



EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

X626AC

**PULSE-AMPLIFIER
L-BAND KLYSTRON**

The Eimac X626AC is a three-cavity, pulse-amplifier klystron designed for high-average-power pulse service at frequencies from 400 to 450 megacycles. This klystron will deliver a peak output power of 1.25 megawatts, at 75 kilowatts average power, with a narrow-band power gain of 30 decibels.

All tuning is accomplished outside the vacuum envelope by means of external resonant cavities which enclose the cylindrical ceramic windows of the klystron. This design permits external cavity loading for wide-band applications. For spares or replacements, only the basic klystron, without cavities, need be purchased.

This klystron employs the Eimac Modulating Anode which provides a convenient means for pulse modulating the output power without changing the beam voltage. The electron-gun geometry is such that the required beam current is obtained with a peak modulating-anode voltage of only 52 kilovolts, at the rated beam voltage of 100 kilovolts.

Waveguide output coupling for the X626AC is achieved by means of an adjustable iris in the output cavity.

Eimac Klystron Amplifier Circuit Assembly H-123B has been designed for use with the X626AC to cover the specified frequency range. This assembly includes a supporting structure, magnetic focusing coils, tuning cavities, input load coupler, output waveguide transition, and a klystron socket.

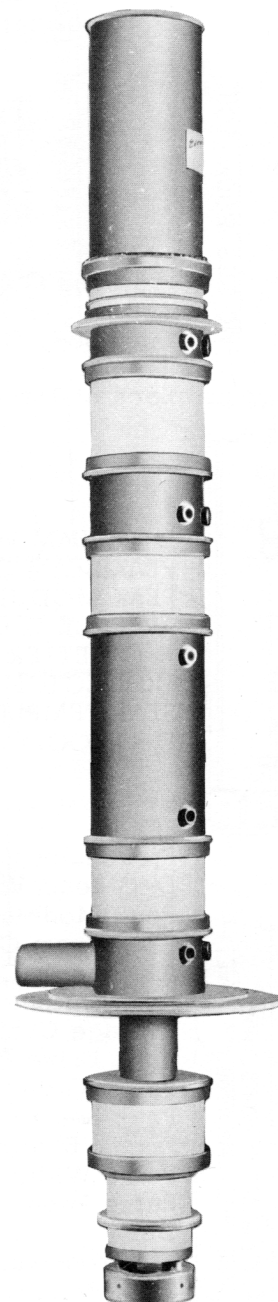
CHARACTERISTICS

ELECTRICAL

Cathode:	EMA, Unipotential							
	Minimum Heating Time -	-	-	-	10	minutes		
Heater:	Voltage ($\pm 5\%$)	-	-	-	7.5	volts		
	Current -	-	-	-	90 to 100	amperes		
	Maximum Starting Current	-	-	-	200	amperes		
Getter:	Voltage -	-	-	-	15.6	volts		
	Current -	-	-	-	36	amperes		
Modulating Anode Capacitance (to all other electrodes):								
	Dry	-	-	-	45	μf		
	In Typical Circuit							
	(oil immersed)				125 to 150	μf		
Power Gain (Narrow Band)					30	decibels		
Peak Output Power	-	-	-	-	1.25	megawatts		
Average Output Power	-	-	-	-	75	kilowatts		
Frequency Range (H-123B Circuit Assembly)					400 to 450	megacycles		

MECHANICAL

Operating Position	-	-	-	-	-	-	-	Vertical, Cathode Down
R-F Input Coupling	-	-	-	-	-	-	-	1 5/8 inch, 50-ohm line
R-F Output Coupling	-	-	-	-	-	-	-	WR-2100 Waveguide
Weight (X626AC only)	-	-	-	-	-	-	-	590 pounds





MECHANICAL cont.

Weight (H-123B Circuit Assembly) -	-	-	-	-	-	-	-	-	1780	pounds
Maximum Dimensions (X626AC)										
Length -	-	-	-	-	-	-	-	-	118	inches
Diameter -	-	-	-	-	-	-	-	-	18	inches
Maximum Dimensions (X626AC and H-123B Circuit Assembly)										
Height -	-	-	-	-	-	-	-	-	120	inches
Width -	-	-	-	-	-	-	-	-	38	inches
Depth -	-	-	-	-	-	-	-	-	38	inches
Cooling: Oil, Water and Forced Air										
Electron Gun: Immersed in Oil										

	<u>Flow Rate</u>	<u>Pressure Drop</u>
Penultimate and Output Cavities	250 cfm	3 inches H ₂ O
Four Drift-Tube Sections in Series	5 gpm	5.5 psi
Collector	50 gpm	26 psi

MAGNETIC COIL POWER-SUPPLY REQUIREMENTS

Prefocus Coil:	Voltage	-	-	-	-	-	-	-	-	0 to 60	volts
	Current	-	-	-	-	-	-	-	-	0 to 2	amperes
First Body Coil:	Voltage	-	-	-	-	-	-	-	-	0 to 100	volts
	Current	-	-	-	-	-	-	-	-	0 to 2	amperes
Each of Three Body Coils and Collector Coil:	Voltage	-	-	-	-	-	-	-	-	0 to 150	volts
	Current	-	-	-	-	-	-	-	-	0 to 6	amperes

MAXIMUM RATINGS

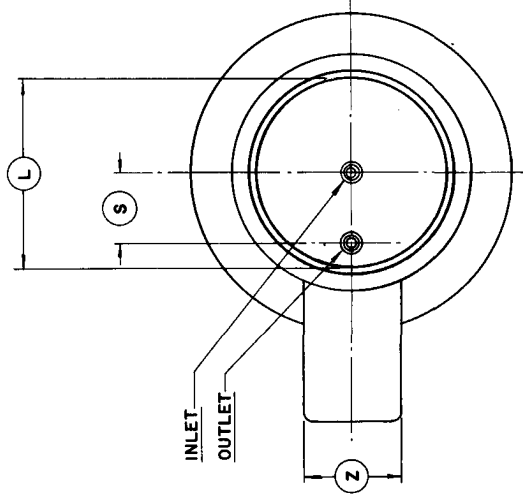
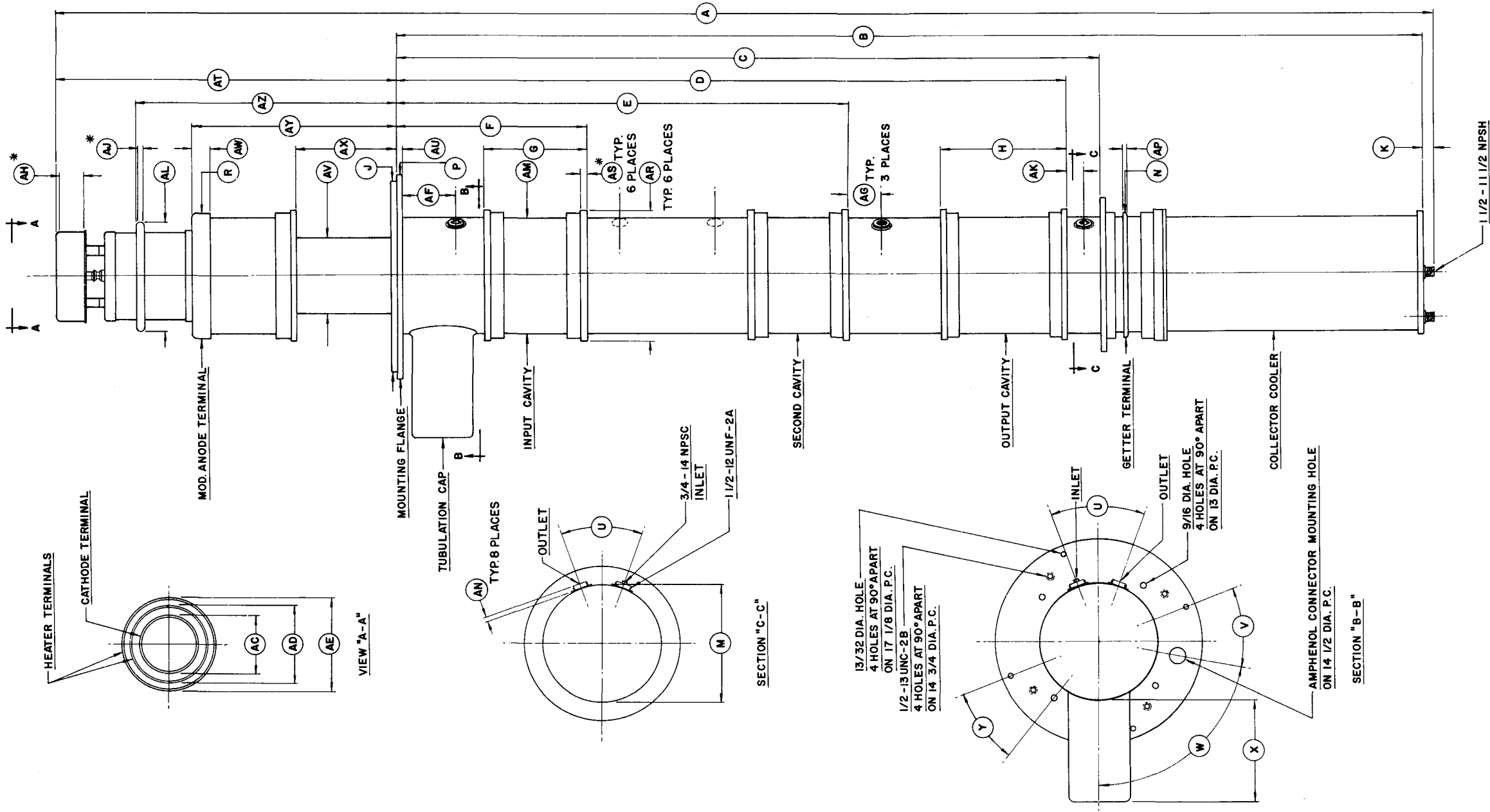
D-C BEAM VOLTAGE	-	-	-	-	-	-	-	-	-	110	KILOVOLTS
PEAK BEAM CURRENT	-	-	-	-	-	-	-	-	-	36.5	AMPERES
PEAK MODULATING-ANODE VOLTAGE	-	-	-	-	-	-	-	-	-	66	KILOVOLTS
AVERAGE D-C BODY CURRENT	-	-	-	-	-	-	-	-	-	150	MILLIAMPERES
A-C GETTER CURRENT	-	-	-	-	-	-	-	-	-	50	AMPERES
COLLECTOR DISSIPATION	-	-	-	-	-	-	-	-	-	240	KILOWATTS
SEAL TEMPERATURES	-	-	-	-	-	-	-	-	-	175	DEGREES C
D-C FOCUS-ELECTRODE VOLTAGE	-	-	-	-	-	-	-	-	-	-500	VOLTS

TYPICAL OPERATION, NARROW-BAND, PULSE AMPLIFIER

Frequency	-	-	-	-	-	-	-	-	-	425	megacycles
D-C Beam Voltage	-	-	-	-	-	-	-	-	-	100	kilovolts
Peak Modulating-Anode Voltage	-	-	-	-	-	-	-	-	-	52	kilovolts
Peak Beam Current	-	-	-	-	-	-	-	-	-	32.5	amperes
Average D-C Body Current	-	-	-	-	-	-	-	-	-	130	milliamperes
Peak Output Power	-	-	-	-	-	-	-	-	-	1.25	megawatts
Average Output Power	-	-	-	-	-	-	-	-	-	75	kilowatts
Peak Drive Power	-	-	-	-	-	-	-	-	-	1.25	kilowatts
Power Gain	-	-	-	-	-	-	-	-	-	30	decibels
Peak Beam Power Efficiency	-	-	-	-	-	-	-	-	-	38.4	percent
Focus-Electrode Voltage	-	-	-	-	-	-	-	-	-	-50	volts
Pulse Width	-	-	-	-	-	-	-	-	-	2000	microseconds
Pulse Repetition Rate	-	-	-	-	-	-	-	-	-	30	pulses/second
Duty	-	-	-	-	-	-	-	-	-	0.06	
Electron-Gun Microperveance	-	-	-	-	-	-	-	-	-	2.6	
Beam Microperveance	-	-	-	-	-	-	-	-	-	0.98	
Magnetic-Coil Currents											
Prefocus Coil	-	-	-	-	-	-	-	-	-	1.4	amperes
First Body Coil	-	-	-	-	-	-	-	-	-	1.0	ampere
Second, Third & Fourth Body Coil and Collector Coil (each)										4.0	amperes

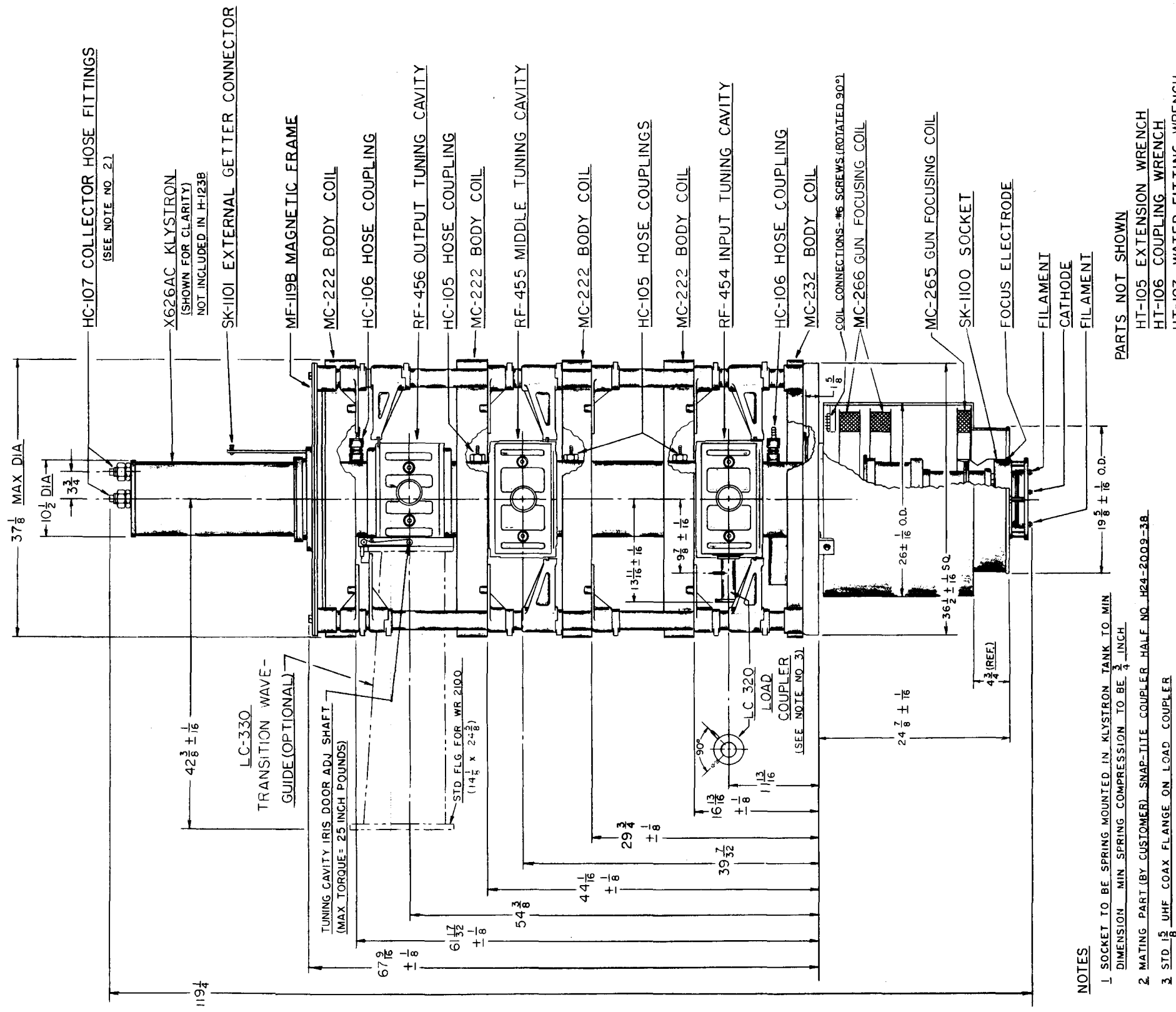
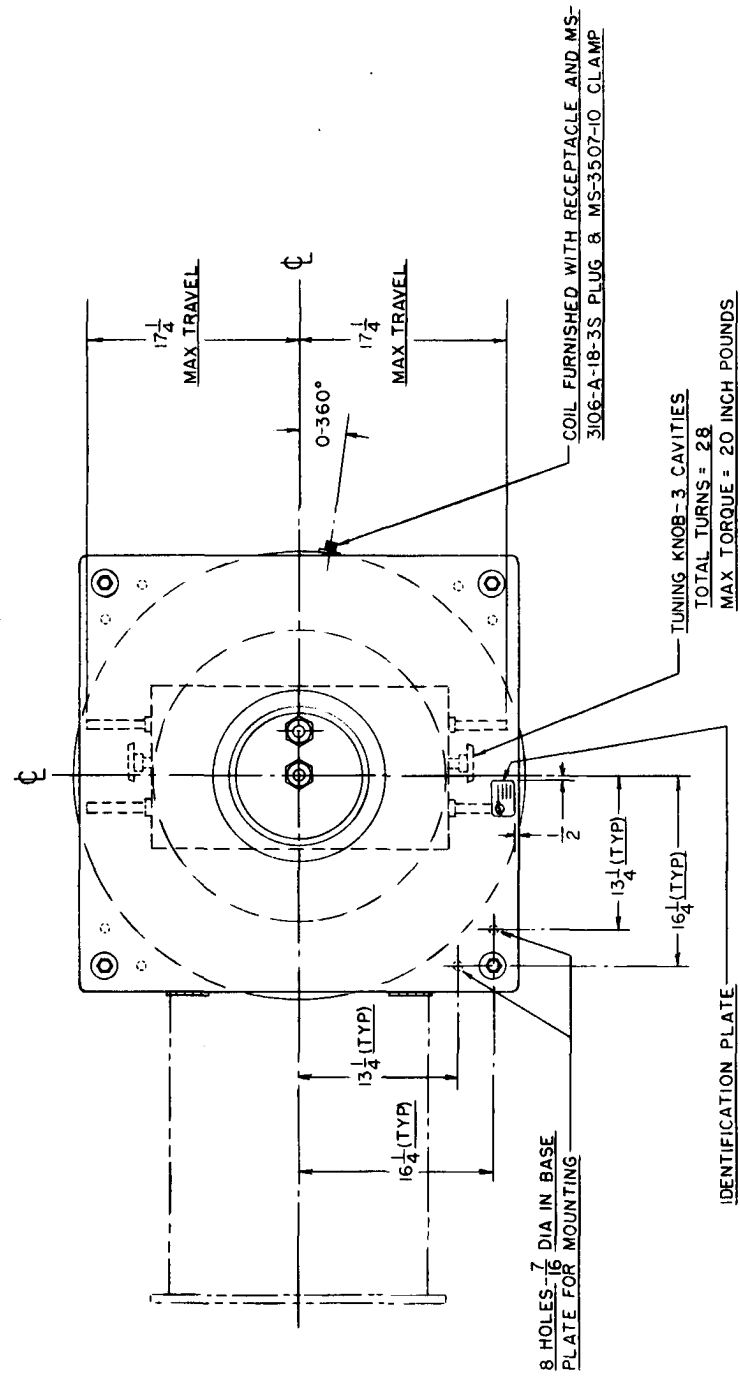
For additional information or information regarding a specific application write to
Eitel-McCullough, Inc., San Carlos, California.

DIMENSIONAL DATA			
REF	NOM	MIN	MAX
A	117.5		
B	89.3		
C		60.78	61.20
D	58.0		
E	42.0		
F	14.6		
G		8.790	8.842
H		10.429	10.481
J		16.375	16.500
K		.600	
L	10.5		
M	10.0		
N	10.8		
P		17.875	18.030
R	10.9		
S	3.7		
T			
U	40°		
V	32°		
W	91.5°		
X	6.750		
Y	30°		
Z	4.0		
AA			
AB			
AC		33.970	4.090
AD		6.165	6.285
AE		7.910	8.030
AF	3.75		
AG	2.0		
AH		2.375	
AJ		.5	
AK		1.460	1.560
AL		9.281	9.343
AM	10.045		
AN		.375	
AP		.250	.500
AR		11.490	11.510
AS		.375	
AT		27.290	27.790
AU		.437	
AV	5.0		
AW			
AX	7.5		
AY	15.6		
AZ	20.7		



NOTES:
 * 1. MIN. STRAIGHT SURFACE FOR CONTACT.
 2. DIMENSIONS ARE INCHES.

X626AC KLYSTRON



H-123B KLYSTRON AMPLIFIER CIRCUIT ASSEMBLY