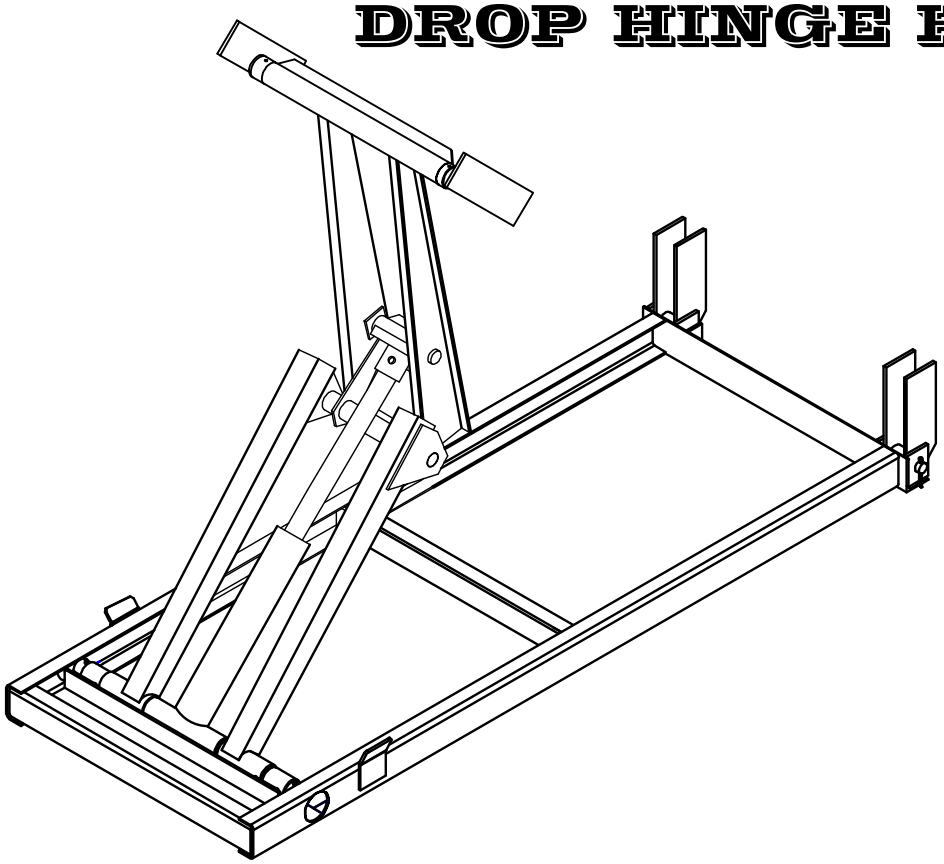
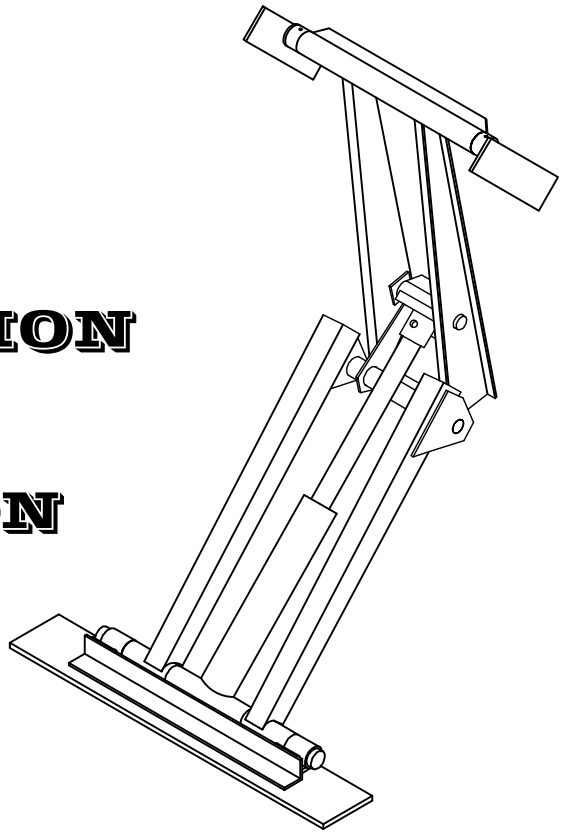
Scott™

LEVEL LIFT

DROP HINGE HOIST



LL-400



LL-400S

INSTALLATION AND OPERATION

SPECIFICATIONS

CYLINDER.....4" WITH CHROME SHAFT
STROKE.....16"
PUMPS SET AT.....3200 PSI

FORM #125-365

IMPORTANT INFORMATION

Congratulations on your recent purchase of a Scott Hoist! This manual is only a small part of Tafco's continuing effort to serve our customers and bring the best products possible to you the customer. If you have any questions or experience any problems, contact your local Scott Hoist distributor.

This manual has been prepared to provide the owner and operator with the information required to properly install and operate the Scott Hoist and pump unit. It is important that you, the owner or operator, read this manual prior to installing, operating or performing any maintenance work on the unit.

For your convenience, we have provided this space for you to record your hoist and pump model and serial numbers and date of purchase as well as your dealership name and address.

Some of the information below is needed for ordering parts. Please fill in the information for faster service when ordering.

OWNERS NAME:_____

OWNERS ADDRESS:_____

HOIST MODEL NUMBER:_____

HOIST SERIAL NUMBER:_____

PUMP MODEL NUMBER:_____

PUMP SERIAL NUMBER:_____

PURCHASE DATE:_____

DEALER NAME:_____

DEALER ADDRESS:_____

DEALER TELEPHONE NUMBER:_____

CAPACITY CHART (TONS)

LL400 HOIST (SCISSOR HINGE BACK)

BOX LENGTH (FEET)	CAB TO AXLE (INCHES)	OVER-HANG (INCHES)	DUMP ANGLE / MOUNTING LENGTH			
			40° 90.7"	45° 80.94"	50° 73.25"	55° 67.07"
9	60	18	8.91	7.94	7.18	6.56
9	72	6	6.68	5.96	5.38	4.92
10	60	30	10.70	9.53	8.61	7.88
10	72	18	7.64	6.81	6.15	5.63
11	72	30	8.91	7.94	7.18	6.56
11	84	18	6.68	5.96	5.38	4.92
12	72	42	10.70	9.53	8.61	7.88
12	84	30	7.64	6.81	6.15	5.63

NOTE: CAPACITY IN TONS AT 3200 PSI.

ELECTRIC PUMPS DECREASE CAPACITY BY APPROX. 10%.

NOTE: (1) OVERHANG BASED ON 32" FROM CENTER LINE OF TAIL HINGE PIN TO CENTER LINE OF TRUCK AXLE, WITH A 2" CLEARANCE BETWEEN CAB AND BODY.

NOTE: (2) CAPACITIES GIVEN INCLUDE BODY WEIGHT PLUS PAYLOAD WEIGHT, AND ASSUME PAYLOAD TO BE CENTERED IN BODY FRONT TO BACK.

LL400S (SUB-FRAME)

BOX LENGTH (FEET)	CAB TO AXLE (INCHES)	OVER-HANG (INCHES)	DUMP ANGLE 43.5°
9	60	3	5.72
9 1/2	60	9	6.08
10	60	15	6.49

NOTE: CAPACITY IN TONS AT 3200 PSI.

ELECTRIC PUMPS DECREASE CAPACITY BY APPROX. 10%.

NOTE: (1) CHART DOES NOT COVER ALL MOUNTING CONDITIONS. CALL TAFCO @ 507-526-3247 FOR YOUR SPECIFIC APPLICATION.

NOTE: (2) OVERHANG BASED ON 47" FROM CENTER LINE OF TAIL HINGE PIN TO CENTER LINE OF TRUCK AXLE, WITH A 2" CLEARANCE BETWEEN CAB AND BODY.

NOTE: (3) CAPACITIES GIVEN INCLUDE BODY WEIGHT PLUS PAYLOAD WEIGHT, AND ASSUME PAYLOAD TO BE CENTERED IN BODY FRONT TO BACK.

INSTALLATION TIPS

1. **The LL-400 hoist can be mounted with the Scissor Hinge either fore or aft for mounting versatility.**

2. **Plan how the hoist, safety prop, and pump will fit on the truck. The mounting area of the hoist must allow for proper movement of the hoist/ pump without interfering with truck cross members, fuel or air tanks etc.**

3. **The hoist upper mounts are positioned up between the bed long beams. It may be necessary to shift the hoist slightly to avoid cutting or moving the bed cross members. Keep in mind that this will slightly effect the hoist dump angle and capacity.**

4. **Determine where the PTO and pump can be located. The pump/ reservoir position will determine how the hoist will be plumbed. Keep the cylinder, pump and reservoir away from heat sources such as exhaust pipes.**

5. **Tilt cabs may require greater cab to bed clearance. This is necessary to allow the truck cab (when tilted) to clear the bed. Also any other obstruction (air cleaner stack, exhaust pipes, etc.) must be 2 inches or more from the bed being installed.**

6. **Take time to become familiar with all hoist parts and how they are to be mounted.**

7. **All work should be performed by qualified personnel.**

8. **When installing the electric M3551 pump, Tafco recommends that a cam lock disconnect cable connector be installed in the battery to pump solenoid cable (example shown on page 25). This would allow for the quick disconnection of the complete hoist/ pump circuit in the unlikely event of a shorted pump circuit/ motor.**

9. **Insure that this manual along with the pump installation manual are forwarded to the end user.**

10. **Never modify the hoist in any way. Install the hoist according to the installation manual.**

11. **These instructions are for typical installations. If your requirements are different due to body and truck configuration, it is the responsibility of the installer to insure the installation is completed correctly.**

READ ALL PROVIDED MATERIAL AND SAFETY INSTRUCTIONS BEFORE INSTALLING HOIST!

LL-400 HOIST INSTALLATION INSTRUCTIONS

1. Mount the tail hinge assembly. It is extremely important to locate the tail hinge as close as possible to the rear of the rear spring shackle mount. For single axle trucks, this distance (from front of tail hinge to rear spring hanger) will be 1 to 6 inches. After placement of the tail hinge has been determined, cut out the top rear section of the truck frame, in which the tail hinge will sit. The tail hinge should be mounted flush with the top and end of the truck frame. Note the decal on the tail hinge. The 4" side of the angle will be vertical while the 3" side of the angle will be horizontal. It may be necessary to cut off the excess length of the truck frame. After the hinge assembly is in place, insure that the tail hinge is square with the truck frame. Weld the assembly securely to the frame.

2. Attach the lower frame mounts to the hoist frame and insert the top hoist mounts into the hoist frame. Make sure the bed guide tabs of the lower mounts are facing away from the hinging end of the hoist frame. After doing so, place the hoist on the truck frame in the position it is to be mounted. Refer to the mounting chart located on page 3 for the mounting length (ML) at which the hoist is to be positioned.

   The mounting length is the distance from the center of the tail hinge pin to the center of the hoist lower mount tube. The hoist can be mounted in the standard or reverse installation to allow for hoist drop hinge clearance. IMPORTANT: DO NOT WELD OR FASTEN LOWER MOUNTS TO TRUCK FRAME AT THIS TIME !

3. Note that moving hoist towards the truck cab will increase capacity but decrease dump angle and opposite results occur when moving the hoist away from the truck cab. IN THE EVENT THAT A CROSS MEMBER MUST BE NOTCHED TO ALLOW FOR THE PROPER POSITIONING OF THE HOIST, IT IS ADVISABLE TO INSERT A CROSS CHANNEL BETWEEN THE LONG BEAMS JUST TO THE FORE AND AFT OF THE HOIST. THE CROSS CHANNEL SIZE WILL BE 1" SMALLER THAN THE SIZE OF THE LONG BEAM. See page 7.

4. If the hoist frame hinging end is not supported by a truck frame cross-member, install a support channel near the hinging end of the hoist frame. Hoist frame should run level along length of the truck frame. (see page 8).

5. Make sure that the hoist is square with the truck frame. Before attaching the lower mount angles, recheck for any possible interference (cylinder swing, etc.). Clamp the lower mount angles to the lower hoist mounts and weld the full length of the lower mount. DO NOT WELD ON THE TRUCK FRAME. Drill and bolt the lower mount angles to the side of the truck frame. DO NOT WELD THE ANGLES TO THE TRUCK FRAME.

6. **There are two methods to attach the upper hoist mounts to the bed long beams, shown on page 7. One method is to bolt the upper mount to the long beam and the other is to weld the upper mount to the long beam. Make sure the hoist is centered between the long beams.**

7. **Slide the upper mounts out against the inner surface of the bed long beams. Position the lock collars against the hoist tube on each side and securely tighten the set-screws. The upper mounts can now be welded or bolted to the long beams. It may be necessary to raise the bed to complete the welding or bolting of the upper mount. Be sure to properly block the bed when doing so.**

8. **Connect the hydraulic hoses and fittings supplied with the hoist and pump. Use Loctite Hydraulic Sealant on all threaded NPT pipe joints. Fill the reservoir with a recommended fluid, as listed in the maintenance portion of this manual.**

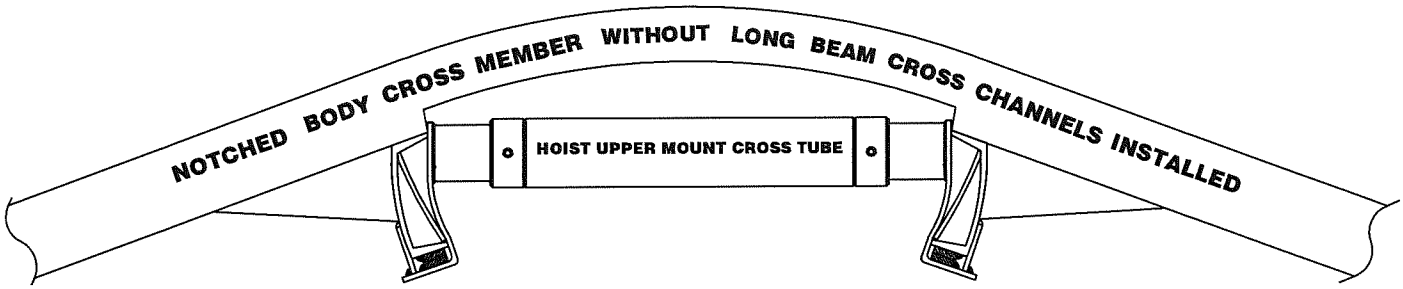
9. **Grease all hoist, tail hinge and drive line grease fittings. This will prevent damage and insure smooth operation.**

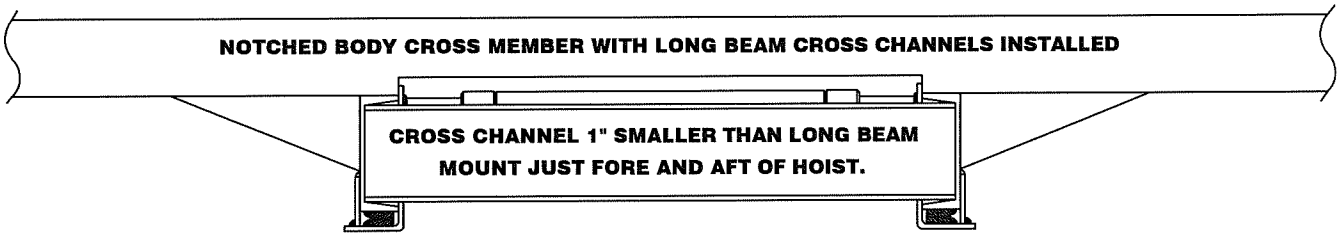
10. **Slowly raise the bed in steps, checking for clearance of all hoist and drive line components. Raising the hoist and stopping it in several positions to check for clearance will help prevent damage to the truck and hoist.**

11. **If the hoist is operating with no clearance problems, then raise the hoist to half of the possible dump angle. <u>SUPPORT THE BED WITH A SUITABLE OVERHEAD HOIST TO PREVENT LOWERING OF THE TRUCK BED</u>. Fill the reservoir tank ¾ full of the recommended fluid. Continue to raise the hoist fully. Unhook the overhead hoist and lower the truck bed.**
NOTE: Double acting cylinders must be powered up and powered down.

12. **Raise and lower the hoist several times. Check the fluid in the reservoir according to the pump installation instructions.**

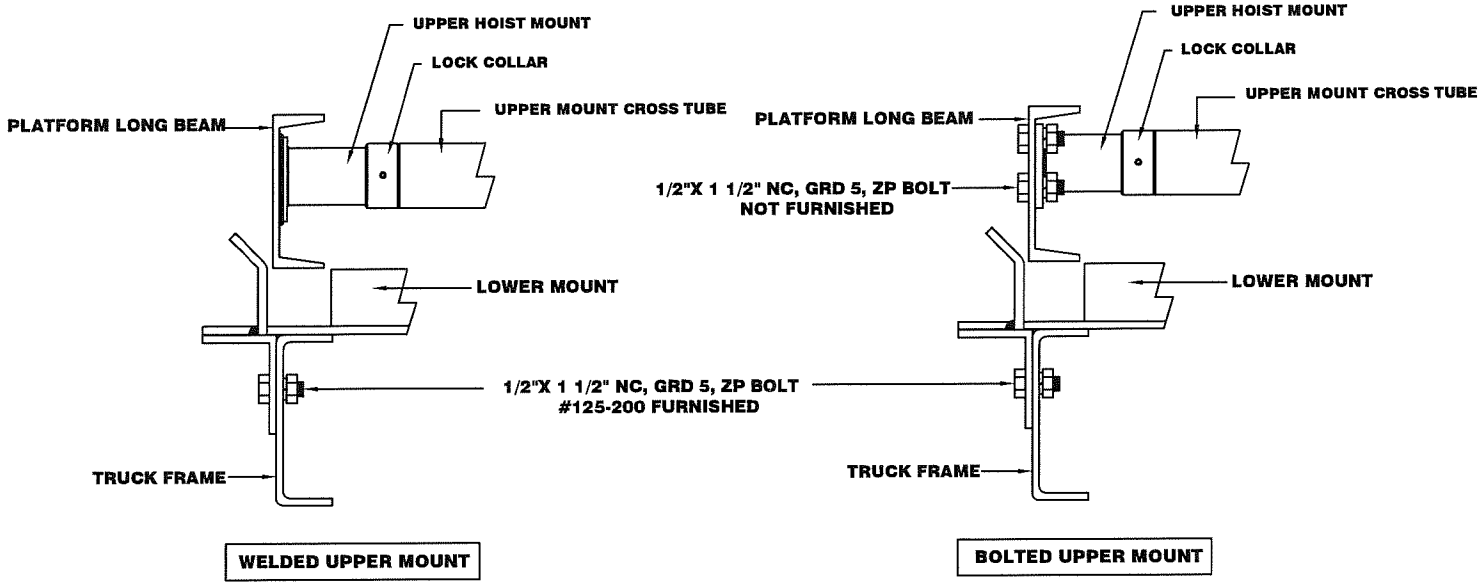
14. ALL INSTALLATIONS MUST INCLUDE A SAFETY PROP. THE SAFETY PROP IS ONLY INTENDED TO SUPPORT AN EMPTY BODY AND IS NOT INTENDED TO BE USED WITH A LOADED BODY. Refer to page 17 in this manual for the Safety Prop mounting instructions.

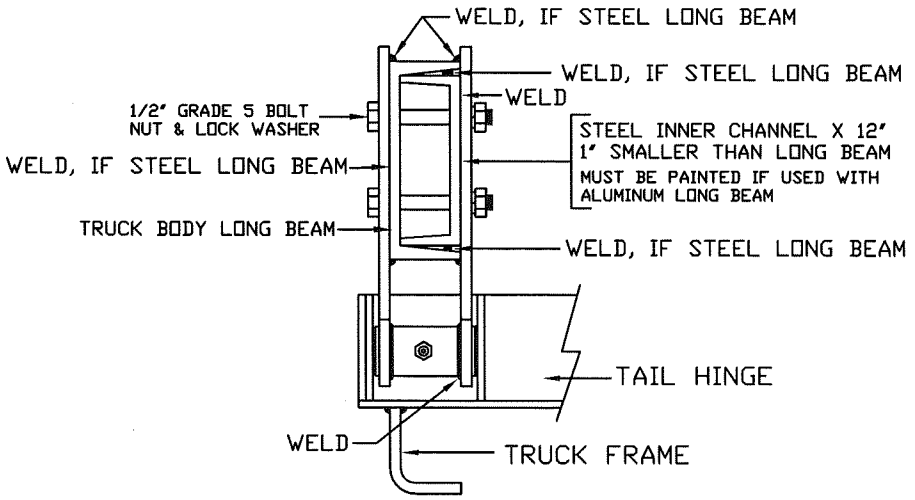




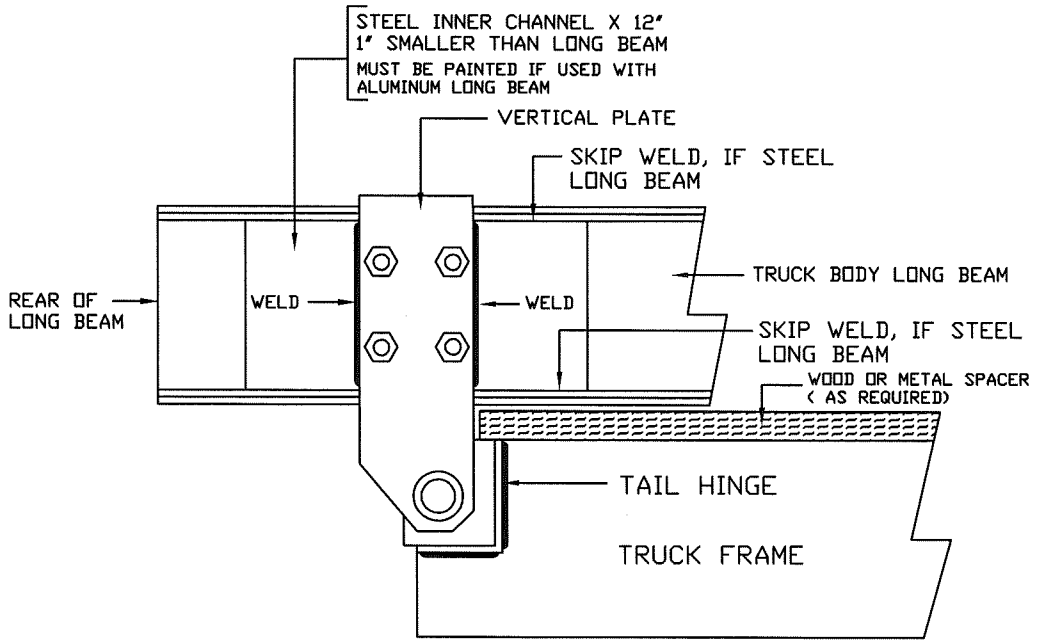
FAILURE TO PROPERLY MOUNT AND REINFORCE THE TRUCK BODY AND HOIST COULD VOID THE BODY AND HOIST WARRANTY!!

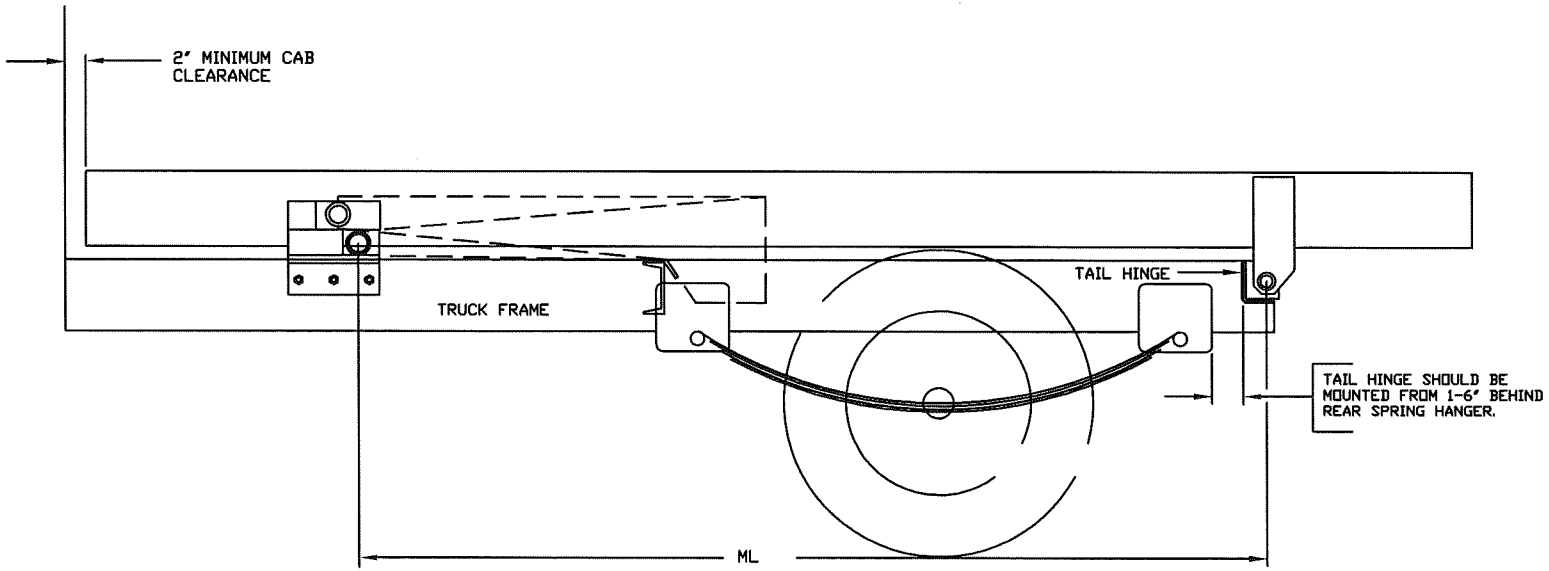
NOTE: INSTALL AND OBSERVE ALL SAFETY AND WARNING DECALS SHOWN ON PAGE 11.





REAR VIEW (DRIVERS SIDE) BODY HINGE





SUBFRAME INSTALLATION INSTRUCTIONS

1. LOCATE HOIST/ SUBFRAME ASSEMBLY

Place the hoist/ sub-frame assembly on the truck frame so the back edge of the body hinge is as close as possible to the truck rear spring shackle mount. For single axle trucks, this distance will be 1 to 6 inches. Mark the rear sub-frame location on the truck frame making sure they are even on both sides. Remove the hoist/ sub-frame from the truck frame. Cut off the truck frame and grind the ends smooth.

Note: If the truck frame has rivets in the top flange, add spacers between the truck frame and the sub-frame, or countersink the rivet heads into the sub-frame by drilling holes in the sub-frame. Do not remove the rivet heads!

Place the hoist/ sub-frame back on the truck frame making sure it is correctly located, centered and square with the truck frame.

2. LOCATE SUBFRAME MOUNTING (SHEAR) PLATES

There are six mounting plates, three for each side- one at the front of each sub-frame side rail, one located as far back as the truck frame arrangement will allow on each side and the last one midway between the front and rear.

Clamp the mounting plates to the truck frame and sub-frame as shown on pages 12 & 13. Mark the truck frame for drilling. Repeat this for the other side.

Caution: Be careful of brake lines, fuel tank, fuel lines and wiring located inside the truck frame when drilling through the truck frame.

Drill 9/16" holes in the truck frame at the marked locations. Bolt the mounting plates in place using (1/2") cap screws (grade 5) and lock washers and nuts, tightening to (64) lb.-ft.

Securely weld the mounting plates to the sub-frame. Do NOT weld the mounting plates to the truck frame.

Add a reinforcement plate (not supplied) to the rear of each truck frame rail (see pages 12 & 13). Securely weld the plates to the end of the truck frame rails and to the back end of the sub-frame. Do this on both sides.

On trucks with "Humped" frames, small mounting angles will need to be added for support between the truck frame and the sub-frame. An example is shown on page 12. The mounting angles should be welded to the sub-frame mounting plates prior to drilling and bolting to the truck frame.

On trucks with a cab to axle dimension of 84" or greater, a sub frame extension is required as shown on pages 12 and 13.

3. SUPPORT FUEL FILL TUBE

On Chevrolet and GMC trucks, a hole will possibly need to be cut in the left (drivers side) of the sub-frame rail for routing the fuel tank fill tube (front & rear tanks) to the outside of the truck frame. In many instances the front tank fill tube will be just ahead of the hoist sub-frame, between the sub-frame and the sub-frame extension. On Dodge trucks, the fill tube will pass between the sub-frame and the truck frame. On Ford trucks, the fill tube passes through holes in the truck frame. After the body has been installed, construct a support for the fuel fill tube. See example on page 12.

Construct the support so that it does not interfere with any portion of the body or hoist operation.

4. **Mount the pump and reservoir at this time. Refer to the Pump Installation instructions in this manual and supplied with your pump/ reservoir. Insure that proper clearance is provided with all hose, cable and PTO mounting.**

5. **Insert the top hoist mounts into the hoist frame. (as shown on page 12).**

6. **Lower the truck bed onto the truck frame. Positioning it exactly as it will be mounted when lowered. Recheck cab to bed clearance and rear hinge positioning to insure proper location. Weld the vertical plate assembly of the tail hinge to the long beam of the bed. Refer to diagram on page 13 for proper mounting. Diagram also shows proper mounting on beds with aluminum long beams. Locate and weld the hoist guide tabs to the sub-frame making sure that they don't interfere with the gussets of the truck bed or with the safety prop, when in support position.**

7. **There are two methods to attach the upper hoist mount to the bed long beams. One method is to bolt the upper mount to the long beam and the other is to weld the upper mount to the long beam. Slide the upper mounts out against the inner surface of the bed long beams. Position the lock collar against the hoist tube on each side and securely tighten the set-screws. The upper mounts can now be welded or bolted to the long beams.**

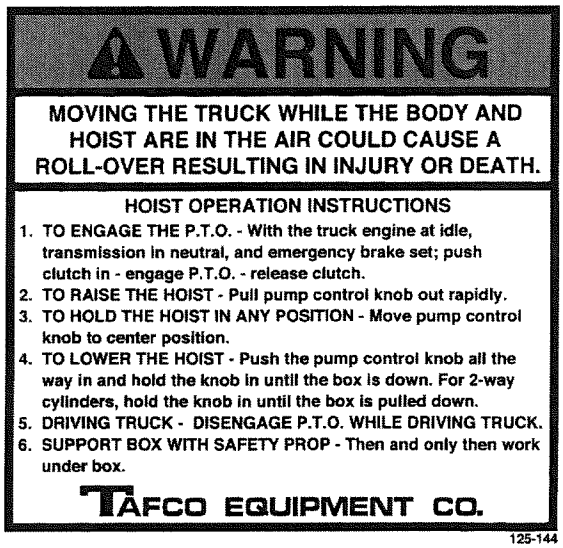
8. **Connect the hydraulic hoses and fittings supplied with the hoist and pump. Use Loctite Hydraulic Sealant on all threaded NPT pipe joints. Fill the reservoir with a recommended fluid, as listed in the Maintenance portion of this manual.**

9. **Grease all hoist, tail hinge and drive line fittings. This will prevent damage and insure smooth operation.**

10. **Slowly raise the bed in steps, checking for clearance of all hoist and drive line components. Raising the hoist and stopping it in several positions to check for clearance will help prevent damage to the truck and hoist.**

11. **If the hoist is operating with no clearance problems, then raise the hoist to half the possible dump angle. <u>SUPPORT THE BED WITH A SUITABLE OVERHEAD HOIST TO PREVENT LOWERING OF THE TRUCK BED</u>. Fill the reservoir tank ¾ full of the recommended fluid. Continue to raise the hoist fully. Unhook the overhead hoist and lower the truck bed.**
Raise and lower the hoist several times. Check the fluid in the reservoir according to the pump installation instructions. Add fluid if necessary.

12. **<u>ALL INSTALLATIONS MUST INCLUDE A SAFETY PROP. THE SAFETY PROP IS ONLY INTENDED TO SUPPORT AN EMPTY BODY AND IS NOT INTENDED TO BE USED WITH A LOADED BODY</u>. Refer to page 17 in this manual for the Safety Prop mounting instructions.**

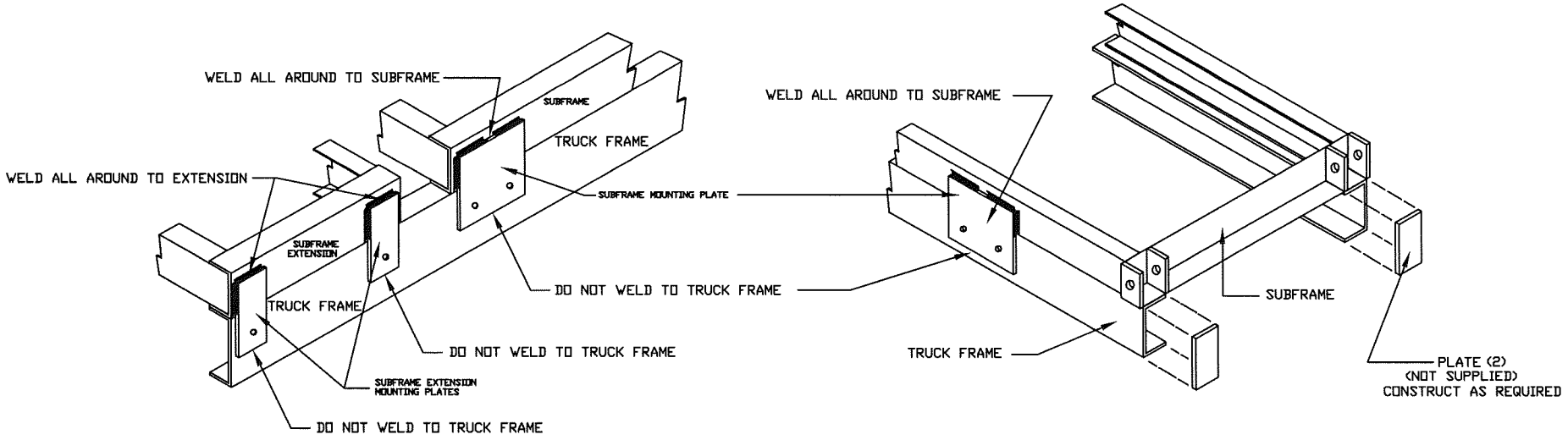


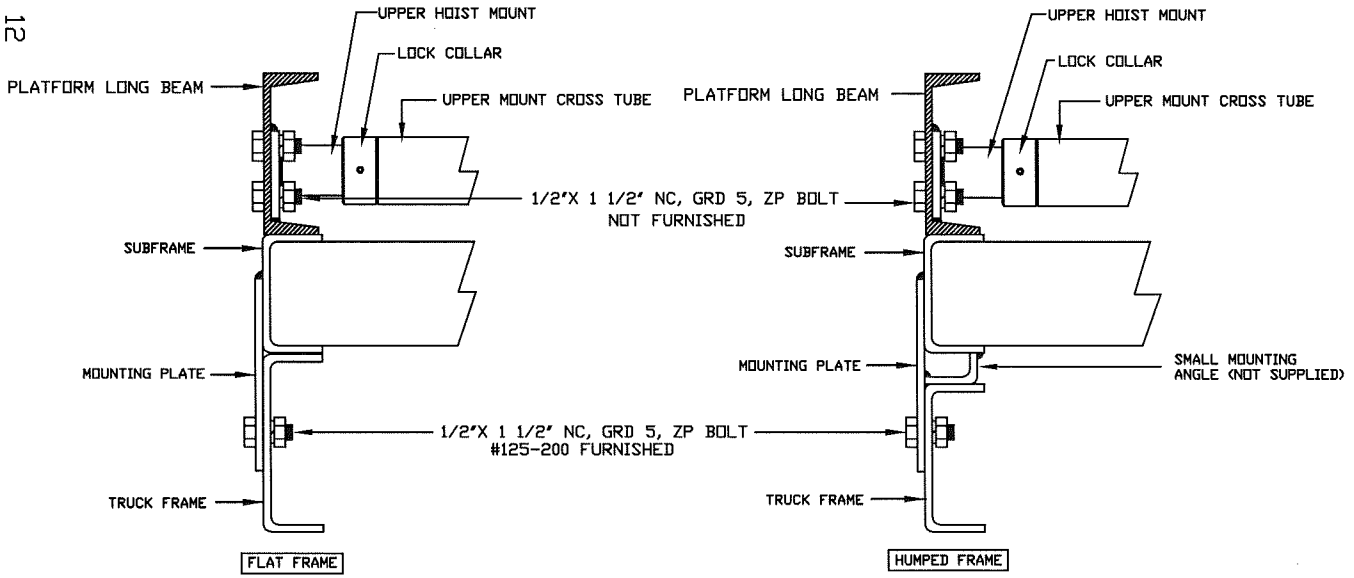
Apply on dashboard as near as possible to Hoist controls.

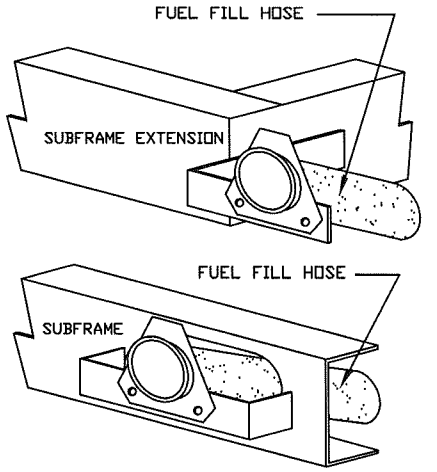
Apply on dashboard as near as possible to Hoist controls.

Position the Safety Prop Safety decals along the truck long beams where they are easily seen.
Position the proper hoist operation decal in the cab near the hoist controller.

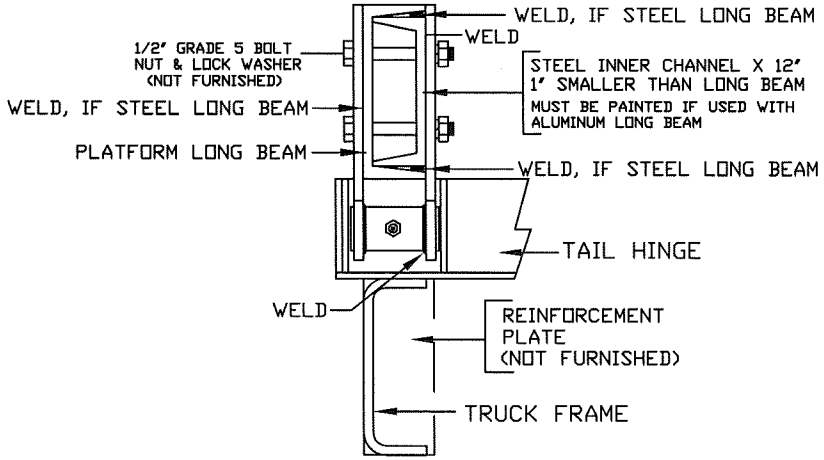
LL400S HOIST/SUBFRAME INSTALLATION DIAGRAM



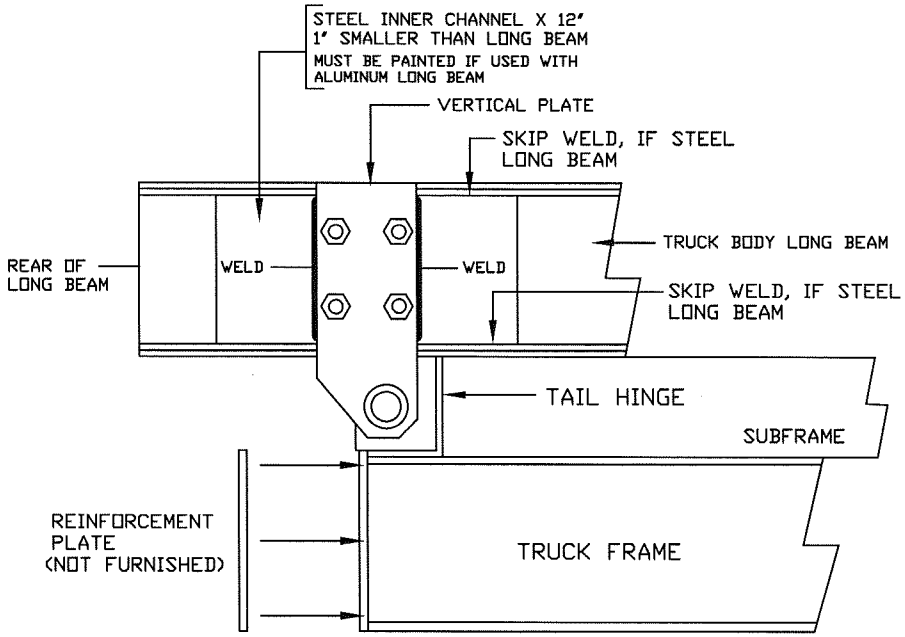


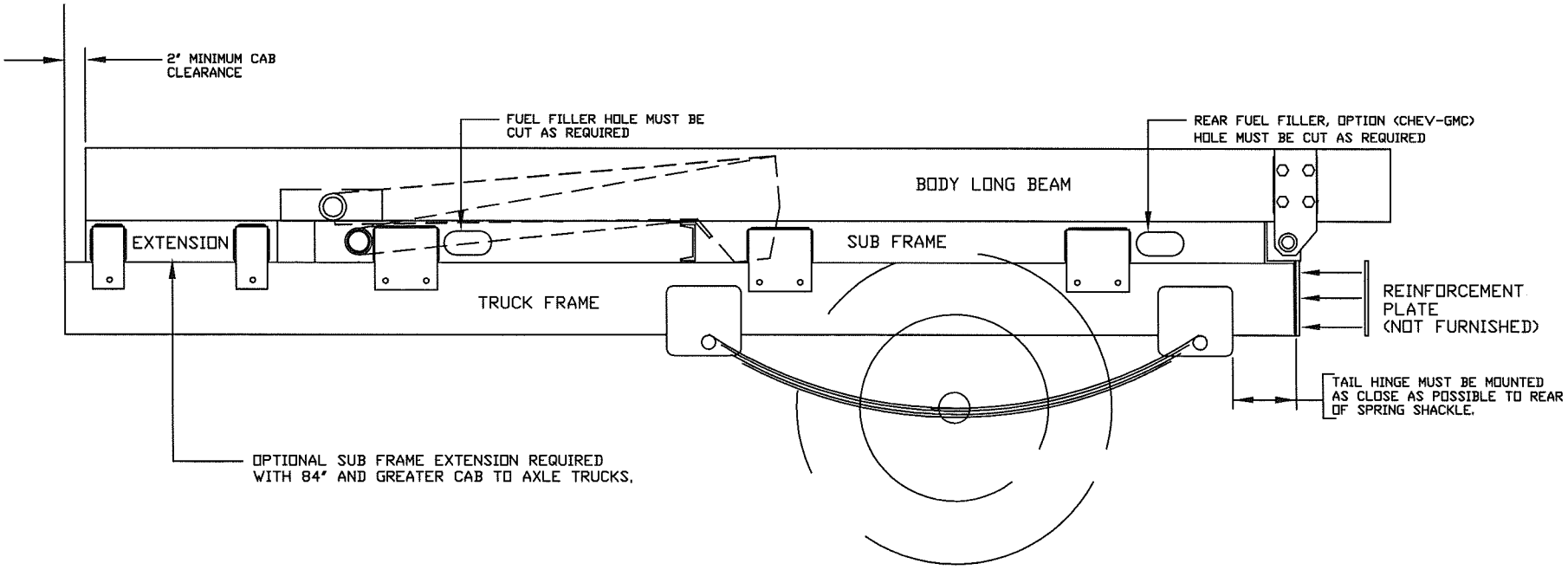


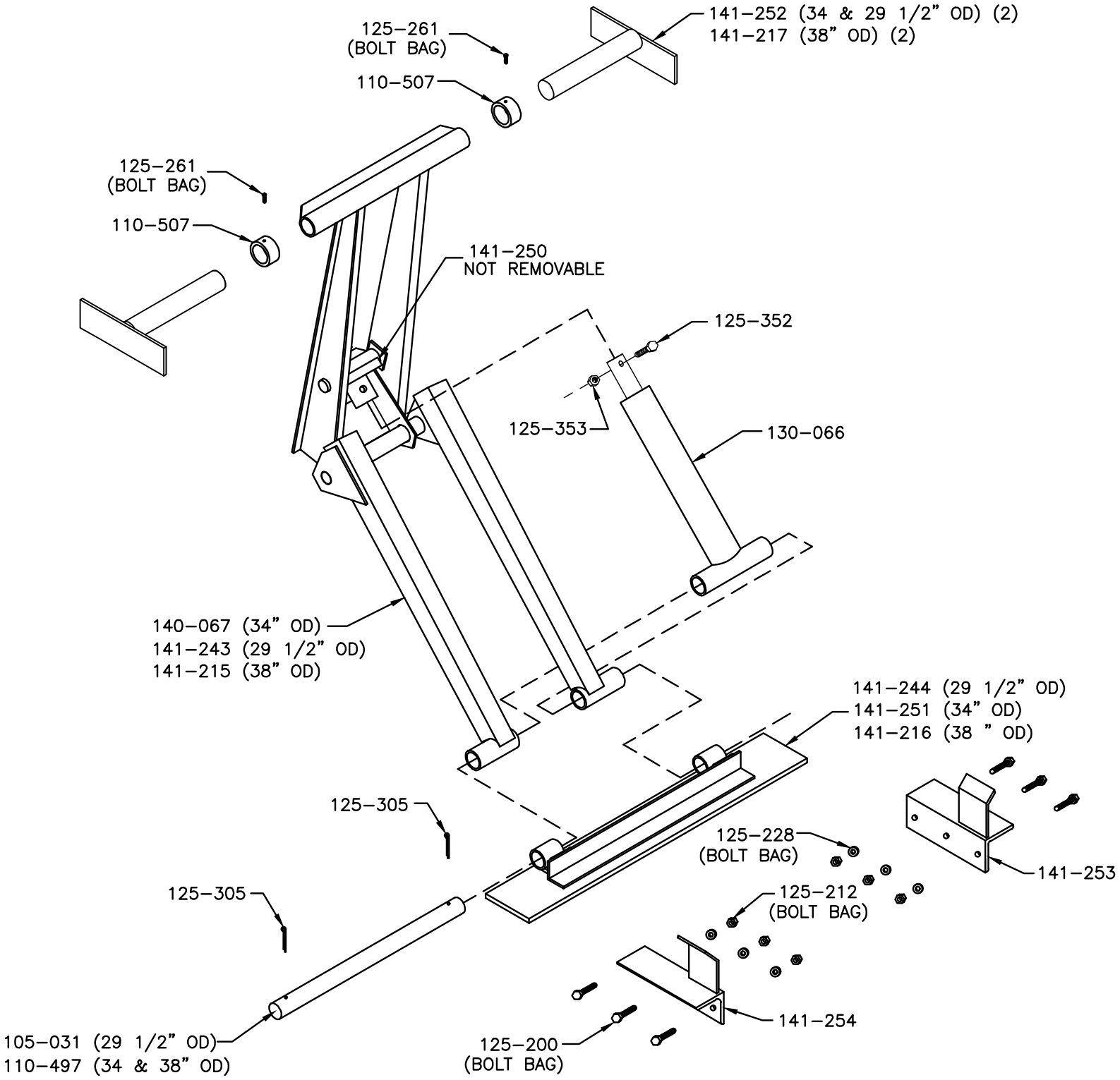
FUEL TANK FILL TUBE SUPPORT (GMC-CHEV)
(NOT SUPPLIED)
CONSTRUCT AS REQUIRED
(EXAMPLE ONLY)

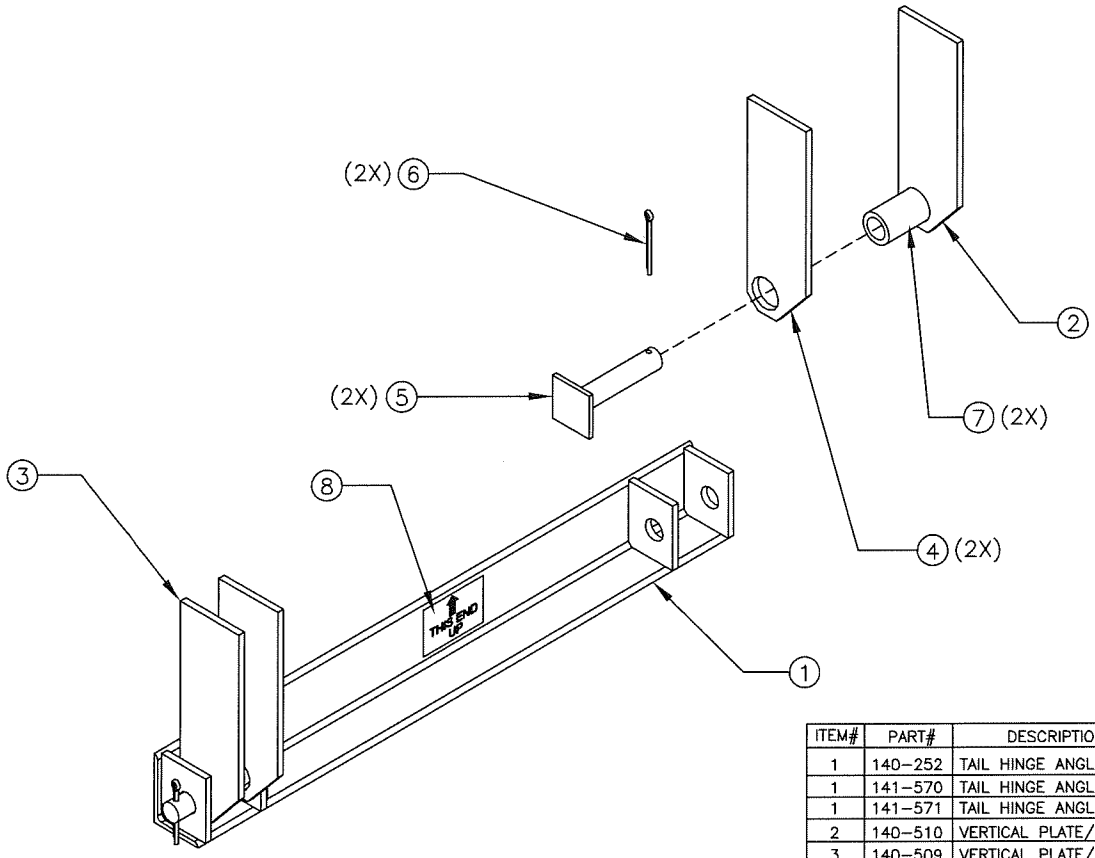


REAR VIEW (DRIVERS SIDE) BODY HINGE






125–261
(BOLT BAG)
110–507
141–252 (34 & 29 1/2" OD) (2)
141–217 (38" OD) (2)
125–261
(BOLT BAG)
110–507
141–250
NOT REMOVABLE
125–352
125–353
130–066
140–067 (34" OD)
141–243 (29 1/2" OD)
141–215 (38" OD)
141–244 (29 1/2" OD)
141–251 (34" OD)
141–216 (38 " OD)
125–305
125–228
(BOLT BAG)
141–253
125–305
125–212
(BOLT BAG)
141–254
105–031 (29 1/2" OD)
110–497 (34 & 38" OD)
125–200
(BOLT BAG)



ITEM#	PART#	DESCRIPTION	QTY
1	140-252	TAIL HINGE ANGLE ASSEMBLY (34" OD)	1
1	141-570	TAIL HINGE ANGLE ASSEMBLY (38" OD)	1
1	141-571	TAIL HINGE ANGLE ASSEMBLY (29 1/2" OD)	1
2	140-510	VERTICAL PLATE/BUSHING ASSEMBLY(R.H)	1
3	140-509	VERTICAL PLATE/BUSHING ASSEMBLY(L.H)	1
4	110-247	VERTICAL PLATE	2
5	140-508	HINGE PIN ASSEMBLY	2
6	125-305	1/4" X 2 1/2" COTTER PIN	2
7	125-285	1/4" DRIVE ZERKS	2
8	126-407	DECAL " THIS END UP "	1

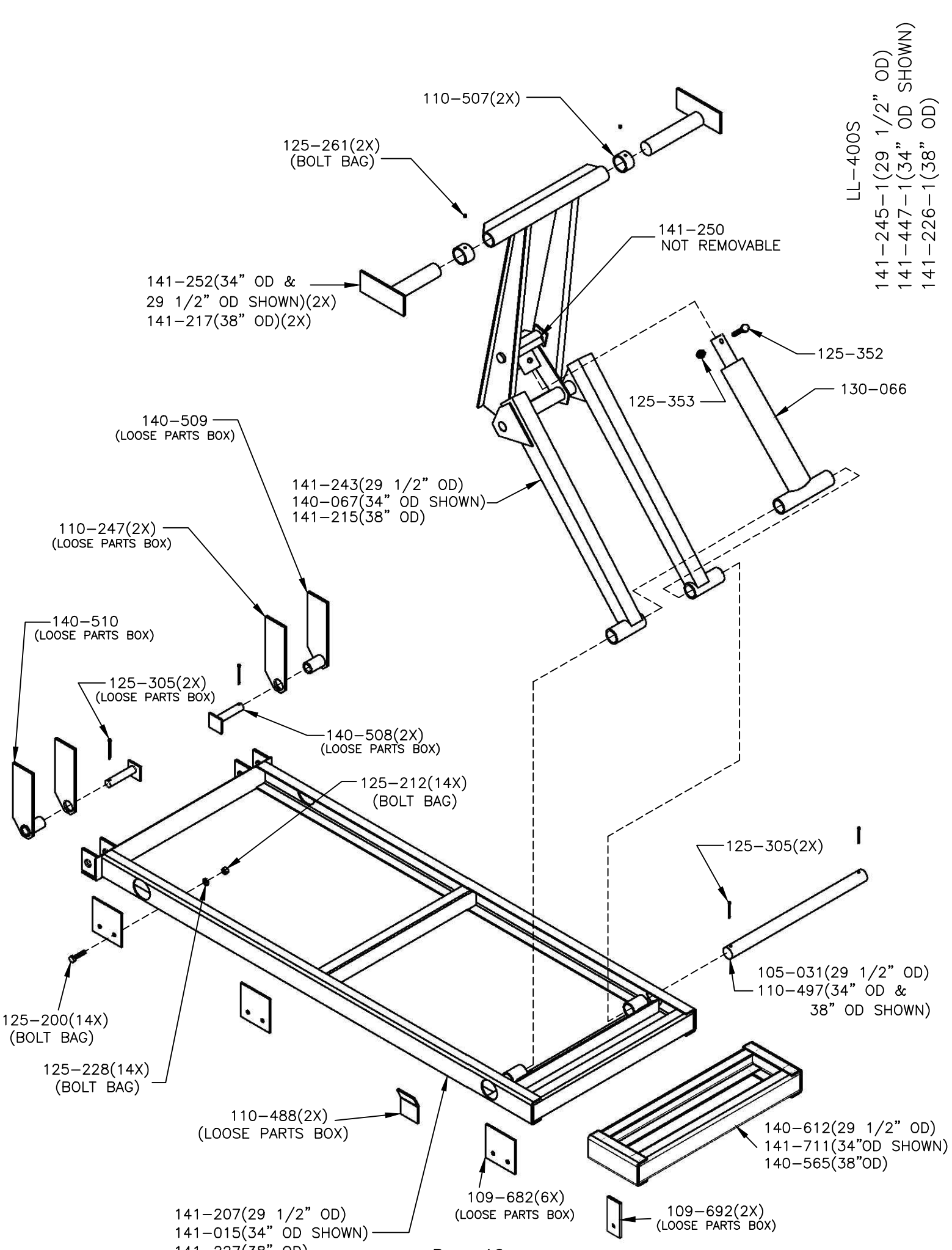
LL-400, 600, 700 TAIL HINGE ASSEMBLY

PART# 140-539 (34" OD)

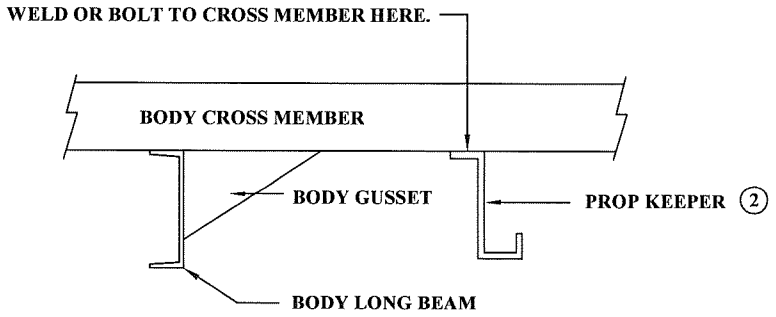
PART# 141-218 (38" OD)

PART# 141-242 (29 1/2" OD)

NOTES:


LL-400S
141-245-1(29 1/2" OD)
141-447-1(34" OD SHOWN)
141-226-1(38" OD)
110-507(2X)
125-261(2X)
(BOLT BAG)
141-250
NOT REMOVABLE
141-252(34" OD &
29 1/2" OD SHOWN)(2X)
141-217(38" OD)(2X)
125-352
125-353
130-066
140-509
(LOOSE PARTS BOX)
141-243(29 1/2" OD)
140-067(34" OD SHOWN)
141-215(38" OD)
110-247(2X)
(LOOSE PARTS BOX)
140-510
(LOOSE PARTS BOX)
125-305(2X)
(LOOSE PARTS BOX)
140-508(2X)
(LOOSE PARTS BOX)
125-212(14X)
(BOLT BAG)
125-305(2X)
105-031(29 1/2" OD)
110-497(34" OD &
38" OD SHOWN)
125-200(14X)
(BOLT BAG)
125-228(14X)
(BOLT BAG)
110-488(2X)
(LOOSE PARTS BOX)
140-612(29 1/2" OD)
141-711(34"OD SHOWN)
140-565(38"OD)
109-682(6X)
(LOOSE PARTS BOX)
109-692(2X)
(LOOSE PARTS BOX)
141-207(29 1/2" OD)
141-015(34" OD SHOWN)
141-227(38" OD)

SAFETY PROP MOUNTING INSTRUCTIONS



ITEM#	PART#	DESCRIPTION	QTY
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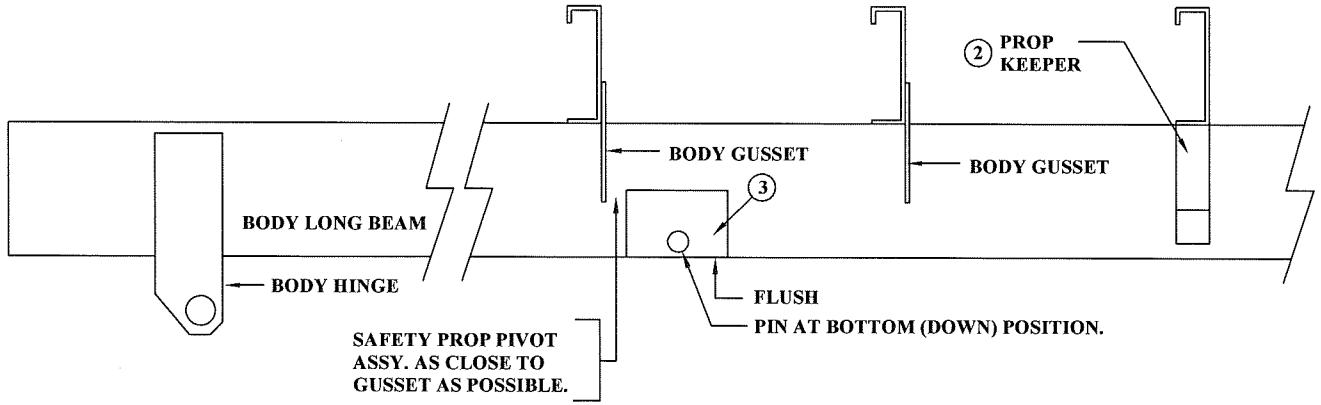
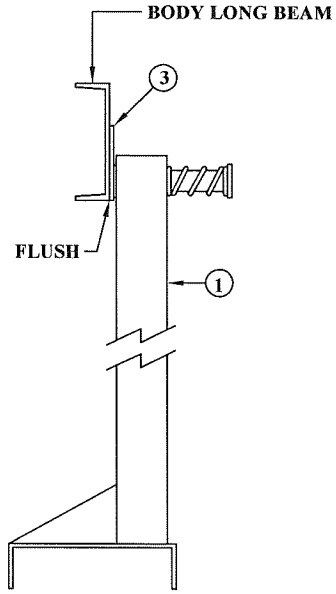
2	110-953	SAFETY PROP KEEPER	1





1. Raise & brace up the empty body.
2. Locate leg/pivot assembly(plate (3)), an appropriate distance forward of body hinge and as close to body gusset as possible. Pivot assembly mounting plate should be flush at the bottom with the bottom of the long beam, with the pin in the down position as shown.
3. Clamp the pivot plate to the long beam and weld all around with a 3/8" fillet weld.
   NOTE: To protect the compression spring from weld splatter, wrap with a wet paper towel.
4. Swing base of leg assembly forward into storage position. Slip prop keeper onto leg assembly and locate keeper to the most suitable crossmember. Clamp keeper to crossmember and weld or bolt permanantly. On shorter truck bodies it may be necessary to store safety prop backward. If this is the case- then the pivot assembly should be welded directly behind body gusset.
5. Apply "DANGER" safety prop decals to outside surface of both bed long beams.

CAUTION: THE SAFETY PROP IS NOT DESIGNED TO SUPPORT LOADED BODY!

TAFCO DIRECT MOUNT PUMP INSTALLATION

The direct mount pump that Tafco supplies is a BI-ROTATIONAL pump with a 5/8" diameter-9 tooth splined shaft and a 2 bolt SAE "A" flange. The pump mounts directly to the PTO and should be positioned to use the end ports. It is recommended that you use the Tafco supplied tank and valve option with this pump. If you are not using the Tafco tank and valve, then you must insure the system you use meets all the requirements of the Scott Hoist you are installing.

The direct mount pump is BI-ROTATIONAL* and will rotate either direction. You must insure that you have the inlet hose (from the front of the tank to the pump) in the correct pump port that will allow oil to enter the pump and flow around the gear teeth. The oil does NOT flow between the teeth. The inlet line should be as close to the size of the inlet fitting as possible and should be a suction hose with crimp fittings. The pump hoses are supplied by the INSTALLER. The pressure hose from the pump to the control valve must have a working pressure rating equal to or exceeding the hoist maximum pressure setting.

NOTE: ALWAYS DOUBLE CHECK THE PTO ROTATION AND PUMP ROTATION TO INSURE YOU HAVE THE INLET AND OUTLET PROPERLY PLUMBED. SEE PAGE 19 FOR MORE INFORMATION.

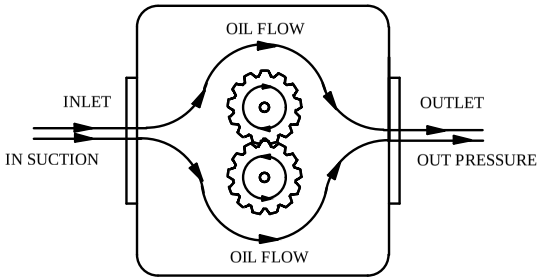
***BI-ROTATIONAL means that you do not need to take the pump apart to reverse the rotation. You simply need to insure that the hose from your oil supply tank attaches to the port that allows the oil to flow around the two gears when the PTO is operating.**

1. **Measure and determine the location and desired height of the valve/ reservoir. The valve/ reservoir should be mounted to insure the valve to cylinder hoses will reach.**
2. **Bolt the mounting brackets to the valve/ reservoir and clamp the brackets to the truck frame in the desired location. Remove the valve/reservoir.**
3. **Drill and bolt the brackets to the frame and remount the valve/reservoir. Be careful of brake lines, fuel tank, fuel lines and wiring located inside the truck frame when drilling through the frame.**
4. **Refer to the CONTROL CABLE INSTALLATION INSTRUCTIONS (page 23). This will give you detailed instructions on the installation and adjustments of the control cable.**
5. **See page 19 for the proper plumbing of the direct mount pump and valve/reservoir assembly. Note the valve lifting port (labeled 1 or B) is connected to the bottom of the cylinder to raise the hoist. The other port is the lowering port. For power up and power down hoists, this valve port is connected to the rod end of the hoist cylinder. For power up only hoists, this valve port is plugged off.**

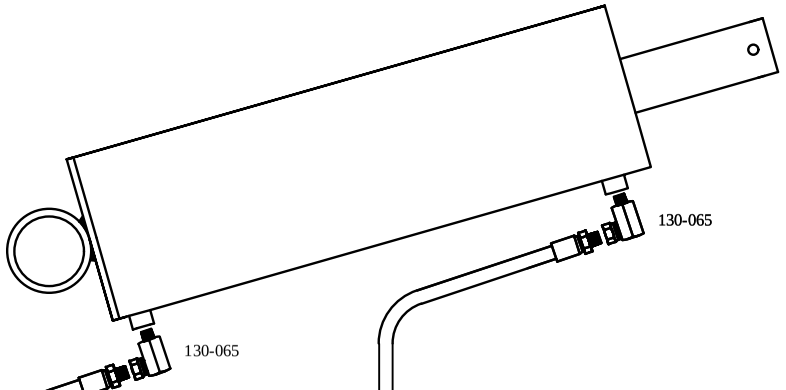
   WARNING: HOISTS WHICH ARE POWER UP AND POWER DOWN MUST NOT BE MADE INTO POWER UP ONLY HOISTS !!

Always insure the proper routing of the cable so you pull the cable knob out to raise and push the cable knob in to lower.

DIRECT MOUNT PUMP INSTALLATION

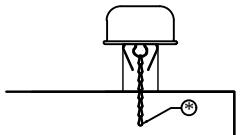


CHECK THE PTO AND PUMP ROTATION. THE GEARS MUST PULL THE OIL IN THROUGH THE INLET PORT, AROUND THE OUTSIDE OF THE GEARS, AND PUSH IT OUT THE PRESSURE PORT. IF YOUR ROTATION IS OPOSITE THE ABOVE VIEW THEN THE GEARS WILL TURN THE OTHER DIRECTION AND THE INLET AND THE OUTLET PORTS WILL BE REVERSED KEEPING IN MIND THAT THE OIL MUST FLOW AROUND THE GEARS AND NOT BETWEEN THEM.



130-064
60" HP HOSE

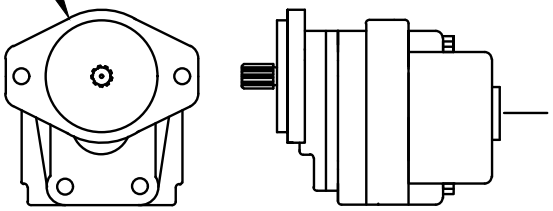
130-063
83" HP HOSE



SIDE VIEW

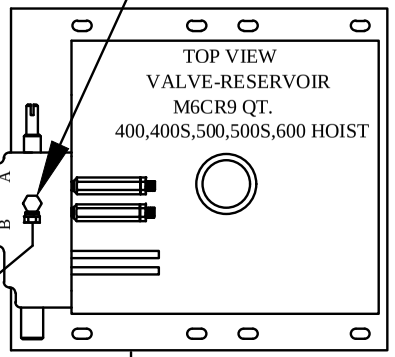
*NOTE: OIL LEVEL MUST BE VISIBLE ON INDICATOR CHAIN WHEN BODY IS COMPLETELY DOWN AND TAILGATE, ETC. IS CLOSED. IE: NO LOWER THAN 1" FROM FULL.

SAE "A" 2 BOLT MOUNTING FLANGE
SAE "A" 9 TOOTH SPLINED SHAFT - 5/8" DIAMETER

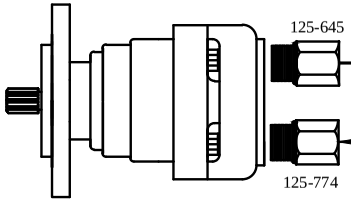


GP31520 PUMP
BI-ROTATIONAL

FITTING SUPPLIED WITH VALVE



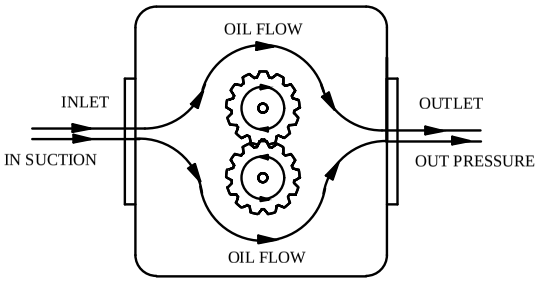
125-647
130-176
130-176



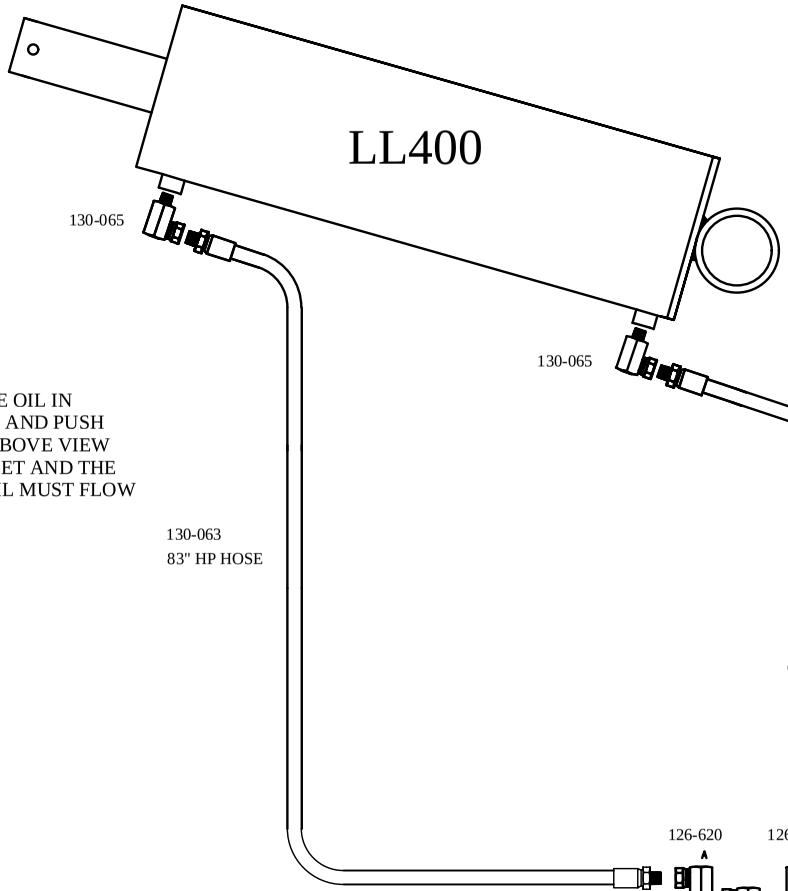
125-645
1/2" HIGH PRESSURE HOSE
(NOT SUPPLIED)
1" SUCTION HOSE
(NOT SUPPLIED)
125-774

OUTLET LOCATED ON BOTTOM OF RESERVOIR.
125-769
125-768

DIRECT MOUNT PUMP INSTALLATION



CHECK THE PTO AND PUMP ROTATION. THE GEARS MUST PULL THE OIL IN THROUGH THE INLET PORT, AROUND THE OUTSIDE OF THE GEARS, AND PUSH IT OUT THE PRESSURE PORT. IF YOUR ROTATION IS OPOSITE THE ABOVE VIEW THEN THE GEARS WILL TURN THE OTHER DIRECTION AND THE INLET AND THE OUTLET PORTS WILL BE REVERSED KEEPING IN MIND THAT THE OIL MUST FLOW AROUND THE GEARS AND NOT BETWEEN THEM.



PTO DRIVE-LINE PUMP / RESERVOIR INSTALLATION

1. **Measure and determine the location and desired height of the pump/ reservoir.**

2. **Bolt the pump brackets to the pump/ reservoir and clamp the brackets to the truck frame in the desired location.**

3. **FOR STEP 3, REFER TO PAGE 22.**
   Check the pump shaft to insure it is parallel to the PTO output shaft and also with the truck frame rail. Determine the drive line angle. The ideal drive line angle is 1 to 7 degrees. If this angle is greater than 15 degrees, relocate the pump/ reservoir to achieve a drive line angle less than 15 degrees. Determine the exact length of hex shaft "B".
   It is of great importance that dimension "A" (of drive shaft illustration on page 22) of 1/8" is maintained on the drive shaft when installing to slip joint. This will prevent the fall out of drive line due to loosening of set-screws and will prevent the shaft from slipping out of the PTO joint.

   NOTE: An improperly installed drive line will cause excessive noise and vibration and may result in pump and/or PTO failure.

4. **Remove the pump/ Reservoir.**
   Drill and bolt the brackets to the frame and remount the pump/reservoir. Be careful of brake lines, fuel tank, fuel lines and wiring inside the truck frame when drilling through the frame. Install the drive shaft insuring that the drive line yokes are in line. (see page 22).

5. **Refer to the control cable installation instructions (page 23). This will give you detailed instructions on the installation and adjustments of the control cable.**

6. **See page 22 for the proper plumbing of the PTO pump to the hoist cylinder. Note the valve lifting port (labeled 1 or B) is connected to the bottom of the cylinder to raise the hoist. The other port is the lowering port. For power up and power down hoists, this valve port is connected to the rod end of the hoist cylinder. For power up only hoists, this valve port is plugged off.**
   WARNING: HOISTS WHICH ARE POWER UP AND POWER DOWN MUST NOT BE MADE INTO POWER UP ONLY HOISTS !!
   Always insure the proper routing of the cable so you pull the cable knob out to raise and push the cable knob in to lower.

CAUTION: Read all safety and operation information provided by the PTO manufacturer. Observe these and all safety instructions.

CAUTION !!

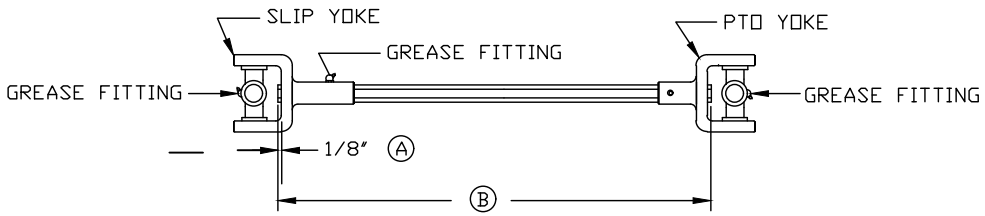
1. **DO NOT go under vehicle when the engine is running.**

2. **DO NOT work on a PTO or shaft while engine is running.**

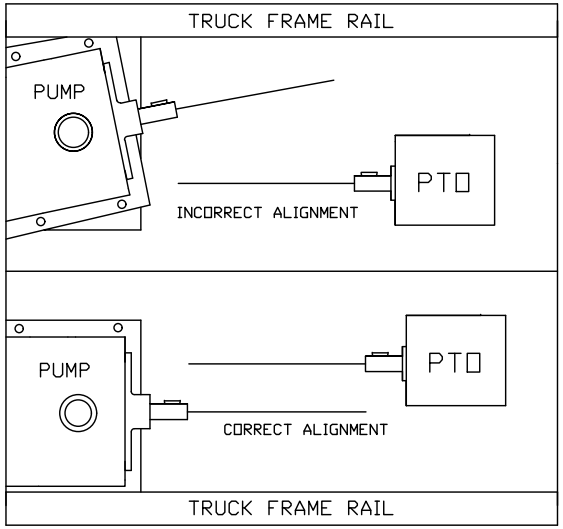
3. **DO NOT engage or disengage the PTO or driven equipment by hand from under the vehicle when the engine is running.**

4. **ALWAYS shut the engine off before working on or near the PTO system.**

PTO DRIVE-LINE/RESERVOIR INSTALLATION

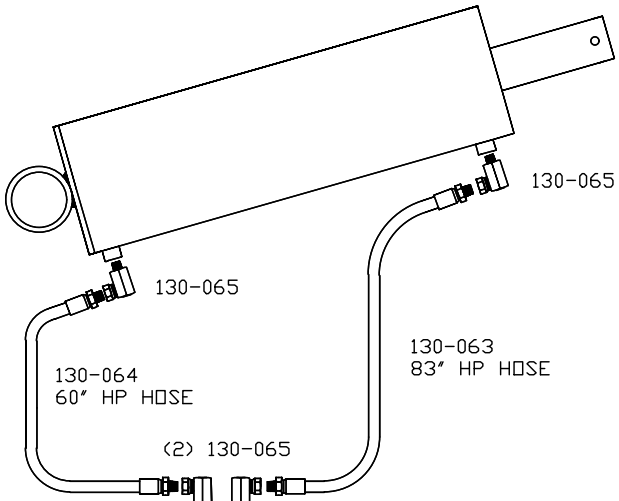


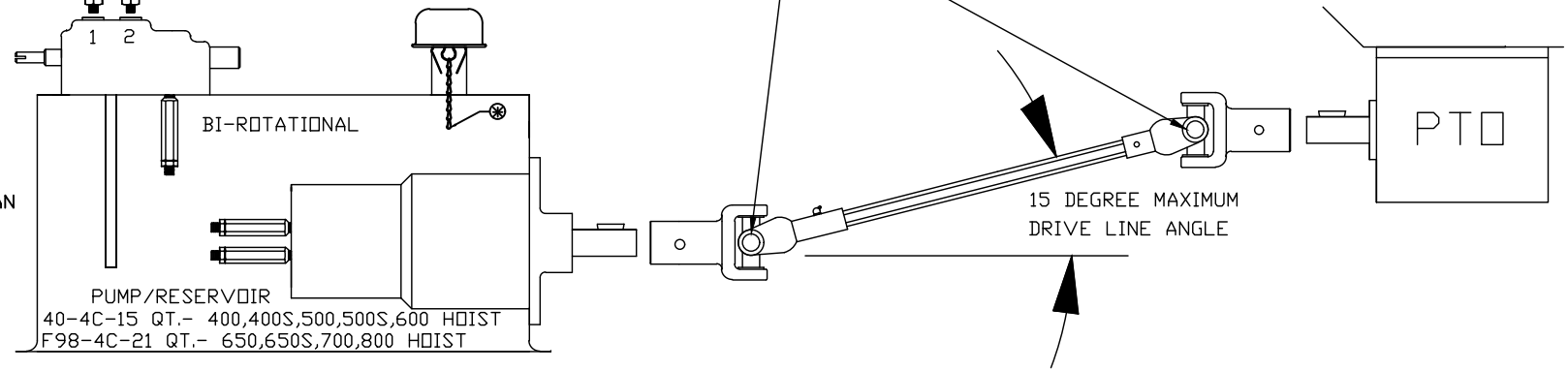
DRIVE SHAFT ILLUSTRATION



PTO-PUMP SHAFT ALIGNMENT

PUMP SHAFT AND PTO SHAFT MUST BE PARALLEL WITH EACH OTHER AND WITH THE TRUCK FRAME RAIL.





*NOTE: OIL LEVEL MUST BE VISIBLE ON INDICATOR CHAIN WHEN BODY IS COMPLETELY DOWN AND TAILGATE, ETC. IS CLOSED. IE: NO LOWER THAN 1" FROM FULL.

WILLIAMS MACHINE & TOOL CO.

MANUFACTURERS OF HYDRAULIC PISTON PUMPS

NEUTRAL LOCK–CONTROL CABLE INSTALLATION INSTRUCTIONS

DANGER DO NOT ALLOW ANY PART OF YOUR BODY UNDER THE TRUCK BOX UNTIL THE TRUCK BOX IS PROPERLY BLOCKED. SERIOUS INJURY OR DEATH WILL RESULT FROM TRUCK BOX FALLING IN 1 SECOND OR LESS.

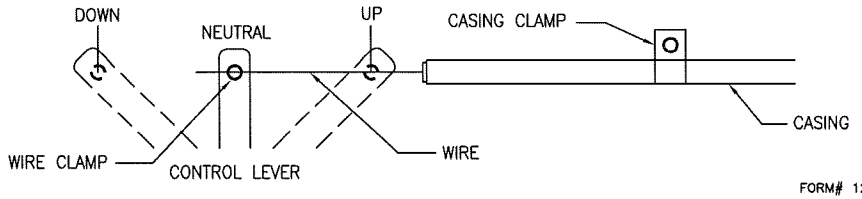
BEFORE BEGINNING ANY CONTROL CABLE INSTALLATION, PERFORM THE 3 STEPS BELOW:

1. MAKE SURE THE TRUCK BOX IS EMPTY – EMPTY THE LOAD.
2. THE TRUCK BOX MUST BE PROPERLY BLOCKED BY USING THE BODY PROPS ON THE TRUCK HOIST AND BY USING BLOCKS UNDER THE HOIST FRAME.
3. READ AND UNDERSTAND THESE INSTRUCTIONS SO PROPER INSTALLATION OF THE CABLE CAN BE ACCOMPLISHED.

INSTALLATION INSTRUCTIONS

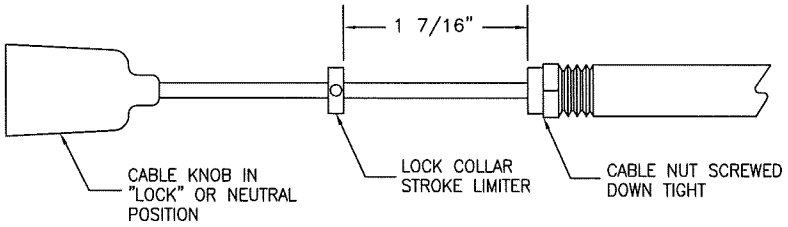
1. MOUNT THE CONTROL CABLE TO THE VEHICLE WITH SPECIAL ATTENTION THAT NO BENDS ARE SHARPER THAN A 10" RADIUS.
2. ROUTE THE CONTROL CABLE CASING AWAY FROM ALL HAZARDS WHICH MAY DAMAGE THE CABLE. KEEP THE CONTROL CABLE AWAY FROM CATALYTIC CONVERTERS, TAIL PIPES, EXHAUST PIPES, ETC. MAKE CERTAIN THE CONTROL CABLE IS NOT CRUSHED OR ROUTED WHERE MOVING PARTS MAY CRUSH IT.
3. A STROKE LIMITER(LOCK COLLAR) HAS BEEN INSTALLED ON THE CABLE HEAD. THIS LIMITER IS NECESSARY TO PREVENT OVER TRAVEL OF THE CABLE WHEN THE CABLE IS PUSHED IN, CAUSING THE CABLE WIRE TO KINK.
4. INSTALL CABLE TO THE CONTROL VALVE AND TIGHTEN THE CLAMPS PER DRAWING INSTRUCTIONS BELOW. SEE INSTRUCTION SHEET INCLUDED INSIDE THE CABLE CLAMP KIT FOR FURTHER DETAILS.

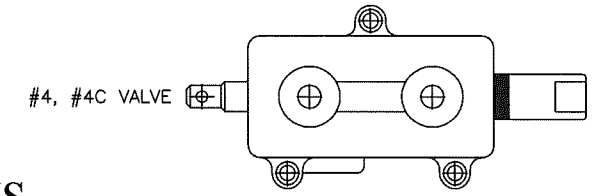
NOTE: WHEN INSTALLING CABLE ON AN EXISTING UNIT WITH HYDRAULIC LINES ALREADY CONNECTED, THE TRUCK BOX MUST BE PROPERLY BLOCKED TO PREVENT THE TRUCK BOX FROM FALLING. MOVING THE LEVER ON THE VALVE CAN CAUSE THE TRUCK BOX TO FALL IN ONE SECOND OR LESS. DEATH OR SERIOUS INJURY WILL RESULT IF THE LEVER IS MOVED WHILE SOMEONE IS UNDER THE TRUCK BOX.



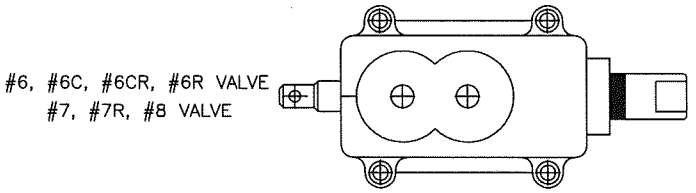
FORM# 125–932

TO PREVENT CABLE WIRE FROM BEING OVER COMPRESSED IN CABLE PUSHED IN POSITION.

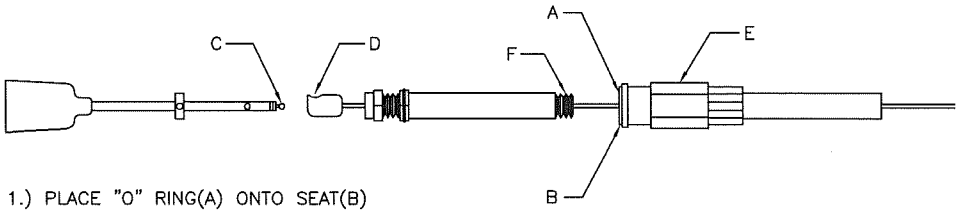




WILLIAMS



ASSEMBLY INSTRUCTIONS FOR CABLE AND CABLE HEAD



1.) PLACE "O" RING(A) ONTO SEAT(B)
2.) SLIDE BALL(C) INTO SLOT(D)
3.) PUSH NUT(E) ONTO THREADS(F) AND TIGHTEN SECURELY.

FORM# 125–932

PUMP INSTALLATION
ELECTRIC DRIVEN/ PUSH BUTTON CONTROL PUMPS

1. **Measure and determine the location and desired height of the pump. Clean the mating surfaces of the truck frame and the pump brackets of paint, dirt, and oil to insure a good ground. An additional ground strap back to the truck frame may be added to prevent pump damage due to poor grounding.**
   NOTE: IT IS HIGHLY RECOMMENDED THAT THE PUMP/ RESERVOIR BE MOUNTED IN THE OPTIONAL ALUMINUM PUMP CABINET TO PREVENT CORROSION TO THE ELECTRICAL COMPONENTS!

2. **Bolt the pump brackets to the pump/ reservoir. Clamp the brackets to the truck frame in the desired location. Remove the pump/ reservoir.**

3. **Drill and bolt the pump brackets to the truck frame and reinstall the pump/ reservoir. Be careful of brake lines, fuel tank, fuel lines and wiring inside the truck frame when drilling through the frame.**

   THE INSTALLER MUST CONSULT THE INFORMATION SUPPLIED WITH THE PUMP TO DETERMINE WHAT, IF ANY, OVERLOAD PROTECTION IS NEEDED IN THE PUMP WIRING CIRCUIT.

4. **Route the push button cable through the truck cab, along the frame and down to the pump. Connect the wires from the push button cable to the appropriate terminals on the pump. (see page 25, 25A). The push button control must be installed inside cab to insure it is out of the weather and also keeps the truck hoist operator inside the truck cab.**

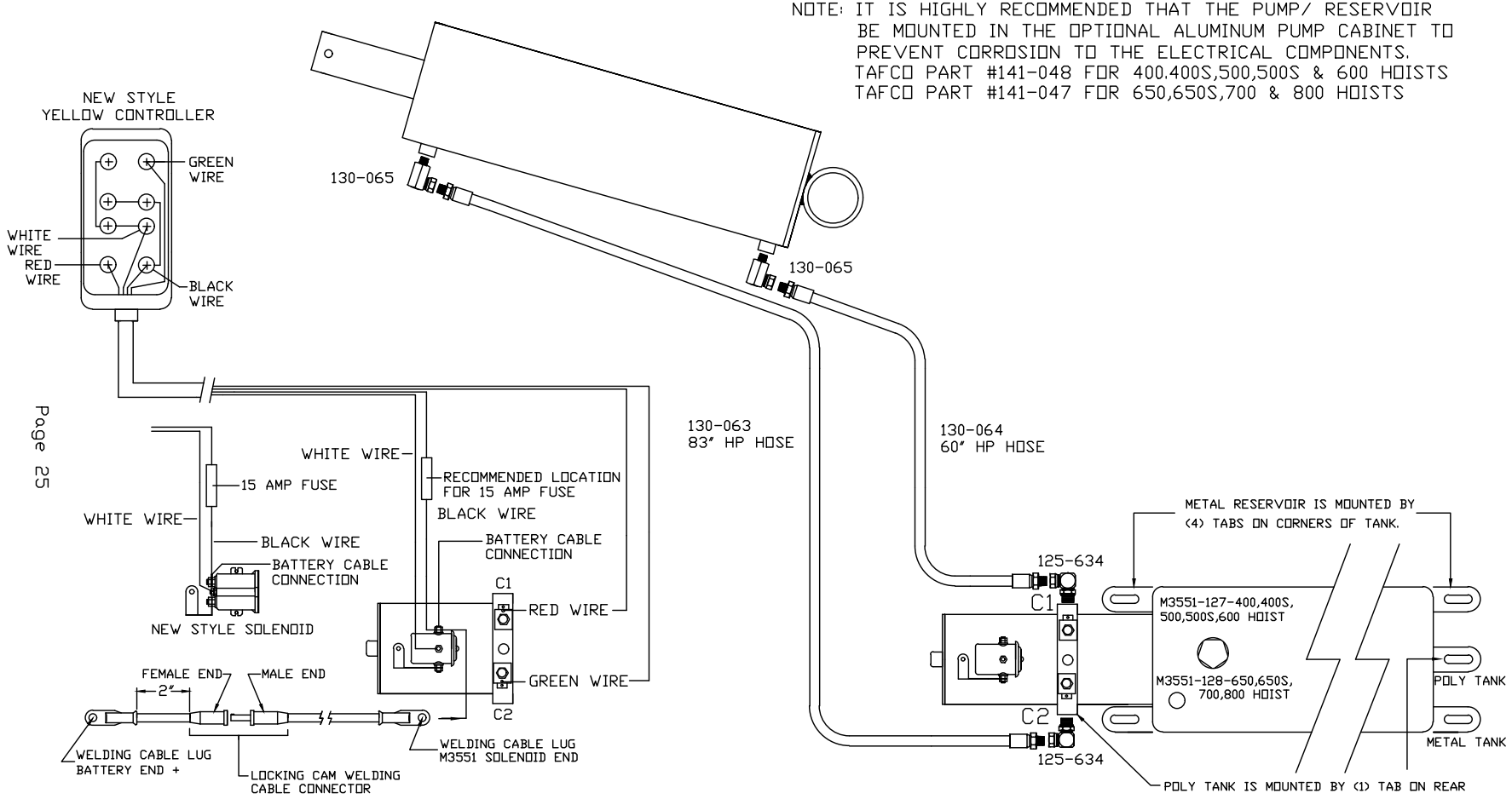
5. **Route a copper cable from the battery to the pump. An example of the recommended cable with locking cam cable connector is shown on page 25, 25A. The locking cam cable connector along with the cable lugs are available from your local welding supplier.**
   Attach the cable to the proper terminal on the pump. It is highly recommended that #00 gauge size cable be used. (300 Amp. Draw occurs during Max Load lift). For negative ground trucks, connect the battery end of the cable to the positive post of the battery. DO NOT connect the cable to the battery until the pump is totally installed and connected.

6. **See page 25, 25A for the proper plumbing and wiring for the unit and refer to the information received with the pump.**

IMPORTANT: KEEP THE BATTERY PROPERLY SERVICED AND CHARGED.

BUCHER/MONARCH
ELECTRIC PUMP INSTALLATION

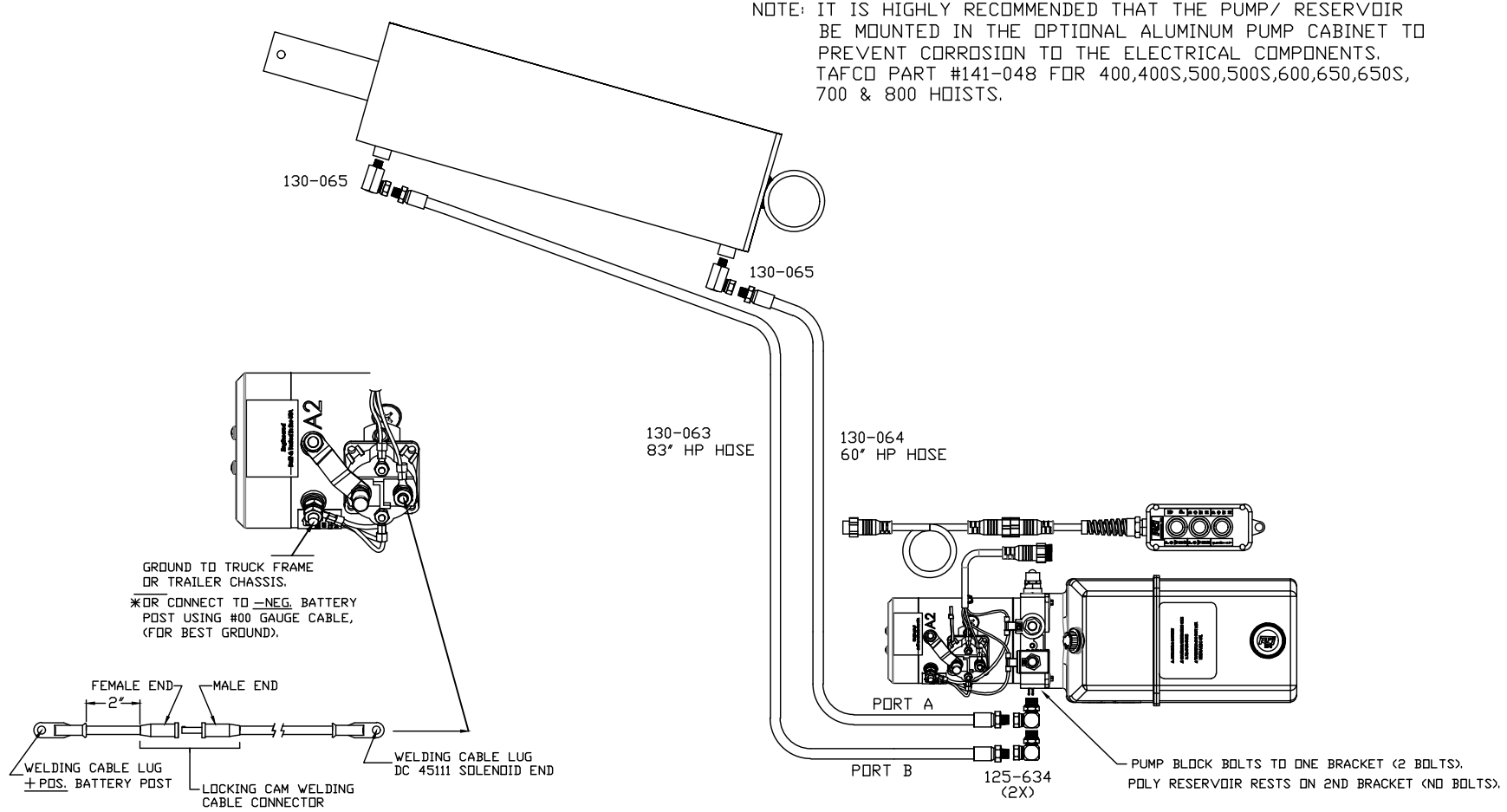
NOTE: IT IS HIGHLY RECOMMENDED THAT THE PUMP/ RESERVOIR BE MOUNTED IN THE OPTIONAL ALUMINUM PUMP CABINET TO PREVENT CORROSION TO THE ELECTRICAL COMPONENTS.
TAFCO PART #141-048 FOR 400,400S,500,500S & 600 HOISTS
TAFCO PART #141-047 FOR 650,650S,700 & 800 HOISTS



NOTE: IT IS HIGHLY RECOMMENDED THAT A QUICK DISCONNECT BE INSTALLED IN THE CABLE THAT RUNS FROM THE BATTERY TO THE PUMP SOLENOID. EXAMPLE SHOWN ABOVE. MAKE SURE THE FEMALE END IS MOUNTED ON THE BATTERY END AND MOUNTED AS CLOSE TO THE BATTERY AS POSSIBLE. THE CABLE SIZE, #00 GAUGE, IS HIGHLY RECOMMENDED.

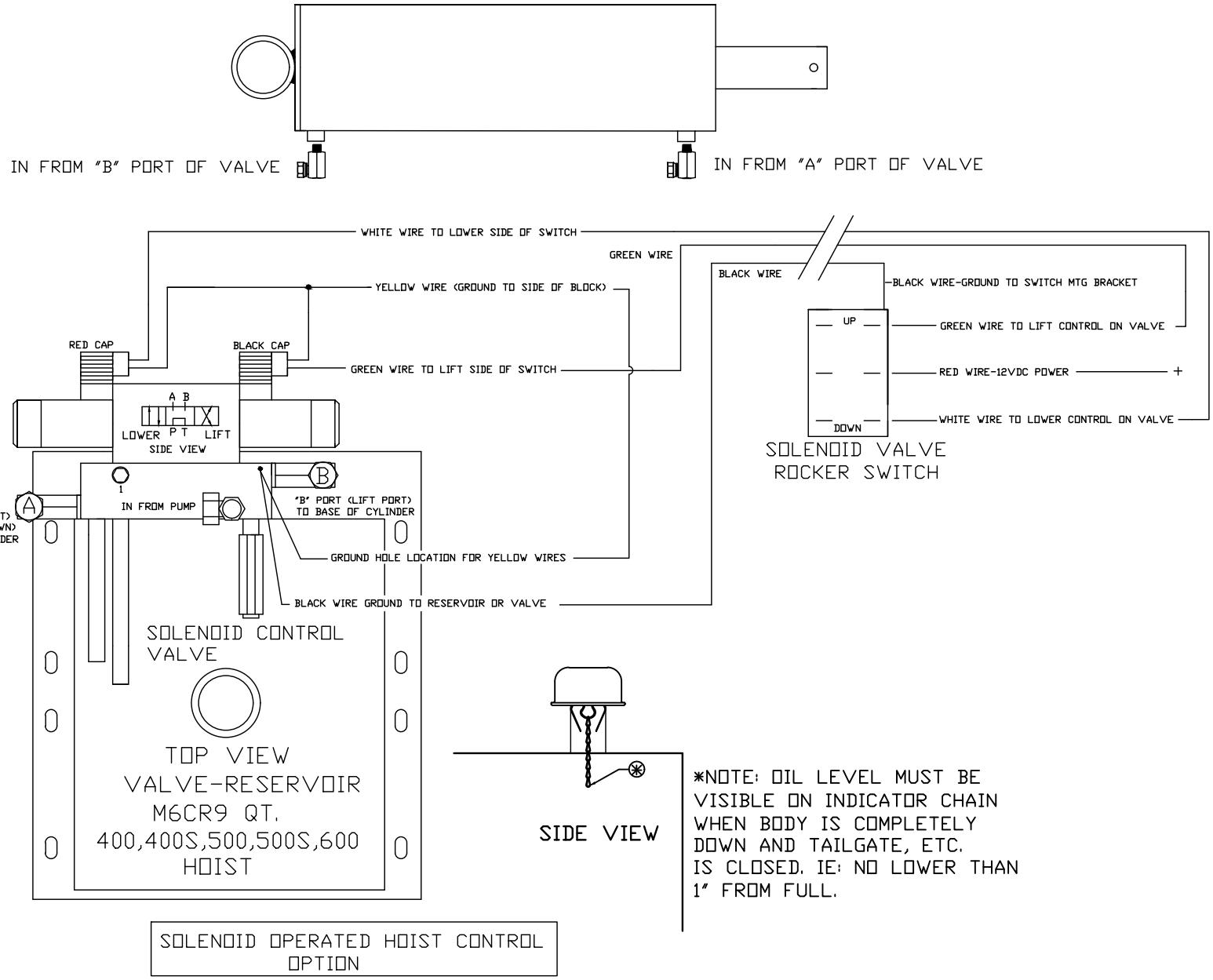
KTI DC 45111
ELECTRIC PUMP INSTALLATION

NOTE: IT IS HIGHLY RECOMMENDED THAT THE PUMP/ RESERVOIR BE MOUNTED IN THE OPTIONAL ALUMINUM PUMP CABINET TO PREVENT CORROSION TO THE ELECTRICAL COMPONENTS. TAFCO PART #141-048 FOR 400,400S,500,500S,600,650,650S, 700 & 800 HOISTS.



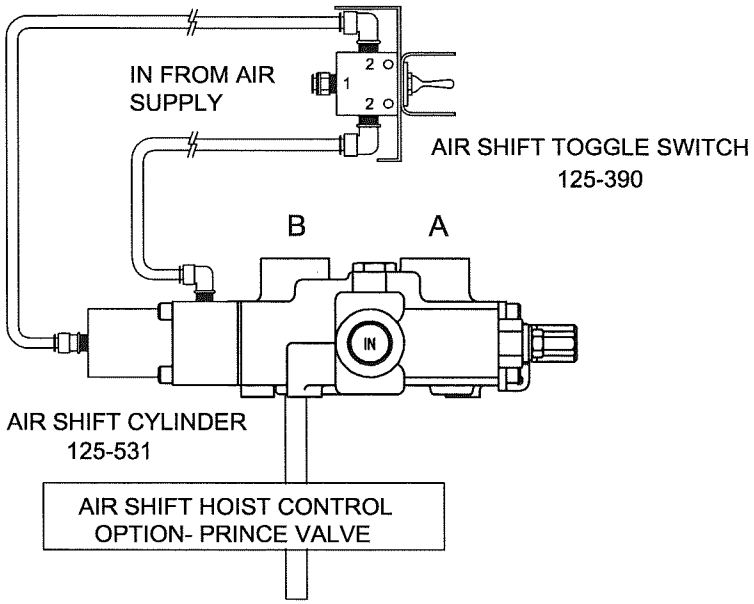
NOTE: IT IS HIGHLY RECOMMENDED THAT A QUICK DISCONNECT BE INSTALLED IN THE CABLE THAT RUNS FROM THE +POS. BATTERY POST TO THE PUMP SOLENOID. EXAMPLE SHOWN ABOVE. MAKE SURE THE FEMALE END IS MOUNTED ON THE BATTERY END AND MOUNTED AS CLOSE TO THE BATTERY AS POSSIBLE. THE CABLE SIZE, #00 GAUGE, IS HIGHLY RECOMMENDED.

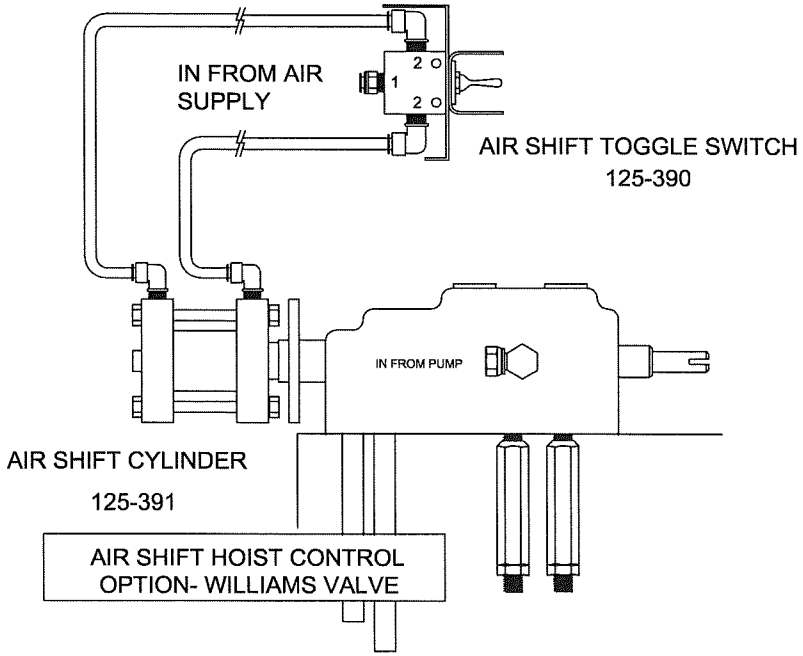
ELECTRIC SHIFT HOIST CONTROL OPTION - WILLIAMS VALVE ONLY



SOLENOID OPERATED HOIST CONTROL OPTION

AIR SHIFT HOIST CONTROL OPTION





SAFETY INSTRUCTIONS

1. **Always insure the Hoist Control in the cab works freely and is in good operating order. The controls must be clearly marked for function and operation.**

2. **Always check for overhead wires, obstructions, and people before raising the hoist.**

3. **Dump with the truck at rest, on level ground and with a balanced load. The hoist design gives added stability in normal dumping operations. The hoist is not designed to operate in extreme conditions.**

4. **The operator must stay in the cab, at the controls during the duration of the dumping cycle. If there are bystanders around the dumping area, the operator must have an outside observer present to insure that all bystanders are a safe distance away.**

5. **Never permit anyone under a loaded dump bed.**

6. **Bring a loaded dump body down slowly by easing the control knob inward. On double acting cylinders, make sure the pump is running when doing so or the reservoir may over flow, resulting in the loss of fluid and allowing air into the system.**

7. **Always use the safety prop to secure a raised dump bed before any maintenance or inspection is performed under the empty dump body as specified by the safety decals provided by Tafco Equipment Co. The safety prop is not designed or intended to support a loaded body. If repairs or maintenance is needed, you must unload the body before attempting any repairs.**

8. **Observe all PTO safety instructions provided by the PTO manufacturer as well as those listed in the hoist information.**

   A. **Do not go under the vehicle when the engine is running.**
   B. **Do not work on PTO or shaft when the engine is running.**
   C. **Do not engage or disengage the PTO or driven equipment by hand from under the vehicle when the engine is running.**

OPERATION INSTRUCTIONS

OPERATION WARNINGS !

A. **Do not operate hoist while truck is moving.**
B. **Make sure all loads are level in the truck bed.**
C. **Do not dump loads while on uneven or unstable ground.**
D. **Never operate PTO pump over the rated speed. (check with pump manufacturer for maximum speeds).**
E. **Disengage PTO with clutch depressed and truck still in neutral and parking brake engaged.**
F. **Do not increase pump pressure. Serious damage could occur if increased above the rated setting.**
G. **If the hoist is a power down hoist (double acting cylinders) do not continue to send power to lower the hoist after the body is fully lowered. Damage to the truck and the hoist could occur.**
H. **Never allow the hoist to bounce or jerk when stopping the hoist movement.**

1. **TO RAISE OR LOWER A CONTROL CABLE HOIST.**
   A. **Set the emergency / parking brake.**
   B. **Put the truck in neutral. Check area around truck for clearance.**
   C. **Push the clutch in. Engage the PTO while the truck is at idle. Release the clutch.**
   D. **To raise the hoist- depress the RED neutral release button on the end of the control knob. Pull control knob out rapidly.**
   E. **To hold the hoist in any position- move control knob to center (neutral) position.**
   F. **Stopping the hoist just before the cylinder(s) are fully extended will help increase the life of the hoist and pump.**
   G. **To lower the hoist- depress the RED neutral release button. Push the pump control knob all the way in and hold the knob in until the box is down.**
   H. **To stop the hoist from lowering, slowly return the control to the center position.**
   I. **Disengage the PTO with clutch depressed and truck is still in neutral and parking brake engaged.**
   J. **Always make sure that the cable is centered when the box is fully lowered.**
   K. **Never allow the hoist to bounce or jerk when stopping hoist movement. This could cause serious damage to the truck frame and the hoist. This could also void the warranty due to misuse of the hoist.**

2. TO RAISE AND LOWER AN ELECTRIC SWITCH CONTROL HOIST.

A. Keep the truck running to charge the battery.
B. Set the emergency / parking brake.
C. Put the truck in park or neutral. Check area around truck for clearance.
D. To raise hoist- depress the "UP" button.
E. Release the control button to stop and hold the hoist in any position while raising.
F. Stopping the hoist just before the cylinder(s) are fully extended will help to increase the life of the hoist and pump.
G. To lower the hoist- depress the "DOWN" button.
H. To stop the hoist from lowering, release the button. For safe operation, do not move vehicle until body is completely down.
I. Never allow the hoist to bounce or jerk when stopping hoist movement. This could cause serious damage to the truck frame and the hoist. This could also void the warranty due to misuse of the hoist.

SAFETY PROP OPERATION

WARNING!!

USE THE SAFETY PROP ONLY WITH AN EMPTY BODY. THE SAFETY PROP IS NOT DESIGNED TO SUPPORT A LOADED BODY. IF IT IS NECESSARY TO WORK ON A BODY OR HOIST, THE BODY MUST BE UNLOADED FIRST.

A. Slowly raise the truck body until the base of the Safety Prop will clear the truck frame.
B. The Safety Prop should be unlatched from the prop keeper. Once unlatched, The Safety Prop will hang down.
C. Slowly lower the body back down until the Safety Prop base rests firmly on the truck frame. DO NOT POWER HOIST DOWN !
D. To release the Safety Prop, raise the body until the base of the prop clears the truck frame. Swing the Safety Prop up and latch into the prop keeper. The body can then be lowered completely down to the truck frame.

MAINTENANCE INSTRUCTIONS

1. **Periodic maintenance and inspection will increase hoist life. Check all bolts, cotter pins, hydraulic lines, hydraulic reservoir levels, scissor assembly, universal joints, and drive line components every 50 cycles or weekly, whichever comes first.**

2. **Lubricate all grease fittings before using the hoist the first time and every 50 hoist cycles there after. Greasing the hoist will prevent hoist damage and help to maintain lifting capacity. Severe conditions may require more frequent servicing.**
   The grease fittings on the LL-400 hoist are in the following locations:
   - **A. UPPER CROSS TUBE.....2 FITTINGS**
   - **B. LOWER CROSS TUBE.....2 FITTINGS**
   - **C. CENTER HINGE..... 2 FITTINGS**
   - **D. UPPER CYLINDER PIVOT..... 1 FITTING**
   - **E. LOWER CYLINDER PIVOT.....2 FITTINGS**
   - **F. LOWER MOUNTS.....2 FITTINGS**
   - **G. TAIL HINGE.....2 FITTINGS**

   IF EQUIPED WITH A PTO DRIVE-LINE PUMP/RESERVOIR, THERE WILL BE 3 FITTINGS ON THE PTO DRIVE SHAFT. ONE ON THE SLIP YOKE AND 1 ON EACH UNIVERSAL JOINT.

3. **Under normal use and working conditions, the hydraulic oil should be changed annually. The reservoir breather cap should be cleaned regularly. With heavy use or very dusty conditions, the hydraulic oil should be changed more often.**
   KEEP THE OIL CLEAN. USE CLEAN CONTAINERS, FUNNELS AND AVOID ADDING IN DUSTY CONDITIONS!

   Use a quality hydraulic fluid SAE 10W or equivalent in normal conditions. Use Type A (Dextron) automatic transmission fluid in cold weather and in electric pumps.

4. **Field repair of hydraulic components should not be attempted. This would include hydraulic cylinders, valves and pumps. These should be sent to a Tafco dealer/ distributor. Seals and o-rings on hydraulic cylinders should only be installed by a qualified hydraulic specialist. New parts can be obtained from your Tafco dealer/ distributor. Insure that the complete hydraulic system is flushed after any component failure.**

TROUBLESHOOTING GUIDE

1. THE HOIST WILL NOT RAISE SMOOTHLY:
   - **A: Air in the cylinder. (Refer to installation instructions-pages 6 & 10)**
   - **B: Lubricate hoist and tail hinge.**

2. THE HOIST RAISES VERY SLOW:
   - **A: The oil is too thick for cold weather.**
   - **B: A hydraulic line is partially blocked or pinched.**
   - **C: The filter screen is dirty.**
   - **D: The pump is worn or defective.**
   - **E: The control valve is not moving the full stroke.**

3. FAILURE TO RAISE THE HOIST FULLY:
   - **A: Check the hydraulic oil level in the reservoir.**
   - **B: Air in the cylinder. (Refer to installation instructions-pages 6 & 10)**
   - **C: Lubricate the hoist components.**

4. FAILURE TO RAISE LOAD:
   - **A: Release bed tie downs.**
   - **B: Hoist capacity has been exceeded.**
   - **C: Check for blocked or pinched hydraulic line.**
   - **D: Control valve not moving the full stroke- check cable adjustment.**
   - **E: The pump intake is blocked from dirty oil or the oil is too thick from cold weather.**
   - **F: Check pump for proper operation.**

5. FAILURE TO LOWER HOIST:
   - **A: Control valve is not moving the full stroke. Check cable adjustment.**
   - **B: Check for blocked or pinched lines.**

6. OIL SPILLAGE OUT OF RESERVOIR:
   - **A: Too much oil in reservoir.**
   - **B: Too thick of oil causing oil to foam or air in the hydraulic lines. Cycle the hoist several times to bleed system.**
   - **C: Pump not engaged during lowering.**
   - **D: The body weight is too great, causing the hoist to lower too rapidly. A flow control valve must be installed in this situation.**

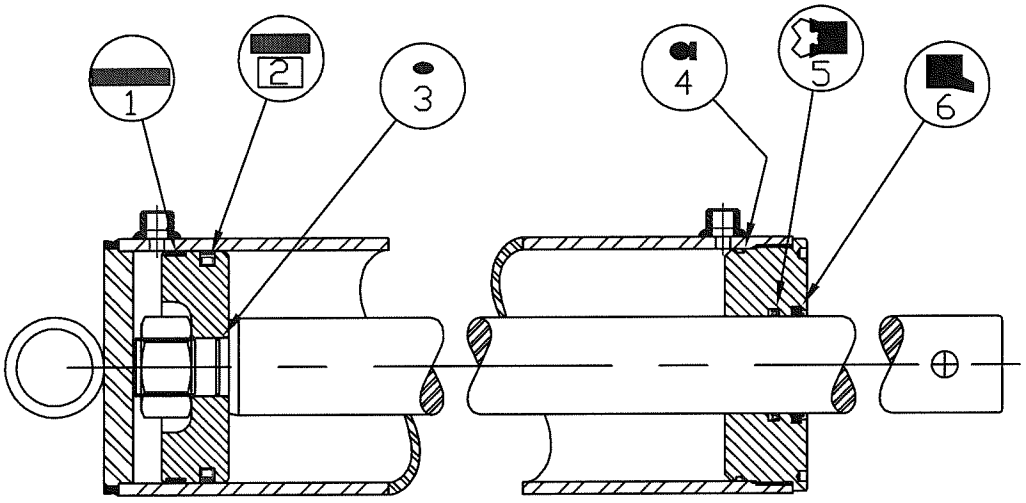
7. OIL LEAKAGE:
   - **A: Make sure all fittings are properly sealed and tight.**
   - **B: Check all hoses. Use only fittings and hoses supplied by Tafco.**
   - **C. Gland nut leaking , may require cylinder repair. Contact your local Tafco dealer.**

CYLINDER REWORK INSTRUCTIONS

1. SPECIAL EQUIPMENT REQUIRED:
   - A. Bronze coated or brass vise inserts.
   - B. Hydraulic pressure available.
   - C. Gland nut and piston spanner wrenches.

2. GENERAL:
   - A. Whenever clamping on a surface that moves past an o-ring or seal, extra care must be taken to prevent nicks, scratches, and deformation.
   - B. All parts that have scores or nicks on moving surfaces should be replaced with new parts.
   - C. Keep the cylinder parts very clean when reassembling.

3. DISASSEMBLY:
   - A. Extend cylinder either manually or with hydraulic pressure. WARNING: NEVER USE AIR PRESSURE TO EXTEND CYLINDER . WARNING: RELEASE HYDRAULIC PRESSURE FROM CYLINDER AND DRAIN CYLINDER.
   - B. Clamp on the cylinder body with a vise and unscrew the gland nut on the cylinder body.
   - C. Remove the gland nut with the cylinder rod. WARNING: DO NOT USE PIPE WRENCHES OR OTHER TOOLS THAT WILL DAMAGE OR SCRATCH CYLINDER RODS .
   - D. Remove the gland nut from the cylinder rod.
   - E. Remove all o-rings, backup rings, and wear rings. HINT: Keeping all parts to a gland nut, piston, or cylinder rod together will help to identify parts. This will make the re-assembly of the cylinder easier.
   - F. Clean all the metal parts and dry them thoroughly.
   - G. Install all o-rings, backup rings, and wear rings using clean grease to hold parts in place if necessary. Grease all o-rings before installing them. Be sure to have all parts fully seated in their respective grooves before attempting final assembly.
   - H. Oil all moving parts: piston, cylinder rod, etc.
   - I. Assemble gland nut on the cylinder rod.
   - J. Reassemble cylinder in the reverse order that it was disassembled. Tighten and Loctite gland nut using Loctite 290. CAUTION: MAKE SURE NOT TO DAMAGE O-RINGS, SEALS, ETC. WHEN ASSEMBLING CYLINDER.
   - K. The cylinder is now ready to install in the hoist assembly.



CYLINDER PART NO. 130-066
SEAL KIT PART NO. 130-163

CONTENTS OF SEAL KIT

ITEM	DESCRIPTION
1	WEAR RING
2	PISTON SEAL
3	O-RING
4	O-RING & BACK-UP
5	ROD SEAL
6	WIPER

NOTES:

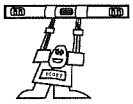
NOTES:

HOIST WARRANTY

Tafco Equipment Co. warrants each new SCOTT Hydraulic Hoist frame to be free from defects in material and workmanship for a period of three years from the date of installation. This warranty does not extend to any hoist unit, or part thereof, which has been subjected to misuse, neglect, accident, improper installation, unequal-loading or loading over and above the recommended weight range. This warranty does not extend to such hoist units or parts which have been repaired or altered outside of our factory or to which any accessories other than SCOTT have been affixed, or to any hoist not installed by an authorized SCOTT dealer or distributor. Tafco's obligation under this warranty is limited to replacement or repair of any part or parts thereof, which within the warranty period shall be returned to our factory, Blue Earth, Minnesota, transportation charges prepaid, for inspection. If such inspection reveals that a defect in the material or manufacturing actually exists, then TAFCO, at its' option, may repair or replace the defective part. All purchase assemblies (such as the hydraulic pump) will be warrantied as per original manufacturer's policy. Pumps and cylinders carry a one year warranty as authorized by the manufacturer.

This warranty will not take effect until the application and registration form, which is provided at the time of the purchase and installation, is completed by the purchaser and returned to TAFCO. TAFCO does not assign to any of its' dealers, distributors or agents the right of warranty on its' behalf. If said dealer or distributor in performing a service or repair, returns to our factory on behalf of the purchaser such parts or hoist, the existence, validity or applicability of this warranty regarding such part or hoist remains solely the prerogative of TAFCO and not its' aforementioned agents.

All warranties must have a transaction number and approval prior to work being performed. TAFCO's policy is that a profit should not be made on warranty work, since this is part of a distributor or dealer function. Repair parts will be provided or replaced at TAFCO's discretion.



TAFCO
EQUIPMENT COMPANY
Highway 16 West- P.O. Box 339
Blue Earth, Mn. 56013
Phone (507) 526-3247

WARRANTY VALIDATION CERTIFICATE

No. _____

TO VALIDATE YOUR WARRANTY:
Complete this form and return it to the factory.

Note: Failure to complete and return this form as prescribed invalidates any warranty obligation by Tafco Equipment Co.

_____
Your name or business name

_____
Dealers name

_____
Your address

_____
Dealer's address

Hoist model _____
Date installed _____

Serial number _____
Installed by _____

I have read and fully understand the provisions and limitations of the warranty.

_____ Date _____
Customer's signature