

# Pioneer/TAD Swedish Reference Installation Manual

## Introduction



*Please follow the instructions included herein carefully!*

*This loudspeaker system is capable of very high output.*

*The amplification can deliver in excess of **1 000 W/channel** with highly efficient speakers. The system is designed to reduce the risk of faulty connectivity among the electronics and loudspeaker units.*

*DO NOT perform any alternative settings if you are not fully convinced of the impact of such actions.*

## Mains connection – 230 V AC

- All amplifiers, bridge unit for the bass speaker and the crossover network are connected to **230 V AC** panel on the rear of the rack cabinet. The pre-installed mains cable only need to be connected to a 230 V AC grounded outlet with a minimum of 10 A capability

## Signal wiring



**NOTE:** The Signal source cable shall ALWAYS be connected to a signal source with a level control. Otherwise the speaker drivers will be damaged due to the full output of the powerful amplifiers!

- All low signal wiring connections to amplifiers, bridge unit for the bass speaker and the active crossover network are pre-installed in the rack cabinets
- Signal source: A separate, unbalanced cable (5 meters) is connected to the balanced input of the active BSS crossover network. This is the signal input for the left and right channels respectively (one for each rack cabinet). This cable must be connected to a signal source **with level control** (Mixer, Preamplifier, etc)
- All units are connected with a separate ground cable to avoid any hum or signal interference

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## Setting up the speaker cabinets



**WARNING:** DO NOT touch any of the speaker driver membranes as these are NOT protected.

1. Place each **Bass Unit** towards the listening position. Note the metal frame on top of each bass unit
2. **Open Flight Case No 3** and take out the **two rectangular dampening pads**. Place these inside the metal frame on top of the **Bass Units**
3. Lift the **Lower Midrange Units** with two hands using the attached straps.  
**NOTE:** Be very careful **NOT TO TOUCH SPEAKER DRIVER MEMBRANES!**
4. Locate the **Lower Midrange Unit** on the rectangular dampening pad on the BASS UNIT.  
A corresponding metal frame is located on the bottom of the Lower Midrange Unit. Align carefully!

5. Take the **stretching screws** out of the Flight Case No 3. Mount the **stretching screw** using the two fixations on the **Bass Unit** and the **Lower Midrange Unit** respectively. Fine-tuning is done later.

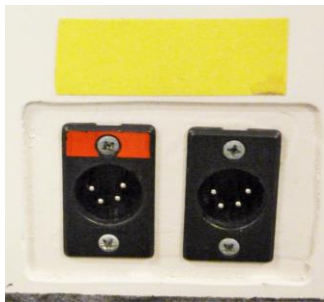


6. Place the **High Mid/Tweeter Unit** on top of the **Lower Midrange Unit**. Fasten the **High Mid/Tweeter Unit** with four Hex bolts securely.  
**Note:** If the **High Mid/Tweeter Unit** shall be tilted vs the **Lower Midrange Unit**, this must be made before its mounted. The adjusting screws are located in the bottom of the **High Mid/Tweeter Unit**
7. Finetune the **Tilting angle** of the midrange/Tweeter combination using the **stretching screws**.  
This enables “focusing” of the sound radiation from the combination ideally in the acoustic environment where the Speaker system is performing.

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## Speaker cabling

- All speaker cables are pre-installed to their respective amplifiers. The cables are stored in the rack cabinets
- Professional XLR connectors are used throughout with colour identification. For the bass and lower midrange units, one connector for each polarity is used due to larger currents being consumed by these drivers. Connectors and cables are identified as follows:



### **BASS Unit**

**YELLOW** marking with two XLR connectors; one for each polarity (RED=positive, BLACK=negative)



### **LOWER Midrange Unit**

**GREEN** marking with two XLR connectors; one for each polarity (RED=positive, BLACK=negative)



**HIGH Midrange Unit:** **BLUE** marking with one XLR connector

**TWEETER:** **WHITE** marking with one XLR connector (5-pin)

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## BSS FDS 360 Active Crossover Network



- At delivery, both Active Crossover units **are pre-set** with respect to phase level, phase and limiter settings
- Each of the two units (Left & Right channel) is set for **4-channel mono mode of operation**. This enables each filter to control each of the speakers channels in the 4-way system



*Note: Do **NOT** change this to 2-Way or 3-way settings as this will be harmful and may damage the speaker units!*

- The Active Crossover unit is protected with a transparent, detachable front cover to minimise the risk of un-authorized individuals to change the settings when installed
- All settings can easily be changed – please refer to the BSS FDS 360 User manual. This can also be found on the internet: [http://www.inphase.at/documents/docs/BSS\\_fds360um.pdf](http://www.inphase.at/documents/docs/BSS_fds360um.pdf)

## Pioneer M90a Stereo Power Amplifiers

There are three stereo power amplifiers being used for each channel:

- **BASS (30 – 220 Hz):** One power amplifier in bridge mode. This is controlled by the SENTEC Phase Controller (Bridge unit), located behind the BSS FDS 360 active filter in the rack cabinet. This allows for tremendous power being available to the TAD 1601 bass unit. This secures full control of the bass range. The M90a Power amplifier is located at the bottom of the rack cabinet
- **LOWER MIDRANGE (220 – 1 600 Hz):** The Pioneer M90a power amplifier located in the middle of the “power amp stack” is being shared between the lower and higher midrange units
- **HIGHER MIDRANGE (1 600 – 5500 Hz):** See above
- **TWEETER (5 500 – 45 000 Hz):** The tweeter section has a separate stereo power amplifier, using one channel. This leaves one channel as a spare, should any of the power amplifiers become faulty



*Note: All power amplifiers are connected to the active crossover via the **CONTROL AMP INPUT**. This input has **NO Level control**. Hence, the level control on each of the Pioneer M90 A power amplifiers **ARE NOT USED**. This safeguards any misuse of the front panel level control which could be detrimental for the speaker drivers!*