

Fitness *Technology*

Performance Measurement, Training and Rehabilitation Equipment

Changes/Modifications to the FT 700 Power Cage for Testing Isometric Mid Thigh Pull.



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www.fittech.com.au

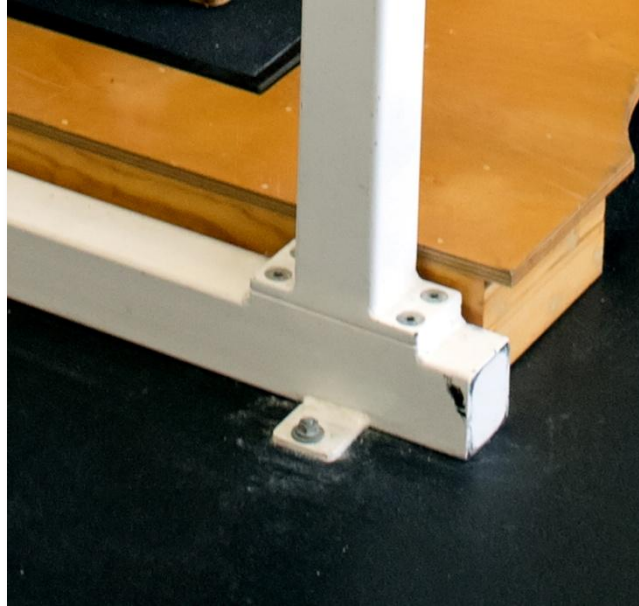
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WARNING!

Before doing this installation or performing any type of Mid Thigh Pull testing in the FT700 Power Cage the unit Ft700 power Cage must be secured to a concrete floor.

To do this Fitness technology recommends using Dynabolt masonry anchors (or any locally available brand that does the same), on the 4 tabs supplied to secure the FT700 cage to the floor.



We recommend an M10 size Dynabolt, This may require drilling out the hole in the tab to 10mm. There is more information on the type of fasteners available at the link below.

<http://www.ramset.com.au/Product/Detail/82/DynaBolt-Plus-Sleeve-Anchors>

Overview

The FT700 adds accurate strength measurement to its existing power training & testing capabilities. Hence the FT700 now has another very important function

Now the FT700 System with its 400S Force Plate adds ground reaction force tracking.

This important new isometric mid-thigh pull feature adds accurate strength measurement for all FT700 customers' squad members. A safer method for 1RM measurements!

The existing FT700 set has the Linear Position Transducer (LPT for barbell tracking) Magnetic Brake Unit (for safe CMJ power training) which are all power training functions. It is just that Fitness Technology has added this very functional isometric strength measurement function to its existing power & neuromuscular fatigue measurement capabilities.

Therefore providing the ultimate measurement tool for the professional strength & conditioning coaches.

The FT700 set up is now the only single product, on the world market at present that performs all these above stated accurate measurements for professional strength & conditioning coaches to improve their squad's strength & power levels.

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Fitness Technology can also provide these items to add this new isometric measurement kit to all existing pre 2013 FT700 customers. These items include:

1. A pair of the Smart Straps as shown in the below photos. Smart Straps Product #338 are high quality heavy duty tie straps - most suitable for this heavy duty isometric purpose.
2. Custom made varnished 5 Ply sheets x 6 each sheet 600 x 600 x 13mm H (alternative is to get these 6 sheets made up locally.)
3. A pair of Barbell Locking Collars.
4. 1x 28mm diameter across the entire Barbell length
5. The instructions below can also be used for DIY instructions for all existing FT700 customers
6. In Australia - Fitness Technology can also supply a quote to have all FT700 sites upgraded locally onsite.
7. Contact Fitness Technology info@fittech.com.au for a price on any of the above items

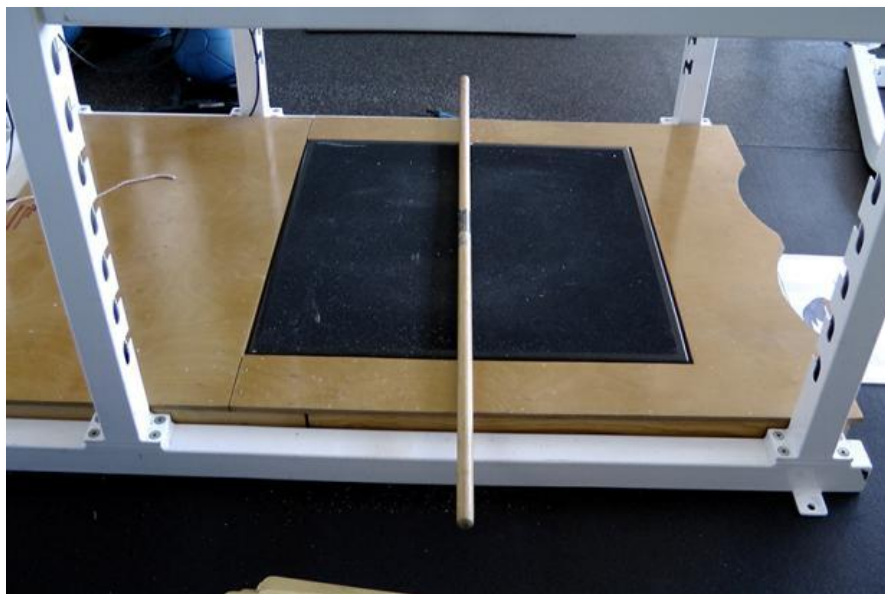
Modifications Required For Isometric Mid-Thigh Pull Testing

Items needed:

1. **Long straight edged item (ruler or broomstick)**
2. **Tape Measure**
3. **Pencil**
4. **15mm diameter hole saw**

The pre 2010 model FT700 system set ups require a 15mm diameter hole saw cut into both sides of the FT700 base support frames as shown in these photos. This is for the Smart Strap to hook into the FT700 base on both sides.

To do this you find the centre point of the force plate and lay something (in this case a broom handle) across the force plate to mark the base of the power cage for drilling. (See below)



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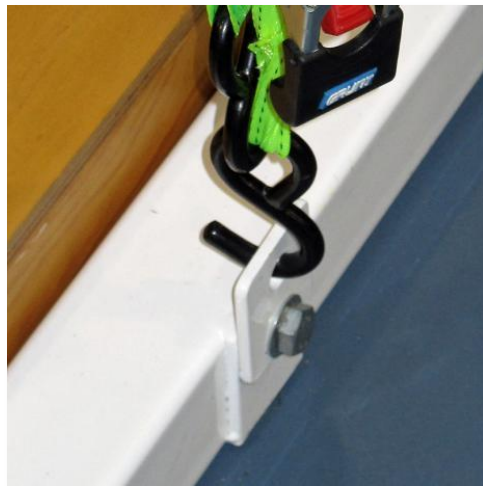
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Once the centre line is determined mark the base of the power cage and drill out a 15mm hole using a 15mm hole-saw it should look like the image below.



From 2010 - 2012 the FT700 models have tie strap tabs fitted in this position so the Smart Strap just hooks into place.



To locate the correct position for the barbell locking collars we measure 50cm from the inside edge of the safety bar (A) to find its centre point (see below) and mark with pencil. Do this on both safety bars this will align with above shown mid-point 400S Force Plate hole-saw cuts.



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Setting up for Isometric Mid-Thigh Pull Testing

Items needed:

1. **High Quality Tie Down Ratchet Straps x2** (we highly recommend Smart-Strap model <http://www.toolsthatlast.com.au/product.asp?idtree=OFF0OFF2OFF11OFF40OFF&nav=3>
Product Code: 338



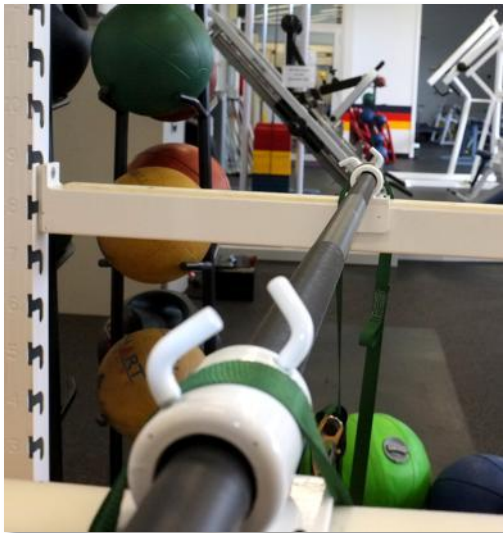
2. **6 x 5 ply varnished sheets each 600 x 600 x 13mm thick**



3. **2 x Fitness Technology Barbell Locking Collars**

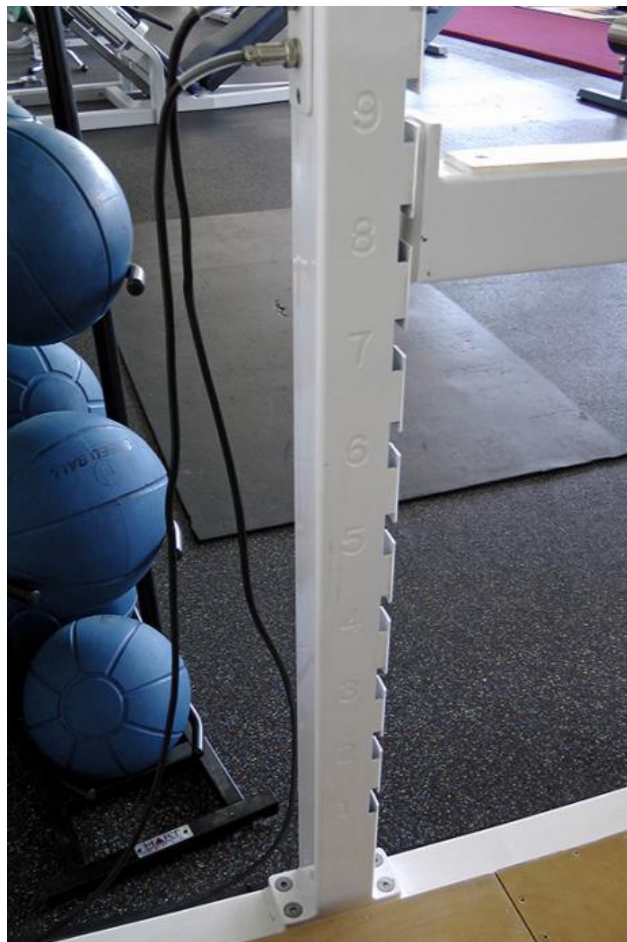


4. 1 x 28mm diameter Barbell



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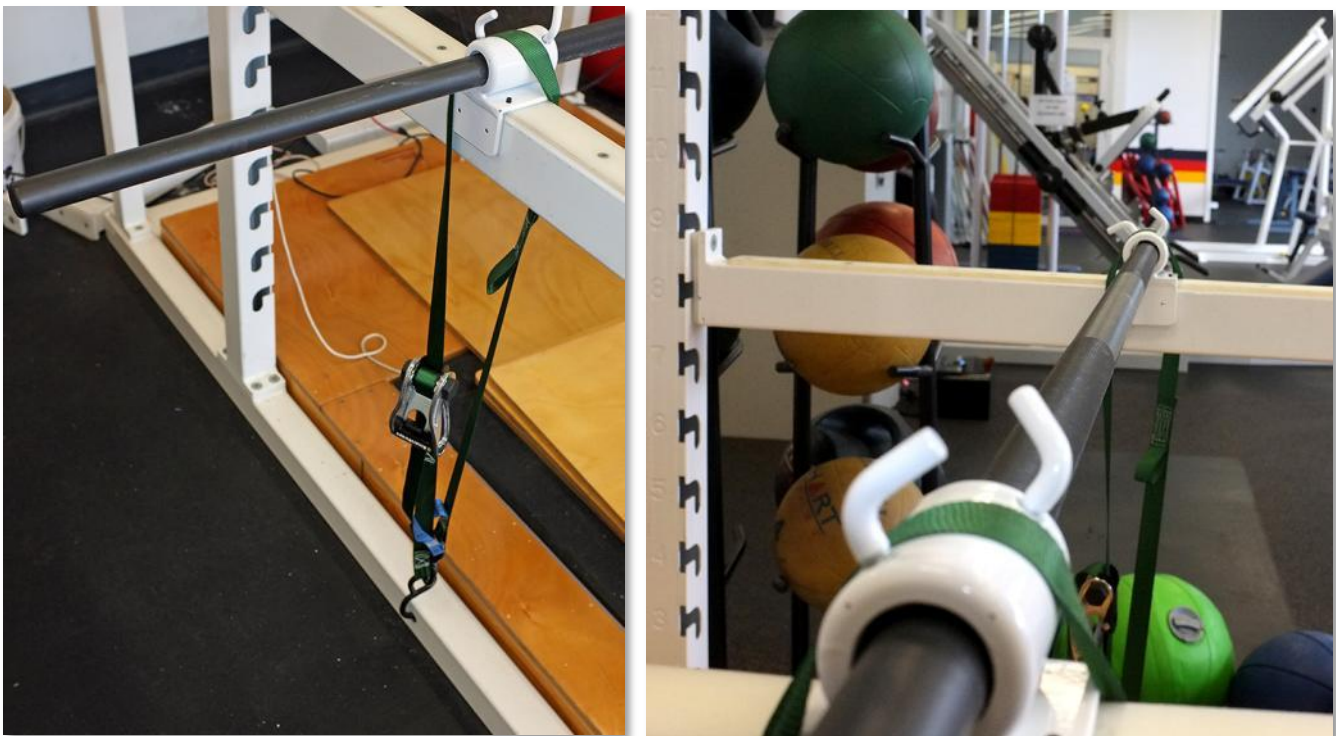
Determine best placement of the safety bars so that your tallest athlete has the correct Knee angle for a mid thigh pull. The tallest squad member in AFL applications should be at the correct knee angle by just using the FT700 number 9 increment setting. This is the correct height for the tallest squad member where none of the ply sheets will be used on the force plate.



Place the bar locking collar so it is located on the 50cm marker made previously. It should sit directly above the two holes cut into the base of the Power cage or above the tie strap tabs in later model power cages. Once this is done you can attach the ratchet strap to your pre-drilled hole or the tab depending on what model FT700 you have.



With the bar locking collars in place (on the power cage internal safety bars) and the bar running through the collars we can attach the tie straps so that they run over the centre of the locking collars.



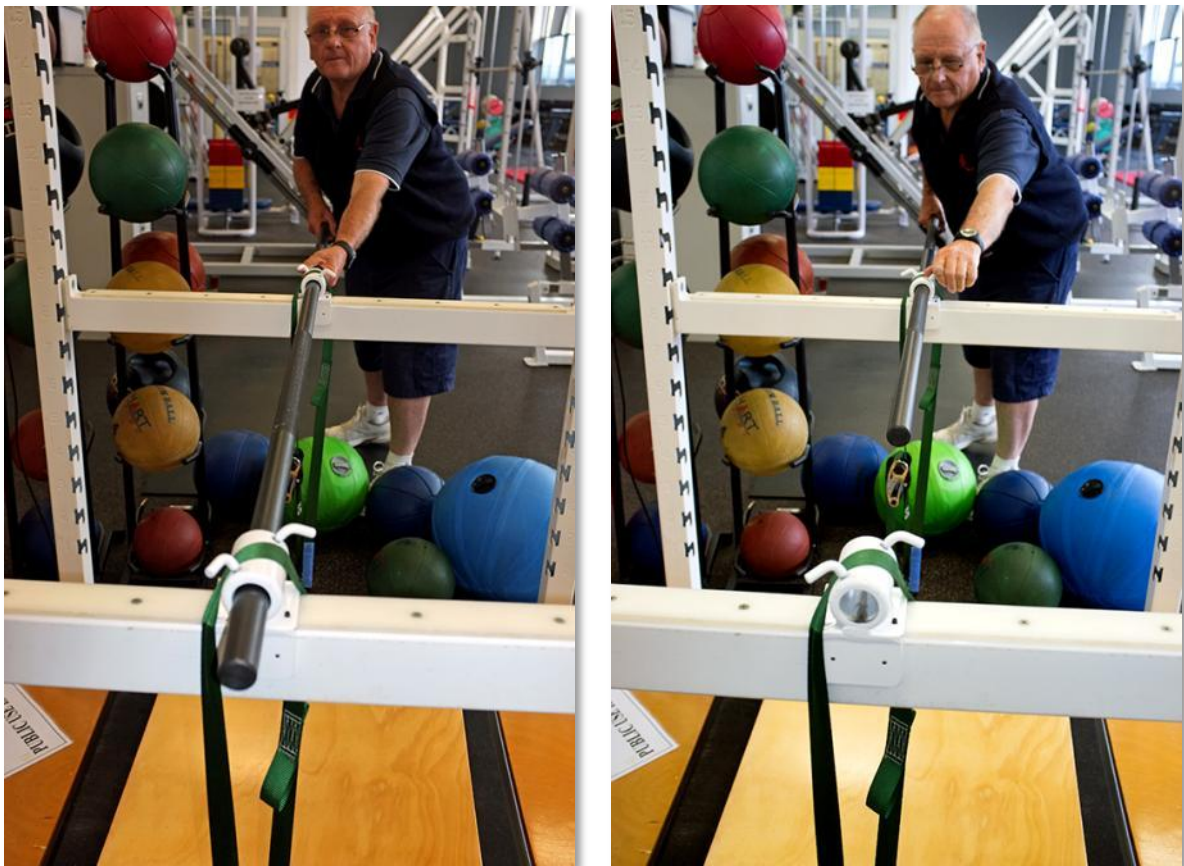
Note that the heavy duty Smart Strap, when in place, positions the barbell in direct alignment with the middle of the FT 700 Power System 400S force plate. The perfect position for isometric mid thigh pulls.

When the Tie Straps have been tightened and the bar is in the correct position you can tighten the 4 grub screws that will bight into the Polystone to prevent the barbell collars from sliding. Use Loctite 243 locking compound (or similar) to prevent the grub screws from coming loose.



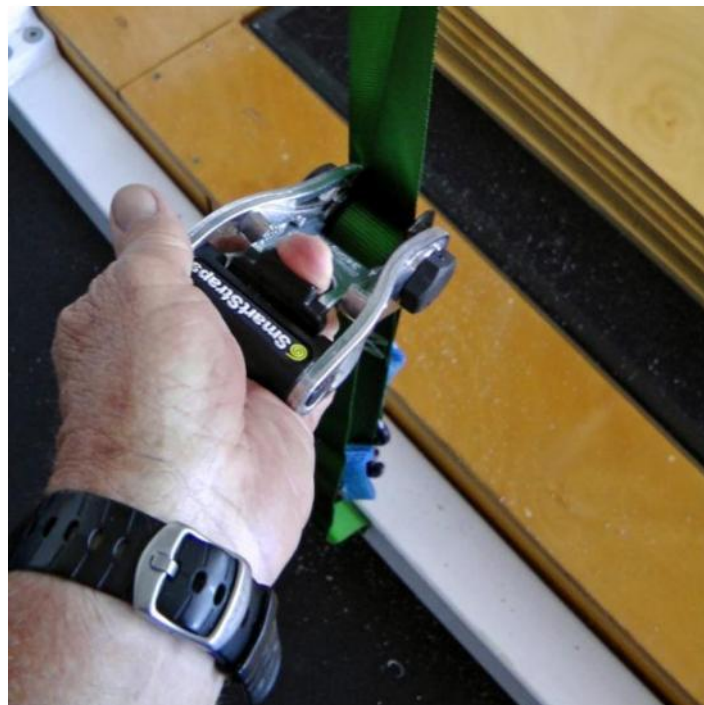
Removing the Bar after Setup

To go from a Mid Thigh pull to an exercise that does not require the bar (CMJ for example) you simply loosen the four locking bolts and slide the bar out.





To release the Ratchet Tie Straps pull the release button in towards your body and holding the button in move clockwise passed the 10 o'clock position which releases the tension on the ratchet Tie straps.



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Performing the Isometric Mid-Thigh pull

1. The tallest squad member in AFL applications should be at the correct knee angle by just using the 9 increment setting.



2. Every other squad member of the lesser height will be at the correct height by adding the number of ply sheets to obtain the correct knee angle for this test.
3. Squad members just have to record on their individual training sheet the number of ply sheets required to be at the correct knee angle. In AFL applications all shorter squad members will use between 1 – 6 of these ply sheets which are all 600 x 600 x 13mm thick
4. Example-The squad member just records on the sheet mid-thigh pull test “2” this means that member I just add 2 sheets onto the plate - the force plate is then zeroed with the sheets on it only and the squad member steps on the plate. In the BMS program START button is clicked and test is performed in a few seconds and the isometric data saved to that squad member’s name in the BMS software program.

**FT700 web page video links: [Isometric Mid-Thigh Pull Data Collection](#)
[Isometric Mid-Thigh Pull Data Analysis](#)**



5. Then the next squad member repeats the same process as stated above with the appropriate number of ply sheets fitted. The force plate is zeroed & so on.

Footnotes:

1. From January 2013 all new FT700 customers will be offered the option of having the above stated isometric mid-thigh pull set up option added to their FT700 quotation offer.
2. This offer will include
 - High Quality Tie Down Ratchet Straps x2 (we at Fitness technology highly recommend Smart-Strap model
<http://www.toolsthatlast.com.au/product.asp?idtree=OFF0OFF2OFF11OFF40OFF&nav=3>
Product Code: 338



- 6 x 5 ply varnished sheets each 600 x 600 x 13mm H



- 2 x Fitness Technology Barbell Locking Collars



- 1 x 28mm Diameter Barbell

