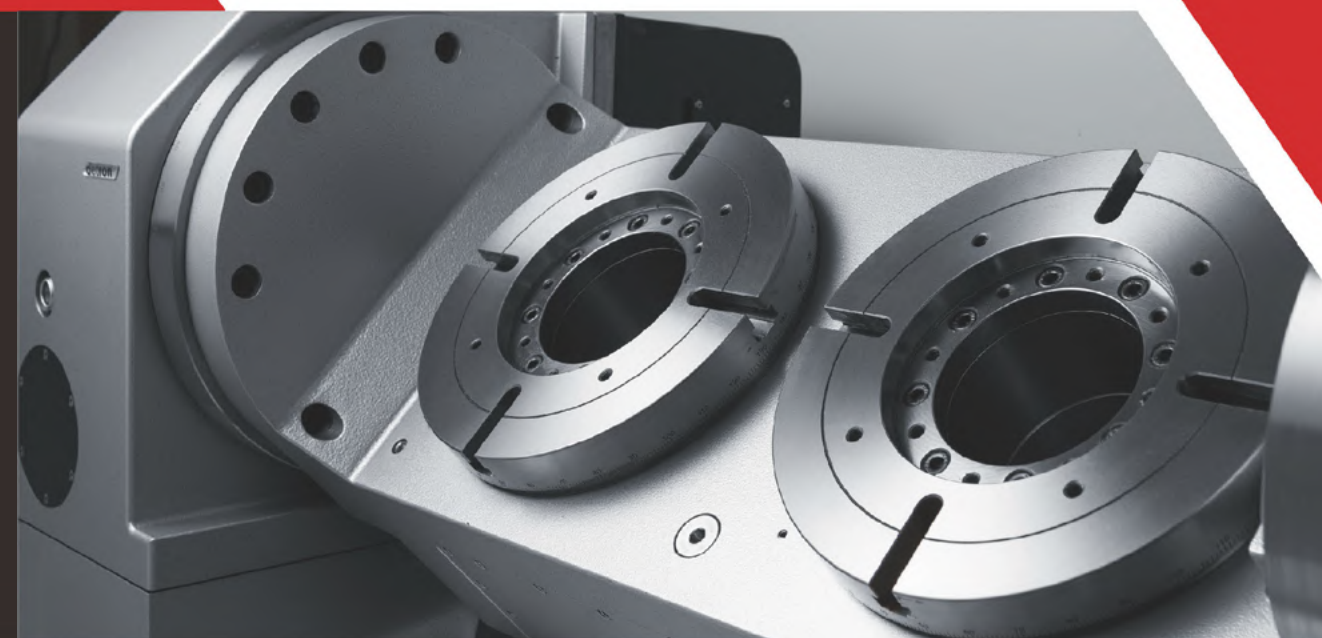


PRODUCT LINE UP

Quality and Cost Effect



detron Machine Co., Ltd.

No. 47-3, Zuncian Road., Shengang District 42952,
Taichung City, Taiwan
Tel: +886-4-2561-6000 Fax: +886-4-2562-7872
<http://www.detron-rotary.com>
e-mail: export.sales@detron.com.tw



detron policy prohibits quoted products from being delivered to violate
"The Wassenaar Arrangement" regulation.

We reserve the right to modify and withdraw any part of the content specified herein.

MAGNIFY THE **VALUE** OF **MACHINERY**

www.detron-rotary.com



GN_APR_2022, EN



The Largest Professional Rotary Table Manufacturer

detron is committed to designing and engineering the highest quality NC rotary table products, through the experience, dedication and innovation of our International R & D team. Our mission is to understand and support our customer's needs with advanced application technology, with a wide range of products, providing optimum performance. Through intelligent design, easy integration to all machine tools is assured.

detron employs strict quality control at all stages of manufacture. Manufacturing all elements in house is the only way we can be sure of the quality of our product. With a huge efficient production facility, detron has become the largest NC rotary table manufacturer by volume in the World. This has ensured that detron are the selected partner of a wide variety of machine tool builders, both at home and internationally.



detron 2nd Factory

- production line of B axis for HMC
- production line for APC
- production line for customization

detron Global Factory Outlet

Factory Outlet in Shanghai



- After-sales service and parts inventory
- distributor training center

Authorized Agent in Taiwan



- After-sales service and parts inventory
- distributor training center

Factory outlet in USA



- After-sales service and parts inventory
- distributor training center

Factory outlet in UK



- After-sales service and parts inventory
- distributor training center

Factory outlet in Turkey



- After-sales service and parts inventory
- distributor training center

Factory outlet in India



- After-sales service and parts inventory
- distributor training center

CONTENTS

01	Company Overview
02	Global Factory Outlet
03	Index
05	Products for VMC
09	Quality Policy
11	Accuracy Inspection Norm
13	Core Components
15	Application Engineering

for VMC_Worm Wheel Transmission

17

17	Core Technology
23	4th Axis_ø125-ø210mm multiple pneu. clamp_GXA-S series
25	4th Axis_ø255-ø400mm hydr. clamp_GXA-H series
27	4th Axis_ø500-ø800mm hydr. clamp_GXA-H series
29	4th Axis_ø170-ø255mm motor at left_GXA-L series
31	4th Axis_ø170-ø255mm motor at back_GXA-B series
33	4th Axis_ø255-ø500mm hydr. indexing table_CX-H series
35	Tailstock_ quill type_ST series
36	Tailstock_ rotary type_SR series
37	5th Axis_ ø100-ø210mm multiple pneu. clamp : GFA-S series
39	5th Axis_ ø255-ø320mm hydr. clamp : GFA-H/HB series

41	5th Axis_Trunnion_ ø125-ø500mm regular swing: GTFA series
43	5th Axis_Trunnion_ ø170-ø500mm ultra swing: GTFA-L(S) series
45	5th Axis_Compact_ ø125-ø170mm multi spindle: GFA-2W series
47	5th Axis_Trunnion_ ø125-ø170mm multi spindle: GTFAE-2W/3W series
49	Auto Pallet Changer Individual pallet: CVR series
50	Auto Pallet Changer Consolidated Pallet: SVC series

Accessories

67

67	Fixture Plate and Base
68	Chuck and Other Accessories
69	Compatible Servo Motors
70	Diagram Illustration
71	Guidance to Select Rotary Table
73	Order Sheet of 4/5th axis
75	Order Sheet of DDM Rotary Table

for VMC_Barrel Cam Transmission

51

51	Exclusive Core Technology
52	Features of RGX series
53	4th Axis_ø125-ø320mm Barrel cam transmission: RGX series

for VMC_DDM series

55

55	Direct Drive Motor Features
59	4th Axis_ø170-ø255mm DDM built-in: DV series
61	5th Axis_ø125-ø170mm DDM built-in: DTF series
63	5th Axis_ø280-ø650mm DDM built-in: DTF series
65	NC Integration for Detron DDM series



for **VERTICAL** Machining Center Series

STANDARD 4th axis 5th axis APC

4th axis

GXA-S series

multiple pneumatic power clamp



GXA-125S
GXA-170S
GXA-210S
GXA-250S
Page 23

GXA-2W series

multi spindle,
pneumatic power clamp



GXA-170S-2W-250
Page 23

GXA-H/GX-H series

hydraulic clamp,
ultra large bore through



GXA-255H
GXA-320H
GXA-400H
GXA-500H
GX-630H
GX-800H
Page 25-28

GXA-L series

motor at left



GXA-170SL
GXA-210SL
GXA-255HL
Page 29

5th axis

GFA-S/H/HB series

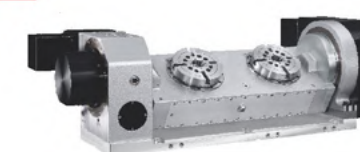
compact 5th axis



GFA-101S
GFA-125S
GFA-170S
GFA-210S
GFA-255H/HB
GFA-320H
Page 37-40

GFA-2W series

5th axis in multi spindle



GFA-125S-2W-240
GFA-170S-2W-300
Page 45

GTFAE-2W/3W series

trunnion 5th axis in multi spindle



GTFAE-210S-2W-320
GTFAE-255H-2W(S)-400
Page 47

GTFAE series

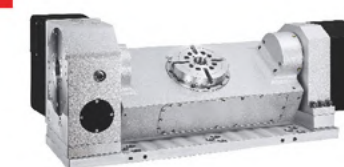
trunnion 5th axis



GTFAE-125S
GTFAE-210S
GTFAE-320XB
GTFAE-320H
GTFAE-410XB
GTFAE-500XB
Page 41

GTFAE-L(S) series

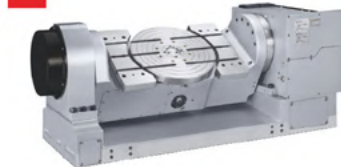
trunnion 5th axis,
ultra large swing



GTFAE-170SL
GTFAE-255SBL(S)
Page 43

GTFAE-L(S) series

trunnions 5th axis,
ultra large swing



GTFAE-320XBL(S)
GTFAE-410XBL(S)
GTFAE-410HL(S)
GTFAE-500XBL
Page 43

RGX

RGX-XII series

4th axis by barrel cam,
air-booster built-in



RGX-170XII

RGX-210XII

RGX-250XII

Page 53

RGX-H series

4th axis by barrel cam,
hydraulic clamp



RGX-255H

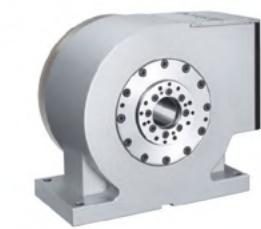
RGX-320HII

Page 53

DDM

DV series

high speed 4th axis by
DDM built-in



DV-170P

DV-255PII

Page 59

DTF series

high speed 5th axis by
DDM built-in



DTFS-125P

DTFE-125P

DTFS-170P

DTFE-170P

DTFE-171P

DTF-280P

DTFAI-650H

Page 61-64

Others

GVA-B series

4th axis with motor at back



GV-170SB

GVA-210SB

GVA-255HBII

Page 31

CXries

hydraulic indexing table by
hirth coupling



CX-255H

CX-320H

CX-400H

CX-500H

Page 33

Tailstock

ST-T/TP/TH series

quill type tailstock



ST-125T/TP

ST-170T/TP

ST-210T/TP

ST-255T/TH

ST-320T/TH

ST-400T/TH

Page 35

SR-P/H series

rotary type tailstock



SR-125P

SR-170P

SR-210P

SR-255H

SR-320H

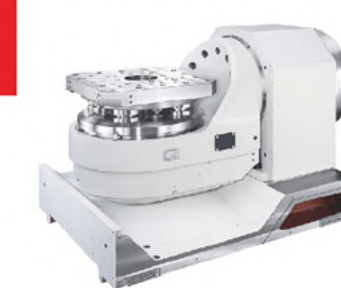
SR-400H

SR-500H

Page 36

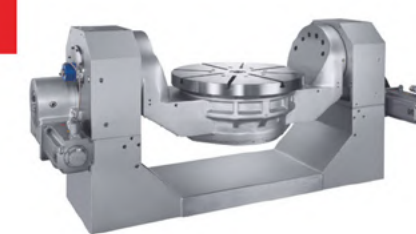
Customized Product with DDM

Pallet changeable



Page 64

With sub support

Low gravity and dual drive
at tilting axis

Page 64

Built in machine table



for VERTICAL

Machining Center Series

Auto Pallet Change

For VMC with fixed column



CVR-660

CVR-850

CVR-10D

Page 49

For VMC with movable column



SVC-7050II

SVC-10065II

Page 50



Product Assembly

Standardization in each operation process, with high volume production management, stable quality is guaranteed.

Calibration & Inspection

Apply German Zeiss CMM for full geometric precision inspection and high resolution Renishaw laser calibration to identify positioning accuracy.



Professional Training

R&D division stands by customers with innovation to upgrade application. On-site technician trainings are regularly taken to intensify engineering skills.



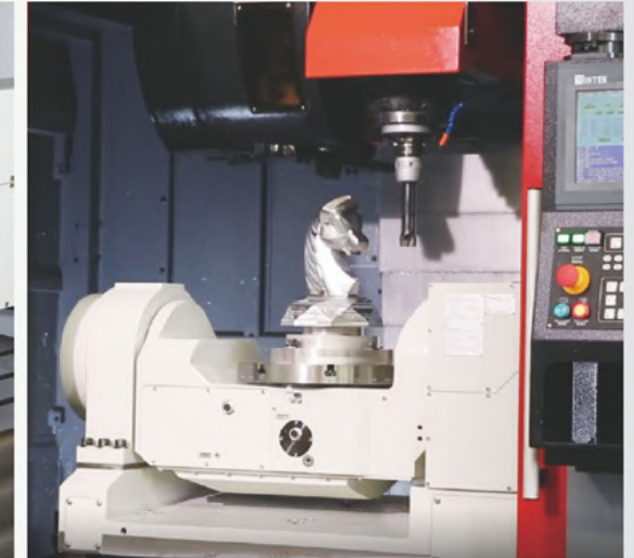
Technical Center and Laboratory

detron laboratory continues various experiments to approve product features. Scientific data applied for optimization for all detron new products and new material.



Dynamic 5 axis Location Alignment

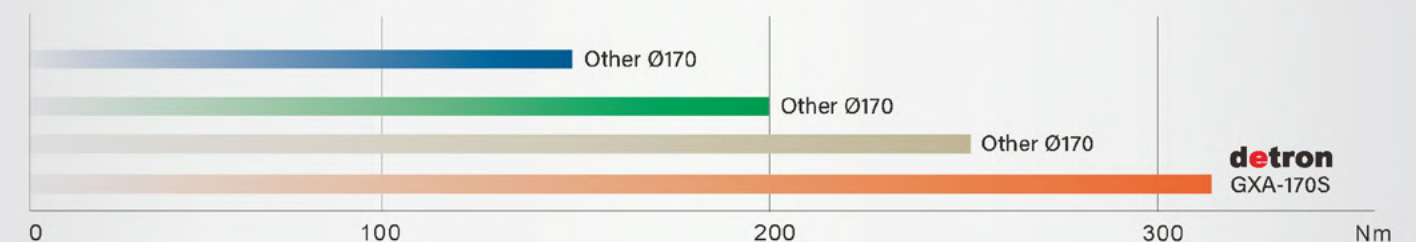
detron own measurement facility with European IBS rotary inspector and software. To provide sufficient efficiency of 5 axis machine manufacturing and processing.



CNC Dynamic 5 axis Machining Application Center

detron own measurement facility with European IBS rotary inspector and software. To provide sufficient efficiency of 5 axis machine manufacturing and processing.

Practical Clamping Force Approved



GXA-170S remains in a stable position with repeated clamping forces of 300nm (+10%). This clamp test is part of the standard testing procedure of every detron product.

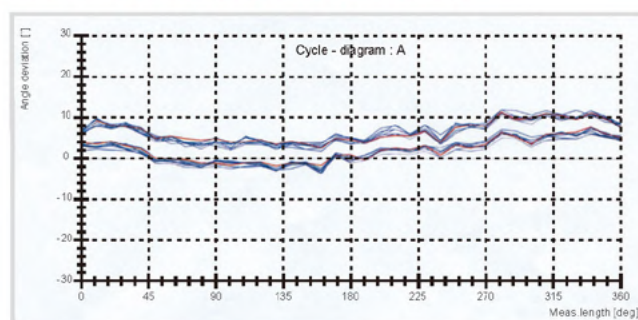
Scan these QR codes to see video:



Accuracy Inspection Norm

detron

ISO 230-2 Norm (equal to JIS B 6192)



Accuracy Inspection upon ISO 230-2 international norm is operated with **5 continuous cycles** in clockwise and counterclockwise test.

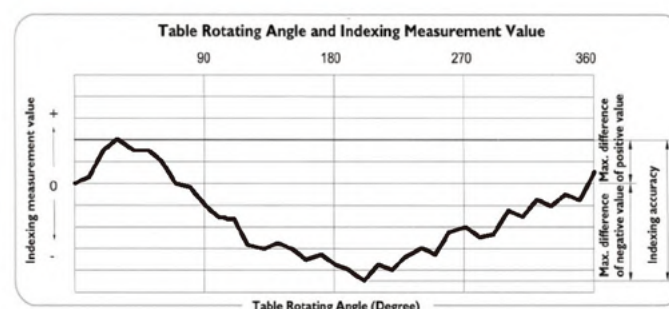
Facility of Inspection

detron applies Heidenhain optical encoder and Renishaw ballbar system to approve positioning and repeatability accuracy.

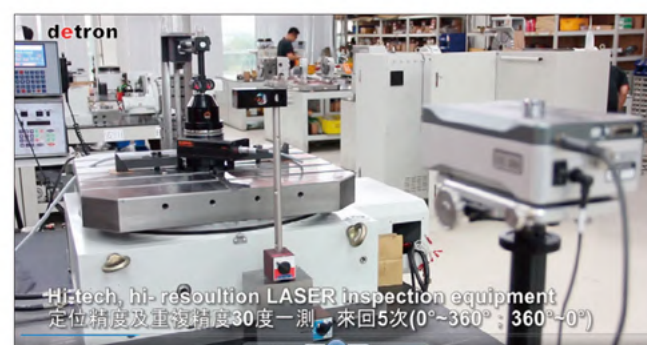


others

JIS B 6330 Norm in Single cycle



Simplified inspection norm without number of laps indicated.



Update Accuracy Identification

Accuracy of Positioning by ISO 230-2 Standard (Unidirectional systematic positioning deviation of an axis)

The inspection presentation of ISO 230-2 is based on **continuously 5 revolutions** of repeatedly clockwise and counter-clockwise test, to diagnose unidirectional systematic positioning deviation.

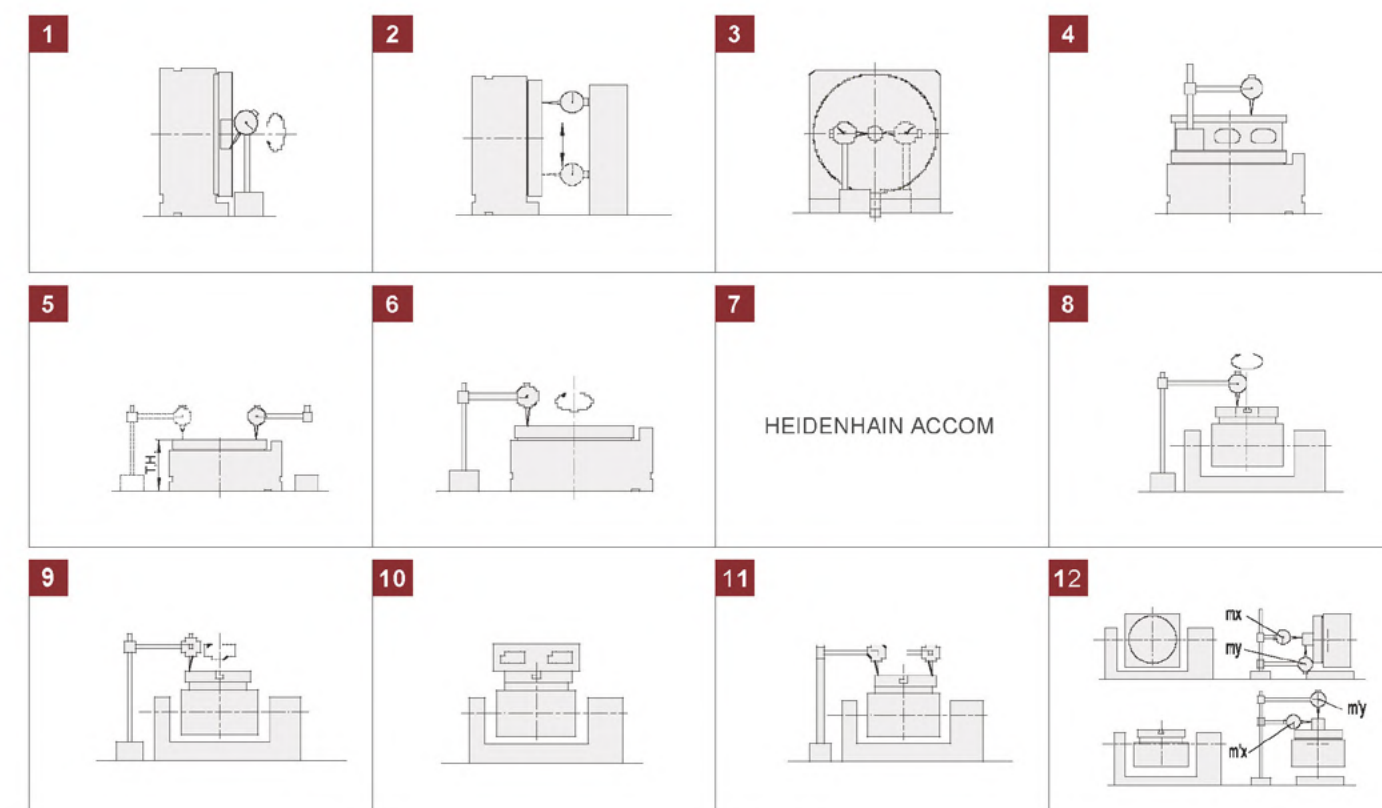
Remark: Due to environmental influences during the measurement, the recorded measuring error may exceed the catalog limit value by up to 10%.

Accuracy of Repeatability by ISO 230-2 Standard (Unidirectional repeatability of positioning)

The inspection presentation of ISO 230-2 based on **continuously 5 revolutions** of repeatedly clockwise and counter-clockwise test, to diagnose unidirectional systematic repeatability of positioning deviation.

Please note: Due to environmental influences during the measurement, the recorded measuring error may exceed the catalog limit value by up to 10%.

Accuracy Tolerance Chart



Description of Inspection

NO.		Unit: mm		
		GXA-125S~GXA-210S	GXA-255H~GXA-500H	GX-630H~GX-800H
1.	Run-out of center hole	0.01	0.01	0.01
2.	Perpendicularity between table surface and base bottom	0.02	0.02	0.02
3.	Parallelism between center hole and center of guide block	0.02	0.02	0.02
	Deviation between center hole and center of guide block	0.02	0.02	0.02
4.	Flatness of table surface	0.01	0.015	0.02 / 0.025
5.	Parallelism between table surface and table base	0.01	0.015	0.02 / 0.025
6.	Run-out of table surface Indexing accuracy	0.01	0.015	0.02
7.	Repeatability accuracy	40 sec - GXA125 20 sec - GXA170-210	15 sec	15 sec
GFA Series (for all 5 axis)				
8.	Run-out of table surface		0.01	
9.	Flatness of table surface		0.015	
10.	Parallelism between table surface and base		0.01	(Ø400-500: 0.015)
11.	Indexing	Rotary	Refer to specification chart of each model	
		Tilt	Refer to specification chart of each model	
Repeatability		Rotary	6 sec.	
		Tilt	8 sec.	
12.	Parallelism between center line of tilt axis and base plate		0.02/Dia	

Core Components — Facilities and Precise Process

German Lieberr Hobbing Machines



Vertical Hobbing Machine

detron applies German Gleason Vertical Hobbing Machine, to achieve the accuracy of worm wheel to DIN1 level.



Vertical grinding machine with hydrostatic bearing technology



Finishing grinding for casting ID



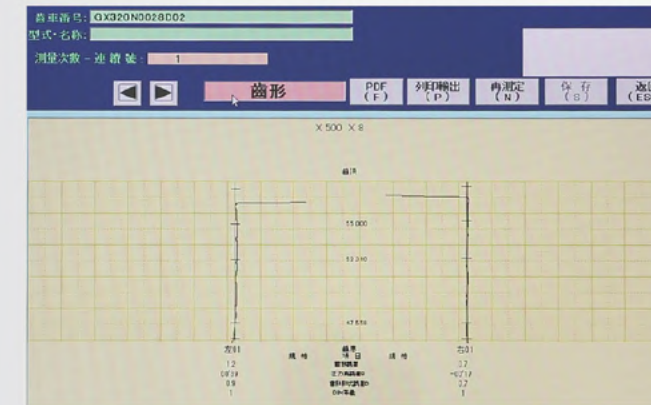
Finishing grinding for gear face



Finishing grinding for brake drum face+ID+OD

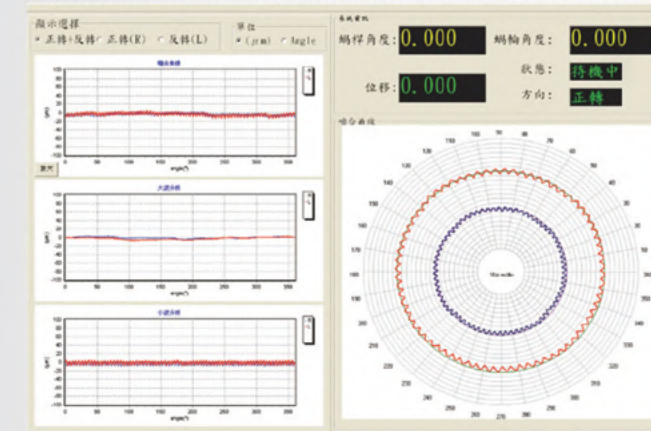
Gear Measuring Machine

detron applies NC control high precision gear measuring system, to ensure the optimum occlusion of worm shaft and wheel during dynamic operation.



Gear Teeth Occlusion Inspection

detron applies European specified gear occlusion tester to calibrate tooth-flank accuracy. Dual encoder mounted at both terminals for worm shaft and wheel. The comparison of transmissions by theoretical and practical measurement approves the coefficient of performance analysis and gear positioning accuracy.



Automation for Burr Removing

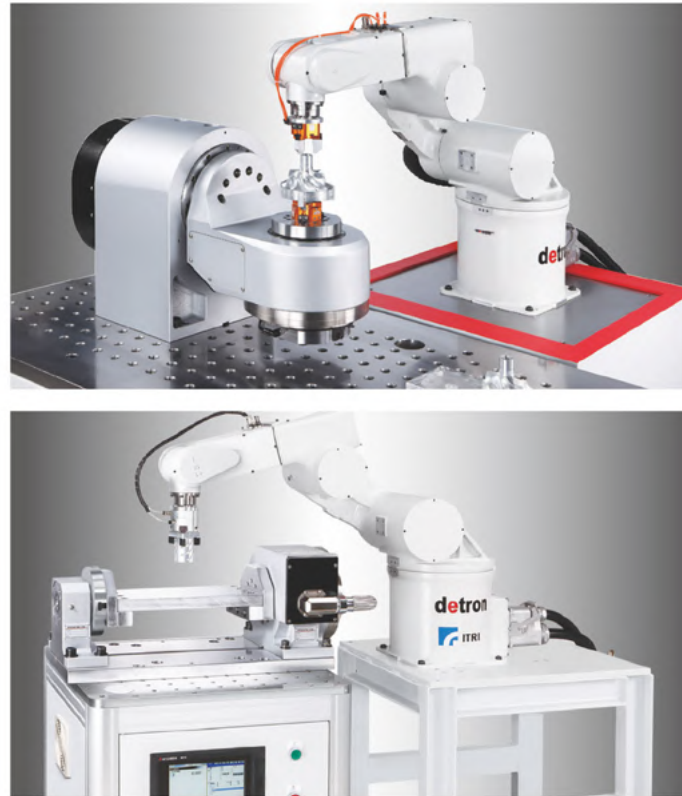


Main Spindle Preload





Prepare for Industry 4.0

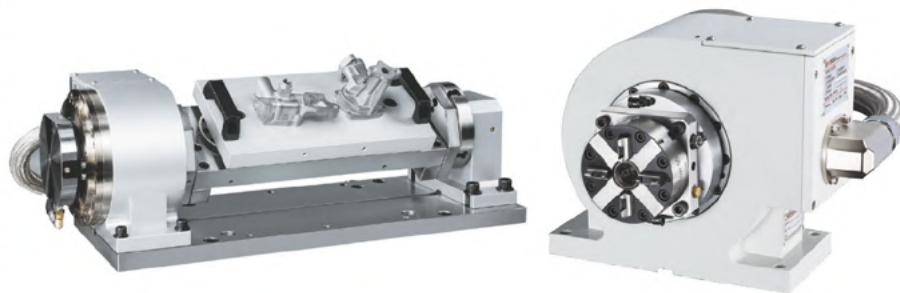


Recommended hardware corroboration in Industrial 4.0 chain.

Integration with High Efficient Mold Change



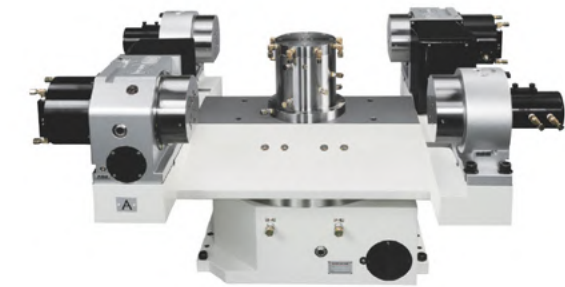
▲ Application of BT40/50 arbors as parts fixture jig can be integrated into **Auto Parts-holding** Change system.



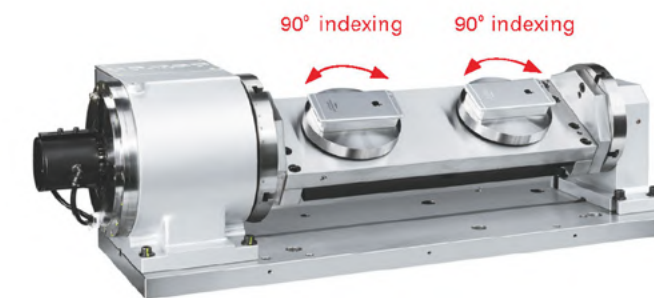
▲ To ease the modulation of parts- holding system in mass production and high end automation, **detron** develops sufficient interface to adapt various **quick mold changing** device, such as EROWA and SCHUNK.

Magnifying the Machining Value

Solutions by Smart Attachments



▲ Standard **detron** models can be modified to provide additional solutions, such as the standard CX-500 model for example, which could be used as an auto pallet system, which is illustrated above and is renamed the SVW-500.

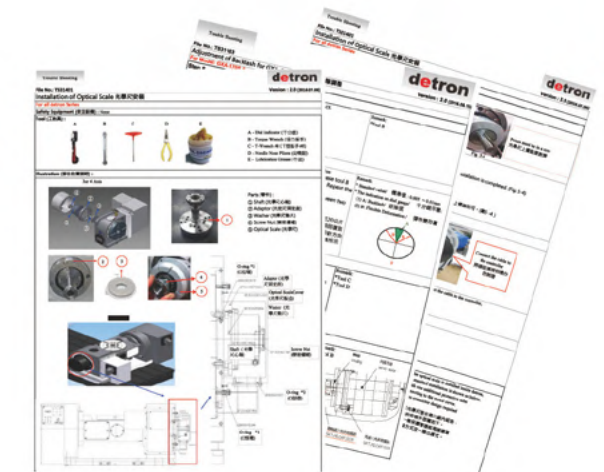


▲ A 90 degree indexer can be modified into a 5 face machining system, options include selected number of multiple spindles and various centre distances according to the application.

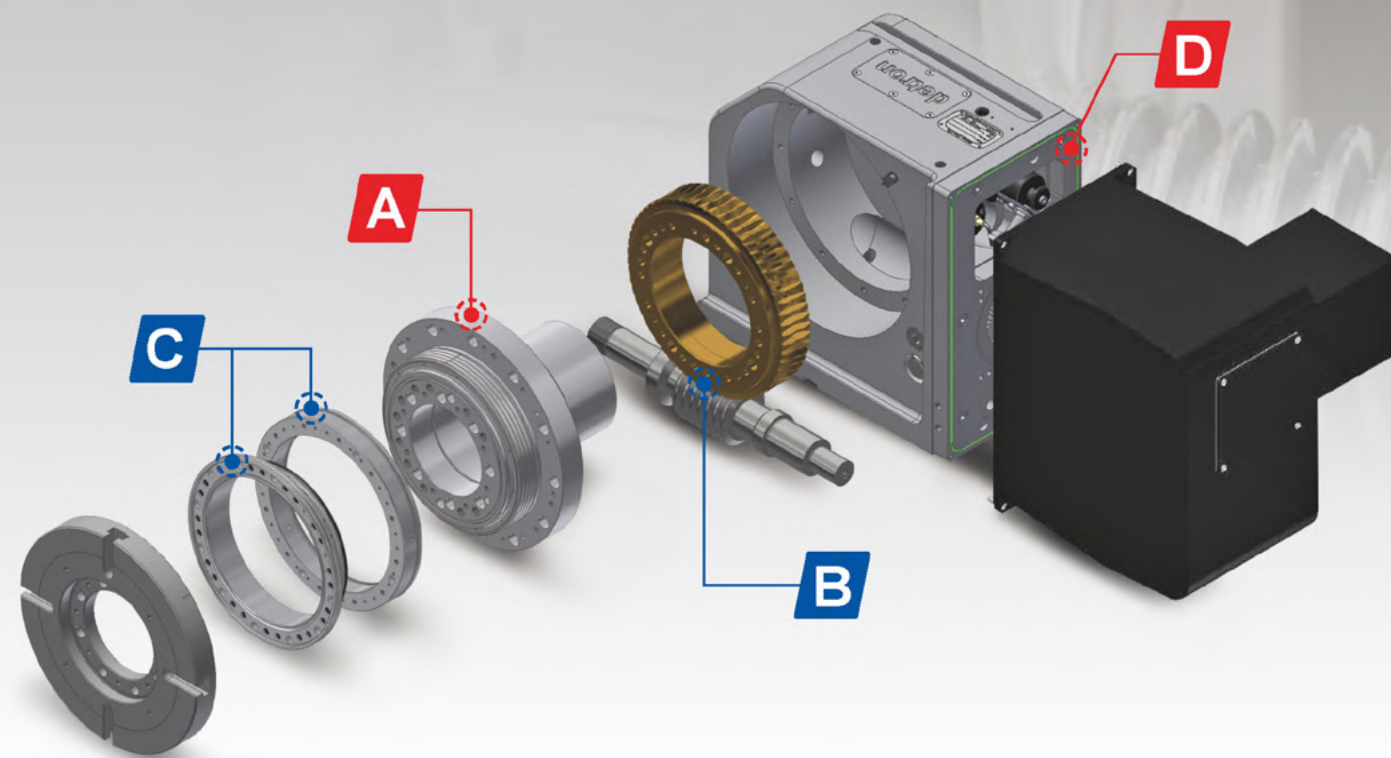
Detron On-Line Service



When owning a **detron** table, you become part of the **detron** family. Support is provided during the selection process, installation and aftersales and help is never far away. With instant access to on line support, or you can talk to your local detron factory outlet. Join the detron family.



Core Technology – Key Parts & Advantages Description



A High Rigidity Consolidated Spindle



YRT bearing integrated in consolidated spindle with least separate elements & premium rigidity.

-refer to P18 for more details-

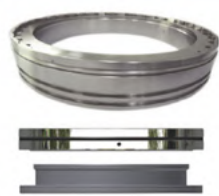
B High Endurable Worm Gear Set



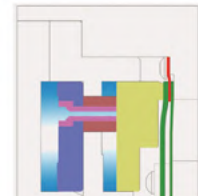
Exclusive application of patented high-endurable copper alloy for detron appointed models.

-refer to P20 for more details-

C Reliable Clamping Force



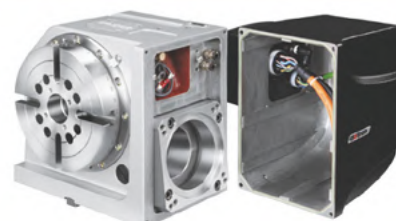
Hydraulic Model:
Special design of drum brake system.



Pneumatic Model:
exclusive patented dual pistons design.

-refer to P19 for more details-

D High Level Waterproof Design



All covers interface with machined groove and Trelleborg seals applied. Waterproof grade IP65.

-refer to P21 for more details-

Core Technology – High Rigidity Consolidated Spindle

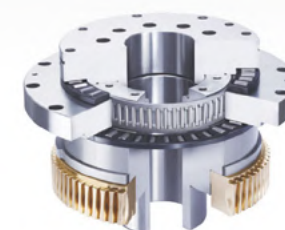


Comparison of Spindle and Bearing

detron

others

others



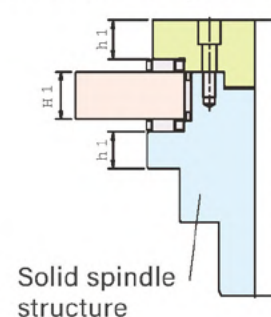
Exclusive Patent
Rigidity



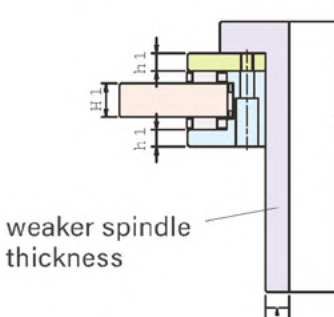
YRT bearing integrated in consolidated spindle.

3 pieces YRT bearing

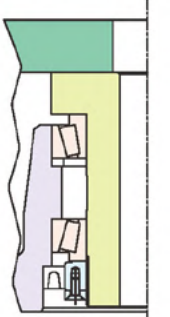
Economic taper roller bearing



Solid spindle structure



weaker spindle thickness



↑ least separate elements, premium rigidity.

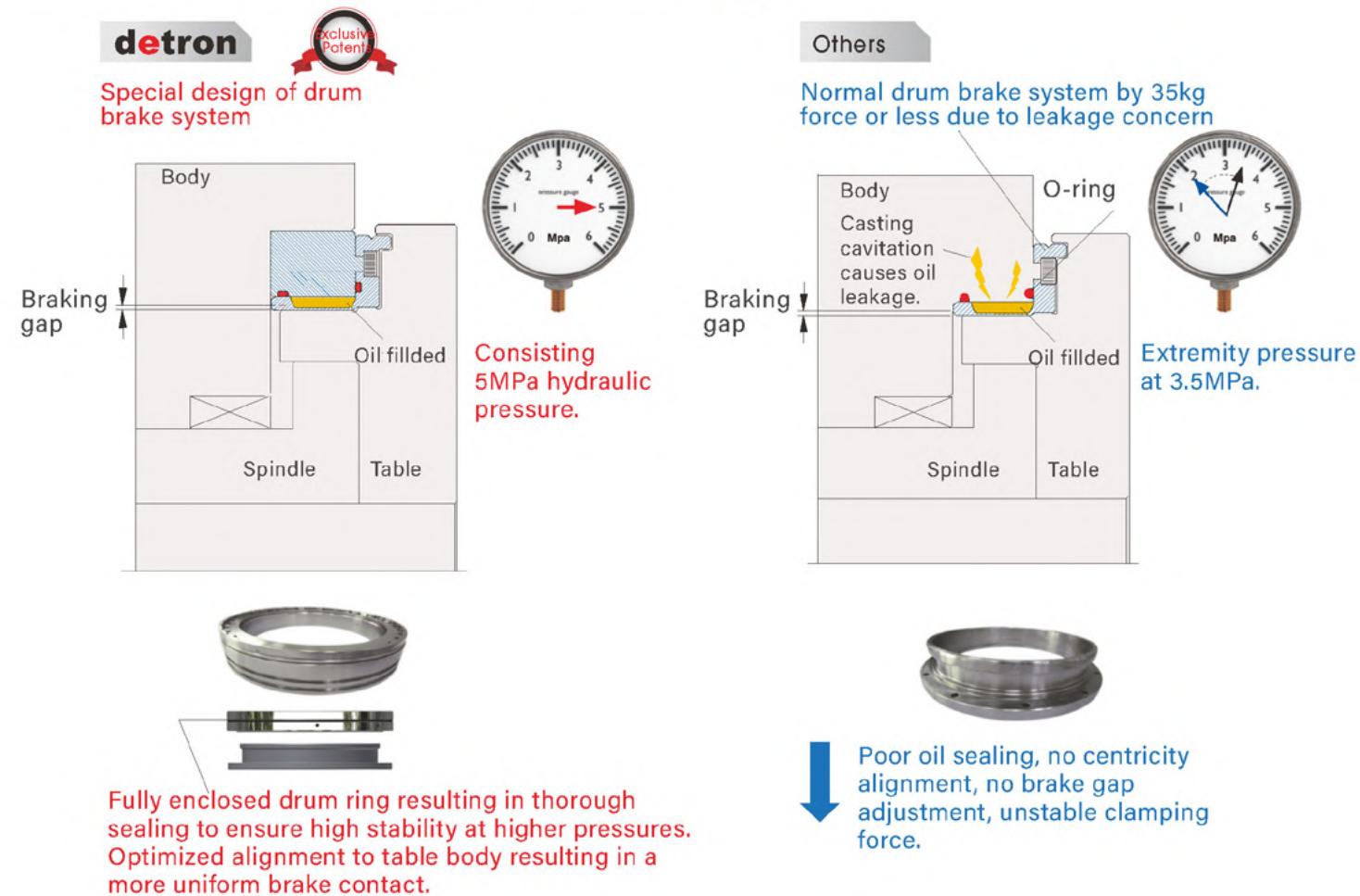
↓ more separate parts, more accumulated error, lower rigidity

↓ not recommended for medium - big table (Ø210mm)

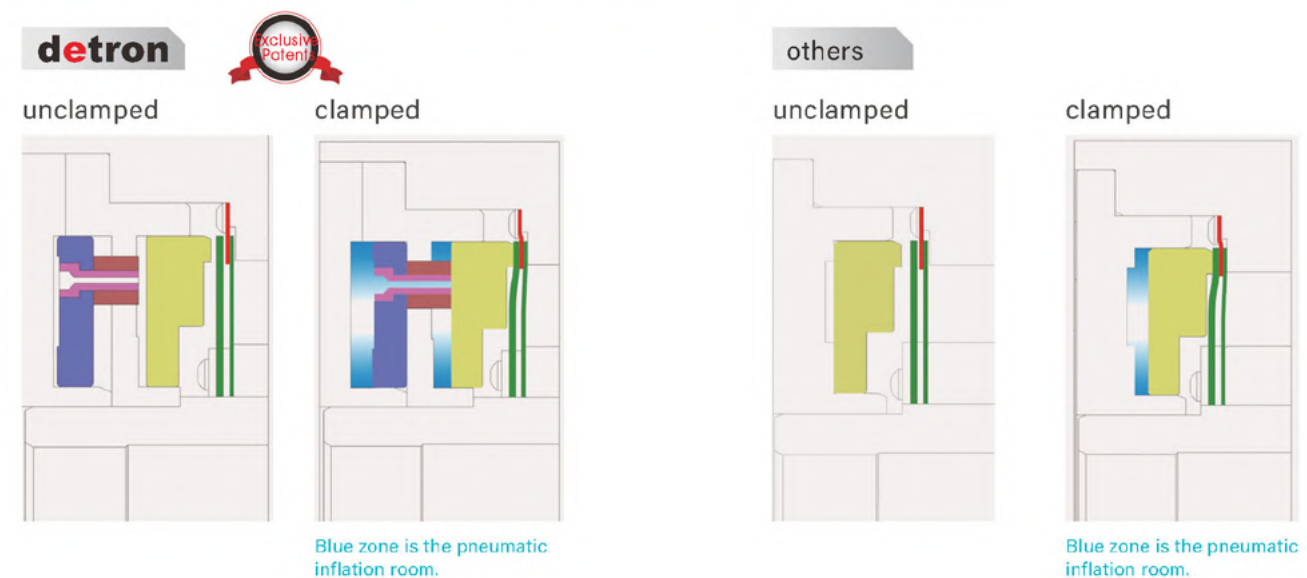
- The roller parts and steady supportive guide ways distinctly share 20-30% and 70-80% from the whole spindle rigidity.
- H1 & h1, as the supportive roller guide ways, are thicker on detron spindle and act high rigidity.
- Less separate parts, less accumulated error concern.

Core Technology — Reliable Clamping Force

Safe and Double Insured Hydraulic Brake



Patented Dual Pneumatic Piston, Braking Force Promoted



detron applies exclusive patented dual pistons to multiply the pneumatic pressure zone and promote the clamping power.

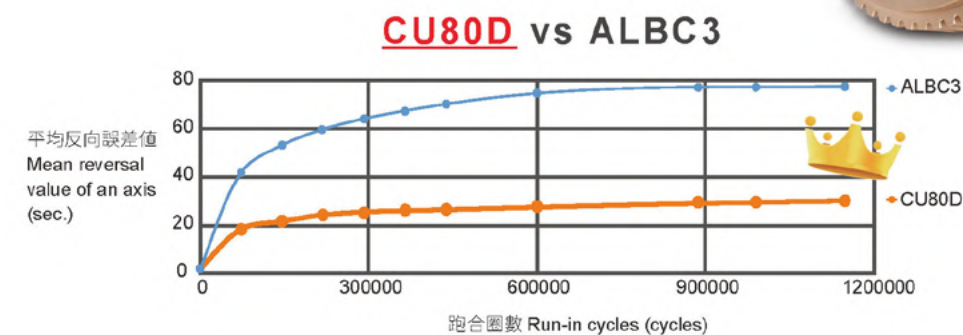
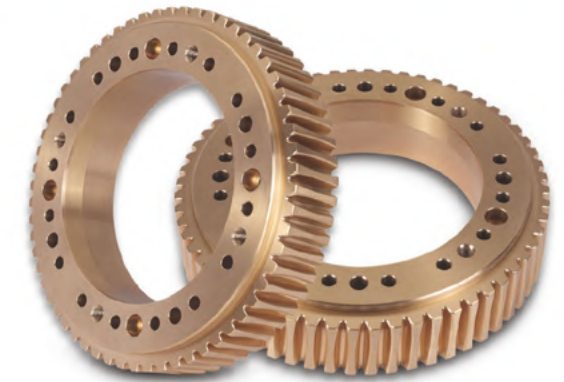
Limited effects by less pneumatic inflation zone of conventional single piston. Lower clamping force.

Core Technology — High Endurable Worm Gear Set

Exclusive Worm Wheel Material -CU80D

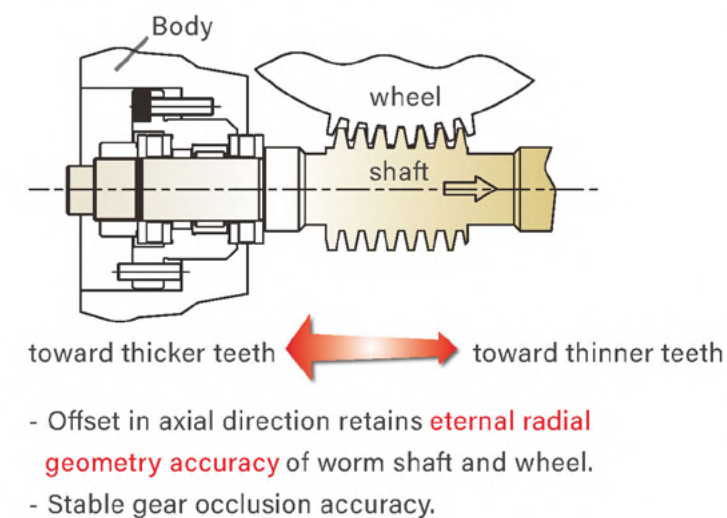
Exclusive application of patented high-endurable copper alloy for detron appointed models.

260% resistance for abrasion compared to conventional worm wheel materials by other brands.

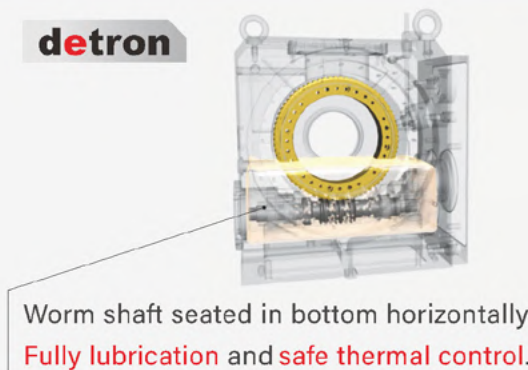


260%
resistance increased

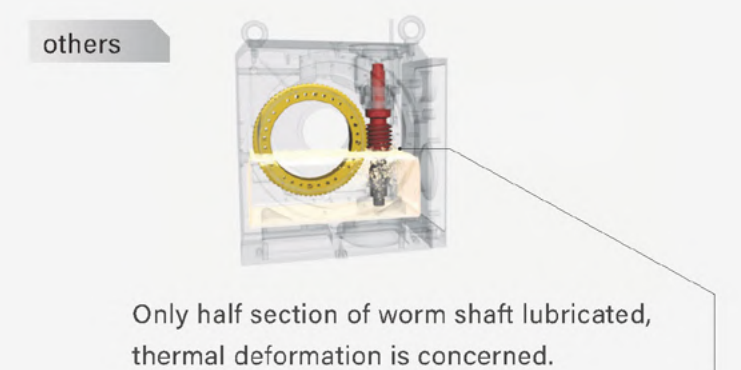
Precise Dual Lead Worm Shaft and Gear



Lubrication and Thermal Control



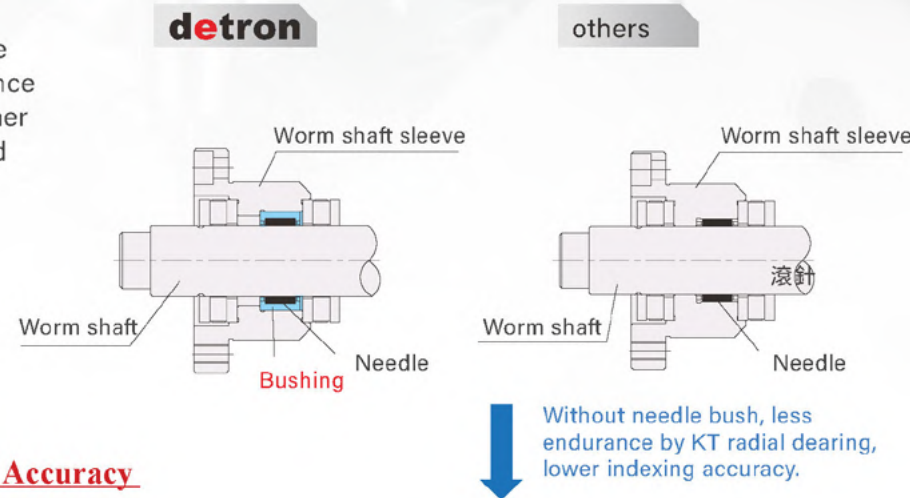
Teeth Module Promoted



Core Technology – Endurance and Protection

Reliable Worm Shaft Rotation

Applying a bushing between sleeve and needle to increase the endurance of the sleeve bore, resulting in higher concentricity of the worm shaft and higher indexing accuracy.



High Concentricity, Consistent Accuracy

Waterproof Design

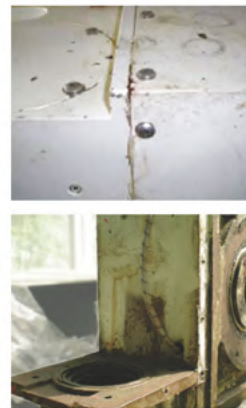
- The electronic parts guard is completely sealed by O-ring to prevent cutting fluid entering and motor burnout.
- Barotropic built-in for dew-proof.
- **Waterproof grade IP65.**

detron

Motor cover interface with machined groove and Trelleborg seals applied.



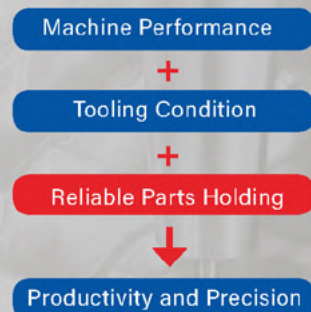
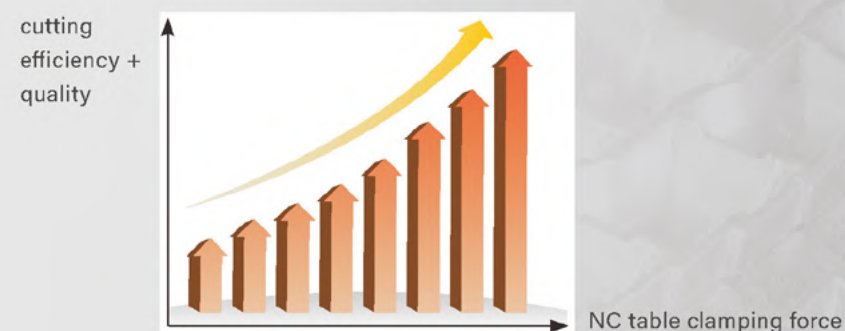
others



Circumference is fully sealed by O-ring to prevent fluid from entering

Clamping Force Supports Advanced Application Engineering

High clamping forces are an important factor when high cutting efficiency is required. It is recommended that **200%** brake force to cutting forces is applied for optimum performance.



Core Technology

Grinding of consolidated spindle unit



Grinding of worm shaft teeth



Processing Of Spindle Bore

Advantages of center positioning hole with grinding

- Superior roundness and surface roughness.
- High accuracy when adjusting jig on center bore.
- **Large spindle hole diameter allows multi-port oil distributor mounted.**

Quicker Precise Mold Change. Higher Indexing Accuracy and Concentricity.

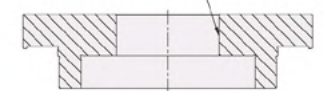
detron

grinding



others

finishing turning



Poor roundness and surface for fixture adjustment.

Fine Finishing Machining Of Brake Shaft

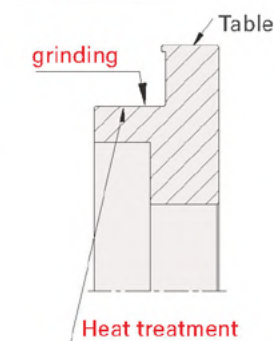
Advantages of surface with hardening and grinding

- Least scratch and wearing concerns, high resistance for large clamping force.
- Precision grinding at the brake features better roundness and cylindricity. As a result, no rotating center offset, minimizing positioning error and increased clamping life are ensured.

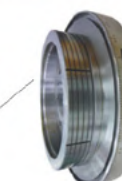
Increased Clamping Life. No Offset During Braking.

detron

grinding

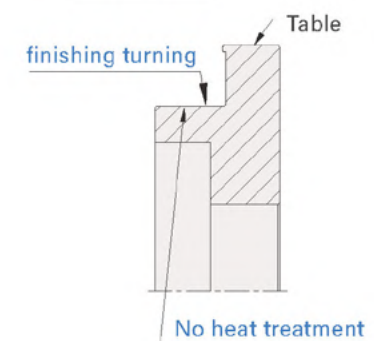


Brake surface with grinding and heat treatment



others

finishing turning



Brake surface only with final turning but no heat treatment



GXA-S series

CNC Rotary Table

High - Power Pneumatic Clamp



G X A - 1 7 0 S

- new optimization model
- superior pneumatic clamp
- table size
- Vertical & horizontal application
- Vertical application
- worm gear transmission

- Worktable diameter Ø125, Ø170, Ø210, Ø255
- Exclusive patented dual pneumatic piston braking system.(P.19)
- Higher rotation speed.
- Equipped with high precision cross roller.
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)



Equipped with upgraded high precision cross roller bearing

SPECIFICATIONS

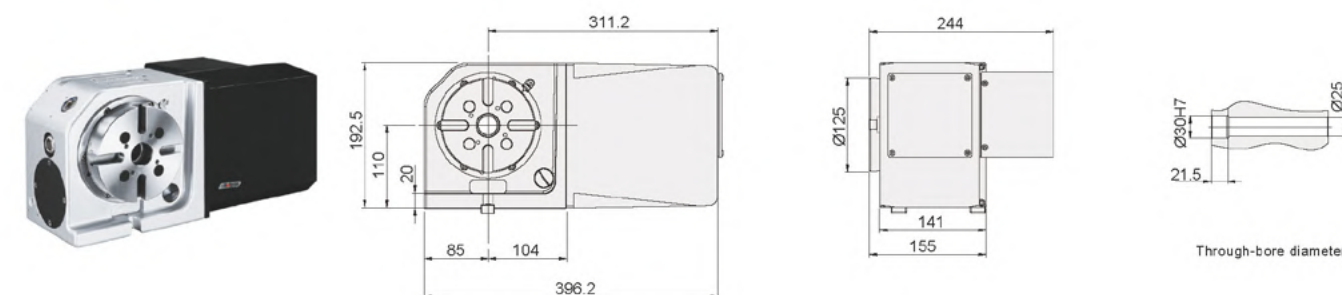
MODEL	Unit	GXA-125S	GXA-170S	GXA-210S GXA-250S	GXA-170S-2W-250
Worktable diameter	mm / inch	Ø125 / Ø 4.92	Ø170 / Ø 6.69	Ø210 / Ø 8.27 Ø255 / Ø 10.04	Ø170 / Ø 6.69
Center bore diameter	mm / inch	Ø30H7 / Ø 1.18H7	Ø40H7 / Ø 1.57H7	Ø65H7 / Ø 2.56H7	Ø40H7 / Ø 1.57H7
Through-bore diameter	mm / inch	Ø25 / Ø 0.98	Ø40 / Ø 1.57H7	Ø65 / Ø 2.56H7	Ø40 / Ø 1.57H7
Pitch of rotary axis	mm / inch	N/A	N/A	N/A	250 / 9.84
Height of table (horizontal)	mm / inch	155 / 6.10	175 / 6.89	175 / 6.89 190 / 7.48	175 / 6.89
Height of table (vertical)	mm / inch	110 / 4.33	135 / 5.31	160 / 6.3	135 / 5.31
Width of T-slot	mm / inch	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7
Width of guide block	mm / inch	18 / 0.71	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method / pressure	MPa / psi	Pneumatic 0.55 ~ 0.7 / 79.8-101.5	Pneumatic 0.55 ~ 0.7 / 79.8-101.5	Pneumatic 0.55 ~ 0.7 / 79.8-101.5	Pneumatic 0.55 ~ 0.7 / 79.8-101.5
Clamping torque	Nm / ft. lbs.	140	300	400	300
Servo motor spec		refer to page 69			
Transmission ratio		1 / 40	1 / 60	1 / 72	1/90
Max. table speed	min ⁻¹	66.6	53.3	53.3	22.2
Standard loading inertia* ($\frac{W.D^2}{8}$)	Kg.m ²	0.2	0.72	1.38	0.54
Maximum loading inertia* ($\frac{W.D^2}{8}$)	Kg.m ²	1	3	5	2.5
Resolution	deg.	0.001	0.001	0.001	0.001
Indexing accuracy	sec.	40	20	20	20
Repeatability	sec.	6	6	6	6
Net weight (servo motor excluded)	kg / lb	32 / 70.40	51.5 / 113.3	60 / 132 66.3 / 145.86	115 / 253.5
Allowable loading capacity	Vertical	kg / lb	50 / 110	100 / 220	125 / 275
	Horizontal	kg / lb	100 / 220	200 / 440	250 / 550
	Tailstock applied	kg / lb	100 / 220	200 / 440	250 / 550
Allowable load (when table clamped)		N / lbs	9700 / 2176.68	14000 / 3141.6	17000 / 3814.8
		Nm / ft. lbs.	410 / 302.17	1020 / 751.74	1265 / 932
		Nm / ft. lbs.	140 / 103.8	300 / 221.1	400 / 294.8
Allowable cutting torque		Nm / ft. lbs.	85 / 62.65	200 / 147.41	260 / 191.62
Allowable Max. rotary joint quantity		-	4	4	4

Note: 1. Allowable cutting torque at table speed of 1 min⁻¹.
2. Standard loading inertia * is allowed in max table speed. Contact detron for the necessary adjustment of speed and others when maximum loading inertia * is required.

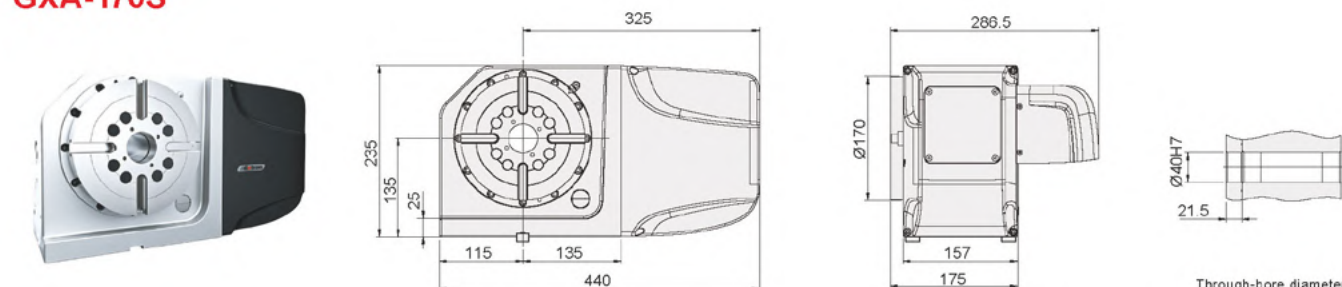
DIMENSIONAL DRAWINGS

Unit : mm

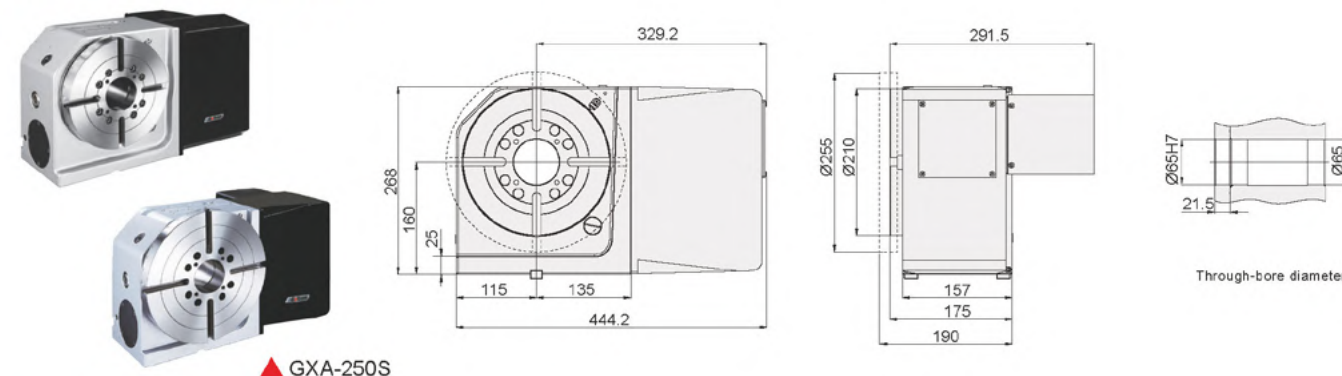
GXA-125S



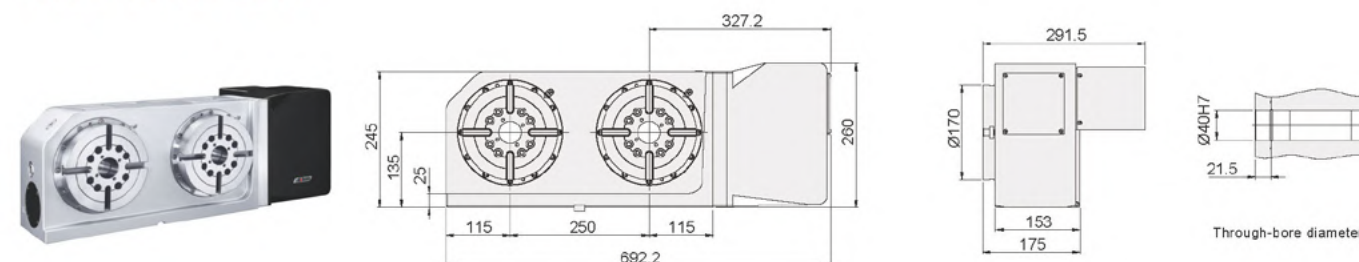
GXA-170S



GXA-210S / GXA-250S



GXA-170S-2W-250



Note: The length of servo guard may vary with servo motor type.
(the metal sheet dimensions shown above are based on Fanuc motor)

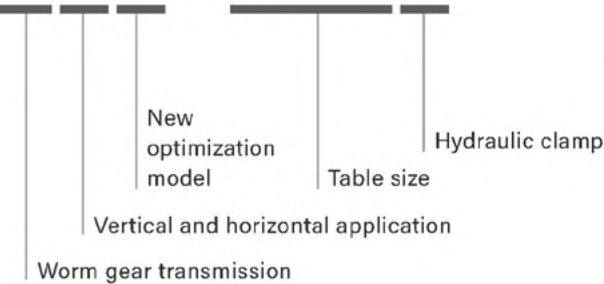
GXA-H series

CNC Rotary Table

Ultra Big Spindle Bore, Hydraulic Clamp



G X A - 2 5 5 H



- Worktable diameter Ø255, Ø320, Ø400.
- Big spindle bore** allow the more complex parts clamping and fixture.
- Ultra high clamping force by **drum brake system**.(P.19)
- Consolidated spindle with radial-Axial bearing built-in.** (P.18)
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)



Consolidated spindle with radial-Axial bearing built-in.

SPECIFICATIONS

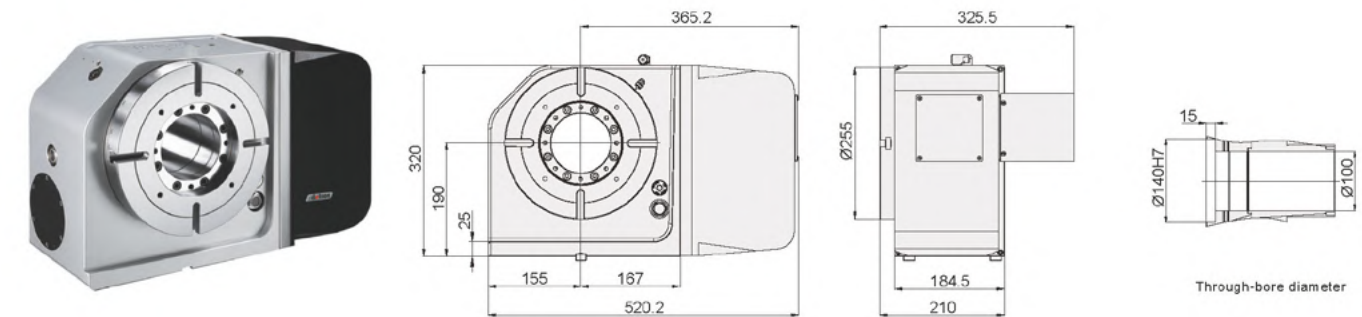
MODEL	Unit	GXA-255H	GXA-320H	GXA-400H
Worktable diameter	mm / inch	Ø255 / Ø 10.04	Ø320 / Ø 12.6	Ø400 / Ø 15.75
Center bore diameter	mm / inch	Ø140H7 / Ø 5.51H7	Ø180H7 / Ø 7.08H7	Ø220H7 / Ø 8.66H7
Through-bore diameter	mm / inch	Ø100 / Ø 3.94	Ø140 / Ø 5.51	Ø180 / Ø 7.09
Height of table (horizontal)	mm / inch	210 / 8.27	235 / 9.25	255 / 10.04
Height of center (vertical)	mm / inch	190 / 7.48	210 / 8.27	255 / 10.04
Width of T-slot	mm / inch	12H7 / 0.47H7	14H7 / 0.55H7	14H7 / 0.55H7
Width of guide block	mm / inch	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method /pressure	MPa / psi	Hydraulic 5 / 725	Hydraulic 5 / 725	Hydraulic 5 / 725
Clamping torque	Nm /ft. lbs.	900 / 663.3	1600 / 1179.2	3000 / 2211
Servo motor spec		refer to page 69		
Transmission ratio		1 / 120	1 / 120	1 / 144
Max. table speed	min ⁻¹	22.2	22.2	11.1
Standard loading inertia *	($\frac{WD^2}{8}$) Kg.m ²	2.43	5.12	10.2
Maximum loading inertia *	($\frac{WD^2}{8}$) Kg.m ²	12	20	40
Resolution	deg.	0.001	0.001	0.001
Indexing accuracy	sec.	15	15	15
Repeatability	sec.	6	6	6
Net weight (servo motor excluded)	kg / lb	114 / 251	147 / 323.4	253 / 556.6
Allowable loading capacity	Vertical	kg / lb	150 / 330	250 / 550
	Horizontal	kg / lb	300 / 660	500 / 1100
	Tailstock applied	kg / lb	300 / 660	500 / 1100
Allowable load (when table clamped)		N / lbs	20000 / 4488	28000 / 6283.2
		Nm /ft. lbs.	1700 / 1252.9	3000 / 2211
		Nm /ft. lbs.	900 / 663.3	1600 / 1179.2
Allowable cutting torque		Nm /ft. lbs.	550 / 405.35	780 / 574.86
Allowable Max. rotary joint quantity		6	6	6

Note: 1. Allowable cutting torque at table speed of 1 min⁻¹.
2. Standard loading inertia * is allowed in max table speed. Contact detron for the necessary adjustment of speed and others when maximum loading inertia * is required.

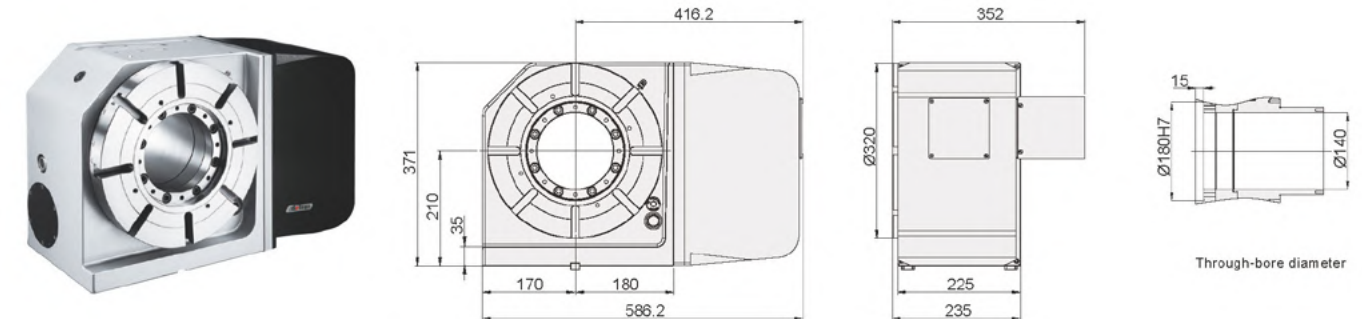
DIMENSIONAL DRAWINGS

Unit : mm

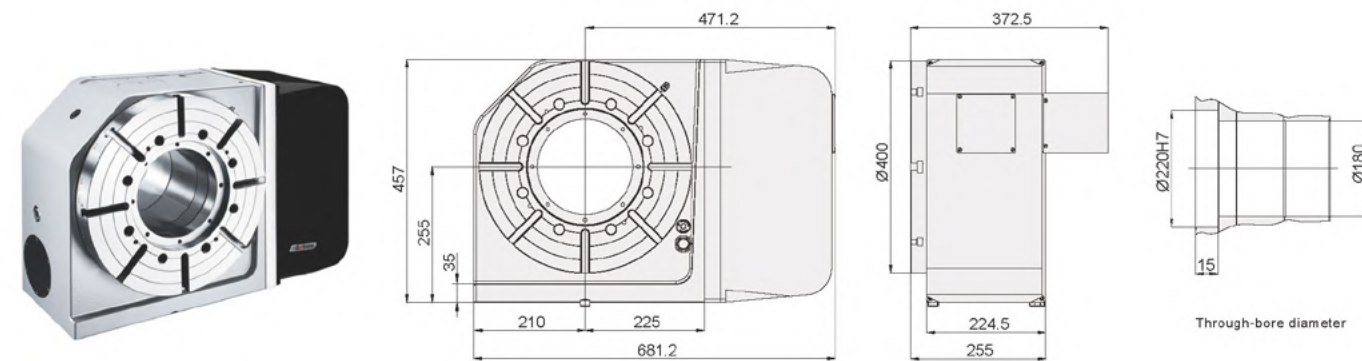
GXA-255H



GXA-320H



GXA-400H

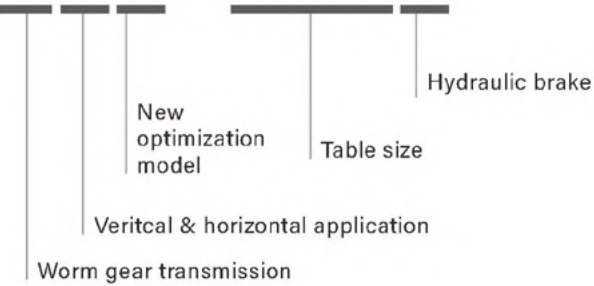


Note: The length of servo guard may vary with servo motor type.
(metal sheet dimensions shown above are based on Fanuc motor)

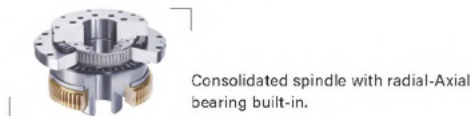
CNC Rotary Table

Ultra Big Spindle Bore, Hydraulic Clamp

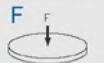
GXA - 500H



- Worktable diameter Ø500, Ø630, Ø800.
- Equipped with extra large bearings, preloaded in radial and axial directions.(P.18)
- Motor is mounted at right side(vertical and horizontal application).
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)



SPECIFICATIONS

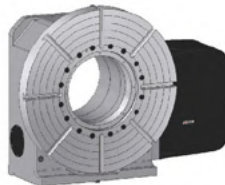
MODEL		Unit	GXA-500H GXA-630EH	GX-630H	GX-800H
Worktable diameter		mm / inch	Ø500 / Ø19.69 Ø630 / Ø24.80	Ø630 / Ø24.80	Ø800 / Ø31.50
Center bore diameter		mm / inch	Ø305H7 / Ø12H7	Ø270H7 / Ø10.63H7	Ø285H7 / Ø11.22H7
Through-bore diameter		mm / inch	Ø265 / Ø10.43	Ø220 / Ø8.66	Ø240 / Ø9.45
Height of table (horizontal)		mm / inch	280 / 11.02	325 / 12.80	365 / 14.37
Height of center (vertical)		mm / inch	350 / 13.78	400 / 15.75	480 / 18.90
Width of T-slot		mm / inch	18H7 / 0.71H7	18H7 / 0.71H7	22H7 / 0.47H7
Width of guide block		mm / inch	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method / pressure		MPa / psi	Hydraulic 5 / 725	Hydraulic 5 / 725	Hydraulic 3.5 / 507.5
Clamping torque		Nm /ft. lbs.	5700 / 4204.11 4500 / 3319	4500 / 3319.03	5200 / 3835.32
Servo motor spec			refer to page 69		
Transmission ratio			1 / 180	1 / 180	1 / 180
Max. table speed		min ⁻¹	11.1	11.1	11.1
Allowable loading inertia	($\frac{WD^2}{8}$)	Kg.m ²	25	40.5	122.4
Resolution		deg.	0.001	0.001	0.001
Indexing accuracy		sec.	15	15	15
Repeatability		sec.	6	6	6
Net weight (servo motor excluded)		Kg /lb	396 / 871.2 455 / 1001	720 / 1584.0	1236 / 2719.2
Allowable loading capacity	Vertical	Kg /lb	450 / 990	450 / 990	800 / 1760
	Horizontal	Kg /lb	800 / 1760	800 / 1760	1500 / 3300
	Tailstock applied	Kg /lb	800 / 1760	800 / 1760	1500 / 3300
Allowable load (when table clamped)		N /lbs	45000 / 10098	49000 / 10780	50000 / 11000
		Nm /ft. lbs.	8300 / 6121.7	8500 / 6264.50	10000 / 7370.0
		Nm /ft. lbs.	5700 / 4204.11 4500 / 3319	4500 / 3316.5	5200 / 3832.4
Allowable cutting torque		Nm /ft. lbs.	2500 / 1842.5	4300 / 3169.1	6860 / 5059.6

Note: Allowable cutting torque at table speed of 1 min⁻¹.

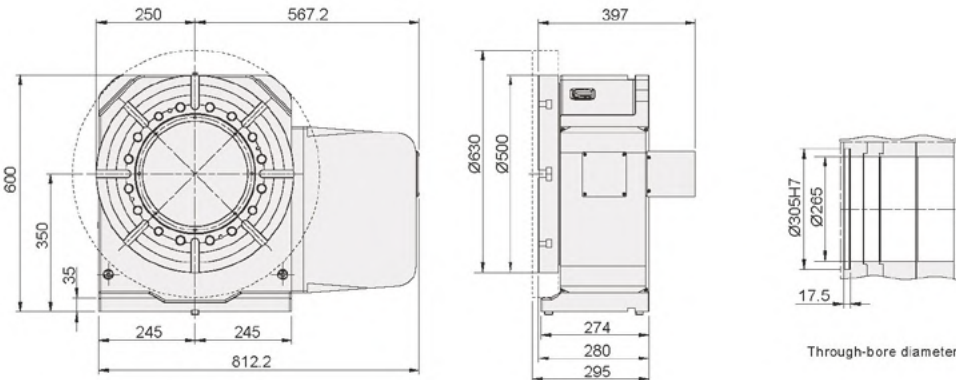
DIMENSIONAL DRAWINGS

Unit : mm

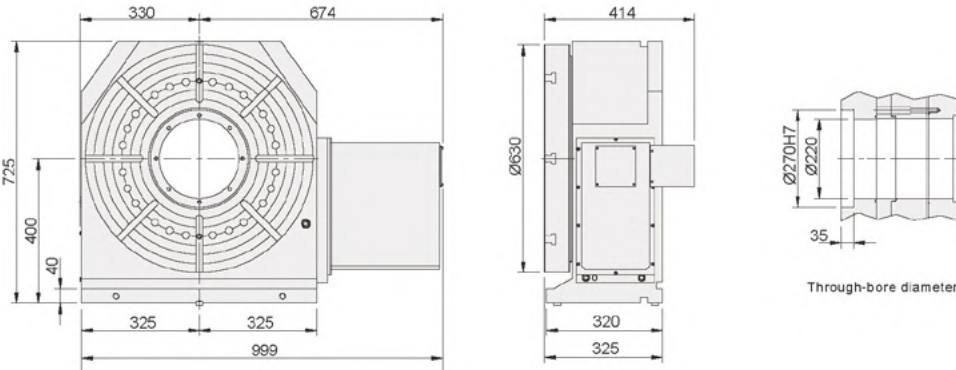
GXA-500H



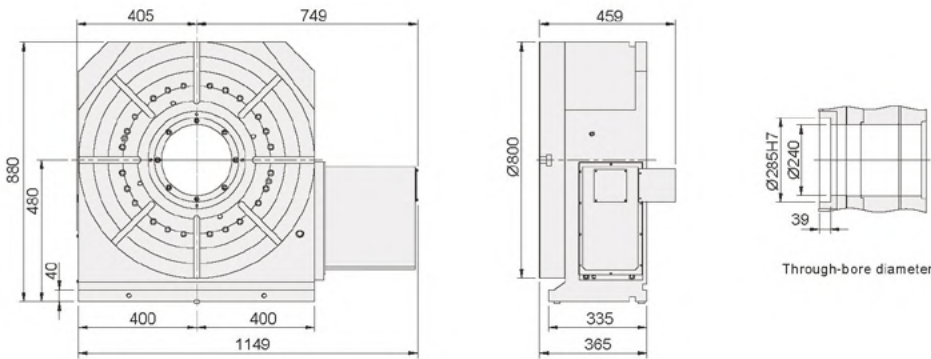
GXA-630EH



GXA-630H



GXA-800H



Note: The length of servo guard may vary with servo motor type.
(metal sheet dimensions shown above are based on Fanuc motor)

CNC Rotary Table

High - Power Clamp, Motor at Left



G X A - 1 7 0 S L

Motor mounted at
left side of table

new
optimization
mode |

☐ S Super multiple pneumatic
☐ H Hydraulic

Table size

☒ Vertical & horizontal application

☒ Vertical application

worm gear transmission

- Worktable diameter Ø170, Ø210, Ø255.
- Motor mounted at left side of table
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash. (P.20)

SPECIFICATIONS

MODEL		Unit	GXA-170SL	GVA-210SL	GXA-255HL
Worktable diameter		mm/inch	Ø170 / Ø 6.69	Ø210 / Ø 8.27	Ø255 / Ø10.04
Center bore diameter		mm/inch	Ø40H7 / Ø 1.57H7	Ø65H7 / Ø 2.56H7	Ø140H7 / Ø 5.51H7
Through-bor diameter		mm/inch	Ø40 / Ø 1.57H7	Ø65 / Ø 2.56H7	Ø100 / Ø 3.94
Height of table (horizontal)		mm/inch	175 / 6.89	—	210 / 8.27
Height of table (vertical)		mm/inch	135 / 5.31	160 / 6.3	190 / 7.48
Width of T-slot		mm/inch	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7
Width of guide block		mm/inch	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method / pressure		Mpa / psi	Pneumatic 0.55 ~ 0.7 / 79.8-101.5	Pneumatic 0.55 ~ 0.7 / 79.8-101.5	Hydraulic 5 / 725
Clamping torque		N.m / ft. lbs.	300 / 221.1	400 / 294.8	900 / 663.3
Servo motor spec			refer to page 69		
Transmission ratio			1 / 60	1 / 72	1 / 120
Max. table speed		min ⁻¹	53.3	53.3	22.2
Allowable loading inertia	$(\frac{WD^2}{8})$	Kg.m ²	0.72	1.38	2.43
Resolution		deg.	0.001	0.001	0.001
Indexing accuracy		sec.	20	20	15
Repeatability		sec.	6	6	6
Net weight (servo motor excluded)		kg / lb	51.5 / 113.3	60 / 132	114 / 251
Allowable loading capacity	Vertical	kg / lb	100 / 220	125 / 275	150 / 330
	Horizontal	kg / lb	200 / 440	—	300 / 660
	Tailstock applied	kg / lb	200 / 440	250 / 550	300 / 660
Allowable load (when table clamped)		N / lbs	14000 / 3141.6	17000 / 3814.8	20000 / 4488
		N.m / ft. lbs.	1020 / 751.74	1265 / 932	1700 / 1252.9
		N.m / ft. lbs.	300 / 221.1	400 / 294.8	900 / 663.3
Allowable cutting torque		N.m / ft. lbs.	200 / 147.41	260 / 191.62	550 / 405.35
Allowable Max. rotary joint quantity			4	4	6

Note: Allowable cutting torque at table speed of 1 min⁻¹.

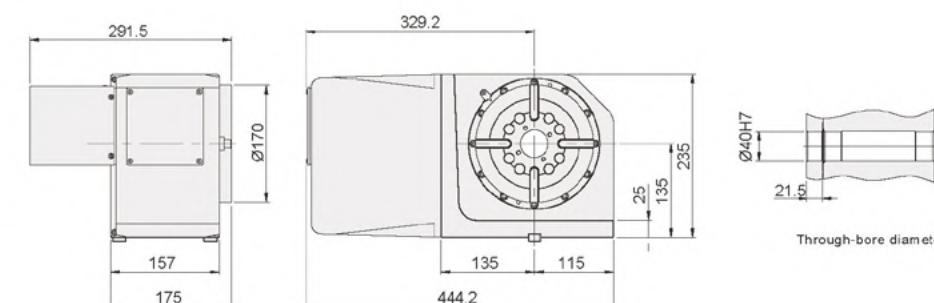
DIMENSIONAL DRAWINGS

Unit : mm

GXA-170SL



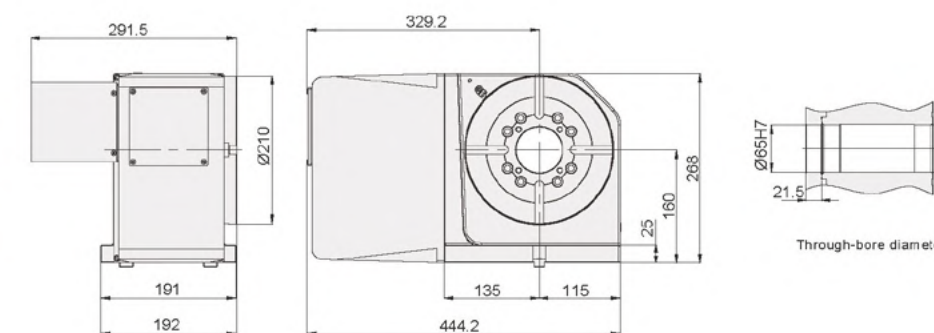
Equipped with upgraded high precision cross roller bearing.



GVA-210SL



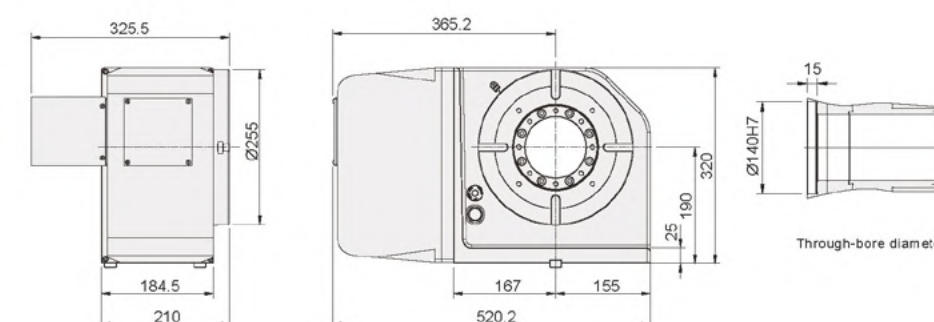
Equipped with upgraded high precision cross roller bearing.



GXA-255HL



Consolidated spindle with YRT bearing built-in.



Note: The length of servo guard may vary with servo motor type.
(metal sheet dimensions shown above are based on Fanuc motor)

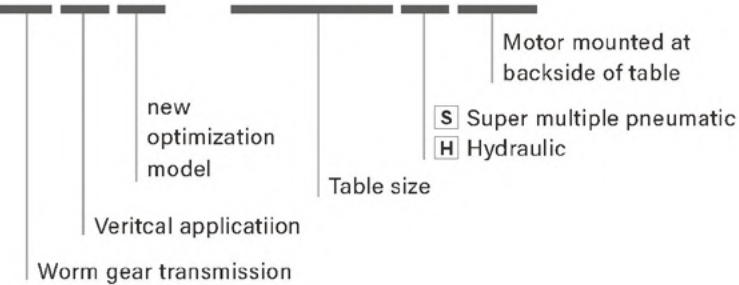
for VMC_Worm Wheel Transmission

GVA-B series

CNC Rotary Table

High - Power Clamp, Motor at Back

GVA - 210SB



Worktable diameter Ø170, Ø210, Ø255.
GVA-SB series is new "super multiple brake" mechanism for pneumatic clamp.(P.19)
Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)

SPECIFICATIONS

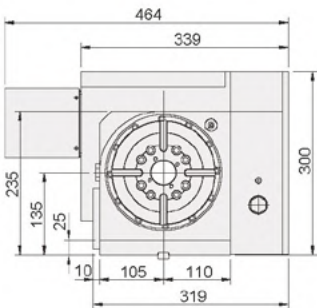
MODEL	Unit	GV-170SB	GVA-210SB	GVA-255HB
Worktable diameter	mm / inch	Ø170 / Ø6.69	Ø210 / Ø8.27	Ø255 / Ø10.04
Center bore diameter	mm / inch	Ø40H7 / Ø1.57H7	Ø65H7 / Ø2.6H7	Ø140H7 / Ø5.51H7
Height of center (vertical)	mm / inch	135 / 5.31	160 / 6.30	190 / 7.48
Width of T-slot	mm / inch	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7
Width of guide block	mm / inch	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method / pressure	Mpa / psi	Super Multi- Pneumatic 0.55 ~ 0.7 / 79.8 ~ 101.5	Super Multi- Pneumatic 0.55 ~ 0.7 / 79.8 ~ 101.5	Hydraulic 5 / 725
Clamping torque	Nm / ft. lbs.	250 / 184.25	400 / 294.8	900 / 663.3
Servo motor spec		refer to page 69		
Transmission ratio		1 / 90	1 / 90	1 / 120
Max. table speed	min ⁻¹	44.4	44.4	22.2
Allowable loading inertia	$\frac{W D^2}{8}$ Kg.m ²	0.28	0.68	1.21
Resolution	deg.	0.001	0.001	0.001
Indexing accuracy	sec.	20	20	15
Repeatability	sec.	6	6	6
Net weight (servo motor excluded)	kg / lb	90 / 198	84 / 184.8	149 / 328
Allowable loading capacity	Vertical	kg / lb	75 / 165	125 / 275
	Tailstock applied	kg / lb	150 / 330	250 / 550
Allowable load (when table clamped)		N / lbs	14000 / 3141.60	17000 / 3814.8
		Nm / ft. lbs.	1020 / 751.74	1265 / 932.3
		Nm / ft. lbs.	250 / 184.25	400 / 294.80
Allowable cutting torque		Nm / ft. lbs.	170 / 125.29	260 / 191.62

Note: Allowable cutting torque at table speed of 1 min⁻¹.

DIMENSIONAL DRAWINGS

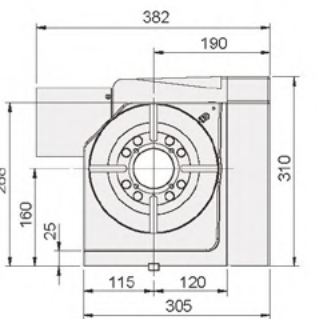
Unit : mm

GV-170SB



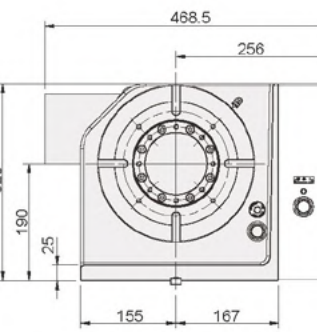
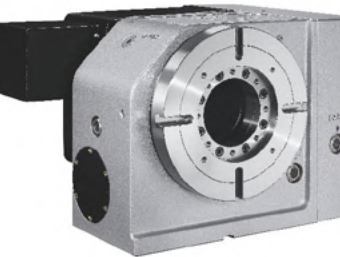
Equipped with upgraded high precision cross roller bearing.

GVA-210SB



Equipped with upgraded high precision cross roller bearing.

GVA-255HBII



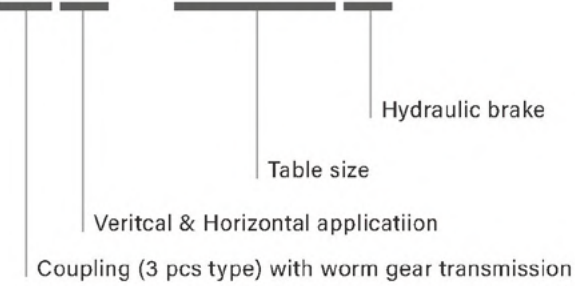
Consolidated spindle with YRT bearing built-in.

Note: The length of servo guard may vary with servo motor type.
(metal sheet dimensions shown above are based on Fanuc motor)

for VMC_Worm Wheel Transmission

CNC Index Table

CX - 255H



- Worktable diameter Ø255, Ø320, Ø400, Ø500.
- Motor is mounted at right side (vertical and horizontal applications).
- Equipped with three pieces type coupling with worm gear to achieve positioning. It is suitable for heavy cutting.
- The minimum degree is 1°.



Equipped with 3-pcs coupling

SPECIFICATIONS

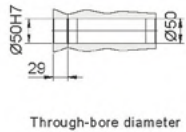
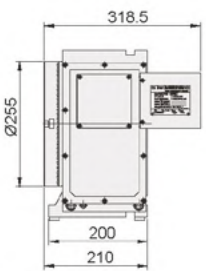
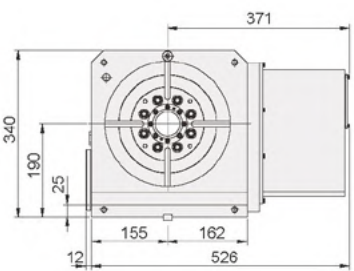
MODEL	Unit	CX-255H	CX-320H	CX-400H	CX-500H
Worktable diameter	mm / inch	Ø255 / Ø10.04	Ø320 / Ø12.60	Ø400 / Ø15.75	Ø500 / Ø19.69
Center bore diameter	mm / inch	Ø50H7 / Ø1.97H7	Ø70H7 / Ø2.76H7	Ø110H7 / Ø4.33H7	Ø130H7 / Ø5.12H7
Through-bore diameter	mm / inch	Ø50 / Ø1.97	Ø70 / Ø2.76	Ø110 / Ø4.33	Ø130 / Ø5.12
Height of table (horizontal)	mm / inch	210 / 8.27	235 / 9.25	255 / 10.04	281 / 11.06
Height of center (vertical)	mm / inch	190 / 7.48	210 / 8.27	255 / 10.04	310 / 12.20
Width of T-slot	mm / inch	12H7 / 0.47H7	14H7 / 0.55H7	14H7 / 0.55H7	18H7 / 0.71H7
Width of guide block	mm / inch	18 / 0.71	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method / pressure	MPa / psi	Hydraulic 3.5 / 508	Hydraulic 3.5 / 508	Hydraulic 3.5 / 508	Hydraulic 3.5 / 508
Clamping torque	Nm / ft. lbs.	3000 / 2211	4000 / 2948	5000 / 3685	10000 / 7370
Servo motor spec		refer to page 69			
Transmission ratio		1 / 120	1 / 120	1 / 144	1 / 180
Max. table speed	min ⁻¹	22.2	22.2	11.1	11.1
Allowable loading inertia $(\frac{WD^2}{8})$	Kg.m ²	2.48	4.57	10.2	19.1
Resolution	deg.	1°	1°	1°	1°
Indexing accuracy	sec.	8	8	8	8
Repeatability	sec.	2	2	2	2
Net weight (servo motor excluded)	kg / lb	134 / 295	186 / 410	350 / 771	450 / 992
Allowable loading capacity	Vertical	kg / lb	125 / 275	175 / 385	400 / 880
	Horizontal	kg / lb	300 / 660	350 / 770	500 / 1100
	Tailstock applied	kg / lb	300 / 660	400 / 880	500 / 1100
Allowable load (when table clamped)		N / lbs	16000 / 3590.4	20000 / 4488.0	30000 / 6732.0
		Nm / ft. lbs.	1750 / 1289.75	2500 / 1842.5	3000 / 2211.0
		Nm / ft. lbs.	3000 / 2211.0	4000 / 2948.0	5000 / 3685.0
Drive torque	Nm / ft. lbs.	240 / 176.9 (motor α iF4) 480 / 353.8 (motor α iF8)	720 / 530.2	864 / 618.5	1080 / 795.3

Note: Allowable cutting torque at table speed of 1 min⁻¹.

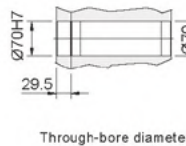
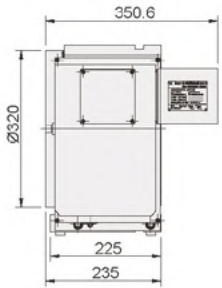
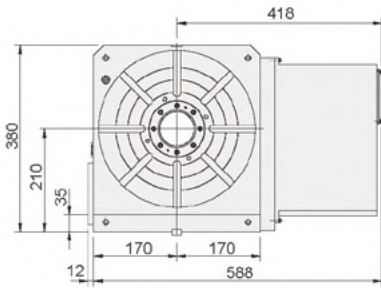
DIMENSIONAL DRAWINGS

Unit : mm

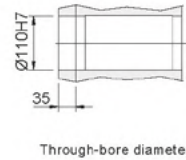
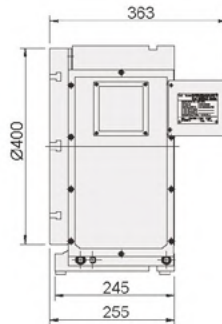
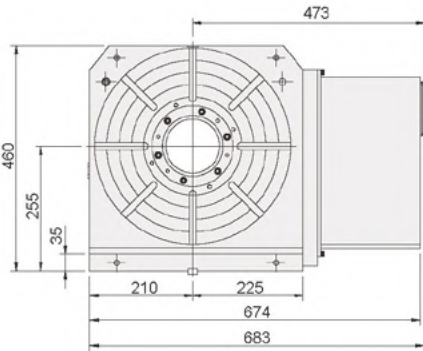
CX-255H



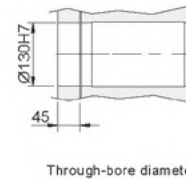
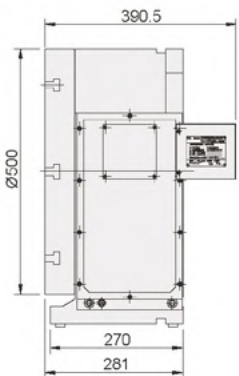
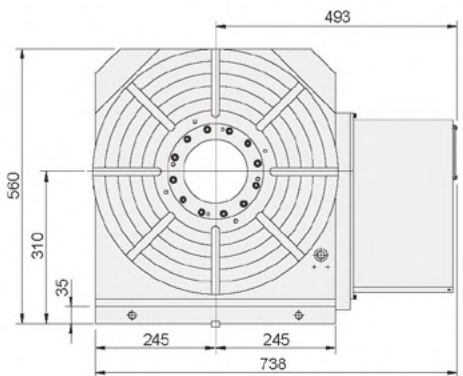
CX-320H



CX-400H



CX-500H



Note: The length of servo guard may vary with servo motor type.
(metal sheet dimensions shown above are based on Fanuc motor)

CNC Tilting Rotary Table

GFA - 125S

- new optimization model
- Five axes
- Worm gear transmission
- Table size
- Super pneumatic for multiple clamp force

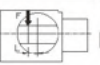


- Worktable diameter Ø100, Ø125, Ø170, Ø210.
- Exclusive patented dual pneumatic piston braking system.(P.19)
- Enlarged the high precision cross roller bearing.
- Transmitted by dual lead worm with high efficiency and full depth gear teeth.(P.20)



Equipped with upgraded high precision cross roller bearing.

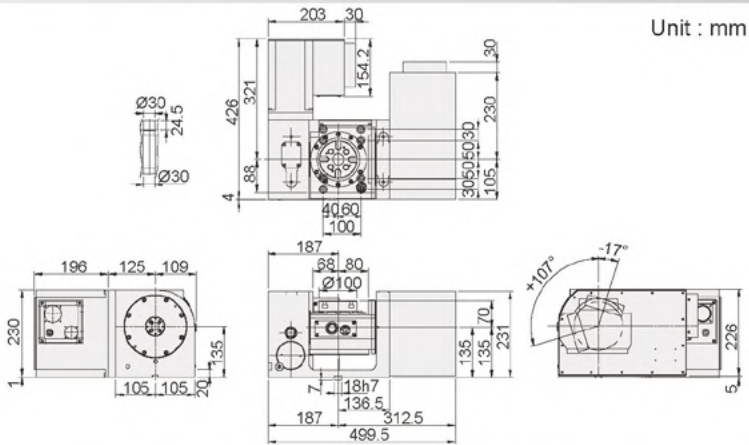
SPECIFICATIONS

MODEL		Unit	GFA-101S		GFA-125S		GFA-170S		GFA-210S	
Worktable diameter		mm / inch	Ø100 / Ø3.94		Ø125 / Ø4.92		Ø170 / Ø6.69		Ø210 / Ø8.27	
Center bore diameter		mm / inch	Ø30H7 / Ø1.18H7		Ø30H7 / Ø1.18H7		Ø40H7 / Ø1.57H7		Ø65H7 / Ø2.56H7	
Height of table (horizontal)		mm / inch	205 / 8.07		224.5 / 8.84		260 / 10.24		280 / 11.02	
Height of center (vertical)		mm / inch	135 / 5.31		160 / 6.30		190 / 7.48		210 / 8.27	
Width of T-slot		mm / inch	12H7 / 0.47H7		12H7 / 0.47H7		12H7 / 0.47H7		12H7 / 0.47H7	
Width of guide block		mm / inch	18 / 0.71		18 / 0.71		18 / 0.71		18 / 0.71	
Clamping method /pressure		MPa / psi	pneumatic 0.55 ~ 0.7 / 79.8 ~ 101.5		pneumatic 0.55 ~ 0.7 / 79.8 ~ 101.5		pneumatic 0.55 ~ 0.7 / 79.8 ~ 101.5		pneumatic 0.55 ~ 0.7 / 79.8 ~ 101.5	
Servo motor spec			refer to page 69							
Transmission ratio			R	T	R	T	R	T	R	T
			1:75	1:120	1:90	1:90	1:90	1:90	1:90	1:90
Max. table speed		min ⁻¹	33.3	16.6	44.4	44.4	33.3	22.2	33.3	22.2
Allowable loading capacity	In Horizontal 	kg / lb	35 / 77		50 / 110		75 / 165		100 / 220	
	In Tilting (0~90°) 	kg / lb	20 / 44		35 / 77		50 / 110		70 / 154	
Allowable unblancing work moment	WxL 	Nm /ft. lbs.	24 / 17.69		24 / 17.69		40 / 29.5		62 / 45.7	
Allowable load (when table clamped)	F 	N / lbs	4000 / 897.60		4000 / 897.60		7000 / 1570.8		14000 / 3141.6	
	FxL 	Nm /ft. lbs.	200 / 147.4		140 / 103.2		300 / 221		400 / 294.7	
	FxL 	Nm /ft. lbs.	250 / 184.25		300 / 221.1		400 / 294.7		600 / 442	
Allowable loading inertia	$\frac{WD^2}{8}$ 	kg.m ²	0.044		0.1		0.28		0.55	
Resolution		deg.	0.001		0.001		0.001		0.001	
Indexing accuracy		sec	40"	60"	40"	60"	20"	60"	20"	60"
Repeatability		sec	6"	8"	6"	8"	6"	8"	6"	8"
Tilting angle range		deg.	-25 ~ +110		-30 ~ +120		-30 ~ +120		-30 ~ +120	
Net weight (servo motor excluded)		kg / lb	90 / 198		120 / 264		180 / 396		230 / 490.6	
Allowable cutting torque		Nm /ft. lbs.	85 / 62.65		85 / 62.65		200 / 147.4		250 / 184.25	
Allowable Max. rotary joint quantity		Port	—		3		4		4	

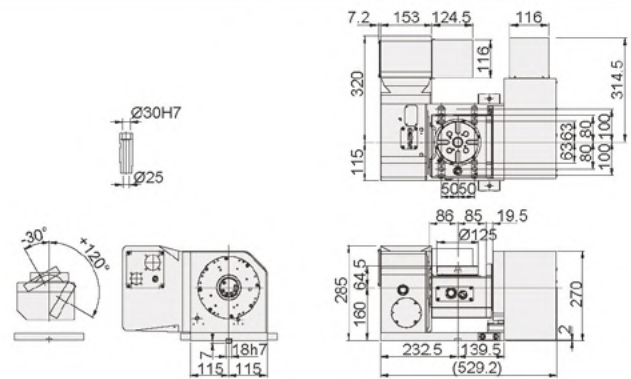
Note: R: Rotary Axis T: Tilt Axis

DIMENSIONAL DRAWINGS

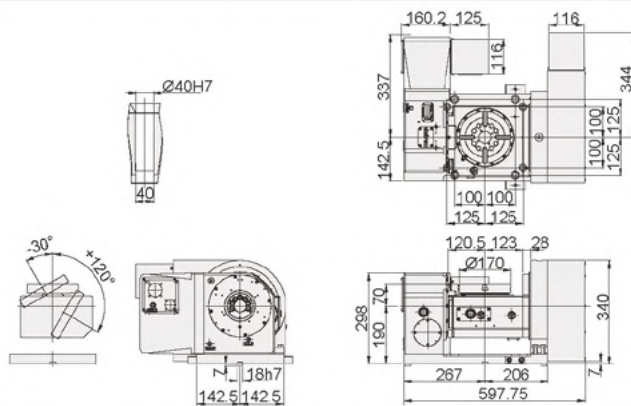
GFA-101S



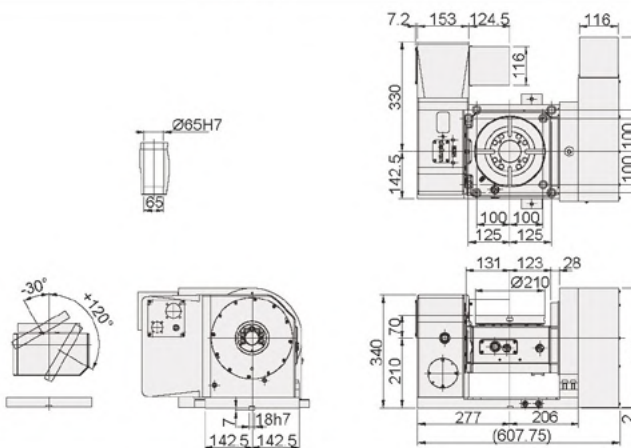
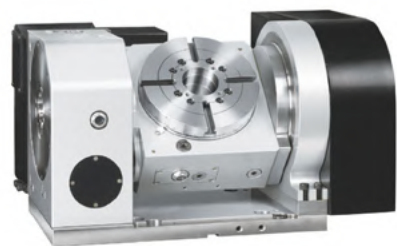
GFA-125S



GFA-170S



GFA-210S

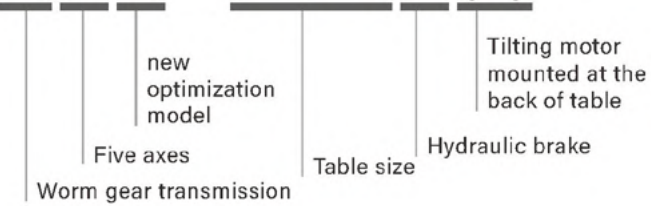


Note: 1. The length of servo guard may vary with servo motor type. (the metal sheet dimensions shown at above are based on Fanuc motor)
2. Allowable wheel torque at table speed of 1 min⁻¹.
3. According to application engineering, optical encoder is recommended for tilting axis.

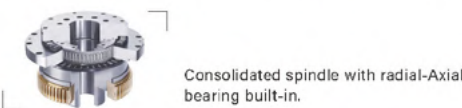
GFA-H/HB series

CNC Tilting Rotary Table

GFA - 255H(B)



- Worktable diameter Ø255, Ø320.
- The hydraulic brake equipped with radial and axial bearings.(P.18)
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)



SPECIFICATIONS

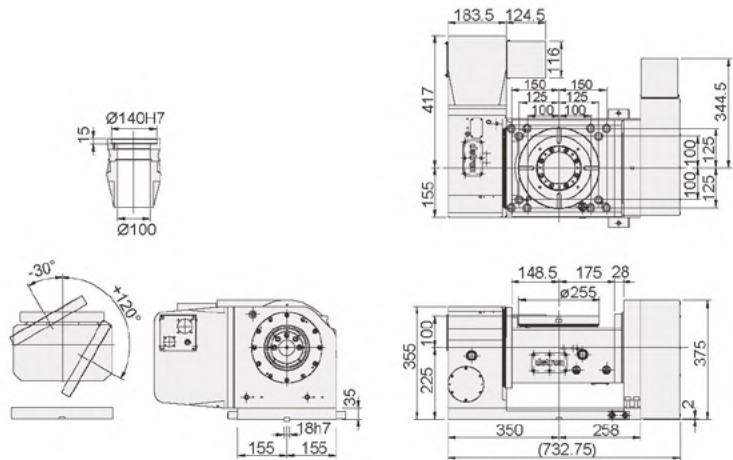
MODEL		Unit	GFA-255H/HB		GFA-320H	
Worktable diameter		mm / inch	Ø255 / Ø10.04		Ø320 / Ø12.60	
Center bore diameter		mm / inch	Ø140H7 / Ø5.51H7		Ø180H7 / Ø7.09H7	
Height of table (horizontal)		mm / inch	325 / 12.8		355 / 13.98	
Height of center (vertical)		mm / inch	225 / 8.86		255 / 10.04	
Width of T-slot		mm / inch	12H7 / 0.47H7		14H7 / 0.55H7	
Width of guide block		mm / inch	18 / 0.71		18 / 0.71	
Clamping method /pressure		MPa / psi	Hydraulic 5 / 725.0		Hydraulic 5 / 725.0	
Servo motor spec		refer to page 69				
Transmission ratio			R	T	R	T
			1:90	1:120	1:120	1:120
Max. table speed		min ⁻¹	22.2	16.6	22.2	16.6
Allowable loading capacity	In Horizontal 	kg / lb	120 / 264		200 / 440	
	In Tilting (0~90°) 	kg / lb	90 / 166.33		150 / 330	
Allowable unblancing work moment	WxL 	Nm /ft. lbs.	92 / 68		130 / 95.8	
Allowable load (when table clamped)	F 	N / lbs	16000 / 3590.40		20000 / 4488.0	
	FxL 	Nm /ft. lbs.	900 / 663.8		1600 / 1179.2	
	FxL 	Nm /ft. lbs.	900 / 663.8		1600 / 1179.2	
Allowable loading inertia	($\frac{WD^2}{8}$) 	kg.m ²	0.98		2.6	
Resolution		deg.	0.001		0.001	
Indexing accuracy		sec	15"	50"	15"	50"
Repeatability		sec	6"	8"	6"	8"
Tilting angle range		deg.	-30 ~ +120		-30 ~ +120	
Net weight (servo motor excluded)		Kg / lb	320 / 704 347 / 765		470 / 1037	
Allowable cutting torque		Nm /ft. lbs.	370 / 272.9		780 / 569.4	
Allowable Max. rotary joint quantity		Port	6 / 6		6	

Note: R: Rotary Axis T: Tilt Axis

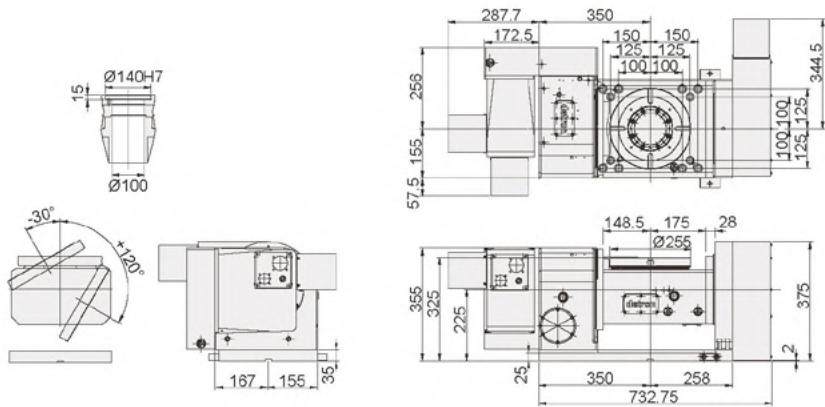
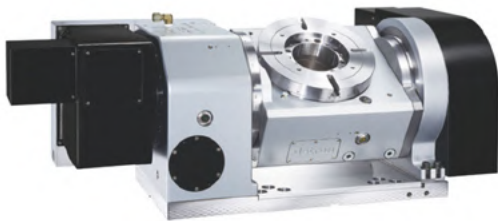
DIMENSIONAL DRAWINGS

Unit : mm

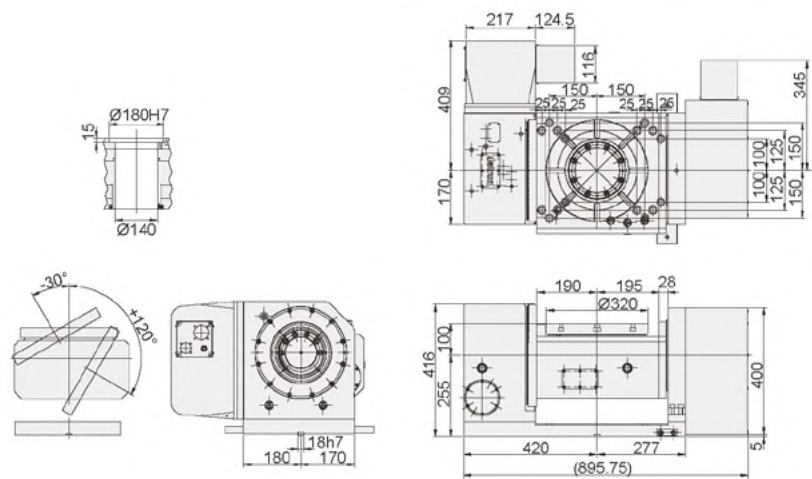
GFA-255H



GFA-255HB



GFA-320H



- Note: 1. The length of servo guard may vary with servo motor type. (the metal sheet dimensions shown at above are based on Fanuc motor)
2. Allowable wheel torque at table speed of 1 min⁻¹.
3. According to application engineering, optical encoder is recommended for tilting axis.

CNC Trunnion Tilting Rotary Table

GTFAE-410XB

- Flat supplemental base for standard 3 axis M/C
- new optimization model
- Five axis
- Trunnion type for lower gravity
- Worm gear transmission
- Tilting motor mounted at the back of table
- X hydraulic clamp by air booster converter built-in
- S superior pneumatic clamp
- H hydraulic brake



- Worktable diameter Ø210, Ø320, Ø410, Ø500.
- The hydraulic brake equipped with radial and axial bearings.(P.18)
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)
- Built-in air-booster for appointed models.



Option type, motor mounted at the front side



customized base available according to demand

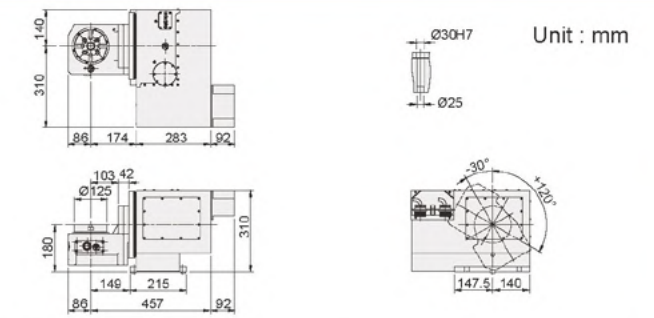
SPECIFICATIONS

MODEL	Unit	GTFAE-125S	GTFAE-210S	GTFAE-320XB/H	GTFAE-410XB	GTFAE-500XB
Worktable diameter	mm / inch	Ø125 / Ø4.92	Ø210 / Ø8.27	Ø320 / Ø12.60	Ø410 / Ø16.14	Ø500 / Ø19.69
Center bore diameter	mm / inch	Ø30H7 / Ø1.18H7	Ø40H7 / Ø1.57H7	Ø50H7 / Ø1.97H7	Ø70H7 / Ø2.76H7	Ø70H7 / Ø2.76H7
Height of table (horizontal)	mm / inch	180 / 7.09	375 / 14.76	365 / 14.37 317 / 12.48	411 / 16.18	460 / 18.11
Height of center (vertical)	mm / inch	180 / 7.09	375 / 14.76	365 / 14.37 317 / 12.48	411 / 16.18	460 / 18.11
Width of T-slot	mm / inch	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7	14H7 / 0.55H7	14H7 / 0.55H7
Clamping method /pressure	MPa / psi	*P: 0.5~0.6 / 72.5~87	*P: 0.55~0.7 / 79.7~101.5	*P: 0.6~0.7 / 87~101.5 *H: 5/725	*P: 0.6~0.7 / 87~101.5	*P: 0.6~0.7 / 87~101.5
Servo motor spec		refer to page 69				
Transmission ratio		R: 1:60 T: 1:90	R: 1:90 T: 1:90	R: 1:100 T: 1:120	R: 1:120 T: 1:150	R: 1:120 T: 1:180
Max. table speed	min ⁻¹	33.3 22.2	33.3 22.2	25 16.6	16.6 11.1	16.6 11.1
Allowable loading capacity	In Horizontal In Tilting (0~90°)	kg / lb kg / lb	30 / 66 70 / 154.3	100 / 220 100 / 220	200 / 440 150 / 330	300 / 660 250 / 550
Allowable unbalancing work moment	WxL	Nm / ft. lbs.	27 / 19.91 53 / 39.06	100 / 73.70 100 / 73.70	200 / 147.40 200 / 147.40	300 / 221.0 300 / 221.0
Allowable load (when table clamped)	F FxL FxL	N / lbs. Nm / ft. lbs. Nm / ft. lbs.	2800 / 629.5 140 / 103.26 900 / 663.8	14000 / 3141.60 400 / 295 600 / 442.48	16000 / 3590.40 750 / 553.17 1500 / 1106.25	20000 / 4488.0 1600 / 1180 2000 / 1475
Allowable loading inertia	(W _D ² / 8)	kg.m ²	0.06 0.55 2.6	0.001 0.001 0.001	0.001 0.001 0.001	0.001 0.001 0.001
Resolution	deg.	0.001	0.001	0.001	0.001	0.001
Indexing accuracy	sec	40" 60"	20" 60"	20" 60"	15" 60"	15" 60"
Repeatability	sec	6" 8"	6" 8"	6" 8"	6" 8"	6" 8"
Tilting angle range	deg.	-30 ~ +120	-120 ~ +30	-120 ~ +30	-120 ~ +30	-120 ~ +30
Net weight (servo motor excluded)	kg / lb	142 / 312.4	455 / 1001	700 / 1540 610 / 1342	940 / 2068.0	1270 / 2794
Allowable cutting torque	Nm / ft. lbs.	85 / 62.69	260 / 191.6	550 / 401.5	780 / 569.4	1700 / 1241
Allowable Max. rotary joint quantity	Port	-	4	6	6	6

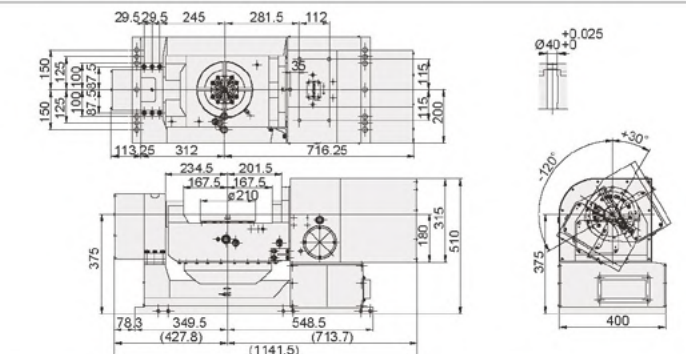
Note: 1. P: Pneumatic H: Hydraulic R: Rotary Axis T: Tilt Axis

DIMENSIONAL DRAWINGS

GTFAE-125S



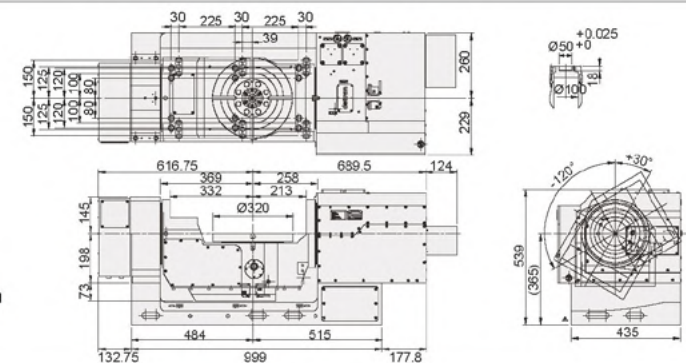
GTFAE-210S



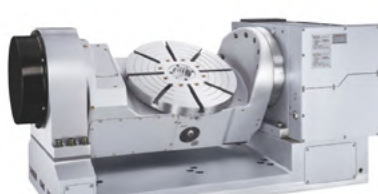
GTFAE-320XB



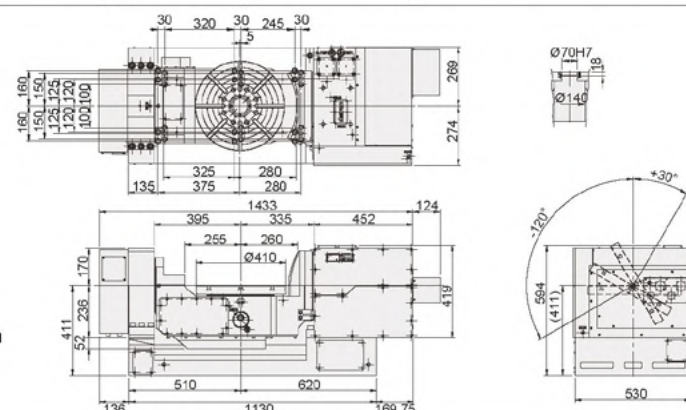
air-oil converter built-in



GTFAE-410XB



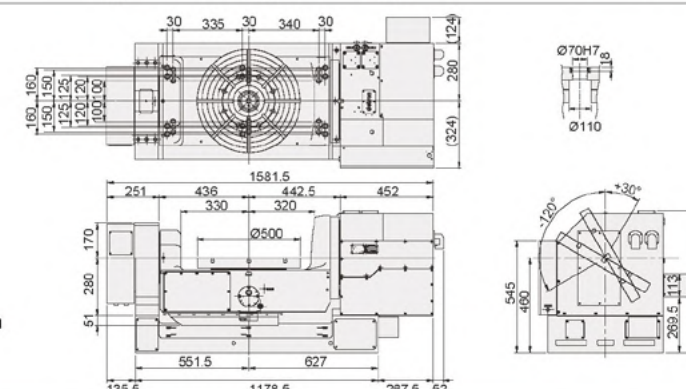
air-oil converter built-in



GTFAE-500XB



air-oil converter built-in



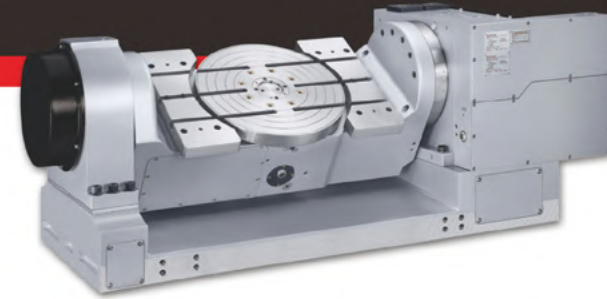
- Note: 1. The length of servo guard may vary with servo motor type. (the metal sheet dimensions shown at above are based on Fanuc motor)
 2. Allowable wheel torque at table speed of 1 min⁻¹.
 3. According to application engineering, optical encoder is recommended for tilting axis.
 4. Customized table Ø630mm and dual drive at tilting axis are available.

GTFAE-L(S) series

CNC Trunnion Tilting Rotary Table

GTFAE-410XBL(S)

- Flat supplemental base for standard 3 axis M/C
- new optimization model
- Five axis Trunnion type for lower gravity
- Worm gear transmission
- with sub-table enlarged swing scope
- Tilting motor mounted at the back of table
- X hydraulic clamp by air booster converter built-in
- S superior pneumatic clamp
- H hydraulic brake
- Table size



- Worktable diameter, Ø255, Ø320, Ø410, Ø500.
- The hydraulic brake equipped with radial and axial bearings.(P.18)
- Full gear depth transmitted by dual lead worm drive, resulting in higher efficiency and lower backlash.(P.20)
- Enlarged swing to allow more working envelope.
- Sub- table available as "S" model.



▲ GTFAE-410HL(S) with tilting axial motor at front.

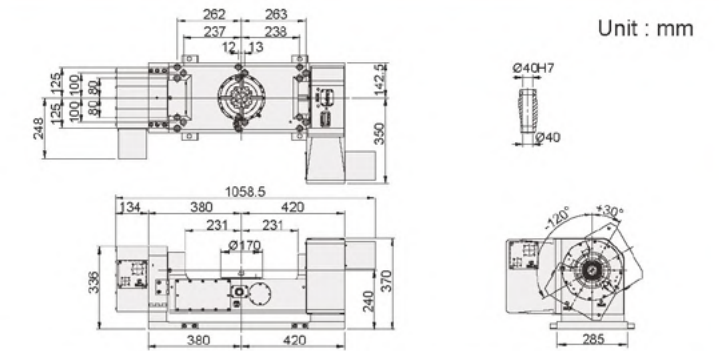
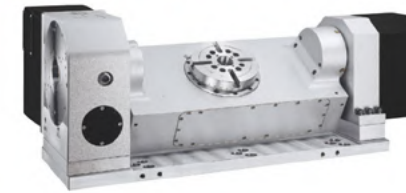
SPECIFICATIONS

MODEL		Unit	GTFAE-170SL		GTFAE-255SBL(S)		GTFAE-320XBL(S)		GTFAE-410XBL(S) / HL(S)		GTFAE-500XBL		
Worktable diameter		mm / inch	Ø170 / Ø6.69		Ø255 / Ø10.455		Ø320 / Ø12.60		Ø410 / Ø16.14		Ø500 / Ø19.69		
Center bore diameter		mm / inch	Ø40H7 / Ø1.57H7		Ø65H7 / Ø2.56H7		Ø50H7 / Ø1.97H7		Ø70H7 / Ø2.76H7		Ø70H7 / Ø2.76H7		
Height of table (horizontal)		mm / inch	240 / 9.45		360 / 14.17		365 / 14.37		411 / 16.18 370 / 14.57		460 / 18.11		
Height of center (vertical)		mm / inch	240 / 9.45		360 / 14.17		365 / 14.37		411 / 16.18 370 / 14.57		460 / 18.11		
Width of T-slot		mm / inch	12H7 / 0.47H7		12H7 / 0.47H7		12H7 / 0.47H7		14H7 / 0.55H7		14H7 / 0.55H7		
Clamping method /pressure		MPa / psi	P: 0.55~0.7 / 72.5~101.5		*P:0.55~0.7/ 72.5~101.5		*P: 0.6~0.7/ 87~101.5		*P:0.6~0.7/87~101.5 *H:5/725		*P: 0.6~0.7/ 87~101.5		
Servo motor spec			refer to page 69										
Transmission ratio			R	T	R	T	R	T	R	T	HL(S)	R	T
			1/90	1/90	1:90	1:120	1:100	1:120	1:120	1:120	1:150 1:120	1:120	1:180
Max. table speed		min ⁻¹	22.2	22.2	22.2	16.6	25	16.6	16.6	11.1		16.6	11.1
Allowable loading capacity	In Horizontal 	kg / lb	75 / 165		100 / 220		200 / 440		200 / 440		300 / 660		
	In Tilting (0~90°) 	kg / lb	50 / 110		75 / 165		100 / 220		150 / 330		250 / 550		
Allowable unblancing work moment	WxL 	Nm /ft. lbs.	40 / 29.5		53 / 39.06		100 / 73.7		200 / 147.40		300 / 221.0		
Allowable load (when table clamped)	F 	N / lbs	7000 / 1570.8		20000 / 4488.0		20000 / 4488.0		20000 / 4488.0		30000 / 6732.0		
	FxL 	Nm /ft. lbs.	300 / 221		400 / 295		750 / 553.17		1600 / 1180		2500 / 1843.75		
	FxL 	N.mNm /ft. lbs.	400 / 294.7		600 / 442.48		1500 / 1106.25		2000 / 1475		3000 / 2212.5		
Allowable loading inertia	$\frac{WD^2}{8}$ 	kg.m ²	0.28		0.55		2.6		4.3		9.6		
Resolution		deg.	0.001		0.001		0.001		0.001		0.001		
Indexing accuracy		sec	20"	60"	20"	60"	20"	60"	15"	60"	15"	60"	
Repeatability		sec	6"	8"	6"	8"	6"	8"	6"	8"	6"	8"	
Tilting angle range		deg.	-120 ~ +30		-120 ~ +30		-120 ~ +30		-120 ~ +30		-120 ~ +30		
Net weight (servo motor excluded)		kg / lb	275 / 606.3		560 / 1235		750 / 1653		1020 / 2175 850 / 1860		1270 / 2800		
Allowable cutting torque		Nm /ft. lbs.	200 / 147.4		250 / 182.5		550 / 401.5		780 / 569.4		1700 / 1241		
Allowable Max. rotary joint quantity		Port	-		4		6		6		6		

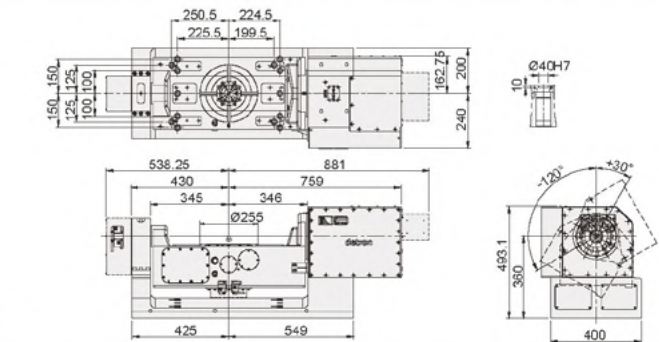
Note: P: Pneumatic H: Hydraulic R: Rotary Axis T: Tilt Axis

DIMENSIONAL DRAWINGS

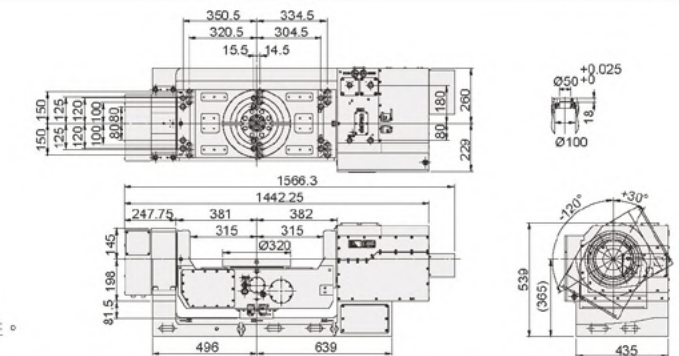
GTFAE-170SL



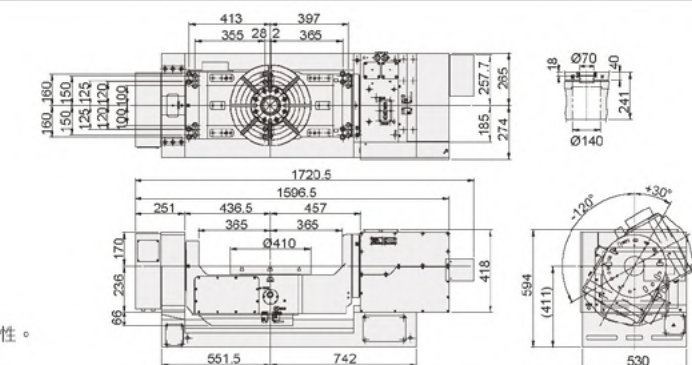
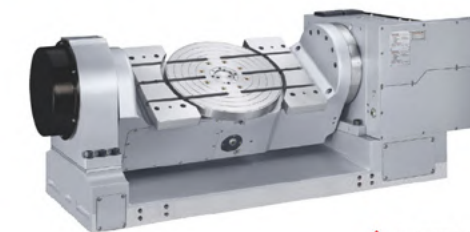
GTFAE-255SBL(S)



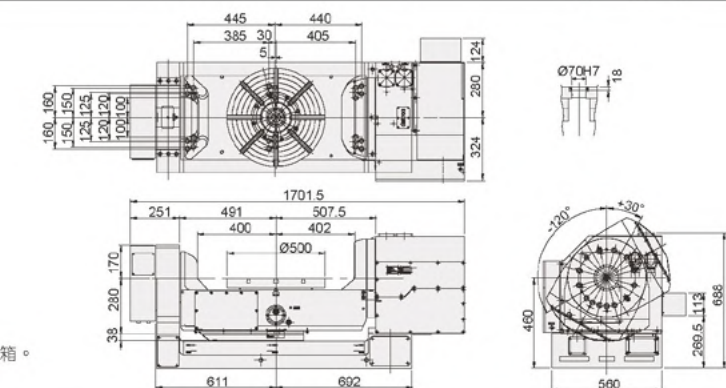
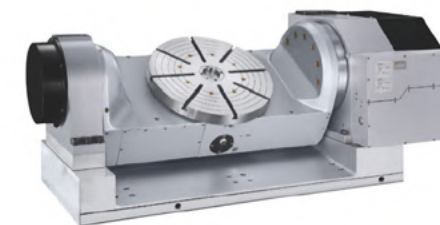
GTFAE-320XBL(S)



GTFAE-410XBL(S)



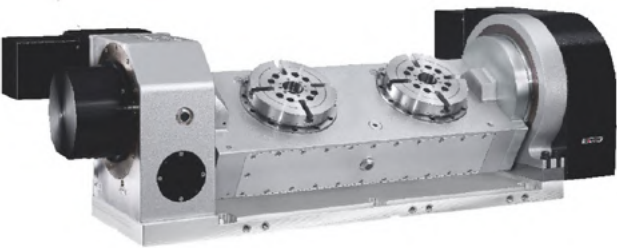
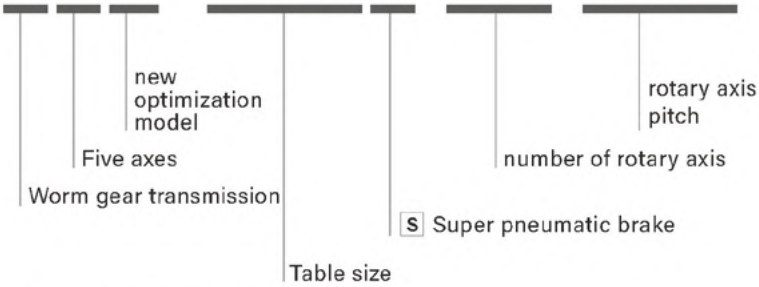
GTFAE-500XBL



- Note: 1. The length of servo guard may vary with servo motor type. (the metal sheet dimensions shown at above are based on Fanuc motor)
 2. Allowable wheel torque at table speed of 1 min⁻¹.
 3. According to application engineering, optical encoder is recommended for tilting axis.
 4. Customized table Ø630mm and dual drive at tilting axis are available.

Multi Spindle
Tilting Rotary Table

G F A - 1 7 0 S - 2 W - 3 0 0



Worktable diameter Ø125, Ø170
Multiple rotary axis allow high volume production and automation integration.

SPECIFICATIONS

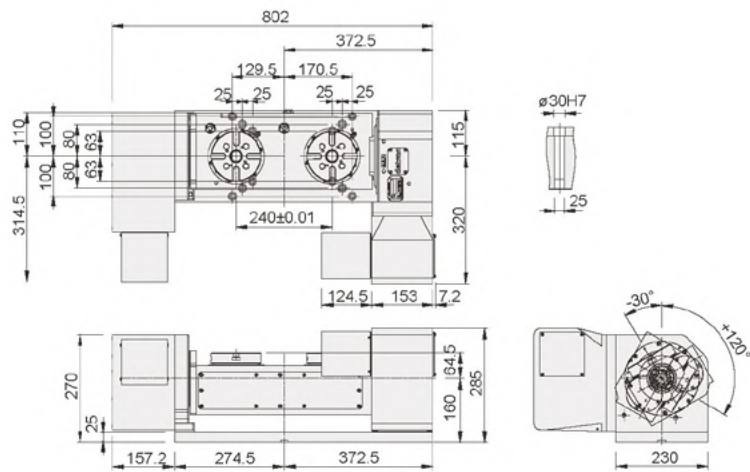
MODEL		Unit	GFA-125S-2W-240		GFA-170S-2W-300	
Worktable diameter		mm / inch	Ø125 / Ø4.92		Ø170 / Ø6.69	
Center bore diameter		mm / inch	Ø30H7 / Ø1.18H7		Ø40H7 / Ø1.57H7	
Pitch of rotary axis		mm / inch	240 / 9.45		300 / 11.81	
Max. work swing		mm / inch	195 / 7.68		285 / 11.22	
Height of table (horizontal)		mm / inch	224.5 / 8.84		250 / 9.84	
Height of center (vertical)		mm / inch	160 / 6.30		220 / 8.66	
Width of T-slot		mm / inch	12H7 / 0.47H7		12H7 / 0.47H7	
Width of guide block		mm / inch	18 / 0.71		18 / 0.71	
Drive pressure / method		MPa / psi	Pneumatic 0.55~0.7 / 79.8~101.5		Pneumatic 0.55~0.7 / 79.8~101.5	
Servo motor spec			refer to page 69			
Transmission ratio			R	T	R	T
			1/90	1/90	1/90	1/90
Max. table speed		min ⁻¹	22.2	22.2	25	22.2
Allowable loading capacity	In Horizontal 	kg / lb	35 / 77		40 / 88	
	In Tilting (0~90°) 	kg / lb	20 / 44		30 / 66	
Allowable unblancing work moment	WxL 	Nm /ft. lbs.	24 / 17.688		62 / 45.728	
Allowable load (when table clamped)	F 	N / lbs	2800 / 629.5		4900 / 1102	
	FxL 	Nm /ft. lbs.	140 / 103.26		300 / 221.26	
	FxL 	Nm /ft. lbs.	300 / 221		600 / 442.5	
Allowable loading inertia	$(\frac{WD^2}{8})$ 	kg.m ²	0.1		0.15	
Resolution		sec	0.001		0.001	
Indexing accuracy		sec	40"	60"	20"	60"
Repeatability		sec	6"	8"	6"	8"
Tilting angle range		deg.	-30 ~ +120		-30 ~ +120	
Net weight (servo motor excluded)		Kg/lbs	172 / 379		222 / 489	
Allowable cutting torque		Nm /ft. lbs.	85 / 62.645		200 / 147.512	

Note: R: Rotary Axis T: Tilt Axis

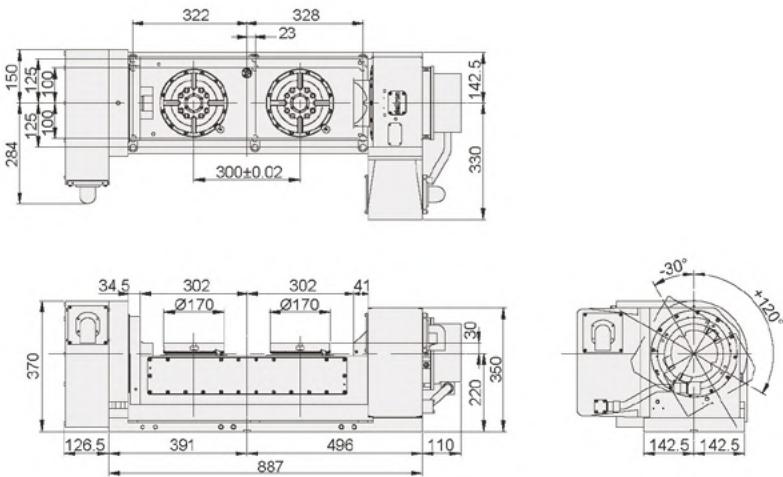
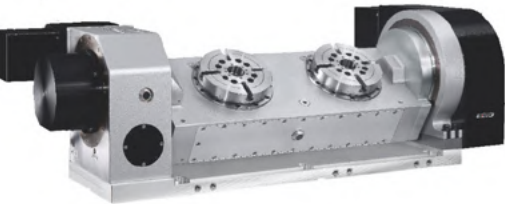
DIMENSIONAL DRAWINGS

Unit : mm

GFA-125S-2W-240



GFA-170S-2W-300



Note: 1. The length of servo guard may vary with servo motor type. (the metal sheet dimensions shown at above are based on Fanuc motor)
2. Allowable wheel torque at table speed of 1 min⁻¹.
3. According to application engineering, optical encoder is recommended for tilting axis.

GFA-2W/3W series

Multi Spindle
Tilting Rotary Table

G T F A E - 2 1 0 S - 2 W - 3 2 0

Flat supplemental base for standard 3 axis M/C

new optimization model

Five axes

Trunnion type for lower gravity

Worm gear transmission

rotary axis pitch

number of rotary axis

H hydraulic brake

S Super pneumatic brake

Table size



Worktable diameter Ø125, Ø210, Ø255
Multiple rotary axis allow high volume production and automation integration.

SPECIFICATIONS

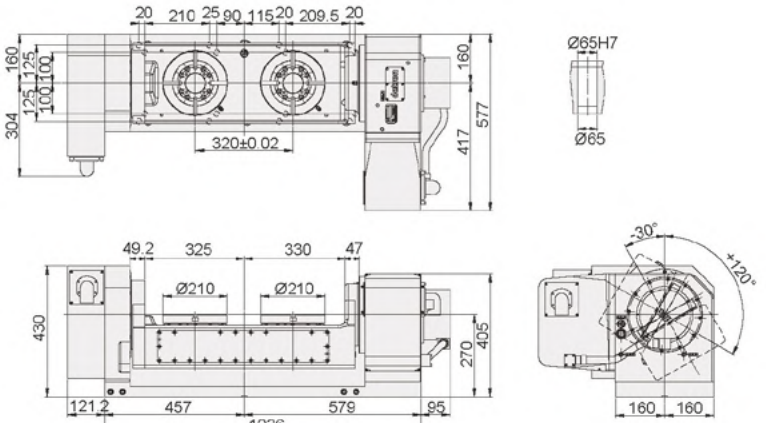
MODEL		Unit	GTFAE-210S-2W-320		GTFAE-255H-2W-400	
Worktable diameter		mm / inch	Ø210 / Ø8.27		Ø255 / Ø10.04	
Center bore diameter		mm / inch	Ø40H7 / Ø1.57H7		Ø40H7 / Ø1.57H7	
Pitch of rotary axis		mm / inch	320 / 12.60		400 / 15.75	
Max. work swing		mm / inch	310 / 12.20		390 / 15.35	
Height of table (horizontal)		mm / inch	270 / 10.63		370 / 14.57	
Height of center (vertical)		mm / inch	270 / 10.63		370 / 14.57	
Width of T-slot		mm / inch	12H7 / 0.47H7		12H7 / 0.47H7	
Width of guide block		mm / inch	18 / 0.71		18 / 0.71	
Drive pressure / method		MPa / psi	Pneumatic 0.55~0.7 / 79.8~101.5		Hydraulic 5 / 725.0	
Servo motor spec		refer to page 69				
Transmission ratio			R	T	R	T
			1/90	1/120	1/90	1/120
Max. table speed		min ⁻¹	25	22.2	20	16.2
Allowable loading capacity	In Horizontal 	kg / lb	50 / 110		100 / 220	
	In Tilting (0~90°) 	kg / lb	35 / 77		75 / 165	
Allowable unblancing work moment	WxL 	Nm /ft. lbs.	92 / 68		130 / 95.8	
Allowable load (when table clamped)	F 	N / lbs	9800 / 2203		11000 / 2473	
	FxL 	Nm /ft. lbs.	400 / 295		900 / 663.8	
	FxL 	Nm /ft. lbs.	900 / 663.8		2500 / 1843	
Allowable loading inertia	$(\frac{WD^2}{8})$ 	kg.m ²	0.22		0.8	
Resolution		sec	0.001		0.001	
Indexing accuracy		sec	20"	60"	20"	60"
Repeatability		sec	6"	8"	6"	8"
Tilting angle range		deg.	-30 ~ +120		-30 ~ +120	
Net weight (servo motor excluded)		Kg/lbs	440 / 970		856 / 1887	
Allowable cutting torque		Nm /ft. lbs.	250 / 184		550 / 405	

Note: R: Rotary Axis T: Tilt Axis

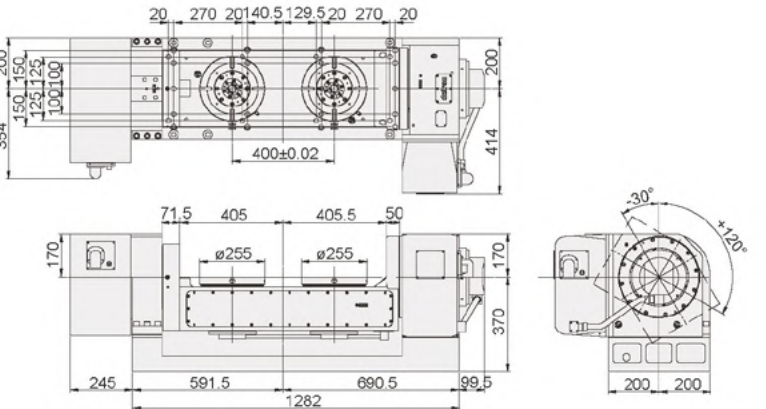
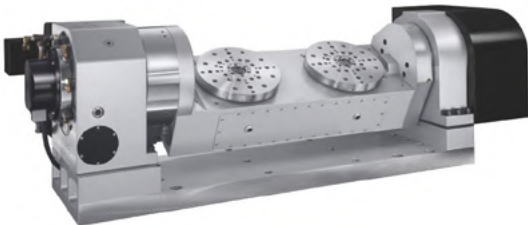
DIMENSIONAL DRAWINGS

Unit : mm

GTFAE-210S-2W-320

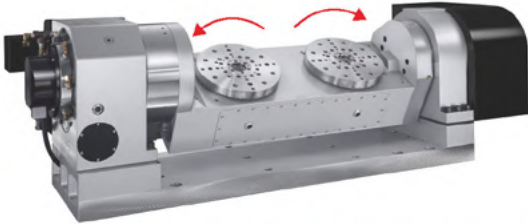


GTFAE-255H-2W-400



Hybrid Drive ▶▶▶

GTFAE-255H-2WS-400



Individual rotations on each axis.

GDTF-500HB-2W-600



Rotary axis by DDM for 50rpm.
Tilting axis by worm wheel transmission.

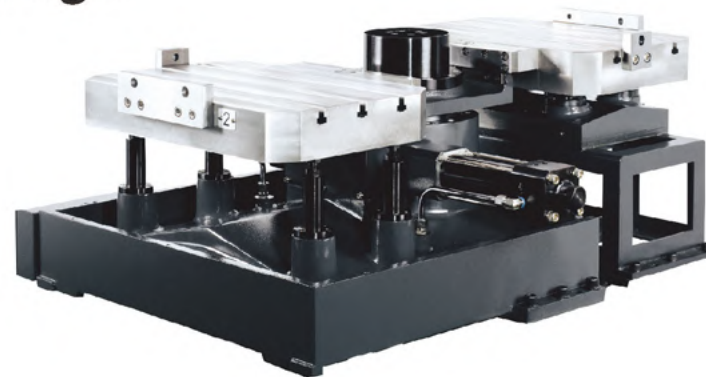
Note: 1. The length of servo guard may vary with servo motor type. (the metal sheet dimensions shown at above are based on Fanuc motor)
2. Allowable wheel torque at table speed of 1 min⁻¹.
3. According to application engineering, optical encoder is recommended for tilting axis.

Automatic Pallet Change System

C V R - 6 6 0

Rack type	Pallet size
-----------	-------------

Double pallet system (C type)



- **EASY INSTALLATION:** The pallet change device is directly mounted on the base. Easy to install and space saving.
- **FLEXIBLE PRODUCTION:** Available to equip with several tables to meet small lot flexible production requirements.
- **GREAT LOADING CAPACITY:** Hydraulic drive. Workpiece loading capacity up to 300kg x 2 pcs.
- **HIGH REPEATABILITY:** Employs high precision conical positioning blocks to ensure stability of table and repeatability in $\pm 0.005\text{mm}$.

SPECIFICATIONS

MODEL		Unit	CVR-660	CVR-850	CVR-10D
Pallet sizes		mm / inch	660 x 500 / 25.98 x 19.69	850 x 500 / 33.46 x 19.69	1000 x 500 / 39.37 x 19.69
Number of pallets			2	2	2
Pallet change method			180° Swing	180° Swing	180° Swing
T-slot size		mm / inch	14H8 / 0.55H8	18H8 / 0.71H8	18H8 / 0.71H8
Drive method /pressure		MPa / psi	Hydraulic 6 / 870	Hydraulic 6 / 870	Hydraulic 6 / 870
Pallet clamping force		N / lbs	36850 / 8269.14	36850 / 8269.14	36850 / 8269.14
Cutting load resistant capacity		Nm /ft. lbs.	2940 / 2166.78	2940 / 2166.78	2940 / 2166.78
Pallet positioning method			Taper cone	Taper cone	Taper cone
Allowable loading capacity		Kg / lb	200 x 2 / 440 x 2	300 x 2 / 660 x 2	300 x 2 / 660 x 2
Allowable loading inertia		kg.m ²	7.5 x 2	7.5 x 2	7.5 x 2
Lifting force		N / lbs	35280 / 7916.83	35280 / 7916.83	35280 / 7916.83
Weight(N.W.)	Pallet exchange mechanism	Kg / lb	550 / 1210	550 / 1210	550 / 1210
	Pallet	Kg / lb	170x2 / 375x2	190 x 2 / 418 x 2	220 x 2 / 418 x 2
	Sub-pallet	Kg / lb	105 / 231	105 / 231	105 / 231

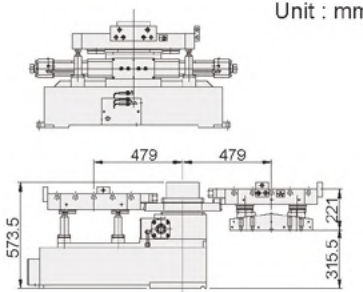
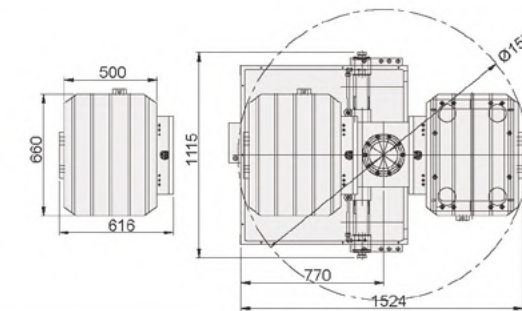
NOTE: 1. Pallet change time may varied with flow of pump, length and diameter of pipe.

- Allowable loading inertia means the allowable value at the distance of 450mm between the loading gravity and the APC center.

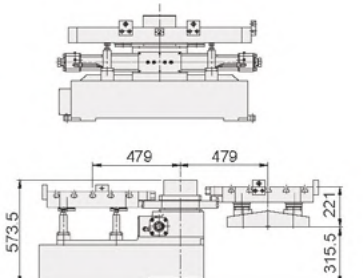
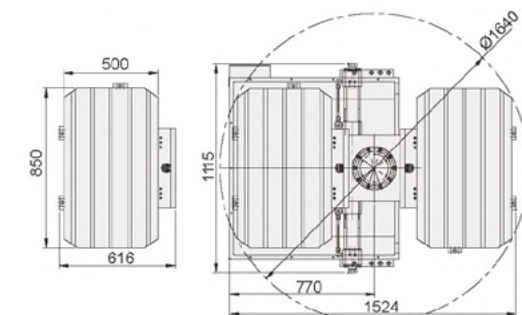
DIMENSIONAL DRAWINGS

Unit : mm

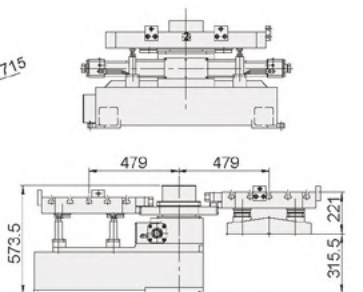
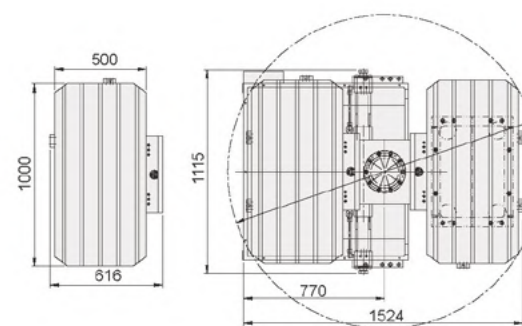
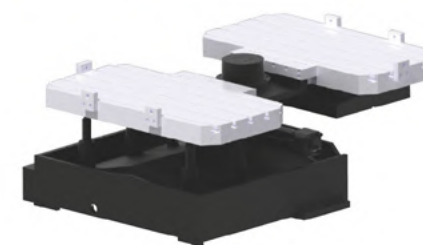
CVR-660



CVR-850



CVR-10D



SVC series

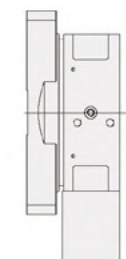
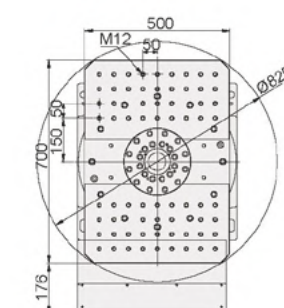
SVC - 7050 II

Roller gear
cam type

Pallet size

Single pallet system (Column moving type)

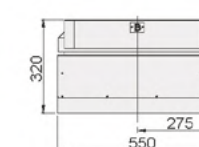
- Roller cam transmission perform backlash free without wear-out and stabilizes fast pallet change.
- Applied for machining center with column movable. Change cycle in 3.5 sec.
- Driven by servo motor with encoder for accurate positioning.



With flat structure

SVC-7050 II

SVC-10065 II



Core Technology — Barrel Cam



- Zero-Backlash

Patented barrel cam structure



- Zero Wear-Out

Rolling contact to eliminate wear-out



- High Rigidity

Bigger cam follower carrier under pre-loading process to achieves high rigidity



- Outstanding Precision

High repeatability accuracy clockwise and counter-clockwise



- High Torque Output

Act radius larger than other regular roller gear, resulting in 20% higher torque output



- High Speed

Maximum rotation speed 83.3rpm (servo motor 2500rpm)

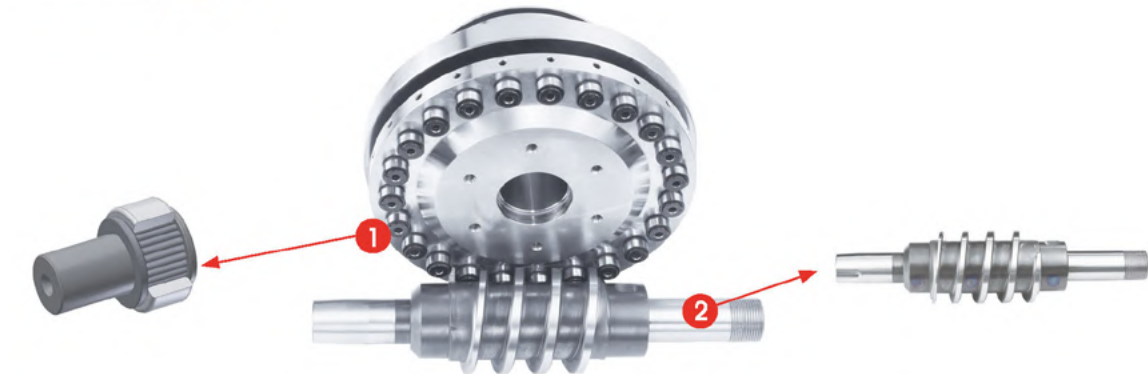


- High Clamping Force

Double insured hydraulic brake system ensures high clamping force

RGX Core Technology

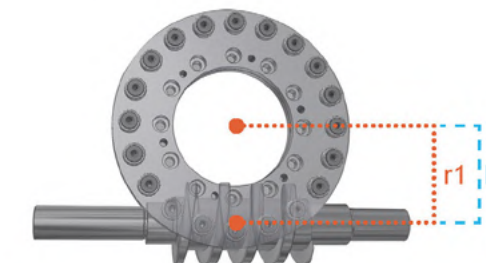
Zero-Backlash



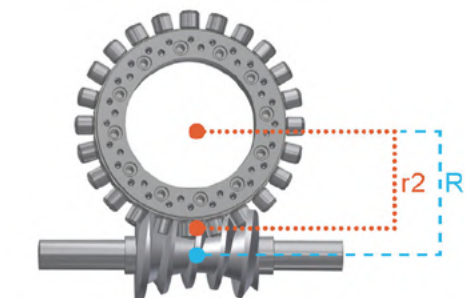
▲ The pre-loading process between cam follower carrier and cam with variable lead (shown as ①) can eliminate the backlash with the cam shaft (shown as ②) and approach extraordinary high precision.

High Torque

Barrel Cam Mechanism



Roller Cam Mechanism

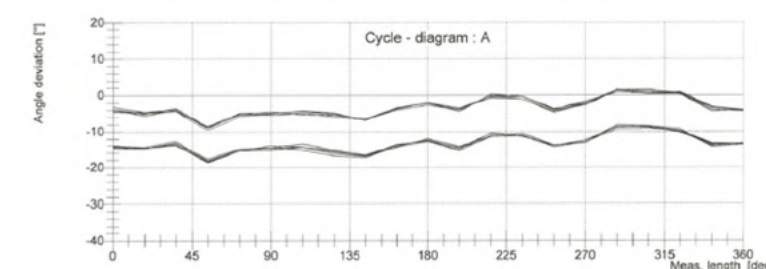


▲ By equal center distance R, detron RGX act radius r1 is larger than regular roller gear act radius r2, resulting the torque output performance 20% higher than other roller gear. Least geometry error and high precision.

Strict Inspection Norm

detron

ISO 230-2 Norm (equal to JIS B 6192)



◀ Accuracy Inspection upon ISO 230-2 international norm is operated with 5 continuous runs in clockwise and counterclockwise test.

RGX170/210/255: by 18 degree measurement
RGX320H: by 30 degree measurement

Barrel Cam Drive 4 Axis

RGX-170X RGX-210X
RGX-255H RGX-320H

RGX - 210X

H Hydraulic brake
X Hydraulic clamp by air
booster built in

table diameter

vertical & horizontal application

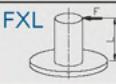
barrel cam drive

- Rolling contact reserves high rigidity, high speed and long endurance.
- Least drive energy wear- out and more than 90% transmission rate.
- Backlash-free from rolling motion achieves high accuracy.
- RGX170/210X built-in air booster system assures more superior clamping force (additional hydraulic tank not required).



RGX-250XII

SPECIFICATIONS

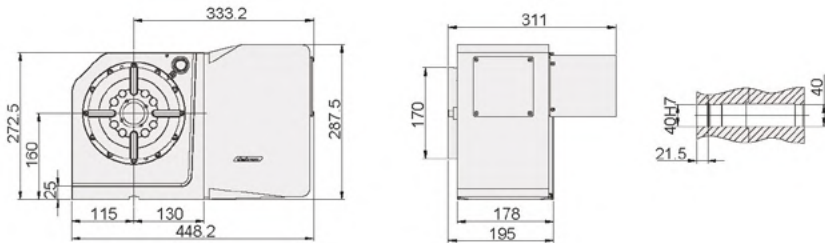
MODEL		Unit	RGX-170XII	RGX-210XII RGX-250XII	RGX-255X	RGX-320HII
Worktable diameter		mm / inch	Ø170 / Ø6.69	Ø210 / Ø8.27 Ø255 / Ø10.04	Ø255 / Ø10.04	Ø320 / Ø12.6
Center bore diameter		mm / inch	Ø40H7 / Ø1.57H7	Ø40H7	Ø140H7 / Ø5.51H7	Ø180H7 / Ø7.08H7
Through-bore diameter		mm / inch	Ø40 / Ø1.57	Ø40 / Ø1.57	Ø90 / Ø3.54	Ø140 / Ø5.51
Height of table (horizontal)		mm / inch	195 / 7.68	195 / 7.68 210 / 8.27	230 / 9.06	255 / 10.04
Height of center (vertical)		mm / inch	160 / 6.30	160 / 6.30	190 / 7.49	210 / 8.27
Width of T-slot		mm / inch	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7	12H7 / 0.47H7
Width of guide block		mm / inch	18 / 0.71	18 / 0.71	18 / 0.71	18 / 0.71
Clamping method /pressure		MPa / psi	Pneumatic 0.6~0.7 / 87~101.5	Pneumatic 0.6~0.7 / 87~101.5	Hydraulic 5 / 725	Hydraulic 5 / 725
Clamping torque		Nm /ft. lbs.	420 / 310	420 / 310 340 / 251	900 / 664	1600 / 1180
Servo motor spec		refer to page 69				
Transmission ratio			1 / 30	1 / 30	1 / 60	1 / 60
Max. table speed		min	83.3	83.3	50	40
Standard loading inertia	$(\frac{WD^2}{8})$	Kg.m	0.72	0.72 / 0.54	2.43	5.12
Resolution		deg.	0.001	0.001	0.001	0.001
Indexing accuracy		sec.	20	20	20	20
Repeatability		sec.	6	6	6	6
Net weight (servo motor excluded)		kg / lb	72 / 159	75 / 165 82 / 181	126 / 278	200 / 441
Allowable loading capacity	Vertical	kg / lb	100 / 220	100 / 220 75 / 165	150 / 331	200 / 441
	Horizontal	kg / lb	200 / 441	200 / 441 150 / 331	300 / 661	400 / 882
	Tailstock applied	kg / lb	200 / 441	200 / 441 150 / 331	300 / 661	400 / 882
Allowable load (when table clamped)		N / lbs	14000 / 3141.6	14000 / 3141.6	20000 / 4488	28000 / 6283.2
		Nm /ft. lbs.	1020 / 752	1020 / 752	1700 / 1254	3000 / 2213
		Nm /ft. lbs.	420 / 310	420 / 310	900 / 664	1600 / 1180
Cam allowable torque		Nm /ft. lbs.	417 / 307	417 / 307	917 / 676	1480 / 1091
Allowable Max. rotary joint quantity		Port	4	4	6	6



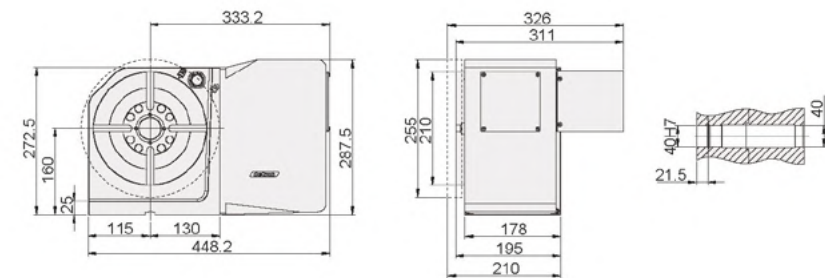
DIMENSIONAL DRAWINGS

Unit : mm

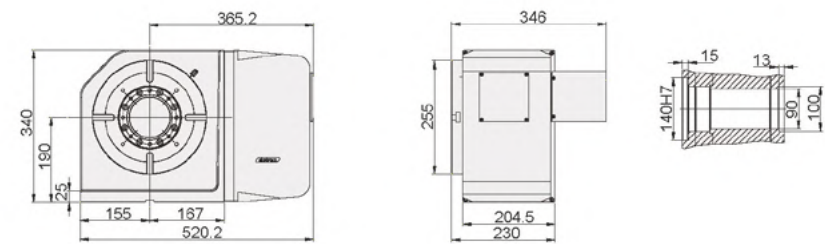
RGX-170XII



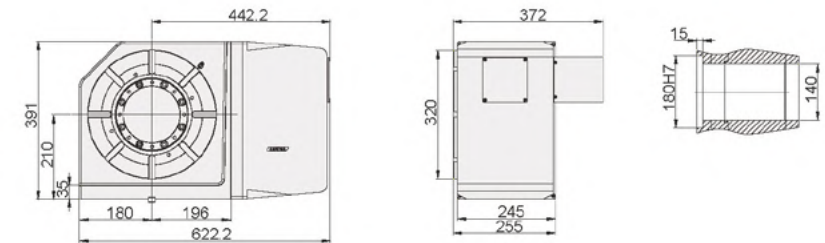
RGX-210XII / RGX-250XII



RGX-255H

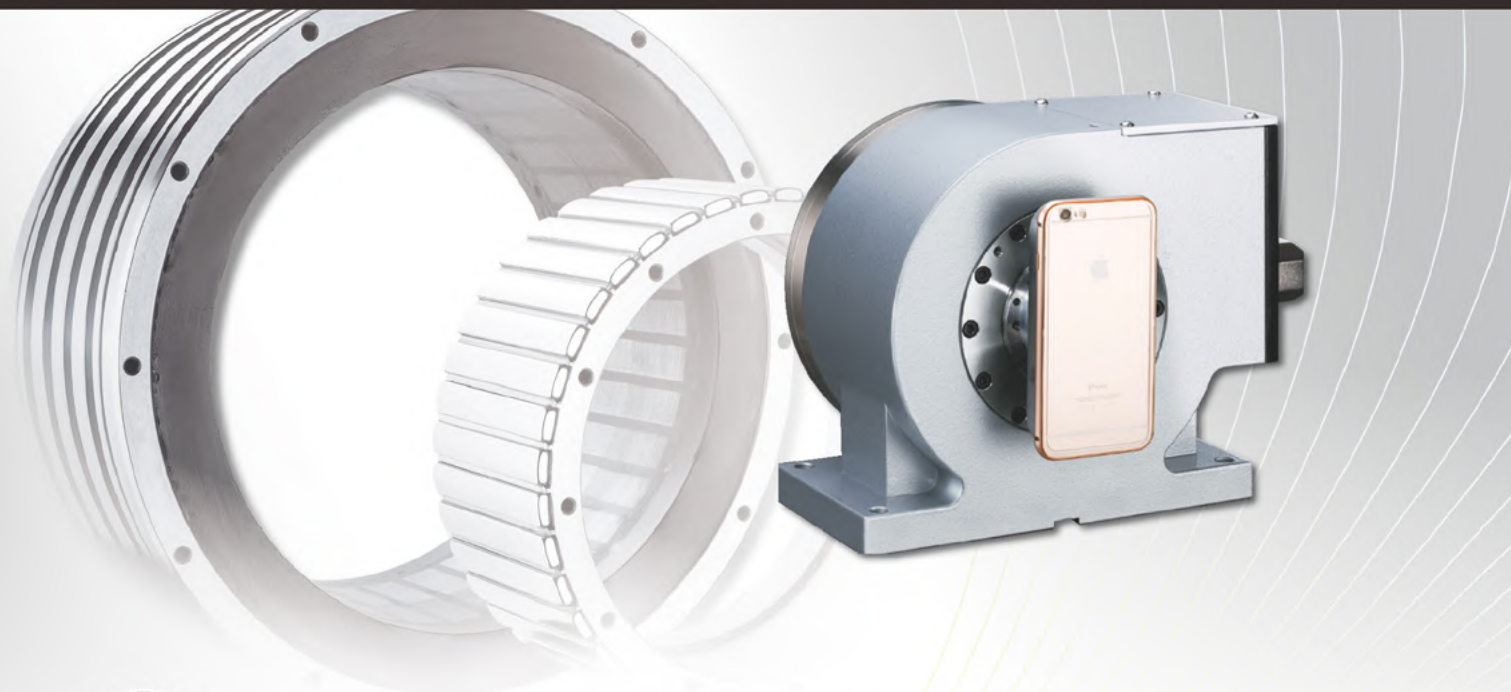


RGX-320HII



Note: 1. The length of servo guard may vary with servo motor type. (metal sheet dimensions shown above are based on Fanuc motor)
Brake system must remain CLAMP status when power failure happens, otherwise, it may cause the dropping of the rotary table under different situations of the facilities and work pieces.

Core Technology — Built- in Torque Motor for Direct Drive



Speed

- Built-in torque motor for direct drive, max speed 250rpm.
- Super low inertia, high efficient gain loop response.
- High acceleration and deceleration, 0- 180 degree positioning in 0.2 sec.



Precision

- Zero backlash, mechanical wear-free and least friction.
- High- end European optical encoder as standard equipment.
- Excellent accuracy guarantee- 20 sec for positioning, 4 sec for repeatability
- ISO 230-2 norm applied as standard inspection.



Rigidity

- Consolidated main body, all mounting interface are integrated onto the cartridge. Premium rigidity retained.



Protection

- IP65 water proof with European adherent electrical connection.
- Thermal detection as standard feature.
- Safe parts holding design during power failure.



Environmental

- Noise- reducing, easy maintenance, free from oil waste.
- Compact structure for flexible working envelope.

Core Technology — High Speed and Precision

Higher Speed and Torque Performance

Table Ø 170mm model as example

detron

Torque at Peak	201.5 N-m ↑
Rated Continuous Torque	60 N-m ↑
Continuous Power Output	0.968 KW ↑
Max Speed	250 ↑

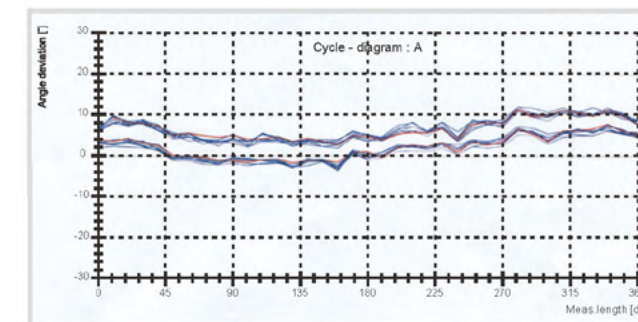
others

Torque at Peak	184 N-m ↓
Rated Continuous Torque	46 N-m ↓
Continuous Power Output	0.75 KW ↓
Max Speed	200 ↓

Strict Inspection Norm

detron

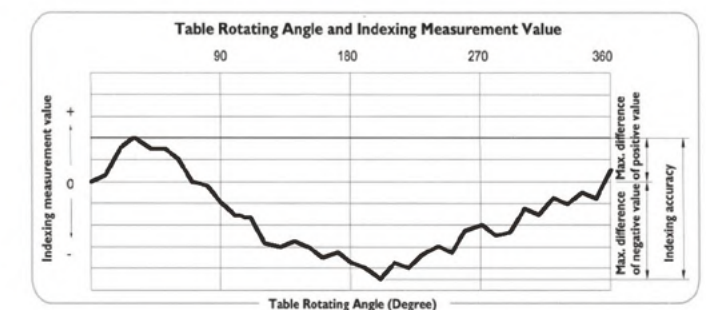
ISO 230-2 (JIS B6192)



Accuracy Inspection upon ISO 230-2 international norm is operated with **5 continuous runs** in clockwise and counterclockwise test.

others

JIS B6330



Simplified inspection norm without number of laps indicated.

European High End Optical Encoder Applied

detron

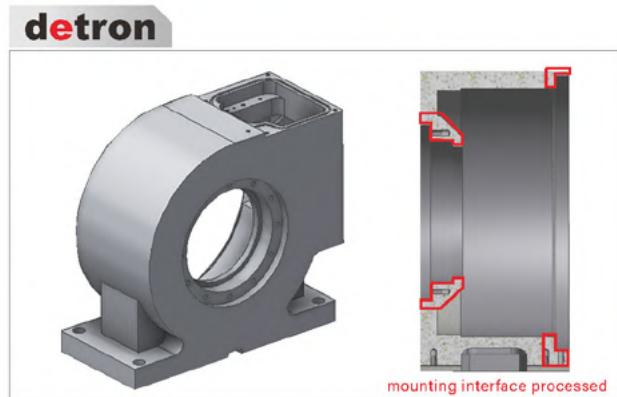


Heidenhain or Renishaw are standard attachment for all detron DDM series. High resolution to ± 2.5 secs.

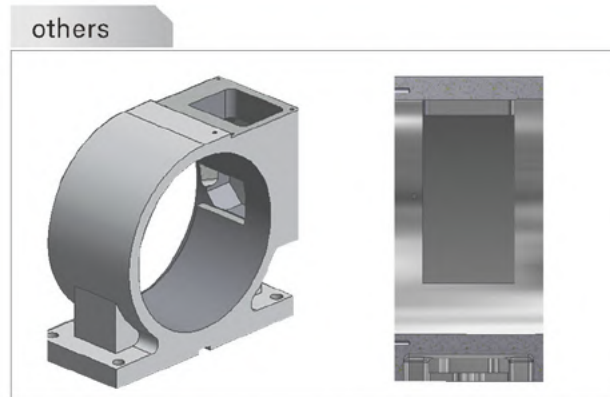
others

Economic encoder of ± 10 secs is applied, non- CNC purpose application.

Main Cartridge Structure



- Consolidated main cartridge with spindle mounting interface reserved.
- Least isolated components, accumulated error reduced.
- Excellent rigidity dynamic balance while high speed operation, low inertia and run-out concern.
- Closer distance between optical encoder and bearing for higher positioning detection.

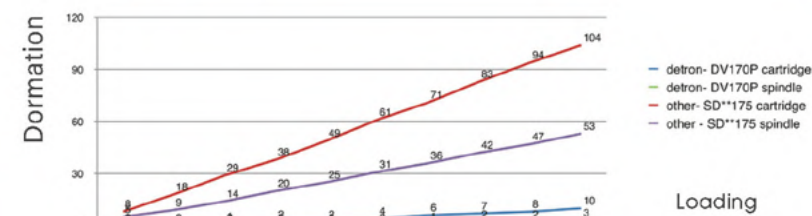


- Weak and hollow cartridge without mounting interface reserved. Spindle is installed by isolated flanges.
- Isolated parts caused more accumulated errors.
- Instable rigidity and deformation, mass inertia, low loading capability. Not recommended for high speed processing.
- Longer distance between encoder and bearing, positioning detection is limited.

practical test



Rigidity Experiment Analysis

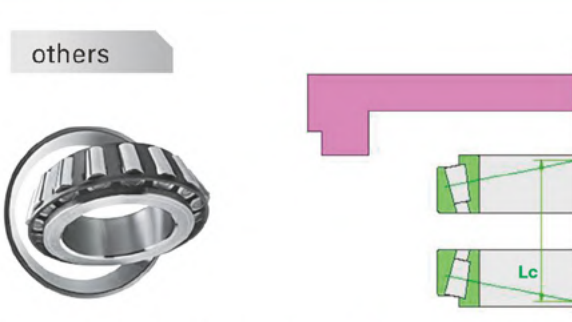


Spindle Bearing



Cross Roller Bearing moment L_b is longer than L_c , better loading performance.

Cross roller bearing with high capability of axial and radial loading. Better moment to ensure dynamic rigidity.



Taper Roller Bearing moment L_c is shorter than L_b , lower loading capacity.

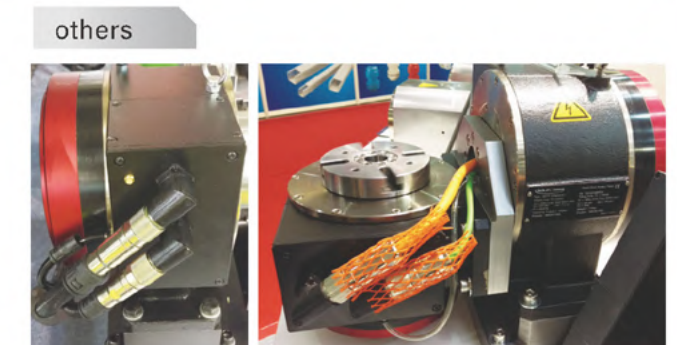
Low cost taper roller bearing, poor moment and less loading effect.

Guarantee for Thorough Protection

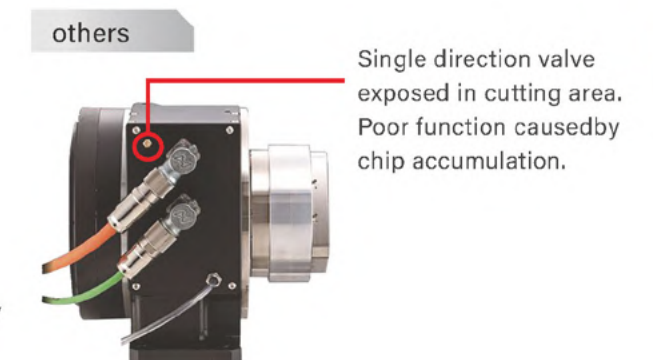
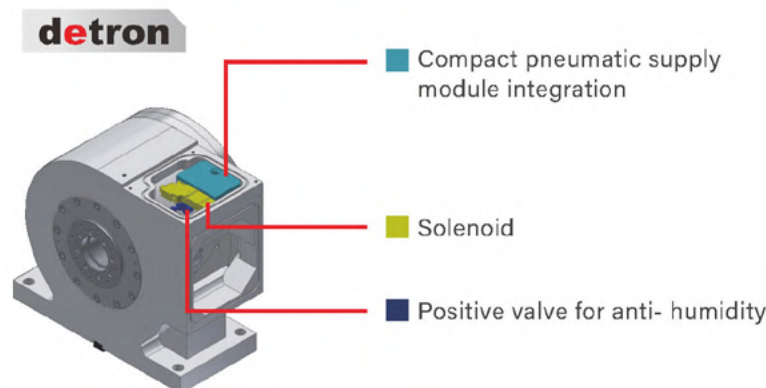
Chip and Water Proof



- European adherent connector guarantees safe water proof, signal/ power cable/ pneumatic tube are all integrated in 1 compact pipeline.
- All cables are shielded by anti- erosion pipe and the outer lattice prevents breakage by cutting chips.



- Cables terminated in low cost plug connectors. Isolated electronic and pneumatic pipelines are randomly arranged.
- Poor pipe material. Erosion and chip cut concern on nylon pipes. High risk by frequent break-down.



Brake in Various Condition

Table in Operation

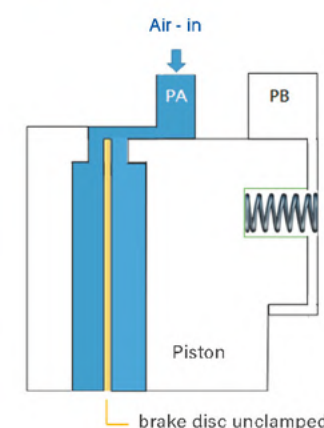
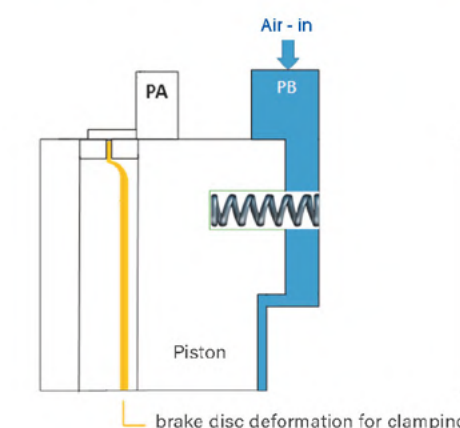
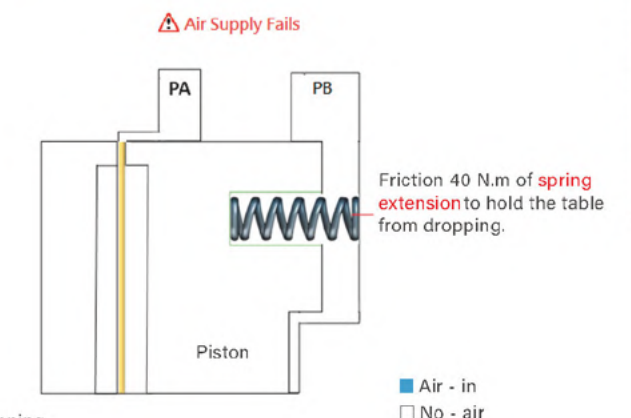


Table Positions



Power Failure



DDM Rotary Table

D V - 1 7 0 P

Table size P Pneumatic
V Vertical application
DDM direct drive (torque motor)



equipped with optional table with T-slot

- Rotation speed exceeds 250 min-1, excellent speed and efficiency for mass production.
- Low inertia- no gears or belts drive in direct drive system, resulting in lower inertia and greater acceleration / deceleration.
- Equipped with high precision encoder to achieve high precision positioning.
- Backlash-free transmission improves workpiece accuracy and surface roughness.
- Direct drive features reach zero-wear.

SPECIFICATIONS

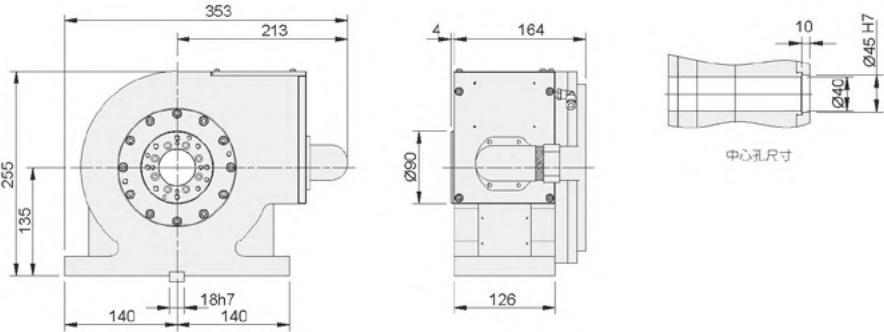
MODEL		Unit	DV-170P	DV-255PII
Worktable diameter		mm / inch	STD : No table OPT : Ø170 / Ø6.69	STD : No table OPT : Ø255 / Ø10.04
Center bore diameter		mm / inch	Ø45H7 / Ø1.77H7 / OPT : Ø45H7 / Ø1.77H7	Ø65g6 / Ø2.55g6 / OPT : Ø50H7 / Ø1.96H7
Through-bore diameter		mm / inch	Ø40 / Ø1.57	Ø40 / Ø1.57
Height of center (vertical)		mm / inch	135 / 5.31	160 / 6.3
Width of T-slot		mm / inch	12H7 / 0.47H7	12H7 / 0.47H7
Width of guide block		mm / inch	18 / 0.71	18 / 0.71
Clamping method and pressure		MPa / psi	Pneumatic 0.6 ~ 0.7 / 87 ~ 101.5	Pneumatic 0.5 ~ 0.7 / 72.5 ~ 101.5
Clamping torque		Nm / ft. lbs.	230 / 169.51	400 / 294.8
Transmission Method			Direct Drive	Direct Drive
Max. table speed		min ⁻¹	250	250
Allowable loading capacity	Vertical	Kg / lb	30 / 66	75 / 165
	Horizontal	Kg / lb	-	-
	Tailstock applied	Kg / lb	70 / 154	150 / 330
Allowable cutting force (while braking)		N / lbs	12700 / 2849.88	14000 / 3141.6
		Nm / ft. lbs.	740 / 540.2	1020 / 751.74
		Nm / ft. lbs.	230 / 169.51	400 / 294.8
Allowable cutting torque		Nm / ft. lbs.	60 / 44.22	70 / 51.6
Allowable loading inertia (WD²/8)		Kg.m²	0.11	0.61
Resolution		deg.	0.001	0.001
Indexing accuracy		sec.	20	20
Repeatability		sec.	4	4
Net weight (motor incl.)		Kg / lb	47 / 104	70 / 154
Cooling system			Air cooling	Air cooling

Remark*:1.Torque motor (Direct Drive motor) can be chosen based on customers' control system.
2.Index accuracy will be different depending on encoder type revised.

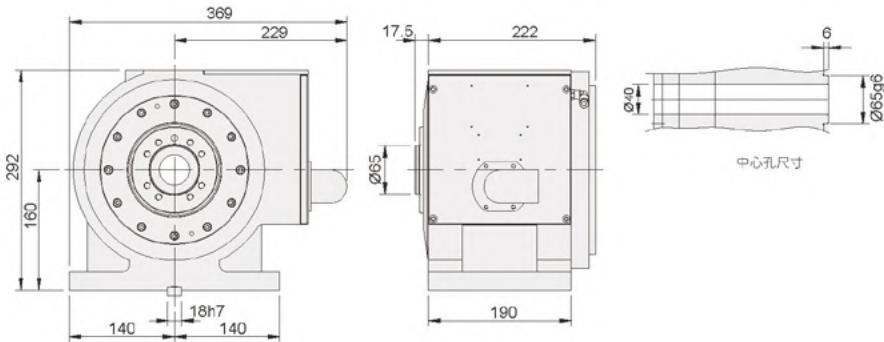
DIMENSIONAL DRAWINGS

Unit : mm

DV-170P



DV-255PII



Application Example



▲ 90° degree dividers



▲ Customized interface of quick change mold , EROWA as example

for VMC_DDM series

DDM Trunnion
Tilting Rotary Table

DTFS - 170P

S

E

Five axes

DDM direct drive (torque motor)

Single support Flat

Supplemental Base for standard 3 axis M/C

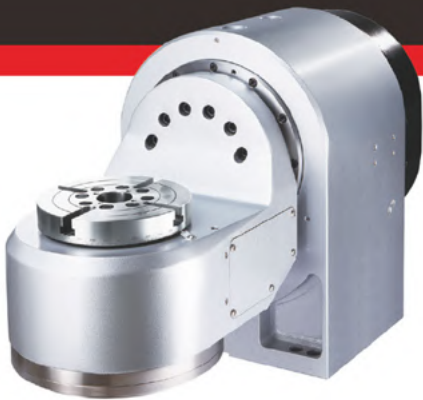
P

H

Pneumatic Hydraulic brake

Table size

Low Gravity Design



High Speed – The average rotation speed of a normal rotary table is 22.2 RPM. Whereas DDM Rotary Table runs at speeds exceeding 100RPM. Hence this is suitable for high speed turning and cutting applications.

High Precision – Direct drive design is without the normal worm gear transmission. Hence, there is no backlash and mechanical errors. This guarantees very high positional accuracy and repeatability.

Superior Surface Finish - No Backlash, No Abrasion & Low Inertia – No gears or belts in direct drive system ensures superior surface finish.

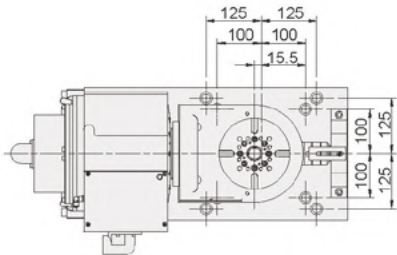
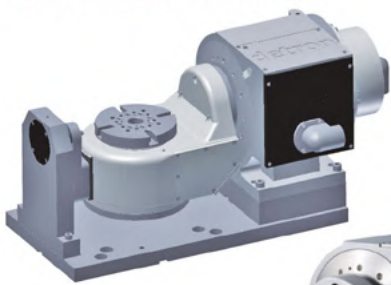
SPECIFICATIONS

MODEL		Unit	DTFS-125P / DTFE-125P		DTFS-170P / DTFE-170P / DTFE-171P	
Worktable diameter		mm / inch	Ø160 / Ø6.29		Ø170 / Ø6.69	
Center bore diameter		mm / inch	Ø30H7 / Ø1.18H7		Ø40H7 / Ø1.57H7	
Height of table (horizontal)		mm / inch	210 / 8 240 / 9		280 / 11 310 / 12	
Height of center (vertical)		mm / inch	210 / 8		280 / 11	
Width of T-slot		mm / inch	12H7 / 0.47H7		12H7 / 0.47H7	
Width of guide block		mm / inch	18 / 0.71		18 / 0.71	
Clamping method / pressure		MPa / psi	pneumatic 0.6~0.7 / 87~101.5		pneumatic 0.6~0.7 / 87~101.5	
Max. table speed		min ⁻¹	R	T	R	T
			200	50	250	100
Allowable loading capacity	In Horizontal	kg / lb	20 / 44.10		30 / 66.14	
	In Tilting (0~90°)	kg / lb	20 / 44.10		30 / 66.14	
Allowable unblancing work moment	WxL	Nm / ft. lbs.	6.4 / 4.72		30 / 14.74	
Allowable cutting force (while braking)	F	N / lbs	9700 / 2180.6		12700 / 2855.07	
	FxL	Nm / ft. lbs.	100 / 73.76		230 / 169.64	
	FxL	Nm / ft. lbs.	400 / 295.02		400 / 295.02	
Allowable loading inertia	($\frac{WD^2}{8}$)	kg.m ²	0.05		0.12	
Resolution		deg.	0.001		0.001	
Indexing accuracy		sec	20	30	20	30
Repeatability		sec	4	4	4	4
Tilting angle range		deg.	+30 ~ -120		+30 ~ -120	
Net weight (motor incl.)		kg / lb	DTFS-125P: 105 / 231.49 DTFE-125P: 226 / 498.24		DTFS-170P: 215 / 474 DTFE-170P: 296 / 652.56 DTFE-171P: 336 / 740.75	
Cooling system			Air cooling		DTFE-171P: Oil cooling DTFE-170P / DTFS-170P: Air cooling	

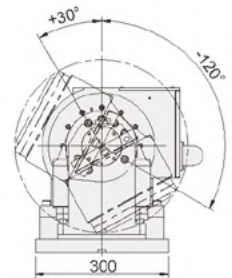
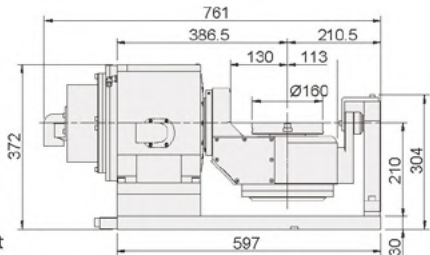
Remark* : 1. Oil cooling device shall be connected and shared from the basic 3 axis standard machine.
2. Air cooling device is not allowed for continuous cutting.

DIMENSIONAL DRAWINGS

DTFE-125P with base plate

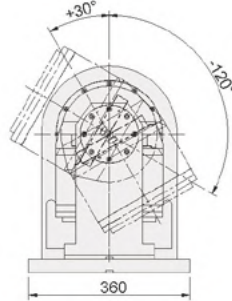
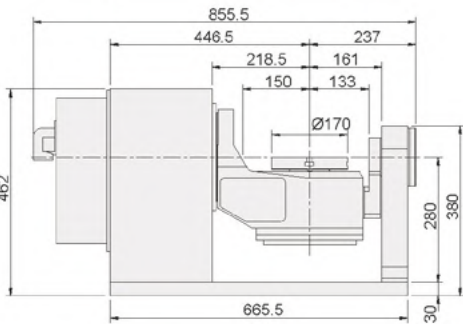
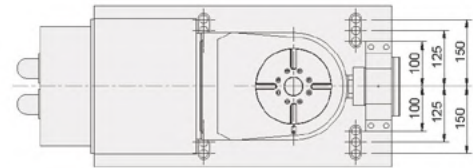
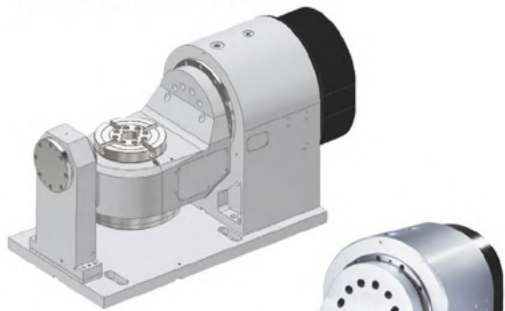


Unit : mm



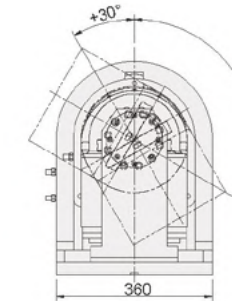
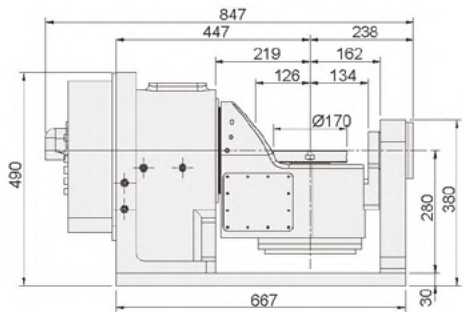
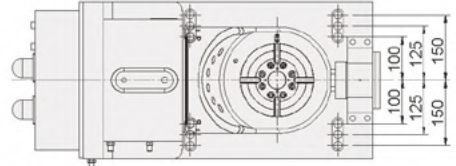
DTFS-125P with compact single support

DTFE-170P with base plate



DTFS-170P with compact single support is recommended model for multiple faces positioning application

DTFE-171P



for VMC_DDM series

DDM Trunnion
Tilting Rotary Table

DTFA(I)-650(E)H(C)

refer to
Ramark-2

new
optimization
model

Five axes

Low Gravity Design

DDM direct drive
(torque motor)

Cable set with
cable carrier (Opt.)

Hydraulic brake

Enlarged worktable dia. (Opt.)

Table size



▲ Machine base supplied by buyer

- High Speed – The average rotation speed of a normal rotary table is 22.2 RPM. Whereas DDM Rotary Table runs at speeds exceeding 100RPM. Hence this is suitable for high speed turning and cutting applications.
- High Precision – Direct drive design is without the normal worm gear transmission. Hence, there is no backlash and mechanical errors. This guarantees very high positional accuracy and repeatability.
- Superior Surface Finish – No Backlash, No Abrasion & Low Inertia – No gears or belts in direct drive system ensures superior surface finish.

SPECIFICATIONS

MODEL		Unit	DTF-280P		DTFAI-650H / DTFAI-720EH	
Worktable diameter		mm / inch	Ø280 / Ø11.02		Ø650 / Ø25.59 / Ø720 / Ø28.34	
Center bore diameter		mm / inch	—		Ø70H7 / Ø2.76H7	
Height of table		mm / inch	200 / 7.87		250 / 9.84	
Width of T-slot		mm / inch	12H7 / 0.47H7		18H7 / 0.71H7	
Width of guide block		mm / inch	—		-	
Clamping method / pressure		MPa / psi	R	T	hydraulic 4 / 580	
			pneumatic 0.6~0.7 / 87~101.5	pneumatic 0.4 / 58.0		
Max. table speed		min ⁻¹	R	T	R	T
			1500	150	100	50
Allowable loading capacity	In Horizontal 	kg / lb	60 / 132.28		300 / 661.39	
	In Tilting (0~90°) 	kg / lb	60 / 132.28		300 / 661.39	
Allowable unblanching work moment	WxL 	Nm / ft. lbs.	60 / 44.25		300 / 221.27	
Allowable load (when table clamped)	F 	N / lbs	18000 / 4046.56		40000 / 8992.36	
	FxL 	Nm / ft. lbs.	250 / 184.39		2500 / 1843.91	
	FxL 	Nm / ft. lbs.	550 / 405.66		4500 / 3319.03	
Allowable loading inertia	$\frac{WD^2}{8}$ 	kg.m ²	0.22		9.4	
Resolution		deg.	0.001		0.001	
Indexing accuracy		sec	20	30	10	20
Repeatability		sec	4	4	4	4
Tilting angle range		deg.	+30~-120		+110 ~ -110	
Net weight (motor incl.)		kg / lb	432 / 952.39		1450 / 3196.7 / 1500 / 3306.9	
Cooling system			Oil cooling		Oil cooling	

Remark*: 1. Oil cooling device shall be connected and shared from the basic 3 axis standard machine.
2. DTFA: Rotary table mounted on M/C base. DTF-720EH: Tilting axis mounted inside of MC column.

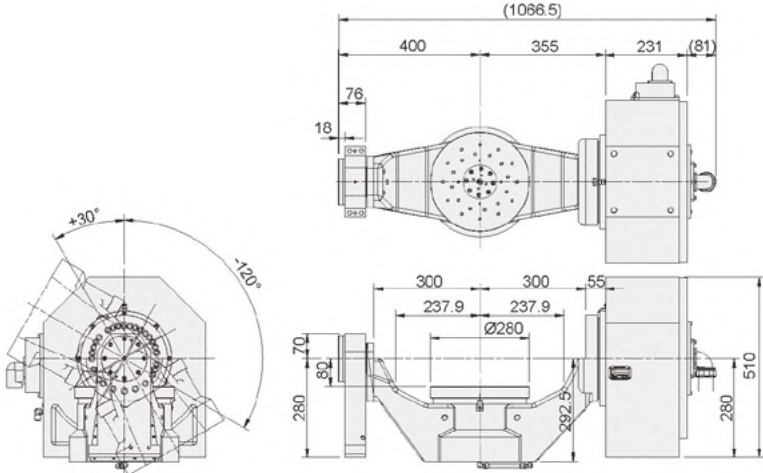
DIMENSIONAL DRAWINGS

Unit : mm

DTF-280P



Machine base supplied by buyer

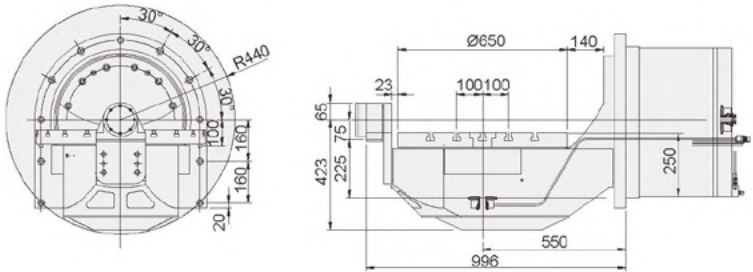


DTFAI-650H



▲ DTFAI-720EH

Machine base supplied by buyer



Hybrid Drive▶▶▶

DTF-410H



Rotary Axis – DDM (100rpm)
Tilting Axis – DDM (60rpm)

G2DTF-630H(S)

Dual Drive CNC Deep Tilting Rotary Table
(Max. table size 800mm)



Rotary Axis - DDM (80rpm, option 800rpm)
Tilting Axis - Tandem drive by spur gear and worm gear

NC Integration for Detron DDM series

DDM Rotary Table

Compatible System & Spec.	detron DD 4th Axis Rotary Table	
	DV-170P	DV-255PII
Cooling System	Air Cooling	
Optical Scale	Renishaw or Heideihain	
NC parameter	Exclusive tech of detron	
Fanuc System	Driver	α iSV20: New: A06B-6240-H123 Old : A06B-6117-H103 β iSV20: New: A06B-6160-H002 Old : A06B-6130-H002
	Remark	α iSV80: New: A06B-6240-H125 Old : A06B-6117-H105 β iSV80: New: A06B-6160-H004 Old : A06B-6130-H004 Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744
Mitsubishi System	Driver	New: MDS-EJ-V1-30 Old : MDS-DJ-V1-30
	Remark	N/A
Siemens System	Driver	With Internal Cooling: 6SL3120-1TE15-0AA4 Compact Type: 6SL3420-1TE15-0AA1
	Remark	With Internal Cooling: 6SL3120-1TE21-0AA4 Compact Type: 6SL3420-1TE21-0AA1 - Purchase Siemens "SMC40" module while applying Heidenhain encoder. - Purchase Renishaw "A-977-0575" signal transferrer while applying Renishaw encoder.
Heidenhain System	Driver	UM111D
	Remark	- Compatible with Heideihain Optical Scale Only

DDM Trunnion Tilting Rotary Table

Compatible System & Spec.	detron DD 5th Axis Rotary Table $\varnothing$ 125mm	
	DTFS125P / DTFE125P	
Axis	Tilting Axis	Rotary Axis
Cooling System	Air Cooling	
Optical Scale	Renishaw or Heideihain	
NC parameter	Exclusive tech of detron	
Fanuc System	Driver	α iSV80: New: A06B-6240-H125 Old : A06B-6117-H105 β iSV80: New: A06B-6160-H004 Old : A06B-6130-H004
	Remark	α iSV40: New: A06B-6240-H124 Old : A06B-6117-H104 β iSV40: New: A06B-6160-H003 Old : A06B-6130-H003 Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744
Mitsubishi System	Driver	New: MDS-EJ-V1-40 Old : MDS-DJ-V1-40
	Remark	N/A
Siemens System	Driver	With Internal Cooling: 6SL3120-1TE21-0AD0 Compact Type: 6SL3420-1TE21-0AA1
	Remark	With Internal Cooling: 6SL3120-1TE21-0AD0 Compact Type: 6SL3420-1TE21-0AA1 - Purchase Siemens "SMC40" module while applying Heidenhain encoder. - Purchase Renishaw "A-977-0575" signal transferrer while applying Renishaw encoder.
Heidenhain System	Driver	UM111D
	Remark	- Compatible with Heideihain Optical Scale Only

DDM Trunnion Tilting Rotary Table

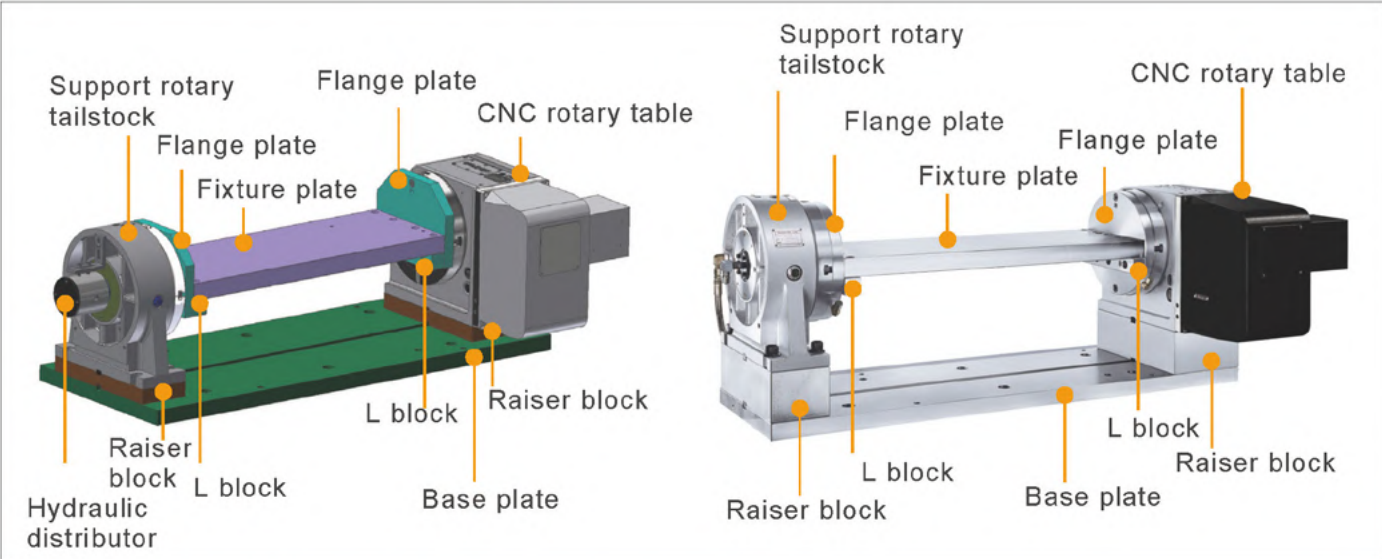
Compatible System & Spec.		detron DD 5th Axis Rotary Table ø170mm			
		DTFS170P / DTFE170P		DTFE171P	
Axis		Tilting Axis	Rotary Axis	Tilting Axis	Rotary Axis
Cooling System		Air Cooling	Air Cooling	Oil Cooling	Oil Cooling
Optical Scale		Renishaw or Heideihain			
NC parameter		Exclusive tech of detron			
Fanuc System	Driver	α iSV40: New: A06B-6240-H124 Old : A06B-6117-H104 β iSV40: New: A06B-6160-H003 Old : A06B-6130-H003	α iSV20: New: A06B-6240-H123 Old : A06B-6117-H103 β iSV20: New: A06B-6160-H002 Old : A06B-6130-H002	α iSV80: New: A06B-6240-H125 Old : A06B-6117-H105 β iSV80: New: A06B-6160-H004 Old : A06B-6130-H004	α iSV40: New: A06B-6240-H124 Old : A06B-6117-H104 β iSV40: New: A06B-6160-H003 Old : A06B-6130-H003
	Remark	Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744			
Mitsubishi System	Driver	New: MDS-EJ-V1-80 Old : MDS-DJ-V1-80	New: MDS-EJ-V1-30 Old : MDS-DJ-V1-30	New: MDS-EJ-V1-80 Old : MDS-DJ-V1-80	New: MDS-EJ-V1-40 Old : MDS-DJ-V1-40
	Remark	N/A			
Siemens System	Driver	With Internal Cooling: 6SL3120-1TE21-8AD0	With Internal Cooling: 6SL3120-1TE15-0AD4	With Internal Cooling: 6SL3120-1TE23-0AD0	With Internal Cooling: 6SL3120-1TE21-0AD0
	Remark	- Purchase Siemens "SMC40" module while applying Heidenhain encoder. - Purchase Renishaw "A-977-0575" signal transferrer while applying Renishaw encoder.			
Heidenhain System	Driver	UM112D	UM111D	UM112D	UM111BD
	Remark	- Compatible with Heideihain Optical Scale Only			

DDM Trunnion Tilting Rotary Table

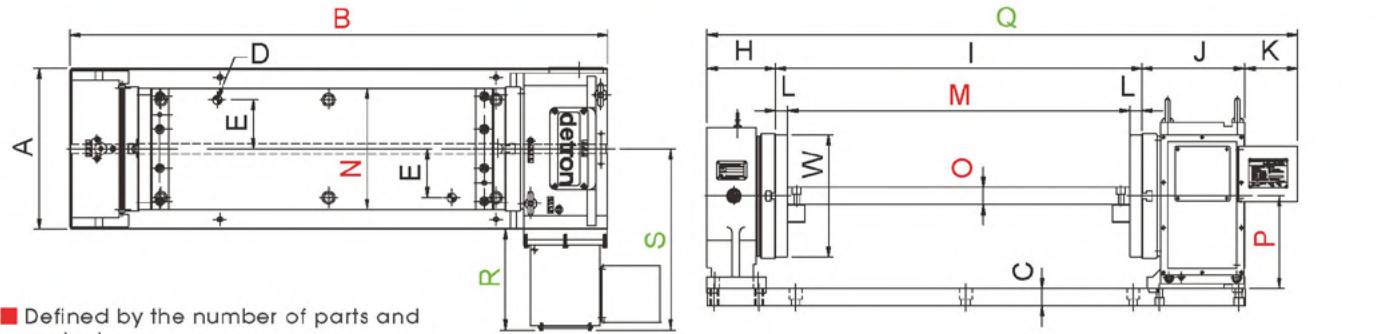
Compatible System & Spec.		detron DD 5th Axis Rotary Table ø280 mm & ø650 mm			
		DTF-280P		DTFAI-650H	
Axis		Tilting Axis	Rotary Axis	Tilting Axis	Rotary Axis
Cooling System		Oil Cooling	Oil Cooling	Oil Cooling	Oil Cooling
Optical Scale		Renishaw or Heideihain			
NC parameter		Exclusive tech of detron			
Fanuc System	Driver	Please See Note*	Please See Note*	α iSV360S-B: A06B-6240-H169	α iSV160S-B: A06B-6240-H126
	Remark	Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744			
Mitsubishi System		Contact us for further information of integration with Mitsubishi system.			
Siemens System	Driver	With Internal Cooling: 6SL3120-1TE24-5AC0	With Internal Cooling: 6SL3120-1TE23-0AD0	With Internal Cooling: 6SL3120-1TE26-0AC0	With Internal Cooling: 6SL3120-1TE23-0AD0
	Remark	- Purchase Siemens "SMC40" module while applying Heidenhain encoder. - Purchase Renishaw "A-977-0575" signal transferrer while applying Renishaw encoder.			
Heidenhain System	Driver	UM113D	UM112D	UM114D	UM113D
	Remark	- Compatible with Heideihain Optical Scale Only			

Note*: For detailed information, please contact detron.

Fixture Plate and Base



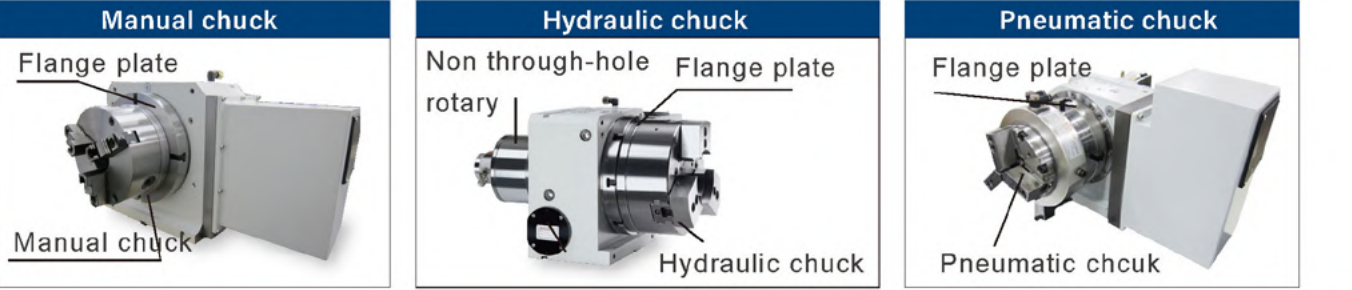
Suggested Dimension of Fixture and Base Plate



MODEL	Unit	GXA-125S	GXA-170S	GXA-210S	GXA-255H	GXA-320H	GXA-400H	DV-170P	DV-255PII
X axis stock	mm / inch	500 / 20	600 / 24	700 / 28	800 / 32	1000 / 40	1300 / 51	500/20	700/28
A	mm/inch	210 / 8.27	270 / 10.63	270 / 10.63	330 / 12.99	360 / 14.17	450 / 17.72	290 / 11.42	290 / 11.41
B	mm/inch	726 / 28.58	856 / 33.7	956 / 37.64	1101 / 43.35	1241 / 48.86	1440 / 56.69	635 / 25	849 / 33.42
C	mm/inch	30 / 1.18	35 / 1.38	35 / 1.38	35 / 1.38	40 / 1.57	40 / 1.57	35 / 1.38	35 / 1.38
D	mm/inch	2-Ø14 / 2-Ø0.55	2-Ø18 / 2-Ø0.71	2-Ø18 / 2-Ø0.71	2-Ø18 / 2-Ø0.71	2-Ø18 / 2-Ø0.71	2-Ø18 / 2-Ø0.71	2-Ø18 / 2-Ø0.71	2-Ø18 / 2-Ø0.71
E	mm/inch	80 / 3.15	100 / 3.94	100 / 3.94	100 / 3.94	100 / 3.94	125 / 4.92	100 / 3.94	125 / 4.92
H	mm/inch	130 / 5.12	130 / 5.12	130 / 5.12	140 / 5.51	145 / 5.71	190 / 7.48	100 / 3.94	100 / 3.94
I	mm/inch	441 / 17.36	551 / 21.69	651 / 25.63	751 / 29.57	861 / 33.90	961 / 37.83	401 / 15.79	551 / 21.7
J	mm/inch	155 / 6.10	175 / 6.9	175 / 6.9	210 / 8.27	235 / 9.25	254 / 10	168 / 6.61	230 / 9.05
K	mm/inch	89 / 3.5	111.5 / 4.4	118.5 / 4.66	115 / 4.52	116.5 / 4.58	117.5 / 4.63	-	-
L	mm/inch	20 / 0.79	25 / 0.98	25 / 0.98	25 / 0.98	30 / 1.18	30 / 1.18	25 / 0.98	25 / 0.98
M	mm/inch	400 / 15.75	500 / 19.69	600 / 23.62	700 / 27.56	800 / 31.50	900 / 35.43	350 / 13.78	500 / 19.69
N	mm/inch	120 / 4.72	170 / 6.69	200 / 7.87	250 / 9.84	300 / 11.81	400 / 15.75	170 / 6.69	200 / 7.87
O	mm/inch	30 / 1.18	30 / 1.18	30 / 1.18	40 / 1.57	40 / 1.57	40 / 1.57	30 / 1.18	30 / 1.18
P	mm/inch	110 / 4.33	135 / 5.31	160 / 6.30	190 / 7.48	210 / 8.27	255 / 10.04	135 / 5.31	160 / 6.30
Q	mm/inch	815 / 32.08	967.5 / 38.1	1072.5 / 42.2	1216 / 47.87	1357.5 / 53.4	1523 / 60	669 / 26.33	881 / 34.68
R	mm/inch	206 / 8.11	190 / 7.48	194 / 7.63	200 / 7.87	236 / 9.29	246 / 9.68	68 / 2.67	84 / 3.30
S	mm/inch	311 / 12.24	325 / 12.8	329 / 12.95	365 / 14.37	416 / 16.37	471 / 18.54	213 / 8.38	229 / 9.01
W	mm/inch	107 / 4.21	126 / 4.96	141 / 5.55	180.5 / 7.10	206.5 / 8.12	230 / 9.05	126 / 4.96	141 / 5.55

Remark 1: The center height of permissible error between rotary table and support rotary tailstock is within
Remark 2: Contact detron technical division for proper software adjustment under mass factors of fixture. ±0.01 mm

Chuck and Other Accessories



ROTARY TABLE AND COMPATIBLE CHUCK

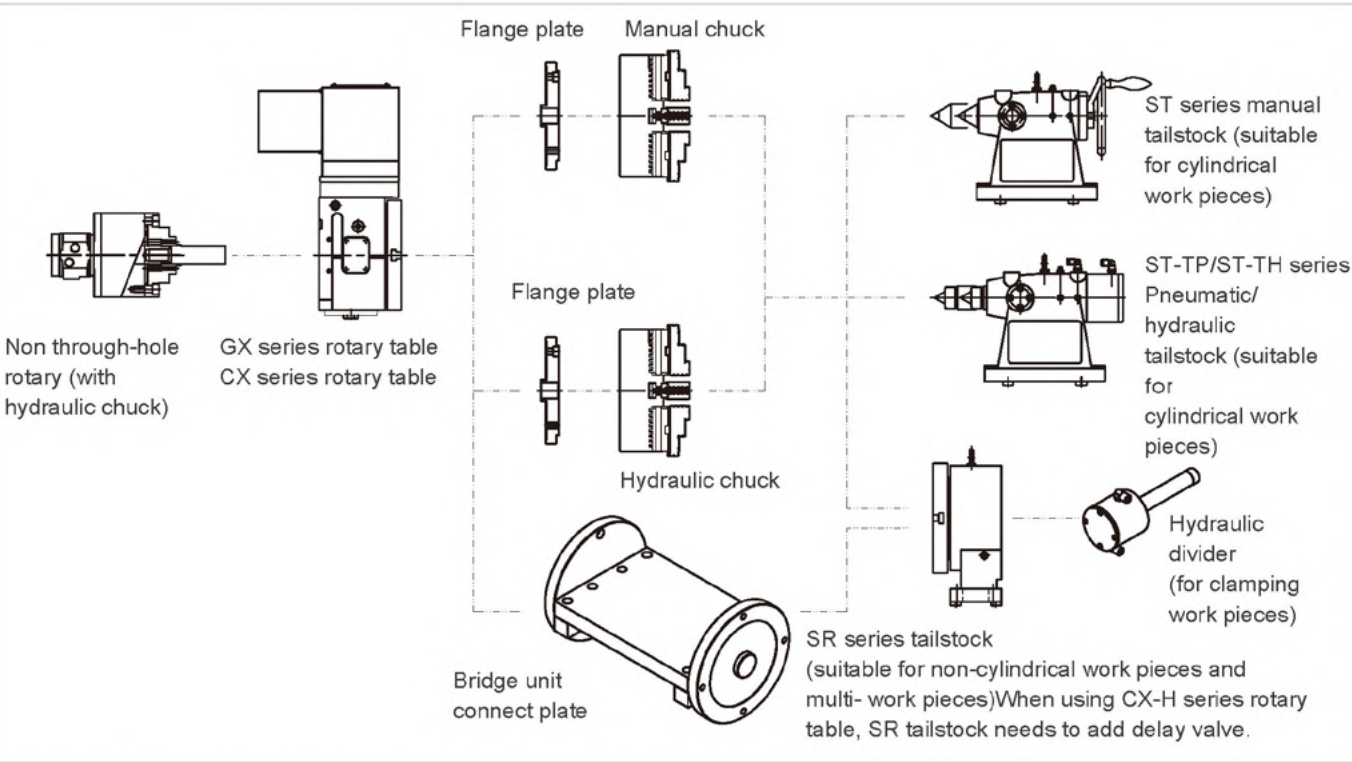
MODEL	GXA-125S	GXA-170S	GXA-210S	GXA-255H	GXA-320H	GXA-400H	GX-500H
Manual chuck	SC-4", SC-5"	SK-6", SK-7"	SK-7", SK-8"	SK-8", SK-9"	SK-10", SK-12"	SK-10", SK-12"	SK-12", SK-16"
Hydraulic chuck		HCK-6"	HCK-6"	HCK-8"	HCK-10"		

*Model in red is suggested

GRIPPING RANGE OF 3- JAW CHUCK

MODEL	SC-4	SC-5	SK-6	SK-7	SK-8	SK-9	SK-10	SK-12	SK-16
O.D. range	Ø 3 - 90 / Ø 0.12 - 3.5	Ø3-110/ Ø0.12-4.33	Ø3-160/ Ø0.12-6.30	Ø8-180/ Ø0.31-7.09	Ø8-190/ Ø0.31-7.48	Ø11-220/ Ø0.43-8.66	Ø12-260/ Ø0.47-10.24	Ø15-300/ Ø0.59-11.81	Ø30-400/ Ø1.18-15.75
I.D range	Ø1.26-3.31	Ø1.38-3.94	Ø2.17-5.91	Ø2.44-6.69	Ø2.67-7.08	Ø2.76-8.27	Ø3.15-9.84	Ø3.54-11.42	Ø4.33-14.96

ACCESSORIES CONNECTION DIAGRAM



Compatible Servo Motors

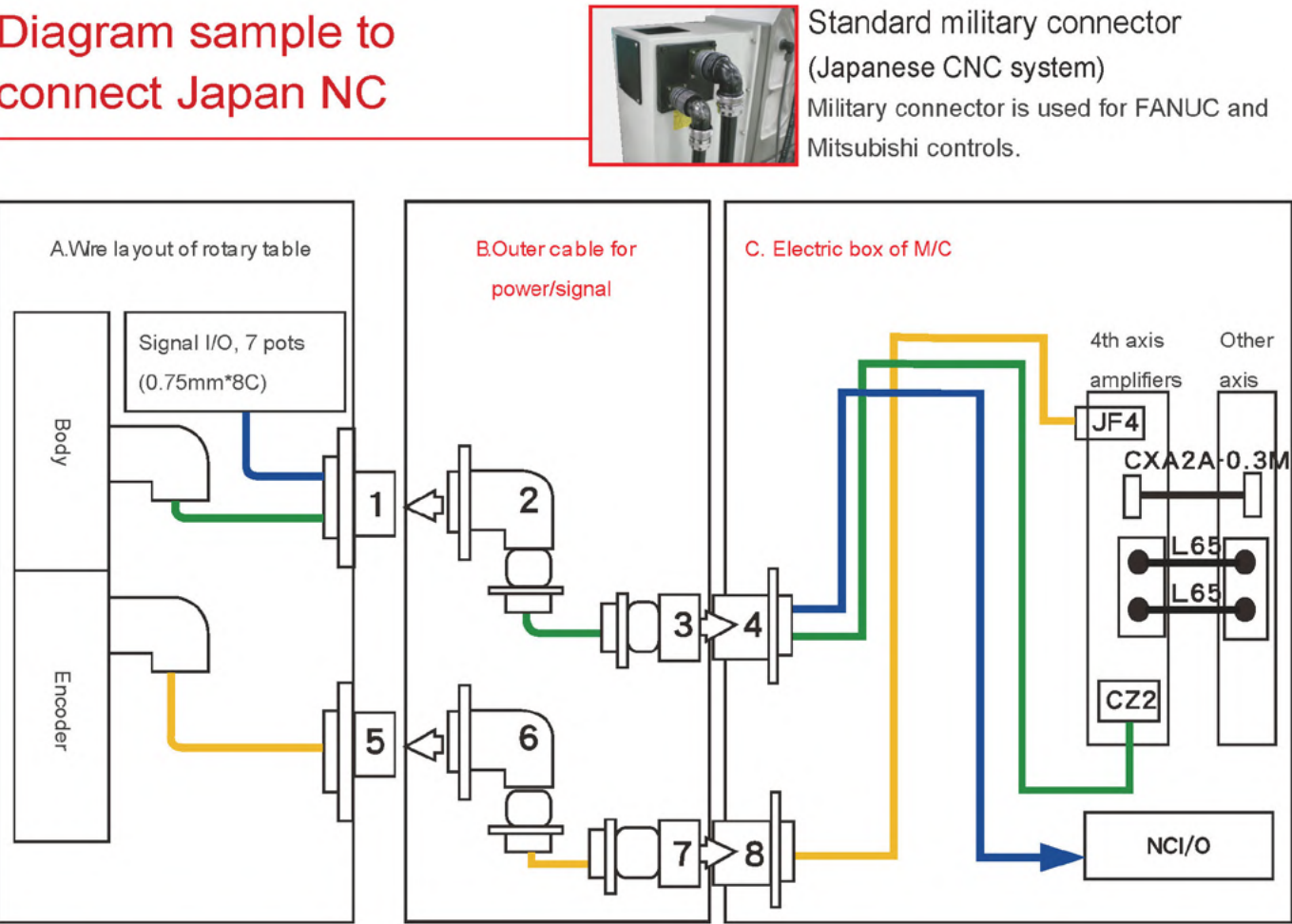
4th Axis							
CNC and Servo System							
Model	FANUC	MITSUBISHI	YASKAWA	SIEMENS	HEIDENHAIN	FAGOR	Brother (SANGYO)
GXA-125S	αiF2 βis4	HG-75	SGM7J08A	1FK2204-6AF 1FK2205-2AF	QSY-96A	FKM22.30A	-
GXA-170S RGX-170XII RGX-210XII	αiF4 βis8	HG-104	SGM7G09A	1FK2205-4AF 1FK2206-2AF	QSY-116C	FKM42.30A	R2AA08075FXPHV R2AAB8100HXP5F RS2W03A0KL10XXXXC00
GXA-210S	αiF4 βis8	HG-104	SGM7G09A	1FK2205-4AF 1FK2206-2AF	QSY-116C	FKM42.30A	R2AA08075FXPHV R2AAB8100HXP5F RS2W03A0KL10XXXXC00
GXA-250S RGX-250XII	αiF4 βis8	HG-104	SGM7G09A	1FK2205-4AF 1FK2206-2AF	QSY116C	FKM42.30A	-
GXA-255H CX-255H RGX-255H	αiF8 βis8	HG-154	SGM7G13A	1FK2206-4AF	QSY-116E	FKM44.30A	-
GXA-320H CX-320H RGX-320HII	αiF12 βis22	HG-204	SGM7G30A	1FK2208-3AC	QSY-155B	FKM64.30A	-
GXA-400H CX-400H	αiF12 βis22	HG-204	SGM7G30A	1FK2208-3AC	QSY-155B	FKM64.30A	-
GX-500H CX-500H	αiF12 βis22	HG-204	SGM7G30A	1FK2208-3AC	QSY-155B	FKM64.30A	-
GX-630H	αiF22 βis22	HG-354	SGM7G44A	1FK2208-4AC	QSY-155D	FKM66.30A	-
GX-800H	αiF22 βis22	HG-354	SGM7G44A	1FK2208-4AC	QSY-155D	FKM66.30A	-

5th Axis												
Motor & NC system												
Axis	FANUC		MITSUBISHI		YASKAWA		SIEMENS		HEIDENHAIN		FAGOR	
	Rotary Axis	Tilting Axis	Rotary Axis	Tilting Axis	Rotary Axis	Tilting Axis	Rotary Axis	Tilting Axis	Rotary Axis	Tilting Axis	Rotary Axis	Tilting Axis
GFA-101S	αiF2 / βis4	αiF2 / βis4	HG-105	HG-105	SGMJV08A SGM7J08A	SGMJV08A SGM7J08A	1FK2204-6AF 1FK2205-2AF	1FK2204-6AF 1FK2205-2AF	QSY-96A	QSY-96G	FKM22.30A	FKM22.30A
GFA-125S GFA-125S-2W-240	αiF2 / βis4	αiF4 / βis8	HG-75	HG-104	SGMJV08A SGM7J08A	SGMGV09A SGM7G09A	1FK2204-6AF 1FK2205-2AF	1FK2205-4AF 1FK2206-2AF	QSY-96A	QSY-116C	FKM22.30A	FKM42.30A
GFA-170S	αiF4 / βis8	αiF4 / βis8	HG-104	HG-104	SGMGV09A SGM7G09A	SGMGV09A SGM7G09A	1FK2205-4AF 1FK2206-2AF	1FK2206-4AF	QSY-116C	QSY-116C	FKM22.30A	FKM42.30A
GFA-210S	αiF4 / βis8	αiF8 / βis12	HG-104	HG-104	SGMGV09A SGM7G09A	SGMGV09A SGM7G09A	1FK2205-4AF 1FK2206-2AF	1FK2206-4AF	QSY-116C	QSY-116C	FKM42.30A	FKM42.30A
GTFAE-210-2W-320 GFA-255H GFA-170S-2W-300	αiF4 / βis8	αiF8 / βis12	HG-104	HG-154	SGMGV09A SGM7G09A	SGMGV13A SGM7G13A	1FK2205-4AF 1FK2206-2AF	1FK2206-4AF	QSY-116C	QSY-116E	FKM42.30A	FKM42.30A
GFA-320H	αiF8 / βis12	αiF12 / βis22	HG-154	HG-204	SGMGV13A SGM7G13A	SGMGV30A SGM7G30A	1FK2206-4AF	1FK2208-3AC	QSY116E	QSY155B	FKM42.30A	FKM44.30A
GTFAE-170SL	αiF2 / βis4	αiF4 / βis8	HG96S	HG-H104S	SGMJV08A SGMJV13A	SGMJV13A SGMGV30A	1FK2205-4AF 1FK2206-2AF	1FK2208-3AC	QSY116E	QSY155B	FKM42.30A	FKM44.30A
GTFAE-320H	αiF4 / βis8	αiF12 / βis22	HG-104	HG-204	SGMGV13A SGM7G13A	SGMGV30A SGM7G30A	1FK2206-4AF	1FK2208-3AC	QSY116E	QSY155B	FKM42.30A	FKM44.30A
GTFA(E)-210S GTFA(E)-255SBL(S)	αiF4 / βis8	αiF8 / βis12	HG-104	HG-224	SGMGV09A SGM7G09A	SGMGV13A SGM7G13A	1FK2205-4AF 1FK2206-2AF	1FK2206-4AF	QSY116C	QSY116J	FKM42.30A	FKM42.30A
GTFA-320X	αiF4 / βis8	αiF8 / βis12	HG-104	HG-224	SGMGV09A SGM7G09A	SGMGV13A SGM7G13A	1FK2205-4AF 1FK2206-2AF	1FK2206-4AF	QSY116E	QSY116J	FKM42.30A	FKM42.30A
GTFA(E)-320XB/ XBL(S)	αiF4 / βis8	αiF12 / βis22	HG-104	HG-204	SGMGV13A SGM7G13A	SGMGV30A SGM7G30A	1FK2206-4AF	1FK2208-3AC	QSY116E	QSY155B	FKM42.30A	FKM64.30A
GTFA(E)-410XB/ XBL(S)/HL(S) GTFAE-255H-2W-400	αiF8 / βis12	αiF12 / βis22	HG-154	HG-204 HG-354	SGMGV13A SGM7G13A	SGMGV30A SGM7G30A	1FK2206-4AF	1FK2208-3AC	QSY116J	QSY155C	FKM44.30A	FKM64.30A
GTFA(E)-500XB GTFA(E)-500XBL	αiF8 / βis12	αiF22	HG-154	HG-354	SGMGV13A SGM7G13A	SGMGV30A SGM7G30A	1FK2206-4AF	1FK2208-4AC	QSY-116J QSY-130E	QSY155F	FKM44.30A	FKM66.30A

* Please refer to the basic X/Y/Z axial motor to identify compatible 4/5th motor specification.

Diagram Illustration

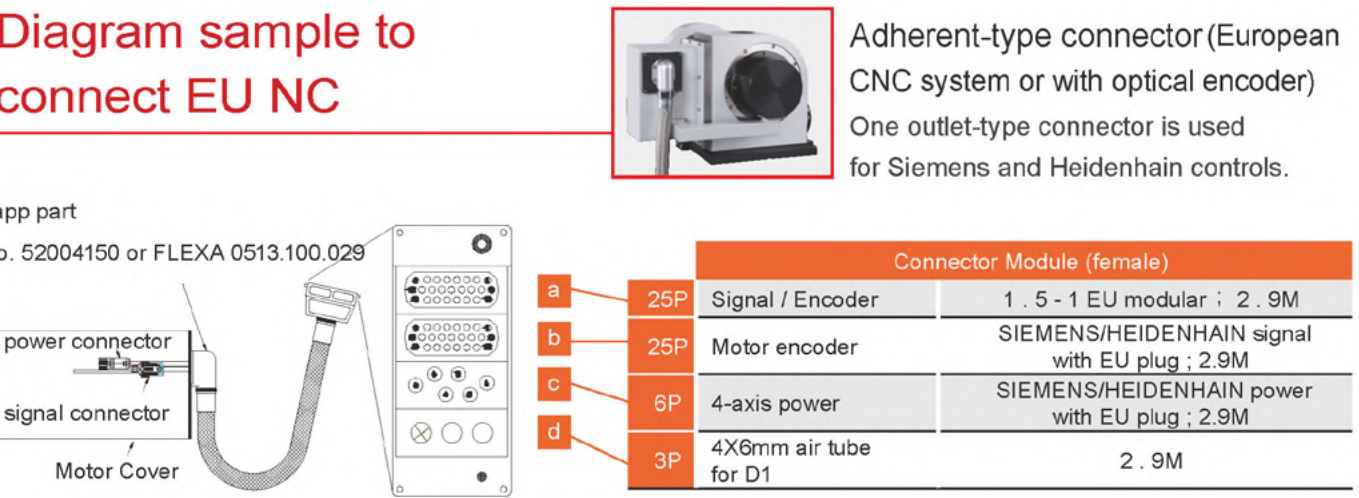
Diagram sample to connect Japan NC



Cable spec. for JP NC

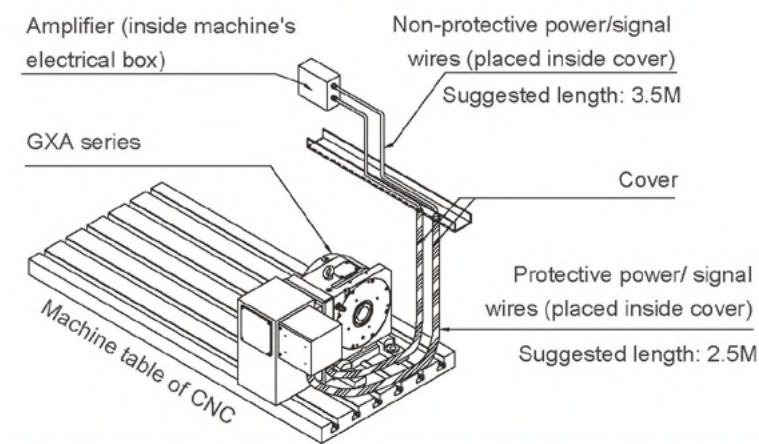
Power connector #	1	2	3	4
connector SPEC	MS3102A28-11P	MS3108A28-11S	MS3106A28-11P	MS3102A28-11S
Signal connector #	5	6	7	8
connector SPEC	MS3102A20-29PW	MS3108A20-29SW	MS3106A20-29PW	MS3102A20-29SW
FANUC / 17Pin	MS3102A20-29P	MS3108A20-29S	MS3106A20-29P	MS3102A20-29S
MITSUBISHI / 19Pin	MS3102A22-14P	MS3108A22-14S	MS3106A22-14P	MS3102A22-14S

Diagram sample to connect EU NC



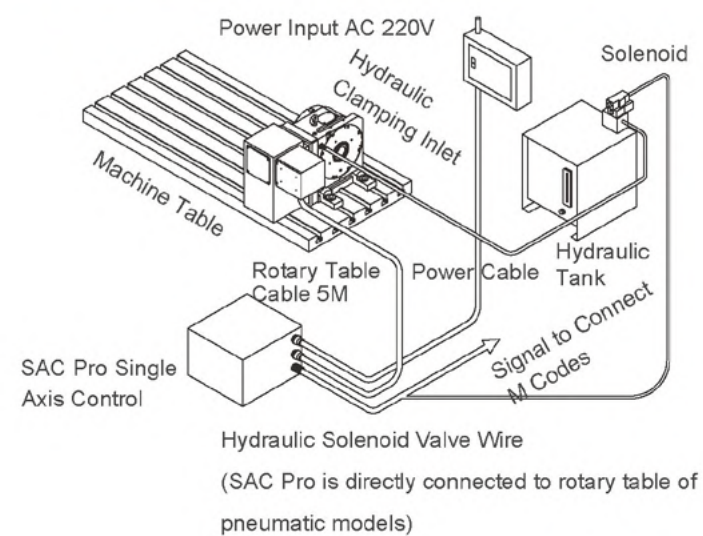
Guidance to Select Rotary Table

SCHEMATIC DIAGRAM OF ROTARY TABLE AND CNC MACHINE



- Feature**
- Allows for simultaneous control with X, Y, Z-axis of machine and ARC machining.
 - Programs can be directly edited on the control screen of the machine.
 - Suggested length 2.5M with protective pipe for outer power / signal cable, from motor cover to machine guarding. (for X travel 500-1300mm machines)
 - for power / signal cable, from machine guarding for power / signal cable, from machine guarding to amplifier.

SCHEMATIC DIAGRAM OF ROTARY TABLE AND SINGLE AXIS CONTROLLER



SAC Pro Series- Single Axis Control

- Features:**
- For machine NC without 4th axis function, SAC Pro provide signals to allow indexing application (no simultaneous function available).
 - Programs of rotary table can be directly input through SAC Pro and allow machine NC M code command.
 - Compatible with any brand of NC control.

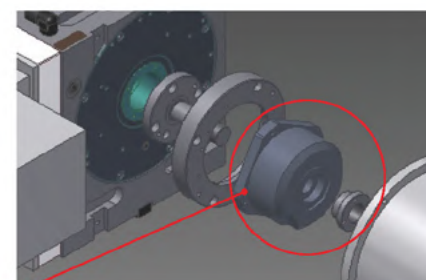


OPTIONAL OPTICAL SCALE



NC System & Scale Resolution		Heidehain Model	Fagor Model
For Fanuc	±5"	RNC2390F	H2AF-26-D90
	±10"	ENC2190F	H2AF-23-D87
For Mistubishi	±5"	RNC2390M	H2AM-26-D90
	±10"	ENC2190M	H2AM-23-D87
For Siemens	±5"	RCN2380 RNC2310	H2AS-23-D90
	±10"	ENC2180	H2AS-23-D87

* Recommended option for titling axis of 5 axis.



Heidenhain encoder

SELECT A PROPER ROTARY TABLE ACCORDING TO WORKPIECE AND CUTTING CONDITIONS

Workpiece diameter Within rotary table diameter	Workpiece weight Within allowable load range	Indexing processing FXL value should be within the range of clamping torque	Eccentric Load • Movement of inertia of workpiece should be within the permissible angle • Consider interference	For workpiece with large diameter but light weight • Movement of inertia of workpiece should be within the permissible range • Consider interference
---	--	---	---	---

Interference Reminders

Please refer to right illustration:

X axis (Fig 1)

- A. Pay attention to total length of rotary table+tailstock+fixture+base plate, machine table envelope, rest space between splashguard and X axial limit.

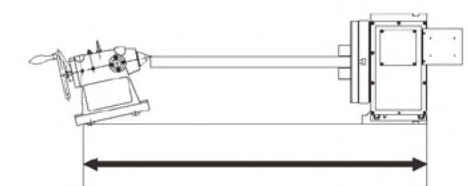


Fig 1

Y axis (Fig 2)

- B. Locate table center paralleled to Y axis center. Pay attention to the clearance of rotary table cover to front splashguard.
- C1 & C2 as the rest space between Y+ / Y- limit.

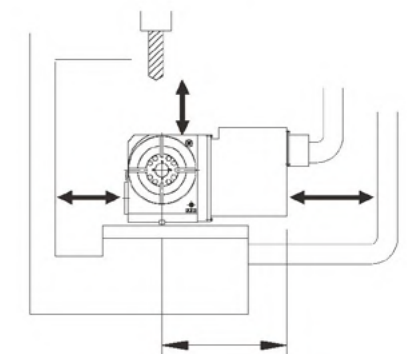


Fig 2

Z axis (Fig 2 and Fig 3)

- D. as maximum distance between tooling and NC table body (refer to item E-1).
- E. Distance between spindle nose to working table.
- F. Stroke for tool change.
- G. Allowable maximum tool length.
- H. Swing of tool change.

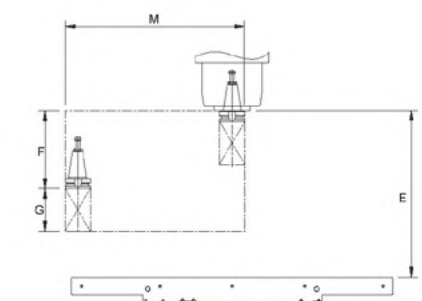
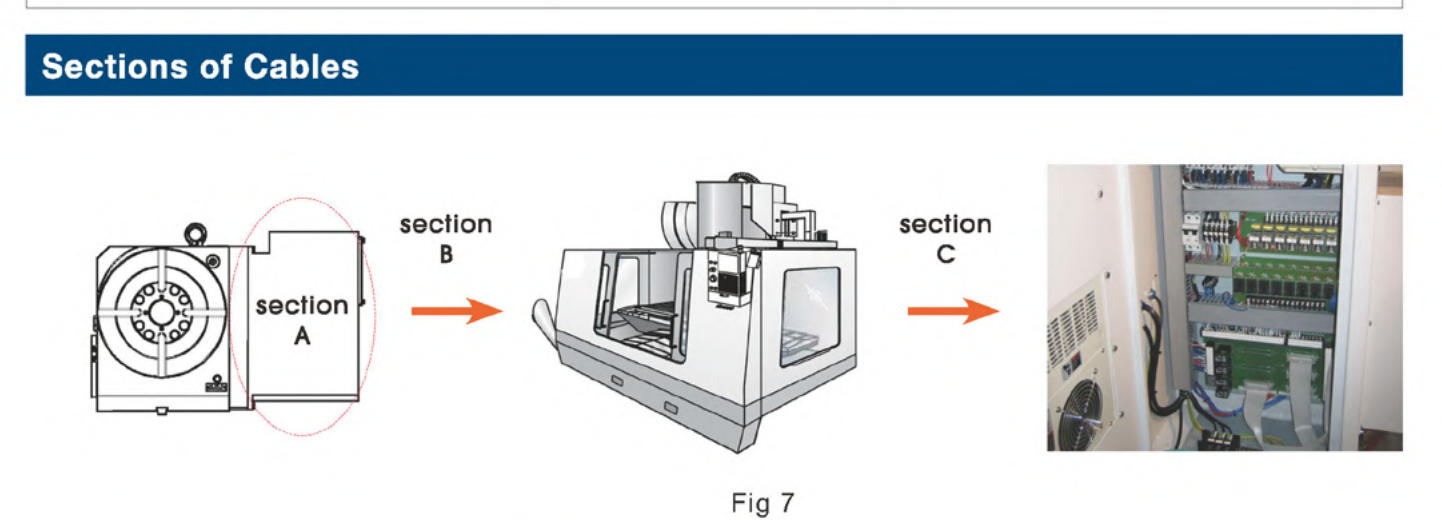
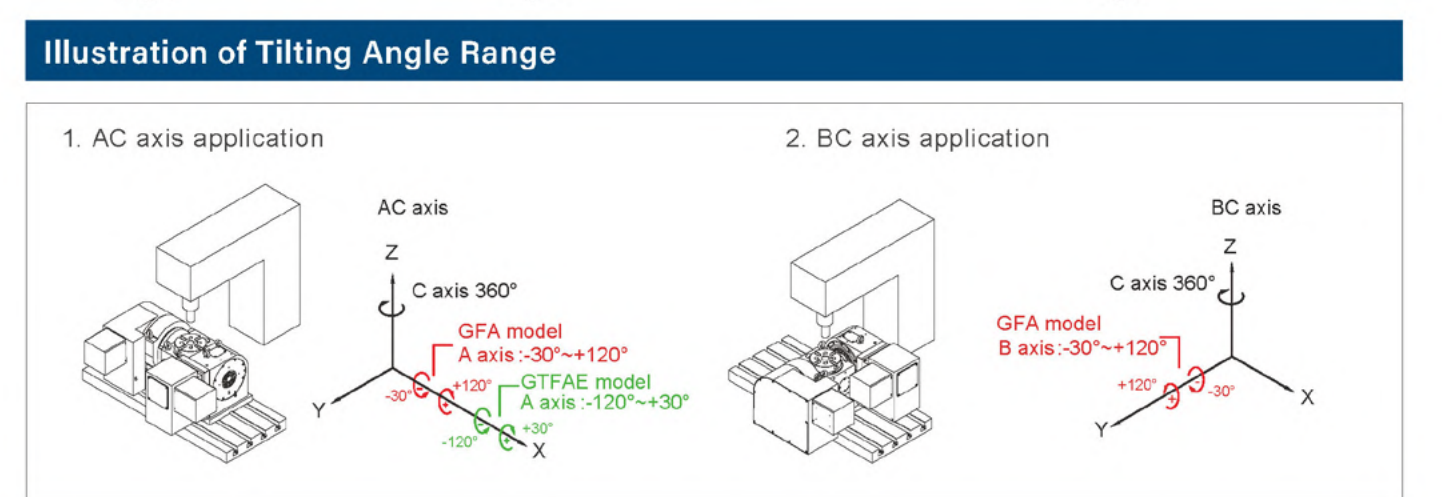
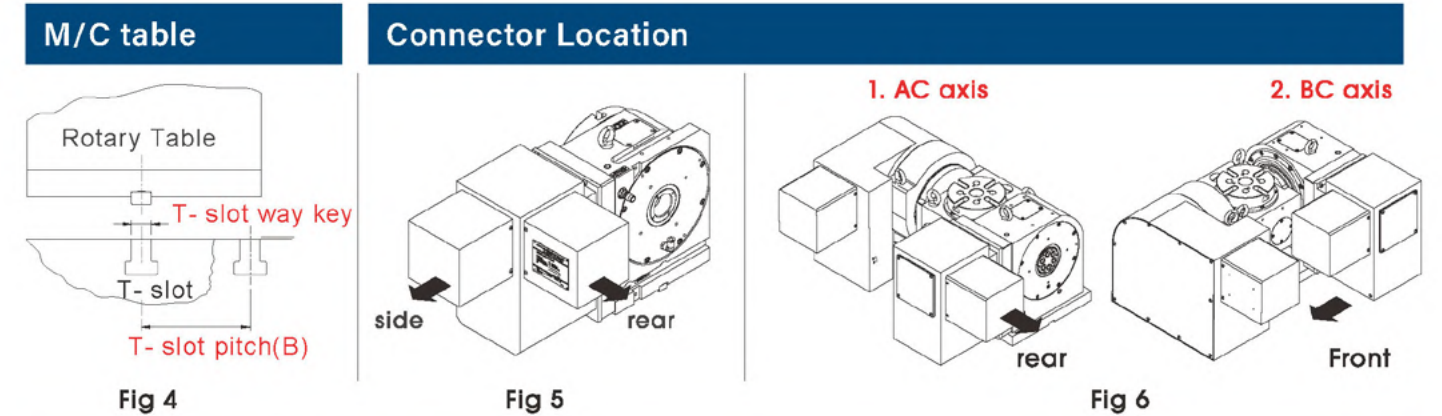


Fig 3

Order Sheet of 4/5th axis

STEP 1 _ Machine Info			
Q1	Machine Information	Machine Brand _____ Machine Model _____	
Q2	Control System	☐ Fanuc ☐ Mitsubishi ☐ Siemens ☐ Heidenhain ☐ Others _____	
Q3	Working Table Info	Size: L _____ * W _____ T-slot size: ☐ 14mm ☐ 16mm ☐ 18mm ☐ 22mm T-slot Pitch: ☐ 80mm ☐ 100mm ☐ 125mm ☐ 150mm ☐ Others _____ Number of T-slot: ☐ 3 ☐ 4 ☐ 5 ☐ 6	Catalog P74_Fig. 4
STEP 2 _ NC Table Selection			
Q4	Rotary Table	☐ 4th Axis Rotary Table, Model No. _____, Q'ty _____ ☐ 5th Axis Tilting Rotary Table, Model No. _____, Q'ty _____	
Q5	Connector Cover Location	4th Axis cable connector located at ☐ rear (vertical application) ☐ side (horizontal application) 5th Axis cable connector located at ☐ rear (AC axis application) ☐ front (BC axis application)	Catalog P74_Fig. 5 Catalog P74_Fig. 6
	Connector Interface	☐ Interface of MS connector, ☐ Interface of PG29 connector ☐ Inner cable prepared by buyer, motor cover attached with connector plate without holes	
Q5	Inner and Outer Cable Type	☐ Section A (Inside the motor cover), 0.5M, standard attachment for Fanuc and Mitsubishi System ☐ Section A+B ☐ separated type ☐ integrated type Section A: 0.5M, Section B: _____M ☐ Section A+B+C ☐ separated type ☐ integrated type Section A: 0.5M, Section B: _____M, Section C: _____M Connector Type ☐ 17 pin ☐ 19 pin (only selected for Mitsubishi system) Remark: Inner cable for tilting axis: 1.2M, inner cable for rotary axis (4th axis): 0.5M	Catalog P74_Fig. 7
Q6	Tailstock	☐ Rotary tailstock, model SR- _____ ☐ Quill tailstock, model ST- _____, ☐ standard quill taper MT3 ☐ optional quill taper MT4 ☐ Manual Switch Valve required for pneumatic or hydraulic quill tailstock (optional)	
Q7	M/C Control System & Servo Motor	☐ Fanuc system ☐ alpha ☐ beta; ☐ 4th axis _____ ☐ 5th axis _____ ☐ straight shaft ☐ taper shaft ☐ Mitsubishi system ☐ 4th axis _____ ☐ 5th axis _____ ☐ straight shaft ☐ taper shaft ☐ Siemens system ☐ 4th axis _____ ☐ 5th axis _____ ☐ Heidenhain system ☐ 4th axis _____ ☐ 5th axis _____ ☐ Other system _____ ☐ 4th axis _____ ☐ 5th axis _____ Motor supplied by ☐ buyer or ☐ detron ☐ special request _____ Amplifier supplied by ☐ buyer or ☐ detron, model _____ ☐ Amplifier wirings required Independent Controller ☐ Single Axis ☐ Dual Axis	
Q8	Limit switch (5th axis only)	☐ Standard tilting axis limit setting as catalogue diagram, ☐ Others _____ ☐ Standard 2 wires NC, ☐ Others _____	
Q9	Solenoid	☐ DC24V, ☐ AC110V, ☐ AC220V	
STEP 3 _ Peripheral Accessories			
Q10	Optical scale	☐ Heidenhain ☐ Renishaw ☐ Fagor ☐ 5" ☐ 10" ☐ 13" ☐ Optical scale cable required, ☐ 10M ☐ 12M as a recommended option for tilting axis upon 5th axis application	
Q11	Chuck	☐ 3-Jaw Manual scroll chuck, SC- _____, ☐ 3-Jaw Powerful chuck, SK- _____ ☐ Pneumatic chuck, _____; ☐ Hydraulic chuck, _____; ☐ Others _____ ☐ Chuck interface flanged required only. (Chuck equipped by buyer)	Catalog P68
Q12	Air / Hydraulic System accessories	☐ Air booster (air-oil converter) ABR-35, for hydraulic table (+tailstock) only ☐ Hydraulic Unit, please describe the detailed application below: _____ ☐ Pneumatic Connector & Tube Kit, _____M ☐ Hydraulic Connector & Tube Kit _____M	Catalog P68
Q13	Rotary Joint	☐ 4 port ☐ 6 port ☐ 8 port ☐ 10 port ☐ _____port, please refer to spec sheet for suitable port q'ty. ☐ _____port with air tube, _____port with hydraulic tube Tube Size ☐ 1/4" ☐ 1/8", tube size will be determined by the center bore size (please refer to the final layout)	
Q14	Others	☐ Please describe the detailed application below: _____	



	Regular Connection of Japan NC System	Regular Connection of European NC System	
Section A Power+Signal Wire of NC Table	Individual Wires	Integrated Cable	Integrated Cable
Section B Power+Signal Cables between NC Table to MC Guard	Individual Cables		
Section C Power+Signal Connection in M/C Electrical Cabinet	Individual Connection	Individual Connection	

Order Sheet of DDM Rotary Table

STEP 1_ Machine Info			
Machine Spec	Machine information	Machine brand _____ Machine model _____	
	Control System	☐ FANUC ☐ MITSUBISHI ☐ SIEMENS ☐ HEIDENHAIN ☐ Others _____	
	Original 3 axis Driver Information	☐ model _____	
Working Table Info	Table size	L _____ *W _____ (Please provide relating drawing)	
	T-slot width (A)	☐ 14mm ☐ 16mm ☐ 18mm ☐ 22mm ☐ Others _____	Catalog P76_Fig.1
	T-slot pitch (B)	☐ 100mm ☐ 125mm ☐ 150mm ☐ Others _____	Catalog P76_Fig.2
	Number of T-slot	☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Others _____	
STEP 2_Rotary Table Spec			
DDM Rotary Table	detron Model	☐ DV-170P ☐ DV-255P ☐ DTFS-125P ☐ DTFE-125P ☐ DTFS-170P ☐ DTFE-170P ☐ DTFE-171P ☐ DTF-280P ☐ DTF-650H	
	Solenoid for Pneumatic model	☐ AC110V ☐ AC220V ☐ DC24V	
	Limit switch (5 axis only)	☐ standard tilting axis limit setting (refer to each model 's specification list on catalogue) ☐ Others _____ ☐ 2 wires NC(detron standard) ☐ Others _____	
Parameter	Exclusive Tech of detron		
Operation Manual	☐ English ☐ Japanese		
STEP 3_for 4th axis DDM Model choose only			
NC Control	Torque motor	☐ detron ☐ Others, Model _____	
	Driver	Supplied by ☐ buyer ☐ detron FANUC system ☐ α i system, Model _____ ☐ β i system, Model _____ Mitsubishi system ☐ MDS-EJ- _____ ☐ MDS-DJ- _____ Siemens ☐ 6SL3120-1TE _____ ☐ 6SL3420-1TE _____ Heidenhain ☐ UM111D Remark: Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744	Catalog P65
		Faceplate	☐ Without(detron standard) ☐ incl. faceplate ☐ Others _____
Peripheral Accessories	Tailstock	☐ Rotary tailstock, model SR- _____ ☐ Quill tailstock, model ST- _____, quill taper MT3 ☐ optional quill taper MT4 ☐ live center ☐ Manual Switch Valve required for pneumatic or hydraulic quill tailstock (optional)	
	Chuck	☐ 3-Jaw Powerful chuck, SK- _____ ☐ Pneumatic chuck, _____; ☐ Hydraulic chuck, _____; ☐ Others _____ ☐ Only flange plate (Chuck supplied by buyer), Chuck brand _____, Model _____ (Please provide relating drawing)	Catalog P68
	Fixture plate and Accessories	☐ Required (Please discuss more details with detron)	Catalog P67
STEP 4_for 5th axis DDM model choose only			
NC Control for rotary axis	Torque	☐ detron ☐ Others, Model _____	
	Driver	Supplied by ☐ buyer ☐ detron FANUC system ☐ α i system, Model _____ ☐ β i system, Model _____ Mitsubishi system ☐ MDS-EJ- _____ ☐ MDS-DJ- _____ Siemens ☐ 6SL3120-1TE _____ Heidenhain ☐ UM _____ Remark: Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744	Catalog P65 & P66

NC Control for tilting axis	Torque	☐ detron ☐ Others, Model _____	
	Driver	Supplied by ☐ buyer ☐ detron FANUC system ☐ α i system, Model _____ ☐ β i system, Model _____ Mitsubishi system ☐ MDS-EJ- _____ ☐ MDS-DJ- _____ Siemens ☐ 6SL3120-1TE _____ Heidenhain ☐ UM _____ Remark: Purchase software "Pole Position Detection Function" from NC service center: Oi-MC: A02B-0310-S744 Oi-MD: A02B-0320-S744 Oi-MF: A02B-0340-S744 31i-B5: A02B-0326-S744	Catalog P65 & P66
STEP 5_Accessories required info			
Accessories	Optical scale	detron standard-Renishaw optical scale ☐ R+F (suitable for Fanuc control) ☐ R+M (suitable for Mitsubishi control) ☐ R+S (suitable for Siemens control) ☐ R+B (suitable for PC-based control) optional Heidenhain optical scale ☐ H+F (suitable for Fanuc control) ☐ H+M (suitable for Mitsubishi control) ☐ H+S (suitable for Siemens/Heidenhain control)	
	Sensor Module (while applying Siemens control)	☐ Heidenhain optical scale shall be equipped with Siemens "SMC40" module, supplied by buyer ☐ Renishaw optical scale shall be equipped with Renishaw "A-977-0575" module, supplied by detron	
	Temperature Control	☐ Supplied by detron TM-K2(3pcs for each axis) ☐ Supplied by buyer	
	Cable set	Supplied by ☐ buyer ☐ detron (If supplied by detron, please choose below items) ☐ Standard: Integrated cable with adherent connector. Inner Section: 2.5M, Outer Section: 4.0M ☐ Special length required: Integrated cable with adherent connector. Inner Section: _____M, Outer Section: _____M Inner Section: from table to M/C guarding Outer Section: detron M/C guarding to amplifier	Catalog P76_Fig.3
	Rotary Joint	☐ Pneumatic port ☐ Hydraulic port ☐ Pressure required _____ Mpa	
STEP 6_Others			
Others	☐ Please describe the detailed application below: _____		

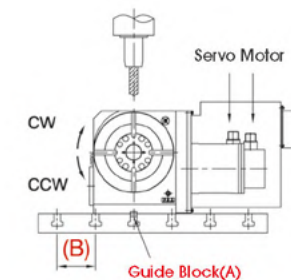


Fig.1

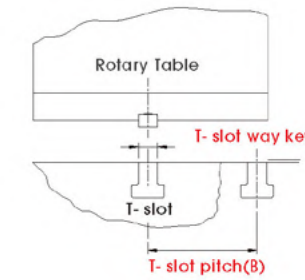


Fig.2

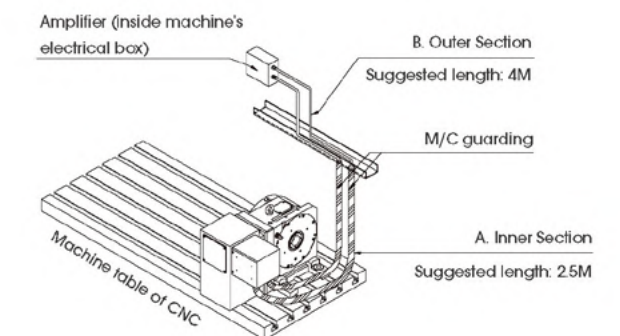


Fig.3