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Item #33913

2 TON ENGINE CRANE

INSTRUCTIONS

The **EASTWOOD 2 TON ENGINE CRANE** features robust, heavy-duty construction and oversized components to handle frequent shop demands as well as occasional hobbyist use. Steel, ball bearing swivel casters and an 8-Ton hydraulic cylinder will support up to a total loaded weight of 2 tons [4000lb/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.

SPECIFICATIONS

Maximum Weight Capacity:	2 Tons [4000lbs/1814 kg]
Maximum Lifting Boom Clearance:	6.5' [1.98m]
Overall Boom Extended Length (@1/2 Ton):	4.75' [1.44m]
Assembled Engine Crane weight:	193.7 lbs. [90.5 kg.]

TOOLS REQUIRED

- Two 14mm wrenches (not included)
- Two 22mm wrenches (not included)
- Two 24mm wrenches (not included)

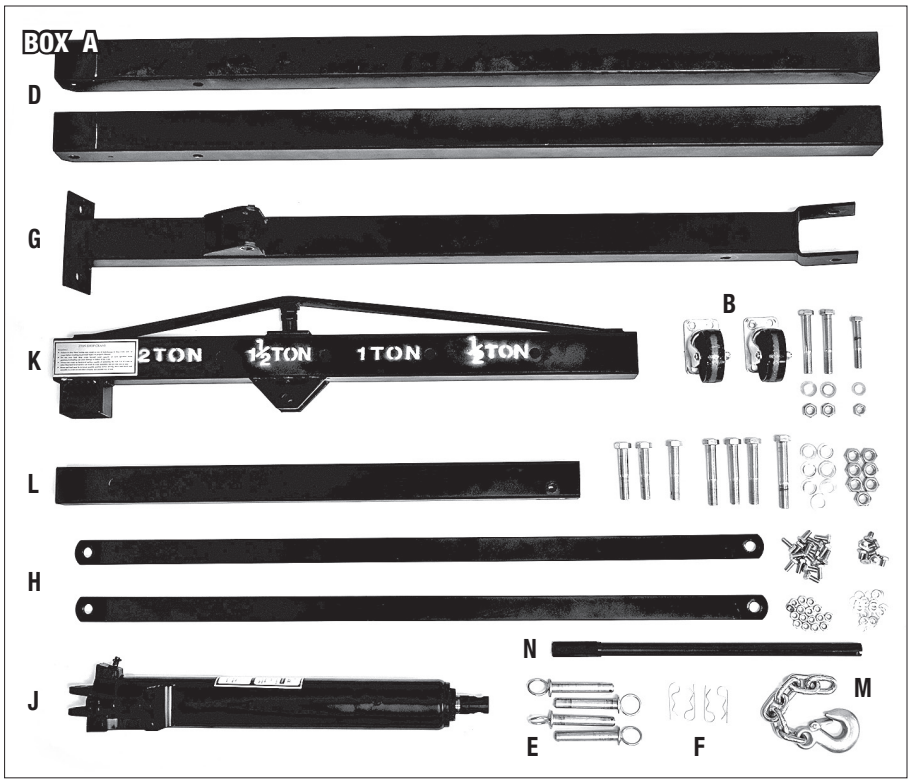
CONTENTS

COMPONENTS

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

HARDWARE

- **(16)** M8 x 1.25 x 20mm Bolts
- **(8)** M8 x 1.25 x 12mm Bolts
- **(24)** M8 Washers
- **(16)** M8 x 1.25 Nuts
- **(2)** M14 x 2.00 x 100mm Shoulder Bolts
- **(1)** M14 x 2.00 x 80mm Shoulder Bolt
- **(3)** M14 Washers
- **(3)** M14 x 2.00 Nuts
- **(1)** M16 x 2.00 x 110mm Shoulder Bolt
- **(3)** M16 x 2.00 x 100mm Shoulder Bolts
- **(1)** M16 x 2.00 x 90mm Shoulder Bolt
- **(2)** M16 x 2.00 x 85mm Shoulder Bolts
- **(7)** M16 Washers
- **(7)** M16 x 2.00 Nuts
- **(4)** Cotter Pins



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 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.

⚠ 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

⚠ WARNING INJURY HAZARDS!

The Eastwood 2 Ton 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

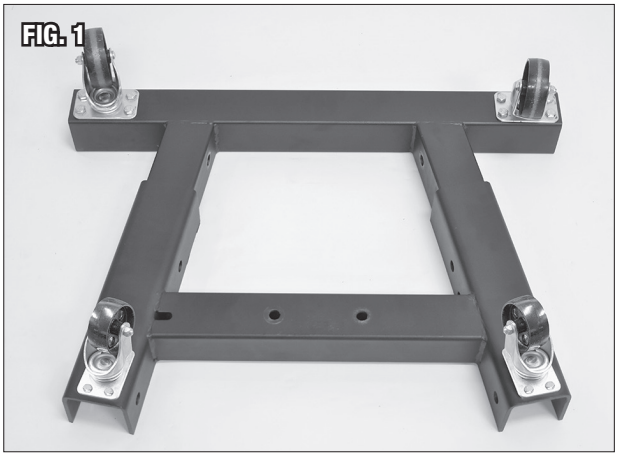
To prevent scratches and damage to the finish of the Engine Crane components, it is strongly advisable to use cardboard, carpet, blankets etc. covering a 4' x 4' area before beginning assembly.

ASSEMBLY

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

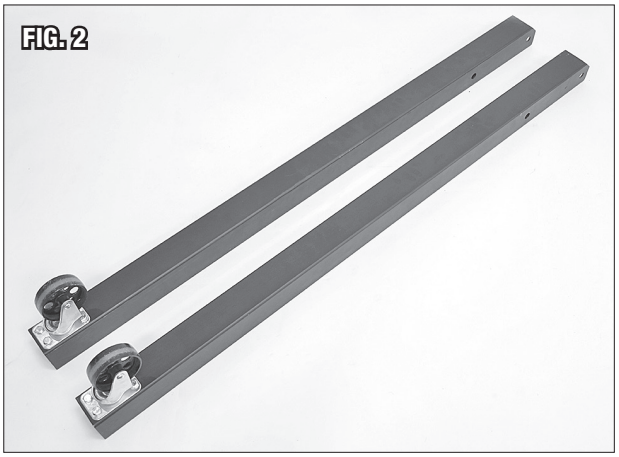
Note that there are 2 sizes of Casters: Four 3-1/2" Swivel Casters **[B]** and Two 3" Swivel Casters **[C]**.

1. Place the Base **[A]** upside down, resting on the floor **(FIG 1)**.
2. Align the four holes of each large 3-1/2" Swivel Caster **[B]** with those in the boxed section of the Base **[A]** and secure them with eight M8 x 20mm Hex Head Bolts, M8 Washers and Nuts using two 14mm wrenches (not included) **(FIG 1)**.
3. Attach the two smaller, 3" Swivel Casters **[C]** to the open channel section arms of the Base **[A]** with eight M8 x 12mm Hex Head Bolts and M8 Washers by securing them to the threaded holes in the Base using a 14mm wrench (not included) **(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 2)**.
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 20mm Hex Head Bolts, M8 Washers and Nuts using two 14mm wrenches (not included) **(FIG 2)**.



LEGS [D] TO BASE [A]

1. Position 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 into the open "C" channel of the Base. The opposite ends will be resting on the Casters.
3. Align the large, 17mm holes in the sides of the Base **[A]** with those in the Legs **[D]** then insert the four Lock Pins **[E]** into the holes.
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 crossmember of the Base **[A]** end **(FIG 5)** and align the holes in the flange with those in the crossmember.
2. Drop two M14 x 100mm Shoulder Bolts through the holes in the flange and crossmember and, with the helper continuing to support the Post, add M14 Washers and thread on two M14 Nuts.

> **⚠ NOTICE**
> **Do Not fully tighten the bolts at this point but allow some flexibility and movement for alignment with Braces and other components as the Crane is constructed.**

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

Note the angled bends at the ends of the Braces **[H]**. The Braces **[H**] are mounted at an angle **(FIG 6)** 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 6**). Place the M16 x 110mm Shoulder Bolt through the holes, add an M16 Washer and thread on an M16 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.**

2. Set the lower ends of the Braces **[H]** against the outer sides of the Base **[A] (FIG 6)** and align the holes in the Braces with the ones in the Base.
3. Pass two M16 x 100mm Shoulder Bolts through the holes, add an M16 Washer and thread on M16 Nuts.

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 using two 22mm or two 24mm wrenches (not included).

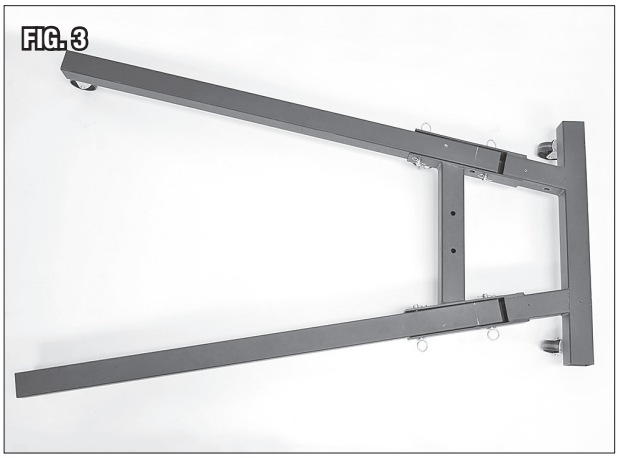


FIG. 3

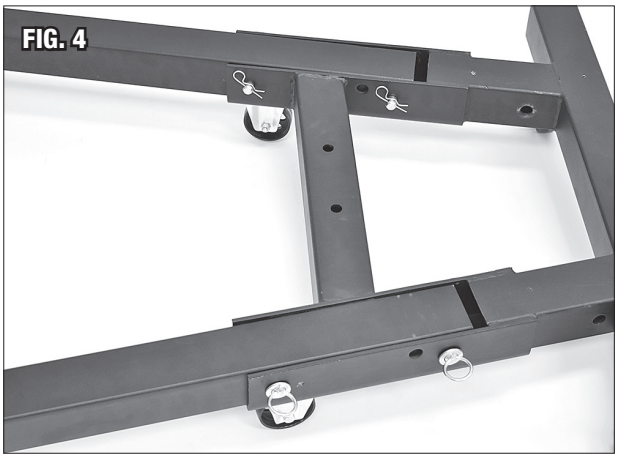


FIG. 4


FIG. 5

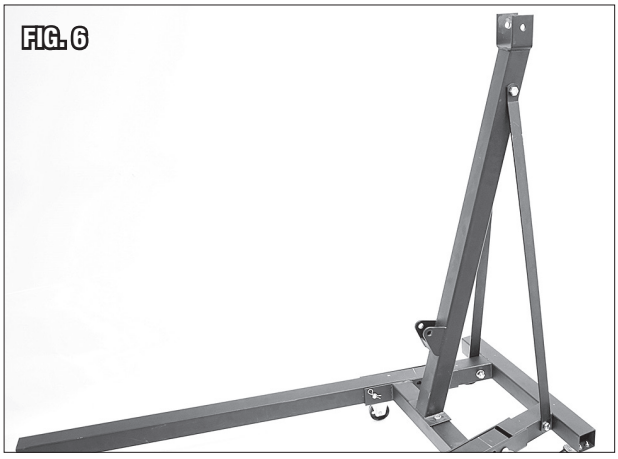


FIG. 6

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] (FIG 7)** and align the hole in the base of the Hydraulic Cylinder with those in the pivot mount of the Post.

> **⚠ NOTICE**
> **The Jacking Mechanism of the Hydraulic Cylinder MUST be oriented away from the face of the Post [G] (Fig 7).**

2. Slide the M16 x 85 Shoulder Bolt through the holes in the pivot mount of the Post **[G]** and the base of the Hydraulic Cylinder **[J]**, add an M16 Washer, 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 7)**.

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 8)**.
2. Slide the M16 x 110mm Shoulder Bolt through the holes in the "U" of the Post **[G]** and the end of the Lifting Boom **[K]**, add an M16 Washer, thread on an M16 Nut then tighten securely with two M24 wrenches (not included).

FIG. 7

FIG. 8

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 9)**.
2. Insert an M16 x 85mm Shoulder Bolt, add an M16 washer, thread on an M16 Nut then tighten securely with two M24 wrenches (not included) **(FIG 9)**.

LIFTING BOOM EXTENSION [L] TO LIFTING BOOM [K] (FIG 10)

1. Close the release valve located in the base of the Hydraulic Cylinder **[J]** by rotating the "T" in a Clockwise direction using the notch in the end of the Cylinder Control Handle **(N)**.
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. Note that the sides of the Lifting Boom Extension **[L]** have holes punched in them near the ends. One set is centered on the Boom, the other set is off-center. Also note the end with the off-center holes has a long slot cut from the end of the Boom. With the slot positioned downward, insert the end of the Lifting Boom Extension with the centered holes into the end of the Lifting Boom **[K] (FIG 10)**.
4. Note that there are four sets of holes punched in the sides of the Lifting Boom **[K]** with 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 M16 x 90mm Shoulder Bolt through, add an M16 Washer and retain it by threading on an M16 Nut.

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

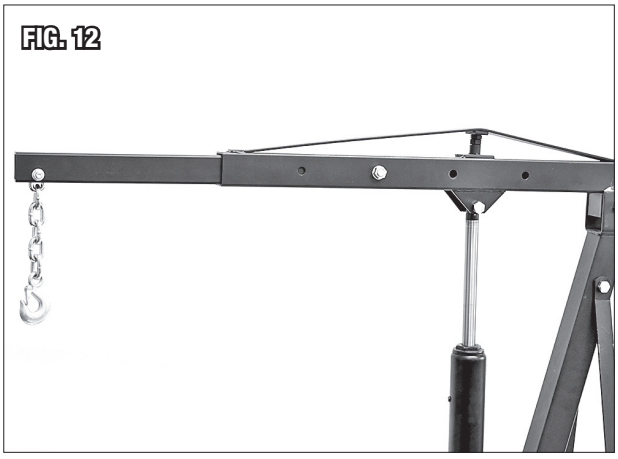
1. Place the open link of the Chain **[M]** into the slot at the underside end of the Lifting Boom Extension **[L]** then slide an M14 x 80mm Shoulder Bolt through the holes in the sides of the Lifting Boom Extension **[L]** and the open link at the end of the Chain and Hook **[M]**, thread on an M14 Nut, then secure using two 22mm wrenches (not included) **(FIG 12)**.

FIG. 9

FIG. 10

FIG. 11

FIG. 12



SET-UP ENGINE CRANE FOR USE

As previously noted in Assembly, 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 M16 x 90mm Shoulder Bolt through and retain it by threading on an M16 Nut.

FOLDING FOR STORAGE

- Remove the M16 x 90mm Shoulder Bolt, Washer and M16 Nut from the Lifting Boom.
- Telescope the Lifting Boom Extension back into the Lifting Boom to the 2 Ton position and replace the M16 x 90mm Shoulder 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 13 & 14)**.
- 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.

FIG. 13

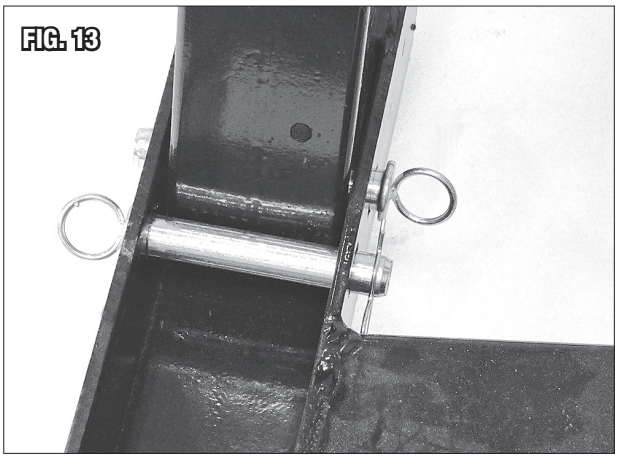


FIG. 14

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.

TROUBLESHOOTING

<table>
<tr><th>PROBLEM</th><th>CAUSE</th><th>CORRECTION</th></tr>
<tr><td rowspan="2">Failure to Lift While Jacking</td><td>Air in hydraulic system</td><td>Bleed out air.
Pull Rubber Plug out of upper side of Hydraulic Cylinder.
Turn the Release Valve Knob in a Counter-Clockwise direction to open.
Carefully push the Lifting Boom downward to retract the Ram fully.
⚠ CAUTION
Do not allow Lifting Boom or Ram to move upward with Release Valve open or hydraulic fluid can be forced out.
Slowly operate the Lifting Mechanism through 5 to 10 full strokes.
Close Release Valve fully by rotating in a Clockwise direction.
Replace Rubber Plug in Hydraulic Cylinder.</td></tr>
<tr><td>Low Hydraulic Fluid level</td><td>Add Hydraulic Fluid.
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 jack pump seals.</td></tr>
</table>

ADDITIONAL ITEMS

#43090 Eastwood Safety Goggles
#21297 Tillman Work Gloves
#21299 Tillman Cut-resistant Gloves
#31551 Eastwood Engine Stand
#31504 Eastwood 6 Ton Jack Stand Set
#31630 Rockwood Drain Pan

If you have any questions about the use of this product, please contact
The Eastwood Technical Assistance Service Department: 800.343.9353 >> email: tech@eastwood.com
PDF version of this manual is available at eastwood.com
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