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Courtesy of **LEWMAR**

Windlasses are situated at the bow of a boat and used for retrieving chain and anchors. They can be used on both power and sail boats. There are different styles of windlass and with a small amount of maintenance annually they will give years of untroubled anchoring.

In order to select the proper windlass for your boat, three questions should be answered:

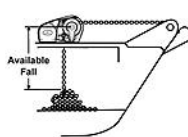
1. How long is my boat?

Most reputable manufacturers will have recommended sizes of windlass for each size of boat.

2. How long is the anchor rode you wish to use and will it fit into your locker?

Begin by examining the depth of the anchor locker to determine the amount of 'fall' available. The fall is the vertical distance between the top of the anchor locker and the top of the anchor rode when it is completely stored inside the locker. The measurement is important in determining whether your boat will be best suited for a vertical or horizontal windlass.

Horizontal windlasses



The Horizontal windlass is a no-nonsense design widely used by boaters requiring optimum performance from their anchoring system. Boaters who frequently anchor, especially in deep water, require a no-hassle self-tailing system. The horizontal windlass offers the best performance with smaller or unusual locker designs. As the anchor rode enters the gypsy it makes a 90° turn and feeds directly into the anchor locker. A minimum fall of 30cm (12in) is recommended.

Vertical Windlasses



Vertical windlasses provide aesthetic value and offer the added security of the anchor rode making a 180° wrap around the gypsy. The inherent design of the vertical windlass requires at least 30cm (12 in) of fall. This is to allow gravity to properly self-tail the anchor rode through a 90° vertical turn into the anchor locker. Additionally, nylon line is lightweight and a short fall in a vertical windlass system might prevent the rode from feeding completely in to the locker.

3. How much pulling power should my windlass have?

Having selected the vertical or horizontal windlass sized for your boat length and displacement, the correct windlass pulling power for your needs must be determined using the following formula:

First determine the total weight of the ground tackle which comprises the anchor and rode.

For example:

The weight of your anchor = 10kg (22lb)

The weight of your anchor rode = 4.58m (15ft) of chain (4.58 x 1.09kg/m or 15 x 0.74lbs/ft) = 5kg (11lbs)

61m (200ft) of rope (61 x 0.09kg/m or 200 x 0.06lbs/ft) = 5.5kg (12lbs)

Total weight of your ground tackle = 20.5kg (45 lbs)

Second, take the total weight of the ground tackle and multiply it by a factor of three to arrive at the required windlass pulling strength. The factor of three covers the effects of windage and the speed of tidal current and includes a safety margin for unknown circumstances.

In our example, the required windlass pulling strength is 61.5kg (135 lbs), 3 x 20.5kg (45 lbs).

Safety guidelines suggest that the required windlass pulling strength must not exceed one-third of the maximum pull capacity on the windlass. Therefore, our selection of 270kg (600lbs) pull windlass is correct as the 61.5kg (135 lbs) required pulling strength is well below one-third of the maximum windlass pull capacity.

Working Load

In a typical anchor recovery situation, the windlass will pass through a number of phases of operation as the boat approaches the anchor and finally breaks it out of the seabed. The load and speed will vary at each phase. For any anchor recovery, the windlass will operate longest in the 'working load' phase and it will experience a significant peak in load during anchor breakout.

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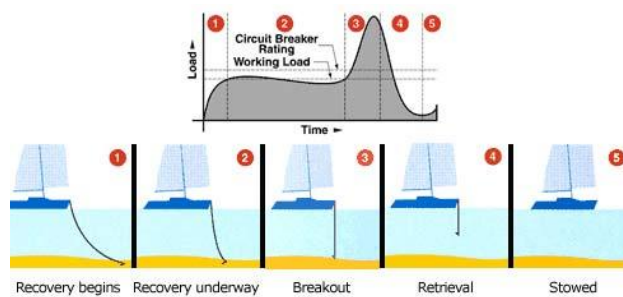
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Electrical Circuit Protection

Any installation of electric powered windlasses must be protected with a circuit breaker. This ensures complete protection of the electric motor and installation cables if the windlass is overloaded. Circuit breakers are normally rated on a 'continuous' basis. This is the load in Amps, under which they will retain electrical contact for an indefinite period.

For example, a 70A circuit breaker will not trip unless the continuous current loads exceeds this figure. However, the maximum tolerated current draw may be as much as 250A, but only for a short period of time. All of our windlasses carry a recommendation on circuit breaker rating based on continuous operation. Remember that motoring up to the anchor while using the windlass to retrieve the anchor rode and using the boat to "break out the anchor" is the proper anchor recovery procedure. Using the windlass to haul the boat to the anchor is not recommended and will result in damage to the windlass and motor.

Safety At Anchor

Windlasses are not designed to hold high loads while a boat is at anchor. When the windlass is not in use and the boat is at anchor, the anchor rode should be secured using a chain stopper or attached to a load bearing point such as a cleat.