

Gateclaw Installation, Maintenance & User Guide

The following information is designed as a guide for the installation of the Gateclaw 1000mm and Gateclaw 500mm surface fitted systems and the IG1000mm In-ground Gateclaw system.

Introduction

Gateclaw is designed as a modular system with each unit's mechanism acting independently of each other. To achieve the required system length, the units are butted to each other to obtain the overall road area required. For example, a 3.5m road width would require 3 x Gateclaw 1000mm and 1 x Gateclaw 500mm (The IG1000 is only available in 1000mm sections). In some circumstance's customers may require a gap between units, to allow for example bicycles to transit the Gateclaw, in which case allowance needs to be made to accommodate this by spacing between the units but not too wide so as to allow vehicles to place a tyre in the gap. End caps are not required for the Gateclaw system.

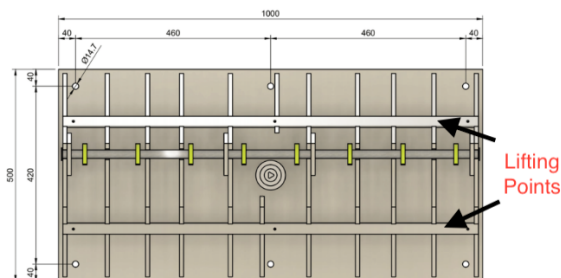
Each module is supplied with neoprene damping pads, 6 with each Gateclaw 1000 and 4 with each Gateclaw 500. These pads are holed (12mm) and are designed to be placed underneath the Gateclaw in line with the holes (14mm) situated in each corner of the base unit and also centrally in the Gateclaw 1000 and Gateclaw IG1000.

With each order includes a long handled locking key and a 5mm T Handle Allen key for removing the top plates.

The purpose of the neoprene pads is to adsorb/dampen impact on the Gateclaw as well as helping to retain tension on the fixings, reduce potential road noise and to create an air gap to allow water to drain away.

Installation of GC1000 and GC500

1. Once the surface area has been identified, unlock the Gateclaw by rotating the locking mechanism with the long key provided making sure the spikes are in the Active Mode (meaning they can be pushed down and spring up again). The top plate can then be removed using the allen key provided.
2. With the top plates removed, the base units can then be lifted and positioned according to where they are to be located. Caution, do not use the central spike bar to lift the units, instead use the longitudinal rib braces on each side of the Gateclaws rib structure. Checking in the process that the ground is level and each unit is sitting flush to the road surface. If the surface has any undulations or irregularities, ground works may be needed to level the surface area of the road where the units are being installed.

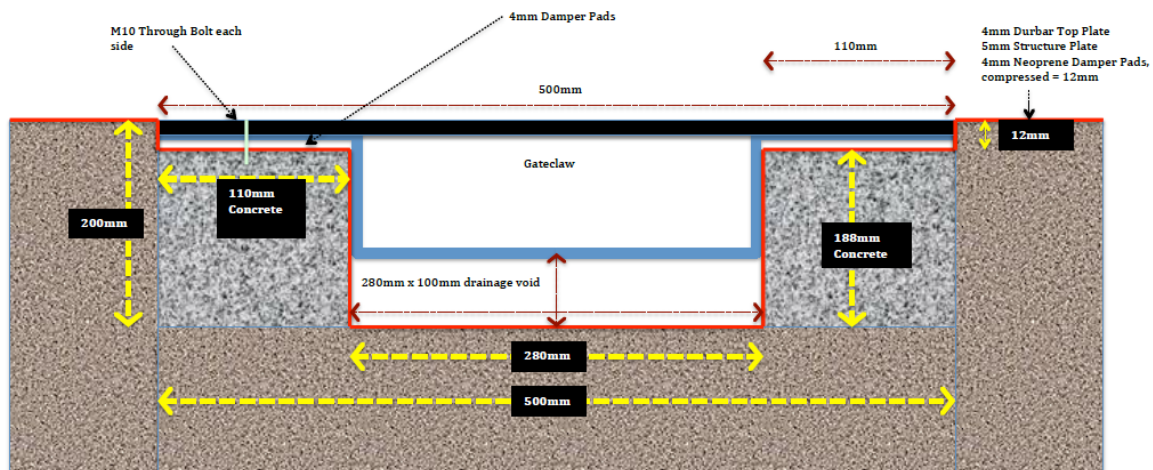


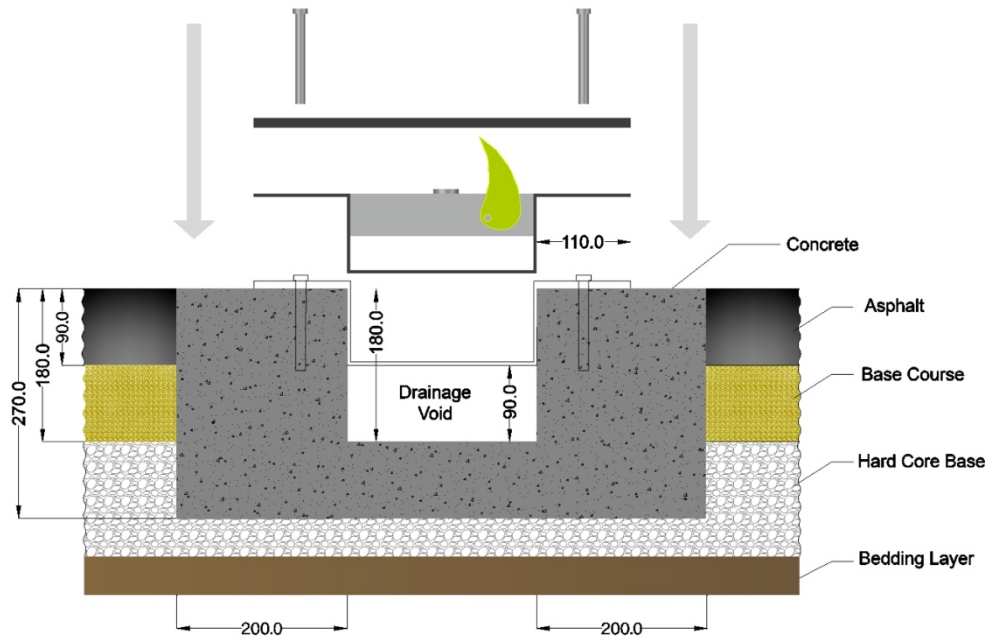
3. Once all the base units are in place and the claws are correctly aligned (facing away from the direction of the normal traffic flow) mark the road surface where the bolt holes are located and remove the base units.
4. The next stage is to hole the road surface, before this is done the installer needs to decide if they intend to use masonry through bolts or alternatively we recommend using threaded rod and epoxy resin setting. Either way the rod or bolt depth should be at least 120mm.
 - (a) Masonry through bolt: drill 12mm hole x 120mm deep and fit using M12 through bolt with standard nyloc nut and washer (not supplied).
 - (b) Threaded rod: drill 14mm hole x 120mm deep and epoxy set M12 threaded rod cut to 160mm lengths with standard nyloc nut and washer (not supplied).
5. Once the holes have been drilled or the threaded rod is set and cured, place a neoprene pad over each protruding stud or in line with the base plate's 14mm holes. Then fit the base units over the protruding studs or, if through bolts are being used, over the holes in the road surface.
6. The units can now be anchored to the road, care should be taken not to over tighten either the through bolts or nuts on the threaded rod, hand tight should be ample.
7. Checking that all units are equally anchored and level, grind or cut off any residual rod or bolt that is protruding more than 5mm above the nut. Replace the top plates and set the locking mechanism to the required mode. i.e. active/locked down/locked up.
8. The spike bar in each unit has a hole in one of the claws. This is designed to allow the operator to padlock the unit claws in the 'locked up' mode if desired.

Installation of IG1000 (in-ground Gateclaw)

Ground works

The below schematics are typical/ suggested cross sections of the ground works required to house the IG1000. Note the walling aspects which are important for the structural stability of the IG1000 and the bottom void for water drainage.





1. Once the ground works have been completed, unlock the Gateclaw by rotating the locking mechanism with the long key provided making sure the spikes are in the Active Mode (meaning they can be pushed down and spring up again).
2. Undo the 12mm set bolts securing the top plate to the base and discard, these are just for transportation. With the top plates removed, the base units can then be lifted and positioned according to where they are to be located. Caution, do not use the central spike bar to lift the units. Checking in the process that the ground is level and each unit is sitting flush to the road surface. If the surface has any undulations or irregularities, additional works may be needed to level the surface area of the road where the units are being installed.
3. Once all the base units are in place and the claws are correctly aligned (facing away from the direction of the normal traffic flow) mark the road surface where the bolt holes are located and remove the base units.
4. The next stage is to hole the concrete side walls, before this is done the installer needs to decide if they intend to use masonry through bolts or alternatively we recommend using threaded rod and epoxy resin setting. Either way the rod or bolt depth should be at least 120mm.
 - (c) Masonry through bolt: drill 12mm hole x 120mm deep and fit using M12 through bolt with standard nyloc nut and washer (not supplied).
 - (d) Threaded rod: drill 14mm hole x 120mm deep and epoxy set M12 threaded rod cut to 160mm lengths with standard nyloc nut and washer (not supplied).
5. Once the holes have been drilled or the threaded rod is set and cured, place a neoprene pad over each protruding stud or in line with the base plate's 14mm holes. Then fit the base units over the protruding studs followed by the top plates.
6. The units can now be anchored to the road, care should be taken not to over tighten either the through bolts or nuts on the threaded rod, hand tight should be ample.
7. Checking that all units are equally anchored and level, grind or cut off any residual rod or bolt that is protruding above the nut ensuring the thread is still operable and there are no sharp burrs that could damage tyres. Set the locking mechanism to the required mode. i.e. active/locked down/locked up.
8. The spike bar in each unit has a hole in one of the claws. This is designed to allow the operator to padlock the unit claws in the 'locked up' mode if desired.

Gateclaw Maintenance

The Gateclaw's are designed to be low maintenance. However, periodic greasing of the spike bars situated in the area where they meet the cradles in the internal rib structure, may be required if the units start to squeak each time the claws are driven over. Likewise, greasing of the bottom surface of the removeable locking barrel may be necessary after a period of operation.

Periodic or monthly general dry cleaning of the inner base unit is recommended to prevent build-up of debris that might interfere with the Gateclaw operation. This is best carried out with an airline or alternatively a small brush. With an airline the dry cleaning can be done in a matter of minutes.

Spring replacement, if the vehicle transiting speeds are too high this can result in broken springs due to the impact, in which case each spring can be simply unhooked and replaced. Checking/re-tightening of the bolts which secure the Gateclaw to the road surface is advisable after a period of operation in case there has been some settling or loosening of the nuts.

The central locking mechanism has a sprung stainless-steel bar which is designed to prevent the locking mechanism rotating due to vibration or movement caused by traffic transiting the Gateclaw. Care should be taken to ensure the locks rotate fully home in each of the three positions and the sprung steel bar is retaining the lock in the correct position. Failure to fully rotate/retain the lock in the correct position could cause the claws to release if Locked down or jam if in Active mode.

Gateclaw Maintenance Instructions

To ensure your Gateclaws operate correctly, regular maintenance and inspection of the product is essential. The frequency this is required can vary depending on the installation location and the traffic volumes transiting the Gateclaw. The suggested frequency for high volume traffic scenarios is monthly but this can be adjusted if on inspection the accumulation of debris inside the Gateclaw is found to be minimal.

- Ensure spikes are raised.
- Remove top plate socket head bolts using an Allen key (careful not to thread or round off the bolts!).
- Remove top plate and sit adjacent to base, top plates are matched to their bases!
- Lift the locking disc, clean and lightly grease its underside and three pins.
- Using either an airline, Hoover or small brush remove any debris especially underneath the locking disc and under the return springs.
- Replace the locking disc aligning it with the spike bar cam.
- Check the sprung steel bar on the locking mechanism is secure and in contact with the outer edge of the locking disc.
- Wire brush any rust build up on parts.
- Check the return springs for any breakages in the actual spring or the two loops at each end.
- To clean the "Return" springs depress the spike bar to extend the spring and brush away any debris in the spring. Greasing of the return spring is not necessary. If necessary lightly oil the return springs to reduce any squeaking.
- Check the bolts holding the return springs are secure and in place.
- Remove any debris from the compression bolt spring and lightly grease.
- Check for wear on the spike bar cam caused by impact from the compression bolt.
- Check there is play in the compression bolt (4mm+) by pushing the claw spike away from normal line of travel (i.e pull it back against the compression spring). If the claw spike

doesn't move from its top vertical position by at least 4mm the compression bar isn't set correctly and needs adjusting by loosening off the nut.

- Routinely check for burring on the tips of the spikes* and if necessary dress the spike tips with a file or grinder to remove any burrs.
- Once all checks and maintenance are done, check the position of the claw spikes. In the vertical or UP position the tip of the claw should be at least 10mm or 10deg off top dead centre*. i/e leaning away with the direction of vehicle travel.
- Replace top plate and replace any socket head bolts that are rounding, threading or showing signs of corrosion. Lightly grease or lubricate the top plate socket head bolts and tighten hand tight!!!
- Using the locking key, push the spikes down and check the locking mechanism by locking the spikes down, release the spikes so they spring up then lock them in the upright position. Once these checks are done the spikes can be set as required. I.e UP/DOWN or ACTIVE.

*Spike tip burring. If the spikes tips are burring it is due to the tips hitting the base plate. This is sign of excess vehicle speed depressing the spikes. And can result in the burrs damaging the vehicle tyres passing over it.

*If the spikes are aligned less than 10deg off top centre this can cause damage to tyres and adjustment of the compression bolt is required.

Caution, any rubber debris found in the base of the unit indicates that one of the above faults is present and immediate attention is required.

Corrosion prevention.

Rust: Whilst rust build up shouldn't affect the operation of the Gateclaw, periodic wire brushing and lightly greasing the areas affected should help to reduce this.

Socket Head Bolts: These are Stainless Steel so are subject to metallurgic reaction with the Mild Steel base plate threads. If the Gateclaws are not maintained regularly the bolts can seize in their threads. Make sure the bolts are hand tight only.

Road Gritting: Any introduction of Road Grit or Salt to the Gateclaws will result in excessive corrosion and damage to the Gateclaws!! If unavoidable the Gateclaws should be thoroughly cleaned out and pressure washed to remove any grit or salt and then lubricated as per normal maintenance requirements.

Gateclaw Refurbishment

After a while, if deemed desirable SAE Systems can offer a refurbishment of the Gateclaws to include re-painting of the spike bars, top plates, general inspection and replacement of any parts required.

Maintenance packages

SAE Systems Ltd is happy to offer periodic return to base maintenance packages if required, please contact our office directly on 01692 671918 or email info@sae-ltd.com

Gateclaw Traffic Spike System Product Disclaimer:

Responsibility and Liability:

SAE Systems Ltd, herein referred to as "the manufacturer," explicitly disclaims any responsibility for damages, injuries, or any adverse consequences towards individuals, vehicles, or property resulting from the use of the Gateclaw Traffic Spike System. Upon purchase, all legal responsibilities associated with the operation and consequences of the Gateclaw system are transferred to the buyer. The buyer acknowledges that they have familiarised themselves with the product, comprehended the associated risks, and accepts all legal liabilities arising from its use.

The buyer confirms having reviewed the manufacturer's recommendations concerning product maintenance, operation, proper siting, installation, and traffic management. This includes understanding and mitigating the risks outlined in this disclaimer, thereby accepting full responsibility for any consequences that may arise.

Warranties:

Warranties provided by SAE Systems Ltd cover only parts that have failed due to manufacturing faults. These warranties do not extend to issues arising from normal wear and tear, lack of or inadequate maintenance, incorrect installation, or improper siting of the product. The buyer is responsible for ensuring proper care, maintenance, and adherence to installation guidelines to maintain warranty coverage.

By purchasing and using the Gateclaw Traffic Spike System, the buyer acknowledges and agrees to the terms and conditions outlined in this disclaimer, thereby releasing SAE Systems Ltd from any liability beyond the scope of the provided warranties.