

# ELECTRON BEAM SOURCES

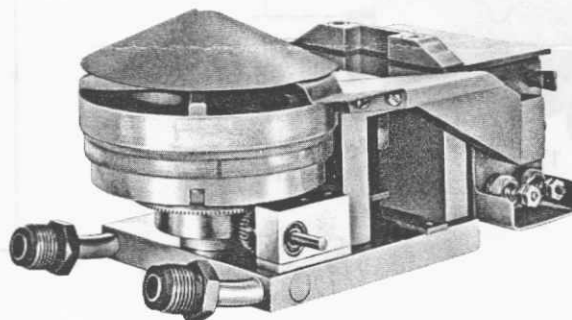
## 10 KW, Four Position Rotary: 270° Type

### MODEL TIH-270

- RELIABILITY
- HIGH RATE
- MULTILAYER DEPOSITION
- LATERAL DEFLECTION COIL

Featuring Airco Temescal's patented 270° electron beam source, this model possesses all the features of the FIH-270. In addition the source has a unique four-cavity rotary turret which makes it extremely suitable for sequential multilayer deposition. The quadruple crucible arrangement also enables one to obtain extended vaporization of one material without auxiliary feeders. A divider and tantalum shield protect the crucibles not subjected to the electron beam from falling evaporant.

Filament location provides maximum protection from shorting and eliminates any line-of-sight from the filament to the substrates. X and Y deflection coils are included as standard for use with external controls to accurately position the beam or program it over the crucibles.



The crucible may be rotated either manually or by motor. As with other Airco sources, the TIH-270 can be precisely controlled and offers exceptional high rate and high purity deposition. Its extremely long filament life, electro-magnetic deflection, standard lateral deflection coil and accurate beam positioning assure reliable performance.

The Airco Temescal 270° gun is covered by one or more of the following US patents 3177535, 3235647, 3420977, and 3535428.

#### DATA

MAXIMUM POWER RATING	.. 10 KW
EMISSION VOLTAGE	..... 4 to 10 KV
EMISSION CURRENT	..... 0 to 1A
BAKEOUT TEMPERATURE	.. 150°C
BEAM DEFLECTION	..... 270°
MAGNETICS	..... Hermetically Sealed Electromagnet
MOUNTING	..... Internal
CRUCIBLE	.....
Type	..... Four-cavity Rotary Turret
Volume	..... Each Cavity is 6.47 cc (0.395 cubic inch) Total available volume is 25.9 cc (1.58 cubic inches)

#### INSTALLATION REQUIREMENTS

##### ELECTRICAL FEEDTHROUGHS

Low Voltage—one octal—115 volt, 5 amperes per pin;  
2 pins for focus coil; 2 pins for lateral  
deflection coil  
High Voltage—two—12 KV, 70 amperes

##### COOLING WATER FEEDTHROUGHS

One dual 3/8" O.D. water, "In" and "Out" 2 GPM

##### ROTARY DRIVE

May be manually or motor driven with either  
internal or external motor (not included).  
External motor requires a feedthrough (not  
included) with 10 in. lb. intermittent torque.

##### STANDARD ACCESSORIES

- Crucible Liners
  - 1 1/8" Graphite—No. 518-7751-3
  - 1 1/8" Intermetallic—No. 518-7751-2
- Low Voltage Octal Feedthrough
  - "O" Ring Sealed—#402-7463
  - Metal Sealed—#502-0103
  - #503-0093 (connector)
- High Voltage Feedthrough—12 KV, 70 amp
  - "O" Ring Sealed—#718-8483
  - Metal Sealed—#302-2573
- High Voltage Enclosure
  - "O" Ring Sealed—#502-8174
  - Metal Sealed—#502-8164