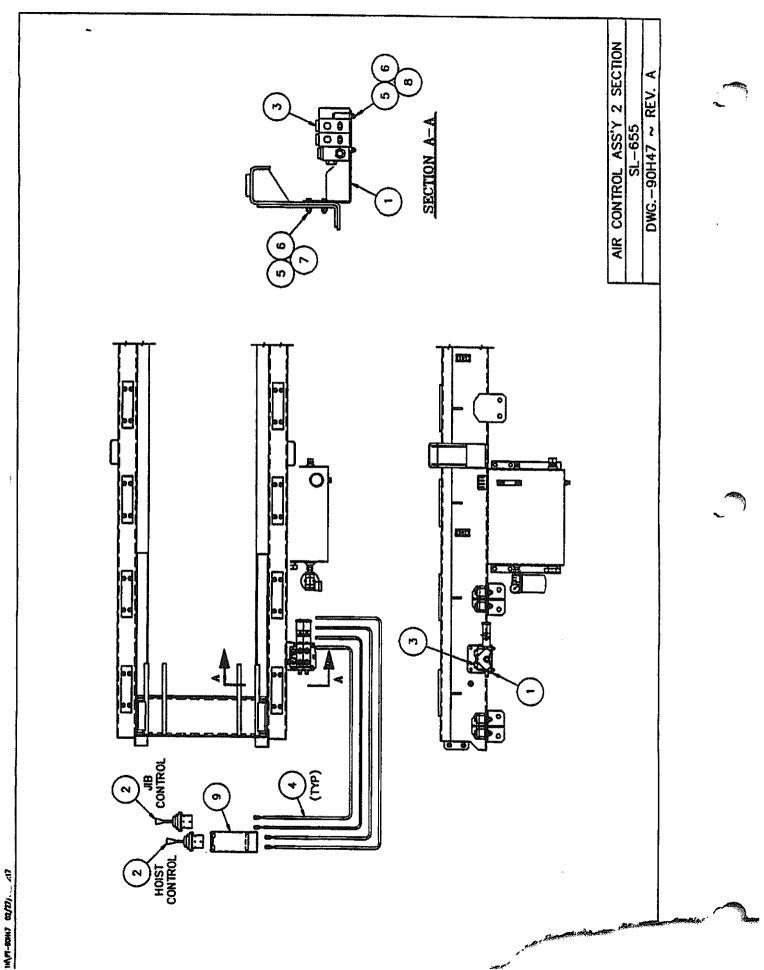
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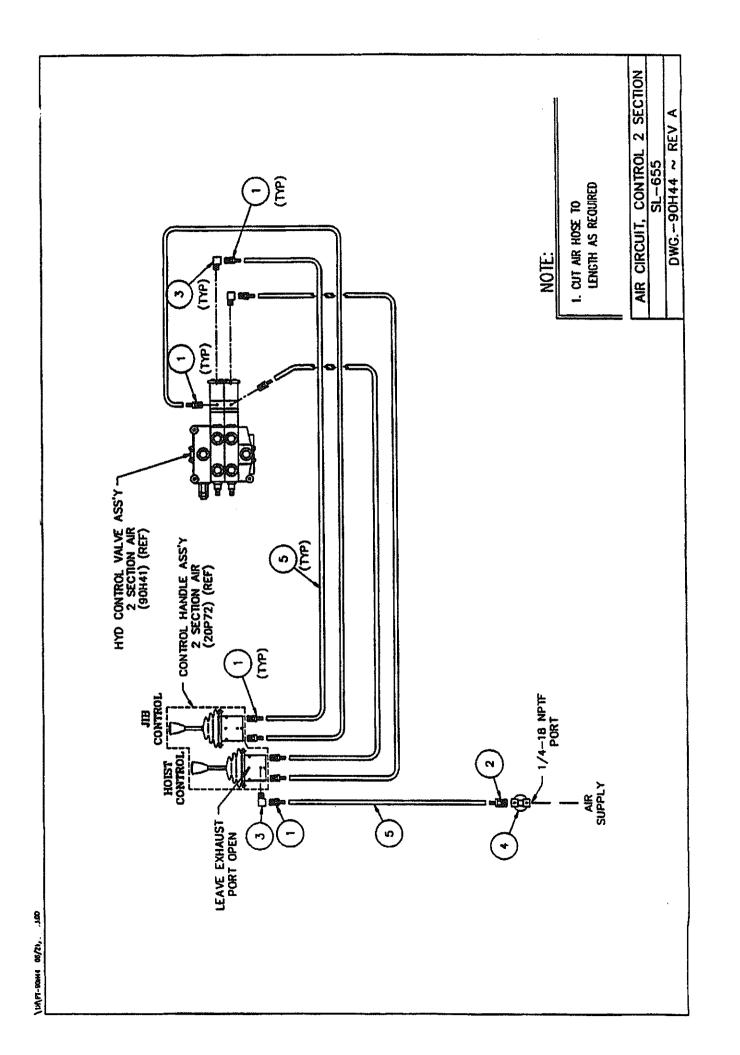
REVISION	REMARKS																							TOTAL
	WT Ib. PER EACH																							. !
DECAL ASSEMBLY DWG40H47	DESCR.	OPR & SERV MANUAL	HOIST - BODY SPEC	234S 710 OLH	HYD OIL FLAMMABLE	HOIST FALLING	LEVER CONTROL	SAFETY INSTRUCTIONS	SWAPLOADER - JB	RELIEF VALVE	SF-655													
	P/N	90P07	90P08	90P09	90P10	90P11	90P12	90P13	90P14	90P18	90P31													
	OTY.	2	2	ONE	ONE	2	ONE	ONE	3	ONE	4			•										
	ITEM	1	2	3	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	

## **OPTIONS**

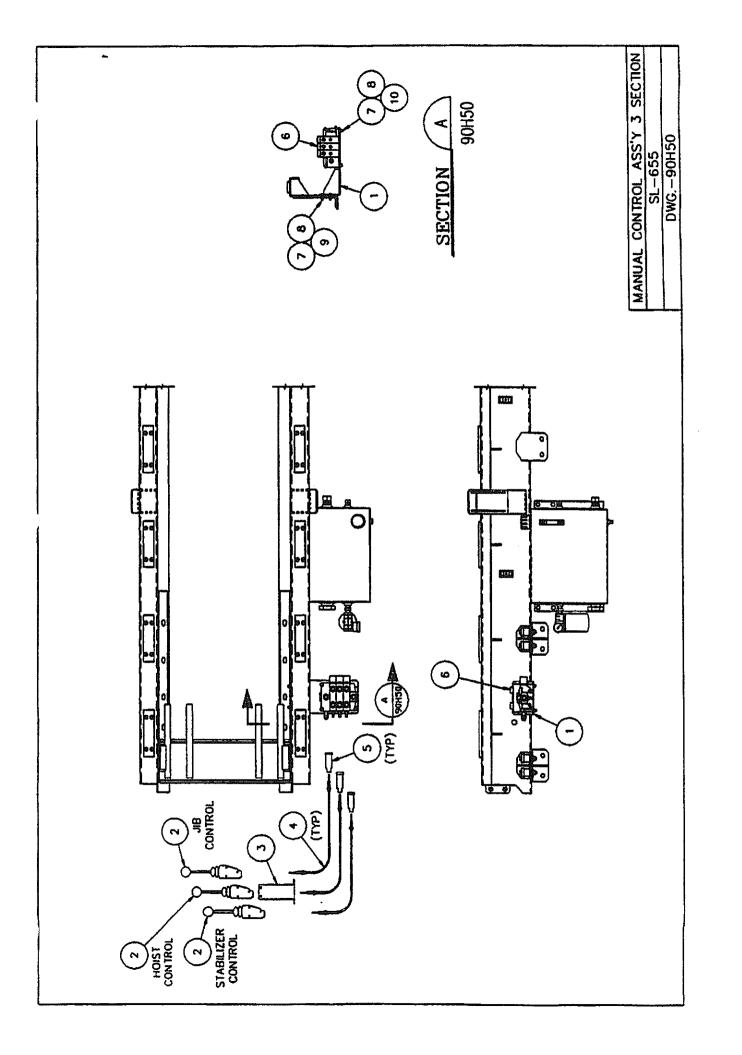
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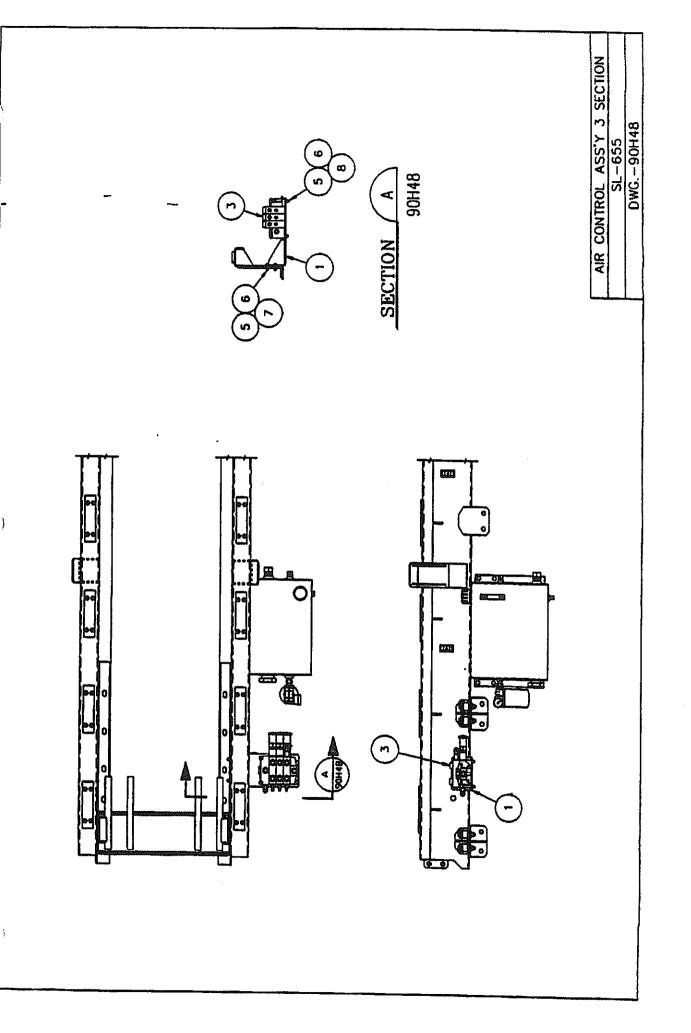
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REVISION	REMARKS						GR-8	GR-8	GR-8															TOTAL
	WT 15. PER EACH	13.13	1.60	49.00	6.73	.05	.10	41.	.22	6.23														78.96
CONTROL ASS'Y 2 SECTION DWG90H47	DESCR.	VALVE MOUNT BRACKET	CONTROL HANDLE ASS'Y	HYD VALVE ASS'Y	AIR CIRCUIT, CONTROL VALVE	3/8ø LOCK WASHER	3/8-16 HEX NUT	3/8-16 x 1 1/2 HHCS	3/8-16 x 4 HHCS	AIR CONTROL CONSOLE ASS'Y														
AIR C	₽	40H43	20P72	90H41	90H44	00755	00P14	00P44	00P99	51H27														
	OTY.	SE SE	SE SE	SE	ONE	7	7	÷	2	SE														
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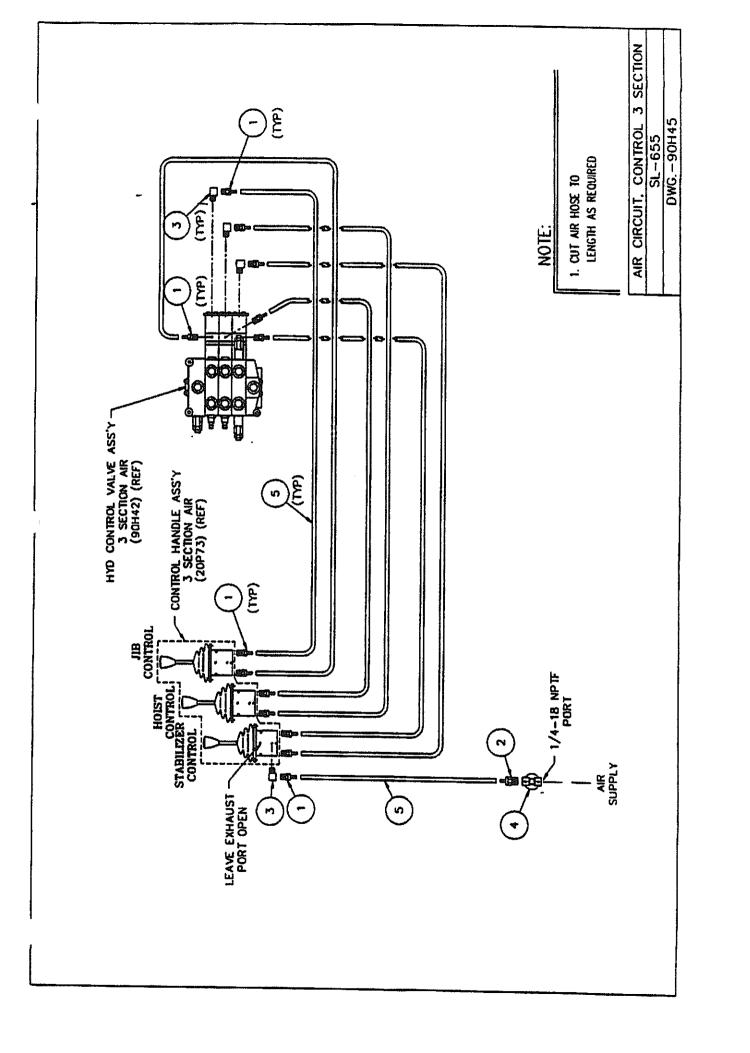
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REVISION	REMARKS	100048102	100048-104	3400-2	WM778A	H20104													•					TOTAL
	WT Ib. PER EACH	.00	10.	10.	.59	6.00																		6.72
CIRCUIT, CONTROL 2 SECTION DWG 90H44	DESCR.	FITTING, AIR 1/8-27 NPT	FITTING, AIR 1/4-18 NPT	ADP, AIR MP/FP 90" BRASS	AIR PRESSURE PROTECTION VALVE	AIR HOSE, 1/46 x 75 ft																		
AIR C	P∕N	11P80	11P81	11P82	20P74	90443																		
	OTY.	6	SE	3	ONE	ONE																		
	ITEM	-	2	3	4	2	9	7	8	6	10	11	12	13	14	15	16	17	18	13	20	21	22	



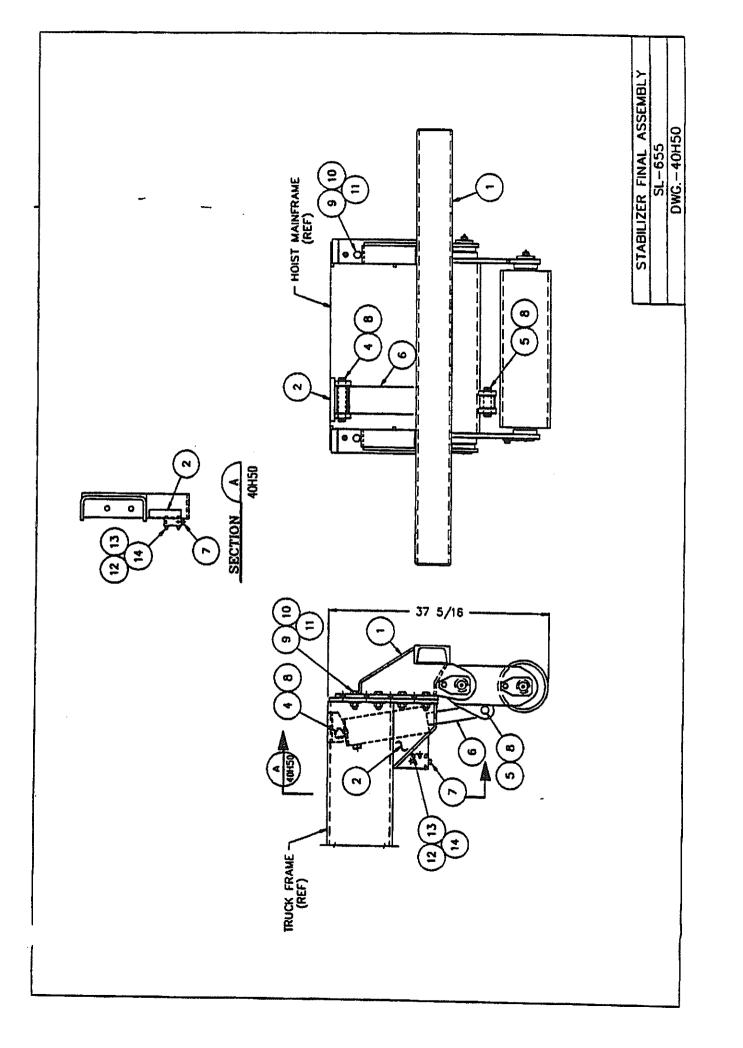
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REMSION	REMARKS								GR-8	GR8	GR-8													TOTAL
	WT 1b. PER EACH	14.15	2.80	4.75	2.00	.50	58.00	.05	-10	.14	.22													95.07
AL CONTROL ASS'Y 3 SECTION DWG90450	DESCR.	VALVE MOUNT BRACKET WOMT	REMOTE VALVE CONTROL HANDLE	CONTROL HANDLE MOUNT CONSOLE	CONTROL CABLE 96" LG	BONNET CONNECTION KIT	HYD VALVE ASS'Y	3/8¢ LOCK WASHER	3/8-16 HEX NUT	3/8-16 x 1 1/2 HHCS	3/8-16 x 4 HHCS													
MANUAL	₹	40H58	20P08	20P78	20P40	20P65	20P70	00755	00P14	00P44	00P99													
	O]	몽	М	ONE	3	3	ONE	7	7	4	3			-										
	ITEM	-	7	3	4	2	ထ	7	80	6	10	=	12	13	14	15	16	17	82	19	70	21	22	



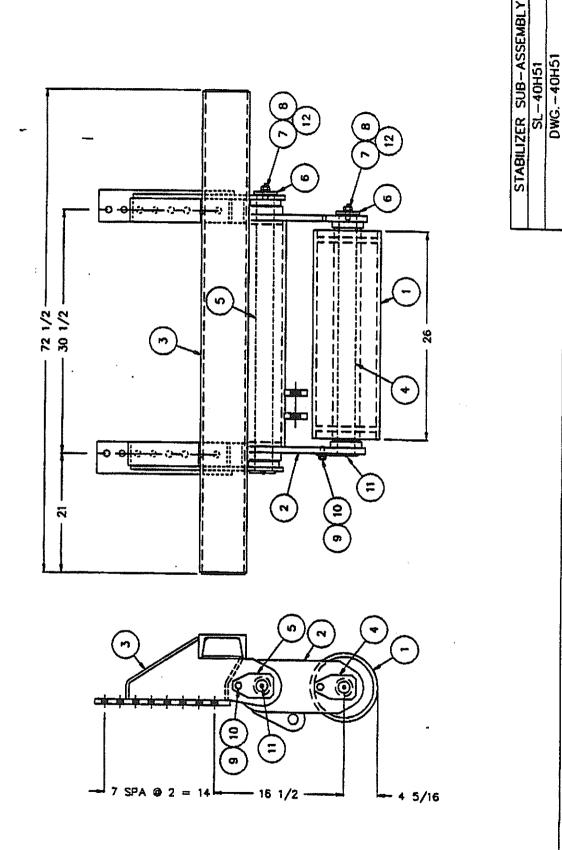
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REVISION	REMARKS		SEOF SEOF				GR8	GR8	GR-8										- The state of the					TOTAL
	WT Ib. PER EACH	14.15	2.40	62.50	8.77	.05	01.	.14	22															90.09
CONTROL ASS'Y 3 SECTION DWG90448	DESCR.	VALVE MOUNT BRACKET WOMT	CONTROL HANDLE ASS'Y	HYD VALVE ASS'Y	AIR CIRCUIT, CONTROL VALVE	3/8¢ LOCK WASHER	3/8-16 HEX NUT	3/8-16 x 1 1/2 HHCS	3/8-16 x 4 HHCS															
AIR	P,¥	40H58	20P73	90H42	90H45	00755	00P14	00P44	00299															
	OŢ,	ᇂ	뜅	器	ONE	7	^	4	3					4										
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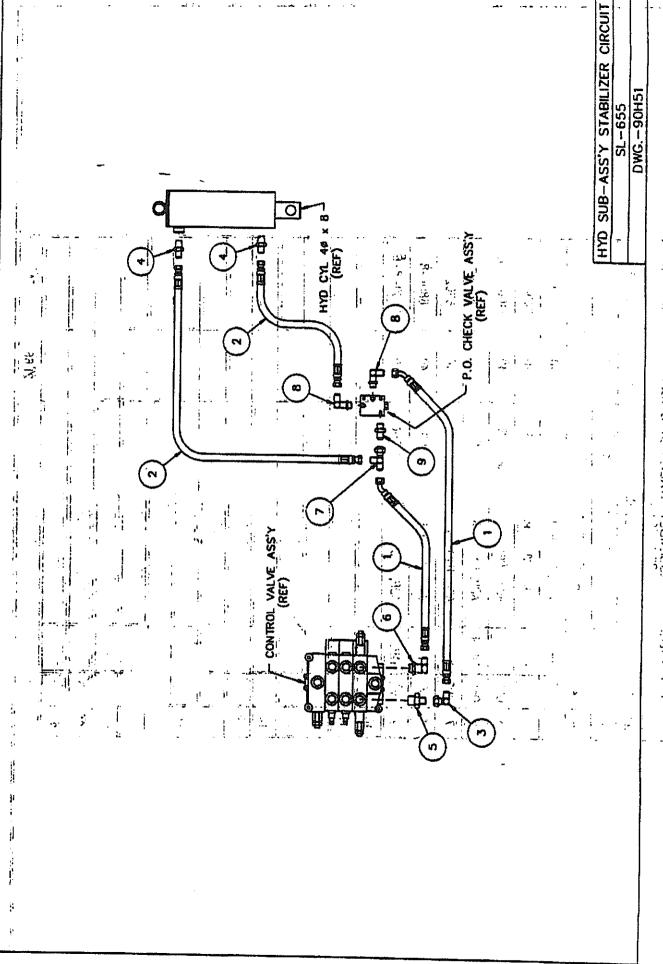
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REVISION	REMARKS	10004B-102	100048-104	3400-2	WA778A	H20104																		TOTAL
	WT Ib. PER FACH	10:	9.	9.	.59	8.00																		8.77
CIRCUIT, CONTROL 3 SECTION DWG90H45	DESCR.	FITTING, AIR 1/8-27 NPT	FITTING, AIR 1/4-18 NPT	ADP, AIR MP/FP 90' BRASS	AIR PRESSURE PROTECTION VALVE	AIR HOSE, 1/40 x 100 ft																		
AIR (	P.N	11P80	11P81	11P82	20P74	90H46																		ļ
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REVISION	REMARKS			NOT CHOWN						GR-8	F-436	GR-C	CR-8		GR-8									TOTAL
	WT Ib.	510.75	60.10	21.66	2.52	1.65	35.00	1.00	.03	.50	.10	.22	.12	,0°	.00 .00									639.86
STABILIZER FINAL ASSEMBLY DWG40H50	DESCR.	STABILIZER SUB-ASS'Y	STABILIZER MODIFICATION WOMT	STABILIZER HYD CIRCUIT	UPPER CYLINDER PIN	LOWER CYLINDER PIN	40 BORE x 8 STROKE HYD CYL	P.O. CHECK VALVE	HITCH PIN	3/4-10 x 2 1/2 HHCS	3/46 FLAT WASHER HT	3/4-10 LOCKING HEX NUT	5/16-18 x 2 HHCS	5/16ø LOCK WASHER	5/16-18 HEX NUT				`					
STA	P/N	40H51	40H60	90H51	82H03	82H04	20P57	20P76	07406	00P93	00786	00P72	01P08	00752	00P20									
	QTY.	SE	ONE	ONE	S	ONE	ONE	SK OK	4	8	8	8	2	7	2									
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REVISION	REMARKS									GR-8		-				and the second s								TOTAL
	WI Ib.	146.43	121.22	166.33	34.47	39.82	r.	31.	90.	.20	.07	10.	10.											510.75
STABILIZER SUB-ASSEMBLY DWG40H51	DESCR.	STABILIZER ROLLER	STABILIZER ARM	STABILIZER MOUNT	SHORT AXLE	LONG AXIE	AXIE PIN CAP	ROLLER RETAINER BOLT	5/8% LOCK WASHER	1/2-13 x 1 1/4 HHCS	1/2¢ LOCK WASHER	1/8 NPT GREASE ZERK	1/4-28 GREASE ZERK				•							
STA	P/N	40H52	40H53	40H54	40H55	40H56	82H05	22H36	29/00	00P31	09/00	90P03	90P20											
	OTY.	몽	ONE	ONE	용	R	2	2	2	2	2	2	2											
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PERIMBIA LIVERINCE C. 1711.

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REMSION	REMARKS			6500-8	2404-8-8	6400-8-12	6801-8-12	6602-8	6801-8	6400-8-6		-							-					TOTAL
CIRCUIT	WT Ib. PER EACH	8.00	1.03	04.	.40	.40	· <del>\$</del>	<b>\$</b> .	.40	.40								-						21.66
SUB-ASSEMBLY STABILIZER DWG90H51	DESCR.	HOSE ASS'Y 1/2 H.P. x 240	HOSE ASS'Y 1/2 H.P. x 14	ADP, HYD M JIC / FM JIC 90"	ADP, HYD M PIPE / M JIC STR	ADP, HYD O-RING / M JIC STR	ADP, HYD 0-RING / M JIC 90"	"ADP, HYD SWIVEL NUT RUN TEE	ADP, HYD 0-RING / M JC 90"	ADP, HYD O-RING / M JIC STR					**									
HYDRAULIC	₽∕A	11P87	11P88	10P44	10P99	11P83	11P84	11P85	11P23	11P89			,											
Ε <del>Υ</del>	OTY.	2	2	S.	2	ONE	SE SE	ONE	2	ONE		÷		-8°4										
	IEM	-	7	М	4	သ	9.	7	∞	9	10	11	12	13	14	15	<b>3</b> £	17	<b>œ</b>	19	20	21	22	



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