


Model No. MS5N-1885-R/51		(M-702) No. M5-122
ITEM	SPEC	CONDITION
<b>1 · Rating</b>		
Rated Voltage	12.0 V DC	Between Motor Terminals
Rated Load	54.0g-cm	Pulley
Direction of Rotation	CCW	Viewed from Output Shaft Side
<b>2 · Measuring Condition</b>		
Motor Position	Motor to be held, with shaft horizontally	
Environmental Temperature and Humidity	Normal	25 ± 5°C 65% ± 15% TEMP : 25 ± 5 °C HUMID : 65 ± 15 %
Power Supply	Regulated	
<b>3 · Electrical Characteristics</b>		
No-Load Current	0.30 A MAX	Rated Voltage
No-Load Speed	12500 ± 15% RPM	Rated Voltage
Rated-Load Current	0.80 ± 0.16 A	Rated Voltage
Rated-Load Speed	10300 ± 15% RPM	Rated Voltage
Insulation Resistance	DC 500V 10MΩ MIN	Between Motor Terminal and Motor Metal Housing
Dielectric Strength	AC600V 10mA/S	
<b>4 · Mechanical Characteristics</b>		
External Appearance	As per motor Drawing	Optical
External Dimension	As per motor Drawing	Dial Caliper
Shaft End Play	0.05 ~ 0.60 mm	Micrometer
Shaft Bending	0.05 mm MAX	Micrometer
5. 2 rows information laser engraving on the Motor	232022 yyymmdd  yy 年 year mm 月 month dd 日 date	

# NICHIBO DC MOTOR

(Customer) : JAMES

(Ambient Temperature) : 25

(Motor Model) : MS5N-1885-R/51

(No-Load R.P.M) : 12500

(Voltage) : 12.0 V

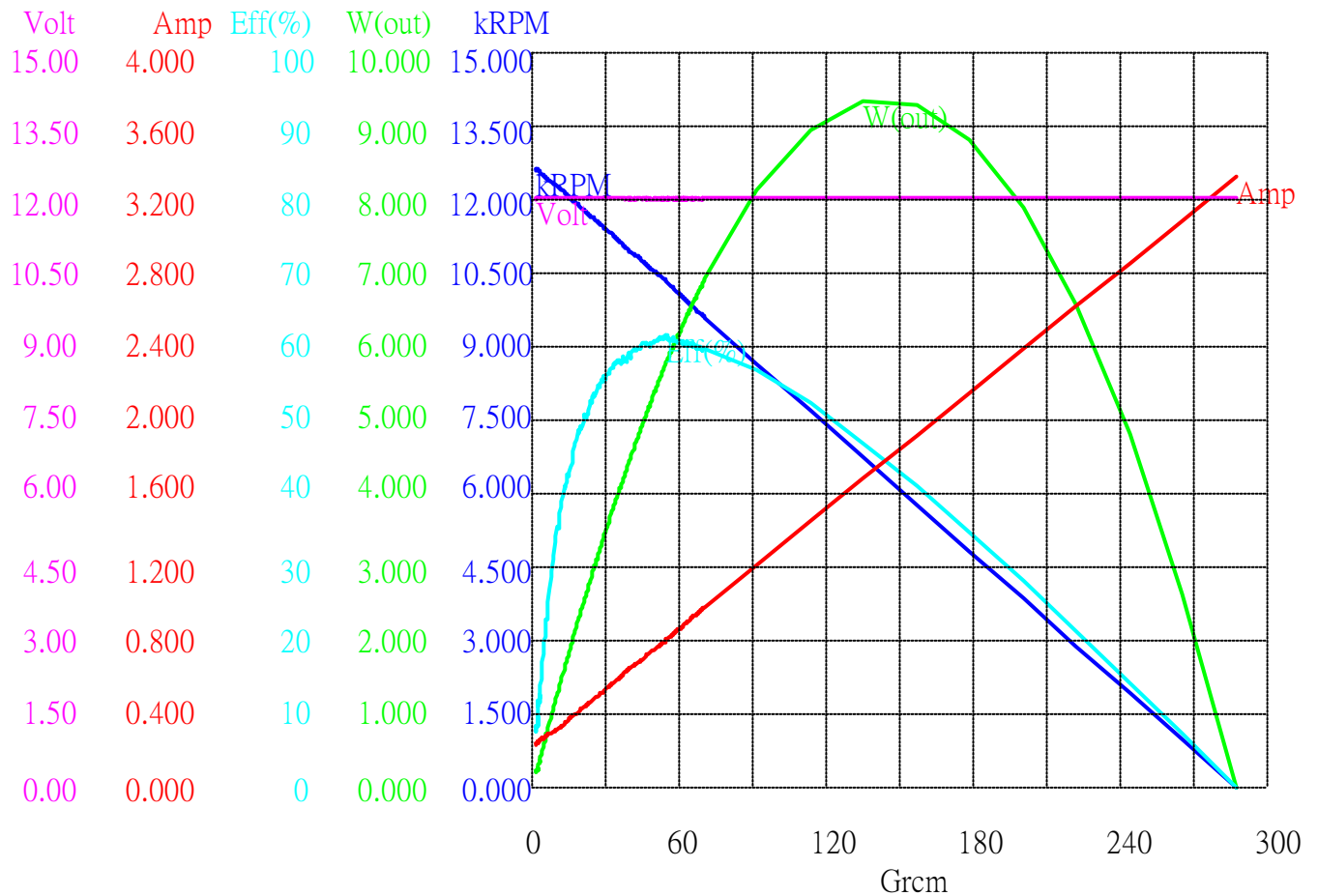
(No-Load Current) : 0.30A

(Rated Power Output) : 5.74 W

(Started Torque) : 287 g-cm

(Test Date) : 2015.03.0

	R.P.M.	Amps	Grcm	Eff(%)	W(out)	W(in)
(Locked Rotor)	0	3.318	287.002	0	0.000	39.335
(Max-Torque)	0	3.318	287.002	0	0.000	39.335
(Max-Efficiency)	10352	0.791	54.010	61	5.742	9.341
(Max-W(out))	6718	1.679	135.108	47	9.321	19.907



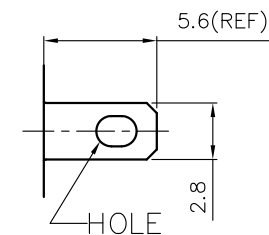
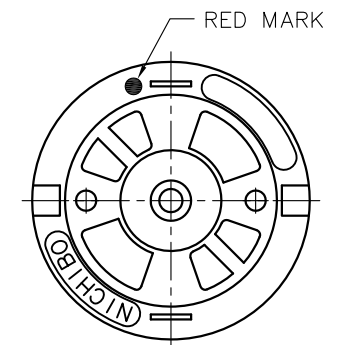
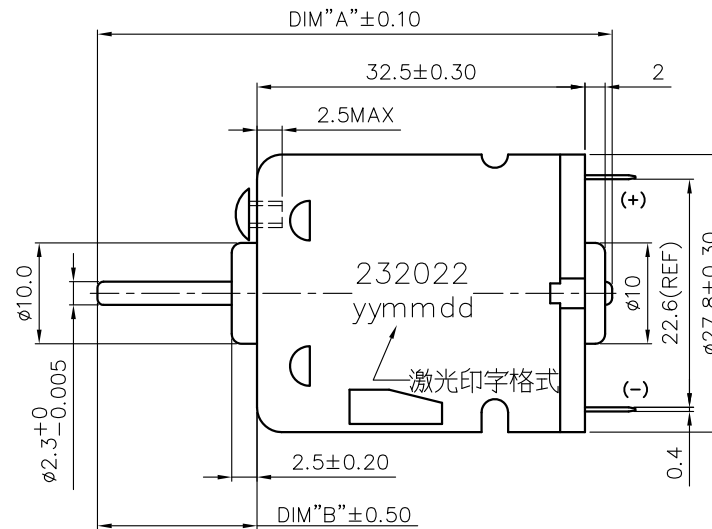
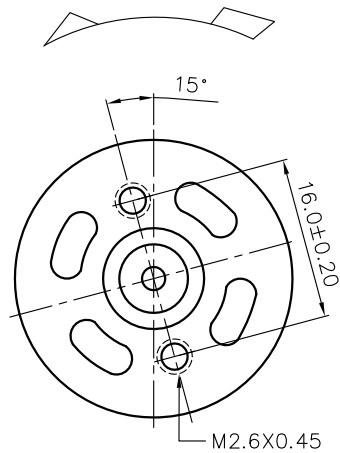
扭力常數(Torque Constant): 91.2822

馬達常數(Motor Constant): 35.8916

REV

A0

## DIRECTION OF ROTATION



## NOTE :

- 1.LENGTH OF SHAFT DIM "A" 51.0 mm.
- 2.FRONT EXTENSION DIM "B" 15.8 mm.WHILE THE SHAFT AT EXTREMELY RIGHT POSITION.
- 3.END PLAY : 0.05-0.60 mm.
- 4.RESTRICTION OF SCREW LENGTH: 2.5 mm MAX.(FROM MOTOR MOUNTING FACE)



## NICHIBOTAIWAN CORP.

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0	±0.3
0.0	±0.1
0.00	±0.05
	±5°
	FREE

NAME

JAMES

MODEL

MS5N-1885-R/51

UNIT

mm

DATE

2015/03/09

## NICHIBO TAIWAN CORP.

### General Instructions and Important Notes of motor application

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1:

#### General Instructions :

- 1.1 Any revisions on this specification shall be done on mutual discussion and agreement.
- 1.2 In order to continuously improve the performance within the scope of this specification, parts or materials are subjected to change without notice to customer.  
  
Any item, which is necessary to be added into specification, will be determined based on the customer's requests. If no information given, motors will be delivered based on our standard of judgment.
- 1.3
- 1.4 When any unexpected incidence occurs, both parties shall discuss the nature of the incidence and base on this specification to solve the matters. In this case, our guarantee is only limited for motors.

2: Important Notes :

- 2.1 Confirmation of the matching and reliability on actual set or unit application should be performed.
- 2.2 Necessary protections to ensure no foreign materials such as metal scraps or tiny parts get inside the motor.
- 2.3 Keep the motor terminal intact to avoid changes of motor performance.
- 2.4 Axial thrust on the output shaft could have an adverse effect on the motor life. Please check the expected service life under the actual operating conditions by testing the motors installed in your application products. For heavy thrust loads, consider using some mechanical measure to retain the shaft end.
- 2.5 Motor life may be affected adversely by heavy radial load such as produced by rotating eccentric cams, and also by vibration given from external devices. Confirmation on the actual set is needed.
- 2.6 When press fitting a pulley, gear, fan, etc., onto the motor output shaft, always support the shaft at the other end or its retaining metal pad in a proper and correct way.
- 2.7 Motor bearing oil may cause plastic part cracked. Please confirm bearing oil influence on plastic material of set.
- 2.8 When impedance is connected serially to the motor, reliability of motor may be affected. Please avoid using impedance. If necessary, minimize the impedance value and confirm reliability of the motor under such condition.

- 2.9 In case of low or no side pressure to the motor shaft, clearance noise between shaft and bearing may occur. Confirmation on actual set is needed.
- 2.10 For safety standard, e.g. UL, CSA, customer should apply and acquire certification.
- 2.11 Make arrangement to limit the storage period to 6 months or less. Do not store motors in abnormal low or high temperature or high humidity environment. In addition, condensation of atmosphere should be avoided in motor usage or opening the package of the motor.

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CORP.**

Important Notes for safety

Please be sure of taking the following precaution.

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1:

Protection Circuit :

In order to acquire safety assurance, please consider adding protection devices such as a fuse, a protection circuit or other devices to the motor. Safety confirmation test shall be conducted on the following conditions.

1.1

Toward the end of motor life or unexpected failure in motor, commutator slit short or short between brush and motor housing ( cell ) might occur.

1.2

When motor shaft is locked or continuous over-load while power is applied, excessive heat might generate to burn motor parts or cause ignition.

1.3

Motor control circuit or semiconductor may be damaged by supplied voltage exceeded rated limit, supplied voltage in reverse polarity or electrical contact partial open or short circuit.

2:

Detrimental gases :

2.1

For proper operation, storage and operating environment should not contain corrosive gases such as H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, CL<sub>2</sub>, SiO<sub>2</sub>, SiC and etc.

2.2

Storage environment should not have materials that emit corrosive gases especially from silicon, cyanic formalin and phenol group. In a mechanism or a set, existence of corrosive gases may cause no rotation in a motor.

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### 2.3

Please evaluate the selection of binding agents or sealing materials that could generate detrimental gases.

## 3:

### Surrounding Atmosphere :

#### 3.1

Ambient and operating temperatures exert an affect more or less on motor performance and life. Do pay particular attention to the surroundings when it is hot and damp. A proper climate control is recommend in production site.

#### 3.2

A motor should be protected from temperature extremes that could cause condensation. This might lead to short circuit or current leakage. A safety device, such as condensation censor, is recommended to add on client's end product to cut off power supply.

## 4:

### Electrification :

#### 4.1

Belt Electrification : Static electricity may be generated by friction between pulley and belt. When electrostatic discharged from the belt accumulates, electrical noise is generated in a motor. This may cause motor or semiconductor failure in a client's end product.

#### 4.2

Earth-Electrostatic Protection : Electrification and leakage can cause motor circuit or semiconductor failure. Proper grounding is required for soldering iron and conveyer belt during the motor terminal or lead wire is soldered to a mechanism or client's end product.

## 5 Power Supply & Electric Conduction :

### 5.1

The fluctuation of the motor driving power source can influence the life span of the motor. In instances where there is low input of voltage to the motor, the internal resistance of the power source is large which may well result in an inferior motor after a short time ; conversely in instances where high cyclic voltages are applied, this internal resistance is small and the motor life span is shortened.

### 5.2

To use connector for interface, please ensure complete pin insert. When power supply is on, connector contacts that do not insert or disconnect might cause damage to control circuit or semiconductor in the motor or circuit components.

## 6

### Operation of Motor Mounting :

#### 6.1

In case, a mounting screw is longer than our recommended length, the screw may touch and damage the rotor. Motor will not be able to perform. Suitable screw length should be used for mounting motor to the mounting face. ( the recommended screw length is indicated in the appendix B Note. ) In addition, well flat matching between a mounting face and a motor should be used. In case a screw-tightening surface is not flat, motor jam might occur.

#### 6.2

Ultrasonic welding for motor mounting may damage motor and control circuit due to its vibration

#### 6.3

Terminal soldering operation:

##### 6.3.1

Suitable soldering iron and temperature are required. Suggested soldering head temperature is 400°C , and soldering time must not exceed 2 seconds.

##### 6.3.2

Please keep the motor horizontal while soldering, in order to avoid remaining tin or flux get inside the motor.

##### 6.3.3

No contact with any plastic parts during soldering, in case the plastic parts deform.



## 6.4

## Mounting Application :

## 6.4.1

Screw Type : Do not use a oversized screw so that will cause unbalance to a motor. Motor vibration may be enlarged by unbalanced motor rotation and cause motor failure.

## 6.4.2

Adhesive Type : Do not apply excessive adhesive material overflowing to motor bearing. Overflowed adhesive may cause locked rotor and motor vibration.

## 6.4.3

Forced Insert Type : Do not exert over load to the motor. Overload may cause a shaft deformed or a shaft support broken and result in no rotation of a motor.