

## HAND WINCHES

by David Bowyer, visit the website: [www.davidbowyer.com](http://www.davidbowyer.com) for more information!

I've been using Brano hand winches now for fifteen years, which was about the time we opened our Off-Road Centre. Before then I was using a similar type, the Tirfor. However, the Brano is comparatively cheap and comes with a carrying handle which makes life much easier when lifting the winch around.

If you are seriously into off-roading, I recommend that you carry the appropriate size Brano with you, whether or not you have a winch fitted on the front. Should your vehicle not have a front mounted winch then it is essential to carry a good hand winch for obvious reasons. You might well ask, 'Why should I need to take a hand winch on an off-road trek when I've got a front mounted winch?' There are lots of reasons. Out in the wilds, your front mounted winch could let you down through lack of maintenance, a damaged wire rope, abuse, or a flattened battery. Could even be dead engine if in deep water, making mechanical or hydraulic winches useless.



A trio of Brano hand winches (see picture above).

Maybe you are the first vehicle in your small green laning convoy and there is a need to retreat. The vehicle behind you hasn't a front mounted winch to help you to back out of your predicament. Perhaps there is a need to lower all the vehicles in your convoy down through a badly washed out section of track. Oh yes, the Brano can be used for lowering, as well as pulling.

Over the years, we have employed the Brano to lift part fallen trees clear of the track to allow us to pass underneath. Many is the time we have also had a need to attach the wire rope from a Brano to the side of a vehicle that is trapped on a tree or stone wall whilst on a side slope. The Brano hand winch is in fact known as a 'Rope Hoist'. So you can be rest assured that if you have a requirement to change an engine for instance, having one of these units would be ideal. This is providing of course you have a good strong solid beam above you!

Portable winching power is invaluable off-road (see picture).



There are three sizes of Brano hand winches available. The smaller size is quite suitable for use with all smaller sized 4x4s, including SWB Land Rovers, Ninetys, Range Rovers and Discoverys. Though I recommend you carry a Superwinch Swingaway snatch block with this size.

#### **Brano 800:**

This smaller unit is known as the 'Brano 800,' which refers to its lift capacity, namely 800 kilograms (about 3/4 of a tonne) The nominal 'pull' rating is nearly one and a half tonne making this unit ideal for small to medium sized 4x4s. Should you be in the process of being recovered from thick mud, remember to have your wheels turning slowly in first gear to not only take the strain off of the Brano, but also to assist the recovery.

The 800 model takes up very little space in the vehicle as its size is only 535mm x 260mm (21" x 11") This unit comes complete with 20 metres of 8mm galvanised wire rope, which incidentally comes on a very neat metal carrying rack. At just under £200 + VAT this is an inexpensive piece of essential equipment to carry.

#### **Brano 1600:**

The second most popular size is the 'Brano 1600.' This refers of course to its 1600 Kilogram lifting capacity. That's a sheer lift of 1.5 tonne. This unit is for the more serious off-roader, especially if the vehicle is a LWB Land Rover, One Ten, 127/130, 101 or a heavily equipped Ninety, Range Rover or Discovery.

The nominal pull rating is nearly two and a half tonne for this model, which is more than enough to extract even the most stuck vehicle from the mire. Again however, always assist the recovery with wheels slowly turning whenever possible. This larger model measures 630mm x 365mm (25"x15") and comes complete with 20m x 11.2mm galvanised wire rope, again on a handy cable carrier. This model is very good value at just under £300 + VAT.

#### **Brano 3200:**

The largest model is not really for normal off road use, unless you are taking a four ton 4 x 4 lorry on a major expedition. This 'Brano 3200' will lift nearly 3.25 tonne, pulls about five tonne and uses a 16 mm wire rope. As a matter of interest this big Brano is priced at just under £400 + VAT complete with 20M of wire rope.

## Safety:

Each unit is subjected to a 50 percent overload test to ensure safety. The 800 & 1600 models have a bronze shear pin situated on the main operating/lifting lever. A spare shear pin is hidden in the base of this lever to which the operating handle is attached to.

As a matter of interest, in all the years of using these two models, I've never blown a shear pin yet. And we've done some pretty crazy things! Only twice have we supplied some spare shear pins. I know that in one of these cases the client was attempting to physically drag tree stumps out of the ground with the 1600 anchored to an even larger tree. Well there are limits! And that's what the shear pins are there for.

The shear pin is installed in this position (see picture).



The casing of the Brano is the main supporting frame of the winch and is manufactured by hot shaping of quality steel sheet making the unit very strong indeed.

Each size of Brano has two special sets of jaw block mechanisms which grip the steel cable. They are manufactured from quality steel and are heat treated to give long life. It's these jaw sets that take their turn in gripping, holding and pulling the steel cable through. A telescopic operating handle is extended when you have a heavy pull or used closed for a light pull and easy storage.

Both the 800 and 1600 models have revolving hooks fitted for attachment of the unit to a ground anchor or suitable tree using a webbing strop and bow shackle. All the galvanised wire ropes have a suitable sized hook attached and are fitted with safety latches.

The wire ropes are specially manufactured for use with the Brano and are therefore not any old bit of rope! The rope is made to a precise diameter to suit the 'jaws' within the winch. Each rope is made by laying six strands of a variety of different sizes of individual wires over a fibre core. The end of the rope which is guided into the Brano before use has a fused and tapered end. The ropes have a safety factor of 5-1 built in to allow for lifting. You will never ever have problems when pulling!

In normal use off-road, in an assisted recovery, one person operating the Brano should achieve pulling in about 3m (10') per minute. A person standing each side of the Brano to give four hands on the operating handle will halve the energy required and probably move the load much faster. Every movement of the operating handle, be it part or full swing of the arc either forwards or backwards, will move the wire rope through the Brano. The load is always held wherever the operating handle is. Such is the strength and manner in which the 'jaws' grip the cable whatever the load.



f you feel that the standard 20m (66') wire rope isn't going to be long enough for possible recoverys that you might have to carry out, then carry an extension wire rope of a suitable size and length. I actually carry a special 90' extension so I can really reach a long way. If this rope is too long, I simply halve the length by placing a swingaway snatch block half way along the length of the rope, attaching this pulley to the ground anchor or tree and bring the two 'ends' back to the Brano hook. Or you could put the extension between the Brano wire rope hook and the load. As with all recoveries, no two will ever be the same.

Never attempt to carry out a recovery if it is obvious that the load imposed on the Brano is too great for it. As with any winching situation, think out the recovery first. If you are well and truly stuck in the mire or a bog, with the chassis, diffs and axles well grounded, break suction first by using a high lift jack and placing something appropriate in the holes left under the wheels. Make sure you have a decent ground anchor onto which you are going to attach the Brano. It may be a set of 'T-Stakes' well driven into firm ground or it could be a couple of vehicles chained together. You could be forced to dig a trench to bury your spare wheel and anchor to the centre of it at right angles to your load.

### **Operation:**

Using the Brano is very simple. Open the 'jaws' of the unit by pulling back the release lever and push the tapered end of the wire rope right through and out the back of the unit. Unclip the release lever so that the 'jaws' bite onto the cable.

Insert the operating handle onto the side lifting lever until the handle fully engages and swing it backwards and forwards to pull the rope through. As the load comes on, make sure the stuck vehicle's handbrake is off (you may laugh!) and perhaps in gear with wheels turning slowly to assist if necessary.

Stand with the side of your body next to the winch so that you push the handle forwards and away from you. At the end of that stroke, you pull the handle back to you. Operating the unit that way will ensure you don't twist your back.

To lower the load backwards, or to simply take the load off the wire rope so as to uncouple, move the operating handle to the lowering lever which protrudes through the top slot in the centre of the unit and 'work' the handle in the same way.

When winching is complete, open the jaws again by pulling back the release lever so as to pull all the wire rope back out through the unit. Finally unclip the release lever so as not to leave a load and hence weaken the 'jaw' springs. As a safety feature, you cannot release the load via the release lever, until the load is taken off.

Laying out the wire prior to recovery (see picture below).



With the Brano you can pull at any angle you like, on any secure point on an end or side of the vehicle. On a drum winch you must of course only pull in the cable square to the drum to avoid problems.

If you have a particularly heavy recovery and you just happen to have two of these hand winches within the group's equipment, then you could always consider using both simultaneously to halve the load on each. Or you could use a Superwinch swingaway snatch block to double up the wire rope and bring the hook back to the same anchoring point that the Brano is attached to.

Pulling back the Brano's release lever (see picture below).



Make sure your wire rope is always in good condition, not only for safety's sake, but also damaged wire rope will not 'run through' the 'jaws' of the Brano. To ensure that you get no kinks in the wire rope, when taking the rope off the carrier, drop the hook end to the ground and walk forward unrolling the rope. Simply dragging the wire rope off the side of the carrier will cause all sorts of problems of untwisting of the lay and kinking. You have been warned!

Inserting the tapered end of the wire rope (see picture below).



I like to keep my Brano and extension wire ropes in old worn out trail bike tyres. Drill the odd hole in the sidewalls to poke through the tapered end of the wire rope and guide the remainder of the rope all into the tyre. Three or four tree ties or cable ties will ensure the rope stays inside.

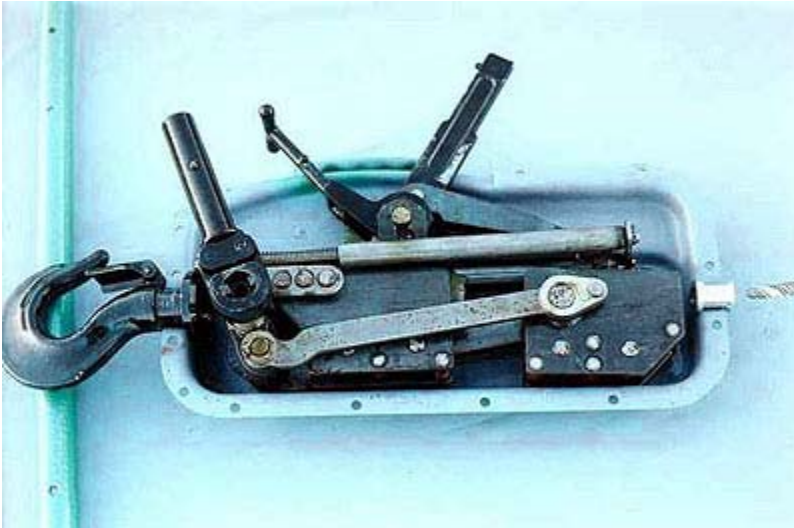


## Maintenance:

The Brano is lubricated with general purpose grease on all pivot points on assembly. From time to time I usually squirt a little duck oil (WD40) in through the top to kill any rust that make try and form (why is it nearly always raining when you are carrying out a recovery?) Also this helps to make the unit run more smoothly as the oil lubricates all the smaller pivot points. Once a year, or sooner if you use the unit a lot, I recommend you remove the ring bolts on the casing, split the unit sides, lift out the whole mechanism in one, wash it off in degreaser, rinse off, dry and regrease all pivot points. Leave a light coating of duck oil over all the mechanism. Do not attempt to take the mechanism to pieces!



Carefully lower or release the load (see picture above).



The "heart" of the Brano hand winch (see picture above).

Try not to use the Brano actually in the mud for fear of it entering the unit through the slot where the lowering lever protrudes. Should this happen, strip the unit as above when back home, before your next off-road session. Never oil the wire rope as it will not be very nice to handle. The oiled surface will attract dust and dirt and the jaws will not grip so well!

Never drag a rope under load over sharp rocks, as you could easily damage the rope by either breaking some of the wires that make up the strands or, just as bad, squash the rope flat so it cannot go through the 'jaws'.

In finishing, always look after your Brano Rope Hoist and it will always look after you!