Home Work Shop & Fitting Out

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Making A DIY Anchor Winch

Hi Peter,

Here is a way for some handy recreational fishos to save some real money.

Not getting any younger I felt it was about time to invest in a drum motorised anchor winch but with a starting price of about $2000 I felt was totally out of control.

The gypsy types, are a little cheaper, but by the time one replaces all one's anchor rope/chain (etc) to suit, the price wasn't much less.

I suppose if one owned a 40 ft man-o-war, the price could be Justified, but for a 25 year old 16ft half cab, although in as new working order, it seemed over the top.

This system may not be for exposed deck mounted professional use but for a protected underdeck rec fisho use, is more than adequate.

Having thought about the above for some time and doing some basic maths, I decided that a home made winch was a definite possibility.

The limiting factor mainly concerned finding an easily available, cost effective, and powerful enough 12V drive to do the job. As it turns out, a trade quality, 2 speed 12V DC drill, has enough grunt - especially if mated with the correct reduction drive to the drum.

To cut a long story short, a 12V, 2 speed drill, a few steel rods, 2 vee-pulleys and belt, four roller bearings, some angle iron and a little marine ply are all one needs to make a perfectly operational winch for a total price of around $500 which also includes hot gal dipping.

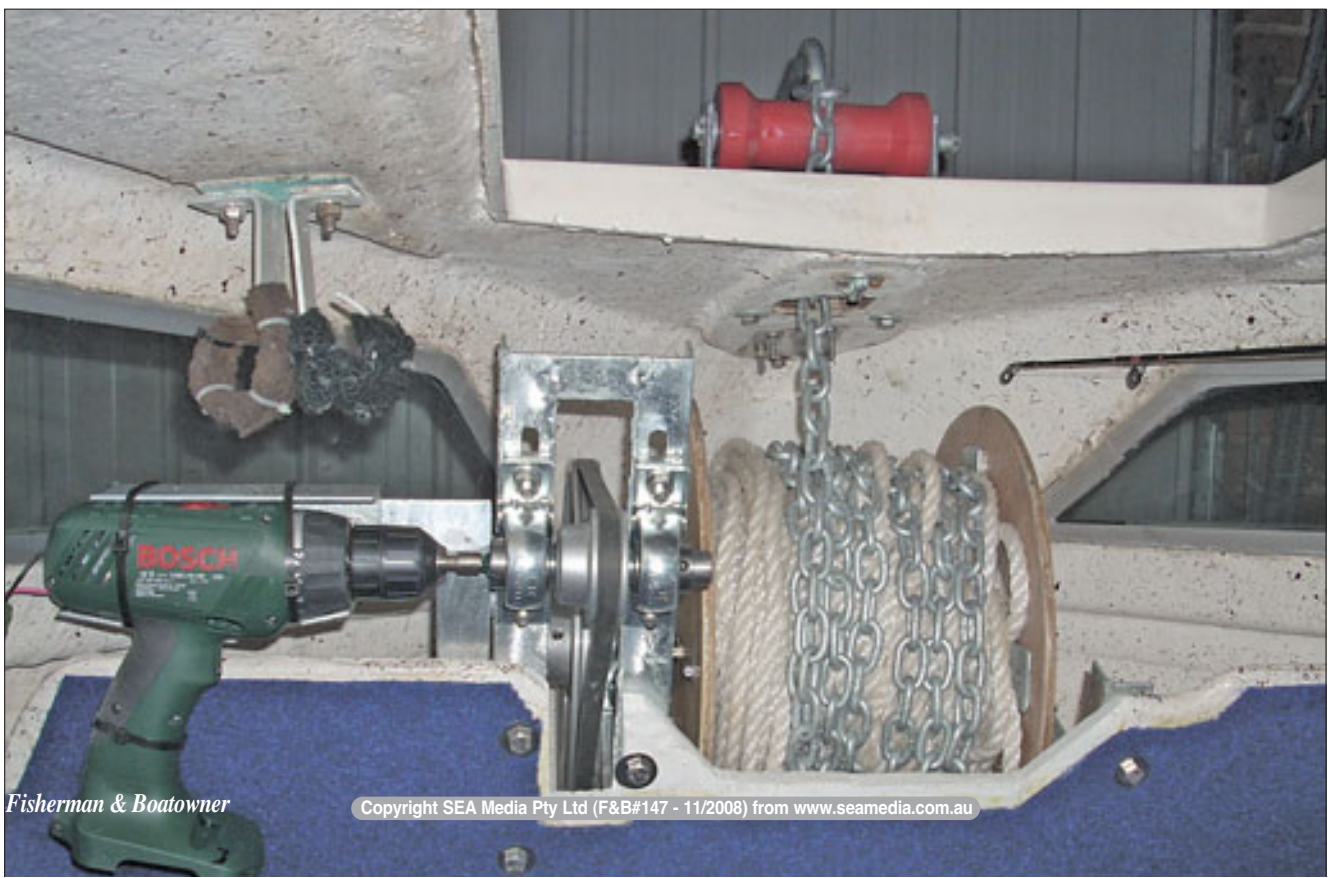
For some engineering oriented fishos who have similar parts lying around the shed, this could be built for next to nothing.

The steel parts are hot dipped galvanised to stop corrosion, which is a cheap and easy process. I chose this method over stainless construction for ease of fabrication and material availability.

The DC drill used to power the winch is replaceable easily with many types and powers.

Mine is trade quality 2 speed 12V Bosch with 67NM torque (approx 6.5KgM) run off the boat's battery, which works very well.

With a 5 to 1 reduction from the drill to the winding reel produced by the vee pulleys, at the final winding



radius of about 150mm, approx 225Kg pulling power is generated. (When most of the rope is out, the pulling power is many times that).

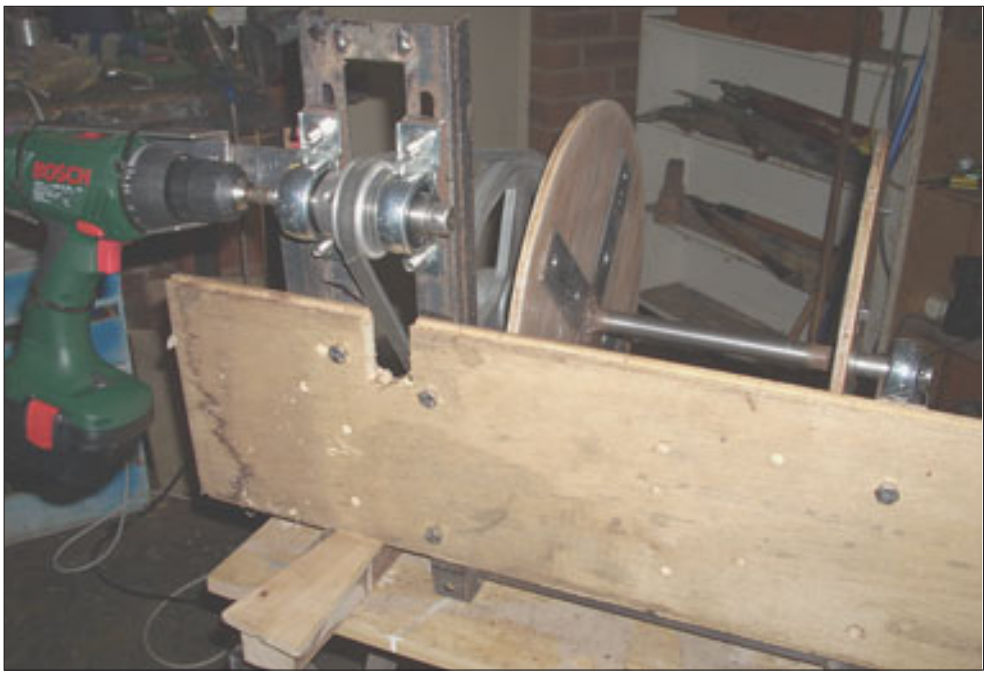
Given that the anchor and chain is about 10kg, it does it quite easily.

With trade quality drills, the power available is similar to commercial winch grunt.

If one has 24V on board, massive torque can be achieved. For smaller tinnies (etc) a smaller handy man drill would be adequate.

Dedicated sealed 12V worm gear drives (like the bought ones) are also available from engineering suppliers, but generally need to be specially ordered and are costly - but even using these, one is still over $1,000 ahead on the total cost of a commercial unit.

The drill at low range runs at 400rpm no load max, which relates to about 80rpm at the winch with the belt reduction. A belt drive was chosen because it is very cheap, keeps the drill away from wet areas and I can easily change ratios if necessary.



I am currently using 80m of 10mm rope as shown in the photos, but coming down to 6mm nylon rope will make the winding diameter smaller and therefore giving the winch more grunt if necessary plus more rope length if required.

The easiest way to control it, is to remove the trigger mechanism from the drill and run the motor wires to the dash wired to a switch.

In my case I have fitted a 2 pole change over momentary switch on the dash (similar to the types used for trim tabs) which is wired to implement forward and reverse and also a

parallel switch at the front of the boat, so I can control the winch whilst standing in the hatch if necessary.

I use the reverse feature of the drill to drop anchor as well as raise it like the commercial units, but with very little extra skull-duggery, it could be made to free fall.

For anybody that scoffs at using converted consumer goods to do a job like this, think again, as some products (especially low volume or industrial stuff often uses pulled down consumer products) because the cost of doing this is far cheaper than using dedicated parts.

A small panel keeps the pulleys protected from fingers once everything is installed under deck.

I found the basic unit very quick and easy to make.

However, what took a fair bit of time was fitting this mechanism into the limited space available underdeck in the anchor well.

The unit has to be assembled in the well, part by part, rather than a whole assembly, but of course this will vary depending on the boat. Also the devil is in the detail. Experimenting with different drive setups, ratios, etc, is time consuming but infinitely more interesting than watching TV.

Enclosed are a few pics of the assembly in development (pics show a different medium power handyman drill for development purposes) out of the boat, and a few pics of the final installation. I look upon this as a work in progress (as I do the whole boat) and with time I will no doubt tweak this or that.

I hope this may be of benefit to your readers and inspire other DIY ideas.

- Andrew Kluchareff.

Andrew,

Full marks for initiative and ingenuity. I think you'll become the first member of F&B's new "Bob Davis DIY Club" - few people are as committed to DIY philosophies as Bob (as you'll read and enjoy in the coming months) and his love of DIY Projects is infectious.

We all love working on our boats; we have all stopped and admired the work of others - in shows, at the ramps, in workshops. Big or small, it doesn't matter.

What matters is that you get off your bum and do something you enjoy; combining skill with ingenuity - and a genuine passion for the work.

I hope your work here will inspire other readers to share their thinking, ideas and DIY projects with us.

Keep your eye out for January 09 F&B, as we unshackle Bob and start running a major DIY project he's been working on for several months. It's a classic . . .

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