



Terex Utilities

SERVICE ADVISORY

SA-626

DATE: 3/31/16

REVISED:

TO: Owners, Users, Dealers, and Installers

Models Affected: All Current Production Models

SUBJECT: *Rotation Bearing Deflection Test*

Issue:

Terex has updated the procedures used to test Rotation Bearing Deflection by providing a specific distance for the dial indicator and a unit specific maximum bearing deflection measurement. The updated procedures are available on our public Terex Utilities website. More information on accessing tech-tips can be found on the next page.

Choose the appropriate product type listed below for each Tech-tip from the dropdown.

- Tech-tip 4 – Rotation Bearing Deflection Test – (Digger Derricks)
- Tech-tip 43 – Rotation Bearing Deflection Test – (Non-OverCenter)
- Tech-tip 44 – Rotation Bearing Deflection – (Overcenter)
- Tech-tip 45 – Rotation Bearing Deflection – (Telescopic)
- Tech-tip 49 – Rotation Bearing Deflection – (Telescopic)

Action:

What the Owner can do:

1. Download the relevant Tech-tips for your fleet and add them as an addendum to the existing manual
2. Distribute Tech-tips to all technicians

If you have any questions you can contact your nearest dealer at this web site;

<http://www.terex.com/utilities/en/products/dealer-locator/index.htm>.

What Terex will do:

Terex has made available the updated Tech-tips [on our public website](#). Choose your product type and model to view the relevant Tech-tips for your machine. A copy of each of the Tech-tips is also attached to this Service Advisory.

Accessing Tech-tips

To access Tech-tips, go to <http://www.terex.com/utilities/en/service-support/tech-tips/index.htm>

Using the Product Type dropdown box, choose the appropriate product type. To view Tech-tip #4, choose “Digger Derrick”

Product Selection

Product Type

Product Subtype

Click on Tech-tip #4 – Rotation Bearing Deflection Test to view the tech-tip

Documents

- [Tech-tip #2 - Adjusting System Relief Pressure](#)
- [Tech-tip #4 - Rotation Bearing Deflection Test](#)
- [Tech-tip #8 - DD reduced pressure adjustment](#)
- [Tech-tip #9 - Fiberglass boss repair - Z643](#)
- [Tech-tip #10 - Setting Boom HOP](#)
- [Tech-tip #11 - Slip Drive](#)
- [Tech-tip #12 - Bleeding and Setting Rotation HOP](#)
- [Tech-tip #13 - Troubleshooting a Digger Drive](#)
- [Tech-tip #15 - Checking the Torque on Rotation Bearing Fasteners](#)

To view the tech-tip on TM Bearing Deflection, select Non-Overcenter Aerial Device from the Product Type dropdown menu.

Product Selection

Product Type

Product Subtype

Click on Tech-tip #43 – Rotation Bearing Deflection Test to view the tech-tip

Documents

- [Tech-tip #39 - Identifying which Terex Chassis Controller is installed on my unit](#)
- [Tech-tip #40 - Troubleshooting the Terex Light Duty Chassis Controller](#)
- [Tech-tip #41 - Troubleshooting the First Generation Terex Chassis Controller](#)
- [Tech-tip #43 - Rotation Bearing Deflection Test](#)
- [Tech-tip #50 - Customer and Distributor Unit Folder Access](#)

Service Call:

Rotation Bearing Deflection Test

Tools Required:

- (1) Dial Indicator with Magnetic Base
- (2) Maintenance Manual for the Unit Being Tested
- (3) Additional outrigger pads as needed

Model(s):

All: Telelect / Simon-Telelect / Terex
Utilities manufactured Digger Derricks

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:
 - o manufacturer's instructions and safety rules
 - o employer's safety rules and worksite regulations
 - o 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

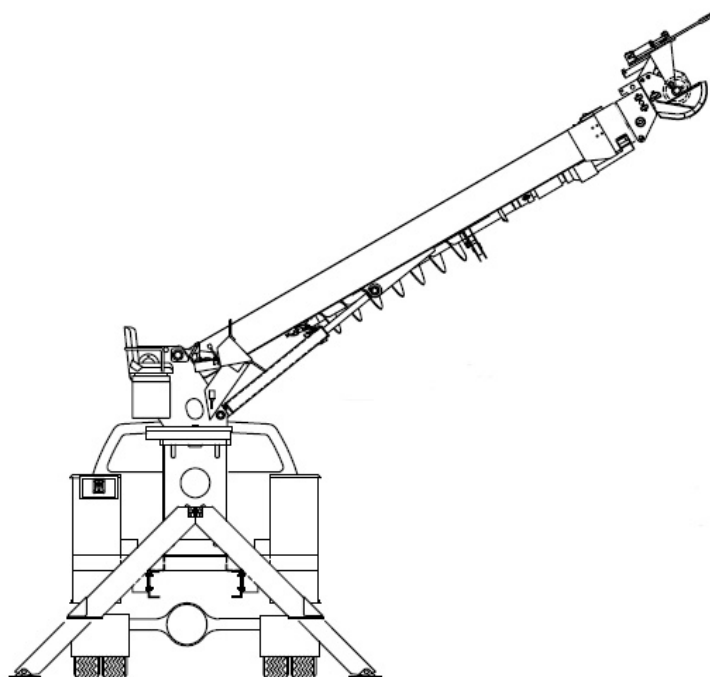
Read this entire procedure and the section in the maintenance manual that applies to this procedure before starting the work.

Step 2

Position the truck in a suitable location. Check for overhead obstructions. Set the outriggers.

Step 3

Check for obstructions before rotating boom. Position the boom where it is used most frequently during operation. This is usually to the curbside of the truck or 45 degrees forward or backwards of this position.



Step 4

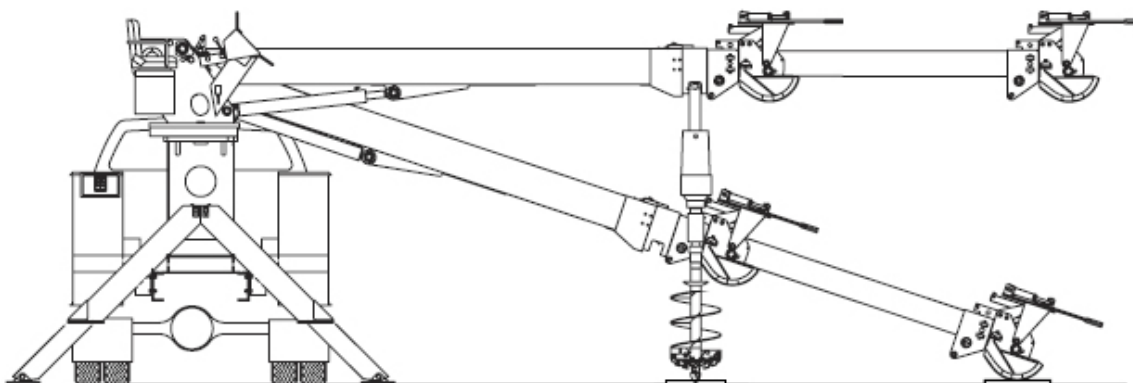
Extend the second (or stinger) section of the boom. If the second doesn't reach the ground, then lower the auger and place an outrigger pad at the position the auger will contact the ground.

If the unit isn't equipped with an auger, stack an adequate number of outrigger pads to allow the sheave head to make contact with the outrigger pads.

Do not contact the outrigger pads at this point.

Step 5

Check for obstructions. Boom down slowly and stop just above the outrigger pads.

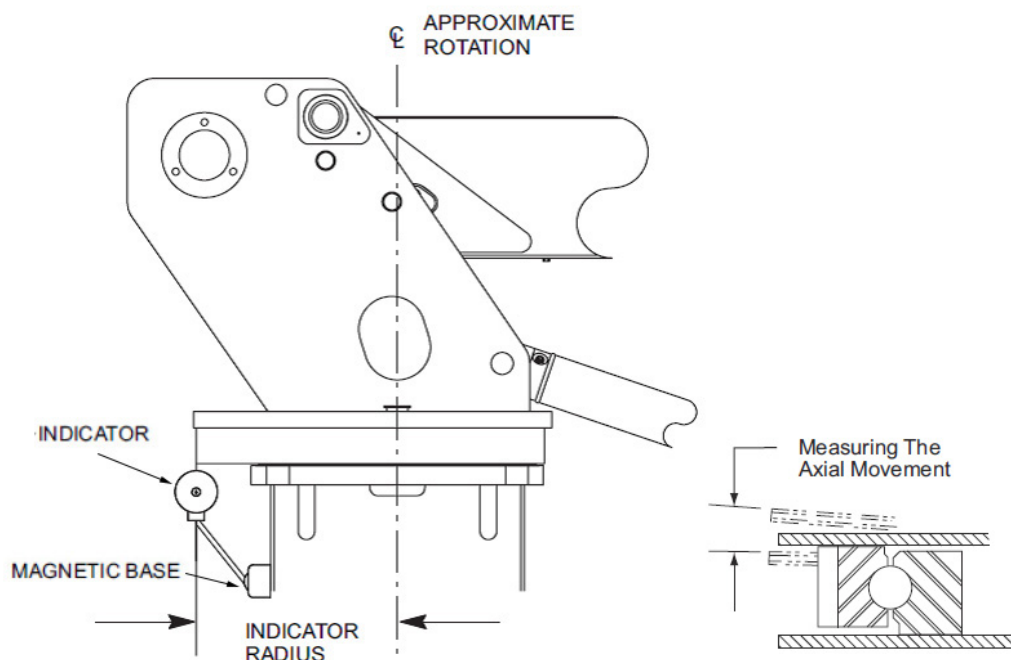


Step 6

Attach the dial indicator base to the pedestal, positioning the tip perpendicular to the edge of the turntable bottom plate and at the specified indicator radius. Typically the dial indicator position is at the edge of the cover for the rotation gearbox pinion. See drawing below.

Note: Consult the table at the end of this document for the dial indicator radius for your specific unit.

Note: Make sure you know which way the dial indicator rotates when it moves to record the correct reading.



Step 7

Zero out the dial indicator. Verify that you have at least .25 inches of movement on the dial indicator in both directions when zeroing.

Step 8

Slowly and carefully lower the sheave head or auger onto the outrigger pad. Referencing the hydraulic pressure gauge, boom down until the gauge reads between 1,600 to 1,800 PSI.

Step 9

Read the number on the dial indicator. This is your rotation bearing deflection. Record the reading and check this reading against the “Maximum Allowable Bearing Deflection” in the following table.

Note: This value is based on a specific dimension of the reading from the centerline of rotation. This dimension is given with the maximum deflection.

Note: Measure the deflection at the same boom location and dial indicator radius every time this

test is performed to provide consistent measurements that can be compared over the life of the machine.

Unit Model	Maintenance Manual	Indicator Radius (inch)	Max Deflection (inch)
92 Series	463279	16.25	0.185
Telecon	463277	13.25	0.203
C3000	463277	16.25	0.185
L4000	463277	16.25	0.185
XL4000	463277	16.25	0.165
C4000	463277	16.25	0.165
C5000	463277	17.25	0.176
C6000 Before 2004	463277	17.25	0.176
C6000 2004 to Present	463277	17.75	0.138
General	463277	21.13	0.164

Unit Specific Maximum Allowable Bearing Deflection

Service Call:

Rotation Bearing Deflection Test

Tools Required:

- Dial Indicator with Magnetic Base
- Maintenance Manual for the Unit Being Tested

Model(s):

Non Over-Center Aerial Devices:

TC, TCX, RM, RMX, TM

Bearing Deflection

The following procedure can be used for all of the models listed above, regardless of the age of the unit.

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 - o 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

Read this entire procedure and the section in the maintenance manual that applies to this procedure before starting the work.

Step 2

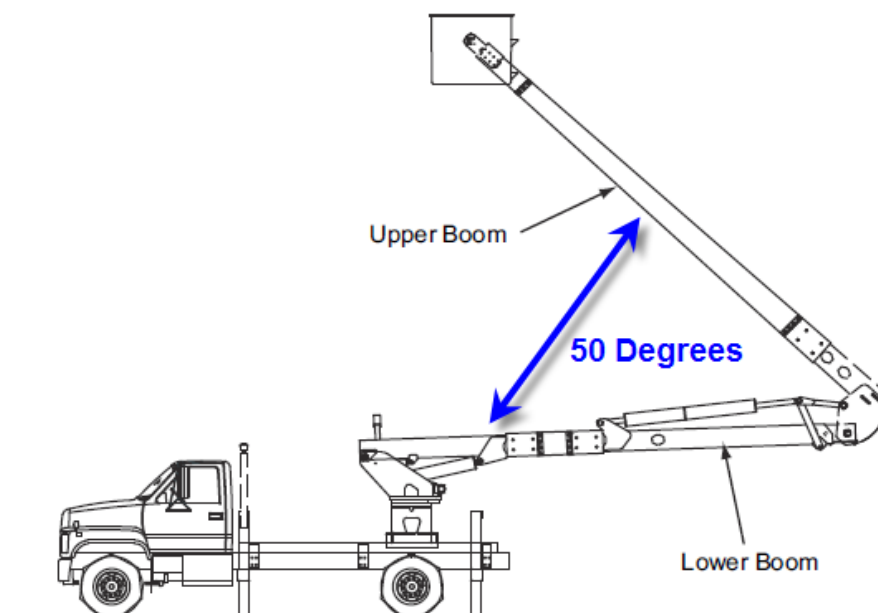
Position the truck in a suitable location, checking for overhead obstructions. Set the outriggers and level the machine. There can be no additional tools or materials in the platform with the exception of a platform liner.



Step 3

TC and TCX:

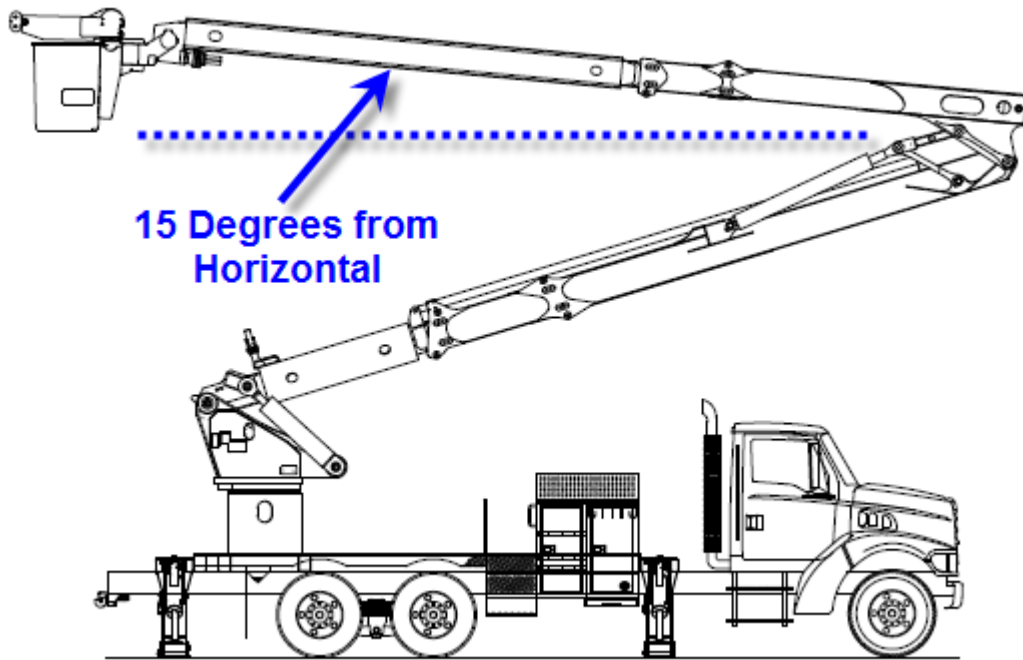
Check for obstructions before rotating boom. Rotate boom off rear of vehicle. Place lower boom at 0 degrees and upper boom at 50 degrees from horizontal. See image below.





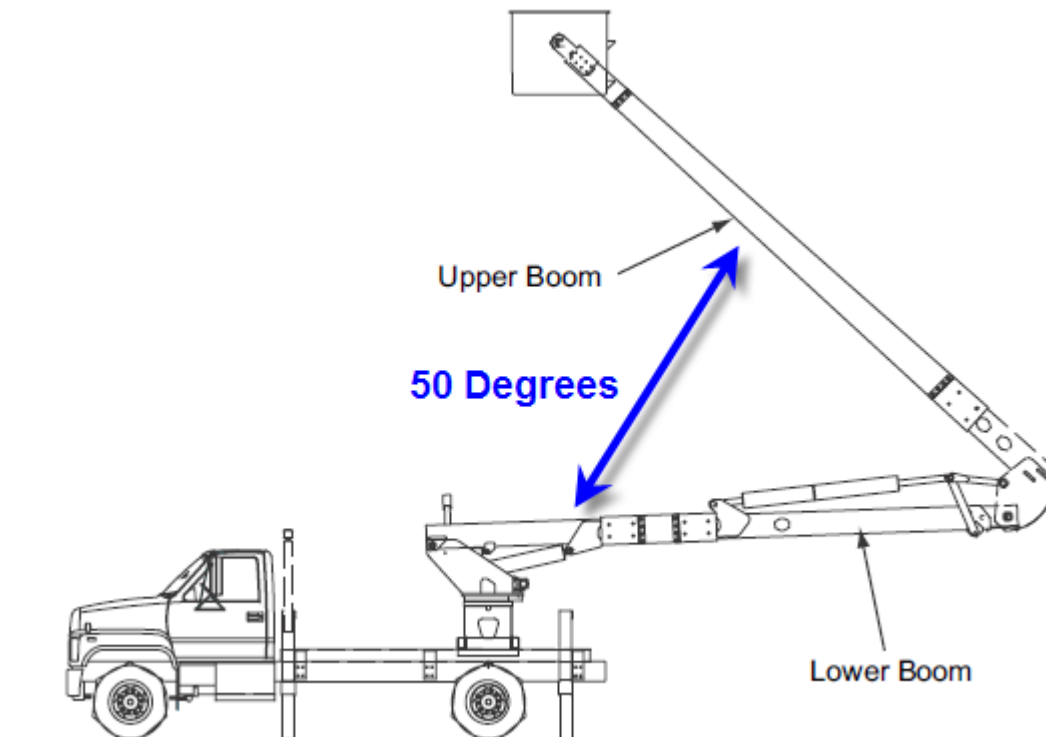
TM Series:

Check for obstructions before rotating boom off rear of vehicle. Place lower boom just out of the lower boom rest and upper at 15 degrees. See image below



RM and RMX:

Check for obstructions before rotating boom.
Rotate boom off rear of vehicle. Place lower
boom at 0 degrees and upper at 50 degrees.
See image below.



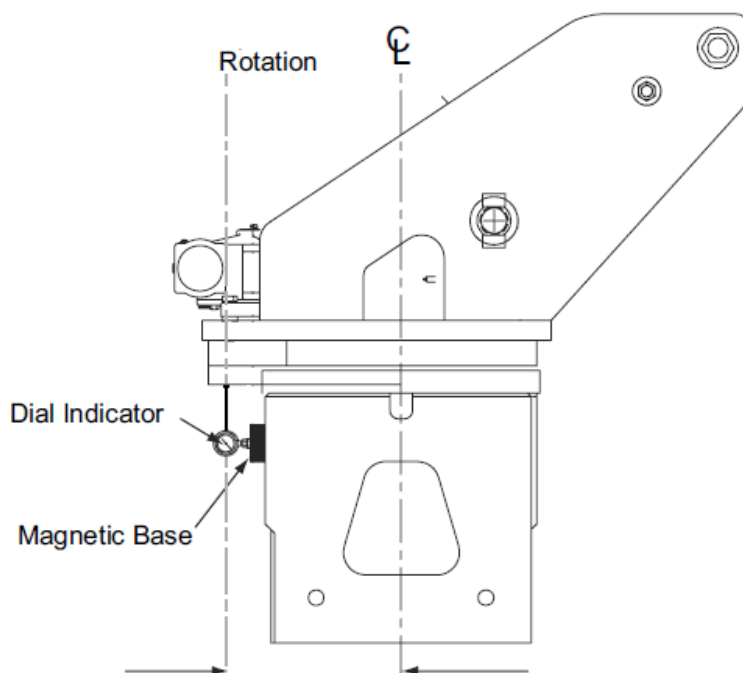
Step 4

Attach the dial indicator base to the pedestal, positioning the tip perpendicular to the edge of the turntable bottom plate at the specified indicator radius.

Note: Consult the table at the end of this document for the dial indicator radius for your specific unit.

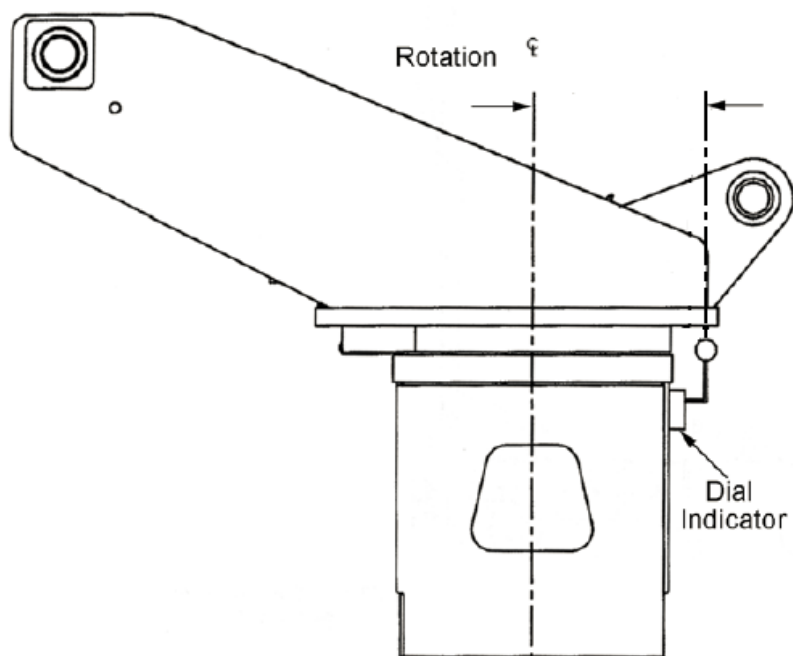
Note: Make sure you know which way the dial indicator rotates when it moves to get the correct reading.

TC and TCX

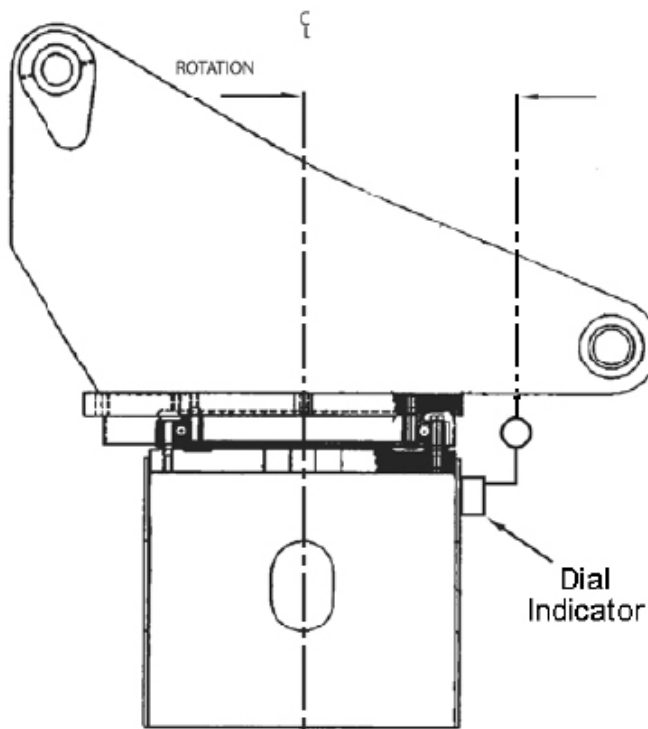




RM and RMX:



TM Series:



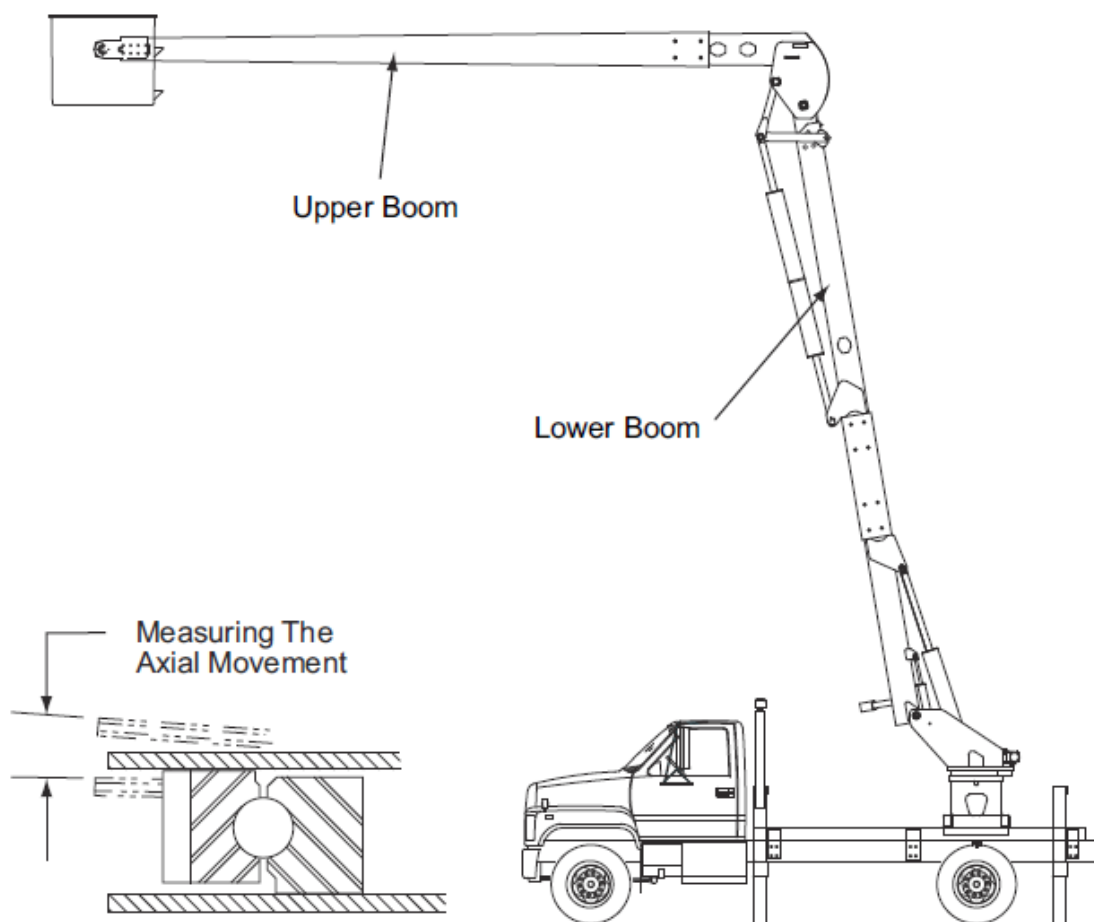
Step 5

Zero out the dial indicator. Verify that you have at least .25 inches of movement on the dial indicator in both directions when zeroing.

Step 6

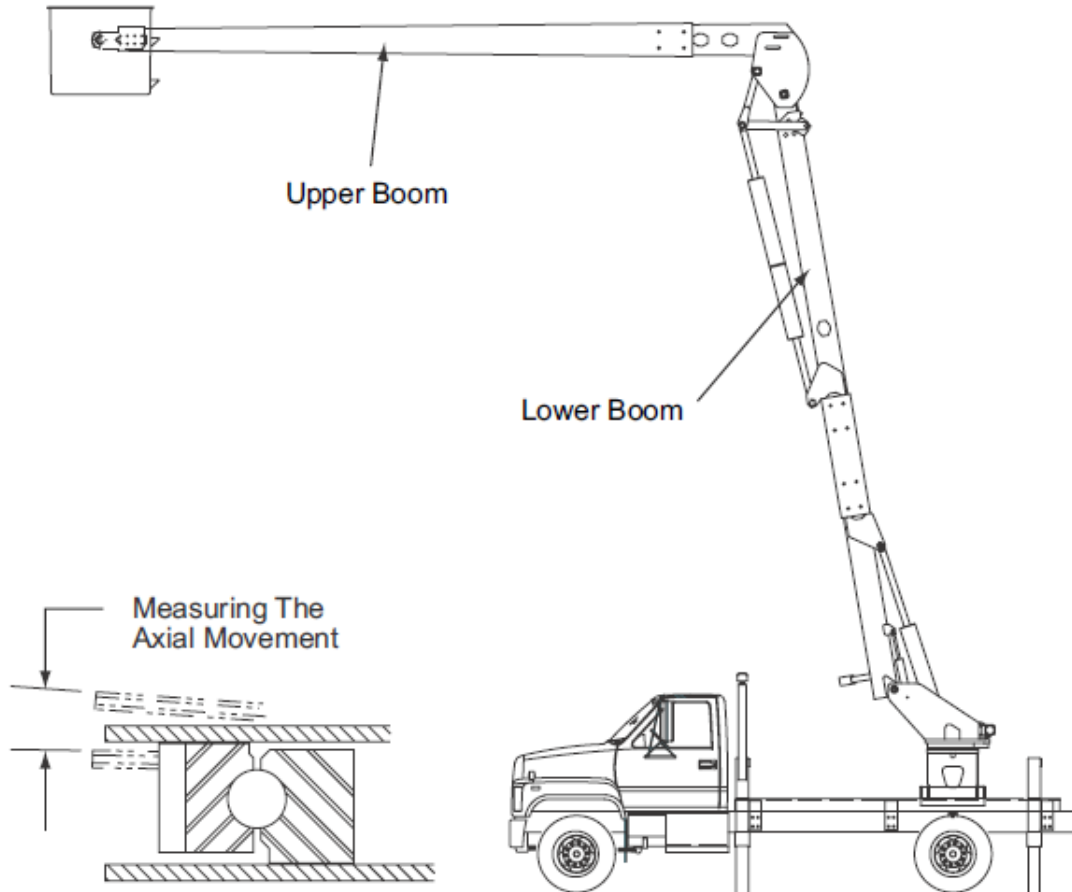
TC and TCX

Position the lower boom as indicated in the illustration below. Lower boom fully articulated and upper at horizontal.



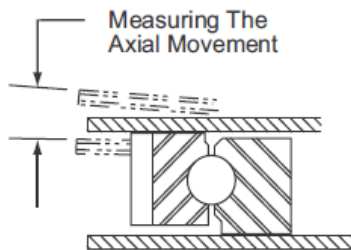
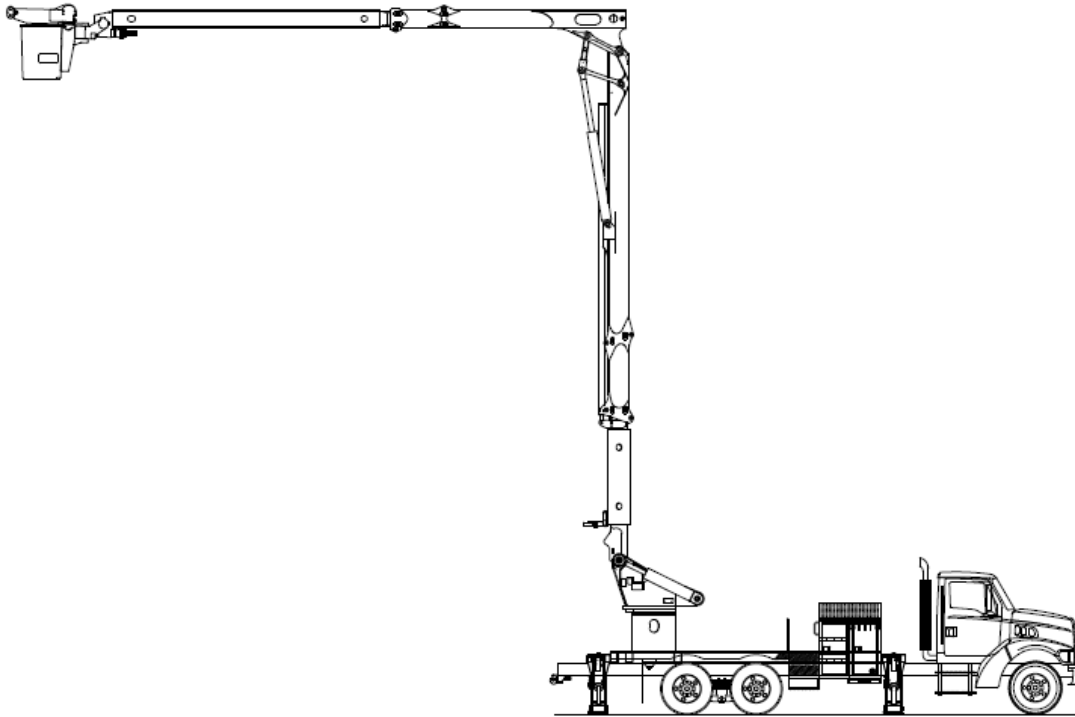


RM and RMX: Lower boom at 90 degrees and Upper boom horizontal.





TM Series: Lower boom fully articulated and upper at horizontal.



Step 6

Read the number on the dial indicator. This is your rotation bearing deflection. Record the reading and check this reading against the “Maximum Allowable Bearing Deflection” in the following table.

Note: This value is based on a specific dimension of the reading from the centerline of rotation. This dimension is given with the maximum deflection.

Note: Measure the deflection at the same boom location and dial indicator radius every time this test is performed to provide consistent measurements that can be compared over the life of the machine.

Unit	Manual	Indicator Radius	Max Deflection
TC	463193	14.00	0.160
TCX	477476	14.00	0.160
RM	472198	15.00	0.156
RMX	483019	15.00	0.156
TM85/100	472798	17.50	0.135
TM105/125	472798	20.00	0.155

Model Specific Maximum Allowable Bearing Deflection

Service Call:

Rotation Bearing Deflection Test

Tools Required:

- Dial Indicator with Magnetic Base
- Maintenance Manual for the Unit Being Tested

Model(s):

Over-Center Units:

HR37-55, HRX, XML, OM, OMD, XM, XT and XT PRO

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Step 1

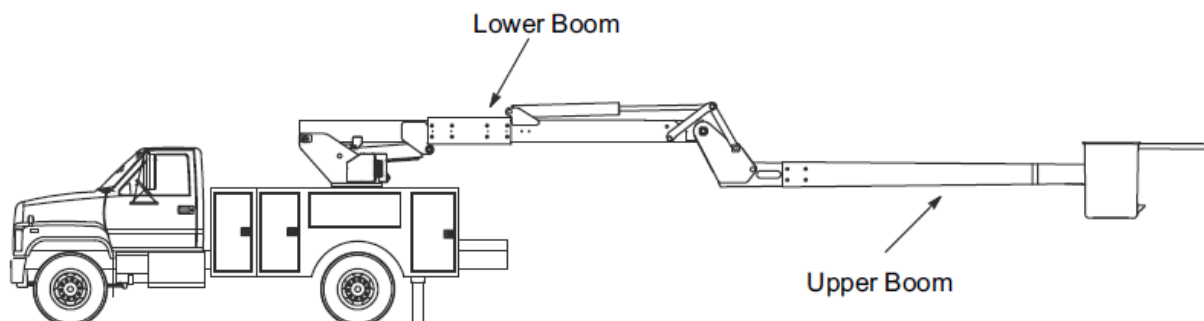
Read this entire procedure and the section in the maintenance manual that applies to this procedure before starting the work.

Step 2

Position the truck in a suitable location. Check for overhead obstructions. Set the outriggers. There can be no additional tools or materials in the platform with the exception of a platform liner.

Step 3

Check for obstructions before rotating boom. Rotate boom 180 degrees off the rear of the vehicle. Place lower boom at 0 degrees and unfold the upper boom to 180 degrees. See image below.



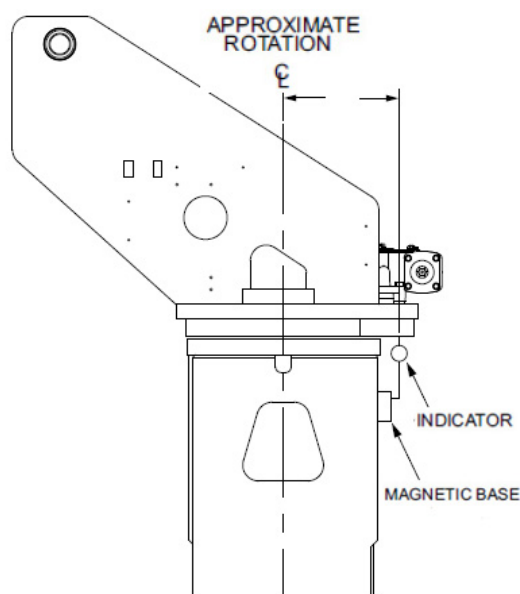
ENSURE THE OUTRIGGERS ARE PROPERLY EXTENDED

Step 4

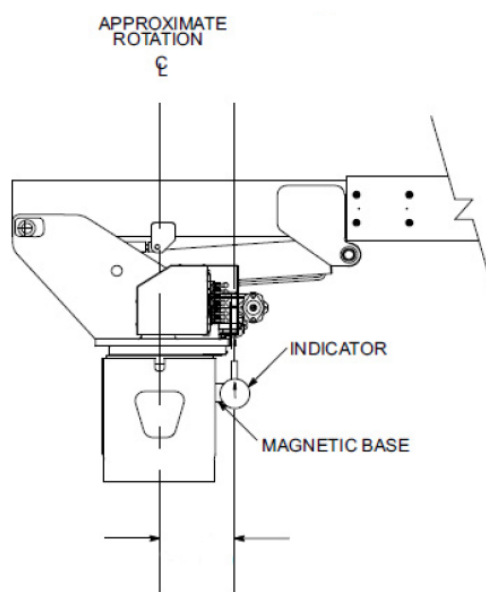
Attach the dial indicator base to the pedestal, positioning the tip perpendicular to the edge of the turntable bottom plate at the specified indicator radius.

Note: Consult the table at the end of this document for the dial indicator radius for your specific unit.

Note: Make sure you know which way the dial indicator rotates when it moves for the correct reading.



**OM/OMD
XM**



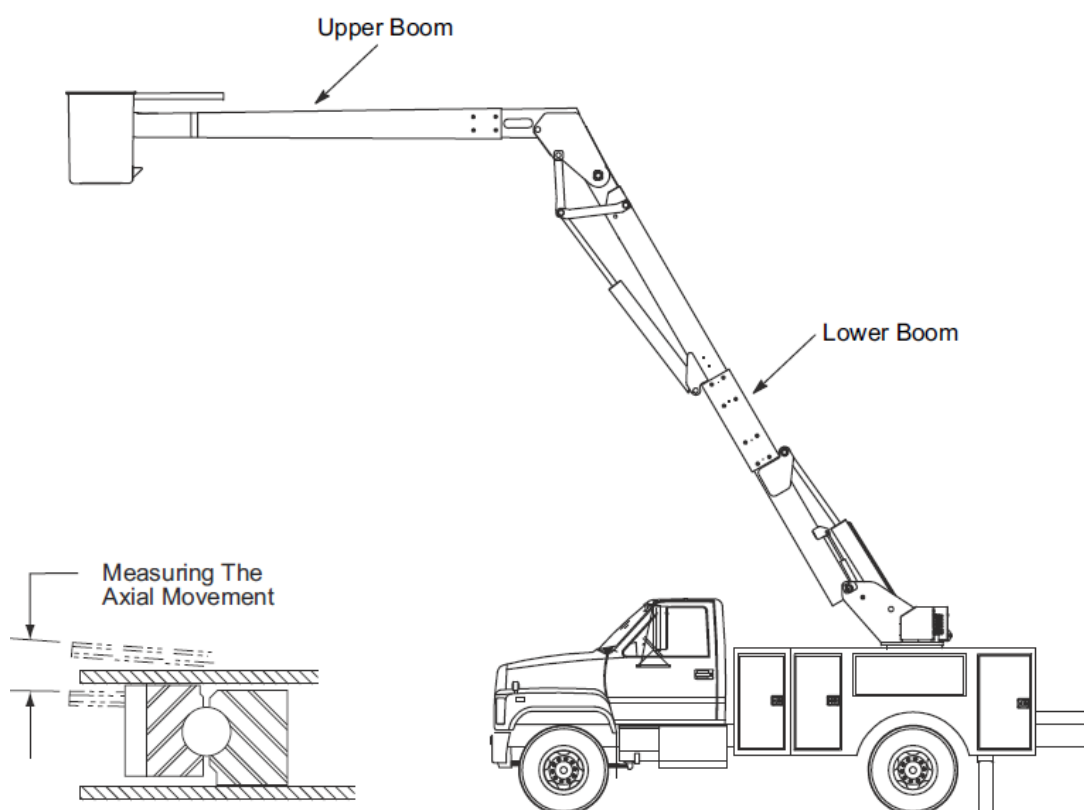
**HR/HRX
XML/XT
XT PRO**

Step 5

Zero out the dial indicator. Verify that you have at least .25 inches of movement on the dial indicator in both directions when zeroing.

Step 6

Position the lower boom as indicated in the illustration below. Lower boom fully articulated and upper boom horizontal.



Step 7

Read the number on the dial indicator. This is your rotation bearing deflection. Record the reading and check this reading against the “Maximum Allowable Bearing Deflection” in the following table.

Note: Measure the deflection at the same boom location and dial indicator radius every time this test is performed to provide consistent measurements that can be compared over the life of the machine.

Unit Model	Maintenance Manual	Indicator Radius (inch)	Max Deflection (inch)
HR37-40	463199	11.50	0.177
HR40 thru HR46	463199	14.00	0.175
HR50 thru HR55	463199	14.00	0.160
HRX-XML	477640	14.00	0.160
OM	463203	14.00	0.160
OMD	463535	15.00	0.156
SC	463535	14.00	0.175
XM	469572	15.00	0.156
XT55	463107	14.00	0.175
XT60	463107	14.00	0.160
XT Pro	611447	14.00	0.160

Unit Specific Maximum Allowable Bearing Deflection

Service Call:

Rotation Bearing Deflection Test

Tools Required:

- Dial Indicator with Magnetic Base
- Maintenance Manual for the Unit Being Tested
- Dynamometer
- Digger Derrick for the negative deflection test
- Auxiliary Load Line

Model(s):

TPL 29, TPL 33, TE/TS

Tech Tip Safety Rules



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Step 1

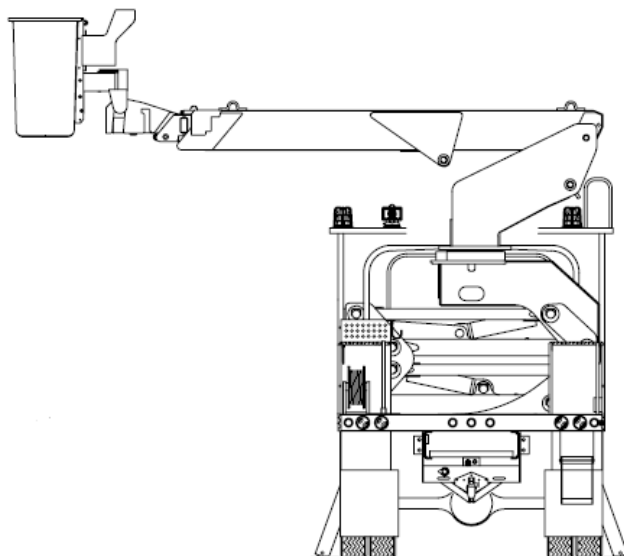
Read this entire procedure and the section in the maintenance manual that applies to this procedure before starting the work.

Step 2

Position the truck in a suitable location. Check for overhead obstructions. Set the outriggers. There can be no additional tools or materials in the platform with the exception of a platform liner.

Step 3

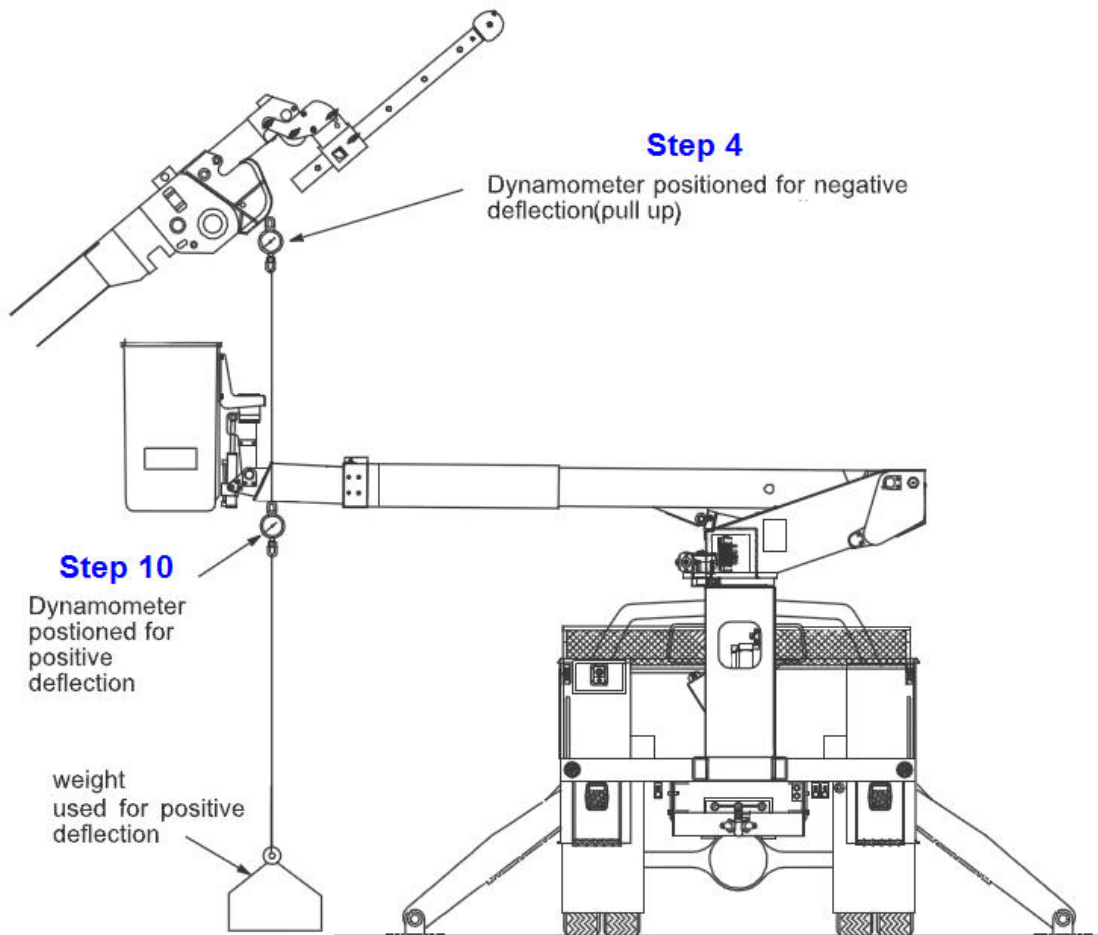
Check for obstructions before rotating boom. Rotate boom 90 degrees off the side or rear of the vehicle. Place upper boom at 0 degrees with boom extension fully retracted. See images below.





Step 4

Attach a dynamometer between the boom tip and the auxiliary load line for pulling up the boom (negative deflection).

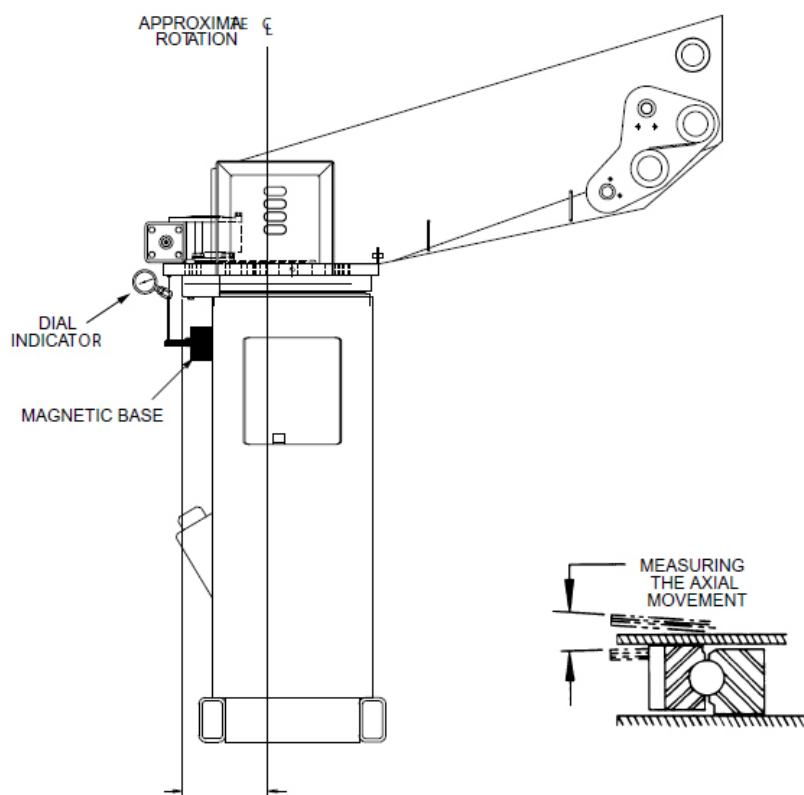


Step 5

Attach the dial indicator base to the pedestal, positioning the tip perpendicular to the edge of the turntable bottom plate at the specified indicator radius.

Note: Consult the table at the end of this document for the dial indicator radius for your specific unit.

Note: Make sure you know which way the dial indicator rotates when it moves to get the correct reading.



Step 6

Zero out the dial indicator. Verify that you have at least .25 inches of movement on the dial indicator in both directions when zeroing.

Step 7

Pull up on the boom using the Digger Derrick, dynamometer, and auxiliary load line.

Note: Do not exceed the value specified in the appropriate manual.

Step 8

Read the number on the dial indicator. This is your rotation bearing deflection. Record the reading and check this reading against the "Maximum Allowable Bearing Deflection" in the following table.

Step 9

Release the up pressure on the boom.

Step 10

Attach a dynamometer between the weight and load line for pulling down the boom (positive deflection). Do not exert any load on the boom.

Step 11

Zero out the dial indicator.

Step 12

If equipped use the winch and pull up, if not equipped lift up with the lift cylinder.

Note: Do not exceed the value specified in the appropriate manual.

Step 13

Read the number on the dial indicator. This is your rotation bearing deflection. Record this reading and check this reading against the "Maximum Allowable Bearing Deflection" in the following table.



Note: Measure the deflection at the same boom location and dial indicator radius every time this test is performed to provide consistent measurements that can be compared over the life of the machine.

Unit Model	Maintenance Manual	Indicator Radius (inch)	Max Deflection (inch)
TPL	463668	11.50	0.176
TE/TS	463312	12.75	0.160

Unit Specific Maximum Allowable Bearing Deflection

Service Call:

Rotation Bearing Deflection Test

Tools Required:

- Dial Indicator with Magnetic Base
- Maintenance Manual for the Unit Being Tested

Model(s):

LT, TPL, TLM

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Step 1

Read this entire procedure and the section in the maintenance manual that applies to this procedure before starting the work.

Step 2

Position the truck in a suitable location. Check for overhead obstructions. Set the outriggers. There can be no additional tools or materials in the platform with the exception of a platform liner.

Step 3

Check for obstructions, then raise upper boom to the vertical position. Do not rotate the boom.

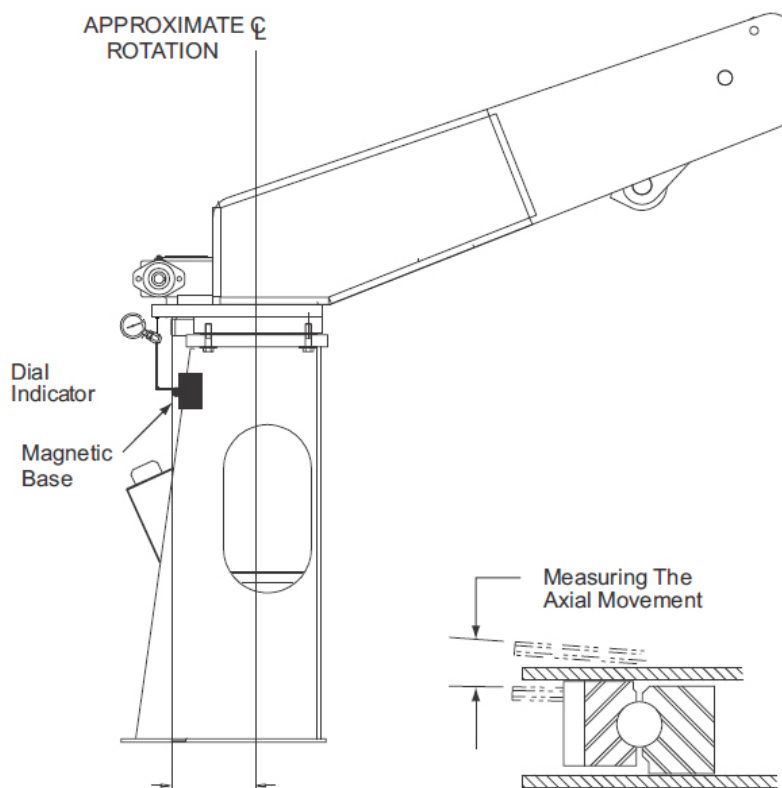


Step 4

Attach the dial indicator base to the pedestal, positioning the tip perpendicular to the edge of the turntable bottom plate at the specified indicator radius.

Note: Consult the table at the end of this document for the dial indicator radius for your specific unit.

Note: Make sure you know which way the dial indicator rotates when it moves to get the correct reading.



Step 5

Zero out the dial indicator. Verify that you have at least .25 inches of movement on the dial indicator in both directions when zeroing.

Step 6

Raise the lower boom to the vertical position with the upper boom horizontal. Fully extend the upper boom. Do not rotate the boom.



Step 7

Read the number on the dial indicator. This is your rotation bearing deflection. Record the reading and check this reading against the “Maximum Allowable Bearing Deflection” in the following table.

Note: This value is based on a specific dimension of the reading from the centerline of rotation. This dimension is given with the maximum deflection.

Note: Measure the deflection at the same boom location and dial indicator radius every time this test is performed to provide consistent measurements that can be compared over the life of the machine.

Unit Model	Maintenance Manual	Indicator Radius (inch)	Max Deflection (inch)
LT	463067	11.50	0.176
TL	463209	11.50	0.144
TPL	463668	11.50	0.176

Unit Specific Maximum Allowable Bearing Deflection