Tech Tips

Service Call:
Removing the Upper Boom Extension Cylinder on a TM

Tools Required:
- Snap ring pliers
- ½ inch socket set
- Open end wrench set
- Ball peen hammer
- Bar to remove cylinder pin
- (2) - Eight foot 2x4’s nailed together
- (2) - 3/8 JIC caps and plugs
- Red Loctite
- Blue Loctite
- Calibrated torque wrench

Model(s): TM Series
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.
Step 1
Locate the unit in a suitable place that will allow the upper boom to be lifted and extended out at least 3 feet with no obstructions.

Step 2
With the unit in the stored position, place the 2x4’s under the upper boom extension cylinder. The 2x4’s should be just past the collars of the trunnions on the cylinder and centered under the cylinder.
Step 3
Extend the upper boom far enough to allow removal of the plastic access covers on the side of the steel portion of the upper boom.

Remove covers.

Step 4
Remove the 2 bolts holding the cylinder to the catrac mounting plate.
**Step 5**
Retract the upper boom and place the upper boom in the rest.

**Step 6**
Remove the snap ring on the pin for the extension cylinder, and then remove the pin.

**Step 7**
Slowly extend the cylinder out far enough to allow the rod eye to be turned without hitting the knuckle.
**Step 8**
Label the hoses on the cylinder, then remove, cap and plug.

⚠️ Escaping fluid under pressure can penetrate skin causing serious injury

**Step 9**
Rotate the rod eye far enough to remove the 2 - 3/8” bolts from the trunnion block.
Step 10
Remove the 2 - $\frac{3}{4}$” bolts (4 total) holding each trunnion to the inner boom.

DO NOT remove the top bolts holding the catrac to the boom. Removing the bolts will cause the catrac to fall.

Step 11
Remove the trunnions off of the cylinder and then slowly remove the cylinder leaving the 2x4’s in the boom.

Step 12
Reinstallation: Slide cylinder back into the boom by placing cylinder on top of 2x4’s, guiding the cylinder so it stays on top of the 2x4’s.
Step 13
Reinstall the trunnion blocks; make sure that the threads for the 3/8” bolts are facing towards the rod eye. Lubricate the 4-¾” bolts with red Loctite and torque to 280 ft. lbs.

Lubricate the 2-3/8” bolts with blue Loctite for the catrac to the trunnion and torque to 23 ft. lbs. (See step 9)

Step 14
Next line the rod eye up with the pinning hole and install the pin, snap rings and connect the hoses for the extension cylinder.

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**Step 15**
Extend the upper boom out far enough so that you can get to the side access holes to reinstall the bolts in to the cylinder. Lubricate the bolts with red Loctite and torque to 200 ft. lbs.

**Step 16**
After hooking hoses back up run the upper boom extension and verify that everything works properly, there are no leaks and it runs in and out smoothly.

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