



Powering wind energy maintenance

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In this, the second of four articles, we see how ActSafe Powered Ascenders can be used for material lifting in the wind energy industry.

What is an ActSafe Portable Powered Winch?

A Portable Powered Winch is a Li-ion battery or petrol powered lifting apparatus that is certified for lifting both loads, personnel and for lowering operations. The winches use readily available, 11mm kernmantle ropes so only rope length limits

the lifting distances. The Working Load Limit is 200 and 250kg so these winches are a flexible tool that makes it possible to lift a wide variety of cargo and facilitate positioning operations.

Nacelle

In wind energy maintenance time is money, particularly when offshore, where weather



Photo: ASAKEN



windows are short. What happens when your crew arrive onsite, with a restricted time opportunity to get the turbine back online and they are unable to get tools and material into the turbine because the installed lifting equipment is not fit for purpose?

An Actsafe portable battery powered winch, with a lifting capacity of 200Kg will ensure your maintenance teams can complete the task. This will reduce the risk of prolonged downtime. It also means it's not necessary to have a permanent chain hoist fitted to the turbine, eliminating an additional piece of machinery, which also becomes a maintenance item. The line maintenance of a portable winch can be carried out back in the maintenance depot.

Portable Powered Winches can also save time. The average wind technician takes approximately 10mins to reach the nacelle and the average chain hoist takes about 8mins for the chain to reach ground and

another 8 minutes to lift the load. So the onsite time, before the tools and material are in place, is a minimum of 26 minutes.

However, using a Portable Powered winch, the first crew member climbs to the nacelle with only a bag of rope, in seconds the rope is fixed in position and the rope is lowered to ground. The second team member connects the Portable ascender to the rope at ground level, with the rope bag attached, to install the ascender later to the anchor. The first team member can then lift the ascender by Bluetooth remote control, whilst his colleague climbs to the nacelle. This small saving, in time and efficiency multiplied over many turbines and multiple maintenance crews, can quickly add up to significant savings for your wind turbine maintenance business.

Once the first team member receives the load, including the ActSafe portable powered winch and the cargo, he can then

invert the device, connect the winch to the anchor point and it is set up for subsequent loads to be lifted. For extended lifting operations, the battery can be removed and the winch connected to an AC power supply.

The portability of the ActSafe powered winches gives much more flexibility than a fixed lifting system. An example might be the need to replace heavy service items in the hub, such as pitch motors. For hubs that are accessed from inside the nacelle, the winch can be rigged in the nacelle and the rope deviated through pulleys so that it can lift and transfer the pitch motor without the need for manual handling. Incidentally, because the winch is also certified for personnel lifting, with it rigged in this way, you end up with a pre-rigged hub rescue system.

For hubs where access is from the exterior of the nacelle, it becomes possible to lift

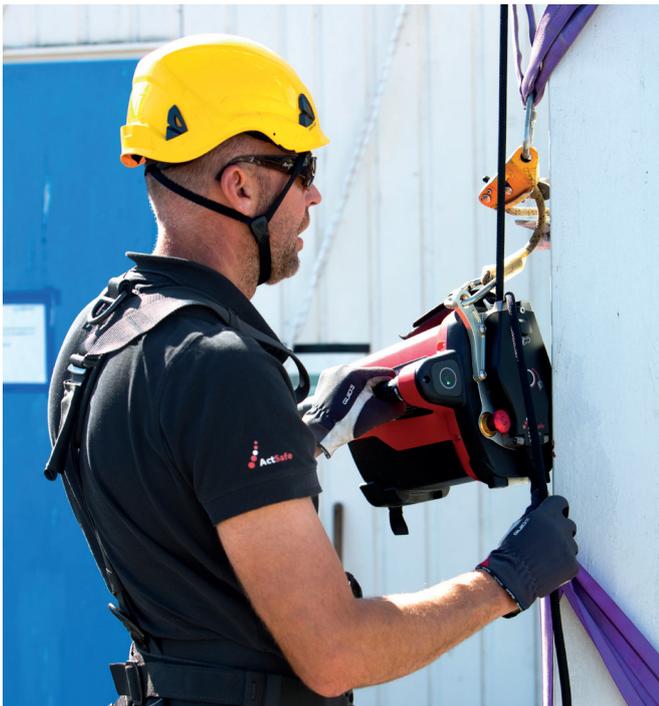
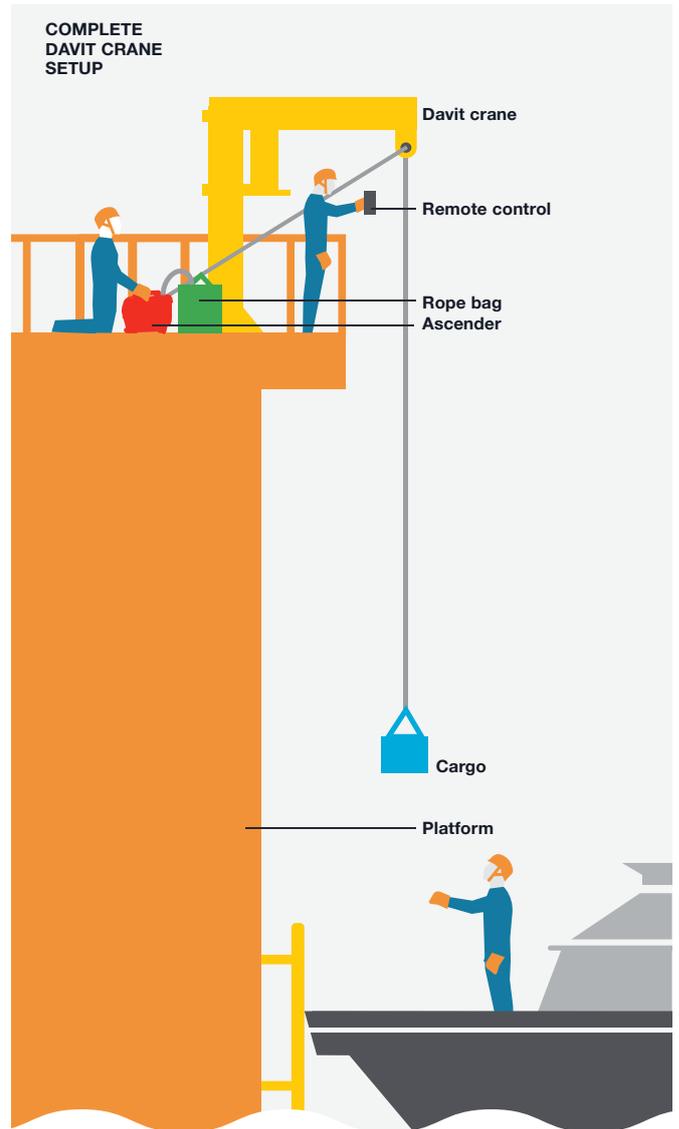


Photo: hoehenwerkstatt



material directly from ground or transfer vessel when rigged through a removable davit system. This removes the need to double handle the load and manual handling of awkward or heavy loads.

The portability of the Powered Winches is also ideal for those areas of the turbine where lifting apparatus is rarely fitted, such as the transformer space on a tower platform or the inside of the monopile. Where space is restricted the winch can simply be either rigged overhead off an anchor point or mounted to a structure or ground anchor and the rope deviated through a pulley.

Transition Piece

As with load lifting to the nacelle, ActSafe Portable Winches are ideal for lifting cargo from the transfer vessel to the deck of the transition piece. This is very useful when preparing for offshore turbine maintenance

or construction.

By mounting the Portable Winch off a ground anchor and deviating it via a pulley, mounted to the davit arm, cargo can be transferred quickly and efficiently to the transition piece deck. Being a battery powered unit the turbine doesn't need to have power, which is ideal during the construction phase or when there is no power to the turbine.

As for work from the nacelle for extended lifting operations, either a suitable number of spare batteries can be carried or if power is present on the turbine an AC power supply can be installed.

Tower

With the ActSafe Portable Powered Winches it is no longer necessary to winch tools and loads on the exterior of the turbine, leaving them exposed to wind and weather. The flexibility of a powered winch

allows a maintenance technician to haul from the yaw deck and lift tools and components on the inside of the turbine.

This eliminates the need for a tag line, as loads are no longer exposed to wind conditions. This also gives a wider weather window for certain maintenance tasks, reducing opportunity risk.

Conclusion

The flexibility of having a powerful yet portable winch allows maintenance tasks to be completed more quickly and efficiently, which in turn reduces cost. Investment in portable powered winches is amortised quickly because of their capacity to do more, with less people in less time. Making ActSafe Portable Powered Ascenders an integral part of your wind energy line maintenance tools and equipment will help to achieve this.

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