

VR SERIES INSPECTION REPORT

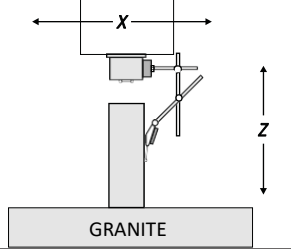
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5.A SQUARENESS OF Z-AXIS MOTION TO X-AXIS

PLACE A CYLINDER SQUARE CENTERED ON TABLE. ADJUST CYLINDER TOP TO WITHIN 0.0000 FOR X-Y MOTION (NO MEASURABLE CHANGE IN X/Y MOTION). INDICATE THE SIDE OF THE CYLINDER SQUARE IN X DIRECTION. FIND THE HIGH POINT AND MOVE Z.

MEASURED VALUE: _____ Z-AXIS TILT RELATIVE TO X-AXIS
 (NTE 0.0005 / 10")
 (NTE 12.7 μ m / 250mm)

PARALLEL TO X-AXIS

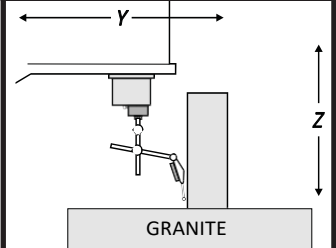


5.B SQUARENESS OF Z-AXIS MOTION TO Y-AXIS

INDICATE THE SIDE OF THE CYLINDER SQUARE IN Y DIRECTION. FIND THE HIGH POINT AND MOVE Z. MOVE Z.

MEASURED VALUE: _____ Z-AXIS TILT RELATIVE TO Y-AXIS
 (NTE 0.0005 / 10")
 (NTE 12.7 μ m / 250mm)

PARALLEL TO Y-AXIS



6. SPINDLE SWEEP

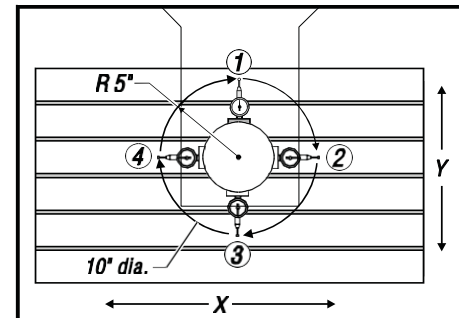
SPINDLE SWEEP X/Z PLANE

HOME THE B-AXIS. AND SET THE INDICATOR ON THE SPINDLE.

- (1) POSITION INDICATOR WITHIN 5" RADIUS.
- (2) SET ZERO AT A QUADRANT.
- (3) MEASURE EACH 3 REMAINING POSITIONS.

(X) MEASURED DIFFERENCE: _____
 (NTE 0.0005 / 10" dia.)
 (NTE 12.7 μ m / 250mm)

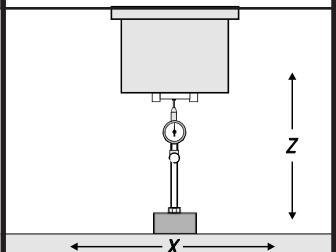
(Y) MEASURED DIFFERENCE: _____
 (NTE 0.0005 / 10" dia.)
 (NTE 12.7 μ m / 250mm \varnothing)



7.A SPINDLE RUNOUT AT TAPER

RUNOUT OF TAPER

MEASURED VALUE: _____
 (RUNOUT OF TAPER 0.0002" [5.08 μ m] TIR)

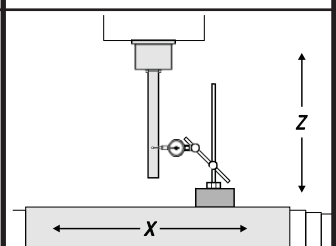
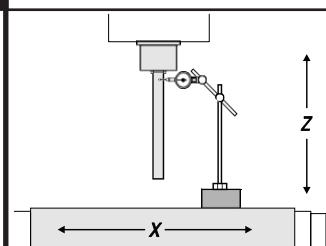


7.B SPINDLE RUNOUT ON TEST TOOL BAR

RUNOUT AT BASE OF BAR

RUNOUT AT 6" FROM BASE

- (1) **MEASURED VALUE:** _____
 (RUNOUT AT BASE OF BAR 0.0005 [12.7 μ m] TIR)
- (2) **MEASURED VALUE:** _____
 (RUNOUT AT 6" FROM BASE 0.001 [25.4 μ m] TIR)



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THIS SECTION OF THE INSPECTION REPORT ONLY APPLIES TO THE 5-AXIS HEAD OF THE VF SERIES.

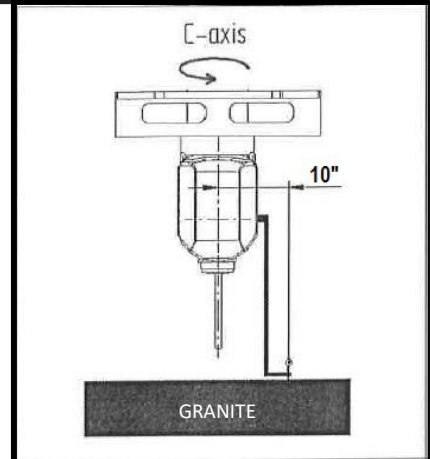
8. C-AXIS PARALLEL TO Z AXIS

C-AXIS PARALLEL TO Z AXIS

SETUP THE GRANITE SQUARE ON THE TABLE WITH THE TOP SURFACE PARALLEL TO THE XY PLANE WITHIN 0.0001"/10". USE MACHINIST JACKS OR SHIM UNDER THE GRANITE.

- (1) POSITION INDICATOR BASE ON THE SIDE OF THE B-AXIS BODY TO SWEEP THE GRANITE SURFACE WITHIN 5" RADIUS.
- (2) ROTATE C-AXIS USING JOG HANDLE THROUGH COMPLETE ROTATION.
- (3) RECORD THE READING

MEASURED VALUE: _____
 (NTE 0.0008" / 10" dia.)

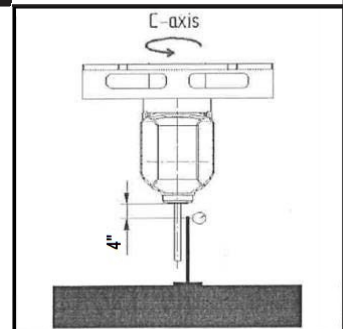


9. C-AXIS RUNOUT

C-AXIS RUNOUT

- (1) POSITION INDICATOR NEEDLE ON HIGH SPOT OF ALIGNMENT BAR.
- (2) ROTATE C-AXIS USING THE JOG HANDLE ONE FULL REVOLUTION AND MEASURE RUNOUT.

MEASURED VALUE: _____
 (NTE 0.0015" TIR)



10. B-AXIS INCLINATION

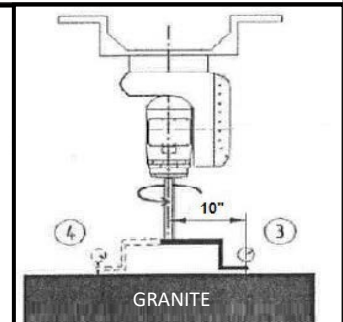
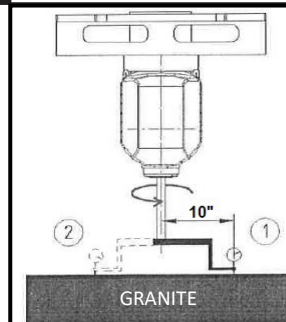
C-AXIS AT HOME POSITION

C-AXIS AT 90 DEGREES

- (1) JOG B-AXIS TO OBTAIN SAME VALUE AT POSITIONS 1 AND 2 WHILE C-AXIS AT HOME POSITION.

MEASURED DIFFERENCE BETWEEN 1 AND 2: _____
 (NTE 0.0005 TIR WHILE C-AXIS AT HOME POSITION)

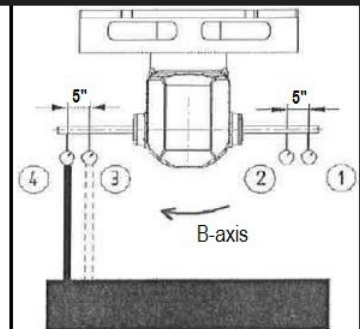
MEASURED DIFFERENCE BETWEEN 3 AND 4: _____
 (NTE 0.002 TIR WHILE C-AXIS AT 90 DEGREES)



11. SPINDLE CENTERLINE AND B-AXIS INTERSECTION

- (1) ROTATE B-AXIS TO -90°.
- (2) ADJUST B-AXIS TO OBTAIN THE SAME VALUE AT POSITIONS 1 AND 2.
- (3) ROTATE B-AXIS TO 90°.
- (4) ADJUST B-AXIS TO OBTAIN THE SAME VALUE AT POSITIONS 3 AND 4.

MEASURED DIFFERENCE BETWEEN 1 AND 4 SPLIT IN HALF: _____
 (NTE 0.002 TIR)



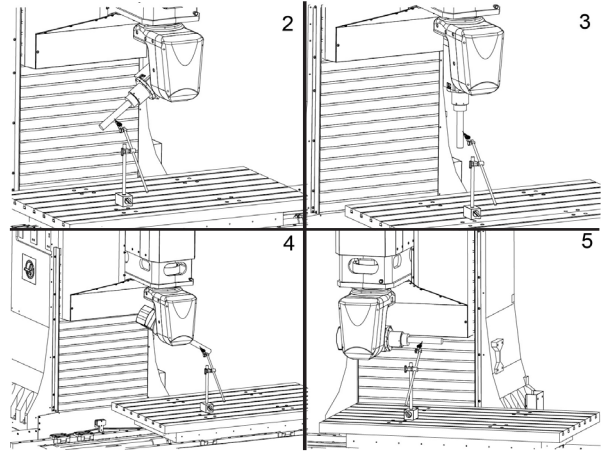
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12. B-AXIS SWEEP

B-AXIS POSITIONS AT 45° INCREMENTS

- (1) ROTATE B-AXIS TO 90°. MEASURE 4" AWAY FROM SPINDLE NOSE. MARK THE POINT ON THE TEST BAR WITH A FELT TIP MARKER AND PLACE YOUR INDICATOR AND SET IT TO ZERO AT THE MARKED POINT.
- (2) ROTATE 45° TO POSITION [2]. WITHOUT MOVING THE INDICATOR JOG THE X AND Z AXIS TO THE MARKED POINT ON THE TEST BAR IN POSITION [2] MAKE SURE THERE IS NO MOVEMENT IN THE Y- AXIS.
- (3) REPEAT FOR POSITIONS [3], [4], & [5].
NOTE: ALL POSITIONS ARE IN 45° INCREMENTS
- (4) FROM POSITION [5] ROTATE THE C-AXIS 180° AND REPEAT STEPS
1-4. USE THE TABLE BELOW TO FIND THE B-AXIS SWEEP ERROR.
- (5) THE TOLERANCE IS NOT TO EXCEED THE DIFFERENCE DIVIDED BY 2 AT EACH LOCATION



	<u>LOCATION 2</u>	<u>LOCATION 3</u>	<u>LOCATION 4</u>	<u>LOCATION 5</u>
RUN 1 (C=0)				
RUN 2 (C=180)				
DIFFERENCE				
TOL. (NTE 0.0040")				