

**Service Call:**

Removing Extension Cylinder for a TL48

**Tools Required:**

Simple hand tools

Nylon Strap

Hoist/Overhead Crane

**Model(s):**

TL48

## Tech Tip Safety Rules




### Danger

Failure to obey the instructions and safety rules in the appropriate Operator's Manual and Service Manual for your machine will result in death or serious injury. Many of the hazards identified in the operator's manual are also safety hazards when maintenance and repair procedures are performed.

### Do Not Perform Maintenance Unless:

- You are trained and qualified to perform maintenance on this machine.
- You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- You have the appropriate tools, lifting equipment and a suitable workshop.

The information contained in this tech tip is a supplement to the service manual. Consult the appropriate service manual of your machine for safety rules and hazards.

 **WARNING**



Escaping fluid under pressure can penetrate skin causing serious injury.

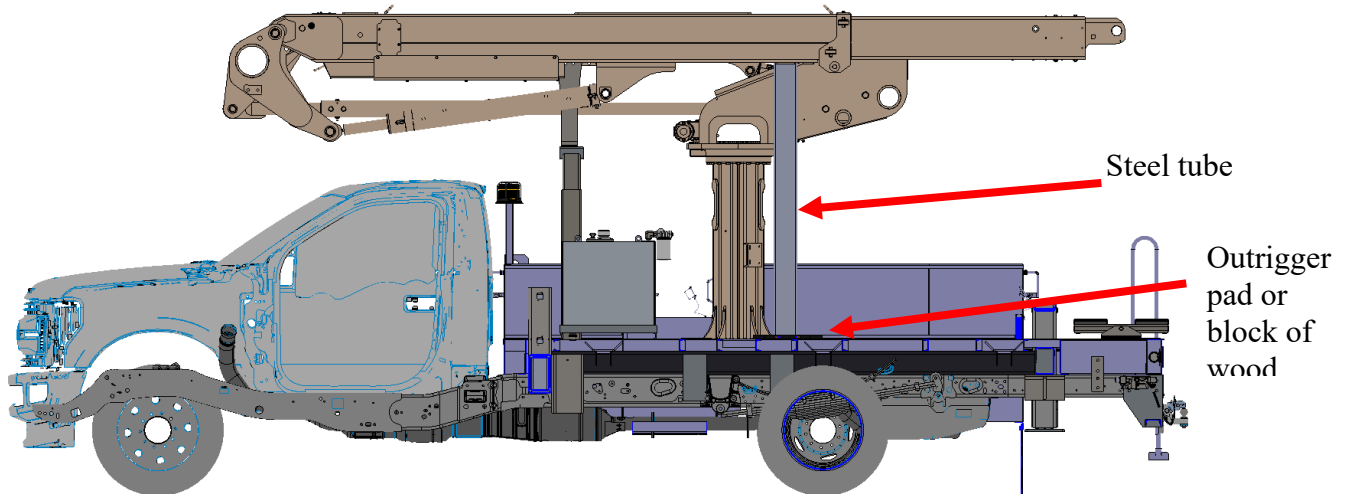
Relieve pressure before disconnecting hydraulic lines. Keep away from leaks and pin holes. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

Fluid injected into skin must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene will result.

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## Step 1

Position the upper boom in a horizontal position with no load in the platform.

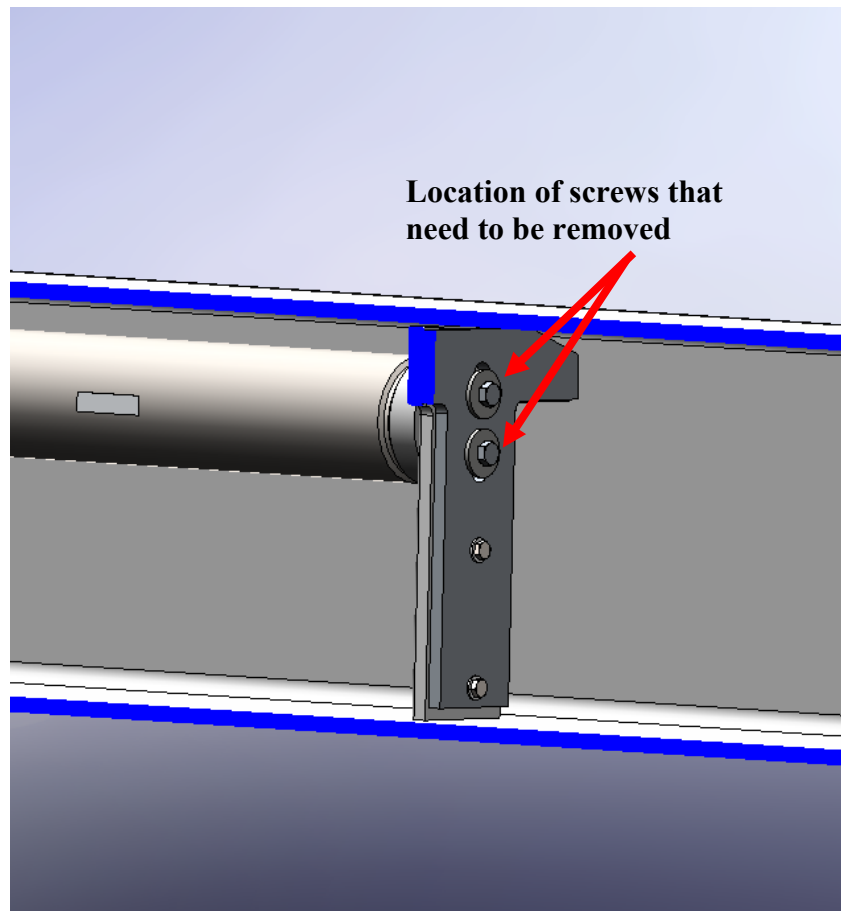
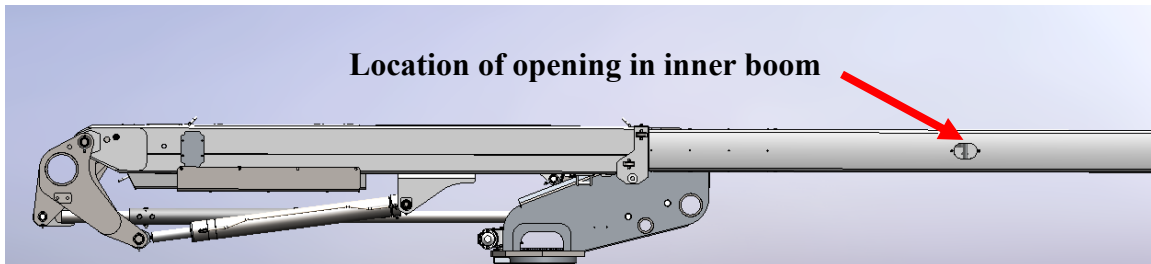


A stand will need to be placed at the end of the steel section of the upper boom. This can be done by using a piece of tube and outrigger pads or wood blocks. If possible, use a 6x6 tube. This will fit into the boom latch weldment and help with keep the tube from moving.

**Note:** Placing the tube directly on the floor may cause damage, use an outrigger pad or wooden blocks

## Step 2

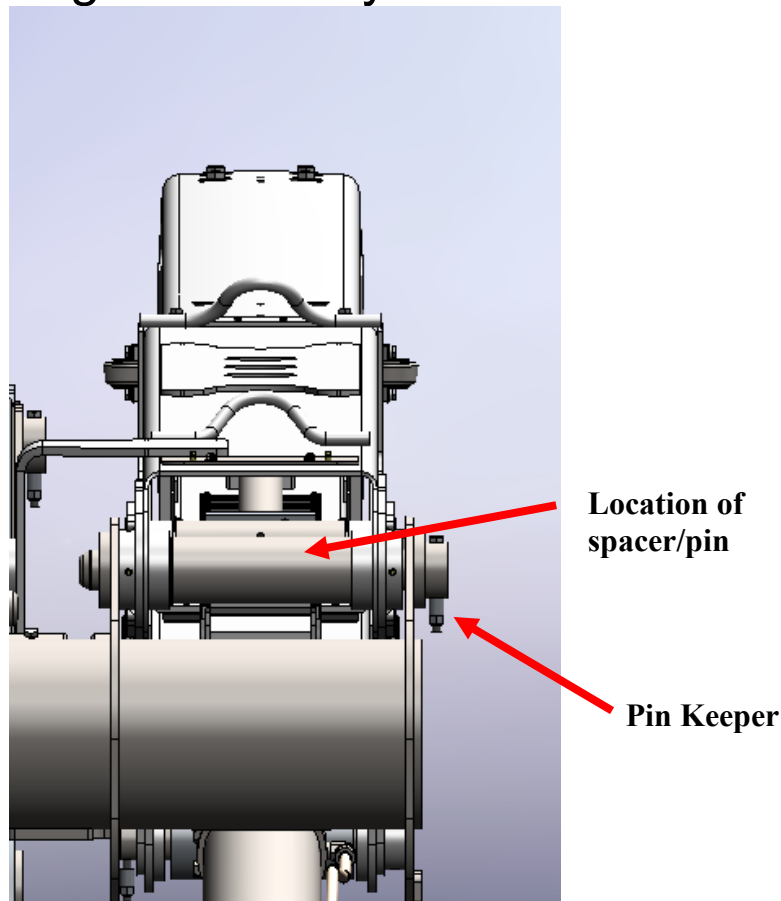
Extend the boom to allow access to the opening on the inner boom. Remove the cylinder end support bracket. After the support has been removed, retract the inner boom.



## Step 3

Remove the upper boom pivot pin. Place the shim, spacer and pivot pin in a safe place for reuse.

If possible, use a short stub of a pin on one side and leave the pin partially in the boom and the elbow pin hole to maintain alignment. This will save time during reassembly.



Boom will need to be supported if the pin is completely removed.

## Step 4

Tag the hydraulic lines on the extension cylinder. Remove the hydraulic lines and cap and plug the fittings.



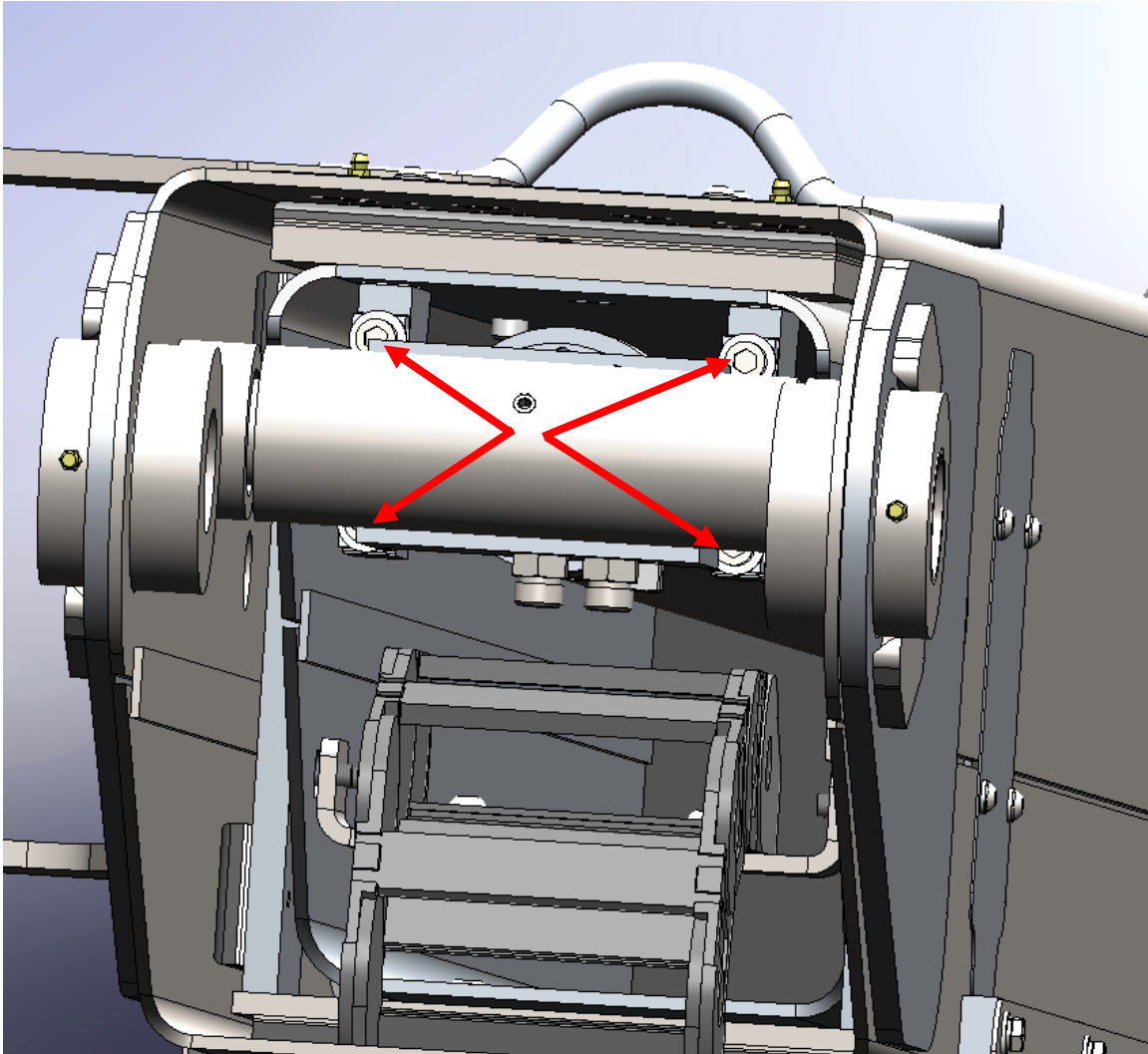
Escaping fluid under pressure can penetrate skin causing serious injury.

Relieve pressure before disconnecting hydraulic lines. Keep away from leaks and pin holes. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

**Note:** Hydraulic oil will cause permanent marker to rub off. Make sure the hoses are marked in a way that won't be removed with hydraulic oil.

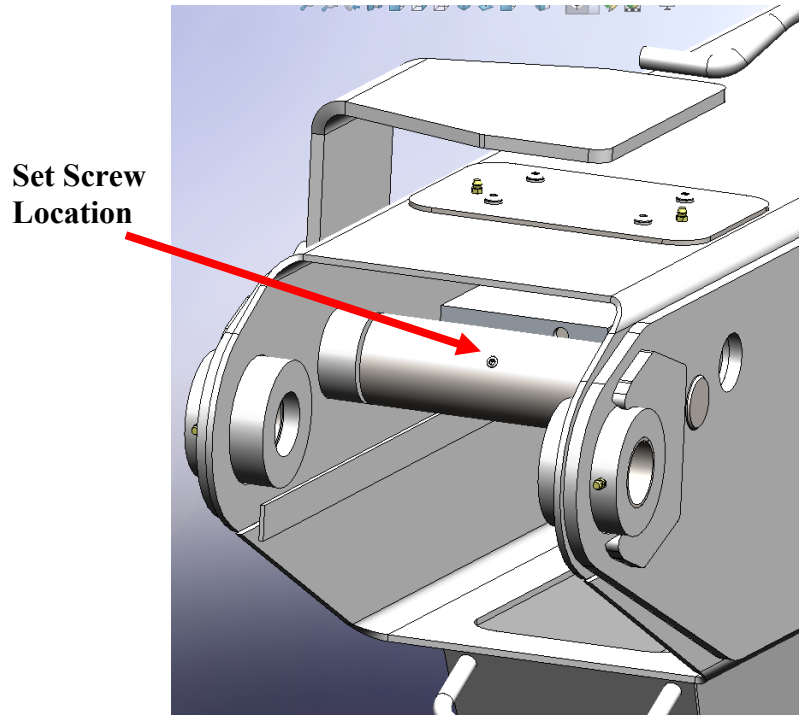
## Step 5

Remove the 4 fasteners that hold the extension cylinder to the inner boom.



## Step 6

Remove the set screw for the base end extension cylinder pin.





## Step 7

Remove the cylinder pin. Slide the cylinder slowly out the rear of the upper boom. Support the cylinder as it is removed with a suitable lifting device.

The boom assembly, including the platform, will have to be supported with a suitable lifting device prior to removal of cylinders.



Do not scratch or mar surface of fiberglass. Use rope slings or other soft material - never use chains or wire rope directly on fiberglass.

Care should be exercised when removing cylinders, as they are heavy. Cylinders should be removed by means of a hoist, if available.

## Step 8

Once the cylinder is removed, it provides a good opportunity to perform inspection on it. Also inspect the bushings, replacing any that are worn.

## Step 9

If cylinder is disassembled for any reason, it will need to be cycled to fill the cylinder with oil. Deadhead the cylinder in each direction multiple times to purge air out of the cylinder.

## Step 10

Reassemble the boom in reverse order. Use blue Loctite for the four screws securing the rod to the inner boom. Lubricate the pins before reassembly. Do not use your fingers in the bore to see if boom is aligned.

**Note:** Prior to installation of cylinder pins, inspect for any nicks or burrs and remove if found. Damage to the bearings/bushing will result if not repaired at this time.

**Note:** Check bearings for wear whenever maintenance or repair is being performed at cylinders or linkage. Replace any worn components. Always lubricate prior to assembly. Consult the unit specific lubrication chart.



Use caution when positioning hydraulic hoses. Sharp bends will create kinks and cause unnecessary repairs later.



The cylinder will be empty of oil and full of air after repair, which may make initial operation dangerous. Thus, the cylinder should be purged of air. After purging, fill the hydraulic reservoir to the full level, if needed, with all cylinders retracted. From the lower controls, cycle the boom fully three (3) times before operating from the platform. Do not ride the platform while air is being purged - **SERIOUS INJURY OR DEATH COULD RESULT.**

## **Step 11**

After assembly, operate the unit through its full range of motion from the lower controls to bleed air out of the hydraulic hoses and cylinder.

Verify correct operation of the extension cylinder.