

QINGYAO
SYSTEMS

**PRECISION.
TRUST.
DIFFERENT PERSPECTIVE.**

Moving Forward Together.



ZT系列高精度 弧锥齿轮减速器

HIGH PRECISION SPIRAL BEVEL GEARBOXES

QINGYAO
SYSTEMS

| Precision. Trust. Different Perspective.

以精准、信任与不同视角持续前行

▶ 欢迎来到上海卿耀实业有限公司。

自 2017 年在上海成立以来，QINGYAO 持续成长为工业自动化、运动控制、机器人相关电机、可再生能源部件及传感解决方案领域值得信赖的合作伙伴。

▶ 我们不仅仅是提供产品。

我们倾听客户需求，理解实际应用环境，并与可靠的制造合作伙伴紧密协作，为客户提供实用、稳定并可定制的方案。

▶ 在当今快速变化的工业市场中，

客户需要的不只是标准化供货，更需要灵活的沟通、专业的技术理解、可靠的品质以及长期稳定的支持。QINGYAO 将以真诚、速度与责任感回应客户需求。

▶ 展望未来，

我们将持续强化产品能力，提升服务质量，并以信任、品质和客户满意为基础，建立长期合作伙伴关系。

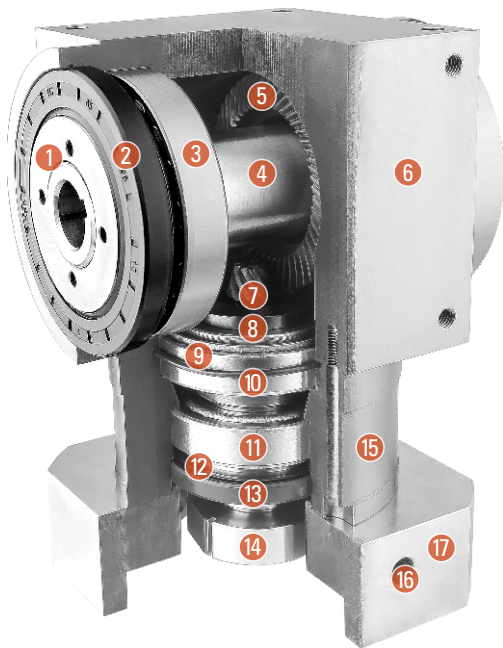
“ 始终以不同的视角
观察、思考并回应。 ”



ZT系列高精度弧锥齿轮减速器

HIGH PRECISION SPIRAL BEVEL GEARBOXES

剖视图 Sectional drawing



- ① 调节螺母 Adjustment nut
- ② 油封 Oil seal
- ③ 轴承 Bearing
- ④ 输出轴 Output shaft
- ⑤ 输出锥齿轮 Output bevel gear
- ⑥ 输出箱体 Output box
- ⑦ 输入锥齿轮 Input bevel gear
- ⑧ 输入轴 Input shaft
- ⑨ 轴承 Bearing
- ⑩ O形圈 O-rings
- ⑪ 轴承 Bearing
- ⑫ 锁紧螺母 Locking nut
- ⑬ 油封 Oil seal
- ⑭ 锁紧器 Locking device
- ⑮ 输入箱体 Input box
- ⑯ 紧定螺钉 Screw
- ⑰ 后端盖垫片 Rear end cover gasket

系列号、机座标识说明 Type And Model Number

ZT减速机 ZT Reducers	伺服电机 Servo motor
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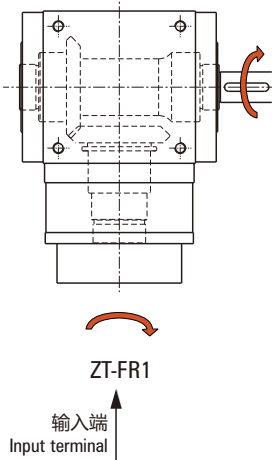
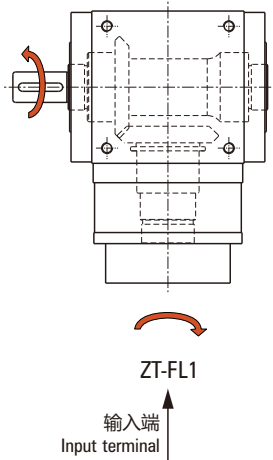
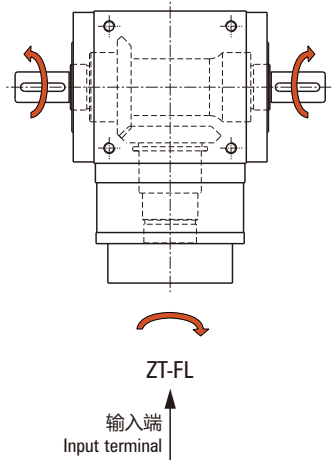
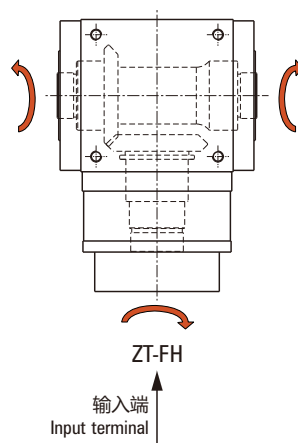
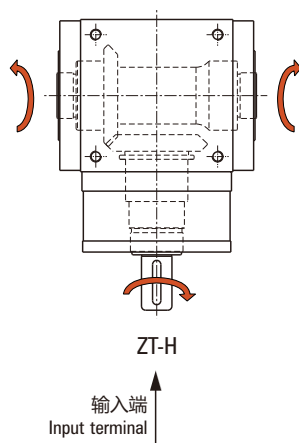
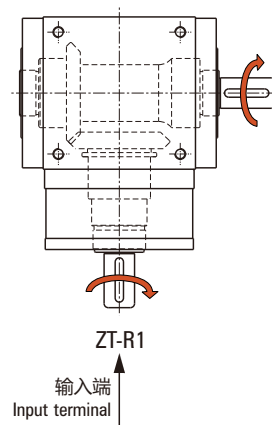
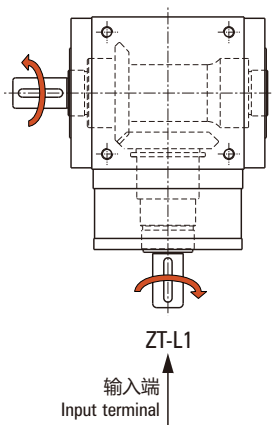
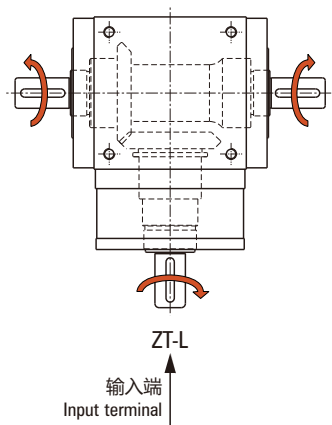
ZT
110
-
L
-
2
P2
S1
-
1000
□

1
2
3
4
5
6
7
8

① 减速机系列代号：ZT	Gear head series code: ZT
② 减速机规格代号：075, 090, 110, 140	Gearbox size: 075, 090, 110, 140
③ 减速机型式：L, L1, R1, H, FH, FL, FL1, FR1	Gearbox: L, L1, R1, H, FH, FL, FL1, FR1
④ 减速比：1, 1.5, 2, 3, 4, 5, 7, 10, 15, 20, 25, 35, 50	Gear ratio: 1, 1.5, 2, 3, 4, 5, 7, 10, 15, 20, 25, 35, 50
⑤ 精度：标准型P2（省略）具体见P06 输出轴负荷量为容许输出扭矩的±2%时的值	Amount of backlash: Standard type P2 (Omission) Please refer to P06 for details Precision (The load of output shaft is ±2% of allowable output torque)
输入轴型式： S1：带锁紧环锁紧（省略） ⑥ （无论马达是否有键槽都可使用，但"D"字型不适用） S2：带键槽锁紧（输入轴带键） A：其他适配器（请与本公司联系）	Input shaft type: S1: Locking with locking ring (Omission) (Regardless whether the motor with keyway can use it. But "D" cut can't use) S2: Locking with keyway (Input shaft with key) A: Other type (Please contact with us)
⑦ 适用伺服马达功率（W）	Applicable servo motor power (W)
⑧ 伺服马达型号	Model of servo motor

转向图 HOW TO CHOOSE

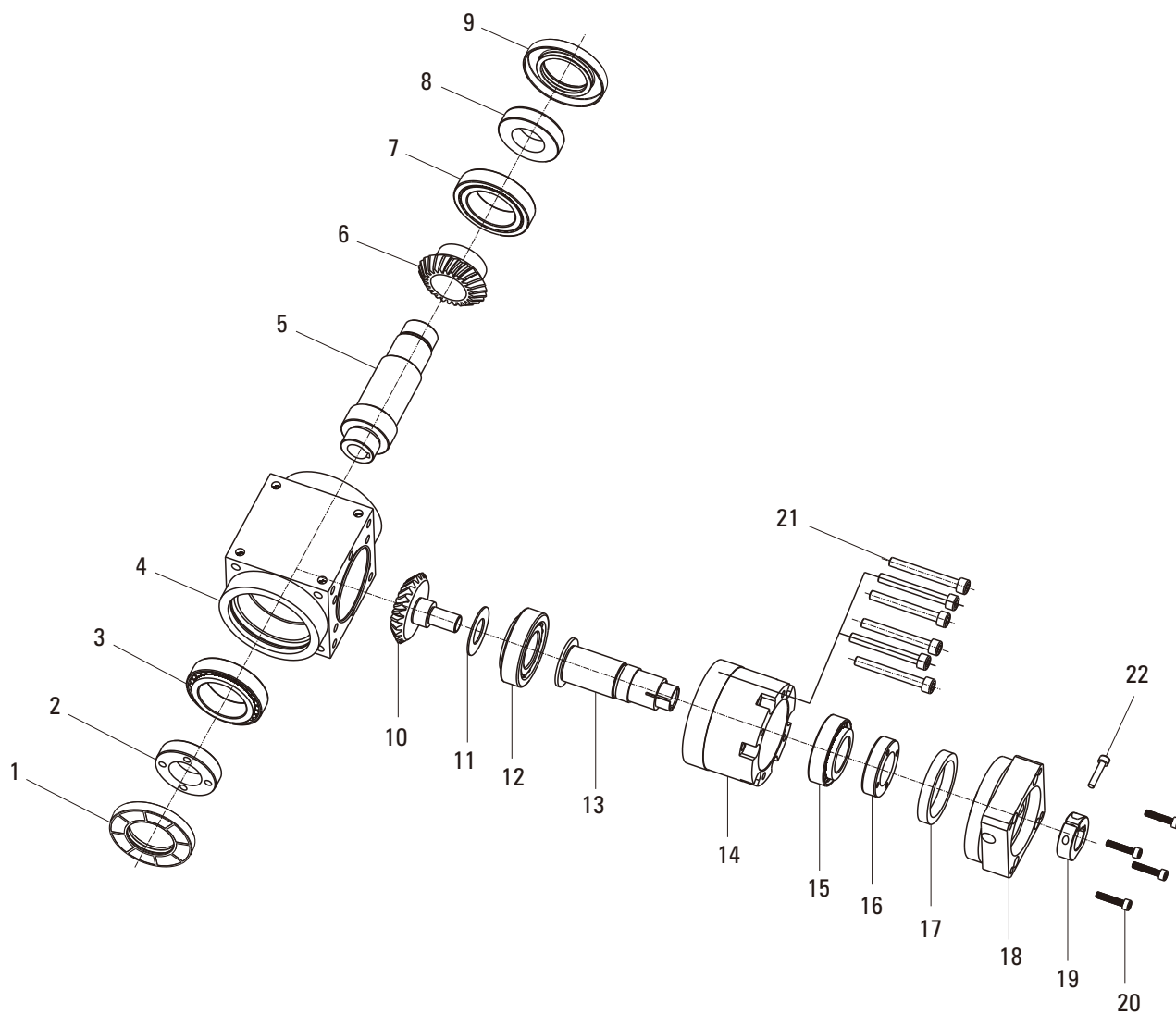
转向图 Dimensions



ZT系列高精度弧锥齿轮减速器

HIGH PRECISION SPIRAL BEVEL GEARBOXES

ZT产品结构原理 ZT basic structure



1 油封 Oil seal	9 油封 Oil seal	17 油封 Oil seal
2 锁紧螺母 Lock nut	10 输入锥齿轮 Input bevel gear	18 输入法兰 Input flange
3 轴承 Bearing	11 调整垫片 Shim ring	19 锁紧器 Locker
4 输出箱体 Output casing	12 轴承 Bearing	20 内六角螺钉 Inner hex screw
5 空心轴 Hollow shaft	13 输入轴 Input shaft	21 内六角螺钉 Inner hex screw
6 输出锥齿轮 Output bevel gear	14 输入箱体 Input casing	22 内六角螺钉 Inner hex screw
7 轴承 Bearing	15 轴承 Bearing	
8 锁紧螺母 Lock nut	16 锁紧螺母 Lock nut	

ZT减速机性能资料
HIGH PRECISION SPIRAL BEVEL GEARBOXES

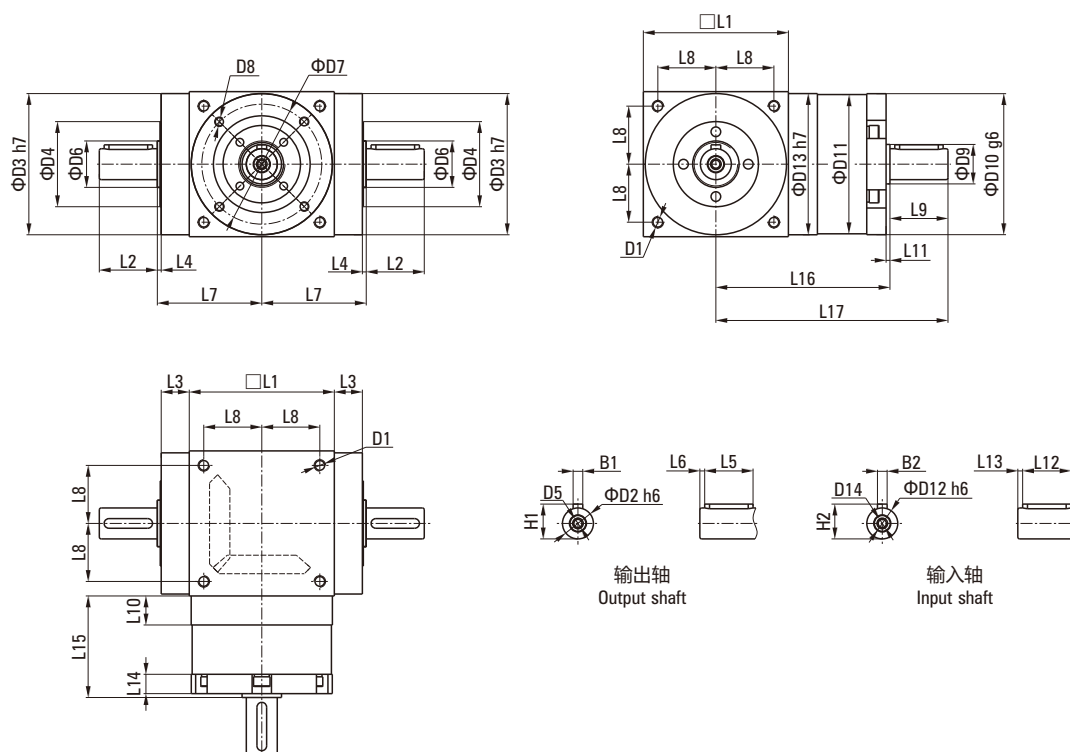
性能表 Performance table

规格 Specifications		级数 Series	减速比 Reduction ratio	ZT075	ZT090	ZT110	ZT140
额定输出力矩 T _{2N} Rated output torque	Nm	1	1	45	78	150	360
			1.5	45	78	150	360
			2	42	68	150	330
			3	33	54	120	270
			4	28	48	100	224
		2	5	25	40	85	196
			7	12	33	91	91
			10	28	68	150	208
			15	33	54	120	270
			20	28	48	100	224
			25	25	40	85	196
			35	25	40	85	196
			50	25	40	85	196
最大加速力矩 T _{2B} Maximum acceleration torque	Nm	1,2	1~50	1.5倍额定输出力矩 1.5 times rated output torque			
最大加速输入转速 n _{1B} Maximum acceleration input speed	rpm	1	1~5	6500	5500	4500	3500
		2	7~50	8000	6000	6000	6000
标准背隙 Standard back gap	arcmin	1	1~5	≤6	≤6	≤6	≤6
		2	7~50	≤8	≤8	≤8	≤8
容许径向力 F _{2rB} Allowable radial force 输出轴 output shaft d2	N	1,2	1~50	1100	1700	2700	4800
容许轴向负载 F _{2aB} Allowable axial load 输出轴 output shaft d2	N	1,2	1~50	550	850	1350	2400
使用寿命 Service life	hr	1,2	1~50	20000 *			
效率 Efficiency	%	1	1~5	≥98%			
		2	7~50	≥94%			
重量 weight (FH)	Kg	1	1~5	4.1	6.7	11.4	18.9
		2	7~50	4.6	7.7	13.6	22.4
使用温度 Service temperature	℃	1,2	1~50	-10℃~90℃			
润滑 Lubrication	-	1,2	1~50	合成润滑油脂 Synthetic grease			
防护等级 Degree of protection	-	1,2	1~50	IP65			
安装方向 Installation direction	-	1,2	1~50	任意方向 Any direction			
噪音值 Noise value (n1=1500rpm, 无负载 No load)	dB(A)	1,2	1~50	≤72	≤76	≤77	≤78
转动惯量 J ₁ Moment of inertia	kg·cm ²	1	1	1.3	3.14	7.62	23.54
			1.5	1.15	2.8	6.65	19.34
			2	1.1	2.68	6.23	17.72
			3	1.09	2.64	6.08	17.16
			4	1.08	2.63	6.05	17.03
		2	5	1.08	2.63	6.04	16.99
			7	0.15	0.5	2.79	2.79
			10	0.15	0.5	2.8	2.8
			15	0.15	0.5	2.8	2.8
			20	0.15	0.5	2.8	2.8
			25	0.15	0.5	2.8	2.8
			35	0.15	0.5	2.79	2.79
			50	0.15	0.5	2.79	2.79

ZT-L系列

ZT-L SERIES

尺寸图 Dimensions



尺寸 (一级, 减速比 $i = 1 \sim 5$) Performance table

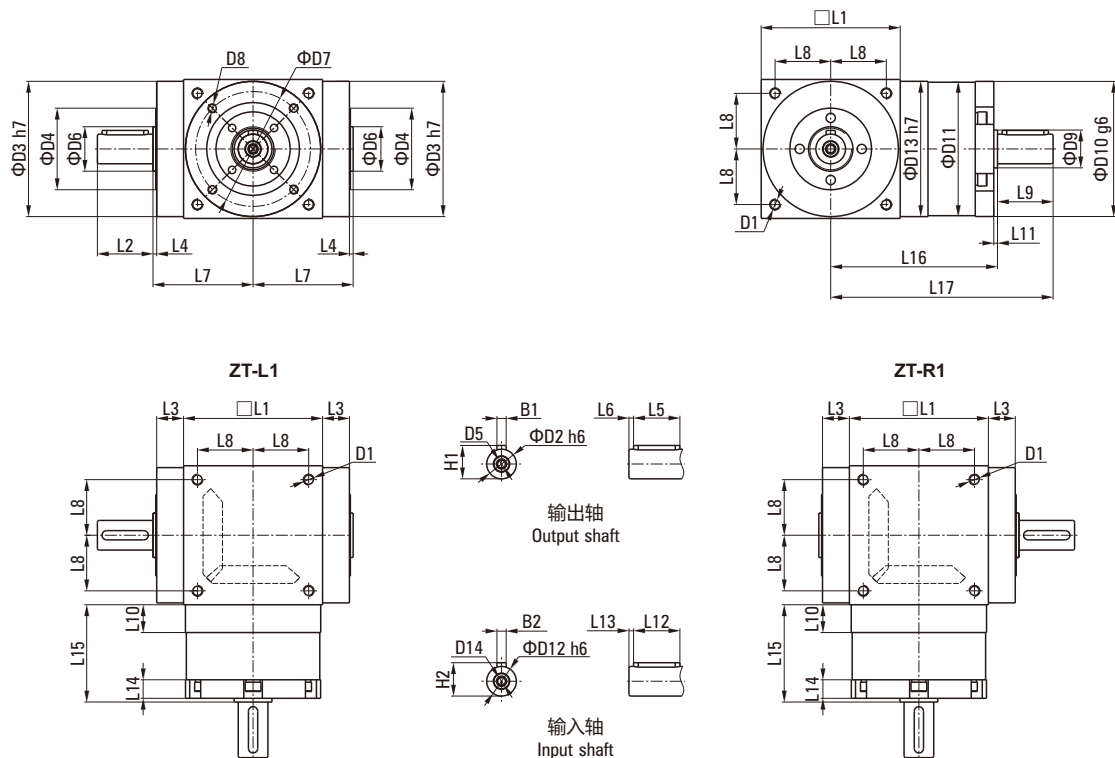
单位 Unit: mm

尺寸 Size	ZT075-L	ZT090-L	ZT110-L	ZT140-L
D1	M6	M6	M8	M10
D2 h6	16	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D5	M5	M5	M8	M12
D6	22	28	35	48
D7	62	76	95	92
D8	4×M5×L8	4×M5×L10	6×M6×L12	6×M6×L12
D9	20.4	25.8	35.8	45
D10 g6	72.9	87	107	107
D11	72	86	106	106
D12 h6	16	18	22	32
D13 h7	73	88	108	135
D14	M5	M5	M8	M12
L1	75	90	110	140
L2	30	35	40	50
L3	14.5	15	15	15
L4	2	2	2	2
L5	25	28	32	45
L6	2.5	3.5	4	2.5
L7	54	62	72	87
L8	30	36	44	55
L9	30	35	40	50
L10	15	15	15	15
L11	2	2	2	2
L12	25	28	32	32
L13	2.5	3.5	4	2.5
L14	10	11	8	10
L15	52.5	53	60	60
L16	90	100	115	130
L17	120	135	155	180
B1	5	6	6	10
B2	5	6	6	10
H1	18	20.5	24.5	35
H2	18	20.5	24.5	35

ZT-L1/R1系列

ZT-L1/R1 SERIES

尺寸图 Dimensions



尺寸 (一级, 减速比i = 1~5) Performance table

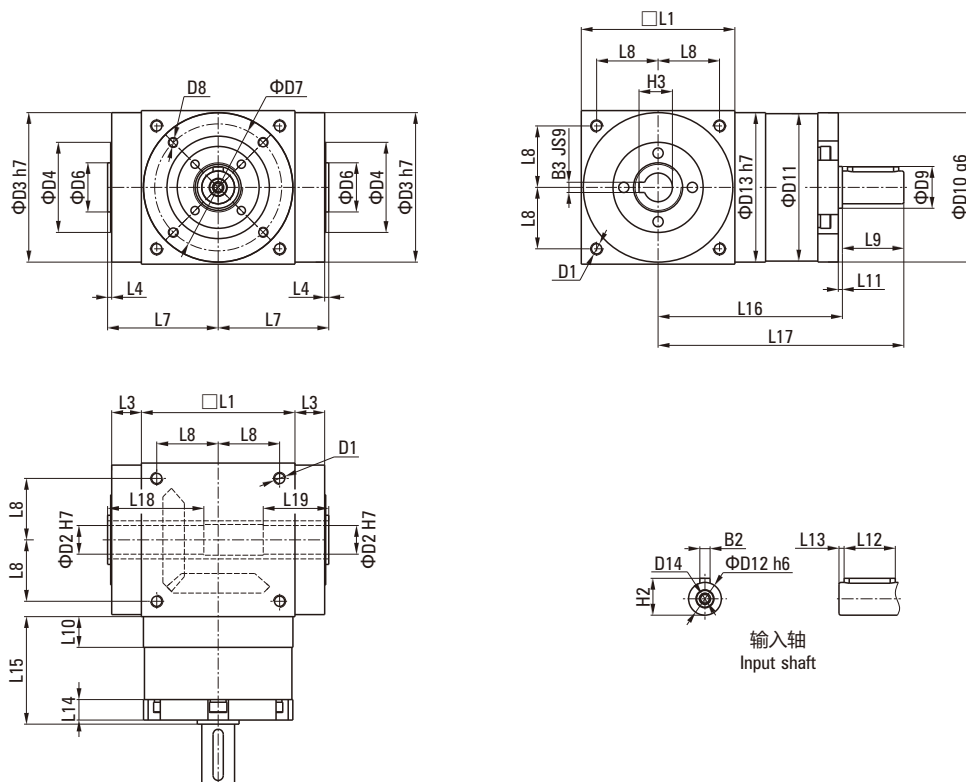
单位 Unit: mm

尺寸 Size	ZT075-L1/R1	ZT090-L1/R1	ZT110-L1/R1	ZT140-L1/R1
D1	M6	M6	M8	M10
D2 h6	16	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D5	M5	M5	M8	M12
D6	24	28	35	48
D7	62	76	95	92
D8	4×M5×L8	4×M5×L10	6×M6×L12	6×M6×L12
D9	20.4	25.8	35.8	45
D10 g6	72.9	87	107	107
D11	72	86	106	106
D12 h6	16	18	22	32
D13 h7	73	88	108	135
D14	M5	M5	M8	M12
L1	75	90	110	140
L2	30	35	40	50
L3	14.5	15	15	15
L4	2	2	2	2
L5	25	28	32	45
L6	2.5	3.5	4	2.5
L7	54	62	72	87
L8	30	36	44	55
L9	30	35	40	50
L10	15	15	15	15
L11	2	2	2	2
L12	25	28	32	45
L13	2.5	3.5	4	2.5
L14	10	11	8	10
L15	52.5	53	60	60
L16	90	100	115	130
L17	120	135	155	180
B1	5	6	6	10
B2	5	6	6	10
H1	18	20.5	24.5	35
H2	18	20.5	24.5	35

ZT-H系列

ZT-H SERIES

尺寸图 Dimensions



尺寸 (一级, 减速比i = 1~5) Performance table

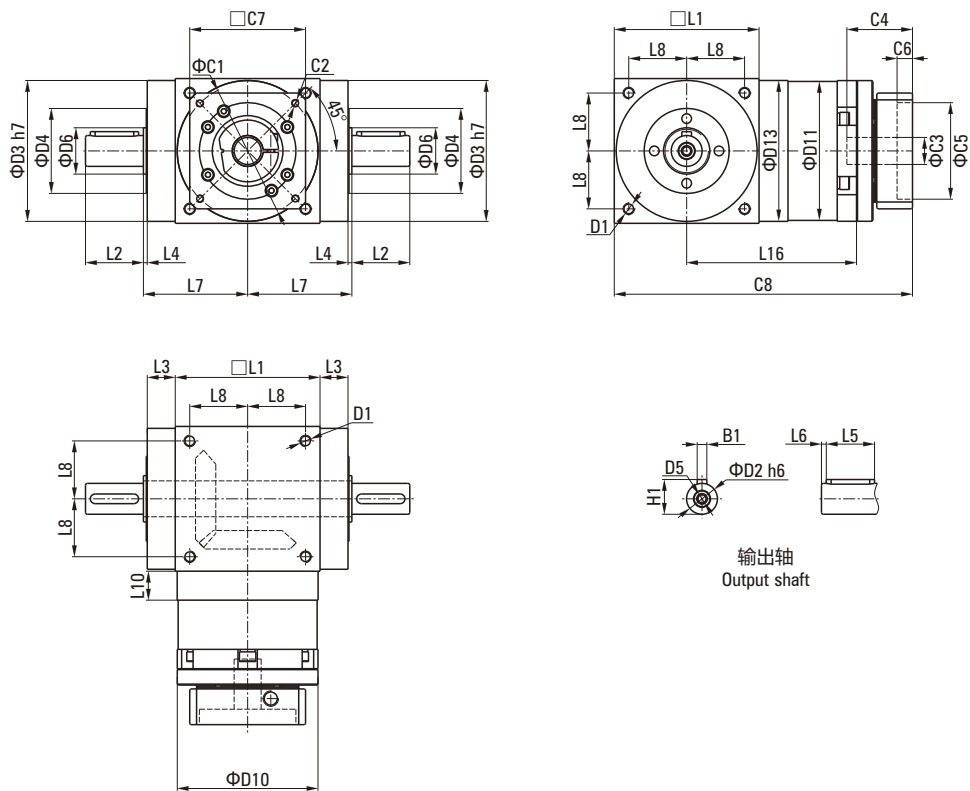
单位 Unit: mm

尺寸 Size	ZT075-H	ZT090-H	ZT110-H	ZT140-H
D1	M6	M6	M8	M10
D2 h7	14	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D6	24	28	35	48
D7	62	76	95	92
D8	4×M5×L8	4×M5×L10	6×M6×L12	6×M6×L10
D9	20.4	25.8	35.8	45
D10 g6	72.9	87	107	107
D11	72	86	106	106
D12 h6	16	18	22	32
D13 h7	73	88	108	135
D14	M5	M5	M8	M12
L1	75	90	110	140
L3	14.5	15	15	15
L4	2	2	2	2
L7	54	62	72	87
L8	30	36	44	55
L9	30	35	40	50
L10	15	15	15	15
L11	2	2	2	2
L12	25	28	32	45
L13	2.5	3.5	4	2.5
L14	10	11	8	10
L15	52.5	53	60	60
L16	90	100	115	130
L17	120	135	155	180
L18	47	52	53	70
L19	32	35	35	50
B2	5	6	6	10
B3 p9	5	6	6	10
H2	18	20.5	24.5	35
H3	16.3	20.8	24.8	35.3

ZT-FL系列

ZT-FL SERIES

尺寸图 Dimensions



输出轴
Output shaft

尺寸（一级，减速比i=1~5） Performance table

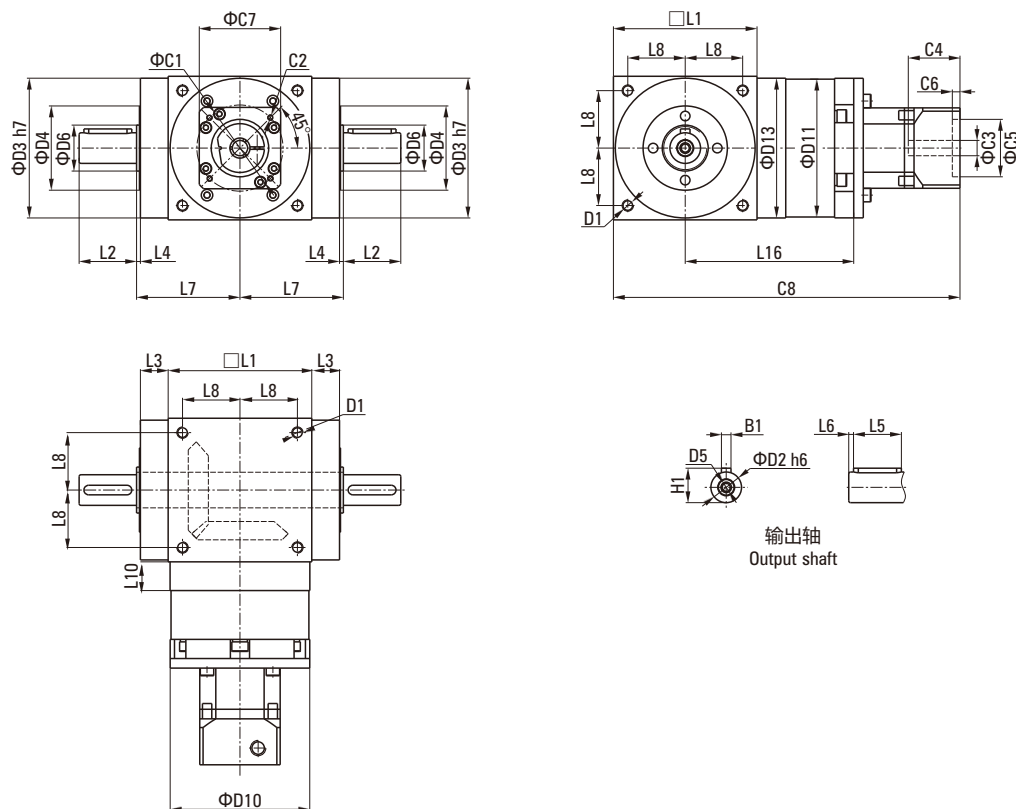
单位 Unit: mm

尺寸 Size	ZT075-FL	ZT090-FL	ZT110-FL	ZT140-FL
D1	M6	M6	M8	M10
D2 h6	16	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D5	M5	M5	M8	M12
D6	24	28	35	48
D10	72.9	87	107	107
D11	72	86	106	106
D13	73	88	108	135
L1	75	90	110	140
L2	30	35	40	50
L3	14.5	15	15	15
L4	2	2	2	2
L5	25	28	32	45
L6	2.5	3.5	4	2.5
L7	54	62	72	87
L8	30	36	44	55
L10	15	15	15	15
L16	88	98	113	128
C1*	70	90	130	145
C2*	M4	M6	M8	M8
C3*	≤14	≤19	≤24	≤24
C4*	34	49	59	59
C5*	50	70	110	110
C6*	8	4	15	8
C7*	60	90	130	100
C8*	117	170	208.5	245
B1	5	6	6	10
H1	18	20.5	24.5	35

ZT-FL系列

ZT-FL SERIES

尺寸图 Dimensions



尺寸 (二级, 减速比 $i = 7 \sim 50$) Performance table

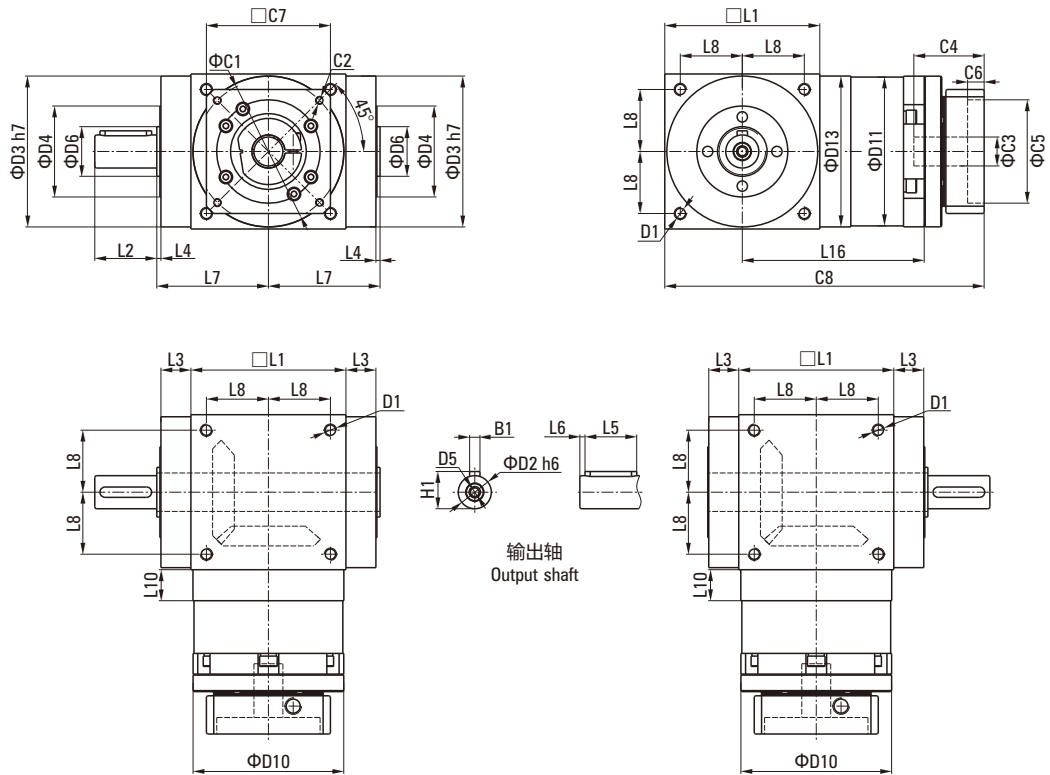
单位 Unit: mm

尺寸 Size	ZT075-FL	ZT090-FL	ZT110-FL	ZT140-FL
D1	M6	M6	M8	M10
D2 h6	16	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D5	M5	M5	M8	M12
D6	24	28	35	48
D10	72.9	87	107	107
D11	72	86	106	106
D13	73	88	108	135
L1	75	90	110	140
L2	30	35	40	50
L3	14.5	15	15	15
L4	2	2	2	2
L5	25	28	32	45
L6	2.5	3.5	4	2.5
L7	54	62	72	87
L8	30	36	44	55
L10	15	15	15	15
L16	88	118	113	128
C1*	45	70	90	145
C2*	M3	M5	M5	M8
C3*	≤ 8	≤ 14	≤ 19	≤ 22
C4*	27	37.5	44	59
C5*	30	50	70	110
C6*	4	8	7	8
C7*	42.5	60	80	130
C8*	181	213	255	305.5
B1	5	6	6	10
H1	18	20.5	24.5	35

ZT-FL1/FR1系列

ZT-FL1/FR1 SERIES

尺寸图 Dimensions



尺寸（一级，减速比 $i=1\sim5$ ） Performance table

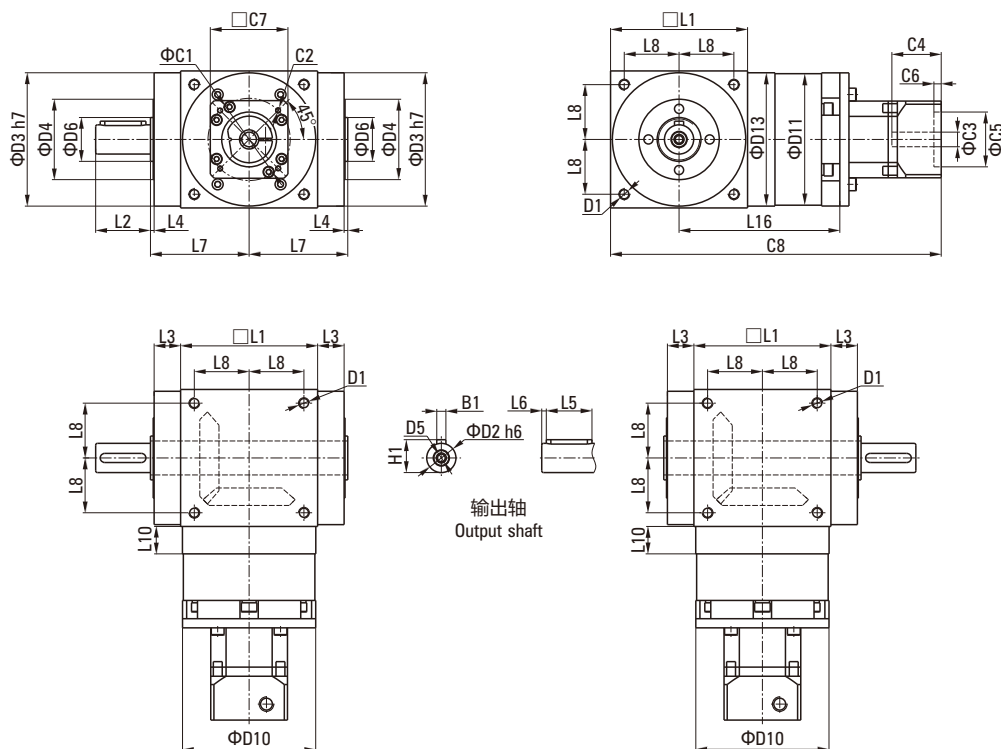
单位 Unit: mm

尺寸 Size	ZT075-FL1/FR1	ZT090-FL1/FR1	ZT110-FL1/FR1	ZT140-FL1/FR1
D1	M6	M6	M8	M10
D2 h6	16	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D5	M5	M5	M8	M12
D6	24	28	35	48
D10	72.9	87	107	107
D11	72	86	106	106
D13	73	88	108	135
L1	75	90	110	140
L2	30	35	40	50
L3	14.5	15	15	15
L4	2	2	2	2
L5	25	28	32	45
L6	2.5	3.5	4	2.5
L7	54	62	72	87
L8	30	36	44	55
L10	15	15	15	15
L16	88	98	113	128
C1*	70	90	130	145
C2*	M4	M6	M8	M8
C3*	≤ 14	≤ 19	≤ 24	≤ 24
C4*	34	49	59	48
C5*	50	70	110	95
C6*	8	4	15	5
C7*	60	90	130	100
C8*	117	170	208.5	245
B1	5	6	6	10
H1	18	20.5	24.5	35

ZT-FL1/FR1系列

ZT-FL1/FR1 SERIES

尺寸图 Dimensions



尺寸 (二级, 减速比 $i = 7 \sim 50$) Performance table

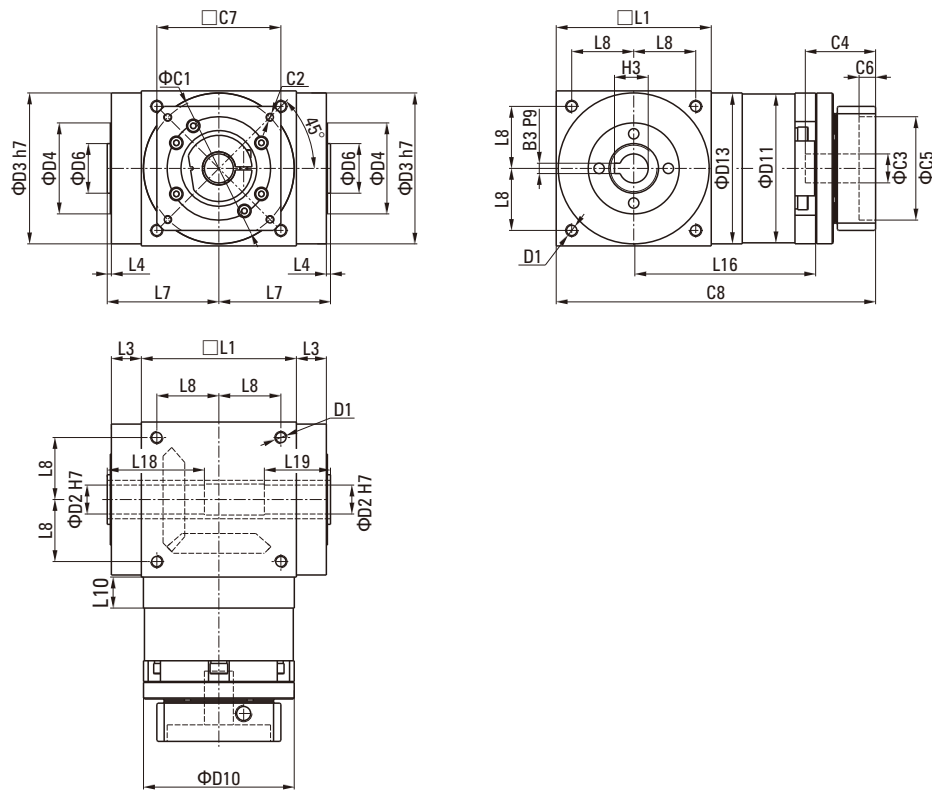
单位 Unit: mm

尺寸 Size	ZT075-FL1/FR1	ZT090-FL1/FR1	ZT110-FL1/FR1	ZT140-FL1/FR1
D1	M6	M6	M8	M10
D2 h6	16	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D5	M5	M5	M8	M12
D6	24	28	35	48
D10	72.9	87	107	107
D11	72	86	106	106
D13	73	88	108	135
L1	75	90	110	140
L2	30	35	40	50
L3	14.5	15	15	15
L4	2	2	2	2
L5	25	28	32	45
L6	2.5	3.5	4	2.5
L7	54	62	72	87
L8	30	36	44	55
L10	15	15	15	15
L16	88	118	113	128
C1*	45	70	90	145
C2*	M3	M5	M5	M8
C3*	≤ 8	≤ 14	≤ 19	≤ 24
C4*	27	37.5	44	59
C5*	30	50	70	110
C6*	4	8	7	8
C7*	42.5	60	80	130
C8*	181	213	255	305.5
B1	5	6	6	10
H1	18	20.5	24.5	35

ZT-FH系列

ZT-FH SERIES

尺寸图 Dimensions

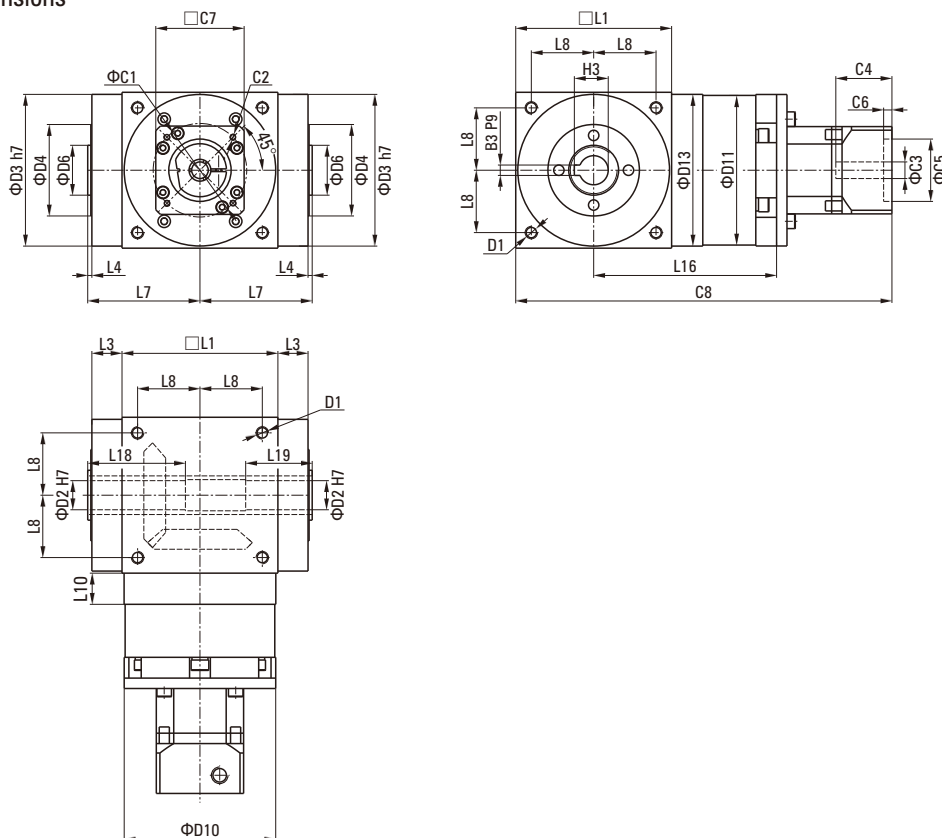


尺寸（一级，减速比i = 1~5） Performance table

单位 Unit: mm

尺寸 Size	ZT075-FH	ZT090-FH	ZT110-FH	ZT140-FH
D1	M6	M6	M8	M10
D2 H7	14	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D6	24	28	35	48
D10	72.9	87	107	107
D11	72	86	106	106
D13	73	88	108	135
L1	75	90	110	140
L3	14.5	15	15	15
L4	2	2	2	2
L7	54	62	72	87
L8	30	36	44	55
L10	15	15	15	15
L16	88	98	113	128
L18	47	52	53	70
L19	32	35	35	50
C1*	70	90	130	145
C2*	M4	M6	M8	M8
C3*	≤14	≤19	≤24	≤24
C4*	34	49	59	48
C5*	50	70	110	95
C6*	8	4	15	5
C7*	60	90	130	100
C8*	117	170	208.5	245
B3	5	6	6	10
H3	16.3	20.8	24.8	35.3

尺寸图 Dimensions



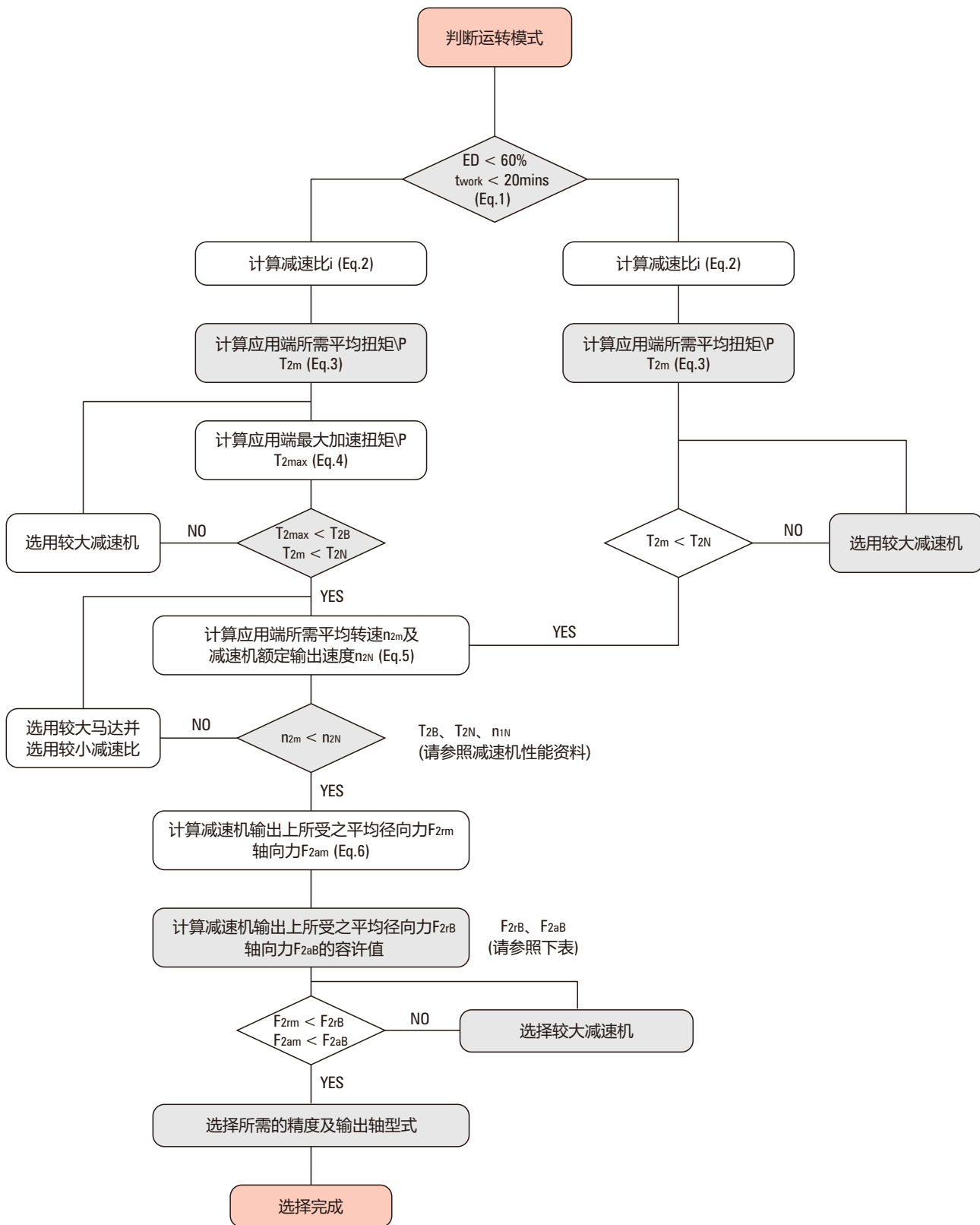
尺寸 (二级, 减速比 $i = 7 \sim 50$) Performance table

单位 Unit: mm

尺寸 Size	ZT075-FH	ZT090-FH	ZT110-FH	ZT140-FH
D1	M6	M6	M8	M10
D2 h7	14	18	22	32
D3 h7	73	88	108	135
D4	44	47	65	75
D6	24	28	35	48
D10	72.9	87	107	107
D11	72	86	106	106
D13	73	88	108	135
L1	75	90	110	140
L3	14.5	15	15	15
L4	2	2	2	2
L7	54	62	72	87
L8	30	36	44	55
L10	15	15	15	15
L16	88	118	113	128
L18	47	52	53	70
L19	32	35	35	50
C1*	45	70	90	145
C2*	M3	M5	M5	M8
C3*	≤ 8	≤ 14	≤ 19	≤ 22
C4*	27	37.5	44	59
C5*	30	50	70	110
C6*	4	8	7	8
C7*	42.5	60	80	130
C8*	181	213	255	305.5
B3 P9	5	6	6	10
H3	16.3	20.8	24.8	35.3

如何选用减速机 HOW TO CHOOSE

尺寸图 Dimensions



如何选用减速机 HOW TO CHOOSE

尺寸图 Dimensions

$$1. ED = \frac{t_a + t_c + t_d}{t_{cycle}} \times 100\%, \quad t_{work} = t_a + t_c + t_d$$

下标说明：a.加速 Acceleration, c.等速 Constant velocity (Eq.1)

Subscript description: b.减速 Slow down, p.停止 Stop

$$2. i \approx \frac{n_m}{n_{work}}$$

n_m 马达输出速度 Motor output speed

n_{work} 实际应用速度 Actual application speed

(Eq.2)

$$3. T_{2m} = 3 \sqrt{\frac{n_{2a} \times t_a \times T_{2a}^3 + n_{2c} \times t_c \times T_{2c}^3 + n_{2d} \times t_d \times T_{2d}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$$

$$4. T_{2max} = T_{mB} \times i \times K_s \times \eta$$

(Eq.3)

● K_s 负载系数 Load factor

K_s	周期次数/小时 Number of cycles/hour
1.0	0~1000
1.1	1000~1500
1.3	1500~2000
1.6	2000~3000
1.8	3000~5000
2.0	5000~9000
2.05	9000~10000
Not recommended	Above 10000

T_{mB} 马达最大输出扭矩

Maximum output torque of the motor

(Eq.4)

η 减速机运转效率 Reducer operating efficiency

$$5. n_{2a} = n_{2d} = \frac{1}{2} \times n_{2c}$$

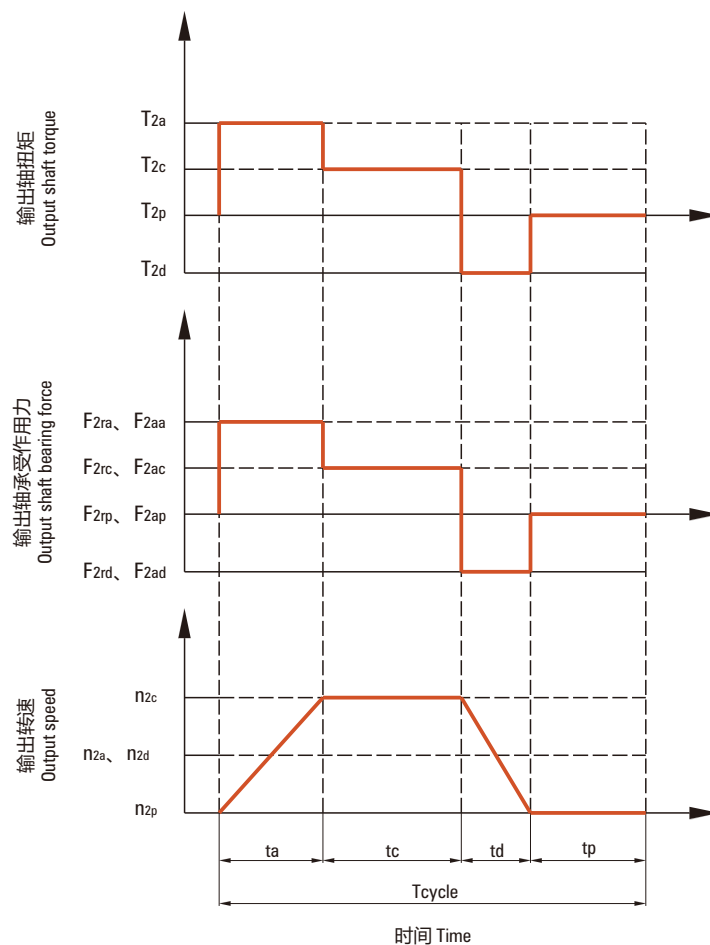
$$n_{2m} = \frac{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}{t_a + t_c + t_d}$$

$$n_{2N} = \frac{n_{1N}}{i}$$

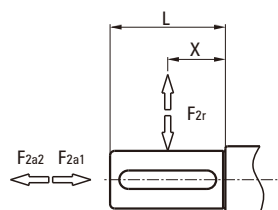
$$6. F_{2rm} = 3 \sqrt{\frac{n_{2a} \times t_a \times T_{2ra}^3 + n_{2c} \times t_c \times T_{2rc}^3 + n_{2d} \times t_d \times T_{2rd}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$$

$$F_{2am} = 3 \sqrt{\frac{n_{2a} \times t_a \times T_{2aa}^3 + n_{2c} \times t_c \times T_{2ac}^3 + n_{2d} \times t_d \times T_{2ad}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$$

尺寸图 Dimensions



尺寸图 Dimensions



F_{2r} 径向力 Radial force

F_{2a} 轴向力 Axial force

● 减速机输出轴之容许径向力及轴向力 Allowable radial and axial forces on the output shaft of the gearbox

减速机输出轴所能承受最大径向力及轴向力，端视内部支撑轴承之设计。

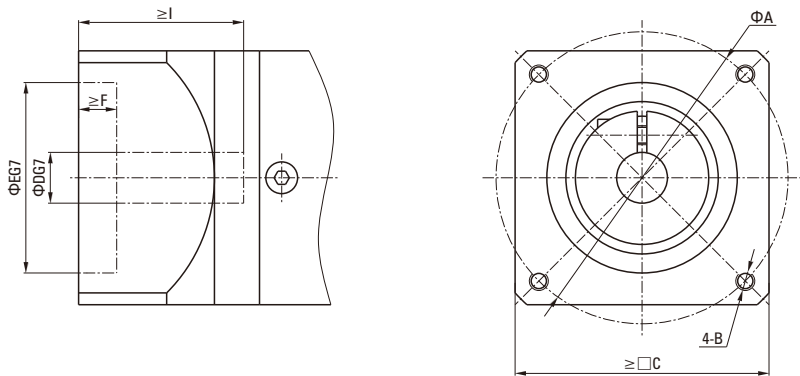
The maximum radial and axial force that the output shaft of the gearbox can withstand depends on the design of the internal support bearing.

宁波中大减速机采用大尺寸的轴承及较大跨距的设计，其能承受更大的径向及轴向负荷。

The Ningbo Zhongda reducer adopts large-sized bearings and a large span design, which can withstand larger radial and axial loads.

伺服电机对应尺寸表 SERVO MOTOR CORRESPONDING SIZE TABLE

减速器输入端 Gearbox input



输入法兰与伺服电机对应尺寸表 Input flange and servo motor matching table

电机功率 Motor power (W)	电机尺寸 Motor size	安装距 Installation distance	螺纹孔 Threaded hole	边框 Frame	孔径 Aperture	止口 Stop	止口深度 Stop depth	轴伸 Shaft extension
		A	B	C	D	E	F	I
50	T1	45	M3	38	8	30	3	25
	T2	46	M4	40	6	30	3	25
	T3	47	M4	40	8	30	3	25
	T4	48	M3	42	8	30	3	25
100	T1	45	M3	38	8	30	3	25
	T2	46	M4	40	8	30	3	25
	T3	46	M4	40	8	30	3	25
	T4	48	M3	42	8	30	3	25
200	T1	70	M4	60	11	50	3	30
	T2	70	M5	60	14	50	3	30
	T3	70	M5	60	14	50	3	30
400	T1	70	M4	60	14	50	3	30
	T2	70	M5	60	14	50	3	30
	T3	70	M5	60	14	50	3	30
750	T1	90	M5	80	19	70	3	35
	T2	90	M6	80	16	70	3	40
	T3	90	M6	80	19	70	3	40
	T4	100	M6	86	16	80	3	35
	T5	145	M8	130	19	110	6	58
	T6	100	M6	86	19	80	3	40
1000	T1	100	M6	90	19	80	3	55
	T2	115	M6	100	24	95	3	45
	T3	115	M8	100	24	95	5	45
	T4	145	M8	130	22	110	6	58
	T5	145	M8	130	22	110	6	70
	T6	115	M8	100	22	95	5	45
	T7	145	M8	130	24	110	3	55
1500	T1	115	M8	100	19	95	3	55
	T2	115	M6	100	24	95	3	45
	T3	115	M8	100	24	95	3	45
	T4	145	M8	130	22	110	6	58
	T5	145	M8	130	22	110	6	70
	T6	115	M8	100	22	95	5	45
	T7	145	M8	130	24	110	3	55

伺服电机对应尺寸表 SERVO MOTOR CORRESPONDING SIZE TABLE

输入法兰与伺服电机对应尺寸表 Input flange and servo motor matching table

电机功率 Motor power (W)	电机尺寸 Motor size	安装距 Installation distance	螺纹孔 Threaded hole	边框 Frame	孔径 Aperture	止口 Stop	止口深度 Stop depth	轴伸 Shaft extension
		A	B	C	D	E	F	I
2000	T1	115	M8	100	19	95	3	55
	T2	115	M6	100	24	95	3	45
	T3	115	M8	100	24	95	3	45
	T4	145	M8	130	22	110	6	58
	T5	200	M12	175	35	114.3	10	80
	T6	115	M8	100	22	95	5	45
2500	T1	115	M8	100	19	95	3	55
	T2	115	M6	100	24	95	3	45
3000	T1	130	M8	120	22	110	3	55
	T2	145	M8	130	28	110	6	65
	T4	145	M8	130	24	110	6	65
	T5	200	M12	175	35	114.3	10	80
	T7	200	M12	175	35	114.3	10	65
3500	T1	130	M8	120	22	110	3	55
	T2	145	M8	130	28	110	3	63
	T5	200	M12	175	35	114.3	10	80
4000	T1	145	M8	130	24	110	6	65
	T2	145	M8	130	28	110	6	65
	T5	200	M12	175	35	114.3	10	80
	T6	200	M12	175	42	114.3	10	113
4500	T1	145	M8	130	24	110	6	65
	T5	200	M12	175	35	114.3	10	80
	T6	200	M12	175	42	114.3	10	113
	T7	200	M12	175	35	114.3	10	65
5000	T1	145	M8	130	24	110	6	65
	T2	145	M8	130	28	110	6	65
	T5	200	M12	175	35	114.3	10	80
	T7	200	M12	175	35	114.3	10	65

注1) 没有油封和尺寸不同时，安装带油封的马达有时需特别订货。
If an oil-seal is not present and the size is different, attachment of the oil-seal may correspond to special order, in some cases.

注2) 马达轴为D形轴、锥形时需要特别订货。
If the motor shaft is of D-cut and taper type, it corresponds to a special order.

注3) 标准外有时需要特别订货。欲知详情，请另外与本公司联系。
Out-of-standard may correspond to a special order in some cases. For details, contact us.

安装 ASSEMBLY

■ 安装马达的步骤 Assembly procedure

客户自行安装伺服马达时，请按以下要领进行安装。伺服马达的尺寸多种多样，除指定的产品外，有些马达可能会无法连接法兰，因为，一定要使用您订货时指定的马达。

If a customer personally assembles the servo motor and reducer please use the following tip. The reducer flange to which the servo motor is attached has different dimensions based on the motor specified. Therefore, assembly may be impossible for some motor. Make sure the correct motor is specified before ordering the reducer.

1. 安装无键马达 Spec. in case of assembling a motor without key

① 拧去紧定螺钉，转动输入轴，使螺栓头和紧定螺钉的孔吻合。并确认固定螺栓已松开。
Take off the rubber cap, turn the input shaft, and match the head of the bolt to the hole of the rubber cap. Make sure that the set bolt is loosened.

② 将马达轴平稳地插入输出轴（请确保不受阻塞地顺畅的插入）。请充分注意不要让马达倾斜插入。
Gradually put the motor shaft into the input shaft (Ensure that it is smoothly put in without iam.) Be careful not to be inserted with the motor tilted.

③ 将马达固定在减速机上，并按指定的扭矩将螺栓拧紧。（参考表1）
Attach the motor to the reducer and fasten the bolt with designated fastening torque. (See table 1)

④ 使用扭矩扳手等工具，按指定的扭矩将输入轴的固定螺栓拧紧。（参考表2）
Fasten the set bolt of the input shaft with designated fastening torque wrench, etc. (See table 2)

⑤ 拧上紧定螺钉。安装到此结束。
Put on a rubber cap. It is the end of assembling.

● 表1 Table1

马达固定螺栓 Motor combination bolt	拧紧扭矩 Fastening torque	
	(N·m)	(kgf·cm)
M3	1.0	10
M4	3.0	30
M5	5.8	60
M6	9.8	100
M8	19.6	200
M10	39.2	400
M12	68.6	700
M16	168.0	1650

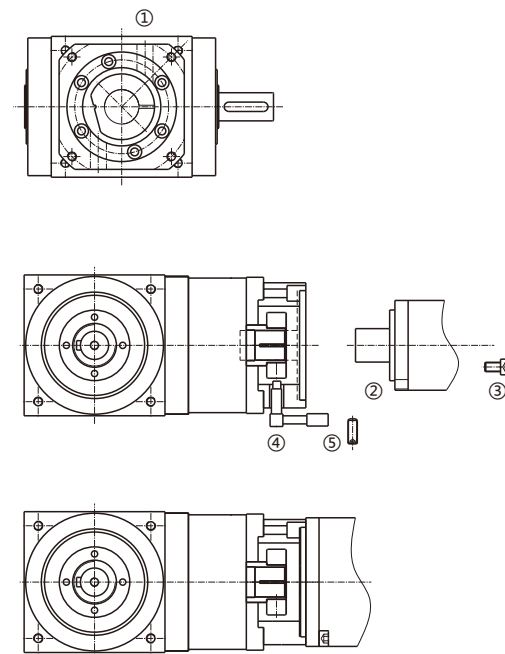
● 表2 Table2

固定螺栓 Combination bolt	拧紧扭矩 Fastening torque	
	(N·m)	(kgf·cm)
M3	1.5	15
M4	3.5	35
M5	7.1	71
M6	12	120
M8	30	300
M10	60	612

带键槽式马达的键取下后，可以像上述无键马达一样安装。无需担心会滑动。

You can assemble the motor with keyway like above when take off the key. There is no risk of dislocation.

● ZT系列示意图
ZT series schematic diagram



安装 ASSEMBLY

■ 减速机的安装 Reducer assembly

将减速机安装在设备上时，请在确认安装面平坦且无毛刺等后，使用扭矩扳手等工具按指定的扭矩用螺栓将其固定。(参考表3)

Joining with reducer In case of joining a reducer with the device, make sure that the combining side is plane without inconsistency, and when assemble reducer onto equipment, ensuring assembly surface smooth and without burr. (See table 3)

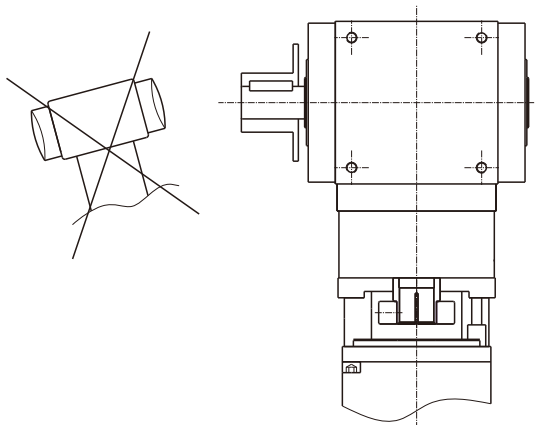
● 表3 Table 3

减速机固定螺栓 Reducer combination bolt	拧紧扭矩 Fastening torque	
	(N·m)	(kgf·cm)
M5	5.8	60
M6	9.8	100
M8	19.6	200
M10	39.2	400
M12	68.6	700
M16	16.8	1650

■ 连接输出轴 Connection to the output shaft

注意事项 Cautions:

- 1、在输出轴上安装耦合器、滑轮等时，请勿在输出轴上施加过大的轴向负荷。
When assemble a coupling, pulley, etc. onto the output shaft, make sure that excessive axial load not be given to the output shaft.
- 2、请勿使用强力将轴敲入，以免使轴承或减速机内部受到损伤。
In case of strongly hitting the shaft with a hammer, the shaft inlet or the inside of the reducer may be damaged, therefore it shall be prohibited.
- 3、安装的耦合器等的轴和键槽如有较大松动，可能会导致设备烧毁，安装时请充分注意。
If the shaft or key of a coupling assembled is loosed, it may cause carbonization, so be careful when assembling.
- 4、安装耦合器等时，请使用固定螺栓来将键固定住。
For assembling of a coupling, fix the key with a set bolt.
- 5、连接时请充分调校轴心。
Please adjust shaft centre carefully in connecting.



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