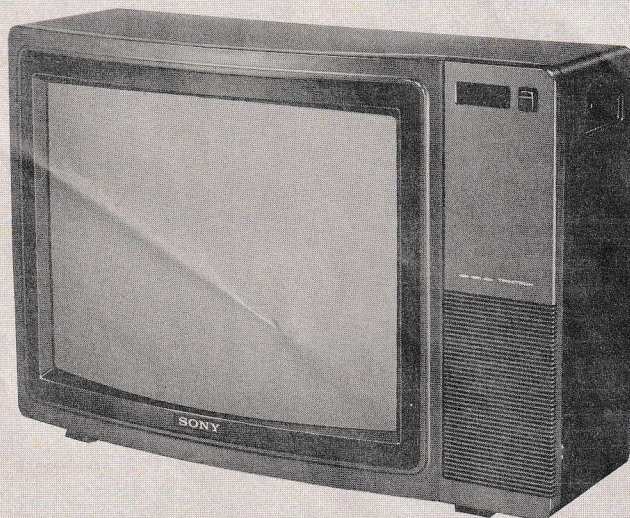


KV-2204EC

This circuit and mechanical structure of models KV-2204E and KV-2204EC are almost identical. Refer to the service manual of KV-2204E (Part No. 9-962-511-01) for operation and service procedure not contained in this manual.

Belgium Model

Chassis No. SCC-216C-A



TRINITRON®
COLOR TV

SPECIFICATIONS

Television System:	CCIR system B, G and H
Color System:	PAL
Picture Tube:	56 cm, 22" (53.8 cm screen measured diagonally), 114° deflection TRINITRON system
Semiconductors:	63 transistors, 2 FETs, 16 ICs, 85 diodes and 1 GCS (Gate Controlled Switch)
Antennas:	75 Ω standard antenna socket
Channel Coverage:	VHF channels: LOW (45 – 110 MHz) HIGH (110 – 280 MHz) UHF channels: E21 – 68
Intermediate Frequencies:	Picture i-f carrier: 38.9 MHz Color subcarrier: 34.47 MHz Sound i-f carrier: 33.4 MHz
Sound System:	5.5 MHz intercarrier Output power: 2 W (at 10 % harmonic distortion) Speaker: 12 cm (4 3/4 inches) dia., 8 Ω
Video System:	R, G, B cathode drive
Automatic Controls:	ABL (automatic brightness limiter) ACC (automatic color control) ACK (automatic color killer) ADG (automatic degaussing) AFC (automatic frequency control) AFT (automatic fine tuning) AGC (automatic gain control) ANC (automatic noise canceller) APC (automatic phase control) AVR (automatic voltage regulator)

WARNING

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

— Continued on page 2 —

SONY®
SERVICE MANUAL

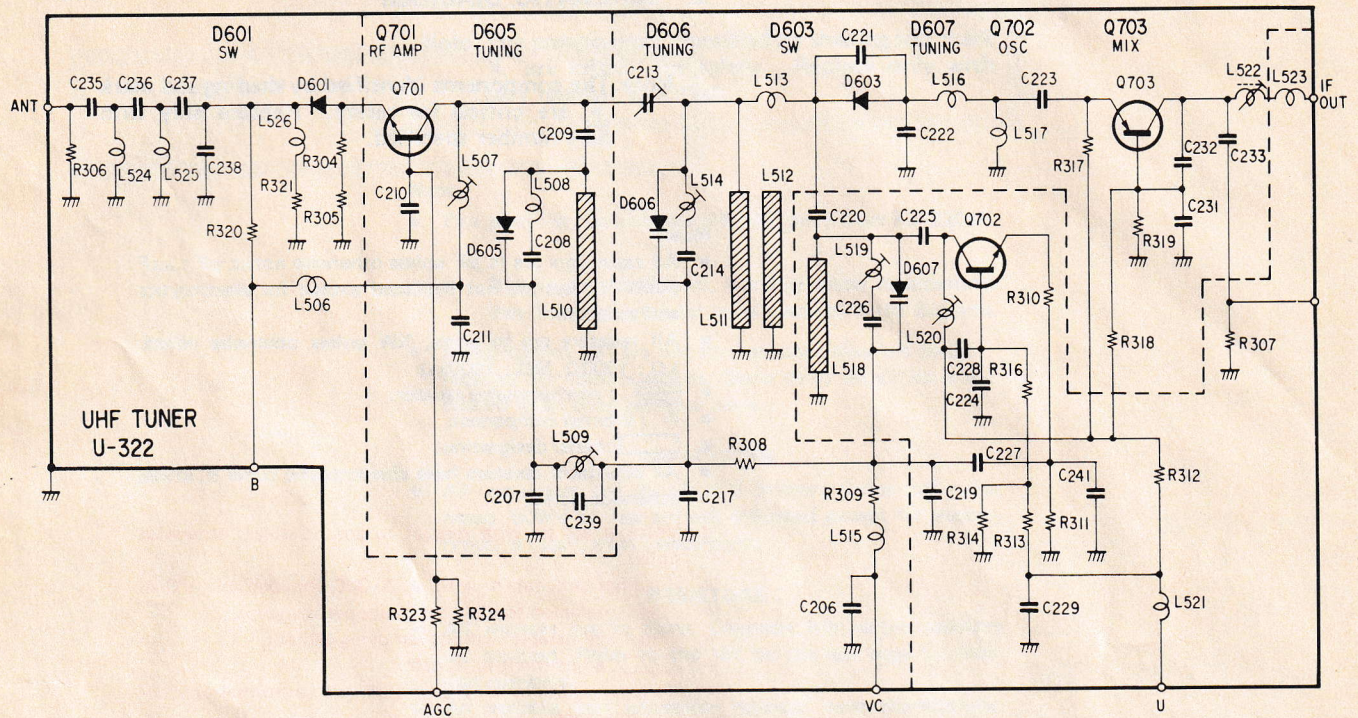
Anode Voltage: 24.5 kV at zero beam current
Power Requirement: 220 — 240 V ac, 50 Hz
Power Consumption: 98 W ac
7 W ac (in stand-by condition)
Dimensions: Approx. 669 (w) x 459 (h) x 413 (d) mm
26 $\frac{3}{8}$ (w) x 18 $\frac{1}{8}$ (h) x 16 $\frac{3}{8}$ (d) inches
Net Weight: Approx. 32 kg (70 lb 9 oz)
Accessories Supplied: Remote commander RM-605
Earphone (ME-20B)
Instruction manual

Note: KV-2204EC is much the same to KV-2204E, so this service manual has only different portions.
Refer to the KV-2204E Service Manual for related information (block diagram, disassembly, setup and circuit adjustments, mounting diagrams, exploded views, electrical parts list).

1. UHF AND VHF TUNER SCHEMATIC DIAGRAMS

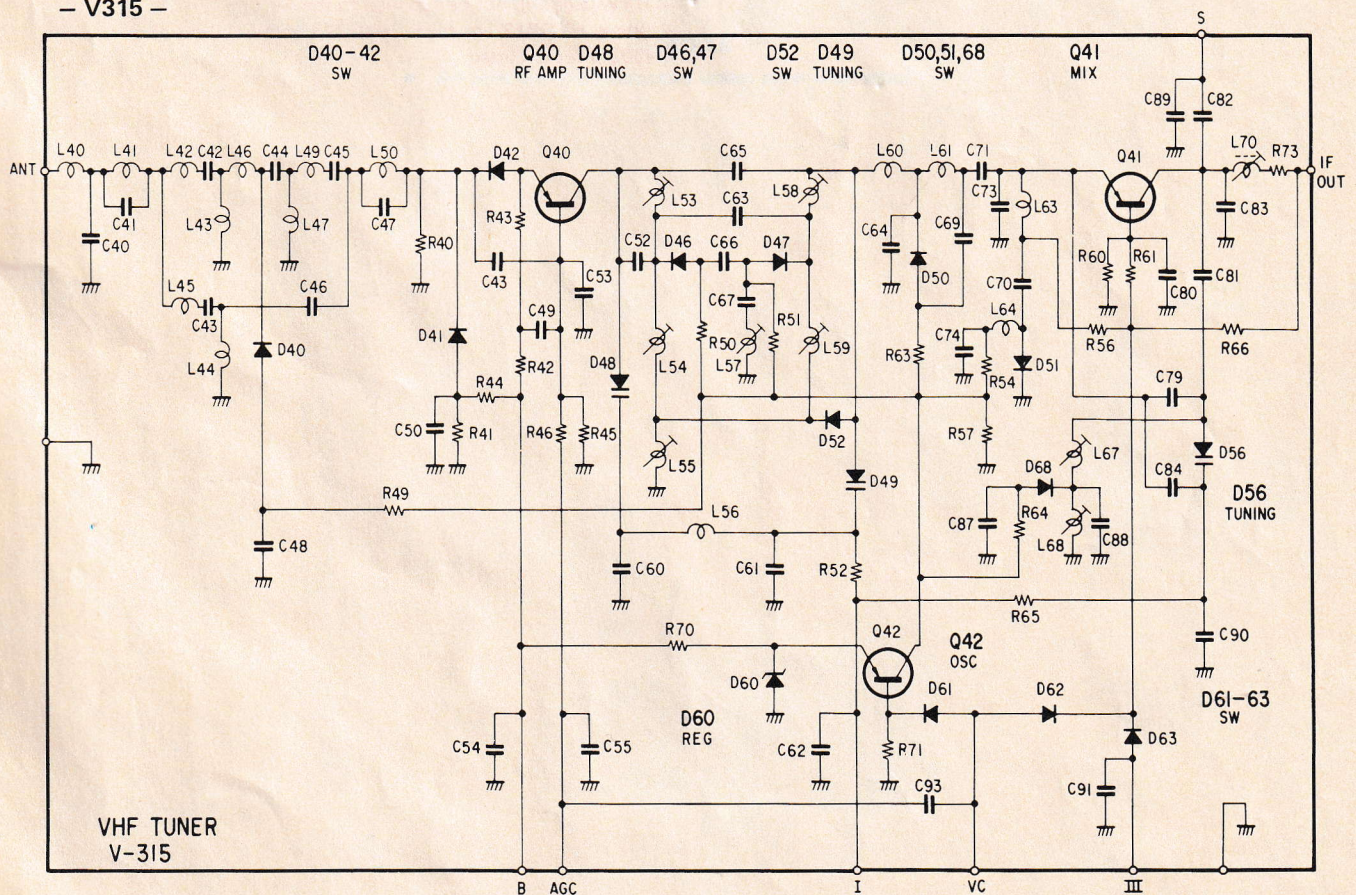
UHF TUNER

— U322 —



VHF TUNER

— V315 —



2. SCHEMATIC DIAGRAM

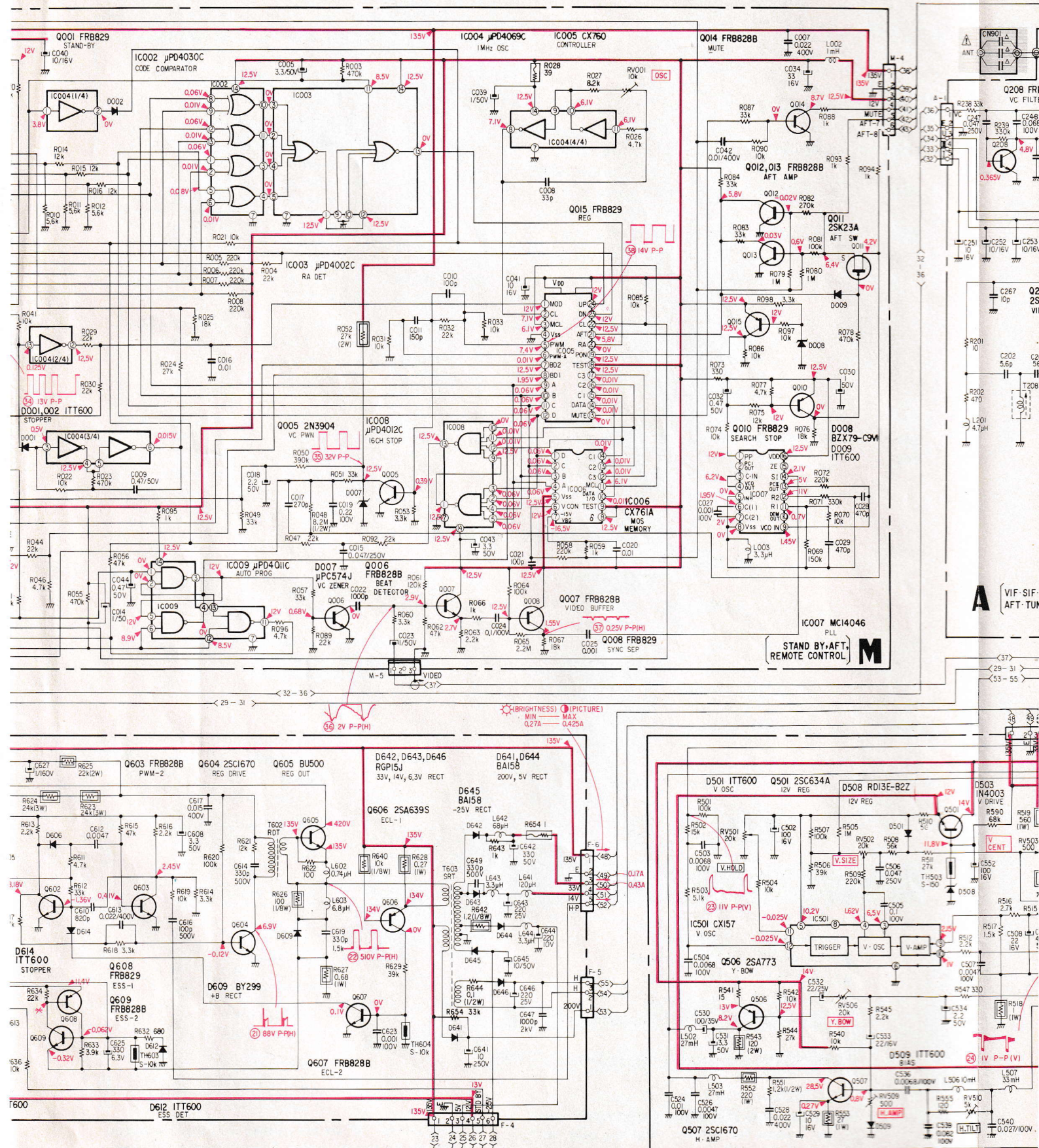
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$
50WV or less are not indicated except for electrolytics and tantalum.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted.
 $\text{k}\Omega$: 1000Ω , $\text{M}\Omega$: $1000\text{k}\Omega$
-  : nonflammable resistor.
- Δ : internal component.
-  : panel designation.
- All adjustable resistors have characteristic curve B, unless otherwise noted.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
- ※ : selected to yield optimum performance.
-  : adjustable without removing cabinet.
-  : adjustment for repair.
- Voltage variations may be noted due to normal production tolerances.
- Do not touch the base of Q608 with the VOM probe, as B+ voltage will not be supplied to the set.
- Voltages of Q512 are taken with D-7 removed and also TH502 short-circuited.

C





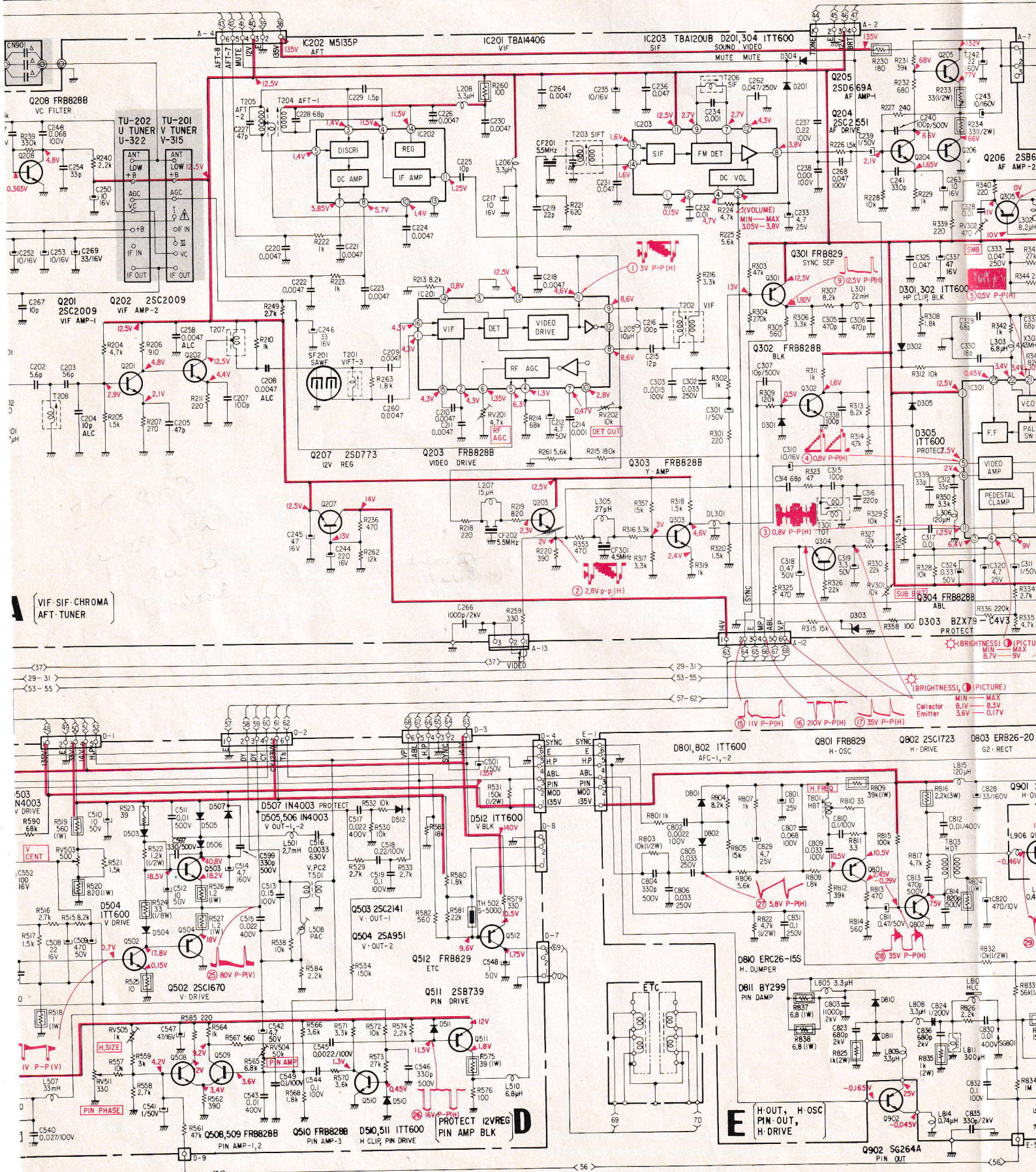
H

I

J

K

< 19 - 22 >





3. ELECTRICAL PARTS LIST

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note:

- This parts list has only the different parts from KV-2204E.
- $\Rightarrow$: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μF , elect : electrolytic

RESISTORS

- All resistors are in ohms. Common $\frac{1}{4}\text{W}$ carbon resistors are omitted. Refer to the list on the last page for their part numbers.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
k Ω : 1000 Ω , M Ω : 1000k Ω

COILS

- All coils are microinductors unless otherwise noted.

Ref. No. Part No. Description Remark

A BOARD

● A-1295-356-A A Board, complete

CAPACITORS

C216	1-102-529-00	100p		
C217	1-123-316-00	10	16V	elect
C218	1-161-328-00	0.0047		
C269	1-123-318-00	33	16V	elect
C337	1-123-319-00	47	16V	elect

C338	1-161-271-00	100p		
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DIODE

⇒ D307	8-719-815-55	1S1555		
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COILS

L305	1-407-743-00	27μH		
L306	1-407-753-00	180μH		

C BOARD**RESISTOR**

R719	1-202-635-00	390k	½W	
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Ref. No. Part No. Description Remark

D BOARD**CAPACITORS**

C513	1-130-243-00	0.15	100V	film
C529	1-131-199-00	10	16V	tantalum
C541	1-123-352-00	1	50V	elect
C542	1-123-355-00	4.7	50V	elect
C545	1-108-618-00	0.0022	100V	mylar

C549	1-130-242-00	0.10	100V	film
C599	1-102-030-00	330p	500V	

RESISTOR

R523	1-217-394-00	39	¼W	carbon (nonflammable)
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E BOARD**CAPACITOR**

C833	1-123-351-00	0.47	50V	elect
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COIL

L805	1-408-225-00	3.3μH		
------	--------------	-------	--	--

- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			<i>Remark</i>
RESISTORS					
R821	1-206-443-00	1.5	1W	metal oxide (nonflammable)	
R828	1-206-443-00	1.5	1W	metal oxide (nonflammable)	
R837	1-212-370-00	6.8	1W	metal oxide (nonflammable)	
R838	1-212-370-00	6.8	1W	metal oxide (nonflammable)	

F BOARD**RESISTORS**

R644	1-207-451-00	10	½W	wirewound
R645	1-217-375-00	1	¼W	fusible

M BOARD**CAPACITOR**

C011	1-161-313-00	150p
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DIODE

⇒ D009	8-719-815-55	1S1555
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MISCELLANEOUS

TU201	⚠ 1-463-244-00	VHF Tuner, V315
V901	⚠ 8-737-606-05	Picture Tube, 570HB22

1-533-149-00	Holder, fuse
● 1-535-283-00	Terminal, ground
● 1-535-489-00	Cable with Pin
1-535-506-21	Terminal, press
⚠ 1-551-270-00	Cord, power; parallel blade

⚠ 1-551-427-11	Cord, power; euro plug
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Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
3-701-360-00	Label, tack
4-491-416-12	Leaflet, instruction

- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

P 3 x 10

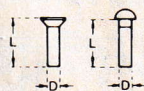
L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).

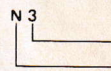


Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation

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