

Instruction for the use of asymmetric wedge sockets acc. to / similar to DIN EN 13411-6 and DIN 43148

Method of assembly:

1. Prior to assembly the socket body and the pin should be examined to ensure they are free from any defect that will affect the effectivity and performance of the assembly.
2. It is essential to use only a wedge and a socket body of the correct dimensions and strength for the particular (steel) wire rope. Failure to do so may result in the rope pulling through the fitting, or in failure of the wire rope, or the termination. No attempt should be made to modify the socket body or wedge in any way.
3. Socket bodies and wedges from different manufacturers should not be assembled together, even though they may be designed for the same size of rope. Components of different designs should not be mixed and the manufacturer's marks and the fit of the wedge (with the rope) in the socket body should always be checked at the time of the assembly. An oversize wedge, or a wedge of wrong taper, will not enter the socket body sufficiently to give a secure termination; a wedge too small will protrude too far through the socket body and the high localised loading may cause the socket body to crack and open out, allowing the wedge to pull through. To reduce the risk of confusion of a body and wedge of different sizes or manufacture, the socket body, pin and wedge should be secured together during storage and transport of the termination.
4. When a rope is to be terminated with a wedge socket assembly this can only be achieved by shortening the rope. No part of any previous flattening and/or damaged rope should be within the area of the bearing part of the rope or within the clamping area between either side of the socket body and the wedge.
5. The rope should be fitted so that the bearing part is not kinked where it leaves the socket body. Incorrect fitting will result in premature failure of the rope.
6. When the termination is made up, the tail-end of the rope left protruding should be long enough for whatever securing method is to be used (see fig. 1). For particular uses other methods for securing the tail-end could be applicable. It should be checked whether these are allowed for each use.
7. Rotation resistant ropes tend to show distortion when they are bent around small radii and may require temporary serving, e.g. with tape during fitting of the socket body. As much as possible of the serving should subsequently be removed to allow for inspection of the rope.
8. After a termination has been made or re-made, it is essential to check that the wedge and the rope are properly seated in the socket body before the equipment is put into service. Failure to do so may allow the rope to pull through the fitting or, particularly when the rope is new, the wedge may be sprung out of the socket body.

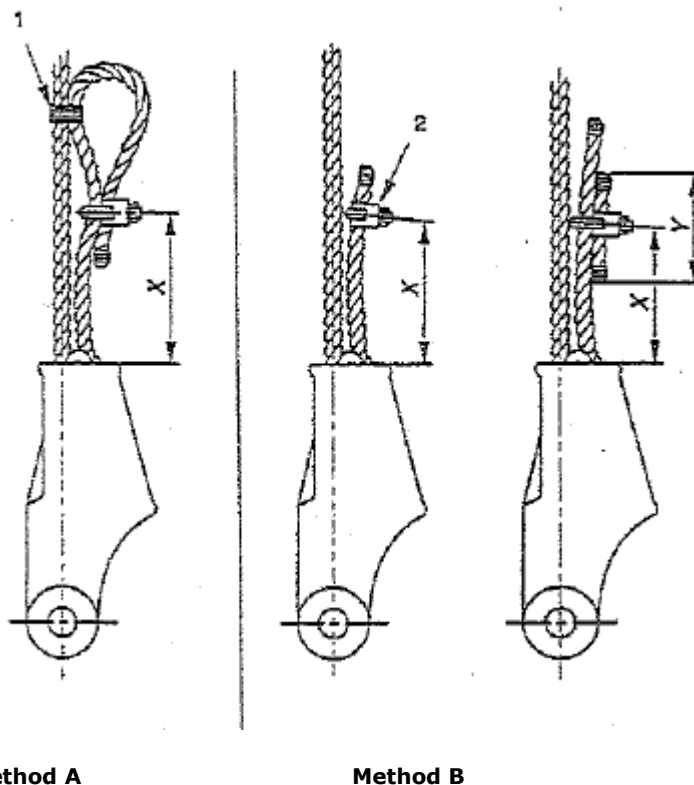
9. Tension should be applied to both sides of the rope to pull the rope and wedge into the socket body and the wedge hammered home using a wooden packer to protect the fitting and rope against damage. A load (at least equivalent to 10% of the minimum breaking force of the rope) should be applied and maintained, but not left unattended, to seat the wedge and rope firmly into the socket body. The wedge should be properly seated before the assembly is put into service.
10. In order to prevent the possibly loosening of the wedge while operation or a pulling-through of the rope while assembling the dead end side of the rope has to be secured. The different usage conditions have to be considered while securing. Depending on these conditions different methods are proposed for the procedure with the dead end: The objective of these methods is to prevent the rope being pulled through the body.
The methods are as follows:
 - a. The tail-end may be looped back on itself and secured by a U-bolt wire rope grip conforming to EN 13411-5. The loop should then de-lashed to the standing part of the rope by suitable means, such as soft binding (serving) wire, to prevent flexing of the rope in service, see fig. 1 – method A.
 - b. Where there is a possibility of the loop in the method A interfering with an obstruction (such as the working structure) which might cause the wedge to loosen and the rope run free, the tail-end length of the rope should not be looped back, but should be laid parallel to the standing part of the rope. A distance piece or short length of rope of the same diameter and a U-bolt wire rope grip conforming to EN 13411-5 will be necessary to ensure that the tail-end is adequately secured, see fig. 1 – method B. If necessary the tail-end may be secured to the standing part with soft binding (serving) wire.
 - c. Alternatively, a wire rope clip with shortened brackets could be used.

The wire rope grip is used to ensure that the rope cannot slip through the socket body before the wedge has had a chance to seat adequately. The clamp or wire rope grip should not be allowed to encroach on the fused end of the rope.

11. Special care is necessary when tension may be completely removed from the rope, e.g. when a load is set down and when there is a possibility that the wedge may become loosened.
12. The pin should be secured in such a way that it cannot move from its position during operation.
13. Case depending (for example: lift construction), the end termination has to be secured against twisting.
14. If the rope end connection with this wedge-socket is exposed to raised temperatures (e. g. by fire), all parts of the rope end connection have to be replaced with new parts.

Inspection in use:

1. Wedge socket terminations should be inspected at the time of rope inspection.
2. Particular attention should be paid to the following:
 - a. Rope damages, e.g. broken wires, or deformation of the rope where it emerges from the socket body;
 - b. The conditions of the socket body, e.g. cracks, particularly if the wedge is seen to protrude excessively. The lugs of the socket body should be examined for possible deformation, cracks or other defects;
 - c. The security and tightness of the wedge fitting;
 - d. Condition of the pin including any screw thread and the presence of the split cotter pin correctly positioned and locked in.
3. The socket body and the wedge and the part of the rope lying inside the fitting should be examined each time the assembly is dismantled for any reason. A wedge or socket body found to be damaged should be replaced.



Key

1 Soft wire

2 U-bolt wire rope grip

Fig. 1 – Two methods of dealing with the rope tail-end

For particular uses other methods for securing the tail-end could be applicable, which prevent the wedge from dropping when the load is removed. It should be checked whether these are allowed for each use.

Note: The measurement X in fig. 1 being the distance of the grip from the nearest part of the socket body. This distance, should be no more than 75% of the overall length of the wedge, in order to avoid, - if X were too small - deforming the rope; or allowing the wedge to fall clear of the socket body if the rope were slack and X were too great.