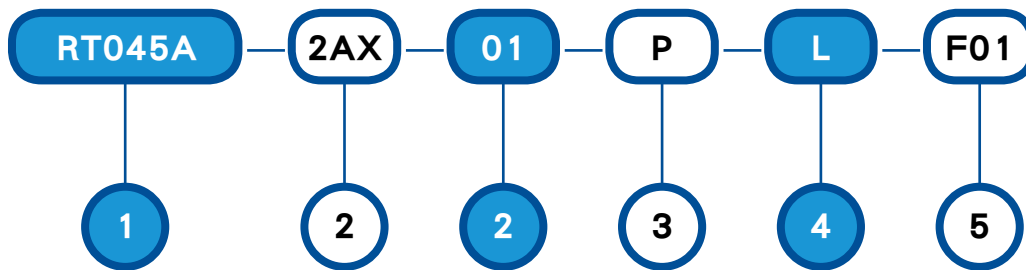


## RT series (for Bevel gear boxes): Helical bevel gears (gear ratio): 1/1 – 1/5



### 1. Models (solid input shaft models) :

RT045A / RT070A / RT085A / RT105A / RT125A / RT125B / RT150A / RT150B / RT180B /  
RT045AS / RT080AS / RT110AS / RT135AS / RT135BS / RT165AS / RT165BS / RT200BS

### 2. 2AX: 2-input shaft models; 3AX: 3-input shaft models; no denotation: 1-input shaft models

2AX-Z: 2-input shaft models; 3AX-Z: 3-input shaft models; 4AX-Z: 4-input shaft models

### 3. Gear ratios: 1/1 - 1/5

Type of output shaft: as Fig. 1

### 4. Direction of rotation of output shaft: as Fig. 2

(L - left / R - right)

### 5. Base plate

P: Single solid output shaft with keyway  
2P: Double solid output shafts with keyway  
CR: Hollow shaft with keyway  
RF: Hollow rotating flange  
BS: for ball screws

Note: RT045A (available only in P/2P)

\*Fig. 2

\*Fig. 1

*RT( )-01-P-L 	*RT( )-01-P-R 	*RT( )-01-2P 	*RT( )-01-CR 	*RT( )-2AX-01-P 
*RT( )-2AX-01-2P 	*RT( )-(02-05)-BS-F01 	*RT( )-2AX-(02-05)-BS-F01 	*RT( )-2AX-Z-(02-05)-BS-F01 	*RT( )-3AX-Z-(02-05)-BS-F01 
*RT( )-4AX-Z-(02-05)-BS-F01 	*RT( )-(02-05)-CR-F01 	*RT( )-2AX-Z-(02-05)-CR-F01 		

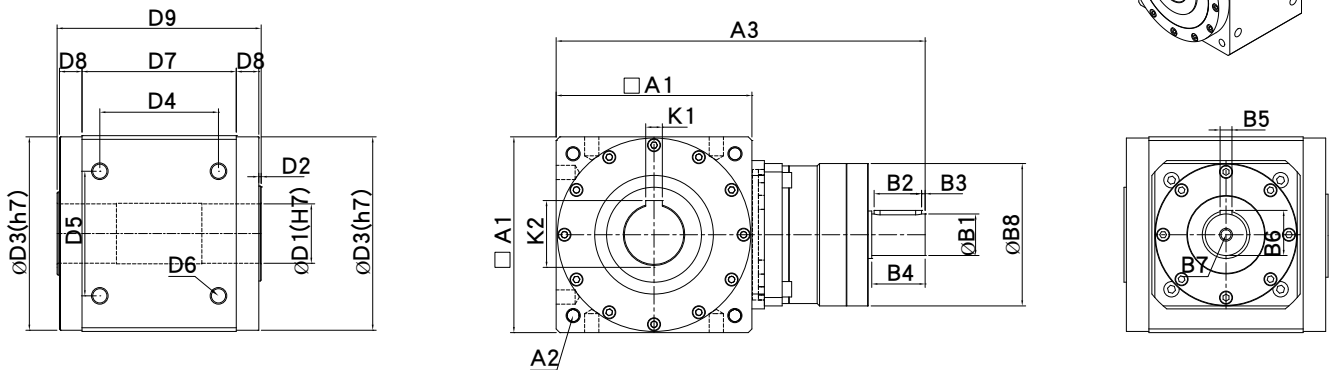
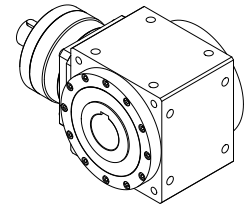
## ■ Performance & Specification table: RT-A series: Helical bevel gears (gear ratios): 1/1

Rated output torque (Nm)	Gear type	Gear ratio	RT045A	RT070A	RT085A	RT105A	RT125A	RT125B	RT150A	RT150B	RT180A	RT180B		
		Helical bevel gear	1:1	20	30	85	215	370	280	680	550	Not produced	900	
Max. acc. torque (Nm)	1.5 x Rated output torque (Nm)													
Input speed (rpm)	2000			2000	1500	1000	1000	1000	1000	1000	1000			1000
Standard backlash (arc-min)	≤ 10													
Allowed radial force (N)	1100			3250	3250	5850	9100	9100	14300	14300				19500
Allowed axial force (N)	650			1625	1625	2925	4550	4550	14300	14300				19500
Efficiency (%)	90%													
Weight (kg)	1.5			3.2	5.2	10.5	17.0	13.5	31	25.5				37.5
Working temp (C)	-10°C ~ +80°C													
Lubricant	100% synthetic lubricant (TOTAL CERAN HV)													
Direction of installation	Any direction													
Noise level (db)	≤ 65			≤ 70	≤ 72	≤ 73	≤ 74	≤ 74	≤ 76	≤ 76				≤ 78

## ■ Performance table: RT-AS series: Helical bevel gears (gear ratios): 1/2 – 1/5

Rated output torque (Nm)	Gear type	Gear ratio	RT045AS	RT070AS	RT080AS	RT110AS	RT135AS	RT135BS	RT165AS	RT165BS	RT200AS	RT200BS	RT250AS	
		Helical bevel gear	1/2	9.5		78.5	230	350	303	750	510	Not produced	1200	Not produced
	1/3					38.5	75	160	160	325	325		750	
	1/5				24.5	49	123	208	208	490	490		800	
Max. acc. torque (Nm)	1.5 x Rated output torque (Nm)													
Input speed (rpm)	2000		2000	2000	2000	1500	1500	1500	1500	1500			1000	
Standard backlash (arc-min)	≤ 6													
Allowed radial force (N)	1100		2800	3900	5500	9800	9800	16500	16500				24100	
Allowed axial force (N)	660		2800	3900	5500	9800	9800	16500	16500				24100	
Efficiency (%)	90%													
Weight (kg)	1.5		3.5	4.8	8.2	15.5	12.5	27.5	21.5				32.5	
Working temp (C)	-10°C ~ +80°C													
Lubricant	100% synthetic lubricant (TOTAL CERAN HV)													
Direction of installation	Any direction													
Noise level (db) /1500(rpm)	≤ 65	≤ 70	≤ 70	≤ 72	≤ 73	≤ 73	≤ 74	≤ 74				≤ 76		

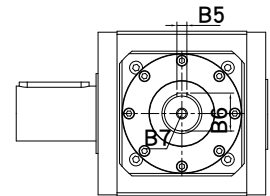
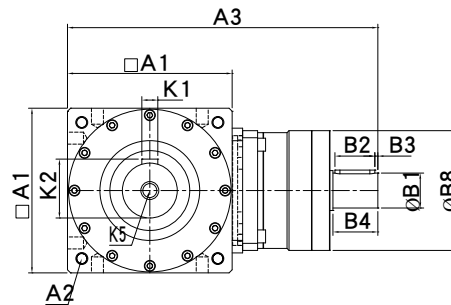
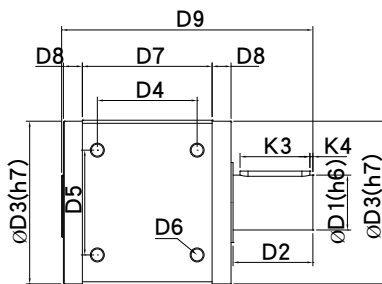
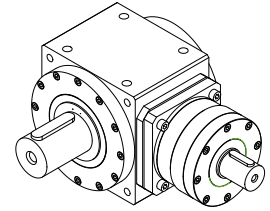
## RT-A series (gear ratio 1/1): CR Hollow shaft with keyway models – Dimensions



Spec	RT045A	RT070A	RT085A	RT105	RT125A	RT125B	RT150A	RT150B	RT180B
D1	Not produced	13	15	22	28	28	35	35	*40/50
D2		2	2	2	2	2	2	2	2
D3		66	82	100	120	120	135	135	165
D4		54	68	80	100	100	120	120	141.42
D5		50	52	60	80	80	100	100	141.42
D6		4-M5*P0.8	4-M6*P1.0	4-M8*P1.25	4-M8*P1.25	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M12*P1.75
D7		70	85	105	125	125	142	142	180
D8		16.5	15.5	18.5	19.5	19.5	20	20	21
D9		107	120	146	168	168	194	194	226
A1		70	85	105	125	125	142	142	180
A2		P.C.D φ 86 4-M5*P0.8	P.C.D φ 100 4-M6*P1.0	P.C.D φ 118 4-M8*P1.25	P.C.D φ 145 4-M8*P1.25	P.C.D φ 145 4-M8*P1.25	P.C.D φ 185 4-M10*P1.5	P.C.D φ 185 4-M10*P1.5	P.C.D φ 200 4-M12*P1.75
A3 (total length)		159	180	214	279	232	350	311	375
K1		4	5	6	8	8	10	10	14
K2		14.7	17.3	22.5	31.3	31.3	38.3	38.3	53.8
B1		16	20	28	35	28	50	35	50
B2		20	20	35	40	35	50	40	50
B3		3	3	3	3	3	3	3	3
B4		27	30	40	45	40	65	45	65
B5		5	6	8	10	8	14	10	14
B6		18	22.5	31	38	31	53.5	38	53.5
B7		M5	M6	M8	M10	M8	M12	M10	M12
B8		62	62	95	120	95	147	120	147

- (\*) additional bore of hollow shaft (mm)
- Actual dimensions are according to the 2D/3D drawings.
- Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.

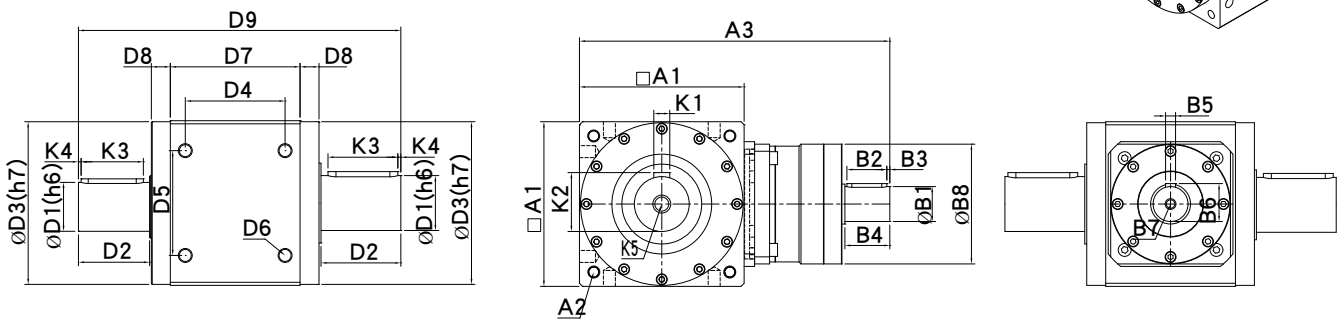
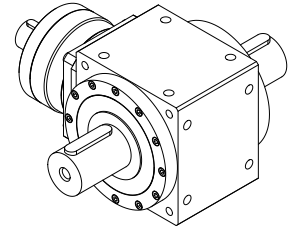
## RT-A series (gear ratio 1/1): P Single output shaft models – Dimensions



Spec	RT045A	RT070A	RT085A	RT105	RT125A	RT125B	RT150A	RT150B	RT180B
D1	13	16	20	28	32	32	40	40	50
D2	20	30	35	40	50	50	63	63	73
D3	43.2	66	82	100	120	120	135	135	165
D4	36	54	68	80	100	100	120	120	141.42
D5	26	50	52	60	80	80	100	100	141.42
D6	4-M4*P0.7	4-M5*P0.8	4-M6*P1.0	4-M8*P1.25	4-M8*P1.25	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M12*P1.75
D7	54	70	85	105	125	125	142	142	180
D8	10.5	16.5	15.5	18.5	19.5	19.5	20	20	21
D9	98	137	155	186	218	218	257	257	299
A1	46	70	85	105	125	125	142	142	180
A2	P.C.D φ 53 4-M5*P0.8	P.C.D φ 86 4-M5*P0.8	P.C.D φ 100 4-M6*P1.0	P.C.D φ 118 4-M8*P1.25	P.C.D φ 145 4-M8*P1.25	P.C.D φ 145 4-M8*P1.25	P.C.D φ 185 4-M10*P1.5	P.C.D φ 185 4-M10*P1.5	P.C.D φ 200 4-M12*P1.75
A3 (total length)	141	159	180	214	279	232	350	311	375
K1	4	5	6	8	10	10	10	10	14
K2	14.5	18	22.5	31	35	35	43	43	53.5
K3	15	20	25	30	40	40	50	50	60
K4	2.5	3	3.5	3.5	3	3	3	3	3
K5	M4	M5	M6	M8	M8	M8	M12	M12	M12
B1	13	16	20	28	35	28	50	35	50
B2	15	20	20	35	40	35	50	40	50
B3	2	3	3	3	3	3	3	3	3
B4	20	27	30	40	45	40	65	45	65
B5	4	5	6	8	10	8	14	10	14
B6	14.5	18	22.5	31	38	31	53.5	38	53.5
B7	M4	M5	M6	M8	M10	M8	M12	M10	M12
B8	49	62	62	95	120	95	147	120	147

1. Actual dimensions are according to the 2D/3D drawings.
2. Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.

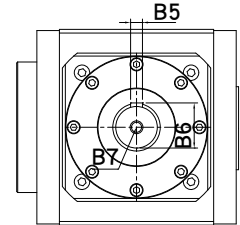
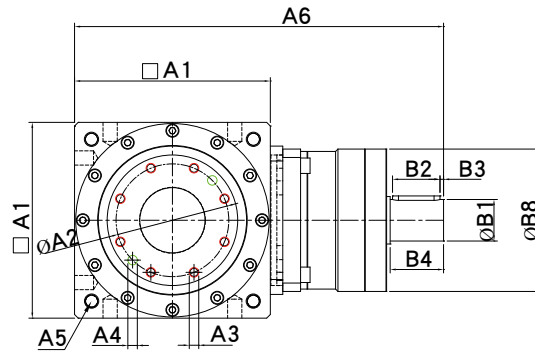
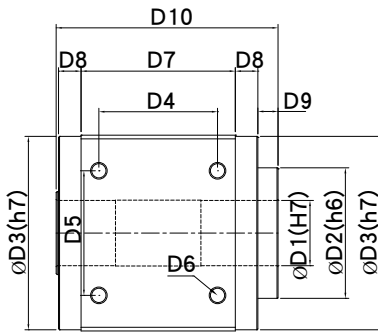
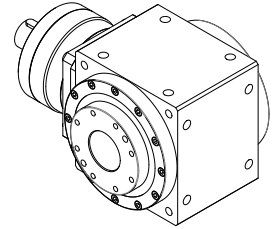
## RT-A series (gear ratio 1/1): 2P Double output shafts models – Dimensions



Spec	RT045A	RT070A	RT085A	RT105	RT125A	RT125B	RT150A	RT150B	RT180B
D1	13	16	20	28	32	32	40	40	50
D2	20	30	35	40	50	50	63	63	73
D3	43.2	66	82	100	120	120	135	135	165
D4	36	54	68	80	100	100	120	120	141.42
D5	26	50	52	60	80	80	100	100	141.42
D6	4-M4*P0.7	4-M5*P0.8	4-M6*P1.0	4-M8*P1.25	4-M8*P1.25	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M12*P1.75
D7	54	70	85	105	125	125	142	142	180
D8	10.5	16.5	15.5	18.5	19.5	19.5	20	20	21
D9	118	167	190	226	268	268	320	320	372
A1	46	70	85	105	125	125	142	142	180
A2	P.C.D $\phi$ 53 4-M5*P0.8	P.C.D $\phi$ 86 4-M5*P0.8	P.C.D $\phi$ 100 4-M6*P1.0	P.C.D $\phi$ 118 4-M8*P1.25	P.C.D $\phi$ 145 4-M8*P1.25	P.C.D $\phi$ 145 4-M8*P1.25	P.C.D $\phi$ 185 4-M10*P1.5	P.C.D $\phi$ 185 4-M10*P1.5	P.C.D $\phi$ 200 4-M12*P1.75
A3 (total length)	141	159	180	214	279	232	350	311	375
K1	4	5	6	8	10	10	10	10	14
K2	14.5	18	22.5	31	35	35	43	43	53.5
K3	15	20	25	30	40	40	50	50	60
K4	2.5	3	3.5	3.5	3	3	3	3	3
K5	M4	M5	M6	M8	M8	M8	M12	M12	M12
B1	13	16	20	28	35	28	50	35	50
B2	15	20	20	35	40	35	50	40	50
B3	2	3	3	3	3	3	3	3	3
B4	20	27	30	40	45	40	65	45	65
B5	4	5	6	8	10	8	14	10	14
B6	14.5	18	22.5	31	38	31	53.5	38	53.5
B7	M4	M5	M6	M8	M10	M8	M12	M10	M12
B8	49	62	62	95	120	95	147	120	147

1. Actual dimensions are according to the 2D/3D drawings.
2. Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.

## RT-AS series (gear ratio 1/2 – 1/5): RF Hollow rotating flange models – Dimensions



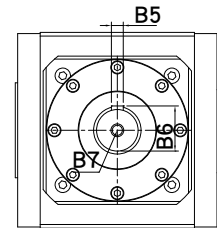
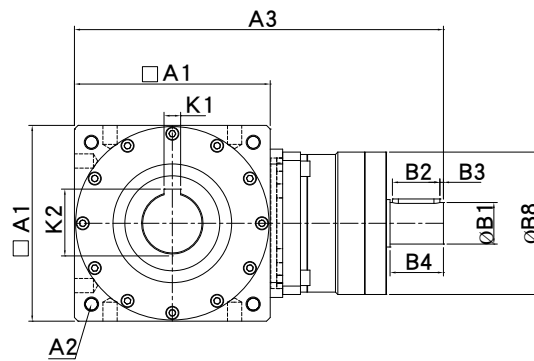
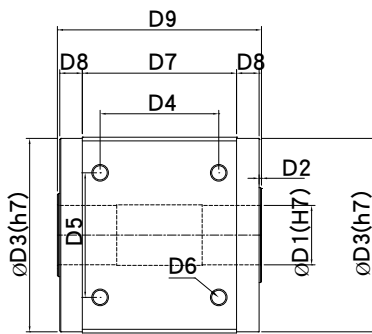
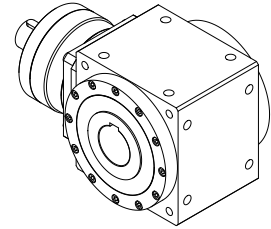
Spec	RT045AS	RT080AS	RT110AS	RT135AS	RT135BS	RT165AS	RT165BS	RT200BS
D1	9	*16/20	*25/30	*35/40	*35/40	*50/55	*50/55	*65/80
D2	20	45	65	85	85	110	110	140
D3	43.2	78	106	133	133	163	163	195
D4	36	49.5	68	86	78	106	100	129
D5	26	49.5	65	83	83	105	105	130
D6	4-M4*P0.7	4-M6*P0.8	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M14*P2.0	4-M14*P2.0	4-M14*P2.0
D7	54	67	90	120	102	142	130	155
D8	10.5	13	15	10	19	13	19	22
D9	3.5	7	9.5	9.5	9.5	17	17	22
D10	80	102	131.5	151.5	151.5	187	187	223
A1	46	80	110	138	135	168	165	200
A2	15.5	36	50	70	70	95	95	124
A3	6-M3*P0.5	8-M5*P0.8	8-M5*P0.8	8-M8*P1.25	8-M8*P1.25	8-M8*P1.25	8-M8*P1.25	12-M8*P1.25
A4(H7)		2- $\phi$ 5	2- $\phi$ 5	2- $\phi$ 8	2- $\phi$ 8	2- $\phi$ 8	2- $\phi$ 8	2- $\phi$ 8
A5	P.C.D $\phi$ 53 4-M5*P0.8	P.C.D $\phi$ 93 4-M6*P1.0	P.C.D $\phi$ 130 4-M8*P1.25	P.C.D $\phi$ 160 4-M10*P1.5	P.C.D $\phi$ 160 4-M10*P1.5	P.C.D $\phi$ 193 4-M12*P1.75	P.C.D $\phi$ 193 4-M12*P1.75	P.C.D $\phi$ 240 4-M16*P2.0
A6 (total length)	141	173	209	279	232	353.5	311	385
B1	13	20	28	35	28	50	35	50
B2	15	20	35	40	35	50	40	50
B3	2	3	3	3	3	3	3	3
B4	20	30	40	45	40	65	45	65
B5	4	6	8	10	8	14	10	14
B6	14.5	22.5	31	38	31	53.5	38	53.5
B7	M4	M6	M8	M10	M8	M12	M10	M12
B8	49	62	95	120	95	147	120	147

1. (\*) additional bore of hollow shaft (mm)

2. Actual dimensions are according to the 2D/3D drawings.

3. Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.

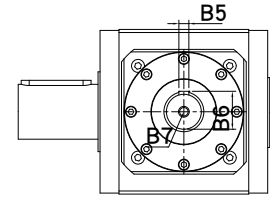
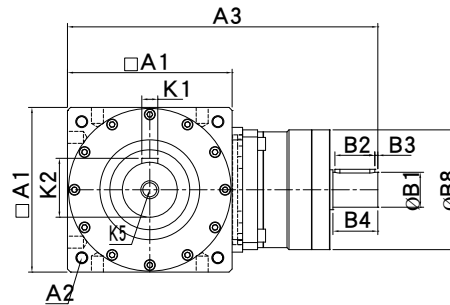
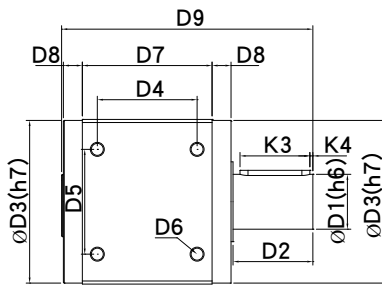
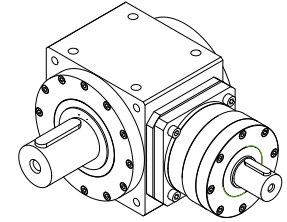
## RT-AS series (gear ratio 1/2 – 1/5): CR Hollow shaft with keyway models – Dimensions



Spec	RT045A	RT080AS	RT110AS	RT135AS	RT135BS	RT165AS	RT165BS	RT200BS
D1	Not produced	20	*25/30	*35/40	*35/40	*50/55	*50/55	65
D2		1.75	2	3	3	2	2	2
D3		78	106	133	133	163	163	195
D4		49.5	68	86	78	106	100	129
D5		49.5	65	83	83	105	105	130
D6		4-M6*P1.0	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M14*P2.0	4-M14*P2.0	4-M14*P2.0
D7		67	90	120	102	142	130	155
D8		13	15	10	19	13	19	22
D9		96.5	124	146	146	172	172	202
A1		80	110	138	135	168	165	200
A2		P.C.D φ 93 4-M6*P1.0	P.C.D φ 130 4-M8*P1.25	P.C.D φ 160 4-M10*P1.5	P.C.D φ 160 4-M10*P1.5	P.C.D φ 193 4-M12*P1.75	P.C.D φ 193 4-M12*P1.75	P.C.D φ 240 4-M14*P2.0
A3 (total length)		173	209	279	232	353.5	311	385
K1		6	8	*10/12	*10/12	14	14	18
K2		22.8	*28.3/33.3	*38.3/43.3	*38.3/43.3	*53.8/58.8	*53.8/58.8	59.4
B1		20	28	35	28	50	35	50
B2		20	35	40	35	50	40	50
B3		3	3	3	3	3	3	3
B4		30	40	45	40	65	45	65
B5		6	8	10	8	14	10	14
B6		22.5	31	38	31	53.5	38	53.5
B7		M6	M8	M10	M8	M12	M10	M12
B8		62	95	120	95	147	120	147

- (\*) additional bore of hollow shaft (mm)
- Actual dimensions are according to the 2D/3D drawings.
- Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.

## RT-AS series (gear ratio 1/2 – 1/5): P Single output shaft models – Dimensions

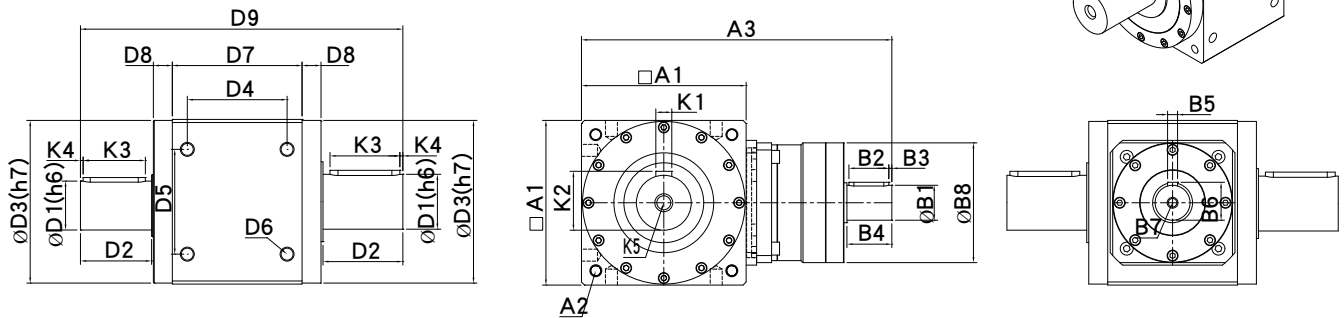
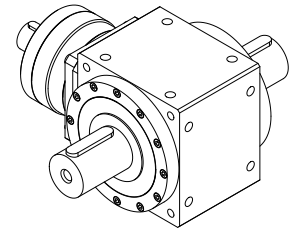


Spec	RT045AS	RT080AS	RT110AS	RT135AS	RT135BS	RT165AS	RT165BS	RT200BS
D1	13	20	30	40	40	55	55	75
D2	20	35	45	55	55	80	80	100
D3	43.2	78	106	133	133	163	163	195
D4	36	49.5	68	86	78	106	100	129
D5	26	49.5	65	83	83	105	105	130
D6	4-M4*P0.7	4-M6*P0.8	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M14*P2.0	4-M14*P2.0	4-M14*P2.0
D7	54	67	90	120	102	142	130	155
D8	10.5	13	15	10	19	13	19	22
D9	98	132	169	201	201	252	252	302
A1	46	80	110	138	135	168	165	200
A2	P.C.D φ 53 4-M5*P0.8	P.C.D φ 93 4-M6*P1.0	P.C.D φ 130 4-M8*P1.25	P.C.D φ 160 4-M10*P1.5	P.C.D φ 160 4-M10*P1.5	P.C.D φ 193 4-M12*P1.75	P.C.D φ 193 4-M12*P1.75	P.C.D φ 240 4-M14*P2.0
A3 (total length)	141	173	209	279	232	353.5	311	385
K1	4	6	8	12	12	16	16	20
K2	14.5	22.5	33	43	43	59	59	79.5
K3	15	30	35	45	45	70	70	90
K4	2.5	3	5	5	5	3	3	5
K5	M4	M6	M8	M12	M12	M16	M16	M20
B1	13	20	28	35	28	50	35	50
B2	15	20	35	40	35	50	40	50
B3	2	3	3	3	3	3	3	3
B4	20	30	40	45	40	65	45	65
B5	4	6	8	10	8	14	10	14
B6	14.5	22.5	31	38	31	53.5	38	53.5
B7	M4	M6	M8	M10	M8	M12	M10	M12
B8	49	62	95	120	95	147	120	147

1. Actual dimensions are according to the 2D/3D drawings.
2. Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.



## RT-AS series (gear ratio 1/2 – 1/5): 2P Double output shafts models – Dimensions



Spec	RT045A	RT080AS	RT110AS	RT135AS	RT135BS	RT165AS	RT165BS	RT200BS
D1	13	20	30	40	40	55	55	75
D2	20	35	45	55	55	80	80	100
D3	43.2	78	106	133	133	163	163	195
D4	36	49.5	68	86	78	106	100	129
D5	26	49.5	65	83	83	105	105	130
D6	4-M4*P0.7	4-M6*P0.8	4-M8*P1.25	4-M10*P1.5	4-M10*P1.5	4-M14*P2.0	4-M14*P2.0	4-M14*P2.0
D7	54	67	90	120	102	142	130	155
D8	10.5	13	15	10	19	13	19	22
D9	118	152	214	256	256	332	332	402
A1	46	80	110	138	135	168	165	200
A2	P.C.D $\phi$ 53 4-M5*P0.8	P.C.D $\phi$ 93 4-M6*P1.0	P.C.D $\phi$ 130 4-M8*P1.25	P.C.D $\phi$ 160 4-M10*P1.5	P.C.D $\phi$ 160 4-M10*P1.5	P.C.D $\phi$ 193 4-M12*P1.75	P.C.D $\phi$ 193 4-M12*P1.75	P.C.D $\phi$ 240 4-M14*P2.0
A3 (total length)	141	173	209	279	232	353.5	311	385
K1	4	6	8	12	12	16	16	20
K2	14.5	22.5	33	43	43	59	59	79.5
K3	15	30	35	45	45	70	70	90
K4	2.5	3	5	5	5	3	3	5
K5	M4	M6	M8	M12	M12	M16	M16	M20
B1	13	20	28	35	28	50	35	50
B2	15	20	35	40	35	50	40	50
B3	2	3	3	3	3	3	3	3
B4	20	30	40	45	40	65	45	65
B5	4	6	8	10	8	14	10	14
B6	14.5	22.5	31	38	31	53.5	38	53.5
B7	M4	M6	M8	M10	M8	M12	M10	M12
B8	49	62	95	120	95	147	120	147

1. Actual dimensions are according to the 2D/3D drawings.
2. Continued use for 12 hr/day and longer will decrease the lifespan by 1/2.