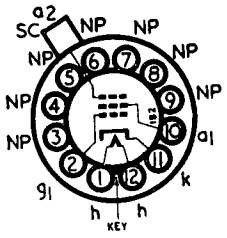
Replacement Type

TYPE **C21HM**

B12A (DUODECAL) BASE



RECTANGULAR WIDE ANGLE DEFLECTION TELETUBE WITH ALUMINIZED SCREEN AND EXTERNAL CONDUCTIVE COATING

RATINGS

Heater Voltage	6.3 volts
Heater Current	0.6 amp. (nom.)
Final Anode Voltage (V_{a2})*	18,000 volts max.
Final Anode Voltage (V_{a2})	14,000 volts min.
First Anode Voltage (V_{a1})	500 volts max.
First Anode Voltage (V_{a1})	250 volts min.
Beam Current	250 μA max.
Peak Heater to Cathode Potential	180 volts max.
Peak Heater to Cathode Potential†	410 volts max.
Grid Voltage	—2 volts min.
Grid-Cathode Circuit Resistance	1 megohm max.
Diagonal Deflection Angle	70° approx.

** No harmful X-ray radiation is produced by this tube when operated at final anode voltages not greater than 16 kV. At voltages above 16 kV some shielding may be necessary to protect against possible injury from prolonged exposure at close range.*

† Heater Negative with respect to cathode and only during warm-up period of 15 secs. maximum duration.

OPERATING CONDITIONS

Final Anode Voltage	16,000 volts
First Anode Voltage	300 volts
Peak to Peak Modulation for Beam Current of 150 μA	30 volts
Grid Voltage Limits for Spot Cut-off	—33 to —77 volts
Focusing requirements with $\frac{1}{4}$" gap	750 amp. turns approx.
Distance from Modulator Grid Aperture to Centre of Focus Coil Gap	$2\frac{1}{4}$" approx.
Field Strength of Ion-Trap Magnet**	63 gauss

***Centre of ion-trap magnet not less than 4.5 inches from reference line. Suitable magnet is the IT9 supplied by Messrs. ELAC Ltd.*

INTER-ELECTRODE CAPACITANCES

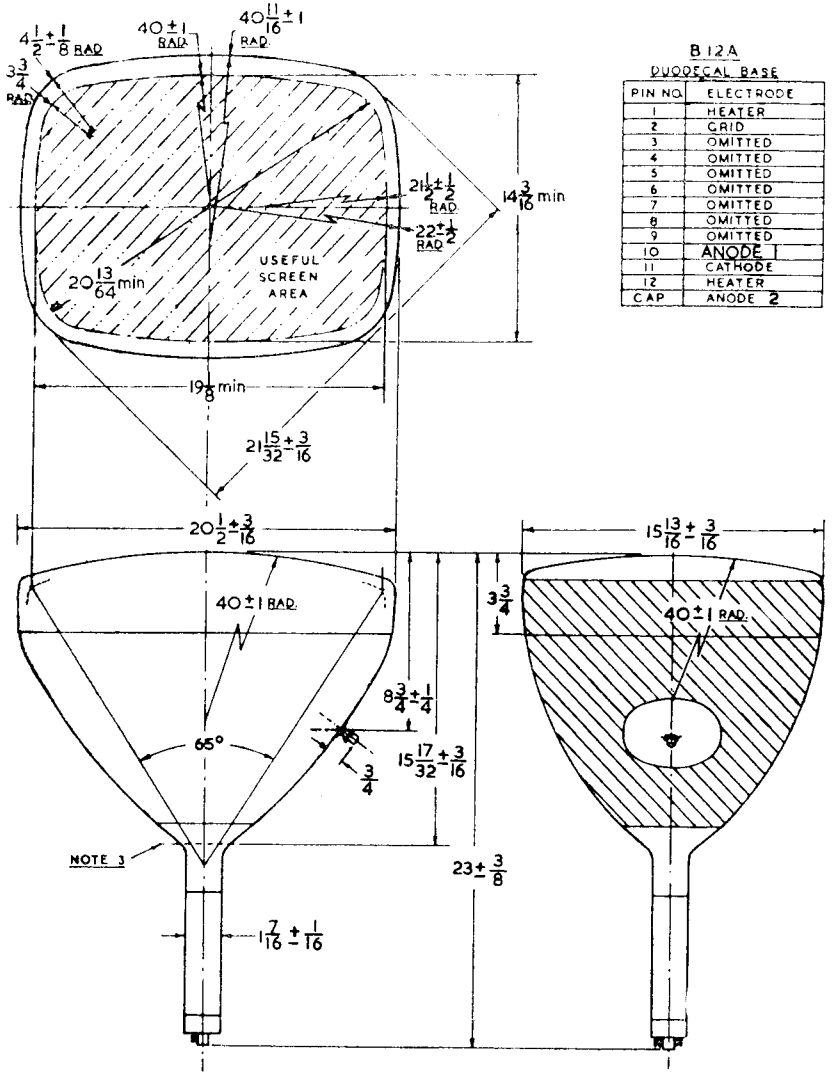
Grid to all	9.0 max.
Cathode to all	6.0 max.
External Conducting Coating to all	1,000 pF max.

ADJUSTMENT OF ION-TRAP MAGNET

The magnet should be located on the neck with the arrow pointing towards the screen along the line marked on the neck and between the top of the base shell and the line marked parallel to it. With an unmodulated raster the magnet should be slid up the neck to give the brightest picture. It may be necessary to re-adjust the focus during this operation and after doing so the magnet setting should again be adjusted for optimum brightness. It is important to set the ion-trap magnet correctly, as incorrect positioning may lead to premature failure of the tube.

VAD/392-27

CATHODE RAY TUBE C21HM



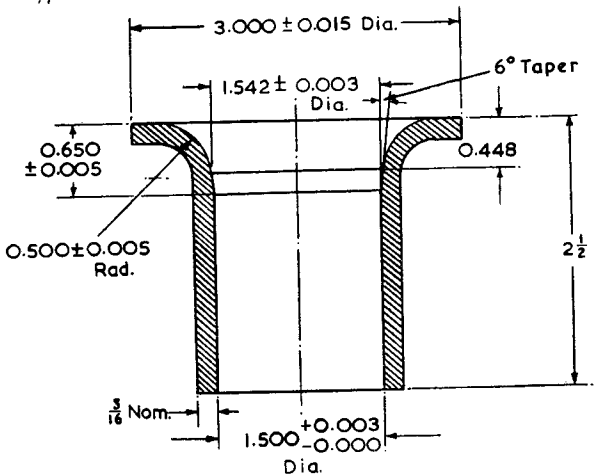
B12A
DUODECAL BASE

PIN NO.	ELECTRODE
1	HEATER
2	GRID
3	OMITTED
4	OMITTED
5	OMITTED
6	OMITTED
7	OMITTED
8	OMITTED
9	OMITTED
10	ANODE 1
11	CATHODE
12	HEATER
CAP	ANODE 2

NOTE
1. ALL DIMENSIONS IN INCHES.
2. ANODE CAP IN LINE ± 10° WITH VACANT BASE PIN POSITION No. 6.
3. REFERENCE LINE DETERMINED BY POSITION OF GAUGE No. DD. 705. (SEE VAD./392.12)
4. ON TUBES WITH TINTED FACEPLATE THE ANODE CAP WILL BE RECESSED TYPE CT8.

REFERENCE LINE GAUGE

For use in conjunction with wide angle tubes having a 1½" neck, i.e. types C14BM, C14FM, C17BM, C17FM, C17JM and C21HM.



Note: All dimensions in inches.

Use of Reference Line Gauge

In order to ensure that correctly dimensioned deflector coils will fit all cathode ray tubes of any one type, a reference line gauge is specified. This checks for maximum neck diameter, straightness of neck and alignment of base and neck.

Deflector coils should be designed to pass over a mandrel which will fit the internal dimensions of the reference line gauge.

The position of the reference line is defined as the distance between the centre of the face of the bulb and the plane of the flared end of the gauge when the tube neck has been inserted into that end.