

QUALITY DERIVE
FROM SANKAI
REPUTATION COME ALONG

品质源三凯 口碑自然来

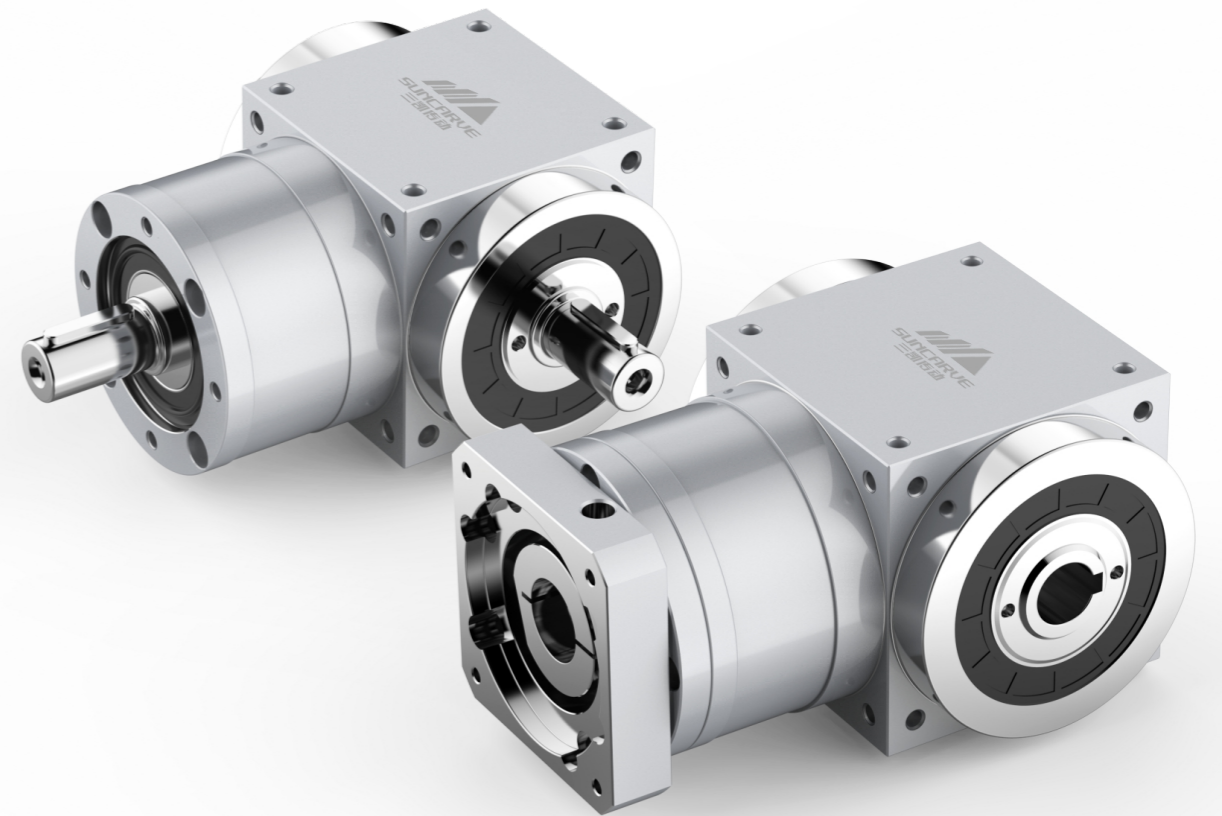
为谋品牌设计 158 8866 3398

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高精度
螺旋伞齿轮减速机
HIGH PRECISION SPIRAL BEVEL GEARBOX



浙江三凯机电有限公司

ZHEJIANG SANKAI MACHINE & ELECTRIC CO., LTD.

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传动装置专业制造商

Professional Manufacturer Of Transmission Device

安全

- ◎ 正直、诚信、责任、使命、尊重他人并且乐于助人，是我们倡导的人的安全。
- ◎ 在我们所提供的传动装置专业制造中，真诚与客户沟通，产品方面，从品质、运输和最终使用上，我们均确保安全，在承诺、结果和质量方面值得客户信赖。
- ◎ 以人为本，我们强调，快乐工作以及自我价值的实现，人人平等，价值共享，致力于提升员工工作的安全感和对公司的归属感。
- ◎ 注重健康、环保和节能，尊重自然和履行社会责任，做合格的社会企业公民。

共赢

- ◎ 人力资源是企业的第一生产力，以人为本，企业是员工实现自我价值的平台。
- ◎ 个人的发展源于企业的发展，企业的发展依托于每个员工的卓越贡献，企业和员工是命运共同体，价值共同体，利益共同体，共同承担，共同发展。
- ◎ 我们的市场价值在于我们所带给客户的价值，我们通过传动装置专业制造服务，帮助和推动客户成功，与客户共存，并实现多方共赢。
- ◎ 企业是这个社会的有机组成部分，企业的进步和发展依托行业以及整个社会的进步和发展，依托社会，贡献社会，回报社会，我们与社会以及自然共存共赢。

创新服务

- ◎ 服务是三凯传动的核心竞争优势所在，服务意识，将贯穿三凯的整个体系。
- ◎ 从服务模式以及服务内容等多层面的不断颠覆和创新，是三凯发展的源动力。创新服务，是三凯的长期使命，是三凯立足于行业的目标，并藉此推动行业的发展和进步。
- ◎ 以市场和客户为导向，创新服务，缔造价值，是三凯的竞争核心。

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INTRODUCTION

关于我们

INTRODUCTION

浙江三凯机电有限公司是一家集科研、生产、销售与一体的动力传动装置专业制造商。企业位于中国东南沿海浙江省台州市，交通便捷。经过多年兢兢业业的务实经营，已成为全球传动行业的创新者。

公司生产的减速机产品齐全，主导产品有：高精行星齿轮减速机、NMRV系列蜗轮蜗杆减速机、UDL系列无级变速机、SRC系列斜齿轮减速机，SKM斜齿-准双曲面齿轮减速机、机器人关节减速机、PC斜齿轮减速机等。产品广泛应用于自动化产业、工业机器人、航空航天、数控机床、冶金矿山、啤酒饮料、烟草轻工、环保工程、仓储物流、塑料机械、起重运输、立体停车、汽车制造、纺织、食品、陶瓷、等领域中。

商潮涌动、傲立潮头；风起云涌、英雄并起。秉承着锐意进取、敢为人先的企业理念，目前三凯传动的产品已拥有范围广阔的市场占有率，采用先进的检测设备和手段，建立了符合ISO9001：2015质量管理体系，产品销售至全国各地，出口东南亚、欧美等国家与地区。公司也将一如继往，争做传动行业的佼佼者。

英雄凯旋、凯歌高亢、奏凯而归！三凯象征着英雄的品格、进取的精神和胜利的喜悦！三凯人始终本着“敬业、求实、创新”的经营理念；坚持“质量第一、信誉第一”的宗旨，为广大用户提供优质的减速机和服务；“以质量求生存、以顾客为中心、以管理求效益、以市场求发展”是公司的经营方针，“致力创新、永不满足”是本公司永恒的主题，三凯凝聚一批有理想、敢拼搏、勇争先的高素质专业技术人员，致力于开发生产高效、节能、精密环保型传动产品。决心以更加优质、及时、快捷的服务，以敢为人先、艰苦创业的敬业精神与国内外朋友精诚合作，共同发展！



Zhejiang Sankai Machine and Electric Co.,Ltd is an integrative and professional manufacturer of power transmission device, which specialize in scientific research, production and marketing. As located in Taizhou city, southeast of Zhejiang province, Zhejiang Sankai has a very convenient transport system. And after years' effort, based on dedication and pragmatic management, Sankai has become a famous innovator among transmission industry in the world.

Our company specialize in High Precision Planetary Gearbox, NMRV series Worm Gearbox, UDL series Stepless Speed Variator, SRC series Helical Gearbox, SKM series Helical-Hypoid Gearbox, Precision Gearbox for Robot Arm and PC Helical Gear Unit. All the products are widely used in different fields such as automation industry, industrial robot, aerospace, metallurgy and mining, light industry of beer, beverage and tobacco, environmental engineering, logistics, plastic machinery, lifting and transport, parking, automobile manufacturing, textile, food, ceramics and so on.

Standing on the top as tide moving high. So does the business. Adhering to the spirit of 'forge ahead, be pioneers', our company has already gained a big market share. Adopting advanced detecting equipment and means, company establishes a quality control system that is in accordance with ISO9001: 2015. Products are sold all over the country, exporting to Southeast Asia, Europe, America and other regions. Sankai will continue, as we always do, to strive to become a leader of power transmission industry.

Hero's back with the song of triumph. The word Sankai represents the character of hero, the enterprising spirit and the joy of success. The faculty of Sankai take the spirit of "dedication, truth-seeking, innovation" as its business ideas, providing customers both products and service with high quality, as adhered to the purpose of "quality first, reputation first". Our principles and policy: to control quality for survival; to regard customer as the center: to manage for efficiency: to market for development. With company's eternal theme "keep creativity, and never satisfied", Sankai has introduced a batch of high-caliber professional and technical personnel, dedicated to developing high-efficient, energy-saving, high-precision, environment-friendly transmission product. Sincerely Sankai determine to provide service of better quality, in-time and fast reply to our clients. And Sankai is looking forward to cooperating with domestic and foreign friends and grow together with our hard work and professionalism.

整齐干净 规范作业
您的设备在这里生产



WORKSHOP

生产车间

每一道工序,要求精益求精。
Perfection in Every Little Step & Process.



TEST CENTER

检测中心

每一件产品,皆是用心之作。
Each Product is Manufactured by Heart.





客户至上 贴心服务
您的满意，是我们不懈的追求

三凯为完善客户服务质量，精心打造一支专业贴心的售后服务团队。耐心听取客户诉求并几时做出相应是每个三凯人的职责。灵活调度和迅速解决问题是我们与客户密切合作的基础。不断改善产品体系和服务流程，并超出客户期望是我们的服务宗旨。

Suncarve to improve customer service quality, and carefully build a professional thoughtful after-sales service team. Patience to listen to customer demands and to respond in a timely manner is the responsibility of every Suncarve person. Flexible scheduling and quickly solve the problem is the basic that we work closely with the customer. Continuously improve product system and service process, and exceed customer expectations is our service tenet.

CUSTOMER SERVICE

客户服务



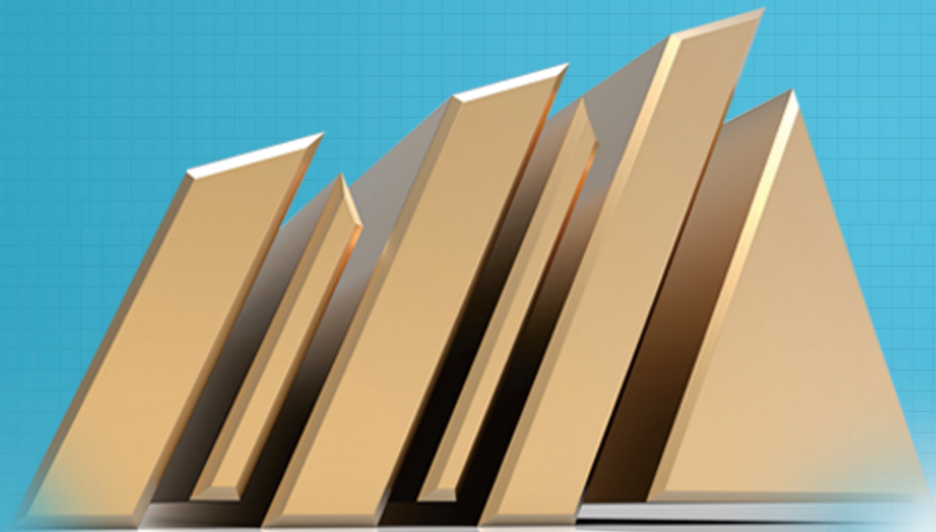
HONOR TO WITNESS HISTORY
QUALITY IN THE FUTURE

荣誉见证历史 品质带动未来

绽放荣耀

SUNCARVE

品质源三凯 口碑自然来



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产品图片 / PRODUCT PICTURE



FAT-L/L1/R1



FAT-FL/FL1/FR1



FAT-H/C



FAT-FH/FC

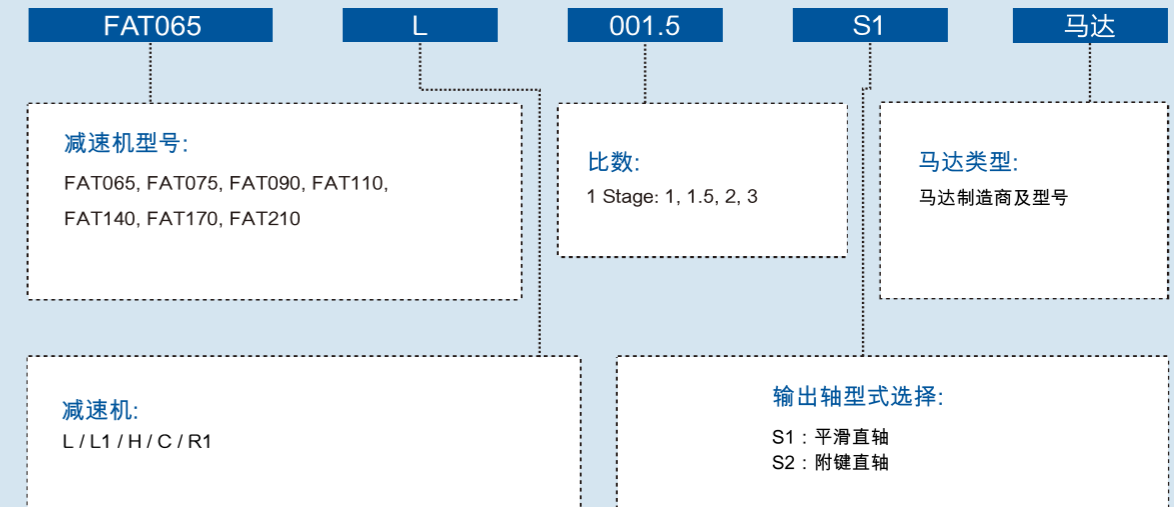
产品特点

- 各种输出轴选择
- 高扭力
- 高效率
- 使用寿命长
- 低背隙
- 免维护
- 灵活的安装尺寸

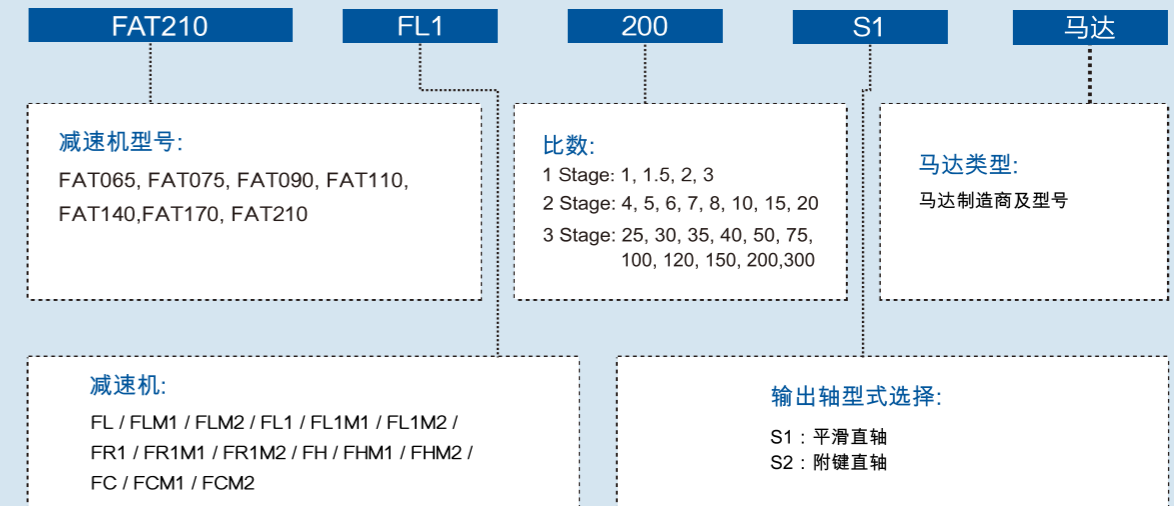
Products characteristics

- Various output options
- High torque
- High efficiency
- Long service life
- Reduced backlash
- Maintenance free
- Flexible mounting dimensions

型号说明 / MODEL ILLUMINATE

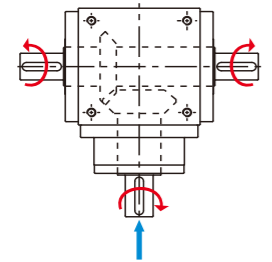


选用范例: FAT065-L-001.5-S1 / SIEMENS 1FK6 032-6AK71

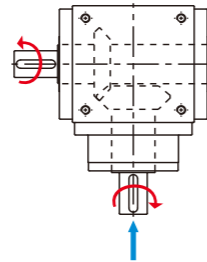


选用范例: FAT210-FL1-200-S1 / SIEMENS 1FK6 032-6AK71

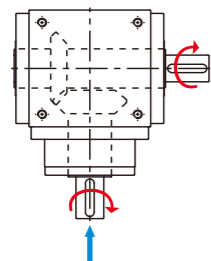
FAT系列的旋转方向 / ROTATE DIRECTIONS OF FAT SERIES



FAT-L FAT-H FAT-C
FAT-FL FAT-FH FAT-FC

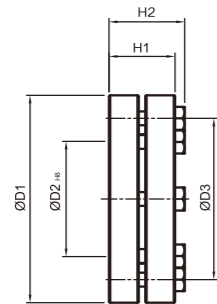


FAT-L1 FAT-FL1



FAT-R1 FAT-FR1

缩紧盘附件选配 / ACCESSORIES - SHRINK DISC POWER LOCK



C / FC 系列	D1	D2	D3	H1	H2
SSD-d16xdw14	41	16	26	15	18.5
SSD-d22xdw18	50	22	36	19.5	23
SSD-d25xdw22	50	25	38	19.5	23
SSD-d44xdw32	80	44	61	25.5	29.5
SSD-d50xdw40	90	50	70	27.5	31.5
SSD-d62xdw50	110	62	86	30.5	34.5
SSD-d68xdw55	115	68	86	30.5	34.5
SSD-d75xdw60	138	75	100	32.5	38

产品规格-FAT轴型系列 / SPECIFICATION FAT SHAFT TYPE SERIES

减速机性能资料 / GEARBOX PERFORMANCE

规格 Model No.	节数 Stage	比数 ^A Ratio ^A	FAT065 L	FAT075 L	FAT090 L	FAT110 L	FAT140 L	FAT170 L	FAT210 L	
			FAT065 L1	FAT075 L1	FAT090 L1	FAT110 L1	FAT140 L1	FAT170 L1	FAT210 L1	
额定输出力矩 T_{2N}	Nm	1	1	25	45	78	150	360	585	1,300
			1.5	25	45	78	150	360	585	1,300
			2	24	42	68	150	330	544	1,220
			3	18	33	54	120	270	450	1,020
最大加速力矩 T_{2B}	Nm	1	1~3	1.5 倍额定输出力矩 (1.5 times of Nominal Output Torque)						
最大加速输入转速 n_{1B}	rpm	1	1~3	7,500	6,500	5,500	4,500	3,500	3,000	2,200
背隙 ^B	arcmin	1	1~3	≤6	≤6	≤6	≤6	≤6	≤6	6
容许径向力 F_{1rB} ^C 输出轴 d1	N	1	1~3	700	950	1,450	2,100	2,700	3,800	7,800
容许径向力 F_{2rB} ^D 输出轴 d2	N	1	1~3	900	1,100	1,700	2,700	4,800	6,600	11,500
容许轴向力 F_{1aB} ^C 输出轴 d1	N	1	1~3	350	425	725	1,050	1,350	1,900	3,900
容许轴向力 F_{2aB} ^D 输出轴 d2	N	1	1~3	450	550	850	1,350	2,400	3,300	5,750
使用寿命 ^E	hr	1	1~3	20,000						
效率 η	%	1	1~3	≥95%						
使用温度	°C	1	1~3	-10°C ~ 90°C						
润滑				合成润滑油 (Synthetic lubrication oils)						
噪音值 ($n_1=1500\text{rpm}$, 无负载) ^F	dB (A)	1	1~3	≤68	≤70	≤74	≤76	≤77	≤78	≤80

减速机转动惯量 / GEARBOX INERTIA

规格 Model No.	节数 Stage	比数 ^A Ratio ^A	FAT065 L	FAT075 L	FAT090 L	FAT110 L	FAT140 L	FAT170 L	FAT210 L
			FAT065 L1	FAT075 L1	FAT090 L1	FAT110 L1	FAT140 L1	FAT170 L1	FAT210 L1
转动惯量 J_1 ($\text{kg} \cdot \text{cm}^2$) Mass Moments of Inertia J_1	1	1	0.51	1.30	3.16	7.70	23.57	58.99	195.40
		1.5	0.64	1.16	2.82	6.74	19.37	49.28	155.45
		2	0.44	1.11	2.70	6.31	17.75	45.35	140.24
		3	0.43	1.09	2.66	6.17	17.18	44.01	134.95

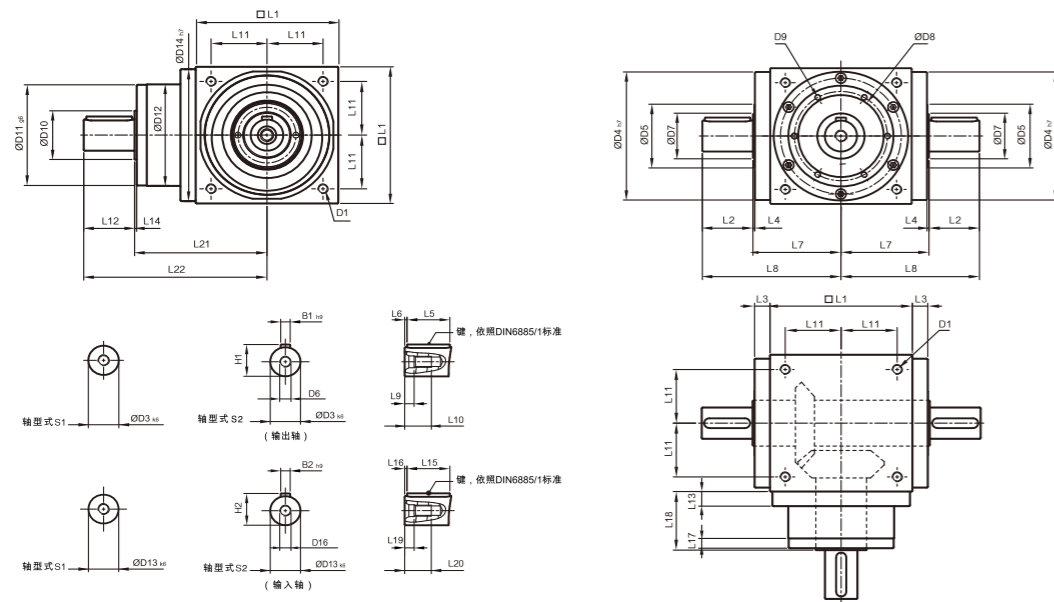
重量 / WEIGHT

减速机型号 Model No.	节数 Stage	比数 ^A Ratio ^A	FAT065	FAT075	FAT090	FAT110	FAT140	FAT170	FAT210
L 系列 (Series)	kg	1	2.6	4.2	6.8	11.6	19.8	34.8	66.2
L1 系列 (Series)		1	2.6	4.1	6.7	11.5	19.5	34.2	65.1
H 系列 (Series)		1	2.5	3.9	6.4	11.0	18.1	31.6	60.0
C 系列 (Series)		1	2.8	4.2	6.9	11.4	19.6	33.7	63.3
R1 系列 (Series)		1	2.6	4.1	6.7	11.5	19.5	34.2	65.1

A. 比数 ($i=N_{in}/N_{out}$)
B. 背隙值是在2%额定力矩 T_{2N} 的扭力下测得。
C. 最大加速输入转速 n_{1B} 作用于输入轴中心位置。
D. 最大加速输出转速 n_{2B} 作用于输出轴中心位置。
E. 连续运转使用寿命为10,000小时。
F. 噪音值将会随减速比及高转速而升高。

A. Ratio ($i=N_{in}/N_{out}$)
B. Backlash is measured at 2% Nominal Torque T_{2N} .
C. Apply to the input shaft center at n_{1B} .
D. Apply to the output shaft center at n_{2B} .
E. S1 service life 10,000 hrs.
F. The dB value will be higher by lower ratio and/or with high PRM.

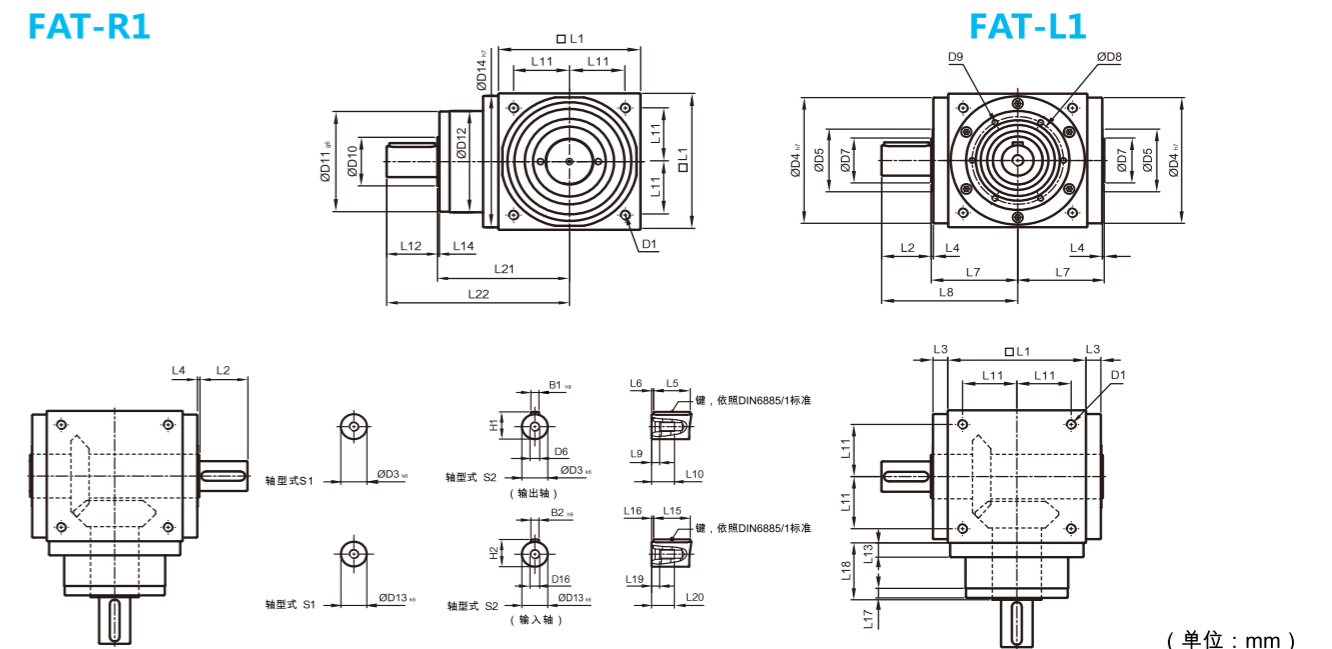
尺寸-FAT-L系列 (单节, 减速比i=1~3)
DIMENSIONS (I-STAGE, RATIO I=1~3) FAT-L SERIES



(单位: mm)

尺寸	FAT065 L	FAT075 L	FAT090 L	FAT110	FAT140	FAT170	FAT210
D1	M4	M6	M6	M8	M10	M12	M16
D3 _{k6}	13	16	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D6	M4	M5	M5	M8	M12	M16	M16
D7	21	22	28	33	47	55	75
D8	53	62	76	95	92	114	142
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3
D11 _{g6}	62.9	72.9	87	107	103	127	158
D12	62	72	86	106	104	128	160
D13 _{k6}	13	16	18	22	32	40	50
D14 _{h7}	63	73	88	108	135	165	205
D16	M4	M5	M5	M8	M12	M16	M16
L1	65	75	90	110	140	170	210
L2	19.5	30	35	40	50	60	75
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70
L6	2	2.5	3.5	4	2.5	5	2.5
L7	47.5	54	62	72	87	102	127
L8	67	84	97	112	137	162	202
L9	4.5	4.8	4.8	7.2	10	12	12
L10	10	12.5	12.5	19	28	36	36
L11	27	30	36	44	55	67	85
L12	19.5	30	35	40	50	60	75
L13	13	15	15	15	15	15	20
L14	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70
L16	2	2.5	3.5	4	2.5	5	2.5
L17	6	8	8	8	10	10	10
L18	43	52.5	55	60	60	70	90
L19	4.5	4.8	4.8	7.2	10	12	12
L20	10	12.5	12.5	19	28	36	36
L21	75.5	90	100	115	130	155	195
L22	95	120	135	155	180	215	270
B1 _{h9}	5	5	6	6	10	12	14
B2 _{h9}	5	5	6	6	10	12	14
H1	15	18	20.5	24.5	35	43	53.5
H2	15	18	20.5	24.5	35	43	53.5

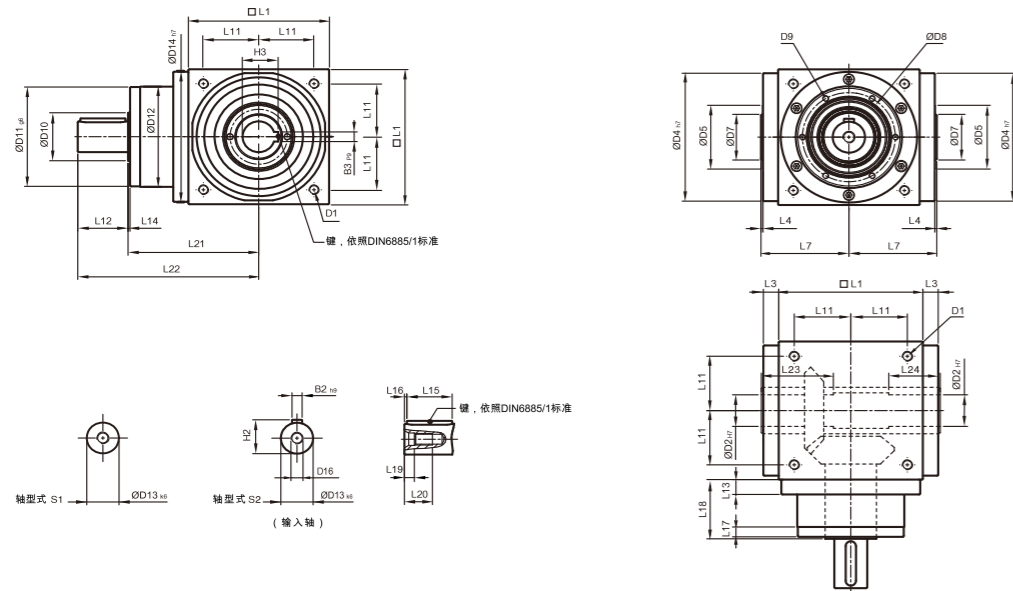
尺寸-FAT-L1/R1轴型系列 (单节, 减速比i=1~3)
DIMENSIONS (I-STAGE, RATIO I=1~3) FAT-L1 /R1 SERIES



(单位: mm)

尺寸	FAT065 L1/R1	FAT075 L1/R1	FAT090 L1/R1	FAT110 L1/R1	FAT140 L1/R1	FAT170 L1/R1	FAT210 L1/R1
D1	M4	M6	M6	M8	M10	M12	M16
D3 _{k6}	13	16	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D6	M4	M5	M5	M8	M12	M16	M16
D7	21	22	28	33	47	55	75
D8	53	62	76	95	92	114	142
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3
D11 _{g6}	62.9	72.9	87	107	103	127	158
D12	62	72	86	106	104	128	160
D13 _{k6}	13	16	18	22	32	40	50
D14 _{h7}	63	73	88	108	135	165	205
D16	M4	M5	M5	M8	M12	M16	M16
L1	65	75	90	110	140	170	210
L2	19.5	30	35	40	50	60	75
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70
L6	2	2.5	3.5	4	2.5	5	2.5
L7	47.5	54	62	72	87	102	127
L8	67	84	97	112	137	162	202
L9	4.5	4.8	4.8	7.2	10	12	12
L10	10	12.5	12.5	19	28	36	36
L11	27	30	36	44	55	67	85
L12	19.5	30	35	40	50	60	75
L13	13	15	15	15	15	15	20
L14	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70
L16	2	2.5	3.5	4	2.5	5	2.5
L17	6	8	8	8	10	10	10
L18	43	52.5	55	60	60	70	90
L19	4.5	4.8	4.8	7.2	10	12	12
L20	10	12.5	12.5	19	28	36	36
L21	75.5	90	100	115	130	155	195
L22	95	120	135	155	180	215	270
B1 _{h9}	5	5	6	6	10	12	14
B2 _{h9}	5	5	6	6	10	12	14
H1	15	18	20.5	24.5	35	43	53.5
H2	15	18	20.5	24.5	35	43	53.5

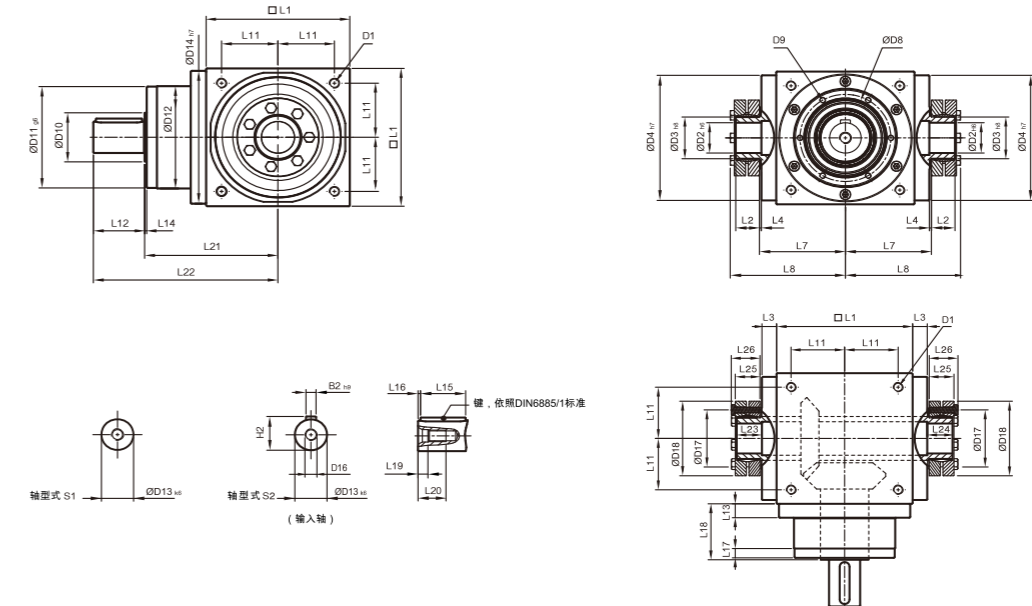
尺寸-FAT-H系列 (单节, 减速比*i*=1~3) DIMENSIONS (I-STAGE, RATIO *i*=1~3) FAT-H SERIES



(单位: mm)

尺寸	FAT065 H	FAT075 H	FAT090 H	FAT110 H	FAT140 H	FAT170 H	FAT210 H
D1	M4	M6	M6	M8	M10	M12	M16
D2 H7	13	14	18	22	32	40	50
D4 h7	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D7	21	22	28	33	47	55	75
D8	53	62	76	95	92	114	142
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3
D11 g6	62.9	72.9	87	107	103	127	158
D12	62	72	86	106	104	128	160
D13 k6	13	16	18	22	32	40	50
D14 h7	63	73	88	108	135	165	205
D16	M4	M5	M5	M8	M12	M16	M16
L1	65	75	90	110	140	170	210
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127
L11	27	30	36	44	55	67	85
L12	19.5	30	35	40	50	60	75
L13	13	15	15	15	15	15	20
L14	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70
L16	2	2.5	3.5	4	2.5	5	2.5
L17	6	8	8	8	10	10	10
L18	43	52.5	55	60	60	70	90
L19	4.5	4.8	4.8	7.2	10	12	12
L20	10	12.5	12.5	19	28	36	36
L21	75.5	90	100	115	130	155	195
L22	95	120	135	155	180	215	270
L23	40	47	52	53	70	80	95
L24	30	32	35	35	50	55	65
B2 h9	5	5	6	6	10	12	14
B3 P9	5	5	6	6	10	12	14
H2	15	18	20.5	24.5	35	43	53.5
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8

尺寸-FAT-C系列 (单节, 减速比*i*=1~3) DIMENSIONS (I-STAGE, RATIO *i*=1~3) FAT-C SERIES



(单位: mm)

尺寸	FAT065 C	FAT075 C	FAT090 C	FAT110 C	FAT140 C	FAT170 C	FAT210 C
D1	M4	M6	M6	M8	M10	M12	M16
D2 H6	13	14	18	22	32	40	50
D3 h8	16	16	22	25	44	50	62
D4 h7	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D7	21	22	28	33	47	55	75
D8	53	62	76	95	92	114	142
D9	4xM4xL7	4xM5xL8	4xM5xL8	6xM6xL10	6xM6xL10	6xM8xL12.5	6xM8xL12.5
D10	15.4	20.4	25.8	35.8	49.8	59.3	79.3
D11 g6	62.9	72.9	87	107	103	127	158
D12	62	72	86	106	104	128	160
D13 k6	13	16	18	22	32	40	50
D14 h7	63	73	88	108	135	165	205
D16	M4	M5	M5	M8	M12	M16	M16
D17	26	26	36	38	61	70	86
D18	41	41	50	50	80	90	110
L1	65	75	90	110	140	170	210
L2	14	14	18	18	24	26	29
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127
L8	66	72.5	85	95	116.5	133.5	161.5
L11	27	30	36	44	55	67	85
L12	19.5	30	35	40	50	60	75
L13	13	15	15	15	15	15	20
L14	2	2	2	2	2	2	2
L15	16	25	28	32	45	50	70
L16	2	2.5	3.5	4	2.5	5	2.5
L17	6	8	8	8	10	10	10
L18	43	52.5	55	60	60	70	90
L19	4.5	4.8	4.8	7.2	10	12	12
L20	10	12.5	12.5	19	28	36	36
L21	75.5	90	100	115	130	155	195
L22	95	120	135	155	180	215	270
L23	15	15	20	20	26	28	31
L24	15	15	20	20	26	28	31
L25	15	15	19.5	19.5	25.5	27.5	30.5
L26	18.5	18.5	23	23	29.5	31.5	34.5
B2 h9	5	5	6	6	10	12	14
H2	15	18	20.5	24.5	35	43	53.5

产品规格-FAT法兰型系列 / SPECIFICATION FAT FLANGE TYPE SERIES

减速机性能资料 / GEARBOX PERFORMANCE

规格 Model No.	节数 Stage	比数 ^A Ratio ^A	FAT065 FL	FAT075 FL	FAT090 FL	FAT110 FL	FAT140 FL	FAT170 FL	FAT210 FL	
			FAT065 FL1 FAT065 FH FAT065 FC FAT065 FR1	FAT075 FL1 FAT075 FH FAT075 FC FAT075 FR1	FAT090 FL1 FAT090 FH FAT090 FC FAT090 FR1	FAT110 FL1 FAT110 FH FAT110 FC FAT110 FR1	FAT140 FL1 FAT140 FH FAT140 FC FAT140 FR1	FAT170 FL1 FAT170 FH FAT170 FC FAT170 FR1	FAT210 FL1 FAT210 FH FAT210 FC FAT210 FR1	
额定输出力矩 T _{2N}	1	1	25	45	78	150	360	585	1,300	
		1.5	25	45	78	150	360	585	1,300	
		2	24	42	68	150	330	544	1,220	
		3	18	33	54	120	270	450	1,020	
		4	25	45	78	150	360	585	1,300	
		5	25	45	78	150	360	585	1,300	
	2	6	25	45	78	150	360	585	1,300	
		7	25	45	78	150	360	585	1,300	
		8	24	42	68	150	330	544	1,220	
		10	24	42	68	150	330	544	1,220	
		15	18	33	54	120	270	450	1,020	
		20	24	42	68	150	330	544	1,220	
	3	25	25	45	78	150	360	585	1,300	
		30	25	45	78	150	360	585	1,300	
		35	25	45	78	150	360	585	1,300	
		40	25	45	78	150	360	585	1,300	
		50	24	42	68	150	330	544	1,220	
		75	-	-	-	120	270	450	1,020	
		100	-	-	-	150	330	544	1,220	
		120	-	-	-	120	270	450	1,020	
		150	-	-	-	120	270	450	1,020	
		200	-	-	-	150	330	544	1,220	
		300	-	-	-	120	270	450	1,020	
		最大加速力矩 T _{2B}	Nm	1,2,3	1~300	1.5 倍额定输出力矩 (1.5 times of Nominal Output Torque)				
最大加速输入转速 n _{1B}	rpm	1	1~3	7,500	6,500	5,500	4,500	3,500	3,000	2,200
		2	4~20	8,000	8,000	6,000	6,000	6,000	6,000	4,800
		3	25~300	-	-	8,000	8,000	6,000	6,000	6,000
背隙 ^B	arcmin	1	1~3	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	4~20	≤10	≤10	≤10	≤10	≤10	≤10	≤10
		3	25~300	-	-	-	≤12	≤12	≤12	≤12
容许径向力 F _{2rB} ^C 输出轴d2	N	1,2,3	1~300	900	1,100	1,700	2,700	4,800	6,600	11,500
容许轴向力 F _{2aB} ^C 输出轴 d2	N	1,2,3	1~300	450	550	850	1,350	2,400	3,300	5,750
使用寿命 ^D	hr	1,2,3	1~300	20,000						
效率 η	%	1	1~3	≥95%						
		2,3	4~300	≥92%						
使用温度	°C	1,2,3	1~300	-10°C ~ 90°C						
润滑				合成润滑油脂						
噪音值 (n _i =1500rpm, 无负载)	dB (A)	1,2,3	1~300	≤71	≤72	≤76	≤77	≤78	≤79	≤81

产品规格-FAT法兰型系列 / SPECIFICATION FAT FLANGE TYPE SERIES

减速机转动惯量 / GEARBOX INERTIA

规格 Model No.	节数 Stage	比数 ^A Ratio ^A	FAT065 FL	FAT075 FL	FAT090 FL	FAT110 FL	FAT140 FL	FAT170 FL	FAT210 FL
			FAT065 FL1 FAT065 FH FAT065 FC FAT065 FR1	FAT075 FL1 FAT075 FH FAT075 FC FAT075 FR1	FAT090 FL1 FAT090 FH FAT090 FC FAT090 FR1	FAT110 FL1 FAT110 FH FAT110 FC FAT110 FR1	FAT140 FL1 FAT140 FH FAT140 FC FAT140 FR1	FAT170 FL1 FAT170 FH FAT170 FC FAT170 FR1	FAT210 FL1 FAT210 FH FAT210 FC FAT210 FR1
转动惯量 J ₁	1	1	0.51	1.30	3.14	7.62	23.54	59.09	195.96
		1.5	0.46	1.15	2.80	6.65	19.34	49.38	156.02
		2	0.44	1.10	2.68	6.23	17.72	45.44	140.80
		3	0.43	1.09	2.64	6.08	17.16	44.11	135.51
		4	0.43	1.08	2.63	6.05	17.03	43.79	134.14
		5	0.43	1.08	2.63	6.04	16.99	43.69	133.71
	2	6	0.15	0.15	0.50	2.79	2.79	2.79	9.91
		7	0.15	0.15	0.50	2.79	2.79	2.79	9.91
		8	0.15	0.15	0.50	2.80	2.80	2.80	9.96
		10	0.15	0.15	0.50	2.80	2.80	2.80	9.96
		15	0.15	0.15	0.50	2.80	2.80	2.80	9.96
		20	0.15	0.15	0.50	2.80	2.80	2.80	9.96
		25	0.15	0.15	0.50	2.80	2.80	2.80	9.96
		30	0.15	0.15	0.50	2.80	2.80	2.80	9.96
		35	0.15	0.15	0.50	2.79	2.79	2.79	9.91
		40	0.15	0.15	0.50	2.79	2.79	2.79	9.91
	3	50	0.15	0.15	0.50	2.79	2.79	2.79	9.89
		75	-	-	-	0.15	0.15	0.50	0.50
		100	-	-	-	0.15	0.15	0.50	0.50
		120	-	-	-	0.15	0.15	0.50	0.50
		150	-	-	-	0.15	0.15	0.50	0.50
		200	-	-	-	0.15	0.15	0.50	0.50
		300	-	-	-	0.15	0.15	0.50	0.50

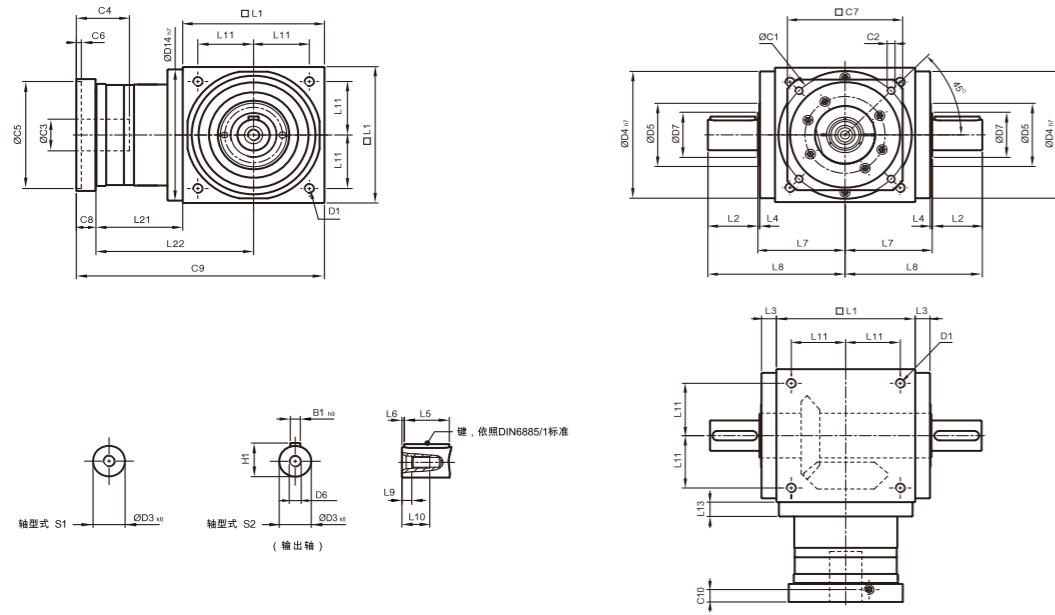
重量 / WEIGHT

减速机型号 (Model No.)	节数 Stage	比数 ^A Ratio ^A	FAT065	FAT075	FAT090	FAT110	FAT140	FAT170	FAT210
FL 系列 (Series)	1	1~3	2.8	4.4	7.1	12.1	20.9	36.1	69.4
	2	4~20	3.2	4.8	8.1	14.3	24.2	38.5	74.1
	3	25~300	-	-	-	13.9	23.7	38.8	73.4
FL1 系列 (Series)	1	1~3	2.7	4.3	7.1	11.9	20.3	35.5	68.3
	2	4~20	3.2	4.8	8.0	14.2	23.9	37.9	73.0
	3	25~300	-	-	-	13.8	23.4	38.2	72.3
FH 系列 (Series)	1	1~3	2.6	4.1	6.7	11.4	18.9	32.9	63.2
	2	4~20	3.1	4.6	7.7	13.6	22.4	35.3	67.9
	3	25~300	-	-	-	13.3	21.9	35.6	67.2
FC 系列 (Series)	1	1~3	2.9	4.4	7.2	11.8	20.4	35.0	66.5
	2	4~20	3.3	4.9	8.2	14.1	24.1	37.4	71.2
	3	25~300	-	-	-	13.7	23.5	37.5	70.5
FR1 系列 (Series)	1	1~3	2.7	4.3	7.1	11.9	20.3	35.5	68.3
	2	4~20	3.2	4.8	8.0	14.2	23.9	37.9	73.0
	3	25~300	-	-	-	13.8	23.4	38.2	72.3

* 比数 (i=N_{in}/N_{out})
 * 背隙值是在2%额定力矩 T_{2N} 的扭力下测得。
 * 最大加速输入转速 n_{1B} 作用于输入轴中心位置。
 * 最大加速输出转速 n_{1B} 作用于输出轴中心位置。
 * 连续运转使用寿命为10,000小时。
 * 噪音值将会随低减速比及高转速而升高。

* Ratio (i= N_i / N_o).
 * Backlash is measured at 2% Nominal Torque T_{2N}.
 * Apply to the input shaft center at n_{1B}.
 * Apply to the output shaft center at n_{1B}.
 * S1 service life 10,000 hrs.
 * The dB value will be higher by lower ratio and/or with high PRM.

尺寸-FAT-FL系列 (单节, 减速比*i*=1~3) DIMENSIONS (1-STAGE, RATIO *i*=1~3) FAT-FL SERIES

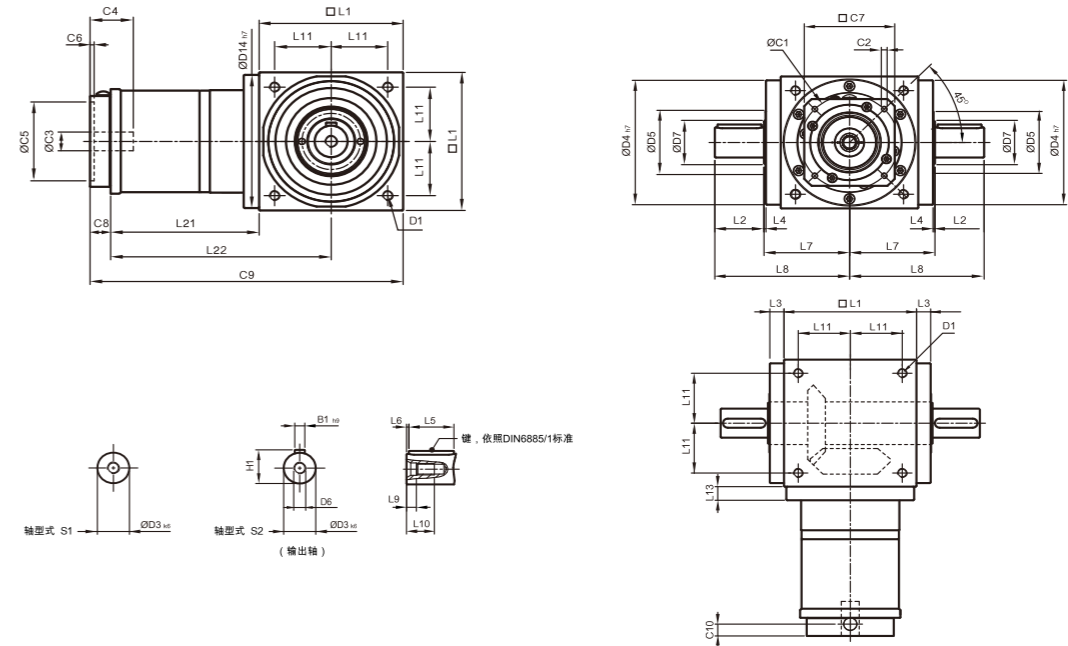


(单位: mm)

尺寸	FAT065 FL	FAT075 FL	FAT090 FL	FAT110 FL	FAT140 FL	FAT170 FL	FAT210 FL
D1	M4	M6	M6	M8	M10	M12	M16
D3 _{k6}	13	16	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D6	M4	M5	M5	M8	M12	M16	M16
D7	21	22	28	33	47	55	75
D14 _{h7}	63	73	88	108	135	165	205
L1	65	75	90	110	140	170	210
L2	19.5	30	35	40	50	60	75
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70
L6	2	2.5	3.5	4	2.5	5	2.5
L7	47.5	54	62	72	87	102	127
L8	67	84	97	112	137	162	202
L9	4.5	4.8	4.8	7.2	10	12	12
L10	10	12.5	12.5	19	28	36	36
L11	27	30	36	44	55	67	85
L13	13	15	15	15	15	15	20
L21	49	60.5	63	69.5	85.5	95	130
L22	81.5	98	108	124.5	155.5	180	235
C1 ¹	46	70	100	100	130	165	215
C2 ¹	M4	M5	M6	M6	M8	M10	M12
C3 ¹	≤11 / ≤12 ²	≤14 / ≤15.875 / ≤16 ²	≤19	≤24	≤32	≤38	≤42
C4 ¹	30	34	40	40	50	60	85
C5 ¹	30	50	80	80	110	130	180
C6 ¹	3.5	8	4	4	5	6	6
C7 ¹	42	60	90	90	115	142	190
C8 ¹	19.5	19	17	17	19.5	22.5	29
C9 ¹	133.5	154.5	170	196.5	245	287.5	369
C10 ¹	13.25	13.5	10.75	10.75	13	15	20.75
B1 _{h9}	5	5	6	6	10	12	14
H1	15	18	20.5	24.5	35	43	53.5

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10are motor specific dimensions(metric std shown), which could be customised.
* FAT065 FLM1提供C3≤12选择; FAT075 FLM1提供C3≤12选择; FAT075 FLM2提供C3≤15.875选择。
* FAT065 FLM1 offers C3≤12 option; FAT075 FLM1 offers C3≤16 option; FAT075 FLM2 offers C3≤15.875 option.

尺寸-FAT-FL系列 (双节, 减速比*i*=4~20) DIMENSIONS (2-STAGE, RATIO *i*=4~20) FAT-FL SERIES

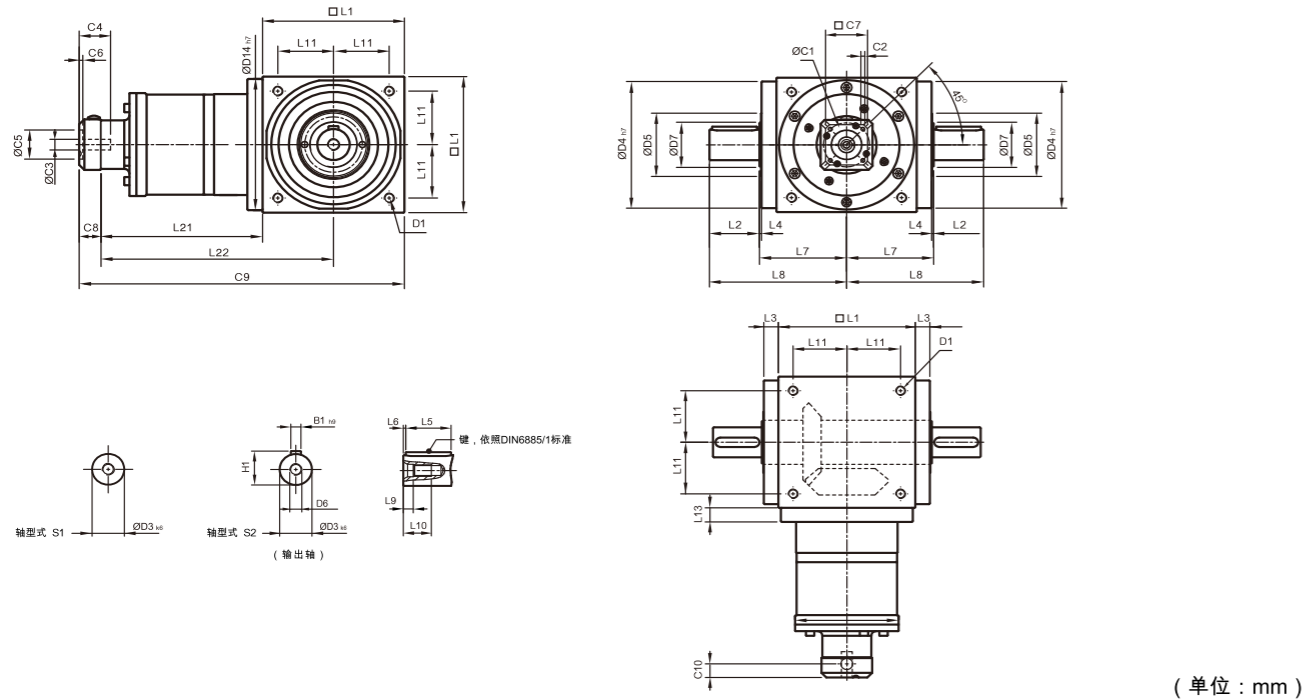


(单位: mm)

尺寸	FAT065 FL	FAT075 FL	FAT090 FL	FAT110 FL	FAT140 FL	FAT170 FL	FAT210 FL
D1	M4	M6	M6	M8	M10	M12	M16
D3 _{k6}	13	16	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D6	M4	M5	M5	M8	M12	M16	M16
D7	21	22	28	33	47	55	75
D14 _{h7}	63	73	88	108	135	165	205
L1	65	75	90	110	140	170	210
L2	19.5	30	35	40	50	60	75
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L5	16	25	28	32	45	50	70
L6	2	2.5	3.5	4	2.5	5	2.5
L7	47.5	54	62	72	87	102	127
L8	67	84	97	112	137	162	202
L9	4.5	4.8	4.8	7.2	10	12	12
L10	10	12.5	12.5	19	28	36	36
L11	27	30	36	44	55	67	85
L13	13	15	15	15	15	15	20
L21	75	84.5	99	122	144.5	157.5	206.5
L22	107.5	122	144	177	214.5	242.5	311.5
C1 ³	46	46	70	100	100	100	130
C2 ³	M4	M4	M5	M6	M6	M6	M8
C3 ³	≤12	≤12	≤16	≤24	≤24	≤24	≤32
C4 ³	30	30	34	40	40	40	50
C5 ³	30	30	50	80	80	80	110
C6 ³	3.5	3.5	8	4	4	4	5
C7 ³	42	42	60	92	92	92	115
C8 ³	21.5	21.5	21.5	20	20	20	24
C9 ³	161.5	181	210.5	252	304.5	347.5	440.5
C10 ³	14.5	14.5	15.5	13	13	13	16
B1 _{h9}	5	5	6	6	10	12	14
H1	15	18	20.5	24.5	35	43	53.5

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10are motor specific dimensions(metric std shown), which could be customised.

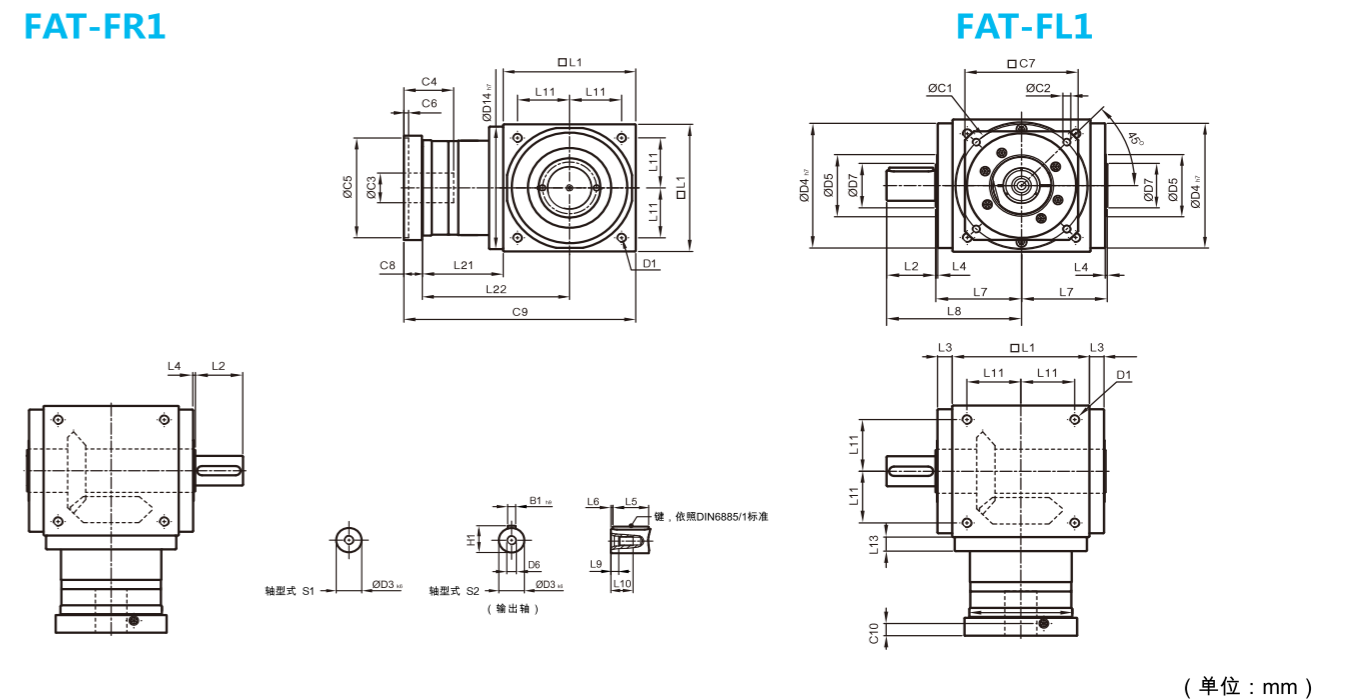
尺寸-FAT-FL系列 (三节, 减速比*i*=25~300)
DIMENSIONS (3-STAGE, RATIO *i*=25~300) FAT-FL SERIES



尺寸	FAT110 FL	FAT140 FL	FAT170 FL	FAT210 FL
D1	M8	M10	M12	M16
D3 _{k6}	22	32	40	50
D4 _{h7}	108	135	165	205
D5	53	68	83	104
D6	M8	M12	M16	M16
D7	33	47	55	75
D14 _{h7}	108	135	165	205
L1	110	140	170	210
L2	40	50	60	75
L3	15	15	15	20
L4	2	2	2	2
L5	32	45	50	70
L6	4	2.5	5	2.5
L7	72	87	102	127
L8	112	137	162	202
L9	7.2	10	12	12
L10	19	28	36	36
L11	44	55	67	85
L13	15	15	15	20
L21	136.5	159.5	183.5	226
L22	191.5	229.5	268.5	331
C1 ⁴	46	46	70	70
C2 ⁴	M4	M4	M5	M5
C3 ⁴	≤12	≤12	≤16	≤16
C4 ⁴	30	30	34	34
C5 ⁴	30	30	50	50
C6 ⁴	3.5	3.5	8	8
C7 ⁴	42	42	60	60
C8 ⁴	21.5	21.5	21.5	21.5
C9 ⁴	268	321	375	457.5
C10 ⁴	14.5	14.5	15.5	15.5
B1 _{h9}	6	10	12	14
H1	24.5	35	43	53.5

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10 are motor specific dimensions(metric std shown), which could be customised.

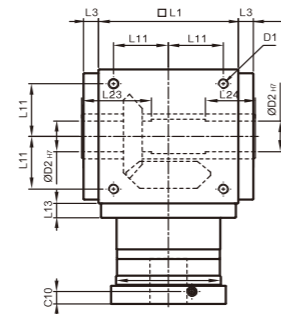
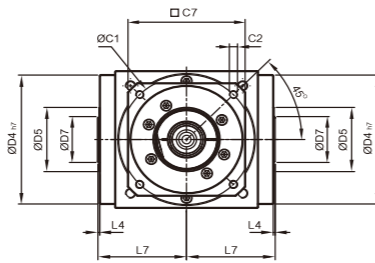
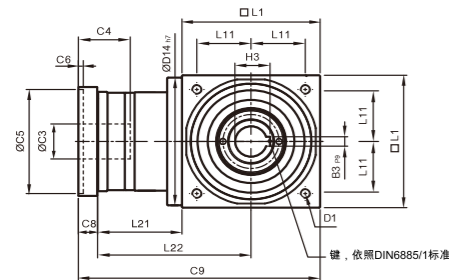
尺寸-FAT-FL1/FR1系列 (单节, 减速比*i*=1~3)
DIMENSIONS (1-STAGE, RATIO *i*=1~3) FAT-FL1/FR1 SERIES



尺寸	FAT065 FL1/FR1	FAT075 FL1/FR1	FAT090 FL1/FR1	FAT110 FL1/FR1	FAT140 FL1/FR1	FAT170 FL1/FR1	FAT210 FL1/FR1
D1	M4	M6	M6	M8	M10	M12	M16
D3 _{k6}	13	16	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D6	M4	M5	M5	M8	M12	M16	M16
D7	21	22	28	33	47	55	75
D14 _{h7}	63	73	88	108	135	165	205
L1	65	75	90	110	140	170	210
L2	19.5	30	35	40	50	60	75
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L5	16	25	28	45	45	50	70
L6	2	2.5	3.5	4	2.5	5	2.5
L7	47.5	54	62	72	87	102	127
L8	67	84	97	112	137	162	202
L9	4.5	4.8	4.8	7.2	10	12	12
L10	10	12.5	12.5	19	28	36	36
L11	27	30	36	44	55	67	85
L13	13	15	15	15	15	15	20
L21	49	60.5	63	69.5	85.5	95	130
L22	81.5	98	108	124.5	155.5	180	235
C1 ⁵	46	70	100	100	130	165	215
C2 ⁵	M4	M5	M6	M6	M8	M10	M12
C3 ⁵	≤11/≤12 ⁶	≤14/≤15.875/≤16 ⁶	≤19	≤24	≤32	≤38	≤42
C4 ⁵	30	34	40	40	50	60	85
C5 ⁵	30	50	80	80	110	130	180
C6 ⁵	3.5	8	4	4	5	6	6
C7 ⁵	42	60	90	90	115	142	190
C8 ⁵	19.5	19	17	17	19.5	22.5	29
C9 ⁵	133.5	154.5	170	196.5	245	287.5	369
C10 ⁵	13.25	13.5	10.75	10.75	13	15	20.75
B1 _{h9}	5	5	6	6	10	12	14
H1	15	18	20.5	24.5	35	43	53.5

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10 are motor specific dimensions(metric std shown), which could be customised.
* FAT065 FL1/FR1M1 提供C3≤12选择; FAT075 FL1/FR1M1提供C3 ≤12选择; FAT075 FL1/FR1M2 提供C3 ≤15.875选择。
* FAT065 FL1/FR1M1 offers C3 ≤12 option; FAT075 FL1/FR1M1 offers C3 ≤12 option; FAT075 FL1/FR1M2 offers C3 ≤15.875 option.

尺寸-FAT-FH系列 (单节, 减速比*i*=1~3)
DIMENSIONS (1-STAGE, RATIO *i*=1~3) FAT-FH SERIES

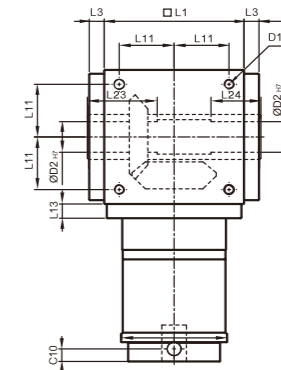
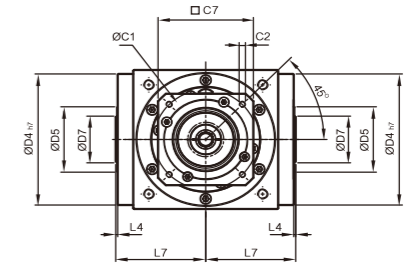
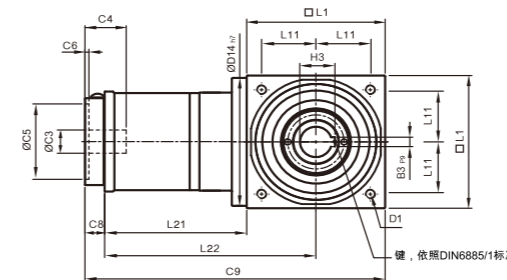


(单位: mm)

尺寸	FAT065 FH	FAT075 FH	FAT090 FH	FAT110 FH	FAT140 FH	FAT170 FH	FAT210 FH
D1	M4	M6	M6	M8	M10	M12	M16
D2 _{H7}	13	14	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D7	21	22	28	33	47	55	75
D14 _{h7}	63	73	88	108	135	165	205
L1	65	75	90	110	140	170	210
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127
L11	27	30	36	44	55	67	85
L13	13	15	15	15	15	15	20
L21	49	60.5	63	69.5	85.5	95	130
L22	81.5	98	108	124.5	155.5	180	235
L23	40	47	52	53	70	80	95
L24	30	32	35	35	50	55	65
C1 ⁹	46	70	100	100	130	165	215
C2 ⁹	M4	M5	M6	M6	M8	M10	M12
C3 ⁹	≤11/≤12 ¹⁰	≤114/≤15.875/≤16 ¹⁰	≤19	≤24	≤32	≤38	≤42
C4 ⁹	30	34	40	40	50	60	85
C5 ⁹	30	50	80	80	110	130	180
C6 ⁹	3.5	8	4	4	5	6	6
C7 ⁹	42	60	90	90	115	142	190
C8 ⁹	19.5	19	17	17	19.5	22.5	29
C9 ⁹	133.5	154.5	170	196.5	245	287.5	369
C10 ⁹	13.25	13.5	10.75	10.75	13	15	20.75
B3 _{P9}	5	5	6	6	10	12	14
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10 are motor specific dimensions(metric std shown), which could be customised.
* FAT065 FHM提供C3≤12选择; FAT075 FHM1提供C3≤16选择; FAT075 FHM2提供C3≤15.875选择。
* FAT065 FHM1 offers C3≤12 option; FAT075 FHM1 offers C3≤16 option; FAT075 FHM2 offers C3≤15.875 option.

尺寸-FAT-FH系列 (双节, 减速比*i*=4~20)
DIMENSIONS (2-STAGE, RATIO *i*=4~20) FAT-FH SERIES

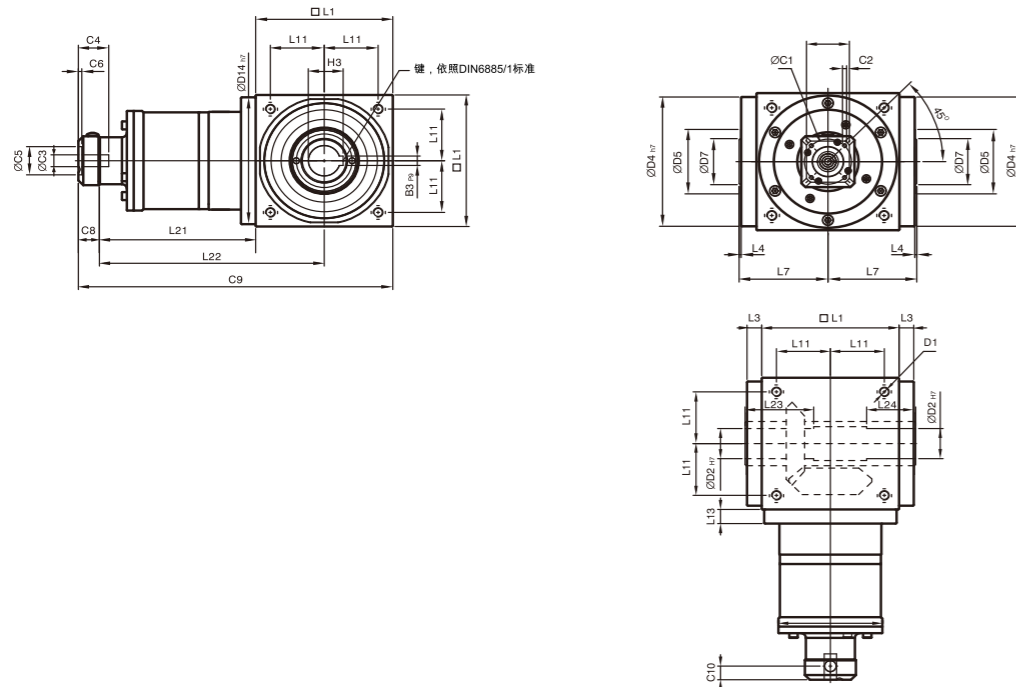


(单位: mm)

尺寸	FAT065 FH	FAT075 FH	FAT090 FH	FAT110 FH	FAT140 FH	FAT170 FH	FAT210 FH
D1	M4	M6	M6	M8	M10	M12	M16
D2 _{H7}	13	14	18	22	32	40	50
D4 _{h7}	63	73	88	108	135	165	205
D5	31	35	43	53	68	83	104
D7	21	22	28	33	47	55	75
D14 _{h7}	63	73	88	108	135	165	205
L1	65	75	90	110	140	170	210
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127
L11	27	30	36	44	55	67	85
L13	13	15	15	15	15	15	20
L21	75	84.5	99	122	144.5	157.5	206.5
L22	107.5	122	144	177	214.5	242.5	311.5
L23	40	47	52	53	70	80	95
L24	30	32	35	35	50	55	65
C1 ⁹	46	46	70	100	100	100	130
C2 ⁹	M4	M4	M5	M6	M6	M6	M8
C3 ⁹	≤12	≤12	≤16	≤24	≤24	≤24	≤32
C4 ⁹	30	30	34	40	40	40	50
C5 ⁹	30	30	50	80	80	80	110
C6 ⁹	3.5	3.5	8	4	4	4	5
C7 ⁹	42	42	60	92	92	92	115
C8 ⁹	21.5	21.5	21.5	20	20	20	24
C9 ⁹	161.5	181	210.5	252	304.5	347.5	440.5
C10 ⁹	14.5	14.5	15.5	13	13	13	16
B3 _{P9}	5	5	6	6	10	12	14
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10 are motor specific dimensions(metric std shown), which could be customised.

尺寸-FAT-FH系列 (三节, 减速比i=25~300) DIMENSIONS (3-STAGE, RATIO I=25~300) FAT-FH SERIES

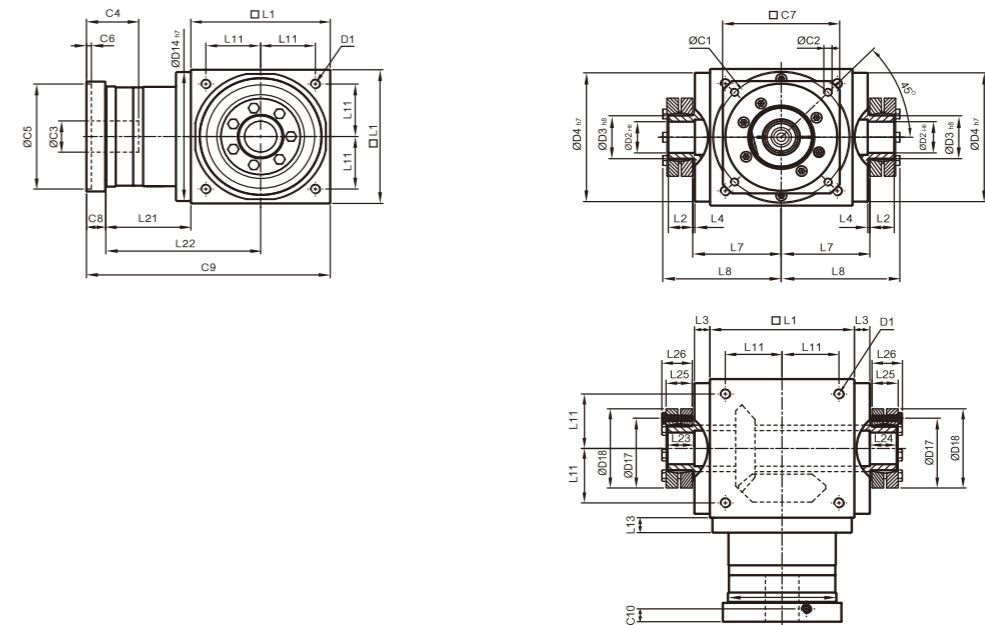


(单位: mm)

尺寸	FAT110 FH	FAT140 FH	FAT170 FH	FAT210 FH
D1	M8	M10	M12	M16
D2 _{H7}	22	32	40	50
D4 _{H7}	108	135	165	205
D5	53	68	83	104
D7	33	47	55	75
D14 _{H7}	108	135	165	205
L1	110	140	170	210
L3	15	15	15	20
L4	2	2	2	2
L7	72	87	102	127
L11	44	55	67	85
L13	15	15	15	20
L21	136.5	159.5	183.5	226
L22	191.5	229.5	268.5	331
L23	53	70	80	95
L24	35	50	55	65
C1 ⁹	46	46	70	70
C2 ⁹	M4	M4	M5	M5
C3 ⁹	≤12	≤12	≤16	≤16
C4 ⁹	30	30	34	34
C5 ⁹	30	30	50	50
C6 ⁹	3.5	3.5	8	8
C7 ⁹	42	42	60	60
C8 ⁹	21.5	21.5	21.5	21.5
C9 ⁹	268	321	375	457.5
C10 ⁹	14.5	14.5	15.5	15.5
B3 _{P9}	6	10	12	14
H3	24.8	35.3	43.3	53.8

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10 are motor specific dimensions(metric std shown), which could be customised.

尺寸-FAT-FC系列 (单节, 减速比i=1~3) DIMENSIONS (1-STAGE, RATIO I=1~3) FAT-FC SERIES

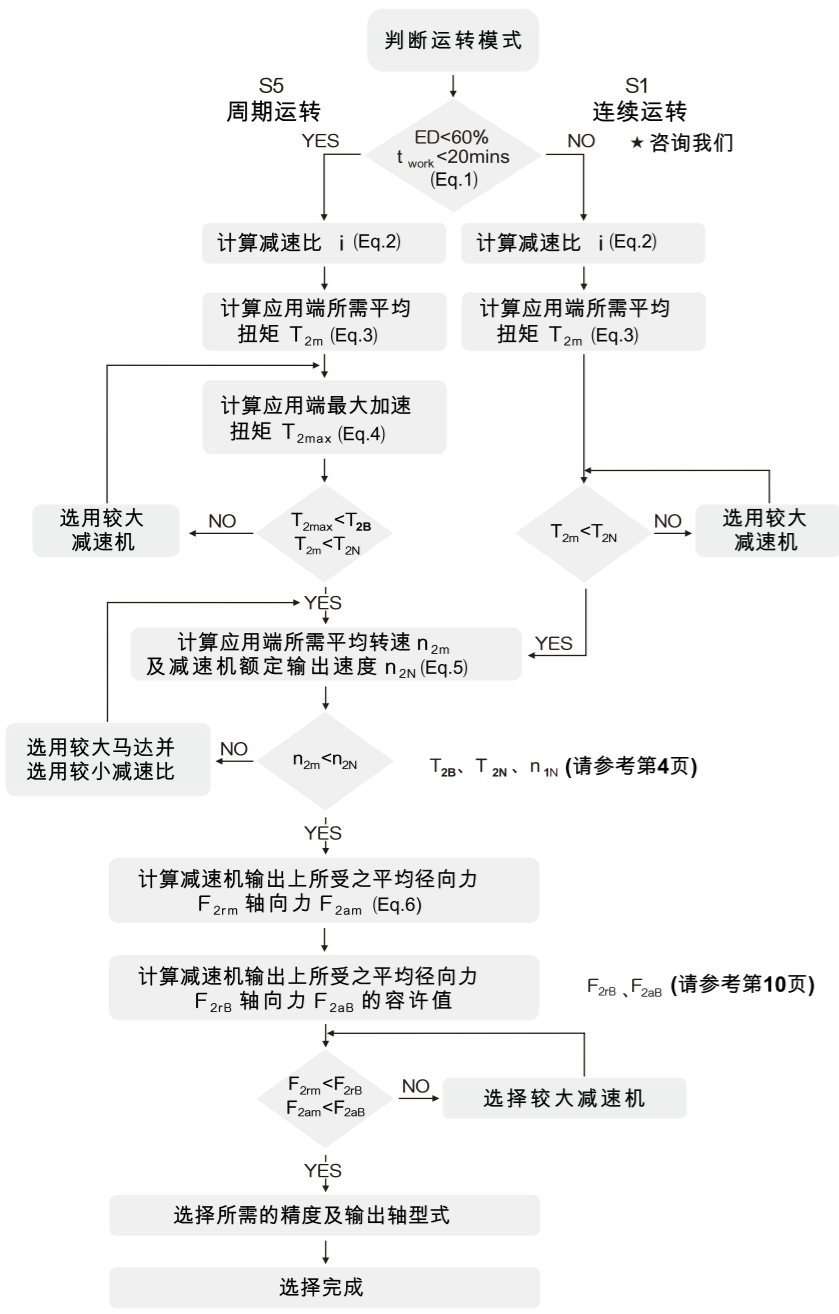


(单位: mm)

尺寸	FAT065 FC	FAT075 FC	FAT090 FC	FAT110 FC	FAT140 FC	FAT170 FC	FAT210 FC
D1	M4	M6	M6	M8	M10	M12	M16
D2 _{H6}	13	14	18	22	32	40	50
D3 _{H8}	16	16	22	25	44	50	62
D4 _{H7}	63	73	88	108	135	165	205
D14 _{H7}	63	73	88	108	135	165	205
D17	26	26	36	38	61	70	86
D18	41	41	50	50	80	90	110
L1	65	75	90	110	140	170	210
L2	14	14	18	18	24	26	29
L3	13	14.5	15	15	15	15	20
L4	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127
L8	66	72.5	85	95	116.5	133.5	161.5
L11	27	30	36	44	55	67	85
L13	13	15	15	15	15	15	20
L21	49	60.5	63	69.5	85.5	95	130
L22	81.5	98	108	124.5	155.5	180	235
L23	15	15	20	20	26	28	31
L24	15	15	20	20	26	28	31
L25	15	15	19.5	19.5	25.5	27.5	30.5
L26	18.5	18.5	23	23	29.5	31.5	34.5
C1 ¹³	46	70	100	100	130	165	215
C2 ¹³	M4	M5	M6	M6	M8	M10	M12
C3 ¹³	≤11/≤12 ¹⁴	≤14/≤15.875/≤16 ¹⁴	≤19	≤24	≤32	≤38	≤42
C4 ¹³	30	34	40	40	50	60	85
C5 ¹³	30	50	80	80	110	130	180
C6 ¹³	3.5	8	4	4	5	6	6
C7 ¹³	42	60	90	90	115	142	190
C8 ¹³	19.5	19	17	17	19.5	22.5	29
C9 ¹³	133.5	154.5	170	196.5	245	287.5	369
C10 ¹³	13.25	13.5	10.75	10.75	13	15	20.75

* C1~C10为公制马达规范尺寸, 可根据客户要求单独定做。
* C1~C10 are motor specific dimensions(metric std shown), which could be customised.
* FAT065 FCM1提供C3≤12选择; FAT075 FCM1提供C3≤16选择; FAT075 FCM2提供C3≤15.875选择。
* FAT065 FCM1 offers C3≤12 option; FAT075 FCM1 offers C3≤16 option; FAT075 FCM2 offers C3≤15.875 option.

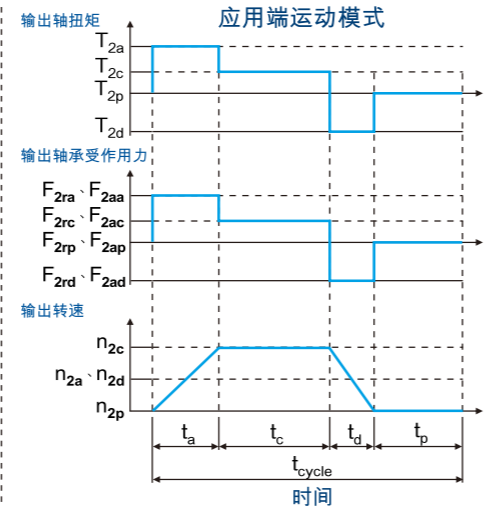
减速机的选用 / SELECTION OF THE OPTIMUM GEARBOX



S5周期运转之建议事项
一般的应用惯量须符合以下公式：
 $\frac{J_L}{i^2} \leq 4 \times J_m$

最适当的应用惯量须符合以下公式：
 $\frac{J_L}{i^2} \cong J_m$

J_L 负载惯量
 J_m 马达惯量



1. $ED = \frac{t_a + t_c + t_d}{t_{cycle}} \times 100\%$, $t_{work} = t_a + t_c + t_d$
下表说明：a. 加速, c. 等速, d. 减速, p. 停止 (Eq.1)

2. $i \cong \frac{n_m}{n_{work}}$
 n_m 马达输出速度
 n_{work} 实际应用速度 (Eq.2)

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

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

K_s 负载系数

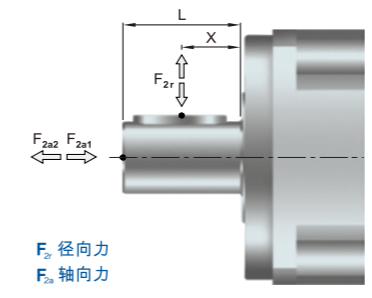
K_s	周期次数 / 小时
1.0	0~1,000
1.1	1,000 ~ 1,500
1.3	1,500 ~ 2,000
1.6	2,000 ~ 3,000
1.8	3,000 ~ 5,000
2.0	5,000 ~ 9,000
2.05	9,000 ~ 10,000
not recommended	above 10,000

T_{mB} 马达最大输出扭矩
 η 减速机运转效率 (Eq.4)

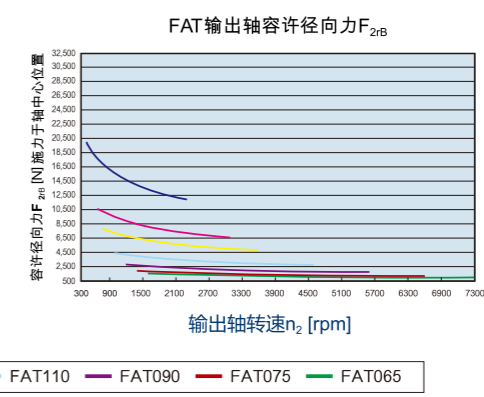
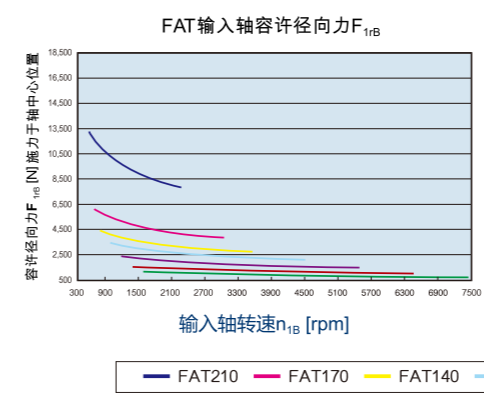
5. $n_{2a} = n_{2d} = \frac{1}{2} \times n_{2c}$
 $n_{2m} = \frac{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}{t_a + t_c + t_d}$
 $n_{2N} = \frac{n_{1N}}{i}$ (Eq.5)

6. $F_{2rm} = \sqrt[3]{\frac{n_{2a} \times t_a \times F_{2ra}^3 + n_{2c} \times t_c \times F_{2rc}^3 + n_{2d} \times t_d \times F_{2rd}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$
 $F_{2am} = \sqrt[3]{\frac{n_{2a} \times t_a \times F_{2aa}^3 + n_{2c} \times t_c \times F_{2ac}^3 + n_{2d} \times t_d \times F_{2ad}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ (Eq.6)

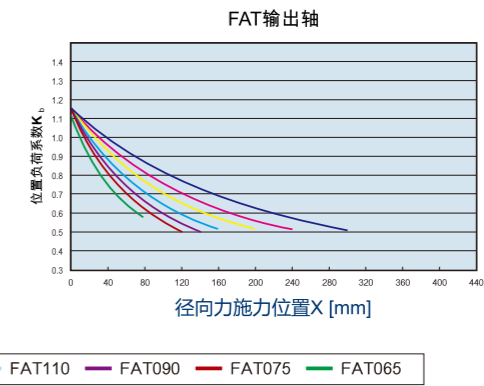
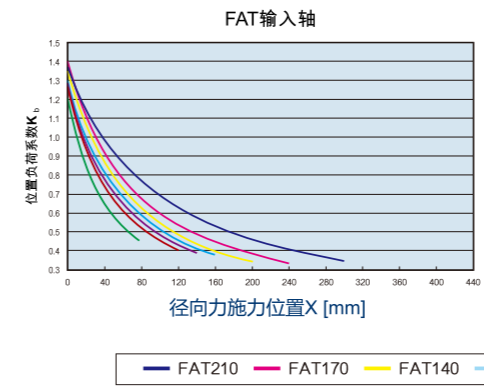
减速机输出轴的容许径向力及轴向力 PERMITTED RADIAL AND AXIAL LOADS



减速机输出轴所能承受之最大径向力及轴向力,端视内部支撑轴承之设计。三凯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。



当径向力 F_{2r} 施力于轴中心位置即 $X=1/2 \times L$ 时,不同规格之减速机在不同输出转速运用下,使用寿命为 20,000h 时,所能承受之容许径向力 F_{2rB} ,请参照左图。



当径向力 F_{2r} 不在轴中心位置时,越靠近减速机即 $X=1/2 \times L$ 时,所能承受之容许径向力变大,越远离减速机即 $X > 1/2 \times L$ 时,所能承受之容许径向力则变小,借由左图,依减速机规格及径向力施力位置 X ,查出位置负荷系数 K_b 。

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