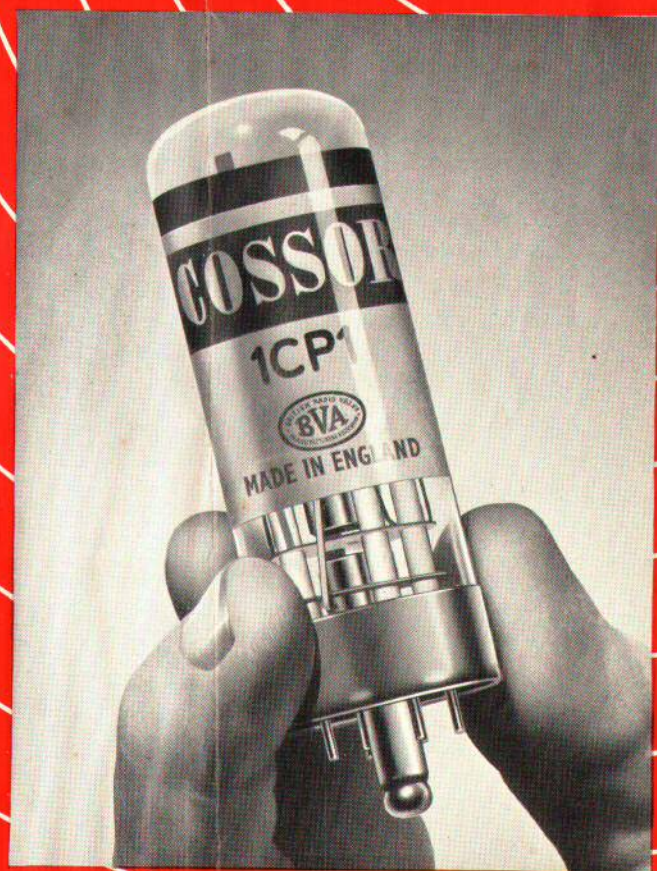


COSSOR

MINIATURE
SELF-FOCUSING
CATHODE RAY TUBE

1CP1



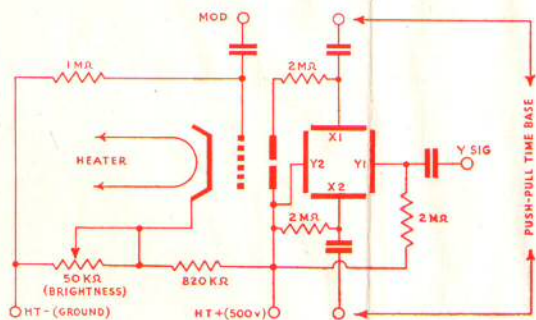
APPROX.
FULL SIZE

COSSOR

MINIATURE SELF-FOCUSING CATHODE RAY TUBE ICPI

The ICPI is a miniature Cathode Ray Tube with a Lock-in base. By ingenious construction the focusing of the beam is automatic and only one anode potential is required. For simple display purposes the grid bias is most easily developed by inserting a resistance of about 100,000 ohms in the cathode line of the tube; thus the excitation of the tube is exceedingly simple. Furthermore the heater/cathode insulation is such that up to 250 volts may be applied between them and this simplifies the derivation of the heater voltage. Although the information given above indicates that the tube is somewhat unorthodox in design the performance is good and, if desired, may be improved still further by operating at the higher anode voltage quoted.

This tube is intended to be incorporated for monitoring purposes in a wide variety of electronic equipment to permit the observation of wave forms in various stages of complex circuits.



TYPICAL CIRCUIT FOR ICPI TUBE

NOTE:
Y2 plate is connected
internally to anode.

TECHNICAL DATA

CLASSIFICATION

One inch diameter screen, fixed electrostatic focus, electrostatic deflection, cathode ray tube.

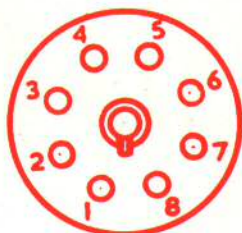
PHYSICAL DATA

| | | | | | |
|--------------------|-----|-----|-----|-------------------------------------|----------|
| Overall length | ... | ... | ... | ... | 100 mms. |
| Max. diameter | ... | ... | ... | ... | 30 mms. |
| Diameter of screen | ... | ... | ... | ... | 25 mms. |
| Base type | ... | ... | ... | ... | Lock-in |
| Screen | ... | ... | ... | Willemite, green, short persistence | |

CONNECTIONS

| | |
|-----------|--|
| Pin No. 1 | Heater |
| " " | 2 Final anode and deflector plate (Y2) |
| " " | 3 Deflector plate (Y1) |
| " " | 4 Deflector plate (X2) |
| " " | 5 Modulator |
| " " | 6 Deflector plate (X1) |
| " " | 7 Cathode |
| " " | 8 Heater |

(X plates nearest screen).



LOCK-IN TUBE BASE
VIEWED FROM UNDERSIDE

CAPACITANCES

| | | | | |
|--|-----|-----|-----|----------|
| Modulator to all other electrodes | ... | ... | ... | 8.5 pF. |
| Y1 to all other electrodes | ... | ... | ... | 4.5 pF. |
| X1 to all other electrodes | ... | ... | ... | 8.0 pF. |
| X2 to all other electrodes | ... | ... | ... | 8.0 pF. |
| Y1 to X1 all other electrodes grounded | ... | ... | ... | 0.25 pF. |
| Y1 to X2 all other electrodes grounded | ... | ... | ... | 0.35 pF. |
| X1 to X2 all other electrodes grounded | ... | ... | ... | 1.5 pF. |

HEATER DATA

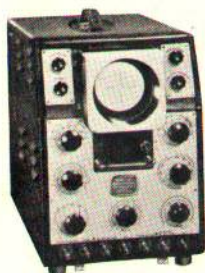
| | | | | | |
|----------------|-----|-----|-----|-----|-----------|
| Heater Voltage | ... | ... | ... | ... | 6.3 v. |
| Heater Current | ... | ... | ... | ... | 0.6 amps. |

OPERATING CONDITIONS AND CHARACTERISTICS

| | | | | |
|--|-----|-----|-----------------|--------------|
| Anode voltage (V) | ... | ... | 500 (min) | 800 (max) |
| Max. grid voltage for beam cut-off | ... | ... | -21 volts | -32 volts. |
| X plates deflectional sensitivity | ... | ... | $\frac{90}{V}$ | mm per volt. |
| Y plates deflectional sensitivity | ... | ... | $\frac{110}{V}$ | mm per volt. |
| Spot size ($I_a = 10\mu A$) | ... | ... | 0.3 mms. | 0.2 mms. |
| Max. voltage between heater and cathode | ... | ... | ... | 250 volts |
| Max. resistance between grid and cathode | ... | ... | ... | 1 meg. |
| Max. resistance between any deflecting electrode and final anode | ... | ... | ... | 5 megs. |

COSSOR

ELECTRONIC INSTRUMENTS



MODEL 1035 DOUBLE BEAM OSCILLOGRAPH

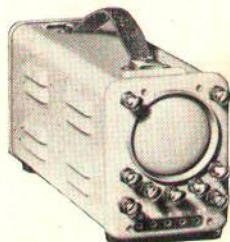
Two independent amplifiers with frequency ranges 20 cps. to 7 Mc/s and 20 cps. to 100 Kc/s. The 4" dia. flat screen tube operates at 2 Kv. Voltages and Time Intervals may be measured on either beam by means of the calibrated controls. Time base for repetitive, triggered or single stroke scan with velocity 150 milliseconds to 15 microseconds.



MODEL 1049 DOUBLE BEAM OSCILLOGRAPH

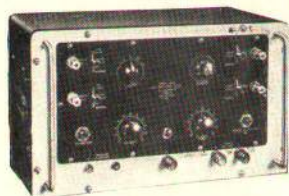
Has direct-coupled amplifiers operating from D.C. to 100 Kc/s. Stabilised power supplies provide alternative tube operating voltages of 2 Kv. and 4 Kv. Voltages and Time Intervals may be measured on either beam. Direct-coupled time base provides a repetitive, triggered or single-stroke scan with a time range of 1.5 sec. to 150 microseconds. Provision is made internally for Z modulation of the traces.

CAMERA Model 1428 and nine-speed MOTOR DRIVE Model 1431 are available for the above instruments.



MODEL 1039 BM. PORTABLE OSCILLOGRAPH

A miniature instrument weighing only 9½-lbs. with a tube of 2¼" screen dia. Single stage amplifier covers a frequency range from 25 c/s to 120 Kc/s (30% down) at a gain of 75, and 25 c/s to 1.5 Mc/s (30% down) at a gain of 20. The free-running hard-valve time base provides symmetric X plate deflection with repetition frequencies of 10 c.p.s. to better than 50 Kc/s.



MODEL 1430 D.C. PRE-AMPLIFIER

A battery-operated instrument with a gain of 50. High-impedance cathode follower input and a low-impedance cathode follower output. Balanced or unbalanced outputs are provided from single or double-ended inputs. Frequency range from D.C. to 30 Kc/s.

Full details on application to Agents in U.S.A.

BEAM INSTRUMENTS CORPORATION

EMPIRE STATE BUILDING, 350, FIFTH AVENUE, NEW YORK, 1, N.Y.

Telephone: LONGACRE 5-0522

Cables: BEAMINST NEW YORK.

Manufactured by: **A. C. COSSOR LTD**

INSTRUMENT DIVISION

COSSOR HOUSE, Highbury Grove, LONDON, N.5. ENGLAND

Telephone: CANonbury 1234 (30 lines)

Telegrams: AMPLIFIERS, NORPHONE, LONDON.

Leaflet No. L.511

Printed in England.