TONGLI

股票代码 301255

TS系列减速机选型样本

二〇二四年

（总第十版）

入选《机械设计手册》选型标准

(化工工业出版社/机械工业出版社)

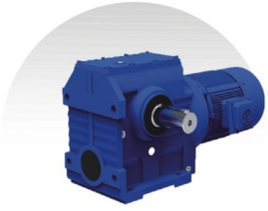
Listed in《Handbook of mechanical design》

as guideness of gearbox selection

STANDARD
PRODUCTS

标准产品

I TR系列斜齿轮硬齿面减速机
TR series Rigid Tooth Flank
Helical Gear Reducer



I TS系列斜齿-蜗轮蜗杆减速机
TS series Helical-worm
Gear Reducer

I TF系列平行轴斜齿轮减速机
TF series Parallel Shaft
Helical Gear Reducer

I TK系列螺旋锥齿轮减速机
TK series Helical-bevel
Gear Reducer

I TH系列硬齿面齿轮减速机
TH series Rigid Tooth Flank
Gearbox

I TB系列硬齿面齿轮减速机
TB series Rigid Tooth Flank
Gearbox

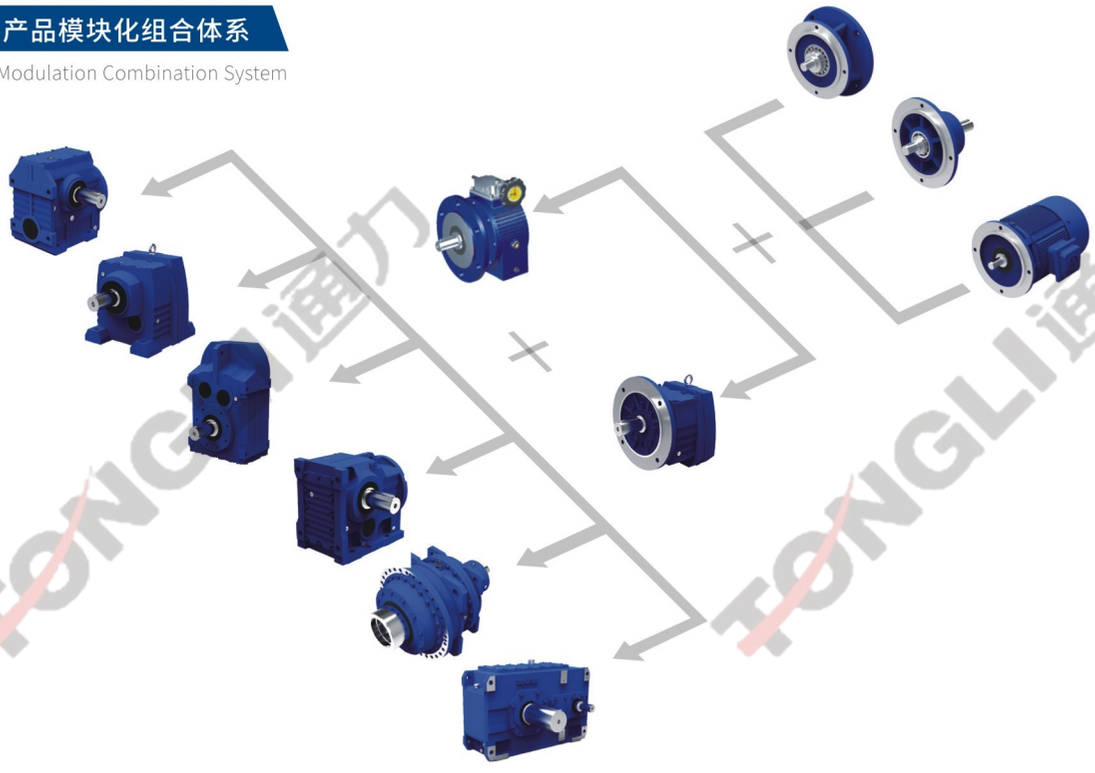
I SJ系列涡轮丝杆升降机
SJ series Worm Screw
elevators

I Z系列螺旋锥齿减速机
Z series Spiral Bevel
Gear Reducer

I TP系列行星齿轮减速机
TP series Planetary
Gear Units

通力产品模块化组合体系

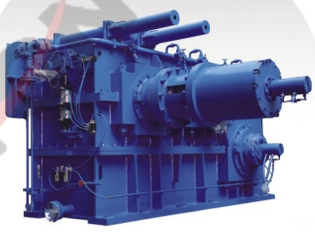
TONGLI Modulation Combination System



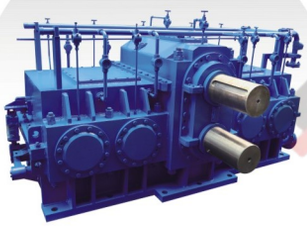
PROFESSIONAL
CUSTOMIZATION

专业定制

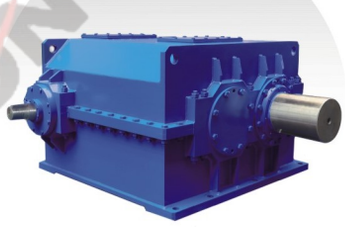
TONGLI通力



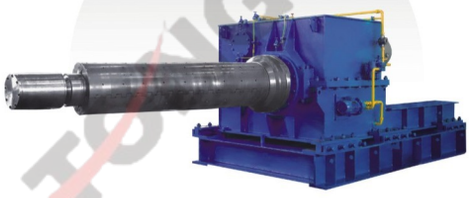
粗轧卷取机用减速机
Uncoiler Specialized Gearbox



粗轧机用主减速机
Rolling Mill Specialized Gearbox

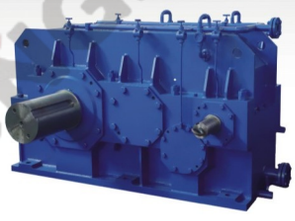


刮板输送机用减速机
Scraper Conveyor Specialized Gearbox

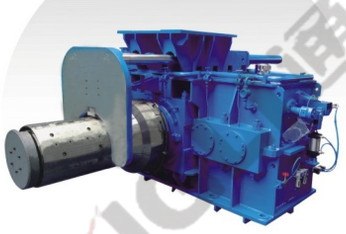


开收卷机用减速机
Uncoiler Specialized Gearbox

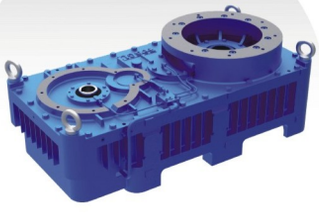
棕榈油专用减速机
Palm Oil Specialized Gearbox



干燥窑用减速机
Dry Kiln Specialized Gearbox



精轧卷取机用减速机
Precision Uncoiler Specialized Gearbox



颗粒机专用减速机
Granulator Specialized Gearbox

启闭机用减速机
Hoist Specialized Gearbox

ENTERPRISE
PROFILE

公司简介

浙江通力传动科技股份有限公司创建于2008年，是一家专业从事减速机研发生产、销售及服务的国家高新技术企业、国家级绿色工厂、国家专精特新“小巨人”企业，下辖通用减速机、工业齿轮箱二大生产基地。公司于2022年12月27日在深交所创业板上市（股票简称:通力科技，股票代码:301255)，经过十余年的稳健发展和技术积累，公司现已成为中国减速机行业的知名企业之一，在技术、装备、产品性能等方面均处于国内先进水平。近年来，通力作为起草单位参与制定了4项减速机国家标准与行业标准;拥有多项核心技术专利，自主研发多个系列减速机 (齿轮箱)产品，其中部分产品被列为国家重点新产品和国家火炬计划项目。

通力主导产品通用减速机、工业齿轮箱广泛应用于治金、化工、环保、能源、制药、起重、输送、建材、粮油等国民经济的支柱产业领域。先后为中国一重、中国二重、中国中冶、中粮集团、青山控股、齐鲁制药、宁德时代、中央电视台春晚舞台、北京冬奥会、杭州亚运会等国内大型工业企业及国家重点工程项目提供高性能的配套减速机，并出口东南亚、南美、中东等国家和地区，获得国内外众多客户的首肯和赞许。

Zhejiang TONGLI Transmission Technology Co., LTD. established in 2008 and is a National High-tech Enterprise and National Specialized New Little Giant Enterprise which engaged in gearbox R & D, manufacturing, sales and service. At present, TONGLI has two production bases for general reducer and industrial gearbox. On 27th Dec. 2022, TONGLI was floated on GEM of Shenzhen Stock Exchange (Stock for short: TONGLI Tech., Stock code: 301255). After more than 10 years of steady development and technical accumulation, TONGLI has become one of the well-known enterprises in China reducer industry, and in the domestic advanced level in technology, equipment, product performance and other aspects. In recent years, as a drafting unit, TONGLI has participated in the formulation of four national and industry standards for reducer, owns a number of core technology patents and independently developed a number of series of reducer and gearbox. Some products have been listed as national key new products and national torch plan projects. TONGLI's leading products are widely used in Metallurgy, Chemical, Environmental protection, Energy, Pharmaceutical, Hoist, Transportation, Building materials, Grain and oil and other pillar industries of the national economy. At the same time, TONGLI successively provide high performance matching gearbox for CFHI, CNEG, MCC Group, COFCO, Tsingshan Holding, QILU Pharmaceutical, CATL, the CCTV Spring Festival Gala stage, Beijing Winter Olympics and other large domestic industrial enterprises and national key projects. TONGLI gearbox exported to Southeast Asia, South America, the Middle East and other countries and regions, and obtained many approvals and praises from home and abroad customers.

通力产品选型信息：

客户：				浙江通力传动科技股份有限公司	
联系人		电话		销售员	
E-MAIL		传真		电 话	
地址				时 间	年 月 日
工作机	设备名称：				
额定功率： kw		工作扭矩： N.m		转速： r/min	
日工作制：（1）≤ 0.5h (2) 0.5–10h (3) > 10h					
环境温度： ℃	海拔高度： m		起动扭矩： N.m	起动频率： 次/h	
冲击载荷：（1）强烈冲击（2）中等冲击（3）轻微冲击（4）没有冲击				冲击载荷频率： 次/h	
安装空间（1）狭小空间 风速 ≤ 0.5m/s （2）大厅或大车间 风速 ≥1.4 m/s（3）室外 风速 ≥ 4 m/s			使用场合: (1) 普通 (2) 腐蚀 (3) 盐雾 (4) 粉尘		
原动机	原动机名称		原动机型号		
原动机描述（如功率、转速、制动等）					
电机型号：			类别：（1）普通电机（2）辊道电机（3）其他电机		
功能特性（可多选）：（1）制动（2）防爆（3）变频调速（4）其他					
参数及性能	电机功率： KW		电机极数	基准频率： Hz	
额定电压： V	额定电流： A		防护等级：	绝缘等级：	
其他： 注：用户自配电机时请提供电动机的联接尺寸图					
减速机要求	要求的产品系列：		安装型式（根据样本选取）		
输出轴方式：（1）单向实心轴（2）双向实心轴（3）平键空心轴（4）锁紧盘空心轴（5）内花键空心轴（6）外花键实心轴					
原动机与减速机的联接方式：（1）直联（无联接法兰）（2）直联（有联接法兰）（3）联轴器（4）皮带轮（5）链轮					
工作机与减速机的联接方式：（1）直联（2）齿轮（3）联轴器（4）皮带轮（5）链轮					
输出轴与输入轴之间的结构形式：（1）平行轴（2）直交轴（3）同轴					
电机接线盒位置（根据样本选取）：(1)Ⅰ(0°) (2)Ⅱ(270°) (3)Ⅲ(180°) (4)Ⅳ(90°) (5)Ⅴ(0°) (6)Ⅵ(270°) (7)Ⅶ(180°) (8)Ⅷ(90°)					
附件及其他要求：					
输入轴、输出轴法兰及锁紧盘方向：					
输入轴旋转方向①：			输出轴旋转方向①：		
输入轴外部径向力及作用点：					
输出轴外部径向力及作用点：					
输入轴外部轴向力及方向：			输出轴外部轴向力及方向：		
减速机的其他特殊要求：					
预选型号：					

①TB、TP..L、TP..K型减速机必须填写，TK系列只需填输出轴旋向，其他可不填。
②本选型信息表适用于TH、TB、TP、TR、TK、TF、TS系列减速机。
注：请在数字下面打 √

轴端螺纹孔，配合公差，平键和键槽

Centre Holes in Shaft Ends, Fit tolerance and Parallel Key and Keyway

轴端螺纹孔 Centre holes in shaft end										mm
轴径 Φd Diameter	≥16~21	>21~24	>24~30	>30~38	>38~50	>50~85	>85~130	>130~225	>225~320	>320~500
螺孔尺寸 Screw	M6×12	M8×16	M10×20	M12×20	M16×30	M20×35	M24×40	M30×50	M36×60	M42×70

配合公差Selection of ISO Fits			
轴径 Shaft d/mm		轴径公差 Shaft tolerance	孔公差 Bore tolerance
	≤25	k6	H7
>25	≤100	m6	H7
>100		n6	H7

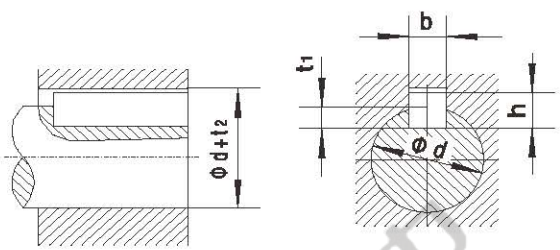
平键和键槽 Parallel key and keyway mm

平键紧固采用无锥度联接.

平键和键槽根据GB/T1095-1979标准确定

Drive type fastening without taper action.

Parallel key and keyway acc. to GB/T 1095-1979



直径 Diameter d	宽度 Width b	高度 Height h	轴键槽深度 Depth of keyway in shaft t_1	轮毂键槽深度 Depth of keyway in hub $d+t_2$
>8-10	3	3	1.8	d+1.4
>10-12	4	4	2.5	d+1.8
>12-17	5	5	3	d+2.3
>17-22	6	6	3.5	d+2.8
>22-30	8	7	4	d+3.3
>30-38	10	8	5	d+3.3
>38-44	12	8	5	d+3.3
>44-50	14	9	5.5	d+3.8
>50-58	16	10	6	d+4.3
>58-65	18	11	7	d+4.4
>65-75	20	12	7.5	d+4.9
>75-85	22	14	9	d+5.4
>85-95	25	14	9	d+5.4
>95-110	28	16	10	d+6.4
>110-130	32	18	11	d+7.4
>130-150	36	20	12	d+8.4
>150-170	40	22	13	d+9.4
>170-200	45	25	15	d+10.4
>200-230	50	28	17	d+11.4
>230-260	56	32	20	d+12.4
>260-290	63	32	20	d+12.4
>290-330	70	36	22	d+14.4
>330-380	80	40	25	d+15.4
>380-440	90	45	28	d+17.4
>440-500	100	50	31	d+19.4

注：配合公差仅为推荐值

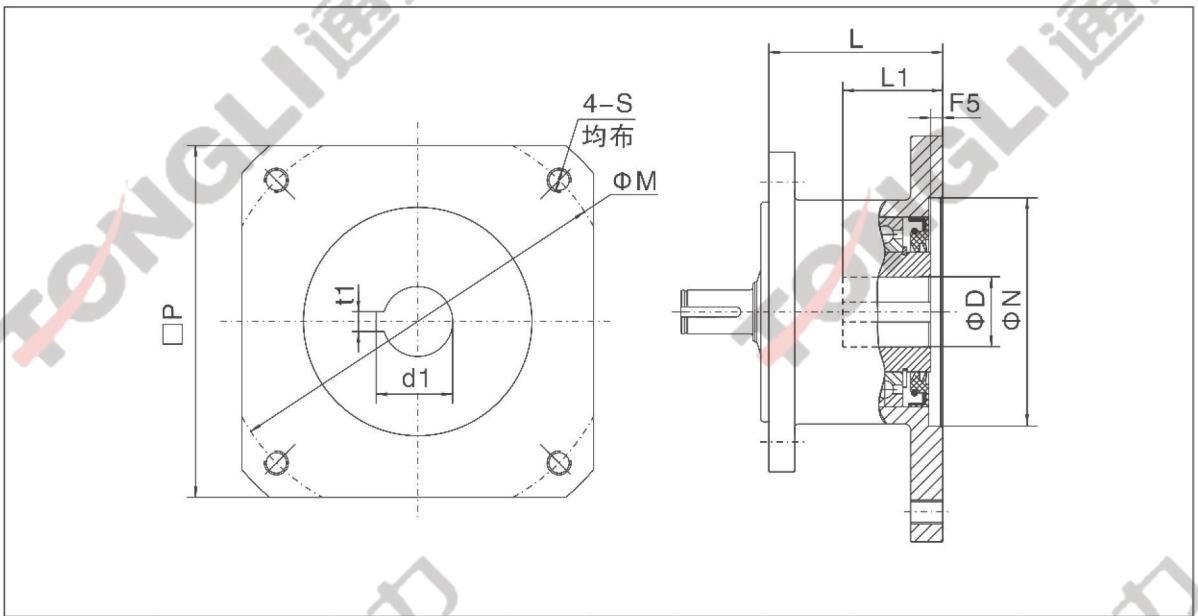
TS系列实际传动比

TS38	TS48	TS58	TS68	TS78	TS88	TS98
165.71	244.74	196.21	227.20	241.09	329.81	283.04
152.00	228.75	180.40	205.11	206.04	292.50	254.80
129.41	197.73	154.35	180.46	188.89	289.22	230.48
111.58	168.00	133.79	170.40	165.75	256.50	207.48
104.00	150.00	125.05	144.00	157.08	245.87	187.89
90.91	146.84	108.09	130.00	137.48	215.61	166.62
85.22	137.25	91.84	114.38	123.86	198.00	150.64
75.20	118.64	82.00	108.00	108.65	166.43	127.68
66.67	100.80	70.04	91.96	95.88	152.95	111.52
56.67	90.00	66.89	83.57	92.18	135.83	93.27
52.80	76.88	65.60	72.39	85.00	121.44	83.31
52.00	72.00	62.53	65.00	78.78	109.19	80.75
45.45	68.63	54.05	63.00	72.22	94.77	75.32
42.61	60.65	45.92	57.19	63.38	84.86	63.84
37.60	59.32	41.00	54.00	60.06	75.63	55.76
33.33	50.40	35.02	45.98	52.57	70.40	46.64
28.33	45.00	32.80	41.79	47.36	67.62	40.38
26.40	38.44	30.12	36.20	41.54	60.80	36.39
23.46	36.00	26.11	31.50	36.66	52.77	32.76
20.22	30.33	24.40	26.40	32.50	47.25	29.67
18.85	27.74	21.09	23.83	27.75	42.47	26.31
16.48	25.93	17.92	20.97	25.79	39.20	23.79
15.45	22.41	16.00	19.80	22.75	38.25	20.16
13.63	19.04	13.67	16.86	21.56	34.09	17.61
12.08	17.00	12.80	15.32	18.87	32.15	14.73
10.27	14.52	10.78	13.27	17.00	29.55	12.75
9.57	13.60		11.55	14.91	26.24	
	11.46			13.16	23.46	
				11.67	21.09	
				9.96	18.31	
					16.39	
					13.60	
					11.83	

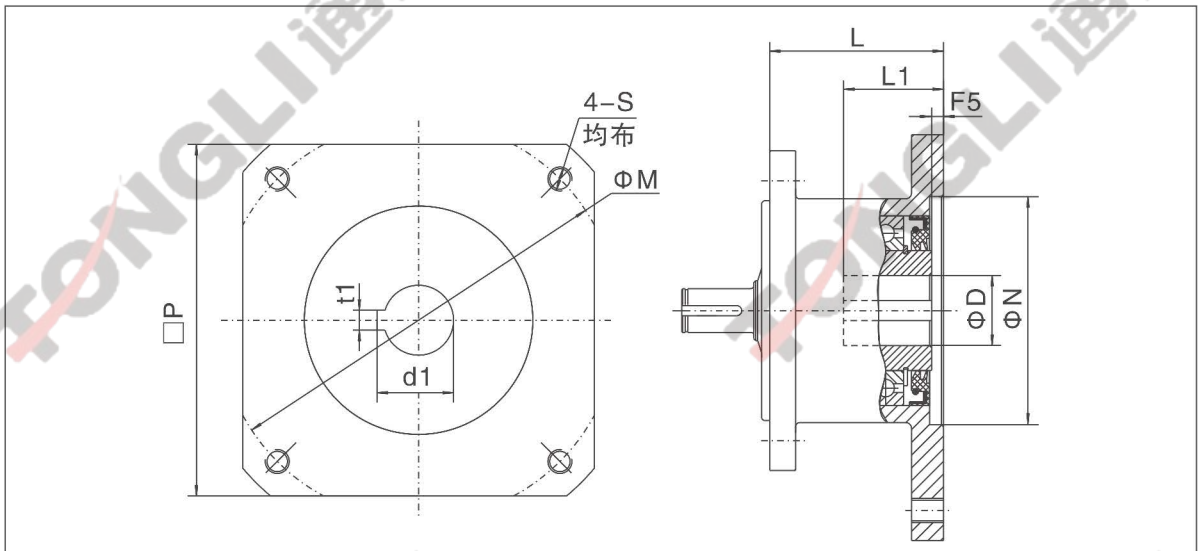
TS...TR...系列实际传动比

TS38TR18	TS48TR18	TS58TR18	TS68TR38	TS78TR38	TS88TR58	TS98TR58
174	391	577	1043	3107	5874	8606
163	342	504	912	2075	5236	7513
144	295	431	807	1794	4571	6710
128	256	390	716	1730	3874	5767
109	229	332	616	1609	3483	4964
	203	288	541	1412	2928	4433
	183	268	467	1224	2556	4018
	162	231	423	1098	2369	3479
		202	367	957	2078	3107
		189	319	840	1852	2642
		167	281	711	1657	2331
		134	247	641	1322	2082
			222	576	1179	1827
			199	505	1022	1566
			169	430	919	1399
				388	852	1231
				327	713	1072
				290	607	943
				246	552	824
				216	479	702
					433	627
					373	534
					327	485
					275	420
					257	372
					222	322
					207	281
						245
						205

伺服电机联接法兰

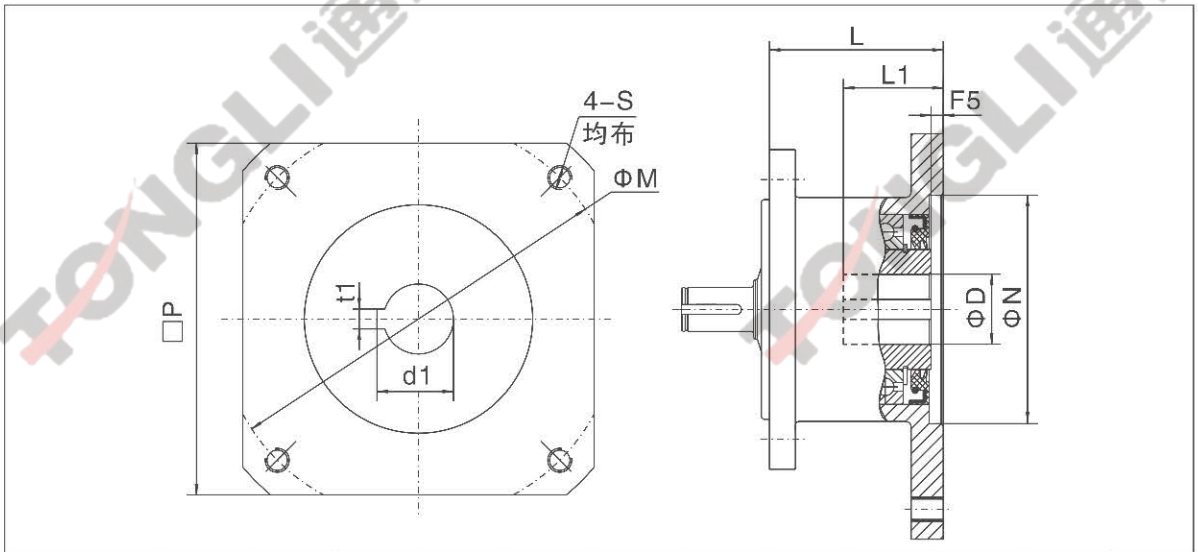


机型	代号		□P	M	N	F5	L	S	D	t1	d1	L1
TR18,28,38 TF38,48 TK38 TS38,48,58	SF71	-1	60	70	50	5	56	M5	14	5	16.3	35
	SF80	-1	80	90	70	4	64	M6	19	6	21.8	45
		-2	90	100	80	5	64	M6	19	6	21.8	45
		-3	96	100	80	4	64	M6	19	6	21.8	45
		-4	110	130	95	4	64	M8	19	6	21.8	45
		-5	130	145	110	8	66	M8	22	8	25.3	55
	SF90	-1	100	115	95	8	66	M6	24	8	27.3	55
		-2	126	130	110	5	66	M8	24	8	27.3	55
	SF100	-1	130	145	110	7	68	M8	28	8	31.3	65
TR48,58,68 TF58,68 TK48,58,68 TS68 TRX58,68	SF71	-1	60	70	50	5	58	M5	14	5	16.3	35
	SF80	-1	80	90	70	5	75	M6	19	6	21.8	45
		-2	96.5	100	80	5	75	M6	19	6	21.8	45
		-3	110	130	95	6	75	M8	19	6	21.8	45
	SF90	-1	100	115	95	7	76	M8	22	8	25.3	55
		-2	130	145	110	6	76	M8	22	8	25.3	55
		-3	126	130	110	5	76	M8	24	8	27.3	55
		-4	142	165	130	4	76	M10	24	8	27.3	55
		-5	100	115	95	8	77	M6	24	8	27.3	55
	SF100	-1	145	165	130	4	77	M10	24	8	27.3	55
		-2	140	165	130	4	77	M10	28	8	31.3	65
		-3	130	145	110	7	77	M8	28	8	31.3	65
	SF132	-1	155	165	130	4	88	M10	32	10	35.3	80
		-2	180	200	114.3	6	88	M12	35	10	38.3	80
		-3	192	215	180	5	88	M12	38	10	41.3	80

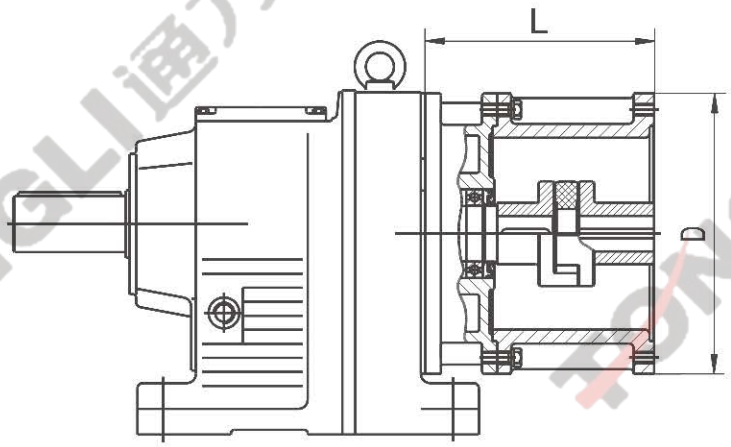


机型	代号		□P	M	N	F5	L	S	D	t1	d1	L1
TR78 TF78 TK78 TS78 TRX78	SF71	-1	60	70	50	5	33	M5	14	5	16.3	35
	SF80	-1	110	130	95	4	66	M8	19	6	21.8	45
		-2	80	90	70	5	67	M6	19	6	21.8	45
	SF90	-1	100	115	95	7	70	M8	22	8	25.3	55
		-2	130	145	110	10	73	M8	22	8	25.3	55
		-3	126	130	110	5	68	M8	24	8	27.3	55
		-4	143	165	130	5	68	M10	24	8	27.3	55
		-5	100	115	95	8	71	M6	24	8	27.3	55
	SF100	-1	150	165	130	5	68	M10	28	8	31.3	65
		-2	130	145	110	8	73	M8	28	8	31.3	65
	SF132	-1	155	165	130	6	73	M10	32	10	35.3	80
		-2	180	200	114.3	6	76	M12	35	10	38.3	80
		-3	192	215	180	5	73	M12	38	10	41.3	80
		-4	224	215	180	5	73	M12	38	10	41.3	80
	SF160	-1	180	200	114.3	5	104	M12	42	12	45.3	115
TR88 TF88 TK88 TS88 TRX88	SF80	-1	100	115	95	4	73	M8	19	6	21.8	45
		-2	80	90	70	5	74	M6	19	6	21.8	45
	SF90	-1	130	145	110	6	73	M8	22	8	25.3	55
		-2	100	115	95	9	78	M6	24	8	27.3	55
	SF100	-1	150	165	130	5	74	M10	28	8	31.3	65
		-2	130	145	110	7	76	M8	28	8	31.3	70
	SF132	-1	155	165	130	5	88	M10	32	10	35.3	80
		-2	180	200	114.3	6	88	M12	35	10	38.3	80
		-3	192	215	180	5	88	M12	38	10	41.3	80
	SF160	-1	180	200	114.3	5	99	M12	42	12	45.3	115

伺服电机联接法兰



机型	代号		□P	M	N	F5	L	S	D	t1	d1	L1
TR98 TF98 TK98 TS98 TRX98	SF90	-1	130	145	110	7	68	M8	22	8	25.3	55
		-2	100	115	95	9	58	M6	24	8	27.3	55
	SF100	-1	130	145	110	7	56	M8	28	8	31.3	70
	SF132	-1	155	165	130	5	83	M10	28	8	31.3	65
		-2	192	215	180	5	83	M12	32	10	35.3	80
		-3	180	200	114.3	7	83	M12	35	10	38.3	80
		-4	185	215	180	5	83	M12	38	10	41.3	80
	SF160	-1	180	200	114.3	5	119	M12	42	12	45.3	115
TR108 TF108 TK108 TRX108	SF100	-1	130	145	110	7	59	M8	28	8	31.3	70
	SF132	-1	190	215	180	5	83	M12	38	10	41.3	80
		-2	180	200	114.3	7	81	M12	35	10	38.3	80
	SF160	-1	180	200	114.3	5	114	M12	42	12	45.3	115
	SF180	-1	260	300	250	5	113	M16	48	14	51.8	110
TR138	SF132	-1	196	215	180	7	78	M12	38	10	41.3	80
		-2	180	200	114.3	7	79	M12	35	10	38.3	80
	SF160	-1	180	200	114.3	5	93	M12	42	12	45.3	115
TK128 TRX128 TF128 TR148	SF132	-1	180	200	114.3	7	61	M12	35	10	38.3	80
	SF160	-1	180	200	114.3	5	97	M12	42	12	45.3	115
TK158 TK168 TK188 TRX158 TF158 TR168	SF160	-1	180	200	114.3	5	90	M12	42	12	45.3	115



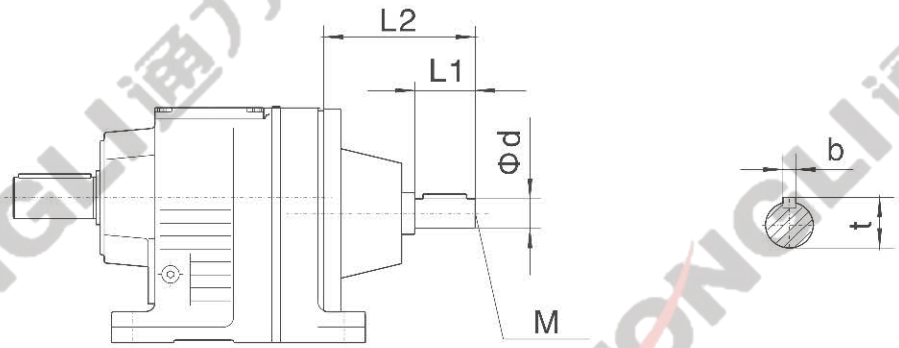
输入配IEC标准接口电机，TR、TRX、TS、TF、TK系列通用

规格	电机功率	D	L
TRX38、TR18、TR28、TR38、TS38、TS48、TS58、TK38、TF38、TF48	0.55~1.5kW	Φ200	168
	2.2~3kW	Φ250	189.5
TRX58、TRX68、TR48、TR58、TR68、TS68、TK48、TK58、TK68、TF58、TF68	0.55~1.5kW	Φ200	178
	2.2~4kW	Φ250	200.5
	5.5~7.5kW	Φ300	250
TRX78、TR78、TS78、TK78、TF78	0.55~1.5kW	Φ200	169.5
	2.2~4kW	Φ250	191.5
	5.5~7.5kW	Φ300	236
	11kW	Φ350	328
TRX88、TR88、TS88、TK88、TF88	0.75~1.5kW	Φ200	177
	2.2~4kW	Φ250	198.5
	5.5~7.5kW	Φ300	251
	11~22kW	Φ350	324
TRX98、TR98、TS98、TK98、TF98	0.75~1.5kW	Φ200	156
	2.2~4kW	Φ250	176.5
	5.5~7.5kW	Φ300	245
	11~22kW	Φ350	342
	30kW	Φ400	342

规格	电机功率	D	L
TRX108、TR108、TR128、TK108、TF108	2.2~4kW	Φ250	181.5
	5.5~7.5kW	Φ300	245
	11~22kW	Φ350	341
	30kW	Φ400	339
	37~45kW	Φ450	411
TR138	5.5~7.5kW	Φ300	240
	11~22kW	Φ350	318
	30kW	Φ400	338
	37~45kW	Φ450	404
	55kW	Φ550	437
TRX128、TR148、TK128、TF128	7.5kW	Φ300	223
	11~22kW	Φ350	322
	30kW	Φ400	327
	37~45kW	Φ450	405
	55~90kW	Φ550	415
TRX158、TR168、TR178、TR188、TK158、TK168、TK188、TF158、TF168、TF178	11~22kW	Φ350	315(348)
	30kW	Φ400	320(353)
	37~45kW	Φ450	410(443)
	55~90kW	Φ550	423(456)

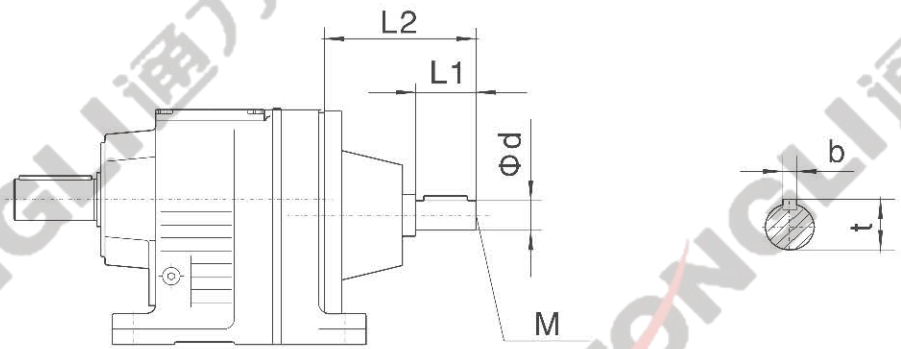
注：TR188、TF178为括号内数据

输入带轴



TR、TRX、TS、TF、TK系列输入带轴通用

规格	输入轴型号	适用功率范围	d	L1	L2	b	t	M
TRX38、TR18、TR28、TR38、TS38、TS48、TS58、TK38、TF38、TF48	AD1	0.12-0.75kW	16k6	40	115	5	18	M5
	AD2	0.12-3kW	19k6	40	115	6	21.5	M6
TRX58、TRX68、TR48、TR58、TR68、TS68、TK48、TK58、TK68、TF58、TF68	AD2	0.18-3kW	19k6	40	120	6	21.5	M6
	AD2A	0.25-4kW	24k6	50	130	8	27	M8
	AD3	0.55-7.5kW	28k6	60	140	8	31	M10
TRX78、TR78、TS78、TK78、TF78	AD2	0.18-3kW	19k6	40	130	6	21.5	M6
	AD2A	0.25-4kW	24k6	50	140	8	27	M8
	AD3	0.55-7.5kW	28k6	60	150	8	31	M10
	AD4	1.1-11kW	38k6	80	170	10	41	M12
TRX88、TR88、TS88、TK88、TF88	AD2	0.55-3kW	19k6	40	160	6	21.5	M6
	AD3	0.55-7.5kW	28k6	60	180	8	31	M10
	AD4	1.1-15kW	38k6	80	200	10	41	M12
	AD5	2.2-22kW	42k6	110	230	12	45	M16
TRX98、TR98、TS98、TK98、TF98	AD3	0.55-7.5kW	28k6	60	200	8	31	M10
	AD4	1.1-15kW	38k6	80	220	10	41	M12
	AD5	2.2-22kW	42k6	110	250	12	45	M16
	AD6	5.5-30kW	48k6	110	250	14	51.5	M16



TR、TRX、TS、TF、TK系列输入带轴通用

规格	输入轴型号	适用功率范围	d	L1	L2	b	t	M
TRX108、TR108、TR128、TK108、TF108	AD3	2.2-7.5kW	28k6	60	220	8	31	M10
	AD4	2.2-15kW	38k6	80	240	10	41	M12
	AD5	2.2-22kW	42k6	110	270	12	45	M16
	AD6	5.5-45kW	48k6	110	270	14	51.5	M16
TR138	AD4	5.5-15kW	38k6	80	277	10	41	M12
	AD5	5.5-22kW	42k6	110	307	12	45	M16
	AD6	5.5-30kW	48k6	110	307	14	51.5	M16
	AD7	5.5-45kW	55k6	110	307	16	59	M20
	AD8	30-55kW	70k6	140	337	20	74.5	M20
TRX128、TR148、TK128、TF128	AD4	7.5-15kW	38k6	80	267	10	41	M12
	AD5	7.5-22kW	42k6	110	297	12	45	M16
	AD6	7.5-30kW	48k6	110	297	14	51.5	M16
	AD7	11-45kW	55k6	110	297	16	59	M20
	AD8	30-90kW	70k6	140	327	20	74.5	M20
TRX158、TR168、TR178、TR188、TK158、TK168、TK188、TF158、TF168、TF178	AD5	11-22kW	42k6	110	344[1)]	12	45	M16
	AD6	11-30kW	48k6	110	344[1)]	14	51.5	M16
	AD7	11-45kW	55k6	110	344[1)]	16	59	M20
	AD8	30-200kW	70k6	140	374[2)]	20	74.5	M20

注:1）表示TR188、TF178时该尺寸为337　　2）表示TR188、TF178时该尺寸为367

性能特点
Performance characteristics

- TR系列斜齿轮硬齿面减速机、TK系列螺旋锥齿轮减速机、TF系列平行轴斜齿轮减速机、TS系列斜齿-蜗轮蜗杆减速机，Z系列螺旋锥齿轮减速机，具有体积小，传递扭矩大的特点。
- 在模块组合体系基础上设计制造，有极多的电机组合、安装型式和结构方案，传动比分级细密，满足不同的使用工况，实现机电一体化。
- TR、TK、TF、TS四大系列减速机采用单元结构模块化设计原理，大量减少了零部件种类和库存量，也大大的缩短了交货周期。
- 传动效率高，耗能低，性能优越。
- 带筋的高刚性铸铁箱体；硬齿面齿轮采用优质合金钢，表面经渗碳淬火硬化处理，磨齿精细加工，传动平稳、噪声低、承载能力大，温升低、寿命长。

- TR series rigid tooth flank helical gear units, TK series helical-bevel gear units, TF series parallel shaft helical gear units, TS series helical-worm gear units, Z series spiral bevel gear units, have such outstanding characters as small size and large transmission torque.
- Designed and manufactured on the basis of modular porfolio system, the gear units have abundant combinations with motors, numbers of mounting positions and structure schemes, and a finer grade of transmission ratio, which meet the requirements of various working conditions and realize mechatronics.
- TR, TK, TF, TS four main series gear units adopt the modular cell structure design, which greatly reduced the classification and inventory of parts, and thus the delivery cycle is signifi-cantly shortened.
- High efficiency transmission, low energy consumption and superior performance.
- High rigid cast iron housing with ribs. The rigid tooth flank gear adopts high-quality alloy steel, and is hardened with carburizing and quenching treatment and refined by grinding. Smooth drive, low noise, large load capacity and long service life.

选型方法
Type selection method

- 减速机是按载荷平稳，每天工作时间一定和少量起停次数的情况设计的，而在实际使用中往往不是处于此种理想状况，因此必须按照实际情况的载荷类型、运行时间、起动频率来确定工作机系数f_1、减速器安全系数f_2、起动系数f_3。使其小于或等于选型表中的服务系数f_B,即

$$f_1 \times f_2 \times f_3 \leqslant f_B$$

式中

f_1 — 工作机系数 (见表1)

f_2 — 减速器安全系数 (见表2)

f_3 — 起动系数 (见表3)

- TK系列和Z系列螺旋锥齿轮减速机如果只承受单向载荷则最好注明旋转方向（从输出端方向看），这样有利于改善螺旋锥齿轮的受力状况。
- 输入、输出轴配带轮、链轮、齿轮或会产生其他附加载荷等情况，请与我公司联系
- 我公司可承接特殊规格产品的订货，并可为客户提供专用设计服务。
- 本样本中如有改进之处，不另作通知，请谅解。
- 四大系列减速机98机座以下在出厂前已加润滑油，108机座以上出厂前不加润滑油。

- Gear units are designed under the circumstance of steady load, stated operating time per day and a few sarting times.but the practical condition will be not as perfect as the designed circ-umstance.so we must confirm driven machine factor f_1, gear units safety factor f_2,starting factor f_3 according to actual load type, operating time,starting frequency.let it less than or equale to the service factor f_B of selection table,viz

$$f_1 \times f_2 \times f_3 \leqslant f_B$$

In the formula

f_1 — driven machine factor(see table 1)

f_2 — gear units safety factor(see table 2)

f_3 — starting factor(see table 3)

- If the TK series and Z series spiral bevel gear units can only bear single direction load, please indicate the rotating direction (see from output side), which is good for improving the pressing state of the spiral bevel gear.
- Input, output shaft equipped with wheel, sprocket, gear or can generate additional load and so on, please contact our company.
- We accept the orders of products of special specification, and provide our customer with exclusive design service.
- Design and specifications are subject to change without notice, Please forgive
- The four series gearbox under 98`s have added lubricating oil before leave the factroy,but 108`s and above didn`t add lubricating oil.

减速器服务系数

表1　　工作机系数　　f_1

工作机		日工作小时数			工作机		日工作小时数		
		≤0.5h	0.5-10h	>10h			≤0.5h	0.5-10h	>10h
污水处理	浓缩器(中心传动)	–	–	1.2	金属加工设备	可逆式板坯轧机	–	2.5	2.5
	压滤器	1.0	1.3	1.5		可逆式线材轧机	–	1.8	1.8
	絮凝器	0.8	1.0	1.3		可逆式薄板轧机	–	2.0	2.0
	曝气机	–	1.8	2.0		可逆式中厚板轧机	–	1.8	1.8
	搜集设备	1.0	1.2	1.3		辊缝调节驱动装置	0.9	1.0	–
	纵向、回转组合搜集装置	1.0	1.3	1.5	输送机械	斗式输送机	–	1.2	1.5
	预浓缩器	–	1.1	1.3		绞车	1.4	1.6	1.6
	螺杆泵	–	1.3	1.5		卷扬机		1.5	1.8
	水轮机	–	–	2.0		皮带输送机<150kw	1.0	1.2	1.3
	离心泵	1.0	1.2	1.3		皮带输送机≥150kw	1.1	1.3	1.5
	1个活塞容积式泵	1.3	1.4	1.8		货用电梯*	–	1.2	1.5
	>1个活塞容积式泵	1.2	1.4	1.5		客用电梯*		1.5	1.8
挖泥机	斗式运输机	–	1.6	1.6		刮板式输送机	–	1.2	1.5
	倾卸装置	–	1.3	1.5		自动扶梯		1.2	1.4
	Carteypillar行走机构	1.2	1.6	1.8		轨道行走机构	–	1.5	–
	斗轮式挖掘机(用于捡拾)	–	1.7	1.7	变频装置		–	1.8	2.0
	斗轮式挖掘机(用于粗料)	–	2.2	2.2	往复式压缩机		–	1.8	1.9
	切碎机	–	2.2	2.2	起重机械	回转机构 *	1.0	1.4	1.8
	行走机构*		1.4	1.8		俯仰机构	1.0	1.25	1.5
弯板机*		–	1.0	1.0		行走机构	1.5	1.75	2.0
化学工业	挤压机	–	–	1.6		提升机构 *	1.0	1.25	1.5
	调浆机	–	1.8	1.8		转臂式起重机*	1.0	1.25	1.6
	橡胶砑光机	–	1.5	1.5	冷却塔	冷却塔风扇	–	–	2.0
	冷却圆筒	–	1.3	1.4		风机(轴流和离心式)	–	1.4	1.5
	混料机,用于均匀介质	1.0	1.3	1.4	蔗糖生产	甘蔗切碎机*	–	–	1.7
	混料机,用于非均匀介质	1.4	1.6	1.7		甘蔗碾磨机	–	–	1.7
	搅拌机,用于密度均匀介质	1.0	1.3	1.5	甜菜糖生产	甜菜绞碎机	–	–	1.2
	搅拌机,用于非均匀介质	1.2	1.4	1.6		抽取机,机械致冷机,蒸煮机	–	–	1.4
	搅拌机,用于不均匀气体吸收	1.4	1.6	1.8		甜菜清洗机	–	–	1.5
	烘炉	1.0	1.3	1.5		甜菜切碎机	–	–	1.5
	离心机	1.0	1.2	1.3	造纸机械	各种类型**	–	1.8	2.0
金属加工设备	翻板机	1.0	1.0	1.2		碎浆机驱动装置	2.0	2.0	2.0
	推钢机	1.0	1.2	1.2	离心式压缩机		–	1.4	1.5
	绕线机	–	1.6	1.6	索道缆车	运货索道	–	1.3	1.4
	冷床横移架	–	1.5	1.5		往返系统空中索道	–	1.6	1.8
	辊式矫直机	–	1.6	1.6		T型杆升降机	–	1.3	1.4
	辊道(连续式)	–	1.5	1.5		连续索道	–	1.4	1.6
	辊道(间歇式)	–	2.0	2.0	水泥工业	混凝土搅拌器	–	1.5	1.5
	可逆式轧管机	–	1.8	1.8		破碎机*	–	1.2	1.4
	剪切机(连续式)*	–	1.5	1.5		回转窑	–	–	2.0
	剪切机(曲柄式)*	1.0	1.0	1.0		管式磨机	–	–	2.0
	连铸机驱动装置	–	1.4	1.4		选扮机	–	1.6	1.6
	可逆式开坯机	–	2.5	2.5		辊压机	–	–	2.0

工作机额定功率P_2的确定　*)按最大扭矩确定额定功率.　**)检验热功率是绝对必要的.

表 2　　减速器安全系数　　f_2

重要性与安全要求	一般设备,减速器失效仅引起单机停产且易更换备件	重要设备,减速器失效引起机组、生产线或全厂停产.	高度安全要求,减速器失效引起被备、人身事故
f_2	1~1.2	1.2~1.4	1.4~1.6

表3　　起动系数　　f_3

f_3 / f_1 / 每小时起动次数	1	1.25 -1.75	2- 2.75	≥3
≤5	1	1	1	1
6-25	1.2	1.12	1.06	1
26-60	1.3	1.2	1.12	1.06
61-180	1.5	1.3	1.2	1.12
>180	1.7	1.5	1.3	1.2

Gear Units Service Factor

Table 1 Factor for driven machine f_1

Driven machines		Effective daily operating period under load in hours			Driven machines		Effective daily operating period under load in hours		
		≤0.5h	0.5-10h	>10h			≤0.5h	0.5-10h	>10h
Waste water treatment	Thickeners(central drive)	-	-	1.2	Metal working mills	Reversing slabbing mills	-	2.5	2.5
	Filter presses	1.0	1.3	1.5		Reversing wire mills	-	1.8	1.8
	Flocculation apparata	0.8	1.0	1.3		Reversing sheet mills	-	2.0	2.0
	Aerators	-	1.8	2.0		Reversing plate mills	-	1.8	1.8
	Raking equipment	1.0	1.2	1.3		Roll adjustment drives	0.9	1.0	-
	Combined longitudinal and rotary rakes	1.0	1.3	1.5	Conveyors	Bucket conveyors	-	1.2	1.5
	Pre-thickeners	-	1.1	1.3		Hauling winches	1.4	1.8	1.8
	Screw pumps	-	1.3	1.5		Hoists		1.5	1.8
	Water turbines	-	-	2.0		Belt conveyors <150 kw	1.0	1.2	1.3
	Centrifugal pumps	1.0	1.2	1.3		Belt conveyors ≥150 kw	1.1	1.3	1.5
	1piston positive-displacement pumps	1.3	1.4	1.8		Goods lifts *	-	1.2	1.5
	>1piston positive-displacement pumps	1.2	1.4	1.5		Passenger lifts *		1.5	1.8
Dredgers	Bucket conveyors	-	1.6	1.6		Apron conveyors	-	1.2	1.5
	Dumping devices	-	1.3	1.5		Escalators		1.2	1.4
	Carterpillar travelling gears	1.2	1.6	1.8		Rail travelling gears	-	1.5	-
	Bucket wheel excavators as pick-up	-	1.7	1.7	Frequency converters		-	1.8	2.0
	Bucket wheel excavators for primitive material	-	2.2	2.2	Reciprocating compressors		-	1.8	1.9
	Cutter heads	-	2.2	2.2	Cranes	Slewing gears *	1.0	1.4	1.8
	Traversing gears *		1.4	1.8		Luffing gears	1.0	1.25	1.5
Plate bending machines		-	1.0	1.0		Travelling gears	1.5	1.75	2.0
Chemical industry	Extruders	-	-	1.6		Holsting gears *	1.0	1.25	1.5
	Dough mills	-	1.8	1.8		Derricking jib cranes *	1.0	1.25	1.6
	Rubber calenders	-	1.5	1.5	Cooling towers	Cooling tower fans	-	-	2.0
	Cooling drums	-	1.3	1.4		Blowers(axial and radial)	-	1.4	1.5
	Mixers for uniform media	1.0	1.3	1.4	Cane sugar production	Cane knives *	-	-	1.7
	Mixers for non-uniform media	1.4	1.6	1.7		Cane mills	-	-	1.7
	Agitators for media with uniform density	1.0	1.3	1.5	Beet sugar production	Beet cossettes macerators	-	-	1.2
	Agitators for media with non-uniform density	1.2	1.4	1.6		Extraction plants, Mechanical refrigerators, Juice boilers,	-	-	1.4
	Agitators for media with non-uniform gas absorption	1.4	1.6	1.8		Sugar beet washing machines	-	-	1.5
	Toasters	1.0	1.3	1.5		Sugar beet cutters	-	-	1.5
	Centrifuges	1.0	1.2	1.3	Paper machines	Of all-kind **	-	1.8	2.0
Metal working mills	Plate tilters	1.0	1.0	1.2		Pulper drives	2.0	2.0	2.0
	Ingot pushers	1.0	1.2	1.2	Centrifugal compressors		-	1.4	1.5
	Winding machines	-	1.6	1.6	Cableways	Material ropeways	-	1.3	1.4
	Cooling bed transfer frames	-	1.5	1.5		To-and fro system aerial ropeways	-	1.6	1.8
	Roller straighteners	-	1.6	1.6		T-bar lifts	-	1.3	1.4
	Roller tables continuous	-	1.5	1.5		Continuous ropeways	-	1.4	1.6
	Roller tables intermittent	-	2.0	2.0	Cement industry	Concrete mixers	-	1.5	1.5
	Roller tables Reversing tube mills	-	1.8	1.8		Breakers *	-	1.2	1.4
	Shears continuous *	-	1.5	1.5		Rotary kilns	-	-	2.0
	Shears crank type *	1.0	1.0	1.0		Tube mills	-	-	2.0
	Continuous casting drivers	-	1.4	1.4		Separators	-	1.6	1.6
	Reversing blooming mills	-	2.5	2.5		Roll crushers	-	-	2.0

Design for power rating of driven machine P_2 *)Designed power corresponding to max.torque.

**)A check for thermal capacity is absolutely essential.

Table 2 Table 2 Safety factor f_2 f_2

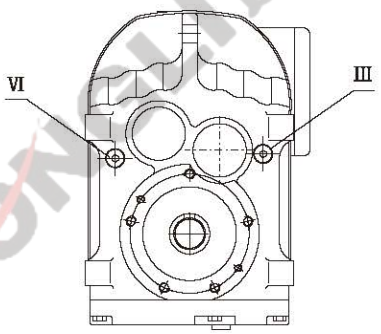
Importance and safety request	Ordinary equipment, malfunction only cause accident of single-machine and easily replaced.	Important equipment, malfunction cause the accident of assembling unit, production-line or whole factory.	Safety request highly, malfunction cause the accident of equipment and personal injury.
f_2	1~1.2	1.2~1.4	1.4~1.6

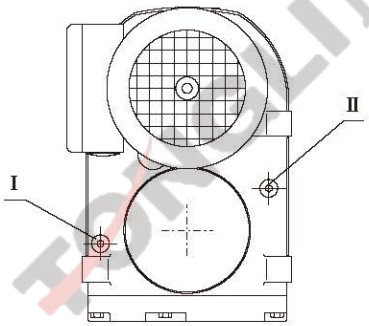
Table 3 Start factor f_3

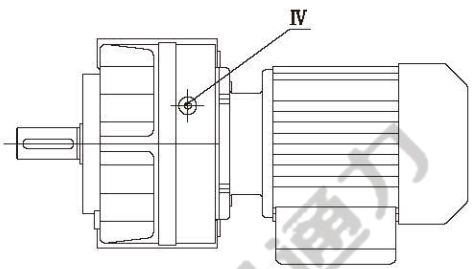
f_3 \ f_1 / Starts per hour	1	1.25-1.75	2-2.75	≥3
≤5	1	1	1	1
6-25	1.2	1.12	1.06	1
26-60	1.3	1.2	1.12	1.06
61-180	1.5	1.3	1.2	1.12
>180	1.7	1.5	1.3	1.2

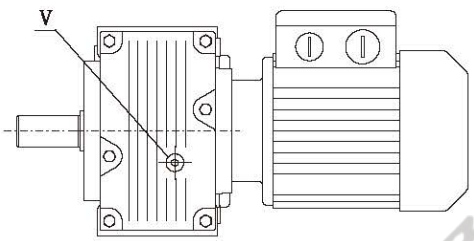
四大系列通气孔、油镜孔（溢油孔）放油孔位置图
Location of four series's Blowhole、oil immersion lens、drain hole

TF..38~TF..178







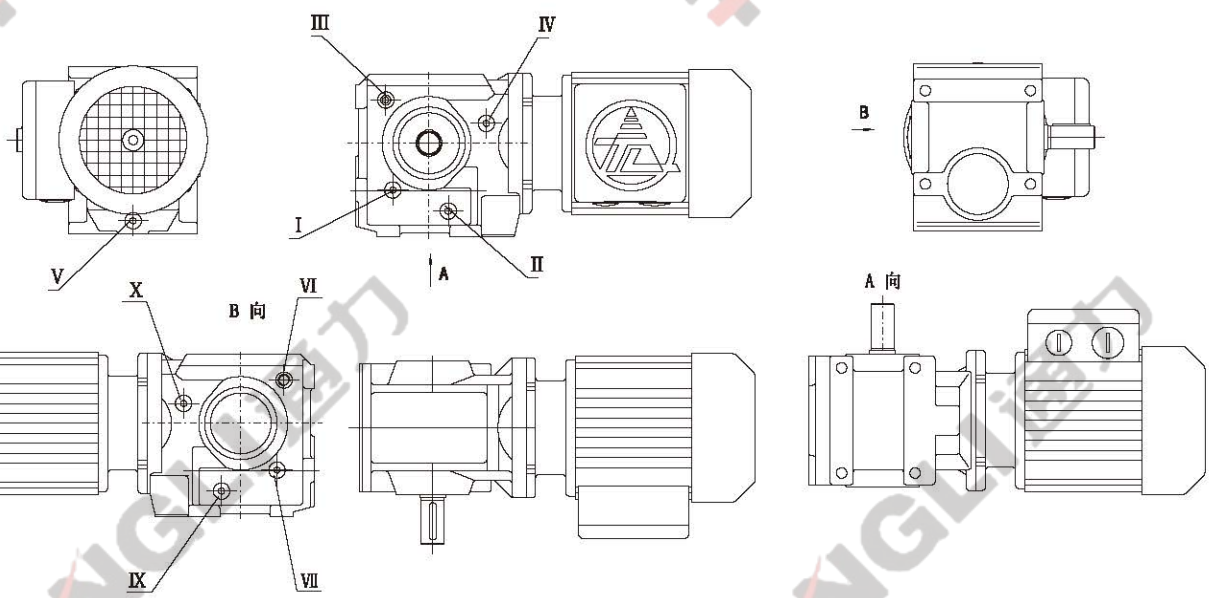


所有M4安装，有条件通气孔钻在直联电机上

注:M2安装时盖板方向取高油位,
TF68以下 M5、M6安装时盖板方向取低油位
TF78以上 M5、M6安装时盖板方向取高油位
M1、M3、M4安装时盖板方向按图

安装方式 / 孔位顺序	M1	M2	M3	M4	M5	M6	
通气孔	Ⅳ	Ⅲ	Ⅴ	Ⅰ	Ⅵ	Ⅲ	
油镜孔	Ⅲ	Ⅴ	Ⅱ	Ⅳ	Ⅴ	Ⅴ	
放油孔	Ⅴ	Ⅰ	Ⅳ	Ⅲ	Ⅰ	Ⅱ	

TS38



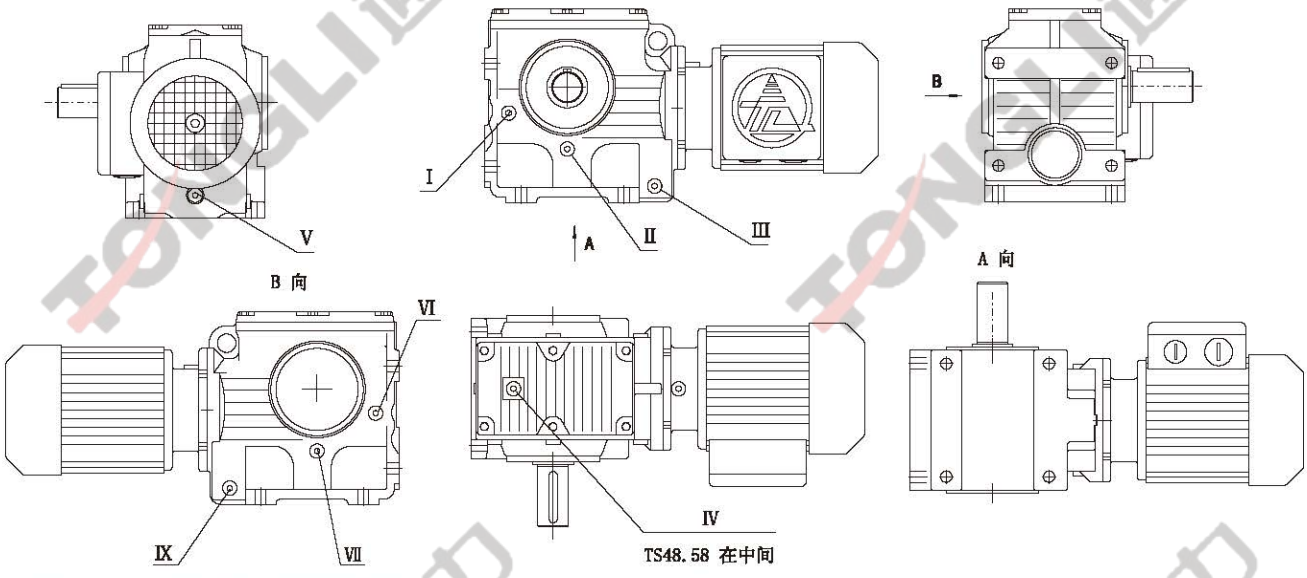
所有M4安装，有条件通气孔钻在直联电机上

注:油镜安装在两侧且为实心单输出时,装在输出轴反方向,如为双出轴或是空心轴则安装在A面

安装方式 / 孔位顺序	M1	M2	M3	M4	M5	M6	
通气孔	Ⅱ	Ⅲ	Ⅴ	Ⅴ	Ⅵ	Ⅲ	
油镜孔	Ⅰ/Ⅵ	Ⅱ/Ⅸ	Ⅰ/Ⅵ	Ⅳ/Ⅹ	Ⅴ	Ⅴ	
放油孔	Ⅴ	Ⅴ	Ⅲ	Ⅲ	Ⅱ	Ⅵ	

四大系列通气孔、油镜孔（溢油孔）放油孔位置图
Location of four series's Blowhole、oil immersion lens、drain hole

TS48~TS98



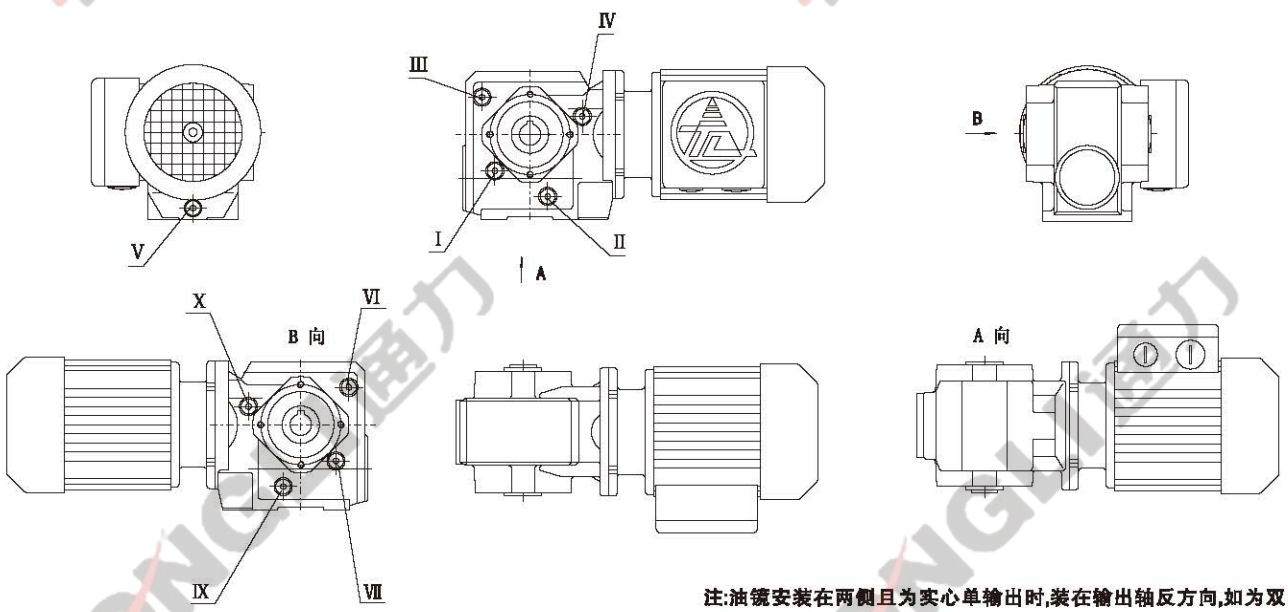
TS48. 58 在中间

注意：M2.M5.M6安装、盖板方向取Ⅳ孔的高油位
油镜安装在两侧且为实心单输出时,装在输出轴反方向,如为双出轴或是空心轴则安装在A面

安装方式 / 孔位顺序	M1	M2	M3	M4	M5	M6	
通气孔	Ⅳ	Ⅰ	Ⅲ	Ⅴ	Ⅶ	Ⅱ	
油镜孔	Ⅰ/Ⅵ	Ⅳ	Ⅱ/Ⅵ	Ⅲ/Ⅸ	Ⅳ	Ⅳ	
放油孔	Ⅲ	Ⅴ	Ⅳ	Ⅰ	Ⅲ	Ⅸ	

所有M4安装，有条件通气孔钻在直联电机上

TSA38　TSF38



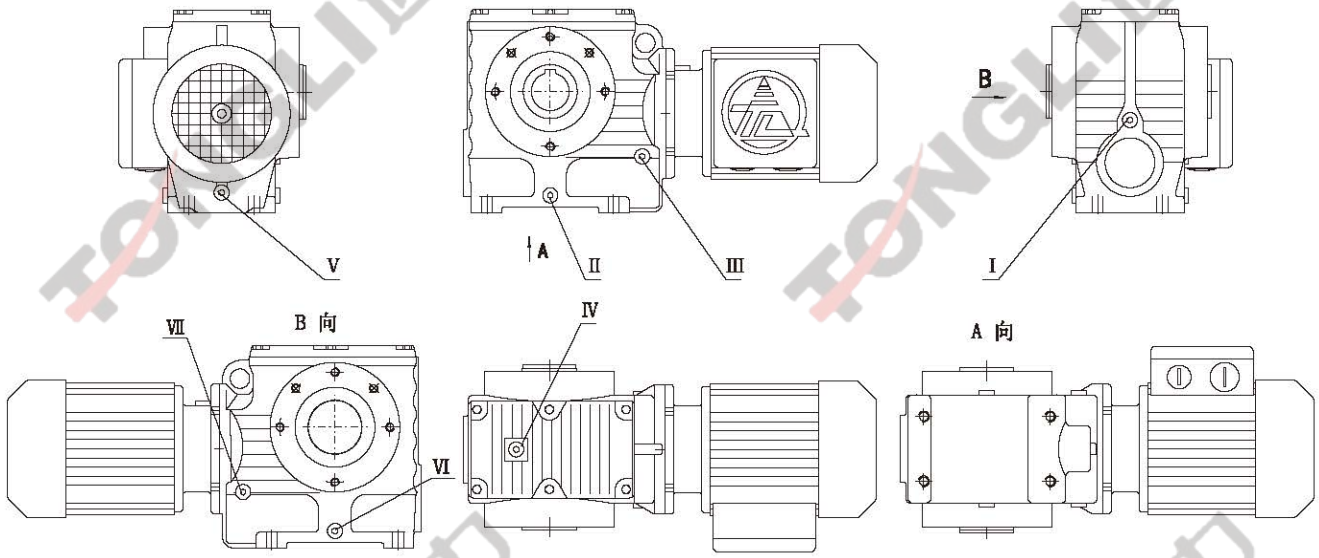
所有M4安装，有条件通气孔钻在直联电机上

注:油镜安装在两侧且为实心单输出时,装在输出轴反方向,如为双出轴或是空心轴则安装在A面

安装方式 / 孔位顺序	M1	M2	M3	M4	M5	M6	
通气孔	Ⅲ	Ⅲ	Ⅴ	Ⅴ	Ⅵ	Ⅲ	
油镜孔	Ⅰ/Ⅵ	Ⅱ/Ⅸ	Ⅰ/Ⅵ	Ⅳ/Ⅹ	Ⅴ	Ⅴ	
放油孔	Ⅴ	Ⅴ	Ⅲ	Ⅲ	Ⅲ	Ⅵ	

四大系列通气孔、油镜孔（溢油孔）放油孔位置图
Location of four series's Blowhole、oil immersion lens、drain hole

TSA48~TSA58　TSF48~TSF58

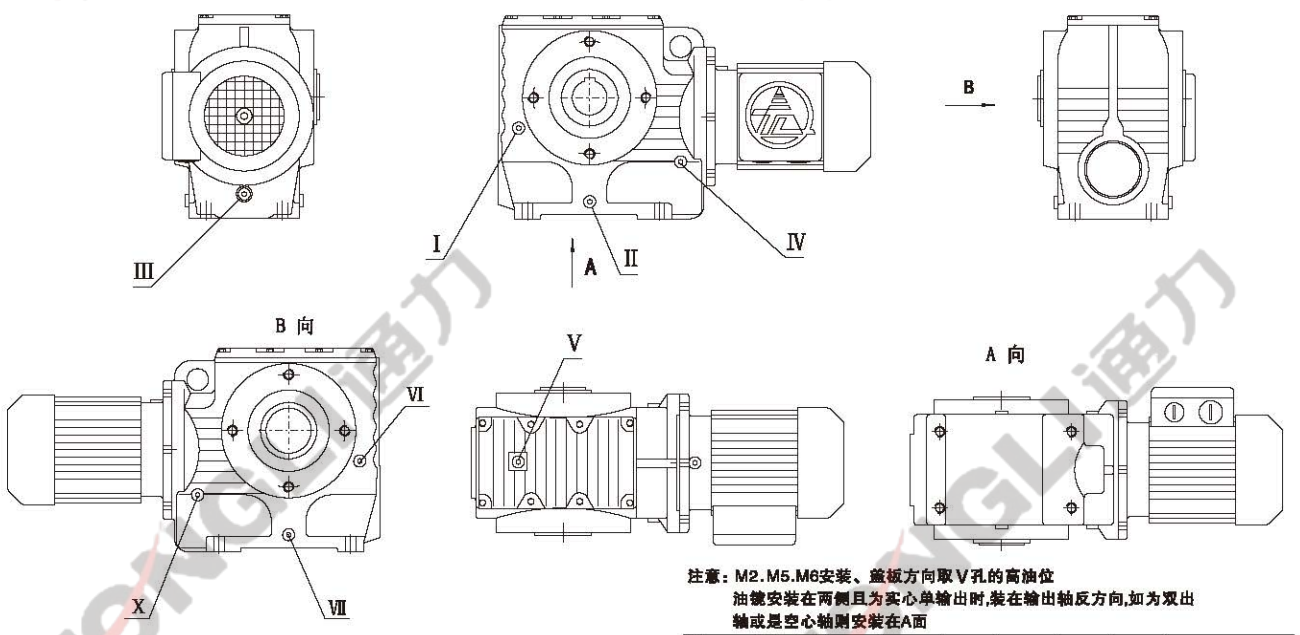


注意：M2 安装、盖板方向取Ⅳ孔的高油位
油镜安装在两侧且为实心单输出时,装在输出轴反方向,如为双出轴或是空心轴则安装在A面

安装方式 / 孔位顺序	M1	M2	M3	M4	M5	M6	
通气孔	Ⅳ	Ⅰ	Ⅱ	Ⅴ	Ⅵ	Ⅱ	
油镜孔	Ⅰ	Ⅳ	Ⅲ/Ⅵ	Ⅲ/Ⅵ	Ⅳ	Ⅳ	
放油孔	Ⅱ	Ⅴ	Ⅳ	Ⅰ	Ⅱ	Ⅵ	

所有 M4 安装，有条件通气孔钻在直联电机上

TSA68~TSA98　TSF68~TSF98



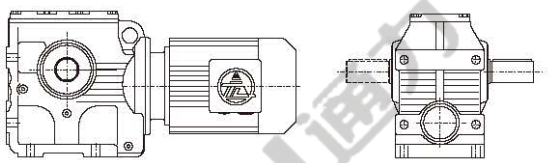
所有 M4 安装，有条件通气孔钻在直联电机上

注意：M2.M5.M6安装、盖板方向取Ⅴ孔的高油位
油镜安装在两侧且为实心单输出时,装在输出轴反方向,如为双出轴或是空心轴则安装在A面

安装方式 / 孔位顺序	M1	M2	M3	M4	M5	M6	
通气孔	Ⅴ	Ⅰ	Ⅱ	Ⅲ	Ⅵ	Ⅰ	
油镜孔	Ⅰ/Ⅵ	Ⅴ	Ⅳ/Ⅹ	Ⅳ/Ⅹ	Ⅴ	Ⅴ	
放油孔	Ⅱ	Ⅲ	Ⅴ	Ⅰ	Ⅰ	Ⅵ	

TS系列减速机有以下设计方案：

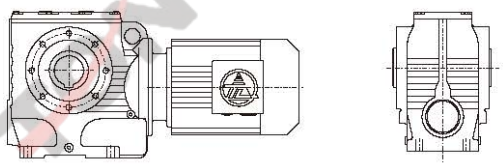
TS series gear units are available in the following designs:



TS..Y..

底脚轴伸式安装斜齿-蜗轮蜗杆减速机

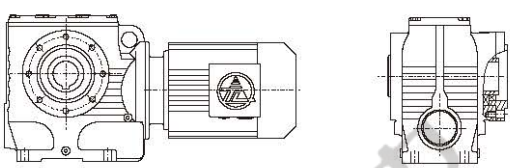
Foot-mounted helical-worm gear units with solid shaft



TSA...Y..

空心轴安装斜齿-蜗轮蜗杆减速机

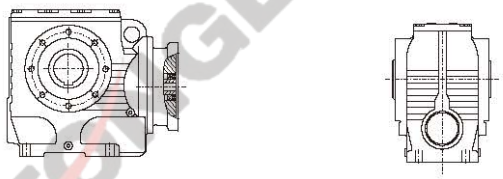
Helical-worm gear units with hollow shaft



TSAZ...Y..

小法兰空心轴安装斜齿-蜗轮蜗杆减速机

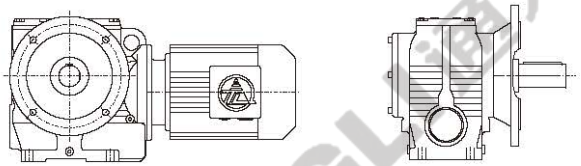
Short-flange mounted helical-worm gear units with hollow shaft



TSA（TS、TSF、TSAF、TSAZ）...Y...

电机用户自配或配特殊电机时需加联接法兰

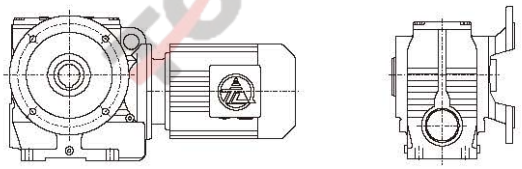
When equipping the user`s motor or the special one,the flange is required to be connected



TSF...Y..

法兰轴伸式安装斜齿-蜗轮蜗杆减速机

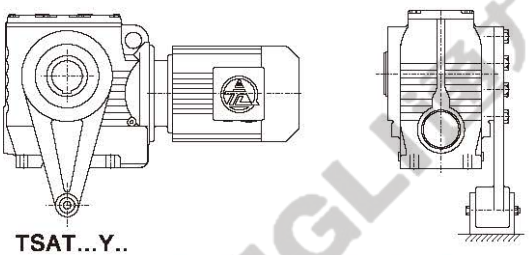
Flange-mounted helical-worm gear units with solid shaft



TSAF...Y..

法兰空心轴安装斜齿-蜗轮蜗杆减速机

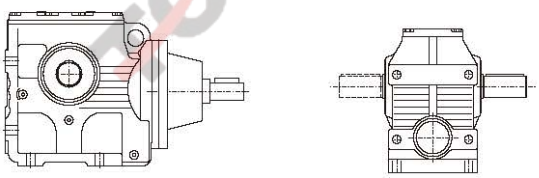
Flange-mounted helical-worm gear units with hollow shaft



TSAT...Y..

带防转臂空心轴安装斜齿-蜗轮蜗杆减速机

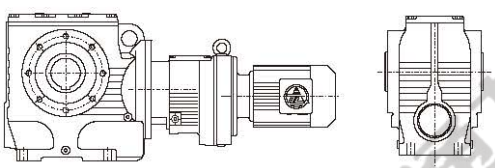
Torque-arm-mounted helical-worm gear units with hollow shaft



TS（TSF、TSA、TSAF、TSAZ）S...

轴输入的斜齿-蜗轮蜗杆减速机

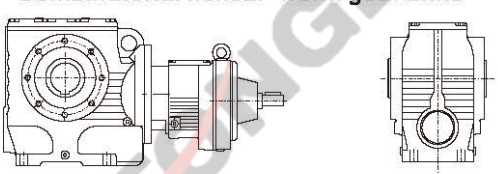
Shaft input helical-worm gear units



TSA（TS、TSF、TSAF、TSAZ）...TR...Y...

组合式斜齿-蜗轮蜗杆减速机

Combinatorial helical-worm gear units



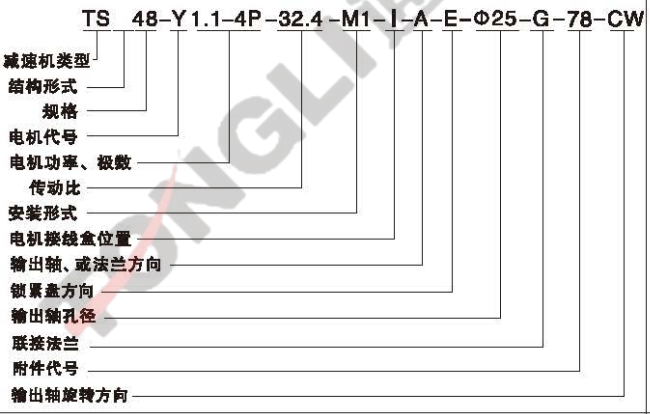
TSA（TS、TSF、TSAF、TSAZ）...TRS ...

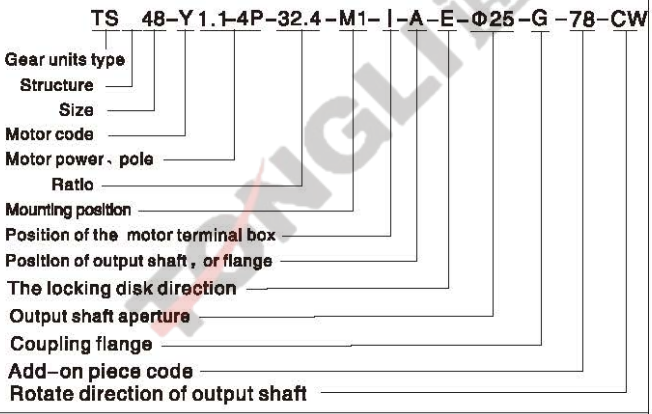
轴输入的组合式斜齿-蜗轮蜗杆减速机

Shaft input combinatorial helical-worm gear units

TS
02

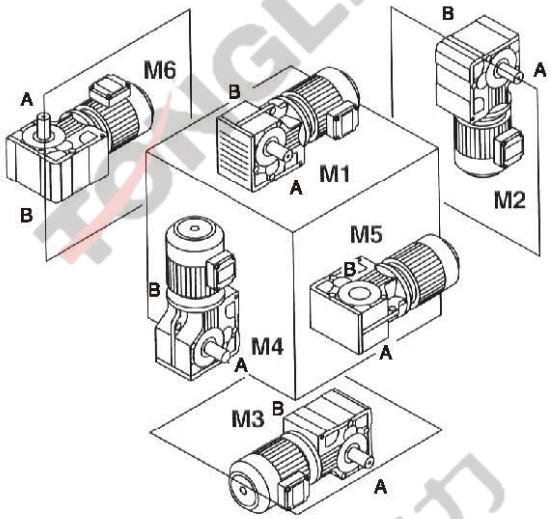
型号与标记 / Type Designations

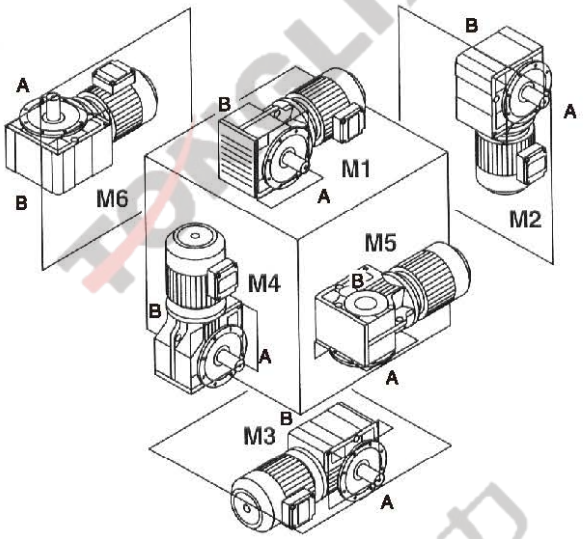




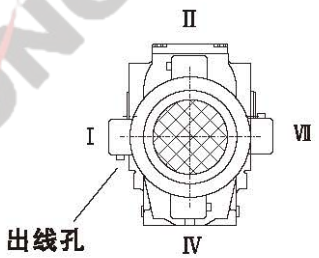
减速机类型：斜齿-蜗轮蜗杆减速机	Gear units type: Helical-worm gear units
结构形式：普通轴伸式（省略） 轴装式 A 轴伸法兰式 F 轴装法兰式 AF 轴装小法兰式 AZ 轴装带防转臂 AT 普通轴伸式，轴输入 S 普通轴装式，轴输入 AS 轴伸法兰式，轴输入 FS 轴装法兰式，轴输入 AFS 带锁紧盘式 H..(H, HF, HZ, HT)	Structure: Foot-mounted solid shaft output (-) Hollow shaft output A Flange-mounted solid shaft output F Flange-mounted hollow shaft output AF Short-flange-mounted hollow shaft output AZ Torque-arm-mounted hollow shaft output AT Foot-mounted solid shaft output,shaft input S Hollow shaft output,shaft input AS Flange-mounted solid shaft output,shaft input FS Flange-mounted hollow shaft output,shaft input AFS Hollow shaft output with shrink disk H..(H, HF, HZ, HT)
规格：（见选型参数表）	Size: (see selection table)
电机代号： 普通（更新） Y(Y2) 防　爆 B 制　动 E 多　速 D 变　频 V 冶金起重 YZ/YZR 变频制动 VE 辊　道 G 自配电机 ZP	Motor code: Ordinary(renew) Y(Y2) Flame-proof B Brake E Multi-speed D Variable frequency V Hoisting in metallurgy YZ/YZR Variable frequency and brake VE Roller tables G With built-in motor ZP
电机功率、极数：（见选型参数表）	Motor power、pole：（see selection table)
传动比：（见选型参数表）	Ratio: (see selection table)
安装形式： M1、M2、M3、M4、M5、M6（见第TS-03页）	Mounting position: M1、M2、M3、M4、M5、M6(see page TS-03)
电机接线盒位置： Ⅰ、Ⅱ、Ⅲ、Ⅳ、Ⅴ、Ⅵ、Ⅶ、Ⅷ(见第TS-03页)	Position of the motor terminal box: Ⅰ、Ⅱ、Ⅲ、Ⅳ、Ⅴ、Ⅵ、Ⅶ、Ⅷ（see page TS-03）
输出轴或法兰方向（锁紧盘）： 从电机尾部看左边为 A（E） 从电机尾部看右边为 B（F）（见安装形式） 从电机尾部看左右边为 A+B	Position of output shaft or flange（The locking disk）： viewing on motor end:left side -A, right side-B,both sides-A+B(see mounting position)
输出轴孔径： (见安装尺寸图)带实心轴输出时省略 联接法兰：配直联电机 省略 配标准电机 G/GS(联接法兰双密封) 输入带轴 AD..	Output shaft aperture: (see the chart of mouting dimension) It will be omitted when solid output shaft
附件代号：输出保护罩 90 补偿油箱 87 逆止器 78 电机支座 70	Add-on piece code: Protective cover 90 Compensation tank 87 Backstop 78 Motor bell housing 70
输出轴旋转方向（面对输出轴方向看）： 顺时针旋转CW,逆时针旋转CCW 不带逆止器，可省略	Rotate direction of output shaft(viewing on output shaft): Clockwise CW Counter clockwise CCW

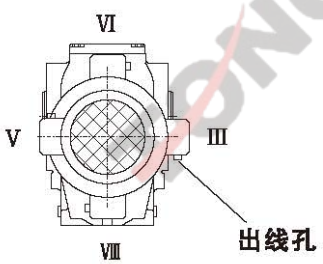
安装形式
Mounting position





电机接线盒位置（M1安装时，从电机尾部看）
Position of the motor terminal box





输入功率及最大转矩 *
Input power rating and maximum torque

规格 Size	38	48	58	68	78	88	98
结构形式 Structure	TS TSA TSF TSAF TSAT TSAZ						
输入功率(kW) Input power rating	0.18~0.75	0.18~1.5	0.18~3	0.25~5.5	0.55~7.5	0.75~15	1.5~22
传动比 Ratio	10.27~152	11.46~244.74	10.78~196.21	11.55~227.20	9.96~241.09	11.83~222	12.75~230.48
最大转矩*(N.m) Maximum torque	90	170	295	520	1270	2280	4000

*) 最大转矩系指该规格不同传动比对应的最大转矩中的最大值.

*) Maximum torque means the biggest one of the maximum torque related to the different ratio for the specified size.

减速机重量
Gear unit weight

规格 Size	38	48	58	68	78	88	98
重量(kg) Weight	9.5	15.5	16	33.5	53	100	170

所注重量为平均值，仅供参考
The weights are mean values,only for reference.

润滑油量表
Lubrication table

TS...:

规格	润滑油量（升）					
	M1	M2	M3 1)	M4	M5	M6
TS38	0.5	0.6	0.6	0.8	0.6	0.6
TS48	0.6	1.1	1.1	1.1	0.9	0.9
TS58	1	1.3	1.3	1.6	1.3	1.3
TS68	1.7	3	2.7/3.3	2.8	2.6	2.6
TS78	3.2	4.8	4.8	6.2	4.8	4.8
TS88	7.1	10	10	11.6	10	10
TS98	13.2	18.4	17.6/21.5	22.8	17.6	17.6

TSF...:

规格	润滑油量（升）					
	M1	M2	M3 1)	M4	M5	M6
TS38	0.5	0.6	0.6	0.8	0.6	0.6
TS48	0.6	1.1	1.1	1.1	0.9	0.9
TS58	1	1.3	1.3	1.6	1.3	1.3
TS68	1.7	3	2.7/3.3	2.8	2.6	2.6
TS78	3.2	4.8	4.8	6.2	4.8	4.8
TS88	7.1	10	10	11.6	10	10
TS98	13.2	18.4	17.6/21.5	22.8	17.6	17.6

TSA...、TSAF...、TSAZ...:

规格	润滑油量（升）					
	M1	M2	M3 1)	M4	M5	M6
TS..38	0.5	0.6	0.6	0.8	0.6	0.6
TS..48	0.7	1.1	1.2	1.2	0.9	0.9
TS..58	1	1.3	1.3	1.6	1.4	1.4
TS..68	1.7	3	2.7/3.3	2.8	2.6	2.6
TS..78	3.2	4.8	4.8	6.2	4.8	4.8
TS..88	7.1	10	10	11.6	10	10
TS..98	13.2	18.5	17.8/22.2	22.8	17.6	17.6

注：1）表示减速机为组合型时低速级所加油量为大值。
Notes: 1)The large gear unit of multi-stage gear units must be filled with the larger oil volume.

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.18kW					
0.40	2838	3483	0.76		
0.47	2385	2928	0.90	TS 88TR58	4
0.59	1688	2369	1.28	TSF 88TR58	4
0.67	1481	2078	1.46	TSA 88TR58	4
0.75	1320	1852	1.64	TSAF88TR58	4
0.84	1350	1657	1.60		
0.98	1174	1412	1.00		
1.1	1018	1224	1.15		
1.3	782	1098	1.50	TS 78TR38	4
1.5	796	957	1.47	TSF 78TR38	4
1.7	698	840	1.68	TSA 78TR38	4
2.0	591	711	1.99	TSAF78TR38	4
2.2	533	641	2.21		
2.4	479	576	2.45		
1.9	595	716	0.83		
2.3	512	616	0.96	TS 68TR38	4
2.6	450	541	1.09	TSF 68TR38	4
3.0	333	467	1.48	TSA 68TR38	4
3.3	301	423	1.64	TSAF68TR38	4
3.8	305	367	1.61		
3.2	307	431	0.91		
3.6	324	390	0.86		
4.2	276	332	1.01	TS 58TR18	4
4.8	239	288	1.17	TSF 58TR18	4
5.2	191	268	1.46	TSA 58TR18	4
6.0	192	231	1.45	TSAF58TR18	4
6.9	168	202	1.66		
7.4	157	189	1.78		
4.7	210	295	0.76	TS 48TR18	4
5.4	213	256	0.75	TSF 48TR18	4
6.1	190	229	0.85	TSA 48TR18	4
6.8	169	203	0.95	TSAF48TR18	4
3.7	230	227.20	2.14	TS 68	6
4.1	207	205.11	2.38	TSF 68	6
4.7	182	180.46	2.71	TSA 68	6
5.0	172	170.40	2.87	TSAF68	6
4.3	238	196.21	1.17	TS 58	6
4.7	219	180.40	1.27	TSF 58	6
5.5	187	154.35	1.49	TSA 58	6
6.4	162	133.79	1.72	TSAF58	6
7.1	146	196.21	1.91	TS 58	4
7.7	134	180.40	2.09	TSF 58	4
9.0	115	154.35	2.43	TSA 58	4
10	99	133.79	2.83	TSAF58	4
5.1	170	168.00	0.93		
5.7	152	150.00	1.05	TS 48	6
5.8	178	146.84	0.89	TSF 48	6
6.2	167	137.25	0.95	TSA 48	6
7.2	144	118.64	1.10	TSAF48	6
5.7	151	244.74	1.06		
6.1	141	228.75	1.14		
7.0	122	197.73	1.32		
8.3	104	168.00	1.53	TS 48	4
9.3	93	150.00	1.71	TSF 48	4
9.5	109	146.84	1.46	TSA 48	4
10	102	137.25	1.56	TSAF48	4
12	88	118.64	1.80		
14	75	100.80	2.11		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.18kW					
15	67	90.00	2.19		
18	57	76.88	2.78	TS 48	4
19	53	72.00	2.77	TSF 48	4
20	59	68.63	2.65	TSA 48	4
23	45	60.65	3.27	TSAF48	4
11	96	129.41	0.89		
12	83	111.58	1.00		
13	77	104.00	1.07		
15	67	90.91	1.21		
16	63	85.22	1.28		
18	56	75.20	1.42		
21	49	66.67	1.58		
25	42	56.67	1.83		
26	39	52.80	1.94		
27	45	52.00	1.71		
31	39	45.45	1.97		
33	37	42.61	2.02	TS 38	4
37	33	37.60	2.24	TSF 38	4
42	29	33.33	2.48	TSA 38	4
49	25	28.33	2.85	TSAF38	4
53	23	26.40	3.05		
59	23	23.46	3.01		
69	20	20.22	2.47		
74	19	18.85	3.55		
84	16	16.48	3.08		
90	15	15.45	3.16		
102	13	13.63	3.58		
115	12	12.08	3.80		
135	10	10.27	4.56		
145	9	9.57	4.96		
0.25kW					
0.59	2345	2369	0.92		
0.67	2057	2078	1.05	TS 88TR58	4
0.75	1833	1852	1.18	TSF 88TR58	4
0.84	1875	1657	1.15	TSA 88TR58	4
1.1	1308	1322	1.65	TSAF88TR58	4
1.4	1011	1022	2.14		
1.5	1105	957	1.06		
1.7	970	840	1.21	TS 78TR38	4
2	821	711	1.43	TSF 78TR38	4
2.2	740	641	1.59	TSA 78TR38	4
2.4	665	576	1.77	TSAF78TR38	4
2.8	583	505	2.02		
2.6	625	541	0.79		
3	462	467	1.06	TS 68TR38	4
3.3	419	423	1.17	TSF 68TR38	4
3.8	424	367	1.16	TSA 68TR38	4
4.4	316	319	1.56	TSAF68TR38	4
4.9	324	281	1.52		
4.8	333	288	0.84		
5.2	265	268	1.05		
6	267	231	1.04	TS 58TR18	4
6.9	233	202	1.20	TSF 58TR18	4
7.4	218	189	1.28	TSA 58TR18	4
8.3	193	167	1.45	TSAF58TR18	4
10	155	134	1.80		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.25kW					
2.8	420	227.20	1.17	TS 68	8
3.1	380	205.11	1.30	TSF 68	8
3.6	334	180.46	1.47	TSA 68	8
3.8	315	170.40	1.56	TSAF68	8
4.5	320	144.00	1.54		
3.7	319	227.20	1.54	TS 68	6
4.1	288	205.11	1.71	TSF 68	6
4.7	253	180.46	1.95	TSA 68	6
5	239	170.40	2.06	TSAF68	6
5.9	243	144.00	2.03		
6.1	195	227.20	2.53		
6.8	176	205.11	2.80		
7.7	155	180.46	3.18	TS 68	4
8.2	146	170.40	3.38	TSF 68	4
9.7	148	144.00	3.33	TSA 68	4
11	134	130.00	3.68	TSAF68	4
12	118	114.38	4.18		
13	111	108.00	4.45		
4.3	331	196.21	0.84		
4.7	304	180.40	0.92	TS 58	6
5.5	260	154.35	1.07	TSF 58	6
6.4	225	133.79	1.24	TSA 58	6
6.8	211	125.05	1.32	TSAF58	6
7.1	202	196.21	1.38		
7.7	186	180.40	1.50		
9	159	154.35	1.76	TS 58	4
10	138	133.79	2.03	TSF 58	4
11	129	125.05	2.17	TSA 58	4
13	111	108.09	2.52	TSAF58	4
15	95	91.84	2.95		
17	84	82.00	3.33		
7	170	197.73	0.95		
8.3	144	168.00	1.10		
9.3	129	150.00	1.23		
9.5	151	146.84	1.05		
10	141	137.25	1.13		
12	122	118.64	1.30	TS 48	4
14	104	100.80	1.52	TSF 48	4
15	93	90.00	1.58	TSA 48	4
18	79	76.88	2.00	TSAF48	4
19	74	72.00	1.98		
20	83	68.63	1.88		
23	62	60.65	2.37		
23	71	59.32	2.07		
28	61	50.40	2.41		
31	54	45.00	2.72		
15	94	90.91	0.86		
16	88	85.22	0.91		
18	77	75.20	1.03		
21	69	66.67	1.12		
25	58	56.67	1.32	TS 38	4
26	54	52.80	1.40	TSF 38	4
27	63	52.00	1.22	TSA 38	4
31	55	45.45	1.39	TSAF38	4
33	51	42.61	1.47		
37	45	37.60	1.64		
42	40	33.33	1.80		
49	34	28.33	2.09		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.25kW					
53	32	26.40	2.19		
59	32	23.46	2.16		
69	28	20.22	1.76		
74	26	18.85	2.59	TS 38	4
84	23	16.48	2.14	TSF 38	4
90	21	15.45	2.26	TSA 38	4
102	19	13.63	2.45	TSAF38	4
115	17	12.08	2.68		
135	14	10.27	3.25		
145	13	9.57	3.43		
0.37kW					
0.75	2713	1852	0.79	TS 88TR58	4
0.84	2775	1657	0.78	TSF 88TR58	4
1.1	1936	1322	1.11	TSA 88TR58	4
1.4	1497	1022	1.44	TSAF88TR58	4
1.6	1456	852	1.48		
2	1215	711	0.96		
2.2	1095	641	1.07	TS 78TR38	4
2.4	984	576	1.19	TSF 78TR38	4
2.8	863	505	1.36	TSA 78TR38	4
3.2	630	430	1.86	TSAF78TR38	4
3.6	568	388	2.07		
3.8	627	367	0.78	TS 68TR38	4
4.4	467	319	1.05	TSF 68TR38	4
4.9	460	281	1.02	TSA 68TR38	4
5.6	422	247	1.17	TSAF68TR38	4
2	870	329.81	2.48		
2.3	771	292.50	2.80		
2.3	839	289.22	2.58	TS 88	8
2.6	744	256.50	2.88	TSF 88	8
2.7	648	245.87	3.23	TSA 88	8
3.1	625	215.61	3.26	TSAF88	8
3.4	626	198.00	3.18		
4	527	166.43	3.71		
2.8	763	241.09	1.58		
3.3	652	206.04	1.85	TS 78	8
3.5	598	188.89	2.01	TSF 78	8
4	524	165.75	2.30	TSA 78	8
4.3	497	157.08	2.40	TSAF78	8
3.9	454	227.20	1.08		
4.3	409	205.11	1.20	TS 68	6
4.9	360	180.46	1.37	TSF 68	6
5.2	340	170.40	1.45	TSA 68	6
6.1	345	144.00	1.43	TSAF68	6
6.1	289	227.20	1.70		
6.8	261	205.11	1.89		
7.7	229	180.46	2.15	TS 68	4
8.2	217	170.40	2.27	TSF 68	4
9.7	220	144.00	2.24	TSA 68	4
11	198	130.00	2.49	TSAF68	4
12	174	114.38	2.83		
6.6	320	133.79	0.87		
7.1	300	125.05	0.93	TS 58	6
8.2	259	108.09	1.08	TSF 58	6
9.6	220	91.84	1.27	TSA 58	6
11	196	82.00	1.42	TSAF58	6

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.37kW					
7.1	299	196.21	0.93		
7.7	275	180.40	1.01		
9	235	154.35	1.19		
10	204	133.79	1.37		
11	191	125.05	1.46	TS 58	4
13	165	108.09	1.69	TSF 58	4
15	140	91.84	2.00	TSA 58	4
17	125	82.00	2.24	TSAF58	4
20	107	70.04	2.57		
21	119	66.89	1.95		
21	100	65.60	2.70		
22	111	62.53	2.09		
12	181	118.64	0.87		
14	154	100.80	1.03		
15	137	90.00	1.07		
18	117	76.88	1.35		
19	110	72.00	1.33		
20	122	68.63	1.28		
23	92	60.65	1.60		
23	106	59.32	1.38	TS 48	4
28	90	50.40	1.63	TSF 48	4
31	80	45.00	1.84	TSA 48	4
36	68	38.44	2.16	TSAF48	4
39	64	36.00	2.30		
46	54	30.33	2.72		
50	56	27.74	2.57		
54	53	25.93	1.97		
62	46	22.41	2.97		
73	39	19.04	2.67		
82	35	17.00	2.98		
25	86	56.67	0.89		
26	81	52.80	0.93		
27	93	52.00	0.82		
31	81	45.45	0.95		
33	76	42.61	0.98		
37	67	37.60	1.10		
42	59	33.33	1.22		
49	50	28.33	1.42	TS 38	4
53	47	26.40	1.49	TSF 38	4
59	48	23.46	1.44	TSA 38	4
69	41	20.22	1.20	TSAF38	4
74	38	18.85	1.77		
84	34	16.48	1.45		
90	31	15.45	1.53		
102	28	13.63	1.66		
115	25	12.08	1.82		
135	21	10.27	2.17		
145	19	9.57	2.35		
0.55kW					
1.1	2878	1322	0.75		
1.2	2567	1179	0.84		
1.4	2225	1022	0.97		
1.5	2288	919	0.94	TS 88TR58	4
1.6	2164	852	1.00	TSF 88TR58	4
1.9	1552	713	1.39	TSA 88TR58	4
2.3	1322	607	1.63	TSAF88TR58	4
2.5	1202	552	1.80		
3.2	1100	433	1.96		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.55kW					
2.8	1283	505	0.91		
3.2	936	430	1.25	TS 78TR38	4
3.6	845	388	1.39	TSF 78TR38	4
4.3	712	327	1.65	TSA 78TR38	4
4.8	631	290	1.86	TSAF78TR38	4
5.7	625	246	1.88		
5.6	627	247	0.78	TS 68TR38	4
6.3	564	222	0.87	TSF 68TR38	4
7	505	199	0.97	TSA 68TR38	4
8.2	429	169	1.15	TSAF68TR38	4
2	1293	329.81	1.67		
2.3	1146	292.50	1.89		
2.3	1247	289.22	1.73	TS 88	8
2.6	1106	256.50	1.94	TSF 88	8
2.7	964	245.87	2.17	TSA 88	8
3.1	930	215.61	2.19	TSAF88	8
3.4	931	198.00	2.14		
4	783	166.43	2.49		
2.7	979	329.81	2.21		
3	868	292.50	2.49		
3.1	944	289.22	2.29	TS 88	6
3.5	837	256.50	2.56	TSF 88	6
3.6	730	245.87	2.87	TSA 88	6
4.1	704	215.61	2.90	TSAF88	6
4.5	705	198.00	2.82		
5.3	593	166.43	3.30		
3.3	969	206.04	1.24	TS 78	8
3.5	888	188.89	1.35	TSF 78	8
4	780	165.75	1.54	TSA 78	8
4.3	739	157.08	1.61	TSAF78	8
3.7	858	241.09	1.40		
4.3	734	206.04	1.64	TS 78	6
4.7	673	188.89	1.79	TSF 78	6
5.3	590	165.75	2.04	TSA 78	6
5.6	559	157.08	2.14	TSAF78	6
5.8	547	241.09	2.20	TS 78	4
6.7	467	206.04	2.58	TSF 78	4
7.4	428	188.89	2.81	TSA 78	4
				TSAF78	4
6.1	429	227.20	1.15		
6.8	387	205.11	1.27		
7.7	341	180.46	1.44		
8.2	322	170.40	1.53		
9.7	326	144.00	1.51	TS 68	4
11	295	130.00	1.67	TSF 68	4
12	259	114.38	1.90	TSA 68	4
13	245	108.00	2.01	TSAF68	4
15	208	91.96	2.37		
17	189	83.57	2.61		
19	164	72.39	2.78		
21	172	65.00	2.87		
9.6	327	91.84	0.85		
11	292	82.00	0.95		
12.5	249	70.04	1.10		
13	278	66.89	0.83	TS 58	6
13.5	234	65.60	1.15	TSF 58	6
14	260	62.53	0.89	TSA 58	6
16	225	54.05	1.11	TSAF58	6
19	191	45.92	1.21		
22	170	41.00	1.36		
25	145	35.02	1.60		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.55kW					
9	350	154.35	0.80		
10	303	133.79	0.92		
11	283	125.05	0.99		
13	245	108.09	1.14		
15	208	91.84	1.34		
17	186	82.00	1.50		
20	159	70.04	1.73		
21	177	66.89	1.31		
21	149	65.60	1.81	TS 58	4
22	165	62.53	1.41	TSF 58	4
26	143	54.05	1.76	TSA 58	4
30	121	45.92	1.92	TSAF58	4
34	108	41.00	2.15		
40	93	35.02	2.50		
42	87	32.80	2.67		
46	91	30.12	2.55		
53	79	26.11	2.94		
57	74	24.40	3.14		
66	64	21.09	3.63		
18	174	76.88	0.91		
19	163	72.00	0.90		
20	182	68.63	0.86		
23	137	60.65	1.07		
23	157	59.32	0.93		
28	133	50.40	1.10		
31	119	45.00	1.23		
36	102	38.44	1.44	TS 48	4
39	95	36.00	1.55	TSF 48	4
46	80	30.33	1.84	TSA 48	4
50	84	27.74	1.71	TSAF48	4
54	78	25.93	1.33		
62	68	22.41	2.01		
73	58	19.04	1.80		
82	51	17.00	2.04		
96	44	14.52	2.37		
102	41	13.60	2.52		
121	35	11.46	2.95		
42	88	33.33	0.82		
49	75	28.33	0.95		
53	70	26.40	1.00		
59	71	23.46	0.97		
69	61	20.22	0.80	TS 38	4
74	57	18.85	1.18	TSF 38	4
84	50	16.48	0.98	TSA 38	4
90	47	15.45	1.01	TSAF38	4
102	41	13.63	1.13		
115	37	12.08	1.23		
135	31	10.27	1.47		
145	29	9.57	1.53		
0.75kW					
1.1	4264	1231	0.89		
1.3	3713	1072	1.02		
1.5	3266	943	1.16	TS 98TR58	4
1.7	2854	824	1.33	TSF 98TR58	4
2	2084	702	1.82	TSA 98TR58	4
2.2	2172	627	1.74	TSAF98TR58	4
2.6	1850	534	2.05		
2.9	1680	485	2.26		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.75kW					
1.9	2117	713	1.02		
2.3	1802	607	1.20	TS 88TR58	4
2.5	1639	552	1.32	TSF 88TR58	4
3.2	1500	433	1.44	TSA 88TR58	4
4.3	1294	327	1.67	TSAF88TR58	4
4.3	971	327	1.21	TS 78TR38	4
4.8	861	290	1.36	TSF 78TR38	4
5.7	852	246	1.38	TSA 78TR38	4
6.4	748	216	1.57	TSAF78TR38	4
2.4	1490	283.04	2.55		
2.7	1342	254.80	2.83	TS 98	8
3	1456	230.48	2.60	TSF 98	8
3.3	1311	207.48	2.89	TSA 98	8
3.6	1187	187.89	3.13	TSAF98	8
2.8	1298	329.81	1.66		
3.1	1151	292.50	1.88		
3.1	1252	289.22	1.73	TS 88	6
3.5	1110	256.50	1.93	TSF 88	6
3.7	968	245.87	2.16	TSA 88	6
4.2	933	215.61	2.18	TSAF88	6
4.6	935	198.00	2.13		
5.5	786	166.43	2.48		
4.2	850	329.81	2.54		
4.8	754	292.50	2.87		
4.8	820	289.22	2.64	TS 88	4
5.4	727	256.50	2.95	TSF 88	4
5.7	633	245.87	3.31	TSA 88	4
6.4	611	215.61	3.34	TSAF88	4
7	612	198.00	3.25		
8.4	515	166.43	3.80		
3.8	1138	241.09	1.06	TS 78	6
4.4	973	206.04	1.23	TSF 78	6
4.8	892	188.89	1.35	TSA 78	6
5.5	783	165.75	1.54	TSAF78	6
5.8	745	241.09	1.61		
6.7	637	206.04	1.89		
7.4	584	188.89	2.06	TS 78	4
8.4	512	165.75	2.35	TSF 78	4
8.8	486	157.08	2.46	TSA 78	4
10	425	137.48	2.77	TSAF78	4
11	383	123.86	3.00		
13	336	108.65	3.39		
6.8	528	205.11	0.93		
7.7	465	180.46	1.06		
8.2	439	170.40	1.12		
9.7	445	144.00	1.11		
11	402	130.00	1.22		
12	354	114.38	1.39	TS 68	4
13	334	108.00	1.47	TSF 68	4
15	284	91.96	1.73	TSA 68	4
17	258	83.57	1.91	TSAF68	4
19	224	72.39	2.03		
21	234	65.00	2.11		
24	206	57.19	2.21		
26	195	54.00	2.43		
30	166	45.98	2.74		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
0.75kW					
13	331	70.04	0.83	TS 58 TSF 58 TSA 58 TSAF58	6
14	310	65.60	0.87		6
17	298	54.05	0.84		6
20	253	45.92	0.91		6
22	226	41.00	1.02		6
13	334	108.09	0.83		
15	284	91.84	0.98		
17	253	82.00	1.10		
20	217	70.04	1.26		
21	241	66.89	0.96		
21	203	65.60	1.33		
22	226	62.53	1.02		
26	195	54.05	1.29		
30	166	45.92	1.40	TS 58 TSF 58 TSA 58 TSAF58	4
34	148	41.00	1.57		4
40	126	35.02	1.84		4
42	118	32.80	1.97		4
46	124	30.12	1.87		
53	108	26.11	2.15		
57	101	24.40	2.30		
66	87	21.09	2.67		
78	74	17.92	2.15		
87	66	16.00	3.09		
102	56	13.67	2.85		
31	162	45.00	0.90		
36	139	38.44	1.05		
39	130	36.00	1.13		
46	109	30.33	1.35		
50	114	27.74	1.26	TS 48 TSF 48 TSA 48 TSAF48	4
54	107	25.93	0.97		4
62	92	22.41	1.48		4
73	78	19.04	1.33		4
82	70	17.00	1.49		
96	60	14.52	1.74		
102	56	13.60	1.84		
121	47	11.46	2.20		
74	78	18.85	0.86	TS 38 TSF 38 TSA 38 TSAF38	
102	56	13.63	0.83		4
115	50	12.08	0.91		4
135	42	10.27	1.08		4
145	39	9.57	1.14		4
1.1kW					
1.7	4156	824	0.91		
2	3035	702	1.25	TS 98TR58	4
2.2	3163	627	1.20	TSF 98TR58	4
2.6	2693	534	1.41	TSA 98TR58	4
2.9	2446	485	1.55	TSAF98TR58	4
3.3	2118	420	1.79		
2.3	2624	607	0.82		
2.5	2387	552	0.90		
2.9	2071	479	1.04		
3.2	2184	433	0.99	TS 88TR58	4
3.8	1613	373	1.34	TSF 88TR58	4
4.3	1885	327	1.14	TSA 88TR58	4
5.1	1387	275	1.56	TSAF88TR58	4
5.4	1296	257	1.45		
6.3	1280	222	1.46		
6.8	1044	207	1.80		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
1.1kW					
6.5	1089	216	1.08	TS 78TR38 TSF 78TR38 TSA 78TR38 TSAF78TR38	4 4 4 4
2.4	2186	283.04	1.73		
2.7	1968	254.80	1.93	TS 98 TSF 98 TSA 98 TSAF98	8
3	2136	230.48	1.77		8
3.3	1923	207.48	1.97		8
3.6	1741	187.89	2.13		8
3.2	1634	283.04	2.32		
3.6	1471	254.80	2.58	TS 98 TSF 98 TSA 98 TSAF98	6
3.9	1596	230.48	2.38		6
4.4	1437	207.48	2.64		6
4.8	1301	187.89	2.86		6
4.2	1237	329.81	1.75		
4.8	1097	292.50	1.97		
4.8	1193	289.22	1.81		
5.5	1058	256.50	2.02	TS 88 TSF 88 TSA 88 TSAF88	4
5.7	922	245.87	2.27		4
6.5	890	215.61	2.29		4
7.1	891	198.00	2.23		4
8.4	749	166.43	2.61		
9.2	689	152.95	2.75		
10	611	135.83	3.04		
5.8	1085	241.09	1.11		
6.8	928	206.04	1.30		
7.4	850	188.89	1.41		
8.4	746	165.75	1.61	TS 78 TSF 78 TSA 78 TSAF78	4
8.9	707	157.08	1.69		4
10	619	137.48	1.90		4
11	558	123.86	2.06		4
13	489	108.65	2.33		
14.6	432	95.88	2.57		
15.2	484	92.18	2.23		
11	585	130.00	0.84		
12	515	114.38	0.95		
13	486	108.00	1.01		
15	414	91.96	1.19		
17	376	83.57	1.31		
19	326	72.39	1.39	TS 68 TSF 68 TSA 68 TSAF68	4
22	341	65.00	1.44		4
22	284	63.00	1.60		4
24	300	57.19	1.52		4
26	284	54.00	1.67		
30	241	45.98	1.89		
34	219	41.79	2.08		
39	190	36.20	2.40		
44	165	31.50	2.76		
53	158	26.40	2.88		
20	315	70.04	0.87		
21	295	65.60	0.91		
26	284	54.05	0.88		
30	241	45.92	0.96		
34	215	41.00	1.08	TS 58 TSF 58 TSA 58 TSAF58	4
40	184	35.02	1.26		4
43	172	32.80	1.35		4
54	157	26.11	1.48		4
57	146	24.40	1.59		
66	127	21.09	1.83		
78	108	17.92	1.47		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
1.1kW					
88	96	16.00	2.12	TS 58	4
102	82	13.67	1.94	TSF 58	4
109	77	12.80	2.07	TSA 58	4
130	65	10.78	2.47	TSAF58	4
46	159	30.33	0.92		
50	167	27.74	0.86		
62	135	22.41	1.01	TS 48	4
74	114	19.04	0.91	TSF 48	4
82	102	17.00	1.02	TSA 48	4
96	87	14.52	1.20	TSAF48	4
103	82	13.60	1.26		
122	69	11.46	1.50		
1.5kW					
2	4139	702	0.91		
2.2	4313	627	0.88	TS 98TR58	4
2.6	3673	534	1.03	TSF 98TR58	4
2.9	3336	485	1.13	TSA 98TR58	4
3.3	2889	420	1.31	TSAF98TR58	4
3.8	2559	372	1.48		
4.3	2215	322	1.71		
2.9	2824	479	0.76		
3.8	2199	373	0.98		
4.3	2570	327	0.84	TS 88TR58	4
5.1	1891	275	1.14	TSF 88TR58	4
5.4	1768	257	1.06	TSA 88TR58	4
6.3	1745	222	1.07	TSAF88TR58	4
6.8	1424	207	1.32		
2.4	2938	283.04	1.29		
2.7	2645	254.80	1.43	TS 98	8
3	2871	230.48	1.32	TSF 98	8
3.3	2584	207.48	1.47	TSA 98	8
3.7	2340	187.89	1.59	TSAF98	8
4.1	2075	166.62	1.75		
3.3	2203	283.04	1.72		
3.6	1983	254.80	1.91	TS 98	6
4	2153	230.48	1.76	TSF 98	6
4.4	1938	207.48	1.96	TSA 98	6
4.9	1755	187.89	2.12	TSAF98	6
5.5	1556	166.62	2.34		
4.9	1448	283.04	2.62		
5.5	1303	254.80	2.91	TS 98	4
6.1	1415	230.48	2.68	TSF 98	4
6.7	1274	207.48	2.98	TSA 98	4
7.5	1153	187.89	3.22	TSAF98	4
2.8	2567	329.81	0.84		
3.1	2277	292.50	0.95		
3.2	2477	289.22	0.87		
3.6	2196	256.50	0.97	TS 88	6
3.7	1914	245.87	1.09	TSF 88	6
4.3	1846	215.61	1.10	TSA 88	6
4.6	1850	198.00	1.07	TSAF88	6
5.5	1555	166.43	1.25		
6	1429	152.95	1.32		
4.2	1687	329.81	1.28		
4.8	1496	292.50	1.44	TS 88	4
4.8	1627	289.22	1.33	TSF 88	4
5.5	1443	256.50	1.48	TSA 88	4
5.7	1258	245.87	1.66	TSAF88	4
6.5	1213	215.61	1.68		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
1.5kW					
7.1	1215	198.00	1.64		
8.4	1022	166.43	1.91		
9.2	939	152.95	2.02	TS 88	4
10	834	135.83	2.23	TSF 88	4
12	745	121.44	1.92	TSA 88	4
13	670	109.19	2.66	TSAF88	4
15	582	94.77	2.61		
7.4	1160	188.89	1.04		
8.4	1017	165.75	1.18		
8.9	964	157.08	1.24		
10	844	137.48	1.39		
11	760	123.86	1.51		
13	667	108.65	1.70		
14.6	589	95.88	1.88	TS 78	4
15.2	660	92.18	1.64	TSF 78	4
16	522	85.00	2.00	TSA 78	4
18	564	78.78	1.80	TSAF78	4
19	517	72.22	2.02		
22	454	63.38	2.30		
23	430	60.06	2.29		
27	376	52.57	2.77		
30	339	47.36	2.77		
34	297	41.54	3.51		
17	513	83.57	0.96		
19	444	72.39	1.02		
21.5	466	65.00	1.06		
22.2	387	63.00	1.17		
24	410	57.19	1.11		
26	387	54.00	1.22		
30	329	45.98	1.38		
34	299	41.79	1.52	TS 68	4
39	259	36.20	1.76	TSF 68	4
44	226	31.50	2.01	TSA 68	4
53	216	26.40	2.11	TSAF68	4
59	195	23.83	2.33		
67	172	20.97	2.65		
71	162	19.80	1.99		
83	138	16.86	3.30		
91	125	15.32	2.58		
106	109	13.27	2.96		
121	95	11.55	4.25		
43	235	32.80	0.99		
54	214	26.11	1.08		
57	200	24.40	1.16		
66	173	21.09	1.34	TS 58	4
78	147	17.92	1.08	TSF 58	4
88	131	16.00	1.55	TSA 58	4
102	112	13.67	1.42	TSAF58	4
109	105	12.80	1.52		
130	88	10.78	1.82		
96	119	14.52	0.87	TS 48	4
103	111	13.60	0.93	TSF 48	4
122	94	11.46	1.10	TSA 48	4
				TSAF48	4
2.2kW					
3.4	4177	420	0.90	TS 98TR58	4
3.8	3700	372	1.02	TSF 98TR58	4
4.4	3203	322	1.18	TSA 98TR58	4
5.1	2795	281	1.35	TSAF98TR58	4
5.8	2437	245	1.55		

选型参数表
Selection Table

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
2.2kW					
3.3	3163	283.04	1.20	TS 98	6
3.7	2847	254.80	1.33	TSF 98	6
4.1	3091	230.48	1.22	TSA 98	6
4.5	2782	207.48	1.36	TSAF98	6
5	2519	187.89	1.47		
5	2094	283.04	1.81		
5.6	1885	254.80	2.01		
6.2	2046	230.48	1.85		
6.8	1842	207.48	2.06	TS 98	4
7.6	1668	187.89	2.23	TSF 98	4
8.5	1479	166.62	2.46	TSA 98	4
9.4	1337	150.64	2.65	TSAF98	4
11	1133	127.68	3.06		
17	863	83.31	3.56		
4.3	2440	329.81	0.88		
4.9	2164	292.50	1.00		
4.9	2353	289.22	0.92		
5.5	2087	256.50	1.02		
5.8	1819	245.87	1.15		
6.6	1754	215.61	1.16		
7.2	1758	198.00	1.13		
8.5	1477	166.43	1.32		
9.3	1358	152.95	1.39	TS 88	4
10	1206	135.83	1.54	TSF 88	4
12	1078	121.44	1.33	TSA 88	4
13	969	109.19	1.84	TSAF88	4
15	841	94.77	1.80		
17	753	84.86	2.29		
19	783	75.63	1.94		
20	625	70.40	2.43		
21	700	67.62	2.30		
23	630	60.80	2.41		
27	546	52.77	2.78		
10	1220	137.48	0.96		
11	1099	123.86	1.04		
13	964	108.65	1.18		
15	851	95.88	1.30		
15	955	92.18	1.13		
17	755	85.00	1.38		
18	816	78.78	1.24		
20	748	72.22	1.39		
22	656	63.38	1.59	TS 78	4
24	622	60.06	1.58	TSF 78	4
27	544	52.57	1.92	TSA 78	4
30	490	47.36	1.91	TSAF78	4
34	430	41.54	2.43		
39	380	36.66	2.75		
44	337	32.50	3.10		
51	287	27.75	3.64		
55	267	25.79	3.91		
62	269	22.75	3.84		
66	255	21.56	3.91		
31	476	45.98	0.95		
34	433	41.79	1.05		
39	375	36.20	1.21	TS 68	4
45	326	31.50	1.39	TSF 68	4
54	312	26.40	1.46	TSA 68	4
60	282	23.83	1.61	TSAF68	4
68	248	20.97	1.83		
72	234	19.80	1.38		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
2.2kW					
84	200	16.86	2.28	TS 68	4
93	181	15.32	1.78	TSF 68	4
107	157	13.27	2.05	TSA 68	4
123	137	11.55	2.94	TSAF68	4
89	189	16.00	1.08	TS 58	4
104	162	13.67	0.98	TSF 58	4
111	151	12.80	1.05	TSA 58	4
132	128	10.78	1.25	TSAF58	4
3kW					
5.1	3811	281	0.99	TS 98TR58	4
				TSF 98TR58	4
				TSA 98TR58	4
				TSAF98TR58	4
5	2855	283.04	1.33		
5.6	2570	254.80	1.47		
6.2	2790	230.48	1.36		
6.8	2511	207.48	1.51	TS 98	4
7.6	2274	187.89	1.63	TSF 98	4
8.5	2017	166.62	1.80	TSA 98	4
9.4	1823	150.64	1.94	TSAF98	4
11	1545	127.68	2.24		
17	1176	83.31	2.61		
8.5	2015	166.43	0.97		
9.3	1851	152.95	1.02		
10	1644	135.83	1.13		
12	1470	121.44	0.97		
13	1322	109.19	1.35		
15	1147	94.77	1.32		
17	1027	84.86	1.68	TS 88	4
19	1068	75.63	1.42	TSF 88	4
20	852	70.40	1.78	TSA 88	4
21	955	67.62	1.69	TSAF88	4
23	859	60.80	1.76		
27	745	52.77	2.04		
30	667	47.25	2.27		
33	600	42.47	2.53		
36	554	39.20	2.74		
37	617	38.25	2.46		
15	1302	92.18	0.83		
17	1029	85.00	1.01		
18	1113	78.78	0.91		
20	1020	72.22	1.02		
22	895	63.38	1.16		
24	848	60.06	1.16		
27	742	52.57	1.40		
30	669	47.36	1.40		
34	587	41.54	1.78	TS 78	4
39	518	36.66	2.01	TSF 78	4
44	459	32.50	2.27	TSA 78	4
51	392	27.75	2.66	TSAF78	4
55	364	25.79	2.87		
62	367	22.75	2.82		
66	348	21.56	2.86		
75	305	18.87	3.17		
84	274	17.00	2.44		
95	241	14.91	3.86		
108	212	13.16	3.15		
122	188	11.67	4.69		
143	161	9.96	4.15		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
3kW					
39	511	36.20	0.89		
45	445	31.50	1.02		
54	426	26.40	1.07		
60	385	23.83	1.18	TS 68	4
68	338	20.97	1.34	TSF 68	4
72	320	19.80	1.00	TSA 68	4
84	272	16.86	1.67	TSAF68	4
93	247	15.32	1.30		
107	214	13.27	1.50		
123	186	11.55	2.17		
132	174	10.78	0.92	TS 58	4
				TSF 58	4
				TSA 58	4
				TSAF58	4
4kW					
6.2	3668	230.48	1.03		
6.9	3302	207.48	1.15		
7.7	2990	187.89	1.24	TS 98	4
8.6	2652	166.62	1.37	TSF 98	4
9.6	2397	150.64	1.47	TSA 98	4
11	2032	127.68	1.70	TSAF98	4
17	1547	83.31	1.98		
19	1399	75.32	2.09		
23	1185	63.84	2.64		
13	1738	109.19	1.02		
15	1508	94.77	1.00		
17	1351	84.86	1.27		
19	1404	75.63	1.08		
20	1120	70.40	1.35		
21	1256	67.62	1.28		
24	1129	60.80	1.34	TS 88	4
27	980	52.77	1.55	TSF 88	4
30	877	47.25	1.73	TSA 88	4
34	789	42.47	1.92	TSAF88	4
37	728	39.20	2.08		
38	812	38.25	1.87		
45	682	32.15	2.22		
49	627	29.55	2.42		
55	557	26.24	2.11		
61	498	23.46	3.05		
24	1115	60.06	0.88		
27	976	52.57	1.07		
30	879	47.36	1.06		
35	771	41.54	1.35		
39	681	36.66	1.53		
44	603	32.50	1.73		
52	515	27.75	2.02	TS 78	4
56	479	25.79	2.18	TSF 78	4
63	483	22.75	2.14	TSA 78	4
67	458	21.56	2.17	TSAF78	4
76	400	18.87	2.42		
85	361	17.00	1.85		
97	316	14.91	2.94		
109	279	13.16	2.40		
123	248	11.67	3.56		
145	211	9.96	3.17		
85	358	16.86	1.27	TS 68	4
94	325	15.32	0.99	TSF 68	4
109	282	13.27	1.14	TSA 68	4
125	245	11.55	1.64	TSAF68	4

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
5.5kW					
8.6	3646	166.62	1.00		
9.6	3296	150.64	1.07		
11	2794	127.68	1.24		
13	2440	111.52	1.36		
15	2041	93.27	1.60	TS 98	4
17	2127	83.31	1.44	TSF 98	4
18	1767	80.75	1.73	TSA 98	4
19	1923	75.32	1.52	TSAF98	4
23	1630	63.84	1.92		
26	1424	55.76	1.93		
31	1191	46.64	2.63		
36	1031	40.38	3.04		
17	1857	84.86	0.93		
20	1541	70.40	0.98		
21	1726	67.62	0.93		
24	1552	60.80	0.97		
27	1347	52.77	1.12		
30	1206	47.25	1.26		
34	1084	42.47	1.40		
37	1001	39.20	1.51	TS 88	4
38	1116	38.25	1.36	TSF 88	4
42	870	34.09	1.74	TSA 88	4
45	938	32.15	1.62	TSAF88	4
49	862	29.55	1.76		
55	766	26.24	1.53		
61	685	23.46	2.21		
68	615	21.09	1.91		
79	534	18.31	2.84		
88	478	16.39	2.46		
106	397	13.60	2.96		
122	345	11.83	3.41		
35	1061	41.54	0.98		
39	936	36.66	1.11		
44	830	32.50	1.25		
52	708	27.75	1.47		
56	658	25.79	1.58	TS 78	4
63	664	22.75	1.55	TSF 78	4
67	629	21.56	1.58	TSA 78	4
76	551	18.87	1.75	TSAF78	4
85	496	17.00	1.35		
97	435	14.91	2.14		
109	384	13.16	1.74		
123	341	11.67	2.59		
145	291	9.96	2.30		
				TS 68	4
109	387	13.27	0.83	TSF 68	4
125	337	11.55	1.19	TSA 68	4
				TSAF68	4
7.5kW					
13	3282	111.52	1.01		
16	2745	93.27	1.19		
18	2861	83.31	1.07		
18	2377	80.75	1.29	TS 98	4
19	2586	75.32	1.13	TSF 98	4
23	2192	63.84	1.43	TSA 98	4
26	1915	55.76	1.43	TSAF98	4
31	1601	46.64	1.95		
36	1387	40.38	2.26		
40	1428	36.39	2.19		

输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
7.5kW					
45	1286	32.76	2.43		
49	1164	29.67	2.69	TS 98	4
55	1032	26.31	3.03	TSF 98	4
61	934	23.79	3.25	TSA 98	4
72	791	20.16	3.61	TSAF98	4
31	1622	47.25	0.93		
34	1458	42.47	1.04		
37	1346	39.20	1.12		
38	1501	38.25	1.01		
43	1171	34.09	1.29		
45	1262	32.15	1.20	TS 88	4
49	1160	29.55	1.31	TSF 88	4
56	1030	26.24	1.14	TSA 88	4
62	921	23.46	1.65	TSAF88	4
69	828	21.09	1.42		
80	719	18.31	2.11		
89	643	16.39	1.83		
107	534	13.60	2.20		
123	464	11.83	2.53		
53	953	27.75	1.09		
57	886	25.79	1.17		
64	893	22.75	1.15		
68	846	21.56	1.17	TS 78	4
77	741	18.87	1.30	TSF 78	4
86	667	17.00	1.00	TSA 78	4
98	585	14.91	1.59	TSAF78	4
111	516	13.16	1.29		
125	458	11.67	1.92		
147	391	9.96	1.71		
11kW					
26	2808	55.76	0.98		
31	2349	46.64	1.33		
36	2034	40.38	1.54		
40	2094	36.39	1.49		
45	1886	32.76	1.66	TS 98	4
49	1708	29.67	1.83	TSF 98	4
55	1514	26.31	2.07	TSA 98	4
61	1369	23.79	2.22	TSAF98	4
72	1160	20.16	2.46		
83	1014	17.61	2.43		
99	848	14.73	3.21		
115	734	12.75	3.36		
62	1350	23.46	1.12		
69	1214	21.09	0.97	TS 88	4
80	1054	18.31	1.44	TSF 88	4
89	943	16.39	1.24	TSA 88	4
107	783	13.60	1.50	TSAF88	4
123	681	11.83	1.72		
15kW					
31	3203	46.64	0.97		
36	2773	40.38	1.13	TS 98	4
40	2856	36.39	1.09	TSF 98	4
45	2571	32.76	1.21	TSA 98	4
49	2329	29.67	1.34	TSAF98	4

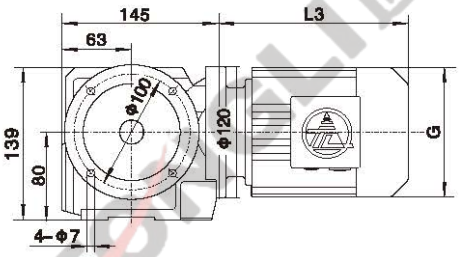
输出转速 Output speed r/min	输出扭矩 Output torque Nm	传动比 Ratio i	服务系数 Service factor f_B	机型号 Type Type	极数 Pole p
15kW					
55	2065	26.31	1.51		
61	1867	23.79	1.62	TS 98	4
72	1582	20.16	1.80	TSF 98	4
83	1382	17.61	1.78	TSA 98	4
99	1156	14.73	2.35	TSAF98	4
115	1001	12.75	2.46		
89	1286	16.39	0.91	TS 88	4
107	1067	13.60	1.10	TSF 88	4
123	928	11.83	1.26	TSA 88	4
				TSAF88	4
18.5kW					
45	3150	32.76	0.99		
50	2852	29.67	1.09		
56	2529	26.31	1.23	TS 98	4
62	2287	23.79	1.32	TSF 98	4
73	1938	20.16	1.47	TSA 98	4
83	1693	17.61	1.45	TSAF98	4
100	1416	14.73	1.92		
115	1226	12.75	2.01		
22kW					
56	3008	26.31	1.04		
62	2720	23.79	1.11	TS 98	4
73	2305	20.16	1.24	TSF 98	4
83	2013	17.61	1.22	TSA 98	4
100	1684	14.73	1.61	TSAF98	4
115	1458	12.75	1.69		

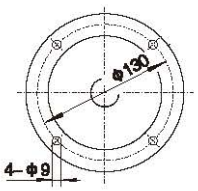
Mamax Permissible torque Nm	输出转速 Output speed r/min	传动比 Ratio i	机型号 Type Type	功率 Power kW/4p
90	8.0	174	TS 38TR18 TSF 38TR18 TSA 38TR18 TSAF38TR18	0.18
	8.5	163		
	9.7	144		
	11	128		
	13	109		0.25
170	3.6	391	TS 48TR18 TSF 48TR18 TSA 48TR18 TSAF48TR18	0.18
	4.1	342		
	4.7	295		
	5.4	256		0.25
	6.1	229		
	6.8	203		
	7.6	183		
	8.6	162		
295	2.4	577	TS 58TR18 TSF 58TR18 TSA 58TR18 TSAF58TR18	0.18
	2.8	504		
	3.2	431		
	3.6	390		
	4.2	332		0.25
	4.8	288		
	5.2	268		
	6.0	231		0.37
	6.9	202		
	7.4	189		
	8.3	167		0.55
	10	134		
520	1.3	1043	TS 68TR38 TSF 68TR38 TSA 68TR38 TSAF68TR38	0.18
	1.5	912		
	1.7	807		
	1.9	716		
	2.3	616		0.25
	2.6	541		
	3.0	467		0.37
	3.3	423		
	3.8	367		
	4.4	319		0.55
	4.9	281		
	5.6	247		
	6.3	222		
	7.0	199		0.75
1240	0.45	3107	TS 78TR38 TSF 78TR38 TSA 78TR38 TSAF78TR38	0.18
	0.67	2075		
	0.77	1794		
	0.80	1730		
	0.86	1609		
	0.98	1412		0.25
	1.1	1224		
	1.3	1098		
	1.5	957		0.37
	1.7	840		
	2.0	711		
	2.2	641		0.55
	2.4	576		
	2.8	505		
	3.2	430		0.75
	3.6	388		
	4.3	327		1.1
	4.8	290		
	5.7	246		
	6.5	216		

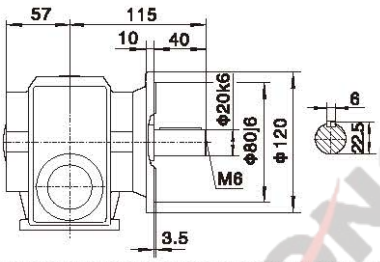
Mamax Permissible torque Nm	输出转速 Output speed r/min	传动比 Ratio i	机型号 Type Type	功率 Power kW/4p
2280	0.24	5874	TS 88TR58 TSF 88TR58 TSA 88TR58 TSAF88TR58	0.18
	0.27	5236		
	0.30	4571		
	0.36	3874		0.25
	0.40	3483		
	0.47	2928		
	0.59	2369		0.37
	0.67	2078		
	0.75	1852		0.55
	0.84	1657		
	1.1	1322		
	1.2	1179		
	1.4	1022		0.75
	1.5	919		
	1.6	852		
	2.0	713		1.1
	2.3	607		
	2.5	552		
	2.9	479		1.5
	3.2	433		
	3.8	373		
	4.3	327		2.2
	5.2	275		
4000	0.16	8606	TS 98TR58 TSF 98TR58 TSA 98TR58 TSAF98TR58	0.18
	0.19	7513		
	0.21	6710		
	0.24	5767		
	0.28	4964		
	0.31	4433		0.25
	0.35	4018		
	0.40	3479		
	0.45	3107		0.37
	0.53	2642		
	0.60	2331		
	0.67	2082		0.55
	0.76	1827		
	0.89	1566		
	0.99	1399		0.75
	1.1	1231		
	1.3	1072		
	1.5	943		1.1
	1.7	824		
	2.0	702		1.5
	2.2	627		
	2.6	534		
	2.9	485		2.2
	3.4	420		
	3.8	372		
	4.4	322		3
	5.1	281		
	5.9	245		4
	7.0	205		

表上所配功率均有超载,按实际条件确定的转扭不得大于减速机额定转扭. The power are all overload in the table.The decided torque according to operating condition should not more than gear units' nominal torque.

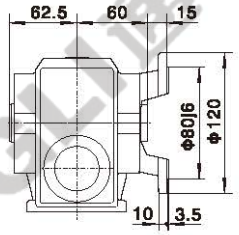
TSF38/Φ120



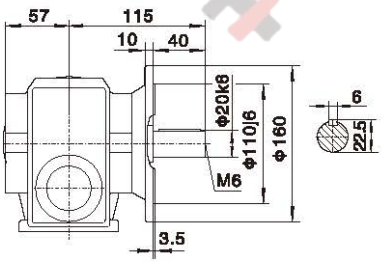




TSAF38/Φ120



TSF38/Φ160



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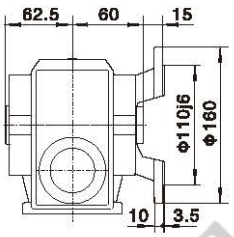
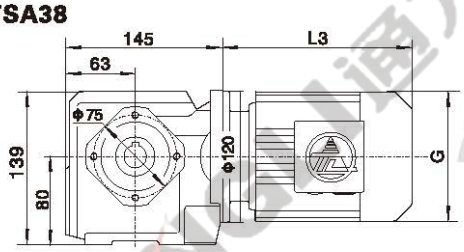
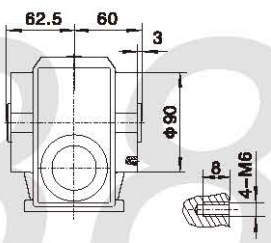
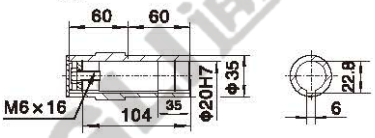


TSA38

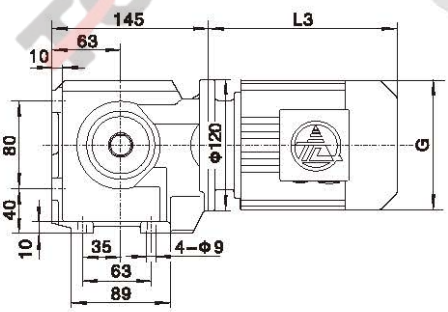


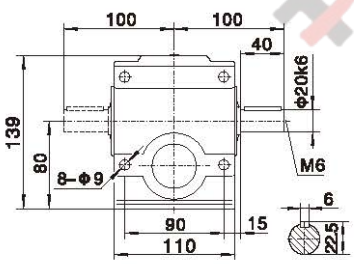


TSAF38/TSA38
空心轴/Hollow shaft

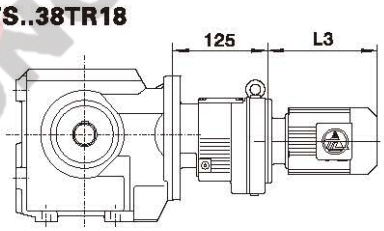


TS38

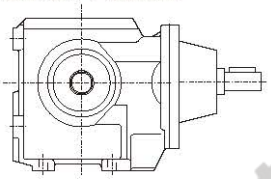




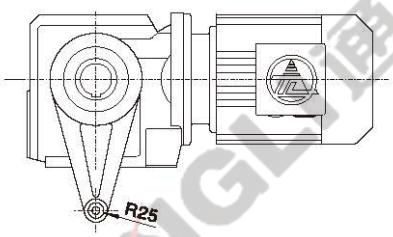
TS..38TR18

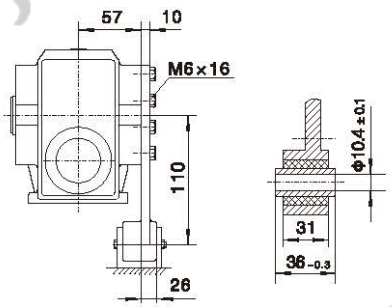


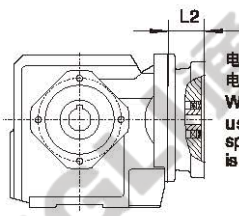
TS..S38
输入带轴尺寸详见19页



TSAT38







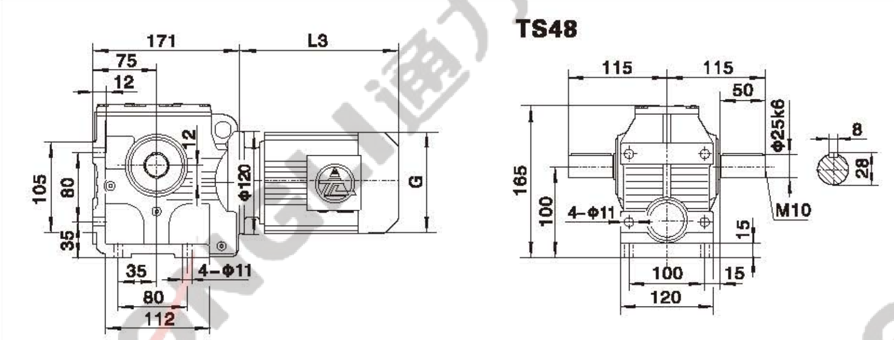
电机需方配或配特殊电机时需加联接法兰
When equipping the user's motor or the special one,the flange is required to connected.

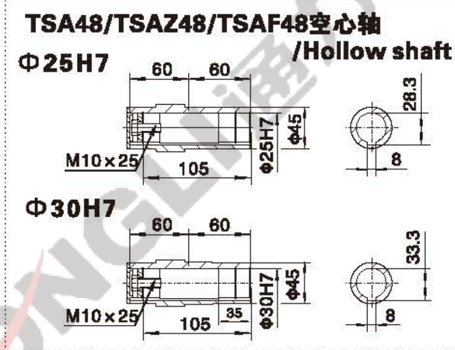
注：其余尺寸见相对应结构形式
Note:For other values please refer to the opposited structure.

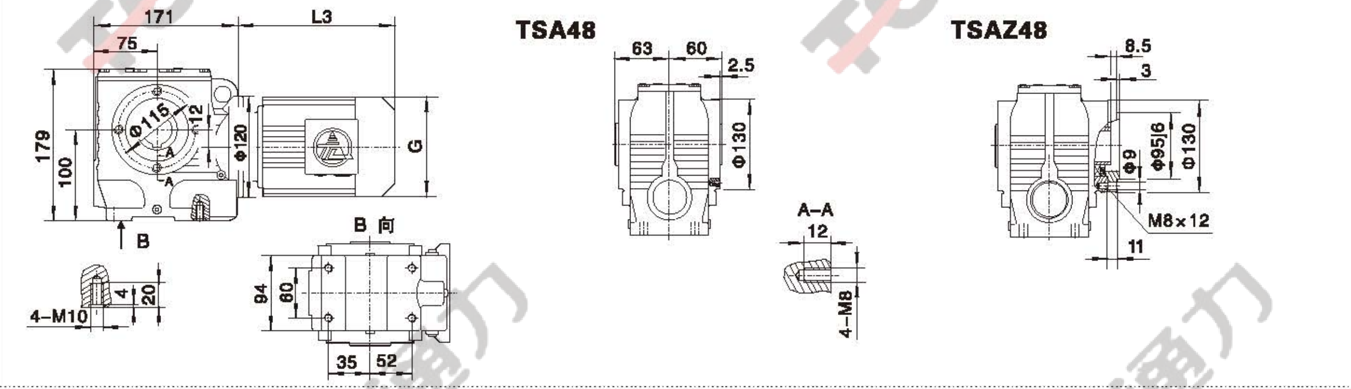
Y2电机机座号 Motor size	63	71		80	
功率/4P Power/(kW)	0.18	0.25	0.37	0.55	0.75
L3	235	250		293	
G	130	145		175	
L2	56	56		62	

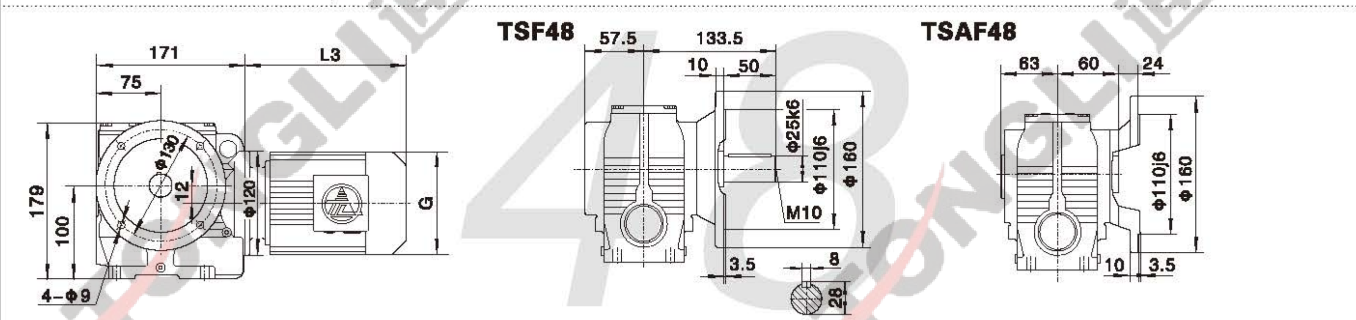
注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照. 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

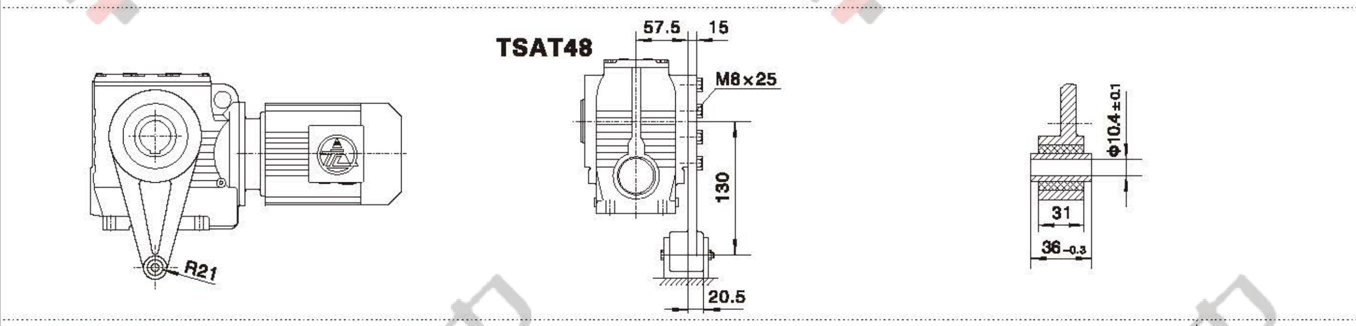
Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ
3.Hollow shaft output with shrink disk, see P Tk40 for detail.

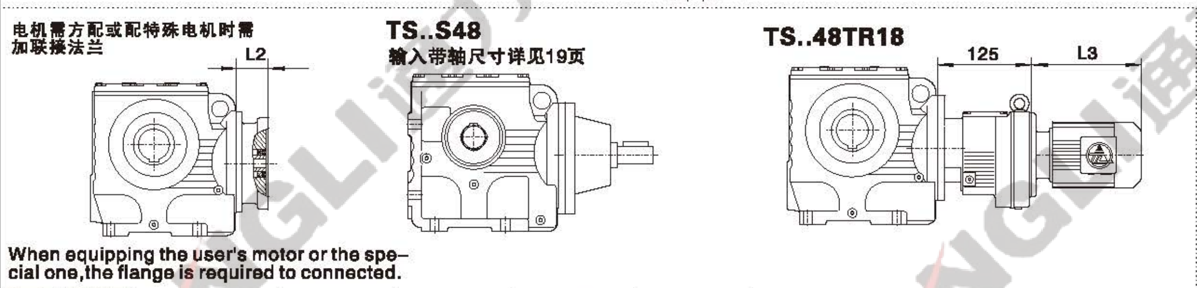












注：其余尺寸见相对应结构形式

Note:For other values please refer to the opposited structure.

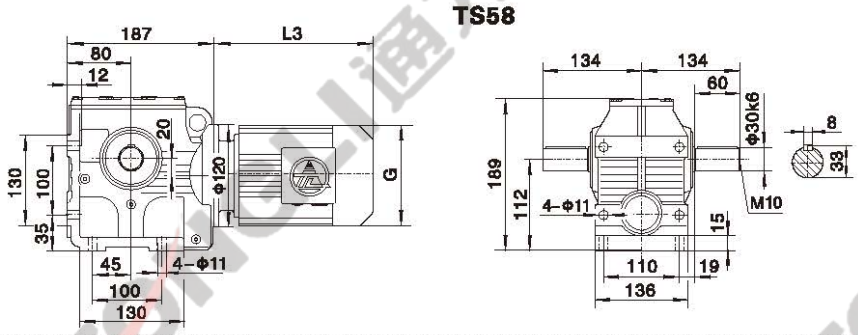
Y2电机机座号 Motor size	63	71		80		90S	90L
功率/4P Power/(kW)	0.18	0.25	0.37	0.55	0.75	1.1	1.5
L3	235	250		293		308	333
G	130	145		175		195	195
L2	56	56		62		62	62

注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照。 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ 3.Hollow shaft output with shrink disk, see P TK40 for detail.

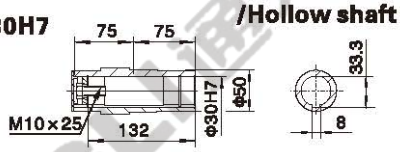
外形安装尺寸
Mounting Dimension Sheets–overview

TS58

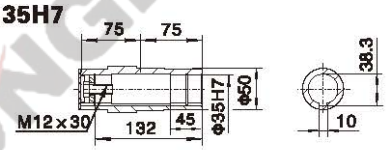


TSA58/TSAZ58/TSAF58空心轴 /Hollow shaft

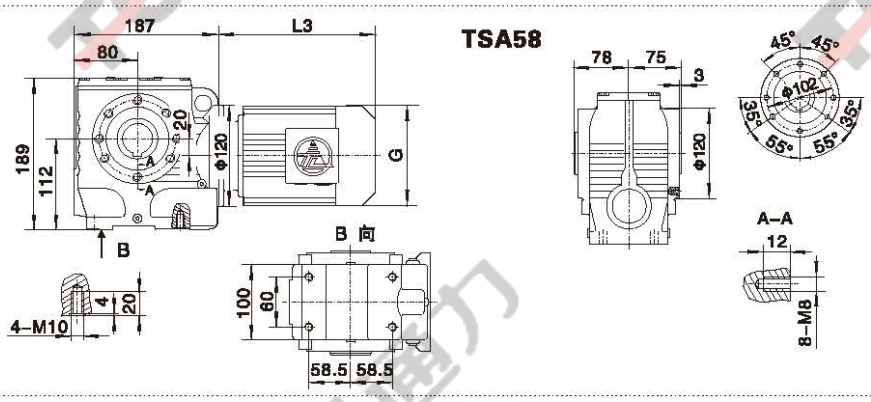
Φ30H7



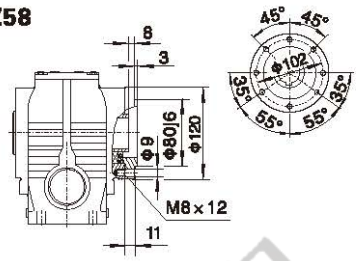
Φ35H7



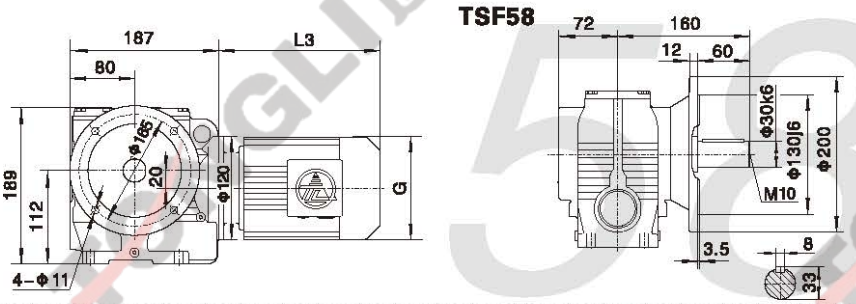
TSA58



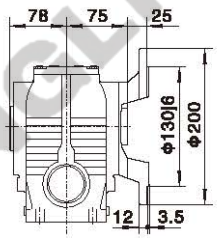
TSAZ58



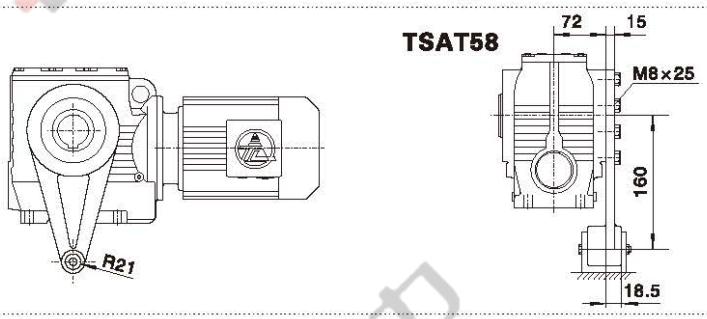
TSF58



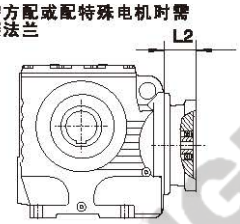
TSAF58



TSAT58



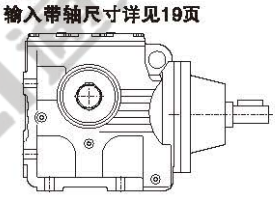
电机需方配或配特殊电机时需加联接法兰



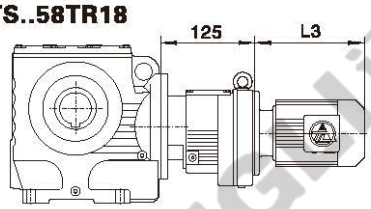
When equipping the user's motor or the special one,the flange is required to connected.

TS..S58

输入带轴尺寸详见19页



TS..58TR18



注：其余尺寸见相对应结构形式

Note:For other values please refer to the opposited structure.

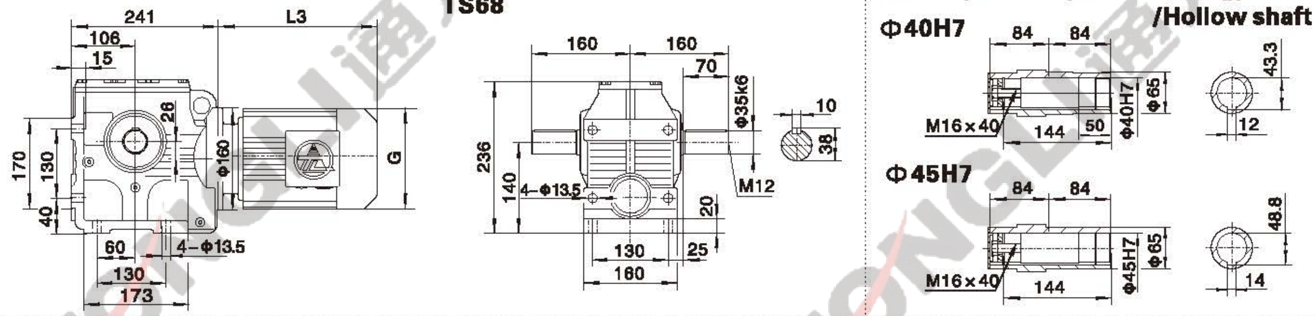
Y2电机机座号 Motor size	63	71		80		90S	90L	100	
功率/4P Power/(kW)	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3.0
L3	235	250		293		308	333	347	
G	130	145		175		195	195	215	
L2	56	56		62		62	62	63	

注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照. 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

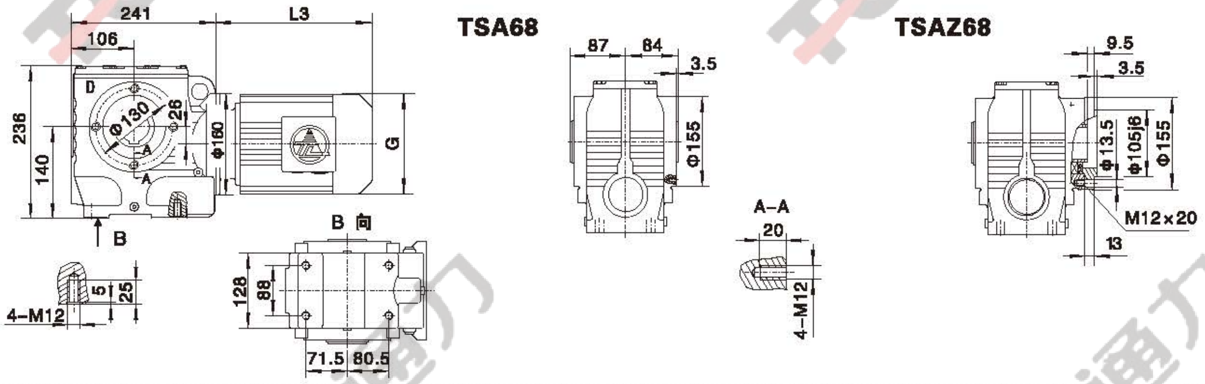
Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ 3.Hollow shaft output with shrink disk, see P TK40for detail.

TS68

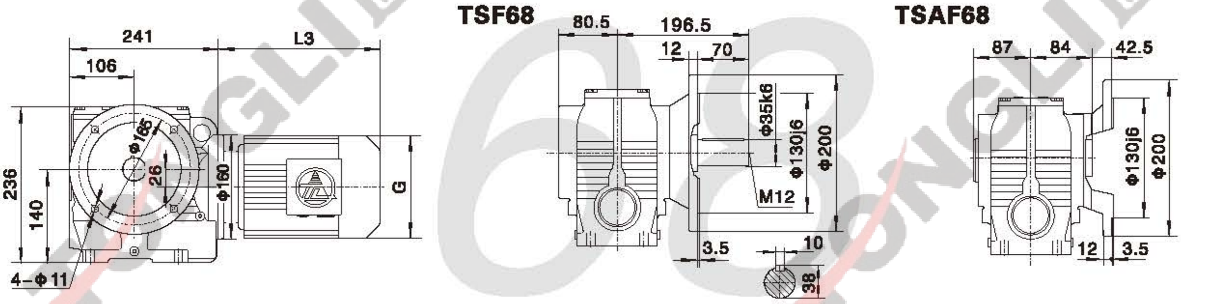
TSA68/TSAZ68/TSAF68空心轴 /Hollow shaft



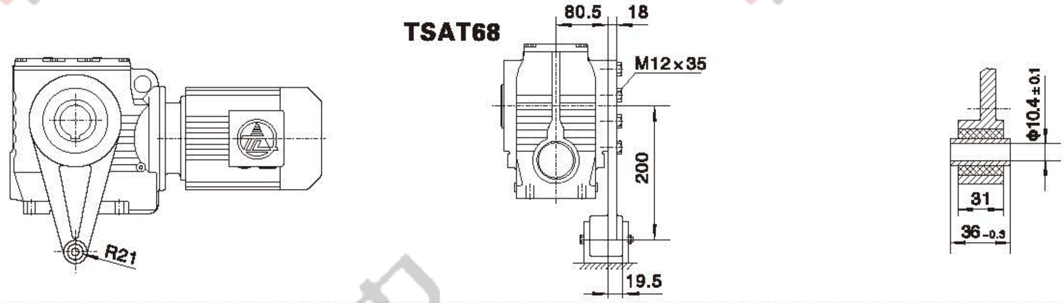
TSA68 / TSAZ68



TSF68 / TSAF68



TSAT68

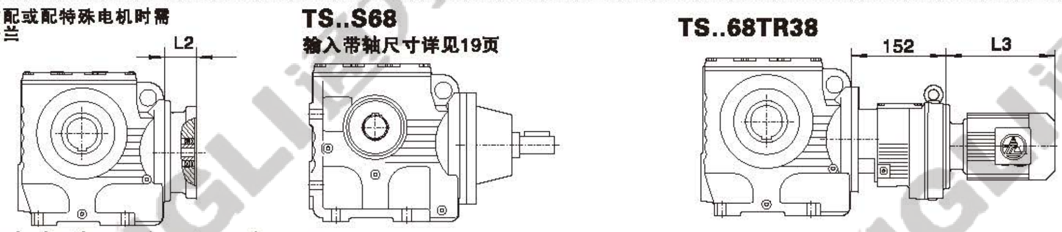


电机需方配或配特殊电机时需加联接法兰

TS..S68

输入带轴尺寸详见19页

TS..68TR38



When equipping the user's motor or the special one,the flange is required to connected.

注：其余尺寸见相对应结构形式

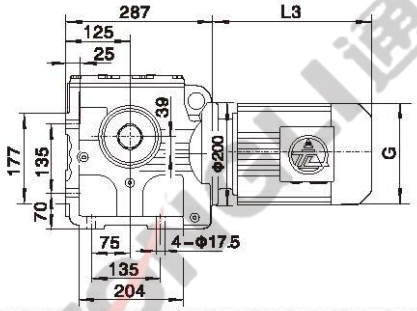
Note:For other values please refer to the opposited structure.

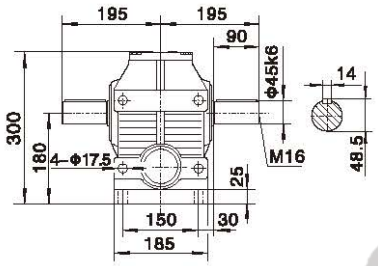
Y2电机机座号 Motor size	71		80		90S	90L	100		112M	132S
功率/4P Power/(kW)	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5
L3	244		293		304	329	357		383	428
G	145		175		195	195	215		240	275
L2	57		72		72	72	74		74	82

注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照. 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ
3.Hollow shaft output with shrink disk, see P TK40 for detail.

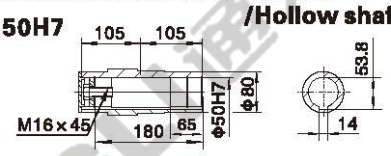
TS78



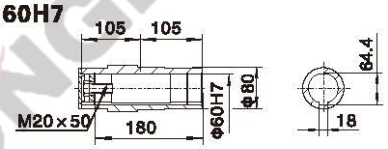


TSA78/TSAZ78/TSAF78空心轴 /Hollow shaft

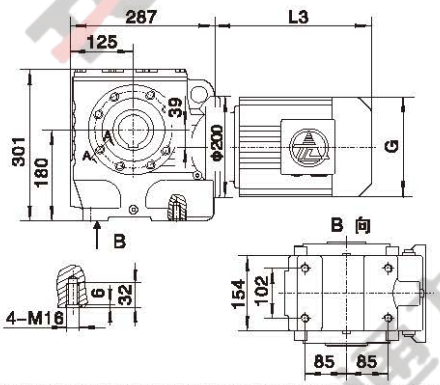
Φ50H7

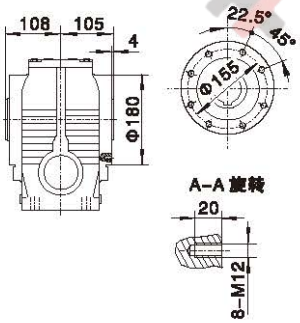


Φ60H7

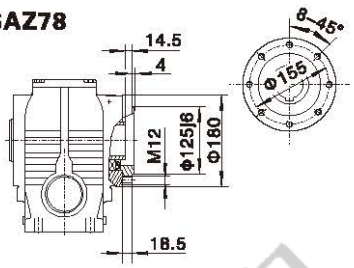


TSA78

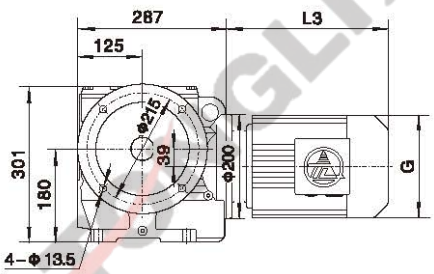


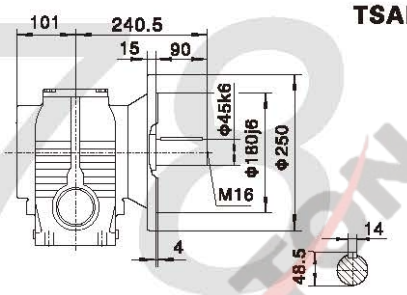


TSAZ78

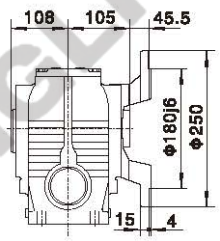


TSF78

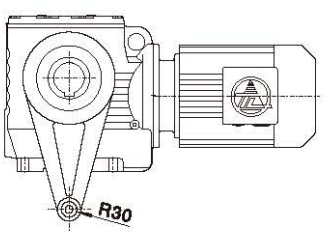


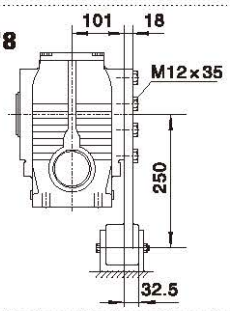


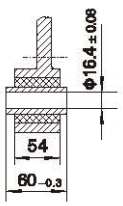
TSAF78



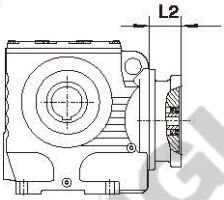
TSAT78







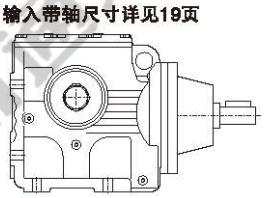
电机需方配或配特殊电机时需加联接法兰



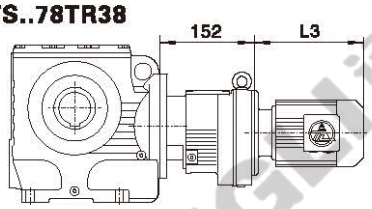
When equipping the user's motor or the special one,the flange is required to connected.

TS..S78

输入带轴尺寸详见19页



TS..78TR38



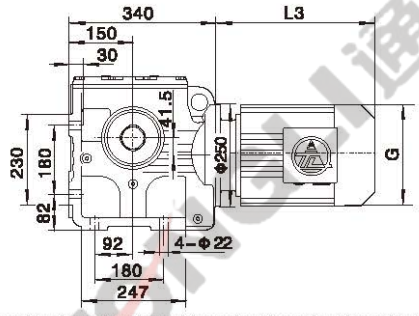
注：其余尺寸见相对应结构形式

Note:For other values please refer to the opposited structure.

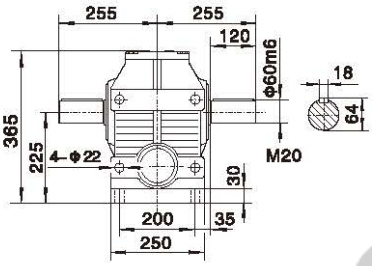
Y2电机机座号 Motor size	80		90S	90L	100		112M	132S	132M
功率/4P Power/(kW)	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5
L3	292		297	322	354		391	430	463
G	175		195	195	215		240	275	275
L2	63.5		63.5	63.5	65		65	68	68

注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照. 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ 3.Hollow shaft output with shrink disk, see P TK40 for detail.

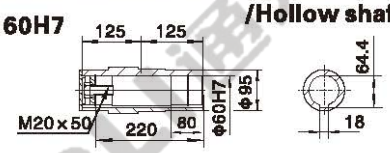


TS88

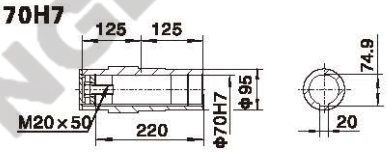


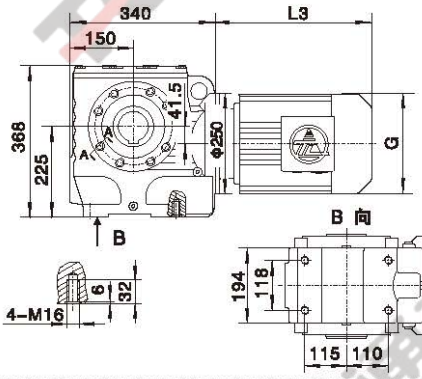
TSA88/TSAZ88/TSAF88空心轴
/Hollow shaft

Φ60H7

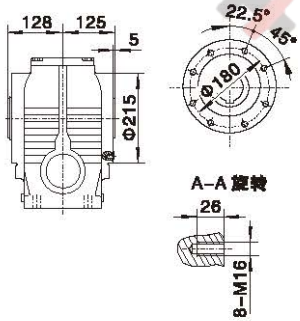


Φ70H7

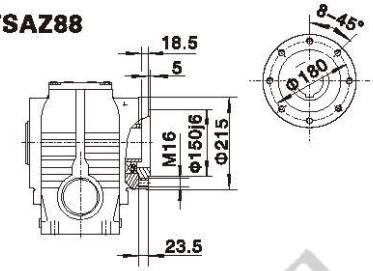


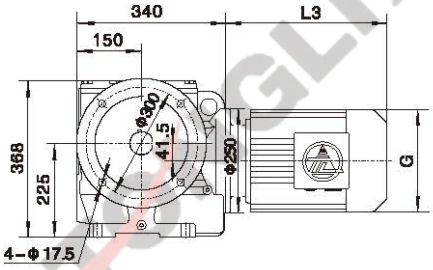


TSA88

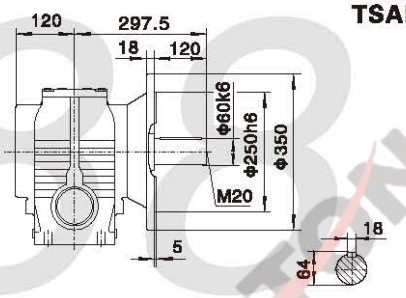


TSAZ88

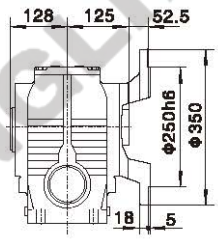


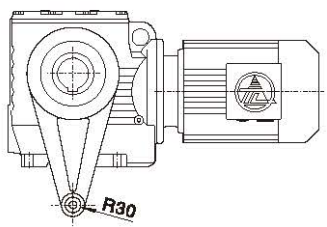


TSF88

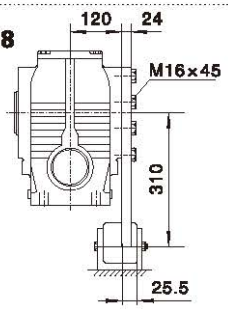


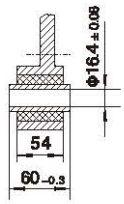
TSAF88



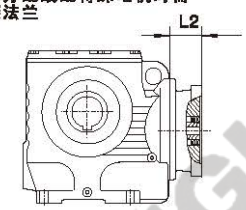


TSAT88



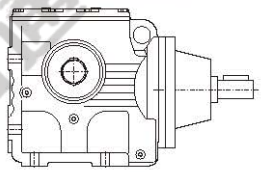


电机需方配或配特殊电机时需
加联接法兰

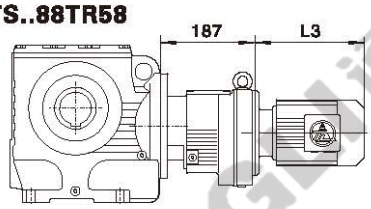


When equipping the user's motor or the spe-
cial one,the flange is required to connected.

TS..S88
输入带轴尺寸详见19页



TS..88TR58



注：其余尺寸见
相对应结构
形式

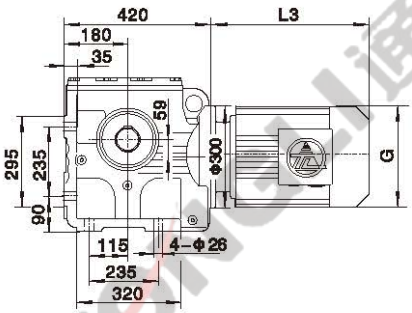
Note:For other
values please
refer to the o-
pposited stru-
cture.

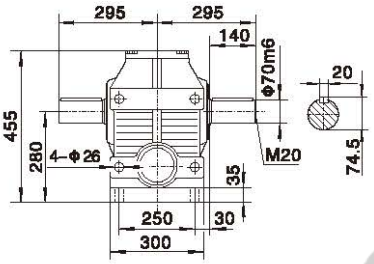
Y2电机机座号 Motor size	80	90S	90L	100	112M	132S	132M	160M	160L	
功率/4P Power/(kW)	0.75	1.1	1.5	2.2 3.0	4.0	5.5	7.5	11	15	
L3	261	284	309	351	371	417	450	538	583	
G	175	195	195	215	240	275	275	330	330	
L2	71	71	71	72	72	83	83	95	95	

注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照. 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ
3.Hollow shaft output with shrink disk, see P TK40 for detail.

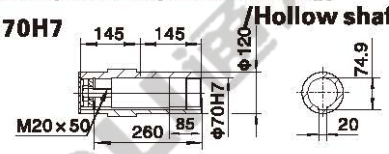
TS98



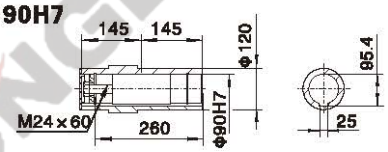


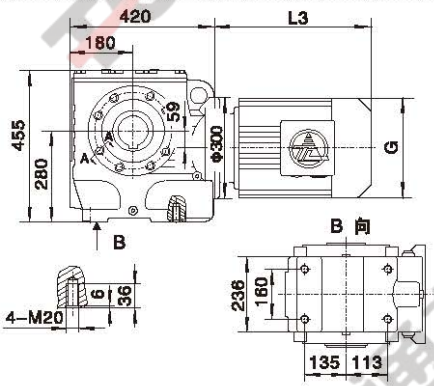
TSA98/TSAZ98/TSAF98空心轴 /Hollow shaft

Φ70H7

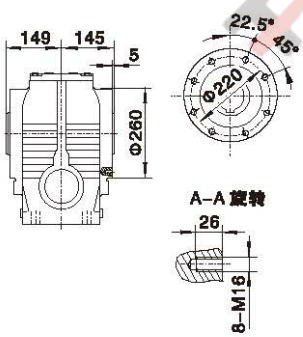


Φ90H7

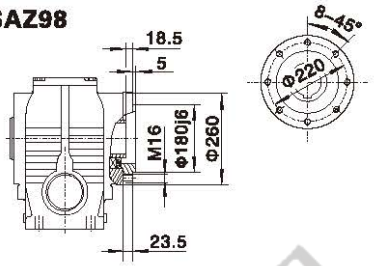




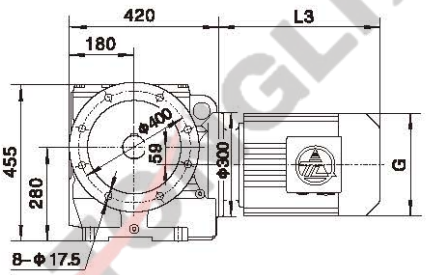
TSA98

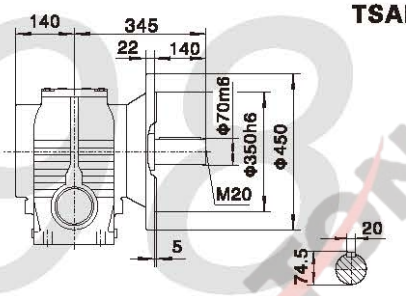


TSAZ98

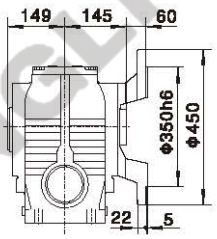


TSF98

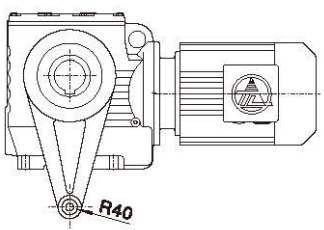


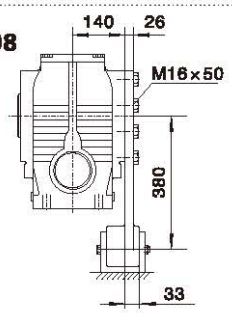


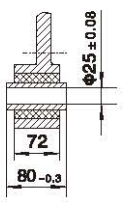
TSAF98



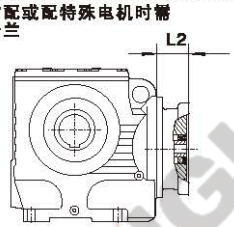
TSAT98







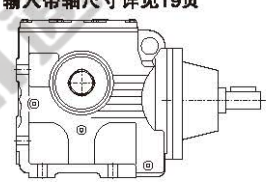
电机需方配或配特殊电机时需加联接法兰



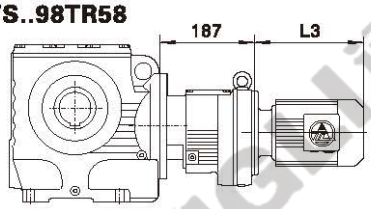
When equipping the user's motor or the special one,the flange is required to connected.

TS..S98

输入带轴尺寸详见19页



TS..98TR58



注：其余尺寸见相对应结构形式

Note:For other values please refer to the opposited structure.

Y2电机机座号 Motor size	90L	100		112M	132S	132M	160M	160L	180M	180L	
功率/4P Power/(kW)	1.5	2.2	3.0	4.0	5.5	7.5	11	15	18.5	22	
L3	301	322		342	411	444	529	574	593	633	
G	195	215		240	275	275	330	330	380	380	
L2	50	50		50	77	77	113	113	113	113	

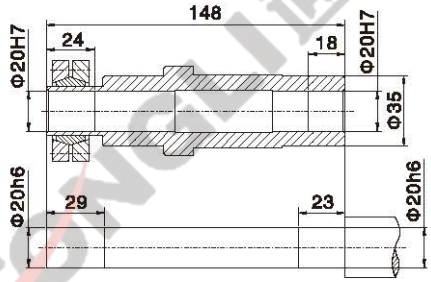
注:1.TSA、TSF、TSAF、TSAZ壳体为通用件,安装尺寸均可相互参照. 2."TS.."表示TS、TSA、TSF、TSAF、TSAZ 3.带锁紧盘式，详见TK40页

Note:1.The housings of TSA、TSF、TSAF、TSAZ are common parts.The mounting dimensions may consult each other. 2."TS.."mean TS、TSA、TSF、TSAF、TSAZ 3.Hollow shaft output with shrink disk, see P TK40 for detail.

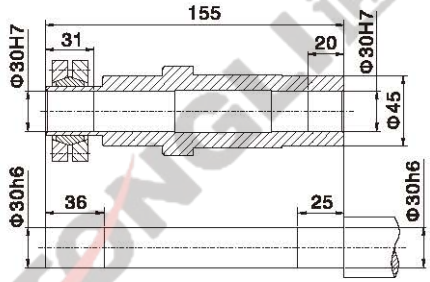
外形安装尺寸
Mounting Dimension Sheets–overview

TS、TF、TK系列锁紧盘尺寸图 Dimensions of shrink disk for TS、TF、TK series

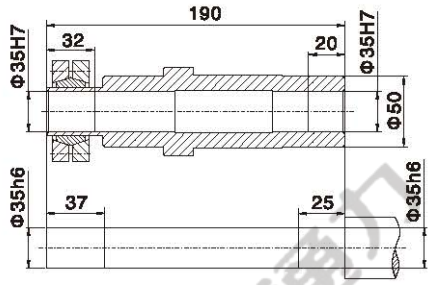
TSH..38..



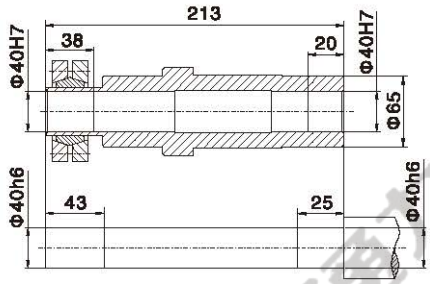
TSH..48..



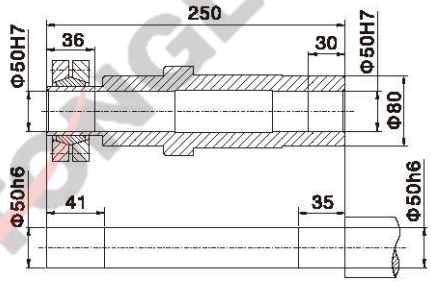
TSH..58..



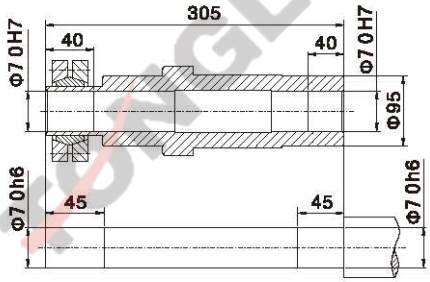
TSH..68..



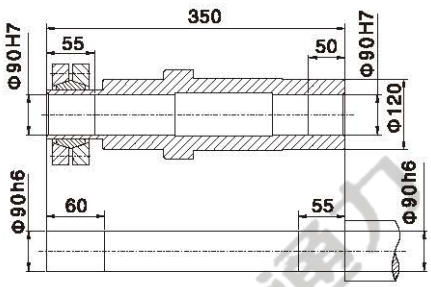
TSH..78..



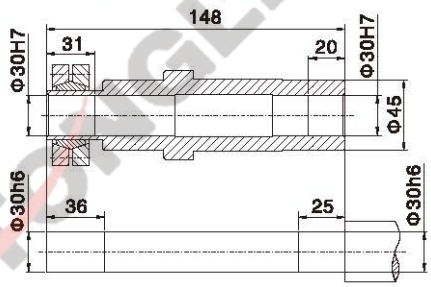
TSH..88..



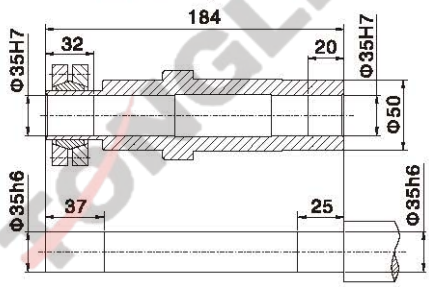
TSH..98..



TKH..38../TFH..38..



TKH..48../TFH..48..



注：1.四大系列带锁紧盘型减速机除输出轴不同外，其余均同平键空心轴标准产品。

Note: 1.Except the output shaft, the main four series gear units with shrink disk are the same as the standard ones with hollow shafts with plat key .

减速器润滑

润滑油种类选择

减速器使用工况	润滑油种类
冶金轧钢、井下采掘、高温有冲击、含水等	L-CKD重载荷工业齿轮油 (GB5903-1995)
其余工况	L-CKC中载荷工业齿轮油 (GB5903-1995)

注:若选用合成齿轮油则更具有良好的抗老化性能,可有效地提高减速器的机械效率。

润滑油粘度

条　　件	润滑油粘度等级 40°C温度下的ISO-VG粘度 mm/s^2(cst)
高速级圆周速度v<2.5m/s,或环境温度在35-50°C之间	VG320(或VG460)
高速级齿轮圆周速度v>2.5m/s,或环境温度在35°C以下,或采用循环油润滑	VG220

浸油润滑润滑油的工作温度

润滑油种类	工作温度/°C
中载荷工业齿轮油L-CKC	-8°C至+90°C(瞬时可达100°C)
重载荷工业齿轮油L-CKD	-5°C至+100°C(瞬时可达110°C)
蜗轮蜗杆油L-CKE/P	-5 C至+100 C(瞬时可达110 C)

注意:如果减速器的工作温度高于或低于表中规定极限值则应重新确定合适的润滑油。
当环境温度低于0°C时启动前油温需加热到0 C以上。

强制润滑润滑油允许的极限温度

40°C温度下的ISO-VG粘度 mm^2/s(cst)	强制润滑允许的极限温度/°C	
	矿物油	合成油
VG220	10-80	0-90
VG320	15-90	5-100
VG460	20-95	10-105

注意:当油温低于表中所列数值时,必须提供浸油润滑方式,或对润滑油加热。

Gear Units Lubrication

Lubricant selection

Operating conditions of gear units	Lubricant specification
Steel rolling,excavating, high temperature with shock,moisture,etc.	L-CKD heavy load industrial gear oil(GB5903-1995)
Others	L-CKC moderate load industrial gear oil(GB5903-1995)

Note:It adopts the synthetic oil which has the better performance of anti-ageing so that improves the mechanical efficiency effectively.

Lubricant viscosity

Conditions	Lubricant viscosity classification Viscosity ISO-VG at 40 ℃ in mm^2/s(cst)
Rotation velocity of high speed stage v<2.5m/s, or ambient temperature between 35~50℃	VG320(or VG460)
Rotation velocity of high speed stage v>2.5m/s, or ambient temperature at 35℃, or lubrication with circulating oil	VG220

Working temperature for dip feed lubrication

Lubricant specification	Working temperature/℃
L-CKC moderate load industrial gear oil	From -8℃ to +90℃(up to 100℃ at moment)
L-CKD heavy load industrial gear oil	From -5℃ to +100℃(up to 110℃ at moment)

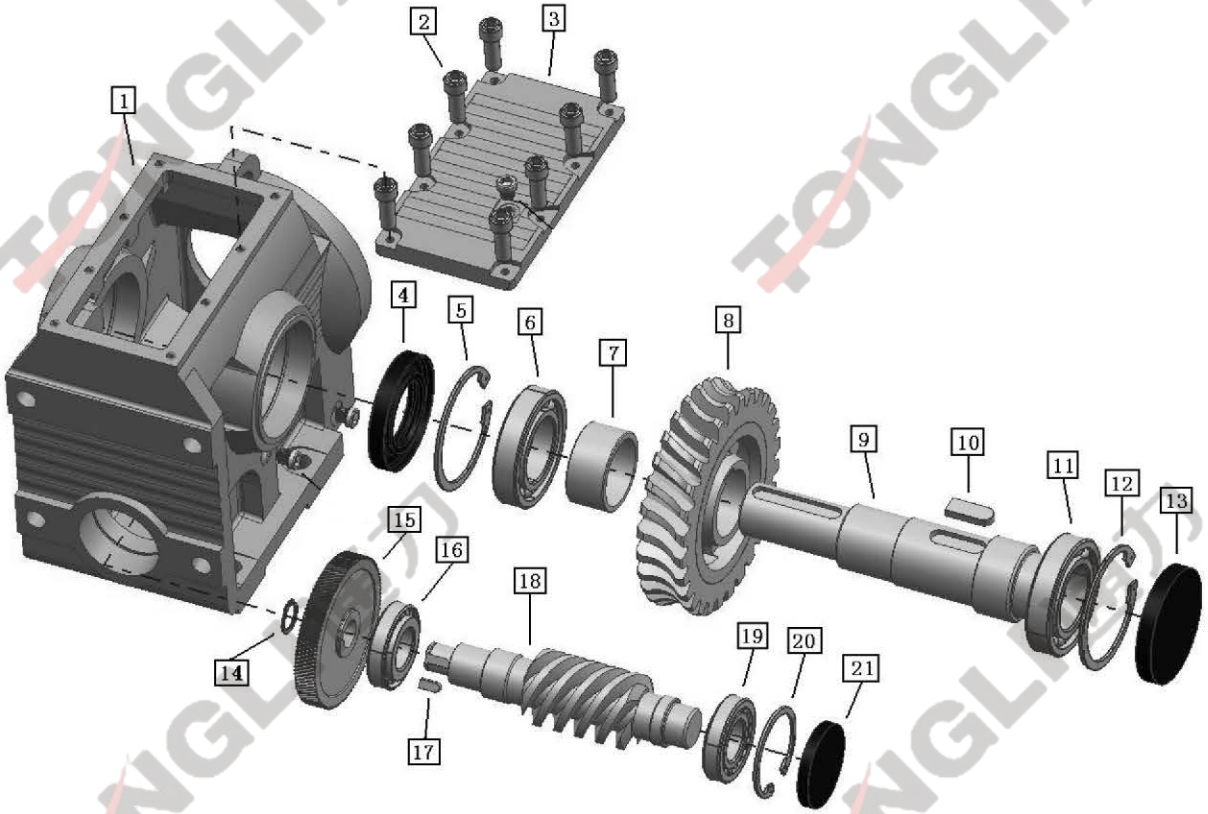
Notes:If the temperatures of gear units are above or below the values as listed in table ,it determines the proper oil again. If the ambient temperatures are below 0℃, the oil has to be heated above 0℃.

Permissible temperature limit for forced feed lubrication

Viscosity ISO-VG at 40 ℃ in mm2/s(cst)	Permissible temperature limit for forced feed lubrication/℃	
	Mineral oil	Synthetic oil
VG220	10-80	0-90
VG320	15-90	5-100
VG460	20-95	10-105

Notes:If the temperatures are below the values as listed in table, dip lubrication has to be provided or the oil must be heated.

四、TS系列爆炸图　　TS series exploded view

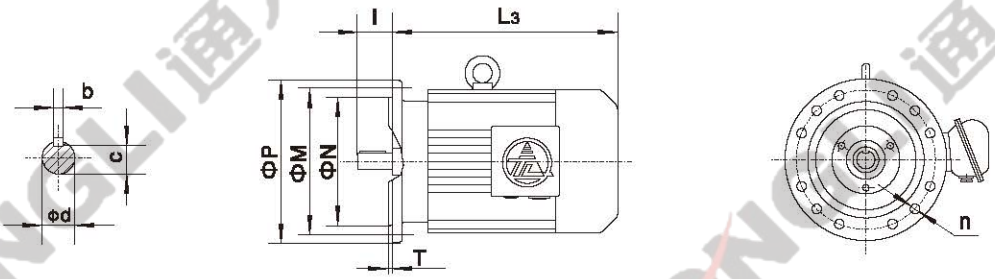


1.箱体	8.蜗轮	15.齿轮Ⅰ
2.螺栓Ⅰ	9.输出轴	16.轴承Ⅲ
3.盖	10.平键Ⅰ	17.平键Ⅱ
4.油封Ⅰ	11.轴承Ⅱ	18.蜗杆
5.孔用挡圈Ⅰ	12.孔用挡圈Ⅱ	19.轴承Ⅳ
6.轴承Ⅰ	13.封盖Ⅰ	20.孔用挡圈Ⅲ
7.轴套Ⅰ	14.轴用挡圈Ⅰ	21.封盖Ⅱ

1.Housing	8.Worm wheel	15.Gear
2.Bolts	9.Output shaft	16.Bearing
3.Cover	10.Parallel key	17.Parallel key
4.Seal	11.Bearing	18.Worm
5.Circlip	12.Circlip	19.Bearing
6.Bearing	13.Cover	20.Circlip
7.Bush	14.Circlip	21.Cover

标准普通电机和特殊电机的参数及安装尺寸

Standard and ordinary motor or special motor parameter and mounting dimension



电机机座号	4极 4 Pole		6极 6 Pole		8极 8 Pole		L3				安装尺寸 Mounting dimensions									M(kg)				
Motor size	P1 (kW)	n1 (r/min)	P1 (kW)	n1 (r/min)	P1 (kW)	n1 (r/min)	Y_2	B	E	V	M	N	P	n	T	d	l	b	c	Y (铝壳) (Aluminium housing)	Y_2	B	E	V
63M1	0.12	1390					202	270	328		115	95j6	140	4×Φ10	3	11j6	23	4	8.5	5.5	13			11
63M2	0.18	1390																		6	13.5	15		12
71M1	0.25	1390	0.18	850			225	285	345		130	110j6	160	4×Φ10	3.5	14j6	30	5	11	6.5	14	16	12	14
71M2	0.37	1390	0.25	850																7.5	14.5	16	13	15
80M1	0.55	1390	0.37	885	0.18	645	255	290	350	310	165	130j6	200	4×Φ12	3.5	19j6	40	6	15.5	10	15	31	20	16
80M2	0.75	1390	0.55	885	0.25	645														11	16	32	21	17
90S	1.1	1400	0.75	910	0.37	670	270	310	370	320	165	130j6	200	4×Φ12	3.5	24j6	50	8	20	16	23	35	27	23
90L	1.5	1400	1.1	910	0.55	670	295	335	395	345	165	130j6	200	4×Φ12	3.5	24j6	50	8	20	20	25	39	31	28
100L1	2.2	1420	1.5	920	0.75	680	325	370	420	370	215	180j6	250	4×Φ15	4	28j6	60	8	24		33	49	41	35
100L2	3	1420			1.1	680															35	53	44	36
112M	4	1440	2.2	940	1.5	690	340	400	450	390	215	180j6	250	4×Φ15	4	28j6	60	8	24		41	67	60	43
132S	5.5	1440	3	960	2.2	710	390	430	505	450	265	230j6	300	4×Φ15	4	38k6	80	10	33		65	93	85	63
132M	7.5	1460	4	960	3	710	430	470	545	490	265	230j6	300	4×Φ15	4	38k6	80	10	33		76	105	98	75
			5.5	960																				
160M	11	1460	7.5	960	4	720	505	545	610	550	300	250h6	350	4×Φ19	5	42k6	110	12	37		118	150	143	116
					5.5	720																		
160L	15	1460	11	960	7.5	720	560	585	655	595	300	250h6	350	4×Φ19	5	42k6	110	12	37		132	169	165	136
180M	18.5	1470	/	/	/	/	590	620	715	740	300	250h6	350	4×Φ19	5	48k6	110	14	42.5		164	205	203	169
180L	22	1470	15	970	11	730	630	640	765	790	300	250h6	350	4×Φ19	5	48k6	110	14	42.5		182	222	216	183
200L	30	1470	18.5	970	15	730	660	695	790	850	350	300h6	400	4×Φ19	5	55k6	110	16	49		245	300	296	236
			22	970																				
225S	37	1480	/	/	18.5	730	675	705	860	910	400	350h6	450	8×Φ19	5	60m6	140	18	53		258	360	370	291
225M	45	1480	30	980	22	730	705	730	890	940	400	350h6	450	8×Φ19	5	60m6	140	18	53		290	390	405	327
250M	55	1480	37	980	30	730	770	795		1060	500	450h6	550	8×Φ19	5	65m6	140	18	58		388	530	498	393
280S	75	1480	45	980	37	730	845	870		1160	500	450h6	550	8×Φ19	5	75m6	140	20	67.5		510	660	633	520
280M	90	1485	55	980	45	740	895	920		1260	500	450h6	550	8×Φ19	5	75m6	140	20	67.5		606	785	723	610
315S	110	1485	75	980	55	740	1100	1100		1330	600	550h6	660	8×Φ24	6	80m6	170	22	71		910	1000	1150	950
315M	132	1485	90	985	75	740	1180	1180		1380	600	550h6	660	8×Φ24	6	80m6	170	22	71		1000	1100	1230	1030
315L	160	1485	110	985	90	740	1270	1270		1450	600	550h6	660	8×Φ24	6	80m6	170	22	71		1055	1100	1320	1100
	200	1485	132	985	110	740															1128	1160	1420	1200

注：由于结构需要及生产厂家不同，有时参数会有所变化，此表仅供参考，准确尺寸请来电垂询。

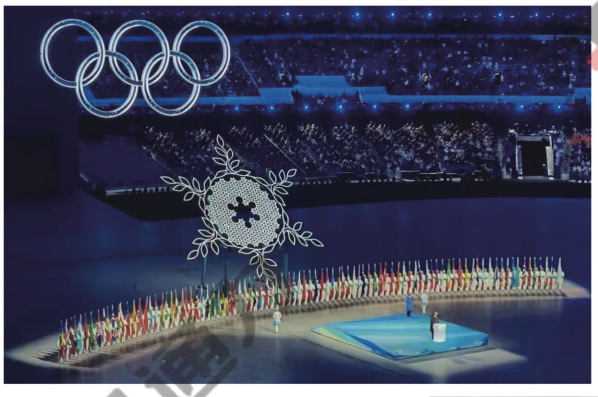
Note: Sometimes the parameters may be changed with the different structures and manufacturers, this table is only for reference,please refer to us for the exact dimensions.

APPLICATION
FIELDS

应用领域











钢铁冶金
Steel metallurgy

橡胶塑料
Rubber plastic

石油化工
Petrochemical

环保生态
Environmental Protection

电力设备
Power equipment

建材机械
Building materials machinery

港口机械
Port machinery

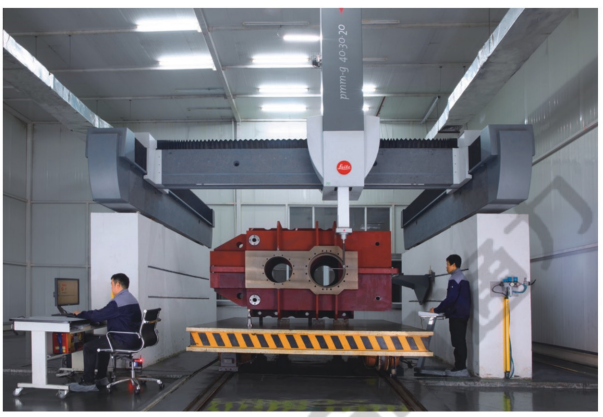
煤矿机械
Coal mining machinery

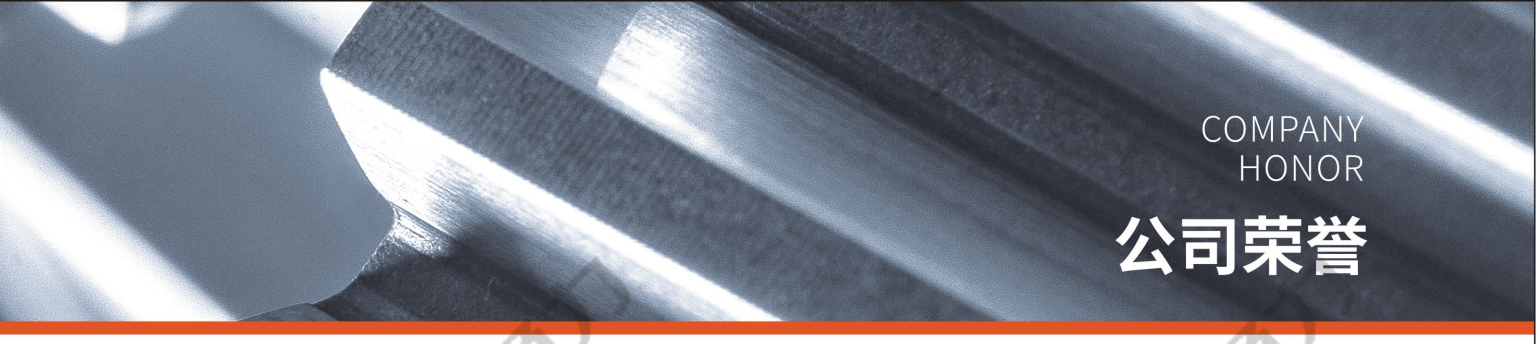
工程机械
Construction machinery

起重运输
Lifting and transportation

PROCESSING AND
TESTING EQUIPMENT

加工和检测设备





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