

HITACHI ELECTRON TUBE

The HITACHI 2M121A is fixed frequency continuous wave magnetron intended for use in microwave ovens and industrial heating applications.

The useful RF power output at 2450 MHz band is approx. 1400 watts into a matched load.

HITACHI 2M121A CW MAGNETRON

26 January 2001
【TENTATIVE DATA】

FEATURES

1. Suitable performance and excellent reliability for use in microwave ovens and industrial microwave heating applications.
2. Sufficient Noise suppression with the improvement of integrated filter circuit.
3. Low 5th harmonics type : 2M121A-400S

GENERAL DATA

ELECTRICAL

Filament Voltage (Stand-by)	.....	4.6 V
Filament Voltage (Operation)	.....	( Fig. 1)
Filament Current (Stand-by)	.....	14 A
Filament Pre-heating Time	.....	5 sec
Frequency (with matched load)	.....	2455 MHz
Recommending Operation	.....	Continuous
Anode Potential	.....	Grounded
Filament Potential	.....	Negative High Voltage
		- 4.5 kV
Magnet	.....	Permanent Magnet

MECHANICAL

Dimensions : See dimensional outline (Fig. 5).

Width	.....	105 mm MAX.
Length	.....	127 mm MAX.
Height (antenna height is excluded.)	....	109 mm MAX.
Antenna height	.....	32 mm MAX.
Weight	.....	Approx. 1.4 kg
Mounting Position	.....	any
Cooling	.....	Forced Air

(Fig. 4)

2M121A

ABSOLUTE MAXIMUM RATINGS

	Min.	Max.	Unit
Filament Voltage (Stand-by)		4.3	5.0 V
Filament Voltage (Operation)		(Fig. 1)	(Fig. 1) V
Preheating Time		3	- s
Average Anode Current		-	500 mAdc
Peak Anode Current		-	1800 mAdc
Average Anode Input		-	2250 W
Load VSWR (Continuously)		-	4
Anode Core Temperature		-	160
Storage Temperature		-30	60
Antenna Temperature (metal-ceramic seal point) **		-	350
Case Temperature		-	100

TYPICAL OPERATION

Test conditions : at a matched load, and with the power supply of single phase
full-wave rectifier without filter

Filament Voltage (Stand-by)	.....	4.6	V
Filament Voltage (Operation)	.....	3.8	V
Average Anode Current	.....	450	mA
Peak Anode Voltage	.....	4.5	kV
Average Power Output (matched load)	.....	1400	W
Frequency (matched load)	.....	2455	MHz
Cooling Air Flow	.....	1.5	m³/min
Static Pressure Drop	.....	147	Pa

Note :

- (1) The information contained herein is tentative and may be changed without prior notice. It is therefore advisable to contact HITACHI before proceeding with the design of equipment incorporating this product.
- (2) Data are based on the Testing Methods for Continuous Wave Magnetrons ED-1501 (ET-145A) set by the Electronic Industries Association of Japan (EIAJ).
- (3) Precautions for Safety : Please see attached news letter of No. NL73M1053.

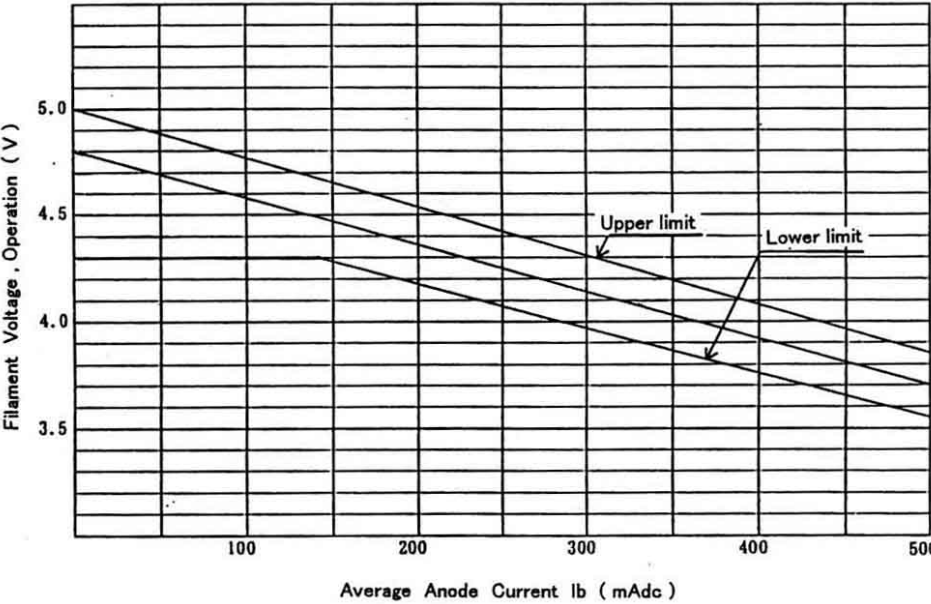
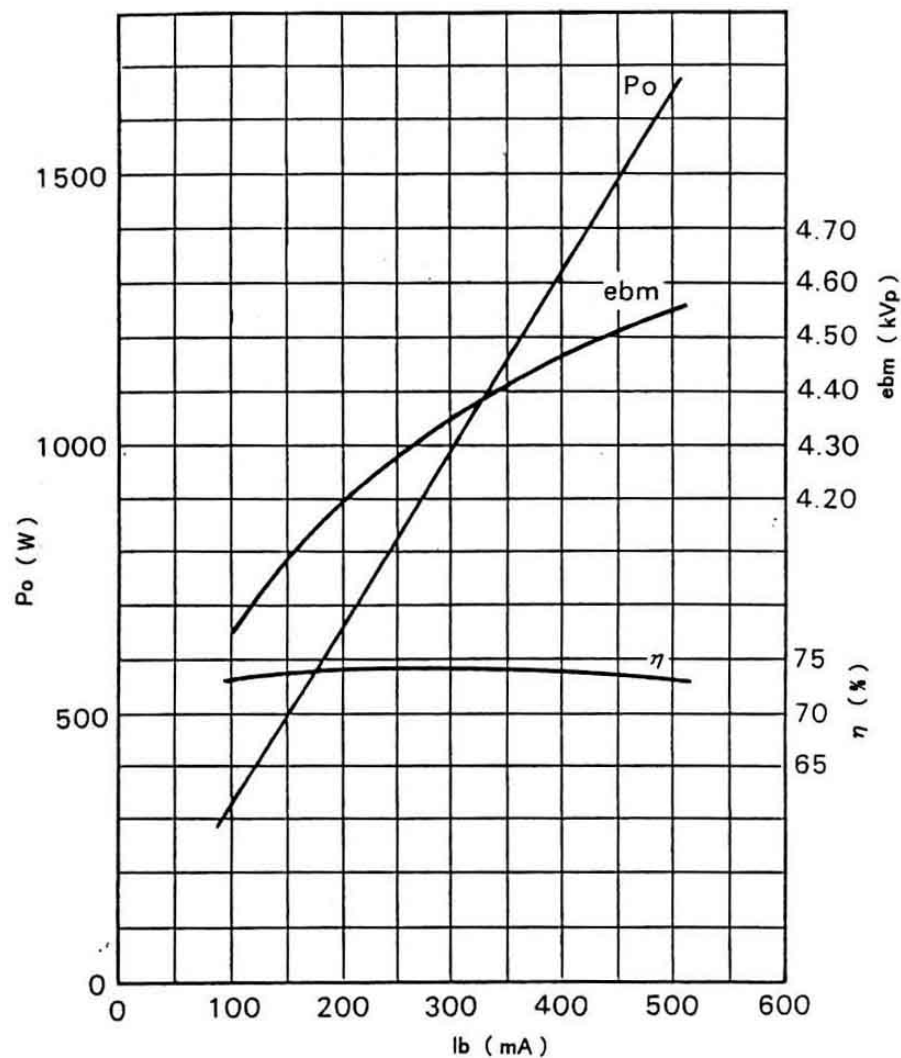
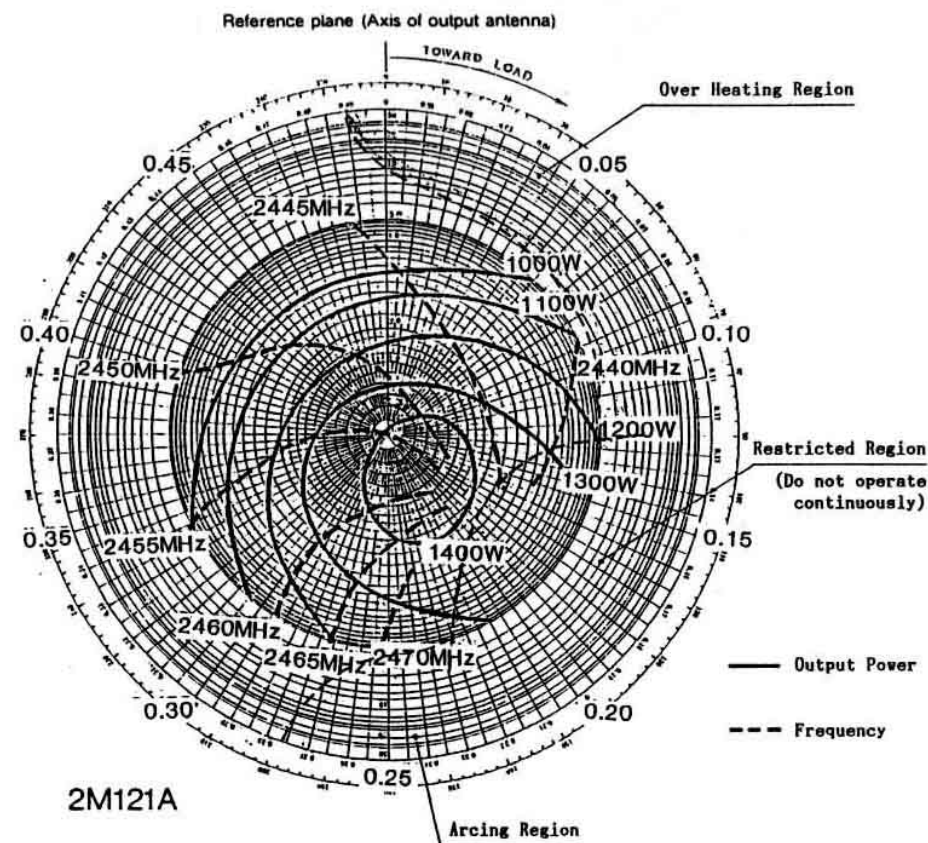


Fig. 1 Reduction Chart of Filament Voltage



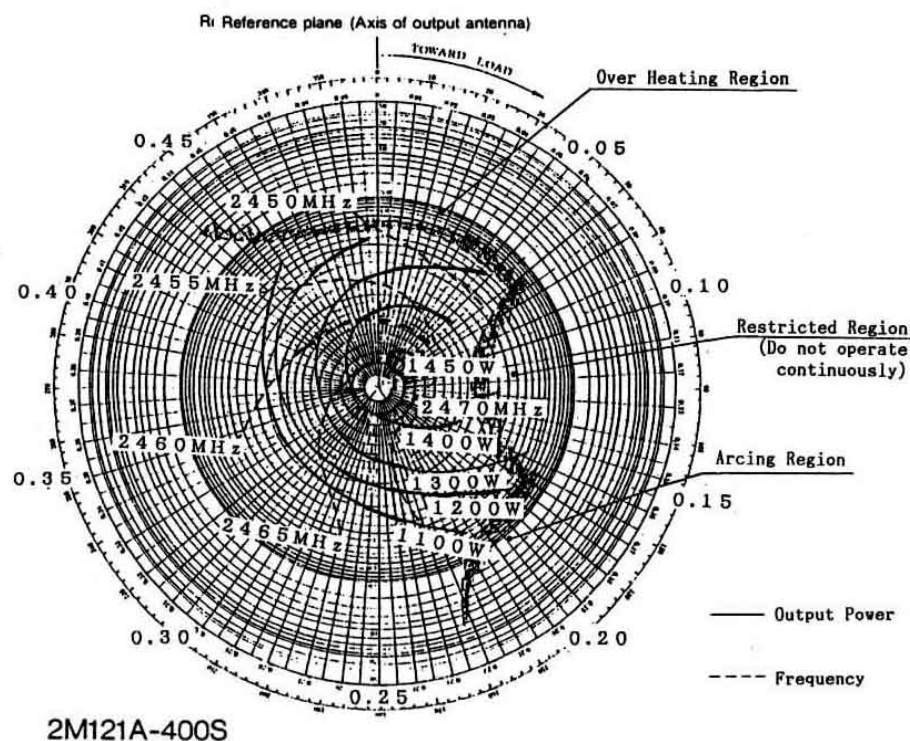
Test conditions
 1. Load VSWR : $\sigma L \leq 1.1$
 2. Anode supply : Single phase, full wave rectifier without filter
 3. Filament voltage : 4.6 V

Fig. 2 Performance Chart of The 2M121A



Test conditions
 1. Average anode current : 450 mA
 2. Anode supply : Single phase, full wave rectifier without filter
 3. Filament voltage : 4.6 V

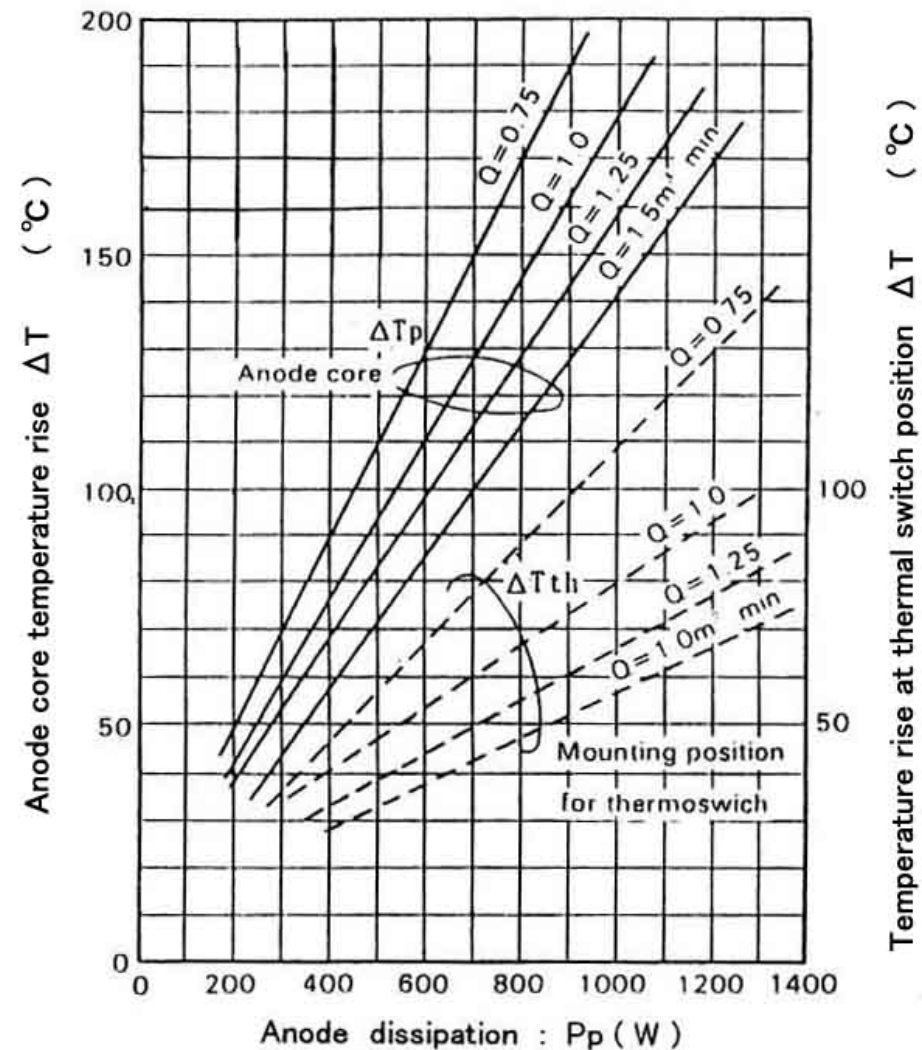
Fig. 3(A) Rieke Diagram of The 2M121A



Test conditions

1. Average anode current : 450 mA
2. Anode supply : Single phase, full wave rectifier without filter
3. Filament voltage : 4.6 V

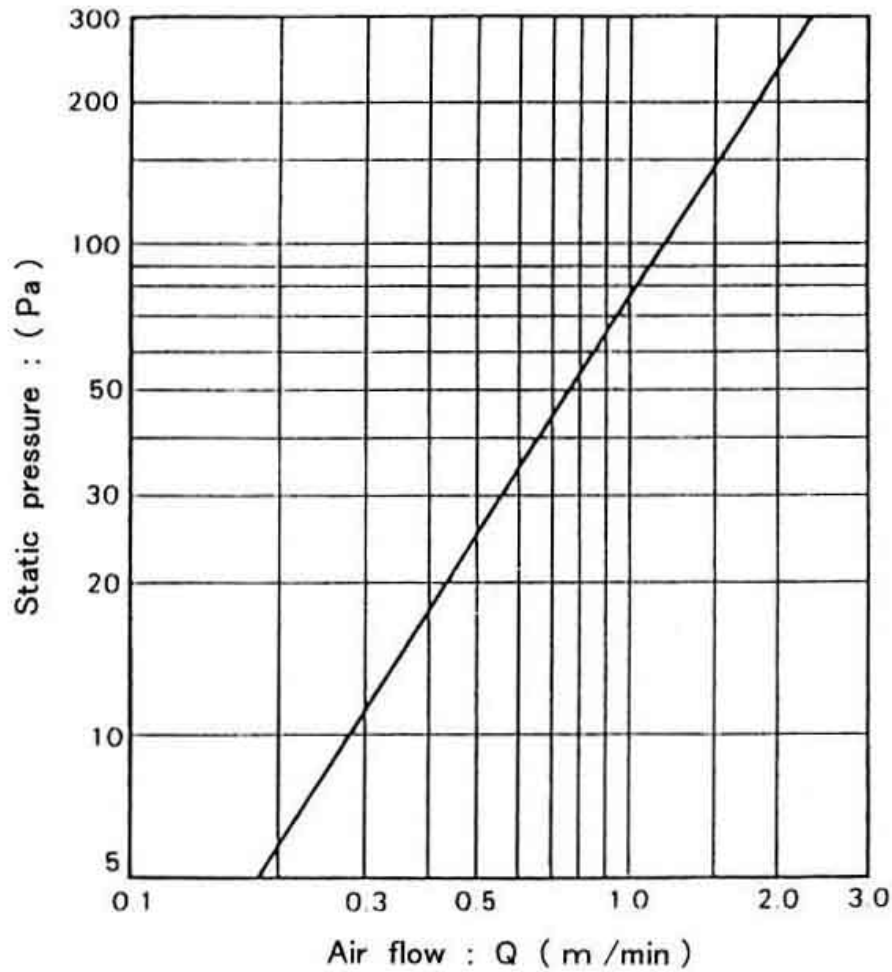
Fig. 3(B) Rieke Diagram of The 2M121A



Anode Dissipation vs. Anode Core Temperature Rise

Fig. 4(A) Cooling Requirements of The 2M121A

2M121A



Air Flow vs. Static Pressure

Fig. 4(B) Cooling Requirements of The 2M121A

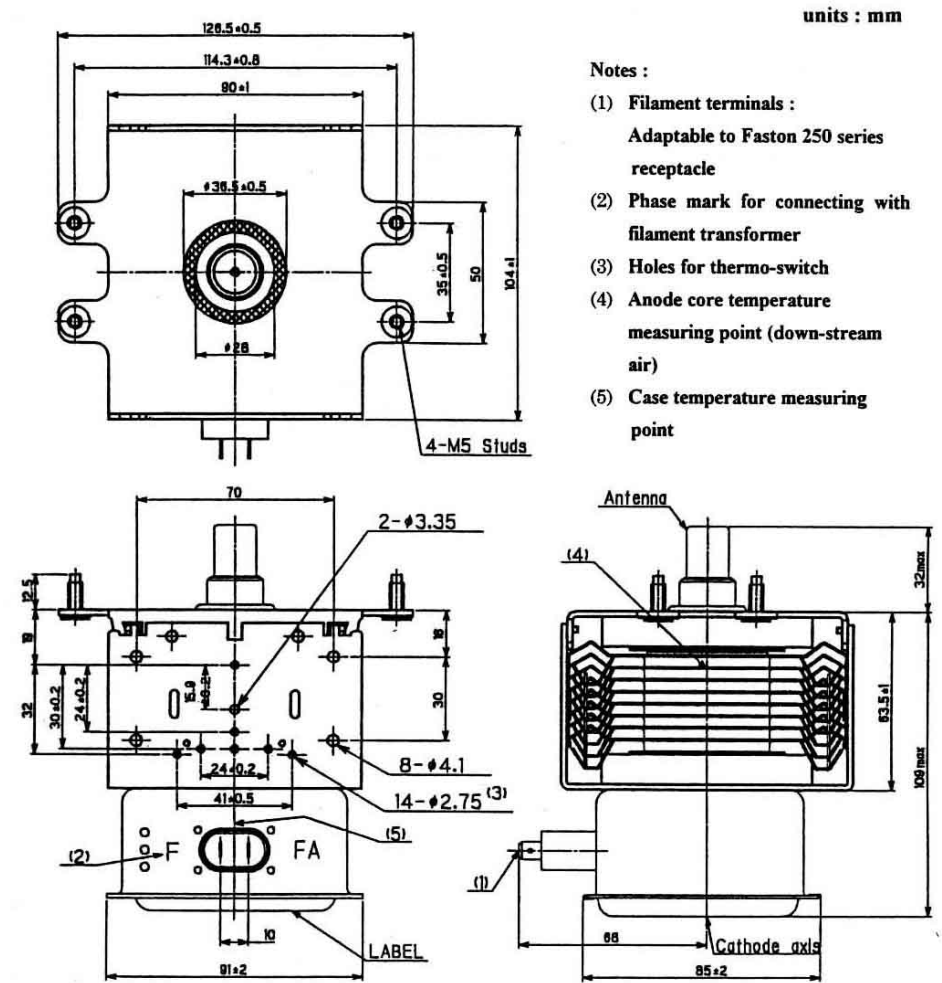


Fig. 5 Dimensional Outline of The 2M121A

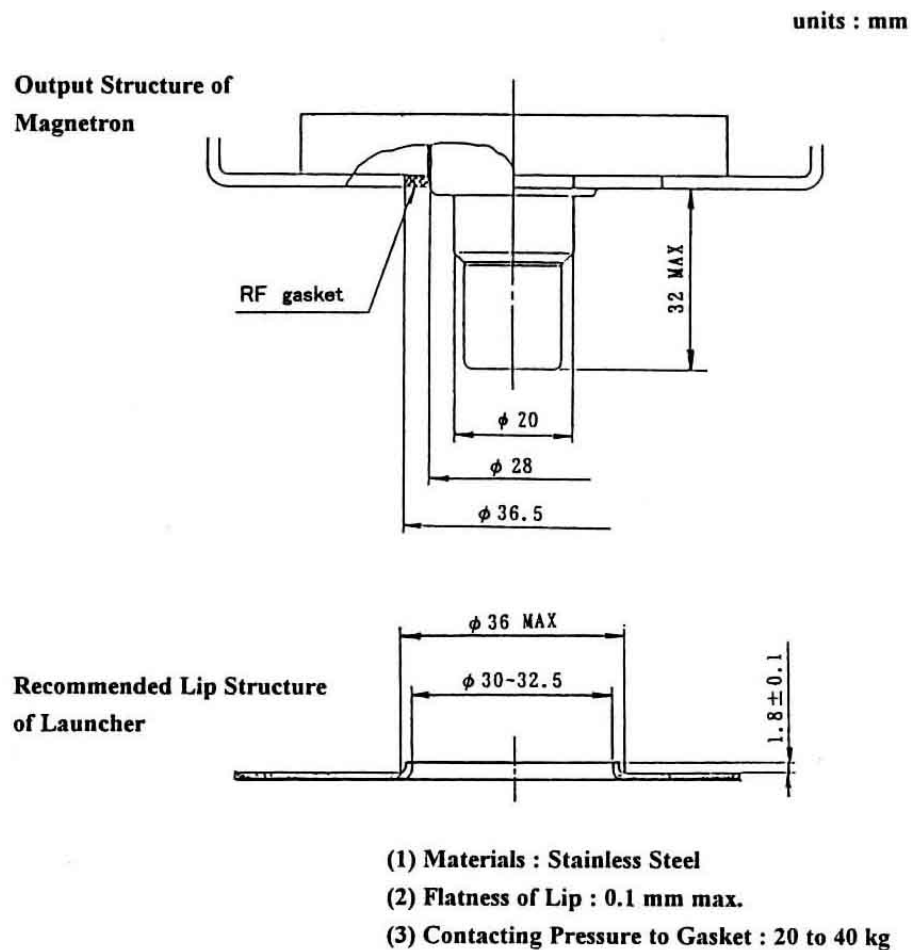


Fig. 6 Details of Output Coupling Portion and Recommended Launcher Design

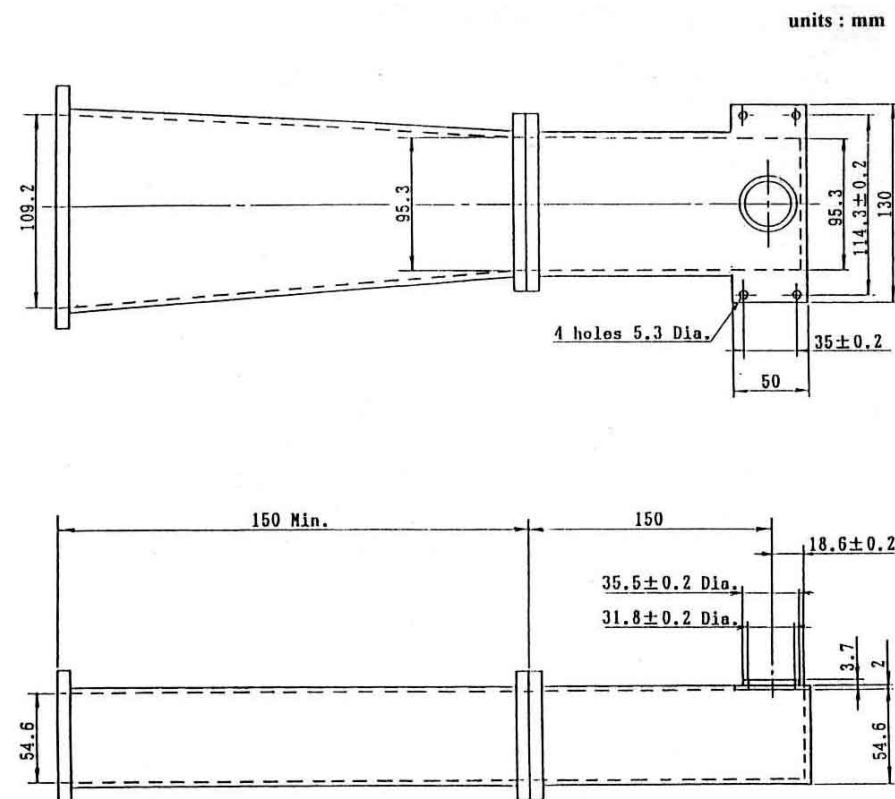


Fig. 7 Launcher and Tapered Waveguide for Testing