

# Supplement to Wells-Gardner 19-Inch Color Monitor Manual

(Atari Part Number TM-281)

This supplement documents changes to the above-named manual (TM-281) for this monitor. These changes were made to customize the monitor for your Atari System II™ game.

Page	Section:	Change:
Cover		Add: Model 19K4915
2	1.0 Supply Voltage	FROM: 108 VAC-132 VAC TO: 102 VAC-132 VAC and add: 145 VDC-165 VDC
2	2.0 High Voltage (EHT) For 19-Inch V models	FROM: 24.3 ± 0.8 KV at 0 Beam TO: 27.4 KV 0.8 KV at 0 Beam FROM: 22.8 ± 0.8 KV at 1 mA Beam TO: 23.6 KV 0.8 at 0.75 mA Beam
7	5.7	Delete all text in this paragraph after "shown in Fig. 10."
7	5.13	Change the text to read: "With the oscilloscope connected to the collector of the lead color video output transistor (see Fig. 3), adjust the black level control to obtain the waveform in Fig. 10."
7	Figure 10, Blanking Pulses Diagram	FROM: 140 V TO: 100 V
13	Oscilloscope Waveform Patterns	Remove the entire page.
27	Typical DC Voltages With Input Signal	Remove the entire page; replace with attached corrected page 27.

Refer to the parts list (pages 8-10) of the monitor manual for the majority of the parts in this monitor. Your System II/Paperboy™ game uses a Wells-Gardner monitor, Model 19K4915: this is the same as Models K4901, K4906, K4951, and K4956 *with the following exceptions:*

## Main Board

Reference No.	Part No.	Description
<b>Resistors</b>		
R202	340X2680-934	68 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R207	340X2271-934	270 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R209	340X2271-934	270 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R211	340X2271-934	270 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R233	340X2221-934	220 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R237	340X2471-934	470 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R238	340X2471-934	470 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R239	340X2471-934	470 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R240	340X2471-934	470 $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R351	340X2183-934	18 k $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R353	340X2393-934	39 k $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R354	340X2432-934	4.3 k $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R359	340X8222-934	8.2 k $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R370	340X2223-934	22 k $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
R387	ELIMINATED	
R391	340X4222-633	2.2 k $\Omega$ , $\pm 5\%$ , 1 W, Metal Oxide
R394	43X0478-001	680 $\Omega$ , $\pm 5\%$ , 5 W, Wirewound
R503	43X0481-001	180 $\Omega$ , $\pm 5\%$ , 25 W, Wirewound
R701	340X5074-633	4.7 $\Omega$ , $\pm 5\%$ , 2 W, Metal Oxide
R705	340X3473-934	4.7 k $\Omega$ , $\pm 5\%$ , 1/2 W, Carbon
R706	340X2273-934	27 k $\Omega$ , $\pm 5\%$ , 1/4 W, Carbon
VR352	204X2070-072	10 k $\Omega$ -B Semi Fixed
<b>Capacitors</b>		
C353	46X0528-024	0.0047 $\mu$ F, 33 V, Polystyrene
C355	203X1600-366	0.0068 $\mu$ F, 50 V, Mylar
C360	202X7050-366	0.0033 $\mu$ F, 500 V, Ceramic
C363	46X0551-001	4300 pF, 1.5 kV, PP
C368	203X1100-858	0.1 $\mu$ F, 50 V
C370	80X0098-048	5 pF, $\pm 20\%$ , 2 kV, Ceramic, NPO
C385	46X0536-036	1000 pF, 1.6 kV, PP
C389	45X0525-008	0.22 $\mu$ F, 25 V, Tantalum
C391	46X0544-005	0.15 $\mu$ F, 100 V, PP
C705	46X0544-004	0.012 $\mu$ F, 100 V, PP
C706	45X0566-003	22 $\mu$ F, 100 V, Electrolytic

### Semiconductors

D705	66X0075-001	Diode, 1N4005
Q352	86X0178-001	Transistor (NPN), 2SD870
IC501	86X0179-001	Integrated Circuit, STR380
ZD202	66X0040-019	Diode, Zener, 3.9 V, $\pm 5\%$ , $\frac{1}{2}$ W

### Transformers & Coils

L351	ELIMINATED	
L352	9A2838-002	Horizontal Size Coil
L353	9A2813-002	Linearity Coil

## Final Assembly Parts

88X0217-506	CRT, Rauland M48AAWOOX
ELIMINATED	Lateral/Purity Assembly
9A2843-001	Deflection Yoke
205X9800-158	Purity/Convergence Assembly

## Neck Board

### Resistors

R410	340X5682-633	6.8 k $\Omega$ , $\pm 5\%$ , 2 W, Metal Oxide
R411	340X5682-633	6.8 k $\Omega$ , $\pm 5\%$ , 2 W, Metal Oxide
R412	340X5682-633	6.8 k $\Omega$ , $\pm 5\%$ , 2 W, Metal Oxide

### Capacitors

C401	80X0099-023	390 pF, 500 V, Ceramic
C402	80X0099-023	390 pF, 500 V, Ceramic
C403	80X0099-023	390 pF, 500 V, Ceramic

## Auto Protect Board (P390)

### Resistors

R100	340X2330-934	33 $\Omega$ , $\pm 5\%$ , $\frac{3}{4}$ W, Carbon
R101	340X2101-934	100 $\Omega$ , $\pm 5\%$ , $\frac{3}{4}$ W, Carbon
R102	340X2102-934	1 k $\Omega$ , $\pm 5\%$ , $\frac{3}{4}$ W, Carbon
R103	340X2223-934	22 k $\Omega$ , $\pm 5\%$ , $\frac{3}{4}$ W, Carbon
R104	40X0639-007	5s k $\Omega$ Control

### Capacitors

C100	45X0560-017	47 $\mu$ F, 25 V, Electrolytic
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### Semiconductors

Q100	86X0114-001	Transistor (PNP), 2N3906
Q101	86X0127-001	Transistor (NPN), TPS 98
ZD100	66X0040-032	Diode, 13 V, $\pm 3\%$ , $\frac{1}{2}$ W Zener

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### Typical DC Voltages With Input Signal

Transistor Number	Collector	Transistor Base	Emitter
Q201	8.1	0.43	0.36
Q202	9.8	8.1	9.3
Q203	0.0	0.35	1.0
Q204	0.0	0.35	1.0
Q205	0.0	0.35	1.0
Q206	9.7	5.5	4.8
Q207	9.7	5.5	4.8
Q208	9.7	5.5	4.8
Q209	15.4	-0.30	0.01
Q210	14.0	0.31	0.17
Q301	15.5	4.7	4.2
Q302	79.0	37.8	37.7
Q303	37.0	0.51	0.0
Q351	41.4	0.41	0.0
Q352	Do not measure	-0.03	0.0
Q401	88.3	8.5	8.4
Q402	88.3	8.5	8.4
Q403	88.3	8.5	8.4
Q901	34.6	17.5	16.9

#### I. C. 301

Pin No. Voltage

1	1.16
2	4.0
3	6.8
4	3.9
5	12.1
6	4.1
7	4.1
8	1.9
9	12.2
10	14.2
11	3.6
12	7.9
13	6.8
14	12.8
15	1.52
16	0.0
17	0.83
18	0.0

#### I. C. 501

Pin No. Voltage

1	159
2	123
3	0
4	125