

您身边的微电机专家！



HQ MOTOR

湖南正权机电科技有限责任公司

Hunan Zhengquan Electromechanical Technology Co., Ltd.

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为人类智能化生活
提供电机解决方案

Providing Electric Machine Solution for Human Intelligent Life



湖南正权机电科技有限责任公司坐落于湖南省娄底市经济开发区电机产业园区，位于电机产业集聚地，周边配套完善，便于产业协作与资源整合。公司是一家专业为人类智能化生活，提供电机解决方案的研发与制造小型直流电机（马达）企业。公司主要生产1（ $\phi 20\text{mm}$ ）、2（ $\phi 24\text{mm}$ ）、3（ $\phi 28\text{mm}$ ）、5（ $\phi 36\text{mm}$ ）、7（ $\phi 42\text{mm}$ ）、8（ $\phi 48\text{mm}$ ）、9（ $\phi 52\text{mm}$ ）及定做各种非标钢管电机等。产品规格丰富齐全，工作电压覆盖1.2VDC到240VDC。广泛应用于汽车电装、家用电器、电动工具、办公设施、健身器材及电动模型产品上，为全球客户在智能办公家居、家庭数字化、电动工具、汽车零部件、各种减速齿轮箱、精密医疗器械、精密仪器仪表、通信技术、工业自动化和金融设备等诸多领域提供了具有品质、价格、服务竞争力的创新解决方案。

我们将继续以现代企业的管理理念，秉承“重技术、高品质、诚服务”的企业宗旨，共同致力于微特电机行业的创新；以满足客户的需求，赢得客户的信赖！竭诚欢迎国内外新老客户莅临洽谈、合作、共同发展！

Hunan Zhengquan Electromechanical Technology Co., Ltd. is located in the Motor Industrial Park of Loudi Economic and Technological Development Zone, Hunan Province. As a gathering place for the motor industry, the surrounding supporting facilities are well-developed, facilitating industrial collaboration and resource integration. We are a professional R&D and manufacturing enterprise specializing in small DC motors, dedicated to providing motor solutions for human intelligent life.

Our main products include Series 1 ($\phi 20\text{mm}$), Series 2 ($\phi 24\text{mm}$), Series 3 ($\phi 28\text{mm}$), Series 5 ($\phi 36\text{mm}$), Series 7 ($\phi 42\text{mm}$), Series 8 ($\phi 48\text{mm}$), Series 9 ($\phi 52\text{mm}$), as well as customized non-standard steel tube motors. With a complete range of product specifications, the operating voltage covers 1.2VDC to 240VDC. Our products are widely used in automotive electrical equipment, household appliances, power tools, office equipment, fitness equipment, and electric model products. We provide global customers with innovative solutions featuring competitive quality, price, and service in numerous fields such as smart office and home furnishings, home digitalization, power tools, auto parts, various reduction gearboxes, precision medical devices, precision instruments, communication technology, industrial automation, and financial equipment.

Adhering to modern enterprise management concepts and the corporate tenet of "Emphasizing Technology, Pursuing High Quality, and Delivering Sincere Service", we will continue to commit ourselves to innovation in the micro-special motor industry, aiming to meet customer needs and gain their trust. We sincerely welcome new and old customers at home and abroad to visit, negotiate, cooperate, and achieve common development!



汽车部件



电动工具



办公设备



运动器械



个人护理

Catalog

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DC brush motor 直流有刷电机

TOP-LEVEL CONFIGURATION, EXCELLENT PERFORMANCE
NEW DESIGN CONCEPT TO DEAL WITH COMPLEX OPERATION ENVIRONMENT

顶级配置，卓越性能
全新设计理念，应对复杂运行环境



直流有刷马达市场应用极其广泛，冲击钻、手持吸尘器、车载气泵、汽车座椅等领域中的明星产品，经过重新设计，搭载高性能的铁氧体磁石，坚固耐磨的进口碳刷，特别设计的超大散热风扇，超过200°耐温的芯线，让此款马达能够胜任各种恶劣使用环境，稳定的性能输出及高性价比在同类产品中一直佼佼者。

As a traditional DC brush motor, it enjoys wide market application, and it is the star product in the field of percussion drilling, hand cleaner, car air pump, car seats; through redesign, it is equipped with high-powered ferite magnet, imported wear-resisting carbon brush, specifically designed super cooling fan and heat-resistant wire of more than 200° so that this motor is able to adapt to all kinds of bad operating environment; the stable performance output and higher cost performance make it outstanding among these products.

Micromotor Experts Around You

您身边的微电机专家

Quality Control

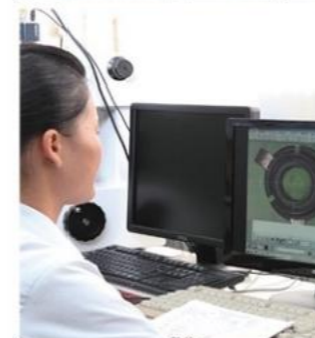
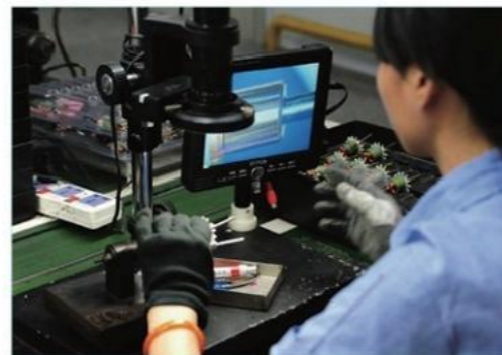
品质控制

原材料检验→制程检验→成品检验→成品出货

Inspection of raw materials > process test > finished product test > product shipment



Raw Material Inspection
原材料检验

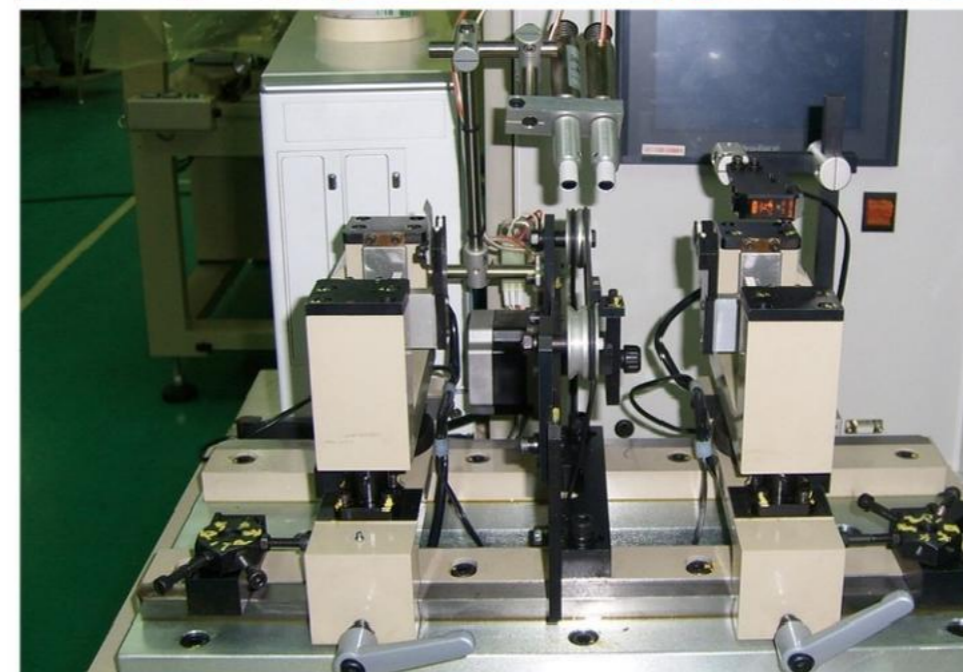


Product Test
产品检验



公司拥有独立的技术研发中心、精密测试实验室、多功能寿命测试中心，经验丰富的研发团队，能够准确的根据客户的要求设计产品，满足日新月异的客户需求。

The company has an independent R&D center, a precision test laboratory, a multi-purpose endurance test center and an experienced R&D team, and thus is able to accurately design products according to customer requirements and meet the changing customer needs.



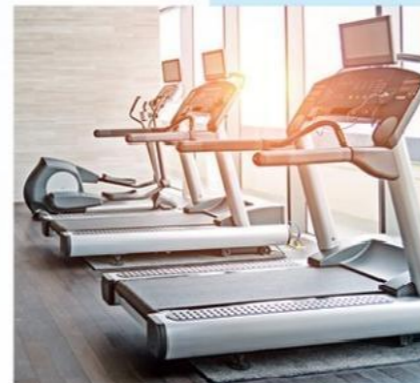
Production Test
生产环节检验

Product Application

产品应用

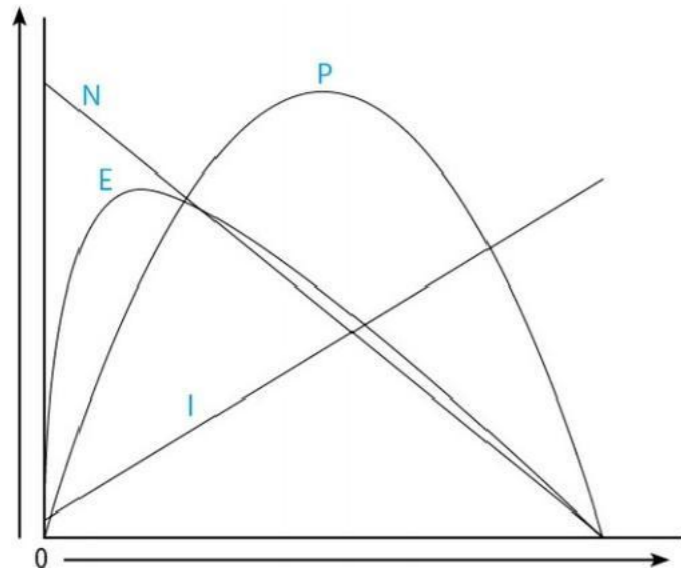
本公司生产的各类电机广泛应用于电动工具，家用电器，汽车，医疗器械，运动器械，办公设备，特种设备，个人护理等领域。

All kinds of motors produced by our company are widely used in electric tools, household appliances, automobiles, medical devices, sports equipment, office equipments, special equipment, personal care and other fields.



Performance Chart

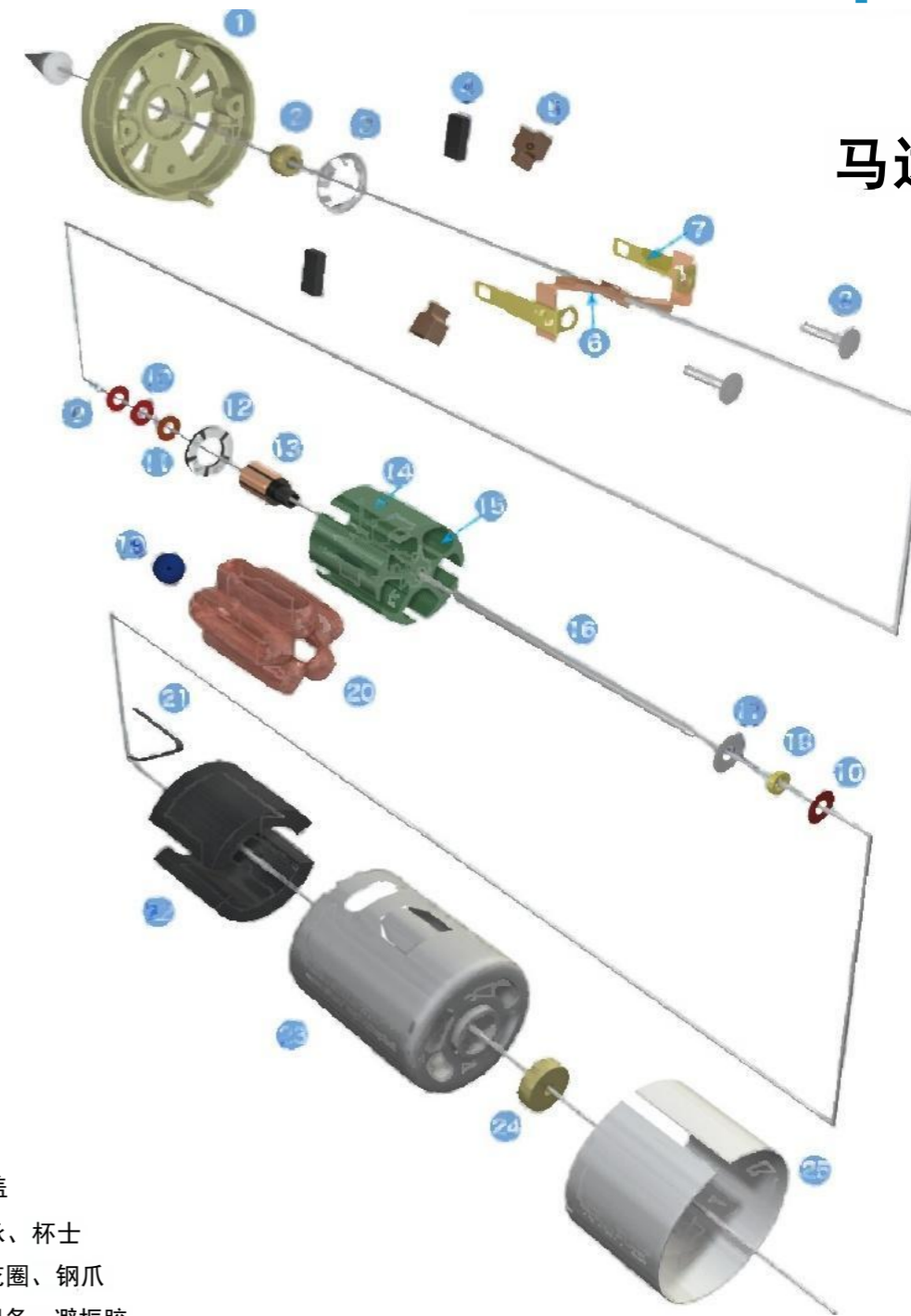
性能表说明



例如: HRS-775PH-3559电机
 电压: 24V
 空载转速: 7000 Rpm
 空载电流: 0.5A
 负载扭矩: 672.84 g.cm
 负载电流: 2.33A
 负载转速: 5765 Rpm
 输出功率: $672.84 \times 5765 \div 97500 = 39.78$ W
 输入功率: $24 \times 2.33 = 55.92$ W
 效率: $39.78 \div 55.92 \times 100\% = 71.14\%$

Motor Exploded View

马达分解图



T 扭矩: 电机的扭矩与电机的体积、转速、材料有关

Torque: Torque of motor is related to volume, speed and material of motor.

N 转速: 电机每分钟运行的圈数。电机转速与电压成正比，与线圈的圈数成反比，与负载扭矩成反比

Speed: Number of cycles per minute of motor operation. The motor speed is proportional to the voltage, inversely proportional to the number of coils and inversely proportional to the load torque.

电流: 电机的电流与负载扭矩成正比

Current: The current of the motor is proportional to the load torque.

P_{out} 输出功率: 电机输出功率是电机的有用功。电机输出功率 ≈ 转速 × 负载扭矩 / 97500

Output power: The output power of the motor is the useful power of the motor. Motor output power = speed × Load torque / 97500

P_{in} 输入功率: 电机输入功率 = 电压 × 电流

Input power = motor input power = voltage × current

η (E) 电机的效率: 电机的效率 = 输出功率 ÷ 输入功率 × 100%

Motor efficiency = motor efficiency = output power ÷ input power × 100%

- | | | |
|-------------|-------------|--------------|
| 1. 胶盖 | 12. 压敏电阻、圈仔 | 19. 平衡胶、平衡泥 |
| 2. 轴承、杯士 | 13. 换向器、整流子 | 20. 漆包线 |
| 3. 梅花圈、钢爪 | 14. 铁芯片、冲片 | 21. 弹弓、卡簧 |
| 4. 阻尼条、避振胶 | 15. 绝缘漆、涂敷层 | 22. 磁瓦 |
| 5. 碳刷、碳精 | 16. 轴、铁枝 | 23. 铁壳、大壳、机壳 |
| 6. 刷架 | 17. 绝缘垫片 | 24. 轴承、杯士 |
| 7. 端子、插头 | 18. 定位圈、铜环 | 25. 保磁圈、护磁圈 |
| 8. 铆钉 | | |
| 9. 垫片、介子 | | |
| 10. 垫片、介子 | | |
| 11. 止油片、防油圈 | | |

HRS-360/365SH

OUTPUT:2.5W-40W(APPROX)

产品用途:

电动工具>电磨

办公室OA系统>打印机

家电产品>电吹风

汽车设备>水泵

Product uses:

Electric Tools>electric mill

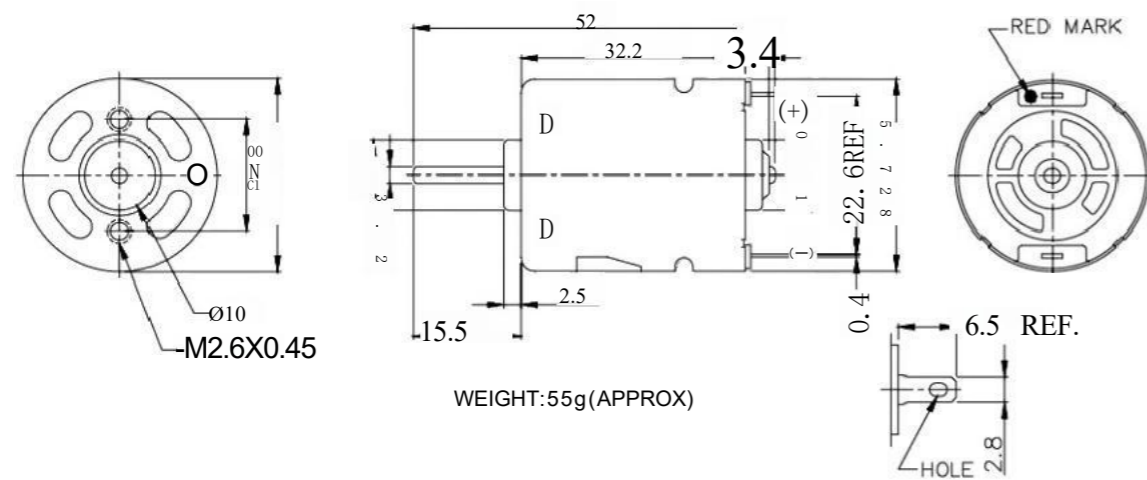
Office OA system>printer

Home appliances>hair dryer

Vehicle Equipment>pump



MODEL	Voltage		No Load		At Maximum Efficiency						Stall		
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							g.cm	mNm				g.cm	mN.m
HRS-365SH-3270	3.0-7.2	7.2	14800	0.55	12200	2.10	75	7.35	9.32	61	10.40	440	43.14
HRS-365SH-18180	6.0-120	6.0	4750	0.13	3700	0.42	36	3.53	1.38	59	1.60	173	16.96



HRS-360/365SA

OUTPUT:2.5W-40W(APPROX)

产品用途:

电动工具>电磨

办公室OA系统>打印机

家电产品>电吹风

汽车设备>水泵

Product uses:

Electric Tools>electric mill

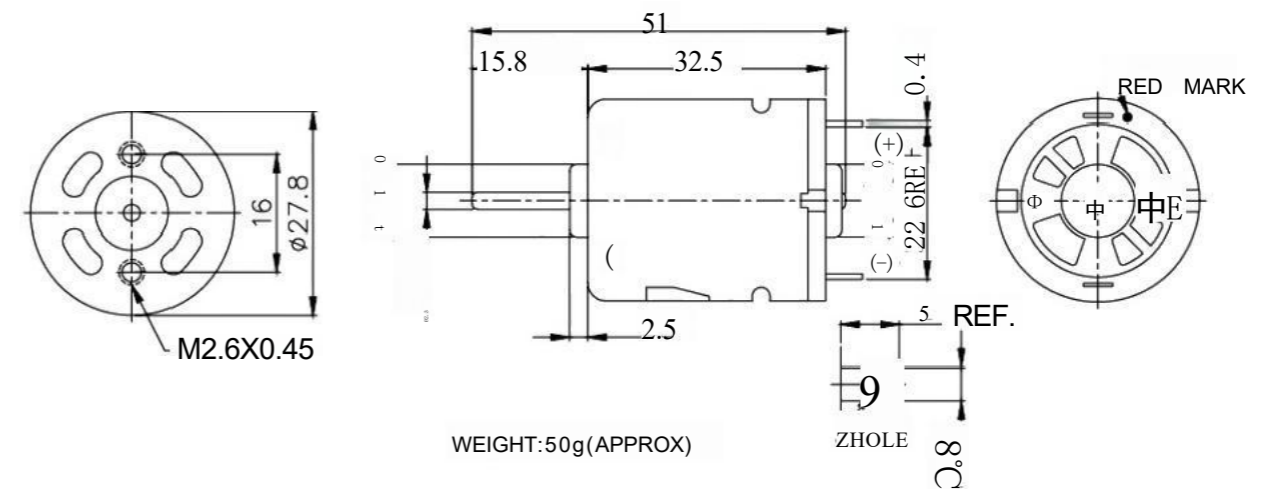
Office OA system>printer

Home appliances>hair dryer

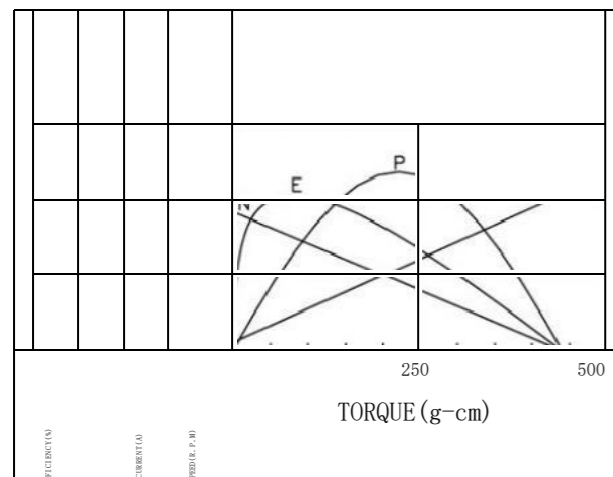
Vehicle Equipment>pump



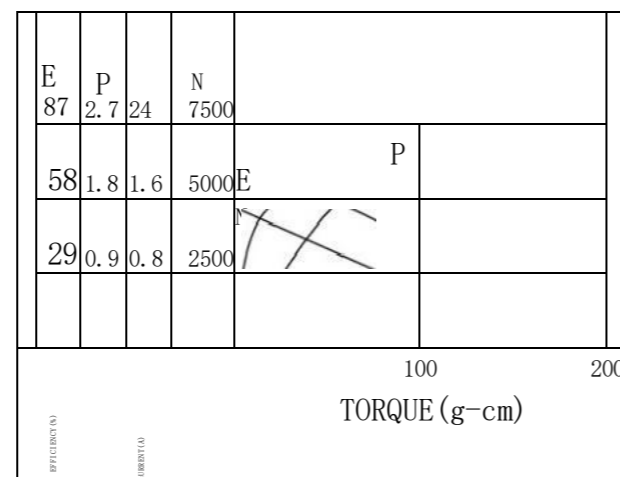
MODEL	Voltage		No Load		At Maximum Efficiency						Stall		
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output W	Eff %	Current A	Torque	
							g.cm	mN.m				g.cm	mN.m
HRS-365SA-3745	1.2-3.6	3.6	12500	0.80	9900	2.55	55	5.39	5.67	61	9.54	264	25.88
HRS-365SA-2880	6.0-12.0	6.0	12000	0.35	9900	1.57	57	5.39	5.90	64	8.18	363	35.39



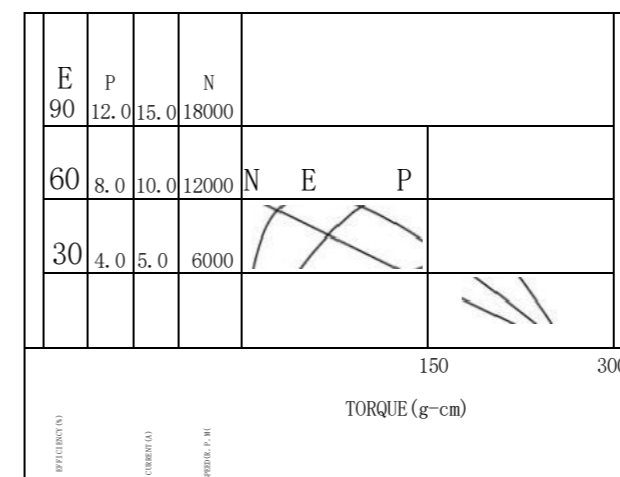
HRS-360/365SH-3270



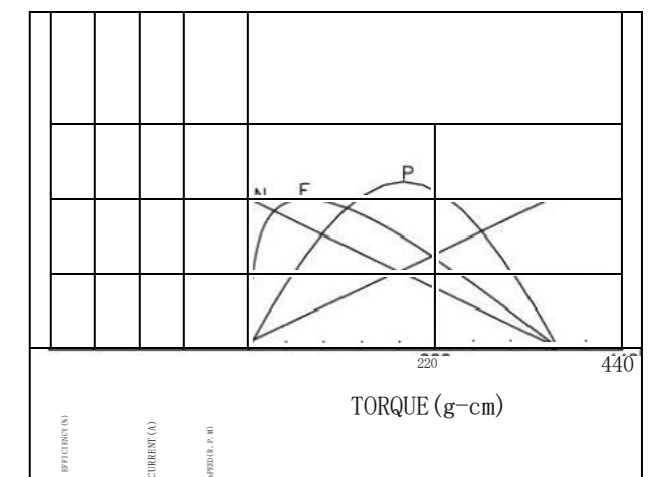
HRS-360/365SH-18180



HRS-360/365SA-3745



HRS-360/365SA-2880



HRS-390/395PH

OUTPUT:5W-60W(APPROX)

产品用途:

电动工具>电动剪刀、电磨
办公室OA 系统>打印机
家电产品>扫地机

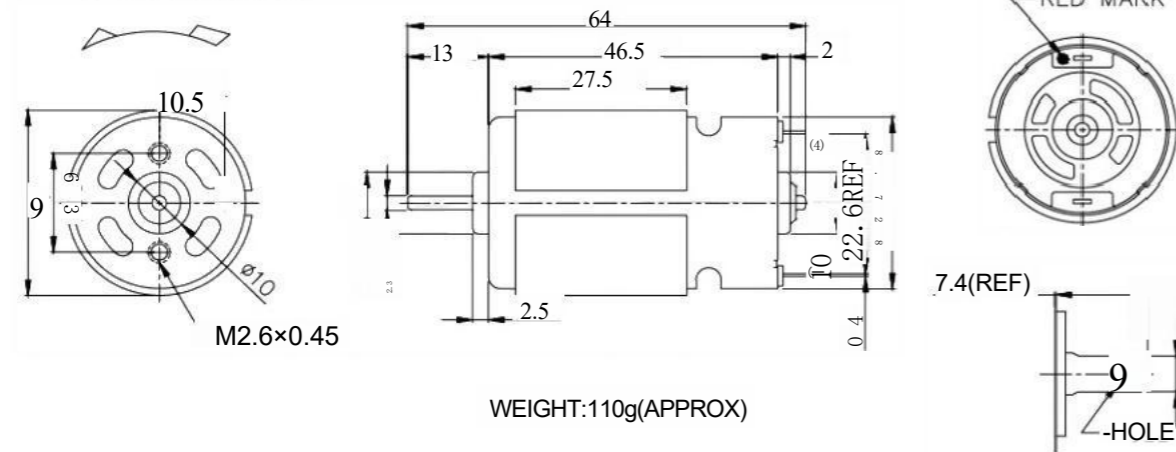
Product uses:

Electric Tools>electric scissors,electric grinder
Office OA system>printer
Home appliances >sweep the floor



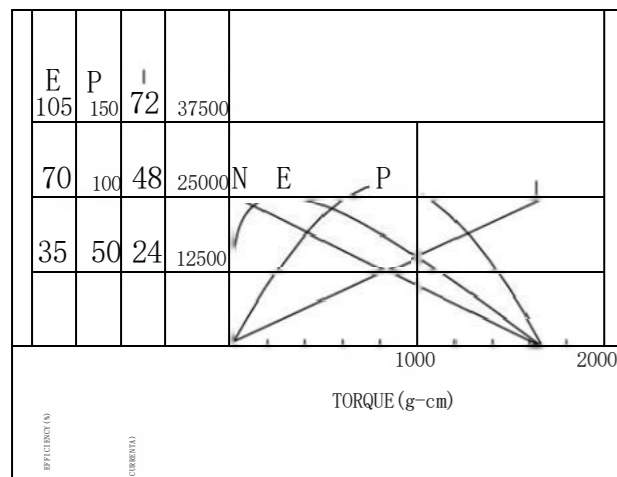
MODEL	Voltage		NoLoad		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							gcm	mNm				g cm	mN.m
HRS-395PH-5025	4.8-9.6	9.6	25500	1.40	21800	7.75	230	22.55	51.68	70	47.75	1673	164.02
HRS-395PH-5518	3.3-6.0	6.0	20800	1.20	17600	8.76	209	20.49	37.98	72	50.84	1371	134.41

DIRECTION OF ROTATION

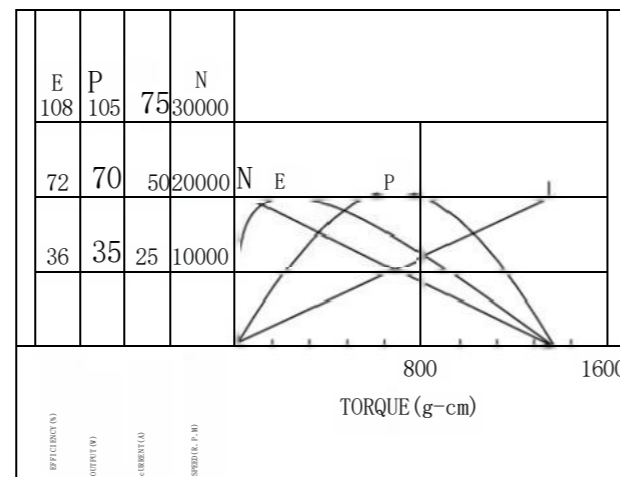


WEIGHT:110g(APPROX)

HRS-390/395PH-5025



HRS-390/395PH-5518



HRS-390/395PA

OUTPUT:5W-60W(APPROX)

产品用途:

电动工具>电动剪刀、电磨
办公室OA 系统>打印机
家电产品>扫地机

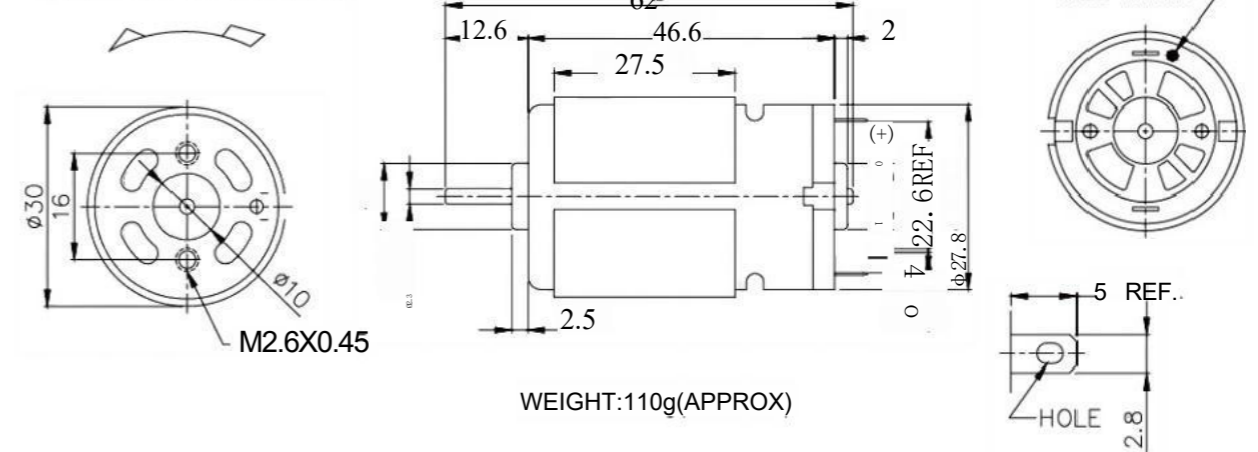
Product uses:

Electric Tools>electric scissors,electric grinder
Office OA system>printer
Home appliances >sweep the floor



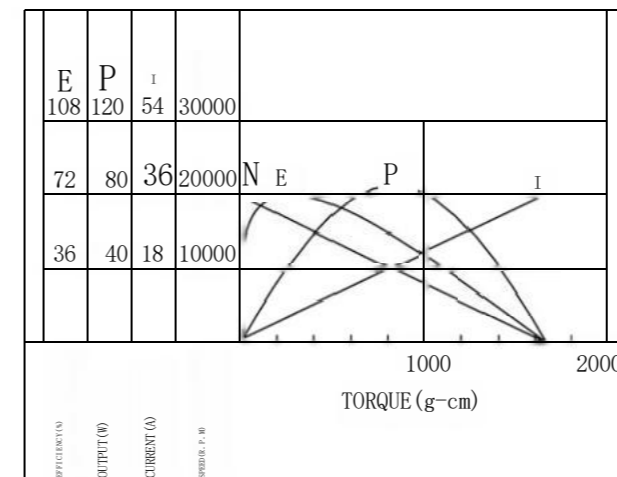
MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							gcm	mN.m				g cm	mN.m
HRS-385PA-4532	4.8-9.6	9.6	20000	0.80	16800	5.60	223	23.86	38.73	72	36.39	1662	162.94
HRS-385PA-14260	6.0-24.0	12.0	3000	0.06	2300	0.22	64	6.27	1.54	60	0.91	334	32.75

DIRECTION OF ROTATION

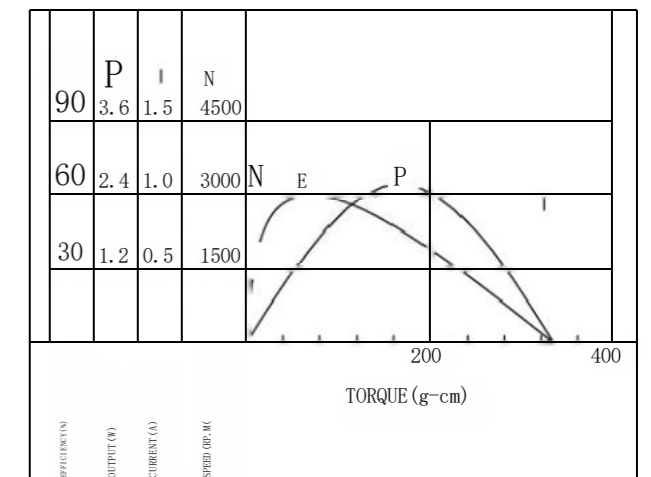


WEIGHT:110g(APPROX)

HRS-390/395PA-4532



HRS-390/395PA-14260



HRS-550/555PH

OUTPUT:2.5W-120W(APPROX)

产品用途:

电动工具>冲击螺丝批

办公室OA 系统>碎纸机

家电产品>按摩仪

汽车设备>水泵、电动千斤顶

玩具&模型>遥控车

Product uses:

Electric Tools>impact screwdriver

Office OA system>shredder

Home appliances >massage apparatus

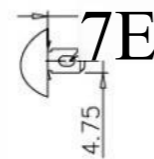
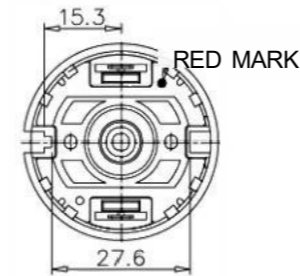
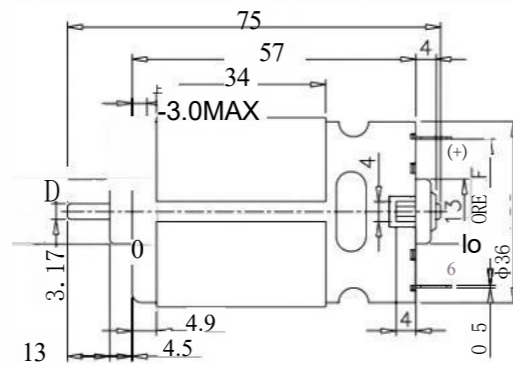
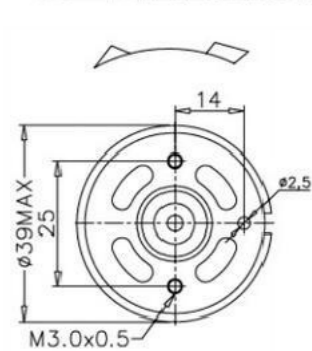
Automobile Equipment >pump and electric jack

Toy &model remote control vehicle



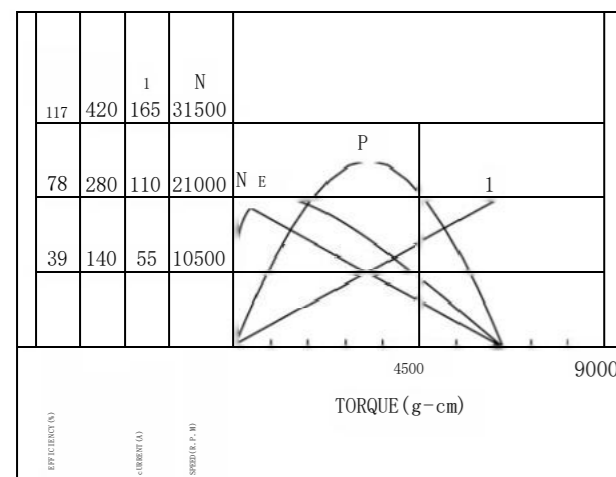
MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							g.cm	mNm				g.cm	mN.m
HRS-555PH-8022F	6.0-12.0	12.0	21000	1.8	18248	14.46	704	69.02	131.93	79	111.93	6510	638.24
HRS-555PH-8023F	6.0-120	10.8	20000	2.2	15798	12.31	616	60.39	99.93	77	82.63	4852	449.22

DIRECTION OF ROTATION

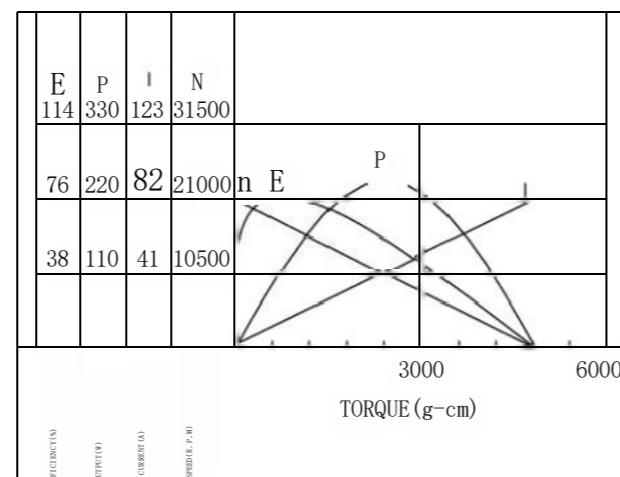


WEIGHT:220g(APPROX)

HRS-550/555PH-8022F



HRS-550/555PH-8023F



HRS-550/555PA

OUTPUT:2.5W-120W(APPROX)

产品用途:

电动工具>冲击螺丝批

办公室OA 系统>碎纸机

家电产品>按摩仪

汽车设备>水泵、电动千斤顶

玩具&模型>遥控车

Product uses:

Electric Tools>impact screwdriver

Office OA system>shredder

Home appliances >massage apparatus

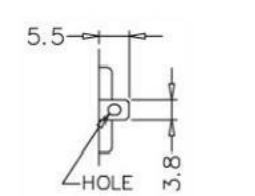
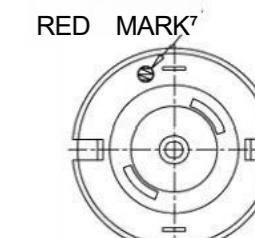
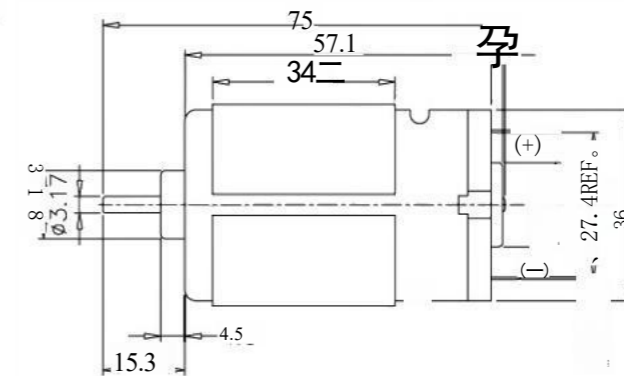
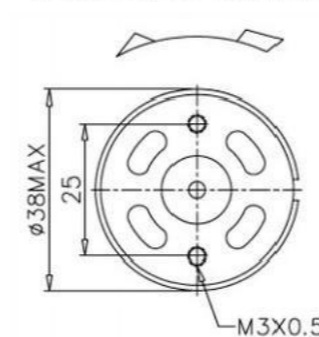
Automobile Equipment >pump and electric jack

Toy &model remote control vehicle



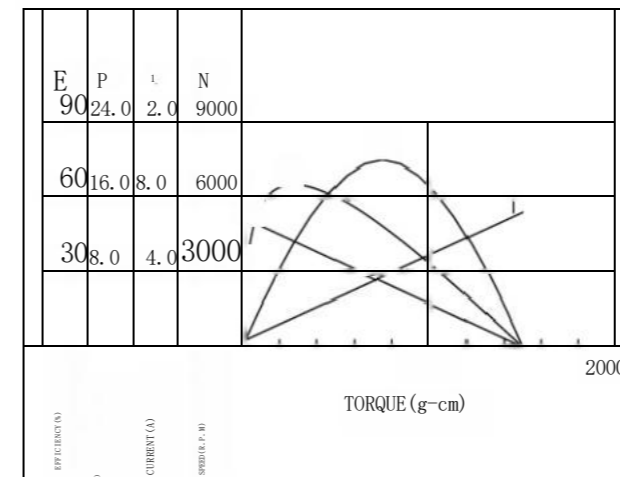
MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							g.cm	mN.m				g.cm	mN.m
HRS-555PA-30100	12.0-24.0	12.0	5200	0.30	4300	1.33	235	23.04	10.50	65	7.21	1500	147.06
HRS-555PA-4553	6.0-12.0	12.0	10200	0.60	8400	3.60	353	34.61	30.86	72	22.68	2513	246.37

DIRECTION OF ROTATION

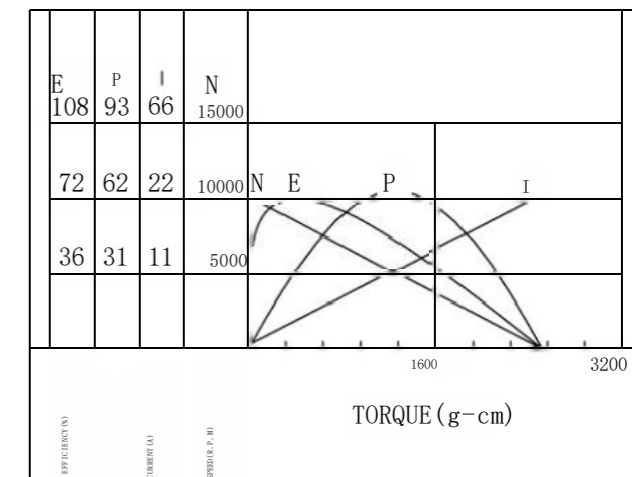


WEIGHT:220g(APPROX)

HRS-550/555PA-30100



HRS-550/555PA-4553



HRS-755PH

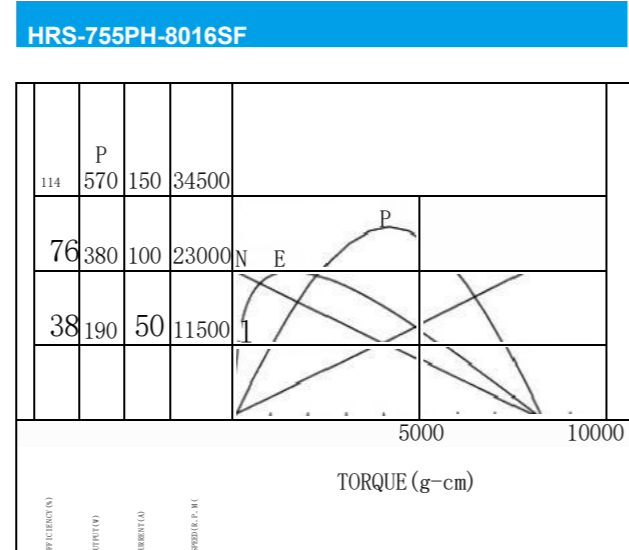
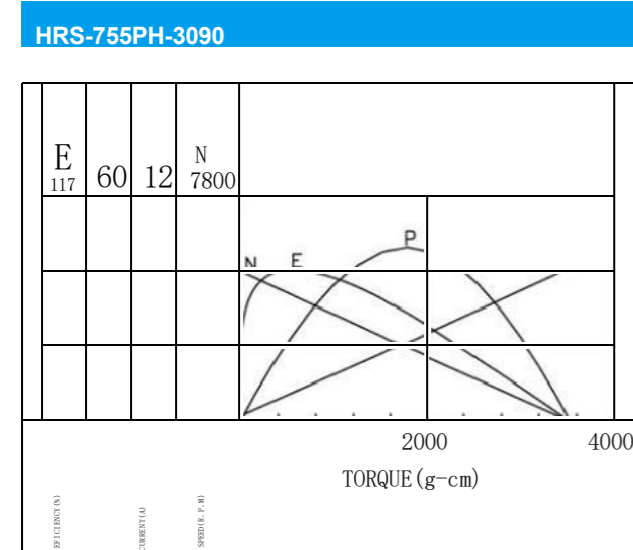
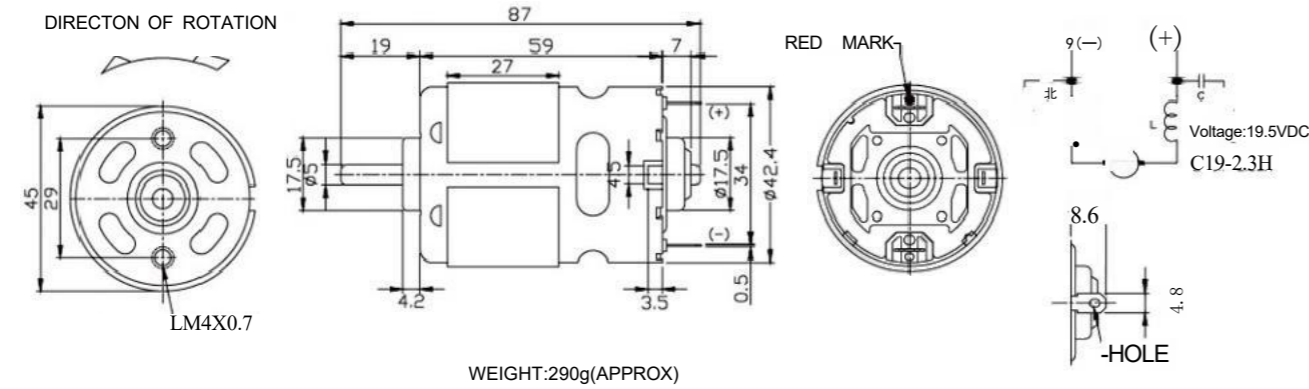
OUTPUT:10W-150W(APPROX)

产品用途:
 电动工具>绕线机
 家电产品>吸尘器
 汽车设备>水泵、电动千斤顶
 玩具&模型>航模、船模

Product uses:
 Electric Tools>winding machine
 Home appliances>vacuum cleaner
 Automobile Equipment >pump,electric jack
 Toy model>ship model,ship model



MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque gcm	Torque mN.m	Output W	Eff %	Current A	Torque gcm	Torque mN.m
HRS-755PH-3090	18.0-36.0	24.0	5200	0.30	4715	0.94	363	35.59	17.58	78.63	8.20	3530	346.08
HRS-755PH-8016SF	9.6-20.0	18.0	23000	3.50	19569	20.21	1346	131.96	270.50	7530	104.77	8276	811.37



HRS-775PH

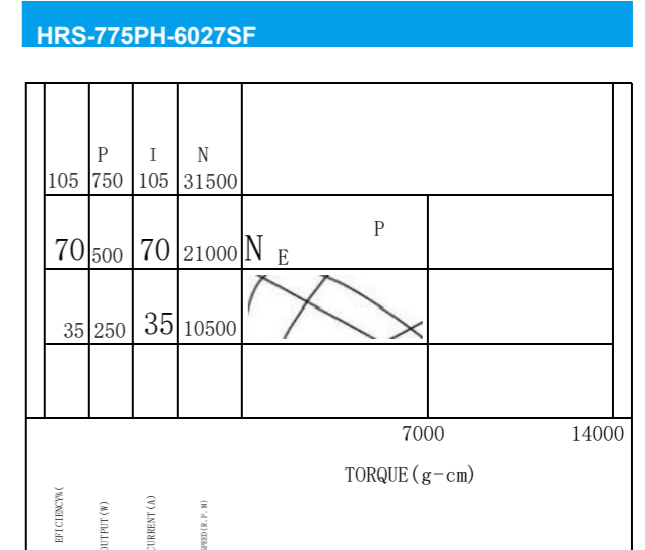
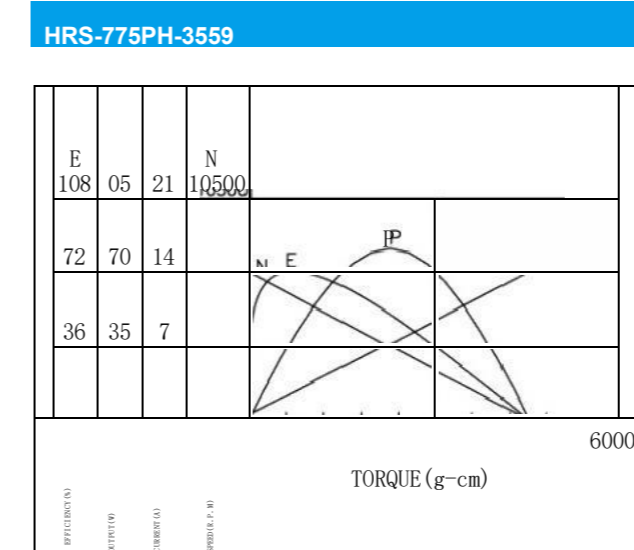
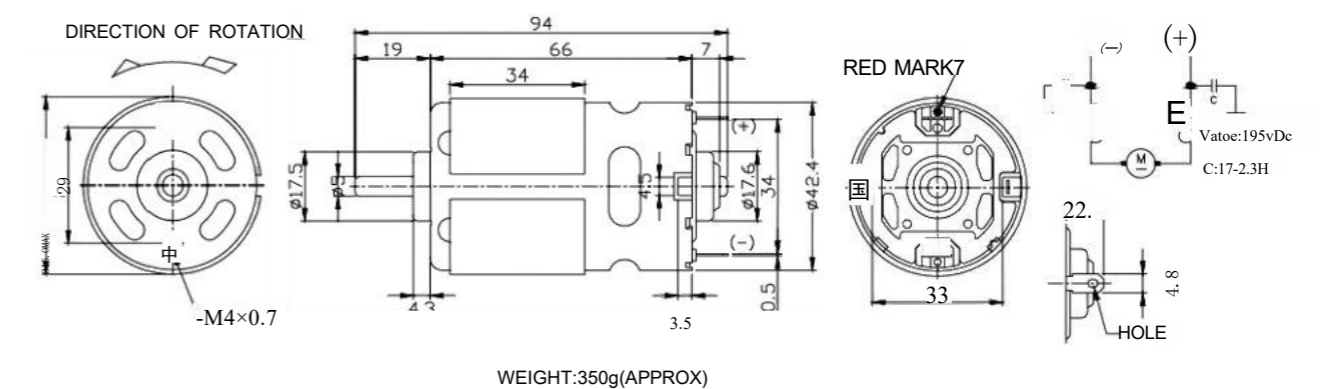
OUTPUT:10W-150W(APPROX)

产品用途:
 电动工具>电锤、修枝剪
 家电产品>电动喷雾器
 汽车设备>水泵、电动千斤顶
 玩具&模型>航模、船模

Product uses:
 Electric Tools>Electric hammer,pruning scissors
 Home appliances>Electric sprayer
 Automobile Equipment >pump,electric jack
 Toy model>ship model,ship model



MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque g cm	Torque mN.m	Output w	Eff %	Current A	Torque g cm	Torque mN.m
HRS-775PH-3559	6.0-36.0	24.0	7000	0.50	5862	2.19	620	61	37.32	72	14.03	4519	443
HRS-775PH-6027SF	18.0-36.0	36.0	21500	1.75	18618	11.20	1446	142	276.46	71	71.15	10659	1045



HRS-5512PH

OUTPUT:10W-150W(APPROX)

产品用途:

电动工具>电磨
 家电产品>吸尘器、按摩器
 办公室OA系统>点钞机

Product uses:

Electric Tools > electric mill
 Home appliances > vacuum cleaner, massager
 Office OA system > banknote counting machine



MODEL	Voltage		No Load		At Maximum Efficiency						Stall		
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							g.cm	mN.m				g.cm	mN.m
HRS-5512PH-1521	100-140	120	13500	0.11	10847	0.46	428	42.0	45.56	69	1.90	2180	213.7
HRS-5512PH-1522	120-130	230	12600	0.05	10143	0.21	350	34.3	36.56	73	0.85	1800	0.85

HRH-7712PH

OUTPUT:10W-150W(APPROX)

产品用途:

家电产品>按摩器
 办公室OA系统>点钞机

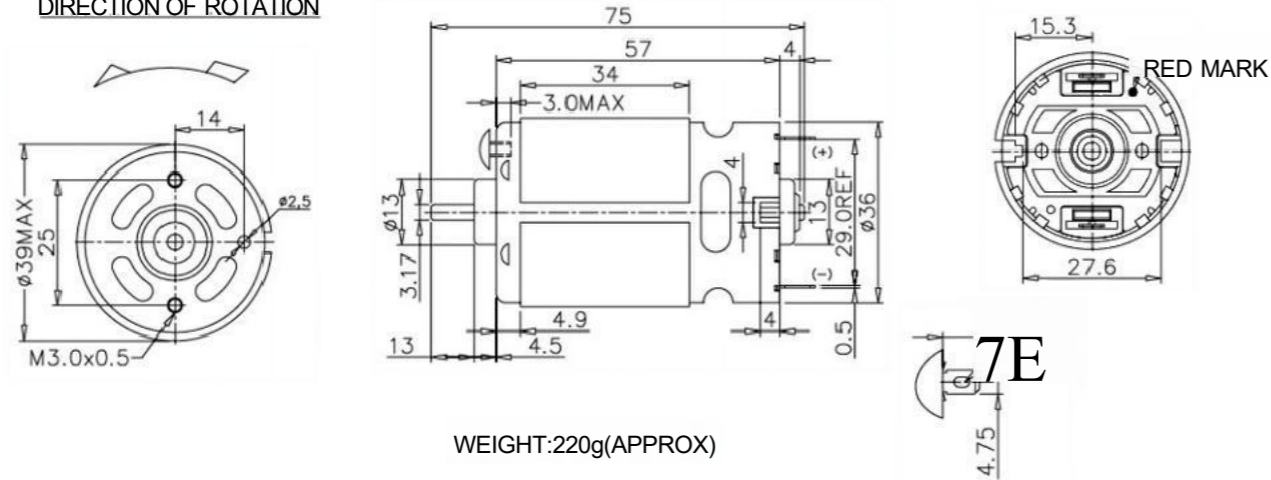
Product uses:

Home appliances > massager
 Office OA system > banknote counting machine



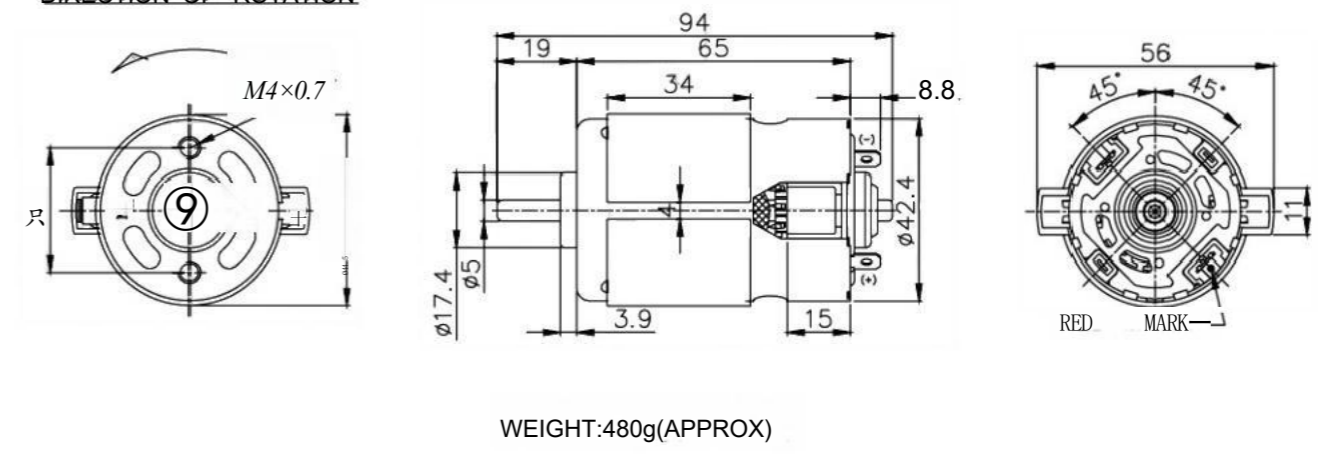
MODEL	Voltage		No Load		At Maximum Efficiency						Stall		
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output w	Eff %	Current A	Torque	
							g.cm	mN.m				g.cm	mN.m
HRH7712PH-10215	100-230	150	4700	0.07	4058	0.20	477	46.76	19.88	69	1.12	3790	312.75
HRH-7712PH-1690	60-150	100	8000	0.14	6845	0.52	532	52.16	37.40	73	3.39	4089	400.88

DIRECTION OF ROTATION



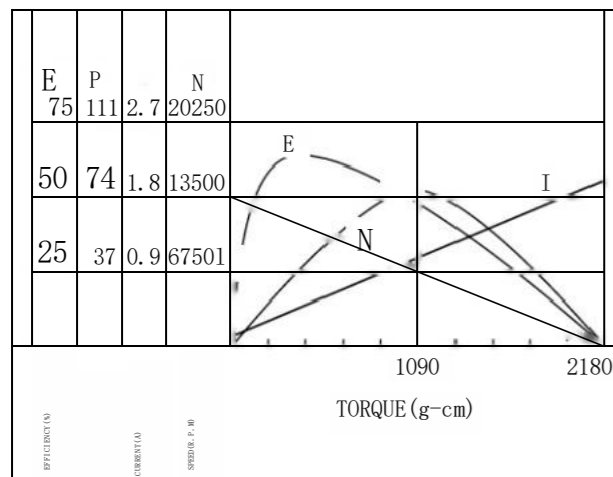
WEIGHT:220g(APPROX)

DIRECTION OF ROTATION

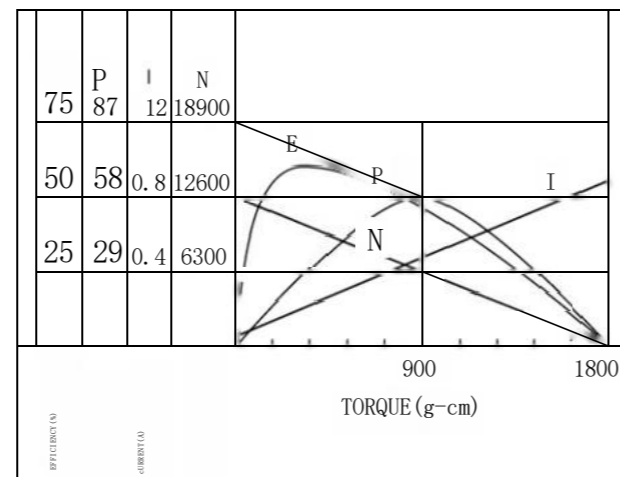


WEIGHT:480g(APPROX)

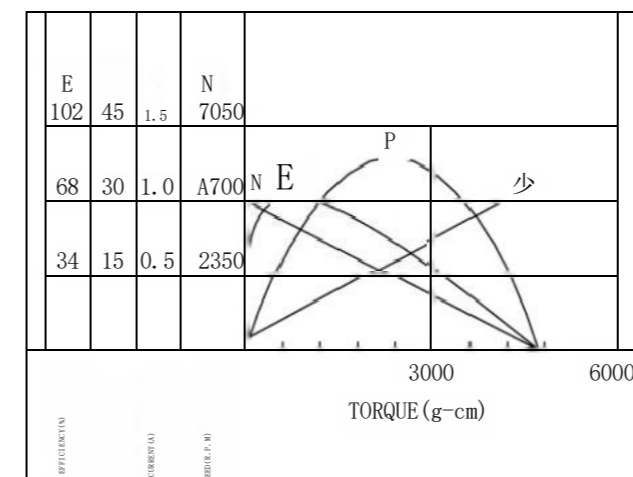
HRS-5512PH-1521



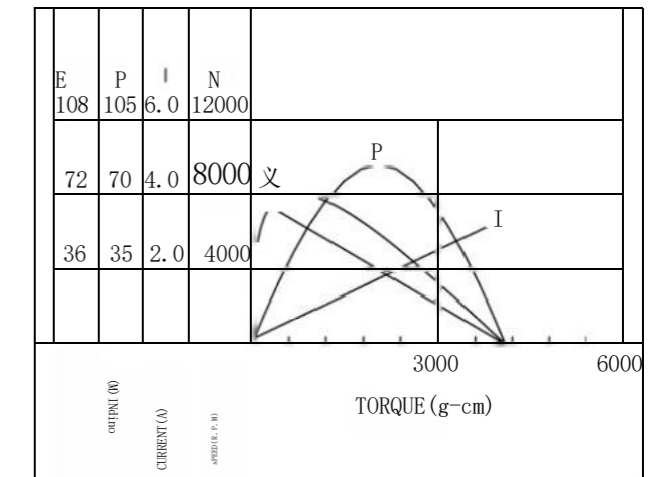
HRS-5512PH-1522



HRH-7712PH-10215



HRH-7712PH-1690



HRS-887PH

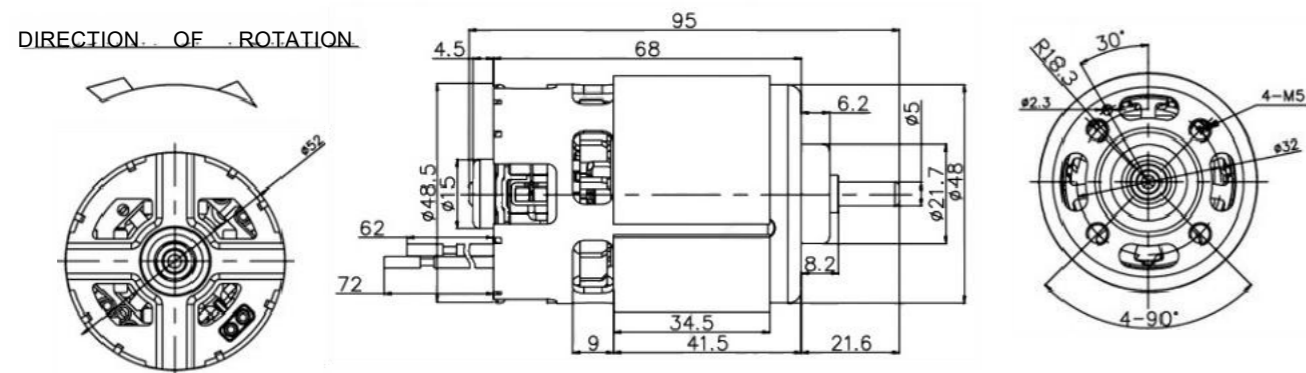
OUTPUT:30W-300W(APPROX)

产品用途：
 电动工具>电锤、修枝剪
 家电产品>吸尘器
 汽车设备>电动千斤顶

Product uses:
 Electric Tools>electric hammer,pruning scissors
 Household appliances >vacuum cleaner
 Automotive Equipment >electric jack



MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output W	Eff %	Current A	Torque	
							g.cm	mN.m				g.cm	mN.m
HRS-887PH-5019F	12.0-24.0	20.7	17200	2.83	14184	17.65	1747	171.27	245.47	72	110.36	12999	1274.41
HRS-887PH-8508F	14.0-22.0	18.0	19300	4.80	16694	40.02	3337	327.16	572.09	79	265.90	25000	2450.98



HRS-997PH

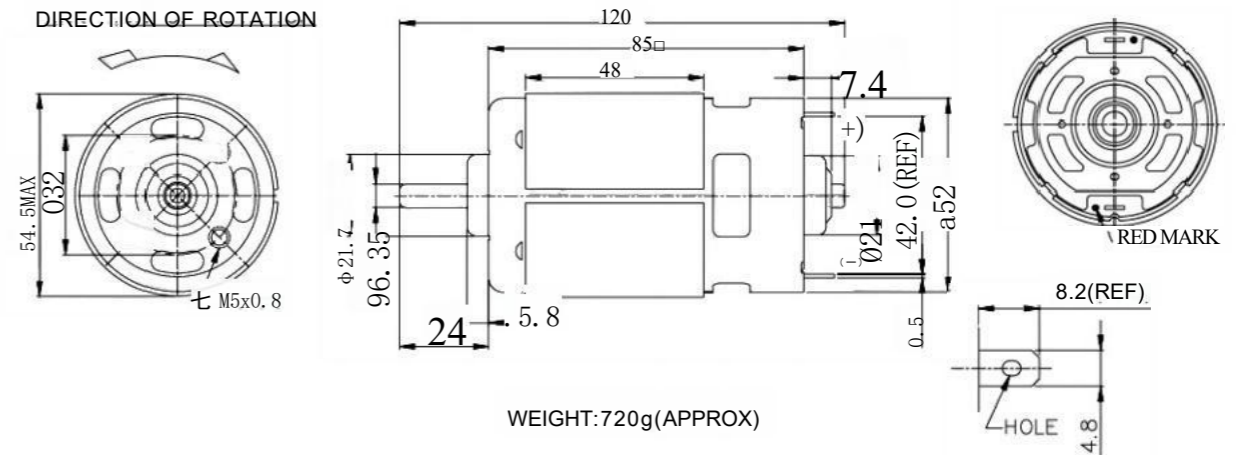
OUTPUT:30W-300W(APPROX)

产品用途：
 电动工具>电锤、修枝剪
 家电产品>吸尘器
 汽车设备>电动千斤顶

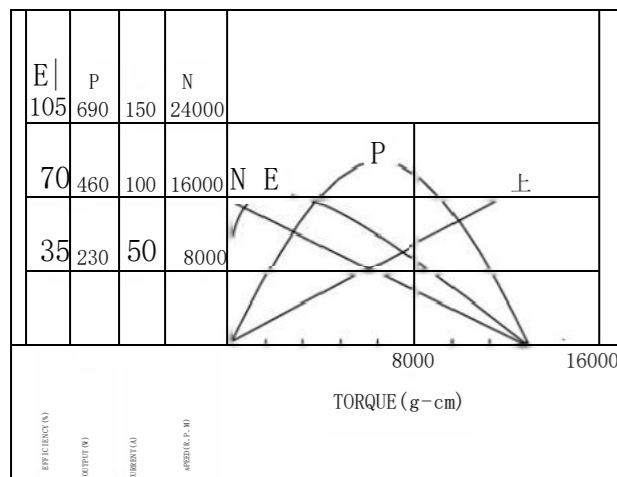
Product uses:
 Electric Tools>electric hammer,pruning scissors
 Household appliances >vacuum cleaner
 Automotive Equipment >electric jack



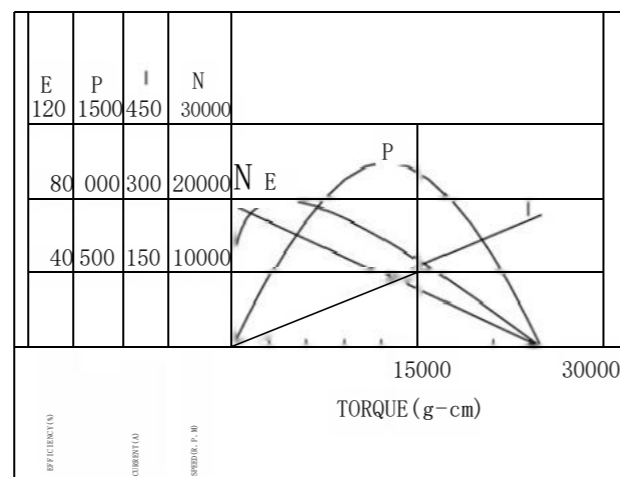
MODEL	Voltage		No Load		At Maximum Efficiency					Stall			
	Operating Range	Nominal V	Speed rpm	Current A	Speed rpm	Current A	Torque		Output W	Eff %	Current A	Torque	
							g.cm	mN.m				g.cm	mN.m
HRS-997PH-5036	18.0-48.0	24.0	4900	0.42	4198	2.79	1197	117.35	51.60	79.67	25.95	12350	1211
HRS-997PH-7018	6.0-36.0	12.0	4900	5.40	4182	5.40	1168	114.51	50.16	78.44	48.12	11499	1127



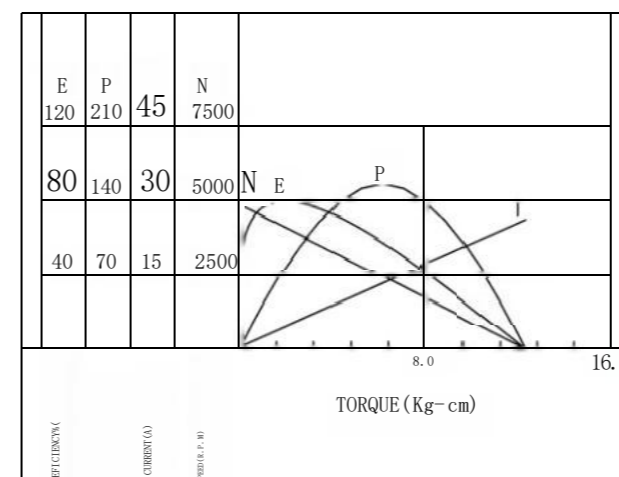
HRS-887PH-5019F



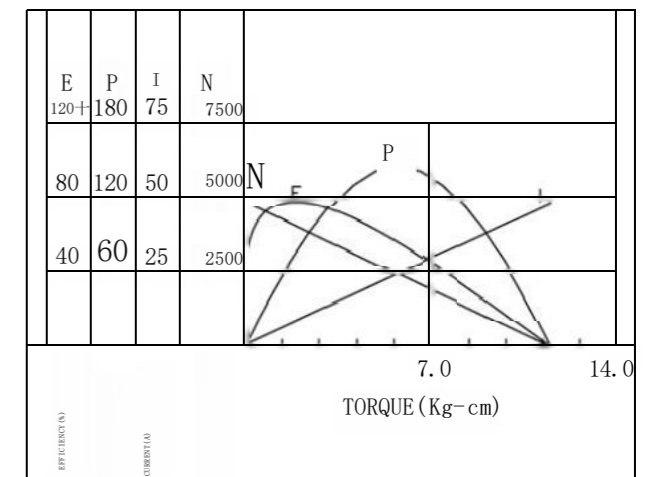
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HRS-997PH-5036

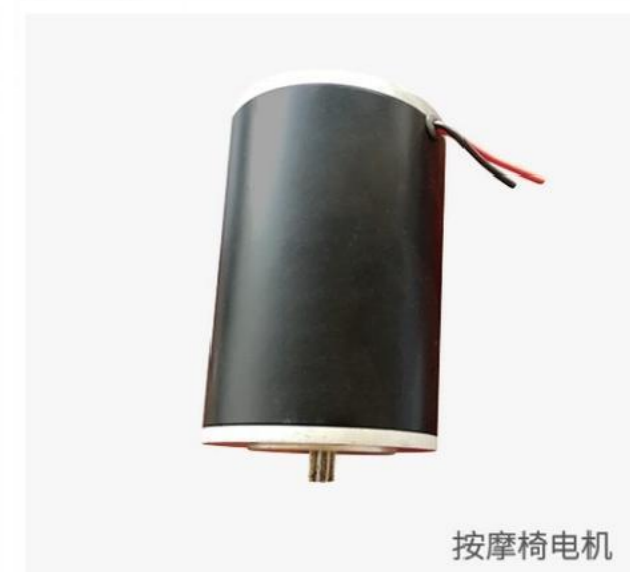
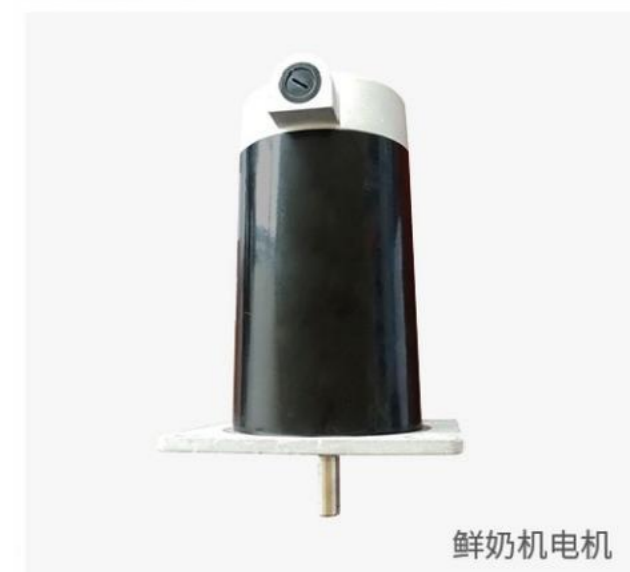
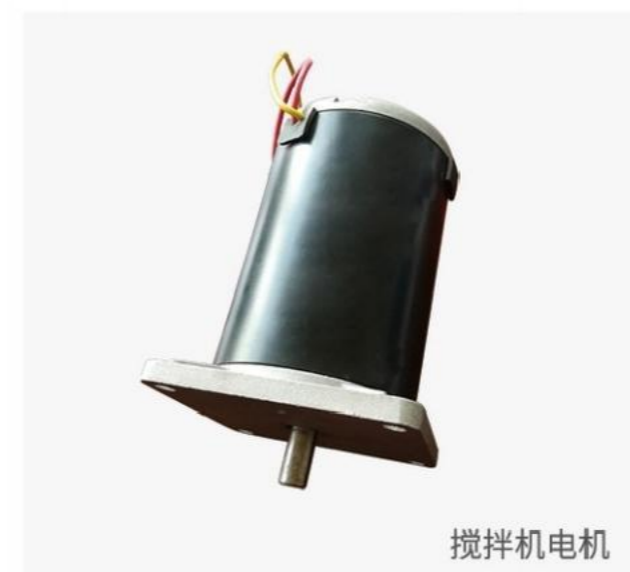
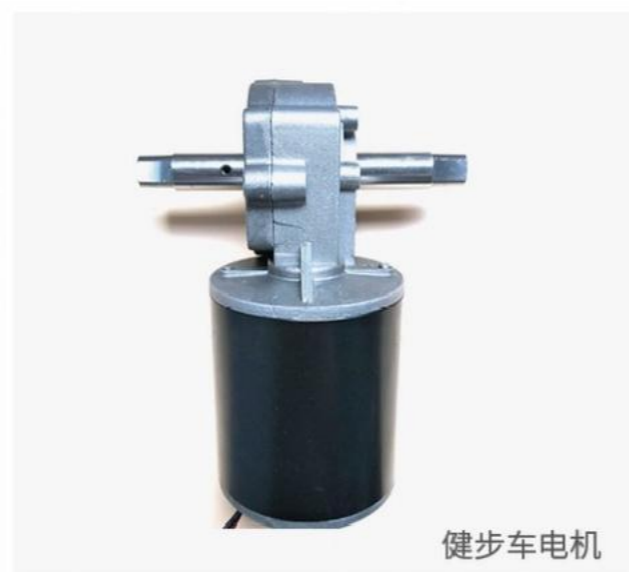


HRS-997PH-7018



Steel tube motor 钢管电机

本公司能够根据客户的需求，研发各种钢管电机，以及带有蜗轮蜗杆的减速钢管电机，现已研发的电机广泛应用于各行各业，包括康复机、健步车、升降机、雨刮器、智能门、油烟机、暖风机、智能办公、电动桌椅、搅拌机、按摩器、鲜奶机等领域。



Torque unit conversion table

力矩单位换算表

单位unit	gf. cm	kg. cm	kg. m	N. m	mN. m	N. cm	ib. in	oz. in
g. cm	1	0.001	0.00001	0.000098	0.098	0.0098	0.000868	0.013889
kg. cm	1000	1	0.01	0.098	98	9.8	0.868	13.889
kg. m	100000	100	1	9.8	9800	980	86.8	1388.9
N. m	10200	10.2	0.1	1	1000	100	8.85	141.64
mN. m	10.2	0.0102	0.0001	0.001	1	0.1	0.00885	0.142
N. cm	102	0.102	0.001	0.01	10	1	0.0885	1.42
ibin	1152	1.152	0.0113	0.113	113	11.3	1	16
oz. in	72	0.072	0.000706	0.00706	7.06	0.706	0.0625	1



H E Q I N G M O T O R

客户需求调查表

Date: _____

公司名称 (Firm): _____

地址 (Address): _____

联系人 (Contact person): _____

电话 (Tel): _____ 传真 (Fax): _____

(1) 应用的产品名称 (Application) _____

(2) 马达的使用目的 (What does motor drive): _____

(3) 电压 (Voltage) _____ V

(4) 电源 (Power source) 干电池 (Dry cells): _____ PCS

铅蓄电池 (Lead-acid): _____ A

其它方式 (Other) _____

(5) 转数 (Speed): 无负载时 (No Load): _____ rpm

负载时 (Load): _____ rpm

(6) 电流 (Current): 无负载时 (No Load): _____ A

负载时 (Load): _____ A

(7) 转矩 (Torque) 运转时 (Under Load) _____ g-cm

停止扭力 (Stall torque) _____ g-cm

(8) 旋转方向 (Direction of rotation): _____

顺时针 (CW): _____ 逆时针 (CCW): _____

正反转 (Bi-directional): _____

(9) 尺寸 (Dimension) 长度 (Length) _____ mm

宽度 (Width): _____ mm

高度 (Height) _____ mm

(10) 其它要求事项 (Other requirements): _____
