



Features

- Designed for durability with a minimum of maintenance.
- Increased launch heights up to 30% compared to conventional winches with similar rope lengths.
- Maximum rope length 8000 ft for a launch height of 4000 ft. in normal conditions.
- Constant and high quality launch performance by an electronic control system, less dependant on the winch driver skills.
- The winch driver can instinctively overrule the electronic control system.
- "Pilot in command": The electronics sense multiple parameters during the launch and it continually optimises the acceleration, speed and force, providing the pilot full control over the airspeed of his glider.
- Weak links should not break, even under turbulent conditions.
- Only proven industrial components are used for mechanics, hydraulics and electronics.
- Fairleads and drums are optimized to reduce wear of Spectra and Plasma ropes, which limits operational cost.

Launch characteristics

- Removing slack with constant speed without jerking.
- Powerful acceleration independent of glider weight and water ballast (automatically controlled).
- Automatic rope speed and force control during launch.
- Many settable parameters (password protected) to adjust the launch profile and performance to your preferences.
- Information from the system is shown on a display.

Chassis

The Hydrowinch Club Series is trailer based and supported by double axles. The total weight is under 6000 pounds. All parts of the chassis are powder coated, zinc plating for a durable rust protection is optional. During operation, the winch is stabilized by manually operated legs.

Rope guidance

The Hydrowinch is fitted with a unique rope guidance system. This system is optimized for Spectra and Plasma ropes and reduces the operational costs caused by rope wear.

The Hydrowinch is fitted with very reliable guillotines that are resistant to dirt and pollution. The guillotines require no maintenance or checks and are activated by a push button on the dashboard.

Drums

The drums can hold 8000 ft ropes based on 3/16" (5mm) rope diameter. The revolutionary design of the drums effectively reduces rope wear. The lifetime (fatigue) is verified by Final Elements Analyses.

Power unit

The standard power unit is a 350 bhp common-rail industrial diesel engine with turbocharger and intercooler. It complies to EPA/Carb Tier III and EU Stage III emission-requirements. The engine is built and tested for this application by the manufacturer. The engine speed is limited to 2000 rpm (2200 rpm max) for a reduced noise level, lower fuel consumption and longer maintenance intervals.

Hydraulics

The drums are driven by hydraulic components with proven quality in heavy industrial and agricultural equipment. The hydraulic system is very robust and reliable. Temperature and pressure are constantly monitored by the electronic control system to prevent any damage to the system. The system needs no maintenance other than periodic oil and filter replacement: Filters annually, oil after six years.

The drums are mounted directly on the hydraulic motors. There are no couplings, clutches, bearings or mechanical brakes. During pay out, the

hydraulic motors automatically provide a constant braking force at speeds up to 20 mph. The maximum pay out speed is 35 mph.

The pump is directly mounted on the diesel engines' flywheel.

Electronics

The Hydrowinch is controlled by a PLC (Programmable Logical Controller) and Touch Screen. The PLC communicates with the engine by a "single wire" CAN-Open bus system. This industrial bus system eliminates complicated wiring diagrams and simplifies fault finding. All electronic components are available worldwide and comply with industrial availability standards.

Safety cabin

The cabin provides an ergonomic and safe environment for the winch driver. All controls are placed on the central dashboard at the center of the cabin. The controls can be operated from both seats. The cabin has a low floor plan and is easily accessible through the two doors on either side of the cabin. The winch driver is protected by an impact resistant safety glass with UV-filter. Optionally, a combined heating/cooling system can be mounted.

Controls

The controls are placed on the central dashboard and are well accessible from both seats:

- Display
- Selection push buttons
- Throttle lever
- Guillotine activation push button
- Emergency stop push button

Electronic launch control system

The Hydrowinch Club is operated by an electronic throttle lever which gives the winch driver full control of the winch. The electronic control system simplifies the operation of the winch and assists in controlling the ideal speed and force for higher safety and optimal launch height.

The average launch height can increase up to 30% compared to conventional winches with torque converters or automotive transmissions. This is realized by:

- Limited "take up slack" speed
- Smooth but powerful acceleration independent of the glider type and weight (jerk free)
- Intelligent rope force control for an optimum airspeed during all stages of the launch

The pilot is able to control the airspeed himself. To reduce airspeed he or she gently pulls the stick. To increase airspeed the pilot gently eases forward on the stick.

In contrary to traditional winches with torque converters, the glider gains extra height in a thermal. When the glider enters a thermal during the launch, the pilot reduces the increased airspeed by pulling the stick and gains extra height. The electronic control system prevents a break of the weak link.

The electronic control system constantly checks the status of the diesel engine and hydraulics. The status of the components is shown on the display to inform the winch driver. In the event of a technical failure, the electronic control system will prevent possible damage to the system.

The electronic control system is built with very reliable industrial electronics. The characteristics and performance of the winch can be easily adjusted to your preferences via the menus on the display. The menus for the control parameters (e.g. acceleration properties, 'remove slack' speed, etc) can be protected with a password to prevent unauthorized adjustments.

Durability

The engine and hydraulics of the Hydrowinch have a calculated lifetime expectancy (L10h) of at least 200.000 launches.

Maintenance and service

Because the Hydrowinch system is very simple, maintenance can be done by the club's winch technicians. Maintenance is limited to oil and filter changes of the diesel engine and the hydraulic system.

The Hydrowinch is built using only standard, globally available components. On site repairs of the engine, hydraulics and electronics can be done by the global service networks our suppliers.

Documentation

The Hydrowinch is supplied including:

- User manual.
- Maintenance manual.
- Maintenance schedule.
- Complete package of assembly drawings.
- Spare part list and specifications.

Commissioning

The Hydrowinch will be fully tested before shipment. On site commissioning includes setting the parameters of the electronics to your preferences, winch driver training and launch instructions.