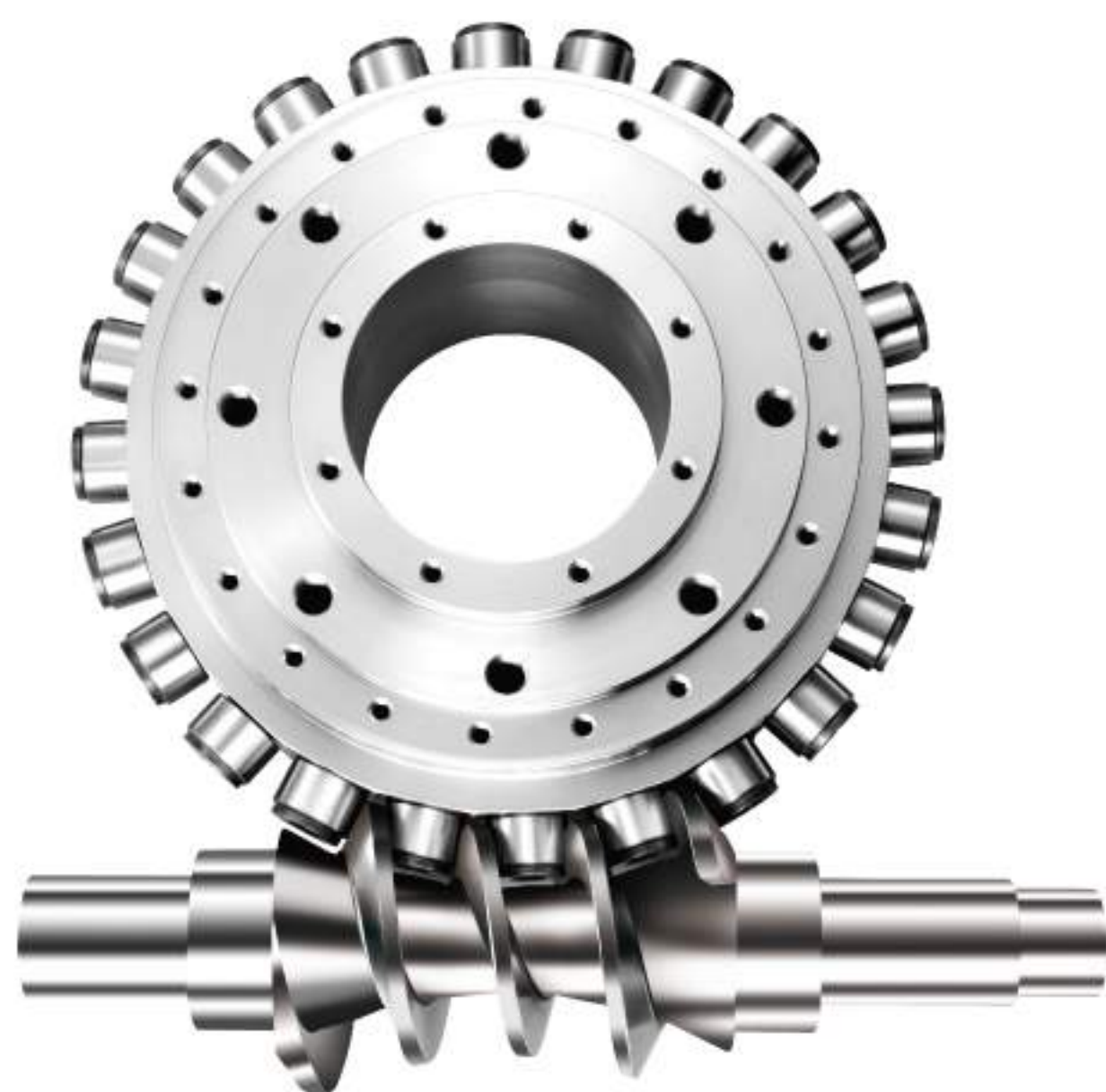




德士凸輪股份有限公司
TE-SHIN CAM CO., LTD.

No.88, Chajhuan 1st St., Gueishan Dist., Taoyuan City 333, Taiwan
TEL : 886-3-349-3596 FAX : 886-3-349-3600
E-mail : dex.cams@msa.hinet.net

昆山弘迪精密機械有限公司
DE SHIN PRECISION MACHINE CO., LTD.

No.3088, BeiMen Road, YuShan Town, Kunshan City, Jiangsu, China
TEL : 86-512-5519-3688 FAX : 86-512-5519-2688
E-mail : hongdi20051128@163.com

※ TE SHIN policy prohibits the above products from being used for the development or production use or stockpiling of weapons of mass destruction (nuclear weapons, biological weapons, chemical weapons or missiles).

www.teshin.com.tw



德士凸輪股份有限公司
TE-SHIN CAM CO., LTD.

Rotary Table

ZERO-BACKLASH Roller Cam Table
Have 40 years professional
production technology



ISO 9001:2015





德士凸輪股份有限公司
TE-SHIN CAM CO., LTD.

Strong Team — High Quality — Service



Brief

The Te-shin Cam Company was established in 1982 and commenced Cam Machining business in 1987. The company was engaged in the production/sales of ATC, Divider and Index Table in 1988 and 2010 respectively.

The Company has three factories to provide the on-line production which of the two were located at the Guishan district of Taoyuan, and another is at Kunshan city of Jiangsu, China. The plant area is up to 12,000 square meters and employed with 400 staffs. The company's capital is NT\$480,000,000.

The company has accumulated 40 years of rich practices of experience in machining design manufacture. Especially to meet the demand of customers' in the cam manufacturing and the ATC in the machine industry or the index divider in the automatic equipments. Which the company has won the high praise with affirmation in various fields and hold the 75% of usage in the existing market as well.

As known, an outstanding team has to be able to manufacture excellent product in quality since we have strict requirement in quality control and to meet the needs of satisfaction with customers after goods sales-service.

Presently we are promoting the precision of power turrets, regardless in the positioning accuracy, cutting power, steel structural or the lifetime in usage can be compared with the famous European/American/Japan brands. Especially to be assigned to use by some customers in Dutch and USA.



Milestones

1982 Dex Cams established : first to establish cam processing business.

1987 Starts producing and marketing **high speed roller ATC**.

1988 Expanding production and marketing **roller divider**.

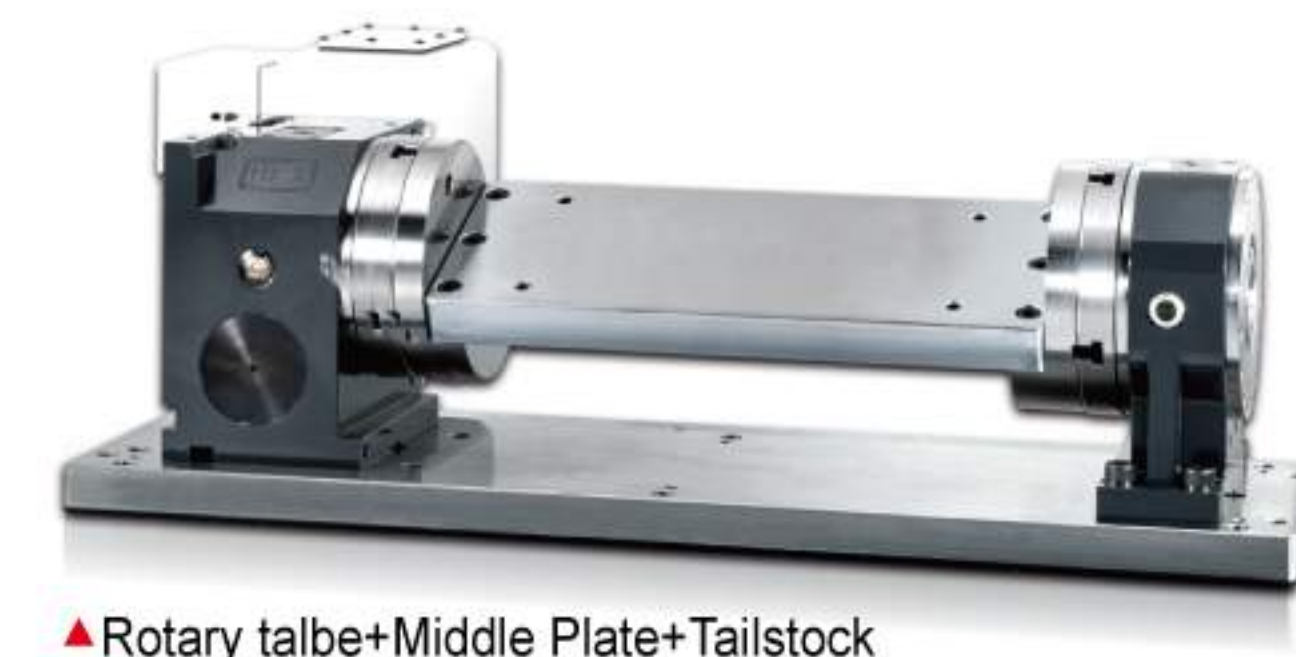
2010 Continuing expanding production and marketing of **index table**.

Strong Team
Service
High Quality



All series

40 years of expertise
Subverting tradition.
Create world-class products



▲ Rotary talbe+Middle Plate+Tailstock



▲ RD320 Rotary Table



▲ RD250 Rotary Table



▲ RD200 Rotary Table



▲ RD170 Rotary Table



▲ Faceplate Tailstock 160



▲ Manual Tailstock 185



▲ BT 40 Vertical digital ATC tool changer



▲ CNC machine horizontal ATC tool changer



▲ AD Series precision index divider



▲ DF Series index divider

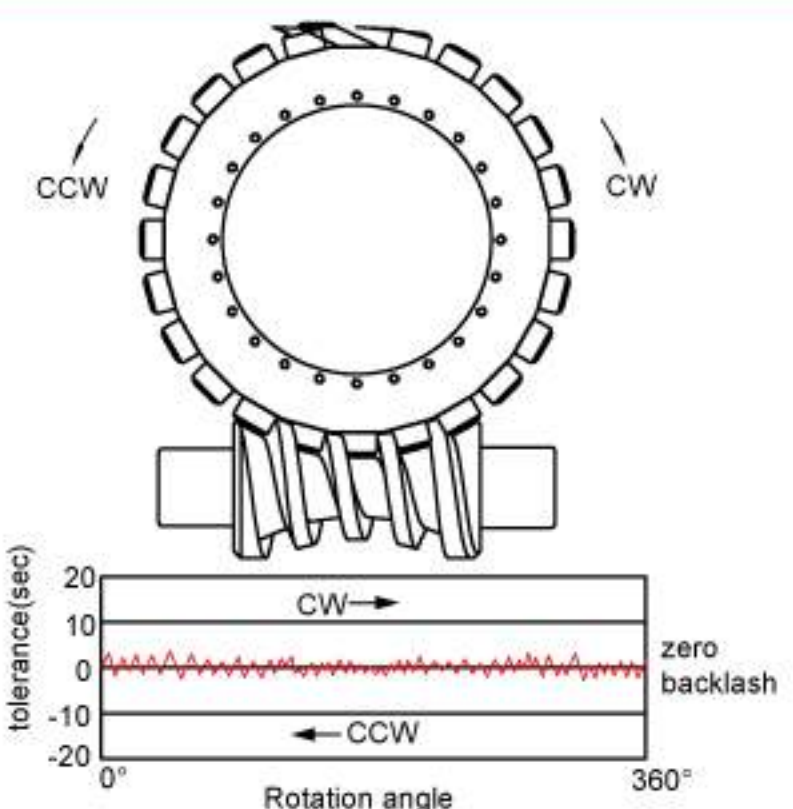
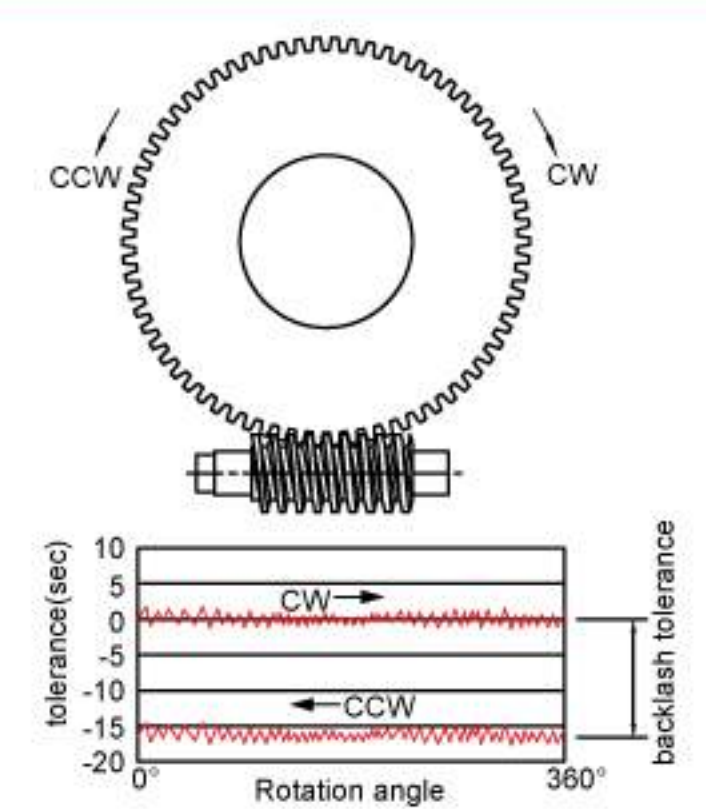
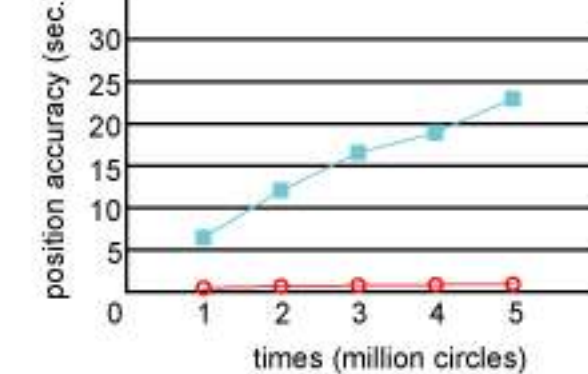


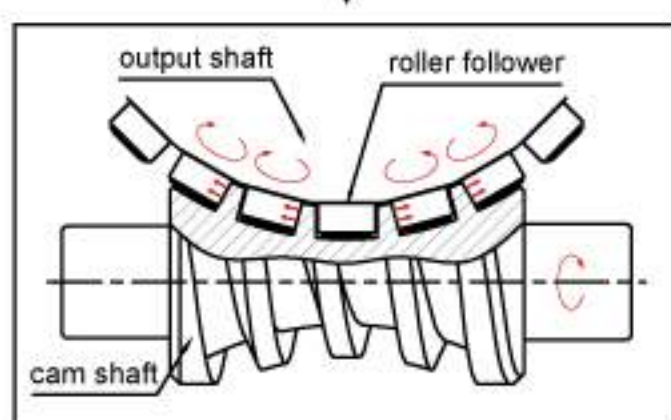
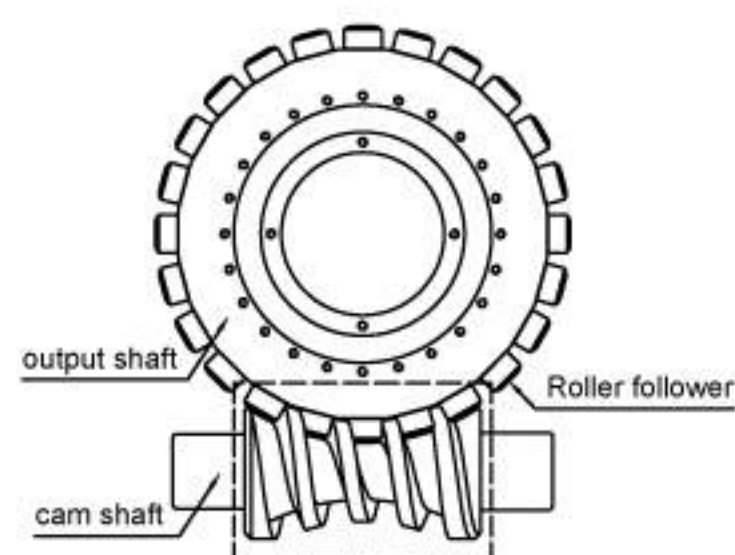
▲ P Series Parallel cam divider



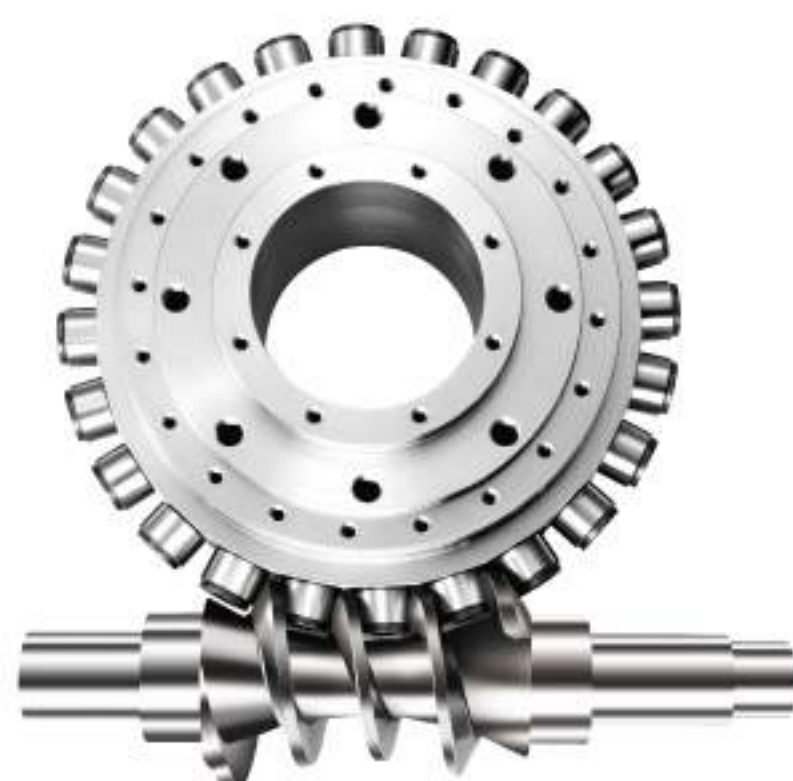
Comparison difference on conduction mode structure

Comparison of rotary table conduction characteristics

conduction mode	roller cam	worm gear/shaft
Backlash comparison CW & CCW		
Conduction mode	Rolling conduction	Friction squeeze conduction
Material, Hardness	cam shaft: bearing steel HRC60 / Roller bushing: bearing steel HRC60	Worm shaft: Carburized steel HRC60 / Worm gear: Bronze HB90
Pre-pressure	V	X
Backlash	X	V
Attrition	low	high
Thermal displacement	minimal	V
Brake position accuracy	high (in 0.002)	low (depend on different tolerance)
Conduction efficiency	high (90-95%)	low (50-60%)
	durability	change in position accuracy
		



▲ Cam struction



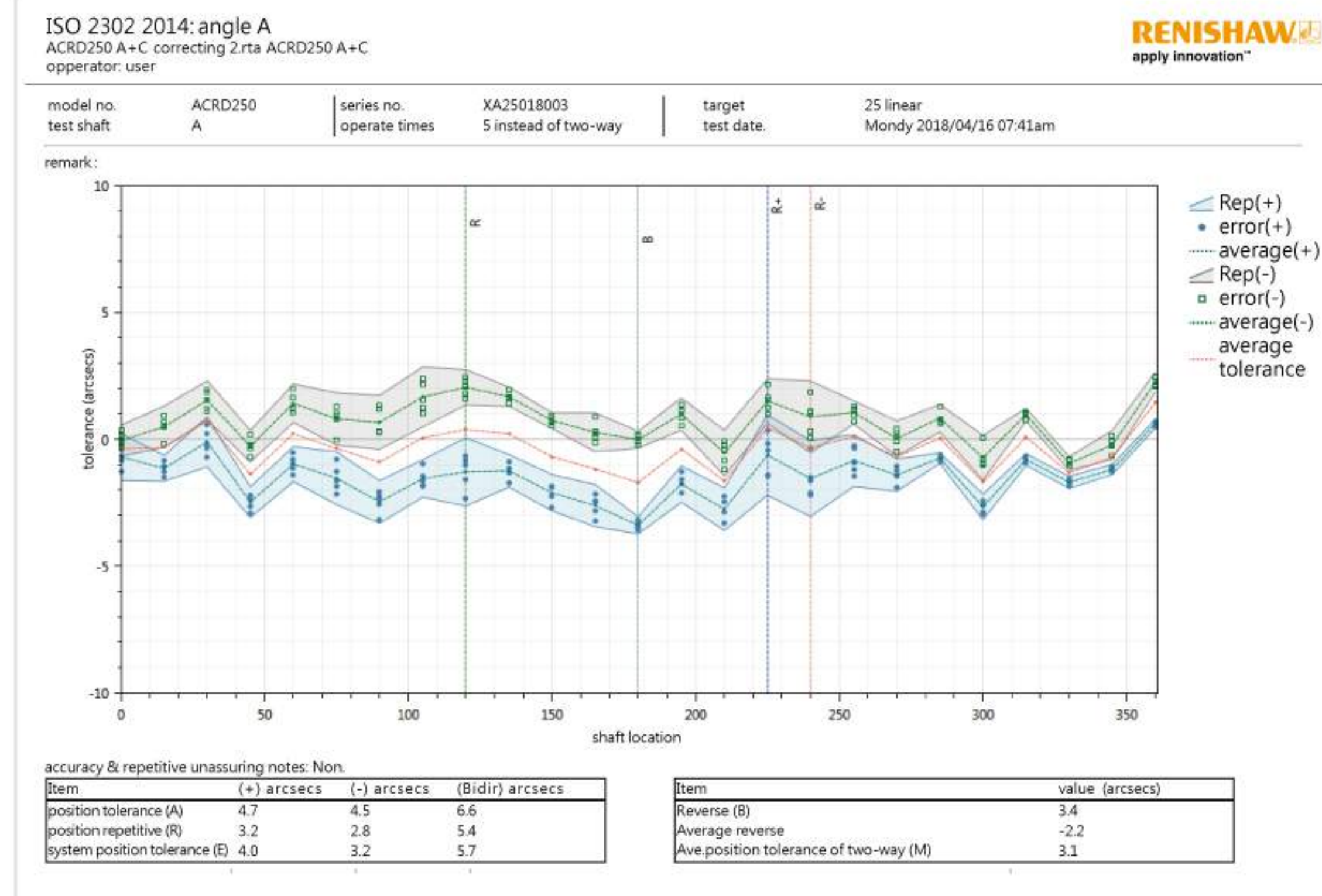
▲ Rolling conduction
efficiency at 90~95%



▲ Friction squeeze conduction
efficiency at 55~65%



Laser test



RENISHAW Laser test



CMM Measure



Producing Lines





Roller cam rotary table (RD Series)

- Zero backlash
- Roller cam type turret conducts in rolling mode to reduces wear.
- Forward & reverse rotary are high accuracy and efficiency
- High rigidity
- Keeping high accuracy for long time
- Continuous processing for a long time, the accuracy is stable, there is no change the initial accuracy due to temperature rise



Item	TYPE	Unit	RDE80R	RD140R	RDE170R	RD170R	RDS200R	RD200R	RDS250R	RD250R	RD320R	RD400R
Table diameter		mm	80	140	170	170	200	200	250	250	320	400
Center height		mm	80	115	135	135/160	160	160	160	185	210	255
Center hole	Front spindle hole	mm	30H7	35H7	55H7	55H7	55H7	60H7	60H7	90H7	120H7	150H7
	Through hole	mm	20H7	15H7	36H7	45H7	45H7	45H7	45H7	60H7	90H7	120H7
T-slot on table		mm	N/A	12H7	12H7	12H7	12H7	12H7	12H7	12H7	14H7	14H7
Datum position key		mm(h7)	14h7	14h7	14h7	14h7	14h7	18h7	18h7	18h7	18h7	18h7
Servo motor	FANUC	α	αiF2 □90	αiF4 □130	αiF4 □130	αiF4 □130	αiF4 □130	αiF4 □130	αiF4 □130	αiF8 □130	αiF12 □176	αiF12 □176
		β	βiS2 □90	βiS8 □130	βiS8 □130	βiS8 □130	βiS8 □130	βiS8 □130	βiS8 □130	βiS8 □130	βiS22 □176	βiS22 □176
	mitsubishi		HF-75S □90	HF-104T □130	HF-104T □130	HF-104T □130	HF-104T □130	HF-104T □130	HF-104T □130	HF-154T □130	HF-204S □176	HF-204S □176
Motor interface	SIEMENS		N/A N/A	1FK7060 □126	1FK7060 □126	1FK7060 □126	1FK7060 □126	1FK7060 □126	1FK7060 □126	1FK7063 □126	1FK7083 □155	1FK7083 □155
Reduction ratio			1/24	1/30	1/45 (1/36)	1/45 (1/36)	1/45 (1/36)	1/60	1/60 (1/50)	1/60	1/72	1/120
Maximum rpm		r.p.m.	100	100	83 (100)	83 (100)	83 (100)	66	66 (80)	50	41	25
Mini. degree		Degree	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Index accuracy (Grand total)		Second	25	25	17	16	16	14	14	13	12	11
Repet.accuracy (two-way)		Second	7	7	4	4	4	4	4	4	4	4
Allowable cutting torque		[kgf-m]	[5.8]	[20]	[39]	[39]	[39]	[47]	[47]	[55]	[110]	[186]
		N-m	57	200	387	387	387	464	464	545	1082	1831
Moment max.cutting torque		[kgf-m]	[9.2]	[33]	[63]	[63]	[63]	[76]	[76]	[89]	[176]	[299]
		N-m	91	322	619	619	619	743	743	871	1731	2930
Clamp power source		Pneumatic / Hydraulic	N / A	Pneumatic / Hydraulic	N / A	Pneumatic / Hydraulic	Pneumatic / Hydraulic	Pneumatic / Hydraulic	Pneumatic / Hydraulic	Pneumatic / Hydraulic	Hydraulic	Hydraulic
Clamp pressure		kg-cm ²	N / A	6 / 35	N / A	6 / 20	6 / 20	6 / 20	6 / 20	6 / 20	30	30
Clamp torque		[kgf-m]	N / A	[9 / 20]	N / A	[26 / 80]	[26 / 80]	[26 / 80]	[26 / 80]	[40 / 93]	[225]	[420]
		N-m	N / A	88 / 196	N / A	254 / 784	254 / 784	254 / 784	254 / 784	392 / 911	2205	4116
Allowable load (radial)straight	Vertical	kg	30	60	80	90	100	145	155	200	260	400
Allowable load (Axial) flat	Tailstock applied	kg	60	120	160	180	200	290	310	400	520	800
Allowable load (Axial) flat	Horizontal	kg	60	120	160	180	200	290	310	400	520	800
Allowable load (table clamped)		F	Kgf	N / A	1400	N / A	2100	2100	3200	3200	4300	5200
			N	N / A	13720	N / A	20580	20580	31360	31360	42140	50960
		FxL	Kgf-m	N / A	[10 / 20]	N / A	[26 / 80]	[26 / 80]	[26 / 80]	[26 / 80]	[40 / 93]	[225]
			N-m	N / A	98/196	N / A	254/784	254/784	254/784	254/784	392/911	2205
		FxL	Kgf-m	N / A	83	N / A	122	122	314	314	490	635
			N-m	N / A	813	N / A	1195	1195	3077	3077	4802	6223
Product weight		kg	25	55	60	60	65	70	80	126	186	310
Max. inertia force		kg-m ²	0.2	0.66	1.25	1.4	2.25	3.26	3.48	6.12	10.4	24



▲RD320 Rotary table



▲RD250 Rotary table



▲RD200 Rotary table



▲RD170 Rotary table



▲RDE80 Rotary table

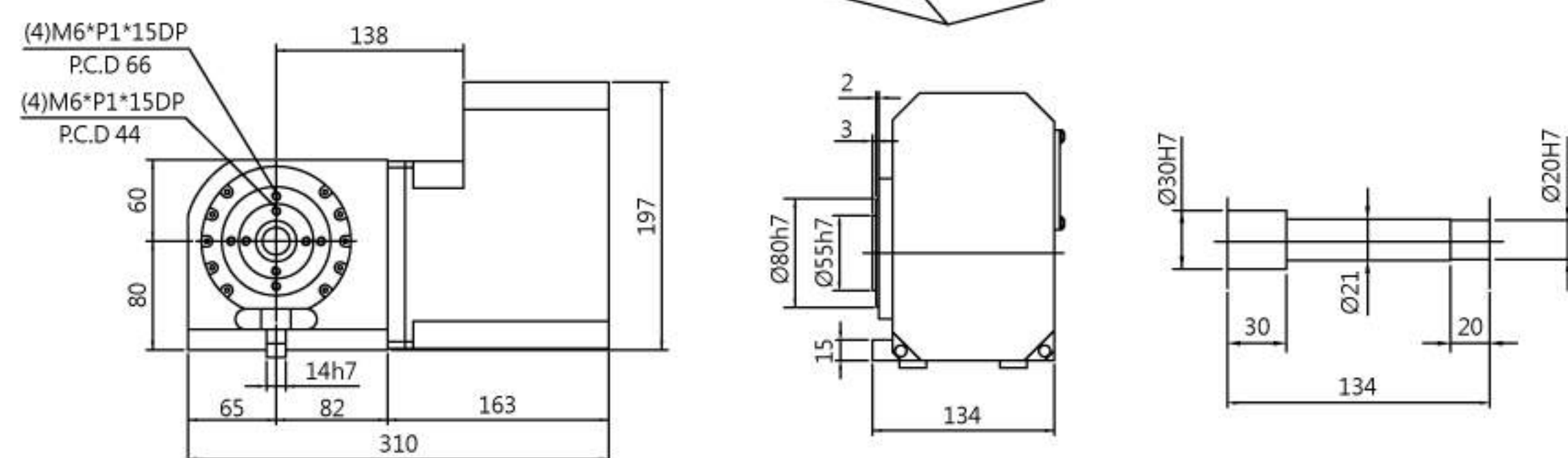
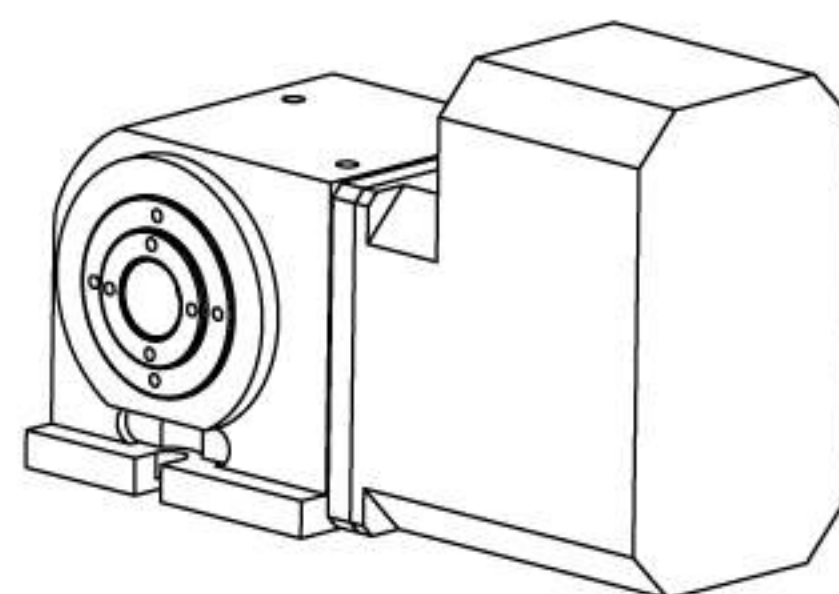


Specification

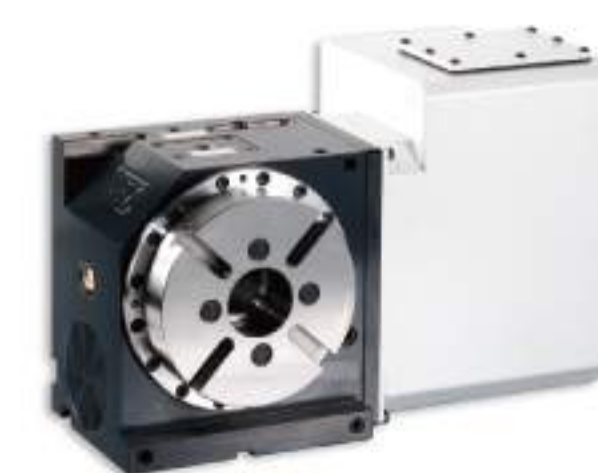
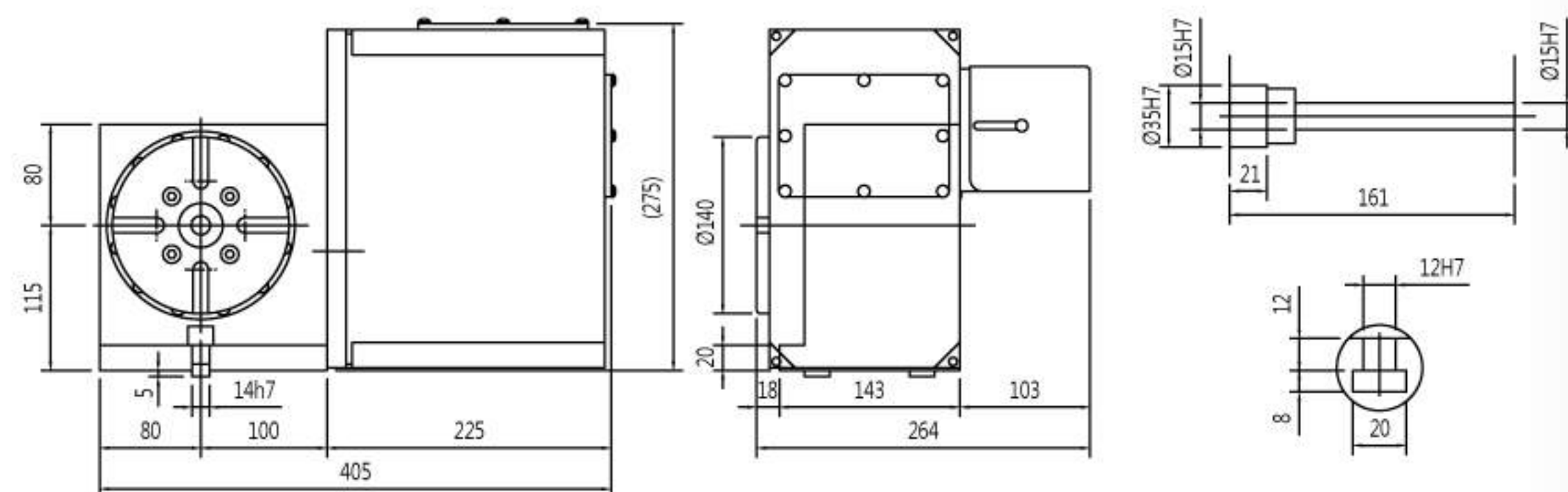
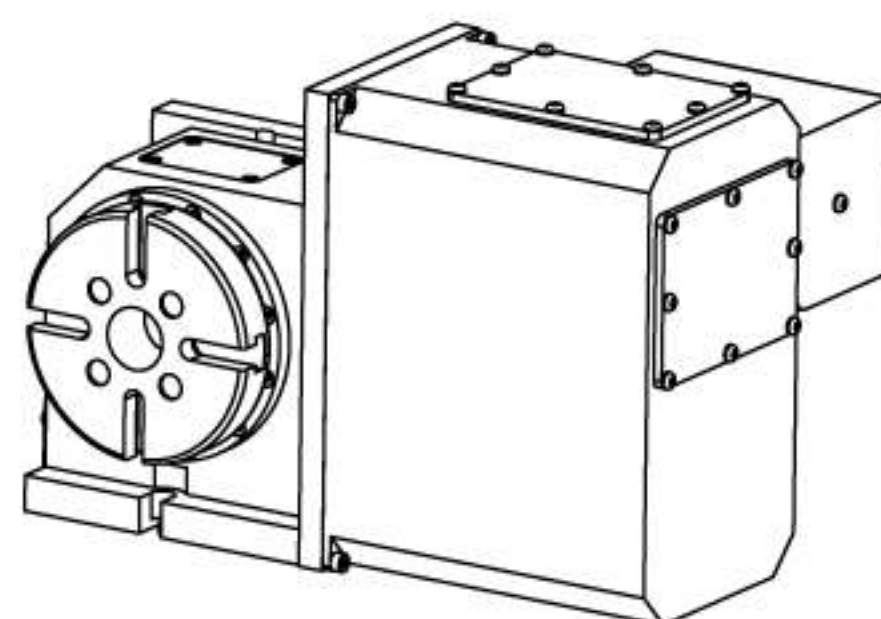
Unit : mm



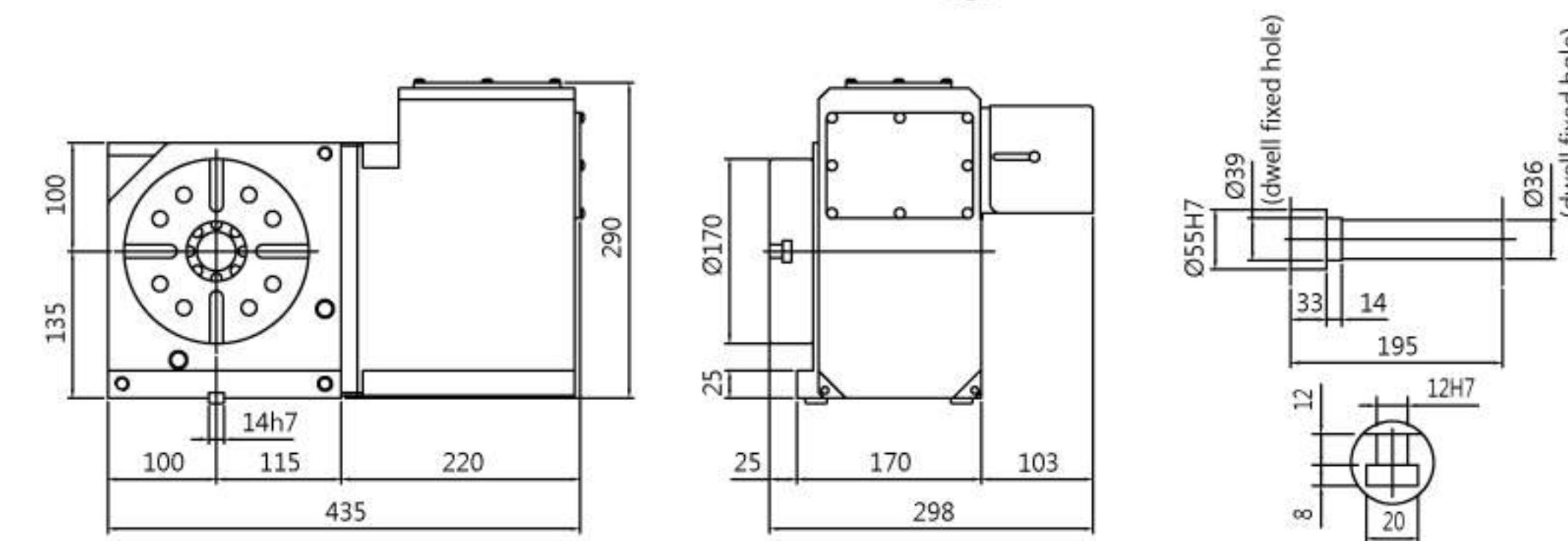
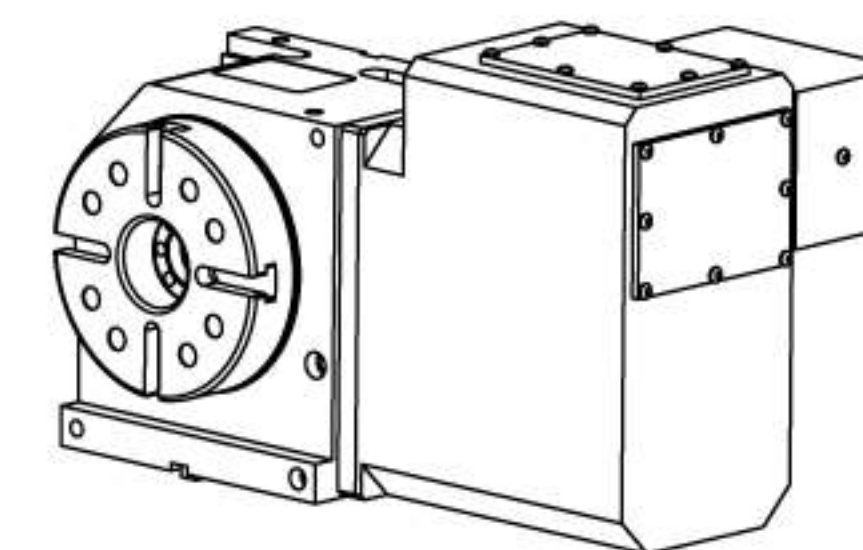
RDE80R



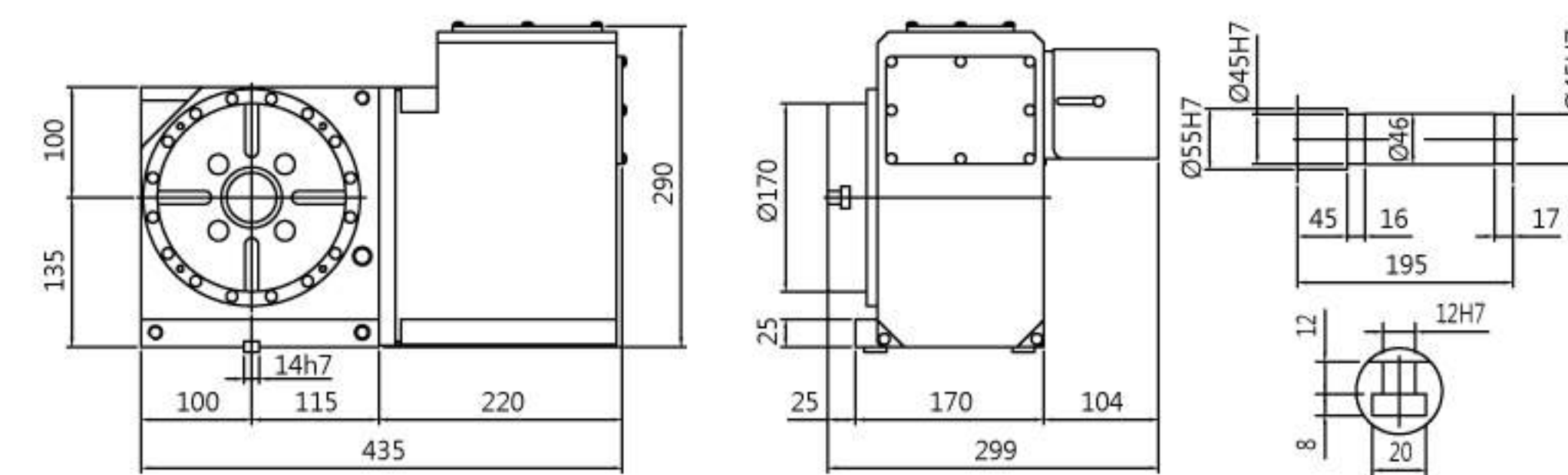
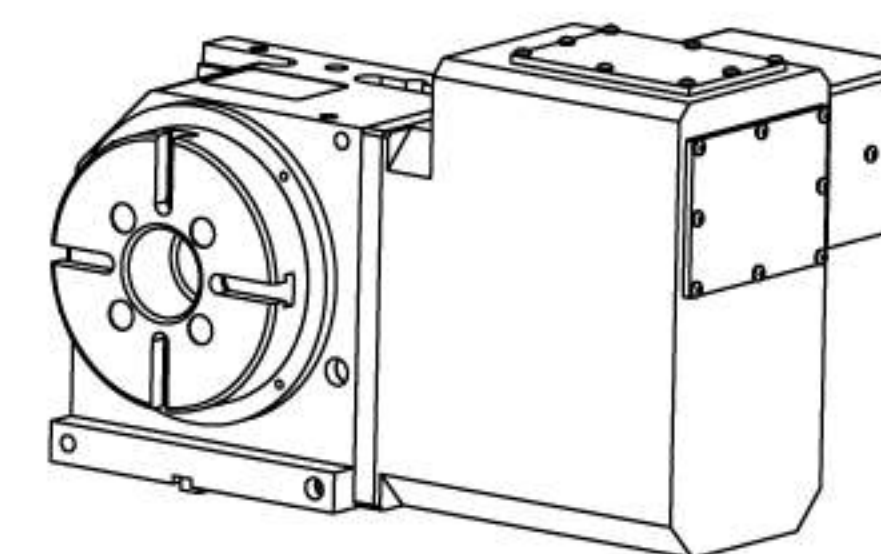
RD140R



RDE170R



RD170R



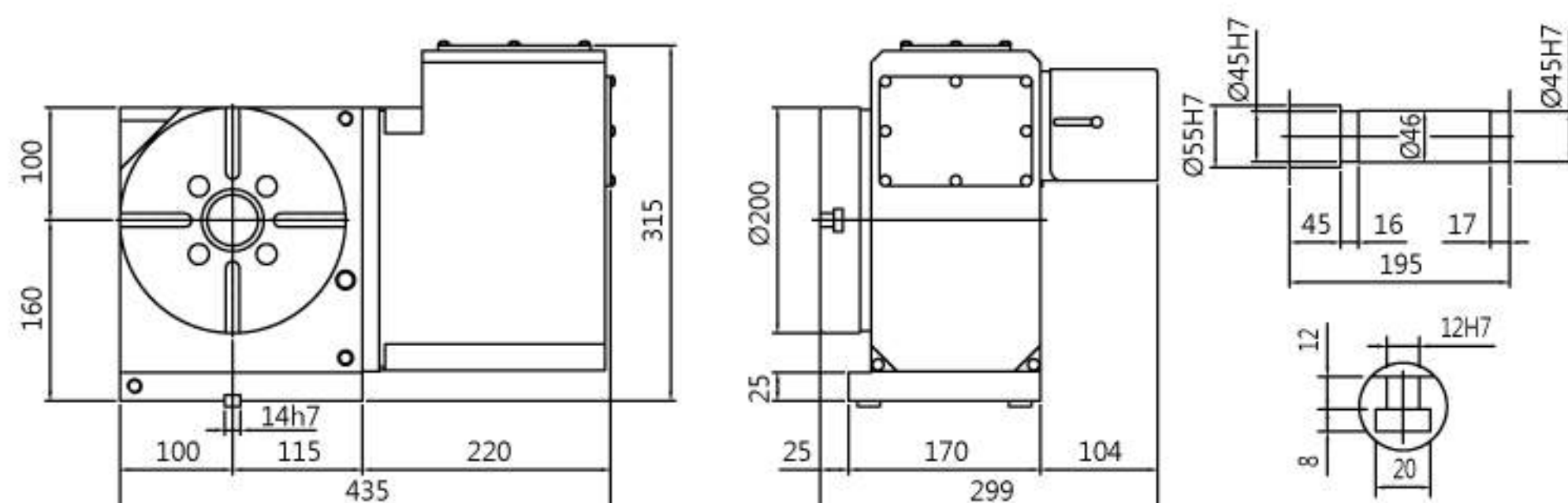
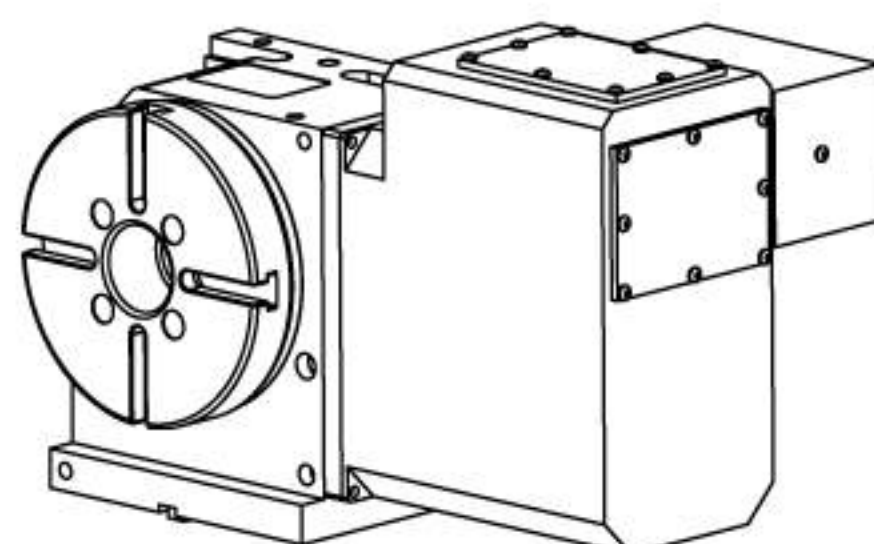


Specification

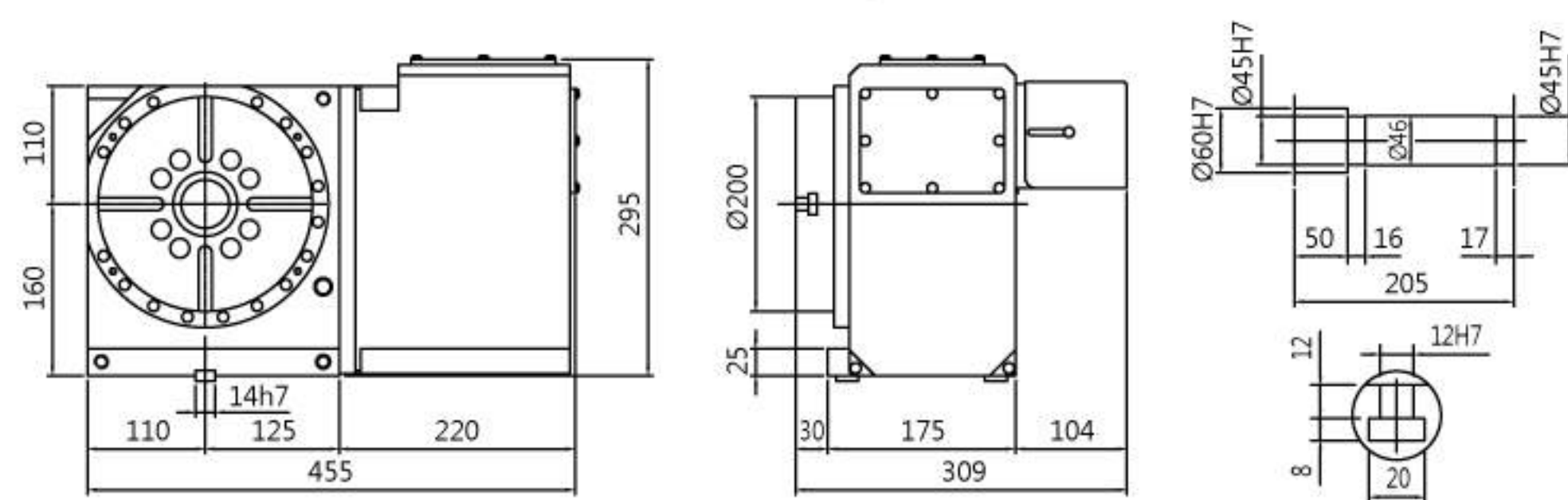
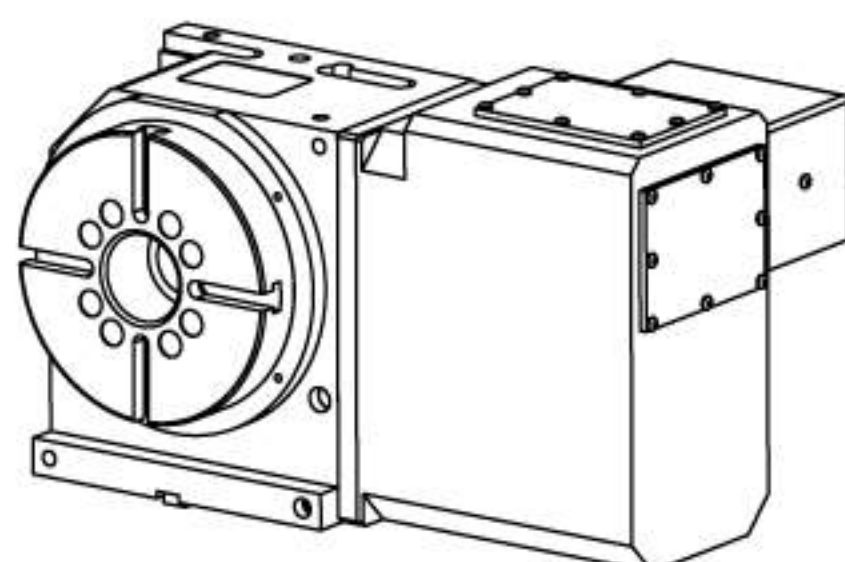
Unit : mm



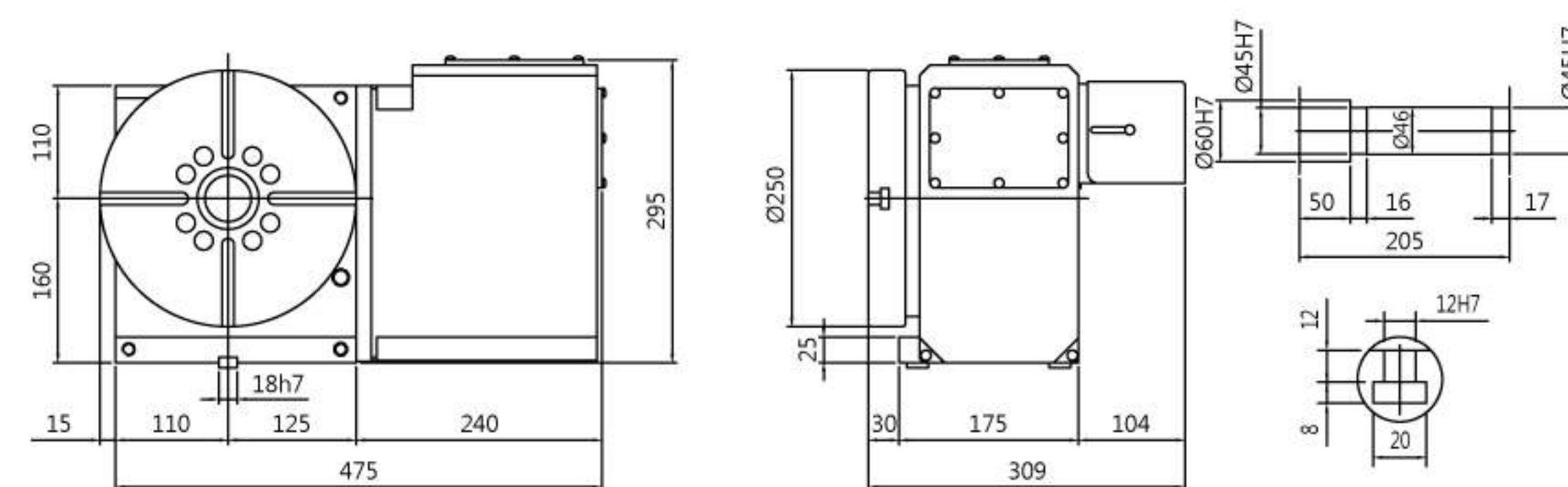
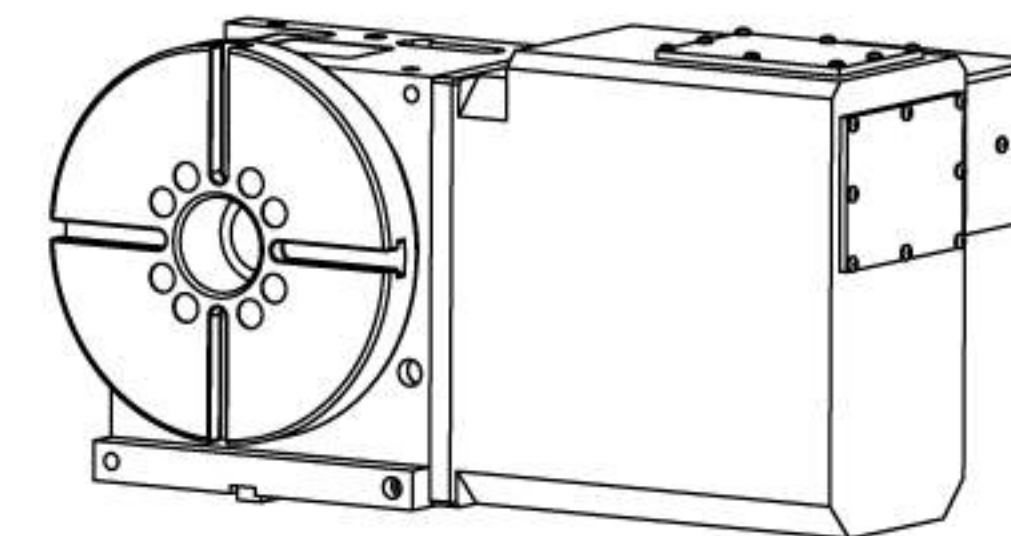
RDS200R



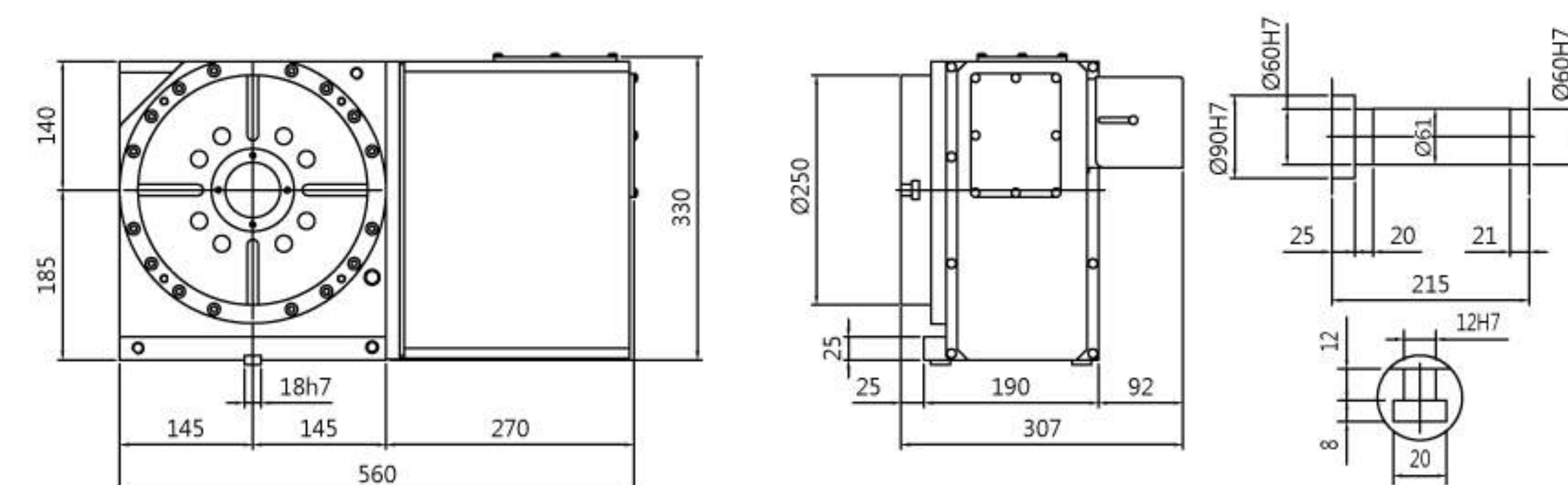
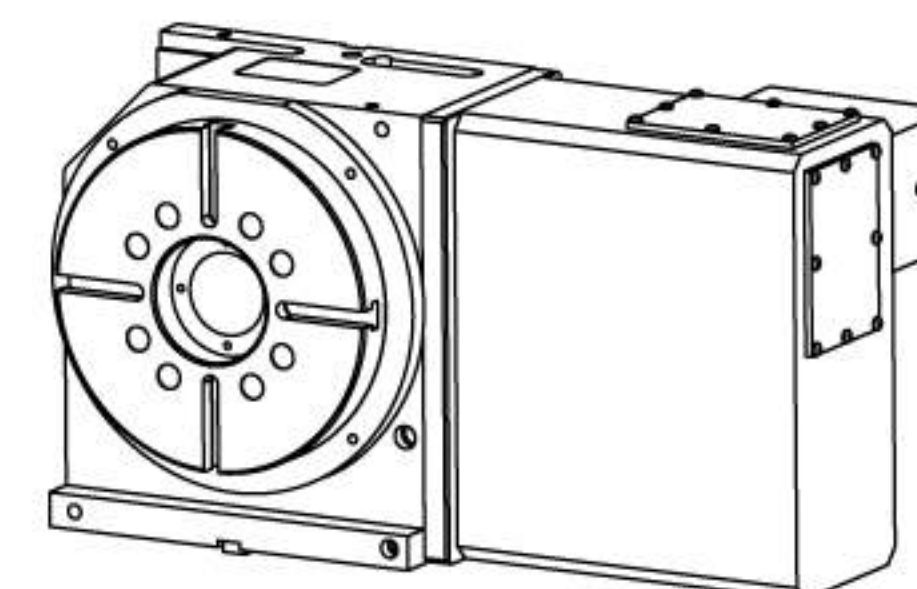
RD200R



RDS250R



RD250R

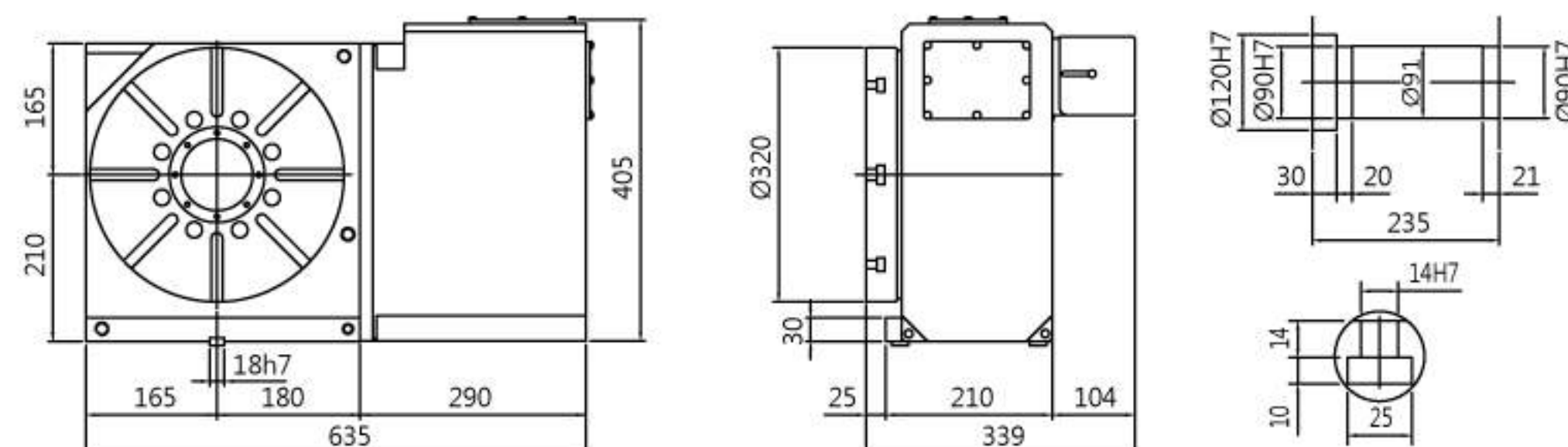
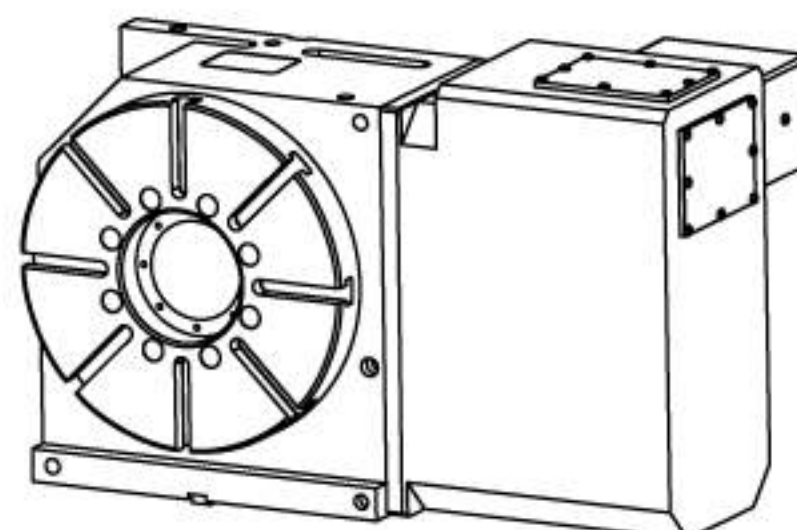




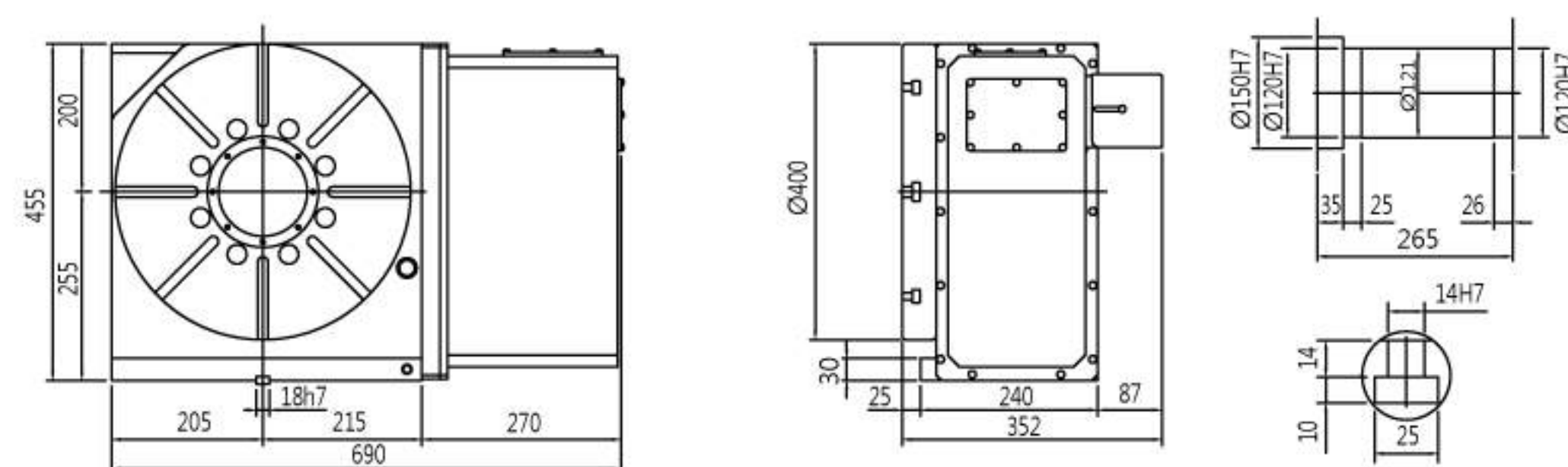
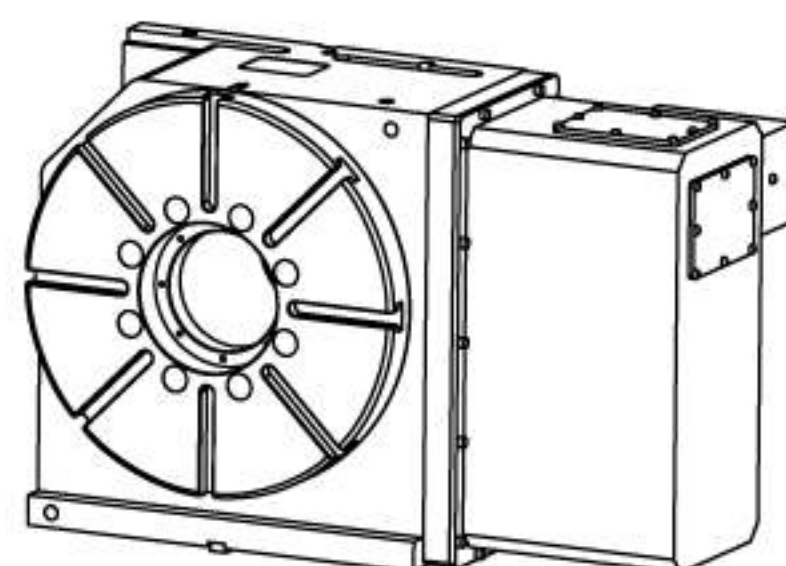
Specification Unit : mm



RD320R



RD400R

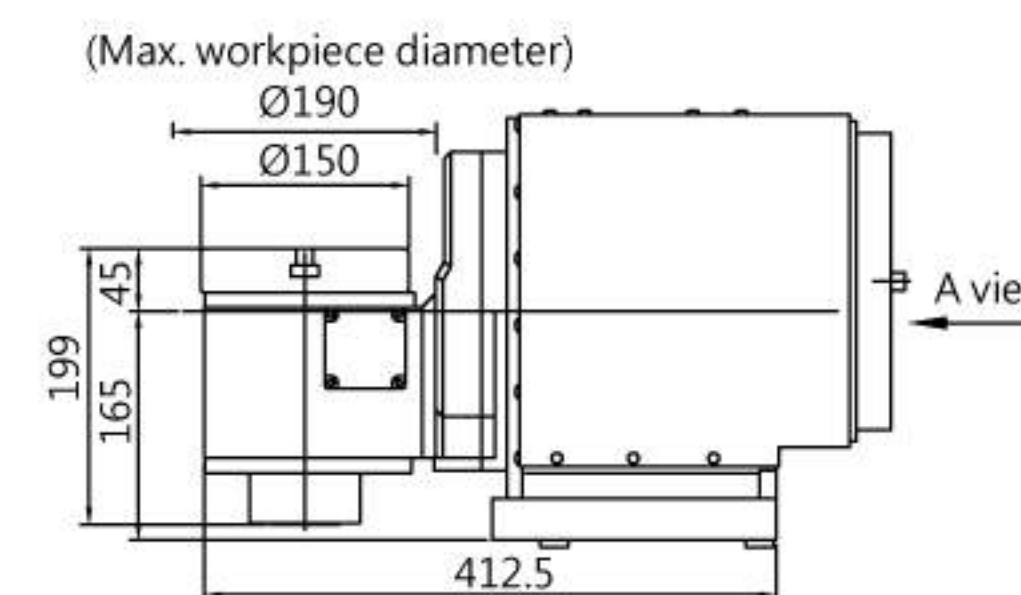
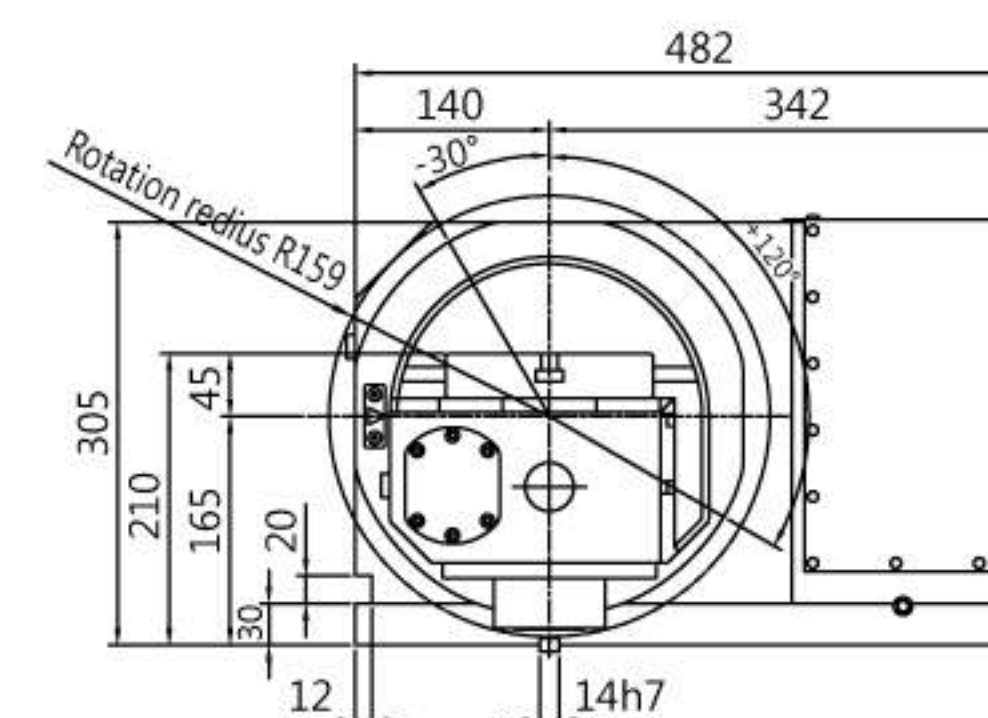
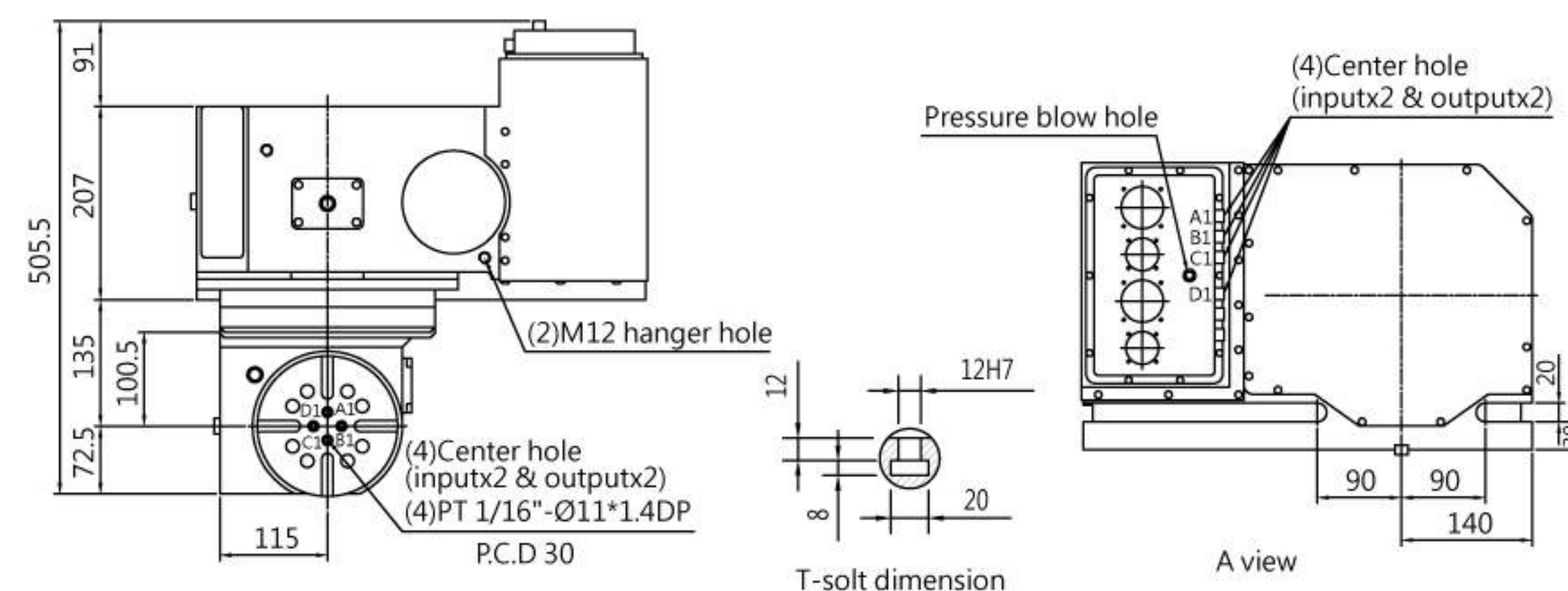
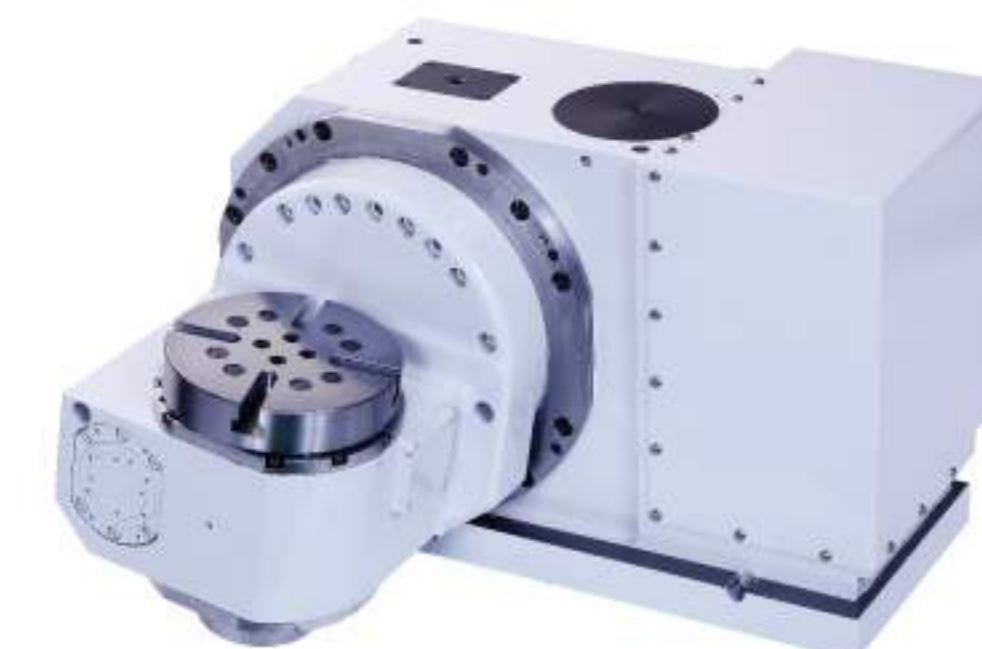


CNC 5 axis Rotary Tilting Tables ACUB series

ACUB150

Standard: Pneumatic/hydraulic distributors
(input x 2 & output x 2) inside.

Item	Unit	Specification			
Table diameter	mm	Φ150			
Table center height	mm	210			
Datum hole	mm	N / A			
Through-hole	mm	N / A			
Datum position key	mm	14h7			
Allowable work-piece load	kg	40			
Allowable cutting torque	kg-m	12			
Axis	Degree	rotation axis (C-axis),360		tilt axis (A-axis),-30 to +120	
Servo motor (Option)	Fanuc	α iF2	Motor interface □ 90	α iF4	Motor interface □ 130
		β iS4		β iS8	
	Mitsubishi	HG96S-D47	□ 80	HG104S-D48	□ 130
Total reduction ratio		1/48		1/72	
Maximum rpm	rpm	83		66	
Clamp power source		Pneumatic	Hydraulic	Pneumatic	Hydraulic
Clamp pressure	kg / cm²	6	35	6	35
Clamp torque	kg-m	5	24	20	116
Index accuracy	sec	20		15 (-30°~+120°)	
Repetition accuracy	sec	8		4	
Product weight	kg	175			





Standard: Pneumatic/hydraulic distributors
(input x 2 & output x 2) inside.

568

91

207

170

100

135

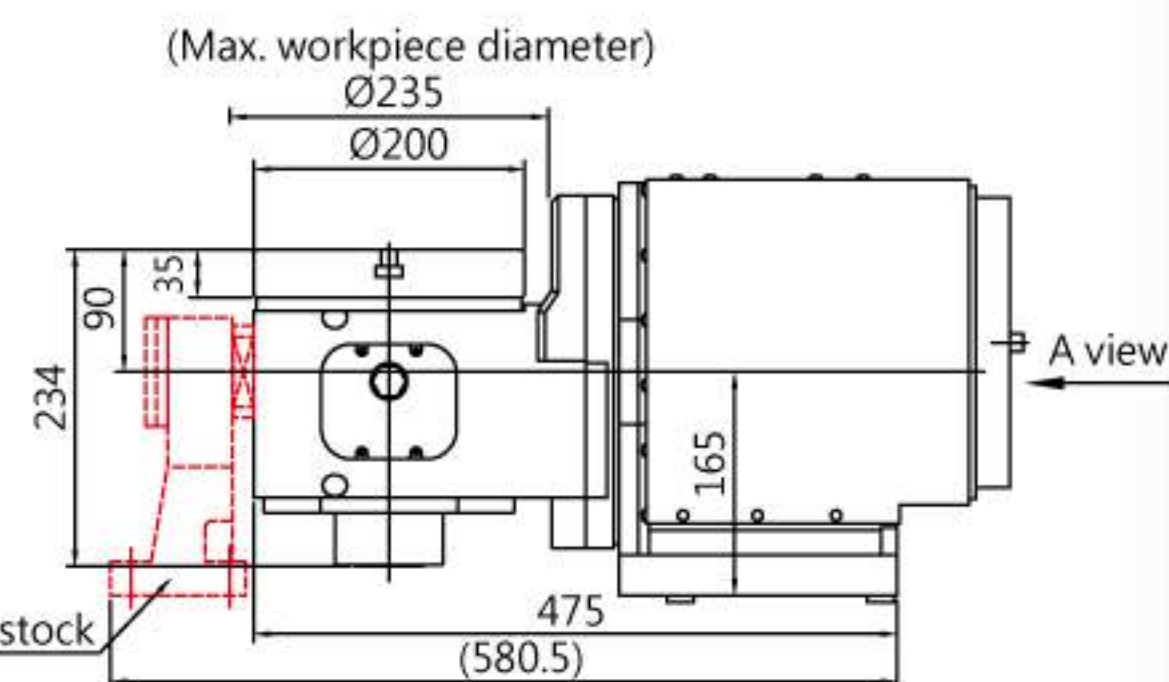
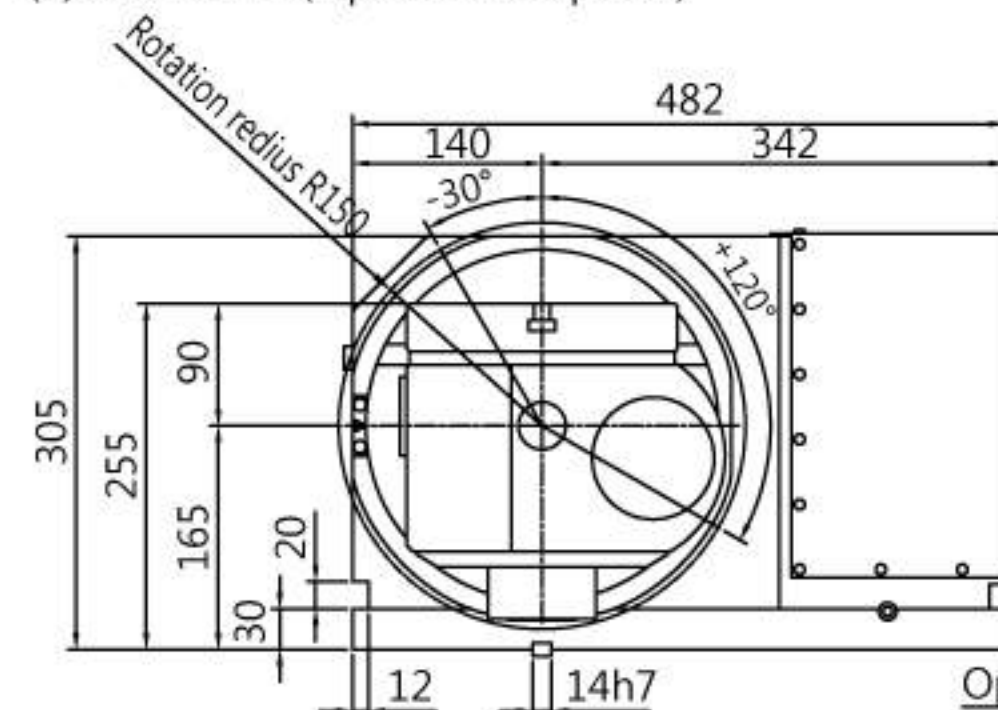
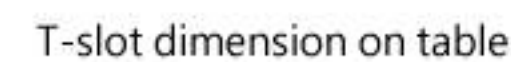
R120

(2)M12 hanger hole

(4)PT 1/16"-Ø11*1.4DP

P.C.D 36

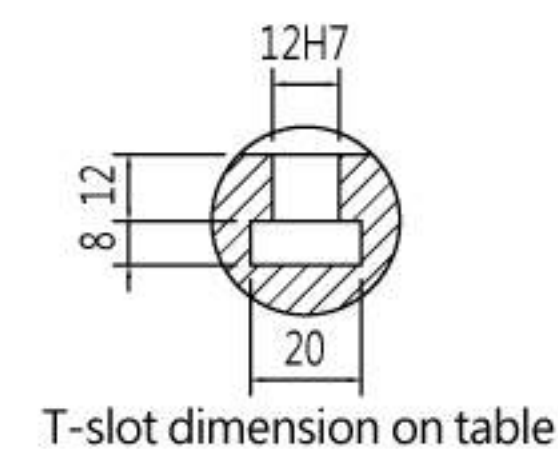
(4)Center hole (inputx2 & outputx2)


CNC 5 axis Rotary Tilting Tables ACU series

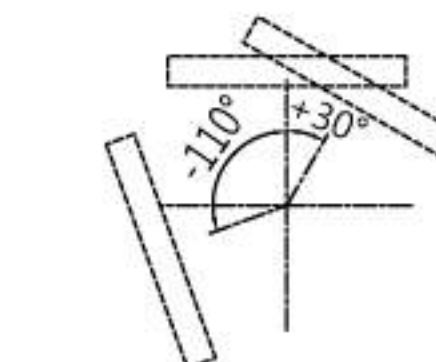
Item	Unit	Specification			
Table diameter	mm	Φ250			
Table center height	mm	315			
Datum hole	mm	Φ55H7			
Through-hole	mm	Φ45H7			
T-slot on table	mm	12H7			
Datum position key	mm	18h7			
Allowable work-piece load	kg-m	30			
Allowable cutting torque	kg	0°/ 120kg		90°/ 80kg	
Axis	Degree	rotation axis (C-axis),360		tilt axis (A-axis),+30 to -1	
Servo motor (Option)	Fanuc	α iF4	Motor interface □ 130	α iF4	Motor interf □ 130
		β iS8		β iS8	
	Mitsubishi	HF-154S		HF-154S	
	Siemens	1FK7060	□ 126	1FK7060	□ 126
	Heidenhain	QSY116C	□ 116	QSY116C	□ 116
Total reduction ratio		1/45		1/96	
Mini. degree	Degree	0.001		0.001	
Maximum rpm	rpm	44.4(2000rpm)		20.8(2000rpm)	
Clamp power source		Pneumatic		Pneumatic	
Clamp pressure	kg / cm ²	6		6	
Clamp torque	kg-m	20		45	
Index accuracy	sec	20		15 (+30°~-110°)	
Repetition accuracy	sec	4		4	
Product weight	kg	280			

Technical drawing of a circular machine component. The drawing shows a front view of a circular assembly. Key dimensions and features include:

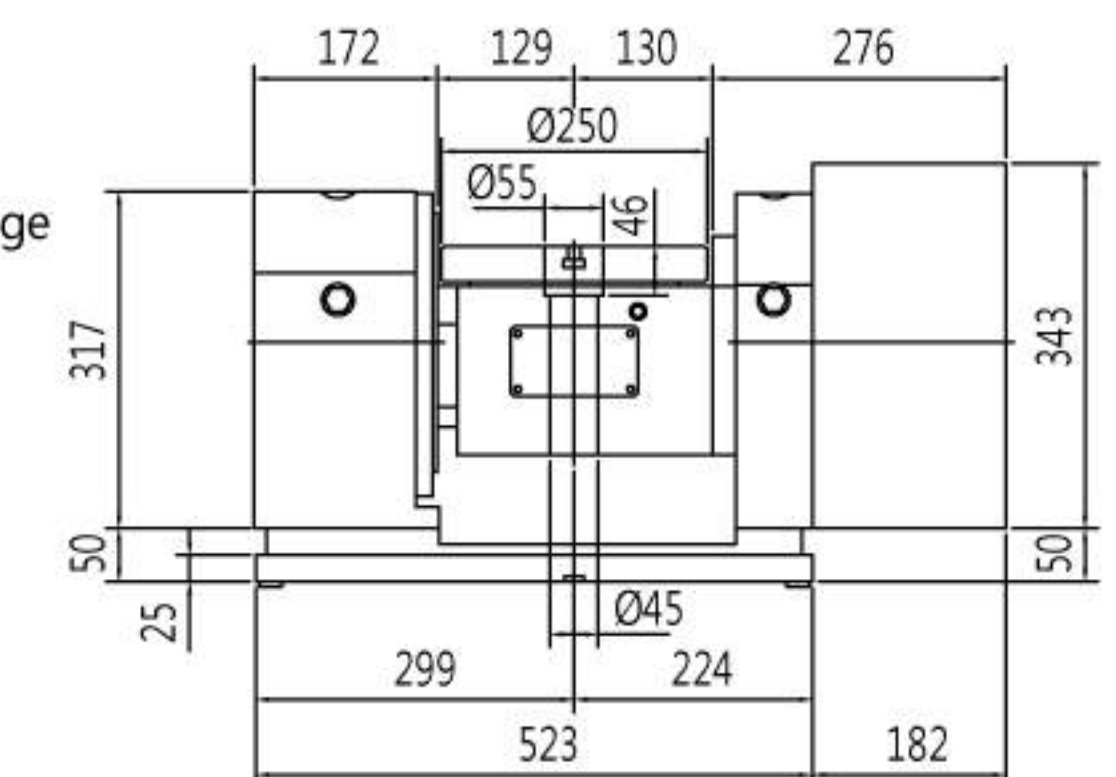
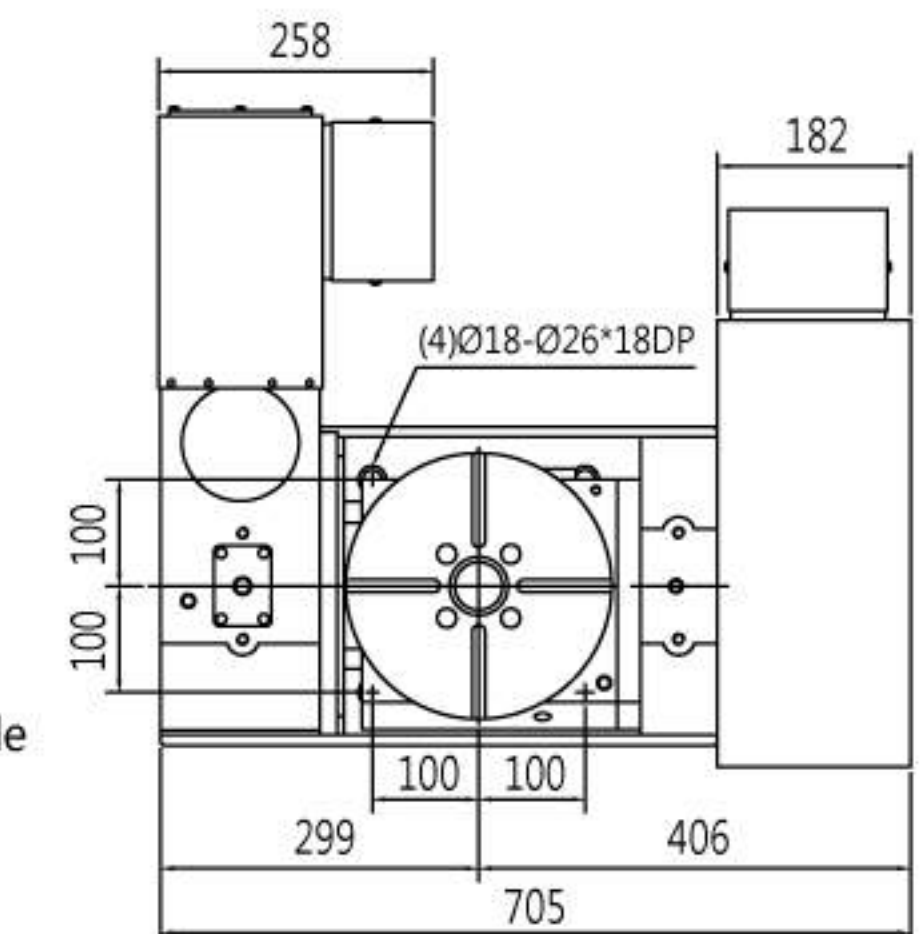
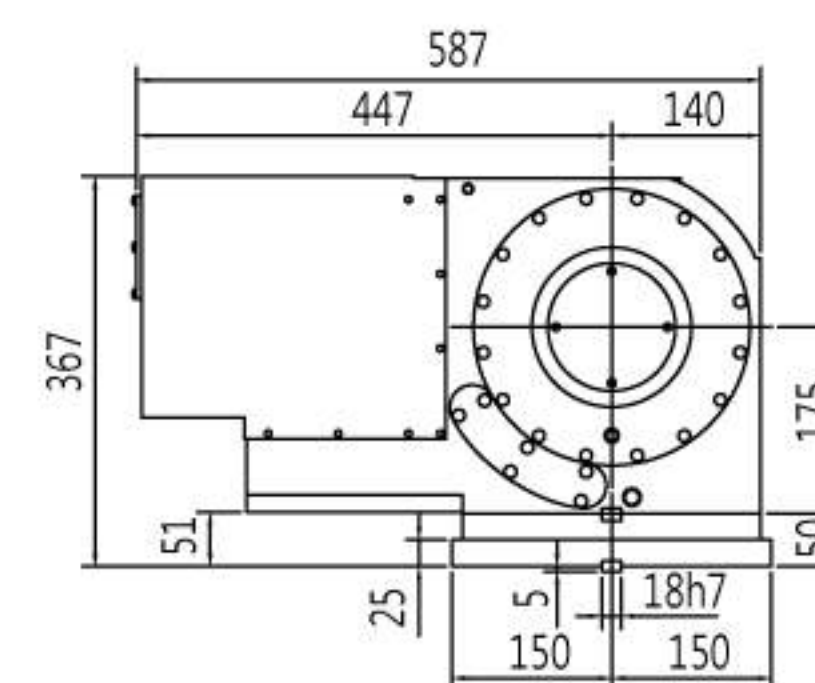
- Overall width: 524
- Overall height: 315
- Internal width segments: 170 and 354
- Internal height segments: 90, 225, 25, and 25
- Angular dimensions: $+30^\circ$ and -110°
- Annotation: "Rotation radius R15" with an arrow pointing to a small circular feature on the right side.



T-slot dimension on table



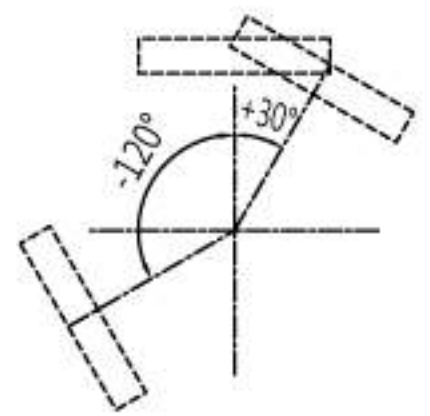
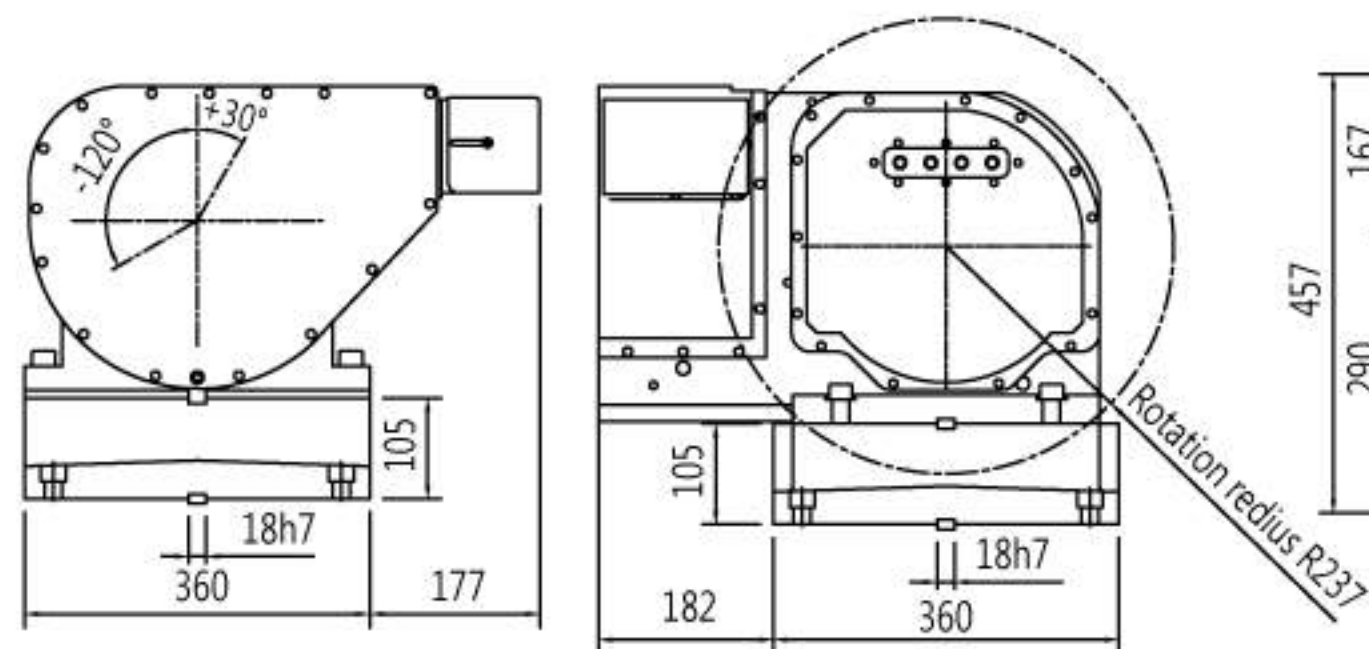
Rotation angle range



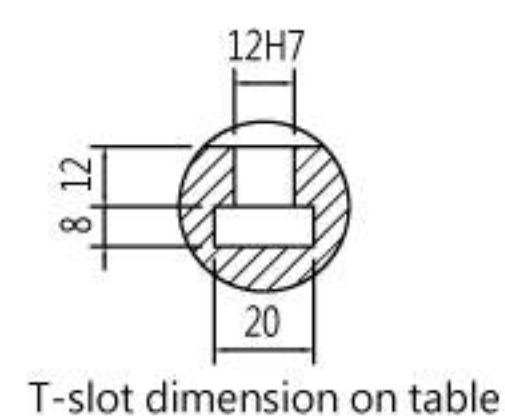
**ACL250** (High rigidity type)

Item	Unit	Specification	
Max.workpiece diameter	mm	Φ410	
Table diameter	mm	Φ250	
Table center height	mm	290	
Datum hole	mm	Φ90H7	
Through-hole	mm	Φ60H7	
T-slot on table	mm	12H7	
Datum position key	mm	18h7	
Allowable cutting torque	kg-m	50	
Allowable workpiece load	kg	0°/ 170kg	90°/ 140kg
Axis	Degree	rotation axis (C-axis),360	tilt axis (A-axis),+30 to -120
Servo motor (Option)	Fanuc	α iF4,β iS8	α iF8+B,β iS8+B
	Mitsubishi	HF-154S	HF-154BS
	Siemens	1FK7060	1FK7063+B
	Heidenhain	QSY116C	QSY116J+B
Total reduction ratio		1/60	1/120
Mini. degree	Degree	0.001	0.001
Maximum rpm	rpm	50	25
Clamp power source		Hydraulic	Hydraulic
Clamp pressure	kg / cm ²	25	25
Clamp torque	kg-m	60	180
Index accuracy	sec	15	20 (+30°~-120°)
Repetition accuracy	sec	4	4
Product weight	kg	490	

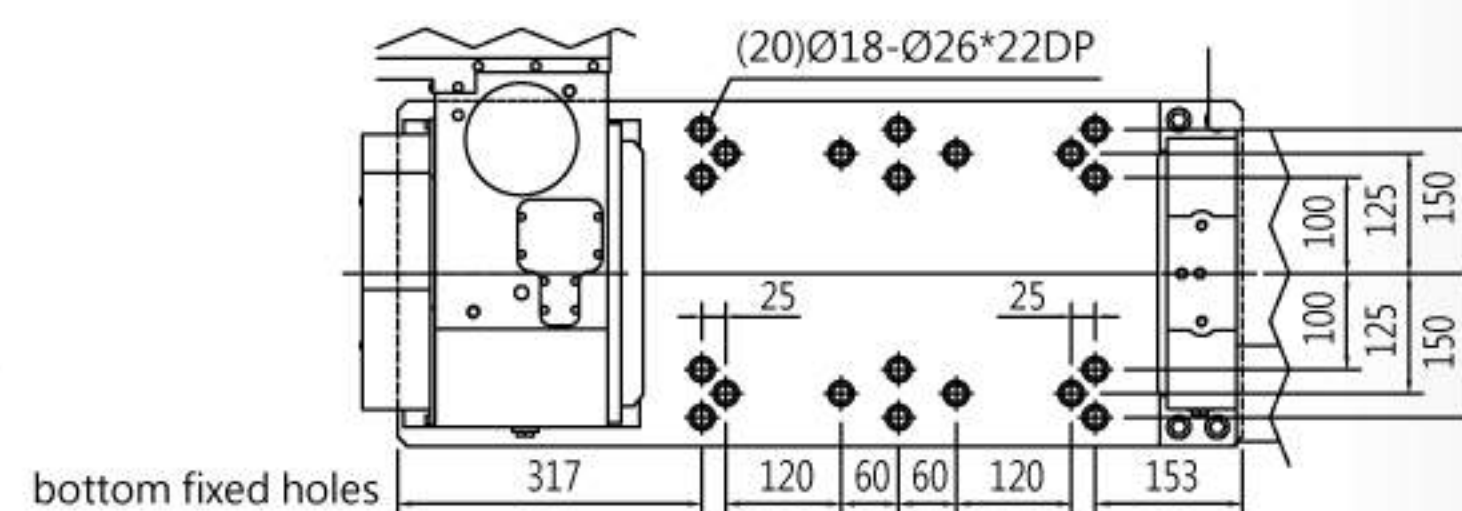
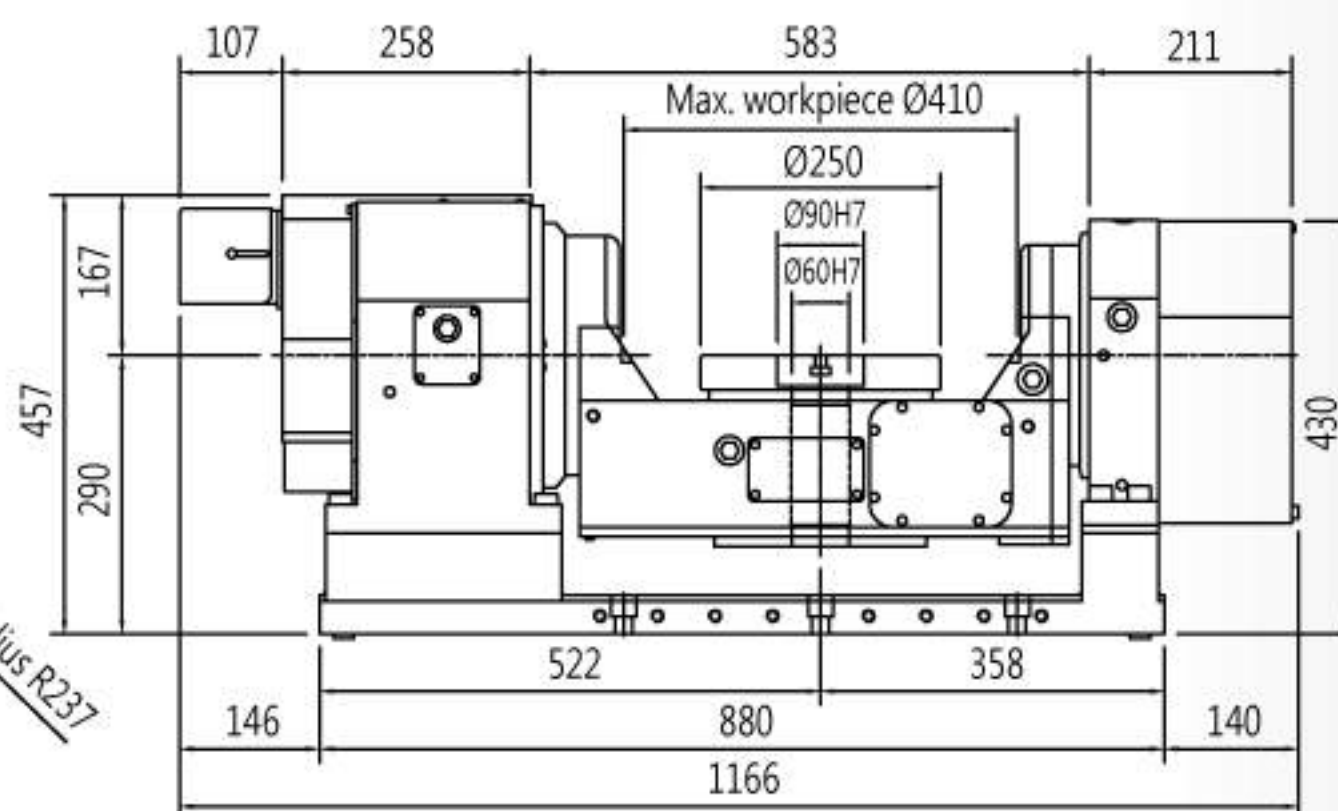
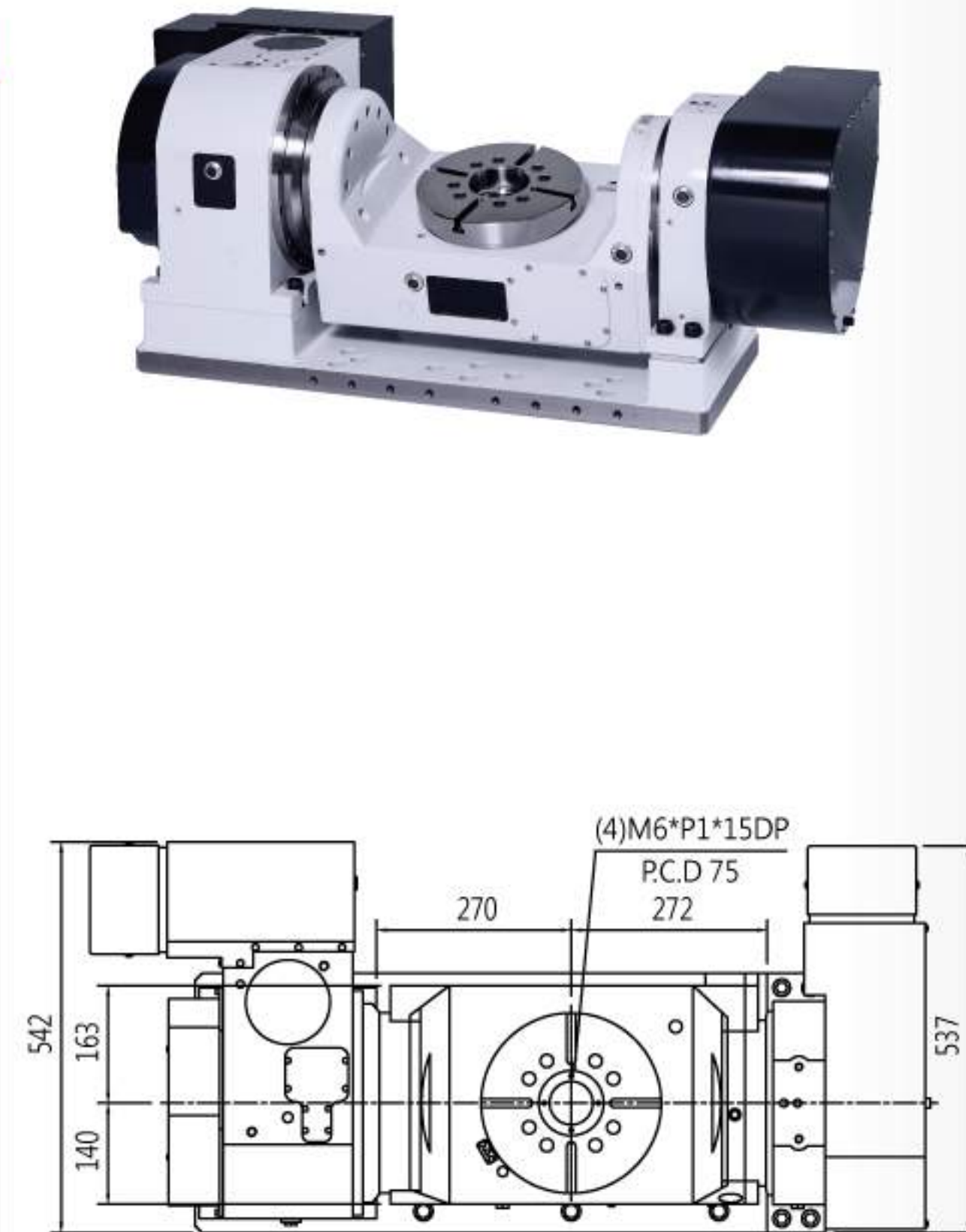
※ Option version:
1. Hydraulic distributors (input x 2 & output x 2) inside
2. Table at dia.320mm



Rotation angle range



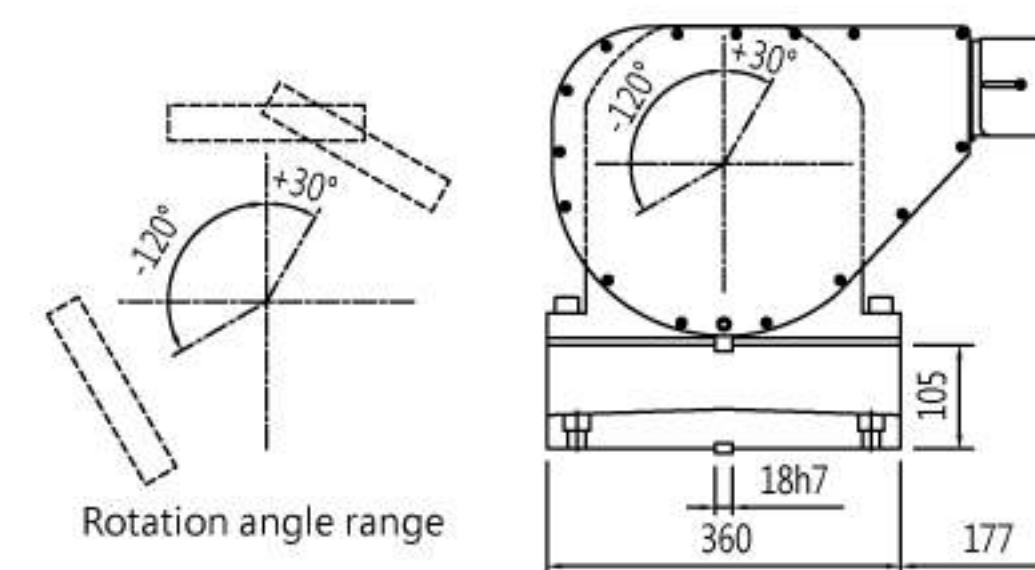
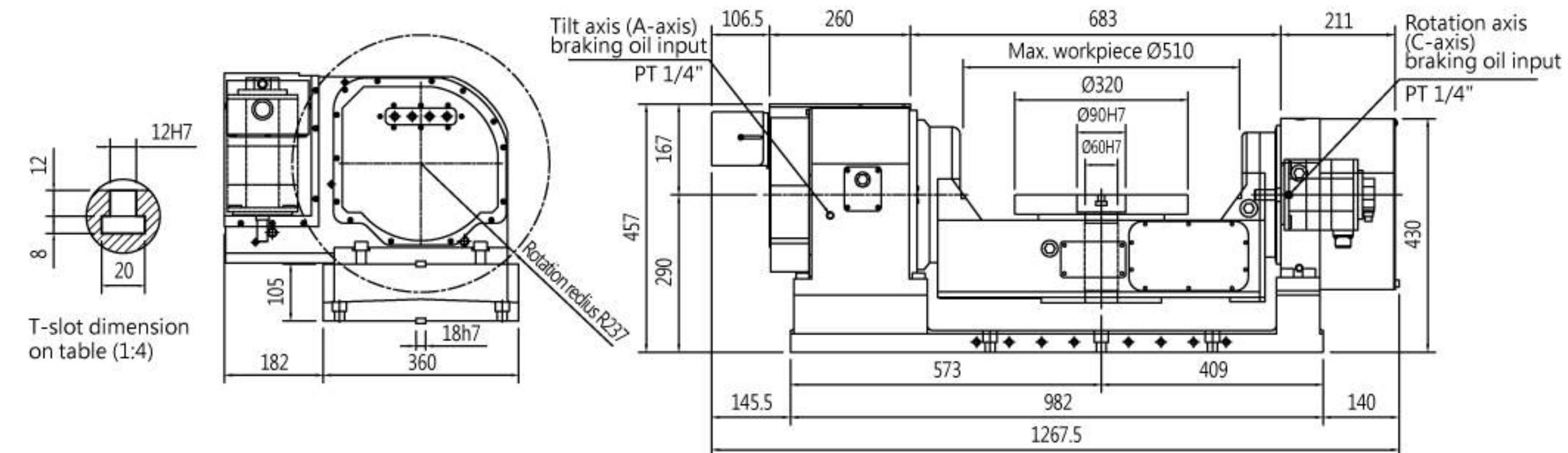
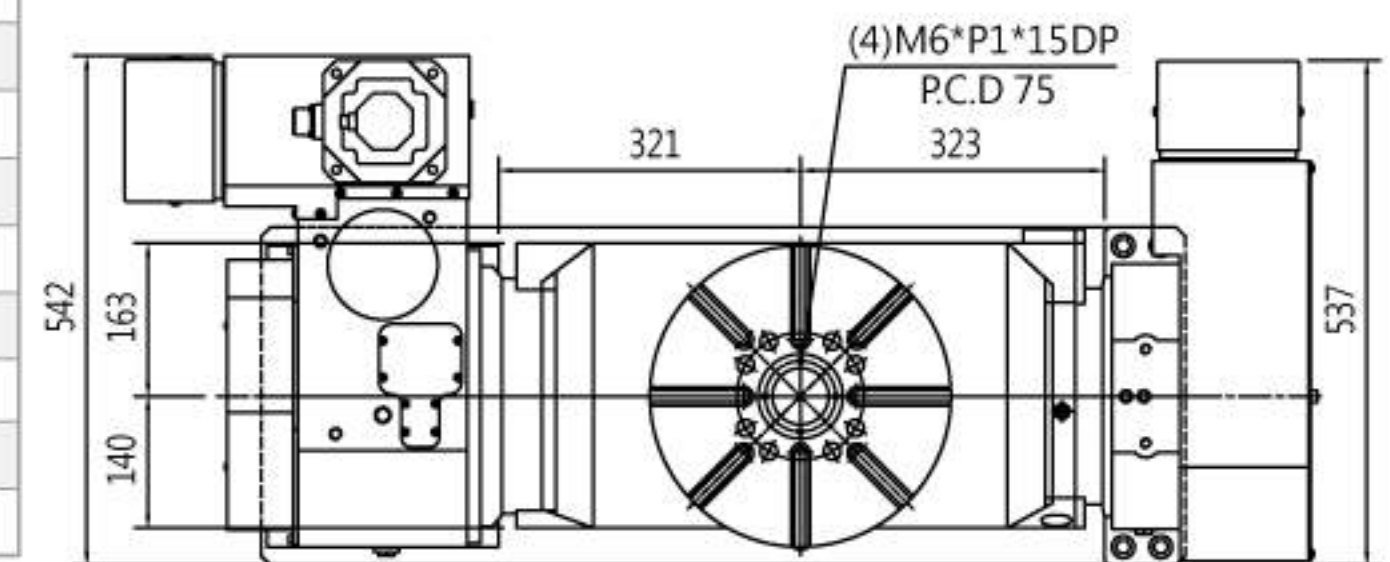
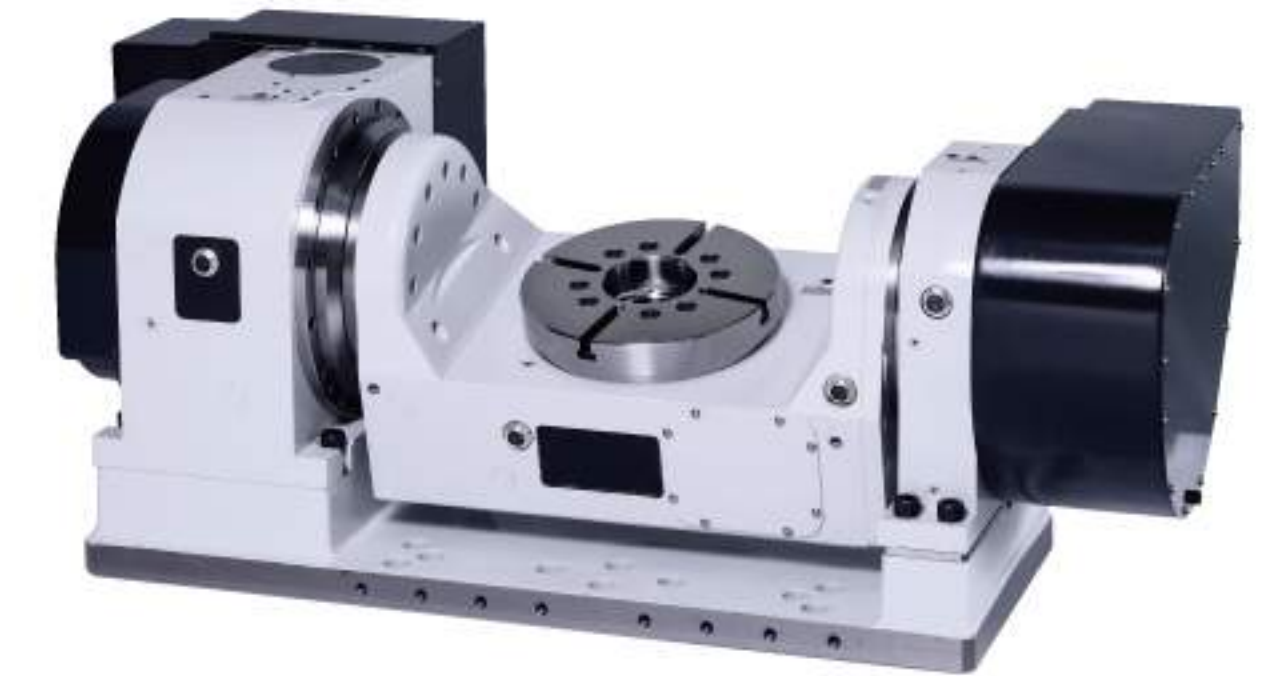
T-slot dimension on table



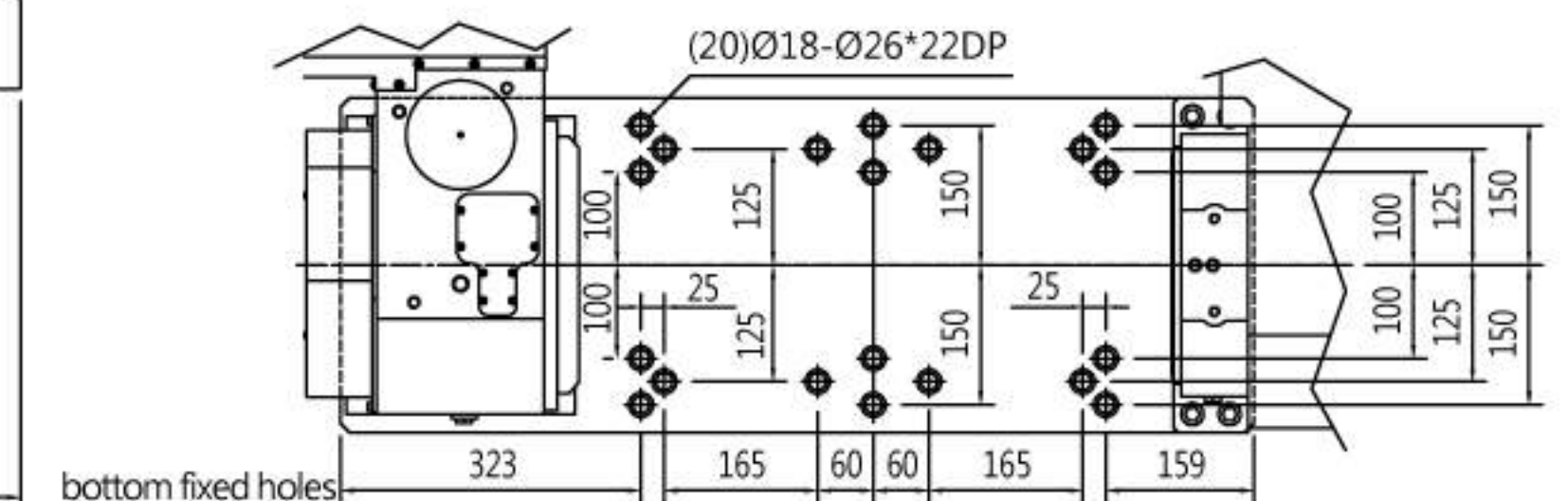
ACS320

Item	Unit	Specification	
Max.workpiece diameter	mm	Φ510	
Table diameter	mm	Φ320	
Table center height	mm	290	
Datum hole	mm	Φ90H7	
Through-hole	mm	Φ60H7	
T-slot on table	mm	12H7	
Datum position key	mm	18h7	
Allowable cutting torque	kg-m	50	
Allowable workpiece load	kg	0°/ 170kg	90°/ 140kg
Axis	Degree	rotation axis (C-axis), 360	tilt axis (A-axis), +30 to -12
Servo motor (Option)	Fanuc	α iF4, β iS8	α iF8+B, β iS8+B
	Mitsubishi	HF-154S	HF-154BS
	Siemens	1FK7060	1FK7063+B
	Heidenhain	QSY116C	QSY116J+B
Total reduction ratio		1/60	1/120
Mini. degree	Degree	0.001	0.001
Maximum rpm	rpm	50	25
Clamp power source		Hydraulic	Hydraulic
Clamp pressure	kg / cm ²	25	25
Clamp torque	kg-m	60	180
Index accuracy	sec	15	20 (+30°~-120°)
Repetition accuracy	sec	4	4
Product weight	kg	500	

※ Option version :
Hydraulic distributors (input x 2 & output x 2) inside



Rotation angle range



bottom fixed holes



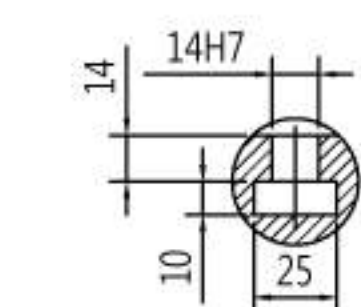
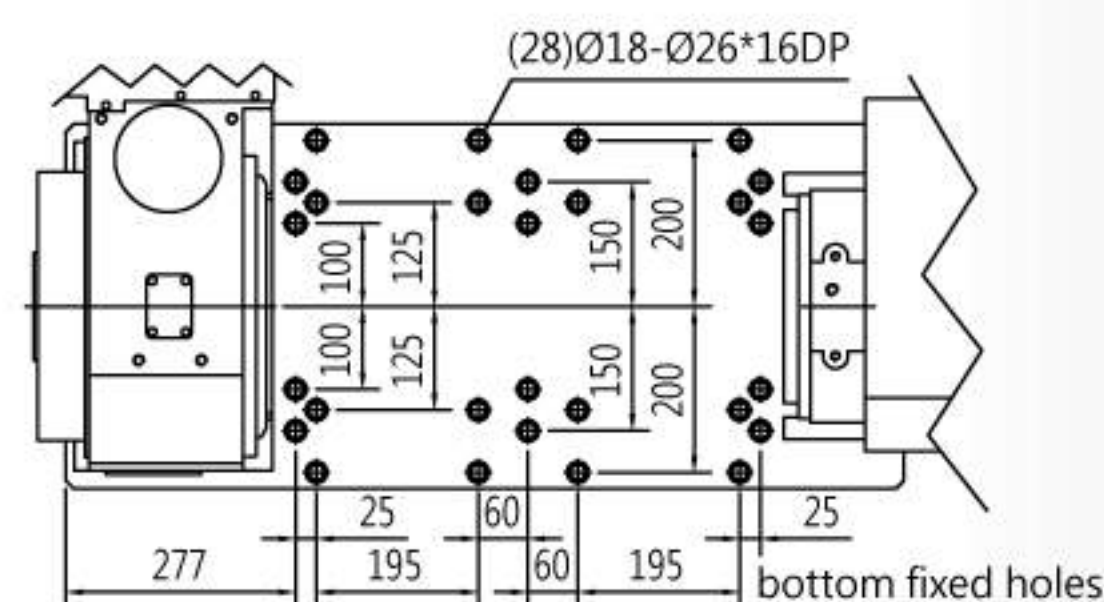
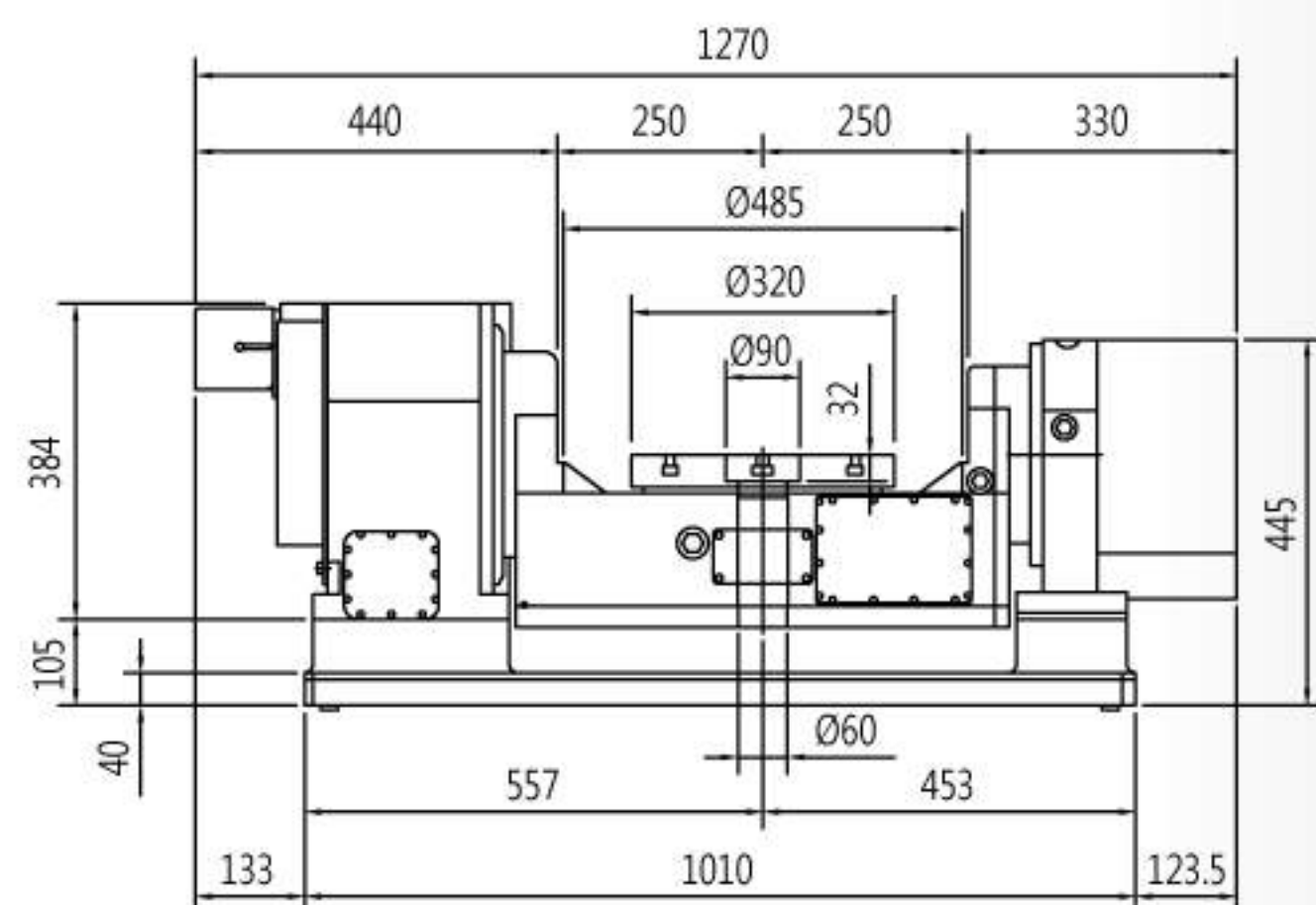
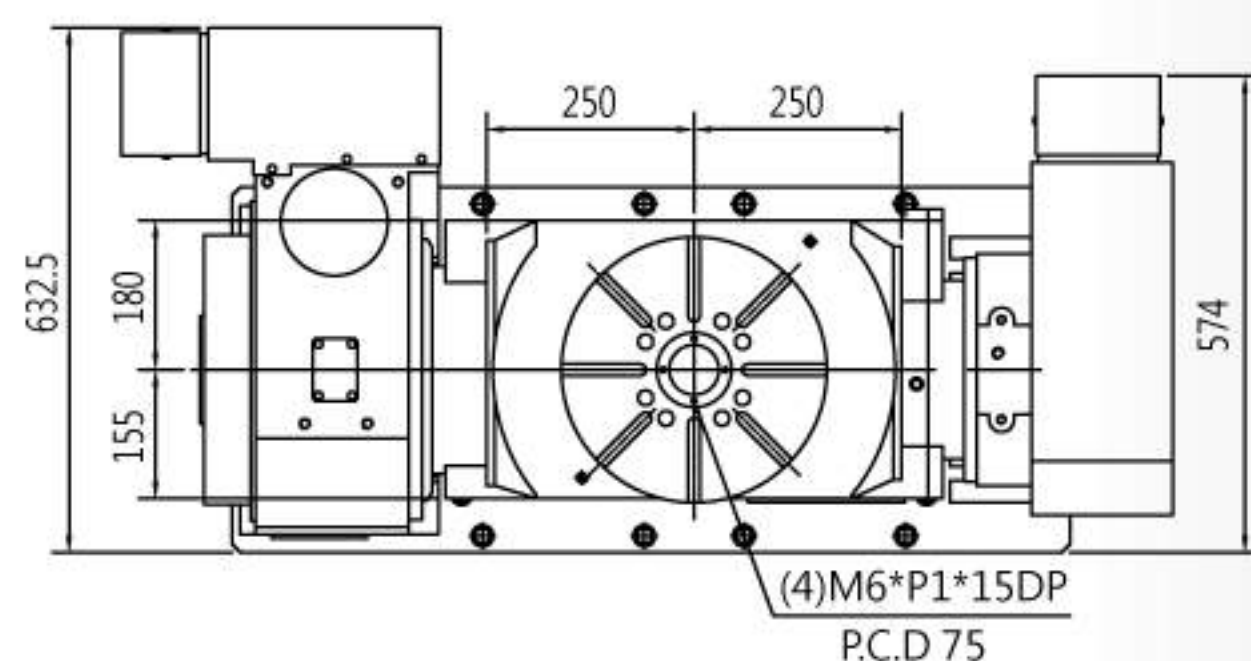
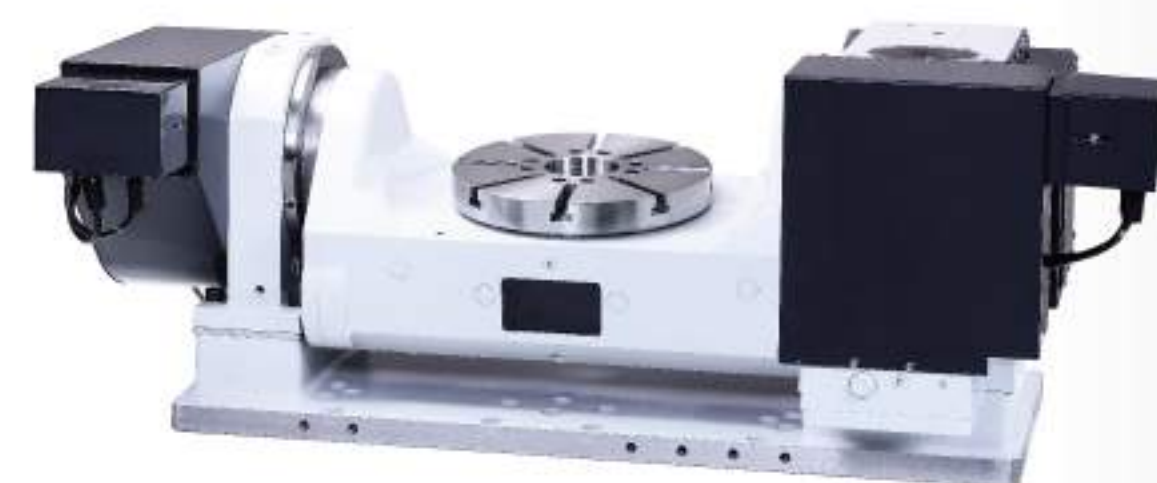
CNC 5 axis Rotary Tilting Tables ACL series

ACL320 (High rigidity type)

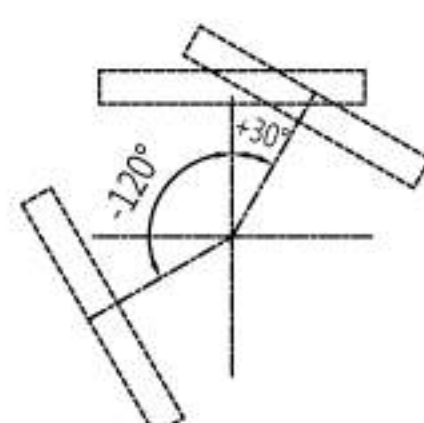
Item	Unit	Specification	
Max.workpiece diameter	mm	Φ490	
Table diameter	mm	Φ320	
Table center height	mm	305	
Datum hole	mm	Φ90H7	
Through-hole	mm	Φ60H7	
T-slot on table	mm	14H7	
Datum position key	mm	18h7	
Allowable cutting torque	kg-m	81	
Allowable workpiece load	kg	0°/ 220kg	90°/ 170kg
Axis	Degree	rotation axis (C-axis),360	tilt axis (A-axis),+30 to -120
Servo motor (Option)	Fanuc	α iF8、β iS8	α iF8+B、β iS8+B
	Mitsubishi	HF-154S	HF-154BS
	Siemens	1FK7063	1FK7063+B
	Heidenhain	QSY116J	QSY116J+B
Total reduction ratio		1/60	1/120
Mini. degree	Degree	0.001	0.001
Maximum rpm	rpm	50	25
Clamp power source		Hydraulic	Hydraulic
Clamp pressure	kg / cm ²	25	25
Clamp torque	kg-m	60	180
Index accuracy	sec	15	20 (+30°~-120°)
Repetition accuracy	sec	4	4
Product weight	kg	660	

※ Option:

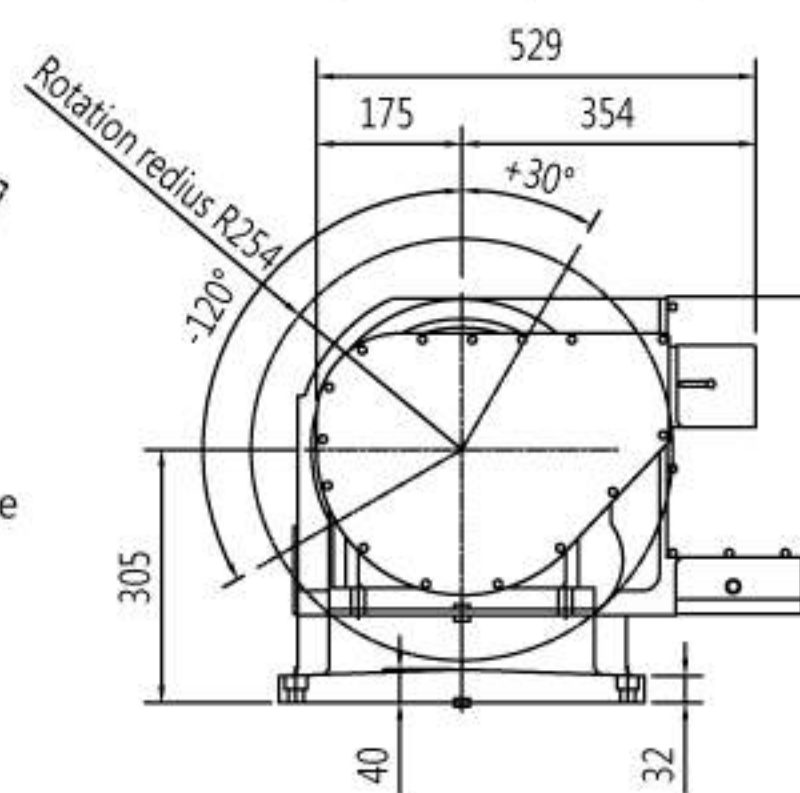
- 1.Hydraulic distributors (input x 2 & output x 2) inside
- 2.Table at dia.420mm



T-slot dimension on table



Rotation angle range



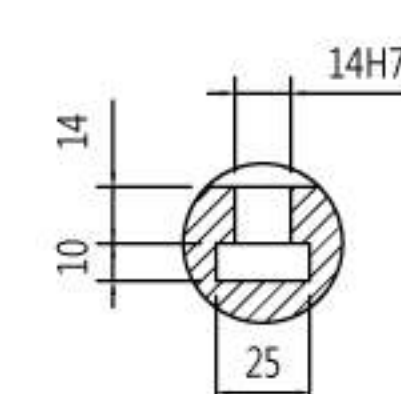
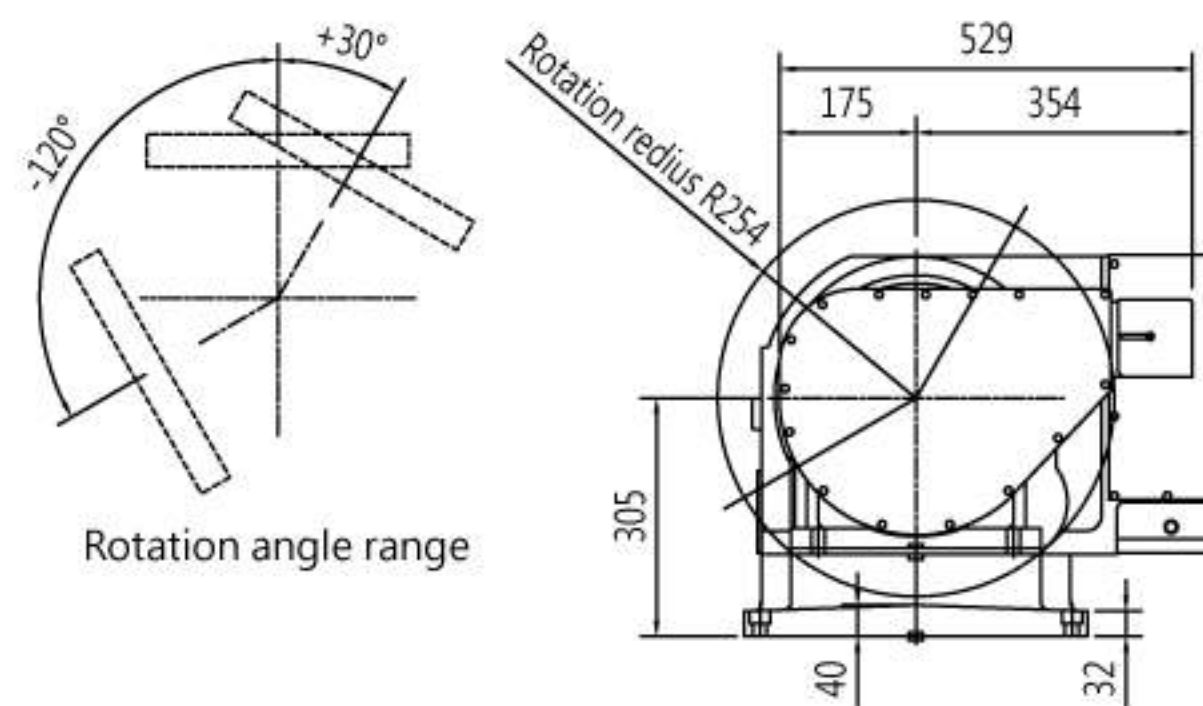
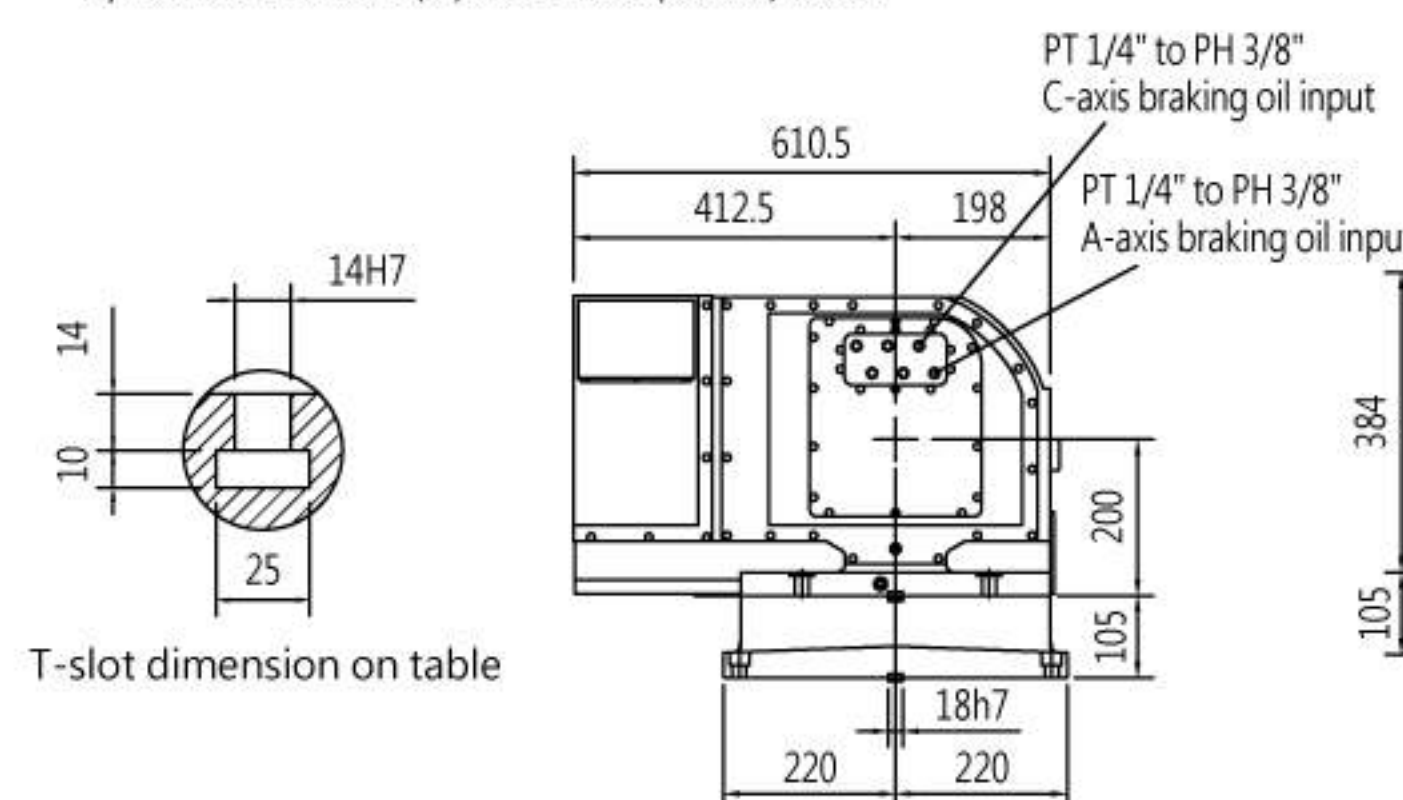
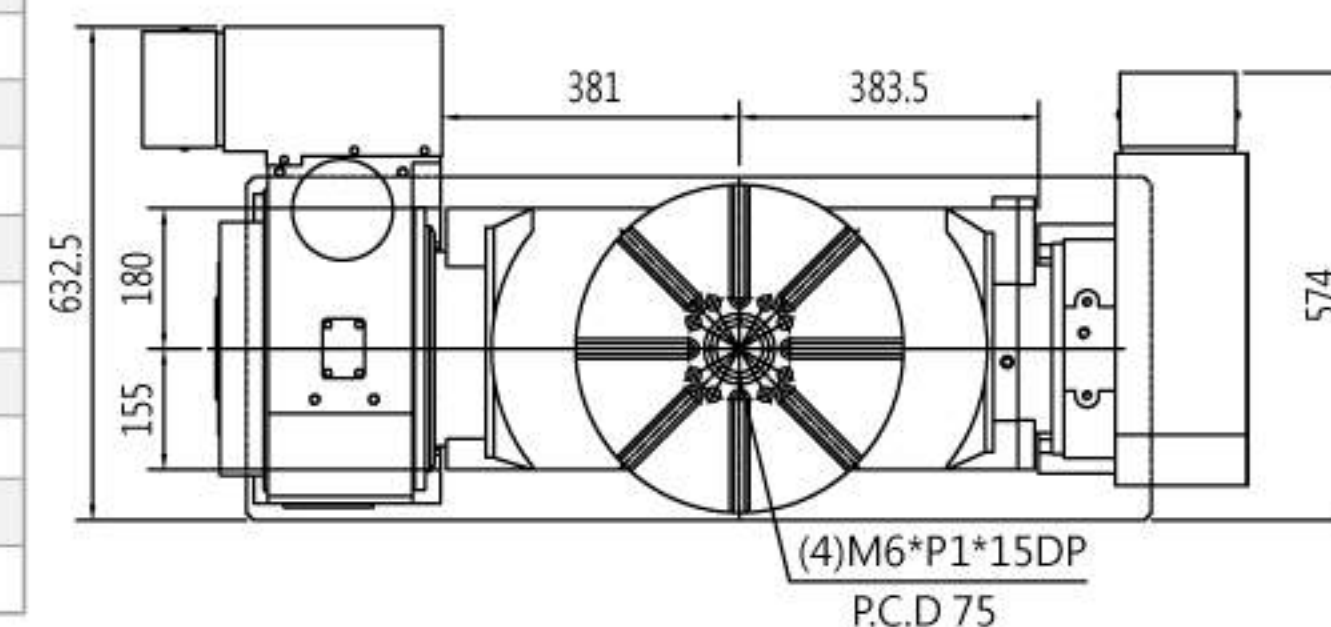
CNC 5 axis Rotary Tilting Tables ACS series

ACS420

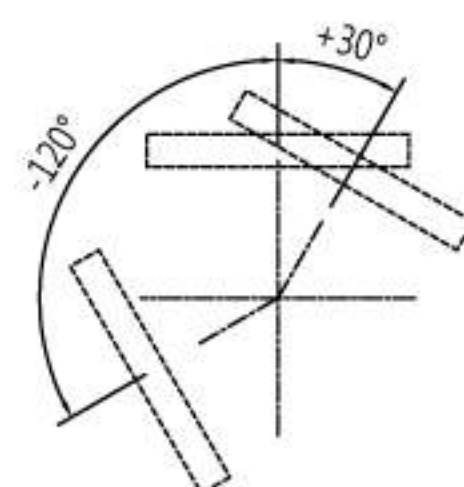
Item	Unit	Specification	
Max.workpiece diameter	mm	Φ640	
Table diameter	mm	Φ420	
Table center height	mm	305	
Datum hole	mm	Φ90H7	
Through-hole	mm	Φ60H7	
T-slot on table	mm	14H7	
Datum position key	mm	18h7	
Allowable cutting torque	kg-m	81	
Allowable workpiece load	kg	0°/ 220kg	90°/ 170kg
Axis	Degree	rotation axis (C-axis),360	tilt axis (A-axis),+30 to -120
Servo motor (Option)	Fanuc	α iF8、β iS8	α iF8+B、β iS8+B
	Mitsubishi	HF-154S	HF-154BS
	Siemens	1FK7063	1FK7063+B
	Heidenhain	QSY116J	QSY116J+B
Total reduction ratio		1/60	1/120
Mini. degree	Degree	0.001	0.001
Maximum rpm	rpm	50	25
Clamp power source		Hydraulic	Hydraulic
Clamp pressure	kg / cm ²	25	25
Clamp torque	kg-m	60	180
Index accuracy	sec	15	20 (+30°~-120°)
Repetition accuracy	sec	4	4
Product weight	kg	650	

※ Option:

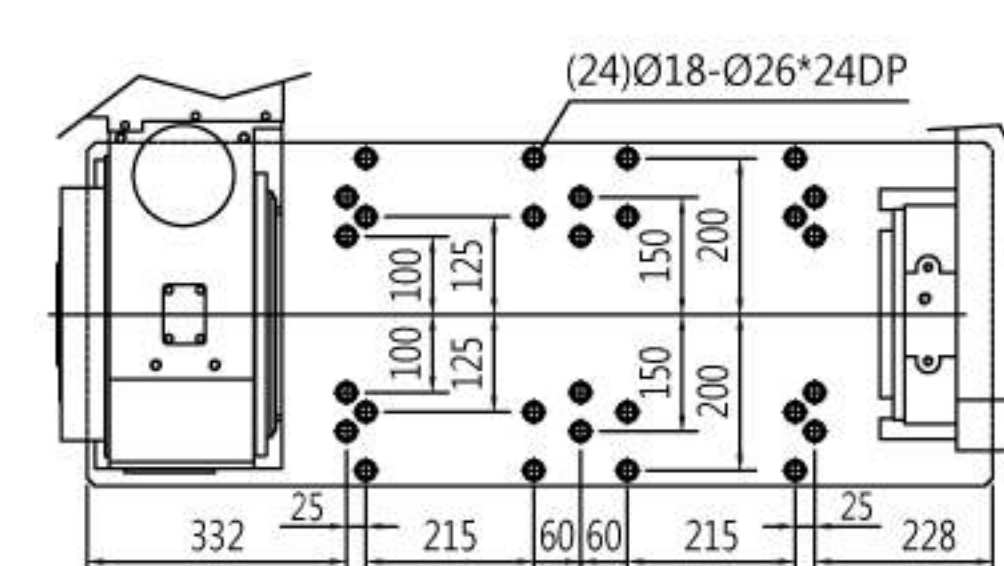
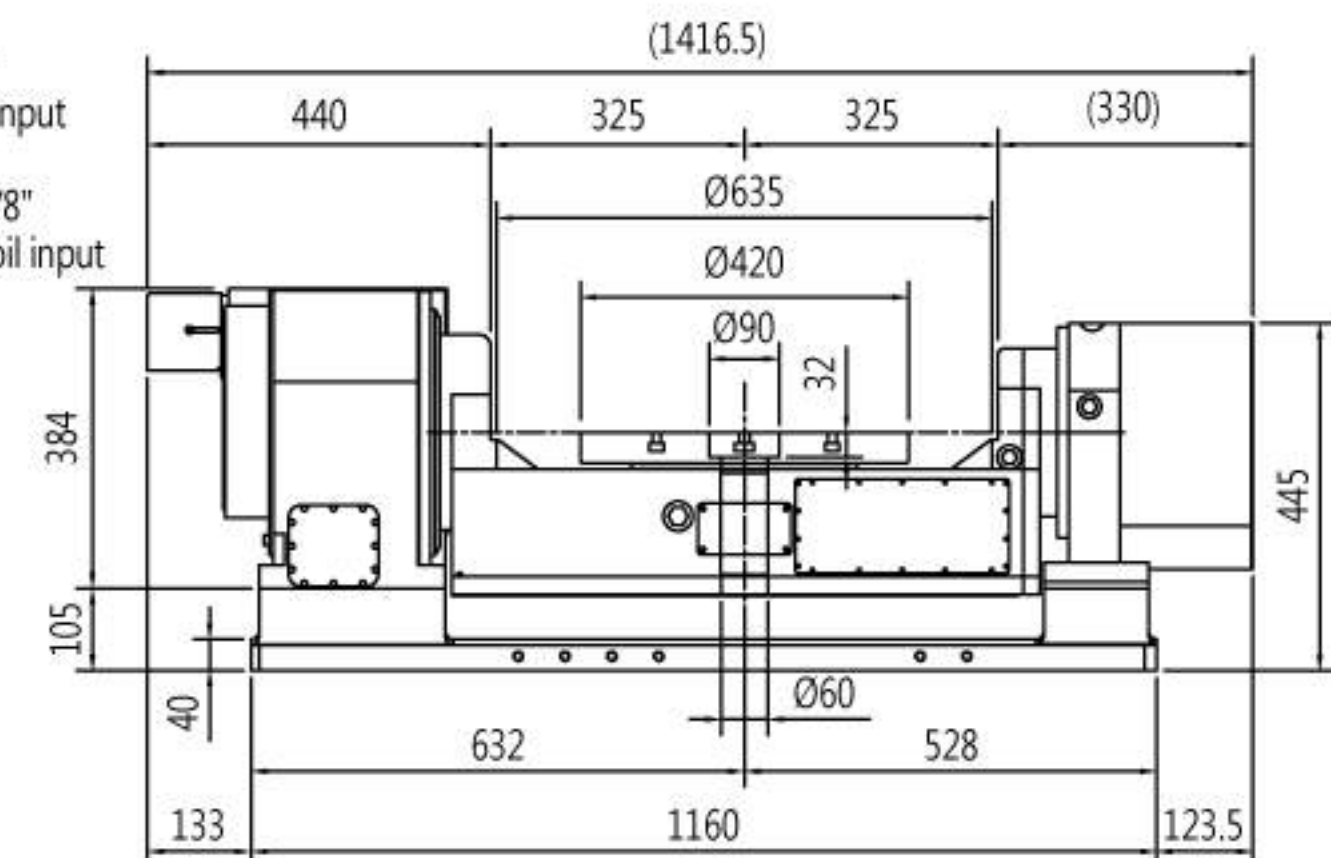
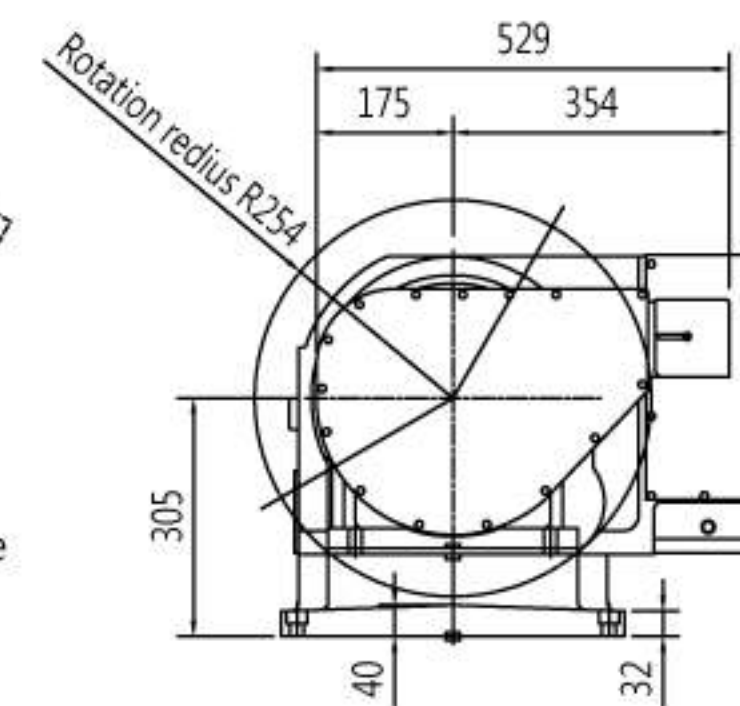
- 1.Hydraulic distributors (input x 2 & output x 2) inside



T-slot dimension on table



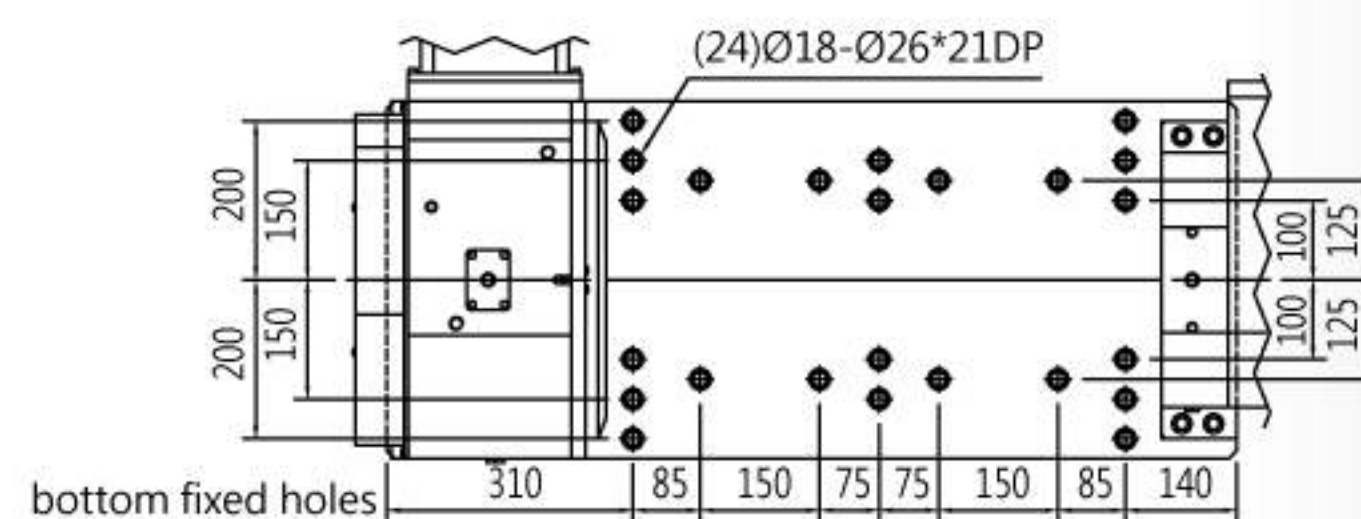
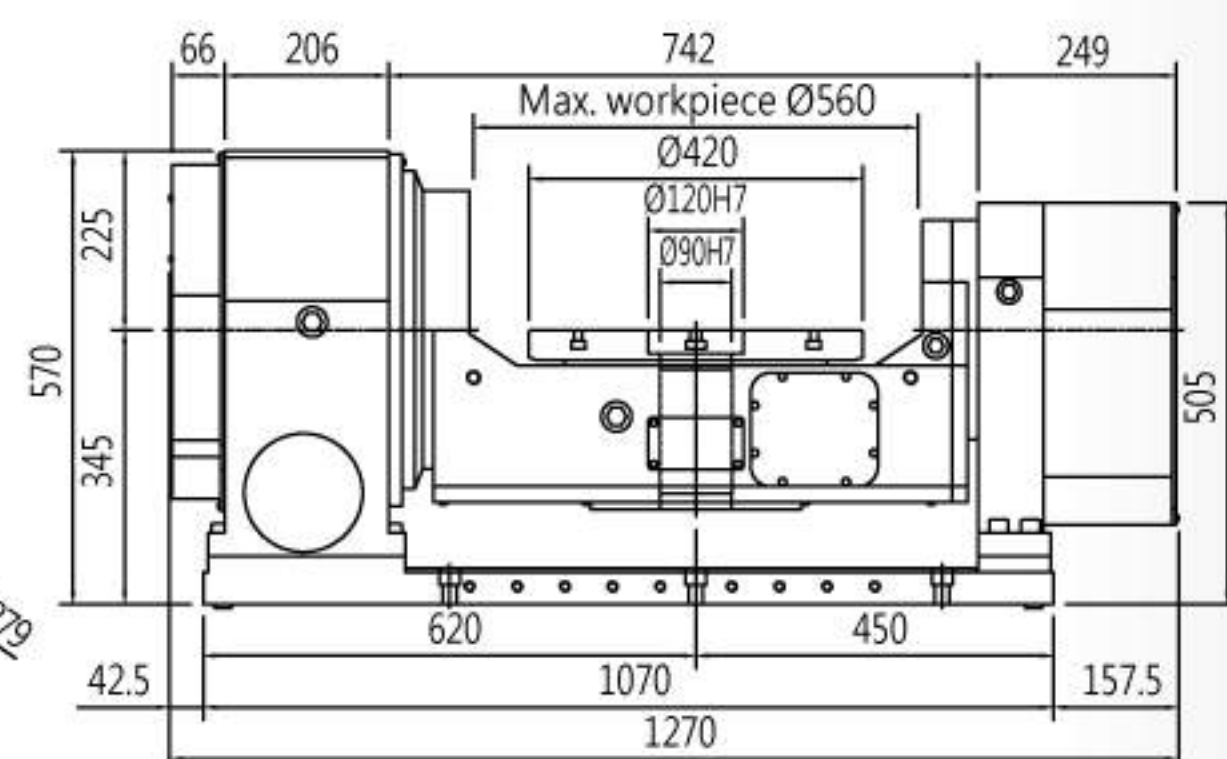
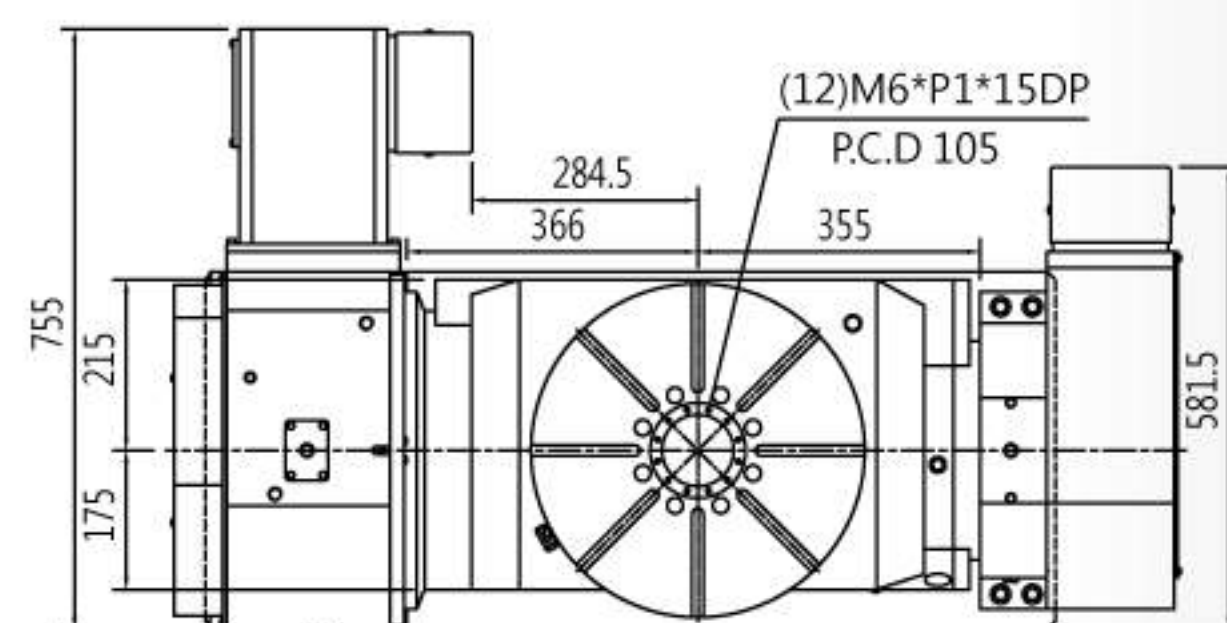
Rotation angle range



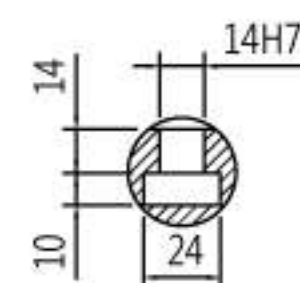
ACL420 (High rigidity type)

Item	Unit	Specification	
Max.workpiece diameter	mm	Φ560	
Table diameter	mm	Φ420	
Table center height	mm	345	
Datum hole	mm	Φ120H7	
Through-hole	mm	Φ90H7	
T-slot on table	mm	14H7	
Datum position key	mm	18h7	
Allowable cutting torque	kg-m	91	
Allowable workpiece load	kg	0°/ 260kg	90°/ 220kg
Axis	Degree	rotation axis (C-axis),360	tilt axis (A-axis),+30 to -120
Servo motor (Option)	Fanuc	α iF8	α iF12+B
		β iS12	β iS22+B
	Mitsubishi	HF-154S	HF-204BS
	Siemens	1FK7063	1FK7083+B
	Heidenhain	QSY116J	QSY155C+B
Total reduction ratio		1/80	1/120
Mini. degree	Degree	0.001	0.001
Maximum rpm	rpm	37	25
Clamp power source		Hydraulic	Hydraulic
Clamp pressure	kg / cm ²	35	35
Clamp torque	kg-m	220	710
Index accuracy	sec	15	30 (+30°~-120°)
Repetition accuracy	sec	4	4
Product weight	kg	830	

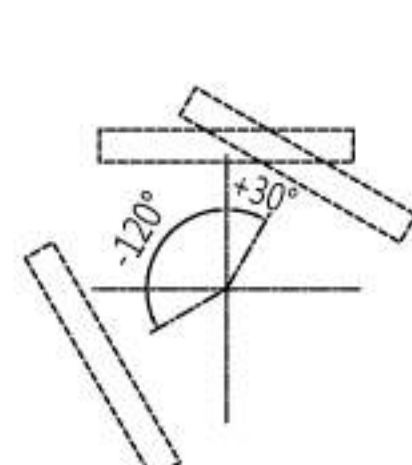
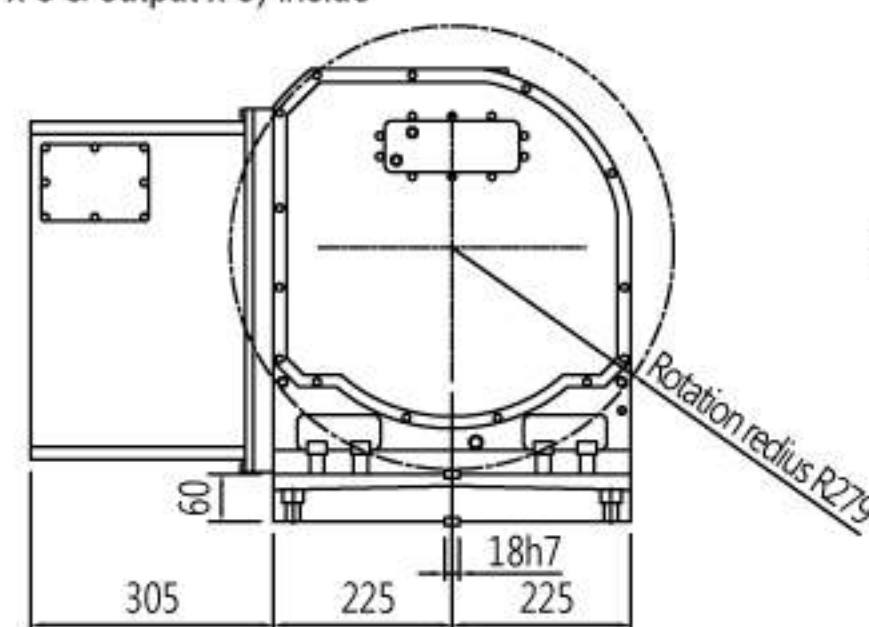
※ Option version:
1. Hydraulic distributors (input x 3 & output x 3) inside
2. Table at dia.500mm



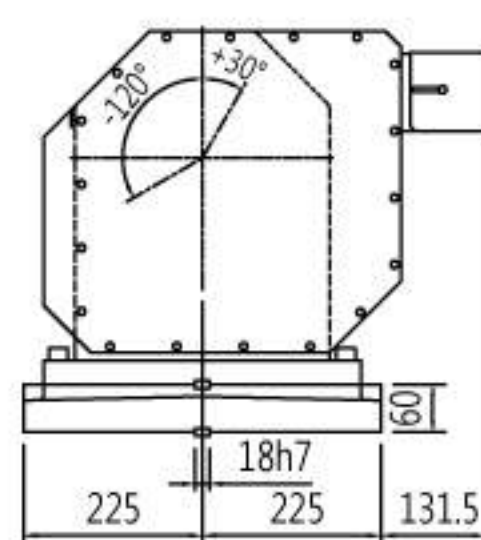
bottom fixed holes



T-slot dimension on table



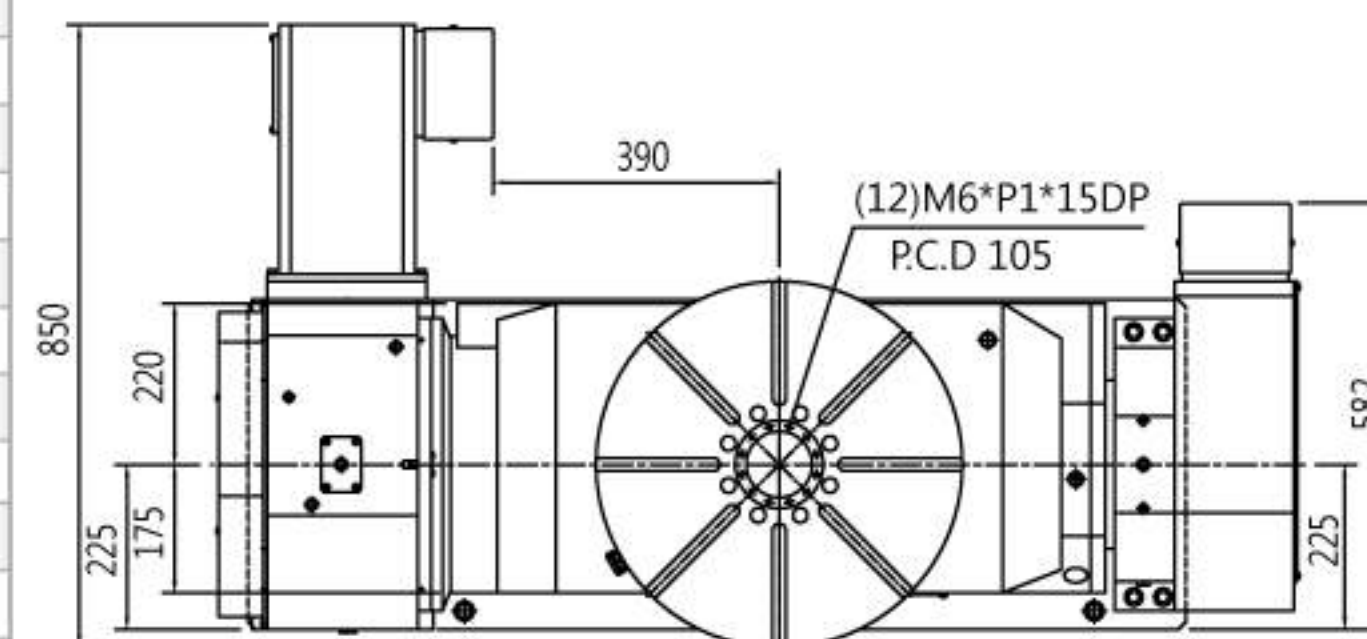
Rotation angle range



ACS500

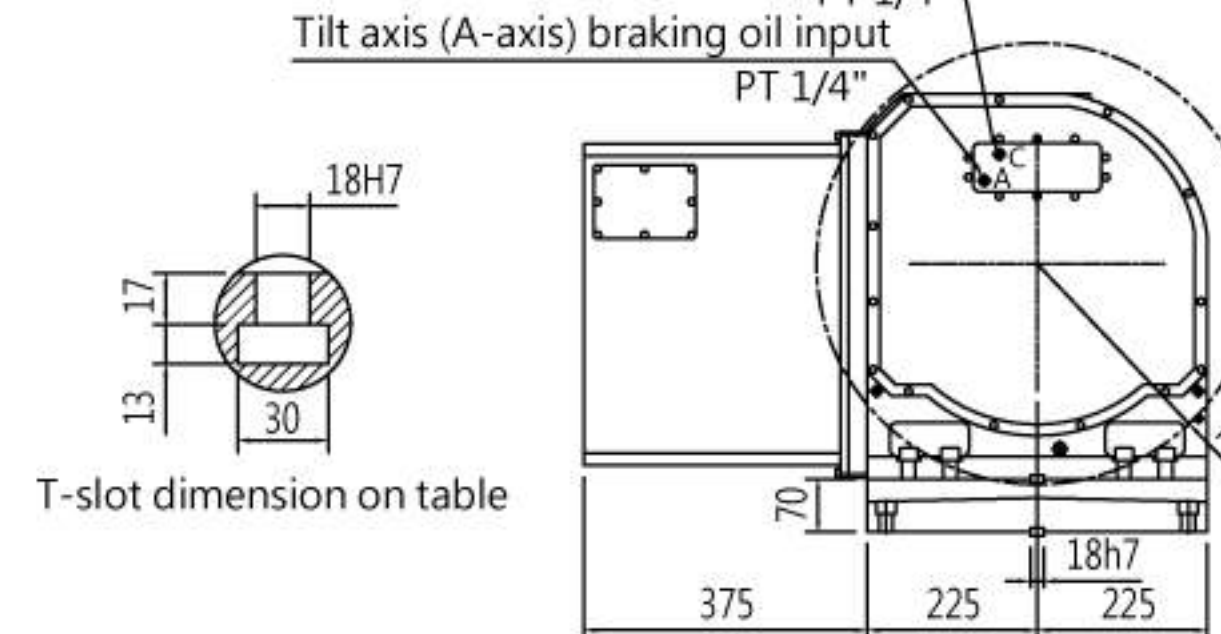
Item	Unit	Specification	
Max.workpiece diameter	mm	Φ760	
Table diameter	mm	Φ500	
Table center height	mm	285	
Datum hole	mm	Φ120H7	
Through-hole	mm	Φ90H7	
T-slot on table	mm	18H7	
Datum position key	mm	18h7	
Allowable cutting torque	kg-m	91	
Allowable workpiece load	kg	0°/ 500kg	90°/ 340kg
Axis	Degree	rotation axis (C-axis),360	tilt axis (A-axis),+30 to -120
Servo motor (Option)	Fanuc	α iF8	α iF22+B
		β iS12	β iS22+B
	Mitsubishi	HF-154S	HF-354BS
	Siemens	1FK7063	1FK7084+B
	Heidenhain	QSY116J	QSY155F+B
Total reduction ratio		1/96	1/120
Mini. degree	Degree	0.001	0.001
Maximum rpm	rpm	31	25
Clamp power source		Hydraulic	Hydraulic
Clamp pressure	kg / cm ²	35	35
Clamp torque	kg-m	220	710
Index accuracy	sec	15	30 (+30°~-120°)
Repetition accuracy	sec	4	4
Product weight	kg	930	

※ Option version: Hydraulic distributors (input x 3 & output x 3) inside

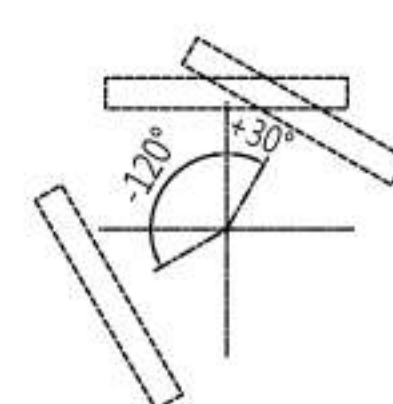


Rotation axis (C-axis) braking oil input

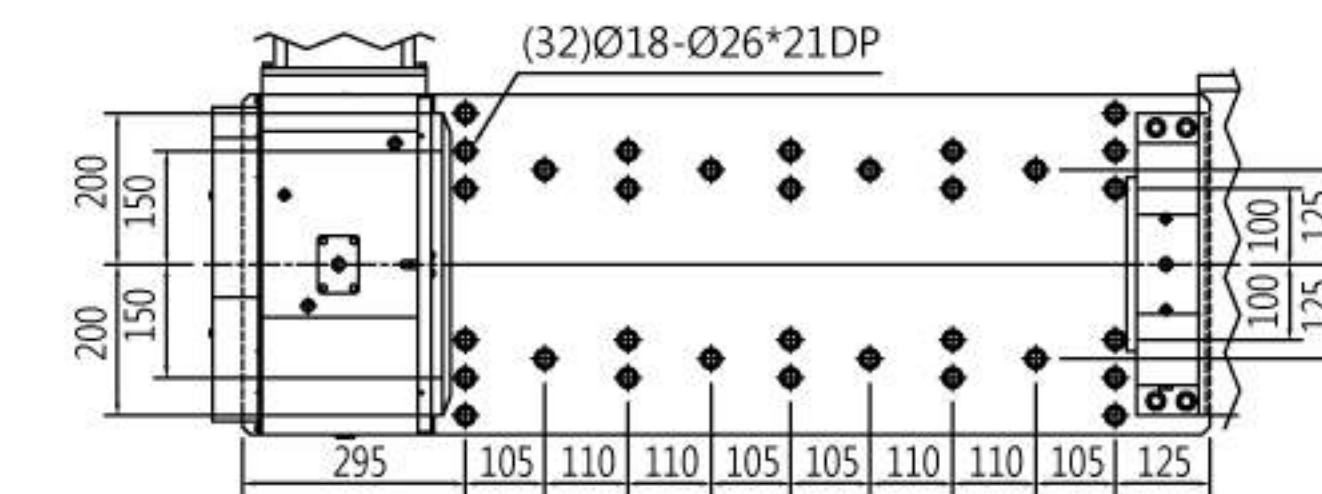
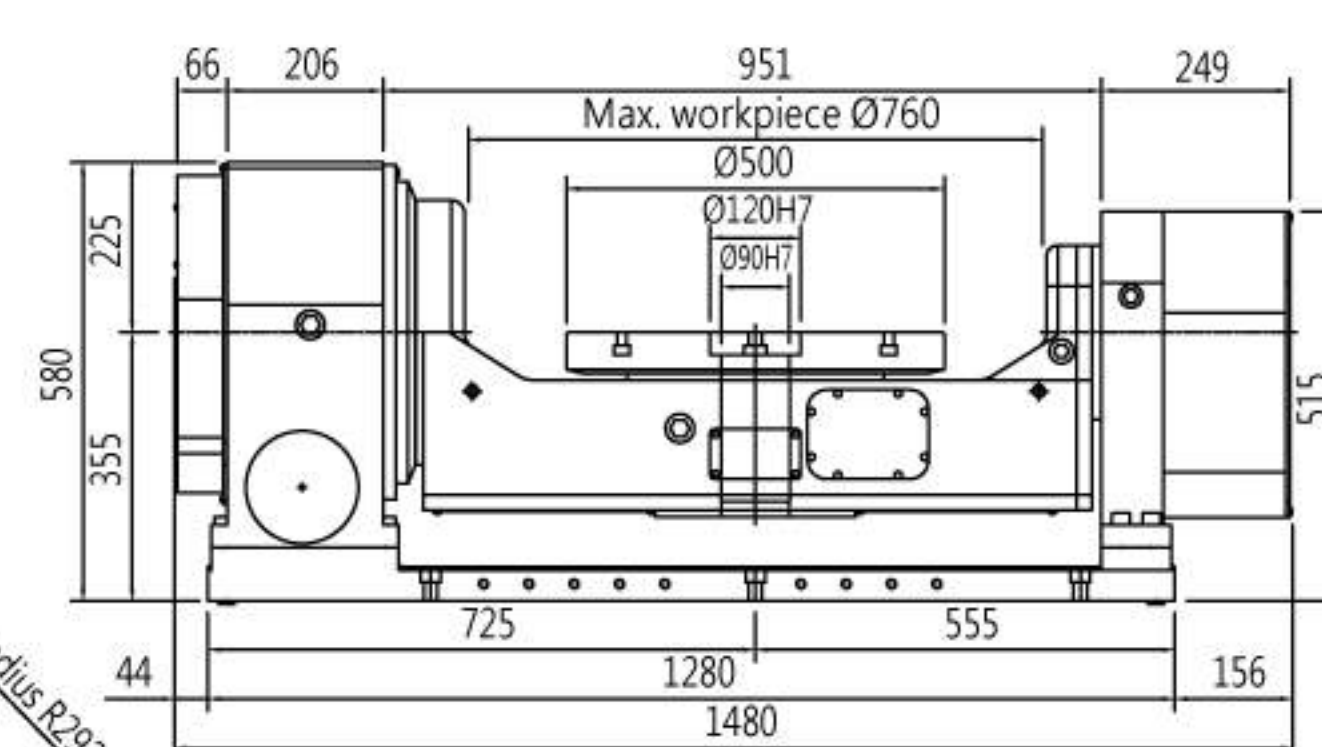
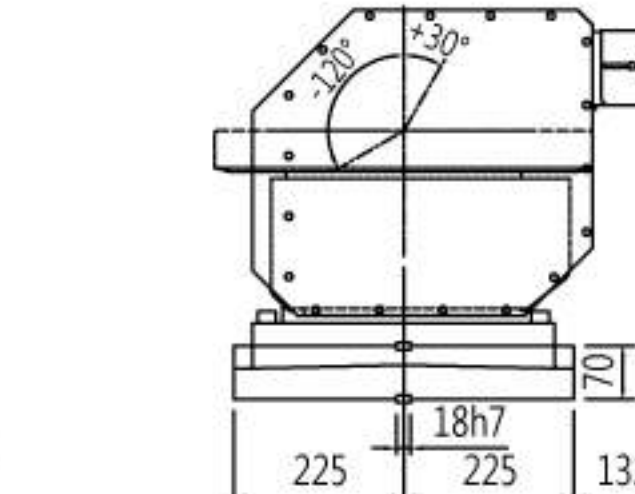
Tilt axis (A-axis) braking oil input



T-slot dimension on table



Rotation angle range

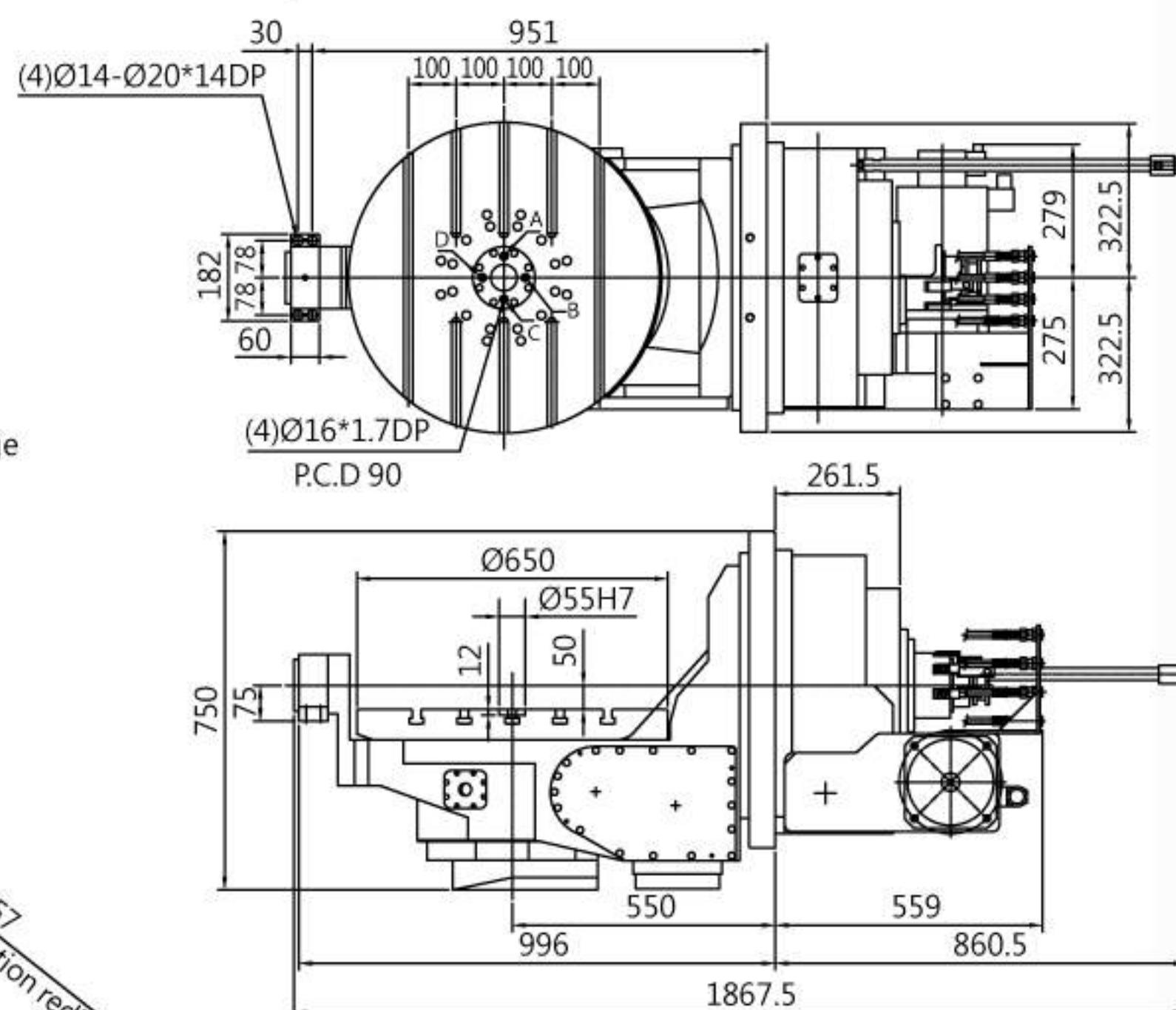
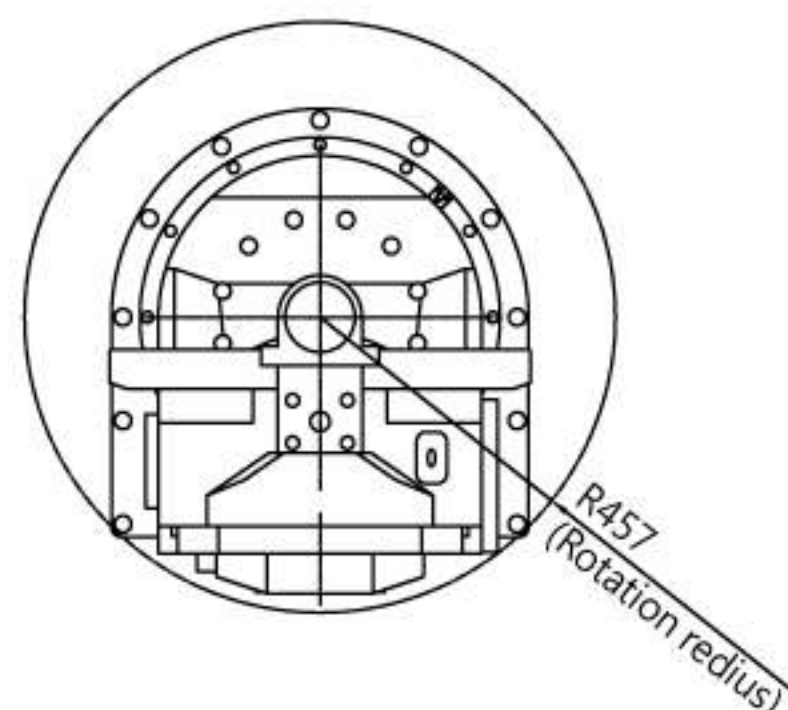
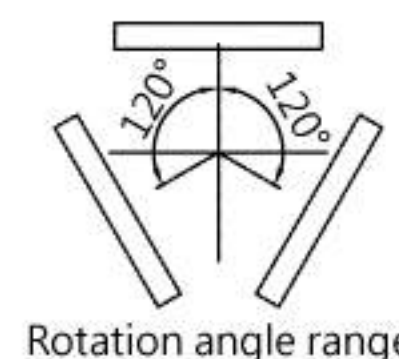
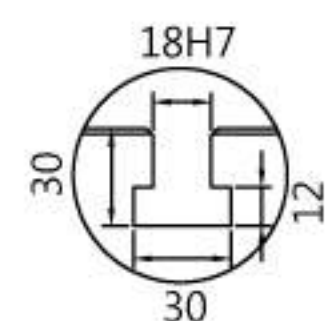
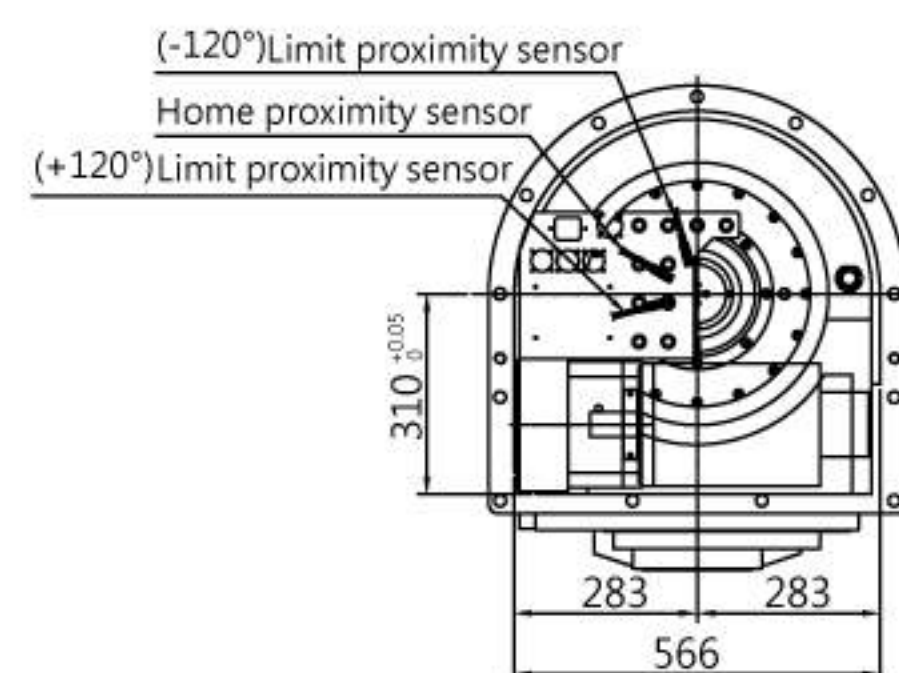




CNC 5 axis Rotary Tilting Tables ACL series

ACL650 Standard: Hydraulic distributors (input x 2 & output x 2) inside

Item	Specification	
Table diameter	Φ650mm	
Horizontal total height	760mm	
Table center height	-50mm	
Total length	1867.5mm	
Datum hole	Φ55H7x12mm/Dp	
T-slot on table	18H7mm	
Axis	rotation axis	tilt axis
Servo motor (Option)	Fanuc	α iF12
	Mitsubishi	HF204S
	Siemens	1FK7083
	Heidenhain	QSY155C
Total reduction ratio	1 : 60	
	1 : 120	
	25(1500rpm)	
	25(3000rpm)	
Index accuracy	15	
	45 (±120°)	
Encoder	5	
	5 (±120°)	
Repetition accuracy	4	
	4	
Tilting degree without fixture & workpiece	+120° ~ -120°	
	+120° ~ -120°	
Clamp torque	□Pneumatic(6kg/cm²)	
	□Hydraulic(40kg/cm²)	
Encoder	□RCN2590 (±2.5")	
	Option	
Suitable work temp.	18°C ~ 40°C	
	18°C ~ 40°C	
Allowable load	Level (0-45°)	
	300kg	
Product weight	Tilting (60-90°)	
	200kg	
	1200kg	

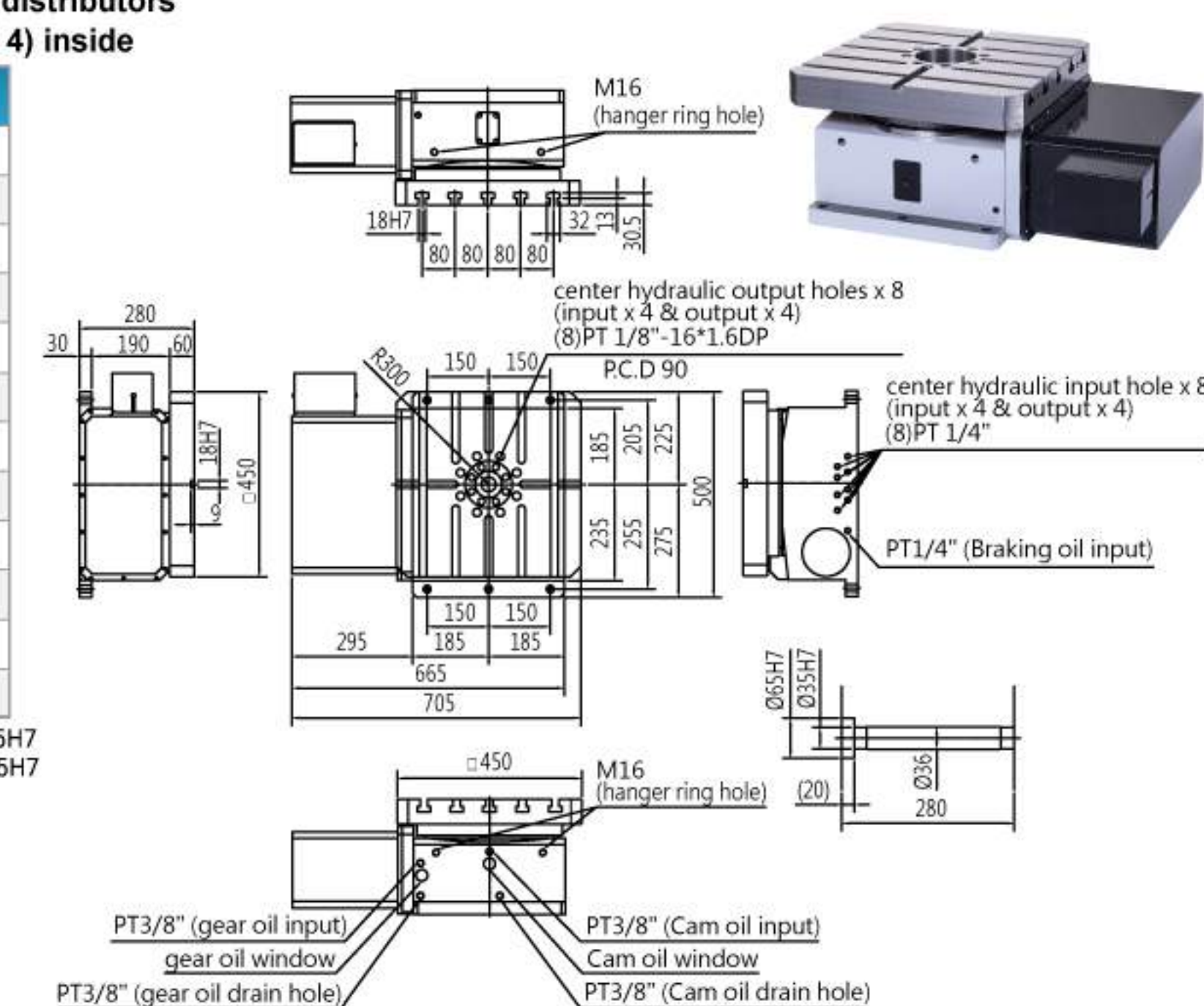


CNC Horizontal Rotary Table HRD Series

HRD450 Standard: Hydraulic distributors (input x 4 & output x 4) inside

Item	Unit	Specification
Table diameter	mm	□450
T-slot on table	mm	18H7
Servo motor (Option)	Fanuc	α iF12
Total reduction ratio		90
Maximum rpm	rpm	33.3
Index accuracy mini.	deg	0.001°
Allowable load	kg	560kg
Clamp power source		Hydraulic
Clamp pressure	kg / cm²	30
Clamp torque	kg-m	225
Index accuracy	sec	15
Repetition accuracy	sec	4

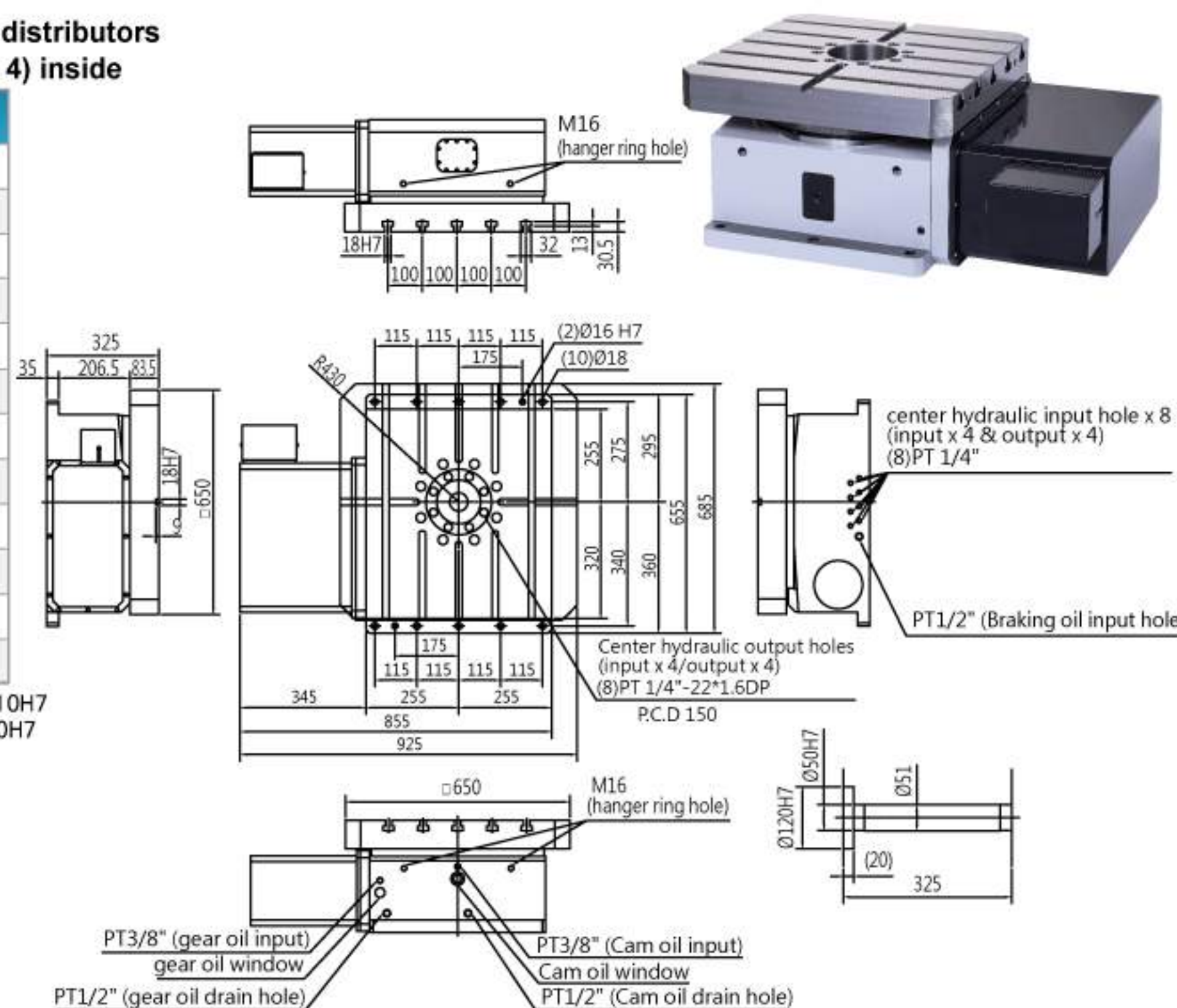
※ 1.No Hydraulic distributors - center through-hole at 85H7
2.No Hydraulic distributors - center datum hole at 115H7



HRD650 Standard: Hydraulic distributors (input x 4 & output x 4) inside

Item	Unit	Specification
Table diameter	mm	□650
T-slot on table	mm	18H7
Servo motor (Option)	Fanuc	α iF22
Total reduction ratio		120
Maximum rpm	rpm	25
Index accuracy mini.	deg	0.001°
Allowable load	kg	1300kg
Clamp power source		Hydraulic
Clamp pressure	kg / cm²	30
Clamp torque	kg-m	600
Index accuracy	sec	15
Repetition accuracy	sec	4

※ 1.No Hydraulic distributors - center through-hole at 110H7
2.No Hydraulic distributors - center datum hole at 180H7





CNC Horizontal Rotary Table HRD Series

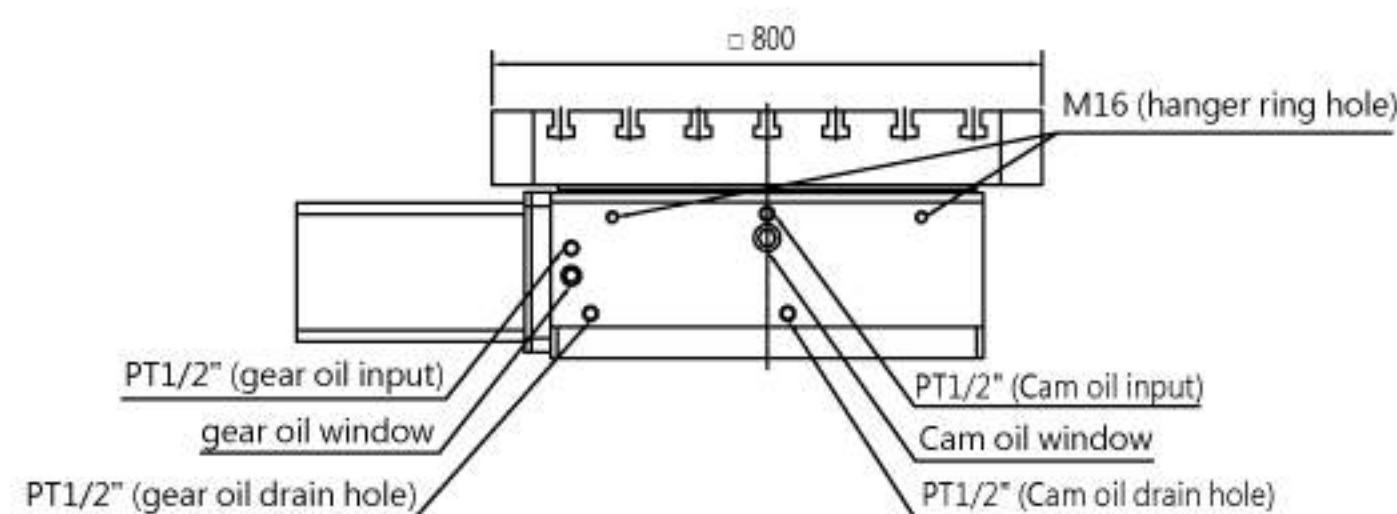
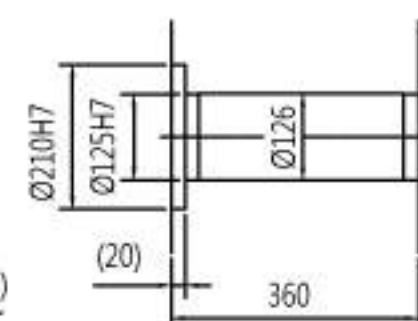
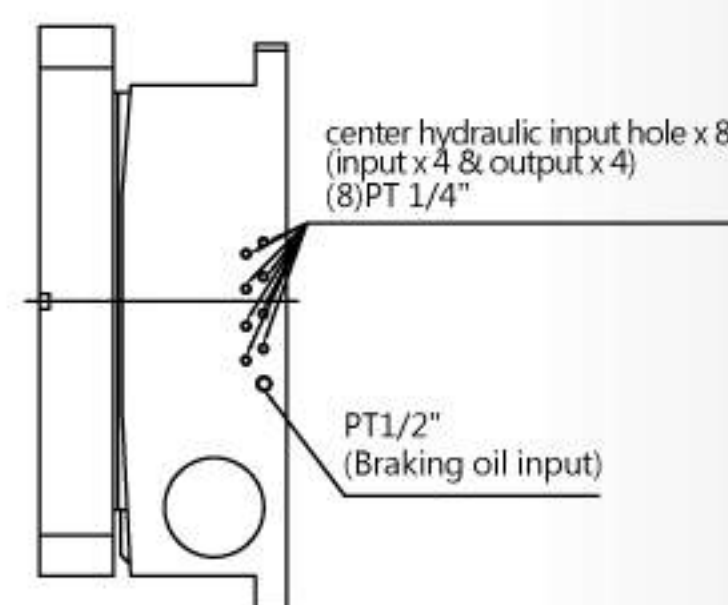
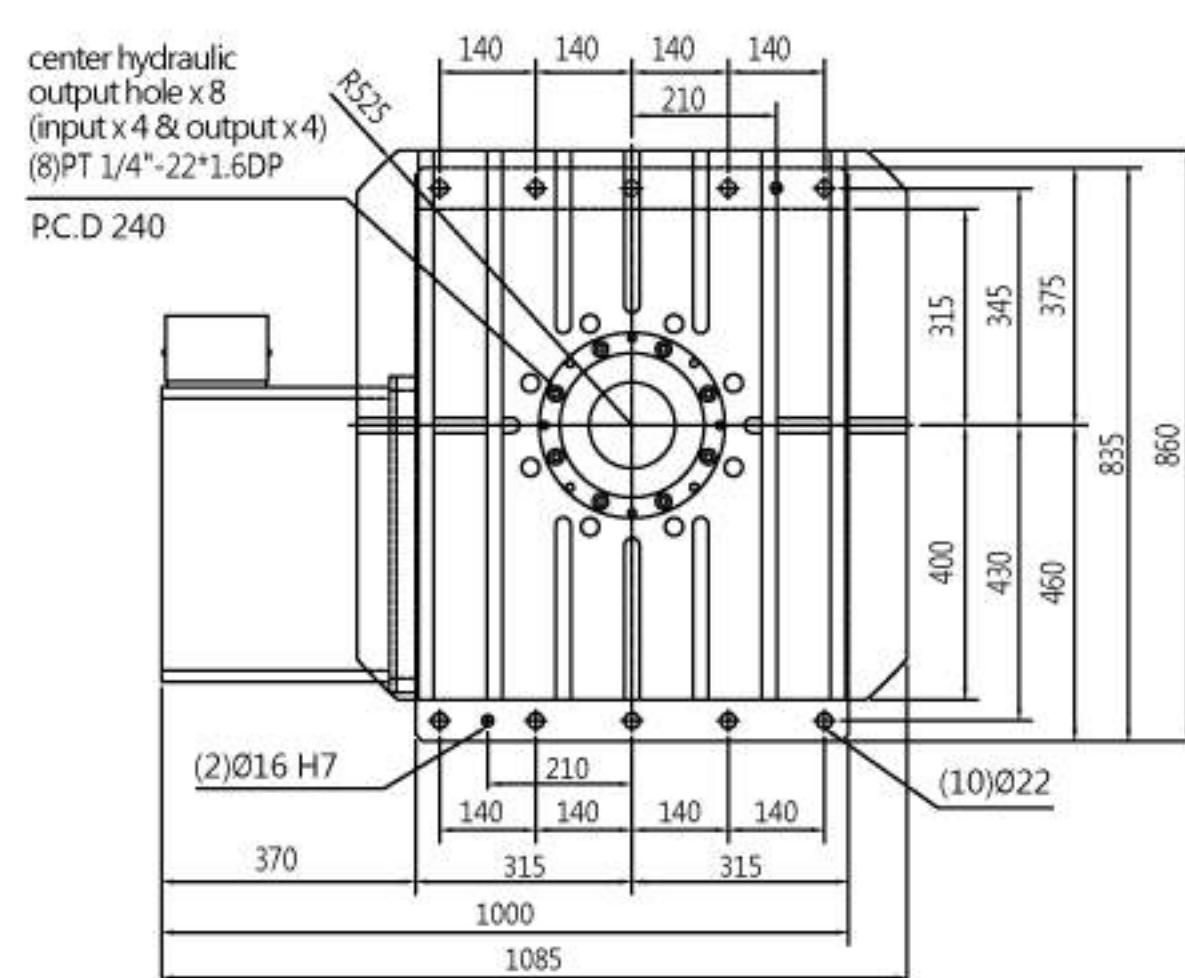
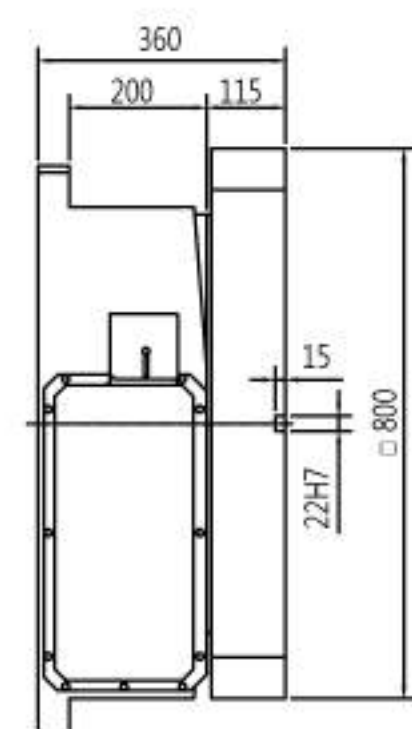
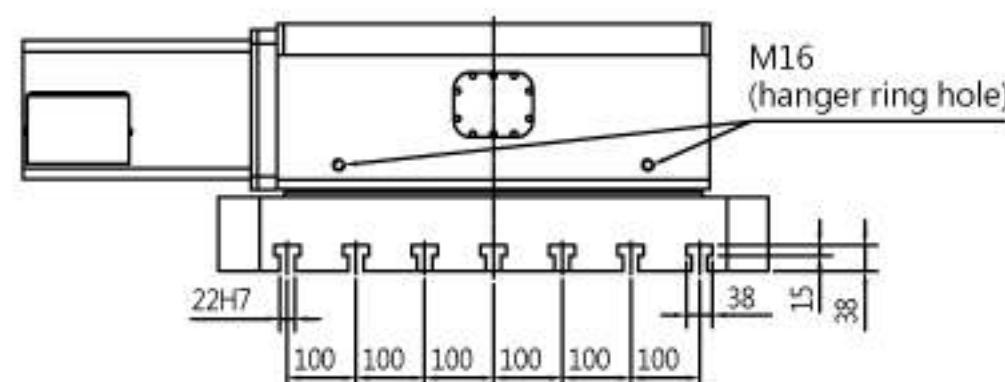
HRD800

Standard: Hydraulic distributors
(input x 4 & output x 4) inside

Item	Unit	Specification
Table diameter	mm	□800
T-slot on table	mm	22H7
Servo motor (Option)	Fanuc	α iF22
Total reduction ratio		144
Maximum rpm	rpm	20.8
Index accuracy mini.	deg	0.001°
Allowable load	kg	2200kg
Clamp power source		Hydraulic
Clamp pressure	kg / cm ²	30
Clamp torque	kg-m	1000
Index accuracy	sec	15
Repetition accuracy	sec	4



※ 1.No Hydraulic distributors - center through-hole at 185H7
2.No Hydraulic distributors - center datum hole at 270H7



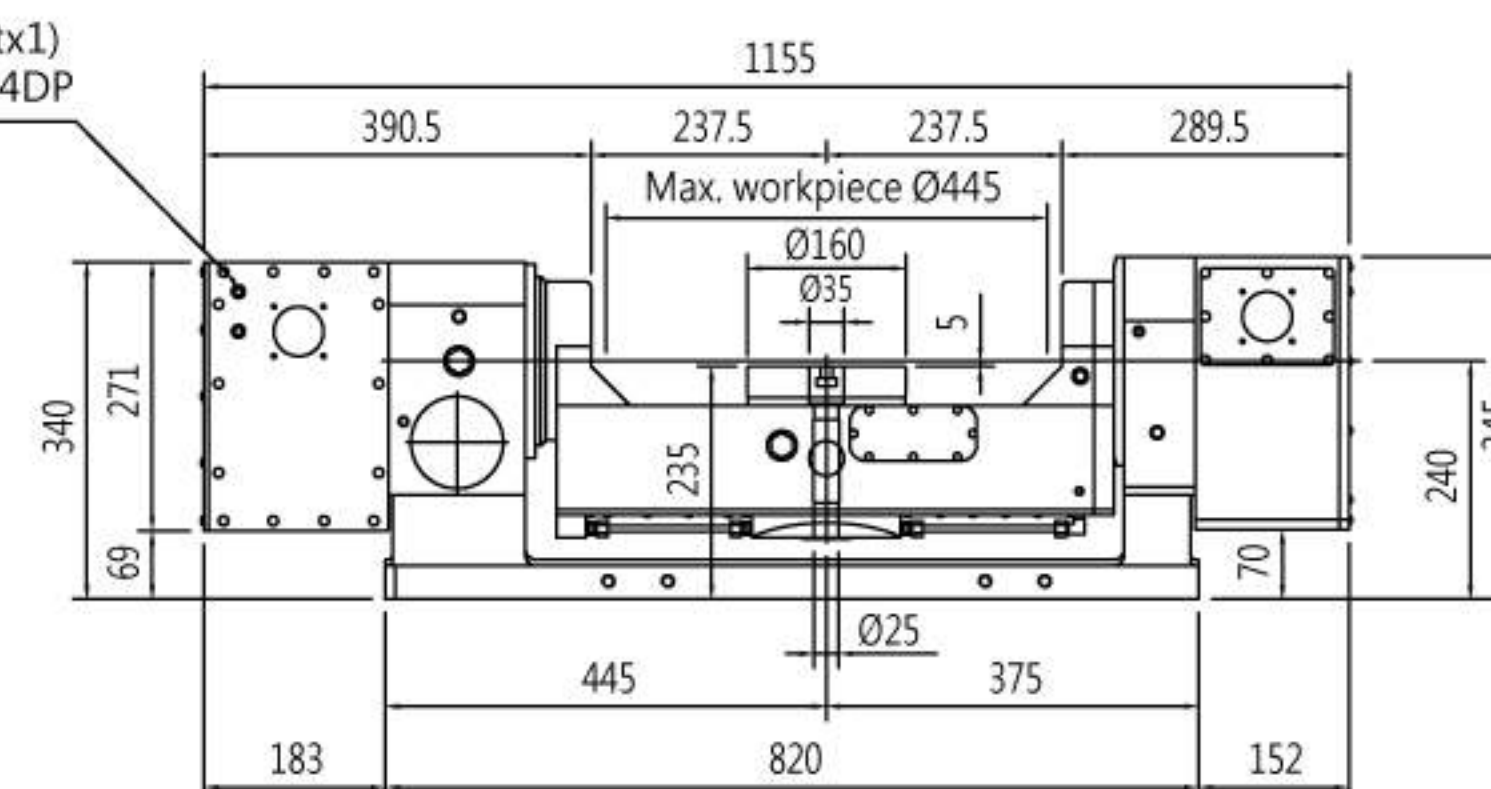
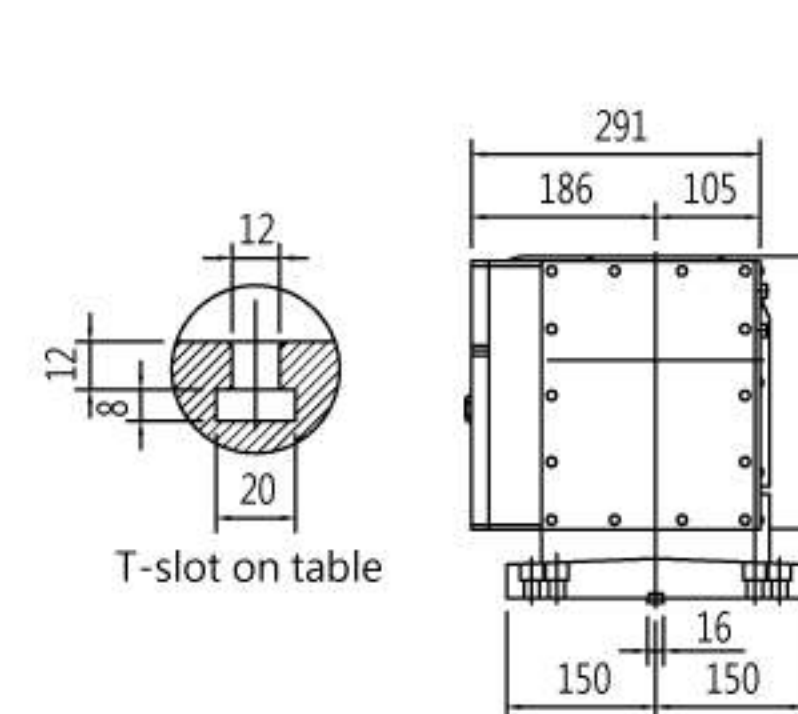
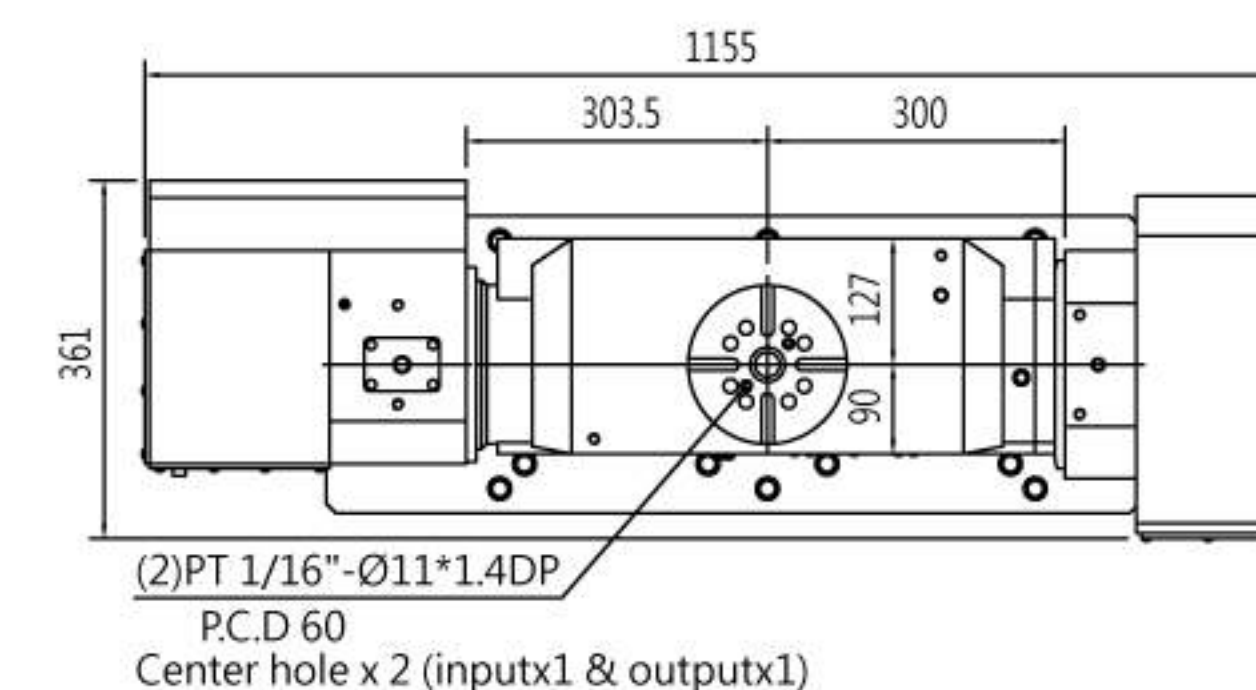
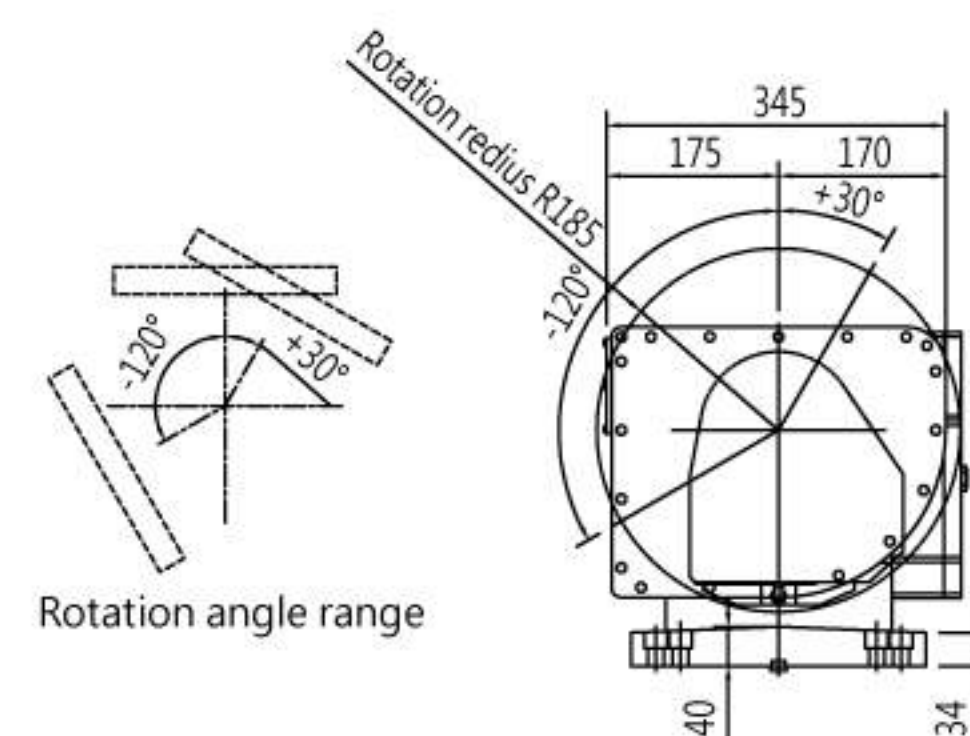
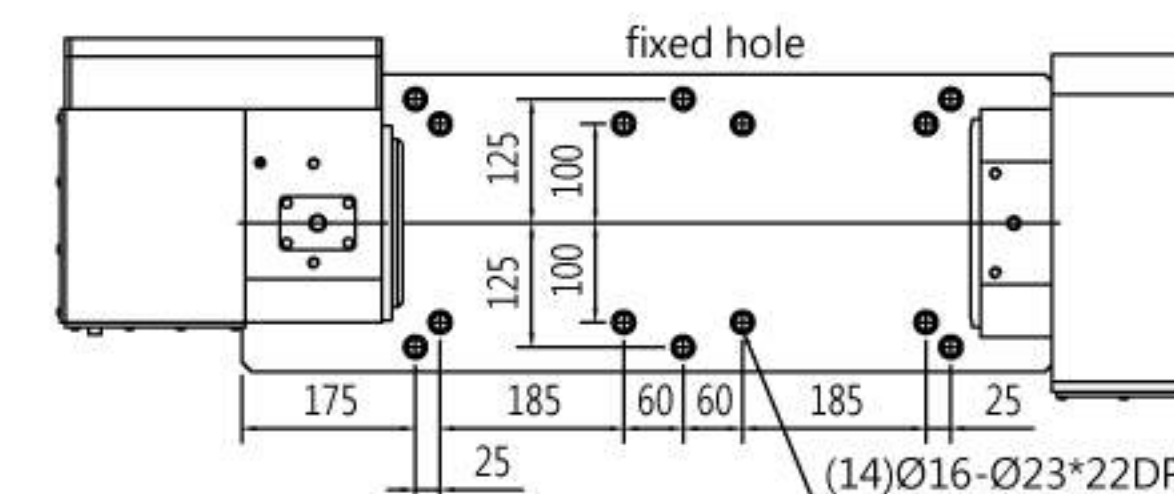
CNC 5 axis Rotary Tilting Tables ACL series

ACL160

Standard: Hydraulic distributors
(input x 1/output x 1) inside

Item	Unit	Specification
Max.workpiece diameter	mm	Φ445
Table diameter	mm	Φ160
Table center height	mm	235
Datum hole	mm	Φ35H7
Through-hole	mm	Φ25H7
T-slot on table	mm	12H7
Datum position key	mm	16h7
Allowable workpiece load	kg	80
Axis	Degree	rotation axis (C-axis), 360 tilt axis (A-axis), +30 to -120
Servo motor (Option)	Fanuc	α iF2 β iS4
	Mitsubishi	HF-75S HF-104S+B
Total reduction ratio		1/96 1/120
Mini. degree	Degree	0.001 0.001
Maximum rpm	rpm	31 25
Clamp power source		Pneumatic / Hydraulic Pneumatic / Hydraulic
Clamp pressure	kg / cm ²	6/35 6/35
Clamp torque	kg-m	5/24 13/75
Index accuracy	sec	25 40 (+30°~-120°)
Repetition accuracy	sec	8 4
Product weight	kg	290

※ Option : table diameter at 200mm





CNC 5 axis Rotary Tilting Tables ACL series

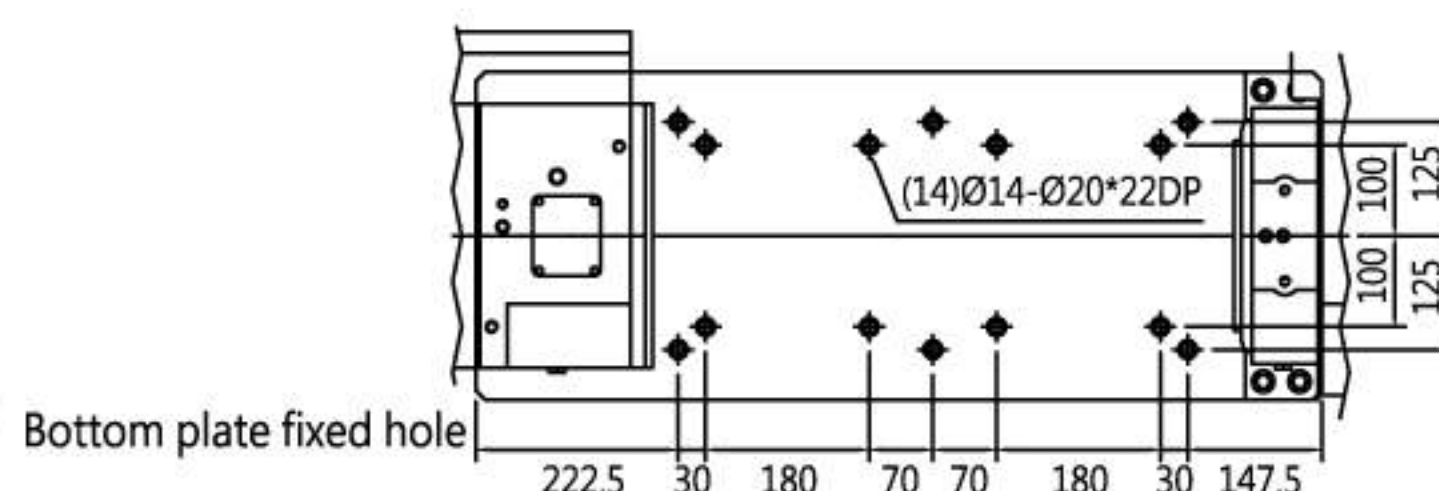
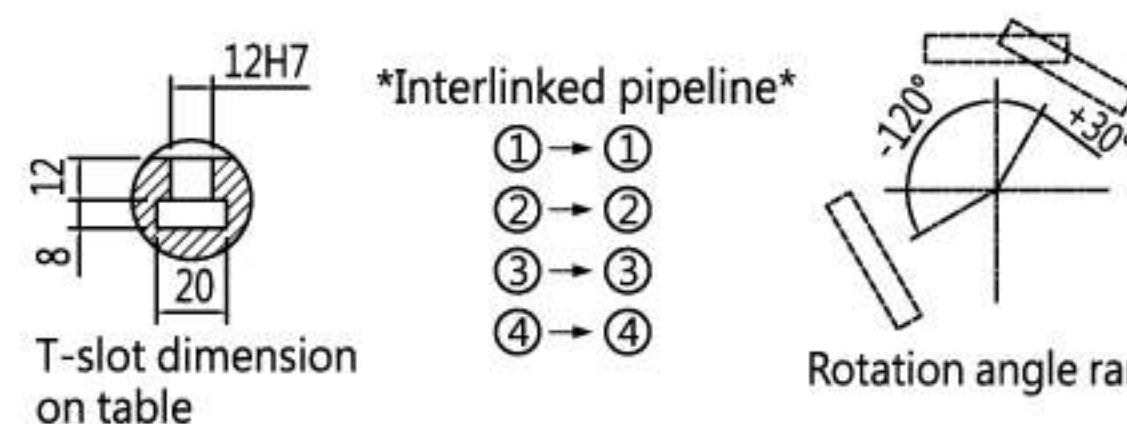
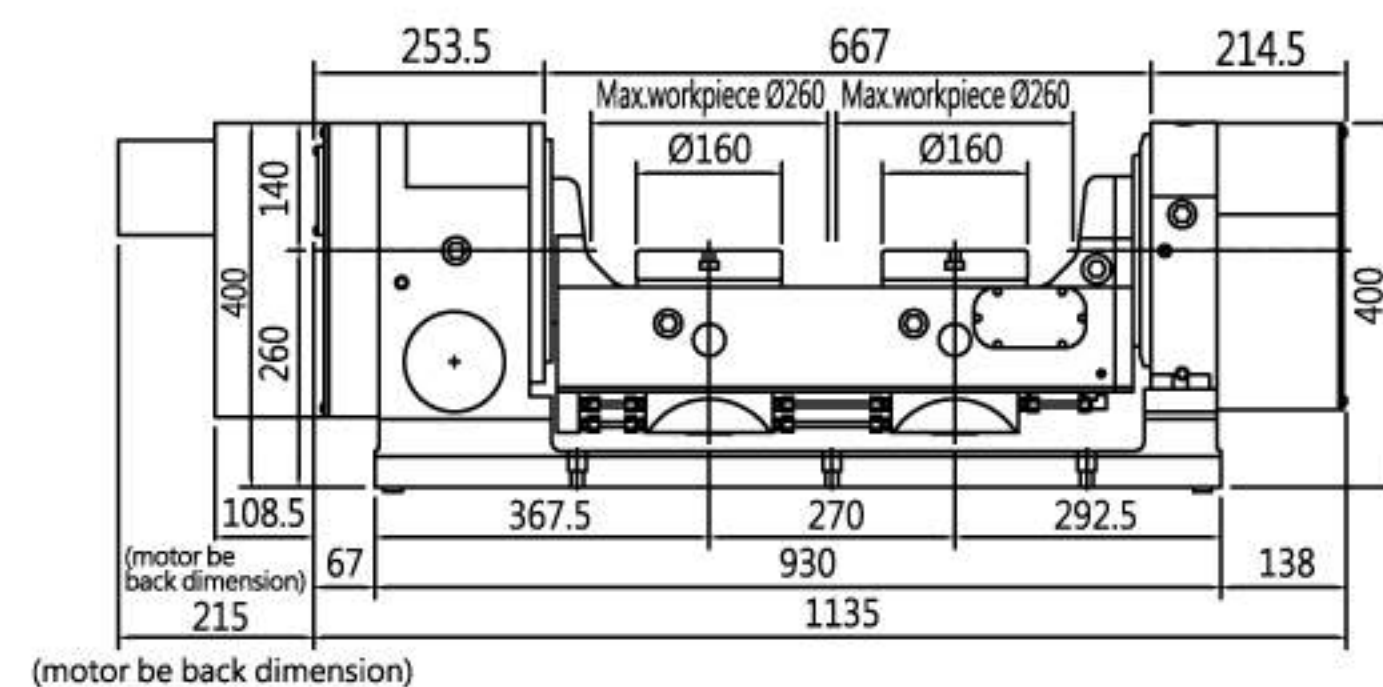
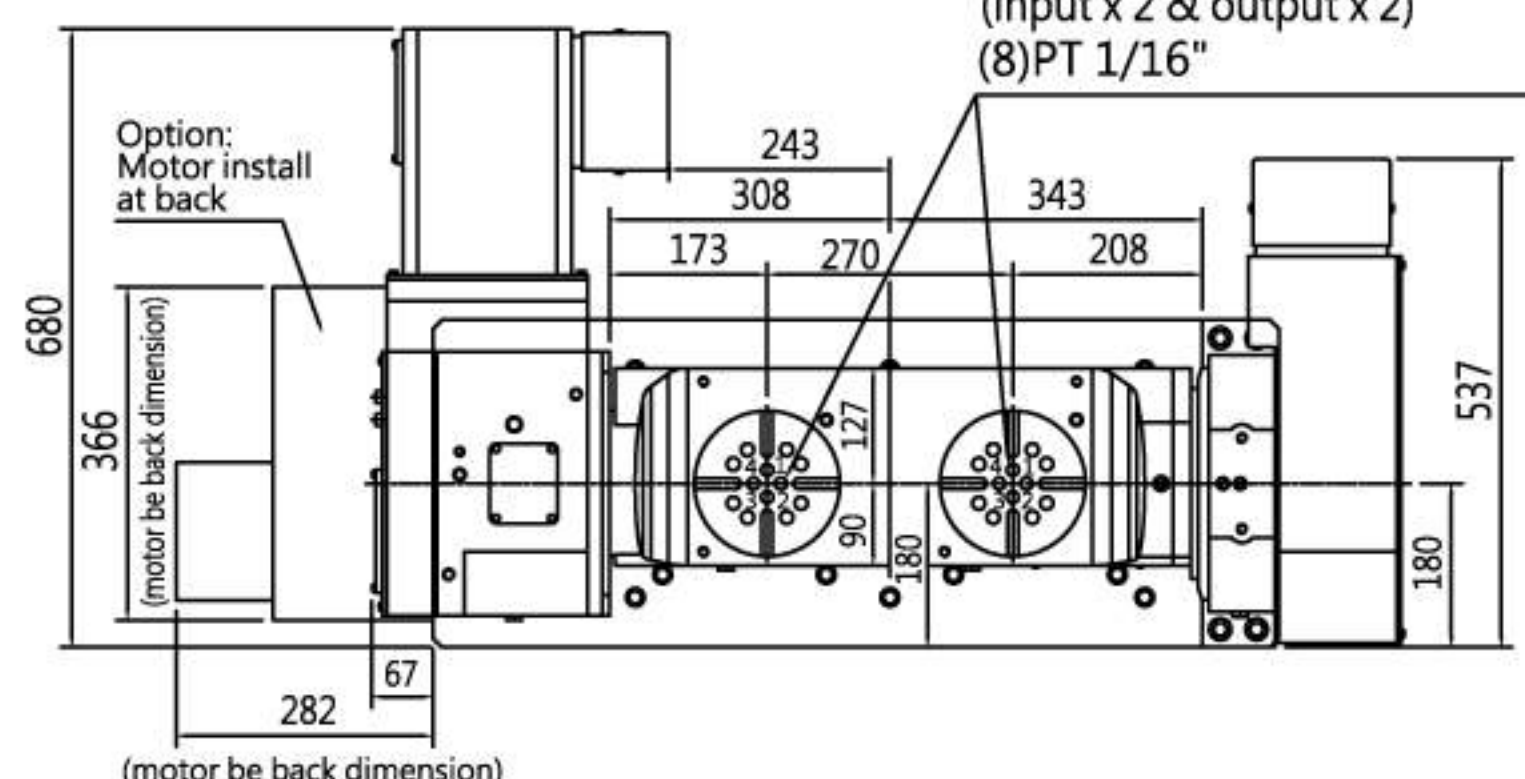
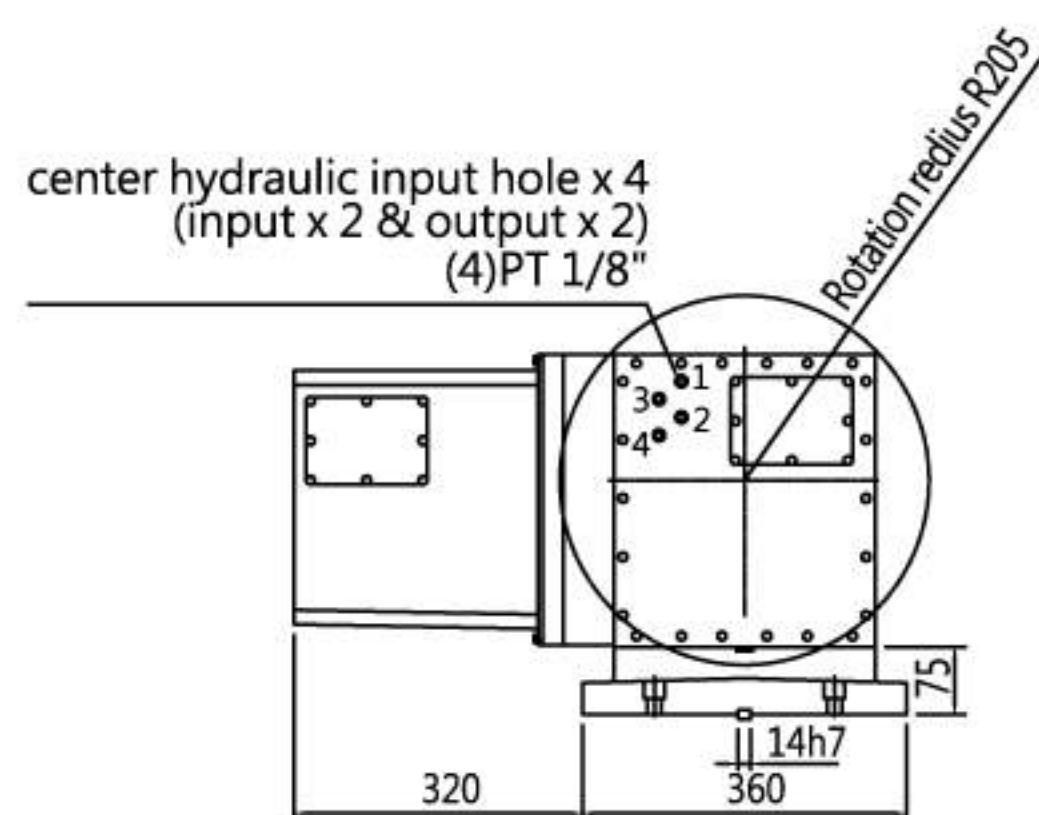
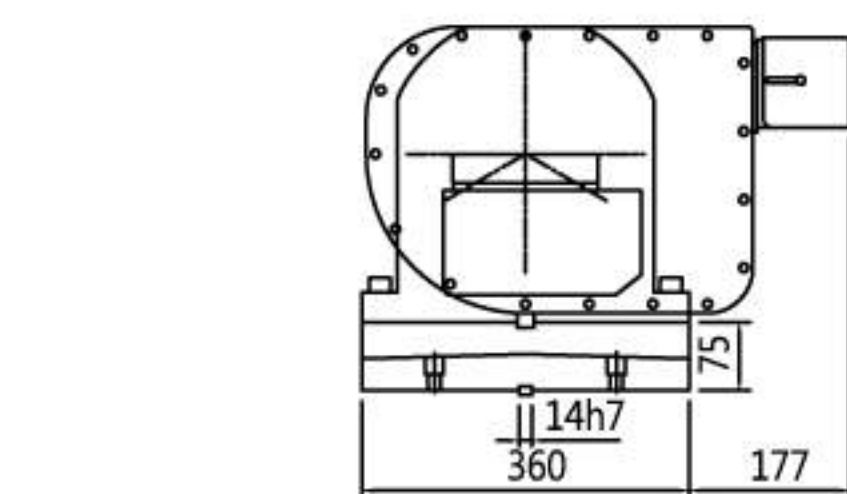
ACL160T2

Standard: Hydraulic distributors
(input x 2 & output x 2) inside

Item	Unit	Specification
Max.workpiece diameter	mm	Φ260
Table diameter	mm	Φ160
Table center height	mm	260
T-slot on table	mm	12H7
Datum position key	mm	14h7
Allowable workpiece load	kg	35 (each table)
Axis	Degree	rotation axis (C-axis), 360 tilt axis (A-axis), +30 to -120
Servo motor (Option)	Fanuc Mitsubishi	α iF4, β iF8 HF-154S HF-154BS
Total reduction ratio		1/96 1/120
Mini. degree	Degree	0.001 0.001
Maximum rpm	rpm	31 25
Clamp power source		Hydraulic Hydraulic
Clamp pressure	kg / cm ²	35 35
Clamp torque	kg-m	24 110
Index accuracy	sec	40 40 (+30°~-120°)
Repetition accuracy	sec	8 4
Product weight	kg	446



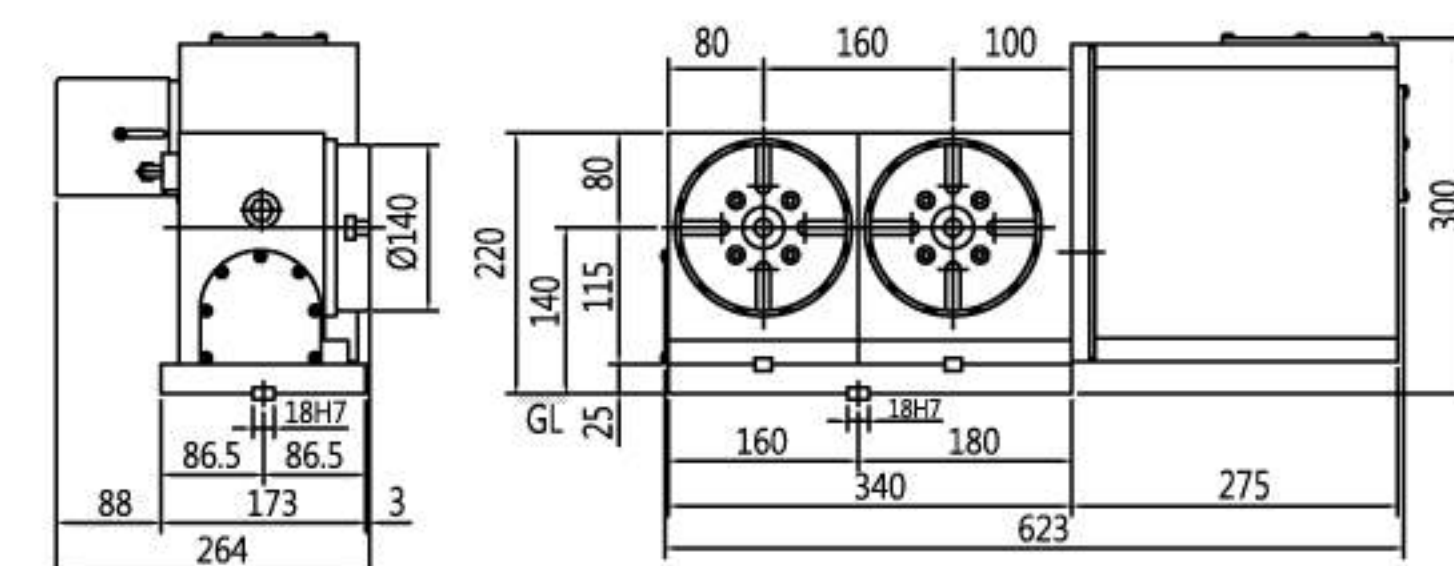
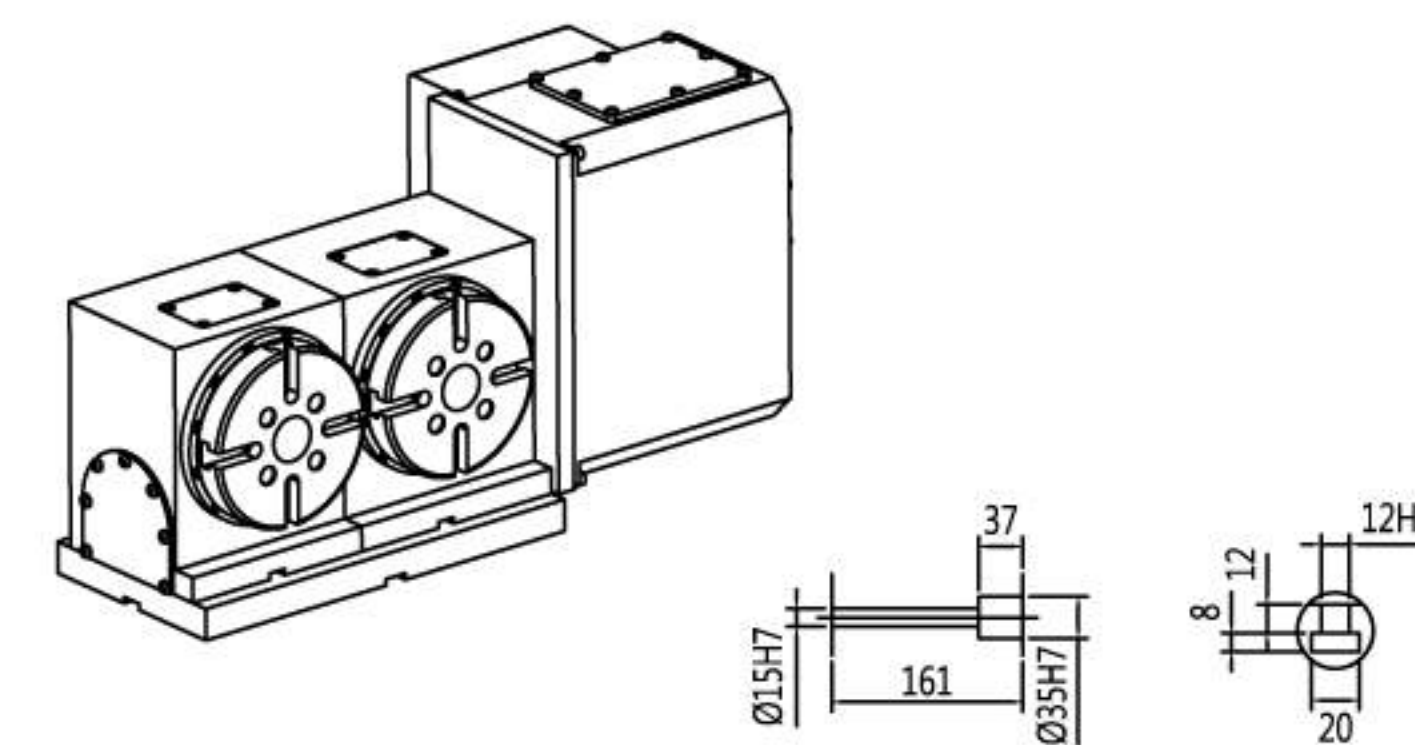
center hydraulic input hole x 4
(input x 2 & output x 2)
(8)PT 1/16"



Roller cam rotary table RD series

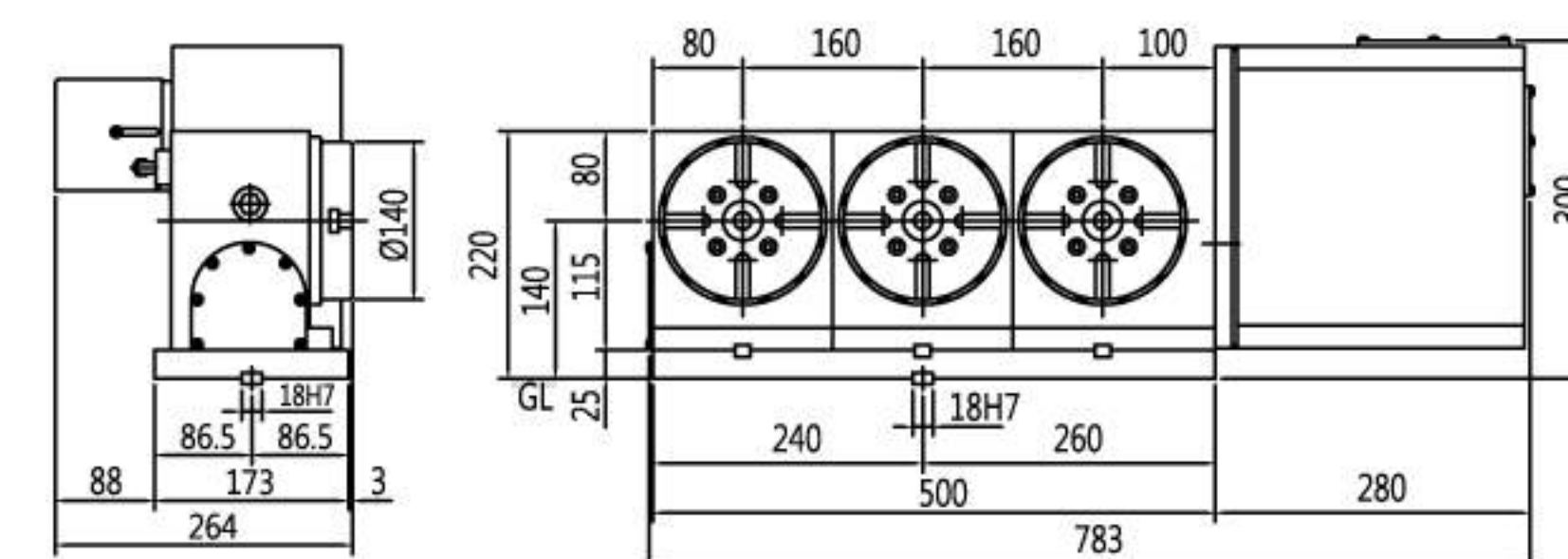
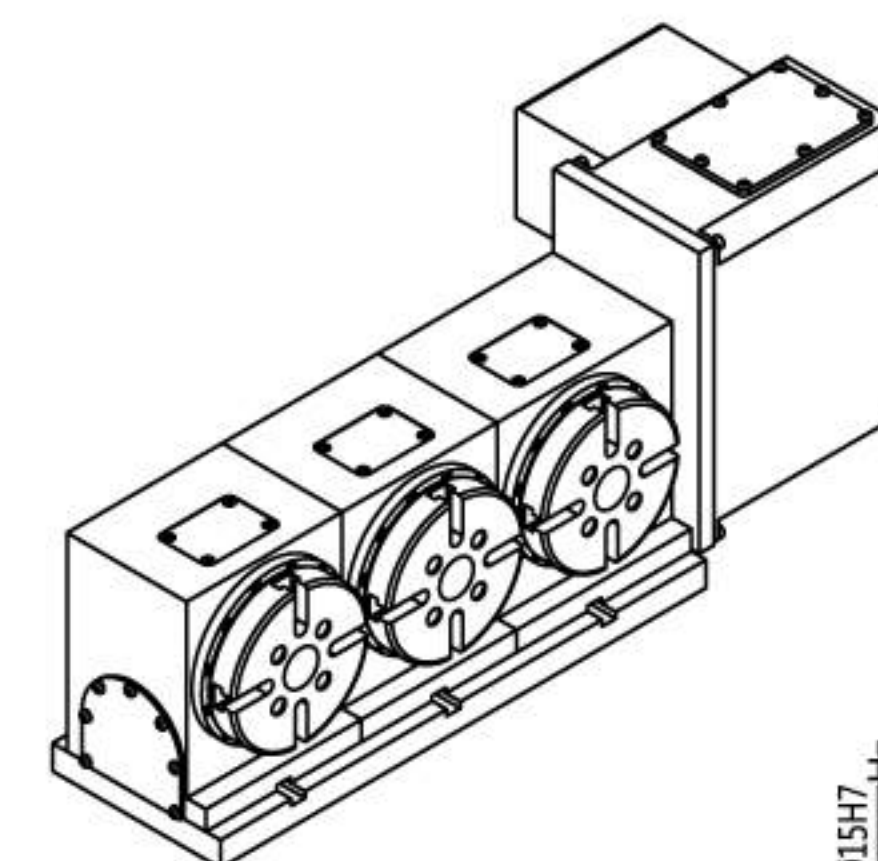
RD140T2

Item	Unit	Specification
Table diameter	mm	Φ140
Table center height	mm	140
Datum hole	mm	Φ35H7
Through-hole	mm	Φ15H7
T-slot on table	mm	12H7
Datum position key	mm	18h7
Servo motor (Option)	Fanuc Mitsubishi Siemens Heidenhain	α iF8 HF-154T 1FK7063 QSY116J
	Motor interface	□ 130 □ 126 □ 116
Total reduction ratio		30
Allowable cutting torque	kg-m	20
Maximum rpm	rpm	100
Clamp power source		Pneumatic/Hydraulic
Clamp pressure	kg / cm ²	6/35
Clamp torque	kg-m	9/20
Index accuracy	sec	25
Repetition accuracy	sec	7
Allowing load	Level(kg) Horzional(kg)	60 120



RD140T3

Item	Unit	Specification
Table diameter	mm	Φ140
Table center height	mm	140
Datum hole	mm	Φ35H7
Through-hole	mm	Φ15H7
T-slot on table	mm	12H7
Datum position key	mm	18h7
Servo motor (Option)	Fanuc Mitsubishi Siemens Heidenhain	α iF8 HF-154T 1FK7063 QSY116J
	Motor interface	□ 130 □ 126 □ 116
Total reduction ratio		30
Allowable cutting torque	kg-m	20
Maximum rpm	rpm	100
Clamp power source		Pneumatic/Hydraulic
Clamp pressure	kg / cm ²	6/35
Clamp torque	kg-m	9/20
Index accuracy	sec	25
Repetition accuracy	sec	7
Allowing load	Level(kg) Horzional(kg)	60 120



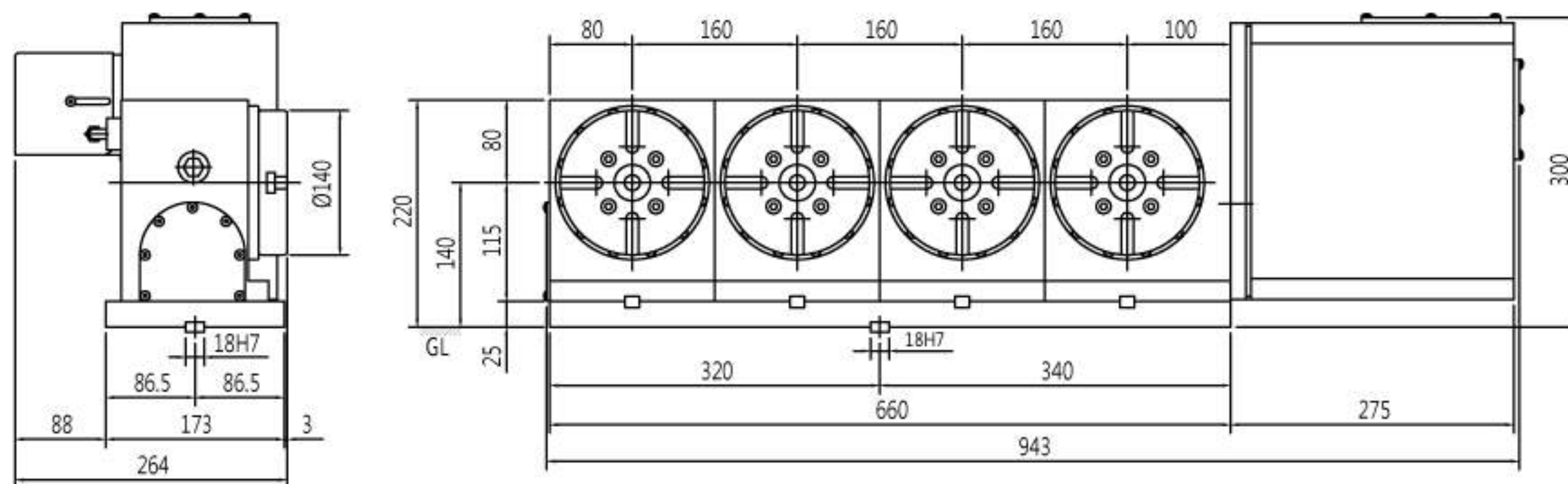
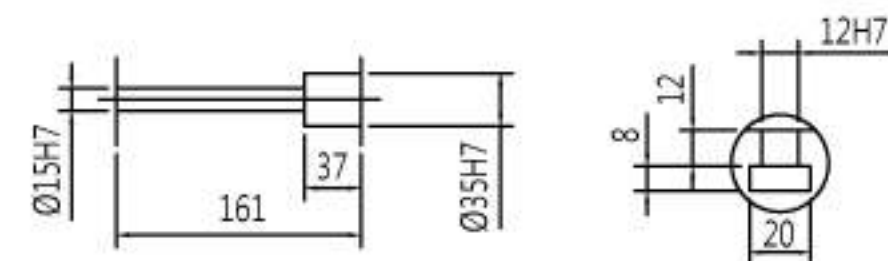


Roller cam rotary table RD series



RD140T4

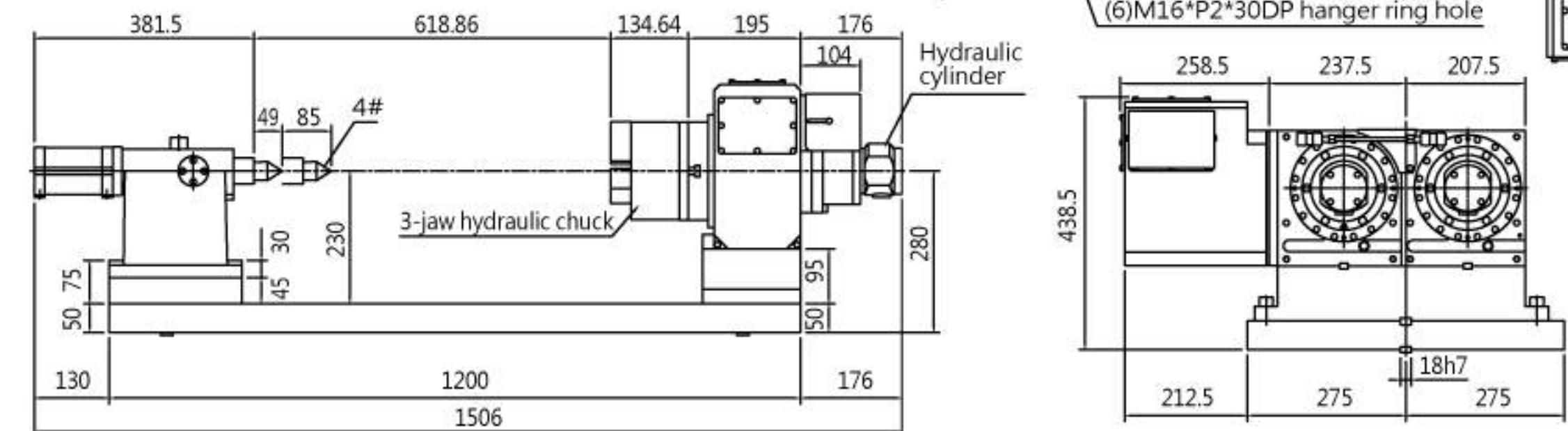
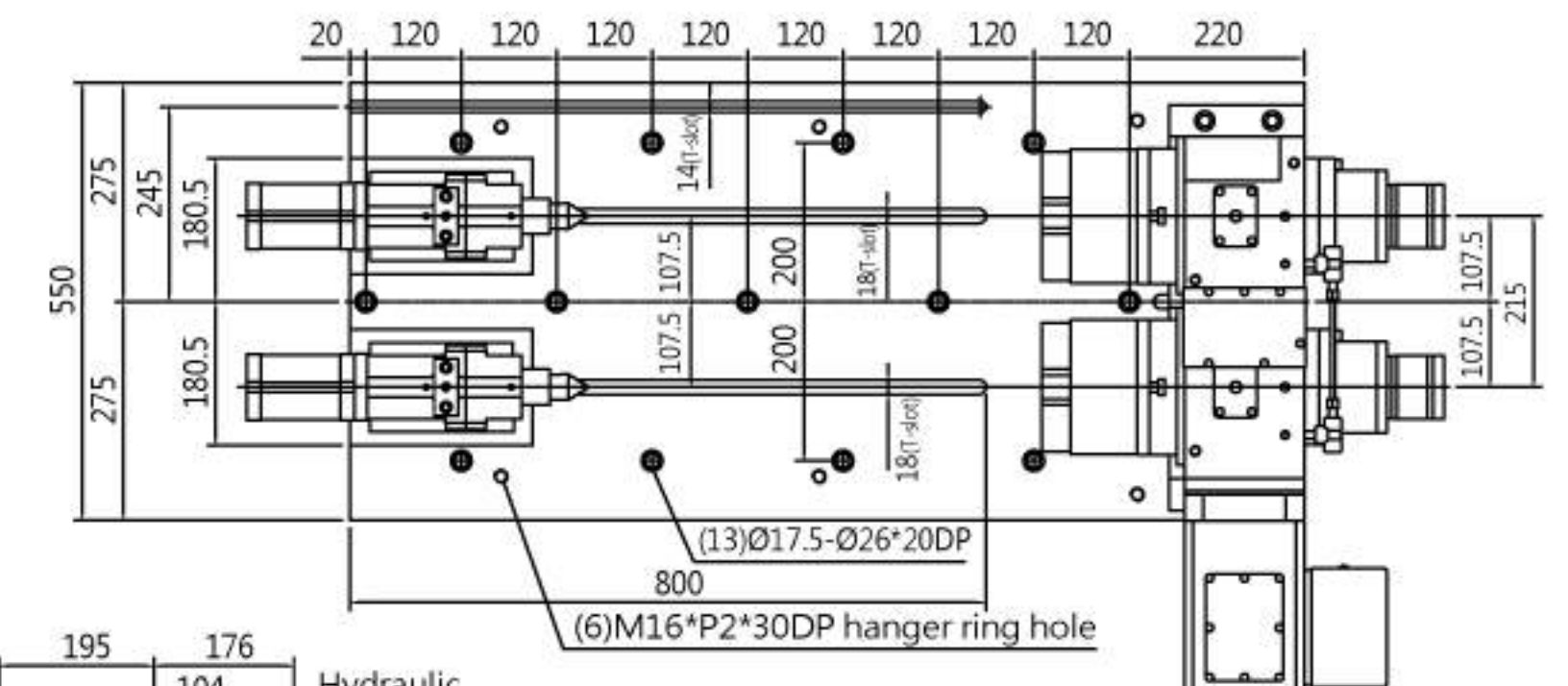
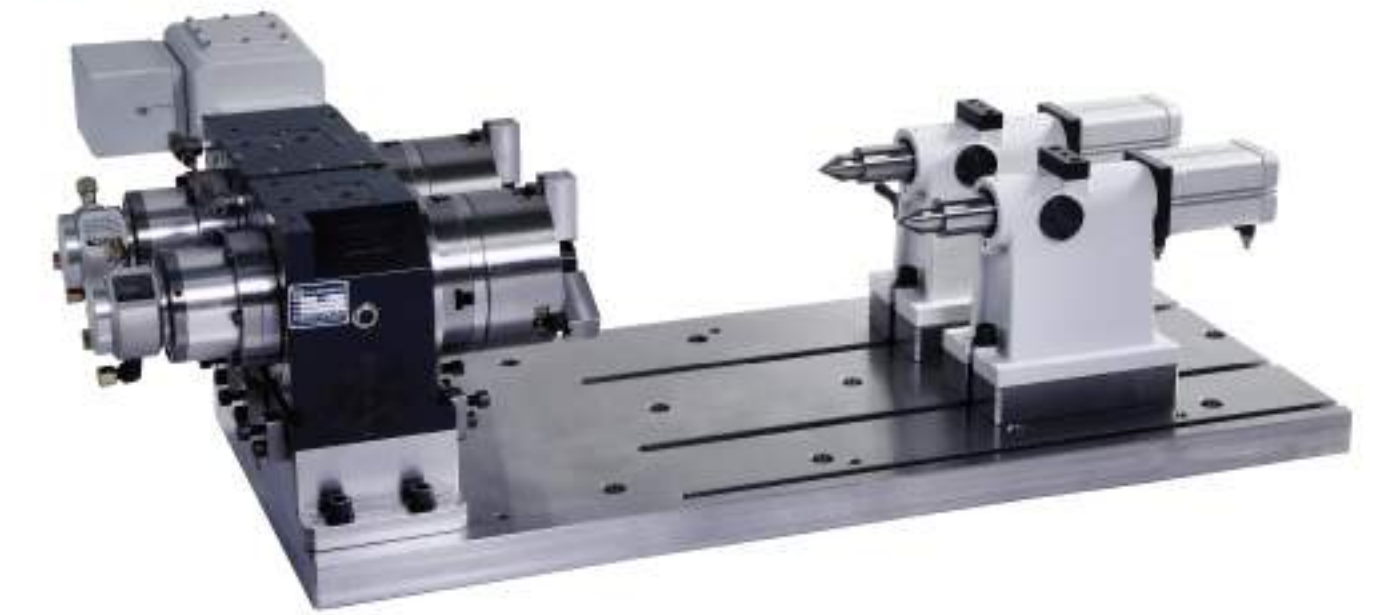
Item	Unit	Specification	
Table diameter	mm	Φ140	
Table center height	mm	140	
Datum hole	mm	Φ35H7	
Through-hole	mm	Φ15H7	
T-slot on table	mm	12H7	
Datum position key	mm	18h7	
Servo motor (Option)	Fanuc	α iF8	Motor interface □ 130 □ 126 □ 116
	Mitsubishi	HF-154T	
	Siemens	1FK7063	
	Heidenhain	QSY116J	
Total reduction ratio		30	
Allowable cutting torque	kg-m	20	
Maximum rpm	rpm	100	
Clamp power source		Pneumatic / Hydraulic	
Clamp pressure	kg / cm ²	6/35	
Clamp torque	kg-m	9/20	
Index accuracy	sec	25	
Repetition accuracy	sec	7	
Allowing load	Level (kg)	60	
	Horizontal (kg)	120	



Customization example RD series

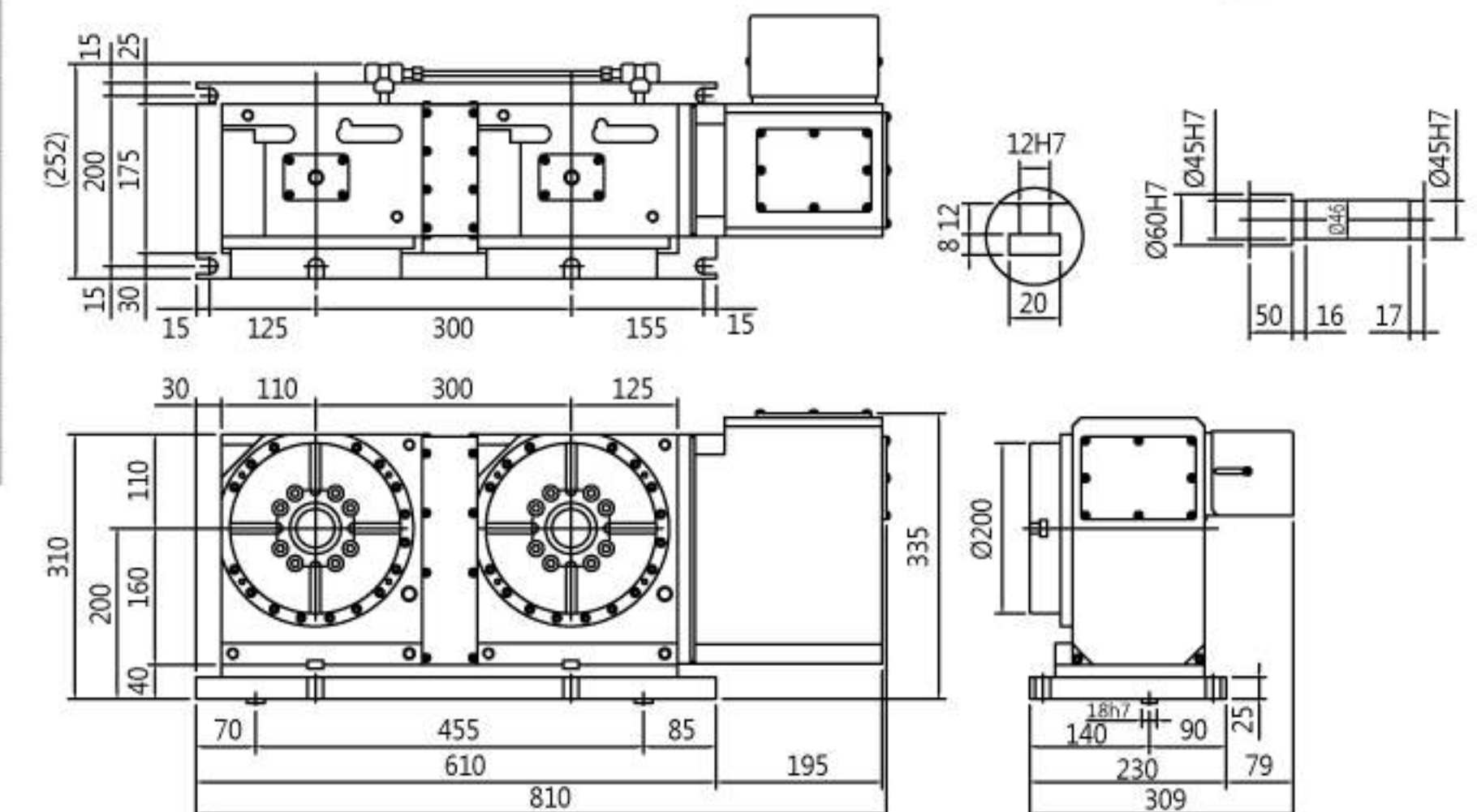
RD170T2

Item	Unit	Specification
Table diameter	mm	φ170
Table center height	mm	230
Datum hole	mm	N / A
Through-hole	mm	N / A
T-slot on table	mm	12H7
Datum position key	mm	18h7
Servo motor (Option)		α iF8 (Tapped shaft)
Total reduction ratio		45
Allowable cutting torque	kg-m	39
Maximum rpm	rpm	83
Clamp power source		Pneumatic/Hydraulic
Clamp pressure	kg / cm ²	6/20
Clamp torque	kg-m	26/80
Index accuracy	sec	16
Repetition accuracy	sec	4



RD200T2

Item	Unit	Specification	
Table diameter	mm	Φ200	
Table center height	mm	200	
Datum hole	mm	Φ60H7	
Through-hole	mm	Φ45H7	
T-slot on table	mm	12H7	
Datum position key	mm	18h7	
Servo motor (Option)	Fanuc	β iS8	Motor interface
	Mitsubishi	HG-154	□ 130
	Siemens	1FK7063	□ 126
Total reduction ratio		60	
Allowable cutting torque	kg-m	47	
Maximum rpm	rpm	66	
Clamp power source		Pneumatic/Hydraulic	
Clamp pressure	kg / cm ²	6/20	
Clamp torque	kg-m	26/80	
Index accuracy	sec	14	
Repetition accuracy	sec	4	

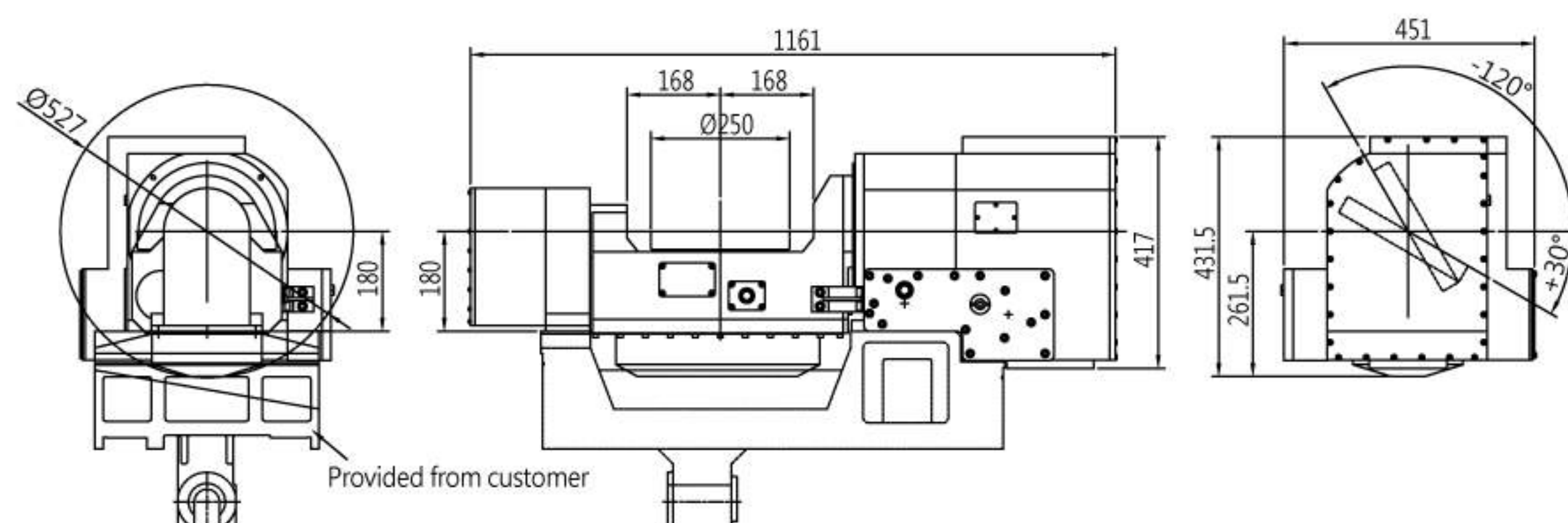




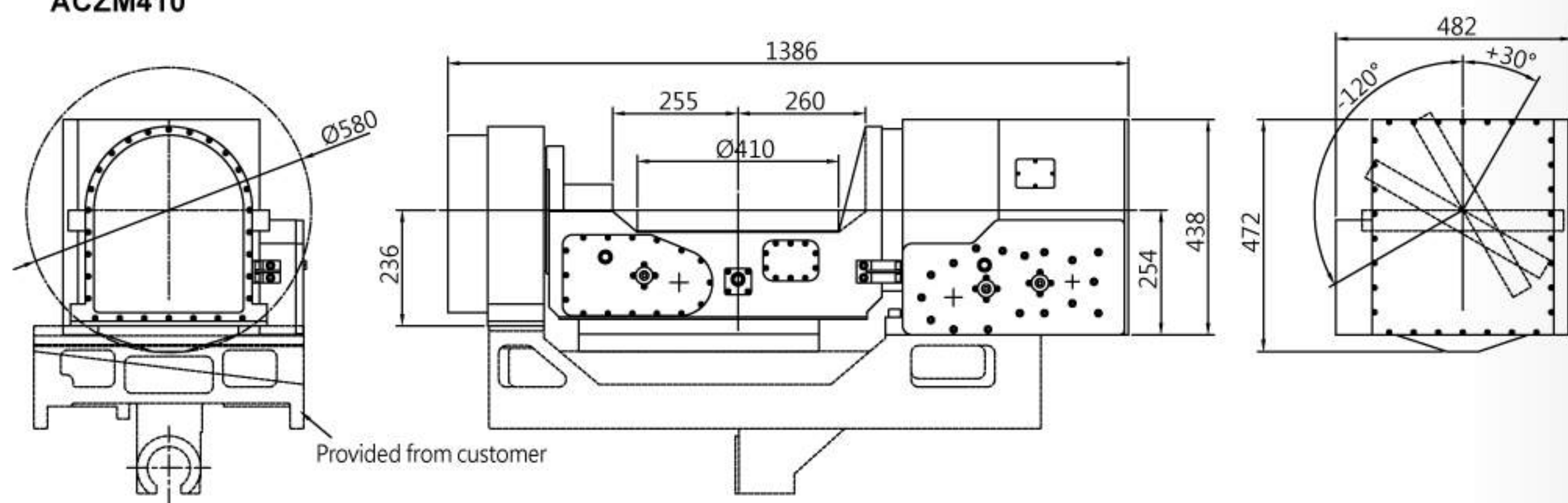
Customization example ACZM series



ACZM250



ACZM410

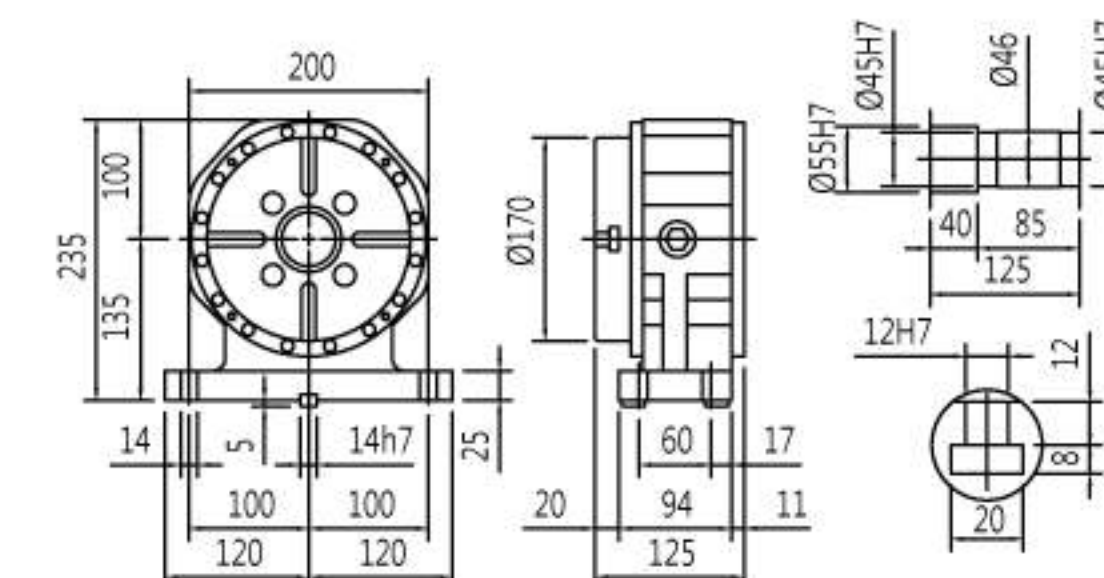


Faceplate Tailstock CR Series

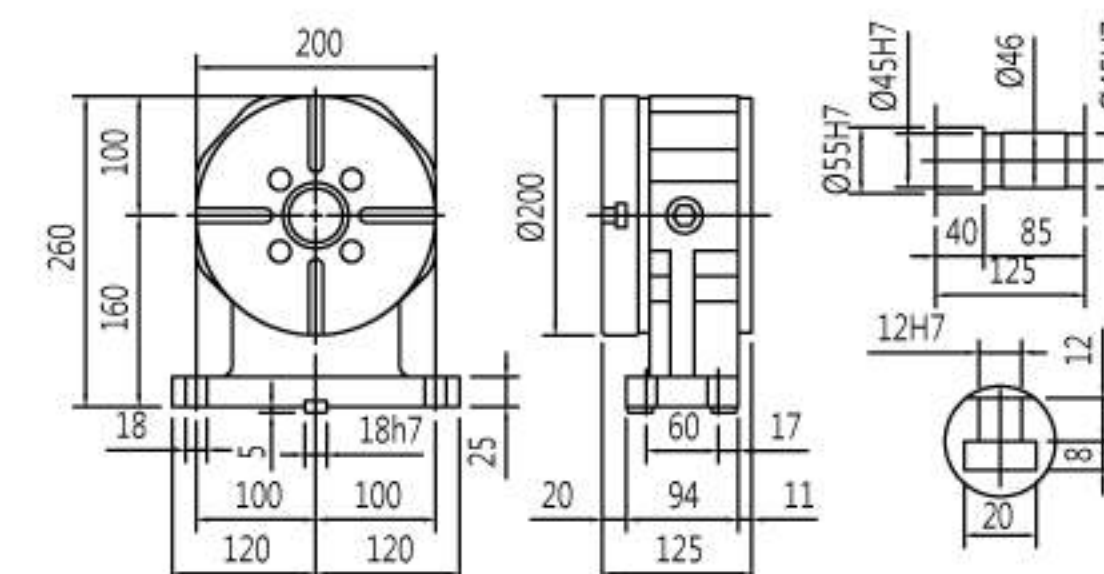
CR series tailstock with different center heights and are able to be matched all kinds of rotary table. To assemble on fourth axis RD series and Fixtures to be perfect performance and effective working time and cost savings.

Type	Size/Center height
CR170 P/H	135mm
CR200 P/H	160mm
CR250 P/H	185mm
CR320 P/H	210mm

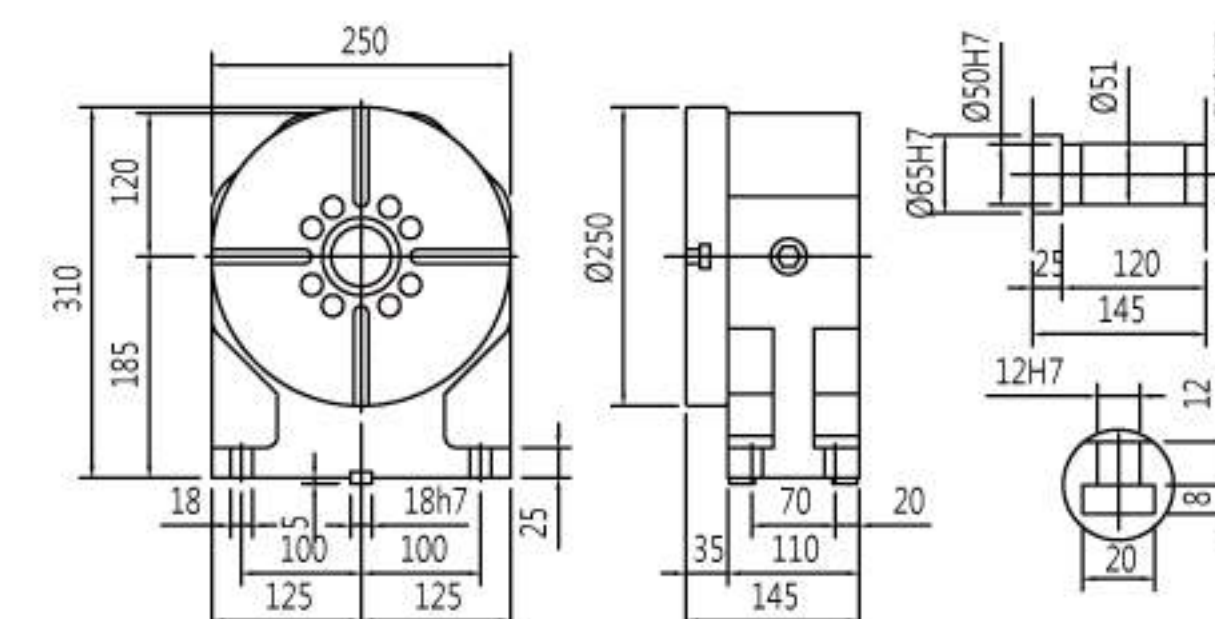
CR170



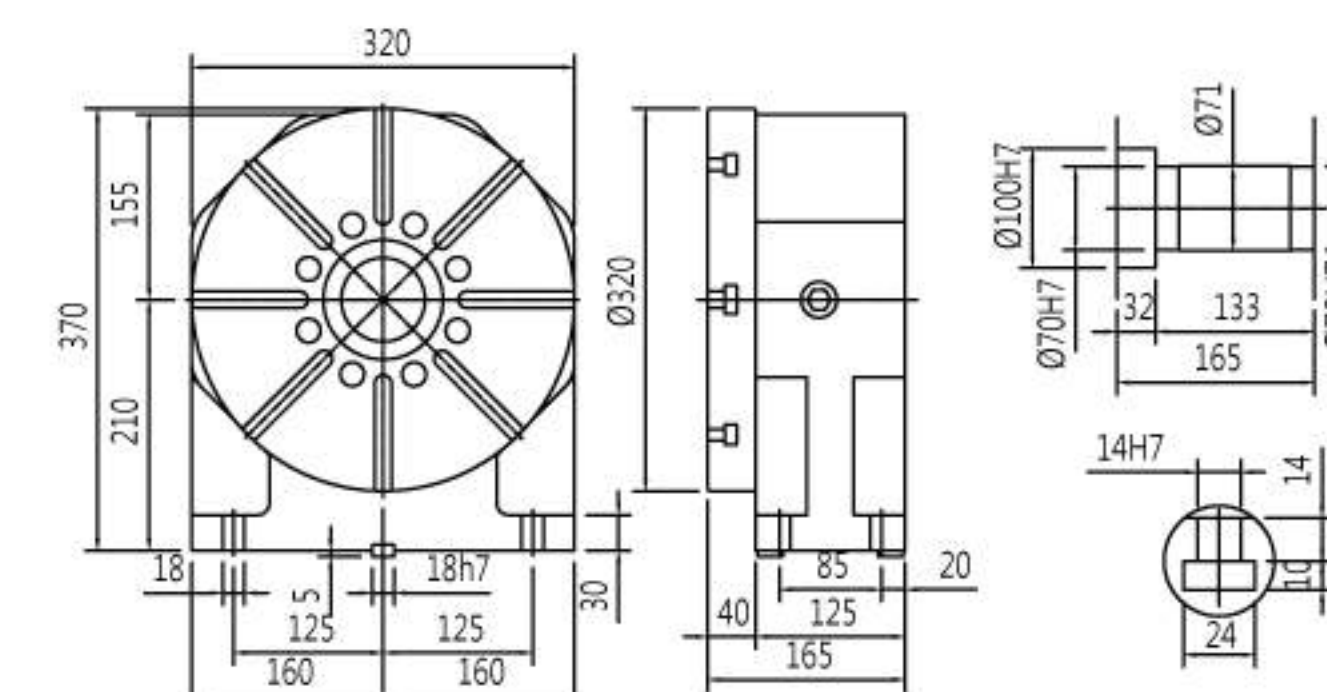
CR200



CR250



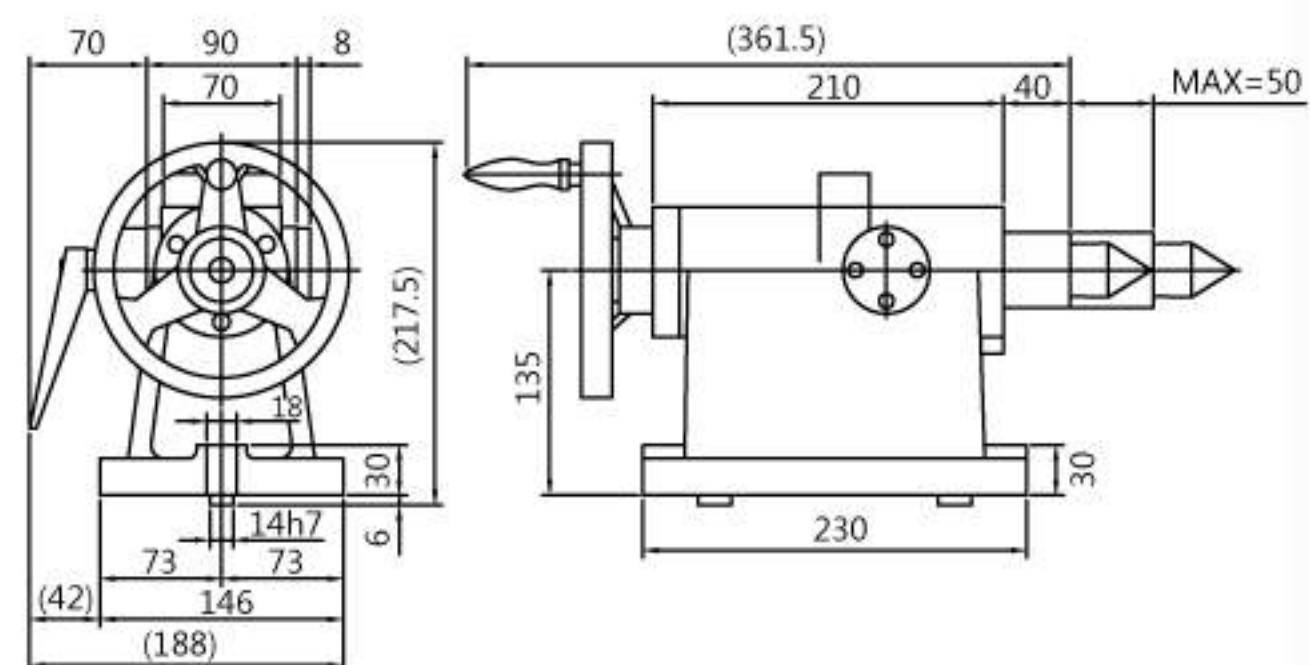
CR320



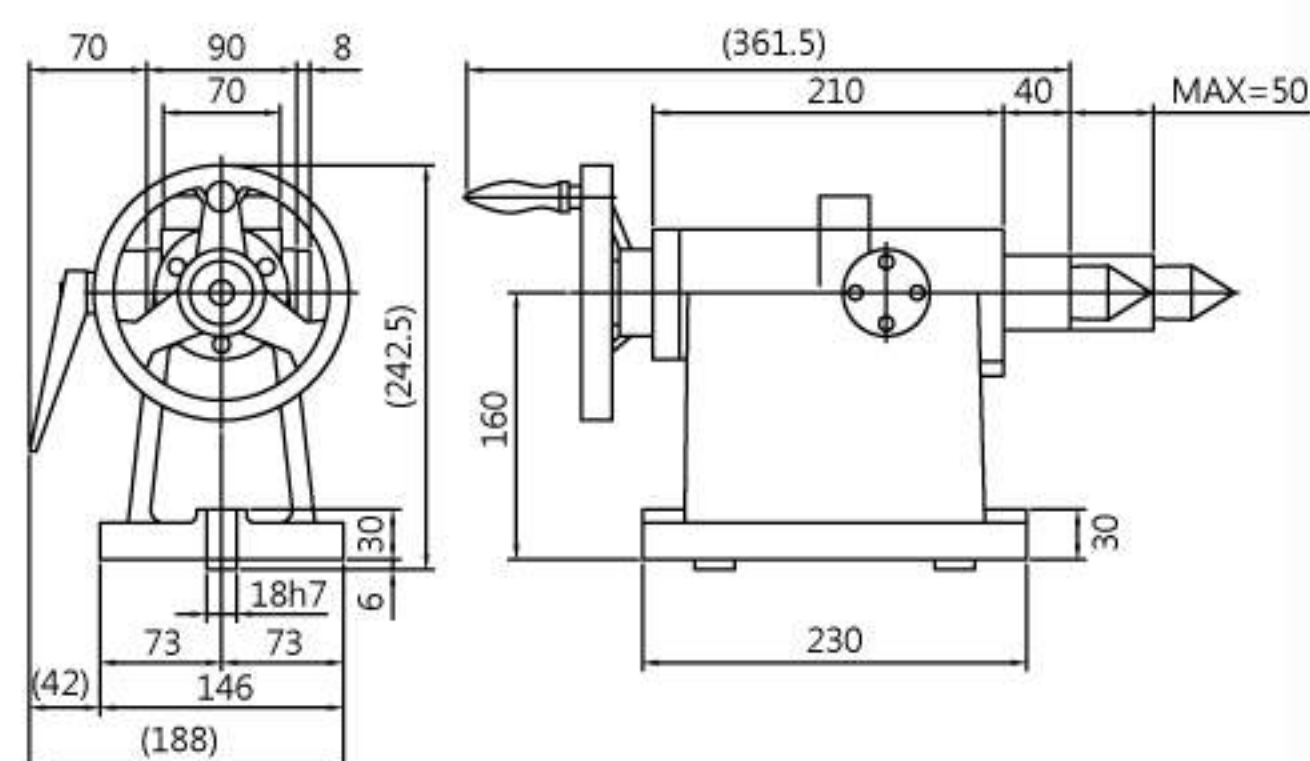


Manual Tailstock MT Series

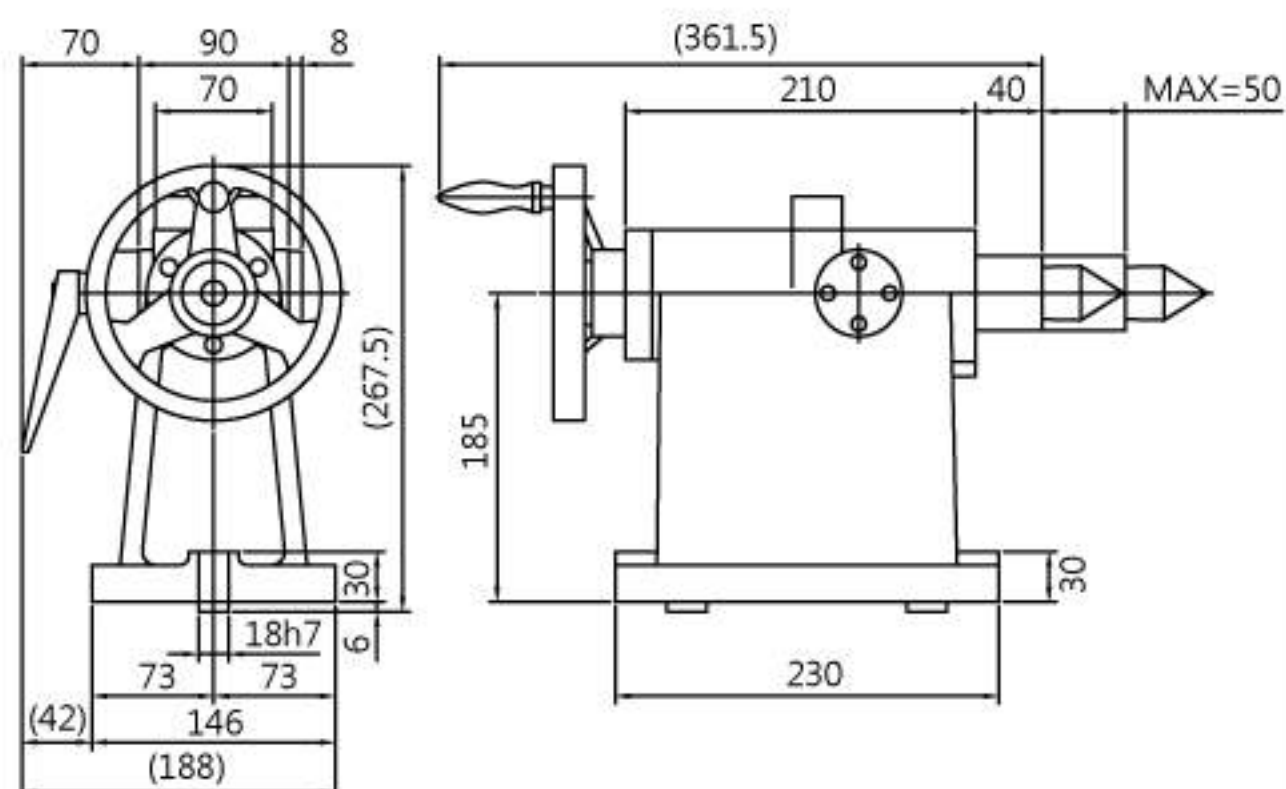
MT135



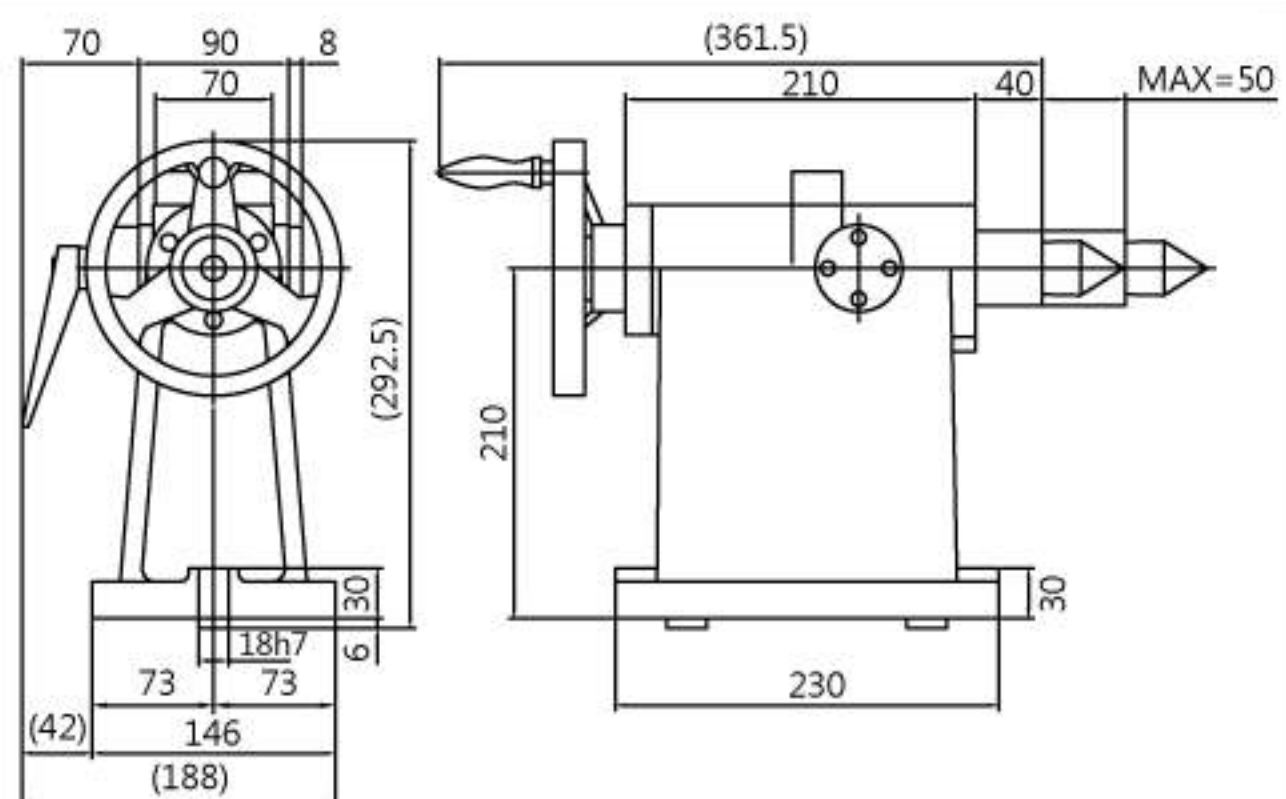
MT160



MT185

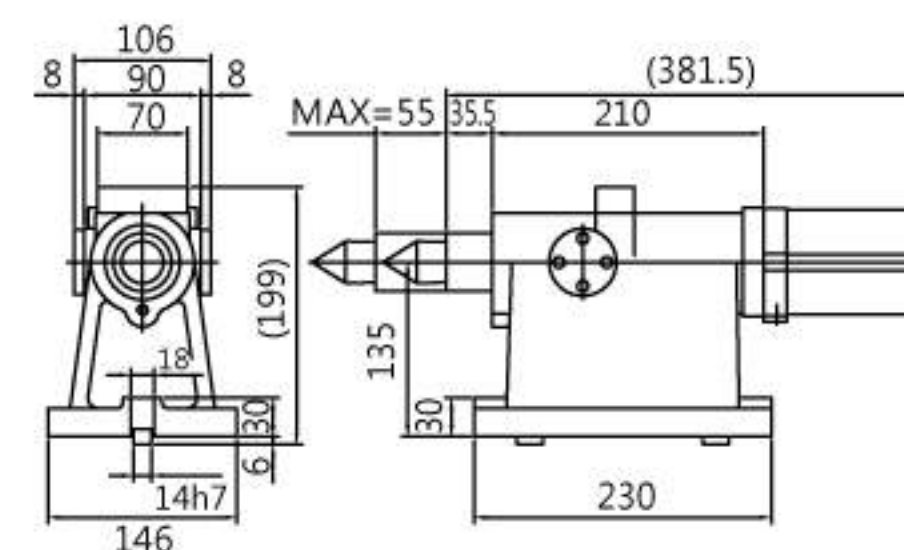


MT210

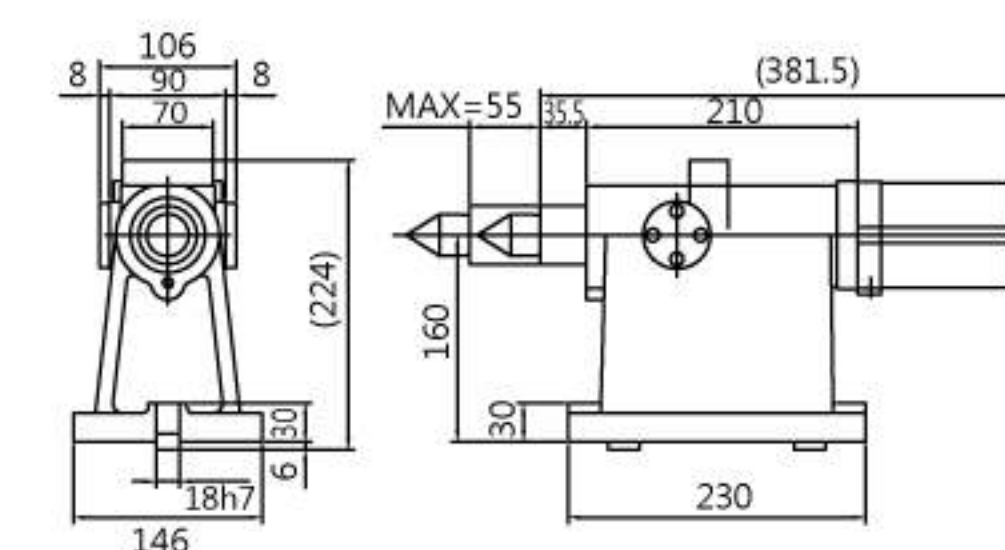


Pneumatic/Hydraulic thimble tailstock PAT/HAT series

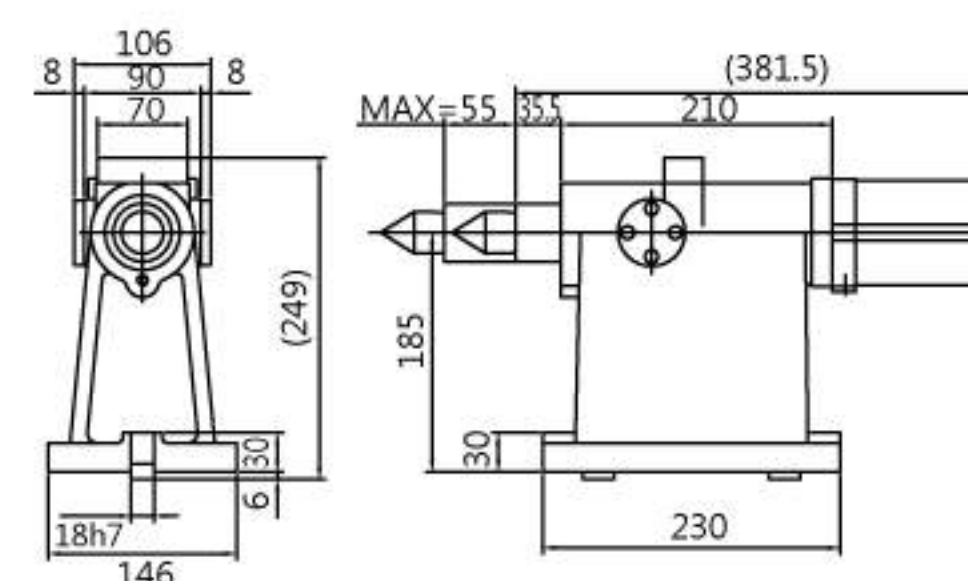
PAT/HAT135



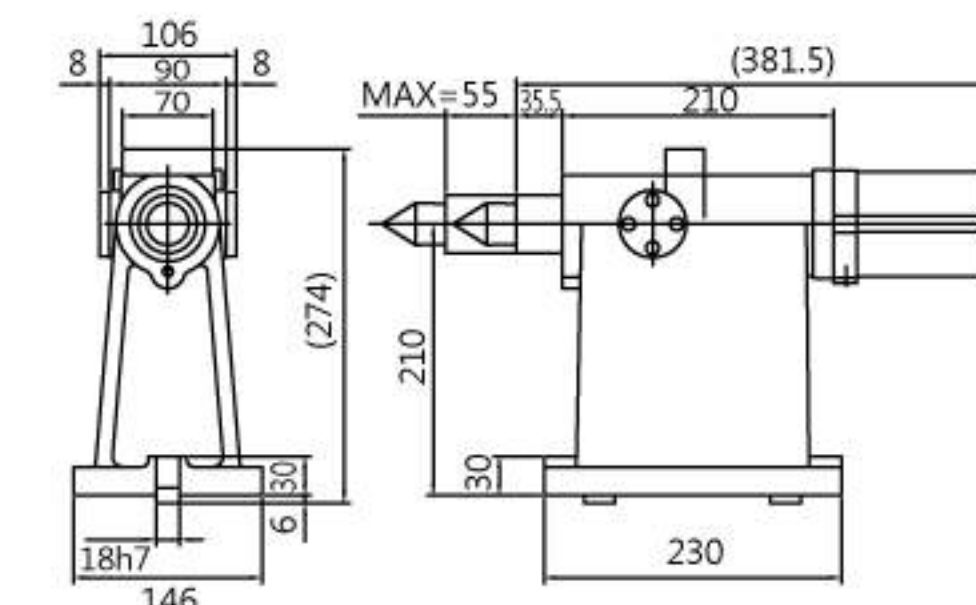
PAT/HAT160



PAT/HAT185



PAT/HAT210



▲ Pneumatic/hydraulic converter (8 times)

- Air pressure source 6kg/cm²
- Solenoid valve DC24V or AC110/220V

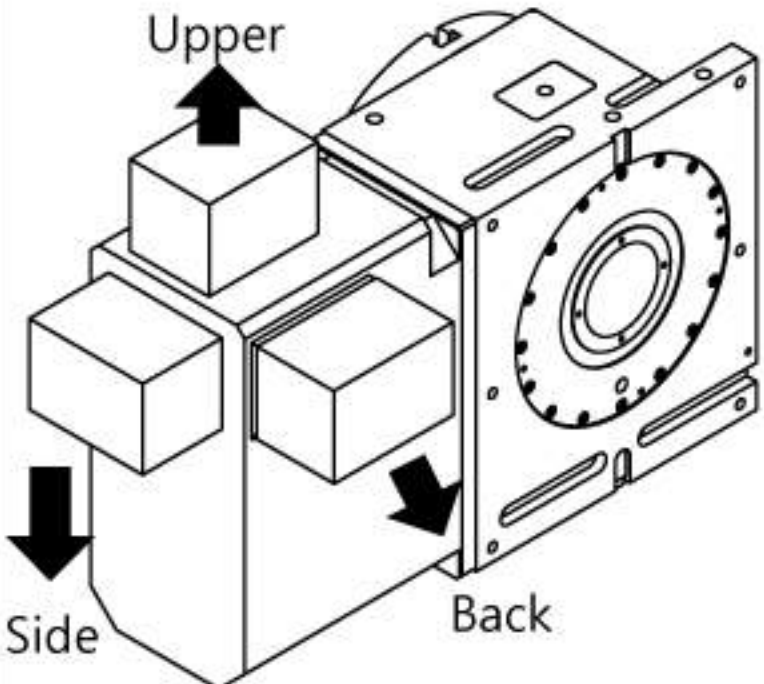
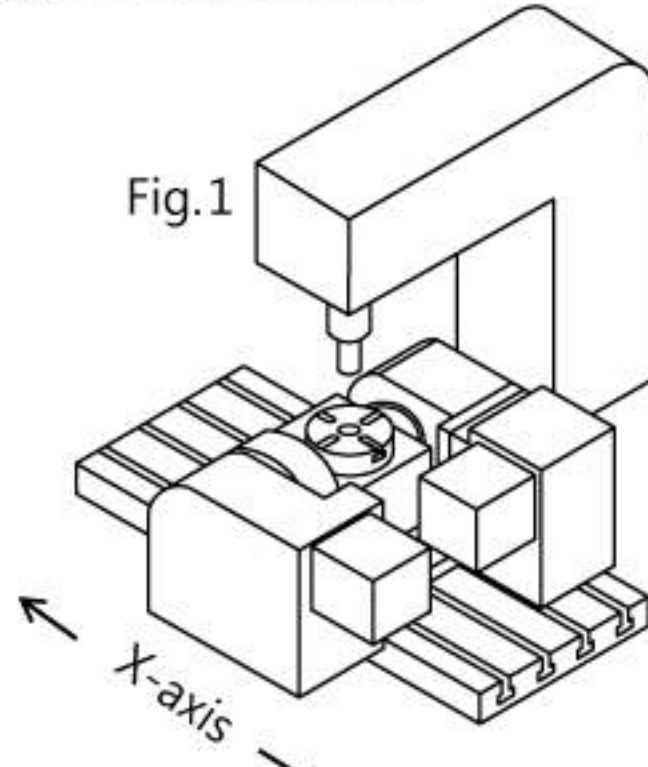
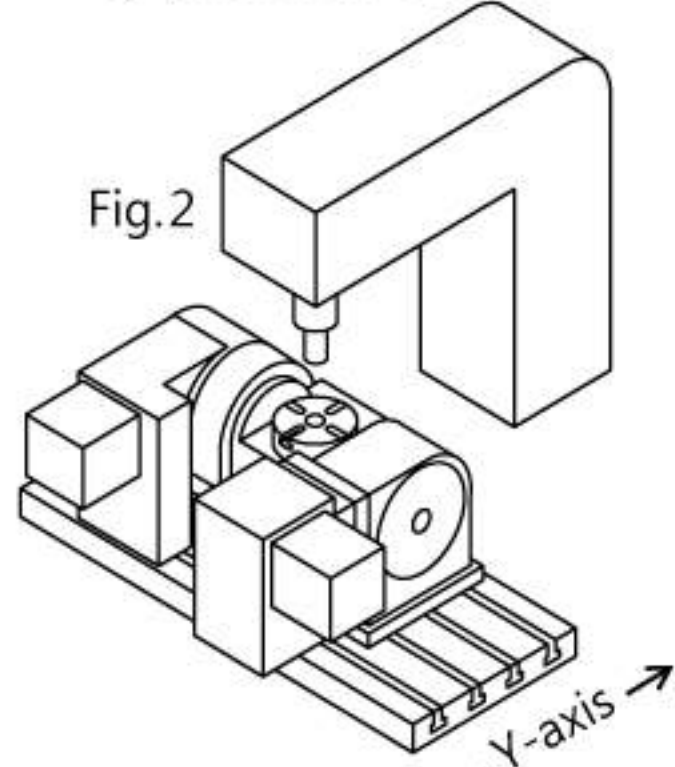


▲ Hydraulic device

- 1HP x 4P, 12 liter / min, 40L
- 2HP x 4P, 30 liter / min, 70L

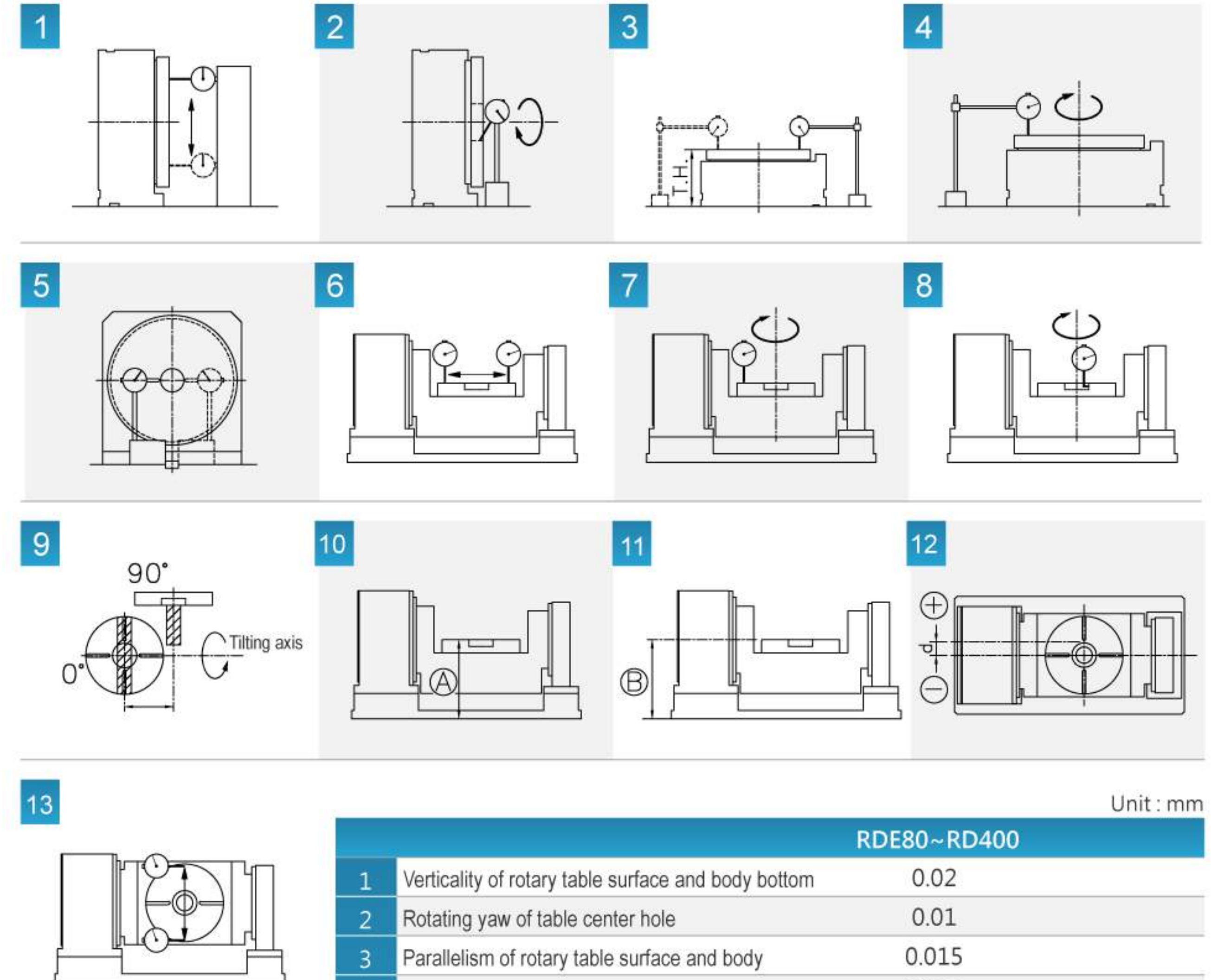


Motor Type specification

Machine Specification	Machine Specification	Brand	Model					
	Machine Controller	☐ Fanuc ☐ Mitsubishi ☐ Siemens ☐ Heidenhain ☐ Others						
	Driver & cables	☐ None ☐ Cables only ☐ Driver and cables						
Machine Table	T-slot width(A)	☐ 14mm ☐ 16mm ☐ 18mm ☐ 22mm						
	T-slot pitch size (B)	☐ 100mm ☐ 150mm ☐ Others						
	T-slot amount on table	☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Others Provide machine table dimension						
NC Rotary Table (4 axis)	Rotary table model number	☐ RDE80 (no brake) ☐ RDE170 (no brake)						
		☐ RD140 ☐ RD170 ☐ RDS200 ☐ RDS250 ☐ RD200 ☐ RD250						
		☐ RD320 ☐ RD400						
NC Rotary Table (5 axes)	Rotary table model number	☐ ACUB150 ☐ ACUB200						
		☐ ACU250 ☐ ACL250 ☐ ACL320 ☐ AC420 ☐ AC500 ☐ ACL650						
	Fixture clamp type	☐ Pneumatic ☐ Hydraulic		Braking type ☐ Pneumatic ☐ Hydraulic				
	Solenoid valve pneumatic locking	☐ AC110V ☐ AC220V ☐ DC24V						
	Outlet way of power / signal wires	☐ Military standard (Japan system) ☐ Defensive device on tilt axis (standard) ☐ Others						
		☐ European standard						
	Mitsubishi connector	☐ 17PIN ☐ 19PIN						
Servo Motor	Limit angle and switch type	☐ Standard (according to catalog spec.) ☐ Others						
		☐ 2-line NC (standard) ☐ Others						
	Fanuc	☐ αF2/5000	☐ αF4/5000	☐ αF8/3000	☐ αF12/4000	☐ αF22/3000	☐ αF40/3000	
		(☐ αS2/5000)	(☐ αS4/5000)	(☐ αS8/4000)	(☐ αS12/4000)	(☐ αS22/4000)	(☐ αS40/4000)	
	Mitsubishi	HF75T	HF54T	HF104T	HF204S	HF354S	HF703S	
	Yaskawa	SGMPS-04	SGMGV-05	SGMGV-09	SGMGV-20	SGMGV-30		
Tailstock (special attachment)	Siemens	1FK7042	1FK7060	1FK7063	1FK7083	1FK7101	1FK7105	
	Heidenhain	QSY96A	QSY116C	QSY116E	QSY155B	QSY155D	QSY190D	
	Changeable thimble manual tailstock	☐ MT-135 ☐ MT-160 ☐ MT-185 ☐ MT-210						
	Faceplate braking tailstock	☐ CR-170 ☐ CR-200 ☐ CR-250 ☐ CR-320 ☐ Pneumatic brake ☐ Hydraulic braking						
Remark	Auto.tailstock	Hydraulic type ☐ HAT-135 ☐ HAT-160 ☐ HAT-185 ☐ HAT-210						
		Pneumatic type ☐ PAT-135 ☐ PAT-160 ☐ PAT-185 ☐ PAT-210						
Wires case ☐ Upper ☐ Side ☐ Back		Mounting location of 5-axis NC rotary table and machine ☐ (Fig. 1) ☐ (Fig. 2)						
		1. 5-axis NC rotary table is installed by parallel to X-axis. 						
		2. 5-axis NC rotary table is installed by parallel to Y-axis. 						



Accuracy inspection diagram



Unit : mm

RDE80~RD400		
1	Verticality of rotary table surface and body bottom	0.02
2	Rotating yaw of table center hole	0.01
3	Parallelism of rotary table surface and body	0.015
4	Amplitude of table surface	0.015
5	Parallelism of table center and datum block	0.02
5	Sides tolerance of table center and datum block	0.02
AC(5-axis model)		
6	Verticality of table surface and bottom	0.01
7	Plate Amplitude of table in rotating	0.02
8	Concentricity of table internal hole in rotating	0.01
9	Change location of tilting axis (0° ~±90°) in rotating	0.02
10	Height of table and datum block	A±0.5
11	Height of tilting axis center & rotating axis center	B±0.5
12	Yaw distance of tilting axis center & rotating axis center	0.02
13	Perpendicular tolerance of table when tilting axis 90° (test from our plant)	0.02
14	Index accuracy	Rotating axis see specification table
		Tilting axis see specification table
	Repetition accuracy	Rotating axis see specification table
		Tilting axis see specification table