

# 產品目錄 Product Catalog

## 深圳市万源轴承有限公司 SHENZHEN WANYUAN BEARING CO.,LTD

### 模具制造能力 Manufacturing Capability

深圳市萬源擁有一支國際一流的精密模具開發、設計、制造工程師隊伍。擁有瑞士AGIE切割機、火花機、牧野火花機、Sodic注塑成型機、Werth測量中心等高精密制造設備。專業制造精密、微小、超薄塑膠配件、產品組立及OEM業務。

Shenzhen Wanyuan has a great team group who are professional in precision mold designing, developing and manufacturing. We have high precision manufacturing facilities, such as AGIE wire-cutting machines, AGIE Electricity Discharge Machines (EDM), SODIC injection machines, WERTH testing machine. We are major in manufacturing precise motor accessories, products installation and other OEM business.



標準行星齒輪箱系列		碳刷馬達 ( Carbon-brush Motors)	
Φ4mm	3	FFC-020GA/SA	57
FYD006006	4	FFC-030SA	58
FYD010010	5	FFC-050ST	59
FYD012012	6	FFC-130GTi'ST	60
FYD016016	7	FFC-180ST	61
FYD02020	8	FRC-260GA/SA	62
FYD024024	9	FRC-270GA	63
FYD028028	10	FFC-280GA/SA	64
FYD16016	11	FRC-280GA/SA	65
FYD022022	12	FRC-300NT	66
齒輪減速電機 ( DC Gear Motors)		FRC-310NT	67
FLT-12FN20	13	FRC-330NT	68
FLT-16A030	14	FRC-370NT	69
FLT-16A050	15	FRC-370ST	70
FLT.-20A130	16	FRC-360GJ/ST	71
FLT-20A180	17	FRC-365GT	72
FLT-25A310	18	FRC-380ST	73
FLT-25A370	19	FRC-385GA/SA	74
FLT-27A280	20	FRC-450SA	75
FLT-32B300-A	21	FRC-500NA	76
FLT-32B310	22	FRC-520NA	77
FLT-32B300-B	23	FRC-528NA	78
FLT-33B360	24	FRC-540GT/ST	79
FLT-33B380	25	FRC-545GT/ST	80
FLT-36F500	26	FRC-550STP	81
FLT-37B520	27	FRC-555STP	82
FLT-37B528	28	FRC-755STP	83
FLT-38F520	29	FRC-775STP	84
FLT-40F3540	30	電子調速電動機 ( Electronic Governor Motors)	
FLT~40-BS00_A	31	FE-520NT	85
FLT-40B500-B	32	FE-530NT	86
FLT-48T500	33	FE-530NTP	87
FLT-48T520	34	永磁交流發電機 ( Permanent Magnet Alternator)	
金屬電刷馬達 ( Metal-brush Motors)		FLT-29B	88
FFK-130GA/SA	35	空心杯電機 ( coreless Motors)	
FRK-140GA	36	FRK-4L8	89
FRK-20GA	37	FRK-4L12	
FRK=280GA/SA	38	FRK-6L12	90
貴金屬電刷馬達 ( Precious Metal-brush Motors)		FRK-6L14	91
FFK-K10SA	39	FRK-7L17	
FFK-K20SA	40	FRK-7L24	94
FFK-K30SA	41	FRK-3A1	
FFK-M20SA	42	FRK-4F101	
FFK-N20SA	43	FRK-4C112-H072	95
FFK--N30SA	44	FRK-4C1-J056	
FFK-O20NT	45	FRK-5A1	
FFK-O30SA	46	FRK-4D1	
FFK-O5OST	47	FRK-4C1-J056	96
FRK-I30NT	48	FRK-5A1	
FFK-130GT/ST	49	FRK-4D1	
FFK-180GT/ST	50	FRK-4C105-H055	97
FRK-300NT	51	FRK-6A1-J032	
FRK-310NT	52	FRK-6C101-J037	
FRK-330NT	53	FRK-4C105-H055	98
FRK-370NT	54	FRK-6A1-J032	
FRK-400NT	55	FRK-6C101-J037	
FRK-500NA	56	Miniature Flat Vibration Motor	

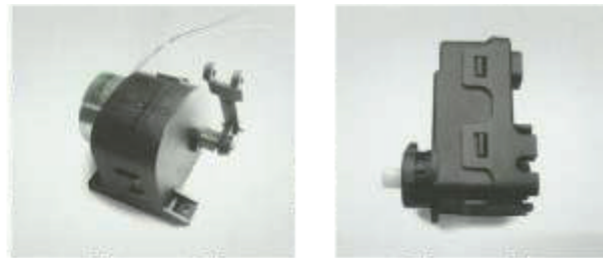
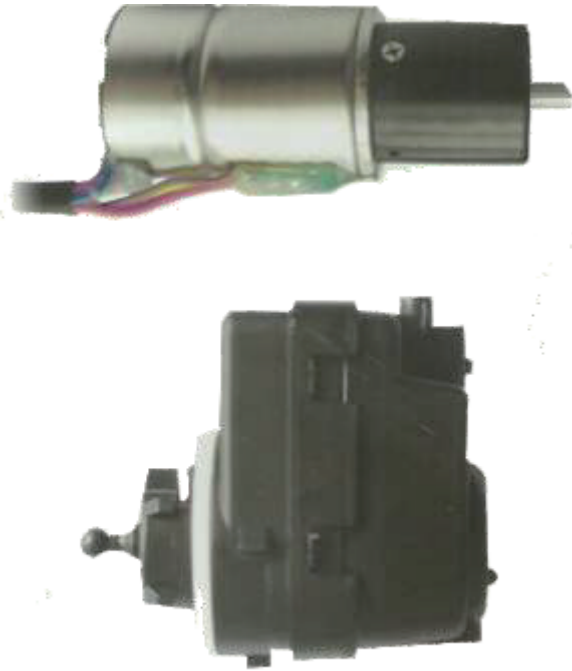
产品策略 Product strategies

1. 全系列精密减速电机行星齿轮箱，直径4、6、8、10、12、16、20、22、28mm, 输出转速5-2000RPM, 减速比5-1500
2. 通用驱动器、调节器齿轮箱传动机构系统
3. 定制化精密齿轮、蜗轮、蜗杆传动机构系统
4. 精密、微小、超薄的塑料和特殊金属粉末注塑零件及集成装配组件。

产品广泛用于: 汽车部件、智能厨卫、家用电器、医疗器械、通讯器材、工业设备、仪器仪表、航模、个人护理、安防摄像、数码电子等。

1. A full range of precision geared motor planetary gearboxes, diameter 4, 6, 8, 10, 12, 16, 20, 22, 28mm, output speed 5-2000RPM, reduction ratio 5-1500
2. Universal driver, regulator gearbox transmission mechanism system
3. Customized precision gear, worm gear and worm drive mechanism system
4. Precision, tiny, ultra-thin plastic and special metal powder injection parts and integrated assembly components.

Products are widely used in: auto parts, smart kitchen and bathroom, household appliances, medical equipment, communication equipment, industrial equipment, instrumentation, model aircraft, personal care, security cameras, digital electronics, etc.

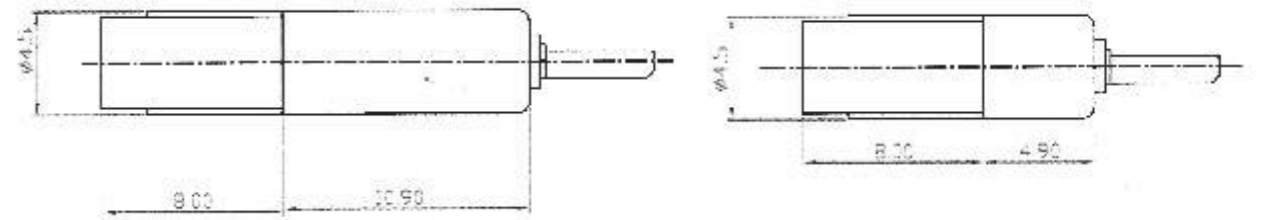


塑膠行星齒輪箱系列  
Plastic Planetary Gearbox Series

Φ4mm



外形尺寸  
Dimension



性能參數  
Parameter

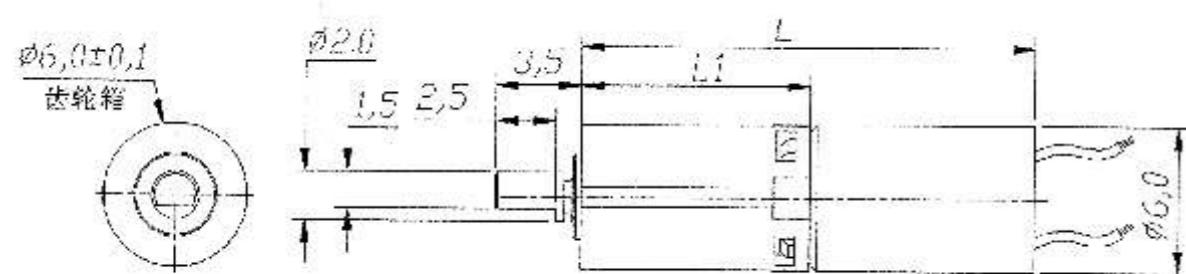
型號 Model	電壓Voltage		空載N0—Load		最大效益點At Max. Efficiency			減速比 Reduction ratio	齒輪箱 長度 Length of gearbox (mm)	輸出功率 Output Power (W)	
	使用範圍 OPERATING RANGE	標準值 NOMINAL	轉速 SPEED r/min	電流 CURRENT (A)	電流 CURRENT (A)	轉速 SPEED r/min	轉矩 TORQUE mN.cn				功率 OUTPUT (W)
Φ 4mm	1.5 ~ 6	3	11563	0.037	0.063	8565	0.03	0.04	4.67	4.9	0.07 ~ 0.2
Φ 4mm	1.5 ~ 6	3	2479	0.037	0.063	1836	0.17	0.04	21.78	6.9	0.07 ~ 0.2
Φ 4mm	1.5 ~ 6	3	531	0.037	0.063	393	0.78	0.04	101.6	8.9	0.07 ~ 0.2
Φ 4mm	1.5 ~ 6	3	113	0.037	0.063	84	3.64	0.04	474.3	10.9	0.07 ~ 0.2

Φ6mm

塑膠行星齒輪箱系列  
Plastic Planetary Gearbox Series



外形尺寸  
Dimension



性能參數  
Parameter

型號 Model	電壓Voltage		空載N0—Load		額定負載 Rating load					堵轉 Block		減速比 Reduction ratio	總長L Total length	減速箱 L1 Gearbox length L1	輸出功率 Output Power (w)	
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT						
FYD006006-26	0.2 ~ 6	3	1200	25	1000	40	25.0	2.55	0.1	55.0	5.61	190	26	16.35	7.05	0.07-0.2
FYDD006006-136	0.2 ~ 6	3	240	25	200	40	120.0	12.24	0.1	280.0	28.57	190	136	18.7	9.4	0.07-0.2
FYDD006006-700	0.2 ~ 6	3	47	25	40	40	200.0	20.41	0.1	452.0	46.12	190	700	21.05	11.75	0.07-0.2

注：可根據客戶要求定制功率為0.01~1.2W

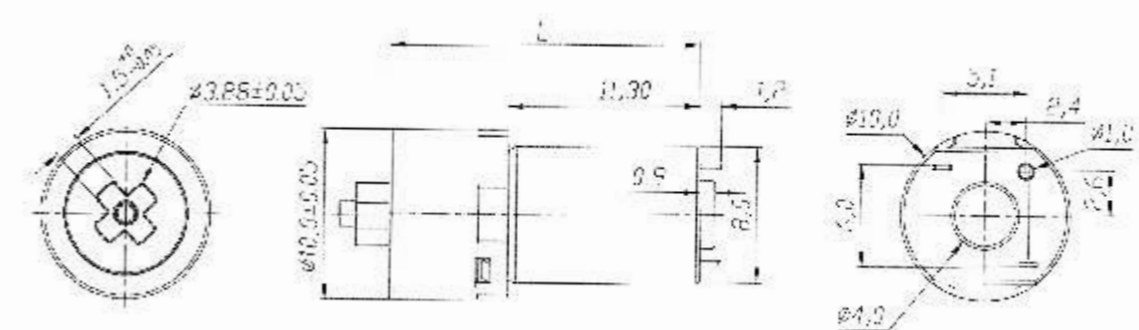
Note: Could be customized based on customers' requirement to 0.01-1.2W

Φ10mm

塑膠行星齒輪箱系列  
Plastic Planetary Gearbox Series



外形尺寸  
Dimension



性能參數  
Parameter

型號 Model	電壓Voltage		空載N0—Load		額定負載 Rating load					堵轉 Block		減速比 Reduction ratio	總長L Total length	輸出功率 Output Power (w)	
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT					
FYD010010-171	0.5 ~ 9	1.5	45	32	40	70	85.0	8.67	0.2	165.0	16.84	160	171	18.3	0.05-0.5

注：可根據客戶要求定制功率為0.01~1.2W

Note: Could be customized based on customers' requirement to 0.01-1.2W



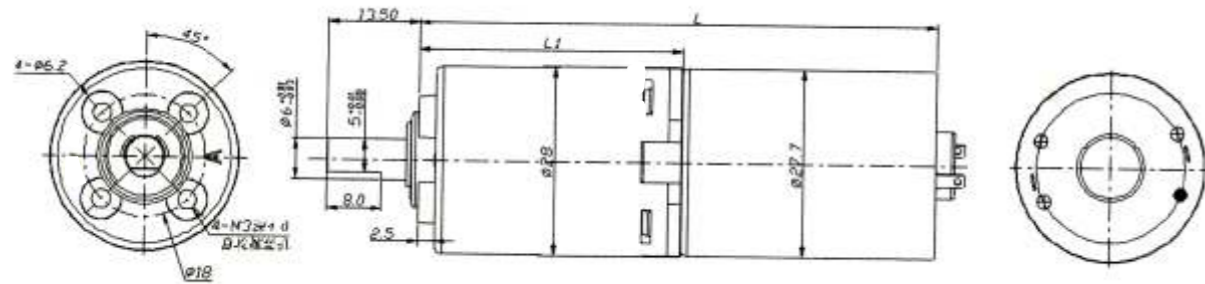


Φ28 mm

塑膠行星齒輪箱系列  
Plastic Planetary Gearbox Series



外形尺寸  
Dimension



性能參數  
Parameter

型號 Model	電壓Voltage		空載NO—Load		額定負載 Rating load				齒輪箱額定 容許力矩 Gearbox rated torque	齒輪箱瞬間 容許力矩 Instantaneous gearbox rated torque	減速比 Reduction ratio	總長L Total length	減速箱長L1 Gearbox length L1	輸出功率 Output Power	
	使用範圍 OPERATING RANGE	標準值 NOMINAL	轉速	電流	轉速	電流	轉矩								功率
			SPEED r/min	CURRENT mA	SPEED r/min	CURRENT mA	g.cm	mN.cm							
FYD028028-4	6.0~30	24	1849	80	1583	360	292	29	29	1000	3000	4	58.4	20.8	0.1~6
FYD028028-6	6.0~30	24	1233	80	155	360	439	43	43	1000	3000	6	58.4	20.8	0.1~6
FYD028028-16	6.0~30	24	462	90	396	365	1006	99	99	2000	6000	16	67.5	29.9	0.1~6
FYD028028-24	6.0~30	24	308	90	264	365	1509	148	148	2000	6000	24	67.5	29.9	0.1~6
FYD028028-36	6.0~30	24	201	90	178	345	1464	144	144	2000	6000	36	67.5	29.9	0.1~6
FYD028028-64	6.0~30	24	116	90	99	365	3460	339	339	3500	10500	64	76.6	39	0.1~6
FYD028028-96	6.0~30	24	77	90	70	325	3480	341	341	3500	10500	96	76.6	39	0.1~6
FYD028028-144	6.0~30	24	51	90	49	315	3480	341	341	3500	10500	144	76.6	39	0.1~6
FYD028028-216	6.0~30	24	34	90	33	305	3435	337	337	3500	10500	216	76.6	39	0.1~6
FYD028028-256	6.0~30	24	29	95	28	240	4761	467	467	5000	10500	256	85.7	48.1	0.1~6
FYD028028-384	6.0~30	24	19	95	19	220	4831	474	474	5000	10500	384	85.7	48.1	0.1~6
FYD028028-576	6.0~30	24	13	95	12	180	4884	479	479	5000	10500	576	85.7	48.1	0.1~6
FYD028028-864	6.0~30	24	8	95	8	160	4962	487	487	5000	10500	864	85.7	48.1	0.1~6
FYD028028-1296	6.0~30	24	6	95	5.6	150	4962	487	487	5000	10500	1296	85.7	48.1	0.1~6

注：可根據客戶要求定制功率為0.01~1.2W

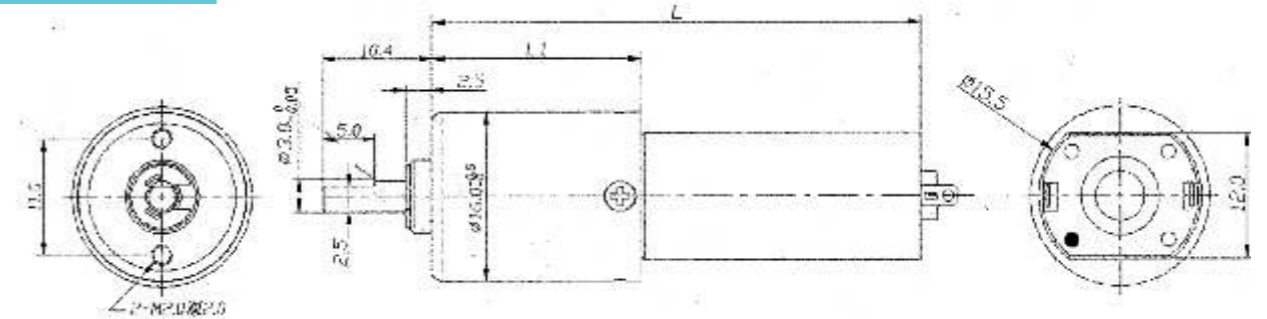
Note: Could be customized based on customers' requirement to 0.01-1.2W

Φ16mm

塑膠行星齒輪箱系列  
Plastic Planetary Gearbox Series



外形尺寸  
Dimension

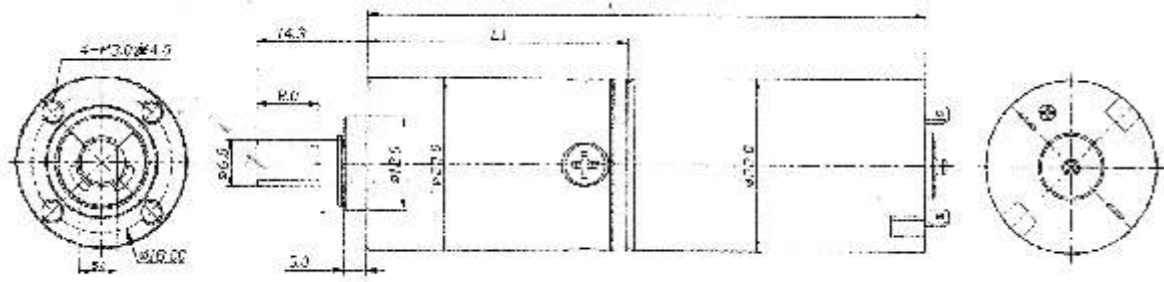


Φ22mm

塑膠行星齒輪箱系列  
Plastic Planetary Gearbox Series



外形尺寸  
Dimension



性能參數  
Parameter

型號 Model	電壓Voltage		空載NO-Load		額定負載 Rating load				齒輪箱額定容許力矩 Gearbox rated torque	齒輪箱瞬間容許力矩 Instantaneous gearbox rated torque	減速比 Reduction ratio	總長L Total length	減速箱長L1 Gearbox length L1	輸出功率 Output Power	
	使用範圍 OPERATING RANGE	標準值 NOMINAL	轉速	電流	轉速	電流	轉矩								功率
			SPEED r/min	CURRENT mA	SPEED r/min	CURRENT mA	g.cm	mN.cm							
FYD022022-4	6.0~25	24	2073	55	1742	215	136	13	2.4	1000	3000	4	56.4	18.1	0.5~6
FYD022022-5	6.0~25	24	1745	55	1467	215	162	16	2.4	1000	3000	5	56.4	18.1	0.5~6
FYD022022-16	6.0~25	24	513	60	435	220	152	44	2.4	2000	6000	16	61.5	23.2	0.5~6
FYD022022-19	6.0~25	24	432	60	367	220	537	53	2.0	2000	6000	19	61.5	23.2	0.5~6
FYD022022-23	6.0~25	24	364	60	309	220	637	62	2.0	2000	6000	23	61.5	23.2	0.5~6
FYD022022-64	6.0~25	24	127	65	109	220	1447	142	1.6	3500	10500	64	66.6	28.3	0.5~6
FYD022022-76	6.0~25	24	107	65	92	220	1718	168	1.6	3500	10500	76	66.6	28.3	0.5~6
FYD022022-90	6.0~25	24	90	65	77	220	2040	200	1.6	3500	10500	90	66.6	28.3	0.5~6
FYD022022-107	6.0~25	24	76	65	65	220	2423	238	1.6	3500	10500	107	66.6	28.3	0.5~6
FYD022022-256	6.0~25	24	32	60	29	220	5000	490	1.5	5000	10500	256	71.7	33.4	0.5~6
FYD022022-304	6.0~25	24	27	60	25	200	5000	490	1.3	5000	10500	304	71.7	33.4	0.5~6
FYD022022-361	6.0~25	24	23	60	21	170	5000	490	1.1	5000	10500	361	71.7	33.4	0.5~6
FYD022022-429	6.0~25	24	19	60	18	150	5000	490	0.9	5000	10500	429	71.7	33.4	0.5~6
FYD022022-509	6.0~25	24	16	60	15	130	5000	490	0.8	5000	10500	509	71.7	33.4	0.5~6

注：可根據客戶要求定制功率為0.01~1.2W  
Note: Could be customized based on customers' requirement to 0.01-1.2W

FLT-12FN20

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※自動門鎖 Automatic door-lock
- ※投影儀 Projector
- ※美容儀器 Hairdressing equipment

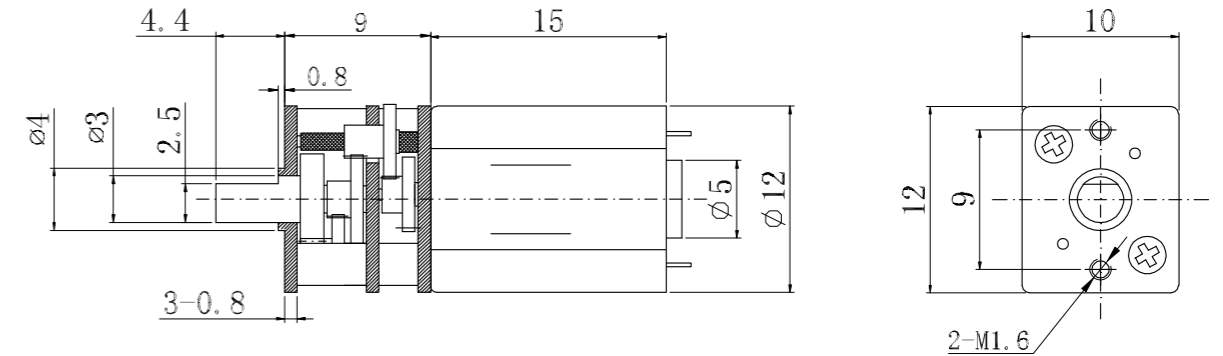
齒輪箱長度L Length of Gear	減速比 Ratio		
	9	100	298

TECHNICAL DATA:

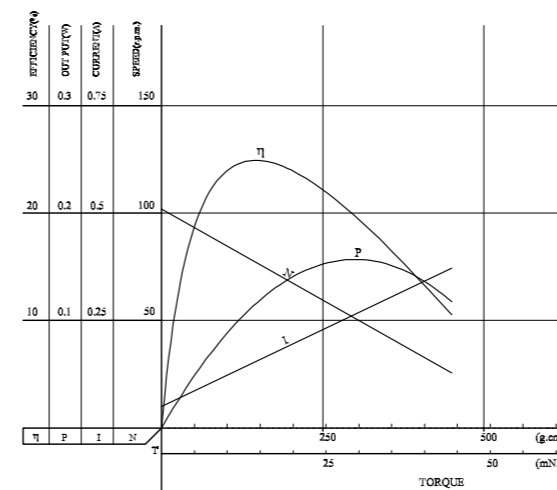


型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	功率 OUTPUT Kg·cm	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A	
FLT-12FN20-100	3	102	0.05	76	0.15	14.7	0.15	0.11	58.8	0.6	0.48
FLT-12FN20-298	4.5	52	0.045	41	0.165	39.2	0.40	0.17	176.4	1.8	0.62

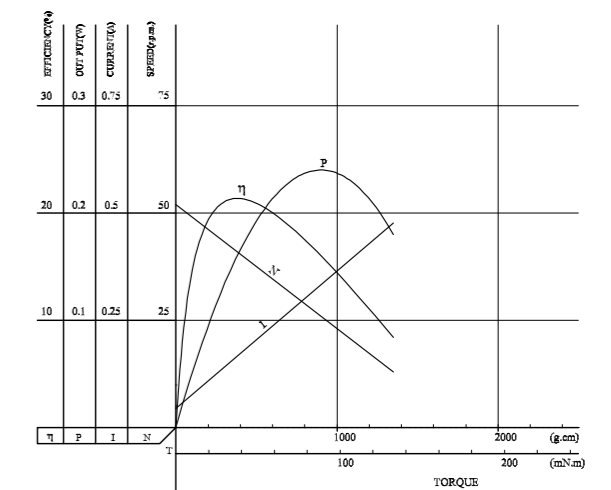
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-12FN20-100



FLT-12FN20-298



FLT-16A030

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 電動玩具 Electric-drive toy
- ※ 電動牙刷 Electric-drive toothbrush
- ※ 投影儀 Projector

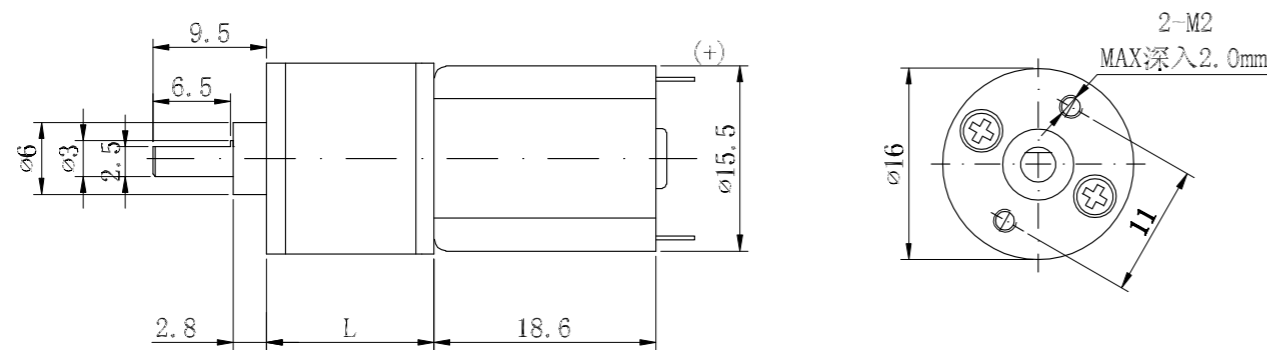


TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio				
	11	13	16	37	45
12.5	26	32	37	45	
14	75	91	105	128	
15.5	148	182	210	256	
17	592	723	825	1021	

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY					堵轉 STALL		
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
		FLT-16A030-105	5	100	0.05	77	0.17	29.4	0.3	0.23	127
FLT-16A030-210	5	55.7	0.06	43.9	0.19	58.8	0.6	0.36	274.5	2.8	0.70

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-16A050

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 電動玩具 Electric-drive toy
- ※ 電動牙刷 Electric-drive toothbrush
- ※ 投影儀 Projector

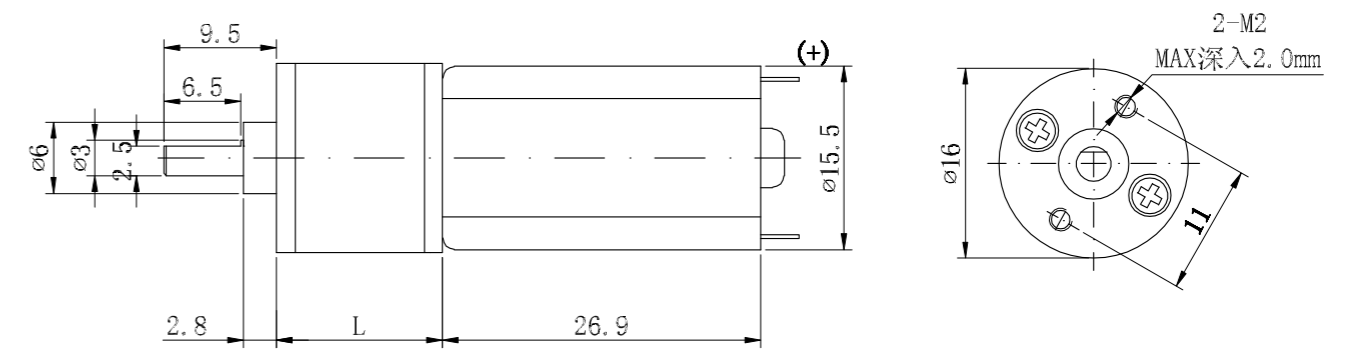


TECHNICAL DATA:

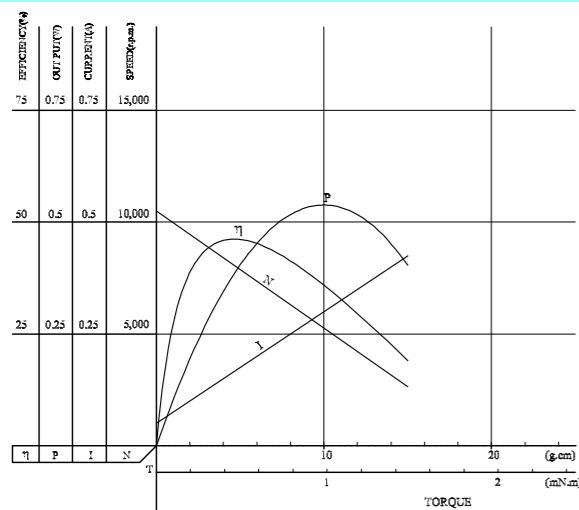
齒輪箱長度L Length of Gear	減速比 Ratio				
	11	13	16	37	45
12.5	26	32	37	45	
14	75	91	105	128	
15.5	148	182	210	256	
17	592	723	825	1021	

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY					堵轉 STALL		
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
		FLT-16A050-45	8	180	0.04	146	0.10	24.5	0.25	0.37	122.5
FLT-16A050-362	6	31.5	0.10	25.0	0.32	196	2.0	0.36	950	9.67	1.30

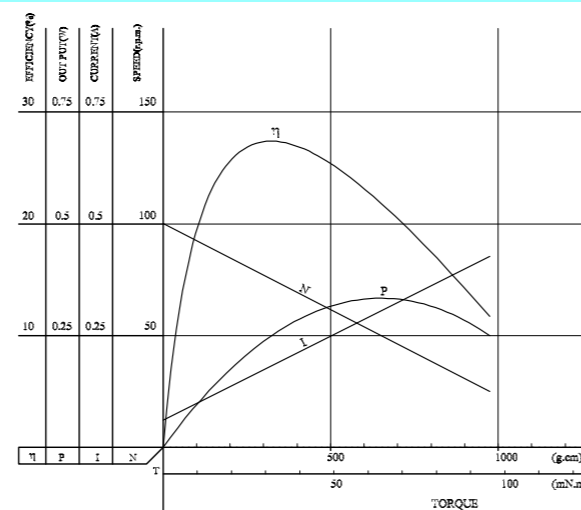
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



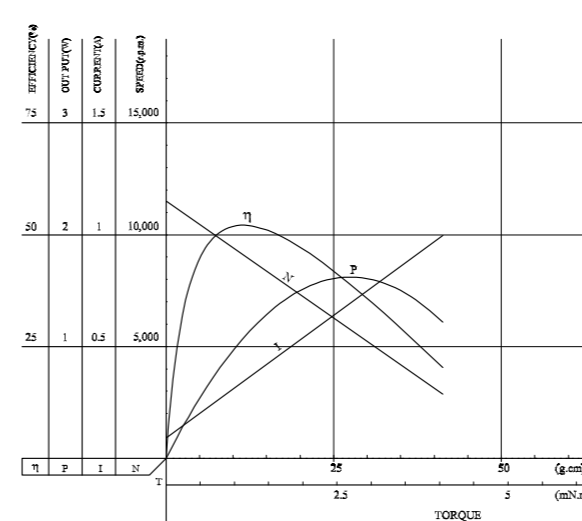
FFK-030SA-09210 5.0V



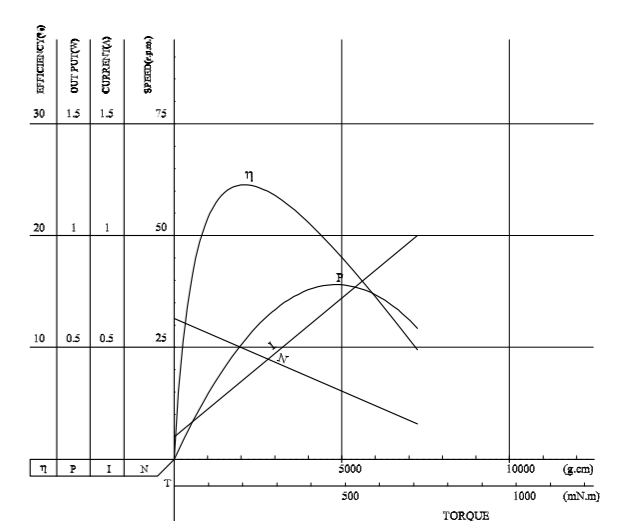
FLT-16A030-105



FFK-050ST-13125 6.0V



FLT-16A050-362



FLT-20A130

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※自動閥門 Automatic valve
- ※遙控車鎖 Remote-control vehicle-lock
- ※電動玩具 Electric-drive toy

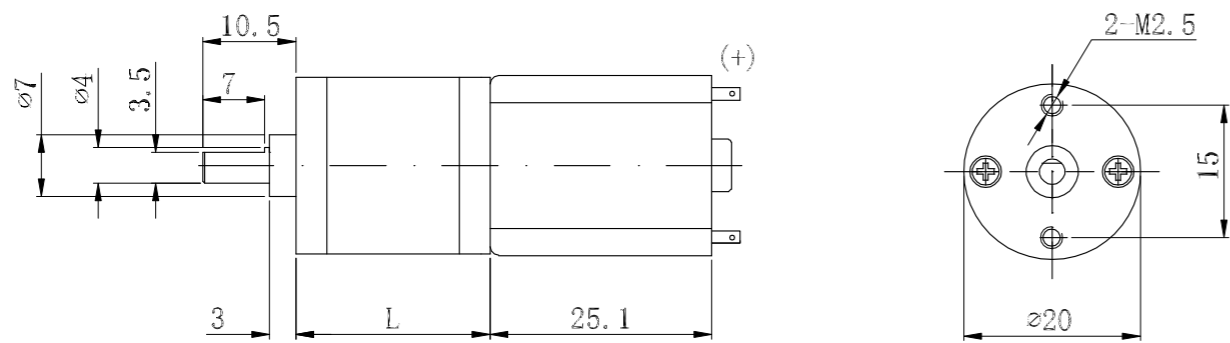
TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio				
	16	10	12.5	25	31
17.5	50	62	78		
19	100	125	156	195	
20.5	250	313	391	488	



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A	
FLT-20A130-31	12	290	0.04	220	0.12	21.5	0.22	0.49	89.2	0.91	0.41
FLT-20A130-250	12	30	0.04	24	0.11	147	1.5	0.37	735	7.5	0.47

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-20A180

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※自動閥門 Automatic valve
- ※遙控車鎖 Remote-control vehicle-lock
- ※電動玩具 Electric-drive toy

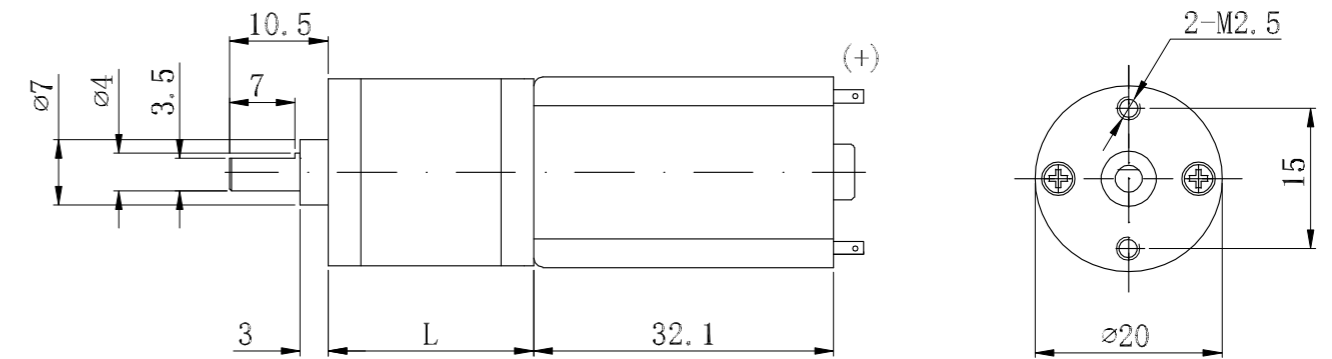
TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio				
	16	10	12.5	25	31
17.5	50	62	78		
19	100	125	156	195	
20.5	250	313	391	488	



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A	
FLT-20A180-78	12	83	0.03	67	0.12	82.3	0.84	0.58	450.9	4.6	0.52
FLT-20A180-195	2.4	41	0.16	35	0.82	147	205.8	0.37	140.2	14.3	4.5

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

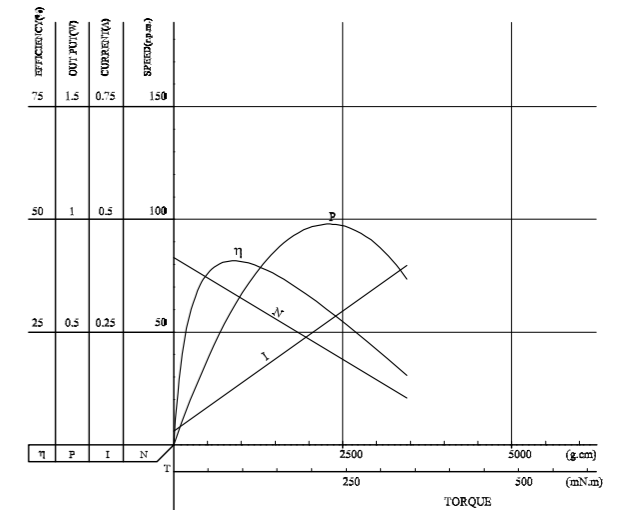
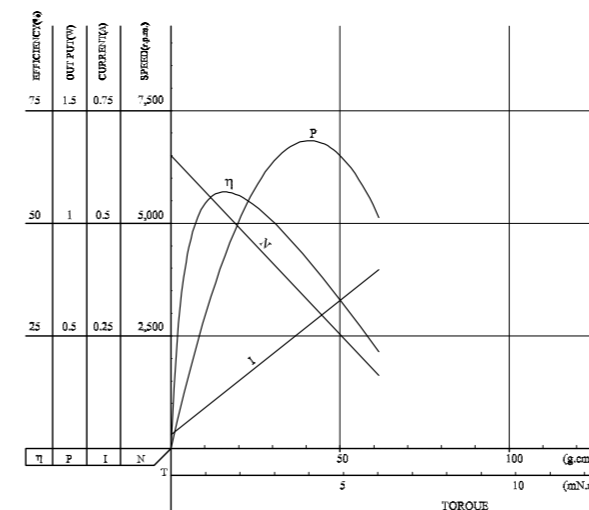
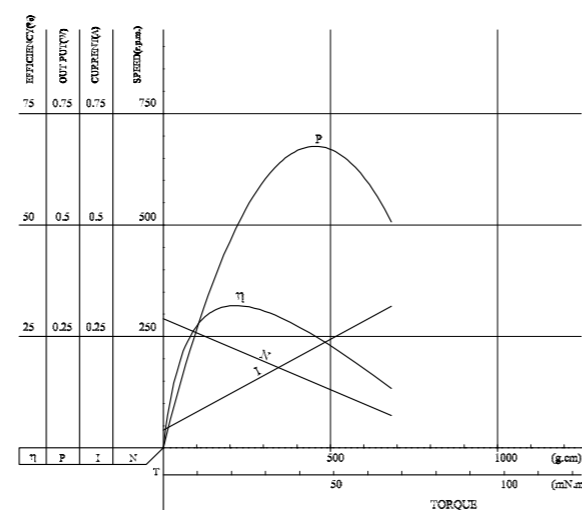
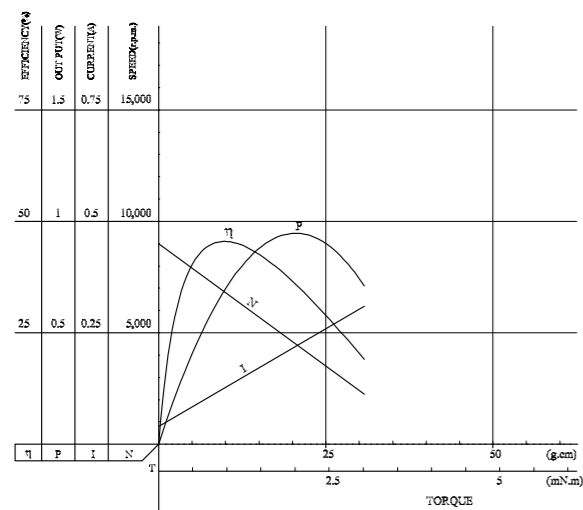


FFK-130GT-09490 12V

FLT-20A130-31

FFK-180ST-10320 12V

FLT-20A180-78



FLT-25A310

齒輪減速電機 DC GEAR MOTOR

- 典型應用 Typical Applications**
- ※感應水龍頭 Induction stopcock
  - ※保險櫃 Strongbox
  - ※自動閥門 Automatic valve

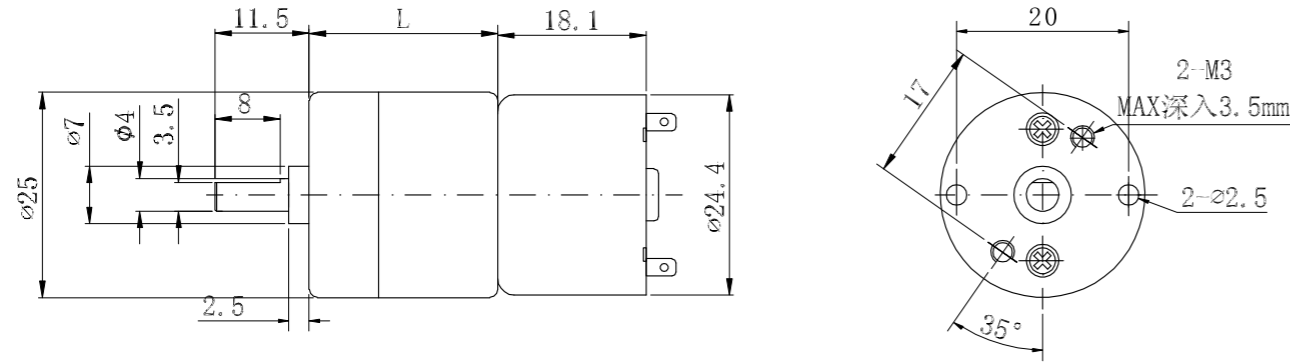


TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio			
	19	21	23	25
15	20	27	36	47
26	34	45	59	77
57	75	98	125	165
125	165	217	275	362
275	362	478	603	796
603	796	1051		

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-25A310-217	6	30	0.04	24	0.10	117.6	1.2	0.30	588	6.0	0.48
FLT-25A310-362	4.5	9	0.02	7	0.12	88.2	0.9	0.06	392	4.0	0.20

馬達性能及轉軸長度可按客戶的需要設定。  
M Motor performance and rotating bearing can be set according to customer needs.



FLT-25A370

齒輪減速電機 DC GEAR MOTOR

- 典型應用 Typical Applications**
- ※液晶顯示屏 Liquid crystal display screen
  - ※烘乾機 Dryer drying machine
  - ※自動門鎖 Automatic door-lock

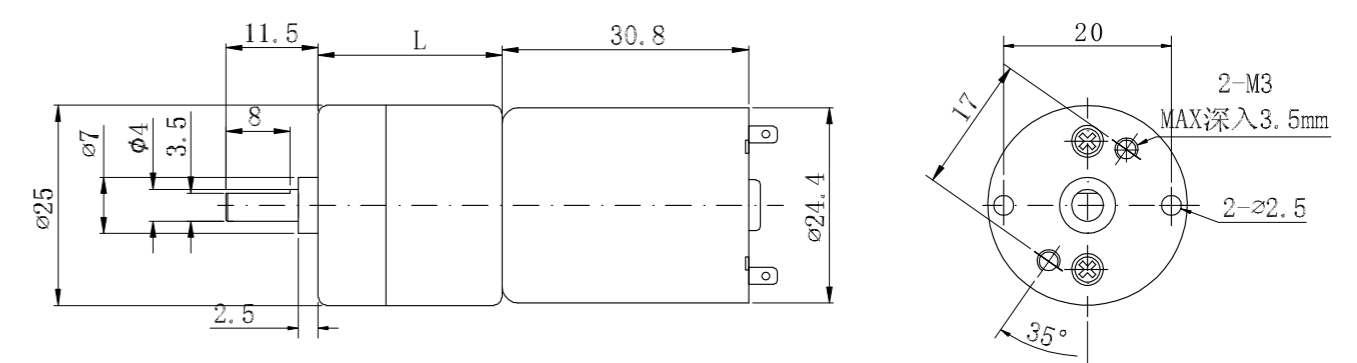


TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio			
	19	21	23	25
15	20	27	36	47
26	34	45	59	77
57	75	98	125	165
125	165	217	275	362
275	362	478	603	796
603	796	1051		

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-25A370-98	12	59	0.04	48	0.17	176	1.8	0.88	941	9.6	10.6
FLT-25A370-165	12	22	0.03	18	0.10	196	2.0	0.37	1078	11.0	0.46

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

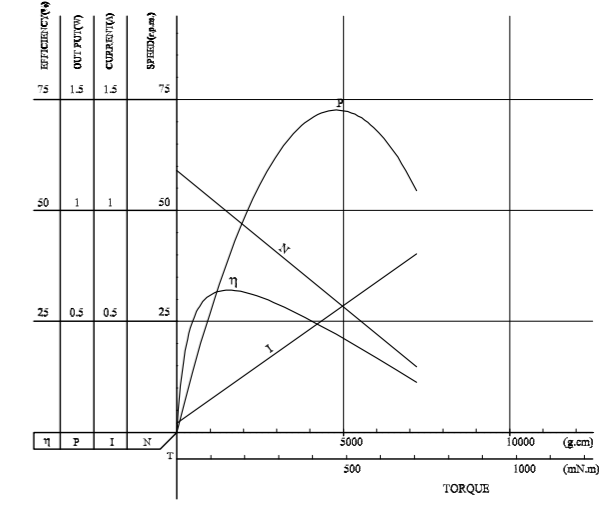
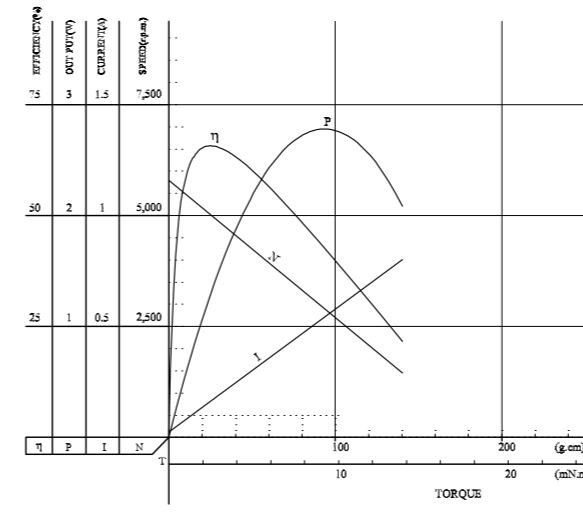
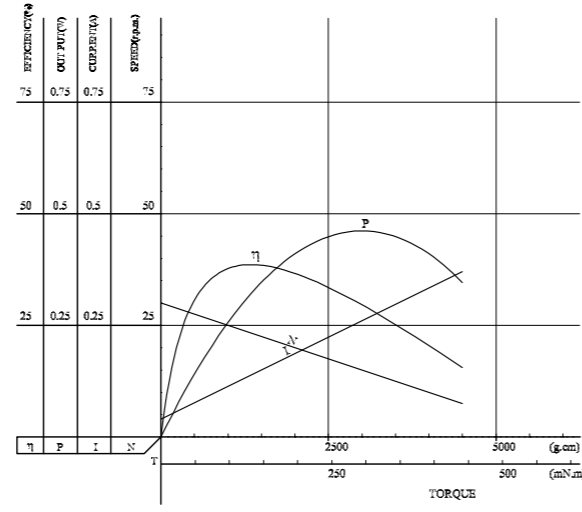
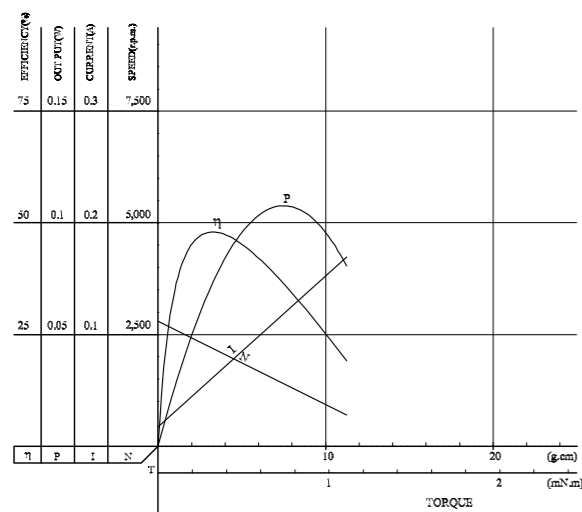


FRK-310WT-11400 2.5V

FLT-25A310-217

FRK-370NT-1537

FLT-25A370-98



FLT-27A80

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 液晶顯示屏 Liquid crystal display screen
- ※ 烘幹機 Dryer drying machine
- ※ 自動門鎖 Automatic door-lock

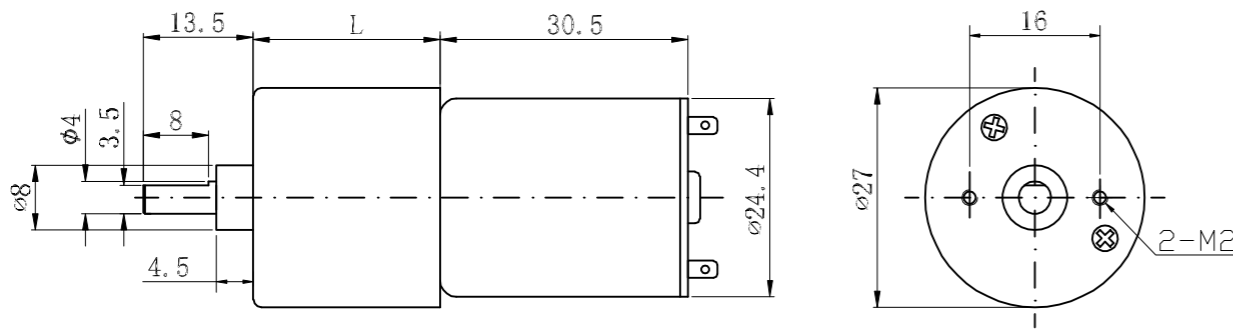
TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio	
14.4	18	23
16.2	44	73
18.0	111	233



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-27A280-23	3.0	217	0.08	179	0.33	25.5	0.26	0.48	147.1	1.5	1.52
FLT-27A280-73	6.0	106	0.09	91	0.50	156.9	1.6	1.49	1107.8	11.3	3.0

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-320B300

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 電動玩具 Electric-drive toy
- ※ 舞臺燈飾(貼面) Stage lighting (veneer)
- ※ 報警器 Alarm

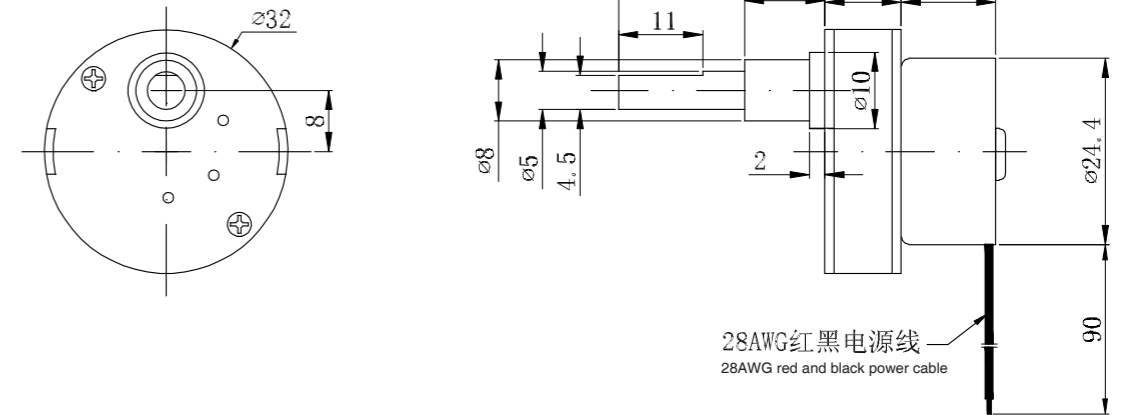
TECHNICAL DATA:

減速比 Ratio	44	142	360
L	10.0		



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-32B300-142	2	15	0.03	11	0.07	29.4	0.3	0.034	127.4	1.3	0.17
FLT-32B300-360	3	10	0.04	8.0	0.09	78.4	0.8	0.065	64.7	4.6	0.30

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

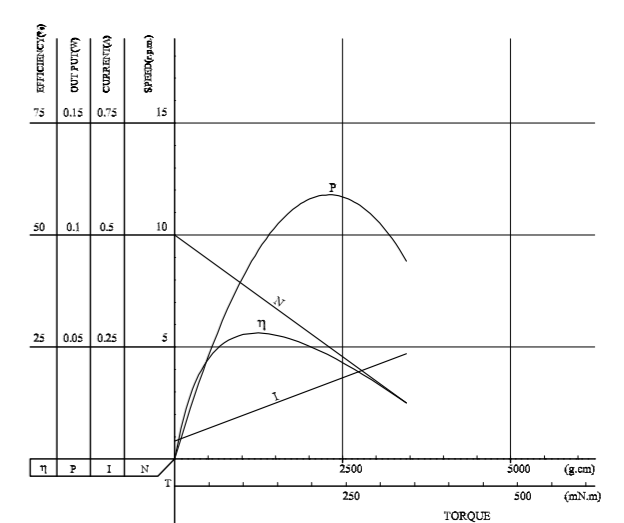
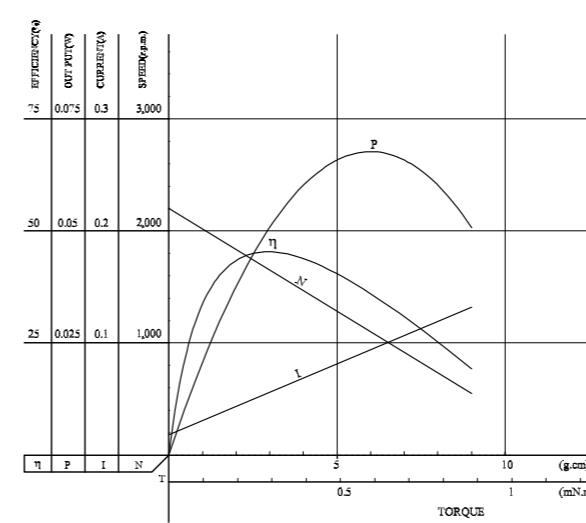
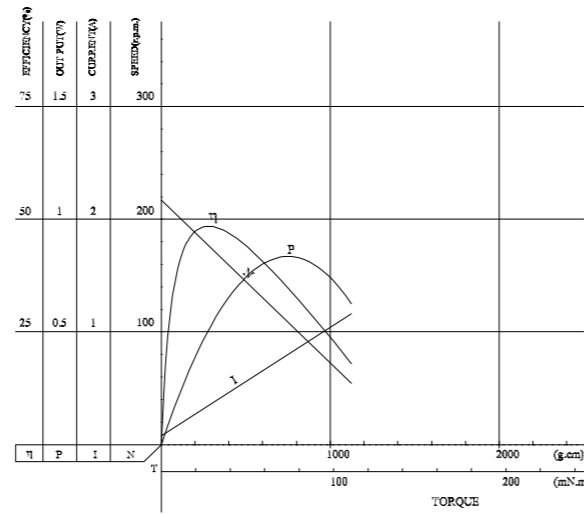
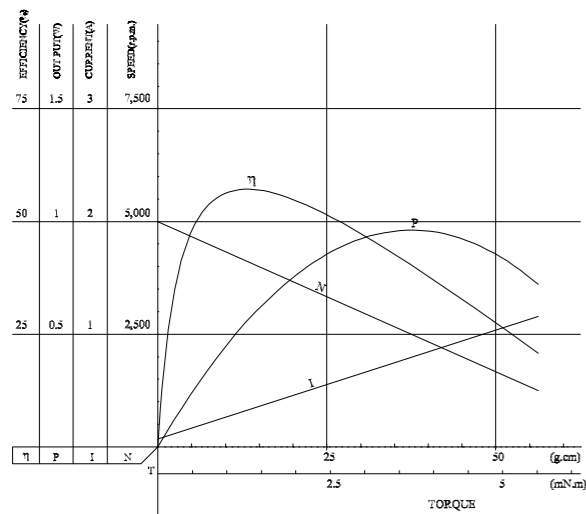


FRC-280GA-20120 3V

FLT-27A280-23

FRK-310NT-11440 2V

FLT-32B300-142



FLT-32B310

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 電動玩具 Electric-drive toy
- ※ 舞臺燈飾(貼面) Stage lamp decoration (vener)
- ※ 報警器 Alarm

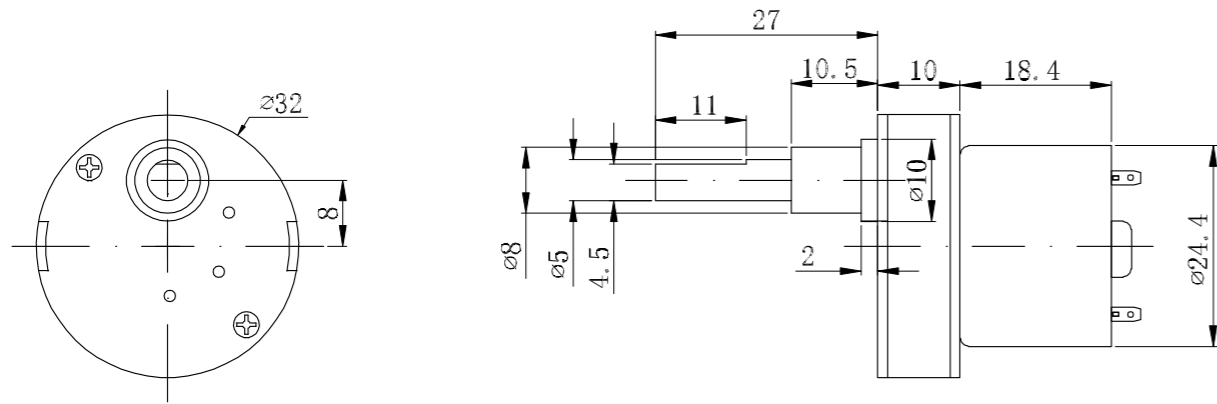
減速比 Ratio	44	142	360
L	10.0		

TECHNICAL DATA:



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-32B310-44	3	70	0.05	45	0.11	19.6	0.2	0.092	54.9	0.56	0.28
FLT-32B310-142	3	8.0	0.006	5.6	0.02	19.6	0.2	0.011	64.7	0.66	0.12

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-32B300

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 舞臺燈飾(貼面) Stage lighting (vener)
- ※ 醫療儀器 Medical equipment

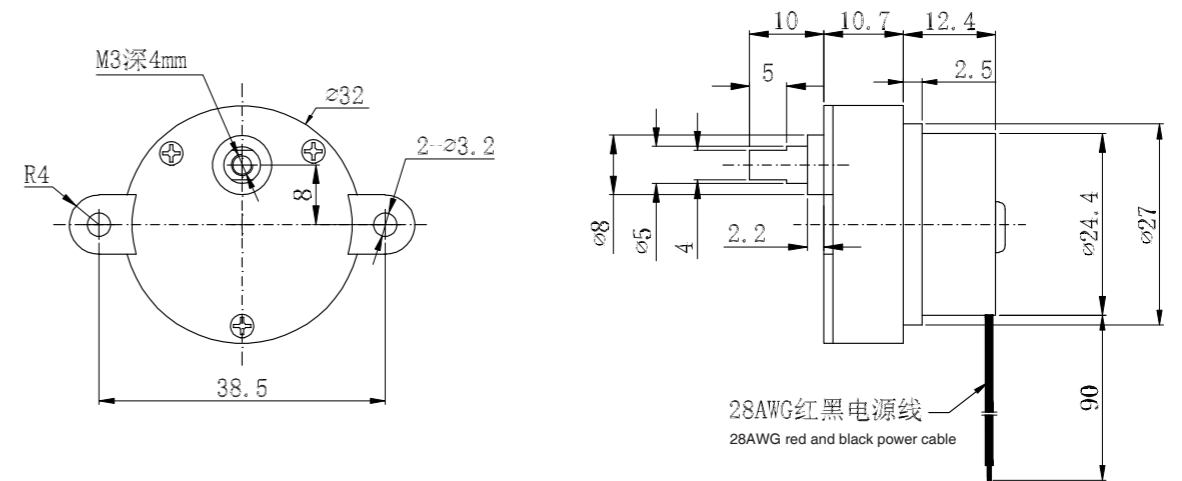
減速比 Ratio	130	320	
L	10.7		

TECHNICAL DATA:



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-32B300-130	3	20	0.04	15	0.07	24.5	0.25	0.038	98.0	1.0	0.15

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

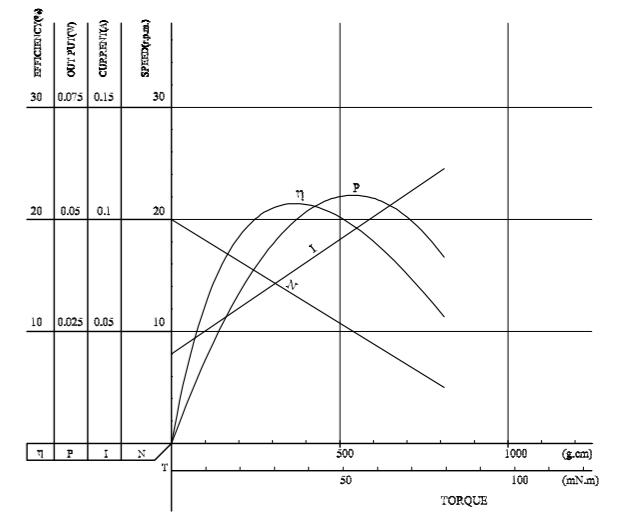
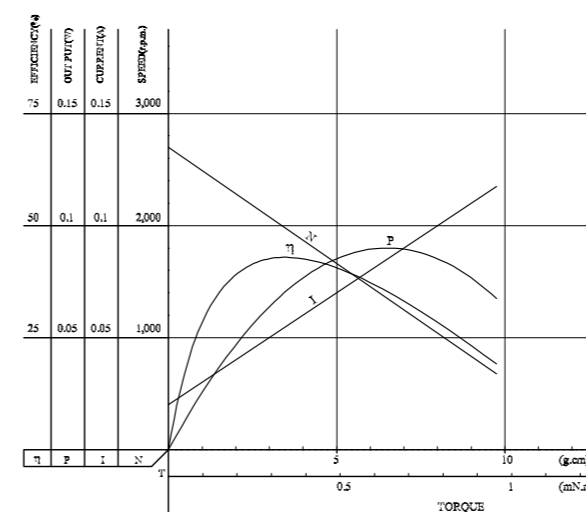
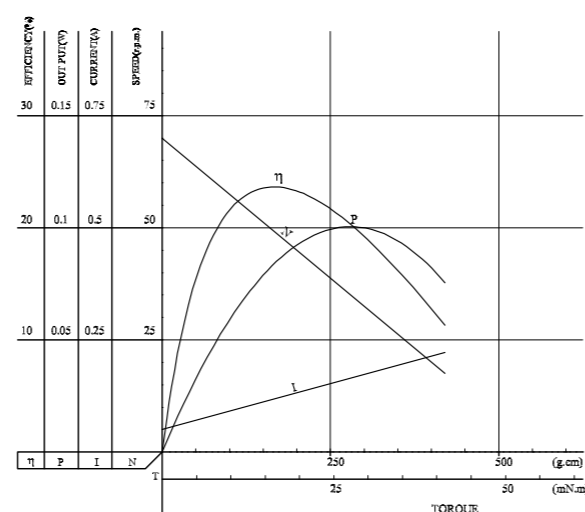
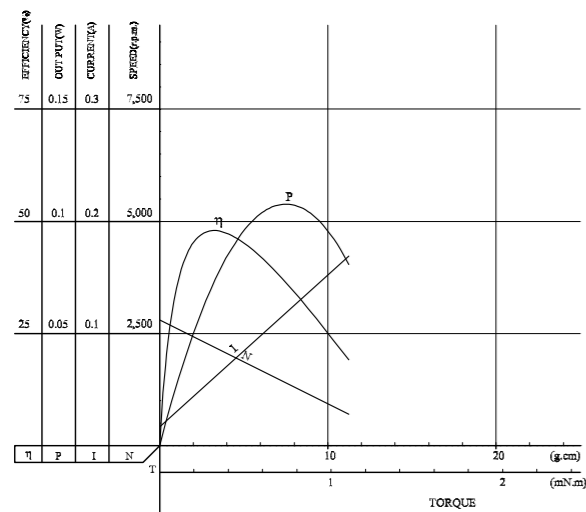


FFK-310NT-11400 2.5V

FLT-32B310-44

FRK-300NT-09550 3V

FLT-32B300-130



FLT-33B360

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※液晶顯示屏 Liquid crystal display screen
- ※自動門鎖 Automatic door-lock
- ※電動窗簾 Electric curtain

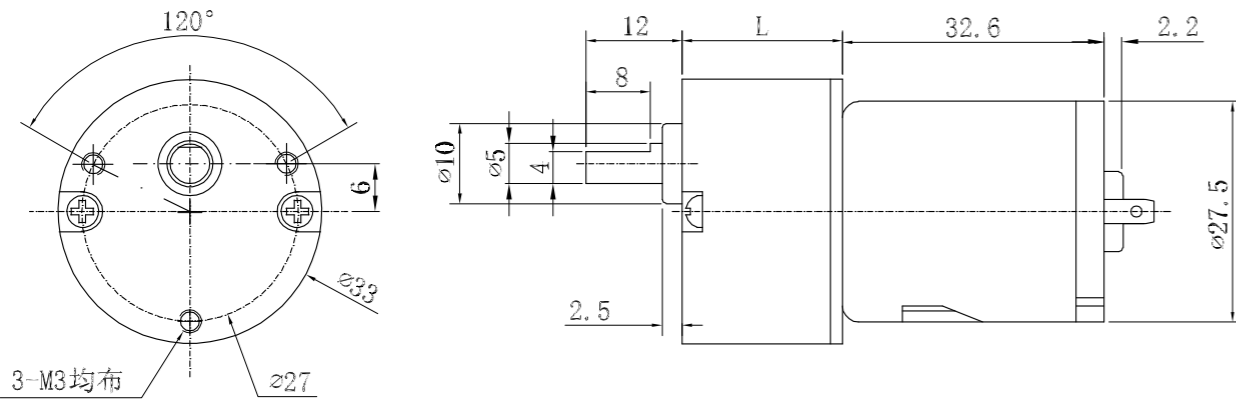
減速比 Ratio	20	51	132
L	15.6	17.7	20

TECHNICAL DATA:



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-33B360-20	12	225	0.07	166	0.14	39.2	0.4	0.68	149.0	1.52	0.40
FLT-33B360-51	24	137	0.06	109	0.20	176.4	1.8	2.01	862.7	8.8	0.80

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-33B380

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※液晶顯示屏 Liquid crystal display screen
- ※自動門鎖 Automatic door-lock
- ※電動窗簾 Electric curtain

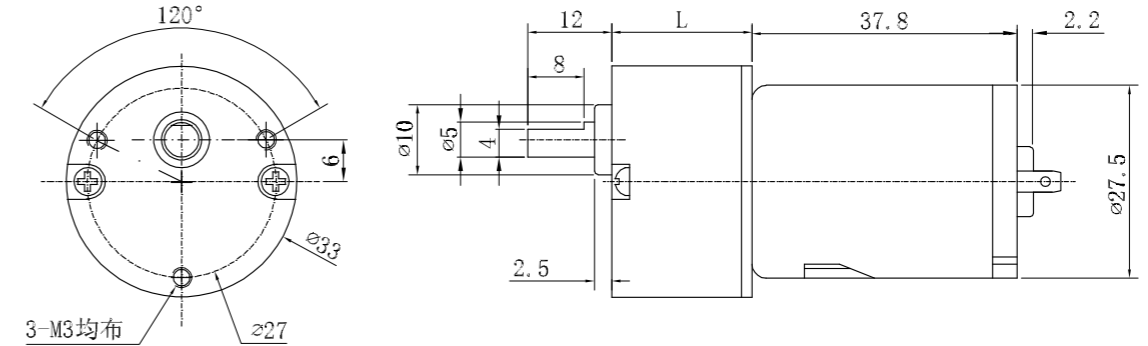
減速比 Ratio	20	51	132
L	15.6	17.7	20

TECHNICAL DATA:



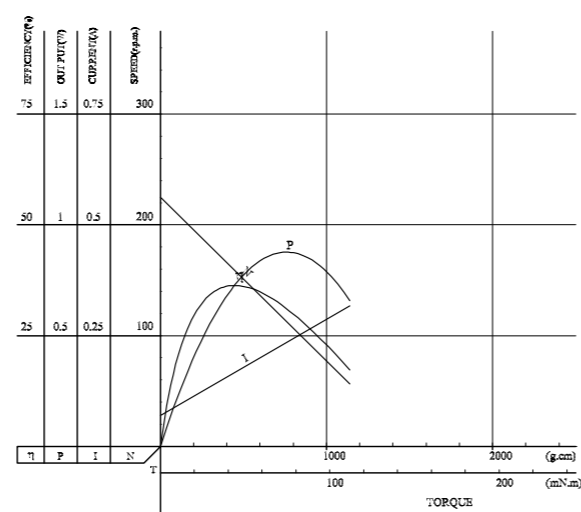
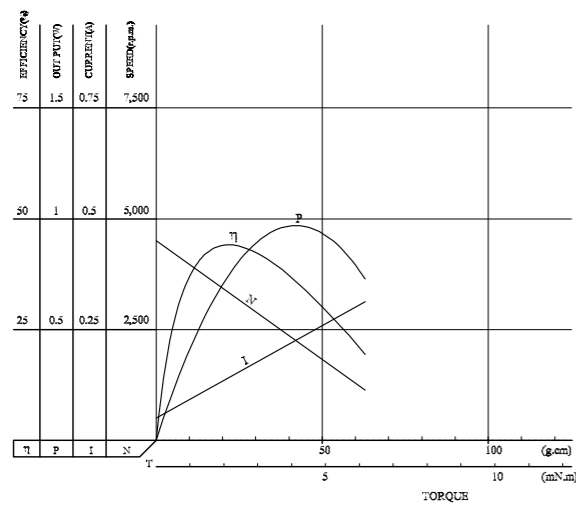
型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-33B385-51	24	156	0.10	127	0.32	245	2.5	3.25	1313	13.4	1.40
FLT-33B385-132	20	130	0.21	108	1.05	784	8.0	8.86	4627	47.2	5.40

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



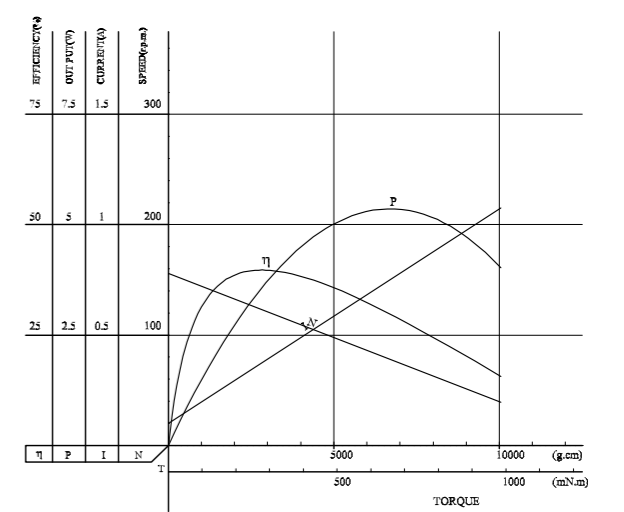
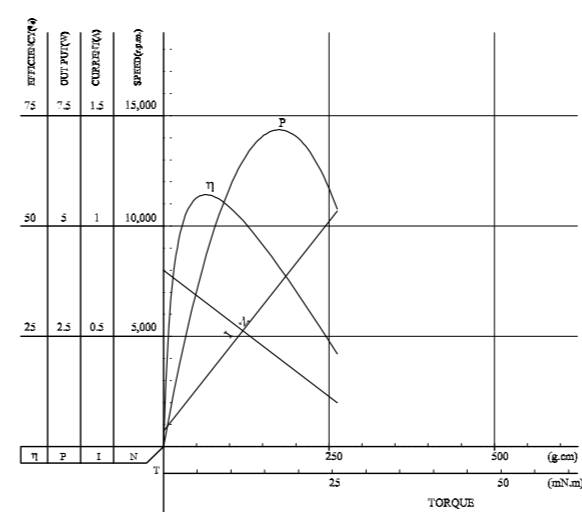
FRC-360ST-10500 12V

FLT-33B360-20



FRC-380ST-12300 24V

FLT-33B380-51



FLT-36F500

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications  
※ 智能水表 Smart meter

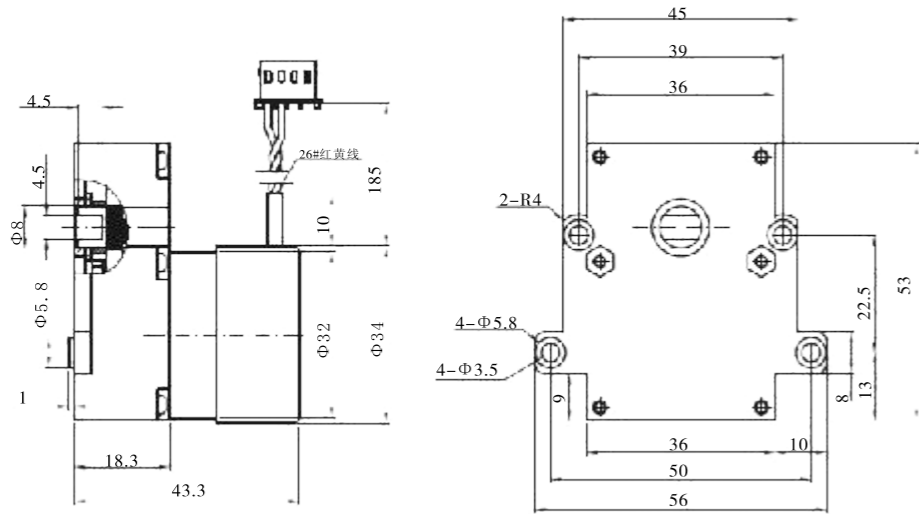


TECHNICAL DATA:

減速比 Ratio
2000

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-36F500-2000	3	1.3	0.046	1.29	0.092	294	3	0.04	/	/	/

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-37B520

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications  
※ 電動窗簾 Electric-drive curtain  
※ 舞臺燈飾 Stage illumination  
※ 空氣開關 Air switch

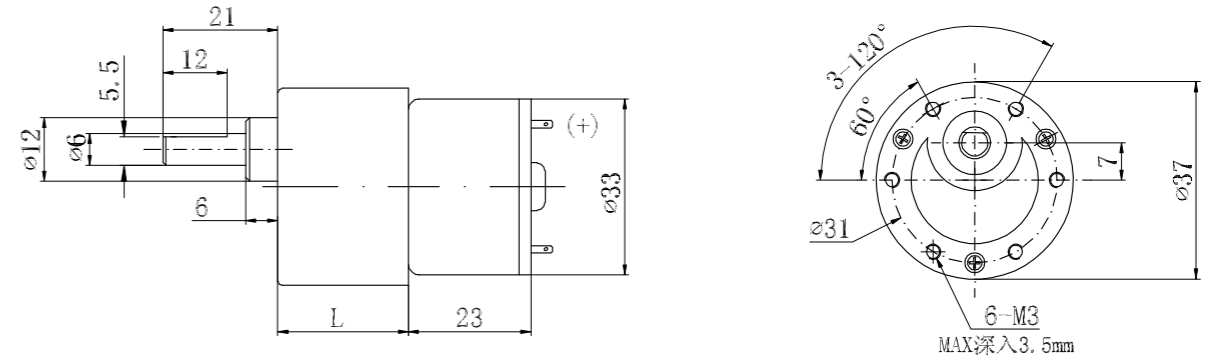


TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio			
17.8	10			
21.5	20	30	45	
24	50	60	70	90
26.5	120	150	210	270
29	450	540	630	810

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
JL-37B520-50	12	110	0.04	94	0.18	147	1.5	1.45	1009	10.3	1.6
JL-37B520-150	12	21	0.03	17	0.11	353	3.6	0.37	1853	18.9	0.40

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

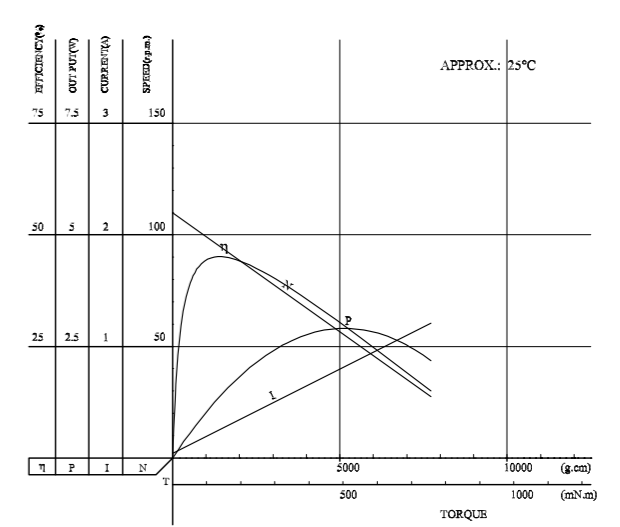
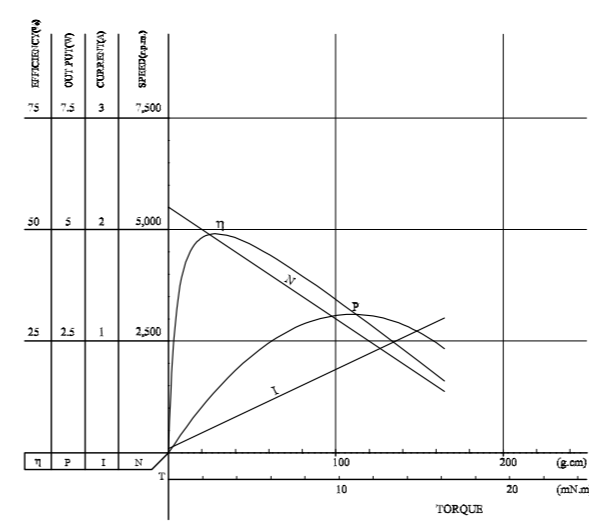
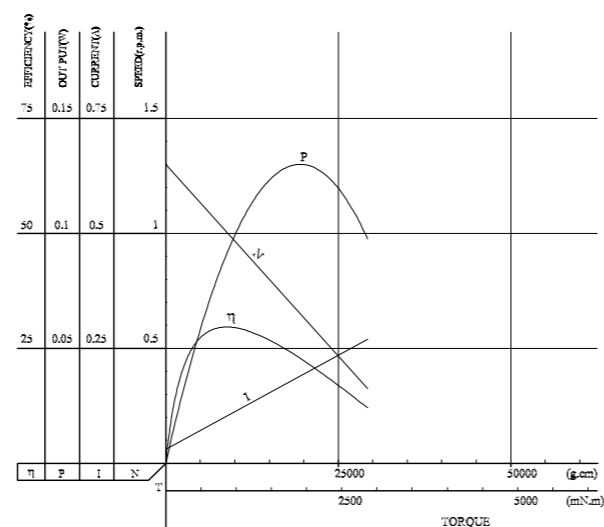
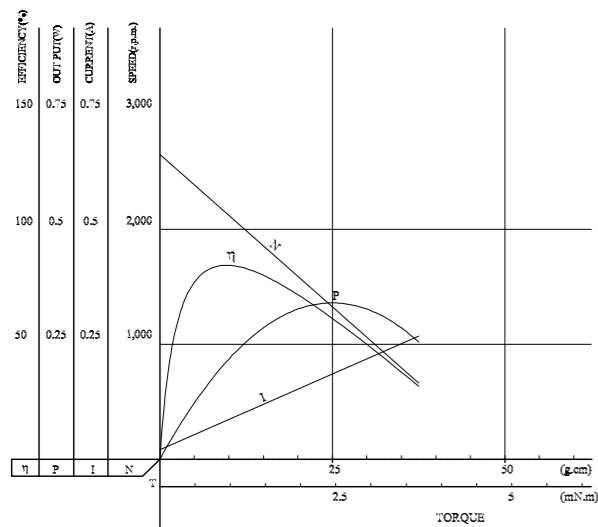


FRK-500NA-18280 3.0V

FLT-36F500-2000

FRC-520NA-17410 12V

FCF-37B520-50



FLT-37B528

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 捆紗機 Tie-yarn machine
- ※ 按摩器 Massager
- ※ 切卡機 Cut-card machine

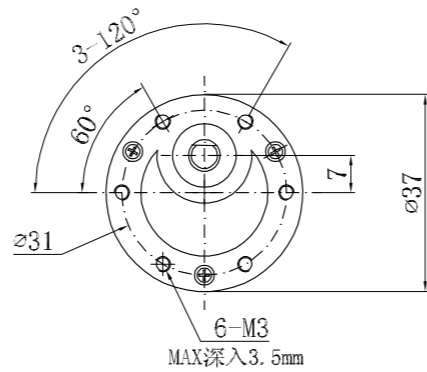
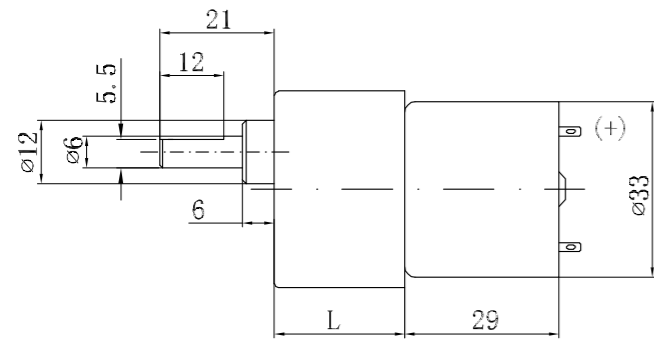
齒輪箱長度L Length of Gear	減速比 Ratio			
	10	30	45	90
17.8	10			
21.5	20	30	45	
24	50	60	70	90
26.5	120	150	210	270
29	450	540	630	810

TECHNICAL DATA:

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE		功率 OUTPUT W	轉矩 TORQUE		電流 CURRENT A
						mN·m	Kg·cm		mN·m	Kg·cm	
FLT-37B528-90	12	77	0.07	62	0.32	314	3.2	2.04	1607	16.4	1.7
FLT-37B528-210	24	31.5	0.04	25	0.20	617	6.3	1.61	2990	30.5	1.0



馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-38F520

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 捆紗機 Tie-yarn machine
- ※ 按摩器 Massager
- ※ 切卡機 Cut-card machine

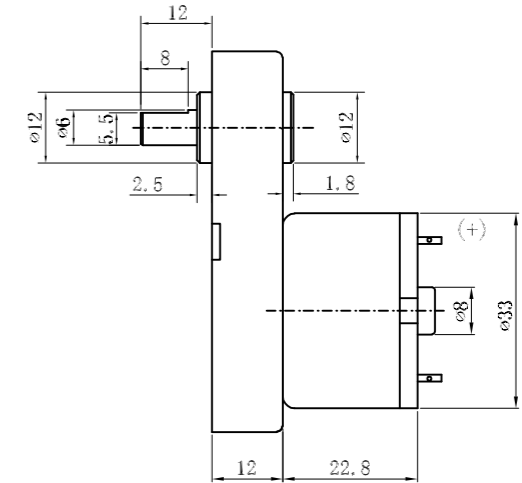
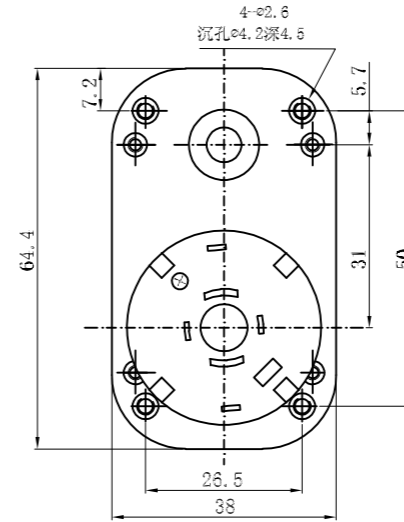
減速比 Ratio	
142	225
445	

TECHNICAL DATA:

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE		功率 OUTPUT W	轉矩 TORQUE		電流 CURRENT A
						mN·m	Kg·cm		mN·m	Kg·cm	
FLT-38F520-225	12	24	0.05	20	0.22	568.6	5.8	1.19	3421	34.9	1.05
FLT-38F520-445	12	6.5	0.02	5.7	0.12	980.4	10.0	0.58	5196	53.0	0.51

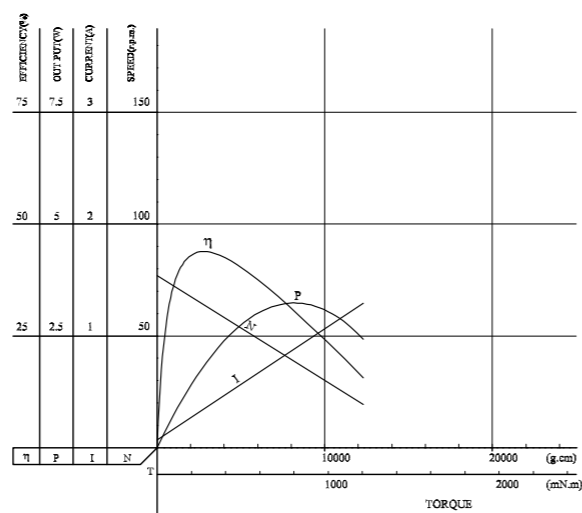
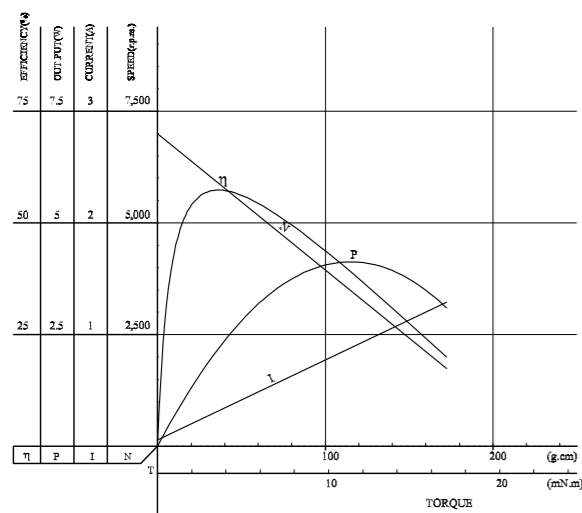


馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



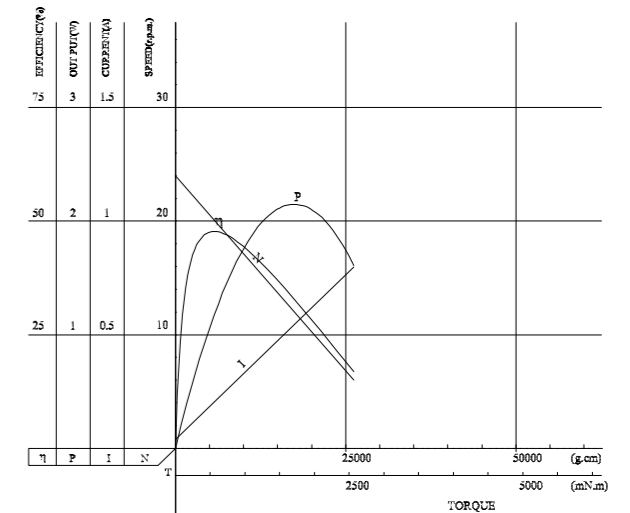
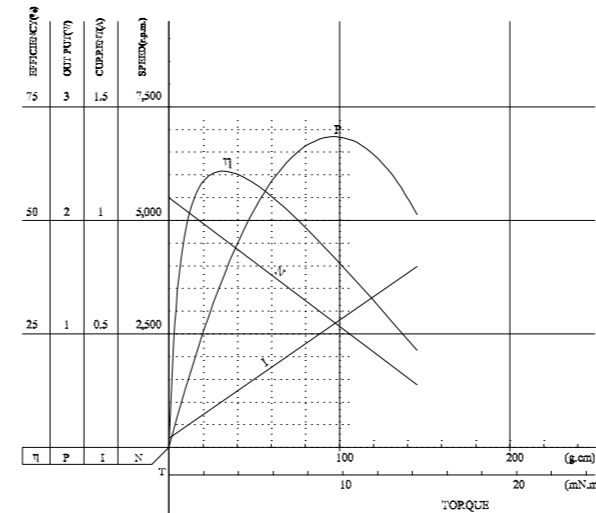
FRC-528NT-18260 12V

FLT-37B528-90



FRC-520N-17410 12V

FLT-38F520-225



FLT-40F3540

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※醫療儀器 Medical equipment
- ※自動化設備 Automation Equipment

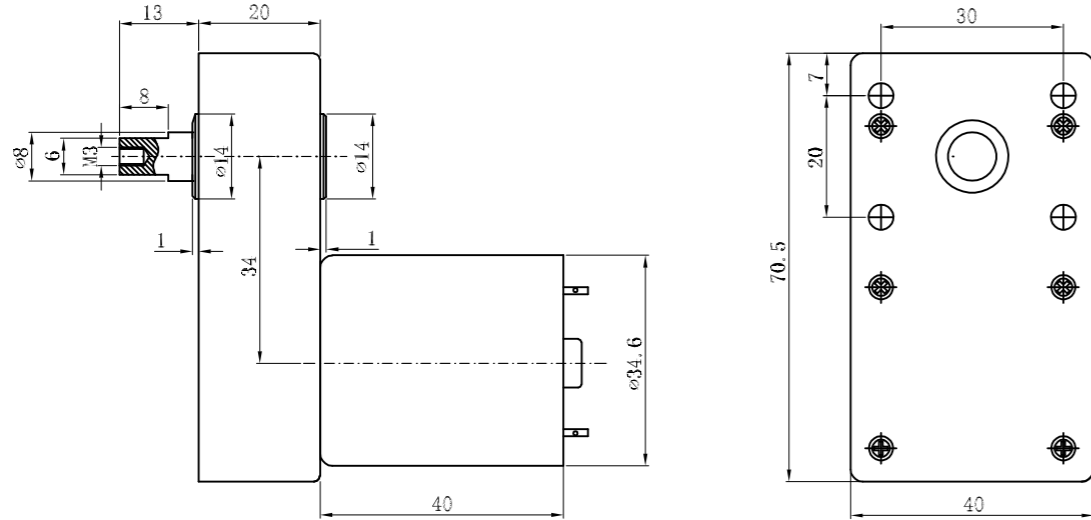
減速比 Ratio	
42	50
158	530

TECHNICAL DATA:



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-40F3540-530	12	4.5	0.05	3.5	0.16	1813.7	18.5	0.66	8137	83	0.60
FLT-40F3540-50	24	100	0.08	82	0.24	490.2	5.0	4.21	2647	27	1.15

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-40B500

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※麻將桌 Mahjong desk
- ※醫療儀器 Medical equipment
- ※自動化設備 Automation Equipment

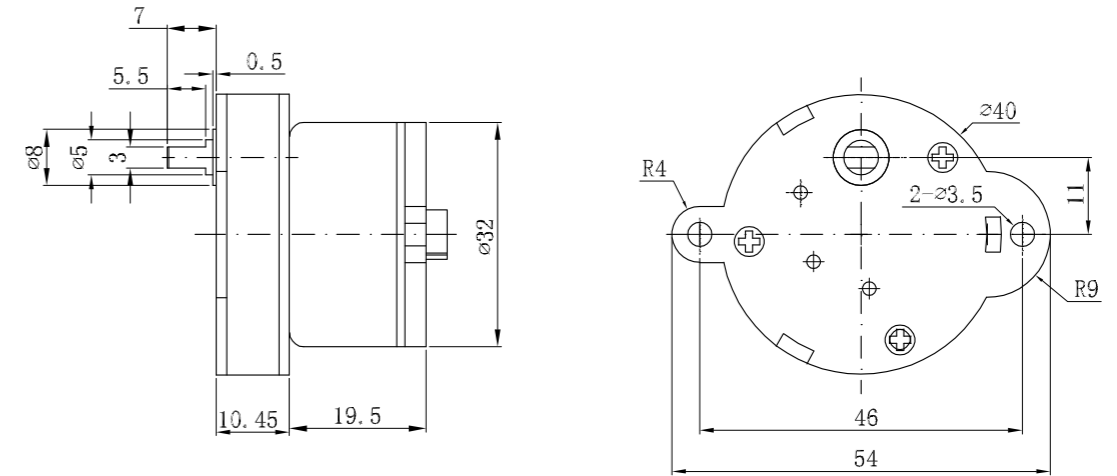
減速比 Ratio	27	40	103
L	10.45		

TECHNICAL DATA:

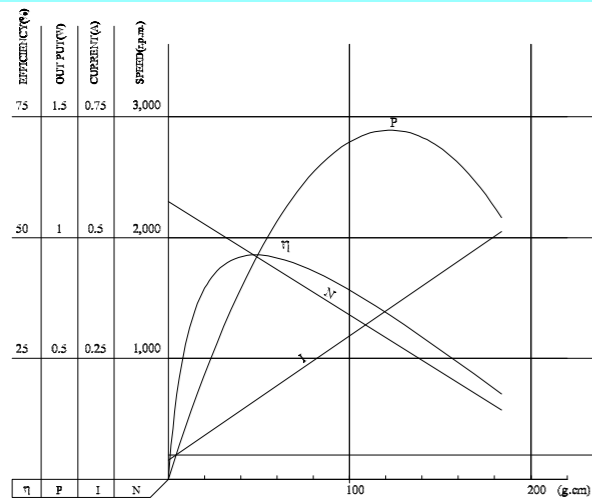


型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-40B500-40	12	214	0.05	162.4	0.284	117.6	1.2	1.99	487	4.9	1.40
FLT-40B500-27	12	315	0.06	230	0.30	78.4	0.8	1.88	323	3.3	1.42

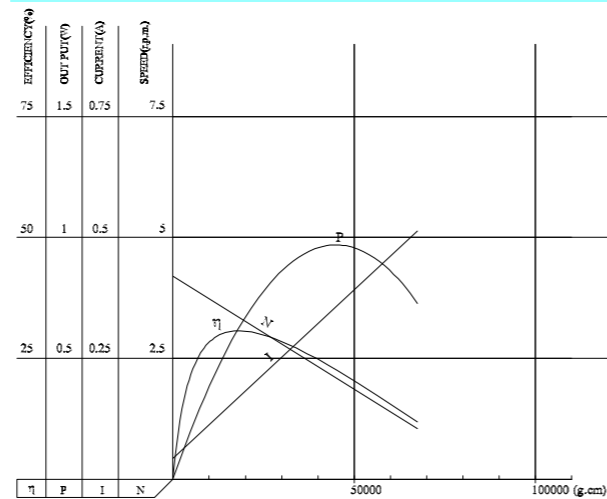
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



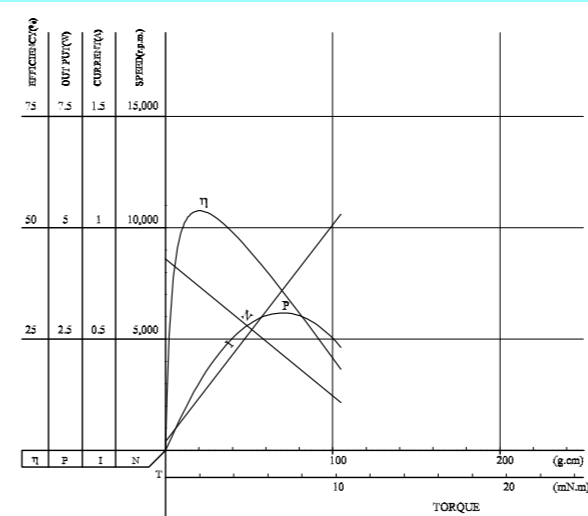
FRC-3540NT-12560 12V



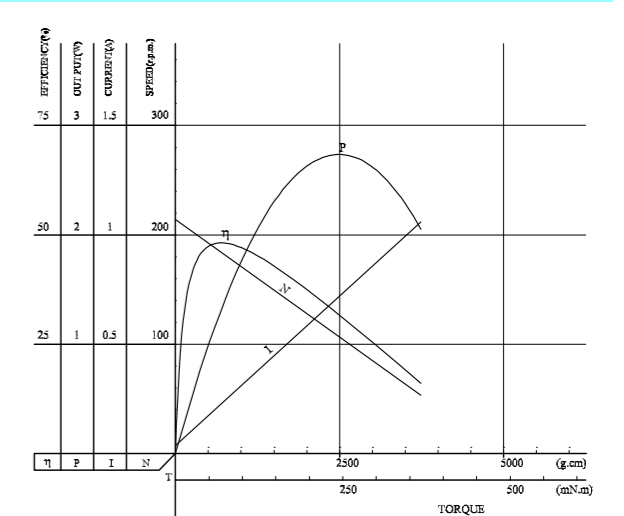
FLT-40F3540-530



FRK-500NA-15380 12V



FLT-40B500-27



FLT-40B500-1

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 麻將桌 Mahjong desk
- ※ 醫療儀器 Medical equipment
- ※ 自動化設備 Automation Equipment

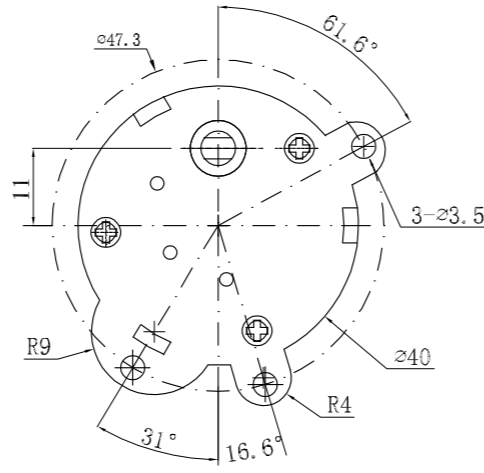
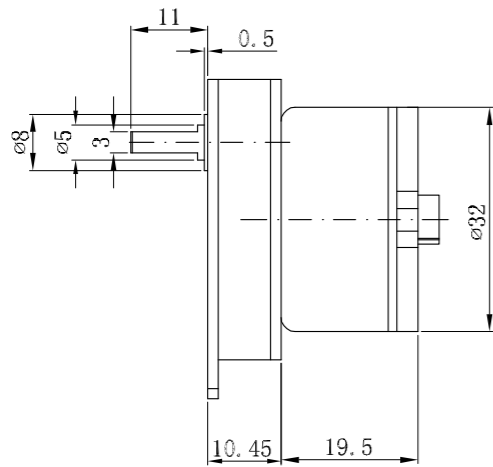
TECHNICAL DATA:

減速比 Ratio	27	40	103
L	10.45		



型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-40B500-103	12	52	0.04	41	0.106	176.5	1.8	0.76	838	8.8	0.52
FLT-40B500-40	12	138	0.035	110	0.10	58.8	0.6	0.67	290	2.95	0.52

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FLT-48T500

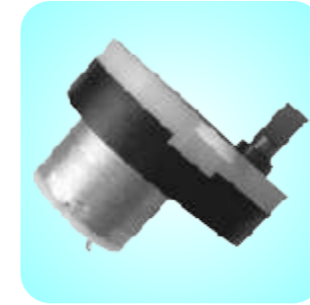
齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

- ※ 醫療儀器 Medical equipment
- ※ 自動化設備 Automation Equipment

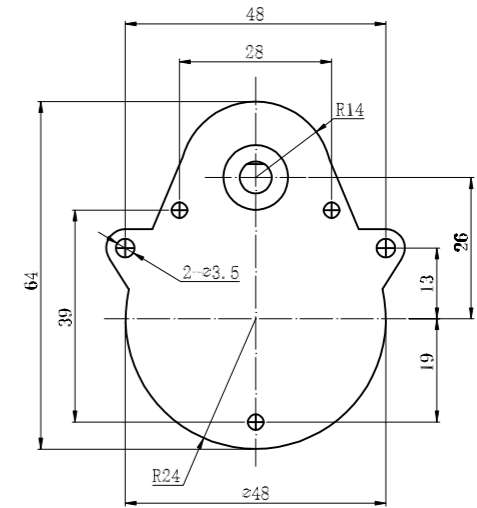
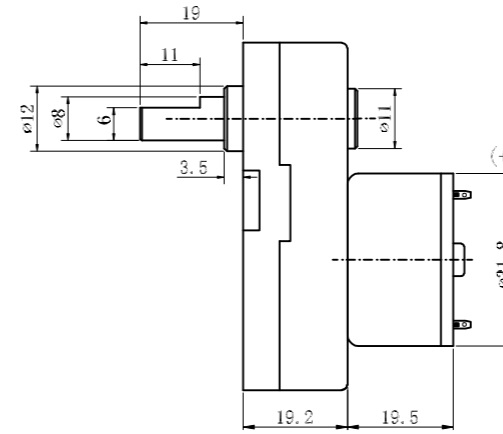
TECHNICAL DATA:

齒輪箱長度L Length of Gear	減速比 Ratio			
19.5	300	640	800	900
	1200	1500	1800	2700

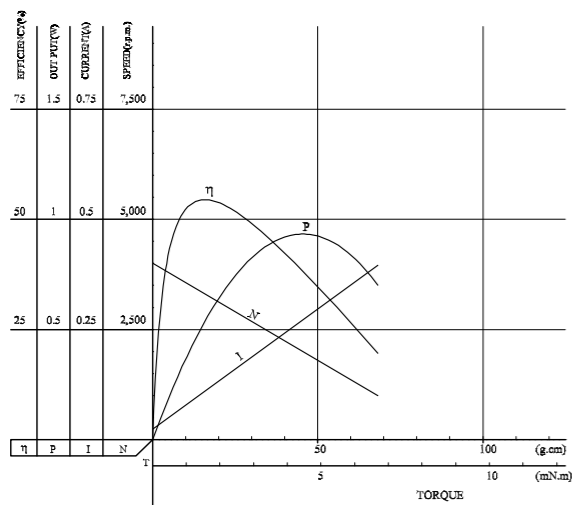


型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉 STALL	
		轉速 SPEED r/min	電流 CURRENT mA	轉速 SPEED r/min	電流 CURRENT mA	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE Kg·cm
FLT-48T500-800	12	2.3	0.04	2.1	0.16	2941	30	0.65	30-60 adjustable
FLT-48T500-2700	24	2.2	0.07	1.9	0.20	5882	60	1.17	

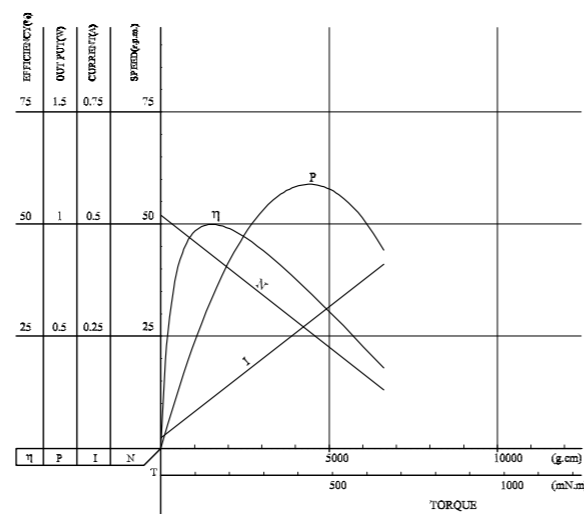
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



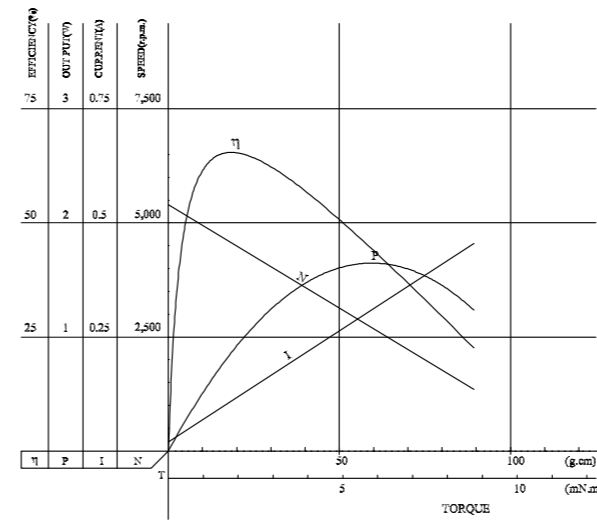
FRK-500NA-12560 9V



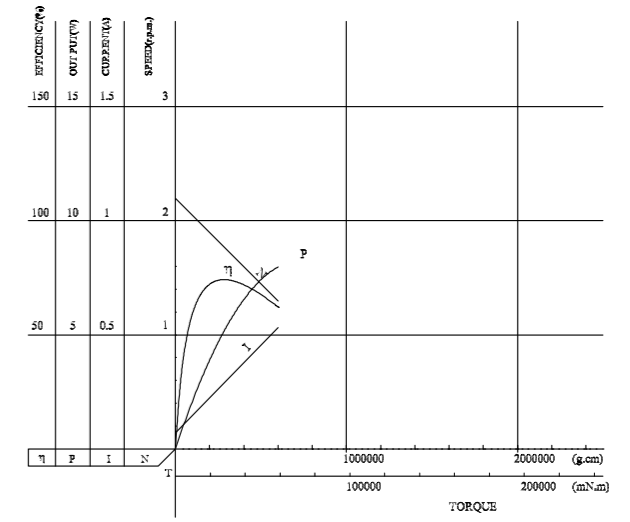
FLT-40B500-103



FRK-500NA-12560 12V



FLT-48T500-2700



FLT-48T520

齒輪減速電機 DC GEAR MOTOR

典型應用 Typical Applications

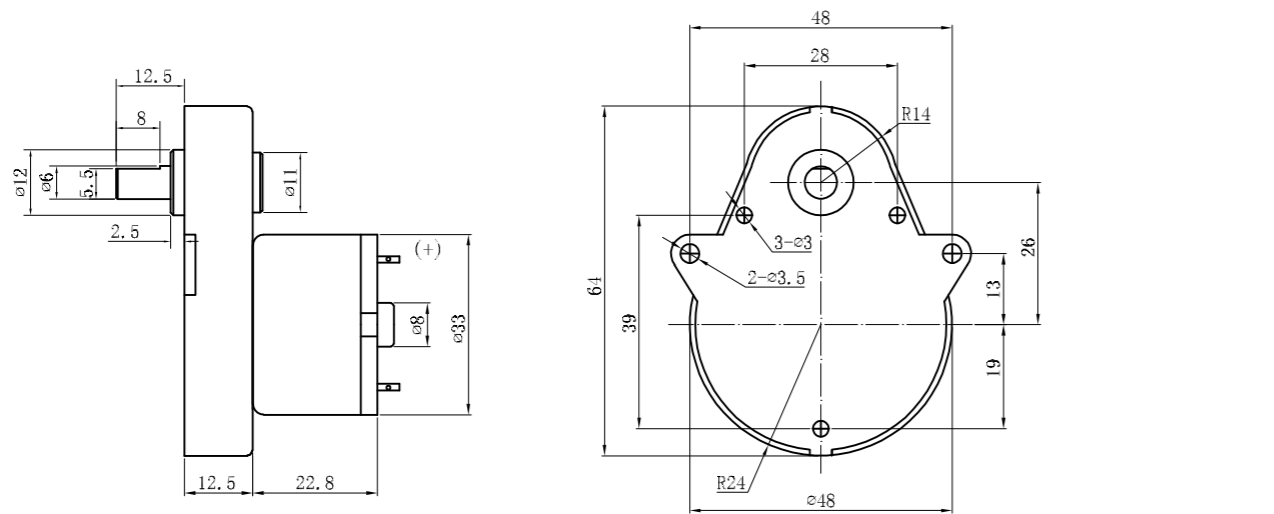
- ※醫療儀器 Medical equipment
- ※自動化設備 Automation Equipment

齒輪箱長度L Length of Gear	減速比 Ratio			
	10	30	45	60
12.5	90	120	225	300
	340	454	900	1500

TECHNICAL DATA:

型號 MODEL	電壓 VOLTAGE V	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY				堵轉STALL			
		轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE Kg·cm	電流 CURRENT A
FLT-48T520-225	12	47	0.12	38	0.60	686	7.0	2.73	4410	45.0	2.5
FLT-48T520-454	24	13	0.02	10	0.06	1470	15.0	0.40	2451	25	1.2

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FFK-130GA/SA

輸出功率:約0.2W~2.5W  
金屬電刷馬達

OUTPUT: APPROX 0.2W~2.5W  
Precious Metal-brush motors

典型應用

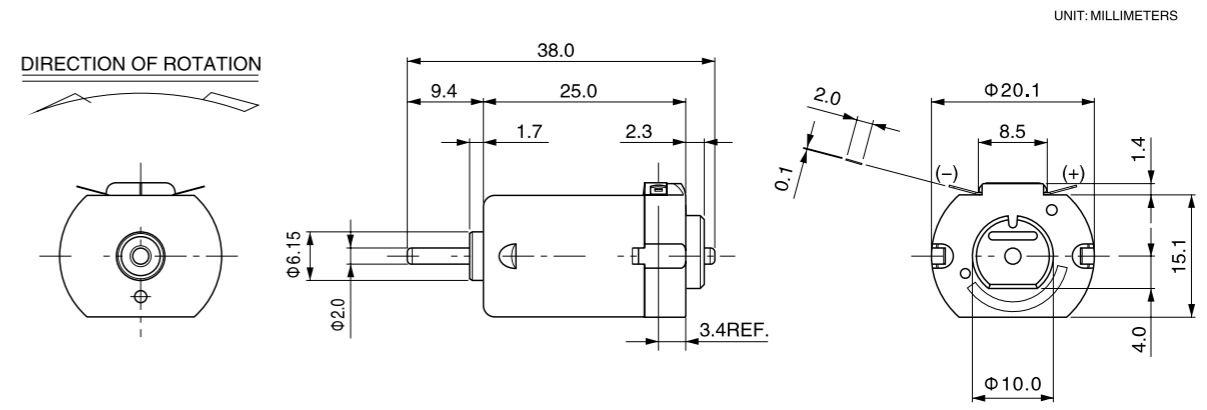
- 玩具,模型:電動玩具
- 電動塑料模型

Typical Applications Toys and Models :  
Motorized Toy  
Motorized Plastic Model



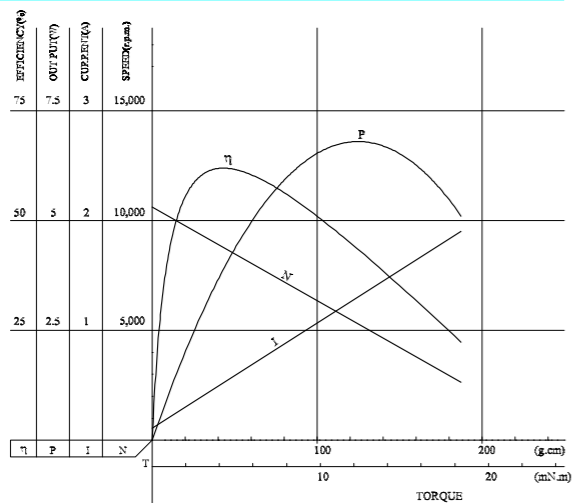
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED r/min	電流 CURRENT A	轉速 SPEED r/min	電流 CURRENT A	轉矩 TORQUE mN·m	轉矩 TORQUE g·cm	功率 OUTPUT W	轉矩 TORQUE mN·m	轉矩 TORQUE g·cm	電流 CURRENT A
FFK-130GA-2270	DC 1.5-3.0V	DC 1.5V	9100	0.20	6990	0.66	0.59	6.0	0.43	2.55	26	2.20
		DC 3V	16400	0.23	13200	0.95	0.84	8.6	1.16	4.32	44	3.92
FFK-130GA-18100	DC 1.5-3.0V	DC 1.5V	6200	0.15	4540	0.41	0.47	4.8	0.22	1.76	18	1.12
		DC 3V	12300	0.15	9710	0.56	0.74	7.6	0.76	3.53	36	2.10
FFK-130GA-14150	DC 1.5-4.5V	DC 3V	8300	0.11	6150	0.31	0.55	5.6	0.35	2.11	22	0.90
FFK-130SA-2270	DC 1.5-3.0V	DC 3V	13000	0.20	10650	0.91	1.24	12.7	1.38	6.86	70	4.10
FFK-130SA-18100	DC 1.5-4.5V	DC 3V	9300	0.14	7350	0.53	1.03	10.5	0.79	4.91	50	2.00
FFK-130SA-14150	DC 1.5-4.5V	DC 3V	6200	0.080	4780	0.27	0.74	7.6	0.37	3.23	33	0.90

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

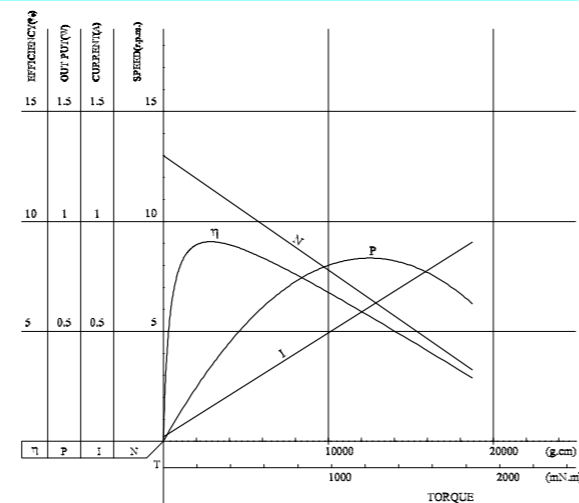


WEIGHT: 17g (APPROX)

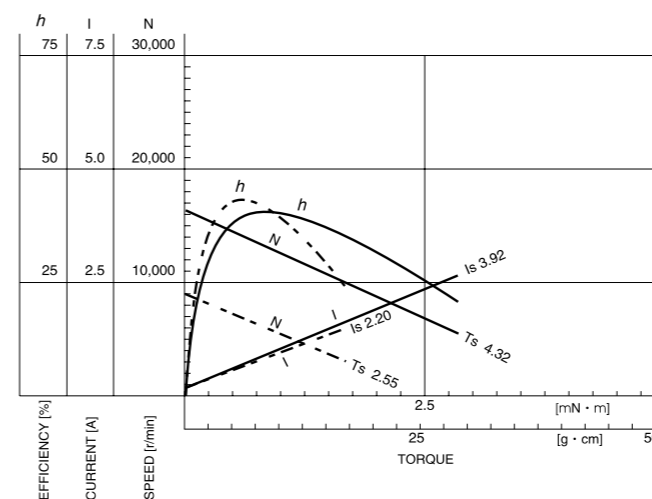
FRC-520NA-16290 12V



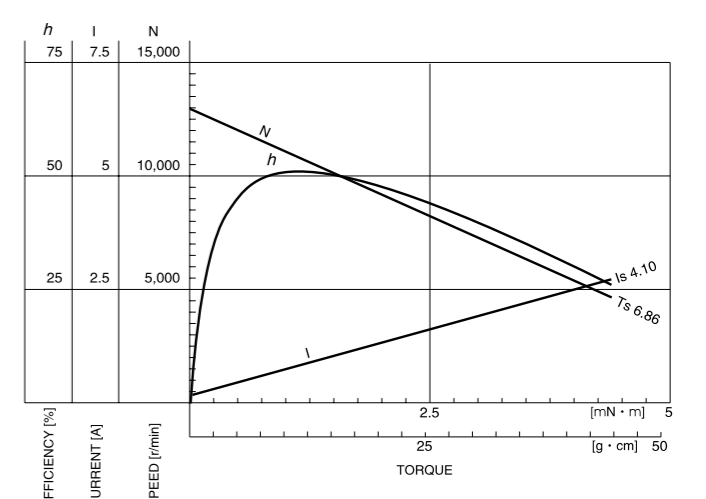
FLT-48T520-454



FFK-130GA-2210 1.5V-3V



FFK-130SA-2270 3V



FRK-140GA

輸出功率:約0.2W~3W  
金屬電刷馬達

OUTPUT: APPROX 0.2W~3W  
Precious Metal-brush motors

典型應用

玩具,模型:電動玩具  
電動塑料模型

Typical Applications Toys and Models :  
Motorized Toy  
Motorized Plastic Model



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-140GA-2270	DC 1.5-3.0V	DC 1.5V	8100	0.21	6150	0.66	0.66	6.7	0.42	2.74	28	2.10
		DC 3V	14200	0.25	11320	0.98	1.04	10.6	1.24	5.15	53	3.87
FRK-140GA-18100	DC 1.5-3.0V	DC 1.5V	5700	0.13	4230	0.37	0.48	4.9	0.21	1.86	19	1.07
		DC 3V	10900	0.16	8520	0.57	0.79	8.1	0.71	3.63	37	2.04
FRK-140GA-12240	DC 3.0-6.0V	DC 3V	4800	0.050	3530	0.14	0.44	4.5	0.16	1.67	17	0.39

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRK-260GA

輸出功率:約0.4W~4.0W  
金屬電刷馬達

OUTPUT: APPROX 0.4W~4.0W  
Precious Metal-brush motors

典型應用

玩具,模型:電動玩具  
電動塑料模型

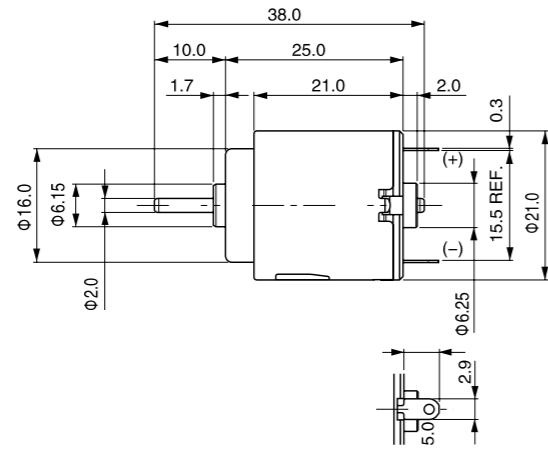
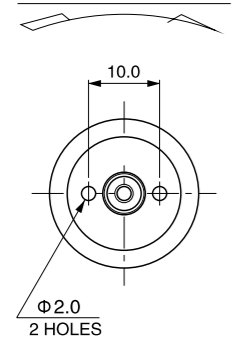
Typical Applications Toys and Models :  
Motorized Toy  
Motorized Plastic Model



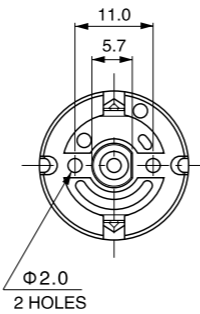
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-260GA-2670	DC 1.5-3.0V	DC 1.5V	6300	0.16	5040	0.64	0.98	10.0	0.52	4.90	50	2.56
		DC 3.0V	12300	0.20	10200	0.97	1.50	15.2	1.60	8.77	90	4.73
FRK-260GA-18130	DC 1.5-4.5V	DC 1.5V	3300	0.075	2490	0.23	0.60	6.1	0.16	2.45	25	0.72
		DC 3.0V	6900	0.095	5470	0.36	0.97	9.9	0.56	4.70	48	1.40
FRK-260GA-2295	DC 3.0-4.5V	DC 3.0V	9400	0.15	7610	0.64	1.31	13.3	1.04	6.86	70	2.70

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

DIRECTION OF ROTATION

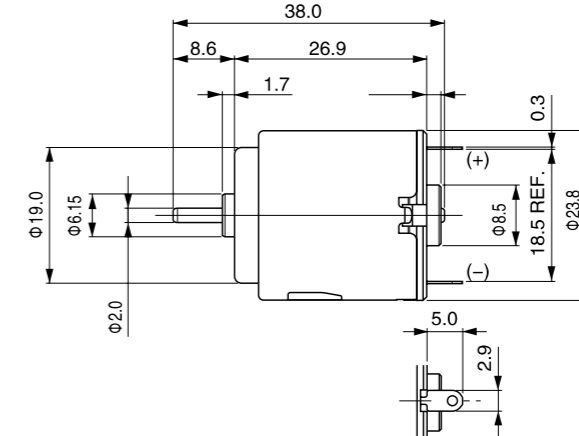
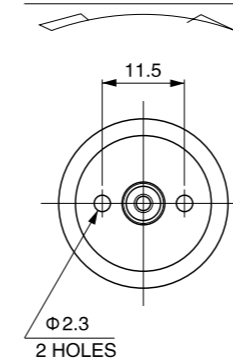


UNIT: MILLIMETERS

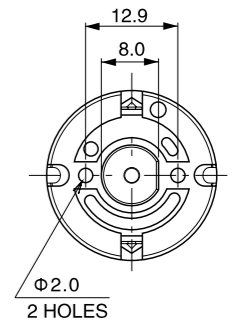


WEIGHT: 19g (APPROX)

DIRECTION OF ROTATION

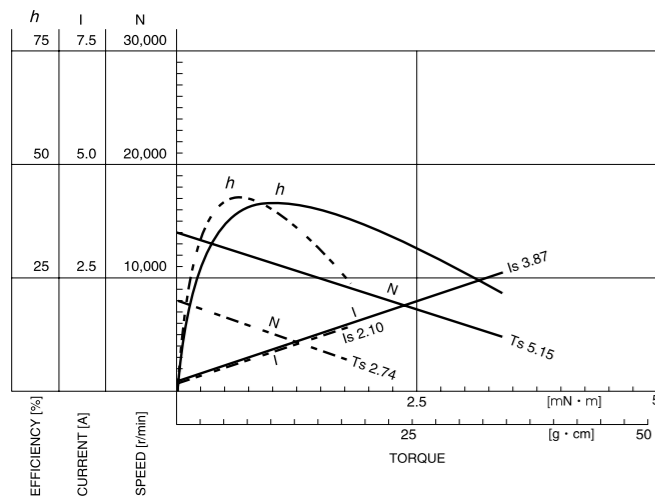


UNIT: MILLIMETERS

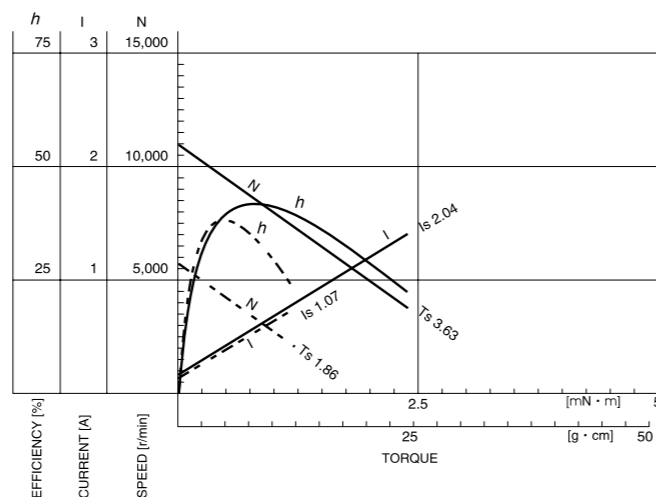


WEIGHT: 28g (APPROX)

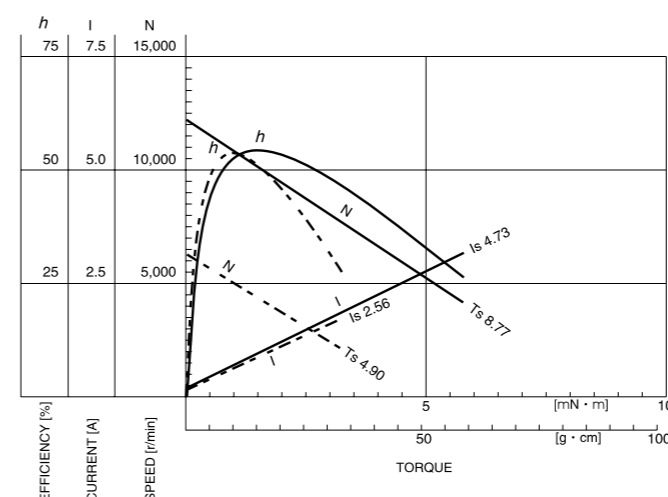
FRK-140GA-2270 1.5V-3V



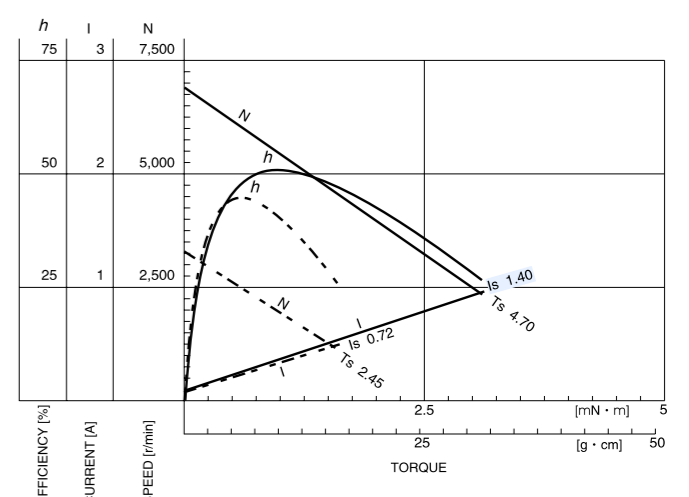
FRK-140GA-18100 1.5V-3V



FRK-260GA-2670 1.5V-3V



FRK-260GA-18130 1.5V-3V



FRK-280GA/SA

輸出功率:約0.8W~4.5W  
金屬電刷馬達  
OUTPUT: APPROX 0.8W~4.5W  
Precious Metal-brush motors

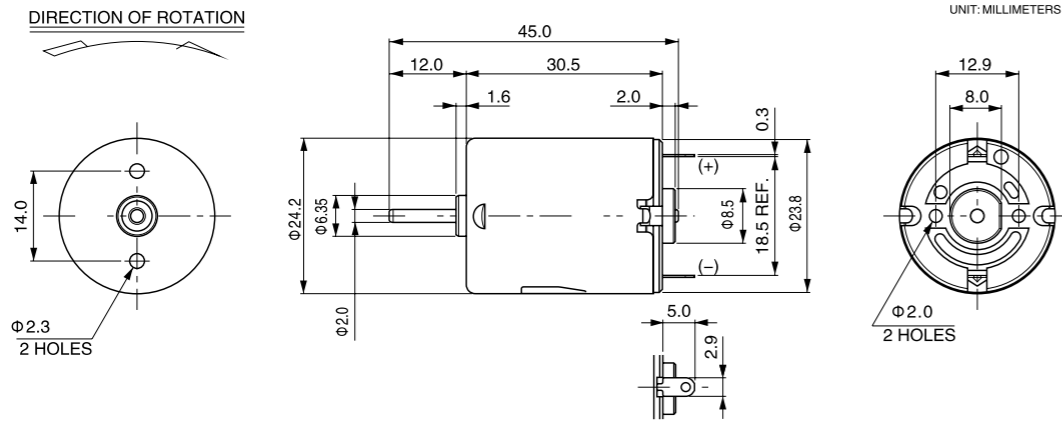
典型應用  
玩具,模型:無線控制模型  
家用電器:剪發器,按摩器,振動器

Typical Applications  
Toys and Models : Radio Control Model  
Household Appliances : Hair Clipper/Massager/vibrator

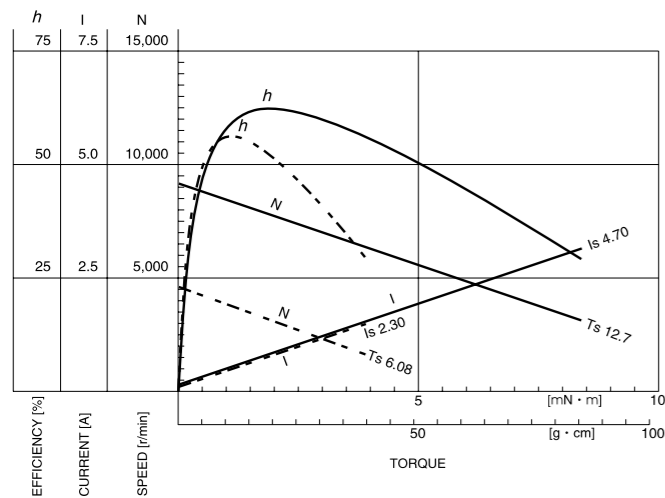


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK280GA-2865	DC 1.5-3.0V	DC 1.5V	4600	0.12	3740	0.53	1.13	11.5	0.44	6.08	62	2.30
		DC 3.0V	9200	0.16	7770	0.87	1.98	20.2	1.61	12.7	130	4.70
FRK280GA-20120	DC 3.0-6.0V	DC 3.0V	5000	0.070	4120	0.33	1.30	13.3	0.56	7.36	75	1.52
		DC 4.5V	7500	0.080	6300	0.42	1.77	18.1	1.17	11.1	113	2.21
FRK280GA-2485	DC 1.5-4.5V	DC 3.0V	7000	0.12	5800	0.58	1.68	17.1	1.02	9.80	100	2.80
FRK280SA-2865	DC 1.5-4.5V	DC 3.0V	7100	0.16	6000	0.88	2.58	26.3	1.62	16.7	170	4.80
		DC 4.5V	10400	0.19	8920	1.14	3.34	34.1	3.12	23.5	240	6.90
FRK280SA-20120	DC 3.0-6.0V	DC 4.5V	5800	0.080	4890	0.43	2.26	23.1	1.16	14.5	148	2.34
		DC 6.0V	7800	0.085	6680	0.50	2.71	27.6	1.89	18.8	192	3.00
FRK280SA-2485	DC 3.0-6.0V	DC 4.5V	8100	0.13	6880	0.73	2.74	27.9	1.97	18.1	185	4.10

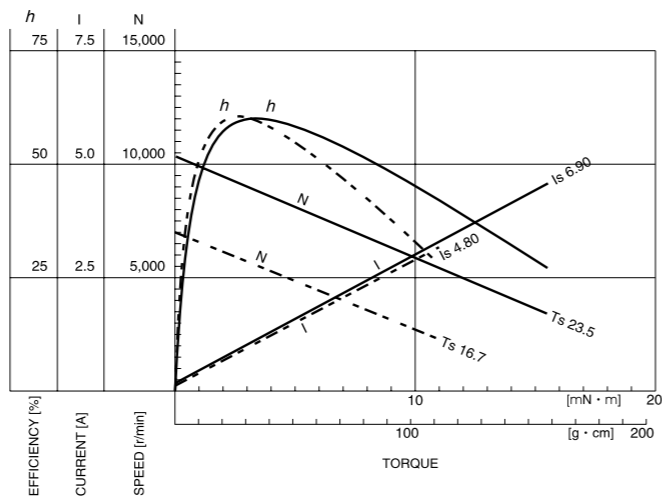
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



FRK-280GA-2865 1.5V-3V



FRK-280SA-2865 3V-4.5V



FFK-K10SA

輸出功率:約0.07W~0.1W  
貴金屬電刷馬達  
OUTPUT: APPROX 0.07W~0.1W  
Precious Metal-brush motors

典型應用:  
辦公自動化設備:  
筆記本電腦  
精密儀器: 照相機

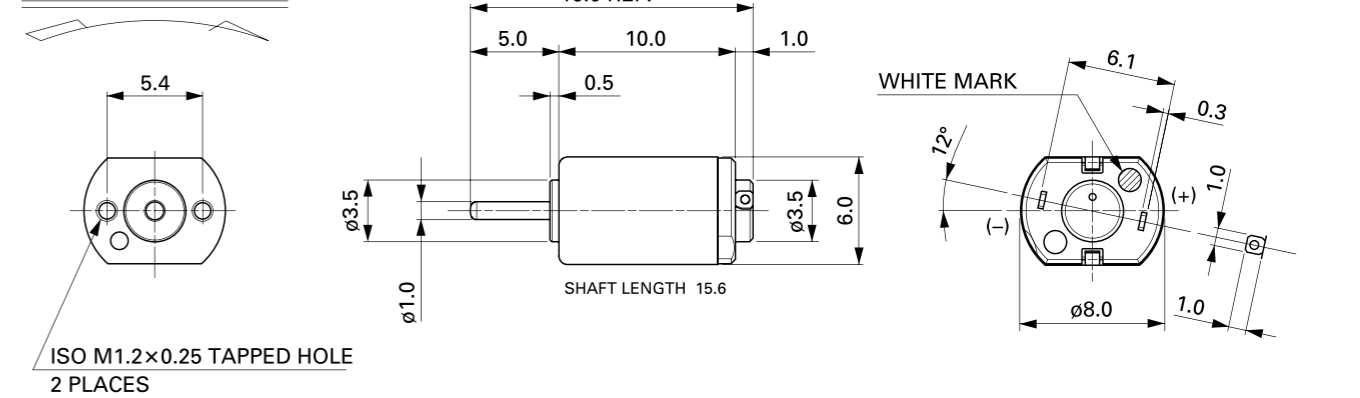
Typical Applications  
Office Automation Equipments  
Notebook PC  
Precision Instruments :Camera



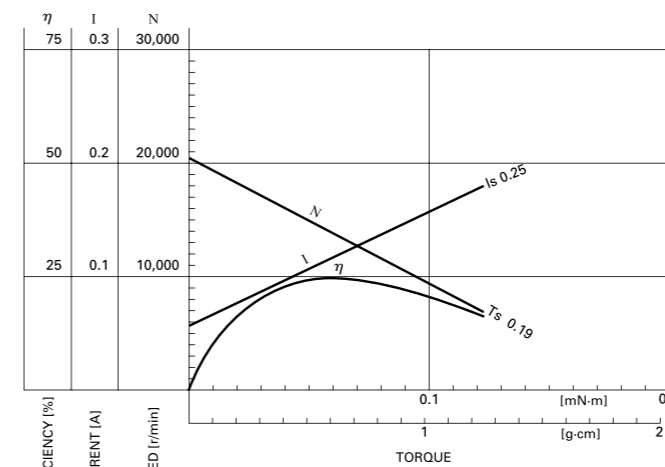
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-K10SA-0525	2.5 - 3.5	3V CONSTANT	20500	0.057	13870	0.12	0.06	10.63	0.089	0.19	1.9	0.25

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

DIRECTION OF ROTATION



FFK-K10SA-05215 3.0V



FFK-K20SA

輸出功率:約0.1W~0.2W  
貴金屬電刷馬達

OUTPUT: APPROX 0.1W~0.2W  
Precious Metal-brush motors

典型應用

辦公自動化設備:  
筆記本電腦  
CD/DVD-ROM驅動

Typical Applications Office Automation Equipments :  
Notebook PC  
CD/DVD-ROM Drive



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT	
FFK-K20SA-08127	DC 1.5-3.5V	DC 1.5V	8800	0.038	6260	0.093	0.072 0.74	0.047	0.25 2.5	0.23	

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FFK-K30SA

輸出功率:約0.1W~0.2W  
貴金屬電刷馬達

OUTPUT: APPROX 0.1W~0.2W  
Precious Metal-brush motors

典型應用:

辦公自動化設備:  
筆記本電腦  
CD/DVD-ROM驅動

Typical Applications Office Automation Equipments :  
Notebook PC  
CD/DVD-ROM Drive

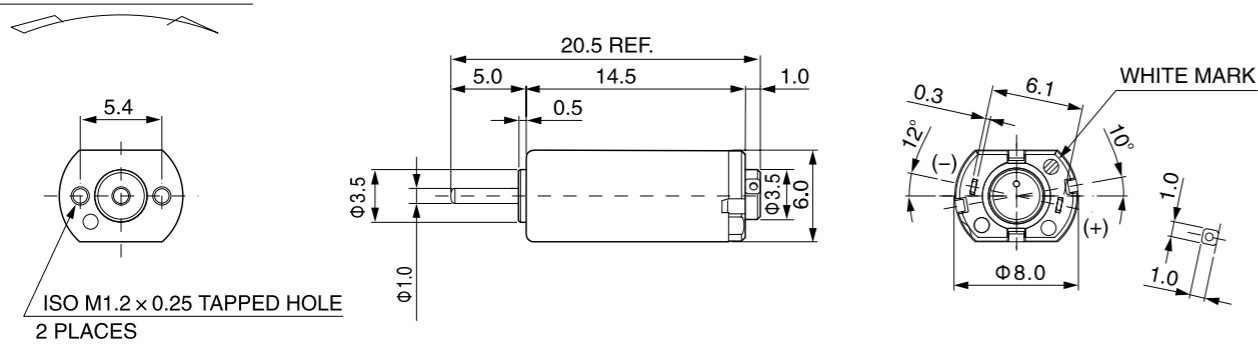


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT	
FFK-30SA-1077	DC 1.2-4.5V	DC 1.5V	10000	0.043	7510	0.13	0.097 0.99	0.076	0.39 4.0	0.39	
FFK-30SA-08107	DC 1.5-4.3V	DC 3.0V	14500	0.036	11150	0.12	0.13 1.3	0.15	0.57 5.8	0.40	

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

UNIT: MILLIMETERS

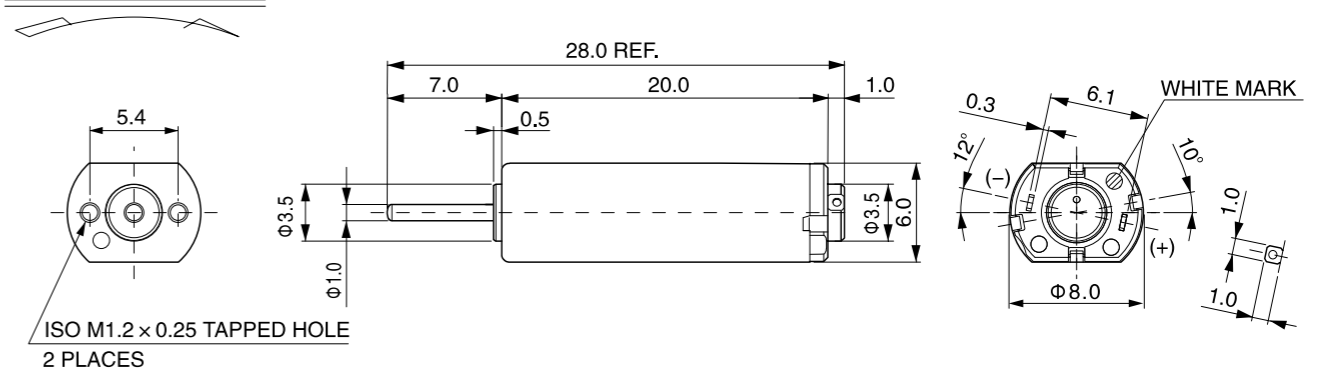
DIRECTION OF ROTATION



Usable machine screw length 1.0 max. from motor mounting surface.

UNIT: MILLIMETERS

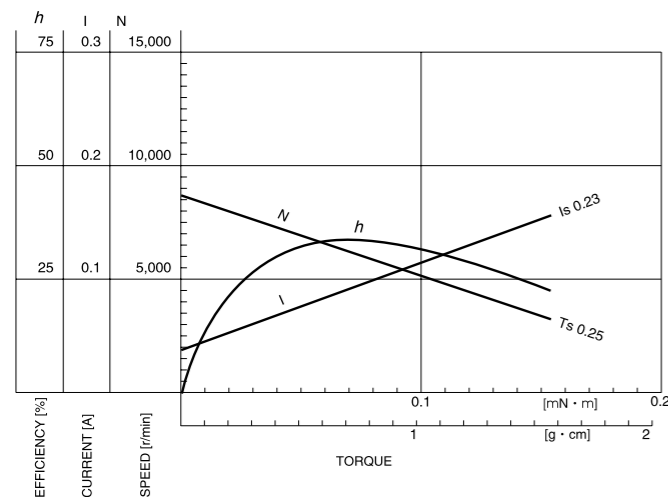
DIRECTION OF ROTATION



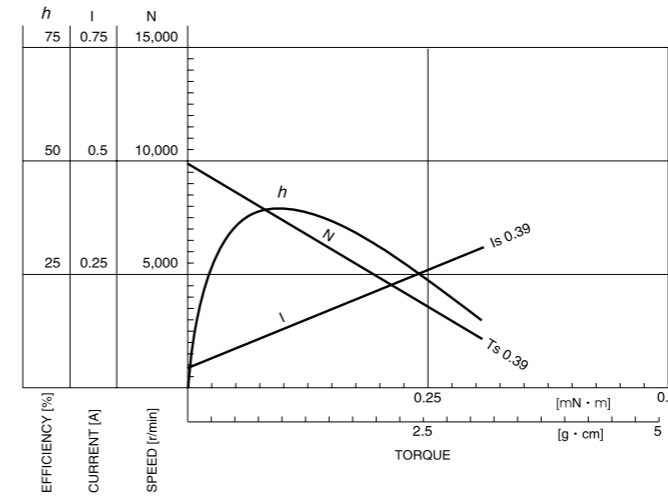
Usable machine screw length 0.8-1.1 from motor mounting surface.

WEIGHT: 3.6g (APPROX)

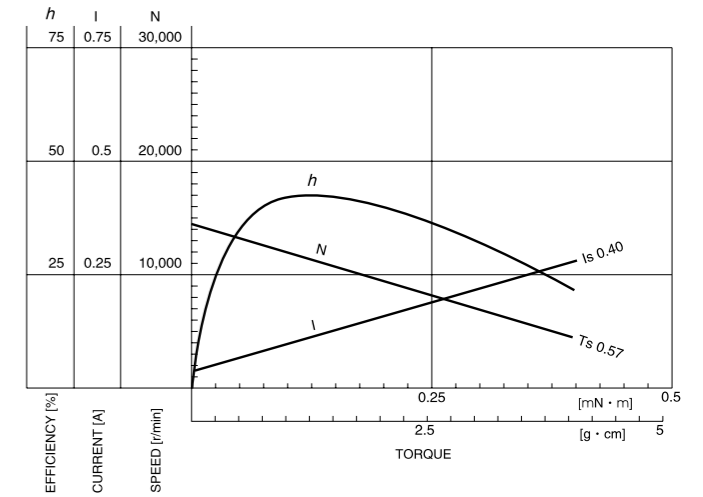
FFL-K20SA-08127 1.5v



FFK-K30SA-1077 1.5V



FFK-K30SA-08107 3.0V



FFK-M20SA

输出功率:約0.05W~0.5W  
貴金屬電刷馬達  
OUTPUT: APPROX 0.05W~0.5W  
Precious Metal-brush motors

典型應用

視聽設備: MD播放機, 汽車CD機, 便携式攝像機  
精密器械: 照相機  
家用電器: 電動剃須刀, 來電顯示電話機

Typical Applications

Audio and Visual Equipments :  
MD Player / Car CD Player / Camcorder  
Precision Instruments : Camera  
Household Appliances : Electric Shaver

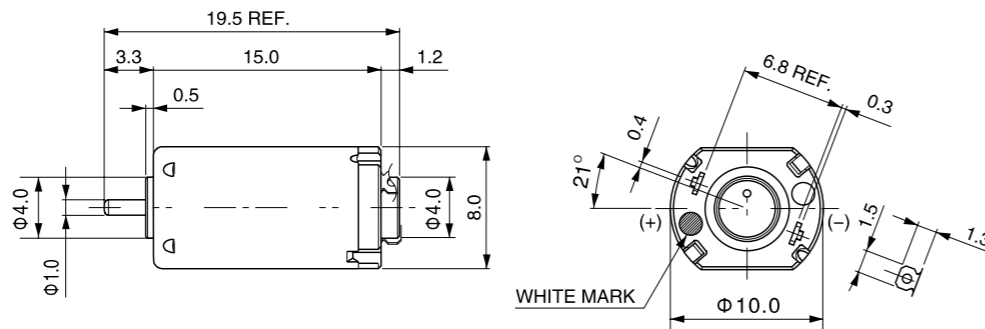
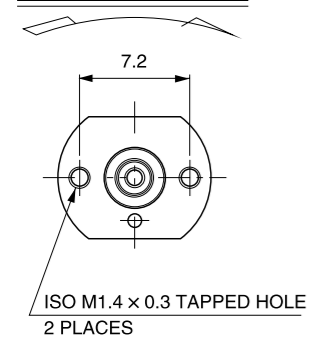


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT		轉矩 TORQUE	電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-M20SA-08130	DC 2.0-3.0V	DC 3.0V	15200	0.045	11820	0.16	0.16	1.7	0.20	0.74	7.6	0.55
FFK-M20SA-10100	DC 1.2-3.5V	DC 2.4V	15800	0.056	12410	0.20	0.18	1.8	0.23	0.84	8.6	0.75
FFK-M20SA-07170	DC 2.0-4.0V	DC 2.0V	8000	0.025	6020	0.076	0.094	0.96	0.059	0.38	3.9	0.23

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

UNIT: MILLIMETERS

DIRECTION OF ROTATION



Usable machine screw length 1.2 max. from motor mounting surface.

WEIGHT: 4g (APPROX)

FFK-N20SA

输出功率:約0.2W~0.8W  
貴金屬電刷馬達  
OUTPUT: APPROX 0.2W~0.8W  
Precious Metal-brush motors

典型應用

視聽設備: MD播放機, 汽車CD機, 便携式攝像機  
精密器械: 照相機  
玩具和模型: 機動玩具, 機動塑料模型, 無線控制模型

Typical Applications

Audio and Visual Equipments : Car CD/MD Player  
Precision Instruments : Camera  
Toys and Models : Motorized Toy / Motorized Plastic Model / Radio Control Model

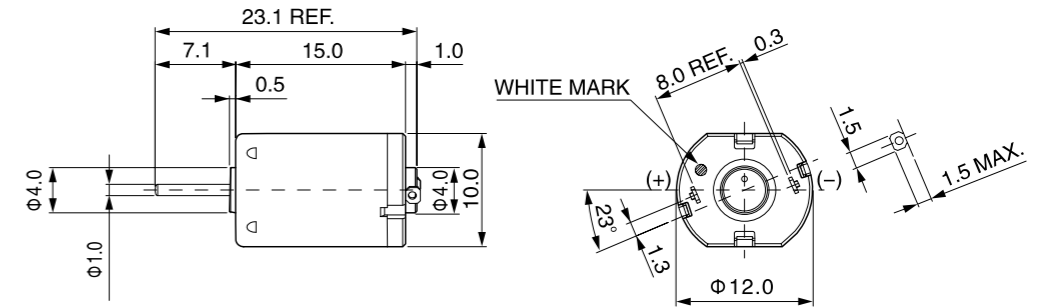
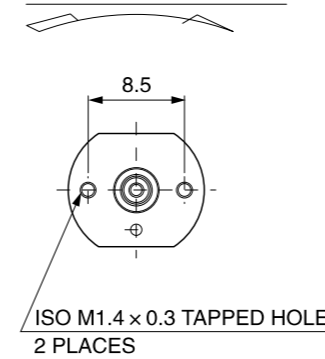


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE	電流 CURRENT	
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-N20SA-10190	DC 2.0-5.0V	DC 3V	12100	0.045	9390	0.16	0.21	2.1	0.20	0.92	9.4	0.54
FFK-N20SA-08260	DC 1.5-6.0V	DC 3V	8200	0.040	5920	0.10	0.17	1.8	0.11	0.62	6.3	0.27

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

UNIT: MILLIMETERS

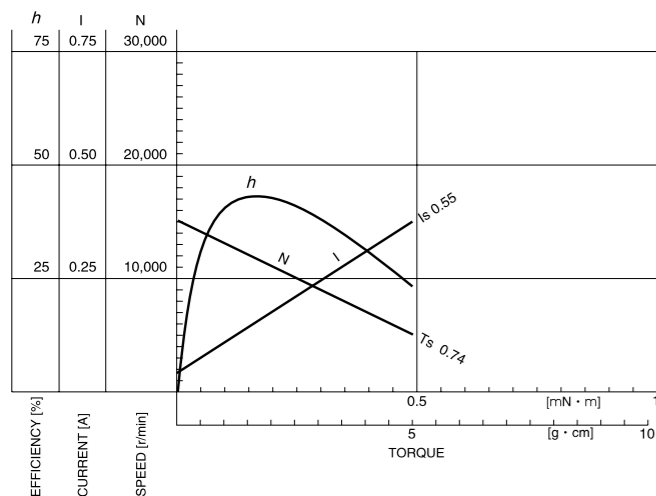
DIRECTION OF ROTATION



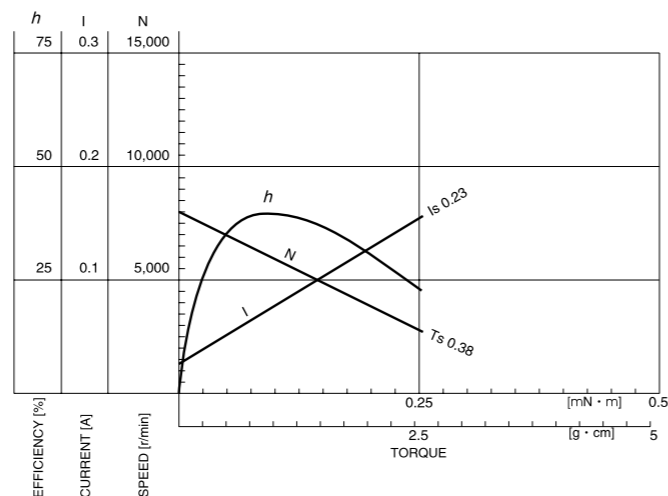
Usable machine screw length 1.3 max. from motor mounting surface.

WEIGHT: 5g (APPROX)

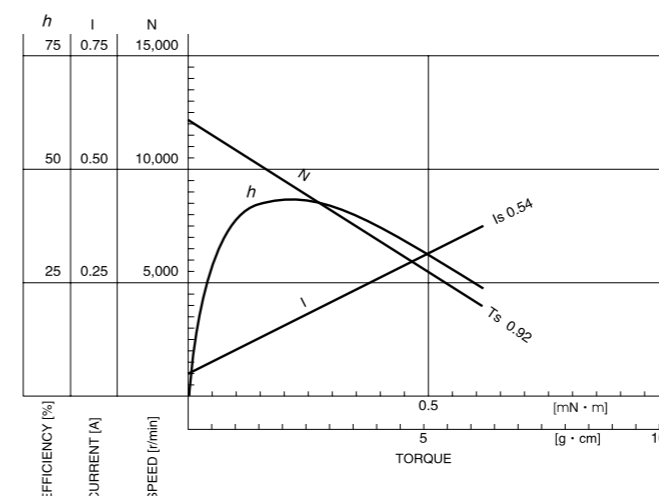
FFK-M20SA-08130 3V



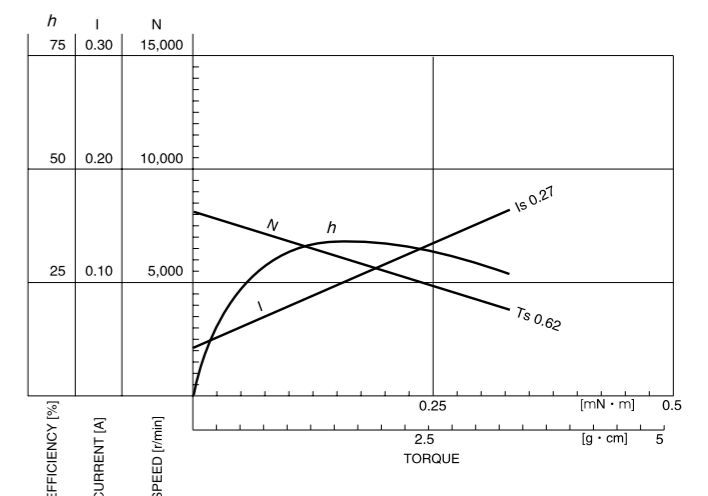
FFK-M20SA-07170 2V



FFK-N20SA-10190 3V



FFK-N20SA-08260 3V



FFK-N30SA

輸出功率:約0.1W~0.8W OUTPUT: APPROX 0.1W~0.8W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備: 光盤播放機  
MD播放機  
汽車CD機

Typical Applications Audio and Visual Equipments :  
Portable CD Player  
MD Player  
Car MD Player



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-N30SA-09210	DC 2-5V	DC 2.5V	5200	0.019	4040	0.066	0.18	1.8	0.075	0.80	8.2	0.23

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FFK-020NT

輸出功率:約0.1W~0.8W OUTPUT: APPROX 0.1W~0.8W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用:

家用電器  
辦公自動化設備: 打印機

Typical Applications Toys and Models :  
Radio Control Model / Servo Mechanism

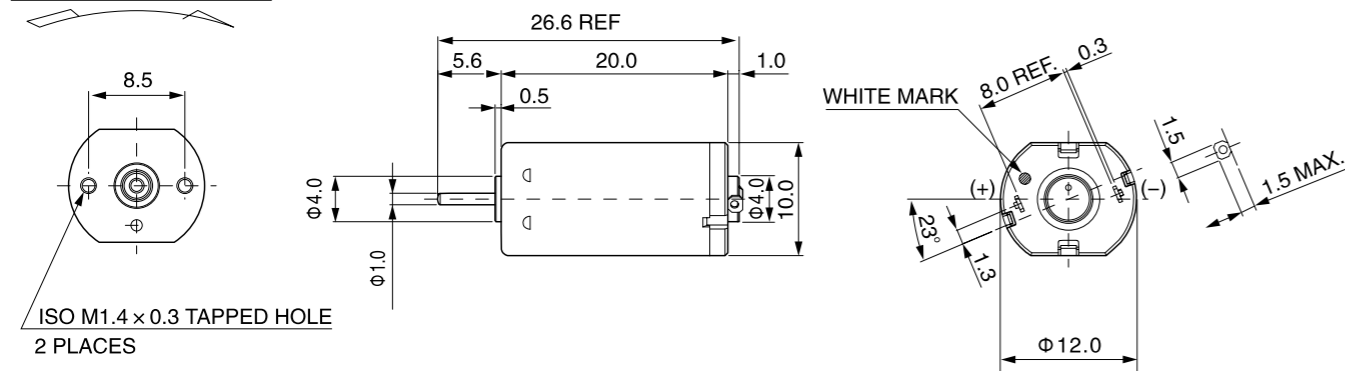


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-020NT-10210	2 - 5	4.5V CONSTANT	12600	0.058	9590	0.18	0.38	3.9	0.39	1.61	16	0.59

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

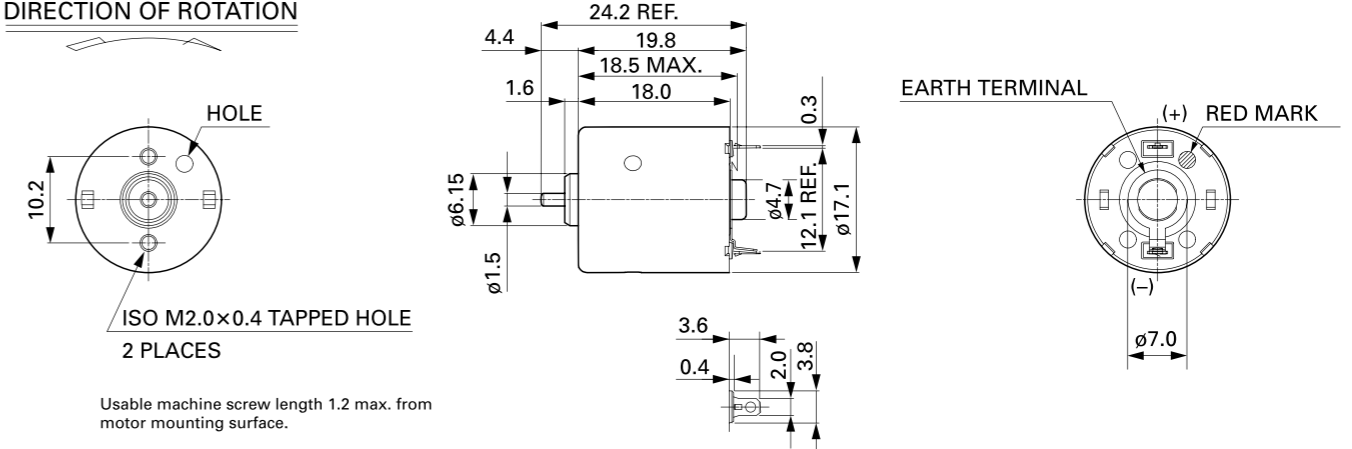
DIRECTION OF ROTATION

UNIT: MILLIMETERS

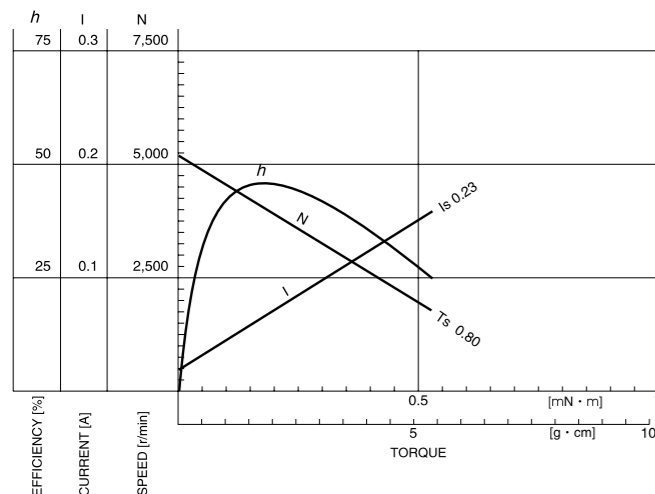


DIRECTION OF ROTATION

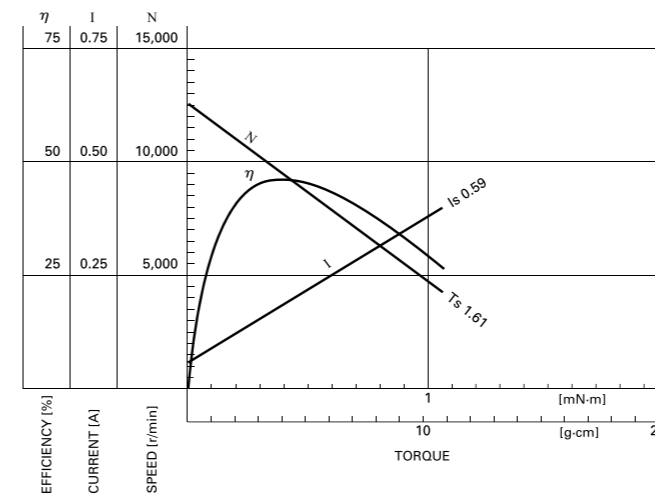
UNIT: MILLIMETERS



FFK-N30SA-09210 2.5V



FRK-020NT-10210 4.5V



FFK-030SA

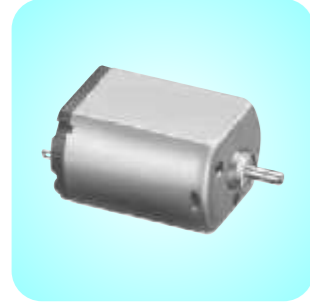
输出功率:約0.05W~1.2W OUTPUT: APPROX 0.05W~1.2W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備:CD/MD播放機,汽車CD播放機/攝像機  
家用電器:血壓計  
辦公自動化設備:CD/DVD-Drive

Typical Applications

Audio and Visual Equipments : CD/MD Player  
Car CD Player / Camcorder  
Household Appliances : Blood Pressure Meter  
Office Automation Equipments : CD/DVD-ROM Drive



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-030SA-10180	DC 3.5-6.0V	DC 5.0V	11700	0.050	9230	0.19	0.50	5.1	0.48	2.35	24	0.70
FFK-030SA-09210	DC 1.0-5.0V	DC 5.0V	10500	0.046	8140	0.16	0.44	4.5	0.37	1.96	20	0.55
FFK-030SA-08250	DC 1.0-6.0V	DC 2.5V	4100	0.028	2940	0.071	0.21	2.1	0.064	0.74	7.6	0.18
		DC 5.0V	10500	0.041	8020	0.13	0.43	4.4	0.36	1.81	19	0.43
FFK-030SA-09210	DC 4.5-6.0V	DC 5.0V	10400	0.045	8000	0.15	0.42	4.3	0.35	1.81	19	0.50

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FFK-050ST

输出功率:約0.2W~1.5W OUTPUT: APPROX 0.2W~1.5W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備:CD/MD播放機,汽車CD播放機,DVD播放機  
辦公自動化設備:CD/DVD-ROM Drive  
家用電器:電動剃須刀

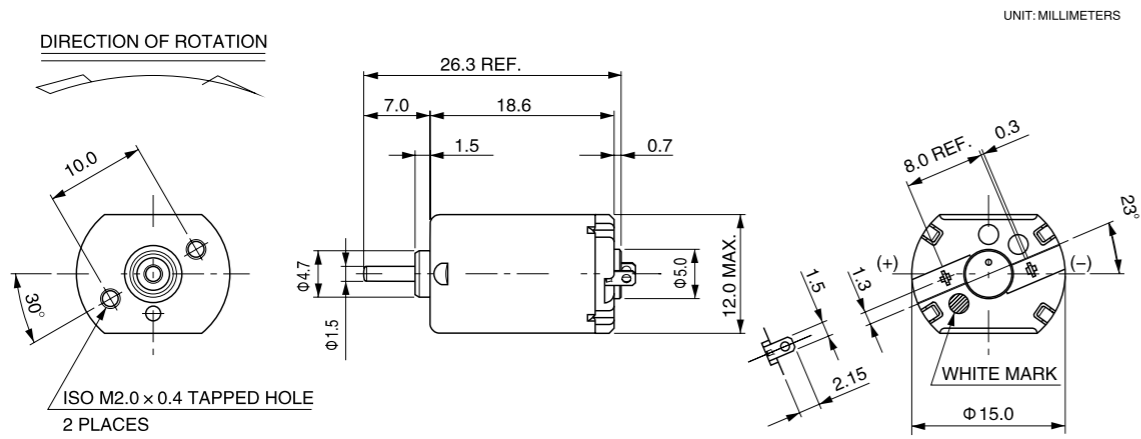
Typical Applications

Audio and Visual Equipments :  
CD Player / Car CD Player DVD Player  
Office Automation Equipments : CD/DVD-ROM Drive  
Household Appliances : Electric Shaver



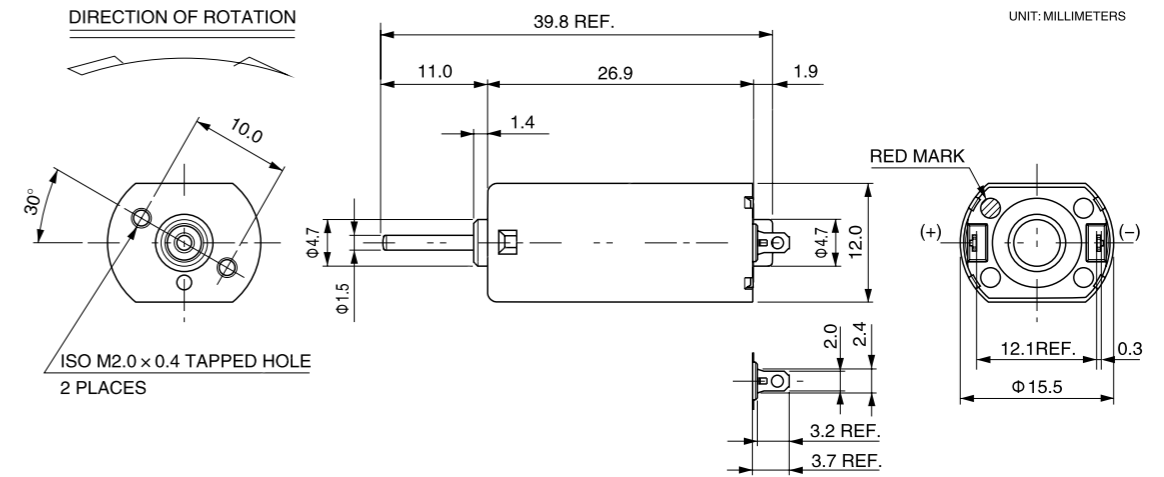
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-050ST-09250	DC 5.0-11.5V	DC 8V	8100	0.023	6610	0.10	0.63	6.4	0.44	3.43	35	0.45
FFK-050ST-13125	DC 3-10V	DC 6V	11500	0.090	9100	0.34	1.12	11.4	1.07	5.39	55	1.30

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



Usable machine screw length 1.5 max. from motor mounting surface.

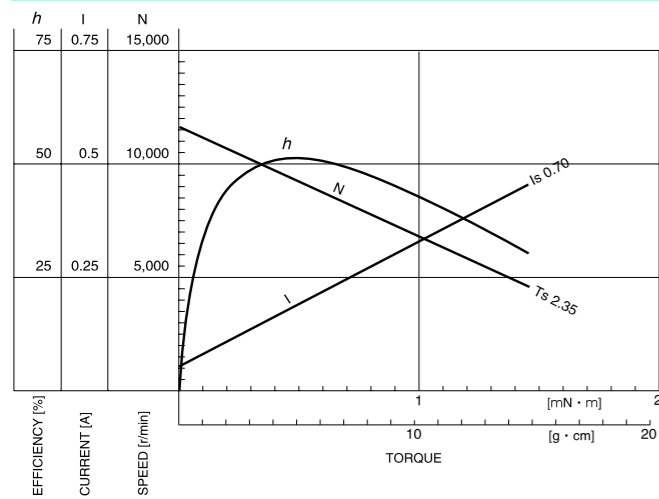
WEIGHT: 11g (APPROX)



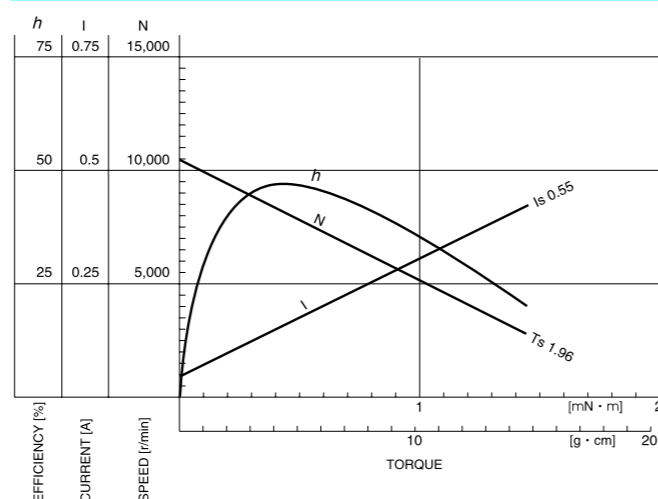
Usable machine screw length 2.5 max. from motor mounting surface.

WEIGHT: 18g (APPROX)

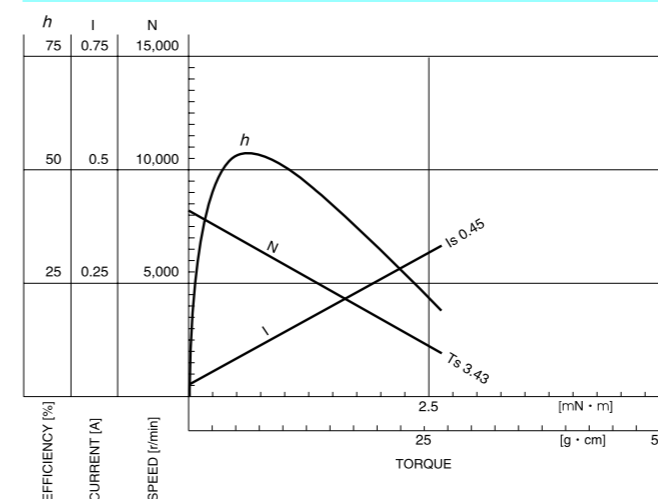
FFK-030SA-10180 5V



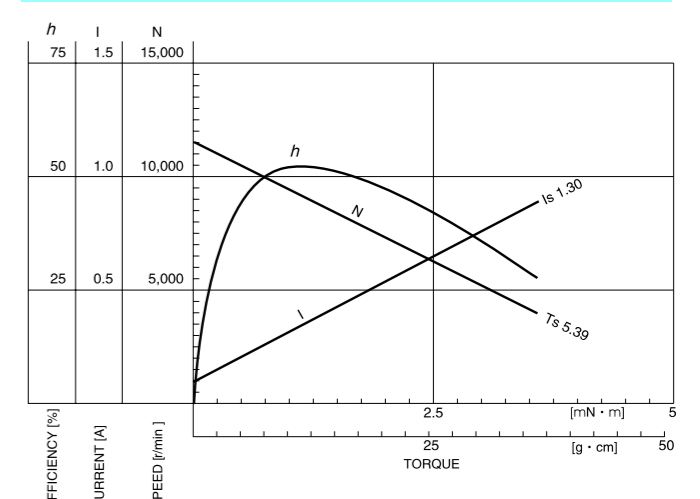
FFK-030SA-09210 5V



FFK-050ST-09250 8V



FFK-050ST-13125 6V



FRK-130NT

输出功率:約0.31W~1.5W OUTPUT: APPROX 0.3W~1.5W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備:CD/MD播放機,汽車CD播放機,DVD播放機  
家用電器:電動剃須刀

Typical Applications Audio and Visual Equipments :CD Player  
DVD Player  
Household Appliances :Electric Shaver



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-130NT-12250	2.0 - 7.5	3.5V CONST. (CW)	4700	0.028	3730	0.11	0.49	5.0	0.19	2.36	24	0.41
		6V CONST. (CW)	8100	0.036	6600	0.16	0.76	7.8	0.53	4.12	42	0.70
FRK-130NT-2860	1.0 - 1.5	1.5V CONST. (CW+)	9200	0.140	7600	0.67	0.74	7.5	0.58	4.24	43	3.18

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

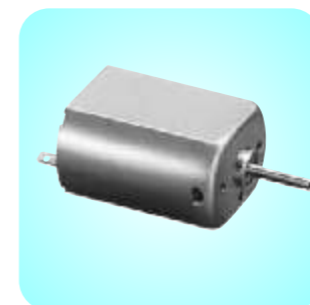
FFK-130GT/ST

输出功率:約0.1W~2.5W OUTPUT: APPROX 0.1W~2.5W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

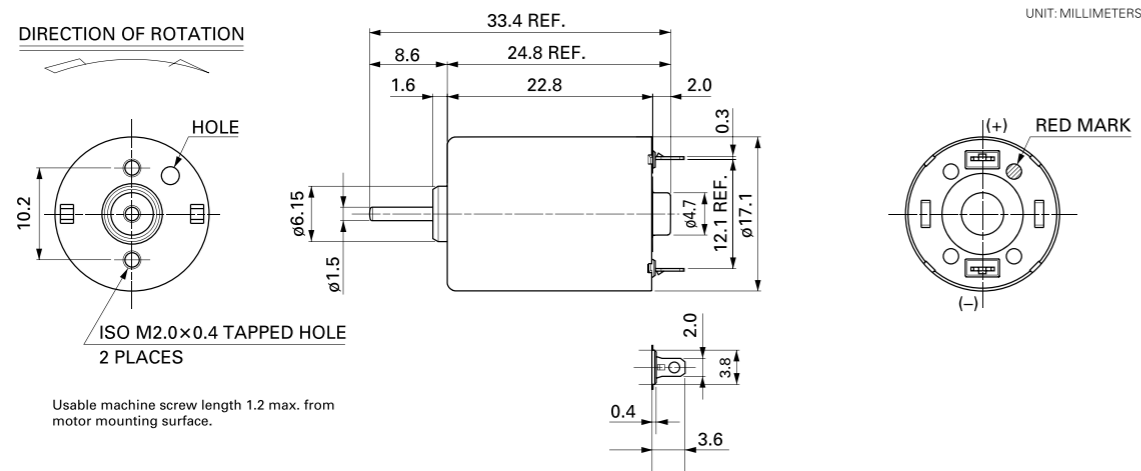
視聽設備:CD/MD播放機,磁帶播放機  
家用電器:電動剃須刀  
辦公自動化設備:CD/DVD-ROM驅動  
汽車產品:空調潮濕調節器

Typical Applications Audio and Visual Equipments :  
CD Player / Tape Cassette Adapter  
Household Appliances : Electric Shaver  
Office Automation Equipments : CD/DVD-ROM Drive  
Automotive Products : Air Conditioning Damper Actuator

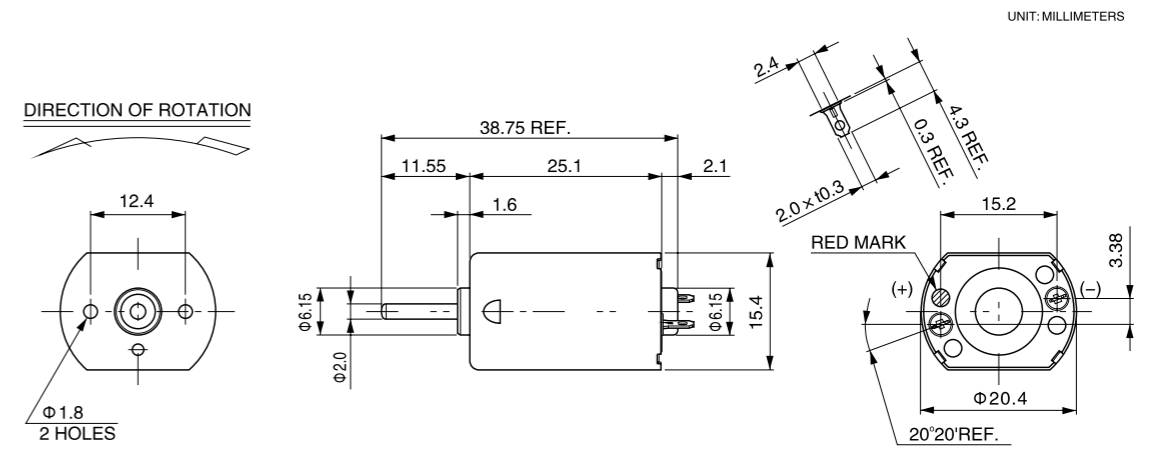


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFK-130GT/ST-15210	DC 1.0- 4.0V	DC 3.0V	5400	0.045	4280	0.17	0.57	5.8	0.26	2.74	28	0.65
FFK-130GT/ST-2860	DC 1.0-1.5V	DC 1.2V	7400	0.21	5870	0.81	0.77	7.8	0.47	3.72	38	3.10
FFK-130GT/ST-11340	DC 3.0- 12V	DC 6.0V	4800	0.030	3820	0.12	0.88	8.9	0.35	4.31	44	0.46
		DC 9.0V	7400	0.035	6030	0.15	1.18	12.0	0.74	6.37	65	0.68

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

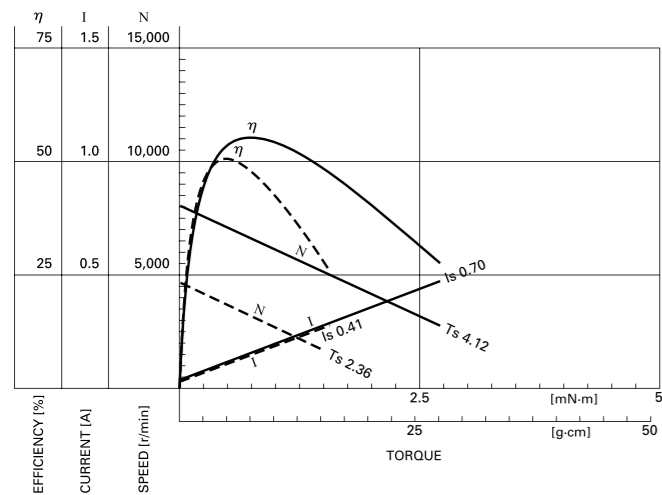


WEIGHT: 18g (APPROX)

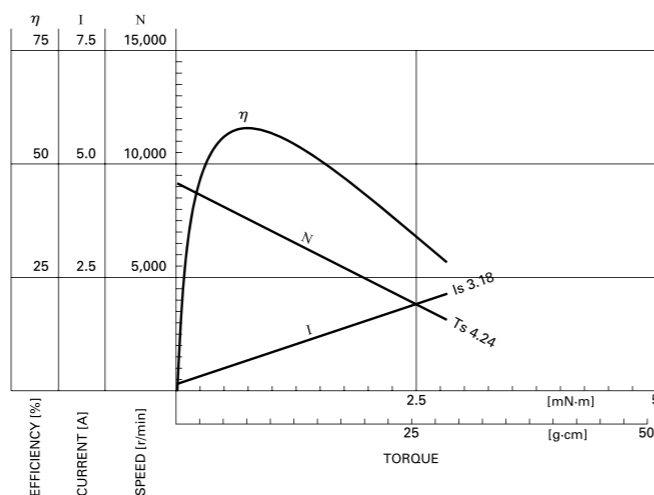


WEIGHT: 24g (APPROX)

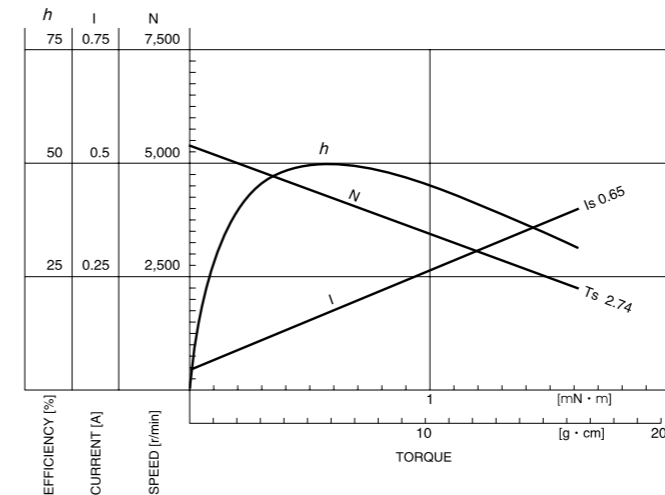
FRK-130NT-12250 3.5V-6.0V



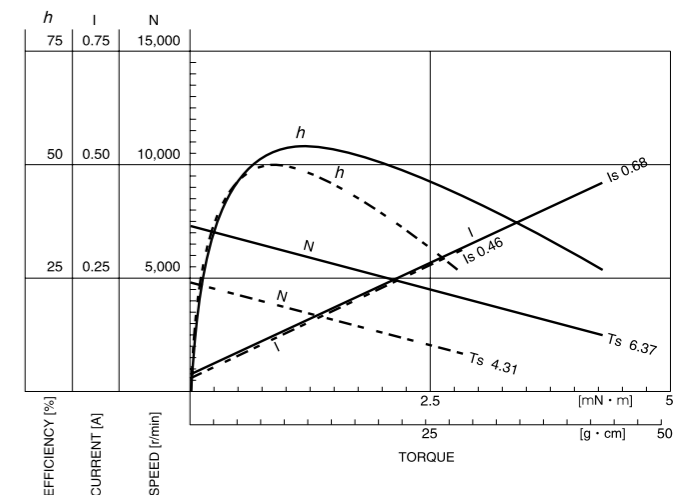
FRK-130NT-2860 1.5V



FFK-130GT/ST-15210 3V



FFK-130GT/ST-11340 6.0V-9.0V



FFK-180GT/ST

输出功率:約0.5W~3.5W OUTPUT: APPROX 0.5W~3.5W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備: 視頻磁帶播放機  
家電電器: 電動剃須刀, 牙刷

Typical Applications

Audio and Visual Equipments: VCR  
Household Appliances: Electric Shaver / Tooth Brush



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT	
			r/min	A	r/min	A	mN·m g·cm	W	mN·m g·cm	A	
FFK-180GT-2852	DC 1-3V	DC 2.4V	8100	0.15	6850	0.82	1.82 18.6	1.30	11.8 120	4.50	
FFK-180GT-4022	DC 1.0-1.5V	DC 1.2V	9400	0.40	7830	1.99	1.76 17.9	1.44	10.5 107	9.90	
FFK-180GT-10320	DC 6-12V	DC 12V	6500	0.028	5280	0.12	1.51 15.4	0.84	8.04 82	0.52	
FFK-180GT-2657	DC 1-3V	DC 2.4V	7700	0.13	6500	0.70	1.56 15.9	1.06	10.0 102	3.80	
FFK-180GT-14210	DC 3.7-7.2V	DC 4.5V	3700	0.025	3090	0.13	1.02 10.4	0.33	6.17 63	0.63	
FFK-180GT-4026	DC 1.0-1.5V	DC 1.2V	8300	0.30	6990	1.60	1.64 16.7	1.20	10.4 106	8.55	

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRK-300NT

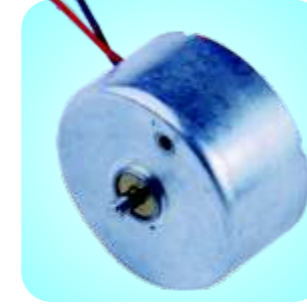
输出功率:約0.1W~0.5W OUTPUT: APPROX 0.1W~0.5W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備: CD播放機, 立體聲耳機,  
汽車CD播放機, DVD播放機  
辦公自化設備: CD/DVD-ROM驅動

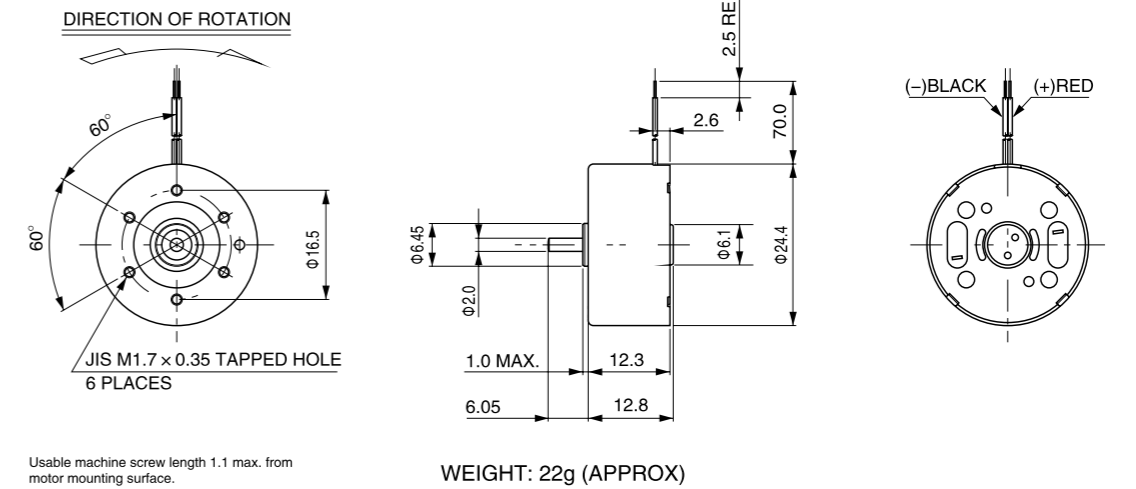
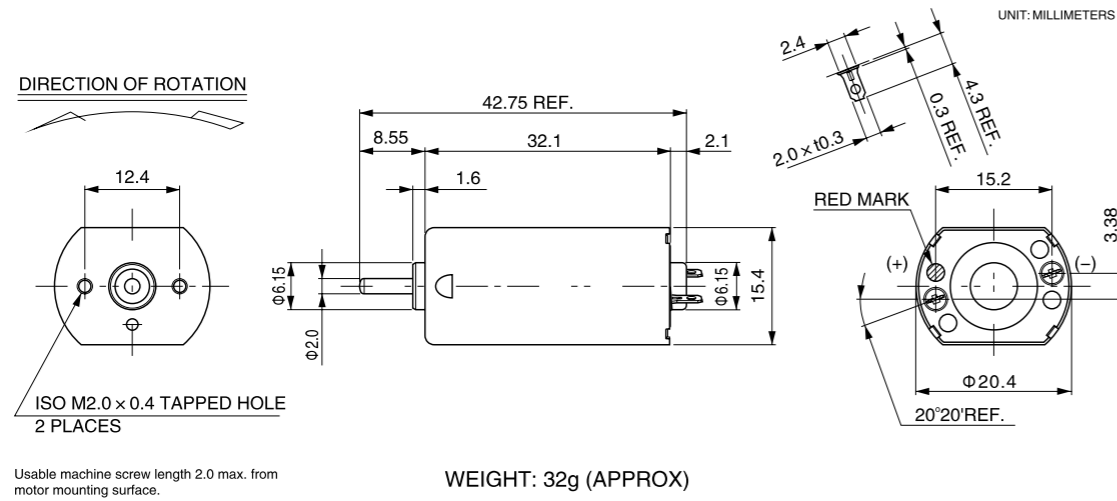
Typical Applications Audio and Visual Equipments:

CD Player  
Headphone Stereo / Car CD Player / DVD Player  
Office Automation Equipments: CD/DVD-ROM Drive

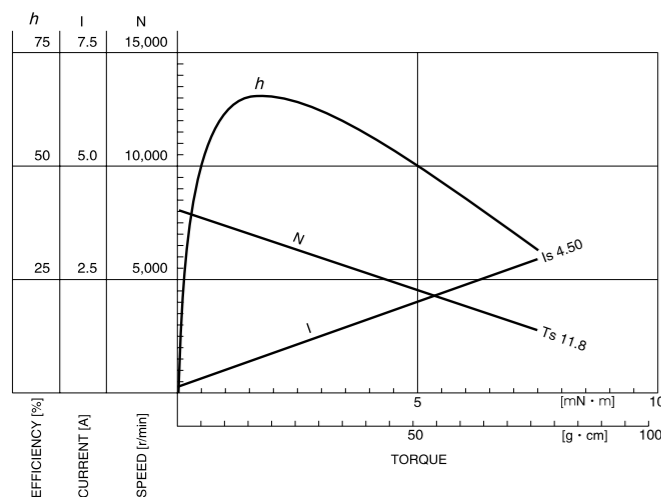


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT	
			r/min	A	r/min	A	mN·m g·cm	W	mN·m g·cm	A	
FRK-300NT-11440	DC 0.7-5.0V	DC 2V	2200	0.018	1660	0.055	0.28 2.9	0.049	1.14 12	0.17	
FRK-300NT-11400	DC 1.2-6.0V	DC 3V	3700	0.018	2970	0.073	0.38 3.8	0.12	1.91 20	0.30	
FRK-300NT-09550	DC 1-6V	DC 3V	2700	0.012	2100	0.042	0.27 2.8	0.060	1.24 13	0.15	
FRK-300NT-14270	DC 0.5-4.0V	DC 1.9V	3500	0.032	2740	0.12	0.38 3.9	0.11	1.76 18	0.42	

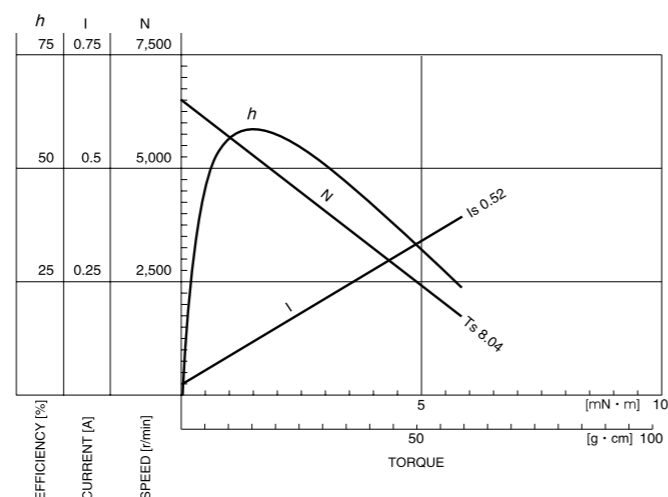
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



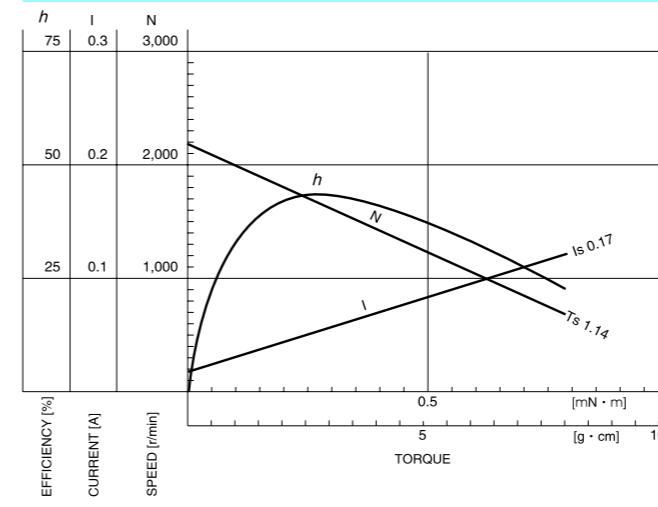
FFK-180GT/ST-2852 2.4V



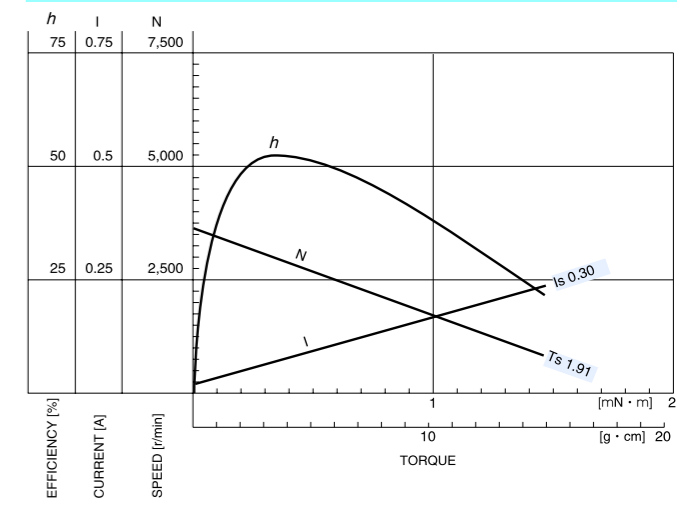
FFK-180ST-10320 12V



FRK-300NT-11440 2V



FRK300NT-11400 3V



FRK-310NT

輸出功率:約0.04W~0.8W OUTPUT: APPROX 0.04W~0.8W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備:CD播放機  
DVD播放機

Typical Applications Audio and Visual Equipments :  
CD Player / DVD Player



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-310NT-11400	DC 1 - 6V	DC 2.5V	2800	0.017	2190	0.061	0.32	3.3	0.073	1.47	15	0.22

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

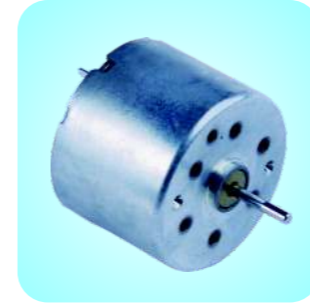
FRK-330NT

輸出功率:約0.04W~0.8W OUTPUT: APPROX 0.04W~0.8W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

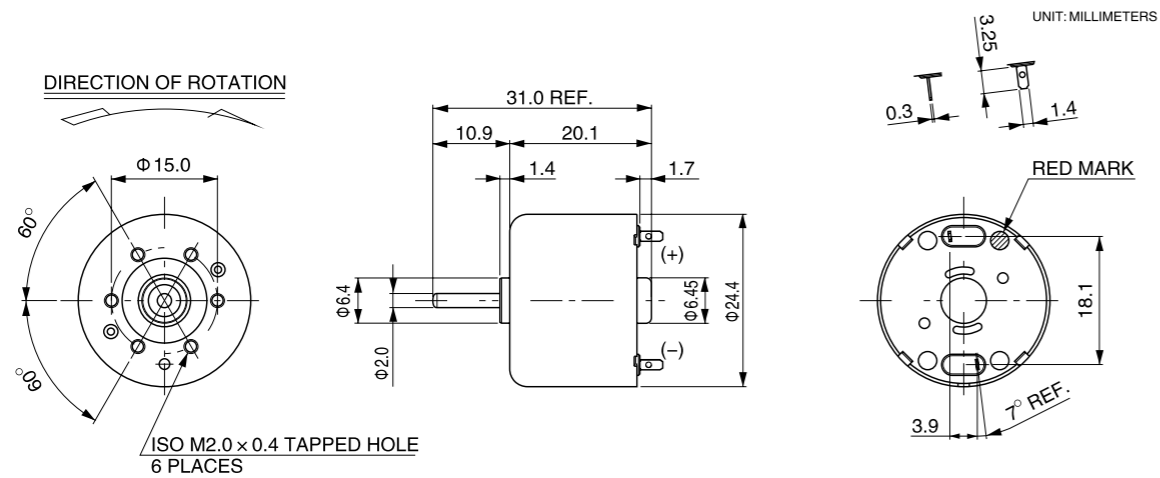
視聽設備:音量電位器

Typical Applications Audio and Visual Equipments : Volume Drive

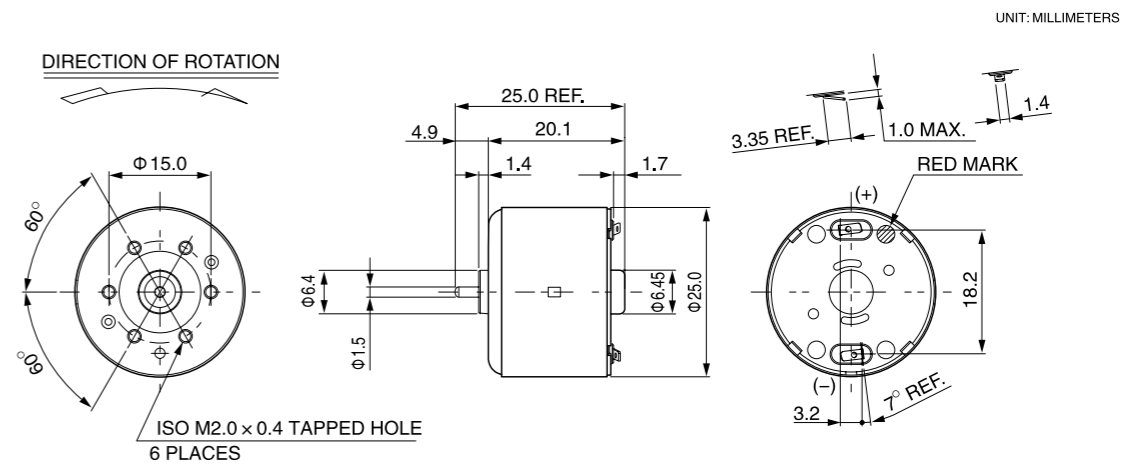


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-330NT-09500	DC 2 - 8V	DC 4.5V	3300	0.010	2700	0.045	0.40	4.1	0.11	2.21	23	0.20

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

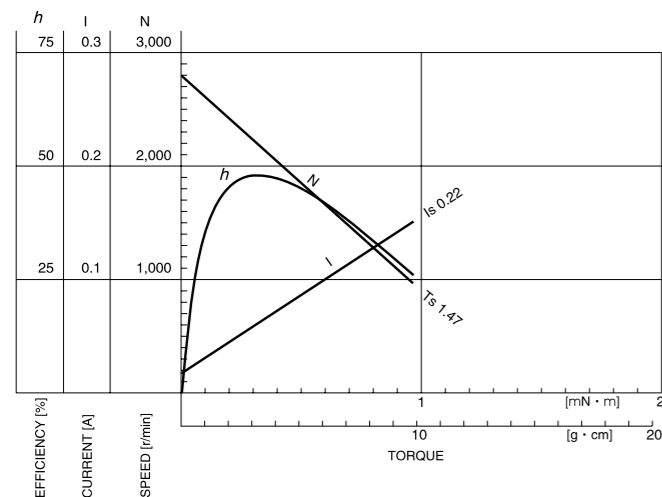


Usable machine screw length 1.5 max. from motor mounting surface.

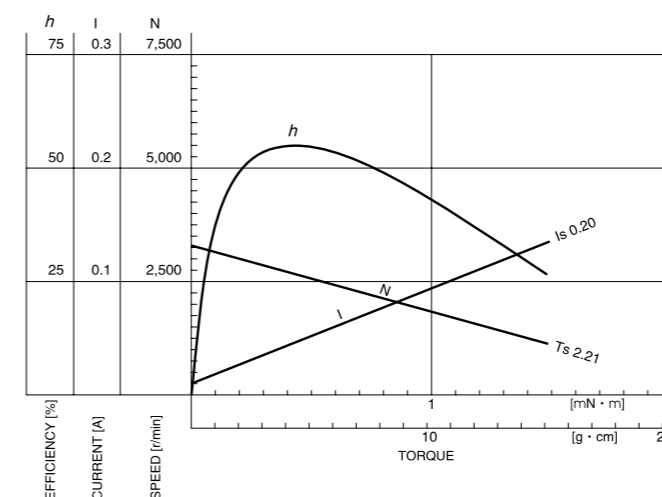


Usable machine screw length 1.5 max. from motor mounting surface.

FRK-310NT-11400 2.5V



FRK-330NT-09500 4.5V



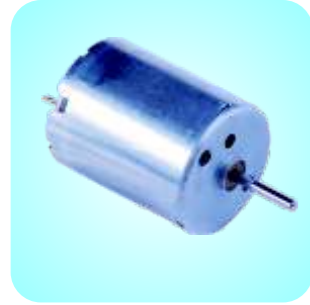
FRK-370NT

输出功率:約0.1W~4.5W OUTPUT: APPROX 0.1W~4.5W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

視聽設備: 視頻磁帶播放機/視頻磁帶錄音機  
家用電器: 廚房電器/血壓計

Typical Applications Audio and Visual Equipments :  
CD Player/VCR  
Household Appliances: Kitchen Appliance  
Blood Pressure Meter



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-370NT-15370	DC3-12.0	DC 12V	5800	0.025	4800	0.17	2.35	24	1.15	18.3	187	1.06
FRK-370NT-12560	DC4-12.0	DC 12V	3700	0.018	3000	0.09	1.98	20	0.62	12.3	125	0.46
FRK-370NT-13350	DC3-12.0	DC 12V	4200	0.025	3600	0.11	1.47	15	0.55	11.0	112	0.64
		DC 12V	5600	0.030	4900	0.14	1.96	20	1.01	14.7	150	0.85

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRK-400NT

输出功率:約0.05W~0.25W OUTPUT: APPROX 0.05W~0.25W  
貴金屬電刷馬達 Precious Metal-brush motors

典型應用

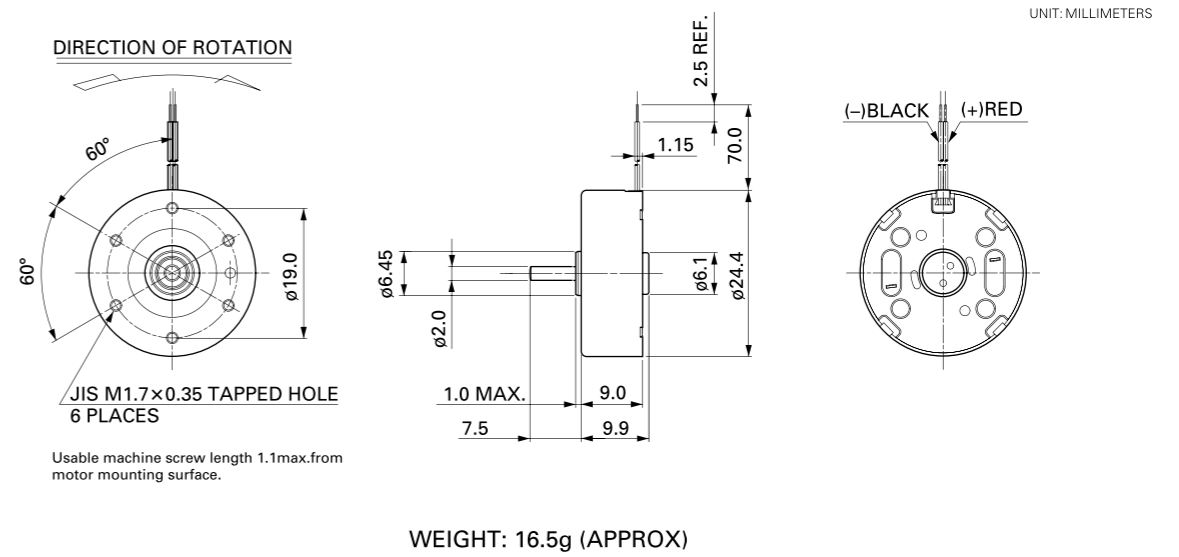
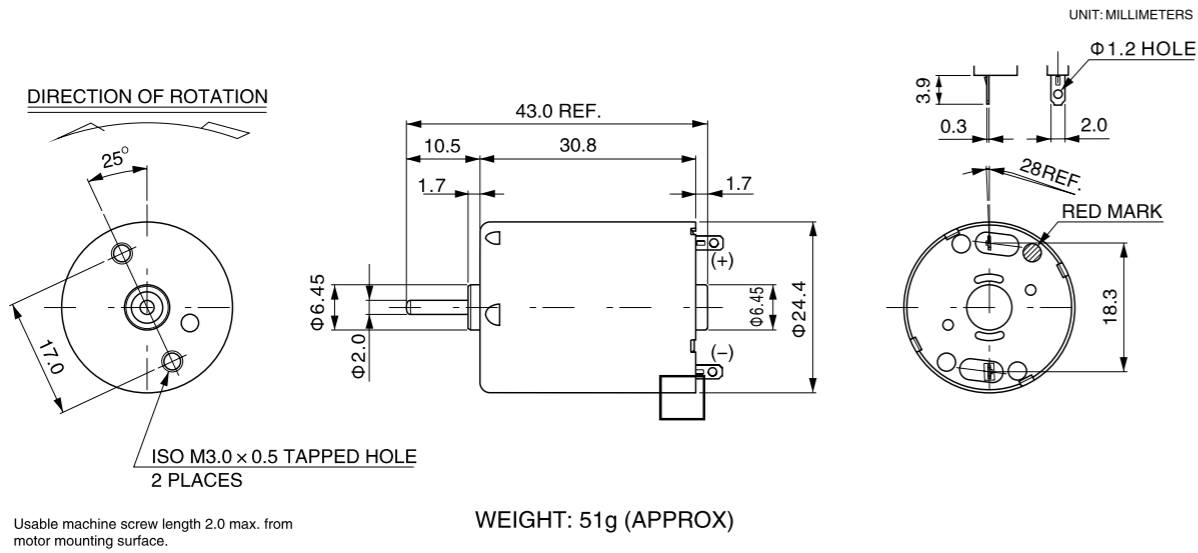
視聽設備: 便攜式CD播放器/車載CD  
辦公自動化設備: CD/DVD-ROM 驅動器

Typical Applications Audio and Visual Equipments : Portable CD  
Player / Car CD Player  
Office Automation Equipments : CD/DVD-ROM Drive

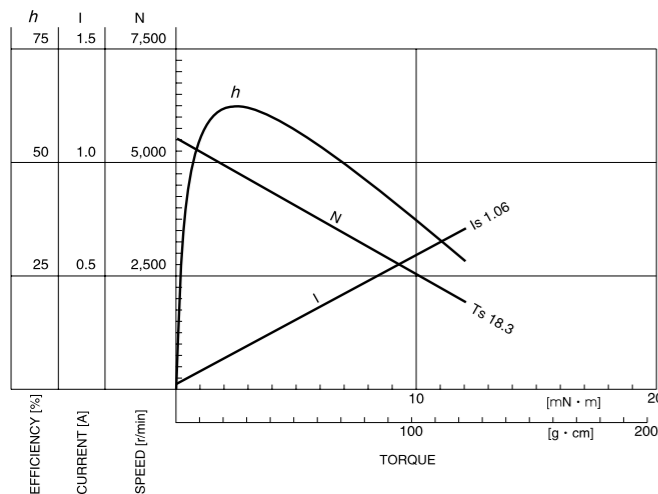


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-400NT-12265	1~6	2V CONSTANT	4000	0.030	3070	0.099	0.25	2.6	0.080	1.08	11	0.33
FRK-400NT-13225	1.5~6.0	2V CONSTANT	4800	0.035	3730	0.12	0.30	3.0	0.12	1.33	14	0.43

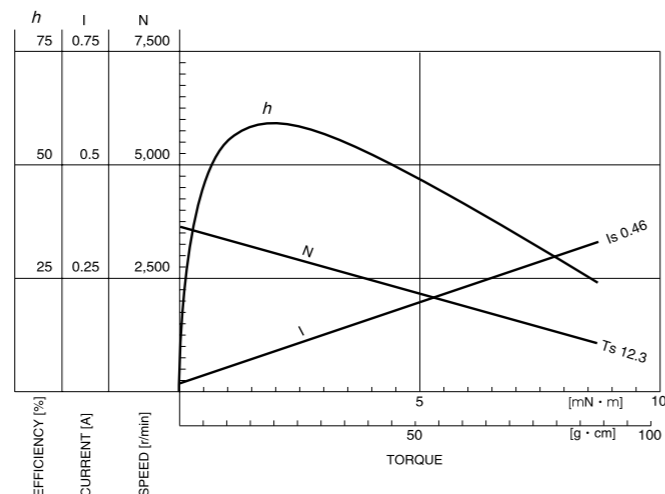
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



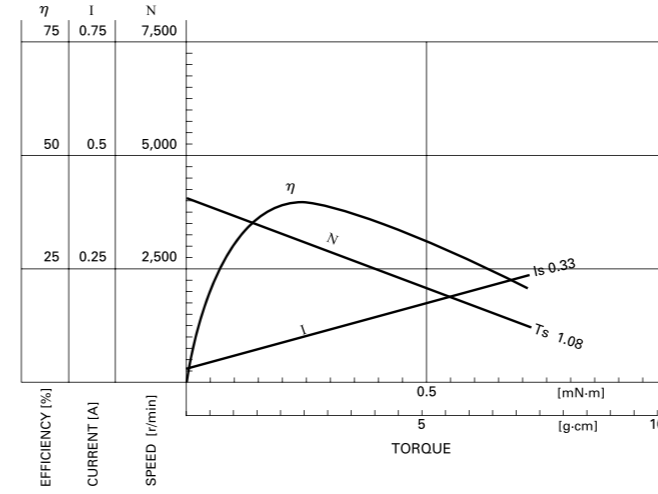
FRK-370NT-15370 12V



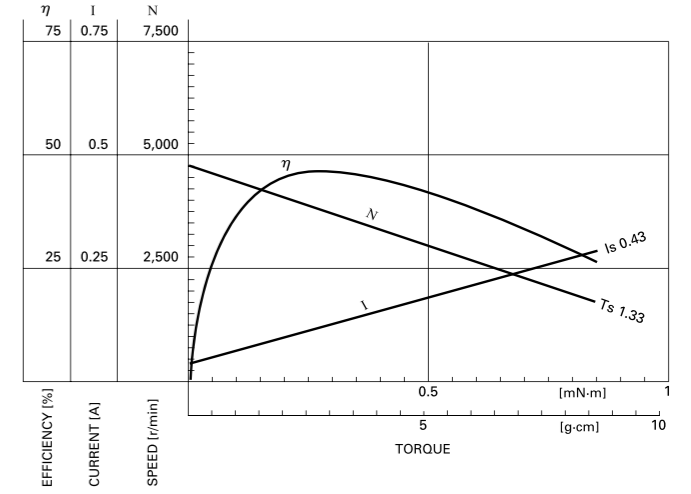
FRK-370NT-12560 12V



FRK-400NT-12265 2V



FRK-400NT-13225 2V



FRK-500NA

輸出功率:約0.03W~1.5W  
貴金屬電刷馬達  
OUTPUT: APPROX 0.03W~1.5W  
Precious Metal-brush motors

典型應用

視聽設備:CD播放機,DVD播放機  
磁帶錄音機,視頻磁帶錄音機

Typical Applications Audio and Visual Equipments :  
CD Player / DVD Player  
Cassette Tape Recorder / VCR



型號 MODEL	電壓VOLTAGE		無負荷NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRK-500NA-12560	DC 1.5-12.0V	DC 6V	2700	0.020	2180	0.084	1.13	11.6	0.26	5.88	60	0.35
		DC 9V	4000	0.023	3300	0.11	1.55	15.8	0.53	8.92	91	0.52
FRK-500NA-14415	DC 1.5-9.0V	DC 3V	1800	0.022	1430	0.085	0.82	8.4	0.12	4.02	41	0.33
		DC 6V	3700	0.028	3060	0.13	1.42	14.4	0.45	8.24	84	0.65

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

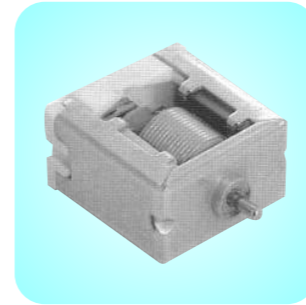
FFC-020GA/SA

輸出功率:約0.1W~0.8W  
貴金屬電刷馬達  
OUTPUT: APPROX 0.1W~0.8W  
Precious Metal-brush motors

典型應用

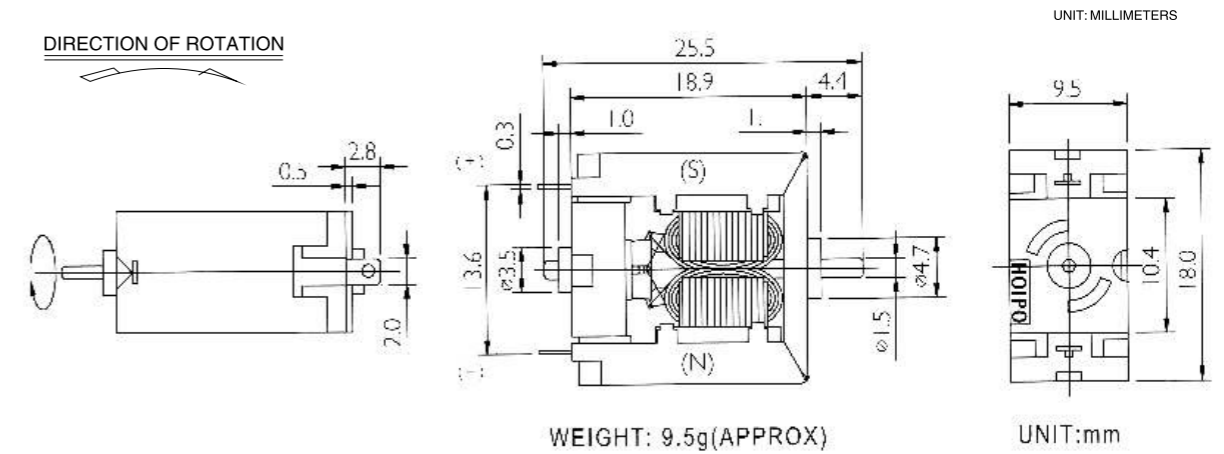
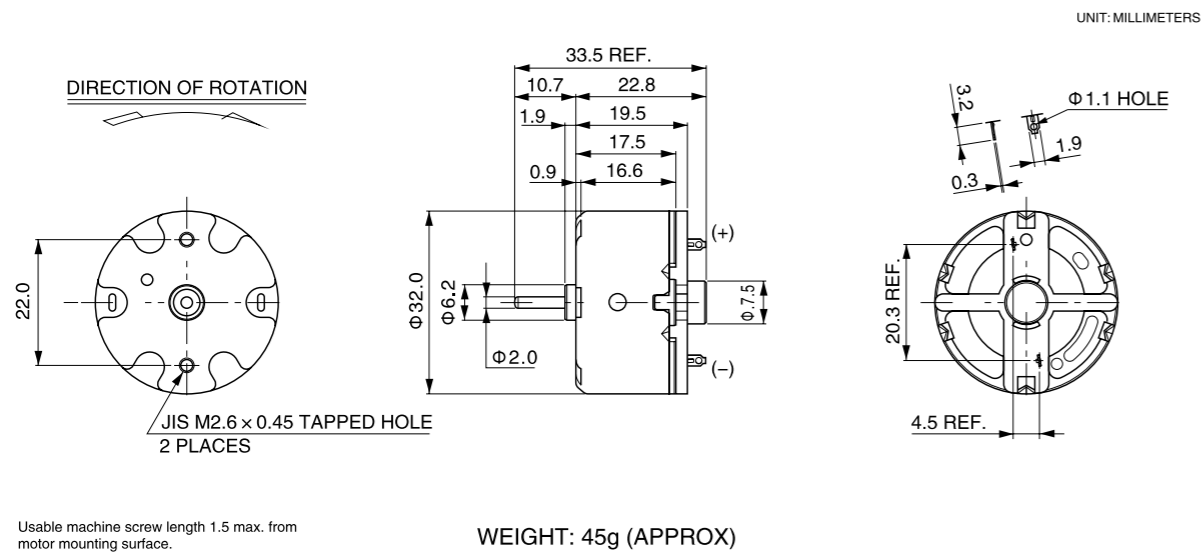
視聽設備:光盤播放機  
MD播放機  
汽車CD機

Typical Applications Audio and Visual Equipments :  
Portable CD Player  
MD Player  
Car MD Player

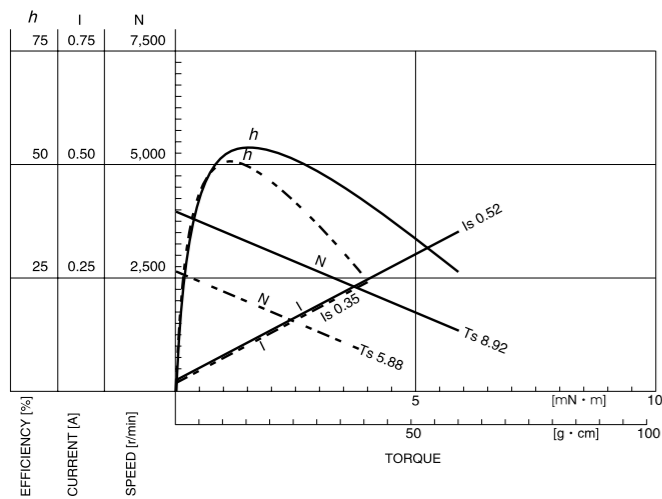


型號 MODEL	電壓VOLTAGE		無負荷NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFC-020GA-1665	1.0-1.5V	1.5V	15000	0.26	10600	0.63	0.18	1.9	0.20	0.63	6.4	1.52
FFC-020GA-12110	1.0-3.0V	1.5V	9800	0.15	6400	0.28	0.11	1.2	0.08	0.33	3.4	0.54
FFC-020GA-09170	1.5-3.0V	3.0V	12000	0.10	8000	0.20	0.15	1.6	0.13	0.47	4.8	0.41
FFC-020SA-1665	1.0-1.5V	1.5V	12400	0.22	9000	0.58	0.23	2.4	0.22	0.84	8.6	1.52
FFC-020SA-12110	1.5-3.0V	1.5V	6400	0.12	4300	0.24	0.14	1.4	0.06	0.42	4.2	0.50
FFC-020SA-09170	1.5-3.0V	3.0V	9300	0.08	6400	0.18	0.17	1.7	0.11	0.54	5.5	0.40

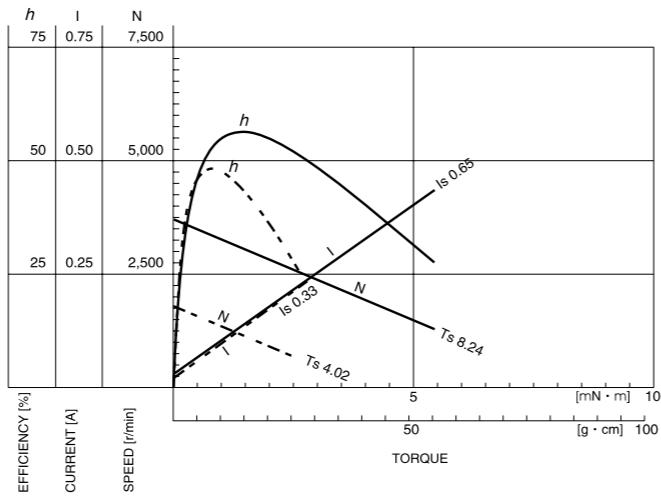
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



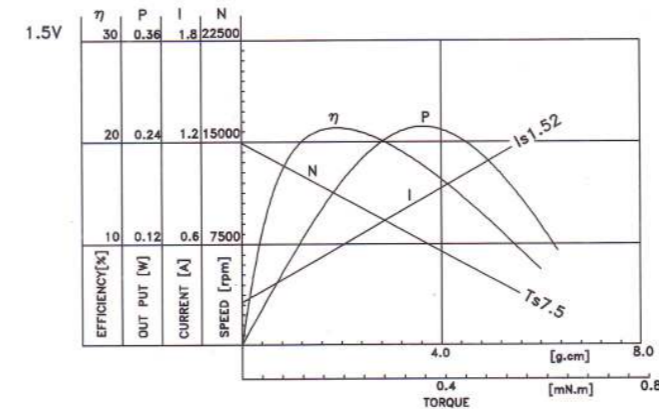
FRK-500NA-12560 6V-9V



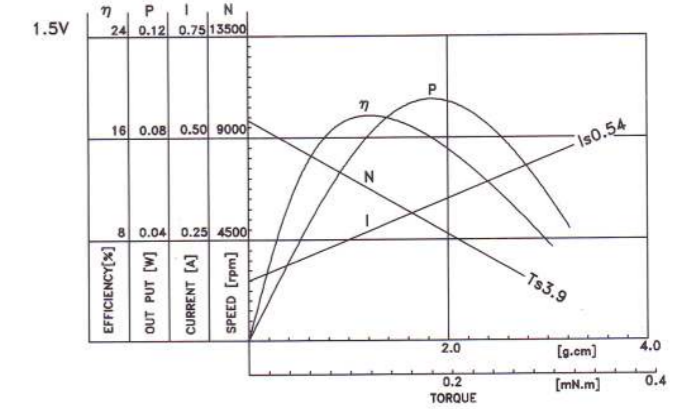
FRK-500NA-14415 3V-6V



FFC-020GA-1665 1.5V



FFC-020GA-12110 1.5V



FFC-030SA

輸出功率:約0.05W~1.2W OUTPUT: APPROX 0.05W~1.2W  
碳刷馬達 Carbon-brush motors

典型應用

視聽設備: CD/MD播放機, 汽車CD播放機/攝像機  
家用電器: 血壓計  
辦公自動化設備: CD/DVD-Drive

Typical Applications Audio and Visual Equipments: CD/MD Player  
Car CD Player / Cmacorder  
Household Appliances: Blood Pressure Meter  
Office Automation Equipments: CD/DVD-Drive



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFC-030SA-08240	6.0-12.0V	12.0V	22300	0.10	16300	0.27	0.75	7.6	1.27	2.75	28.0	0.72
FFC-030SA-09170	3.0-6.0V	6.0V	15000	0.15	10400	0.34	0.58	5.9	0.63	1.89	19.2	0.72
FFC-030SA-12100	1.5-6.0V	3.0V	11200	0.19	7900	0.45	0.52	5.3	0.43	1.75	17.8	1.05

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FFC-050ST

輸出功率:約0.2W~3.0W OUTPUT: APPROX 0.2W~3.0W  
碳刷馬達 Carbon-brush motors

典型應用

家電電器  
辦公自動化設備:打印機

Household Appliances  
Typical Applications Office Automation Equipments : Printer

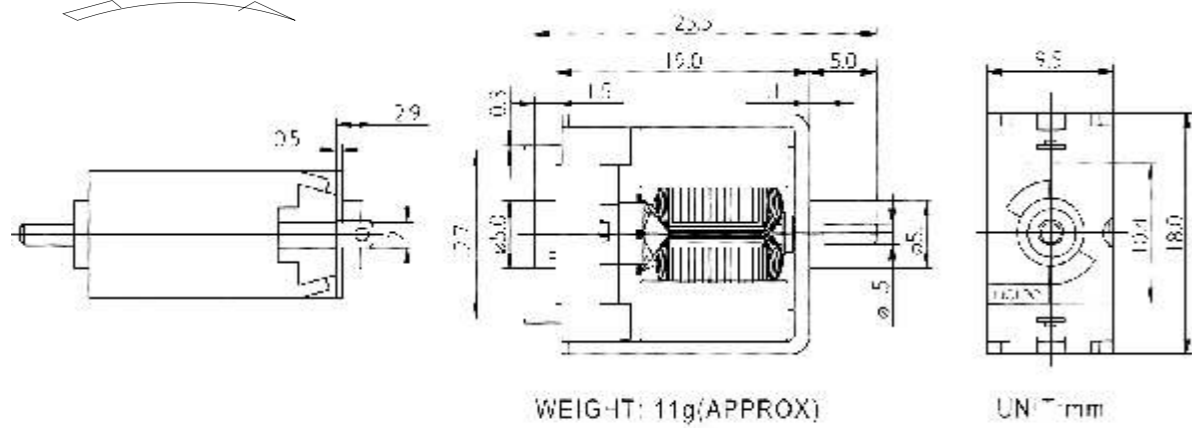


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFC-050ST-13125	3-10	6V CONSTANT	11500	0.090	9100	0.34	1.12	11.4	1.07	5.39	55	1.30

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

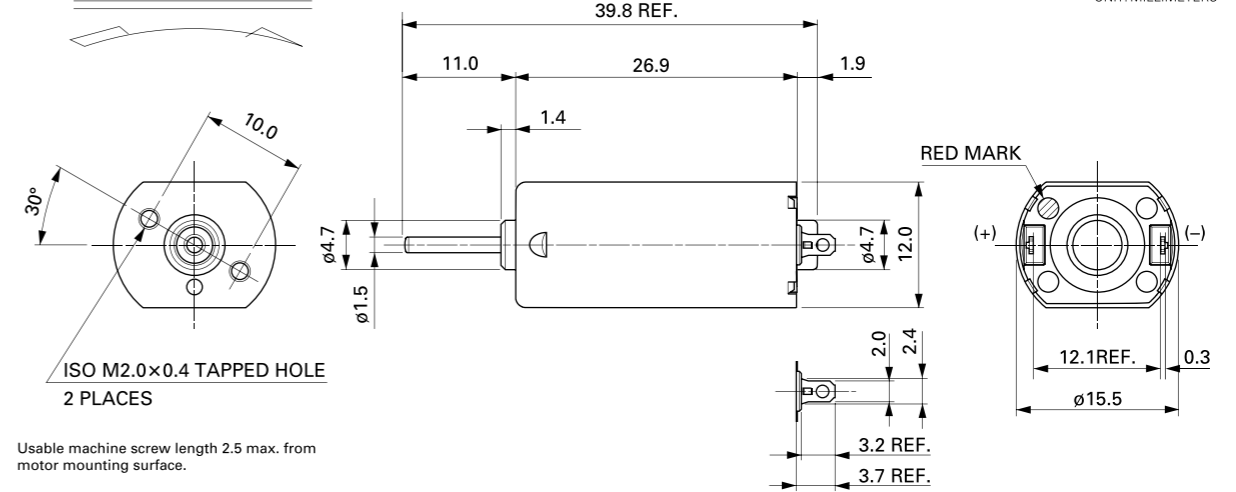
DIRECTION OF ROTATION

UNIT: MILLIMETERS



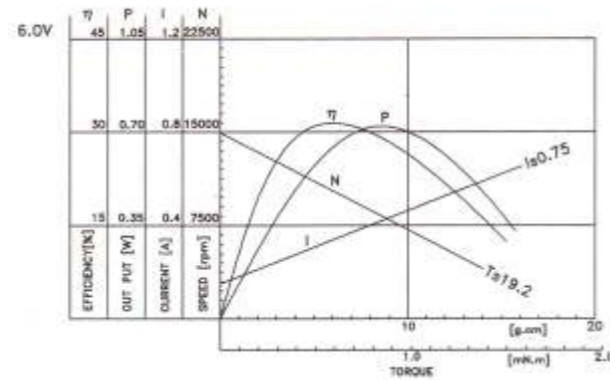
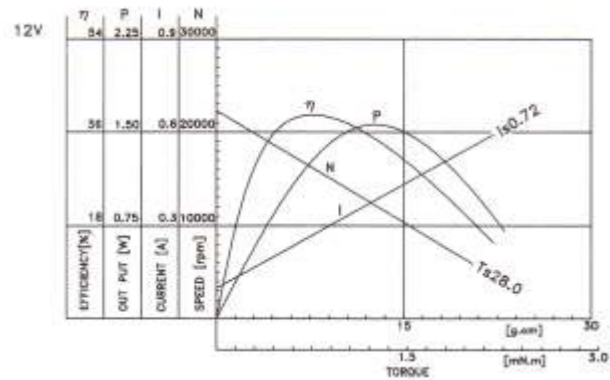
DIRECTION OF ROTATION

UNIT: MILLIMETERS

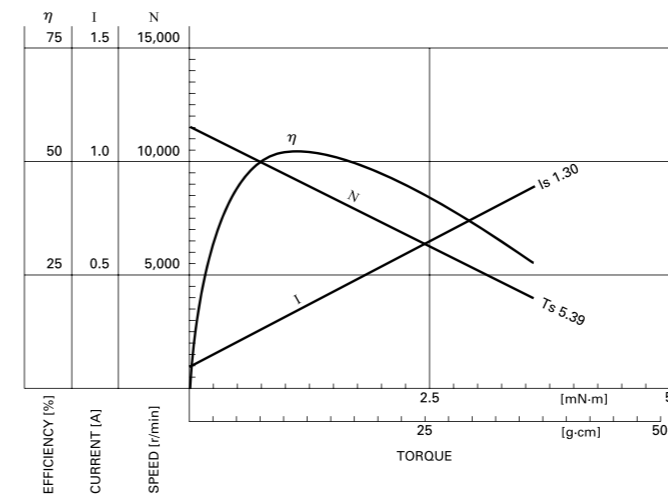


FFC030SA-08240 12V

FFC030SA-09170 6V



FFC050ST-13125 6V



FFC-130GT-ST

输出功率:約0.2W~10W  
碳刷馬達

OUTPUT: APPROX 0.2W~10W  
Carbon-brush motors

典型應用  
辦公自動化設備:打印機  
自動車電裝機器:後視鏡,光軸調整

Typical Applications Office Automation Equipments : Printer  
Automotive Products : Rearview Mirror  
Head Light Beam Level Adjuster



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT		
			r/min	A	r/min	A	mN·m g·cm	W	mN·m g·cm	A	A	
FFC-130GT-09490	DC 6.0-8.0V	DC 12V	9000	0.034	6990	0.12	0.88	8.9	0.64	3.92	40	0.41
FFC-130GT-15210	DC 4.5-6.0V	DC 4.8V	8300	0.075	6540	0.28	0.89	9.0	0.61	4.17	43	1.03
FFC-130ST-09450	DC 6.0-24V	DC 12V	7200	0.030	5680	0.11	1.12	11.4	0.66	5.30	54	0.42
FFC-130ST-16180	DC 4.0-10V	DC 4.8V	7100	0.080	5690	0.32	1.31	13.4	0.78	6.59	67	1.30

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

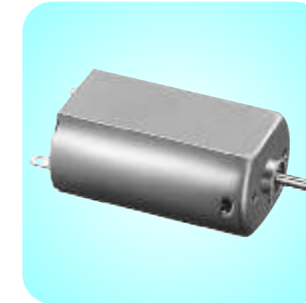
FFC-180ST

输出功率:約0.3W~15W  
碳刷馬達

OUTPUT: APPROX 0.3W~15W  
Carbon-brush motors

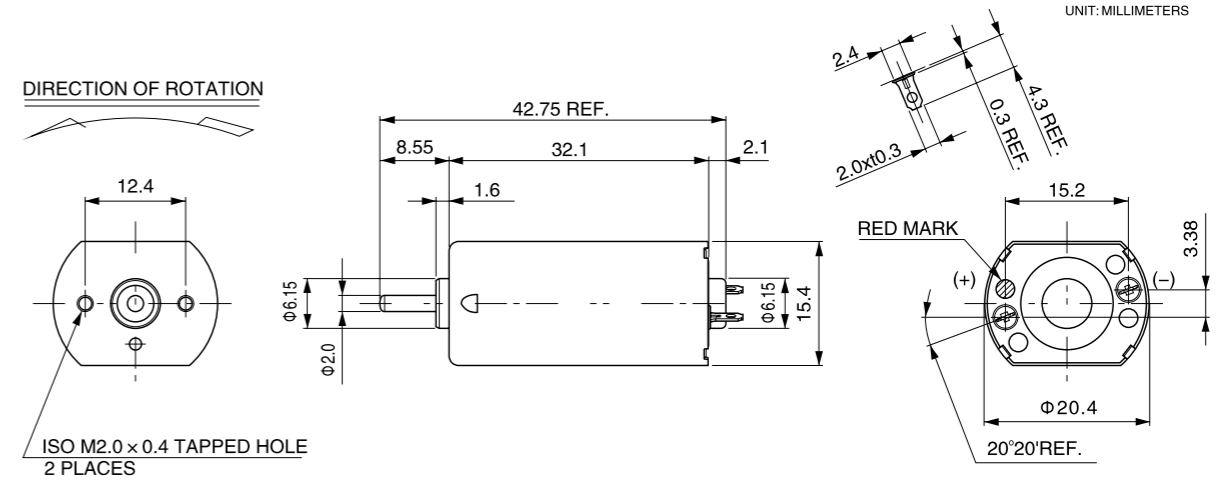
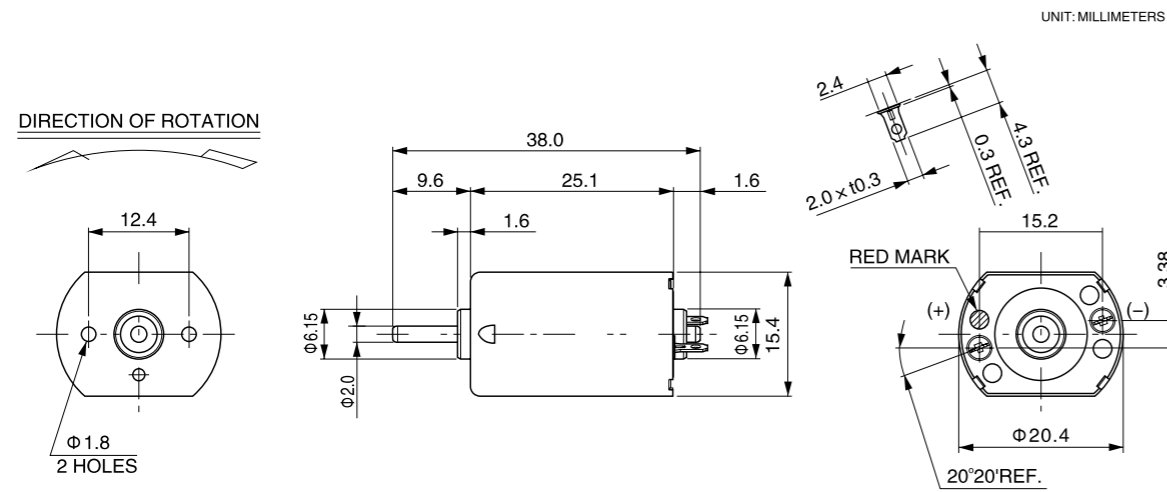
典型應用  
家用電器:電動剃須刀  
辦公自動化設備:打印機

Typical Applications Household Appliances : Electric Shaver  
Office Automation Equipments : Printer



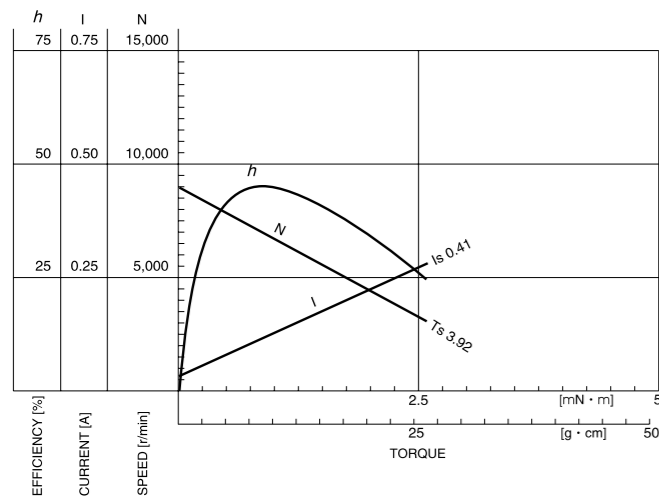
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT		
			r/min	A	r/min	A	mN·m g·cm	W	mN·m g·cm	A	A	
FFC180ST-09450	DC 12-24V	DC 12V	4400	0.021	3500	0.082	1.33	13.6	0.49	6.54	67	0.32
		DC 24V	9200	0.025	7660	0.12	2.12	21.6	1.70	12.7	130	0.62
FFC-180ST-17140	DC 6-24V	DC 6V	7800	0.085	6390	0.39	2.04	20.8	1.36	11.3	115	1.75

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



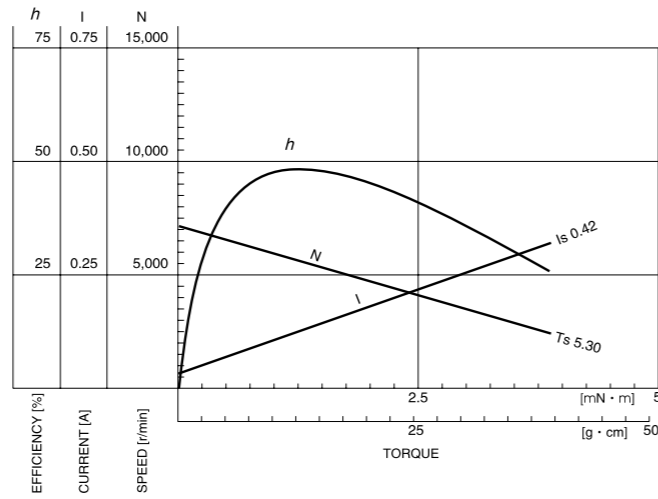
FFC-130GT-09490

12V



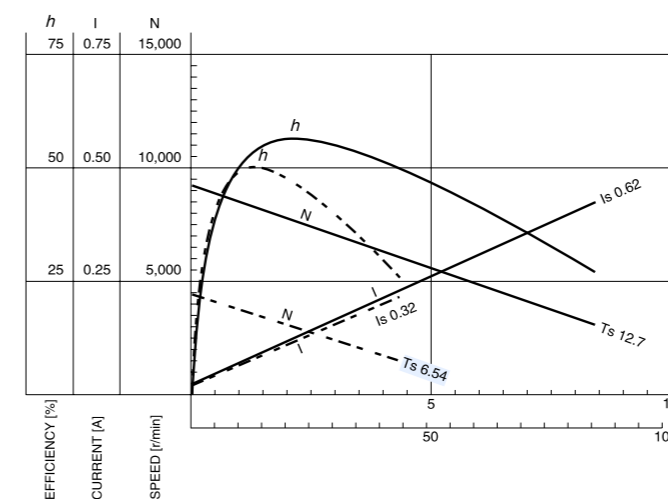
FFC-130ST-09450

12V



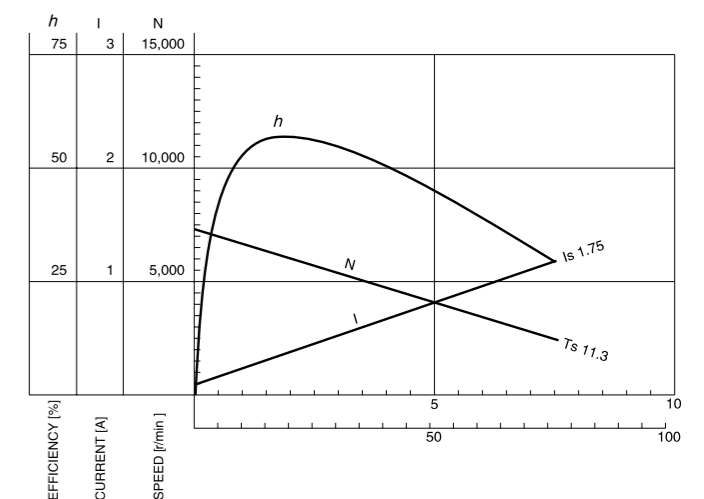
FFC-180ST-09450

12V-24V



FFC-180ST-17140

6V



FRC-260GA-SA

輸出功率:約0.3W~20W OUTPUT: APPROX 0.3W~20W  
碳刷馬達 Carbon-brush motors

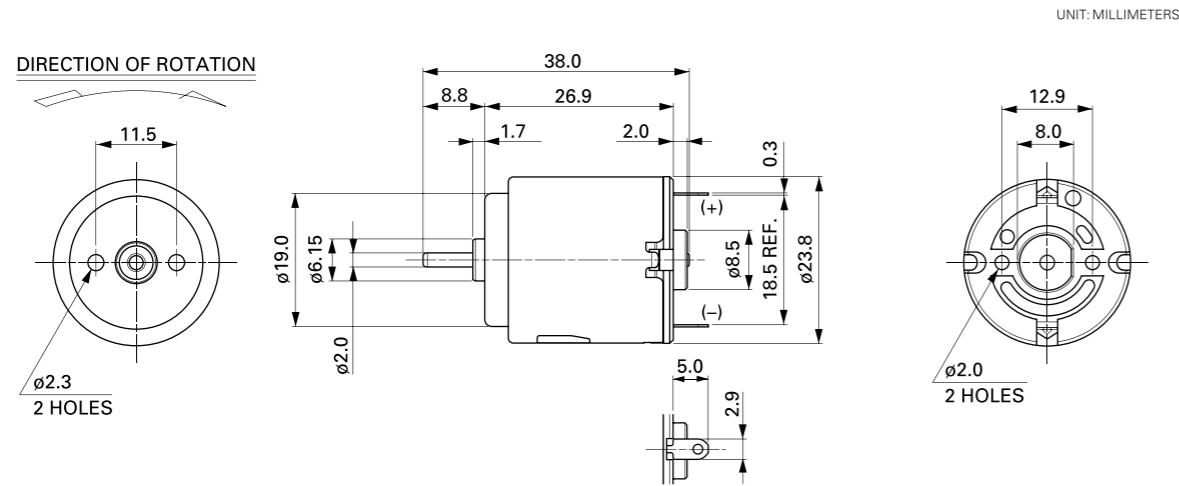
典型應用  
家用電器:按摩器/振蕩器  
玩具和模型:無線電控制模型

Typical Applications Household Appliances :Massager / Vibrator  
Toys and Models :Radio Control Model



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-260GA-18130	4.5 ~ 6.0	4.5V CONSTANT	9800	0.14	7750	0.53	1.48	15.1	1.20	7.06	72	2.00
		6V CONSTANT	13600	0.17	10840	0.67	1.71	17.5	1.94	8.44	86	2.62
FRC-260GA-2670	3.0 ~ 4.5	4.5V CONSTANT	18500	0.30	15290	1.43	2.14	21.8	3.41	12.3	125	6.80
FRC-260SA-2670	3.0 ~ 4.5	4.5V CONSTANT	13700	0.24	11520	1.27	2.66	27.1	3.20	16.7	170	6.70
FRC-260SA-2295	3.0 ~ 6	4.5V CONSTANT	10200	0.20	8300	0.87	2.43	24.7	2.11	13.0	133	3.80

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



WEIGHT: 28g (APPROX)

FRC-270GA

輸出功率:約0.1W~4.5W OUTPUT: APPROX 0.1W~4.5W  
碳刷馬達 Carbon-brush motors

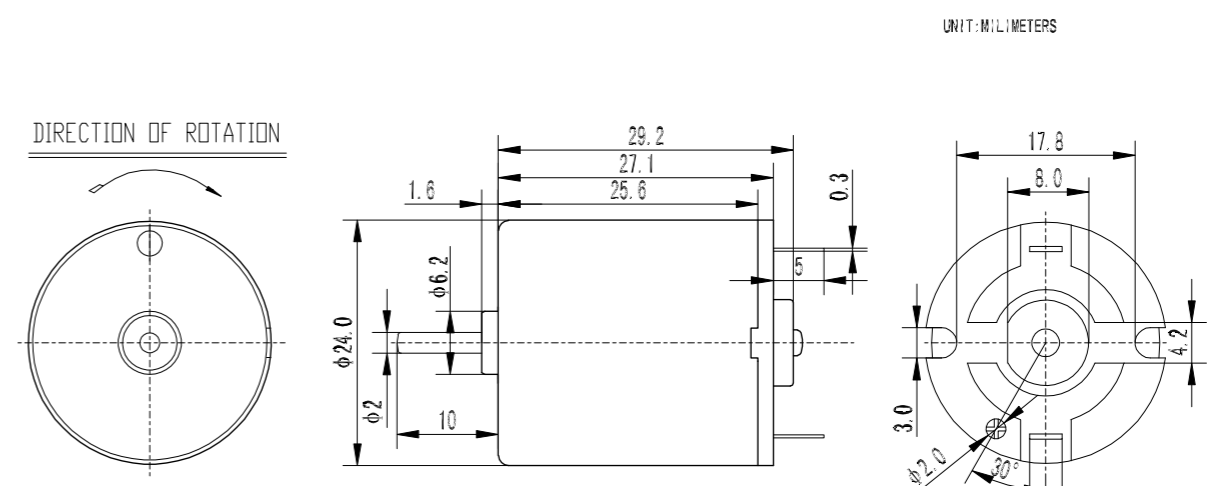
典型應用  
視聽設備:CD播放機/錄像機  
家用電器:廚房電器/血壓計

Typical Applications Audio and Visual Equipments:  
CD Player/VCR  
Household Appliances:  
Kitchen Appliance/Blood Pressure Meter



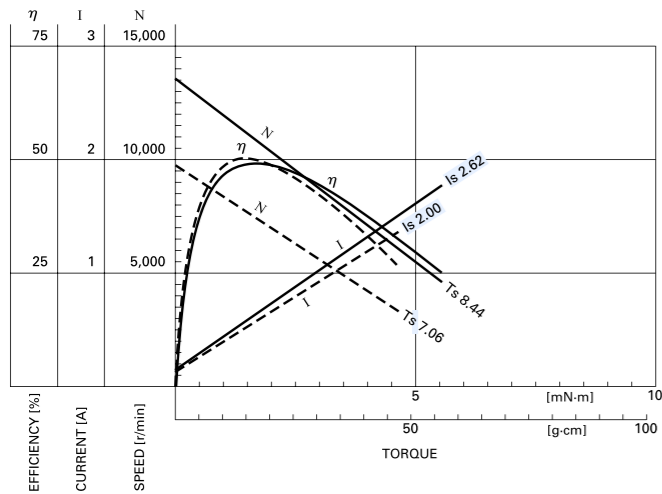
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-270GA-078710	24~30	28.8V CONSTANT	5750	0.015	5000	0.05	20	1.96	1.02	153.3	15.0	0.3
FRC-270GA-08480	6~24	12V CONSTANT	4350	0.025	3850	0.06	10	0.98	0.39	87	8.5	0.35

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

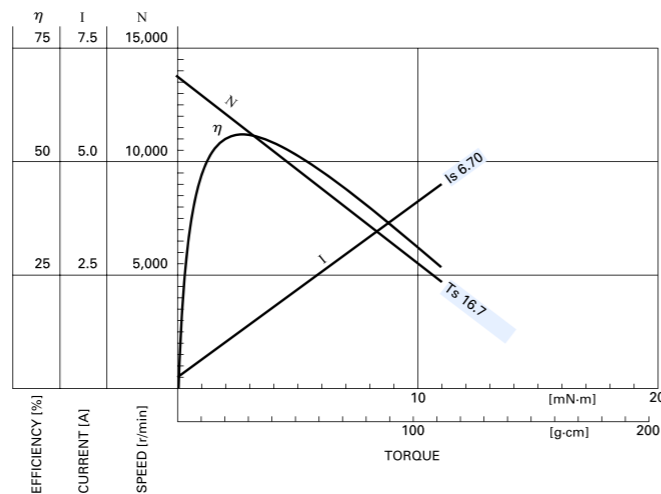


WEIGHT: 38g (APPROX)

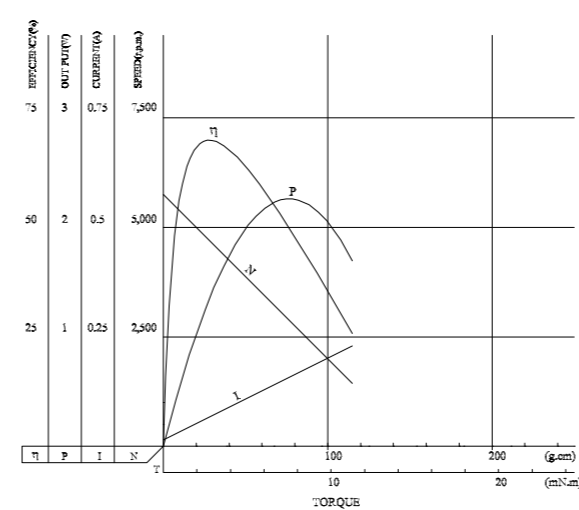
FRC-260GA-18130 4.5V-6.0V



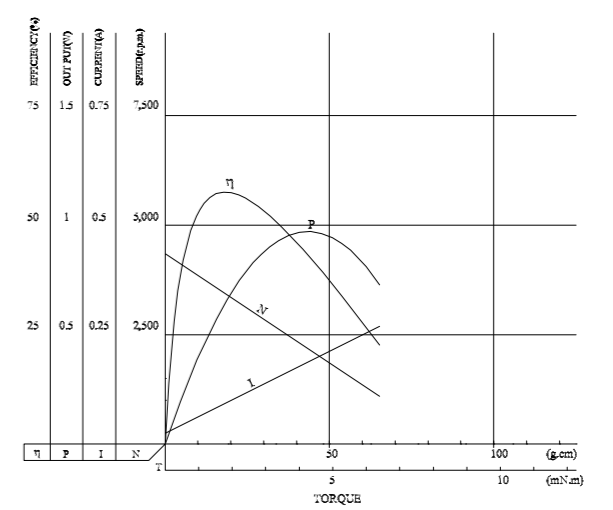
FRC-260SA-2670 4.5V



FRC-270GA-07870 28.8V



FRC-270GA-08480 12V



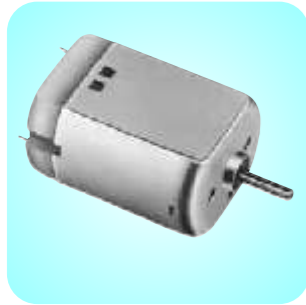
FFC-280GA/SA

輸出功率:約0.3W~23W OUTPUT: APPROX 0.3W~23W  
碳刷馬達 Carbon-brush motors

典型應用

汽車產品:門鎖執行器/伸縮後視鏡  
家用電器:頭髮脫塗劑  
精密儀器:自動販賣機

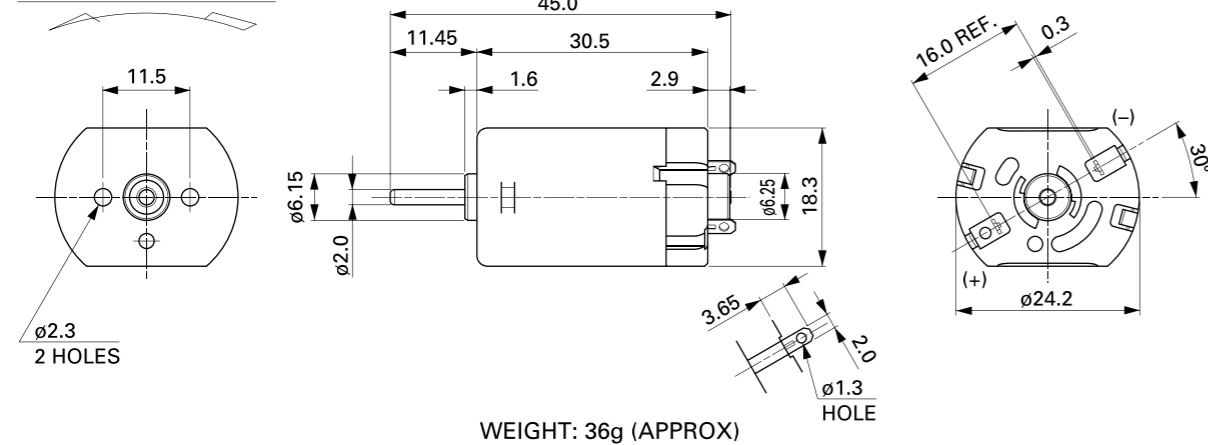
Typical Applications Automotive Products :Door Lock Actuator / Retractable Rearview Mirror  
Household Appliances :Hair Remover  
Precision Instruments :Vending Machine



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FFC-280GA-20150	10 ~ 15	12V CONSTANT	12000	0.10	10330	0.62	4.45	45.4	4.81	31.9	325	3.80
FFC-280GA-18165	10 ~ 15	12V CONSTANT	10500	0.090	9000	0.54	4.12	42.0	3.88	28.9	295	3.25
FFC-280SA-18165	10 ~ 15	12V CONSTANT	12300	0.075	10710	0.50	3.40	34.7	3.81	26.3	268	3.40
FFC-280SA-20150	10 ~ 15	12V CONSTANT	13500	0.10	11700	0.65	3.80	38.7	4.64	28.4	290	4.20

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

DIRECTION OF ROTATION



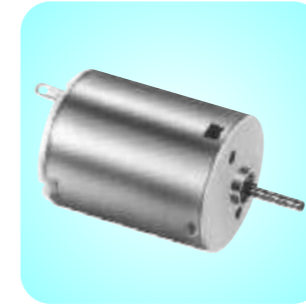
FFC-280GA/SA

輸出功率:約0.5W~25W OUTPUT: APPROX 0.5W~25W  
碳刷馬達 Carbon-brush motors

典型應用

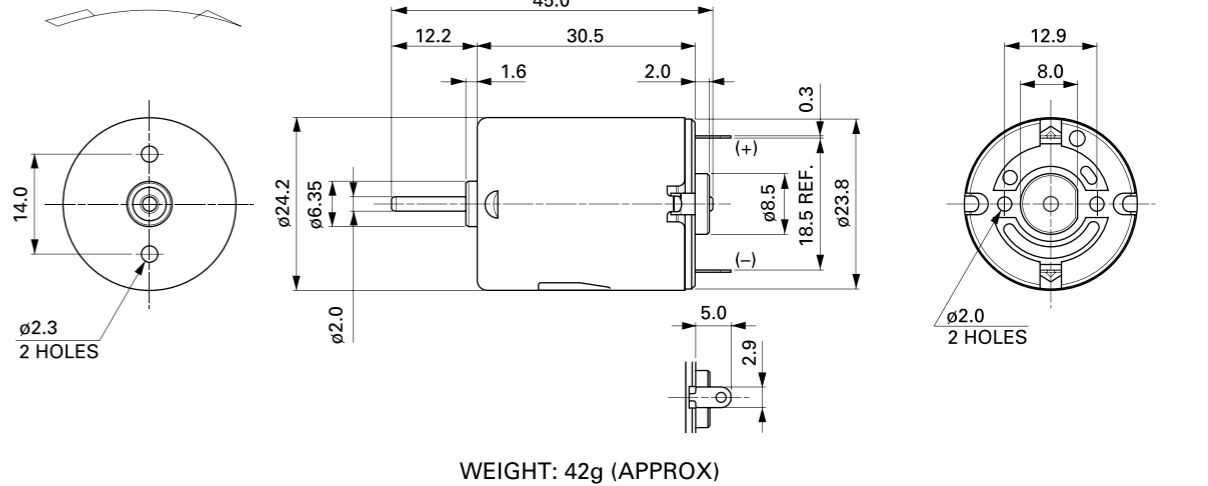
家用電器:理髮剪/按摩器/振動器  
玩具和模型:電動玩具/遙控器

Typical Applications Household Appliances :Hair Clipper / Massager / Vibrator  
Toys and Models :Motorized Toy / Radio Control Model

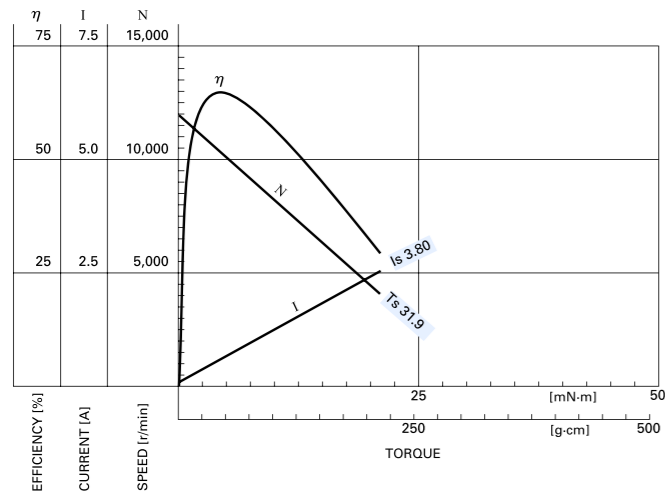


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE	功率 OUTPUT	轉矩 TORQUE	電流 CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-280GA-2865	4.5 ~ 6.0	4.5V CONSTANT	13600	0.27	11350	1.36	2.92	29.8	3.47	17.7	180	6.90
FRC-280GA-20120	4.5 ~ 9.0	4.5V CONSTANT	7500	0.11	6110	0.48	1.91	19.4	1.22	10.3	105	2.13
		6V CONSTANT	9900	0.12	8210	0.58	2.26	23.0	1.94	13.2	135	2.82
FRC-280GA-2485	4.5 ~ 8.4	7.2V CONSTANT	16800	0.21	14260	1.18	3.27	33.3	4.87	21.6	220	6.60
FRC-280SA-2865	4.5 ~ 9.0	6V CONSTANT	14000	0.28	11910	1.60	4.46	45.5	5.56	29.9	305	9.10
FRC-280SA-20120	4.5 ~ 12.0	6V CONSTANT	7700	0.12	6390	0.58	2.93	29.9	1.96	17.2	175	2.85
		12V CONSTANT	15500	0.15	13320	0.92	4.68	47.7	6.52	33.3	340	5.60
FRC-280SA-2485	4.5 ~ 9.6	7.5 V CONSTANT	13300	0.19	11350	1.10	4.25	43.3	5.04	28.9	295	6.40

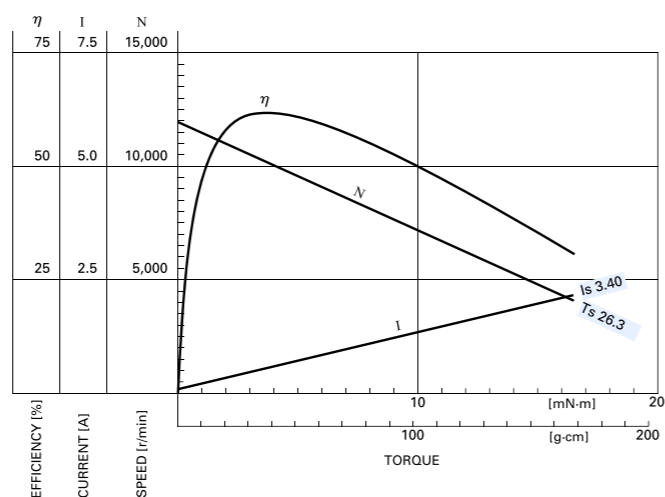
DIRECTION OF ROTATION



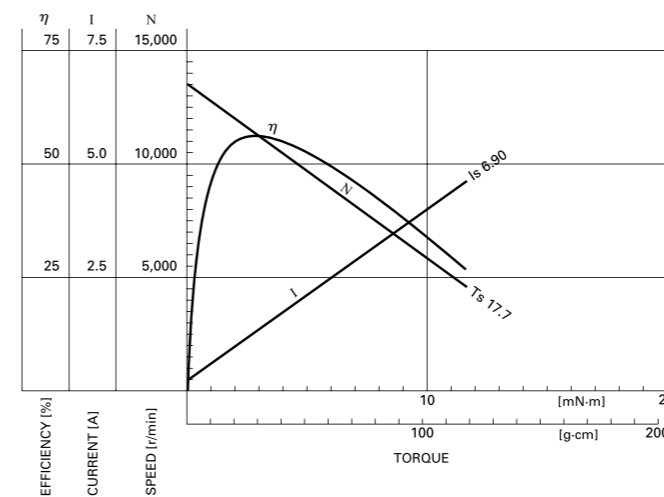
FFC-280GA-20150 12V



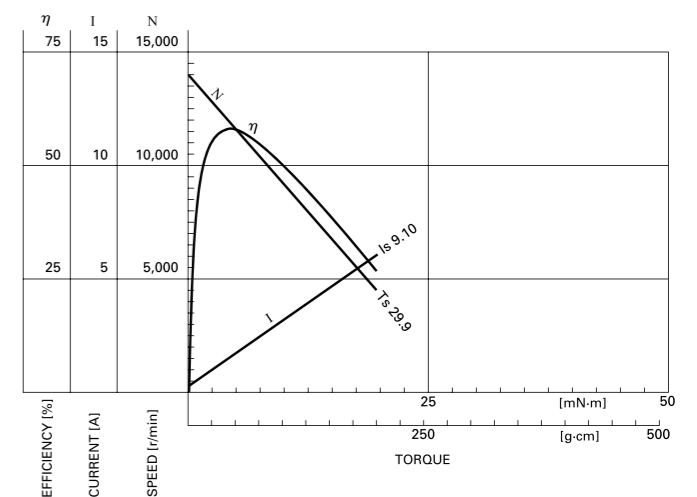
FFC-280SA-18165 12V



FRC-280GA-2865 4.5V



FRC-280SA-2865 6V

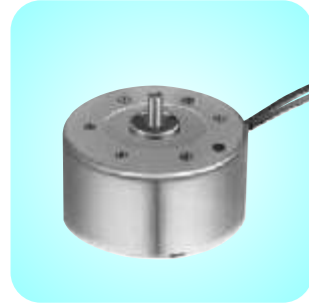


FRC-300NT

輸出功率:約0.1W~1.0W OUTPUT: APPROX 0.1W~1W  
碳刷馬達 Carbon-brush motors

典型應用:  
麻將機,減速齒輪箱,其它工藝品  
特點: 超長壽命, 可連續運轉50萬次以上

Typical Applications Mahjong Machine, Reduction Gear Box, Other Craft  
Features Long Life, Continuous Operation For More Than 50 Million Times



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-300NT-11400	DC 2.0-5.0V	DC 5.0V	8000	0.018	7000	0.12	0.38	3.8	0.2	3.46	35	0.65
FRC-300NT-14270	DC 2.0-5.0V	DC 5.0V	10500	0.065	9200	0.15	0.38	3.9	0.3	3.9	40	0.95

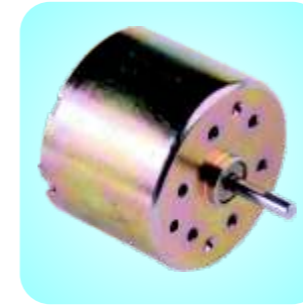
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRC-310NT

輸出功率:約0.04W~0.8W OUTPUT: APPROX 0.04W~0.8W  
碳刷馬達 Carbon-brush motors

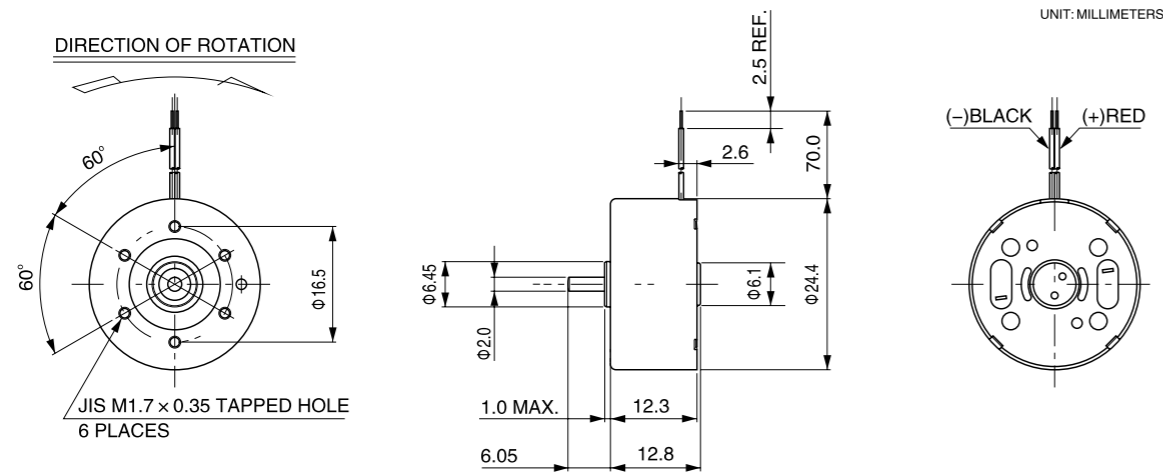
典型應用:  
視飄香機: USB風扇、工業用途  
特點: 超長壽命, 是普通電機壽命的2-3倍

Typical Applications Automatic Dipenser Machine :USB Fan, Industrial applications  
Features Super long service life, twice to three times as much as normal ones.



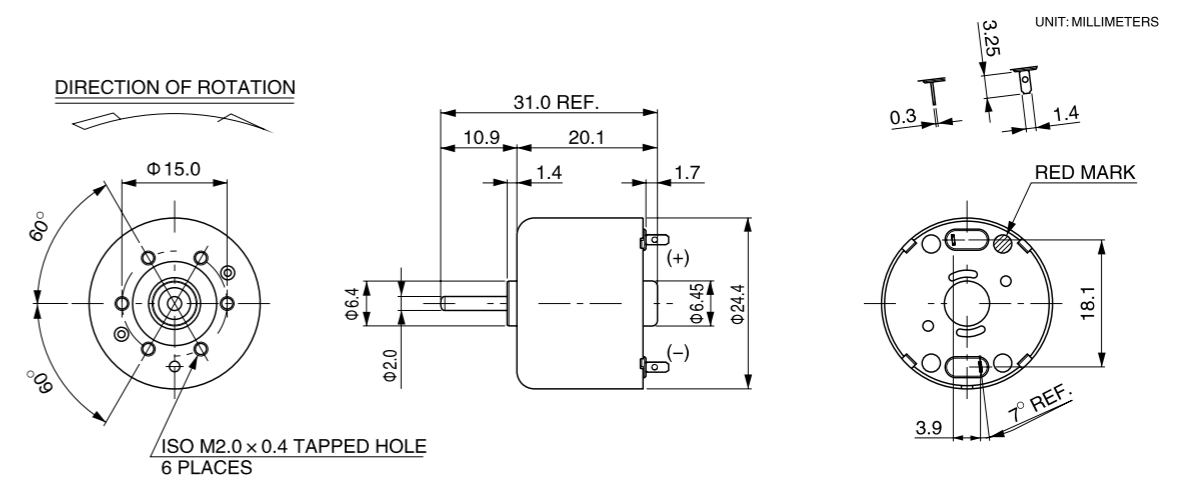
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-310NT-11400	DC 1 ~ 6V	DC 2.5V	2800	0.017	2190	0.061	0.32	3.3	0.073	1.47	15	0.22

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



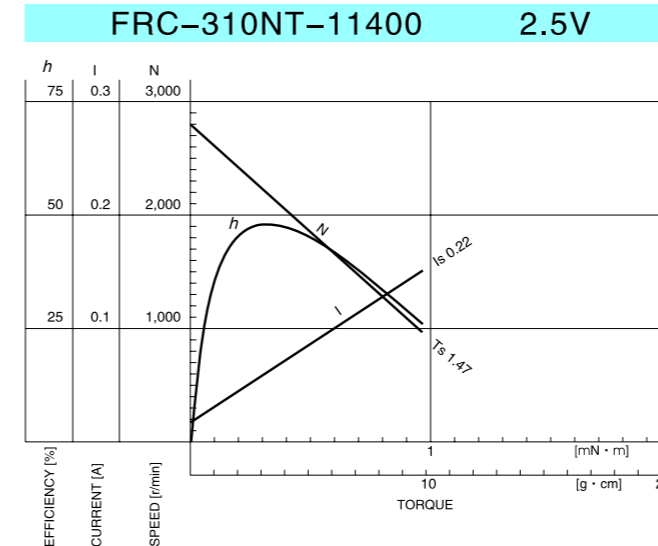
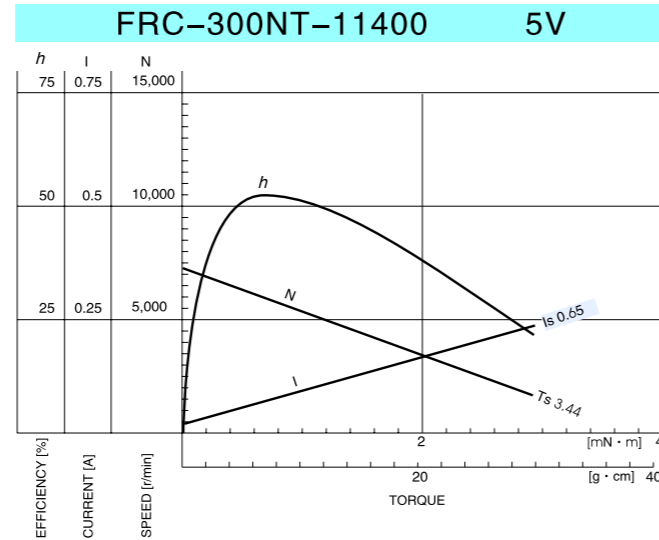
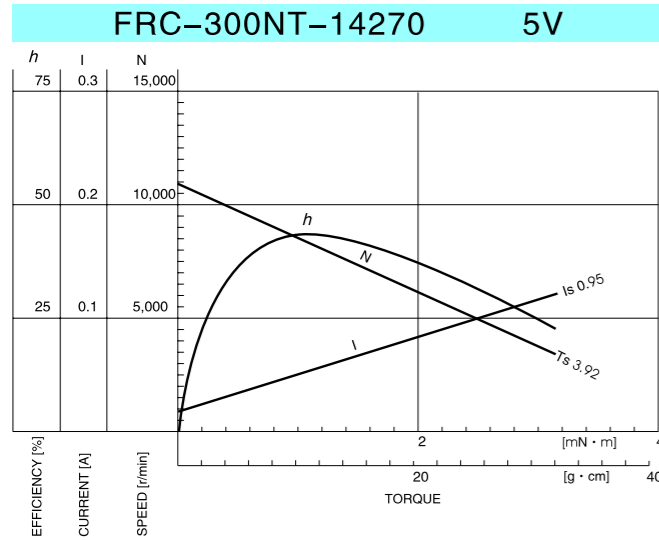
Usable machine screw length 1.1 max. from motor mounting surface.

WEIGHT: 22g (APPROX)



Usable machine screw length 1.5 max. from motor mounting surface.

WEIGHT: 29g (APPROX)

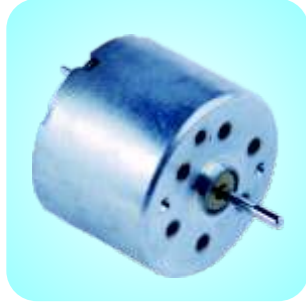


FRC-330NT

輸出功率:約0.04W~0.8W OUTPUT: APPROX 0.04W~0.8W  
碳刷馬達 Carbon-brush motors

**典型應用**  
視聽香機: USB風扇、工業用途  
特點: 超長壽命, 是普通電機壽命的2-3倍

**Typical Applications** Automatic Dipenser Machine :USB Fan,  
Industrial applications  
**Features** Super long service life,twice to three  
times as much as normal ones.



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-330NT-09500	DC 2 - 8V	DC 4.5V	3300	0.010	2700	0.045	0.40	4.1	0.11	2.21	23	0.20

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRC-370NT

輸出功率:約0.5W~25W OUTPUT: APPROX 0.5W~25W  
碳刷馬達 Carbon-brush motors

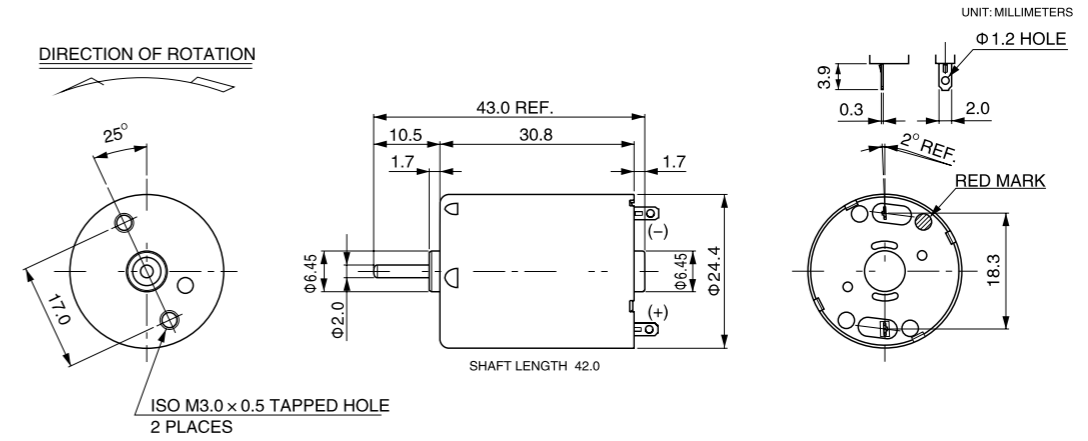
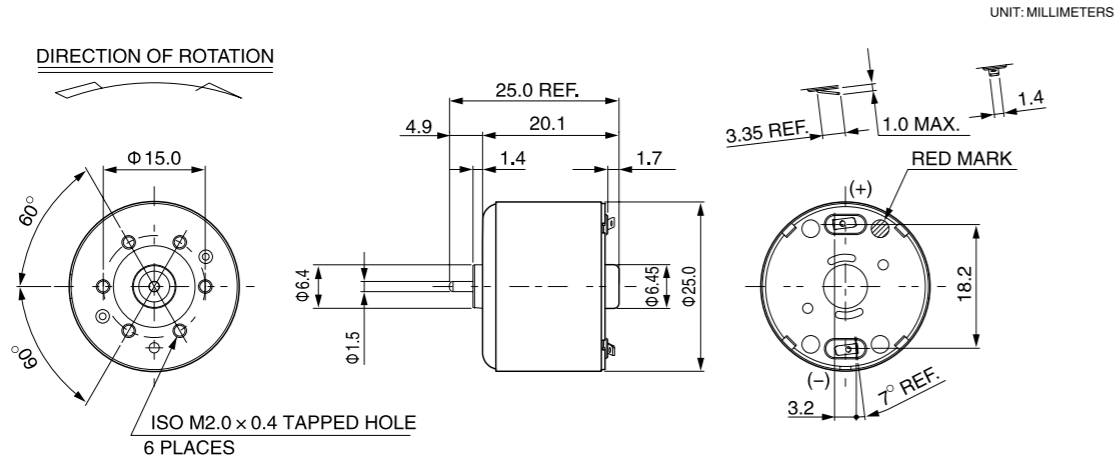
**典型應用**  
辦公自動化設備  
打印機,復印機  
精密儀器:自動售貨機

**Typical Applications** Office Automation Equipments :  
Printer / Copy Machine  
Precision Instruments : Vending Machine

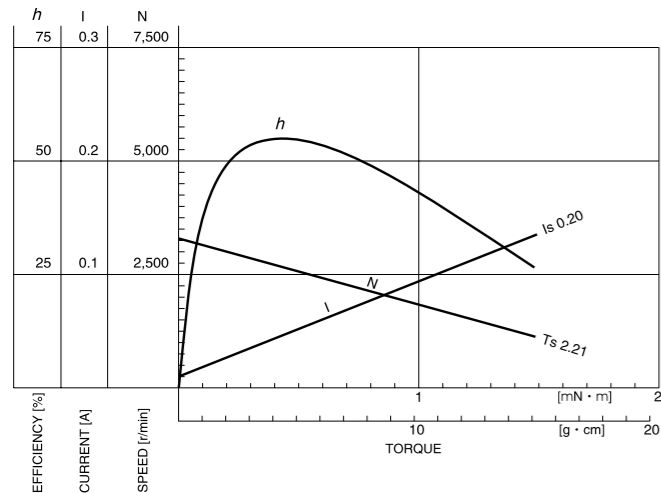


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY					起動 STALL		
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-370NT-10800	DC 12-30V	DC 24V	5100	0.015	4310	0.082	2.58	26.3	1.16	16.7	170	0.45
FRC-370NT-18260	DC 6-18V	DC 12V	7900	0.050	6820	0.32	3.21	32.7	2.29	23.5	240	2.00
FRC-370NT-081050	DC 12-30V	DC 24V	3900	0.010	3210	0.047	1.90	19.3	0.64	10.8	110	0.22

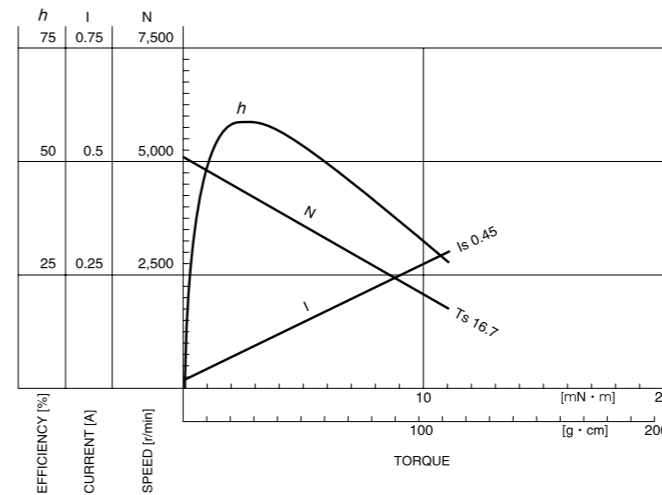
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



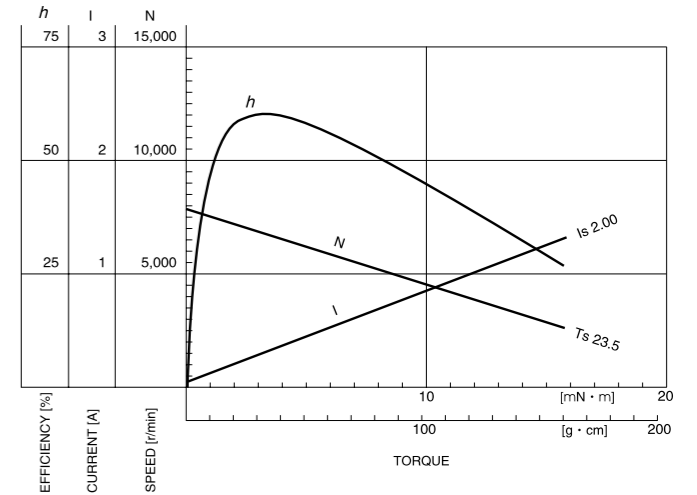
FRC-330NT-09500 4.5V



FRC-370NT-10800 24V



FRC-370NT-18260 12V





FRC-365GT

輸出功率:約1.0W~35W  
碳刷馬達

OUTPUT: APPROX1.0W~35W  
Carbon-brush motors

典型應用:  
家用電器:空氣壓縮機/按摩器/振動器

Typical Applications Household Appliances :  
Air Compressor / Massager / Vibrator



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-365GT-2650	3 ~ 12	12V CONSTANT	25500	0.40	20930	1.83	5.36	54.6	11.7	29.9	305	8.40

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRC-380ST

輸出功率:約1.0W~50W  
碳刷馬達

OUTPUT: APPROX1.0W~50W  
Carbon-brush motors

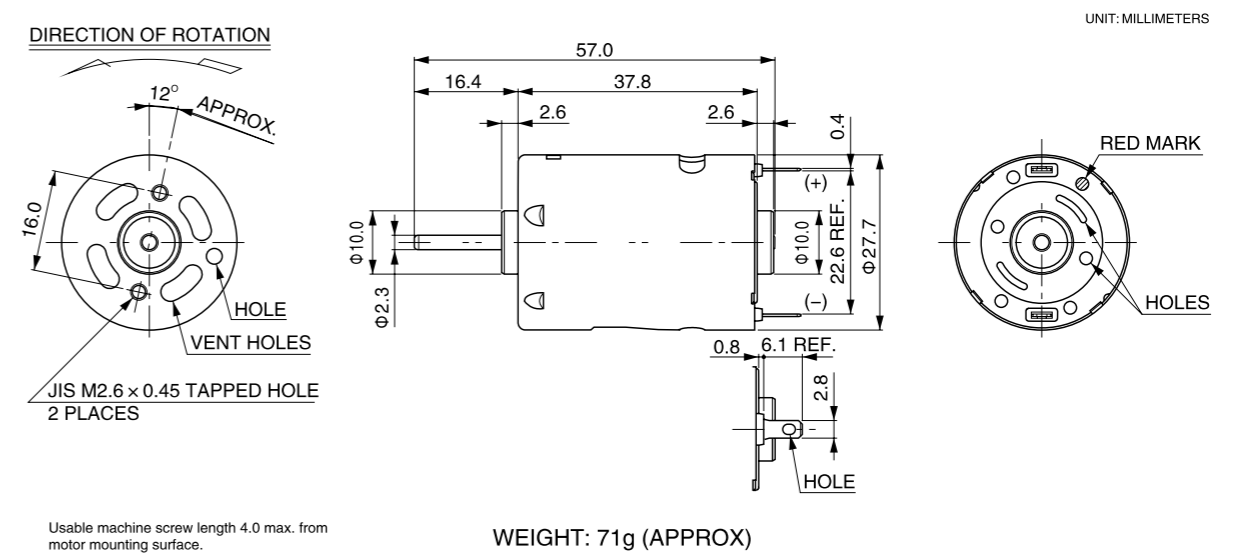
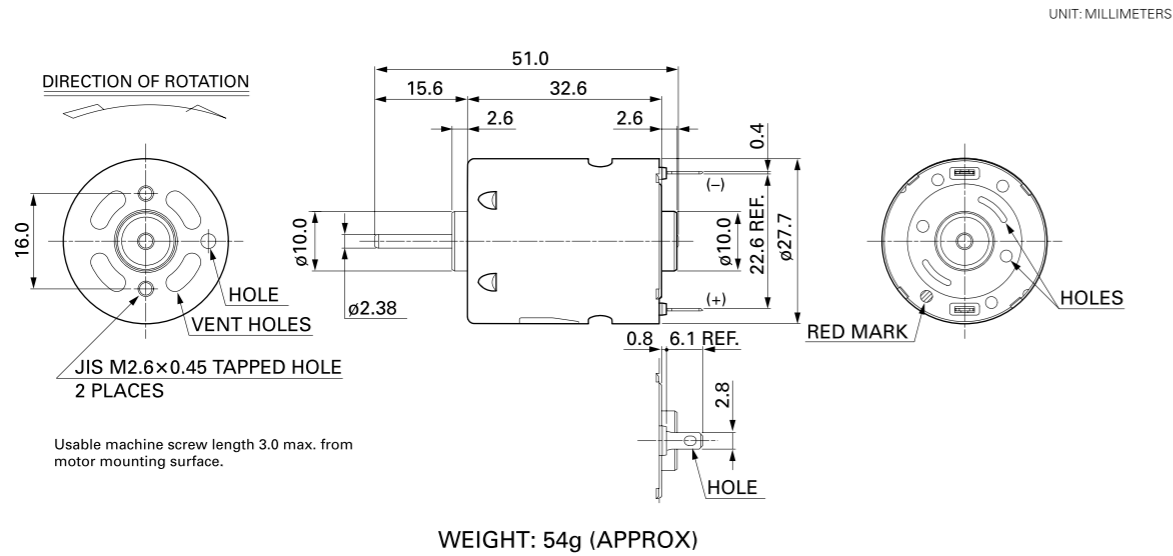
典型應用:  
家用電器:真空吸塵器,廚房器具  
電動工具:電鑽&起子

Typical Applications Household Appliances : Vacuum Cleaner  
Kitchen Appliance  
Cordless Power Tools : Drill & Screwdriver

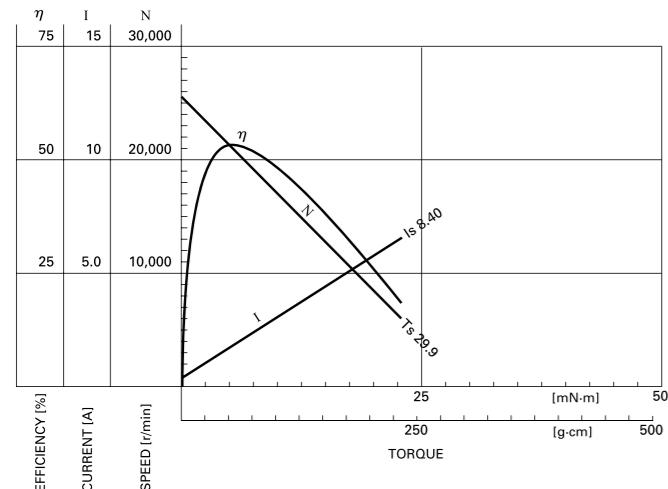


型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-380ST-4045	DC 3-9V	DC 7.2V	16200	0.50	14060	3.29	10.9	111	16.0	82.3	840	21.6
FRC-380ST-12300	DC 12-30V	DC 24V	8000	0.070	6540	0.31	6.27	63.9	4.29	34.3	350	1.40

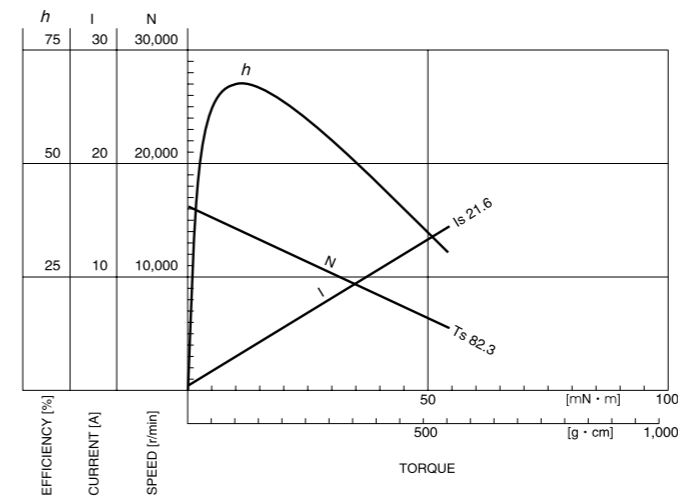
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



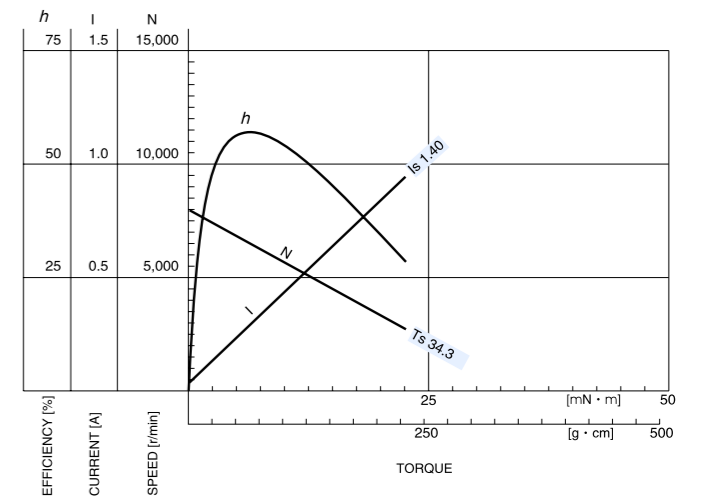
FRC-365GT-2650 12V



FRC-380ST-4045 7.2V



FRC-380ST-12300 24V



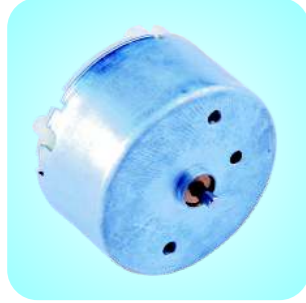


FRC-500NA

輸出功率:約0.03W~1.5W OUTPUT: APPROX 0.03W~1.5W  
碳刷馬達 carbon-brush motors

典型應用  
減速電機、電磁爐

Typical Applications Gear Motor,  
Electromagnetic oven



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-500NA-12560	DC 1.5-12.0V	DC 6V	2700	0.020	2180	0.084	1.13	11.6	0.26	5.88	60	0.35
		DC 9V	4000	0.023	3300	0.11	1.55	15.8	0.53	8.92	91	0.52
FRC-500NA-14415	DC 1.5-9.0V	DC 3V	1800	0.022	1430	0.085	0.82	8.4	0.12	4.02	41	0.33
		DC 6V	3700	0.028	3060	0.13	1.42	14.4	0.45	8.24	84	0.65

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRC-520NA

輸出功率:約0.03W~1.5W OUTPUT: APPROX 0.03W~1.5W  
碳刷馬達 carbon-brush motors

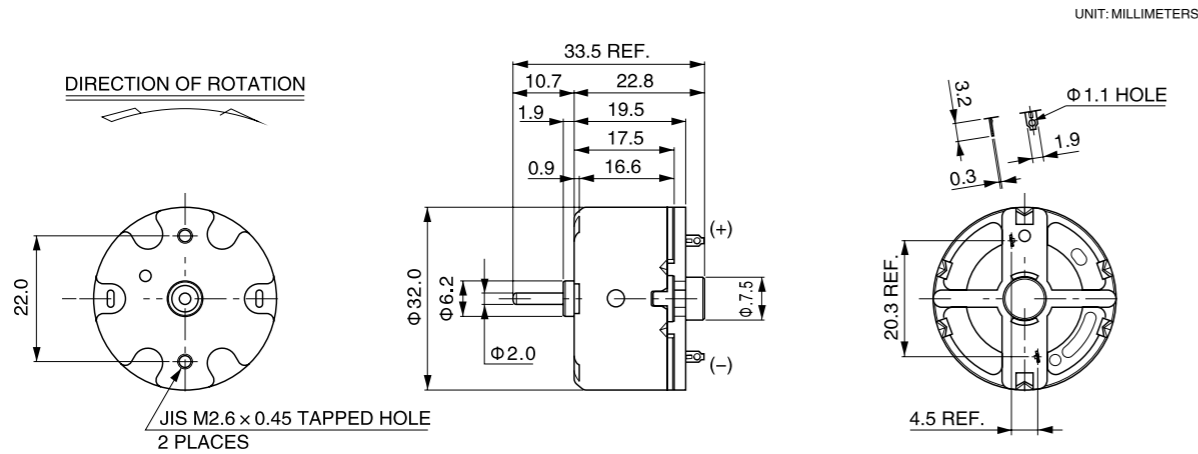
典型應用  
警鈴、電磁爐、工業用品

Typical Applications Alarm Bell, Electromagnetic oven  
Industrial Applications



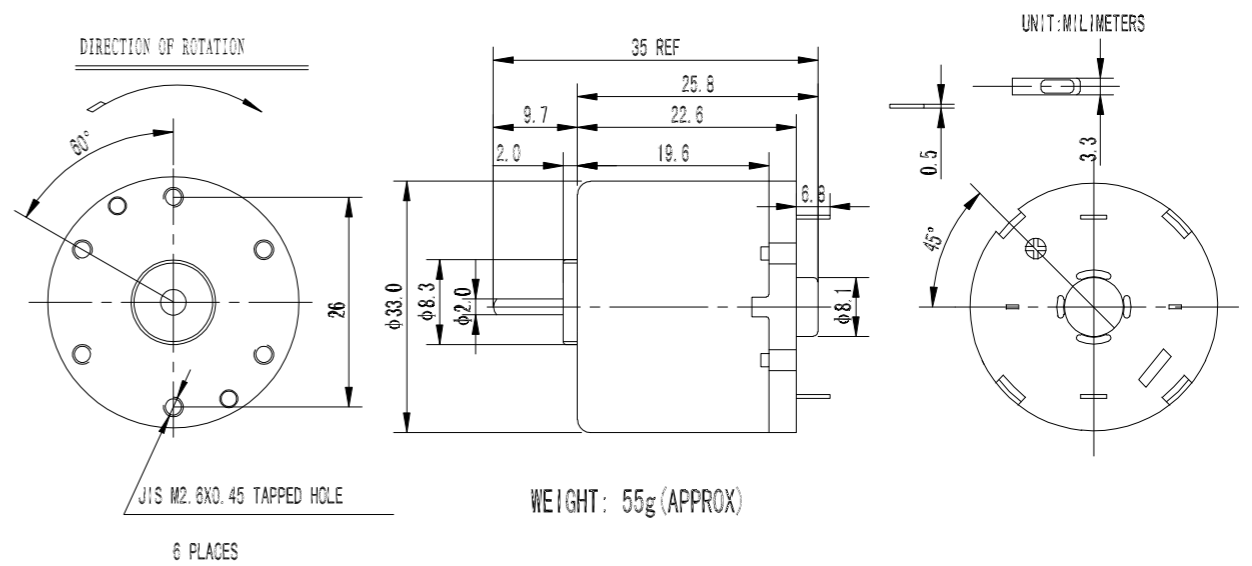
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-520NA-10700	6-24	12V CONSTANT	2650	0.015	1950	0.047	1.96	20	0.4	7.42	75.7	0.17

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

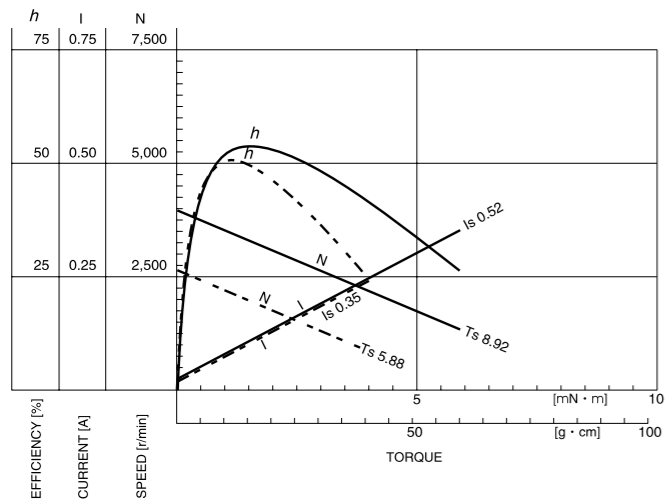


Usable machine screw length 1.5 max. from motor mounting surface.

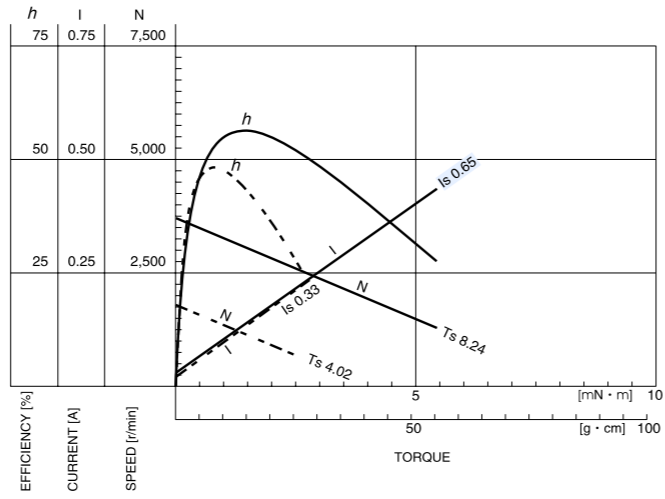
WEIGHT: 45g (APPROX)



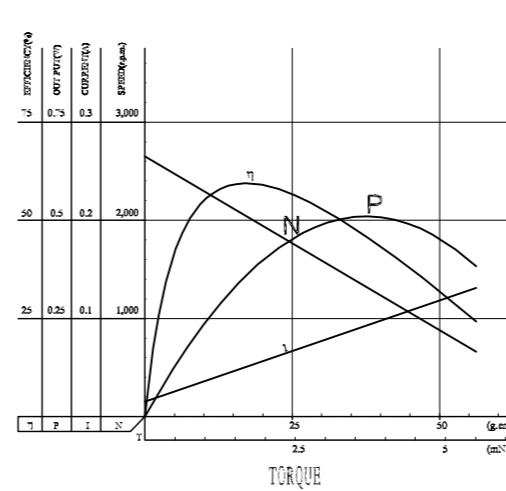
FRC-500NA-12560 6V-9V



FRC-500NA-14415 3V-6V



FRC-520NA-10700 12V



FRC-528NA

輸出功率:約0.3W~2W  
碳刷馬達

OUTPUT: APPROX 0.3W~2W  
carbon-brush motors

典型應用

點鈔機、復印機、自動售貨機

Typical Applications

Audio and Visual Equipments :  
CD Player/ Cassette Tape Recorder / VCR



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-528NA-14420	5-24	24V CONSTANT	8000	0.05	7300	0.135	1.96	20	1.49	22.4	228.5	1.3
FRC-528NA-2495	3-9	4.5V CONSTANT	6300	0.165	5500	0.45	1.96	20	1.12	15.43	157.5	3.8

馬達性能及轉軸長度可按客戶的需要設定。

Motor performance and rotating bearing can be set according to customer needs.

FRC-540GT/ST

輸出功率:約2W~65W  
碳刷馬達

OUTPUT: APPROX 2W~65W  
carbon-brush motors

典型應用

家用電器:真空吸塵器  
電動工具:空氣壓榨機,電鑽&起子,無線花園工具  
玩具和模型:無線控制模型

Typical Applications

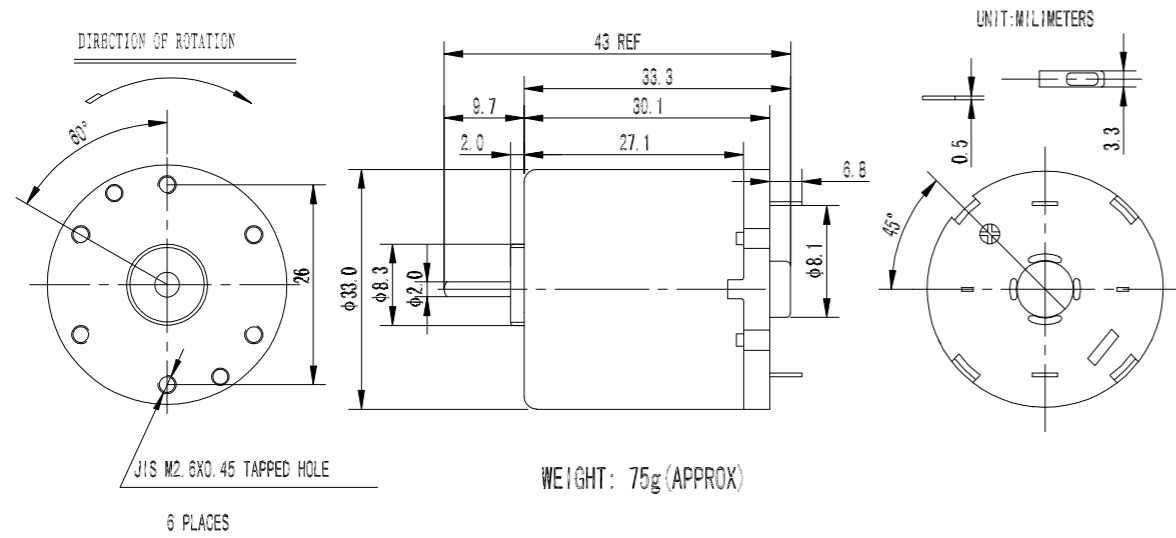
Household Appliances : Vacuum Cleaner  
Cordless Power Tools : Air Compressor  
Drill & Screwdriver / Cordless Garden Tool  
Toys and Models : Radio Control Model



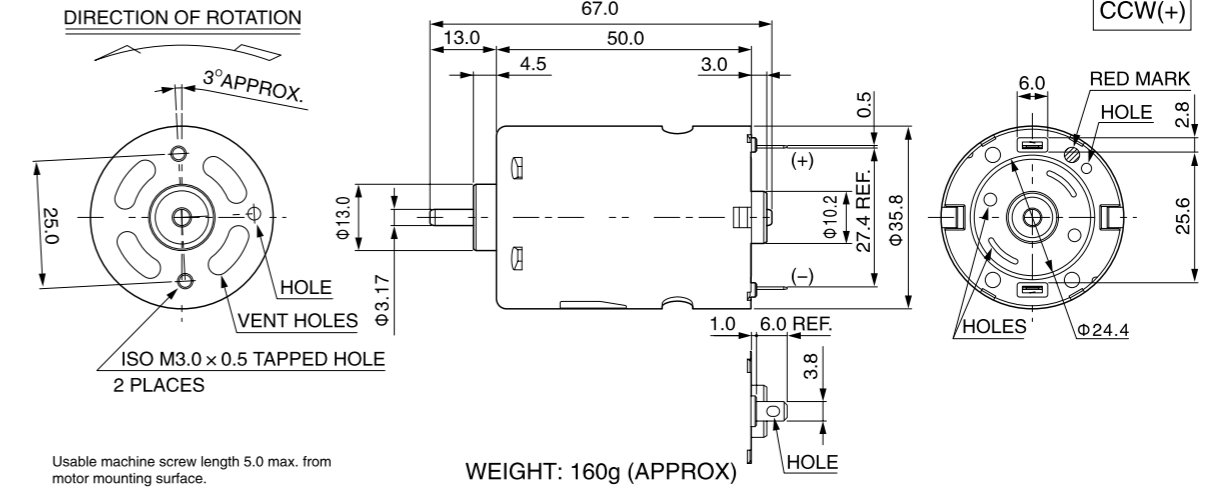
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-540GT-7516	DC 2.4-4.5V	DC 3.6V	20200	2.90	16310	12.2	15.1	154	25.8	78.5	800	51.0
FRC-540GT-5045	DC 4.5-9.6V	DC 6V	11600	0.82	9660	4.09	14.4	147	14.6	86.3	880	20.4
FRC-540GT-6035	DC 3.6-7.2V	DC 7.2V	9500	1.15	7700	4.91	12.3	125	9.88	64.7	660	21.0
FRC-540ST-5045	DC 4.5-12V	DC 12V	17500	0.95	15080	5.93	31.8	324	50.1	230	2350	37.0
FRC-540ST-7520	DC 3.6-7.2V	DC 4.8V	15400	2.00	13010	10.9	26.0	265	35.3	167	1700	59.0

馬達性能及轉軸長度可按客戶的需要設定。

Motor performance and rotating bearing can be set according to customer needs.



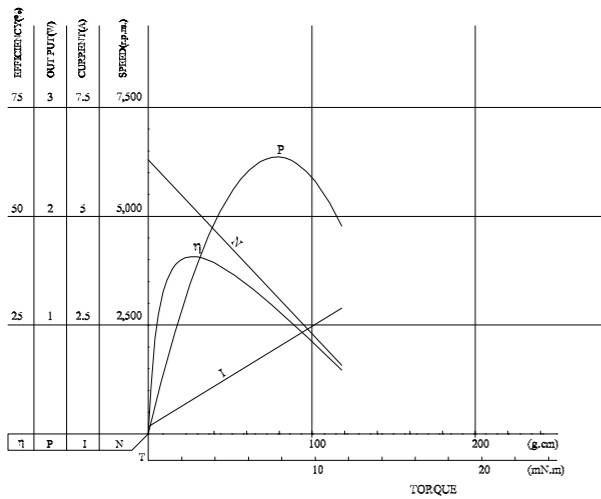
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.



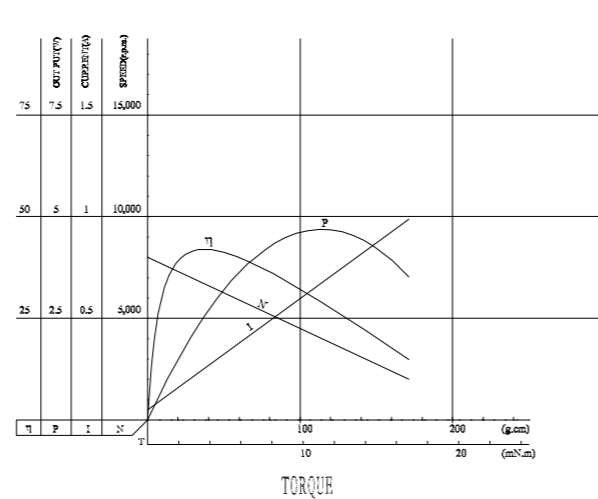
Usable machine screw length 5.0 max. from motor mounting surface.

WEIGHT: 160g (APPROX)

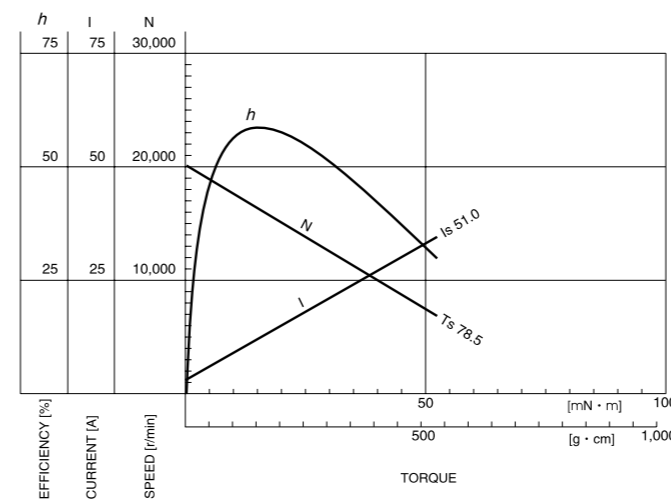
FRC-528NA-2495 4.5V



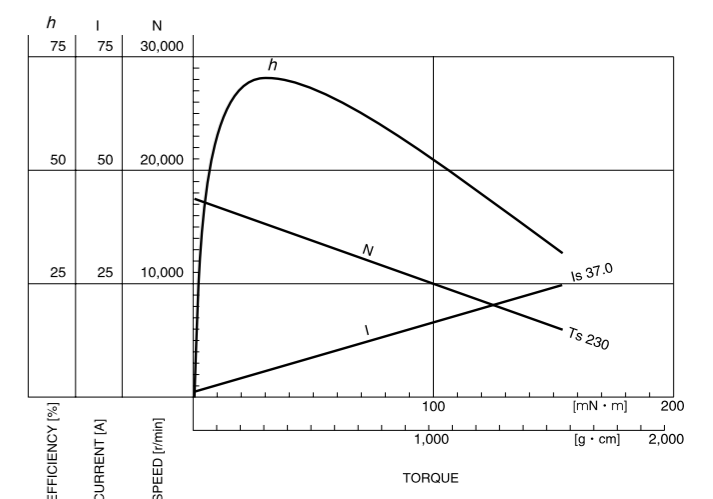
FRC-528NA-14420 24V



FRC-540GT-7516 3.6V



FRC-540ST-5045 12V



FRC-545GT/ST

輸出功率:約2W~60W  
碳刷馬達

OUTPUT: APPROX 2W~60W  
carbon-brush motors

典型應用  
家用電器:電吹風  
辦公自動化設備:打印機/復印機

Typical Applications Household Appliances :Hair Dryer / Massager  
Vibrator / Vacuum Cleaner / Bilge Pump  
Automotive Products :Automatic Cruise Control



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-545GT-4522	3.6 ~ 12.0	12V CONST. (CCW+)	27800	1.30	22940	6.14	19.4	198	46.5	111	1130	29.0
FRC-545ST-5018	4.5 ~ 12.0	12V CONST. (CCW+)	24000	1.30	20510	7.65	31.1	317	66.7	214	2180	45.0
FRC-545ST-18150	12 ~ 32	24V CONST. (CCW+)	5600	0.12	4560	0.53	16.4	167	7.82	88.2	900	2.30
FRC-545ST-22100	12 ~ 24	12V CONST. (CW+)	4200	0.16	3350	0.63	12.5	127	4.36	61.7	630	2.50

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FRC-550STP

輸出功率:約5W~120W  
碳刷馬達

OUTPUT: APPROX 5W~120W  
carbon-brush motors

典型應用  
電動工具:空氣壓縮機,電鑽&起子  
無線花園工具  
玩具和模型:騎乘玩具

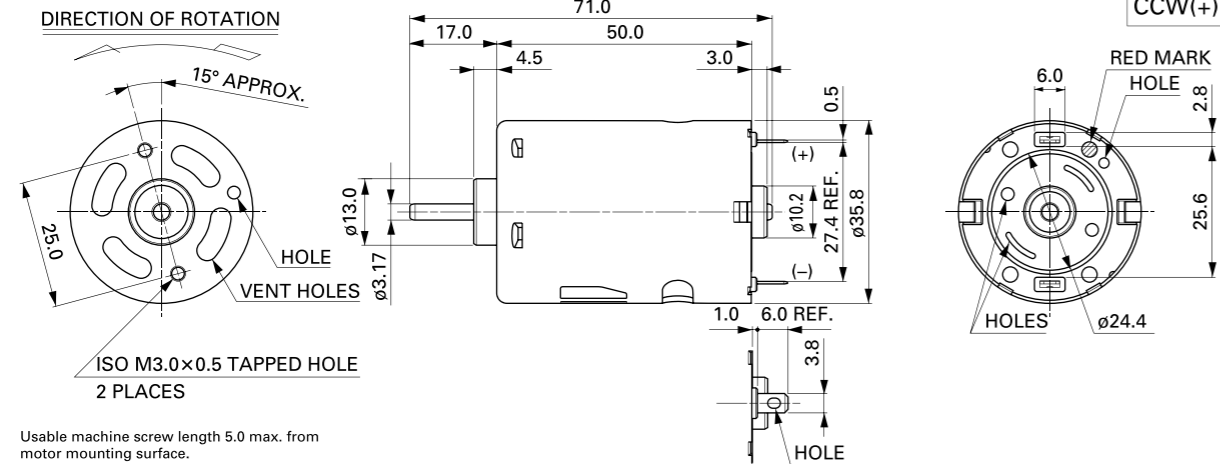
Typical Applications Cordless Power Tools : Drill & Screwdriver /  
Air Compressor / Cordless Garden Tool  
Toys and Models : Ride-on Toy



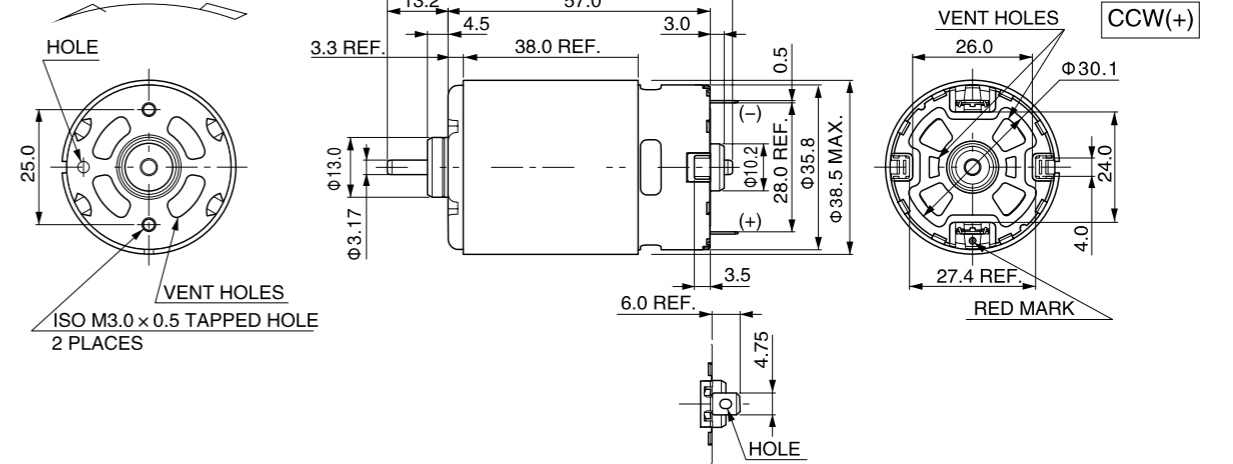
型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-550STP-7524	DC 6-12V	DC 12V	20600	1.35	18180	10.2	49.4	503	93.8	421	4300	76.5
FRC-550STP-7527	DC 6-14.4V	DC 14.4V	19800	1.30	17620	10.5	64.7	660	119	588	6000	85.0

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

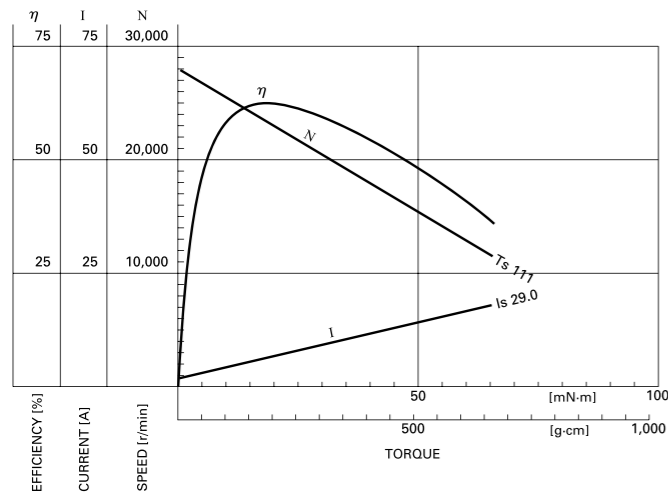
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.



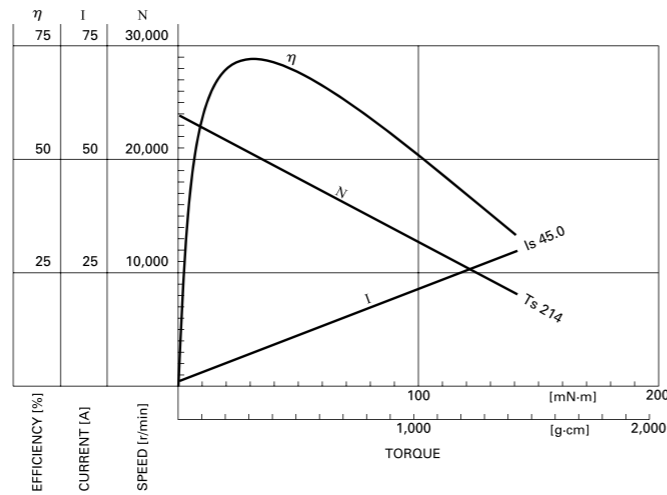
DIRECTION OF ROTATION



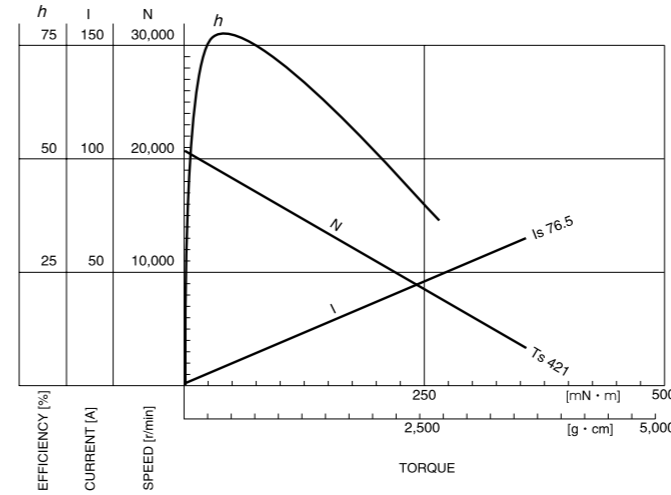
FRC-545GT-4522 12V



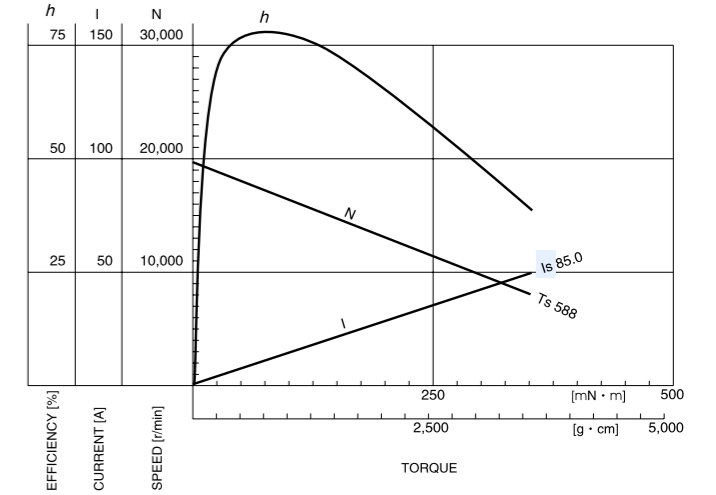
FRC-545ST-5018 12V



FRC-550STP-7524 12V



FRC-550STP-7527 14V





FRC-775STP

輸出功率:約40W~200W  
碳刷馬達  
OUTPUT: APPROX 40W~200W  
carbon-brush motors

典型應用  
辦公自動化設備:打印機

Typical Applications Cordless Power Tools :  
Drill & Screwdriver / Cordless Garden Tool  
Toys and Models :Ride-on Toy



型號 MODEL	電壓 VOLTAGE		無負荷 NO LOAD		最大效率點 AT MAXIMUM EFFICIENCY				起動 STALL			
	使用範圍 OPERATING RANGE	額定值 NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	轉矩 TORQUE		功率 OUTPUT	轉矩 TORQUE		電流 CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FRC-775STP-8015	6 ~ 20	16.8V CONSTANT	18000	2.60	15630	17.1	135	1375	220	1024	10450	113
FRC-775STP-8514	6 ~ 20	18V CONSTANT	19500	2.70	17040	18.7	153	1560	273	1215	12400	130

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FE-520NT

輸出功率:約0.1W~0.2W  
電子調速電動機  
OUTPUT: APPROX 0.1W~0.2W  
carbon-brush motors

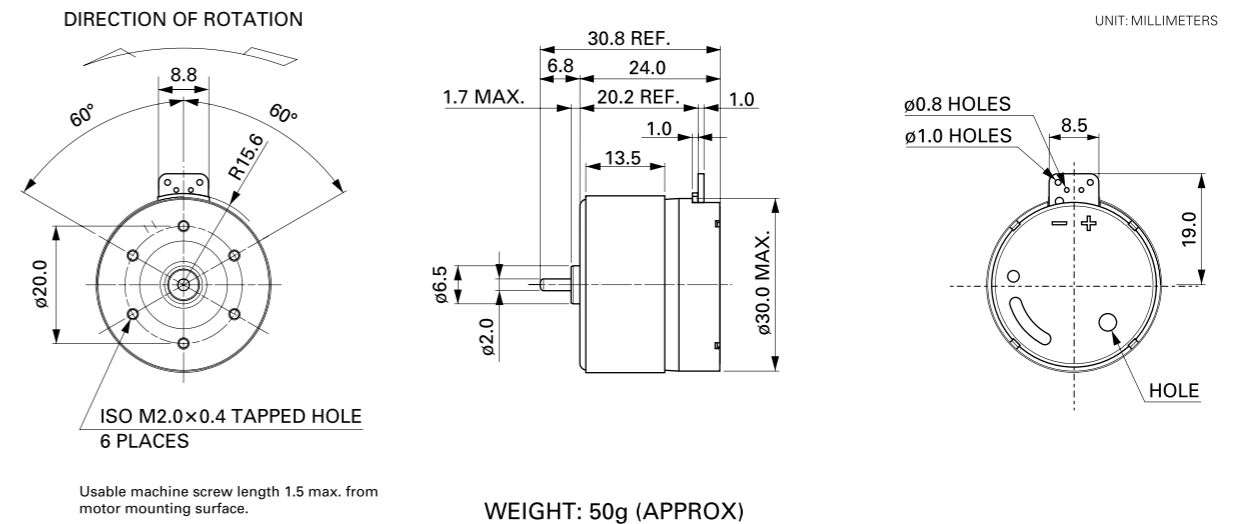
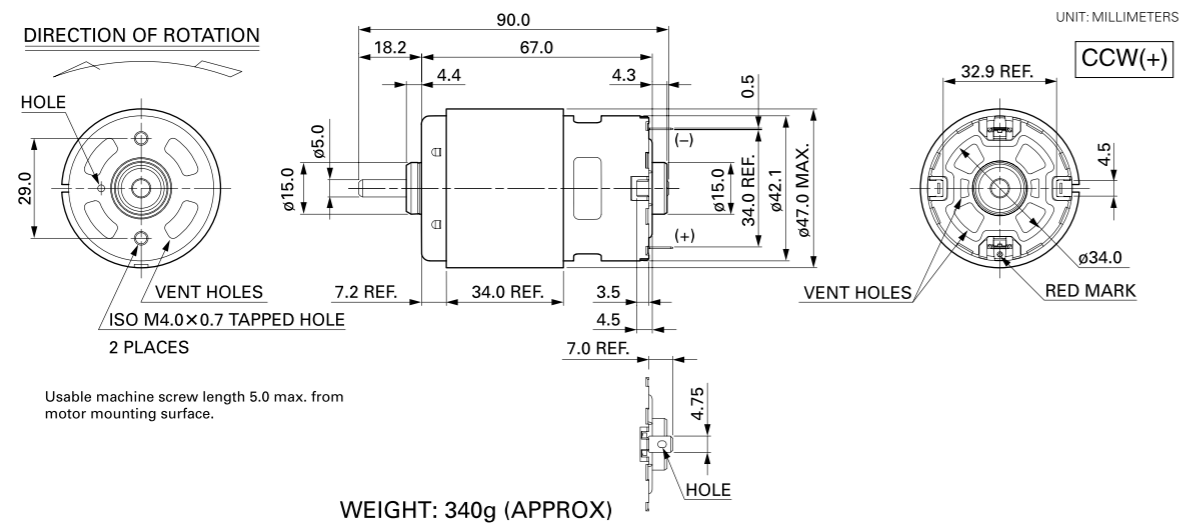
典型應用  
視聽設備  
汽車磁帶錄音機

Typical Applications Audio and Visual Equipments :  
Car Cassette Tape Recorder

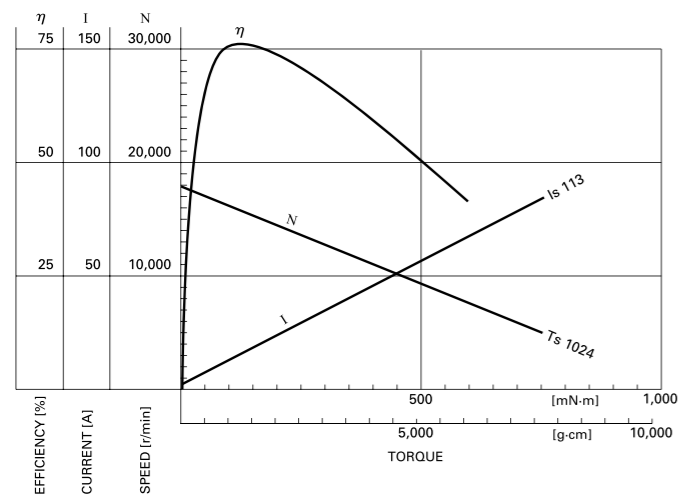


型號 MODEL	額定電壓 RATED VOLTAGE	工作電壓 WORKING VOLTAGE	額定負荷 RATED LOAD		額定轉速 RATED SPEED	額定電流 RATED LOAD CURRENT	負荷流動(典型值) LOAD FLUCTUATION(TYP)	起動轉矩(最小) STARTING TORQUE (MIN)	
	V	V	mN·m	g·cm	r/min	mA(TYP)	r/min / g·cm	mN·m	g·cm
FE-520NT-3B	13.2	8.4 ~ 16.0	0.98	10	2400 ± 2%	74	2.5	5.8at8.4V	60at8.4V

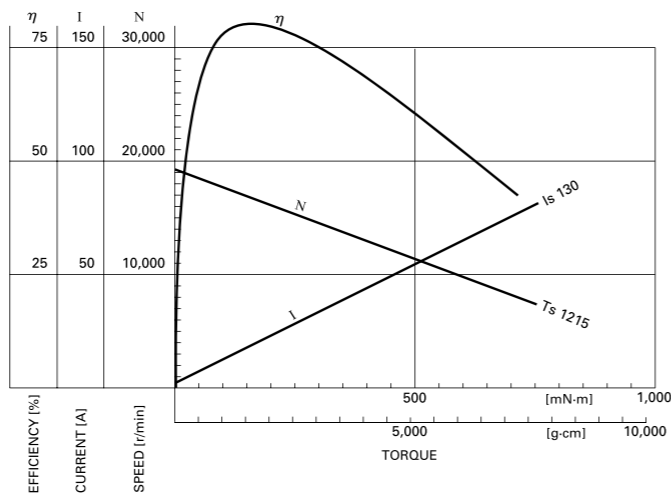
馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



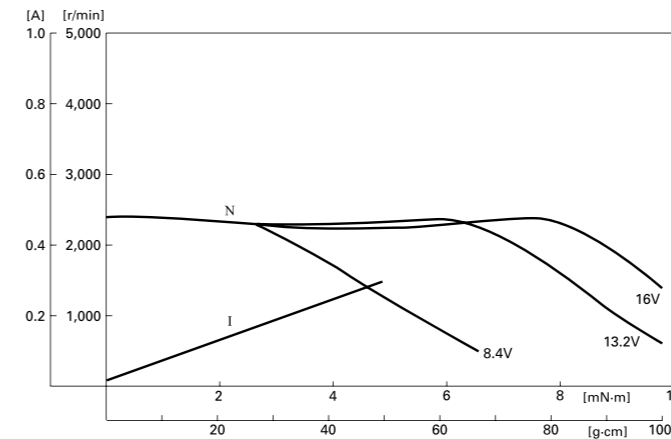
FRC-775STP-8015 16.8V



FRC-775STP-8514 18V



FE-520NT-3B 8.4V/13.2/16V



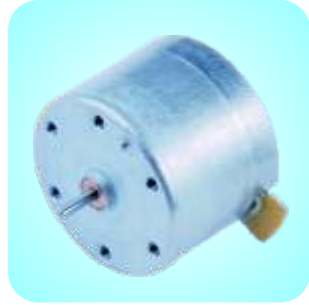
FE-530NT

輸出功率:約0.1W~0.2W  
電子調速電動機

OUTPUT: APPROX 0.1W~0.2W  
carbon-brush motors

典型應用  
視聽設備  
汽車磁帶錄音機

Typical Applications Audio and Visual Equipments :  
Car Cassette Tape Recorder



型號 MODEL	額定電壓	工作電壓	額定負荷		額定轉速	額定電流	負荷流動(典型值)	起動轉矩(最小)	
	RATED VOLTAGE V	WORKING VOLTAGE V	mN · m	g · cm	r/min	mA(TYP)	r/min / g · cm	mN · m	g · cm
FE-530NT-6F(16B)	6	4.2 ~ 7.5	0.78	8.0	2400 ± 2%	132	9.0	3.72at4.2V	38at4.2V
FE-530NT-9F(9B)	9	6 ~ 11	0.78	8.0	2400 ± 2%	92	9.0	4.90at6.0V	50at6.0V
FE-530NT-2F(2B)	12	8.4 ~ 15.0	0.78	8.0	2400 ± 2%	73	9.0	5.88at8.4V	60at8.4V

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

FE-530NTP

輸出功率:約0.1W~0.2W  
電子調速電動機

OUTPUT: APPROX 0.1W~0.2W  
carbon-brush motors

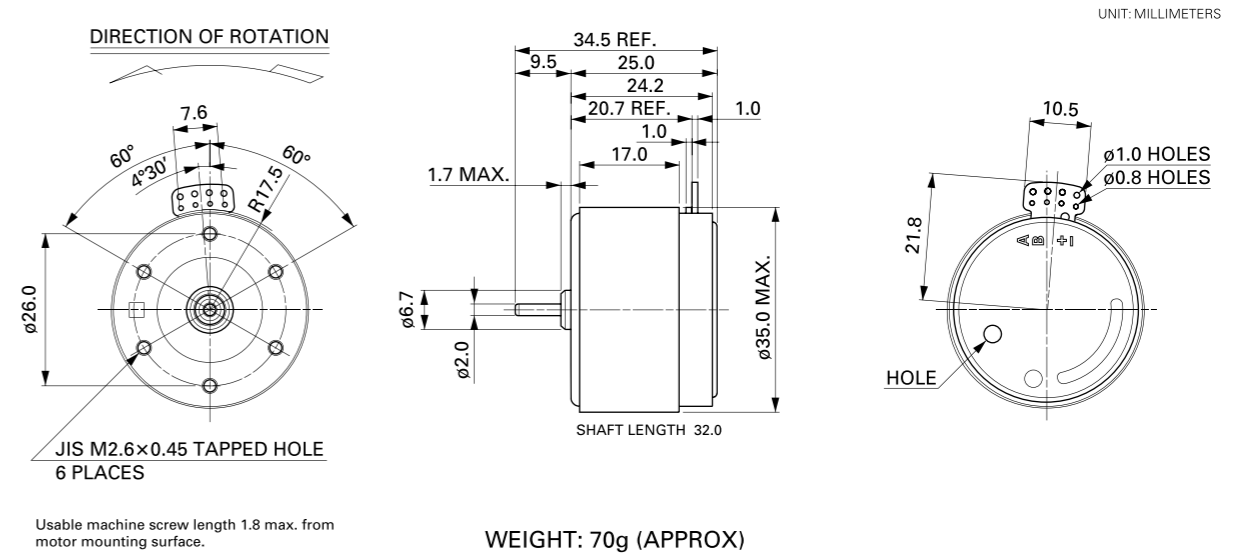
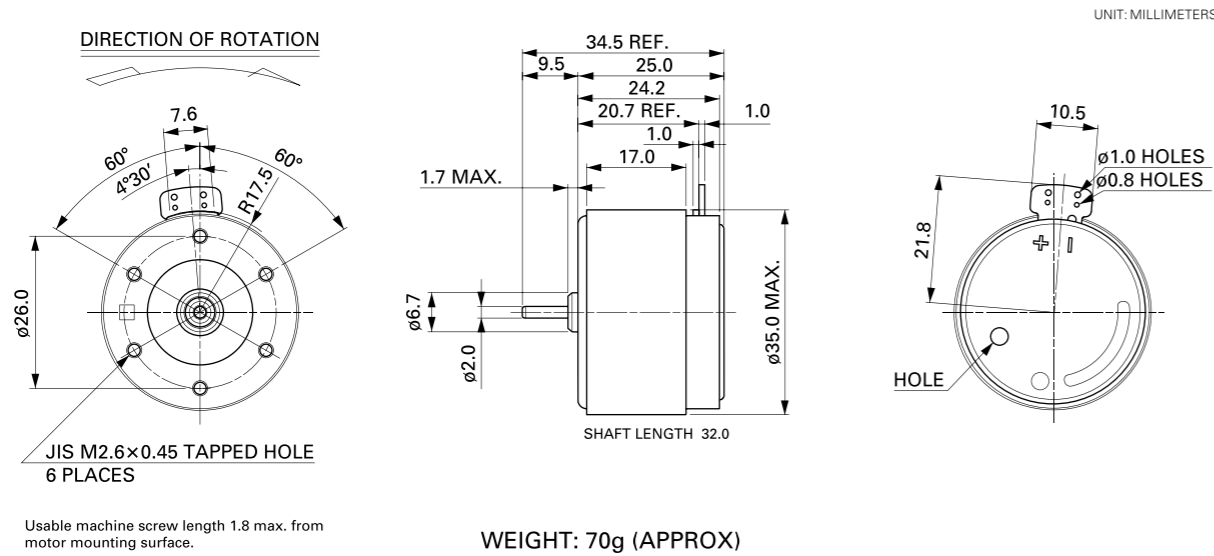
典型應用  
視聽設備  
汽車磁帶錄音機

Typical Applications Audio and Visual Equipments :  
Car Cassette Tape Recorder



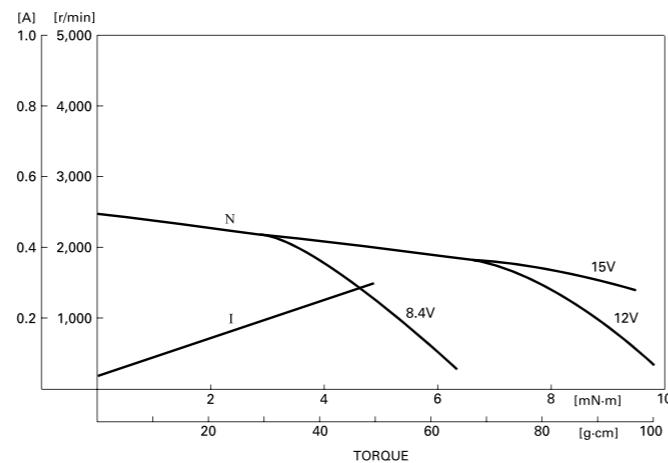
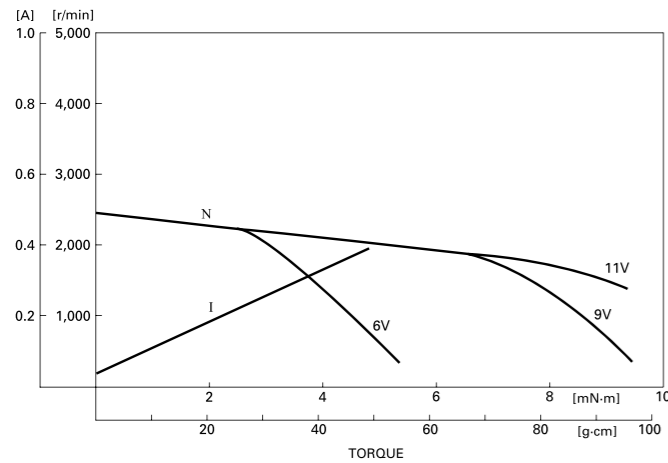
型號 MODEL	額定電壓	工作電壓	額定負荷		額定轉速	額定電流	負荷流動(典型值)	起動轉矩(最小)	
	RATED VOLTAGE V	WORKING VOLTAGE V	mN · m	g · cm	r/min	mA(TYP)	r/min / g · cm	mN · m	g · cm
FE-530NTP-9BH	9	6.3 ~ 11.7	0.98	10	2000	128	1.5	4.90	50
					4000	140	4.0		
FE-530NTP-2BH	12	8.4 ~ 15.6	0.98	10	2000	99	1.5	5.39	55
					4000	108	4.0		

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



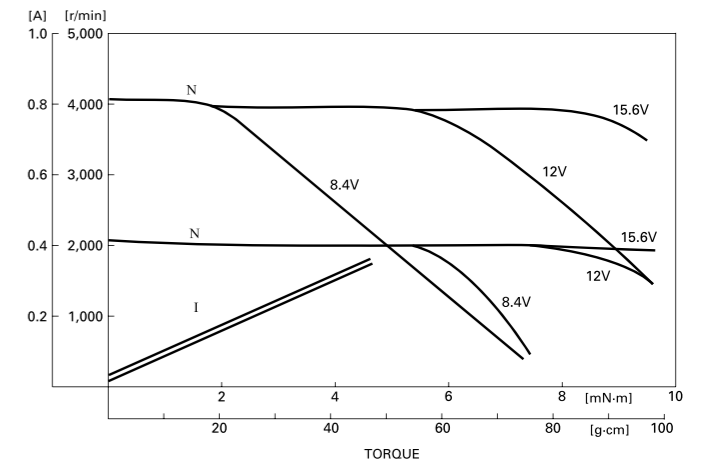
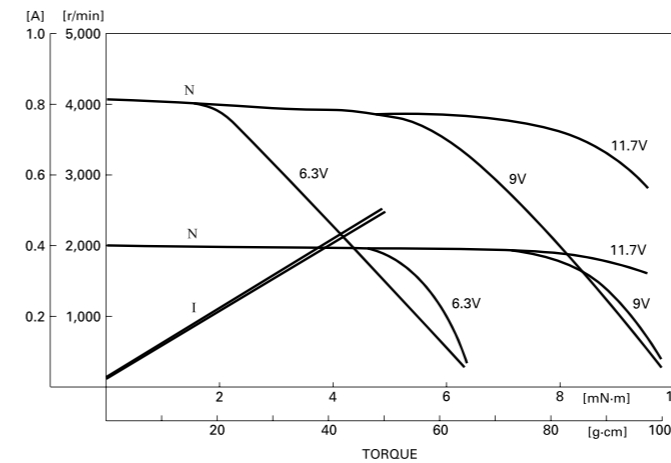
FE-530NT-9F(9B) 6V/9V/11V

FE-530NT-2F(2B) 8.4V/12V/15V



FE-530NTP-9BH 6.3V/9V/11.7V

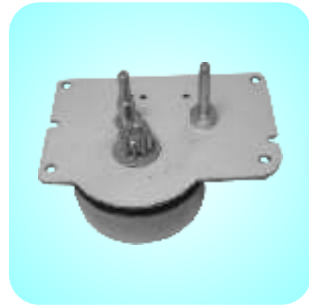
FE-530NTP-2BH 8.4V/12V/15.6V



FLT-29B

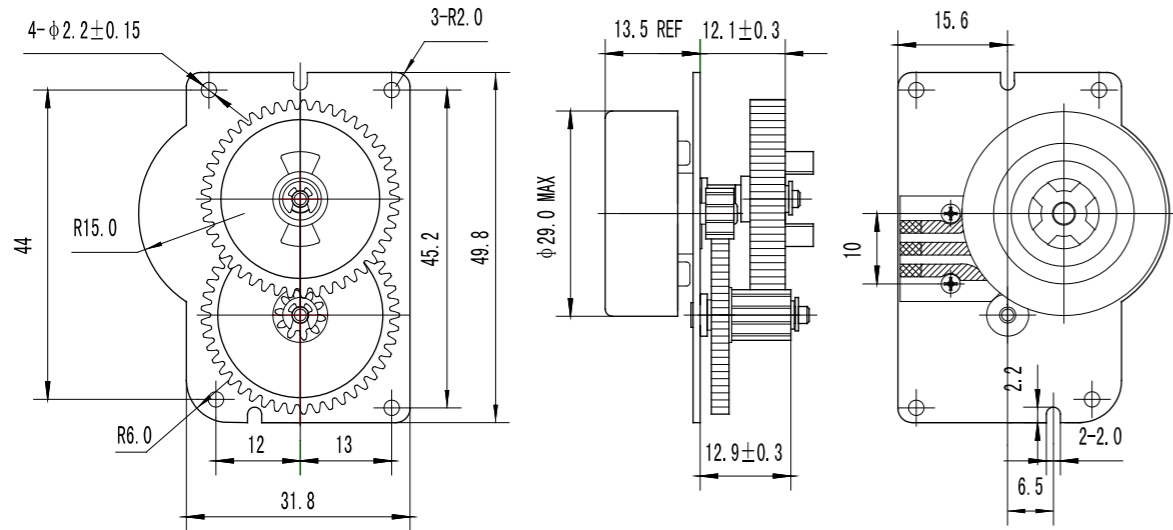
輸出功率:約0.5W~8.0W  
OUTPUT: APPROX 0.5W~8.0W

典型應用  
應急環保電器  
手搖充電器/應急電源盒  
手搖手電筒/應急電燈  
手搖收音機/手搖收錄機及相關手搖電器玩具



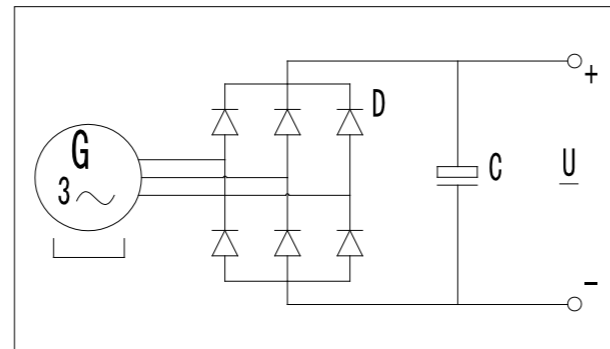
型號 MODEL	額定轉速 SPEED	輸出電壓 Output voltage	輸出電流 Output current	相數 Phases	旋轉方向 Rotation direction
	r/min	V	mA	m	CW/CCW
FLT-29B-01	3000	8	300	3	CW/CCW
FLT-29B-02	3000	10	250	3	CW/CCW
FLT-29B-03	3000	12	180	3	CW/CCW

馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.



使用說明:

1、本系列發電機主要適用於對小型蓄電池進行充電，因此用該電機時需要將交流電轉化為直流電，需要對其進行整流濾波，其電路原理圖如：



圖中 G:發電機,其輸出三根導線不分相序,可隨間與D相接;  
D:二極管,可選IN4001(推薦);  
C:電解電容器,其容量在470uF-2000uF/16V選取;

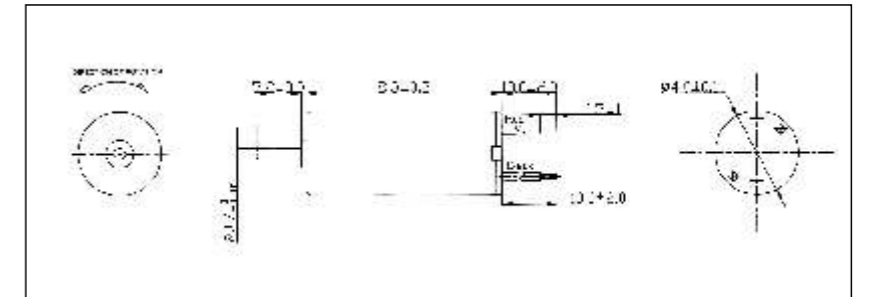
2、電機主軸齒輪數 $z = 10$ , 齒輪模數 $m = 0.6$ , 壓力角 $\alpha = 20^\circ$   
3、當電機噪音增大時,可在電機齒輪上加入齒輪潤滑油。

FRK-4L8



Typical Applications Mobile Telephone  
Motor Toy

MOTOR OUTLINE (UNIT:MILLIMETERS)

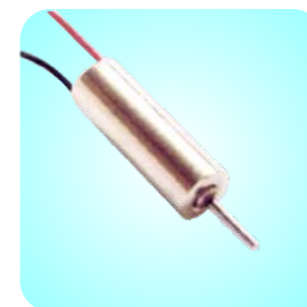


馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

MOTOR TECHNICAL DATA

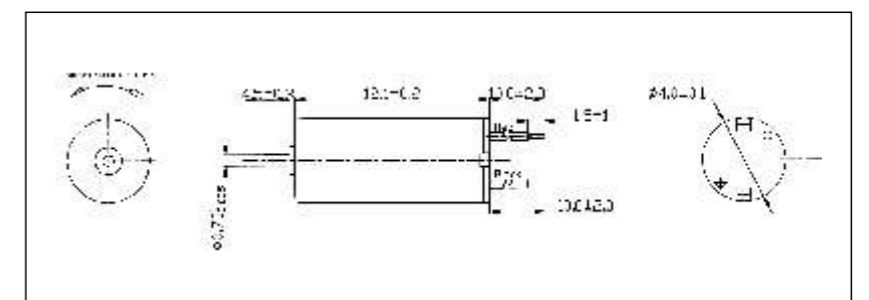
型號 MODEL	電壓 VOLTAGE	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY		堵轉STALL
	NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	電流 CURRENT
	V	r/min	A	r/min	A	A
FRK-4L8-3884	3.0	54000	0.09	12400	0.18	0.22

FRK-4L12



Typical Applications Motor Toy  
Mobile Toothbrush  
Aviation Aerial Model

MOTOR OUTLINE (UNIT:MILLIMETERS)



馬達性能及轉軸長度可按客戶的需要設定。  
Motors specification and shaft length can be tailor-made according to customer's requirements.

MOTOR TECHNICAL DATA

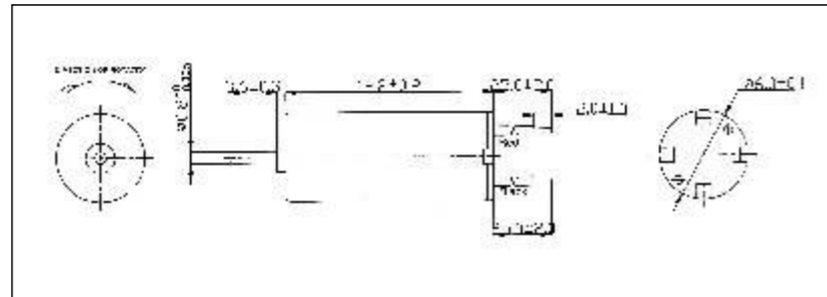
型號 MODEL	電壓 VOLTAGE	空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY		堵轉STALL
	NOMINAL	轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	電流 CURRENT
	V	r/min	A	r/min	A	A
FRK-4L12-5065	3.0	52600	0.05	22800	0.22	0.35

FRK-6L12



**Typical Applications** Motor Toothbrush  
Remedy Apparatus  
Micro Electrical Appliances  
Aviation Aerial Model

MOTOR OUTLINE (UNIT:MILLIMETERS)



馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

MOTOR TECHNICAL DATA

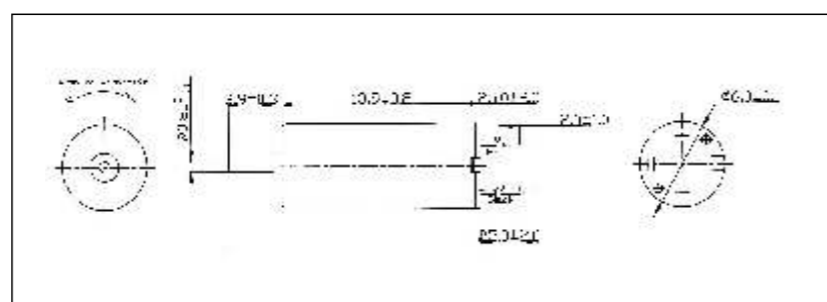
型號 MODEL	電壓 VOLTAGE		空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY		堵轉STALL
	NOMINAL		轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	電流 CURRENT
	V		r/min	A	r/min	A	A
FRK-6L12-6538	3.0		31700	0.06	25100	0.16	0.52

FRK-6L14



**Typical Applications** Motor Toothbrush  
Remedy Apparatus  
Micro Electrical Appliances  
Aviation Aerial Model

MOTOR OUTLINE (UNIT:MILLIMETERS)



馬達性能及轉軸長度可按客戶的需要設定。  
Motors specification and shaft length can be tailor-made according to customer's requirements.

MOTOR TECHNICAL DATA

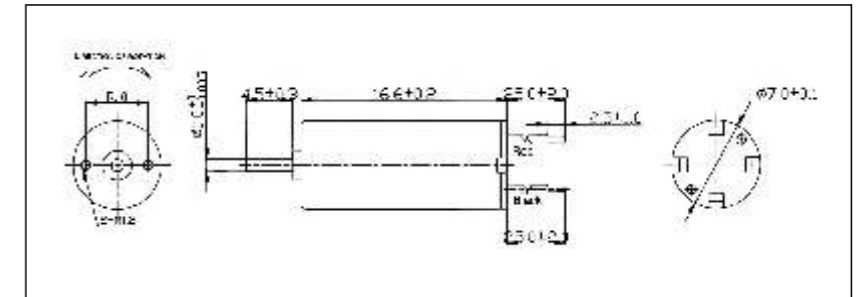
型號 MODEL	電壓 VOLTAGE		空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY		堵轉STALL
	NOMINAL		轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	電流 CURRENT
	V		r/min	A	r/min	A	A
FRK-6L14-9029	3.7		48800	0.07	3100	0.45	1.2

FRK-7L17



**Typical Applications** Motor Toothbrush  
Remedy Apparatus  
Micro Electrical Appliances  
Aviation Aerial Model

MOTOR OUTLINE (UNIT:MILLIMETERS)



馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

MOTOR TECHNICAL DATA

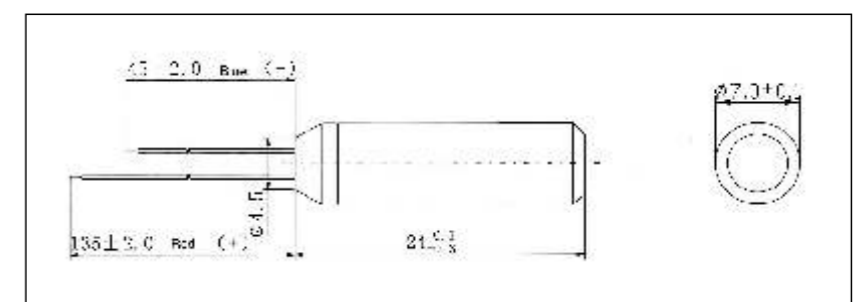
型號 MODEL	電壓 VOLTAGE		空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY		堵轉STALL
	NOMINAL		轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	電流 CURRENT
	V		r/min	A	r/min	A	A
FRK-7L17-11023	3.7		43000	0.08	1620	0.57	1.78

FRK-7L24



**Typical Applications** Mobile Toothbrush

MOTOR OUTLINE (UNIT:MILLIMETERS)



馬達性能及轉軸長度可按客戶的需要設定。  
Motors specification and shaft length can be tailor-made according to customer's requirements.

MOTOR TECHNICAL DATA

型號 MODEL	電壓 VOLTAGE		空載 NO LOAD		負載 AT MAXIMUM EFFICIENCY		堵轉STALL
	NOMINAL		轉速 SPEED	電流 CURRENT	轉速 SPEED	電流 CURRENT	電流 CURRENT
	V		r/min	A	r/min	A	A
FRK-7L24-F529	1.5		20000	0.05	13200	0.16	0.35

## 微型空心杯振動電機結構 Structure of Micro Coreless Vibration Motor

固定安裝形式 Mode of Fixed Installation.

功能Function

將電機本體與所有應用產品(如移動電話)安裝固定。  
Fix the motor to different application (e.g. Mobile phone)



基本結構Basic Structure

功能Function

將電能轉換為動能，并由軸帶動偏心錘轉動，產生振動。  
Convert electrical energy to kinetic energy. Motor shaft turns the eccentric weight

Fix

電源連接形式

Mode of Power Connection

功能Function

實現與外部電源連接。  
Connect to external power supply.



## 微型扁平振動電機結構 Structure of Micro Flat Vibration Motor

固定安裝形式 Mode of Fixed Installation.

功能Function

將電機本體與所有應用產品(如移動電話)安裝固定。  
Fix the motor to different application (e.g. Mobile phone)



基本結構Basic Structure

功能Function

將電能轉換為動能，并由軸帶動偏心錘轉動，產生振動。  
Convert electrical energy to kinetic energy. Motor shaft turns the eccentric weight to rotate and produces Vibration.

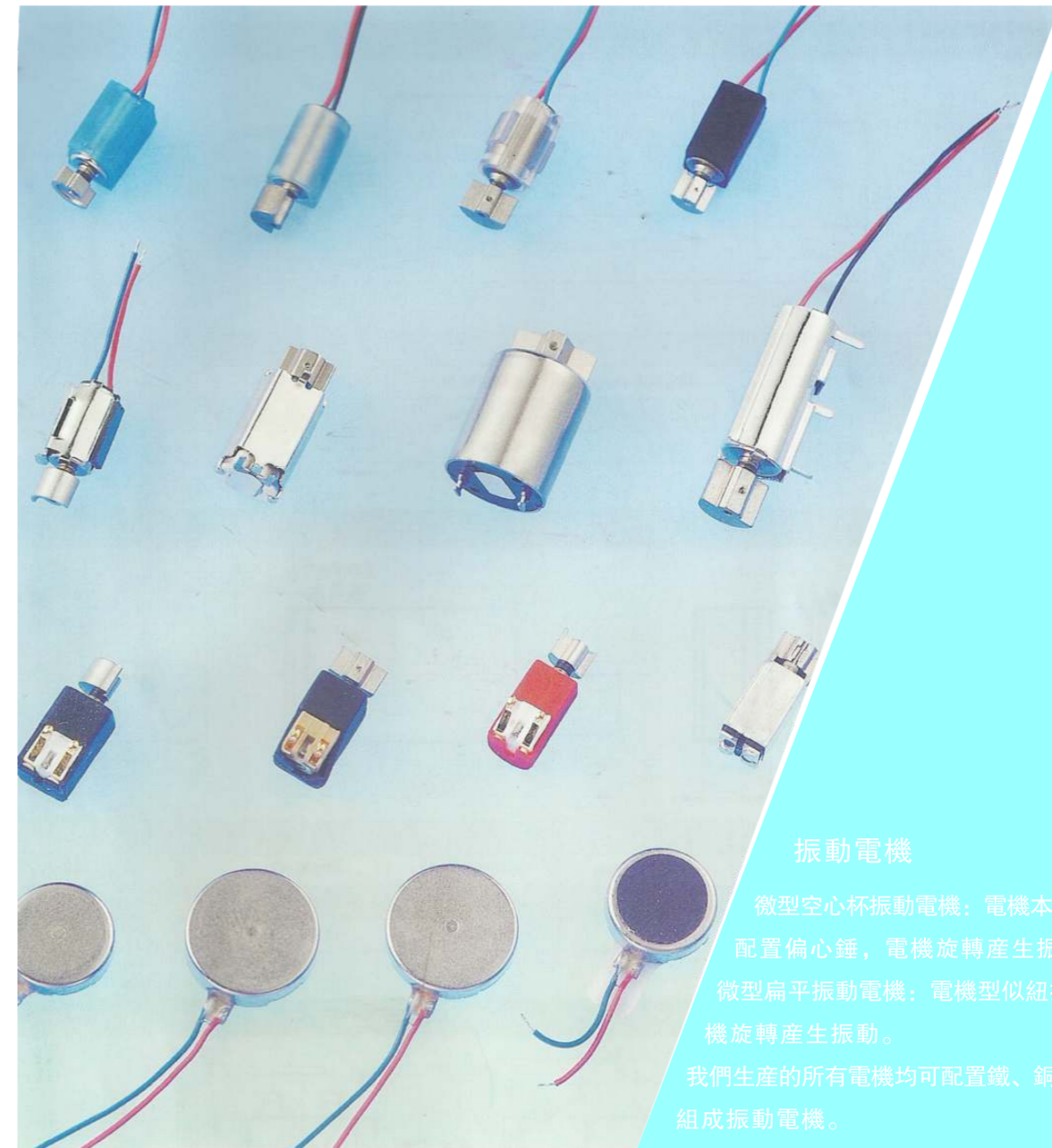


電源連接形式

Mode of Power Connection

功能Function

實現與外部電源連接。  
Connect to external power supply.



振動電機

微型空心杯振動電機：電機本體采用空心杯結構，配置偏心錘，電機旋轉產生振動。

微型扁平振動電機：電機型似鈕扣，內置偏心錘，電機旋轉產生振動。

我們生產的所有電機均可配置鐵、銅、鎢材質的偏心錘組成振動電機。

## Vibration Motor

Micro Coreless Vibration Motor: Coreless construction and mouted with eccentric weight. Vibration is produced under motor rotation.

Micro Flat Vibration Motor: Coin-type design with internal eccentric weight. Vibration is produced under motor rotation.

All our motor series can become vibration motor when mounted with eccentric weight which be made of iron brass or wolfram.

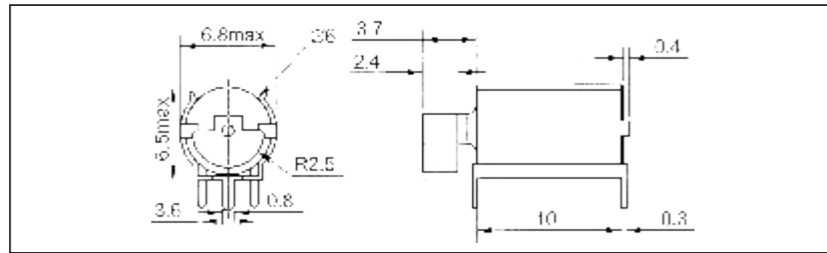




FRK-4C105-H055



MOTOR OUTLINE (UNIT:MILLIMETERS)

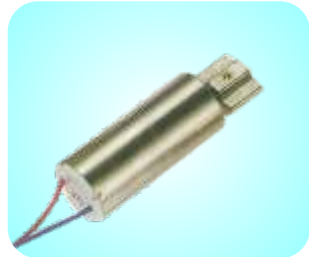


馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

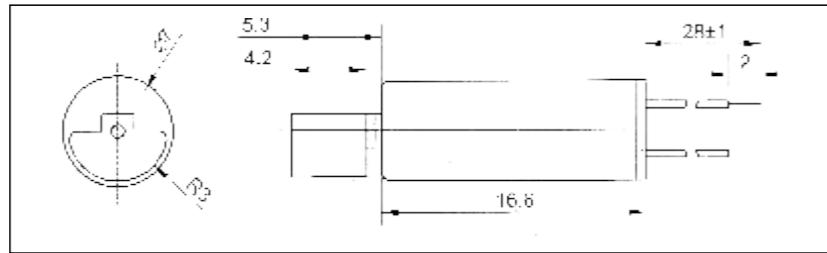
MOTOR TECHNICAL DATA

型號 MODEL	電壓 VOLTAGE	起動電壓 STARTING VOLTAGE	額定轉速 RATED SPEED	額定電流 RATED CURRENT	堵轉STALL		端電阻 TERMINAL RESISTANCE	適用電壓 OPERATING VOLTAGE	重量 WEIGHT
	NOMINAL	NOMINAL			電流 CURRENT	Ω			
	V	V							
FRK-4C105-H055	3.0	2.0	11000±2500	85	135	24	2.0-3.6	2	

FRK-6A1-J032



MOTOR OUTLINE (UNIT:MILLIMETERS)



馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

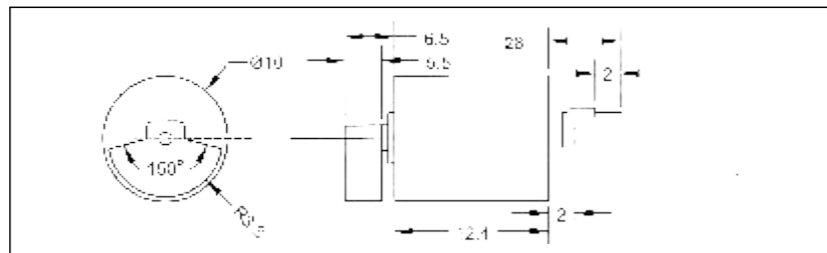
MOTOR TECHNICAL DATA

型號 MODEL	電壓 VOLTAGE	起動電壓 STARTING VOLTAGE	額定轉速 RATED SPEED	額定電流 RATED CURRENT	堵轉STALL		端電阻 TERMINAL RESISTANCE	適用電壓 OPERATING VOLTAGE	重量 WEIGHT
	NOMINAL	NOMINAL			電流 CURRENT	Ω			
	V	V							
FRK-6A1-J032	3.0	2.0	8000±1000	85	140	22	2.0-3.6	4	

FRK-6C101-J037



MOTOR OUTLINE (UNIT:MILLIMETERS)

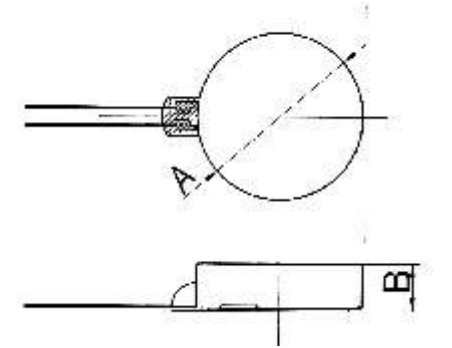
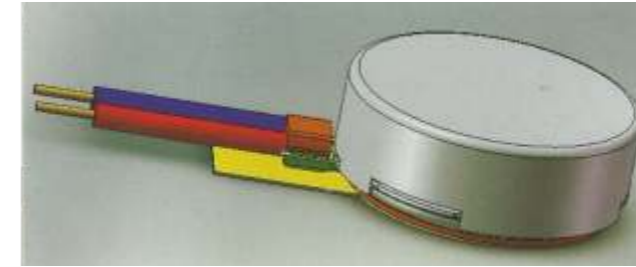


馬達性能及轉軸長度可按客戶的需要設定。  
Motor performance and rotating bearing can be set according to customer needs.

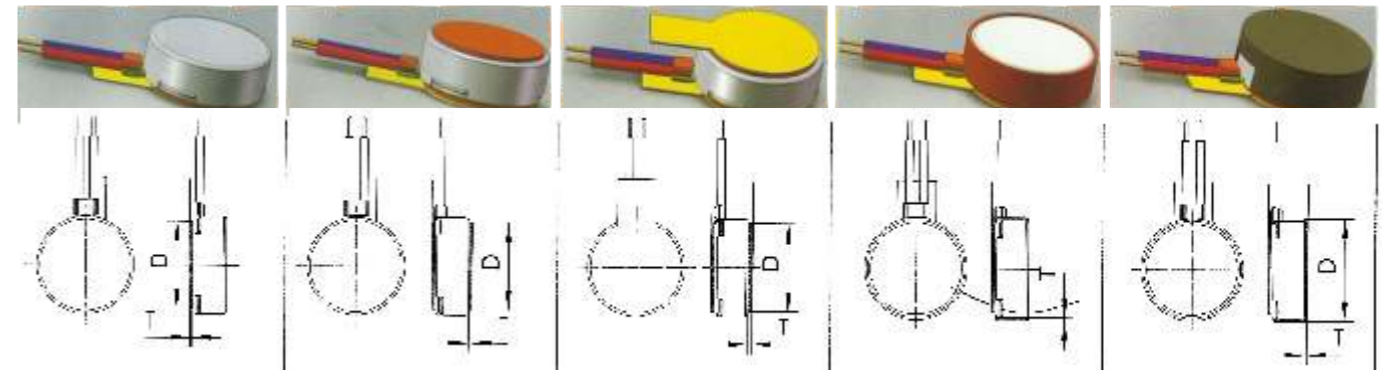
MOTOR TECHNICAL DATA

型號 MODEL	電壓 VOLTAGE	起動電壓 STARTING VOLTAGE	額定轉速 RATED SPEED	額定電流 RATED CURRENT	堵轉STALL		端電阻 TERMINAL RESISTANCE	適用電壓 OPERATING VOLTAGE	重量 WEIGHT
	NOMINAL	NOMINAL			電流 CURRENT	Ω			
	V	V							
FRK-6C101-J037	3.0	2.0	5000±1000	80	177	18.2	2.0-3.6	5.4	

微型扁平振動電機  
Micro Flat Vibration Motor



電機參數 Motor Model							
電機型號 Motor Model	1020	1027	1030	1034A	1226	1234	
尺寸規格 Dimension							
1 直徑 Dimension	mm	10	10	10	10	12	12
2 厚度 Thickness	mm	2	2.7	3	3.4	2.6	3.4
額定參數 Rated Parameters							
3 額定電壓 Rated voltage	V	3	3	3	3		33
4 額定轉速 Rated speed		9000min	9000min	9000min	9000min	9000min	9000min
5 額定電流 Rated current	rpm	80max	80max	80max	80max	80max	80max
6 堵轉電流 Stall current	mA	130max	130max	130max	130max	130max	120max
7 立嵩電阻 Terminal resistance	mA	Ω	29	39	42	36	2833
8 電機重量 Weight	g	1	1.1	1.1	1.1	1.21	1.45
9 振動量 Vibrational Quantity	G	07	0.8	0.85	0.9		11.3



適用型號 Model	下貼片 Lower Tape		上貼片 Upper Tape				醋酸膠布袋 Acetate Cloth Tape	膠套 Rubber or Plastic Holder	
	雙面膠 Double Tape		泡棉+單畫膠 Sponge+Single-sided Tape		泡棉+雙畫膠 Sponge+Double-sided Tape			直徑 D Diameter	直徑 D Diameter
	直徑 D Diameter	厚度 T Thickness	直徑 D Diameter	厚度 T Thickness	直徑 D Diameter	厚度 T Thickness	mm		
	mm	mm	mm	mm	mm	mm	mm	mm	
F10系列 Series	9	0.15	9	0.3,0.5	9	0.4,0.6	0.2	11.2	0.6
F12系列 Series	11		11	0.7,0.9	11	0.8,1.0			
材料 Material	3M / 9448HK		膠 Tape: 3M19448HK :		泡棉 Sponge: PRON-H H48		NITTO I56A	橡膠或塑料 Rubber or Plastic	
配置 Configuration	標準配置 Standard configuration		根據需要選擇 Optional configuration						