

TRUCK MOUNTING ASSEMBLY

STUDY NAMES AND LOCATIONS OF THE PARTS AND FAMILIARIZE YOURSELF WITH THE HOIST BEFORE STARTING THE ASSEMBLY. READING THE STEP-BY-STEP INSTRUCTIONS THAT FOLLOW WILL BE HELPFUL.

SAFETY



READ ALL OF THE SAFETY NOTATIONS IN THE ASSEMBLY INSTRUCTIONS FOR YOUR PROTECTION. ACCIDENTS CAN BE PREVENTED BY RECOGNIZING THE CAUSE OF AN ACCIDENT BEFORE IT CAN HAPPEN.

PREPARATION

Select an area for installation that will be large enough to accommodate the completed unit. The surface of the work area should be as level as possible. Use the proper hand tools to insure proper bolt tightness. Refer to the chart on opposite page for the recommended torque values for different sizes of bolts.

Model Number

Know the model number of the hoist being mounted. Use this model number whenever referring to the assembly or parts listing pages. The number is stamped on the Name Plate which is located on the left front end of the main frame.



RIGHT and LEFT sides can be established by standing behind the truck frame and looking towards the front, or the direction of travel.

TRUCK CHASSIS SPECIFICATIONS

See the illustrations on pages 4 and 5 at the front of this manual.

MINIMUM AXLE RATING:	FRONT	18,000 LBS.
	REAR	44,000 LBS. with walking beam type suspension
FRAME STRENGTH:	Total allowable bending moment = 2,400,000 in-lbs. (both channels)	
	Section Modulus (minimum) = 32 in ³ for 36,000 PSI steel	
	Section Modulus (minimum) = 24 in ³ for 55,000 PSI steel	
IMPORTANT: IF YOUR TRUCK CHASSIS HEIGHT EXCEEDS THE 45" DIMENSION, OR TIRE DIMENSION IS GREATER THAN 102", THE O.R.T. OR I.O.T. HOIST SHOULD BE CONSIDERED. (SEE PAGE 4 at front of this manual)		

1. Thoroughly check the truck requirements to assure proper clearance and frame strength before mounting the hoist.

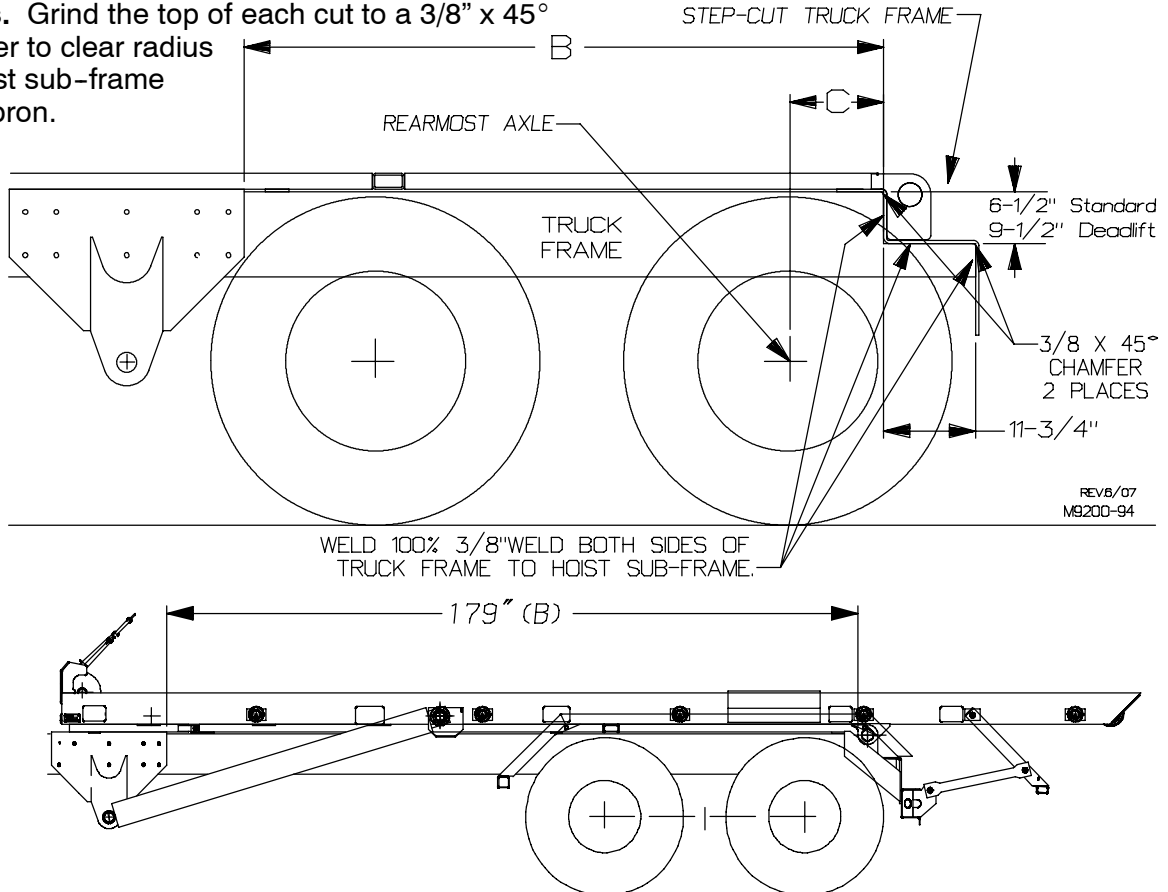
NOTE: The rear of cab boundary is the rearmost unremovable protrusion behind the cab and above the chassis frame.

2. From the rear of the cab boundary, TO THE CENTER OF THE WALKING BEAM SUSPENSION (CT) DIMENSION IS: PER THE FOLLOWING CHART.

RELOCATE THE REAR AXLES AS REQUIRED. K-PAC AUTOTARPER MUST HAVE 10" TO 12" UNOBSTRUCTED SPACE BEHIND CAB FOR INSTALLATION.		CAB TO TRUNNION	
	MODEL	w/o TARPERS	WITH TARPERS
	KP60-174	174 INCHES	180 INCHES
	KP60-182	182 INCHES	188 INCHES
	KP60-194	194 INCHES	200 INCHES

I. TRUCK FRAME CUT-OFF

Measure and mark truck frame as shown below. Measure assembled hoist to be sure that adequate room is available behind truck cab; between bumper and tires; and between fender and tires. This verifies that a measurement error has not been made either in the CT (Cab to Trunnion) or cut-off dimension. After double-checking your measurements, step-cut the truck frame to dimensions C. **IMPORTANT: Note the difference in depth required for Dead Lift Hoists.** Grind the top of each cut to a $3/8" \times 45^\circ$ chamfer to clear radius on hoist sub-frame rear apron.



REVERSE MOUNT CYLINDERS

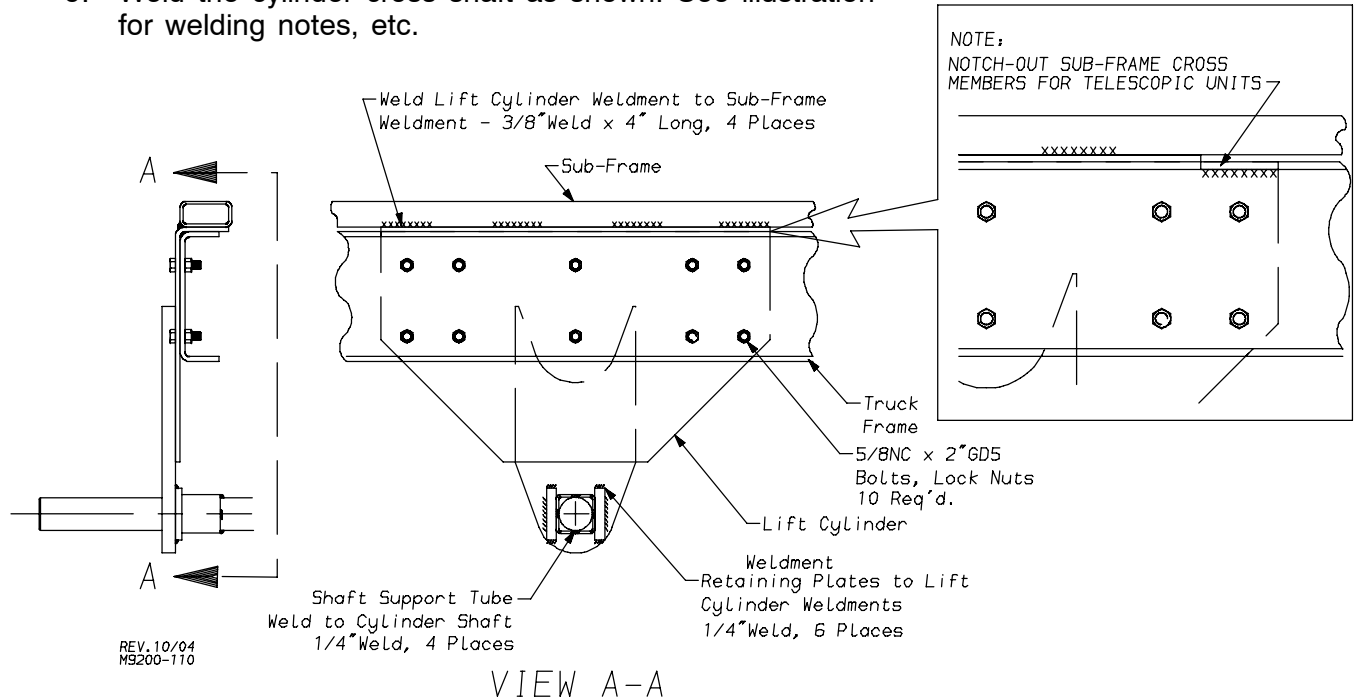
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MAXIMUM REAR TIRE SIZE	C	LIFT CYLINDER LUG (Ref.) B		
10.00 X 22	12"	TANDEM AXLE	TRI-AXLE	REVERSE MOUNT CYLINDERS
11.00 X 24	14"	81-3/4"	134-1/2"	179"

II. MOUNT SUB-FRAME, HOIST & LIFT CYLINDERS ON TRUCK FRAME REFER TO ILLUSTRATION ABOVE AND PARTS PAGE P2

- Position the hoist sub-frame onto truck frame, aligning and squaring up with truck frame, clamp and then heavily tack in place.
- Check frame for bolts, rivets, etc. and clearance required (Dimension "B" above) before placing the Lift Cylinder Lug into place under the hoist sub-frame. Do not fasten at this time.
- To determine if a drop shaft is required, lay a straight edge through the top set of holes in the Lift Cylinder Lug. If less than 5" of clearance is available between the straight edge and the driveshaft, a Drop Shaft must be used.
- Install the appropriate cylinder shaft.
- Install the Lift Cylinders and extend each cylinder rod $1/4"$. Check the shaft to cylinder dimension on both sides. Standard Lift Cylinders dimension should be $90-1/4" \pm 1/8"$. Telescopic Cylinder dimension should be $61-1/4" \pm 1/8"$. Be sure to install proper cylinder shaft hardware so that Lift Cylinders do not interfere with truck frame or bolts. The lift cylinders will precisely locate the lift cylinder lugs.

6. Match all crossmember holes, then clamp the Lift Cylinder Lug in place and drill ten (10) 5/8" diameter holes as per illustration.
7. Install 5/8NF x 2-1/2"GD5 Cap Screws and torque to 180 Ft. Lbs.
8. Weld the Lift Cylinder Lugs to the sub-frame as shown in illustration. Remove any gap between lugs and sub-frame before welding. Make certain shaft is centered.
9. Weld the cylinder cross shaft as shown. See illustration for welding notes, etc.



10. Install the outside washers, collars, etc. to secure Lift Cylinders at rod and butt ends.
11. **VERY IMPORTANT:** Weld the Sub-Frame securely to truck frame as shown in illustration at top of page A2 using 3/8" Weld.

III. HYDRAULIC TANK INSTALLATION - REFER TO PARTS SECTION PAGE P6

1. Assemble valve, hoses, etc. to tank before mounting tank. Label hoses per illustration.
2. Position and clamp the Tank Mounting Bracket approximately 22" behind the rear of the cab boundary per illustration.

NOTE: It may be necessary to relocate air tanks, fuel tanks, battery cases or any other accessories mounted in this area. Check bolt sides for clearance on hydraulic tank and toolbox mounting.



Warning: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

3. Drill six (6) 1/2" diameter holes as shown in illustration. Use six (6) 1/2NF x 2-1/2"GD5 Cap Screws torqued to 90 ft. lbs.
4. If remote pump is installed, see Remote Mount Pump Installation (pg. A5) before proceeding.
5. Install the Close Nipple, Gate Valve, and Hose Barb onto the Tank Assembly.
6. Remove the Tank Assembly and drill 3/8" diameter holes on the marks.
7. Re-install the tank and tighten the set screws into the drilled holes. Tighten the jam nuts.

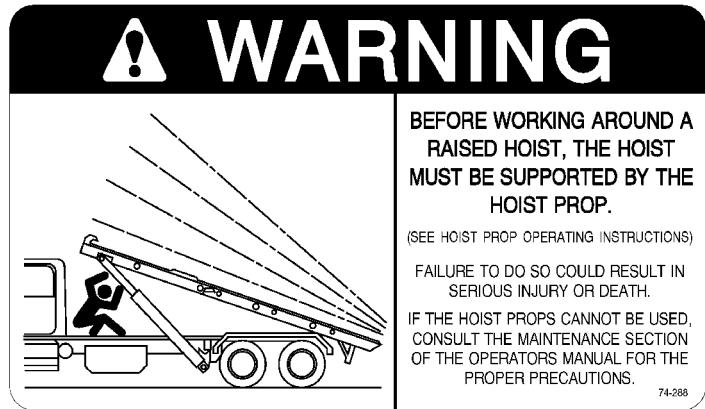
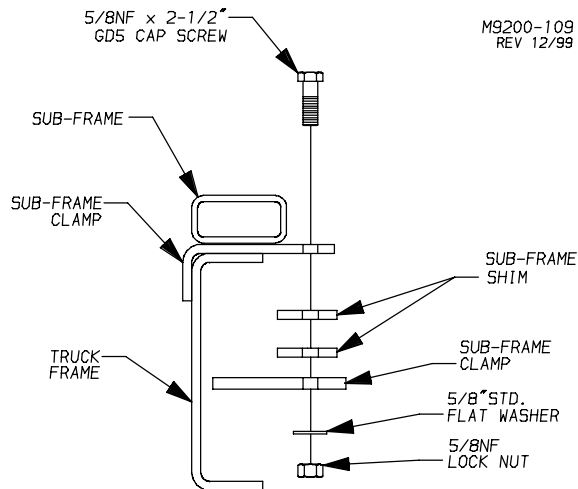
IV. SUB-FRAME FRONT CLAMP INSTALLATION - REFER TO PARTS SECTION

PAGE P6

Before proceeding any further, it is necessary to raise the hoist and set it down on the hoist props.

1. Position the L-shaped clamp between the sub-frame and truck frame as shown below.
2. Assemble the lower clamp and two (2) shims with a 5/8NC x 2-1/2" GD. 5 Cap Screw, two (2) Flat Washers and Self Locking Nuts. Trim the lower clamp as required to clear the frame channel.

NOTE: Stair-step the shims so fillet welds can be applied.



HOIST USAGE INSTRUCTIONS

1. Read and understand hoist manual before using the hoist and follow its instructions.
2. Observe and practice all safety and operating rules as established by your company and those included in the hoist manual.
3. Always use hoist within its rated capacity.
4. Be sure container is securely attached to hoist before moving.
5. Repairs to hoist and container must be made, when required, before using.
6. Use only with containers that have been properly designed to work with hoist.
7. Do not allow material to extend beyond the limits of container.
8. Keep container long sills engaged on hoist main frame rails and rollers.
9. Do not operate within ten feet of overhead power lines.
10. Be Careful -- Be Alert -- Use Good Judgement.

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3. Tighten the bolts to the specified torque and weld the plates and shims in position.

V. P.T.O. INSTALLATION (Install per instructions included with P.T.O.)

Warning: Do not attempt to install or service any power take-off with your truck engine running. Put the ignition keys in your pocket before getting under the truck.

Do not allow truck engine to be started while workmen are under the truck.

Block truck wheels with suitable chocks before working on or under the equipment.

Be sure to block any raised body or mechanism before working on or under the equipment.

Installed power take-offs must never be shifted in or out of gear by any means except by the controls in the cab of the truck.

Stay clear of spinning driveshafts to avoid becoming entangled and injured.

Caution: The power take-off selection should be done with care. For diesel engines, the P.T.O. should be 85% to 100% of engine R.P.M. The torque required is 110 Ft. Lbs. minimum. Minimum output shaft to be 1-1/4" DIA. with a 5/16" keyway for the remote mount pump. For gas engines, the P.T.O. should be 65% to 80% of engine R.P.M. The direct mounted pump requires a SAE B 4-bolt mounting flange and must accept a 7/8" 13 tooth splined shaft.

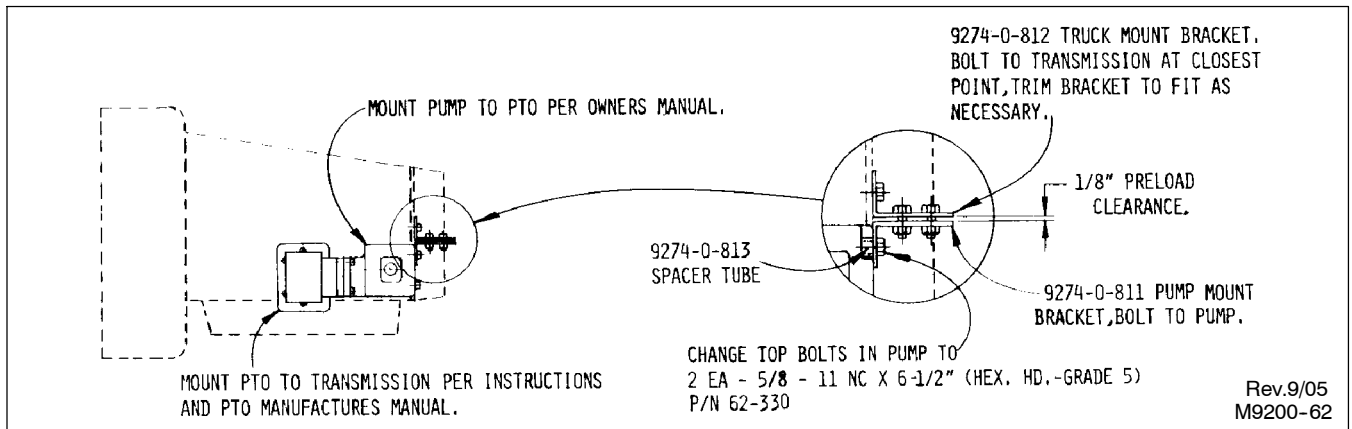
Warning: Direct mounted hydraulic pumps weighing more than 50 lbs. should be supported at the rear by a strap attached to the transmission.

VI. DIRECT MOUNTED PUMP INSTALLATION - (Refer to illustration below)

1. Determine the direction of rotation of the PTO from the illustration.
2. Align the splined shaft on the pump with the splines in the PTO.
3. Install the four (4) Cap Screws and Lock Washers to attach Pump to PTO.
4. Install the Pump Supports provided by removing the two upper pump housing bolts. Install the bushings, lower angle plate and longer 5/8NC x 6-1/2" GD5 Cap Screw. Tighten to 118 ft. lbs.
5. Position the upper angle plate to pick up the nearest available transmission case bolts. Allow a 1/8" gap between the mounting plate to "pre-load" the pump support. This will assure that the support is holding the pump load.

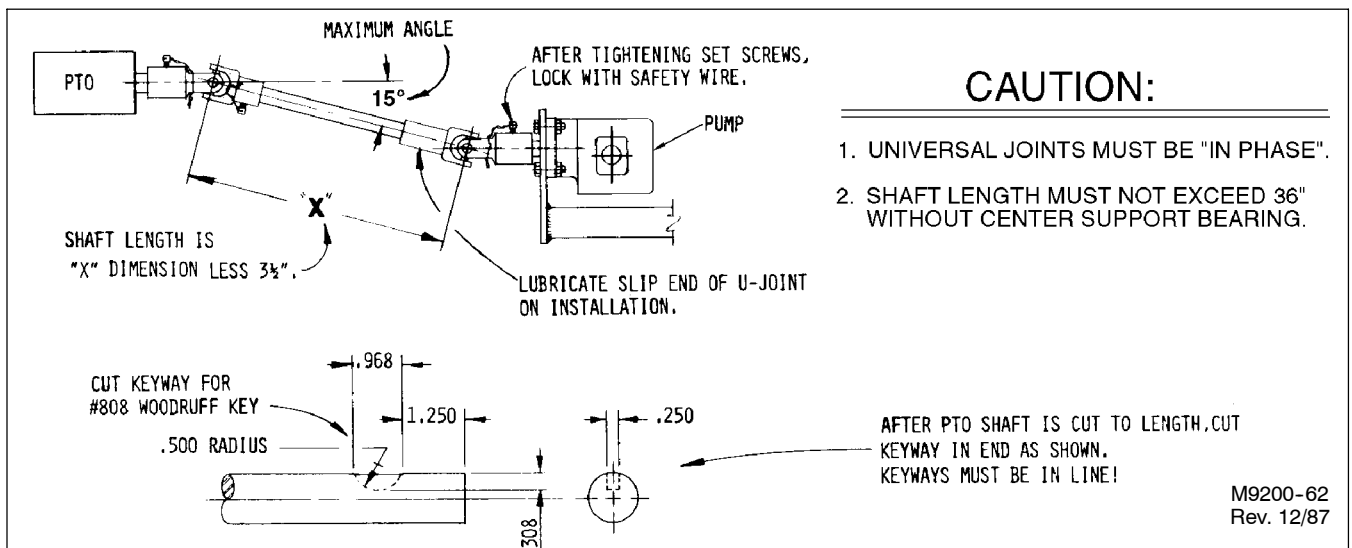
NOTE: The P.T.O. position and / or the type of transmission may require that another upper support be built. Use good mechanical judgement to build an adequate support. Never support P.T.O. from truck frame, must be supported from transmission.

6. Tighten all of the hardware.



VII. REMOTE MOUNTED HYDRAULIC PUMP - (Refer to illustration below)

1. Determine the direction of PTO and pump rotation.
2. Orient the pump so that the outlet or pressure port is toward the left side of the truck.
3. Assemble the pump to the Pump Mounting Bracket.
4. Install the Standard Universal Joint on the PTO shaft and slip the universal joint on the Pump Shaft.
5. Measure the distance between the centers of the U-Joint crosses. Subtract 3-1/2" from the measured distance and cut the pump driveshaft to the calculated length.
6. Install a woodruff keyway.
7. Lubricate the slip yoke and install the driveshaft so that the universal joints are in-phase.
8. Tighten all three (3) set screws and lock with wire.

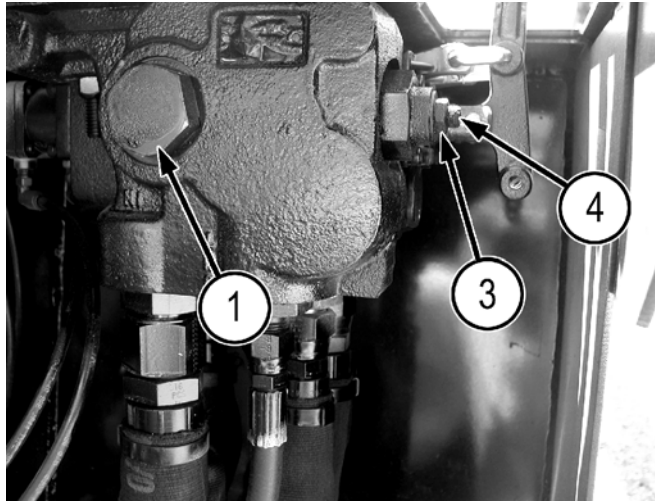


VIII. FRONT MOUNTED PUMP INSTALLATION

The front mounted pump installation is specific per truck mount. For more information regarding installation or service contact the factory.

IX. HYDRAULIC RELIEF PRESSURE SETTING

1. Locate plug facing front of truck.
2. Remove plug and install PRESSURE GAUGE with fittings or adapters as needed.
3. Loosen JAM NUT.
4. Using allen wrench, adjust to proper pressure. See specifications on page 5 of this manual.
5. Tighten JAM NUT, holding adjustment screw in position.
6. Test unit for proper operation, readjust to correct pressure if needed.
7. Remove test pressure gauge and reinstall plug.
8. Retest unit checking leaks and proper operation.



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X. HYDRAULIC PLUMBING INSTALLATION - REFER TO PARTS SECTION PAGE P10



Warning: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Clean all hydraulic components and keep all hoses, tubes, valves, and fittings capped until they are installed. Use pipe sealant on pipe thread joints ONLY. (DO NOT USE TEFLON TAPE)

1. Install fittings and hoses as shown in parts illustration.
2. Note single stage Lift Cylinder plumbing and Telescopic Cylinder plumbing are different. See hydraulics schematic on parts page P10.

XI. CABLE CONTROL INSTALLATION

The optional cable controls supplied with K-PAC equipment are a high-quality assembly which seal out moisture, are corrosion protected and engineered to minimize backlash (lost motion).

After the hoist and hydraulic tank are mounted to the truck chassis, the remote cable controls may be installed.

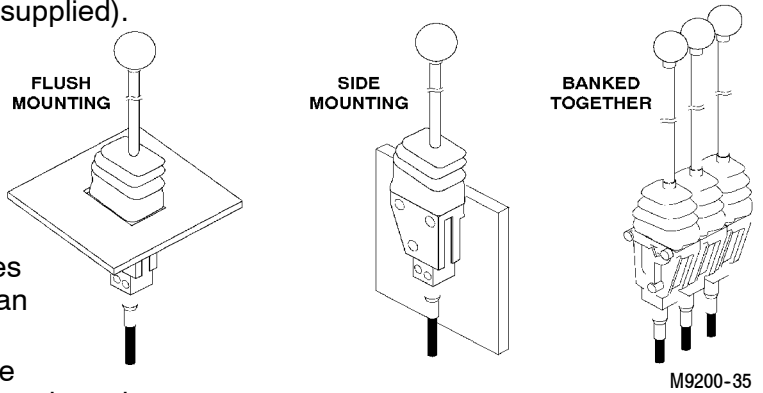
Cable Control Mounting:

1. On the hydraulic control valve, remove the screws holding the spool cover plate. Position the handle assembly on the valve face and install the screws provided with the handle kit. Install the clevis pin and cotter pin.
2. Mount the valve to the underside of the mounting plate located on top of the hydraulic tank assembly with the handles sticking up through the rectangular cutout.
3. Position the control cable bulkhead plate on the top of the hydraulic tank assembly. Install the control cable bulkhead plate with 1/2" cap screws and nuts, or weld. If necessary, temporarily assemble the threaded cable end to the bulkhead plate for proper positioning with the valve handles.

- Mount the cable controllers to the control mount supplied. Other mounting options are shown in the following illustration (parts not supplied).

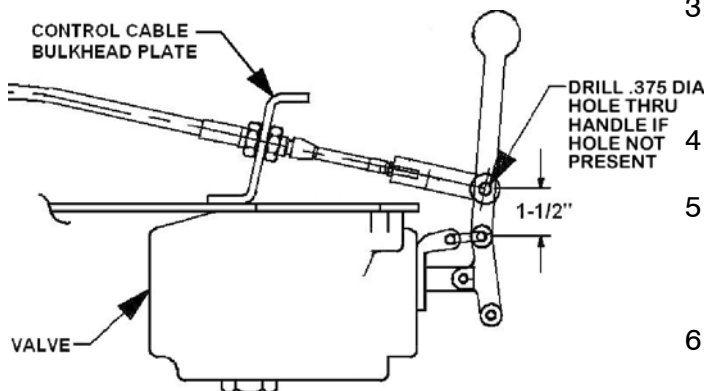
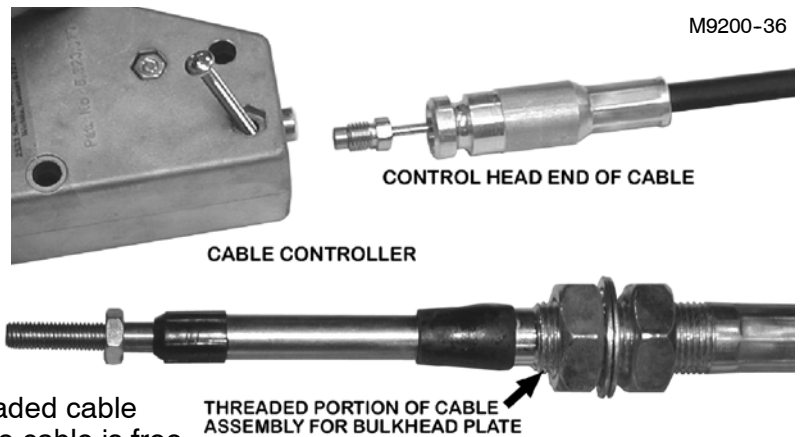
IMPORTANT:

- A good cable path is essential for a properly operating system. Keep bends in the cable path to a minimum and as generous as possible. Under no circumstances should any bend be tighter than an 8" radius.
 - Protect the cable from heat above 225°F and avoid hot areas such as the exhaust system, etc.
 - Protect the cable from physical damage such as pinching or crushing and do not use cable supports which may crush or deform the cable.
 - Allow room for flexing where the cable is attached to moving parts of the equipment so that the cable is neither kinked nor stretched.
- Choose a mounting location which is convenient and comfortable for the operator and provides adequate clearance for the control lever movement. Check the underside of the cab for reinforcement members, air lines, wiring harnesses, and linkages before cutting into the floor. Be sure the location chosen allows the cable to be led easily away from the control. Reversing control direction usually is not necessary. In most cases, the direction of the lever movement for a given valve function can be changed by switching the hydraulic lines at the valve. If this is not an option, control operation can be changed simply by turning the cable controller 180°.
 - Cut a hole for the control cables to pass through.
 - If using the control mount provided, mark and drill (4) .343" diameter holes for the 3/8" self-tapping screws provided.



Cable Connections

- Remove the screw from the cable controller where the cable end will install. Do NOT remove the other screws passing through the cable control housing.
- Screw the hex threaded cable end into the cable controller end. Moving the cable controller handle will allow easier access to start the thread. If the hex threaded cable end is not visible, make certain the cable is free to slide back and forth and shake the cable end with the end in the downward position.



- Install the control head end of the cable into the cable controller. Reinstall the cable controller screw passing through the groove in the end of the cable housing.
- Check the control for free movement and correct valve control.
- To connect the cable to the valve handle, start by removing the mounting nut from the cable assembly. (Large nut in the photo above)
- Install the threaded portion of the cable assembly through the bulkhead weldment and replace the mounting nut.

7. Install the clevis provided to the cable end. The cable end should be parallel to the bulkhead weldment.
8. Locate the clevis on the control valve handle. If a hole is not provided in the control valve handle for the clevis, drill a .375" diameter hole through the valve handle as illustrated. Install pin and keeper included with clevis.
9. Do a final check of the controls for free movement and correct valve control.

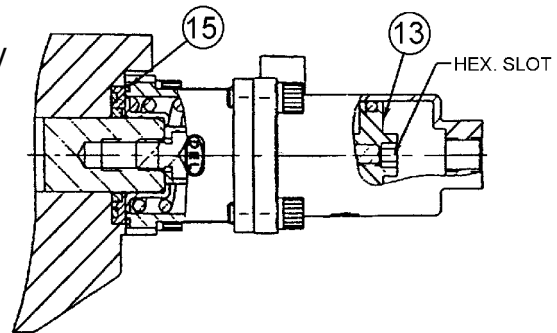
PNEUMATIC CONTROL INSTALLATION INSTRUCTIONS

The pneumatic controller provided with the K-PAC Roll-Off Hoist are dual three-way regulating valves. Output of the controllers is proportional to the control lever position and is balanced against the force of an internal spring

Pneumatic Actuator Installation - Refer to illustrations below

The pneumatic actuator has been partially assembled and pre-lubricated for ease of installation. The actuator does not have to be disassembled for installation.

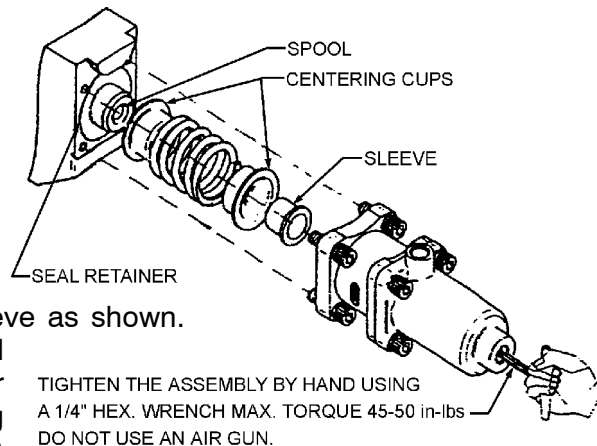
1. Remove the valve from the hydraulic tank if previously installed.
2. Find a suitable area free of dust and dirt to attach the pneumatic actuators.
3. Set the hydraulic valve on its mounting base.
4. Determine which spools are to be pneumatically controlled.



5. From the valve assembly:
 - e. Remove and discard the 1/4" retainer screws and the valve spring cover.
 - f. Retain the handle end of the spool. Using a 5/16" hex Allen wrench, remove and discard the 3/8" shoulder bolt and washer from the end of the valve spool exposed by the removal of the valve spring cover.

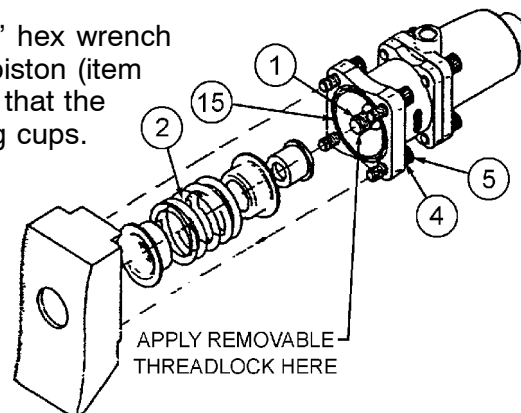
NOTE: It may be necessary to give the hex Allen wrench a sharp rap to break the socket head screw loose.

- g. Remove and discard the original centering spring. Keep the two original centering cups and the sleeve for reuse.
 - h. Insure the original seal retainer on the valve spool is properly seated.
6. Assemble the new centering spring (item 2) supplied with the pneumatic actuator using the original centering cups and sleeve as shown.



7. Apply a small bead of removable thread lock to the threads of the spool adapter (item 1). Holding the spool on the opposing end, **hand tighten** (torque 45-50 in-lbs) the centering spring assembly by inserting 1/4" hex wrench through the rear fitting port into the end of the piston (item 13). **DO NOT USE AN AIR GUN.** Make certain that the spring assembly does not bind on the centering cups.

8. Make certain the o-ring (item 15) is in place. Secure the pneumatic actuator assembly to the valve body using the four socket head screws and lock washers (items 4 & 5). Test for proper alignment by turning the valve spool. The spool should rotate freely.
9. Assemble the valve to the mounting plate on the hydraulic tank. Test spool for free movement.



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Pre-Assembled Pneumatic Control Tower Installation See parts page P22

1. Determine a suitable location which is in a comfortable location for the driver and not in the way of the transmission lever.
2. Position the lower bolt holes so that the bolts will miss any cable, wires or structural members in or under the cab floor.
3. Mark and drill the four (4) .343"dia. holes for the 3/8" self tapping screws supplied for the tower.
4. Determine a location in the area between the mounting holes to run the air lines.
5. Drill a 2" to 3" dia. hole through the floor of the truck. Remove all burrs and sharp edges. Line the hole with the grommet material supplied.
6. Using the washers on the underside of the floor, attach the tower to the floor with the 3/8" screws and lock nuts.

After the control tower has been mounted, the air lines can be routed. The air line tubing is color coded as follows:

Blue	Winch / Cable In
Green	Winch / Cable Out
Orange	Hoist Raise / On
Yellow	Hoist Down / Off
Red	PTO
Black	Exhaust
Silver	Supply
Silver	Aux In
White	Aux Out

To remove an air line from a fitting, push the line in, hold the internal sleeve of the fitting then pull the air line out.

1. Pass the air lines through the hole lined with grommet material in the floor.
2. Route the exhaust air line outside of the truck cab.
3. Determine a suitable route for the air lines to the control valve. Avoid sharp bends, sharp edges, and heat sources.
4. Install supplied elbow fittings into pneumatic actuators.
5. Connect the air lines to the elbow fittings in the pneumatic actuators.
6. Bundle the air lines together and secure out of harms way.

A Decal with an assortment of .94"DIA. labels are provided with the owner's manual. These decal labels can be applied to the underside of the clear plastic caps to identify the function of each pneumatic control handle. After the decals have been applied, snap the clear covers into the handles.

Start-Up Procedure

1. Charge the air system of the truck; check all lines for leakage.
2. Operate the controllers and check for correct hydraulic valve movement.

NOTE: The controllers pressurize the port toward which the handle is moved. If the function is to be reversed, exchange the air lines at the controller or actuator.

3. After the correct connections have been made, and the hoist has been completely installed, engage the P.T.O. to check out the operation of the hoist.

XII. BUMPER INSTALLATION

Unlighted Bumper Installation - See page Parts P8 for instructions and illustration

Back-Up Alarm:

1. To install the back-up alarm, find a suitable mounting location near the rear bumper area. Mount the alarm and wire per schematic, parts page P14. Connect the white wire to a ground and the blue wire to the hot wire for the back-up lights.
2. Install the "Alarm Must Sound" decal in the cab in FULL VIEW of the operator.
3. Check all light functions.

IMPORTANT: THE BACK-UP ALARM SHOULD SOUND WHEN THE BACK-UP LIGHTS ARE ON.

Lighted Bumper Installation - Reference Parts pages P8, P13 and P14

1. Remove the cover plate over the right side access hole.
2. Align the lighted bumper with the holes in the apron. Install six (6) 5/8NC x 1-1/2" GD.5 Cap Screws, Lock Washers and Hex Nuts. Torque to specifications. Weld to Sub-Frame (10) places: (5) 3" Welds on top side, (5) 3" Welds on bottom side.
3. Install the wiring harness through the left side access hole.
4. Slip a grommet onto the harness leads and pull through the 5/8" DIA. hole.
5. Attach the ground wire to the bumper with a 3/8" self tapping screw.
6. Install the bumper lights as shown on parts page P13.
7. Connect the leads from the wiring harness to the truck wiring as shown on parts page P14.
For 4-Wire systems: If truck has 5-Wire system, do not tie the Stop Light and Turn Light together. Instead, tie both the Left Hand and Right Hand Stop Light wires together.
8. Back-Up Alarm.
 - i. To install the back-up alarm, run the white and blue leads with bullet sockets through the left side cover plate. Install the cover plate with four (4) 3/8" self-tapping screws. (See drawing on parts section page P13)
 - j. Attach the back-up alarm to the cover plate with two (2) 3/8" self-tapping screws.
 - k. Connect the white wire to the (-) terminal on the alarm, and the blue wire to the (+) terminal.
 - l. Install the "Alarm Must Sound" decal in the cab in FULL VIEW of the operator.

IMPORTANT: THE BACK-UP ALARM SHOULD SOUND WHEN THE BACK-UP LIGHTS ARE ON.

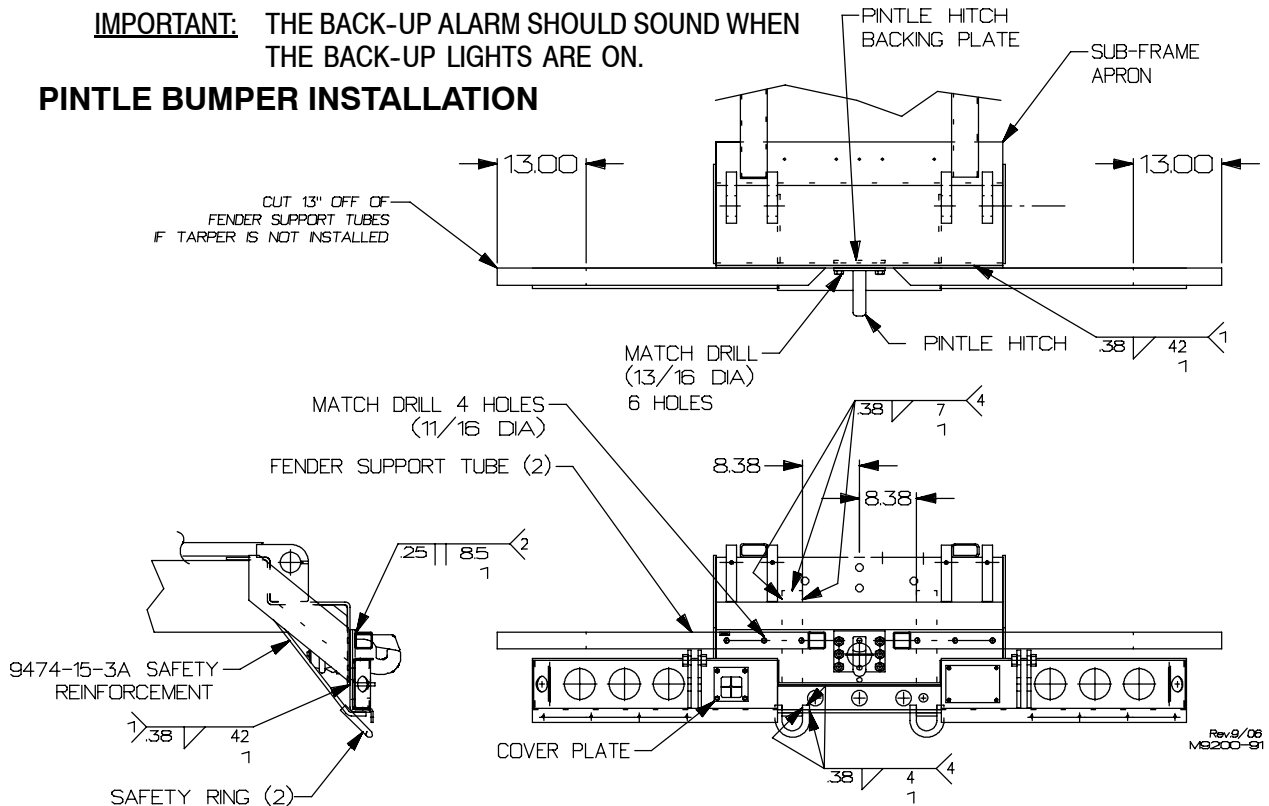
Pintle Bumper Installation

1. Unbolt the pintle hitch from the bumper.
2. Position the bumper weldment over the hoist apron and center.
3. Make sure bumper is level and tack weld into position.
4. Match drill all fender and pintle mounting holes through the hoist apron.
5. Bolt pintle hitch back onto bumper, position 9474-0-2 backing plate inside apron and tighten.
6. Weld bumper on per weld call-out shown.
7. Position and weld the reinforcement straps as shown.
8. Position and weld the safety chain rings as shown.
9. Install bumper components and wire per parts pages P13 and P14.
10. BACK-UP ALARM:
 - a. To install the back-up alarm, run the white and blue leads with bullet sockets through the left side cover plate. Install the cover plate with four (4) 3/8" self-tapping screws. (See drawing on parts section page P13)

- b. Attach the back-up alarm to the cover plate with two (2) 3/8" self-tapping screws.
 - c. Connect the white wire to the (-) terminal on the alarm, and the blue wire to the (+) terminal.
 - d. Install the "Alarm Must Sound" decal in the cab in FULL VIEW of the operator.
11. Check all light functions.

IMPORTANT: THE BACK-UP ALARM SHOULD SOUND WHEN THE BACK-UP LIGHTS ARE ON.

PINTLE BUMPER INSTALLATION



I.C.C. Bumper Installation - Refer to parts page P8 USE SACK #9274-60-0

1. Connect the bumper weldment to the hoist with two (2) 3/4NC x 7-1/2" Hex Bolts, Spacers, Flat Washers and Self Locking Nuts. It may be necessary to use flat washers between the bumper uprights and the hoist frame.
2. Connect the lower links between the pivot on the lighted bumper and the ICC bumper. Use a 3/4NC x 2" GD.5 Cap Screw, Spacer, Flat Washer and Self Locking Nut to attach each link to the lighted bumper. Use a 3/4NC x 4" GD.5 Cap Screw, Spacer, Flat Washer and Self Locking Nut to connect each link to the ICC bumper.
3. Torque nuts to specifications.
4. The ICC Bumper should fold up against or near the tail of the hoist as the unit is raised to the full-up position. If the ICC Bumper does not fold correctly, it will be necessary to add flat washers between the lighted bumper and the sub-frame apron. To tuck the ICC Bumper closer to the hoist frame, the flat washers must be installed on the upper lighted bumper mounting bolts. If the ICC contacts the hoist before the unit is completely raised, the flat washers should be installed on the lower lighted bumper mounting bolts.

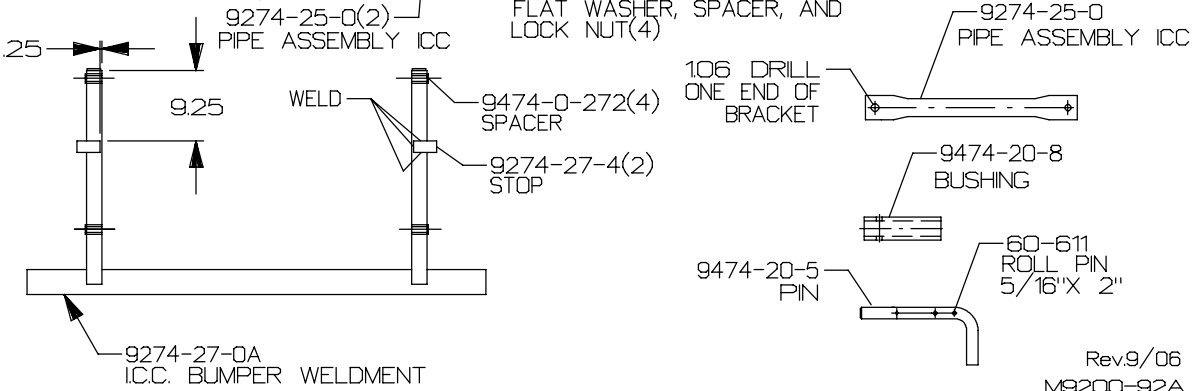
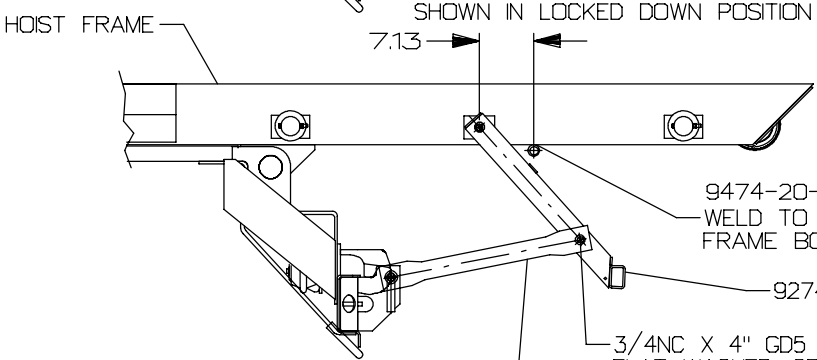
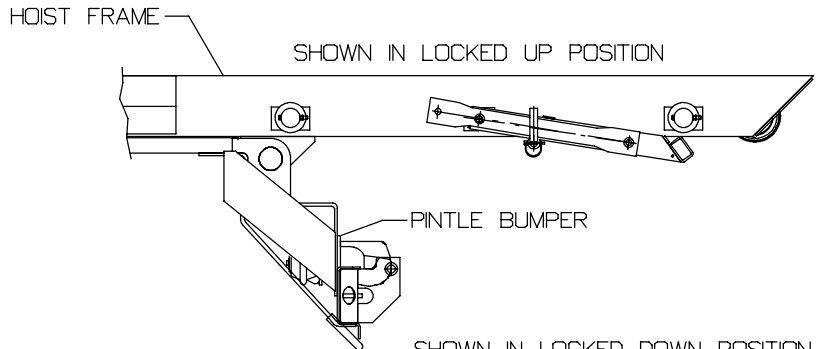
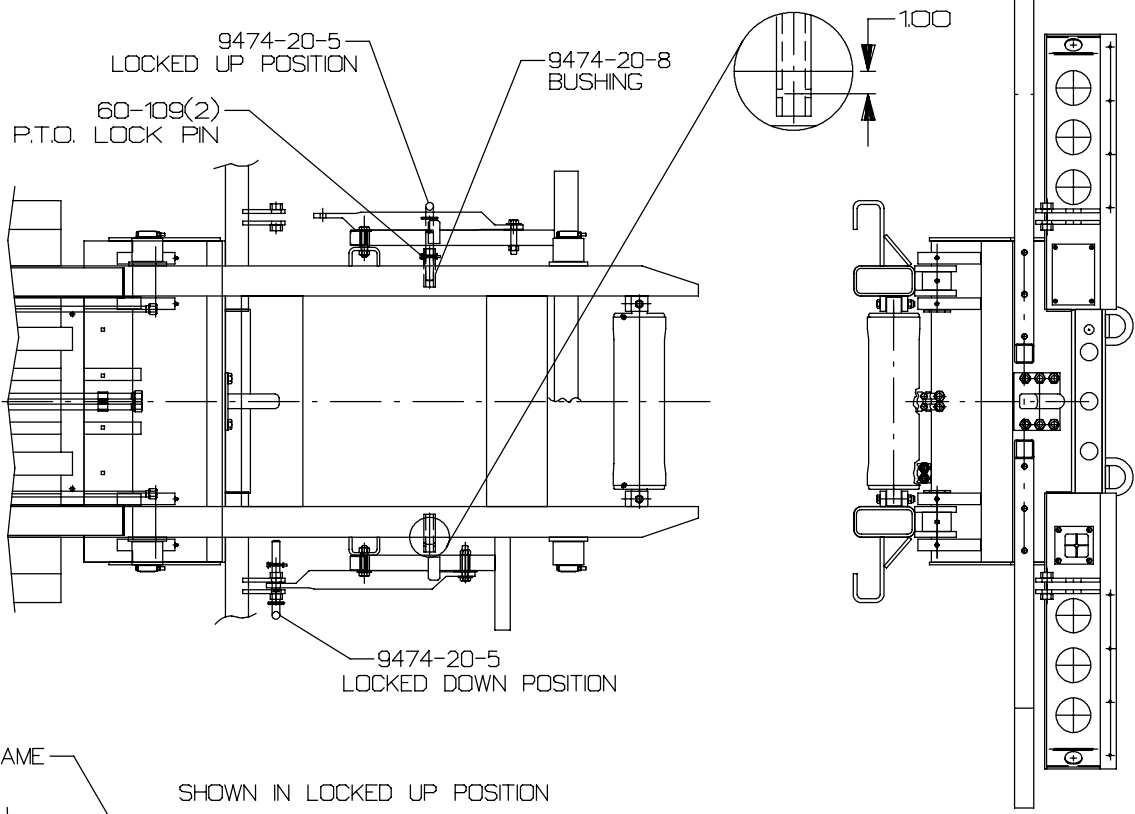
I.C.C. Bumper Installation (I.O.X) - Refer to parts page P8 USE SACK #9274-460-0

1. This I.C.C. bumper is mounted in the same manner as the OR or IO I.C.C. bumper.

Pintle I.C.C. Bumper Installation - Refer to page A12

1. Modify 9274-27-A bumper by adding 9474-15-6 bushings.
2. Attach 9274-27-0A bumper by existing holes in hoist frame.
3. Swing up and locate weld bushing 9474-15-8 to under side of hoist frame on both sides.
4. Swing bumper down and install 9474-15-7 with hardware as shown on installation page P8.
5. BUMPER MUST BE PINNED DOWN EXCEPT WHEN PULLING A PUP TRAILER. Pin bumper up when pup trailer is attached to eliminate any possible damage to bumper or trailer tongue.

PINTLE I.C.C. BUMPER INSTALLATION



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XIII. HOIST UP LIGHT - See pages P13 & P14

HOIST-UP LIGHT INSTALLATION INSTRUCTIONS

1. Read the Operating Section of the manual.

WARNING: Before working around a raised hoist, the hoist must be supported by the hoist props.

2. Position the mounting plate between the hoist sub-frame and the truck frame as shown.

3. Weld the mounting plate to the sub-frame with (4) .19 groove welds.

4. Mount the remote switch to the mounting plate with (3) 1/4NC x 1-1/4" Cap Screws and Hex Flange Nuts.

5. Pick a suitable location on the truck dash which is plainly visible to the operator for the "Hoist Up" warning light.

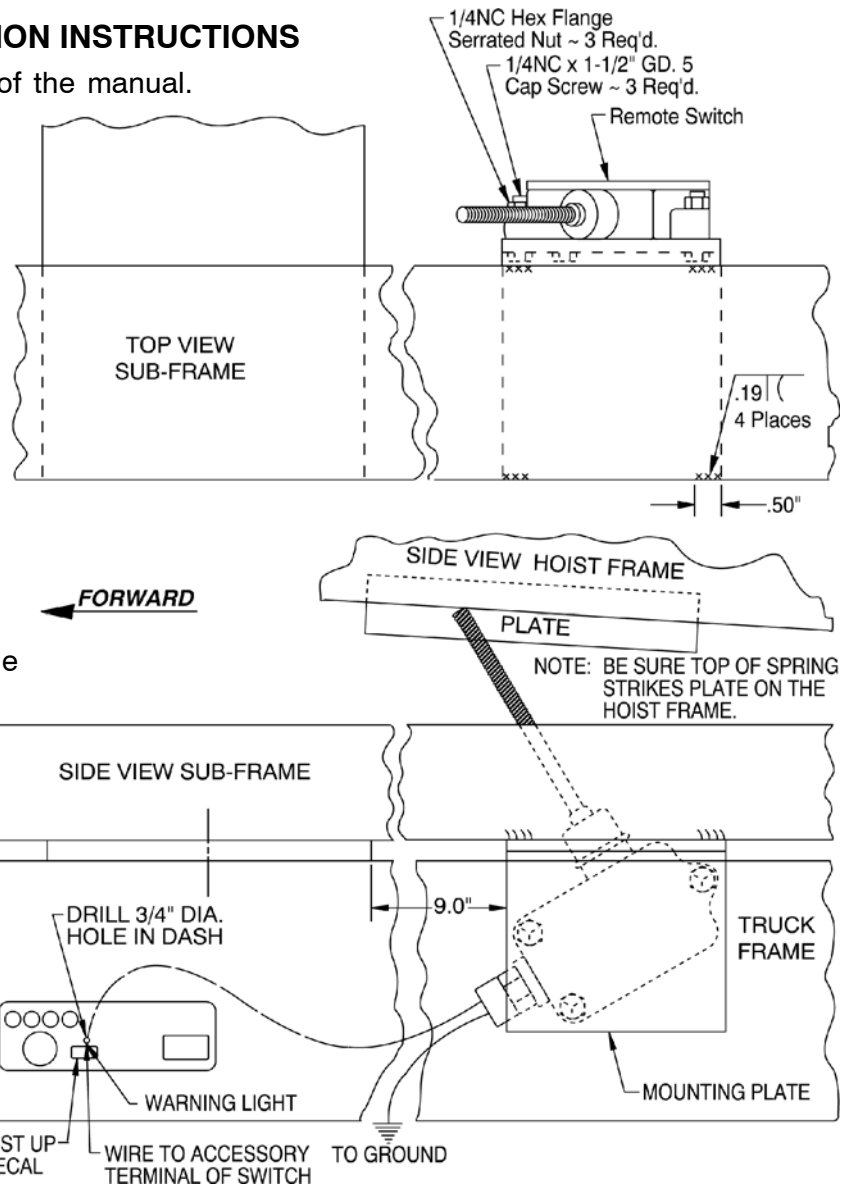
6. Drill a 3/4" Dia. hole for the light. The "Hoist Up" decal is to be located under or near the warning light. **Do not install light at this time.**

7. Two 16' long pigtails with bullet terminals are provided. The female bullet terminals will be used at the light. The male bullet terminals on the pigtail may be cut off if not used.

8. Connect the pigtail wires to the power source and ground per the wiring diagram on page P14.

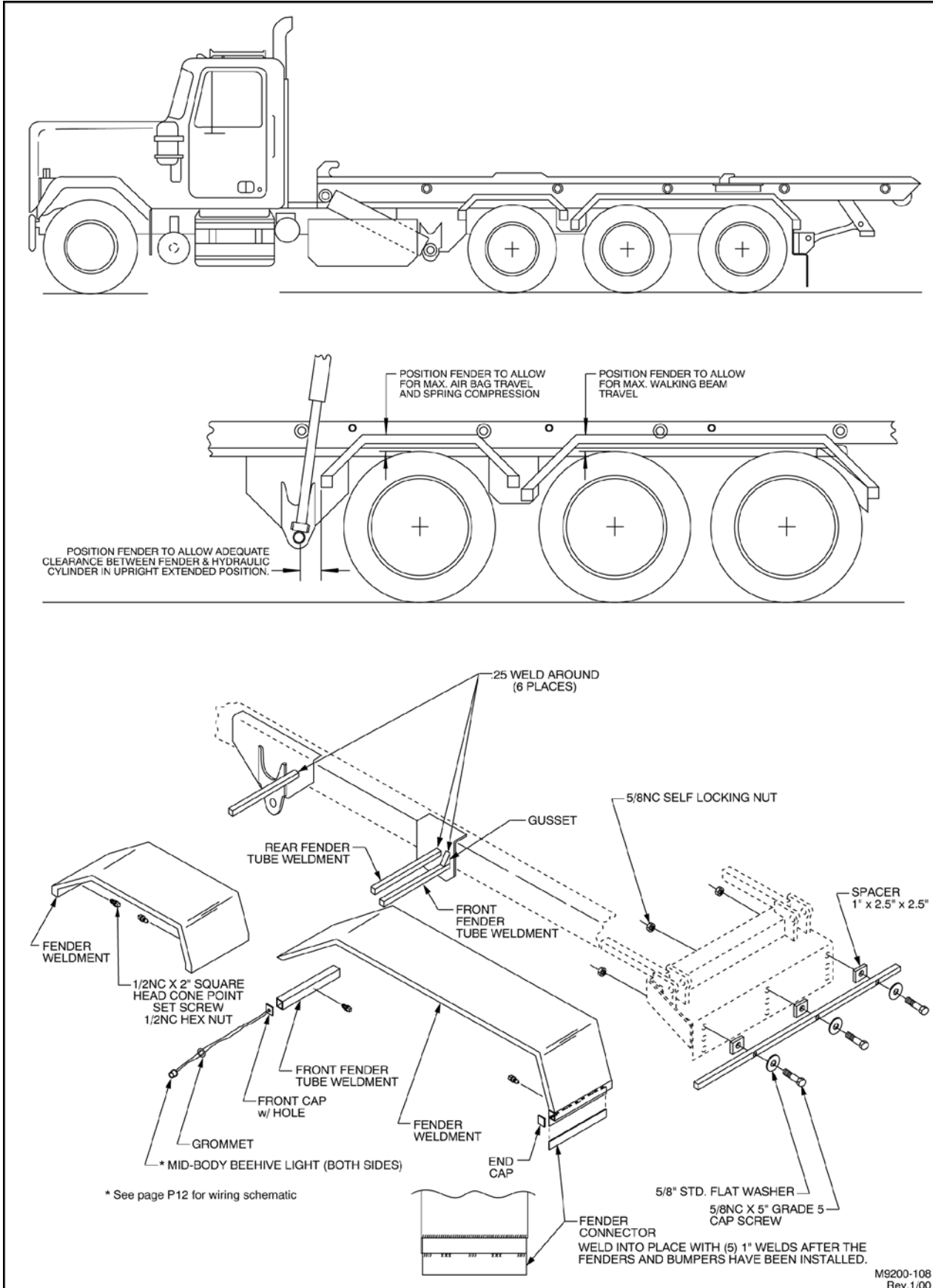
NOTE: the optional Air Control Tower also has a hoist-up light. Power wires from both lights can be "T" connected and ground wires can be "T" connected. Do not wire in series as if one light should fail, neither light would function.

9. **CAUTION:** The LED warning light is polarity sensitive. Connect the bullet terminals from the white ground wire of the light to the pigtail wire running to ground. Connect the bullet terminals from the colored wire of the light to the pigtail wire running to the power source. Verify the light works before proceeding.
10. Slide the rubber grommet off of the light base then push and seat the grommet into the drilled hole. The outside of the grommet should be flush with the mounting surface. Insert the light into the grommet by gently pressing in the light.
11. Raise the hoist and move the hoist prop to the storage position. Check that the "Hoist Up" warning light is on.
12. Lower the hoist and check that the warning light goes off. Check to be sure the spring on the remote switch is bent over evenly and not binding or rubbing on a rough hole.

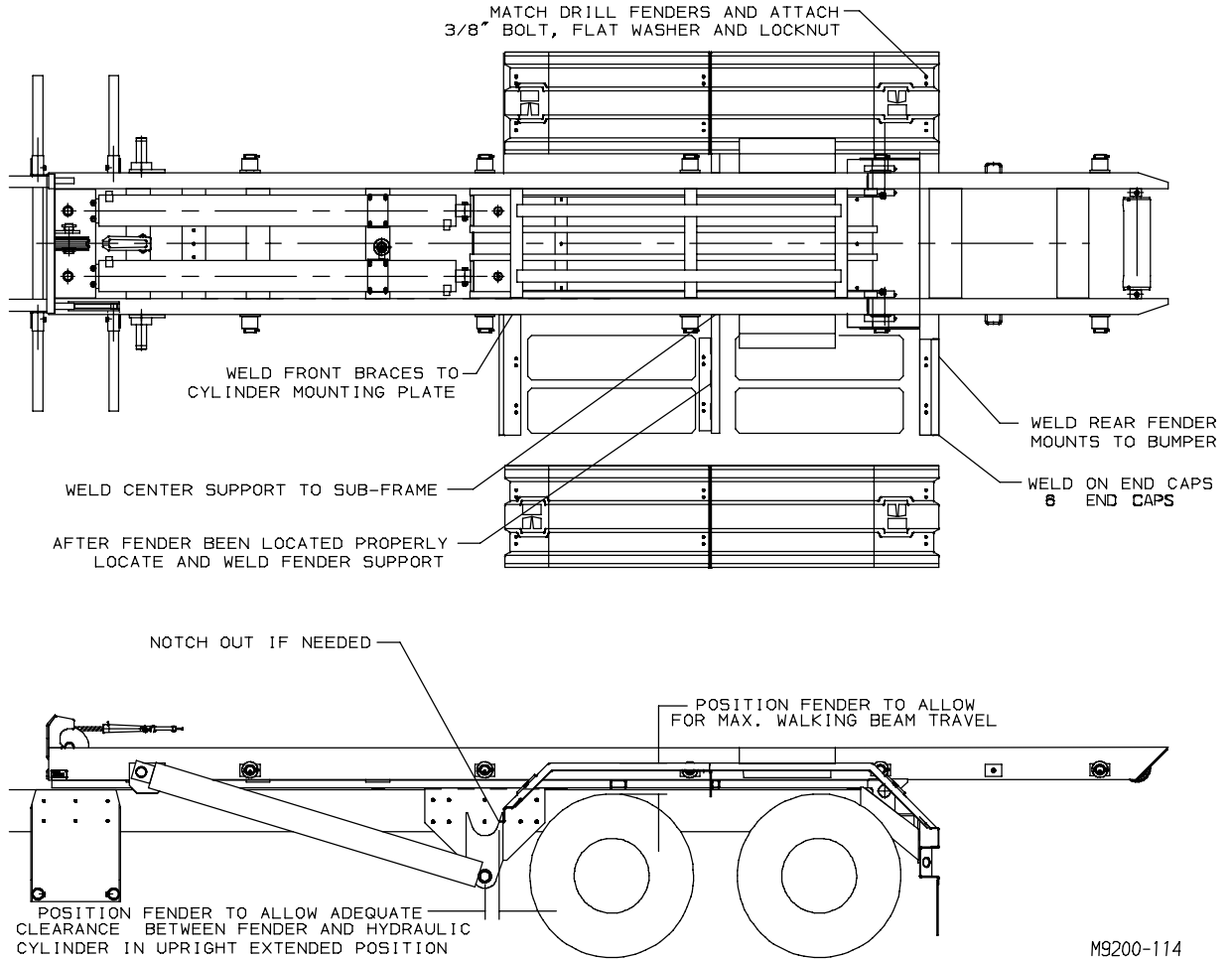


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XIV. STEEL TANDEM FENDER & TRI-AXLE FENDER INSTALLATION - REFER TO PARTS SECTION PAGES P16- P17



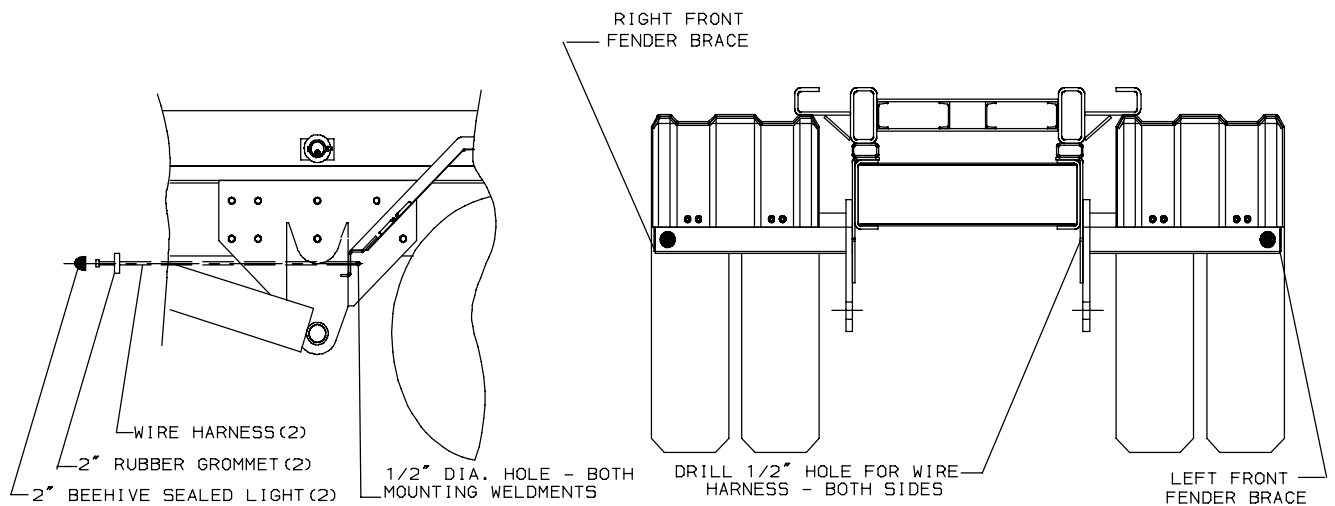
XV. PLASTIC TANDEM, TRI-AXLE FENDER INSTALLATION - REFER TO PARTS SECTION PAGES P18 & P19



M9200-114

XVI. MID-BODY LIGHTS

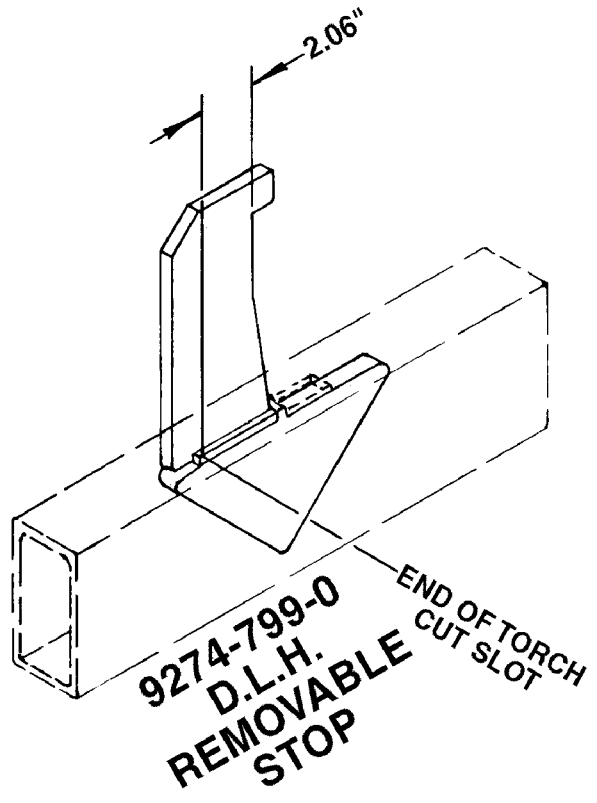
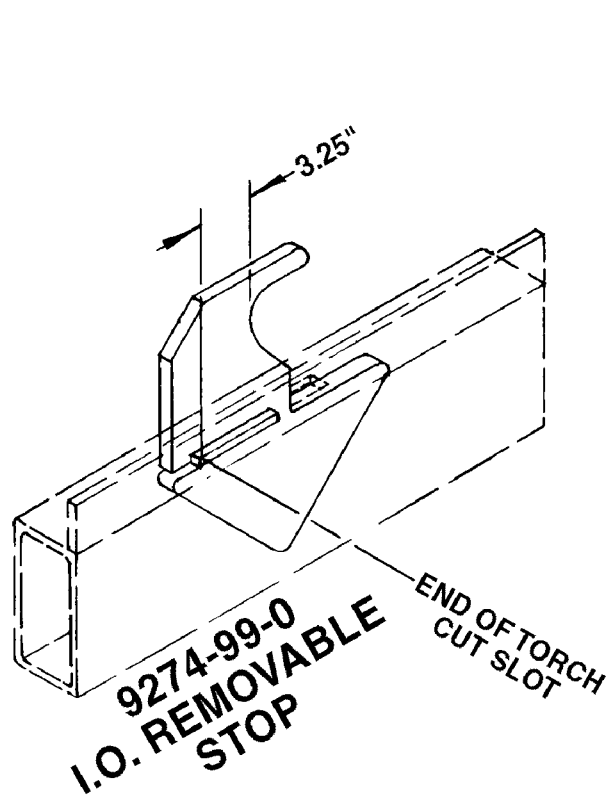
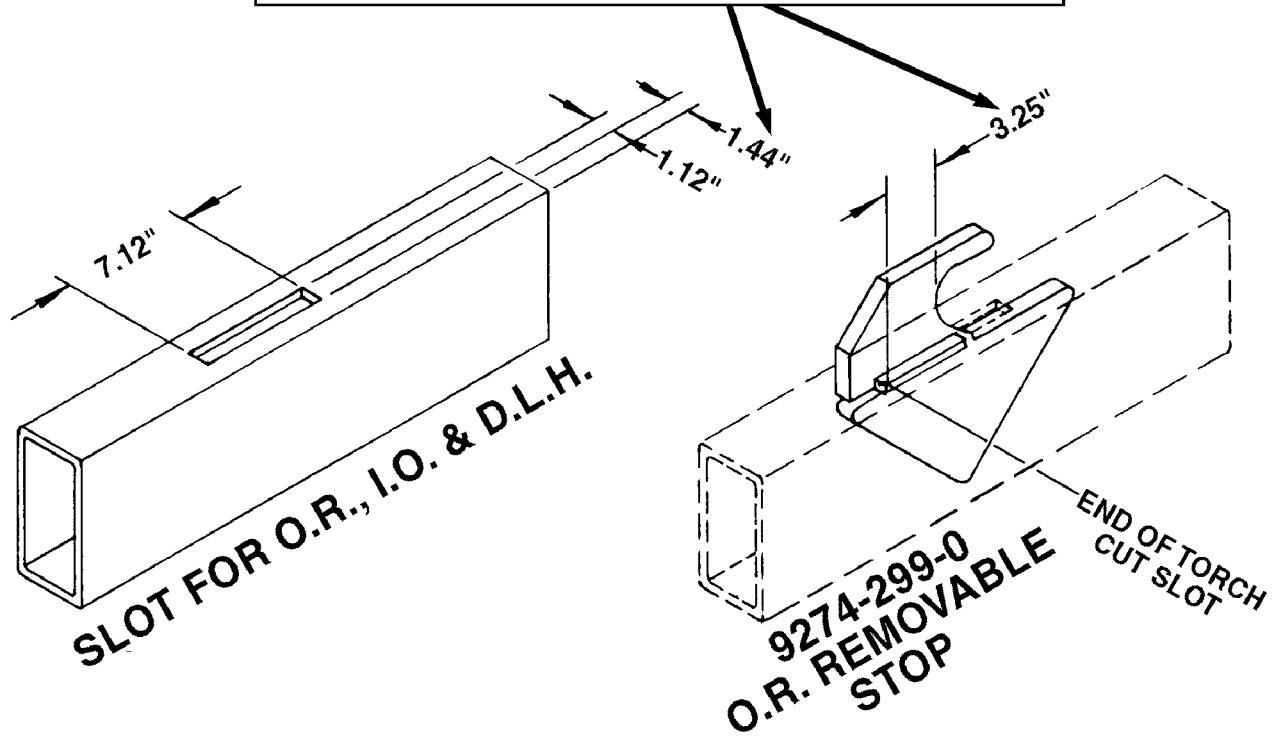
1. Mount Mid-Body lights as shown in illustration below.



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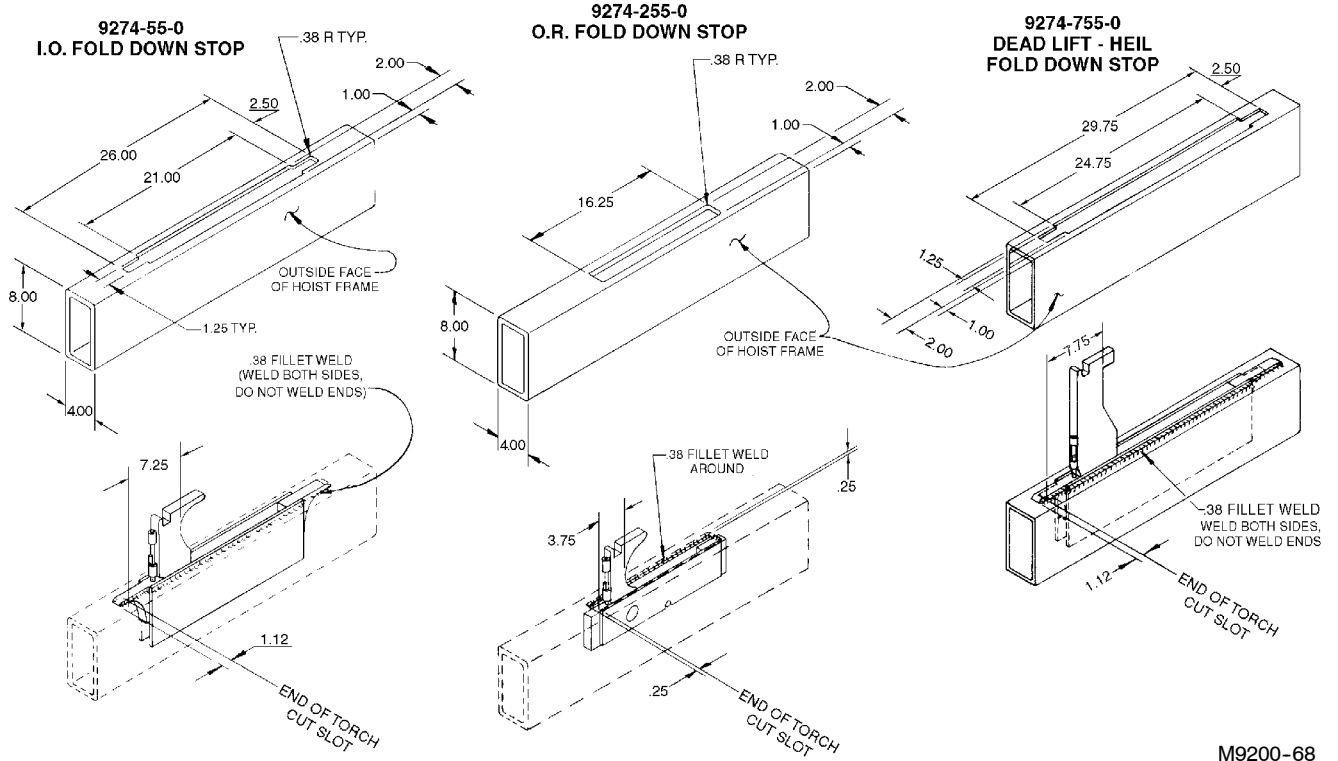
XVII. REMOVABLE STOP INSTALLATION

DIMENSIONS SHOWN ARE LOCATOR DIMENSIONS FOR 9274-299-0



XVIII. INTERMEDIATE STOP INSTALLATION

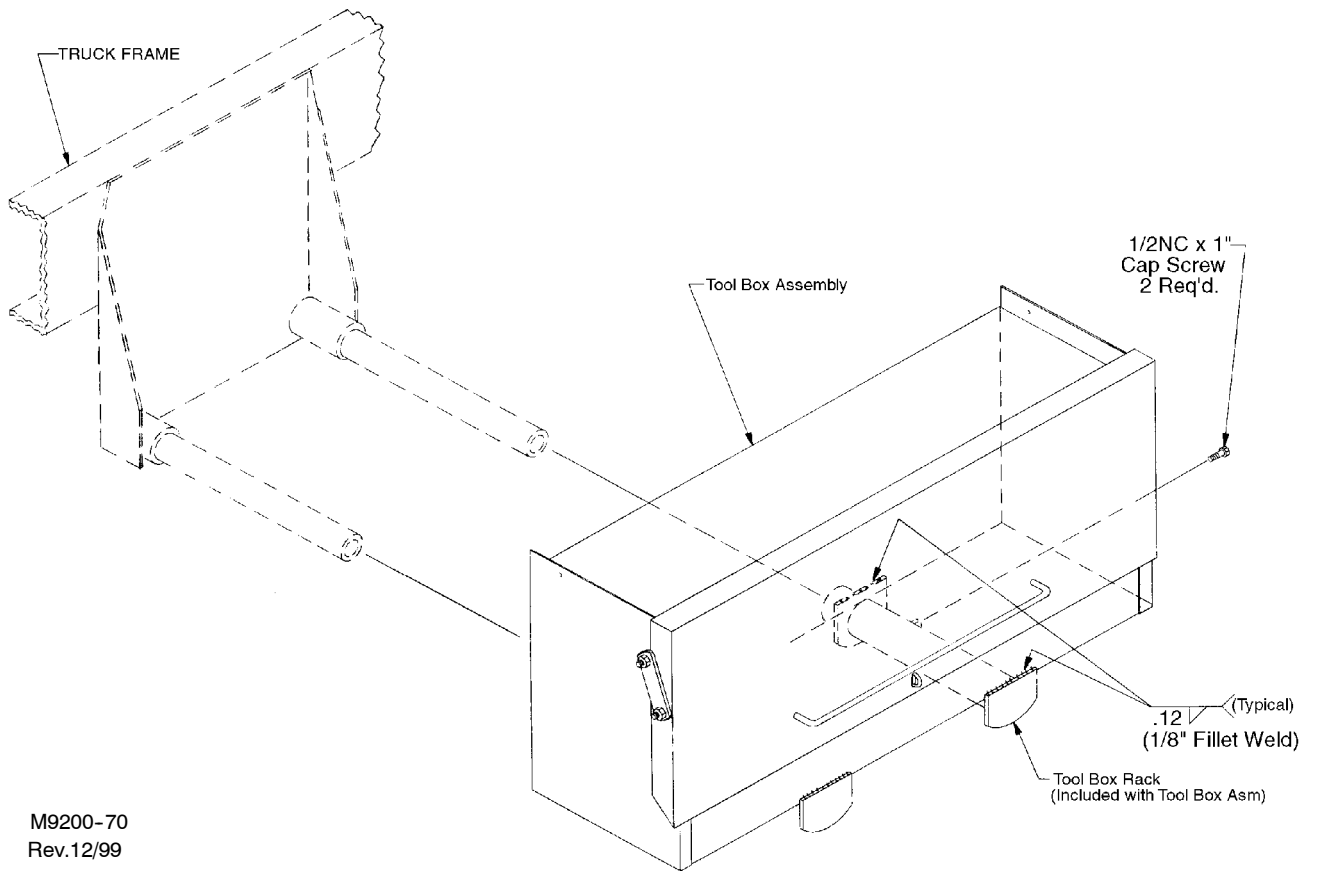
Fold-Down Stop Installation



M9200-68
 Rev. 12/89

XIX. ACCESSORIES

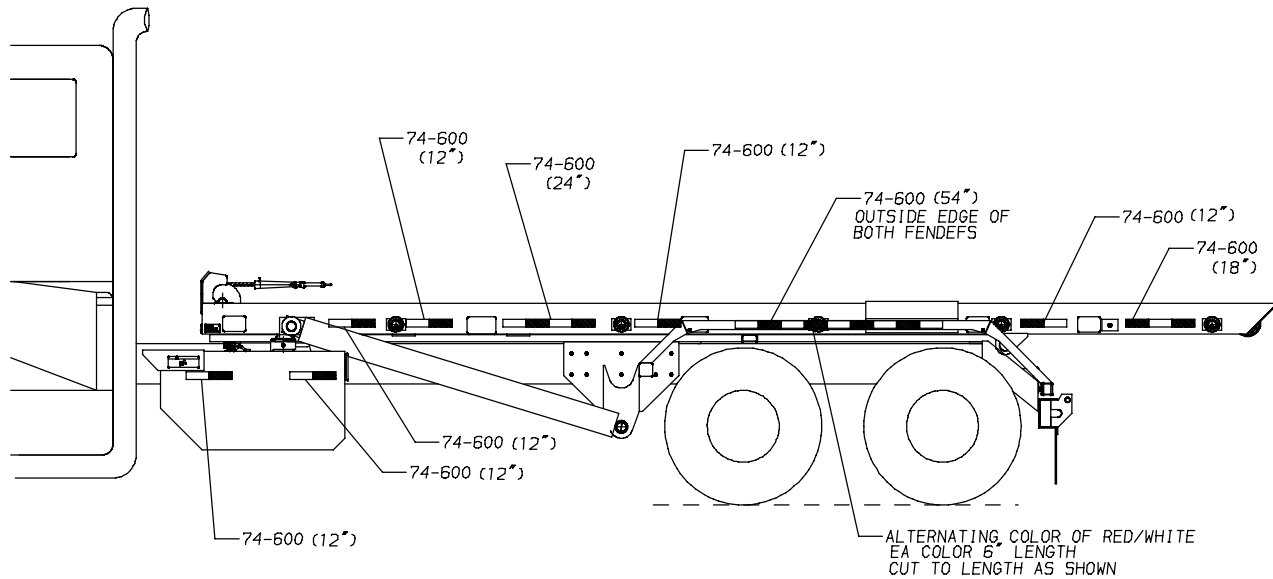
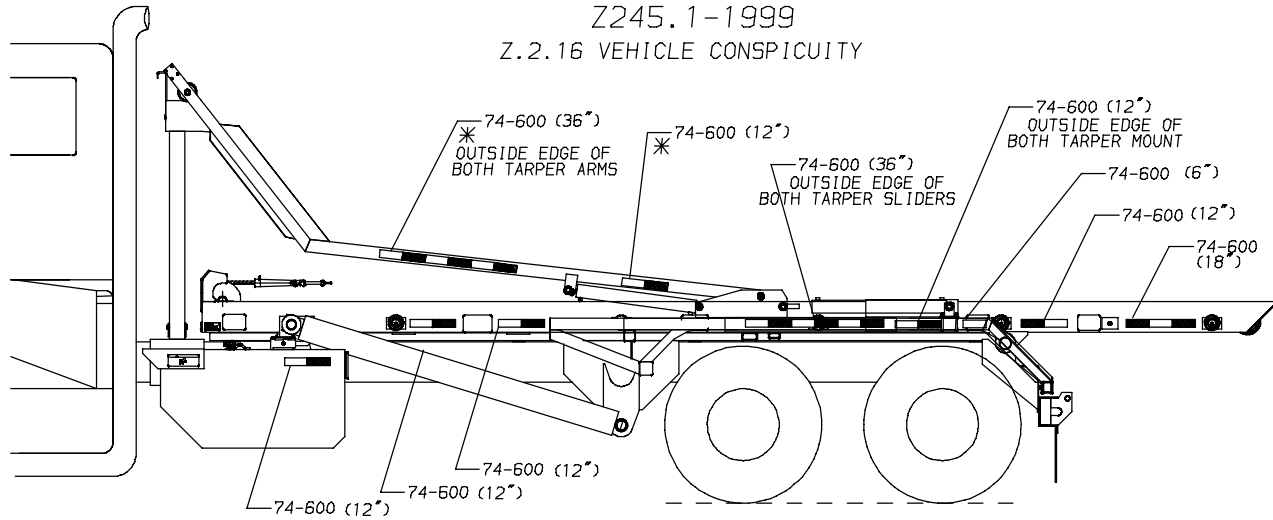
Toolbox Installation



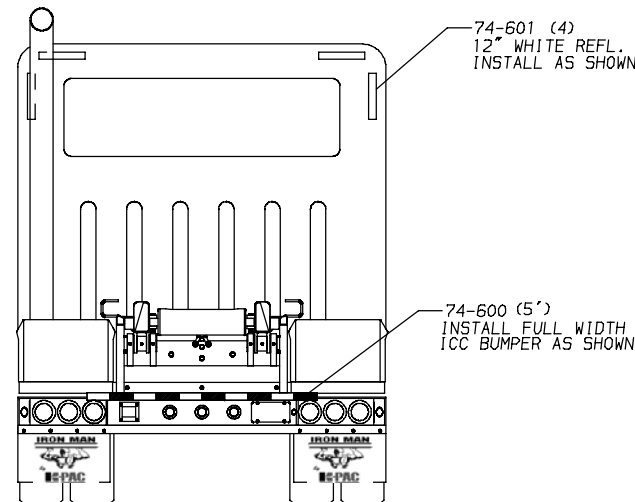
M9200-70
 Rev. 12/99

REFLECTIVE TAPE INSTALLATION

REF. ANSI STANDARD
Z245.1-1999
Z.2.16 VEHICLE CONSPICUITY



KP60/174 SHOWN
OTHER MODELS/SIZES
SIMILAR IN PLACEMENT



REFLECTIVE TAPE LOCATIONS AND LENGTHS ARE FOR REFERENCE,
YOUR REFLECTIVE TAPE LOCATION MAY DIFFER DUE TO EQUIPMENT OPTIONS.
REFLECTIVE TAPE TO COVER TRUCK CHASSIS OR HOIST FRAME,
PER ANSI STANDARD Z245-1-1999

Rev.8/06
M9200-119