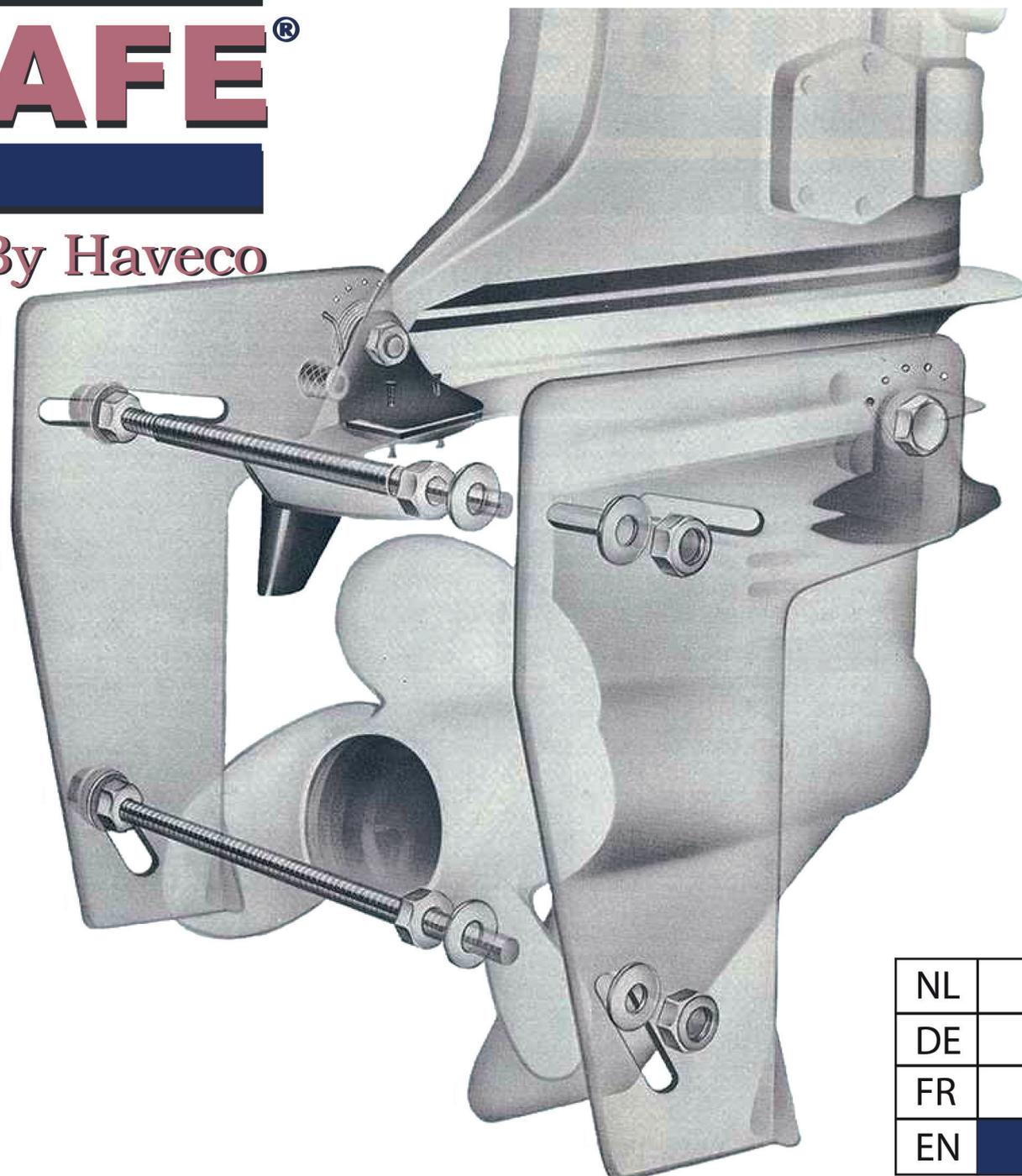


RUDDERSAFE[®]

By Haveco

THE DUAL RUDDER

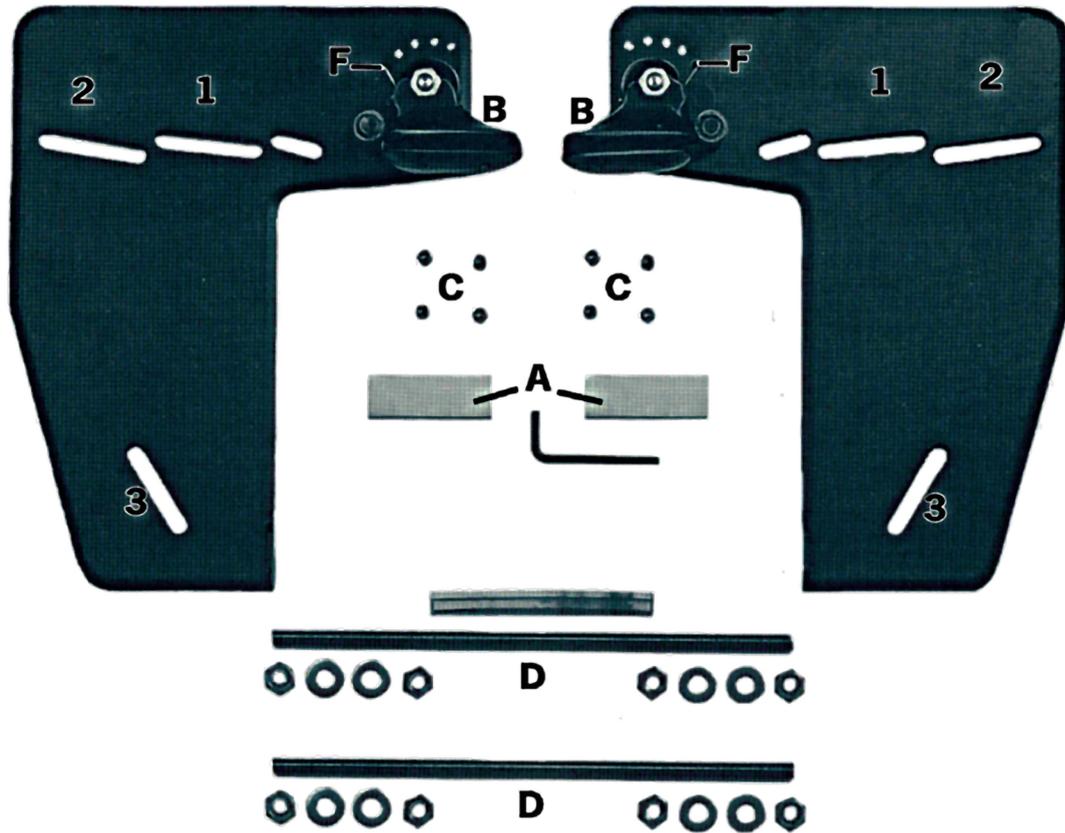


The Captain's Choice

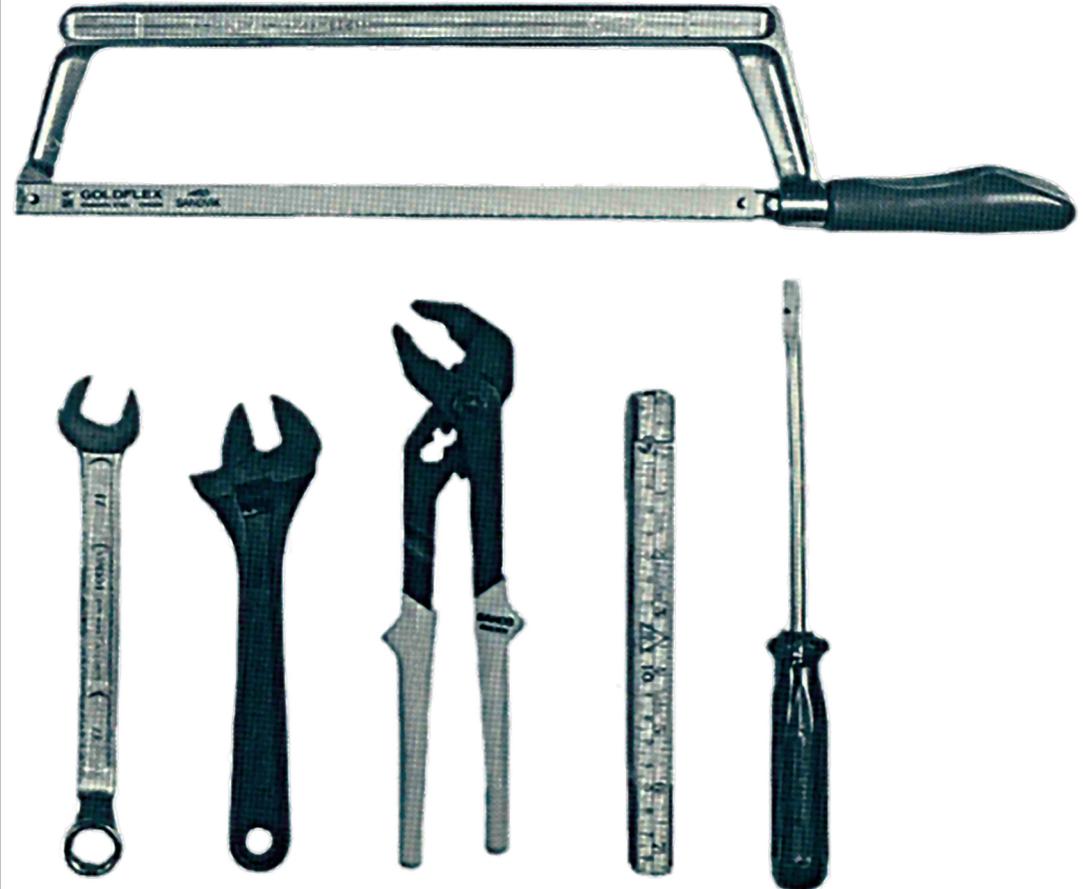


NL	
DE	
FR	
EN	

RUDDERSAFE - Parts (delivered with the Ruddersafe Standard Type):



Tools that are needed (NOT included):



MORE INFORMATION:

Visit us:

WWW.RUDDERSAFE.COM
WWW.HAVECO.NL

RUDDERSAFE - INSTRUCTIONS MANUAL - ASSEMBLY INSTRUCTIONS

Carefully read the assembly instructions before installing the RUDDERSAFE. Always follow the instructions carefully! The numbers and letters at the back of the instruction manual refer to the section of the assembly instructions concerned. The diagrams at the front of the instruction manual show how the RUDDERSAFE must be assembled.

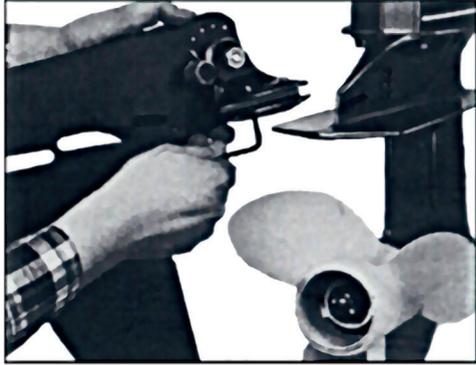


Image 1

Screw the adjusting screws (C) into the brackets. During coating, a protective layer is applied to the screw thread. This may make it slightly more difficult to screw the adjusting screws into the bracket. The coating can be removed with an M8 bolt or stud.

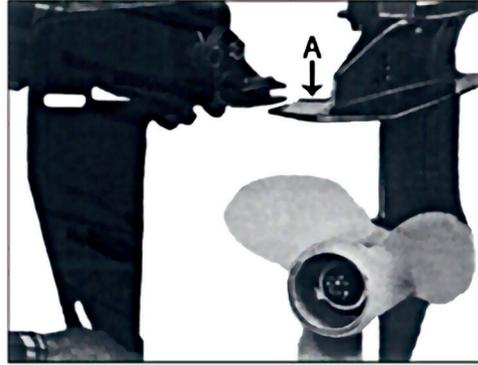


Image 2

If necessary, place the shim (A) on top of the cavitation plate.

Liquid Sealing Compound

Prevents screw threads, such as nuts, bolts and stud bolts, from coming loose or leaking.

Instructions: apply to the component directly from the tube. For the best result, clean and degrease the component beforehand. Apply enough product to fill the space. Fit the components and allow the compound to harden. The tube must contain air in order for the product to remain liquid. Easy to disassemble with suitable tools.

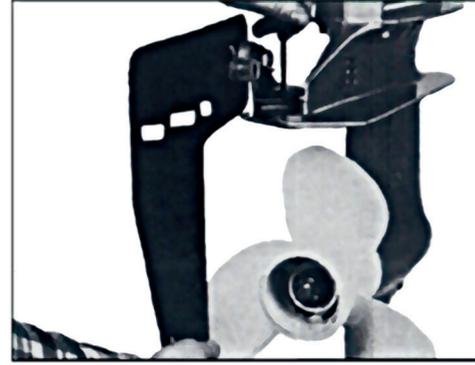


Image 3

Slide the rudder blade over the cavitation plate and any shims until it butts. Tighten the rudder blade to the cavitation plate **by hand** by **equally tightening** the top and bottom adjusting screws in turn, one revolution at a time. The rudder blade must be fitted on such way that it is parallel to the center-line of the engine.

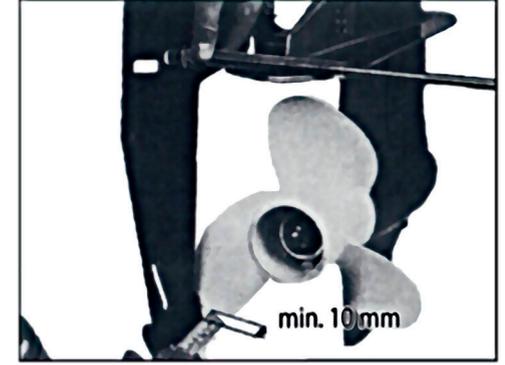


Image 4

The distance between the rudder blade and the screw must be approximately 2.5 cm. This is not a set requirement and can vary for each engine or tailpiece. It is not recommended that the distance be less than 1 cm.

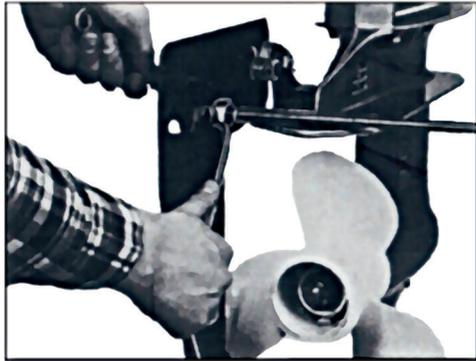


Image 5

Screw the stud bolt (D), with the protective cover, in **groove 1 or 2** and tighten it by hand. The stud bolt may rest against the tip of the cavitation plate. However, this is not absolutely necessary and not always possible and may vary for each motor. **Groove 2** is used more often. You must make sure that the stud bolt does not touch the tailpiece when the rudder comes out of the water higher speeds.

Comments:

At higher speeds, the increasing water pressure on the trimming tabs on the underside of the blades will lift the rudder out of the water. Therefore. It must be possible for the RUDDERSAFE to move freely. At low speeds, the springs will return the RUDDERSAFE to its original position. The tipping can be slowed down by tightening the springs.

It is recommended to check the adjusting screws and the nuts and, if necessary to retighten them, after 5-10 hours of sailing.

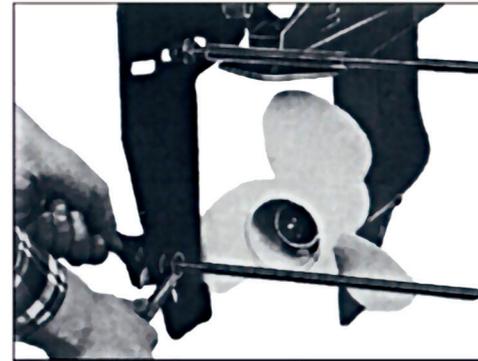


Image 6

Screw stud bolt (D) into **groove 3** and tighten it by hand. Make sure that the stud bolt does not touch the tailpiece when the rudder is tipped up. This can be avoided by sliding the stud bolts along the grooves or by moving the rudder backwards or forwards over the cavitation plate.

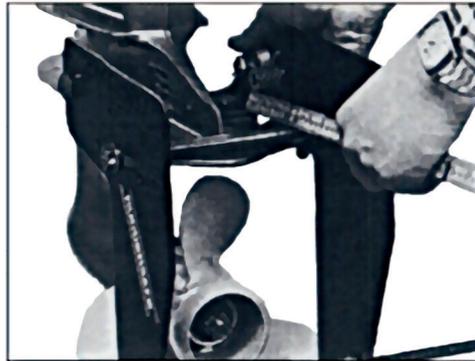


Image 7

Attach the second rudder blade as described in **Image 1 to Image 6**. The brackets must be equally spaced on the left and right-hand sides of the cavitation plate.

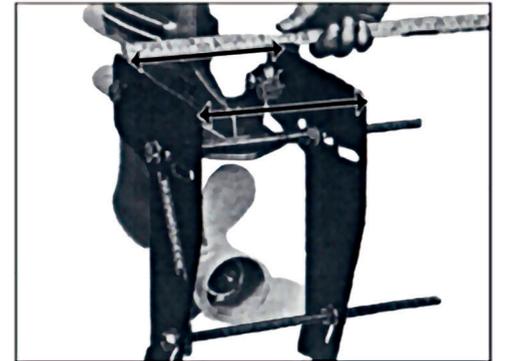


Image 8

In order for the RUDDERSAFE to work properly, the distance between the rudder blades at the top and bottom must be same and the blades must be parallel to each other and the center-line of the engine. This can be achieved using the stud bolts and the nuts. After the RUDDERSAFE has been correctly assembled and the adjusting screws and nuts have been tightened, the protruding parts of the stud bolts can be cut off along the lock using a hacksaw.

The RUDDERSAFE must be inspected during the engine's annual service. The inspection is limited to lubricating the tipping mechanism and, if necessary, cleaning and applying an antifouling layer.

Important! To protect the rudder against corrosion, it is recommended to attach an aluminium anode to the rudder and/or the tailpiece