



PARTS & INSTALLATION MANUAL

SL-160



HOIST SERIAL NUMBER

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TO THE CUSTOMER:

THIS MANUAL CONTAINS INSTALLATION INSTRUCTIONS TO THE TRUCK CHASSIS. ALL INSTRUCTIONS ARE RECOMMENDED PROCEDURES ONLY. THIS MANUAL ALSO PROVIDES BREAKDOWNS OF EACH SUB-ASSEMBLY APART OF THE HOIST THAT LISTS PART NUMBERS AND DESCRIPTIONS SHOULD ANYTHING NEED TO BE REPLACED ON THE HOIST. 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.



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

Also, included with your hoist, is a Technical Guide. This guide provides safety suggestions, technical information, operation instructions, maintenance requirements, troubleshooting, and accessory installation instructions. Please refer to the Technical Guide for any questions you may have pertained to the above.

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 improvements 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.

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INSTALLATION

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INITIAL INSPECTION



When the hoist is installed and ready for delivery, it is your responsibility to fill out and submit the Product Registration Form. Visit [Truck-Mounted Product Registration - Swaploader](#) to complete this form.

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. Be sure to note any damage or missing items on bill of Lading.

When you receive your SwapLoader hoist, it is your responsibility to make sure you have received all the parts and pieces that were ordered, within 30 days of the invoice date of the hoist. Lay out all the options, loose parts and accessories on a table and compare the items received vs the Packing List and the Loose Parts Box List(s) shipped with the hoist order.

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 or EHV system 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 to the hydraulic control valve 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. (Note: This can be done prior to hoist installation on the truck chassis.)
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 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 SL-160 hoist assembly on the truck chassis. The truck chassis mounting surface should be flat without any steps or protrusions. If necessary, shim bars need to be added to ensure a flat surface on which to support hoist. It is advised to clamp the main frame of the hoist to the truck chassis prior to install of the mount brackets.

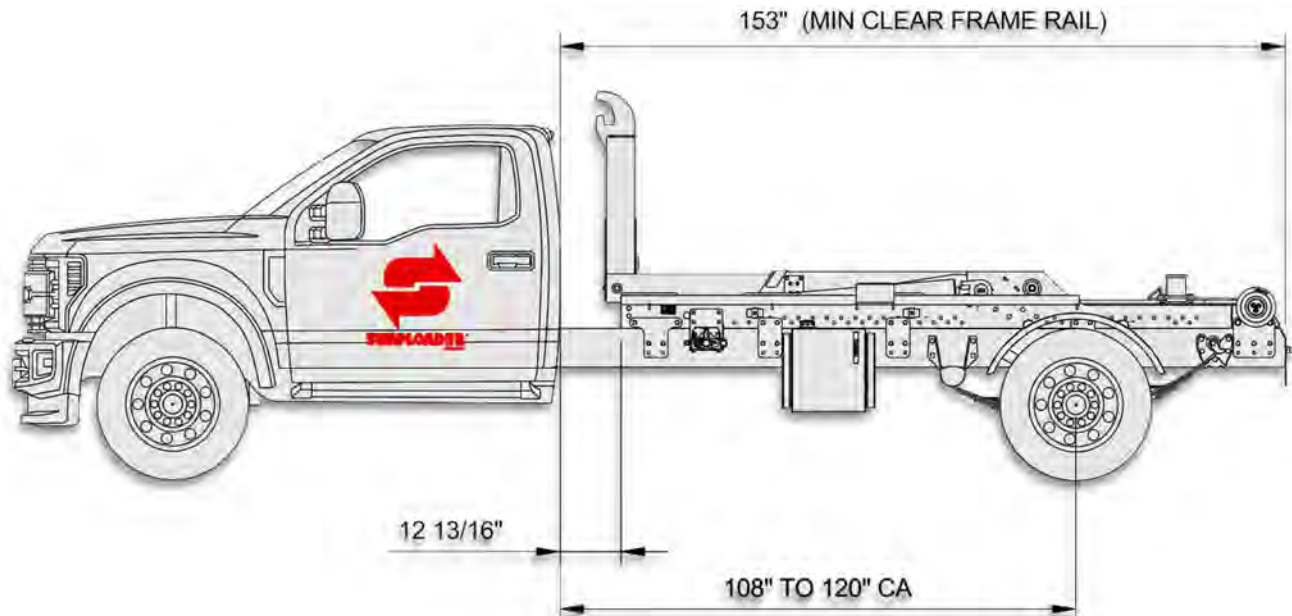


Figure A

The clear frame dimension indicated in *Fig. A* 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., Cab Guard, Tarper, Light Kit, Stabilizer, etc.). For example, when mounting a light kit on a truck with a long CA, check that the hoist and the light kit are positioned far enough back to eliminate any interference between the fender and the light kit. You should also consider the final weight distribution regarding the bridge code when positioning the hoist.

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.)

2. There are three types of mount brackets used on the Model SL-160 hoist as indicated in *Fig. B*. They are the front brackets (*Pt. No. 25H91*), the mid brackets (*Pt. No. 25H89*) and the rear brackets (*Pt. No. 25H90*). Locate the mount brackets on the side of the hoist as indicated in *Fig. B*. These dimensions are flexible because of possible interference with

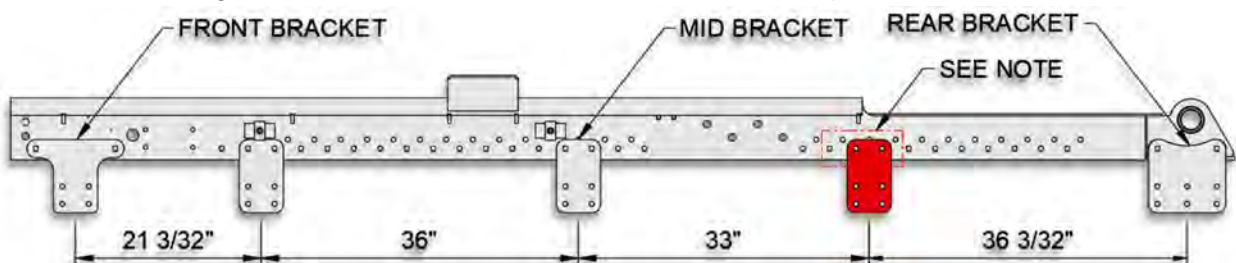


Figure B

chassis components. **Note: Be sure to secure a mid bracket to one on the hole locations indicated in Fig. B.** Also allow space 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 $2\frac{3}{4}$ " from the top of the truck chassis rails (reference Fig. C, Fig. D & Fig. E). Mid brackets will have more flexibility due to the additional row of holes in the Main Frame and allows for drilling into the truck chassis frame rails at $2\frac{3}{4}$ ", $3\frac{3}{4}$ " or $4\frac{3}{4}$ " (**bolts are only required on two of the four lower mount bracket holes**). Once the locations of the mount brackets have been determined, use the mount brackets as a template for marking the mounting holes in the truck chassis frame rails. Drill the $\frac{17}{32}$ " diameter holes required and attach the brackets to the truck chassis with the $\frac{1}{2}$ " diameter bolts, washers, and locking hex nuts provided. Torque to 110 ft.lb.

3. Bolt the mount brackets to the hoist main frame as indicated on Fig. C, D and E. You may need to modify the mount brackets or add shim plates to allow for variances in the width of the truck chassis as well as to allow for top rivets, stepped channels, etc.

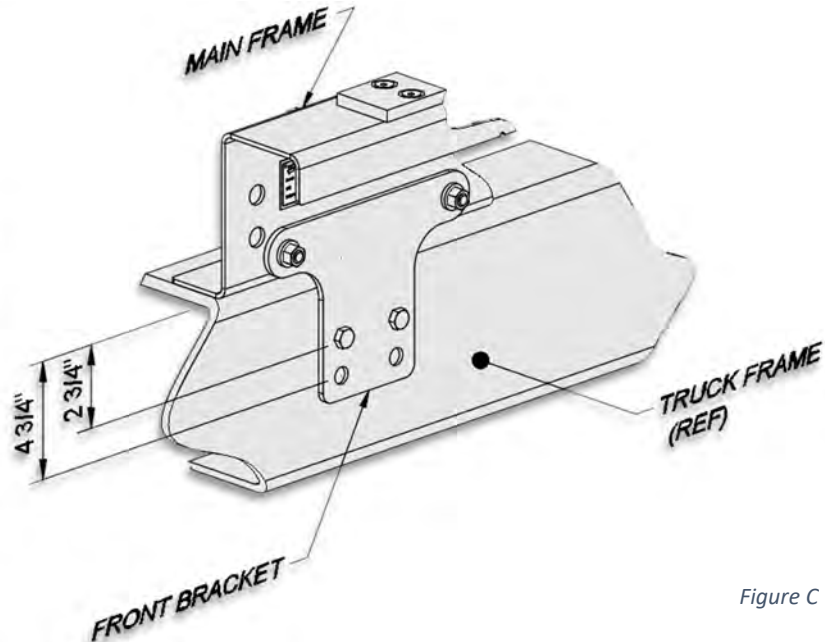


Figure C

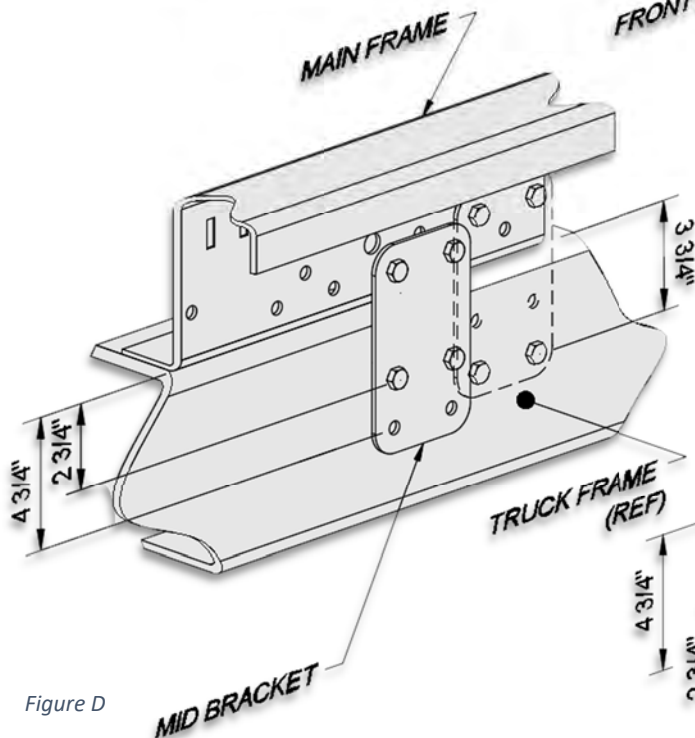


Figure D

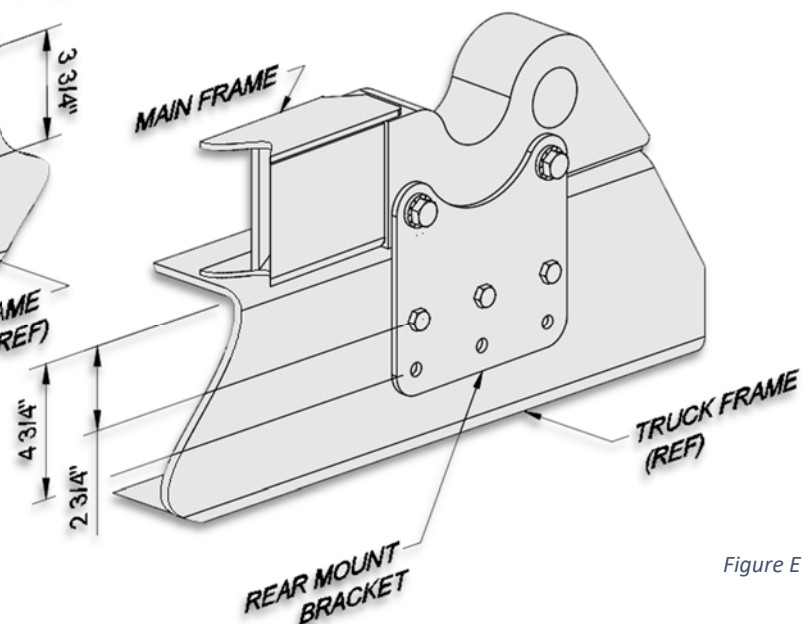


Figure E

CONTROLS INSTALLATION – MANUAL

1. Attach the valve mount bracket (*Pt. No. 10H51*) to the main frame as indicated on *Pg. 3-12* with the fasteners provided (see *Pg. 3-8*).
2. Mount the hydraulic control valve assembly (*Pt. No. 21P32*) to the valve mount bracket as shown on *Pg. 3-12* with the fasteners provided.
3. Install the hydraulic adapters, connect the hydraulic tubing & hoses (*Pt. Nos. 12P53, 12P59, & 13P07*) to the control valve assembly as indicated on *Pg. 3-10*. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box (see *Pg. 3-8*).
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 (see *Pg. 3-12*).
5. Assemble and install the control lever console (see *Fig. F*). 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 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 *Pg. 3-12* (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*). See the following instruction sheet for installation procedures. The control cables supplied are 84 inches long. Your mounting may require different length control cables, which can be purchased locally or through SwapLoader. Take proper care when routing the control cables, as a good cable path is essential for a proper 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

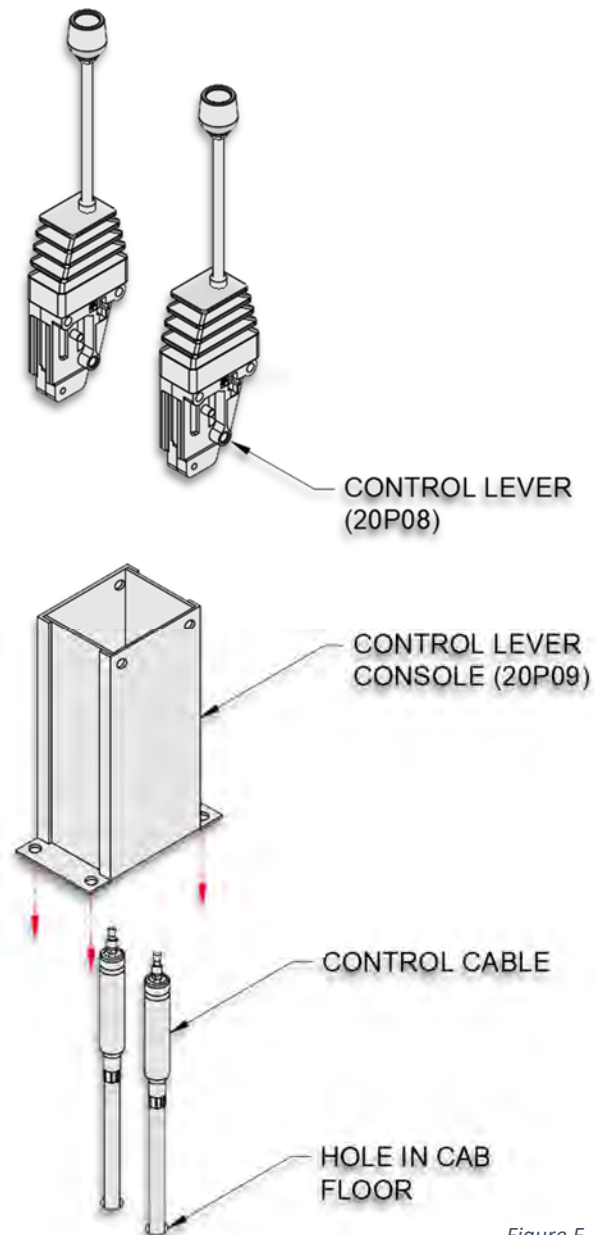
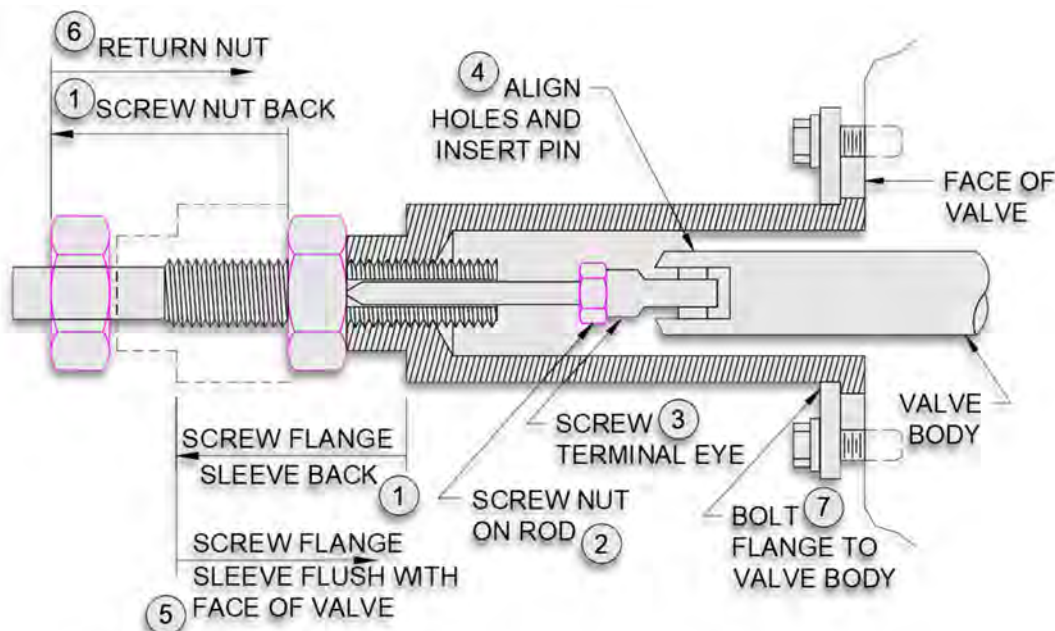


Figure F

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.

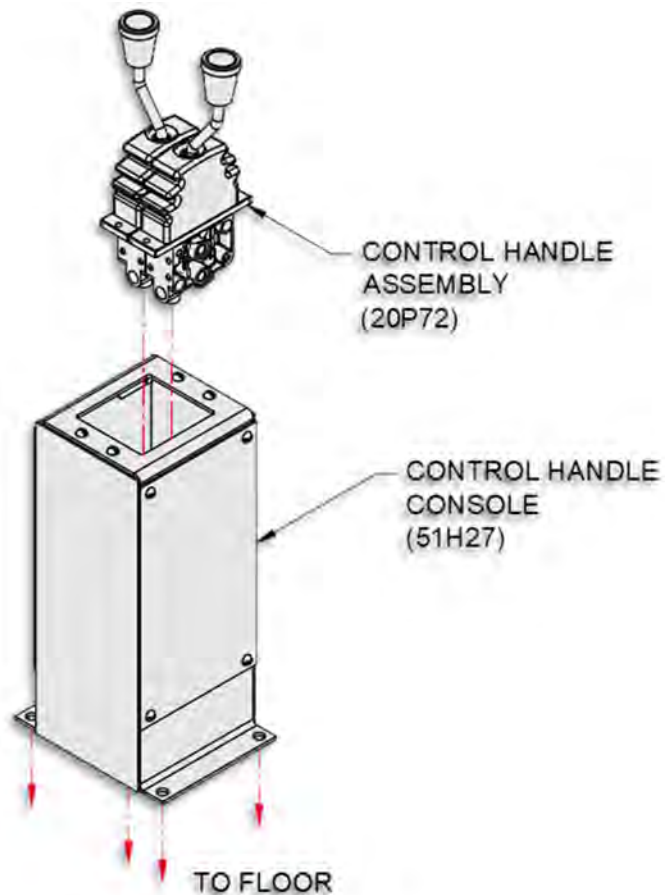
INSTALLATION PROCEDURE FOR A HYDRAULIC CONTROL CABLE TO HYDRAULIC VALVE WITH BONNET CONNECTION KIT

1. Turn .750-16 UNF jam nut entire length of threaded hub back over the cable. Place Flange onto Sleeve (large end first) and flange onto sleeve and turn flange adaptor / flange / sleeve assembly entire length of threaded hub back over the cable.
2. Turn .250-28 UNF jam nut onto cable threaded rod until it bottoms.
3. Place clevis of threaded rod and bottom against jam nut. Turn other .250-28 UNF jam nut onto threaded rod until it bottoms against clevis. Align clevis so it will mate with spool terminal eye and secure jam nut against clevis.
4. Slide the clevis onto terminal eye on spool and align the holes. Insert clevis pin through yoke and terminal eye holes and secure clevis pin with retaining ring.
5. Now, with the cable attached to the valve and control head, turn the flange adapter / flange / sleeve assembly back onto the threaded hub until it is flush with the valve face. When turning on the flange adapter / flange / sleeve assembly, make sure that the control head remains in the neutral position.
6. Tighten the .750-16 UNF jam nut against the sleeve and lock in position.
7. Bring flange into position on bolt assembly to valve housing.



CONTROLS INSTALLATION - AIR SHIFT (OPTION)

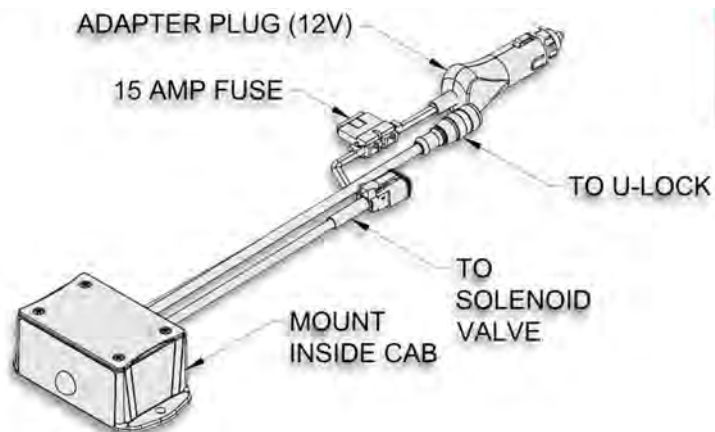
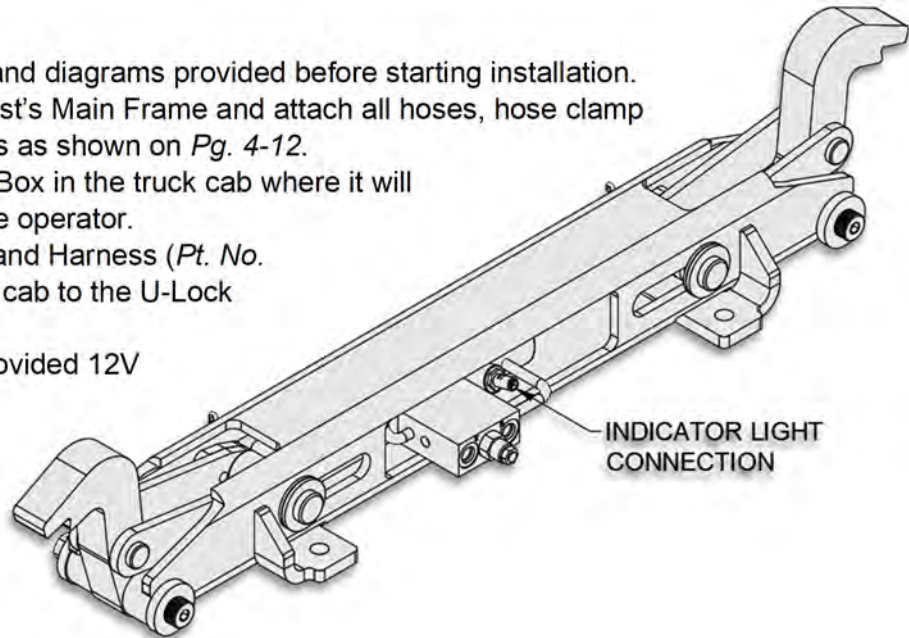
1. Attach the valve mount bracket (*Pt. No. 10H51*) to the main frame as indicated on *Pg. 4-5* with the fasteners provided.
2. Mount the hydraulic control valve assembly (*Pt. No. 21P32*) to the valve mount bracket as shown on *Pg. 4-5* with the fasteners provided. Attach air shift kits (*Pt. No. 20P95*) to the hydraulic control valve. Reference installation instructions included with the air shift kits.
3. Install the hydraulic adapters and connect the hydraulic hoses and tubing (*Pt. Nos. 10P54, 12P53 & 12P59*) to the control valve assembly as indicated on *Pg. 3-10*. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box (See *Pg. 3-8*).
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 (See diagram below).
5. Install the air fittings and hose as shown on *Pg. 4-6* (Air Circuit Plumbing Diagram). 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.



AIR OR CABLE CONTROL INSTALLATION w/ U-LOCK (OPTION)

The Universal Body Lock (U-Lock) can be installed with a standard 3-section valve and operated from the cab (see *Pg. 4-8* for routing). A separate indicator light and harness will be provided to be installed in the truck cab. This will notify the operator when the U-Lock has been engaged or disengaged.

1. Review all directions and diagrams provided before starting installation.
2. Mount valve to the hoist's Main Frame and attach all hoses, hose clamp assemblies and fittings as shown on *Pg. 4-12*.
3. Mount Indicator Light Box in the truck cab where it will be clearly visible to the operator.
4. Route Indicator Light and Harness (*Pt. No. 40P60*) from the truck cab to the U-Lock cylinder.
5. Hardwire or plug in provided 12V adapter for indicator light.



NOTE:

AS A SAFETY MEASURE, THE JIB CYLINDER IS DISENGAGED WHENEVER THE U-LOCK IS ENGAGED.

EHV INSTALLATION (OPTION)

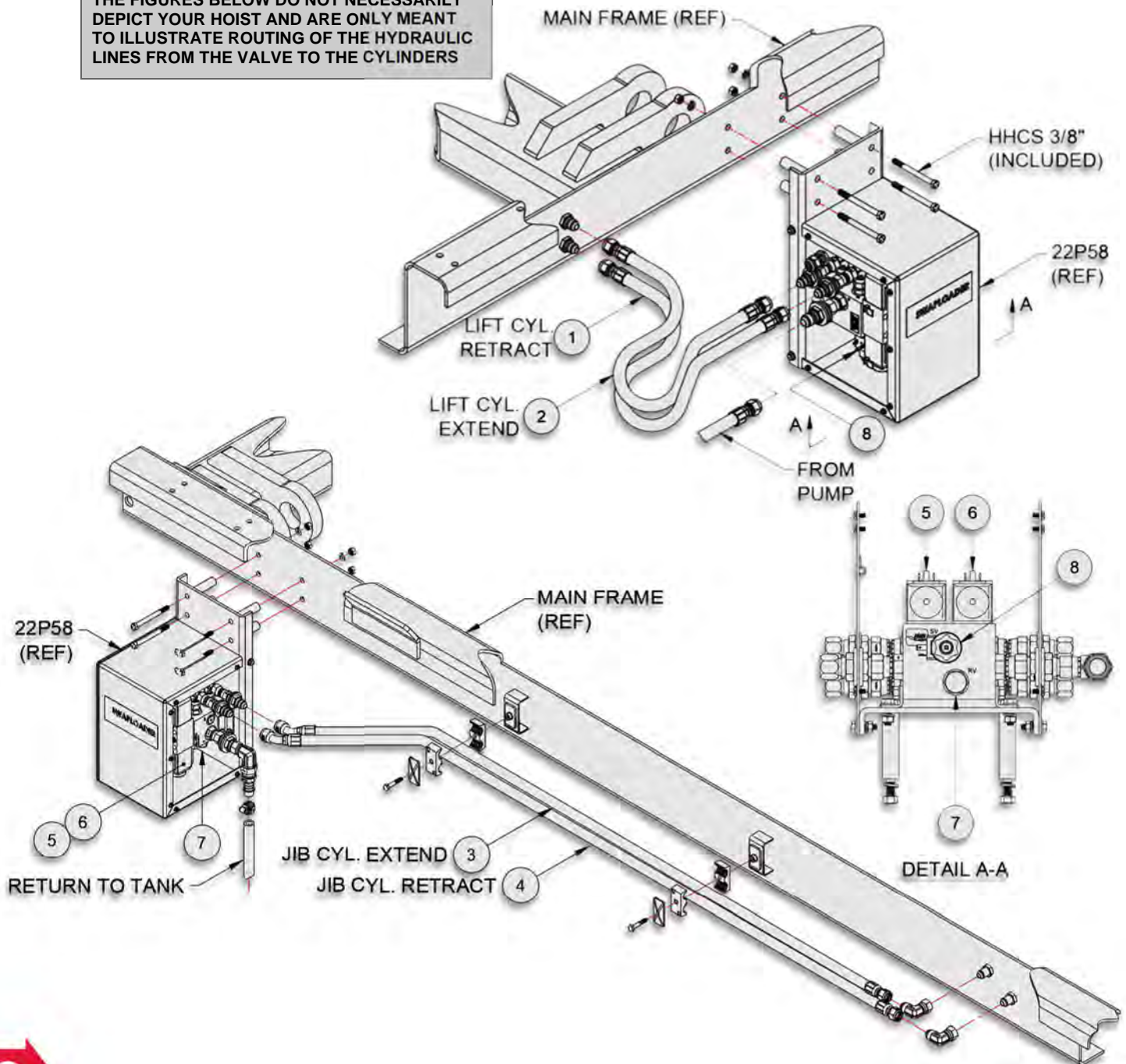
6. Review all directions and diagrams provided before starting the **Electric over Hydraulic Valve** Installation.
7. Mount the 22P58 EHV to the hoist's Main Frame and attach all hoses, hose clamp assemblies and fittings as shown on *Pg. 4-15* (also see Illustrations).

NOTE:

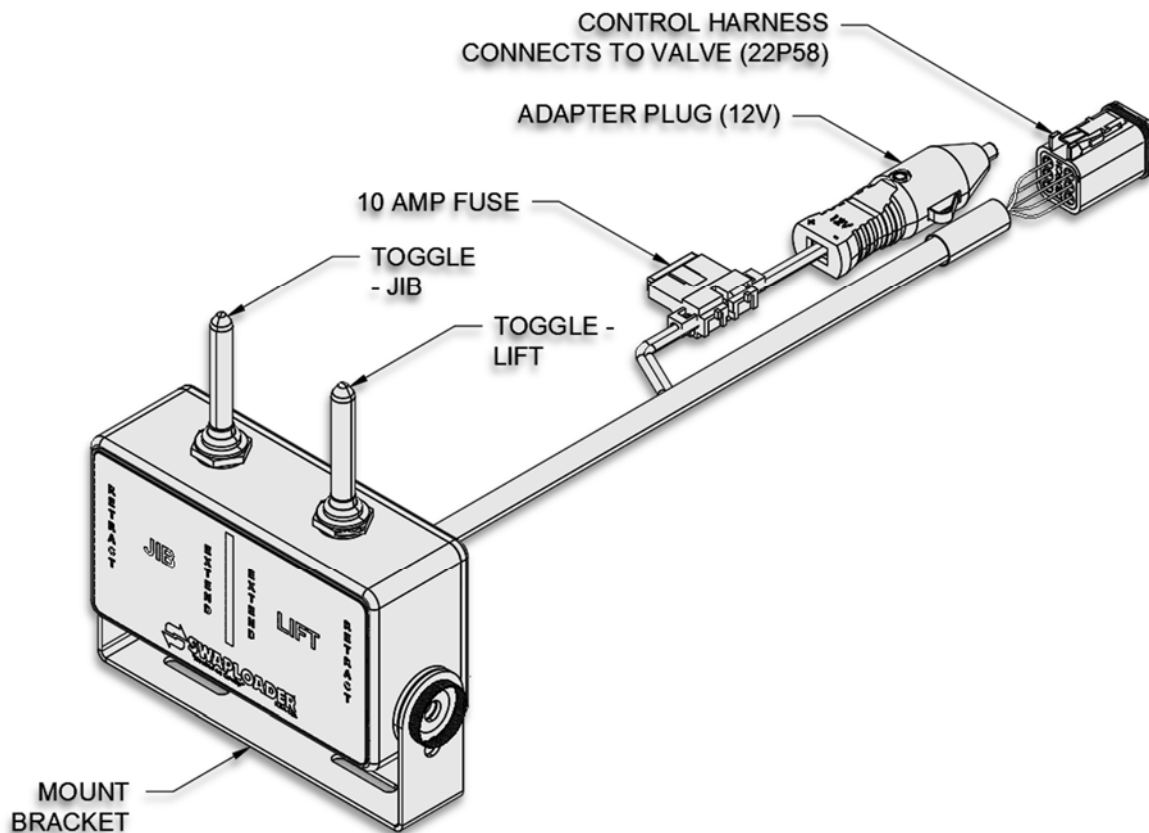
THE FIGURES BELOW DO NOT NECESSARILY DEPICT YOUR HOIST AND ARE ONLY MEANT TO ILLUSTRATE ROUTING OF THE HYDRAULIC LINES FROM THE VALVE TO THE CYLINDERS

Electric Over Hyd. Valve - SERVICE PARTS SL-160

ITEM	PART #	QTY	DESCRIPTION
1	12P53	1	Hose Assy 21 08-08FJ/08FJ90
2	12P59	1	Hose Assy 20 08-08FJ/08FJ45
3	13P32	1	Hose Assy 60 08-08FJ/08FJ45
4	13P33	1	Hose Assy 63.5 08-08FJ/08FJ45
5	22P82	1	Solenoid Operated Valve, Coil
6	22P83	1	Solenoid Operated Valve, Spool
7	22P84	1	Relief Valve Cartridge (3250)
8	22P85	1	Dump Valve



3. Route control harness from valve into the truck cab. Determine the best location in the cab for the control box location and install with mounting screws (included). The location should be such that the controls can be easily reached while operating the truck.



4. Hardwire or plug in provided 12V adapter for control box.

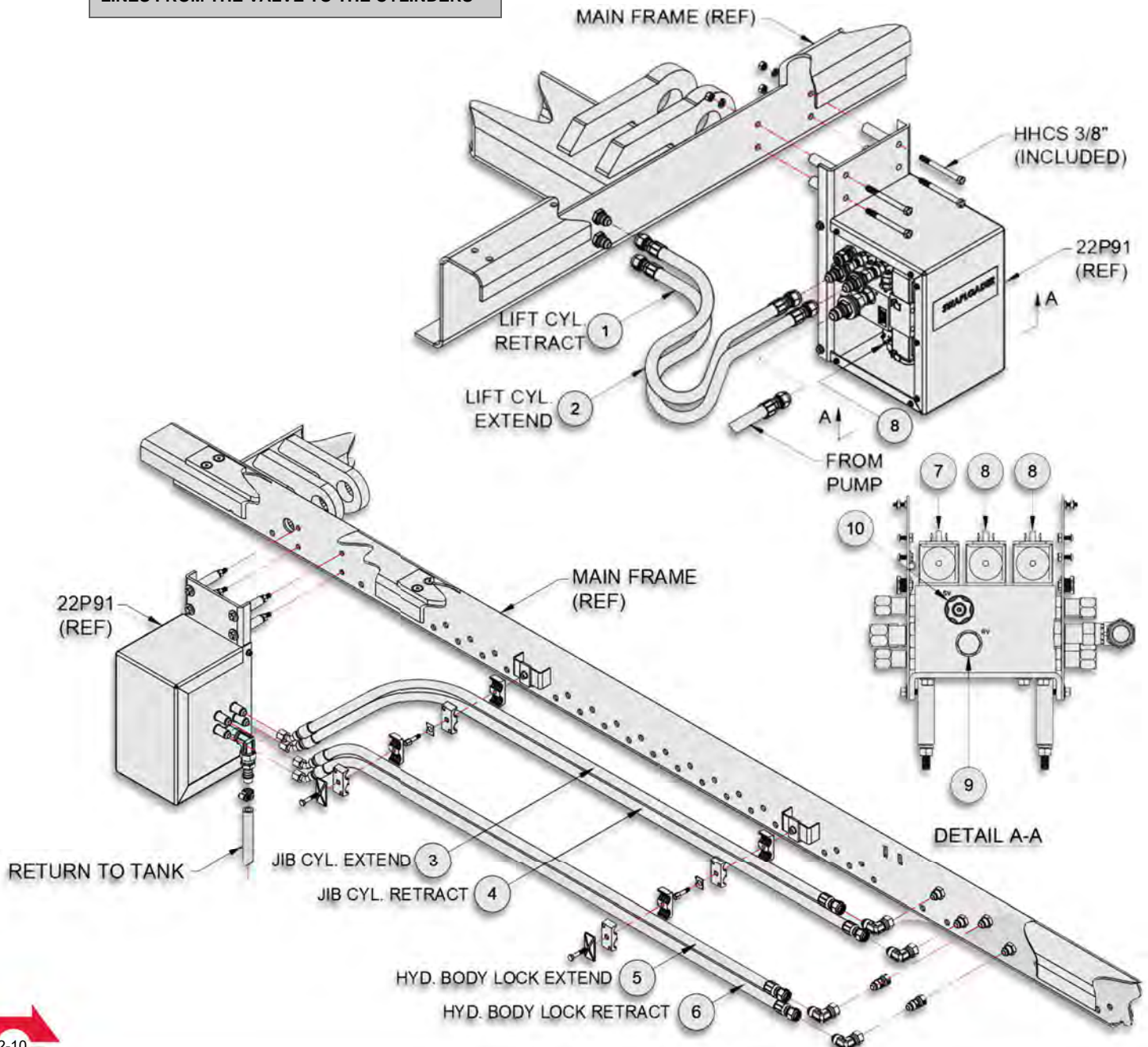
EHV INSTALLATION w/ U-LOCK (OPTION)

1. Review all directions and diagrams provided before starting the **Electric over Hydraulic Valve** Installation.
2. Mount the 22P91 EHV to the hoist's Main Frame and attach all hoses, hose clamp assemblies and fittings as shown on *Pg. 4-16* (also see Illustrations).

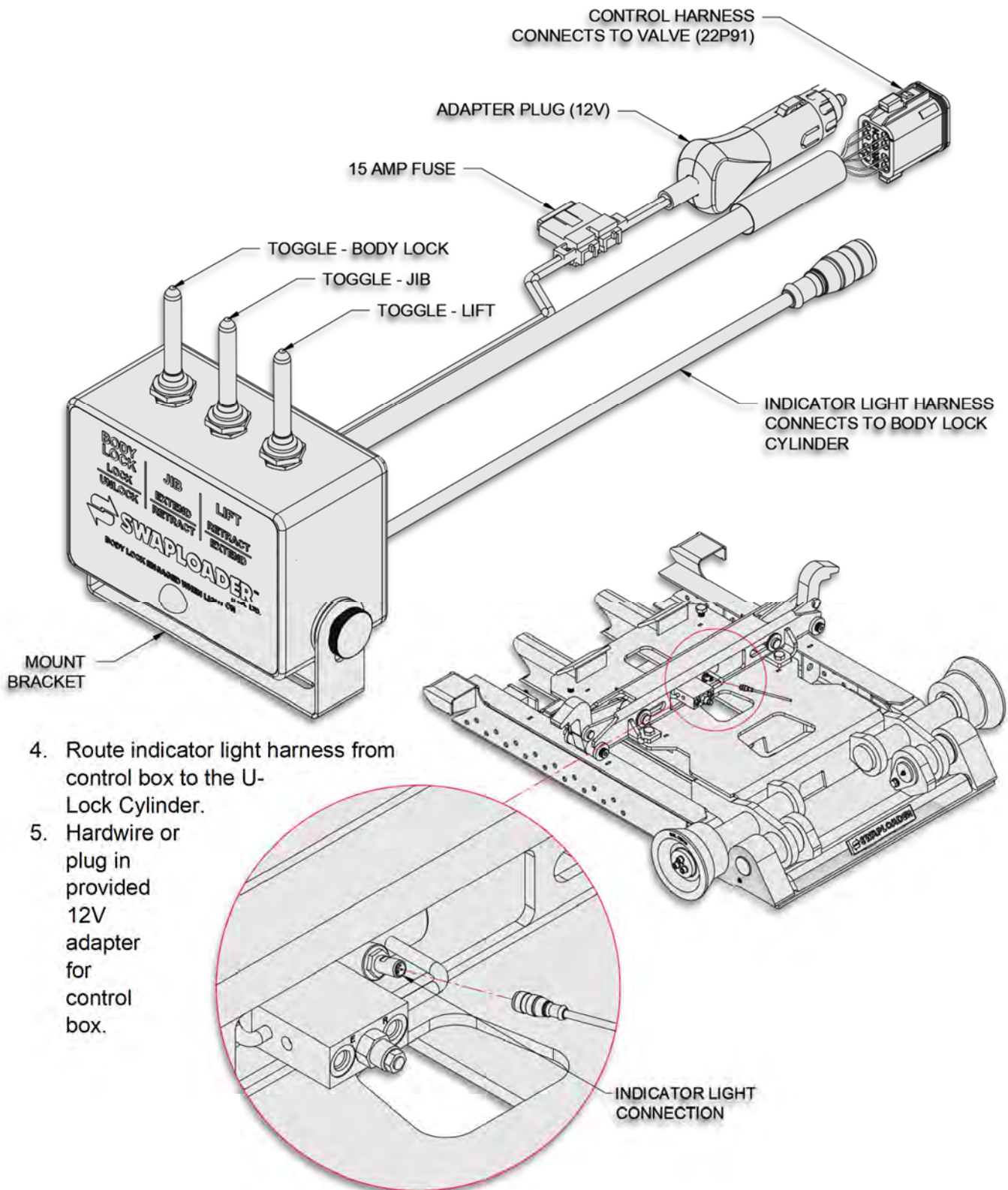
NOTE:

THE FIGURES BELOW DO NOT NECESSARILY DEPICT YOUR HOIST AND ARE ONLY MEANT TO ILLUSTRATE ROUTING OF THE HYDRAULIC LINES FROM THE VALVE TO THE CYLINDERS

Electric Over Hyd. Valve - SERVICE PARTS				SL-160
ITEM	PART #	QTY	DESCRIPTION	
1	12P53	1	Hose Assy 21 08-08FJ/08FJ45	
2	12P59	1	Hose Assy 20 08-08FJ/08FJ45	
3	13P32	1	Hose Assy 60 08-08FJ/08FJ45	
4	13P33	1	Hose Assy 63.5 08-08FJ/08FJ45	
5	13P34	1	Hose Assy 66 08-08FJ/08FJ45	
6	14P56	1	Hose Assy 70 08-08FJ/08FJ45	
7	22P82	1	Solenoid Operated Valve, Motor	
8	22P83	2	Solenoid Operated Valve, Cylinder	
9	22P84	1	Relief Valve Cartridge, 3250	
10	22P85	1	Dump Valve	



3. Route control harness from valve into the truck cab. Determine the best location in the cab for the control box location and install with mounting screws (included). The location should be such that the controls (*Pt. No. 22P95*) can be easily reached while operating the truck.



PUMP INSTALLATION

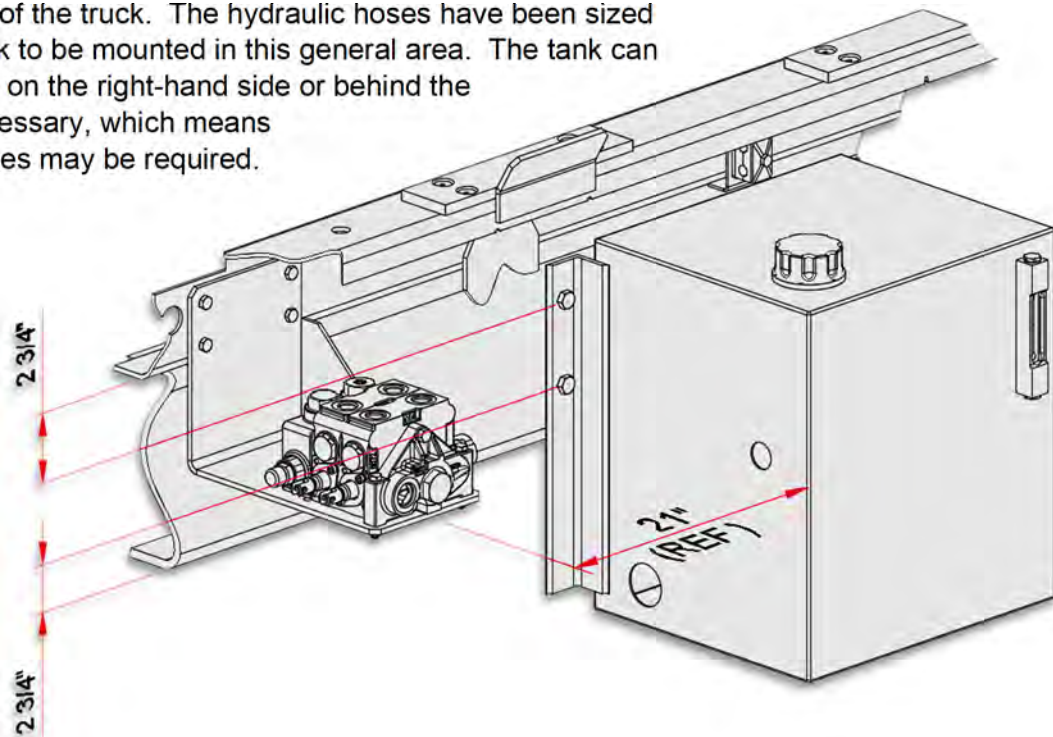
1. Install the hydraulic pump to the P.T.O. (Bolts are not provided).
2. Install the hydraulic fittings into ports on the hydraulic pump as shown on *Pg. 3-11*.
3. Connect the suction hose assembly to the hydraulic tank (1" I.D. hose) and route to the hydraulic pump in as short and straight line as possible. 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. Connect pressure hose assembly (1/2" I.D. hose) to control valve inlet and route to the pump the same as the suction line. This hose is provided with only one fitting, so the hose can be shortened to appropriate length. Remove the hose and shorten as required. After the hose has been shortened, lubricate the insert threads of the fitting and the I.D. of the hose. Measure 1-3/16" from the end of the hose and mark the hose for the socket depth. Screw hose into the socket (left-hand thread) to the depth marked on the hose. Screw insert in socket until insert touches the socket. Clean the inside of the hose assembly by either blowing clean compressed air through it or by flushing it. Install the completed hose assembly to the inlet port of the control valve assembly and the outlet port of the hydraulic pump.
5. 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.

HYDRAULIC TANK INSTALLATION

1. Select a location to mount the hydraulic tank. Reference figure below or *Pg. 3-12* 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 1/2" 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 *Pg. 3-10*. The hose length can be shortened if necessary. Secure the hose to the barb fittings with the hose clamps provided.

START UP PROCEDURE

1. Fill the hydraulic tank with hydraulic oil (see oil specification in Section IV: Maintenance.)
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 the figure below.
6. Install all safety decals and product decals per as shown on *Pg. 3-13* after final installation and painting have been completed.
7. Fill out the Product Registration form online at Truck-Mounted Product Registration - Swaploader.



NOTE:

FAILURE TO FILL OUT AND SUBMIT PRODUCT REGISTRATION 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 (see Subframe Critical Dimensions in the Technical Guide). If possible, pick up one of the containers that will 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.)

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PARTS

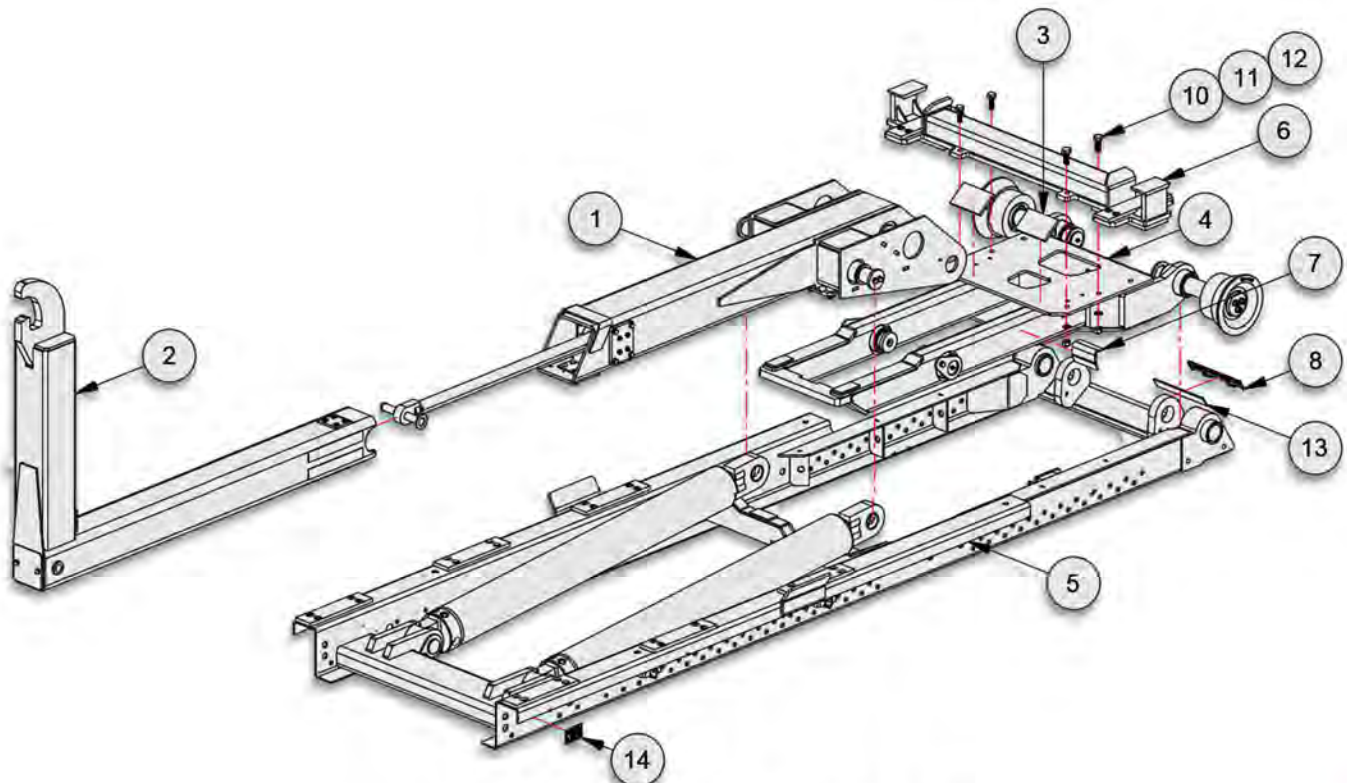
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**DISC-LOCK WASHER
TORQUE SPECS**

BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

13H68 - BASE HOIST ASSEMBLY**SL-160**

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT-lb/all
1	13H05	1	Outer Tube Sub-Assembly	428.46	428.46
2	13H08	1	Fixed Jib Sub-Assembly	291.80	291.80
3	13H48	2	Tube Stop Sub-Wdmt, 50.5 Deg	3.02	6.04
4	13H65	1	Pivot Joint Sub-Assembly	397.11	397.11
5	13H67	1	Main Frame Sub-Assembly	948.23	948.23
6	13H74	1	Body Lock w/ Shelf Assembly	109.46	109.46
7	23H56	1	Lockout Valve Ramp	1.20	1.20
8	62H99	1	Logo Name Plate	109.44	109.44
9	90H89	1	Base Cylinder Circuit	21.44	21.44
10	00767	4	Washer, Lock - 5/8 Dia	0.01	0.04
11	00P24	4	Nut, Hex 5/8-11 UNC Gr8	0.09	0.36
12	00P91	4	HHCS 5/8 - 11 x 1-3/4 Gr8	0.31	1.24
13	90P90	1	Name Plate Insert	0.09	0.09
14	91P35	1	Serial Tag	0.02	0.02

**SL-160 BASE HOIST w/ FIXED JIB**

**DISC-LOCK WASHER
TORQUE SPECS**

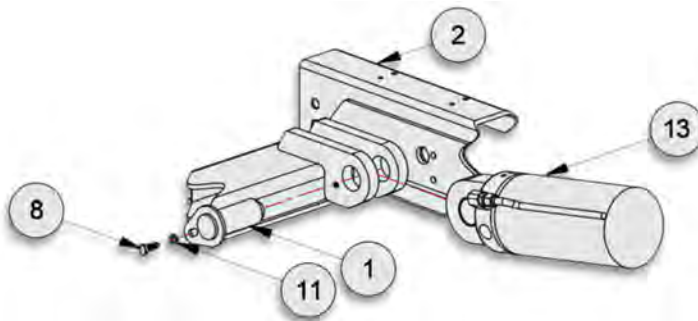
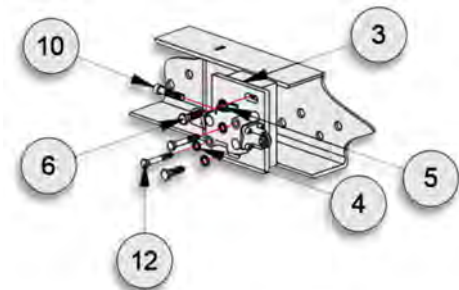
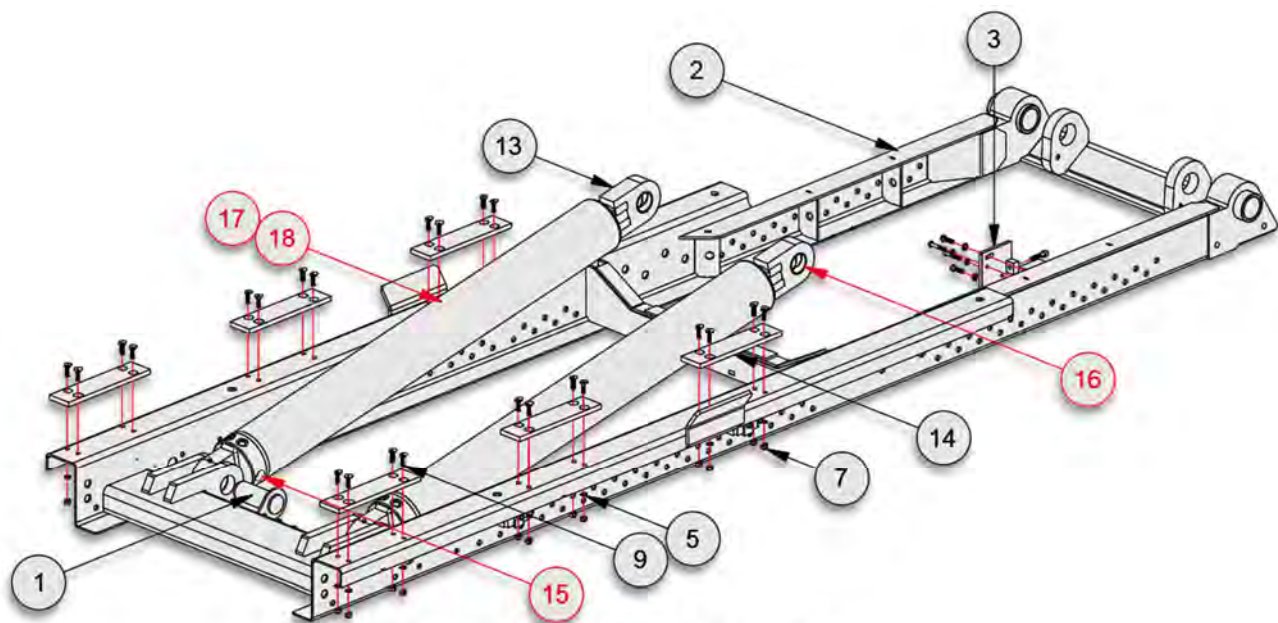
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

13H67 – MAIN FRAME SUB-ASSEMBLY**SL-160**

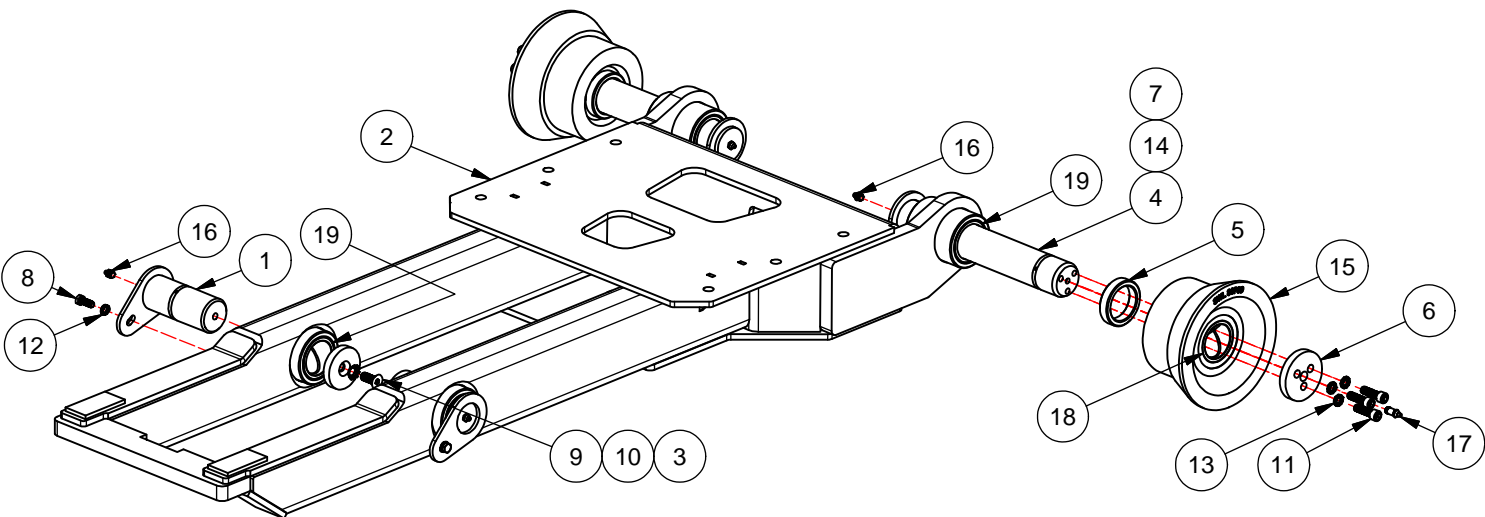
ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT-lb/all
1	12H29	2	Main Frame Pin	5.50	11.00
2	13H66	1	Main Frame Weldment	489.64	489.64
3	42H11	1	Jib Lockout Mount Wdmt, 5x4-1/4	2.39	2.39
4	00752	2	Washer, Lock - 5/16 Dia	0.03	0.06
5	00755	26	Washer, Lock - 3/8 Dia	0.03	0.78
6	00P13	2	HHCS 3/8-16 UNC x 1-1/4 Gr8	0.10	0.20
7	00P14	24	Nut, Hex 3/8-16 UNC Gr8	0.02	0.48
8	00P31	2	HHCS 1/2-13 UNC x 1-1/4	0.14	0.28
9	00P68	24	FSCS 3/8-16 UNC X 1-1/4 SS	0.11	2.64
10	01P20	1	SHCS 3/8-16 UNC x 1-3/4 Gr8	0.07	0.07
11	01P30	2	Washer, Lock, Disc 1/2 Pr	0.02	0.04
12	10P63	2	HHCS 5/16 x 1-3/4	0.03	0.06
13	22P92	2	Hyd Cyl 5x2.25x43	219.90	439.80
14	90P71	6	Wear Pad, 2-3/4x1/2x11-3/4	0.70	4.20

LIFT CYLINDER SERVICE PARTS

15	21P11	2	Counterbalance Valve Cartridge		
16	21P60	2	Bronze Bearing		
17	22P97	1	Seal Kit		
18	22P98	1	Hydraulic Return Line		

**LIFT CYLINDER PIN DETAIL****JIB LOCKOUT VALVE MOUNT DETAIL****MAIN FRAME ASSEMBLY**

DISC-LOCK WASHER TORQUE SPEC'S		13H65 - PIVOT JOINT SUB- ASSEMBLY				
BOLT SIZE	SAE GR 8 ASSY TORQUE (FT-LBS)	ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
3/8	53	1	13H23	2	PIN, PJ/OT 2-1/4 x 5-1/2 ZP	6.41
7/16	85	2	13H64	1	PIVOT JOINT WELDMENT	277.70
1/2	130	3	22H76	2	PIVOT PIN CAP	0.66
5/8	258	4	51H70	2	PIN, PJ/MF 2-1/4 x 13-7/8 ZP	16.42
3/4	459	5	61H94	2	SPACER, ROLLER 11/16x2-1/4 ZP	0.56
7/8	739	6	85H21	2	ROLLER RETAINER, 1/2 x 3-1/4 ZP	1.05
1	1108	7	00P09	2	HHCS 1/2-13 UNC x 1 GR8	0.09
NOTE: APPLY LOCTITE 243 (BLUE) TO ALL BOLTS.		8	00P62	2	HHCS 3/8-16 UNC x 1 GR8	0.04
		9	00P73	2	FHCS 1/2-13 UNC x 1-1/4 GR8	0.07
		10	00P86	2	WASHER, LOCK CS 1/2	0.01
		11	01P25	6	SHCS 7/16-14 UNC x 1-1/2 GR8	0.08
		12	01P28	2	WASHER, DISC LOCK 3/8 PR	0.00
		13	01P29	6	WASHER, DISC LOCK 7/16 PR	0.02
		14	01P30	2	WASHER, DISC LOCK 1/2 PR	0.02
		15	80P09	2	ROLLER ASSY, 6-1/4x2-1/4ID	34.12
		16	90P03	4	GREASE ZERK, 1/8-27 NPT STR	0.02
		17	90P19	2	GREASE ZERK, 1/8-27 NPT LONG	0.03
		BEARINGS				
		18	23H07	2	BRZ BRG, 2.25IDx3.00x2.75OD	1.71
		19	23H08	4	BRZ BRG, 2.25IDx4.00x2.75OD	2.00



PIVOT JOINT SUB-ASSY, 160

**DISC-LOCK WASHER
TORQUE SPECS**

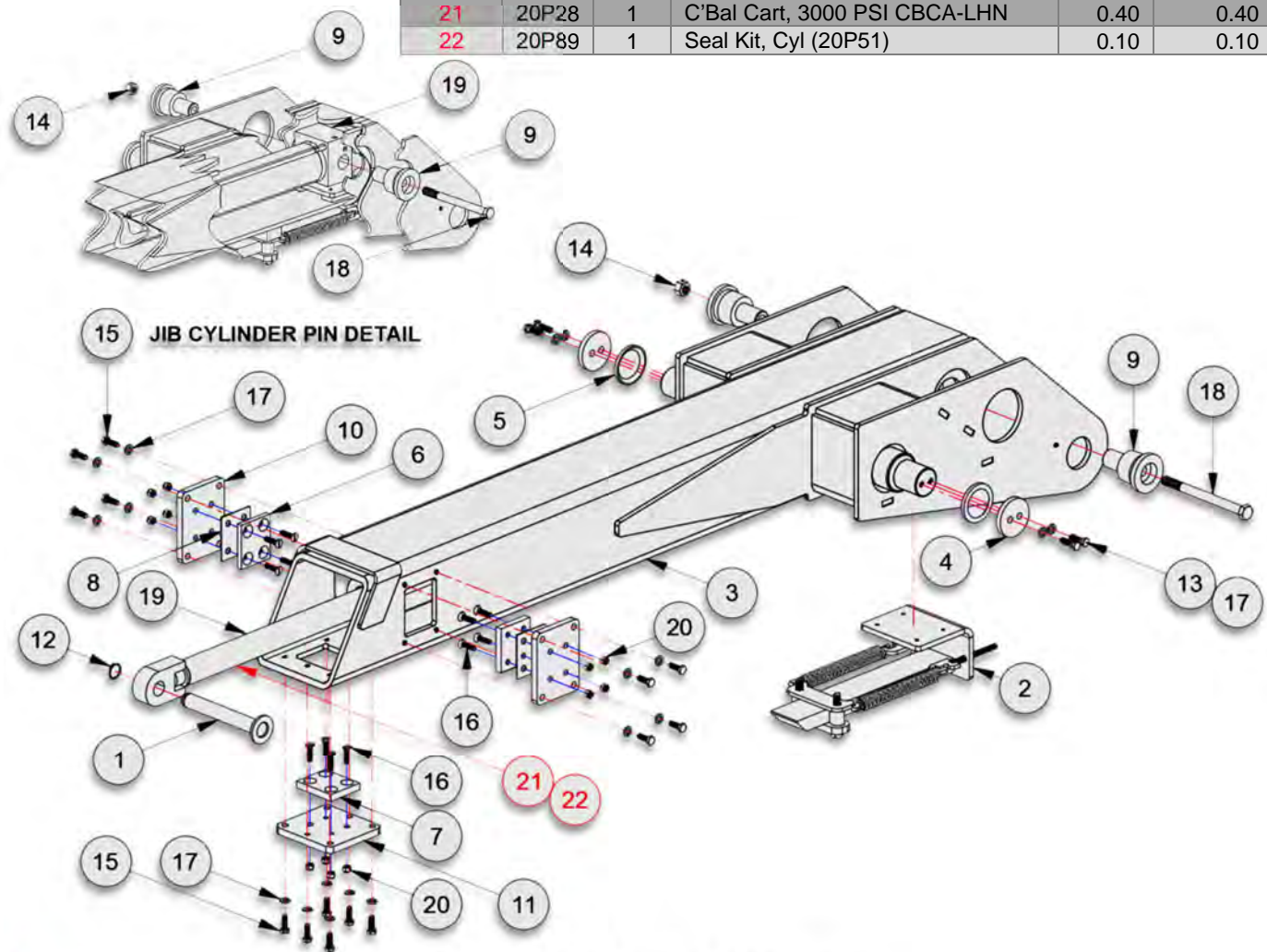
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

13H05 – OUTER TUBE SUB-ASSEMBLY**SL-160**

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT-lb/all
1	10H08	1	Pin, Jib/Cyl 1 x 6-3/4	1.70	1.70
2	13H06	1	Pivot Lock Assembly	19.15	19.15
3	13H15	1	Outer Tube Weldment	308.30	308.30
4	20H19	2	Pin Cap, 3/8 x 2-3/4	0.60	1.20
5	20H21	2	Spacer, 3/8 x 2-3/4OD	0.20	0.40
6	22H27	2	Wear Pad, 2-3/4 x 3/8 x 3-1/4	0.12	0.24
7	23H54	1	Wear Pad, 2-3/4x1/2x3-1/4	0.19	0.19
8	24H67	2	Shim, Jib 2-3/4x14GAx3-1/4	0.18	0.36
9	24H68	2	Pin, OT/Cyl 1-1/4 x 1-7/8	2.40	4.80
10	25H71	2	Jib Clamp, Outer	2.83	5.66
11	26H68	1	Jib Clamp, Under	3.54	3.54
12	00P05	1	Snap Ring, Ext 1 Shaft	0.01	0.01
13	00P13	4	HHCS 3/8-16 UNC x 1-1/4 Gr8	0.10	0.40
14	00P55	1	Nut, Lock 5/8-11 UNC Gr8	0.13	0.13
15	00P62	14	HHCS 3/8-16 UNC x 1 Gr8	0.05	0.70
16	01P16	12	FHCS 5/16-18 UNF x 1-1/4 Brass	0.03	0.36
17	01P28	18	Washer, Lock, Disc 3/8 Pr	0.01	0.18
18	01P43	1	HHCS 5/8-11 UNC x 7-1/2 Gr8	0.75	0.75
19	20P51	1	Hyd. Cylinder 3 x 1.75 x 32	86.00	86.00
20	23001	12	Nut, Nylock 5/16	0.01	0.12

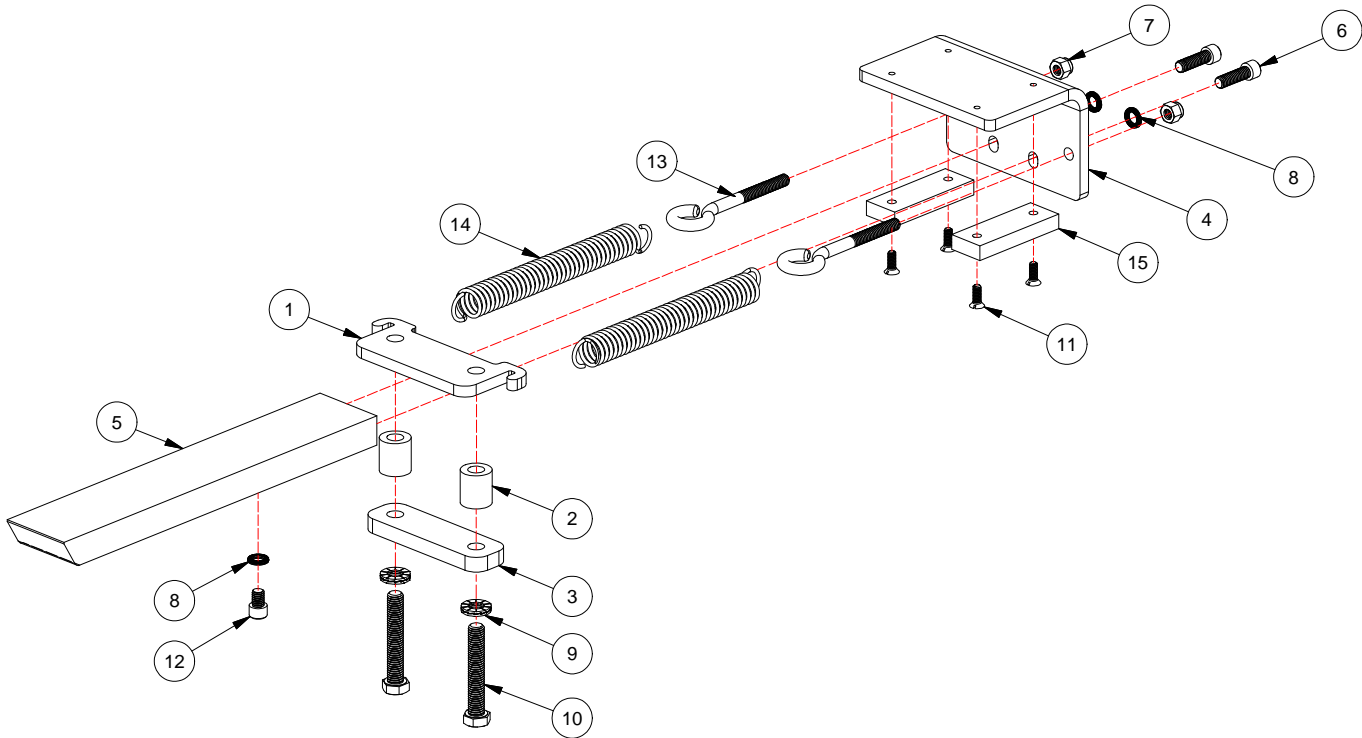
SERVICE PARTS FOR JIB CYLINDER

21	20P28	1	C'Bal Cart, 3000 PSI CBCA-LHN	0.40	0.40
22	20P89	1	Seal Kit, Cyl (20P51)	0.10	0.10

**OUTER TUBE SUB-ASSEMBLY**

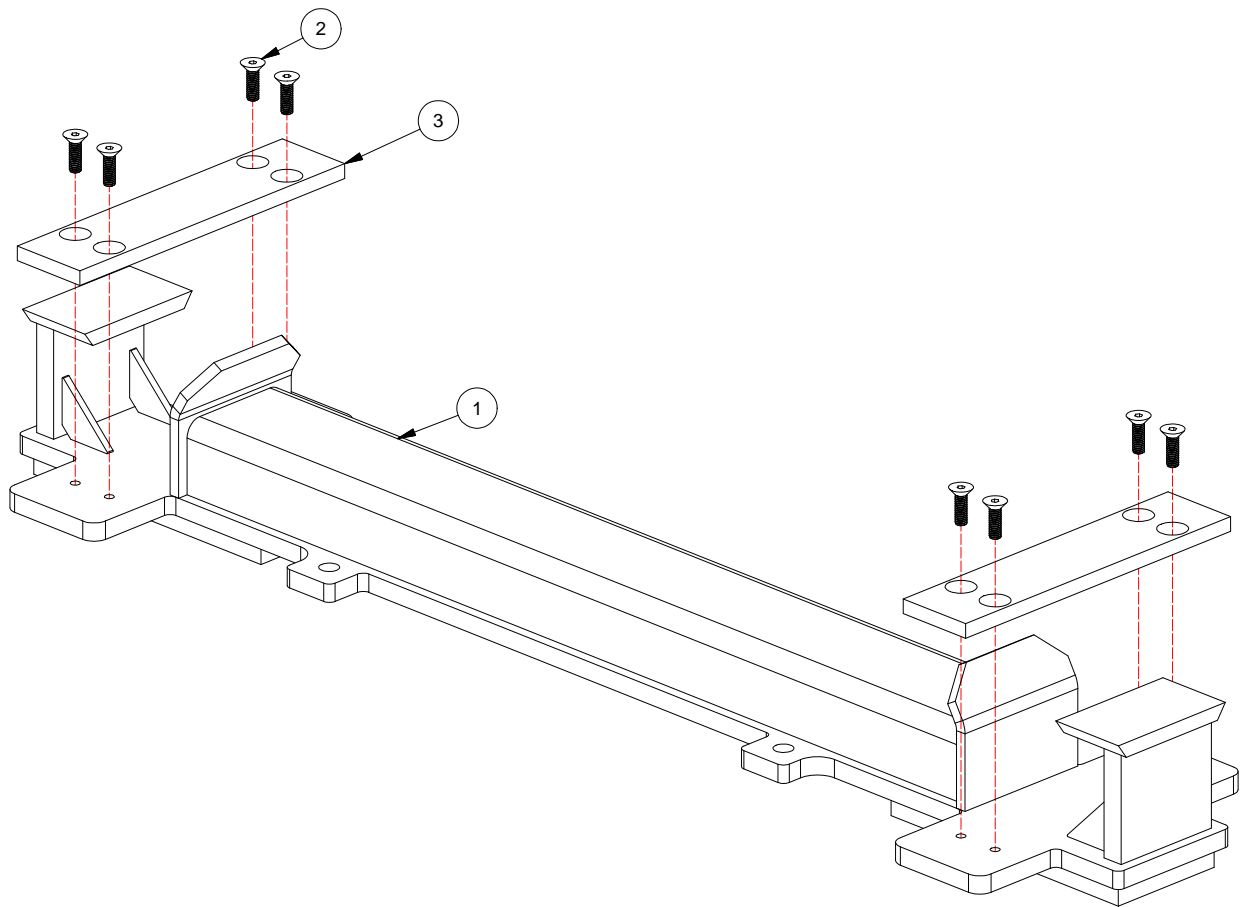
DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASSY TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108
NOTE: LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY	

13H06 - PIVOT LOCK SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	25H76	1	SPRING PLATE, PL	1.14
2	25H77	2	SPACER, PIVOT LOCK 1-1/8	0.18
3	25H78	1	CONNECTION BAR, 160/212/214	0.98
4	27H05	1	SLIDE, PL 100S	4.73
5	27H06	1	PIVOT LOCK PRONG	9.58
6	00P32	2	SHCS 3/8-16 UNC x 1-1/4 GR8	0.05
7	00P43	2	NUT, NYLOCK 3/8-16 UNC GR8	0.02
8	01P28	3	WASHER, DISC LOCK 3/8 PR	0.00
9	01P30	2	WASHER, DISC LOCK 1/2 PR	0.02
10	01P48	2	HHCS 1/2-13 UNC x 3 GR8	0.18
11	01P67	4	FHCS 1/4-20 UNC x 3/4 BR	0.01
12	02P01	1	SHCS 3/8-16 UNC x 1/2 ZP	0.03
13	23P13	2	EYEBOLT 3/8-16 UNC x 3	0.20
14	90P04	2	SPRING, EXT 7/8 OD x 6 LG	0.33
15	91P21	2	WEAR PAD 1-1/4x1/2x3-1/2	0.08



PIVOT LOCK SUB-ASSY, 100S

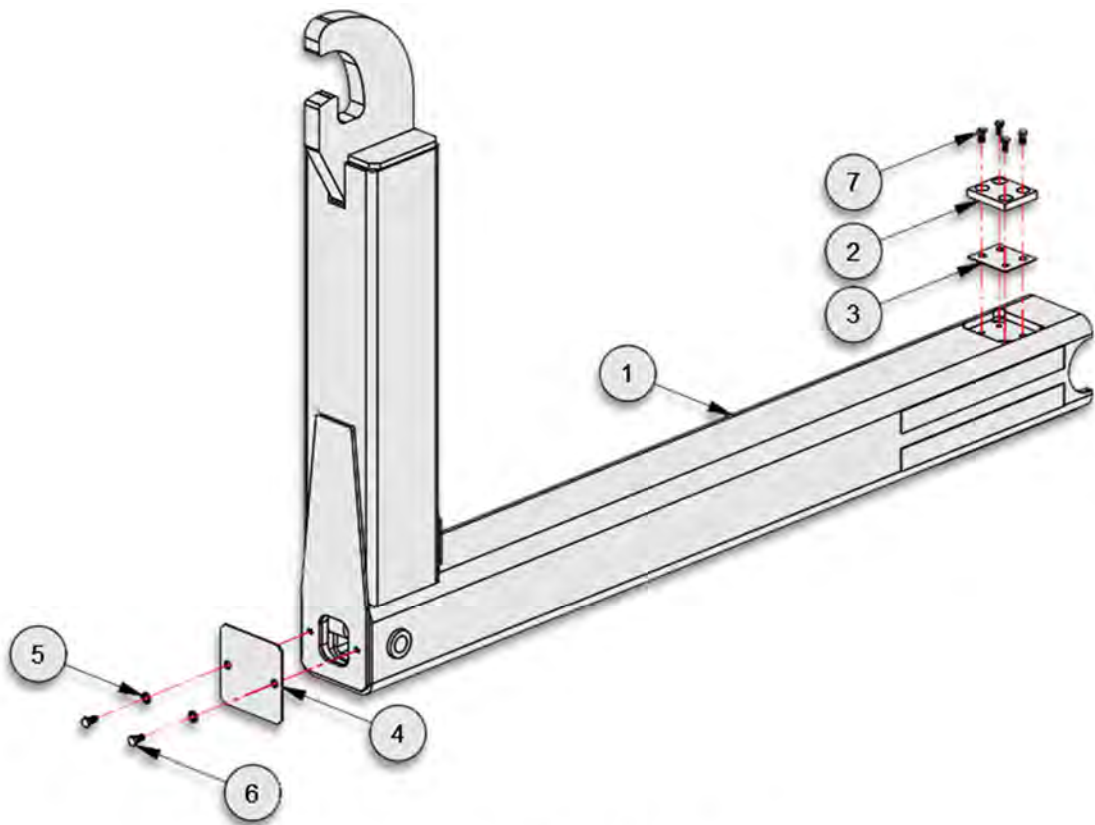
13H74 - BODY LOCK W/ SHELF ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	13H75	1	BODY LOCK WDMT, SHELF 100S	109.93
2	00P68	8	FHCS 3/8-16 UNC x 1-1/4 SS	0.04
3	90P71	2	WEAR PAD, 2-3/4 x 1/2 x 11-3/4	0.63



BODY LOCK W/SHELF, 100S

DISC-LOCK WASHER TORQUE SPECS	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

13H08 – FIXED JIB SUB-ASSEMBLY					SL-160
ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT-lb/all
1	13H19	1	Fixed Jib Weldment 36"	310.44	310.44
2	23H54	1	Wear Pad, 2-3/4x1/2x3-1/4	0.19	0.19
3	24H67	1	Shim, Jib 2-3/4 x 14GA x3-1/4	0.20	0.20
4	62H11	1	Cover, Jib 5-1/4x11GAx5-1/4	0.90	0.90
5	00755	2	Washer, Lock - 3/8 Dia	0.03	0.06
6	00P03	2	HHCS 3/8-16 UNC x 3/4	0.04	0.08
7	01P50	4	FHCS 5/16-18 UNC x 3/4	0.02	0.08



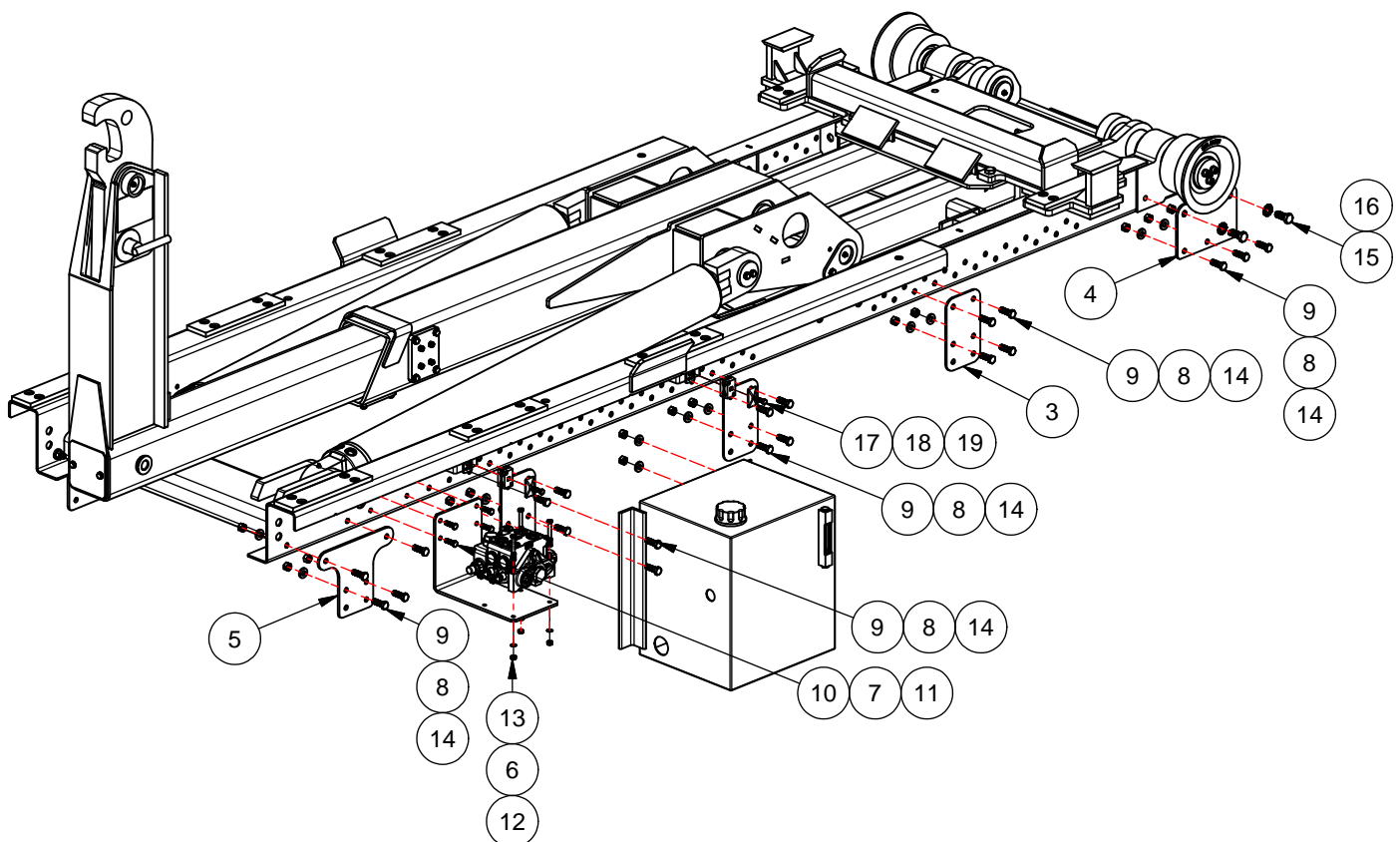
FIXED JIB SUB-ASSEMBLY

DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASSY TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108
NOTE: APPLY LOCTITE 243 (BLUE) TO ALL BOLTS.	

13H70- HOIST INSTALL KIT, SL-160

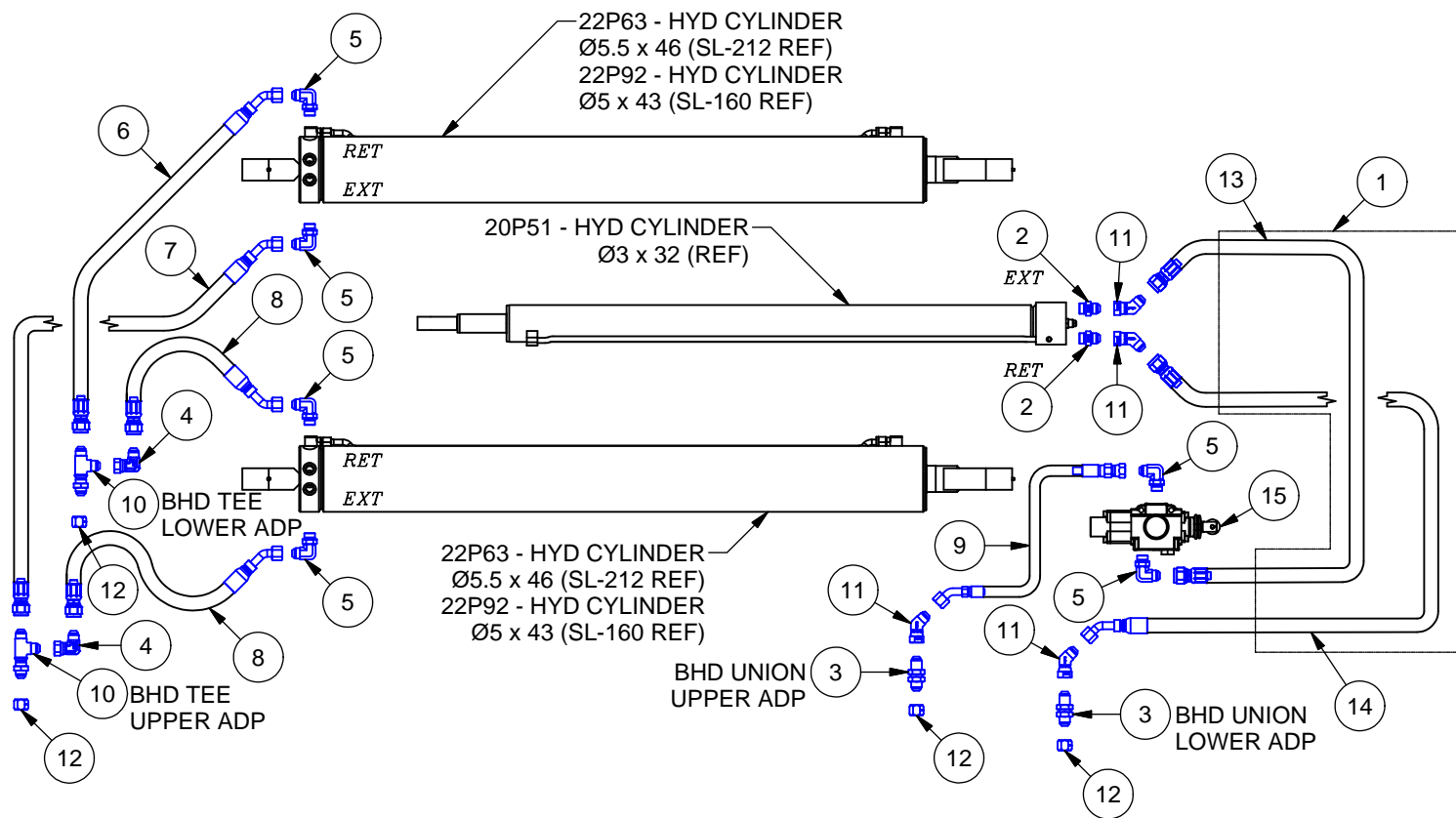
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	13H72	1	PARTS & OP, SL-160	0.00
2	13H73	1	DECAL ASSEMBLY, SL-160	0.00
3	25H89	6	MNT BKT, 5x3/16x8-1/4	2.08
4	25H90	2	REAR BRACKET	3.09
5	25H91	2	MNT BKT, 8-1/4x1/4x11	3.68
6	00752	3	WASHER, LOCK 5/16	0.03
7	00755	4	WASHER, LOCK 3/8	0.03
8	00784	42	WASHER, FLAT 1/2 ZP	0.03
9	00P01	42	HHCS 1/2-13 UNC x 1-1/2 GR8	0.11
10	00P13	4	HHCS 3/8-16 UNC x 1-1/4 GR8	0.05
11	00P14	4	NUT, HEX 3/8-16 UNC GR8	0.02
12	00P19	3	HHCS 5/16-18 UNC x 2-3/4 GR8	0.07
13	00P20	3	NUT, HEX 5/16-18 UNC GR8	0.01
14	00P35	42	NUT, LOCK 1/2-13 UNC GRC	0.04
15	00P56	4	HHCS 5/8-11 UNC x 1-1/2 GR8	0.19
16	01P31	4	WASHER, DISC LOCK 5/8 PR	0.03
17	10P28	2	HHCS 5/16-18 UNC x 1-1/4 ZP	0.04
18	10P29	2	COVER PLATE, CLAMP 7/8	0.08
19	10P30	2	CLAMP ASSY, TWIN 1/2	0.04
20	91P79	1	ALL MODEL TECH GUIDE	0.00

* ITEM NOT SHOWN



HOIST INSTALL KIT, SL-160

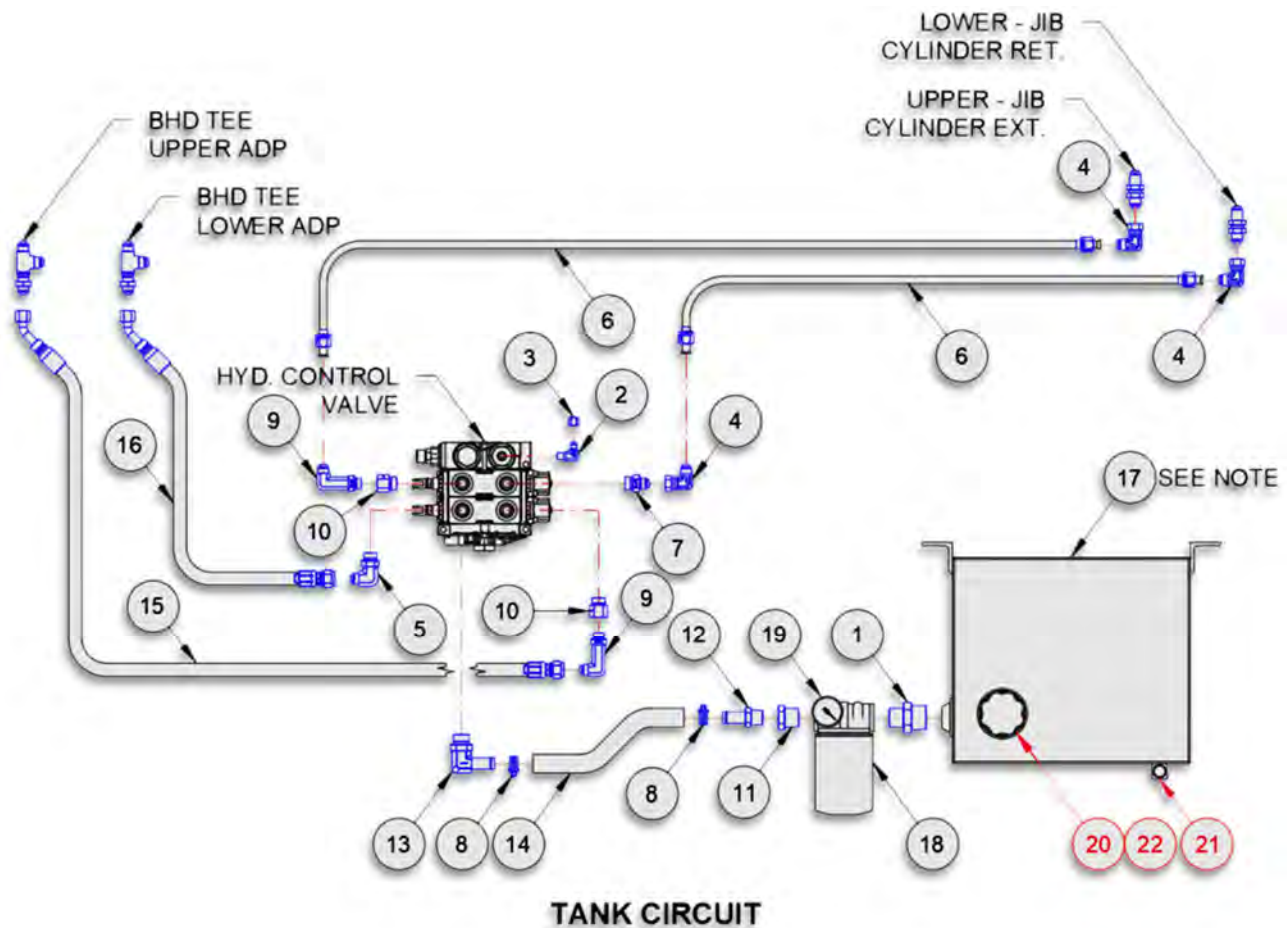
90H89 - BASE CYLINDER CIRCUIT 160/212				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	90H74	1	NYLON HOSE SLEEVE x 60"	0.30
2	10P39	2	ADP HYD 08MJ/08MB	0.40
3	10P43	2	ADP HYD 08MJ/08MJ BHD	0.28
4	10P44	2	ADP HYD 08MJ/08FJ 90	0.23
5	11P23	6	ADP HYD 08MJ/08MB 90	0.29
6	12P51	1	HOSE ASSY 42 08-08FJ/08FJ45	1.18
7	12P52	1	HOSE ASSY 38 08-08FJ/08FJ45	1.10
8	12P53	2	HOSE ASSY 21 08-08FJ/08FJ45	0.86
9	12P55	1	HOSE ASSY 31 06-08FJ/08FJ45	0.91
10	12P58	2	ADP HYD 08MJ/08MJ/08MJ	0.17
11	12P85	4	ADP HYD 08MJ/08FJ 45	0.20
12	13P14	4	ADP HYD 08FJ CAP	0.07
13	13P72	1	HOSE ASSY 78 06-08FJ/08FJ	1.60
14	13P74	1	HOSE ASSY 109 06-08FJ/08FJ45	2.06
15	23P04	1	HYD VALVE, 2-WAY 08FB	5.25



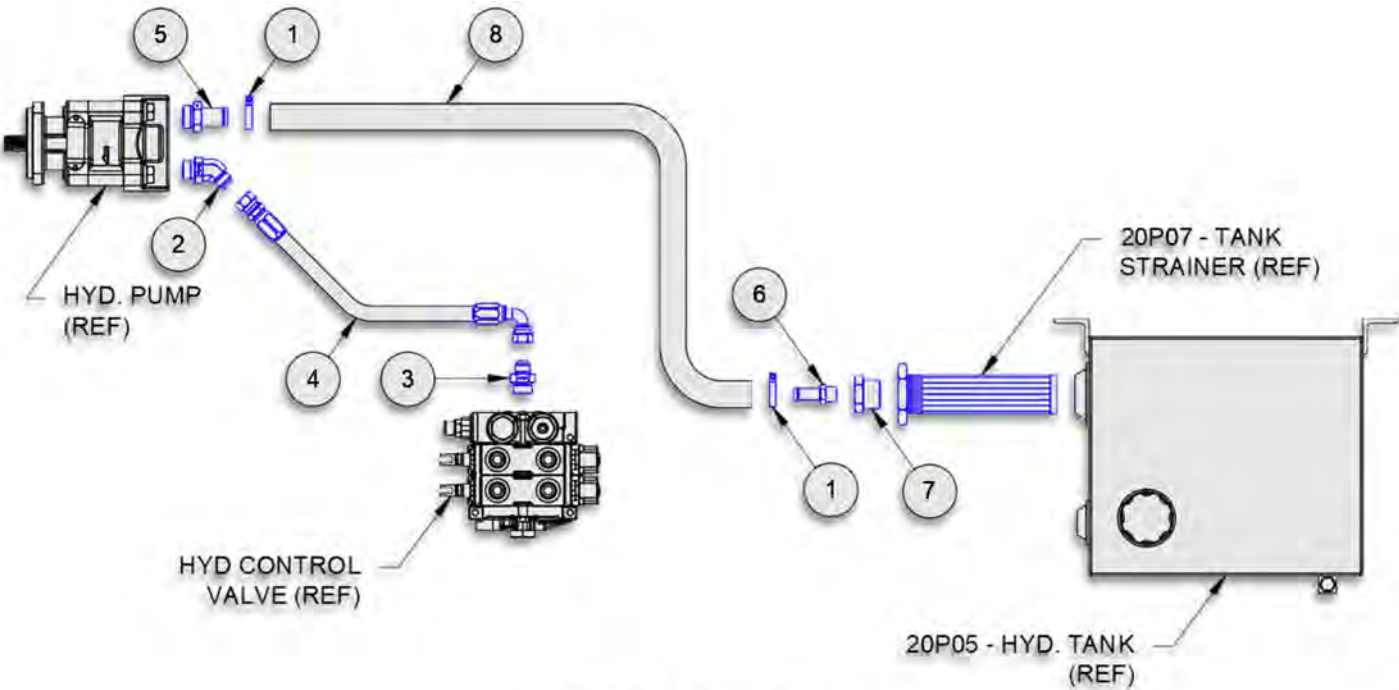
BASE CYLINDER CIRCUIT, 160/212

90H90 – TANK CIRCUIT					SL-160
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P26	1	Adp Hyd 20MP/16MP	0.70	0.70
2	10P37	1	Adp Hyd 04MJ/04MP 90	0.30	0.30
3	10P38	1	Adp Hyd 04FJ Cap	0.10	0.10
4	10P44	3	Adp Hyd 08MJ/08FJ 90	0.30	0.90
5	10P45	1	Adp Hyd 08MJ/10MB 90	0.30	0.30
6	10P54	2	Hyd Tube, Up 1/2 x 61-3/8	2.10	2.10
7	11P08	1	Adp Hyd 08MJ/10MB	0.30	0.30
8	11P20	2	Worm Gear Clamp (HSS16)	0.10	0.20
9	12P16	2	Adp Hyd 08MJ/08MB 90 LL	0.30	0.60
10	12P17	2	Adp Hyd 10MB/08FB	0.30	0.60
11	12P21	1	Adp Hyd 16MP/12FP	0.20	0.20
12	12P22	1	Adp Hyd 12HB/12MP	0.30	0.30
13	12P23	1	Adp Hyd 12HB/12MB 90	0.60	0.60
14	12P29	1	Hose 3/4 x 24 LP	0.88	0.88
15	12P53	1	Hose Assy 21 08-08FJ/08FJ45	1.26	1.26
16	12P59	1	Hose Assy 20 08-08FJ/08FJ	1.22	1.22
17	20P05	1	Hyd. Tank, - 15 gallon	54.20	54.20
18	20P22	1	Hyd. Filter Assembly - 25 GPM	2.30	2.30
19	20P64	1	Hyd Filter Indicator	-	-
SERVICE PARTS FOR TANK					
20	20P07		Hyd Strainer, 25 GPM		
21	20P96		Sight Gauge, Hyd Tank		
22	20P97		Breather Cap Assy, Hyd Tank		

Note: Hyd. Tank consists of tank weldment, tank mounted strainer, sight gauge, filler/breather cap, magnetic drain plug, and port plugs.

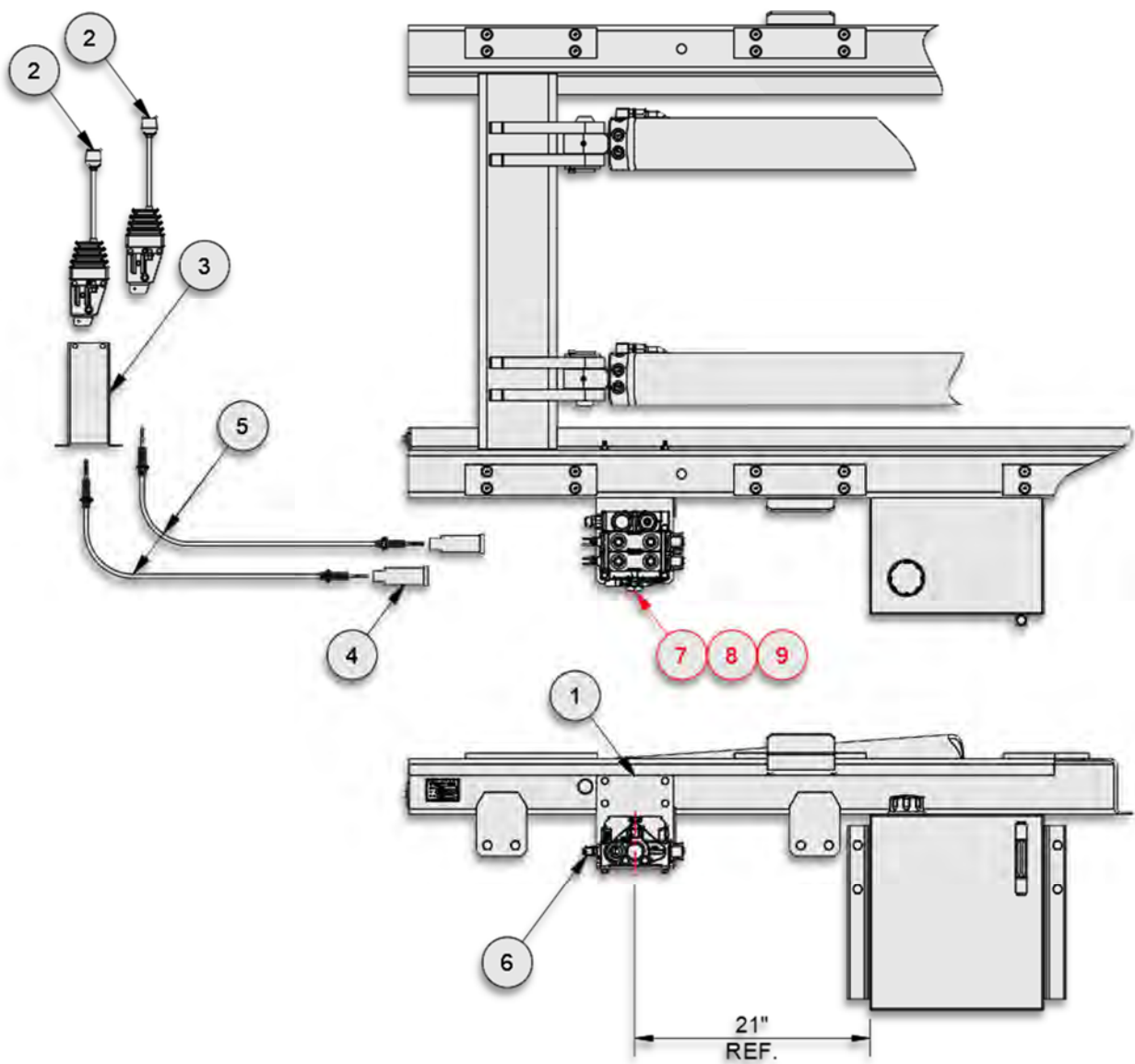


90H91 – PUMP CIRCUIT					SL-160
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P21	2	T-Bolt Clamp - 1-1/2 Dia	0.10	0.20
2	10P32	1	Adp Hyd 10MJ/12MB 45	0.30	0.30
3	10P35	1	Adp Hyd 10MJ/12MB	0.30	0.30
4	10P61	1	Hose Assy 106 08-10FJ/10FJ90	3.80	3.80
5	12P18	1	Adp Hyd 16HB/16MB	0.40	0.40
6	12P19	1	Adp Hyd 10HB/10MP	0.3	0.30
7	12P20	1	Adp Hyd 20MP/16FP	0.30	0.30
8	12P28	1	Hose 1 X 120 LP	6.60	6.60

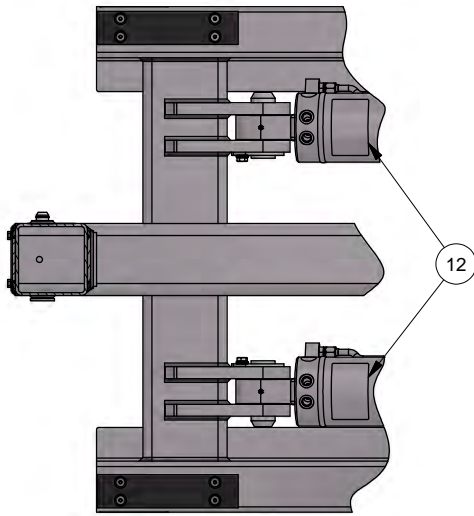


PUMP CIRCUIT

90H72 – MANUAL CONTROLS, 2-SECTION					SL-160
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10H51	1	Valve Mount Bracket	8.20	8.20
2	20P08	2	Control Handle, Cable	2.80	5.60
3	20P09	1	Control Console, 2 Sect	4.10	4.10
4	20P10	2	Bonnet Kit, V20	0.50	1.00
5	20P15	2	Control Cable Assy, 84" Std	1.83	3.66
6	21P32	1	Hyd Valve, V20, 2 Sect 3250	27.00	27.00
VALVE SERVICE PARTS					
7	20P17	1	Relief Valve Cart, 3250 V20		
8	22P20	2	Seal Kit, Sect V20		
9	22P21	2	Seal Kit, Sect & Spool V20		

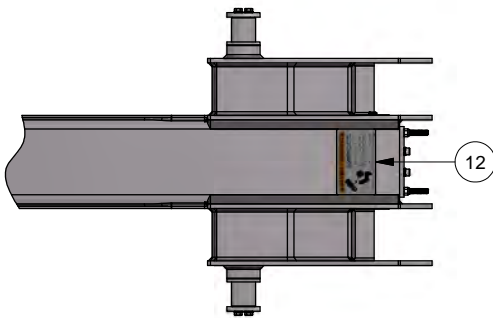


MANUAL CONTROLS



MAIN FRAME TOP VIEW

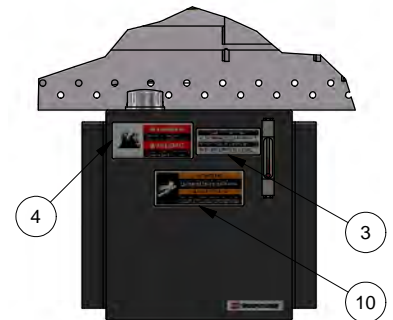
13H73 - DECAL ASSEMBLY, SL-160				
ITEM	QTY	PART #	DESCRIPTION	WT.-lb./ea.
1	2	90P07	DECAL, OP & SERVICE MANUAL	0.00
2	2	90P08	DECAL, HOIST/BODY	0.00
3	1	90P09	DECAL, HYD OIL	0.00
4	1	90P10	DECAL, HYD OIL FLAMMABLE	0.00
5	2	90P11	DECAL, HOIST FALLING	0.00
6	1	90P12	LEVER CONTROL DECAL	0.01
7	1	90P13	DECAL, SAFETY INSTRUCTIONS	0.00
8	2	90P14	DECAL, SWAPLOADER	0.01
9	1	90P18	DECAL, RELIEF VALVE	0.00
10	1	90P78	DECAL, HIGH-PRESSURE FLUIDS	0.00
11	2	91P06	DECAL, LUBRICATION POINTS	0.00
12	3	91P52	DECAL, COUNTERBALANCE VALVE	0.00
13	1	91P66	DECAL, OUTSIDE CONTROLS	0.00
14	4	91P36	DECAL, SL-160	0.00
ADJUSTABLE JIB OPTION ONLY				
15	90P94	2	DECAL, ADJ JIB OP 54/62	0.01



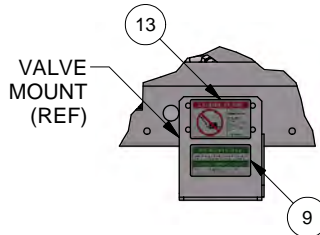
OUTER TUBE TOP VIEW



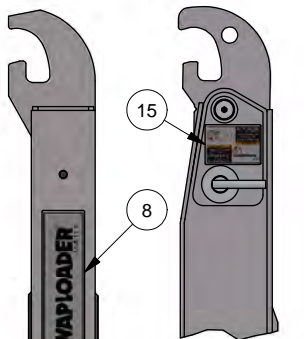
IN-CAB VISOR DETAIL
(FIELD INSTALL)



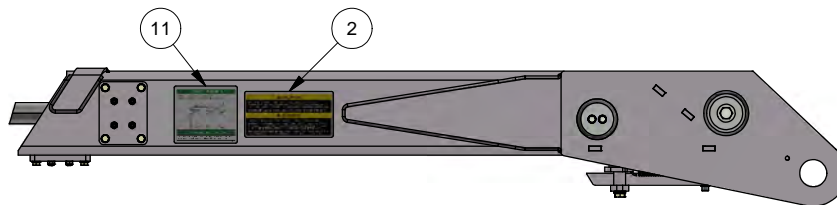
TANK DETAIL
(FIELD INSTALL)



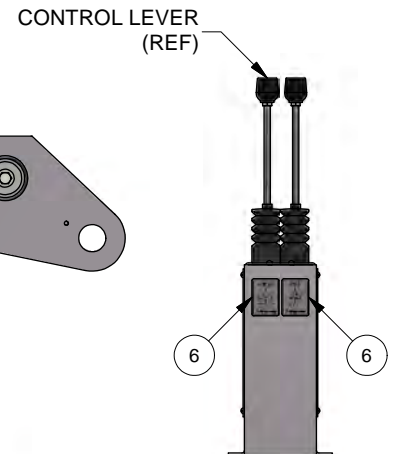
VALVE MOUNT DETAIL
(FIELD INSTALL)



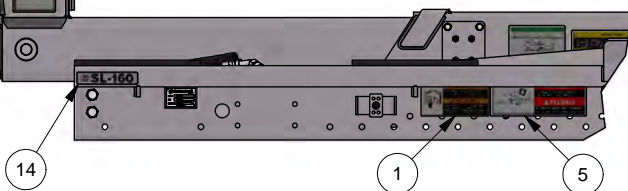
ADJ. JIB DETAIL



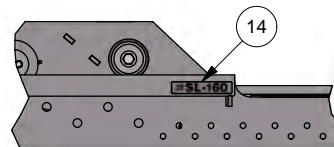
OUTER TUBE DETAIL
(TYPICAL ON BOTH SIDES)



IN-CAB CONSOLE DETAIL
(FIELD INSTALL)



MAIN FRAME DETAIL
(TYPICAL ON BOTH SIDES)



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OPTIONS

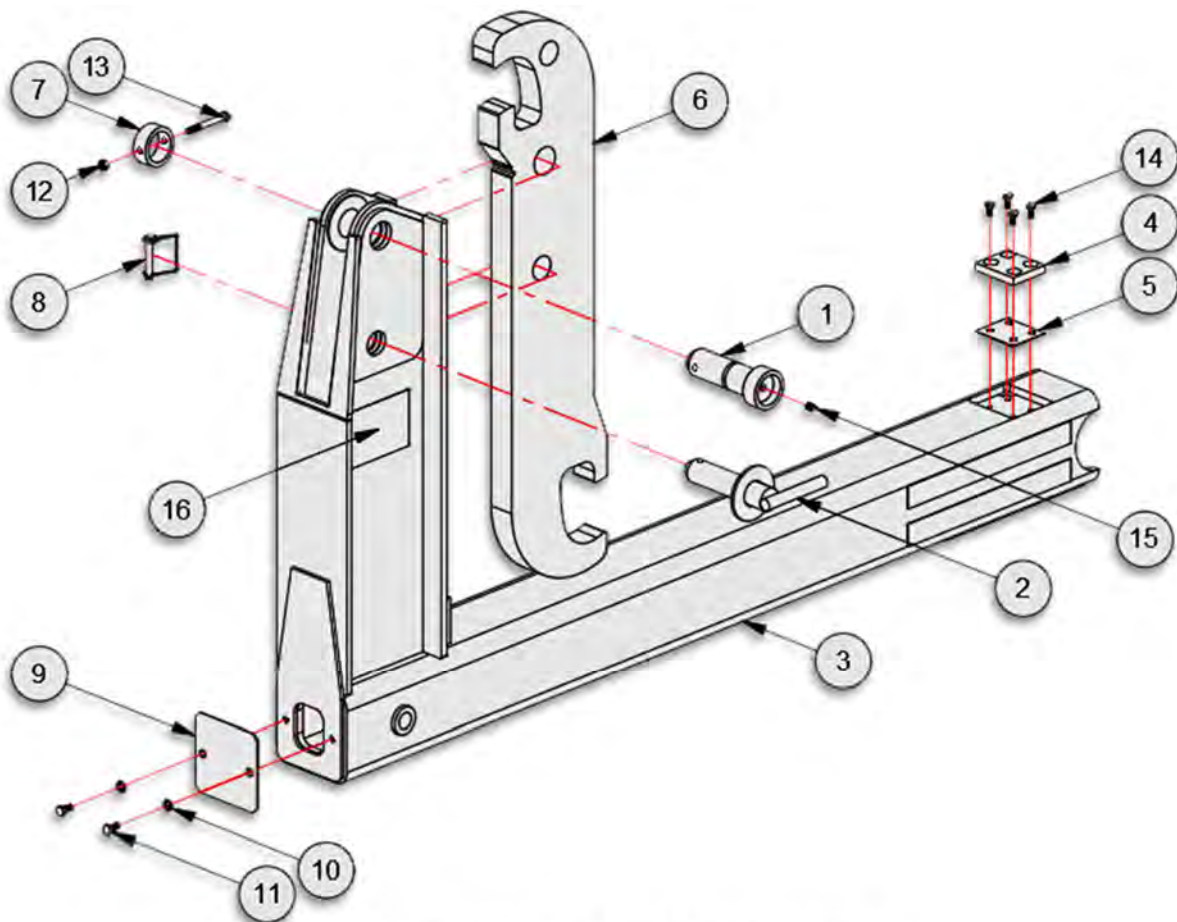
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**DISC-LOCK WASHER
TORQUE SPECS**

BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

13H07 – ADJUSTABLE JIB SUB-ASSEMBLY
SL-160

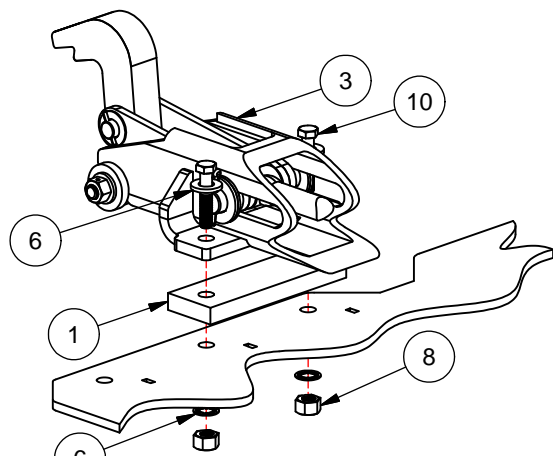
ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT-lb/all
1	12H35	1	Pivot Pin	3.20	3.20
2	12H36	1	Lock Pin	3.00	3.00
3	13H18	1	Adj. Jib Wdmt 36"/54"	328.09	328.09
4	23H54	1	Wear Pad, 2-3/4x1/2x3-1/4	0.19	0.19
5	24H67	1	Shim, Jib 2-3/4 x 14GA x3-1/4	0.20	0.20
6	24H80	1	Hook, Adj Jib, 36/54	120.40	120.40
7	24H83	1	Tube 2-1/2OD x 1	0.30	0.30
8	53586	1	Safety Snap Pin, 3/8 Dia x 2-1/2 Lg	0.14	0.14
9	62H11	1	Cover, Jib 5-1/4x11GAx5-1/4	0.90	0.90
10	00755	2	Washer, Lock - 3/8 Dia	0.03	0.06
11	00P03	2	HHCS 3/8-16 UNC x 3/4	0.04	0.08
12	00P34	1	Nut, Lock 3/8-16	0.02	0.02
13	01P01	1	HHCS 3/8-16 UNC x 3-1/4	0.01	0.01
14	01P50	4	FHCS 5/16-18 UNC x 3/4	0.02	0.08
15	90P03	1	Zerk, Grease - 1/8 NPT	0.01	0.01
16	90P91	2	Decal, Adjustable Jib Operation	0.01	0.02


ADJUSTABLE JIB SUB-ASSEMBLY

DISC-LOCK WASHER TORQUE SPECS

BOLT SIZE	SAE GR 8 ASSY TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

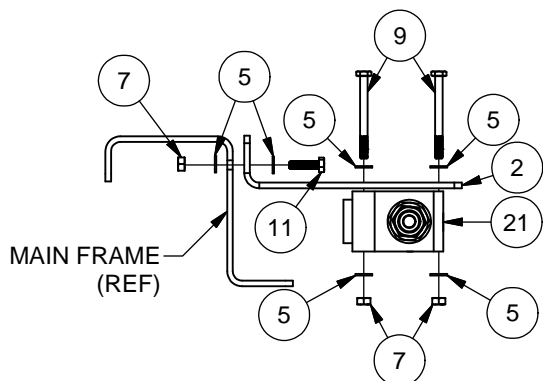
NOTE:
APPLY LOCTITE 243 (BLUE)
TO ALL BOLTS.



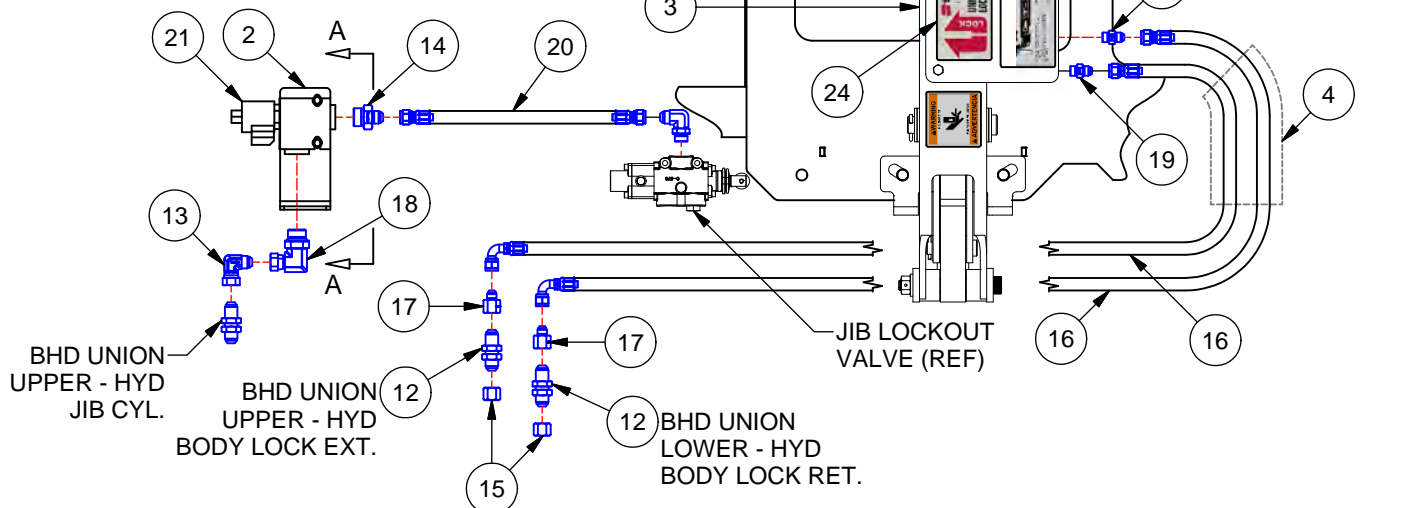
HYD BODY LOCK MOUNTING DETAIL

91H51- CYLINDER CIRCUIT, BL 160/212 STD

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	27H14	2	BODY LOCK MOUNT SHIM	4.11
2	27H22	1	VALVE MOUNT BKT, SOLENOID	1.22
3	44H76	1	UNIVERSAL LOCK ASSY, 100/200	86.42
4	90H74	1	NYLON HOSE SLEEVE x 60"	0.00
5	00770	8	WASHER, FLAT 1/4	0.00
6	00785	8	WASHER, FLAT 5/8 ZP	0.05
7	00P51	4	NUT, LOCK 1/4-20 UNC GR8	0.01
8	00P55	4	NUT, LOCK 5/8-11 UNC GR8	0.08
9	01P41	2	HHCS 1/4-20 UNC x 2-3/4 GR8	0.04
10	01P49	4	HHCS 5/8-11 UNC x 2-3/4 GR8	0.30
11	01P56	2	HHCS 1/4-20 UNC x 1 GR8	0.02
12	10P43	2	ADP HYD 08MJ/08MJ BHD	0.28
13	10P44	1	ADP HYD 08MJ/08FJ 90	0.23
14	11P83	1	ADP HYD 08MJ/12MB	0.30
15	13P14	2	ADP HYD 08FJ CAP	0.07
16	13P84	2	HOSE ASSY 62 06-06FJ/06FJ90	2.00
17	13P87	2	ADP HYD 08FJ/06MJ	0.10
18	13P98	1	ADP HYD 12MB/08FJ90	0.65
19	14P77	2	ADP HYD 06MJ/06MB .141 RSTR.	0.08
20	14P98	1	HOSE ASSY 22 08-08FJ/08FJ	0.76
21	23P02	1	SOLENOID VALVE, U-LOCK	2.85
22	91P50	2	DECAL, PINCH POINT	0.00
23	91P51	3	DECAL, U-LOCK ENGAGEMENT	0.00
24	92P31	2	DECAL, U-LOCK PATENT	0.00



SECTION A-A



CYLINDER CIRCUIT, BL 160/212 STD

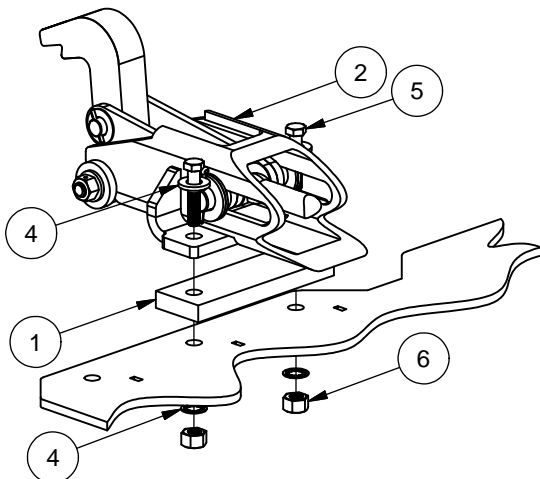
DISC-LOCK WASHER TORQUE SPEC'S

BOLT SIZE	SAE GR 8 ASSY TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

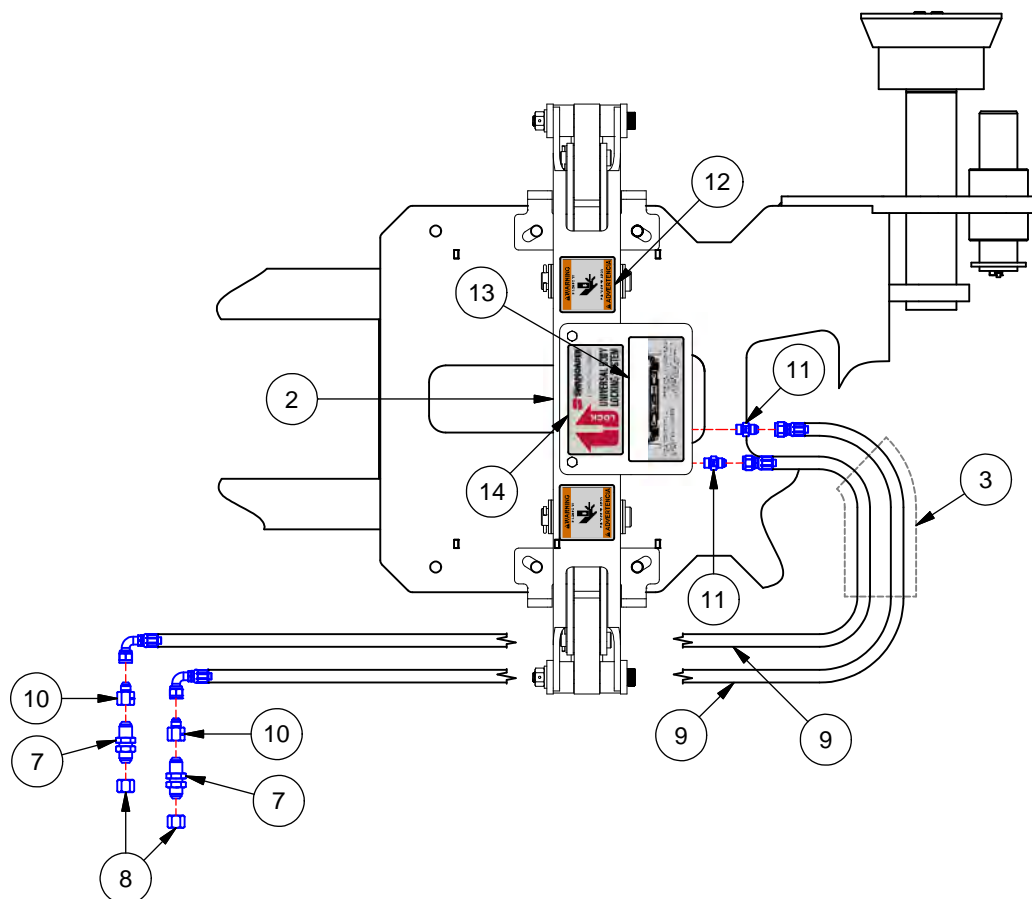
NOTE:
APPLY LOCTITE 243 (BLUE)
TO ALL BOLTS.

91H46 - CYLINDER CIRCUIT, BL 160/212 EHV

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	27H14	2	BODY LOCK MOUNT SHIM	4.11
2	44H76	1	UNIVERSAL LOCK ASSY, 100/200	86.42
3	90H74	1	NYLON HOSE SLEEVE x 60"	0.00
4	00785	8	WASHER, FLAT 5/8 ZP	0.05
5	00P55	4	NUT, LOCK 5/8-11 UNC GR8	0.08
6	01P49	4	HHCS 5/8-11 UNC x 2-3/4 GR8	0.30
7	10P43	2	ADP HYD 08MJ/08MJ BHD	0.28
8	13P14	2	ADP HYD 08FJ CAP	0.07
9	13P84	2	HOSE ASSY 62 06-06FJ/06FJ90	2.00
10	13P87	2	ADP HYD 08FJ/06MJ	0.10
11	14P77	2	ADP HYD 06MJ/06MB .141 RSTR.	0.08
12	91P50	2	DECAL, PINCH POINT	0.00
13	91P51	3	DECAL, U-LOCK ENGAGEMENT	0.00
14	92P31	2	DECAL, U-LOCK PATENT	0.00



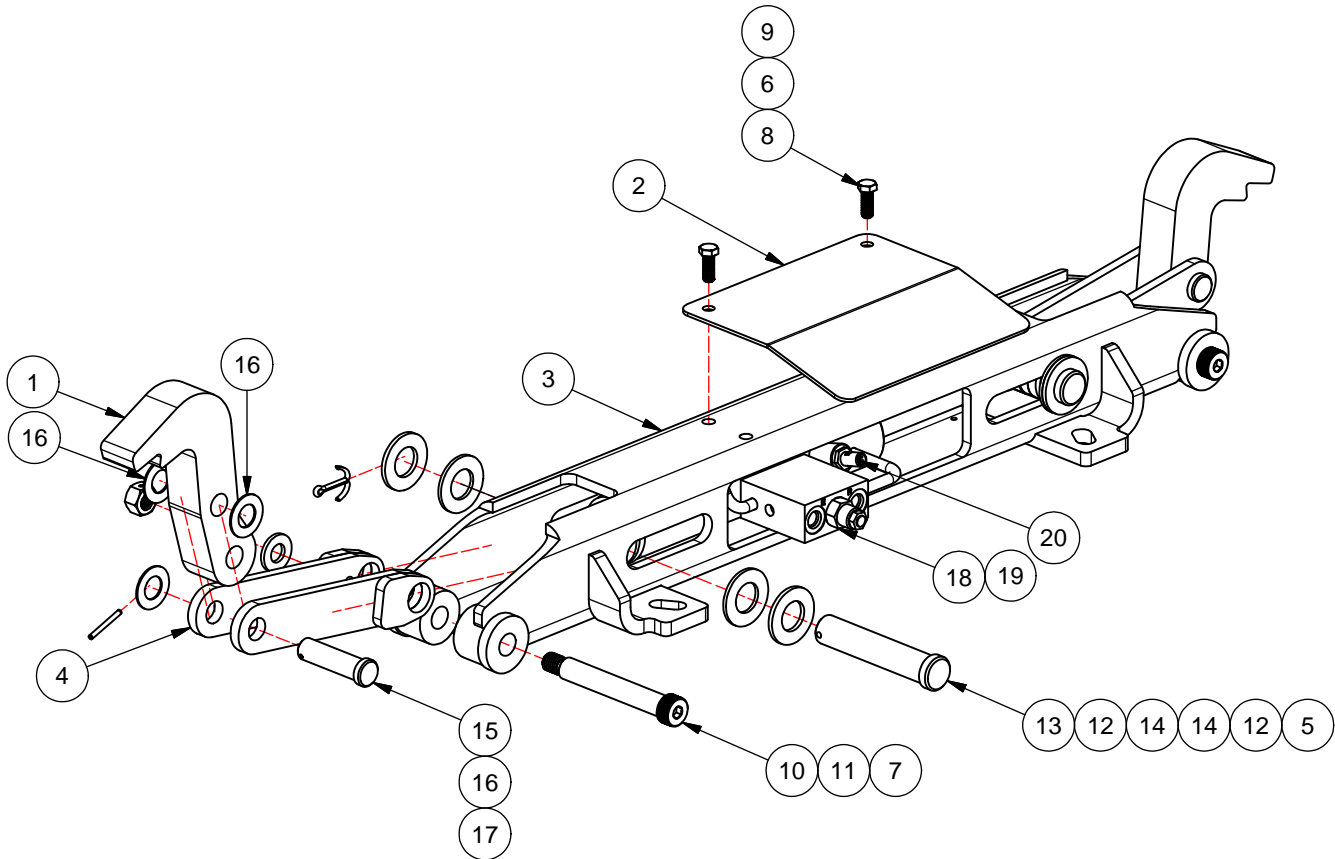
HYD BODY LOCK MOUNTING DETAIL



CYLINDER CIRCUIT, BL 160/212 EHV

DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASSY TORQUE (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108
NOTE: APPLY LOCTITE 243 (BLUE) TO ALL BOLTS.	

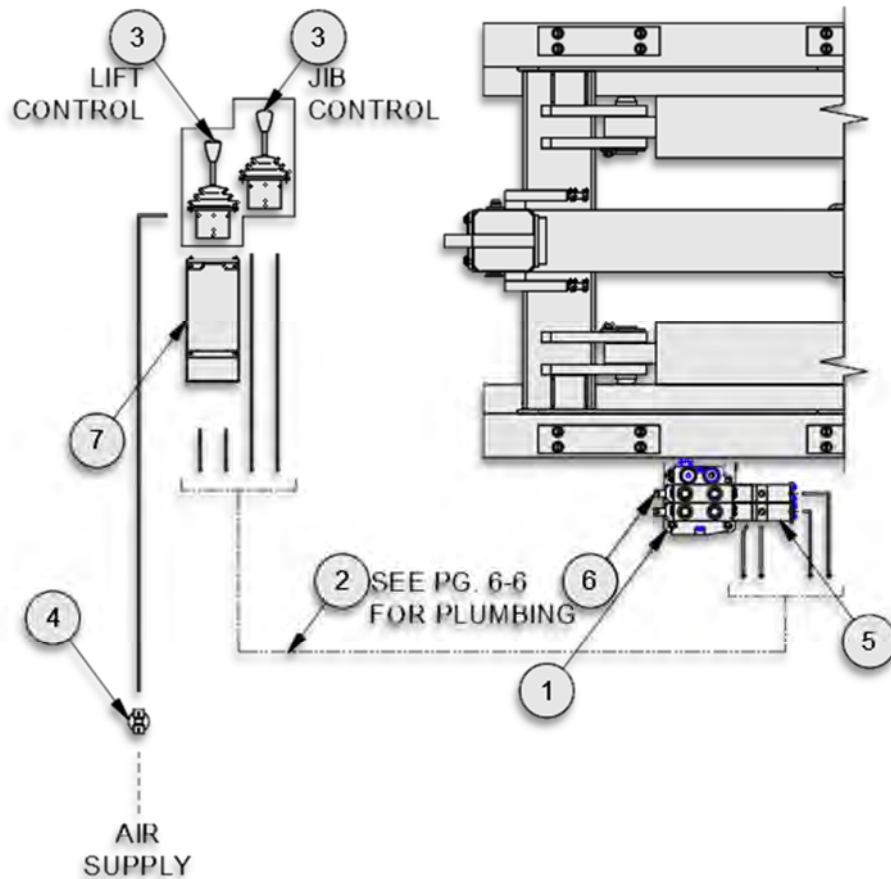
44H76 - U-LOCK ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	26H97	2	SINGLE PRONG	6.58
2	27H26	1	COVER PLATE, HYD LOCK	2.43
3	44H77	1	UNIVERSAL LOCK WELDMENT	43.67
4	44H78	4	LINKAGE WELDMENT	1.74
5	00837	2	PIN, COTTER 3/16 DIA x 2	0.02
6	00P14	2	NUT, HEX 3/8-16 UNC GR8	0.02
7	00P55	2	NUT, LOCK 5/8-11 UNC GR8	0.08
8	00P62	2	HHCS 3/8-16 UNC x 1 GR8	0.04
9	01P28	2	WASHER, DISC LOCK 3/8 PR	0.00
10	01P85	2	SS 5/8-11 UNC x 4-3/4	0.75
11	01P86	2	WASHER, FLAT 5/8 ZP	0.06
12	01P87	4	WASHER, FLAT 1 ZP	0.10
13	01P88	2	PIN, CLEVIS 1 x 4-11/16	1.21
14	01P89	4	WASHER, FLAT 1 NYLON	0.01
15	01P90	2	PIN, CLEVIS 3/4 x 2-1/2 ZP	0.39
16	01P91	6	WASHER, FLAT 3/4 SS	0.02
17	01P92	2	PIN, SLTD SPG 5/32 x 1-1/2 ZP	0.01
18	22P90	1	UNIVERSAL LOCK CYLINDER	14.46
SERVICE PARTS FOR CYLINDER				
19	22P78	1	C'BAL CART, 5000 PSI CBCG-LJN	0.50
20	23P94	1	PROXIMITY SWITCH, U-LOCK	0.10

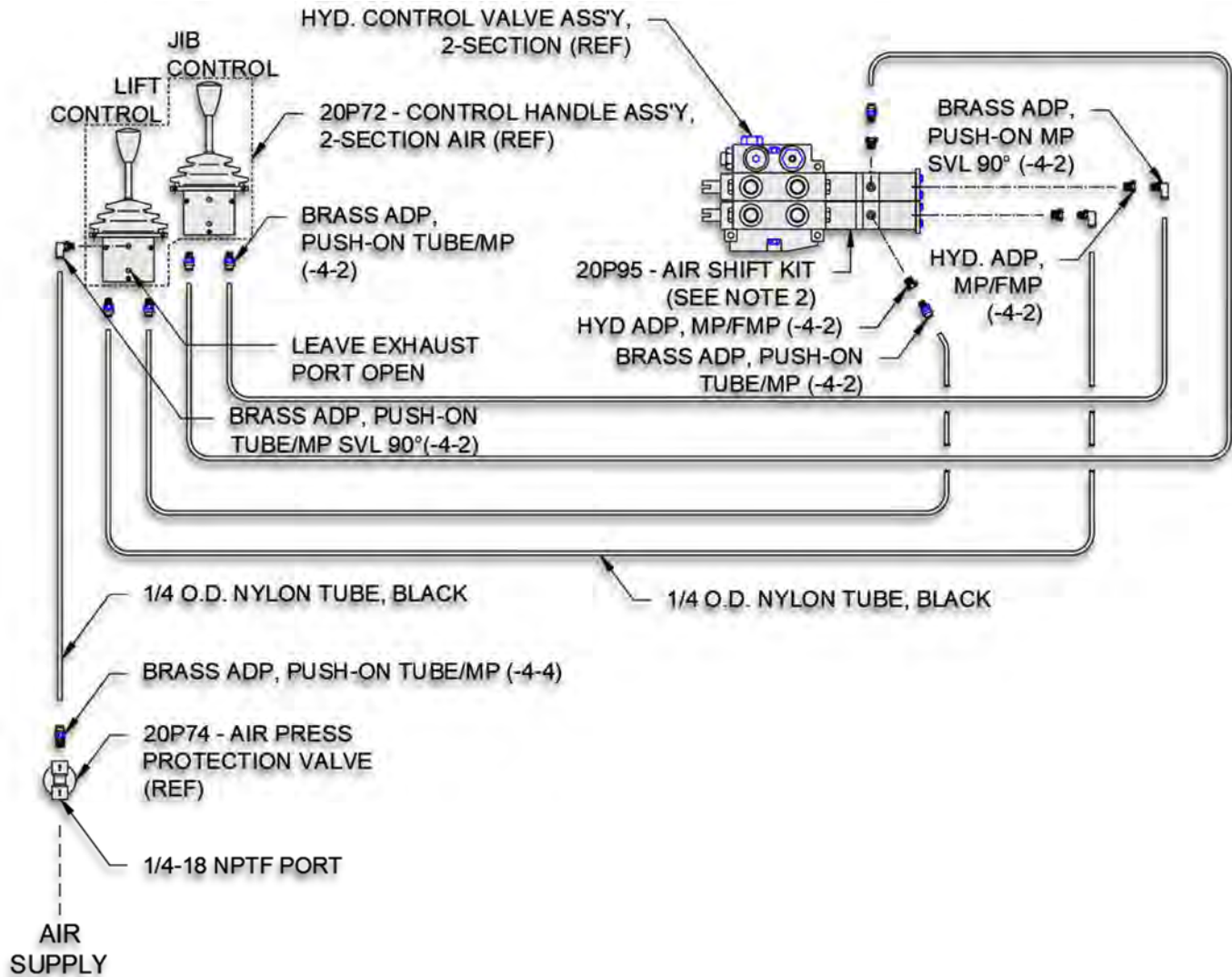


UNIVERSAL LOCK ASSY, 100/200

91H16 – AIR CONTROLS, 2-SECTION**SL-160**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10H51	1	Valve Mount Bracket	8.20	8.20
2	12P94	1	Air Line Kit	1.40	1.40
3	20P72	1	Control Handle, 2-Section Air	1.60	1.60
4	20P74	1	Air Pressure Protection Valve	0.60	0.60
5	20P95	2	Air Shift Kit, V20	1.40	2.80
6	21P32	1	Hyd. Valve, V20, 2-Section 3250	27.00	27.00
7	51H27	1	Air Cntrl Handle Console, -Section	4.20	4.20

**AIR CONTROLS, 2-SECTION**

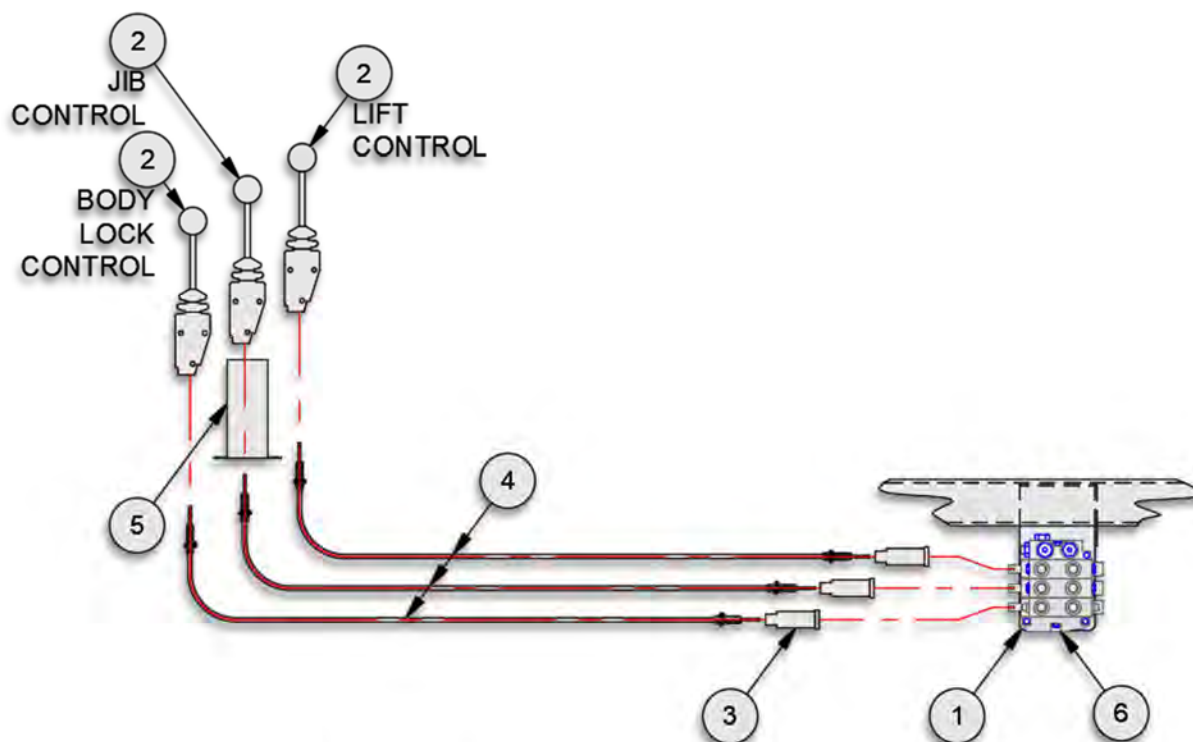


AIR CIRCUIT PLUMBING DIAGRAM, 2-SECTION

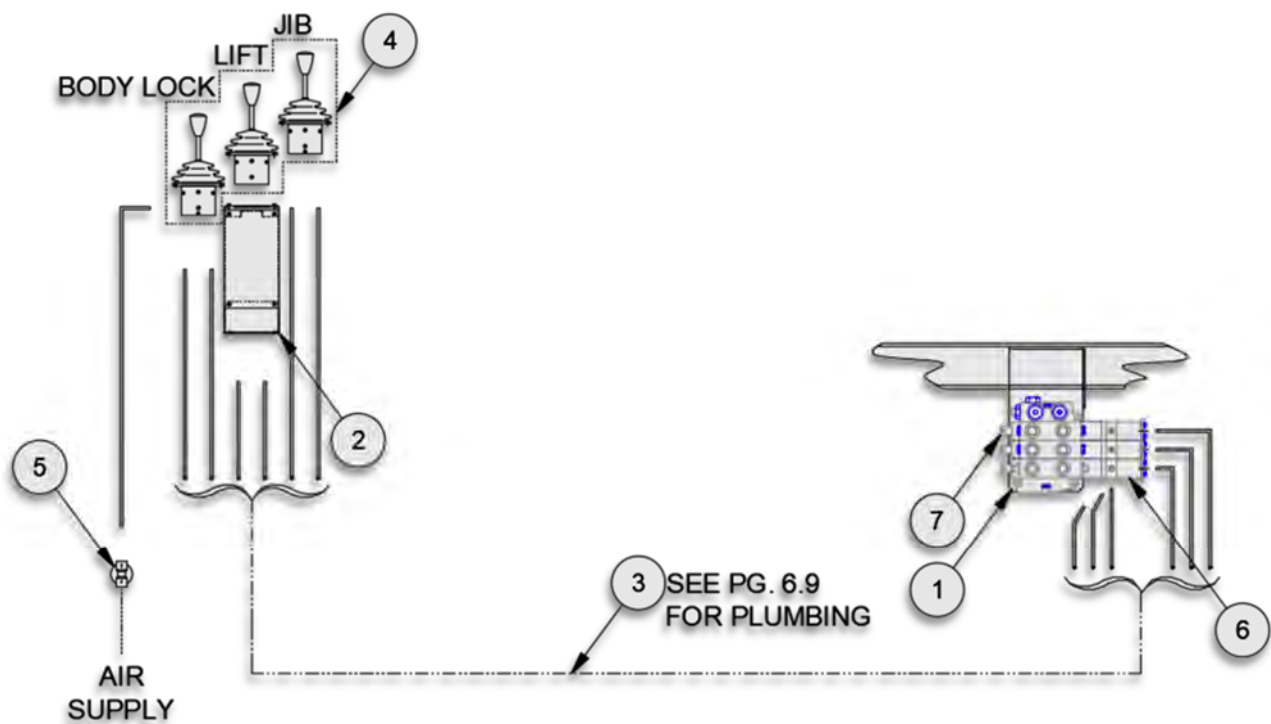
NOTE:

1. FITTING AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT WHICH CONTAINS FITTINGS FOR MULTIPLE HOIST/PLUMBING CONFIGURATIONS. NOT ALL FITTINGS MAY BE UTILIZED.
2. THE 20P95 AIR SHIFT KITS ARE TO BE INSTALLED ON THE HYD. CONTROL VALVE BY THE HOIST INSTALLER. PREFERENCE INSTALLTION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.

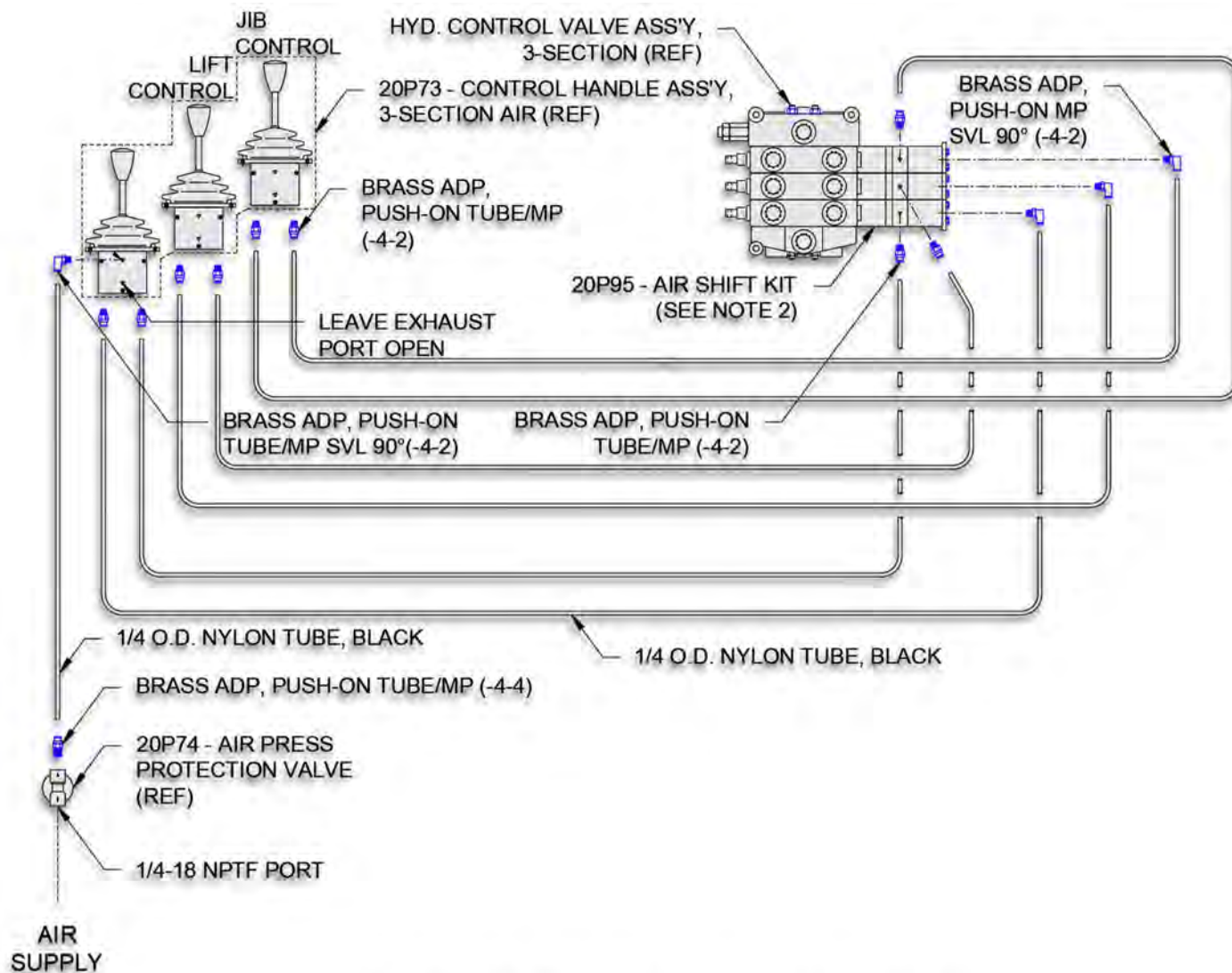
91H48 – MANUAL CONTROLS, 3-SECTION					SL-160	
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all	
1	13H76	1	Valve Mount Bkt, 3-Sect	11.47	11.47	
2	20P08	3	Control Handle, Cable	2.80	8.40	
3	20P10	3	Bonnet Kit, V20	0.50	1.50	
4	20P15	3	Control Cable Assy, 84 STD	1.83	5.49	
5	20P78	1	Control Console, 3-Sect	0.60	0.60	
6	22P94	1	Hyd Valve, 3-Sect 3250 V20	45.00	45.00	

**MANUAL CONTROLS, 3-SECTION**

91H49 – AIR CONTROLS, 3-SECTION					SL-160
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	13H76	1	Valve Mount Bkt, 3-Sect	11.47	11.47
2	51H37	1	Air Ctrl Console, 3-Sect	4.90	4.90
3	12P94	1	Air Line Kit	1.40	1.40
4	20P73	1	Control Handle, 3 Sect Air	2.40	2.40
5	20P74	1	Air Pressure Protection Valve	0.60	0.60
6	20P95	3	Air Shift Kit, V20	1.40	4.20
7	22P94	1	Hyd Valve, 3-Sect 3250 V20	45.00	45.00



AIR CONTROLS, 3-SECTION



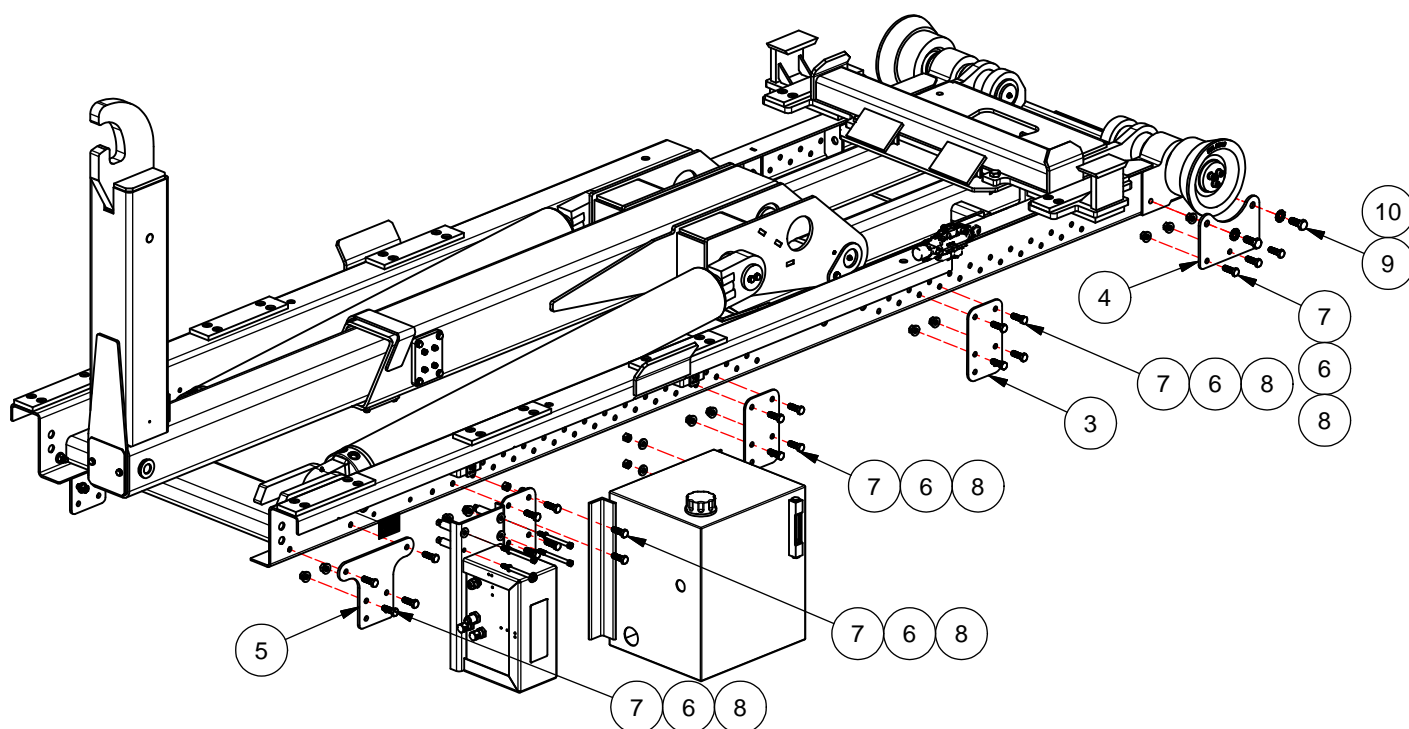
AIR CIRCUIT PLUMBING DIAGRAM, 3-SECTION

NOTE:

1. FITTING AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT WHICH CONTAINS FITTINGS FOR MULTIPLE HOIST/PLUMBING CONFIGURATIONS. NOT ALL FITTINGS MAY BE UTILIZED.
2. THE 20P95 AIR SHIFT KITS ARE TO BE INSTALLED ON THE HYD. CONTROL VALVE BY THE HOIST INSTALLER. PREFERENCE INSTALLTION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.

13H71 - HOIST INSTALL KIT, EHV-160				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
* 1	13H72	1	PARTS & OP, SL-160	0.00
* 2	13H73	1	DECAL ASSEMBLY, SL-160	0.00
3	25H89	6	MNT BKT, 5x3/16x8-1/4	2.08
4	25H90	2	REAR BRACKET	3.09
5	25H91	2	MNT BKT, 8-1/4x1/4x11	3.68
6	00784	42	WASHER, FLAT 1/2 ZP	0.03
7	00P01	42	HHCS 1/2-13 UNC x 1-1/2 GR8	0.11
8	00P35	42	NUT, LOCK 1/2-13 UNC GRC	0.04
9	00P56	4	HHCS 5/8-11 UNC x 1-1/2 GR8	0.19
10	01P31	4	WASHER, DISC LOCK 5/8 PR	0.03
* 11	91P79	1	ALL MODEL TECH GUIDE	0.00

* ITEM NOT SHOWN



HOIST INSTALL KIT, EHV-160

91H23 – TANK CIRCUIT (EHV)**SL-160**

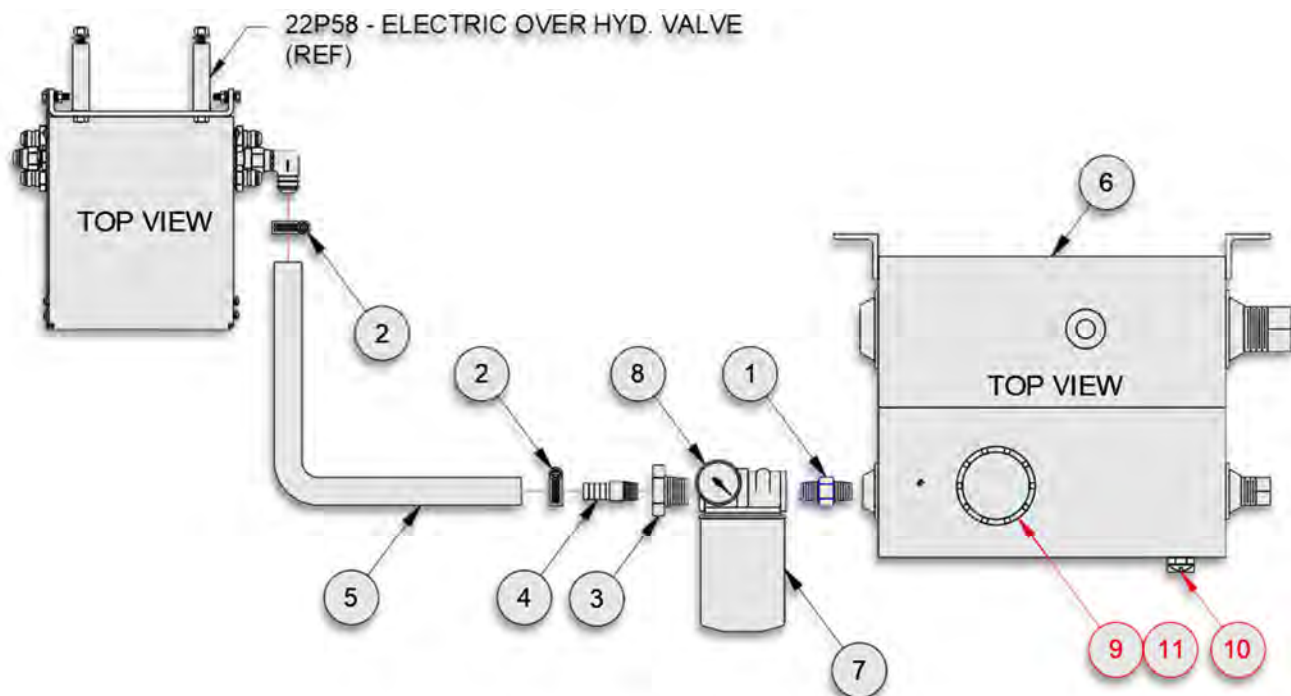
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P26	1	Adp Hyd 20MP/16MP	0.70	0.70
2	11P20	2	Worm Gear Clamp (HSS16)	0.10	0.20
3	12P21	1	Adp Hyd 16MP/12FP	0.20	0.20
4	12P22	1	Adp Hyd 12HB/12MP	0.30	0.30
5	12P29	1	Hose 3/4 x 24 LP	0.88	0.88
6	20P05	1	Hyd. Tank, - 15 Gallon	54.20	54.20
7	20P22	1	Hyd. Filter Assembly - 25 GPM	2.30	2.30
8	20P64	1	Hyd Filter Indicator	0.01	0.01

NOTE:

TANK CONSISTS OF TANK WELDMENT, TANK MOUNTED STRAINER, SIGHT GAUGE, FILLER/BREATHING CAP, MAGNETIC DRAIN PLUG AND PORT PLUGS.

SERVICE PARTS FOR TANK

9	20P07	1	Hyd Strainer, 25 GPM		
10	20P96	1	Sight Gauge, Hyd Tank		
11	20P97	1	Breather Cap Assy, Hyd Tank		

**TANK CIRCUIT (EHV)**

SERVICE PARTS FOR TANK

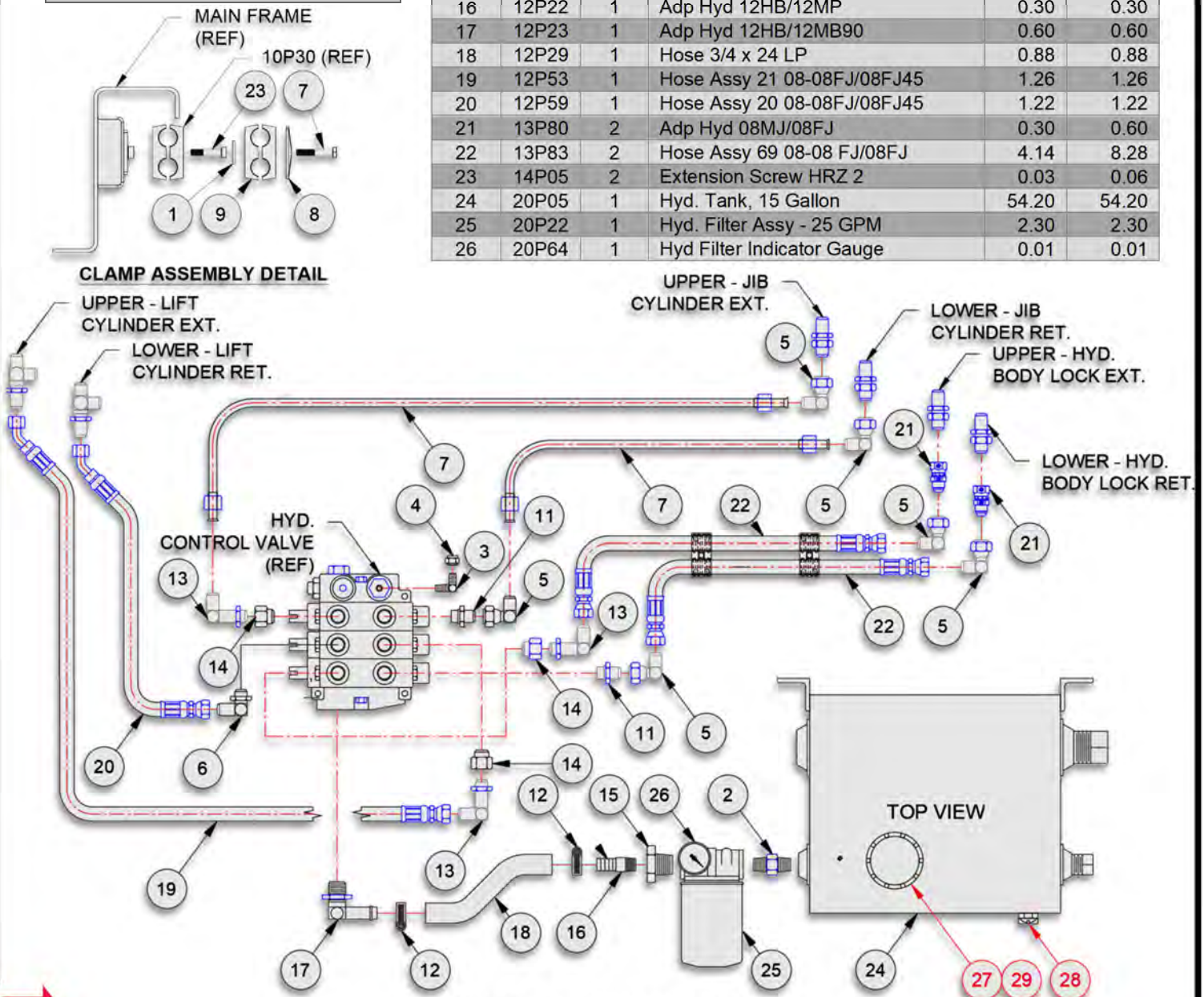
ITEM	PART #	QTY	DESC.
27	20P07	1	Hyd Strainer, 25 GPM
28	20P96	1	Sight Gauge, Hyd Tank
29	20P97	1	Breather Cap Assy, Hyd Tank

NOTE:

TANK CONSISTS OF TANK WELDMENT, TANK MOUNTED STRAINER, SIGHT GAUGE, FILLER/BREATHING CAP, MAGNETIC DRAIN PLUG AND PORT PLUGS.

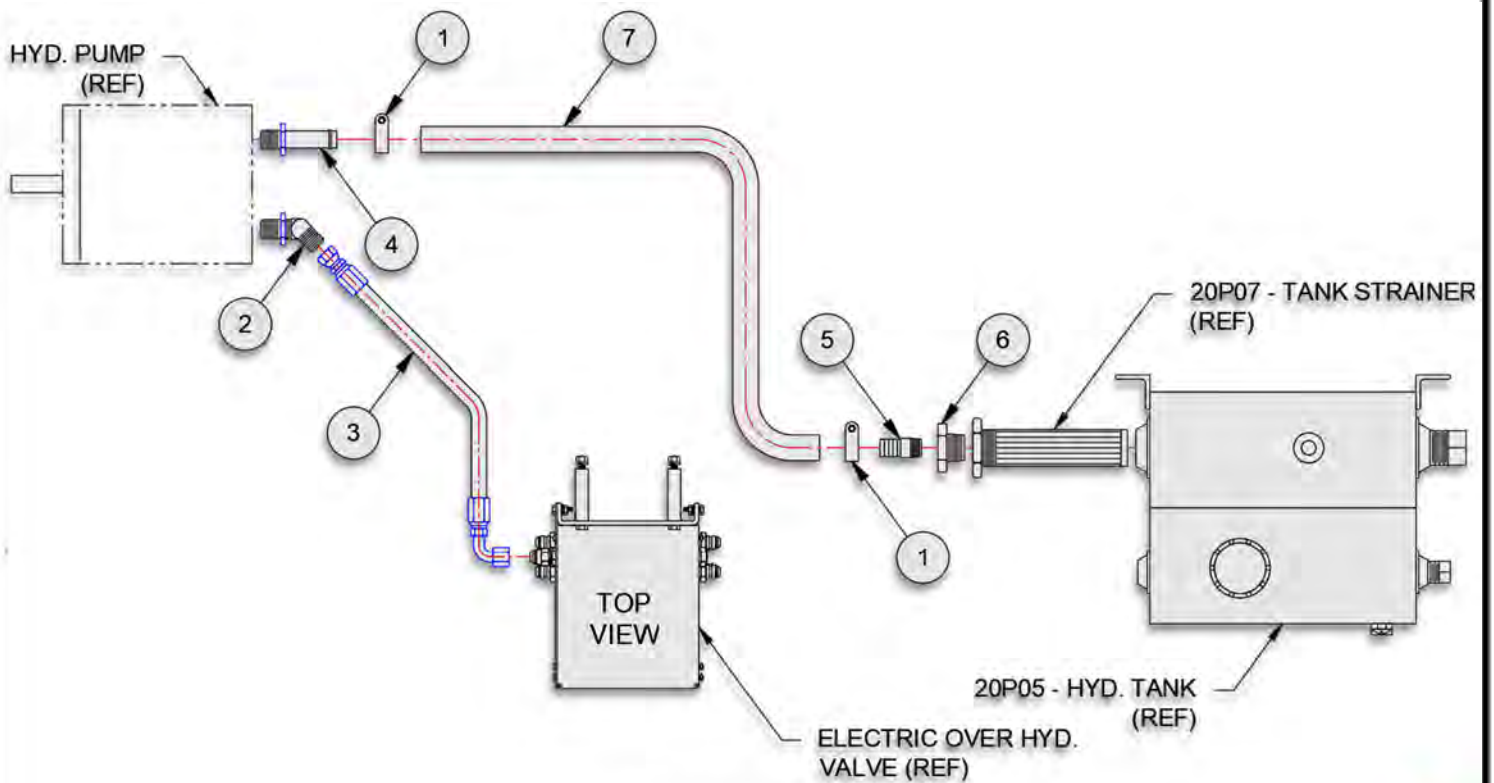
91H42 – TANK CIRCUIT, 3-SECTION**SL-160**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	01P98	2	Adp Hyd 10MJ/12MB 45	0.30	0.30
2	10P26	1	Adp Hyd 20MP/16MP	3.80	3.80
3	10P37	1	Adp Hyd 04MJ/04MP90	0.40	0.40
4	10P38	1	Adp Hyd 04FJ Cap	0.30	0.30
5	10P44	6	Adp Hyd 08MJ/08FJ90	0.30	0.30
6	10P45	1	Adp Hyd 08MJ/10MB90	6.60	6.60
7	10P54	2	Hyd Tube, Up 1/2 x 61-3/8	2.33	4.66
8	10P63	2	HHCS 5/16 x 1-3/4	0.05	0.10
9	10P64	2	Cover Plate, Clamp 1/2	0.10	0.20
10	10P65	2	Clamp Assy, Twin, 7/8	0.04	0.08
11	11P08	2	Adp Hyd 08MJ/10MB	0.30	0.60
12	11P20	2	Worm Gear Clamp (HSS16)	0.10	0.20
13	12P16	3	Adp Hyd 08MJ/08MB 90 LL	0.30	0.90
14	12P17	3	Adp Hyd 10MB/08FB	0.30	0.90
15	12P21	1	Adp Hyd 16MP/12FP	0.20	0.20
16	12P22	1	Adp Hyd 12HB/12MP	0.30	0.30
17	12P23	1	Adp Hyd 12HB/12MB90	0.60	0.60
18	12P29	1	Hose 3/4 x 24 LP	0.88	0.88
19	12P53	1	Hose Assy 21 08-08FJ/08FJ45	1.26	1.26
20	12P59	1	Hose Assy 20 08-08FJ/08FJ45	1.22	1.22
21	13P80	2	Adp Hyd 08MJ/08FJ	0.30	0.60
22	13P83	2	Hose Assy 69 08-08 FJ/08FJ	4.14	8.28
23	14P05	2	Extension Screw HRZ 2	0.03	0.06
24	20P05	1	Hyd. Tank, 15 Gallon	54.20	54.20
25	20P22	1	Hyd. Filter Assy - 25 GPM	2.30	2.30
26	20P64	1	Hyd Filter Indicator Gauge	0.01	0.01

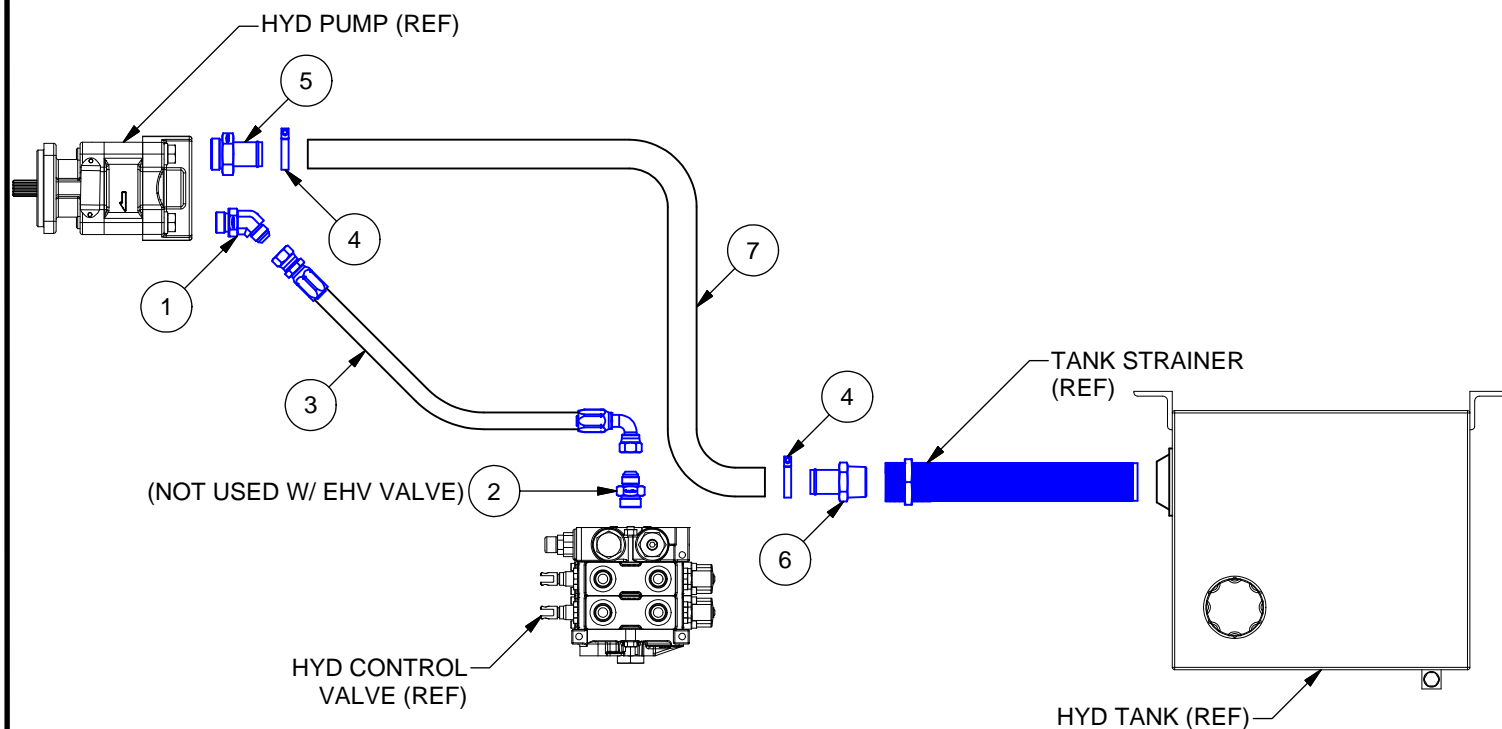
**TANK CIRCUIT, 3-SECTION 160**

91H22 – PUMP CIRCUIT (EHV)**SL-160**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P21	2	T-Bolt Clamp - 1-1/2 Dia	0.10	0.20
2	10P32	1	Adp Hyd 10MJ/12MB 45	0.30	0.30
3	10P61	1	Hose Assy 106 08-10FJ/10FJ90	3.80	3.80
4	12P18	1	Adp Hyd 16HB/16MB	0.40	0.40
5	12P19	1	Adp Hyd 10HB/10MP	0.30	0.30
6	12P20	1	Adp Hyd 20MP/16FP	0.30	0.30
7	12P28	1	Hose 1 x 120 LP	6.60	6.60

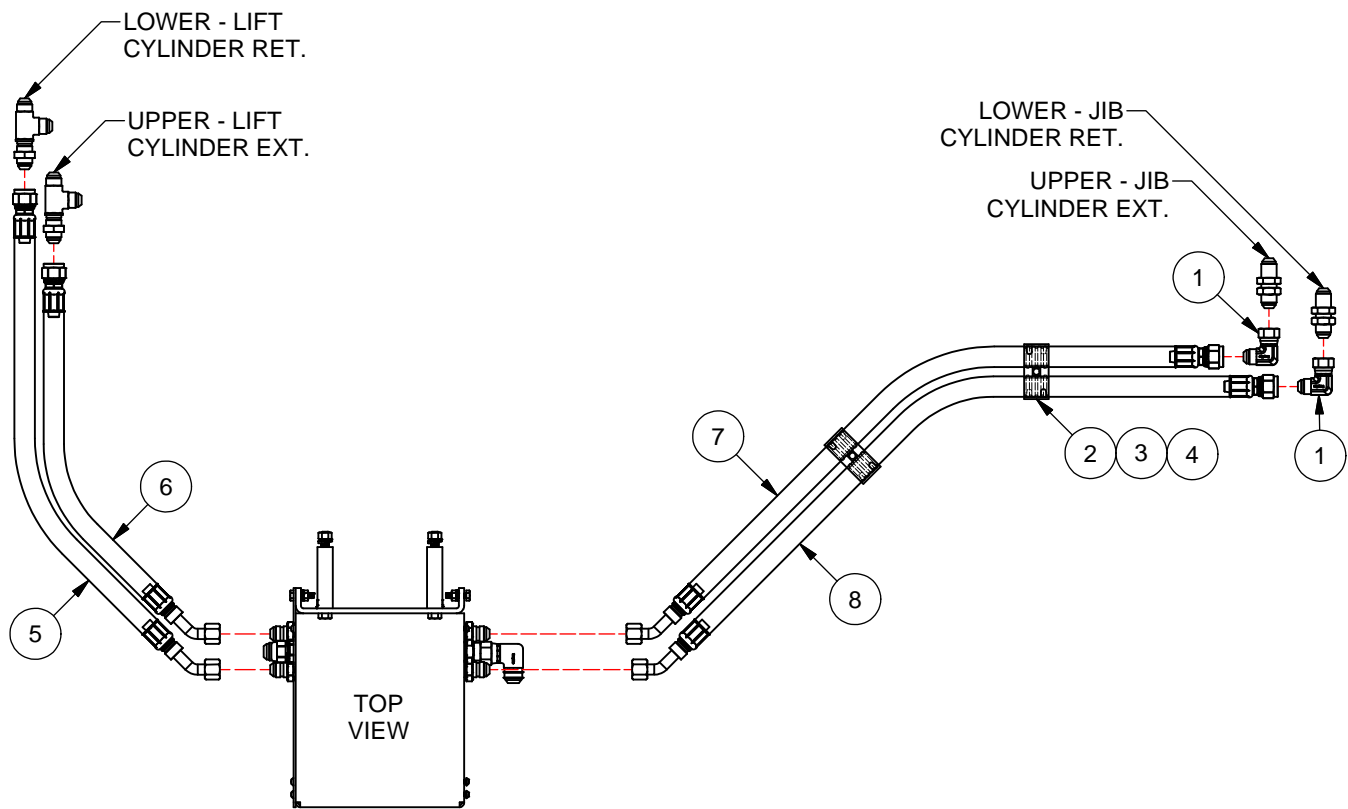
**PUMP CIRCUIT (EHV)**

91H93 - PUMP CIRCUIT, F550				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	10P32	1	ADP HYD10MJ/12MB 45	0.30
2	10P35	1	ADP HYD 10MJ/12MB	0.30
3	10P61	1	HOSE ASSY 106-08-10FJ/10FJ90	4.42
4	10P78	2	CLAMP, T-BOLT Ø1-3/4	0.15
5	12P24	1	ADP HYD 20HB/20MB	0.60
6	12P25	1	ADP HYD 20HB/20MP	0.60
7	12P30	1	HOSE 1-1/4 x 148 LP	9.74



PUMP CIRCUIT, F550

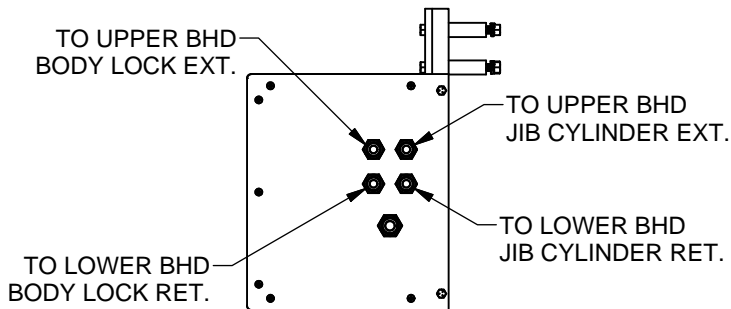
91H50 - HOSE CIRCUIT, 2-SECT 160 EHV				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	10P44	2	ADP HYD 08MJ/08FJ 90	0.23
2	10P63	2	HHCS 5/16-18 UNC x 1-3/4 ZP	0.04
3	10P64	2	COVER PLATE, CLAMP 1/2	0.10
4	10P65	2	CLAMP ASSY, TWIN 7/8	0.07
5	12P53	1	HOSE ASSY 21 08-08FJ/08FJ45	0.85
6	12P59	1	HOSE ASSY 20 08-08FJ/08FJ45	0.87
7	13P32	1	HOSE ASSY 60 08-08FJ/08FJ45	1.50
8	13P33	1	HOSE ASSY 63.5 08-08FJ/08FJ45	1.52



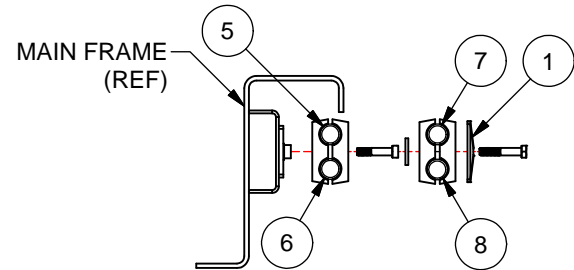
HOSE CIRCUIT, 2-SECT 160 EHV

91H38 - HOSE CIRCUIT, 3-SECT 160 EHV

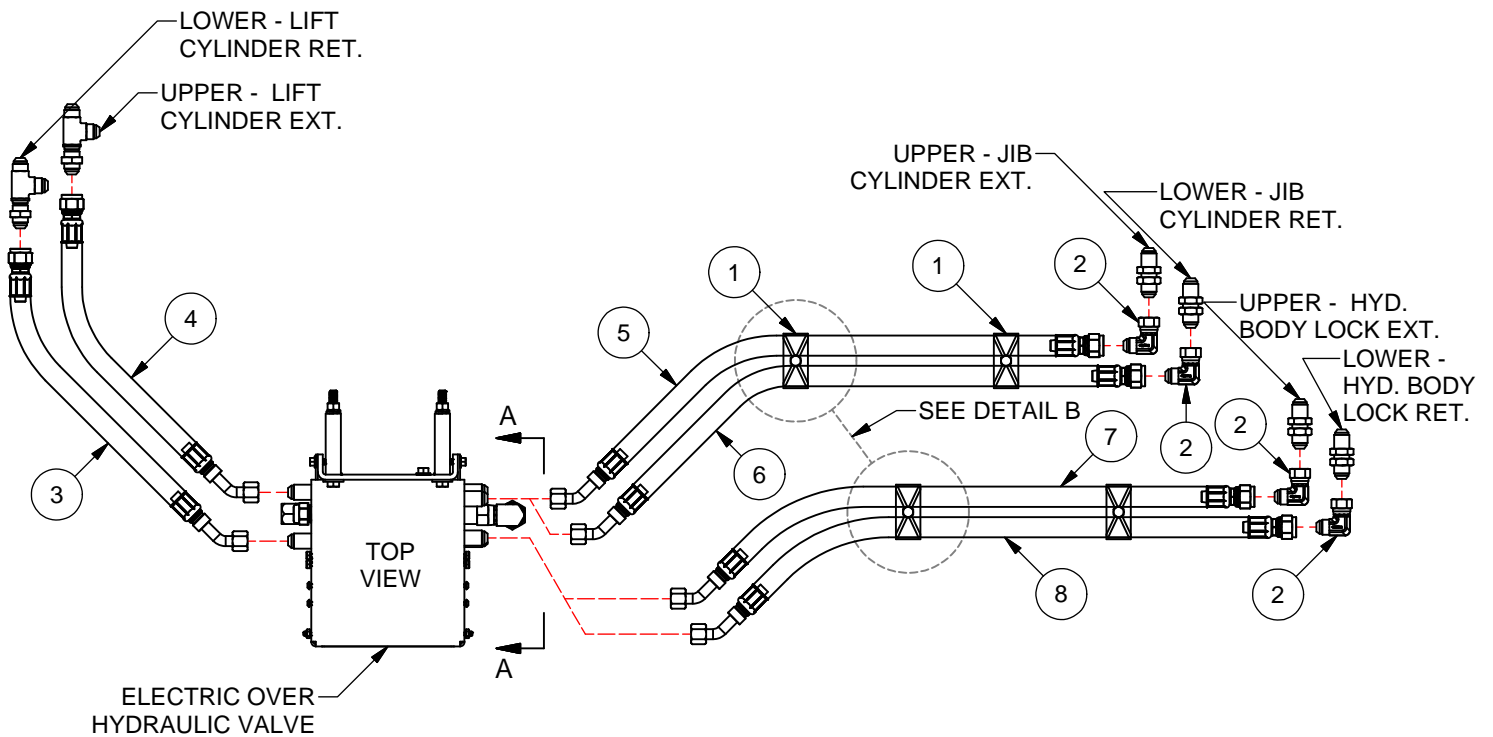
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	91H75	2	HOSE CLAMP ASSY, 7/8-7/8	0.34
2	10P44	4	ADP HYD 08MJ/08FJ 90	0.23
3	12P53	1	HOSE ASSY 21 08-08FJ/08FJ45	0.83
4	12P59	1	HOSE ASSY 20 08-08FJ/08FJ45	0.85
5	13P32	1	HOSE ASSY 60 08-08FJ/08FJ45	1.49
6	13P33	1	HOSE ASSY 63.5 08-08FJ/08FJ45	1.52
7	13P34	1	HOSE ASSY 66 08-08FJ/08FJ45	1.58
8	14P56	1	HOSE ASSY 70 08-08FJ/08FJ45	1.62



SECTION A-A



DETAIL B



HOSE CIRCUIT, 3-SECT 160 EHV



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