

Service Manual

LCD TV

Simplified



Model No. TX-L24X5B
TX-L24X5E
TX-LR24X5

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Panasonic

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Safety Precautions

General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
4. When conducting repairs and servicing, do not attempt to modify the equipment, its parts or its materials.
5. When wiring units (with cables, flexible cables or lead wires) are supplied as repair parts and only one wire or some of the wires have been broken or disconnected, do not attempt to repair or re-wire the units. Replace the entire wiring unit instead.
6. When conducting repairs and servicing, do not twist the Faston connectors but plug them straight in or unplug them straight out.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be 100 Mohm and over. When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

1.1.2. Leakage Current Hot Check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kohm, 10 watts resistor, in parallel with 0.15 μ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

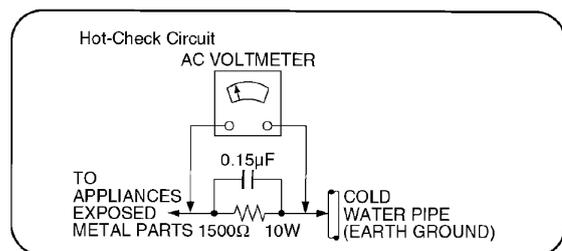


Figure 1

Warning

Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor [chip] components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as [anti-static (ESD protected)] can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise ham less motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

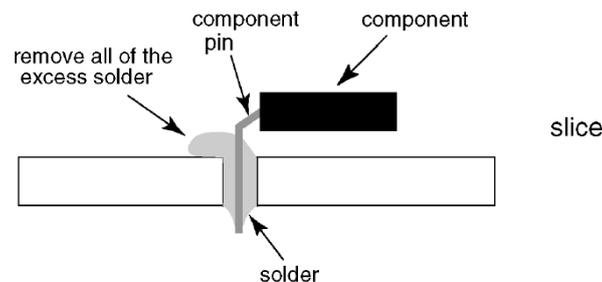
PCBs manufactured using lead free solder will have the PbF within a leaf Symbol **PbF** stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).

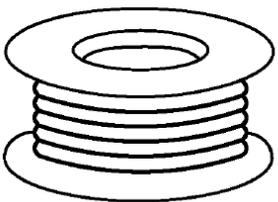
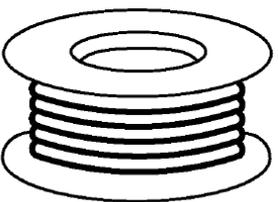
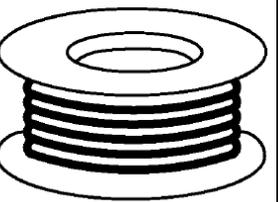
If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.

- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



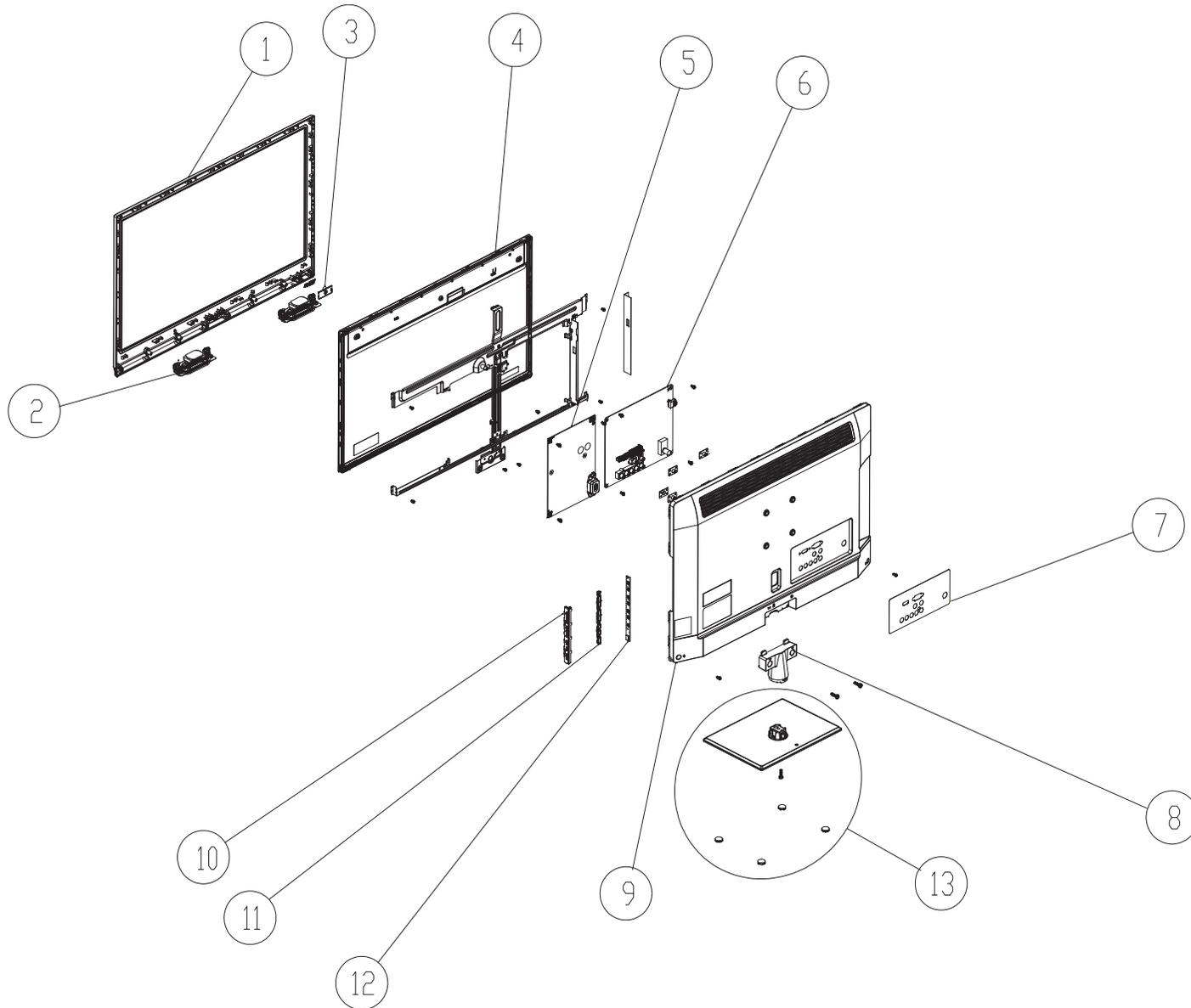
Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

Exploded View and Replacement Parts List

Exploded View



Replacement Parts List

Important Safety Notice

Components Identified by  mark have special characteristics important for safety.
* When replacing any of these components, use only manufacturers specified parts.
In case of ordering these spare parts, please always add the complete Model-Type number to your order.

TX-L24X5B

Location	Parts Number	Description
1	TZZ00000244A	BEZEL 
2	TZZ00000185A	SPEAKER 
3	TZZ00000355A	IR BOARD 
4	L5EDDY00394	LCD PANEL 
5	TZZ00000396A	POWER BOARD 
6	TZZ00000308A	MAIN BOARD 
7	TZZ00000447A	IO LABEL
8	TZZ00000524A	STAND 
9	TZZ00000245A	REAR COVER 
10	TZZ00000516A	KEY COVER
11	TZZ00000519A	KEY PAD
12	TZZ00000361A	KEY BOARD 
13	TZZ00000526A	BASE 
.	TZZ00000007A	REMOTE CONTROLLER 
.	TZZ00000187A	POWER CORD 
.	TZZ00000207A	CABLE_CN601-SPK
.	TZZ00000213A	CABLE_MAIN-POWER
.	TZZ00000227A	CABLE_CN401-001/201
.	TZZ00000236A	LVDS CABLE
.	TZZ00000409A	RATING LABEL 
.	TZZ00000449A	MANUAL 
.	TZZ00000492A	CARTON 
.	TZZ00000500A	PE BAG FOR SET
.	TZZ00000583A	CUSHION-T
.	TZZ00000584A	CUSHION-B

TX-L24X5E

Location	Parts Number	Description
1	TZZ00000244A	BEZEL 
2	TZZ00000185A	SPEAKER 
3	TZZ00000355A	IR BOARD 
4	L5EDDY00394	LCD PANEL 
5	TZZ00000396A	POWER BOARD 
6	TZZ00000305A	MAIN BOARD 
7	TZZ00000448A	IO LABEL
8	TZZ00000524A	STAND 
9	TZZ00000245A	REAR COVER 
10	TZZ00000516A	KEY COVER
11	TZZ00000519A	KEY PAD
12	TZZ00000361A	KEY BOARD 
13	TZZ00000526A	BASE 
.	TZZ00000007A	REMOTE CONTROLLER 
.	TZZ00000177A	POWER CORD 
.	TZZ00000207A	CABLE_CN601-SPK
.	TZZ00000213A	CABLE_MAIN-POWER
.	TZZ00000227A	CABLE_CN401-001/201
.	TZZ00000236A	LVDS CABLE
.	TZZ00000410A	RATING LABEL 
.	TZZ00000478A	QSG 
.	TZZ00000493A	CARTON 
.	TZZ00000500A	PE BAG FOR SET
.	TZZ00000509A	CD MANUAL 
.	TZZ00000583A	CUSHION-T
.	TZZ00000584A	CUSHION-B

TX-LR24X5

Location	Parts Number	Description
1	TZZ00000244A	BEZEL 
2	TZZ00000185A	SPEAKER 
3	TZZ00000355A	IR BOARD 
4	L5EDDY00394	LCD PANEL 
5	TZZ00000396A	POWER BOARD 
6	TZZ00000310A	MAIN BOARD 
7	TZZ00000448A	IO LABEL
8	TZZ00000524A	STAND 
9	TZZ00000245A	REAR COVER 
10	TZZ00000516A	KEY COVER
11	TZZ00000519A	KEY PAD
12	TZZ00000361A	KEY BOARD 
13	TZZ00000526A	BASE 
.	TZZ00000007A	REMOTE CONTROLLER 
.	TZZ00000177A	POWER CORD 
.	TZZ00000207A	CABLE_CN601-SPK
.	TZZ00000213A	CABLE_MAIN-POWER
.	TZZ00000227A	CABLE_CN401-001/201
.	TZZ00000236A	LVDS CABLE
.	TZZ00000411A	RATING LABEL 
.	TZZ00000450A	MANUAL 
.	TZZ00000494A	CARTON 
.	TZZ00000500A	PE BAG FOR SET
.	TZZ00000583A	CUSHION-T
.	TZZ00000584A	CUSHION-B