

# Calburn Turntable Installation Manual

continuum  
*calburn cobra castellan*



Welcome and congratulations on your purchase of the Caliburn turntable system. Your Caliburn was hand-crafted and assembled by the team at Continuum Audio Laboratories, and has been rigorously tested and is ready for your enjoyment.

We ask that you take the time to read this manual carefully to ensure that you not only enjoy optimum sound quality from your Caliburn, but also understand the care and maintenance procedures required to keep your Caliburn in as-new condition for many years to come.

If you have any questions in reference to any part of your Caliburn at any time in the future, please feel free to contact your nearest Continuum Consultant for assistance.

**Your Authorised Continuum Consultant is:**

**Serial Number:**

Date of Manufacture

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## **IMPORTANT INFORMATION AND NOTES**

ENGLISH

**WE RECOMMEND YOU READ THIS DOCUMENT IN ITS ENTIRETY BEFORE ATTEMPTING TO ASSEMBLE OR DISASSEMBLE YOUR NEW TURNTABLE.**

### ***WHO SHOULD READ THIS MANUAL***

This manual is designed for the owner, dealer, or dealer representative who will install the Caliburn turntable. The reader should have a good general knowledge of mechanical devices and be proficient with basic tools such as allen wrenches, spirit levels, and general assembly techniques for machined components.

### ***HOW TO READ THIS MANUAL***

The User manual (this manual) contains important notes that need to be observed to operate the Caliburn safely and correctly.

**Throughout this manual there will be standard symbols denoting important information.**

### **Standard Symbols and Safety Notifications**

For your safety and that of others, follow the guidelines provided on the following pages concerning the use of the product.

Symbols are used throughout this manual. These are provided to emphasize important points for your safety and that of others. The following are the symbols and their meanings:

#### **⚠ WARNING**

Ignoring the instructions under this symbol when installing or dismantling the Caliburn may be hazardous or even lethal.

#### **⚠ CAUTION**

Ignoring the instructions under this symbol when installing or dismantling the Caliburn may lead to injuries as well as damage to the device or hardware options.

#### **CAUTION**

(CAUTION without the exclamation mark)

Ignoring the instructions under this symbol when using the Caliburn may lead to damage to the device or hardware options.

## **Safety Precautions**

Category	<b>⚠ WARNING</b>
Electric shock and fire	<p>Do not dismantle or modify this device in any other way than described in this manual.</p> <p>Do not place anything on top of this device. Doing so may cause fire, electric shock or a malfunction.</p> <p>Do not install this device in direct sunlight, near a heater, or in a humid or dusty environment. Doing so may cause fire or electric shock. To prevent fire or shock hazard, do not expose this unit to rain or moisture. Do not use or allow any liquid cleaning solutions to enter the unit.</p> <p>Do not obstruct the ventilation slots. This could cause overheating and fire.</p> <p>Use only a certified safe AC adapter and power cable to connect to any IEC connectors on the provided Power Entry Modules. Third-party adapters and cables may cause fire, electric shock or malfunction.</p> <p>In the event the device overheats, starts to smoke or smells strange, immediately unplug the device completely from the AC power plug. Contact the company where you purchased the device immediately. Using the device in its current condition may cause fire or electric shock.</p> <p>Do not damage or modify the power or other cables. Do not twist the cables together, place anything on them or place them where someone may trip over them. Doing so may cause fire or electric shock or personal injury.</p> <p>The Power Supply contains voltages that can cause serious injury or death. There are no user serviceable parts inside and no reason to open the control box or the pump box. In situations of failure return to approved dealer or agent. Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by your Factory Authorized Dealer</p> <p>To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.</p> <p>Before operating the unit, check that the operating voltage is identical with your local power supply. The operating voltage is indicated on the name plate at the rear of the unit on the Power Entry Module.</p> <p>The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off. If you are not going to use the unit for a long time, be sure to disconnect the unit from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never the cord.</p> <p>AC power cord must be changed only at a qualified service shop.</p>
Fitting components	<p><b>⚠ CAUTION</b></p> <p>The components in the Caliburn are made to close tolerances with sliding fits on most bearing surfaces. Never over tighten any of the provided fasteners for assembling the platter. If you are in doubt request the assistance of a trained dealer representative to ensure no forcing or misalignment of the components during assembly.</p> <p>Observe all instructions on placing your hands in the correct location when installing the heavy platter on to the bearing. Failure to observe the instructions and commonsense may result in injury.</p>

## **CALIBURN SYSTEM COMPONENTS**

The Caliburn consists of separate subsystems that combine to create a most sophisticated analogue playback system.

### **CALIBURN TURNTABLE**

The Caliburn turntable is a precisely engineered piece of equipment designed to be a low noise foundation for the record to sit, allowing the stylus to extract the maximum information from the record's groove.

### **CALIBURN CONTROL UNIT**

The Caliburn Control Unit allows for platter speed selection, 33, 45 and 78, and speed adjustment/memory settings. It also controls the vacuum unit for precise negative pressure to hold the record down during playback.

### **CALIBURN VACUUM UNIT**

The Caliburn Vacuum Unit is a super quiet pump with a "stealth-mode" operation during playback. It is a computer controlled negative pressure mechanism that maintains correct vacuum for record playback. It runs continuously during playback.

### **CASTELLON ISOLATION STAND**

The Castellon Isolation Stand is specifically designed to support the Caliburn Turntable and provide a suspension system that is tuned to the Caliburn. It contributes a significant proportion to the sound of the system.

### **COBRA TONEARM**

As the primary tonearm on the Caliburn System the Cobra offers unparalleled performance even against very complicated linear mechanisms. It has been designed to work as part of the overall system to deliver a complete sonic result.

## Castellon Stand



## **Overview of Basic Installation Steps**

Perform the steps below to install the Castellon. Details are contained in this manual.

1. Read the User Manual (this manual)
- ↓
2. Unpack and Check the contents of the packaging
- ↓
3. Confirm location for Castellon installation
- ↓
6. Position and place the Castellon. Level the Stand using the adjustable feet
- ↓
7. Remove protective packing film
- ↓
8. Remove Top Drawer
- ↓
9. Install the Lower Ceramic Shelf and Upper Ceramic Shelf using Special Bolts
- ↓
10. Install Pneumatic Buffer around Upper Ceramic Shelf
- ↓
11. Place Damping Sheets onto Upper Ceramic Shelf
- ↓
12. Place Top Timber Shelf on Damping Sheets
- ↓
13. Install Caliburn
- ↓
14. Release Installation Bolts
- ↓
15. Secure Safety Bolt
- ↓
16. Inflate Buffer

## **PACKAGING**

Please retain all the packaging in a safe dry place away from fire hazard and/or pests which could damage the packaging materials.

Should you need to transport the turntable we strongly recommend you use the original packaging to prevent damage during shipment.

Never transport the turntable with the platter assembled as this will potentially lead to serious damage to the bearing and platter.

## **INSPECT PACKAGING PRIOR TO OPENING**

The packaging has been especially designed so that all component parts are safe during transportation by reputable shipping companies. Should the packaging appear damaged or show signs of having been exposed to significant amounts of moisture (buckled cardboard packaging or heavy water stains) please advise your dealer immediately as the contents may have been exposed to undesirable events.

The packaging is designed to handle the majority of expected shipping conditions but there may be instances where events beyond Continuum Audio Laboratories control have occurred in shipping. To avoid complications with warranty claims we recommend you contact your dealer for assistance in evaluating the packaging prior to unpacking and installation.

## **OPEN THE PACKAGING**

The standard packaging consists of custom made roadcases and triple walled cardboard boxes containing foam lining to protect the components.

### **⚠ CAUTION**

Use a suitable protected cutting implement to carefully release the packaging tape holding the protective boxes.

Then remove each component. Note: the parts are heavy and require a firm careful grip to remove the items from their packaging. Be careful not to drop these components. Ask for assistance before lifting heavy objects should you feel this is necessary.

Place each component in a safe place (i.e a soft surface such as a towel or soft blanket) before opening the next component.

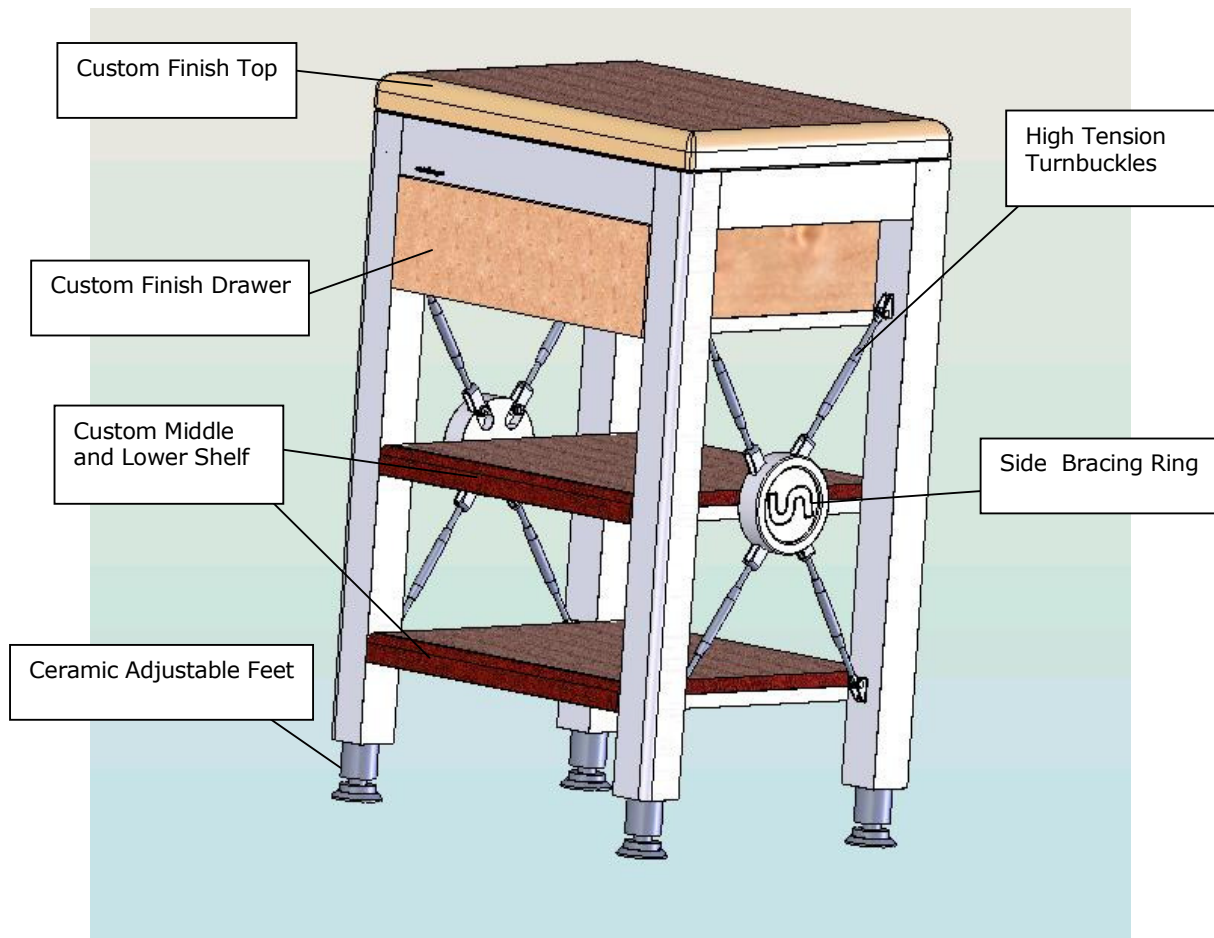
## **CASTELLON OVERVIEW**

The Castellon is a very specialised design incorporating the latest technology in vibration control.

The stand contains a negative stiffness mechanism which works in harmony with the Caliburn to produce unequalled sonic results. This spring mass damper system are hidden beneath the attractive exterior.

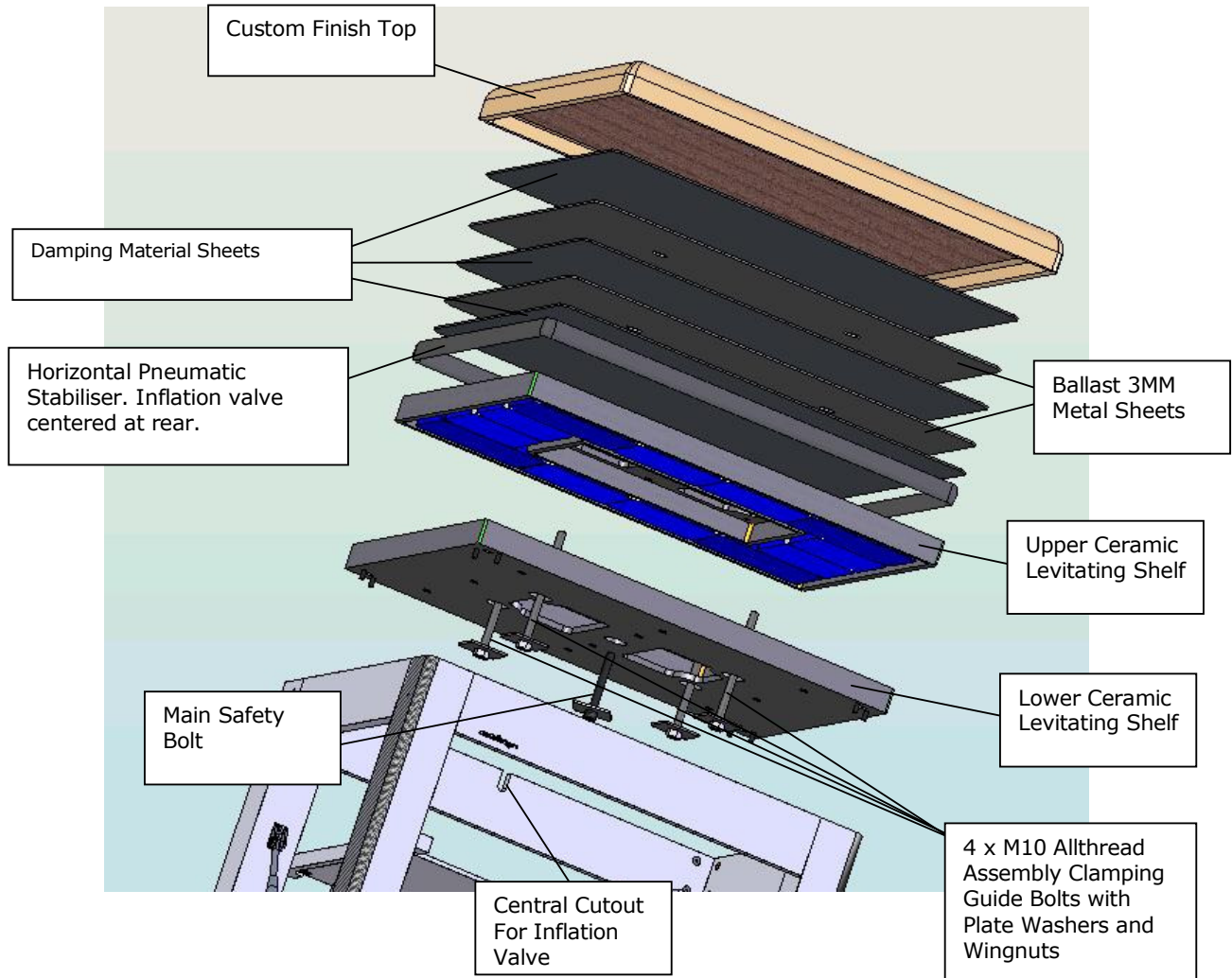
Aircraft grade alloys are used throughout along with high tension turnbuckle systems to rigidly brace the stand from any spurious movement.

Convenient features such as the drawer mechanism allow for storage of the usual collection of tools and cleaning needs of quality analogue systems.



## CASTELLON LAYERS

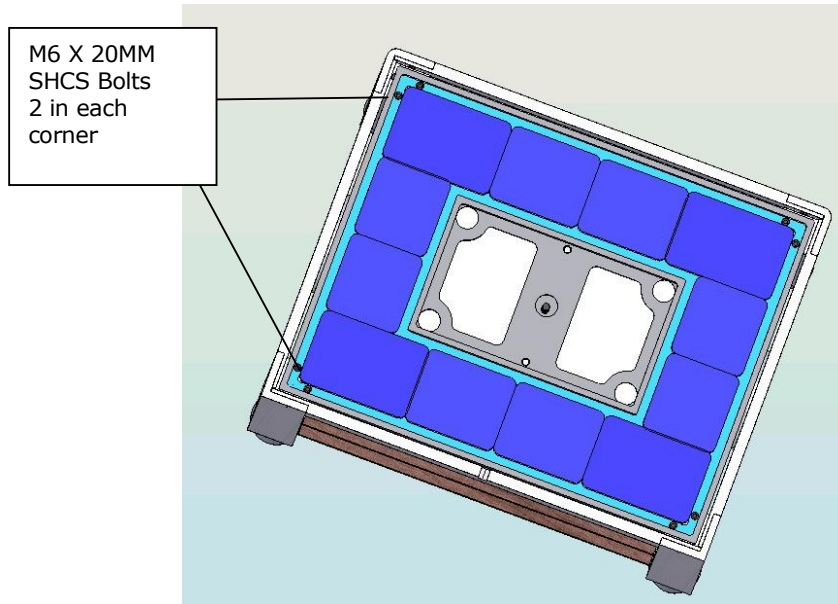
Once you have installed the stand in the correct location you need to insert the various shelf components, ceramic levitating shelves, ballast metal sheets and damping material sheets.



## **INSTALL LOWER CERAMIC SHELF**

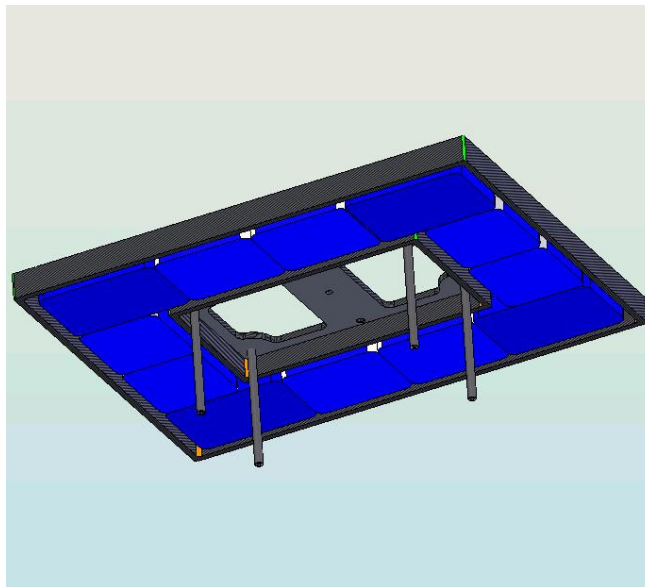
Carefully lower the Bottom Ceramic Levitating Shelf into the recess in the top of the stand. Secure at each corner with the supplied M6 x 20MM Socket Head Cap Screws.

Tighten all the bolts after ensuring each bolt has been started without crossthreading.



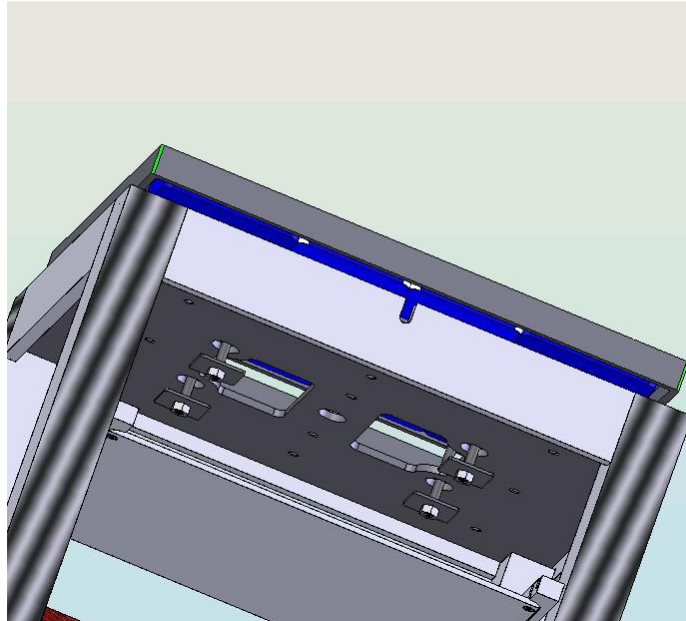
## **INSTALL UPPER CERAMIC SHELF GUIDE BOLTS**

Thread the 4 x M10 Allthread Assembly Clamping Guide Bolts into the inside corners of the UPPER Ceramic Shelf. Ensure these are flush with the top face of the Ceramic Shelf.



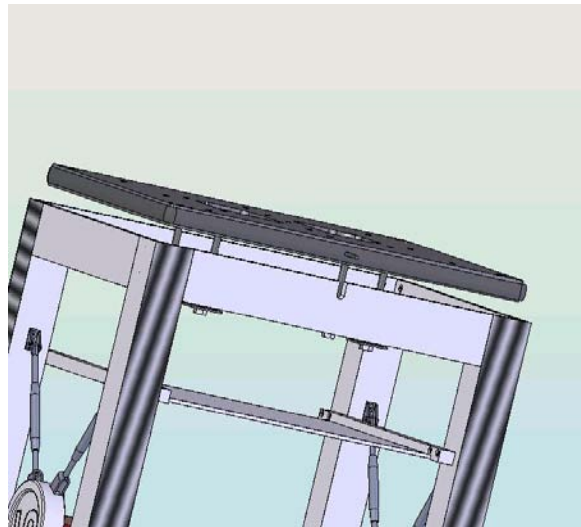
Lower into the stand allowing the Guide Bolts to locate the top shelf evenly through the opposing holes in the LOWER Ceramic Shelf.

Secure the flat plate washers and wingnuts as shown.



Install the Pneumatic Horizontal Stabilizer (do not inflate at this stage) by wrapping it around the outer edge of the UPPER Ceramic Shelf.

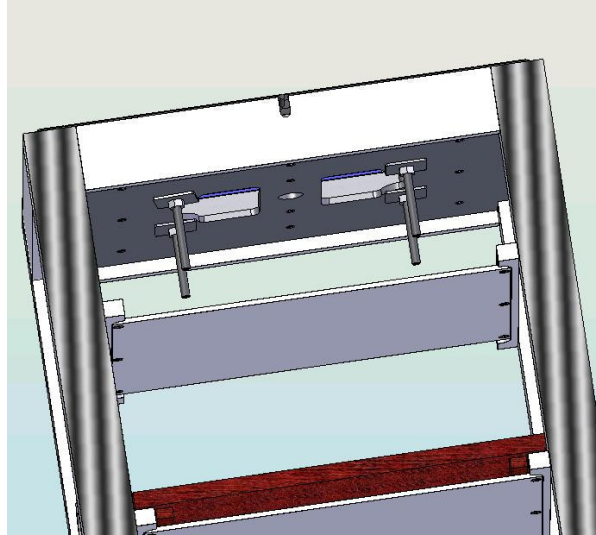
Ensure the inflation valve is centered at the rear of the Castellon Stand inline with the cutout.



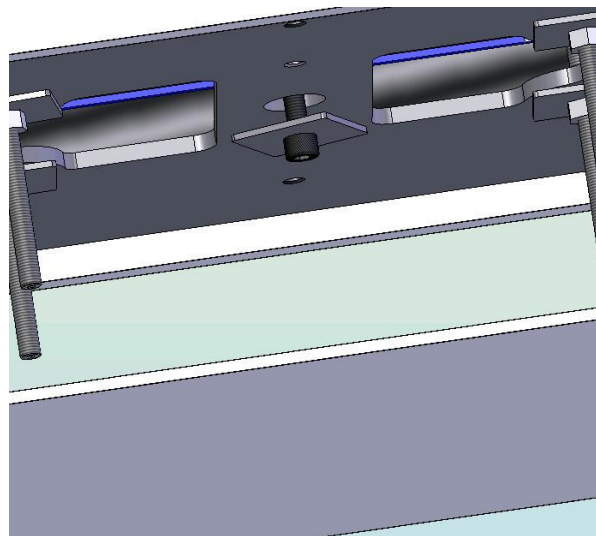
Tighten the allthreads in sequence to pull the UPPER Ceramic Shelf gradually and evenly into the recess in the Castellon.

**⚠ CAUTION**

DO NOT REMOVE THESE BOLTS UNTIL THE CENTRAL SAFETY BOLT HAS BEEN INSTALLED.



Install the Safety Bolt and tighten this until it is flush with the top surface.



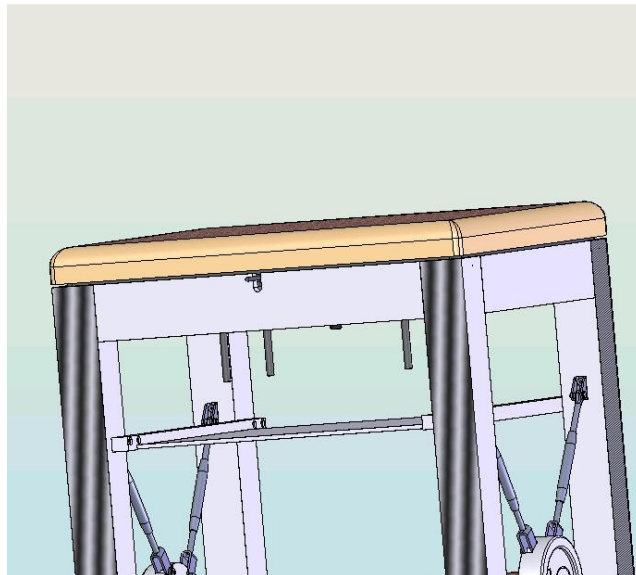
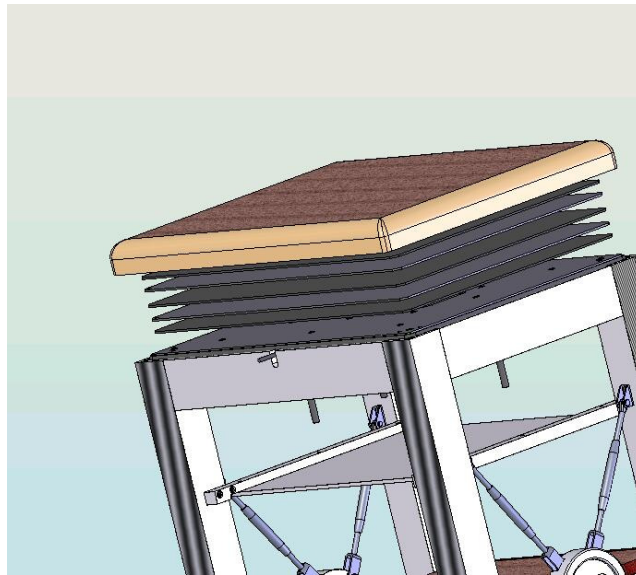


## **INSTALLING THE DAMPING & BALLAST LAYERS**

Install the alternating layers of damping material and ballast metal sheets in the following order:

After Ceramic UPPER Shelf Secured into stand

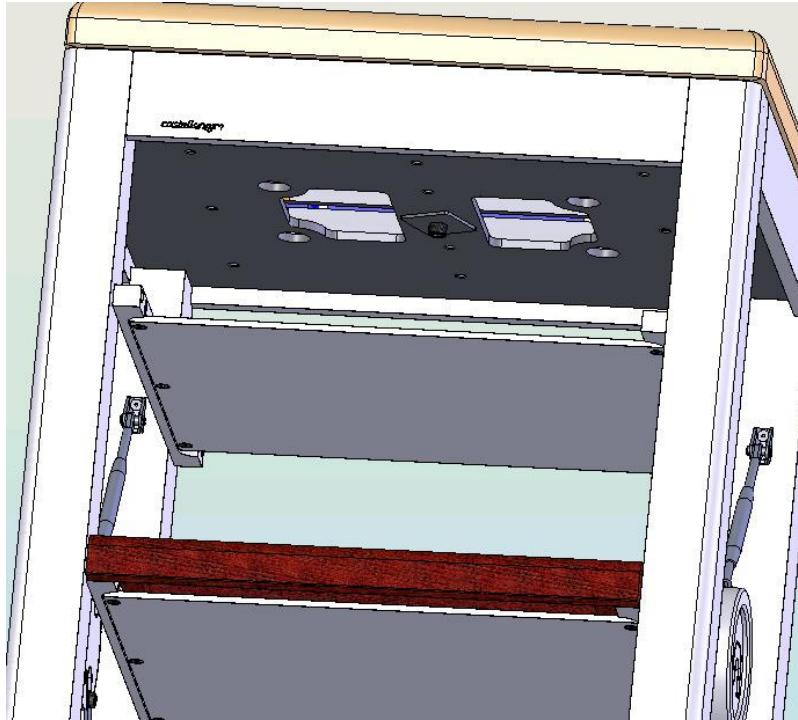
- A. 1 x 3MM Damping Sheet (EPDM Rubber)
- B. 1 x 3MM Ballast Metal Sheet .
- C. 1 x 3MM Damping Sheet (EPDM Rubber)
- D. 1 x 3MM Ballast Metal Sheet .
- E. 1 x 1.5MM Damping Sheet (EPDM Rubber)
- F. 1 x Custom Finished Top Cap



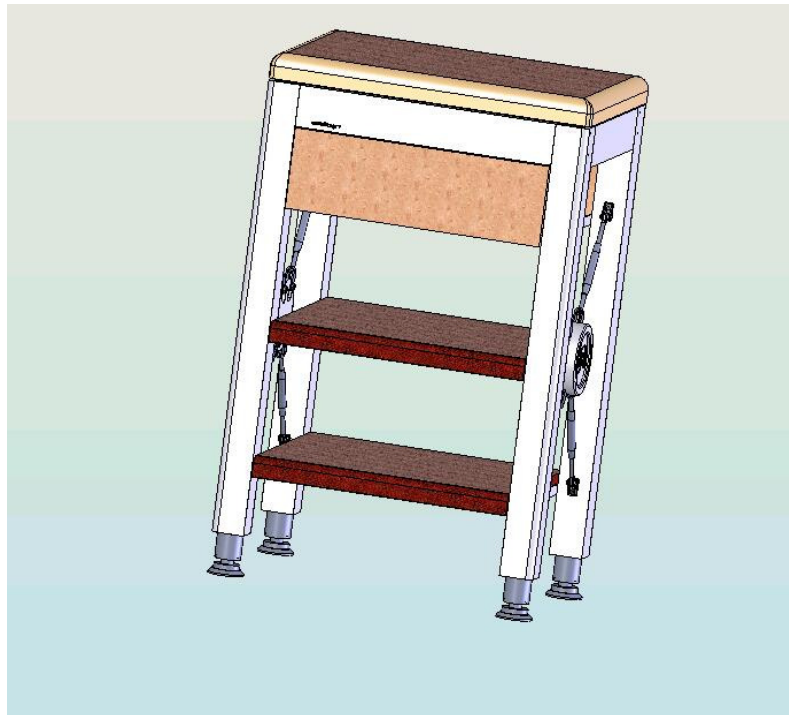


Remove the M10 Allthread Guide Bolts to allow clear room for the Drawer Mechanism:

**YOU MUST ENSURE SAFETY BOLT REMAINS INSTALLED. THIS IS TO PREVENT THE LEVITATION SYSTEM FROM RELEASING INADVERTENTLY SHOULD SOMEONE REMOVE THE CALIBURN TURNTABLE OFF THE STAND WITHOUT FOLLOWING PROPER INSTRUCTIONS**



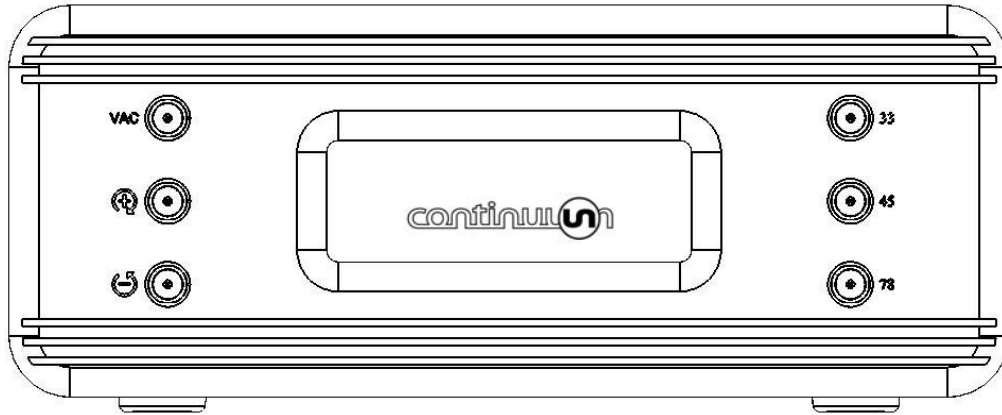
**INSTALL THE DRAWER MECHANISM**



## **CONTROL BOX**

THE CONTROL BOX IS USED TO SET SPEEDS, TURN VACUUM AND LOGO LIGHT ON/OFF.

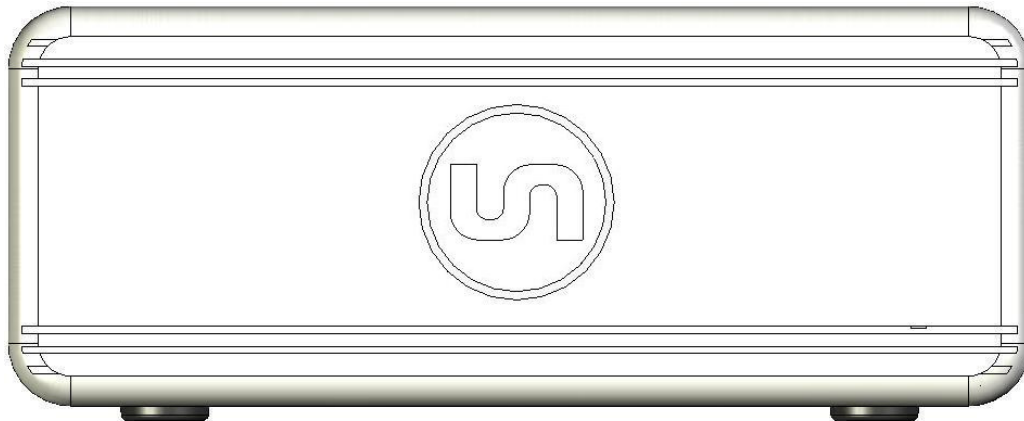
We recommend this is installed in the middle shelf of the Castellon



## **VACUUM BOX**

THE VACUUM BOX IS USED TO DELIVER NEGATIVE PRESSURE FOR VACUUM HOLDDOWN.

We recommend this is installed in the lower shelf of the Castellon



## **INFLATION OF THE HORIZONTAL STABILISER**

Once the Caliburn has been fully installed on to the Castellon a settling procedure is required to centralize and level the levitating ceramic shelves.

Use the supplied manual inflation pump to add about 5-6PSI of low pressure to provide a “rolling” buffer to the UPPER Ceramic Shelf.

You may need to push repeatedly up and down on the shelf to equalize the pressure around the periphery of the shelf.

Additional fine positioning of the Caliburn Motor and Chassis will help evenly distribute and balance the suspension system.

Periodic checking of the pneumatic buffer is recommended (3-6month cycle). Add pressure using the pump if required.

## **Caliburn Turntable**

## **OVERVIEW OF BASIC INSTALLATION STEPS**

Perform the steps below to install the Caliburn. Details are contained in this manual.

1. Read the Caliburn Installation Manual (this manual)
- ↓
2. Unpack and Check the contents of the packaging
- ↓
3. Confirm location for installation
- ↓
4. Confirm the location of the Control Box and Vacuum Box installation
- ↓
5. Position and install the Castellon Stand
- ↓
6. Position and place the Motor and Pucks for Mounting Feet
- ↓
7. Position and place the Caliburn Chassis
- ↓
8. Install the Outer Platter and Inner Platter
- ↓
9. Install the Belt
- ↓
10. Install the Top Plate
- ↓
11. Connect the cables and vacuum hoses
- ↓
12. Connect the AC power adapter (IEC Mains Plug)
- ↓
13. Turn on the power
- ↓
14. Test Operations
- ↓
15. Install the Tonearm
- ↓
16. Start Operations and Playback

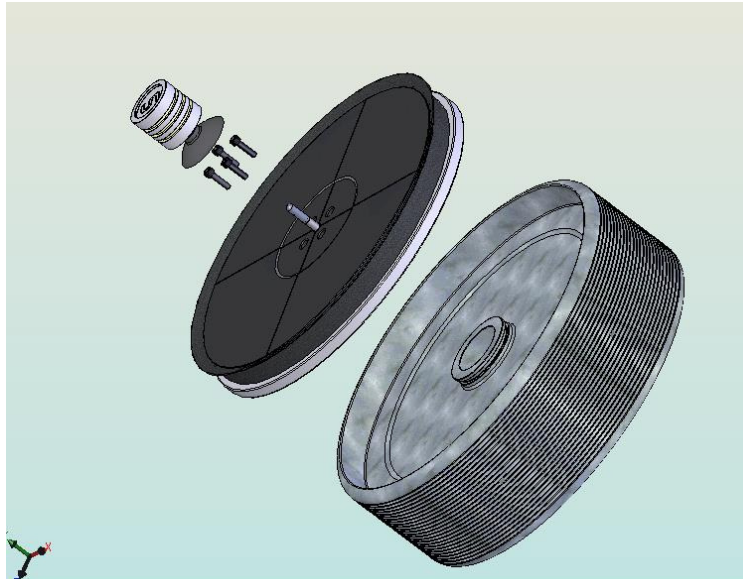
## **PACKAGING CONTENTS**

THERE ARE 6 MAIN COMPONENTS WHICH COMPRISE THE CALIBURN TURNTABLE SYSTEM

- Roadcase 1 – Platter, Chassis, Bearing, Motor, Top Plate and assembly parts.
- Roadcase 2 – Castellon Stand Assembly and Shelving
- Box 3 – Castellon Heavy Upper Ceramic Shelving
- Box 4 – Castellon Heavy Lower Ceramic Shelving
- Box 5 – Vacuum Box including Cables and Hoses
- Box 6 – Control Box including Cables

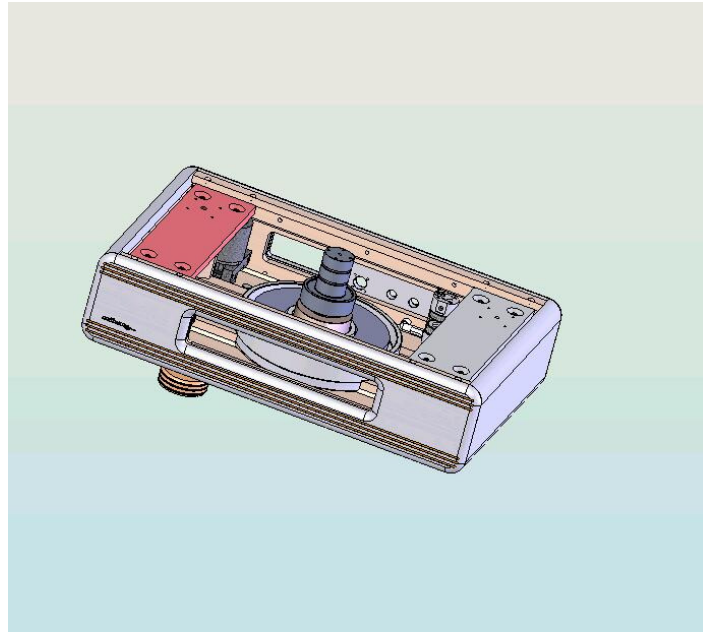
## **PLATTER ASSEMBLY**

- 1 x Record Clamp
- 1 x Record Vacuum Cap Seal
- 4 x M5 x 20MM Inner Platter Bolts
- 1 x Titanium Spindle Protector
- 1 x Inner Platter with Lip Seal and O’ring installed
- 1 x Outer Platter with O’ring installed

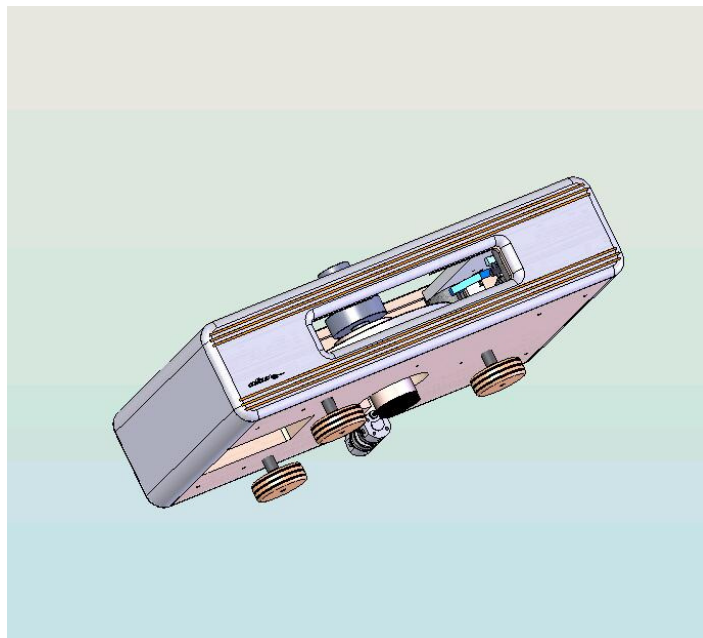


## **CHASSIS, BEARING, ARMBBOARD ASSEMBLY**

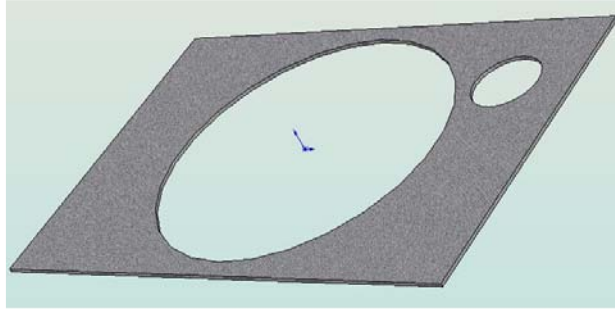
- 1 x Chassis with Bearing and Armboard Assembly
- 4 x M4 x16MM Tonearm Mounting Bolts
- 1 x Custom Veneer finished Top
- 3 x Mounting Feet (must be threaded into chassis before placing chassis on stand)
- 3 x Mounting Feet Pucks



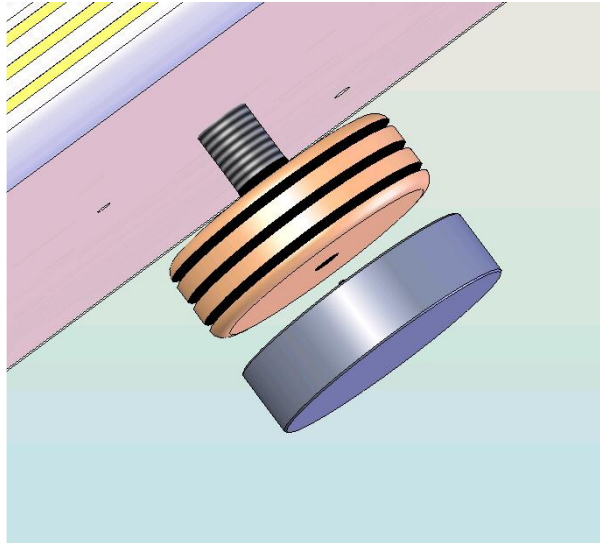
TOP OF CHASSIS SHOWING LOCATION OF BEARING AND ARMBBOARD



UNDERSIDE OF CHASSIS SHOWING LOCATION OF 3 ADJUSTABLE FEET



TOP PLATE



### 3 x ADJUSTABLE MOUNTING FEET AND MATCHING PUCKS

NOTE: EACH ADJUSTABLE FOOT HAS A SMALL CONICAL CENTER UNDER EACH FOOT.

EACH PUCK HAS A CORRESPONDING CONE WHICH IS USED TO SUPPORT THE FOOT.

WHEN THE TWO COMPONENTS ARE INSTALLED CORRECTLY THE ADJUSTABLE FOOT IS ABLE TO ROTATE ON THE CONE OF THE PUCK. THIS IS LIKE A REVERSE "SPIKE".

The Chassis and Main Bearing come fully assembled with integral armboard pre-drilled for Cobra Tonearm Installation.

Open Inner box and remove chassis from packaging. Carefully remove cling film protective wrap.

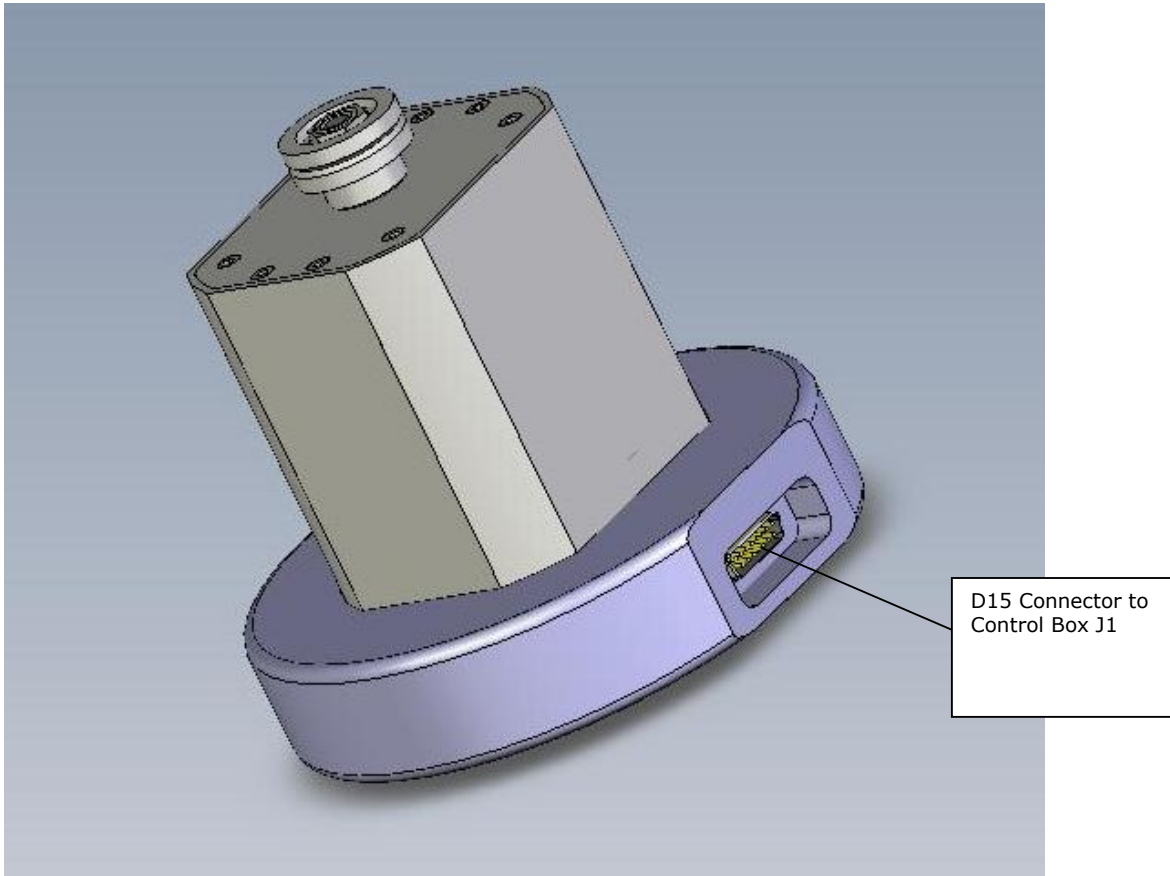
Do not worry about fingerprints and other wrapping marks. These will be removed with a final cleaning when fully assembled.

Unpack 3 x Adjustable Feet and install on the underside of the chassis.

Keep the 3 corresponding pucks free for placement on to the Castellon stand you will lower the chassis onto later.



## **MOTOR ASSEMBLY**

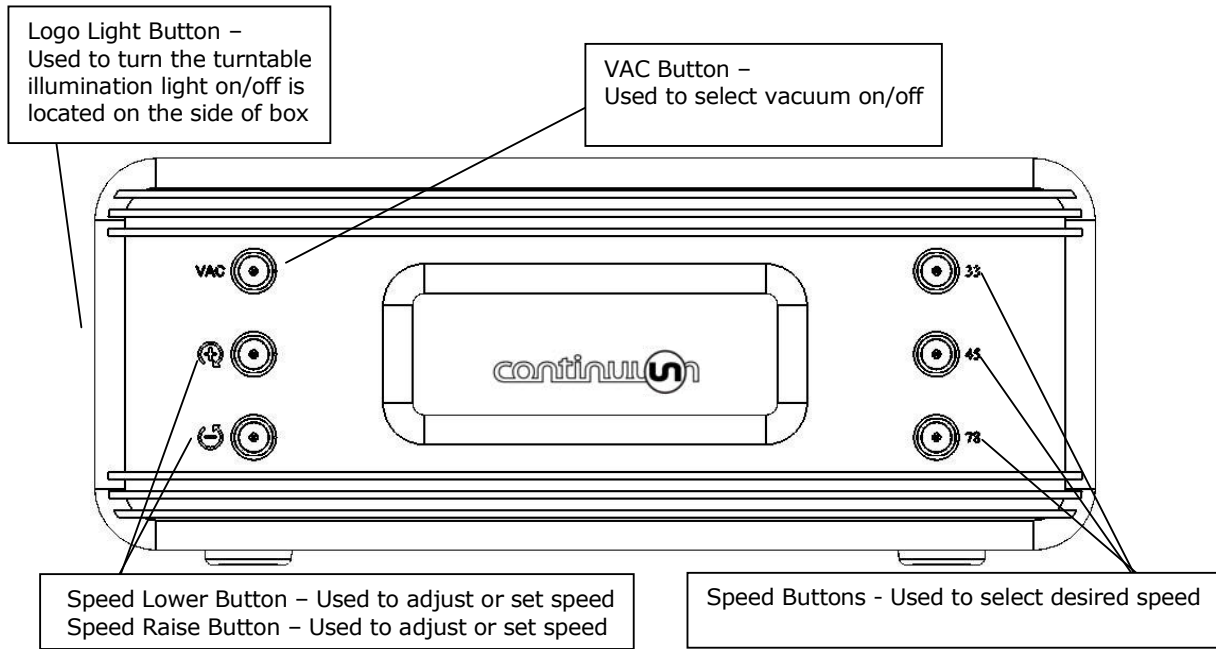


- 1 x Motor System
- 1 x Motor to Control Box Cable From Motor to Control Box (D15 Connector must be connected before lowering chassis over motor)
- 2 x Pyrrthane "O" Ring Belts

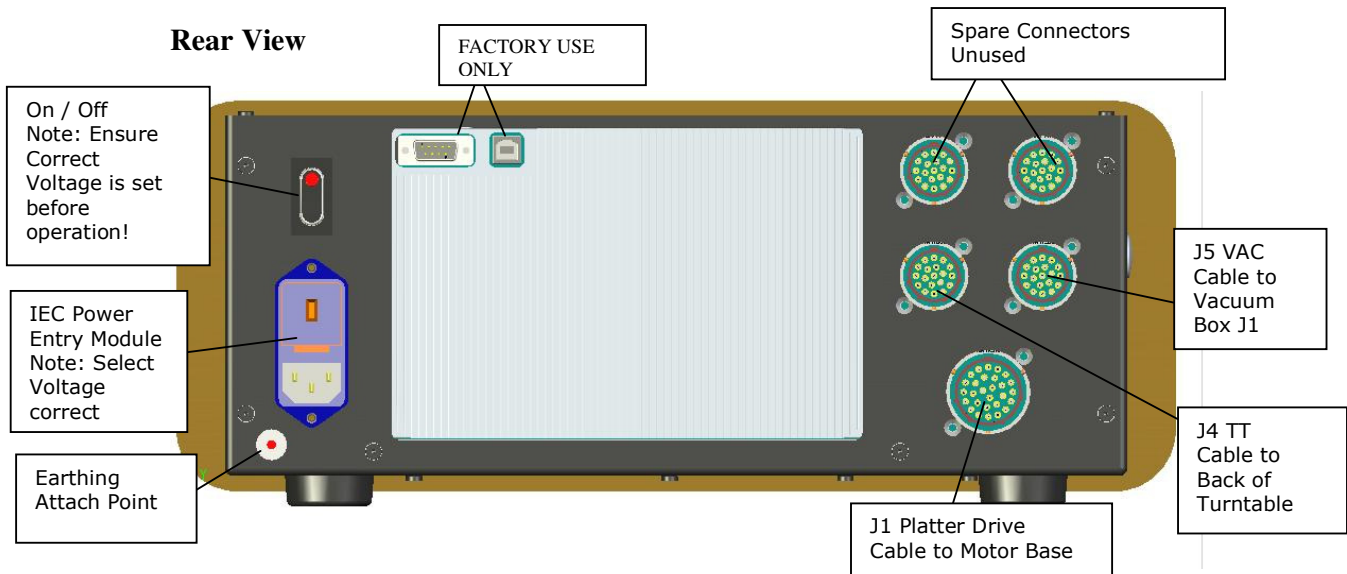
## CONTROL BOX ASSEMBLY

THE CONTROL BOX IS USED TO SET SPEEDS, TURN VACUUM AND LOGO LIGHT ON/OFF.

### Front View



### Rear View



- 1 x Control Box
- 1 x Link Cable Control Box to Vacuum Box (J5 to J1 Connector)
- 1 x Link Cable Control Box to Turntable Chassis Rear Panel (J4 to Epic 12Pin Rear TT Chassis)
- 1 x Link Cable Control Box to Motor Base (J1 to D15 Motor Connector)

## **CONTROL BOX – FITTING OF SEALED BATTERIES**

**⚠ WARNING**

Ignoring the instructions under this symbol when installing or dismantling the Caliburn may be hazardous or even lethal.

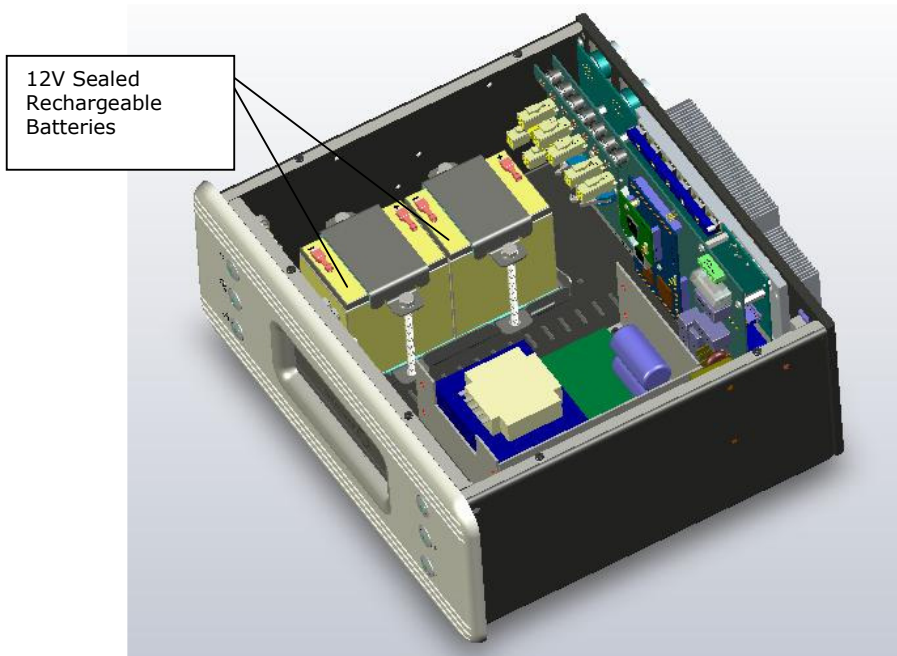
THIS CONTROL UNIT REQUIRES BATTERIES TO BE INSTALLED BEFORE OPERATION. THE CONTROL BOX REQUIRES 2 x 12Volt Lead Acid Batteries of minimum 3AH rating to be connected for 24Volts total DC output.

**DO NOT OPERATE THIS UNIT WITHOUT CONTACTING YOUR AUTHORISED CONTINUUM DEALER TO ENSURE THE CORRECT FITMENT OF BATTERIES HAS BEEN CARRIED OUT.**

DO NOT ATTEMPT TO OPEN THE CONTROL BOX. THERE ARE NO USER SERVICEABLE PARTS INSIDE. ONLY CONTINUUM FACTORY TRAINED AND AUTHORISED TECHNICIANS ARE ALLOWED TO FIT BATTERIES.

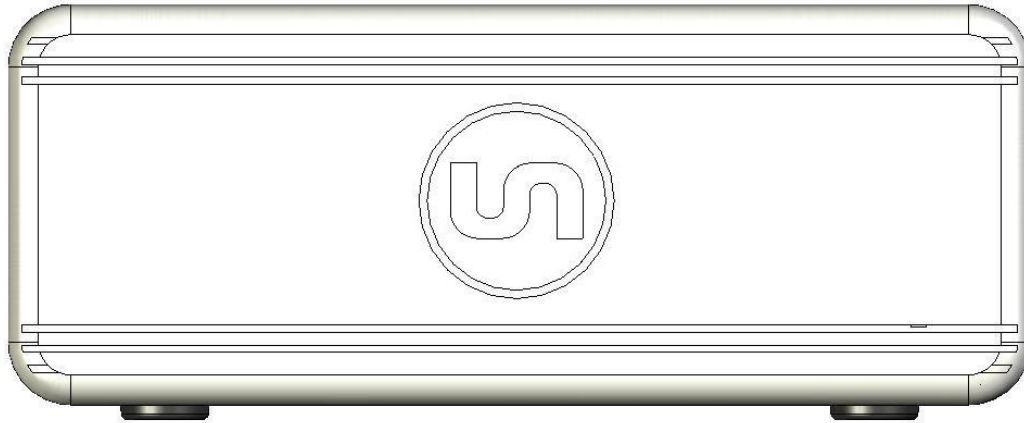
ENSURE ALL STATIC DISCHARGE PRECAUTIONS ARE OBSERVED AS FAILURE TO PROTECT THE DEVICE FROM STATIC CHARGES CAN DAMAGE SENSITIVE PARTS AND VOID WARRANTY.

1. Disconnect all Power from the rear of the Control Box
2. Remove the Control Box Lid
3. Locate Bolts and Clamps and secure batteries as shown
4. Procure 2 off 12Volt4.2AH/20HR Non-Spillable Sealed Rechargeable Batteries (Pb type) with small terminals for easy fitment. Dimensions each battery no to exceed 90mm L x 70mm W x 110mm H. See Appendix 1 in this manual for Recommended Battery details
5. Connect Terminal Leads Positive (White) and Negative (Black) and Central Jumper Strap (12V + 12V=24V). Note: Depending on local battery supplier, the terminal leads may need to be adjusted or lengthened to reach the attachment location. Remove any cable ties which limit the length of the leads so as to extend reach of cables.
6. Resecure the lid and ensure correct voltage is eselcted on the IEC power entry module.
7. Connect all cables to Caliburn Chassis, Pump Box and Motor
8. Connect IEC Power source and test operation.

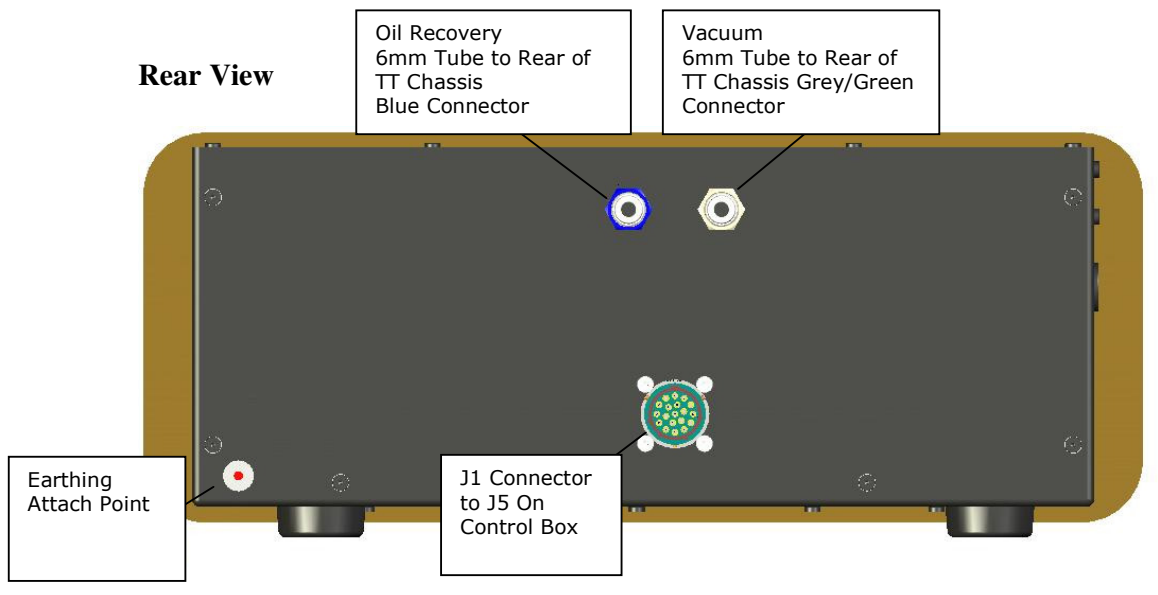


## VACUUM BOX ASSEMBLY

### Front View



### Rear View



- 1 x Vacuum Box
- 2 x 6MM Vacuum and Oil Recovery Hose (2 meters)

THE VACUUM BOX IS USED TO DELIVER NEGATIVE PRESSURE FOR VACUUM HOLDDOWN AND PROVIDE OIL PRESSURE FOR THE HYDROSTATIC MAIN PLATTER BEARING.

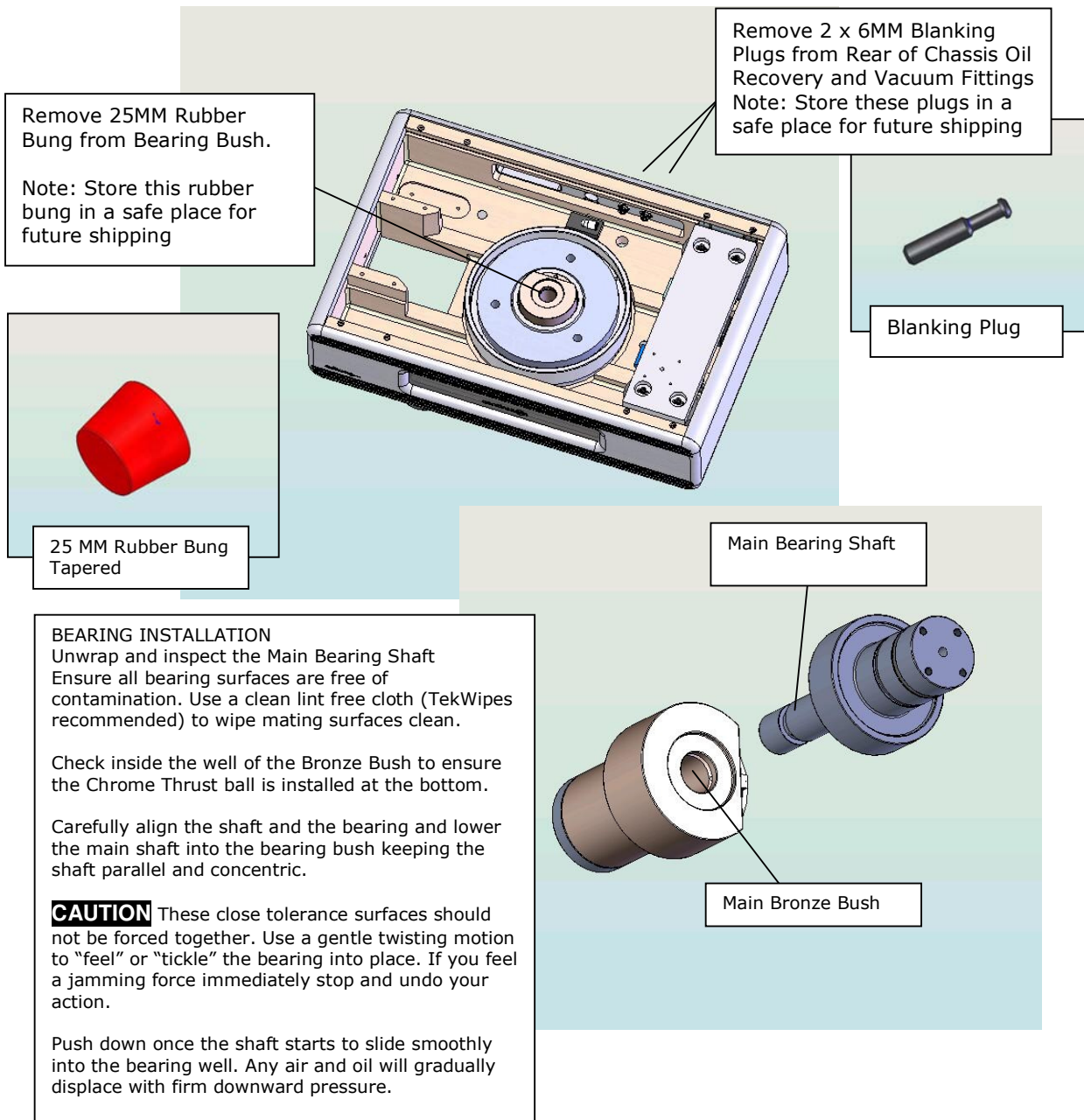
## SET - UP INSTRUCTIONS

The Calburn should be installed on a firm level surface with a free space of 615mm x 500mm for the best results. This surface must be capable of withstanding a load of 100Kg's safely. Please consult your dealer for recommendations on suitable stands.

### PREPARING THE CHASSIS BEFORE INSTALLATION

Before placing the Calburn onto the stand a few steps must be carried out to prepare the bearing.

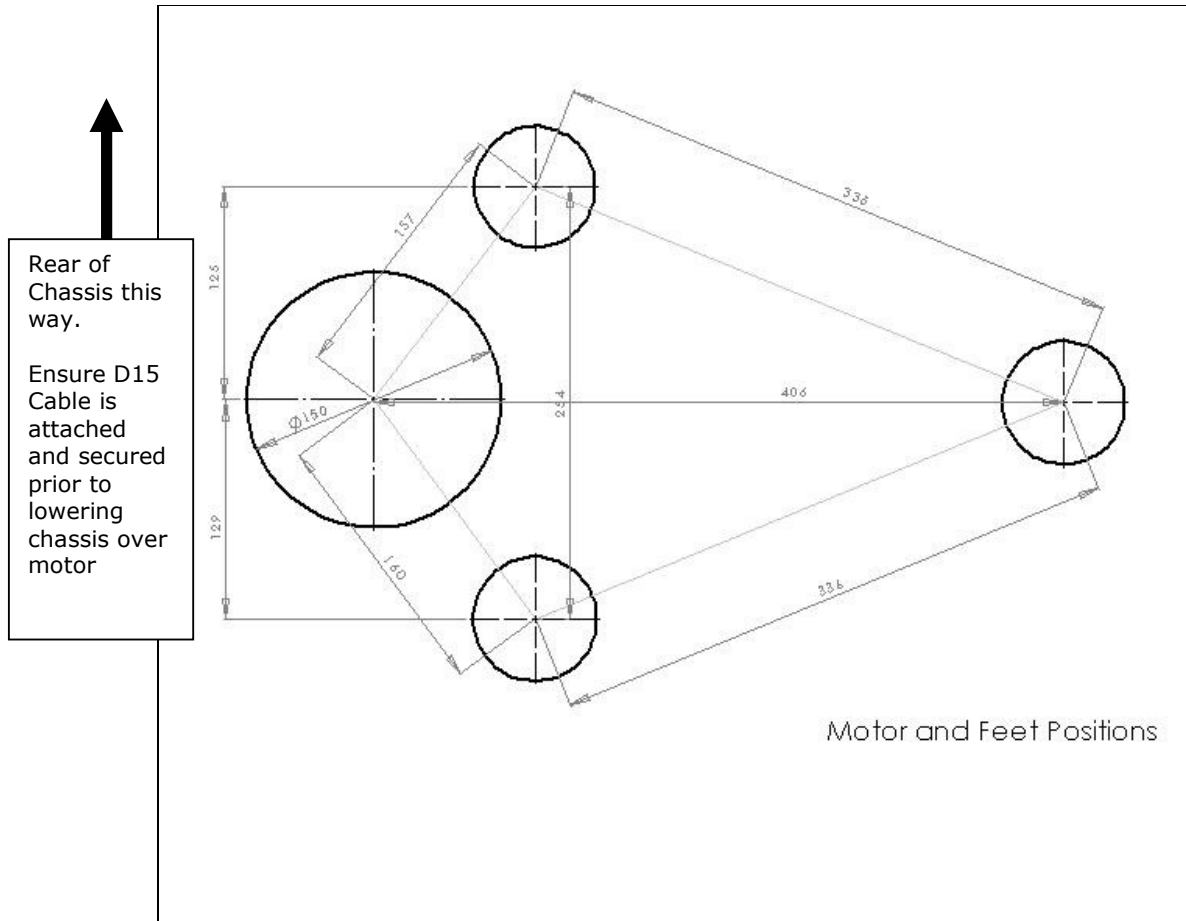
1. Remove any blanking plugs
2. Check Oil Level
3. Insert Bearing Shaft into Bronze Bush



## PLACING THE TURNTABLE CHASSIS

Procedure for placing the turntable:

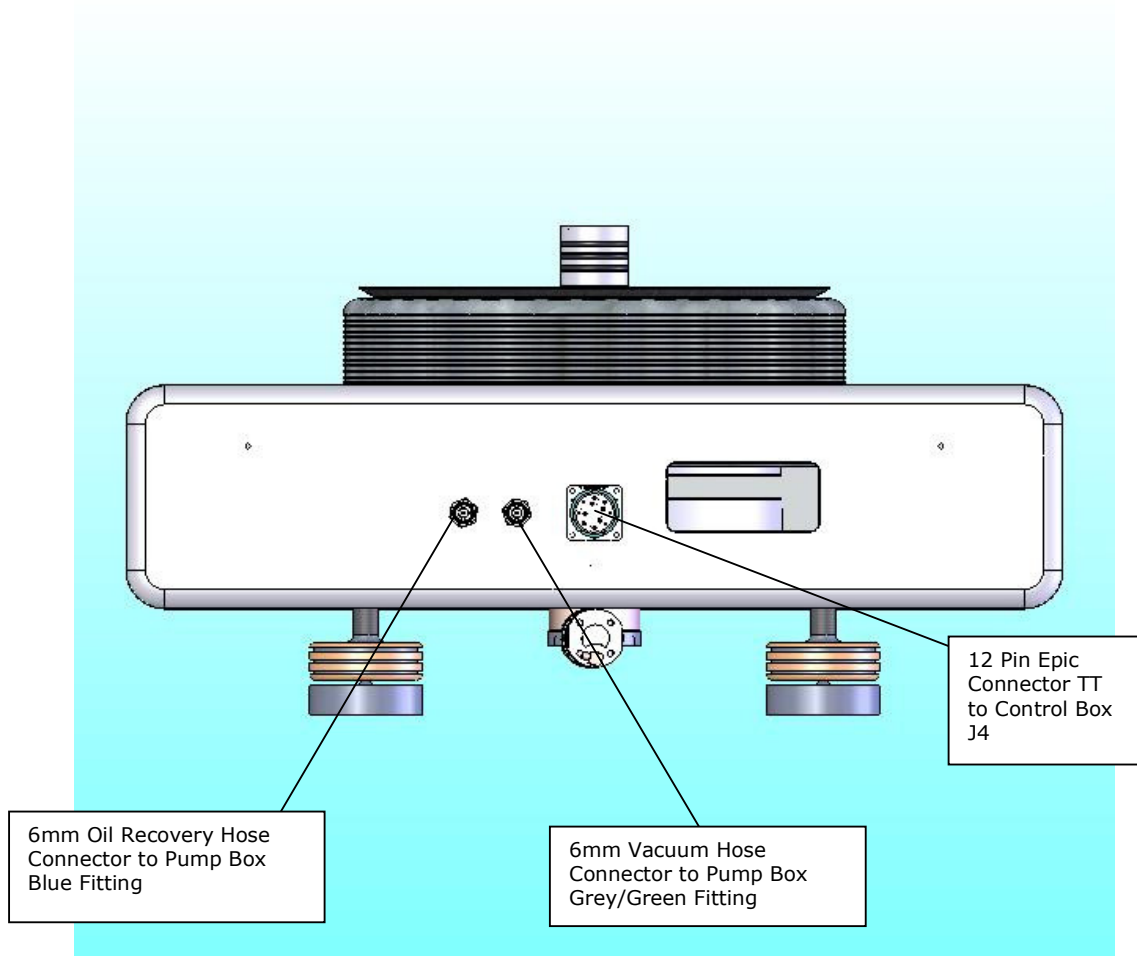
1. Place the motor and 3 Pucks as shown below. Ensure the motor cable is pointing to the rear of the intended position for the turntable chassis.



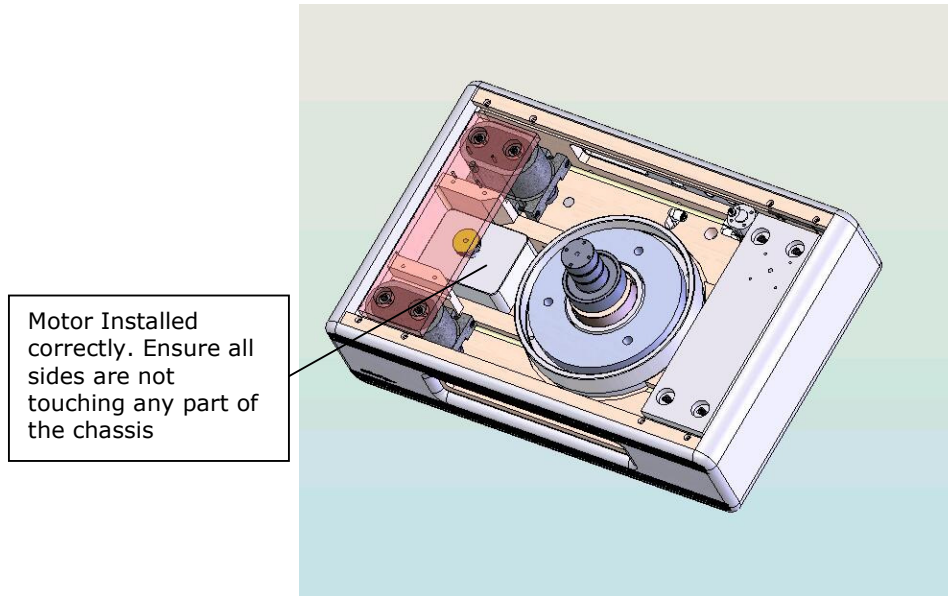
**CAUTION**

2. Connect the 6MM Vacuum Hose (Black) to the pneumatic fitting on the rear of the chassis. This is a swivel fitting with a simple push connect fitting. Firmly push the hose into the fitting for sealing.

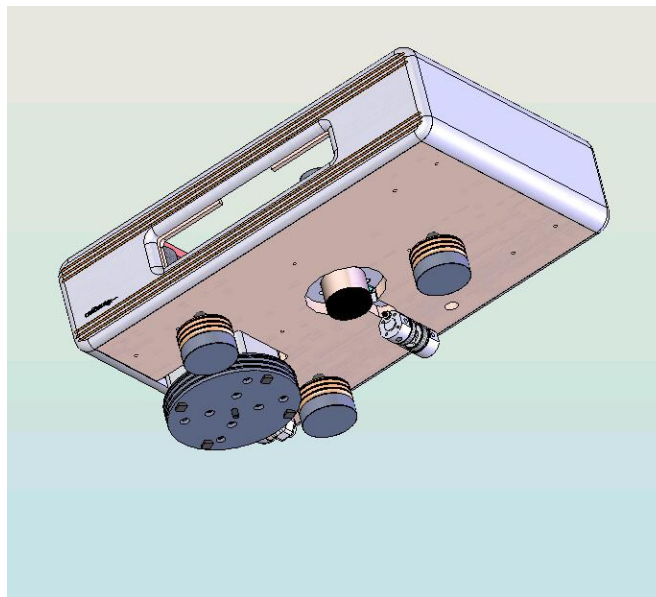
In the event that you need to remove the hose, push the small locking collar in whilst simultaneously pulling on the hose to free it from the fitting. Never pull on the hose without depressing the collar first as the connector is designed to resist this force.



3. Request the assistance of an able bodied helper to lift and place the turntable chassis over motor and feet as shown. Take care to avoid knocking the motor housing when lowering the chassis over the motor housing.



4. Move the pucks under the 3 adjustable feet to locate the centre "spike" on each puck into the matching recess under each adjustable foot. The "spike" will leave a few millimetres of space between the foot and the puck when correctly installed.

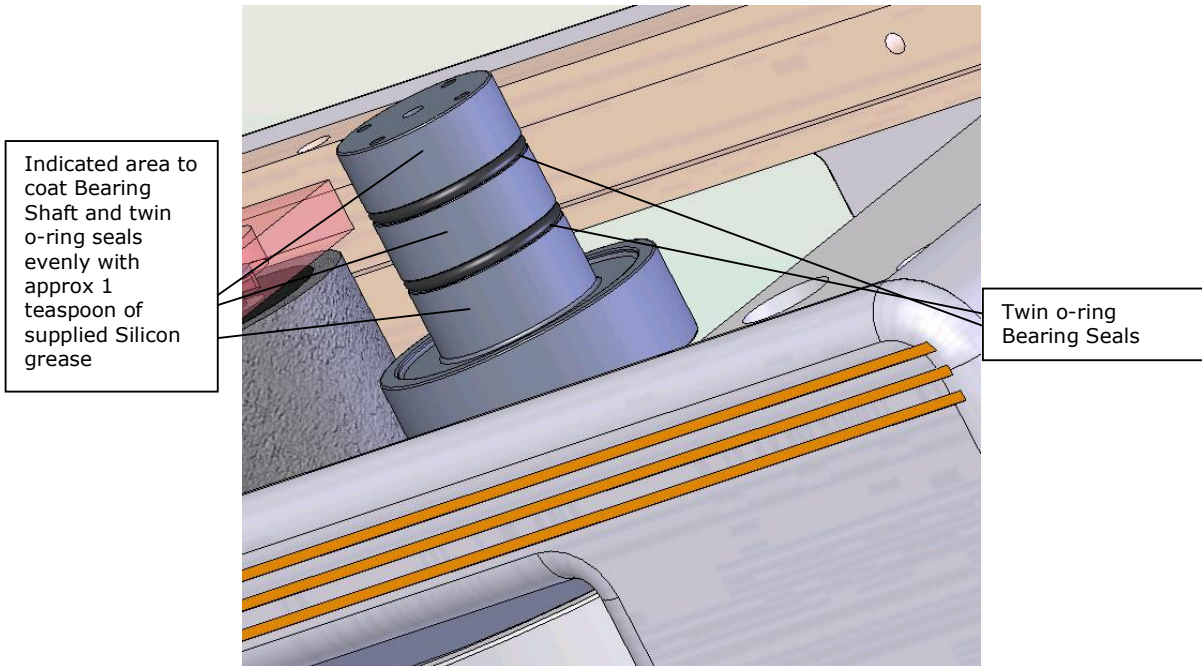


5. Level the turntable chassis with a suitable spirit level. Be careful not to mark or scratch any external finishes. Use a small circular bubble level for best results.



## **PREPARING THE BEARING FOR PLATTER INSTALL**

6. Ensure O'Rings are installed and undamaged.
7. Prepare bearing for platter installation by applying supplied silicon grease to the bearing shaft. The supplied grease is designed to ease the lowering of the larger outer platter onto the bearing shaft and shaft seals. Use a soft cloth or paper towel to scoop a teaspoon amount of grease and smear this over the shaft as shown (see picture below).



**Greasing the bearing shaft**

8. Wash your hands to ensure they are free from oil and grease before continuing with platter installation.

## **OUTER PLATTER INSTALLATION**

### **⚠ CAUTION**

Failure to place your hands in an area with clearance may result in personal injury.

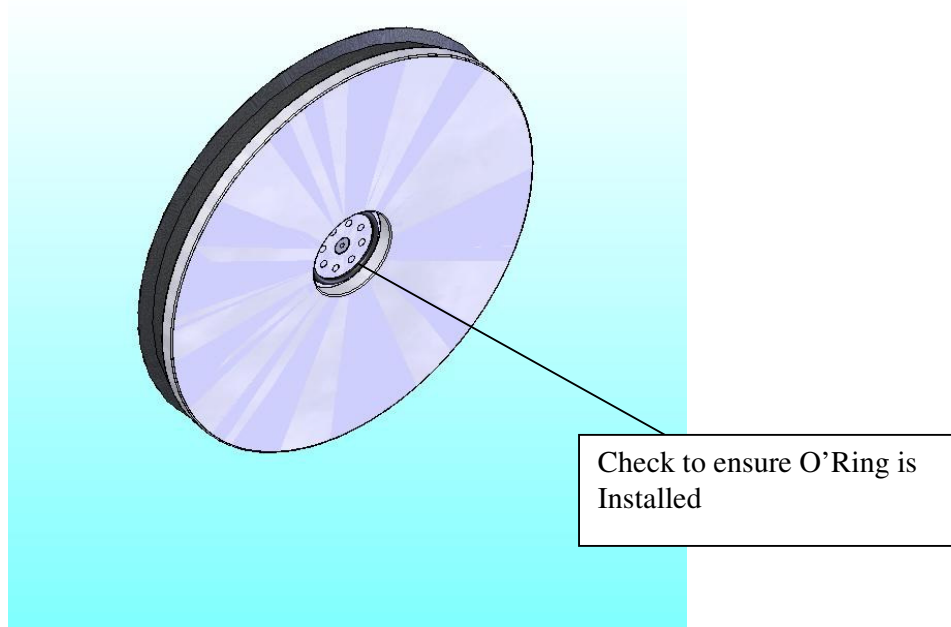
9. Lift the heavy outer platter (34Kg) and whilst holding the platter as flat and parallel to the chassis base as possible, gently place over the bearing shaft as shown. You must place your hands diagonally in the empty areas near the front and rear of the chassis (as shown in picture below) to ensure your fingers have clearance to lower the platter.
10. Carefully move your hands away from the underside of the platter to retain your grip on the sides. This will protect your fingers as the platter is lowered against the bearing base.



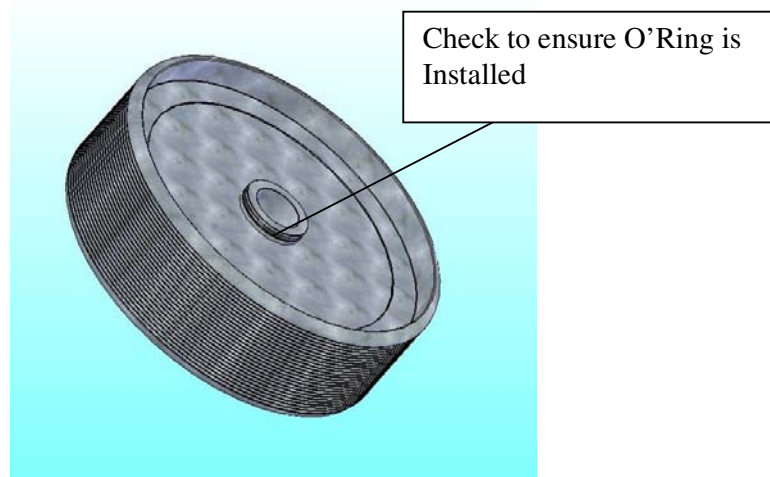
11. Gently push down to seat the platter over the two o-ring seals on the bearing shaft. These seals will give a little resistance at first but the platter weight will quickly “pop” past these seals when pushed from above. Make sure you keep your fingers in the clear areas shown.

## **INSTALLING THE INNER PLATTER**

12. Check underside of the inner platter to ensure o-ring seal is in place (this can sometimes dislodge during shipping)

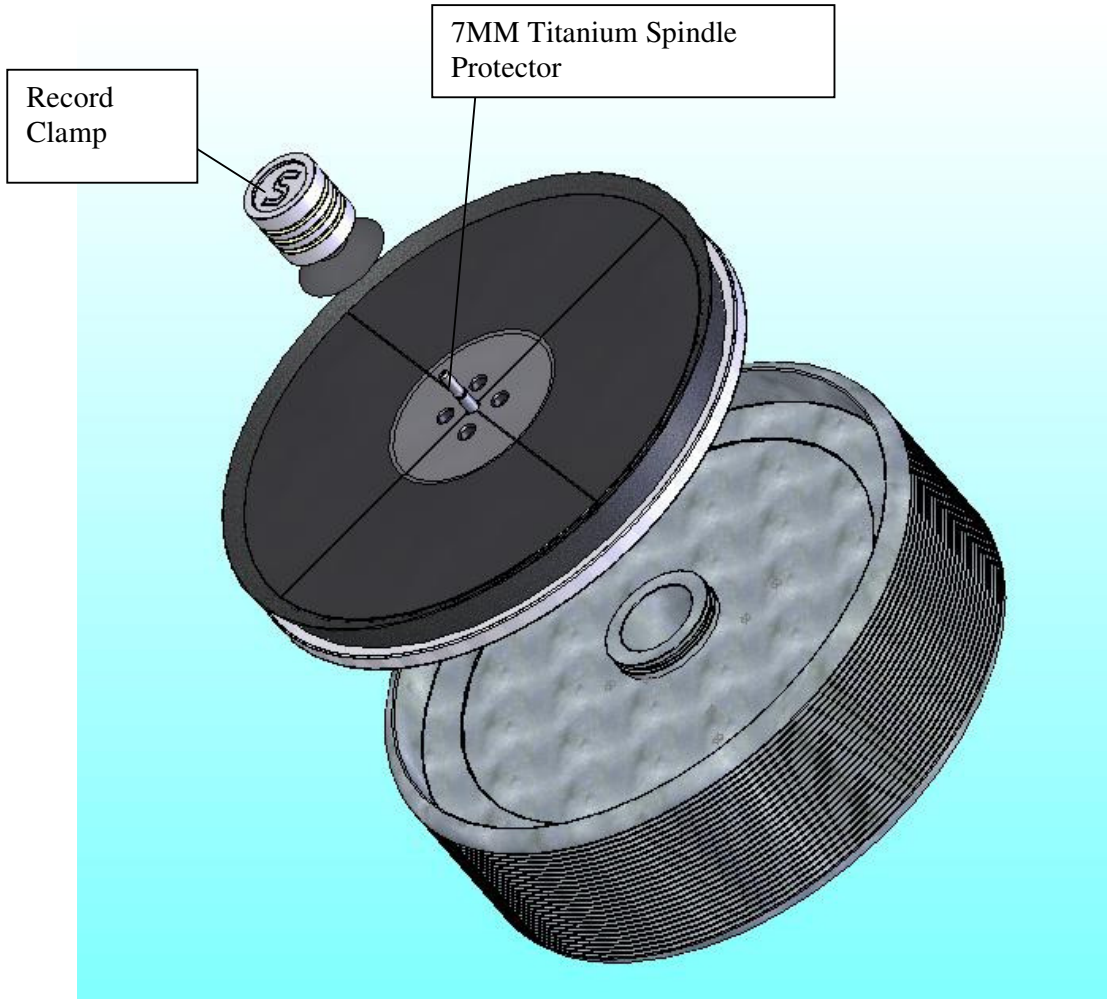


13. Check top seal of the outer platter to ensure o-ring seal is in place. This was installed at the factory. Ensure it is in place. If replacement is required install a spare seal as shown (seals are available from your factory authorised dealer or service agent).

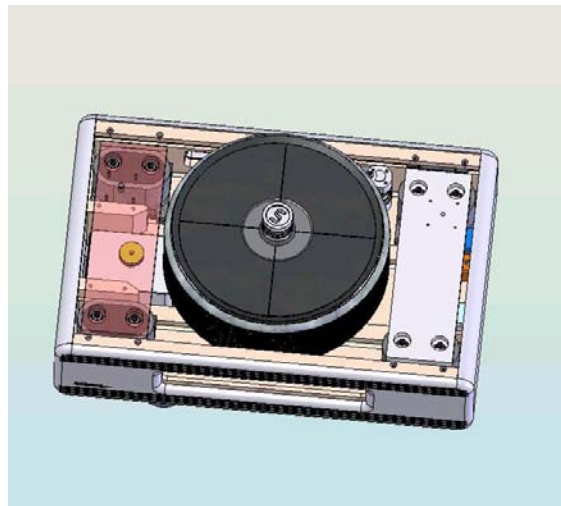
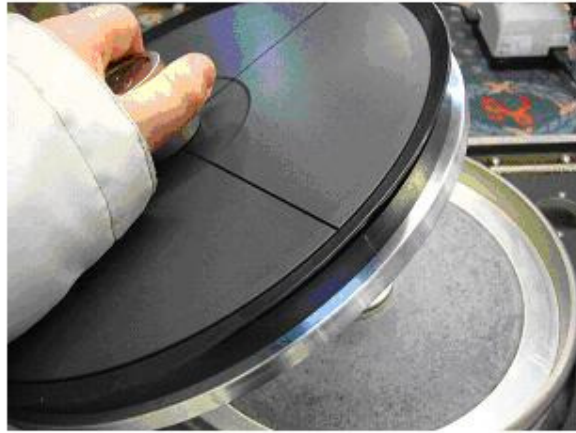


**⚠ CAUTION**

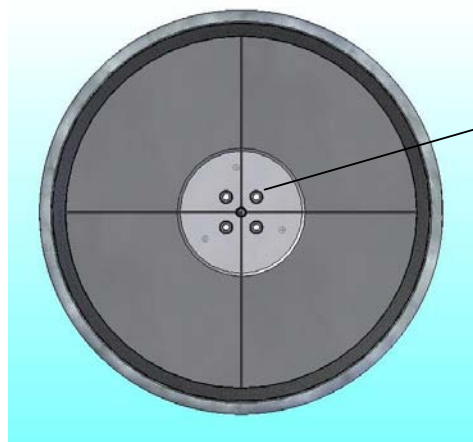
14. Remove the small 7MM titanium spindle protector and screw the supplied Record Clamp in its place. This Record Clamp will allow you to lift and lower the inner platter on to the outer platter safely.



15. The inner platter can now be placed over the outer platter and located on the centre “boss”. Push the inner platter down firmly and rotate the four central holes to align with the matching threads in the main bearing.



16. Next, remove the Record Clamp to expose the four central platter to bearing mounting (M5) holes. Check the alignment of the holes and rotate the inner platter by placing your palms on top of the platter surface and then moving your hands in a circular motion until the holes line up.



Align these holes with bearing mounting (M5) holes

Holes lined up

17. Locate 4 x M5 x 20mm platter bolts and place them into the matching holes near the centre of the inner platter.
18. Gently align these bolts and start the threads being careful not to cross thread.
19. Tighten these bolts by criss-crossing the bolt pattern and evenly tightening each opposing bolt. We recommend you use the short end of the hexagonal allen wrench first to avoid over torquing each screw during the initial tightening procedure. Then use the long end of the allen wrench to apply final tightening torque.

## ***INSTALLING THE BELT***

20. Locate one of the supplied pyrrthane belts and loop this around the outer platter and once around the opposing motor pulley. Keep one hand on the pulley as you guide the belt down the grooves of the platter until the pulley groove and platter groove are in alignment. You may have to adjust the height of the feet under the chassis to ensure groove alignment is complete. The Caliburn design is quite forgiving of minor misalignments but your endeavour to get this as true and parallel will assist with accurate motion control.

## ***PLACING THE TOP COVER***

21. Locate the top plate. Whilst holding the top plate, position the cutout for the tonearm to align with the armboard position. Gently lower the top plate over the platter being careful not to touch the platter edges. Align the edges to fit in the chassis rebate and lower the top plate down into the rebate. No further attachments are necessary as the plate is designed to “float” in the chassis. It provides a shield for the armboard.

## ***INSTALLING THE PERIPHERALS***

22. Locate and install the Control Box and Pump Box in the Castellon stand to suit your location of a phono stage or preamplifier.
23. Locate the dedicated cabling and 6MM Vacuum Hoses and connect the cabling and hoses according to the labelled connectors found on the rear of each box. Each cable connection is unique to prevent misconnections. Ensure Vacuum Hose connections follow labelled pathway.
24. Connect IEC AC mains power cable once all other connections are in place.
25. Turn Mains Power on.
26. Check for operation by pressing the logo light button on the front panel of the Control Box. The Caliburn Chassis Light should be on or off depending on toggle status.



## ***INSTALLING THE ARM***

27. Locate and install the tonearm base (depending on your choice of tonearm). Align the tonearm to ensure all mounting parameters are correct. See separate Cobra tonearm manual for details.

## **CALIBURN OPERATING INSTRUCTIONS**

Now that your Caliburn turntable has been installed and fully optimized it is now ready for you to enjoy. Please take a moment to familiarize yourself with the basic controls for operating your Caliburn. These are located on the front of the Control Box

### **PLATTER CLAMP AND LIP SEAL OPERATION**

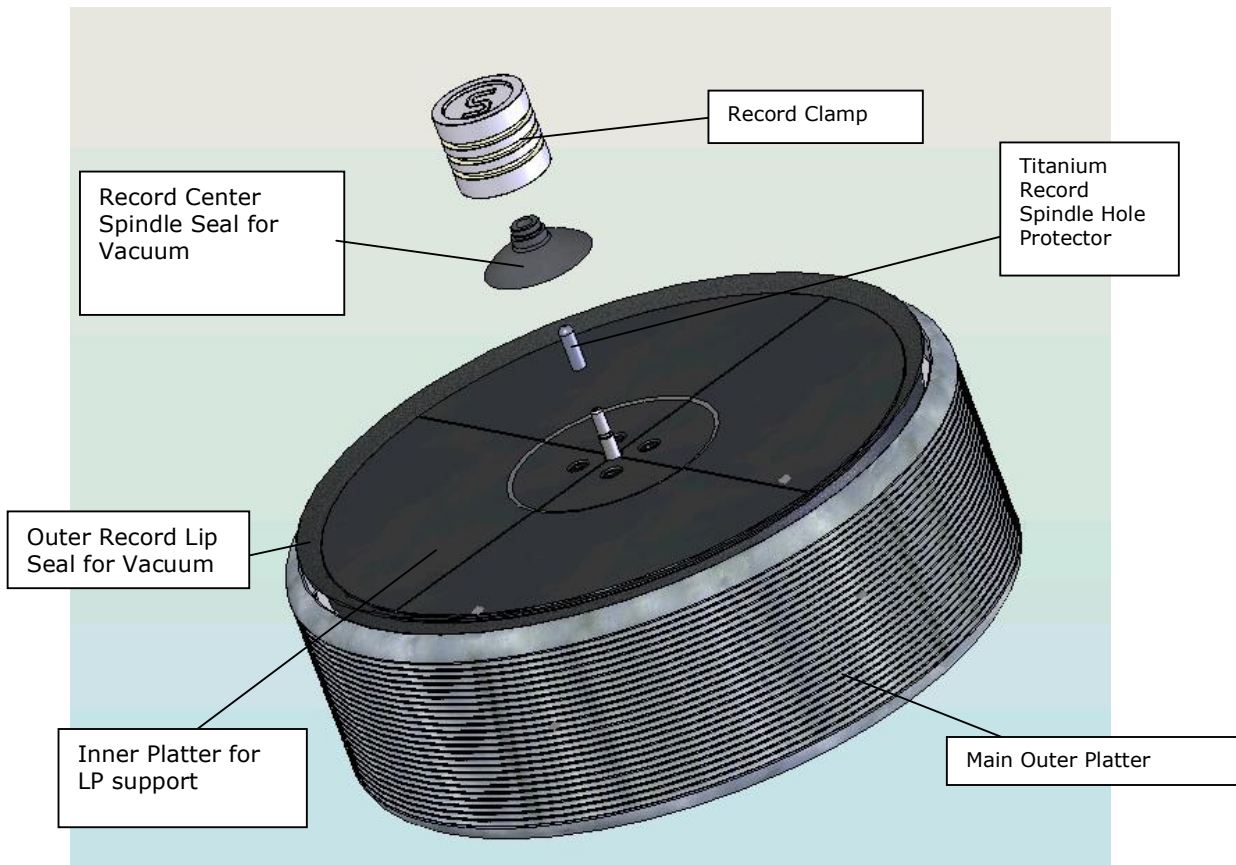
The Caliburn Platter system offers both vacuum and manual clamping options to secure the LP evenly onto the platter surface.

Provided Record Clamp and Spindle Seal can be used alone or in combination to secure the LP before and during playback.

Additionally there is a Titanium Record Spindle Hole Protector. This is for playing very special collector edition vinyl records where resale values may be affected if the hole in the centre of the LP record is marked. To protect this hole use the Titanium Record Spindle Hole Protector before placing the LP on the surface of the platter. Unscrew the protector before using the Record Clamp or leave it in place if you only want to use the Spindle Seal on its own.

The Record Clamp is a threaded clamp. Threaded clamps can exert significantly more pressure than a vacuum alone on an LP. Never over-tighten the Record Clamp as damage to the LP may occur. A light pressure is all that is required to press the LP against the platter surface.

Never try to undo the seal whilst the LP is playing as this may lead to damage to the spindle thread and other bearing and motor related components.



## **RECORD PLAYING PROCEDURE**

**Note: Clean equipment and clean media is a necessary prerequisite to ensure the Caliburn will give you the best performance every time.**

Set the master amplifier volume control close to its minimum setting to avoid damaging your speakers.

Ensure that the platter surface on the turntable is clean and dust free, and clean the record to be played on both sides, using a suitable dust remover.

Place the record on the platter, ensuring the black outer sealing rubber ring is evenly placed around the rim of the record so as to create optimum negative pressure when the vacuum is turned on. Place the record spindle seal and clamp over the center of the record to ensure the label is sealed.

## **OPERATING THE VACUUM**

Press the Vacuum button on the Caliburn Control Unit to the "ON " position. The LED will light up. The record is drawn down to the platter within a few seconds. Use the supplied vacuum spindle seal to secure the record to the spindle.



Vacuum Button

## **STARTING THE MOTOR**

Next, select the required play speed by pressing the corresponding button on the Control Unit - 33, 45 or 78. The LED will light up. The motor will start and the platter will start to spin at the selected speed.



Wait about ten seconds for the platter speed to stabilize, then place the stylus arm gently on the record and enjoy the programme.

## **REMOVING RECORD PROCEDURE**

Set the master amplifier volume control close to its minimum setting to avoid any damaging your speakers.

Gently remove the stylus arm from the record and place it on its rest position.

Press the selected speed button (LED will be on) on the Control Unit to stop the motor and platter from spinning (LED will turn off).

Press the Vacuum button on the Control Unit to turn the vacuum off (LED will turn off). The record slowly rises up away from the platter within a few seconds.

Wait about ten seconds, then remove clamp and spindle seal. The record can now be removed from the platter.

## **SPEED ADJUSTMENT**

The Caliburn turntable has one of the most advanced motion control systems that today's technology can provide. The turntable is fitted with a drive motor fully integrated with electronic control to maintain the speed to preset values within a Micro controller.

To adjust or set the turntable playing speeds via "SPEED LOWER & SPEED RAISE" push buttons.



Speed Lower



Speed Raise

Place a speed calibration strobe disk (*available from quality hi-fi suppliers*) on the platter, following the previously mentioned record playing procedure, and select the platter speed button of the desired speed to be adjusted i.e. 33, 45 or 78.

Simultaneously press "Speed Lower" and "Speed Raise" push buttons on the Control Unit and hold down for more than 5 seconds. Both LED's will flash once to show the Speed Control Computer is now in adjustment mode.

Release the push buttons and begin lowering or raising the speed as described below.

### **LOWERING THE SPEED**

To lower the speed of the Platter, push the "Speed Lower" button. This will cause the platter speed to reduce by 0.1 r.p.m. each time it is pressed. Holding down the Speed Lower button continuously will cause a more rapid adjustment.

Once you have set the desired speed, you must wait 45 seconds, with no further adjustments to store the setting into the Control Box memory as the new user default. Should you wish to make further speed changes, repeat the Speed Adjustment procedure.

### **RAISING THE SPEED**

To Raise the speed of the platter push the "Speed Raise" push button on the Control Unit. This will cause the platter speed to increase by 0.1 r.p.m. each time it is pressed. Holding down the Speed Raise button continuously will cause a more rapid adjustment.

Once you have set the desired speed, you must wait 45 seconds, with no further adjustments to store the setting into the Control Box memory as the new user default. Should you wish to make further speed changes, repeat the Speed Adjustment procedure.

### **CONFIRMING THE SET SPEED**

Once you have set the desired speed, you must wait 45 seconds, with no further adjustments to store the setting into the Control Box memory as the new user default.

Should you wish to make further speed changes, repeat the Speed Adjustment procedure.

## **OWNER CARE & MAINTENANCE**

Your Caliburn turntable is a delicate piece of equipment, and care needs to be taken when using and cleaning it. Below are recommendations for keeping your Caliburn at its optimum performance.

### **CARING FOR METAL SURFACES**

The metals chosen because of their superior sound qualities are soft, and care should be taken when using your Caliburn. Make sure there are no sharp objects on or near that could scratch the metal surfaces. Clean with a soft camera-lens-quality cleaning chamois.

**Do not use any window cleaning solutions, silicon based polish, abrasive pads, scouring powder or solvents such as alcohol or benzene to clean your Caliburn. Your Continuum Consultant can advise you on what products available in your area are suitable to use for cleaning.**

### **CLEANING THE PLATTER**

The platter can be cleaned using a soft, camera-lens-quality, cleaning chamois.

### **BEARING MAINTENANCE**

The bearing is fully enclosed and requires no owner maintenance under normal operating conditions for temperature and humidity.

If you hear any unfamiliar noise coming from your Caliburn, turn the unit off immediately and contact your Continuum Consultant.

Note: The Nested Platter design isolates the Platter surface from the bearing and will help prevent rumble from transmitting to the LP surface.

### **MOTOR**

The motor is sealed and can only be serviced by an Authorised Continuum Agent. Warranty will be void if seal is broken.

### **MOTOR BELT REPLACEMENT**

Replacement belts are available. We recommend you contact your Continuum Consultant if you need an additional belt. 2 belts are supplied with your Caliburn.

## ***FAULTS & TROUBLE SHOOTING***

**Before reporting any faults please ensure the following items are checked.**

- 1. Have you connected all the hoses and cables securely?**
- 2. Have you connected the power and turned the switch on the back of the Pump Box on?**
- 3. Have you checked that the belt is installed (and has not slipped off)**
- 4. Have you leveled the unit correctly?**
- 5. Is the motor clear of the chassis and platter?**
- 6. Have you adjusted the speeds using the calibration procedure?**
- 7. Is the surface of the platter free of debris and dust?**
- 8. Is the rubber seal clean?**

**The Caliburn is designed for robust operation and should be fault free for the life of the unit. If the bearing has been damaged during installation by incorreced platter install then problems may occur. These out of the norm issues are the responsibility of the user and will not by our Warranty.**

## **SPECIFICATIONS**

### **CALIBURN TURNTABLE**

- 33, 45, 78 RPM Selectable from Control Box
- Ability to support 2 tonearms simultaneously
- Unique Magnetically Isolated Armboard Technology
- Integrated Castellon Isolation Stand with Unique Magnetic Damping
- 350 kg fully assembled

### **PLATTER**

- 38 kg Nested Platter Design for Ultra Low Noise Operation.

### **BEARING**

- Unique Oil Pressurised Hydrostatic Bearing for highly damped super stable operation.
- Solid one-piece, centre ground steel alloy with high pressure bearing outer using ceramic coatings such silicon nitride and tungsten bisulphide in nano-technology lubricants

### **VACUUM**

- Super quiet pump mechanism with “absolute stealth-mode” operation during playback.
- Computer controlled, negative pressure mechanism to maintain minimum vacuum for record playback.

### **MOTOR**

- Computer-controlled high-torque with TRUE ZERO cogging DC Brushless Sinusoidally Commutated Motor configured for 3 Phase AC Synchronous operation.
- Integrated Optical Encoder with high line count for quadrature encoding.
- 600 oz-in. peak torque
- High efficiency
- 12–48 VDC

## ***CALIBURN'S DESIGN HISTORY***

Passion is a powerful force; shared passion is twice as powerful.

Mark Doehmann, Caliburn's designer, believed his passion for analogue sound was unmatched, until he met David Payes.

Mark Doehmann has been building custom turntables for a select clientele since 1982. These turntables aimed to solve the particular problems of each system, by trading off advantage against disadvantage in an attempt to create a balance Mark knew, to his frustration, was ultimately a compromised solution. Compromise he accepted as inevitable in his quest for the purest analogue sound possible.

David Payes is a well-respected Australian businessman and a passionate audiophile. During the installation of a highly regarded turntable onto David's system and the subsequent evaluation of the results, David asked Mark, if money was no object, what would he do to improve the turntable. Thinking in terms of this being a theoretical conversation, Mark nominated the platter as the first thing he would change. David response was "Ok, do it".

So began the first step in the long and challenging process of developing the critically acclaimed Caliburn Cobra Castellon system.

Mark's ultimate aim when imagining the perfect platter was to create a silent foundation for the record to sit, to allow the stylus to extract the maximum information from the record's groove.

Mark realized to create his vision would require some very sophisticated engineering. With his background in aeronautical engineering, Mark called upon the expertise of some of his colleagues from this field.

A unique alloy formula to address the stiffness and damping of the platter was developed with the help of materials engineer John Vietz. Using the most advanced shape optimization computer technology Dr. Neil McLachlan developed the optimum shape for the first prototype of the Caliburn to reduce vibration to an absolute minimum.

After months of complex computer modelling, Mark returned to David Payes with the Caliburn's nested platter design and rather nervously replaced the existing platter and sat back with David to listen to the results.

It was obvious to both of them that there was a marked improvement in the sound they were hearing. The nested platter design matched the predicted computer modelling results, and was delivering real-world results. David then asked, if this was possible with a re-design of the platter alone, what could be achieved if this same rigorous design process was applied to all the components of a turntable?

This same process of development was now applied to every aspect of a turntable. The chassis, the bearing, the motor were all designed with a back-to-the-drawing-board approach.



**THE CALIBURN IS THE FRUIT OF COLLABORATION**

Many very intelligent minds were brought together to push the envelope of what was imagined possible for turntable technology, and we would like acknowledge each one of them now.

**Mark Doehmann** – Director Engineering and Development

Marks’ passion for analogue sound reproduction combined with his background in aeronautical and advanced software engineering and materials fabrication techniques was used to transform his vision from the “virtual world” to the end product.

**David Payes** - Chairman, Continuum Audio Labs

David was the catalyst for the development of the Caliburn, and created the financial and creative freedom to push the envelope. David is a passionate audiophile and has had extensive input with technical design issues.

**Dr Murali Murugasu MB.ChB. MBA** – CEO

Murali is part of the core design team at Continuum Audio Labs. His day to day involvement ensures that our products meet various regional market requirements and ensures that they works in harmony with other high quality components to deliver a complete solution.

**Joe Persico** - Bachelor of Engineering (Electrical), Advanced Vacuum & Logic Control.

Joe developed the Caliburn’s unique vacuum control mechanism and computer controlled subsystems.

**Arthur Rappos** - Bachelor of Engineering (Electrical), Advanced Motor & RF circuit design

Arthur’s understanding of RF circuit design and noise control was used to extract maximum performance from several new technologies used in the Caliburn’s design.

**John Loton** - Bachelor of Engineering (Aeronautical) Physics & Structures Design.

John was instrumental in the “challenging process” where original “seed ideas” were subjected to an intense peer review process.

**John Vietz** - Bachelor of Engineering (Metallurgical) –

A recognized leader in his field, John developed Caliburn’s unique magnesium alloy which gives Caliburn it’s high damping characteristics.

**Dr. Neil McLachlan** – Associate Professor of Engineering at Melbourne University

Neil worked closely with Mark on the reshaping and acoustic modelling and design, and developed new and innovative solutions to the some very old problems associated with analogue sound reproduction.

**Michail Barabasz** - Bachelor of Engineering (Electrical), Advanced Magnetic Design. –

An expert in magnetic circuit design and voice coil engineering, Michail developed the unique magnetic propulsion system to levitate and drive the platter.

**Dr. Nigel Ricketts** - Principal Research Scientist CSIRO Manufacturing & Infrastructure

Technology, Brisbane. Nigel was consulted to resolve various metallurgical casting issues to ensure the magnesium properties we specified were transferred to the end product.

**Prof. Josef Tomas** - Reshape Software and Mechanical Engineering Design. –

Josef created the Reshape™ software that allowed us to move resonances inherent in the Caliburn’s shape into regions where they could be controlled and managed.

**Dr. Glen Wolff** - Advanced Systems Engineering.

Glen expertise was sought to deal with the complex use of organic materials and their application on the Cobra.

## APPENDIX 1 – Recommended Battery Details

We recommend the YUASA brand of Sealed Lead Acid Batteries for use in the Calburn Control Box. Please use the NP4-12 Type battery with the Type "A" Terminal size for ease of installation. Please procure 2 of these NP4-12 batteries to create the necessary 24Volts of DC power (i.e 12V + 12V = 24V)

Specifications are shown below:

Data Sheet

### NP SERIES - NP4-12

#### Reliability is your Security

Yuasa NP, NPC and NPH Batteries. Utilising the latest advance design Oxygen Recombination Technology, Yuasa have applied their 80 years experience in the lead acid battery field to produce the optimum design of Sealed Lead Acid batteries.

#### FEATURES

- Superb recovery from deep discharge.
- Electrolyte suspension system.
- Gas Recombination.
- Multipurpose: Float or Cyclic use.
- Usable in any orientation (except continuous inverted).
- Superior energy density.
- Lead calcium grids for extended life.
- Manufactured World wide.
- Application specific designs.


#### Technical Features

**Sealed Construction**  
Yuasa's unique construction and sealing technique ensures no electrolyte leakage from case or terminals

**Electrolyte Suspension System**  
All NP batteries utilize Yuasa's unique electrolyte suspension system incorporating a microfine glass mat to retain the maximum amount of electrolyte in the cells. The electrolyte is retained in the separator material and there is no free electrolyte to escape from the cells. No gels or other contaminants are added.

**Control of Gas Generation**  
The design of Yuasa's NP batteries incorporates the very latest oxygen recombination technology to effectively control the generation of gas during normal use.

**Low Maintenance Operation**  
Due to the perfectly sealed construction and the recombination of gasses within the cell, the battery is almost maintenance free.

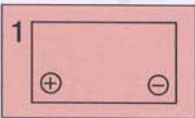


**Terminals**  
NP batteries are manufactured using a range of terminals which vary in size and type. Please refer to details as shown.

**Operation in any Orientation**  
The combination of sealed construction and Yuasa's unique electrolyte suspension system allows operation in any orientation, with no loss of performance or fear of electrolyte leakage. (Excluding continuous use inverted)

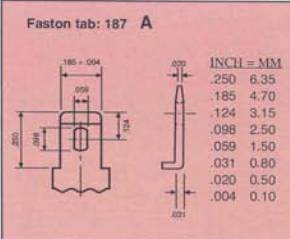
**Valve Regulated Design**  
The batteries are equipped with a simple, safe low pressure venting system which releases excess gas and automatically reseals should there be a build up of gas within the battery due to severe overcharge. Note. On no account should the battery be charged in a sealed container.

#### Layout

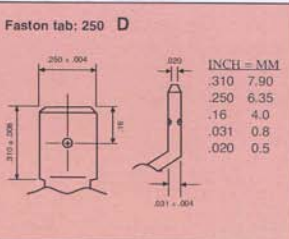


#### Terminals

Faston tab: 187 **A**



Faston tab: 250 **D**



#### General Specifications

Nominal Capacity (Ah)	NP4-12
20hr to 1.75vpc 30°C	4
10hr to 1.75vpc 20°C	3.7
5hr to 1.70vpc 20°C	3.4
1hr to 1.60vpc 20°C	2.4
Voltage	12
Energy Density (Wh.L.20hr)	75
Specific Energy (Wh.kg.20hr)	27
Int. Resistance (m.Ohms)	40
Maximum discharge (A)	40/75
Short Circuit current (A)	120
Dimensions (mm)	
Length	90
Width	70
Height overall	106
Weight (Kg)	1.75
Terminal	A/D
Layout	1
Terminal Torque Nm	-

www.yuasa-battery.co.uk
NP

# NP SERIES - NP4-12

# Data Sheet

### Lead Calcium Grids

The heavy duty lead calcium alloy grids provide an extra margin of performance and life in both cyclic and float applications and give unparalleled recovery from deep discharge.

### Long Cycle Service Life

Depending upon the average depth of discharge, over a thousand discharge/charge cycles can be expected.

### Float Service Life

The expected service life is five years in float standby applications.

### Separators

The use of the special separator material provides a very efficient insulation between plates preventing inter-plate short circuits and prohibiting the shedding of active materials.

### Long shelf Life

The extremely low self discharge rate allows the battery to be stored for extended periods up to one year at normal ambient temperatures with no permanent loss of capacity.

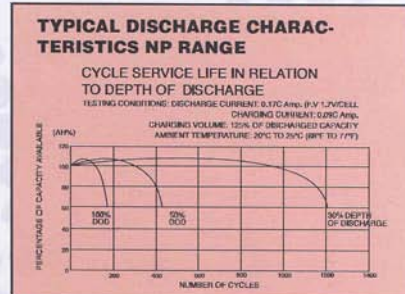
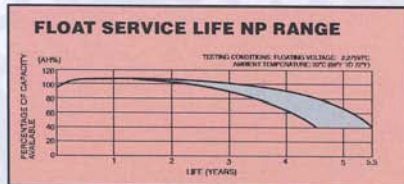
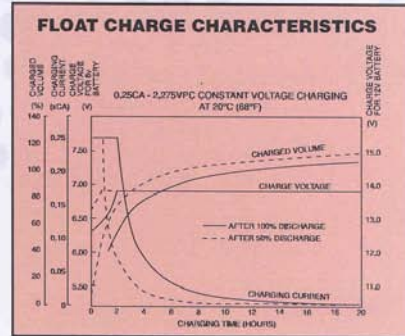
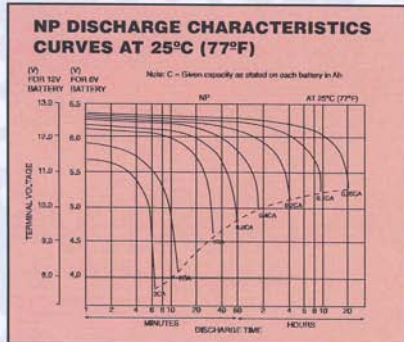
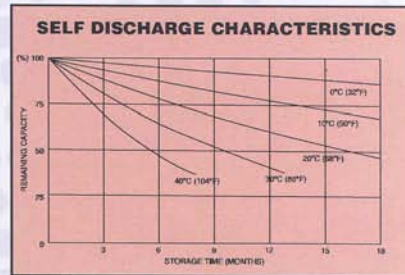
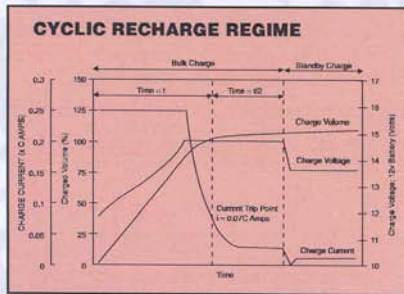
### Operating Temperature Range

The batteries can be used over a broad temperature range permitting considerable flexibility in system design and location.

Charge – 15°C to 50°C

Discharge – 20°C to 60°C

Storage – 20°C to 50°C (fully charged battery)



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NP



# NP SERIES - NP4-12

## Data Sheet

### INTELLIGENT BATTERY CHARGERS

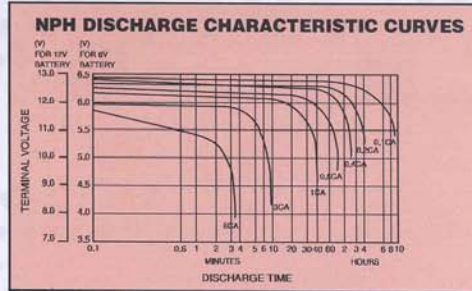
Manufactured to BS3456, IEC335, UL 1236, EN60335, CE mark to EN5008-1

#### Features

- Micro processor controlled
- Short circuit protection
- Reverse polarity protection
- High temperature protection
- Soft start current control
- Fast constant current bulk charge
- 3 stage charging CI-CV-float
- Constant voltage float/standby
- Proportional timing
- Flexibility, to match battery specification.

#### Standard Range

YCP03A12	300mA 12v
YCP03A24	300mA 24v
YCP03A6	300mA 6v
YCP06A12	600mA 12v
YCP06A6	600mA 6v
YCP1.5A12	1.5A 12v
YCP1.5A24	1.5A 24v
YCP1.5A6	1.5A 6v
YCP1A12	1A 12v
YCP1A6	1A 6v
YCP2A12	2A 12v
YCP2A24	2A 24v
YCP2A6	2A 6v
YCP3A12	3A 12v
YCP4A12	4A 12v
YCP6A12	6A 12v
YCP8A12	8A 12v
YCP10A12	10A 12v
YCP8A24	8A 24v



#### Standard NP

Available in a wide range of sizes to suit general applications.

#### NPH/NPW

High performance batteries specially designed for applications requiring high rate discharge, supplying up to 50% (NPH), (NPW) more power (Watts) for short durations when compared to conventional NP models.

#### NPC

Specifically designed to suit the arduous requirements of cyclic applications allowing increased cycle life (at least double that of conventional types). (NPC Shortform refers)

#### NPL

Long Life Model also to BS6290pt4 (FR Options)  
Dedicated literature available on request. (NPL Shortform refers).

#### Applications

Yuasa NP batteries, having excellent deep discharge recovery characteristics coupled with long life on float standby, are ideal for numerous applications in both cyclic and standby modes. For advice on the use of NP batteries in your particular application please contact our Sales Office.

#### Charging For Float Standby Applications

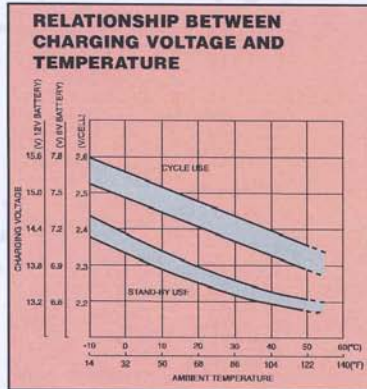
Charged at 2.275 volts per cell continuous. The battery will seek its own current level and float fully charged. However, users should be aware that when charging from fully discharged, the battery can draw an initial charge current of approximately 2cA. Care should therefore be taken to ensure that this initial charge current (if uncontrolled) is within the output capability of the equipment. Final charge current at 2.275 volts per cell is typically between 0.0005cA to 0.004cA.

#### Charging For Cyclic Applications

See cyclic recharge regime graph.

#### CAUTION

- Do not Short Circuit
- Do not charge in a sealed container
- Service life and operational characteristics will be affected by temperature
- AC Ripple reduces service life.



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