
TIMBERMAX T10
TIMBER MAX
ZAXIS

TAKING THE STEEP IN OUR STRIDE

Traction aid winches are helping to make difficult sites more accessible. **RAB Easton** reports

Forestry, like many industries, is extremely competitive and to be successful large volumes of timber are required at roadside each week. Most of the easiest timber to access has been felled and is now replanted; it will be a quite a few years before it is ready for clearfelling again.

With the rising demand and prices of timber at an all-time high, we have to consider more awkward and steeper sites to satisfy the timber markets.

The steepest sites had previously been hand-felled and extracted by skylines; however, this method of harvesting requires a lot of skilled manpower (which is difficult to find), is expensive, and requires a lot of setting up/taking down time, which has a negative impact on production.

Skylines are expensive to purchase and can incur high operating costs per tonne of timber harvested.

When hydrostatic transmissions were introduced into harvesters and forwarders, it became possible to work safely on steeper ground than before but we were still unable to harvest and extract timber from steep, uneven mountainsides.

Consequently, excavators were adapted and developed to be able to high lead and skyline the steeper areas. They had the advantage of being able to track under their own steam to the inaccessible timber. This reduced the length of the skyline extraction distance, which increased production but still involved another expensive machine on site and the trees still had to be felled manually.

Many of our European neighbours working in Alpine regions and areas in North America, Canada and New Zealand were experiencing the same problems but on a much bigger scale than us.

They began experimenting with new technology that would allow the machines to work on steeper ground than before while also reducing the risk to operators and equipment.

Traction assist winches were developed that were either attached to the machine or integrated into the machines chassis. The winches were synchronised with the transmission speed of the machine, however, if there were multiple active machines working the same site, either the winches had to be changed >>

The Timbermax winch at work

T Winch on a stepp Jim Wilmer site near Moniaive (left)

>> over or, in the case of chassis mounted winches, many expensive units had to be purchased.

The solution has been to introduce an independent traction winch aid carrier which could be remotely operated from the machine working onsite (harvester, forwarder, skidder, feller buncher, processor etc).

Using a traction aid winch prevents wheel spin and damage to the ground, providing a remarkable increase in traction in areas where there is poor soil stability. Rather than waiting for dryer conditions, these areas can be worked throughout the year.

The system will also increase access to timber in areas affected by heavy snowfall.

In the event of a malfunction or failure on the machine or the carrier, the winch rope is locked in place and the machine held in position until mobilised again. Timber fallers working on steep sites are at a much greater risk of being injured or killed due to the severe conditions.

Mechanised logging has significantly reduced the number of accidents but risks and danger still need to be intensively managed.

Manufacturers of this type of equipment are increasing as it is becoming a more economical and safer solution for steep ground harvesting and we will look at three different types that are currently available for purchase in the UK (some models will be available on a hire basis).

Timbermax

There are three models of this winch: the T10, T14 and T20, available for all sizes of timber harvesting equipment.

This is a relatively easy winch to install and it is attached to the boom of a 20 tonne plus excavator. The digging bucket is removed and there are very few modifications required to install the winch. Conversion of the carrier between an excavator and traction aid winch is a quick and simple process.

The Timbermax uses tried and tested Rexroth components powered by a variable displacement hydraulic motor, which allows high torque or high speed under low load conditions. The drum transmits power through a three-stage planetary gear system and a multi-disc spring applied brake secures the drum. The unit has a reliable and robust spooling system that has been designed to prolong the cable's lifetime, thus reducing operating costs.

The I-winch control system has been designed to be intuitive and user-friendly. It is fitted to the steep slope machine and relays information essential for the safety of the operator onto a high contrast 12" monitor. The system recognises which direction the slope machine is travelling and it can be set to three different tensioning settings: uphill, not moving and downhill. The operator can reduce the pre-set tension with the potentiometer and it is also possible >>

>> to test the traction capacity by having the cable tension reduced to zero to determine whether the machine will hold unassisted. Safety is the priority. It is paramount to sustain safe communications between the winch and slope machine and the operator in the slope machine can monitor the fuel level, engine oil pressure, hydraulic oil levels and temperature levels of the winch carrier.

The winch is designed to be used with both tracked and wheeled machines; tracked machines require a high pull and lower speed compared to wheeled machines, which require a faster cable speed. The optimum work slope is between 35% and 70% with a 500m rope capacity.

RJ Fukes Forestry Services are the UK sales and service distributors for the Timbermax Traction Aid Winches. They plan to have two winch units available for hire, one at Llandovery and the other at Carlisle.
www.rjfukes.co.uk

Ponsse Ergo with the Herzog Forsttechnik AG traction aid winch

T Winch

I first saw a T Winch working at the Austrofoma exhibition in Austria in 2015. It was attached to a John Deere forwarder on a wet, greasy slope. Wood had been laid out at intervals all the way to the top and it was reversing up the hill and loading until fully loaded. I was amazed as there was no tracks or chains on the forwarder and, apart from a small amount of surface mud (walking down alongside the forwarder would have been difficult without skidding as the ground was sodden due to heavy recent rain), there was no rutting whatsoever. Since then I have seen two of these winches working on severe slopes in the UK; Mike Gillet was using one in mid Wales attached to a Ponsse Scorpion and I recently watched Jim Wilmer's at work near Moniaive, attached to a John Deere 1510.

The T Winch is a tracked, remotely operated unit which is powered by an Iveco 143hp diesel engine and weighs up to 7800kg (depending on the specification). With an 8-tonne pulling force at a speed of up to 4km/h and a 500m rope capacity, there is also the option of an ancillary winch which will manoeuvre the T Winch into the optimal position. Once in position, strops are used to secure the winch and it has a dozer blade fitted to improve the stability of the carrier.

It is amazing to see this equipment in action as no matter whether you are manoeuvring forwards or backwards the rope is always taught and pulling/releasing smoothly.

For sales and service in the UK contact
www.bioequipmentltd.co.uk
For enquiries regarding hiring a T Winch contact
www.envirotecsiteservice.com

Herzog 500 Synchrowinch

This traction aid winch is generally mounted onto a used Ponsse Ergo, although a HS16 or a Cobra with a HN125 or HN200 can be used as well. The winch replaces the harvester crane and is mounted directly on to the tilt, slew base. An added benefit during challenging conditions is the ability to rotate and level the winch into the desired position. There are two additional remotely operated anchor winches, enabling the traction aid winch to be used at a right angle to the work area. It is fitted with a dozer blade which adds extra stability when lowered. The winch unit is remotely operated and driven from the steep slope machine, therefore allowing the operator to slacken the anchor cables, lift the blade and drive the machine out of the way from the cab of the attached machine if it is blocking the exit.

A handheld radio for external use and a touchscreen cab control unit (fitted with a display unit for all the important safety parameters, including the camera for remote driving) are fitted to the steep slope machine and can both be used for operating/driving the winch vehicle.

The Herzog has the capacity for 500m of cable and has guided cable spooling for smooth operation and maximum cable life. In addition, this winch has the benefit of being able to winch out timber due to its high tower.

Again, this is a small selection of the equipment available and the ones above are well represented in the UK. They are known as traction aid or assist winches as they allow safe working on steeper ground than would normally be possible and to help facilitate timber extraction with minimal impact on the environment. They must only be used by trained experienced operators used to working safely in extreme conditions. When used properly and within their capabilities, they are an excellent safeguard for protecting operators.

Rab Easton is the editor of the bi-monthly Forest Machine Magazine. He is a second generation logger with over 40 years of hands on experience in timber harvesting. Rab's magazine is available both in print and online and he is very active on Twitter and Facebook.
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