TENTATIVE

DESCRIPTION:

THE FW-204 IS A 5 INCH IATRON (DIRECT VIEW STORAGE CATHODE-RAY TUBE) THAT PRODUCES A BRIGHT VISUAL DISPLAY OF ELECTRICALLY STORED INFORMATION. IT IS ELECTROMAGNETICALLY FOCUSED AND DEFLECTED. THE TUBE DISPLAYS BRIGHT IMAGES ON A DARK BACKGROUND THAT CAN BE VIEWED IN DIRECT DAYLIGHT, AND FEATURES THE ABILITY TO WRITE, STORE, AND ERASE INFORMATION AT WILL. GREY SHADES ARE PRODUCED IN ACCORDANCE WITH THE AMPLITUDE VARIATION OF THE INPUT SIGNAL. THE TUBE HAS TWO CONCENTRIC ELECTRON GUNS, A WRITING GUN, WHICH WRITES THE INPUT SIGNAL ON A STORAGE MESH, AND A FLOOD GUN, WHICH ILLUMINATES THE PHOSPHOR IN ACCORDANCE WITH THE STORED SIGNAL. THE CONCENTRIC ARRANGEMENT OF THE GUNS REDUCES DISTORTION OF THE WRITING BEAM TO A MINIMUM.

GENERAL:

DIMENSIONS	SEE OUTLINE AND FUNCTIONAL SCHEMATIC	
NOMINAL TUBE DIAMETER	5	INCHES
MINIMUM USEFUL DISPLAY DIAMETER	4	INCHES
PHOSPHOR	P-20	ALUMINIZED
OPERATING POSITION		ANY
CATHODE PRE-HEATING TIME	60	SECONDS
FOCUS		MAGNETIC
DEFLECTION		MAGNETIC

TYPICAL OPERATING VOLTAGES:

			FLOOD SECTION
VIEWING SCREEN	∱10	KV DC	600 UA MAXIMUM
BACKING ELECTRODE	∱10	VDC	AND ERASE PULSES
COLLECTOR	∱150	VDC	1.0 MA
ANODE #5	∱100	VDC	25 UA
ANODE #4	∱20	VDC	200 UA
ANODE #3	∱16	VDC	300 UA
ANODE #2	∱45	VDC	3000 UA
ANODE #1	∱12	VDC	25 MA
CATHODE	0	VDC	30 MA
HEATER	6.3	V AC OR DC	2.1 A

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WRITE SECTION

CATHODE	-2500	VDC	2 MA
GRID #1 (CUTOFF - NOTE 1)	-50	VDC	RESPECT WRITE CATHODE
GRID #2	0	VDC	2 MA
HEATER	6.3	V AC OR DC	.6 A

RANGE OF OPERATING ADJUSTMENTS:

ANODE #1	0 TO 20	VDC	ADJUST FOR BEST COLLIMATION
ANODE #2, 3, 4	0 TO 50	VDC	ADJUST FOR BEST COLLIMATION
ERASE PULSES	3 - 10	V	AMPLITUDE 1/2 U/SEC. WIDE 75 TO 4000 PRF

TYPICAL PERFORMANCE:

RESOLUTION (NOTE 2)		
200 FT. LAMBERTS	125	LINES PER INCH
2000 FT. LAMBERTS	35	LINES PER INCH
BRIGHTNESS	2500	FT. LAMBERTS
WRITING SPEED		
ZERO BIAS WRITING TO 80% BRIGHTNESS	150,000	IN/SEC.
ERASE TIME (NOTE 3)	5	MILLISECONDS
VIEWING TIME (NOTE 4)	30	SECONDS MAXIMUM

NOTES:

1. VISUAL CUTOFF OF STORED, FOCUSED, UNDEFLECTED SPOT.

2. MEASURED BY THE SHRINKING RASTER METHOD AT THE CENTER OF THE TUBE.

3. ERASE TIME IS THE SHORTEST TIME THAT INFORMATION CAN BE REMOVED FROM THE TUBE AFTER BEING STORED AT FULL BRIGHTNESS.

4. VIEWING TIME IS THE TIME THAT A SIGNAL STORED AT FULL BRIGHTNESS ANYWHERE IN THE DISPLAY CAN BE VIEWED WITH ERASE PULSES APPLIED TO COUNTERACTION WRITING.

*TRADEMARK OF ITT

SPECIAL PRECAUTIONS:

OBSERVE MAXIMUM RATINGS TO AVOID POSSIBLE DAMAGE TO THE TUBE. IN PARTICULAR THE VIEWING SCREEN VOLTAGE SHOULD BE LIMITED SO AS TO NEVER EXCEED 12 KV.

THE FULL VOLTAGE SHOULD NOT BE APPLIED TO THE VIEWING SCREEN INSTANTANEOUSLY. AN ORDINARY RC FILTER AT THE OUTPUT OF THE POWER SUPPLY WILL PROVIDE ADEQUATE ASSURANCE THAT THE VOLTAGE BUILD UP WILL NOT BE TOO ABRUPT. THE VIEWING SCREEN POWER SUPPLY SHOULD HAVE A SERIES RESISTANCE OF AT LEAST 1 MEG OHM.

REPEATED BOMBARDMENT WITH A HIGH CURRENT FOCUSED BEAM ON A SMALL AREA OF THE STORAGE SURFACE CAN BURN A DARK IMAGE INTO THE DISPLAY, WHICH MAY REMAIN FOR SEVERAL HOURS OR EVEN PERMANENTLY. THEREFORE, THE DEFLECTION VOLTAGES SHOULD BE APPLIED BEFORE OPERATING THE WRITING BEAM.

ADDITIONAL INFORMATION FOR SPECIFIC APPLICATIONS CAN BE OBTAINED FROM THE

ELECTRON TUBE APPLICATIONS SECTION
ITT COMPONENTS DIVISION
POST OFFICE BOX 412
CLIFTON, NEW JERSEY

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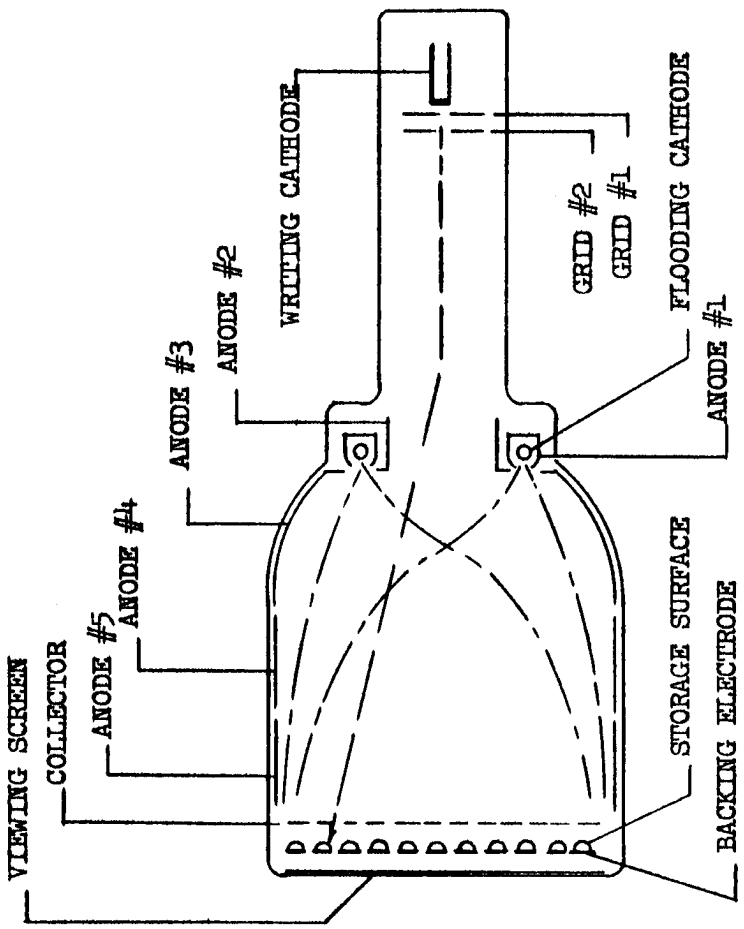
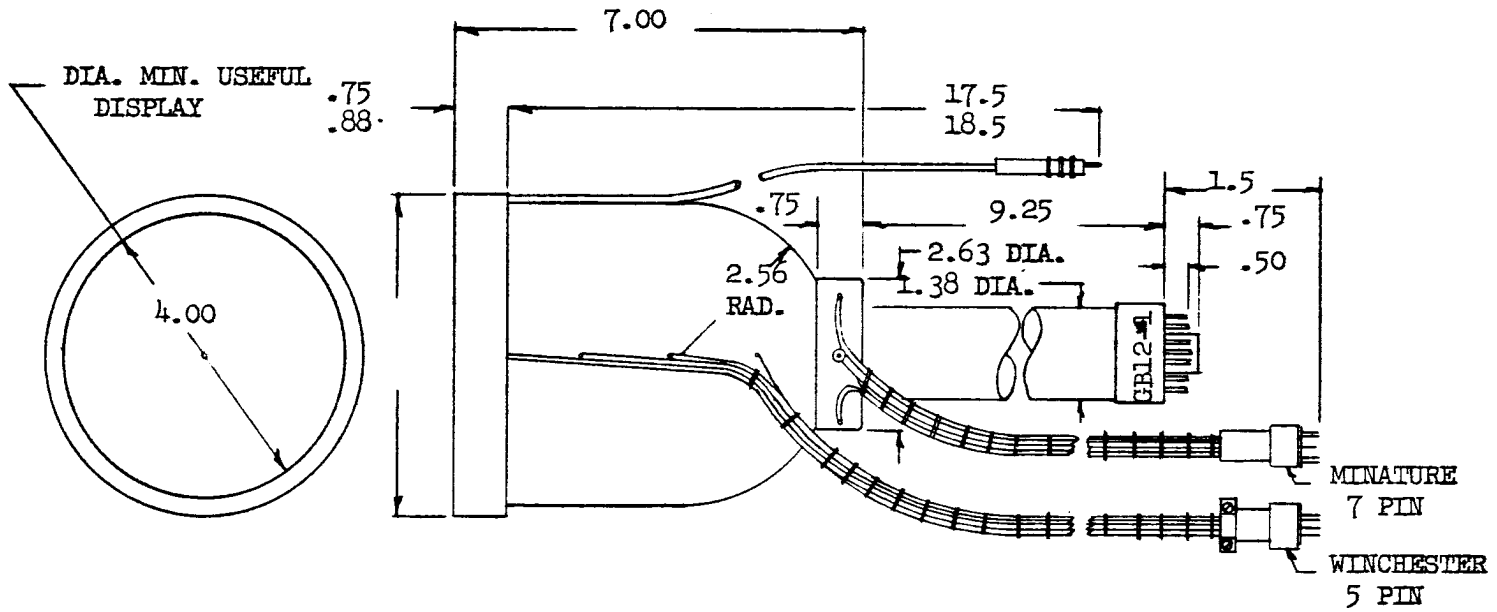

VIEWING SCREEN
COLLECTOR
ANODE #5
ANODE #4
ANODE #3
ANODE #2
WRITING CATHODE
GRID #2
GRID #1
FLOODING CATHODE
ANODE #1
STORAGE SURFACE
BACKING ELECTRODE

FW-204



1. GRID #1
2. WRITING GUN CATHODE
3. WRITING GUN HEATER
4. WRITING GUN HEATER
5. NO CONNECTION
6.
7.
8.
9.
10. NO CONNECTION
11. GRID #2
12. NO CONNECTION

1. ANODE #1
2. NO CONNECTION
3. FLOODING GUN HEATER
4. FLOODING GUN HEATER
5. ANODE #2
6. NO CONNECTION
7. FLOODING GUN CATHODE

A. ANODE #3
B. ANODE #4
D. BACKING ELECTRODE
E. COLLECTOR
H. ANODE #5