

DESCRIPTION

Water cooled electromagnet for use with linear accelerator magnetrons M5028, MG6028 and MG6098.

GENERAL DATA

Electrical (See note 1)

The electromagnet coils should be fed from a constant current power supply.

Magnetic field range, measured at point on diagram overleaf	0 to 165	mT
Typical current condition for 155 mT field (see notes 2 and 3)	33.5	A
Power consumption (approx.)	1.5	kW

Field Strength

A typical field strength -v- current characteristic is shown below.

Cooling

Minimum water flow required (see note 4)	4.5	l./min
Inlet water temperature (see note 3)	40	°C max

Mechanical

Overall dimensions	see outline
Net weight	50 kg approx

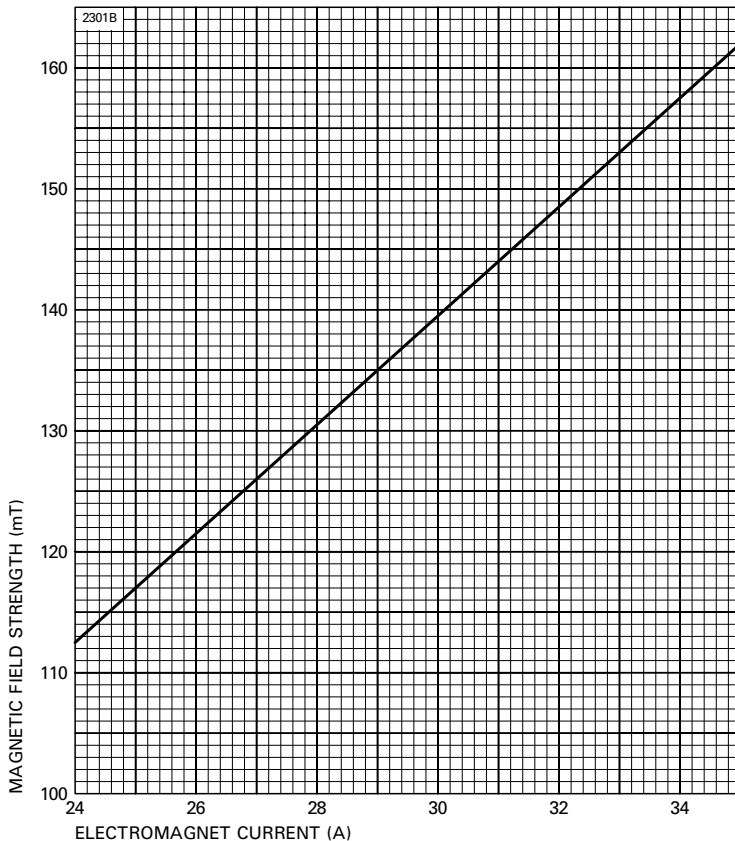
Accessories

- 10 x spring washer, OBA INT, tooth st. st.
- 10 x washer, M6, st. st.
- 10 x screw, M6 x 30.00 long cap, H.D. st.
- 1 x flexible waveguide
- 1 x waveguide seal
- 1 x clamp ring
- 5 x clamp ring screws, $\frac{5}{16}$ " -24 UNF x $1\frac{1}{8}$ " long cap head, st. st.
- 1 x shunt assembly

NOTES

1. The DC electrical connections are made via flexible cables to a connector block as shown on the outline.
2. The field coil resistance increases after initial switch on, due to heating effects, necessitating an increase in voltage to maintain a constant current.
3. The field coil resistance varies with inlet water temperature.
4. For a water flow of 4.5 l./min, a pressure of approximately 14 kPa is required.

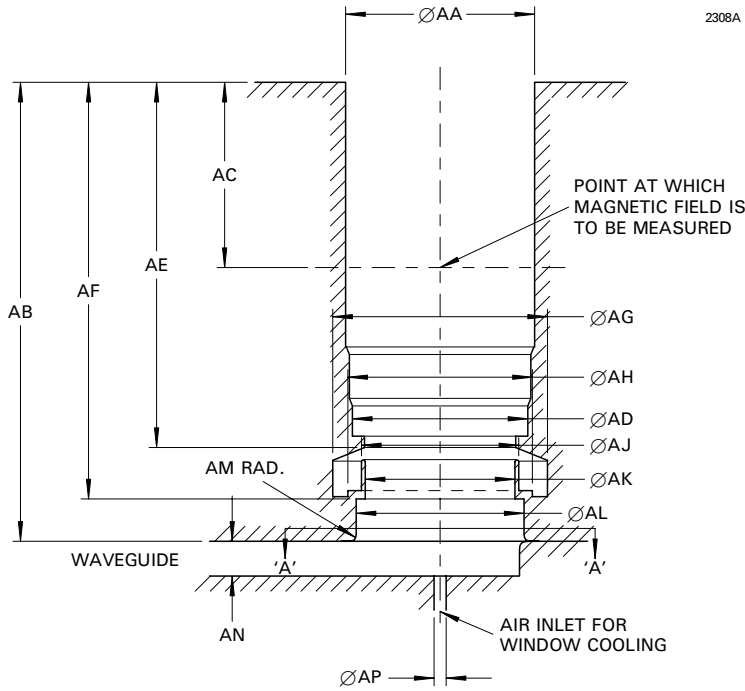
FIELD STRENGTH -v- CURRENT CHARACTERISTIC



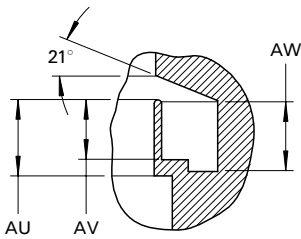
CROSS-SECTION OF SUITABLE ELECTROMAGNET AND LAUNCHING SECTION

(All dimensions without limits are nominal)

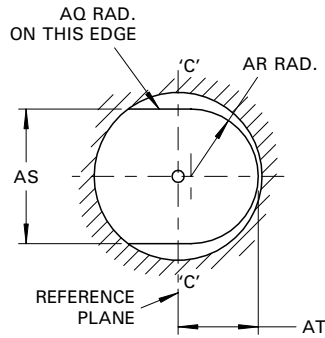
2308A



Ref	Millimetres
AA	101.600 + 0.076 - 0.000
AB	242.6
AC	100.1
AD	95.250 + 0.051 - 0.000
AE	194.0
AF	218.5
AG	110.24 ± 0.13
AH	94.310 ± 0.076
AJ	86.61 ± 0.13
AK	82.55 ± 0.13
AL	92.075 ± 0.076
AM	3.18
AN	34.04
AP	6.35
AQ	3.18
AR	35.99 ± 0.13
AS	72.14
AT	42.34 ± 0.25
AU	20.65 ± 0.25
AV	17.48 ± 0.25
AW	19.05 ± 0.25



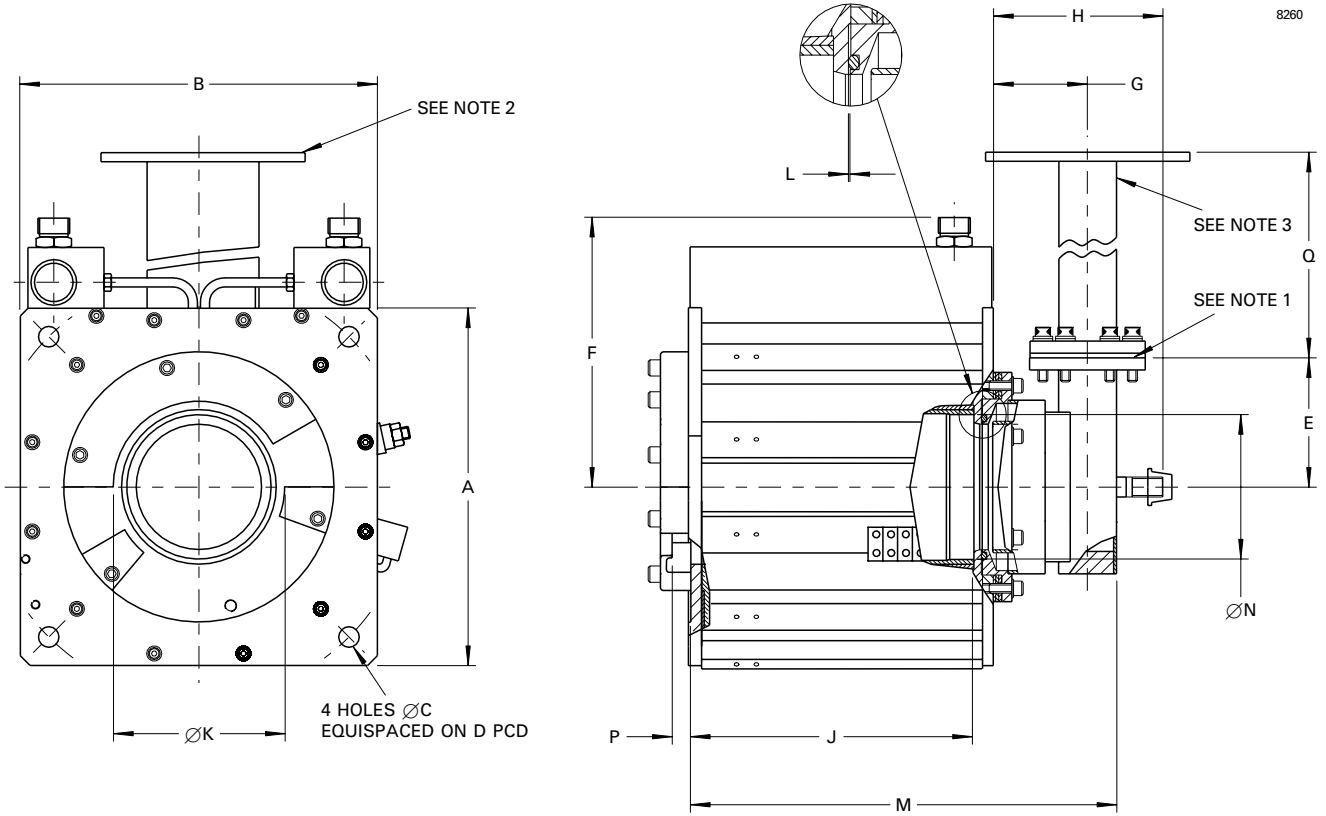
Detail of Choke Ditch



Section 'A' - 'A'

OUTLINE

(All dimensions without limits are nominal)



Outline Notes

1. S-band waveguide coupling CPR284F.
2. Waveguide coupling UG53U.
3. Flexible waveguide WG10 (M1650).

Ref	Millimetres
A	235.0 \pm 3.0
B	235.0 \pm 3.0
C	13.5
D	279.4
E	85.0
F	198.12 max
G	64.26
H	120.65
J	185.42 min
K	112.70 \pm 1.52
L	0.2 \pm 0.1
M	276.63 \pm 0.64
N	95.315 \pm 0.065
P	12.12 max
Q	267.0

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