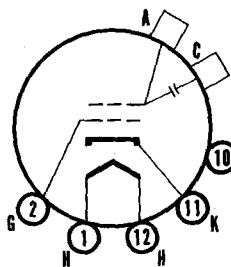
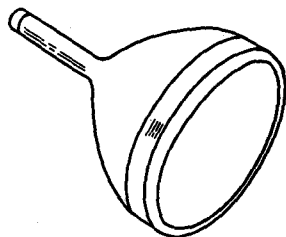


SYLVANIA TYPE 10NP11

VIDEO RECORDING TUBE

10" Direct Viewed Magnetic Deflection
 Round Glass Type Magnetic Focus
 Aluminized Screen External Conductive Coating
 Triode Construction



12-G

CHARACTERISTICS

GENERAL DATA

Focusing Method	Magnetic
Deflecting Method	Magnetic
Deflection Angle (approx.)	52 Degrees
Phosphor	P11
Fluorescence	Blue
Persistence	Short
Faceplate	Clear, or Gray Filter Glass
Light Transmittance (approx.)	76 Percent

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes	4 μf
Grid No. 1 to All Other Electrodes	5 μf
External Conductive Coating to Anode	1500 μf Max. 500 μf Min.

MECHANICAL DATA

Minimum Useful Screen Diameter ¹	9 $\frac{1}{8}$ Inches
Nominal Overall Length	17 $\frac{5}{8}$ Inches
Bulb Contact (Recessed Small Ball Cap)	J1-21
Base (Small Shell Duodecal 5-Pin)	B5-57
Basing	12G
Bulb Contact Aligns with Pin Position No. 3 (Vacant)	± 30 Degrees

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage	27,500 Volts d c
Grid No. 1 Voltage	
Negative Bias Value	385 Volts d c
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater Negative with Respect to Cathode	
During Warm-up Period not to Exceed 15 Seconds	450 Volts
Heater Negative with Respect to Cathode	165 Volts
Heater Positive with Respect to Cathode	165 Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage	18,000 Volts d c
Grid No. 1 Voltage ²	-65 to -125 Volts d c
Focusing Coil Current (approx.) ³	110 Ma d c

NOTES:

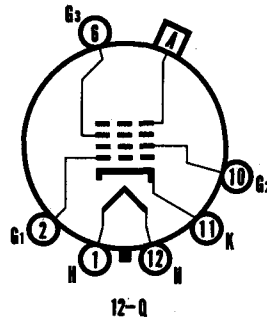
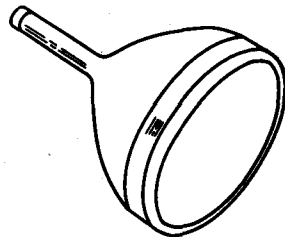
- For film recording it is recommended that the pattern be confined within the 7 inch diameter circle centered on the tube face to minimize its curvature and to insure best screen quality.
- Visual extinction of undeflected focused spot.
- For JETEC focusing coil 109 or equivalent, with the distance from reference line to the center of the air gap equal to 3 $\frac{1}{4}$ inches.

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SYLVANIA TYPE 10SP4

Monitor Tube
10" Direct Viewed
Round Glass Type
Spherical Faceplate
Gray Filter Glass

Aluminized Screen
Magnetic Deflection
No Ion Trap
Acceleration Type
Electrostatic Focus



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflecting Method.....	Magnetic
Deflection Angle (approx.).....	50 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Short to Medium
Faceplate.....	Gray Filter Glass
Light Transmittance.....	76 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μ f
Grid No. 1 to All Other Electrodes.....	6 μ f

MECHANICAL DATA

Minimum Useful Screen Diameter.....	9 1/4 Inches
Nominal Overall Length.....	16 5/8 Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 6-Pin).....	B6-63
Basing.....	12Q
Bulb Contact Aligns with Pin No. 6.....	± 10 Degrees

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	22,000 Volts d c
Grid No. 3 Voltage.....	3300 Volts d c
Grid No. 2 Voltage.....	450 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	140 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed	
15 Seconds.....	450 Volts
After Warm-up Period.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage ¹	14,000 Volts d c
Grid No. 3 Voltage for Focus with	
I _b = 100 μ amps.....	1640 to 2225 Volts d c
Alignment Magnet Field Strength.....	0 to 8 Gauss
Grid No. 2 Voltage.....	200 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-18 to -48 Volts d c
Grid No. 3 Current at I _b = 100 μ amps.....	25 μ a Max.

SYLVANIA TYPE 1OSP4 (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance..... 1.5 Megohms Max.

NOTES:

1. Brilliance and definition decrease with decreasing anode voltage. In general, anode voltage should not be less than 10,000 volts.
2. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

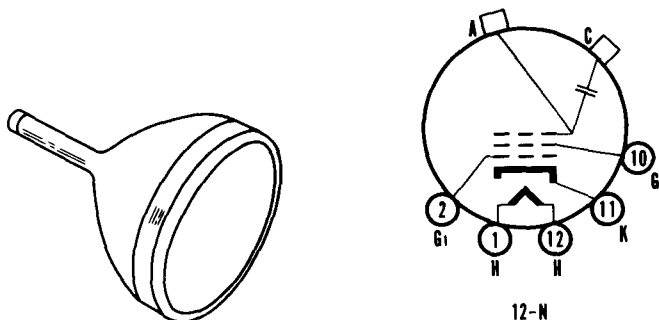
WARNING:

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 12LP4 12LP4A

TELEVISION PICTURE TUBE

12" Direct Viewed	Magnetic Deflection
Round Glass Type	Magnetic Focus
Clear Faceplate	Spherical Faceplate
External Conductive Coating	Double Field Ion Trap
12LP4A has a Gray Filter Glass Faceplate	



CHARACTERISTICS

GENERAL DATA

Focusing Method	Magnetic
Deflecting Method	Magnetic
Deflecting Angle (approx.)	54 Degrees
Phosphor	P4
Fluorescence	White
Persistence	Medium
Faceplate	Clear

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current (approx.)	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes	5 μf
Grid No. 1 to All Other Electrodes	6 μf
External Conductive Coating to Anode ¹	3000 μf Max 750 μf Min
Ion Trap Magnet	External, Double Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter	11 Inches
Bulb Contact (Recessed Small Cavity Cap)	J1-21
Base (Small Shell Duodecal 5-Pin)	B5-57
Basing	12N
Bulb Contact Aligns with Vacant Pin	
Position No. 3	± 10 Degrees

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage	12000 Volts d c
Grid No. 2 Voltage	410 Volts d c
Grid No. 1 Voltage	
Negative Bias Value	125 Volts d c
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds	410 Volts
After Equipment Warm-up Period	140 Volts
Heater Positive with Respect to Cathode	140 Volts

12LP4, 12LP4A (Cont'd)

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	11000 Volts d c
Grid No. 2 Voltage.....	250 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-27 to -63 Volts d c
Focusing Coil Current (approx.) ³	110 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gaussess

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max
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NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 106 or equivalent three and one quarter inches from reference line, bias adjusted to 20 foot lamberts on a 7½ x 10 inch picture area.

12LP4A

The Sylvania Type 12LP4A is identical to Type 12LP4 except for having the gray filter glass faceplate.

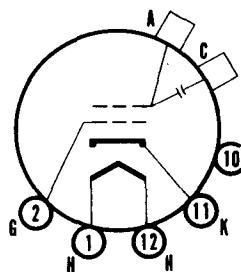
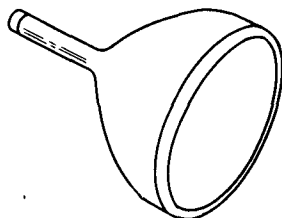
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 12VP4 12VP4A

TELEVISION PICTURE TUBE

12" Direct Viewed	Magnetic Deflection
Round Glass Type	Magnetic Focus
Clear Faceplate	Spherical Faceplate
External Conductive Coating	Double Field Ion Trap
12VP4A has a Gray Filter Glass Faceplate	



12-6

12VP4, 12VP4A (Cont'd)

CHARACTERISTICS

GENERAL DATA

Focusing Method	Magnetic
Deflecting Method	Magnetic
Deflecting Angle (approx.)	55 Degrees
Phosphor	P4
Fluorescence	White
Persistence	Medium
Faceplate	Clear
Light Transmittance (approx.)	66 Percent

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current (approx.)	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes	5 μf
Grid to All Other Electrodes	6 μf
External Conductive Coating to Anode	3000 μf Max
	750 μf Min
Ion Trap Magnet	External, Double Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter	11 Inches
Bulb Contact (Recessed Small Cavity Cap)	J1-21
Base (Small Shell Duodecal 5-Pin)	B5-57
Basing	12G

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage	12000 Volts d c
Grid Voltage	
Negative Bias Value	125 Volts d c
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds	410 Volts
After Equipment Warm-up Period	125 Volts
Heater Positive with Respect to Cathode	125 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage	11000 Volts d c
Grid Voltage Required for Cutoff ²	-33 to -77 Volts d c
Ion Trap Magnet Strength (approx.)	35 Gauss

CIRCUIT VALUES

Grid Circuit Resistance	1.5 Megohms
	Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.

12VP4A

The Sylvania Type 12VP4A is identical to Type 12VP4 except for having the gray filter glass faceplate.

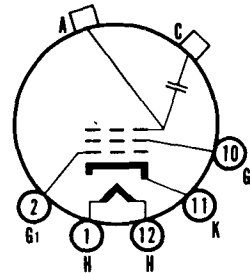
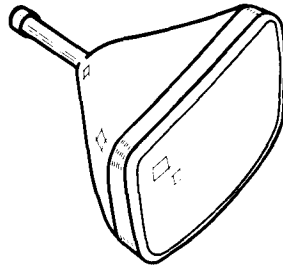
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 14BP4

TELEVISION PICTURE TUBE

14" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



12-N

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	
Horizontal.....	70 Degrees
Diagonal.....	65 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	70 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.).....	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	2000 $\mu\mu\text{f}$ Max
	500 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	8 ² / ₃₂ x 11 ⁹ / ₁₆ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	125 Volts
Heater Positive with Respect to Cathode.....	125 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	11000 Volts d c
Grid No. 2 Voltage.....	250 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-27 to -63 Volts d c
Focusing Coil Current (approx.) ³	110 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

14BP4 (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance..... 1.5 Megohms
Max

NOTES:

- External conductive coating must be grounded.
- Visual extinction of undeflected focused spot.
- For JETEC focusing coil 106 or equivalent three and one quarter inch from reference line, bias adjusted to 20 foot lamberts on a $8\frac{21}{32} \times 11\frac{1}{16}$ inch picture area.

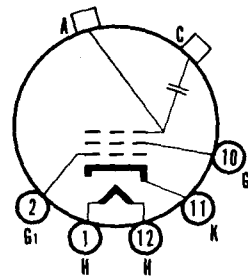
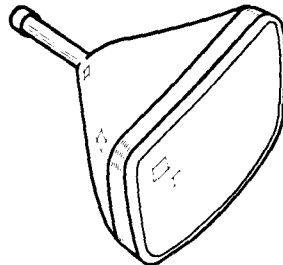
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 14CP4

TELEVISION PICTURE TUBE

14" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



12-N

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	2000 $\mu\mu\text{f}$ Max
	750 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Single Field Type

14CP4 (Cont'd)

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	8½ x 11¾	Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21	
Base (Small Shell Duodecal 5-Pin).....	B5-57	
Basing.....	12N	
Bulb Contact Aligns with Vacant Pin		
Position No. 6.....	±30	Degrees

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000	Volts d c
Grid No. 2 Voltage.....	410	Volts d c
Grid No. 1 Voltage		
Negative Bias Value.....	125	Volts d c
Positive Bias Value.....	0	Volts d c
Positive Peak Value.....	2	Volts
Peak Heater-Cathode Voltage		
Heater Negative with Respect to Cathode		
During Warm-up Period Not to Exceed 15 Seconds.....	410	Volts
After Equipment Warm-up Period.....	150	Volts
Heater Positive with Respect to Cathode.....	150	Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000	Volts d c
Grid No. 2 Voltage.....	300	Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77	Volts d c
Focusing Coil Current (approx.) ³	92	Ma d c
Ion Trap Magnet Strength (approx.).....	32	Gausses

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5	Megohms
		Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 35 foot lamberts on an 8½ x 11¾ inch picture area sharply focused at center of screen.

WARNING

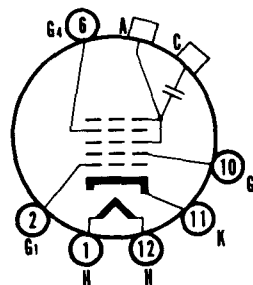
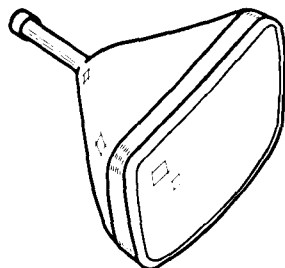
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 14GP4

TELEVISION PICTURE TUBE

14" Direct Viewed
 Rectangular Glass Type
 Gray Filter Glass
 External Conductive Coating

Magnetic Deflection
 Electrostatic Focus
 Spherical Faceplate
 Single Field Ion Trap



12-L

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	2000 $\mu\mu\text{f}$ Max
	750 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	8½ x 11¾ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 6-Pin).....	B6-63
Basing.....	12L

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000 Volts d c
Grid No. 4 Voltage (Focusing Electrode).....	5000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 4 Voltage.....	2170 to 2940 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

14GP4 (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance..... 1.5 Megohms
Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.

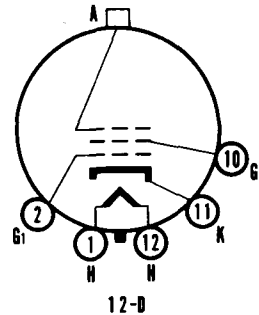
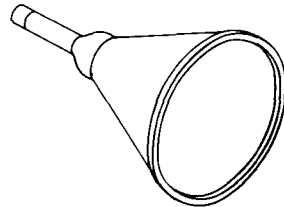
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16AP4 16AP4A

TELEVISION PICTURE TUBE

16" Direct Viewed Magnetic Deflection
Round Metal Type Magnetic Focus
Clear Faceplate Spherical Faceplate
Double Field Ion Trap
16AP4A has Gray Filter Glass Faceplate



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	53 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Clear

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
Ion Trap Magnet.....	External, Double Field Type

MECHANICAL DATA

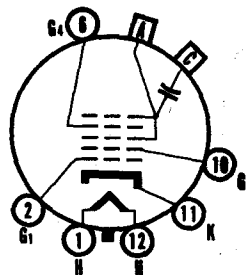
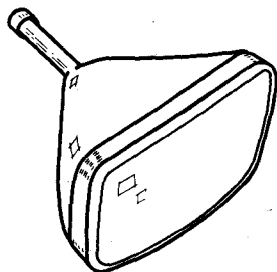
Minimum Useful Screen Diameter.....	14 $\frac{3}{8}$ Inches
Bulb Contact.....	Metal Cone Lip
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12D

SYLVANIA TYPE 14RP4

Silver Screen "85" → 14RP4A

TELEVISION PICTURE TUBE

14" Direct Viewed Magnetic Deflection
 Rectangular Glass Type Electrostatic Focus
 Gray Filter Glass Spherical Faceplate
 External Conductive Coating Single Field Ion Trap
 14RP4A has Aluminized Screen



12-1

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflection Method.....	Magnetic
Deflection Angles (approx.)	
Vertical.....	68 Degrees
Horizontal.....	85 Degrees
Diagonal.....	90 Degrees
Phosphor	P4
14RP4.....	Aluminized P4
14RP4A.....	White
Fluorescence.....	Short to Medium
Persistence.....	Gray Filter Glass
Faceplate.....	78 Percent
Light Transmittance (approx.).....	

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.600 ± 5% Ampere
Direct Interelectrode Capacitance (approx.)	
Cathode to All Other Electrodes.....	5 μf
Grid No. 1 to All Other Electrodes.....	6 μf
External Conductive Coating to Anode.....	1200 μf Max.
	800 μf Min.
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Overall Length.....	14 1/2 ± 1/8 Inches
Minimum Useful Screen Dimensions.....	12 1/2 x 9 1/2 Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodeal 6-Pin).....	B6-63
Basing.....	12L
Weight (approx.).....	8.5 Pounds

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	15,400 Volts d c
Grid No. 4 Voltage.....	-550 to +550 Volts d c
Grid No. 2 Voltage.....	440 Volts d c
Grid No. 1 Voltage	
Negative Bias Value.....	120 Volts d c
Negative Peak Value.....	175 Volts
Positive Bias Value.....	0 Volts
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

SYLVANIA PICTURE TUBES

Issued as a supplement to the manual in Sylvania News for May 1957

14RP4, 14RP4A (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage.....	12,000 Volts d c
Grid No. 4 Voltage for Focus.....	-50 to +350 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-26 to -70 Volts d c
Ion Trap Magnet Strength approx.	40 ± 3 Gausses Min.

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max.
------------------------------------	------------------

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

14RP4A

The Sylvania Type 14RP4A is identical to Type 14RP4 except it has an aluminized screen.

WARNING:

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

16AP4, 16AP4A (Cont'd)

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-33 to -77 Volts d c
Focusing Coil Current (approx.) ²	90 Ma d c
Ion Trap Magnet Current (approx.) ³	200 Ma d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max
------------------------------------	--------------------

NOTES:

1. Visual extinction of undeflected focused spot.
2. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts on a 10 x 13¼ inch picture area.
3. For JETEC ion trap magnet 108 or equivalent.

16AP4A

The Sylvania Type 16AP4A is identical to the Type 16AP4 except for having the gray filter glass faceplate.

WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

16EP4, 16EP4A, 16EP4B (Cont'd)

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff!.....	-33 to -77 Volts d c
Focusing Coil Current (approx.) ²	105 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gausscs

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max
------------------------------------	--------------------

NOTES:

1. Visual extinction of undeflected focused spot.
2. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts on a 10 x 13¼ inch picture area.

16EP4A

The Sylvania Type 16EP4A is identical to the Type 16EP4 except for having a gray filter glass faceplate.

16EP4B

The Sylvania Type 16EP4B is identical to the Type 16EP4 except for having a frosted gray filter glass faceplate.

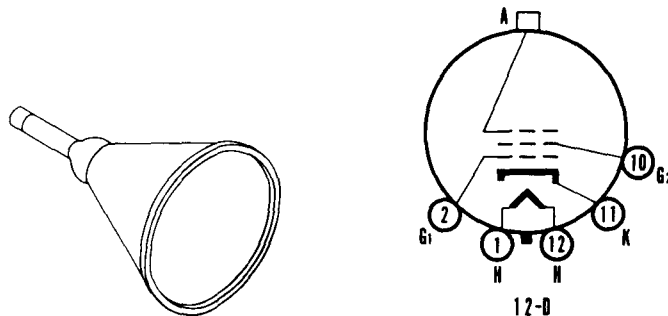
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16GP4 16GP4A 16GP4B

TELEVISION PICTURE TUBE

16" Direct Viewed	Magnetic Deflection
Round Metal Type	Magnetic Focus
Single Field Ion Trap	Spherical Faceplate
	Gray Filter Glass
	16GP4A has Clear Glass Faceplate
	16GP4B has Frosted Gray Filter Glass Faceplate



16GP4, 16GP4A, 16GP4B (Cont'd)

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.).....	
Cathode to All Other Electrodes.....	5 μ f
Grid No. 1 to All Other Electrodes.....	6 μ f
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter.....	14 $\frac{3}{8}$ Inches
Bulb Contact.....	Metal Cone Lip
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12D

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	3 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff.....	-33 to -77 Volts d c
Focusing Coil Current (approx.) ²	100 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max
------------------------------------	--------------------

NOTES:

1. Visual extinction of undeflected focused spot.
2. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts on a 10 x 13 $\frac{1}{2}$ inch picture area.

16GP4A

The Sylvania Type 16GP4A is identical to the Type 16GP4 except for having the clear glass faceplate.

16GP4B

The Sylvania Type 16GP4B is identical to the Type 16GP4 except for having the frosted gray filter glass faceplate.

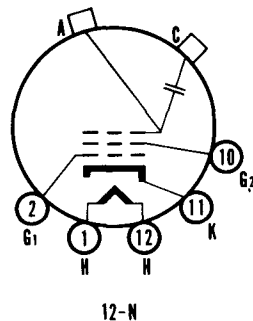
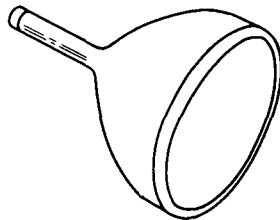
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16JP4 16JP4A

TELEVISION PICTURE TUBE

16" Direct Viewed	Magnetic Deflection
Round Glass Type	Magnetic Focus
Clear Faceplate	Spherical Faceplate
External Conductive Coating	Double Field Ion Trap
16JP4A has Gray Filter	Glass Faceplate



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	60 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Clear
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode.....	2000 $\mu\mu\text{f}$ Max
	750 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Double Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter.....	15 Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to	
Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	125 Volts
Heater Positive with Respect to Cathode.....	125 Volts

16JP4, 16JP4A (Cont'd)

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	11000 Volts d c
Grid No. 2 Voltage.....	250 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-27 to -63 Volts d c
Focusing Coil Current (approx.) ³	115 Ma d c
Ion Trap Magnet Current (approx.) ⁴	120 Ma d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max
------------------------------------	--------------------

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 106 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts.
4. For JETEC ion trap magnet 108 or equivalent.

16JP4A

The Sylvania Type 16JP4A is identical to the Type 16JP4 except for having the gray filter glass faceplate.

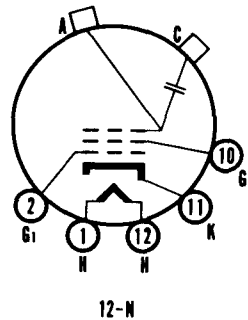
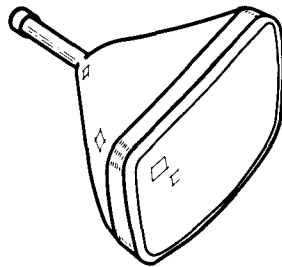
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16KP4 Silver Screen "85" → 16KP4A

TELEVISION PICTURE TUBE

16" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap
16KP4A has an Aluminized Screen	



16KP4, 16KP4A (Cont'd)

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.).....	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	1500 $\mu\mu\text{f}$ Max
	750 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	10 $\frac{1}{8}$ x 13 $\frac{1}{2}$ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Focusing Coil Current (approx.) ³	108 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 20 foot lamberts on a 10 $\frac{1}{8}$ x 13 $\frac{1}{2}$ inch picture area.

16KP4A

The Sylvania Type 16KP4A is identical to the Type 16KP4 except for having an aluminized screen.

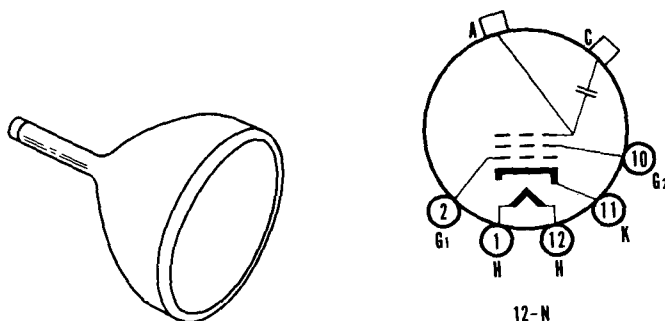
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16LP4 16LP4A

TELEVISION PICTURE TUBE

16" Direct Viewed Magnetic Deflection
 Round Glass Type Magnetic Focus
 Clear Faceplate Spherical Faceplate
 External Conductive Coating Double Field Ion Trap
 16LP4A has a Gray Filter Glass Faceplate



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	52 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Clear
Light Transmittance (approx.).....	70 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μ f
Grid No. 1 to All Other Electrodes.....	6 μ f
External Conductive Coating to Anode ¹	2000 μ f Max
	750 μ f Min
Ion Trap Magnet.....	External, Double Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter.....	14½ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	125 Volts
Heater Positive with Respect to Cathode.....	125 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Focusing Coil Current (approx.) ³	110 Ma d c
Ion Trap Magnet Current (approx.) ⁴	120 Ma d c

16LP4, 16LP4A (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance 1.5 Megohms
Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 106 or equivalent three and one quarter inches from reference line, bias adjusted to 20 foot lamberts on a 14½ x 10¼ inch picture area.
4. For JETEC ion trap magnet 108 or equivalent.

16LP4A

The Sylvania Type 16LP4A is identical to Type 16LP4 except for having the gray filter glass faceplate.

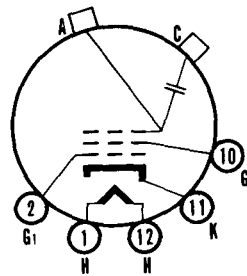
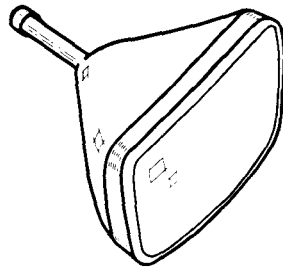
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16RP4

TELEVISION PICTURE TUBE

16" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



12-N

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

16RP4 (Cont'd)

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	1500 $\mu\mu\text{f}$ Max
	750 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	10 $\frac{1}{8}$ x 13 $\frac{1}{2}$ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Focusing Coil Current (approx.) ³	108 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gausses

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms
	Max

NOTES:

- External conductive coating must be grounded.
- Visual extinction of undeflected focused spot.
- For JETEC focusing coil 109 or equivalent three and one half inches from reference line, bias adjusted to 30 foot lamberts on a 10 $\frac{1}{8}$ x 13 $\frac{1}{2}$ inch picture area.

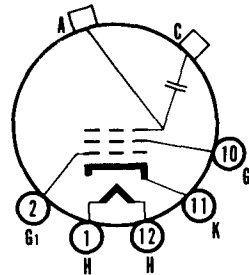
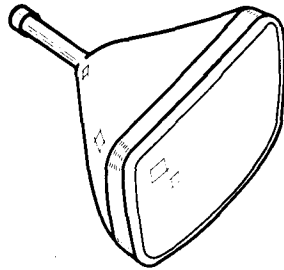
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16TP4

TELEVISION PICTURE TUBE

16" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



12-N

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μ f
Grid No. 1 to All Other Electrodes.....	6 μ f
External Conductive Coating to Anode.....	2000 μ f Max
	750 μ f Min
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	10 $\frac{1}{8}$ x 13 $\frac{1}{2}$ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Focusing Coil Current (approx.) ³	100 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

16TP4 (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance..... 1.5 Megohms
Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focus coil 109 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts on a $10\frac{1}{2} \times 13\frac{1}{2}$ inch picture area.

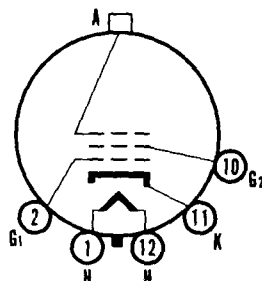
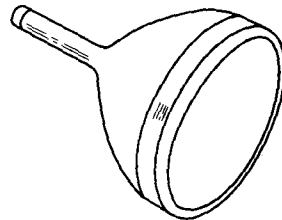
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16WP4 16WP4A

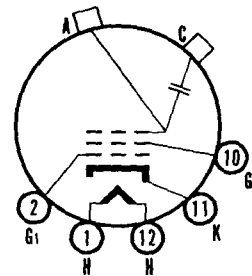
TELEVISION PICTURE TUBE

16" Direct Viewed Magnetic Deflection
Round Glass Type Magnetic Focus
Gray Filter Glass Spherical Faceplate
Double Field Ion Trap
16WP4A has an External Conductive Coating



12-D

16WP4



12-N

16WP4A

16WP4, 16WP4A (Cont'd)

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	70 Degrees
Phosphor.....	
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	70 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 Ampere
Direct Interelectrode Capacitances (approx.).....	
Cathode to All Other Electrodes.....	5 μ f
Grid No. 1 to All Other Electrodes.....	6 μ f
Ion Trap Magnet.....	External, Double Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter.....	14½ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12D

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	125 Volts
Heater Positive with Respect to Cathode.....	125 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	250 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-27 to -63 Volts d c
Focusing Coil Current (approx.) ²	110 Ma d c
Ion Trap Magnet Current (approx.) ³	120 Ma d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max
------------------------------------	--------------------

NOTES:

1. Visual extinction of undeflected focused spot.
2. For JETEC focusing coil 109 or equivalent three and one quarter inches from reference line, bias adjusted to 30 foot lamberts on a 14½ x 10¼ inch picture area.
3. For JETEC ion trap magnet 108 or equivalent.

16WP4A

The Sylvania Type 16WP4A is identical to the Type 16WP4 except for the addition of an external conductive coating which should be grounded.

External Conductive Coating to Anode Capacitance.....	
Maximum.....	1500 μ f
Minimum.....	750 μ f
Basing.....	12N

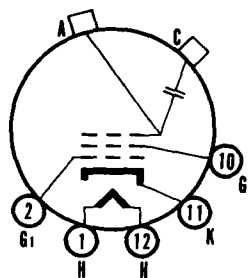
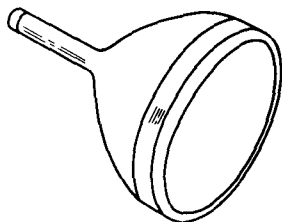
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 16ZP4

TELEVISION PICTURE TUBE

16" Direct Viewed	Magnetic Deflection
Round Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Double Field Ion Trap



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	52 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μmf
Grid No. 1 to All Other Electrodes.....	6 μmf
External Conductive Coating to Anode ¹	1500 μmf Max
	750 μmf Min
Ion Trap Magnet.....	External, Double Field Type

MECHANICAL DATA

Minimum Useful Screen Diameter.....	14½ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	125 Volts
Heater Positive with Respect to Cathode.....	125 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Focusing Coil Current (approx.) ³	110 Ma d c
Ion Trap Magnet Current (approx.) ⁴	120 Ma d c

16ZP4 (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance..... 1.5 Megohms
Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 106 or equivalent three and one quarter inches from reference line, bias adjusted to 30 foot lamberts.
4. For JETEC ion trap magnet 108 or equivalent.

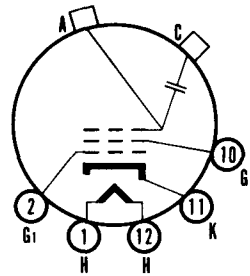
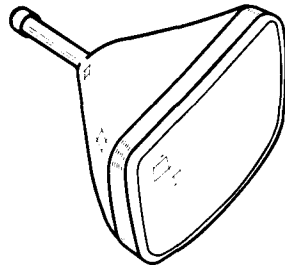
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17AP4

TELEVISION PICTURE TUBE

17" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Magnetic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



12-N

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	72 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μ mf
Grid No. 1 to All Other Electrodes.....	6 μ mf
External Conductive Coating to Anode.....	2000 μ mf Max
Ion Trap Magnet.....	750 μ mf Min
	External, Single Field Type

17AP4 (Cont'd)

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	10 $\frac{3}{4}$ x 14 $\frac{1}{4}$ Inches
Bulb Contact (Recessed Small Cavity Gap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12N

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to	
Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Focusing Coil Current (approx.) ³	115 Ma d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms
	Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of undeflected focused spot.
3. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts on a 10 $\frac{3}{4}$ x 14 $\frac{1}{4}$ inch picture area.

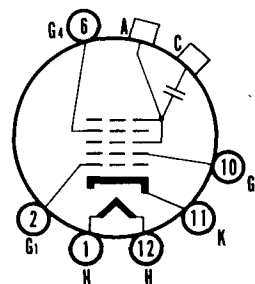
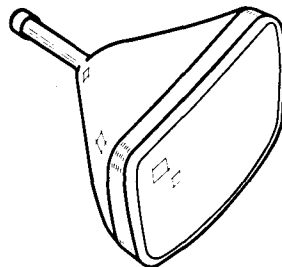
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17AVP4

TELEVISION PICTURE TUBE

17" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Electrostatic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



12-L

17AVP4 (Cont'd)

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.).....	
Horizontal.....	85 Degrees
Diagonal.....	90 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.).....	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	1500 $\mu\mu\text{f}$ Max
	750 $\mu\mu\text{f}$ Min
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Bulb Contact (Recessed Small Cavity Type).....	J1-21
Base (Small Shell Duodecal 6-Pin).....	B6-63
Basing.....	12L

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 4 Voltage (Focusing Electrode).....	-500 to +1000 Volts d c
Grid No. 2 Voltage.....	500 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period Not to Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	180 Volts
Heater Positive with Respect to Cathode.....	180 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12000 Volts d c
Grid No. 4 Voltage.....	-50 to +350 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-28 to -72 Volts d c
Ion Trap Magnet Field Strength (approx.).....	35 Gauss

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms
	Max

NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING

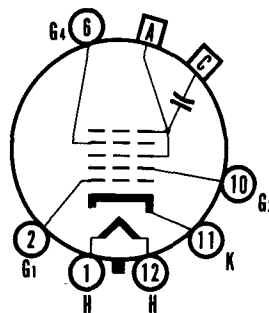
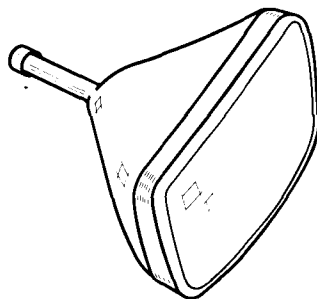
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17AVP4A

Silver Screen "85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Electrostatic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap
Aluminized Screen	



12-L

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflecting Method	Magnetic
Deflecting Angle (approx.)	
Horizontal	85 Degrees
Diagonal	90 Degrees
Phosphor	P4
Fluorescence	White
Persistence	Medium
Faceplate	Gray Filter Glass

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current (approx.)	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes	5 μf
Grid No. 1 to All Other Electrodes	6 μf
External Conductive Coating to Anode	1500 μf Max. 1200 μf Min.
Ion Trap Magnet	External, Single Field Type

MECHANICAL DATA

Bulb Contact (Recessed Small Cavity Type)	J1-21
Base (Small Shell Duodecal 6-Pin)	B6-63
Basing	12L

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage	16,000 Volts d c
Grid No. 4 Voltage (Focusing Electrode)	-500 to +1000 Volts d c
Grid No. 2 Voltage	500 Volts d c
Grid No. 1 Voltage	
Negative Bias Value	125 Volts d c
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period not to	
Exceed 15 Seconds	410 Volts
After Equipment Warm-up Period	180 Volts
Heater Positive with Respect to Cathode	180 Volts

17AVP4A (Cont'd)

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	12,000 Volts d c
Grid No. 4 Voltage.....	-50 to +350 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff.....	-28 to -72 Volts d c
Ion Trap Magnet Strength (approx.).....	35 Gauss

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max.
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NOTES:

1. External conductive coating must be grounded.
2. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING:

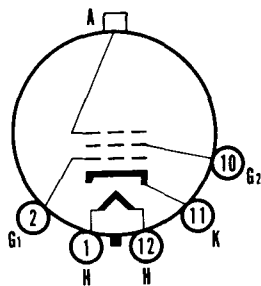
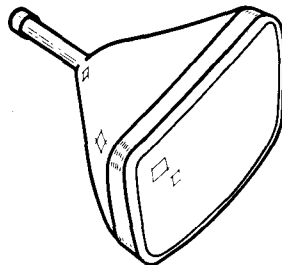
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

**SYLVANIA TYPE 17BP4
17BP4A
Silver Screen "85" → 17BP4B
17BP4C**

TELEVISION PICTURE TUBE

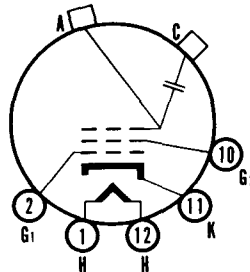
17" Direct Viewed Magnetic Deflection
 Rectangular Glass Type Magnetic Focus
 Gray Filter Glass Spherical Faceplate
 Single Field Ion Trap

17BP4A has an External Conductive Coating
 17BP4B has an External Conductive Coating and
 an Aluminized Screen
 17BP4C has an External Conductive Coating and
 a Frosted Faceplate



12-D

17BP4



12-N

17BP4A
 17BP4B
 17BP4C

CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	65 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	72 Percent

17BP4, 17BP4A, 17BP4B, 17BP4C (Cont'd)

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μ f
Grid No. 1 to All Other Electrodes.....	6 μ f
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	10 $\frac{3}{4}$ x 14 $\frac{1}{4}$ Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12D

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to	
Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	150 Volts
Heater Positive with Respect to Cathode.....	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-28 to -72 Volts d c
Focusing Coil Current (approx.) ²	110 Ma d c
Ion Trap Magnet Strength (approx.).....	30 Gauss

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms
	Max

NOTES:

1. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.
2. For JET EC focusing coil 109 or equivalent three and one quarter inches from reference line, bias adjusted to 20 foot lamberts on a 10 $\frac{3}{4}$ x 14 $\frac{1}{4}$ inch picture area.

17BP4A

The Sylvania Type 17BP4A is identical to the Type 17BP4 except for having an External Conductive Coating which must be grounded.

External Conductive Coating to Anode Capacitance	
Maximum.....	1500 μ f
Minimum.....	750 μ f
Basing.....	12N

17BP4B

The Sylvania Type 17BP4B is identical to the Type 17BP4A except for having an aluminized screen.

17BP4C

The Sylvania Type 17BP4C is identical to the Type 17BP4 except for having an External Conductive Coating which must be grounded and a frosted faceplate.

External Conductive Coating to Anode Capacitance	
Maximum.....	1500 μ f
Minimum.....	750 μ f
Basing.....	12N

WARNING

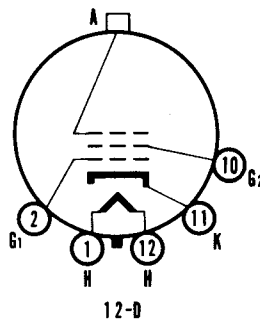
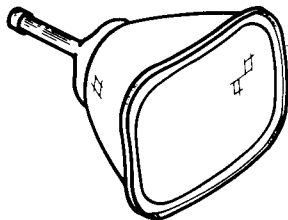
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17CP4

TELEVISION PICTURE TUBE

17" Direct Viewed
 Rectangular Metal Type
 Frosted Gray Filter Glass
 Single Field Ion Trap

Magnetic Deflection
 Magnetic Focus
 Spherical Faceplate



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Magnetic
Deflecting Method.....	Magnetic
Deflecting Angle (approx.)	
Horizontal.....	66 Degrees
Diagonal.....	70 Degrees
Phosphor.....	P4
Fluorescence.....	White
Persistence.....	Medium
Faceplate.....	Frosted Gray Filter Glass
Light Transmittance (approx.).....	66 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current (approx.).....	0.6 Ampere
Direct Inter-electrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes.....	6 $\mu\mu\text{f}$
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions.....	10 $\frac{1}{16}$ x 14 $\frac{3}{8}$ Inches
Bulb Contact.....	Metal Cone Lip
Base (Small Shell Duodecal 5-Pin).....	B5-57
Basing.....	12D

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage.....	16000 Volts d c
Grid No. 2 Voltage.....	410 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	125 Volts d c
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to	
Exceed 15 Seconds.....	410 Volts
After Equipment Warm-up Period.....	180 Volts
Heater Positive with Respect to Cathode.....	180 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage.....	14000 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-33 to -77 Volts d c
Focusing Coil Current (approx.) ²	104 Ma d c
Ion Trap Magnet Strength (approx.).....	50 Gauss

17CP4 (Cont'd)

CIRCUIT VALUES

Grid No. 1 Circuit Resistance 1.5 Megohms
Max

NOTES:

1. Visual extinction of undeflected focused spot.
2. For JETEC focusing coil 109 or equivalent three inches from reference line, bias adjusted to 30 foot lamberts on a $14\frac{3}{8} \times 10\frac{1}{16}$ inch picture area.

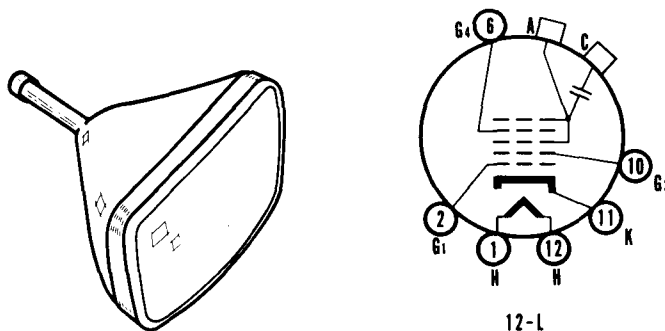
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17FP4

TELEVISION PICTURE TUBE

17" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Electrostatic Focus
Gray Filter Glass	Spherical Faceplate
External Conductive Coating	Single Field Ion Trap



CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflecting Method	Magnetic
Deflecting Angle (approx.)	
Horizontal	65 Degrees
Diagonal	70 Degrees
Phosphor	P4
Fluorescence	White
Persistence	Medium
Faceplate	Gray Filter Glass
Light Transmittance (approx.)	66 Percent

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current (approx.)	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes	6 $\mu\mu\text{f}$
External Conductive Coating to Anode ¹	750 $\mu\mu\text{f}$ Max
	500 $\mu\mu\text{f}$ Min
Ion Trap Magnet	External, Single Field Type

17FP4 (Cont'd)

MECHANICAL DATA

Minimum Useful Screen Dimensions	10 $\frac{3}{4}$ x 14 $\frac{1}{4}$ Inches
Bulb Contact (Recessed Small Cavity Cap)	J1-21
Base (Small Shell Duodecal 6-Pin)	B6-63
Basing	12L

RATINGS

MAXIMUM RATINGS (Design Center Values)

Anode Voltage	18000 Volts d c
Grid No. 4 Voltage (Focusing Electrode)	5000 Volts d c
Grid No. 2 Voltage	410 Volts d c
Grid No. 1 Voltage	
Negative Bias Value	125 Volts d c
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds	410 Volts
After Equipment Warm-up Period	150 Volts
Heater Positive with Respect to Cathode	150 Volts

RECOMMENDED OPERATING CONDITIONS

Anode Voltage	16000 Volts d c
Grid No. 3 Voltage	3100 to 4100 Volts d c
Grid No. 2 Voltage	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-33 to -77 Volts d c
Ion Trap Magnet Strength (approx.)	35 Gauss

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max
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NOTES:

- External conductive coating must be grounded.
- Visual extinction of undeflected focused spot.

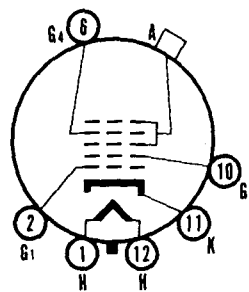
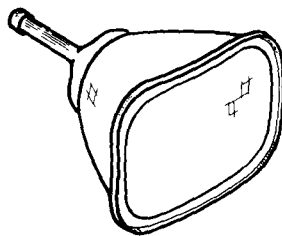
WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17GP4

TELEVISION PICTURE TUBE

17" Direct Viewed	Magnetic Deflection
Rectangular Metal Type	Electrostatic Focus
Frosted Gray Filter Glass	Spherical Faceplate
Single Field Ion Trap	



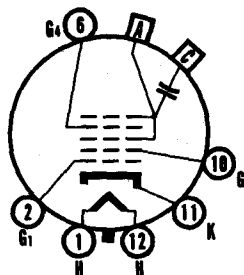
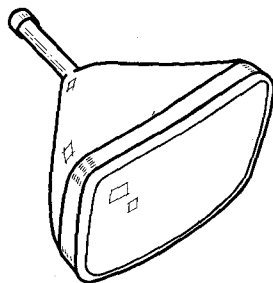
12-M

SYLVANIA TYPE 17BJP4

"Silver Screen 85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Magnetic Deflection
Rectangular Glass Type	Electrostatic Focus
Spherical Faceplate	No Ion Trap
Gray Filter Glass	External Conductive Coating
Aluminized Screen	



12-L

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflection Method	Magnetic
Deflection Angles (approx.)	
Horizontal	85 Degrees
Diagonal	90 Degrees
Phosphor	Aluminized P4
Fluorescence	White
Persistence	Short to Medium
Faceplate	Gray Filter Glass
Light Transmittance (approx.)	74 Percent

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 5% Ampere
Heater Warm-up Time ¹	11 Seconds
Direct Interelectrode Capacitance (approx.)	
Cathode to All Other Electrodes	5 μμf
Grid No. 1 to All Other Electrodes	6 μμf
External Conductive Coating to Anode ²	1500 μμf Max. 1000 μμf Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions	14 ¹ / ₁₆ x 11 ¹ / ₁₆ Inches
Nominal Over-all Length	14 ¹ / ₁₆ Inches
Minimum Useful Screen Area	149 Square Inches
Bulb Contact (Recessed Small Cavity Cap)	J1-21
Base (Small Shell Duodecal 6-Pin)	B6-63
Basing	12L

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage	17,600 Volts d c
Grid No. 4 Voltage	
(Focusing Electrode)	-550 to +1100 Volts d c
Grid No. 2 Voltage	550 Volts d c
Grid No. 1 Voltage	
Negative Bias Value	155 Volts d c
Negative Peak Value	220 Volts
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed	
15 Seconds	450 Volts
After Equipment Warm-up Period	200 Volts
Heater Positive with Respect to Cathode	200 Volts

SYLVANIA PICTURE TUBES

SYLVANIA TYPE 17BJP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage	14,000 Volts d c
Grid No. 4 Voltage	-50 to +300 Volts d c
Grid No. 2 Voltage	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ³	-28 to -72 Volts d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
-------------------------------------	------------------

NOTES:

1. Heater Warm-up Time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times rated heater voltage divided by rated heater current.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING:

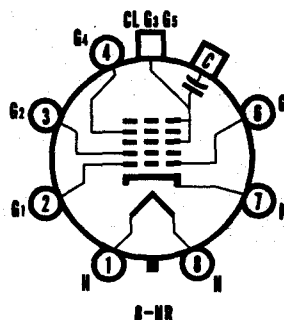
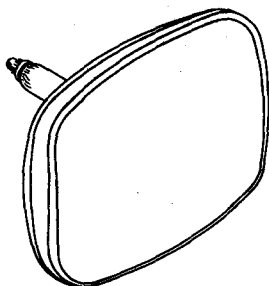
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17BRP4

Silver Screen "85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Aluminized Screen
Rectangular Glass Type	Electrostatic Focus
Lightweight Tube	110° Magnetic Deflection
Spherical Face Plate	1 1/8" Neck Diameter
Gray Filter Glass	Single Field Ion Trap
External Conductive Coating	



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflection Method.....	Magnetic
Deflection Angles (approx.)	
Horizontal.....	105 Degrees
Diagonal.....	110 Degrees
Vertical.....	87 Degrees
Phosphor.....	Aluminized P4
Fluorescence.....	White
Persistence.....	Short to Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	77 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 ± 5% Ampere
Heater Warm-up Time ¹	11 Seconds
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μf
Grid No. 1 to All Other Electrodes.....	6 μf
External Conductive Coating to Anode ²	1500 μf Max. 1000 μf Min.
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured).....	14 3/4 x 11 1/4
Nominal Overall Length.....	12 3/4 Inches
Minimum Useful Screen Area.....	155 Sq. Inches
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base.....	B7-183
Basing.....	8HR
Weight.....	10 1/2 Pounds Approx.

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	16,500 Volts d c
Grid No. 4 Voltage (Focusing Electrode).....	-550 to +1100 Volts d c
Grid No. 2 Voltage.....	550 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	154 Volts d c
Negative Peak Value.....	220 Volts
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to	
Exceed 15 Seconds.....	450 Volts
After Equipment Warm-up Period.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

SYLVANIA TYPE 17BRP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage	14,000 Volts d c
Grid No. 4 Voltage for Focus	0 to 500 Volts d c
Grid No. 4 Current	-15 to +25 μ a d c
Grid No. 2 Voltage	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-28 to -72 Volts d c
Ion Trap Field Intensity ⁴	37 Gaussess Min.

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
Grid No. 2 Circuit Resistance	0.1 Megohm Min.
Grid No. 4 Circuit Resistance	0.1 Megohm Min.

NOTES:

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times rated heater voltage divided by rated heater current.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.
4. For a Heppner PM ion trap magnet or equivalent located in optimum position and rotated to give maximum brightness.

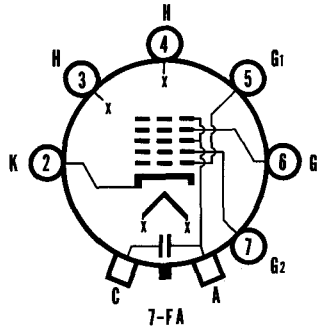
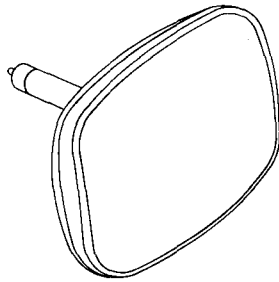
WARNING:

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17BVP4

TELEVISION PICTURE TUBE

17" Direct Viewed	Aluminized Screen
Rectangular Glass Type	Electrostatic Focus
Lightweight Tube	110° Magnetic Deflection
Spherical Faceplate	1 1/8" Neck Diameter
Gray Filter Glass	Single Field Ion Trap
External Conductive Coating	



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflection Method.....	Magnetic
Deflection Angles (approx.)	
Horizontal.....	105 Degrees
Diagonal.....	110 Degrees
Vertical.....	87 Degrees
Phosphor.....	Aluminized P4
Fluorescence.....	White
Persistence.....	Short to Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	79 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 ± 5% Ampere
Heater Warm-up Time ¹	11 Seconds
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μmf
Grid No. 1 to All Other Electrodes.....	6 μmf
External Conductive Coating to Anode ²	1500 μmf Max. 1000 μmf Min.
Ion Trap Magnet.....	External, Single Field Type

MECHANICAL DATA

Overall Length.....	13 1/4 ± 5/16 Inches
Minimum Useful Screen Dimensions.....	14 3/4 x 11 1/8 Inches
Bulb.....	J132 1/2 A1
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base.....	B6-185
Basing.....	7FA
Weight (approx.).....	10 Pounds

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	17,600 Volts d c
Grid No. 4 Voltage.....	-550 to +1100 Volts d c
Grid No. 2 Voltage.....	550 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	154 Volts d c
Negative Peak Value.....	220 Volts
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage.....	
Heater Negative with Respect to Cathode.....	
During Warm-up Period not to Exceed.....	
15 Seconds.....	450 Volts
After Equipment Warm-up Period.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

SYLVANIA PICTURE TUBES

Issued as a supplement to the manual in Sylvania News for March 1957

17BVP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage.....	14,000 Volts d c
Grid No. 4 Voltage for Focus.....	-50 to +350 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff.....	-35 to -72 Volts d c
Ion Trap Magnet Strength.....	33 ± 3 Gaussess Min.

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max.
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NOTES:

1. Heater warm-up time is the time required for the voltage across the heater terminals to increase to 5.0 volts in the JETEC test circuit, with E = 25 volts and series R = 31.5 ohms.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING:

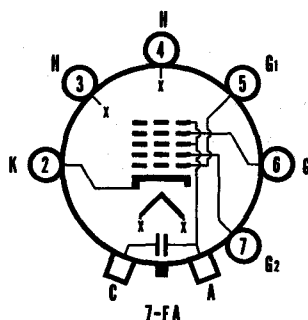
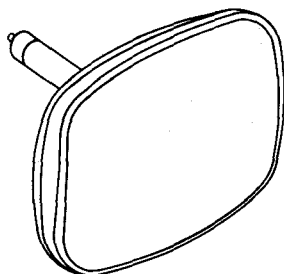
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17BWP4

Silver Screen "85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Aluminized Screen
Rectangular Glass Type	Electrostatic Focus
Lightweight Tube	110° Magnetic Deflection
Spherical Faceplate	1 1/8" Neck Diameter
Gray Filter Glass	No Ion Trap
External Conductive Coating	



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflection Method.....	Magnetic
Deflection Angles (approx.)	
Horizontal.....	105 Degrees
Diagonal.....	110 Degrees
Vertical.....	87 Degrees
Phosphor.....	Aluminized P4
Fluorescence.....	White
Persistence.....	Short to Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	79 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 ± 5% Ampere
Heater Warm-up Time ¹	11 Seconds
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μf
Grid No. 1 to All Other Electrodes.....	6 μf
External Conductive Coating to Anode ²	1500 μf Max. 1000 μf Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured).....	14 3/4 x 11 1/2 Inches
Nominal Overall Length.....	12 1/2 Inches
Minimum Useful Screen Area.....	155 Sq. Inches
Bulb.....	J132 1/2A1
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base.....	B6-185
Basing.....	7FA
Weight (approx.).....	10 Pounds

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	17,600 Volts d c
Grid No. 4 Voltage (Focusing Electrode).....	-550 to +1100 Volts d c
Grid No. 2 Voltage.....	550 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	154 Volts d c
Negative Peak Value.....	220 Volts
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed	
15 Seconds.....	450 Volts
After Equipment Warm-up Period.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

SYLVANIA PICTURE TUBES

SYLVANIA TYPE 17BWP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage.....	14,000 Volts d c
Grid No. 4 Voltage for Focus.....	-50 to -350 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-35 to -72 Volts d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max.
------------------------------------	------------------

NOTES:

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING:

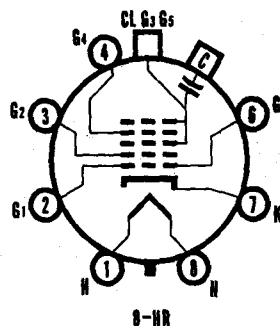
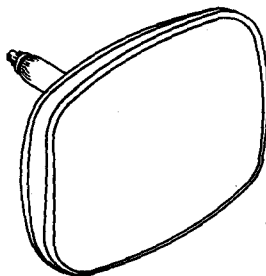
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17BZP4

Silver Screen "85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Aluminized Screen
Rectangular Glass Type	Electrostatic Focus
Lightweight Tube	110° Magnetic Deflection
Spherical Faceplate	1 1/8" Neck Diameter
Gray Filter Glass	No Ion Trap
External Conductive Coating	



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflection Method.....	Magnetic
Deflection Angles (approx.)	
Horizontal.....	105 Degrees
Diagonal.....	110 Degrees
Vertical.....	87 Degrees
Phosphor.....	Aluminized P4
Fluorescence.....	White
Persistence.....	Short to Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	77 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 ± 5% Amperes
Heater Warm-up Time.....	11 Seconds
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 µf
Grid No. 1 to All Other Electrodes.....	6 µf
External Conductive Coating to Anode.....	1500 µf Max. 1000 µf Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured).....	14 3/4 x 11 1/2 Inches
Nominal Overall Length.....	12 3/4 Inches
Minimum Useful Screen Area.....	155 Square Inches
Bulb.....	J132 1/2-A1 or equivalent
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base.....	B7-183
Basing.....	8HR
Weight (approx.).....	10 Pounds

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	17,600 Volts d c
Grid No. 4 Voltage (Focusing Electrode).....	-550 to +1100 Volts d c
Grid No. 2 Voltage.....	550 Volts d c
Grid No. 1 Voltage.....	
Negative Bias Value.....	154 Volts d c
Negative Peak Value.....	220 Volts
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode During Warm-up Period Not to Exceed 15 Seconds.....	450 Volts
After Equipment Warm-up Period.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

SYLVANIA PICTURE TUBES

SYLVANIA TYPE 17BZP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage.....	14,000 Volts d c
Grid No. 4 Voltage for Focus.....	0 to 400 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ²	-35 to -72 Volts d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max.
------------------------------------	------------------

NOTES:

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING:

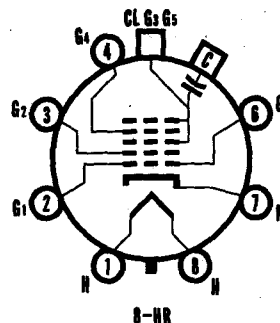
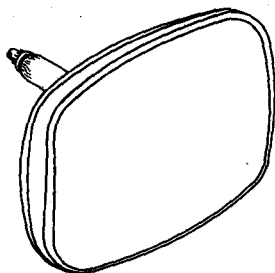
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

SYLVANIA TYPE 17CAP4

Silver Screen "85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Aluminized Screen
Rectangular Glass Type	Electrostatic Focus
Lightweight Tube	110° Magnetic Deflection
Spherical Faceplate	1 1/8" Neck Diameter
Gray Filter Glass	No Ion Trap
	External Conductive Coating



CHARACTERISTICS

GENERAL DATA

Focusing Method.....	Electrostatic
Deflection Method.....	Magnetic
Deflection Angles (approx.)	
Horizontal.....	105 Degrees
Diagonal.....	110 Degrees
Vertical.....	87 Degrees
Phosphor.....	Aluminized P4
Fluorescence.....	White
Persistence.....	Short to Medium
Faceplate.....	Gray Filter Glass
Light Transmittance (approx.).....	79 Percent

ELECTRICAL DATA

Heater Voltage.....	6.3 Volts
Heater Current.....	0.6 ± 5% Ampera
Heater Warm-up Time ¹	11 Seconds
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes.....	5 μf
Grid No. 1 to All Other Electrodes.....	6 μf
External Conductive Coating to Anode ²	1500 μf Max. 1000 μf Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured).....	14 3/4 x 11 1/8 Inches
Nominal Overall Length.....	12 9/16 Inches
Minimum Useful Screen Area.....	155 Sq. Inches
Bulb.....	J132 1/2 A1 or Equivalent
Bulb Contact (Recessed Small Cavity Cap).....	J1-21
Base.....	B7-183
Basing.....	8HR
Weight.....	10 Pounds Approx.

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage.....	17,600 Volts d c
Grid No. 4 Voltage (Focusing Electrode).....	-550 to +1100 Volts d c
Grid No. 2 Voltage.....	550 Volts d c
Grid No. 1 Voltage	
Negative Bias Value.....	154 Volts d c
Negative Peak Value.....	220 Volts
Positive Bias Value.....	0 Volts d c
Positive Peak Value.....	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to	
Exceed 15 Seconds.....	450 Volts
After Equipment Warm-up Period.....	200 Volts
Heater Positive with Respect to Cathode.....	200 Volts

SYLVANIA TYPE 17CAP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode.....	14,000 Volts d c
Grid No. 4 Voltage for Focus.....	-50 to +350 Volts d c
Grid No. 2 Voltage.....	300 Volts d c
Grid No. 1 Voltage Required for Cutoff ¹	-35 to -72 Volts d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance.....	1.5 Megohms Max.
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NOTES:

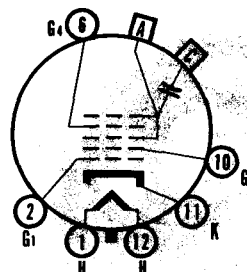
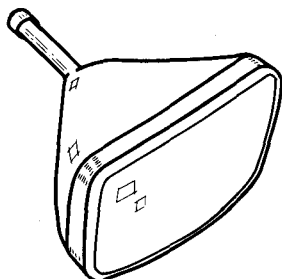
1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times rated heater voltage divided by rated heater current.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

SYLVANIA TYPE 17CFP4

Silver Screen "85"

TELEVISION PICTURE TUBE

17" Direct Viewed	Aluminized Screen
Rectangular Glass Type	Electrostatic Focus
Lightweight Tube	90° Magnetic Deflection
Spherical Faceplate	Short Neck Tube
Gray Filter Glass	No Ion Trap
External Conductive Coating	



12-L

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflection Method	Magnetic
Deflection Angles (approx.)	
Horizontal	85 Degrees
Diagonal	90 Degrees
Phosphor	Aluminized P4
Fluorescence	White
Persistence	Short to Medium
Faceplate	Gray Filter Glass
Light Transmittance (approx.)	77 Percent

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 5% Ampere
Heater Warm-up Time ¹	11 Seconds
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes	5 μmf
Grid No. 1 to All Other Electrodes	6 μmf
External Conductive Coating to Anode ²	1500 μmf Max. 1200 μmf Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured)	14 3/4 x 11 1/2 Inches
Nominal Overall Length	15 Inches
Minimum Useful Screen Area	155 Square Inches
Bulb Contact (Recessed Small Cavity Cap)	J1-21
Base	B6-63
Basing	12L
Weight (approx.)	10 1/2 Pounds

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage	17,600 Volts d c
Grid No. 4 Voltage (Focusing Electrode)	-550 to +1100 Volts d c
Grid No. 2 Voltage	550 Volts d c
Grid No. 1 Voltage	
Negative Bias Value	155 Volts d c
Negative Peak Value	220 Volts
Positive Bias Value	0 Volts d c
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed	
15 Seconds	450 Volts
After Equipment Warm-up Period	200 Volts
Heater Positive with Respect to Cathode	200 Volts

SYLVANIA PICTURE TUBES

Issued as a supplement to the manual in Sylvania News for February 1958

17CFP4 (Cont'd)

TYPICAL OPERATING CONDITIONS

Anode Voltage	14,000 Volts d c
Grid No. 4 Voltage for Focus	-50 to +350 Volts d c
Grid No. 2 Voltage	300 Volts d c
Grid No. 1 Voltage Required for Cutoff*	-35 to -72 Volts d c

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
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NOTES:

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times rated heater voltage divided by rated heater current.
2. External conductive coating must be grounded.
3. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

WARNING:

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.