

**PASS<sup>®</sup>**



## INT-25 Owner's Manual

## WARNING

**Water and moisture:** This device should not be used near water ( as per example, near a bathtub, washbasin, kitchen sink, laundry tub, wet basement or swimming pool ). Care should be taken such that objects do not have the opportunity to fall, and that liquid is never spilled onto or into the device enclosure through openings.

**Power Sources:** This device must be connected to a mains power source in strict accordance with the supplied product owners manual. Please verify that the AC mains voltage specified in the product manual matches those requirements indicated on the unit and the AC voltage provided to your location by the power company. The product **MUST** be connected to a MAINS socket outlet with a protective earthing connection.

**Power Cords:** Pass Labs provides a power supply cord that meets all legislated requirements for the market in which the product was originally sold. If you choose to substitute an after-market product we urge you to choose one that is fully safety rated by the necessary local authority.

Power supply cords should be routed so that they are not likely to be walked on, abraded, or pinched by items placed on or against them, paying particular attention to cords where they enter plugs or exit from a device. Never under any circumstance insert a cut or damaged power cord into a mains power socket. Cables should never be connected / disconnected with equipment powered up. Failure to heed this warning may damage or destroy equipment.

**Ventilation:** Power-amplifiers run warm, but you should be able to place your hands on them without discomfort. You must allow for this heat in installation, by providing for free air circulation around the product. Leave a minimum of 6" of space around the amplifier. The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc.

### Other Warnings:

No naked flame sources, such as lighted candles, should be placed on the apparatus; This amplifier is suitable for tropical climates under 2000m and ambient temperatures of 40 degrees C or less.

**Servicing:** To reduce the risk of fire, electrical shock or other injuries, the user should not attempt to service the device beyond that which is described in the operating instructions. All other servicing must be referred to qualified service personnel.

**For Units With Externally Accessible Fuse Receptacle:** Unplug the device from all sources of power before changing or inspecting any fuse. Replace fuse with one of same physical size, type and rating as that specified by the manufacturer for that product.

### Country Specific Warnings:

China: For use at altitude 2000m or lower.

Norway: Apparatet må tilkoples jordet stikkontakt.

Sweden: Apparaten skall anslutas till jordat uttag.

Finland: Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan.

Denmark: Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

**Trademarks:** "Pass", "PASS", "Pass Labs", "Pass Laboratories", "Supersymmetry", "Aleph", and "Zen" and are all registered trademarks of Pass Laboratories, Inc., and all rights thereto are protected by law.

## **Introduction:**

Entering their 22nd year of production, the X and XA power amplifiers have remained at the cutting edge of audio through continuous innovation and refinement. At Pass we build amplifiers with excessive output stages, huge heat sinks and massive power supplies. We use the highest quality components in simple linear topologies, assembled and tested with great care in Auburn, California. They measure well and sound great. They are heavy, reliable and expensive.

The new INT-25 offers this at slightly lower power, without frills, at a lower price. It embodies new components and innovative circuits coupled with the best elements of the previous generation.

The signal path from input to output has been simplified to fewer components. Degeneration, "the other form of feedback" has been eliminated. The output stage consists of a single pair of 800 watt new generation output transistors operating push-pull Class A. We still use the same "New Old Stock" of small power JFETs and cascoded MOSFET, in the classic "CFA" voltage gain circuit. The amplifier is still DC coupled and has no frequency compensation.

The result is faster, lower distortion, lower noise, higher damping and larger Class A operating envelope into low impedance loudspeakers, all in a simple 3 stage circuit with total of three pair of push-pull gain transistors.

In their ideal state, matched push-pull FETs give perfect "square law" cancellation of distortion, an effect somewhat spoiled by degenerative Source resistance used to constrain the "personality" of the devices. The removal of this form of feedback is an important element in the performance of the INT-25 and is accomplished by new approaches to stabilizing gain and bias of push-pull FETs.

This gives a lower output impedance, more gain, and lower spectral content of distortion, as evidenced by measurements (see the specs section), but the more important factor is the difference it makes to the music.

We observed this difference some years ago in listening tests. Degeneration removed some of the organic quality to the sound and so became the subject of further development work.

The INT-25 measures superbly, but it's subjective qualities are most special. In an industry where products with great specs are frequently found to be dry and boring, this amplifier breathes life into the music.

Thank you for purchasing this INT-25. It is my sincere hope that you will enjoy it as much as we do.

*Pass Labs*

## Setup

The INT-25 measures 17" w x 17.9" d x 6" h and weighs 51 pounds. You may place it wherever you please, but it is going to need lots of free air for adequate cooling. There needs to be space above and unobstructed space around the sides to allow for proper air flow. This is a factor in reliable operation and long life.

The INT-25 is expected to have a 25-degree C rise at the sinks when running. Under normal operation you should be able to grasp the heat-sinks for 5 to 10 seconds without heat being an issue. If the amplifier becomes too hot to touch please contact your dealer or the factory for assistance.

AC power is provided by a conventional detachable IEC 320 grounded AC mains power cord. This power cord serves as the safety disconnect. The power cord should be removed from the wall in the event of electrical storms or when the INT-25 is not going to be used for long periods.

The amplifier is designed to perform well with the included power cord. Should you select an "after market" detachable power cord, please confine your selection to those rated by local authorities to carry a minimum of 13A at 250V.

At idle the INT-25 will consume 275W from the AC mains. The required voltage and correct fuse value will be indicated on the rear of the amplifier. Both 100 Vac and 120 Vac builds are fused at 5A. The 220 - 240 Vac build amplifiers are fused at 2.5 amp.

In all instances the fuses are type 5x20mm slow blow (time delay) fuse rated for 250 VAC service. Do not substitute fuses of different values or physical size. If you cannot source equivalent replacement fuses locally, please contact your dealer or the factory.

This product ships from the factory with a replacement fuse included in addition to the fuse installed in the chassis fuse holder. The fuse holder is located on the rear panel of the amplifier. Changing the fuse requires a close fitting straight blade screwdriver, **and the power cord should be unplugged from the wall.** If you are not comfortable



performing this function in the unlikely event that it becomes necessary, please contact your dealer or a service professional.

### **Input Connection**

The INT-25 accepts three (3) single ended (RCA / Cinch) input connector. The input impedance is 48 Kohm making the INT-25 compatible with either tube or solid state source components.

### **Output Connections and Loudspeakers**

The rear of the INT-25 is equipped with a pair of Furutech binding posts for each channel, four total. The binding posts are marked red and black.

The Red output connector connects to the Red (+) of your speakers and the Black connector will connect to the Black (-). The Black output connector is at circuit ground. You can use it to connect to powered sub-woofers if you like.

The amplifier is stable into any load which does not dip below 0.5 ohms, but it will protect itself by shutting off any channel which outputs more than 10 amps (200 watts peak into 2 ohms). The protection circuit is reset by turning the amp off for a few moments and then turning it back on. We recommend that you check your output wiring and/or the loudspeaker if this happens, and contact your dealer or the factory if you have problems.

The Furutech binding posts deserve special note - in keeping with the requirements of Class 2 circuits in North America they are fully insulated. Speaker cables connected as intended will have no exposed conductive metal. The Furutech posts accept banana, spade, bare wire or pins with a diameter of 4.5mm or less. Bare wire, pins and spades socket into the binding post only from the bottom. The nuts on the binding posts should only be finger tight. Never tighten with wrench or pliers.

### **Operation:**

Once the speakers have been connected in observation of the proper regulations and with the observation of polarity and phase you may attach the input cables and power cord. It is always advised that the power cord is the last connection made and the first to be removed. Once you turn on the AC from the rear switch, the amp will come on briefly and go into Standby.

You are now ready to play music. Press the power switch on the front panel of the INT-25, the display will light up. Select the input you want from the front panel or remote. Turn the volume up to your preferred listening level. Sit back and enjoy! The INT-25 takes approximately an hour to fully warm up and sounds better as it does. Pushing the power button on the front panel of the INT-25 a second time turns it off.



This remote is designed to operate several pieces of Pass Labs electronics, not all of the functions available on this remote will be applicable to your Pass Laboratories INT-25.

**Power:** Pressing power alternates between standby and on.

**Mute:** Pressing mute once will quiet the pre-amplifier outputs; pressing mute a second time will return you to the previous volume control setting

**Input Selection:** Pressing 1,2,3 will immediately move the input selection to that input selection; volume and balance settings will not be disturbed.

**Volume:** Pressing the increase (^) button or the decrease (v) button will shift the volume setting 1dB, holding a button down will increase or decrease the level until such time as you either release pressure on the button or reach the limits of the volume control.

**Balance:** is not used with the INT-25. This is used on other Pass preamps and has no effect on this product.

**Tape:** is not used with the INT-25. This is used on other Pass preamps and has no effect on this product.

**Pass Thru:** is not used with the INT-25. This is used on other Pass preamps and has no effect on this product.

**Display:** The default setting for the display is "bright", pressing the display button once changes the display to "off". When "off" is selected any other control function will cause the display to indicate product operational status for approximately 7 seconds and then the display will once again blank. Pressing the display button again cycles back to a "bright display"

**Ext amp on:** is not used with the INT-25. This is used on other Pass preamps and has no effect on this product.



## Maintenance:

**Leave it on or turn it off:** The product is designed to be left on all the time. The exception to this might be a case where the preamp will not be used for an extended time - in that case it can be turn off.

**Cleaning:** The finish can be damaged by harsh cleaners and abrasive cloths. We find a damp soft cloth works best. You can also use a mild solution of windex or white vinegar but be careful to avoid the acrylic window. The acrylic window should only be cleaned using "plastic cleaner & polish".

**Remote batteries:** The two AAA batteries should be replaced every six months at least. The batteries are located under the remote back. This is held in place with four 4-40 phillips flat head screws. Please note the polarity of the batteries, putting them in wrong could cause damage.

**Replacing the fuse:** The fuse should only be replace with the same type and size as indicated on the rear. Audio Specialty FUSE: NOTE: The "Overload" and "Time Delay characteristics" will differ slightly (due to the different metallurgy of the fuse elements) between commercial grade and audio grade fuses. We can't guarantee that your audiophile grade fuse, won't blow at a different in-rush current threshold, than your stock commercial fuse. Use of other than approved fuses, may invalidate your product warranty and result in product damage.

How to replace the fuse:



## INT-25 Specs:

Inputs:	Three (3) RCA
Gain	26dB
Output power	25 Watts rms @ 8 ohms 50 Watts rms @ 4 ohms
Distortion:	0.1% @ 25 Watts, 8 ohms, 1 KHz
Frequency response:	DC to -2 dB @ 100 KHz
Residual Noise	< 150 uV output, unweighted 20 to 20 KHz
Damping Factor:	500
Input Impedance:	48 Kohm
Idle Power draw:	~2.25 Amps @ 120 VAC
Dimensions:	17"w x 17.13"d x 6"h
Weight:	51 lbs



## Warranty Information

We go through great effort to make a soundly engineered, and superbly performing product of lasting durability. But we also understand that things infrequently go wrong, if you have any questions or problems please contact either your dealer or the factory, we are here to support the product and you, the user.

All Pass Laboratories products purchased new from an authorized Pass Laboratories dealer in North America are covered by a transferable, limited 3-year warranty. This warranty includes all parts and labor charges incurred at the factory or factory specified repair facility, exclusive of any subsequent or consequential damages. Damage due to physical abuse is specifically excluded under this warranty.

For this warranty to apply the customer is responsible for returning the product unmodified to the factory within the specified warranty period. The customer assumes all responsibility for shipping and insurance to and from the factory or a factory specified repair facility. The conditions and stipulations of this Pass Laboratories warranty only applies to units originally sold new through an authorized dealer. Warranty on factory repair is 60 days and covers only the scope of the original repair.

Non-North America customers should consult with their original Pass Labs dealer or distributor for warranty repair instruction prior to contacting the factory or shipping product to the factory for repair.

Non-North American product must be returned to the country of origin for warranty service. Foreign distributors are only required to offer warranty service on Pass Laboratories product that they have imported, verifiable by serial number.

Please note: Conditions of warranty service and customer rights for product purchased outside the United States may vary depending upon the distributor and local laws. Please check with your local distributor for specific rights and details.

Any modifications to Pass Laboratories products that have not received written factory approval nullify all claims and void all provisions of the warranty and liability by the maker or authorized distributor. Should a modified product be returned to the factory for repair the owner will be required to pay all necessary charges for the repair in addition to those charges required to return the product to it's original configuration.

In the case of safety issues, no product shall be returned to the customer without those safety issues being corrected to the most recent accepted standards.

Removal or alteration of original Pass Labs serial numbers voids the factory warranty. Product with altered or missing serial numbers will be suspect as counterfeit or stolen product.

Pass Laboratories will not repair or in any way indemnify any counterfeit or cloned product. Pass Laboratories does not offer products in voltages intended for international markets either to authorized Pass Labs dealers or to third parties located in the United States or Canada.



Pass Laboratories Inc.,  
13395 New Airport Rd.,  
Suite G, Auburn, CA 95602  
530.878.5350  
passlabs.com