



Read this Owner's Manual thoroughly before operating the equipment. Keep it with the equipment at all times. Replacements are available from Thern, Inc., PO Box 347, Winona, MN 55987, 507-454-2996. [www.thern.com](http://www.thern.com)

**IMPORTANT:** Please record product information on page 2. This information is required when calling the factory for service.

**ORIGINAL TEXT**



# Owner's Manual

For  
**5BH5 Hitch Mounted Crane Base**

## Two-Year Limited Warranty

**Please record the following:**

Date Purchased:

Crane Model No.:

Crane Serial No.:

**If sold with a winch:**

Winch Model No.:

Winch Serial No.:

**This information is required when  
calling the factory for service.**

Thern, Inc. warrants its products against defects in material or workmanship for two years from the date of purchase by the original using buyer, or if this date cannot be established, the date the product was sold by Thern, Inc. to the dealer. To make a claim under this warranty, contact the factory for an RGA number. The product must be returned, prepaid, directly to Thern, Inc., 5712 Industrial Park Road, Winona, Minnesota 55987. The following information must accompany the product: the RGA number, the date of purchase, the description of the claimed defect, and a complete explanation of the circumstances involved. If the product is found to be defective, it will be repaired or replaced free of charge, and Thern, Inc. will reimburse the shipping cost within the contiguous USA.

This warranty does not cover any damage due to accident, misuse, abuse, or negligence. Any alteration, repair or modification of the product outside the Thern, Inc. factory shall void this warranty. This warranty does not cover any costs for removal of our product, downtime, or any other incidental or consequential costs or damages resulting from the claimed defects. This warranty does not cover brake discs, wire rope or other wear components, as their life is subject to use conditions which vary between applications. FACTORY AUTHORIZED REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY TO THE CONSUMER. THERN, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Note:** Thern, Inc. reserves the right to change the design or discontinue the production of any product without prior notice.

## About This Manual

The Occupational Safety and Health Act of 1970 states that it is the employer's responsibility to provide a workplace free of hazard. To this end, all equipment should be installed, operated, and maintained in compliance with applicable trade, industrial, federal, state, and local regulations. It is the equipment owner's responsibility to obtain copies of these regulations and to determine the suitability of the equipment to its intended use.

This Owner's Manual, and warning labels attached to the equipment, are to serve as guidelines for hazard-free installation, operation, and maintenance. They should not be understood to prepare you for every possible situation.

The information contained in this manual is applicable only to the Thern 5BH5 Hitch Mounted Crane Base. Do not use this manual as a source of information for any other equipment.

**The following symbols are used for emphasis throughout this manual:**
**▲WARNING**

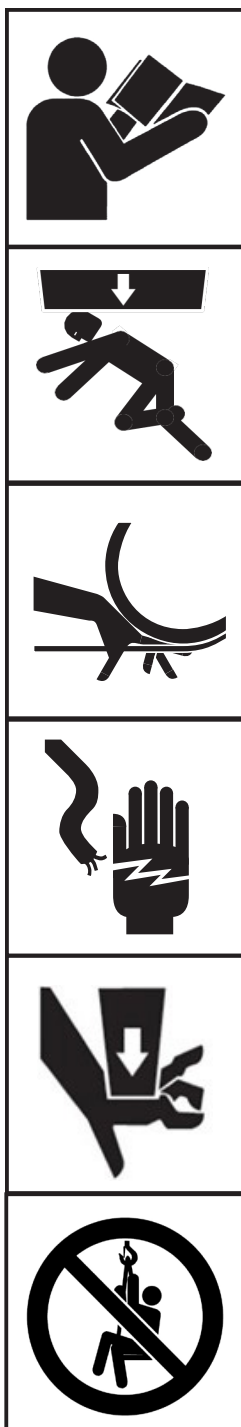
Failure to follow 'WARNING!' instructions may result in equipment damage, property damage, and/or serious personal injury.

**▲CAUTION**

Failure to follow 'CAUTION!' instructions may result in equipment damage, property damage, and/or minor personal injury.

**Important!**

Failure to follow 'important!' instructions may result in poor performance of the equipment.



## Suggestions for Safe Operation

### **⚠ WARNING**

#### **DO the following:**

Read and comply with the guidelines set forth in this Owner's Manual. Keep this manual, and all labels attached to the crane, readable and with the equipment at all times. Contact Thern, Inc. for replacements.

Follow all suggestions in the "Suggestions for Safe Operation" section of the Owner's Manual supplied for the respective davit crane designed for use with this hitch mounted base.

Position the hitch mounted crane base on firm ground such that the crane is level. An uneven base may cause the boom to rotate in the direction the mast is leaning.

Attach the hitch mounted crane base only to a 2 inch x 2 inch Class III or better receiver hitch. The receiver hitch must be properly installed by a qualified service technician.

Use the equipment in a clear location that is away from oncoming traffic or other hazards.

When done working, always remove the hitch mount from the vehicle.

#### **DO NOT do the following:**

Do not lift people, or things over people. Do not walk or work under a load or in the line of force of any load.

Do not exceed the load rating of the crane or any other component in the system. To do so could result in failure of the equipment.

Do not install non-standard davit cranes onto the hitch mounted base without authorization from Thern, Inc.

Do not operate or apply loads without all pins securely in place.

Do not adjust support leg positions while the crane is loaded.

Do not use the hitch mount crane base with lightweight or otherwise unstable vehicles that may move during operation.

Do not move the vehicle with the hitch mount attached.

## 1.1 Installing the Hitch Mounted Base

### **⚠WARNING**

#### **Important!**

- Inspect the hitch mounted base during assembly. This will give you a record of the condition of the base with which to compare future inspections.
- Save all packaging that the base was shipped in, to re-use if you need to repack the base.
- Contact the factory immediately if any parts are missing or damaged.

**Position the hitch mounted crane base on firm ground such that the crane is level. An uneven base may cause the boom to rotate in the direction the mast is leaning.**

**Attach the hitch mounted crane base only to a 2 inch x 2 inch Class III or better receiver hitch. The receiver hitch must be properly installed by a qualified service technician.**

**Use the equipment in a clear location that is away from oncoming traffic or other hazards.**

**Do not use the hitch mount crane base with lightweight or otherwise unstable vehicles that may move during operation.**



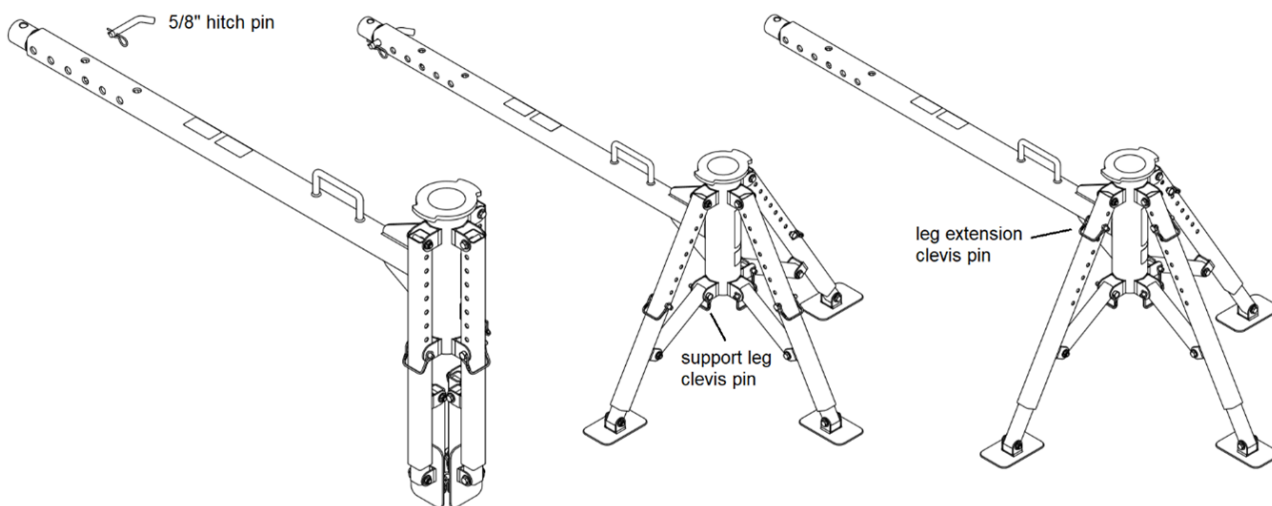
1.1.1 **STUDY PARTS DRAWINGS** to understand how the hitch mounted base is assembled. See page 8.

1.1.2 **LOCATE THE EQUIPMENT** in an area clear of traffic and obstacles that could interfere with operation. Set the vehicle's parking brake.

1.1.3 **ASSEMBLE THE BASE** for the crane to be located directly behind the vehicle. See Figure 1. Skip to section 1.1.4 if you want the crane positioned to the left or right of the vehicle.

- INSERT THE BASE PIPE** assembly into the receiver hitch. Secure in place with the provided 5/8" hitch pin.
- REMOVE THE CLEVIS PINS** to spread the support legs. Reinstall the clevis pins to secure this position.
- REMOVE THE CLEVIS PINS** to extend the support legs. There are various support leg height positions to accommodate different truck sizes and uneven ground. Reinstall the clevis pins to secure the support legs at the desired height. Make sure the base is level. The support legs should be able to extend if necessary during operation.

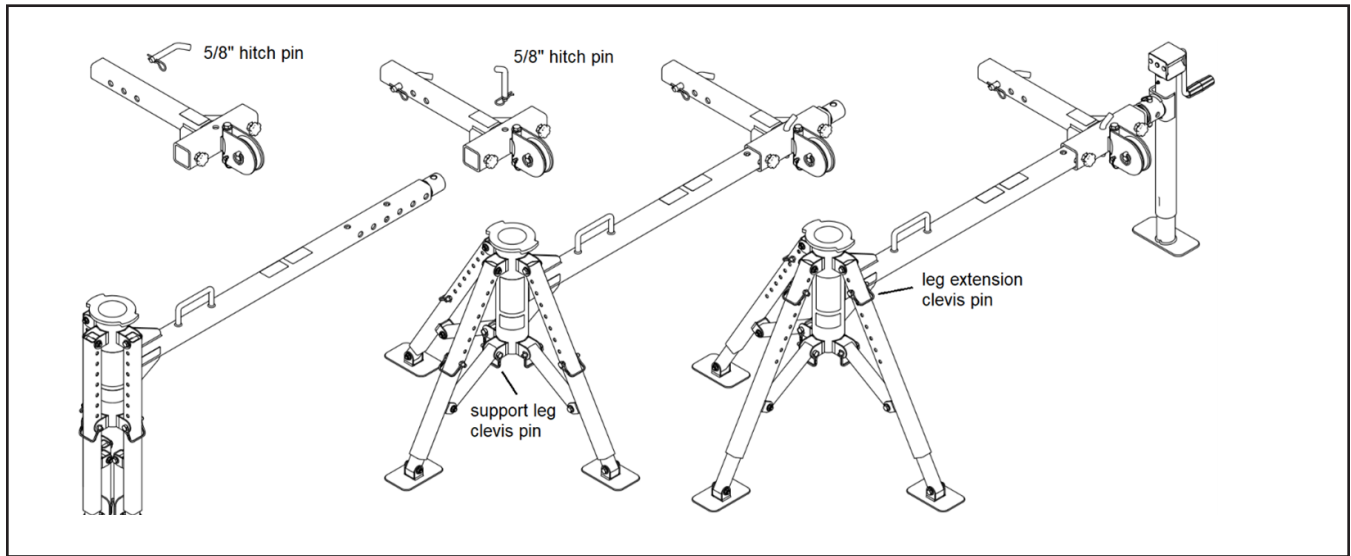
**Figure 1 - Crane located behind the vehicle**



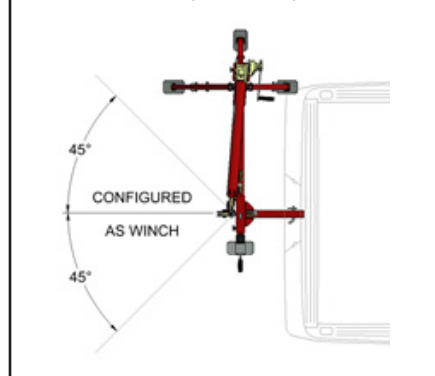
- 1.1.4 ASSEMBLE THE BASE for the crane to be located to the left or right of the vehicle. See Figure 2.
- INSERT THE BASE HITCH “T” assembly into the receiver hitch. Secure in place with the provided 5/8” hitch pin.
  - INSERT THE BASE PIPE assembly into the hitch “T”. Secure in place with the provided 5/8” hitch pin and then tighten thumb screws.
  - REMOVE THE CLEVIS PINS to spread the support legs. Reinstall the clevis pins to secure this position.
  - REMOVE THE CLEVIS PINS to extend the support legs. There are various support leg height positions to accommodate different truck sizes and uneven ground. Reinstall the clevis pins to secure the support legs at the desired height. Make sure the base is level. The support legs should be able to extend if necessary during operation.
  - ATTACH THE SUPPORT JACK and secure with the clevis pin supplied with the jack. Rotate the handle to extend the leg to the ground. Check again to make sure the base is level.
  - TO USE THE PULLEY TO CHANGE ROPE DIRECTION, remove the sheave from the base hitch “T”. Position the winch rope in the sheave’s groove and reinstall the sheave onto the base hitch “T”. Loads can be pulled horizontally at angles up to 45 degrees left or right. See Figure 3.



**Figure 2 - Crane located left or right of the vehicle**



**Figure 3 – Pully**  
(Top View)



## 1.2 Installing the Crane into Hitch Base

- 1.2.1 ASSEMBLE THE CRANE using the Owner’s Manual provided with the respective Thern crane purchased for this hitch mounted base.
- 1.2.2 ASSEMBLE THE ROTATION STOP assembly provided with the hitch base to the crane using a 7/16” wrench and 5/32” hex key.

## 2.2 Preparing for Operation

### **⚠WARNING**

#### **Important!**

- When determining whether the load will exceed the load rating, consider the total force required to move the load.
- Obey a stop signal from anyone.
- Maintain tension on the wire rope to keep it tightly and evenly wound on the drum.
- If the crane and load are not visible during the entire operation, get help from another person.
- Appoint a supervisor if more than one person is involved in the operation. This will reduce confusion and increase safety.
- When lifting a load, use a tag line to keep the load from swinging or twisting, while keeping yourself away from the load.

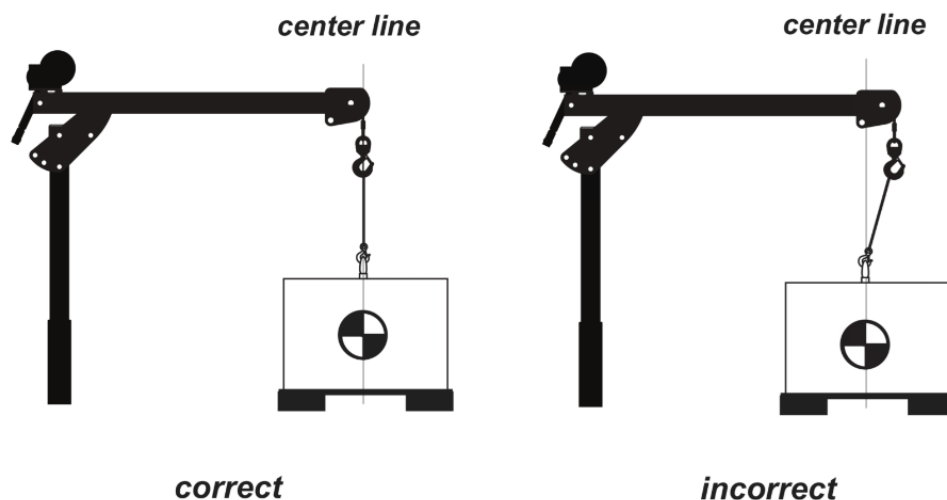
**Do not operate or apply loads without all pins securely in place.**

**Do not adjust support leg positions while the crane is loaded.**

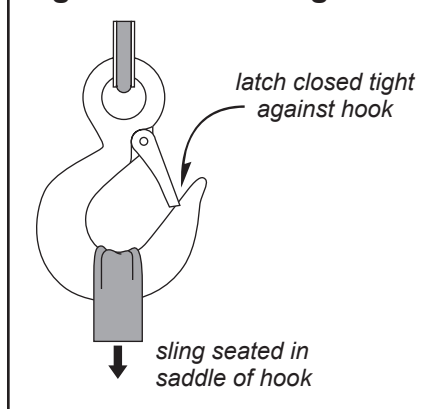
**Do not use the hitch mount crane base with lightweight or otherwise unstable vehicles that may move during operation.**

- 2.2.1 **CONSIDER THE OPERATION.** Do not begin until you are sure you can perform the entire operation without hazard.
- 2.2.2 **SECURE THE VEHICLE.** Make sure the vehicle's engine is OFF with automatic transmission in PARK or manual transmission in 1st gear. Engage the parking brake and chock wheels for added safety.
- 2.2.3 **INSPECT ALL COMPONENTS** of the system.
- INSPECT THE CRANE and other equipment according to the Instructions for Frequent Inspection.
  - INSPECT THE WINCH according to the instructions in the Winch Owner's Manual.
  - OPERATORS must be in good health, alert, thoroughly trained in operating the equipment, and properly clothed (hard hat, safety shoes and safety glasses, no loose clothing).
  - THE LOAD must be clear of other objects and free to move. Make sure the load will not tip, spin, roll away, or in any way move uncontrollably.
- 2.2.4 **KNOW YOUR LOAD** and make sure you do not exceed the load rating of the crane or any other equipment in the system.
- 2.2.5 **POSITION THE BOOM** so the load hook is centered over the load. Avoid side pulls which could damage the crane or cause the load to tip. See Figure 4.

**Figure 4 – Positioning the Boom**





**Figure 5 – Attaching Load**

## 2.3 Attaching the Load

### ⚠ WARNING

**Do not wrap the wire rope around the load. This damages the wire rope and could cause the load to escape. Use a sling or other approved lifting device.**

- 2.3.1 CLEAR OBJECTS from the path of the load so you can move it freely and observe it at all times during the operation.
- 2.3.2 MAKE SURE THE WIRE ROPE is not twisted. A twisted wire rope could cause the load to spin when it is raised off the ground.
- 2.3.3 ATTACH THE LOAD using a nylon sling, or other approved lifting device. Follow the recommendations of the sling manufacturer.
  - a SEAT THE SLING in the saddle of the hook with the hook latch completely closed. See Figure 5.
  - b CENTER THE LOAD on the hook so it will remain balanced and not tip or rotate to one side.

## 2.4 Moving the Load

### ⚠ WARNING

**Do not make adjustments to the crane or base while the crane is loaded.**

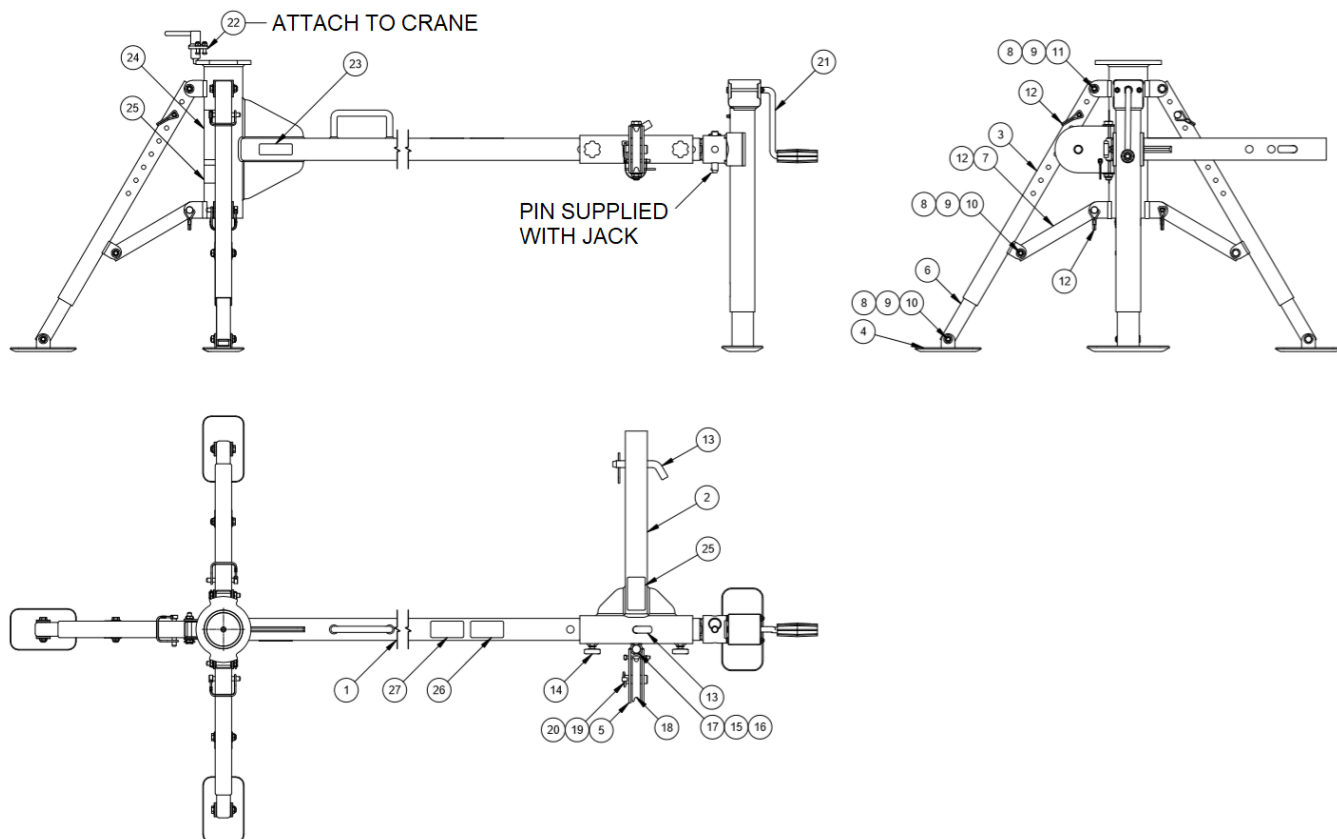
- 2.4.1 MOVE THE LOAD slowly and smoothly, only a small distance at first. Make sure the load is balanced and securely attached before continuing.
- 2.4.2 OPERATE THE WINCH to raise or lower the load. Refer to the instructions in the Winch Owner's Manual.
- 2.4.3 OBSERVE THE WIRE ROPE as it winds onto the drum. If it becomes loose, uneven, or overlapped, stop the operation and rewind the wire rope before continuing. **Continued operation with overlapped or uneven wire rope can damage the wire rope and shorten its life.**
- 2.4.4 ROTATE THE MAST AND BOOM to move the load side-to-side.
  - a ROTATE THE BOOM slowly and smoothly to avoid swinging the load or causing shock loads. **Do not jam the boom against other objects.**
  - b CENTER THE LOAD on the hook so it will remain balanced and not tip or rotate to one side.

**Table 1 - Weight Chart**

Base Component	lbs	(kg)
Main Assembly	47.6	(21.6)
Leg Extension (each)	4.8	(2.2)
Receiver "T" w/ Sheave	17.3	(7.8)
Support Jack	16.0	(7.2)
<b>TOTAL</b>	<b>95.3</b>	<b>(43.2)</b>

**5BH5 Hitch Mount Base**

item	description	part number	qty.
1	WELDMENT BASE PIPE	A27732	1
2	WELDMENT BASE HITCH T	A27733	1
3	WELDMENT BASE LEG	A27735	3
4	WELDMENT BASE FOOTPAD	A27736	3
5	WELDMENT BASE SHEAVE	A27737	1
6	BASE LEG TUBE EXTENSION	A27826	3
7	BASE LEG SUPPORT	A27828	3
8	WASHER FLT SAE .375 X .812 X .065 ZNPL	A11973	18
9	NUT HEX JAM NYLK .375-16NC ZNPL GR2	A3180	9
10	CAPSCR HEXHD .375-16NC X 2.000 ZNPL GR5	A3495	6
11	CAPSCR HEXHD .375-16NC X 2.250 ZNPL GR5	A3494	3
12	PIN LINCH D .375 X 1.875 ZNPL	A27832	6
13	PIN HITCH .625 X 3.000 EFF LENGTH ZNPL	A27214	2
14	SCREW THUMB .375-16NC X .750 BLK A27831	2	
15	WASHER FLT SAE .500 X 1.062 X .095 ZNPL	A2932	2
16	NUT HEX JAM NYLK .500-13NC ZNPL GR2	A3176	1
17	CAPSCR HEXHD .500-13NC X 5.000 ZNPL GR5	A3247	1
18	SHEAVE ASSEMBLY	B2462	1
19	PIN CLEVIS .750 DIA 5PT SHEAVE SST	A12314	1
20	PIN LINCH D ASSY - SEE PRINT	A12414SS	1
21	JACK ROUND SCREW 2000 LB. W/FOOTPLATE	A27829	1
22	ROTATION STOP ASSEMBLY 5Px	B6241	1
23	LABEL THERN 1.00 X 3.20	A6889	1
24	LABEL WARNING	B5790	1
25	LABEL WARNING BEFORE LOADING	B6229	2
26	LABEL WARNING VEHICLE STABILITY	A27271	1
27	LABEL WARNING REMOVE HITCH MOUNT	A27432	1





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**NOTES:**

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