

# Owner's Manual & Safety Instructions

**Save This Manual** Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

19j

# **PITTSBURGH<sup>®</sup> AUTOMOTIVE**

**69514**

## **2 TON CAPACITY FOLDING ENGINE CRANE**



Visit our website at: <http://www.harborfreight.com>  
Email our technical support at: [productsupport@harborfreight.com](mailto:productsupport@harborfreight.com)

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

Copyright© 2012 by Harbor Freight Tools®. All rights reserved.  
No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.  
Tools required for assembly and service may not be included.

### **⚠ WARNING**


Read this material before using this product.  
Failure to do so can result in serious injury.  
**SAVE THIS MANUAL.**

# Table of Contents

Safety .....	2	Maintenance .....	8
Specifications .....	4	Parts Lists and Diagrams .....	10
Setup .....	4	Warranty .....	12
Operation.....	7		

## PITTSBURGH<sup>®</sup> AUTOMOTIVE

### WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
<b>⚠ DANGER</b>	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
<b>⚠ WARNING</b>	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
<b>⚠ CAUTION</b>	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
<b>NOTICE</b> <b>CAUTION</b>	Addresses practices not related to personal injury.

## IMPORTANT SAFETY INFORMATION

### General Safety Warnings

#### ⚠ WARNING

**Read all safety warnings and instructions.**

*Failure to follow the warnings and instructions may result in serious injury.*

**Save all warnings and instructions for future reference.**

1. Study, understand, and follow all instructions before operating this device.
2. Do not exceed **2 ton** rated capacity for the Engine Crane.
3. Use only on hard, level surfaces.
4. Before moving, lower the load to the lowest possible point.
5. Use only sling or chains with a rated capacity greater than the weight of the load being lifted.
6. Do not allow load to swing or drop violently while lowering or moving.
7. Do not make any alterations or modifications to Engine Crane. Do not adjust safety valve.
8. Properly extend leg extensions and secure boom in proper setting before use.
9. Follow capacities marked on boom; capacity decreases as boom lengthens.
10. Wear ANSI-approved safety goggles and heavy-duty work gloves during use.
11. Verify replacement jack has same rating, mounting points and maximum length.
12. Do not use for aircraft purposes.

13. Inspect before every use; do not use if parts loose or damaged.
14. Keep your work area clean and well lit. Cluttered work areas invite accidents.
15. Keep bystanders, children, and visitors away while operating Engine Crane. Distractions can cause you to lose control.
16. Stay alert. Watch what you are doing, and use common sense when operating a jack. Do not use a jack while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating jacks may result in serious personal injury.
17. Follow instructions in the "Inspection, Maintenance, And Cleaning" section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of injury and may void any applicable warranty.
18. Maintain labels and nameplates on the Engine Crane. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
19. Before use, read manufacturer's instruction manual for the object you will lift.
20. Industrial applications must follow OSHA requirements.
21. The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors, which cannot be built into this product, but must be supplied by the operator.



**SAVE THESE INSTRUCTIONS.**

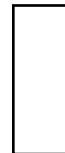
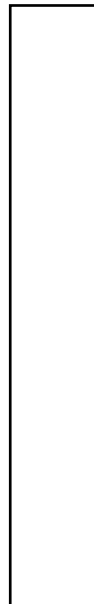
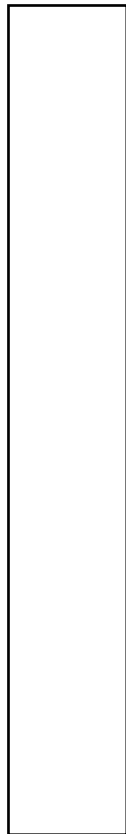
# Specifications

Specifications	
Jack Capacity	8 Ton

Boom Positions	
2 Ton	84 IN.
1-1/2 Ton	89 IN.
1 Ton	95 IN.
1/2 Ton	100 IN.

# Assembly

Part #32 14x90 mm	Part #8 14x100 mm	Part #11 16x80 mm	Part #20 16x90 mm	Part #15 16x100 mm	Part #16 16x110 mm	Part #2 12x80 mm	Part #25 8x20 mm
----------------------	----------------------	----------------------	----------------------	-----------------------	-----------------------	---------------------	---------------------



Part #29  
8x12 mm



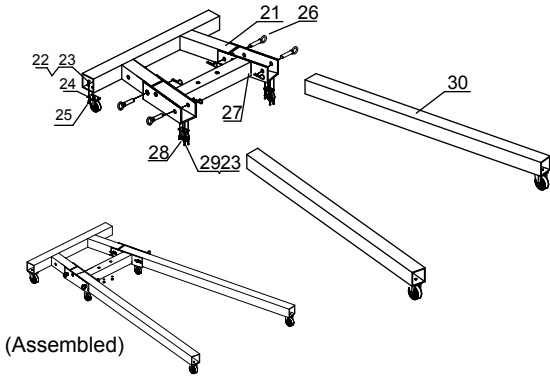
## ⚠ WARNING

**TO PREVENT SERIOUS INJURY AND DEATH:** The correct bolts must be used during assembly. Carefully compare bolts to Bolt Identification illustration above and the measurements shown in the parts list and assembly diagrams near the end of this manual to make sure that the correct bolts are used in the correct place.

**WARNING!** For safety and ease of assembly, use two people to assemble the Shop Crane.

**CAUTION!** DO NOT TIGHTEN ANY BOLTS UNTIL YOU ARE FULLY FINISHED WITH ASSEMBLY. OTHERWISE PARTS WILL NOT LINE UP PROPERLY.

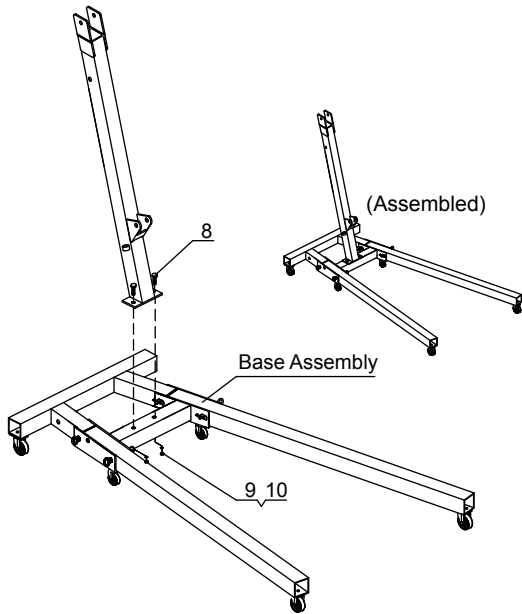
**CAUTION! DO NOT TIGHTEN ANY BOLTS UNTIL YOU ARE FULLY FINISHED WITH ASSEMBLY. OTHERWISE PARTS WILL NOT LINE UP PROPERLY.**



**Figure A**

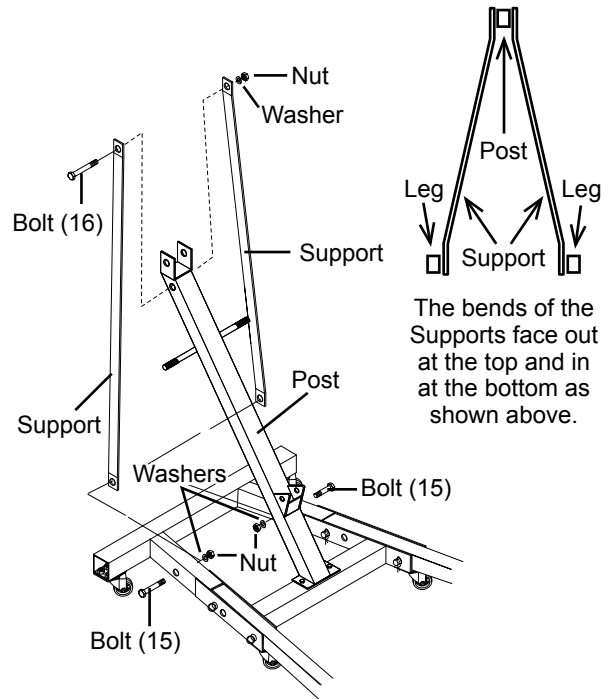
1. Slide the Legs into the front of the Base and Lock Legs in place using the Lock Pins. To insert the Lock Pins, lift up on front of Base until holes line up. After all four Lock Pins are inserted, insert one R-Pin through small hole at end of each Lock Pin until it snaps into place.

**Note:** Make sure Lock Pins are secure before proceeding.



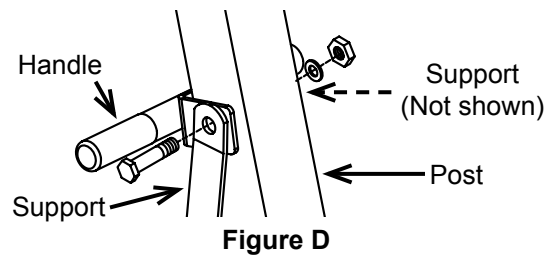
**Figure B**

2. Use the Bolts, Washers, and Nuts to secure the bottom of the Post to the Base.



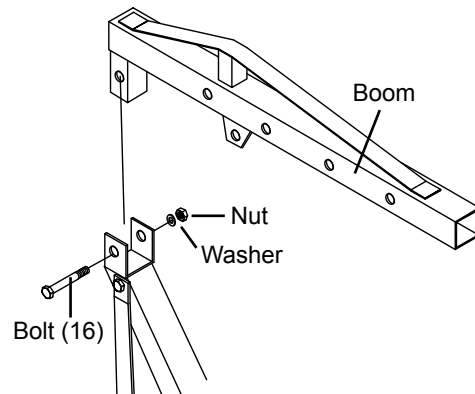
**Figure C**

3. Use two Bolts, Washers and Nuts to fasten the lower ends of the Supports to the inside of the Frame, then use one Bolt, Washer and Nut to fasten the top ends of the Supports and the Handle to the Post.



**Figure D**

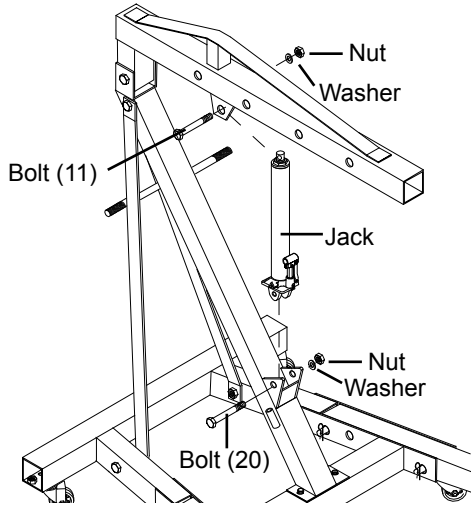
**Note:** Slide the Handle between the Supports and Post, align all holes, then secure in place.



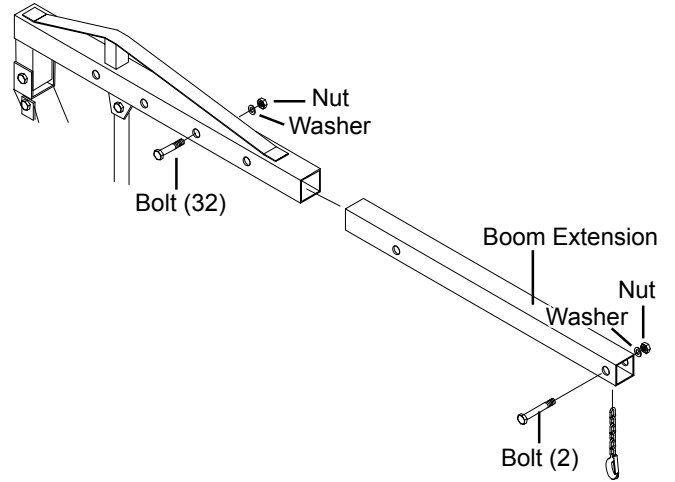
**Figure E**

4. Use the Bolt, Washer and Nut to attach the Boom to the top of the Post.

**CAUTION! DO NOT TIGHTEN ANY BOLTS UNTIL YOU ARE FULLY FINISHED WITH ASSEMBLY. OTHERWISE PARTS WILL NOT LINE UP PROPERLY.**



**Figure F**

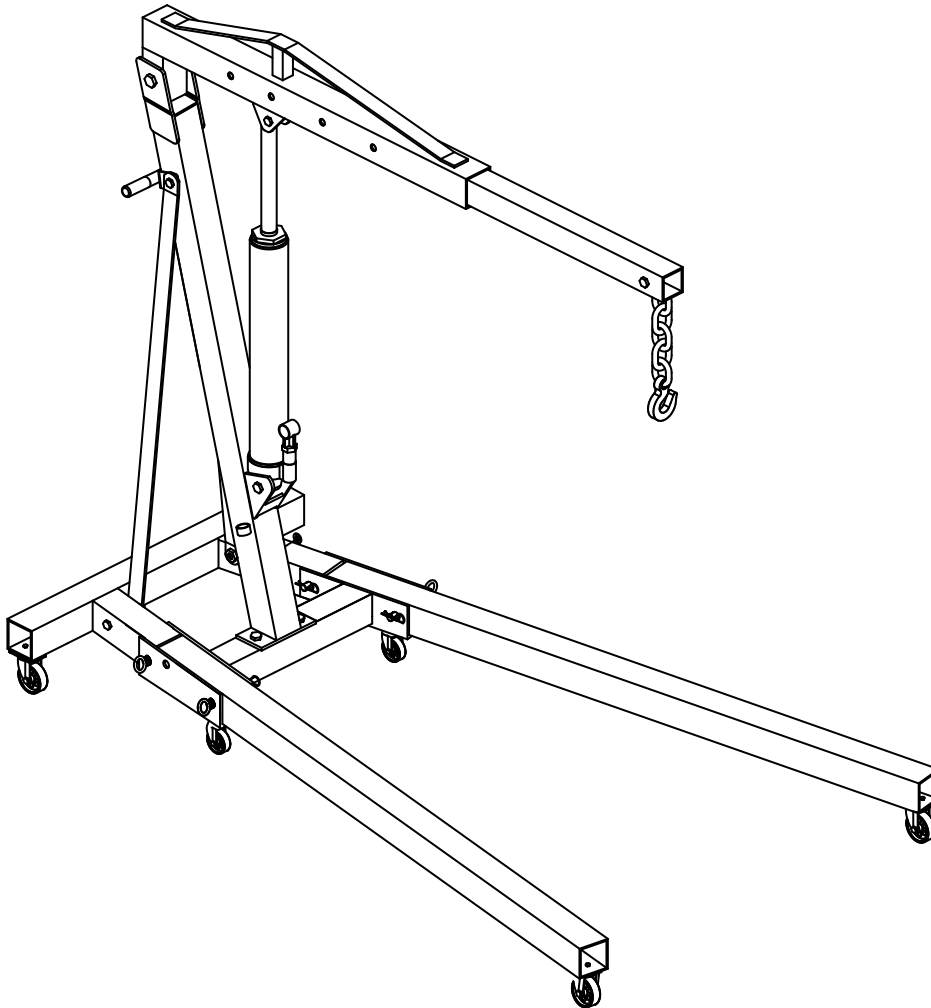


**Figure G**

5. Use a Bolt, Washer and Nut to attach lower end of the Jack to the Post and another Bolt, Washer and Nut to attach the top of the Jack to the Boom.

6. Slide the Boom Extension into the Boom and use the Bolt, Washer and Nut to secure at the desired load rating. Use the Bolt, Washer and Nut to attach the Hook and Chain to the end of the Boom Extension.

7. After assembly, tighten all Nuts and Bolts securely using a Wrench or Socket (sold separately).



**Figure H: Assembled Engine Crane**

## Operating Instructions



Read **ENTIRE IMPORTANT SAFETY INFORMATION** section at beginning of this manual including all text under subheadings therein before set up or use of this product.

**Note:** Once Assembly is complete, tighten ALL Bolts before initial operation.

### Lifting and Lowering

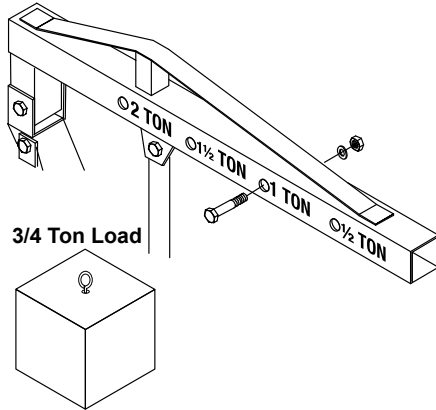


Figure I

1. Locate the hole on the Boom with a weight limit higher than the weight you will be lifting.  
**For example: Locate the 1 TON hole on the Boom for a load that is under one Ton. See Figure 9.**

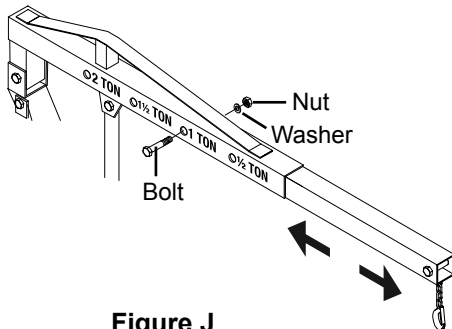


Figure J

2. Adjust the Boom Extension so the hole furthest from the hook-end aligns with the chosen hole on the Boom. Secure into place by inserting the Bolt through all aligned holes and tightening in place with the Washer and Nut. See Figure 10 above.

**WARNING!** Do not stand under an object that is being lifted by the Engine Crane. Be aware of the possibility of a load slipping off the Hook and Chain. An item that falls from the Crane can cause serious injury.

3. Move the Crane so that the Hook and Chain is directly above the item to be lifted.
4. Securely attach the Hook and Chain to the item.

5. To raise the Boom, turn the Jack's release valve fully clockwise (right). Insert the Handle into the Jack and pump (up and down) repeatedly until the item has been lifted to the desired height.

**WARNING!** Fully tighten the release valve or else the Jack may lower or may not be able to reach the full height.

**WARNING! DO NOT MOVE THE CRANE WHEN UNDER LOAD.** The Casters are not designed to be rolled when the Crane is lifting heavy objects.

6. To lower the Crane, **SLOWLY** turn the Jack's release valve counterclockwise (left).

### Folding the Frame

**WARNING!** Do not fold crane while loaded.

1. Lower Crane all the way.
2. Remove R-Pins from the front Lock Pins. Remove the front Lock Pins. Leave rear Lock Pins in.
3. Raise Leg until it rests against Handle.
4. Insert a front Lock Pin into the middle hole of the Base, for each Leg, and reinsert R-Pins.

### Bleeding Instructions

**IMPORTANT!** Before first use, check for proper hydraulic oil level and thoroughly test the equipment. If it does not work properly, bleed excess air from its hydraulic system as follows:

1. Open Release Valve and lower Jack completely.
2. Remove Oil Plug and fill with hydraulic oil (sold separately) to full level.
3. Apply downward pressure to the Boom and Pump the Jack Handle quickly several times.
4. Check the Oil Fill Hole and, if necessary, top off the Oil Fill Hole with hydraulic oil.
5. Replace the Oil Plug and close the Release Valve.
6. Test the equipment several times for proper operation before attempting to lift a load. If, after bleeding, the equipment still does not appear to be working properly, do not use the equipment until it has been repaired by a qualified service technician.

## Maintenance and Servicing



Procedures not specifically explained in this manual must be performed only by a qualified technician.

### **⚠️ WARNING** TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:

Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

## Cleaning, Maintenance, and Lubrication

---

1. **Before each use**, inspect the general condition of the Jack. Check for broken, cracked, or bent parts, loose or missing parts, and any condition that may affect the proper operation of the product. If a problem occurs, have the problem corrected before further use.  
**Do not use damaged equipment.**
2. **Before each use, thoroughly test the Jack for proper operation prior to its actual use. If the Jack appears *not* to be working properly, follow *Bleeding* instructions on page 9.**
3. **Change the hydraulic oil at least once every three years:**
  - a. With the Jack fully lowered, remove the Oil Filler Plug on the side of the Housing.
  - b. Tip the Jack to allow the old hydraulic oil to drain out of the Housing completely, and dispose of the old hydraulic oil in accordance with local regulations.
  - c. With the Jack upright, completely fill the Housing with a high quality hydraulic oil (not included) until the oil just begins to run out of the Oil Fill Hole.
  - d. Open the valve Release Screw and pump the Handle to bleed air from the system.
  - e. Reinstall the Oil Filler Plug.
4. Wipe dry with a clean cloth. Then, store the Jack in a safe, dry location out of reach of children and other non-authorized people.



## Troubleshooting

**⚠️WARNING** TO PREVENT SERIOUS INJURY: Use caution when troubleshooting malfunctioning jack. Stay clear of supported load. Completely resolve all problems before use. If solutions presented in Troubleshooting guide do not solve the problem, have a qualified technician inspect and repair jack before use. **After jack is repaired: Test it carefully without a load by raising and lowering it fully, checking for proper operation, BEFORE RETURNING JACK TO OPERATION.**

**DO NOT USE A DAMAGED OR MALFUNCTIONING JACK!**

POSSIBLE SYMPTOMS						PROBABLE SOLUTION (Make certain that the Jack is not supporting a load while attempting a solution.)
Jack will not lift at its weight capacity	Chain and/or Hook lowers under load	Pump stroke feels spongy	Chain and/or Hook will not lift all the way	Handle moves up when Jack is under load	Oil leaking from Filler Plug	
X	X					Check that Release Valve is closed fully. Bleed air from the system.
X	X			X		Valves may be blocked and may not close fully. To flush the valves: 1. Lower the Chain / Hook and securely close the Release Valve. 2. Manually lift the Chain / Hook several inches. 3. Open the release valve and force the Chain / Hook down as quickly as possible.
X		X	X			Jack may be low on oil. Check the oil level and refill if needed. Jack may require bleeding - see instructions on page 9.
					X	Unit may have too much hydraulic oil inside, check fluid level and adjust if needed.

## PLEASE READ THE FOLLOWING CAREFULLY

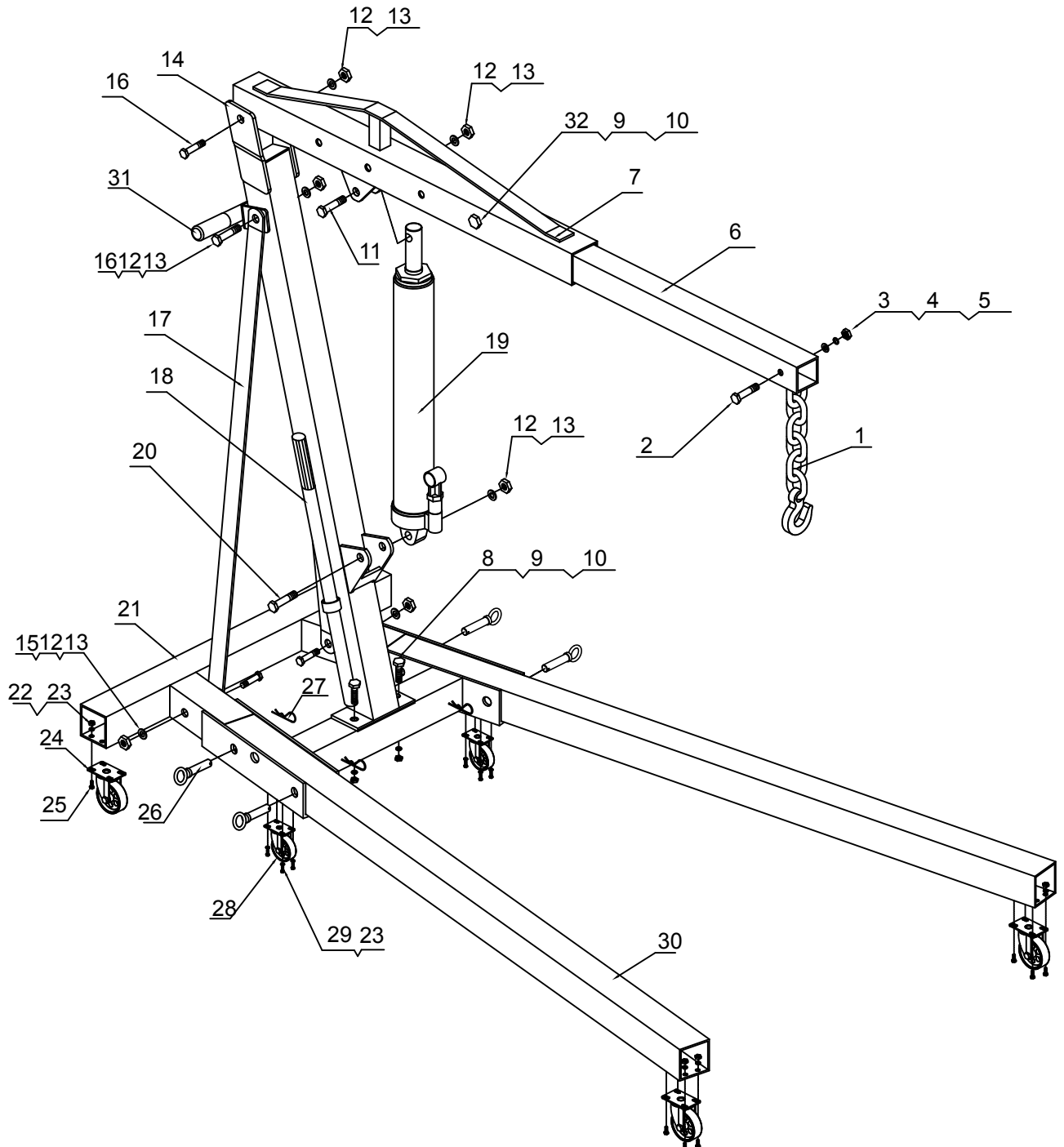
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

# Crane Parts List and Diagram

Part	Description	Qty
1	Hook & Chain	1
2	Hex Bolt M12x80	1
3	Lock Washer Ø12	1
4	Flat Washer Ø12	1
5	nut M12	1
6	Boom Extension	1
7	Boom	1
8	Hex Bolt M14x100	2
9	Flat Washer Ø14	3
10	nut M14	3
11	Hex Bolt M16x80	1

Part	Description	Qty
12	Flat Washer Ø16	6
13	nut M16	6
14	Main Post	1
15	Hex Bolt M16x100	2
16	Hex Bolt M16x110	2
17	Support	2
18	Handle	1
19	8 Ton Long Ram Jack	1
20	Hex Bolt M16x90	1
21	Base	1

Part	Description	Qty
22	nut M8	16
23	Lock Washer Ø8	24
24	3½" Swivel Caster	4
25	Hex Bolt M8x20	16
26	Lock Pin	4
27	R Pin	4
28	3" Swivel Caster	2
29	Hex Bolt M8x12	8
30	Leg	2
31	Handrail	1
32	Hex Bolt M14X90	1



**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

SAFETY

SETUP

OPERATION

MAINTENANCE

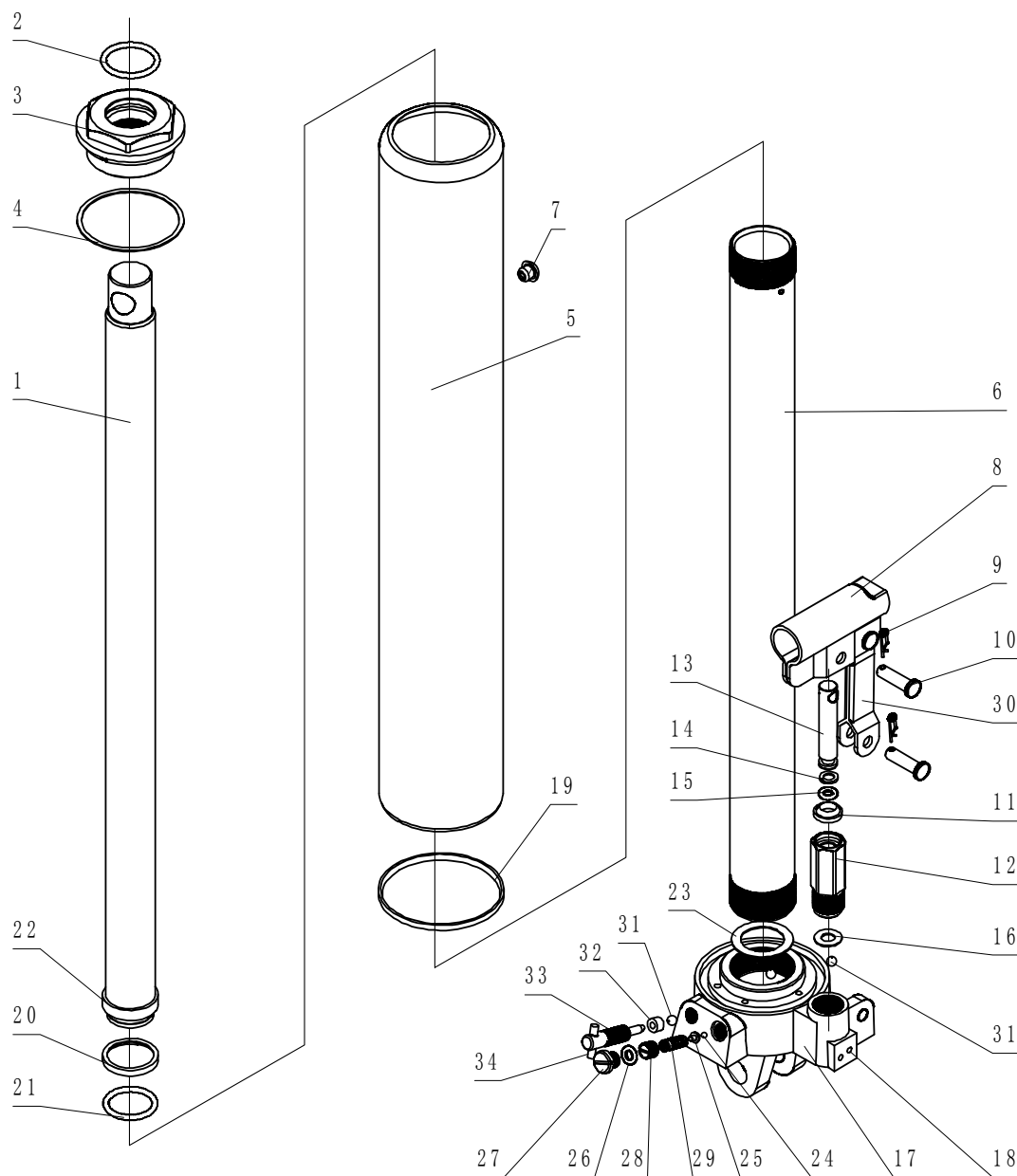
# Jack Parts List and Diagram

Part	Description	Qty
1A	Piston Rod	1
2A	O-Ring	1
3A	Top Cap	1
4A	Rectangle Ring	1
5A	Cover	1
6A	Cylinder	1
7A	Piston	1
8A	Socket	1
9A	Locking Spring	3
10A	Axis Pin	2
11A	Dust Ring	1
12A	Pump Body	1

Part	Description	Qty
13A	Pump Core	1
14A	Snap Ring	1
15A	O-Ring	1
16A	Washer	1
17A	Base	1
18A	Bolt M5x12	2
19A	Trapezoid Ring	1
20A	Bowl Ring	1
21A	O-Ring	1
22A	Piston	1
23A	Washer	1
24A	Steel Ball Ø4	1

Part	Description	Qty
25A	Spring Base	1
26A	Rectangle Ring	1
27A	Screw	1
28A	Adjustable Screw	1
29A	Adjustable Spring	1
30A	Linkage	1
31A	Steel Ball Ø6	3
32A	Rectangle Ring	1
33A	Release Valve Rod	1
34A	Round Pin	1

**Note:** When re-ordering parts from this list, use the part number with the "A" suffix.



Record Product's Serial Number Here: \_\_\_\_\_

**Note:** If product has no serial number, record month and year of purchase instead.

**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

SAFETY  
SETUP  
OPERATION  
MAINTENANCE

## Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**PITTSBURGH<sup>®</sup> AUTOMOTIVE**

26541 Agoura Road • Calabasas, CA 91302 • 1-888-866-5797