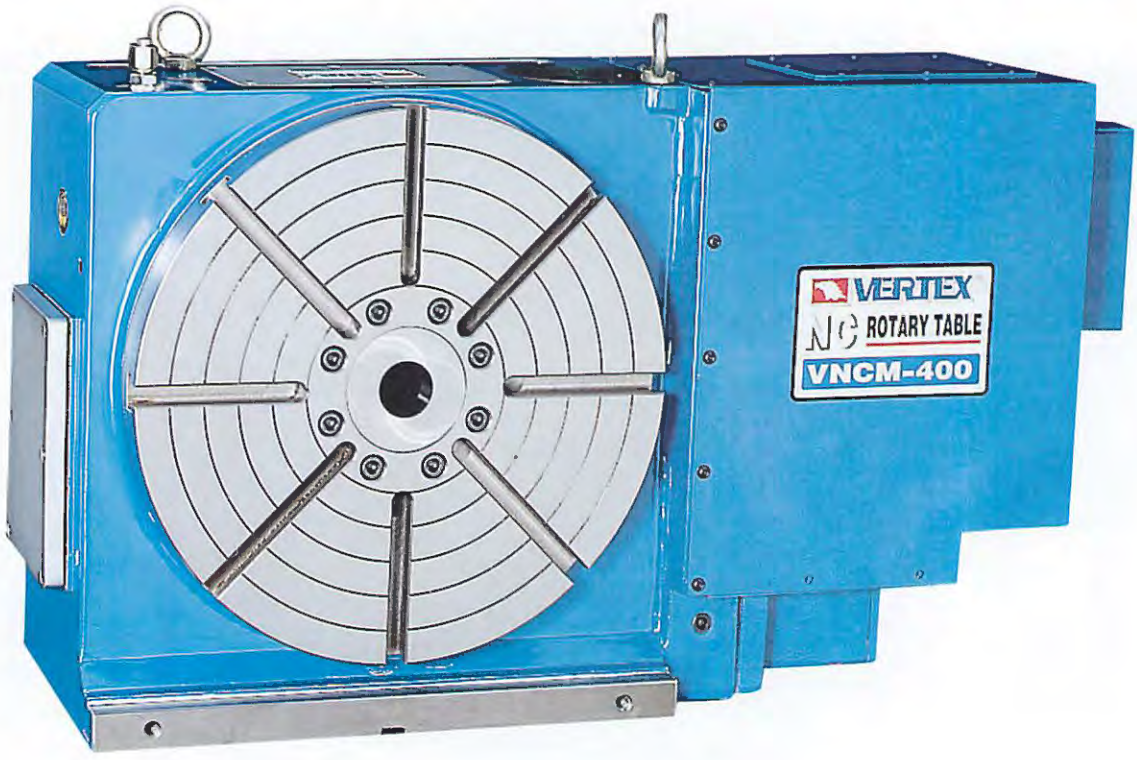
NC-Rotary Table

VERTEX



HIGH ACCURACY AND HIGH RIGIDITY

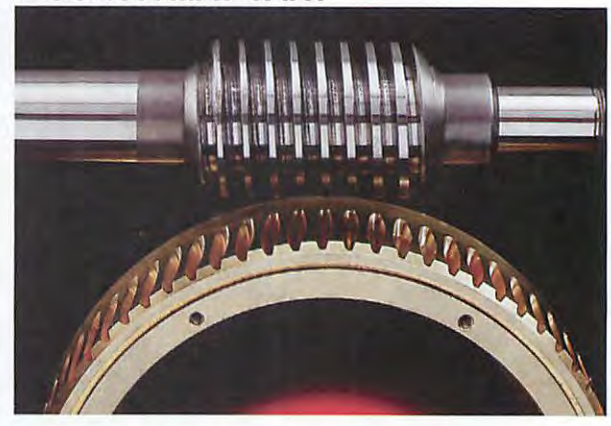
Adoption of new double-lead worm gear--engagement between worm wheel and worm shaft has been improved, and tooth profile has been modified--has contributed greatly to increased dynamic accuracy. To remove the defect of single-lead worm gear. Close-tolerance taper roller bearing assembly is used, and the rotating slide part is finished in a super precision manner, which in turm, implements highly improved overall accuracy.

SLEEVE TYPE CLAMPING MECHANISM

with this system, the Rotary Table is clamped by applying hydraulic pressure to the outer circumference of the turn table. Since the sleeve is positioned closest to the workpiece, the table clamp force is enlarged. This system is not only advantageous for heavy duty cutting but also helps improve the machining accuracy and extend the service life of the Rotary Table.

- This rotary table has been specifically developed to fulfill the requirements of a fully automatic machinging process in association with a machine tool. They are used for miling, grinding and drilling of spindles, slots, plannes or bores in the radial or axial direction of the workpiece.
- Can be equipped with stepping motor or DC/AC servo motors.
- Carefully designed, rigid construction to assure high and constant indexing accuracy.
- Can operate as function M or as 4th axis or more, in machining units or numerically controlled machines, and are equally capable of being fitted to any other type of non-NC machine-tools.
- Hardened and ground steel worm, mounted on high precision combined radial-axial bearings.
- Worm mounted on an axial support system, which allows adjustment and suppression of any backlash existing between the worn and the worm-wheel after long-time service.
- High precision
  Axial and radial runout within 0.01mm, Cumulative indexing accurace within 15 sec.

※COLOR MAY VARY



DOUBLE LEAD WORM GEARS SYSTEM
- New design/special material

PROGRAMMABLE SERVO MOTOR CONTROLLER

● SPECIFICATIONS

Unit:mm

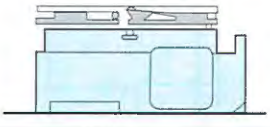
ORDER NO.	VNCM-150 L R	VNCM-220 L R	VNCM-250 L R	VNCM-320 L R		VNCM-400 L R
Right-hand type	O	O	O	O		O
Left-hand type	O	O	O	O		O
Turntable diameter	Ø160	Ø225	Ø250	Ø320		Ø400
Table height(Horizontal pos.)	150	165	165	220		250
Table center height(Vertical pos.)	135	160	160	210		255
Center bore diameter	Ø35H7	Ø40H7	Ø40H7	Ø40H7		Ø40H7
T-slot size	12H7	12H7	12H7	14H7		14H7
Guide-block size	14h7	14h7	14h7	18h7		18h7
Number of worm wheel teeth	72	72	72	72		72
Servo motor type	FANUC α 3	FANUC α 6	FANUC α 6	FANUC α 12	FANUC α 6	FANUC α 12
Speed reduction ratio	1/90	1/180	1/180	1/180	1/360	1/180
Table graduation angle per 1 pulse	0.001°	0.001°	0.001°	0.001°		0.001°
Table rotation speed	22.2r.p.m./ (Motor 2,000r.p.m.)	11.1r.p.m./ (Motor 2,000r.p.m.)	11.1r.p.m./ (Motor 2,000r.p.m.)	11.1r.p.m./ (Motor 2,000r.p.m.)	5.5r.p.m./ (Motor 2,000r.p.m.)	11.1r.p.m./ (Motor 2,000r.p.m.)
Clamp method & Clamp torque (kg-m)	8/ (Air 5kg/cm²)	50/ (Hydraulic 35kg/ cm²)	50/ (Hydraulic 35kg/ cm²)	85/ (Hydraulic 35kg/cm²)		180/ (Hydraulic 35kg/ cm²)
Load capacity, horizontal(kg)	150	250	250	350		500
Load capacity, vertical(kg)	75	100	100	150		200
Inertia force (kg-cm-sec²)	4.3	12.3	12.3	38.5		99.8
Max.torque capacity of worm gear (kg-m)	15	48	48	78		170
Max. workpiece diameter	160	225	225	320		400
Cumulative indexing accuracy sec.	20″	15″	15″	15″		15″
Repeatability sec.	4″	4″	4″	4″		4″
Inertia force(convert into motor shaft) kg-cm-sec²X10⁻²	0.2	0.24	0.34	1.85	1.35	1.94
Net weight (kg)	55	75	75	200		300
CODE NO.	4001-001	4001-002	4001-003	4001-004		4001-005

● Other makers' servo motors can be installed.

● ACCURACY STANDARD

Unit:mm

NO.	Inspection Item		Inspection Item
1	Table top flatness (concave)	Per overall length	0.01
2	Table top runout		0.015
3	Parallelism of table top and frame bottom	Per overall length	0.02
4	Table spindle center runout		0.01
5	Center bore runout	Hole end	0.01
		Per 100mm	0.01
6	Perpendicularity of table top to frame bottom	Per overall length	0.02
7	Perpendicularit of table top to frame bottom guide block	Per overall length	0.02
8	Cumulative indexing accuracy		15″
9	Parallelism of center line between headstock and tailstock to frame bottom guide block	Per 300mm	0.02
10	Height difference of both center lines of headstock (Tailstock center line should be higher)		0.02

1


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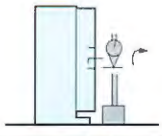

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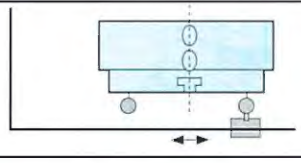

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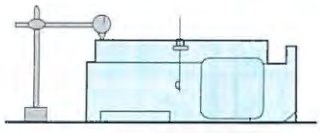

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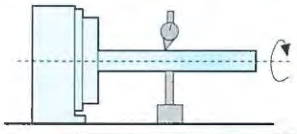
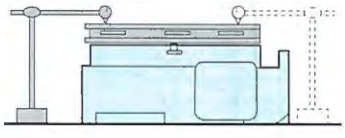


8 An optical measuring instrument should be used for indexing accuracy measurements.

3


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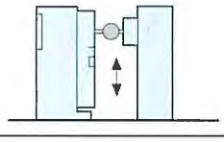

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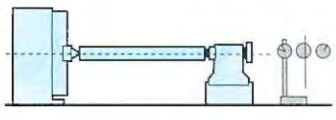
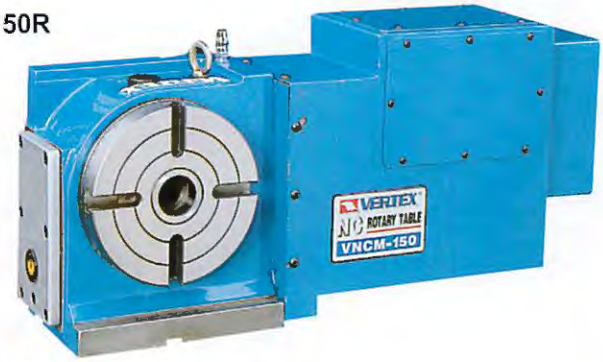


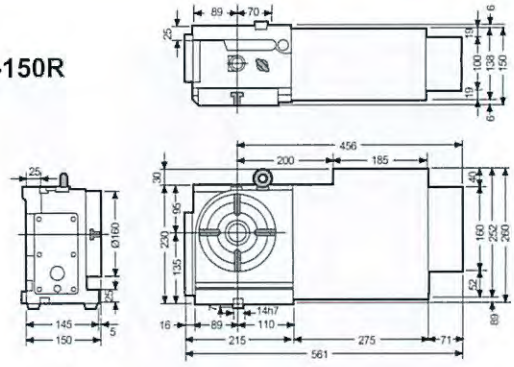
NC-Rotary Table

VERTEX®

VNCM-150R

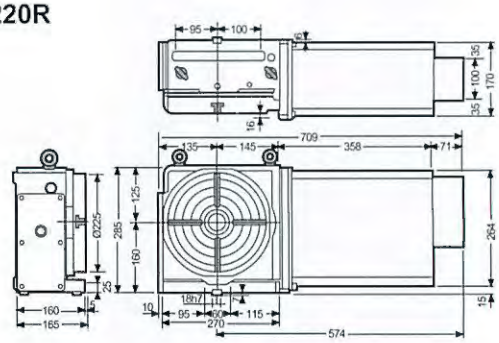


VNCM-150R



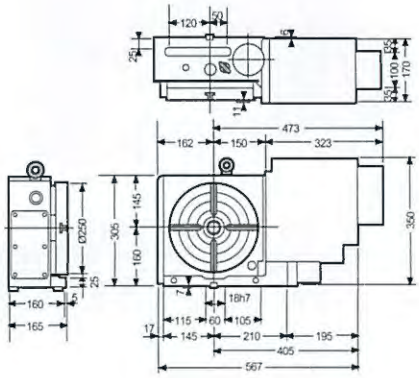
VNCM-220R

VNCM-220R

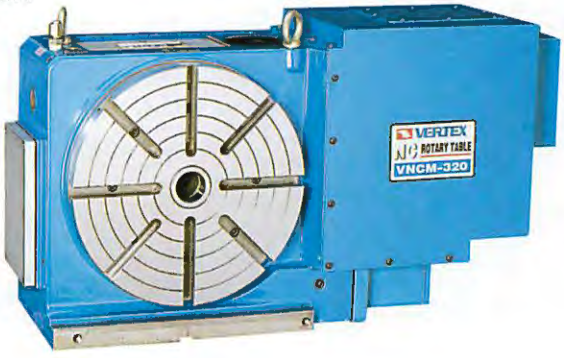


VNCM-250R

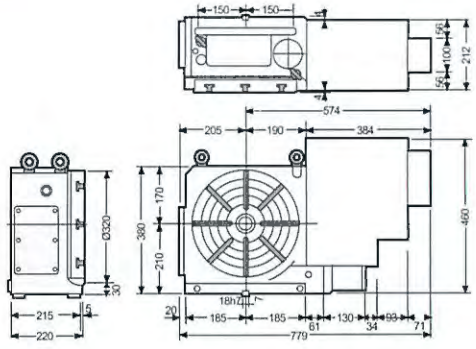
VNCM-250R



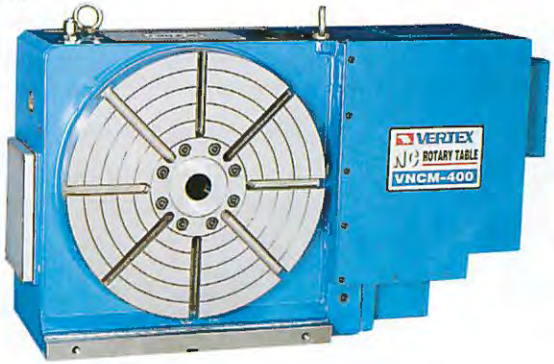
VNCM-320R



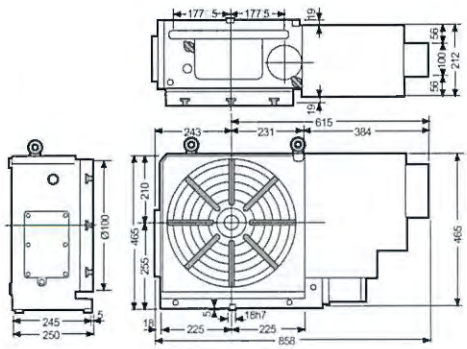
VNCM-320R



VNCM-400R



VNCM-400R



NC-Rotary Table

ORDER NO.VNCX-10 CODE NO.4001-010

- Motor case setted on the back of the body, increased the space for moving forward and backward, suitable for large or small NC machine using.
- Use of precision lead worm gear assures highly accurate dividing independently of table rotating direction. Further, no backlash will be produced.
- Wide range of machining is accomplished by connecting the Drive Table with Mcode of machining center.
- When used with machining center, the Drive Table will widen the range of applications; circular cutting dividing into equal parts, dividing into unequal parts, lead cutting, can cutting etc.
- MACHINE ZERO AND WORK ZERO. Zero Return Function to either Zero.
- BACKLASH COMPENSATION.
- BUILT-IN PNEUMATIC BRAKE FUNCTION.

Dimensions

Unit:mm

Item		
Table diameter		250
Table height		315
Center height		160
Center hole diameter		32
Table reference groove width		14
Key way		18
Clamping force(kgf-m)	Penumatic	20
Allowable work diameter		250
Allowable weight	Horizontal setup Vertical setup	200 100
Allowable work inertia(kgf-cm sec2)		12.5
Total reduction ratio		1:90
Rotary speed(rpm)		11.1
Allowable machine torque(kgf-m)		48

ACCURACY STANDARD

Unit:mm

NO	Inspection Itme		Tolerance
1	Table top flatness(concave)	Per overall length	0.01
2	Table top runout		0.015
3	Parallelism of table top and frame bottom	Per overall length	0.02
4	Table spindle center runout		0.01
5	Center bore runout	Hole end	0.01
		Per 100mm	0.01
6	Perpendicularity of table top to frame bottom	Per overall length	0.02
7	Perpendicularity of table top to frame bottom guide block	Per overall length	0.02
8	Cumulative indexing accuracy		15″
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10	Height difference of both headstock and tailstock center lines(Tailstock center line should be higher)		0.02

VNCX-10