

CERTIFICATE OF INSPECTION

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24R ROUTER

SERIAL NUMBER:

DATE OF MANUFACTURE:

MACHINERY CERTIFICATION

Title	Seal or Signature	Date
Inspection Director		
Inspector		
Tormach QA Representative		

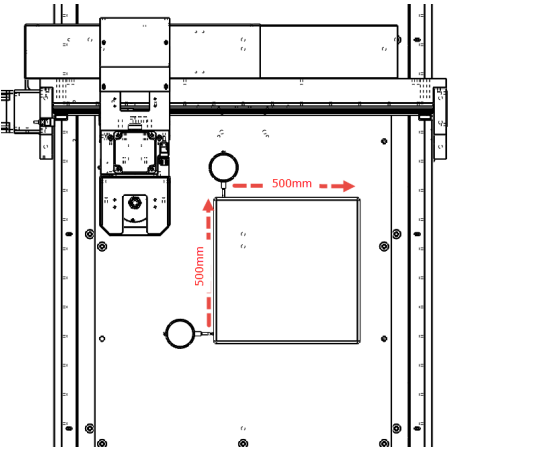
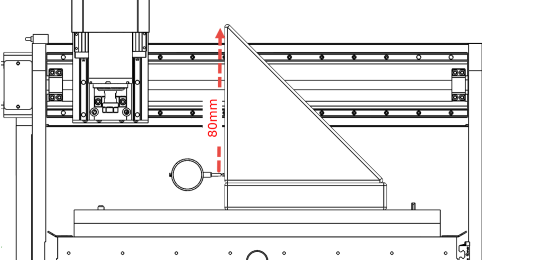
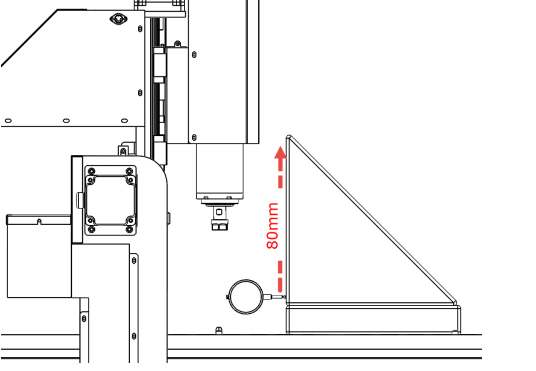
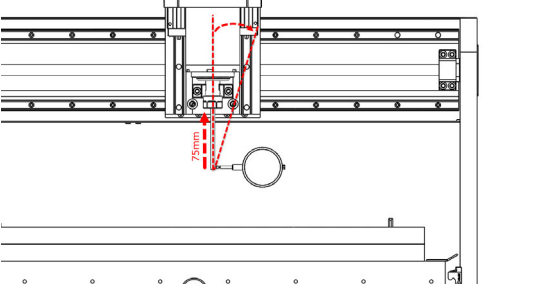
The above signatures certify this machine has passed all inspection requirements and is approved for delivery. See attached inspection documentation.

MADE IN CHINA

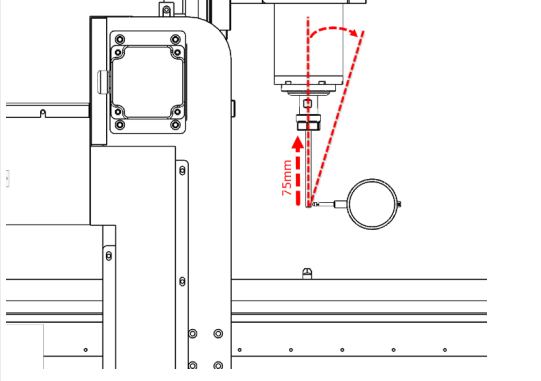


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QA 1: PRECISION INSPECTION

No.	Inspection Item	Tolerance (mm)	Actual (mm)
G1		<p>Perpendicularity of X-Y motion.</p> <p>± 0.04/500</p>	
G2		<p>Perpendicularity of Z motion with respect to the X-axis.</p> <p>± 0.01/80</p>	
G3		<p>Perpendicularity of Z motion with respect to the Y-axis.</p> <p>± 0.01/80</p>	
G4		<p>Spindle tram with respect to the X-axis.</p> <p>± 0.01/75</p>	

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No.	Inspection Item	Tolerance (mm)	Actual (mm)
G5	 <p data-bbox="751 409 1093 472">Spindle tram with respect to the Y-axis.</p>	$\pm 0.01/75$	

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QA 2: FUNCTION/APPEARANCE

No.	Test Name	Description	Completed
T1	Spindle Speed	Validate the minimum and maximum spindle speeds.	
T2	Spindle Direction	Verify that the clockwise and counterclockwise directions are correct.	
T3	Spindle Motor Drive Program	<ol style="list-style-type: none"> 1. Verify 00.011 (Machine Name) is 24r 2. Verify 00.012 (Parameter Version) is 2.01 3. Verify 00.015 (Control Firmware Version) is 01.05.03 4. Verify 00.016 (Power Firmware Version) is 01.05.01 	
T4	Chiller Alarm	Verify that the chiller alarm connector operates.	
T5	Accessory Input 1	Validate the functionality of Accessory Input 1.	
T6	Accessory Input 2	Validate the functionality of Accessory Input 2.	
T7	Accessory Power	Validate the voltage and polarity at XS25 accessory power outlets.	
T8	Controller Communications	Validate the operation of the controller communications port.	
T9	Emergency Stop and Reset Buttons	Validate the functionality of the Emergency Stop and Reset buttons.	
T10	X Limit Switch	<ol style="list-style-type: none"> 1. Limit switch operates. 2. Limit switch reference position is set to 8 mm ± 2 mm clearance between the gantry and Z-axis. 	
T11	Y Limit Switch	<ol style="list-style-type: none"> 1. Limit switch operates. 2. Limit switch reference position is set to 5 mm ± 2 mm clearance between the ball nut carrier and casting. 	
T12	Z Limit Switch	<ol style="list-style-type: none"> 1. Limit switch operates. 2. Limit switch reference position is set to 64 mm ± 2 mm clearance between the Z carriage block and the Z motor mount. 	
T13	Smooth Operation	X, Y, Z and spindle operate without unusual noise or vibration.	
T14	2-Hour Test	2-hour run test has been completed.	
T15	Safety Decals	Verify that the safety decals have been applied.	
T16	Information Decals	Verify that the information decals have been applied.	
T17	Branding Decals	Verify that the branding decals have been applied.	
T18	Linear Guide Block Lubrication	Verify that the linear guide blocks for the X-, Y-, and Z-axes have been lubricated.	
T19	Ball Nut Lubrication	Verify that the ball nuts for X, Y, and Z have been lubricated.	

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No.	Test Name	Description	Completed																											
T20	Dip Switch Settings	<p>Validate the following DIP switch settings on the X-, Y-, and Z-axis drivers.</p> <table border="1" data-bbox="456 293 667 723"> <thead> <tr> <th>Switch</th> <th>Position</th> </tr> </thead> <tbody> <tr><td>1</td><td>On</td></tr> <tr><td>2</td><td>Off</td></tr> <tr><td>3</td><td>On</td></tr> <tr><td>4</td><td>On</td></tr> <tr><td>5</td><td>On</td></tr> <tr><td>6</td><td>Off</td></tr> <tr><td>7</td><td>On</td></tr> <tr><td>8</td><td>On</td></tr> </tbody> </table>	Switch	Position	1	On	2	Off	3	On	4	On	5	On	6	Off	7	On	8	On										
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3	On																													
4	On																													
5	On																													
6	Off																													
7	On																													
8	On																													
T21	Machine Fuses	<p>Verify the installation of the following fuses.</p> <table border="1" data-bbox="456 779 871 1317"> <tbody> <tr> <td rowspan="8">XFM1 Transformer</td> <td>F1</td> <td>5A</td> </tr> <tr> <td>F1</td> <td>8A</td> </tr> <tr> <td>F2</td> <td>8A</td> </tr> <tr> <td>F3</td> <td>8A</td> </tr> <tr> <td>F4</td> <td>8A</td> </tr> <tr> <td>F5</td> <td>1A</td> </tr> <tr> <td>F6</td> <td>10A</td> </tr> <tr> <td>F7</td> <td>8A</td> </tr> <tr> <td rowspan="2">Bus1 DC-Bus Board</td> <td>F8</td> <td>8A</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td rowspan="2">ECM1 Control Board</td> <td>F1</td> <td>Empty</td> </tr> <tr> <td>F2</td> <td>Empty</td> </tr> </tbody> </table>	XFM1 Transformer	F1	5A	F1	8A	F2	8A	F3	8A	F4	8A	F5	1A	F6	10A	F7	8A	Bus1 DC-Bus Board	F8	8A			ECM1 Control Board	F1	Empty	F2	Empty	
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T22	Grounding Tests	From spindle ground to plug.																												
T23	Linear Rail Rust Protection	Verify that the linear rails have been coated with grease before packaging.																												

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QA 3: PACKING LIST

No.	Name	Quantity	PN
1	24R CNC Router	1	39300
2	Water Chiller	1	35161
3	27 mm – 30 mm Double Box End Wrench	1	50357
4	18 mm – 21 mm Double Box End Wrench	1	50358
5	Adjustable Wrench	1	50359
6	ER20 Collet – 1/4 in.	1	30120
7	Grease Gun	1	50360
8	Allen Wrench Set	1	50361

These items are in the tool bag on the right side of the shipping pallet.