

KERSTEN

HyCut

Battery Hybrid Remote Control Mower



55°

Max Slope

Range:

8 hours



www.kerstenuk.com

Kersten
SITE MAINTENANCE EQUIPMENT

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HyCut - Hybrid RC Mower

- The HyCut Mower features a **true hybrid drive**, with electric motors powering both the tracks and the blade. The machine can travel up to 250m without needing charging input from the engine.
- The mower deck can **cut material in both directions**, allowing for minimal turning on slopes, preventing the grass from being churned up by the tracks.
- The radio control is extremely intuitive and **easy to use**, with a range of up to 300m.
- The machine can handle slopes of up to **55 degrees**, without putting the operator at risk.



DESIGN FEATURES

True Hybrid Technology

The HyCut mower uses onboard batteries to power heavy duty electric motors for both the tracks and the mowing blades. The 48v sealed lead acid type battery bank is charged from an onboard generator which is powered by the engine,

All loads exerted on the mower are met by the battery bank. The engine and generator simply maintains a very consistent charge rate to ensure the batteries are able to meet all demands.

Benefits

■ Fuel Economy

The engine is not burdened with constantly changing loads. It has one job only, to charge the 48v battery bank.

Compare the fuel economy of a car which is driving erratically around town with medium speed motorway driving. We experience unrivaled fuel economy resulting in considerably less environmental emissions.

One tank of fuel will last all day. On site refueling is a thing of the past.

■ Low Maintenance

The CanBus system is programmed to reduce instances of overloading of any part of the drive train. Motors are engaged progressively resulting in significantly reduced wear to transmission systems.

All components have been carefully selected to operate well within their capacities and for low maintenance such as sealed and brushless drive motors.

■ Ease of Operation

The operator will find the machine very responsive. When you apply an instruction on the remote control interface, the battery bank immediately provides all the power required to carry out this function. You will not experience any delays.

Uniquely, the HyCut mower can perform some limited functions without the engine running. Loading and unloading from a vehicle may be carried out with pinpoint accuracy and with the operators full sensory awareness. The mower may be parked in a garage with out fear of exhaust gases indoors. Should an engine shutdown occur in work, the mower can be returned to the operator using battery power alone.

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DESIGN FEATURES

Dual Cut Mowing Technology

The HyCut dual swing tip mulching blade assemblies cut organic material up to 50mm diameter when driving the mower in both the forwards or reverse directions.

The robust carrier and belt drive transmission protects the machine in case of collision with unseen objects. A captive blade bolt design makes changing worn blades a simple one tool job.

Operators can remotely control the lift and lower mechanism of the strong steel mowing deck. The floating deck follows ground contours to reduce scalping.

Benefits

■ Productivity

The ability to mow in both the forwards and reverse directions eliminate the requirement to make turns at the ends of mowing lands. This not only significantly boosts productivity but also avoids making severe, turf damaging manoeuvres.

The Hardox steel blades and unique blade attachment design significantly reduces maintenance time and ensures efficient cutting and mulching of the heaviest material in one pass.

■ Reliability

The Electric drive to both the cutting system and the tracks is controlled by the CanBus system. This is not only carrying out commands from the operator but also monitoring information collected from many key components. Without the intervention from the operator, automated protection procedures may be executed should certain parameters be exceeded. eg. Drive speed will automatically be regulated if a level of overload situation is detected from the cutting deck. This protects the drive system seriously improving reliability.

■ Ease of operation

The floating mower deck with simple remote height adjustment together with CamBus control allows the operator the simply drive the machine in the preferred direction .

DESIGN FEATURES

Innovative track design

Working with cutting machines safely on slopes of up to 55 degrees requires a robust and well designed track system. The Kersten engineers have taken their influences from a design more commonly found in the construction machines market.

3 sprockets penetrate through the center of the drive tracks providing 3 points of alignment. 5 track rollers support alignment and ensure maximum contact with the ground.

The rubber track belt is under constant tension from spring adjusters. The relief angles at each end of the track allow kerb edges to be easily mounted.

Benefits

■ Reliability

The tracks on the HyCut are designed to remain on the mower as much as possible. No other mower track system offers more alignment and support.

■ Ease of operation

In the event of losing a track the vehicle lift (included) simply slots in to place and can jack up the lost track side of the mower. Simply release the track adjusters (no tools required), replace the track over the sprockets and re tension the spring loaded track. The motors that drive the tracks are braked, providing added safety if the engine loses power on the slope - preventing it from rolling down the incline.

■ Environment

The track system used on the HyCut mower combines traction with reduced surface disturbance. The ground compaction of a tracked machine is considerably less than a wheeled unit. The operator is not increasing this weight. By reducing the requirement to turn around at the end of every mowing strip, surface damage is virtually eliminated.

DESIGN FEATURES



Fully Connected Technology

Central to the Kersten HyCut mower is the CanBus system. It uses data to control the mower efficiently. Self diagnosis tests are performed during operation. Should any faults be detected a fault code will appear on the remote control. This same data not only remains on the mower but is also shared via a mobile data connection to a database and service portals.

The customer service portal may be accessed by operators and managers. It displays current and historic information including location, working speed, working incline, machines hours etc.

The engineer service portal can be accessed by Kersten engineers and provides hundreds of lines of metrics including individual component temperatures and power utilization.

Benefits

■ Reliability

During development, Kersten engineers have been able to robustly test the HyCut mower all over Europe. The running data collected remotely through the service portal has aided identification of potential problems before they have manifested themselves as a mechanical breakdown leading to a tried and tested reliable design.

The service portal continues to provide data 24/7 and also allows software updates to be remotely installed on the mower should they be required.

■ Less Down Time

Onboard self diagnosis systems detects small problems which can usually be remedied on site by the operator in minutes. Identifying these issues early can prevent escalation to a major failure and makes the operator aware to take future preventative action.

■ Transparency

The HyCut mower provides accurate metrics regarding the position and working angle. Stake holders can use the built in reporting system to plan internal work efficiencies and demonstrate work completion to customers.

DESIGN FEATURES

Simple Control Interface

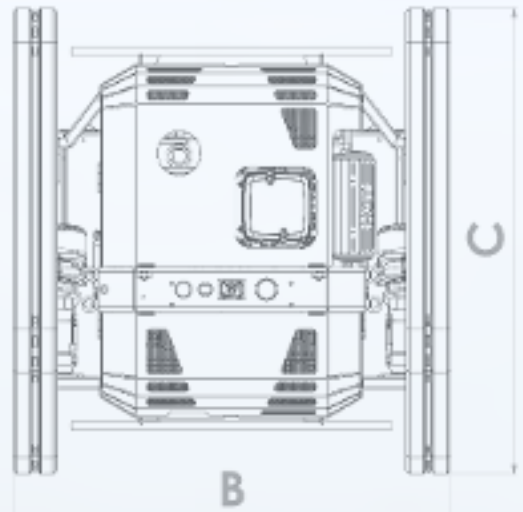
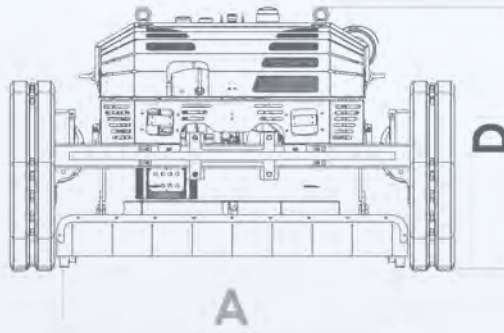
The hybrid battery technology provides power to carry out any instructions provided by the operator, without delay, using the remote control interface. Only 2 main controls are required to provide forwards/reverse and steering left/right.. Other features of the remote control interface include operator fall emergency stop, engine start, mower blades start, cruise control, straight line adjustment and height of cut.

The HyCut mower uses the onboard work lights and horn to signal information to the operator such as the auto slow down feature when the mower experiences potential cutting system overloading.

Benefits

- **Productivity** The hybrid mower significantly reduces the time taken from unloading the HyCut to mowing. Warming up the machine before achieving peak performance is not necessary. Valuable time is saved due to the responsiveness to commands of the mower and a top mowing speed of 6km/h
- **Ease of operation** The 2 lever control interface is intuitive and similar to many games consoles. Due to the prompt execution of commands the typical over compensation of lever movement is reduced providing a very comfortable operator experience. HyCut has very low noise levels and a huge remote control operating range of 300m
- **Safety** The Hycut mower signals information to the operator using the front and rear work lights together with the horn and beacon. This provides a level of feel to the operator who may be very distant from the mower. If the control interface experiences an unexpected operating position the mower will automatically shut down. Well positioned transport tie down loops reduce risks of error.

Specification



A Cutting Width	115cm
B Overall width	150cm
C Overall Length	160cm
D Overall height	89cm

Remote control handset



- Drive forwards/backwards
- Steer left/right
- Emergency stop
- Motor stop/start
- Mower on/off
- Operating distance 300m (visibility)
- Cruise control
- Straight tracking adjustment
- LCD display
- Frequency 2.4GHz
- Rechargeable batteries

Weight	580kg
Cutting system	1150mm - 2 x heavy duty spindles with 4 swinging mulching pairs
Cutting height	Adjustable height 50-180mm or 80mm-210mm
Sound levels	Battery only drive 53.4dB , 78.6dB Hybrid mowing
Drive speed	0-7km/h forwards and backwards
Transmission	2 x 3kW brushless sealed drive motors with brakes and reduction gearboxes - 150mm low ground pressure rubber tracks
Cutting motor	1 x 10kW brushless sealed drive motor with v belt drive to blades
Power unit	B&S petrol engine 23hp. Emissions standard Euro stage 5. Remote control start/stop - 48v brushless generator
Battery bank	4 x 35Ah SLA type batteries - 48V system
Safety	Emergency stop on machine and remote control, Orange flashing warning light on the machine, battery disconnection via main switch on mower
Fuel	25 litre removable marine fuel tank (provides 8 hours working time)