JVC Power Supply trouble shooting procedure

This procedure is based on **GF Chassis**. Minor differences could be seen in other chassis

Important Service manual information
Due to component tolerance production changes were made during manufacturing. Every effort is made to inform those changes in the service manual. During troubleshooting, **Always refer to the service manual**
Listed below are explanations of some of the abbreviations used in JVC service manual

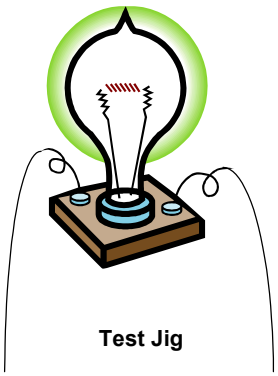
1. (*): Refer to the NOTE
2. (BW): Bus wire is used instead of that particular component
3. (OPT): The specific component is optional and is not used in this model
4. (Y): Chassis configuration bus wire
5. Shaded: Safety related components. Do not substitute these components

Chassis Preparation

1. Remove the main PWB along with the Operation PWB from the television
2. Do not apply AC power to the PWB
3. Using a suitable resistor, **discharge the electrolytic caps**, C910 and C538
4. Visually inspect the PWB and replace if there are any burnt components
5. Connect a **jumper wire between D922 Cathode and IC901 pin 4**
6. Connect another **jumper wire between** the chassis' **cold ground (ex: E1) and hot ground (ex: IC901 heat sink)**
7. In order to disconnect 130V supply from the flyback transformer, **remove L921**.

Test Jig Preparation

Connect two long jumper wires from a 120V lamp assembly as shown in figure
Use a 40W lamp.

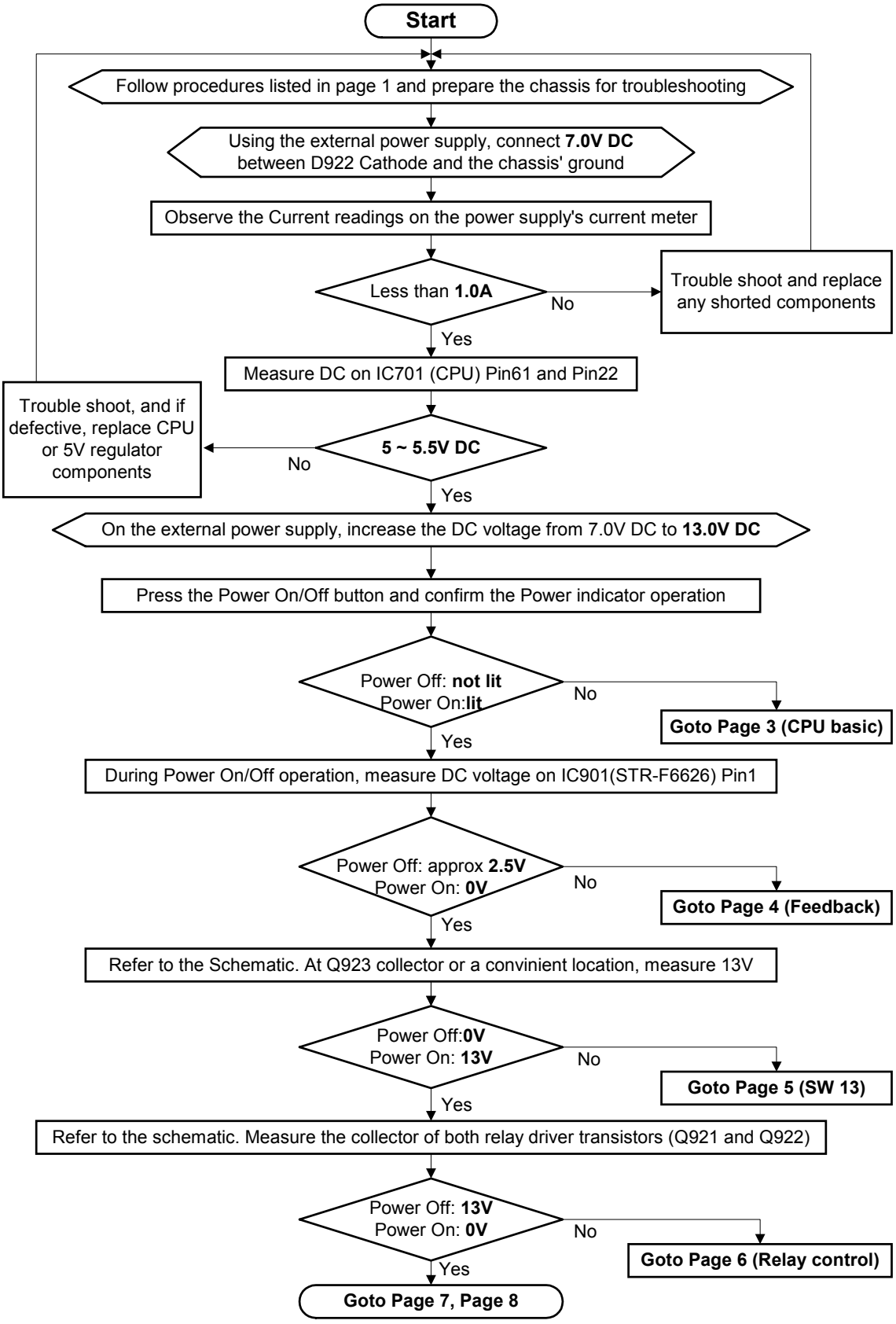


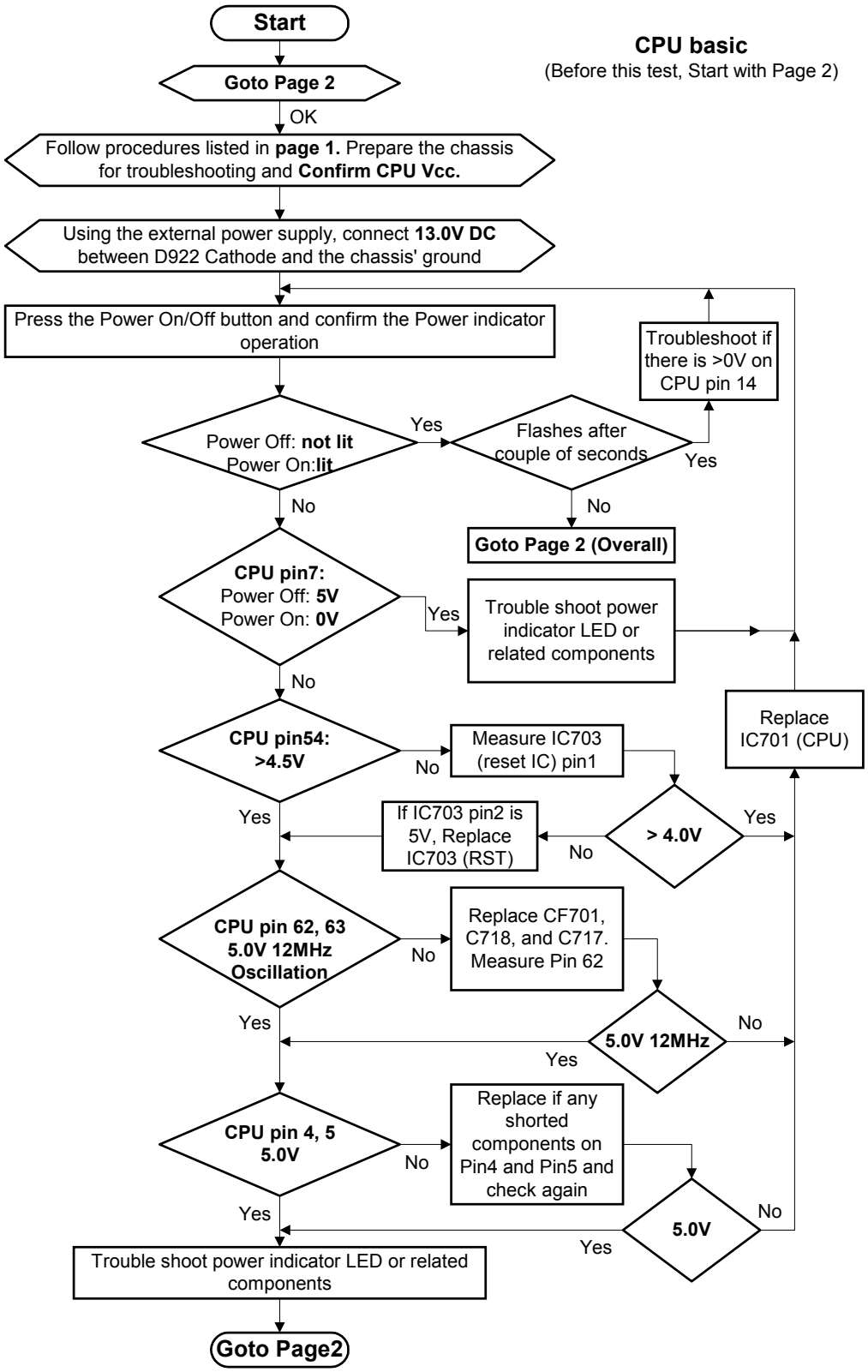
Test Instruments

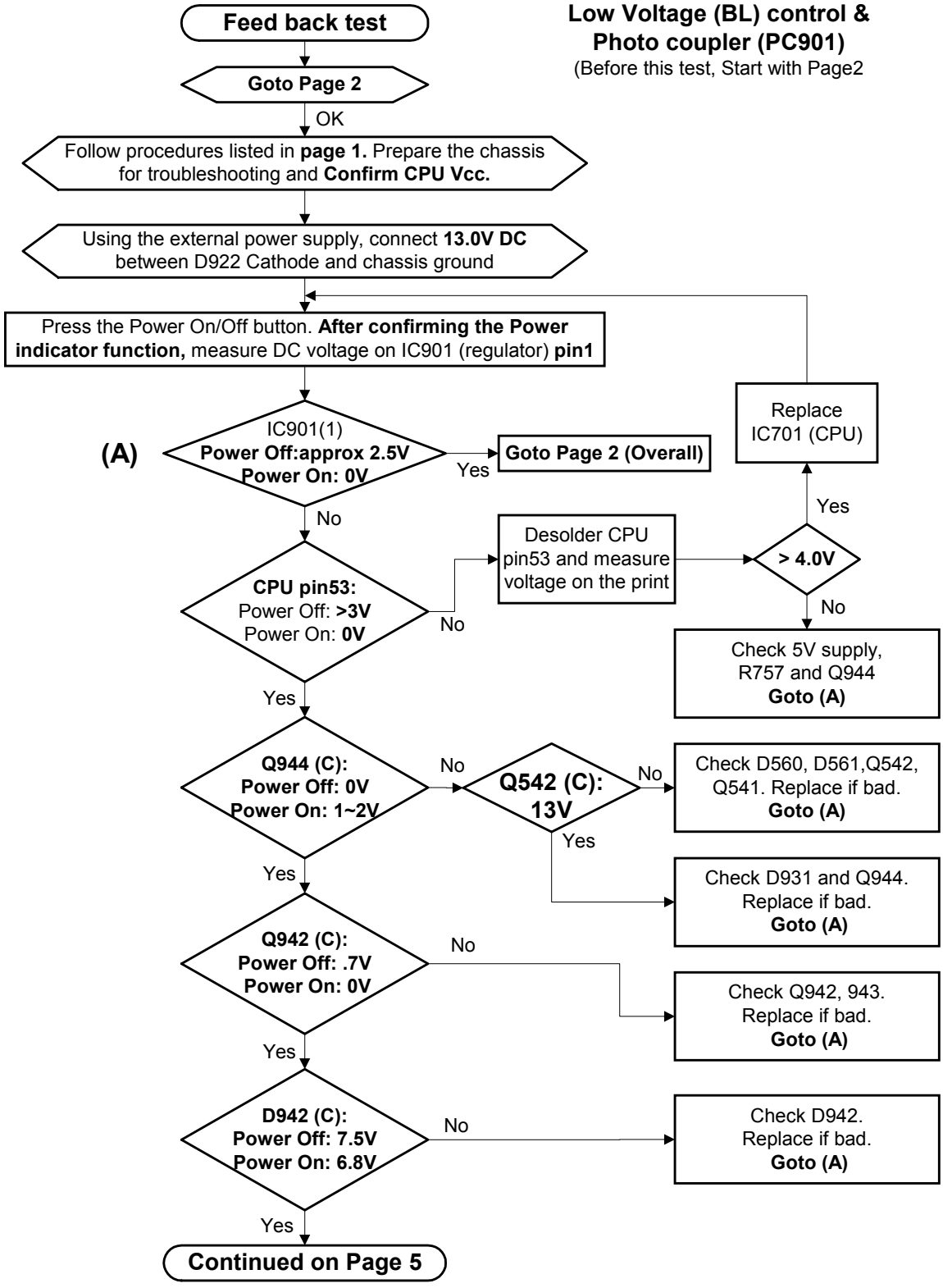
1. Variable DC Power Supply (0~30V; 3A)
2. Digital Multimeter
3. Alligator clips
4. Test jig as shown in picture

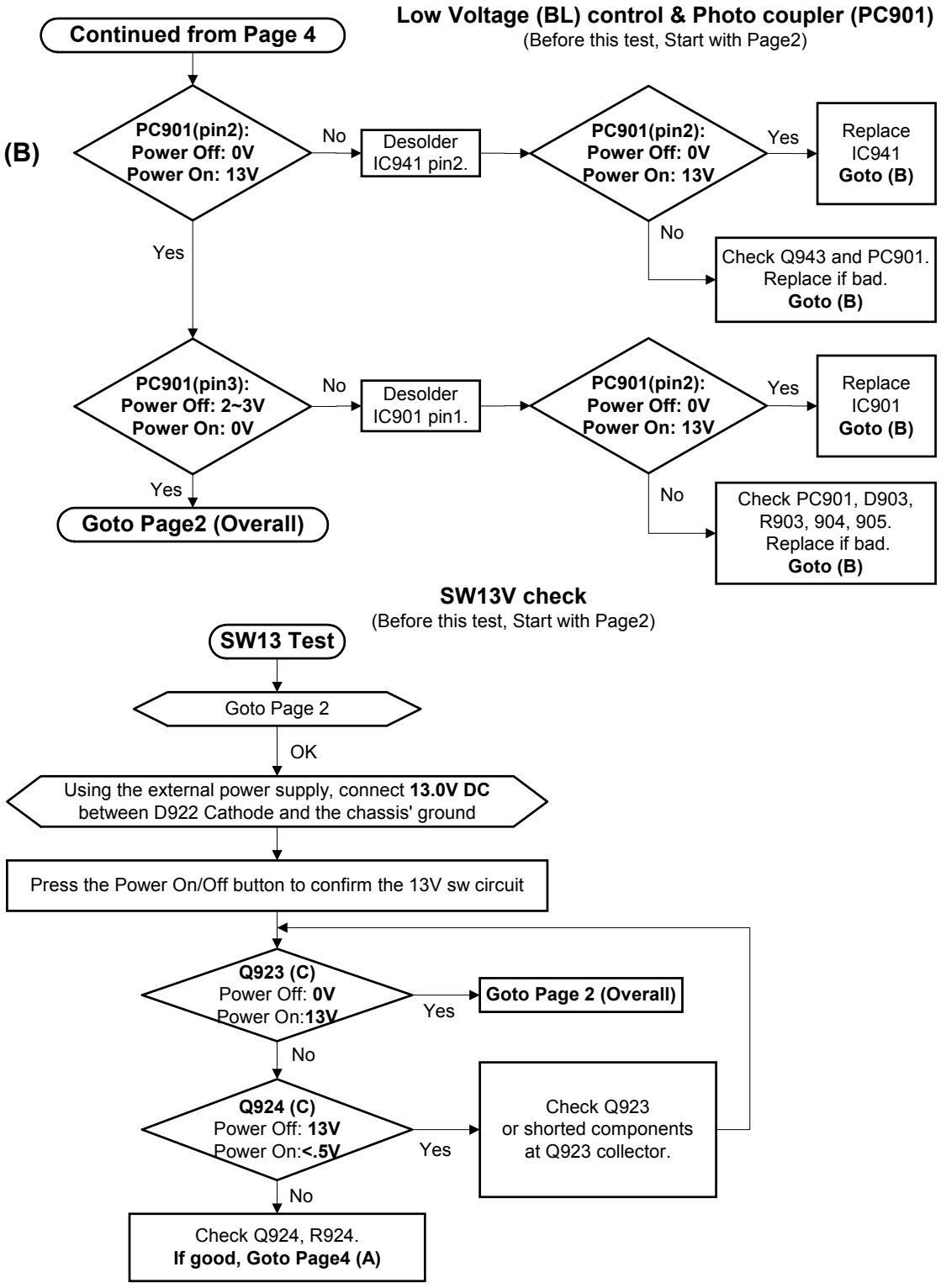
Caution
Before replacing any components, turn off or disconnect all power supplies and **discharge any charged caps**

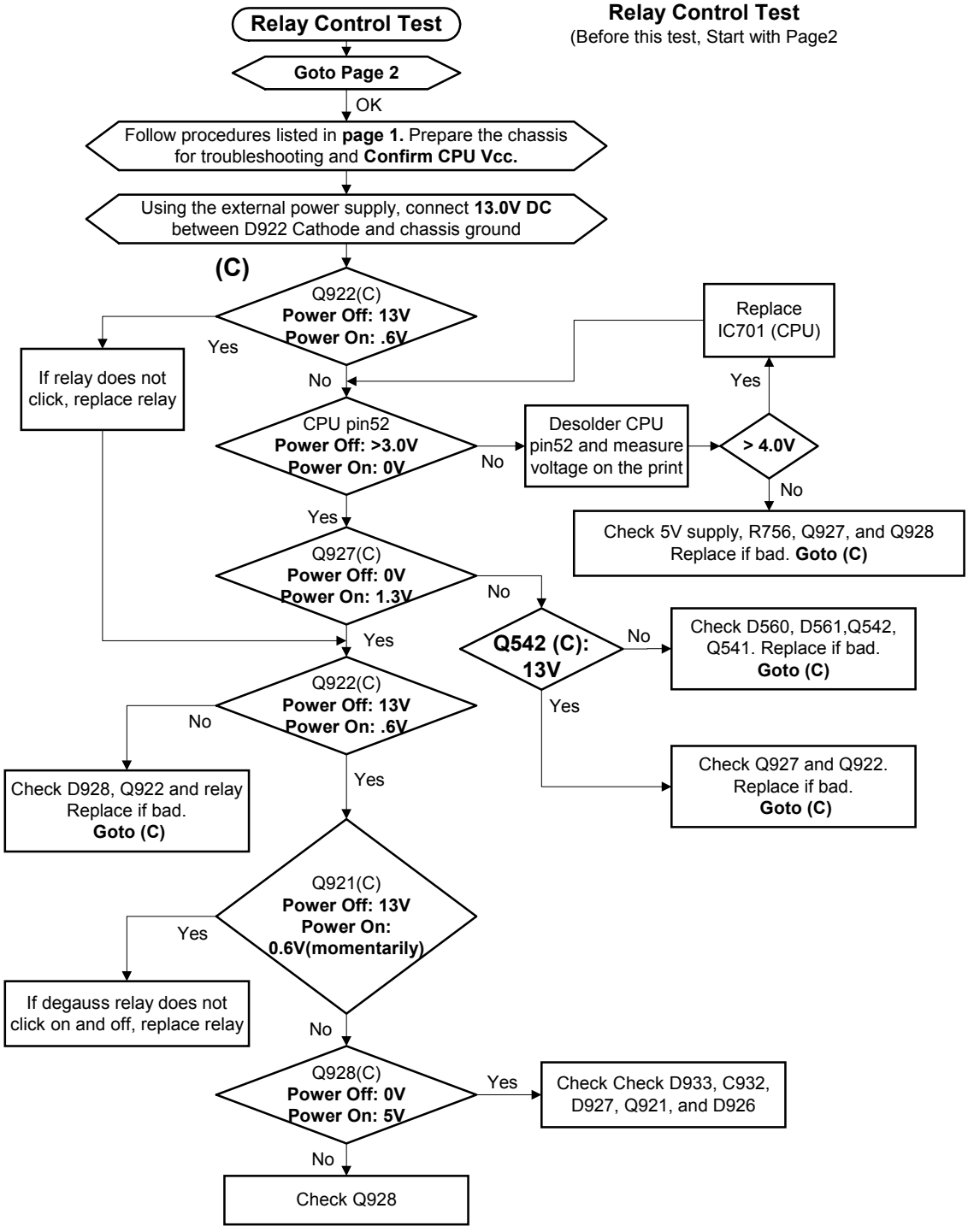
Overall

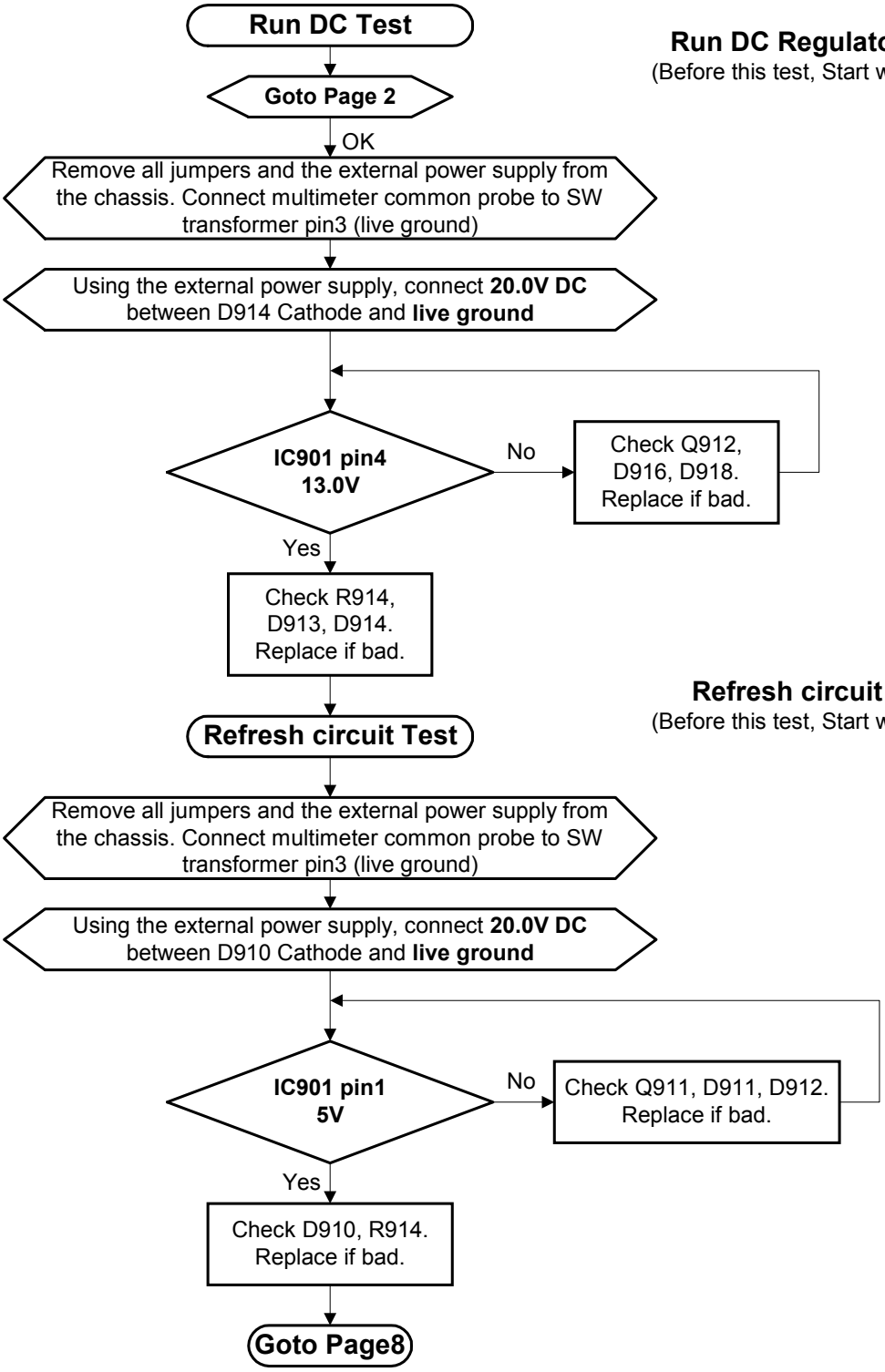

Start
Follow procedures listed in page 1 and prepare the chassis for troubleshooting
Using the external power supply, connect **7.0V DC** between D922 Cathode and the chassis' ground
Observe the Current readings on the power supply's current meter
Less than **1.0A**
No
Trouble shoot and replace any shorted components
Yes
Measure DC on IC701 (CPU) Pin61 and Pin22
Trouble shoot, and if defective, replace CPU or 5V regulator components
5 ~ 5.5V DC
No
Yes
On the external power supply, increase the DC voltage from 7.0V DC to **13.0V DC**
Press the Power On/Off button and confirm the Power indicator operation
Power Off: **not lit**
Power On:**lit**
No
Goto Page 3 (CPU basic)
Yes
During Power On/Off operation, measure DC voltage on IC901(STR-F6626) Pin1
Power Off: approx **2.5V**
Power On: **0V**
No
Goto Page 4 (Feedback)
Yes
Refer to the Schematic. At Q923 collector or a convinient location, measure 13V
Power Off:**0V**
Power On: **13V**
No
Goto Page 5 (SW 13)
Yes
Refer to the schematic. Measure the collector of both relay driver transistors (Q921 and Q922)
Power Off: **13V**
Power On: **0V**
No
Goto Page 6 (Relay control)
Yes
Goto Page 7, Page 8


Start
CPU basic
(Before this test, Start with Page 2)
Goto Page 2
OK
Follow procedures listed in page 1. Prepare the chassis for troubleshooting and Confirm CPU Vcc.
Using the external power supply, connect 13.0V DC between D922 Cathode and the chassis' ground
Press the Power On/Off button and confirm the Power indicator operation
Troubleshoot if there is >0V on CPU pin 14
Power Off: not lit
Power On:lit
Yes
Flashes after couple of seconds
Yes
No
No
Goto Page 2 (Overall)
CPU pin7:
Power Off: 5V
Power On: 0V
Yes
Trouble shoot power indicator LED or related components
No
Replace IC701 (CPU)
CPU pin54:
>4.5V
No
Measure IC703 (reset IC) pin1
Yes
If IC703 pin2 is 5V, Replace IC703 (RST)
No
> 4.0V
Yes
CPU pin 62, 63
5.0V 12MHz
Oscillation
No
Replace CF701, C718, and C717. Measure Pin 62
Yes
5.0V 12MHz
No
Yes
CPU pin 4, 5
5.0V
No
Replace if any shorted components on Pin4 and Pin5 and check again
Yes
5.0V
No
Yes
Trouble shoot power indicator LED or related components
Goto Page2


Feed back test
Low Voltage (BL) control & Photo coupler (PC901)
(Before this test, Start with Page2
Goto Page 2
OK
Follow procedures listed in page 1. Prepare the chassis for troubleshooting and Confirm CPU Vcc.
Using the external power supply, connect 13.0V DC between D922 Cathode and chassis ground
Press the Power On/Off button. After confirming the Power indicator function, measure DC voltage on IC901 (regulator) pin1
(A)
IC901(1) Power Off:approx 2.5V Power On: 0V
Yes
Goto Page 2 (Overall)
No
Replace IC701 (CPU)
Yes
> 4.0V
No
Desolder CPU pin53 and measure voltage on the print
CPU pin53: Power Off: >3V Power On: 0V
No
Check 5V supply, R757 and Q944 Goto (A)
Yes
Q944 (C): Power Off: 0V Power On: 1~2V
No
Q542 (C): 13V
No
Check D560, D561,Q542, Q541. Replace if bad. Goto (A)
Yes
Check D931 and Q944. Replace if bad. Goto (A)
Yes
Q942 (C): Power Off: .7V Power On: 0V
No
Check Q942, 943. Replace if bad. Goto (A)
Yes
D942 (C): Power Off: 7.5V Power On: 6.8V
No
Check D942. Replace if bad. Goto (A)
Yes
Continued on Page 5

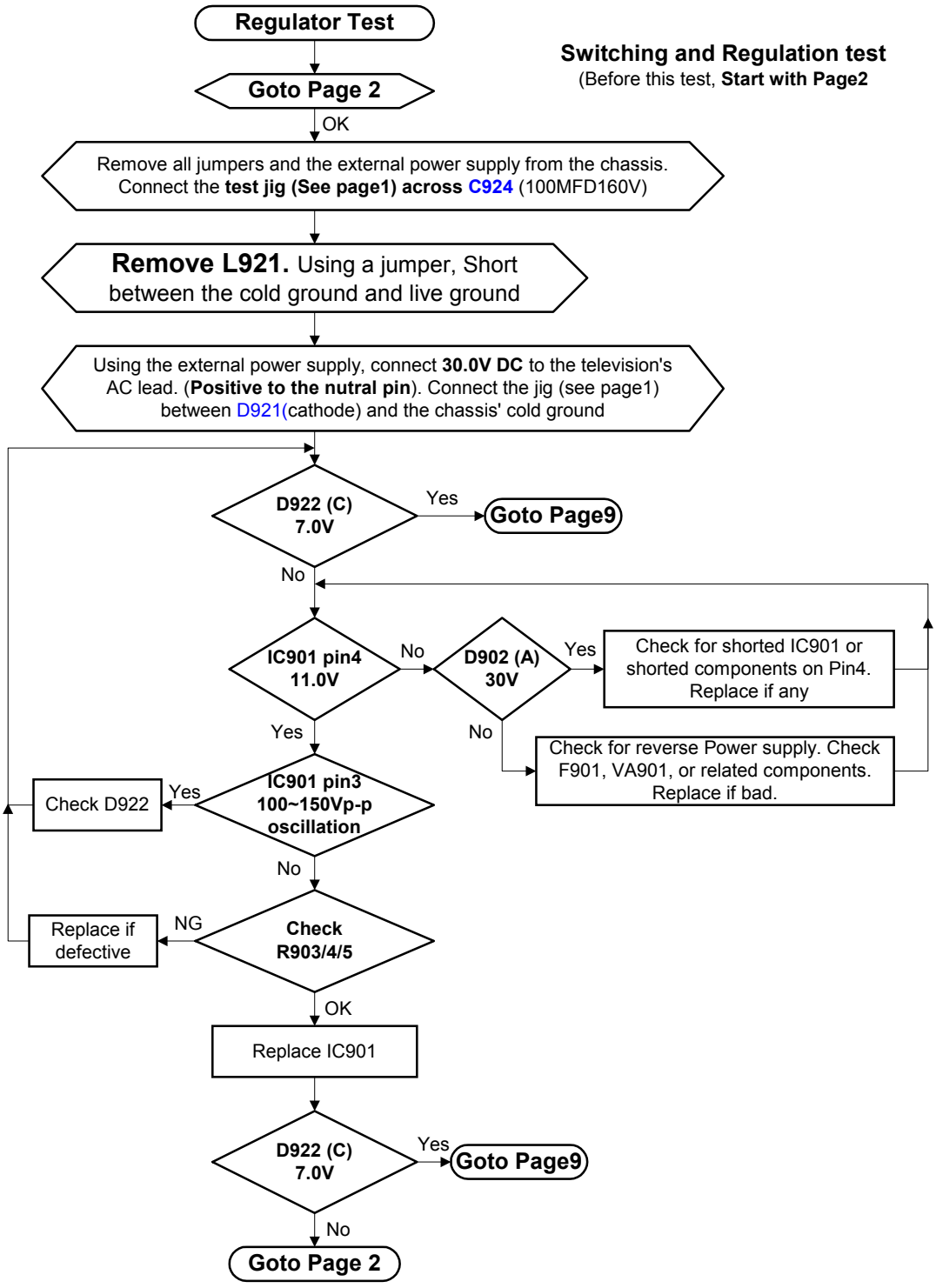

Low Voltage (BL) control & Photo coupler (PC901)
(Before this test, Start with Page2)
Continued from Page 4
(B)
PC901(pin2):
Power Off: 0V
Power On: 13V
No
Desolder
IC941 pin2.
PC901(pin2):
Power Off: 0V
Power On: 13V
Yes
Replace
IC941
Goto (B)
No
Check Q943 and PC901.
Replace if bad.
Goto (B)
Yes
PC901(pin3):
Power Off: 2~3V
Power On: 0V
No
Desolder
IC901 pin1.
PC901(pin2):
Power Off: 0V
Power On: 13V
Yes
Replace
IC901
Goto (B)
No
Check PC901, D903,
R903, 904, 905.
Replace if bad.
Goto (B)
Yes
Goto Page2 (Overall)
SW13V check
(Before this test, Start with Page2)
SW13 Test
Goto Page 2
OK
Using the external power supply, connect 13.0V DC
between D922 Cathode and the chassis' ground
Press the Power On/Off button to confirm the 13V sw circuit
Q923 (C)
Power Off: 0V
Power On:13V
Yes
Goto Page 2 (Overall)
No
Q924 (C)
Power Off: 13V
Power On:<.5V
Yes
Check Q923
or shorted components
at Q923 collector.
No
Check Q924, R924.
If good, Goto Page4 (A)

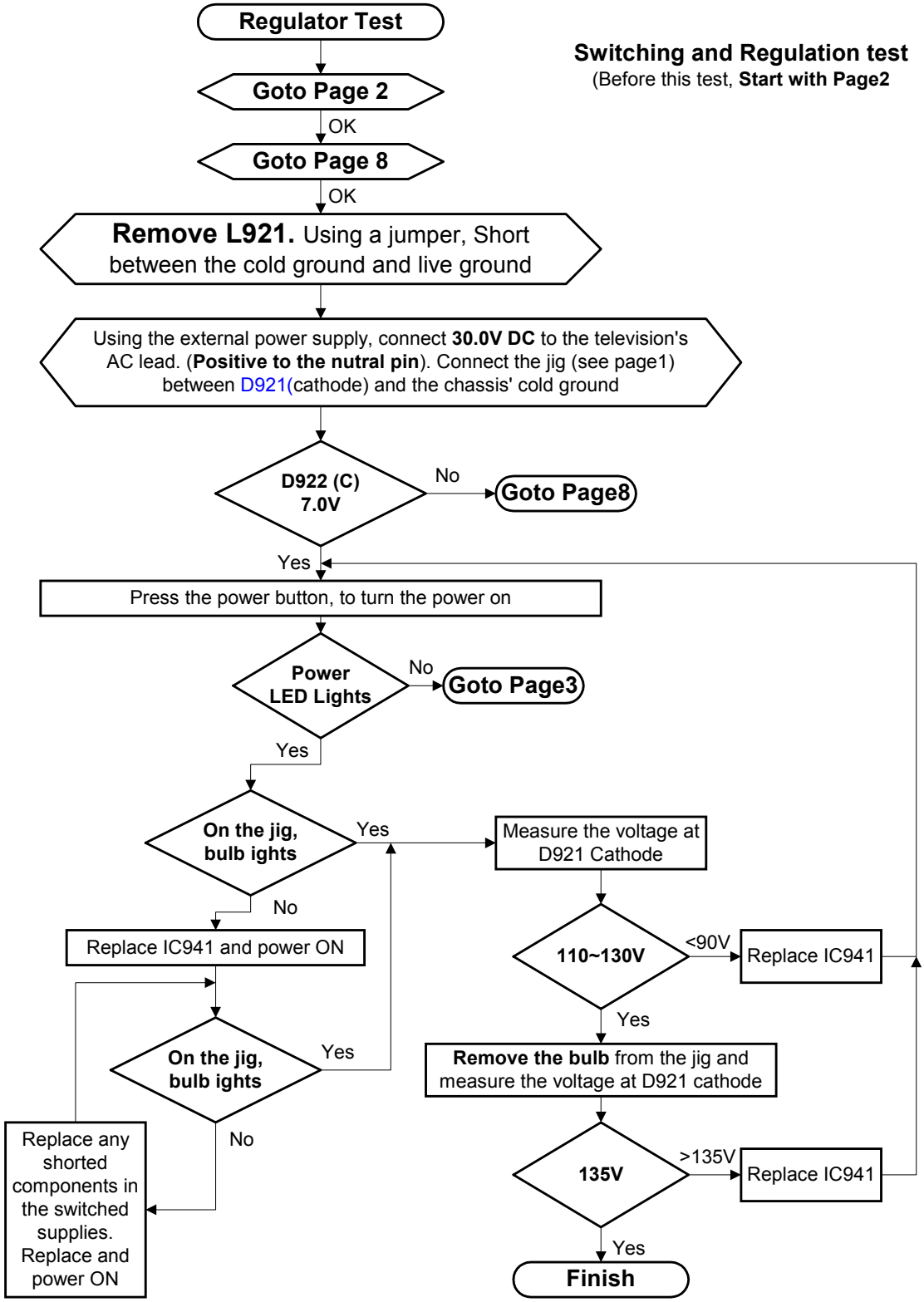

Relay Control Test
Relay Control Test
(Before this test, Start with Page2
Goto Page 2
OK
Follow procedures listed in page 1. Prepare the chassis for troubleshooting and Confirm CPU Vcc.
Using the external power supply, connect 13.0V DC between D922 Cathode and chassis ground
(C)
Q922(C)
Power Off: 13V
Power On: .6V
Yes
No
If relay does not click, replace relay
Replace IC701 (CPU)
Yes
CPU pin52
Power Off: >3.0V
Power On: 0V
No
Desolder CPU pin52 and measure voltage on the print
> 4.0V
No
Check 5V supply, R756, Q927, and Q928 Replace if bad. Goto (C)
Yes
Q927(C)
Power Off: 0V
Power On: 1.3V
No
Q542 (C): 13V
No
Check D560, D561,Q542, Q541. Replace if bad. Goto (C)
Yes
Yes
Q922(C)
Power Off: 13V
Power On: .6V
No
Check D928, Q922 and relay Replace if bad. Goto (C)
Yes
Check Q927 and Q922. Replace if bad. Goto (C)
Q921(C)
Power Off: 13V
Power On: 0.6V(momentarily)
Yes
If degauss relay does not click on and off, replace relay
No
Q928(C)
Power Off: 0V
Power On: 5V
Yes
Check Check D933, C932, D927, Q921, and D926
No
Check Q928



Run DC Regulator Test
(Before this test, Start with Page2

Refresh circuit Test
(Before this test, Start with Page2


Regulator Test
Switching and Regulation test
(Before this test, Start with Page2
Goto Page 2
OK
Remove all jumpers and the external power supply from the chassis.
Connect the test jig (See page1) across C924 (100MFD160V)
Remove L921. Using a jumper, Short between the cold ground and live ground
Using the external power supply, connect 30.0V DC to the television's AC lead. (Positive to the nutral pin). Connect the jig (see page1) between D921(cathode) and the chassis' cold ground
D922 (C) 7.0V
Yes
Goto Page9
No
IC901 pin4 11.0V
No
D902 (A) 30V
Yes
Check for shorted IC901 or shorted components on Pin4. Replace if any
Yes
No
Check for reverse Power supply. Check F901, VA901, or related components. Replace if bad.
IC901 pin3 100~150Vp-p oscillation
Yes
Check D922
No
Check R903/4/5
NG
Replace if defective
OK
Replace IC901
D922 (C) 7.0V
Yes
Goto Page9
No
Goto Page 2


Regulator Test
Switching and Regulation test
(Before this test, Start with Page2
Goto Page 2
OK
Goto Page 8
OK
Remove L921. Using a jumper, Short between the cold ground and live ground
Using the external power supply, connect 30.0V DC to the television's AC lead. (Positive to the nutral pin). Connect the jig (see page1) between D921(cathode) and the chassis' cold ground
D922 (C) 7.0V
No
Goto Page8
Yes
Press the power button, to turn the power on
Power LED Lights
No
Goto Page3
Yes
On the jig, bulb ights
Yes
Measure the voltage at D921 Cathode
No
Replace IC941 and power ON
110~130V
<90V
Replace IC941
Yes
On the jig, bulb ights
Yes
Remove the bulb from the jig and measure the voltage at D921 cathode
No
Replace any shorted components in the switched supplies. Replace and power ON
135V
>135V
Replace IC941
Yes
Finish