LINN

Ikemi Service Manual

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Introduction

About this manual

This manual is designed to help you as a Linn Retailer or Distributor to repair as many Ikemi faults at your premises or at a local repair centre as is practical and so provide the best possible service for your customer should a problem arise.
If you have any suggestions or comments regarding this manual, please contact Customer Services at Linn Products Ltd.

Retailer & Distributor Obligations

Linn Specialist Retailers and Distributors are obliged to carry out the repairs in this manual under the terms of the contract & warranty agreements. You should return a faulty product to Linn for repair, only if the fault is not covered in this Service Manual. If a product, which is under warranty, is returned to Linn for repair and the fault is covered in the service manual, Linn may levy a charge and this charge should not be passed to the customer.

How to use this manual

The main body of this manual, the fault table, is designed to be as quick and easy as possible to use when you are confronted with a faulty product and so it is arranged by fault symptom – the symptom is usually all that you will know about the fault.
If you are unsure about the meaning of any words or phrases, look in the **Glossary.** (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Before embarking on any Service work, you should read the **Service Procedures** section (accessible via Linfo Website http://linfo.linn.co.uk - Product Information), as there are certain procedures that must be followed in order to ensure the problem is resolved quickly and permanently

Table of contents & fault symptoms

Look firstly at the table of contents and find the category that covers the symptom you are seeing, then look down the list of faults in that section until you find the symptom or symptoms that best describe the problem.

Circumstances

Then simply follow the table along – the table specifies circumstances surrounding the fault symptom – e.g. whether the fault is likely to be intermittent or constant, if the fault only occurs within a range of serial numbers etc.

Possible causes

The next column details possible causes – this is effectively the most important section, probably the main reason you are looking at this manual at all. There may be several possible causes for the symptom you have – it is worth checking out all of these (and bear in mind that there may be more than one fault). For some faults, simple checks are detailed that you can use to rule out the problem without replacing any parts, whereas for other faults, the simplest way to rule out the problem is to replace the component(s) listed

Cure

Quite simply the action that you must take to cure the problem.

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Important Safety Information

Mains connections

This appliance **must** be earthed – both for Safety and functional reasons.

Lethal Voltages

Inside the Ikemi, lethal voltages are present, mainly around the mains inlet and inside the Brilliant power supply. Be extremely careful if working on an Ikemi with the sleeve removed.

Ikemi placement, location & environment

Avoid locations where direct sunlight can shine on the display as sunlight (even diffused sunlight) is a strong source of infra-red light & this causes problems with the unit's remote control circuitry. The product may lock up or act unpredictably

Avoid certain types of artificial lighting, such as low energy bulbs, fluorescent light etc, as these emit strong infra-red patterns that can lock up or confuse the Ikemi control functions.

Do not locate near electronic products that may transmit RF, such as microcomputers, fax machines, TVs etc, or connect them to the same mains socket as these devices. Also avoid close contact with the mains or signal leads of such products – careful routing of the cable may be required.

Although the Ikemi can usually be stacked along with other products with no problem, it is better if possible to keep it apart from other products to prevent its operation being adversely affected by the heat and strong electrical field emitted by some products.

Avoid locations where there is a lot of dust.

Avoid locations that have high humidity or the chance of the unit getting wet.

Ikemi handling, transporting & general maintenance.

Always handle the Ikemi with great care.

Always turn off the Ikemi and any devices connected to it and wait a few seconds before connecting or disconnecting any plugs to/from the sockets at the back of the unit.

The Ikemi requires no general maintenance except the occasional removal and refitting of the interconnect leads to remake the contacts.

If the Ikemi requires to be transported at all, take the following precautions to ensure the product does not get damaged in transit:

- Refit the drawer protector that was fitted when the unit was new. If the drawer protector is lost, take a thin piece of card roughly 3cm x 10cm, open the drawer and bend the card over the end of the drawer. Remove the card, close the drawer (using the open/close button on front panel or remote control) and insert the shaped piece of card into the drawer slot so that it protects the drawer at top and bottom.
- Use the original packing. If not available, the correct packing can be ordered from Linn
- DO NOT place any manuals or accessories on top of or beside the product while shipping as they may scratch it. Place such items in the space provided in the packing box.

TAKE ANTI-STATIC PRECATIONS. If you are carrying out any work on the Ikemi with its' sleeve removed, **ALWAYS** take anti-static precautions as tiny static discharges from your body, which you may be completely

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unaware of, can damage electronic circuitry and cause major problems. Anti-static earth mats & wrist straps must be used when handling any of the circuit boards or any spare parts.

Compact Disc Industry Standards

Listed below are some of the agreed Industry Standards for the manufacture of Compact Discs.

- CD diameter should be between 117mm and 123mm
- CD thickness (including label) should be between 1.1mm and 1.5mm
- CD should allow more than 70% of light to reflect back from its' surface. This should not vary by more than 3% throughout the CD.
- The start of the data should be between 22m and 23mm from the centre of the disc. If the distance does not lie within these parameters, this may cause problems with reading the table of contents (TOC) and if the TOC cannot be read, the disc cannot be played.
- The spacing between tracks should be between 1.5uM and 1.7uM.
- Tracks should not vary by more than 70uM from the centre of the disc from rotation to rotation (eccentricity)
- Tracks should not vary by more than 70uM from the centre of the disc from rotation to rotation (concentricity)
- Disc speed should be between 1.2M/s and 1.4M/s
- The reflective layer within the disc should be flat and should not vary by more than 0.4mm.
- CDs should not be recorded in Mono
- The maximum recommended playing time of a CD is 74.7 minutes.

Some CD manufacturers do not adhere to all these recommendations and any variation (even in a single parameter) from the nominal specifications can affect the playability of the disc, so even if a disc looks pristine it can fail.

Power-up problems

General power up problems

Symptom	Circumstances	Possible Cause(s)	Cure
Won't power up. Power LED dead & no function.	Constant	Fuse blown in unit and/or in mains plug.	Replace fuse(s) with correct value & type. Fuse in mains lead should be 5A. Fuse in Ikemi should be "Slow Blow" – look for a 'T' before the rating on the fuse. Correct rating: T800mA
Won't power up - Power LED dead & no function	May be intermittent	Mains lead faulty	Replace faulty mains lead. See Ikemi Exploded Diagram for the correct part numbers (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Won't power up - Power LED dead & no function	Probably constant	Slimline Brilliant power supply faulty.	See Slimline Repair Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information) or replace Slimline.
Unit dies intermittently & may stop working for a while.	At any time	Mains voltage dropping too low for Ikemi to function correctly (known as 'Brown outs' as these voltage drops also sometimes cause the house lights to dim.)	Consult an electrician or your power company.
Doesn't power up **Or** Powers up (display LED lit) but no sound. **Or** Powers up but drawer will not open.	May be intermittent Symptoms may vary Applies only in areas of the world where 100-120V mains is used.	Wrong mains voltage for Ikemi voltage setting – mains voltage is too low. (e.g. Ikemi set for 230V being used with 115V mains supply.)	Check voltage setting on mains inlet at rear of unit – if set to wrong voltage for mains supply being used, adjust to correct setting.
Power LED dead or goes on & off. Display working okay	Ikemi functions okay otherwise. May be intermittent	Power LED assembly faulty	Replace power LED assembly – Linn part no: CONN 702.

Fuse blowing			
Symptom	**Circumstances**	**Possible Cause(s)**	**Cure**
Fuse blowing	May be intermittent	Wrong type of fuse fitted	Replace fuse(s) with correct value & type. Fuse in mains lead should be 5A. Fuse in Ikemi should be T800mA Fuse in Ikemi must be “Slow Blow” – look for a ‘T’ before the rating on the fuse.
Fuse blowing	May be intermittent	Mains surges. You will probably find that the Ikemi is not the only appliance that is affected.	Consult an electrician or your power company.
Fuse blowing	Constant	Wrong mains voltage for Ikemi voltage setting – mains voltage is too high (e.g. Ikemi set for 120V being used with 230V mains supply.)	Replace fuse with correct type & rating (see above). Check voltage setting on mains inlet at rear of unit – if set to wrong voltage for mains supply being used, adjust to correct setting. If Ikemi has been used at wrong voltage, Slimline Brilliant power supply may have been damaged by the ordeal. If the Ikemi does not function after fuse replaced (assuming new fuse is okay) see Slimline Repair Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information) or replace Slimline
Fuse blowing	May be intermittent but usually constant	Slimline Brilliant power supply faulty	See Slimline Repair Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information) or replace Slimline

Display & Control problems

General Display & Control problems

Symptom	Circumstances	Possible Cause(s)	Cure
Doesn't power up **Or** Powers up (display LED lit) but no sound. **Or** Powers up but drawer will not open.	May be intermittent. Symptoms may vary Applies only in regions of the world where 100-120V mains is used.	Wrong mains voltage for Ikemi voltage setting – mains voltage is too low. (e.g. Ikemi set for 230V being used with 115V mains supply.)	Check voltage setting on mains inlet at rear of unit – if set to wrong voltage for mains supply being used, adjust to correct setting.
Display dies – may be intermittent. Drawer will not open, even when display functions	Applies only to Ikemis < ser/no: 1892	In early units, there existed the slight possibility that the jack may jam. On the rare occasions that this did occur, often the jack motor would fail and some components on the CD board may also fail. It is feasible that a certain mode of this failure can pull down the power supplies and cause the display to die. Try (power off) completely disconnecting the Mekk and then power up again to see if the display comes back on.	Replace Mekk - See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Display dies	May be intermittent	Connector not making 100% contact	Check cables etc that connect the Display board to the Control board. Cable may just require re-seating or replace cable if faulty
Ikemi does not function as expected	Probably constant	The Ikemi has several user functions and other settings that can be used to customise the function of the unit. Perhaps one or more of these has been set and has changed the function in an unexpected way.	Reset the unit to factory settings (power up the Ikemi while holding the STOP button for 10 seconds) or alternatively you could run through all the user functions (see Owners Manual) and reset accordingly .

Drawer open/close problems

Drawer won't open/close

Symptom	Circumstances	Possible Cause(s)	Cure
Drawer won't open. Display etc okay	Probably constant – may work occasionally. Applies only in regions of the world where 100-120V mains is used.	Voltage set for 230V when unit is being used with 115V or 100V mains supply. For safety in world-wide distribution, all units dispatched from our factory are set to 230V. Possibly the unit has not been re-adjusted	Set voltage switch at rear of unit to 115V (this also applies to 100V supplies).
Drawer won't open. Drawer may become jammed part-way out	Applies only to Ikemis of ser/no < 1892	In early units, there existed the slight possibility that the jack may jam. On the rare occasions that this did occur, often the jack motor would fail and some components on the CD board may also fail.	See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Drawer won't open/close	May be intermittent	Connector not making 100% contact	Check all cables that connect the main board to the CD engine board. Cable may just require re-seating or replace if faulty.
Drawer won't open Drawer may also be slow/noisy	May be intermittent	Capacitors (C220, C226, C229, C223, C320, C324, C278, C276) on main board faulty (short circuit or low impedance) It is possible to check if any of these capacitors are faulty by simply measuring across them with an ohmmeter. A working capacitor will measure Meg-ohms, whereas a faulty capacitor will measure short circuit or a few ohms only (perhaps up to a maximum of 100-200ohms)	Replace faulty capacitors. Part details: 22uF; 10%; 25V; Tant; SM. Linn part no: CAP 458

Noisy Mekk

Symptom	Circumstances	Possible Cause(s)	Cure
Grinding noise heard when drawer opens/closes	Volume of noise may vary. More likely to occur on early units.	Noise caused by drawer guide rod	Replace Mekk - See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Noise like a hiss or high-pitched whine heard from Ikemi (i.e. not through speakers) only when CD is playing.	Will probably only be heard during very quiet passages of music or when music is muted	Laser hiss.	All CD lasers make this noise to a greater or lesser extent. It is normal and unavoidable and does not indicate a fault. The noise will not affect the function of the Ikemi. If a customer is insistent that the noise is unacceptable, laser replacement is the only solution. This will not be covered by the Linn warranty as it is not considered to be a fault and is not a guarantee that the noise will disappear permanently. This is an issue with the very nature of laser technology generally, rather than an Ikemi problem. See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Noise heard coming from Ikemi as CD turns – noise may be a scuffing, rubbing, ticking or scraping noise. CDs may also sometimes skip/mistrack.	May be intermittent	CD puck is rubbing on the top-plate of the Mekk. You will usually, but not always be able to see the puck rubbing as the disc turns.	Replace Mekk - See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)

Excessive noise heard when disc is loading & unloading (drawer raised/lowered or drawer opened/closed)	May be intermittent	One of the motors or bearings noisy. Important It must be noted that all Ikemi mekks make *some* noise – this is normal and unavoidable. The 'fault' above applies only to units that exhibit **excessive** noise. If in doubt, compare to another Ikemi.	Replace Mekk - See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)

CD playing problems

General CD playing problems

The following are some problems the Ikemi may exhibit when playing CDs.

Unfortunately, with CD players generally, a multitude of different faults exhibit very similar fault symptoms. It is also the case that very often a single fault can present itself in several different ways. This makes life difficult when it comes to separating the fault symptoms, so many different faults have the same symptoms.

Symptom	Circumstances	Possible Cause(s)	Cure
General CD playing problems - any of the following symptoms apply: CD doesn't spin; CD spins but wont read TOC; Reads TOC but won't access tracks; CD spins very fast; Accesses tracks but won't play Plays but skips/jumps	Fault occurs only with certain CDs ie. disc dependent	CD(s) faulty. Disc may be scratched and/or dirty; or may look okay but have manufacturing defects. Please note - it is common for poor CDs to fail in one player and play in another. If a disc fails in a certain Ikemi and plays in another CD player (may be a Linn player or another manufacturer's player) it does not necessarily mean that the Ikemi is faulty. We can only *Guarantee* to play discs that conform to industry standard – discs that do not cannot be guaranteed to play.	Clean or replace the offending discs See section on Compact Disc Industry Standards above
General CD playing problems (symptoms as listed above)	Probably intermittent, may come and go with temperature or movement/vibration Occurs with all CDs. Please check with at least 5 CDs before coming to the conclusion that it is not the fault of poor discs	One of the Mekk connections is not pushed fully home or is damaged.	Examine all connections going from the Mekk to the board – ensure all are pushed fully and firmly into their connector sockets. Check that cables are not broken.
General CD playing problems (symptoms as listed above)	May be intermittent	Laser worn out or faulty.	Replace Laser - See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)

General CD playing problems (symptoms as listed above)	Probably intermittent	Driver IC (U3) on CD board overheating intermittently.	Replace Mekk - See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information) This will cure the fault and prevent re-occurrence
CD skips/ mistracks – probably at a specific part of the CD	May be intermittent May be temperature dependent.	Laser cable is getting snagged as laser travels along length of disc.	See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information). This contains a section, in "Step 2 – preparing the laser tray", that explains how to prepare the cables to prevent snagging
CDs skipping, accompanied by a high-pitched singing noise coming from inside Ikemi	Intermittent. Only happens at a certain part of certain discs.	'Singing' laser. If the frequency of information being extracted from the disc coincides with the resonant frequency of the laser assembly, a feedback loop develops and an audible tone can be heard – the feedback interferes with the laser signal and causes mistracking. This fault has been almost totally eradicated, however the occasional incidence is possible	The cure is fairly simple – just add a plastic label (Linn part no: LBL 113) to the CD turntable – this breaks the acoustic feedback loop. See Singing Laser Repair procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information).
Noise heard from Ikemi (i.e. not through speakers) only when CD is playing. Noise sounds like a hiss or high pitched whine (fairly low volume)	Will probably only be heard during very quiet passages of music or when music is muted	Laser hiss.	All CD lasers make this noise to a greater or lesser extent. It is normal and unavoidable, and does not indicate a fault. The noise will not affect the function of the Ikemi. If a customer is insistent that the noise is unacceptable, laser replacement is the only solution. This will not be covered by the Linn warranty and is not a guarantee that the noise will disappear permanently. See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)

CDs skipping – probably worse toward the end of the disc.	May be intermittent May only happen with certain discs.	CD wobbling as it spins. There can be several causes of this: - CD badly warped - Turntable label raised slightly at one side - Dirt or debris on turntable - Motor spindle bent	Investigate which of the possible causes is responsible. For warped CD, discard CD For turntable label, press label down where raised (be very careful not to press too hard & damage motor spindle) or replace label (Linn part no: LBL 113) If motor spindle bent, replace laser assembly. See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Noise heard coming from Ikemi as CD turns – this may be a scuffing, rubbing, ticking or scraping noise. CDs may also sometimes skip/mistrack.	May be intermittent Probably worse towards the end of the disc.	CD puck is rubbing on the top-plate of the Mekk. You will usually (but not always) be able to see the puck rubbing.	See Ikemi Mekk Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)

Audio output problems

General Audio Problems

Symptom	Circumstances	Possible Cause(s)	Cure
No digital output – analogue audio output working okay	Constant	Digital output can be switched off (by pressing & holding '0' button on remote handset). See Owners Manual for more information	Switch digital output on (press & hold '0' button on remote handset).
One channel output is quieter than the other	Constant	If right channel has low output, FET 303 or FET 304 faulty If left channel has low output, FET 203 or FET 204 faulty	Replace faulty FET (if in doubt about which one is faulty, replace both on that channel.) Part info: SST4392; NJFET; 35v; 0.05a; SOT23. Linn part no: TRAN 024
Sound distorted. Unit may also sometimes mis-track & fail to read CDs	Intermittent May only happen with certain discs.	Laser worn out or faulty	Replace Laser - See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Clicking/ticking sound from speakers while music is playing. Unit may also sometimes mis-track & fail to read CDs	Probably intermittent. May only happen with certain discs.	Laser worn out or faulty	Replace Laser - See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information)
Poor sound quality	Constant Please be sure that Ikemi is definitely the cause – the only way to ensure this is to carry out an A-B comparison against another Ikemi.	Laser worn out or faulty	Replace Laser - See Ikemi Laser Replacement Procedure (accessible via Linfo Website http://linfo.linn.co.uk - Product Information).