

Service Call:

A popping or cracking noise that appears to be coming from the mast or pedestal area

Tools Required:

- Unit Specific Maintenance Manual
- Calibrated Torque Wrench
- Sockets and any Adapters Needed to Access the Fasteners
- One can of #65370833 Anti-seize

Model(s):

Optima HR, Optima HRX, Optima TC, Optima TCX

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.

H23877B

Introduction

The noise repaired by this tech tip will be a popping or cracking noise that appears to be coming from the mast and/or pedestal area. The noise will be sharp in sound and will not be dull or subdued. It can typically be heard standing next to or at the back of the unit. The most common position for the noise to happen is at the end of the lower boom stroke, either up or down, with the upper boom in any position.

The noise is created by minor imperfections in the bearing/pedestal/subframe mounting surfaces and friction on the surfaces as weight is transferred while moving the boom. Very few units have imperfections that will cause this to happen and adding a spacer coated in anti-seize will separate and reduce friction between the surfaces that cause the noise.

This tech tip is not intended to fix or diagnose other noises associated with unit operation such as groaning or creaking created by insufficient lubrication of the unit, noises created by material in the platform or on the jib, or hydraulic sounds.

Note: If you are having difficulty determining where the noise is coming from contact Terex Utilities Tech Support at 1-844-837-3948. Please have the serial number of the unit available when calling.

Step 1

Verify the noise is present by operating the boom from the lower controls through its full range of motion.

The noise may only be present when the boom is in certain positions (rotated off the side or back of the truck) and may require multiple attempts to duplicate the noise.

The noise typically occurs towards the end of the lower boom cylinder stroke, either up or down. It may also occur when the boom comes to a stop at the end of the cylinder stroke.

Step 2

When the noise is duplicated, have someone listen near the joint of the rotation bearing to the pedestal and the pedestal to the subframe (Figure 1 and 2). The noise should be loud at one or both locations and will present as a cracking or popping sound.



Figure 1

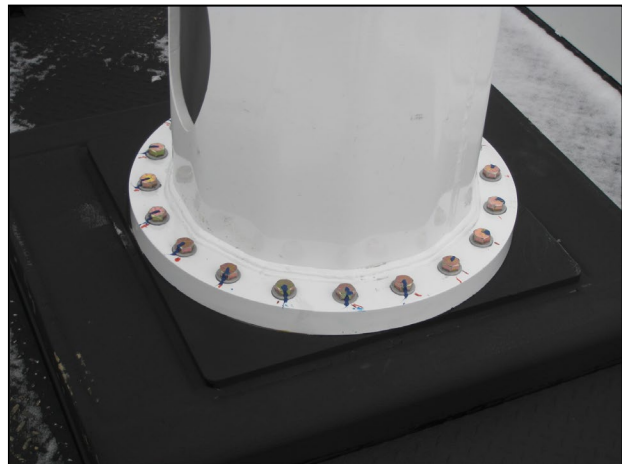


Figure 2

Note: Optima TC and TCX units are equipped with a stop valve in the base of the lower boom. This stop valve will be activated when operating lower boom down between 90° and 100°. The stop valve will make a clicking noise when it activates and will be much quieter than the sound that is associated with the customer complaint.

Step 3

Check the lower boom pivot pin, bushings and the lower boom cylinder pins for any excessive movement or lack of lubrication that could cause noise. If excessive movement is noted, take the unit out of service and identify the components causing the issue, repairing as necessary. If lack of lubrication is observed, lubricate liberally and retest.

If no movement is present and the noise can be isolated to the bearing/pedestal/subframe joints, then proceed to Step 4.

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Step 4

This noise can be eliminated by installing spacers between the bearing/pedestal and pedestal/subframe joints. The spacer shown in Figure 3 is part number: 404285. Two of these spacers are required. Rotation bearing to pedestal and pedestal to subframe bolts and washers will also be replaced when the spacers are installed.

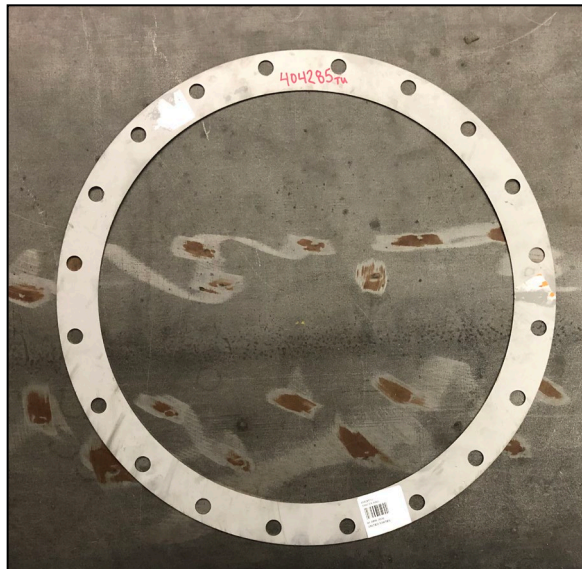


Figure 3

Step 5

Remove the boom/mast to allow removal of the pedestal. See the Optima HR/HRX/TC/TCX maintenance manual for boom and mast removal/installation procedure.

Step 6

Once the pedestal has been removed from the subframe, clean the surfaces on the bottom of the pedestal and subframe, making sure to remove any grease or oil, corrosion and debris. Install the spacer, coated in anti-seize as shown in Figure 4.



Figure 4

Step 7

Install the pedestal using new rotation bearing bolts and washers torqued to the value listed in the maintenance manual.

Step 8

Clean the surfaces on the top of the pedestal and bottom of the rotation bearing, making sure to remove any grease or oil, corrosion and debris. Install the spacer, coated in anti-seize as shown in Figure 5.



Figure 5

Step 9

Install the mast/boom and new hardware (bolts and washers), torquing to the value listed in the maintenance manual. See the Optima HR/HRX/TC/TCX maintenance manual for boom and mast removal/installation procedure.

Step 10

Verify the noise has been eliminated by operating the boom from the lower controls through its full range of motion.

Step 11

If the noise issue has been resolved, perform a torque check on the rotation bearing fasteners and return the unit to service.