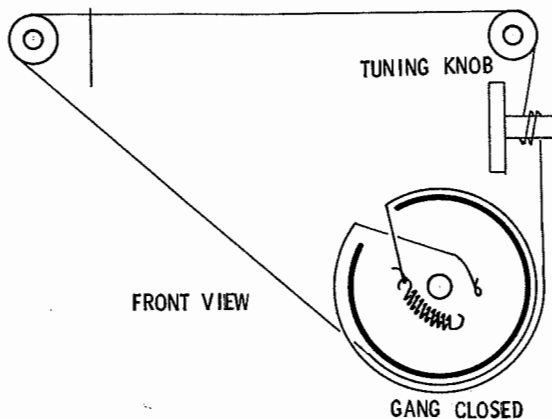


MOTOROLA MODELS
X29N, X29W (Ch. HS-885)

MODEL X29W

MOTOROLA MODELS
X29N, X29W (Ch. HS-885)

TRADE NAME	Motorola Models X29N, X29W (CH. HS-885)		
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois		
TYPE SET	Battery Operated Transistorized Portable AM Receiver		
POWER SUPPLY	6 Volts DC	RATING	12MA@6 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	532 — 1620KC		20MA@6 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

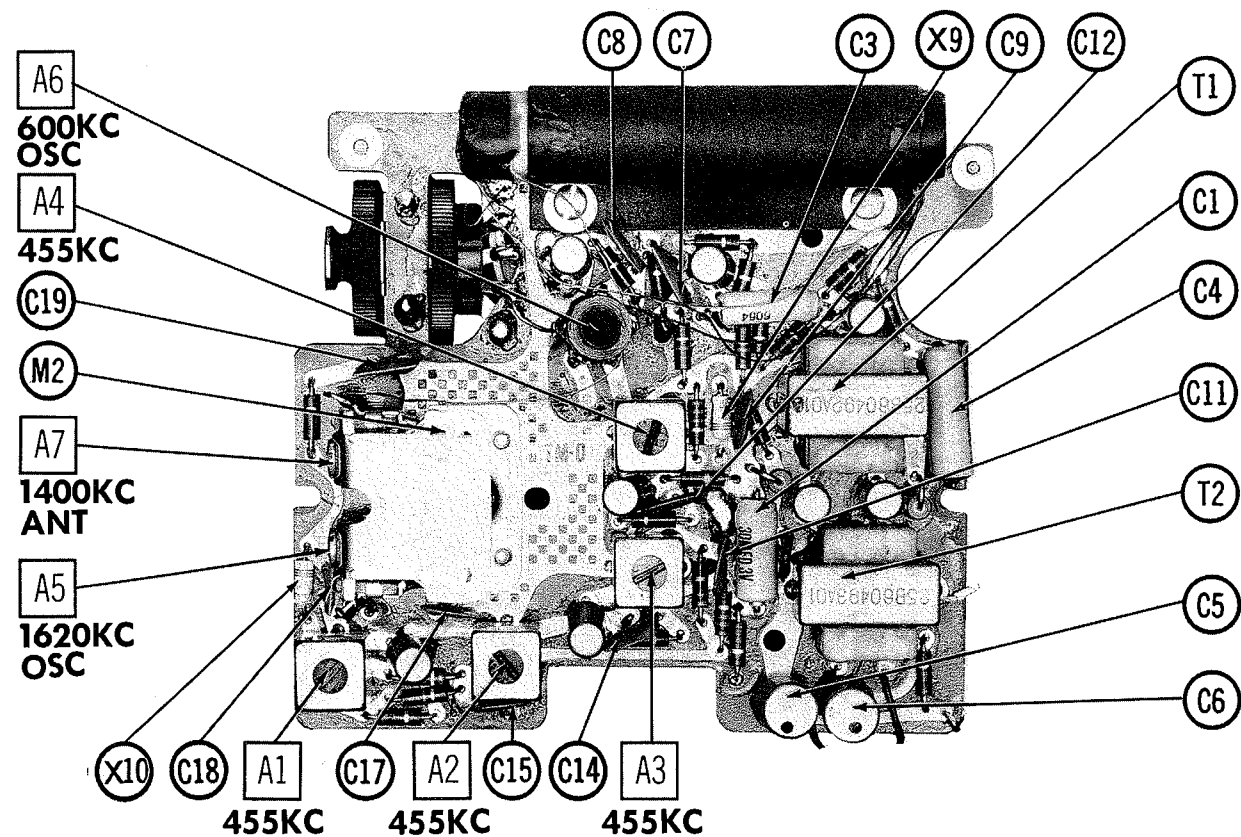
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT					
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.					
Suggested Alignment Tools:					
A1 thru A4..... GENERAL CEMENT #8607, 9291, 9294					
WALSCO #2520, 2522, 2523, 2524, 2534, 2537					
A5, A7..... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291					
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538					
A6..... GENERAL CEMENT #9296, 9297					
WALSCO #2546, 2547					
SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. Fashion loop of several turns of wire and radiate signal into loop of receiver.	455KC (400% Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2. "	1620KC	"	"	A5	"
3. "	600KC	600KC	"	A6	Adjust for maximum output while rocking tuning gang.
4. "	1400KC	1400KC Signal.	"	A7	Adjust for maximum output. Repeat steps 2, 3 and 4.

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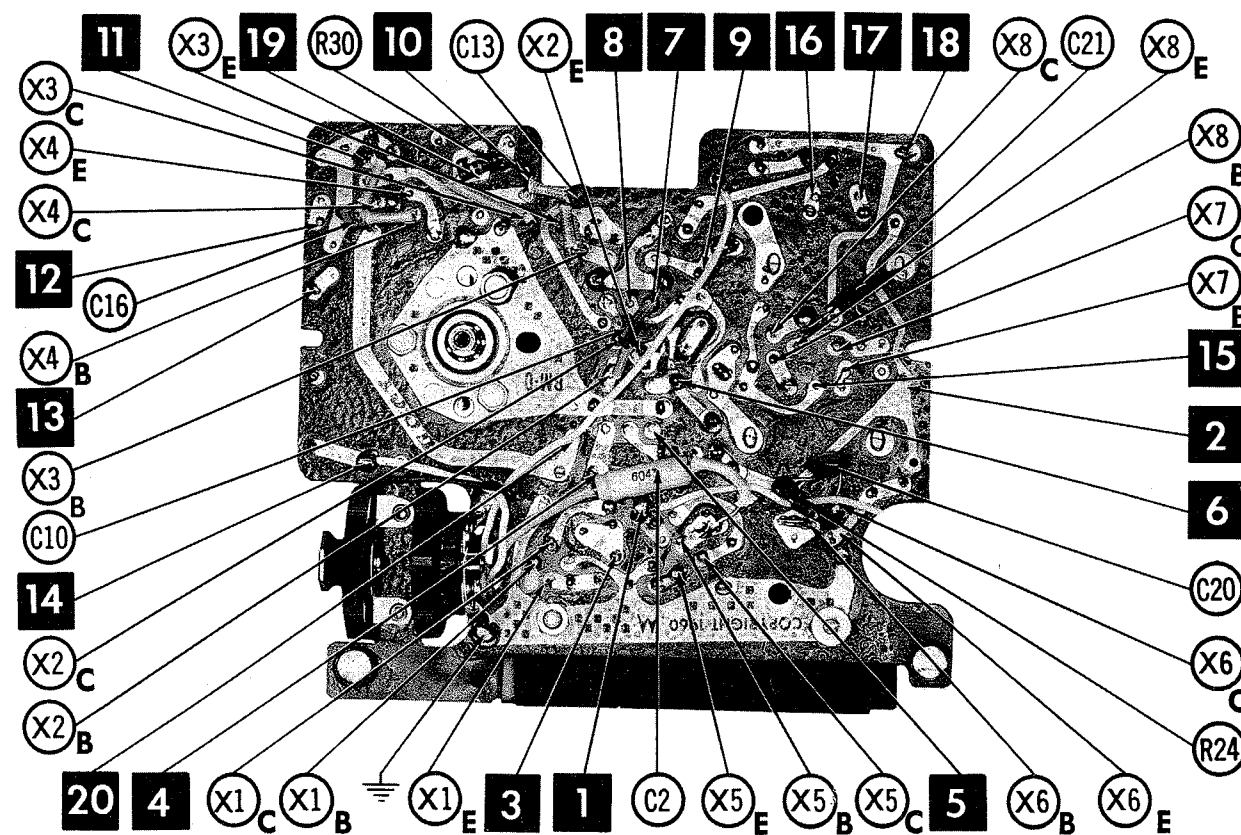


The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of LF193

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America



CHASSIS TOP VIEW - ALIGNMENT, CAPACITOR & MISC. IDENT.



B-BASE C-COLLECTOR
E-EMITTER

PARTS LIST & DESCRIPTION

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	2SA73	Converter	2N412	2N486	PNP
X2	2SA53	1st IF Amplifier	2N410	2N483	PNP
X3	2SA53	2nd IF Amplifier	2N410	2N483	PNP
X4	2SA53	3rd IF Amplifier	2N410	2N483	PNP
X5	2SB54	AF Amplifier	2N362	2N362	PNP
X6	2SB54	Driver	2N406	2N362	PNP
X7	2SB56	Output	2N408	2N632	PNP
X8	2SB56	Output	2N408	2N632	PNP

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	RECTIFIERS		DIODES		NOTES
		ORIGINAL Part or Type No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.	
X9		24K944681				Lineker (LN80)
X10		24K944681				Detector (LN80)

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT.	REPLACEMENT DATA				
			MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PYRAMID PART No.
C1	30	3	23K344688	PTT10	NLW30-6	MTI-13	TT6X30
C2	5	3	23K344689	PTT4	NLW5-15	MTI-3	TT6X5
C3	5	3	23K344689	PTT4	NLW5-15	MTI-3	TT6X5
C4	25	10	23C60496A	PTT42	NLW25-10	MTI-10	TT10X25
C5	50	10	23C60496A	BCD10050	NLW50-10	MTI-16	TT10X50
C6	50	10	23C60496A	BCD10050	NLW50-10	MTI-16	TT10X50

Ⓢ Some versions use 20mfd@12V, Part #23C60496A05.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor Workman TV PART No.	
L1	Loopstick	1V00045A				
L2	Org.	24C0074A01				
L3	2nd IF	24C04656				
L4	3rd IF	24C047237				
L5	4th IF	24C047238				
L6	4th IF	24C046138				

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Triad PART No.	
T1	1.2 1	25B0492A01				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Triad PART No.	
T2	72Ω CT 6-8Ω	25B0493A01			TR-12	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MOTOROLA PART No.	QUAM PART No.	
SP1	3 5/8" PM	50K647239		

BATTERIES

ITEM No.	VOLTAGE	MOTOROLA PART No.	REPLACEMENT DATA			NOTES
			BURGESS PART No.	EVEREADY PART No.	MALLORY PART No.	
M1	1½ V		"A" 930	"B" 1015	"B" M-15R	4 Required

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M2	Tuning Cap.	10B00533A01	
M3	Switch Printed Board	40X047229 84C06090A01	2 Gang (Pushbutton) Battery Life Indicator Less All Components (Part of Chassis Assembly #1V00040A42)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial Scale	34B00582A01	
Dial Pointer	52B00606A01	
Dial Background	34B00592A01	
Knob	38B00578A01	
Knob	38B00533A01	
Cabinet Back	1V00040A03	Tuning Volume Brown, Less Battery Cover, Model X29N
Cabinet Back	1V00040A03	Plate, Less Battery Cover, Model X29N
Cabinet Front	18E00575A06	Bottom, Less Dial Scale Escutcheon, Name Plate, and Front Cover; Model X29W
Cabinet Front	18E00575A01	White, Less Dial Scale Escutcheon, Name Plate, and Front Cover; Model X29W
Front Cover	1V60030A72	Black, Includes Medallion, Model X29N
Front Cover	1V60030A71	White, Includes Medallion, Model X29W

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA				
			AEROVOX PART No.	CENTRALAB PART No.	CORNING PART No.	ELMENCO PART No.	MALLORY PART No.
C7	.05			DA-503	H-05S5		TA-150
C8	.01			DA-103	H-05S1		TA-110
C9	.02			DA-103	H-05S2		TA-120
C10	3		NPO-D1 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533
C11	.02			DA-203	H-05S2		TA-120
C12	.01			DM-103	H-05S1		TA-110
C13	3		NPO-D1 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533
C14	.02			DA-203	H-05S2		TA-120
C15	.02			DA-203	H-05S2		TA-120
C16	3		NPO-D1 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533
C17	.02			DA-203	H-05S2		TA-120
C18	.01			DM-103	H-05S1		TA-110
C19	.05			DA-503	H-05S5		TA-150
C20	.002		BPD-002	DA-202	BYA1002	CCD-202	GP220
C21	.05			DA-503	H-05S5		TA-150
C22							TG-550
C23							TG-510
C24							TG-520
C25							10TCC-V33
C26							TG-520
C27							TG-510
C28							TG-520
C29							10TCC-V33
C30							TG-520
C31							TG-510
C32							TG-520
C33							10TCC-V33
C34							TG-520
C35							TG-510
C36							TG-520
C37							10TCC-V33
C38							TG-520
C39							TG-510
C40							TG-520
C41							10TCC-V33
C42							TG-520
C43							TG-510
C44							TG-520
C45							10TCC-V33
C46							TG-520
C47							TG-510
C48							TG-520
C49							10TCC-V33
C50							TG-520
C51							TG-510
C52							TG-520
C53							10TCC-V33
C54							TG-520
C55							TG-510
C56							TG-520
C57							10TCC-V33
C58							TG-520
C59							TG-510
C60							TG-520
C61							10TCC-V33
C62							TG-520
C63							TG-510
C64							TG-520
C65							10TCC-V33
C66							TG-520
C67							TG-510
C68							TG-520
C69							10TCC-V33
C70							TG-520
C71							TG-510
C72							TG-520
C73							10TCC-V33
C74							TG-520
C75							TG-510
C76							TG-520
C77							10TCC-V33
C78							TG-520
C79							TG-510
C80							TG-520
C81							10TCC-V33
C82							TG-520
C83							TG-510
C84							TG-520
C85							10TCC-V33
C86							TG-520
C87							TG-510
C88							TG-520
C89							10TCC-V33
C90							TG-520
C91							TG-510
C92							TG-520
C93							10TCC-V33
C94							TG-520
C95							TG-510
C96							TG-520
C97							10TCC-V33
C98							TG-520
C99							TG-510
C100							TG-520

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

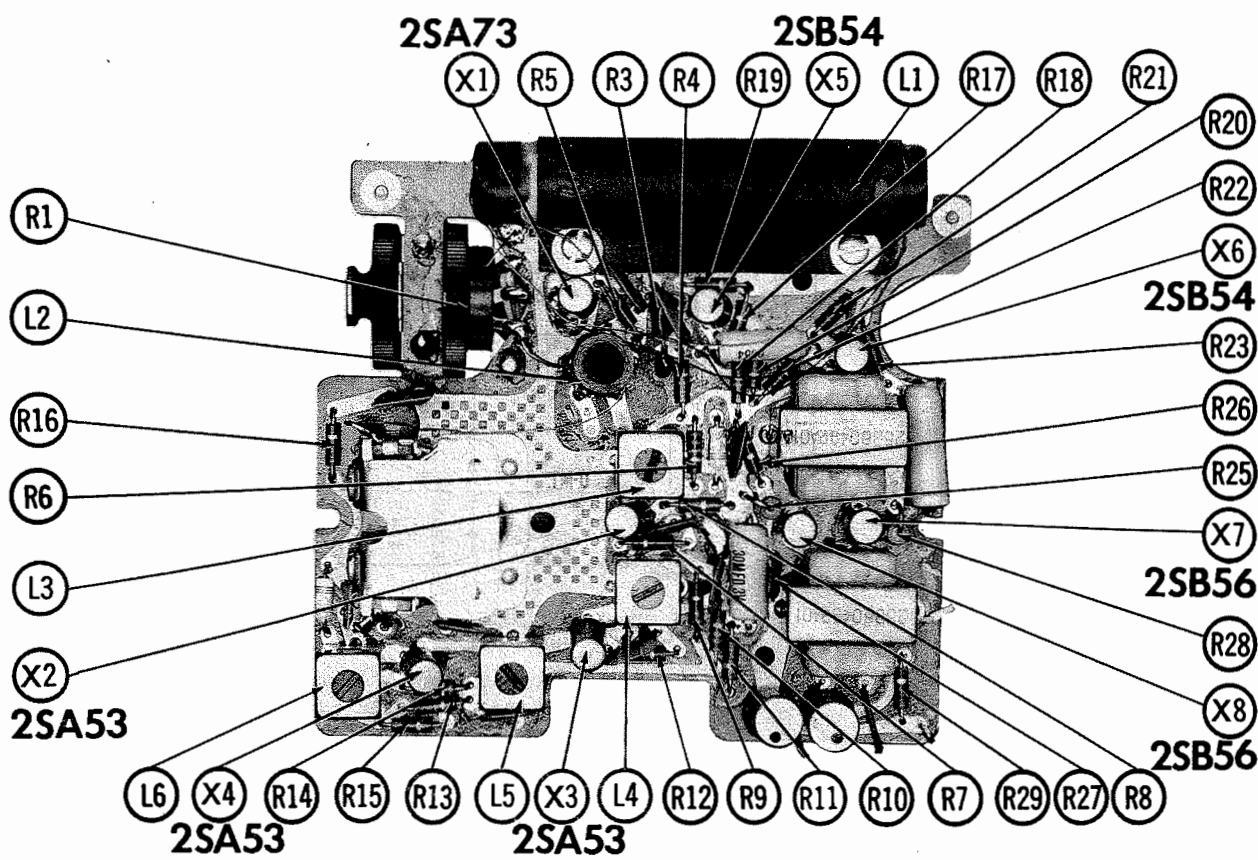
ITEM No.	USE	RESISTANCE	REPLACEMENT DATA			
			MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.
R1	Volume & Switch	5000Ω		18B00512A01		

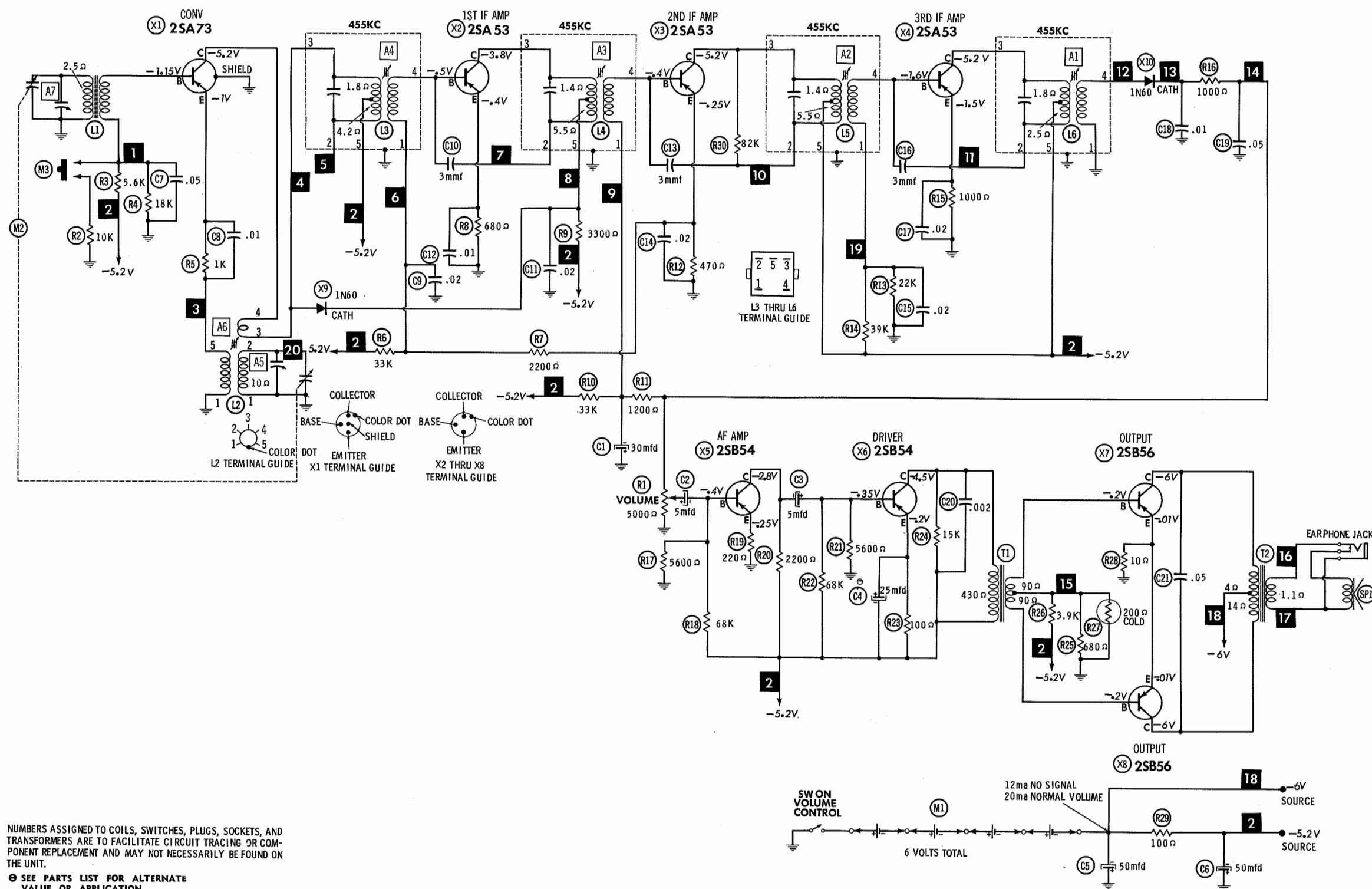
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			REPLACEMENT DATA
			IRC PART No.	WORKMAN TV PART No.	ITEM No.	IRC PART No.
R2	10K				R17	5600Ω
R3	5600Ω				R18	68K
R4	18K				R19	220Ω
R5	1000Ω				R20	220Ω
R6	33K				R21	5600Ω
R7	220Ω				R22	68K
R8	68Ω				R23	100Ω
R9	330Ω				R24	15K
R10	33K				R25	680Ω
R11	120Ω				R26	390Ω
R12	470Ω				R27	200Ω (Cold)
R13	22K				R28	10Ω
R14	39K				R29	100Ω
R15	1000Ω				R30	82K
R16	1000Ω					
R17	5600Ω					
R18	68K					
R19	220Ω					
R20	220Ω					
R21	5600Ω					
R22	68K					
R23	100Ω					
R24	15K					
R25	680Ω					
R26	390Ω					
R27	200Ω (Cold)					
R28	10Ω					
R29	100Ω					
R30	82K					

CHASSIS—TOP VIEW





NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

MOTOROLA MODELS
X29N, X29W (Ch. HS-885)