

Machine number: 76003.

GEOMETRY PROTOCOL FOR RZ 150

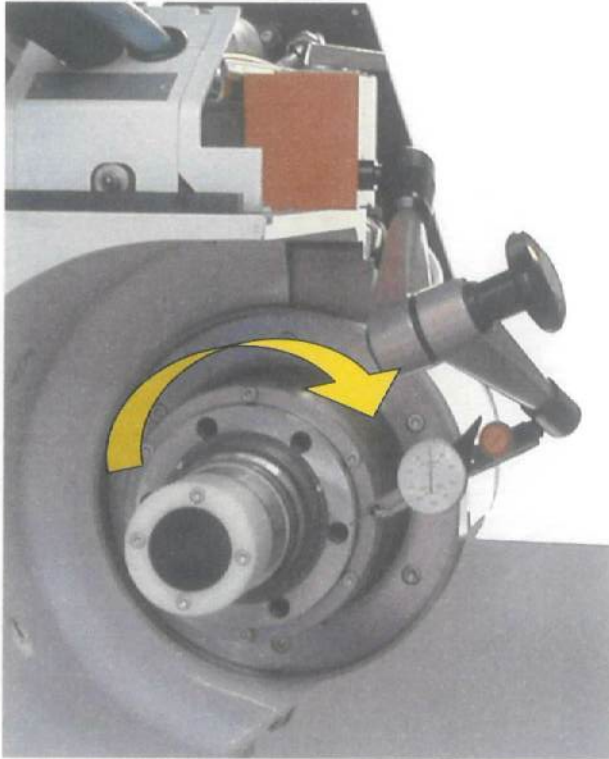
Customer: Sanjeev Auto

Country: India.



Machine number:

Axial runout of the B-axis



Auxiliary equipment:

- Magnetic base
- Dial indicator [0.001]mm

Measurement:

- Set up the measuring equipment according to photo
- Slowly rotate the spindle and read off the maximum deflection on the dial indicator.

Measurement	Permissible	Measured
Axial runout	0.002mm	0.002.....mm

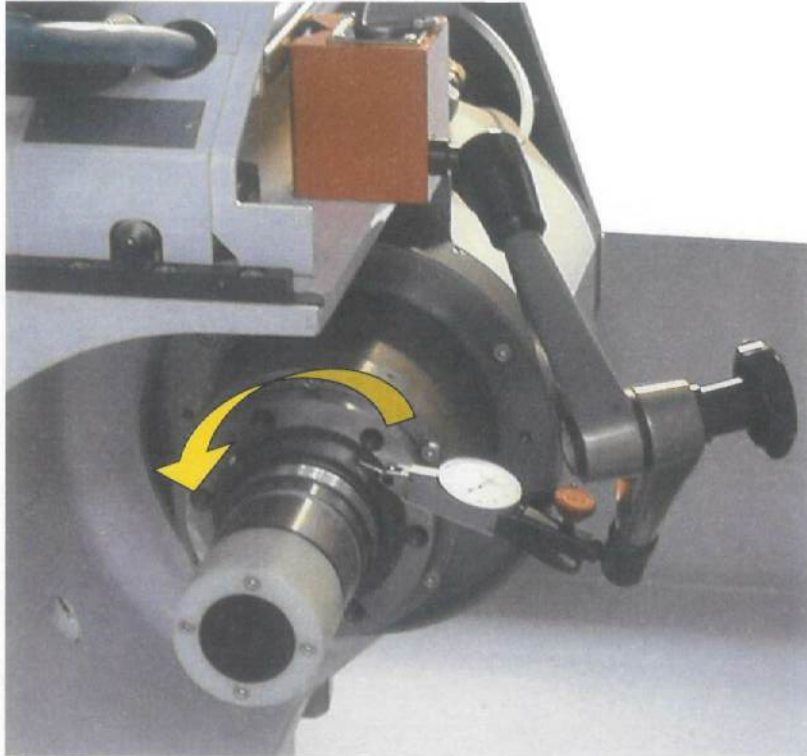
Measurement carried out

Date

Name

Machine number:

Radial runout of the B-axis



Auxiliary equipment:

- Magnetic base
- Dial indicator [0.001]mm

Measurement:

- Set up the measuring equipment according to photo
- Slowly rotate the spindle and read off the maximum deflection on the dial indicator.

Measurement	Permissible	Measured
Radial runout	0.0025mm	0.002.....mm

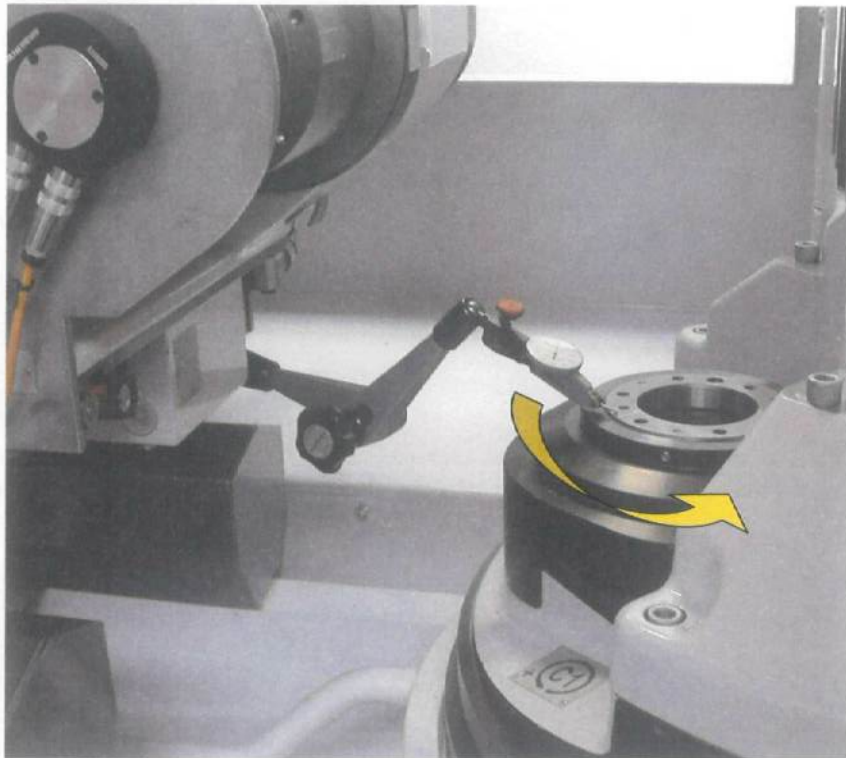
Measurement carried out

Date

Name

Machine number:

Axial runout of the C1 / C2 axis



Auxiliary equipment:

- Magnetic base
- Dial indicator [0.001]mm

Measurement:

- Set up the measuring equipment according to photo
- Slowly rotate the spindle and read off the maximum deflection on the dial indicator.

Centre sleeve C1 axial runout

Measurement	Permissible	Measured
Axial runout	0.002mm0.002.....mm

Centre sleeve C2 axial runout

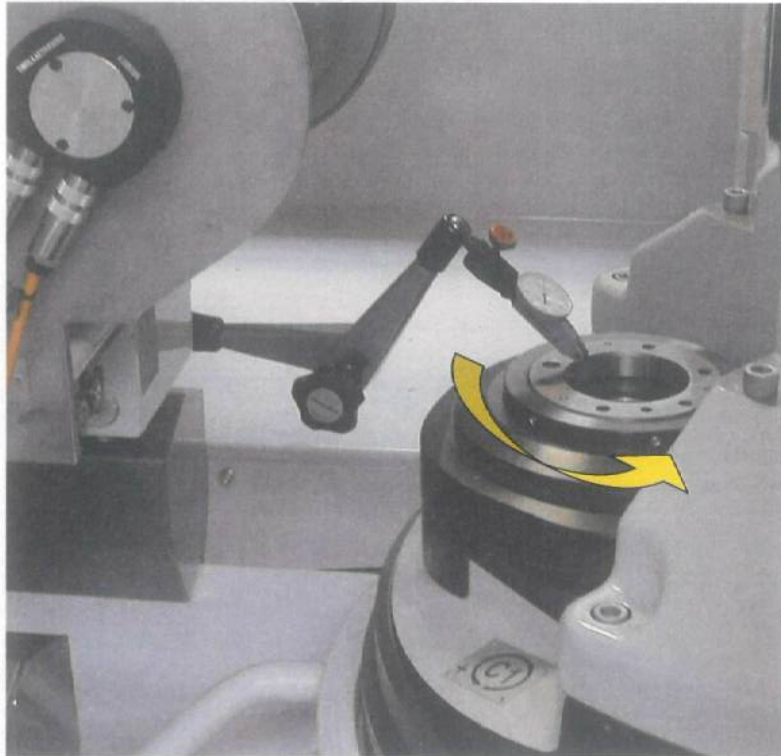
Measurement	Permissible	Measured
Axial runout	0.002mm0.002.....mm

Measurement carried out

Date _____ Name _____

Machine number:

Radial runout of the C1 / C2 axis



Auxiliary equipment:

- Magnetic base
- Dial indicator [0.001mm]

Measurement:

- Set up the measuring equipment according to photo
- Slowly rotate the spindle and read off the maximum deflection on the dial indicator.

Centre sleeve C1 radial runout

Measurement	Permissible	Measured
Radial runout	0.002mm	<u>0.002</u>mm

Centre sleeve C2 radial runout

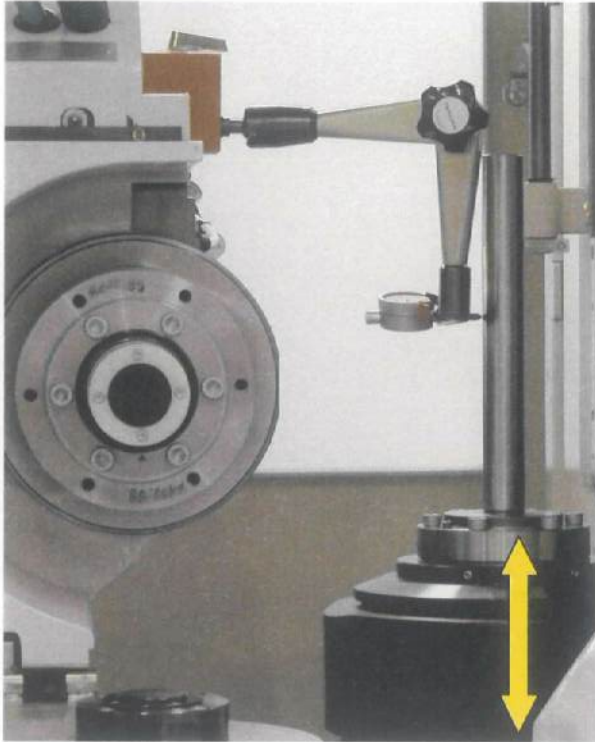
Measurement	Permissible	Measured
Radial runout	0.002mm	<u>0.002</u>mm

Measurement carried out

Date _____ Name _____

Machine number:

Parallelism of the C1 / C2 axis to their guides (carrier guides)



Auxiliary equipment:

- Test mandrel 187485.00
- Dial indicator with 0.001mm scale divisions and spherical measuring probe
- Magnetic base

Measurement:

- Mount the test mandrel on the C1-axis and adjust for concentric running (< 0.003mm).
- Attach magnetic base with dial indicator to the tail stock sleeve.
- Place the dial indicator horizontally in X-direction on the test mandrel and set the scale to 0.
- With the Z-axis move the test mandrel a distance of 100mm.
- Place the dial indicator in Y-direction and set the scale to 0.
- With the Z-axis move the test mandrel a distance of 100mm.
- Carry out the same measurement for the C2-axis.

Measurement direction	Permissible [mm] at 100mm	Measured C1-axis	Measured C2-axis
X-direction	0.010	0.004	0.002
Y-direction	0.010	0.004.	0.004

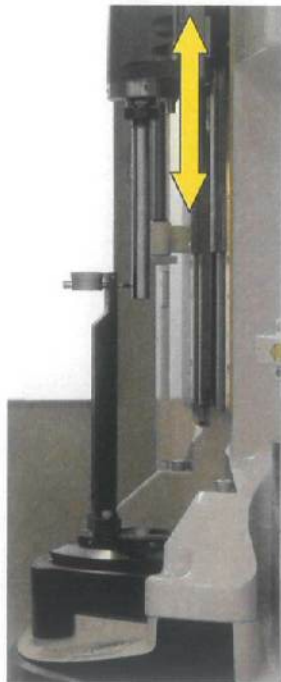
Measurement carried out

Date

Name

Machine number:

Parallelism of the tailstock sleeves (W1 / W2) to their guides



Auxiliary equipment:

- Test mandrel 144273.00
- Dial indicator with 0.001mm scale divisions and spherical measuring probe
- Offset measurement adapter 188851.00

Measurement:

- Mount the offset measurement adapter with dial indicator on the C1-axis
- Position Z-axis at +0.000mm, W1-axis at position according to photo.
- Mount the dial indicator horizontally in X-direction on the test mandrel and set the scale to 0.
- With the W1-axis move the test mandrel a distance of 180mm. Note the max. deflection.
- Mount the dial indicator horizontally in Y-direction on the test mandrel and set the scale to 0.
- With the W1-axis move the test mandrel a distance of 180mm. Note the max. deflection.
- Move W1- and Z-axis 100.000mm in the positive direction.
- Repeat measurements in the X and Y directions at this position.
- Carry out the same measurement for the C2 / W2 axis.

Measurement direction	Permissible at 180mm [mm]	Measured W1-axis	Measured W2-axis
X-direction (Z = 0mm)	0.010	0.010	0.008
Y-direction (Z = 0mm)	0.010	0.008	0.019
X-direction (Z = 100mm)	0.010	0.007	0.012
Y-direction (Z = 100mm)	0.010	0.008	0.008

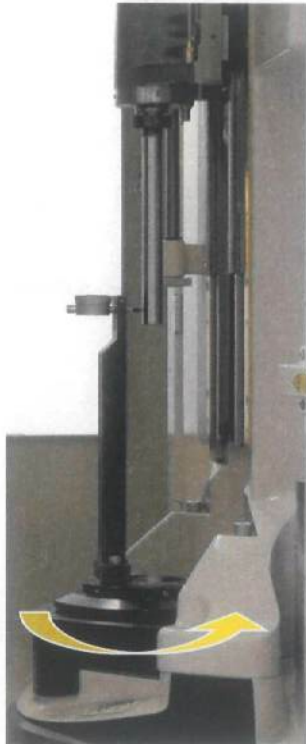
Measurement carried out

Date

Name

Machine number:

Position of the tailstock sleeves (W1 / W2) to the work piece axis (C1 / C2)



Auxiliary equipment:

- Test mandrel 144273.00
- Dial indicator with 0.001mm scale divisions and spherical measuring probe
- Offset measurement adapter 188851.00

Measurement:

- Mount the offset measurement adapter with dial indicator on the C1-axis
 - Position Z-axis at 0.000mm, W1-axis at 195mm.
 - Mount dial indicator on test mandrel and slowly rotate C1 axis.
 - Determine the dial indicator deflection and calculate the eccentricity.
- ☞ The effective concentricity corresponds to one half of the dial indicator deflection.
 (dial indicator deflection = maximum value minus minimum value)
- Carry out measurements according to table.
 - Carry out the same measurement for the C2 / W2 axis.

Measurement	Permissible [mm]	Measured W1-axis	Measured W2-axis
Z = 0.000mm / W = 255.000mm	0.013	0.015	0.010
Z = 0.000mm / W = 20.000mm	0.010	0.018	0.020
Z = 100.000mm / W = 300.000mm	0.013	0.025	0.020
Z = 100.000mm / W = 125.000mm	0.010	0.01	0.010

Measurement carried out

R. 10.25 G. D. Singh
 Date Name