

Torc Ground Anchor – Series II

Fitting Instructions for Concrete Floors

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Important Requirements

Caution: Be careful that you do not drop the anchor on your foot or allow the shackle to fall on a finger!

Any security installation is only as strong as its weakest link:

The Torc Ground Anchor must be used in conjunction with an appropriately fitted Sold Secure-approved lock and chain.

The integrity of the anchor is dependent upon the quality of the surface to which it is fitted. Concrete is generally stronger than brick, and brick is generally stronger than block. The minimum recommended concrete thickness is 120mm; preferably 150mm. Do not fit the anchor to Tarmac or other soft surfaces, even if there is concrete below. Separate fitting kits are available for installation on brickwork and other situations.

If you are unsure, please contact your supplier for advice.

What Tools Will I Need?

The fitting kit includes all parts that are required. The only tools you will require for floor mounting are:

- An electric hammer drill with at least a 12mm chuck capacity (variable speed recommended)
- A medium sized hammer (a 4lb/2kg club hammer is ideal)
- Eye protection – goggles or a visor should be worn
- Ideally a screwdriver or knitting needle or piece of stiff wire at least 200mm long
- A pencil or felt pen or similar for marking holes to drill

How Long Should I Allow to Fit an Anchor to a Concrete Floor?

30-60 minutes as a guideline. Be careful and don't rush. The ground anchor will be ready for use the following day.

What Parts Should be in a Floor Fitting Kit?

The Torc anchor floor fitting kit uses top quality chemical resin capsules for maximum security in variable condition concrete floors:

- M10 x 98mm long high tensile (10.9-rated) hex socket countersunk bolts, fully threaded, specially manufactured with a chamfered end (qty. 4)
- M10 chemical resin anchor capsules (qty. 4) (usually packed in one plastic pipe)
- Hardened steel ball bearings to suit bolts (qty. 4)
- 6mm AF x ¼" Hex Driver bit to suit bolts
- M8 x 50mm hex head bolt (to be used as a punch)
- Length of flexible PVC hose and test tube brush
- Masonry hammer drill bit 12mm straight shank
- These instructions

How to Fit a Torc Ground Anchor to a Concrete Floor

The Torc ground anchor is designed to be fitted by any competent DIY enthusiast.

You should read through these instructions in their entirety *before starting to fit an anchor*. If you are not confident of your ability, you should ask an experienced person or professional builder to help.

If you are installing in unusually high or low temperatures (below 0 or above 30 Celsius), please contact your supplier before proceeding.

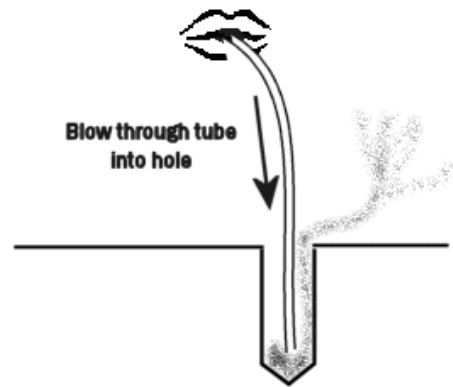
In the following instructions, the term *bike* is used to mean any valuable item that you wish to secure with your ground anchor.

- 1. Check the contents of the Fitting Kit:** Ensure the fitting kit is complete (the items are listed above). Check that the resin capsules are all unbroken. Contact your supplier if there are any parts missing or damaged.
- 2. Choose a good location:** Be careful to choose an appropriate location for fitting your anchor, clear of any pipes, cables etc (the use of a metal detector or other pipe/cable detector is recommended if you are unsure). The anchor is designed for permanent installation so take time to ensure the chosen position will allow you to secure your bike with the chain etc that you have chosen. Putting the anchor near a corner or other location such that the bike restricts access to the anchor can make it a lot harder for a criminal to attack, as can keeping chains and locks off the floor. We recommend that you place the anchor loosely on the floor and check that you can get the bike into position and then ensure you can actually fit the chain & lock. Time spent now checking the intended location is much better than realising later that you can't get the bike within the range of your chain!

Remember that any anchor is only as good as the substrate it is fitted to.

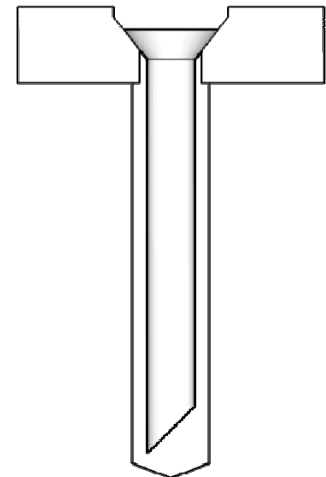
- 3.** The fixing holes are at the corners of a rectangle measuring 100mm x 60mm. Mark the position of the first hole, move the anchor out of the way and using eye protection, good ventilation and a hammer drill, carefully **drill the first hole** to 95mm depth. The drill bit supplied is marked with tape at 95mm – the tape should just touch the surface of the floor as you finish drilling each hole – **don't drill too deep!** Preferably, clean dust from the hole that you have drilled (see the next step) and then put the anchor, without the shackle, back in position. Insert one of the bolts, **without any resin capsule at this stage**, through the anchor and into the hole you have drilled. The bolt will feel loose but we suggest that you keep the anchor in position and progressively use a bolt in each hole that you have drilled to help guide the drill for the remaining holes. It is easy for the drill to drift sideways, particularly in some types of concrete, and using 1, 2, and then 3 bolts to hold the anchor in position while you drill the remaining holes will help to keep the holes accurate. If you are drilling extremely tough concrete or if the drill is difficult to keep in position, you may find it helps to drill a pilot hole of e.g. 8mm diameter first, if you have a suitable drill bit available (only a 12mm drill bit is included in the kit). Keep the drill vertical and drill the remaining 3 holes to approximately half depth, preferably cleaning dust from each hole and inserting a bolt in each hole as you go. You may find that it helps if you put one foot on the edge of the anchor, but be careful to keep the drill clear of your foot and any clothing and not to trip or fall over! Once you have drilled the remaining 3 holes part way, lift the anchor (and bolts) completely out of the way to finish drilling the holes. Take care not to breathe the dust and try to prevent the dust from falling into the other holes. Using a vacuum cleaner and crevice tool near the drill may help to suck up the dust during the drilling process – take care however you do it!

4. **Clean dust from inside the holes:** It is very important that the holes are as clean as possible if the resin is to achieve a good bond. The drill will often leave a surprising amount of dust at the bottom of the hole so it is a good idea to spin the drill up and down to *screw* dust out of each hole. Take care that you don't sweep dust from one hole into another hole!

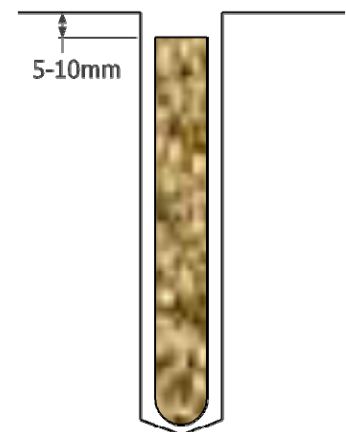


Then, still wearing eye protection and taking care to avoid breathing the dust, use the plastic tube provided to blow any remaining dust out of each hole. Place one end of the tube in your mouth and, whilst blowing, move the other end of the tube up and down in each hole. Then use the test tube brush to clean further dust from the holes, pushing the tip of the brush to the bottom of the hole and pulling it back out again. Having the wire handle of the brush bent into an 'L' shape helps to give a better grip as the brush is a snug fit in the holes. Use the plastic tube again to clear any more dust. Keep doing this brushing and blowing sequence until the holes are clean and no more dust blows out. This stage is easier if you have a source of compressed air or a vacuum cleaner to suck the dust up (a crevice tool and the plastic tube can work well), but take care to protect your eyes and avoid breathing the dust, however you clean the holes.

5. **Check that the holes are clean and deep enough:** Place the ground anchor base plate, again without the D-shackle and without any resin capsules, back in position and drop a bolt into each of the holes to check that all of the bolts are sitting properly at the bottom of their countersunk recesses in the base plate. Compacted dust can remain at the bottom of the holes and this may cause bolts to sit too high. If the holes are not clear or simply not deep enough, repeat the relevant steps above to achieve the correct depth and holes clear of dust. Ideally, use a screwdriver or knitting needle or piece of stiff wire to check that the bottom of each hole is solid and not actually compacted sand or mud. These could compromise the resin fixing. Small errors can be corrected by re-drilling; greater errors need you to start again or seek advice from your supplier. Lift the anchor away to remove the bolts. Clean any dust from the bolts by blowing or wiping with a dry cloth.



6. **Insert the resin capsules:** Gently slide one of the glass resin capsules into each of the four holes, with the rounded end pointing down like a torpedo. The ends should all be 5-10 millimetres below the surface of the floor (no more than 15mm maximum). If the capsule disappears too deep, contact your supplier for advice before proceeding. The anchor can only be as good as the fixing.



7. **Place the D-shaped shackle flat on the floor and put the anchor in position on top of it so that the shackle is held in position by the cut-out in the anchor base plate,** and taking care to line it up with the drilled holes.

**** DO NOT FORGET TO PUT THE SHACKLE ON THE FLOOR FIRST!!! ****

- 8. Drive the bolts into the capsules:** If your drill has a gearbox or speed range selector, set it for its lowest speed and wear eye protection. **Ensure the drill is still set for hammer action** – this helps to mix the resin properly. Insert the hex driver bit supplied into the drill chuck and prepare to use it to drive each bolt into the glass capsule. Note that the slightly larger end of the driver bit should go in the chuck, and the smaller (6mm) end fits into the bolt head. The end of each bolt is sharpened to a chisel-like edge: this helps to break the glass; to mix the resin with its hardener as the bolt is screwed into the capsule; and it also helps to prevent the bolt being unscrewed after the resin has set.

It is important that you do not over-drill the bolt into the capsule and it is important that all four bolts are fully fitted within 10 minutes of each other:

Over-drilling the bolts can cause the resin to be drawn up out of the holes, weakening the bond, and taking too long on this stage can cause the resin to begin setting, causing problems with alignment. Don't be too worried about the time limit as it is normally easy to do it in the time.

Do not try to use any other tool for this stage – An electric hammer drill is essential! If you are using a rechargeable drill, ensure that you are not low on charge.

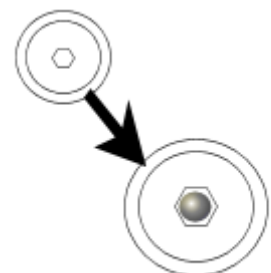
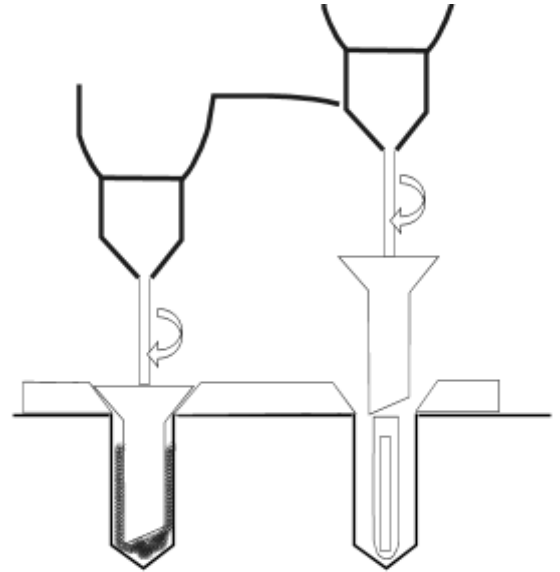
If you engage the hex bit into the head of each bolt and then carefully offer it up to the end of the glass capsule, you will find that you can rest it gently on the capsule whilst changing your grip to hold the drill firmly. Then run the drill at low-to-medium speed with rotary hammer action whilst pushing down firmly so that the glass capsule breaks and the bolt *screws* itself into the resin, mixing it as it spins. The glass breaks easily so this is a lot easier than it sounds ☺ You may find it convenient to hold the anchor in place with your feet as you drive each bolt into position.

Note: You should feel resistance as you do this – If the capsule just pushes down into a space below the concrete or if the concrete crumbled while drilling then you do not have an adequate location and should find somewhere better. (See below: "What if you have poor quality concrete")

Repeat this sequence promptly for all four bolts and driving each one fully home in one go; doing bolts on a diagonal first will help with alignment.

- 9. Check all four bolts are fully home:** Once you have driven all four bolts into their holes, check that they are all fully home and in contact with the base plate of the ground anchor. Do not expect the ground anchor to be held very tightly against the floor – that is not important to the security of the fitting. Slight alignment errors do not have a significant effect on strength. If any bolts have pulled out slightly, you can drive them home with a couple of turns with the drill. Again, do not over-drill them.

- 10. Insert the ball bearings:** Before the resin sets, hammer one of the ball bearings supplied into the hexagonal head of each bolt. You may find the extra M8 x 50mm bolt is useful as a *punch* to reach the bolt heads – the end of the bolt has



a slight dimple that will locate on the ball bearing. The ball bearings are a very tight fit so it will take a few good hammer blows to drive them into the bolt heads. You do not need to drive the balls absolutely all the way into position; providing they won't come out then that is sufficient. Once you have fitted the last ball bearing, check one more time that all four bolts are close against the ground anchor, in case the hammering has loosened any slightly. Use the hammer and punch to tap any into their correct position, if required. Be careful not to hit your fingers! ☺

11. Leave the anchor undisturbed while the resin sets: We recommend that you leave the anchor for 1-2 hours or preferably overnight to ensure the resin is fully hardened before using it. Try to avoid disturbing the anchor during this period.

12. The installation is complete once the resin has set. Well done ☺ The resin cures faster in warmer temperature environments. For example, it will begin to cure in 20 minutes at 10 Celsius; within 10 minutes at 20 Celsius, or within 6 minutes at 30 Celsius. We recommend that you give the anchor a jolly good tug the following day to make certain it is firmly fixed. Contact your supplier if you have any doubts or problems.

Using a Torc Ground Anchor

A properly installed anchor should give you many years of trouble-free service.

Remember that you must use an appropriately fitted Sold Secure-approved lock and chain to be confident in your security provisions.

No maintenance is normally required. Do not use any abrasives for cleaning.

Concrete Fixing Queries

What About the Damp Course in my Floor?

The chemical resin anchors re-seal the damp course as the resin hardens.

What if you have Poor Quality Concrete?

Any anchor is only as good as the substrate that it is fixed to. The Torc anchor uses chemical resin anchors for floor fixing because they cope better with poor quality concrete. The Torc anchor uses 4 fixings to increase resilience further and these are positioned near the outside of the anchor to maximise strength.

However, the resin is not suitable for concrete that contains significant voids, such as if the hole widens below the surface. It needs to be a 12mm diameter hole to the correct depth. If, after drilling, you find that the drill bit wobbles a lot from side to side, the concrete is not sufficiently solid and will not give a good fixing. An alternative location would then be recommended, or using an *injection resin* approach instead (see below).

If you are concerned about the quality of substrate then please contact your supplier for advice. Since this is a DIY-installed product and we have no control over the quality of the substrate, we are unable to provide any warranty on the solidity of the mounting. You should be confident that your substrate is adequate for your needs and you should check that the installation is sound after the resin has hardened.

What if the Concrete isn't Thick Enough? What about *Injection Resin*?

If you find you are drilling into mud, sand or any other loose material, you should find an alternative location with better concrete or switch to an alternative fitting kit (e.g. brick wall). The Sold Secure approvals and any product warranties do not apply to any non-

standard fittings and you are strongly recommended to find a location with a good substrate. However, if you really have no choice about the location and it is not practical to re-concrete the area, you *may* be able to fill a hollow with a larger quantity of resin from a cartridge system instead of the resin capsules supplied. Plastic mesh sleeves can help to constrain the resin in hollow blocks etc. Fischer are manufacturers of high quality vinylester resin cartridges. Suppliers include Screwfix (www.screwfix.com), RS Components (www.rswww.com, part numbers 449-3298 or 436-4005), or Jewson builders' merchants. We are also sometimes able to supply injection resin cartridges and accessories, but our shipping costs may be higher. Beware that the 300ml resin cartridges typically need a special gun to dispense them, hence the part numbers above being for smaller 100ml or 150ml cartridges. Some other/generic cartridges are available at lower prices but these are generally not as good, reducing the strength of the bond. Polyester resin is not recommended. Follow the instructions supplied by the manufacturer. Again, you should be confident that this is adequate for your needs.

Does the Resin Have a Shelf Life?

We recommend that you install the product within one year of purchase. The resin capsules should be kept out of direct sunlight and between 5-25 degrees Celsius. Test results on the resin capsules have revealed no installation problems and no loss of performance after 15 years.