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**RK 7529** | **PRELIMINARY**

**DATA SHEET**

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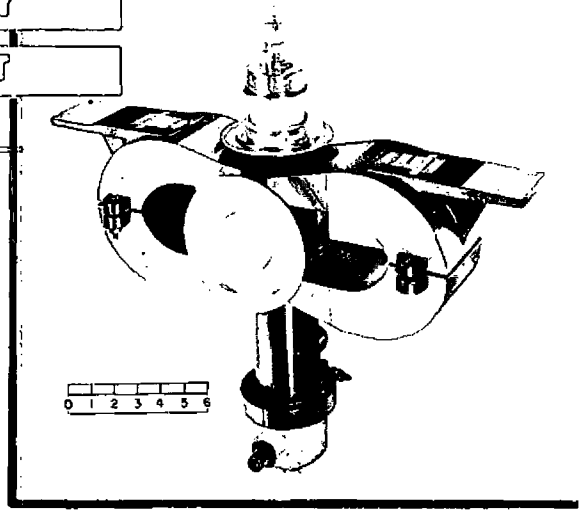

**RK 7529**

## GENERAL DESCRIPTION

The RK7529 magnetron is a mechanically tunable, high power, pulsed-type oscillator which is capable of delivering a minimum of 3.5 megawatts peak power and 2520 watts average power. The RK7529 may be rapid hand or motor tuned to any desired frequency in the 2700 to 2850 megacycle region. It is an integral magnet, unipotential cathode type tube requiring liquid cooling, with an output designed to couple directly into a 1 1/2" x 3" waveguide.

This tube was designed to be interchangeable with the RK6410A/QK338A and at the present time is the highest power tunable S-band magnetron available.

### Mechanical Data

| | |
|---|---|
| Mounting Position | Cathode Vertical |
| Net Weight | 66 lbs. |
| Cooling | Forced Liquid |
| Input Bushing | Oil Immersed |
| Pressurization (Output) | 45 p.s.i.a. Min. |

### Typical Electrical Data

| | |
|---|---|
| Heater Current (Preheat - 300 Sec.) | 78 Amperes |
| Heater Voltage @ 78 Amperes | 8.2 Volts |
| Pulse Duration (tpc) | 2.0 usec |
| Peak Anode Voltage | 62 Kilovolts |
| Peak Anode Current | 115 Amperes |
| Average Power Output | 2800 Watts |
| Voltage Rise Time | 0.3 usec. Min. |
| Maximum VSWR | 1.5 |
| RF Bandwidth (@ 6.0 db) | 3.0/tpc Max. |
| Life (1.5 VSWR, Cycled) | 150 Hrs. Min.<br>1000 Hrs. Min. Objective |

Reliable operation and maximum magnetron life can be achieved only if the overall radar transmitter is designed with the magnetron characteristics and peculiarities clearly in mind. This preliminary Data Sheet is intended to serve as an introduction only and should not be used as an absolute guide to users. Detailed tube specifications are available on request, specific problems and applications should be directed to the Applications Engineering Department, Microwave and Power Tube Division, Raytheon Company, Waltham, Massachusetts.

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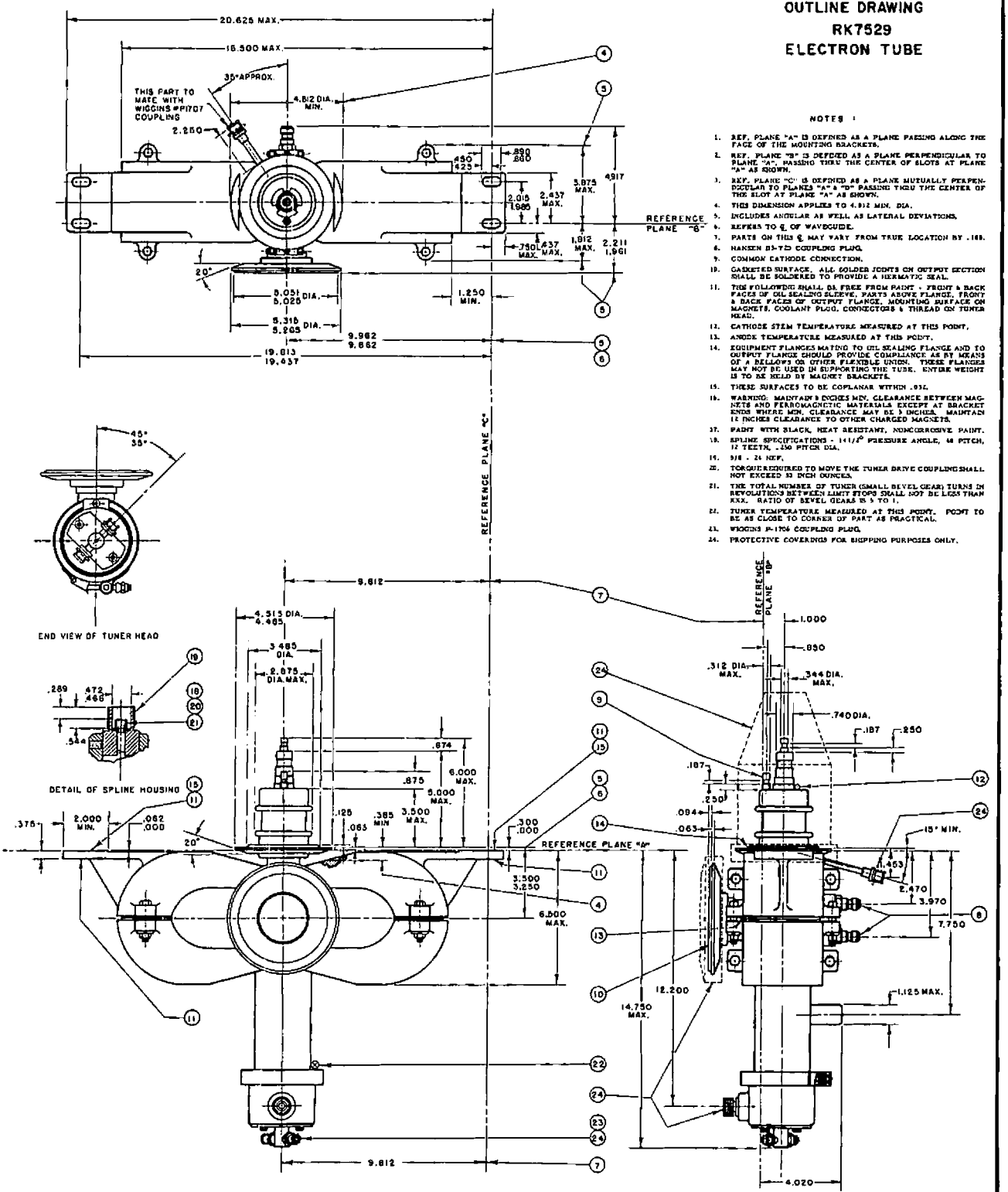
**preliminary data sheet**

# OUTLINE DRAWING
# RK7529
# ELECTRON TUBE




## NOTES :

1. REF. PLANE "A" IS DEFINED AS A PLANE PASSING ALONG THE FACE OF THE MOUNTING BRACKETS.
2. REF. PLANE "B" IS DEFINED AS A PLANE PERPENDICULAR TO PLANE "A", PASSING THRU THE CENTER OF SLOTS AT PLANE "A" AS SHOWN.
3. REF. PLANE "C" IS DEFINED AS A PLANE MUTUALLY PERPENDICULAR TO PLANES "A" & "B" PASSING THRU THE CENTER OF THE SLOT AT PLANE "A" AS SHOWN.
4. THIS DIMENSION APPLIES TO 4.812 MIN. DIA.
5. INCLUDES ANGULAR AS WELL AS LATERAL DEVIATIONS.
6. REFERS TO ℄ OF WAVEGUIDE.
7. PARTS ON THIS ℄ MAY VARY FROM TRUE LOCATION BY .188.
8. NANSEN 83-T2D COUPLING PLUG.
9. COMMON CATHODE CONNECTION.
10. GASKETED SURFACE. ALL SOLDER JOINTS ON OUTPUT SECTION SHALL BE SOLDERED TO PROVIDE A HERMATIC SEAL.
11. THE FOLLOWING SHALL BE FREE FROM PAINT - FRONT & BACK FACES OF OIL SEALING SLEEVE, PARTS ABOVE FLANGE, FRONT & BACK FACES OF OUTPUT FLANGE, MOUNTING SURFACE ON MAGNETS, COOLANT PLUG, CONNECTORS & THREAD ON TUNER HEAD.
12. CATHODE STEM TEMPERATURE MEASURED AT THIS POINT.
13. ANODE TEMPERATURE MEASURED AT THIS POINT.
14. EQUIPMENT FLANGES MATING TO OIL SEALING FLANGE AND TO OUTPUT FLANGE SHOULD PROVIDE COMPLIANCE AS BY MEANS OF A BELLOWS OR OTHER FLEXIBLE UNION. THESE FLANGES MAY NOT BE USED IN SUPPORTING THE TUBE. ENTIRE WEIGHT IS TO BE HELD BY MAGNET BRACKETS.
15. THESE SURFACES TO BE COPLANAR WITHIN .03".
16. WARNING: MAINTAIN 8 INCHES MIN. CLEARANCE BETWEEN MAGNETS AND FERROMAGNETIC MATERIALS EXCEPT AT BRACKET ENDS WHERE MIN. CLEARANCE MAY BE 5 INCHES. MAINTAIN 12 INCHES CLEARANCE TO OTHER CHARGED MAGNETS.
17. PAINT WITH BLACK, HEAT RESISTANT, NONCORROSIVE PAINT.
18. SPLINE SPECIFICATIONS - 14½° PRESSURE ANGLE, 48 PITCH, 12 TEETH, .250 PITCH DIA.
19. 5/8 - 24 NEF.
20. TORQUE REQUIRED TO MOVE THE TUNER DRIVE COUPLING SHALL NOT EXCEED 32 INCH OUNCES.
21. THE TOTAL NUMBER OF TUNER (SMALL BEVEL GEAR) TURNS IN REVOLUTIONS BETWEEN LIMIT STOPS SHALL NOT BE LESS THAN XXX. RATIO OF BEVEL GEARS IS 5 TO 1.
22. TUNER TEMPERATURE MEASURED AT THIS POINT. POINT TO BE AS CLOSE TO CORNER OF PART AS PRACTICAL.
23. WIGGINS P-1704 COUPLING PLUG.
24. PROTECTIVE COVERINGS FOR SHIPPING PURPOSES ONLY.