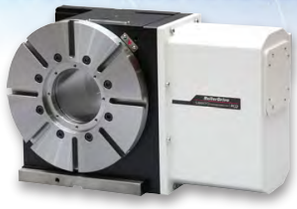
RCD Series

Heavy Duty, Versatile 4-Axis Table



Features

- Quick indexing capability
- Excellent accuracy and repeatability
- Compact size; high speed rotation

Product Code

Rotary table

1	-	2	3	4	5	6	7
RCD105	-	A	R	B	F	1	H

1

Model
RCD105
RCD170
RCD200
RCD250
RCD300
RCD400

2

Servo motor		
With brake	Without brake*1	
A	A1	FANUC
B*2	B1*2	MITSUBISHI
C	C1	—*15
D*3	D1*3	Sanyo Brother type
E	E1	OKUMA
X	X1	Others (Custom)

3

Motor mounting side	
R	Right
L	Left
B*4	Rear
T*4	Top surface

4

Connector position	
B	Rear
S*5	Side
T*6	Top surface

5

Connector type	
F*7	Flexible
R	Receptacle

6

Table shape	
1	Tapped holes
2*6	T slot

7

Posture	
H*9,*10	Horizontal position
V*10	Upright position

-	8	-	9	10	-	11
	EC		M1	W		X

8

Options	
C	Air / Hydraulic clamping
CH*11,*13	Air / Hydraulic clamping External rotary joint
CJ*11	Air / Hydraulic clamping Built-in rotary joint
E*11	With MP scale (MPRZ-536A)
EC*11	With MP scale (MPRZ-536A) Air / Hydraulic clamping
F*11	With MP scale (MPI-536A)
FC*11	With MP scale (MPI-536A) Air / Hydraulic clamping
H*11,*13	External rotary joint
J*11	Built-in rotary joint
G*11,*12	With MP scale (MPRZ-536A) Air / Hydraulic clamping Built-in rotary joint
K*11,*12	With MP scale (MPI-536A) Air / Hydraulic clamping Built-in rotary joint
Blank	No options

9

Mounting clamps	
M1	Keys (14 mm width)
M2	T-slot nuts (14 mm width)
M3	Mounting clamps (14 mm width)
M4	Keys, T-slot nuts (14 mm width)
M5	Keys, Mounting clamps (14 mm width)
M6	Mounting clamps, T-slot nuts (14 mm width)
M7	Keys, Mounting clamps, T-slot nuts (14 mm width)
M8*14	Mounting clamps (14 mm width) [For option J horizontal placement]
M9*14	Keys, Mounting clamps (14 mm width) [For option J horizontal placement]
MA*14	Mounting clamps, T-slot nuts (14 mm width) [For option J horizontal placement]
MB*14	Keys, Mounting clamps, T-slot nuts (14 mm width) [For option J horizontal placement]
MC	Keys (18 mm width)
MD	T-slot nuts (18 mm width)
ME	Mounting clamps (18 mm width)
MF	Keys, T-slot nuts (18 mm width)
MG	Keys, Mounting clamps (18 mm width)
MH	Mounting clamps, T-slot nuts (18 mm width)
MI	Keys, Mounting clamps, T-slot nuts (18 mm width)
MJ*14	Mounting clamps (18 mm width) [For option J horizontal placement]
MK*14	Keys, Mounting clamps (18 mm width) [For option J horizontal placement]
ML*14	Mounting clamps, T-slot nuts (18 mm width) [For option J horizontal placement]
MM*14	Keys, Mounting clamps, T-slot nuts (18 mm width) [For option J horizontal placement]
MN	Keys (22 mm width)
MO	T-slot nuts (22 mm width)
MP	Mounting clamps (22 mm width)
MQ	Keys, T-slot nuts (22 mm width)
MR	Keys, Mounting clamps (22 mm width)
MS	Mounting clamps, T-slot nuts (22 mm width)
MT	Keys, Mounting clamps, T-slot nuts (22 mm width)
Blank	No mounting clamps

10

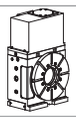
User-supplied items (Motor, MP scale, A/D converter)	
W	No user-supplied items (supplied by Sankyo)
Y	MP scale, A/D converter User supplied
Z	User-supplied motor
Blank	Motor, MP scale, A/D converter User supplied

11

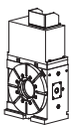
Standard / Custom	
Blank	Standard
X	Custom

*1 If motor brake control is not possible, select a servo motor without brake.
*2 The standard Sankyo-supplied motor for motor code B1 (B) is HF □□□ (B) S-A48.
*3 For RCD105, select "Without brake". For RCD170 to RCD300, select "With brake". RCD400 is not available with the Sanyo Brother type motor.
*4 RCD105 is not available in the motor top surface type or motor rear surface type.
*5 Models of the motor top surface type are not available with the side connector position.
*6 Only models of the motor top surface type are available with the top surface connector position.
*7 If "Flexible" is selected, the flexible cable code must also be selected.
*8 For RCD105, the T slot table cannot be selected.
*9 Models of the motor rear surface type and motor top surface type are not available with the horizontal placement posture.
*10 Models supporting both postures are available (custom).
*11 There is no hollow bore in the table when the MP scale (high-accuracy model) or rotary joint is installed.
*12 Options G and K are only available for RCD250 to RCD400 models of the motor top surface type. MP scales (high-accuracy type) and rotary joints can't be used together in models of other types.
*13 Options CH and H are not available for models of the motor rear surface type and motor top surface type.
*14 Options M8 to MB and MJ to MM are only available for models RCD105 to 200 of the motor right / left mounting type.
*15 Contact Sankyo for information about the external controller type.

Motor mounting side

R	
L	
B	
T	

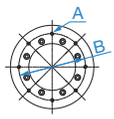
Connector position

B	
S	
T	

Connector type / shape

F	 S : Straight	 A : Angled
R		

Table shape

1	
2*8	P7 ~ 8 : Table with RCD dimensions

	A	B
RCD105	(4)M8 × 1.25, 16DP	75
RCD170	(8)M8 × 1.25, 14DP	140
RCD200	(8)M8 × 1.25, 14DP	170
RCD250	(8)M10 × 1.5, 18DP	210
RCD300	(8)M10 × 1.5, 18DP	250
RCD400	(8)M12 × 1.75, 24DP	355

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Product Code

Flexible cable

1		2		3		4		5		6		7	
CD-105	-	A		A		S		3		R	-	X	

1		2			3		4		5		6		7	
Model		Servo motors for rotary tables			Type of flexible connector at rotary table side		Type of connector at customer side		Length		Flexible material		Standard / Custom	
		With brake	Without brake*1	Manufacturer										
CD-105	For RCD105	A	A1	FANUC	S	Straight	S	Straight	3	3m	R	Resin	Blank	Standard
CD-170	For RCD170	B	B1	MITSUBISHI	A	Angled	A	Angled	5	5m	M	Metal	X	Custom
CD-200	For RCD200	C	C1	— *6										
CD-250	For RCD250 and RCD300	D*2	D1*2	Sanyo Brother type										
CD-400	For RCD400	E	E1	OKUMA										
		X	X1	Others (Custom)										

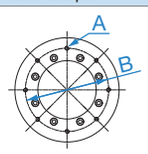
*1 If motor brake control is not possible, select a servo motor without brake.
*2 For RCD105, select "Without brake". For RCD170 to RCD300, select "With brake"RCD400 is not available with the Sanyo Brother type motor.
*6 Contact Sankyo for information about the external controller type.

Support table

1		2		3		4		5	
ST105A	-	1	-	CH	-	M1	-	X	

1		2		3		4		5	
Model		Table shape		Options		Mounting clamps		Standard / Custom	
ST105A	For RCD105	1	Tapped holes	C	Air / Hydraulic clamping	M1	Keys (14 mm width)	Blank	Standard
ST170A	RCD170、For 200	2*3	T slot	CH*4	Air / Hydraulic clamping External rotary joint	M2	T-slot nuts (14 mm width)	X	Custom
ST250A	For RCD250 and RCD300			CJ*4	Air / Hydraulic clamping Built-in rotary joint	M4	Keys T-slot nuts (14 mm width)		
ST400A	For RCD400			H*4	External rotary joint	MC	Keys (18 mm width)		
				J*4, *5	Built-in rotary joint	MD	T-slot nuts (18 mm width)		
				Blank	No options	MF	Keys T-slot nuts (18 mm width)		
						MN	Keys (22 mm width)		
						MO	T-slot nuts (22 mm width)		
						MQ	Keys T-slot nuts (22 mm width)		
						Blank	No mounting clamps		

*3 For ST105A, the T slot table cannot be selected.
*4 There is no hollow bore in the table when a rotary joint is mounted.
*5 Option J is not available (is the same as option H) for ST400A.

Table shape	
1	
2*3	P21 ~ 22 : Table with ST dimensions

	A	B
ST105A	(4)M8 × 1.25, 16DP	75
ST170A	(8)M8 × 1.25, 14DP	140
ST250A	(8)M10 × 1.5, 18DP	210
ST400A	(8)M12 × 1.75, 24DP	355

Tail stock

1		2		3		4		5	
TSS105	-	M		R	-	M1	-	X	

1		2		3		4		5	
Model		Type		Handle side		Mounting clamps		Standard / Custom	
TSS105	For RCD105	M	Manual	R	Right	M1	Keys (14 mm width)	Blank	Standard
TSS135	For RCD170 and RCD200			L	Left	M2	T-slot nuts (14 mm width)	X	Custom
TSS185	For RCD250 and RCD300					M4	Keys T-slot nuts (14 mm width)		
TSS230	For RCD400					MC	Keys (18 mm width)		
						MD	T-slot nuts (18 mm width)		
						MF	Keys T-slot nuts (18 mm width)		
						MN	Keys (22 mm width)		
						MO	T-slot nuts (22 mm width)		
						MQ	Keys T-slot nuts (22 mm width)		
						Blank	No mounting clamps		

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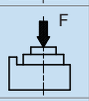
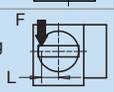
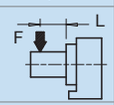
Specifications (RCD models of motor side surface mounting type)

Specifications			RCD105	RCD170	RCD200	RCD250	RCD300	RCD400
Table diameter		mm	Φ 105	Φ 170	Φ 200	Φ 250	Φ 300	Φ 400
Table pilot bore diameter		mm	Φ 60 $^{+0.03}_{0}$	Φ 60 $^{+0.03}_{0}$	Φ 60 $^{+0.03}_{0}$	Φ 110 $^{+0.035}_{0}$	Φ 110 $^{+0.035}_{0}$	Φ 150 $^{+0.04}_{0}$
Center height		mm	105	135	135	185	185	230
Table T slot width		mm	—	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	14 $^{+0.018}_{0}$
Keyway width		mm	14 $^{0}_{-0.011}$	14 $^{0}_{-0.011}$	14 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$
Clamp type (air 0.5 MPa, hydraulic 3.5 MPa)			Air / Hydraulic	Air / Hydraulic	Air / Hydraulic	Hydraulic	Hydraulic	Hydraulic
Clamp torque[*1]		N·m	210	310	310	1100	1100	1850
Motor shaft equivalent inertia[*2, *3]		× 10^{-4} kg·m^2	0.56	2.96	3.15	5.70	5.70	25.76
Motor model (FANUC)			α iS2/5000-B (A06B-2212-B400)	α iS4/5000-B (A06B-2215-B400)	α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS22/4000-B (A06B-2265-B400)
Minimum setting unit		deg	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Maximum table speed		min^{-1}	100	70	70	60	60	60
Gear ratio[*2]			1/50	1/50	1/50	1/60	1/60	1/60
Indexing accuracy		arc.sec	± 15	± 15	± 15	± 10	± 10	± 10
Repeatability		arc.sec	8	8	8	4	4	4
Net weight		kg	30	51	59	110	115	263
Allowable payload	Upright position[*4] 	kg	50（100）	70（140）	70（140）	255（510）	255（510）	295（590）
	Horizontal position 	kg	100	140	140	510	510	590
Allowable load	F 	N	18200	21000	21000	52000	52000	58500
	F × L with clamping 	N・m	210	310	310	1100	1100	1850
	Continuous holding torque[*2, *5]	N・m	122	236	416	512	512	1400
	Maximum output torque[*2, *5, *6]	N・m	221	362	544	987	987	2400
	F × L 	N・m	900	1300	1300	5500	5500	7800
Allowable workpiece inertia		kg·m^2	0.5	1.1	1.1	8.3	8.3	15
Extenal rotary joint (number of ports)[*7]			6+1	6+1	6+1	10+1	10+1	12+1
Internal rotary joint (number of ports)[*7]			4	6	6	8	8	10
MP scale (high-accuracy model)[*7]			MPRZ-536A (MHI)					
			MPI-536A (MHI)					

*1 Values for RCD105, RCD170, and RCD200 are clamping torques when using an air hydro booster with a air pressure of 0.5 MPa as the supply source.
*2 Values for motor shaft equivalent inertia, gear ratio, and continuous / maximum holding torque are given for Fanuc motors. Please contact Sankyo if a different motor is to be used.
*3 Motor shaft equivalent inertia does not include the inertia of the motor shaft.
*4 The allowable payload value for upright mounting shown in brackets applies when a tail stock or support table is used.
*5 The continuous / maximum holding torque is the allowable load torque when a clamp is not used.
*6 Maximum holding torque should not exceed 10 seconds with 20% duty.
*7 Simultaneous use of the MP scale (high-accuracy model) and the rotary joint is not supported.

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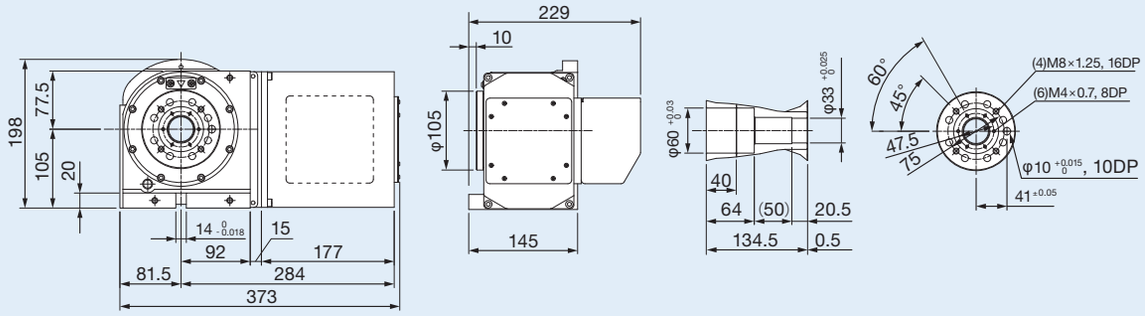
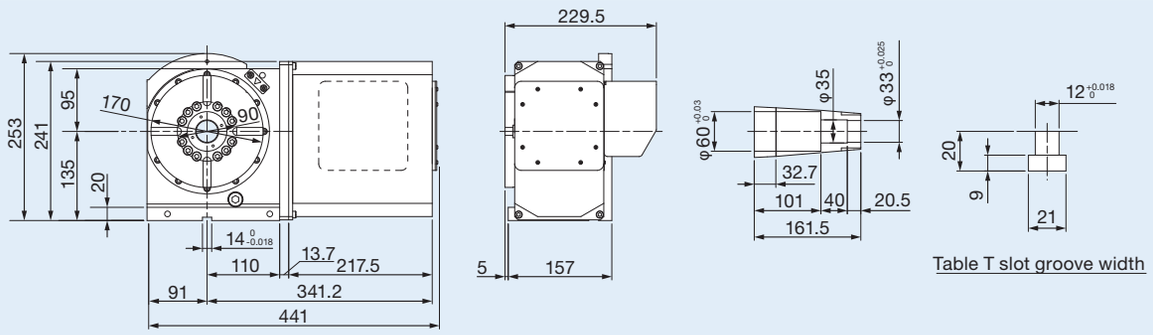
Dimensions (RCD models of motor side surface mounting type)

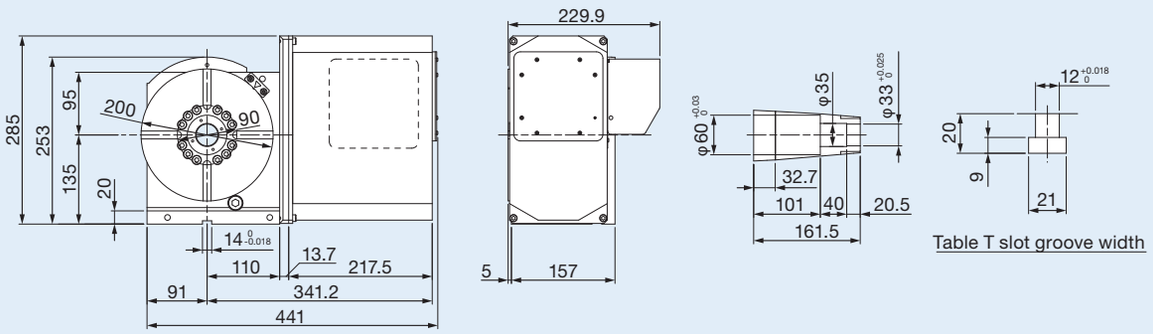
▶ RCD105



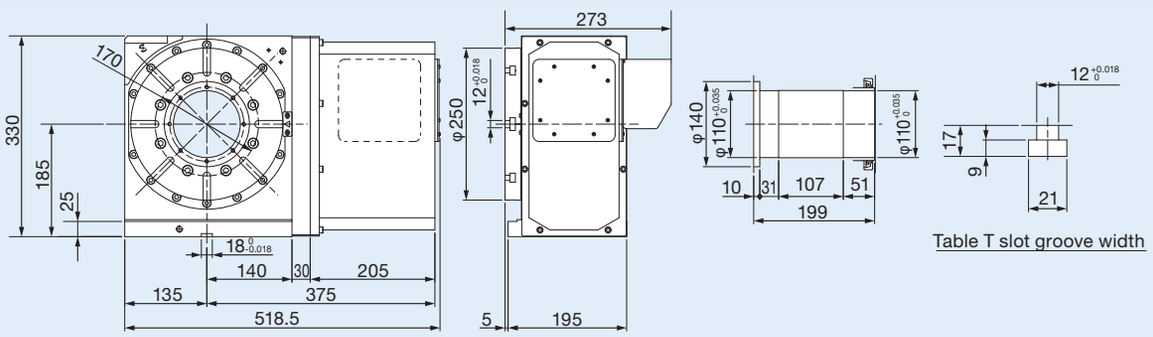
▶ RCD170



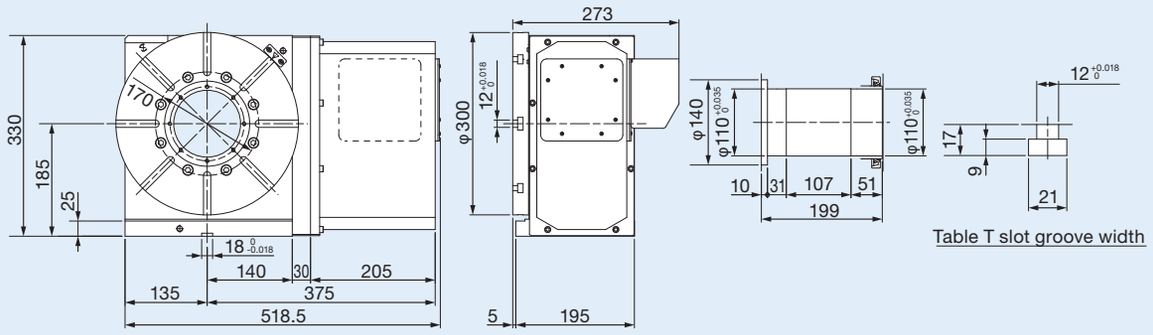
▶ RCD200



▶ RCD250



▶ RCD300



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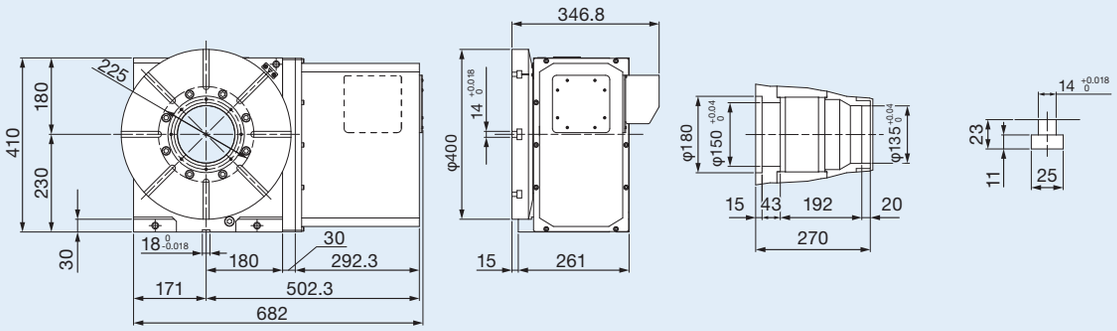
Specifications (RCD models of motor side surface mounting type)

The drawings apply to the following specifications: Fanuc motor, R side mounting, rear connector.

RCD400



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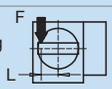
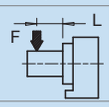
Specifications (RCD models of motor rear surface mounting type)

Specifications			RCD170	RCD200	RCD250	RCD300	RCD400
Table diameter		mm	Φ 170	Φ 200	Φ 250	Φ 300	Φ 400
Table pilot bore diameter		mm	Φ 60 $^{+0.03}_{0}$	Φ 60 $^{+0.03}_{0}$	Φ 110 $^{+0.035}_{0}$	Φ 110 $^{+0.035}_{0}$	Φ 150 $^{+0.04}_{0}$
Center height		mm	185	185	185	185	230
Table T slot width		mm	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	14 $^{+0.018}_{0}$
Keyway width		mm	14 $^{0}_{-0.011}$	14 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$
Clamp type (air 0.5 MPa, hydraulic 3.5 MPa)			Air / Hydraulic	Air / Hydraulic	Hydraulic	Hydraulic	Hydraulic
Clamp torque*1		N·m	310	310	1100	1100	1850
Motor shaft equivalent inertia*2, *3		× 10^{-4} kg·m^2	6.14	6.33	10.90	11.10	47.76
Motor model (FANUC)			α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS22/4000-B (A06B-2265-B400)
Minimum setting unit		deg	0.0001	0.0001	0.0001	0.0001	0.0001
Maximum table speed		min^{-1}	70	70	60	60	60
Gear ratio			1/50	1/50	1/60	1/60	1/60
Indexing accuracy		arc.sec	± 15	± 15	± 10	± 10	± 10
Repeatability		arc.sec	8	8	4	4	4
Net weight		kg	78	80	133	138	305
Allowable payload	Upright position*4 	kg	70 (140)	70 (140)	255 (510)	255 (510)	295 (590)
Allowable load	F 	N	21000	21000	52000	52000	58500
	F × L with clamping 	N・m	310	310	1100	1100	1850
	Continuous holding torque*2, *5	N・m	416	416	512	512	1400
	Maximum output torque*2, *5, *6	N・m	544	544	987	987	2400
	F × L 	N・m	1300	1300	5500	5500	7800
Allowable workpiece inertia		$kg·m^2$	1.1	1.1	8.2	8.2	15
Internal rotary joint (number of ports)*7			6	6	8	8	10
MP scale (high-accuracy model)*7			MPRZ-536A (MHI)				
			MPI-536A (MHI)				

*1 Values for RCD170, RCD200 are clamping torques when using an air hydro booster with a air pressure of 0.5 MPa as the supply source.
*2 The values shown for motor shaft equivalent inertia and continuous/maximum holding torque apply when using a Fanuc motor. Contact Sankyo if using a different motor.
*3 Motor shaft equivalent inertia does not include the inertia of the motor shaft.
*4 The allowable payload value for upright mounting shown in brackets applies when a tail stock or support table is used.
*5 The continuous / maximum holding torque is the allowable load torque when a clamp is not used.
*6 Maximum holding torque should not exceed 10 seconds with 20% duty.
*7 Simultaneous use of the MP scale (high-accuracy model) and the rotary joint is not supported.

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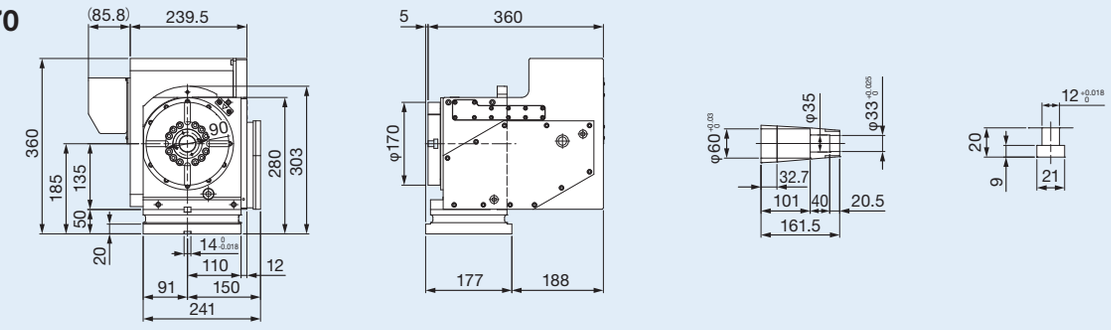
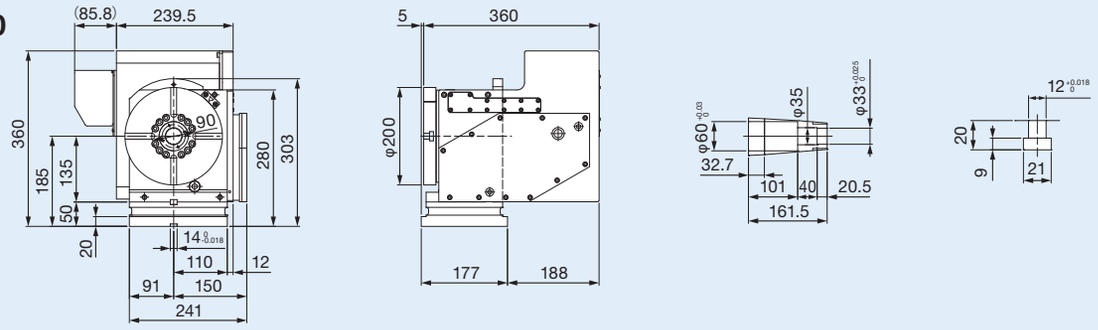
Dimensions (RCD models of motor rear surface mounting type)

The drawings apply to the following specifications: Fanuc motor, side connector.

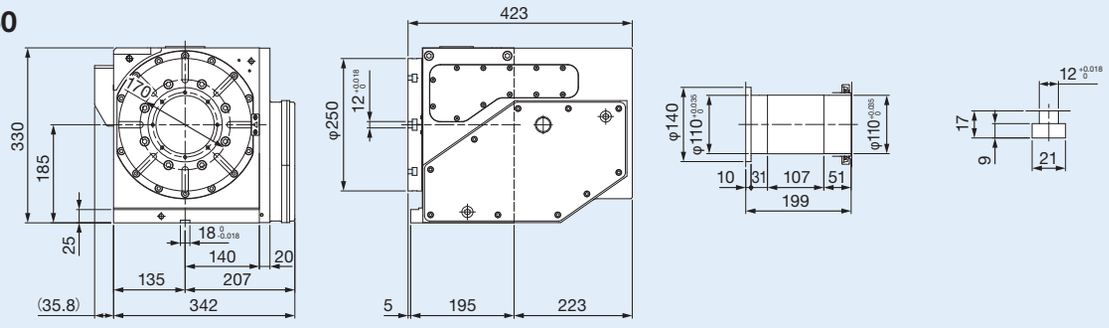
▶ RCD170



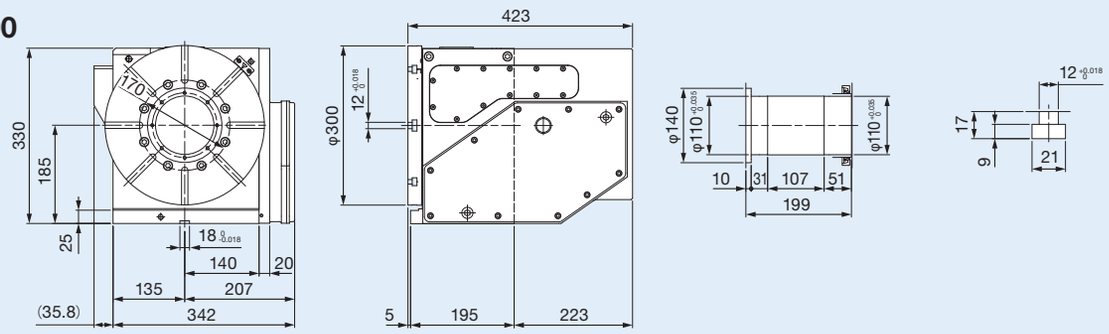
▶ RCD200



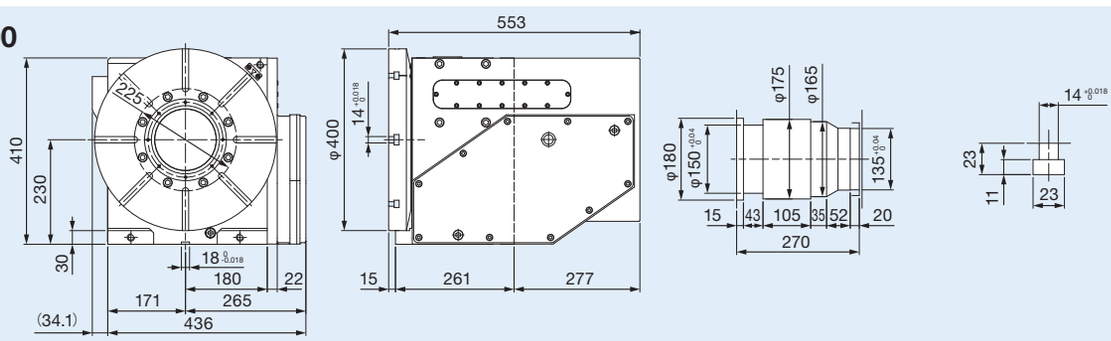
▶ RCD250



▶ RCD300



▶ RCD400



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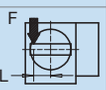
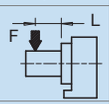
Specifications (RCD models of motor top surface mounting type)

Specifications			RCD170	RCD200	RCD250	RCD300	RCD400
Table diameter		mm	Φ 170	Φ 200	Φ 250	Φ 300	Φ 400
Table pilot bore diameter		mm	Φ 60 $^{+0.03}_{0}$	Φ 60 $^{+0.03}_{0}$	Φ 110 $^{+0.035}_{0}$	Φ 110 $^{+0.035}_{0}$	Φ 150 $^{+0.04}_{0}$
Center height		mm	135	135	185	185	230
Table T slot width		mm	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	12 $^{+0.018}_{0}$	14 $^{+0.018}_{0}$
Keyway width		mm	14 $^{0}_{-0.011}$	14 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$	18 $^{0}_{-0.011}$
Clamp type (air 0.5 MPa, hydraulic 3.5 MPa)			Air / Hydraulic	Air / Hydraulic	Hydraulic	Hydraulic	Hydraulic
Clamp torque*1		N·m	310	310	1100	1100	1850
Motor shaft equivalent inertia*2, *3		× 10^{-4} kg·m^2	2.96	3.15	5.70	5.70	25.76
Motor model (FANUC)			α iS4/4000-B (A06B-2215-B400)	α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS8/4000-B (A06B-2235-B400)	α iS22/4000-B (A06B-2265-B400)
Minimum setting unit		deg	0.0001	0.0001	0.0001	0.0001	0.0001
Maximum table speed		min^{-1}	70	70	60	60	60
Gear ratio			1/50	1/50	1/60	1/60	1/60
Indexing accuracy		arc.sec	± 15	± 15	± 10	± 10	± 10
Repeatability		arc.sec	8	8	4	4	4
Net weight		kg	61	69	120	125	291
Allowable payload	Allowable load*4 	kg	70 (140)	70 (140)	255 (510)	255 (510)	295 (590)
Upright position	F 	N	21000	21000	52000	52000	58500
	F × L with clamping 	N・m	310	310	1100	1100	1850
	Continuous holding torque*2, *5	N・m	236	416	512	512	1400
	Maximum output torque*2, *5, *6	N・m	362	544	987	987	2400
	F × L 	N・m	1300	1300	5500	5500	7800
Allowable workpiece inertia		$kg·m^2$	1.1	1.1	8.2	8.2	15
Extenal rotary joint (number of ports)*7			6+1	6+1	10+1	10+1	12+1
Internal rotary joint (number of ports)*7			6	6	8	8	10
MP scale (high-accuracy model)*7			MPRZ-536A (MHI)				
			MPI-536A (MHI)				

*1 Values for RCD170, RCD200 are clamping torques when using an air hydro booster with a air pressure of 0.5 MPa as the supply source.
*2 The values shown for motor shaft equivalent inertia and continuous/maximum holding torque apply when using a Fanuc motor. Contact Sankyo if using a different motor.
*3 Motor shaft equivalent inertia does not include the inertia of the motor shaft.
*4 The allowable payload value for upright mounting shown in brackets applies when a tail stock or support table is used.
*5 The continuous / maximum holding torque is the allowable load torque when a clamp is not used.
*6 Maximum holding torque should not exceed 10 seconds with 20% duty.
*7 Models RCD105, RCD170, and RCD200 do not enable the use of MP scales (high-accuracy type) together with rotary joints.

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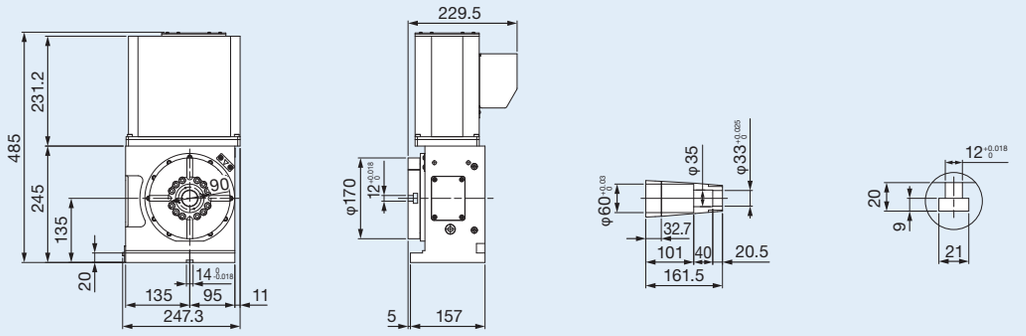
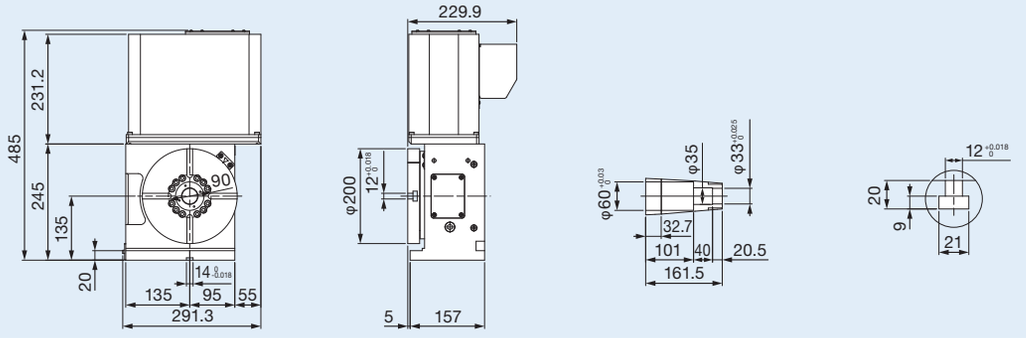
Dimensions (RCD models of motor top surface mounting type)

The drawings apply to the following specifications: Fanuc motor, rear connector.

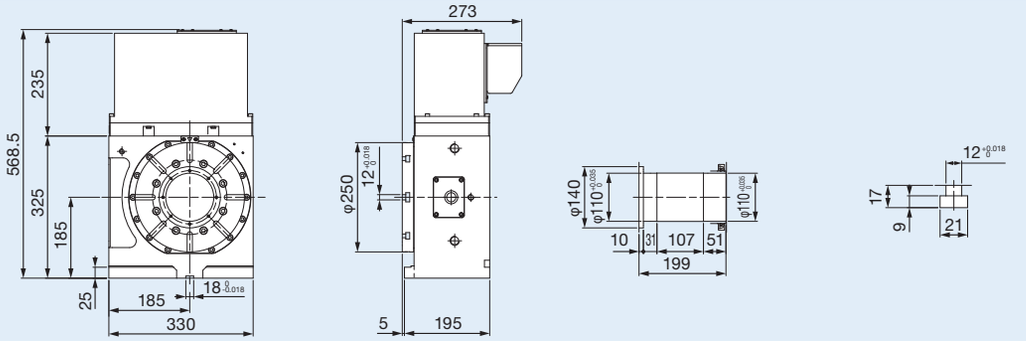
▶ RCD170



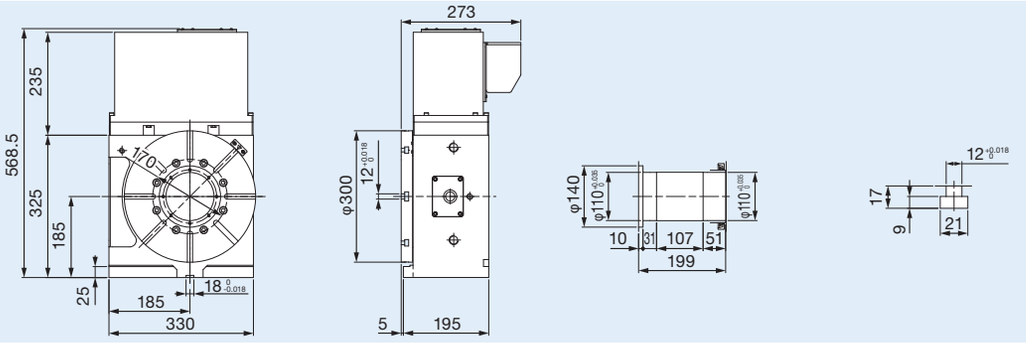
▶ RCD200



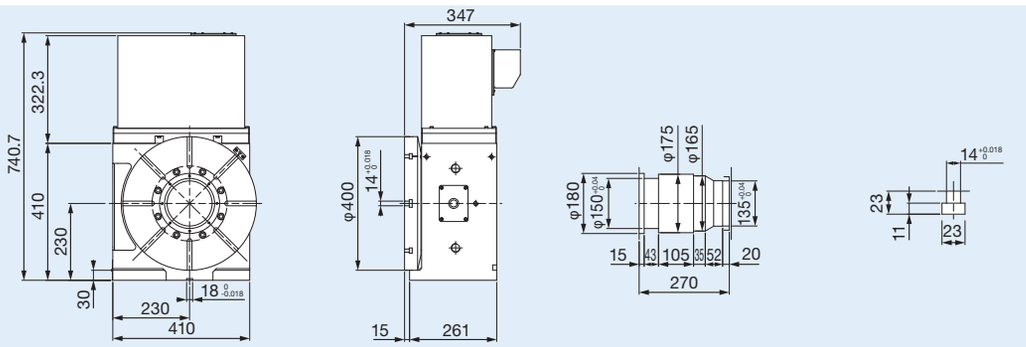
▶ RCD250



▶ RCD300



▶ RCD400



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