

# 14LX/GX, 10LP-12, 70LP



## TRAILER HOIST SAFETY, INSTALLATION AND OPERATING MANUAL Models BT- 8, BT-10, BT-12, BT-18, BT-20

### Customer Information

Hoist Serial #	
Installation Date	

Dealer	
Address	
City ST ZIP	
Phone	

**THIS MANUAL SHOULD BE KEPT WITH THE TOW VEHICLE OR THE TRAILER, WHICH IS EQUIPPED WITH A BIG TEX TRAILER HOIST.**

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## **Overall Scope:**

- Hoist Operation and installation instructions and safety warnings
- Operating instructions for the hydraulic system
- Danger and Warning Decal Locations

## **Hydraulic System**

The hydraulic system supplied with the hoist consists of components such as the pump, cylinder, reservoir, valves, and hoses, which was chosen to be compatible with the hoist manufactured by Big Tex Trailer Manufacturing, Inc. (Big Tex).

### ***Warning:***

If hydraulic components are substituted, it is the installer's responsibility to ensure compatibility with the hoist manufactured by Big Tex. Non-compatible components may cause a hoist failure, which could potentially damage the trailer, tow vehicle and/or other property; or could cause injury or death.

The Big Tex Limited Warranty is void for any hoist where it is determined that incompatible hydraulic components have been substituted.

### ***Warning:***

Carefully read all installation and operating instructions, warnings, and procedures prior to installing or operating the hoist. Failure to read instructions could result in property damage to the trailer, tow vehicle, and/or other property; or become a contributing factor to injury or death.

### ***Warning:***

Welding, oxy-fuel cutting, or sparks can cause fuel ignition. Keep all fuel supplies at a safe distance away from any ignition source.

***Warning:***

High temperatures from the tow vehicle's exhaust system may affect the hydraulic components, leading to failure and/or fire.

***Warning:***

Never position yourself, or permit any one else, under a loaded dump body. Always support an unloaded body with the required prop(s) on the dump trailer. Failure to observe this warning could result in injury or death.

***Warning:***

Always have defective equipment repaired before continuing use of the hoist. Consult Big Tex if necessary.

***Warning:***

Overloading a dump trailer may cause vehicle, trailer, and/or component damage or lead to injury or death. Never exceed the GVW or the GAW rating of your vehicle or trailer (Note: Refer to trailer VIN tag).

***Warning:***

Always disconnect the dump trailer battery prior to installing, servicing, or repairing the power unit.

***Warning:***

Care must be taken not to damage the brake lines during installation of the hoist and hydraulic system. A line rub can lead to brake failure, which may cause an accident resulting in injury or death.



***Warning:***

The General Hoist Operating Parameters are reflected in the following table. Exceeding these parameters could lead to the failure of the hoist during the loaded dump cycle, causing damage to the trailer, vehicle, and/or other property; or become a contributing factor to injury or death.

**General Hoist Operating Parameters Table:**

	BT- 8	BT-10	BT-12	BT-18	BT-20
Maximum hydraulic flow rate (GPM)	2.5 GPM	2.5 GPM	2.5 GPM	2.5	2.5
Maximum pressure while raising Dump	3200 PSI	3200 PSI	3200 PSI	3200	3200
Maximum pressure while lowering Dump	1500 PSI	1500 PSI	1500 PSI	1500	1500

Capacities are determined from the following:

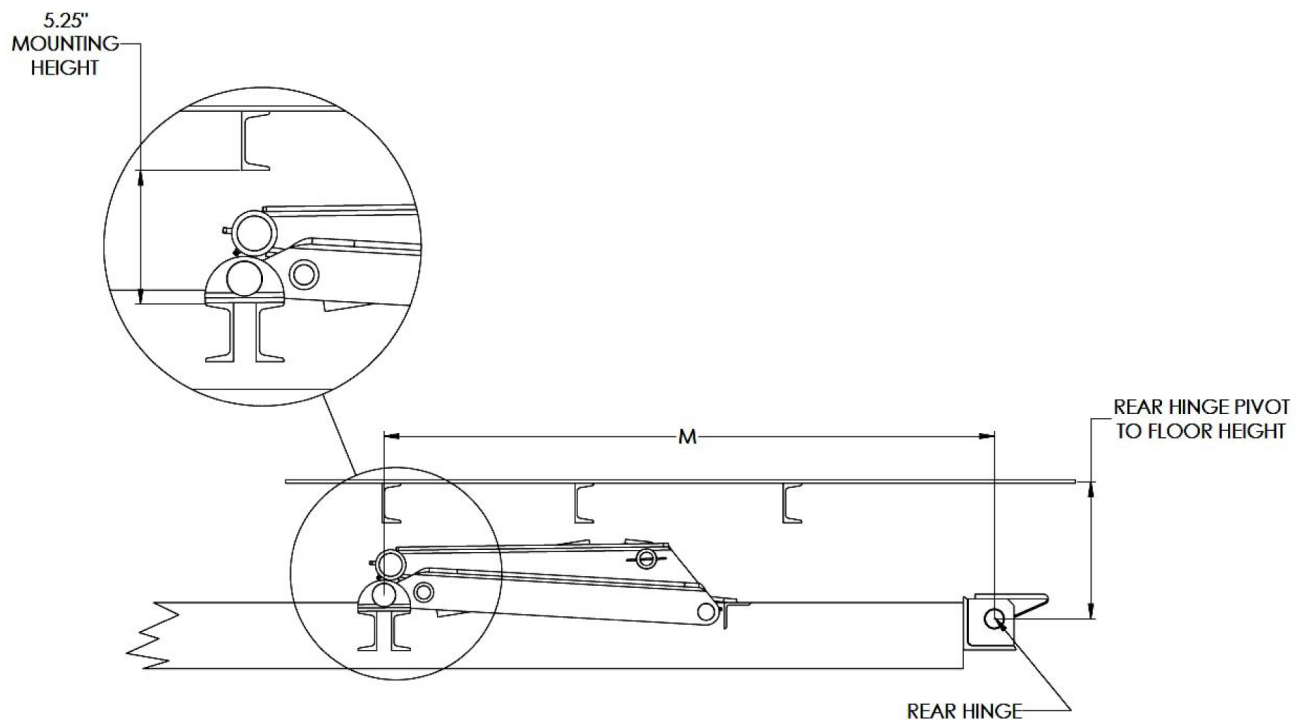
- Load test to 25% over capacity.
- The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- The hydraulic relief pressure set at the maximum 3,200 PSI (see General Hoist Operating Parameters Tables 1A, 1B, 1C, 1D and 1E).

Note: Diverse application scenarios necessitate that the data presented in the tables should only be used as a general guideline.

**Table 1A:**

Standard Mount		<b>BT- 8 Conversion Class A</b>
Dump Angle	M (inches)	
45°	51.50 in	
50°	46.75 in	

**Figure 1A**



**Table 1B:**

Standard Mount		BT-10 Conversion Class B
Dump Angle	M (inches)	
45°	79.00 in	
50°	71.50 in	

**Figure 1B**

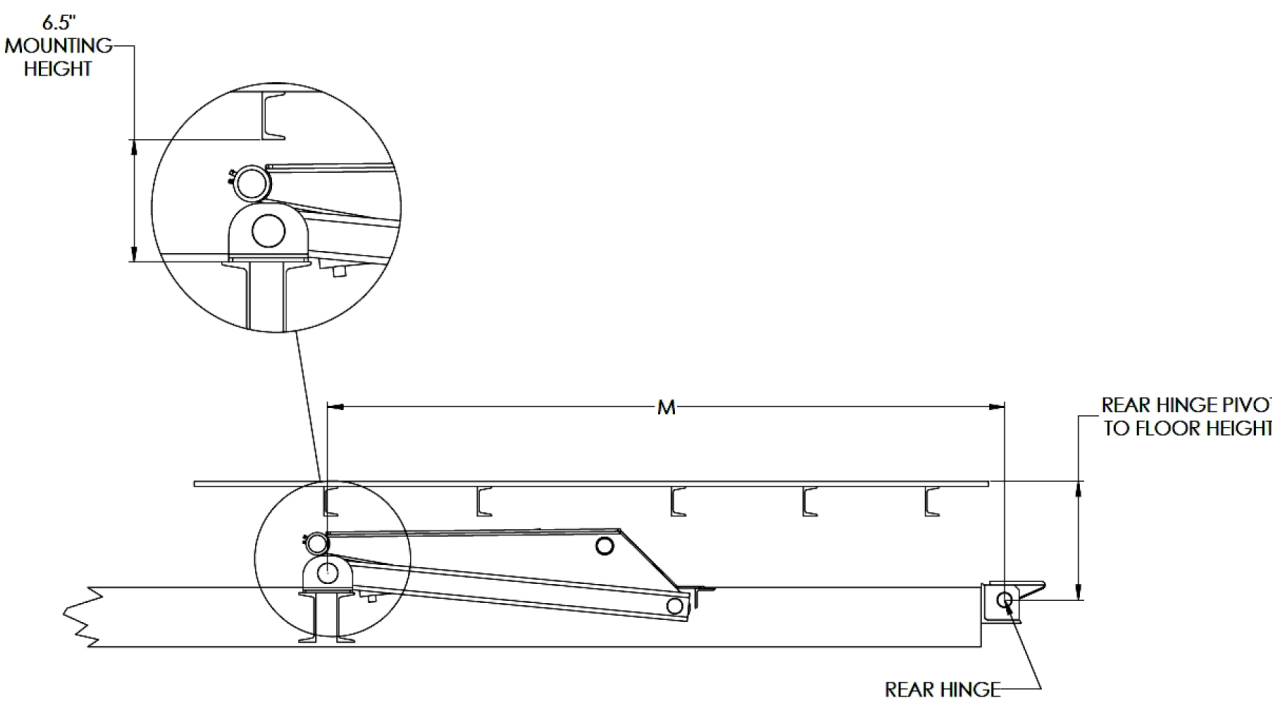


Table 1C:

Standard Mount		BT-12 Conversion Class C
Dump Angle	M (inches)	
45°	77.25 in	
50°	70.00 in	

Figure 1C

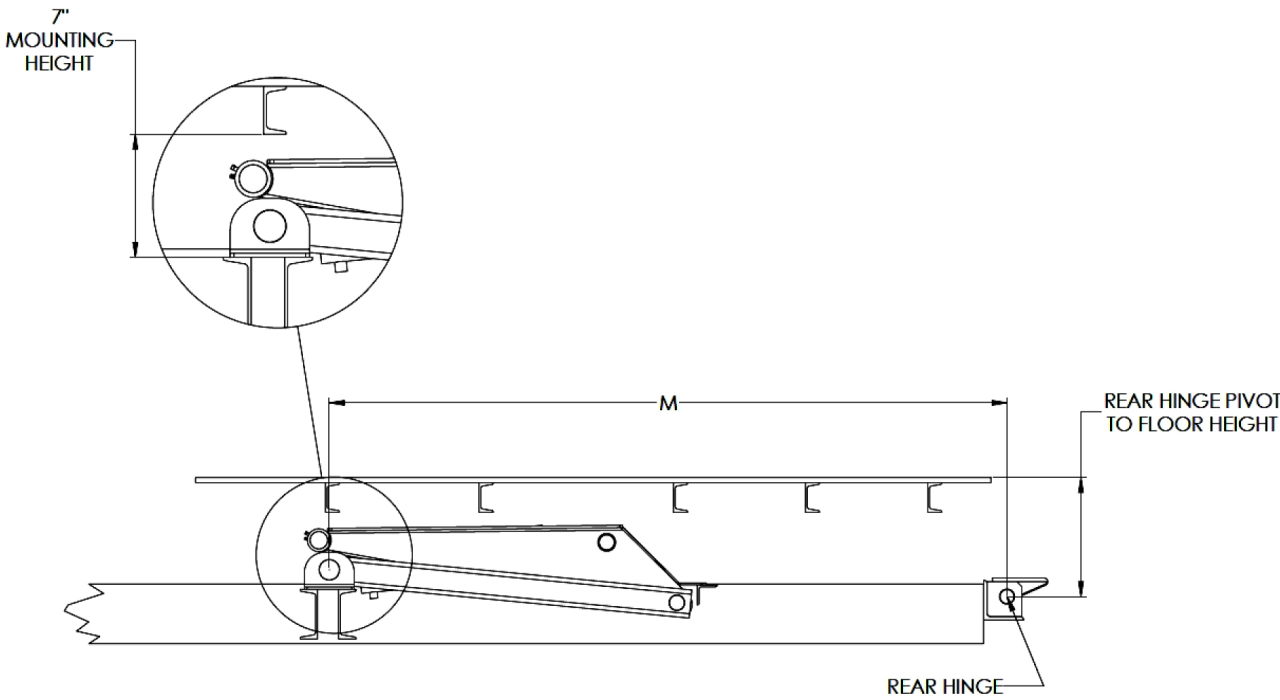


Table 1D

Standard Mount		BT-18 Conversion Class E
Dump Angle	M (inches)	
45°	100.00	
50°	90.75	

Figure 1D

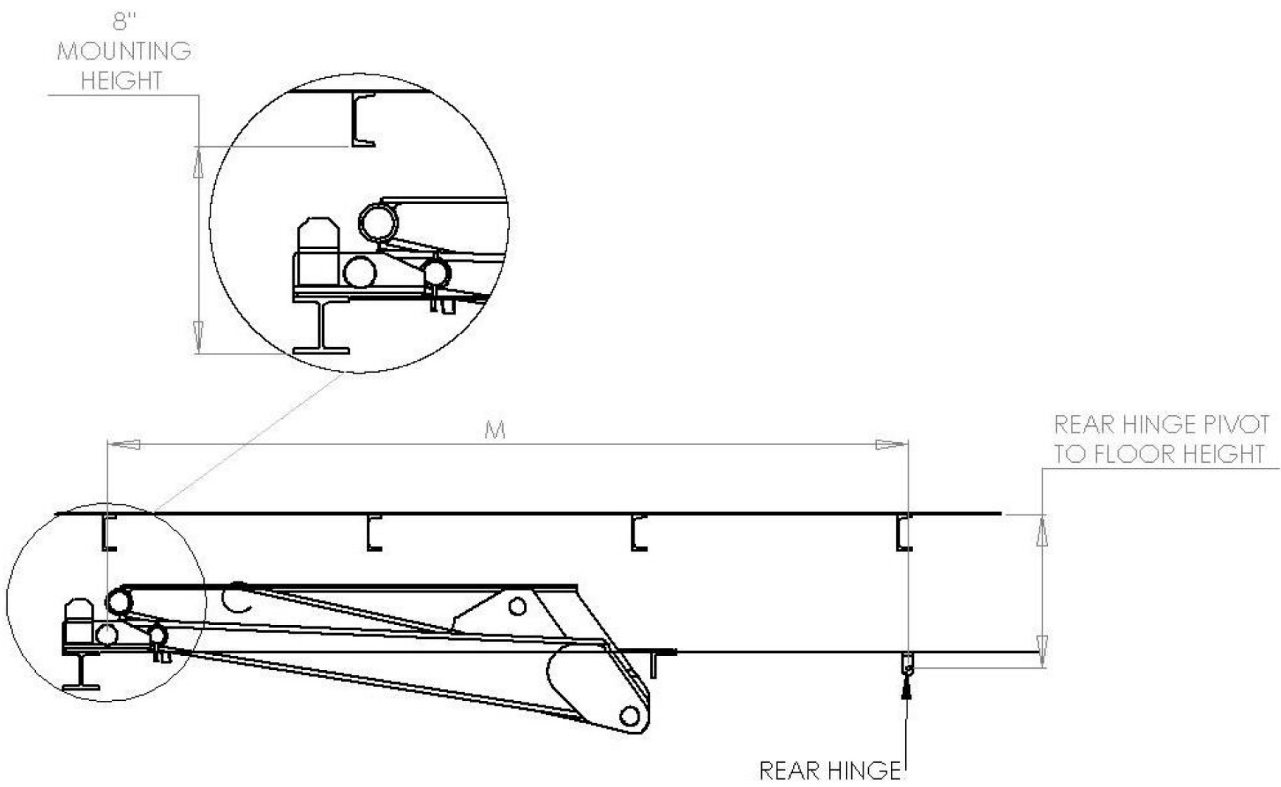
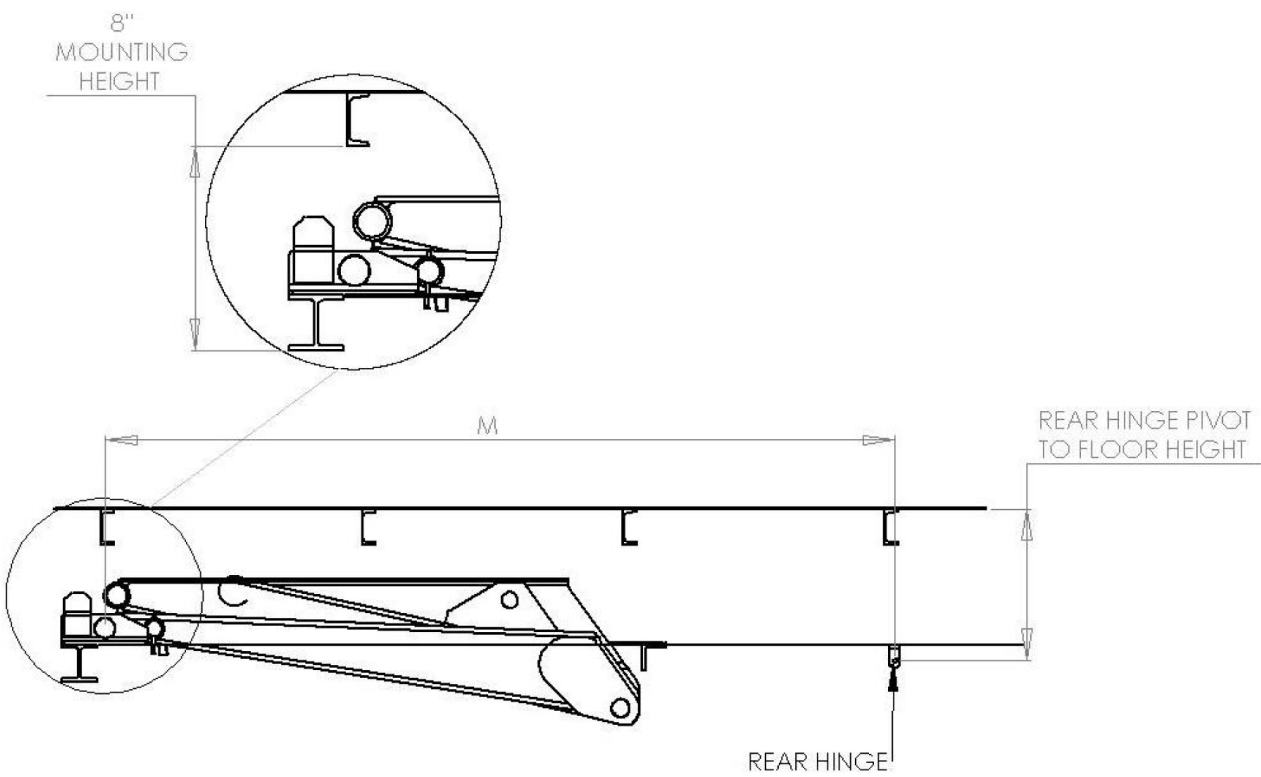


Table 1E:

Standard Mount		BT-20 Conversion Class F
Dump Angle	M (inches)	
45°	128.00	
50°	116.00	

Figure 1E



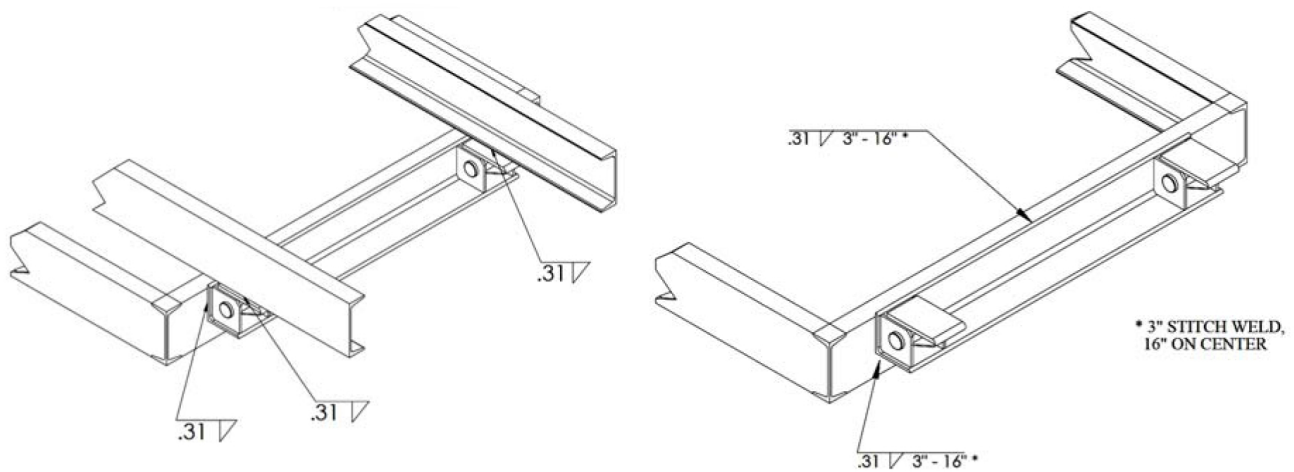
## Installation Instructions

### (Trailer application only)

Use the steps listed as a guide when installing models BT- 8, BT-10, BT-12, BT-18 or BT-20.

1. Install the rear hinge. Make sure that the rear hinge is square with the trailer frame. Weld the hinge assembly to the trailer frame as indicated in Figure 2.

**Figure 2**



2. Install both the front and rear cross-members to support the hoist. The top of the front and rear cross-members should be at the same height.

**Note:** The cross-members are not supplied with the hoist, but are part of the trailer design. The cross-members must have sufficient strength to support the hoist and the load during the dump cycle.

**Note:** The rear cross member must be placed with 1.00" of clearance between the cross-member and the end of the hoist as shown in Figure 3. This should allow the hoist room to rotate as the hoist rises.

3. Locate the hoist on the trailer frame, making sure to center the hoist left-to-right and square with the trailer frame.

**Note:** The horizontal distance between the rear hinge center and the saddle center (Figure 1A-1E) is referred to as the "M" dimension. The capacities for several applications (General Hoist Operating Parameters Table) and dump angles (Tables 1A-1E) are tabulated for the different hoists.

**Note:** Moving the hoist in relation to the rear hinge will affect the hoist's performance. A forward movement of the hoist, where the hoist is farther away from the rear hinge, will reduce the dump angle and increase capacity. A rearward movement of the hoist, where the hoist is closer to the rear hinge, will increase the dump angle and decrease capacity.

***Warning:***

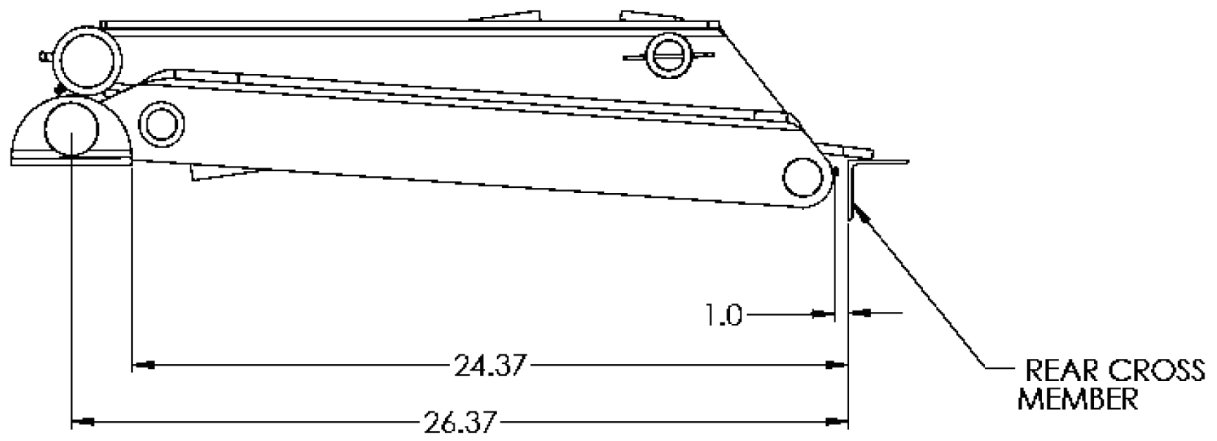
Do not install the BT-8, BT-10, BT-12, BT-18 or BT-20 at a dump angle of more than 50 degrees. The hoist is designed for this range only. Installing the hoist outside this range may lead to an unsafe condition that could cause hoist failure, and result in property damage to the trailer, tow vehicle, and/or other property; or become a contributing factor to injury or death.

4. When the hoist is properly positioned, weld or fasten each saddle bracket to the trailer cross-member as illustrated in Figure 4.

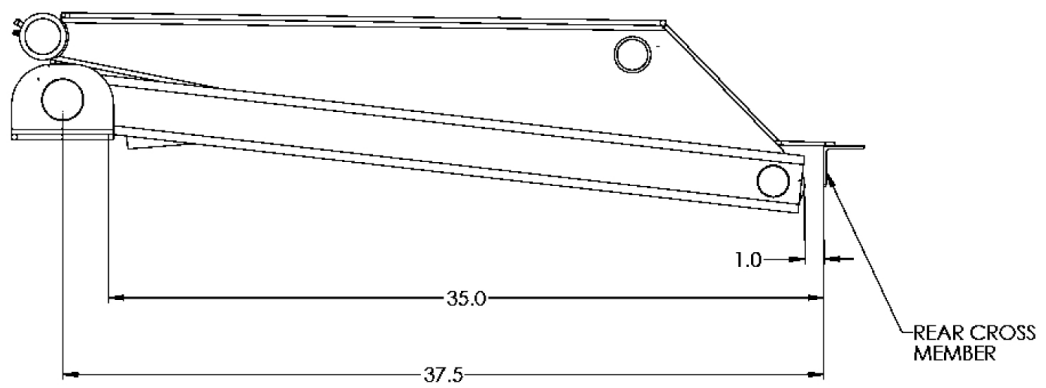


**Figure 3**

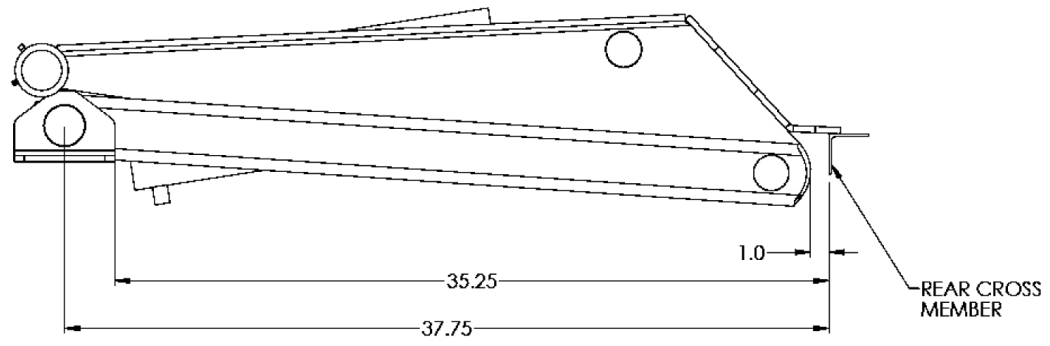
**BT-8**



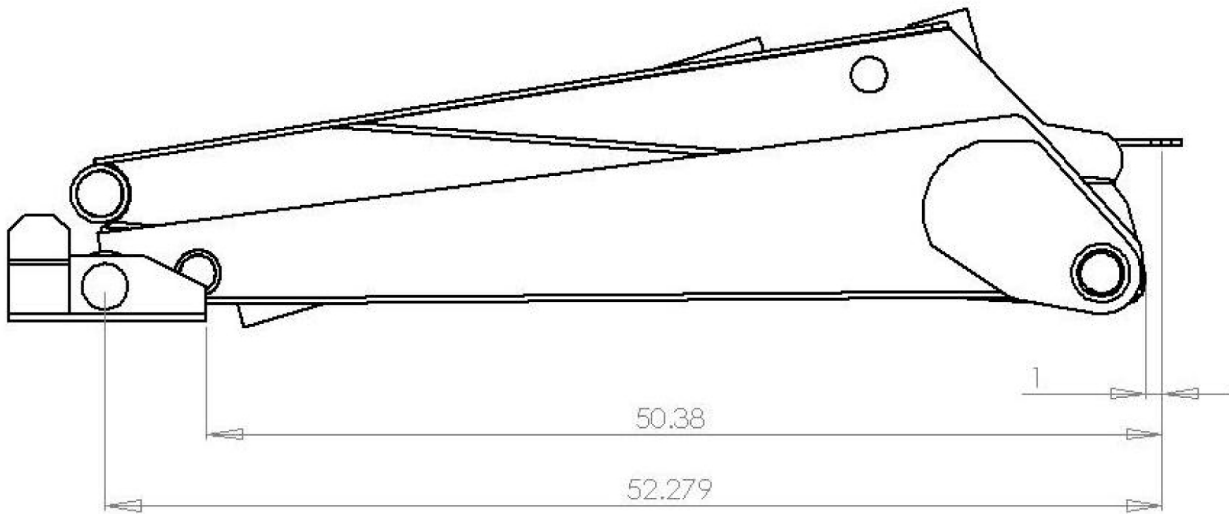
**BT-10**



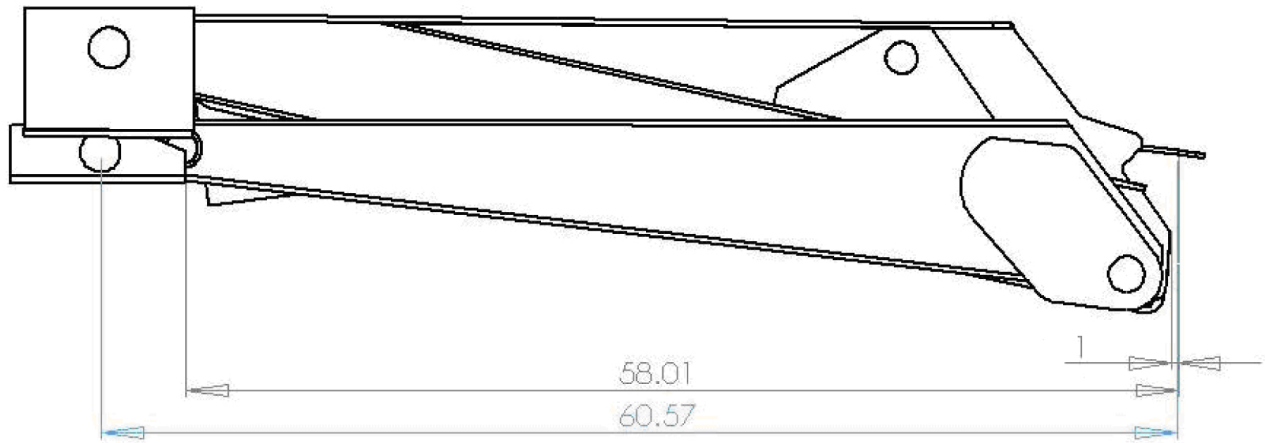
## BT-12



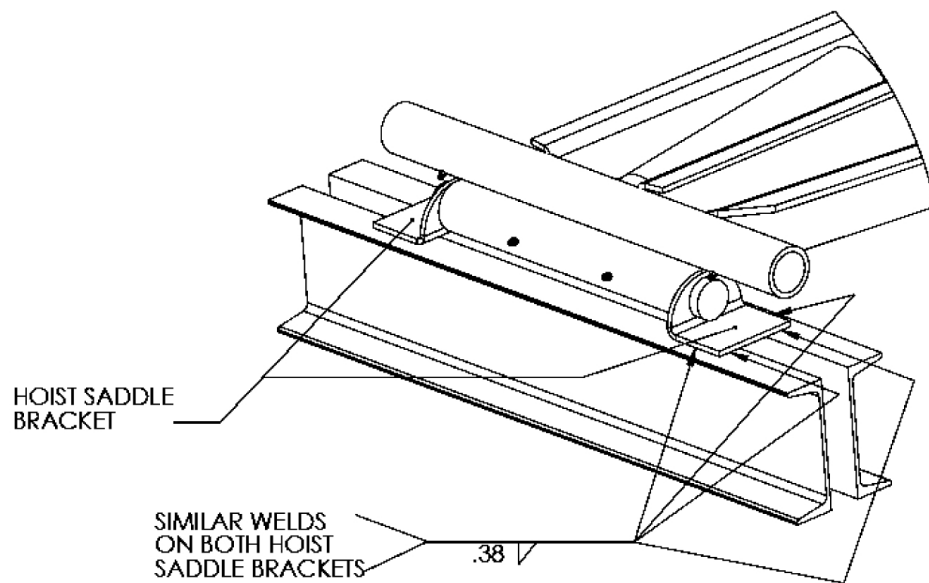
## BT-18



## BT-20



**Figure 4**

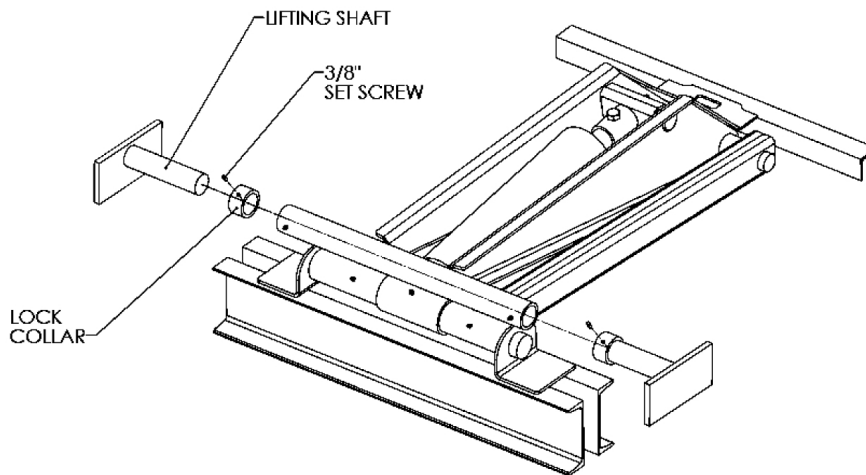


5. The BT- 8 hoist requires at least 5.25 inches of vertical clearance between the point where the saddle brackets mount to the cross-member and the trailer floor cross-members. The BT-10 hoist requires at least 6.50 inches of vertical clearance between the point where the saddle brackets mount to the cross-member and the trailer floor cross-members. The BT-12 hoist

requires at least 7.00 inches of vertical clearance between the point where the saddle brackets mount to the cross-member and the trailer floor cross-members. The BT-18 hoist requires at least 8 inches of vertical clearance between the point where the saddle brackets mount to the cross-member and the trailer floor cross-members. The BT-20 hoist requires at least 8 inches of vertical clearance between the point where the saddle brackets mount to the cross-member and the trailer floor cross-members.

6. Slide a lock collar onto each lifting shaft. Slide a lifting shaft with lock collar into each end of the hoist lifting tube. See Figure 5.

**Figure 5**



7. Position the body on the trailer frame and attach the trailer long beams to the rear hinge as shown in Figure 2. Weld the rear hinges to the long beams with at least as much weld as is indicated.

8. Once the trailer body is positioned on the trailer frame, slide each of the lifting shafts all the way out, against the trailer body long beams. Weld around the lifting shaft plate to secure the shaft to the long beam.
9. With the lifting shafts secured, slide the lock collars against the hoist lifting tube and lock them in position by tightening the set screw. Torque the set screw to 24 ft/lb. See Figure 5.
10. Install all grease fittings. Torque all grease fitting to 70 in/lb. Grease all fittings on both the hoist and the rear hinge. For grease fitting locations in the hoist, refer to Figures 9A and 9B.
11. Install the body prop(s). Refer to the **Body Prop** section.
12. Install the hydraulic system.

**Important:**

Several different types of hydraulic components are used to power the BT- 8, BT-10, BT-12, BT-18 and BT-20 hoists. All hydraulic systems have an installation and operation manual included with them. Refer to your specific hoist model's instructions.

**Warning:**

Carefully read all installation and operating instructions, warnings, and procedures prior to installing or operating the hydraulic system. Failure to read instructions could result in damage to the trailer, tow vehicle and/or other property; or become a contributing factor to injury or death.

13. For a quick reference, these instructions should be kept with the trailer or with the truck pulling the trailer.

14. Install all decals. Refer to **Decal Location** section of this manual.

## **Body Prop**

**Note:** In order to comply with paragraph 10 of Federal Regulation 1926.601, all Big Tex hoists will be sold with one body prop, which locks in position. It is the responsibility of the installer to determine whether one body prop is sufficient. The following information will help in making that determination.

The body prop is designed for use only when the body is empty. The purpose of the body prop is to hold an empty body in the raised position when performing maintenance or inspection on the hoist, body, or any component that requires work under an empty body.

### ***Warning:***

Never position yourself or permit any one else under a loaded dump body. Always prop an unloaded body with the required prop(s) for the dump trailer. Failure to observe this warning could result in injury or death.

### ***Warning:***

Do not use the body prop to support a loaded body.

### ***Warning:***

Do not perform maintenance under a raised body without first blocking the empty body with the body prop(s).

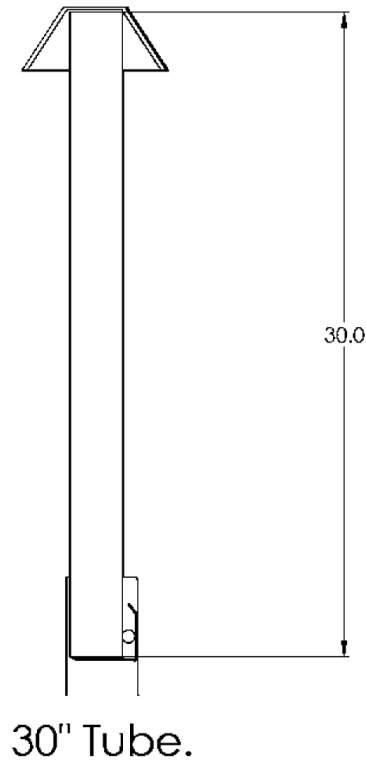
### ***Warning:***

Do not use a body prop that is bent or otherwise damaged. Replace the damaged body prop before attempting any maintenance under a raised body.

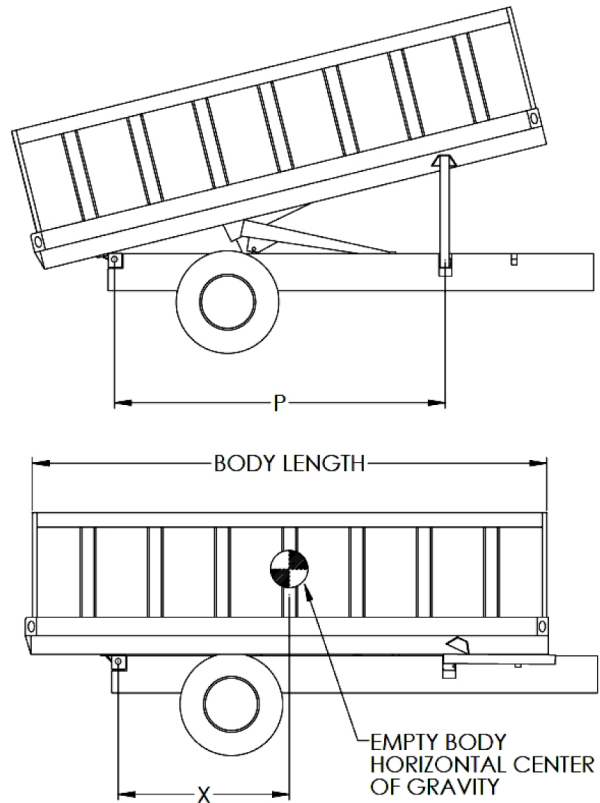
**Warning:**

Be sure to install the body prop(s) according to the **Installation of Body Prop** section of this manual.

**Figure 6**



**Figure 7**



**Note:** If the body weighs more than two times the amount listed (reference Chart 1), another type of body prop with more weight capacity will be required, as two body props will not support this empty body.

Use the following procedure to determine the number of body props required for each application:

1. Determine the "P" value using Figure 7. The "P" value is the horizontal distance between the rear hinge and the prop.

- Determine the "X" value using Figure 7. The "X" value is the horizontal distance between the body center of gravity and the rear hinge when the body is empty and lowered. Be sure to include any items attached to the body, such as toolboxes or other structures, when determining the center of gravity.

## Chart 1

### Body Prop Capacities

Maximum Body Weight per Body Prop											
		Distance Rear Hinge - Center of Gravity "X"									
		0-36	37-48	49-60	61-72	73-84	85-96	97-108	109-120	121-132	133-144
Distance Rear Hinge - Body Prop "P"	42-47	6,100	4,500	3,500	2,800	2,300	2,000	1,700	1,500	1,300	1,100
	48-53	6,600	4,800	3,800	3,000	2,500	2,100	1,800	1,600	1,400	1,200
	54-59	7,200	5,200	4,100	3,300	2,800	2,300	2,000	1,800	1,600	1,400
	60-65	7,700	5,700	4,400	3,600	3,000	2,600	2,200	1,900	1,700	1,500
	66-71	8,300	6,100	4,800	3,900	3,300	2,800	2,400	2,100	1,900	1,700
	72-77	8,900	6,600	5,100	4,200	3,500	3,000	2,600	2,300	2,000	1,800
	78-83	9,500	7,000	5,500	4,500	3,800	3,200	2,800	2,500	2,200	2,000
	84-89	10,200	7,500	5,900	4,800	4,000	3,500	3,000	2,700	2,400	2,100
	90-95	10,800	7,900	6,200	5,100	4,300	3,700	3,200	2,800	2,500	2,300
	96-101	11,400	8,400	6,600	5,400	4,600	3,900	3,400	3,000	2,700	2,400
	102-107	12,100	8,900	7,000	5,800	4,900	4,200	3,700	3,200	2,900	2,600
	108-113	12,700	9,400	7,400	6,100	5,100	4,400	3,900	3,400	3,100	2,800
	114-119	13,400	9,900	7,800	6,400	5,400	4,700	4,100	3,600	3,200	2,900
	120-125	14,000	10,400	8,200	6,700	5,700	4,900	4,300	3,800	3,400	3,100
	126-131	14,700	10,900	8,600	7,100	6,000	5,200	4,500	4,000	3,600	3,300
	132-137	15,300	11,400	9,000	7,400	6,300	5,400	4,700	4,200	3,800	3,400
	138-143	16,000	11,800	9,400	7,700	6,500	5,600	5,000	4,400	4,000	3,600
	144+	16,600	12,300	9,800	8,000	6,800	5,900	5,200	4,600	4,100	3,700

## Installation of the Body Prop

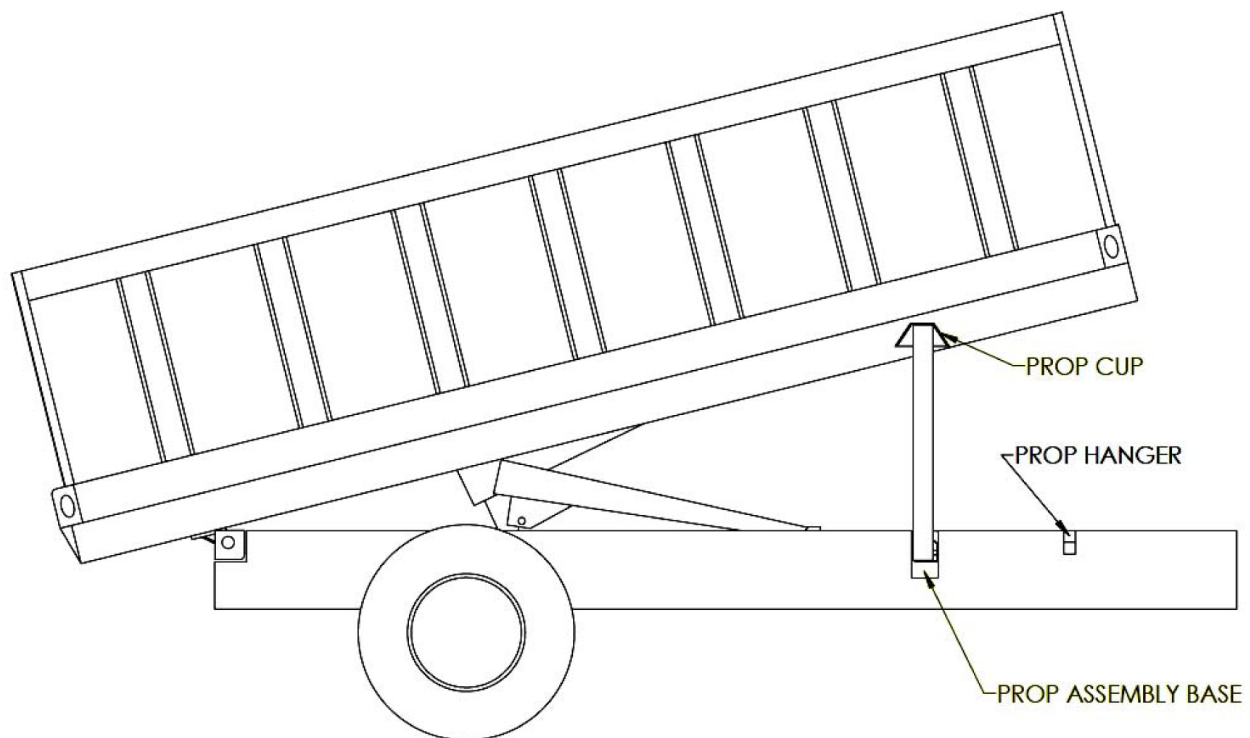
**Note:** The following steps are to be used as a guideline when installing the body prop. Since trailers will vary according to their design, it is not possible to be specific about every aspect of the body prop installation.



1. Once the Big Tex hoist has been installed, raise the hoist up and temporarily block the body up in such manner as to safely secure and stabilize the body in its raised position. Position the body prop assembly against the trailer frame as illustrated in Figure 8.
2. Fasten the body prop assembly base to the trailer frame.
3. Position and fasten the body prop hanger to the trailer frame. Hanger must be installed so that when the body is down, the body prop leg will not bounce out of the hanger.
4. Position and weld the body prop cup on the body as illustrated in Figure 8.

Note: To raise and lower the body prop, see the **Operation of the Body Prop** section of this manual.

**Figure 8**



MOUNTING OF BODY PROP (FOR GUIDELINE PURPOSES ONLY)

## Lubrication

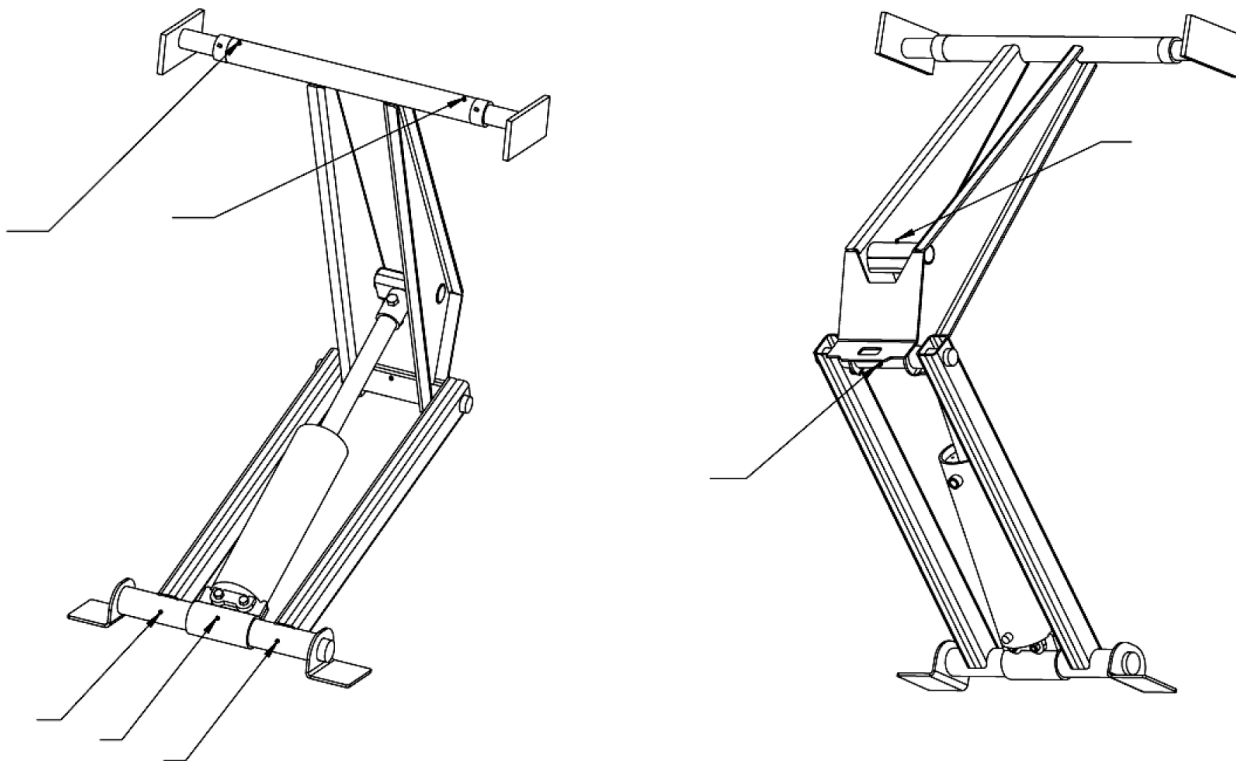
### Important:

All grease fittings should be greased at least twice annually. See Figure 9A and 9B for grease zert locations.

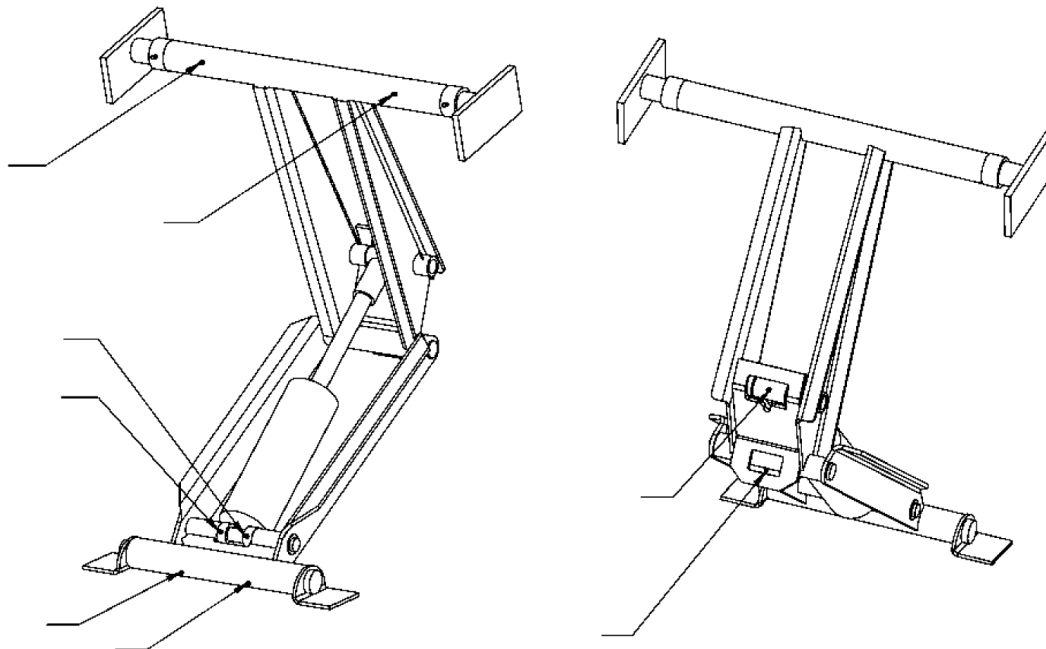
### Important:

Several different types of pumps and hydraulic components are available to power the BT-8, BT-10, BT-12, BT-18 or BT-20 hoist. Refer to the installation and operation manual for your particular pump and hydraulic components.

**Figure 9A**



**Figure 9B**

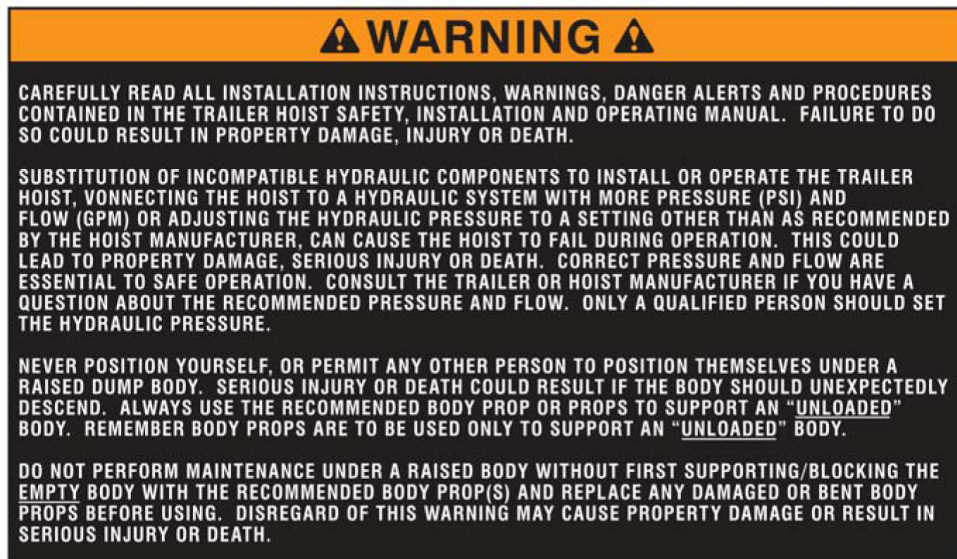


## Decal Location

Two DANGER decals are supplied with each hoist. They should be positioned on each side of the trailer body, in a location where any person can easily read the decal without going under the body.



One WARNING decal is supplied with each hoist. It should be positioned on the driver's side of the trailer near the front, in a location where any person can easily read the decal without going under the body.



***Warning:***

Missing or damaged decals can cause incorrect or unsafe operation of the hoist, which can cause damage to the trailer, tow vehicle, and/or other property; or become a contributing factor to injury or death.

To obtain replacement decals contact your Big Tex dealer or call 903-575-0300 and ask for the Warranty Department.

## **Operation of the Body Prop**

***Warning:***

Never position yourself or permit any one else under a loaded dump body. Always prop an unloaded body with the required prop(s) for the dump trailer. Failure to observe this warning could result in injury or death.

**Procedure for using the body prop:**

1. Raise the body to a sufficient height and shut off all power.

2. Grasp the prop handle at arms' length and rotate body prop upwards.
3. Swing the prop up to vertical and push down until the prop locks in line with the support bracket on the trailer body.
4. Using the dump controller, lower the trailer body slowly until the prop contacts the body prop cup.
5. To lower the body prop for operation of the trailer, reverse this procedure.

***Warning:***

Do not attempt to lower the dump body while the body prop is in its raised position.

## **Operation of Hoist and Pump**

***Warning:***

Carefully read all installation and operating instructions, warnings, and procedures prior to installing or operating the hoist. Failure to read instructions could result in damage to the trailer, tow vehicle and/or other property; or become a contributing factor to injury or death.

***Warning:***

All hydraulic systems have an installation and operation manual included with them. Refer to your specific hoist model's instructions.

***Warning:***

Never position yourself or permit any one else under a loaded dump body. Always support an unloaded body with the required prop(s) for the dump trailer. Failure to observe this warning could result in injury or death.

***Warning:***

1. Controls must be in a safe location.

2. Never leave the trailer body raised or partly raised while the trailer is unattended, without the body prop in the support position.
3. Do not attempt to raise a loaded body when the truck or trailer is on un-level ground. This could cause the trailer to overturn.
4. Never jerk or shock a raised body to loosen a stuck load.

## Trouble Shooting Guide

Problem	Possible Solutions
1. Power unit just clicks or does nothing.	Check to make sure the battery is fully charged.
2. Loaded dump bed will not raise all the way up.	Check all electrical connections (ground, positive) and insure they are tight and making good contact.
3. Empty dump bed will not raise all the way up.	Check fluid level at reservoir with bed down and fluid level should be 1" from the top.



## **BIG TEX LIMITED WARRANTY FOR TRAILER HOISTS**

Your Big Tex Hoist is warranted to the original purchaser to be free from defects in material and workmanship for a period of one (1) year, except as herein limited, from the date of purchase. The obligations of Big Tex Trailer Manufacturing, Inc. under this limited warranty shall be limited to repairing or replacing any part or parts which, in the opinion of the Company, shall be proved defective in materials or workmanship under normal use and service during the one-year-period commencing with the date of purchase. Paint is warranted to be free from defects in material and workmanship for a period of ninety (90) days from the date of purchase. This Warranty does not cover any part or parts which have been damaged as a result of an accident, misuse, abuse, or which have been modified, altered or repaired by other than Big Tex Trailer Manufacturing, Inc. This warranty shall be void if it is determined that incompatible hydraulic components have been substituted. This warranty shall not apply if the hoist has been subjected to loads in excess of its rated capacity. The remedies described herein are the sole remedies.

### **EXCLUSIONS AND LIMITATIONS**

#### **EXCLUSIONS**

**This Warranty shall not extend to:**

- 1) Equipment which has been modified, repaired, or altered in any way without the express written consent of Big Tex Trailer Manufacturing, Inc.**
- 2) Unreasonable use (including failure to provide reasonable and necessary maintenance).**
- 3) Components, or any other equipment which is warranted separately by the respective manufacturers of said components.**
- 4) Parts not supplied by Big Tex Trailer Manufacturing, Inc.**
- 5) Parts which require replacement in the ordinary course of use due to normal wear.**
- 6) Any hoist, after 90 days from the date of purchase, if the hoist is utilized as a component of a rental unit.**
- 7) Damage to paint resulting from deterioration due to use or exposure, such as chipping, scratching or damage due to road salt, tar or pressure washing.**

#### **WHAT YOU MUST DO:**

**In order to make a claim under this warranty:**

You must be the original purchaser of the hoist.

You must properly notify Big Tex Trailer Manufacturing, Inc. within the warranty period of any defect and provide Big Tex Trailer Manufacturing, Inc. with any substantiation that Big Tex Trailer Manufacturing, Inc. may reasonably request.

**The hoist must have been used and maintained in accordance with good industry practice and the recommendations of Big Tex Trailer Manufacturing, Inc. included in your TRAILER HOIST SAFETY, INSTALLATION AND OPERATING MANUAL**

## **LIMITATIONS AND EXCLUSIONS**

Warranties are non-transferable.

**THE FOREGOING WARRANTIES ARE EXCLUSIVE AND THE REMEDIES PROVIDED THEREIN ARE THE SOLE AND ONLY REMEDIES.**

**THERE ARE NO WARRANTIES, EITHER EXPRESS OR IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.**

**EXCEPT AS MAY BE PROHIBITED BY LAW, BIG TEX TRAILER MANUFACTURING, INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR DESCRIPTION INCLUDING BUT NOT LIMITED TO LOSS OF TIME, PROFIT, INCONVENIENCE, LOSS OF USE, TOWING FEES, TELEPHONE CALLS OR COST OF MEALS OR LODGING.**

The limited warranty provided above, subject to the described limitations and exclusions, give you specific legal rights, and you may also have other rights which vary from state/province to state/province.

**5) Inquiries regarding the above warranty should be sent to:**

**Big Tex Trailer Manufacturing, Inc.  
ATTN: Warranty Department  
950 I-30 East  
Mt. Pleasant, Texas 75455  
[www.bigtextrailers.com](http://www.bigtextrailers.com)**