



India Mark II Riser Main (Tripod) Replacement

Replace the riser main with the help of a tripod.

Written By: Andrew Optimus Goldheart



INTRODUCTION

This guide will show you how to replace the riser main with the help of a tripod.

The riser main can, alternatively, be replaced using lifting spanners, but a tripod allows the process to be done by two people. Still use caution when using a tripod.

TOOLS:

- [Pipe Wrench](#) (1)
 - [24mm Wrench](#) (1)
 - [Socket Wrench](#) (1)
-

Step 1 — Access Door



- ☑ Before performing any repairs, perform a water test on the pump by raising and lowering the handle a full 40 strokes. A properly performing pump will yield greater than 10 liters.
- Remove the hex head bolt from the top of the access door on the pump head.
- ☑ On reassembly, this bolt should be hand-tight.

Step 2



- Pull the access door straight up off the pump head.
- ⓘ Store the access door in a sanitary place to prevent contamination.

Step 3



- ✦ The access door has a tongue that fits into the base of the pump head.
- i The access door makes a convenient tray to hold nuts and bolts during the disassembly.


Step 4 — Chain



- Place the spacer collar around the pump rod below the raised chain, with the beveled side down, and the flat side facing up.

Step 5



 The following procedure requires two people. If you attempt to do this alone, you risk injuring yourself and damaging the pump.

- Lift the pump handle until the base of the chain comes to rest on the spacer collar, and the chain is slack. Hold the handle in this position while the chain is being detached.

Step 6



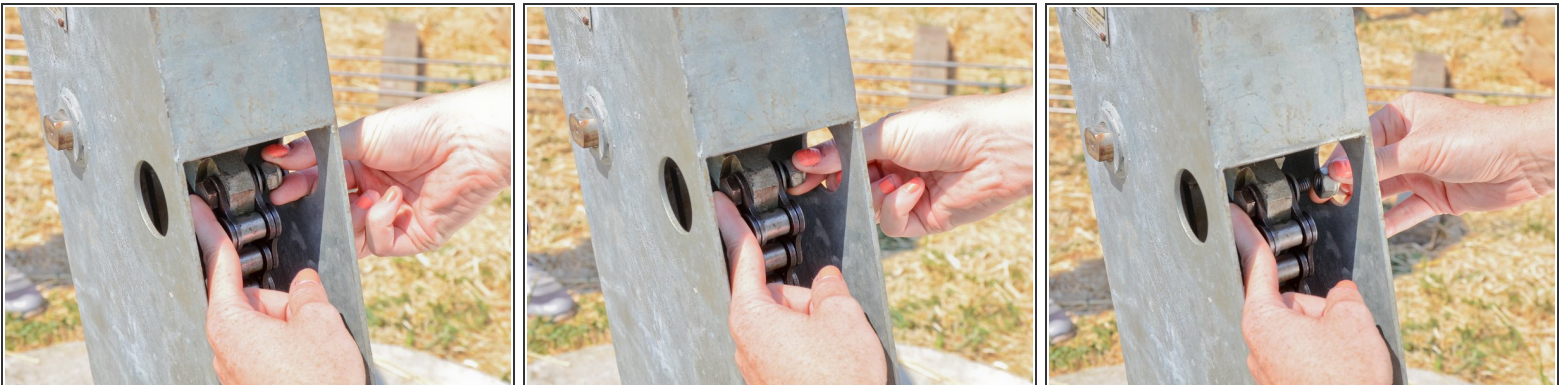
- Using the two access holes, place an angled socket wrench on the bolt and nut attaching the chain to the pump handle.

Step 7



- Hold the wrench on the bolt stationary.
- Loosen the nut.

Step 8



- Remove the nut from the chain bolt.

Step 9



- Remove the washer from the chain bolt.

Step 10



- Remove the chain bolt.

Step 11



- Pull the top of the chain straight off of the pump handle.

Step 12 — Head



- Remove the two bolts from the handle side of the pump head.
- Use one wrench on the bolt and another on the nut beneath. Hold the bolt stationary and loosen the nut.

Step 13



- Remove the two bolts and nuts from the handle side.

Step 14



- After removing the two handle side bolts, have your partner support the weight of the handle.
- Remove the two remaining bolts in the same fashion.

Step 15



- Lift and remove the pump head from the pump.
- ⓘ Store the pump head in a sanitary place, preferably above ground, to prevent contamination.

Step 16 — Chain



- Slightly twist the head flange, until the corners overhang the top of the tank far enough to grab.

Step 17



- Lift the head flange up about one foot above the tank.

Step 18



- Slide the rod clamp around the pump rod, and support it on the tank base.
- ⓘ Make sure the pegs in the base of the rod clamp fit into the appropriate holes in the top of the tank.

Step 19



- Tighten the rod clamp against the pump rod.

⚠ Be sure the pump rod is centered within the jaws of the clamp and held securely.


Step 20



- Lower the head flange.

Step 21



- Unscrew the chain from the top of the pump rod.
 - Remove the chain.
 - Check the chain for signs of wear or damage.
-  Set the chain in a sanitary place, such as the access door that was previously removed.

Step 22 — Head Flange



- Remove the chain support from around the pump rod.

Step 23



- Remove the jam nut from the top of the pump rod.

Step 24



- Remove the head flange.

Step 25



- Screw the jam nut back onto the top of the pump rod.

Step 26 — Tank



- Screw a T-handle onto the top of the pump rod. Tighten the T-handle up against the jam nut.

Step 27



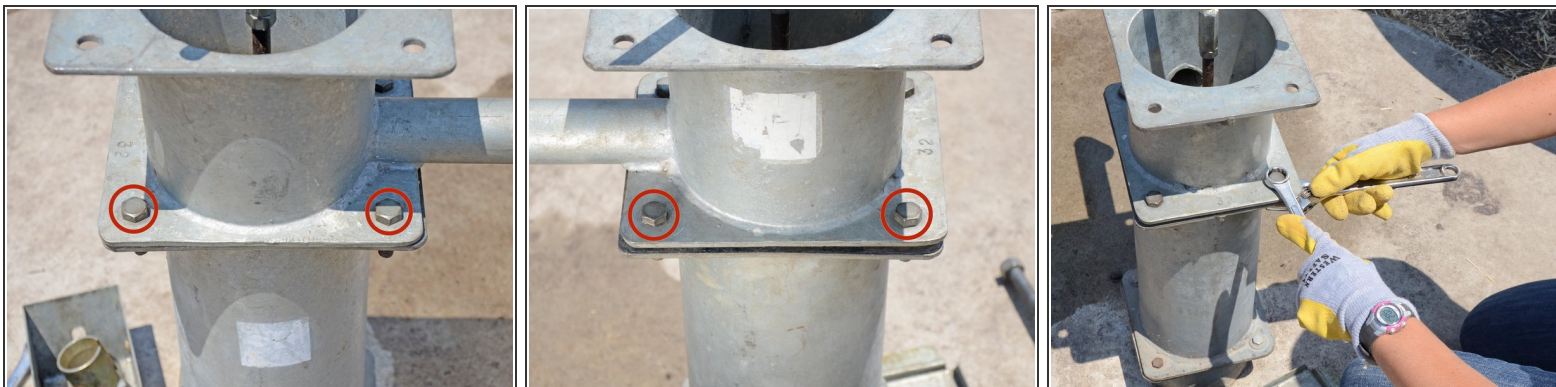
- Loosen the rod vise.

Step 28



- Remove the rod vise from the tank.

Step 29



- Remove the four bolts connecting the tank to the top flange.
- Use one wrench on the bolt and a second wrench on the nut beneath. Hold the bolt still and loosen the nut.

Step 30




- Twist the tank 45 degrees in order to get a better grasp on it.

Step 31



- Lift the tank straight up, about one foot.

 The tank is attached to the riser main, and the two must be lifted as a unit. Be careful and get help, as this can be very heavy.

Step 32



- Have a third person place the pipe vise around the riser main, on top of the top flange.
- Tighten the pipe vise securely around the riser main.

Step 33



- Secure the pipe vise to the top flange with two bolts and nuts to hold the pipe vise in place.

Step 34



- Unscrew the tank from the riser main.

Step 35



- Lift the tank up a few inches above the top of the riser main.

Step 36



- Insert the rod vise between the riser main and the tank, around the pump rod.
- Tighten the rod vise onto the pump rod.

Step 37



- Unscrew the T-handle from the pump rod and remove it.
- ⓘ Keep the T-handle ready to reattach to the pump rod after the tank is removed.

Step 38



- Remove the tank.

Step 39 — Riser Main Coupling



- Place a coupling over the pump rod, on top of the rod vise.

Step 40



- Reattach the T-handle to the top of the pump rod.

Step 41



- Loosen and remove the rod vise from the pump rod.
- ⓘ The coupling will drop down onto the riser main.

Step 42



- Screw the coupling onto the end of the riser main.
- Use a pipe wrench to tighten the coupling onto the riser main.

Step 43 — Riser Main



- Lower the tripod pipe vise to the top of the riser main.
- Close the tripod pipe vise around the riser main, and lock it shut.

Step 44



- Tighten the tripod pipe vise.

Step 45



- i** This procedure requires an important communication dialog between the rope operator and the pipe vise operator.
- The rope operator's job is to pull hard on the rope to take up the slack, and announce that they've "got it," to let the vise operator know that they're holding the weight of the riser main.
 - The vise operator will then announce "loosening," and loosen the pipe vise.

Step 46



- With the pipe vise loosened, pull the riser main up out of the well.
- i** Pull only as high as the tripod vise operator can comfortably reach.

Step 47



- The pipe vise operator then announces "tightening," and tightens the pipe vise.
- It is now safe to loosen and remove the tripod pipe vise.
- ⚠ Be sure to loosen and then fully remove the tripod pipe vise from the riser main. Sliding it down the riser main will scratch the pipe, creating dangerous sharp grooves and causing rust.

Step 48



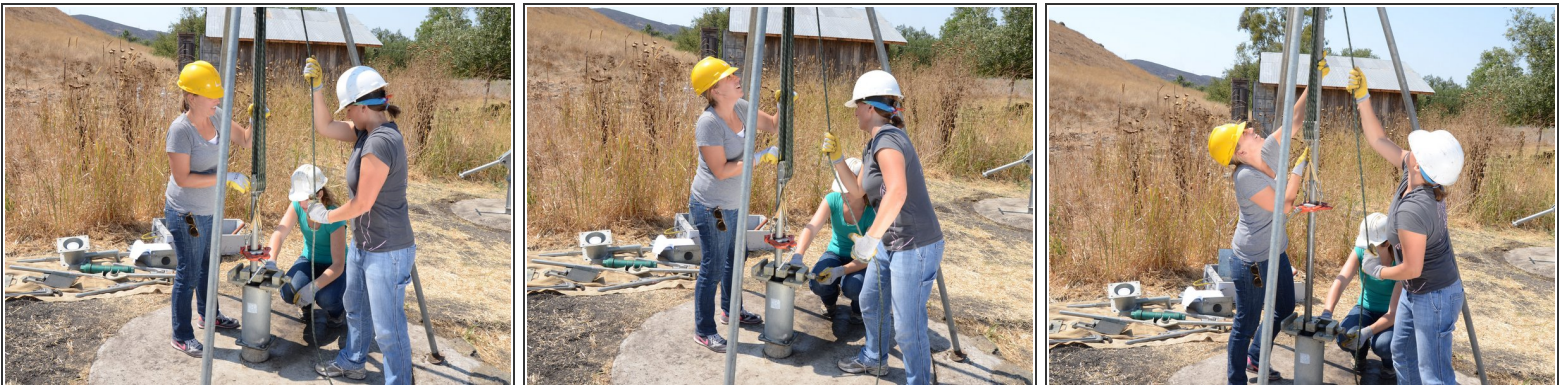
- Lower the tripod pipe vise down to the bottom of the exposed section of riser main pipe.

Step 49



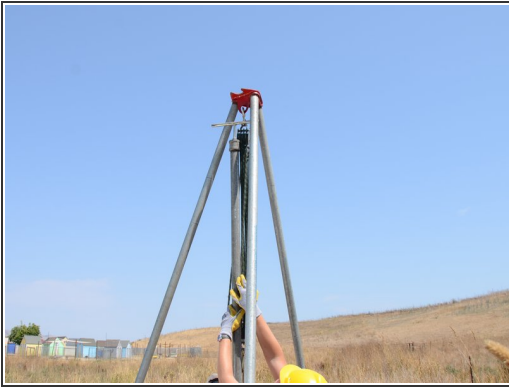
- Secure the tripod pipe vise to the riser main pipe and tighten it securely.

Step 50



- Repeat the lifting procedure: loosen the pipe vise and pull on the rope to raise the riser main another few feet.

Step 51



- ❗ The tripod has an indentation built into its top to guide the riser pipe.
 - As you're raising the riser pipe, guide it into the indentation.

Step 52



- Lift the riser pipe until the first coupling clears the pipe vise.
- You will need to open the pipe vise wider to accommodate the coupling.
- Once the coupling is through the pipe vise, tighten the pipe vise.
- ❗ Be sure to raise the riser main pipe high enough that you can attach the tripod pipe vise to the section of pipe beneath the coupling.

Step 53



From here we have pictures for loosening a coupling with the tripod?

To reassemble your device, follow these instructions in reverse order.