

TANNOY

POWER[™]**V** Owners Manual

POWER V6, POWER V8, POWER V12, POWER V12HP, POWER V15,
POWER VS10BP & POWER VS15BP

TANNOY

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The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY INSTRUCTIONS

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
- 9 Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- 11 Only use attachments / accessories specified by the manufacturer.
- 12 Use only with the cart, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tip-over.
- 13 Unplug this apparatus during lightening storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personnel. Service is required when the apparatus has been damaged in any way, such as power-supply cord or plug damaged, liquid has been spilled or objects have fallen into the apparatus, this apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

SAFETY WARNING

Permanent disconnection from the mains supply is to be achieved by removing the supplied cord connector from the back of the unit.

SAFETY WARNING

Do not remove any covers, loosen any fixings or allow items to enter any aperture.

SAFETY WARNING

Objects filled with liquids should not be placed on this apparatus.

SAFETY WARNING

Replace the mains fuse only with the same T10A HBC type supplied by Tannoy under part number 34610919

SAFETY WARNING

The rear heatsink on this product gets hot. Avoid direct skin contact during operation and for at least 5 minutes after power has been isolated.

AVERTISSEMENT DE SECURITE

Pour déconnecter l'appareil de l'alimentation principale de façon permanente, débranchez le connecteur du câble fourni à l'arrière de l'appareil.

AVERTISSEMENT DE SECURITE

Ne retirez pas les couvercles, ne desserrez pas les fixations et ne laissez aucune pièce s'introduire dans les ouvertures.

AVERTISSEMENT DE SECURITE

Ne placez pas d'objets contenant du liquide à proximité de l'appareil.

AVERTISSEMENT DE SECURITE

Ne remplacez le fusible de réseau principal que par un fusible T10A HBC du même type fourni par Tannoy sous la référence 34610919.

AVERTISSEMENT DE SECURITE

Le radiateur arrière de cet appareil devient chaud. Evitez tout contact direct avec la peau pendant le fonctionnement et au moins 5 minutes après la mise hors tension de l'appareil.

INSTALLATION INSTRUCTIONS

- 1 THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord provided with a green or green and yellow core which must be connected to the protective earthing terminal of the detachable Neutrik 'Powercon' type NEC3FCA connector (Tannoy part number 3461 0919 as supplied with the equipment. The other end of the green or green and yellow conductor must be connected to the earthing pin of a suitable mains plug or the earthing terminal of the installation. The cord must be of maximum length 7.5 meters, rated SJ, SJT, or SJE, 10A minimum and be marked VW-1.
- 2 The electrical power connection to this product is only to be made via a detachable Neutrik 'Powercon' type NEC3FCA connector (Tannoy part number 3461 0919) as supplied with the equipment. Wiring to this connector must only be made by suitably qualified personnel and must comply with all local requirements.
- 3 Do not install this equipment in an enclosed space. Do not limit free ventilation and movement of air around the back panel. Ensure that there is at least 100mm (4") of space around all sides of the product for ventilation.
- 4 Only use attachments and accessories approved by or specified by Tannoy.

FOR CUSTOMERS IN EUROPE

This product complies with both the LVD (electrical safety) 73/23/EEC and EMC (electromagnetic compatibility) 89/336/EEC directives issued by the commission of the European community.

Compliance with these directives implies conformity with the following European standards:

EN60065	Product safety
EN55103-1	EMC emissions
EN55103-2	EMC immunity

This product is intended for the following electromagnetic environments: E2; E3 & E4. Environment E1 (domestic) is specifically excluded.

FOR CUSTOMERS IN THE USA & CANADA

This product has been tested for electrical safety and complies with:

UL60065 7th edition
CA/CSA C22.2 No.60065-03

EMC

This equipment has been designed to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Industry Canada Class A emission compliance statement: This Class B digital apparatus complies with Canadian ICES-003. Avis de conformité a' la réglementation d'Industrie Canada. Cet appareil numérique de classe A est conforme a' la norme ICES-003.

2.0: INTRODUCTION

Power V™ is a range of active sound reinforcement loudspeakers equipped with the Tannoy Dual Concentric™, point source, constant directivity drive unit technology. By combining the 'Dual' with a sophisticated amplifier package integrated within the speaker cabinet, Power V™ is aimed at installation applications where uncompromised sound quality and flexibility is essential. In order to satisfy a wide scope of fixed or on the road sound reinforcement applications there are five full range models and two subwoofers in the Power V™ range; Power V6, Power V8, Power V12, Power V12HP and Power V15; along with the subwoofers - Power VS10 BP and Power VS15 BP.

The location of the high frequency drive unit, in the throat of the low frequency driver, ensures that the driver delivers constant directivity and unparalleled linearity from a true point source.

The spherical wave front delivered presents an even dispersion in both horizontal and vertical planes, providing exceptional off-axis performance and an even response throughout a wide listening area. Overcoming the time alignment problems inherent in a discrete speaker design the constant directivity characteristics of the 'Dual' exhibits better harmonic alignment, delivering a more natural sound with superb tonal balance and greater intelligibility. This highly integrated driver design approach provides a constant time delay over the frequency spectrum ensuring enhanced transient performance and sound quality.

All Power V™ loudspeakers are equipped with highly efficient, flexible and reliable Class D power amplification incorporating switching power supplies. Optimally matched power supplies and power amplifier sections minimises noise and enhances stability. Little is required in the way of heat sinking so the only surface area needed for cooling is the small control panel on the rear of the cabinet; therefore, even when driven at very high power levels no fans are required, so the system runs quietly and is not prone to internal dust contamination.

When used as a stand-alone speaker there is, on the rear panel of the full range Power V™ models, a mode switch for 'Full Range'. Alternatively the 'High Pass' position provides increased headroom for when the unit is used within close proximity to a boundary and, in a simple setup, allows crossover to a subwoofer without the need for an external crossover.

LED's on the rear panel indicate, signal presence, signal activity, and power. Two low pass settings on the subwoofer amplifiers fully optimise integration with the full range units.

Recessed carrying handles aid manoeuvrability and multiple flying points are incorporated to provide a quick and secure flying system. Tannoy's proprietary Secur-ET™ modular mounting hardware provides the Power V™ range with multiple hanging options such as wall mount brackets, yoke fittings, ceiling saddles, pole clamps, pole mounts and eyebolts.

3.0: UNPACKING AND VISUAL CHECKS

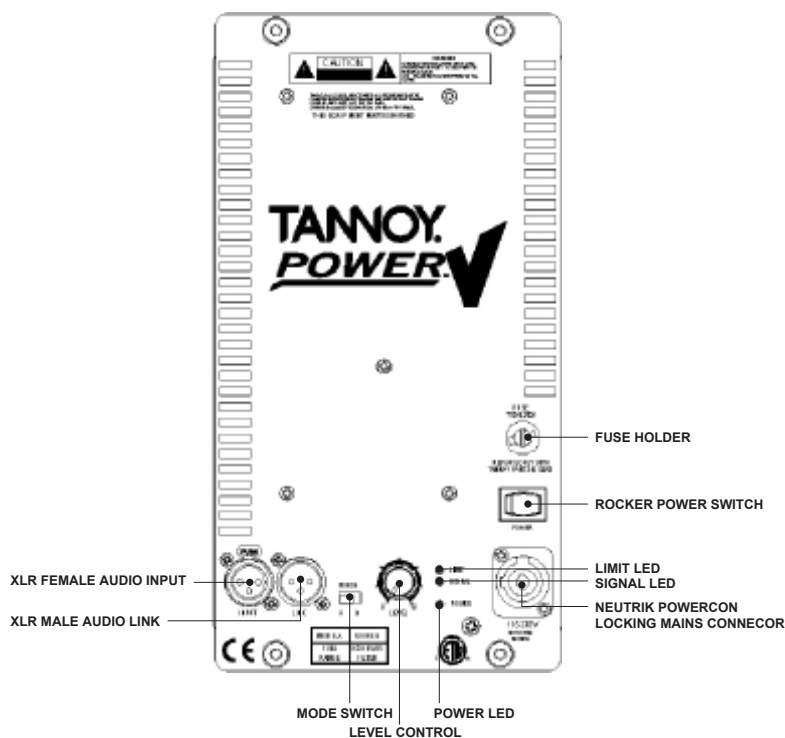
Every Tannoy PowerV™ product is carefully tested and inspected before being packaged and leaving the factory. After unpacking your loudspeaker, please inspect for any exterior physical damage, and save the carton and any relevant packaging materials in case the loudspeaker again requires packing and shipping. In the event that damage has been sustained in transit notify your dealer immediately.

3.1: PRELIMINARY RECOMMENDATION

A word of warning on high sound levels - these speakers are capable of generating high output levels over sustained periods of time and such levels, over 95dBspl for 8 hours per day, can eventually cause permanent hearing loss. Since Tannoy loudspeakers have a natural-sounding flat frequency response and low distortion, it's possible not to be aware just how high the sound level is high while working with them.

For continuous exposure we recommend the occasional use of a sound level meter. This should be capable of integrating the sound level over a period of exposure according to noise control standards and used just to check that noise levels are always within safety limits.

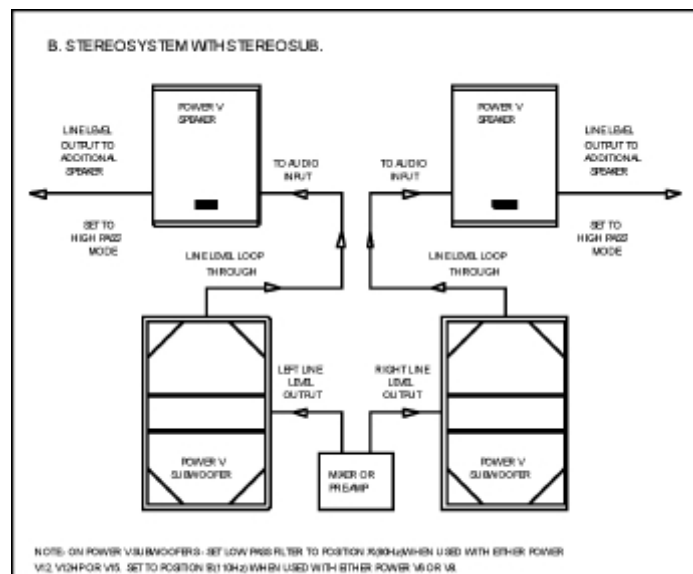
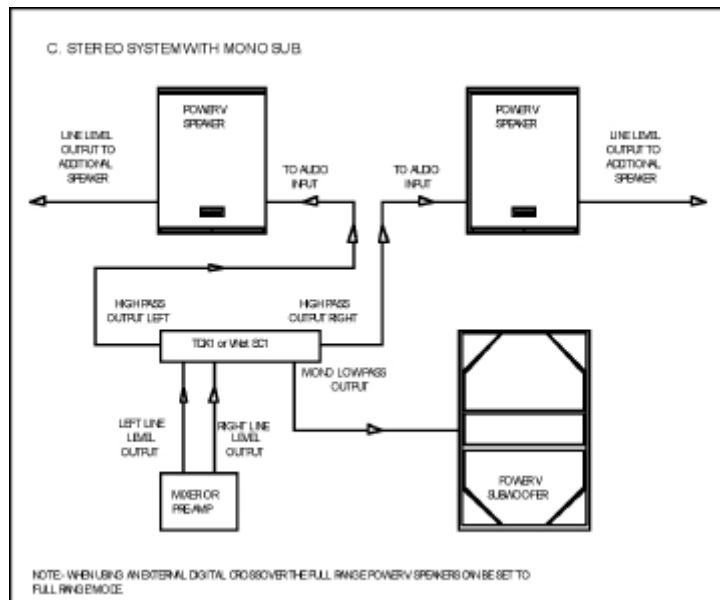
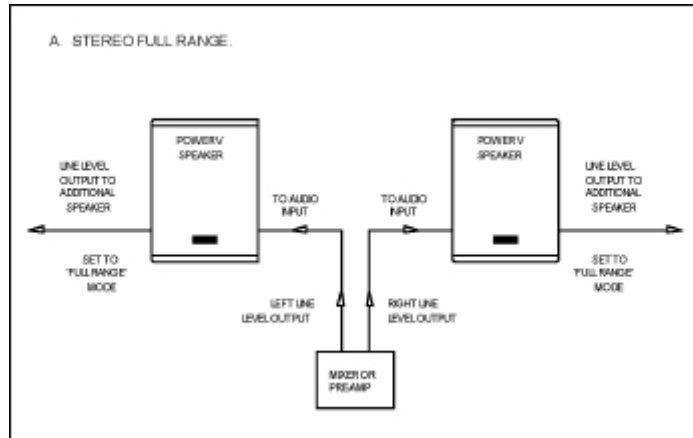
4.0: INTERFACE PANEL



- XLR FEMALE AUDIO INPUT - This is a lockable XLR line input socket for connection to the audio source. Fully balanced. Pin 2 Hot (+), Pin 3 Cold (+), & Pin 1 Ground.
- XLR MALE AUDIO LINK - This is a lockable XLR line output socket to link additional speakers. Fully Balanced. Pin 2 Hot (+), Pin 3 Cold (+), & Pin 1 Ground.
- ROCKER POWER SWITCH - Turns AC power on to the unit (100V - 240V)
- FUSE HOLDER - Replace only with 10A 230V anti-surge fuse.
- AC MAINS CONNECOR - Neutrik Powercon mains connector (supplied)
- SIGNAL PRESENT LED - LED indicates when signal is being received by the speaker.
- LIMIT LED - LED indicates when the integral limiter is functioning to protect the speaker.
- POWER LED - LED indicates when power has been applied to the speaker.
- MODE SWITCH - Switch allows the speaker to be toggled between two modes;
 - The subwoofers can either have an 80Hz or 110Hz low-pass filter (LPF) filter activated.
 - The full range speakers can either be run full range or have a fixed high-pass filter (HPF) activated.
- LEVEL CONTROL - Control allows adjustment of the speaker volume.

The Power V™ range of products are integrated designs which include system specific EQ and protection circuitry, without the need for external amplification. For room equalization, delay and other commissioning or setup functions, we recommend you use a Vnet SC1 or TDX1 Digital Controller.

Below are example setups



5.1: AC POWER REQUIREMENTS

PowerV™ products are equipped with Neutrik Powercon™ mains connectors which mate with the Neutrik NAC3FCA Cable connector, quick lock with a securing lever for power-in. This AC mains connector is supplied with each PowerV™ product. The amplifier operates between the ranges of 100 to 240 Volts; the auto ranging power supply detects the mains voltage automatically and configures accordingly. Replace the mains fuse only with the same T10A HBC type. It is necessary to have power local to each speaker, as it is not possible to daisy chain the AC power connections.

5.2 COOLING

Do not install this equipment in an enclosed space. Do not limit free ventilation and movement of air around the back panel. Ensure that there is at least 100mm (4") of space around all sides of the product for ventilation. An efficient switch mode power supply has less weight, less current draw and more efficient mechanical cooling; meaning that no fans are required.

5.3 LED FUNCTIONS

Power LED – When AC mains is connected to the speaker and the power switch is turned on the blue lower LED will illuminate.

Signal LED – The Green LED indicates that a useable signal is present at the input.

Limit LED - When illuminated this indicates that the system is approaching clipping.

An occasional flicker of the red LED on the loudest peaks is acceptable. If this LED remains red for more than the duration of brief dynamic peaks, or lights continuously then the system is being overdriven.

If the red LED illuminates excessively:

- Reduce the input level (see interface panel)
- Reduce the output level of the mixer, or other source to the speaker.

5.4 LIMITERS

The limiters are carefully set-up to preserve the loudspeakers dynamic headroom by allowing short term transients to pass; audible degradation in sound will only become apparent when the limit indication is on constantly. The limiting functions will protect the amplifier from long term overheating by attenuating the driving voltage to the drive units. If used irresponsibly (constant hard clipping) sound quality will be compromised. In extreme cases drive units may also be damaged.

5.5: AUDIO CONNECTIONS

Audio Connections

The signal input & link connectors are fully balanced. When connecting a balanced signal be sure to wire to the following standard:-

SIGNAL	XLR CONNECTOR
Hot (+)	Pin 2
Cold (-)	Pin 3
Shield (GND)	Pin 1

In a standard balanced interconnection there are two signal conductors and a shield. The shield is normally referenced to ground at one or both ends. Many times the shield is lifted at one end, usually at the input to eliminate "ground loops" or noise. The problem with this approach is that while it may reduce hum, the shields act as radio antennas and pickup radio frequency interference from the environment.

Multiple enclosures may be driven from a single audio source; simply plug the signal source output into the first XLR input socket, and patch that speaker's XLR link to the next speaker's XLR input socket & so on.

6.0: EQUALISATION

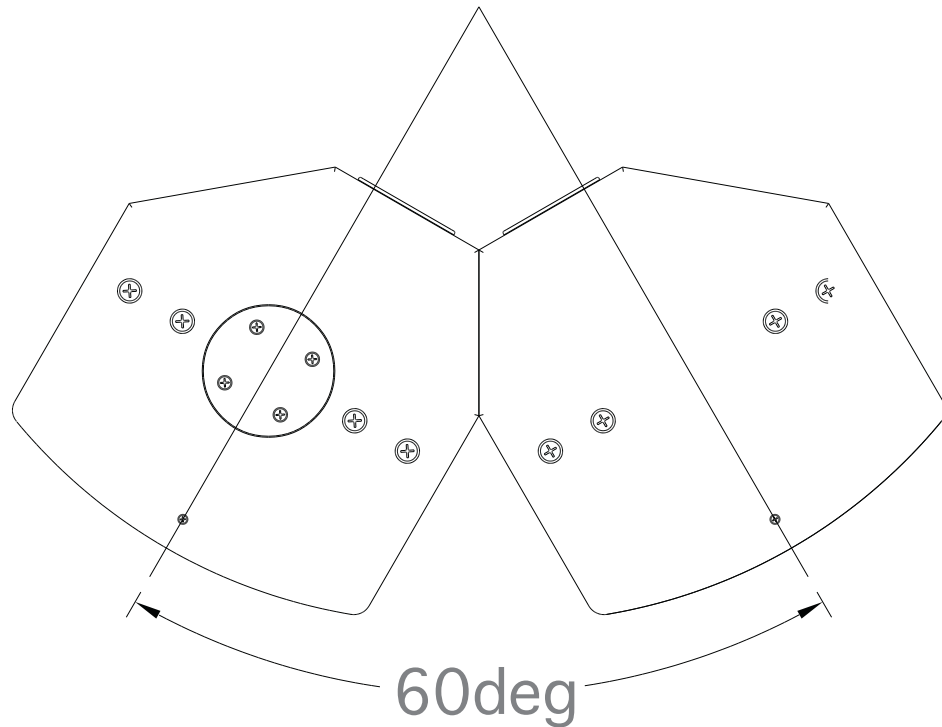
PowerV™ loudspeakers are designed to need no equalisation or correction to overcome system limitations. As a result, they will only need equalisation to compensate for difficult acoustic environments.

Over equalisation can reduce system headroom, and introduce phase distortion resulting in greater problems than cures. If equalisation is required then it should be applied gently and smoothly. PowerV™ full range loudspeakers are point source, phase coherent designs and violent equalisation will be detrimental to the overall sound quality. When a loudspeaker is used in close proximity to another, comb filtering effects can create coverage problems; comb filtering creates an uneven frequency response across the coverage area due to constructive and destructive interference effects between the sources. The amount of comb filtering is affected by the spacing of the relative sound sources. Minimising this effect cannot be cured by equalisation (see the following section for more details).

As discussed in the previous section, comb filtering cannot be cured by equalisation. Small alterations to loudspeaker positions can have the effect of minimising problematic combing frequencies. Arrays should be constructed so that the individual coverage patterns of each loudspeaker combine with minimal overlap. The design of the PowerV™ cabinet greatly simplifies the creation of effective arrays, allowing seamless wide horizontal coverage using two loudspeakers without the need for tedious experimentation.

By placing the PowerV™ cabinets with the 30 degree angled rear panels together, minimal dispersion pattern overlap is achieved, guaranteeing an extraordinarily smooth transition. In many applications the 90-degree (75 - degree on the PowerV12HP™ and PowerV15™) dispersion pattern may be sufficient in the horizontal plane.

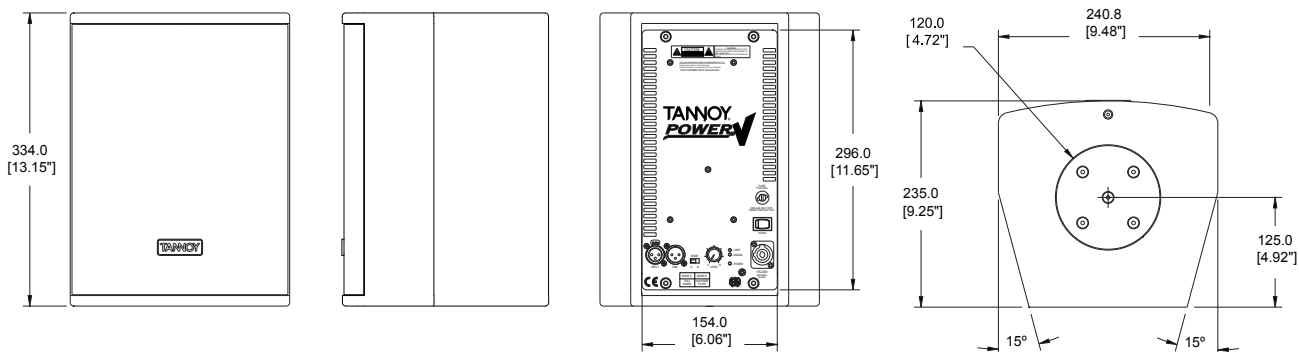
It is also possible to stack the cabinets vertically using the above method, say for use in a central cluster, where greater vertical dispersion is required.



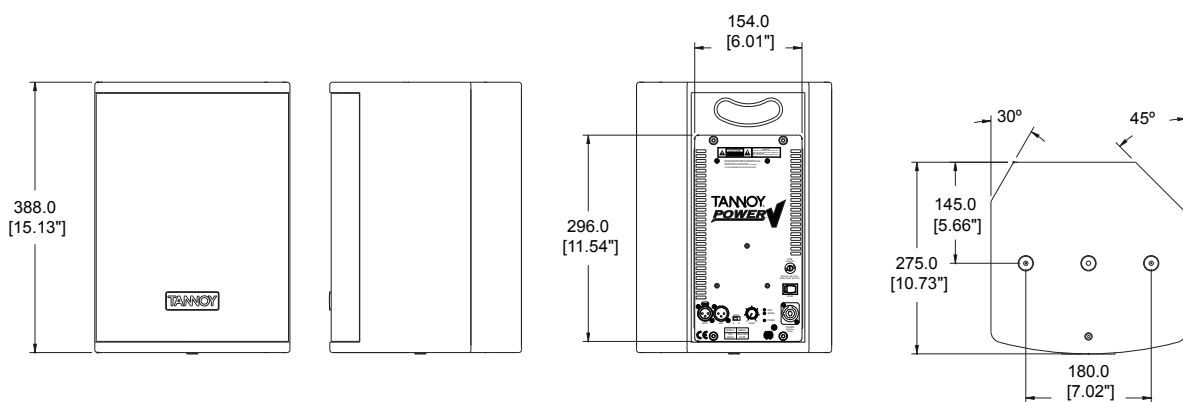
As shown in the above diagram, one of the PowerV™ cabinets is inverted to allow the optimum splay angle to be achieved. The grill can be simply removed from this cabinet and be replaced in the correct orientation. The grill is held in position by the two fixing screws on the top and bottom lips of the cabinet.

8.0 DIMENSIONS

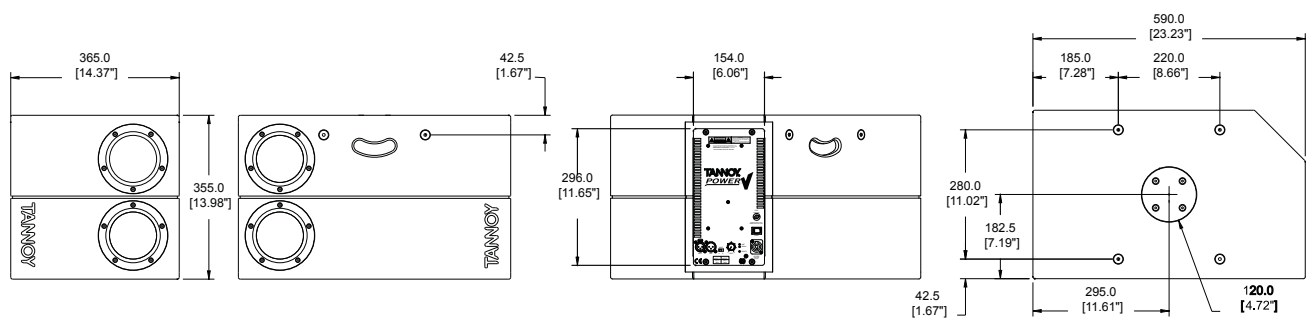
POWER V6



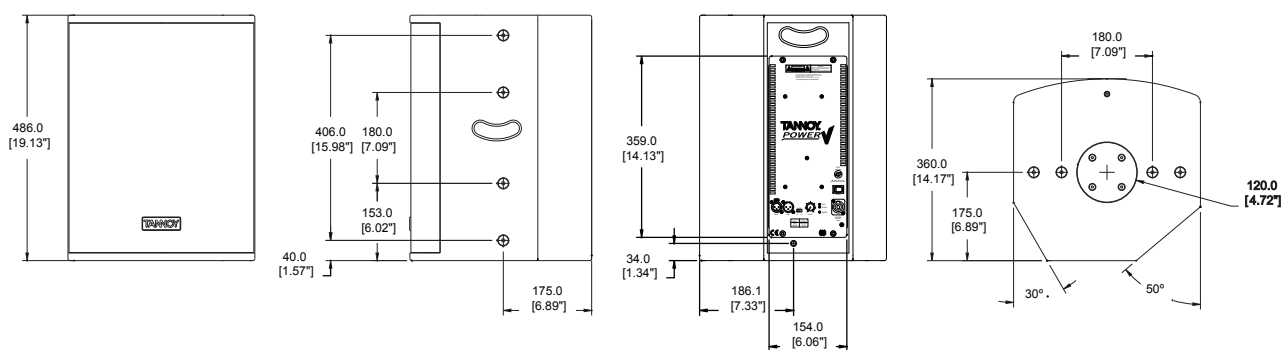
POWER V8



POWER VS10BP

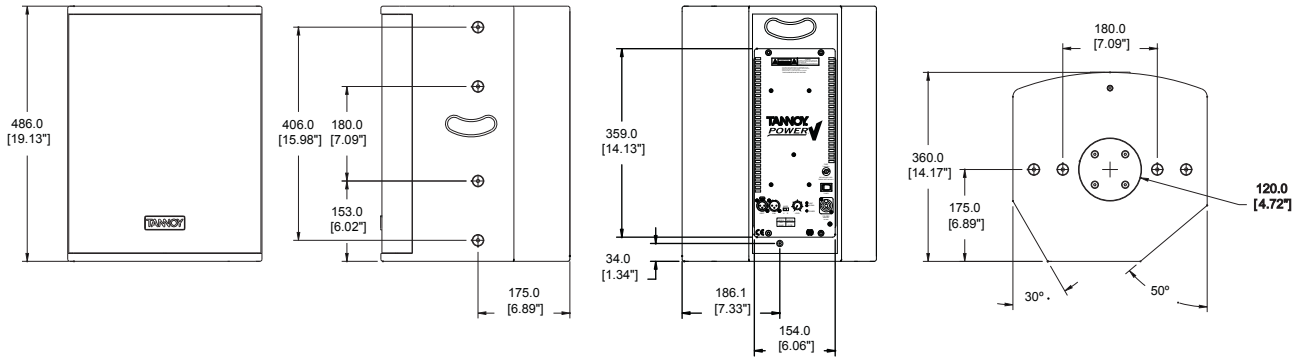


POWER V12

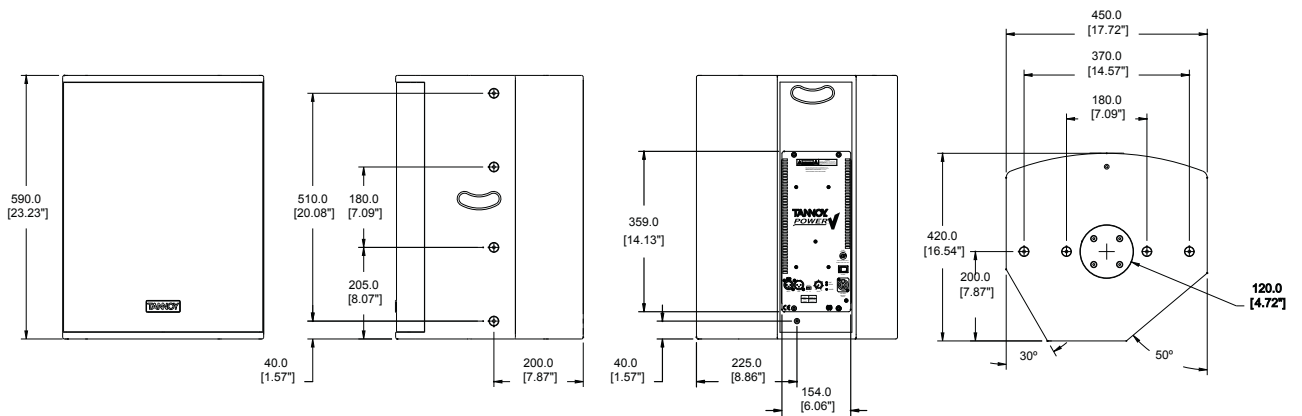


8.0 DIMENSIONS

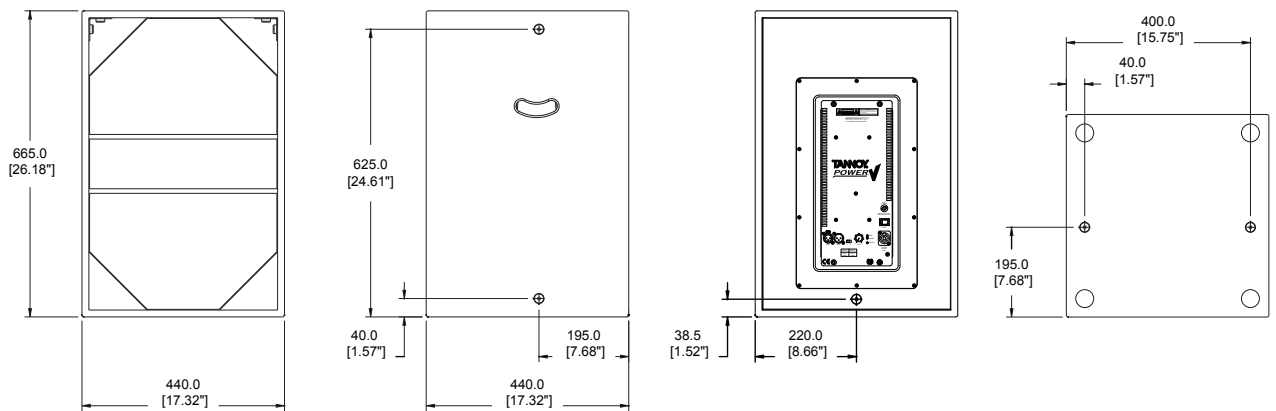
POWER V12HP



POWER V15



POWER VS15BP



9.0 TECHNICAL SPECIFICATIONS



SYSTEM	Power V6	Power V8	Power V12	Power V12HP	Power V15
System Type	Full Range - Vented	Full Range - Vented	Full Range - Vented	Full Range - Vented	Full Range - Vented
Frequency Response (-3dB) ¹ Full Range Mode	85Hz - 35kHz	80Hz - 30kHz	70Hz - 25kHz	71Hz - 23kHz	60Hz - 23kHz
Frequency Range (-10dB) ¹ Full Range Mode	78Hz - 45kHz	67Hz - 40kHz	55Hz - 38kHz	62Hz - 28kHz	47Hz - 26kHz
Frequency Response (-3dB) ¹ High Pass Mode	120Hz - 35kHz	120Hz - 30kHz	100Hz - 30kHz	100Hz - 23kHz	100Hz - 23kHz
Frequency Range (-10dB) ¹ High Pass Mode	100Hz - 45kHz	100Hz - 40kHz	80Hz - 38kHz	80Hz - 28kHz	80Hz - 26kHz
Rated Maximum SPL	107dB (average) 113dB (peak)	113dB (average) 119dB (peak)	120dB (average) 126dB (peak)	124dB (average) 130dB (peak)	126dB (average) 132dB (peak)
Dispersion (-6dB)	90 Degrees Conical	90 Degrees Conical	90 Degrees Conical	75 Degrees Conical	75 Degrees Conical
Driver Complement	1 x 150mm (6) Dual Concentric™	1 x 200mm (8) Dual Concentric™	1 x 300mm (12) Dual Concentric™	1 x 300mm (12) PowerDual™	1 x 380mm (15)PowerDual™
Directivity Factor (Q)	5.6 averaged 1kHz to 10kHz	6.8 averaged 1kHz to 10kHz	8.2 averaged 1kHz to 10kHz	8.2 averaged 1kHz to 10kHz	7.8 averaged 1kHz to 10kHz
Directivity Index (DI)	7.0 averaged 1kHz to 10kHz	7.9 averaged 1kHz to 10kHz	8.8 averaged 1kHz to 10kHz	9.1 averaged 1kHz to 10kHz	8.9 averaged 1kHz to 10kHz
Distortion					
10% Full Power (8.9V)					
250Hz	2nd Harmonic 0.24% 3rd Harmonic 0.31%	2nd Harmonic 0.12% 3rd Harmonic 0.15%	2nd Harmonic 0.56% 3rd Harmonic 0.23%	2nd Harmonic 0.04% 3rd Harmonic 0.58%	2nd Harmonic 1.00% 3rd Harmonic 0.50%
1kHz	0.22% 0.45%	0.23% 0.84%	2.36% 1.88%	0.80% 2.64%	1.40% 1.00%
10kHz	1.87% 0.29%	1.35% 0.16%	2.68% 0.08%	2.11% 0.11%	3.98% 1.78%
1% Full Power (2.8V)					
250Hz	0.63% 0.31%	0.16% 0.14%	0.14% 0.14%	0.24% 0.67%	0.32% 0.45%
1kHz	0.06% 0.23%	0.09% 0.53%	0.38% 0.94%	1.80% 4.11%	0.45% 0.79%
10kHz	0.78% 0.26%	0.53% 0.17%	1.03% 0.05%	5.21% 0.21%	3.16% 0.31%
Crossover	1.6kHz Passive	1.7kHz Passive	1.4kHz Passive	1.75kHz Passive	Passive 1.4kHz

Notes
¹ Average over stated bandwidth. Measured at 1 metre on axis.
² Unweighted pink noise input, measured at 1 metre in an anechoic chamber
 A full range of measurements, performance data, and Easel™ Data can be downloaded from www.tannoy.com. Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notice.

CONSTRUCTION

Enclosure	11.3 litre MDF, Vented, Internally Braced	17 litre vented, 15mm (5/8) birch plywood and 15mm (5/8) MDF front baffle.Vented, Internally braced.	37.5 litre vented, 15mm (5/8) birch plywood and 15mm (5/8) MDF front baffle.Vented, Internally braced.	37.5 litre vented, 15mm (5/8) birch plywood and 15mm (5/8) MDF front baffle.Vented, Internally braced.	62 litre vented, 15mm (5/8) birch plywood and 15mm (5/8) MDF front baffle. Vented, Internally braced.
Finish	Textured Black or White paint (Custom colours on request). Powder Coated Steel Grill (reticulated foam behind)	Textured Black or White paint (Custom colours on request). Powder Coated Steel Grill (reticulated foam behind)	Textured Black or White paint (Custom colours on request). Powder Coated Steel Grill (reticulated foam behind)	Textured Black or White paint (Custom colours on request). Powder Coated Steel Grill (reticulated foam behind)	Textured Black or White paint (Custom colours on request). Powder Coated Steel Grill (reticulated foam behind)
Connectors	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon
Controls & Indicators	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch
Fittings	4 x M6 bracket inserts, 2 x M6 yoke bracket inserts	4 x M10 Flying inserts, 2 x M10 yoke bracket inserts 1 x recessed carrying handle Blanking plate for optional VTH, pole mount	8 x M10 Flying inserts, 8 x M10 yoke bracket inserts 3 x recessed carrying handles (2 side & 1 rear) Blanking plate for optional VTH, pole mount	8 x M10 Flying inserts, 8 x M10 yoke bracket inserts 3 x recessed carrying handles (2 side & 1 rear) Blanking plate for optional VTH, pole mount	8 x M10 Flying inserts, 8 x M10 yoke bracket inserts 3 x recessed carrying handles (2 side & 1 rear) Blanking plate for optional VTH, pole mount
Dimensions	337 x 252 x 240mm 13.26 x 9.92 x 9.44"	338 x 280 x 275mm 15.28x11.02x10.83"	486 x 370 x 375mm 19.13x14.57x15.5"	486 x 370 x 375mm 19.13x14.57x15.5"	590 x 450 x 420mm 23.23x17.72x16.54"
Weight	8.5kg (18.7lbs)	10.5kg (23.1lbs)	23kg (50.6lbs)	23kg (50.6lbs)	35kg (77lbs)

ELECTRONICS

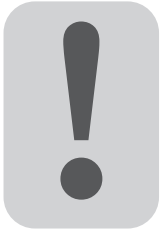
Maximum signal input for clip	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu
Output noise	-105dB unweighted, referenced to maximum output (22kHz bandwidth)	-105dB unweighted, referenced to maximum output (22kHz bandwidth)	-105dB unweighted, referenced to maximum output (22kHz bandwidth)	-105dB unweighted, referenced to maximum output (22kHz bandwidth)	-105dB unweighted, referenced to maximum output (22kHz bandwidth)
Efficiency	>90% typically	>90% typically	>90% typically	>90% typically	>90% typically
Damping Factor	400 ref 8 Ohms	400 ref 8 Ohms	400 ref 8 Ohms	400 ref 8 Ohms	400 ref 8 Ohms
Distortion	<0.05% @ 1kHz -3dB output (22kHz bandwidth)	<0.05% @ 1kHz -3dB output (22kHz bandwidth)	<0.05% @ 1kHz -3dB output (22kHz bandwidth)	<0.05% @ 1kHz -3dB output (22kHz bandwidth)	<0.05% @ 1kHz -3dB output (22kHz bandwidth)
Input Impedance	5.6kOhms unbalanced, 11.2kOhms balanced	5.6kOhms unbalanced, 11.2kOhms balanced	5.6kOhms unbalanced, 11.2kOhms balanced	5.6kOhms unbalanced, 11.2kOhms balanced	5.6kOhms unbalanced, 11.2kOhms balanced
Protection systems					
Over Current	Excessive over current causes shutdown Limiters applied	Excessive over current causes shutdown Limiters applied	Excessive over current causes shutdown Limiters applied	Excessive over current causes shutdown Limiters applied	Excessive over current causes shutdown Limiters applied
Temperature					
Brownout	Automatic protection & recovery	Automatic protection & recovery	Automatic protection & recovery	Automatic protection & recovery	Automatic protection & recovery
Mains	Inrush current limiting	Inrush current limiting	Inrush current limiting	Inrush current limiting	Inrush current limiting
Indicators	1x Limit LED, 1x Signal LED & 1x Power LED	1x Limit LED, 1x Signal LED & 1x Power LED	1x Limit LED, 1x Signal LED & 1x Power LED	1x Limit LED, 1x Signal LED & 1x Power LED	1x Limit LED, 1x Signal LED & 1x Power LED
Number of channels	one	one	one	one	one
System Type	Class D	Class D	Class D	Class D	Class D

PSU SPECIFICATIONS

Input Connector	Locking Neutrik Powercon	Locking Neutrik Powercon	Locking Neutrik Powercon	Locking Neutrik Powercon	Locking Neutrik Powercon
Voltage Selection	Automatic (115 / 230V, 45 - 65Hz)	Automatic (115 / 230V, 45 - 65Hz)	Automatic (115 / 230V, 45 - 65Hz)	Automatic (115 / 230V, 45 - 65Hz)	Automatic (115 / 230V, 45 - 65Hz)
Type	High current, high freq. switch-mode	High current, high freq. switch-mode	192kHz Synchronised to DSP	High current, high freq. switch-mode	High current, high freq. switch-mode
Efficiency	>90% typical	>90% typical	>90% typical	>90% typical	>90% typical
Input voltage	100V / 115V / 230V nominal +/-10%	100V / 115V / 230V nominal +/-10%	>90% typical	100V / 115V / 230V nominal +/-10%	100V / 115V / 230V nominal +/-10%
Mains fuse	External	External	100V / 115V / 230V nominal +/-10%	External	External
Fuse type	T10AT	T10AT	External	T10AT	T10AT
Other features	Automatic soft-start	Automatic soft-start	T10AT	Automatic soft-start	Automatic soft-start
			Automatic soft-start		

9.0 TECHNICAL SPECIFICATIONS (CONTINUED)

SYSTEM	Power Vs10BP	Power Vs15BP
System Type	Subwoofer-Bandpass	Subwoofer-Bandpass
Frequency Response (-3dB) ¹ Lowpass Filter A on	37Hz - 80Hz	47Hz - 80Hz
Frequency Response (-3dB) ¹ Lowpass Filter B on	37Hz - 110Hz	47Hz - 110Hz
Frequency Response (-10dB) ¹ Lowpass Filter A on	32Hz - 80Hz	37Hz - 80Hz
Frequency Response (-10dB) ¹ Lowpass Filter B on	32Hz - 110Hz	37Hz - 110Hz
Rated Maximum SPL	118dB (average) 124dB (peak)	124dB (average) 130dB (peak)
Driver Complement	1 x 250mm (10") High excursion bass driver	1 x 380mm (15") High excursion bass driver
Crossover	User Selectable LPF	User Selectable LPF
Distortion		
10% Full Power (12.7V)	2nd Harmonic 3rd Harmonic	2nd Harmonic 3rd Harmonic
40Hz	2.27% 0.73%	0.65% 0.67%
100Hz	1.79% 1.27%	3.05% 0.70%
1% Full Power (4V)	2nd Harmonic 3rd Harmonic	2nd Harmonic 3rd Harmonic
40Hz	0.57% 0.47%	0.13% 0.30%
100Hz	0.61% 1.37%	0.76% 0.24%
Notes		
<small>1. Average over stated bandwidth. Measured at 1 metre on axis. 2. Unweighted pink noise input, measured at 1 metre in an anechoic chamber A full range of measurements, performance data, and Ease® Data can be downloaded from www.tannoy.com Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior</small>		
CONSTRUCTION		
Enclosure	50 litre Bandpass, 15mm (5/8) birch plywood. Internally braced.	100 litre Bandpass, 15mm (5/8") birch plywood. Internally braced.
Finish	Textured Black or White paint (Custom colours on request).	Textured Black or White paint (Custom colours on request).
Connectors	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon	1 x female XLR (input), 1 male XLR (link), 1 x Neutrik Powercon
Controls & Indicators	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch	Level Control Power LED (Blue) Signal LED (Green) Limit LED (Red) Full Range / HighPass Switch (110Hz) Power Switch
Fittings	2 x Blanking plates, this allows the bass ports to be moved to another facia 8 x M10 Flying inserts 2 x recessed carrying handles Blanking plate for optional VTH, pole mount 4 x Rubber Feet	2 x Blanking plates, this allows the bass ports to be moved to another facia 8 x M10 Flying inserts 2 x recessed carrying handles Blanking plate for optional VTH, pole mount 4 x Rubber Feet
Dimensions	335 x 365 x 590mm 14 x 14.4 x 23.25"	665 x 440 x 440mm 26.18 x 17.3 x 17.3"
Weight	18kg (39.6lbs)	30kg (66lbs)
ELECTRONICS		
Maximum signal input for clip	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu	Input attenuator at minimum - +18dBu Input attenuator at Maximum - +5dBu
Output noise	-105dB unweighted, referenced to maximum output (22kHz bandwidth)	-105dB unweighted, referenced to maximum output (22kHz bandwidth)
Efficiency	>90% typically	>90% typically
Damping Factor	400 ref 8 Ohms	400 ref 8 Ohms
Distortion	<0.05% @ 1kHz -3dB output (22kHz bandwidth)	<0.05% @ 1kHz -3dB output (22kHz bandwidth)
Input Impedance	5.6kOhms unbalanced, 11.2kOhms balanced	5.6kOhms unbalanced, 11.2kOhms balanced
Protection systems		
Over Current	Excessive over current causes shutdown	Excessive over current causes shutdown
Temperature	Limiters applied	Limiters applied
Brownout	Automatic protection & recovery	Automatic protection & recovery
Mains	Inrush current limiting	Inrush current limiting
Indicators	1x Limit LED, 1x Signal LED & 1x Power LED	1x Limit LED, 1x Signal LED & 1x Power LED
Number of channels	one	one
System Type	Class D	Class D
PSU SPECIFICATIONS		
Input Connector	Locking Neutrik Powercon	Locking Neutrik Powercon
Voltage Selection	Automatic (115 / 230V, 45 - 65Hz)	Automatic (115 / 230V, 45 - 65Hz)
Type	High current, high freq. switch-mode	High current, high freq. switch-mode
Efficiency	>90% typical	>90% typical
Input voltage	100V / 115V / 230V nominal +/-10%	100V / 115V / 230V nominal +/-10%
Mains fuse	External	External
Fuse type	T10AT	T10AT
Other features	Automatic soft-start	Automatic soft-start



The Tannoy Professional hardware covered in this guide has been designed to offer quick, simple, cost effective and secure solutions for mounting specific Tannoy Professional loudspeakers. This hardware has been designed and manufactured with a high safety load factor for its specific role. To ensure the safest possible use of the hardware covered in this guide, it must be assembled in strict accordance with the instructions specified. The information in these manuals relating to the assembly and the safe use of these accessories must be understood and followed. The installation of Tannoy Professional loudspeakers using the dedicated hardware should only ever be carried out by fully qualified installers, in accordance with all the required safety codes and standards that are applied at the place of installation.

WARNING: As the legal requirements for flying change from country to country, please consult you local safety standards office before installing any product. We also recommend that you thoroughly check any laws and bylaws prior to commencing work.

Tannoy Professional hardware has been designed for use with specific Tannoy Professional loudspeakers, and is not designed or intended for use with any other Tannoy Professional products, or any other devices. Using Tannoy Professional hardware for any purpose other than that indicated in this guide is considered to be improper use. Such use can be very dangerous as overloading, modifying; assembling in anyway other than that clearly stated in the manual, or damaging Tannoy Professional hardware will compromise safety.

The component parts of any Tannoy Professional hardware device must only be assembled using the accessory kits supplied and in strict compliance with the user manual. The use of other accessories or non-approved methods of assembly may result in an unsafe hardware system by reducing the load safety factor. Welding, or any other method of permanently fixing hardware components together or to the integral fixing points in the cabinet should never be used.

Whenever a Tannoy Professional loudspeaker is fixed to a surface using a Tannoy Professional hardware device, the installer must ensure that the surface is capable of safely and securely supporting the load. The hardware employed must be safely, securely, and in accordance with the manual, attached both to the loudspeaker and also to the surface in question, using only the fixing holes provided as standard and covered in the manual. Secure fixings to the building structure are vital. Seek help from architects, structural engineers or other specialists if in any doubt.

All loudspeakers flown in theatres, nightclubs, conference centre or other places of work and entertainment must, be provided with an independent, correctly rated and securely attached secondary safety - in addition to the principle hardware device. This secondary safety must prevent the loudspeaker from dropping more than 150mm (6") should the principle hardware device fail.

10.1: SECURE™ - V6Y YOKE BRACKET

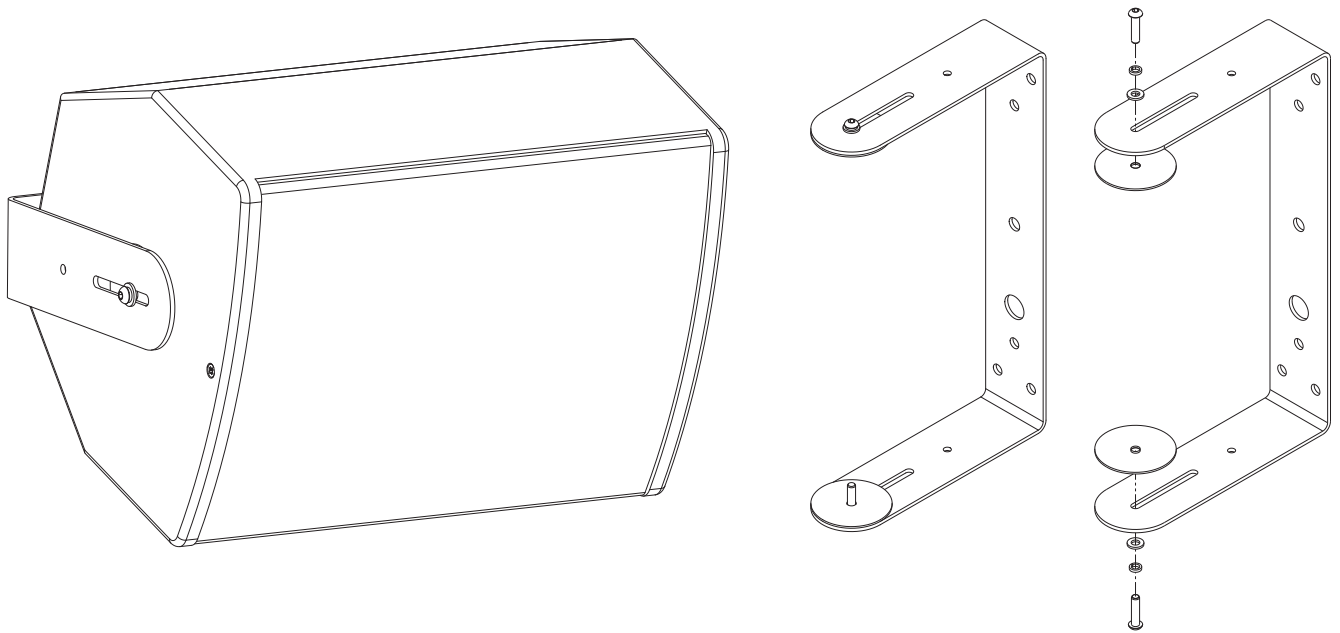
The V6Y is a discreet yoke style bracket, available in both black and white, and is used to mount the Tannoy V6 in both portrait and landscape orientations. The Tannoy V6 loudspeaker is fixed to the bracket using the M6 bolts and washers supplied in the accessory pack

Only the screws, fasteners, shakeproof and plain washers specified on figure 3. should be used to assemble the V6Y bracket.

The arms of the V6Y have long slots, through which M6 bolts are fitted, and screwed into the integral M6 inserts in the top and bottom of the Tannoy V6 cabinet.

These slots allow the installer to easily and precisely adjust the distance between the loudspeaker and the mounting surface for optimal discreet installation of the Tannoy V6.

Use the 20mm hole to pass the loudspeaker cable through before fixing the bracket to the wall.



Use the table of parts along with the assembly drawing to assemble the V6Y.

ASSEMBLY VIEW	DESCRIPTION	QUANTITY
1	Yoke Bracket	1
2	Washer M6 Plain	2
3	Washer M6 Spring	2
4	M6 x 25 Button Head Screw	2
5	Rubber Friction Washer	2

10.2: SECUR ET: V8Y YOKE BRACKET

VCB2: The VCB2 cluster bar is available in both black and white finishes and provides a platform onto which 2 x Tannoy V6 loudspeakers can be mounted using the V6Y yoke bracket (not supplied in the VCB2 kit). A number of different loudspeaker arrangements can be made depending on the application and the coverage pattern required (see figures 1 & 2).

Using the VCS ceiling saddle the resulting cluster can be attached to the ceiling.

VCB4: The VCB4 cluster bar (available in both black and white) provides the platform onto which 3-4 x Tannoy V6 loudspeakers can be mounted using the V6Y yoke bracket (not supplied in the VCB4 kit). A number of different loudspeaker arrangements can be made depending on the application and the coverage pattern required (see figures 3-6).

N.B. When using the VCB4 cluster bar system, one of the cluster bars is mounted above the other to produce a cross formation. To ensure an equal mounting height, the 2 x Tannoy V6 loudspeakers being flown from the lower cluster bar should be attached to the upper surface of this bar. While the 2 x Tannoy V6 loudspeakers being flown from the upper bar should be attached to the underside of this cluster bar.

Using the VCS ceiling saddle the resulting cluster can be attached to the ceiling.

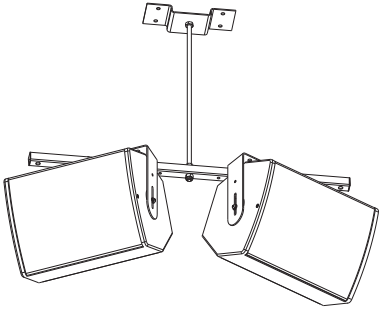


Fig. 1.

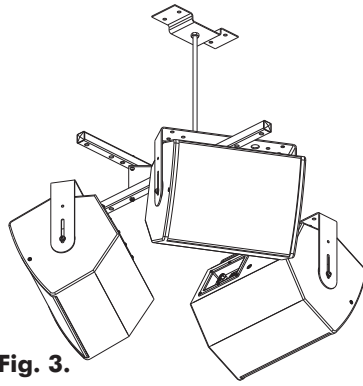


Fig. 3.

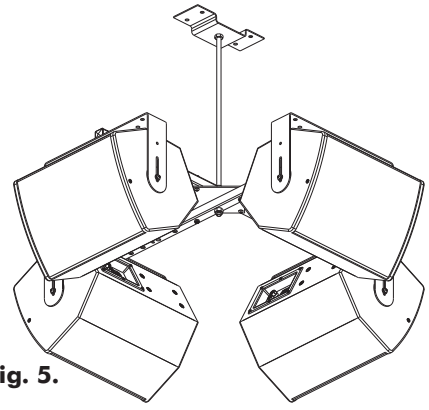


Fig. 5.

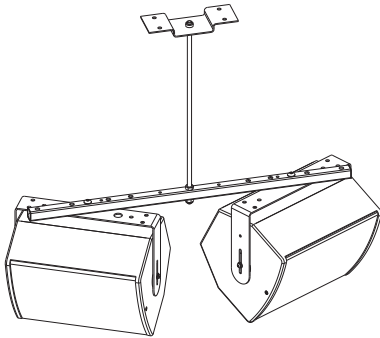


Fig. 2.

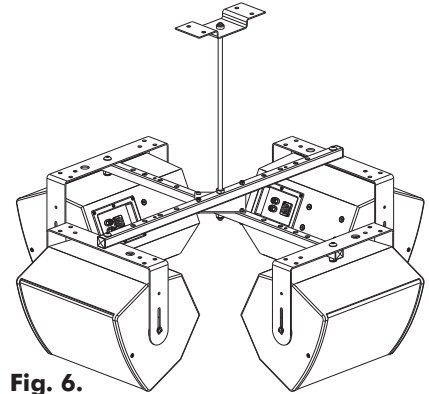
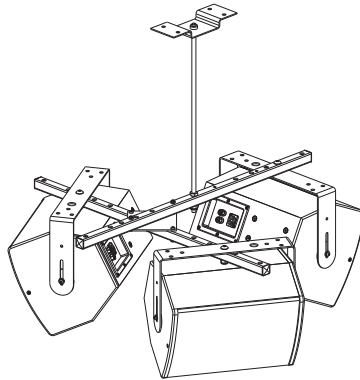
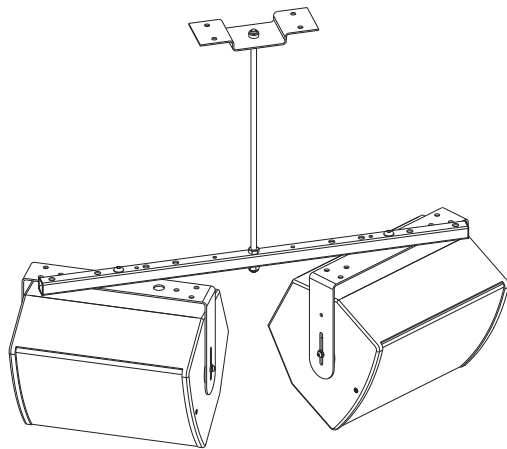
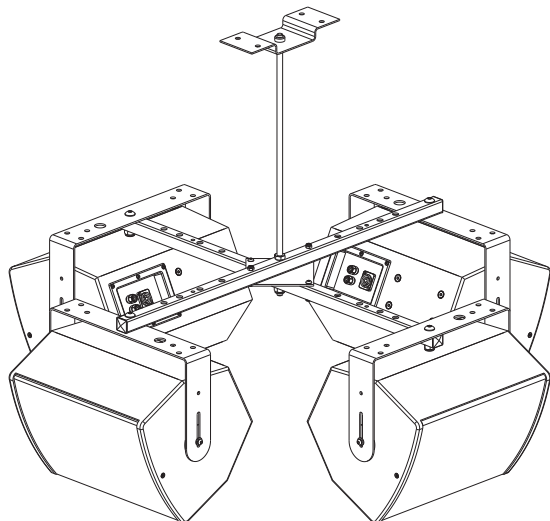


Fig. 6.



Contents of VCB2	DESCRIPTION	QUANTITY
1	Cluster Bar	1
2	Washer M10 Plain	2
3	Screw M10x40 Button Head	2
4	M10 Nyloc Nut	2
5	Blanking Plug	2



Contents of VCB4	DESCRIPTION	QUANTITY
1	Cluster Bar	1
2	Washer M10 Plain	2
3	Screw M10x40 Button Head	2
4	M10 Nyloc Nut	2
5	Blanking Plug	2

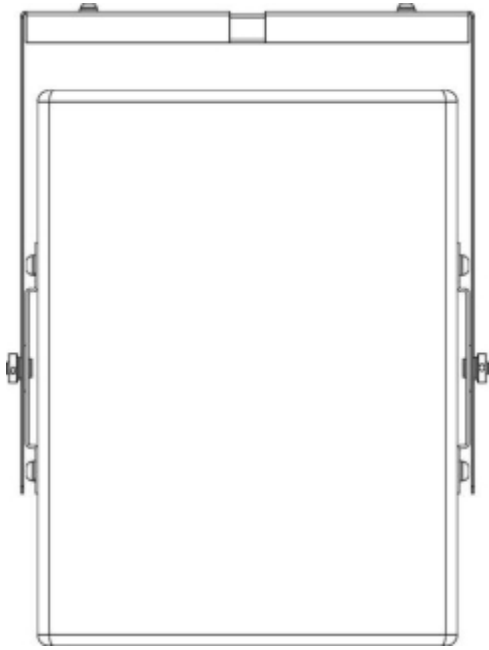


Fig.1

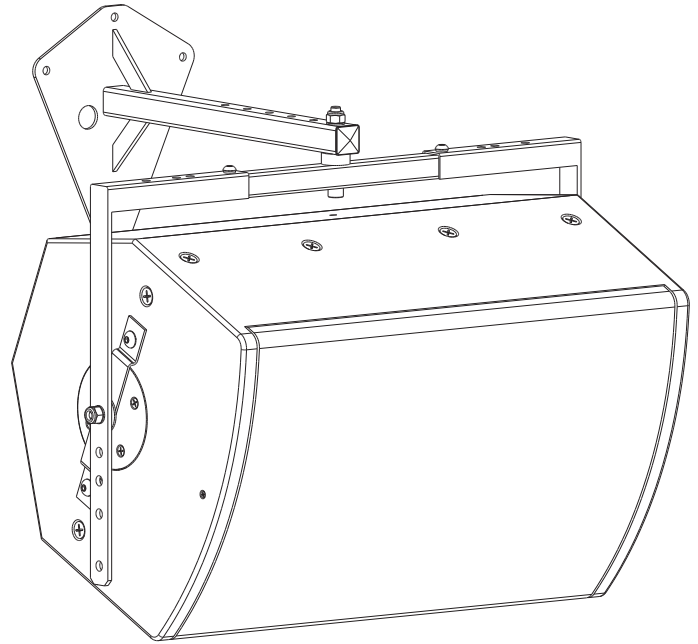


Fig.2

Use the table of parts along with the assembly drawing (Figure 3.) to assemble the VMY. Figure 4 shows the VMY assembled.

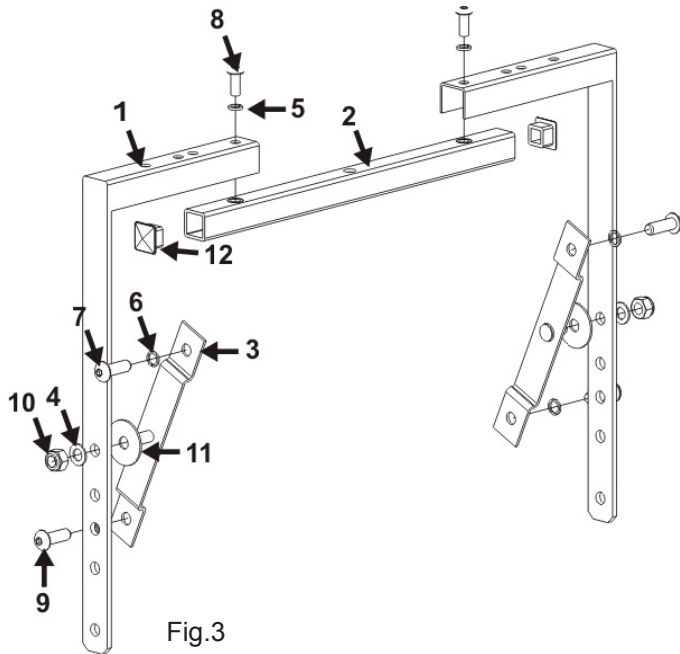


Fig.3

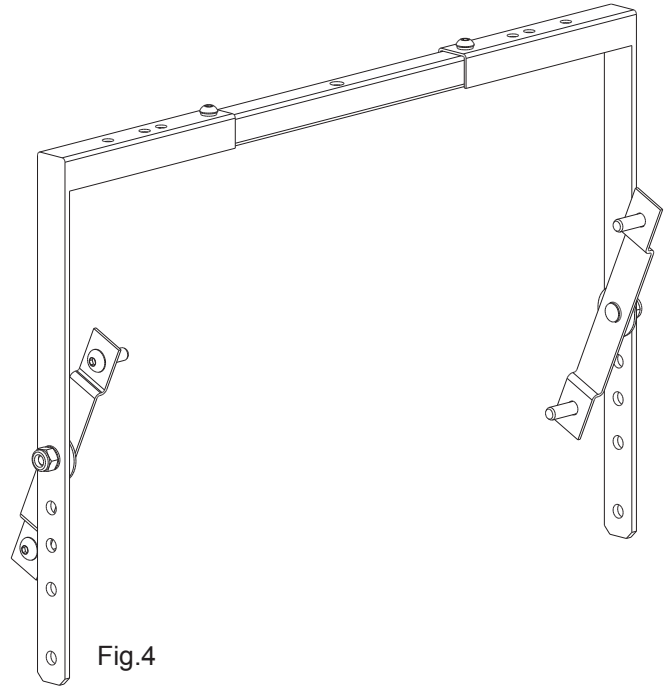
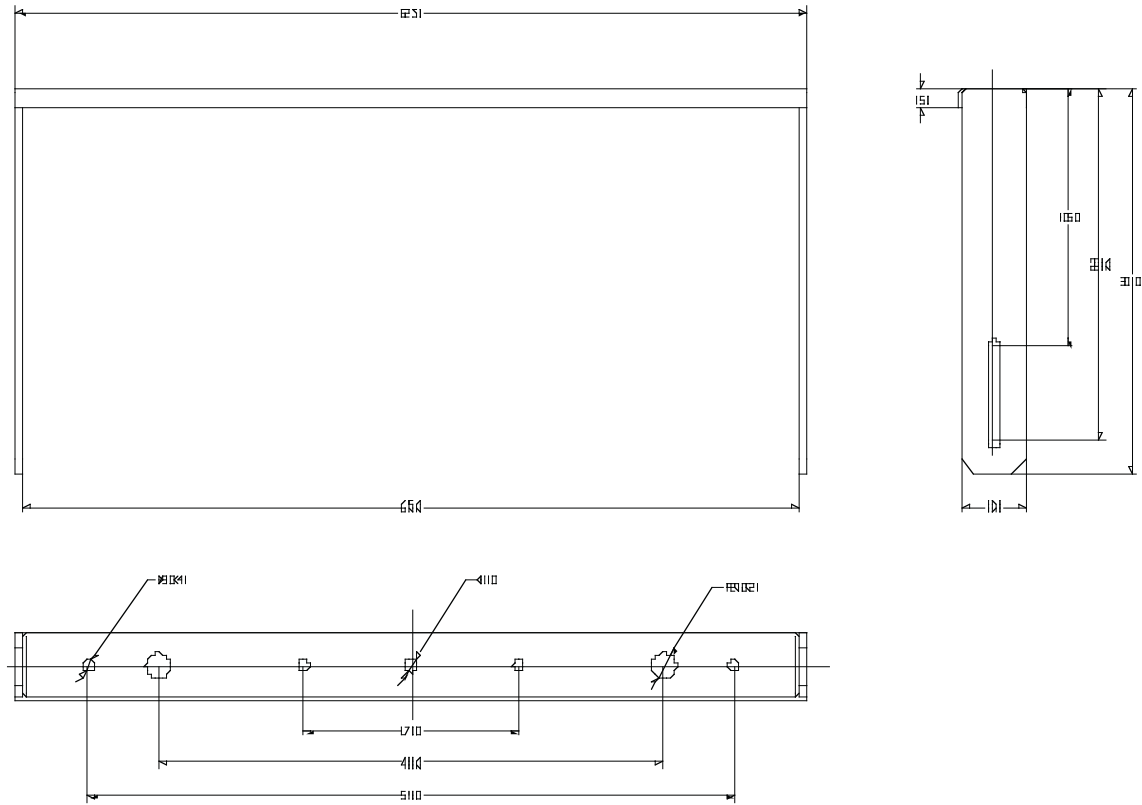


Fig.4

Number on Assembly View (Fig 3.)	Description	Quantity
1	Hanging Bracket	2
2	Cross Member	1
3	Pivot Stud	2
4	M10 Plain Washer	2
5	M8 Spring Washer	2
6	M10 Spring Washer	4
7	M10 x 30mm Screw	2
8	M8 x 20mm Screw	2
9	M10 x 30mm Screw	2
10	M10 Nyloc Nut	2
11	Friction Washer	2
12	30mm Square Blank Plug	2

V15Y



V12Y

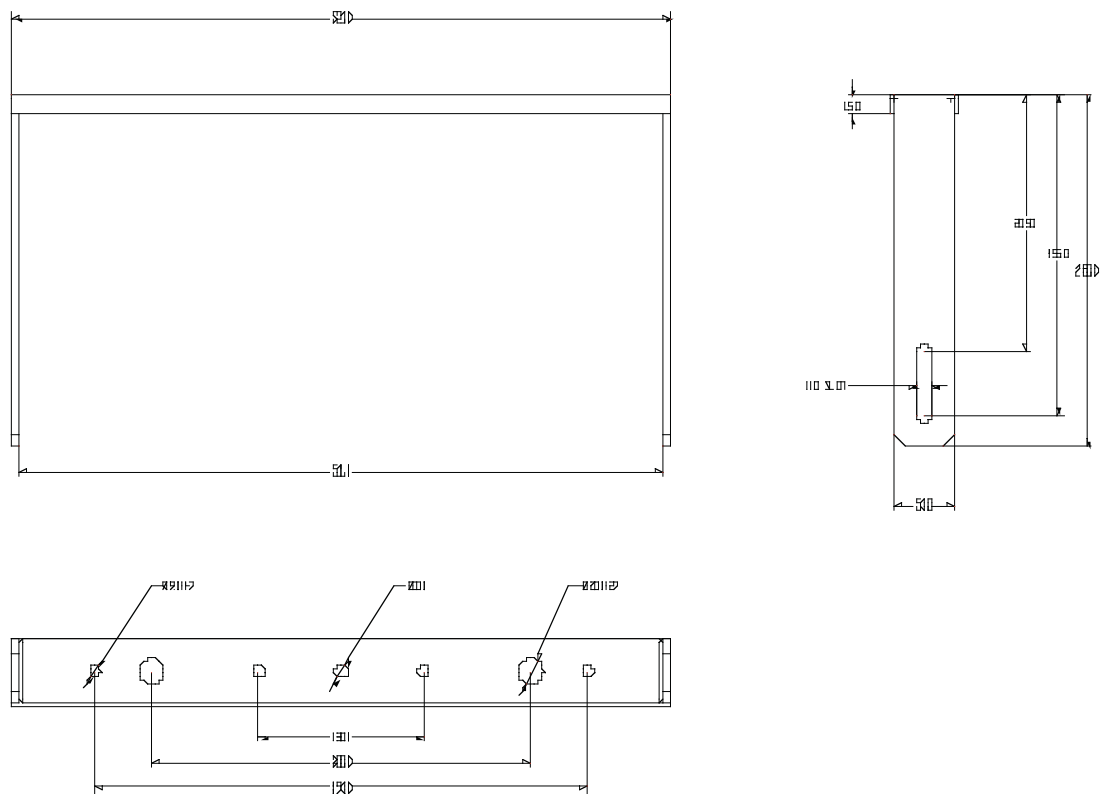
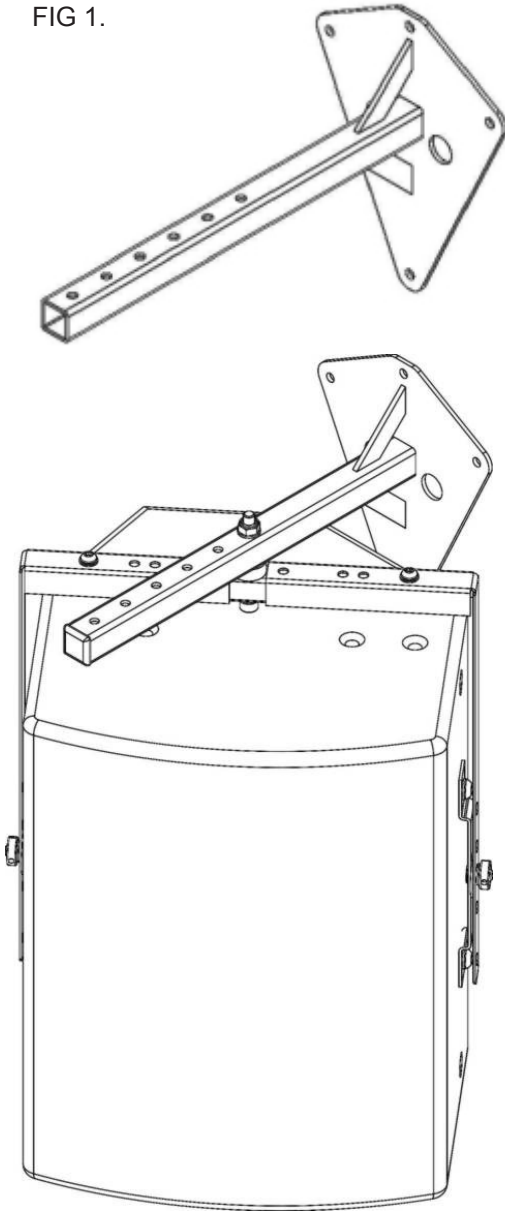


FIG 1.



The VMB is wall mounting bracket for the attachment of a VMY, available in both black and white finishes, allowing the user secure the Tannoy *Power V™* Full range loudspeaker in either portrait or landscape orientations to a wall.

The Tannoy *Power V™* loudspeaker is attached to the bracket using the accessories supplied.

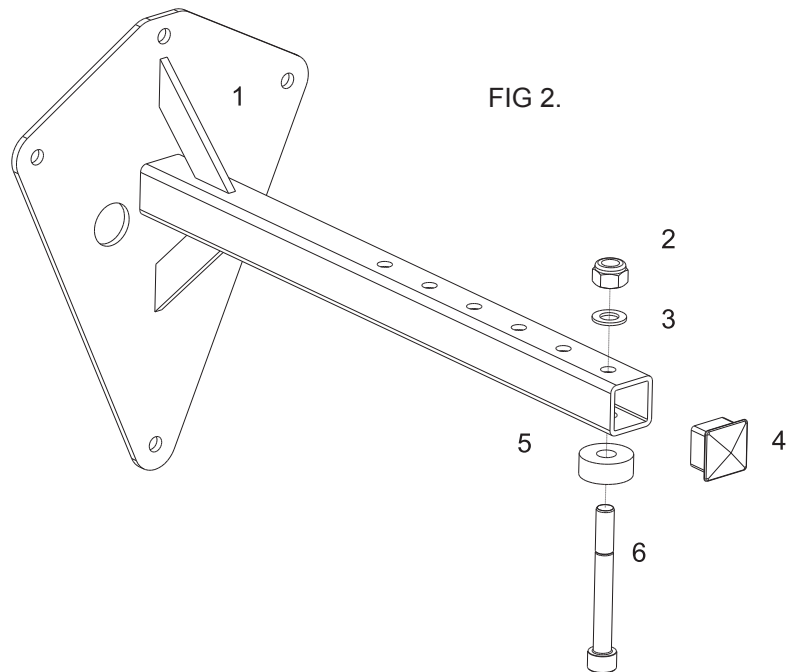
This wall-mounting bracket has a larger wall plate than previous models to maximise the integrity of fixing obtained. There are also two holes either side of the fixing beam to allow the speaker cable the pass through the wall plate and along the fixing beam to the terminal panel resulting in a more discrete installation.

The fixing beam on the VMB has a number of mounting points from which the VMY, V12Y & V15Y can be attached at varying distances from the mounting surface.



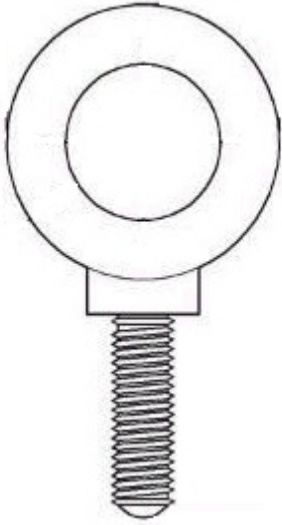
Only the screws, fasteners, shakeproof and plain washers specified on figure 3. should be used to assemble the VMB bracket

FIG 2.



Number on Fig 3.	Description	Quantity
1	VMB Wall Bracket	1
2	M10 Nyloc Nut	1
3	M10 Plain Washer	1
4	30mm Square Blank Plug	1
5	Nylon Spacer	1
6	M10 x 85mm Screw	1

FIG 1.



The Tannoy *Power V™* loudspeaker can be flown with high quality VEB M10 eyebolts with collar to BS4278:1984. The loudspeakers are equipped with internal steel braces, which also double as the flying points, and accept VEB M10 eyebolts.

To install the VEB M10 eyebolts remove the original M10 counter sunk screws from the locations you wish to install the VEB M10 eyebolts. Then replace these counter sunk M10 screws with the VEB M10 eyebolts. The M10 insert on the rear of the cabinet also accepts a VEB M10 eyebolt and should **only** be used for tilting the loudspeaker to the desired angle.



Important: It is imperative for safety reasons that two eyebolts linked to two independently fixed straps are used per cabinet. VEB eyebolts should be installed into the relative sides of the cabinet, and should NEVER be installed on the top of the cabinet. Never suspend one enclosure from another to form a line array or cluster using these fittings.

The correct method is shown in figure 2.

Never attempt to use formed eyebolts i.e. formed from a steel rod and bent into an eye.

Only use the outer fixing points on the top and sides of the *Power V™* cabinet for fixing eyebolts. The inner two fixing points on each side of the cabinet are for dedicated bracketry (VMY) only.

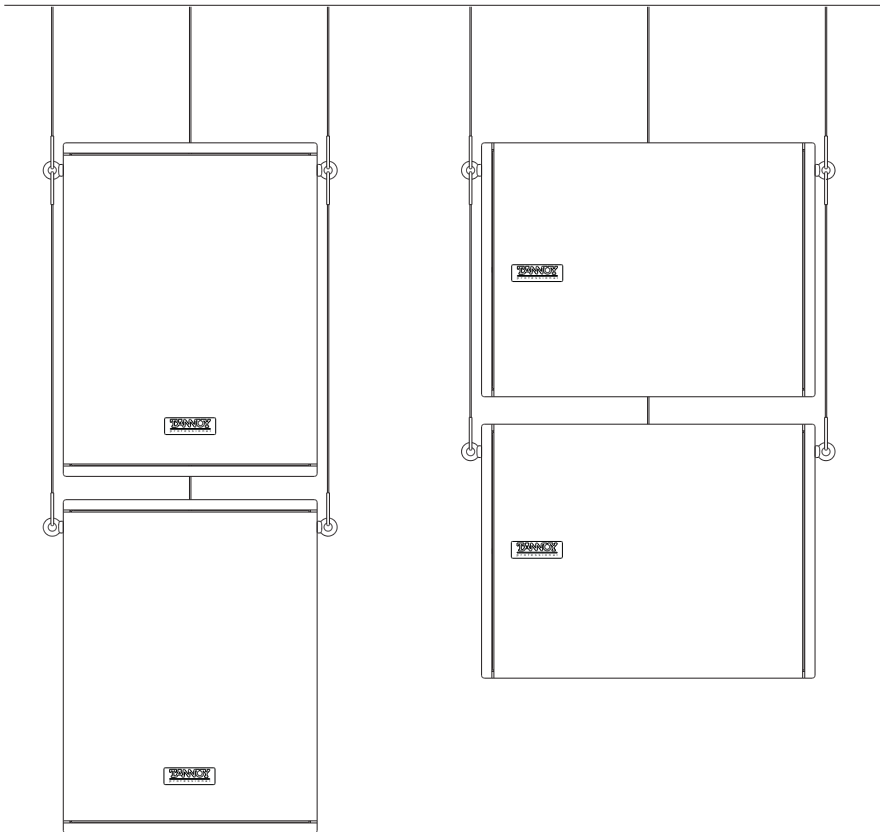
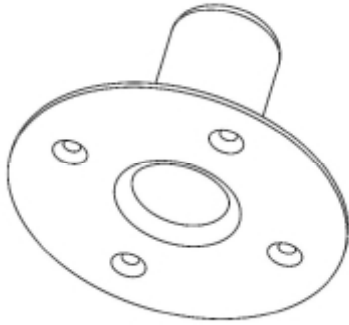


FIG 2.

10.7 : SECUR ET - VTH POLE MOUNT



The Tannoy *Power V™* loudspeakers are fitted as standard with a blanking plate on the base of the cabinet. However, should you ever wish to mount the *Power V™* onto a standard 35mm pole mount this blanking plate can be quickly and easily removed and replaced by a VTH pole mount. The same screws which secure the blanking plate should be used to secure the VTH in position.

10.8 : SECUR ET VCS CEILING SADDLE

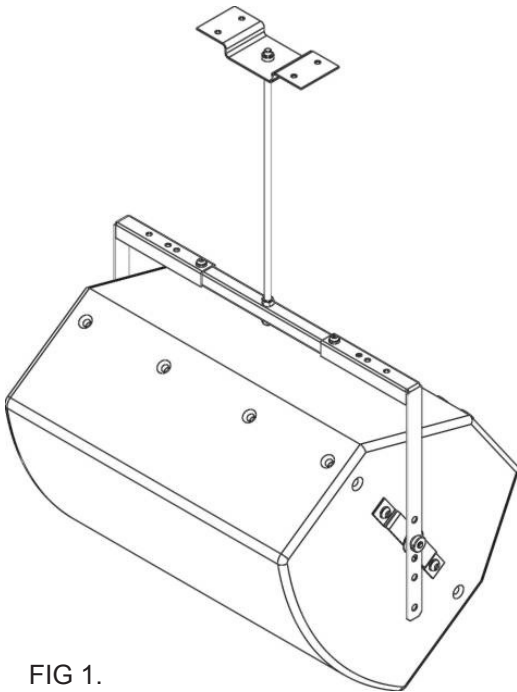
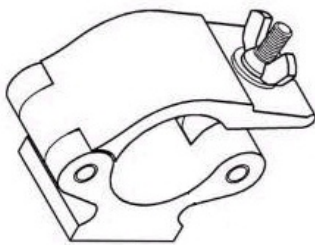


FIG 1.

The VCS ceiling saddle available in both black and white finishes, and is to be used in conjunction with the VMY and a length of M10 threaded rod (not supplied by Tannoy Limited). The VCS ceiling saddle allows the Tannoy *Power V™* loudspeaker to be suspended at a user defined distance from the ceiling as shown in Figure 1.

Included with the VCS is an M10 nut. This should be used to secure and lock the threaded rod in place at the top of the ceiling saddle.

10.9 : SECUR ET VPC POLE CLAMP



The VPC pole clamp can be used along with the VMY yoke bracket to suspend a Tannoy *Power V™* loudspeaker from an overhead bar, truss or suitable structure. Only the parts supplied should be used to secure the VPC to the VMY yoke bracket.

The following items are included with each VPC:-

Description	Quantity
VPC Pole Clamp	1
M10 Washer	1
M10 x 50mm Screw	1
M10 Nyloc Nut (Black)	1

PowerV6

7900 0742 Driver Kit - 1728
7900 0683 HF Diaphragm Kit

PowerV8

7900 0385 HF Diaphragm Kit
7900 0475 Recone Kit - 2062
7900 0474 Driver Kit - 2062

PowerV12

7900 0433 Driver Kit - 3142
7900 0441 Recone Kit - 3142
7900 0199 HF Diaphragm Kit

PowerV12HP

7900 0715 Driver Kit - 3190
7900 0716 Recone Kit - 3190
7900 0718 HF Diaphragm Kit

PowerV15

7900 0644 Driver Kit - 3816
7900 0646 Recone Kit - 3816
7900 0645 HF Diaphragm Kit 0282

PowerV10BP

7900 0756 Driver Kit - 2532
7900 0639 Recone Kit - 2522

PowerV15BP

7900 0596 Driver Kit - 3813
7900 0600 Recone Kit - 3813

PowerV HARDWARE

8001 2780 VMY - Secur ET - Yoke Adjustable (Black)
8001 2790 VMY - Secur ET - Yoke Adjustable (White)
8001 2800 VMB - Secur ET - Wall Bracket (Black)
8001 2810 VMB - Secur ET - Wall Bracket (White)
8001 2820 VEB - Secur ET - Eyebolts M10
8001 2830 VCS - Secur ET - Ceiling Saddle (Black)
8001 2840 VCS - Secur ET - Ceiling Saddle (White)
8001 2850 VPC - Secur ET - Pole Clamp
8001 2860 VTH - Secur ET - Top Hat (Black)
8001 2870 VTH - Secur ET - Top Hat (White)
8001 3180 V12Y- Secur ET - Yoke Bracket (Black)
8001 3181 V12Y- Secur ET - Yoke Bracket (White)
8001 3190 V15Y- Secur ET - Yoke Bracket (Black)
8001 3191 V15Y- Secur ET - Yoke Bracket (White)
8001 2820 VEB - Secur ET - Eyebolts M10

12.0: WARRANTY**No maintenance of the *Power V™* loudspeakers is necessary.**

As part of the MUSIC Group, Tannoy is committed to providing the highest quality products, service and user experience for our customers. One element of this commitment is our after sales support which now incorporates our extended Limited Warranty. In the event of any concern that is not addressed by this extended Limited Warranty we would ask you to contact us at care@music-group.com

For full warranty details including the extended Limited Warranty, please visit <http://www.music-group.com/warranty.aspx> and register your purchase online at www.music-group.com or www.tannoy.com

13.0: DECLARATION OF CONFORMITY

The following apparatus is/are manufactured in UK by Music Group Innovation SC Ltd of Rosehall Industrial Estate, Coatbridge, Scotland, ML5 4TF. The following equipment is marked with the CE label and conform(s) to the protection requirements of the European Electromagnetic Compatibility Standards and Directives. The apparatus is designed and constructed such that electromagnetic disturbances generated do not exceed levels allowing radio and telecommunications equipment and other apparatus to operate as intended, and, the apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance to enable operation as specified and intended.

Details of the Apparatus: ***Power V6***
Power V8
Power V12
Power V12HP
Power V15
Power VS10BP
Power VS15BP

The equipment listed above is covered by this certificate and marked with the CE-label conforms with following standards:

EN 60065 (IEC 60065)	Safety requirements for mains operated electronic and related apparatus for household and similar general use
EN 55103-1	Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2	Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2: Immunity.

With reference to regulations in following directives:
 73/23/EEC, 89/336/EEC

Signed:



Position: Engineering Director – Professional Products, Tannoy Professional

Date: 19/11/2015
 For Music Group Innovation SC Ltd

TANNOY | **POWER**  |  **DUAL** TM
CONCENTRIC

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