

Customer No.: DBPJ1238B2GP002

AVC Model: DBPJ1238B2GP002

* History

REV.	DESCRIPTION	DATE
A	ISSUE SPEC.	04/16'18

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Rev.A

SPECIFICATION FOR APPROVAL

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS FAN.

2. CHARACTERS:

(AT $T_a=25^{\circ}\text{C}$)

	ITEM	SPEC.	
2-1.	RATED VOLTAGE	12	VDC
2-2.	OPERATION VOLTAGE	7 ~ 13.2	VDC
2-3.	RATED CURRENT (IN FREE AIR)	2.6 (3.12 MAX.)	A (AVERAGE)
2-4.	CURRENT ON LABEL	3.12	A
2-5.	RATED POWER (IN FREE AIR)	31.2 (37.44 MAX.)	W
2-6.	SPEED (IN FREE AIR)	7000±10%	R.P.M
2-7.	SPEED CONTROL TYPE	PWM CONTROLLER	(FIX SPEED)
2-8.	SIGNAL OUTPUT	FREQUENCY GENERATOR (FG)	
2-9.	MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	6.575 (5.917 MIN.)	M ³ /MIN
		232.22(209.0 MIN.)	CFM
2-10.	MAX. AIR PRESSURE (AT ZERO FLOW)	38.41 (31.12 MIN.)	mm-H ₂ O
		1.512 (1.225 MIN.)	inch-H ₂ O
2-11.	ACOUSTICAL NOISE	68.0 (71.0 MAX.)	dB-A

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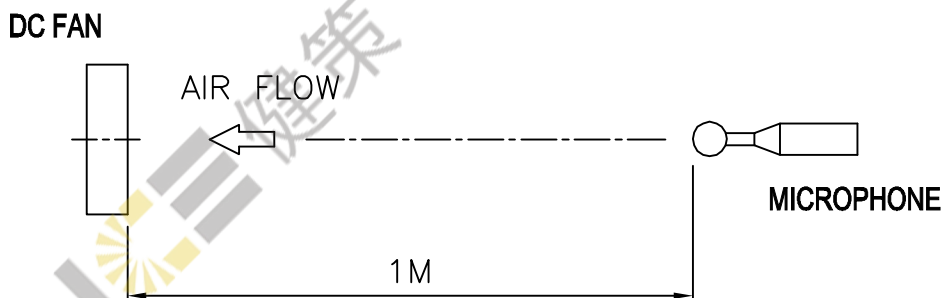
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- 2-12. INSULATION RESISTANCE — 10 MEGA OHM MIN. AT 500 VDC
(BETWEEN FRAME AND (+) TERMINAL)
- 2-13. DIELECTRIC STRENGTH — 5 mA MAX. AT 500 VAC 60Hz ONE MINUTE,
(BETWEEN FRAME AND (+) TERMINAL)
- 2-14. LIFE EXPECTANCE — 70,000 HOURS AT 40°C ROOM, AMBIENT 15%~65%RH
- 2-15. INSULATION CLASS — UL: CLASS A

NOTE:

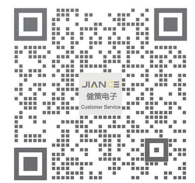
- A. THE VALUES WRITTEN IN PARENTHESIS, (), ARE LIMITED SPEC.
- B. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ACOUSTICAL CHAMBER WITH LARSON DAVIS TYPE 824S SOUND LEVEL METER.

- C. THE AIR FLOW AND AIR PRESSURE MEASURED AT RATED VOLTAGE IN DOUBLE CHAMBER IS MEASURED ACCORDING TO AMCA STANDARD 210-85.

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3. MECHANICAL

- 3-1. DIMENSION _____ SEE DIMENSION DRAWING
- 3-2. FRAME _____ THERMOPLASTIC OF UL 94V-0
- 3-3. FAN BLADE _____ THERMOPLASTIC OF UL 94V-0
- 3-4. BEARING SYSTEM _____ TWO BALL BEARINGS
- 3-5. WEIGHT _____ 300 g

4. ENVIRONMENTAL

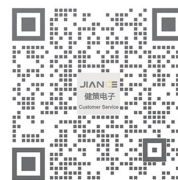
- 4-1. OPERATING TEMPERATURE _____ -10 TO +70 °C
- 4-2. STORAGE TEMPERATURE _____ -40 TO +75 °C
- 4-3. OPERATING HUMIDITY _____ 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY _____ 5 TO 95 % RH
- 4-5. RoHS COMPLIANCE _____ SEE RoHS STANDARD

5. PROTECTION

- 5-1. LOCKED ROTOR PROTECTION _____
IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM DAMAGE IN
72 HOURS OF LOCKED ROTOR CONDITION AT THE RATED VOLTAGE
- 5-2. POLARITY PROTECTION _____
BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR
POSITIVE AND NEGATIVE LEADS
- 5-3. HOT SWAP PROTECTION _____
THIS FAN HAS NO HOT SWAP FUNCTION.
- 5-4. PCBA PROTECTION _____
LIQUID COATING OF PCBA IS TO PREVENT FROM SHORT, DUE TO MOISTURE
CONDENSATION AT LOW TEMP.
- 5-5. SOLDERED PAD OF CABLE PROTECTION _____
UV GLUE COATING FOR SOLDERED DOT OF CABLE IS TO PREVENT DROP.

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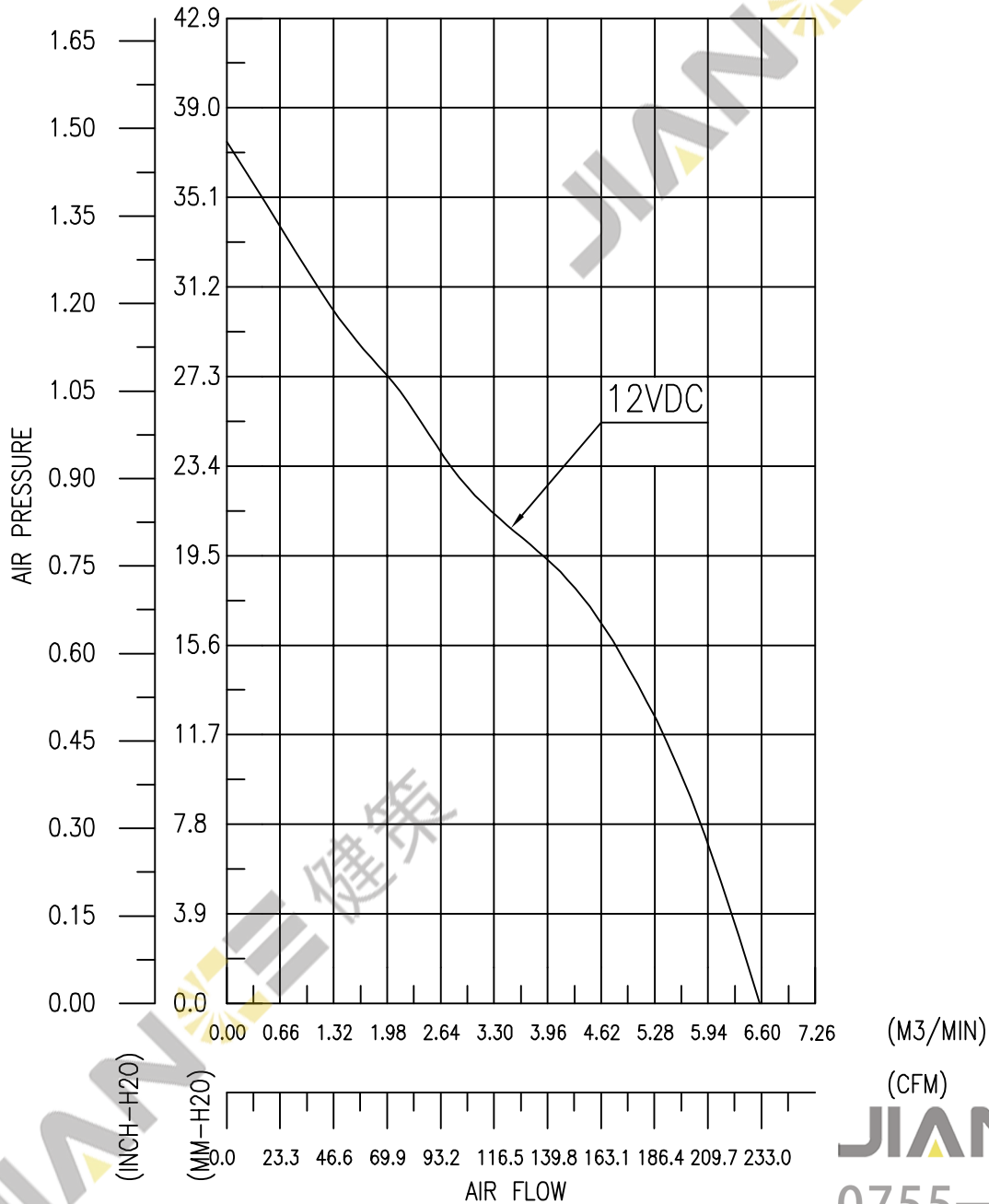
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6. P & Q CURVE



* TEST CONDITION:

INPUT VOLTAGE OPERATION VOLTAGE
TEMPERATURE ROOM TEMPERATURE
HUMIDITY 65%RH

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7. DIMENSION DRAWING



NNN...NN-YWW-M-SSSSSS

Serial NO. 000001-999999, count by weeks.
serial NO. can't repeat in one week.

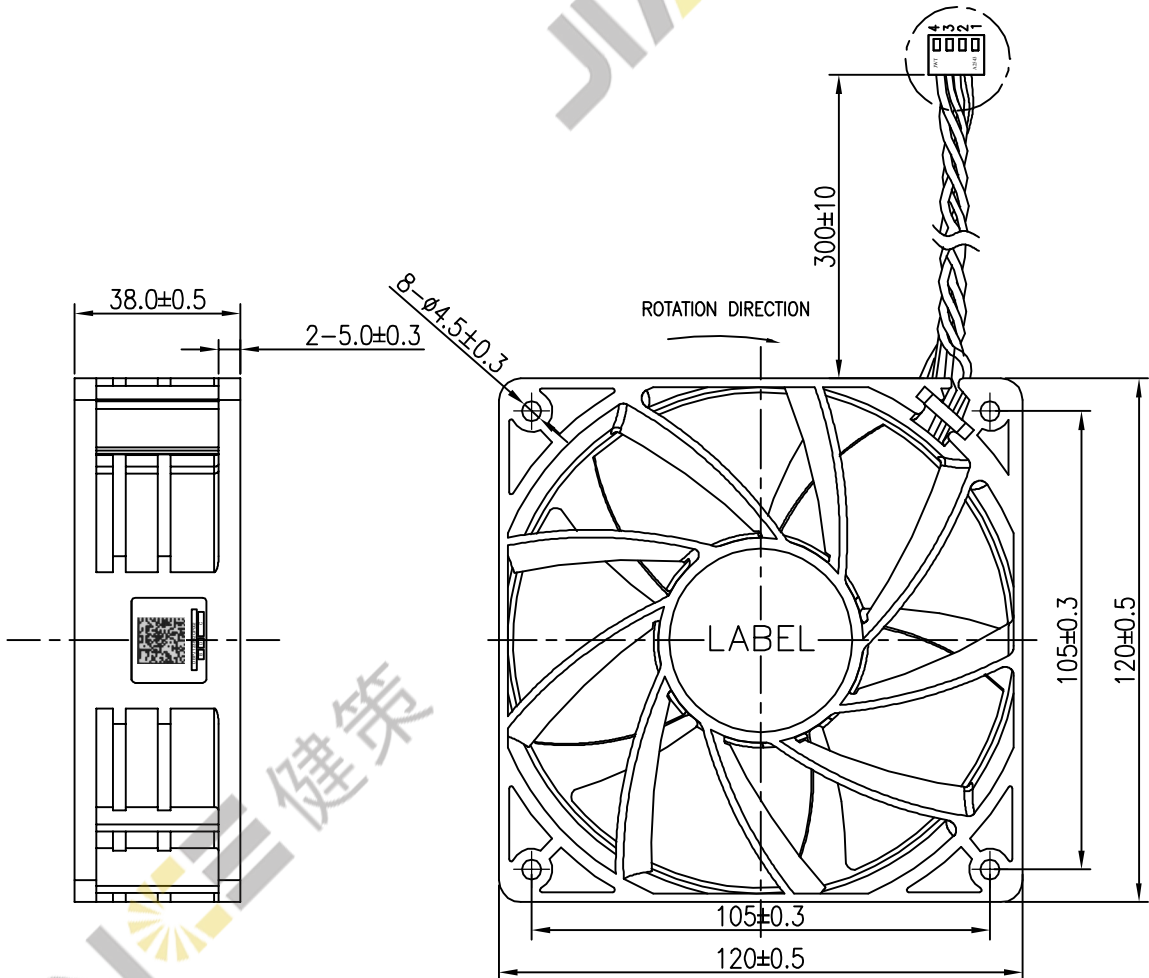
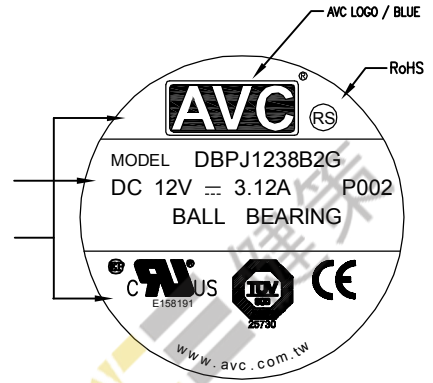
FACTORY ID (C:AVC, SHENZHEN;N:AVC, CHINA)

Manufacture date, YWW respectively Year Week Week.
The year, 26 letters, "A": 2010, "B": 2011... and so on. Week "WW": 01-52
(e.g. B04:2011 Fourth Week).

P/N: a total of 15; when the digital is insufficient · followed by "0" make up.

BACKGROUND COLOR: GOLD
WORD COLOR: WHITE

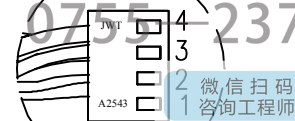
BACKGROUND COLOR: WHITE
WORD COLOR: BLACK



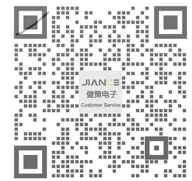
NOTES:

- LEAD WIRES: PVC WIRES UL1007 AWG#24
PIN1: BLUE WIRE (PWM)
PIN2: YELLOW WIRE (FG)
PIN3: RED WIRE (+)
PIN4: BLACK WIRE (-)
- Housing: JWT A2543H00-4P
Terminal: JWT A2543TOP-2

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SCALE:2:1



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8. SPEED CONTROL FUNCTION

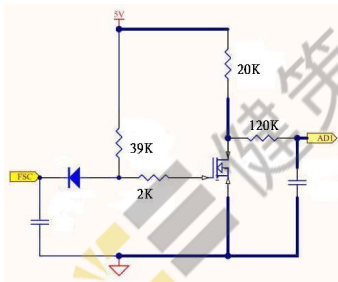
8-1. PWM SIGNAL DESCRIPTION :

1. CONTROL SIGNAL: PWM CONTROL
2. THE RANGE OF SIGNAL VOLTAGE: LOW LEVEL VOLTAGE: MIN. $> -0.8V$,MAX. $< 0.8V$
HIGH LEVEL VOLTAGE: MIN. $> 2.8V$, MAX. $< 12V$
3. THE FREQUENCY OF PWM SINGAL SHALL BE ABLE TO ACCEPT A 300HZ~60KHZ
4. INPUT IMPEDANCE : 20K OHM MIN.

8-2. FAN SPEED CONTROL DESCRIPTION

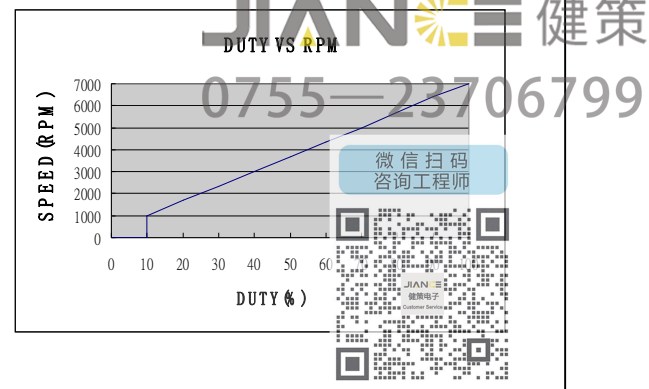
1. FAN INPUT VOLTAGE (POSITIVE) : 12VDC
2. PWM FREQUENCY : 25KHZ
3. THE FAN SPEED WILL SPIN AT MAXIMUM WHEN THE DUTY CYCLE IS 100%.
4. THE FAN SPEED WILL SPIN AT MINIMUM WHEN THE DUTY CYCLE IS 0%.
5. THE FAN SPEED WILL SPIN AT 0~7000 RPM WHEN THE DUTY CYCLE IS 0% ~ 100%.
6. THE FAN SPEED WILL SPIN AT MAXIMUM WHEN THE LEAD WIRE OF PWM SIGNAL DISCONNECTED.
7. THE FAN WILL BE ABLE TO START WHEN THE DUTY CYCLE IS 10% .

8-3. PWM CONTROL LEAD WIRE INPUT IMPEDANCE



8-4. PWM DUTY CYCLE VS. RPM (AT Ta=25°C)

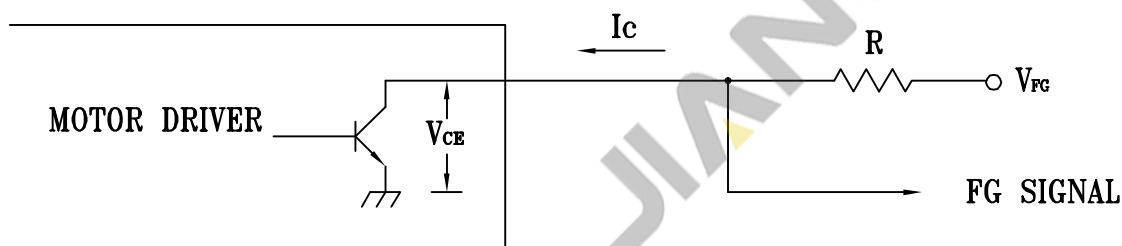
DUTY CYCLE(%)	SPEED R.P.M	TYPICAL CURRENT(A)
0%	0	0.12
10%	1000±300	0.15
50%	3700±10%	0.75
100%	7000±10%	2.60



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9. FREQUENCY GENERATOR (FG) SIGNAL

9-1. SCHEMATIC:



CAUTION:

THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH THE LEAD WIRE OF POSITIVE OR NEGATIVE.

9-2. SIGNAL SPECIFICATION:

OUTPUT TYPE: OPEN COLLECTOR

V_{FG} MAXIMUM VOLTAGE = 13.2V

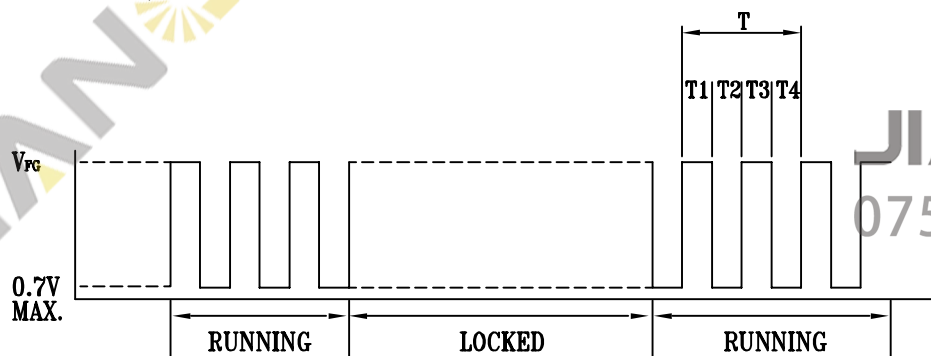
V_{FG} MINIMUM VOLTAGE = 2.8V

I_c MAXIMUM CURRENT = 5mA

LOW LEVEL VOLTAGE = 0.7V MAX.

$$R \geq V_{FG} / I_c$$

9-3. FREQUENCY GENERATOR WAVEFORM:

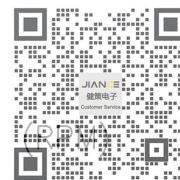


$$T = T1 + T2 + T3 + T4 = 60 / N \text{ (Sec)}$$

N: SPEED

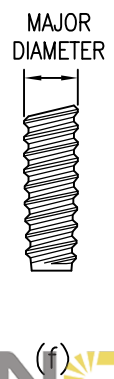
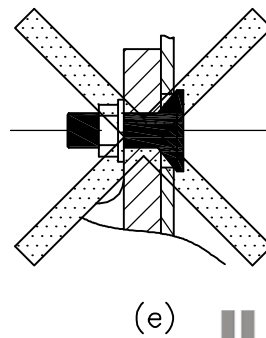
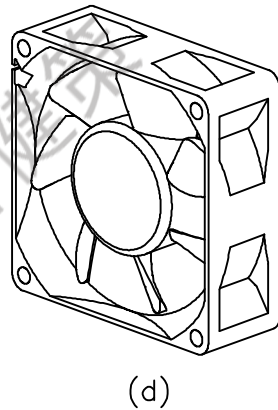
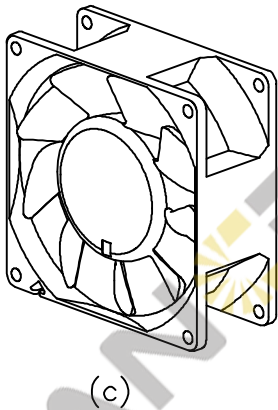
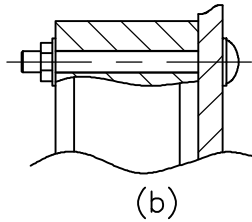
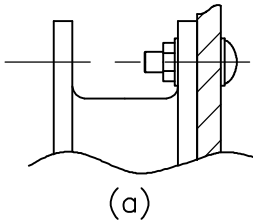
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FAN INSTALLATION INSTRUCTIONS:

- In case of using bolt-nut fasteners, the flatness of chassis mating surfaces should be kept below 0.1mm.
- How to fasten the frames of different types:
 - Flange type : Screw the bolt and nut together from the inlet or outlet.
The torque should not exceed 4.5 kgf-cm [figure(a)]
 - Rib type : Screw the bolt through the rib.
The torque should not exceed 7.5 kgf-cm [figure(b)]
- In case of using self-tapping screws, appropriate screws according to JIS B 1122 Type 2 should be used. The dimensional details of the self-tapping screws recommended are shown in Table(a). Each fastener hole should only be tightened once or slippage may occur. In addition, the torque to be applied to the self-tapping screws must not exceed the values stated in Table(a).
- The countersunk part of fastener head should not interfere with the frame or there would be a risk of breakage [figure(e)]. Fastener head with flat inner surface, i.e. no countersunk, is recommended.



MOUNTING HOLE DIAMETER	SCREW SPEC.	MAJOR DIAMETER [Fig.(f)]		**RECOMMENDED MAX. TORQUE (kgf-cm)	
		MAXIMUM	MINIMUM	FLANGE TYPE FRAME	RIB TYPE FRAME
ø3.5	M4 X 1.41	4.0	3.85	4.5	7.5
*ø4.3	M4.8 X 1.59	4.8	4.65	5.5	7.5
ø4.5	M5 X 1.59	5.0	4.85	5.5	7.5

* Non JIS B 1122 spec.

** A lower torque than the recommended value should be used if slippage is observed.

TABLE (a)

