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## DGH Series Winches

**Connections and commissioning of a DGH Winch should only be carried out by a competent person. There are hazardous voltages on the inside of a DGH Controller and at the supply and motor terminals. If in doubt consult Hall Stage Limited.**

**DGH Controllers are designed for moving horizontal loads. They should not be used for hoisting or lifting applications.**

### Connections

#### Control

The control wiring for a DGH winch is low voltage (24V DC) and relatively low current (<150mA). The unit is supplied with an 8 way 3.5mm connector fitted to the external control input. This has the first three terminals (1, 2, and 3) linked together when supplied. The function of these links is to simulate the remote "Estop" and "Stop" switches which are found on the remote control unit. These links must be removed before connecting in the remote control unit.

The wiring details for the remote control unit are shown in the accompanying drawing 295010 Rev A. Cable of at least 0.5 sq.mm. should be used.

#### Mains

The standard DGH is connected to the mains supply using an IEC connector. It is supplied with a 13A to IEC lead fused at 5A. The unit operates on single phase 230V AC supplies.

#### Fitting the Rope:

To fit the cables first remove the drum guard and loosen the drum on the shaft using the hex head bolt inside the drum. Slacken the cable clamp plates on the drum. Run one end of the wire (3 or 4mm diameter) through the hole in the drums' outer diameter (closest to the gearbox) and pass the cable through the hole in the inner boss of the drum through to the other side where the clamp plates are situated. Push the cable between one set of clamp plates and the drum and tighten bolts. Ensure a minimum of 50mm cable is protruding the clamp plates and that the screws are securely tightened. Re-seat the drum on the shaft and tighten the hex head bolt. Fully load the drum with the wire rope leaving the last two grooves empty for the other end of the cable.

Fully compress the springs on the cable jockeys so that when the wire is loaded onto the drum they can be used for tensioning. Run the cable over the spring loaded cable jockeys along the track through any diverters to the rope return and back to the cable drum. Wrap the cable twice around the drum and through the hole in the drums' outer diameter to the where the clamp plates are situated, and clamp as before. Make sure that there is no undue slack in the cable on the drum or around the track.

The cable is then connected at one ultimate position to the appropriate fixing for the system being used. The limits can then be set this end. See setting the limits.

It is important to check that there is a minimum of two safety turns of cable on the drum at each end of travel. If there is anything unclear please do not hesitate to contact us at Hall Stage Ltd.

### **Interlocked Winding Handle**

The interlocked winding handle is supplied as an optional extra. The DGH hoist has a two pin orange connector mounted on the internal PCB. This has a loop of wire shorting the two pins together. To wire in an Interlocked Control Handle proceed as follows:-

1. Disconnect the supply from the DGH (unplug the IEC connector) and wait 3 minutes.
  2. Remove the 8 of M4 screws which secure the folded cover to the DGH and remove the cover.
  3. Locate the orange two pin connector labelled "P2" and "Handle". This is located near the external "Control In" connector next to the incoming IEC supply.
  4. Unplug the female cable connector from the two pin PCB plug.
  5. Remove the loop of wire from the female cable connector.
  6. A two core cable should be run from the Interlocked Handle Position to the DGH control box.
  7. Feed the cable into the DGH control box through the spare cable gland next to the incoming limit cables.
  8. Strip back the two cores of the new cable and connect one to each of the two terminals of the female cable connector.
  9. Plug the female cable connector back into the PCB and tighten the cable gland locking ring.
  10. Replace the lid of the DGH control box.
  11. At the other end of the cable connect the two cores into the limit switch on the Interlocked Handle such that the limit switch is closed (i.e. both wires are shorted together) when the handle is securely retained in it's carrier.
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1. Power up the DGH controller and test with the handle in position. The unit should run normally.
  2. Remove the handle from it's cradle and attempt to run the system. The unit should not function if the handle is removed from it's cradle. If it does, recheck the connections to the limit switch.

### **Setting and connection of the limits:**

Each unit's travel is controlled by two sets of limit switches. These are chain driven from the gearbox output shaft. One set (labelled "Travel") control the normal movement of the unit. The other set (Labelled "Absolute") are there as a backup to the travel limits in the event of a failure in the system. The Absolute limits should be set first to determine the absolute maximum range of travel that the unit is allowed to run. The travel limits should then be set within this range to limit the movement to the desired normal operating range.

In order to set the limits the two screws holding the yellow cover on should be undone and the cover removed. The large locking screw in the centre of the column should be loosened. The individual limits can now be set. If the unit is wired correctly (fan rotates anticlockwise when the "Open"

button is pressed) the limit labelled “1” (lower cam) will control the “Open” movement and the limit labelled “2” (upper cam) will control the “Close” movement. (Note that “Open” and “Close” are determined by both motor rotation and also by the direction in which the cables are wound. In this explanation anticlockwise movement of the fan is assumed to cause the load to “Open”).

Determine which direction the cam in the limit box rotates when the “Open” button is pressed and turn the screw labelled “1” so that the microswitch is hit by the cam when the load “opens” to the desired position. The lower limit “2” should be adjusted so that the microswitch is hit by the cam as the unit moves into position in the “Close” direction. After setting both limits the locking screw can then be tightened, the limits rechecked, and the cover replaced. Absolute limits should be set before Travel limits.

If in doubt contact Hall Stage

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