

## Equipment for Butleigh Handrail.

JP Kitcher 15/07/2024

Butleigh bellringers have been provided with a suitable length of 40mm diameter gold coloured rope with which to make a handrail on the outer wall of their tower.

The illustration is of a fixing with 40mm plastic pipe viewed from below. (Without wall adhesive)

### ***Bracket combination:***

Wall bracket

M8 bolts

M8 bolts and nyloc nuts.

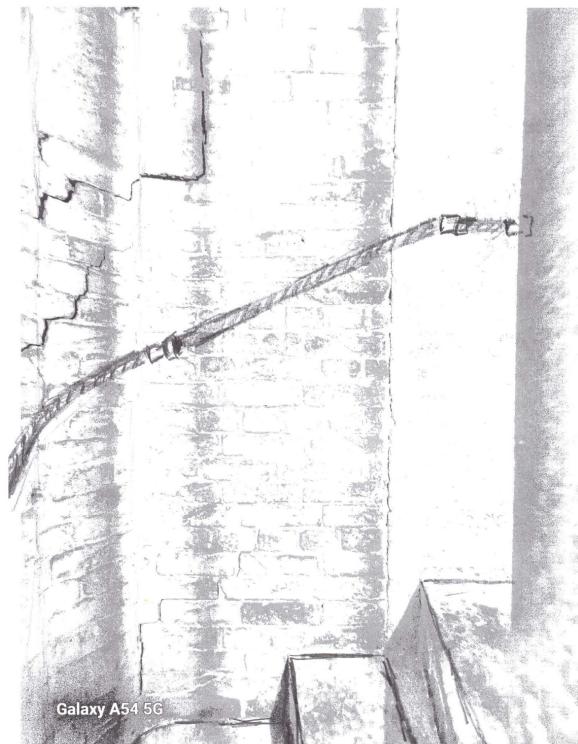
Wall adhesive

Lug plate Key Clamp plus Single Lug Collar Key clamp .  
(photo with screw, now recommended are M8 bolts)



Superglue to stiffen the braided rope which will be used in this application. (Used sparingly so it is only within the outer ring.)

### ***Sketch of the top of the stairwell with rope handrail***



## **Components**



A36 (173M) Single Lug Collar Key Clamp

Price (ex. VAT 17/07/24): Sale price £1.10 (42.4mm OD)

M10 hole

<https://lockinex-store.com/products/single-lug-collar-key-clamp?variant=41904642621692>



A50 (169M) Lug plate Key Clamp

it has nominal M10 fixing holes

Price (ex. VAT 17/07/24): Sale price £1.08 each

<https://lockinex-store.com/products/lug-plate-key-clamp>

Westfield Fasteners.

Stainless steel items. For joining the two components of the bracket.

M8 x 35mm Hex Bolt Part Thread in A2 Stainless box of 100 for £20.74

[https://www.westfieldfasteners.co.uk/A2\\_ScrewBolt\\_HexHd\\_M8\\_THRpart.html](https://www.westfieldfasteners.co.uk/A2_ScrewBolt_HexHd_M8_THRpart.html)

[https://www.westfieldfasteners.co.uk/Metric\\_Nuts/Nyloc\\_Nut\\_Type\\_T\\_Thin\\_M8\\_A2\\_Stainless.html](https://www.westfieldfasteners.co.uk/Metric_Nuts/Nyloc_Nut_Type_T_Thin_M8_A2_Stainless.html). 7 packs of 3 at £1.48 – about £10.40 not including postage) other sources available.

[https://www.westfieldfasteners.co.uk/A2\\_Nut\\_HexNy\\_M.html](https://www.westfieldfasteners.co.uk/A2_Nut_HexNy_M.html)

also

M8 x 50mm Hex Bolt Part Thread in A2 Stainless. Box of 80 for fixing to the wall.

CT1 adhesive (Beige) ( or Grey) -aim for a near colour to that of the stonewaork.) £15 a tube (about 3/4 tubes will be required.)

<https://www.ct1.com/products/ct1/> available in CRS Ltd Wells (Southover)

(Screwfix and B&Q now sell a rival branded product)

## **Method statement.**

Complete the markup of the stair-well with a chalk line one metre above the fall of the steps. Mark on this line positions for the lug plate clamps at uniform intervals. When possible utilise the stonework joints.

Drill M8 holes at each of the lug plate clamp positions.

Loosely attach the lug plate clamps following the fall of the chalk line. Check the holes are free of dust. Insert some CT 1 into the drilled holes and a slug of CT1 builders adhesive onto the lug plate, Press in evenly and push bolts into the holes.

It will be 24/48 hours for the attachment to be at full strength, The bolts will maintain the unit in position while the adhesive cures and also provides additional anchorage to the stone wall.

Thread all the single lug collar key clamps onto the rope.

Start at the top and attach the single lug collar key clamps to the 1 lug plates with the stainless steel bolts and nylock nuts.

(The end of the rope will have needed treatment to taper it and seal its end. Use heat to melt the plastic and shape it so that the single lug collar key units can be fitted. This action will also prevent unwinding/fraying.)

Approximately adjust the rope all the way down. Secure the top by moving the rope a little, adding superglue and slipping this glued portion into the single lug collar key clamp.

Provide time for this first fixing to set. Tighten the grub screw. (The rope with the adsorbed and reacted superglue will be hard/stiff)

At the next bracket combination move the rope a little, add the glue and pull it tight before tightening the grub screw. Repeat working down for all the fixings.

### ***Risk Assessment precautions***

Use battery powered hammer drill for holes in the stonework. Hazard: stone dust in a restricted low ventilation area. Filtering face mask required. Heavy gloves to dampen vibration transmission to arm.

Disposable gloves when applying the CT1 adhesive/filler.

Disposable gloves when applying superglue. Be aware; if the sharp odour of acrylic acid is noticed then cease the operation until PPE charcoal filtered breathing apparatus is available. This material can cause a lung problem on prolonged exposure.

A second person to assist in moving the rope into position. With clamps threaded on it will be heavy.