LIFTING SLING FITTINGS FOR WIRE ROPE

SOCKETS



Applications

Sockets are used as a connection to attach steel wire rope to a fixed point. This may be an anchoring system for tubes or pipes, anchor wires for dredging materials, anchor cables for oil platforms, fastening points for towing cables or for fastening cables in constructions such as bridges, roofs etc. Sockets are designed for in-line use only. Sockets are the strongest steel wire rope end fittings available. If they are assembled in the proper way they meet or exceed the breaking strength of the steel wire rope.

Design

Green Pin® open- and closed spelter sockets and Green Pin® open wedge sockets are made from cast high tensile steel.

These sockets are generally marked with:

- manufacturer's symbol - e.g. GP
- wire rope diameter in mm and inches - e.g. 20-22 and $^{7}/_{8}$"
- traceability code - e.g. A01
- socket number - e.g. 104

Swage sockets are drop forged from special bar quality carbon steel C-1035 and spheroidized annealed to make them suitable for cold swaging.

Socket Lock Socketing Resin

To offer a complete assortment, Green Pin®'s parent company, Royal Van Beest, is the distributor of Socket Lock Socketing Resin. Socket Lock Socketing Resin is designed for speltering wire rope. Socket Lock is developed with a unique formula that uses polyester fibres to thicken the resin and provide a homogenous (consistent) resin cone throughout. Unlike traditional products, which use large grain silica to thicken the resin, the fibres of the innovative Socket Lock Socketing Resin will suspend within the mixed resin and provide a consistent resin cone from top to bottom. The consistency of the resin cone prevents the formation of surface cracking once the resin is hardened. The formula is developed to ensure the resin flows easily and can optimally penetrate the bottom of the socket. This will result in an excellent resin cone, providing the end user with a high-quality socket termination. Socket Lock Socketing Resin kits are now available from stock at Green Pin® and can be ordered in kit sizes of 250, 500, 1000 and 2000 cc.

Additionally, Green Pin® also has the Socket Lock Socketing Booster Pack available. The booster packs are used for cold temperature socketing and are required when ambient temperatures are below +16 °C (+60 °F). For instructions for use, please consult the Green Pin® website: www.greenpin.com/socketlock.

Instructions for use

1) Open spelter sockets – closed spelter sockets

In the past melted zinc was poured into the sockets to fix the steel wire rope; nowadays resins are used for this purpose.

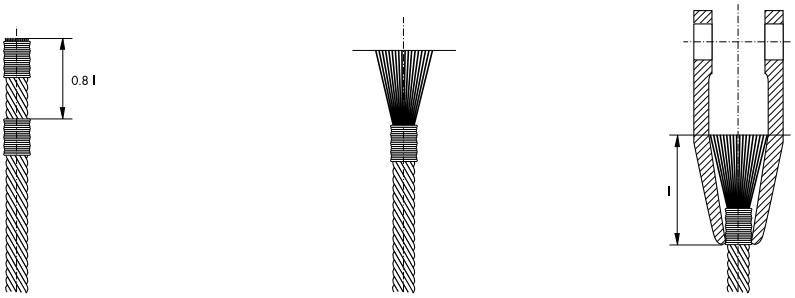


Figure 1

- brooming is done after the wire rope has been placed into the socket;
- when using resins always exactly follow the instructions given by the manufacturer carefully;
- socketing must be done by specialists in a certified sling shop.

2) Open wedge sockets

The wedge and body act as a vice which grips the wire rope and locks it in place. Green Pin® wedge sockets may be used within the range of wire rope diameters as shown in the table further on in the catalogue.

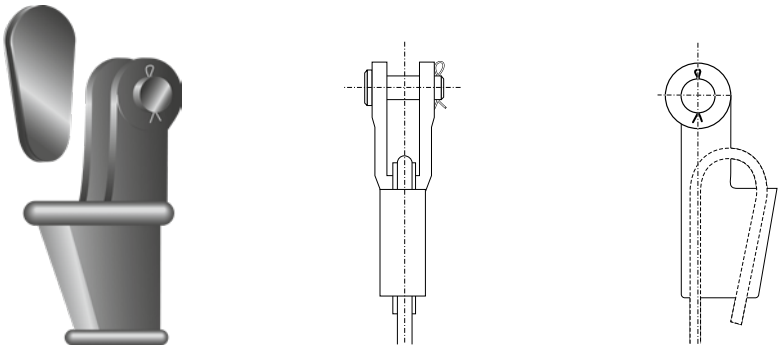


Figure 2

When using open wedge sockets the following precautions should be taken:

- before use always inspect the socket, the wedge and the pin;
- use only with standard 6-8 strand wire rope;
- in case of use with non-rotating wire rope there is a risk of core slippage or loss of rope lay. Instruction from the wire rope manufacturer must be followed to prevent this by; for example welding, brazing or seizing the dead end before introduction in the socket. The minimum tail length is 20 times the wire rope diameter. Furthermore, the wire rope construction must be checked for suitability of bending around the radius of the wedge. Additional measures might be necessary to prevent distortion;
- always be sure that socket and wedge have the correct size for the wire rope diameter;
- the loaded part of the steel wire rope should be mounted in the centre line of the pin;
- when installing the wire rope, always pre-load the wedge with the wire rope in place;
- never weld the tail; the tail should have a length of at least 6 times the wire rope diameter with a minimum of 150 mm. Secure the dead end of the rope with a wire rope clip as shown in figure 3;
- before applying the first load always use a hammer to seat the wedge and rope into the socket as deep as possible;
- check the assembly regularly; re-tighten or re-position if necessary;
- never side load a wedge socket as it has not been designed for that purpose;
- load may slip if the connection is not properly installed;
- the efficiency of a wire rope - wedge socket connection is 80% of the minimum breaking load of the wire, but is limited to the minimum breaking load of the socket;
- only use the original wedge supplied by the manufacturer of the socket and be sure it is suitable for the diameter of the rope used;
- never use a wedge from any other supplier than the original socket supplier as the dimensions will not match.

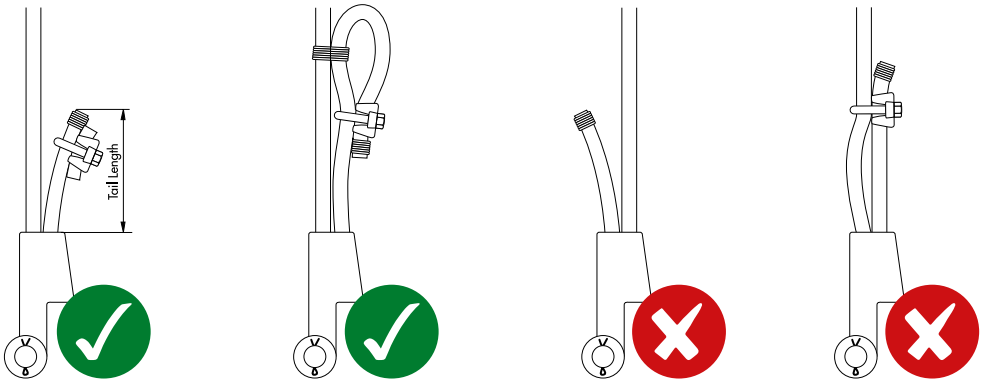


Figure 3

3) Open Long wedge sockets

Verify whether the wedge, socket and wire rope clip match to the wire rope size. In case of the long wedge sockets (G-6419 and G-6429) the correct wire rope size shall be verified using the "GO" and "NO GO" hole (see Figure 4);

- The wire rope MUST pass through the "GO" hole in the wedge;
- The wire rope shall NOT pass through the "NO-GO" hole in the wedge.

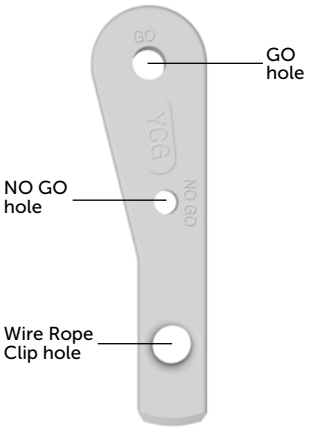


Figure 4

In case of the long wedge sockets (G-6419 and G-6429) mount the corresponding Wire Rope Clip (G-6240) on the dead end section, providing a grip for the tail of the wire rope (see Figure 5 below). The tail length of the wire rope has to be at least 6 times the wire rope diameter with a minimum of 150 mm.

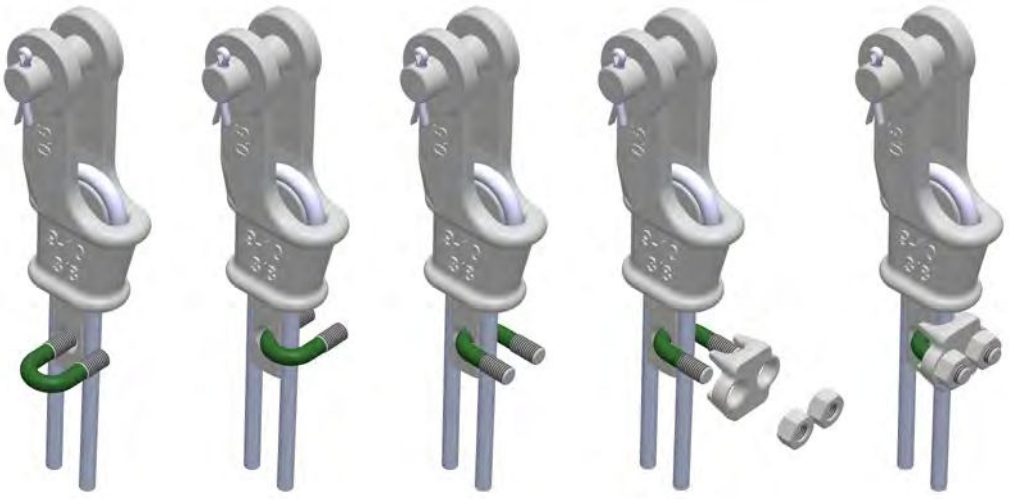


Figure 5

4) Swage sockets

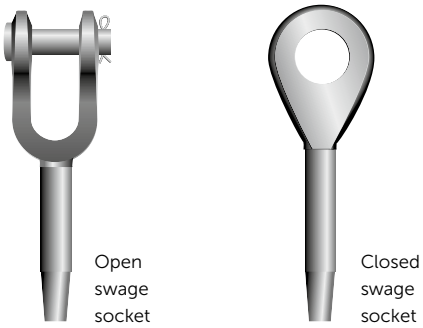


Figure 6

Swage Sockets are recommended for use on 6 x 19 or 6 x 37 IPS or XIP (EIP), XXIP (EEIP), RRL, FC, or IWRC wire ropes. They are also approved for use on galvanized bridge rope. Before using swage socket assemblies, it is recommended that the termination be proof loaded to prove the adequacy of the assembly. Always swage under supervision of a specialist from a certified sling shop.

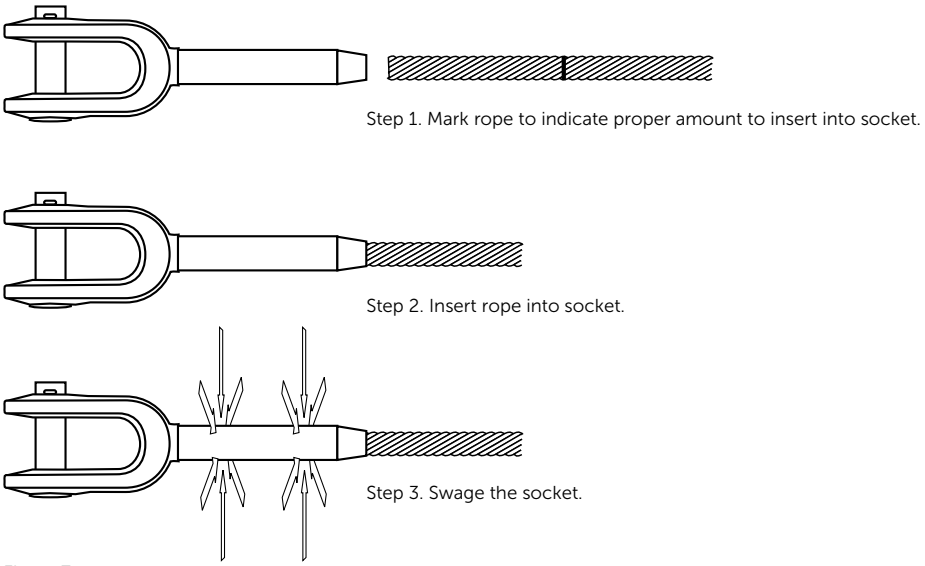


Figure 7

INFO For more instructions on swaging we refer to the swaging instruction (PI-03-14 in the FAQ section) on our website.

Sockets must be regularly inspected in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading etc. which may lead to deformation and alteration of the material structure. Inspection should take place at least every six months (follow the local rules in the country of use) and more frequently when the sockets are used in severe operating conditions.