WINCH SELECTION GUIDE

Which Winch?

There are a number of important criteria to be considered in selecting the correct anchor winch. These include the vessel size, displacement, windage, anchor size and rode selection. Practicalities such as locker space and depth of fall for the rode also play a part in deciding which windlass is ideal for you.

Maxwell Marine's range of windlasses and capstans is extensive, with models to suit boats up to 100 metres (over 300 feet). This section aims to simplify the selection process by taking you step by step through all the criteria that needs to be considered when choosing a windlass or capstan.

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WHAT SIZE WINDLASS OR CAPSTAN FOR MY BOAT?

Consider the overall length and displacement (either light or heavy) of your boat and use the chart provided to identify the most suitable windlass or capstan for your vessel.

VERTICAL OR HORIZONTAL CONFIGURATION?

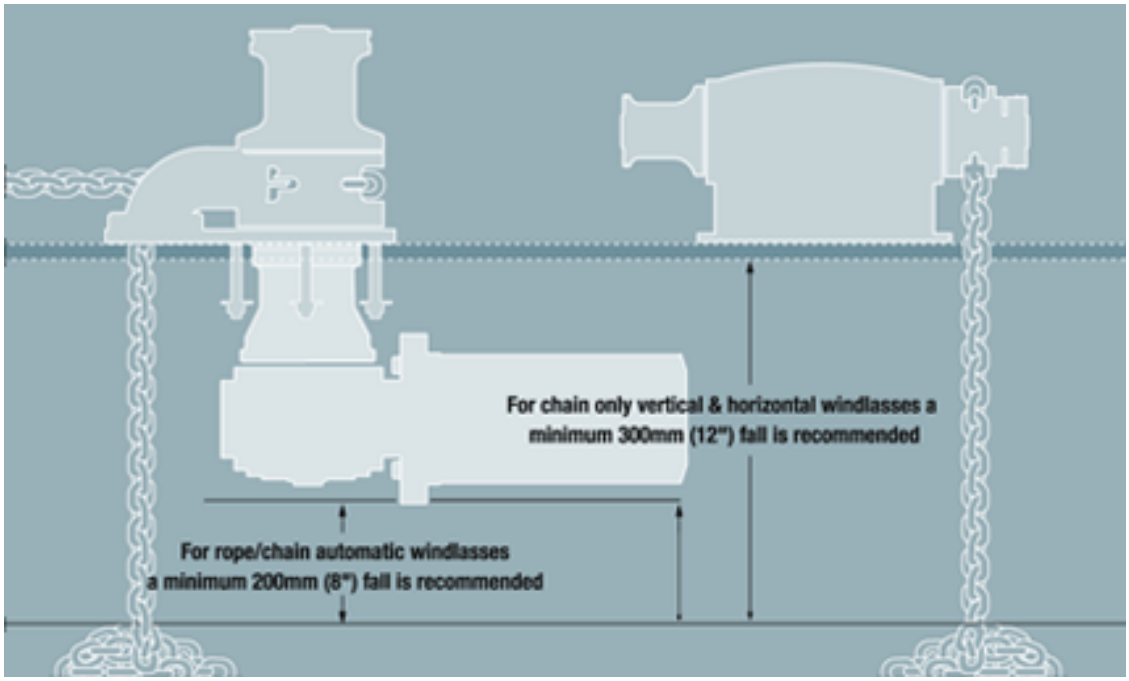
The two basic types of windlasses are differentiated by the drive shaft orientation. Deck thickness and underdeck space are the two main considerations when deciding which of the two types to fit.

Vertical windlasses make up the majority of anchor winch sales. They are characterised by situating the capstan and/or gypsy (topworks) above the deck and the motor and gearbox below. Vertical windlasses provide a 180° wrap of the anchor rode around the chainwheel giving optimal chain control, minimising slippage and jumping.

Horizontal windlasses are mounted completely above deck with gypsy and capstan located to either side. They provide a 90° wrap of the anchor rode around the chainwheel.

HOW MUCH SPACE DO I NEED IN MY CHAIN LOCKER?

Deck thickness and locker space play an important role in deciding whether to install a vertical or horizontal windlass. Estimating or measuring the depth of fall of the rode into the anchor locker may dictate which type of windlass is most suitable for your vessel. Calculating the depth of fall differs for horizontal chain only windlasses and for vertical chain or rope/chain windlasses (see diagram below).



RODE SELECTION

Rope and, particularly chain, selection is extremely important. Deciding on the right anchor winch for your boat depends on the size, not only of the boat, but also the ground tackle. Maxwell anchor winches and capstans are designed to take chain only, rope only or a combination of both. Automatic rope/chain systems are now commonly used on boats up to 20 metres (65 feet). Consequently, Maxwell's HRC6, HRC8, HRC10, RC6, RC8, RC10 and the NEW RC12 automatic rope/chain systems have become increasingly popular, as they offer the added benefit of less weight in the bow with the ability to carry an increased amount of rode. Chain only systems remain popular on heavier displacement sail and motor yachts. There are two main types of anchor chain. Short link chain is most commonly used on small and medium sized boats while stud link chain is generally used on much larger vessels such as Superyachts. The latter is characterised by a stud (bar) joining the two sides of the link preventing them from deforming when overloaded. High test or calibrated short link chain should always be used. Long or regular link chain should not be used with anchor windlasses.

There are a wide variety of both metric (mm) and imperial (inches) chain sizes available and these will have bearing on your final windlass decision. It is important that the right size and right grade of chain is used to ensure a correct fit of the links to the gypsy. If the chain is not matched to the chainwheel problems may occur, such as the chain jumping off the gypsy or the chain jamming as it will not feed smoothly through the chain pipe. As chain to chainwheel compatibility is so important, Maxwell Marine supplies chainwheels to fit just about every known chain available on today's international market.

DC, AC OR HYDRAULIC?

The wattage of a DC electric motor is not the important factor. Rather it is the efficiency of the whole winch, including the gearbox and motor, which counts. With the increasing popularity of powerful and compact on-board generators, AC powered winches are becoming a practical consideration for bigger boats. Hydraulic systems provide another power source well worth considering as they have the advantage of constant speed

under all load conditions and can be run almost constantly while coupled with safe guards such as pressure relief valves. Modern hydraulic systems offer an integrated, low maintenance and efficient, centrally managed, power pack.

WHAT PULL CAPABILITY WILL I NEED?

The only meaningful way to rate anchor winch performance is by looking at what it will lift and at what speed. The two things to consider are (a) the maximum pull capability and (b) the working load of the winch. Maximum pull (sometimes referred to as stall load) is the maximum short term or instantaneous pull of the winch. Working load is generally rated at about one third of the maximum pull and is usually considered to be the load that the winch is pulling once the anchor is off the bottom. To determine your required maximum pull capability, complete the calculation below.

1. Calculate ground tackle weight (anchor + chain + rope = ground tackle)

eg:	ANCHOR	+	18m/60ft CHAIN	+	61m/200ft ROPE	=	GROUND TACKLE
	30kg/66lbs		45kg/100lbs		12kg/26lbs		**87kg/192lbs**

2. Calculate the maximum pull (total ground tackle x 3 = Maximum pull)

Safety guidelines suggest that the pulling capacity of the windlass should not be less than 3 times the total weight of the ground tackle.

eg:	GROUND TACKLE		MAXIMUM PULL
	87kg/192lbs	x 3 =	**261kg/576lbs**

In this instance an **HRC8, HRC10, RC8, RC10, or VW1000** would be suitable, providing the chain and rope size is applicable to the windlass being considered. The maximum pull of 261kg/576lbs is well within the capability of all these anchor winches.

SAFETY AND SECURITY TIPS

Circuit breaker/isolators are used in the installation of any DC electric windlass to provide protection to motor and cables should the windlass be overloaded. Accessories such as chain stoppers or chain snubbers must be used for safe anchoring, the avoidance of unintentional self-launching of the anchor and for the prevention of damage to your anchor winch.

You should never anchor off your winch or use your winch to pull your boat to the anchor spot. The anchor winch is designed to lift a dead weight and should not be subjected to the strain of your boat riding at anchor.

If you think the winch you are considering may be too small, then go to the next size up. Better to have excess lifting capacity than not enough! Maxwell Marine and their agents or distributors offer free and helpful advice should you have any questions.