



An EFCO Company

SWAPLOADER®

"Hooked on Quality" U.S.A. LTD.

MODEL SL-220/222

PARTS AND INSTALLATION MANUAL



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

<https://www.swaploader.com/warranty-registration/> 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-220/222 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.

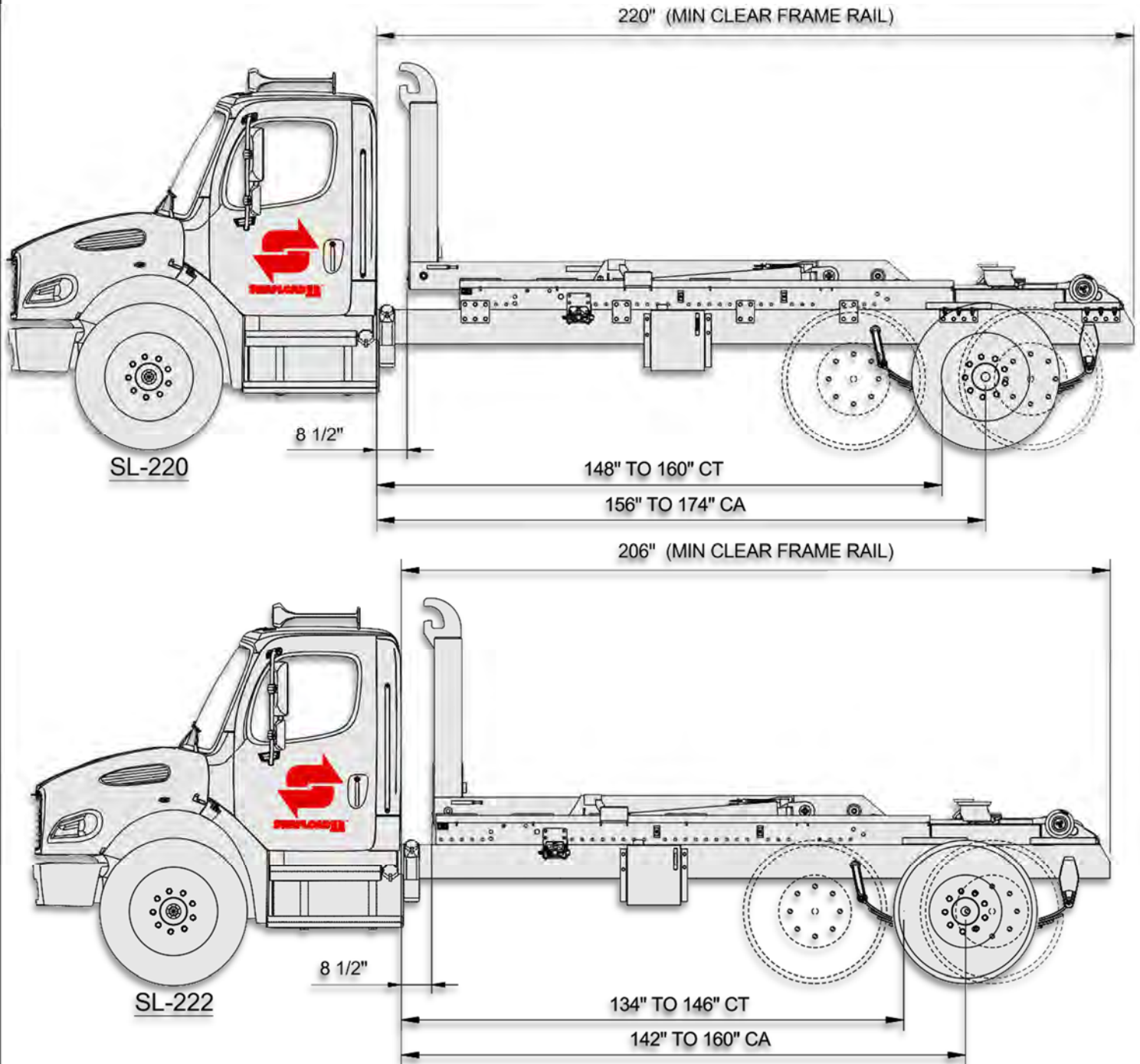


Figure A

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 codes and axle GVWR 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.)

- There are three types of mount brackets used on the Model SL-220/222 hoist as indicated in *Fig. B*. They are Pt. Nos. 64H40, 64H34 and 64H37. Locate the mount brackets on the side of the hoist as indicated in *Fig. B*. These dimensions are flexible because of possible

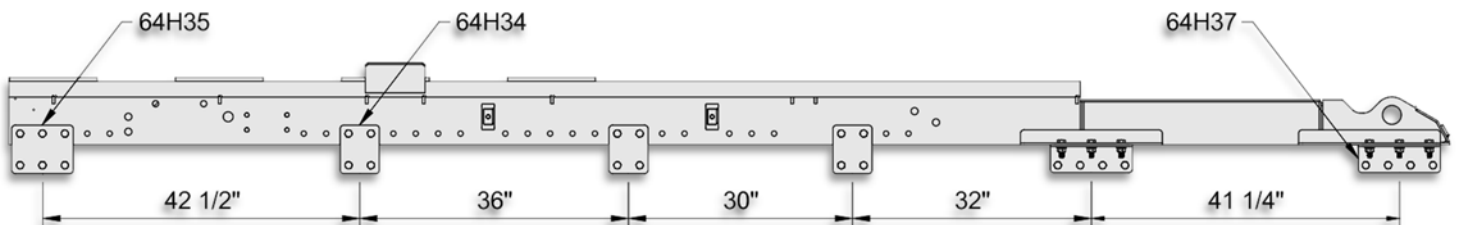


Figure B

interference with chassis components. When positioning the brackets allow 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 (reference *Fig. C, D & E*). 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 21/32" diameter holes required

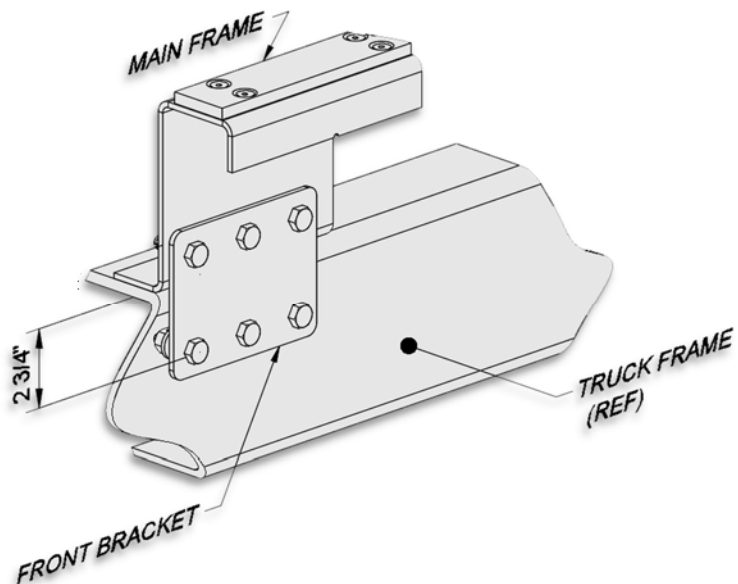


Figure C

and attach the brackets to the truck chassis with the 5/8" diameter bolts, washers, and locking hex nuts provided. Torque to 220 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.

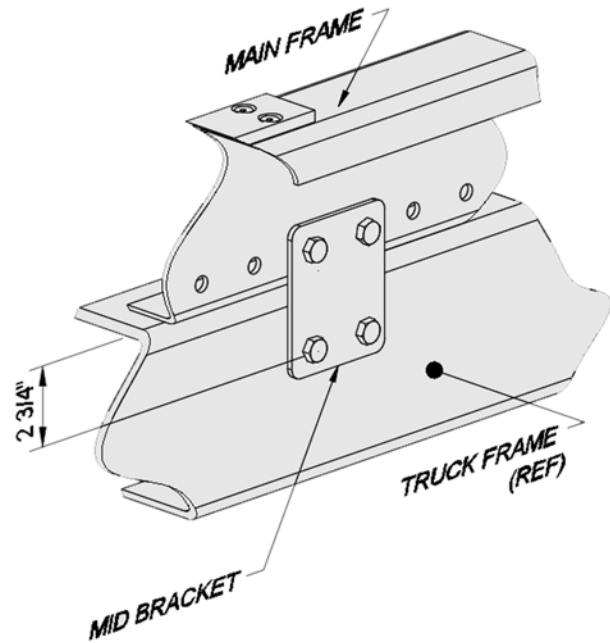


Figure D

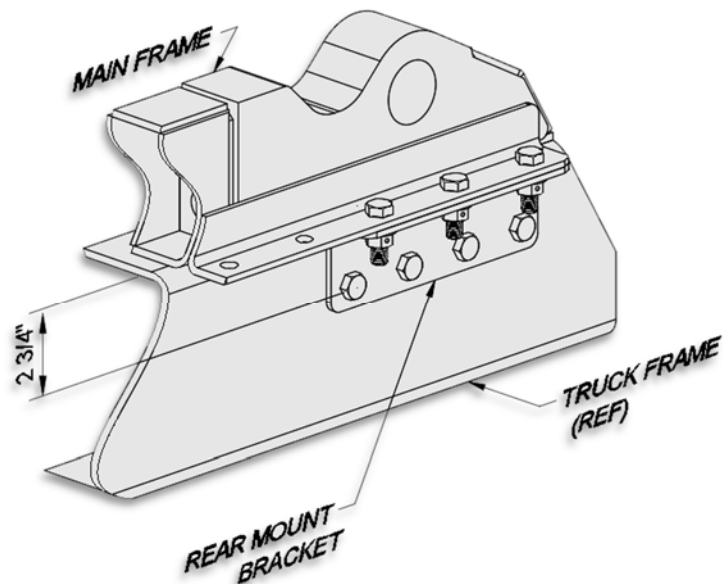


Figure E

CONTROLS INSTALLATION – MANUAL

1. Attach the valve mount bracket (*Pt. No. 10H51*) to the main frame as indicated on *Pg. 3-13* with the fasteners provided (see *Pg. 3-9*).
2. Mount the hydraulic control valve assembly (*Pt. No. 20P39*) to the valve mount bracket as shown on *Pg. 3-13* with the fasteners provided.
3. Install the hydraulic adapters, connect the hydraulic tubing & hoses (*Pt. Nos. 10P73, 11P98, & 11P99*) to the control valve assembly as indicated on *Pg. 3-11*. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box (see *Pg. 3-9*).
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. 3-13*).
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. 3-13* (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 96 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 exhaust pipes, etc. Protect the cable from physical damages such as pinching or crushing,

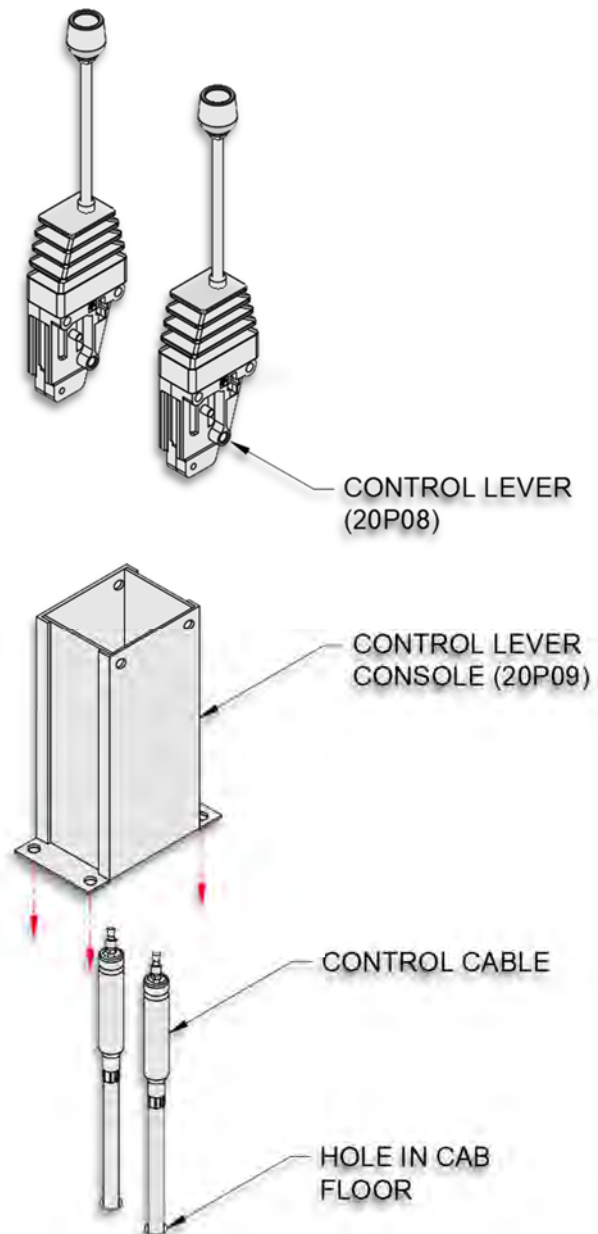
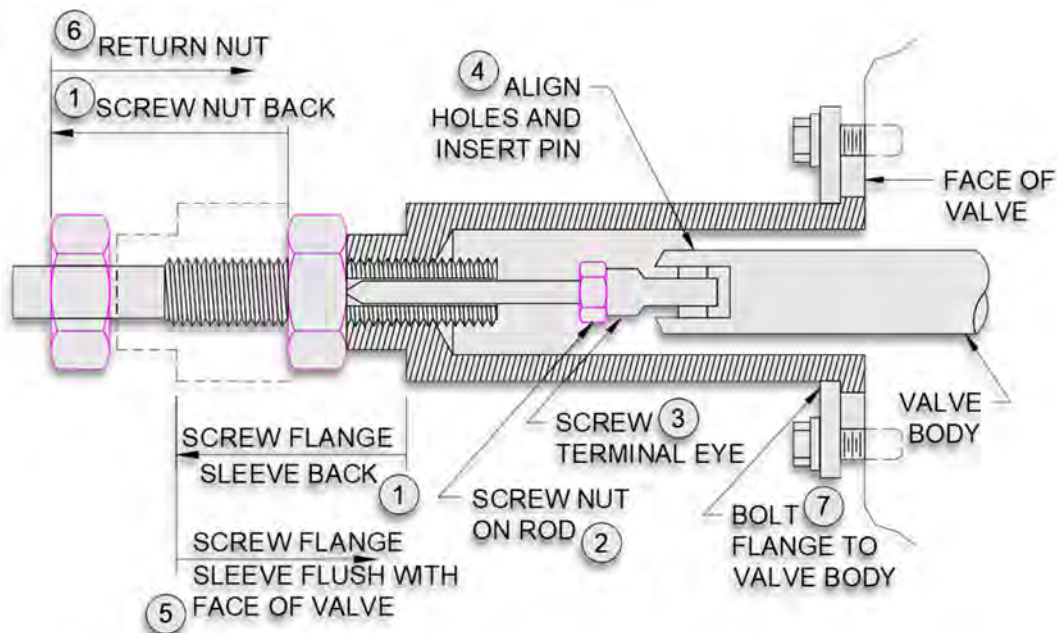


Figure F

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.

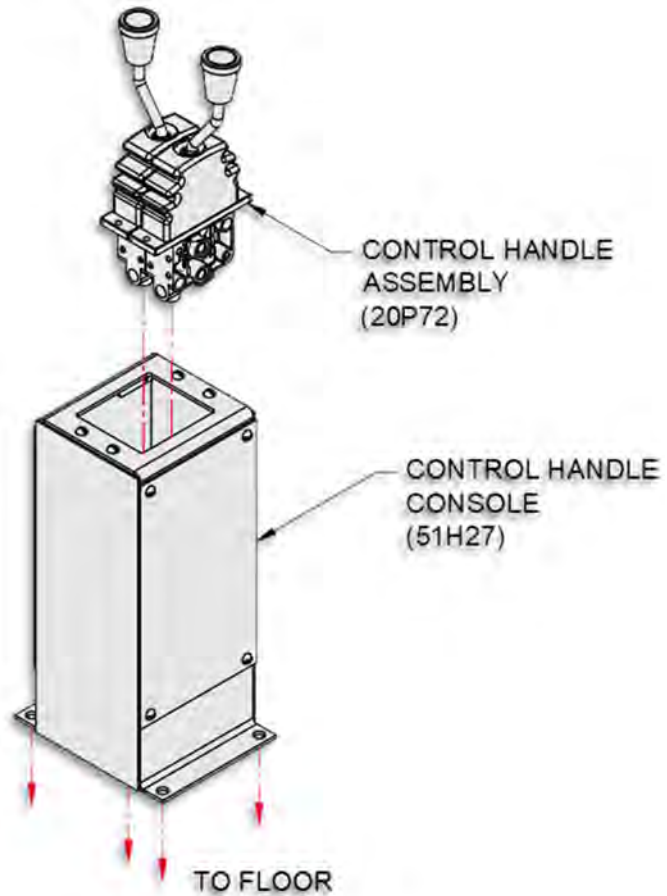
INSTALLATION PROCEDURE FOR A HYDRAULIC CONTROL CABLE TO HYDRAULIC VALVE WITH BONNET CONNECTION KIT

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 adaptor / flange / sleeve assembly back onto the threaded hub until it is flush with the valve face. When turning on the flange adaptor / 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)

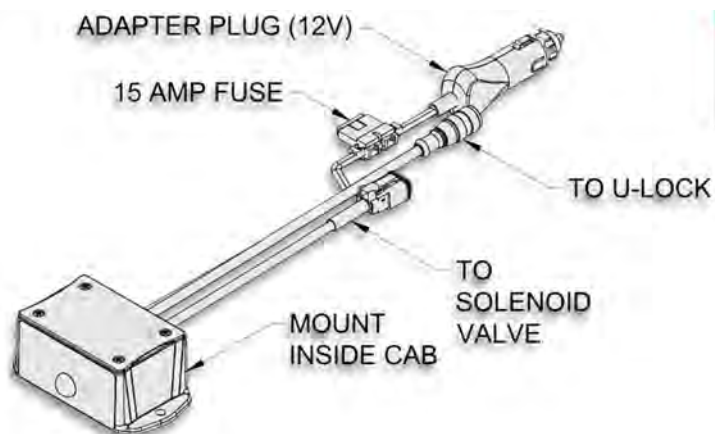
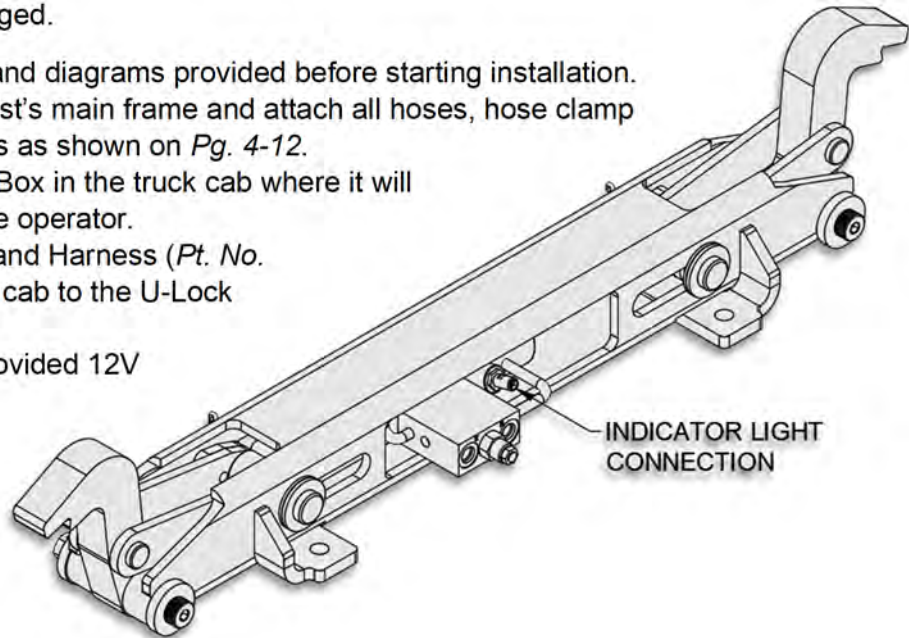
1. Attach the valve mount bracket (*Pt. No. 10H51*) to the Main Frame as indicated on *Pg. 4-5* with the fasteners provided.
2. Mount the hydraulic control valve assembly (*Pt. No. 20P39*) to the valve mount bracket as shown on *Pg. 4-5* with the fasteners provided. Attach air shift kits (*Pt. No. 20P95*) 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. 10P73, 11P98 & 11P99*) to the control valve assembly as indicated on *Pg. 3-11*. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box (See *Pg. 3-9*).
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 illustration on the right).
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. 4-7 or 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)

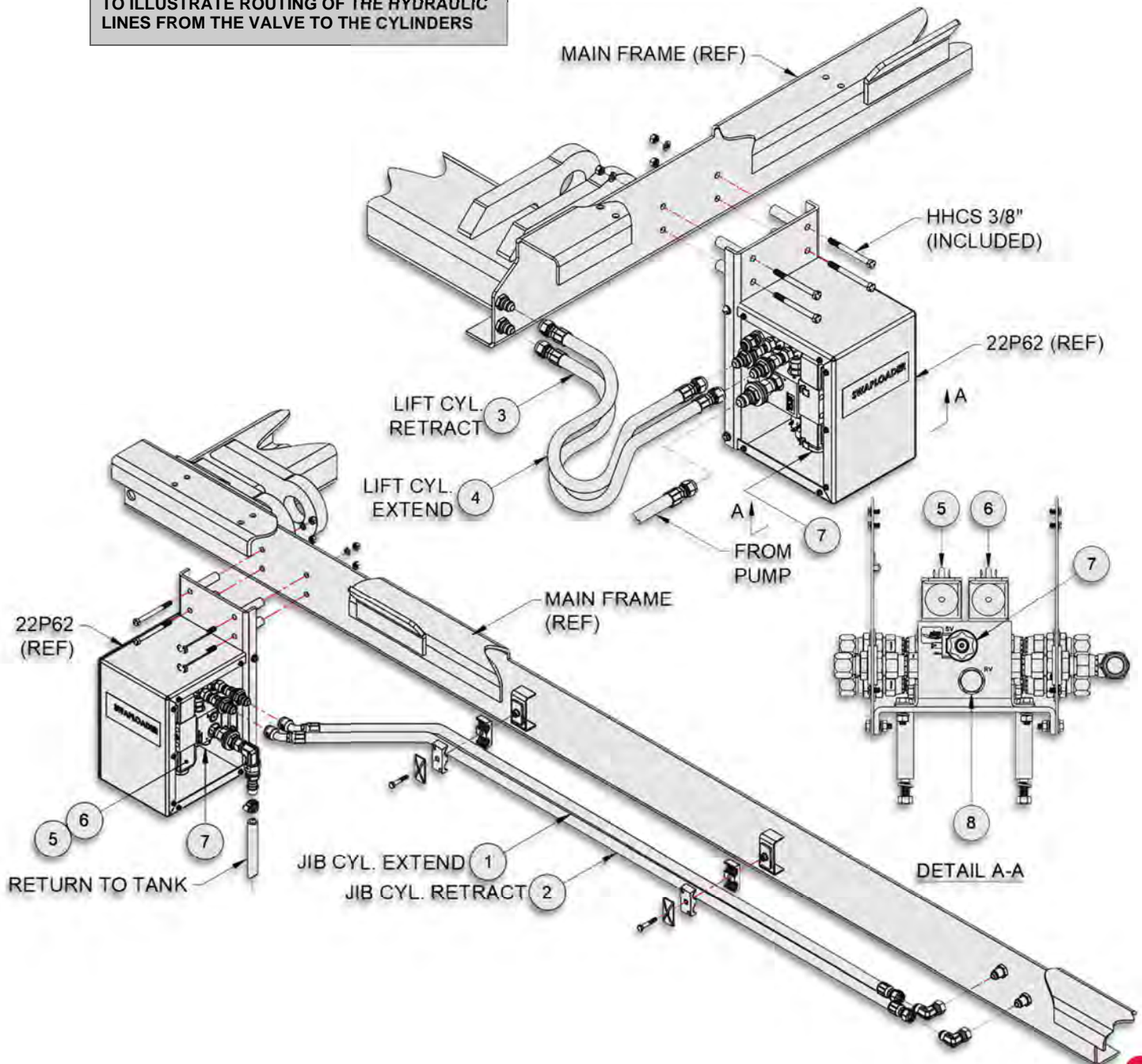
1. Review all directions and diagrams provided before starting the **Electric over Hydraulic Valve** Installation.
2. Mount the 22P62 EHV to the hoist's Main Frame and attach all hoses, hose clamp assemblies and fittings as shown on *Pg. 4-14* (also see Illustrations).

NOTE:

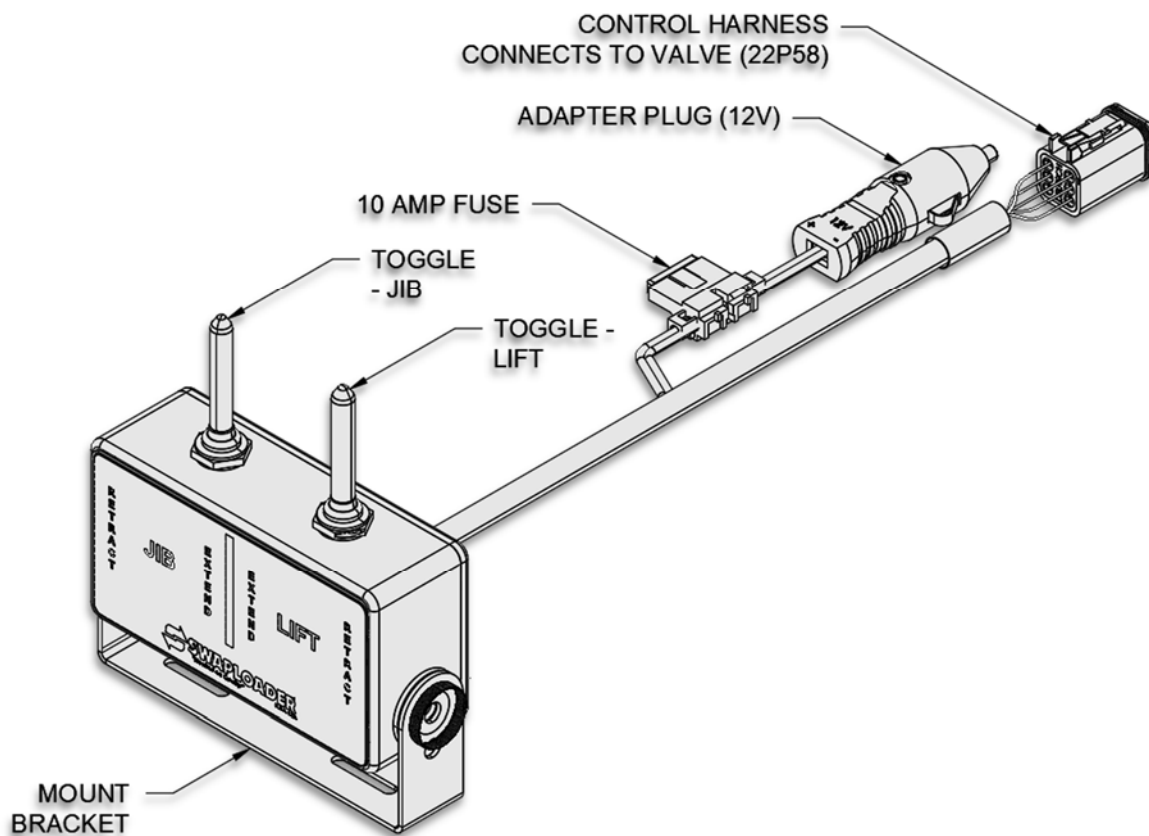
THE FIGURES BELOW DO NOT NECESSARILY DEPICT YOUR HOIST AND ARE ONLY MEANT TO ILLUSTRATE ROUTING OF THE HYDRAULIC LINES FROM THE VALVE TO THE CYLINDERS

Electric Over Hyd. Valve - SERVICE PARTS**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION
1	13P36	1	Hose Assy 83.5 08-08FJ/08FJ45
2	13P37	1	Hose Assy 86 08-08FJ/08FJ45
3	13P40	1	Hose Assy 28 08-08FJ/08FJ
4	13P41	1	Hose Assy 33 08-08FJ/08FJ
5	22P82	1	Solenoid Operated Valve, Motor
6	22P83	1	Solenoid Operated Valve, Cyl.
7	22P85	1	Dump Valve
8	22P88	1	Relief Valve Cartridge (2800)



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.



EHV INSTALLATION w/ U-LOCK (OPTION)

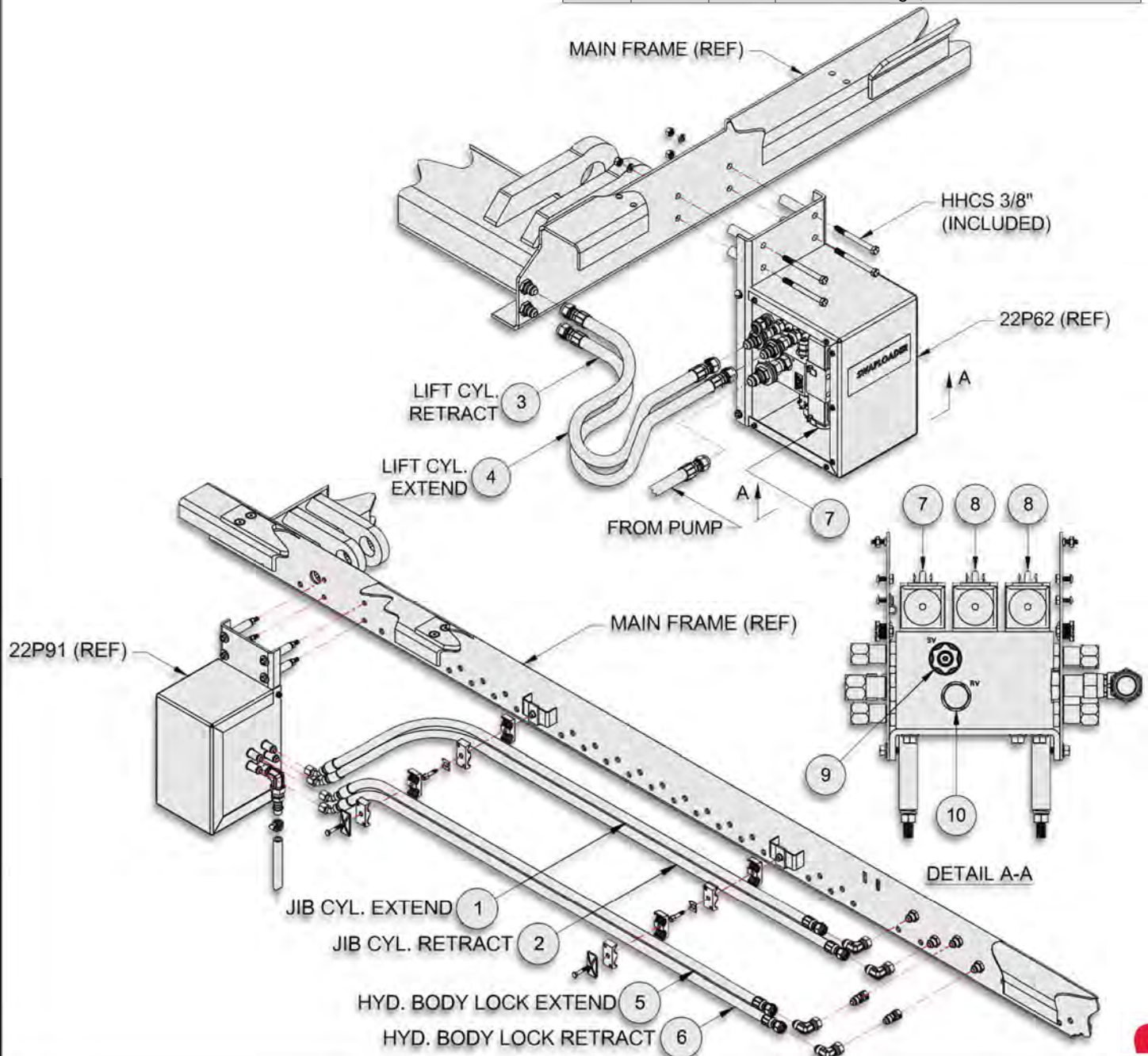
1. Review all directions and diagrams provided before starting the **Electric over Hydraulic Valve** Installation.
2. Mount the 23P48 EHV to the hoist's main frame and attach all hoses, hose clamp assemblies and fittings as shown on *Pg. 4-15* (also see Illustrations).

NOTE:

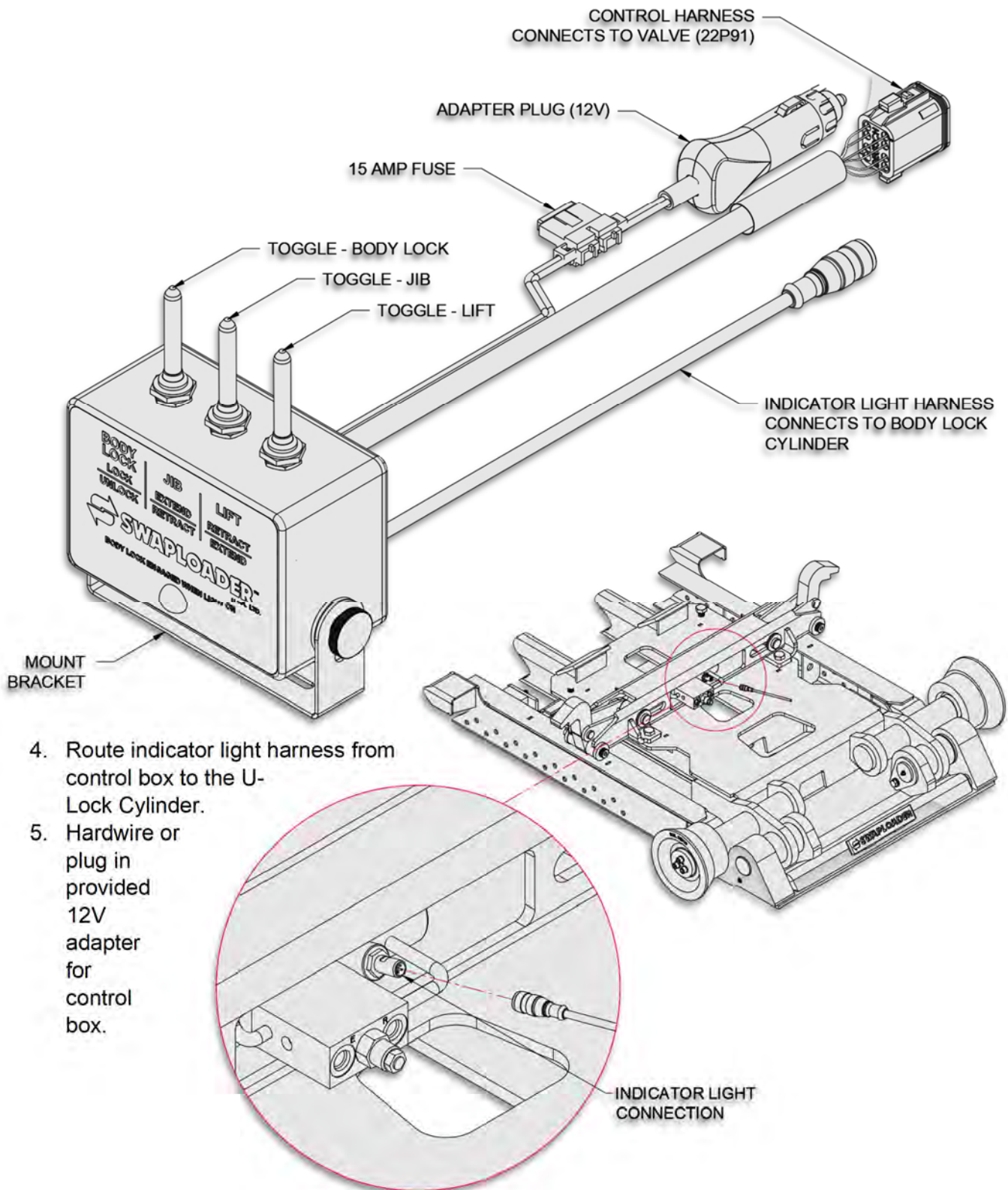
THE FIGURES BELOW DO NOT NECESSARILY DEPICT YOUR HOIST AND ARE ONLY MEANT TO ILLUSTRATE ROUTING OF THE HYDRAULIC LINES FROM THE VALVE TO THE CYLINDERS

Electric Over Hyd. Valve - SERVICE PARTS**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION
1	13P36	1	Hose Assy 83.5 08-08FJ/08FJ45
2	13P37	1	Hose Assy 86 08-08FJ/08FJ45
3	13P40	1	Hose Assy 28 08-08FJ/08FJ
4	13P41	1	Hose Assy 33 08-08FJ/08FJ
5	13P81	1	Hose Assy 77.5 08-08FJ/08FJ45
6	13P83	1	Hose Assy 69 08-08FJ/08FJ
7	22P82	1	Solenoid Operated Valve, Motor
8	22P83	2	Solenoid Operated Valve, Cylinder
9	22P85	1	Directional Valve
10	22P88	1	Relief Cartridge, EHV 2800



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. 3-12*.
3. Connect the suction hose assembly to the hydraulic tank (1 1/4" I.D. hose) and route to the hydraulic pump in as short and straight line as possible. Be sure to route the hose clear of exhaust components and of the drive shaft. Extra hose is provided so the hose can be shortened to an appropriate length. Install the hose on the hose barb fittings at the tank and at the pump and secure with the hose clamps provided.

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

4. The pressure hose from the hydraulic pump to the control valve assembly is not supplied with the hoist as it must be made to the proper length. This hose must be purchased from a local hydraulic hose assembly supplier per the following specification:
 - a. Hose ID: 3/4 inch
 - b. Working Pressure: 3000 PSI
 - c. Hose Fitting Threads: SAE 37° (JIC) 1 1/16-12
5. Install the pressure hose as indicated. Tie up the pressure and suction hoses as necessary. Again, be sure the hoses are routed to avoid exhaust components and to stay clear of the drive shaft.

HYDRAULIC TANK INSTALLATION

1. Select a location to mount the hydraulic tank. Reference *Fig. G* 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" 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. 3-11*. The hose length can be shortened if necessary. Secure the hose to the barb fittings with the hose clamps provided.

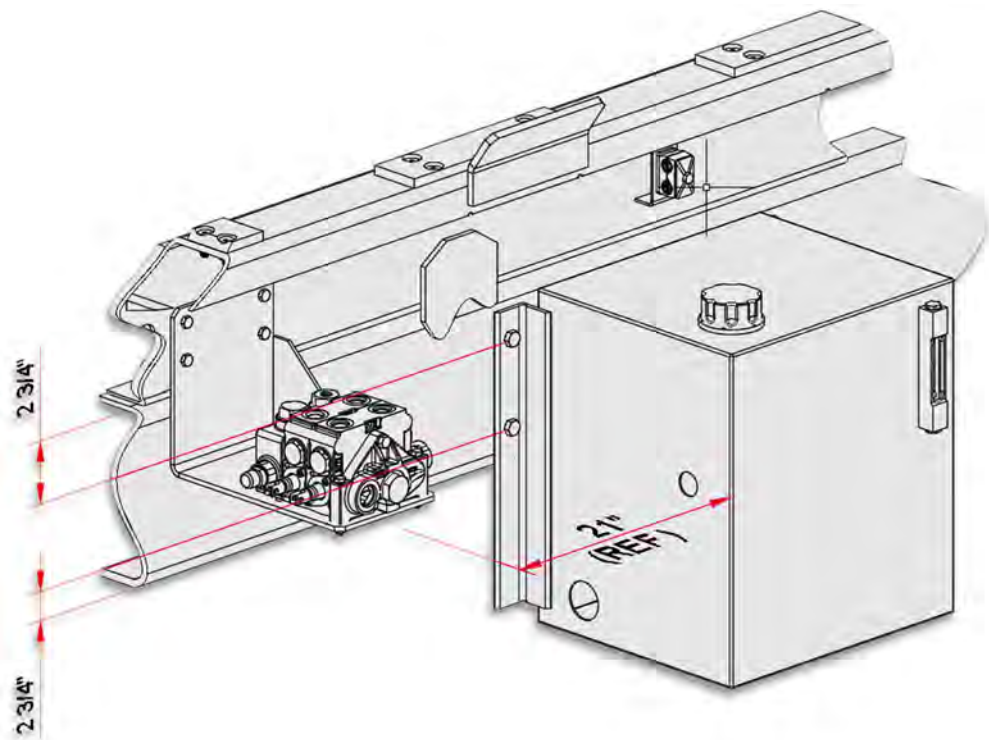


Figure G

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 engine 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 as shown on Pg. 3-14 or 3-15 after final installation has been completed.
7. Fill out the Product Registration form online at <https://www.swaploader.com/warranty-registration/>



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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**HEX HEAD CAP SCREW
TORQUE SPECS**

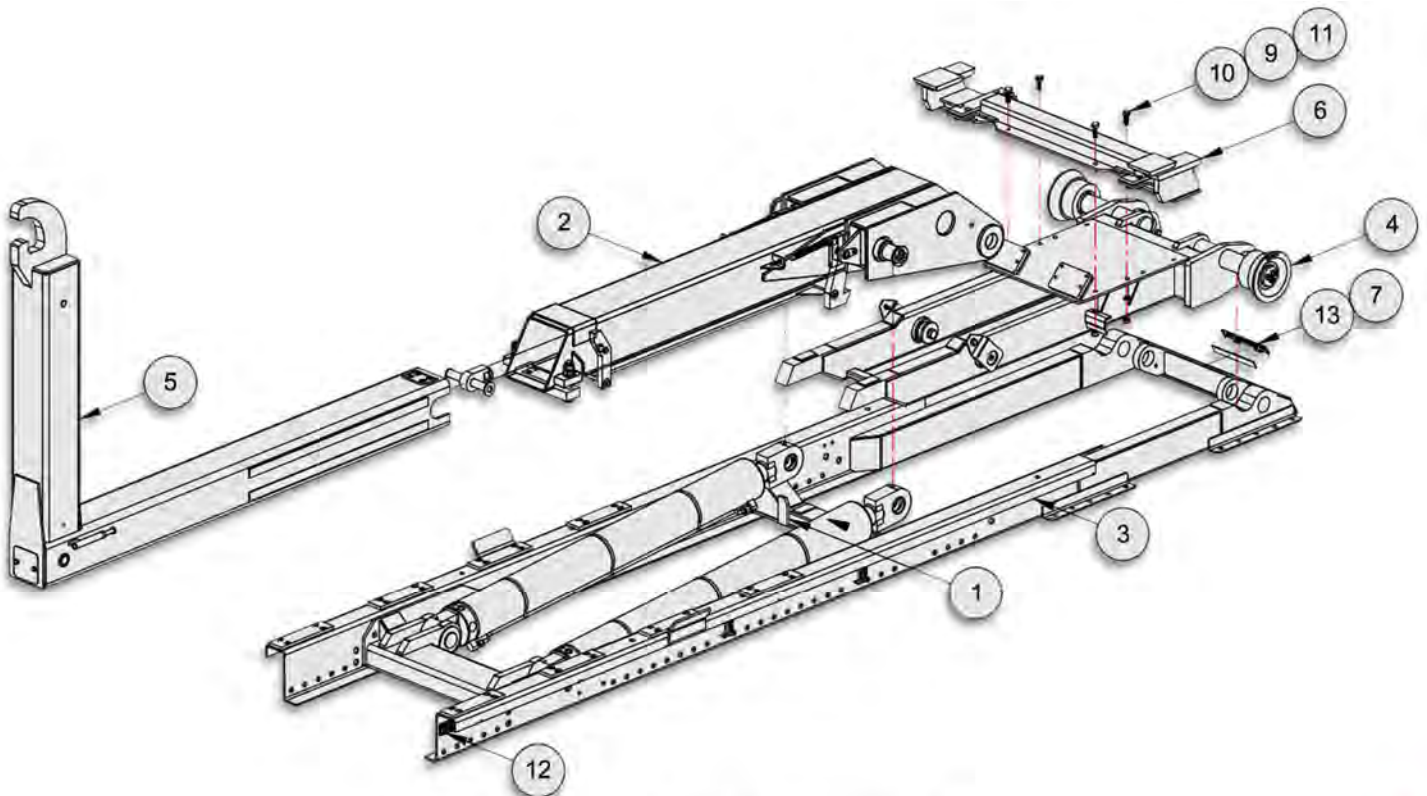
BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

Note: Apply Loctite 243 (Blue) to all bolts.

51H95 - BASE HOIST ASSEMBLY**SL-220**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	22H86	2	Pivot Guide, MF	1.28	2.56
2	51H91	1	Outer Tube Sub-Assy, SL-220	796.57	796.57
3	51H94	1	Main Frame Sub-Assy, SL-220	1847.71	1847.71
4	52H03	1	Pivot Joint Sub-Assy, 200S	646.38	646.38
5	52H53	1	Fixed Jib Sub-Assy, 220/222	644.65	644.65
6	52H89	1	Body Lock w/Shelf, 200S	132.67	132.67
7	62H99	1	Logo Plate	0.30	0.30
* 8	90H96	1	Base Cyl Circuit, 220/222/240	24.37	24.37
9	00767	4	Washer, Lock 5/8	0.04	0.16
10	00P24	4	Nut, Hex 5/8-11 UNC Gr8	0.09	0.36
11	00P91	4	HHCS 5/8-11 UNC x 1-3/4 Gr8	0.31	1.24
12	90P72	1	Serial Tag, SL-220	0.02	0.02
13	90P90	1	Name Plate Insert	0.10	0.10

* Item not shown.

**SL-220 BASE HOIST w/ FIXED JIB**

HEX HEAD CAP SCREW TORQUE SPECS

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

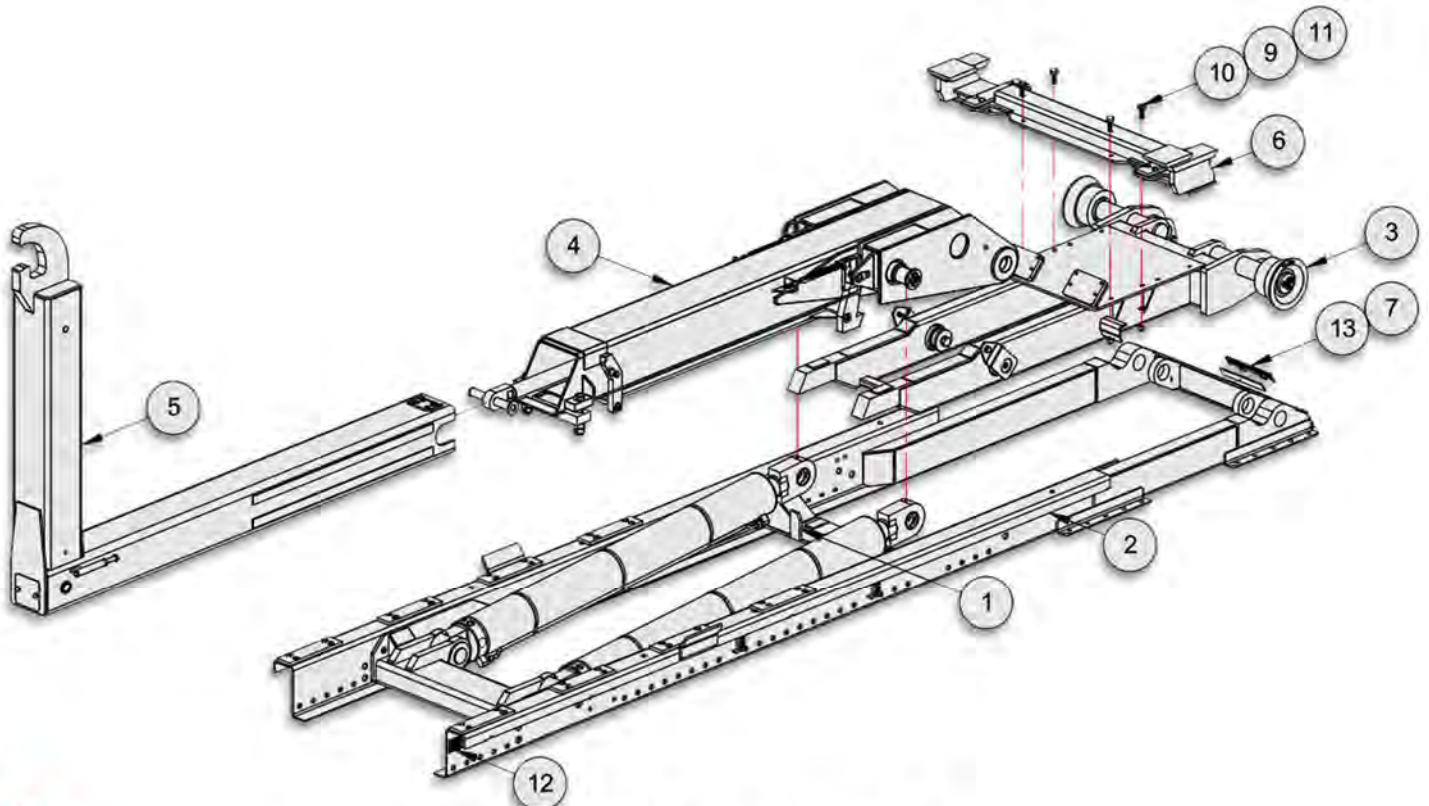
Note: Apply Loctite 243 (Blue) to all bolts.

52H17 - BASE HOIST ASSEMBLY

SL-222

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	22H86	2	Pivot Guide, MF	1.28	2.56
2	51H94	1	Main Frame Sub-Assy, SL-220	1847.71	1847.71
3	52H03	1	Pivot Joint Sub-Assy, 200S	646.38	646.38
4	52H18	1	Outer Tube Sub-Assy, SL-222	803.57	803.57
5	52H53	1	Fixed Jib Sub-Assy, 220/222	644.65	644.65
6	52H89	1	Body Lock w/Shelf, 200S	132.67	132.67
7	62H99	1	Logo Plate	0.30	0.30
* 8	90H96	1	Base Cyl Circuit, 220/222/240	24.37	24.37
9	00767	4	Washer, Lock 5/8	0.04	0.16
10	00P24	4	Nut, Hex 5/8-11 UNC Gr8	0.09	0.36
11	00P91	4	HHCS 5/8-11 UNC x 1-3/4 Gr8	0.31	1.24
12	90P86	1	Serial Tag, SL-222	0.02	0.02
13	90P90	1	Name Plate Insert	0.10	0.10

* Item not shown.



SL-222 BASE HOIST w/ FIXED JIB

**HEX HEAD CAP SCREW
TORQUE SPECS**

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (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.

**SOCKET HEAD CAP
SCREW TORQUE SPECS**

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	62
7/16	103
1/2	151
5/8	291
3/4	516
7/8	831
1	1246

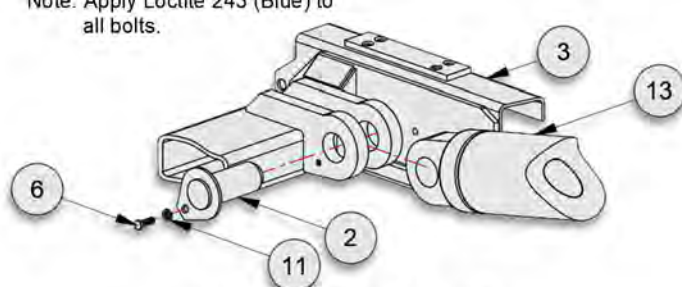
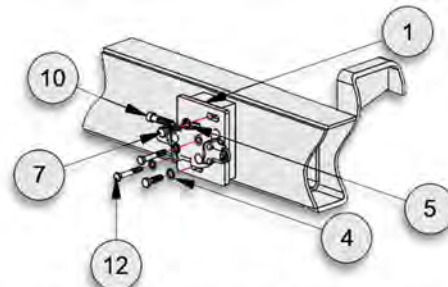
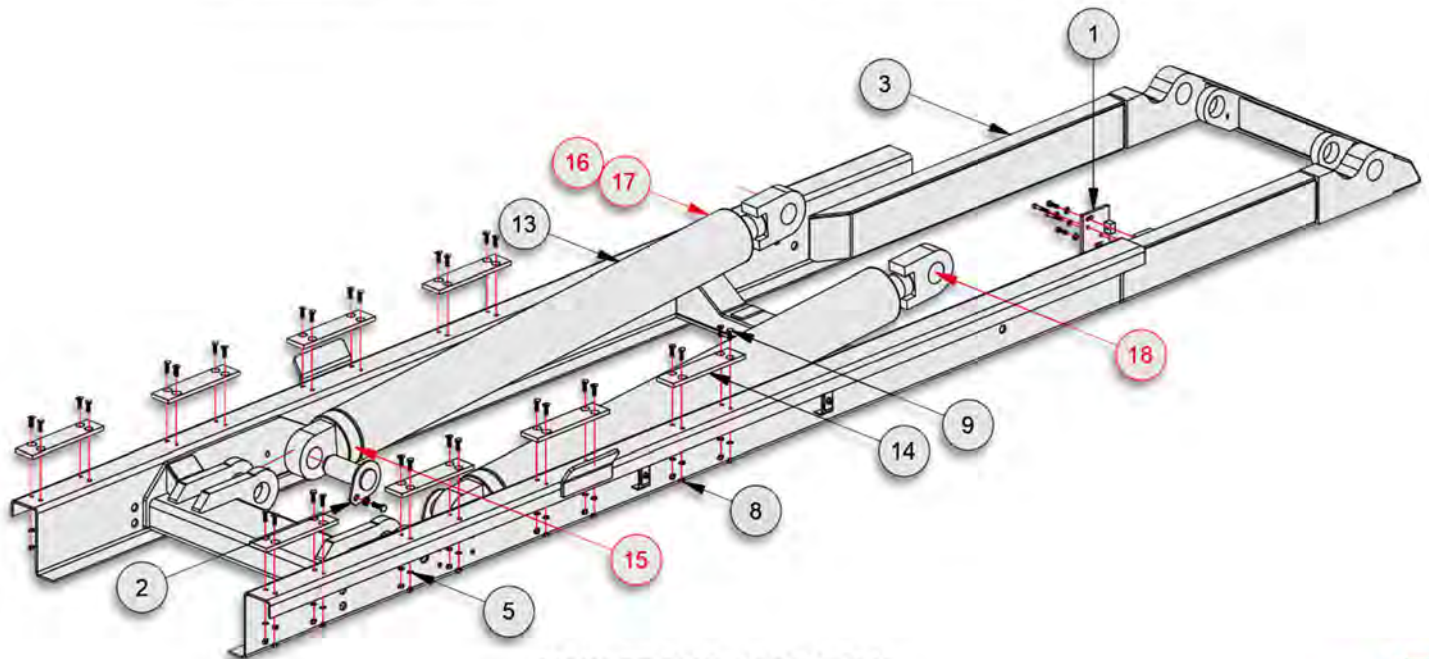
Note: Apply Loctite 243 (Blue) to all bolts.

51H94 – MAIN FRAME SUB-ASSEMBLY**SL-220**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	42H11	1	Jib Lockout Mnt Wdmt, 5x4-1/4	2.39	2.39
2	50H13	2	Pin, MF/Cyl 2-1/2 x 6	9.76	19.52
3	51H83	1	Main Frame Weldment	838.22	838.22
4	00752	2	Washer, Lock - 5/16 Dia	0.03	0.06
5	00755	34	Washer, Lock - 3/8 Dia	0.03	1.02
6	00P01	2	HHCS 1/2-13 UNC x 1-1/2 Gr8	0.21	0.21
7	00P13	2	HHCS 3/8-16 UNC x 1-1/4 Gr8	0.10	0.20
8	00P14	32	Nut, Hex 3/8-16 UNC Gr8	0.02	0.64
9	00P68	32	FSCS 3/8-16 UNC X 1-1/4 SS	0.11	3.52
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 5/16-18 UNC x 1-3/4 ZP	0.03	0.06
13	21P63	2	Hyd Cyl 6x3x54	357.20	714.40
14	90P71	8	Wear Pad, 2-3/4x1/2x11-3/4	0.70	5.60

LIFT CYLINDER SERVICE PARTS

15	20P28	2	C'Bal Cart, 3000 PSI CBCA-LHN	0.40	0.80
16	21P66	1	Seal Kit, Lift Cyl 220/222/240	0.50	0.50
17	21P72	1	Return Line, Cyl 220/222/240	2.00	2.00
18	22P14	2	Hyd Cyl Brg, Brz 2.50ID	1.00	2.00

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

**HEX HEAD CAP SCREW
TORQUE SPECS**

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (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.

**SOCKET HEAD CAP
SCREW TORQUE SPECS**

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	62
7/16	103
1/2	151
5/8	291
3/4	516
7/8	831
1	1246

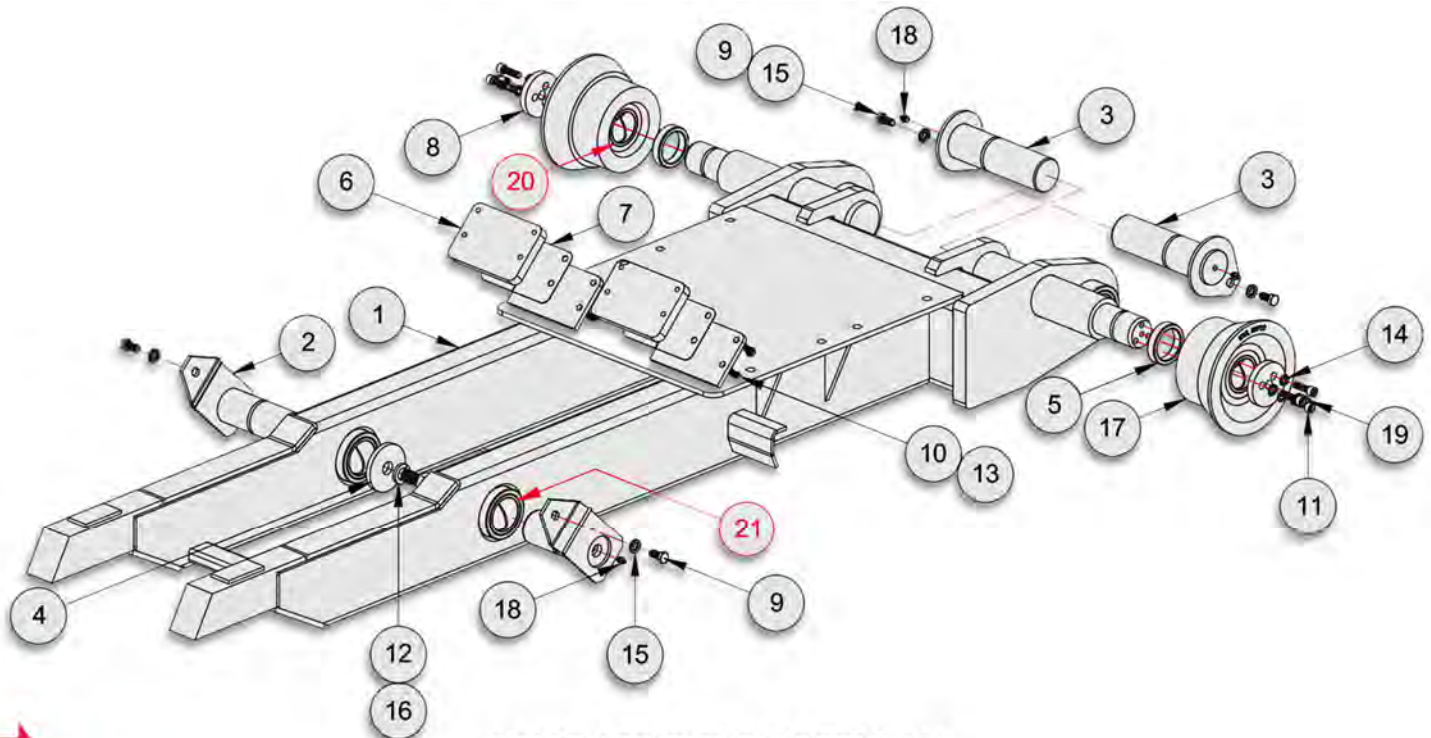
Note: Apply Loctite 243 (Blue) to all bolts.

52H03 – PIVOT JOINT SUB-ASSEMBLY**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
1	51H79	1	Pivot Joint Wdmt, SL-220/240	509.38	509.38
2	51H88	2	Pin, PJ/OT 2-1/2 x 6-1/8	9.95	19.90
3	51H89	2	Pin, PJ/MF 2-1/2 x 8-1/2	13.16	26.32
4	61H93	2	Pin Cap, 3/8 x 3-1/2	1.00	2.00
5	61H94	2	Spacer, Roller 11/16x2-9/32	0.60	1.20
6	64H83	2	Bolt Plate, Tube Stop 200S	6.13	12.26
7	64H84	4	Shim 3-9/32 x 22GA x 4-18	0.11	0.44
8	85H21	2	Roller Retainer, 1/2 x 3-1/4	1.05	2.10
9	00P09	4	HHCS 1/2-13 UNC X 1 Gr8	0.15	0.60
10	00P62	8	HHCS 3/8-16 UNC x 1 Gr8	0.05	0.40
11	01P25	6	SHCS 7/16-14 UNC x 1-1/2 Gr8	0.05	0.30
12	01P27	2	HHCS 7/8-9 UNC x 1-3/4 Gr8	0.60	1.20
13	01P28	8	Washer, Disc Lock 3/8 Pr	0.01	0.08
14	01P29	6	Washer, Disc Lock 7/16 Pr	0.02	0.12
15	01P30	4	Washer, Disc Lock 1/2 Pr	0.02	0.08
16	01P33	2	Washer, Disc Lock 7/8 Pr	0.07	0.14
17	80P09	2	Roller Assy, 6-1/4x2-1/4ID ZP	37.03	74.06
18	90P03	4	Grease Zerk, 1/8-27 NPT Str	0.01	0.04
19	90P19	2	Grease Zerk, 1/8-27 NPT Long	0.08	0.16

BEARINGS

20	23H07	2	Brz Brg, 2-1/4IDx3x2-3/4OD	3.42	6.84
21	64H08	4	Brz Brg, 2-1/2IDx4x3OD	2.90	11.60

**PIVOT JOINT SUB-ASSEMBLY**

HEX HEAD CAP SCREW TORQUE SPECS

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (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.

51H91 OR 52H18 – OUTER TUBE SUB-ASSEMBLY

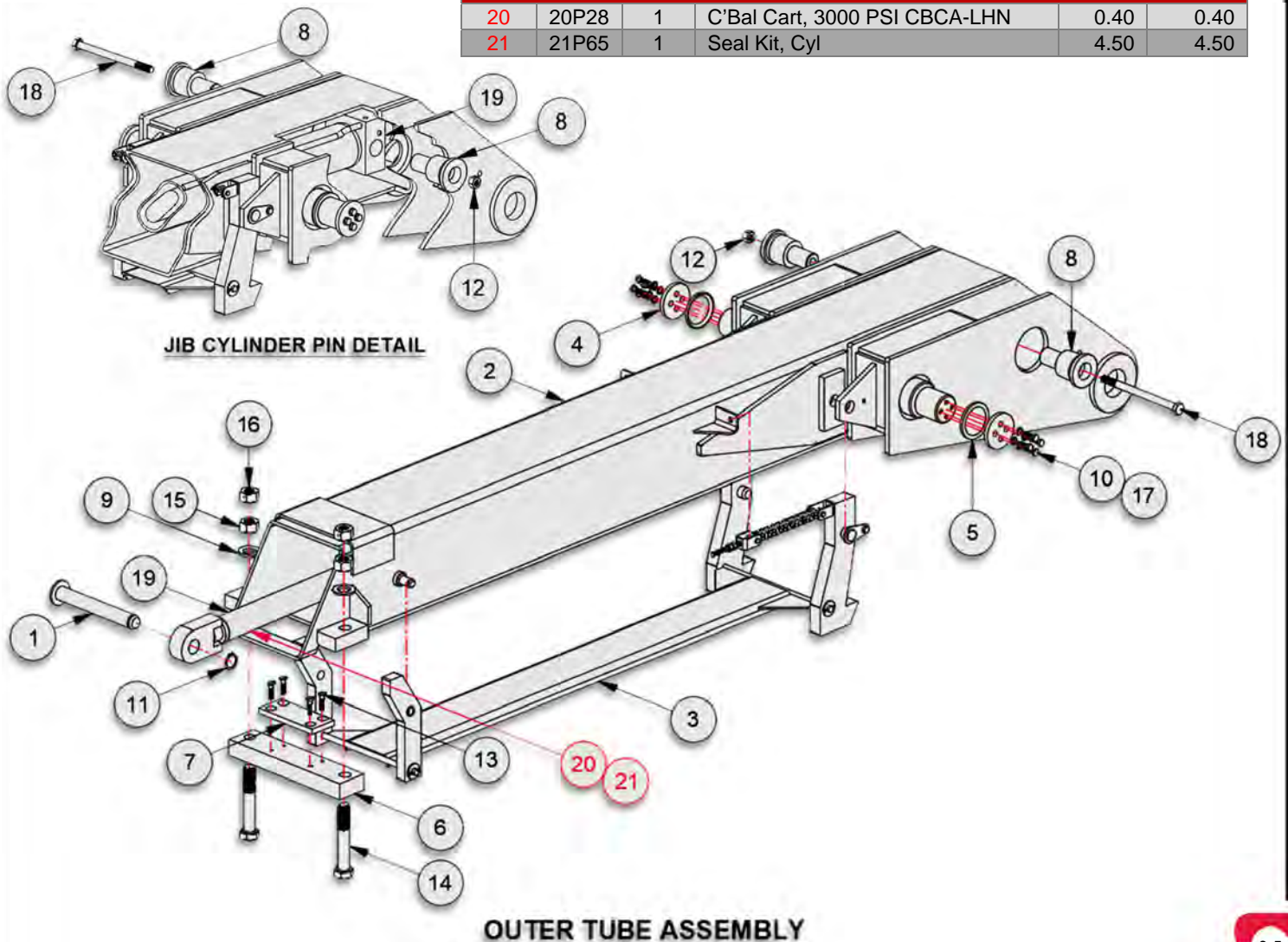
SL-220/222

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
1	50H02	1	Pin, Jib/Cyl 1-1/4 x 8-3/4	3.35	3.35
2	51H75	1	Outer Tube Weldment	528.88	528.88
3	51H92	1	Safety Latch Sub-Assembly	59.77	59.77
4	60H28	2	Pin Cap, 3/8 x 3-1/4	0.82	1.64
5	60H29	2	Spacer, 3/8 x 3-1/4OD	0.20	0.40
6	60H30	1	Clamp Bar, 3x1-1/2x13-1/2	16.37	16.37
7	60H31	1	Wear Pad, 2-3/4x1/2x6-1/2	0.34	0.34
8	63H15	2	Pin, OT/Cyl 2-3/8 x 1-1/2	3.90	7.80
9	00787	2	Washer, Flat - 1 Dia HT	0.19	0.38
10	00P13	8	HHCS 3/8-16 UNC x 1-1/4 Gr8	0.10	0.80
11	00P46	1	Snap Ring, Ext 1-1/4	0.01	0.01
12	00P55	1	Nut, Lock 5/8-11 UNC Gr8	0.13	0.13
13	00P58	4	FHCS 3/8-16 UNC 1-1/2	0.05	0.20
14	00P59	2	HHCS 1-8 UNC x 6	1.34	2.68
15	00P60	2	Nut, Hex 1-8 UNC	0.29	0.58
16	00P67	2	Nut, Lock 1-8 UNC	0.29	0.58
17	01P28	8	Washer, Lock, Disc 3/8 Pr	0.01	0.08
18	01P35	1	HHCS 5/8-11 UNC x 9 Gr8	0.88	0.88
19	21P61	1	Hyd Cyl 3.5x2.25x48 SL-220	166.50	166.50
19	21P86	1	Hyd Cyl 3.5x2.25x34 SL-222	178.30	178.30

SERVICE PARTS FOR JIB CYLINDER

21P61 & 21P86

20	20P28	1	C'Bal Cart, 3000 PSI CBCA-LHN	0.40	0.40
21	21P65	1	Seal Kit, Cyl	4.50	4.50



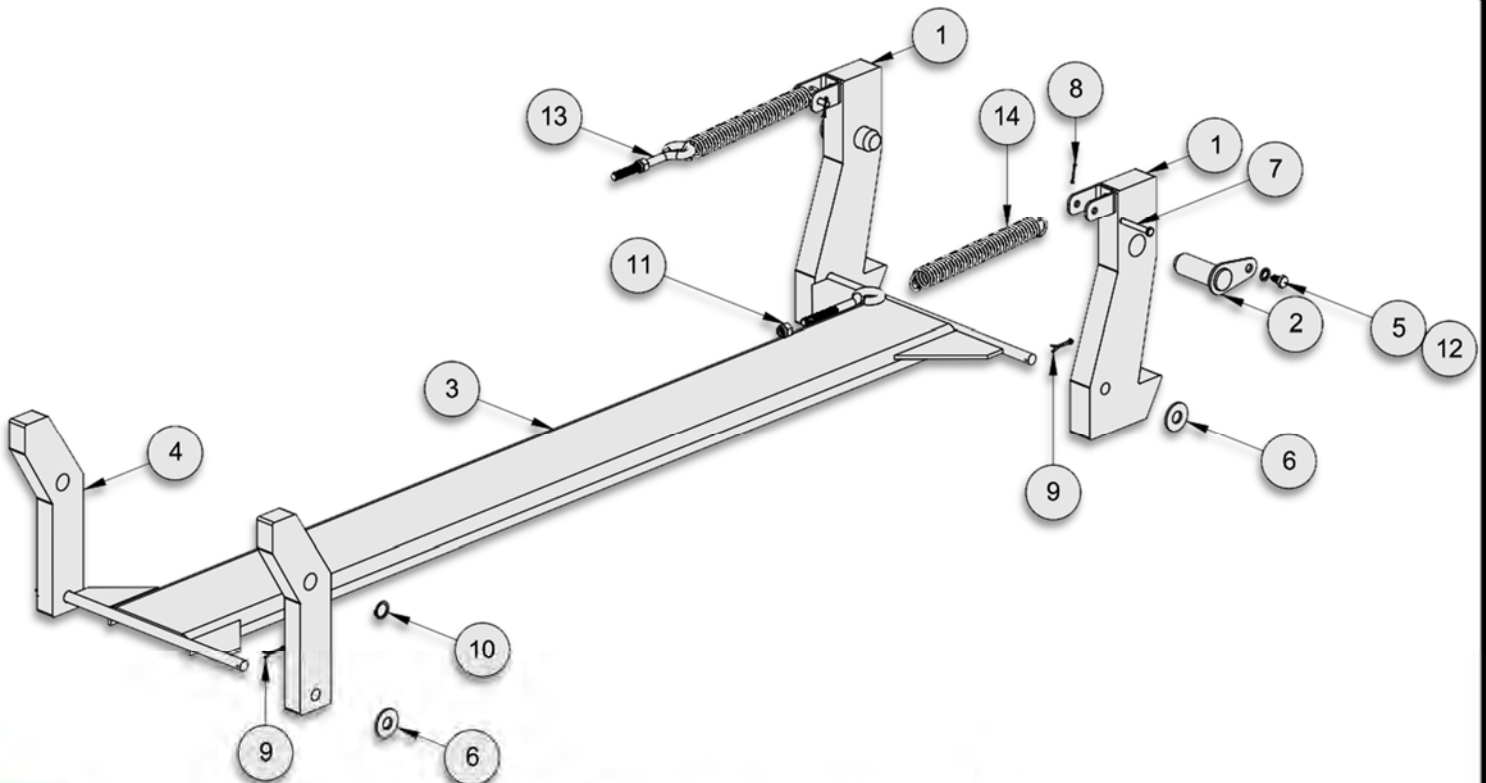
**HEX HEAD CAP SCREW
TORQUE SPECS**

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (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.

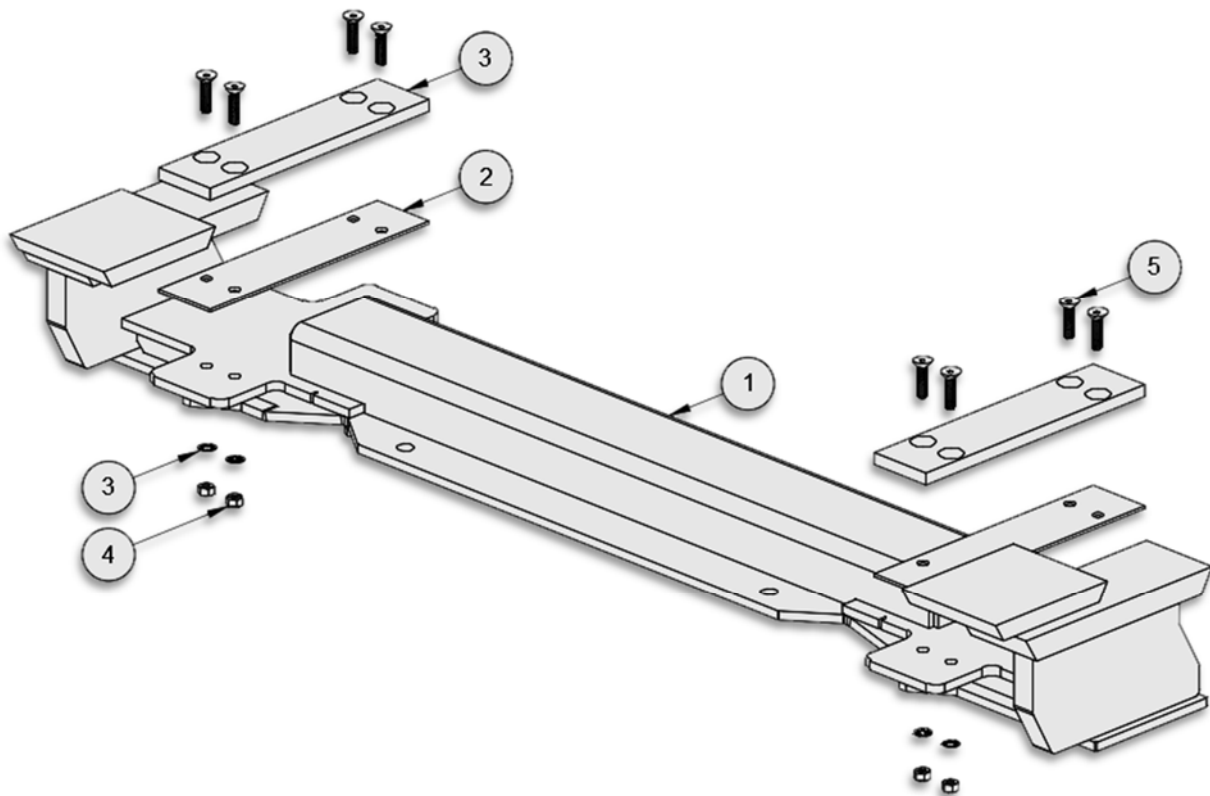
51H92 – SAFETY LATCH SUB-ASSEMBLY**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	50H18	2	Latch Wdmt, 200S	12.30	24.60
2	50H19	2	Pin, Safety L 1 x 2-5/8	0.75	1.50
3	51H90	1	Connection Bar Wdmt 50	19.98	19.98
4	60H89	2	Release Lever, 10-1/8	5.90	11.80
5	00752	2	Washer, Lock 5/16	0.03	0.06
6	00772	4	Washer, Flat 1/2	0.04	0.16
7	00P23	2	Pin, Clevis 1/4 x 1-3/4	0.03	0.06
8	00P25	2	Pin, Cotter 1/16 x 3/4	0.01	0.02
9	00P26	4	Pin, Cotter 1/8 x 1	0.01	0.04
10	00P28	2	Snap Ring, Ext 0.75	0.01	0.02
11	00P43	2	Nut, Nylock 3/8-16 UNC Gr8	0.07	0.14
12	00P49	2	HHCS 5/16-18 UNC x 1/2 Gr8	0.09	0.18
13	23P13	2	Eyebolt 3/8-16 UNC x 3	0.21	0.41
14	90P04	2	Spring, Ext 7/8 OD x 6 Lg	0.40	0.80

**SAFETY LATCH SUB-ASSEMBLY**

52H89 – BODY LOCK w/ SHELF ASSEMBLY**SL-220/222**

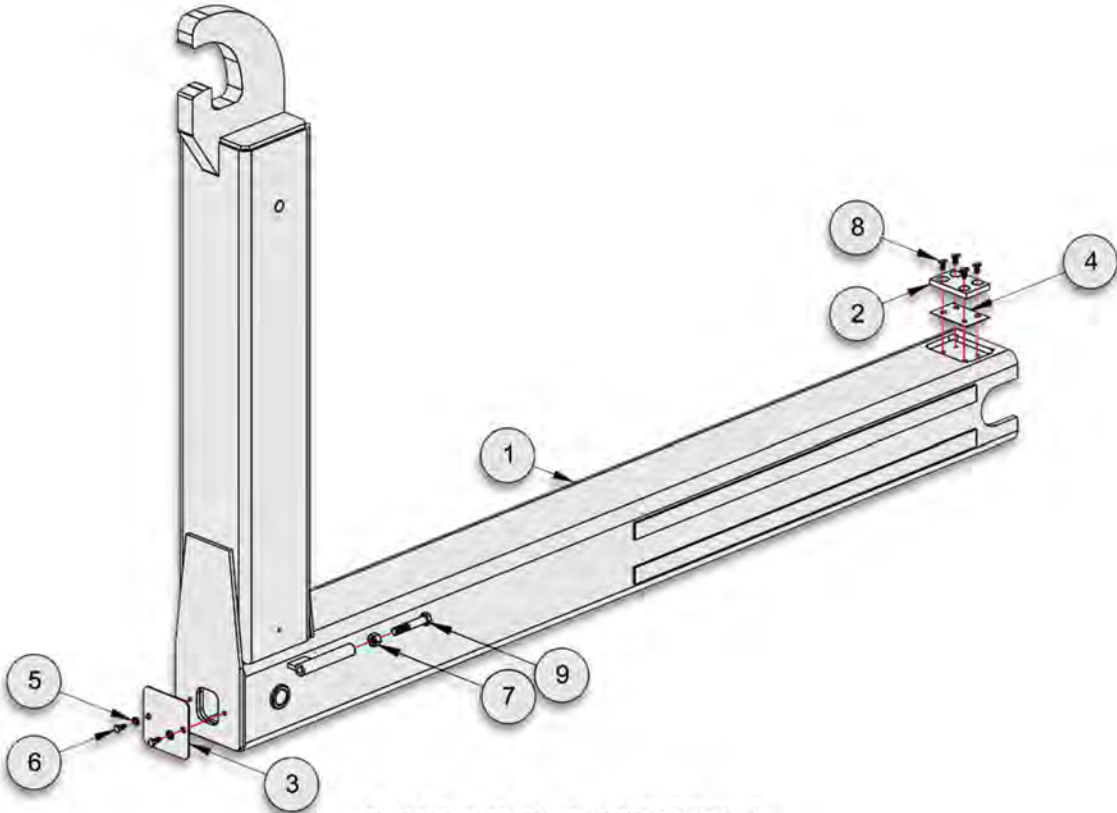
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	52H90	1	Body Lock Wdmt, 200S	128.69	128.69
2	64H33	2	Wear Pad Spacer, BL	1.12	2.24
3	00755	8	Wear Pad, 2-3/4x1/2x11-3/4	0.03	0.24
4	00P14	8	Nut, Hex 3/8-16 UNC Gr8	0.02	0.16
5	01P99	8	FHSS 3/8-16 UNC x 1-1/2 SS	0.05	0.40
6	90P71	2	Wear Pad, 2-3/4x1/2x11-3/4	0.63	1.26

**BODY LOCK w/ SHELF ASSEMBLY**

HEX HEAD CAP SCREW TORQUE SPECS	
BOLT SIZE	SAE GR 8 W/ LOCK WASHER (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.

52H53 – FIXED JIB SUB-ASSEMBLY				SL-220/222	
ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
1	51H73	1	Fixed Jib Wdmt 54	633.82	633.82
2	60H11	1	Wear Pad, 2-3/4x1/2x4-1/4	0.21	0.21
3	62H11	1	Cover, Jib 5-1/4x11GAx5-1/4	0.90	0.90
4	87H45	1	Shim 2-3/4 x 16GA x 4-1/4	0.20	0.20
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	00P24	2	Nut, Hex 5/8-11 UNC Gr8	0.09	0.18
8	00P79	4	FHCS 3/8-16 UNC x 3/4 Brass	0.09	0.36
9	00P85	2	HHCS 5/8-11 UNC x 3-1/2 Gr8	0.37	0.74



FIXED JIB SUB-ASSEMBLY

HEX HEAD CAP SCREW TORQUE SPECS

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

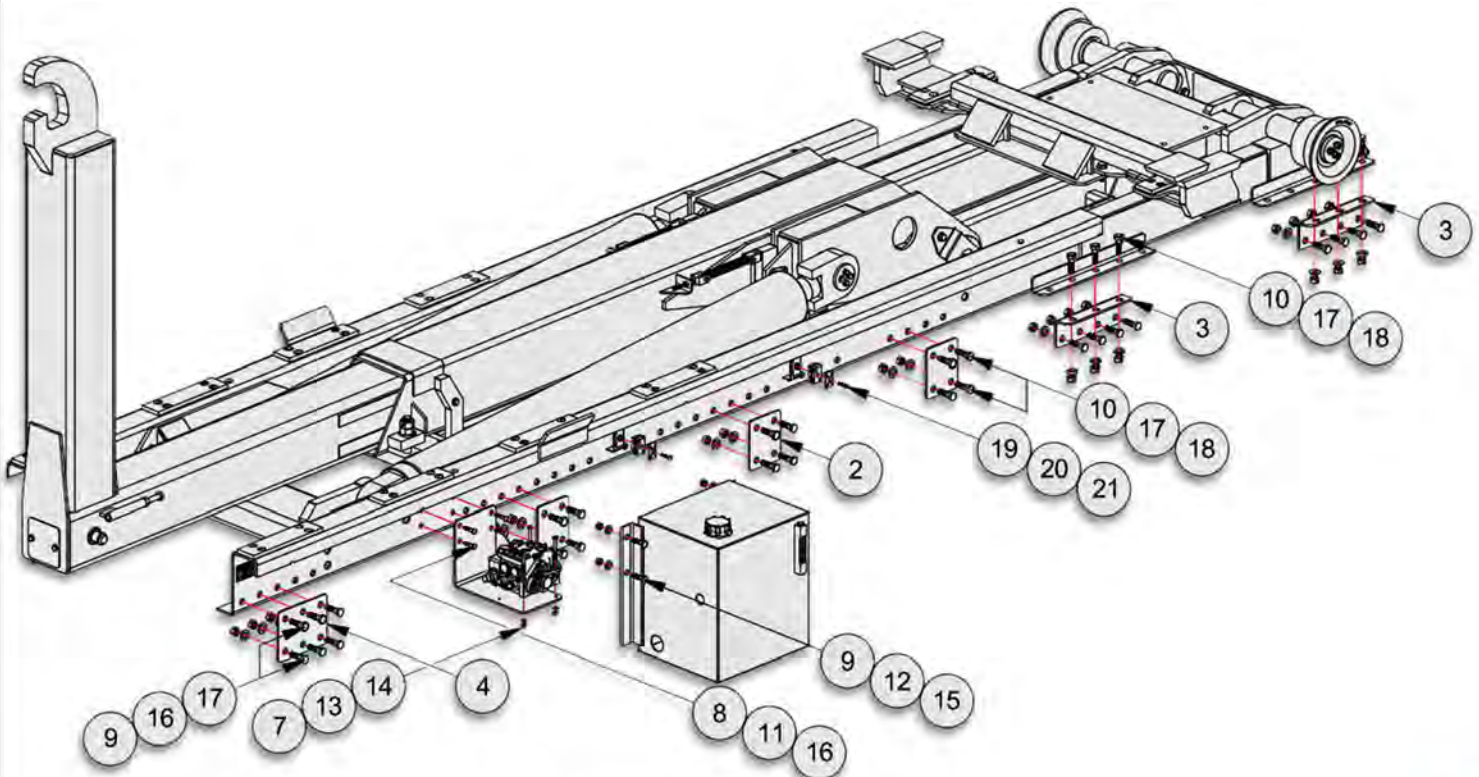
Note: Apply Loctite 243 (Blue) to all bolts.

52H91 OR 52H92 – HOIST INSTALLATION KIT

SL-220/222

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
* 1	51H96	1	Decal Assembly, SL-220	0.38	0.38
* 1	52H19	1	Decal Assembly, SL-222	0.38	0.38
2	64H34	6	Mnt Bkt, 5-1/4x1/4x6-1/2	2.30	13.80
3	64H37	4	Mnt Bkt, 2-3/16x3-3/4x11	3.93	15.72
4	64H40	2	Mnt Bkt, 6-1/2x1/4x8-1/4	3.63	7.26
5	00752	3	Washer, Lock 5/16	0.03	0.09
6	00755	4	Washer, Lock 3/8	0.03	0.12
7	00784	4	Washer, Flat 1/2 HT	0.01	0.04
8	00785	64	Washer, Flat 5/8 HT	0.07	4.48
9	00P14	4	Nut, Hex 3/8-16 UNC Gr8	0.02	0.08
10	00P15	4	HHCS 1/2-13 UNC x 1-3/4 Gr8	0.20	0.80
11	00P19	3	HHCS 5/16-18 UNC x 2-3/4 Gr8	0.02	0.06
12	00P20	3	Nut, Hex 5/16-18 UNC Gr8	0.01	0.03
13	00P35	4	Nut, Lock 1/2-13 UNC GrC	0.05	0.20
14	00P44	4	HHCS 3/8-16 UNC x 1-1/2 Gr8	0.07	0.28
15	00P55	64	Nut, Lock 5/8-11 UNC Gr8	0.13	8.32
16	00P69	64	HHCS 5/8-11 UNC x 2 Gr8	0.33	21.12
17	10P28	2	HHCS 5-16-18 UNC x 1-1/4 ZP	0.03	0.06
18	10P29	2	Cover Plate, Clamp 7/8	0.10	0.20
19	10P66	2	Clamp Assy, Twin 5/8	0.04	0.08
20	02P28	1	Hardware Kit, 200S STD	0.00	0.00
* 21	91P79	1	All Model Tech Guide	0.50	0.50
* 22	91P92	1	Parts Manual, SL-220/222	0.50	0.50

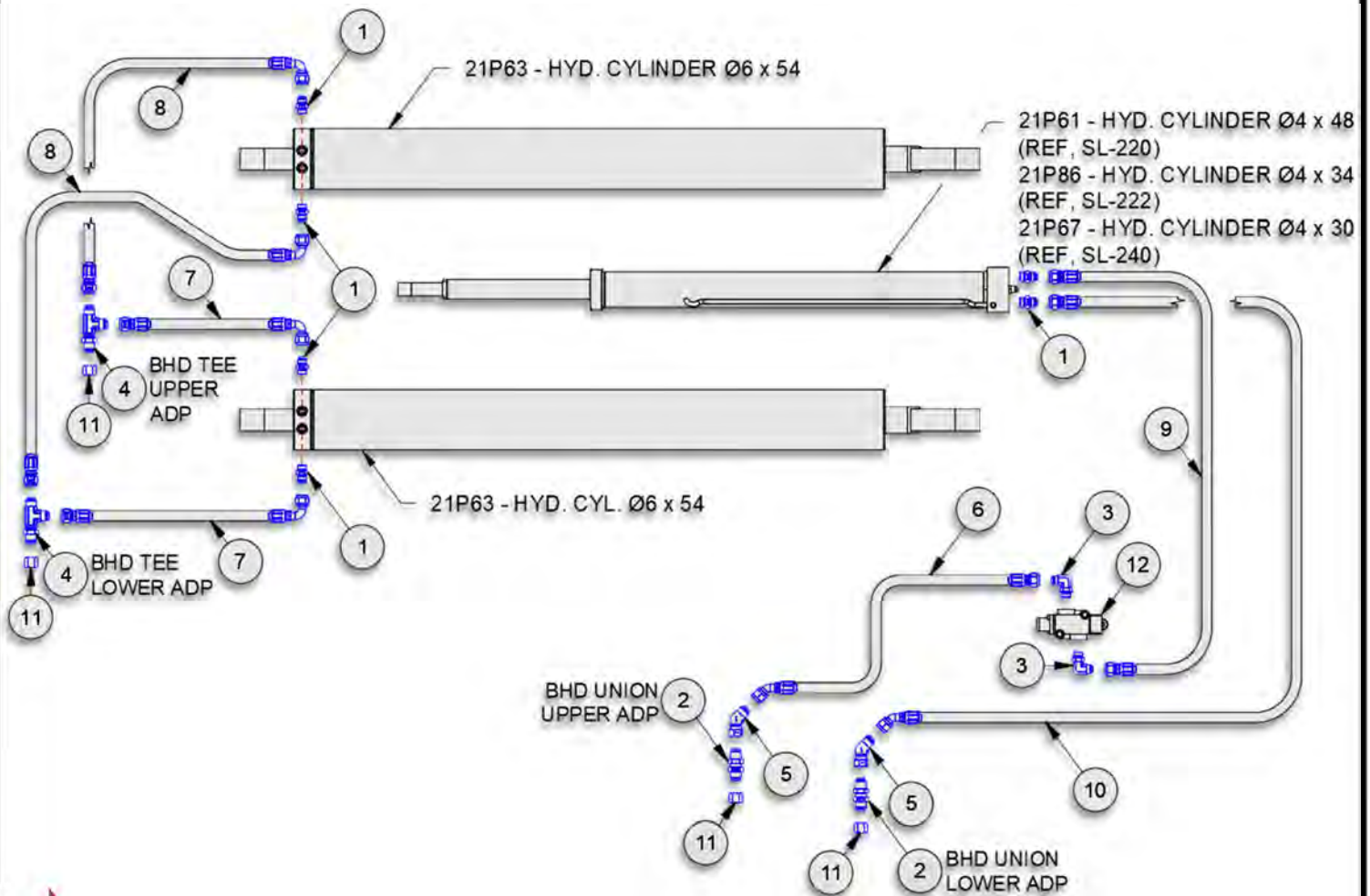
* Item not shown.



HOIST INSTALLATION KIT

90H96 – BASE CYLINDER CIRCUIT**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P39	6	Adp Hyd 08MJ/08MB	0.10	0.60
2	11P02	2	Adp Hyd 10MJ/10MJ BHD	0.40	0.80
3	11P23	2	Adp Hyd 08MJ/08MB 90	0.30	0.60
4	11P27	2	Adp Hyd 10MJ/10MJ/10MJBHD Tee	0.40	0.80
5	12P09	2	Adp Hyd 10FJ/10MJ 45	0.30	0.60
6	12P76	1	Hose Assy 31.5 08-08FJ/10FJ45	1.70	1.70
7	12P87	2	Hose Assy 21 08-10FJ/08FJ90	1.26	2.52
8	12P88	2	Hose Assy 47 08-10FJ/08FJ90	2.24	4.48
9	12P89	1	Hose Assy 102 08FJ/08FJ	4.32	4.32
10	12P90	1	Hose Assy 131 08FJ/10FJ45	5.38	5.38
11	13P15	4	Hyd Valve, 2-Way 16 GPM	2.20	2.20
12	23P04	1	Hyd Valve, 2-Way 08FB	5.20	5.20

**BASE CYLINDER CIRCUIT**

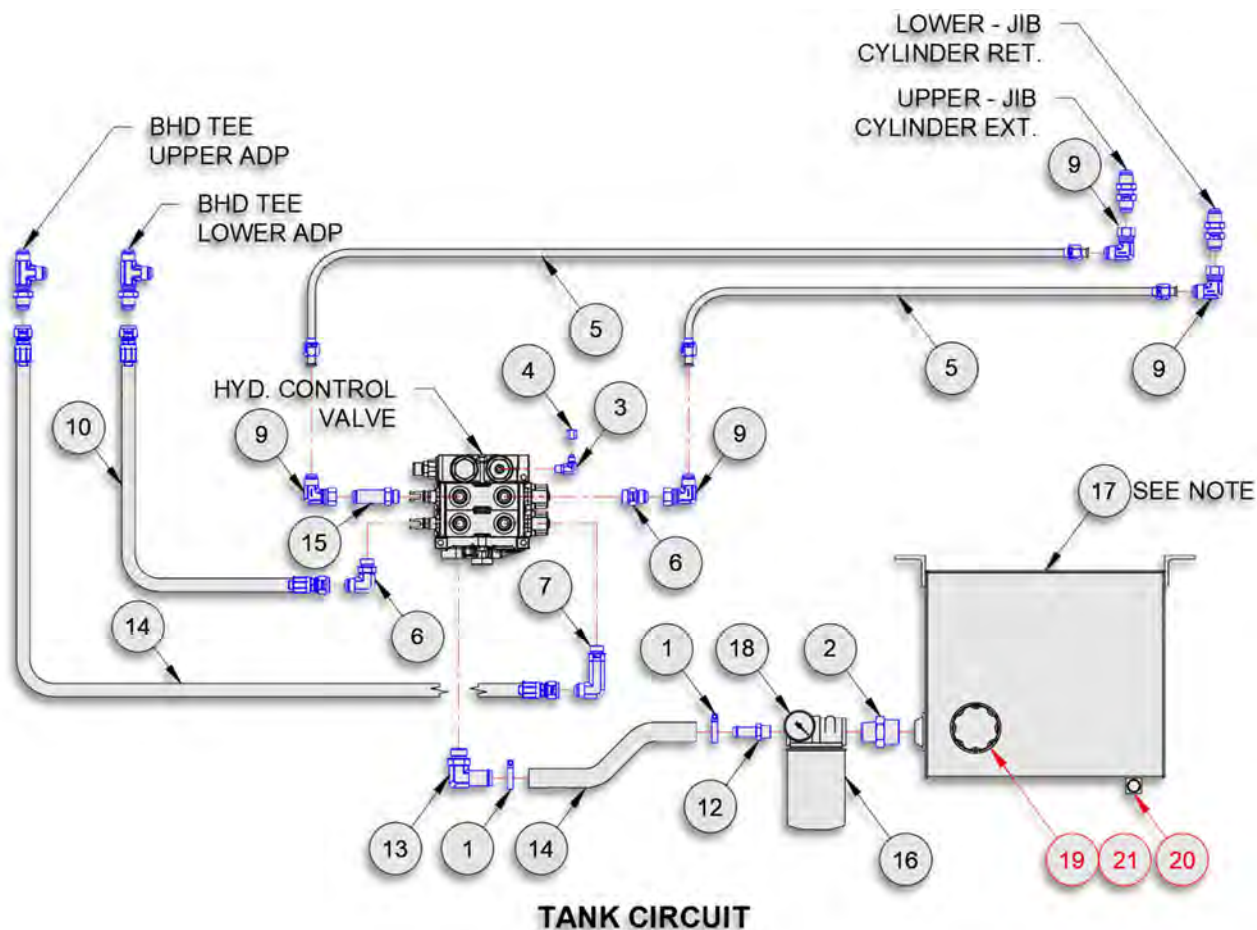
90H97 – TANK CIRCUIT**SL-220/222**

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	10P26	1	Adp Hyd 20MP/16MP	0.70	0.70
3	10P37	1	Adp Hyd 04MJ/04MP 90	0.30	0.30
4	10P38	1	Adp Hyd 04FJ Cap	0.10	0.10
5	10P73	2	Hyd Tube, Low 5/8 x 86-13/16	3.60	7.20
6	11P04	1	Adp Hyd 10MJ/10MB 90	0.40	0.40
7	11P05	1	Adp Hyd 10MJ/10MB 90 LL	0.40	0.40
8	11P06	1	Adp Hyd 10MJ/10MB	0.40	0.40
9	11P07	4	Adp Hyd 10MJ/10FJ 90	0.40	1.60
10	11P98	1	Hose Assy 28 08-10FJ/10FJ	1.40	1.40
11	11P99	1	Hose Assy 33 08-10FJ/10FJ	1.50	1.50
12	12P19	1	Adp Hyd 10HB/10MP	0.30	0.30
13	12P26	1	Adp Hyd 16HB/12MB 90	0.60	0.60
14	12P31	1	Hose 1 x 30 LP	1.65	1.65
15	12P61	1	Adp Hyd 10MJ/10MB L	0.30	0.30
16	20P22	1	Hyd. Filter Assembly - 25 GPM	2.30	2.30
17	20P25	1	Hyd. Tank, - 25 gallon	63.00	63.00
18	20P64	1	Hyd Filter Indicator	0.01	0.01

TANK SERVICE PARTS

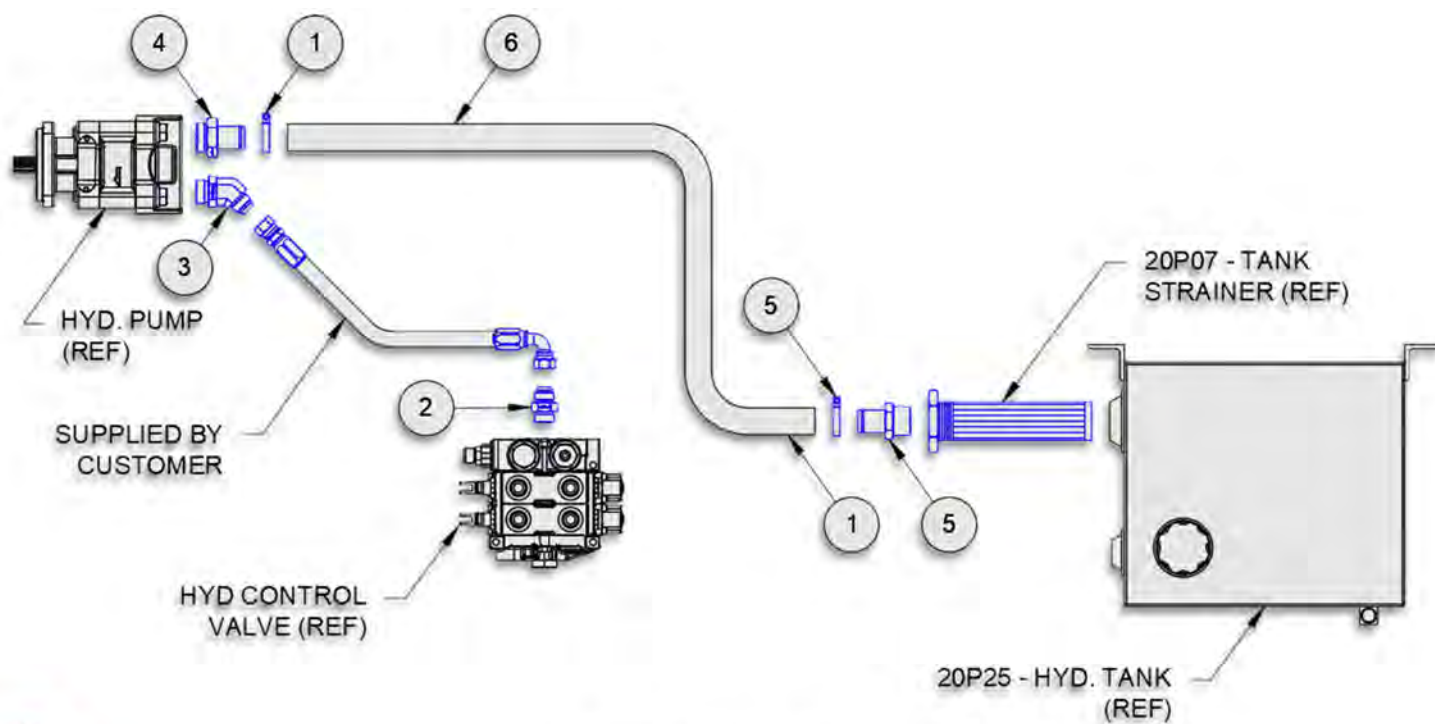
19	20P07	1	Hyd Strainer, 25 GPM	1.20	1.20
20	20P96	1	Sight Gauge, Hyd Tank	0.70	0.70
21	20P97	1	Breather Cap Assy, Hyd Tank	0.60	0.60

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



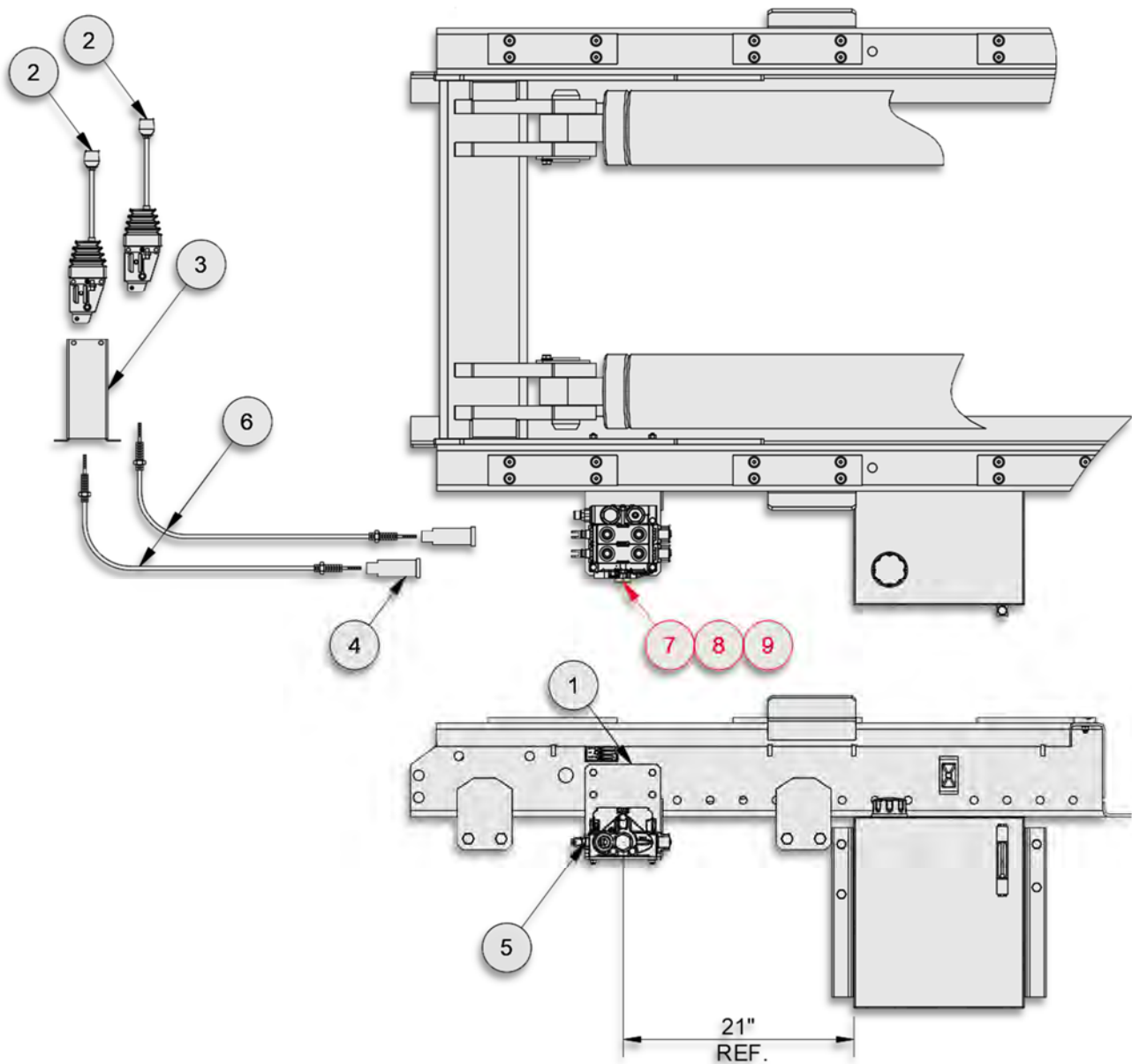
90H98 – PUMP CIRCUIT**SL-220/222**

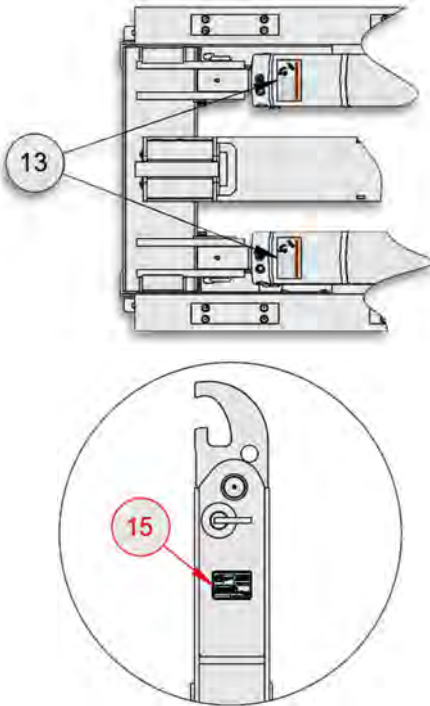
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P78	2	T-Bolt Clamp, 1-3/4 Dia	0.15	0.30
2	10P90	1	Adp Hyd 12MJ/12MB	0.40	0.40
3	10P91	1	Adp Hyd 12MJ/16MB 45	0.50	0.50
4	12P24	1	Adp Hyd 20HB/20MB	0.40	0.40
5	12P25	1	Adp Hyd 20HB/20MP	0.40	0.40
6	12P30	1	Hose 1-1/4 x 148 LP	9.74	9.74

**PUMP CIRCUIT**

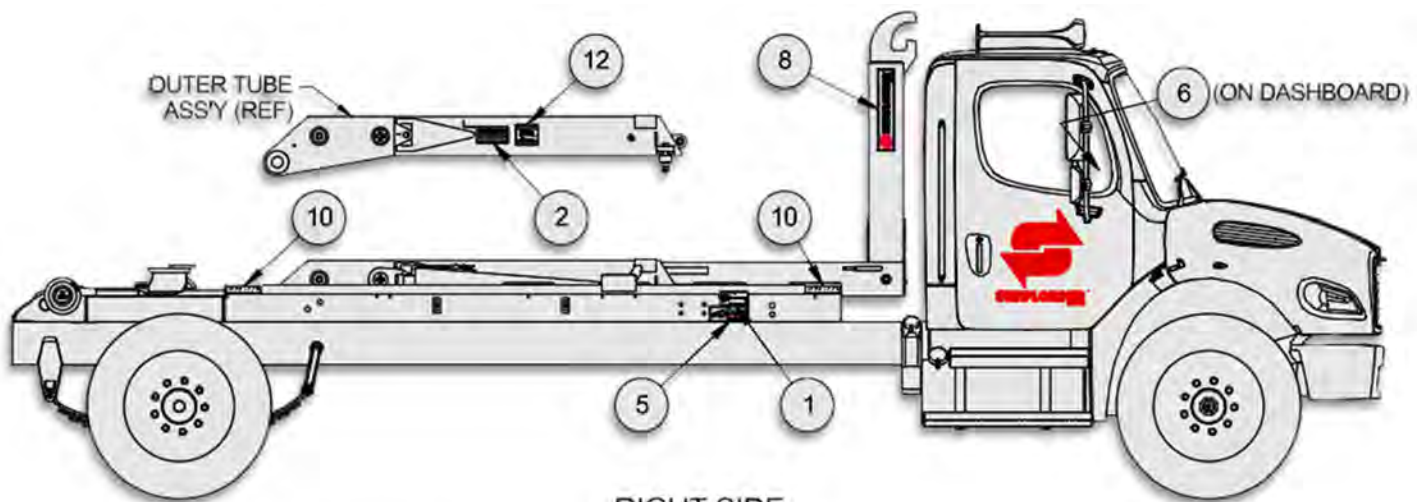
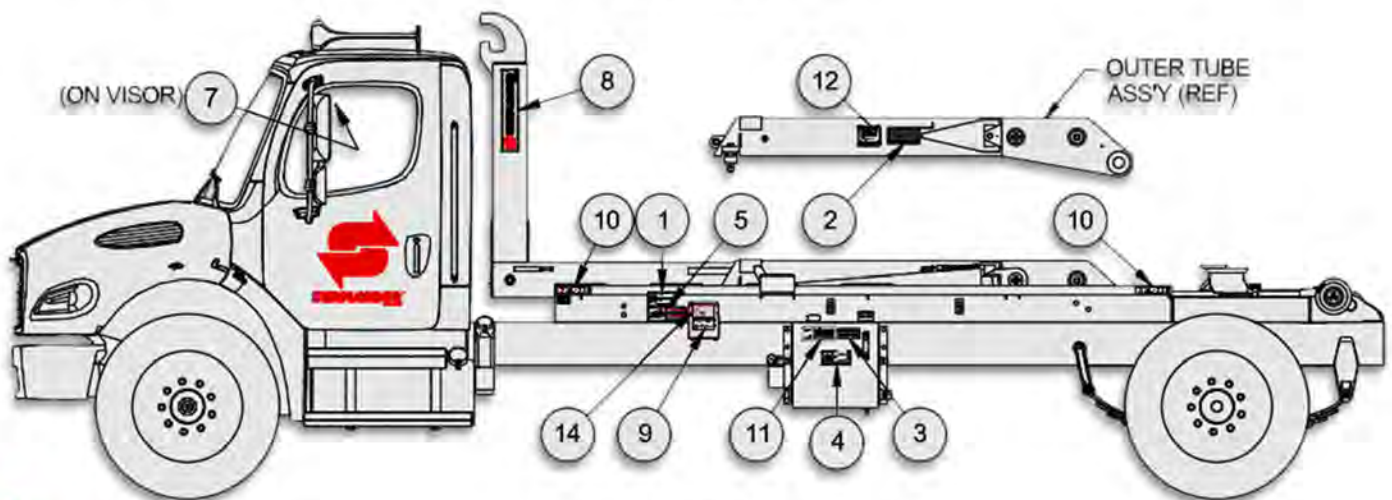
90H30 – MANUAL CONTROLS, 2-SECTION**SL-220/222**

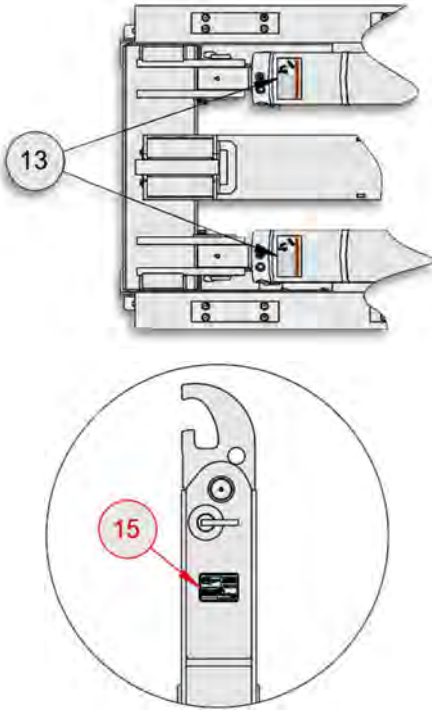
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10H51	1	Valve Mount Bracket	8.20	8.20
2	20P08	2	Control Handle, Cable	2.80	5.60
3	20P09	1	Control Console, 2 Sect	4.10	4.10
4	20P10	2	Bonnet Kit, V20	0.50	1.00
5	20P39	1	Hyd Valve, 2 Sect 2800 V20	27.00	27.00
6	20P40	2	Control Cable Assy, 96 STD	1.98	3.96
VALVE SERVICE PARTS					
7	20P42		Relief Cartridge, V20 2800	0.20	
8	22P20		Seal Kit, Sect V20	0.10	
9	22P21		Seal Kit, Sect & Spool V20	0.20	

**MANUAL CONTROLS**

**51H96 – DECAL ASSEMBLY****SL-220**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	90P07	2	Decal, Op & Service Manual	0.01	0.02
2	90P08	2	Decal, Hoist/Body	0.02	0.04
3	90P09	1	Decal, Hyd Oil	0.02	0.02
4	90P10	1	Decal, Hyd Oil Flammable	0.03	0.03
5	90P11	2	Decal, Hoist Falling	0.03	0.06
6	90P12	1	Decal, Lever Control	0.02	0.02
7	90P13	1	Decal, Safety Instructions	0.03	0.03
8	90P14	2	Decal, SwapLoader	0.03	0.06
9	90P18	1	Decal, Relief Valve	0.03	0.03
10	90P73	4	Decal, SL-220	0.01	0.04
11	90P78	1	Decal, High-Pressure Fluids	0.01	0.01
12	91P06	2	Decal, Lubrication Points	0.01	0.02
13	91P52	3	Decal, Counterbalance Valve	0.01	0.03
14	91P66	1	Decal, Outside Controls	0.01	0.01
ADJUSTABLE JIB OPTION ONLY					
15	90P94	2	Decal, Adj Jib Op 54/62	0.01	

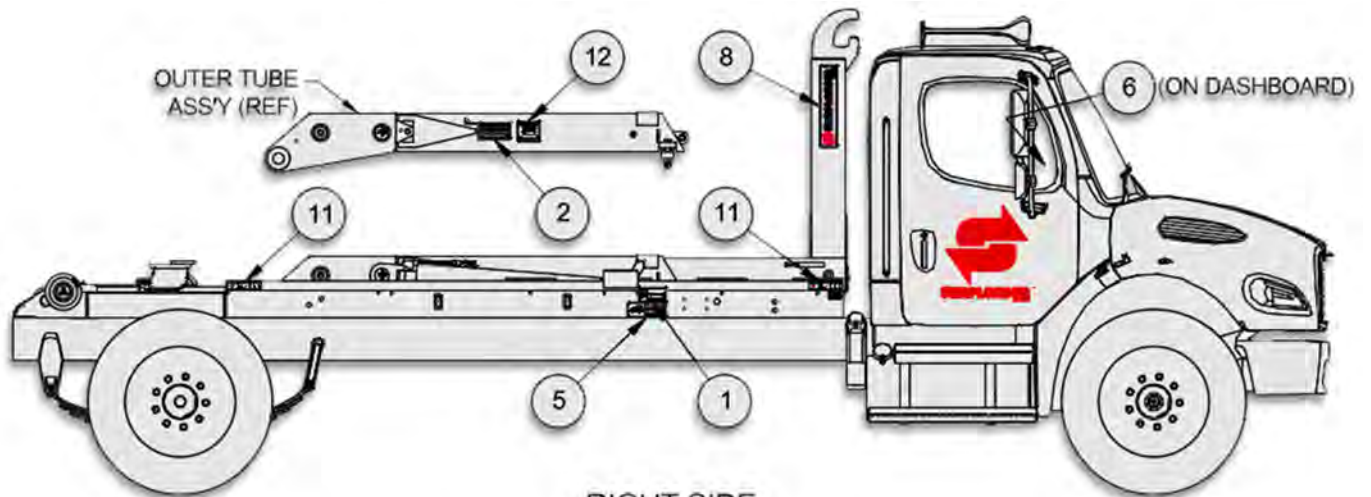
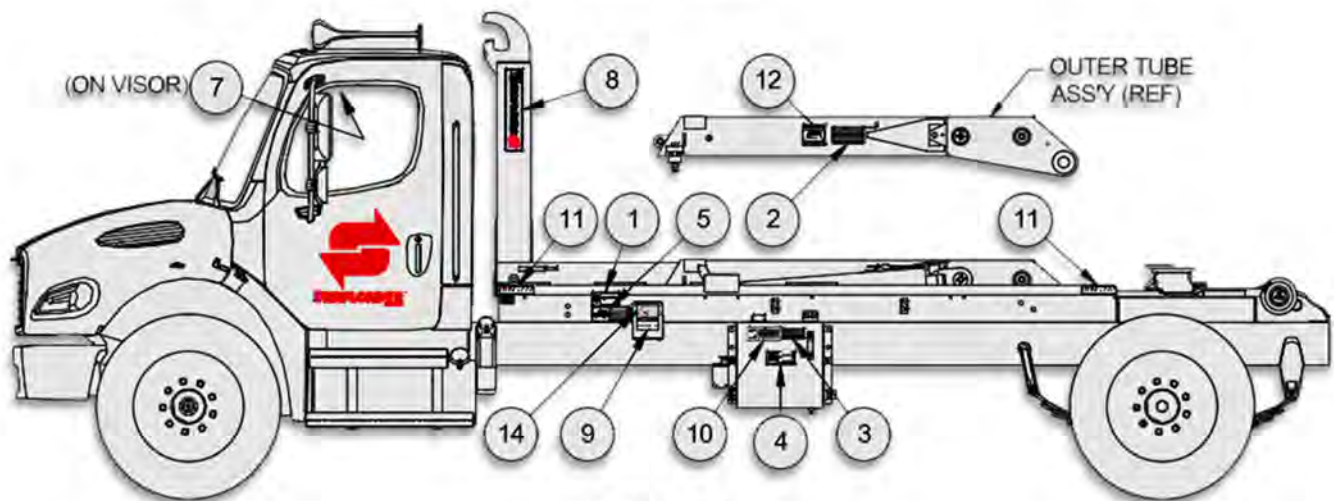
**RIGHT SIDE****LEFT SIDE**

**52H19 – DECAL ASSEMBLY****SL-222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	90P07	2	Decal, Op & Service Manual	0.01	0.02
2	90P08	2	Decal, Hoist/Body	0.02	0.04
3	90P09	1	Decal, Hyd Oil	0.02	0.02
4	90P10	1	Decal, Hyd Oil Flammable	0.03	0.03
5	90P11	2	Decal, Hoist Falling	0.03	0.06
6	90P12	1	Decal, Lever Control	0.02	0.02
7	90P13	1	Decal, Safety Instructions	0.03	0.03
8	90P14	2	Decal, SwapLoader	0.03	0.06
9	90P18	1	Decal, Relief Valve	0.03	0.03
10	90P78	1	Decal, High-Pressure Fluids	0.01	0.01
11	90P83	4	Decal, SL-222	0.01	0.04
12	91P06	2	Decal, Lubrication Points	0.01	0.02
13	91P52	3	Decal, Counterbalance Valve	0.01	0.03
14	91P66	1	Decal, Outside Controls	0.01	0.01

ADJUSTABLE JIB OPTION ONLY

15	90P94	2	Decal, Adj Jib Op 54/62	0.01	
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**RIGHT SIDE****LEFT SIDE**

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OPTIONS

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HEX HEAD CAP SCREW TORQUE SPECS

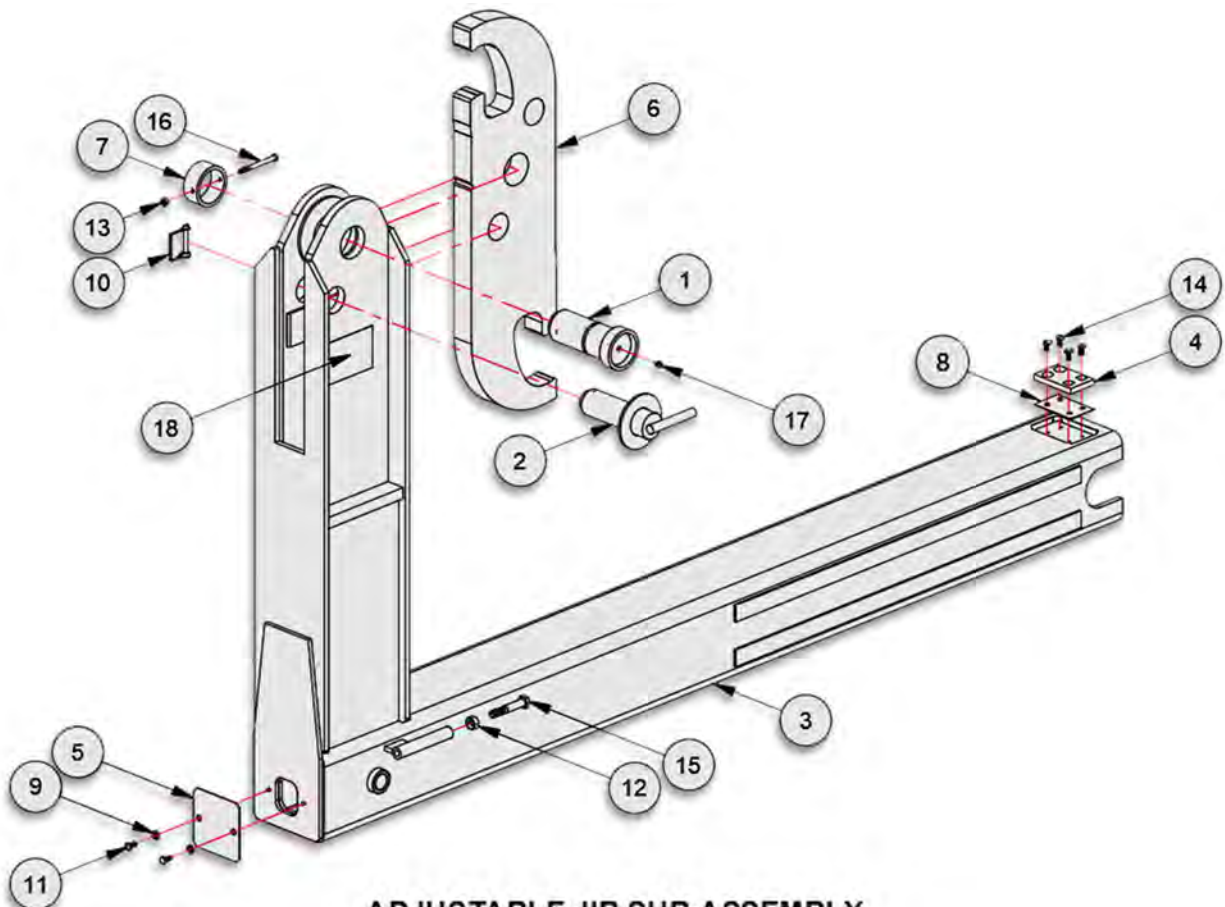
BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

Note: Apply Loctite 243 (Blue) to
all bolts.

52H36 – ADJUSTABLE JIB SUB-ASSEMBLY

SL-220/222

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT-lb/all
1	43H10	1	Pin, Hook Pvt 2-3/4 x 5-3/8	12.38	12.38
2	43H11	1	Pin, Hook Lock 2-1/4 x 5-1/8	9.68	9.68
3	52H37	1	Adj Jib Wdmt 54/62	693.25	693.25
4	60H11	1	Wear Pad, 2-3/4x1/2x4-1/4	0.21	0.21
5	62H11	1	Cover, Jib 5-1/4x11GAx5-1/4	0.90	0.90
6	86H95	1	Hook, Adj Jib 54/62	146.50	146.50
7	86H98	1	Lock Tube, Jib 3-1/2ODx1-1/2	1.20	1.20
8	87H45	1	Shim 2-3/4 x 16GA x 4-1/4	0.20	0.20
9	00755	2	Washer, Lock - 3/8 Dia	0.03	0.06
10	53586	1	Safety Snap Pin, 3/8 x 2-1/2	0.14	0.14
11	00P03	2	HHCS 3/8-16 UNC x 3/4	0.04	0.08
12	00P24	2	Nut, Hex 5/8-11 UNC Gr8	0.09	0.18
13	00P34	1	Nut, Lock 3/8-16	0.02	0.02
14	00P79	4	FHCS 3/8-16 UNC x 3/4 Brass	0.09	0.36
15	00P85	2	HHCS 5/8-11 UNC x 3-1/2 Gr8	0.37	0.74
16	00P99	1	HHCS 3/8-16UNC x 4	0.22	0.22
17	90P03	1	Zerk, Grease - 1/8 NPT	0.01	0.01
18	90P94	2	Decal, Adj Jib Op 54/62	0.01	0.02

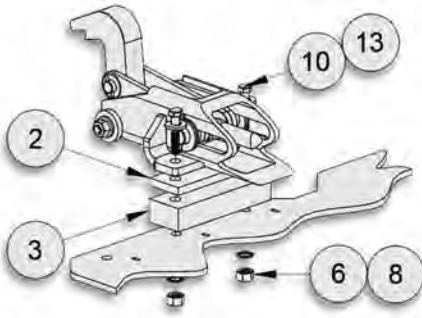


ADJUSTABLE JIB SUB-ASSEMBLY

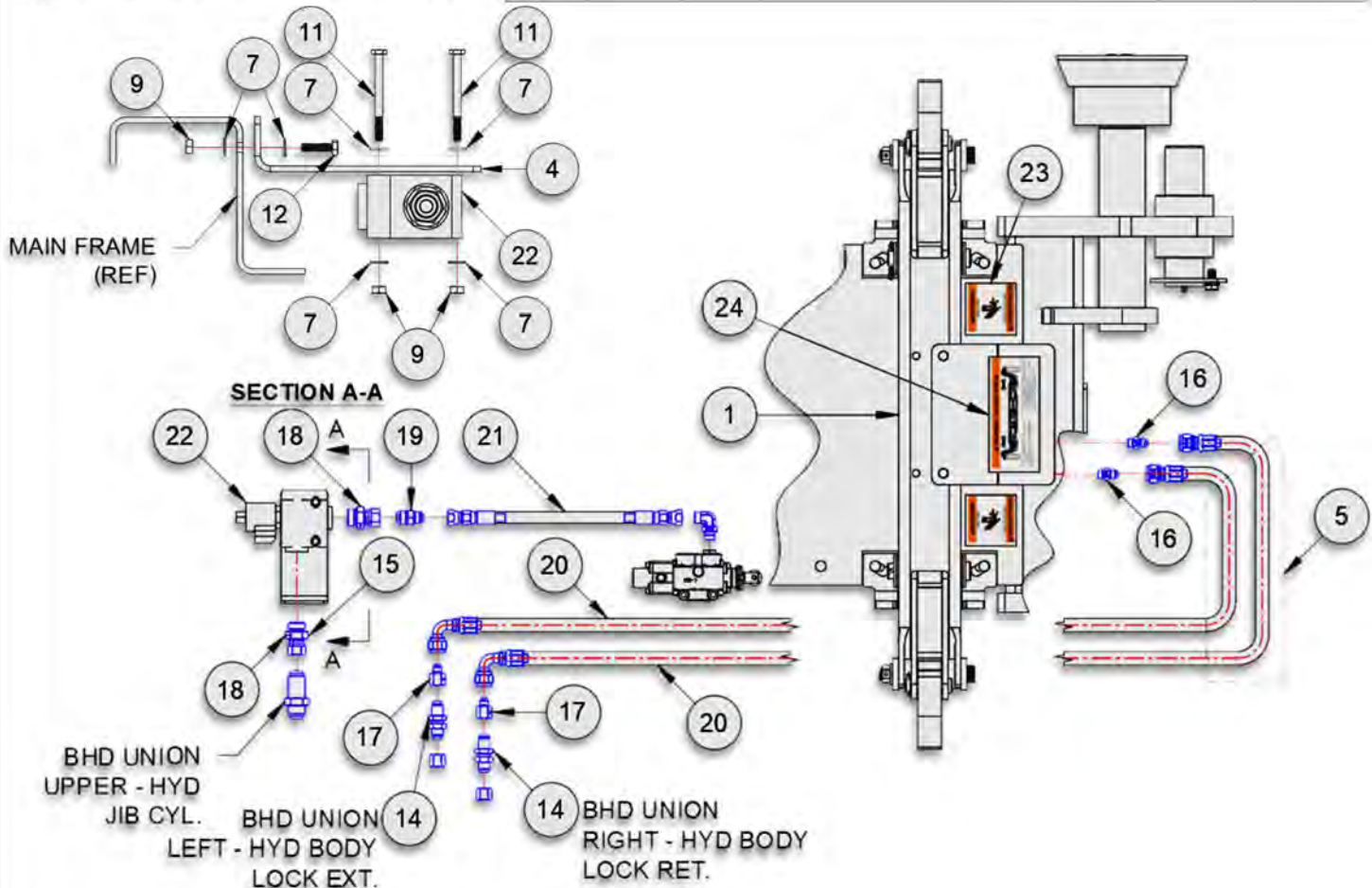
**HEX HEAD CAP SCREW
TORQUE SPECS**

BOLT SIZE	SAE GR 8 W/ LOCK WASHER (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****91H82- CYLINDER CIRCUIT, BL STD****SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
1	44H76	1	U-Lock Assy, 100/200S	84.58	84.58
2	64H78	2	Spacer, BL Mnt 1/2 200S	2.23	4.46
3	64H79	2	Spacer, BL Mnt 1-1/2 200S	6.68	13.36
4	89H45	1	Valve Mnt Bkt, Solenoid HD	1.13	1.13
5	90H74	1	Nylon Hose Sleeve x 60"	0.25	0.25
6	00767	4	Washer, Lock 5/8	0.04	0.16
7	00770	8	Washer, Flat 1/4	0.01	0.08
8	00P24	4	Nut, Hex 5/8-11 UNC Gr8	0.09	0.36
9	00P51	4	Nut, Lock 1/4-20 UNC Gr8	0.01	0.04
10	00P92	4	HHCS 5/8-11 UNC x 4 Gr8	0.51	2.04
11	01P41	2	HHCS 1/4-20 UNC x 2-3/4 Gr8	0.04	0.08
12	01P56	2	HHCS 1/4-20 UNC x 1 Gr8	0.02	0.04
13	01P86	4	Washer, Flat 5/8 ZP	0.06	0.24
14	10P43	2	Adp Hyd 08MJ/08MJ BHD	0.30	0.60
15	13P14	2	Adp Hyd 08FJ Cap	0.32	0.64
16	13P77	2	Adp Hyd 06MJ/06MB .062 Rstr.	0.30	0.60
17	13P87	2	Adp Hyd 08FJ/06MJ	0.30	0.60
18	14P01	2	Adp Hyd 12MB/10FJ	0.34	0.68
19	14P02	1	Adp Hyd 08MJ/10MJ	0.17	0.17
20	14P09	2	Hose Assy 97 06-06FJ/06FJ90	2.84	5.68
21	14P53	1	Hose Assy 25 08-10FJ/10FJ	2.00	2.00
22	23P02	1	Solenoid Valve, U-Lock	2.85	2.85
23	91P50	2	Decal, Pinch Point	0.01	0.02
24	91P51	3	Decal, U-Lock Engagement	0.01	0.03

**CYL CIRCUIT, BL 220/222 STD**

HEX HEAD CAP SCREW TORQUE SPECS

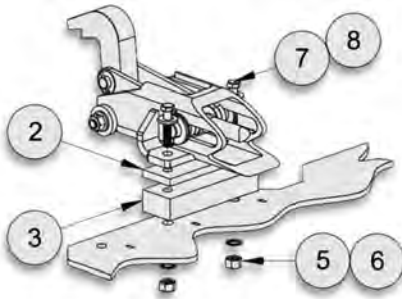
BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

Note: Apply Loctite 243 (Blue) to
all bolts.

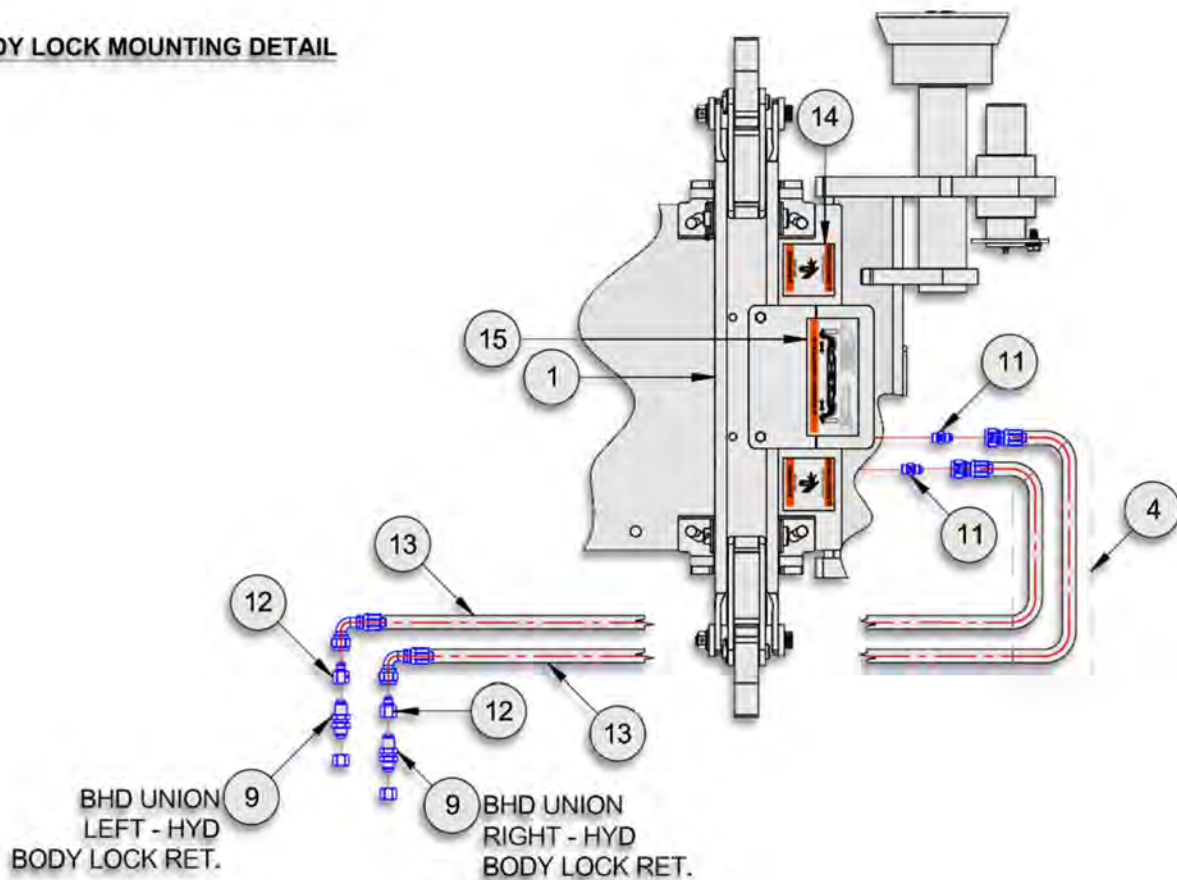
91H91 – CYLINDER CIRCUIT, BL EHV

SL-220/222

ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
1	44H76	1	U-Lock Assy, 100/200S	84.58	84.58
2	64H78	2	Spacer, BL Mnt 1/2 200S	2.23	4.46
3	64H79	2	Spacer, BL Mnt 1-1/2 200S	6.68	13.36
4	90H74	1	Nylon Hose Sleeve x 60"	0.25	0.25
5	00767	4	Washer, Lock 5/8	0.04	0.16
6	00P24	4	Nut, Hex 5/8-11 UNC Gr8	0.09	0.36
7	00P92	4	HHCS 5/8-11 UNC x 4 Gr8	0.51	2.04
8	01P86	4	Washer, Flat 5/8 ZP	0.06	0.24
9	10P43	2	Adp Hyd 08MJ/08MJ BHD	0.30	0.60
10	13P14	2	Adp Hyd 08FJ Cap	0.32	0.64
11	13P77	2	Adp Hyd 06MJ/06MB .062 Rstr.	0.30	0.60
12	13P87	2	Adp Hyd 08FJ/06MJ	0.30	0.60
13	14P09	2	Hose Assy 97 06-06FJ/06FJ90	2.84	5.68
14	91P50	2	Decal, Pinch Point	0.01	0.02
15	91P51	3	Decal, U-Lock Engagement	0.01	0.03



HYD BODY LOCK MOUNTING DETAIL



CYL CIRCUIT, BL EHV

HEX HEAD CAP SCREW TORQUE SPECS

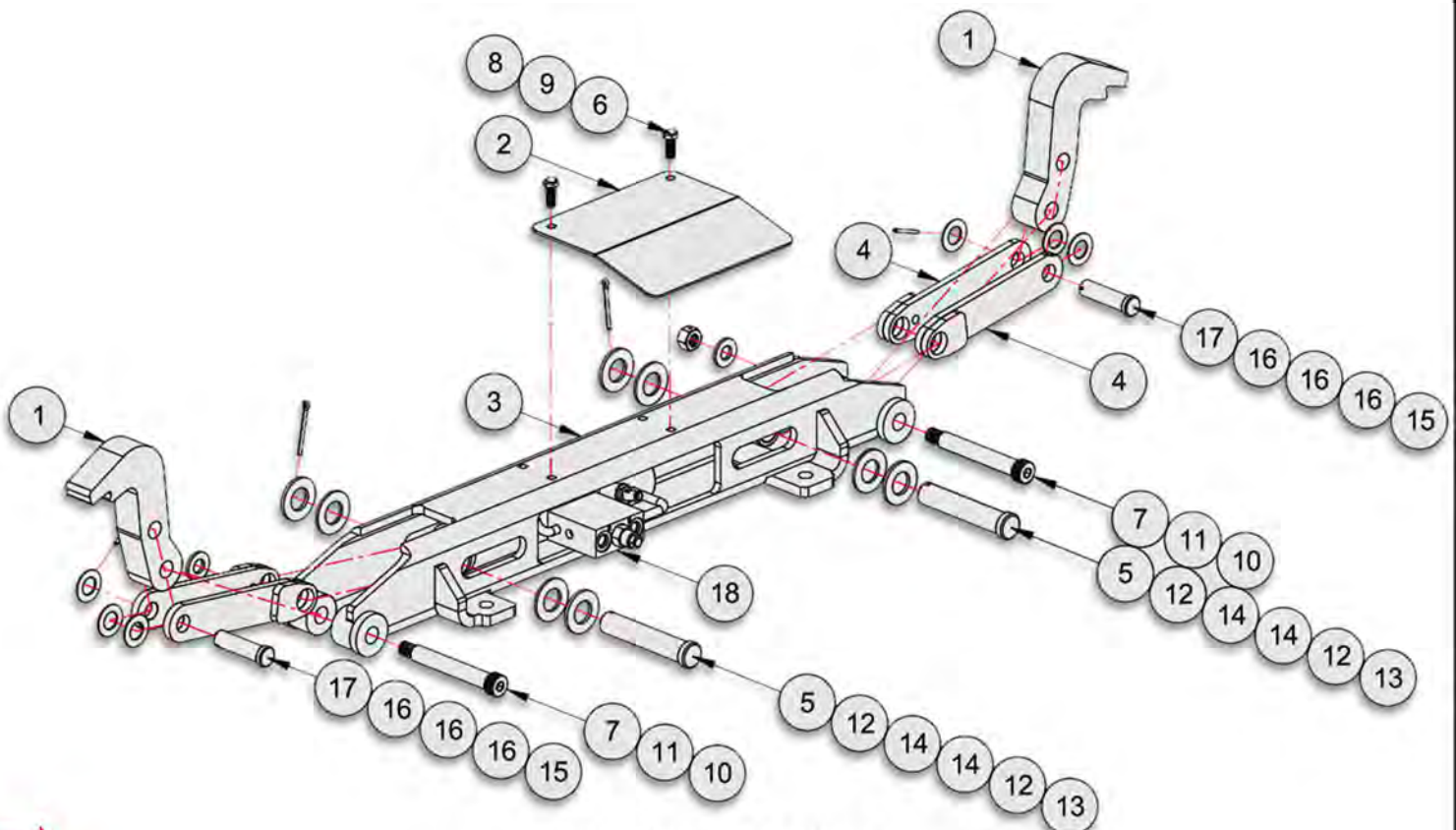
BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

Note: Apply Loctite 243 (Blue) to
all bolts.

44H76 – U-LOCK ASSEMBLY

SL-220/222

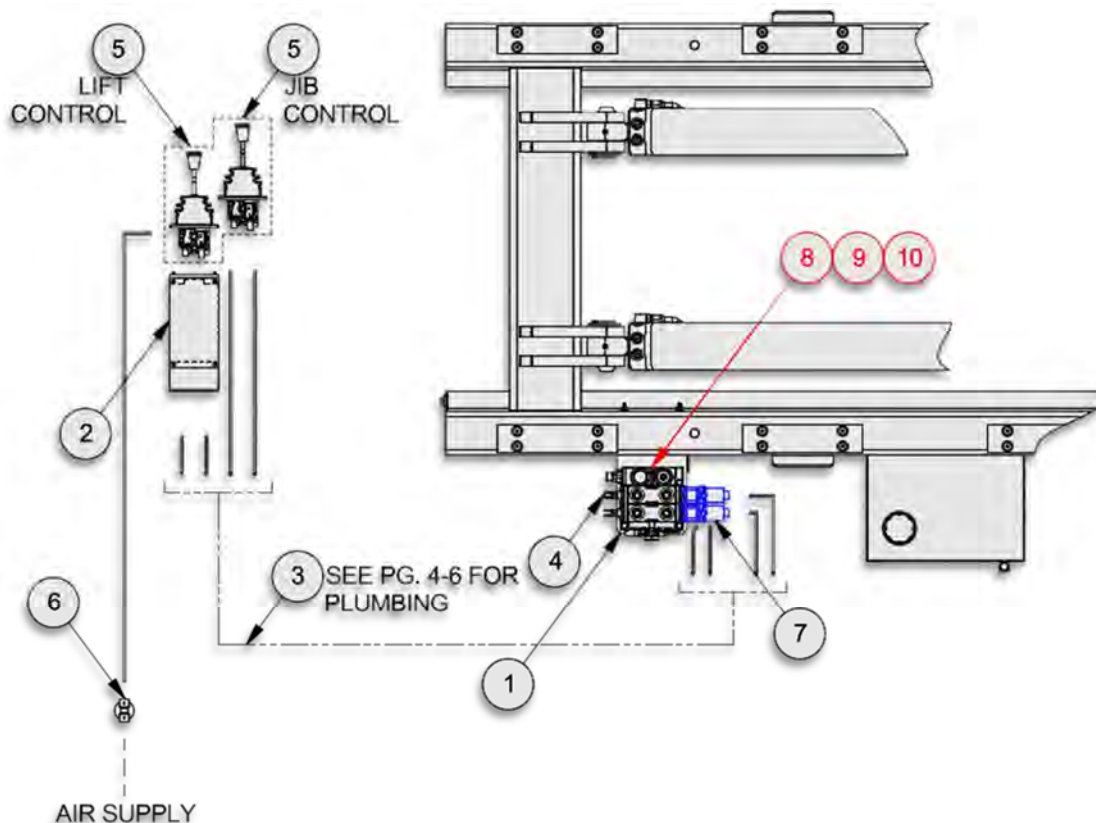
ITEM	PART #	QTY	DESCRIPTION	WT- lb/ea.	WT- lb/all
1	26H97	2	Prong, U-Lock 100/200S	6.58	13.16
2	27H26	1	Cover Plate, Hyd Lock	1.90	1.90
3	44H77	1	U-Lock Wdmt, 100/200S	43.14	43.14
4	44H78	4	Linkage Wdmt, U-Lock 100/200S	1.74	6.96
5	00837	2	Pin, Cotter 3/16 Dia x 2	0.02	0.04
6	00P14	2	Nut, Hex 3/8-16 UNC Gr8	0.02	0.04
7	00P55	2	Nut, Lock 5/8-11 UNC Gr8	0.13	0.26
8	00P62	2	HHCS 3/8-16 UNC x 1 Gr8	0.05	0.10
9	01P28	2	Washer, Disc Lock 3/8 Pr	0.01	0.02
10	01P85	2	SS 5/8-11 UNC x 4-3/4	0.75	1.50
11	01P86	2	Washer, Flat 5/8 ZP	0.06	0.12
12	01P87	4	Washer, Flat 1 ZP	0.10	0.40
13	01P88	2	Pin, Clevis 1 x 4-11/16	1.21	2.42
14	01P89	4	Washer, Flat 1 Nylon	0.01	0.04
15	01P90	2	Pin, Clevis 3/4 x 2-1/2 ZP	0.39	0.78
16	01P91	6	Washer, Flat 3/4 SS	0.02	0.12
17	01P92	2	Pin, Sltd Spg 5/32 x 1-1/2 ZP	0.01	0.02
18	22P90	1	Hyd Cyl 2x1x6	14.86	14.86

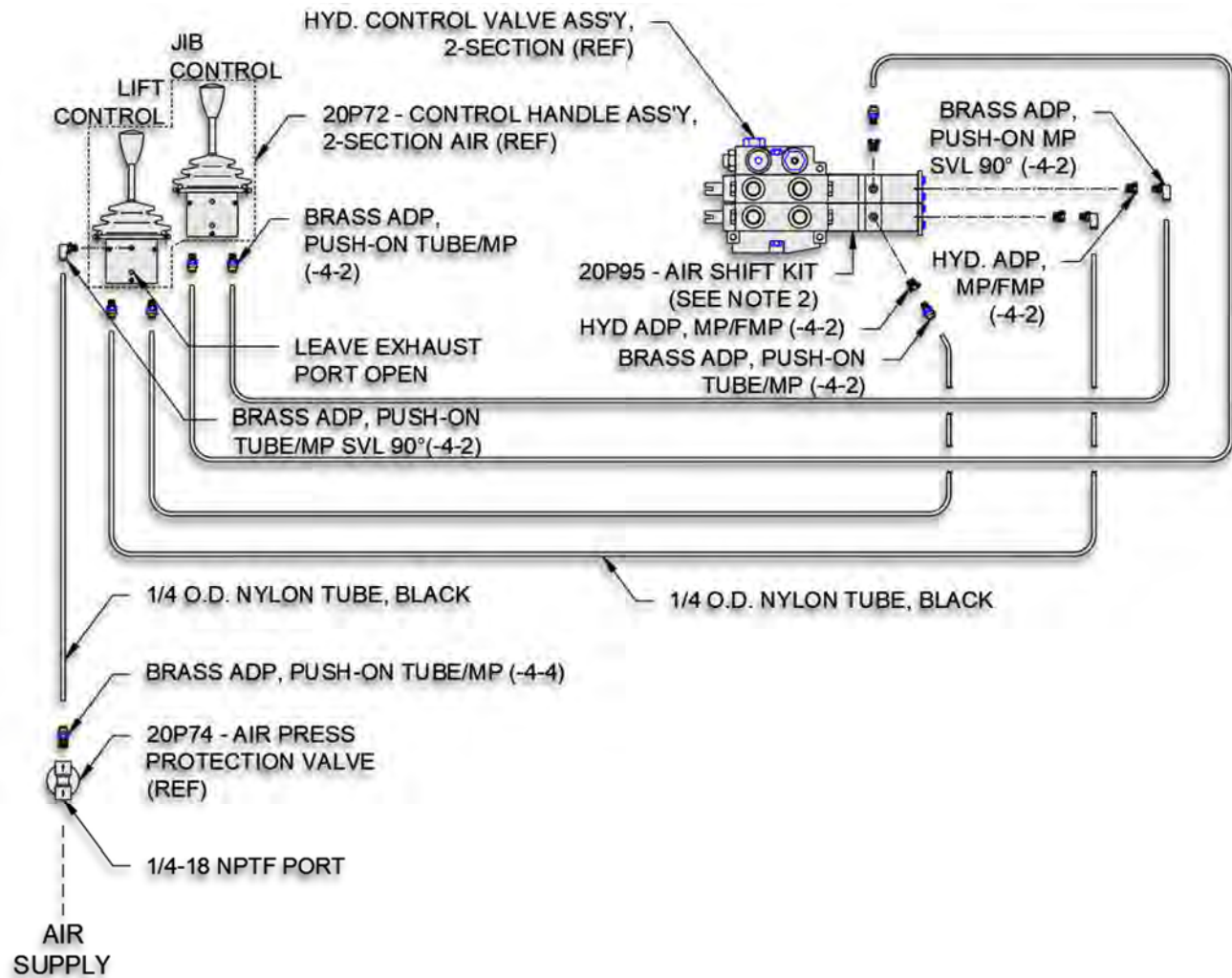


U-LOCK ASSEMBLY

90H61 – AIR CONTROLS, 2-SECTION**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10H51	1	Valve Mount Bracket	8.20	8.20
2	51H27	1	Air Cntrl Handle Console, -Section	4.20	4.20
3	12P94	1	Air Line Kit	1.40	1.40
4	20P39	1	Hyd Valve, 2 Sect 2800 V20	27.00	27.00
5	20P72	1	Control Handle, 2 Sect Air	1.60	1.60
6	20P74	1	Air Pressure Protection Valve	0.60	0.60
7	20P95	2	Air Shift Kit, V20	1.40	2.80
VALVE SERVICE PARTS					
8	20P42		Relief Cartridge, V20 2800	0.20	
9	22P20		Seal Kit, Sect V20	0.10	
10	22P21		Seal Kit, Sect & Spool V20	0.20	

**AIR CONTROLS, 2-SECTION**

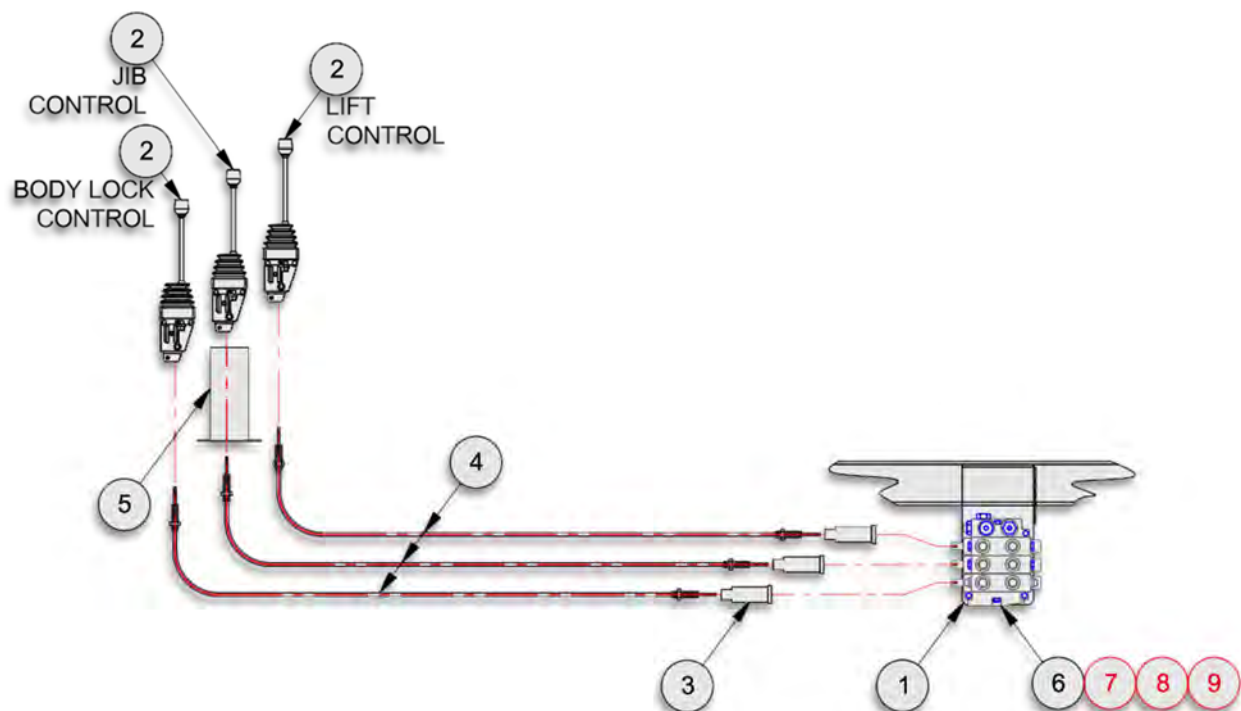


AIR CIRCUIT PLUMBING DIAGRAM, 2-SECTION

NOTE:

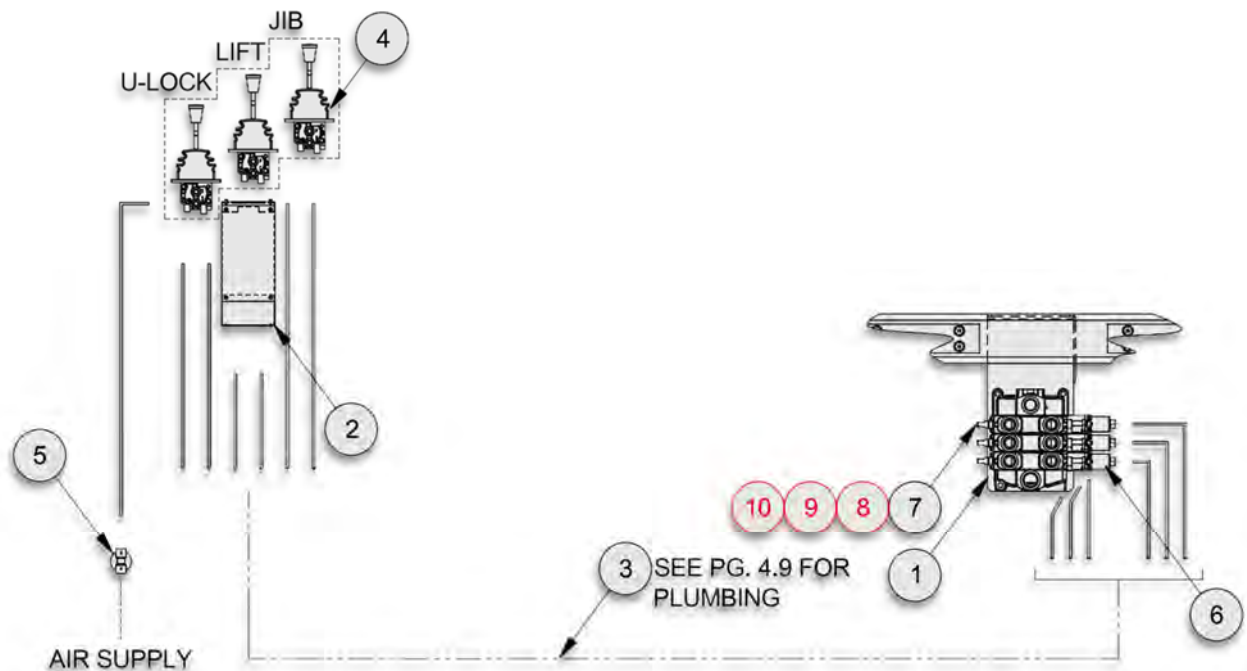
1. FITTING AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT WHICH CONTAINS FITTINGS FOR MULTIPLE HOIST/PLUMBING CONFIGURATIONS. NOT ALL FITTINGS MAY BE UTILIZED.
2. THE 20P95 AIR SHIFT KITS ARE TO BE INSTALLED ON THE HYD. CONTROL VALVE BY THE HOIST INSTALLER. PREFERENCE INSTALLTION INSTRUCTIONS INCLUDED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

91H86 – MANUAL CONTROLS, 3-SECTION BL					SL-220/222	
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all	
1	41H83	1	Valve Mnt Bkt, 3-Sect V20	7.80	7.80	
2	20P08	3	Control Handle, Cable	2.80	8.40	
3	20P10	3	Bonnet Kit, V20	0.50	1.50	
4	20P40	3	Control Cable Assy, 96 STD	1.98	5.94	
5	20P78	1	Control Console, 3-Sect	4.80	4.80	
6	21P90	1	Hyd Valve, 3-Sect 2800 V20 WR	36.50	36.50	
SERVICE PARTS FOR VALVE						
7	20P42		Relief Cartridge, V20 2800	0.20		
8	22P20		Seal Kit, Sect V20	0.10		
9	22P21		Seal Kit, Sect & Spool V20	0.20		

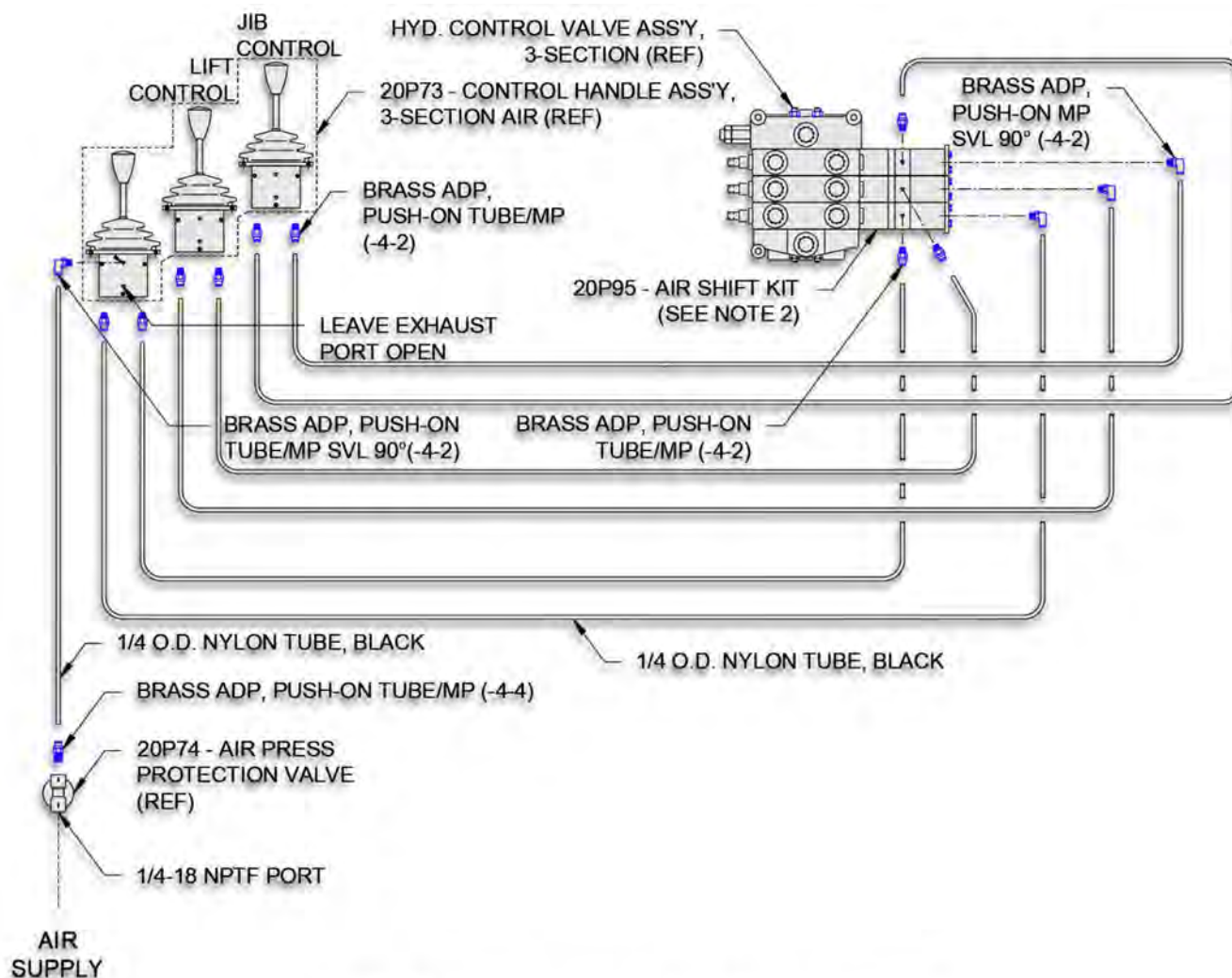


MANUAL CONTROLS, 3-SECTION BL

91H88 – AIR CONTROLS, 3-SECTION BL					SL-220/222
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	11H43	1	Valve Mnt Bkt, 3-Sect V20	8.90	8.90
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	21P90	1	Hyd Valve, 3-Sect 2800 V20 WR	36.50	36.50
SERVICE PARTS FOR VALVE					
8	20P42		Relief Cartridge, V20 2800	0.20	
9	22P20		Seal Kit, Sect V20	0.10	
10	22P21		Seal Kit, Sect & Spool V20	0.20	



AIR CONTROLS, 3-SECTION BL



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.

HEX HEAD CAP SCREW TORQUE SPECS

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

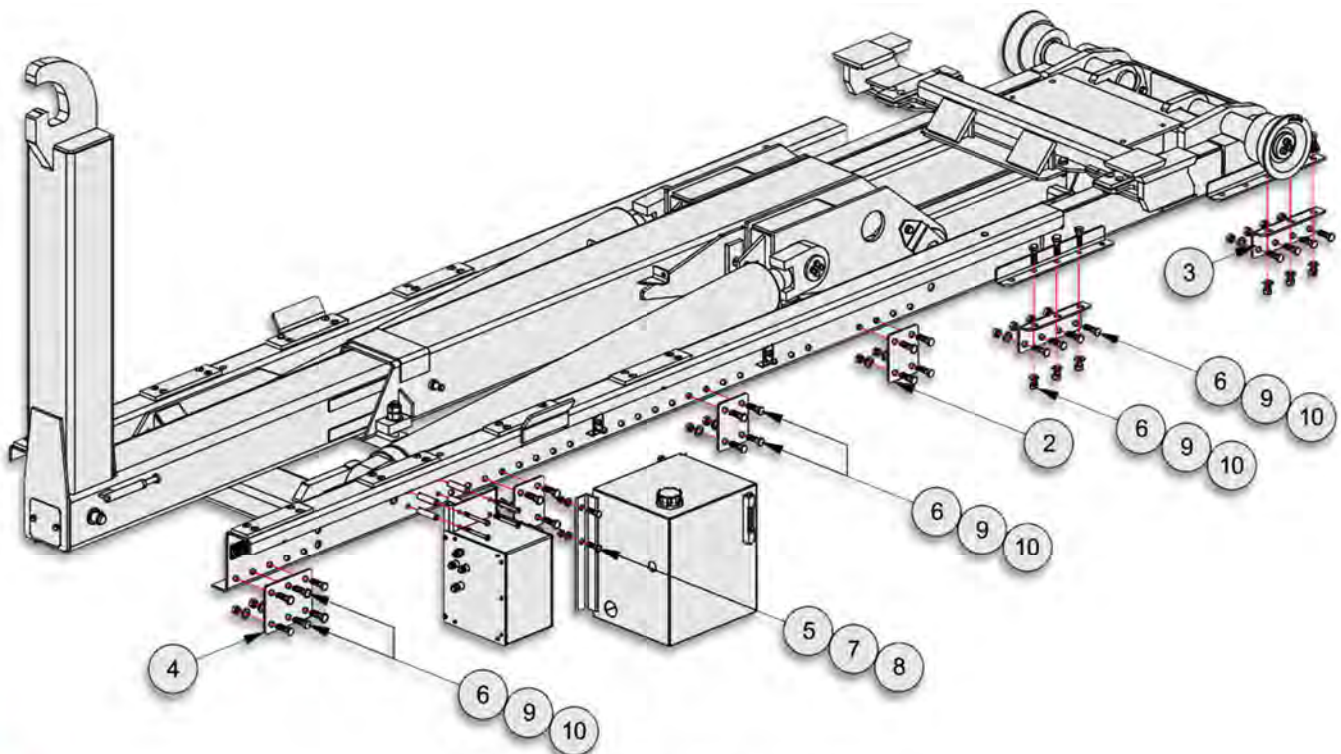
Note: Apply Loctite 243 (Blue) to all bolts.

52H95 OR 52H96 – HOIST INSTALLATION KIT, EHV

SL-220/222

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
* 1	51H96	1	Decal Assembly, SL-220	0.38	0.38
* 1	52H19	1	Decal Assembly, SL-222	0.38	0.38
2	64H34	6	Mnt Bkt, 5-1/4x1/4x6-1/2	2.30	13.80
3	64H37	4	Mnt Bkt, 2-3/16x3-3/4x11	3.93	15.72
4	64H40	2	Mnt Bkt, 6-1/2x1/4x8-1/4	3.63	7.26
5	00784	4	Washer, Flat 1/2 HT	0.01	0.04
6	00785	64	Washer, Flat 5/8 HT	0.07	4.48
7	00P15	4	HHCS 1/2-13 UNC x 1-3/4 Gr8	0.20	0.80
8	00P35	4	Nut, Lock 1/2-13 UNC GrC	0.05	0.20
9	00P55	64	Nut, Lock 5/8-11 UNC Gr8	0.13	8.32
10	00P69	64	HHCS 5/8-11 UNC x 2 Gr8	0.33	21.12
* 11	91P79	1	All Model Tech Guide	0.50	0.50
* 12	91P92	1	Parts Manual, SL-220/222	0.50	0.50

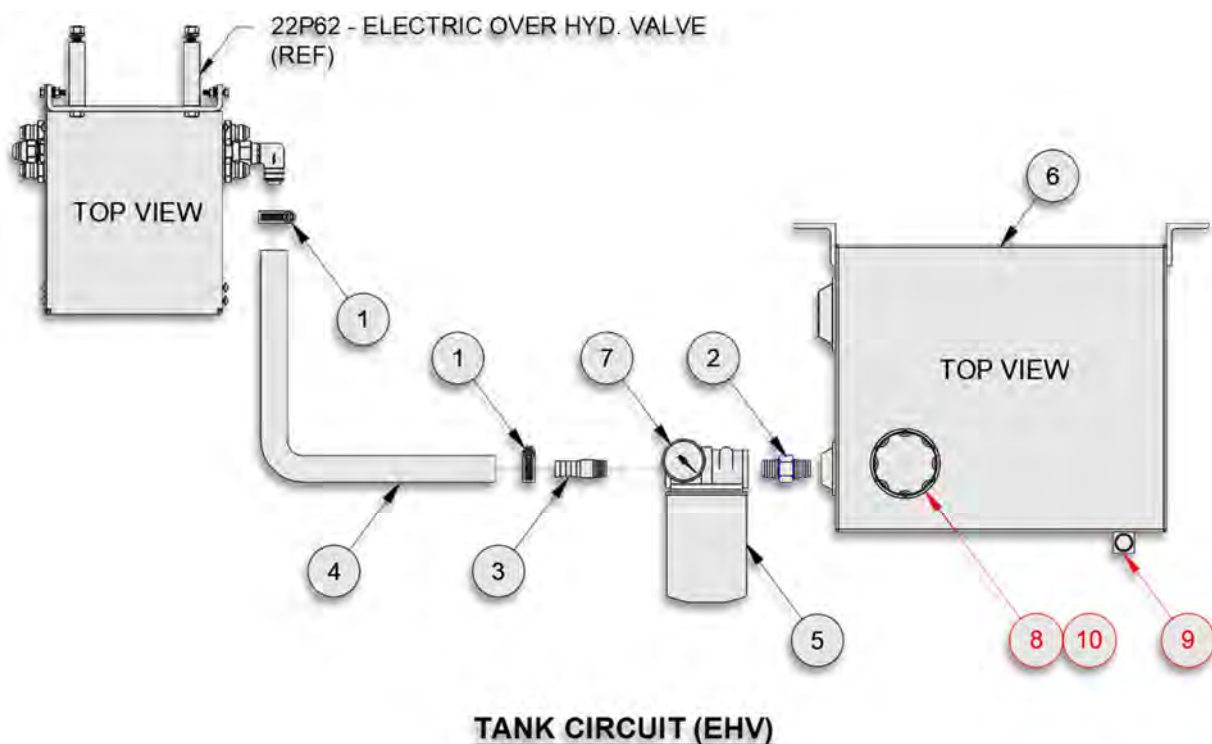
* Item not shown.



HOIST INSTALLATION KIT (EHV)

91H29 – TANK CIRCUIT (EHV)				SL-220/222	
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	10P26	1	Adp Hyd 20MP/16MP	0.70	0.70
3	12P19	1	Adp Hyd 10HB/10MP	0.30	0.30
4	12P31	1	Hose 1 x 30 LP	1.65	0.30
5	20P22	1	Hyd Filter Assy, 25 GPM	2.30	2.30
6	20P25	1	Hyd Tank, 25 Gallon	63.00	63.00
7	20P64	1	Hyd Filter Indicator Gauge	0.01	0.01
TANK SERVICE PARTS					
8	20P07	1	Hyd Strainer, 25 GPM	1.20	1.20
9	20P96	1	Sight Gauge, Hyd Tank	0.70	0.70
10	20P97	1	Breather Cap Assy, Hyd Tank	0.60	0.60

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



SERVICE PARTS FOR TANK

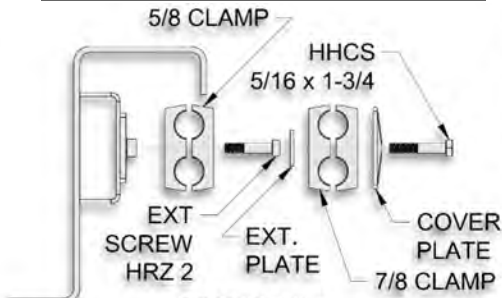
ITEM	PART #	QTY	DESC.
25	20P07	1	Hyd Strainer, 25 GPM
26	20P96	1	Sight Gauge, Hyd Tank
27	20P97	1	Breather Cap Assy, Hyd Tank

NOTE:

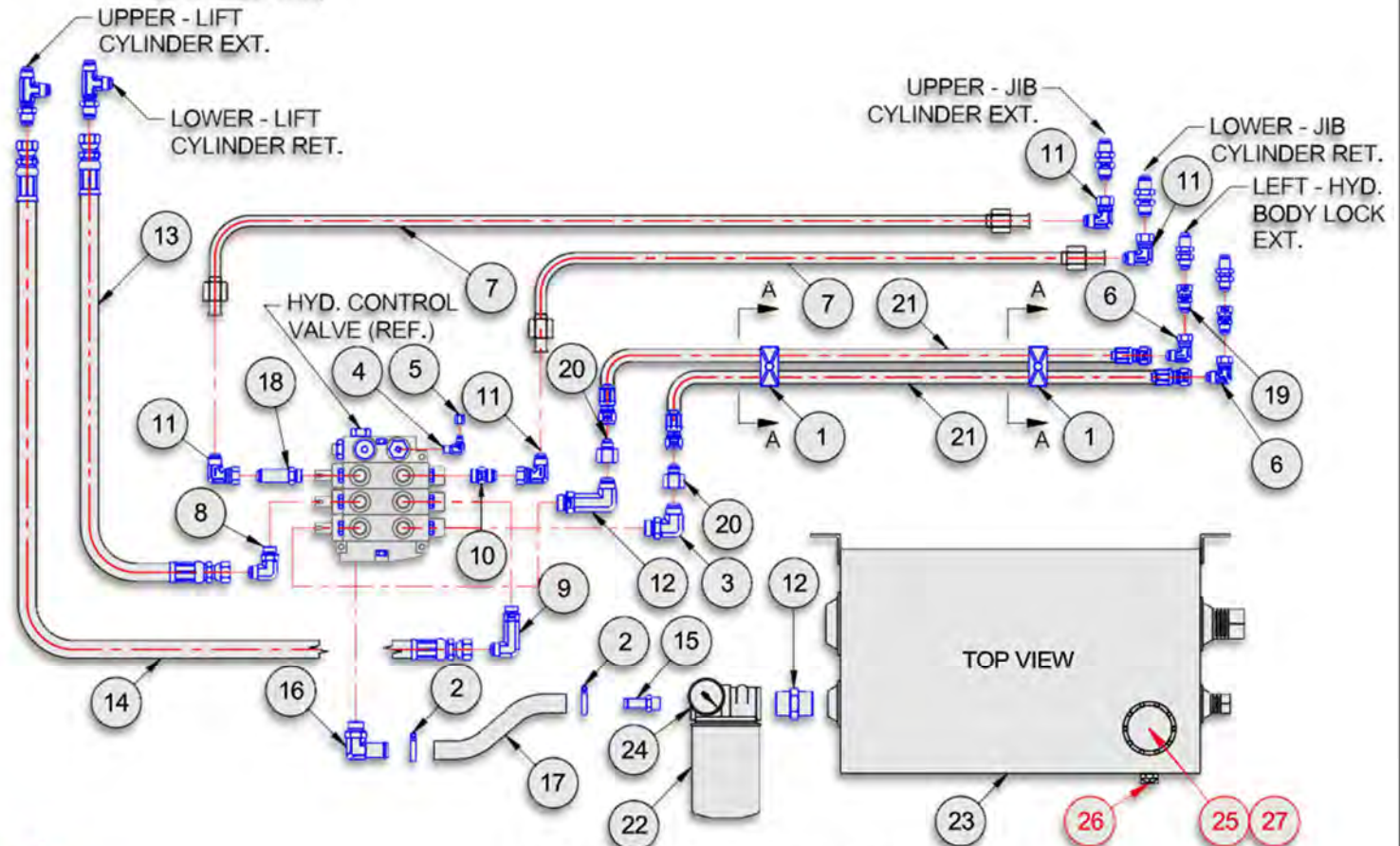
TANK CONSISTS OF TANK WELDMENT, TANK MOUNTED STRAINER, SIGHT GAUGE, FILLER/BREATHING CAP, MAGNETIC DRAIN PLUG AND PORT PLUGS.

91H84 – TANK CIRCUIT, 3-SECTION BL**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	91H74	2	Twin Clamp Assy, 5/8-7/8	0.29	0.58
2	10P21	2	Clamp, T-Bolt Ø1-1/2	0.10	0.20
3	10P36	1	Adp Hyd 12MJ/12MB 90	0.30	0.30
4	10P37	1	Adp Hyd 04MJ/04MP 90	0.30	0.30
5	10P38	1	Adp Hyd 04FJ Cap	0.10	0.10
6	10P44	2	Adp Hyd 08MJ/08FJ 90	0.30	0.60
7	10P73	2	Hyd Tube, Low 5/8 x 86-13/16	3.60	7.20
8	11P04	1	Adp Hyd 10MJ/10MB 90	0.40	0.40
9	11P05	1	Adp Hyd 10MJ/10MB 90 LL	0.40	0.40
10	11P06	1	Adp Hyd 10MJ/10MB	0.40	0.40
11	11P07	4	Adp Hyd 10MJ/10FJ 90	0.40	1.60
12	11P62	1	Adp Hyd 12MJ/12MB 90 LL	0.40	0.40
13	11P98	1	Hose Assy 28 08-10FJ/10FJ	1.40	1.40
14	11P99	1	Hose Assy 33 08-10FJ/10FJ	1.50	1.50
15	12P19	1	Adp Hyd 16HB/16MP	0.30	0.30
16	12P26	1	Adp Hyd 16HB/12MB 90	0.60	0.60
17	12P31	1	Hose 1 x 30 LP	1.65	1.65
18	12P61	1	Adp Hyd 10MJ/10MB L	0.30	0.30
19	13P80	2	Adp Hyd 08MJ/08FJ	0.30	0.60
20	13P82	2	Adp Hyd 12FJ/08MJ	0.30	0.60
21	13P85	2	Hose Assy 84 08-08FJ/08FJ	5.04	10.08
22	20P22	1	Hyd Filter Assy, 25 GPM	2.30	2.30
23	20P25	1	Hyd Tank, 25 Gallon	63.00	63.00
24	20P64	1	Hyd Filter Indicator Gauge	0.01	0.01



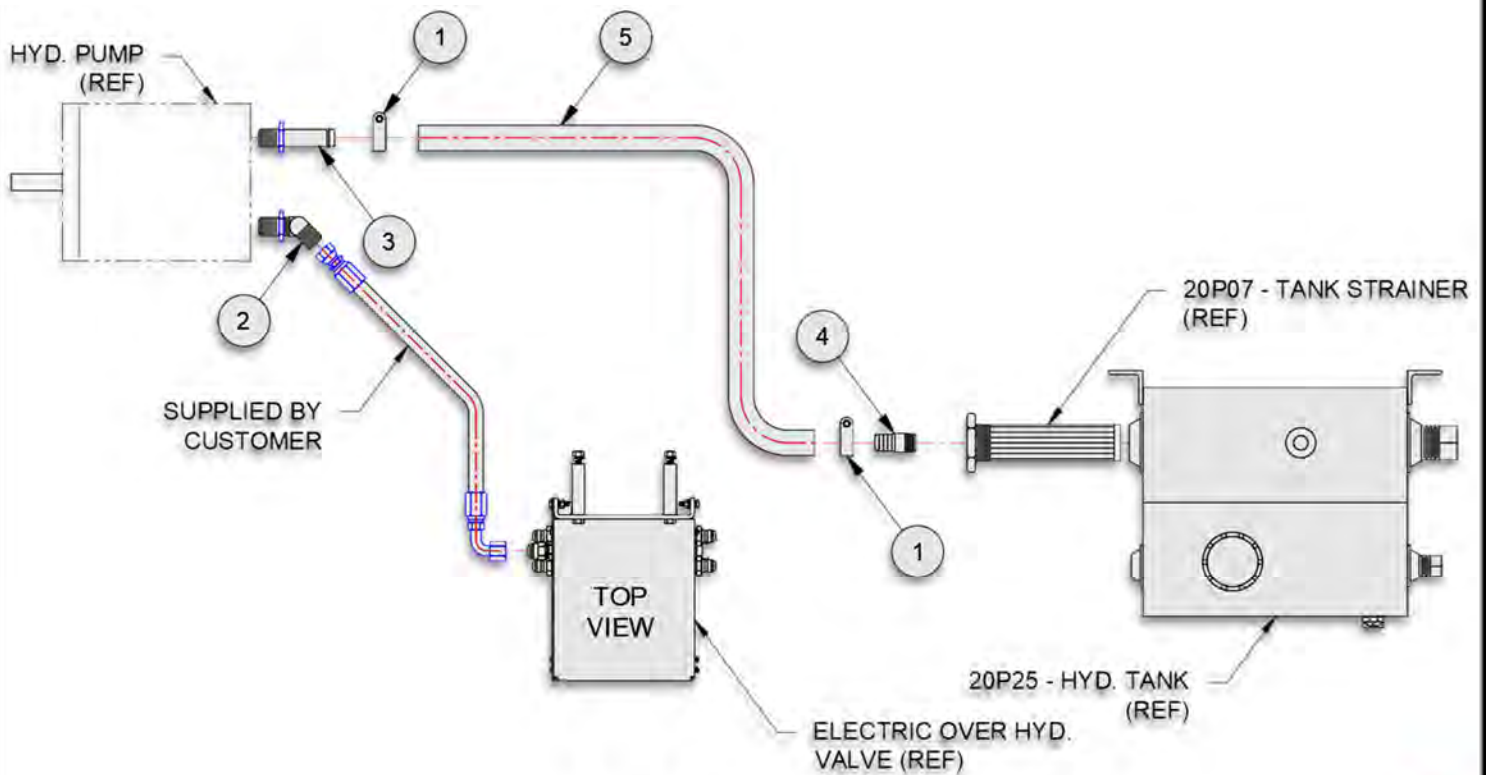
**SECTION A-A
(91H74 DETAIL)**



TANK CIRCUIT, 3-SECTION BL

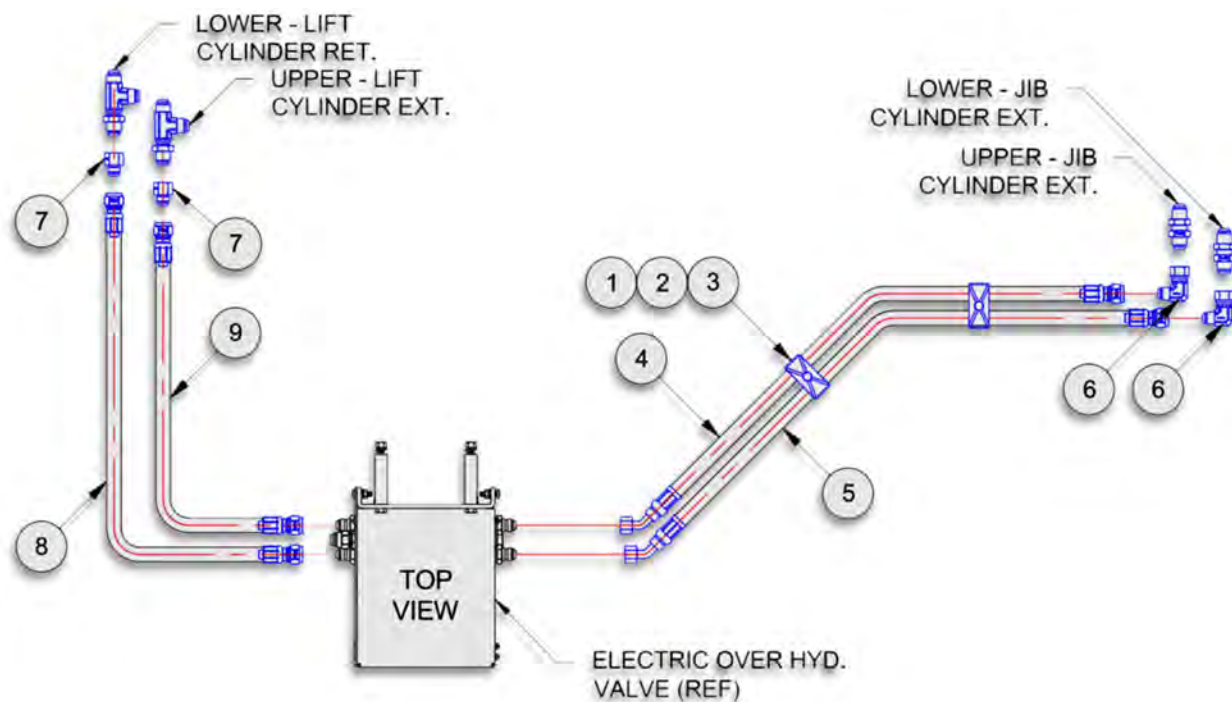
91H31 – PUMP CIRCUIT (EHV)**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P78	2	T-Bolt Clamp, 1-3/4 Dia	0.15	0.30
2	10P91	1	Adp Hyd 12MJ/16MB 45	0.50	0.50
3	12P24	1	Adp Hyd 20HB/20MB	0.40	0.40
4	12P25	1	Adp Hyd 20HB/20MP	0.40	0.40
5	12P30	1	Hose 1-1/4 x 148 LP	9.74	9.74

**PUMP CIRCUIT (EHV)**

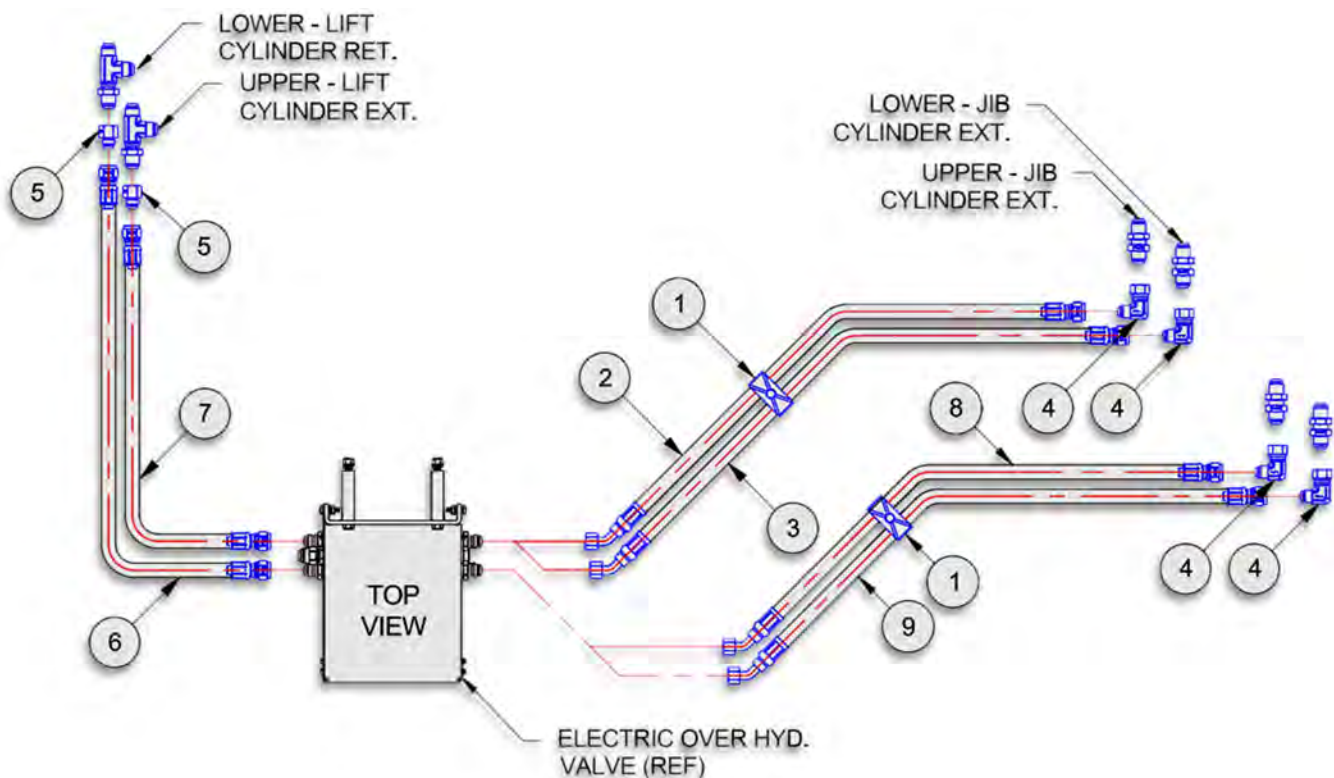
91H32 – HOSE CIRCUIT, 2-SECTION (EHV)**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	10P63	2	HHCS 5/16 x 1-3/4	0.03	0.06
2	10P64	2	Cover Plate. Clamp 1/2	0.10	0.20
3	10P65	2	Clamp Assy, Twin, 7/8"	0.04	0.08
4	13P36	1	Hose Assy 83.5 08-08FJ/08FJ45	3.60	3.60
5	13P37	1	Hose Assy 86 08-08FJ/08FJ45	3.70	3.70
6	13P38	2	Adp Hyd 08MJ/10FJ 90	0.30	0.60
7	13P39	2	Adp Hyd 08MJ/10FJ	0.20	0.40
8	13P40	1	Hose Assy 28 08-08FJ/08FJ	1.04	1.04
9	13P41	1	Hose Assy 33 08-08FJ/08FJ	1.22	1.22

**HOSE CIRCUIT, 2-SECTION (EHV)**

91H89 – HOSE CIRCUIT, 3-SECTION (EHV)**SL-220/222**

ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea.	WT-lb/all
1	91H75	2	Twin Clamp Assy, 7/8-7/8	0.34	0.68
2	13P36	1	Hose Assy 83.5 08-08FJ/08FJ45	3.60	3.60
3	13P37	1	Hose Assy 86 08-08FJ/08FJ45	3.70	3.70
4	13P38	4	Adp Hyd 08MJ/10FJ 90	0.30	1.20
5	13P39	2	Adp Hyd 08MJ/10FJ	0.20	0.40
6	13P40	1	Hose Assy 28 08-08FJ/08FJ	1.04	1.04
7	13P41	1	Hose Assy 33 08-08FJ/08FJ	1.22	1.22
8	13P81	1	Hose Assy 77.5 08-08FJ/08FJ45	4.65	4.65
9	13P83	1	Hose Assy 69 08-08FJ/08FJ	4.14	4.14

**HOSE CIRCUIT, 3-SECTION (EHV)**

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