

# JVC

# SERVICE MANUAL

## COLOUR TELEVISION

BASIC CHASSIS

JK

## AV-29R9(C-BK)

This service manual mainly consists of the following items:

- The items which differ from those for the AV-29RS(C-M) service manual.
- The initial value for each setting item.

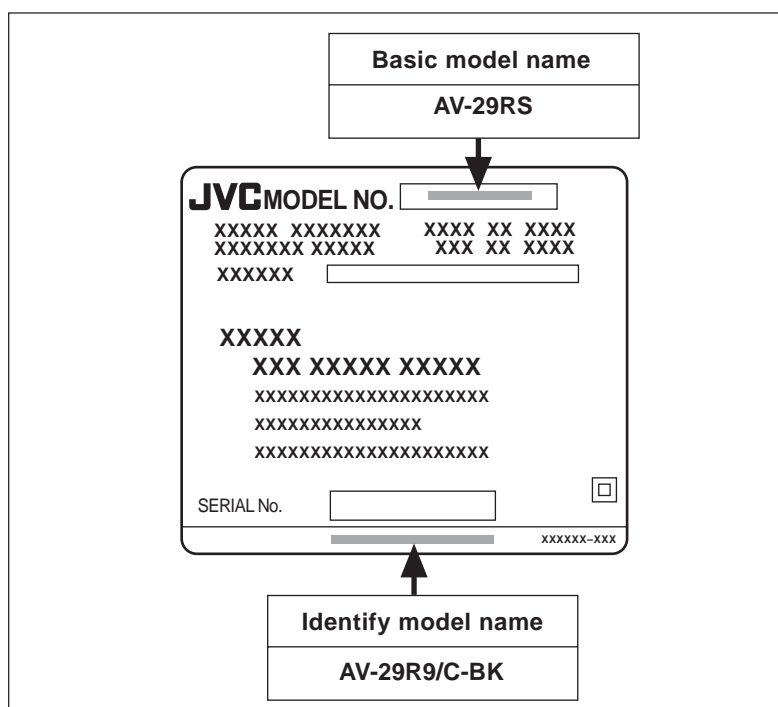
For details other than those described in this manual, please refer to the following service manual.

Reference Service Manual: AV-29RS(C-M) Service Manual (No. 51756, Aug. 2000)

**Note:** The page in parentheses shows the one for the AV-29RS(C-M) service manual (No. 51756, Aug. 2000).

## HOW TO IDENTIFY MODEL

While referring to the illustration given below, identify model name on the rating label affixed to the rear cover.



# PARTS DIFFERENCE TABLE

The different parts between AV-29RS(C-M) and AV-29R9(C-BK) are described below:

△	REF. NO.	AV-29RS(C-M)	AV-29R9(C-BK)	PART NAME	DESCRIPTION		
		PART No.	PART No.				
<b>■ EXPLODED VIEW PARTS LIST (Pages 35 and 36)</b>							
△	V01	A68QCU259X67N	<b>A68QCU259X67Q</b>	PICTURE TUBE			
△	16	LC20377-001B-H	<b>CM22960-080-H</b>	RATING LABEL			
	100	LC10761-002B-H	<b>LC10761-007B-H</b>	FRONT CABI. ASSY			
<b>■ PRINTED WIRING BOARD PARTS LIST [MAIN PWB ASSY] (Page 38-)</b>							
	—	SJK-1022A-H2	<b>SJK-1032A-BK</b>	MAIN PWB ASSY			
	R1329	NRSA02J-102X	———	CH MG R	1kΩ	1/10W	J
		———	<b>NRSA02J-0R0X</b>	CH MG R	0.0Ω	1/10W	J
	R1330	NRSA02J-472X	———	CH MG R	4.7kΩ	1/10W	J
		———	<b>NRSA02J-0R0X</b>	CH MG R	0.0Ω	1/10W	J
	R1871	NRSA02J-102X	———	CH MG R	1kΩ	1/10W	J
	R1872	NRSA02J-222X	———	CH MG R	2.2kΩ	1/10W	J
	R1873	NRSA02J-222X	———	CH MG R	2.2kΩ	1/10W	J
	R1874	NRSA02J-272X	———	CH MG R	2.7kΩ	1/10W	J
	R1875	NRSA02J-0R0X	———	CH MG R	0.0Ω	1/10W	J
	R1876	NRSA02J-102X	———	CH MG R	1kΩ	1/10W	J
	R1877	NRSA02J-393X	———	CH MG R	39kΩ	1/10W	J
	R1878	NRSA02J-182X	———	CH MG R	1.8kΩ	1/10W	J
	R1879	NRSA02J-182X	———	CH MG R	1.8kΩ	1/10W	J
	R1880	NRSA02J-182X	———	CH MG R	1.8kΩ	1/10W	J
	R1881	NRSA02J-181X	———	CH MG R	180Ω	1/10W	J
	R1882	NRSA02J-181X	———	CH MG R	180Ω	1/10W	J
	R1883	NRSA02J-102X	———	CH MG R	1kΩ	1/10W	J
	R1884	NRSA02J-181X	———	CH MG R	180Ω	1/10W	J
	C1324	QETN1HM-105Z	———	E CAP.	1μF	50V	M
	C1325	QETN1HM-105Z	———	E CAP.	1μF	50V	M
	C1326	QETN1HM-105Z	———	E CAP.	1μF	50V	M
	C1334	———	<b>NCB21HK-103X</b>	CH C CAP.	0.01μF	50V	K
	C1335	———	<b>NCB21HK-103X</b>	CH C CAP.	0.01μF	50V	K
	C1336	———	<b>NCB21HK-103X</b>	CH C CAP.	0.01μF	50V	K
	C1871	NCB21EK-104X	———	CH C CAP.	0.1μF	25V	K
	C1872	NCB21HK-223X	———	CH C CAP.	0.022μF	50V	K
	C1873	NDC21HJ-221X	———	CH C CAP.	220pF	50V	J
	C1874	NDC21HJ-150X	———	CH C CAP.	15pF	50V	J
	C1875	NDC21HJ-150X	———	CH C CAP.	15pF	50V	J
	C1876	NDC21HJ-221X	———	CH C CAP.	220pF	50V	J
	C1877	NCB21EK-104X	———	CH C CAP.	0.1μF	25V	K

▲	REF. NO.	AV-29RS(C-M)	AV-29R9(C-BK)	PART NAME	DESCRIPTION
		PART No.	PART No.		
<b>■ PRINTED WIRING BOARD PARTS LIST [MAIN PWB ASSY] - Continued (Page 38-)</b>					
	C1878	NCB21HK-102X	———	CH C CAP.	1000pF 50V K
	C1879	NDC21HJ-221X	———	CH C CAP.	220pF 50V J
	C1880	QETN1AM-477Z	———	E CAP.	470μF 10V M
	C1881	NCB21EK-104X	———	CH C CAP.	0.1μF 25V K
	C1882	QETN1EM-476Z	———	E CAP.	47μF 25V M
	C1883	NCB21HK-103X	———	CH C CAP.	0.01μF 50V K
	C1884	NCB21EK-104X	———	CH C CAP.	0.1μF 25V K
	C1885	NCB21EK-104X	———	CH C CAP.	0.1μF 25V K
	C1886	NCB21EK-103X	———	CH C CAP.	0.01μF 25V K
	L1871	QQL244K-4R7Z	———	PEAKING COIL	4.7μH K
	L1872	QQL244K-3R3Z	———	PEAKING COIL	3.3μH K
	D1303	MA111-X	———	CHIP DIODE	
	Q1871	2SA1037AK/QR/-X	———	SI TRANSISTOR	
	Q1872	2SC2412K/QR/-X	———	CHIP TRANSISTOR	
	IC1701	M37280MF-173SP	<b>M37280MF-201SP</b>	IC (MICROCOMPUTER)	
	IC1702	AT24C16-29RSB	<b>AT24C16-29R9BBK</b>	IC (MEMORY)	(Service)
	IC1871	ET417	———	IC	
	IC1872	ET211	———	IC	
	X1871	CE41257-001Z	———	X TAL	
<b>■ PRINTED WIRING BOARD PARTS LIST [POWER &amp; DEF PWB ASSY] (Page 41-)</b>					
	—	SJK-2022A-H2	<b>SJK-2022A-BK</b>	POWER & DEF PWB ASSY	
<b>■ PRINTED WIRING BOARD PARTS LIST [CRT SOCKET PWB ASSY] (Page 43-)</b>					
	—	SJK-3011A-H2	<b>SJK-3011A-BK</b>	CRT SOCKET PWB ASSY	
<b>■ PRINTED WIRING BOARD PARTS LIST [FRONT CONTROL PWB ASSY] (Page 44)</b>					
	—	SJK-8011A-H2	<b>SJK-8005A-BK</b>	FRONT CONTROL PWB ASSY	
▲	LF8901	QQR0673-004	<b>QQR1035-003</b>	LINE FILTER	
<b>■ PRINTED WIRING BOARD PARTS LIST [AV SEL. PWB ASSY] (Page 45-)</b>					
	—	SJK0S003A-H2	<b>SJK0S003A-BK</b>	AV SEL. PWB ASSY	
<b>■ PACKING PARTS LIST (Page 47)</b>					
	1	LC10845-006A-H	<b>GG10045-008A-H</b>	PACKING CASE	
	3	CP30967-004-H	<b>CP30697-006-H</b>	POLY BAG	
	4	RM-C112-2H	<b>RM-C115-2H</b>	REMOCON UNIT	
	5	CP30966-001-H	<b>QPA02503505</b>	POLY BAG	
▲	6	LCT0664-001A-H	<b>LCT0816-001A-H</b>	INST BOOK	
	7	CM47385-00B-H	———	POS/SERIAL LABEL	
▲	—	QAM0055-001	———	CONVERSION PLUG	
	—	———	<b>ATEAB001-00A</b>	MATCHING BOX	

# SPECIFICATIONS (Page 2)

Item		CONTENTS
<b>Dimensions (W × H × D)</b>		732mm × 588mm × 508mm
<b>Mass</b>		52kg
<b>TV RF System</b>		B, G, I, D, K, K1, M
<b>Colour System</b>		PAL, SECAM, NTSC3.58, NTSC4.43
<b>Stereo System</b>		A2 / NICAM (B,G)
<b>Receiving Frequency</b>		VHF (L) 46.25MHz ~ 168.25MHz VHF (H) 175.25MHz ~ 463.25MHz UHF 471.25MHz ~ 863.25MHz CATV Mid (X-Z, S1-S10), Super (S11-S20), Hyper (S21-S41) bands receivable
<b>Intermediate Frequency</b>		VIF Carrier 38.0MHz SIF Carrier 33.5MHz(4.5MHz), 32.5MHz(5.5MHz), 32.0MHz(6.0MHz), 31.5MHz(6.5MHz)
<b>Colour Sub Carrier Frequency</b>		PAL 4.43MHz SECAM 4.40625MHz, 4.25MHz NTSC 3.58MHz / 4.43MHz
<b>Power Input</b>		Rating : AC110 ~ 240V, 50/60Hz Operating: AC90 ~ 260V, 50/60Hz
<b>Power Consumption</b>		193W (Max) / 137W (Avg)
<b>Picture Tube</b>		Visible size : 68cm measured diagonally
<b>High Voltage</b>		32.0kV ±1.5kV (at zero beam current)
<b>Speaker &amp; Audio Output</b>		Open dome speaker 10W+10W, 10cm round x 2
<b>Video Audio Input terminals</b>		
<b>Video1</b>	<b>S-Video</b>	Y: 1Vp-p Positive (Negative sync provided, when terminated with 75Ω) C: 0.286Vp-p (Burst signal, when terminated with 75Ω)
	<b>Video</b>	1Vp-p 75Ω (RCA pin jack)
	<b>Audio (L/R)</b>	500mVrms (-4dBs), High impedance (RCA pin jack)
<b>Video2</b>	<b>Video</b>	1Vp-p 75Ω (RCA pin jack)
	<b>Audio (L/R)</b>	500mVrms (-4dBs), High impedance (RCA pin jack)
<b>Video3</b>	<b>Video/Y</b>	Composite video 1Vp-p 75Ω (RCA pin jack) Component video 1Vp-p 75Ω (RCA pin jack)
	<b>Cb</b>	Component video B-Y 0.7Vp-p 75Ω (RCA pin jack)
	<b>Cr</b>	Component video R-Y 0.7Vp-p 75Ω (RCA pin jack)
	<b>Audio (L/R)</b>	500mVrms (-4dBs), High impedance (RCA pin jack)
<b>Video4 (Front terminal)</b>	<b>S-Video</b>	Y: 1Vp-p Positive (Negative sync provided, when terminated with 75Ω) C: 0.286Vp-p (Burst signal, when terminated with 75Ω)
	<b>Video</b>	1Vp-p 75Ω (RCA pin jack)
	<b>Audio (L/R)</b>	500mVrms (-4dBs), High impedance (RCA pin jack)
<b>Video Audio Output terminal</b>		
	<b>Video</b>	1Vp-p 75Ω (RCA pin jack)
	<b>Audio (L/R)</b>	500mVrms (-4dBs), High impedance (RCA pin jack)
<b>Aerial Input Terminal</b>		75Ω Unbalanced, Coaxial
<b>Headphone Jack</b>		Stereo mini jack (3.5ø)
<b>AV Compu Link terminal</b>		AV Compu Link II, mini jack (3.5ø)
<b>Remote Control Unit</b>		RM-C115 (AA/R06 / UM-3 dry battery × 2)

*Design & specifications are subject to change without notice.*

# SPECIFIC SERVICE INSTRUCTIONS

## SETTING OF SYSTEM CONSTANT SET (Page 10)

Table 1

CONTENTS	VARIABLE RANGE	INITIAL SETTING VALUE
COLOUR	<input type="checkbox"/> MULTI → TRIPLE → PAL <input type="checkbox"/>	MULTI
MSP	<input type="checkbox"/> YES → NO <input type="checkbox"/>	YES
SUPER BASS	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
CENTER SPEAKER	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
TEXT	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
BLUE BACK MUTE	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
VOLUME LIMIT	<input type="checkbox"/> YES → NO <input type="checkbox"/>	YES
COLOUR AUTO	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
TILT	<input type="checkbox"/> YES → NO <input type="checkbox"/>	YES
C-TRAP	<input type="checkbox"/> 1 → 0 <input type="checkbox"/>	1
E.M.C.	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
N/S WHITE BACK	<input type="checkbox"/> YES → NO <input type="checkbox"/>	NO
7 LED SPEED	<input type="checkbox"/> 00 → 10 → 20 → ... → 1250 <input type="checkbox"/> <input type="checkbox"/> 1270 ← 1260 ← <input type="checkbox"/>	100
LANGUAGE	<input type="checkbox"/> E/T → E <input type="checkbox"/>	E/T

## USER SETTING CONDITIONS (Page 10)

Table 2

PICTURE SETTING		FEATURES	
PICTURE MODE	BRIGHT	SLEEP TIMER	OFF
CONTRAST	CENTER	ON TIMER	PR1 0:00
BRIGHT	CENTER	BLUE BACK	ON
SHARP	CENTER	CHILD LOCK	OFF
COLOUR	CENTER	CHANNEL GUARD	--
TINT	CENTER	AUTO SHUT OFF	OFF
WHITE BALANCE	COOL	VIDEO-3 SETTING	COMPONENT
PICTURE FEATURES		INSTALL	
A.A.C	ON	LANGUAGE	THAI
AUTO VNR	AUTO	AUTO PROGRAM	--
COLOUR SYSTEM	TV: According to preset CH VIDEO: AUTO PAL	EDIT / MANUAL	PRESET CH only Others: blank
ZOOM	REGULAR	DEMO	
ECO SENSOR	OFF	DEMO	OFF
PICTURE TILT	CENTER	OTHERS	
SOUND SETTING		VOLUME	Appropriate sound level
SETERO / I • II	<input type="radio"/>	CHANNEL PRESET	Refer to Operating Instructions.
BASS	CENTER	CHANNEL POSITION	1 POSITION
TREBLE	CENTER	SUB POWER	ON
BALANCE	CENTER	ON SCREEN DISPLAY	POSITION INDICATION
AI VOLUME	ON	TV/VIDEO	TV
BBE	ON	SOUND SYSTEM	B/G
SPATIALIZER	OFF		

# SERVICE ADJUSTMENTS

## ■ Initial Setting Value

### ■ SETTING OF VSM PRESET (Page 19)

[INITIAL SETTING VALUES OF VSM PRESET (SUB MENU 5. VSM PRESET)]


PICTURE MODE ITEM	BRIGHT	STANDARD	SOFT
1. BRIGHT	+0	+0	+0
2. CONT	+17	+0	-4
3. COLOR	+0	+0	-1
4. SHARP	+0	+0	-3
5. TINT	+0	+0	+0

 : Do not adjust.

### ■ SETTING OF WHITE BALANCE PRESET (Page 20)


[SETTING OF WHITE BALANCE PRESET (SUB MENU 6. WB PRESET)]

WHITE BALANCE ITEM	COOL	MID	WARM
1. R DRIVE	0	-3	+26
2. B DRIVE	0	-23	-27

 : Do not adjust.

## ■ VIDEO / CHROMA CIRCUIT ADJUSTMENT (Page 20)

CONTENTS		PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUTOFF	R	-60			
	G	-60			
	B	-60			
2. DRIVE	R	+0			
	B	+0			
3. BRIGHT	TV	0	+3	+1	—
	VIDEO	-1	+2	+2	—
	COMPONENT	-2			
4. CONT	TV	-15	0	0	—
	VIDEO	0	0	0	—
	COMPONENT	+2			
5. COLOUR	TV / VIDEO	+10	+18	+0	0
	COMPONENT	+8		+17	
6. TINT	TV	+6	+6	+7	0
	VIDEO	+6	+6	+14	0
	COMPONENT	+6		0	
7. BLACK OFFSET	R-Y	—	0	—	—
	B-Y	—	0	—	—
8. SHARP	TV	-14	-13	-12	—
	VIDEO	-8	-7	-9	—
	COMPONENT	-10			

 : Do not adjust.

### Adjustment of SUB COLOUR-II (Page 23)

Adjustment part	Description
<b>5. COLOUR</b>	
PAL COLOUR	Value (A) in the figure: Set to <b>-3V (W &amp; G)</b> .
SECAM COLOUR	Value (A) in the figure: Set to <b>-5V (W &amp; G)</b> .
NTSC 3.58 COLOUR	Value (A) in the figure: Set to <b>+3V (W &amp; G)</b> .

### Adjustment of SUB TINT-II (Page 24)

Adjustment part	Description
<b>6. TINT</b>	
NTSC 3.58 TINT	Value (B) in the figure: Set to <b>+4V (W &amp; Cy)</b> .

## ■ DEFLECTION CIRCUIT ADJUSTMENT (Page 26)

[DEFLECTION ADJUSTMENTS INITIAL SETTING VALUE (SUB MENU 4. DEF)]

Setting item	Adjustment name	Initial setting value					
		REGULAR		ZOOM		16:9	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
1. V-SHIFT	Vertical shift	-5	-1	0	+1	0	0
2. V-SIZE	Vertical size	+7	-1	+36	+35	-39	-39
3. SUBTITLE	Subtitle	0	+1	-7	+7	0	0
4. H-CENT	Horizontal center	-10	+5	-1	-1	0	-1
5. H-SIZE	Horizontal size	-12	-1	-4	-4	0	-1
6. EW-PIN	Side pin correction	-3	+1	-4	-4	+2	0
7. TRAPEZ	Trapezoidal distortion correction	+4	-2	0	-1	0	+1
8. EW.COR.L	Corner pin correction Low side	-2	0	-1	-1	+1	+1
9. EW.COR.H	Corner pin correction High side	-2	0	0	0	+1	+1
10. V.S-COR	Vertical size correction	+13	0	0	0	0	0
11. V-LIN	Vertical Linearity	+2	-1	-1	-1	+1	0
12. H-BLK-R	Horizontal Blanking Right	0	0	0	0	+77	0
13. H-BLK-L	Horizontal Blanking Left	0	0	0	0	+2	0
14. V-EHT	V size correction level caused by EHT change	-4	0	0	0	0	0
15. H-EHT	H size correction level caused by EHT change	-3	0	0	0	0	0
16. EHT-GAIN	Size correction gain caused by EHT change	+3	0	0	0	0	0

: Do not adjust.

## ■ AUDIO CIRCUIT ADJUSTMENT (Page 30)

[AUDIO ADJUSTMENTS INITIAL SETTING VALUE (SUB MENU 3. AUDIO)]

Setting item	Variable range	Fixed value
1. ERROR LIMIT	000H ~ FF0H	100H
2. A2 ID THR	00H ~ FFH	14H
3. BASS	-17 ~ +17	+0
4. TREBLE	-17 ~ +17	+0

: Do not adjust.

# JVC

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