Product Operation - How does it work?

The Prop Protector is a simple shaft driven rope cutter, rotating with the shaft and instantly cutting any rope, weed or debris picked up or snagged by the propeller.

Manufactured from high grade (316) Stainless Steel, the Prop Protector is easy to install - fully installed in minutes - with your boat out of the water or between tides. The clamp-on version can even be fitted by a diver if underwater installation is required. The Prop Protector sits on the shaft, between the propeller hub and the stern bearing, waiting to cut anything that threatens to entangle it. There are no moving parts to fail - just a razor sharp marine grade stainless steel blade - ready to slice through most marine debris.

Available to suit shaft sizes 20mm (¾ in) to 130mm (5 in). Prop Protectors can be fitted to a wide range of boats (yachts, motor cruisers, fishing vessels, barges etc.), and are available in two models, the Clamp-On & the Slide-On.

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Specifications

PLEASE NOTE: The Prop Protector is NOT designed to be used with outboard engines, stern drive engines or Saildrives. Diagrams are not to scale and the gaps shown are exaggerated for clarity.

The Slide-On Prop Protector

Manufactured in one piece with a width of only 12mm (0.47"), it is designed for installations where the gap between the propeller and the shaft bearing is small.

A gap of 18mm (0.7") is sufficient; this includes 6mm (1/4") of space for water to circulate to the shaft bearing. This type is available for shafts of 20mm (3/4") dia. up to 50mm (2 "). It simply slides onto the shaft after the propeller has been removed and is secured with a set screw that locates into a small drill dimple made in the shaft.

The Clamp-On Prop Protector

Supplied as an assembly that is split into two halves along the longitudinal axis so that it can be installed on the shaft without removing the propeller. The width is 17mm (0.67"). A gap of 23mm (0.9") is sufficient; this includes 6mm (1/4") of space for water to circulate to the shaft bearing. It is clamped onto the shaft by two Allen screws and is also fixed by a set screw that locates into a small drill dimple made in the shaft. This type is available for shafts of 20mm (3/4") dia. up to 40mm (1 5/8").

Medium Size: Manufactured and fitted as the Standard, the width is the same, the only difference is the blade diameter that is 105mm (4.13"). This type is available for shafts of 1 3/4" dia. & 2" and 45mm & 50mm.

Special: As above but with a larger blade diameter of 127mm (5"), for vessels with extra-large stern bearings and big propeller hubs.

Large Size: Manufactured and fitted as above, these large cutters have a width of 22mm (0.87") . A gap of 32mm (1.26") is sufficient; this includes 10mm (0.39") of space for water to circulate to the shaft bearing.

Extra Large Size: For vessels that are built with large struts or stern bearings. They are fitted in the same way as other Clamp-On units and have a width of 30mm (1.18"). A gap of 42mm (1.65") is sufficient; this includes 12mm (0.47") of space for water to circulate to the shaft bearing.

Cutters in the range 65mm (2 3/4") to 130mm (5") are for use on large vessels such as trawlers, fishing boats, harbour patrol boats, luxury yachts and cruisers. These cutters have a width of 33mm (1.3"). Not all cutters in this range are held in stock. ALL EXTRA LARGE CUTTERS ARE SUPPLIED WITH SELF LOCKING FASTENERS AS STANDARD.

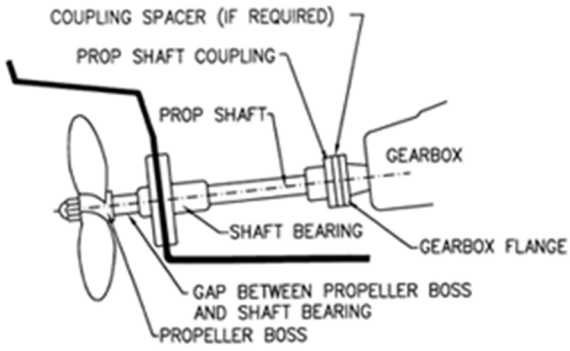
Technical Specifications

UNIT TYPE	FOR SHAFT DIAMETERS	Blade Dia.	Unit Width	Min Gap
Slide-on	3/4" 7/8" 1" 1 1/8" 1 1/4" 20mm 22mm 25mm 28mm 30mm	3.15" 80mm	0.47" 12mm	0.7" 18mm
Slide-on Special	1 1/4"	3.94" 100mm	0.47" 12mm	0.7" 18mm
Slide-on	1 3/8" 1 1/2" 35mm 40mm	3.94" 100mm	0.47" 12mm	0.7" 18mm
Slide-on	1 3/4" 2" 45mm 50mm	4.72" 120mm	0.47" 12mm	0.7" 18mm
Clamp-on Standard	3/4" 7/8" 1" 20mm 22mm 25mm	3.15" 80mm	0.67" 17mm	0.9" 23mm
Clamp-on Standard	1 1/8" 1 1/4" 30mm	3.35" 85mm	0.67" 17mm	0.9" 23mm
Clamp-on Standard	1 3/8" 1 1/2" 1 5/8" 35mm 40mm	3.74" 95mm	0.67" 17mm	0.9" 23mm
Clamp-on Medium	1 3/4" 2" 45mm 50mm	4.13" 105mm	0.67" 17mm	0.9" 23mm
Clamp-on Special	1 3/4" 2" 45mm 50mm	5.00" 127mm	0.67" 17mm	0.9" 23mm
Clamp-on Large	2 1/4" 2 1/2" 55mm 60mm	4.57" 116mm	0.87" 22mm	1.26" 32mm
Clamp-on Extra Large	1 1/2" 1 3/4" 2" 2 1/4" 2 1/2" 45mm 50mm 55mm 60mm	6" 150mm	1.18" 30mm	1.65" 42mm
Clamp-on Extra Large	2 3/4" 3" 3 1/4" 3 3/8" 3 1/2" 4" 65mm 80mm 85mm 90mm 100mm	7.48" 190mm	1.3" 33mm	1.77" 45mm

PLEASE CONTACT US FOR SHAFT SIZES OVER 100mm (4")

Installation

The diagram on the right illustrates the components associated with the selection and installation of all types of Prop Protector. Although the diagram shows one type of stern shaft bearing, the following notes apply equally to craft fitted with either P or A struts or brackets.



In most installations, the gap between the propeller hub and the shaft bearing is wide enough to allow the installation of a Prop Protector. This gap must be sufficiently wide to accommodate the cutter plus an additional gap of 6mm (1/4 inch) between the Protector and the bearing. Extra Large cutters need a gap of approximately 12mm (1/2 inch).

This extra gap is necessary to allow water to circulate to the shaft bearing for cooling and lubrication. It also allows for any end float on the prop shaft. If there is excessive end float due to gearbox end play or over-flexible engine mounts, this extra movement has to be provided for. The recommended gaps for all types of Prop Protector are shown in the specifications. If the gap on your shaft is inadequate, it can be increased by any of the following methods:

1. For adjustments of between 2mm (0.08 inch) and 5mm (0.2 inch), it may be possible to disconnect the prop shaft from the prop shaft coupling, move the shaft aft by the required amount and re-tighten the connection. If this method is used it is important to ensure that there is still sufficient engagement between the shaft and coupling to maintain a secure connection under full power.

2. For larger adjustments, a coupling spacer or a flexible coupling may be fitted between the coupling and the gearbox flange.

We can now supply coupling spacers for most of the popular gearboxes 'off the shelf'. See order page for further details. We can also arrange for the supply of spacers for gearboxes not listed. Please allow three weeks for delivery and supply full details of your engine and gearbox.

Underwater Installation

One of the unique features of the Prop Protectors is that they can be installed with the vessel afloat.

However, the thread-locking compound supplied with each cutter to secure the fastenings is intended for use only with the vessel out of the water; the compound will not cure underwater.

Owners wishing to carry out underwater installation should not use the fastenings or the thread-locking compound supplied, but should order the special self-locking fastenings we supply for this purpose and which are described below:

For all Slide-On cutters from 19mm (3/4 inch) to 50mm (2 inch) diameter shafts a single set screw is required per cutter.

For all Clamp-On standard, medium and large cutters for shafts 19mm (3/4inch) to 62mm (2 1/2inch) diameter, one set screw and two cap screws are required per cutter.

For all Clamp-On extra-large cutters for shafts 37mm (1 1/2 inches) to 100mm (4 inches) diameter, a similar but larger set of fastenings is required per cutter.

These fastenings have been fitted with a plastic insert which serves as a self-locking mechanism and can be re-used up to five times.

Other factors to consider when selecting the correct Prop Protector for your vessel

1.The diameter of the cutter blade must be larger than the diameter of the propeller hub and of the bearing housing in the strut of stern tube. If the blade is shielded by either of these, it cannot cut entangled line. The overlap of the blade should be at least 6mm (1/4 inch).

2.The minimum gap specified for each type and size of cutter should be of UNTAPERED shaft. If all or part of the gap consists of tapered shaft, a cutter for a slightly smaller shaft diameter should be selected so that it can then be machined to match the taper of the shaft.

3. Prop Protectors may be installed with the vessel afloat. Owners wishing to carry out underwater installation should not use the standard fastenings normally supplied but should order the special, self-locking fastenings available for this purpose.

All Prop Protectors are supplied with A4 Stainless steel fastenings, Allen keys, thread locking fluid and installation instructions. Both types are easy to install. For instance, the Clamp-On cutters can be installed in ten minutes

Typical Prop Protector Kit

Shown on the right is a typical Prop Protector kit. Kit includes Prop Protector, allen screws, allen keys, locking fluid, safety warning labels and full fitting instructions.

FAQ (Frequently asked questions)

Q1. How much space is required on the shaft for a PROP PROTECTOR?

A1. The SLIDE-ON type requires a gap on the shaft of 18mm (0.7") and the CLAMP-ON a gap of 23mm (0.9"). These dimensions include a 6mm (0.25") of space on the shaft to allow water to circulate to the cutlass bearing.

Q2. How long does it take to install the PROP PROTECTOR?

A2. The Clamp-On version can be fitted in approximately 10 minutes as the propeller does NOT need to be removed. The Slide-On version would take between 30 minutes and one hour as the propeller MUST be removed before fitting.

Q3. Will I need to buy new bearings for the PROP PROTECTOR every two years or so as with other cutters?

A3. No. PROP PROTECTORS have no moving parts and require no bearings.

Q4. Will I have to install zincs for the PROP PROTECTOR?

A4. No. The zinc usually installed on the propeller shaft will also protect the PROP PROTECTOR.

Q5. Will the PROP PROTECTOR corrode?

A5. No. PROP PROTECTORS are made of high grade 316 stainless steel and will never corrode.

Q6. Will I have to send my PROP PROTECTOR to the manufacturer for sharpening as with other shaft drive cutters?

A6. In the unlikely event that your Prop Protector requires sharpening, this can be easily done by you with a ceramic sharpening stone or a metal file.

Q7. Will my PROP PROTECTOR break on sun-hardened rope as some "chopping" style cutters tend to do?

A7. No, your PROP PROTECTOR will continue cutting while the shaft is turning.

Q8. Will my PROP PROTECTOR affect hull speed to a measurable degree?

A8. For vessels cruising at 25 knots or less the effect on boat speed is negligible. For high speed vessels at above 35 knots, RPM may have to be increased by about 10%.

Q9. Will my PROP PROTECTOR make a noise when the shaft is turning as some "chopping" style cutters do?

A9. No. PROP PROTECTORS are completely silent in operation.

Q10. How long has PROP PROTECTOR been on the market?

A10. PROP PROTECTOR has been selling in Europe since 1992, and the USA since 1995. Over 13,000 are presently in use.