

# THÖRESS

## *F2A11 Stereo Integrated Amplifier*



### INSTRUCTION MANUAL

Thank you for purchasing the THÖRESS F2A11 Stereo Integrated Amplifier. This truly unique tube amplifier offers the music lover the possibility to build a purist setup consisting solely of a CD/DVD player or sound card, the amplifier itself and a pair of highly efficient loudspeakers such as our FR20 or 2CD12 speaker models. Of course, the amplifier may also be combined with a preamplifier, such as our Full Function Preamplifier or a stand-alone phono stage, in which case a high-gain unit such as our Phono Enhancer is strongly recommended.

Three line level inputs are provided, selectable with the source dial located at the back of the case. The volume of each channel is controlled separately via high-grade rotary potentiometers (custom made by ALPS in Japan). These parts are carefully matched to ensure precise channel balance with respect to the rotation angle.

Although reasonably priced, the Stereo Integrated employs the highly regarded new-old-stock Siemens F2A11 beam power tetrode operating single ended triode mode. The amplifier is hand-made in Germany. It shares the non-compromise approach of the larger THÖRESS Mono Power Amplifiers and is entirely hard-wired. Every detail of the internal construction has been carefully considered for reliability and ease of service. Therefore our smallest amplifier model is by no means an entry level component, but a puristic state-of-the-art device which is likely to be sonically superior to any competitive product regardless of price and thus will easily measure up to the expectations of even the most critical and experienced music enthusiast or professional user.

#### POWER TUBES

The Stereo Integrated is a single ended amplifier equipped with the highly regarded Siemens F2A11 beam power tetrode operating in triode mode. These new-old-stock professional grade tubes are known not only for meeting very tight specs and being extremely reliable, but also for offering excellent subjective sound quality (when operating triode mode). They are certainly on par with the finest directly-heated triodes such as the 2A3 or 300B.

The power tubes are biased via low tolerance 220 ohm cathode resistors. The control-grid bias voltage cannot be trimmed in any way to adjust the idle current of an individual power tube. This is a very reliable and stable way to achieve grid bias, but it makes it especially important to use tubes that meet tight specifications. Note that an average

(ideal) F2A11 tube draws a cathode current of around 75mA when the grid bias is set to 16 volts at an anode-cathode voltage of 390 volts. When the power tubes are replaced, it is strongly advised to use only high-quality matched pairs tested for the above specs and supplied from the manufacturer. If there is any doubt that a certain F2A11 power tube actually fulfills these requirements, the idle current can be easily determined by Ohm's law by measuring the DC voltage-drop over the respective cathode resistor while the amplifier is powered on.

**In view of the high voltages involved, measurements within the powered-on amplifier circuitry should always be carried out by an experienced technician only!**

### DRIVER TUBES

The THÖRESS F3A11 Stereo Integrated Amplifier uses a carefully tested new-old-stock 12SN7GT tube in the driver stage. The use of driver tubes with questionable parameters or of poor quality will lead to inferior sound quality and a higher sensitivity to microphony. In extreme cases, damage within the circuit may occur! It is therefore strongly advisable to use only the carefully tested tubes supplied by the manufacturer. When the amplifier is to be equipped with "fresh" driver tubes, proceed as follows:

1. Carefully clean the tube pins with a dry brush.
2. Spray a few drops of highly viscous oil (such as Ballistol) on a cotton-tip.
3. Then use the tip to apply a thin oil film onto the contact pins and the middle pin of the octal base.

Tubes handled this way will move in and out of the sockets more easily and will help to increase the life expectancy of these parts.

**The use of a driver tube of questionable quality may lead to degraded sound quality and inferior signal-to-noise ratio.**

**Never switch on your Integrated Amplifier until all tubes have been placed into their respective sockets.**

**Never pull a tube out of its socket while the amplifier is switched on.**

### SETUP

To set up the Integrated Amplifier, proceed as follows:

Do not connect the amplifier to the mains until the following steps have been taken:

1. Switch off all powered devices which are to be used in the setup.
2. Set the power switch of the F2A11 Integrated Amplifier to the off position (power switch lever directed downwards to the power inlet).
3. Place all tubes into their respective sockets very carefully. Note, that the F2A11 heaters are connected in series and thus none of the tubes will glow/operate unless both tubes have been properly installed into their sockets to form a closed chain with respect to the heaters.

**Never switch on the amplifier until all tubes have been placed into their respective sockets.**

**Always remove all tubes from their sockets and put them in their original transport box before shipping or transporting the amplifier.**

4. Bring the amplifier into its final position on the rack, shelf or platform.
5. Connect the speakers to the amplifier.
6. Connect the inputs of the amplifier to the desired (line-level) program sources or/and to a line or full function preamplifier. If a preamplifier of either type is to be used, it is advisable to control the volume and the balance on the preamplifier and to set the volume knobs of the integrated amp (which serve as attenuators) at about half of the maximum rotation angle. The volume should be turned to zero on the preamplifier.
7. If the volume knobs of the integrated amp itself are to be used for controlling the volume (and the channel balance) these knobs should be set to zero.  
In both cases the slots surrounding the volume knobs on the Stereo Integrated may serve as a scale to attain precise channel balance.

**Do not switch on the amplifier until it has been properly connected to the speakers, the program sources and/or an eventual external line or full function preamplifier.**

8. Power on all program sources and preamplifiers that are to be used for listening.

**Always switch on the program source(s) and eventual preamplifiers in the system first, and then switch on the Integrated Amp with a delay of not less than one minute !**

9. After a delay of about one minute, the Integrated Amp can be connected to the mains and switched on.
10. Select the desired program source with the source dial located at the back of the amplifier, adjust the volume for convenient loudness, correct channel balance and enjoy the music.

**When powering off the system, always switch off the integrated amplifier first, then switch off the program sources and eventual preamplifiers observing a delay of not less than 30 seconds.**

**Never switch a program source or the preamplifier on or off while the power amplifier is powered on.**

**When powering off the system, always switch off the power amplifier(s) first, then switch off the line and phono preamplifiers observing a delay of not less than 30 seconds.**

## SPEAKER LOAD MATCHING

Precise 4, 8 and 16-ohm load impedance matching can be attained with our Stereo Integrated Amplifier by changing the turns ratio of the output transformers by way of jumpers soldered to pairs of secondary terminals to form the patterns as indicated below.

### 4-ohm speaker:

(1 and 2) - (5 and 6) - (6 and 3) - (3 and 4) - (7 and 8).

### 8-ohm speaker:

(5 and 2) - (2 and 3) - (6 and 7) - (7 and 4).

### 16-ohm speaker:

(5 and 2) - (6 and 3) - (7 and 4).

.....  
1 o                      o 5  
2 o                      o 6                      o = secondary terminal  
3 o                      o 7                      1 - speaker-RED  
4 o                      o 8                      8 - speaker-BLACK  
.....  
output transformer coil

It is well known that the distortion and the damping behavior (output resistance) of a tube power amplifier is affected by the output transformer turns ratio. As our Stereo Integrated Amp is a class-A triode amplifier, loudspeakers may be typically used with a higher output transformer turns ratio than the one corresponding to the rated speaker impedance (especially when the speaker efficiency is high). This would, theoretically, reduce the distortion and lower the output resistance of the amplifier (both of which are desirable features) at the expense of a lower maximum power output into the speaker load. On the other hand, it is very unlikely that optimum sound quality will be achieved when speakers are connected to a lower output transformer turns ratio than the one corresponding to the rated speaker impedance. Thus:

**It is possible to use a 8-ohm rated speaker with the 4-ohm load pattern.**

**It is possible to use a 16-ohm rated speaker with the 8-ohm or even the 4-ohm load pattern.**

**It is not advisable to use a 4-ohm rated speaker on the 8-ohm or 16-ohm load pattern.**

**It is not advisable to use a 8-ohm rated speaker on the 16-ohm load pattern.**

POWER INLET AND FUSE

The THÖRESS F2A11 Integrated Power Amplifier draws a current of 0.5 or 1.0 amperes from the 230V and 120V mains respectively, which corresponds to a power consumption of about 115 watts and is equipped with a single fuse located in the fuse case next to the power inlet. Very occasionally, the fuse may blow at the moment the amplifier is switched on, due to the current spike drawn by the power transformer, especially when power cords with very low internal resistance are in use. Should this problem arise more regularly it may be advisable to use a fuse with slightly higher current rating. If, however, fuses with larger current ratings still blow regularly the amplifier should be returned to the factory for inspection.

**Always remove all tubes from their sockets and put them in their original transport box before shipping or transporting the amplifier.**

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**THÖRESS...**

*A Tribute to Professional Equipment from  
the Golden Age of the Electronic Tube !*

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