

Pragmasis *Metal* Shed Shackle

Fitting Instructions for Metal Sheds/Bike Stores

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Important Requirements

Caution: Be careful when fixing the shear nuts and also when using a chain or lock with any valuable items: The nuts will shear suddenly and you should be careful to avoid catching yourself when this happens; It is also easy to cause damage by dropping a heavy lock etc on a valuable bicycle! Being careful should allow you to fit the Shed Shackle easily and to use it without incident.

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

The Shed Shackle should be used in conjunction with an appropriately fitted Sold Secure-approved lock and chain or D-lock. If you are locking a bicycle, be sure to secure the frame and ideally both wheels.

The integrity of the fixing is dependent upon the quality of the structure to which it is fitted.

The shed is vulnerable to attack. Keep the shed door locked whenever possible and fit an alarm if you can. DIY stores offer simple but effective movement detector alarms that are battery powered. The combination of the Shed Shackle as a physical deterrent and the noise made by an alarm should encourage a thief to leave empty-handed.

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

What Tools Will I Need?

The fitting kit includes all parts that are required, as well as an appropriate drill bit. The only tools you will normally require are:

- An electric drill with at least a 10mm chuck capacity
- A 16mm AF spanner or adjustable wrench
- A centre punch for locating the drill bit
- Eye protection – goggles or a visor should be worn
- A pencil or felt pen or similar for marking holes to drill
- A hammer
- Optionally, some threadlock (e.g. *Loctite*)
- A helper for tightening the bolts

How Long Should I Allow to Fit a *Metal* Shed Shackle?

30 minutes as a guideline. Be careful and don't rush.

Fitting a Shed Shackle is straightforward. These instructions may seem long but they explain even the smallest step, to make it easy for people with little experience.

What Parts Should be in the Fitting Kit?

The Shed Shackle fitting kit contains:

- M8 x 30mm long high tensile hex socket button-head, fully threaded bolts (qty. 8)
- M8 security shear nuts (qty. 8)
- M8 x 40mm diameter penny washers (qty. 8) (go under the bolt heads)
- M8 x 20mm diameter penny washers (qty. 8) (go under the shear nuts)
- Hardened steel ball bearings to suit bolts (qty. 8)
- Plastic caps to cover the bolt-ends (qty. 8)

- HSS (metal cutting) drill bits 9mm and 4mm
- 5mm hex wrench (*Allen* key)
- 5mm hex driver bit
- M8 x 50mm hex head bolt (to be used as a punch)
- These instructions

How to Fit a *Metal* Shed Shackle

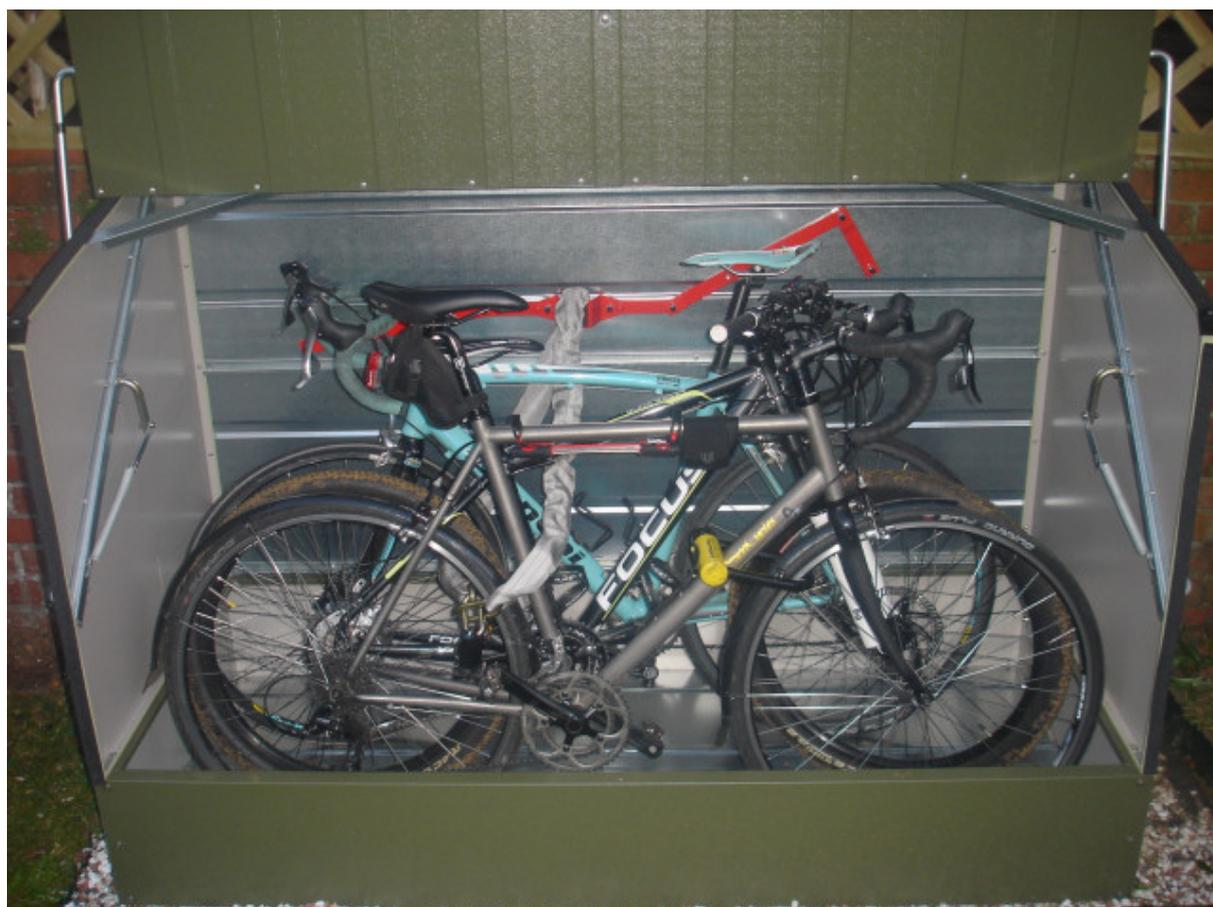
The Shed Shackle is designed to be fitted by a typical DIYer. You should be comfortable using a drill to make holes in metal, but little experience is required beyond that.

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

The Shed Shackle is normally fitted *internally*, i.e. inside the shed.

In the following instructions, the term *bicycle* is used to mean any valuable item that you wish to secure with your Shed Shackle.

The following details the typical fitting sequence with the Shackle itself on a flat area of the rear wall of the shed, an extension bar on each side going above and below, and the side brace fitted perpendicularly to one of the extension bars. This is shown in the photo below. You can modify this sequence if you want to fit the parts in different orientations. Contact your supplier for advice if you are unsure.



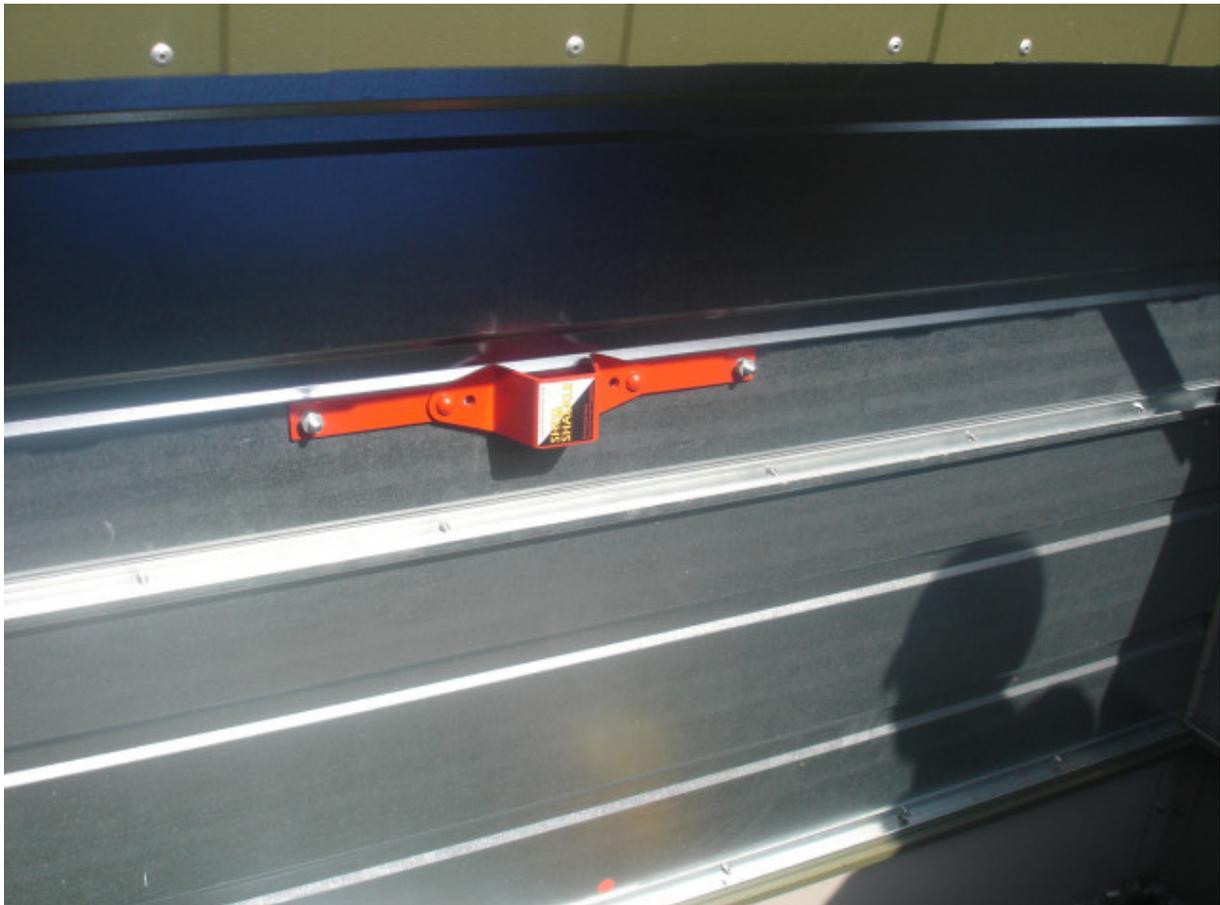
The photo above shows a typical final configuration, with two bicycles chained to the Shackle. The assembly is broadly central left-to-right, and approximately at cross-bar height for the bikes. Note how the extension bars are deliberately angled above and below the Shackle centre section: This helps to reinforce a larger area of the shed wall and to require a large area of that wall to be cut out if a thief was to defeat it. The following guidance will help you to duplicate this arrangement. The short side brace is fitted to the end of the upper extension bar, angled downwards.

1. Check the contents of the Fitting Kit: Ensure the fitting kit is complete (the items are listed above). Contact your supplier if there are any parts missing or damaged.

2. Choosing a good location: The Shed Shackle is supplied with main Shackle member, two long extension bars and one short brace. The extension bars should normally be fitted on each side of the Shackle itself, and the short brace is usually fitted perpendicularly to one of the extensions, to resist sideways twisting attacks. All of these should be fitted to a generally flat area of the metal shed wall. These parts can bridge over a folded ridge that the shed manufacturers include for stiffening, providing that ridge is formed *away* from the inside of the shed. The parts should preferably *not* be all in a straight line – a *zig-zag* is quite OK as it spreads the area that is reinforced. Please refer to the previous photo.

The Shed Shackle is easy to fit but you should think it through in advance to be sure that you get the best position and therefore the best combination of fixings.

Be careful to choose an appropriate location for fitting your Shed Shackle. It is designed for permanent installation so take time to ensure the chosen position will allow you to secure your bicycle with the chain etc that you have chosen. Putting it at the right height and choosing the location such that the bicycle restricts access to the Shackle can make it a lot harder for a criminal to attack, as can keeping chains and locks off the floor.



We recommend that you hold the Shackle and an extension bar against the wall whilst checking the height and relative position of the bicycle frame and any ridges in the shed wall. The Shackle must be within range of the chain, ideally when it is wrapped around more than one member of the frame and the wheels as well. Time spent now checking the intended location is much better than realising later that you can't get the bicycle within the range of your chain!

Remember that the Shackle is only as good as the substrate it is fitted to. If you have the option of fitting it to thicker material, that will generally result in better security.

3. Mark the first holes to drill: The centre section is normally fitted first, as shown in the photo above. It is normally fitted centrally in the horizontal direction, and biased upwards on a flat section of shed wall. Beware that the bolts will have 40mm diameter penny washers fitted under their heads, so be sure to allow enough room for them if there are ridges in the shed wall (as shown in the photos here).

The short brace can be fitted to any of the holes in an extension bar except for the hole at the end that will link to the Shackle itself.

Carefully mark the end holes in the Shackle centre section using a pencil or felt pen, for example.

4. Drill the first holes: Move all items out of the way and *centre-punch* the marked holes to help guide the drill. Then, using eye protection and a 4.0mm HSS drill bit (or similar), carefully **drill a pilot for the first holes** and then switch to a 9.0mm drill to **drill them both to final size.**

Take care with swarf generated.

5. Bolt the central Shackle section in position (loosely): Go outside the shed and push the first two bolts through the wall, with a large penny washer under each bolt head. Have a helper hold those bolts in position while you come back to the inside of the shed and fit the Shackle centre section over the bolts. Alignment errors can be corrected by using the drill to draw the hole a little. This is done by putting sideways pressure on the drill when it is spinning in the hole already drilled. Be careful not to put a lot of pressure on the drill – moving it in and out and taking your time should allow you to elongate the hole in the desired direction without too much difficulty and without risk of breaking the drill bit.

Fit a smaller penny washer and shear nut, loosely, on each bolt. The shear nut is fitted with the hexagonal head facing you (away from the shed wall). Spin the nut onto the bolt thread in each case. This will hold the Shackle in position while you drill the other two holes. **Do not tighten the nuts yet!**



This photo shows that you can use the Shackle itself to guide the drill. You may find it

easiest to run the drill briefly with the 9.0mm drill bit, to mark the metal shed wall at the hole centres, and then to switch to the pilot drill to actually drill through and finally to revert to the 9.0mm drill to complete these holes.

All four holes through the Shackle are used to give maximum strength to the centre section.

Fit these two bolts, with penny washers under their heads, from the outside of the shed and add smaller penny washers and spin shear nuts onto them from the inside.

6. Fit the top extension bar over the first bolt: Remove the shear nut from the right-hand end of the Shackle and hold an extension bar in position over that bolt. The extension bar should be fitted with the cranked end at the bottom, overlapping the end of the Shackle. Orient it at an angle so the other end is high up on the next flat section of the shed wall, and so that there is space to position the short side brace also on that flat section (refer to the first photo).

7. Drill the hole at the top of the extension bar: Use the extension bar to mark the position of the next drill hole, then move items out of the way, centre-punch and drill the hole with a pilot and then the final-size drill.

8. Fit another large penny washer and push a bolt through the wall of the shed and re-fit the extension bar.

Note: Do not expect to fit a bolt through every possible hole in the extension bars. Additional holes are provided to allow a variety of fixing arrangements, but you will typically end up with a *total* of 3 or 4 holes without bolts. All 4 holes in the Shackle centre section itself should be used in all arrangements.

9. Fit the lower extension bar: Similar to the sequence used for the top extension bar, use the other extension bar as a guide to mark its lowest hole with it oriented at an angle downwards from the left end of the Shackle centre section. Remove the left-most shear nut to allow you to position this extension bar with its cranked bend at the point of overlap with the central Shackle. Then, mark the hole at its opposite end, centre-punch & drill the hole. Fit a large penny washer & bolt through the shed wall and through the extension bar. Add a smaller penny washer and finally spin a shear nut onto the end of the bolt at each end of this extension bar, inside the shed.



The previous photo shows the assembly in position. A total of 7 bolts should now be in place, loosely, with large penny washers under each bolt head on the outside of the shed and small washers and shear nuts fitted loosely on the inside of the shed. The fitting kit includes one more bolt/large washer/small washer/nut set. This is provided for more versatility in fitting arrangements, but if you have followed the normal routine and if you wish, you can drill and fit this last fixing through one of the remaining (spare) fitting holes in one of the extension bars.

10. Optional: Apply Threadlocking Compound to the Bolts:

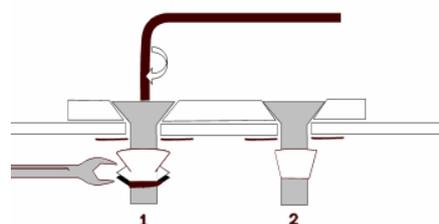
This is not essential as the shear nuts provide a good anti-tamper fixing on their own, and there are 7 or 8 of them! If you wish to make them harder to remove, you can apply a little threadlock to each bolt. **Note that the threadlock should be applied and the respective nut tightened and sheared-off within a few minutes. This is easy, but don't have a cup of tea part way through this part of the process!**

Remove one of the shear nuts at a time, apply threadlock to its bolt, and then replace the nut. The equivalent of 1-2 drips of threadlock fluid is plenty for each bolt. Go through all of the nuts quickly so that you can complete the shearing process (described next) before the threadlock sets!

Caution: Threadlock compounds may produce an allergic reaction and can be harmful by inhalation. After contact with skin, wash immediately with plenty of soap and water. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, showing the threadlock tube.

11. With the aid of a helper outside the shed, tighten all of the nuts: Have your helper use the supplied Allen key in the bolt heads outside the shed. Then, using a 16mm AF spanner/socket or adjustable wrench on the inside of the shed, tighten each of the nuts until the hexagonal head shears off, leaving just the conical anti-tamper surface.

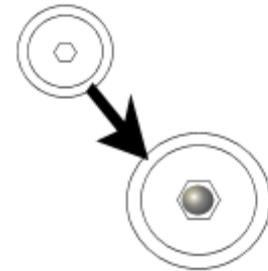
Caution: Be careful that you do not slip or graze your knuckles when the nut head shears off. Reposition the spanner or wrench regularly so that the head shearing off will result in your hand moving *away* from the other bolts etc. Be sensitive to the reduced leverage that your helper has with the Allen key – work together so that all nuts can be tightened steadily, without any discomfort or injury to anyone! The fitting kit also includes a small hex driver bit – this can be used in the bolt head and with a suitable socket or perhaps spanner to give similar leverage to the helper on the outside of the shed.



If you find the shear nuts are too difficult to shear off, you can weaken the shear nut by nicking under the head with a hacksaw and then trying again with the spanner.



12. Fit the anti-drill ball bearings to the bolt heads: Go outside the shed and 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 tight fit so it will take a smart hammer blow to drive them into the bolt heads. Be careful not to hit your fingers! ☺



Be wary of the wall of the shed bending while you are doing this. You may find that a large piece of wood or metal, positioned against the inside of the shed wall near each bolt, helps to steady the shed and reduce the noise!

13. Fit the protective caps over the ends of the bolts: Plastic push-on caps are provided to protect from accidental contact with the exposed bolt ends. One of these caps should be pushed onto the end of each bolt. It is not normally necessary but you may wish to use a hacksaw in advance to trim excess length from the exposed bolt ends if they pose a risk or inconvenience. If you want to make it even more awkward for a thief to undo the nuts, feel free to glue the caps on with a general purpose adhesive!



14. The installation is complete once the threadlock has hardened (where applicable). Threadlock continues to harden for 24 hours. The Shackle can be used immediately. Well done ☺

Using a *Metal Shed Shackle*

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

Remember that you must use an appropriately fitted Sold Secure-approved lock and chain or U-lock to be confident in your security provisions. A chain and lock generally offer better security than a U-lock and particularly than a cable lock. Conversely, U-locks tend to be more portable and may therefore allow their use when the bicycle is away from home.

A 1 metre (3 foot) chain or cable is usually sufficient to go through the Shackle and around a single framing member of a bicycle or similar item. A 2 metre (6 foot) chain or cable can usually be used to go through both wheels and the frame of a single bicycle. If two bicycles can be positioned closely, a similar length can often be used to secure the wheels and frames on both of them.

Try to keep the chain and lock off the ground if possible.



The photo above shows a Shed Shackle in use with a 2.0m *Protector* 11mm chain and Squire SS50CS closed shackle padlock securing 3 bicycles. Much of the ~5kg weight of the chain & lock is carried by the Shed Shackle. The chain goes through the frame of each bike and a wheel of the most exposed bike. The chain and lock are off the floor.

Try to keep the shed door locked closed whenever possible. Be wary that the fixings on various metal sheds are not robust and are easily defeated by a thief.

Use the Shed Shackle to give you important additional security!

No maintenance is required for the Shed Shackle.

Metal Shed Shackle Fixing Queries

I have a spare bolt/large washer/small washer/nut/ball-bearing left?

This is normal if you have followed the sequence described above. The fitting kit includes an extra set of fixings to give versatility for alternative arrangements. You can drill another hole and fit the last bolt if you wish for a minor improvement in security.