

Toshiba

TECHNICAL DATA

M4514B

The Toshiba M4514B is a ceramic sealed fixed frequency continuous wave magnetron, designed to operate on an unsmoothed D.C. anode supply, in the 2420 to 2480MHz frequency range with an average power output of 2.5 kilowatts.

The tube is required liquid cooling and an external magnetic field. The output fitting is designed for coupling to the rectangular waveguide or the heating cavity directly.

The tube is intended for use in microwave heating and cooking application.

GENERAL DATA

Electrical;

Frequency	2450 ± 30	MHz
Filament voltage	6	V
Filament current	34	A
Cathode preheating time	10	sec

Mechanical;

Physical dimensions	See outline drawing
Base and electrical connection	See outline drawing
Mounting position	Cathode vertical
RF coupling	See attached drawing
Magnetic field	External
Cooling { Anode	Liquid
{ Cathode bushing	Forced air
Net weight	1.2 kg approx.
Type of cathode	Thoriated tungsten direct heating

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MAXIMUM RATINGS

	Minimum	Maximum	
Filament voltage (preheat)	5.5	6.5	V
Filament surge current	-	80	A
Cathode preheating time	5	-	sec
Filament voltage (operate)	See attached drawing		
Peak anode voltage	-	8.0	kV
Average anode current	-	700	mAdc
Average anode power input	-	5500	W
Load VSWR	-	4	
Anode temperature (see outline drawing measurement point)	-	100	°C
Cathode bushing temperature (see outline drawing measurement point)	-	300	°C
Temperature of outflow of cooling liquid	-	90	°C

TYPICAL OPERATION

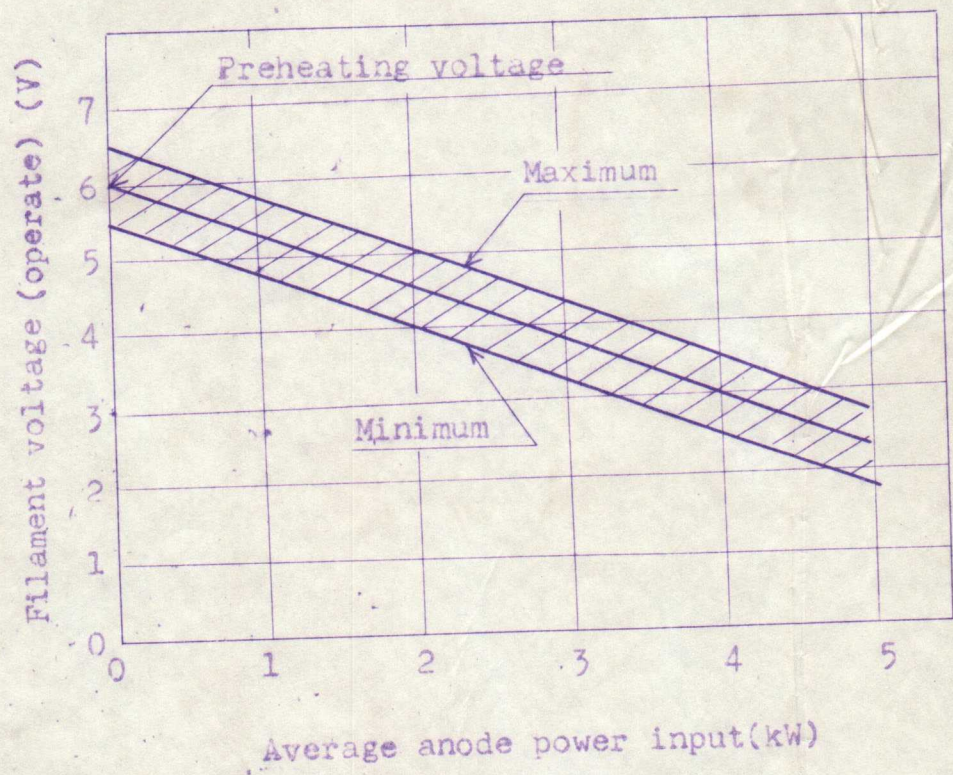
	Unsmoothed fullwave rectified	
Frequency	2450	MHz
Heater voltage (operate)	3	V
Peak anode voltage	7	kV
Average anode current	600	mAdc
Average power output	2500	W
Pulling factor (load VSWR 2)	15	MHz
Magnetic field strength (magnet No. 4514B-800A)	1650	G
Cooling quantity	Anode (water)	2 l/min.
	Cathode bushing (forced air)	500 l/min.



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M4514B

FILAMENT VOLTAGE VS INPUT POWER SCHEDULE



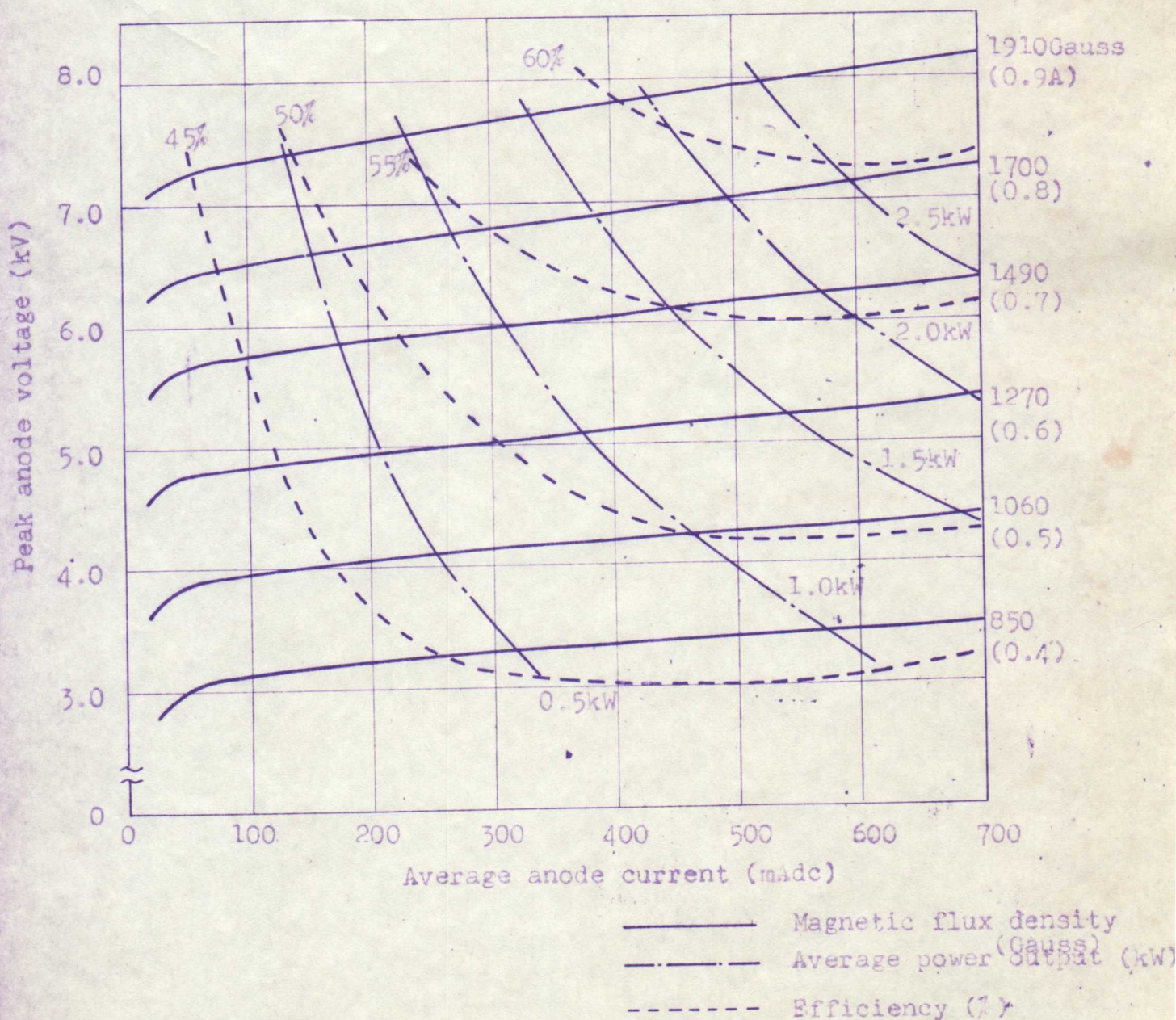
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M4514B

PERFORMANCE CHART

Operating Conditions

Filament voltage:	regular value
Anode supply:	unsmoothed fullwave rectified
Load VSWR:	1.1 MAX.
Electromagnet:	4514B-800A



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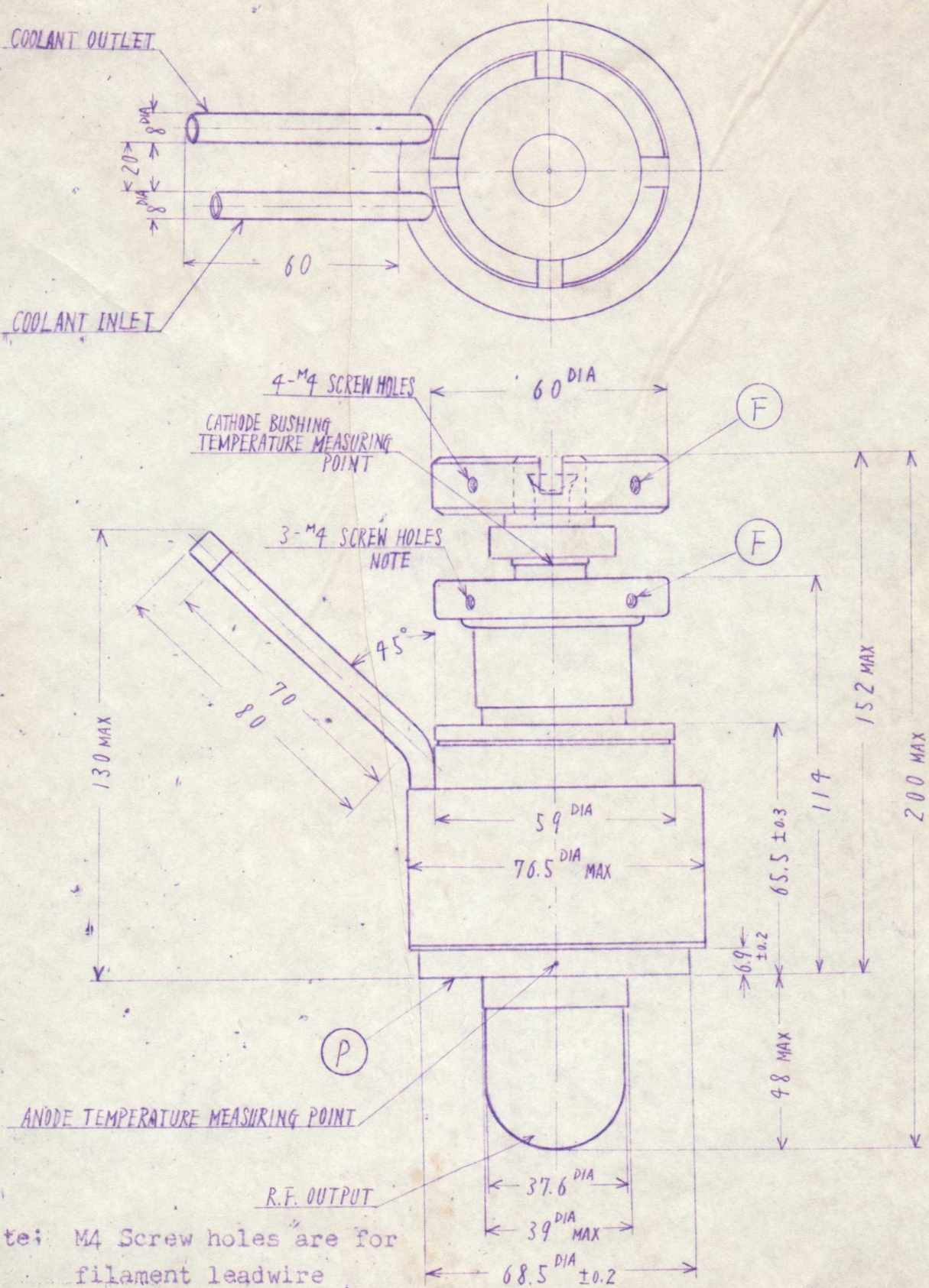


TECHNICAL DATA

M4514B

OUTLINE DRAWING

Unit mm



Note: M4 Screw holes are for filament leadwire settling.

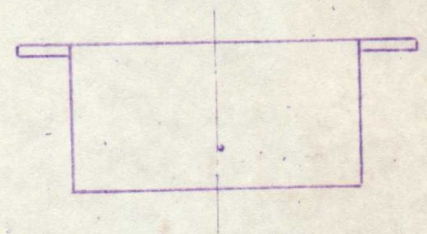
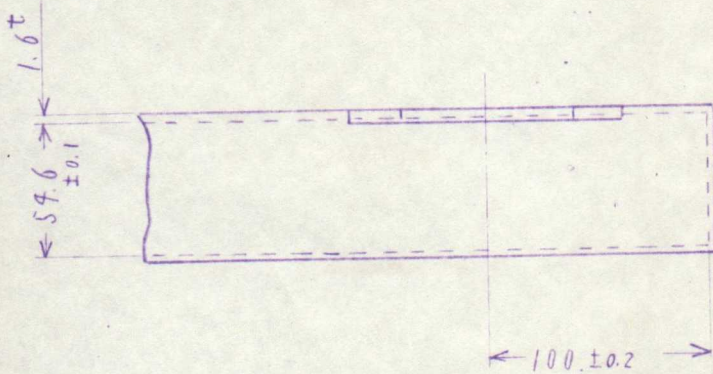
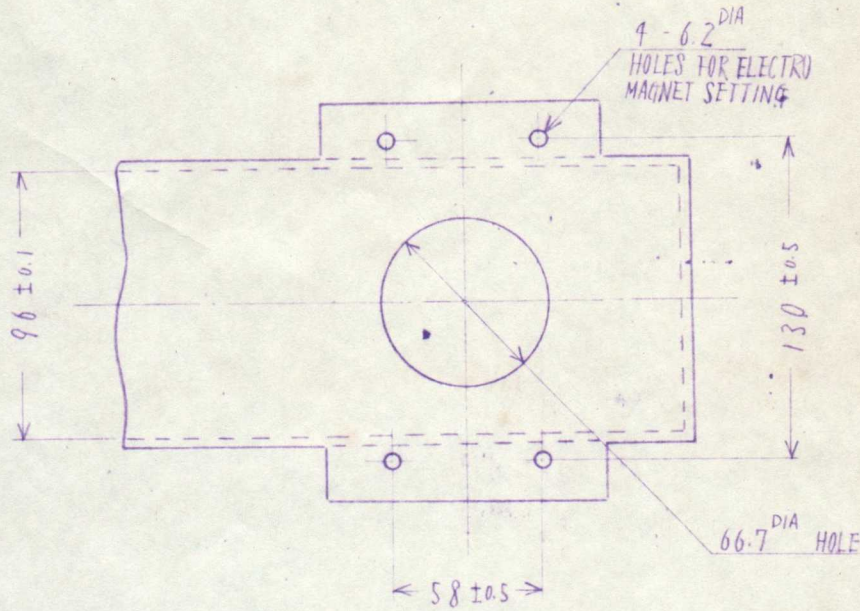


TECHNICAL DATA

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R.F. OUTPUT COUPLER

Unit mm



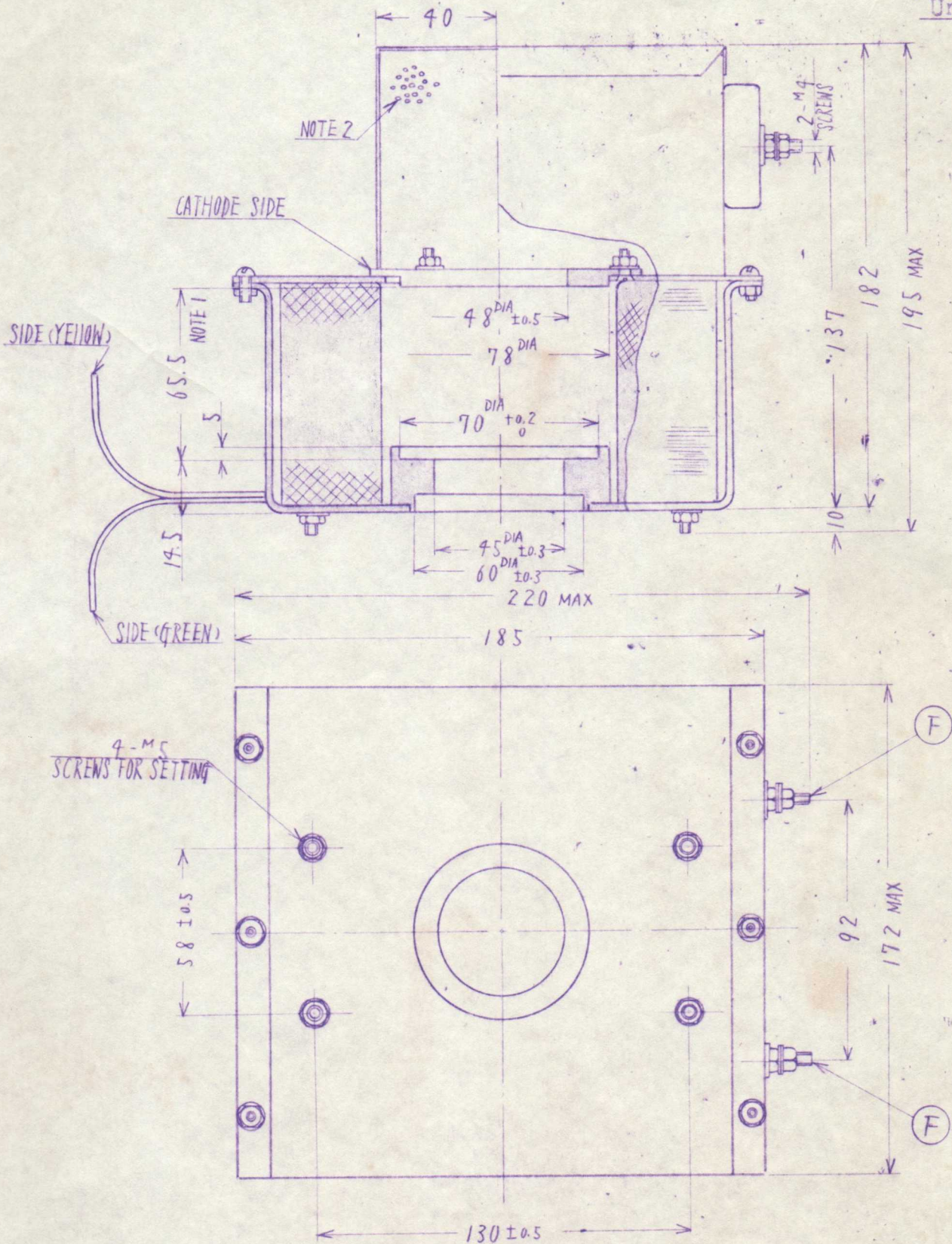


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RECOMMENDED ELECTRO MAGNET (4514B-800A)

Unit mm



- Note 1. Be adjustable ± 2mm
- 2. Many holes for draft

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