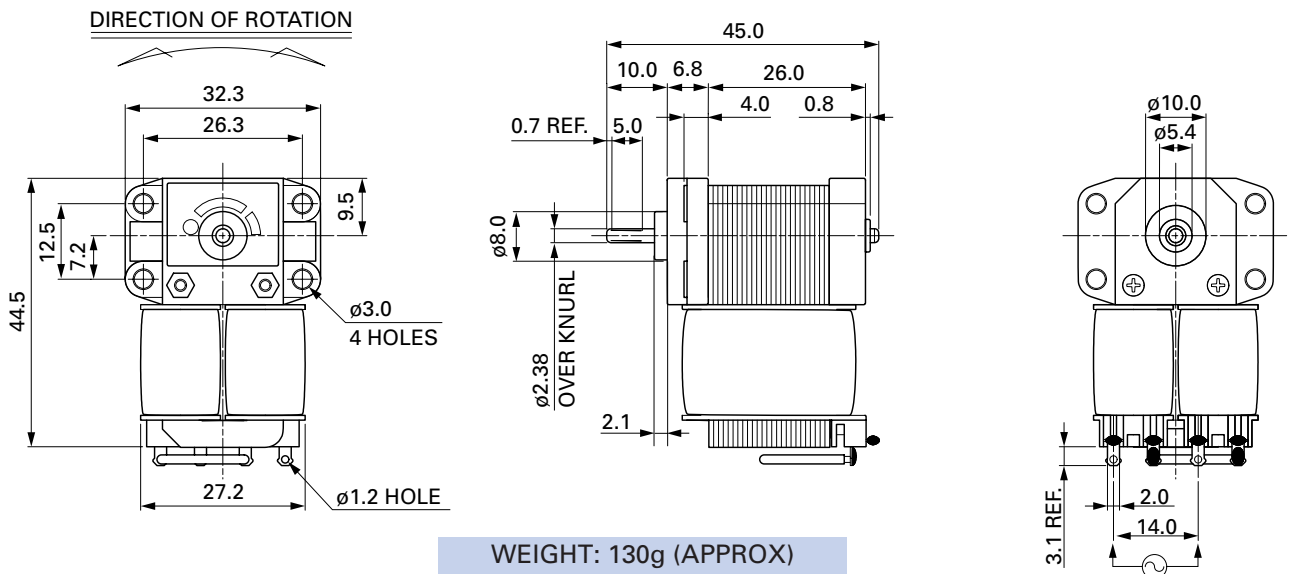


MODEL	VOLTAGE		FREQUENCY	SPEED	CURRENT	INPUT	PULL OUT TORQUE	
	OPERATING RANGE	NOMINAL					mN·m	g·cm
	AC. V	AC. V					Hz	r/min
CO-241PA-112700	220 ~ 240	230	50	3000	0.10	10.2	32.3	330
CO-241PA-161300	100 ~ 120	120	60	3600	0.17	8.5	27.4	280

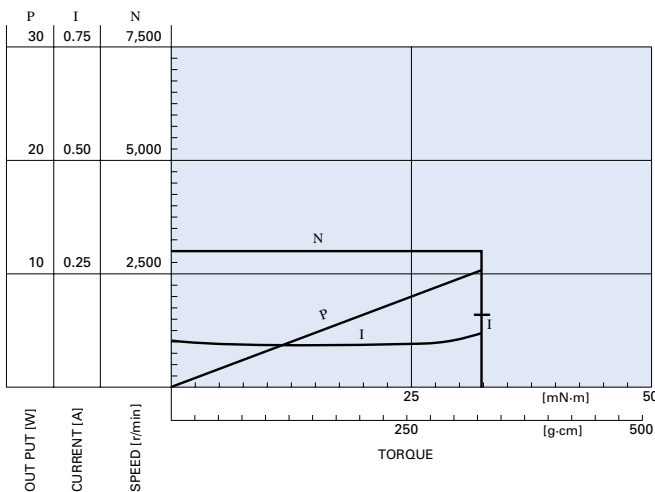
Direction of rotation is controlled mechanically.

UNIT: MILLIMETERS



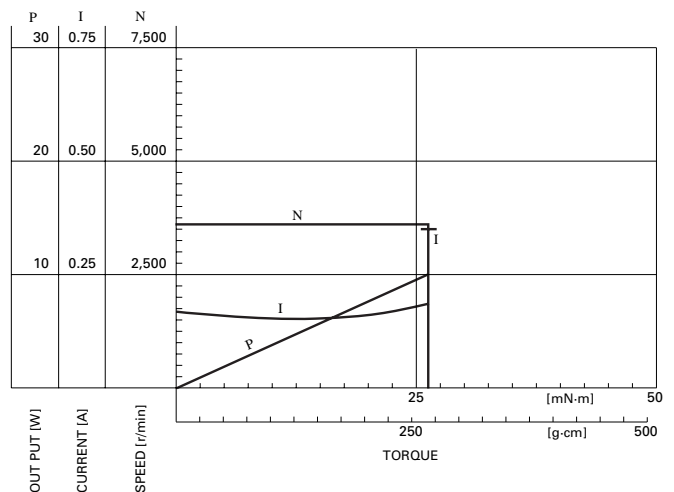
## CO-241PA-112700

AC 230V, 50Hz

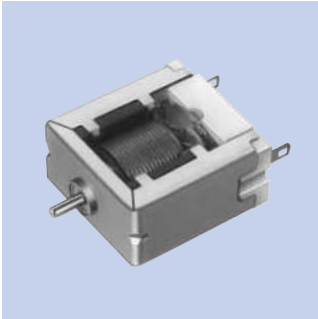


## CO-241PA-161300

AC 120V, 60Hz



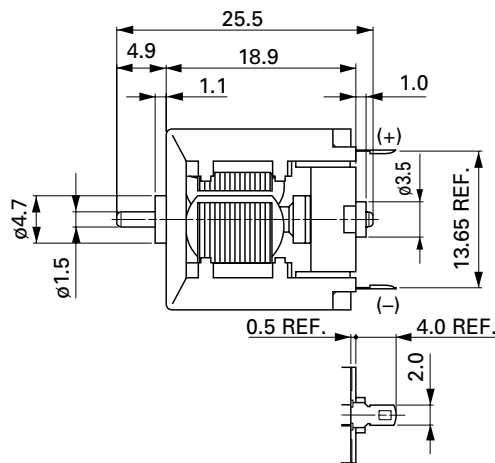
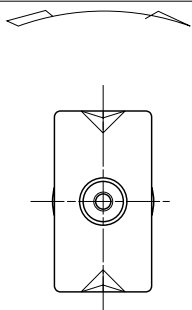
Typical Applications Toys and Models : Motorized Toy



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
SU-020RA-1665	1.5	1.5V CONSTANT	15300	0.21	11080	0.55	0.22	2.2	0.25	0.79	8.1	1.45
SU-020RA-09170	3.0	3V CONSTANT	11800	0.080	8150	0.18	0.15	1.6	0.13	0.50	5.1	0.40
SU-020SA-1665	1.5	1.5V CONSTANT	12100	0.18	9000	0.52	0.31	3.2	0.30	1.23	13	1.52
SU-020SA-09170	1.5 ~ 3.0	3V CONSTANT	9300	0.070	6530	0.17	0.23	2.3	0.15	0.76	7.8	0.39

UNIT: MILLIMETERS

DIRECTION OF ROTATION



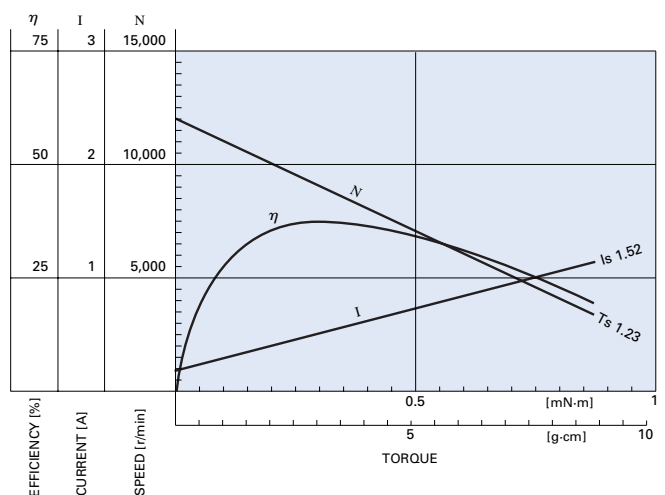
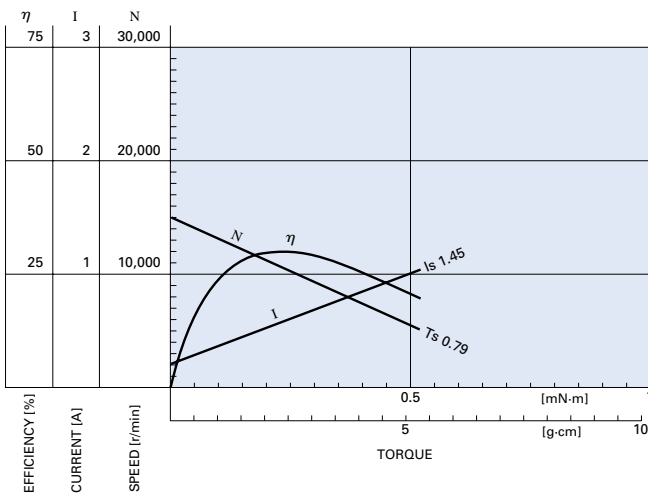
WEIGHT: 9.5g (APPROX)

**SU-020RA-1665**

1.5V

**SU-020SA-1665**

1.5V



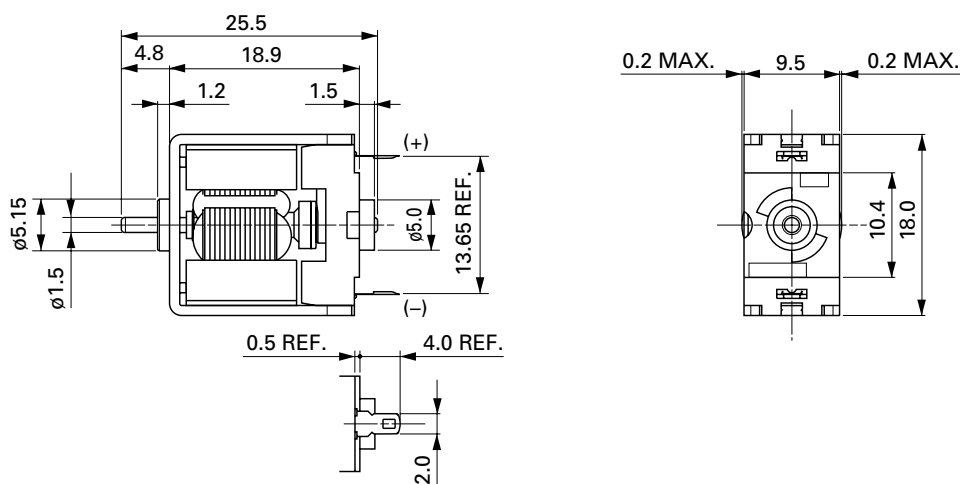
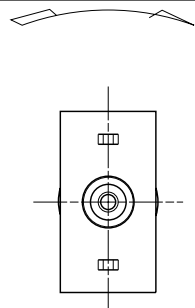
Typical Applications Toys and Models : Motorized Toy



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
SH-030SA-08240	6 ~ 12	12V CONSTANT	22300	0.080	16730	0.24	0.71	7.2	1.24	2.84	29	0.72
SH-030SA-09170	4.5 ~ 9.0	4.8V CONSTANT	11700	0.085	8440	0.22	0.44	4.5	0.39	1.57	16	0.57
		6V CONSTANT	15000	0.090	11080	0.25	0.53	5.4	0.61	2.01	21	0.72

UNIT: MILLIMETERS

DIRECTION OF ROTATION



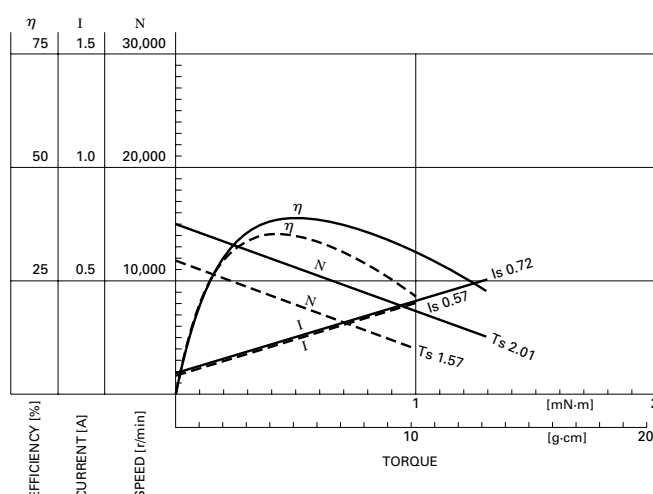
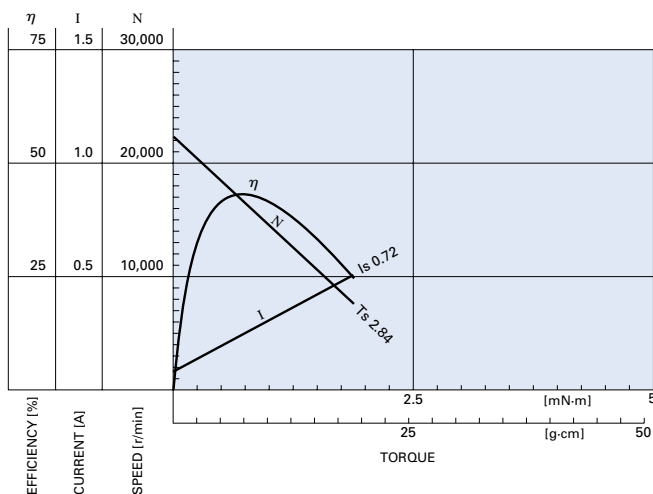
WEIGHT: 11g (APPROX)

**SH-030SA-08240**

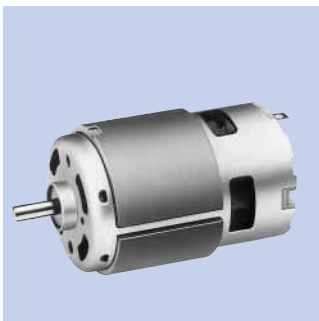
12.0V

**SH-030SA-09170**

---- 4.8V — 6.0V

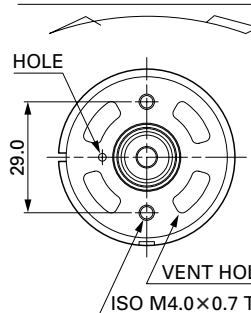


Typical Applications **Cordless Power Tools : Drill & Screwdriver / Cordless Garden Tool**  
**Toys and Models : Ride-on Toy**



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-775VC-8015	6 ~ 20	16.8V CONSTANT	18000	2.60	15630	17.1	135	1375	220	1024	10450	113
RS-775WC-8514	6 ~ 20	18V CONSTANT	19500	2.70	17040	18.7	153	1560	273	1215	12400	130

DIRECTION OF ROTATION



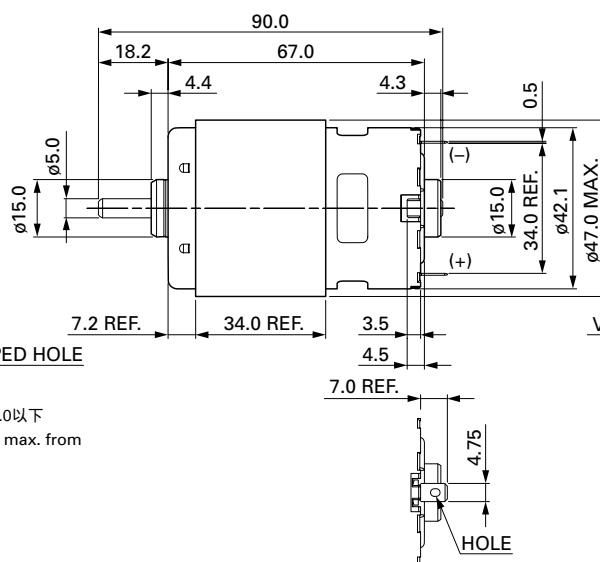
VENT HOLES

ISO M4.0x0.7 TAPPED HOLE

2 PLACES

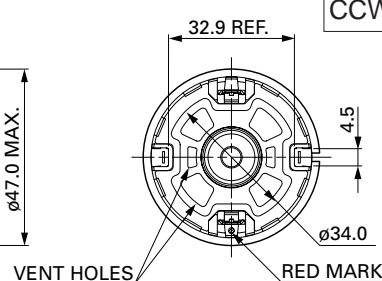
取付けネジはモータケース面より5.0以下

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



UNIT: MILLIMETERS

CCW(+)



VENT HOLES

RED MARK

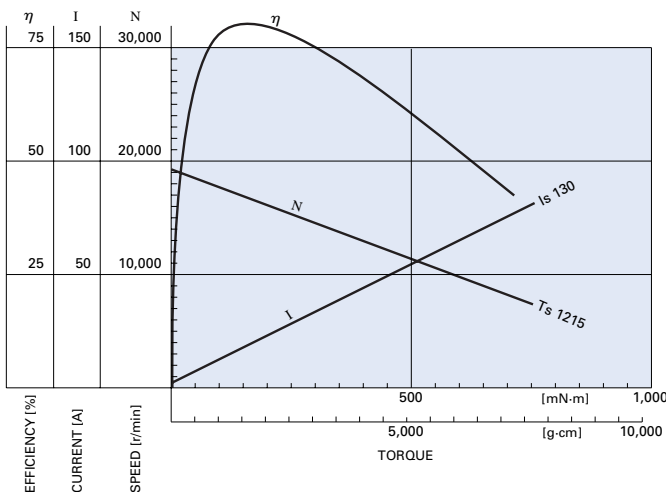
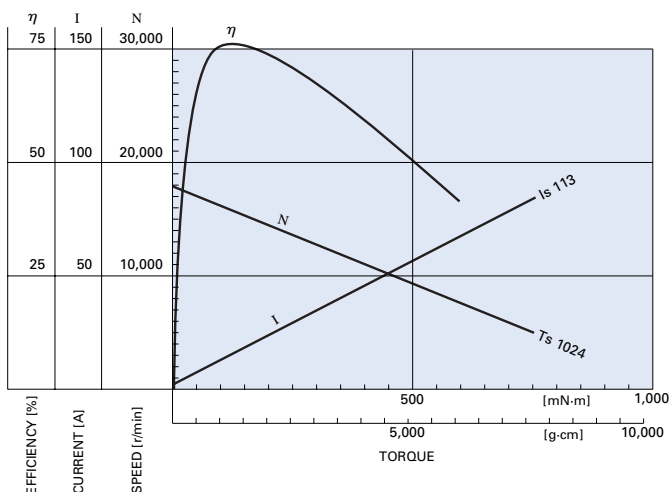
WEIGHT: 340g (APPROX)

## RS-775VC-8015

16.8V

## RS-775WC-8514

18.0V

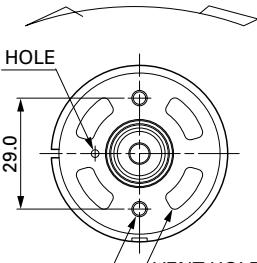


Typical Applications Cordless Power Tools : Drill & Screwdriver



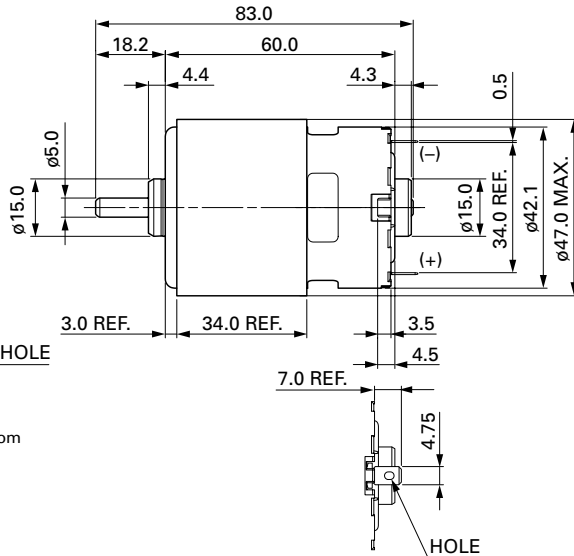
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RS-755WC-8017	6~20	18V CONSTANT	19800	2.30	17320	16.0	126	1289	229	1009	10300	112

DIRECTION OF ROTATION



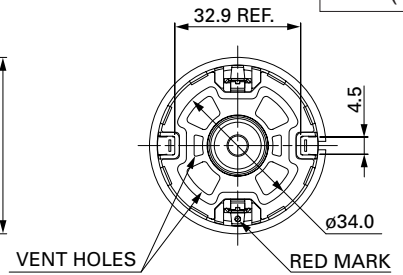
VENT HOLES  
ISO M4.0×0.7 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より5.0以下  
Usable machine screw length 5.0 max. from motor mounting surface.



UNIT: MILLIMETERS

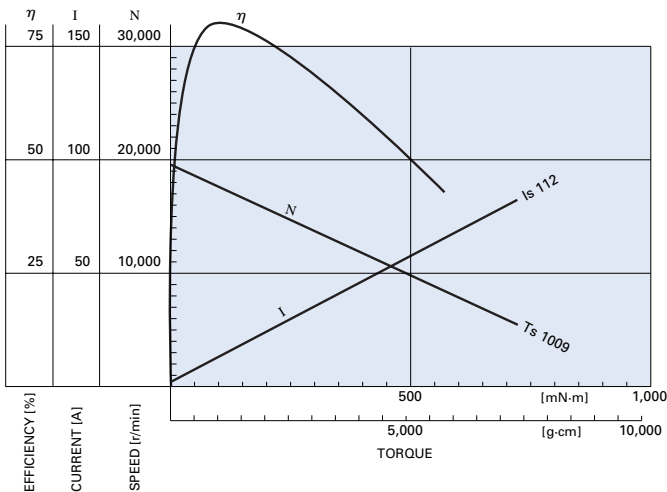
CCW(+)



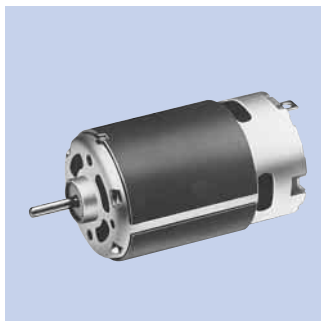
WEIGHT: 286g (APPROX)

**RS-755WC-8017**

18.0V

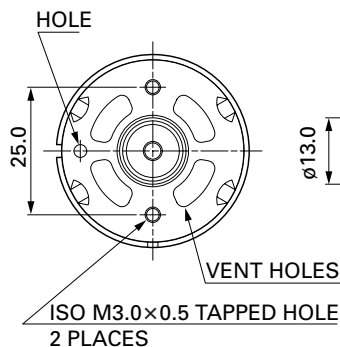


**Typical Applications** Household Appliances : Massager / Vibrator  
Automotive Products : Door Closer  
Toys and Models : Ride-on Toy

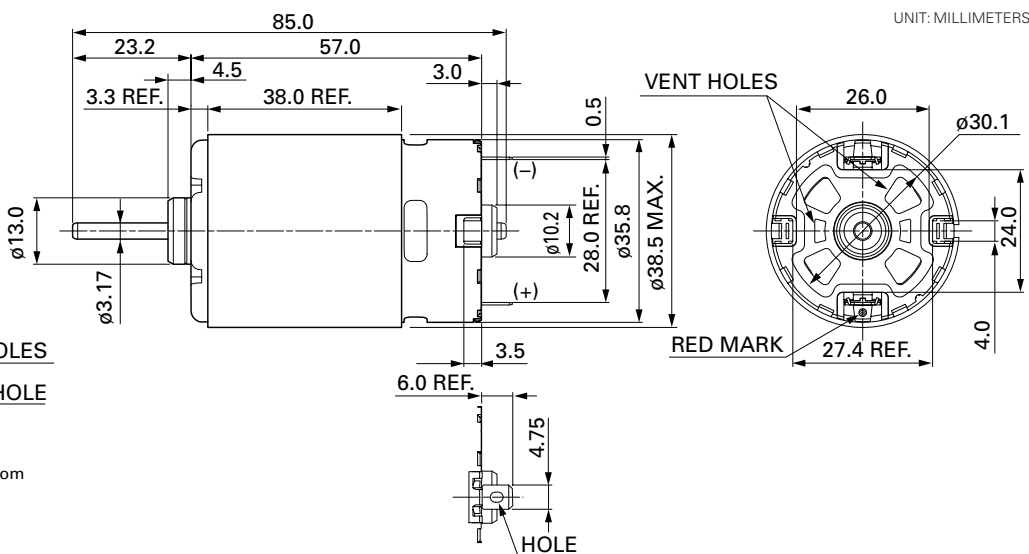


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-555VC-3267	6 - 30	12V CONSTANT	3300	0.16	2870	1.06	30.9	315	9.26	235	2400	7.00

**DIRECTION OF ROTATION**



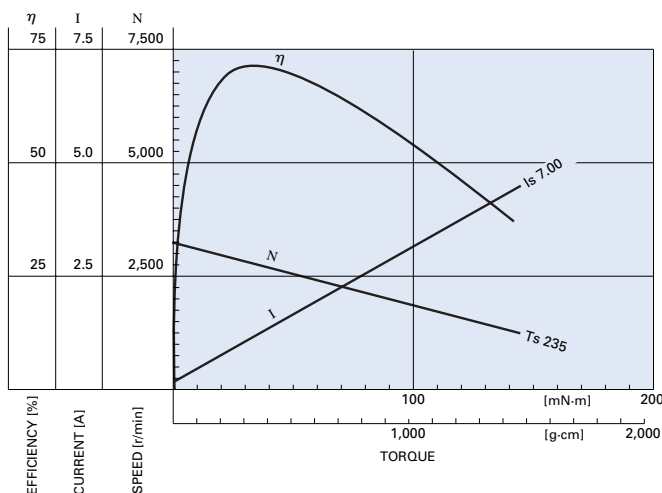
取付けネジはモータケース面より4.0以下  
Usable machine screw length 4.0 max. from motor mounting surface.



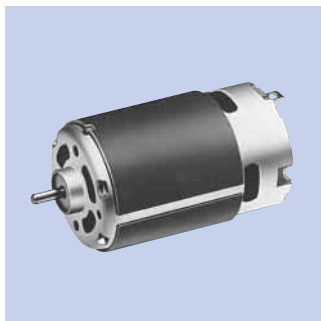
**WEIGHT: 221g (APPROX)**

## RS-555VC-3267

12.0V

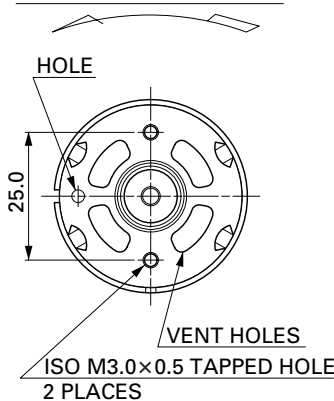


**Typical Applications** Cordless Power Tools : Drill & Screwdriver / Air Compressor / Cordless Garden Tool  
**Toys and Models** : Ride-on Toy

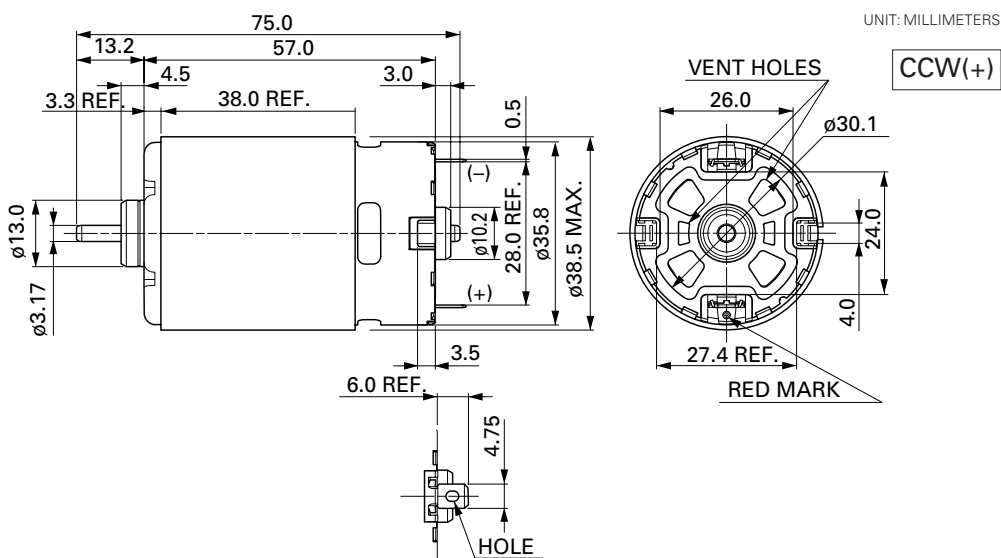


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE		CURRENT	
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RS-550PC-7524	6 ~ 12	12V CONSTANT	20600	1.35	18180	10.2	49.4	503	93.8	421	4300	76.5
RS-550VC-7527	6.0~14.4	14.4V CONSTANT	19800	1.30	17620	10.5	64.7	660	119	588	6000	85.0

**DIRECTION OF ROTATION**



取付けネジはモータケース面より4.0以下  
 Usable machine screw length 4.0 max. from motor mounting surface.



UNIT: MILLIMETERS

CCW(+)

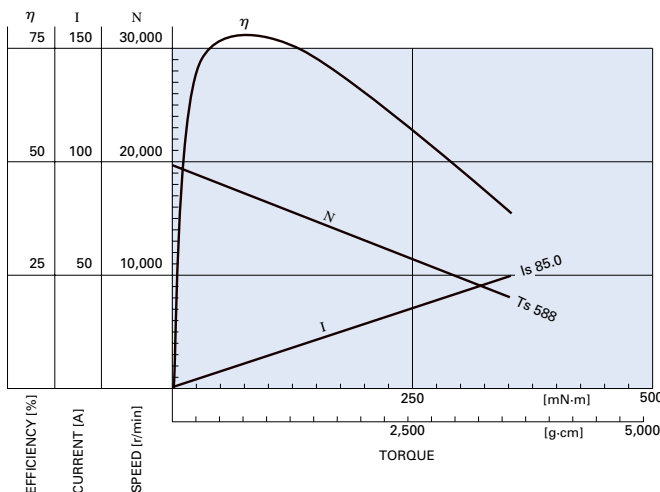
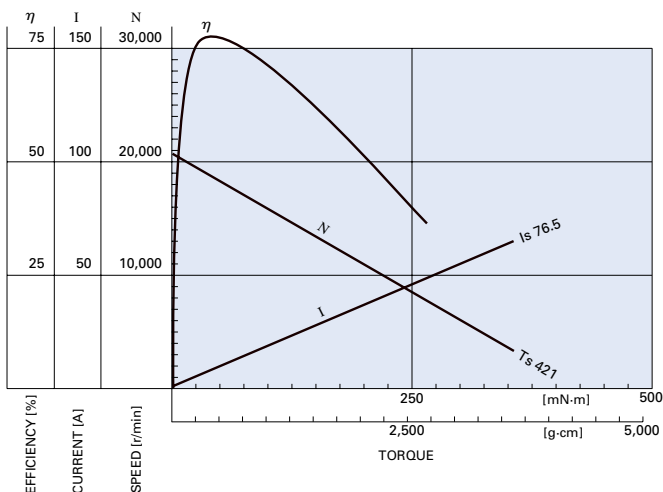
WEIGHT: 255g (APPROX)

**RS-550PC-7524**

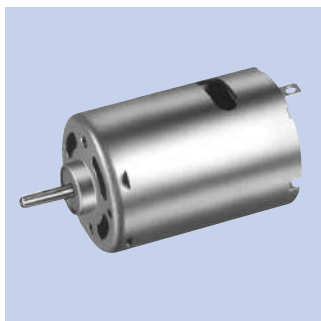
12.0V

**RS-550VC-7527**

14.4V



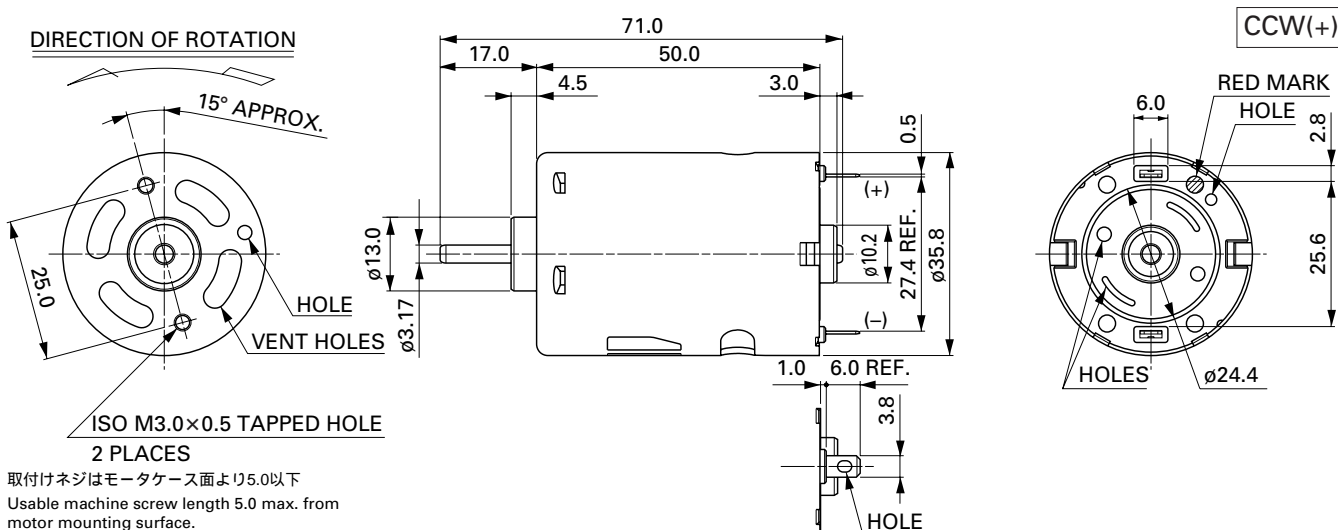
**Typical Applications** Household Appliances : Hair Dryer / Massager / Vibrator / Vacuum Cleaner / Bilge Pump  
Automotive Products : Automatic Cruise Control



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL (COMMUTATOR POSITION)	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	g·cm	OUTPUT W	TORQUE mN·m	g·cm	CURRENT A
RS-545RH-4522	3.6 ~ 12.0	12V CONST. (CCW+)	27800	1.30	22940	6.14	19.4	198	46.5	111	1130	29.0
RS-545SH-5018	4.5 ~ 12.0	12V CONST. (CCW+)	24000	1.30	20510	7.65	31.1	317	66.7	214	2180	45.0
RS-545SH-18150	12 ~ 32	24V CONST. (CCW+)	5600	0.12	4560	0.53	16.4	167	7.82	88.2	900	2.30
RS-545SH-22100	12 ~ 24	12V CONST. (CW+)	4200	0.16	3350	0.63	12.5	127	4.36	61.7	630	2.50

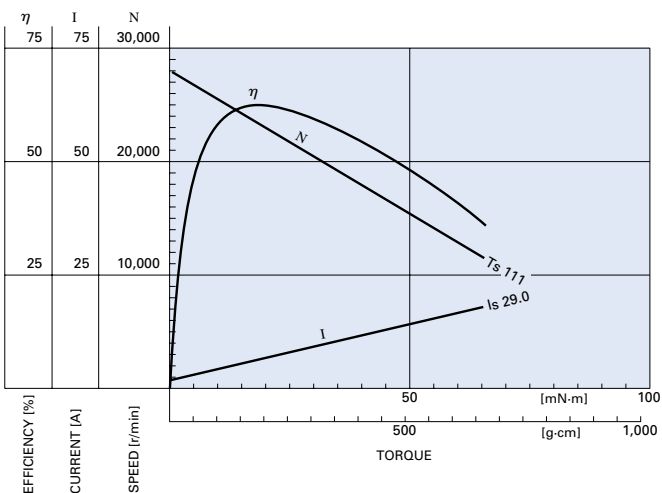
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.

UNIT: MILLIMETERS



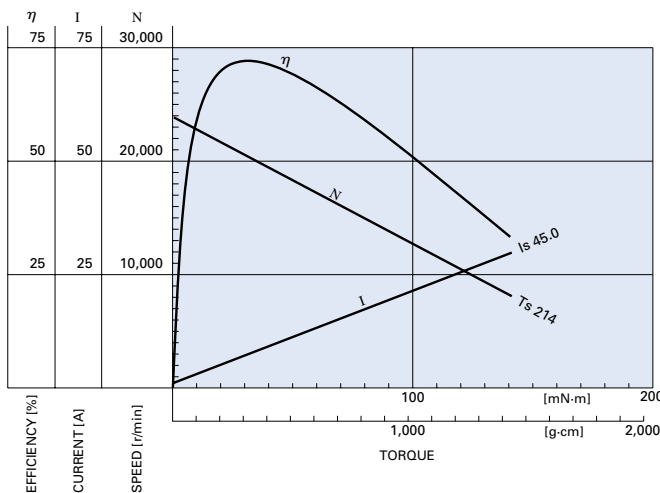
## RS-545RH-4522

12.0V



## RS-545SH-5018

12.0V

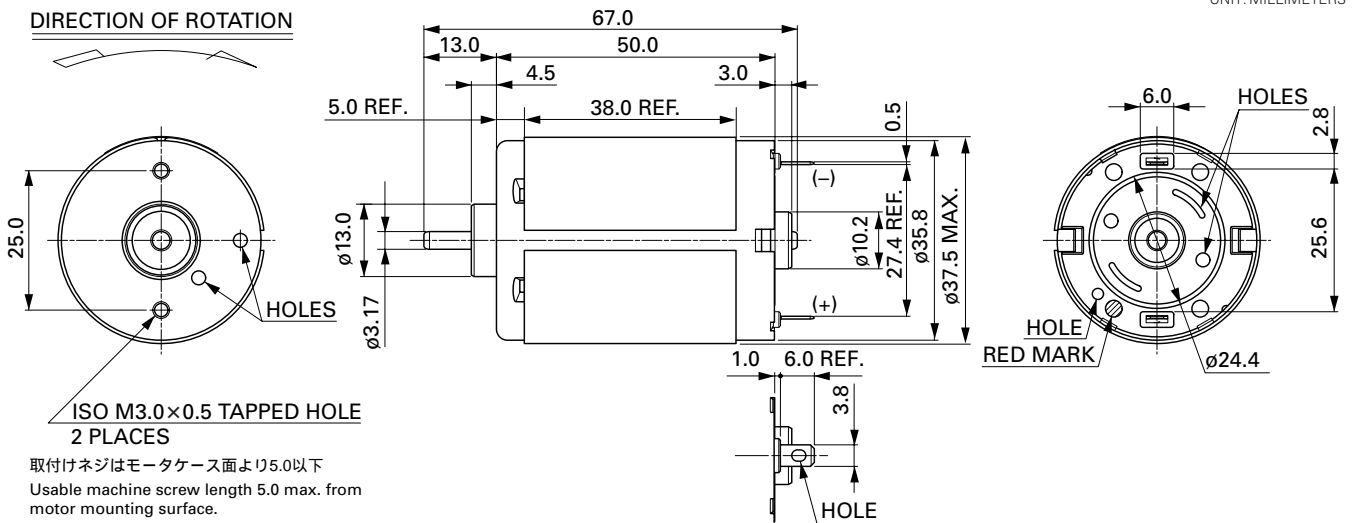






MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-545PH-22140	12 ~ 27	24V CONSTANT	4800	0.070	4200	0.49	18.9	193	8.30	150	1530	3.37
RS-545PH-16250	16 ~ 32	32V CONSTANT	3900	0.045	3310	0.25	15.4	157	5.33	101	1030	1.39
RS-545PH-20165	16 ~ 32	32V CONSTANT	5550	0.065	4850	0.45	20.3	206	10.3	161	1640	3.14

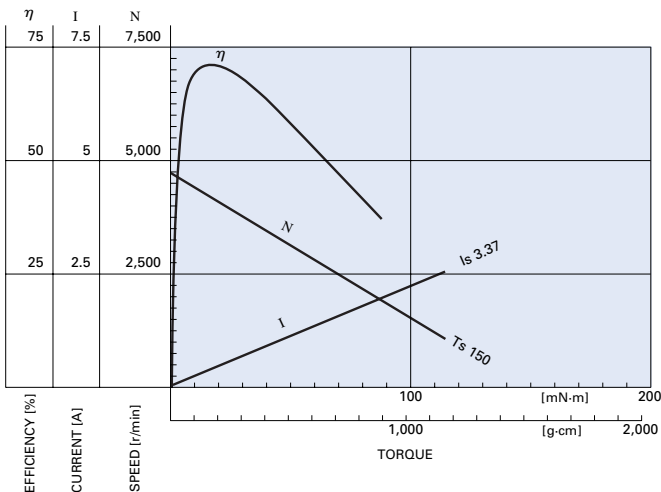
UNIT: MILLIMETERS



WEIGHT: 180g (APPROX)

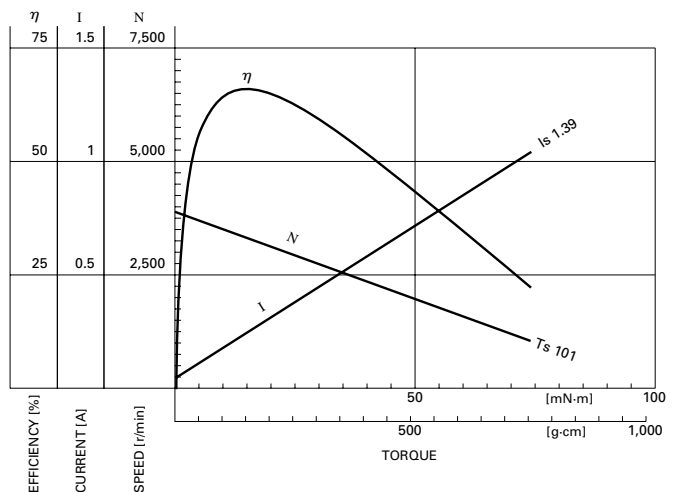
## RS-545PH-22140

24.0V



## RS-545PH-16250

32.0V

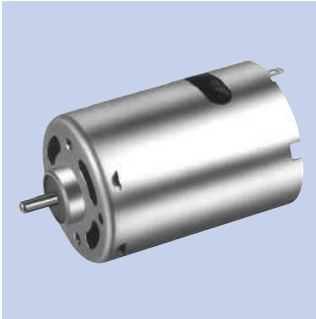


**Typical Applications**

**Household Appliances** : Vacuum Cleaner

**Cordless Power Tools** : Air Compressor / Drill & Screwdriver / Cordless Garden Tool

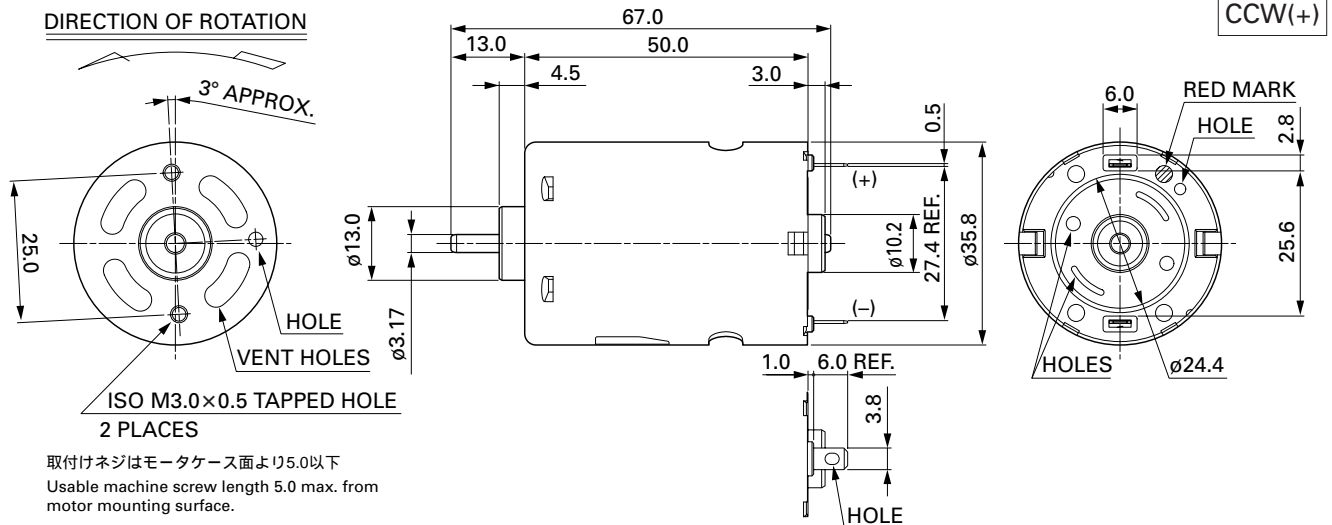
**Tools and Models** : Radio Control Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL (COMMUTATOR POSITION)	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	g·cm	OUTPUT W	TORQUE mN·m	g·cm	CURRENT A
RS-540RH-7516	2.4 ~ 4.5	3.6V CONST. (CCW+)	20200	2.90	16310	12.2	15.1	154	25.8	78.5	800	51.0
RS-540RH-5045	4.5 ~ 9.6	6V CONST. (CCW)	11600	0.82	9660	4.09	14.4	147	14.6	86.3	880	20.4
RS-540RH-6035	3.6 ~ 7.2	3.6V CONST. (CCW+)	9500	1.15	7700	4.91	12.3	125	9.88	64.7	660	21.0
RS-540SH-5045	4.5 ~ 12.0	12V CONST. (CCW+)	17500	0.95	15080	5.93	31.8	324	50.1	230	2350	37.0
RS-540SH-7520	3.6 ~ 7.2	4.8V CONST. (CCW+)	15400	2.00	13010	10.9	26.0	265	35.3	167	1700	59.0

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

UNIT: MILLIMETERS

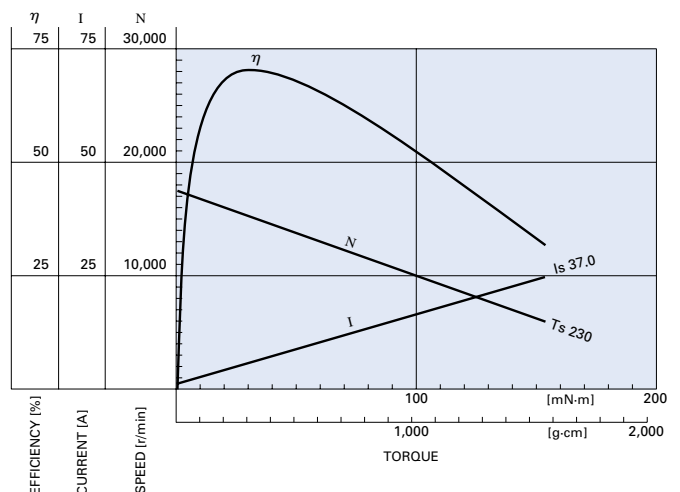
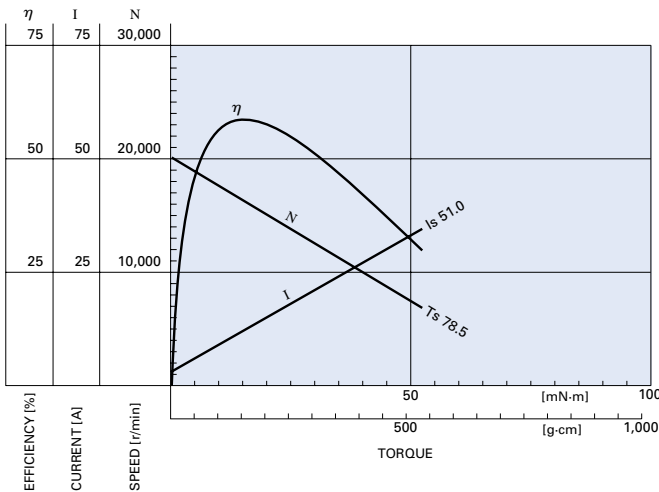


**RS-540RH-7516**

3.6V

**RS-540SH-5045**

12.0V

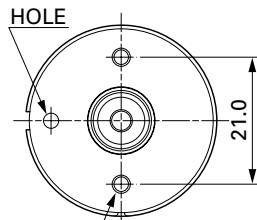




MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-455PA-15200	12 ~ 42	42V CONSTANT	6300	0.058	5350	0.33	15.8	161	8.83	105	1068	1.85
RS-455PA-14230	12 ~ 42	42V CONSTANT	5500	0.047	4640	0.25	14.3	146	6.95	91.9	938	1.38

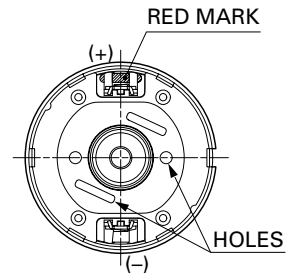
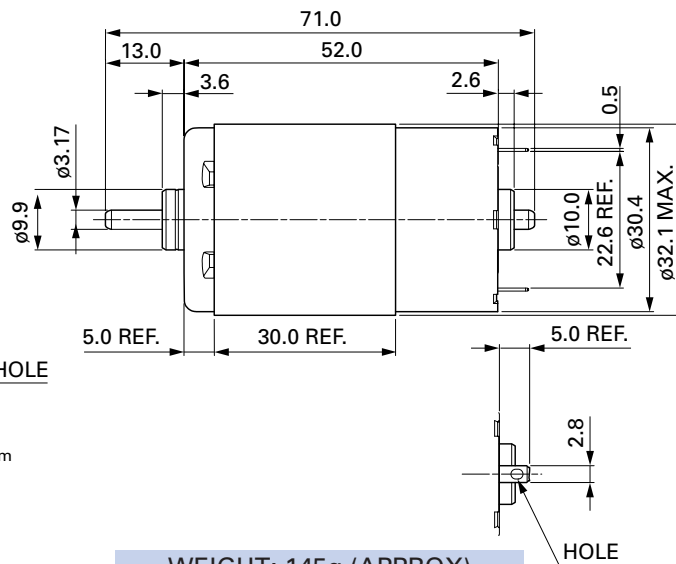
**DIRECTION OF ROTATION**

UNIT: MILLIMETERS



ISO M3.0×0.5 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より4.0以下  
Usable machine screw length 4.0 max. from motor mounting surface.



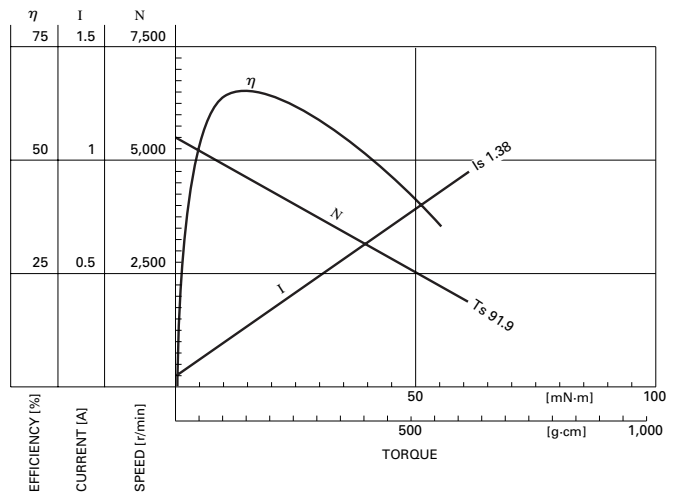
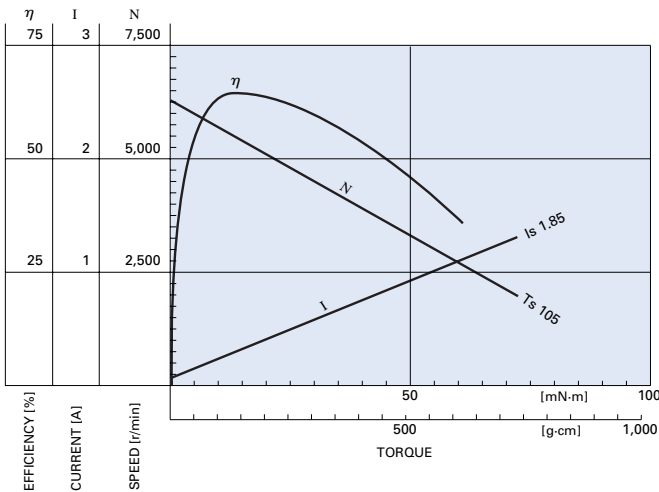
WEIGHT: 145g (APPROX)

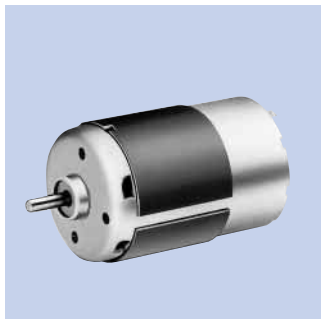
**RS-455PA-15200**

42.0V

**RS-455PA-14230**

42.0V

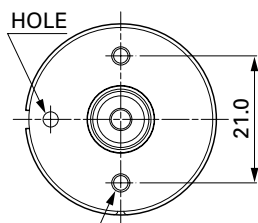




MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-445PA-14230	12 ~ 42	42V CONSTANT	6600	0.060	5500	0.30	13.6	139	7.82	81.6	832	1.50

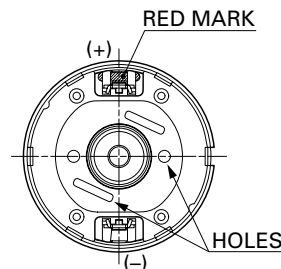
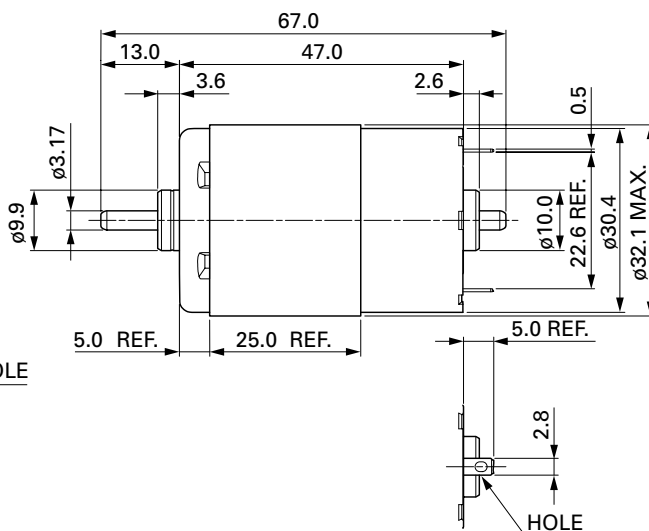
DIRECTION OF ROTATION

UNIT: MILLIMETERS



ISO M3.0×0.5 TAPPED HOLE  
2 PLACES

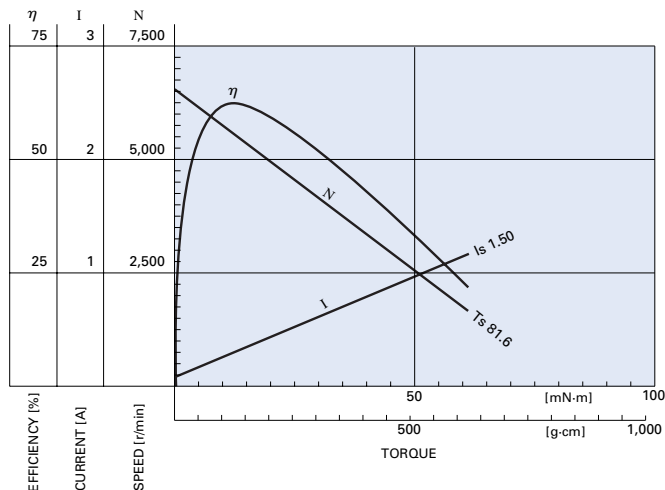
取付けネジはモータケース面より4.0以下  
Usable machine screw length 4.0 max. from motor mounting surface.



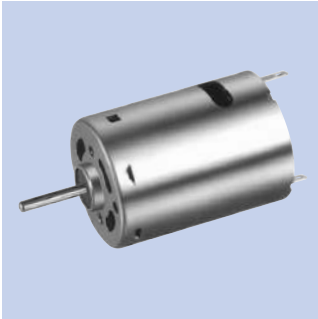
WEIGHT: 127g (APPROX)

RS-445PA-14230

42.0V



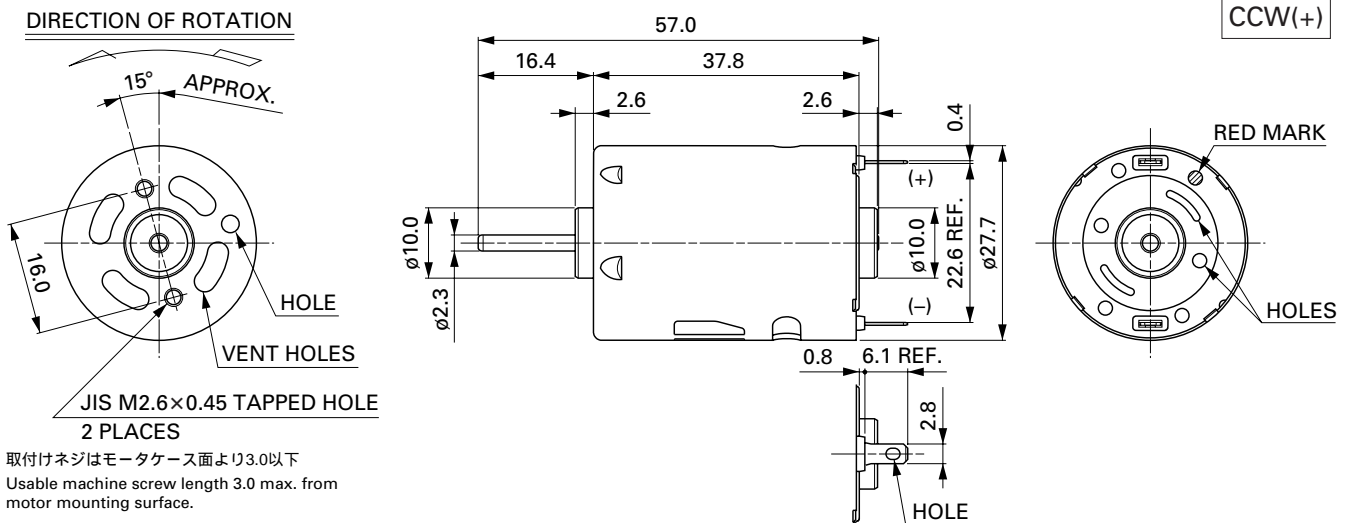
Typical Applications Household Appliances : Hair Dryer  
Office Automation Equipments : Printer / Copy Machine



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE		CURRENT	
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-385SH-2270	6 ~ 24	12V CONSTANT	9800	0.15	8190	0.76	7.15	72.9	6.12	43.6	445	3.90
		20V CONSTANT	16400	0.18	14010	1.06	9.56	97.5	14.0	65.7	670	6.20

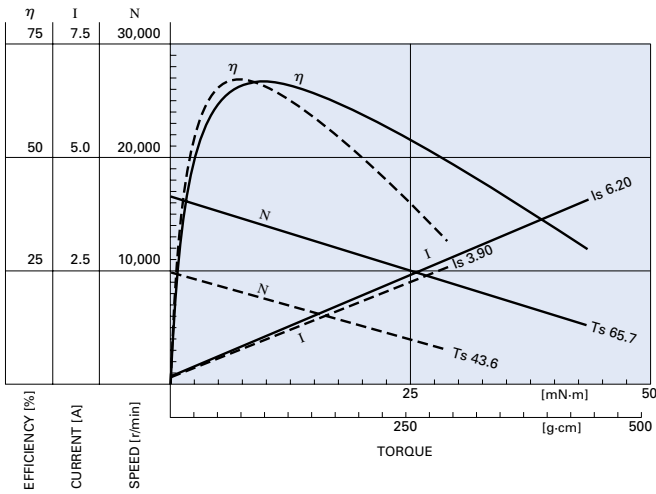
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.

UNIT: MILLIMETERS

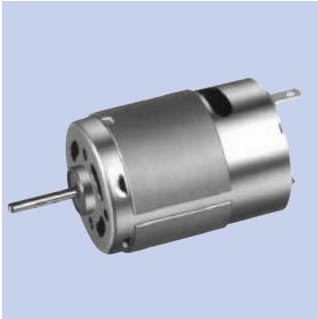


WEIGHT: 70g (APPROX)

**RS-385SH-2270**      - - - - 12.0V    ——— 20.0V



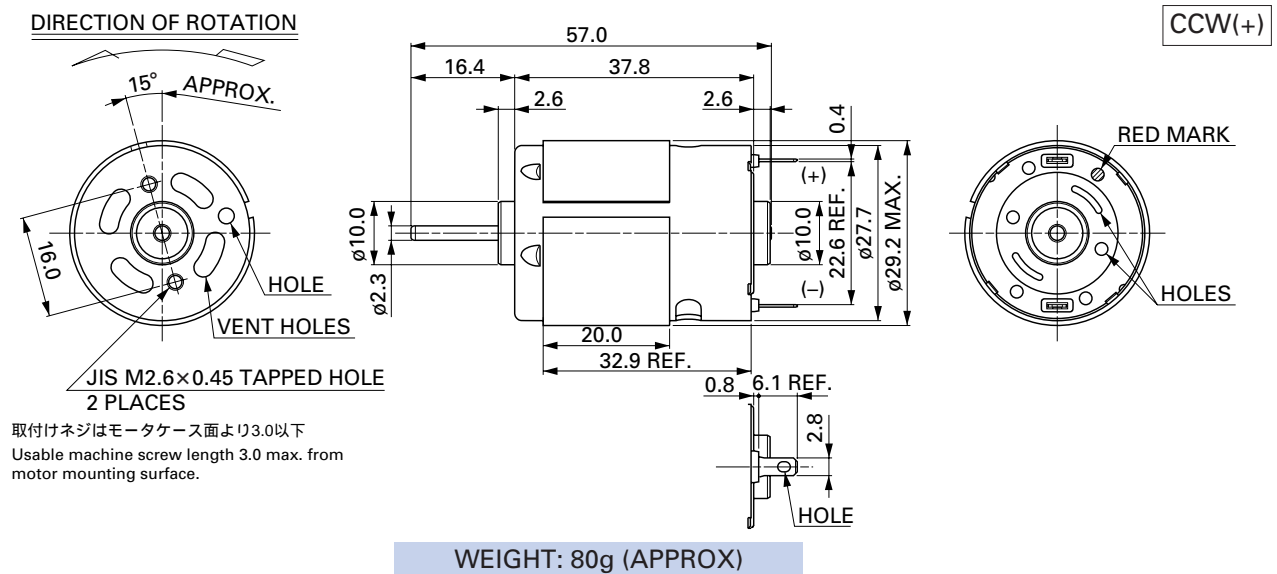
**Typical Applications** Household Appliances : Hair Dryer  
 Automotive Products : Automatic Cruise Control  
 Office Automation Equipments : Printer / Copy Machine



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-385PH-16140	12 ~ 30	24V CONSTANT	9100	0.090	7570	0.44	9.07	92.4	7.18	53.9	550	2.20
RS-385PH-2465	6 ~ 24	12V CONSTANT	9800	0.20	8170	1.00	9.32	95.0	7.96	55.9	570	5.00

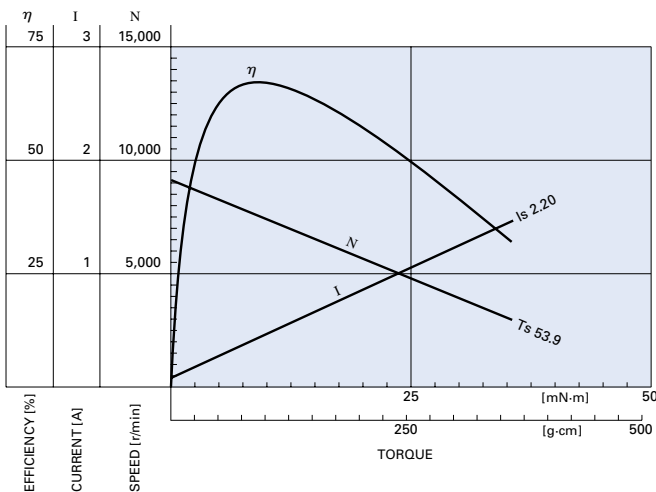
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.

UNIT: MILLIMETERS



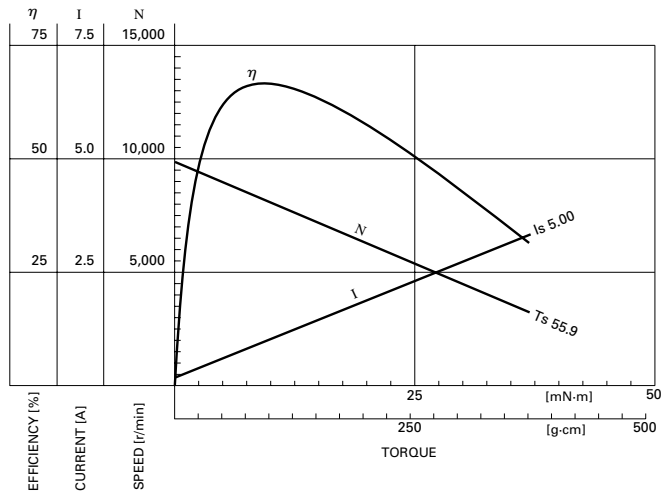
## RS-385PH-16140

24.0V

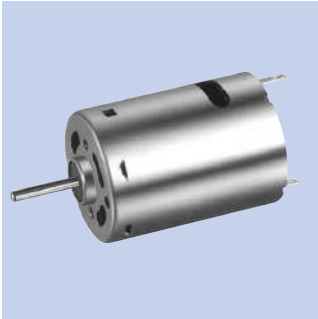


## RS-385PH-2465

12.0V



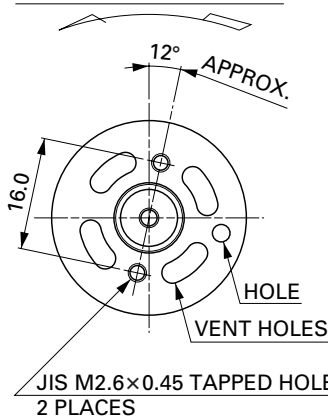
**Typical Applications** Household Appliances : Vacuum Cleaner / Kitchen Appliance  
Cordless Power Tools : Drill & Screwdriver



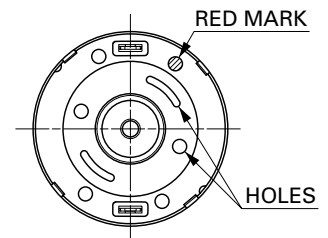
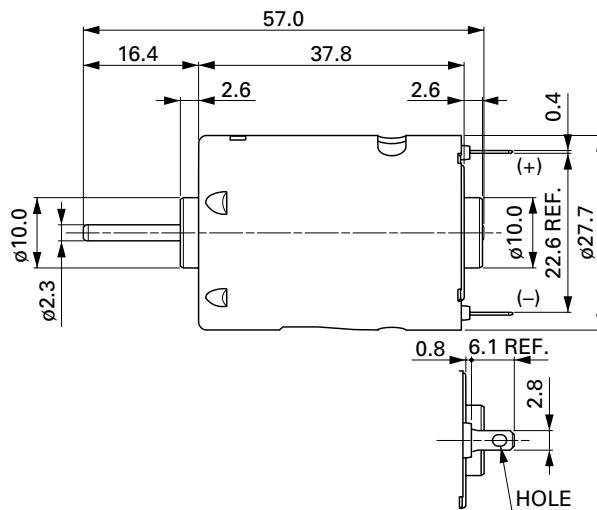
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-380SH-4045	3 ~ 9	7.2V CONSTANT	16200	0.50	14060	3.29	10.9	111	16.0	82.3	840	21.6
RS-380SH-12300	12 ~ 30	24V CONSTANT	8000	0.070	6540	0.31	6.27	63.9	4.29	34.3	350	1.40

DIRECTION OF ROTATION

UNIT: MILLIMETERS



取付けネジはモータケース面より4.0以下  
Usable machine screw length 4.0 max. from motor mounting surface.



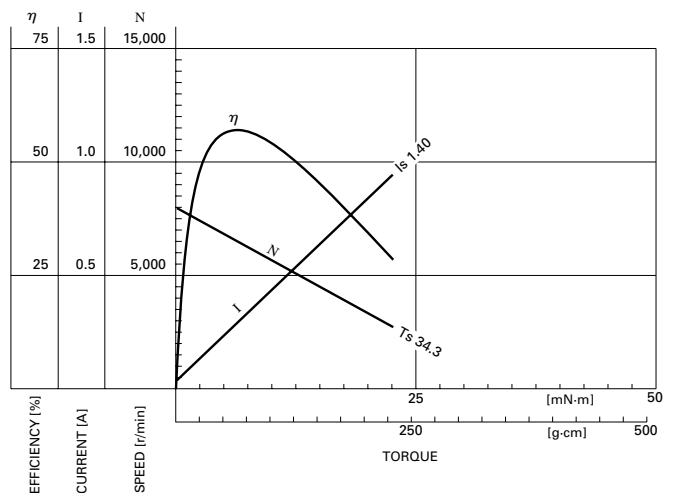
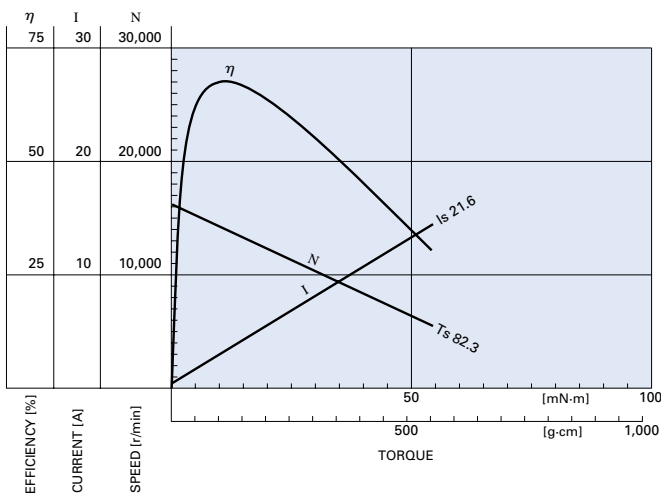
WEIGHT: 71g (APPROX)

**RS-380SH-4045**

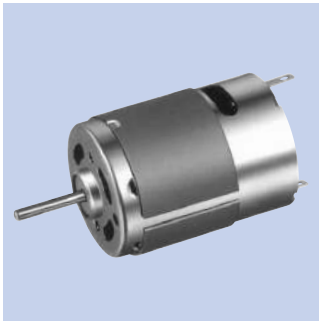
7.2V

**RS-380SH-12300**

24.0V



**Typical Applications** Household Appliances : Vacuum Cleaner  
 Automotive Products : Car Antenna  
 Cordless Power Tools : Drill & Screwdriver



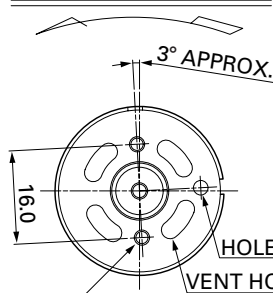
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL (COMMUTATOR POSITION)	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	TORQUE g·cm	OUTPUT W	TORQUE mN·m	TORQUE g·cm	CURRENT A
RS-380PH-4045	2.4 ~ 12.0	10.5V CONST. (CCW+)	21900	0.70	18570	3.90	14.3	146	27.8	94.1	960	21.7
RS-380PH-3270	4.5 ~ 15.0	12V CONST. (CCW)	15200	0.34	13150	2.18	12.6	128	17.3	93.1	950	14.0

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

UNIT: MILLIMETERS

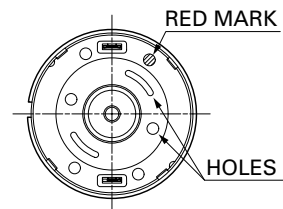
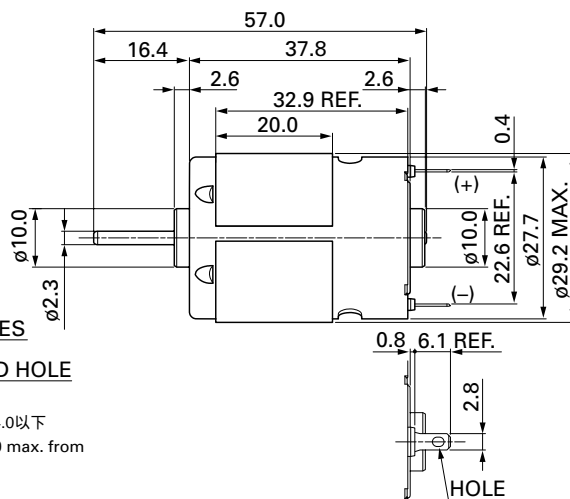
CCW(+)

DIRECTION OF ROTATION



HOLE VENT HOLES  
 JIS M2.6×0.45 TAPPED HOLE 2 PLACES

取付けネジはモータケース面より4.0以下  
 Usable machine screw length 4.0 max. from motor mounting surface.



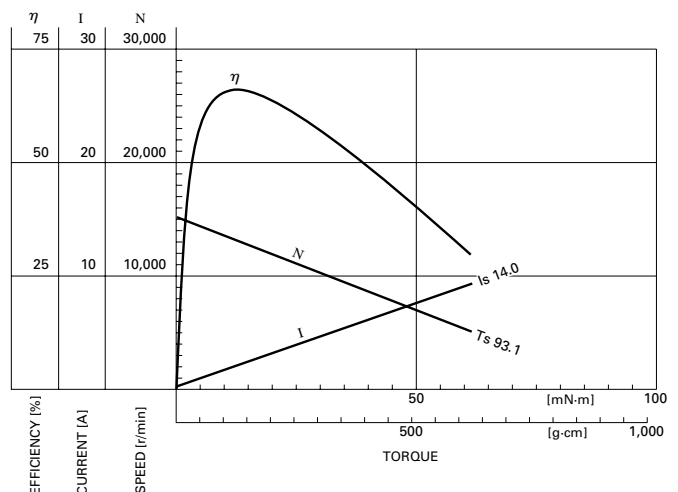
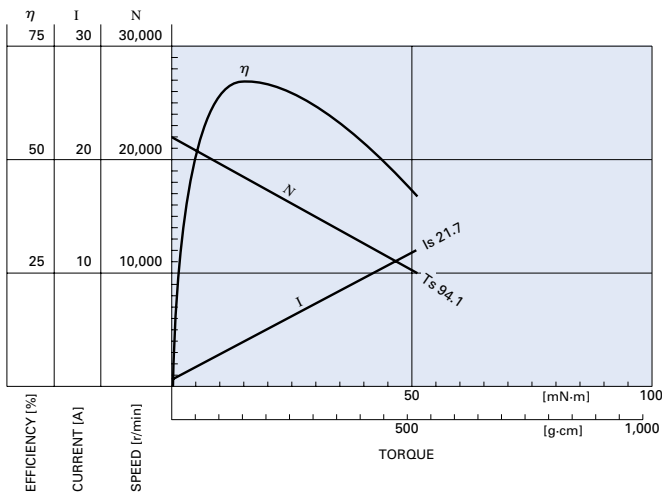
WEIGHT: 80g (APPROX)

## RS-380PH-4045

10.5V

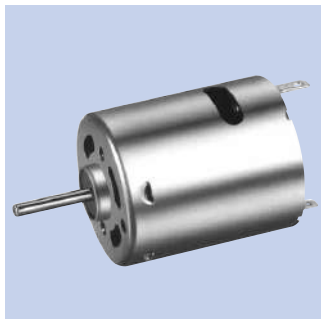
## RS-380PH-3270

12.0V





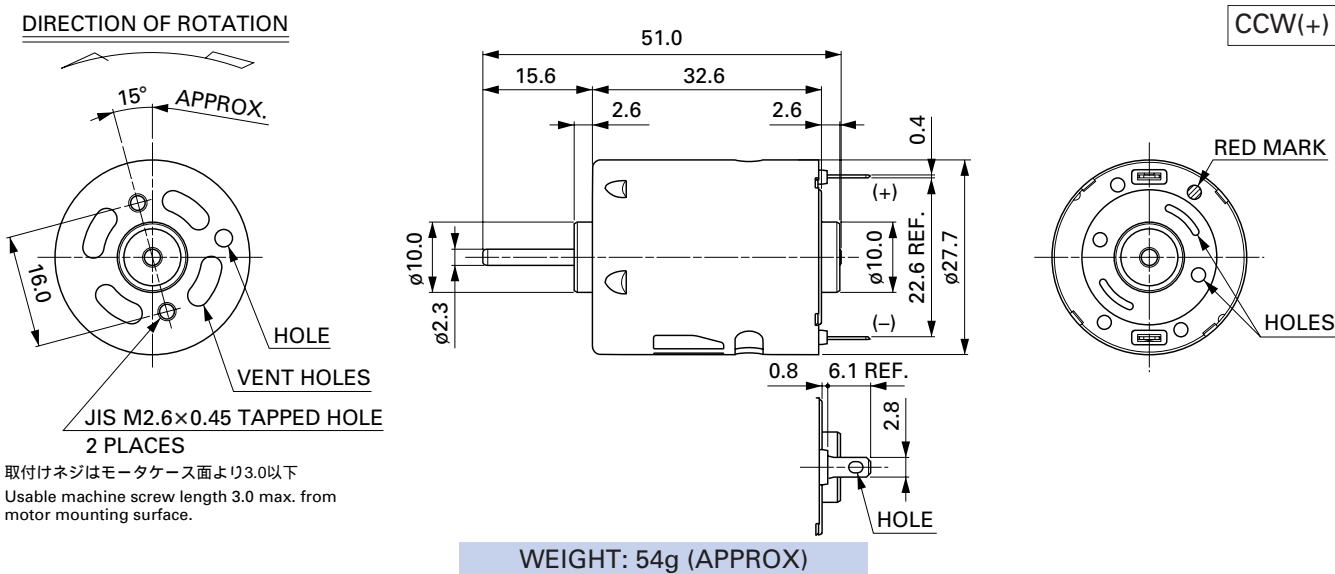
Typical Applications Household Appliances : Hair Dryer / Corn Popper / Massager / Vibrator



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	TORQUE g·cm	OUTPUT W	TORQUE mN·m	TORQUE g·cm	CURRENT A
RS-365SH-2080	6 - 20	12V CONSTANT	12800	0.19	10410	0.83	5.59	56.9	6.08	29.9	305	3.60
		18V CONSTANT	19400	0.22	16060	1.06	7.09	72.2	11.9	41.2	420	5.10

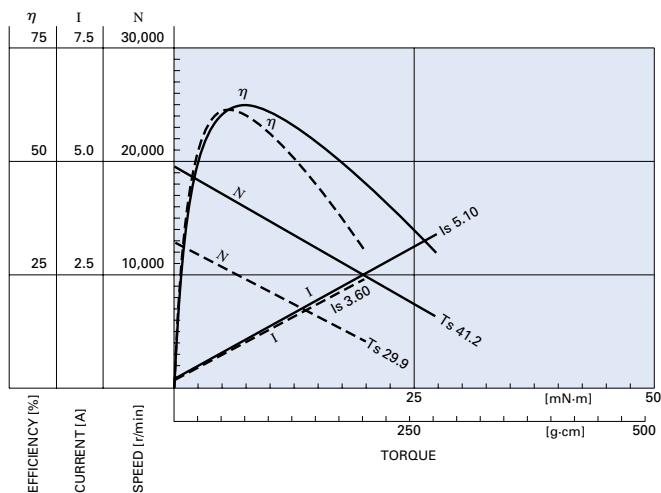
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.

UNIT: MILLIMETERS

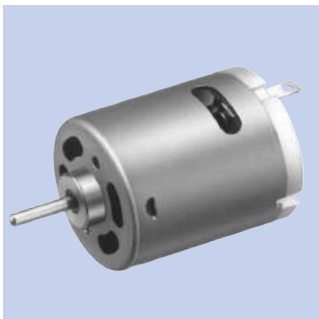


## RS-365SH-2080

----- 12.0V ----- 18.0V



Typical Applications Household Appliances : Hair Dryer



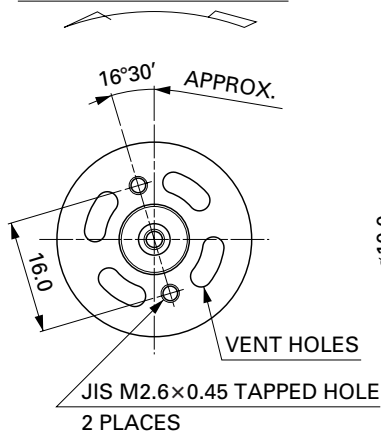
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RS-365SA-1885	6 ~ 20	20V CONSTANT	23200	0.24	18960	1.07	6.82	69.5	13.5	37.3	380	4.80

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

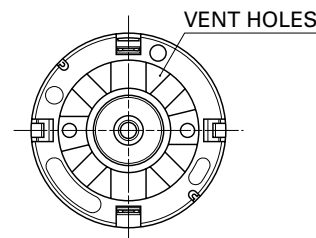
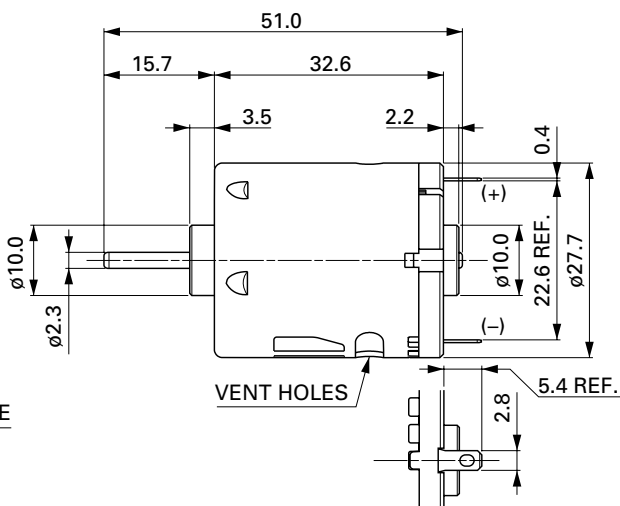
UNIT: MILLIMETERS

DIRECTION OF ROTATION

CCW(+)



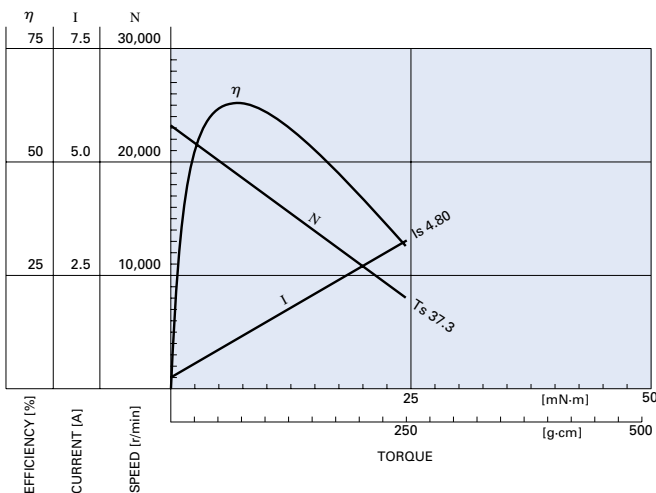
取付けネジはモータケース面より4.0以下  
Usable machine screw length 4.0 max. from motor mounting surface.



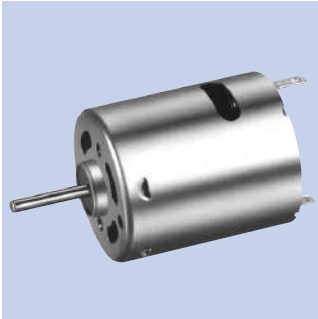
WEIGHT: 49g (APPROX)

RS-365SA-1885

20.0V

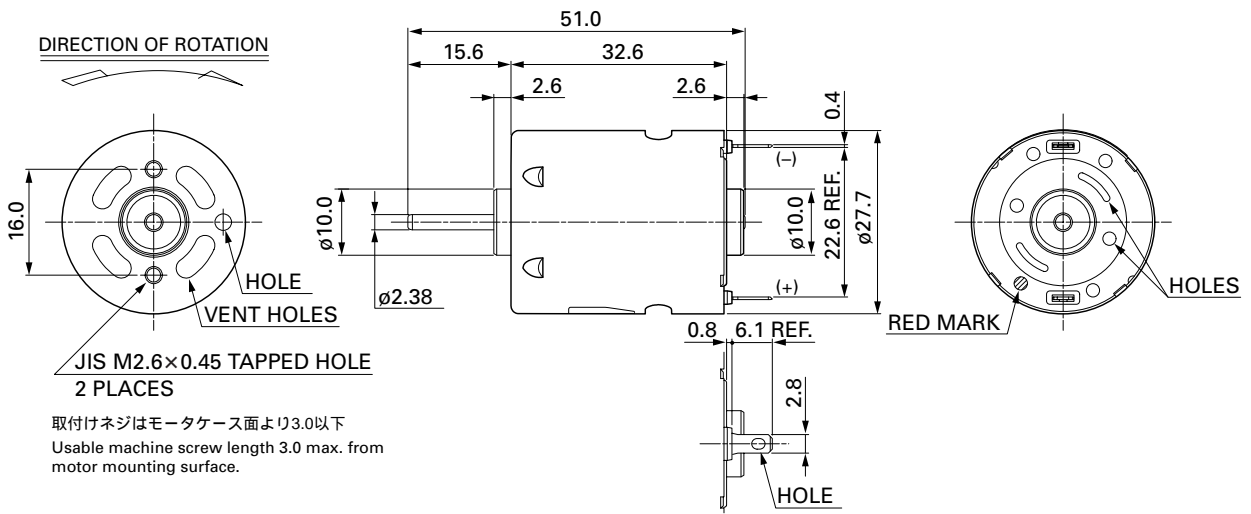


Typical Applications Household Appliances : Air Compressor / Massager / Vibrator



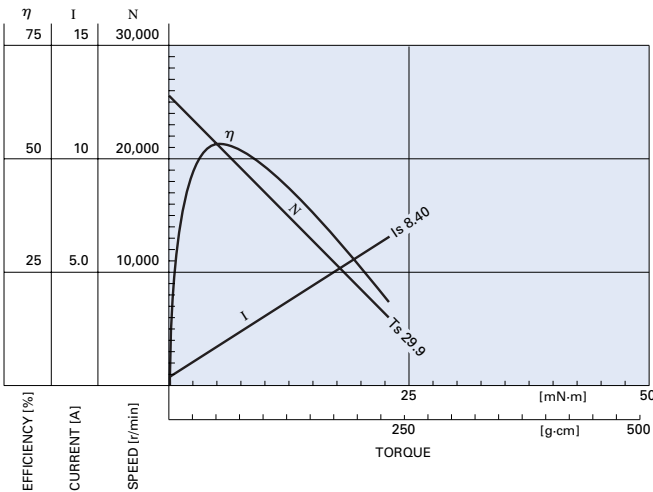
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RS-365RH-2650	3 - 12	12V CONSTANT	25500	0.40	20930	1.83	5.36	54.6	11.7	29.9	305	8.40

UNIT: MILLIMETERS

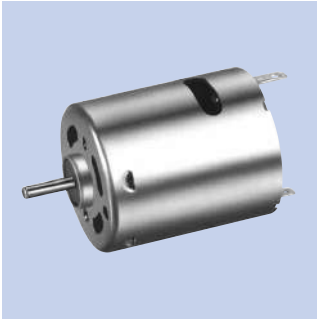


WEIGHT: 54g (APPROX)

**RS-365RH-2650** 12.0V

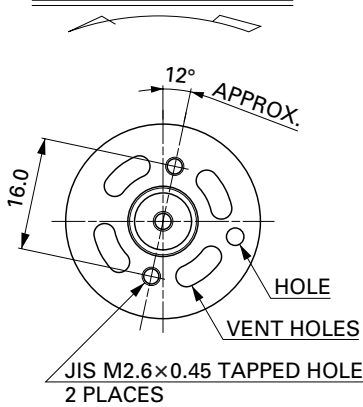


**Typical Applications** Precision Instruments : Vending Machine  
 Household Appliances : Massager / Vibrator  
 Office Automation Equipments : Copy Machine

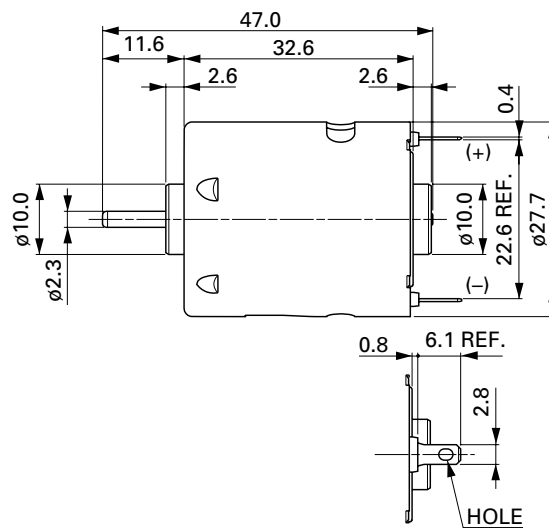


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RS-360RH-2885	3 ~ 8	6V CONSTANT	13700	0.38	11210	1.71	4.64	47.2	5.43	25.5	260	7.70
RS-360RH-10500	12 ~ 25	12V CONSTANT	4500	0.050	3320	0.14	2.15	21.9	0.75	8.24	84	0.40
RS-360SH-2885	3 ~ 9	7.2V CONSTANT	12500	0.36	10380	1.76	7.00	71.3	7.59	41.2	420	8.60
RS-360SH-10500	12 ~ 25	24V CONSTANT	7000	0.050	5600	0.20	4.50	45.9	2.63	22.5	230	0.80
RS-360SH-14280	8 ~ 30	12V CONSTANT	6300	0.085	5040	0.34	4.20	42.8	2.21	21.0	214	1.36

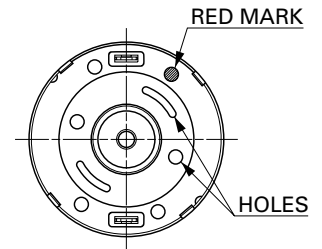
**DIRECTION OF ROTATION**



取付けネジはモータケース面より4.0以下  
 Usable machine screw length 4.0 max. from motor mounting surface.



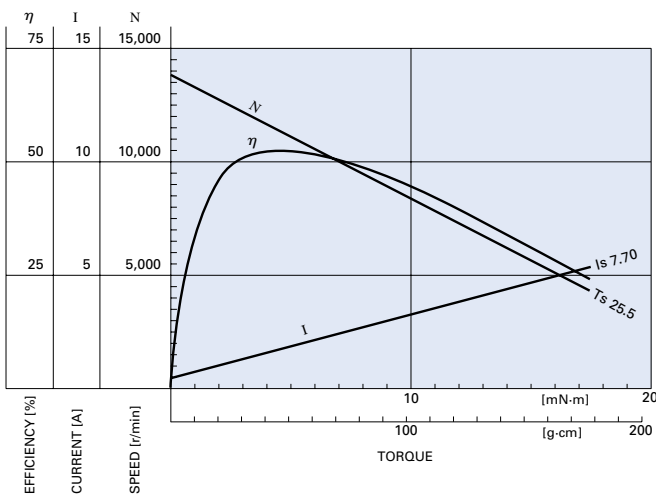
UNIT: MILLIMETERS



WEIGHT: 55g (APPROX)

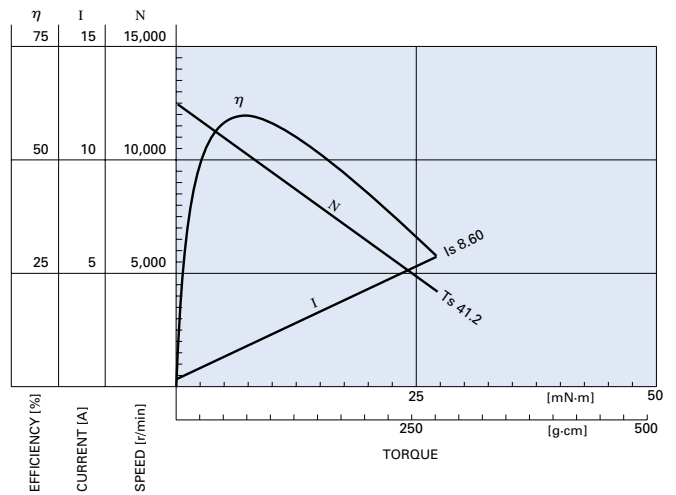
**RS-360RH-2885**

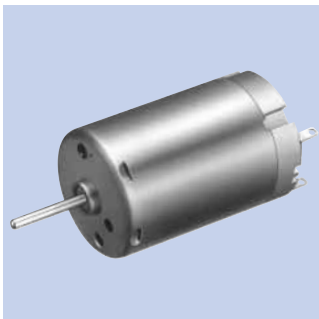
6.0V



**RS-360SH-2885**

7.2V

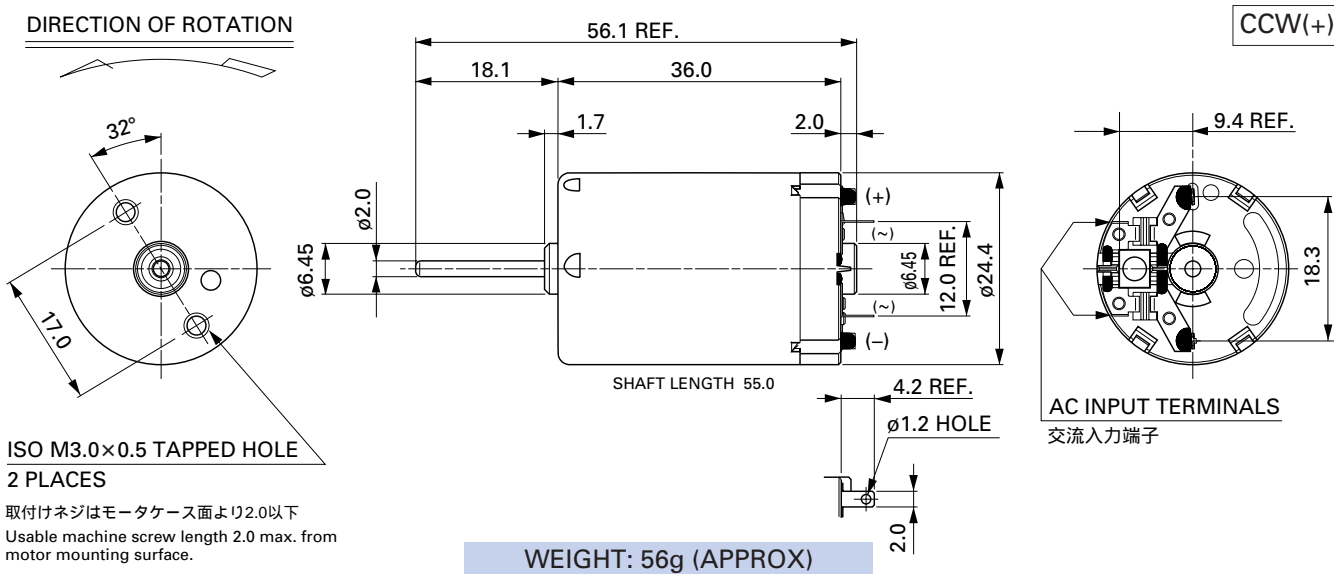




MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RK-384CA-16170	24 ~ 30	30V CONSTANT	21000	0.15	16710	0.58	5.80	59.1	10.1	28.4	290	2.28

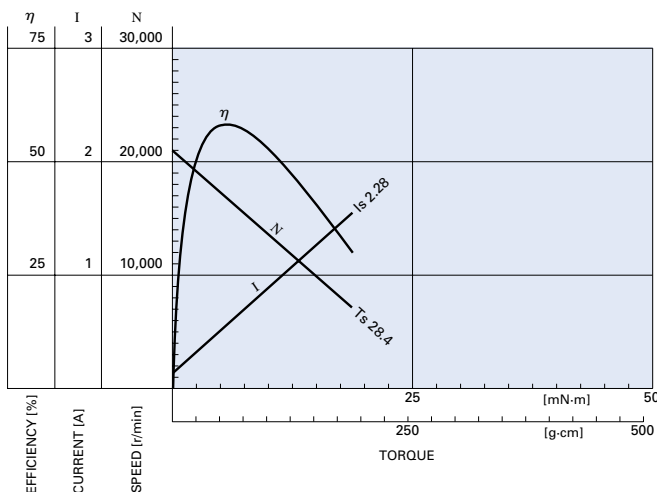
The terminal position against the tapped holes varies depending on CW+/NEUTRAL.

UNIT: MILLIMETERS



## RK-384CA-16170

30.0V



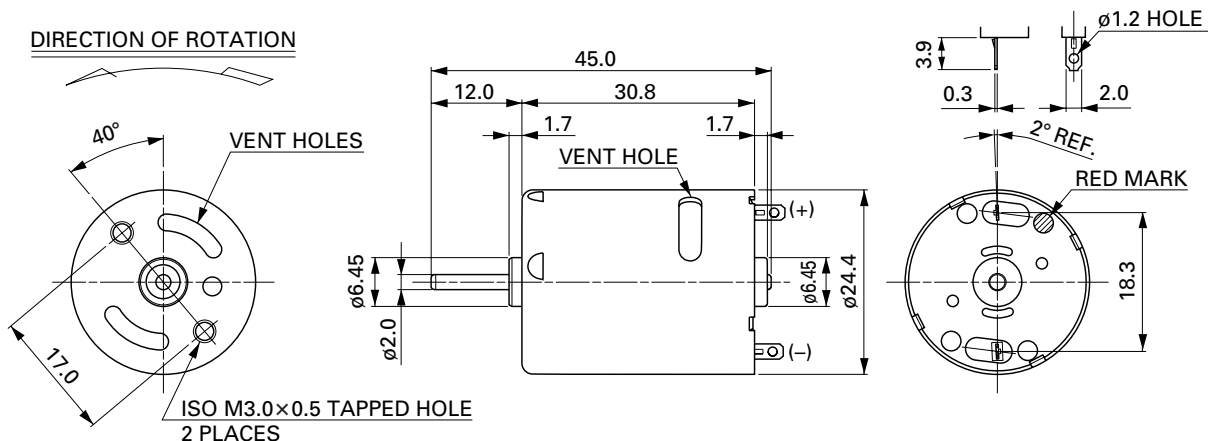


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RK-370SD-2870	4.5 ~ 9.6	7.2V CONSTANT	16500	0.34	13790	1.73	5.97	60.9	8.61	36.3	370	8.77

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

UNIT: MILLIMETERS

CCW(+)

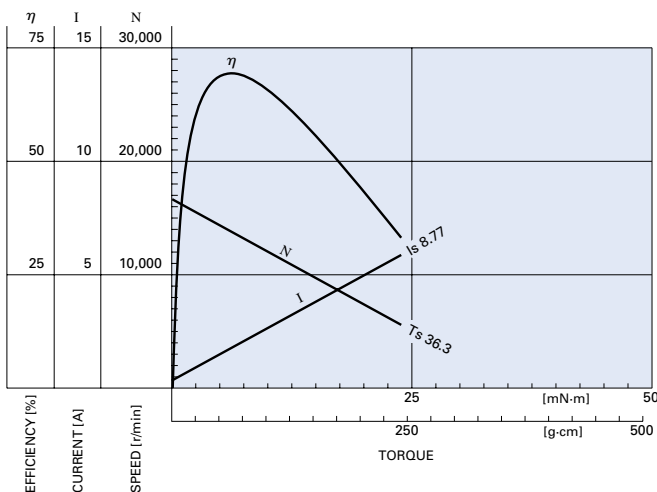


取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.

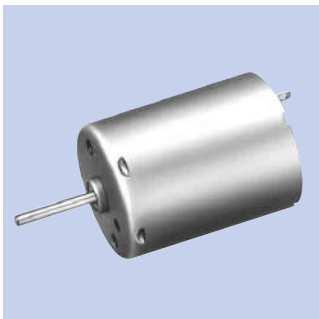
WEIGHT: 51g (APPROX)

## RK-370SD-2870

7.2V



Typical Applications Household Appliances : Styling Brush

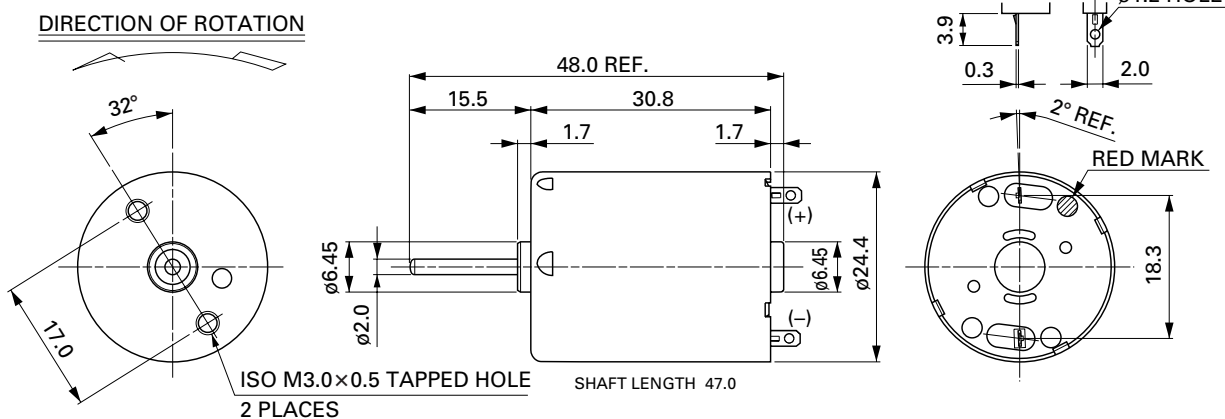


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RK-370CC-14280	12 ~ 30	30V CONSTANT	17000	0.090	14330	0.48	6.15	62.7	9.21	39.2	400	2.60

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

UNIT: MILLIMETERS

CCW(+)

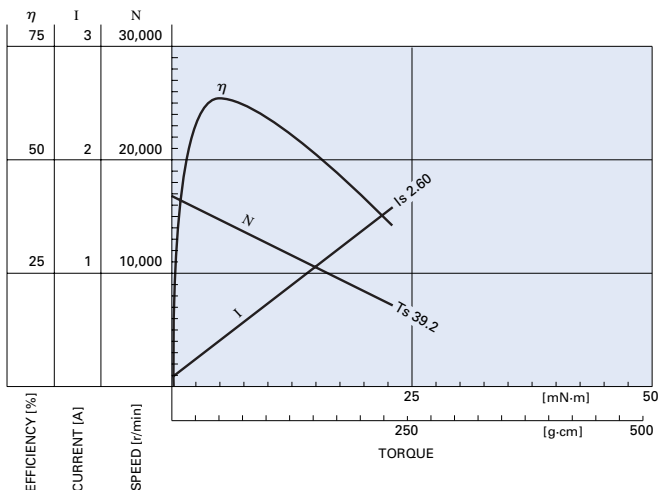


取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.

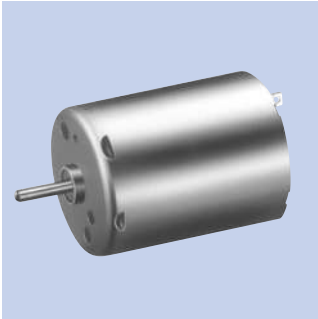
WEIGHT: 51g (APPROX)

## RK-370CC-14280

30.0V

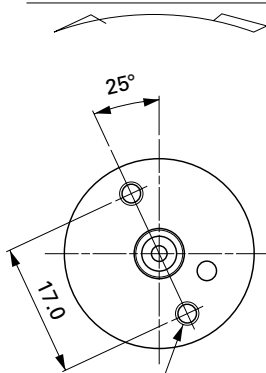


Typical Applications Office Automation Equipments : Printer / Copy Machine  
Precision Instruments : Vending Machine



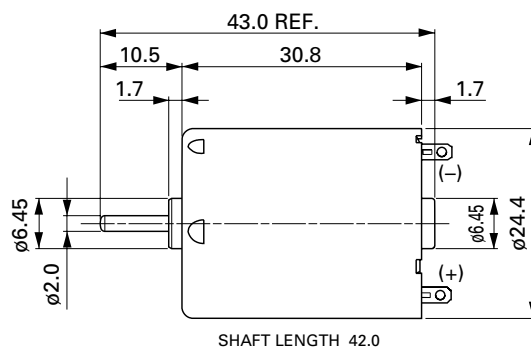
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RK-370CA-10800	12 ~ 30	24V CONSTANT	5100	0.015	4310	0.082	2.58	26.3	1.16	16.7	170	0.45
RK-370CA-18260	6 ~ 18	12V CONSTANT	7900	0.050	6820	0.32	3.21	32.7	2.29	23.5	240	2.00
RK-370CA-081050	12 ~ 30	24V CONSTANT	3900	0.010	3210	0.047	1.90	19.3	0.64	10.8	110	0.22

DIRECTION OF ROTATION

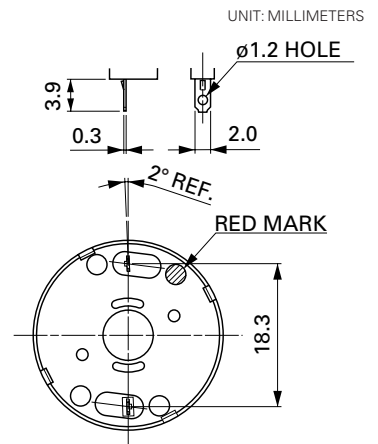


ISO M3.0×0.5 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



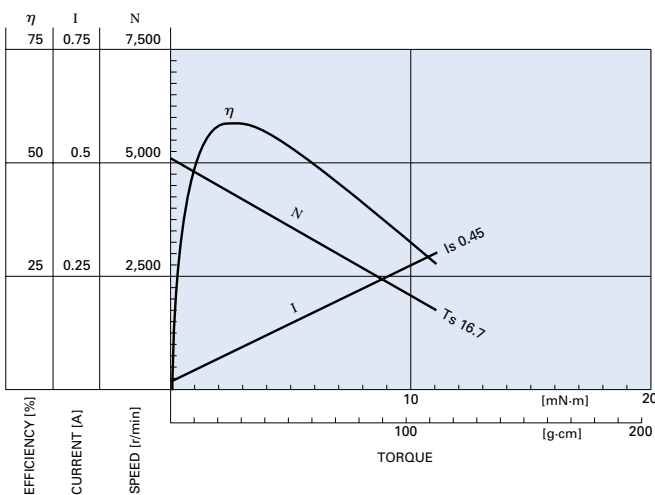
SHAFT LENGTH 42.0



WEIGHT: 51g (APPROX)

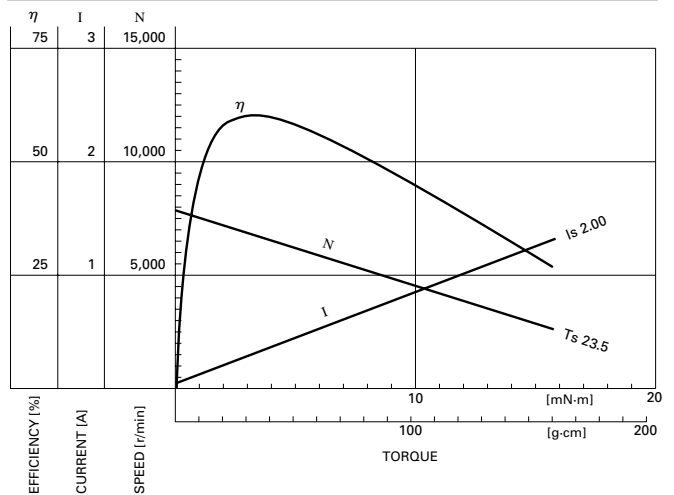
## RK-370CA-10800

24.0V



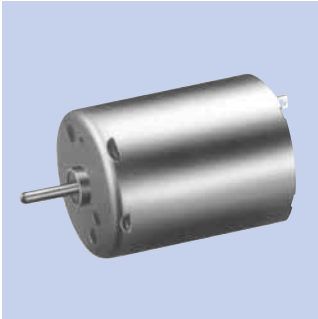
## RK-370CA-18260

12.0V





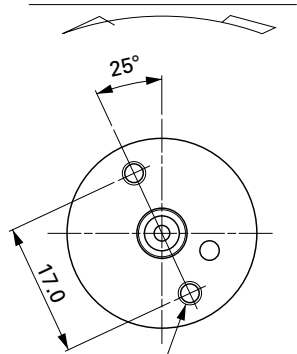
Typical Applications Precision Instruments : Vending Machine  
Office Automation Equipments



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RK-270SH-08550	12 ~ 26	24V CONSTANT	6300	0.026	5060	0.11	2.80	28.6	1.48	14.2	145	0.43
RK-270SH-16175	4.5 ~ 18.0	9V CONSTANT	7500	0.070	6320	0.37	3.18	32.5	2.10	20.2	206	2.00

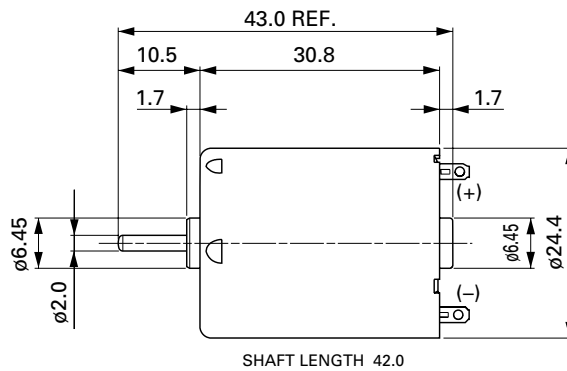
UNIT: MILLIMETERS

DIRECTION OF ROTATION

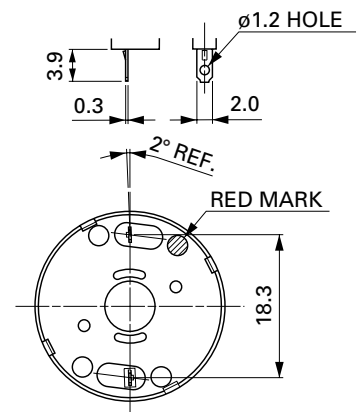


ISO M3.0×0.5 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



SHAFT LENGTH 42.0



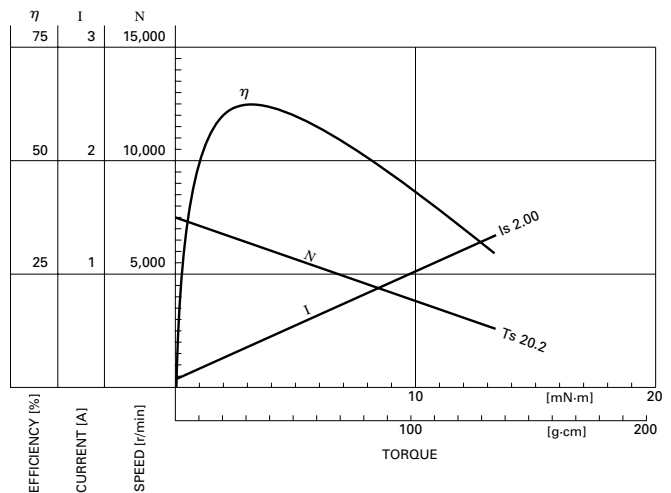
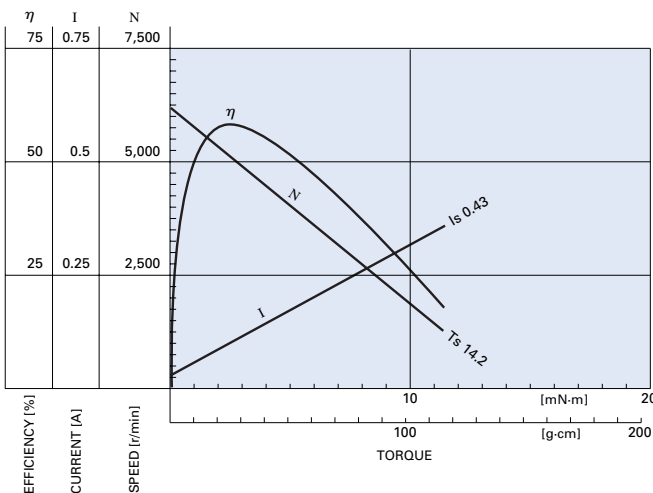
WEIGHT: 51g (APPROX)

## RK-270SH-08550

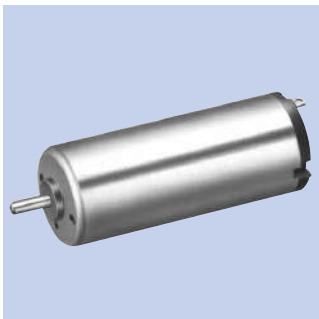
24.0V

## RK-270SH-16175

9.0V



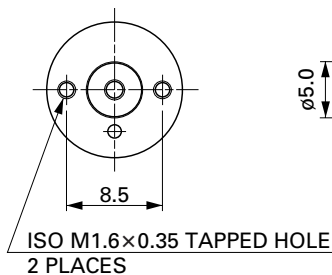
Typical Applications Precision Instruments : Camera  
Household Appliances



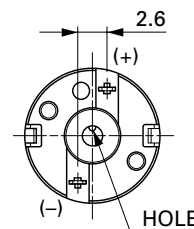
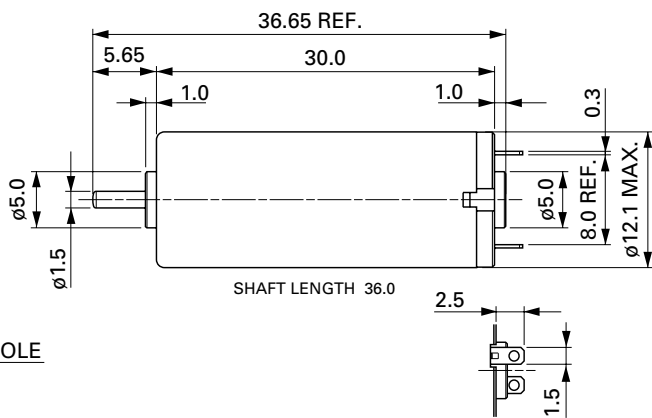
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-N60CA-1955	1 ~ 3	2.4V CONSTANT	12700	0.13	10140	0.51	0.63	6.5	0.67	3.14	32	2.04

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



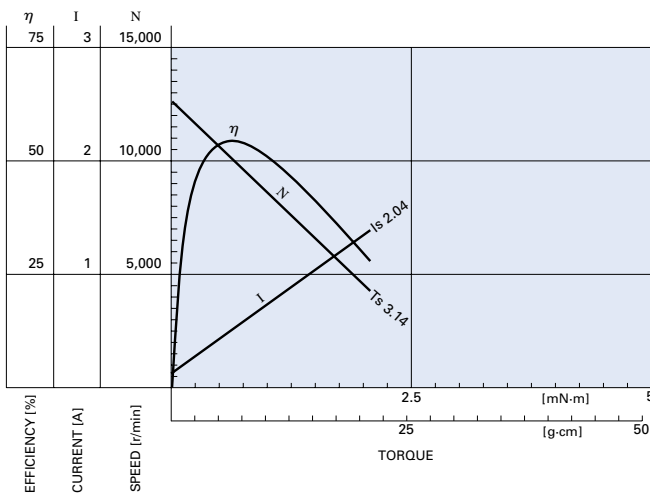
取付けネジはモータケース面より1.0以下  
Usable machine screw length 1.0 max. from motor mounting surface.



**WEIGHT: 13g (APPROX)**

**RF-N60CA-1955**

**2.4V**



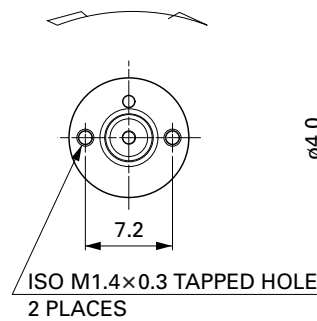


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE		CURRENT	
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-M50SC-1750	1.2 ~ 2.4	2.4V CONSTANT	21200	0.068	17790	0.35	0.27	2.8	0.51	1.70	17	1.85
RF-M50WB/WC-1747	1.2 ~ 2.4	2.4V CONSTANT	15400	0.070	13070	0.39	0.41	4.2	0.56	2.70	28	2.20

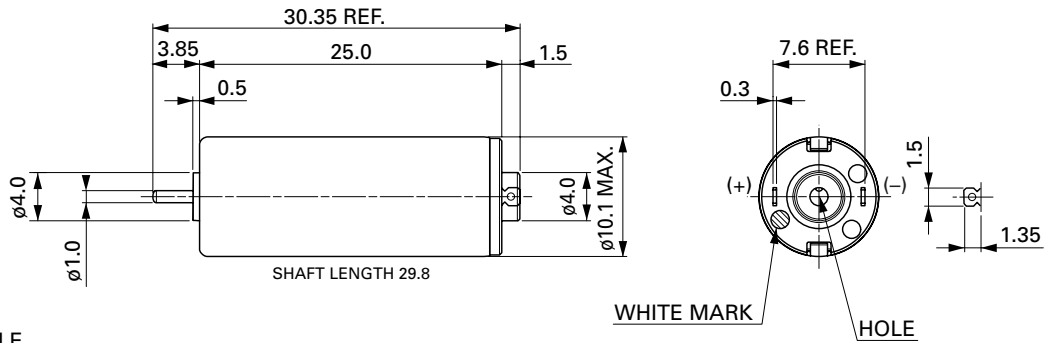
\*RF-M50WB : Magnetic-leak-proof specifications

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



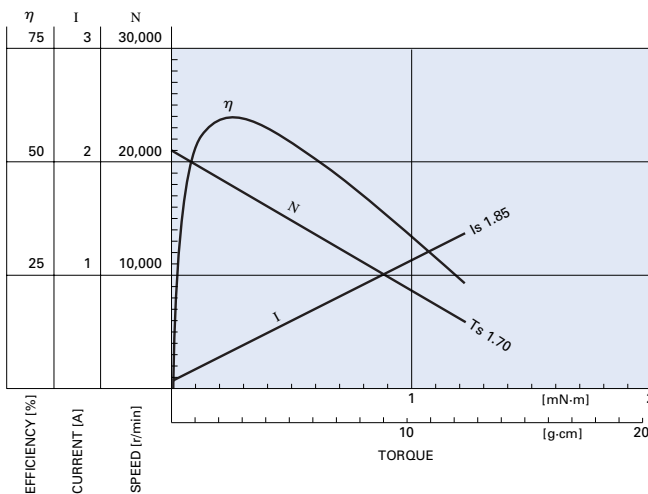
取付けネジはモータケース面より1.0以下  
Usable machine screw length 1.0 max. from motor mounting surface.



**WEIGHT: 8.6g (APPROX)**

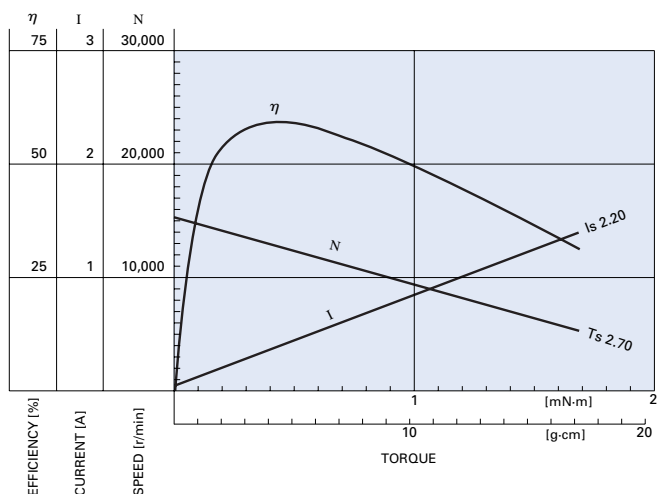
**RF-M50SC-1750**

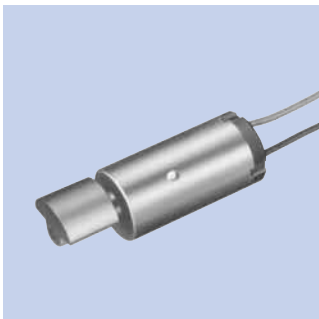
2.4V



**RF-M50WB/WC-1747**

2.4V



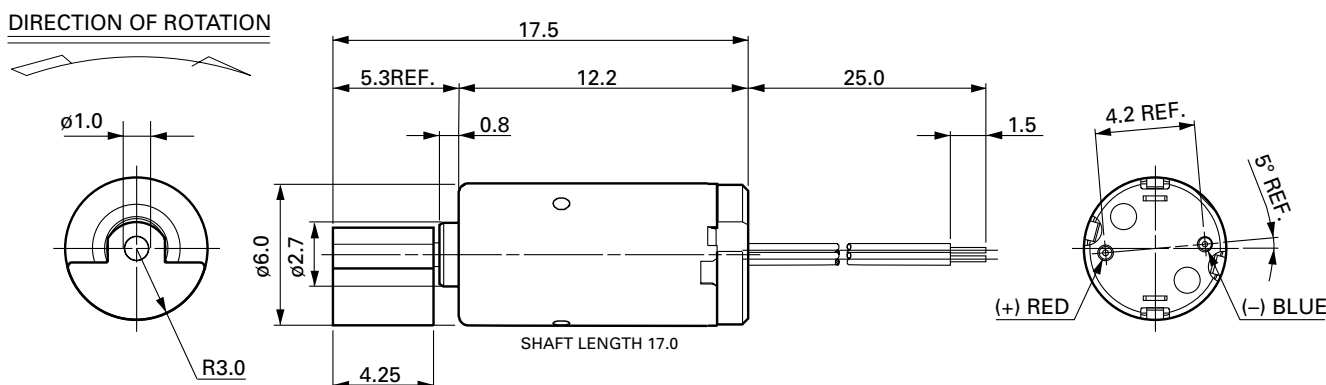


MODEL	RATED VOLTAGE	RATED SPEED	RATED CURRENT	STARTING VOLTAGE	STARTING CURRENT
	V	r/min	mA	V	mA
RF-J20WA-5Z145	1.3V CONSTANT	7400	68	0.48	130

MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A			r/min	A	mN·m	g·cm	W	mN·m
RF-J20WA-5Z145	1.1 ~ 2.0	1.3V CONSTANT	12900	0.028	8810	0.060	0.019	0.19	0.018	0.06	0.6	0.13

\*Without counter weight.

UNIT: MILLIMETERS

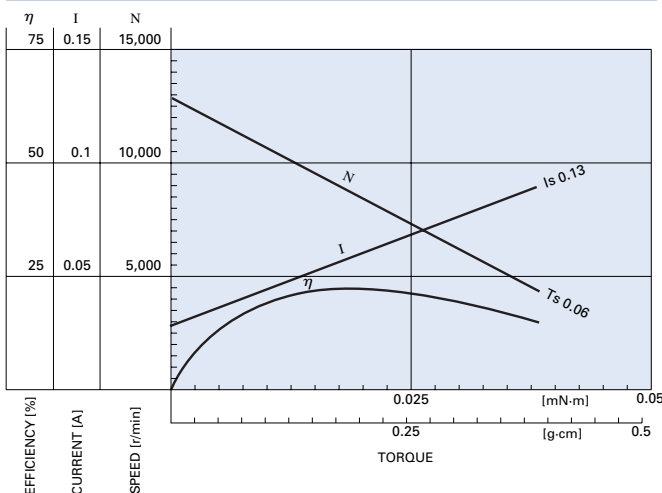


WEIGHT: 2.2g (APPROX)

### Distinctive Features

In comparison with conventional cored motors in the market, this motor has been developed with low starting voltage, while securing sufficient vibration value, and at the competitive price.

### RF-J20WA-5Z145 1.3V

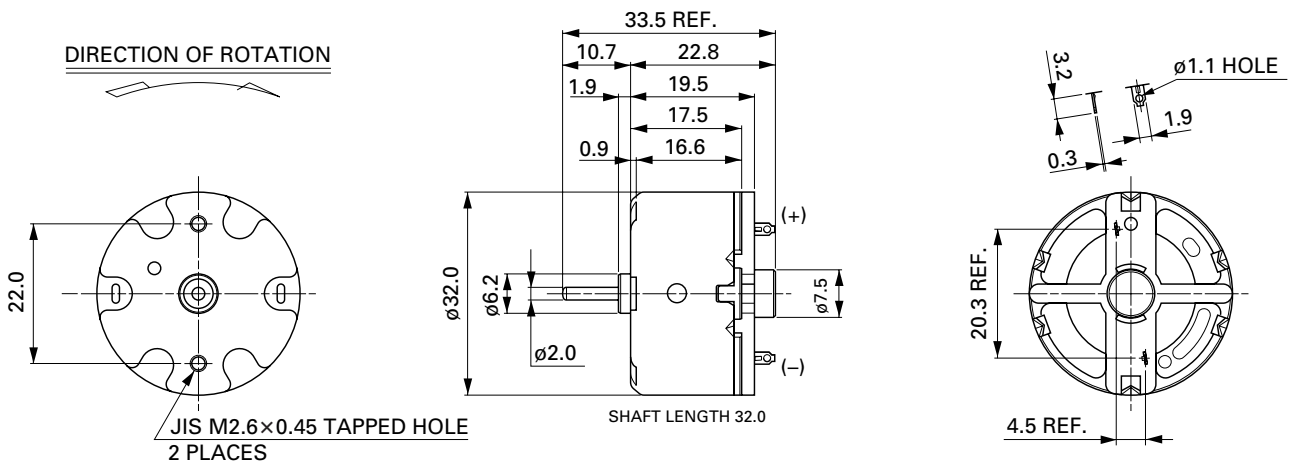


Typical Applications Audio and Visual Equipments : CD Player / DVD Player / Cassette Tape Recorder / VCR



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RF-500TB-12560	1.5 ~ 12.0	6V CONSTANT	2700	0.020	2180	0.084	1.13	11.6	0.26	5.88	60	0.35
		9V CONSTANT	4000	0.023	3300	0.11	1.55	15.8	0.53	8.92	91	0.52
RF-500TB-14415	1.5 ~ 9.0	3V CONSTANT	1800	0.022	1430	0.085	0.82	8.4	0.12	4.02	41	0.33
		6V CONSTANT	3700	0.028	3060	0.13	1.42	14.4	0.45	8.24	84	0.65

UNIT: MILLIMETERS

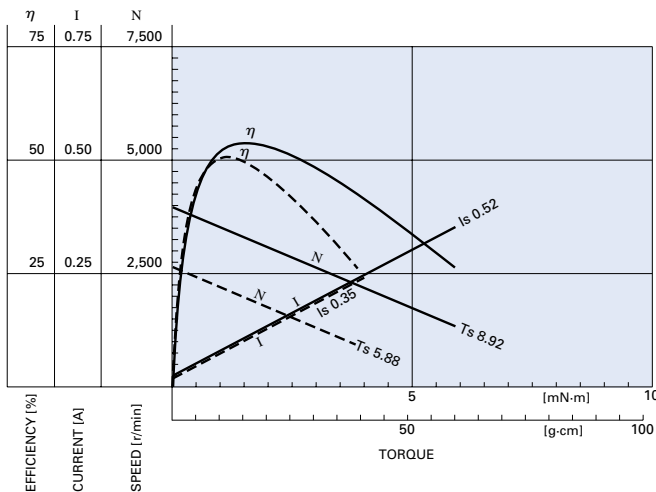


取付けネジはモータケース面より1.5以下  
Usable machine screw length 1.5 max. from motor mounting surface.

WEIGHT: 45g (APPROX)

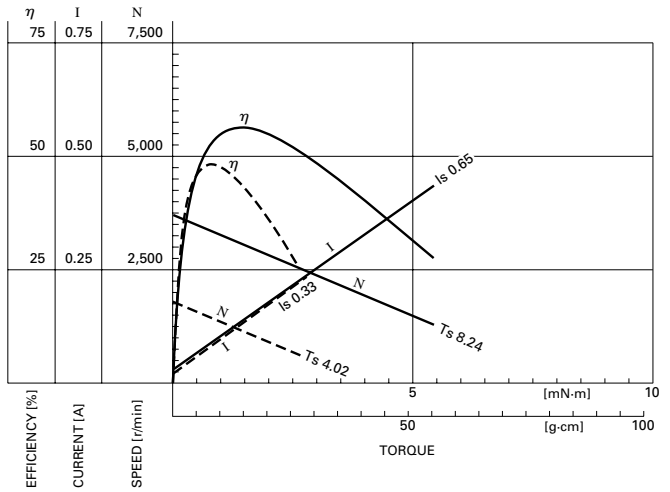
## RF-500TB-12560

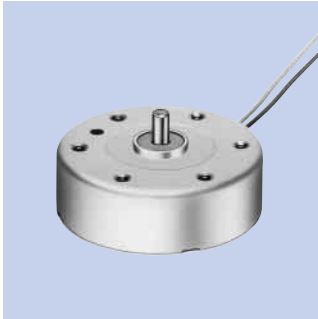
---- 6.0V — 9.0V



## RF-500TB-14415

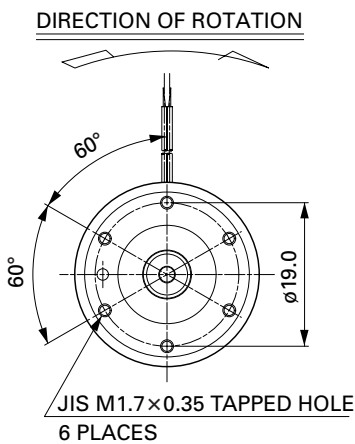
---- 3.0V — 6.0V



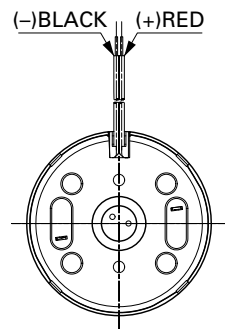
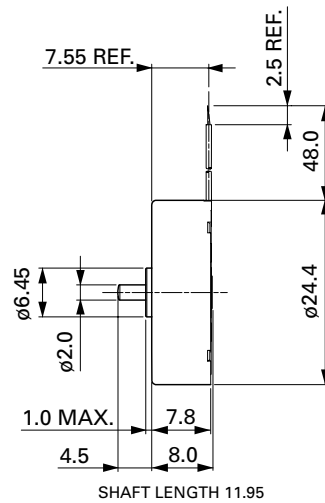


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RF-4LOWA-13185	2~6	2V CONSTANT	4800	0.060	3510	0.16	0.33	3.4	0.12	1.23	13	0.44

UNIT: MILLIMETERS



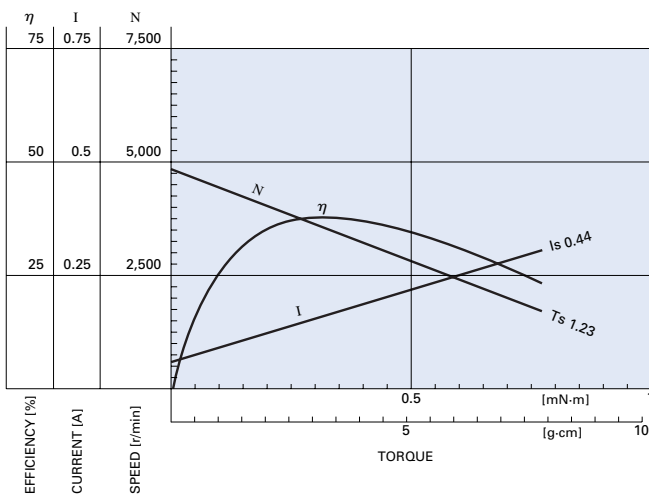
取付けネジはモータケース面より1.1以下  
Usable machine screw length 1.1 max. from motor mounting surface.



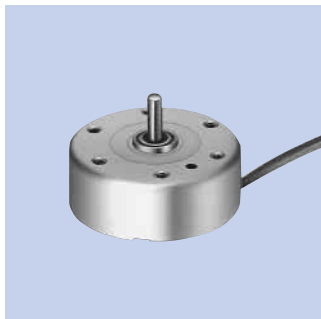
WEIGHT: 13.5g (APPROX)

## RF-4LOWA-13185

2.0V



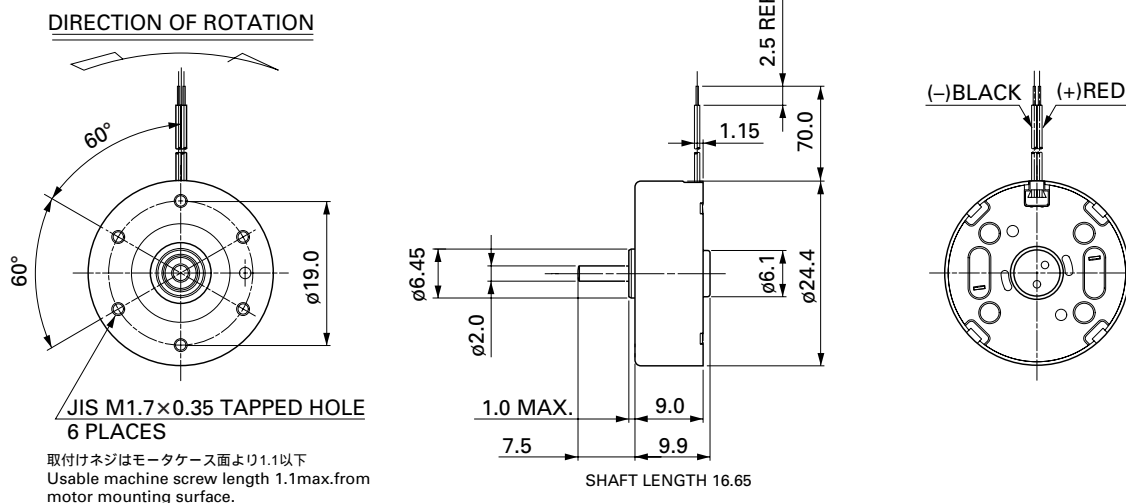
**Typical Applications** Audio and Visual Equipments : Portable CD Player / Car CD Player  
Office Automation Equipments : CD/DVD-ROM Drive



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-400CA-12265	1 ~ 6	2V CONSTANT	4000	0.030	3070	0.099	0.25	2.6	0.080	1.08	11	0.33
RF-400CA-13225	1.5-6.0	2V CONSTANT	4800	0.035	3730	0.12	0.30	3.0	0.12	1.33	14	0.43

\*Also available with terminals (without leadwires).

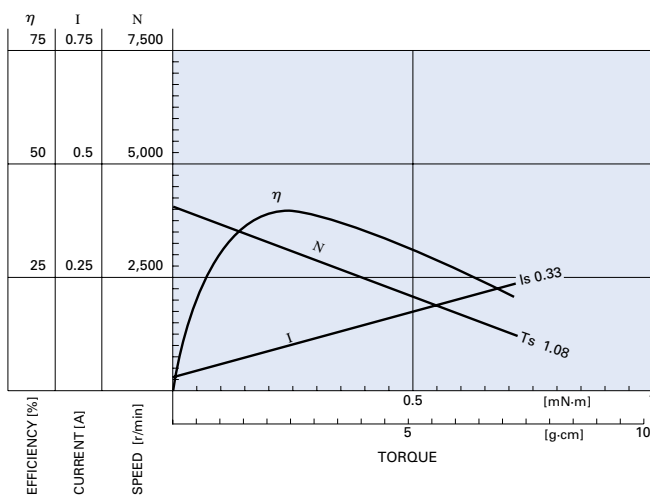
UNIT: MILLIMETERS



WEIGHT: 16.5g (APPROX)

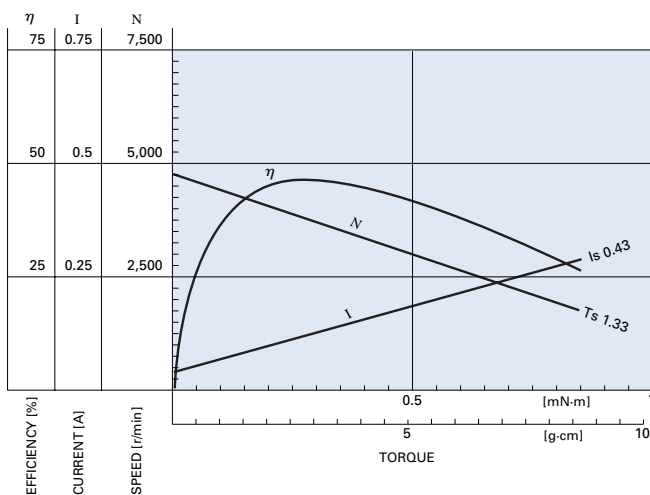
## RF-400CA-12265

2.0V

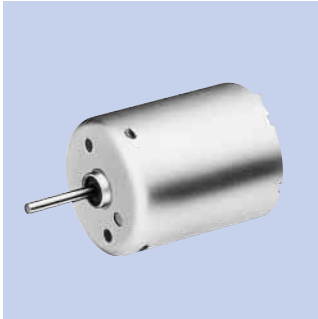


## RF-400CA-13225

2.0V



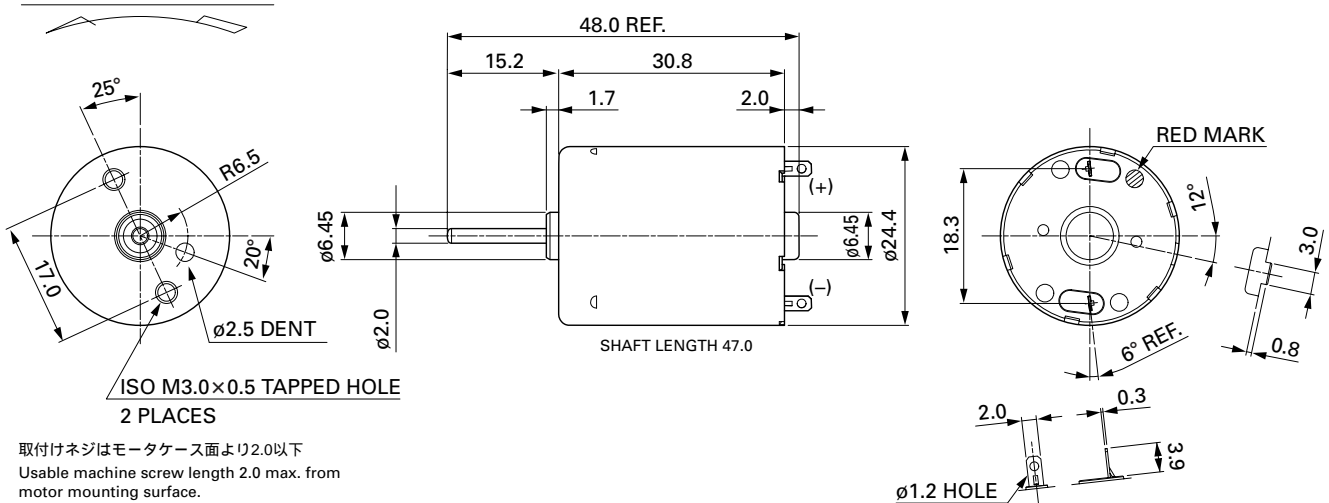
Typical Applications Automotive Products : Air Conditioning Damper Actuator



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-370CB-11670	7 ~ 16	12V CONSTANT	3100	0.011	2620	0.059	1.63	16.6	0.45	10.4	106	0.32

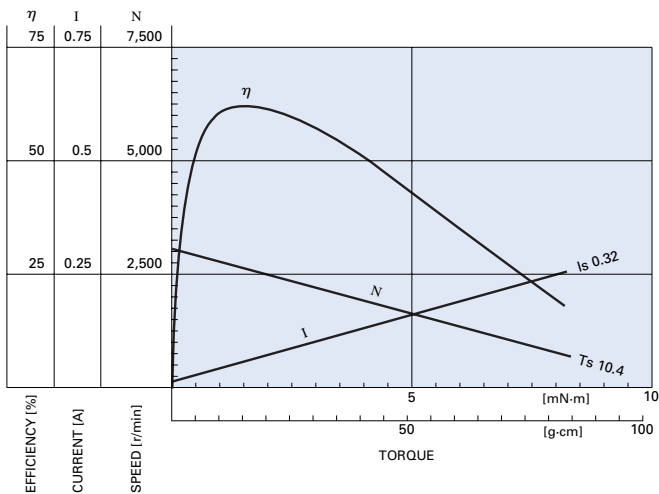
UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



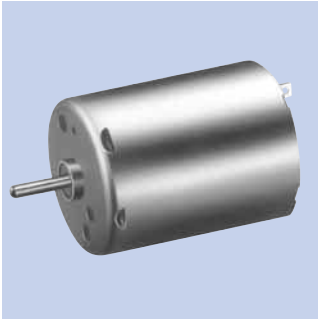
**WEIGHT: 51g (APPROX)**

**RF-370CB-11670 12.0V**





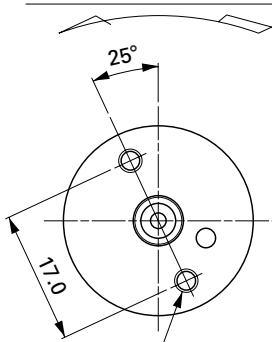
Typical Applications **Audio and Visual Equipments** : CD Player / VCR  
**Household Appliances** : Kitchen Appliance / Blood Pressure Meter



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-370CA-15370	3 ~ 12	12V CONSTANT	5600	0.026	4840	0.17	2.48	25.3	1.25	18.3	187	1.06
RF-370CA-12560	4 ~ 12	12V CONSTANT	3700	0.018	3090	0.091	2.03	20.7	0.66	12.3	125	0.46

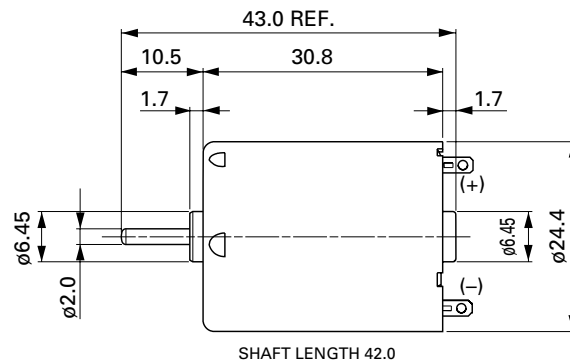
UNIT: MILLIMETERS

DIRECTION OF ROTATION

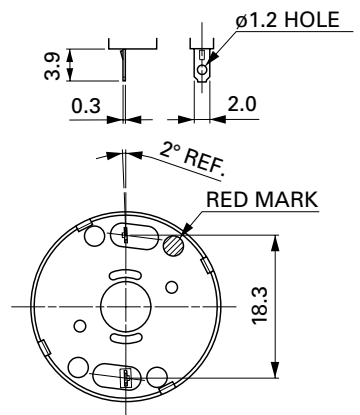


ISO M3.0×0.5 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



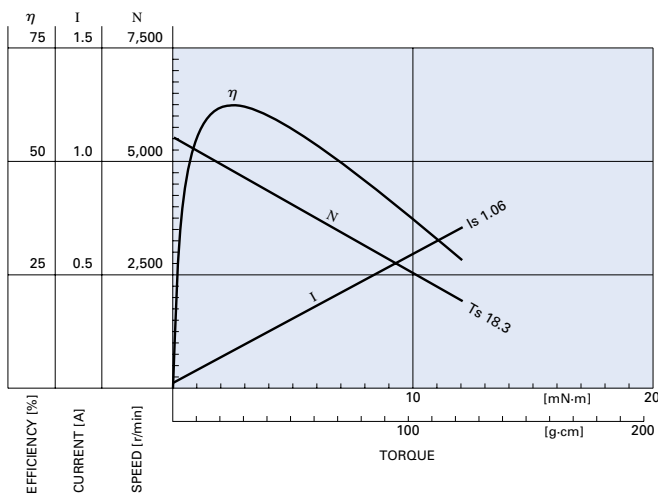
SHAFT LENGTH 42.0



WEIGHT: 51g (APPROX)

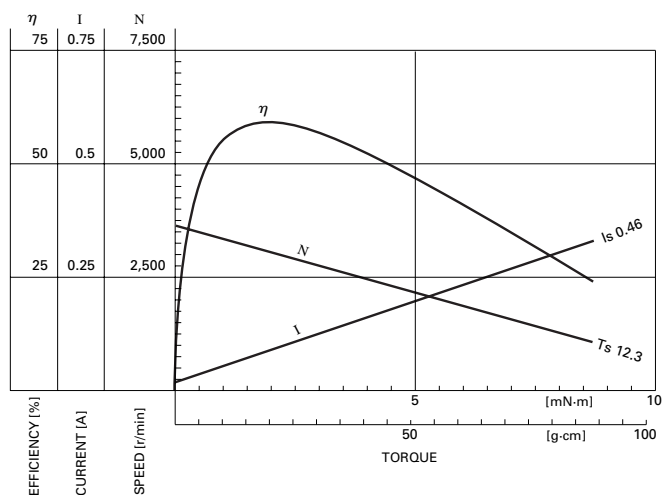
## RF-370CA-15370

12.0V

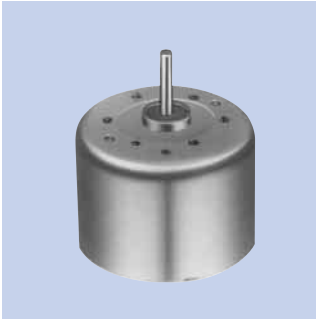


## RF-370CA-12560

12.0V



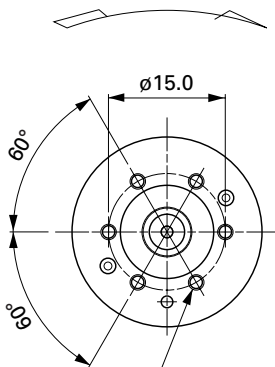
Typical Applications Household Appliances : Air Freshener



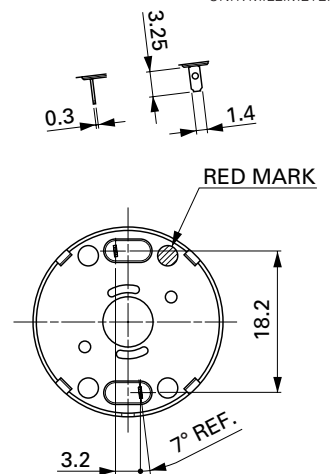
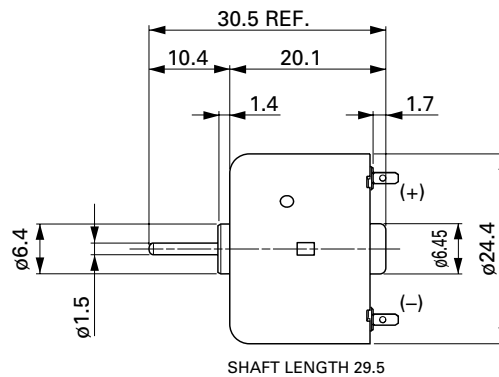
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-330TK-07800	1 ~ 3	1.5V CONSTANT	800	0.004	570	0.010	0.083	0.84	0.005	0.29	3.0	0.025
		3V CONSTANT	1700	0.006	1260	0.017	0.16	1.6	0.021	0.61	6.2	0.050

UNIT: MILLIMETERS

DIRECTION OF ROTATION



ISO M2.0×0.4 TAPPED HOLE  
6 PLACES

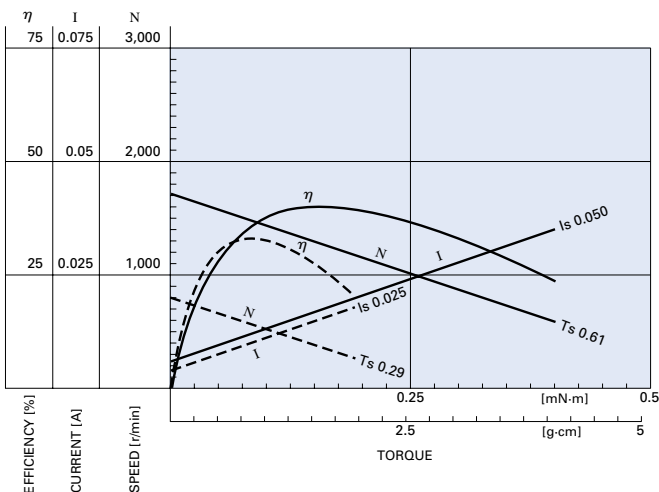


取付けネジはモータケース面より1.5以下  
Usable machine screw length 1.5 max. from motor mounting surface.

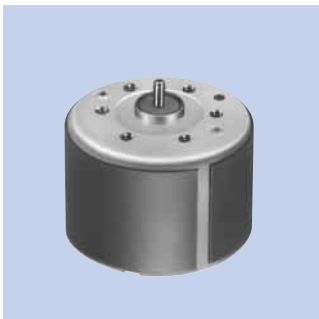
**WEIGHT: 32g (APPROX)**

**RF-330TK-07800**

----- 1.5V ——— 3.0V

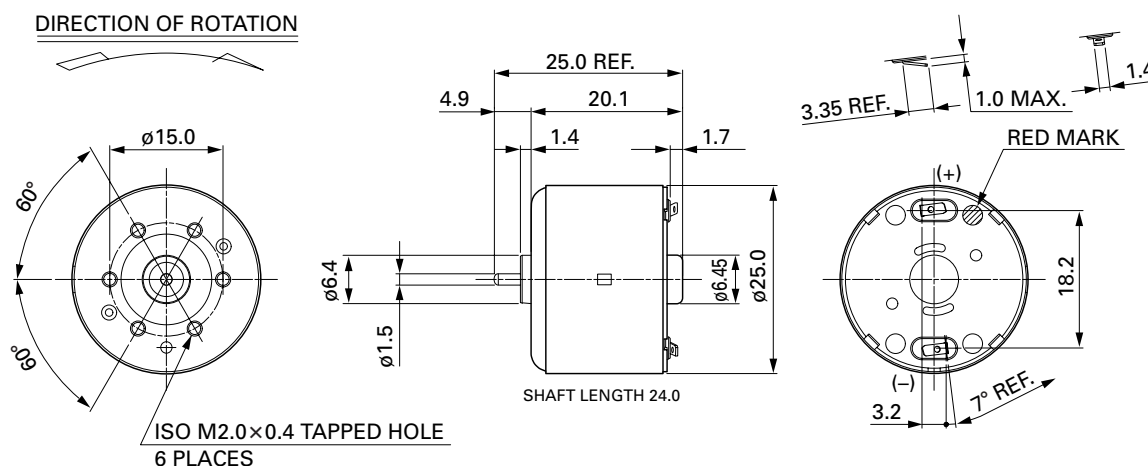


Typical Applications Audio and Visual Equipments : Volume Drive



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-330TA-09500	2 ~ 8	4.5V CONSTANT	3300	0.010	2700	0.045	0.40	4.1	0.11	2.21	23	0.20

UNIT: MILLIMETERS

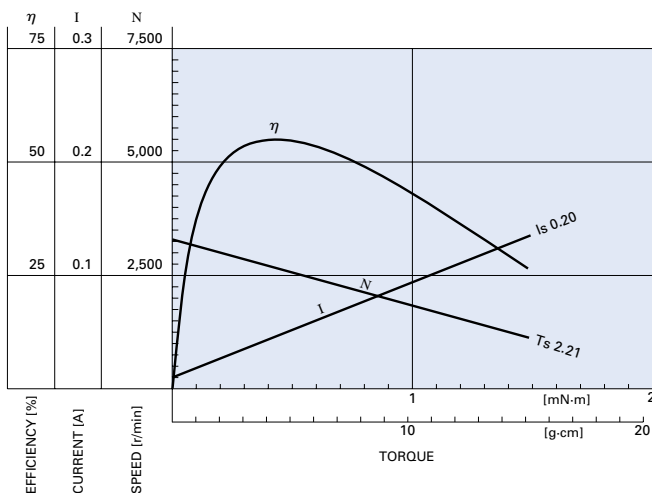


取付けネジはモータケース面より1.5以下  
Usable machine screw length 1.5 max. from motor mounting surface.

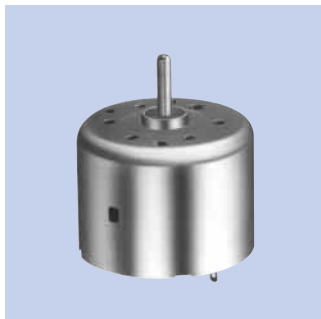
**WEIGHT: 32g (APPROX)**

## RF-330TA-09500

4.5V

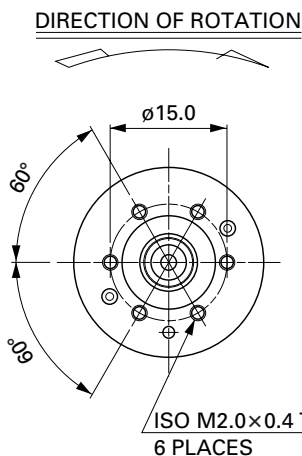


Typical Applications Audio and Visual Equipments : CD Player / DVD Player

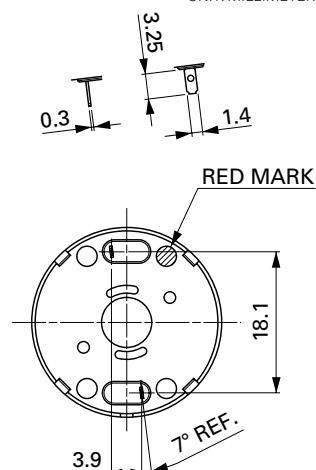
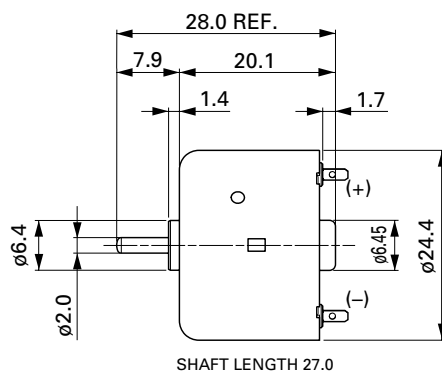


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-320CH-12400	1 ~ 5	3V CONSTANT	2700	0.019	2160	0.075	0.51	5.2	0.12	2.55	26	0.30

UNIT: MILLIMETERS



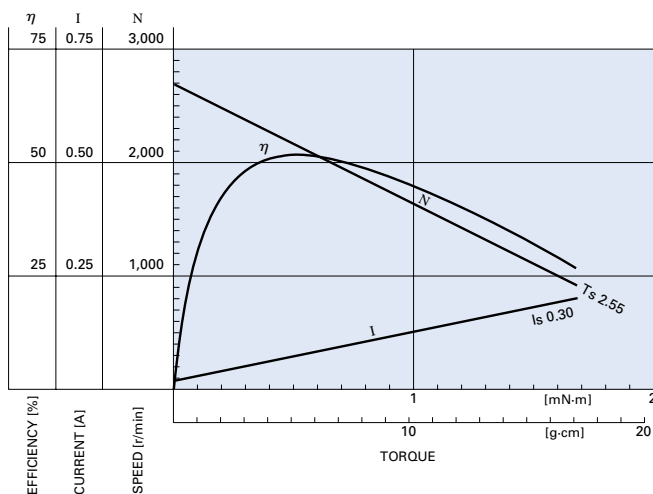
取付けネジはモータケース面より1.5以下  
Usable machine screw length 1.5 max. from motor mounting surface.



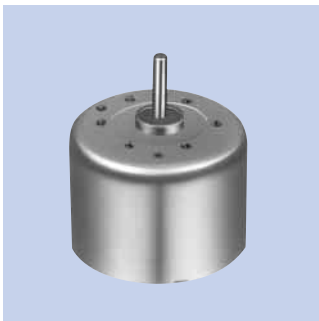
**WEIGHT: 28g (APPROX)**

## RF-320CH-12400

3.0V



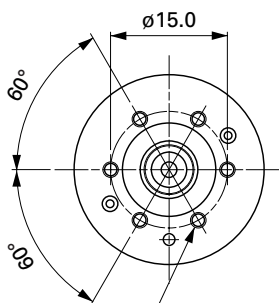
Typical Applications Audio and Visual Equipments : CD Player / DVD Player



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-310TA-11400	1 ~ 6	2.5V CONSTANT	2800	0.017	2190	0.061	0.32	3.3	0.073	1.47	15	0.22

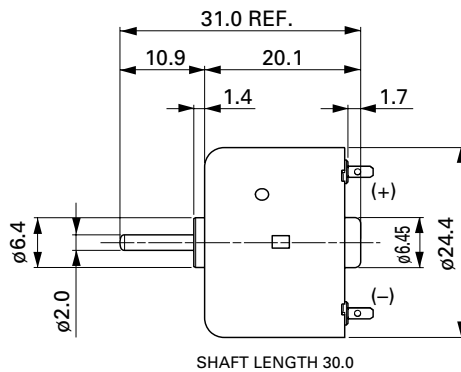
UNIT: MILLIMETERS

DIRECTION OF ROTATION

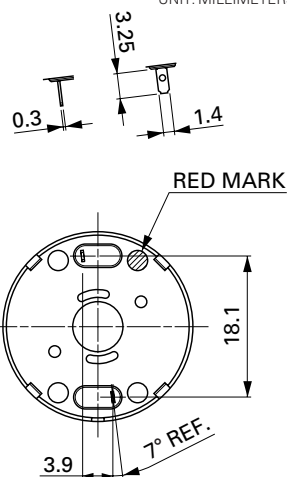


ISO M2.0x0.4 TAPPED HOLE  
6 PLACES

取付けネジはモータケース面より1.5以下  
Usable machine screw length 1.5 max. from motor mounting surface.



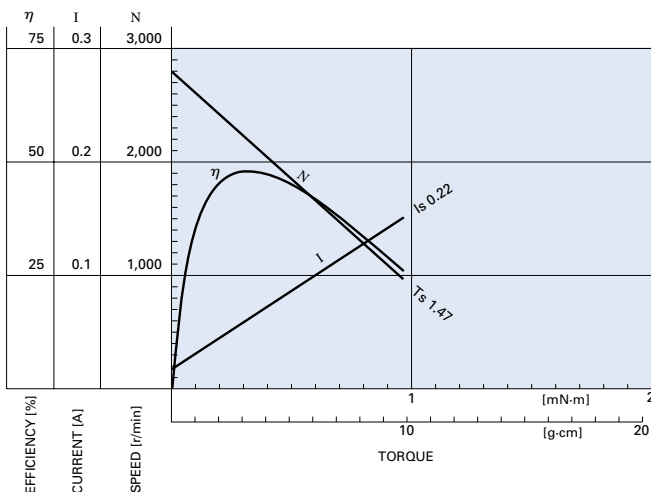
SHAFT LENGTH 30.0



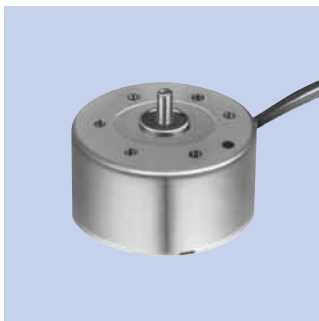
**WEIGHT: 29g (APPROX)**

**RF-310TA-11400**

**2.5V**



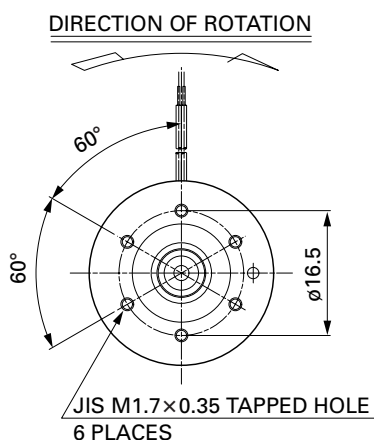
Typical Applications Audio and Visual Equipments : DVD Player



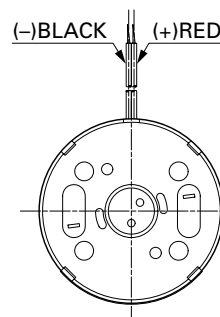
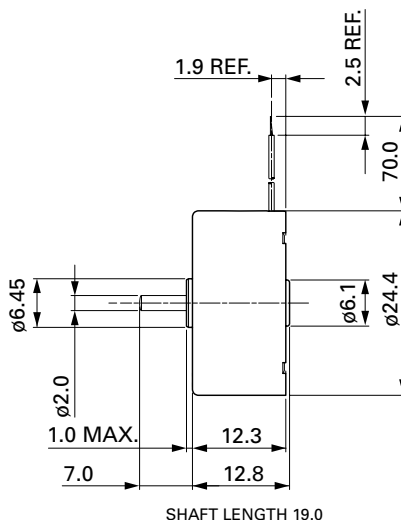
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-300SA-12350	2~6	3V CONSTANT	3100	0.027	2450	0.10	0.60	6.1	0.15	2.88	29	0.39

\*High temperature specification motor is also available.  
\*Also available with terminals (without leadwires).

UNIT: MILLIMETERS



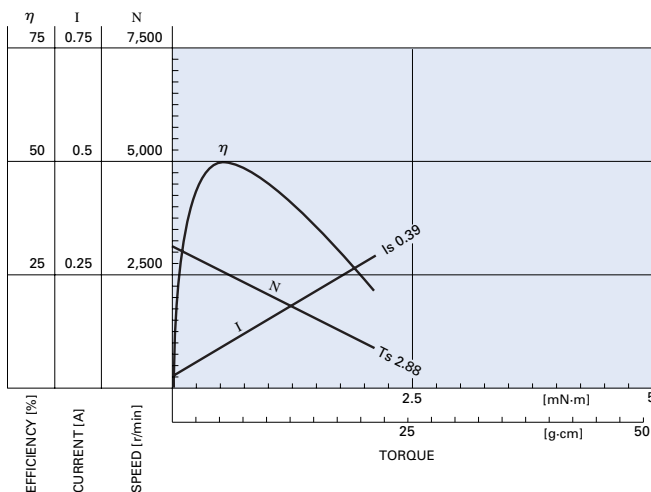
取付けネジはモータケース面より1.1以下  
Usable machine screw length 1.1 max. from motor mounting surface.



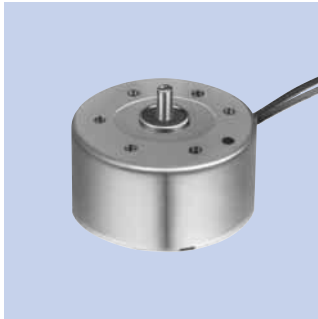
**WEIGHT: 22g (APPROX)**

## RF-300SA-12350

3.0V



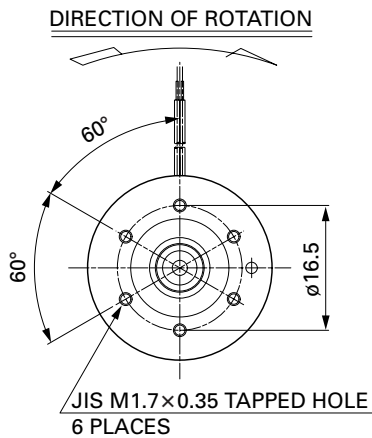
**Typical Applications** Audio and Visual Equipments : CD Player / Car CD Player / DVD Player  
Office Automation Equipments : CD/DVD-ROM Drive



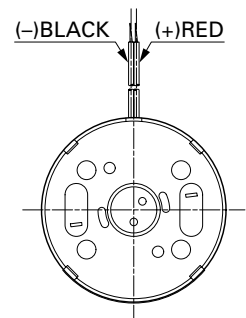
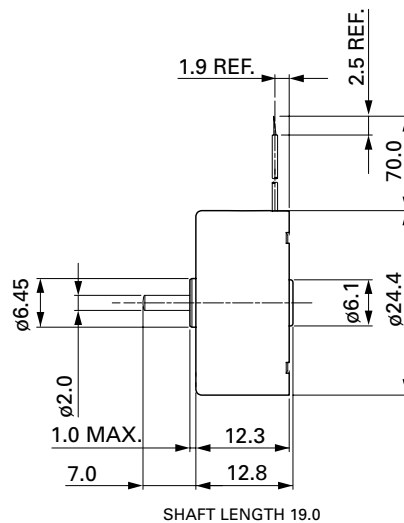
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-300FA-11420	0.7 ~ 5.0	3V CONSTANT	2900	0.017	2320	0.068	0.42	4.3	0.10	2.11	22	0.27
RF-300FA-12350	1.5 ~ 6.0	3V CONSTANT	3500	0.022	2830	0.093	0.48	4.9	0.14	2.51	26	0.39

\*High temperature specification motor is also available.  
\*Also available with terminals (without leadwires).

UNIT: MILLIMETERS



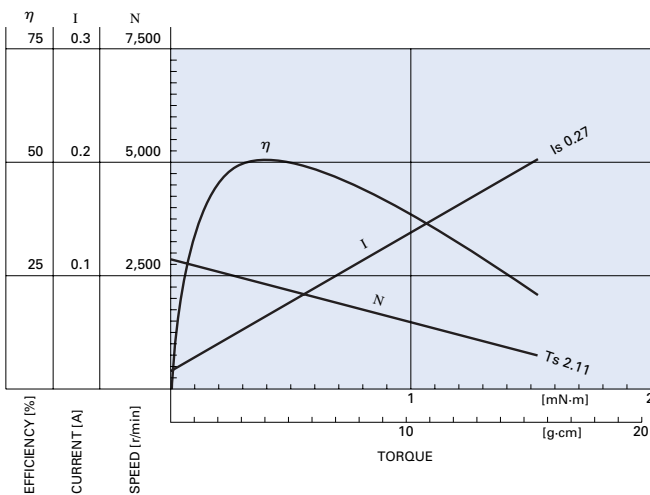
取付けネジはモータケース面より1.1以下  
Usable machine screw length 1.1 max. from motor mounting surface.



WEIGHT: 22g (APPROX)

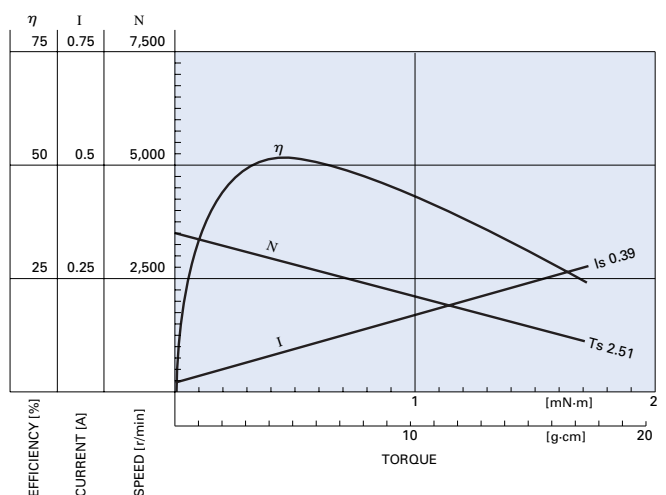
## RF-300FA-11420

3.0V

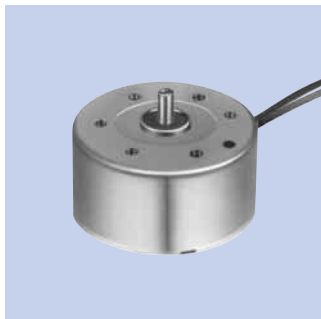


## RF-300FA-12350

3.0V



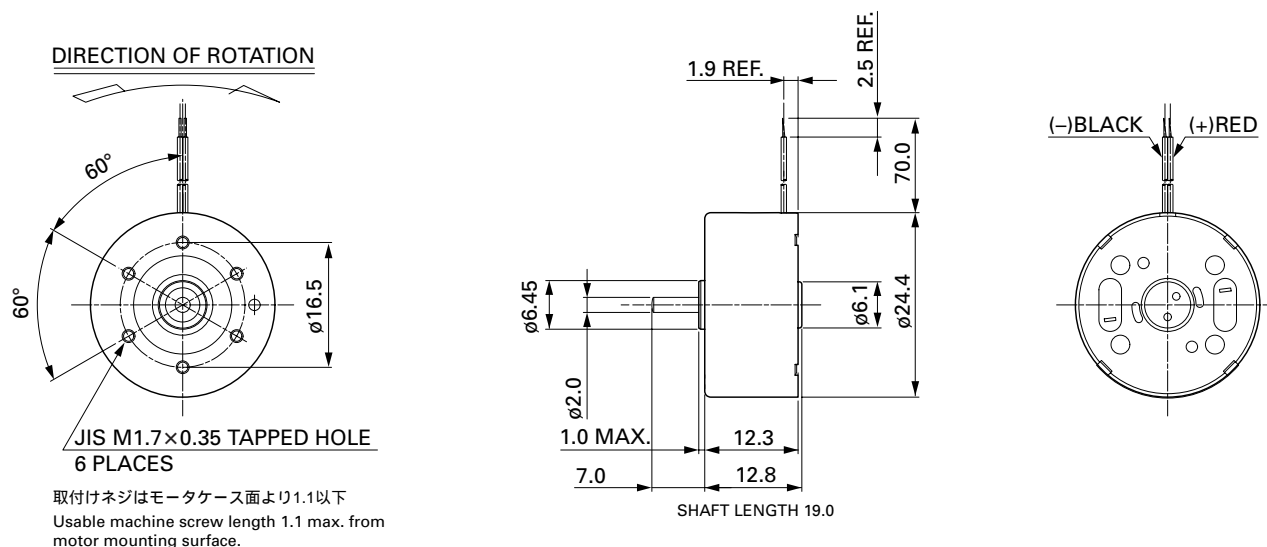
**Typical Applications** Audio and Visual Equipments : CD Player / DVD Player  
Office Automation Equipments : CD/DVD-ROM Drive



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-300EA-1D390	2.8 ~ 7.0	3.9V CONSTANT	4400	0.021	3520	0.084	0.47	4.8	0.17	2.35	24	0.34

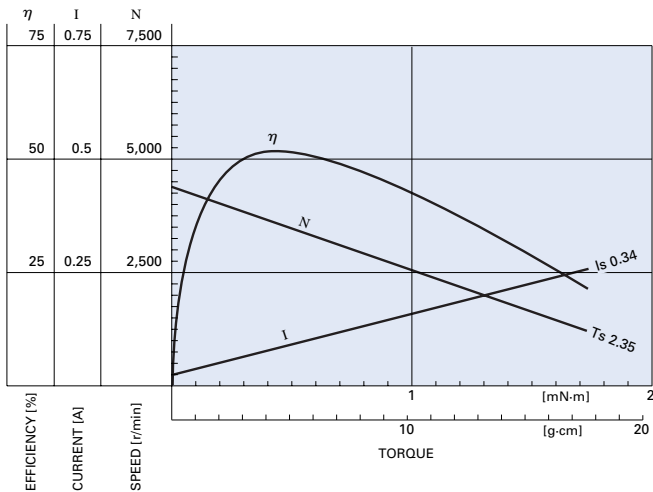
\*High temperature specification motor is also available.  
\*Also available with terminals (without leadwires).

UNIT: MILLIMETERS



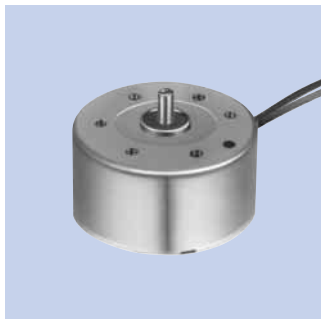
**WEIGHT: 22g (APPROX)**

**RF-300EA-1D390** 3.9V





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

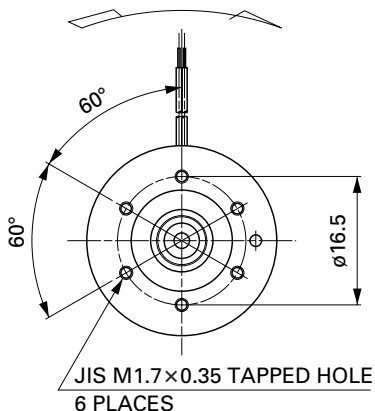


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RF-300CA-11440	0.7 ~ 5.0	2V CONSTANT	2200	0.018	1660	0.055	0.28	2.9	0.049	1.14	12	0.17
RF-300CA-11400	1.2 ~ 6.0	3V CONSTANT	3700	0.018	2970	0.073	0.38	3.8	0.12	1.91	20	0.30
RF-300CA-09550	1 ~ 6	3V CONSTANT	2700	0.012	2100	0.042	0.27	2.8	0.060	1.24	13	0.15
RF-300CA-14270	0.5 ~ 4.0	1.9V CONSTANT	3500	0.032	2740	0.12	0.38	3.9	0.11	1.76	18	0.42

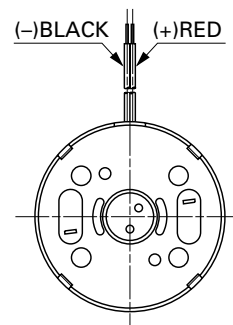
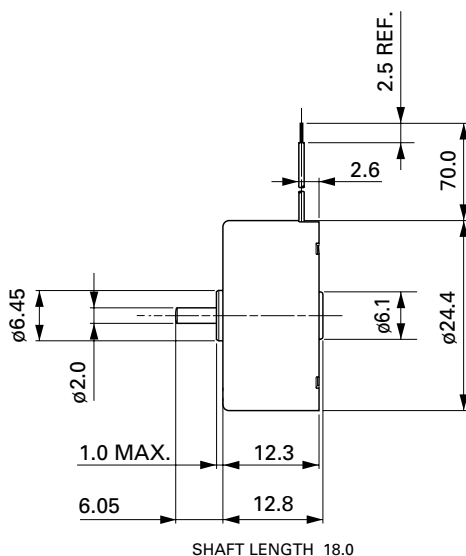
\*High temperature specification motor is also available.  
\*Also available with terminals (without leadwires).

UNIT: MILLIMETERS

DIRECTION OF ROTATION



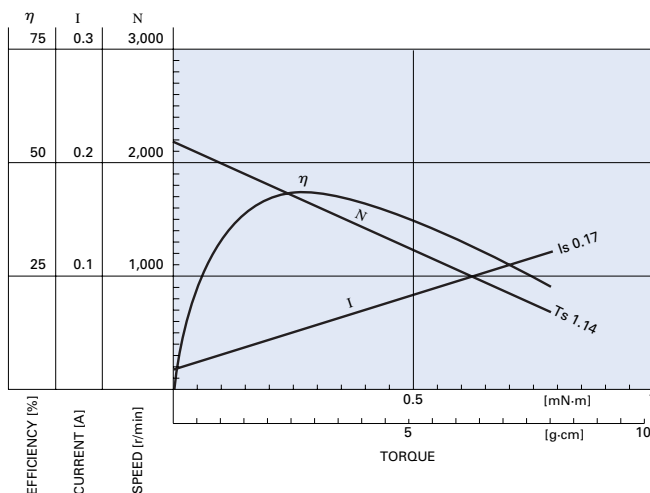
取付けネジはモータケース面より1.1以下  
Usable machine screw length 1.1 max. from motor mounting surface.



WEIGHT: 22g (APPROX)

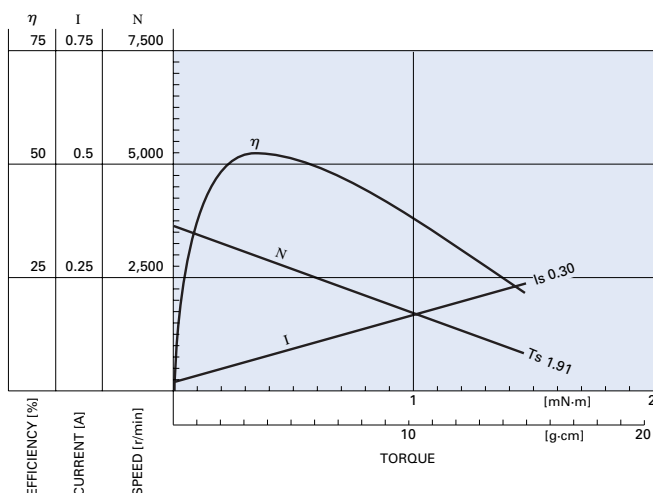
**RF-300CA-11440**

2.0V

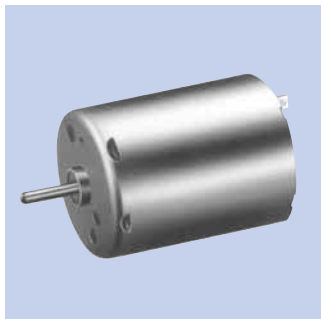


**RF-300CA-11400**

3.0V



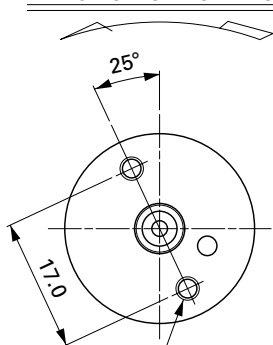
Typical Applications Audio and Visual Equipments : VCR



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RF-270RH-12370	6 ~ 15	12V CONSTANT	6200	0.028	5170	0.14	1.88	19.2	1.02	11.3	115	0.70

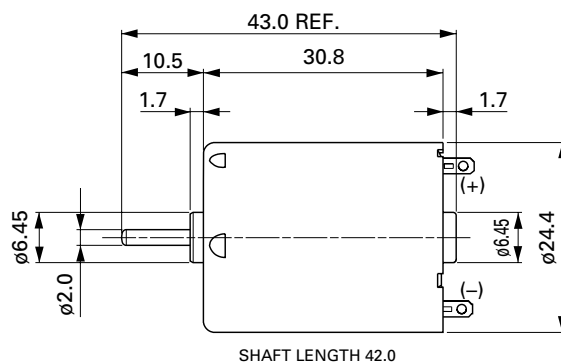
UNIT: MILLIMETERS

DIRECTION OF ROTATION

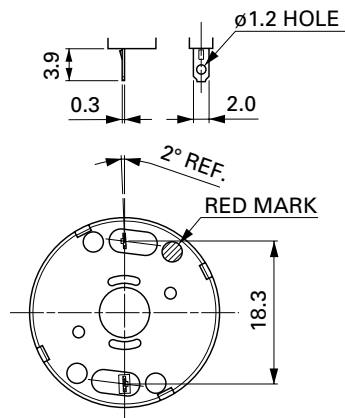


ISO M3.0×0.5 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from  
motor mounting surface.



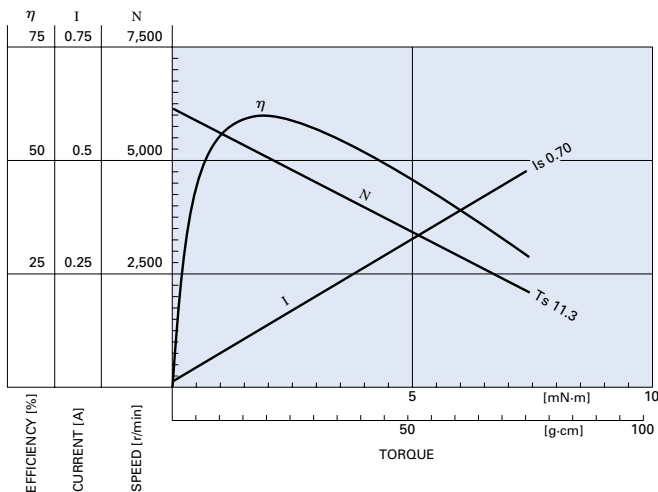
SHAFT LENGTH 42.0



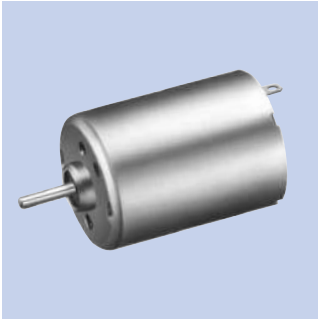
WEIGHT: 51g (APPROX)

## RF-270RH-12370

12.0V

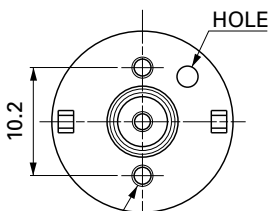


Typical Applications Audio and Visual Equipments : CD Player / DVD Player  
Household Appliances : Electric Shaver



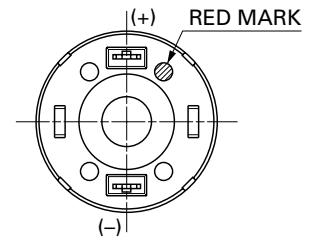
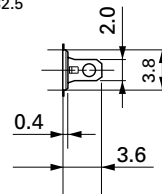
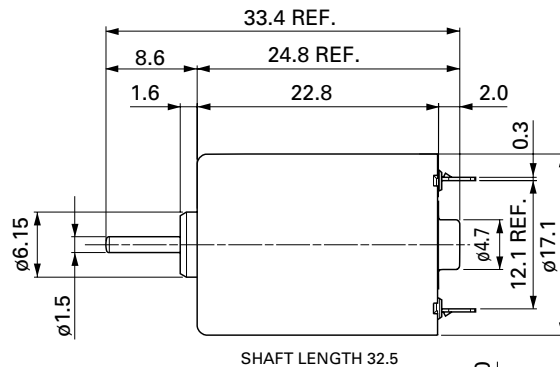
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL (COMMUTATOR POSITION)	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	TORQUE g·cm	OUTPUT W	TORQUE mN·m	TORQUE g·cm	CURRENT A
RF-130CH-12250	2.0 ~ 7.5	3.5V CONST. (CW)	4700	0.028	3730	0.11	0.49	5.0	0.19	2.36	24	0.41
		6V CONST. (CW)	8100	0.036	6600	0.16	0.76	7.8	0.53	4.12	42	0.70
RF-130CH-2860	1.0 ~ 1.5	1.5V CONST. (CW+)	9200	0.14	7600	0.67	0.74	7.5	0.58	4.24	43	3.18

DIRECTION OF ROTATION



ISO M2.0×0.4 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より1.2以下  
Usable machine screw length 1.2 max. from motor mounting surface.

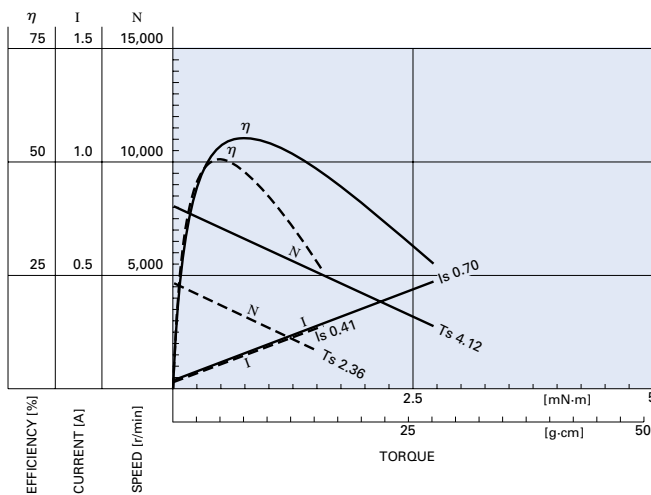


UNIT: MILLIMETERS

WEIGHT: 18g (APPROX)

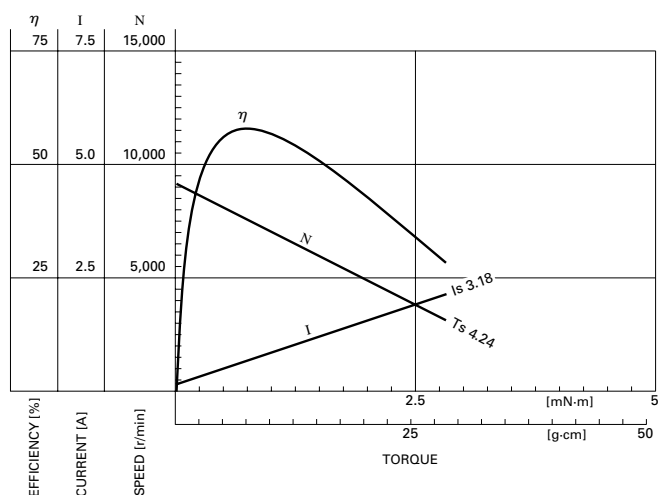
## RF-130CH-12250

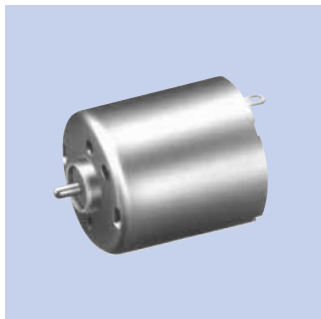
---- 3.5V — 6.0V



## RF-130CH-2860

1.5V

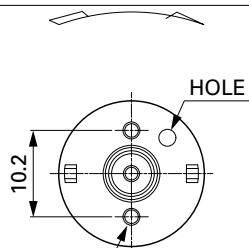




MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RF-020TH-10210	2 ~ 5	4.5V CONSTANT	12600	0.058	9590	0.18	0.38	3.9	0.39	1.61	16	0.59

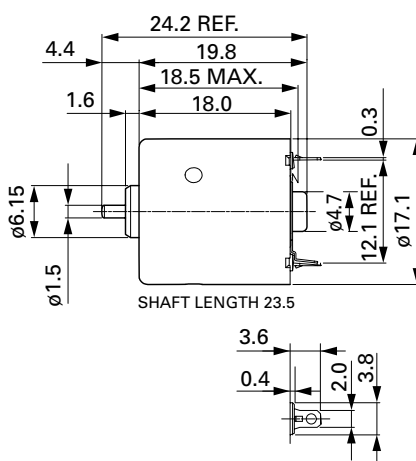
UNIT: MILLIMETERS

### DIRECTION OF ROTATION

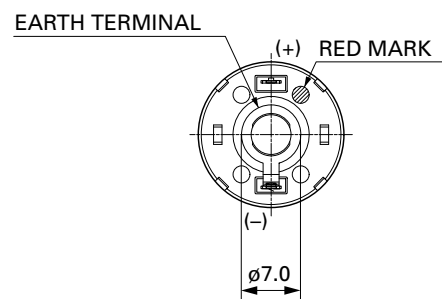


ISO M2.0×0.4 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より1.2以下  
Usable machine screw length 1.2 max. from motor mounting surface.



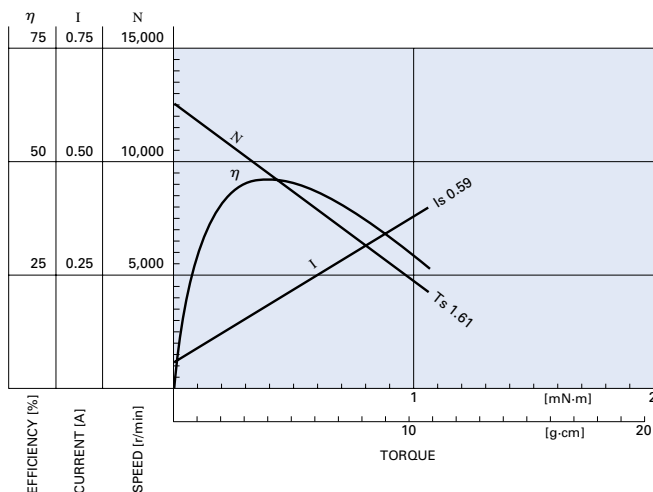
SHAFT LENGTH 23.5



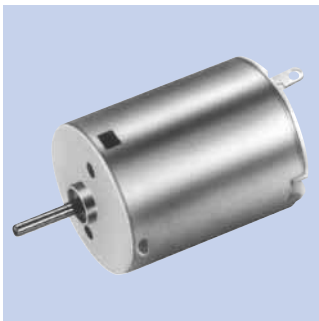
WEIGHT: 16g (APPROX)

## RF-020TH-10210

4.5V

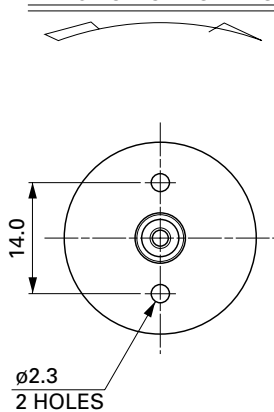


**Typical Applications** Toys and Models : Motorized Toy / Motorized Plastic Model  
Household Appliances : Massager / Vibrator

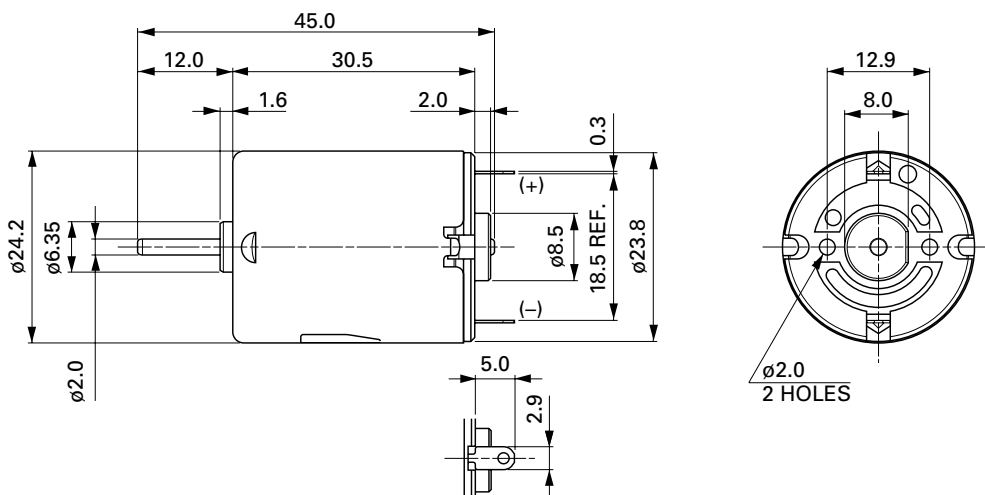


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	TORQUE g·cm	OUTPUT W	TORQUE mN·m	TORQUE g·cm	CURRENT A
RE-280RA-2865	1.5 ~ 3.0	1.5V CONSTANT	4600	0.12	3740	0.53	1.13	11.5	0.44	6.08	62	2.30
		3V CONSTANT	9200	0.16	7770	0.87	1.98	20.2	1.61	12.7	130	4.70
RE-280RA-20120	3 ~ 6	3V CONSTANT	5000	0.070	4120	0.33	1.30	13.3	0.56	7.36	75	1.52
		4.5V CONSTANT	7500	0.080	6300	0.42	1.77	18.1	1.17	11.1	113	2.21
RE-280RA-2485	1.5 ~ 4.5	3V CONSTANT	7000	0.12	5800	0.58	1.68	17.1	1.02	9.80	100	2.80
RE-280SA-2865	1.5 ~ 4.5	3V CONSTANT	7100	0.16	6000	0.88	2.58	26.3	1.62	16.7	170	4.80
		4.5V CONSTANT	10400	0.19	8920	1.14	3.34	34.1	3.12	23.5	240	6.90
RE-280SA-20120	3 ~ 6	4.5V CONSTANT	5800	0.080	4890	0.43	2.26	23.1	1.16	14.5	148	2.34
		6V CONSTANT	7800	0.085	6680	0.50	2.71	27.6	1.89	18.8	192	3.00
RE-280SA-2485	3 ~ 6	4.5V CONSTANT	8100	0.13	6880	0.73	2.74	27.9	1.97	18.1	185	4.10

**DIRECTION OF ROTATION**



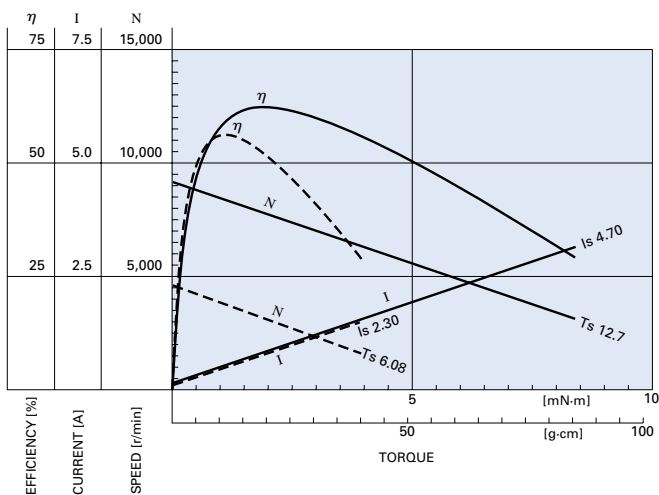
UNIT: MILLIMETERS



**WEIGHT: 42g (APPROX)**

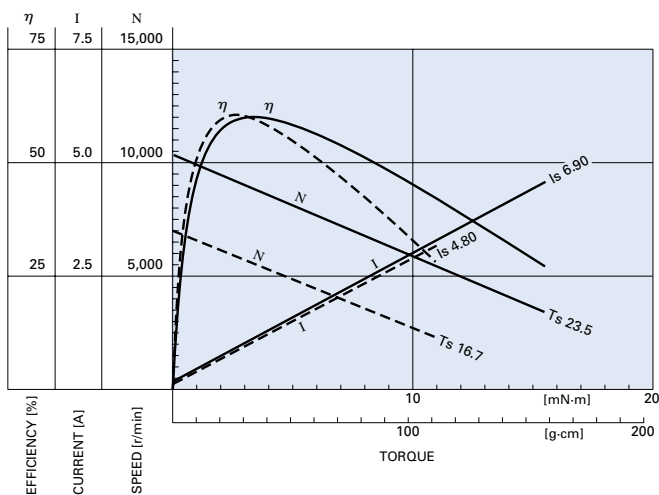
**RE-280RA-2865**

----- 1.5V ——— 3.0V

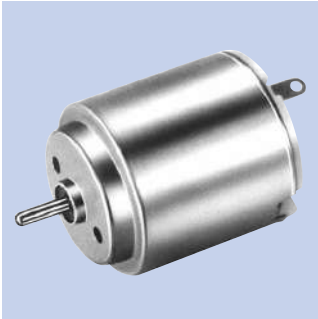


**RE-280SA-2865**

----- 3.0V ——— 4.5V



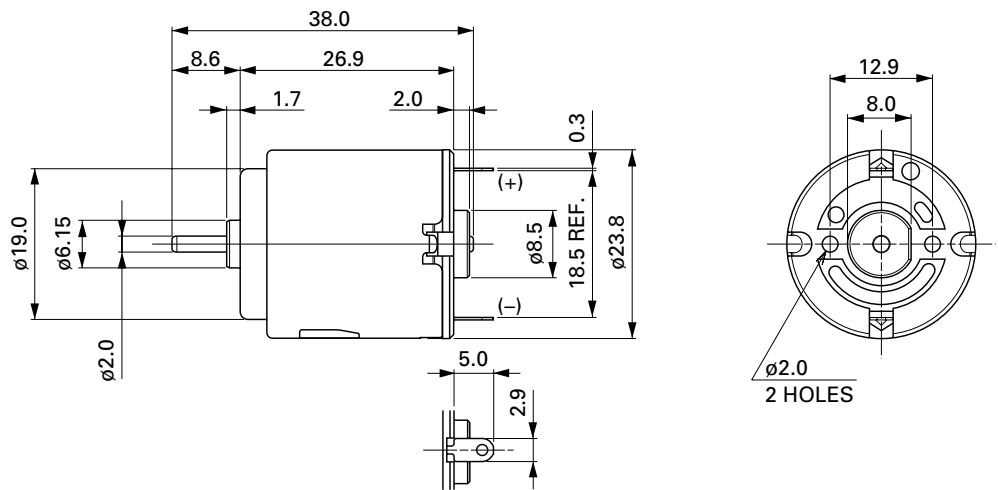
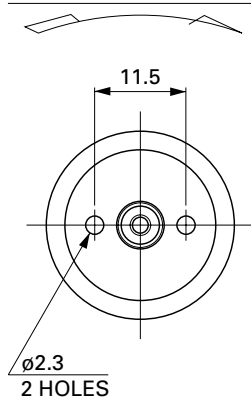
Typical Applications Toys and Models : Motorized Toy / Motorized Plastic Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RE-260RA-2670	1.5 ~ 3.0	1.5V CONSTANT	6300	0.16	5040	0.64	0.98	10.0	0.52	4.90	50	2.56
		3V CONSTANT	12300	0.20	10200	0.97	1.50	15.2	1.60	8.77	90	4.73
RE-260RA-18130	1.5 ~ 4.5	1.5V CONSTANT	3300	0.075	2490	0.23	0.60	6.1	0.16	2.45	25	0.72
		3V CONSTANT	6900	0.095	5470	0.36	0.97	9.9	0.56	4.70	48	1.40
RE-260RA-2295	1.5 ~ 4.5	3V CONSTANT	9400	0.15	7610	0.64	1.31	13.3	1.04	6.86	70	2.70

UNIT: MILLIMETERS

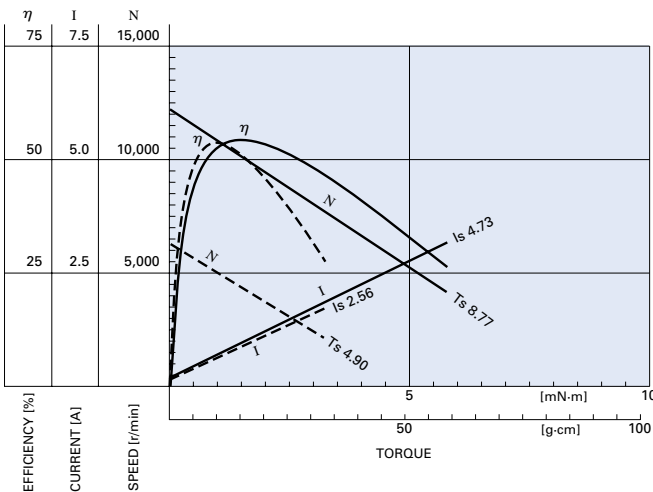
DIRECTION OF ROTATION



WEIGHT: 28g (APPROX)

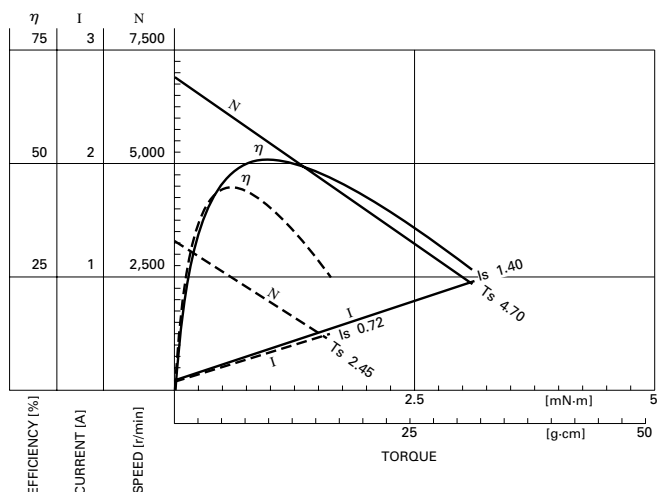
**RE-260RA-2670**

----- 1.5V ——— 3.0V

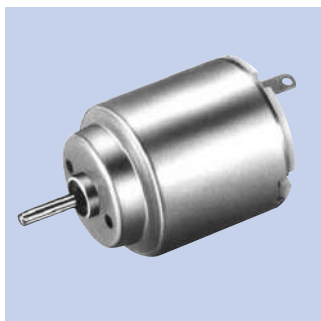


**RE-260RA-18130**

----- 1.5V ——— 3.0V



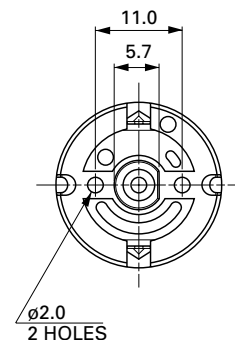
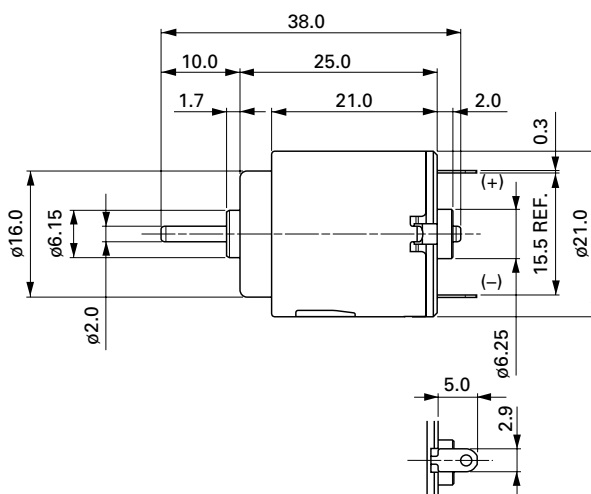
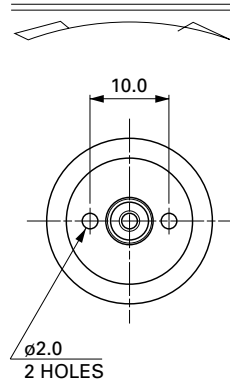
Typical Applications Toys and Models : Motorized Toy / Motorized Plastic Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE		CURRENT	
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RE-140RA-2270	1.5 ~ 3.0	1.5V CONSTANT	8100	0.21	6150	0.66	0.66	6.7	0.42	2.74	28	2.10
		3V CONSTANT	14200	0.25	11320	0.98	1.04	10.6	1.24	5.15	53	3.87
RE-140RA-18100	1.5 ~ 3.0	1.5V CONSTANT	5700	0.13	4230	0.37	0.48	4.9	0.21	1.86	19	1.07
		3V CONSTANT	10900	0.16	8520	0.57	0.79	8.1	0.71	3.63	37	2.04
RE-140RA-12240	3 ~ 6	3V CONSTANT	4800	0.050	3530	0.14	0.44	4.5	0.16	1.67	17	0.39

UNIT: MILLIMETERS

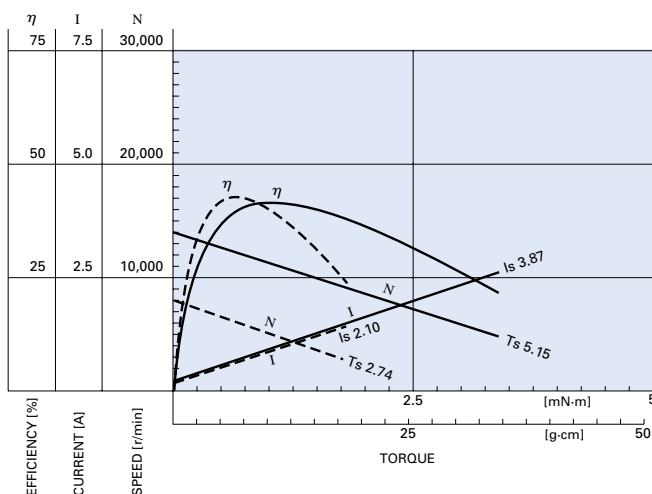
DIRECTION OF ROTATION



WEIGHT: 19g (APPROX)

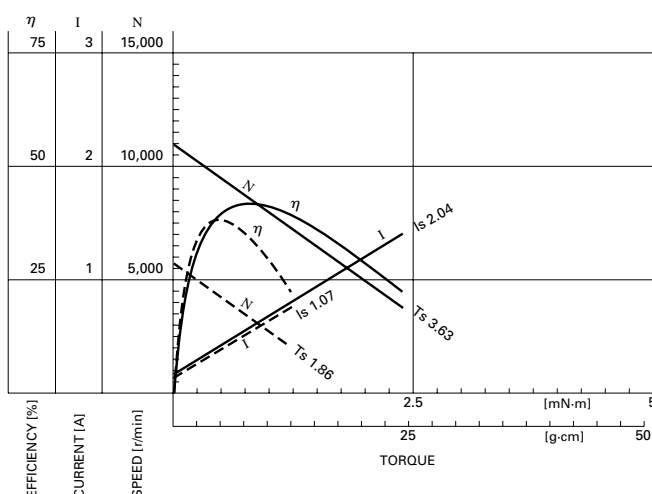
**RE-140RA-2270**

---- 1.5V — 3.0V

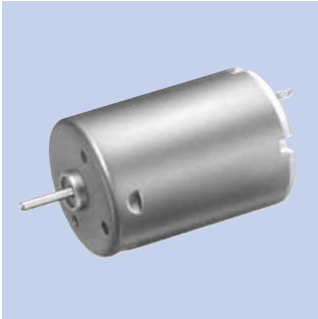


**RE-140RA-18100**

---- 1.5V — 3.0V



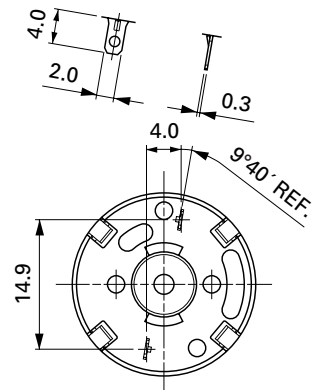
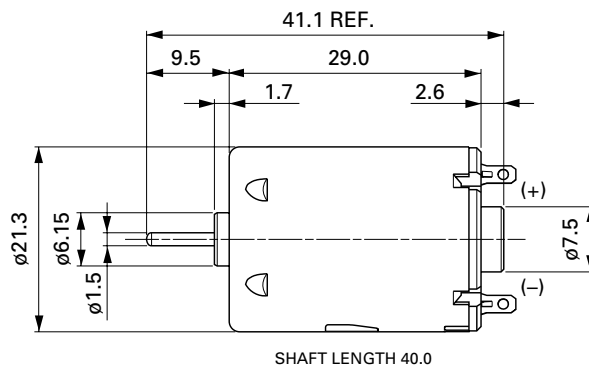
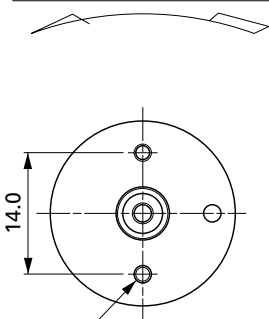
Typical Applications **Household Appliances** : Electric Shaver  
**Toys and Models** : Motorized Toy



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
RD-180SA-2085	1.2 ~ 4.5	1.5V CONSTANT	3300	0.048	2730	0.23	0.73	7.4	0.21	4.22	43	1.11
		2.4V CONSTANT	5300	0.045	4570	0.28	0.96	9.7	0.46	6.97	71	1.78

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



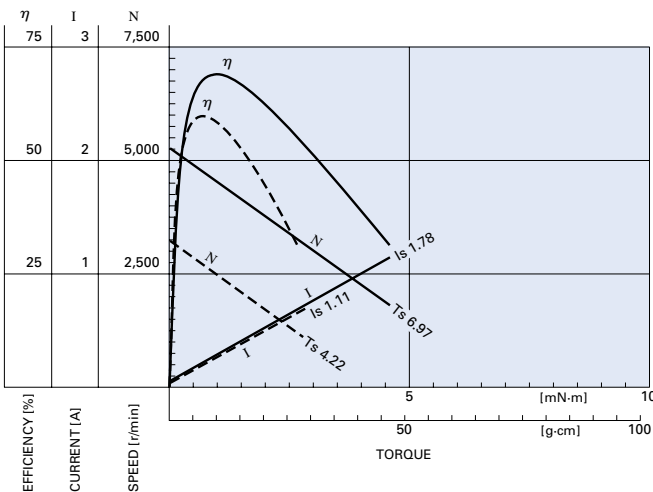
ISO M2.0×0.4 TAPPED HOLE  
2 PLACES

取付けネジはモーターケース面より2.5以下  
 Usable machine screw length 2.5 max. from motor mounting surface.

**WEIGHT: 31g (APPROX)**

**RD-180SA-2085**

----- 1.5V ——— 2.4V





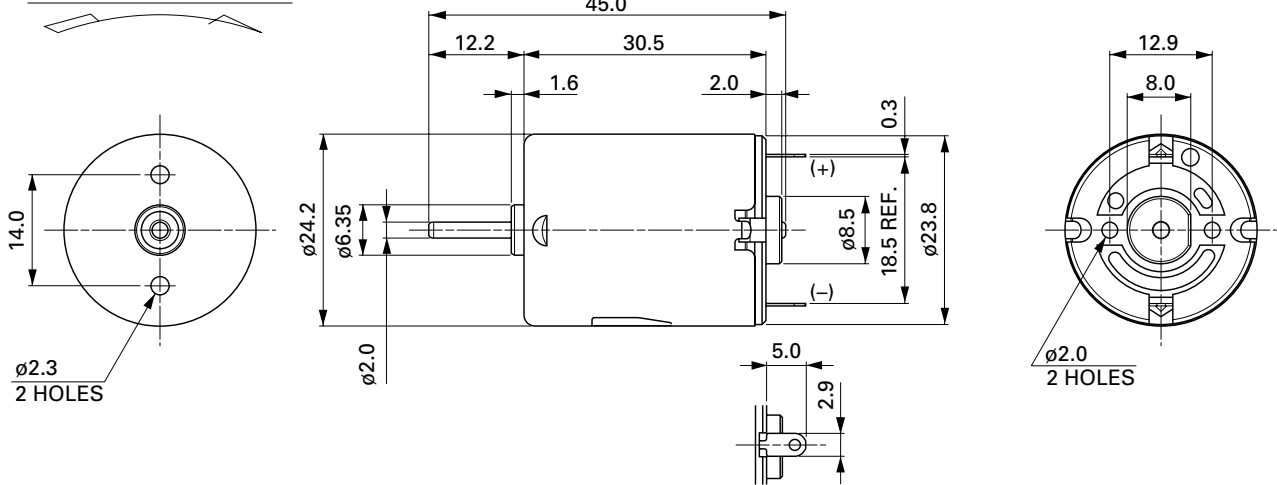
**Typical Applications** Household Appliances : Hair Clipper / Massager / Vibrator  
Toys and Models : Motorized Toy / Radio Control Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
RC-280RA-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
RC-280RA-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
RC-280RA-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
RC-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
RC-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
RC-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

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



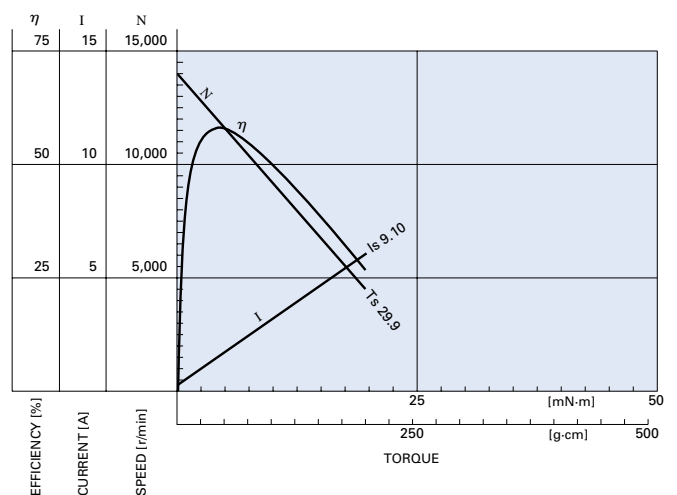
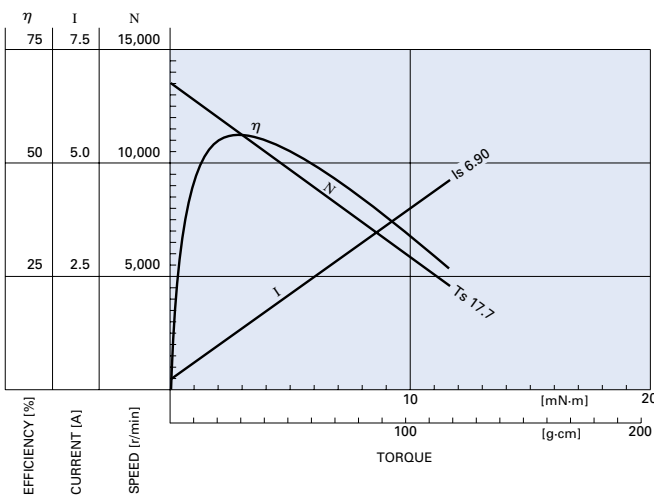
WEIGHT: 42g (APPROX)

**RC-280RA-2865**

4.5V

**RC-280SA-2865**

6.0V



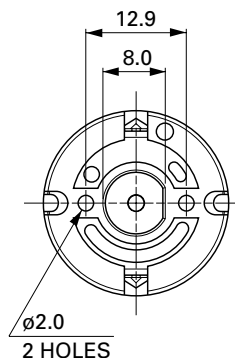
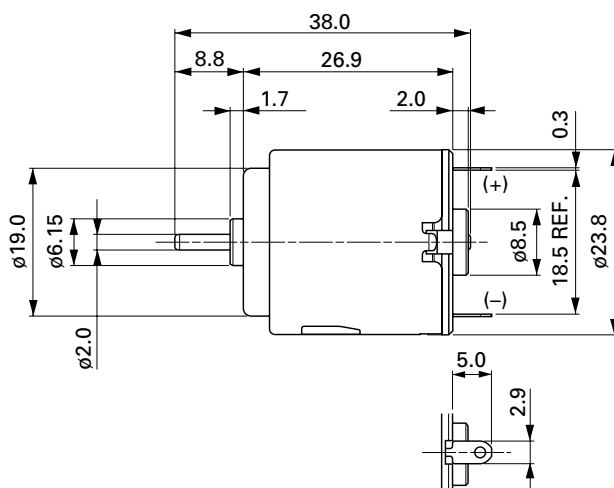
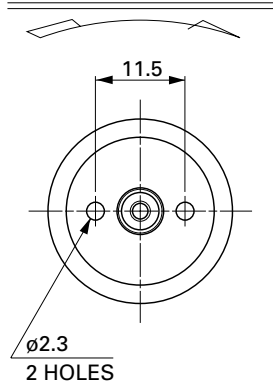
Typical Applications Household Appliances : Massager / Vibrator  
Toys and Models : Radio Control Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN-m	TORQUE g-cm	OUTPUT W	TORQUE mN-m	TORQUE g-cm	CURRENT A
RC-260RA-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
RC-260RA-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
RC-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
RC-260SA-2295	3 ~ 6	4.5V CONSTANT	10200	0.20	8300	0.87	2.43	24.7	2.11	13.0	133	3.80

UNIT: MILLIMETERS

DIRECTION OF ROTATION



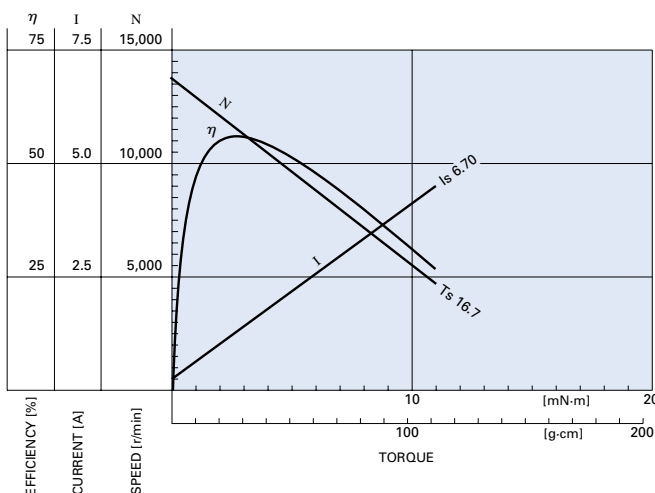
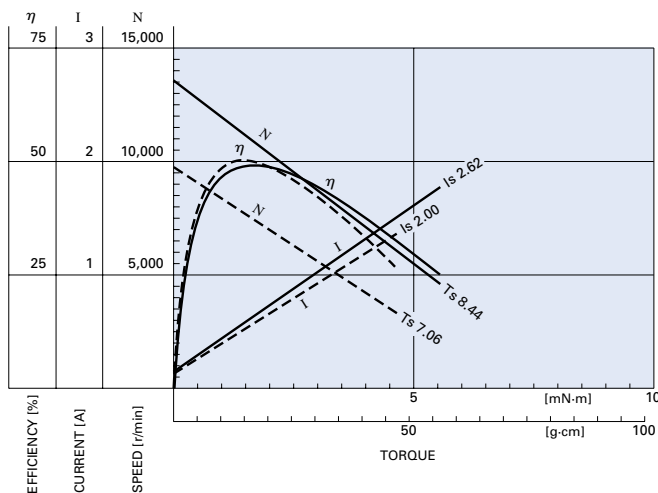
WEIGHT: 28g (APPROX)

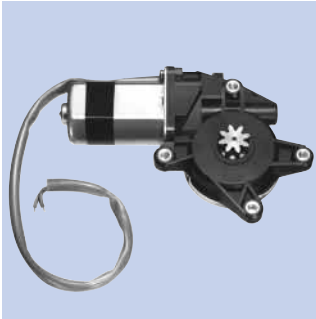
**RC-260RA-18130**

---- 4.5V — 6.0V

**RC-260SA-2670**

4.5V

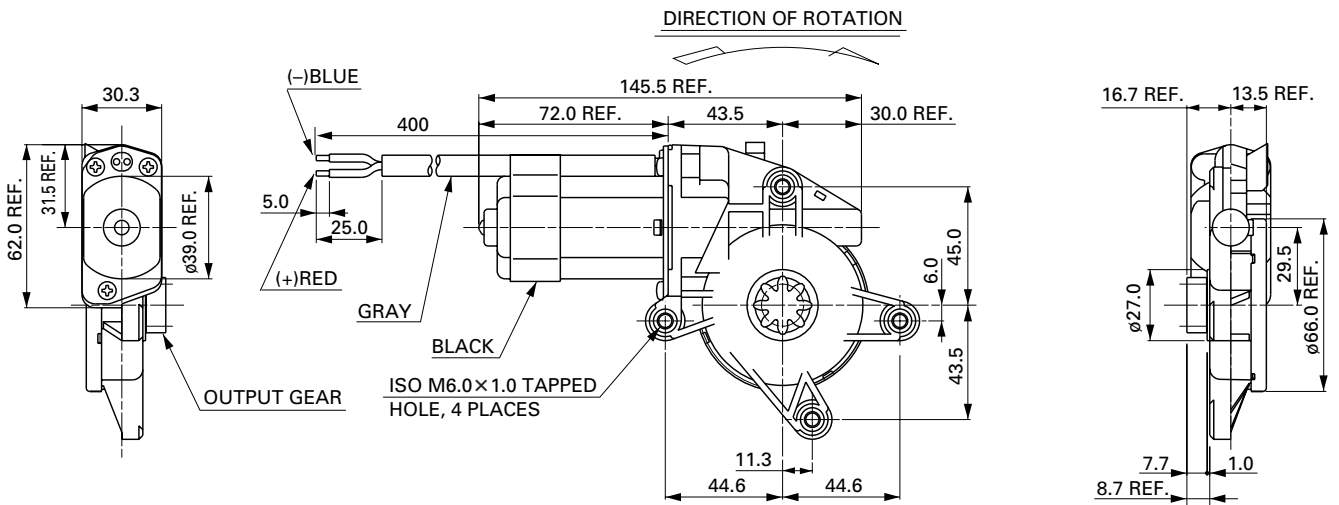




### Distinctive Features

- The drive motor is designed to be the compact sized motor offered for power window applications, measuring 29mm thick and 39mm across the diameter.
- This motor is designed with water proof construction.

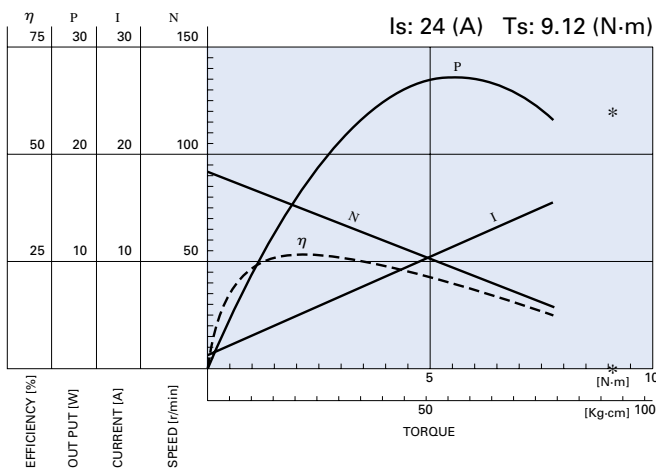
UNIT: MILLIMETERS



**WEIGHT: 520g (APPROX)**

### JC/LC-578VA-4720

12.0V



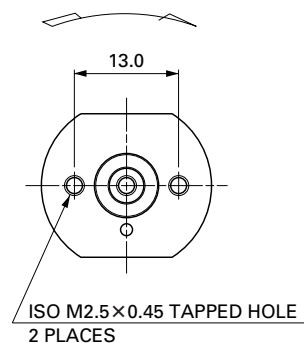


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FK-290PY-051000	100 ~ 120	100V CONSTANT	6800	0.005	5470	0.021	2.01	20.5	1.15	10.3	105	0.085

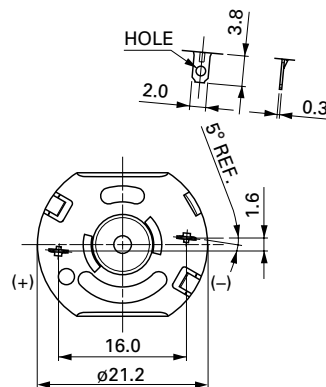
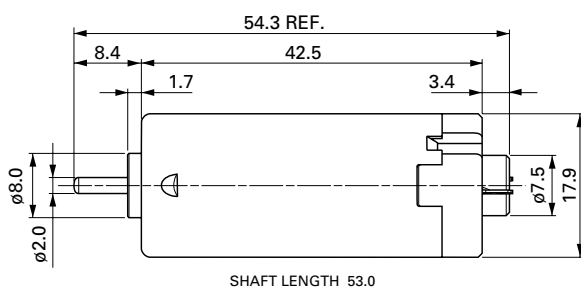
UNIT: MILLIMETERS

CW(+)

DIRECTION OF ROTATION



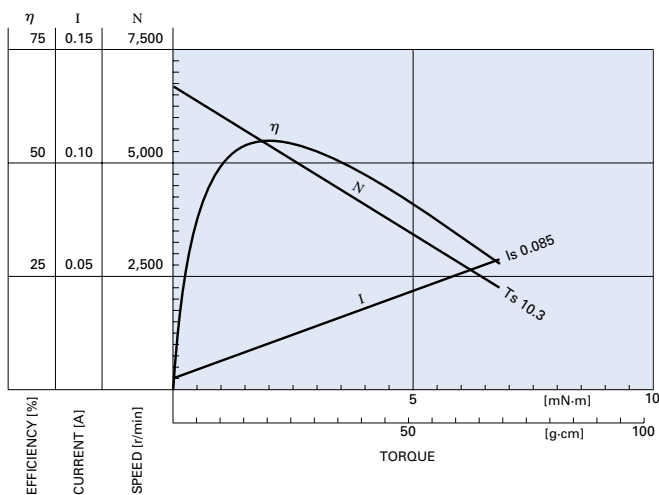
取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



WEIGHT: 50g (APPROX)

## FK-290PY-051000

100.0V



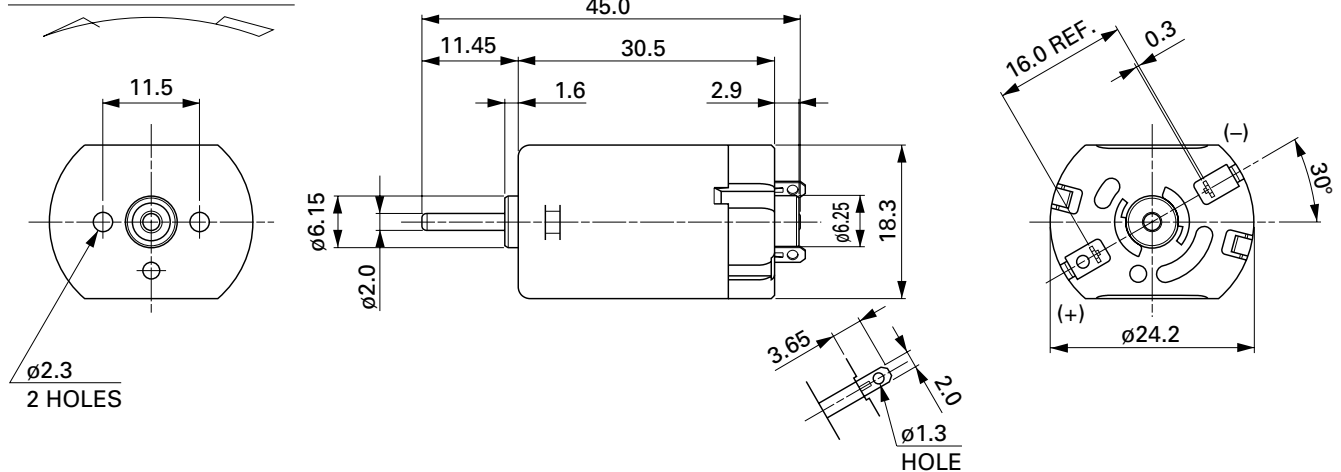
**Typical Applications** Automotive Products : Door Lock Actuator / Retractable Rearview Mirror  
Household Appliances : Hair Remover  
Precision Instruments : Vending Machine



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FK-280PA-20150	10 ~ 15	12V CONSTANT	12000	0.10	10330	0.62	4.45	45.4	4.81	31.9	325	3.80
FK-280PA-18165	10 ~ 15	12V CONSTANT	10500	0.090	9000	0.54	4.12	42.0	3.88	28.9	295	3.25
FK-280SA-18165	10 ~ 15	12V CONSTANT	12300	0.075	10710	0.50	3.40	34.7	3.81	26.3	268	3.40
FK-280SA-20150	10 ~ 15	12V CONSTANT	13500	0.10	11700	0.65	3.80	38.7	4.64	28.4	290	4.20

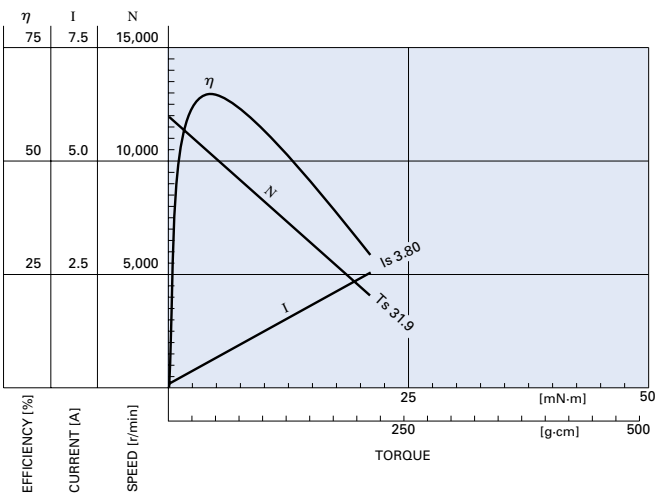
UNIT: MILLIMETERS

**DIRECTION OF ROTATION**

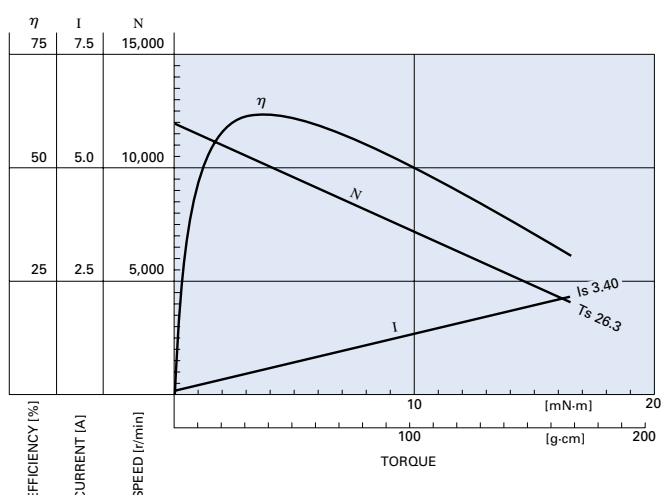


WEIGHT: 36g (APPROX)

**FK-280PA-20150 12.0V**



**FK-280SA-18165 12.0V**



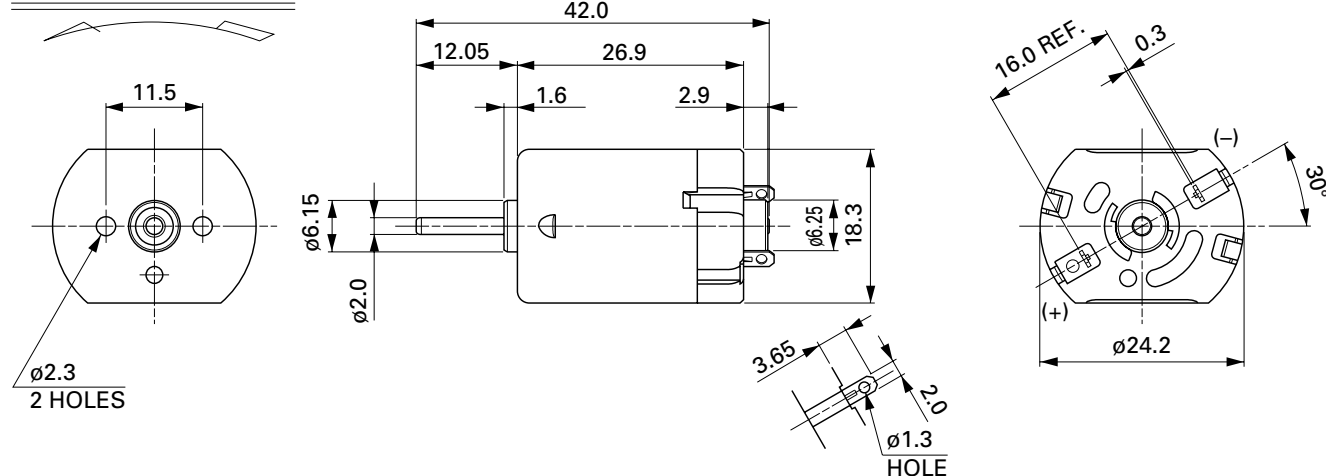
Typical Applications Automotive Products : Door Lock Actuator / Rearview Mirror



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FK-260SA-09450	12 ~ 24	12V CONSTANT	5800	0.027	4630	0.11	1.45	14.8	0.70	7.16	73	0.42
FK-260SA-12300	10 ~ 15	12V CONSTANT	8700	0.042	7220	0.20	1.96	19.9	1.48	11.5	117	1.00

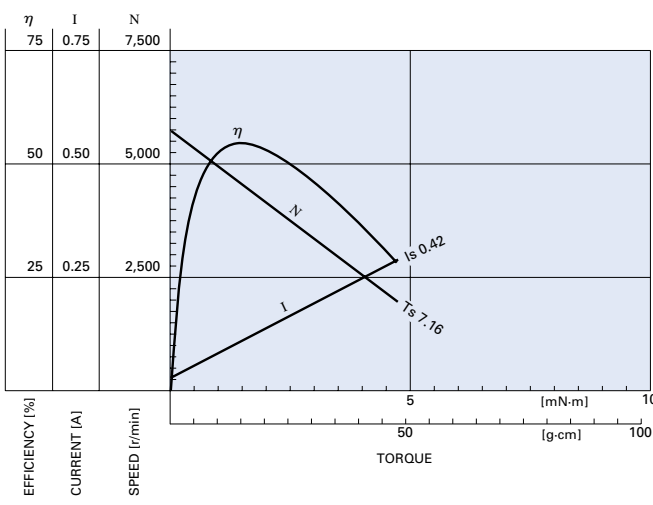
UNIT: MILLIMETERS

**DIRECTION OF ROTATION**

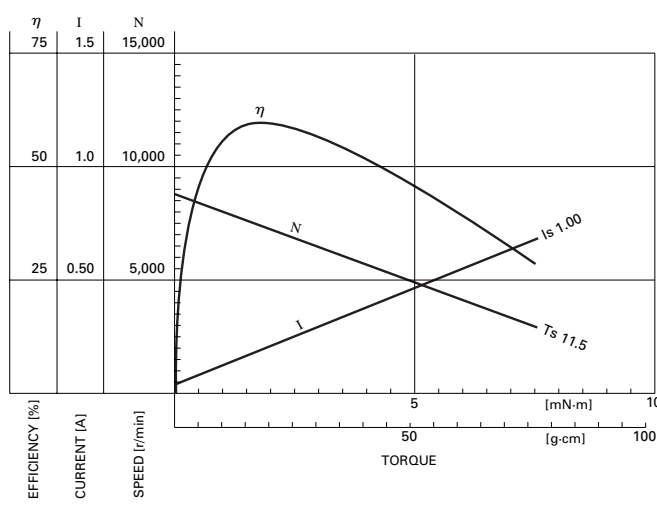


**WEIGHT: 29g (APPROX)**

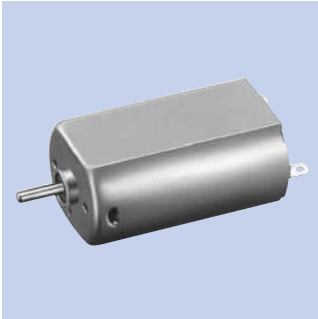
**FK-260SA-09450 12.0V**



**FK-260SA-12300 12.0V**

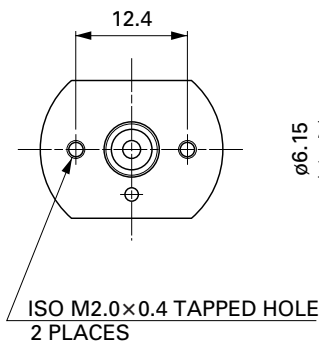


Typical Applications Household Appliances : Electric Shaver  
Office Automation Equipments : Printer

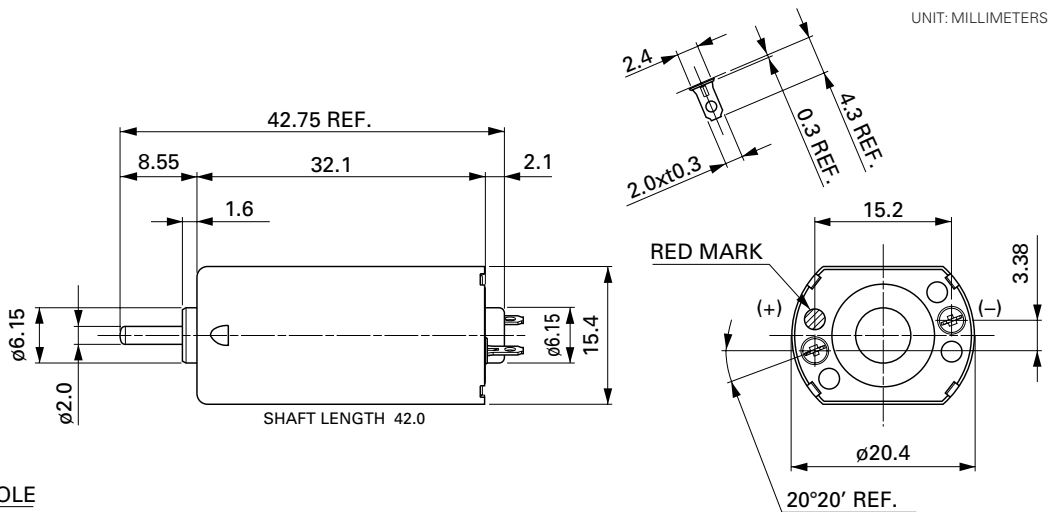


MODEL	OPERATING RANGE	VOLTAGE NOMINAL (COMMUTATOR POSITION)	NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
			SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	TORQUE g·cm	OUTPUT W	TORQUE mN·m	TORQUE g·cm	CURRENT A
FK-180SH-09450	12 ~ 24	12V CONST. (CCW)	4400	0.021	3500	0.082	1.33	13.6	0.49	6.54	67	0.32
		24V CONST. (CCW)	9200	0.025	7660	0.12	2.12	21.6	1.70	12.7	130	0.62
FK-180SH-17140	6 ~ 12	6V CONST. (CCW+)	7800	0.085	6390	0.39	2.04	20.8	1.36	11.3	115	1.75

**DIRECTION OF ROTATION**



取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



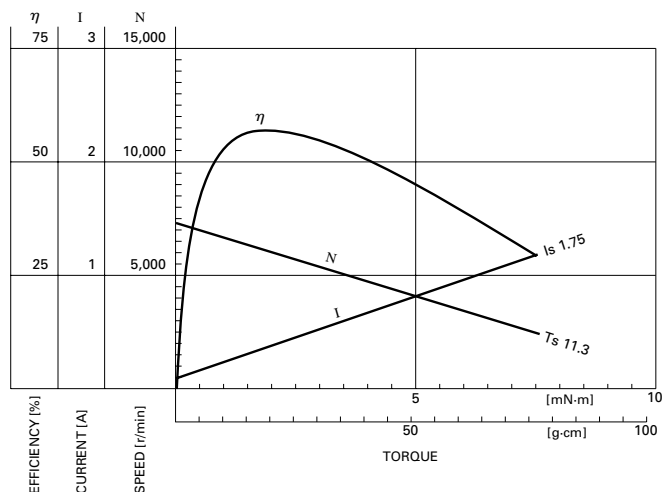
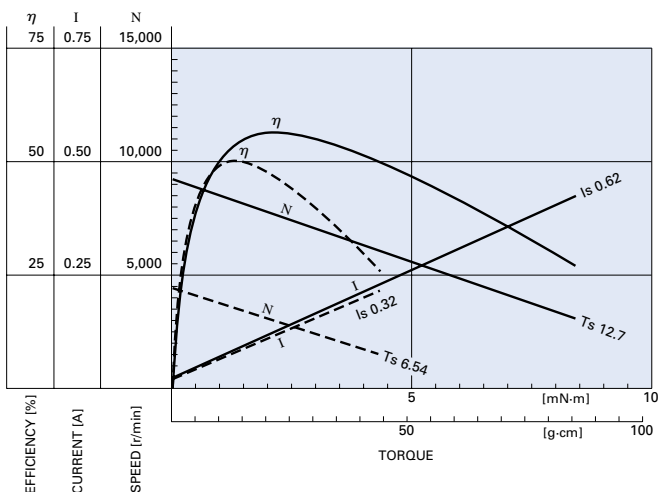
**WEIGHT: 32g (APPROX)**

**FK-180SH-09450**

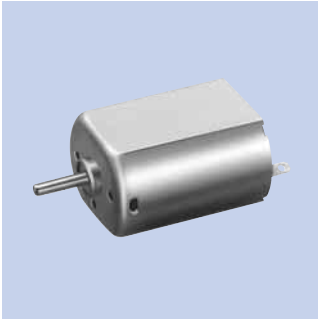
---- 12.0V — 24.0V

**FK-180SH-17140**

6.0V



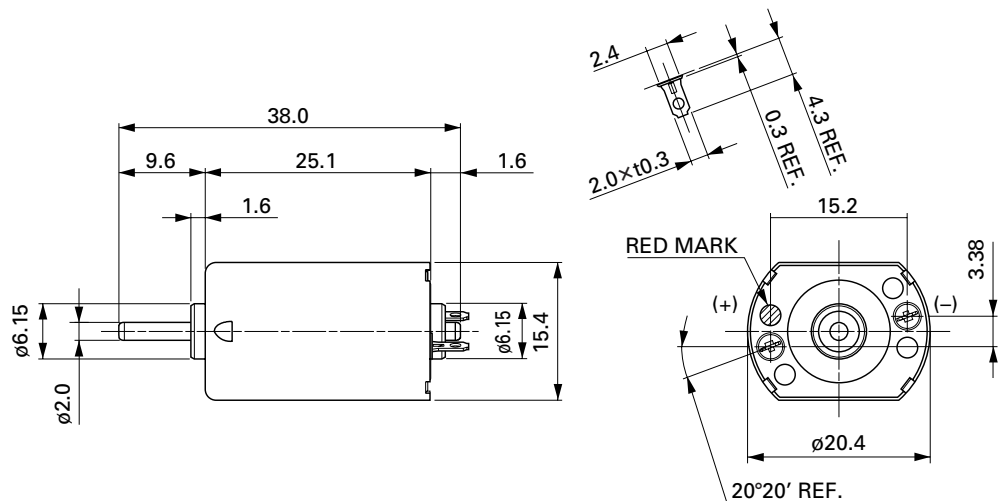
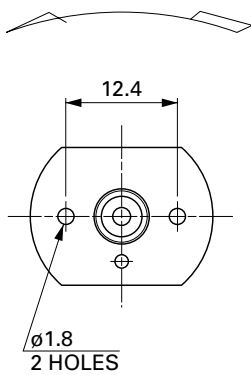
Typical Applications **Office Automation Equipments** : Printer  
**Automotive Products** : Rearview Mirror / Head Light Beam Level Adjuster



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FK-130RH-09490	6 ~ 18	12V CONSTANT	9000	0.034	6990	0.12	0.88	8.9	0.64	3.92	40	0.41
FK-130RH-15210	4.5 ~ 6.0	4.8V CONSTANT	8300	0.075	6540	0.28	0.89	9.0	0.61	4.17	43	1.03
FK-130SH-09450	6 ~ 24	12V CONSTANT	7200	0.030	5680	0.11	1.12	11.4	0.66	5.30	54	0.42
FK-130SH-16180	4 ~ 10	4.8V CONSTANT	7100	0.080	5690	0.32	1.31	13.4	0.78	6.59	67	1.30

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



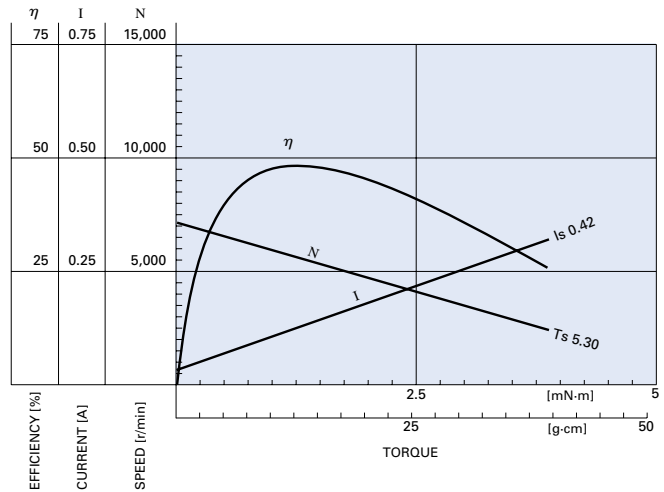
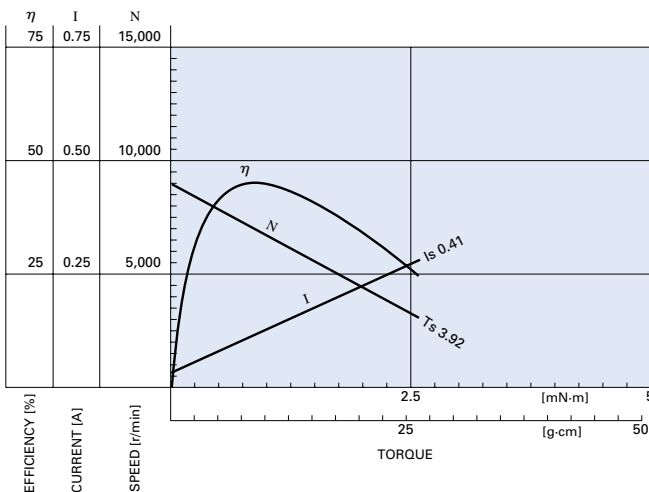
WEIGHT: 24g (APPROX)

**FK-130RH-09490**

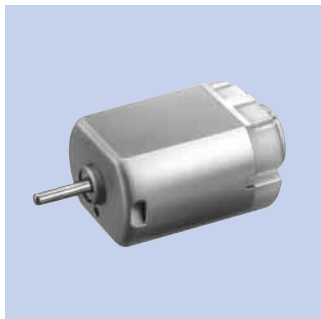
12.0V

**FK-130SH-09450**

12.0V

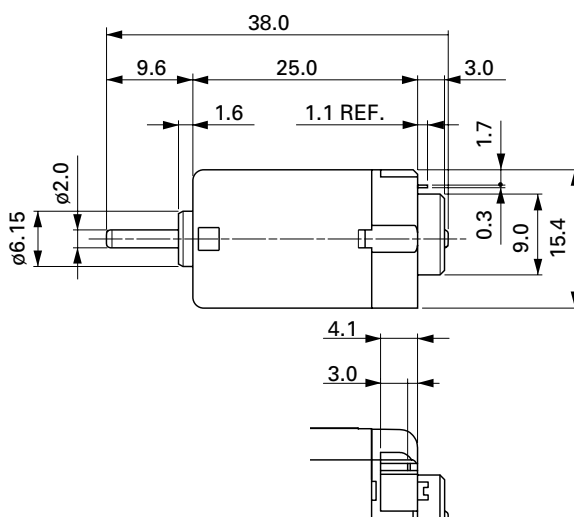
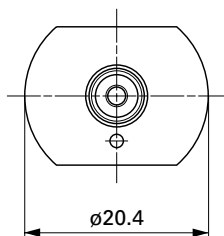




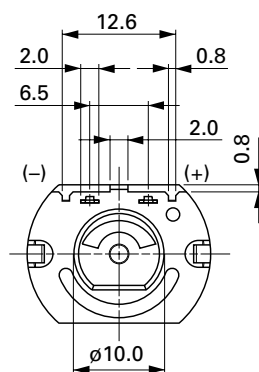


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FK-130RD-09490	9 ~ 15	12V CONSTANT	8800	0.030	6870	0.11	0.82	8.3	0.59	3.72	38	0.38
FK-130SD-09390	9 ~ 15	12V CONSTANT	8400	0.045	6450	0.15	1.23	12.5	0.83	5.29	54	0.49

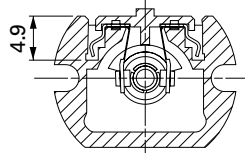
DIRECTION OF ROTATION



UNIT: MILLIMETERS



端子構造部断面図  
Section of Terminal Structure Part.



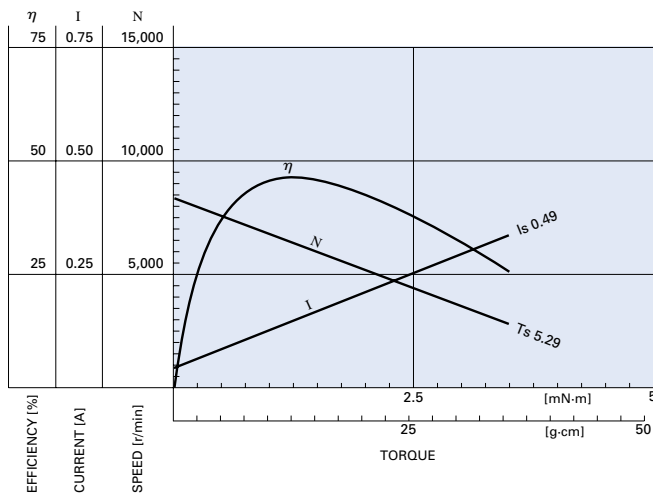
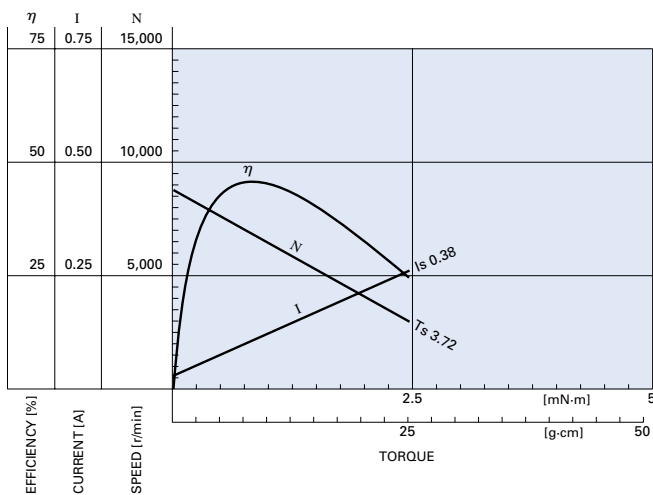
WEIGHT: 24g (APPROX)

FK-130RD-09490

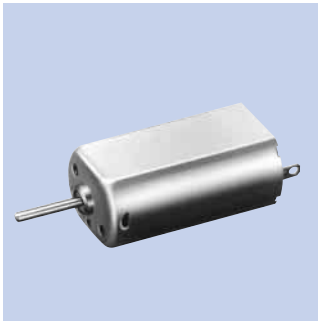
12.0V

FK-130SD-09390

12.0V



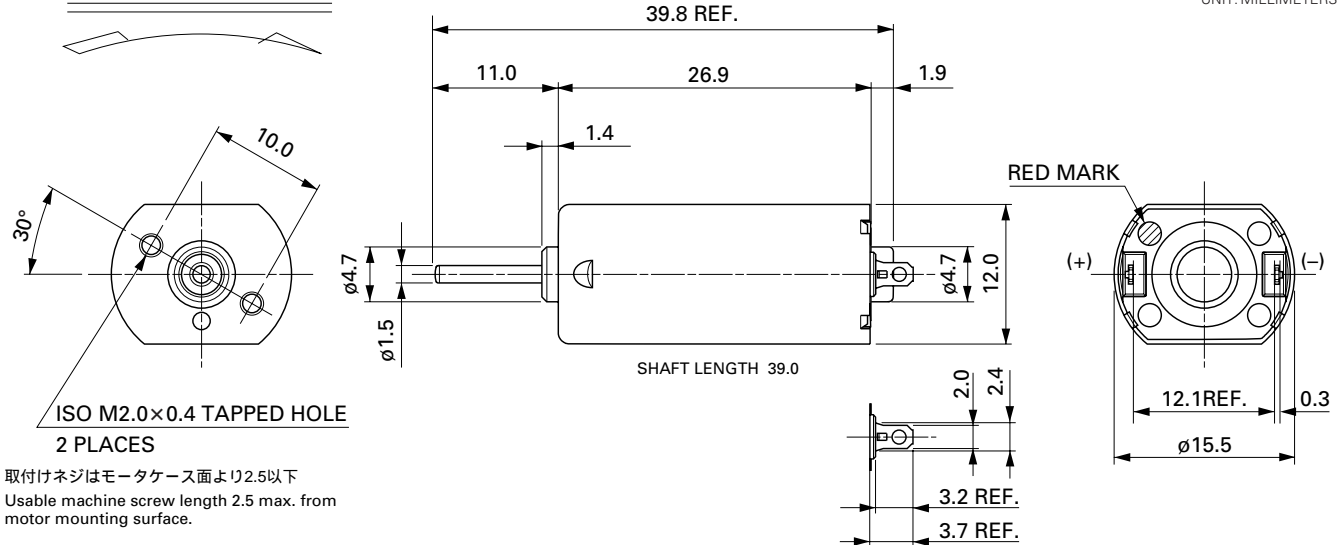
Typical Applications Household Appliances  
Office Automation Equipments : Printer



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FK-050SH-13125	3 ~ 10	6V CONSTANT	11500	0.090	9100	0.34	1.12	11.4	1.07	5.39	55	1.30

DIRECTION OF ROTATION

UNIT: MILLIMETERS



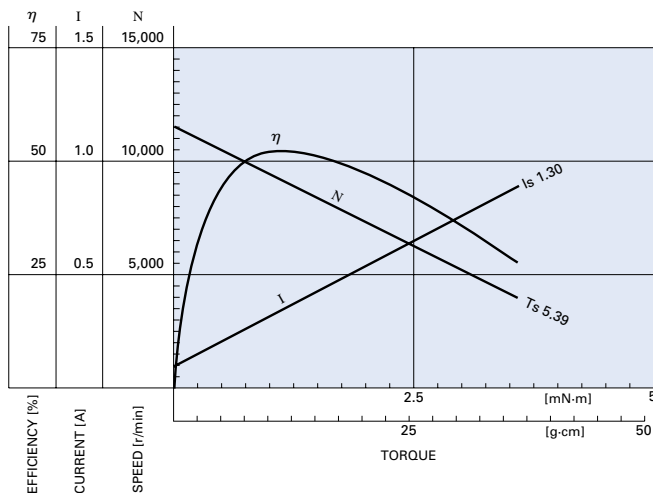
ISO M2.0x0.4 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.5以下  
Usable machine screw length 2.5 max. from motor mounting surface.

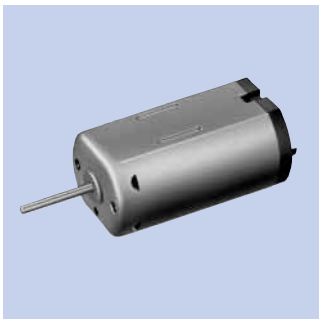
WEIGHT: 18g (APPROX)

FK-050SH-13125

6.0V



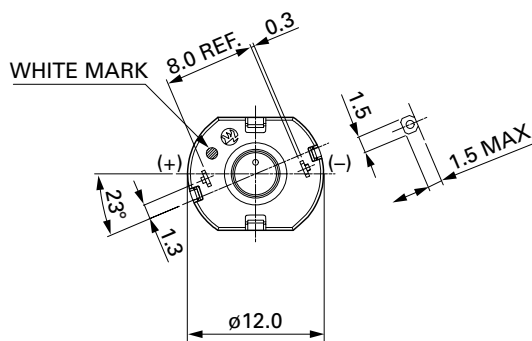
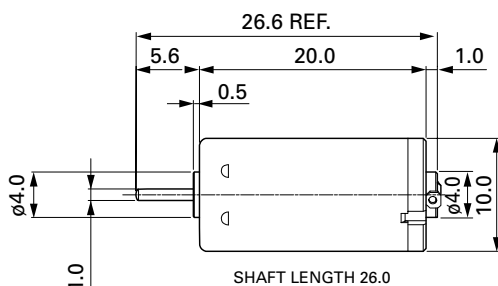
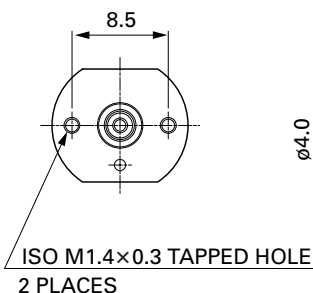
**Typical Applications** Audio and Visual Equipments : Portable CD Player / MD Player / Car MD Player  
Household Appliances : Blood Pressure Meter



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FF-N30VA-09210	2 ~ 5	2.5V CONSTANT	5200	0.019	4040	0.066	0.18	1.8	0.075	0.80	8.2	0.23

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**

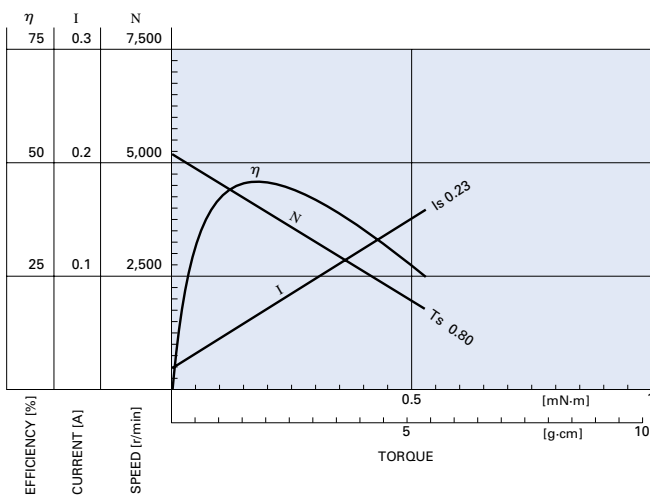


取付けネジはモータケース面より1.3以下  
Usable machine screw length 1.3 max. from motor mounting surface.

**WEIGHT: 7.5g (APPROX)**

**FF-N30VA-09210**

2.5V



**Typical Applications** Audio and Visual Equipments : Car CD/MD Player

Precision Instruments : Camera

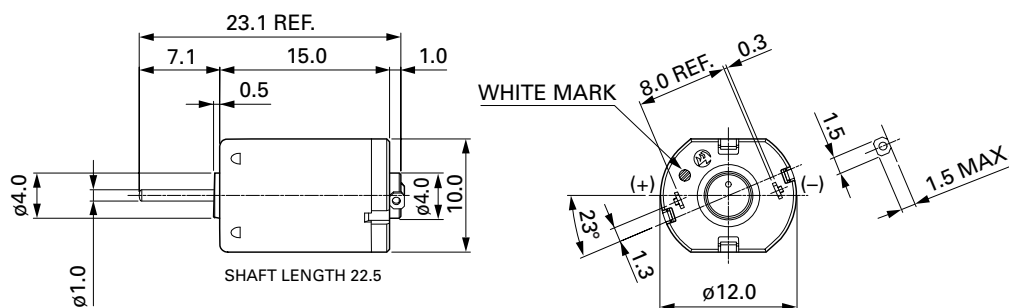
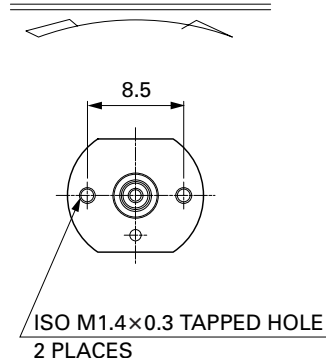
Toys and Models : Motorized Toy / Motorized Plastic Model / Radio Control Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FF-N20PA-10190	2 ~ 5	3V CONSTANT	12100	0.045	9390	0.16	0.21	2.1	0.20	0.92	9.4	0.54
FF-N20PN-08260	1.5 ~ 6.0	3V CONSTANT	8200	0.040	5920	0.10	0.17	1.8	0.11	0.62	6.3	0.27

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**

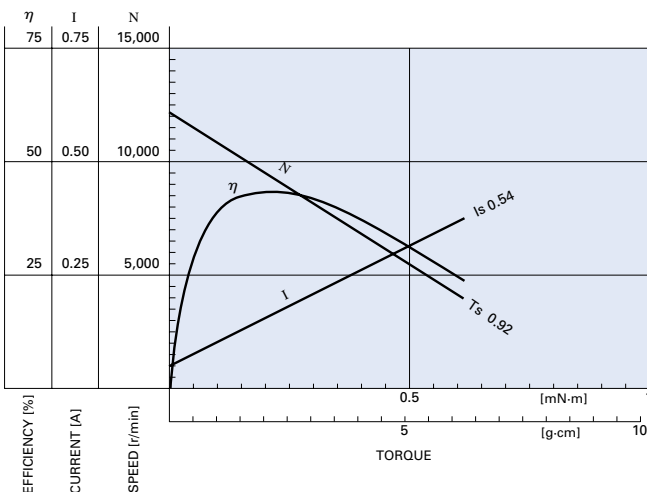


取付けネジはモータケース面より1.3以下  
Usable machine screw length 1.3 max. from motor mounting surface.

**WEIGHT: 5g (APPROX)**

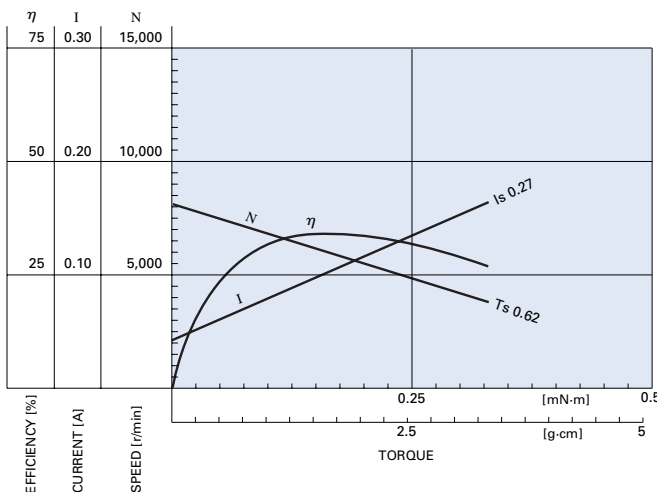
**FF-N20PA-10190**

3.0V



**FF-N20PN-08260**

3.0V



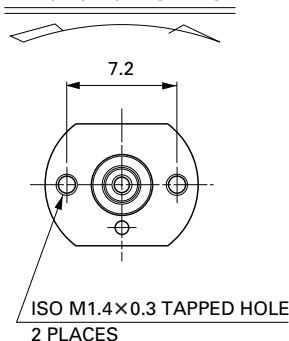
**Typical Applications** Audio and Visual Equipments : MD Player / Car CD Player / Camcorder  
 Precision Instruments : Camera  
 Household Appliances : Electric Shaver



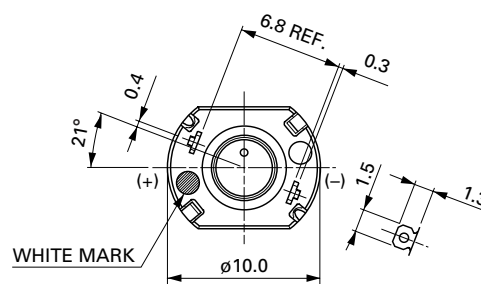
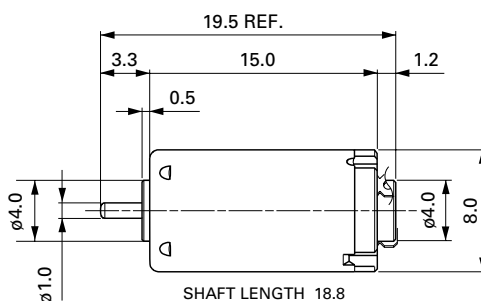
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FF-M20VA-8Z130	2 ~ 3	3V CONSTANT	15200	0.045	11820	0.16	0.16	1.7	0.20	0.74	7.6	0.55
FF-M20VA-10100	1.2 ~ 3.5	2.4V CONSTANT	15800	0.056	12410	0.20	0.18	1.8	0.23	0.84	8.6	0.75
FF-M20VK-7Z170	2 ~ 4	2V CONSTANT	8000	0.025	6020	0.076	0.094	0.96	0.059	0.38	3.9	0.23

UNIT: MILLIMETERS

DIRECTION OF ROTATION



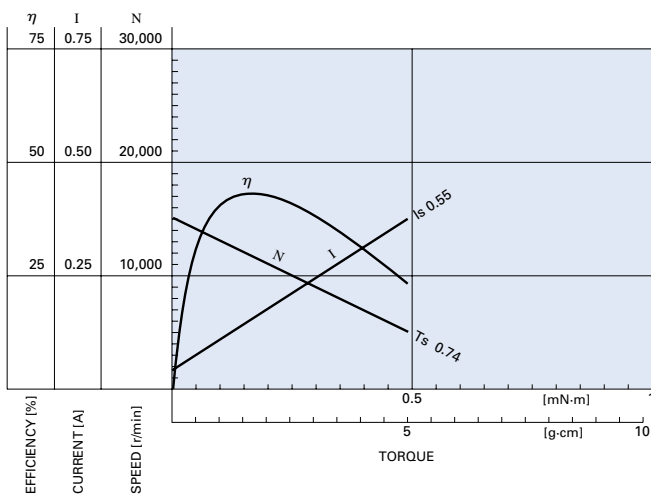
取付けネジはモータケース面より1.2以下  
 Usable machine screw length 1.2 max. from motor mounting surface.



WEIGHT: 4g (APPROX)

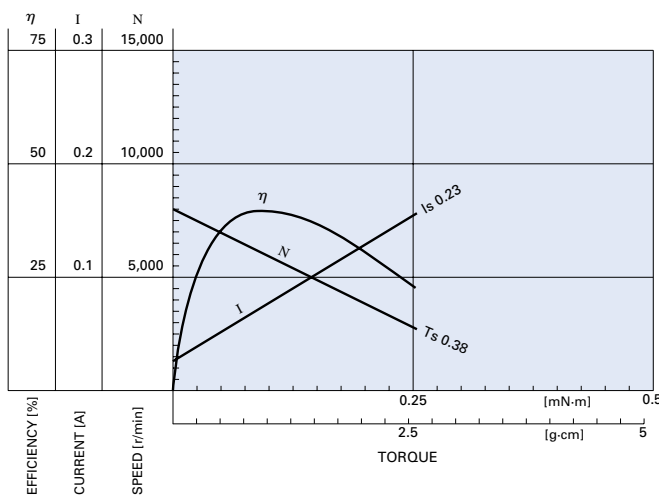
## FF-M20VA-8Z130

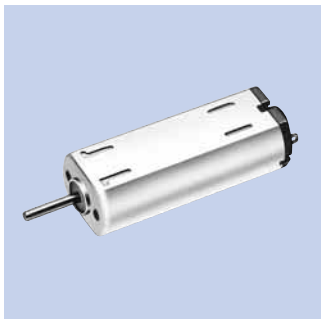
3.0V



## FF-M20VK-7Z170

2.0V

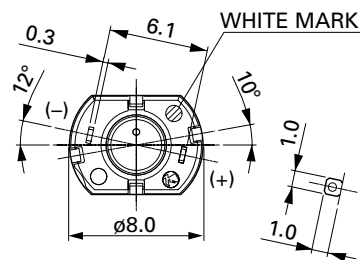
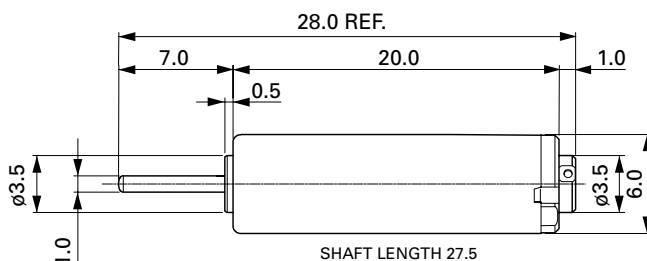
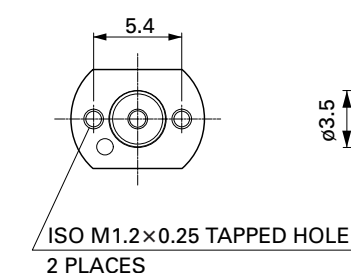




MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-K30WC-1077	1.2 ~ 4.5	1.5V CONSTANT	10000	0.043	7510	0.13	0.097	0.99	0.076	0.39	4.0	0.39
FF-K30WC-8Z107	1.5 ~ 4.3	3V CONSTANT	14500	0.036	11150	0.12	0.13	1.3	0.15	0.57	5.8	0.40

UNIT: MILLIMETERS

DIRECTION OF ROTATION

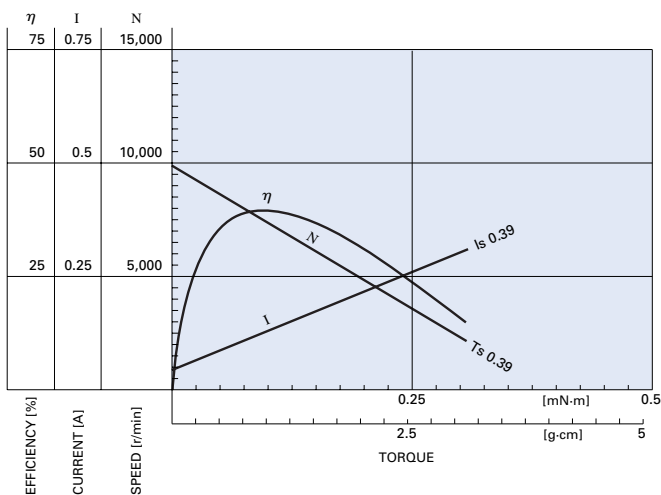


取付けネジはモータケース面より0.8~1.1  
Usable machine screw length 0.8~1.1 from  
motor mounting surface.

WEIGHT: 3.6g (APPROX)

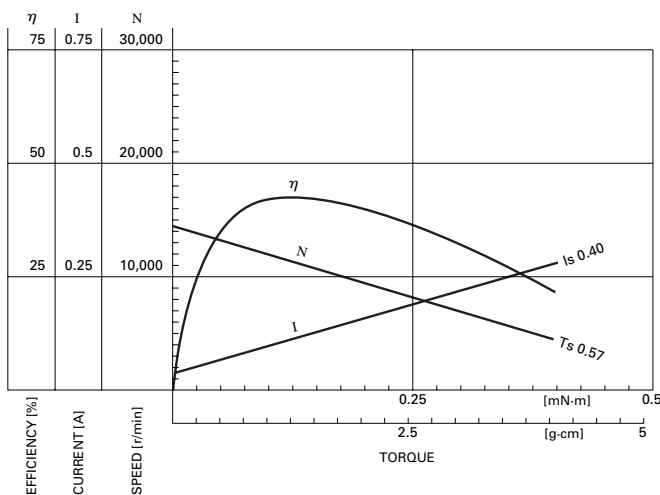
FF-K30WC-1077

1.5V



FF-K30WC-8Z107

3.0V

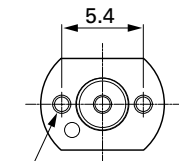




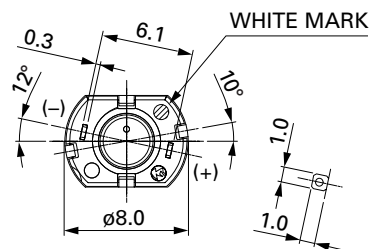
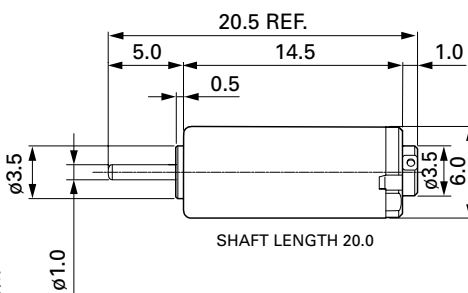
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-K20WC-08127	1.5 ~ 3.5	1.5V CONSTANT	8800	0.038	6260	0.093	0.072	0.74	0.047	0.25	2.5	0.23

UNIT: MILLIMETERS

### DIRECTION OF ROTATION



ISO M1.2×0.25 TAPPED HOLE  
2 PLACES

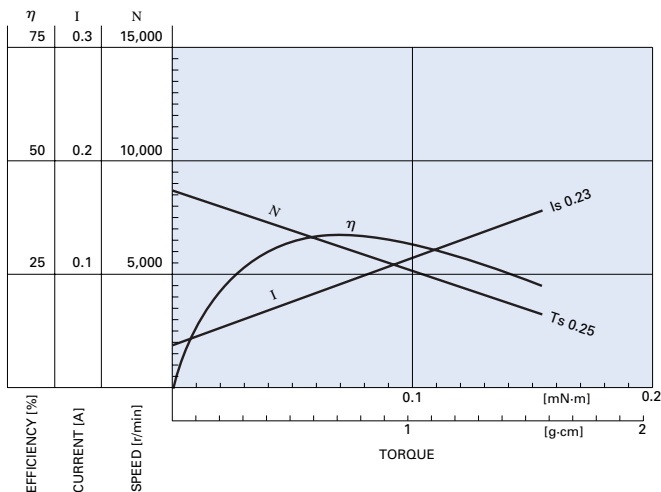


取付けネジはモータケース面より1.0以下  
Usable machine screw length 1.0 max. from motor mounting surface.

WEIGHT: 2.4g (APPROX)

### FF-K20WC-08127

1.5V



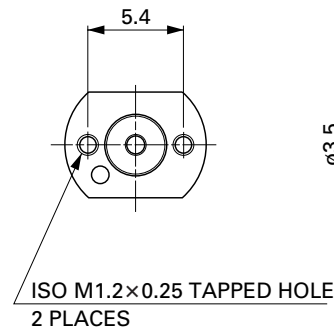
**Typical Applications** Office Automation Equipments : Note Book PC  
Precision Instruments : Camera



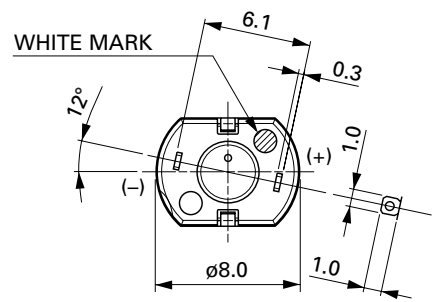
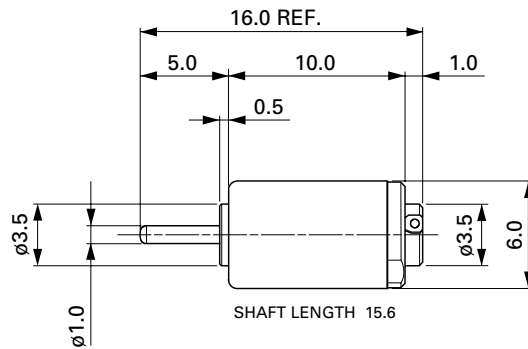
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-K10WA-5Z215	2.5 ~ 3.5	3V CONSTANT	20500	0.057	13870	0.12	0.061	0.63	0.089	0.19	1.9	0.25

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



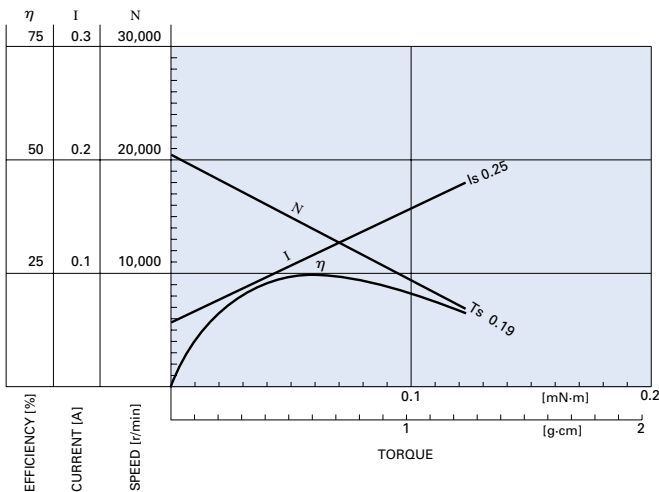
取付けネジはモータケース面より1.0以下  
Usable machine screw length 1.0 max. from motor mounting surface.



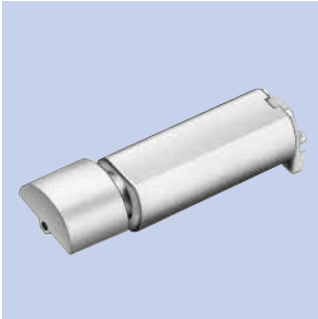
**WEIGHT: 1.6g (APPROX)**

**FF-K10WA-5Z215**

3.0V



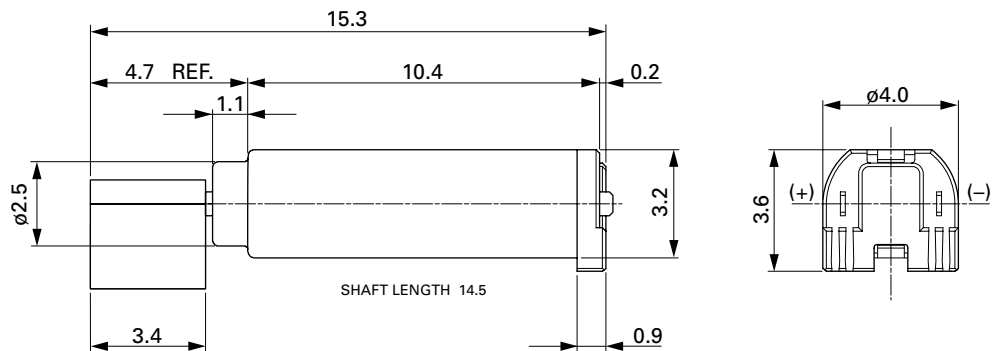
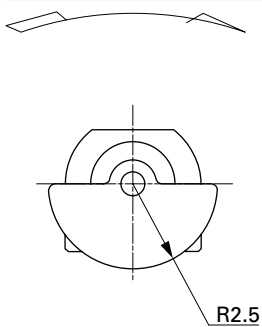




MODEL	COUNTER WEIGHT SIZE	RATED VOLTAGE	RATED SPEED	RATED CURRENT	STARTING VOLTAGE	STARTING CURRENT	VIBRATION FORCE	WEIGHT
	mm	V	r/min	mA	V	mA	N	g
FF-H30WA	R2.5×L3.5	3V CONSTANT	9000	49	1.7	60	0.5	1.1
	R2.5×L4.5	3V CONSTANT	8500	50	1.8	60	0.6	1.3

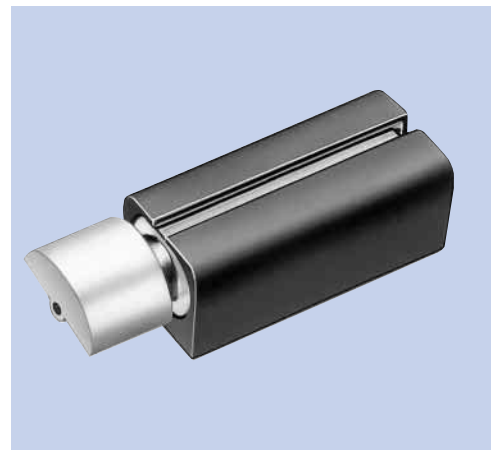
UNIT: MILLIMETERS

DIRECTION OF ROTATION

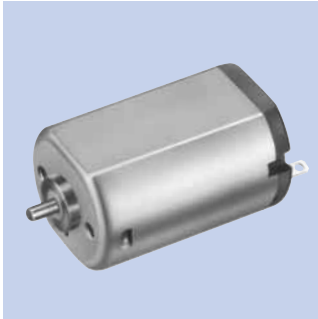


**WEIGHT: 1.3g (APPROX)**

Motor bracket and input terminals may be designed to customer's request. Mabuchi's own input terminals are also available.



Typical Applications Household Appliances : Electric Shaver

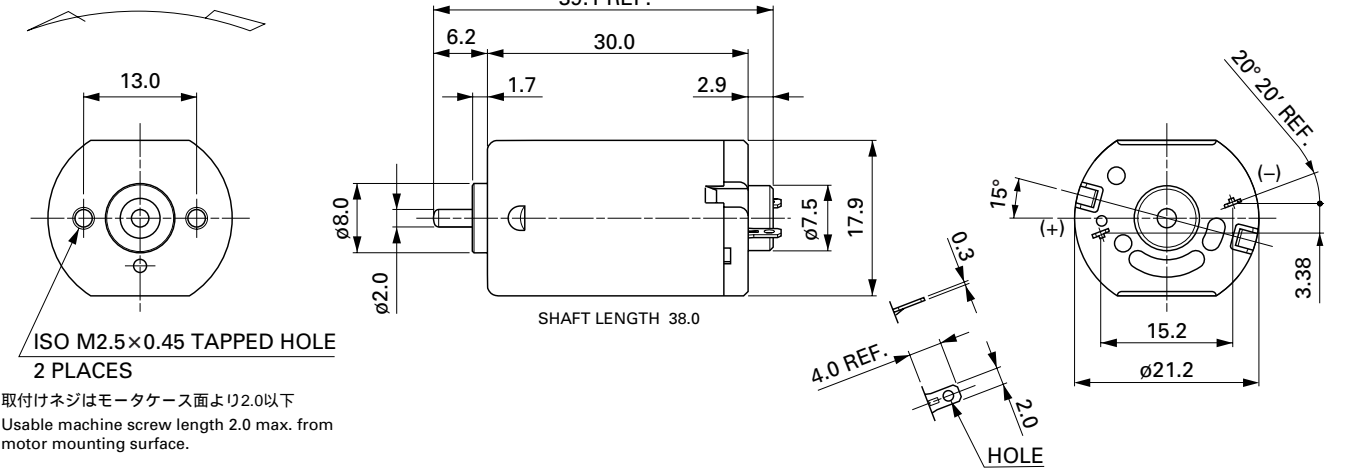


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-270PA-3065	2.4 ~ 4.0	2.4V CONSTANT	6700	0.21	5530	0.99	2.42	24.7	1.40	13.9	142	4.71
FF-270PA-4031	1.2 ~ 2.0	1.2V CONSTANT	7000	0.34	5800	1.65	1.93	19.7	1.17	11.3	115	8.00

UNIT: MILLIMETERS

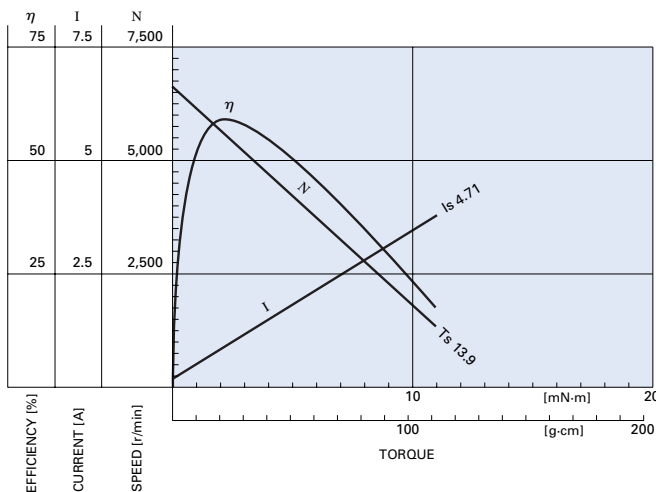
DIRECTION OF ROTATION

CCW(+)



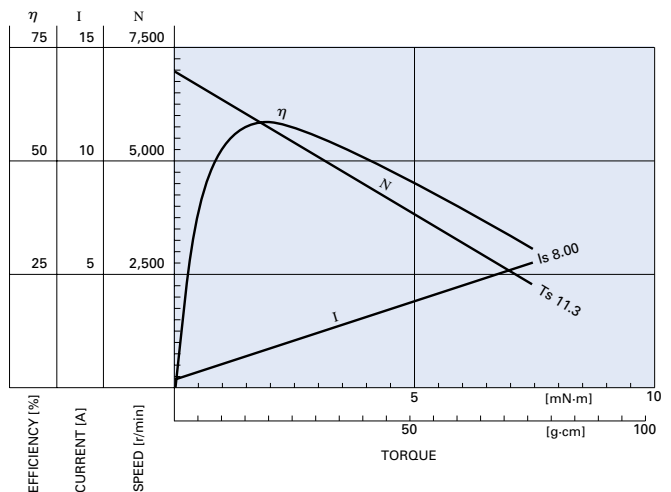
FF-270PA-3065

2.4V

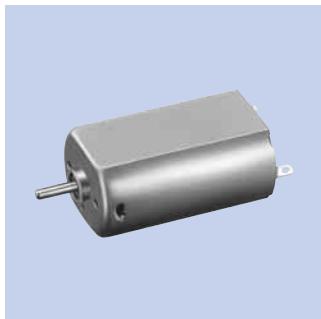


FF-270PA-4031

1.2V



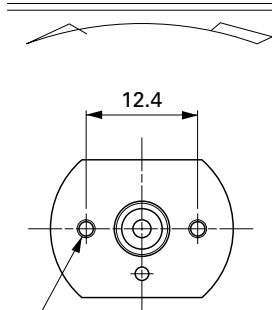
Typical Applications Audio and Visual Equipments : VCR  
Household Appliances : Electric Shaver / Tooth Brush



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL (COMMUTATOR POSITION)	SPEED r/min	CURRENT A	SPEED r/min	CURRENT A	TORQUE mN·m	TORQUE g·cm	OUTPUT W	TORQUE mN·m	TORQUE g·cm	CURRENT A
FF-180PH-2852	1 ~ 3	2.4V CONST. (CCW+)	8100	0.15	6850	0.82	1.82	18.6	1.30	11.8	120	4.50
FF-180PH-4022	1.0 ~ 1.5	1.2V CONST. (CCW+)	9400	0.40	7830	1.99	1.76	17.9	1.44	10.5	107	9.90
FF-180SH-10320	6 ~ 12	12V CONST. (CCW)	6500	0.028	5280	0.12	1.51	15.4	0.84	8.04	82	0.52
FF-180SH-2657	1 ~ 3	2.4V CONST. (CCW+)	7700	0.13	6500	0.70	1.56	15.9	1.06	10.0	102	3.80
FF-180SH-14210	3.0 ~ 7.2	4.5V CONST. (CCW)	3700	0.025	3090	0.13	1.02	10.4	0.33	6.17	63	0.63
FF-180SH-4026	1.0 ~ 1.5	1.2V CONST. (CCW+)	8300	0.30	6990	1.60	1.64	16.7	1.20	10.4	106	8.55

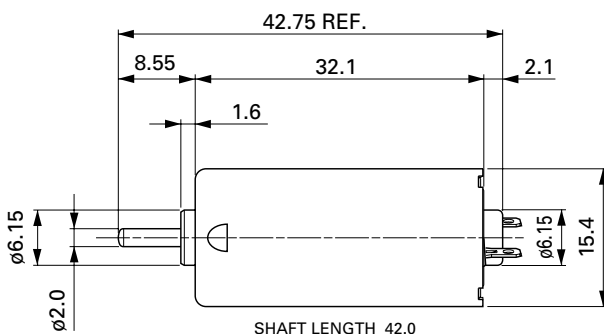
UNIT: MILLIMETERS

DIRECTION OF ROTATION

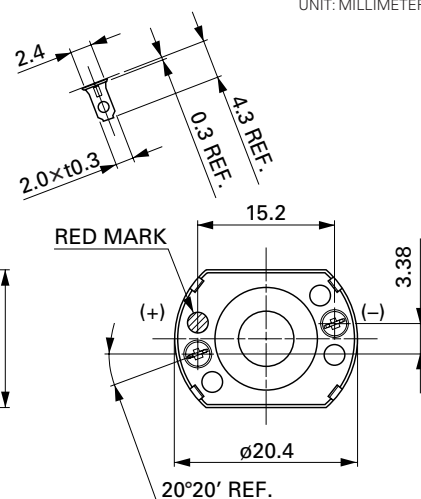


ISO M2.0×0.4 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



SHAFT LENGTH 42.0



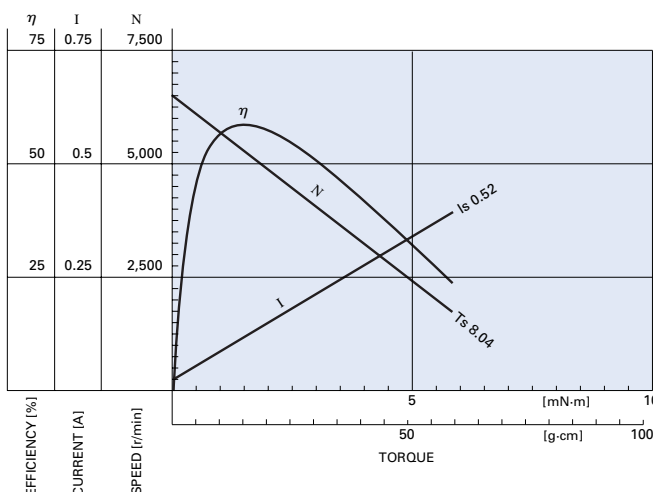
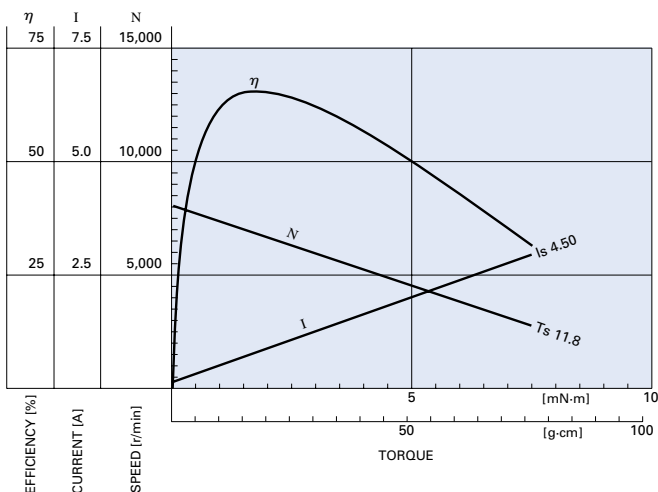
WEIGHT: 32g (APPROX)

## FF-180PH-2852

2.4V

## FF-180SH-10320

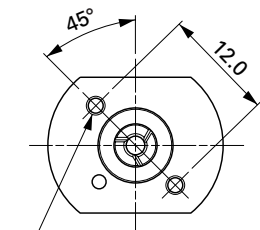
12.0V





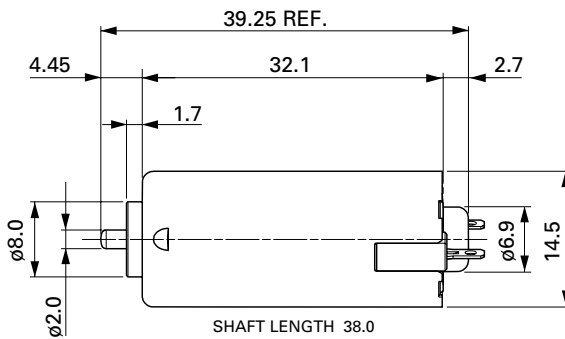
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-170PA-2838	1 ~ 3	2.4V CONSTANT	9900	0.21	8340	1.12	1.97	20.1	1.72	12.5	128	6.00
FF-170PA-3724	1.0 ~ 1.5	1.2V CONSTANT	7800	0.33	6480	1.62	1.82	18.6	1.24	10.8	110	8.00

**DIRECTION OF ROTATION**

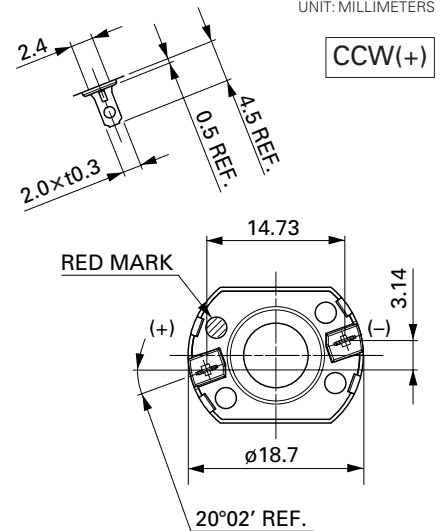


ISO M2.0×0.4 TAPPED HOLE  
2 PLACES

取付けネジはモータケース面より2.0以下  
Usable machine screw length 2.0 max. from motor mounting surface.



WEIGHT: 33g (APPROX)



UNIT: MILLIMETERS

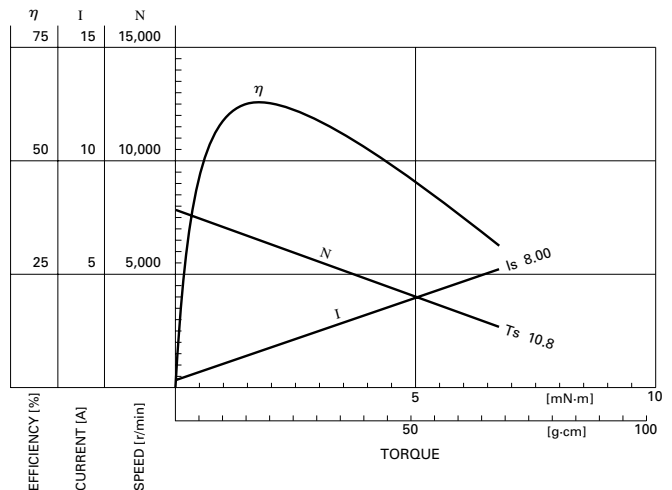
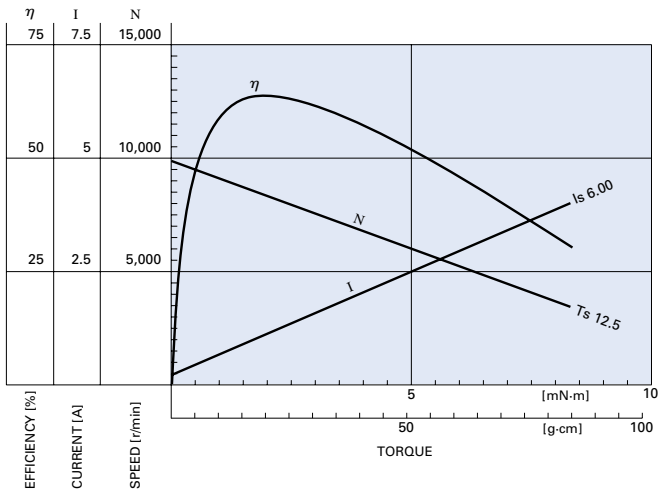
CCW(+)

**FF-170PA-2838**

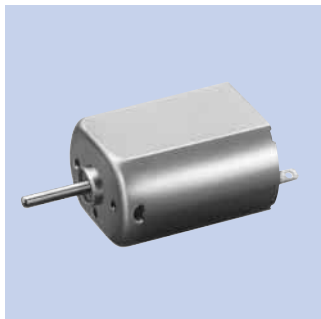
2.4V

**FF-170PA-3724**

1.2V



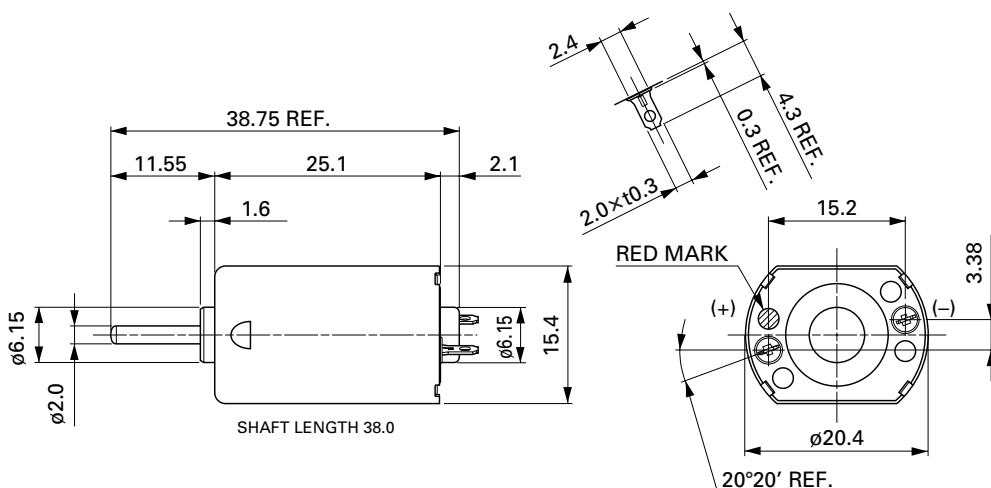
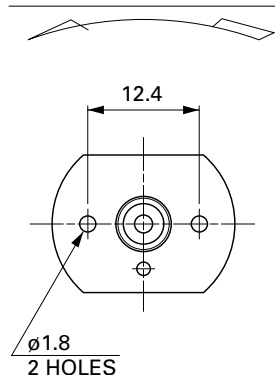
**Typical Applications** Audio and Visual Equipments : CD Player / Tape Cassette Adapter  
 Household Appliances : Electric Shaver  
 Office Automation Equipments : CD/DVD-ROM Drive  
 Automotive Products : Air Conditioning Damper Actuator



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-130RH-15210	1 ~ 4	3V CONSTANT	5400	0.045	4280	0.17	0.57	5.8	0.26	2.74	28	0.65
FF-130RH-2860	1.0 ~ 1.5	1.2V CONSTANT	7400	0.21	5870	0.81	0.77	7.8	0.47	3.72	38	3.10
FF-130SH-11340	3 ~ 12	6V CONSTANT	4800	0.030	3820	0.12	0.88	8.9	0.35	4.31	44	0.46
		9V CONSTANT	7400	0.035	6030	0.15	1.18	12.0	0.74	6.37	65	0.68

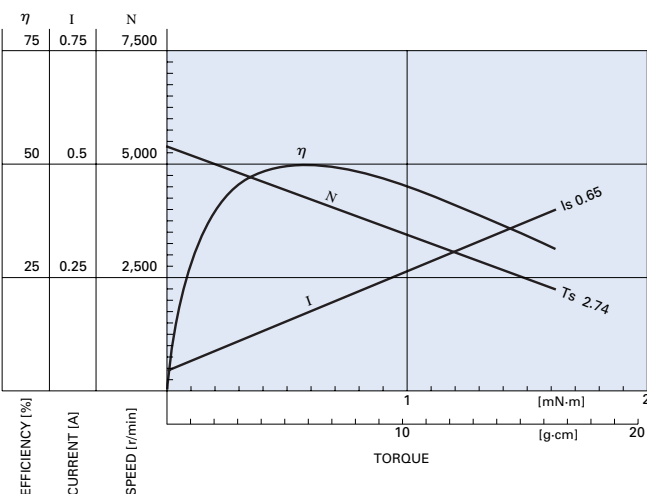
UNIT: MILLIMETERS

**DIRECTION OF ROTATION**

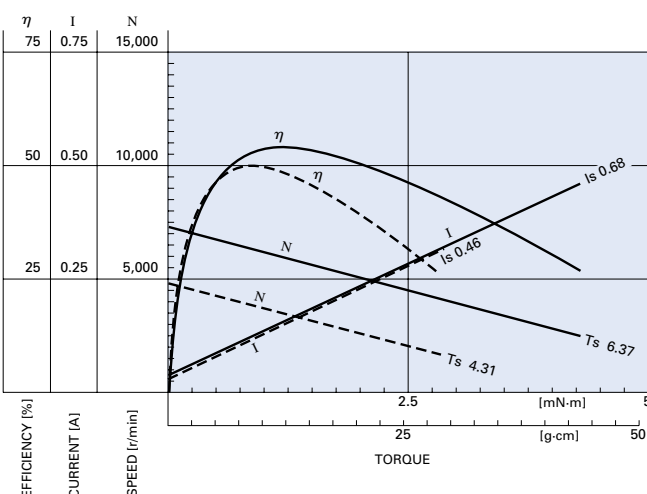


**WEIGHT: 24g (APPROX)**

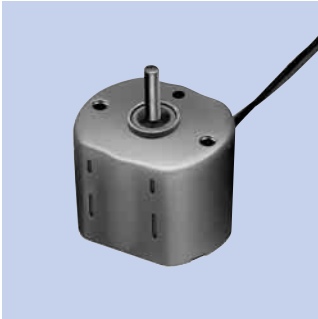
**FF-130RH-15210** 3.0V



**FF-130SH-11340** --- 6.0V — 9.0V



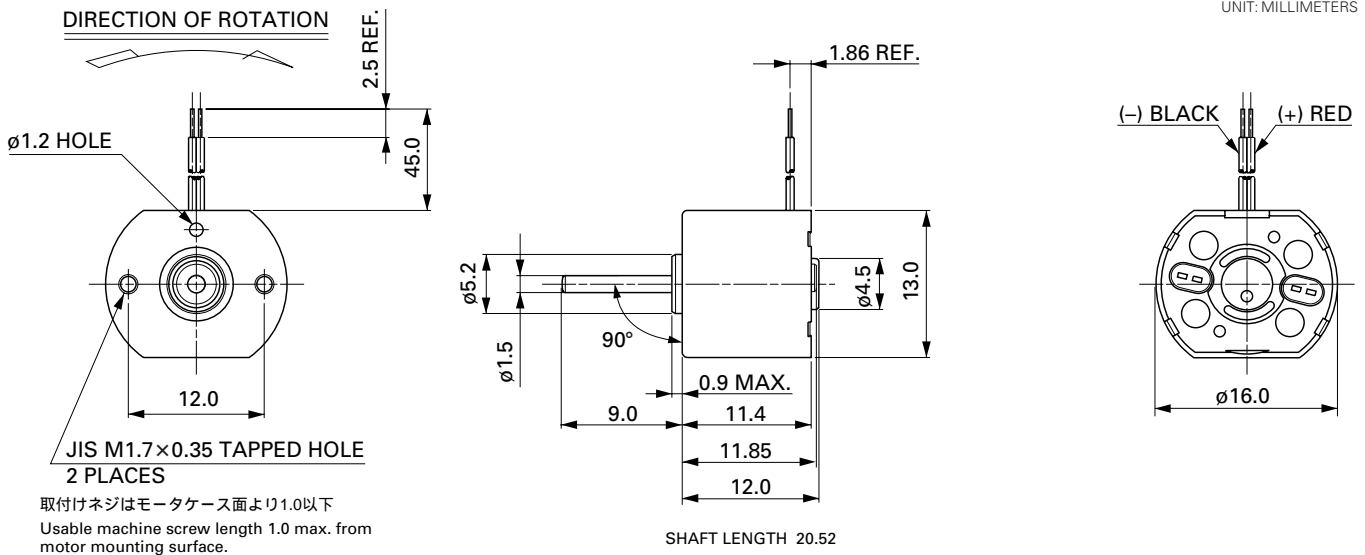
Typical Applications Audio and Visual Equipments : MD Player



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FF-110PH-08280	1 ~ 3	3V CONSTANT	8000	0.031	5850	0.084	0.16	1.6	0.095	0.58	5.9	0.23

\*Also available with terminals (without leadwires).

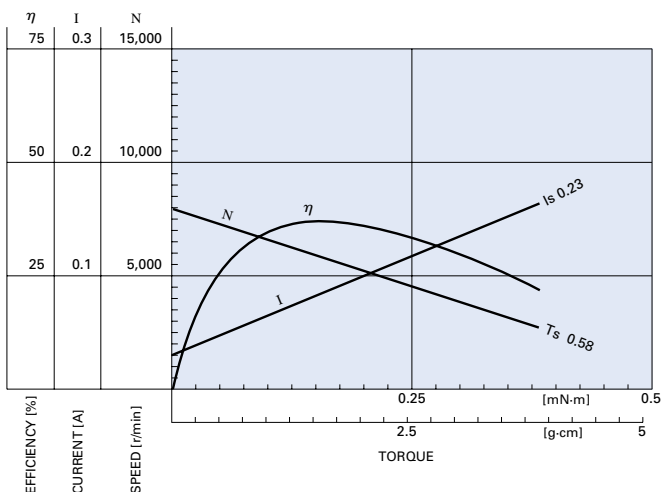
UNIT: MILLIMETERS



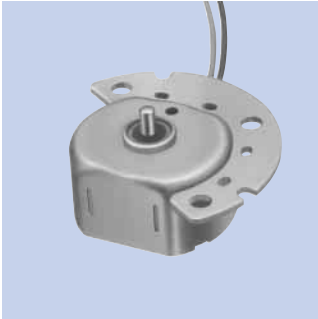
WEIGHT: 7.5g (APPROX)

## FF-110PH-08280

3.0V



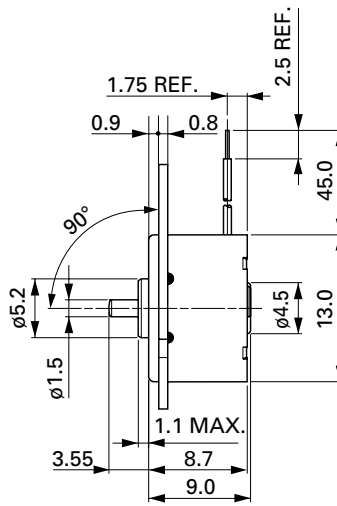
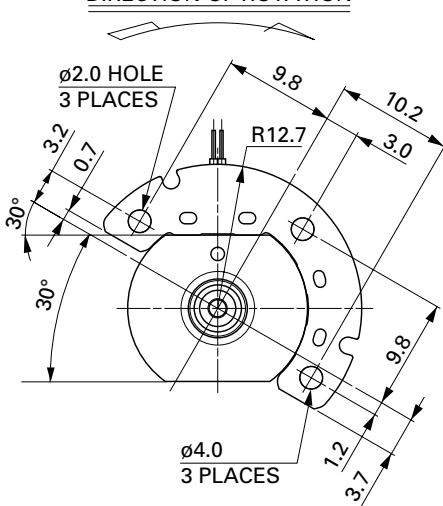
Typical Applications Audio and Visual Equipments : MD Player / Car MD Player / Portable MD Player



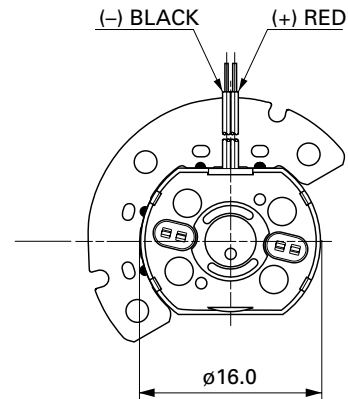
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FF-100VA-08280	1 ~ 6	2V CONSTANT	7800	0.040	5430	0.092	0.10	1.0	0.057	0.33	3.4	0.21

DIRECTION OF ROTATION

UNIT: MILLIMETERS



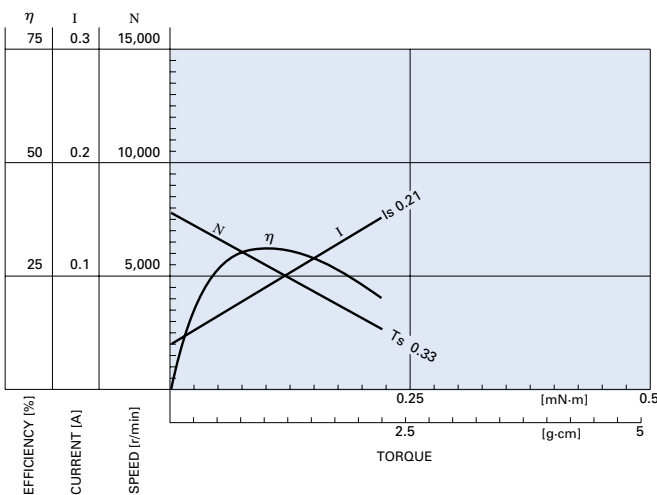
SHAFT LENGTH 11.97



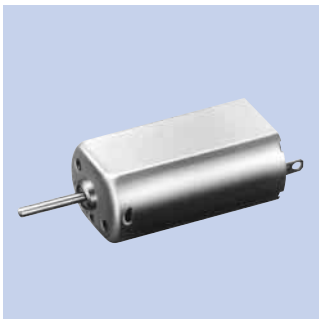
WEIGHT: 6.5g (APPROX)

## FF-100VA-08280

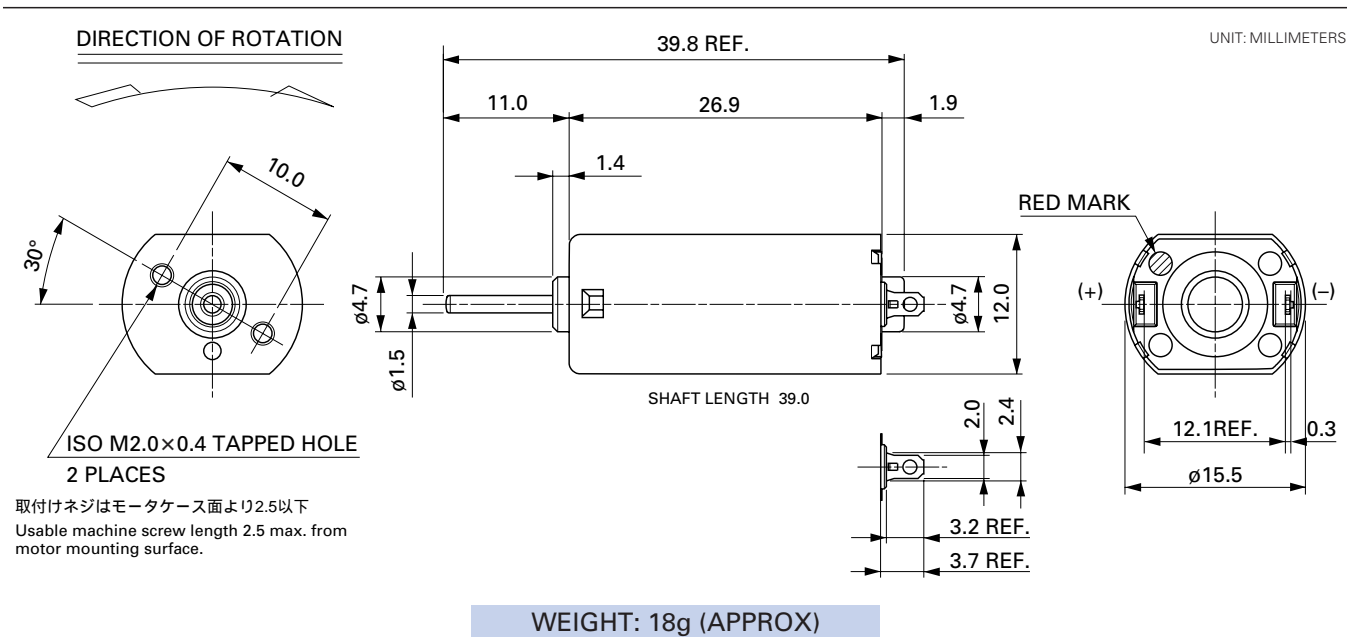
2.0V



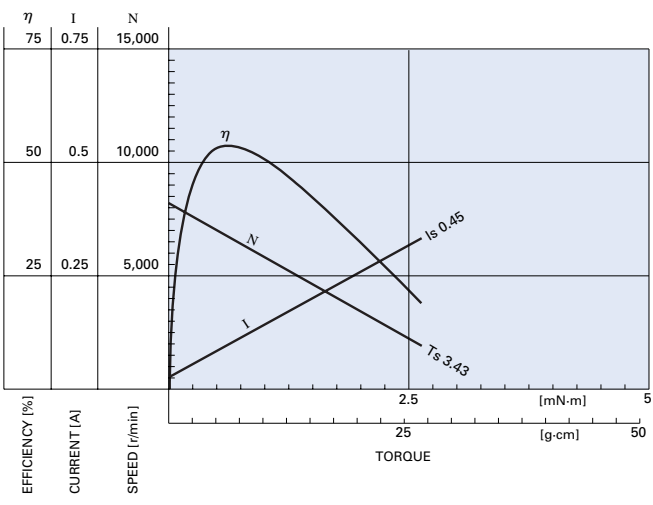
**Typical Applications** Audio and Visual Equipments : CD Player / Car CD Player / DVD Player  
 Office Automation Equipments : CD/DVD-ROM Drive  
 Household Appliances : Electric Shaver



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FF-050SB-09250	5.0~11.5	8V CONSTANT	8100	0.023	6610	0.10	0.63	6.4	0.44	3.43	35	0.45

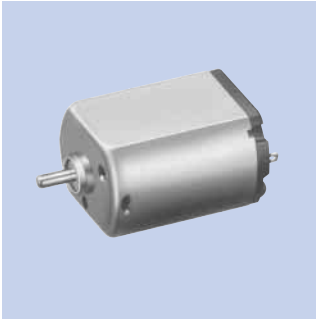


**FF-050SB-09250** 8.0V





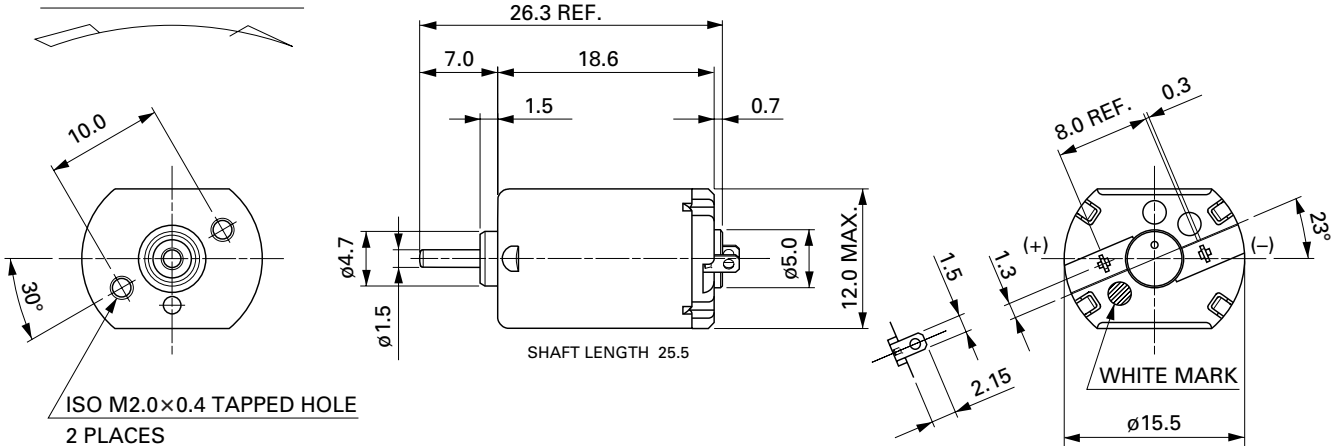
**Typical Applications** Audio and Visual Equipments : CD/MD Player / Car CD Player / Camcorder  
 Household Appliances : Blood Pressure Meter  
 Office Automation Equipments : CD/DVD-ROM Drive



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FF-030PA-10180	3.5 ~ 6.0	5V CONSTANT	11700	0.050	9230	0.19	0.50	5.1	0.48	2.35	24	0.70
FF-030PK-09210	1 ~ 5	5V CONSTANT	10500	0.046	8140	0.16	0.44	4.5	0.37	1.96	20	0.55
FF-030PK-08250	1 ~ 6	2.5V CONSTANT	4100	0.028	2940	0.071	0.21	2.1	0.064	0.74	7.6	0.18
		6V CONSTANT	10500	0.041	8020	0.13	0.43	4.4	0.36	1.81	19	0.43
FF-030PN-09210	4.5 ~ 6.0	5V CONSTANT	10400	0.045	8000	0.15	0.42	4.3	0.35	1.81	19	0.50

UNIT: MILLIMETERS

DIRECTION OF ROTATION

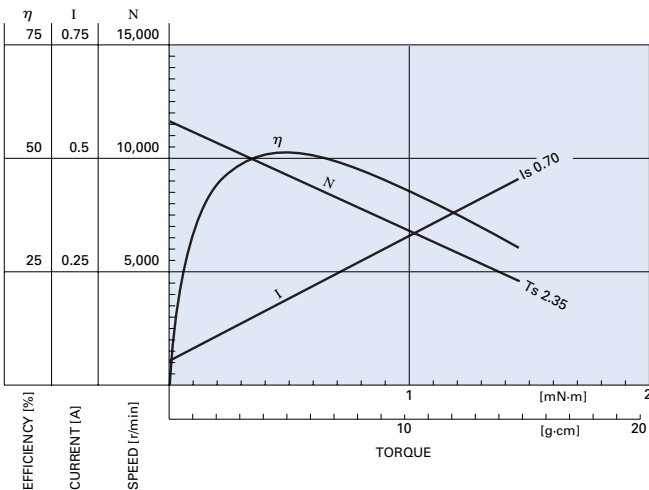


取付けネジはモータケース面より1.5以下  
 Usable machine screw length 1.5 max. from motor mounting surface.

**WEIGHT: 11g (APPROX)**

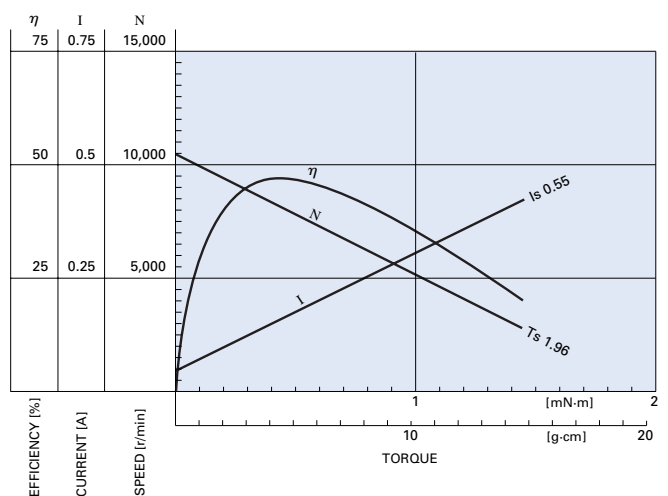
**FF-030PA-10180**

5.0V



**FF-030PK-09210**

5.0V

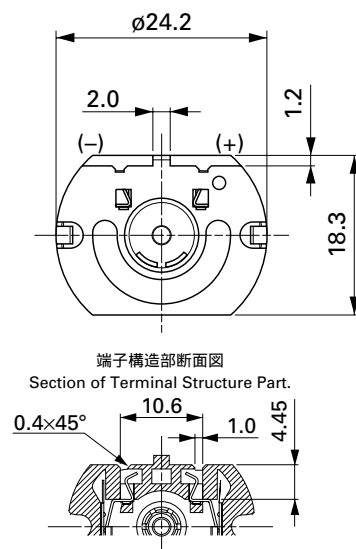
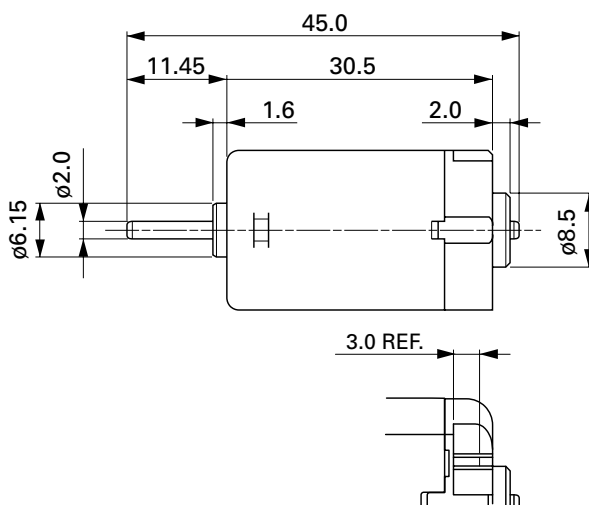
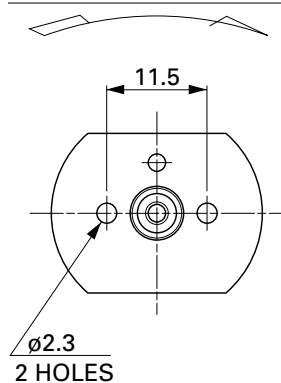




MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN-m	g-cm	W	mN-m	g-cm	A
FC-280SD-18165	10 ~ 15	12V CONSTANT	12200	0.095	10420	0.56	3.43	35.0	3.74	23.5	240	3.25

UNIT: MILLIMETERS

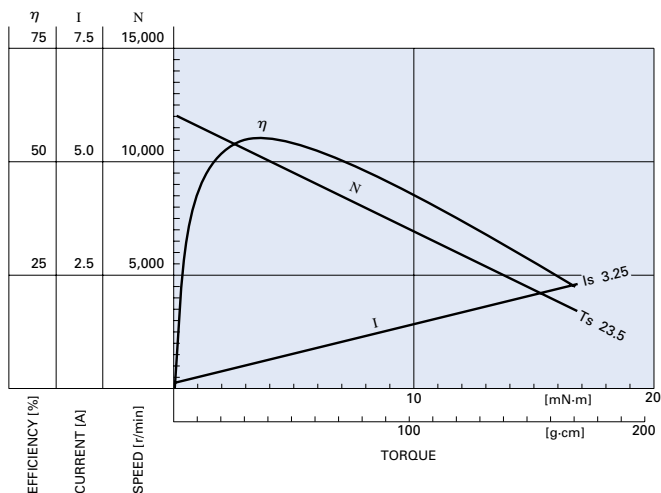
**DIRECTION OF ROTATION**



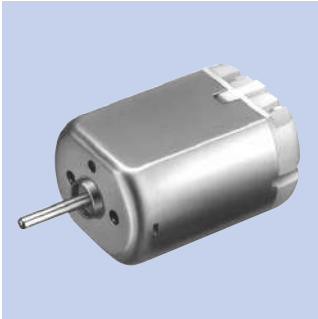
**WEIGHT: 38g (APPROX)**

**FC-280SD-18165**

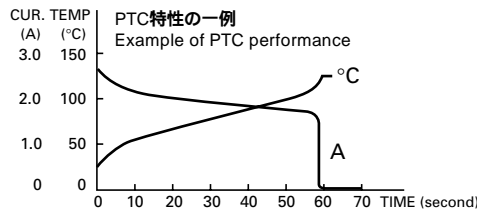
12.0V



Typical Applications Automotive Products : Door Lock Actuator / Trunk Opener



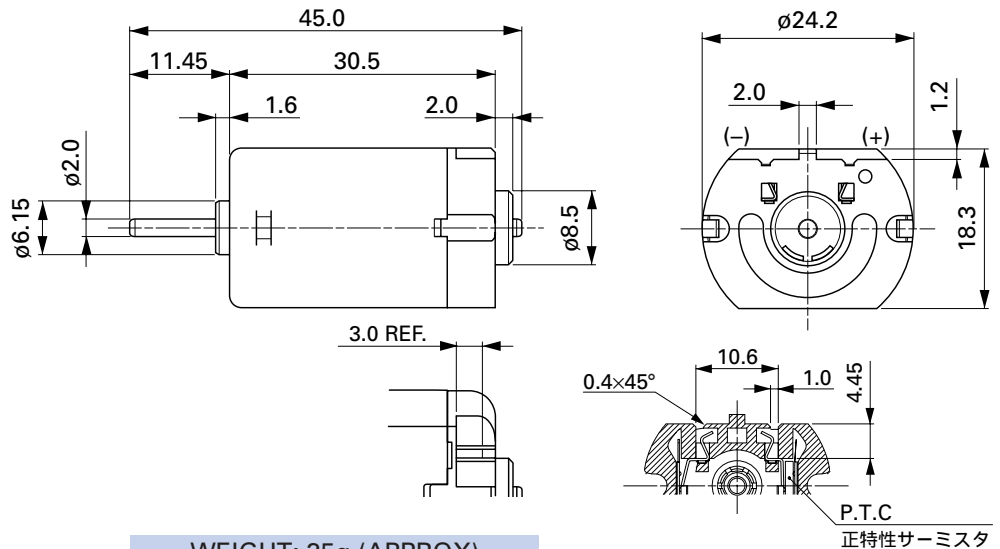
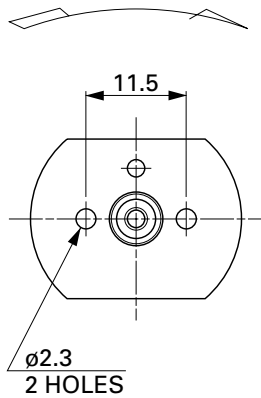
MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FC-280PT-20150	9 ~ 15	12V CONSTANT	12000	0.11	10260	0.65	4.20	42.8	4.51	28.9	295	3.80
FC-280ST-18180	9 ~ 15	12V CONSTANT	11400	0.075	9840	0.47	3.28	33.4	3.37	24.0	245	3.00



\*This performance changes by motor winding and PTC.

### DIRECTION OF ROTATION

UNIT: MILLIMETERS



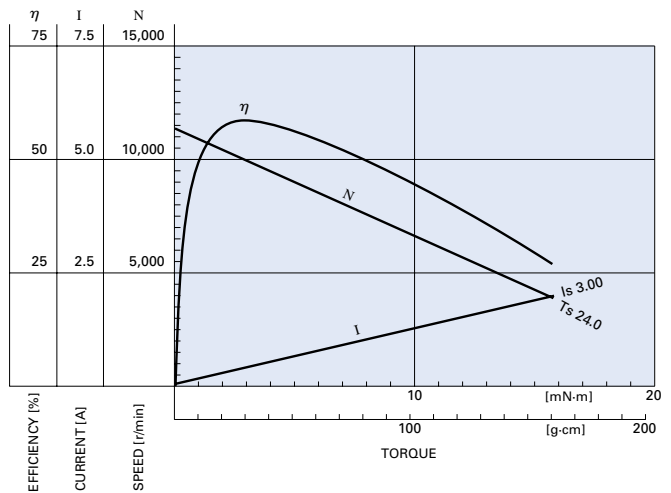
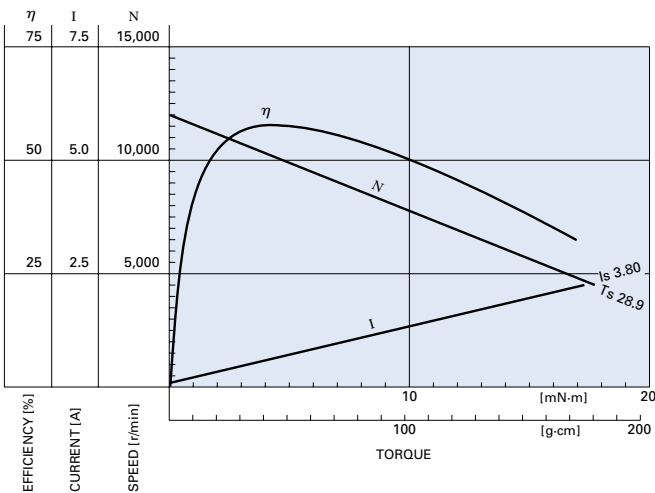
WEIGHT: 35g (APPROX)

### FC-280PT-20150

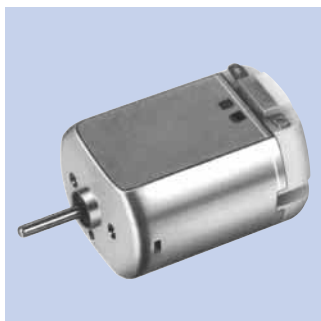
12.0V

### FC-280ST-18180

12.0V



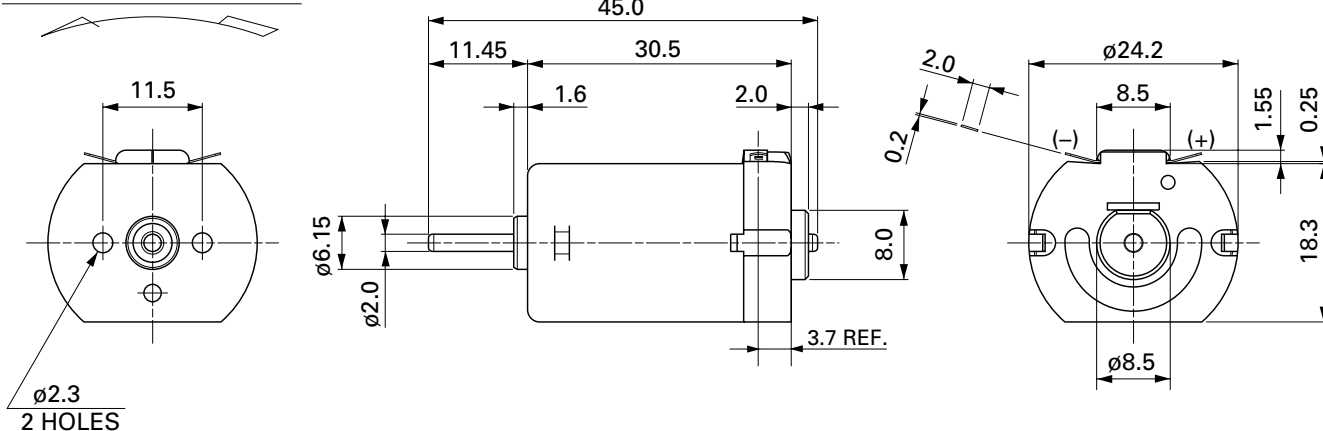
Typical Applications **Automotive Products** : Door Lock Actuator  
**Household Appliances**



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FC-280PA-20150	9 ~ 15	12V CONSTANT	12000	0.10	10360	0.63	4.22	43.0	4.57	30.9	315	4.00
FC-280PA-18165	9 ~ 15	12V CONSTANT	11000	0.10	9330	0.56	4.24	43.2	4.13	27.9	285	3.12
FC-280SA-18165	10 ~ 15	12V CONSTANT	12400	0.090	10660	0.55	3.57	36.4	3.98	25.5	260	3.40
FC-280SA-16200	10 ~ 15	12V CONSTANT	10000	0.070	8470	0.39	3.30	33.7	2.92	21.6	220	2.15
FC-280SA-4523	1 ~ 2	1.2V CONSTANT	8700	0.58	7100	2.58	2.42	24.7	1.80	13.2	135	11.5

**DIRECTION OF ROTATION**

UNIT: MILLIMETERS



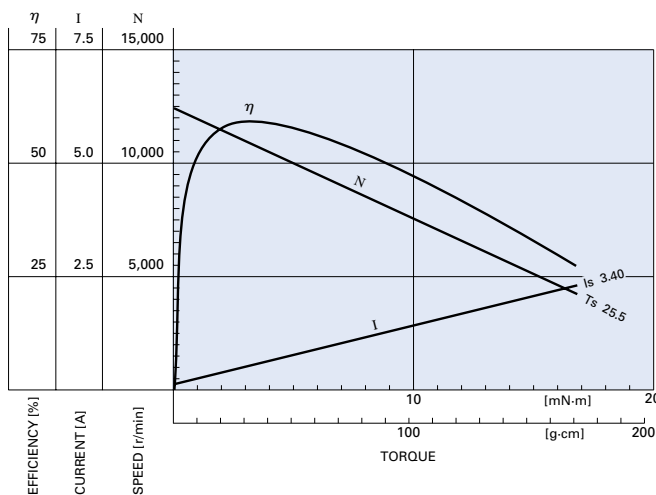
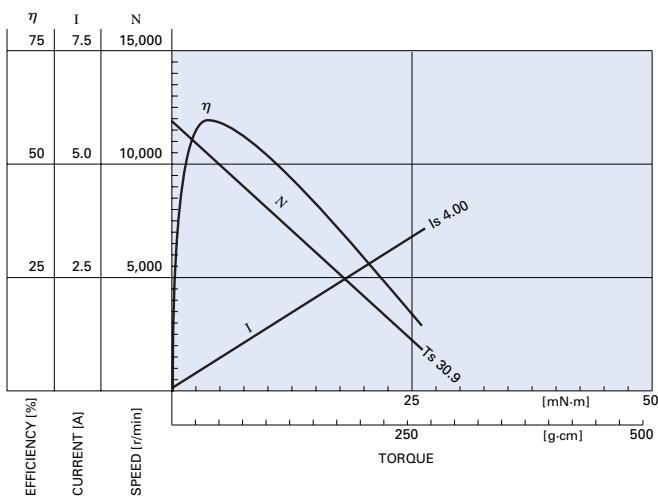
WEIGHT: 35g (APPROX)

**FC-280PA-20150**

12.0V

**FC-280SA-18165**

12.0V



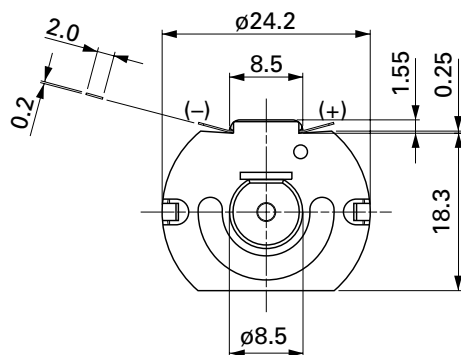
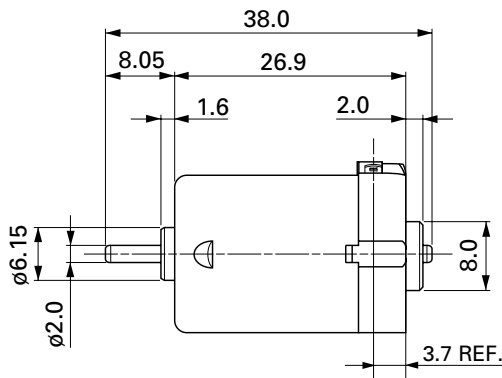
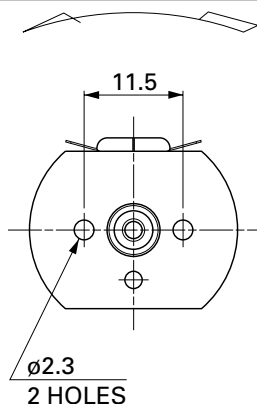
Typical Applications Household Appliances : Hair Dryer



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FC-260RA-10400	6 ~ 15	12V CONSTANT	8800	0.040	6990	0.15	1.41	14.4	1.03	6.87	70	0.60
FC-260SA-2670	3 ~ 6	4.5V CONSTANT	14000	0.27	11660	1.34	2.94	30.0	3.59	17.6	180	6.70
FC-260SA-10300	6 ~ 26	24V CONSTANT	17500	0.065	14400	0.30	2.78	28.4	4.19	15.7	160	1.40
FC-260SA-12250	6 ~ 28	24V CONSTANT	20000	0.090	16700	0.45	3.40	34.7	5.94	20.6	210	2.30

UNIT: MILLIMETERS

**DIRECTION OF ROTATION**



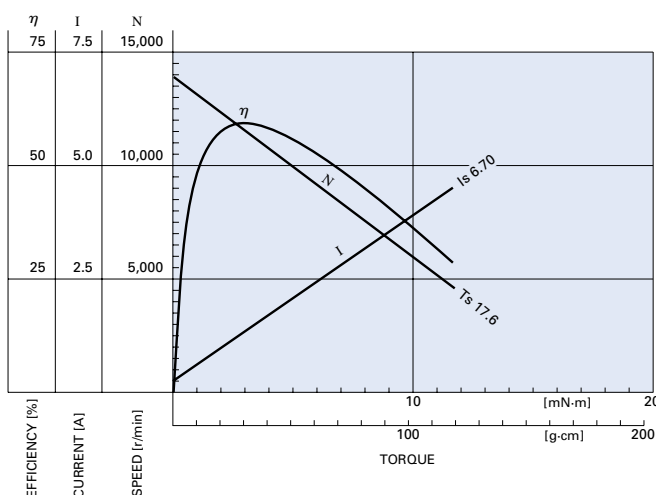
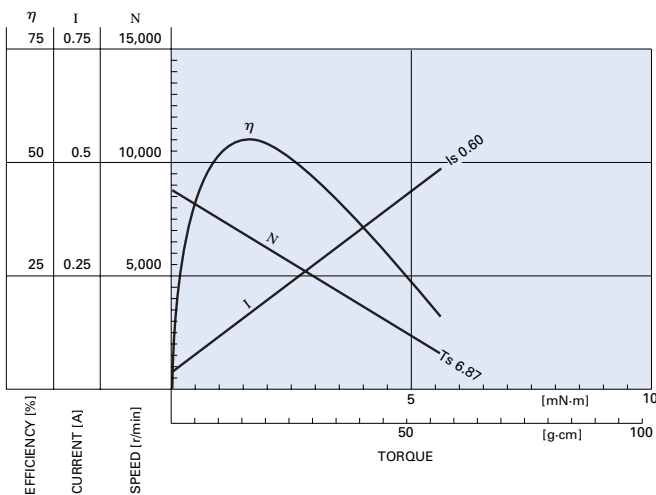
WEIGHT: 28g (APPROX)

**FC-260RA-10400**

12.0V

**FC-260SA-2670**

4.5V

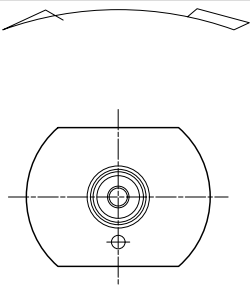


Typical Applications Automotive Products : Rearview Mirror

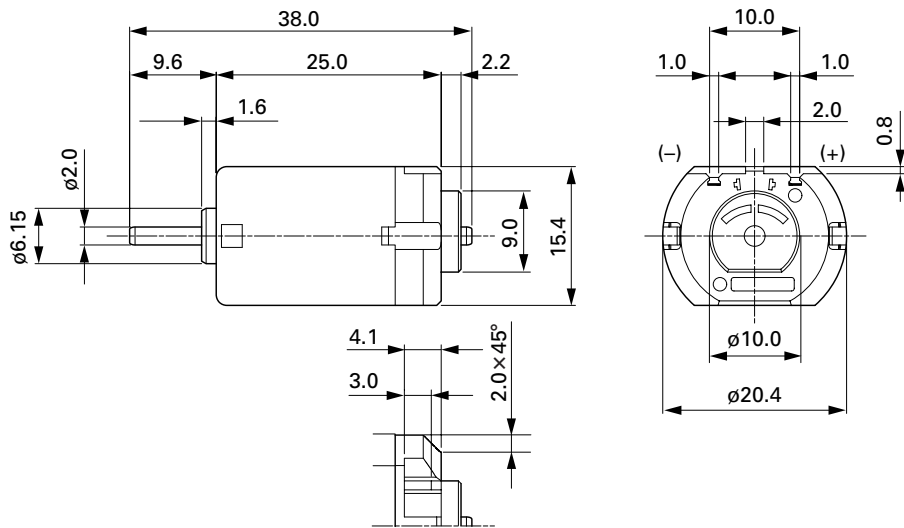


MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE	OUTPUT	TORQUE	CURRENT		
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FC-140RA-09490	9 ~ 15	12V CONSTANT	7900	0.042	5910	0.12	1.03	10.5	0.63	4.07	42	0.37

DIRECTION OF ROTATION



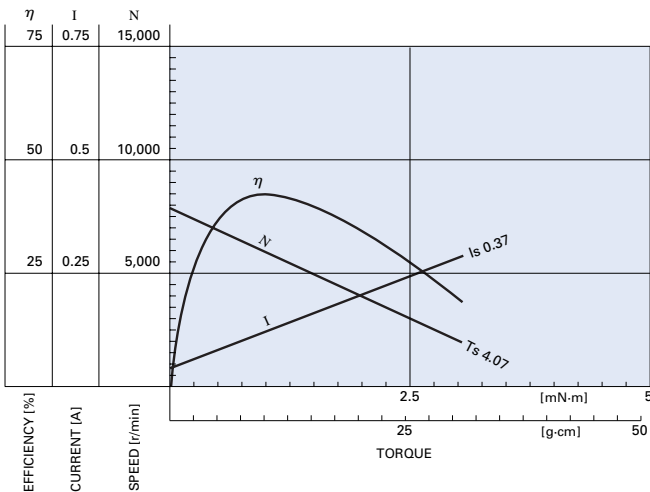
UNIT: MILLIMETERS



WEIGHT: 23g (APPROX)

## FC-140RA-09490

12.0V



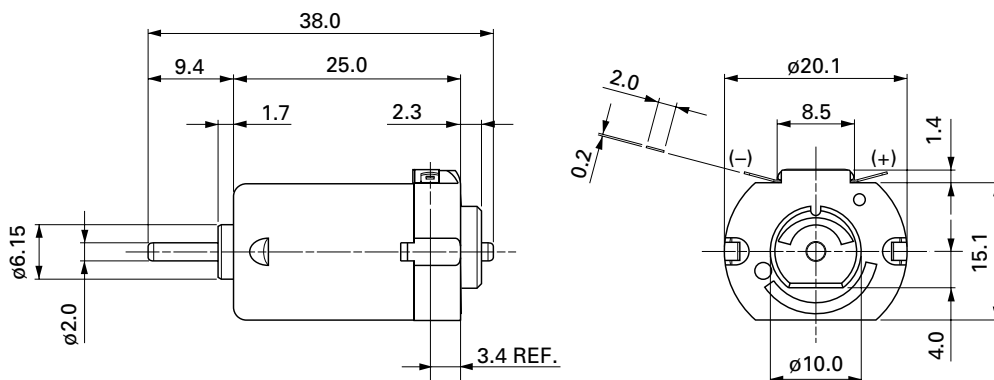
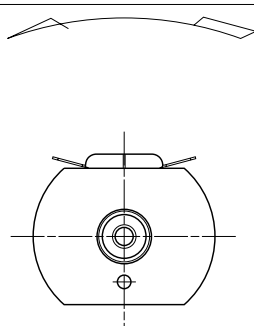
**Typical Applications** Household Appliances : Styling Brush  
Toys and Models : Motorized Toy / Radio Control Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY				STALL			
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FC-130RA-14150	4.5 ~ 6.0	4.5V CONSTANT	13200	0.14	9890	0.42	0.74	7.5	0.76	2.94	30	1.25
FC-130RA-10300	4.5 ~ 12.0	12V CONSTANT	18000	0.080	13770	0.26	0.90	9.1	1.29	3.82	39	0.85
FC-130SA-14150	4.5 ~ 6.0	6V CONSTANT	12400	0.14	9560	0.47	1.19	12.1	1.19	5.19	53	1.59
FC-130SA-2270	3.0 ~ 4.5	3V CONSTANT	13500	0.27	10740	1.05	1.37	14.0	1.54	6.71	69	4.10

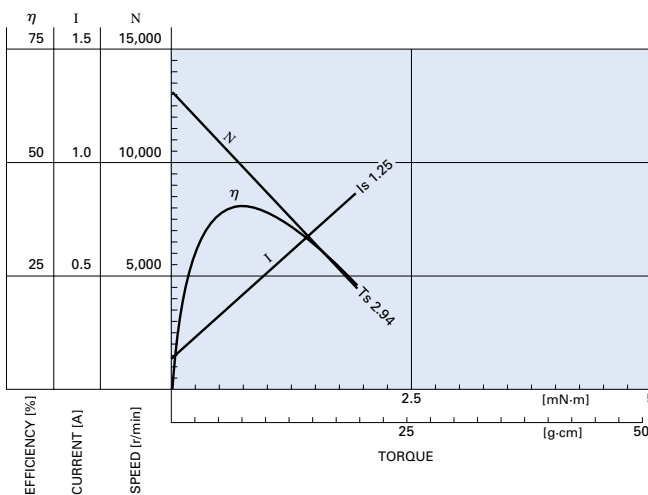
UNIT: MILLIMETERS

**DIRECTION OF ROTATION**

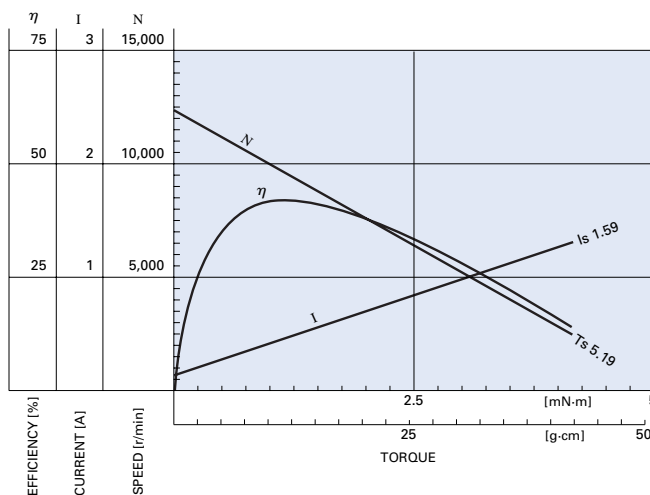


**WEIGHT: 17g (APPROX)**

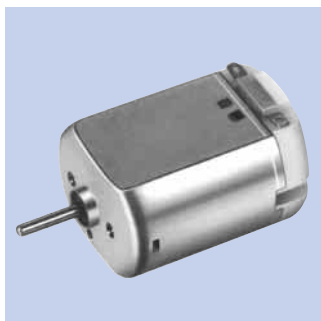
**FC-130RA-14150 4.5V**



**FC-130SA-14150 6.0V**



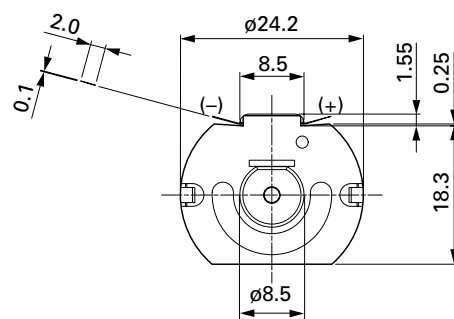
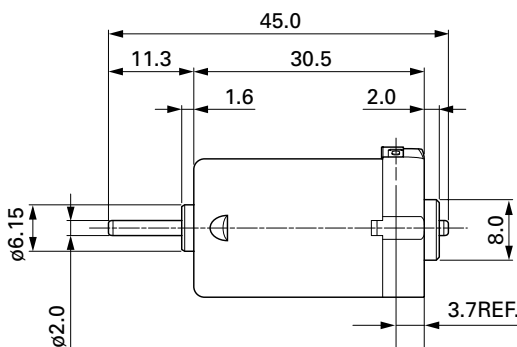
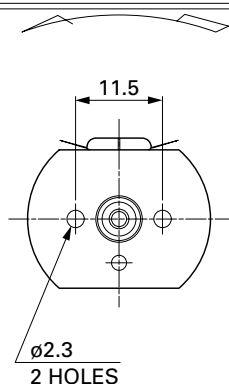
Typical Applications Toys and Models : Motorized Toy / Motorized Plastic Model



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FA-280RA-2865	1.5 ~ 3.0	3V CONSTANT	10500	0.17	8820	0.89	1.79	18.3	1.65	11.2	114	4.68
FA-280RA-20120	1.5 ~ 4.5	3V CONSTANT	5900	0.080	4790	0.35	1.18	12.0	0.59	6.27	64	1.50
FA-280RA-2485	1.5 ~ 3.0	3V CONSTANT	8000	0.13	6600	0.61	1.54	15.7	1.06	8.83	90	2.90
FA-280SA-4030	1.5 ~ 3.0	1.5V CONSTANT	7800	0.37	6540	1.92	2.29	23.4	1.57	14.2	145	10.0

UNIT: MILLIMETERS

DIRECTION OF ROTATION



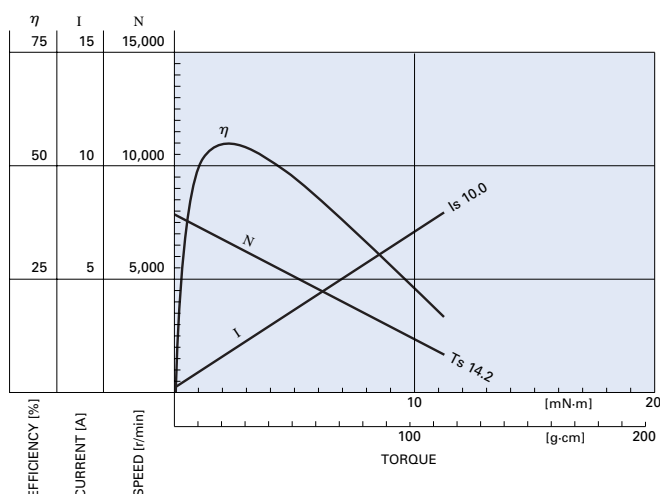
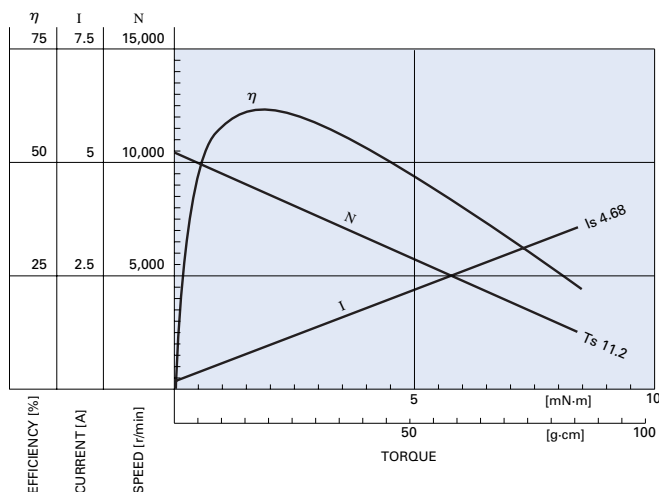
WEIGHT: 35g (APPROX)

**FA-280RA-2865**

3.0V

**FA-280SA-4030**

1.5V





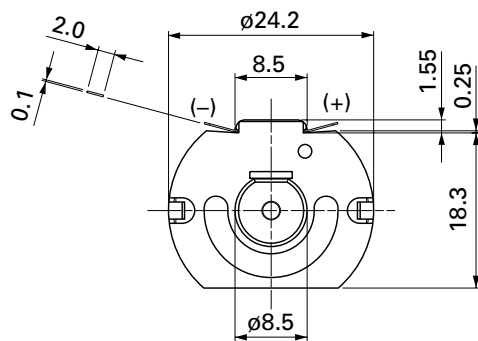
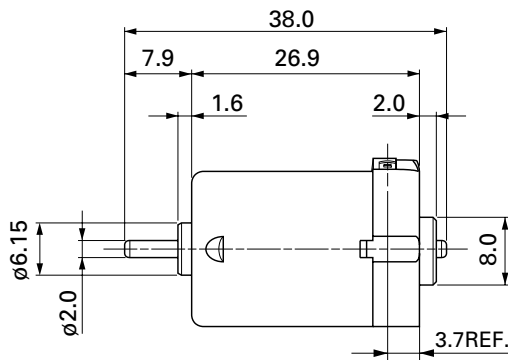
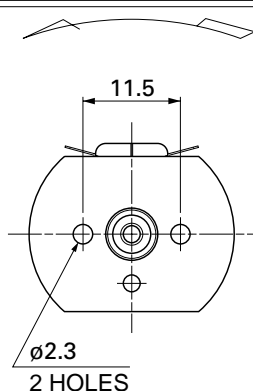
Typical Applications Toys and Models : Motorized Toy



MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY					STALL		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	TORQUE		CURRENT
			r/min	A	r/min	A	mN·m	g·cm	W	mN·m	g·cm	A
FA-260RA-2670	1.5 ~ 3.0	1.5V CONSTANT	6300	0.15	5080	0.62	0.99	10.1	0.52	5.10	52	2.60
		3V CONSTANT	12100	0.21	10010	1.00	1.56	15.9	1.63	9.03	92	4.80
FA-260RA-2295	1.5 ~ 4.5	1.5V CONSTANT	4600	0.10	3640	0.38	0.78	8.0	0.30	3.73	38	1.43
		3V CONSTANT	9300	0.13	7640	0.60	1.26	12.9	1.01	7.06	72	2.74
FA-260RA-20120	1.5 ~ 4.5	3V CONSTANT	7300	0.090	5980	0.41	1.10	11.2	0.69	6.08	62	1.85
		4.5V CONSTANT	10800	0.12	8920	0.57	1.45	14.8	1.35	8.33	85	2.70

UNIT: MILLIMETERS

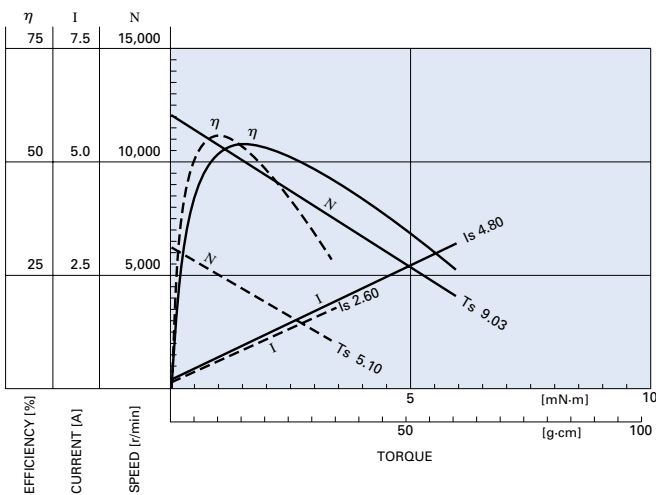
**DIRECTION OF ROTATION**



**WEIGHT: 28g (APPROX)**

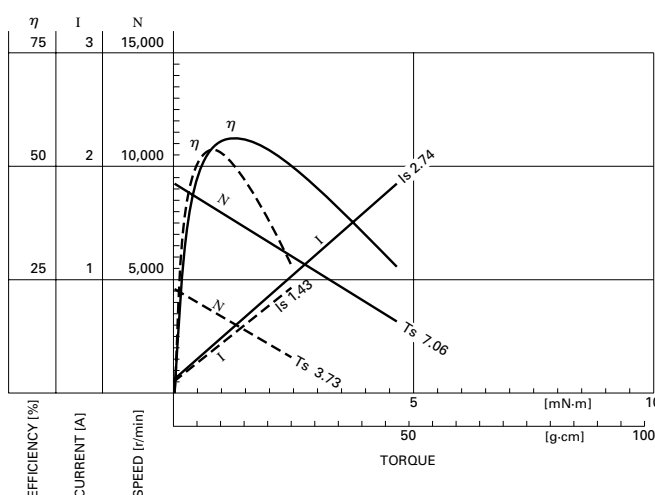
**FA-260RA-2670**

----- 1.5V ——— 3.0V



**FA-260RA-2295**

----- 1.5V ——— 3.0V



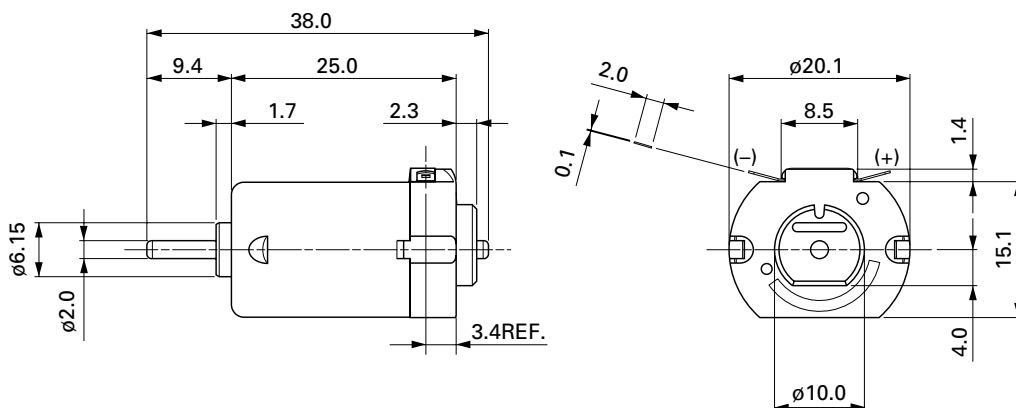
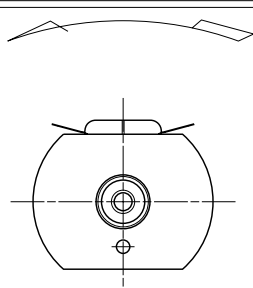
Typical Applications Toys and Models : Motorized Toy / Motorized Plastic Model



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

UNIT: MILLIMETERS

DIRECTION OF ROTATION



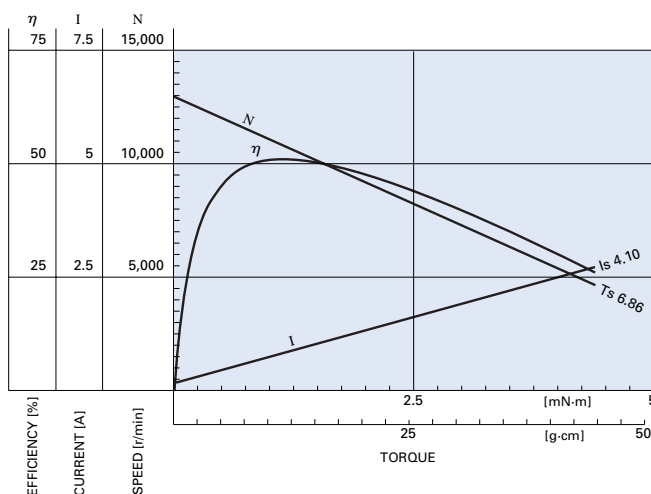
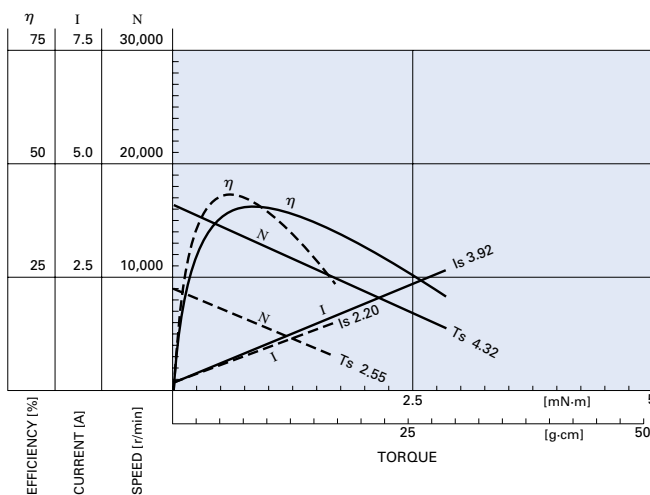
WEIGHT: 17g (APPROX)

## FA-130RA-2270

---- 1.5V — 3.0V

## FA-130SA-2270

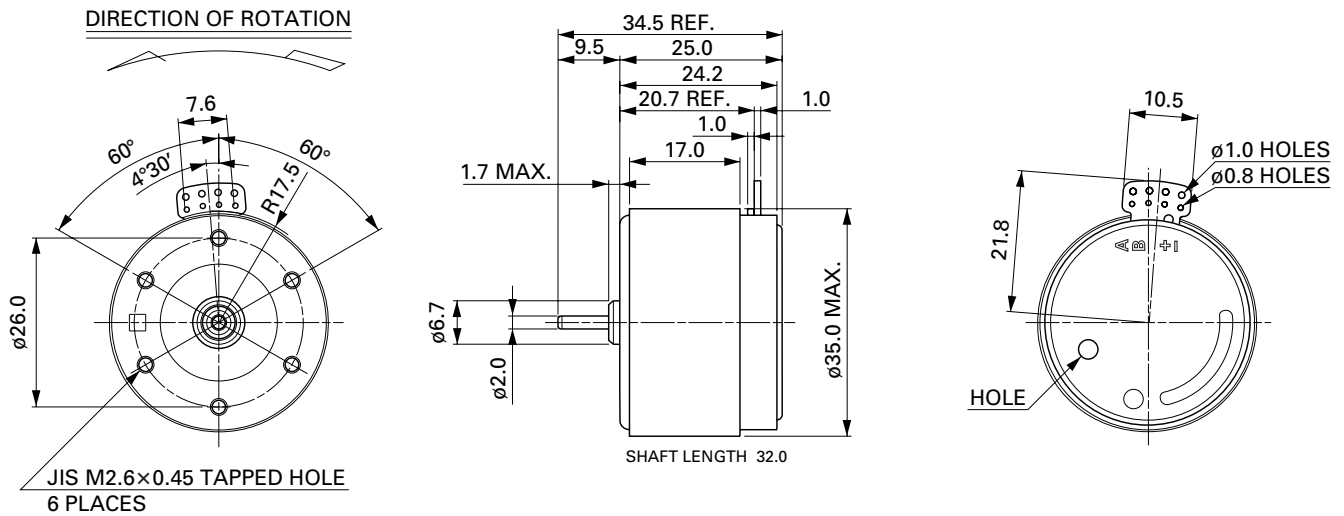
3.0V





MODEL	RATED VOLTAGE	WORKING VOLTAGE	RATED LOAD		RATED SPEED	RATED LOAD CURRENT	LOAD FLUCTUATION(TYP)	STARTING TORQUE(MIN)	
	V		V	mN-m				g-cm	mN-m
EG-530YD-9BH	9	6.3 ~ 11.7	0.98	10	2000	128	1.5	4.90	50
					4000	140	4.0		
EG-530YD-2BH	12	8.4 ~ 15.6	0.98	10	2000	99	1.5	5.39	55
					4000	108	4.0		

UNIT: MILLIMETERS



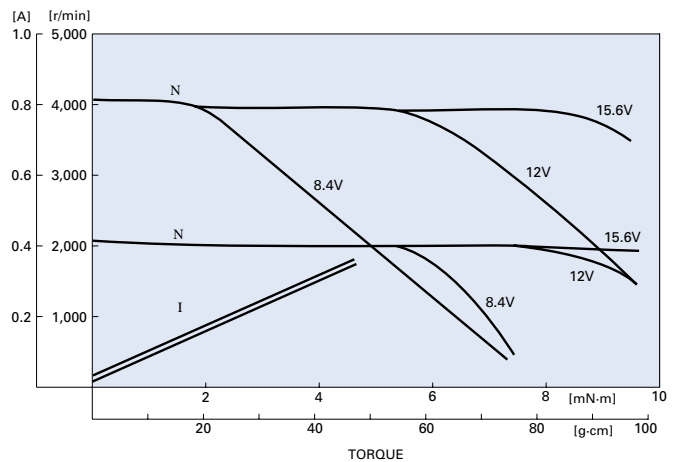
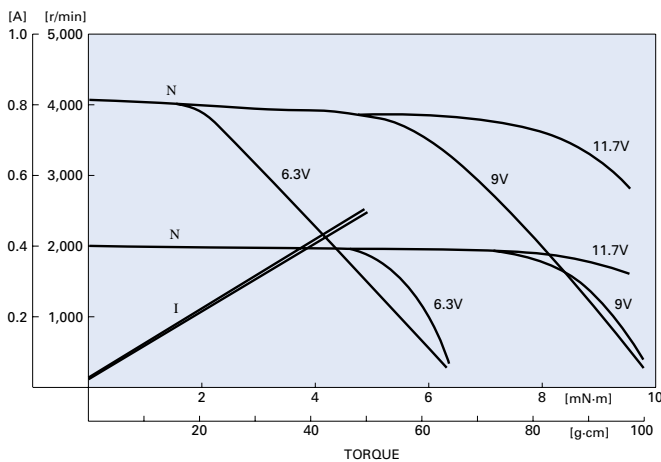
**WEIGHT: 70g (APPROX)**

**EG-530YD-9BH**

6.3V/9.0V/11.7V

**EG-530YD-2BH**

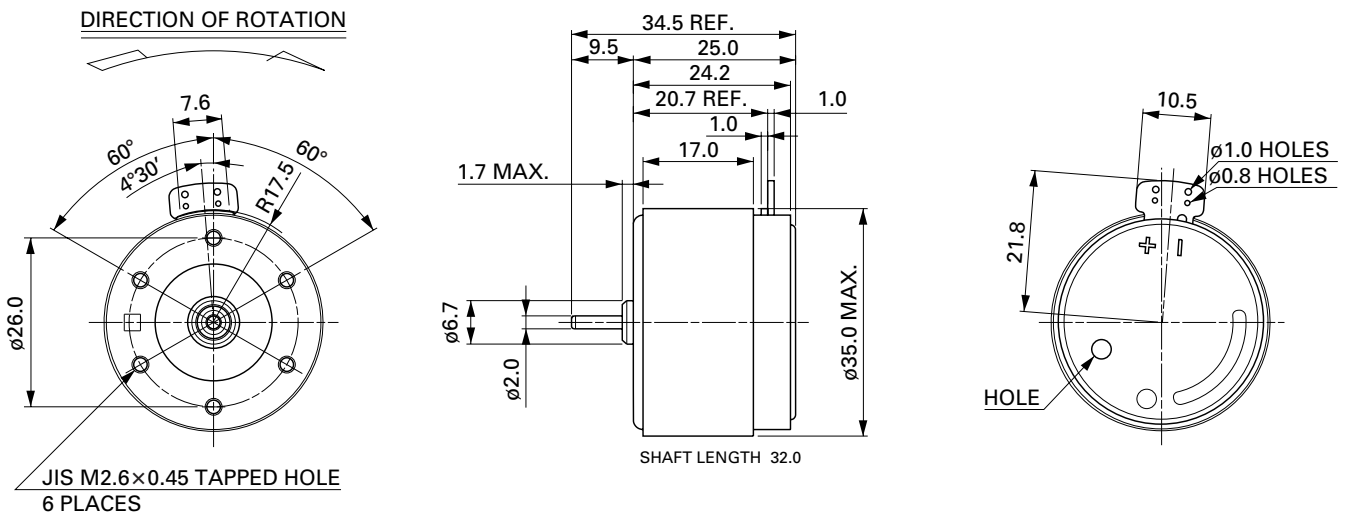
8.4V/12.0V/15.6V





MODEL	RATED VOLTAGE	WORKING VOLTAGE	RATED LOAD		RATED SPEED	RATED LOAD CURRENT	LOAD FLUCTUATION(TYP)	STARTING TORQUE(MIN)	
	V	V	mN-m	g-cm	r/min	mA(TYP)	r/min / g-cm	mN-m	g-cm
EG-530AD-6F (6B)	6	4.2 ~ 7.5	0.78	8.0	2400±2%	132	9.0	3.72at4.2V	38at4.2V
EG-530AD-9F (9B)	9	6 ~ 11	0.78	8.0	2400±2%	92	9.0	4.90at6.0V	50at6.0V
EG-530AD-2F (2B)	12	8.4 ~ 15.0	0.78	8.0	2400±2%	73	9.0	5.88at8.4V	60at8.4V

UNIT: MILLIMETERS



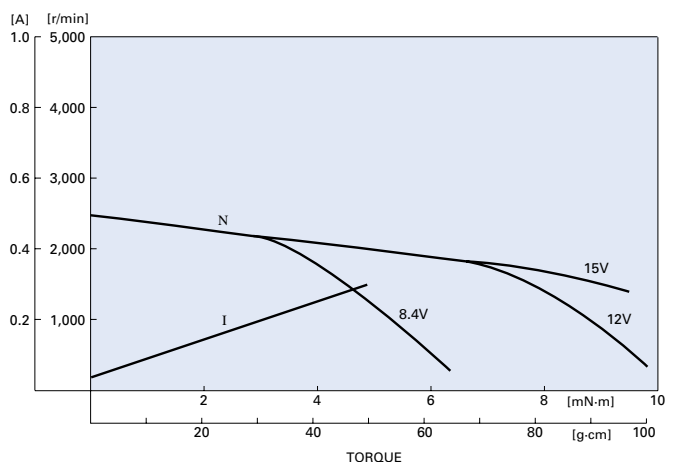
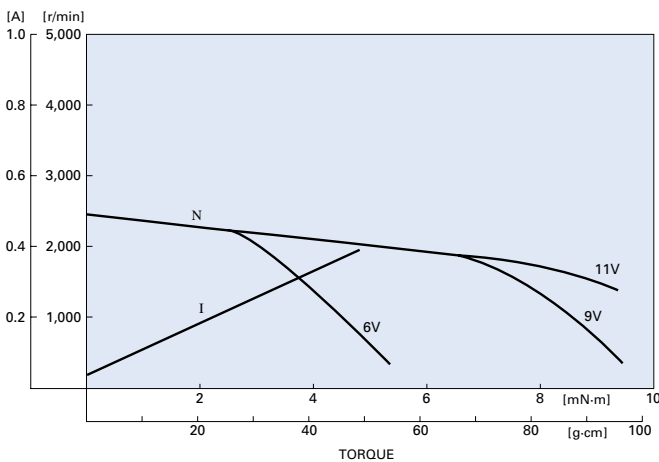
JIS M2.6×0.45 TAPPED HOLE  
6 PLACES

取付けネジはモータケース面より1.8以下  
Usable machine screw length 1.8 max. from  
motor mounting surface.

**WEIGHT: 70g (APPROX)**

**EG-530AD-9F(9B)** 6.0V/9.0V/11.0V

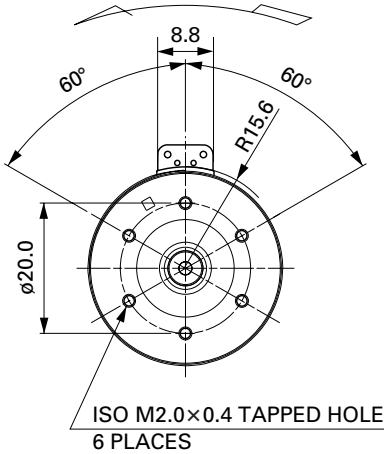
**EG-530AD-2F(2B)** 8.4V/12.0V/15.0V



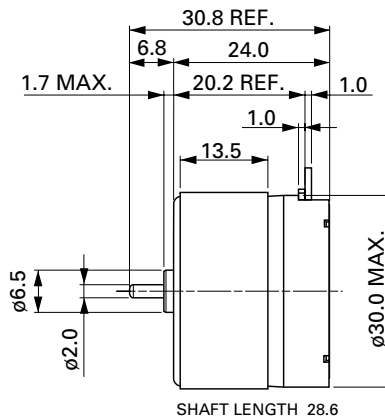


MODEL	RATED VOLTAGE	WORKING VOLTAGE	RATED LOAD		RATED SPEED	RATED LOAD CURRENT	LOAD FLUCTUATION(TYP)	STARTING TORQUE(MIN)	
	V	V	mN·m	g·cm	r/min	mA(TYP)	r/min / g·cm	mN·m	g·cm
EG-520ED-3B	13.2	8.4 ~ 16.0	0.98	10	2400±2%	74	2.5	5.88at8.4V	60at8.4V

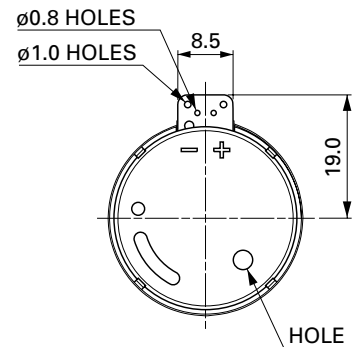
**DIRECTION OF ROTATION**



取付けネジはモータケース面より1.5以下  
Usable machine screw length 1.5 max. from motor mounting surface.



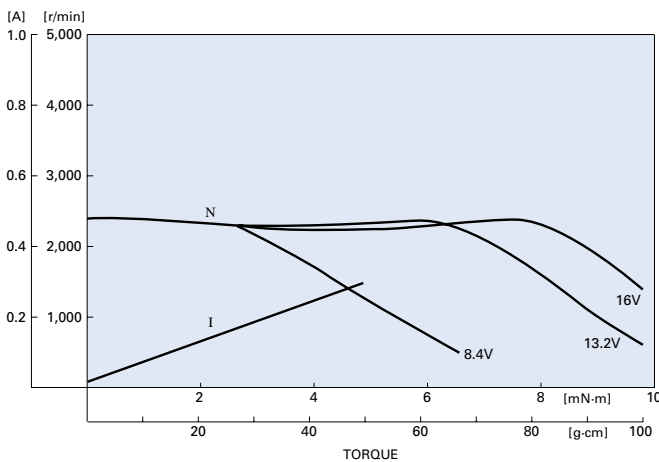
UNIT: MILLIMETERS

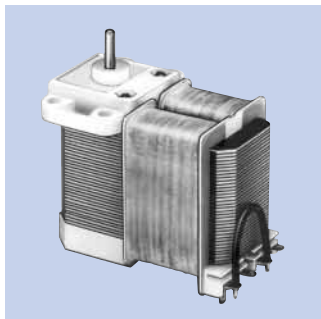


**WEIGHT: 50g (APPROX)**

**EG-520ED-3B**

8.4V/13.2V/16.0V



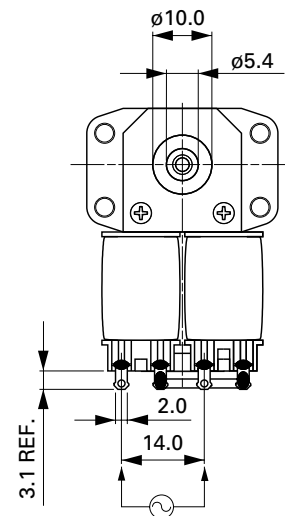
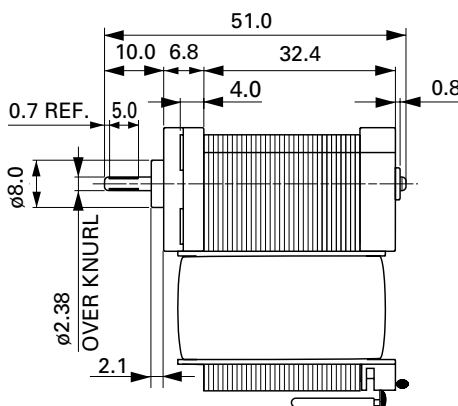
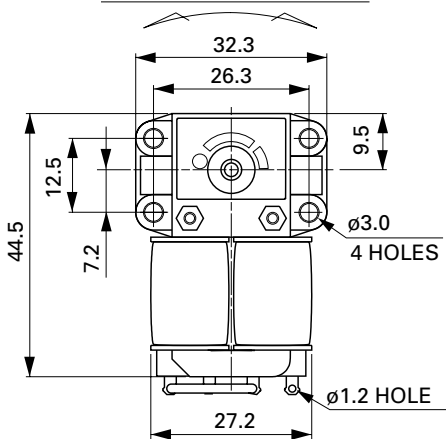


MODEL	VOLTAGE		FREQUENCY	SPEED	CURRENT	INPUT	PULL OUT TORQUE	
	OPERATING RANGE	NOMINAL					mN·m	g·cm
	AC. V	AC. V					Hz	r/min
CO-261PA-122100	220 ~ 240	230	50	3000	0.14	11.5	37.2	380
CO-261PA-181000	100 ~ 120	120	60	3600	0.27	13.0	35.3	360

Direction of rotation is controlled mechanically.

UNIT: MILLIMETERS

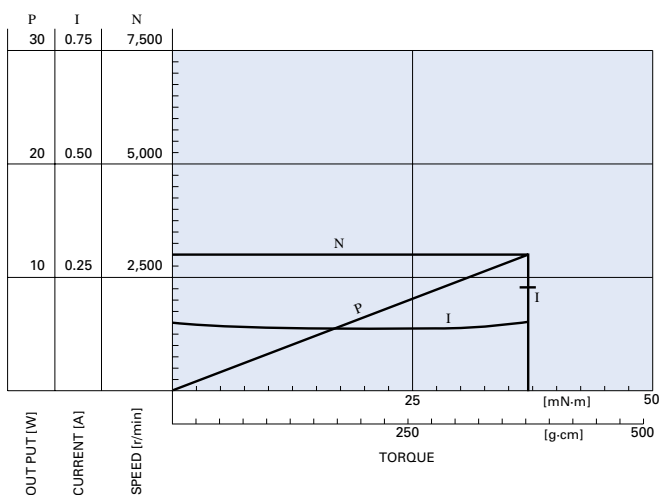
**DIRECTION OF ROTATION**



WEIGHT: 160g (APPROX)

**CO-261PA-122100**

AC 230V, 50Hz



**CO-261PA-181000**

AC 120V, 60Hz

