

SECTION VII

PARTS LIST

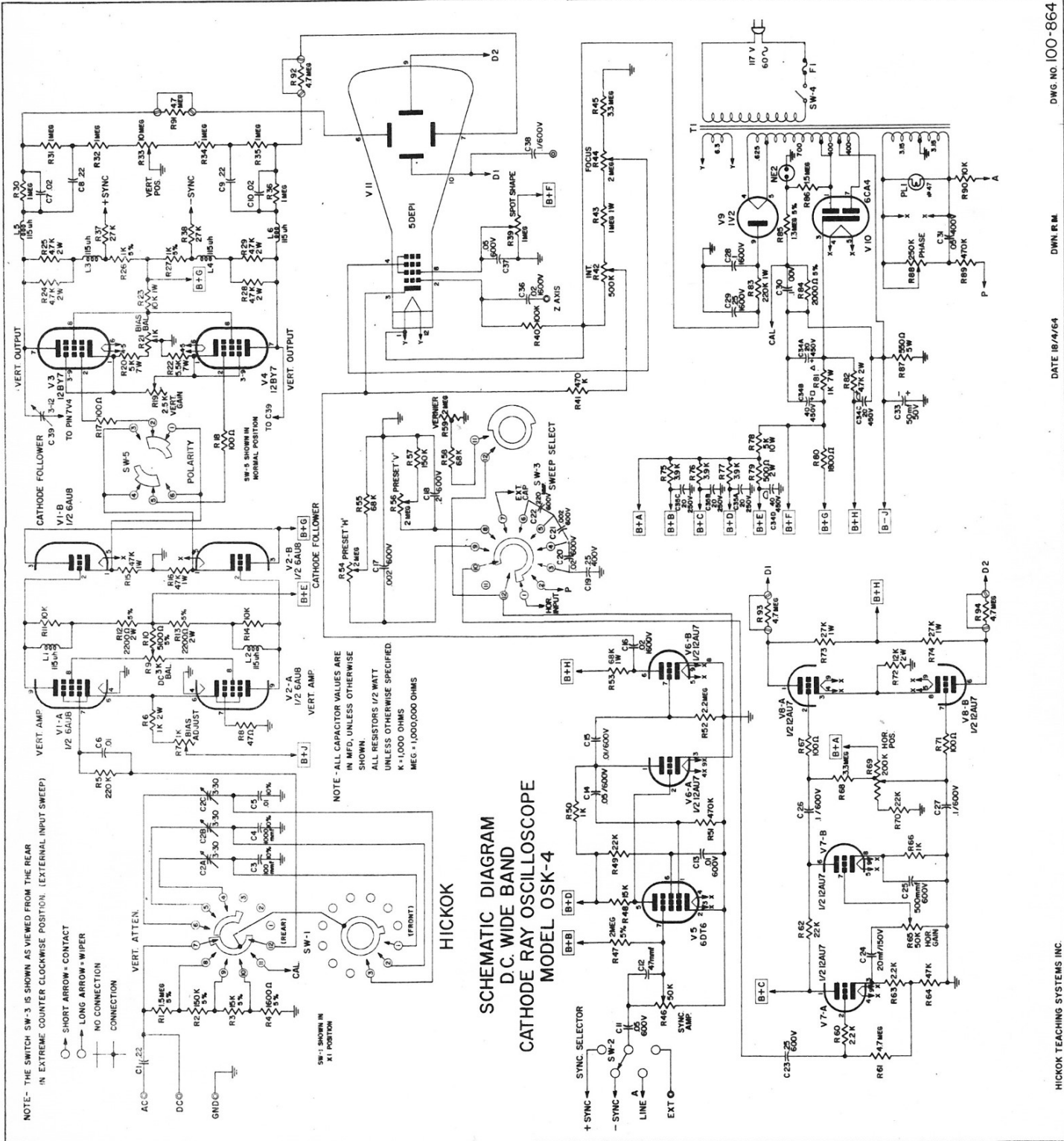
The components listed in this parts list are those that have an electrical bearing on the operation of the OSK-4 oscilloscope. When ordering replacement parts, be sure to list the model number of the unit, serial number as well as the part number, symbol and complete description.

SYMBOL	PART NO	DESCRIPTION
C1	112-6-82	CAPACITOR, PAPER, .22 uf, 600 VDC
C2A, B, C	112-6-81	CAPACITOR, TRIMMER, TRIPLE, 2.7-30 pf, insulated
C3	112-10-97	CAPACITOR, CERAMIC DISC, 100 pf, 1000 VDC, $\pm 10\%$
C4	112-10-96	CAPACITOR, CERAMIC DISC, 1000 pf, 1000 VDC, $\pm 10\%$
C5	112-6-83	CAPACITOR, CERAMIC DISC, .01 uf, 600VDC, $\pm 10\%$
C6		Same as C5
C7	112-12-23	CAPACITOR, PAPER, .02 uf, 600 VDC
C8		Same as C1
C9		Same as C1
C10		Same as C7
C11	112-1-14	CAPACITOR, PAPER, .05 uf, 600 VDC
C12	112-10-35	CAPACITOR, CERAMIC DISC, 47 pf, 600 VDC GMV
C13	112-6-54	CAPACITOR, PAPER, .01 uf, 600VDC
C14		Same as C11
C15		Same as C13
C16	112-10-90	CAPACITOR, CERAMIC DISC, .02 uf, 1.6KVDC GMV
C17	112-10-86	CAPACITOR, CERAMIC DISC, .002 uf, 600 VDC GMV
C18	112-10-91	CAPACITOR, PAPER, .2 uf, 400V
C19	112-10-46	CAPACITOR, PAPER TUBULAR, .25 uf, 400 VDC
C20	112-10-73	CAPACITOR, CERAMIC DISC, .02 uf, 600 VDC
C21		Same as C17
C22	112-10-65	CAPACITOR, CERAMIC DISC, 220 pf, 600 VDC
C23		Same as C19
C24	112-10-87	CAPACITOR, ELECTROLYTIC, 20 uf, 150 VDC
C25	112-6-41	CAPACITOR, CERAMIC DISC, 500 pf, 600 VDC, $\pm 20\%$
C26	112-10-43	CAPACITOR, PAPER, .1 uf, 400 V
C27		Same as C26
C28	112-10-50	CAPACITOR, PAPER, .1 uf, 1600 VDC
C29	112-6-48	CAPACITOR, PAPER, .25 uf, 1600 V
C30		Same as C26
C31		Same as C11
C33	112-5-12	CAPACITOR, ELECTROLYTIC, 50 uf, 50 VDC
C34A, B, C, D	112-10-93	CAPACITOR, ELECTROLYTIC, 40 x 40 x 20 x 20 uf, 450 VDC
C35A, B, C	112-10-92	CAPACITOR, ELECTROLYTIC, 20 x 20 x 20 uf, 250V
C36		Same as C16
C37		Same as C11
C38		Same as C26
C39	112-1-12	CAPACITOR, TRIMMER, 3-12 pf

SYMBOL	PART NO.	DESCRIPTION
F1	125-1-3	FUSE, 3AG, 2A
J1	103-9-11	BINDING POST , 5 way, black
J2		Same as J1
J3		Same as J1
J4		Same as J1
J5		Same as J1
J6		Same as J1
J7		Same as J1
J8		Same as J1
L1	122-4-88	PEAKING COIL, 115 uh on 100K, 1/2W, 10%, RESISTOR
L2		Same as L1
L3	122-4-89	PEAKING COIL, 115 uh
L4		Same as L3
L5		Same as L3
L6		Same as L3
PL1	125-2-5	LAMP 6-8V, GE #47, BAYONET BASE
R1	181-14-155	RESISTOR, FIXED COMPOSITION, 1.5 meg., 1/2W, 5%
R2	181-14-154	RESISTOR, FIXED COMPOSITION, 150K, 1/2W, 5%
R3	181-14-153	RESISTOR, FIXED COMPOSITION, 15K, 1/2W, 5%
R4	181-14-162	RESISTOR, FIXED COMPOSITION, 1600 ohms, 1/2W, 5%
R5	181-15-224	RESISTOR, FIXED COMPOSITION, 220K, 1/2W, 10%
R6	181-35-102	RESISTOR, FIXED COMPOSITION, 1K, 2W, 10%
R7	134-6-20	POTENTIOMETER, WIRE WOUND, 1.5K, 1W, screwdriver adjust
R8	181-15-470	RESISTOR, FIXED COMPOSITION, 47 ohms, 1/2W, 10%
R9	134-6-17	POTENTIOMETER, COMPOSITION, 3K, linear 1/2W, screwdriver adjust
R10	181-14-512	RESISTOR, FIXED COMPOSITION, 5100 ohms, 1/2W, 5%
R12	181-34-222	RESISTOR, FIXED COMPOSITION, 2.2K, 2W, 5%
R13		Same as R12
R15	181-25-473	RESISTOR, FIXED COMPOSITION, 47K, 1W, 10%
R16		Same as R15
R17	181-15-101	RESISTOR, FIXED COMPOSITION, 100 ohms, 1/2W, 10%
R18		Same as R17
R19	134-6-18	POTENTIOMETER, COMPOSITION, 2.5K, linear 1/2W
R20	183-55-502	RESISTOR, WIRE WOUND, 5K, 7W, 10%
R21		Same as R7
R22	183-55-552	RESISTOR, WIRE WOUND, 5.5K, 7W, 10%
R23	181-25-103	RESISTOR, FIXED COMPOSITION, 10K, 1W, 10%
R24	181-35-472	RESISTOR, FIXED COMPOSITION, 4.7K, 2W, 10%
R25		Same as R24
R26	181-14-102	RESISTOR, FIXED COMPOSITION, 1K, 1/2W, 5%
R27		Same as R26
R28		Same as R24
R29		Same as R24
R30	181-15-105	RESISTOR, FIXED COMPOSITION, 1 meg., 1/2W, 10%

SYMBOL	PART NO	DESCRIPTION
R31		Same as R30
R32		Same as R30
R33	134-6-19	POTENTIOMETER, COMPOSITION, 10 meg., linear, 1/2W
R34		Same as R30
R35		Same as R30
R36		Same as R30
R37	181-15-272	RESISTOR, FIXED COMPOSITION, 2700 ohms, 1/2W, 10%
R38		Same as R37
R39	134-5-93	POTENTIOMETER, COMPOSITION, 1 meg., linear, 1/2W screwdriver adjust
R40	181-15-104	RESISTOR, FIXED COMPOSITION, 100K, 1/2W, 10%
R41	181-15-474	RESISTOR, FIXED COMPOSITION, 470K, 1/2W, 10%
R42	134-3-8	POTENTIOMETER, COMPOSITION, 500K, linear, 1/2W c/w SPST switch
R43	181-25-105	RESISTOR, FIXED COMPOSITION, 1 meg., 1W, 10%
R44	134-3-9	POTENTIOMETER, COMPOSITION, 2 meg., linear, 1/2W
R45	181-15-335	RESISTOR, FIXED COMPOSITION, 3.3 meg., 1/2W, 10%
R46	134-1-16	POTENTIOMETER, COMPOSITION, 50K, linear, 1/2W
R47		Same as R41
R48	181-15-153	RESISTOR, FIXED COMPOSITION, 15K, 1/2W, 10%
R49	181-15-223	RESISTOR, FIXED COMPOSITION, 22K, 1/2W, 10%
R50	181-15-102	RESISTOR, FIXED COMPOSITION, 1K, 1/2W, 10%
R51		Same as R41
R52	181-15-225	RESISTOR, FIXED COMPOSITION, 2.2 meg., 1/2W, 10%
R53	181-25-683	RESISTOR, FIXED COMPOSITION, 68K, 1W, 10%
R54	134-6-24	POTENTIOMETER, COMPOSITION, 2 meg., linear, 1/2W
R55	181-15-683	RESISTOR, FIXED COMPOSITION, 68K, 1/2W, 10%
R56		Same as R54
R57	181-15-154	RESISTOR, FIXED COMPOSITION, 150K, 1/2W, 10%
R58		Same as R55
R59		Same as R44
R60	181-15-222	RESISTOR, FIXED COMPOSITION, 2.2K, 1/2W, 10%
R61	181-15-475	RESISTOR, FIXED COMPOSITION, 4.7 meg., 1/2W, 10%
R62		Same as R49
R63		Same as R60
R64	181-15-473	RESISTOR, FIXED COMPOSITION, 47K, 1/2W, 10%
R65		Same as R46
R66		Same as R50
R67		Same as R17
R68		Same as R43
R69	134-5-79	POTENTIOMETER, COMPOSITION 200K, linear, 1/2W
R70		Same as R49
R71		Same as R17
R72	181-35-123	RESISTOR, FIXED COMPOSITION, 12K, 2W, 10%
R73	181-25-273	RESISTOR, FIXED COMPOSITION, 27K, 1W, 10%
R74		Same as R73
R75	181-15-392	RESISTOR, FIXED COMPOSITION, 3.9K, 1/2W, 10%
R76		Same as R75
R77		Same as R75
R78	183-65-502	RESISTOR, WIRE WOUND, 5K, 10W, 10%

SYMBOL	PART NO	DESCRIPTION
R79	183-45-501	RESISTOR, WIRE WOUND, 500 ohms, 5W, 10%
R80	183-55-102	RESISTOR, FIXED COMPOSITION, 1K, 7W, 10%
R81		Same as R80
R82		Same as R24
R83	181-25-224	RESISTOR, FIXED COMPOSITION, 220K, 1W, 10%
R84	181-14-222	RESISTOR, FIXED COMPOSITION, 2200 ohms, 1/2W, 5%
R85	181-14-135	RESISTOR, FIXED COMPOSITION, 1.3 meg., 1/2W, 5%
R86	181-15-125	RESISTOR, FIXED COMPOSITION, 1.2 meg., 1/2W, 10%
R87		Same as R79
R88	134-5-26	POTENTIOMETER, COMPOSITION, 250K, linear, 1/2W
R89		Same as R41
R90	181-15-103	RESISTOR, FIXED COMPOSITION, 10K, 1/2W, 10%
R91		Same as R61
R92		Same as R61
R93		Same as R61
R94		Same as R61
SW-1	144-5-30	SWITCH, ROTARY, 1 deck, 5 position, vert. atten.
SW-2	144-9-96	SWITCH, ROTARY, 1 deck, 4 position, sync. select.
SW-3	144-9-95	SWITCH, ROTARY, 1 deck, 9 position, sweep select.
SW-5	144-5-31	SWITCH, ROTARY, 1 deck, 2 positions vert. polarity
T1	148-9-81	TRANSFORMER, POWER, 110V, 60 cycle primary
V1	163-1-79	TUBE, 6AU8A
V2		Same as V1
V3	163-1-80	TUBE, 12BY7A
V4		Same as V3
V5	163-1-46	TUBE, 6DT6
V6	163-1-4	TUBE, 12AU7A
V7		Same as V6
V8		Same as V6
V9	163-1-62	TUBE, 1V2
V10	163-1-81	TUBE 6CA4
V11	163-1-68	CATHODE RAY TUBE, 5DEP1
	111-2-16	LINE CORD, 3 conductor, black, 6' long
	115-9-61	GRATICULE, green
	125-9-3	NEON LAMP, NE2



**SCHMATIC DIAGRAM
 D.C. WIDE BAND
 CATHODE RAY OSCILLOSCOPE
 MODEL OSK-4**

HICKOK TEACHING SYSTEMS

MODEL OSK-4

WIDE BAND DC OSCILLOSCOPE

To the Customer

Your Model OSK-4 oscilloscope has been equipped with a 3-conductor line cord to conform with current safety practices applying to most electrical and electronic units.

CAUTION

NEVER use the ground connection on either the Vertical or the Horizontal inputs to monitor the AC line voltage or to view waveforms in any unit which may have a "hot" chassis, such as an AC/DC radio.

To make these types of measurement, use the following procedures:

A. To Monitor the AC Line Voltage:

1. Connect the AC input of the oscilloscope to one side of the AC line only. If a straight line appears on the oscilloscope screen, then that side of the AC line is ground and the test lead should be moved to the other side of the line.

B. To Monitor Waveforms in an AC/DC Radio

1. Connect the radio to an isolation transformer to isolate the chassis from the AC line ground and operate the oscilloscope in the normal manner.

or:

2. Connect the radio to the AC line, turn the set on and, using an AC voltmeter, measure the voltage between the chassis of the radio and a known AC ground point. If the voltmeter indicates that there is a voltage present, disconnect the radio, turn the plug over, reconnect the radio and again measure the voltage between the radio chassis and ground. Once the voltmeter indicates that there is negligible potential between chassis and AC ground, then the oscilloscope may be used to monitor waveforms, ensuring that the GROUND binding post on the oscilloscope input is connected to a B- point in the radio set.

HICKOK

Your Guarantee

The Hickok Electrical Instrument Company warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair such instruments which under normal use and service, discloses the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing any instrument or test equipment which proves to be defective, when returned to us, transportation prepaid, within ninety (90) days from the date of original purchase and provided the serial number has been made known to us promptly for our records.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment, to injure their stability or reliability or which have been subject to misuse, negligence, or accident, or which have had the serial number altered, effaced, or removed. Neither does this warranty apply to any of our products which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories including all vacuum tubes not of our manufacture used in this product are not covered by this warranty.

This warranty is in lieu of all other warranties expressed or implied and no representatives or person is authorized to assume for us any other liability in connection with the sale of our products.

Parts will be made available for a minimum period of five (5) years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, etc., which have been furnished in the standard model.

Before returning any equipment for service, under warranty or otherwise, the factory must first be contacted giving the nature of the trouble. Instructions will then be given for either correcting the trouble or returning the equipment. This equipment should be forwarded directly to the Hickok factory, The Hickok Electrical Instrument Company, 10514 Dupont Avenue, Cleveland 8, Ohio. In order to speed the return of the instrument to you, it is recommended that on all repairs you deal directly with the factory at this address, or with an authorized service station in your locality.

REGISTRATION CARD

Be Sure to Return Your Warranty Card Immediately.

The above guarantee is contingent upon the attached registration card being returned to the factory immediately upon receipt of the equipment.

Your Guarantee

HICKOK

**TEACHING
SYSTEMS**

545 Technology Square, Cambridge, Mass. 617/UN 8-5540
A Subsidiary of The Hickok Electrical Instrument Company

DAMAGE REPORT

1. FOR PROPER COMPENSATION ON SHIPPING DAMAGES, TAKE ACTION IMMEDIATELY.
2. GIVE AN IMMEDIATE AND A THOROUGH INSPECTION OF SHIPMENT UPON ARRIVAL.
3. Secure a notation on the freight bill for any damage or shortage noticeable on delivery. The carrier should sign this notation.
4. UNPACK PROMPTLY and notify the delivering Carrier's Agent AT ONCE of any concealed damage or shortage, asking him to inspect the shipment and give you a signed inspection report.
5. Notice of LOSS or DAMAGE should be given the Carrier's Agent by telephone or in person and confirmed by mail within 48 hours, if impractical to inspect shipment immediately.

All goods of our manufacture are carefully packed and thoroughly inspected prior to leaving our factory. They are shipped in packages approved by Consolidated Freight and Express Classification. The Railroads and Motor Carriers are reluctant to make adjustment for damaged merchandise unless reported and inspected PROMPTLY after arrival. Delay in discovering concealed damage necessarily raises a question as to the time when the damage occurred.

6. Please accept all shipments and write us before making any return shipment.

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TEACHING
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