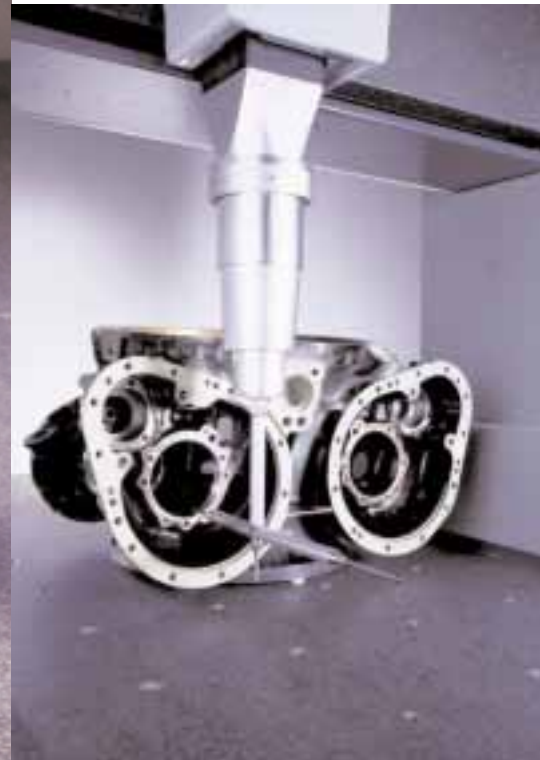


Rotary Tables for Zeiss Coordinate Measuring Machines



Rotary Tables extend the Application Range and simplify the Measuring Procedure.

Zeiss rotary tables provide an additional, programmable axis and thus simplify the measurement of rotary or prismatic parts, allow the use of simple probe combinations and extend the available measuring range.

Rotary tables are primarily used for the measurement of rotary parts featuring periodically recurring geometries such as gear wheels, gear hops, rotors and impellers. They so simplify and speed up measurement and may increase the measuring accuracy.

They are also highly beneficial when it comes to measuring prismatic workpieces, because they

- increase the effective measuring volume of the CMM,
- simplify probe configurations and parts programming,
- travel paths shorten, also the temperature influences decrease.

Another field of application is form measurement of camshafts and crankshafts with scanning. Hereby chucking the workpiece between centers via tailstock is possible.

Fully integrated into measuring software.

The rotary table functions are fully integrated in the measuring programs of the Zeiss basic software:

- Setting to angular positions or rotation at constant speeds.
- Mathematical correction of all alignment errors.
- Scanning with rotary table.

Operational convenience with versatile, computer-controlled functions.

Computer control is provided for a large range of functions:

- Positioning to the table zero point
- Positioning and zero reset of the angle measuring system to any angle
- Selecting any angular step required: positive or negative, absolute or incremental
- Division of one table revolution into any number of gradations
- With universal 3D probe heads: continuous rotating with probe contact and vectorial measuring force generation
- Integration in CNC measuring runs including all necessary rotary table functions



Built-in, surface-mounted or portable: For Use now or later.

Regardless you decide to buy a rotary table together with your CMM or at a later time: We have the solution.

RT1: Built-in or surface mounted version

RT2: Surface mounted version

The RT1 rotary table is permanently installed in the machine table or can be retrofitted at a later time as a surface-mounted version. Removing the faceplate in the built-in version allows full use of the entire CMM measuring volume. The RT2 rotary table is only available in surface-mounted version.

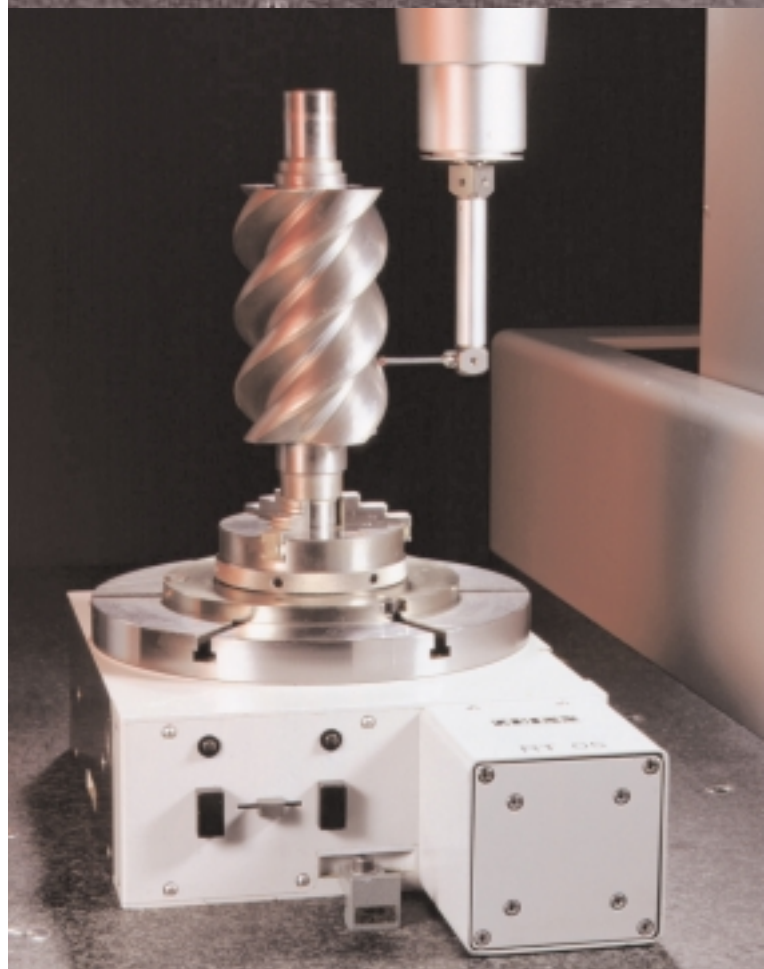
RT05-300: The mobile solution

The RT05-300 rotary table is a portable version. It is ideal for retrofitting.

- Three platforms, therefore suitable for horizontal and vertical use.
- Horizontal use with optional counter point.

RT05-400: Built-in version for highest accuracy

The RT05-400 rotary table is specially designed for high-accuracy measurements. Similar to the built-in version of the RT1 the full use of the entire CMM measuring volume is available after removing the faceplate.



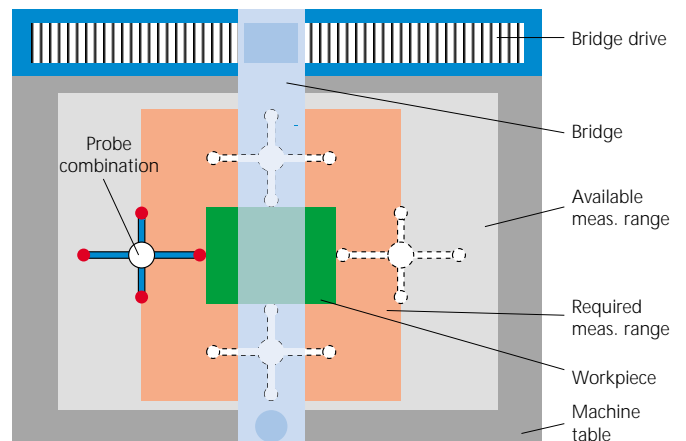
A Rotary Table increases the usable Measuring Range and the Versatility of your CMM.

Using a rotary table allows a better use of the CMM measuring range.

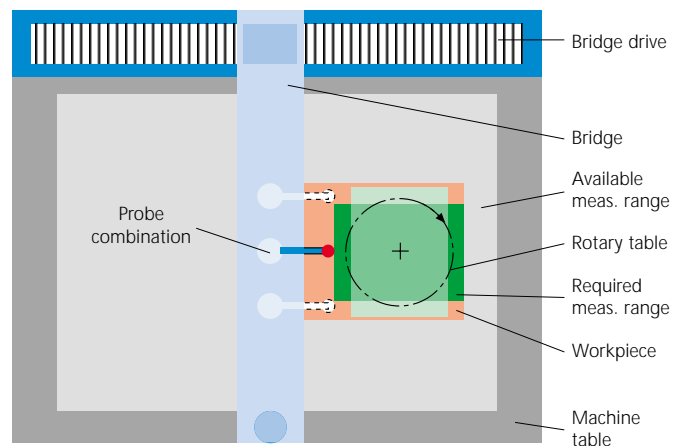
When measuring a workpiece from all sides without a rotary table, in most cases voluminous probe combinations are necessary (see upper drawing). Whether you need a CMM with a relative large measuring volume, or with the present measuring volume you can only perform a complete measurement on relatively small workpieces. A large part of the measuring volume is needed for collision-free movement around the workpiece.

Using a rotary table you have the following advantages (see lower drawing):

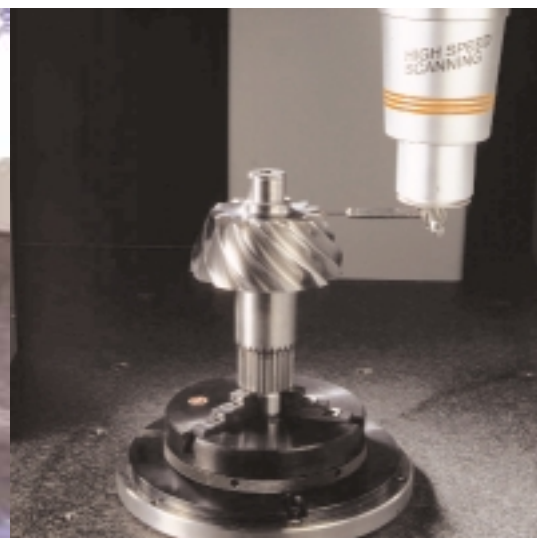
- Relative to the available measuring range you can measure larger workpieces, or
- The required measuring range will be drastically reduced.
- Only a simple probe combination is needed.
- The probe combination must not anymore moved around the workpiece.



Measuring a workpiece without using a rotary table requires a large CMM measuring range.

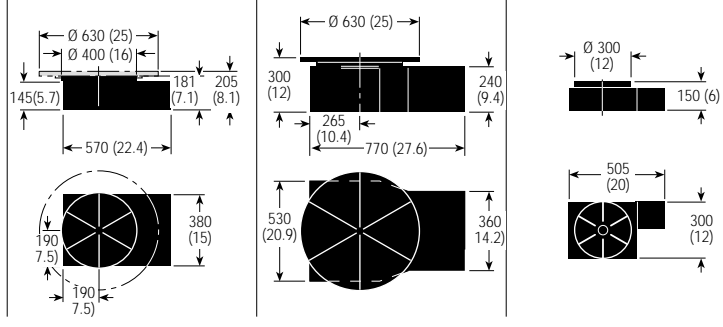


Using a rotary table drastically reduces the required measuring range.



Specifications

Type		RT1	RT2	RT05-300	RT05-400
Installation on CMM	Built-in Version Surface-mounted version Portable version	Standard Option -	- Standard -	- - Standard	Standard - -
Measuring system		RON 806	RON 806	Zeiss Phocodin®	Zeiss Phocodin®
Resolution		0.18"	0.18"	0.2"	0.2"
Table drive					
Drive system		self-adjusting, spring-mounted friction-wheel drive			
Torque at faceplate	in Nm	20	160	10	25
Dimensions, masses					
Rotary table (Built-in/surface-mounted version)	L x B x H in mm (in.)	see drawing below	see drawing below	see drawing below	-
Clamping surface	Diameter in mm (in.)	400 (15.7) optional 630 (24.8)	630 (24.8)	295 (11.6)	400 (24.8) 630 (24.8) with accessories
Center bore	Diameter in mm (in.)	-	-	50 ^{+0.005} mm (1.9685 ^{+0.000200})	50 ^{+0.005} mm (1.9685 ^{+0.000200})
Center point height with horizontal axis	mm (in.)	-	-	150 (6)	-
Approx. mass (Built-in/surface-mounted version) in kg (lb)		85 (187)	345 (760)	75 (165)	-
Load capacity / permiss. moments					
Tilt rigidity	in Nm/°	15	45	-	-
Permiss. tilt moments	in Nm	100	400	50	500
Max. load capacity	in N	6000	20000	1000	3000
Permiss. moment of inertia with collision protection without collision protection	J (kgm ²) J (kgm ²)	- 20	- 200	1.125 3	5 15
Speeds 1) with collision protection 2) without collision protection					
Max. angular speed	in °/s	90	45	35	15
Max. angular acceleration	in °/s ²	450	225	-	-
Rotating speed	in min ⁻¹	15	7.5	5.8	15 ¹⁾ 35 ²⁾
Accuracy specifications					
Angle position deviation	P _W in "	2	2	2	2
Angle position repeatability	in "	0.5	0.5	0.5	1
Axial runout	f _a in μm (in.)	0.5 (0.000 020)	1 (0.000 039)	1 (0.000 039)	0.3 (0.000 012)
Radial runout	f _r in μm (in.)	0.5 (0.000 020)	1 (0.000 039)	1 (0.000 039)	0.3 (0.000 012)
Wobble	f _t in "	0.7	1.0	1	0.5
Axial rigidity	in N/μm (N/in.)	400 (10160)	700 (17780)	500 (12700)	300
Operational data					
Ambient temperatures guaranteeing reliable functioning		+5 to +35 °C (41 °F to 95 °F)			
Operating positions (axis)		vertical	vertical or horizontal	vertical	vertical
Drawings Dimensions in mm (in.)		Surface-mounted/portable versions			
		RT 1	RT 2	RT05-300	

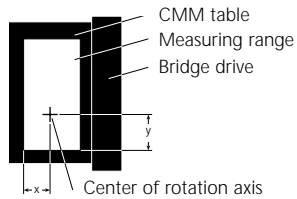


Built-in versions: Standard positions

60-20-113-e Printed in Germany. XI/2000 Noo
 Subject to technical modification and to changes in scope and design.
 Printed on chlorine-free paper.
 © Carl Zeiss © Conception, text and design by Carl Zeiss.

For the CMMs named in the charts mentioned below, standard positions for built-in versions of rotary tables are available. The machine table can be prepared for a later implantation of a rotary table, when this is ordered together with the CMM.

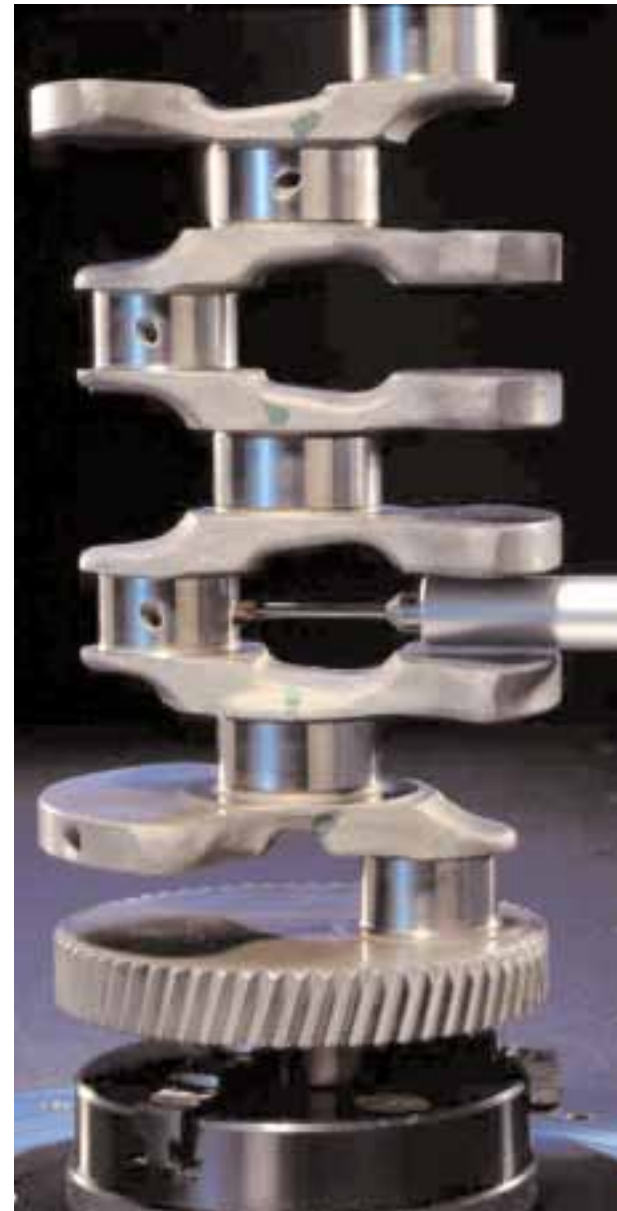
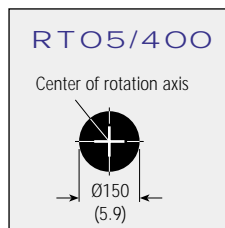
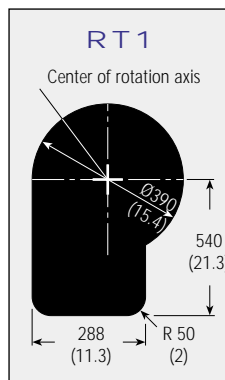
For other CMM types and sizes a standard position is not determined.



The area of the CMM table cut-out or the turn table cover may not have any weight placed upon it and no parts can be clamped.



RT1, RT05/400		
Standard position in mm (in.)	without tailstock x • y	with tailstock x • y
PRISMO 5 7/9/5	300 • 400 (11.8 • 15.7)	300 • 515 (11.8 • 20.3)
PRISMO 7 9/12/7 9/15/7 9/18/7 9/24/7	400 • 400 (15.7 • 15.7)	400 • 515 (15.7 • 20.3)
PRISMO 12 12/18/10 12/24/10 12/30/10 12/42/10	537.5 • 400 (21.2 • 15.7)	400 • 400 (15.7 • 15.7)
PRISMO 16 16/18/10 16/24/10 16/30/10	700 • 400 (27.6 • 15.7)	400 • 400 (15.7 • 15.7)



Carl Zeiss
Unternehmensbereich
Industrielle Meßtechnik
 73446 Oberkochen / Germany
 Sales: +49 18 03 / 33 63 36
 Service: +49 18 03 / 33 63 37
 Fax: +49 73 64 / 20 38 70
 E-mail: imt@zeiss.de
 Internet: www.zeiss.de/imt

