



**DO THE JOB RIGHT.®**

Item #31922

# **2-TON ENGINE CRANE**

## **INSTRUCTIONS**



**Motor and Lift Chain not included**

The **EASTWOOD ENGINE CRANE** features robust, heavy-duty construction and oversized components to handle frequent shop demands, as well as hobbyist use. Steel, ball bearing swivel casters and an 8-Ton hydraulic cylinder will support up to a total loaded weight of 4000 lbs. [1814 kg.] yet is completely portable for lifting and moving engines, transmissions, pickup beds and other concentrated, heavy loads around vehicles and shop areas. The efficient fold-up design requires only a minimal 2' x 2' storage area when not in use.

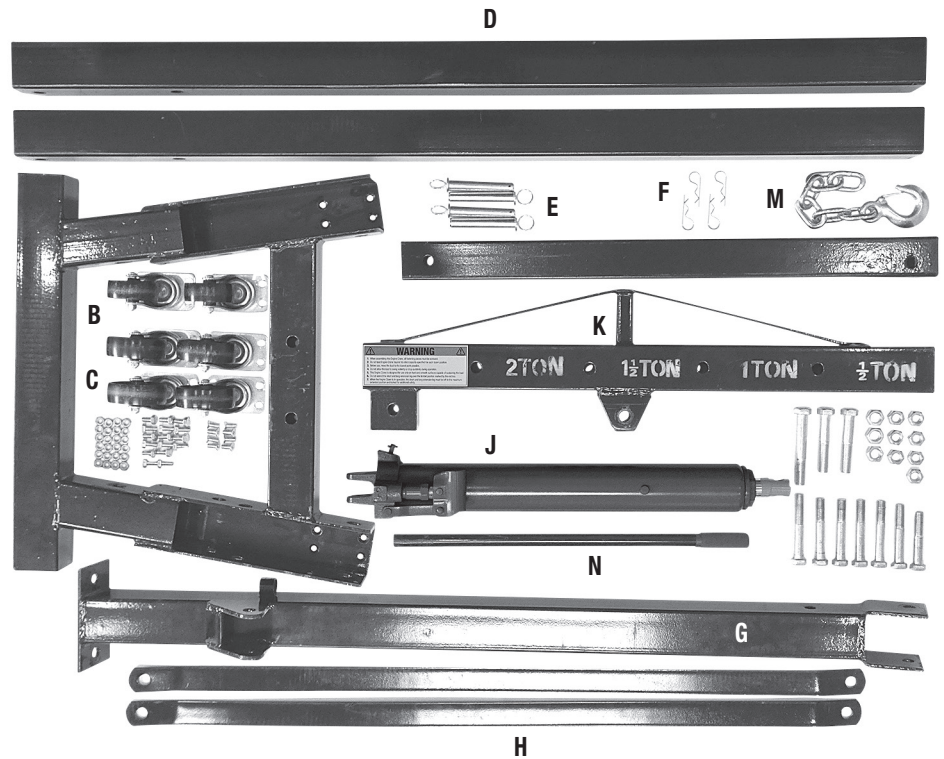
## CONTENTS

### COMPONENTS

- (1) Base - [A]
- (4) 3-1/2" Swivel Casters - [B]
- (2) 2-3/4" Swivel Casters - [C]
- (2) Legs - [D]
- (4) Lock Pins - [E]
- (4) Pin Clips - [F]
- (1) Post - [G]
- (2) Braces - [H]
- (1) Hydraulic Cylinder - [J]
- (1) Lifting Boom - [K]
- (1) Lifting Boom Extension - [L]
- (1) Chain & Hook - [M]
- (1) Cylinder Control Handle - [N]

### HARDWARE

- (16) M8 x 15mm Hex Bolts
- (8) M8 x 15mm Countersunk Phillips Head Screws
- (24) M8 Nuts
- (1) M14 x 100mm
- (4) M14 x 95mm
- (1) M14 x 90mm
- (1) M14 x 80mm
- (7) M14 Nuts
- (1) M16 x 110mm
- (2) M16 x 90mm
- (3) M16 Nuts



## TOOLS REQUIRED

### TOOLS REQUIRED

- Two 14mm wrenches (not included)
- Two 22mm wrenches (not included)
- Two 24mm wrenches (not included)
- A #3 Phillips screw driver (not included)

## SPECIFICATIONS

<b>Max. Weight Capacity</b>	4000 lbs. [1814 kg]
<b>Maximum Lifting Boom Clearance</b>	6' [1.82m]
<b>Overall Boom Extended Length (@1/2 Ton)</b>	4-1/2' [1.37m]
<b>Assembled Engine Crane weight</b>	173 lbs. [78.5 kg.]

# SAFETY INFORMATION

The following explanations are displayed in this manual, on the labeling, and on all other information provided with this product:

## **⚠ DANGER**

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

## **⚠ WARNING**

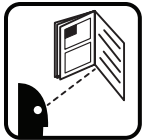
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

## **⚠ CAUTION**

CAUTION used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

## **⚠ NOTICE**

NOTICE is used to address practices not related to personal injury.



### **⚠ READ INSTRUCTIONS**

- Thoroughly read and understand this manual before using.
- Save for future reference.



### **⚠ DANGER ENGINE CRANE CAN TIP OR COLLAPSE CAUSING SEVERE INJURY!**

- **DO NOT** attempt to move Engine Crane on sloped surfaces while loaded.
- **DO NOT** concentrate a heavy load to either side or end of the Engine Crane. This can cause the balance to shift suddenly, tipping the Engine Crane and its load which can quickly cause severe injury and property damage!
- **DO NOT** exceed the rated 4000 lbs. [1814 kg.] weight capacity.
- **DO NOT** use to support humans or animals.
- **DO NOT** climb on the Engine Crane.
- **DO NOT** use the Engine Crane to support items other than engines or other heavy, concentrated loads.
- **DO NOT** attempt to transport this Engine Crane with a load attached by any hauling method.
- **DO NOT** use with lifting devices and/or chains, cables or ropes that are frayed, twisted, kinked or otherwise damaged.

### **⚠ WARNING**

- **DO NOT** remove or cover any of the factory supplied labels or warnings! They include specific safety information that must be communicated to future users.



### **⚠ WARNING FALL HAZARD!**

- Awkward, out of balance body positions may be attempted while trying to reach specific areas of objects placed on the Engine Crane during use. Failure to ensure proper footing can quickly result in a fall which could inflict serious personal injury or property damage.



### **⚠ CAUTION PINCH/CRUSH HAZARD!**

- This Engine Crane has moveable components that can crush and pinch. Keep fingers and hands away from pinch points when operating.

# ASSEMBLY PREPARATION

## **⚠ CAUTION INJURY HAZARDS!**

The Eastwood Engine Crane consists of heavy metal components (173 lbs. [78.5 kg.] assembled weight) which can cause potentially serious injuries if allowed to drop. Avoid pinching hands while handling parts during assembly.

- Obtaining the assistance of a helper during assembly is necessary. DO NOT attempt to construct this Engine Crane without assistance!
- The use of ANSI approved safety shoes, head protection gear and eye protection is necessary.
- Perform assembly in a large, uncluttered area close to area of intended usage.
- Allow sufficient area for operator and helper to remain clear when choosing operating area.
- Use only on a smooth, level and clean work surface. **DO NOT** use on a sloped or rough textured surface, earth, grass, sand, gravel or any other loose or unstable surface.
- **DO NOT** attempt to move Engine Crane on sloped surfaces while loaded.
- Use Extreme Caution when raising or lowering the Lifting Boom while the Engine Crane is supporting a load.

## **⚠ NOTICE**

To prevent scratches and damage to the finish of the Engine Crane components, it is strongly advisable to use cardboard, carpet, blankets etc. covering a 4' x 4' area before beginning assembly.

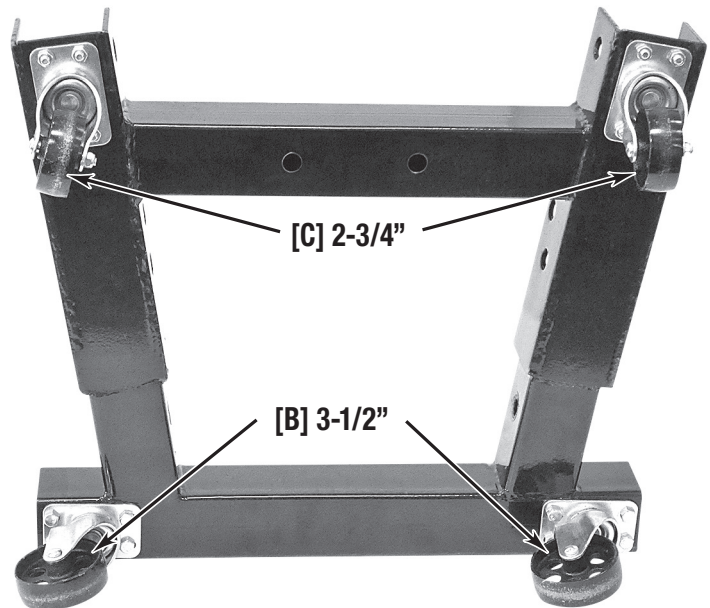
# ASSEMBLY

## **SWIVEL CASTERS [B] & [C] TO BASE [A]**

Note that there are 2 sizes of Swivel Casters: Four 3-1/2" [B] and Two 2-3/4" [C].

1. Stand the Base [A] up, resting on the square tube boxed section end (FIG 1).
2. Align the four holes each of two of the large 3-1/2" Swivel Casters [B] with those in the boxed section of the Base [A] and secure them with eight M8 x 15 Hex Head Bolts and Nuts using two 14mm wrenches (not included) (FIG 1).
3. Attach the two smaller 2-3/4" Swivel Casters [C] to the open channel section arms of the Base [A] and secure them with eight M8 x 15 Phillips Head Countersunk Screws and Nuts using a #3 Phillips screw driver and a 14mm wrench (not included) (FIG 1).

FIG. 1



### SWIVEL CASTERS [B] TO LEGS [D]

1. Place the two Legs on floor with the four holes in each of the ends facing upward (FIG 1).
2. Align the four holes each of two of the large 3-1/2" Swivel Casters [B] with those in the Legs [D] and secure them with eight M8 x 15 Hex Head Bolts and Nuts using two 14mm wrenches (not included) (FIG 2).

### LEGS [D] TO BASE [A]

1. Set the Base [A] Assembly with its Casters setting on a level floor (FIG 3).
2. Place each Leg [D] with the radiused corners facing downward and into the open "C" channel of the Base. The opposite ends will be resting on the Casters.
3. Align the large, 20mm holes in the sides of the Base [A] with those in the Legs [D] then insert the four Lock Pins [E] into the holes (FIG 3).
4. Next, place the Pin Clips [F] through the holes in the protruding ends of the four Lock Pins [E] to prevent them from sliding out during use (FIG 4).

### POST [G] TO BASE [A]

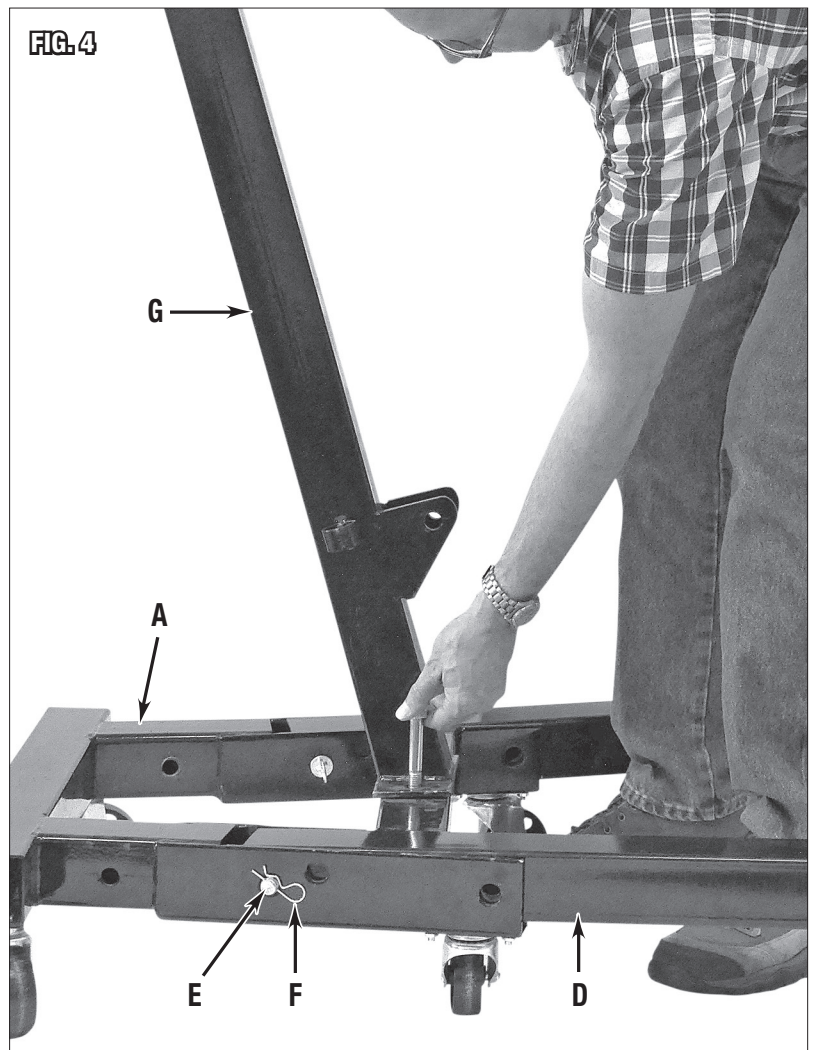
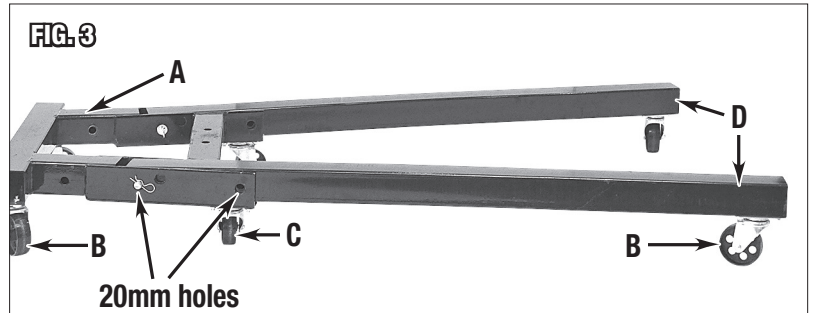
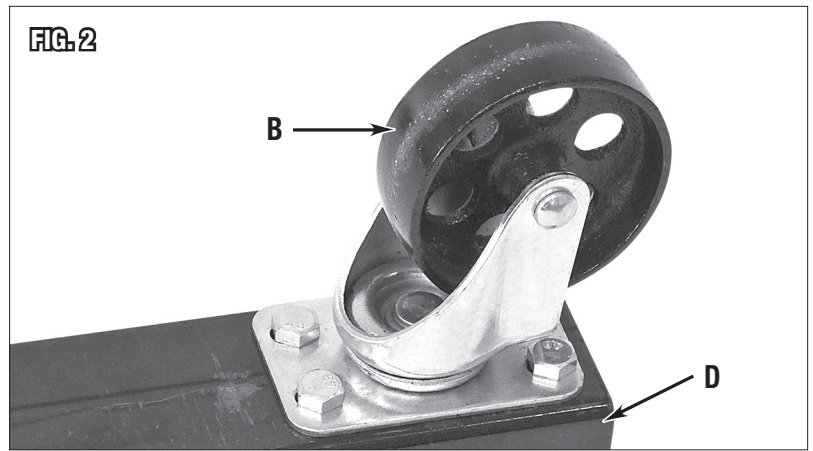
#### **CAUTION** INJURY HAZARD!

The Post [G] is heavy and cumbersome, obtaining the assistance of a helper during this phase of assembly is necessary. DO NOT attempt the following step without assistance!

1. Stand the Post [G] up with the flange resting on the cross-member of the Base [A] end (FIG 4) and align the holes in the flange with those in the crossmember.
2. Drop two M14 x 90mm Bolts through the holes in the flange and crossmember and with the helper continuing to support the Post, thread on two M14 Nuts.

#### **NOTICE**

Do Not fully tighten the bolts at this point but allow some movement for alignment with other components as the Crane is constructed.



### BRACES [H] TO POST [G] AND BASE [A]

Note that the Braces [H] angled bends at the ends. The Braces [H] are mounted at an angle (FIG 5) and as such will have the top ends parallel with the upper Post holes and the lower ends parallel with the inner surfaces of the Base [A] when properly assembled.

1. Hold the upper end of the Braces [H] against the upper sides of the Post [G] and align the holes in the Braces with the one in the Post [G] (FIG 5).
2. Place an M14 x 100mm Bolt through the holes and thread on an M14 Nut.

#### **▲ NOTICE**

**Do Not fully tighten the bolt at this point but allow some movement for alignment with other components as the Crane is constructed.**

3. Set the lower end of the Braces [H] against the inner sides of the Base [A] and align the holes in the Brace with the ones in the Base [A] (FIG 5).
4. Pass M14 x 90mm Bolts through the holes and thread on M14 Nuts.

#### **▲ NOTICE**

**Do Not fully tighten the bolts at this point but allow some movement for alignment with other components as the Crane is constructed**

### TIGHTEN POST [G] AND BRACE [H] BOLTS

1. Once the Post [G] and Braces [H] are in acceptable alignment with the Base [A], all the bolts may be tightened securely with two 22mm wrenches (not included).

### HYDRAULIC CYLINDER [J] TO POST [G]

#### **▲ CAUTION INJURY HAZARD!**

**The Hydraulic Cylinder [J] is heavy and cumbersome, obtaining the assistance of a helper during this phase of assembly is necessary. DO NOT attempt the following step without assistance!**

1. Set the Hydraulic Cylinder [J] on the pivot mount of the forward side of the Post [G] end (FIG 6) and align the hole in the base of the with those in the pivot mount of the Post [G].

#### **▲ NOTICE**

**The Jacking Mechanism of the Hydraulic Cylinder MUST be oriented away from the face of the Post [G] (Fig 6).**

2. Slide the M16 x 75 Bolt through the holes in the pivot mount of the Post [G] and the base of the Hydraulic Cylinder [J], thread on an M16 Nut then tighten securely with two M24 wrenches (not included).
3. Carefully allow the Hydraulic Cylinder [J] to rest against the face of the Post [G] until after the following step (FIG 6).

FIG.5

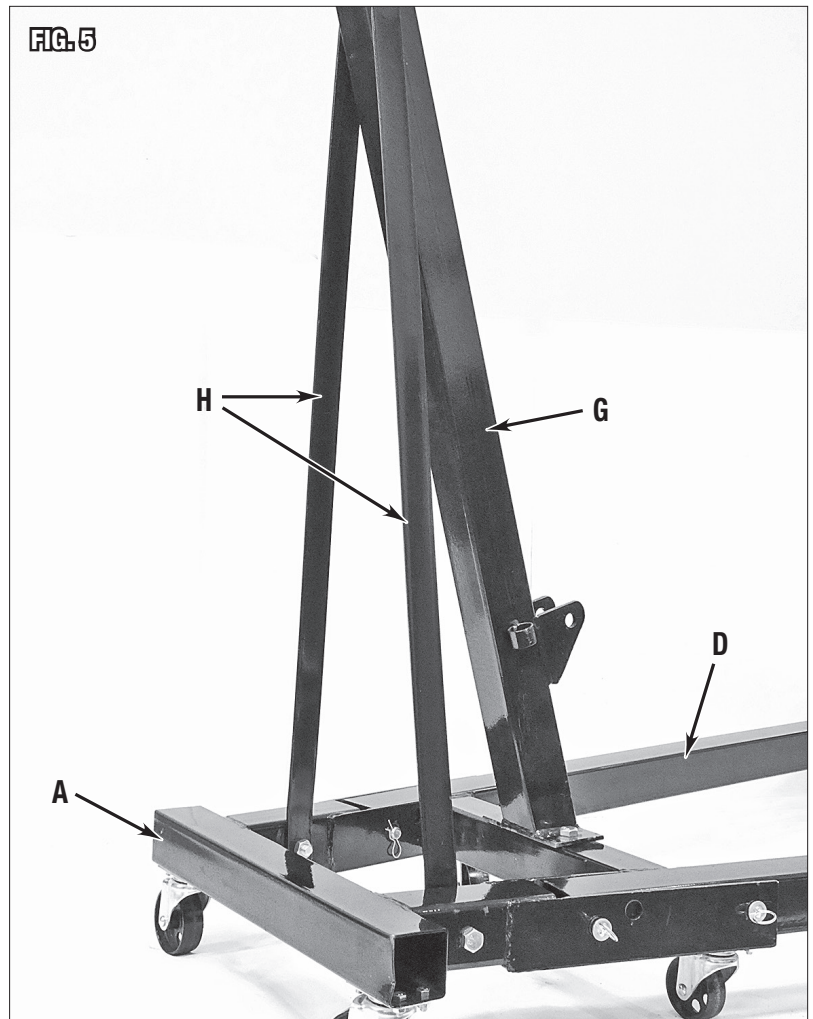
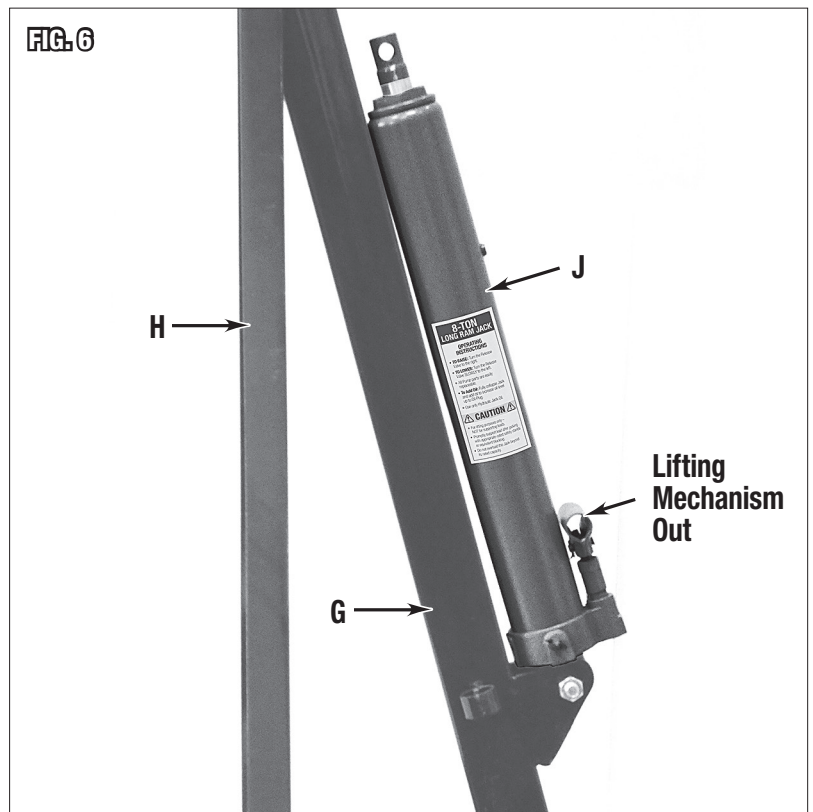


FIG.6



## LIFTING BOOM [K] TO POST [G]

### **CAUTION** INJURY HAZARD!

The Lifting Boom [K] is heavy and cumbersome, obtaining the assistance of a helper during this phase of assembly is necessary. DO NOT attempt the following step without assistance!

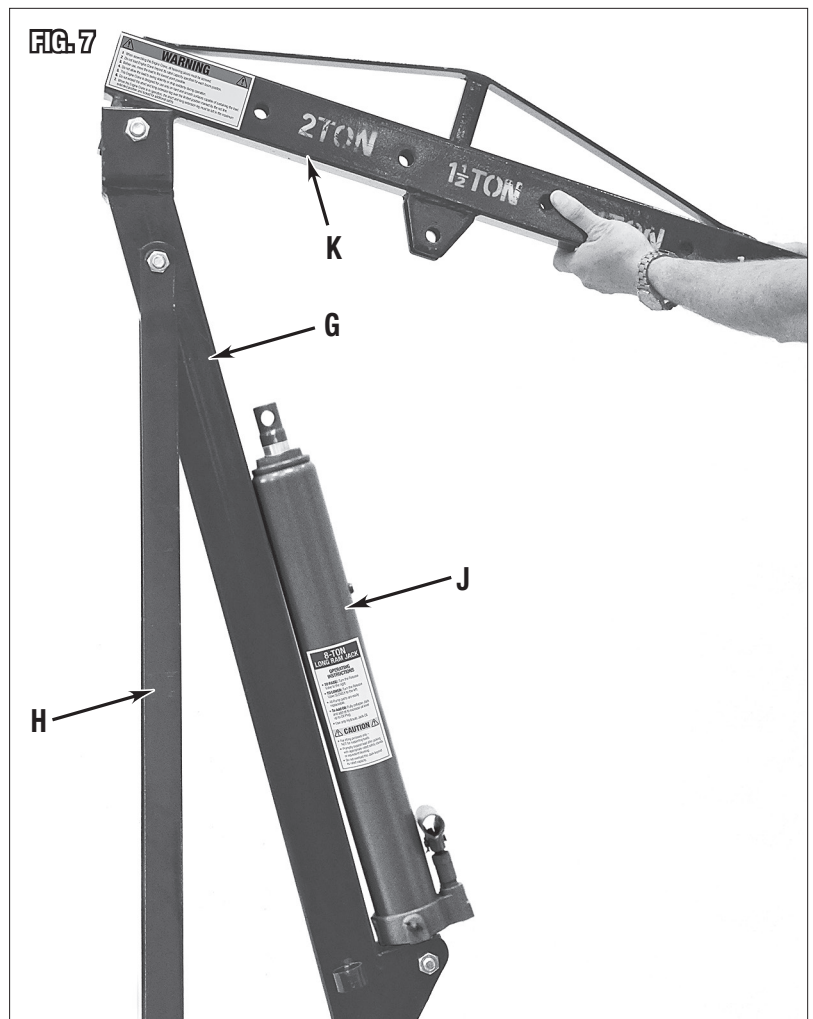
1. Set the pivoting tabs located at the end of the Lifting Boom [K] into the "U" at the top of the Post [G] and align the hole in the Lifting Boom [K] with the ones in the Post [G] (FIG 7).
2. Slide the M16 x 120mm Bolt through the holes in the "U" of the Post [G] and the end of the Lifting Boom [K], thread on an M16 Nut then tighten securely with two M24 wrenches (not included).

## HYDRAULIC CYLINDER [J] TO LIFTING BOOM [K]

### **CAUTION** INJURY HAZARD!

The Hydraulic Cylinder [J] and the Lifting Boom [K] are heavy and cumbersome objects, obtaining the assistance of a helper while handling is necessary. DO NOT attempt the following step without assistance!

1. Tilt the Hydraulic Cylinder [J] out slightly on the pivot mount while rotating the Lifting Boom [K] downward to allow the pivoting tabs of the center underside of the Lifting Boom to meet the top of the Hydraulic Cylinder ram and align the holes (FIG 8).
2. Insert an M16 x 70mm Bolt, thread on an M16 Nut then tighten securely with two M24 wrenches (not included) (FIG 8).



### LIFTING BOOM EXTENSION [L] TO LIFTING BOOM [K]

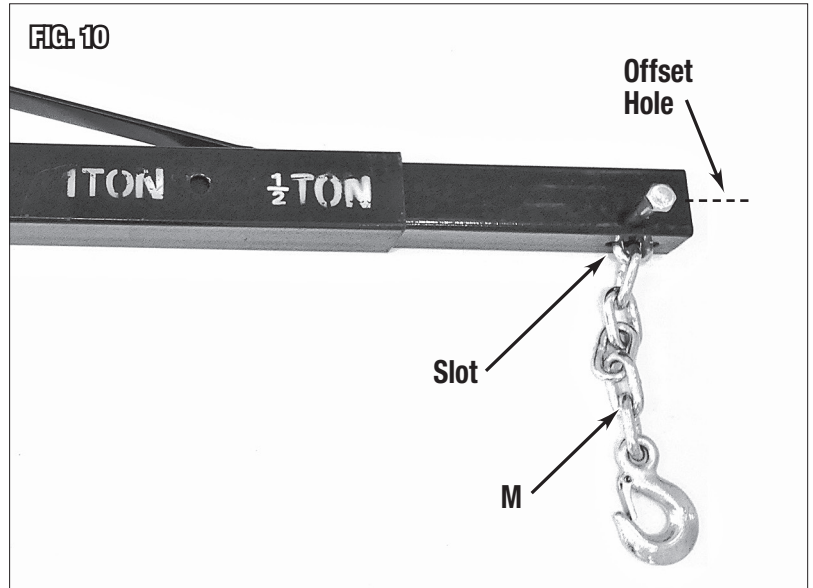
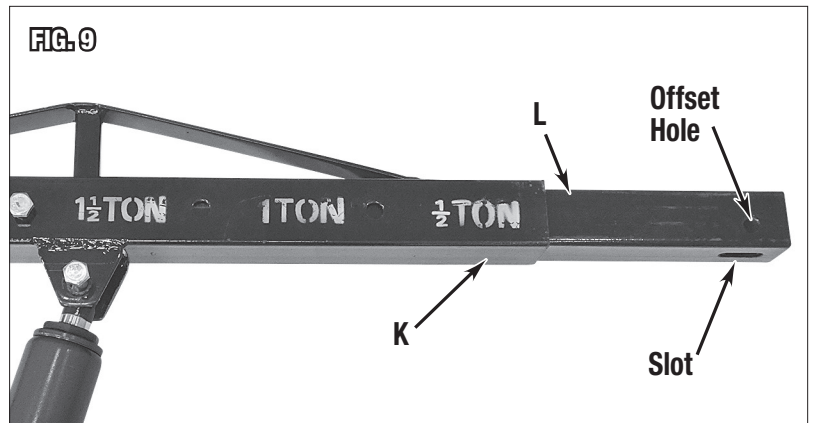
1. Close the release valve located in the base of the Hydraulic Cylinder [J] (FIG 9) by rotating the "T" in a Clockwise direction using the notch in the end of the Cylinder Control Handle [N] (Fig 9).
2. Insert the Cylinder Control Handle [N] into the Jacking Mechanism of the Hydraulic Cylinder [J] and pump it to extend the ram to the point where the Lifting Boom is horizontal.
3. Insert the lesser square tubing Lifting Boom Extension [L] into the end of the greater square tubing of the Lifting Boom [K] (FIG 9). Note that the sides of the Lifting Boom Extension [L], near the ends, have holes punched in them and there is a long slot cut into one end. The centered hole must go into the Lifting Boom while the opposite holes which are off-center along with the long slot must be oriented downward.
4. Note that there are four sets of holes punched in the sides of the Lifting Boom [K] with corresponding weight capacity ranges (FIG 9). Align the set of holes (1/2 Ton, 1 Ton, 1-1/2 Ton and 2 Ton) that are equal to or greater than the weight to be lifted with those in the Lifting Boom Extension [L] then slip an M14 x 90mm Bolt through and retain it by threading on an M14 Nut.

### CHAIN AND HOOK [M] TO LIFTING BOOM EXTENSION [L]

1. Place the open link of the Chain [M] into the slot at the underside end of the Lifting Boom Extension [L] then slide an M14 x 80mm Bolt through the holes in the sides of the Lifting Boom Extension [L] the open link at the end of the Chain and Hook [M], thread on an M14 Nut then secure with Two 22mm wrenches (not included) (FIG 10).

### SET-UP ENGINE CRANE FOR USE

Note that there are four sets of holes punched in the sides of the Lifting Boom [K] with four corresponding weight capacity ranges (FIG 11). Align the set of holes (1/2 Ton, 1 Ton, 1-1/2 Ton and 2 Ton) that are equal to or greater than the weight to be lifted with those in the Lifting Boom Extension [L] then slip an M14 x 90mm Bolt through and retain it by threading on an M14 Nut.





## FOLDING FOR STORAGE

- Remove the M14 x 90mm Bolt and M14 Nut from the Lifting Boom.
- Telescope the Lifting Boom Extension back into the Lifting Boom to the 2 Ton position and replace the M14 x 90mm Bolt.
- Open the release valve located in the base of the Hydraulic Cylinder by rotating the “T” in a Counter-Clockwise direction using the notch in the end of the Cylinder Control Handle and the allow the Hydraulic Cylinder to fully retract.
- Remove the two most forward Locking Pins of the Legs and Base.
- Leaving the two most rearward Locking Pins in place as pivots, raise the Caster ends of the Legs upward then securely lock them in place by inserting the Locking Pins into the auxiliary set of holes in the side rails of the Base Assembly closest to the crossmember (**FIGS 12 & 13**).
- Install the Pin Clips through the protruding holes of the Lock Pins.

### MAINTENANCE:

- Keep all moving components of the Engine Crane well lubricated and free of and dirt or debris accumulations.
- The Engine Crane is finished in rugged powdercoating which will provide many years of effort free beauty, however, it is advisable to keep the finish clean and free from excessive dust and dirt.
- Keep the Engine Crane in a clean and dry environment. **DO NOT** store it in or expose it to a damp or wet environment.
- Occasionally inspect all components for potential damage and proper alignment. Check all hardware for tightness
- **DO NOT** use if damage is discovered.

### CHECKING/ADDING HYDRAULIC OIL

#### Checking Hydraulic Oil

- Pull Rubber Plug out of upper side of Hydraulic Cylinder.
- Observe Oil level. (Full oil level is even with the bottom of the fill hole).
- Replace Rubber Plug in Hydraulic Cylinder.

#### Adding Hydraulic Oil

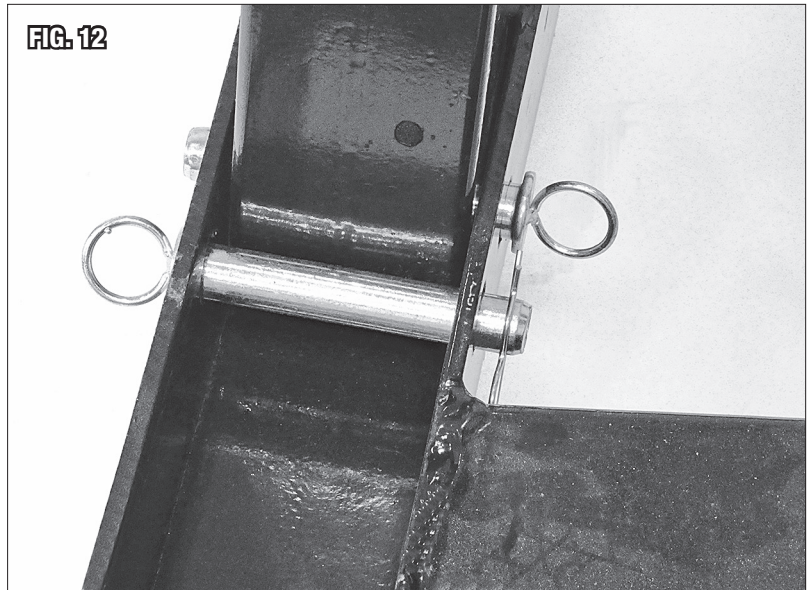
- Pull Rubber Plug out of upper side of Hydraulic Cylinder.
- Observe Oil level (full oil level is even with the bottom of the fill hole).
- Fill to full oil level using a small funnel (full oil level is even with the bottom of the fill hole).
- Use only a high-quality hydraulic jack oil.

#### **CAUTION**

**The use of any other type of oil can seriously damage the Hydraulic Cylinder seals.**

- Replace Rubber Plug in Hydraulic Cylinder.

**FIG. 12**



**FIG. 13**





# TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
<b>Failure to Lift While Jacking</b>	Air in Hydraulic System	<p>Bleed out air.</p> <ul style="list-style-type: none"> <li>• Pull Rubber Plug out of upper side of Hydraulic Cylinder.</li> <li>• Turn the Release Valve Knob in a Counter-Clockwise direction to open.</li> <li>• Carefully push the Lifting Boom downward to retract the Ram fully.</li> </ul> <div data-bbox="760 405 1503 520" style="border: 1px solid black; padding: 5px;"> <p><b>⚠ CAUTION</b>            Do not allow Lifting Boom or Ram to move upward with Release Valve open or hydraulic fluid can be forced out.</p> </div> <ul style="list-style-type: none"> <li>• Slowly operate the Lifting Mechanism through 5 to 10 full strokes.</li> <li>• Close Release Valve fully by rotating in a Clockwise direction.</li> <li>• Replace Rubber Plug in Hydraulic Cylinder.</li> </ul>
	Low Hydraulic Fluid Level	<p>Add Hydraulic Fluid.</p> <ul style="list-style-type: none"> <li>• Pull Rubber Plug out of upper side of Hydraulic Cylinder.</li> <li>• Observe Oil level. (Full oil level is even with the bottom of the fill hole).</li> <li>• Fill to full oil level using a small funnel. (Full oil level is even with the bottom of the fill hole).</li> <li>• Use only a high-quality hydraulic jack oil.</li> </ul> <div data-bbox="760 932 1503 1047" style="border: 1px solid black; padding: 5px;"> <p><b>⚠ CAUTION</b>            The use of any other type of oil can seriously damage the jack pump seals.</p> </div> <ul style="list-style-type: none"> <li>• Replace Rubber Plug in Hydraulic Cylinder.</li> </ul>

## ADDITIONAL ITEMS

- #14530 GRIP Engine Lifting Chain
- #31570 Rockwood OTG Safety Glasses
- #31571 Rockwood Safety Glasses
- #31504 Eastwood 6 Ton Jack Stand Set
- #31503 Eastwood 3 Ton Jack Stand Set

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**If you have any questions about the use of this product, please contact**

The Eastwood Technical Assistance Service Department: 800.343.9353 >> email: [techelp@eastwood.com](mailto:techelp@eastwood.com)  
PDF version of this manual is available online >> [eastwood.com/31922manual](http://eastwood.com/31922manual)

The Eastwood Company 263 Shoemaker Road, Pottstown, PA 19464, USA  
US and Canada: 800.343.9353 Outside US: 610.718.8335  
Fax: 610.323.6268 [eastwood.com](http://eastwood.com)