

WARNING

IF INCORRECTLY USED, THIS EQUIPMENT CAN CAUSE SEVERE IN-JURY. THOSE WHO USE AND MAINTAIN THE EQUIPMENT SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ THE INSTALLATION INSTRUCTIONS AND THE OP-ERATOR'S MANUAL BEFORE ATTEMPTING TO SET UP, OPERATE, ADJUST OF SERVICE THE EQUIPMENT.

INTRODUCTION

This instruction manual contains installation procedures for the 1715, 1721, 1821 and 1824 HD series hoists.

UNPACKING

When you receive your hoist, make sure you have received all your parts by checking them against the following list. Parts marked with a "#" sign are shipped loose and are not in the kit-box.

TED73720-0386

IMPORTANT SAFETY NOTICE

Proper installation, service and repair are important to the safe, reliable operation of the DuraClass' products. Installation and service procedures recommended by DuraClass are decribed in this service manual and are effective for performing installation and service operations. Some of these operations may requilre the use of tools or blocking devices specially designed for the purpose. Special tools should be used when and as recommended. It is important to note that some warnings against the use of specific methods that can damage the product or render it unsafe are stated in this manual. It is also important to understand these warnings are not exhaustive. DuraClass could not possible know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, DuraClass has not undertaken any such broad evaluations. Accordingly, anyone who uses installation and service procedures or tools which are not recommended by DuraClass must first satisfy himself thoroughly that neither his safety nor the product safety will be jeopardized by the method he selects.

The information and specifications included in this publication were in effect at the time of approval for printing. The DuraClass, Tishomingo, MS, reserves the right, however, to discontinue or change specifications or design at any time without notice and without incurring any obligation whatsoever.

PARTS LIST

1715, 1721, 1821 AND 1824 HD

The following is a list of parts you should have received with your hoist kit. The list does not include accessory items or controls other than standard.

Part No.	Page No.	ltem No.	Description	1715	1715 LWB	1721	1821	1824 HD	Std Lever Control
003-2614	*		Bearing	-	-	-	-	-	4
008-7231	15	1	Drive Shaft	1	1	1	1	1	-
011-4049	14	1	Pump Bracket	1	1	1	1	1	-
013-1422	*		Valve Control Lever	-	-	-	-	-	1
013-4278	*		PTO Control Lever	-	-	-	-	-	1
015-2566	11	1	Frame Extension Spacer	2	2	2	2	2	-
015-2567	12	1	Frame Extension Spacer	-	-	-	-	2	-
027-3687	16	12	Control Rod	-	-	-	-	-	2
030-488	15	2	Slip U-joint	1	1	1	1	-	-
030-529	15	3	PTO U-joint	1	1	1	1	-	-
030-542	15	3	PTO U-joint	-	-	-	-	1	-
030-543	15	2	Slip U-joint	-	-	-	-	1	-
032-1020	*		Rod End	-	-	-	-	-	4
034-8956	13	6	Hold-Down Plate	-	-	2	2	2	-
034-9394	*		Brg. Mtg. Plate	-	-	-	-	-	2
047-1088	15	4	Set Screw	3	3	3	3	3	-
048-1254	27	1	Link Pin, 1-7/16 In	2	2	-	-	-	-
048-1326	27	1	Link Pin, 2-1/4 In	-	-	-	-	2	-
048-1604	27	1	Link Pin, 1-3/4 In	-	-	2	2	-	-
053-1379	*		Latch Assy.	-	-	-	-	-	1
057-426-60	*		1-1/4 In. Suction Hose	-	-	-	1	1	-
057-445-60	23	8	1 In. Suction Hose	-	1	-	-	-	-
057-1853-54	24	4	3/4 In. Pressure Hose	-	-	-	1	-	-
057-1854-54	23	3	1/2 In. Pressure Hose	-	1	-	-	-	-
057-519-30	22	2	1/2 In. Pressure Hose	1	-	1	-	-	-
057-1424-48	22	5	1 In. Pressure Hose	1	-	1	-	-	-
057-1848-7	23	4	1/2 In. Hose Coupling	-	1	-	-	-	-
057-1848-8	*		3/4 In. Hose Coupling	-	-	-	1	1	-

MODEL/QTY.

NOTE: Dash number following hose part number indicates length of hose in inches.. * As indicated in instructions.

PARTS LIST (CONT.)

MODEL/QTY.

				MODEL/QTY.						
Part No.	Page No.	ltem No.	Description	1715	1715 LWB	1721	1821	1824 HD	Std Lever Control	
058-2468-3	23	9	1 In. Pipe Fitting L.P.	-	1	-	-	-	-	
058-2468-4	*		1-1/4 In,. Pipe Fitting L.P	-	-	-	1	1	-	
070-765	*		Valve Control Handle	-	-	-	-	-	2	
070-1230	*		Handle	-	-	-	-	-	1	
070-1231	*		Handle	-	-	-	-	-	1	
074-2216-3	23	10	L.P. Clamp Half 1 In	-	2	-	-	-	-	
074-3059-4	*		L.P. Clamp Half 1-1/4 In	-	-	-	2	2	-	
074-3059-4	23	2	1/2 In. Adapter Union	-	1	-	-	-	-	
074-3059-5	*		3/4 In. Adapter Union	-	-	-	1	1	-	
074-3059-6	23	7	1 In. Adapter Union	-	1	-	-	-	-	
074-3059-7	*		1-1/4 In. Adapter Union	-	-	-	1	1	-	
080-1258	*		Stop, Support Leg	2	2	2	2	2	-	
108-1180	34	8	Connector	1	1	1	1	1	-	
108-3991	35	1	Back-Up Alarm	1	1	1	1	1	1	
111-8339			Lock Bracket	-	-	-	-	-	1	
111-8344	13	1	Frame Hold-Down	4	4	4	4	4	-	
115-784	34	5	Indicator	1	1	1	1	1	-	
211-2104	11 & 12	2	Tie Down	2	2	-	2	2	-	
211-2191	34	1	Bracket	1	1	1	1	1	-	
211-3184	33	1	Bracket	2	2	2	2	2	-	
219-1569	14	4	Hyd. Pump & Valve Assy	-	-	-	-	1	-	
219-1425	14	4	Hyd. Pump & Valve Assy	1	1	1	-	-	-	
219-1426	14	4	Hyd. Pump & Valve Assy	-	-	-	1	-	-	
#239-439			Hoist Assy.	1	1	-	-	-	-	
#239-666			Hoist Assy.	-	-	1	-	-	-	
#239-667			Hoist Assy.	-	-	-	1	-	-	
#239-725			Hoist Assy.	-	-	-	-	1	-	
254-3481	33	4	Switch	1	1	1	1	1	-	
263-41	15	6	16 ga. Wire x 16 In. Long	1	1	1	1	1	-	
263-66-144	*		Wire	1	1	1	1	1	-	
263-64-60	34	7	Wire	1	1	1	1	1	-	
263-67-6	33	7	Wire	1	1	1	1	1	-	
272-1690			Hoist Manual Kit	1	1	1	1	-	-	
272-2216	*		Body Raised Indicator Kit	1	1	1	1	1	-	
272-2362	35		Alarm Hardware	1	1	1	1	1	1	
304-67	11 & 12	3	Front Crossmember	1	1	-	1	1	-	
FS-070-720			Hex. Hd. Capscrew 1/4-20 NC x 1	-	-	-	-	-	4	
FS-070-826	23	11	Hex. Hd. Capscrew 5/16-18 NC x 1-3/4	-	2	-	-	-	_	
FS-070-924	*		Hex. Hd. Capscrew3/8-16 NC x 1-1/2	2	2	2	2	2	2	

Shipped loose - not in kit box. * As indicated in instructions.

PARTS LIST (CONT.)

				MODEL/QTY.						
Part No.	Page No.	ltem No.	Description	1715	1715 LWB	1721	1821	1824 HD	Std Lever Control	
FS-070-930	*		Hex Hd. Capscrew 3/8-16 NC x 2	-	-	-	2	2	-	
FS-071-144	*		Hex Hd. Capscrew 1/2-13 NC x 3-1/2	2	2	2	2	2	-	
FS-071-324	14	5	Hex Hd. Capscrew 5/8-11 NC x 1-1/2	-	-	-	-	2	-	
FS-071-330	*		Hex Hd. Capscrew 5/8-11 NC x 2	18	18	24	28	24	-	
FS-079-409	33	5	Hex Hd. Capscrew #10-32 NC x 3/8"	2	2	2	2	2	-	
FS-079-415	34	2	Hex Hd. Capscrew #10-32 NC x 3/4"	2	2	2	2	2	-	
FS-190-400	15	5	Grease Fitting 1/8 Str	1	1	1	1	1	-	
FS-230-700	*		Self-lock Nut 1/4-20 NC	-	-	-	-	-	4	
FS-230-800	23	12	Self-lock Nut 5/16-18 NC	-	2	-	-	-	-	
FS-230-900	*		Self-lock Nut 3/8-16 NC	2	2	2	4	4	2	
FS-231-100	27	3	Self-lock Nut 1/2-13 NC	2	2	2	2	2	-	
FS-231-301	*		Self-lock Nut 5/8-11 NC	18	18	26	28	24	-	
FS-280-400	34	4	Hex Nut #10-32	2	2	2	2	2	-	
FS-291-100	*		Jam Nut 1/2-13 NC	-	-	-	-	-	4	
FS-340-212	*		Cotter Pin 3/32 x 3/4	-	-	-	-	-	4	
FS-510-700	*		Flat Washer 1/4	-	-	-	-	-	4	
FS-510-900	*		Flat Washer 3/8	-	-	-	-	-	6	
FS-541-300	14	6	Lock Washer 5/8	-	-	-	-	2	-	
FS-550-400	*		Lock Washer #10	4	4	4	4	4	-	
FS-592-211	*		Red. Bush 1-1/4 x 1/2 NPT .	1	1	1	-	-	-	
FS-592-215	*		Red. Bush 1-1/4 x 3/4 NPT .	-	-	-	1	1	-	
FS-592-220	*		Red. Bush 1-1/4 x 1 NPT	1	1	1	-	-	-	
FS-592-422	25	12	Red. Bush 1-1/2 x 1-1/4 NPT	-	-	-	-	1	-	
FS-601-511			Red. Bush 3/4 x 1/2 NPT	1	1	1	-	-	-	
FS-822-000			Street Elbow 1 NPT x 90°	1	1	1	1	1	-	
FS-822-200			Street Elbow LP. 1-1/4 NPT x 90°	-	-	-	1	1	-	

MODEL/QTY

Shipped loose - not in kit box. * As indicated in instructions.

BASIC DIMENSIONS

Basic dimensions of the hoists are shown in figures 1, 1A, 1B and 1C.

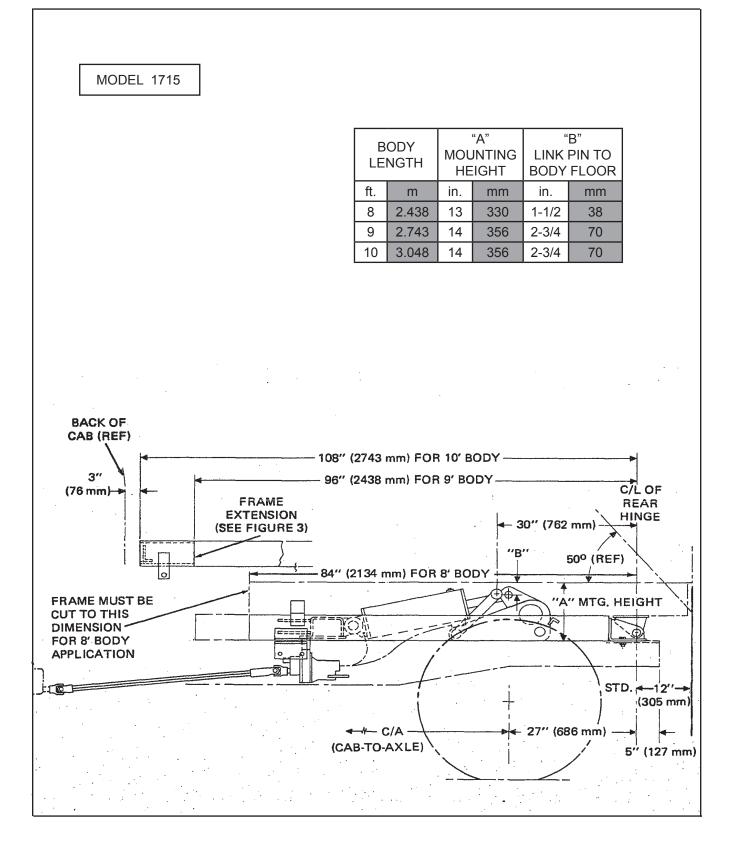


Figure 1. Model 1715 Basic Dimensions

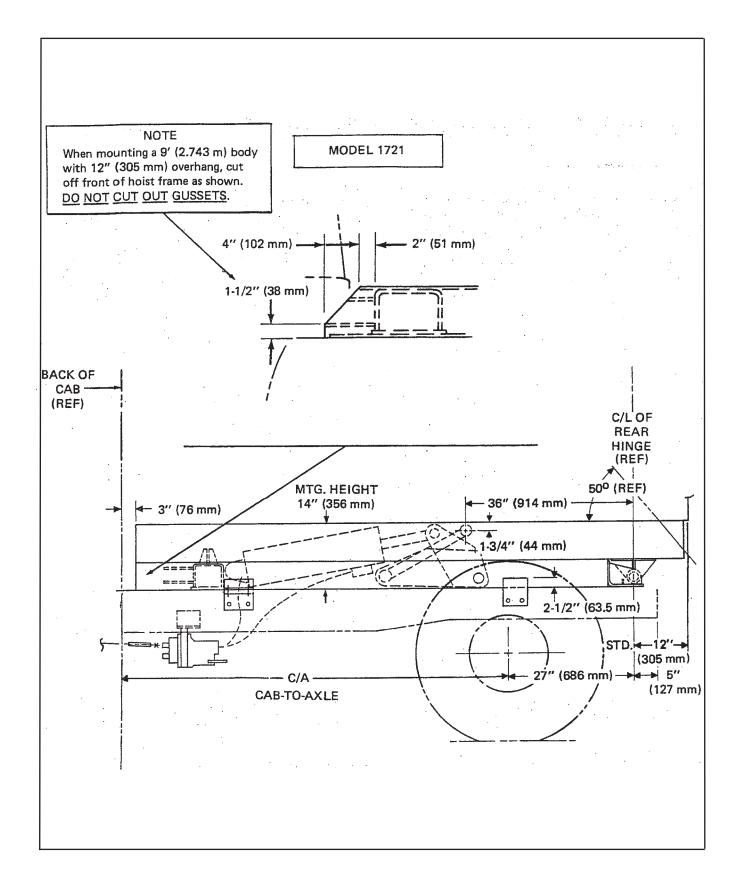


Figure 1A. Model 1721 Basic Dimensions

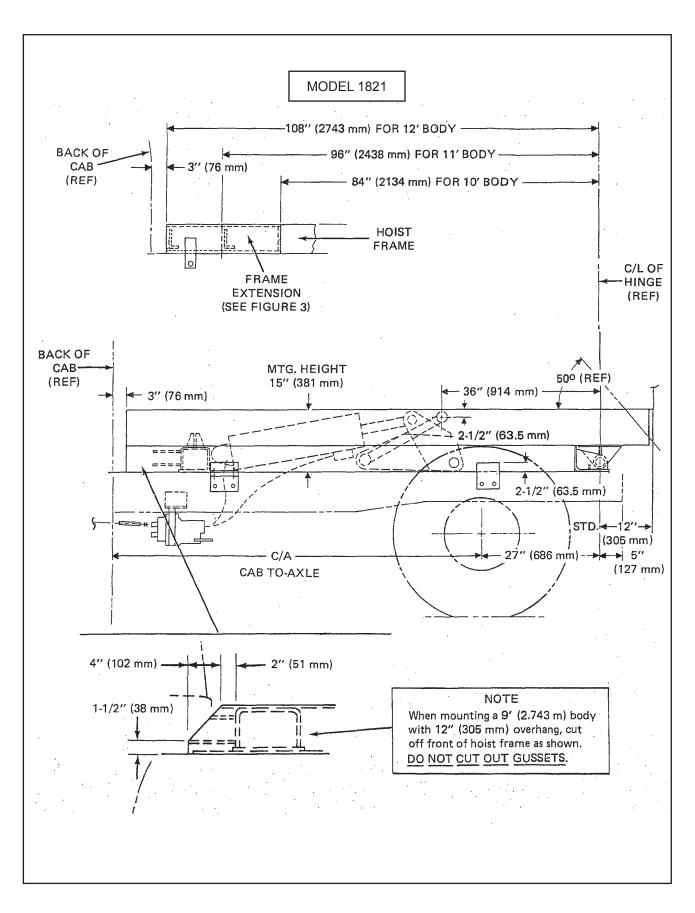


Figure 1B. Model 1821 Basic Dimensions

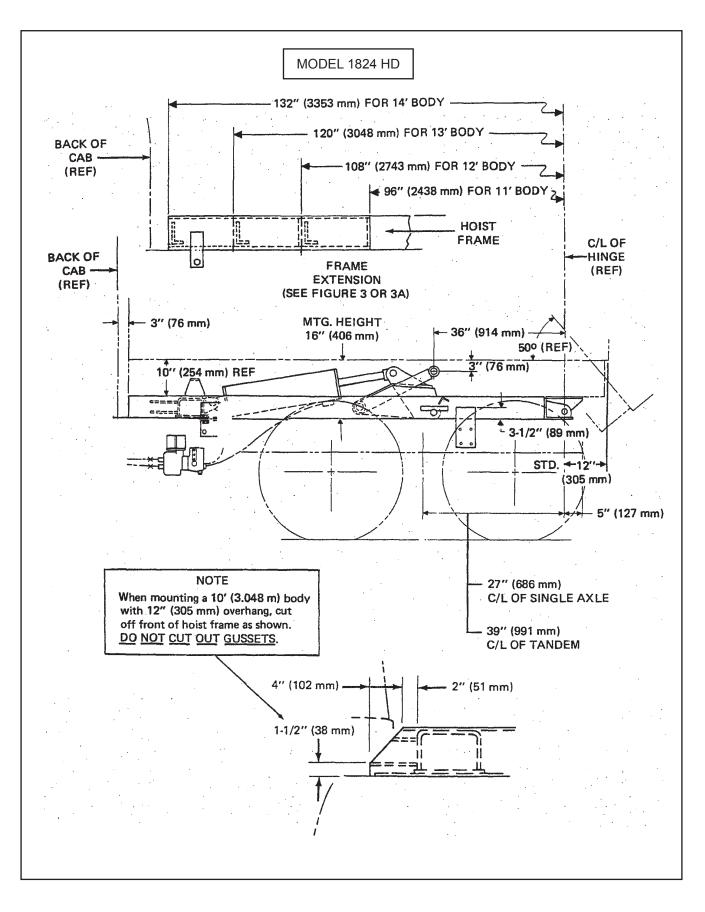
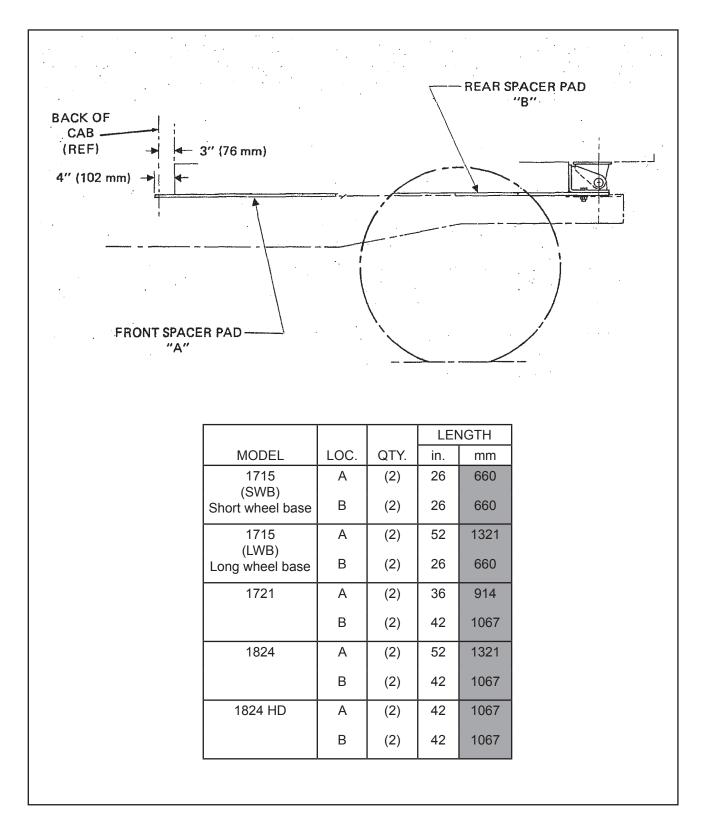


Figure 1C. Model 1824 HD Basic Dimensions

SPACER PADS

When chassis has rivet heads protruding above the chassis frame, spacer pads 3/8" x 2-1/2" H.R.S. (not furnished with hoist) must be used. Temporarily locate front and rear pads on chassis rails as shown in figure 2 and mark them for rivet head interference. Remove pads and drill clearance holes for rivet heads. Place spacer pads on chassis rails. Spacer pads must support hoist frame at rear hings, torque arm pivot shaft and cylinder base trunnion crossmember.



HOIST

The front end of the hoist frame must be flush with the dump body and 3" (76 mm) behind the cab. Add frame extensions or cut off hoist frame as necessary. Refer to either figure 1A, 1B or 1C for frame cut off dimensions or to figure 3 or 3A if frame extensions are required.

WELD NOTE

ALL WELDING DONE IN THE MOUNTING OF THE HOIST AND BODY SHOULD BE PERFORMED USING ONLY THE FOLLOWING RECOMMENDED WELD ELECTRODE AND WIRE.

ELECTRODE -- E-7018 (THIS IS A LOW HYDROGEN ROD, AND MANUFACTURER'S RECOM-MENDATIONS MUST BE FOLLOWED.

WIRE -- E-70S-3 (WIRE MANUFACTURER'S RECOMMENDATIONS MUSST BE FOLLOWED.)

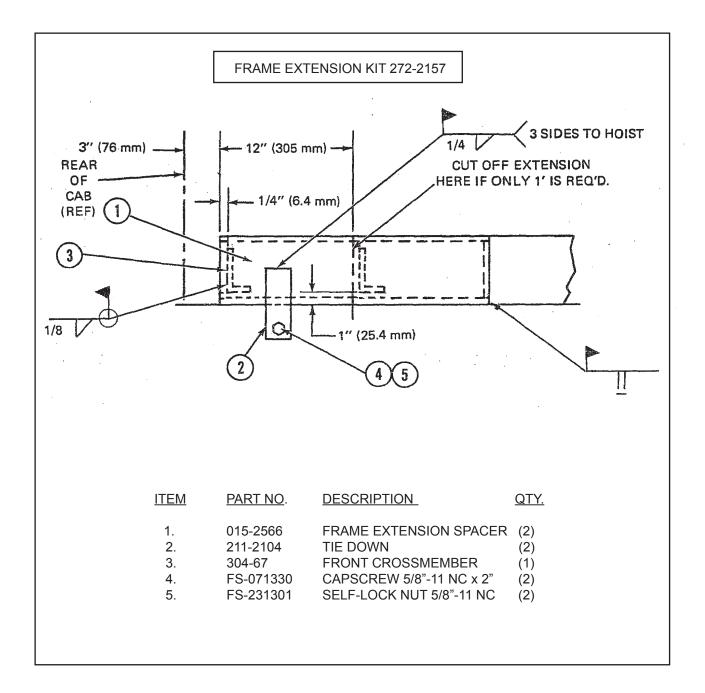


Figure 3. 2' Frame Extension

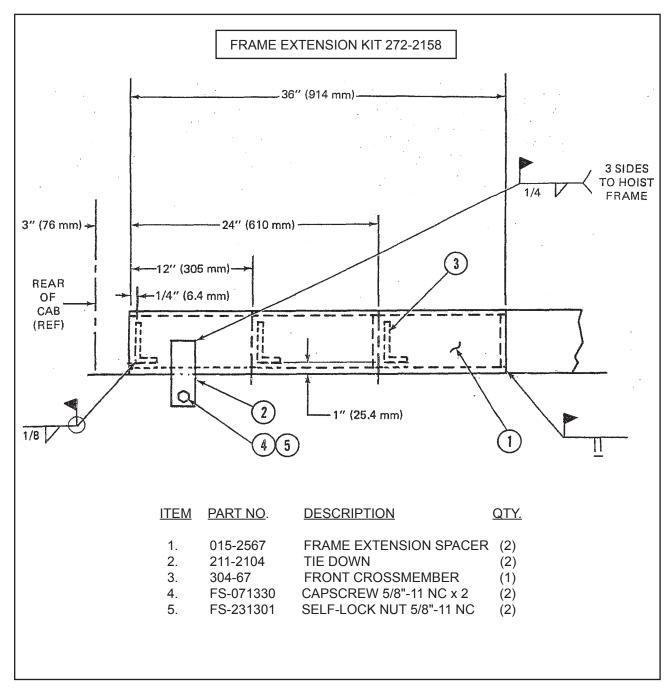


Figure 3A. 3' Frame Extension

Locate hoist assembly so that is square on the chassis and so that the hinge centerline is properly located back of the axle (see figure 1, 1A, 1B or 1C). Drill holes in top of chassis rail at rear for a snug fit of bolt, using hole in rear apron of hoist frame as a guide. Locate front and intermediate hold-downs (Model 1715 does not have intermediate hold-downs, see figure 1) and drill holes in chassis for snug fit of bolts, using holes in hold-down as guide.

Weld hold-downs to hoist frame as shown in figure 4. DO NOT weld to chassis frame.

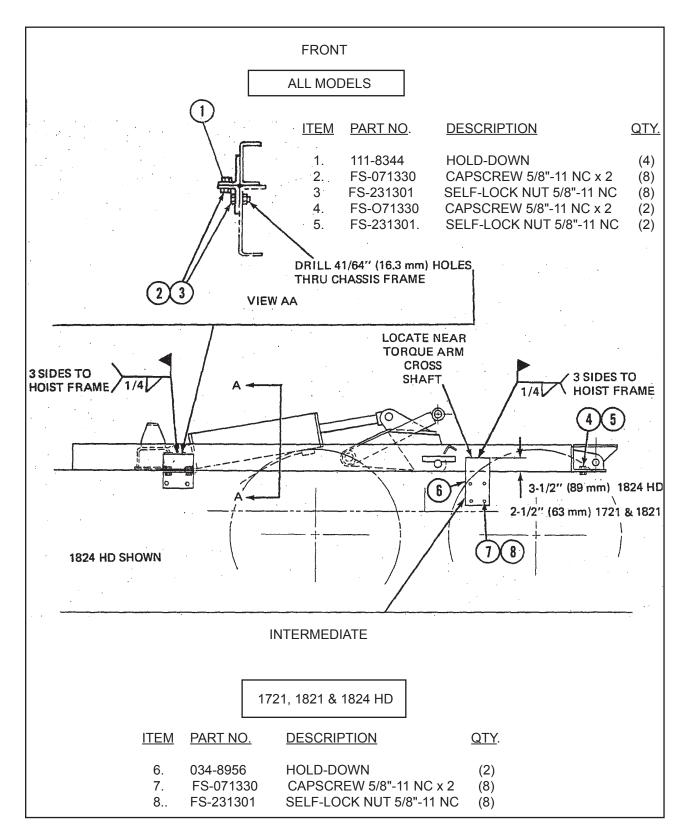


Figure 4. Hoist Frame Hold-Downs

When spacer pads are usedd skip weld (3/16" (4.8 mm) fillet x 2" (51 mm) long at 12" (305 mm) centers) spacer pads to hoist frame. DO NOT weld on truck chasis.

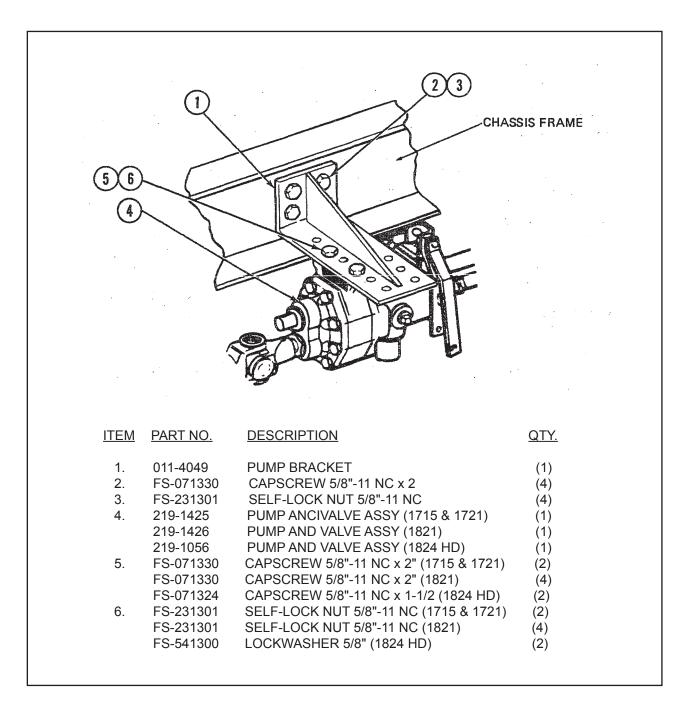
Cut off end of chassis frame 5" (127 mm) from hinge cernterlines. See figure 1, 1A, 1B or 1C.

POWER TAKE-OFF, PUMP AND DRIVE LINE

Select the correct Power Take-Off to match truck tansmission. The PTO output shaft speed should range from 800 rpm to maximum of 1000 rpm (1800 rpm to maximum of 2000 rpm 1824 HD) to provide satisfactory hoist performance. Mount PTO according to manufacturer's recommendation.

Mount pump in a convenient location in the chassis so that it and connecting hoses are as far away from the muffler and exhaust tube as possible, providing a minimum clearance of 1-1/2" (38 mm) and so that the drive line is as short as possible. In any case, the centerline to centerline of universal joints for a 2-joint, 1-shaft drive is not to exceed 42" (1066 mm) and the centerline to centerline of front and rear joints for a 3-joint, 2-shaft drive line is not exceed 64" (1625 mm) with a 1715 hoist on a 72" (1828 mm) cab-axle chassis or 74" (1879 mm) on an 84" (2134 mm) cab-axle chassis.

Drill four 41/64" (16.3 mm) holes in chassis rail to mount pump bracket, using holes in bracket as a guide. Bolt bracket and pump in place. See figure 5.



Cut drive shaft to the proper length to have maximum engagement in universal joints. Hand grease end of drive shaft and slip joint and install drive line. Install set screws and lock wire each, and install grease fitting in slip joint. See figure 6 for installation recommendations.

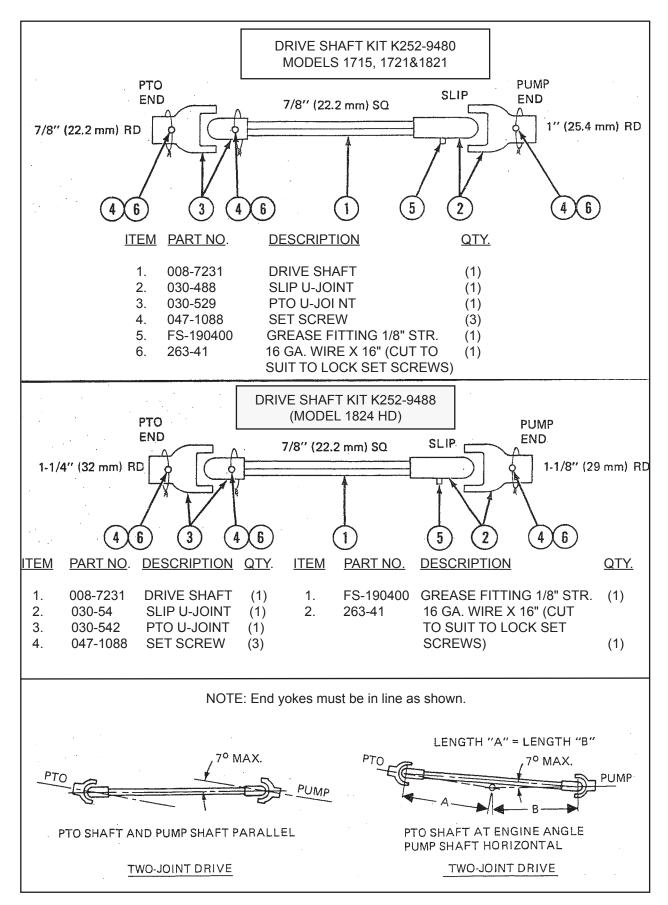


Figure 6. Drive Line

CONTROL LEVERS

Two lever round controls to valve and PTO are standard and shoud be mounted on the floor of the cab in a position convenient for the operator (see figure 7). Weld control lever to valve control shaft (lever to hang vertically downwards).

The recommended arrangement for the in cab control lever operation is as follows:

A) Hoist -- Movement rearward -- RAISE Movement forward -- LOWER

Center position -- HOLD (NEUTRAL)

B) PTO -- Movement rearward -- ENGAGE Movement forward -- DISENGAGE

Install valve rod and PTO rod, positioning them on the control levers so there is at least 6" (152 mm) of movement on cab levers.

Optional controls should be installed as shown in figures 7A, 7B or 7C.

Note: When cable control shown in figure 7D is used with Hydraulic Pump/Valve Assembly, the valve must be equipped with optional Detent Kit #K252-9094.

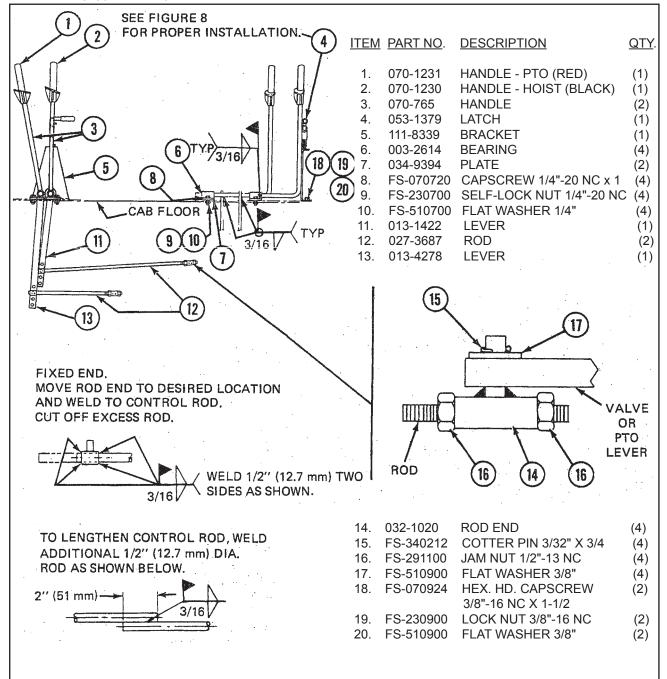


Figure 7. 252-3733 Two Lever Control (Round)

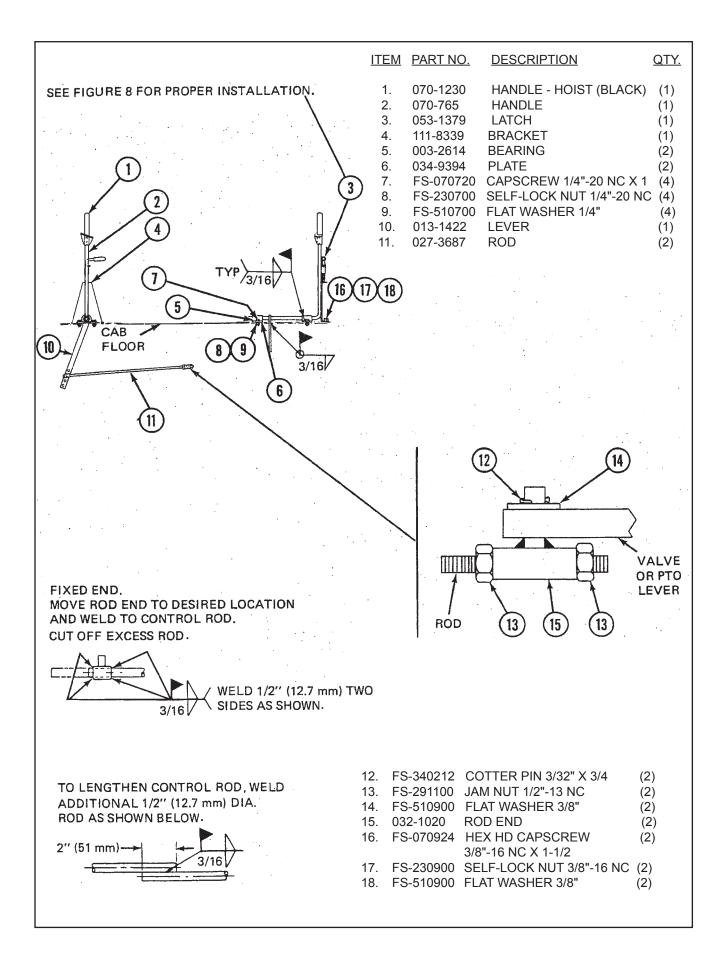


Figure 7 A. 254-1118 Single Lever Control (Round)

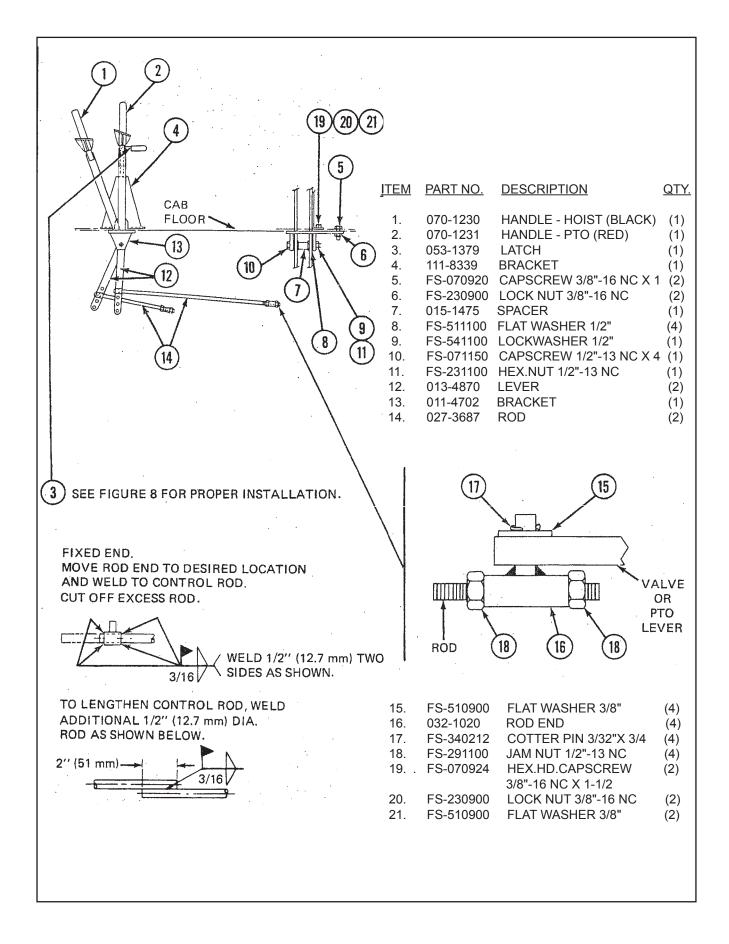


Figure 7 B. 252-9407 Two Lever Control (Flat)

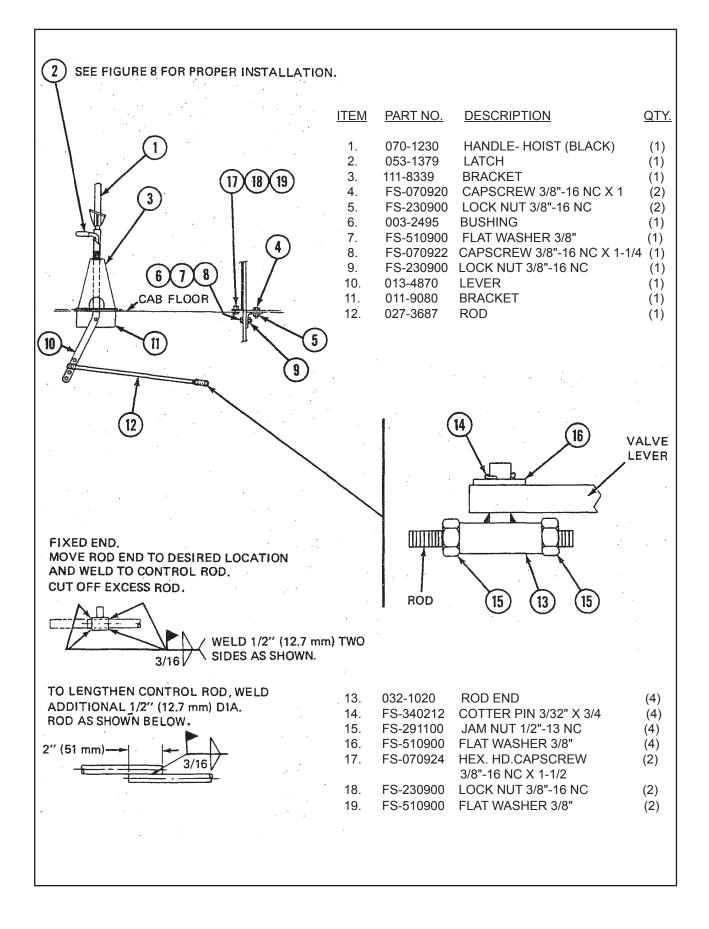
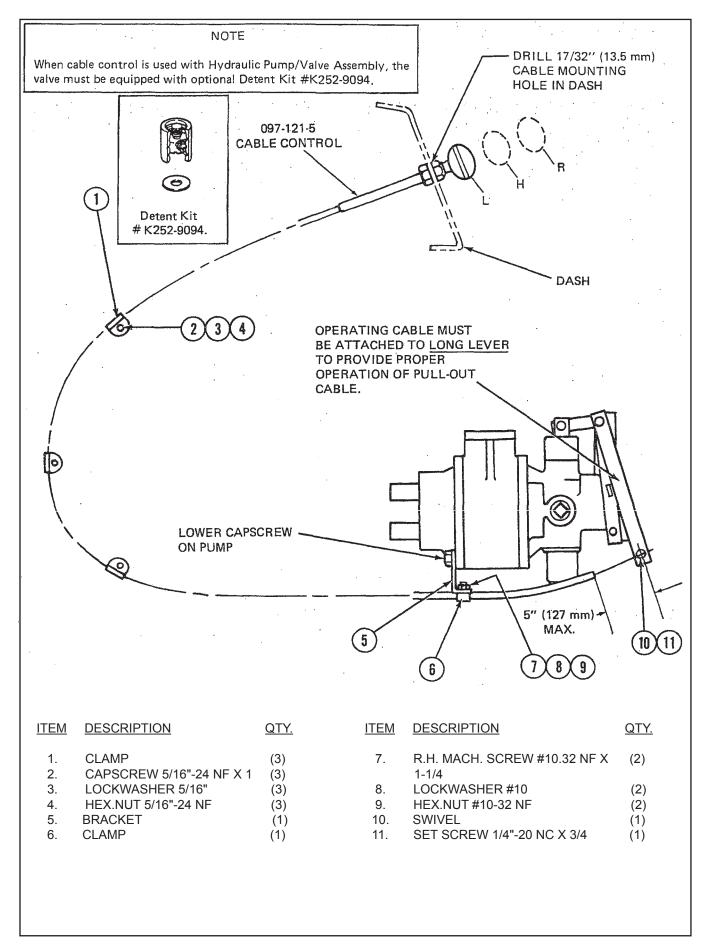


Figure 7 C. 254-710 Single Lever Control (Flat)



VALVE CONTROL SAFETY LOCK

Install the lock, starting at step A, as shown in figure 8.

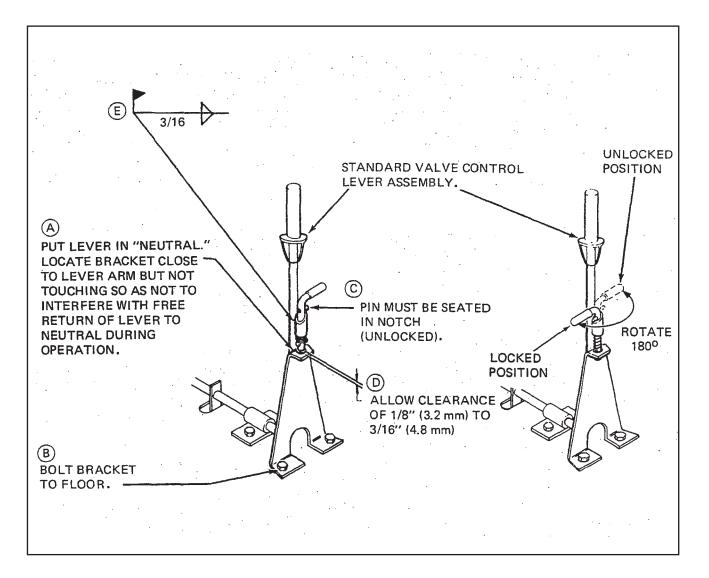


Figure 8. Valve Control Safety Lock

HYDRAULIC LINES

Connect hydraulic lines in order as given in figure 9. See figure 10 for schematics of hydraulic system. Use a thread sealing compound on the ends of all pipe threads. Compound not required on tube fitting nuts or O-ring fittings.

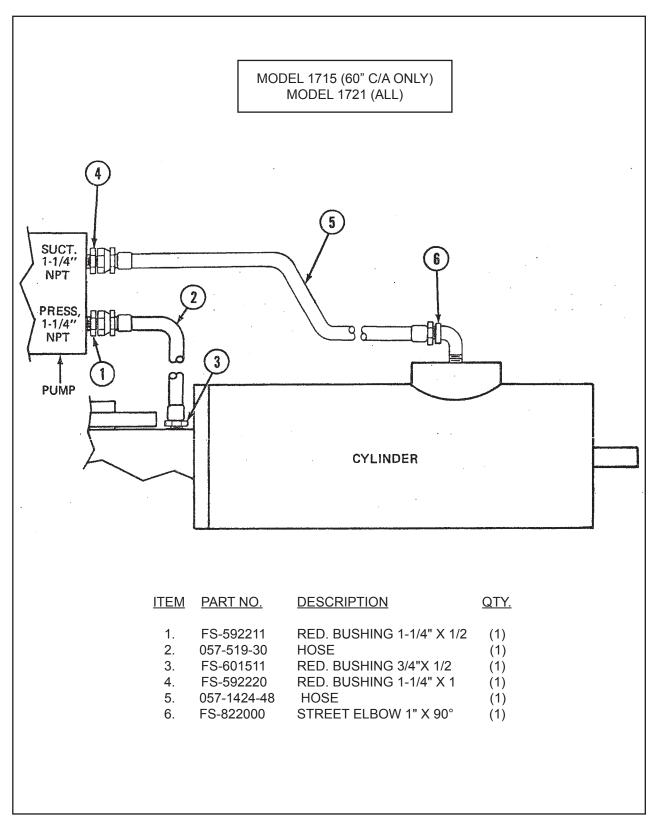


Figure 9. Hydraulic Lines (Sheet 1 of 4)

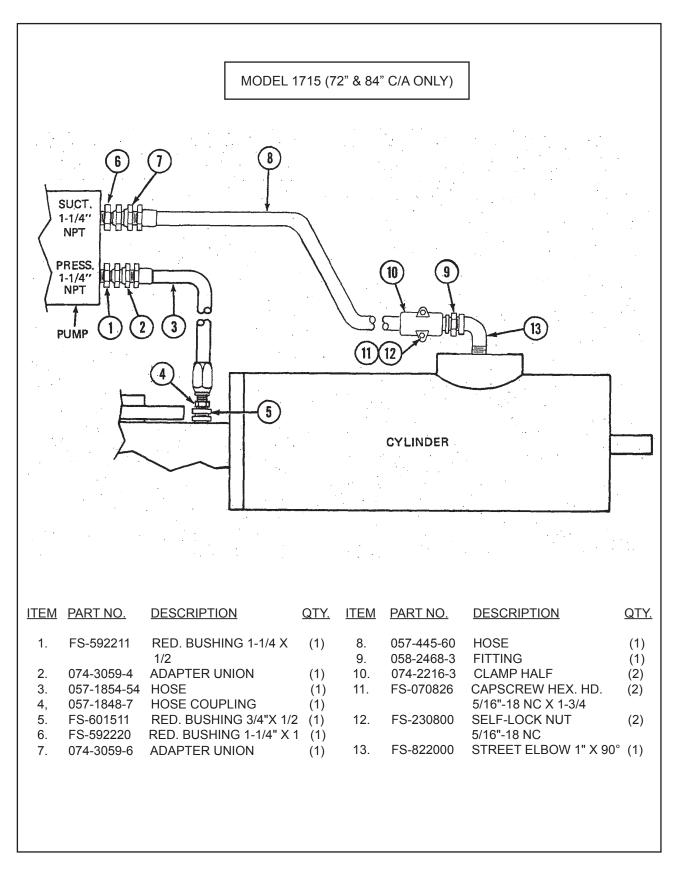
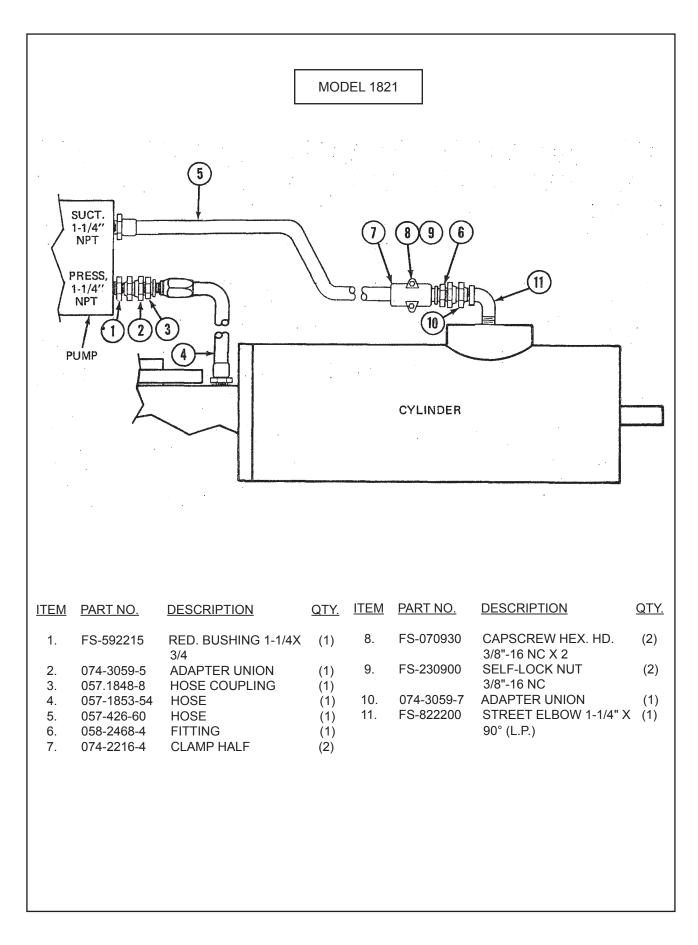
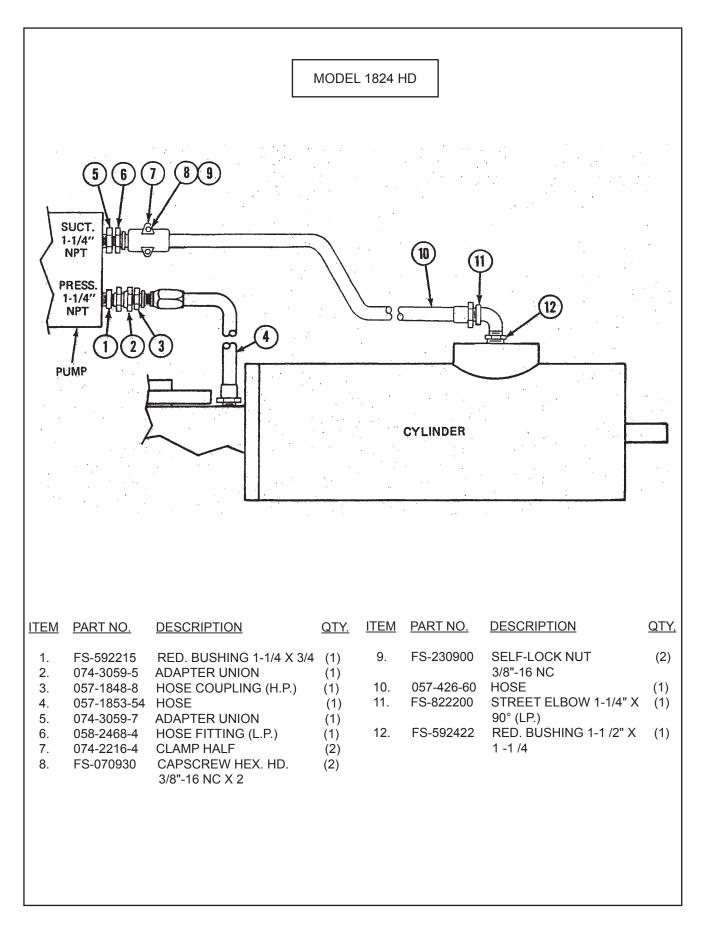


Figure 9. Hydraulic Lines (Sheet 2 of 4)





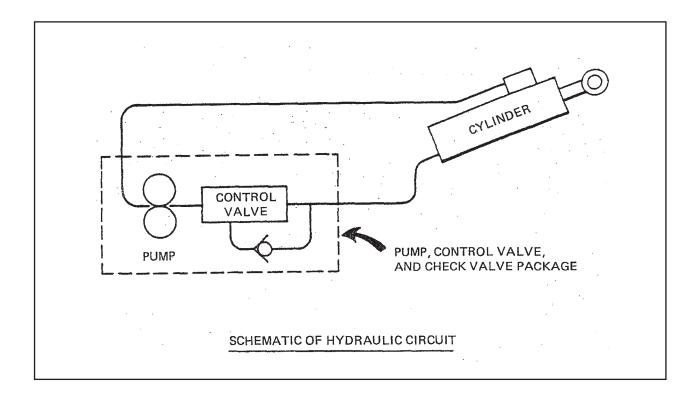


Figure 10. Hydraulic Schematic

FILLING SYSTEM

To fill system, remove vent plug at top cylinder and fill cylinder with oil. Use a hydraulic oil with an SAE viscosity rating of 10W that contains an antifoamant, rust and oxidation inhibitor, and an anitwear additive. If a hydraulic oil is not available use an API enigne oil, designation SE, with SAE viscosity rating of 10W.

<u>DO NOT USE</u> low viscosity naptha base motor oil, hydraulic brake fluid, aircraft hydraulic fluid, of HY-TRAN or other transmission fluid.

Reinstall vent plug.

MOUNTING BODY

Place body so that it is square on the hoist frame. Clearance from front of body to cab must be at least 3" (76 mm) minimum. Body overhang, centerline of hinge to end of body, should be 12" (305 mm) (standard overhang). See figure 11. Attach hoist lifting links to underside of body using link pins and capscrews provided.

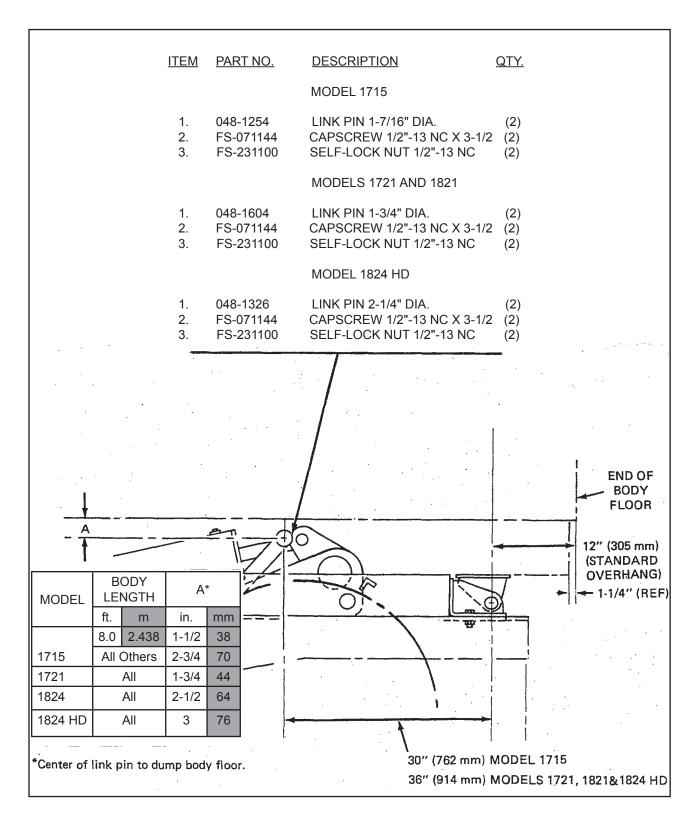


Fig 11. LIfting Links

Grease rear hinges and rotate hinge pins by hand to obtain grease flow around pins.

Keep hinges tight against outer ears of hinge frame (see figure 12) and drive wedge under hinge so that hinge is tight against hinge pin. Shim if necessary, and weld hinges to body longmembers. Remove wedges.

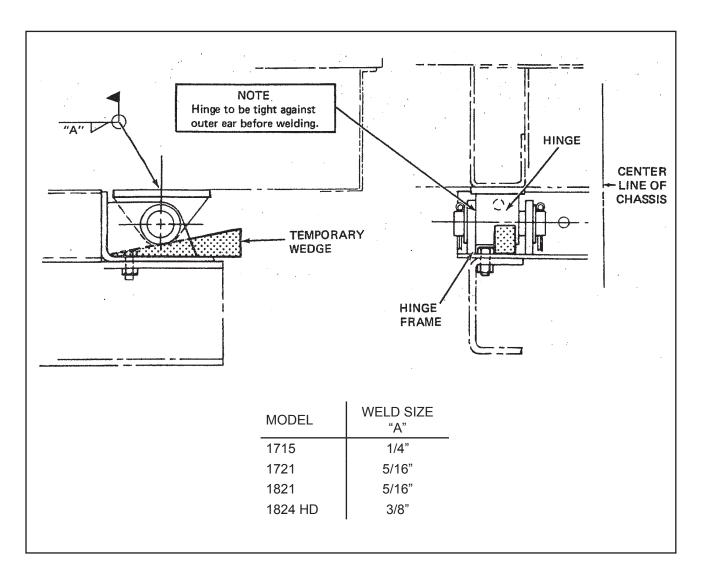


Figure 12. Rear Hinge Assembly

WHEN ANY WORK IS TO BE DONE ON BODY OR HOIST AND BODY IS FULLY OR PARTLY RAISED, BODY MUST BE PROPPED OR BLOCKED SECURELY SO IT CANNOT FALL. IN ADDITION, THE HOIST CONTROL LEVER MUST BE IN NEUTRAL WITH THE HOIST LEVER LOCKOUT ENGAGED IN THE "LOCK" POSITION AND THE PTO DISENGAGED.

SEE FIGURE 13 FOR RECOMMENDED BLOCKING METHODS. READ AND STUDY THE OPERATOR'S MANUAL BEFORE PROCEEDING.

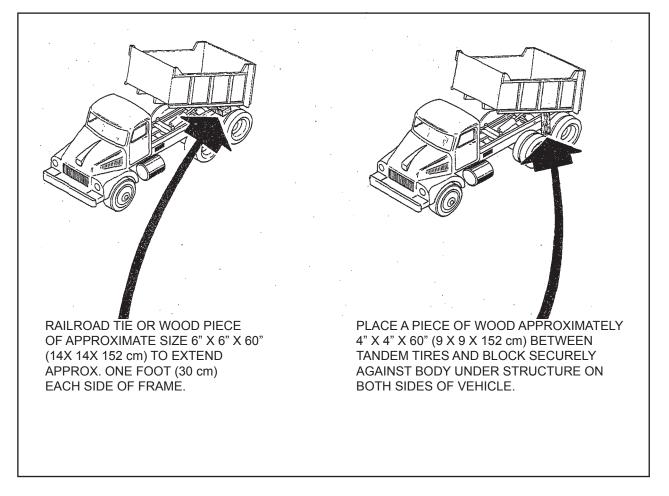


Figure 13. Blocking the Body

Raise body slowly until cylinder is fully extended and block body securely. Remove vent plug from top of cylinder and refill cylinder if necessary. Raise and lower the body several times until air is eliminated from the system. Recheck oil, observing Warning precautions. With body raised, the oil level should be 2" (50 mm) to 3" (76 mm) below the fill hole in the cylinder. Add oil if necessary. Install vent plug.

Keep dirt out of system.

WHEN ANY WORK IS TO BE DONE ON BODY OR HOIST AND BODY IS FULLY OR PARTLY RAISED, BODY MUST BE PROPPED OR BLOCKED SECURELY SO IT CANNOT FALL. IN ADDITION, THE HOIST CONTROL LEVER MUST BE IN NEUTRAL WITH THE HOIST LEVER LOCKOUT ENGAGED IN THE "LOCK" POSITION AND THE PTO DISENGAGED.

Install the body props as shown in figure 14, 14A or 14B depending on type of body.

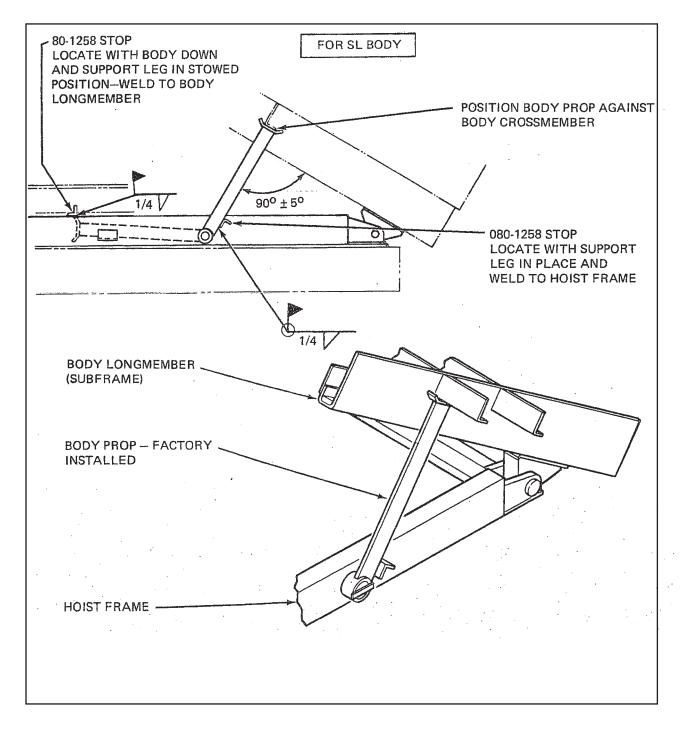


Figure 14. Body Prop Installation (SL Body)

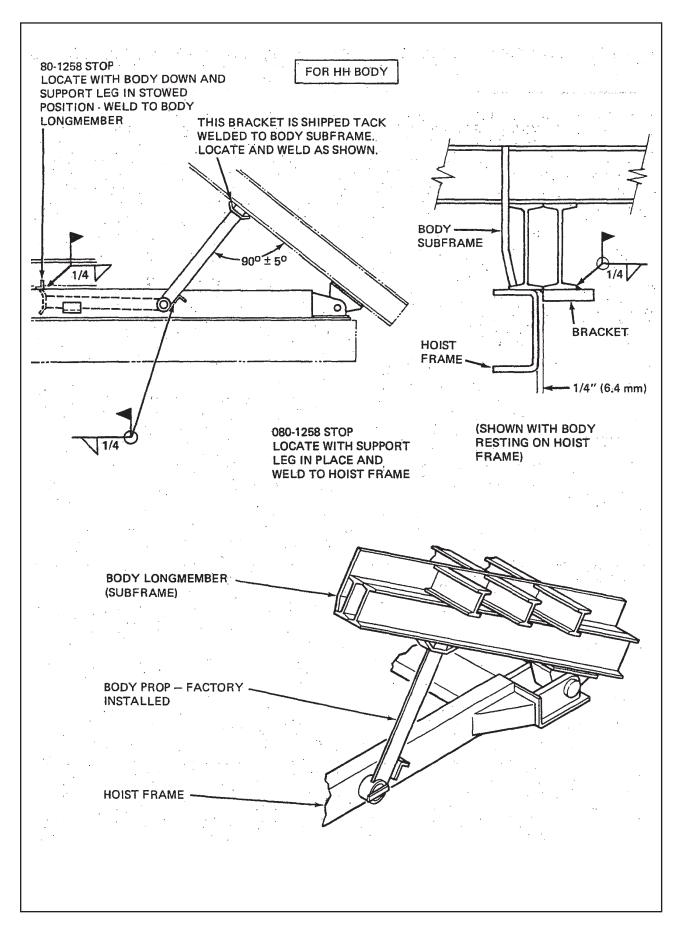


Figure 14A. Body Prop Installation (HH Body)

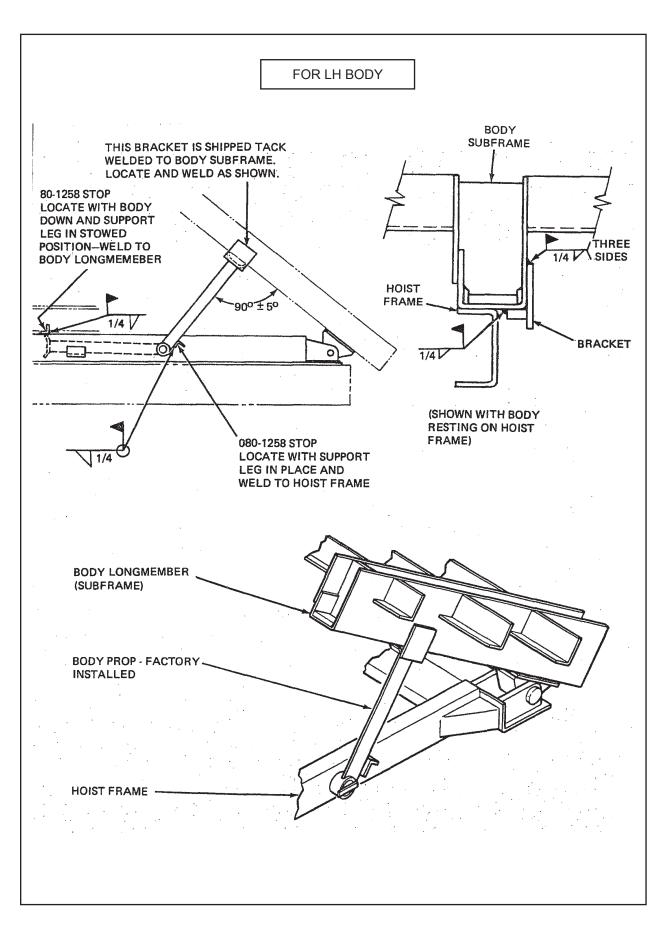


Figure 14B. Body Prop Installation (LH Body)

BODY RAISED INDICATOR KIT

Position body raised switch on the left side on the front of the hoist frame or to the chassis frame. If attached to the hoist frame, the bracket may be welded or bolted in place. If mounted to the chassis frame, use the bracket as a template and drill two holes for 3/8" bolts. See figure 16. Adjust the activating screw so that switch button is depressed about 3/16".

Locate indicator light under vehicle dashboard or at any other convenient location visible to the operator. Use the bracket as a template and drill two holes for #10 screws. See figure 15. Connect wiring as shown in figure 15. Test for proper operation.

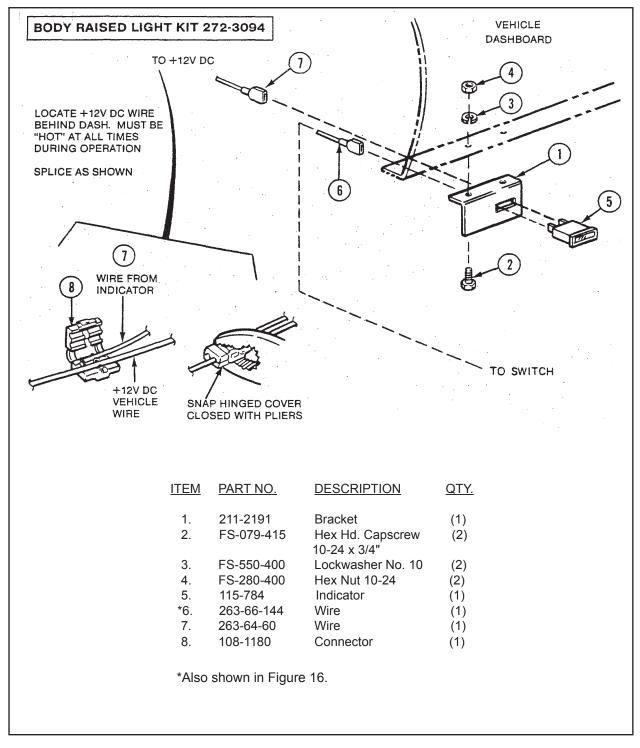


Figure 15. Body Raised Switch

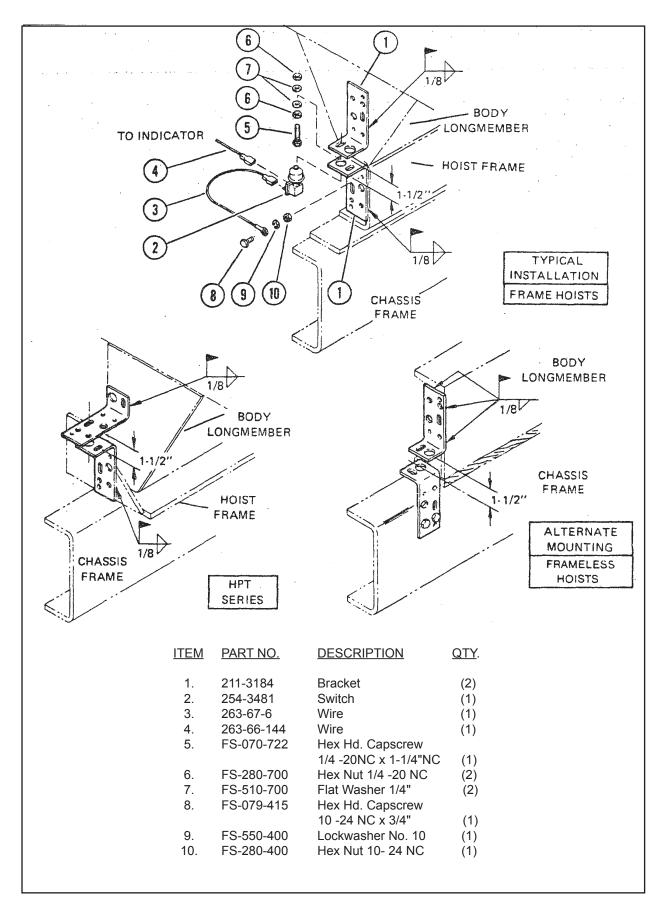


Figure 16. Body Raised Indicator

BACK-UP ALARM INSTALLATION

Mount back-up alarm as shown below using existing holes in bracket on rear hinge frame.

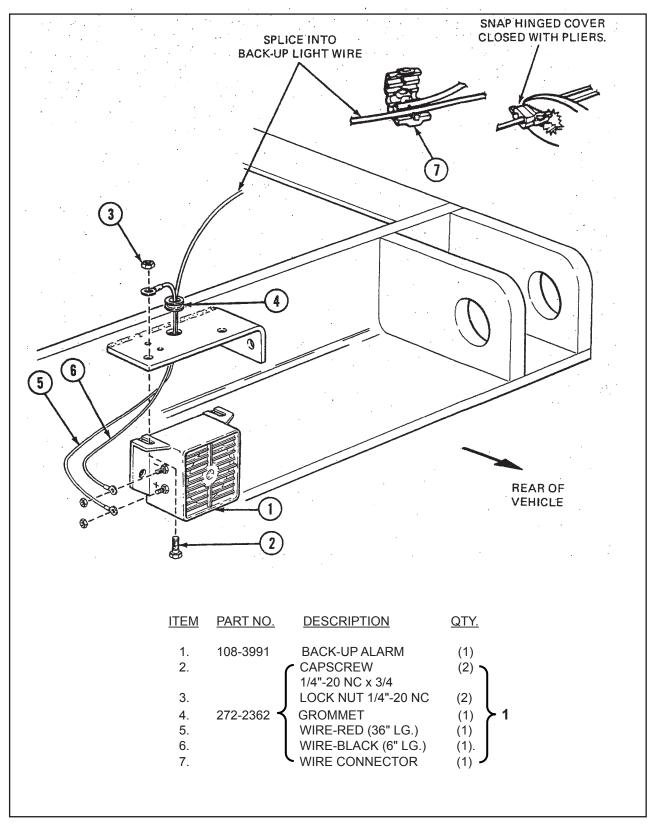


Figure 17. Back-Up Alarm

BE SURE THAT BODY IS UNLOADED BEFORE USING PROP.



TWO PROPS ARE INSTALLED ON THE VEHICLE. BOTH MUST BE USED.

TO USE:

- 1. RAISE BODY TO A HEIGHT WHERE PROPS CAN BE SWUNG INTO POSITON.
- 2. SWING BODY PROPS TO SUPPORT POSITION.
- 3. LOWER BODY ONTO THE BODY PROPS AND VISUALLY INSPECT TO SEE THAT BOTH ARE SECURE BEFORE PERFORMING ANY WORK.

TO STORE:

- 4. RAISE BODY SLIGHTLY. BE SURE HOIST CONTROL VALVE IS IN HOLD POSITION.
- 5. RETURN PROPS TO TRANSIT POSITION.

DECALS AND SERIAL NUMBER PLATES

Install decals according to the instructions below. Refer to figure 17 for decal location. Model and serial numbers are located by manufacturer as shown in figure 17.

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WARNING DECAL #212A735 is 1-7/8" x 4-1/2" (48 mmx 114 mm). It must be placed on the dash above decal #212A1104.

CAUTION DECAL #212A1104 is 1-7/8" x 4-1/2" (48 mm x 114 mm). It must be placed on the dash below decal #212A735 and above decal #212A1170.



CAUTION DECAL #212A1170 is 1-7/8" x 4-1/2" (48 mm x 114 mm). It must be placed on the dash below decal #212A1104.



<u>INSTRUCTION DECAL #212A1166</u> is 3-7/8" x 5-1/2" (98 mm x 140 mm). It must be placed on the dash next to the <u>WARNING</u> and <u>CAUTION</u> decals as shown in figure 17.

If the installation has the standard lever controls, use decals <u>#212A1164</u>. Select and install the decal that corresponds to the direction of travel for PTO lever <u>IN</u> and <u>OUT</u> and for hoist control <u>UP</u> and <u>DOWN</u>.

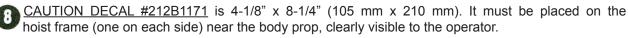
If installation has the optional cable controls, use decal $\underline{#212A1167}$ for hoist control and decal $\underline{#212A1168}$ for PTO control. Based on the controls installation for this specific hoist, select and install the PTO decal ($\underline{#212A1168-1}$ or $\underline{#212A1168-2}$) that corresponds to the direction of travel of the cable control for the PTO IN and OUT.



CAUTION DECAL #212A1131 is 4-3/4" x 5" (121 mm x 127 mm). It must be placed on the front left hand corner of the body as shown in figure 17.



CAUTION DECAL #212A1103 is 3-1/2" x 9" (89 mm x 229 mm). It must be placed on the chassis frame (one on each side) as shown in figure 17.



WARNING DECAL #212A1373 is 1-7/8" x 4-1/2" (48 mm x 114 mm). It must be placed on the dash below decal #212A1170.

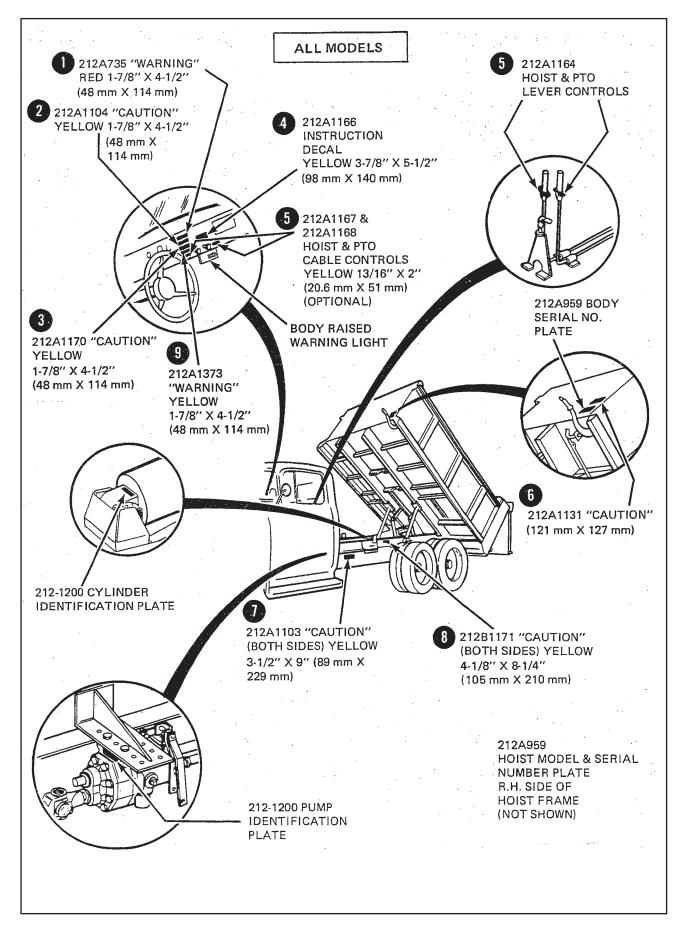


Figure 18. Decals and Serial Number Plates

"The DuraClass, as manufacturer of the equipment that is covered by this manual, is providing a product to the user who has acknowledged to have superior knowledge of the conditions of the use to which the product will be put. The DuraClass relies upon the user's superior knowledge in specifying any changes or modifications including, but not limited to, the inclusion or non-inclusion *of options that are required by the user and the DuraClass product, and for the particular application of the user relative to the DuraClass product."