

THOOSA 12000

Electric Inboard Drive Systems

The Thoosa 12000 is a 72 V system. The system uses a permanent magnet motor; set up in a gearing console made in stainless steel and is regulated by a 4-quadrant motor controller.



12 kW Continuous Power
Replaces a 35 – 50 HP Combustion Engine

CHARACTERISTICS

Increased reliability

An electric motor starts every time.

Power immediately available

No need for pre-heating – the power is immediately available.

Low weight:

The weight of the electric system is very low – and batteries can be distributed for better weight optimization.

Low maintenance costs:

The only maintenance parts in the system are the brushes and the gear belt.

Easy installation:

Low weight of the motor and gearing, and a motor controller designed for easy installation.



RECOMMENDED USE

The Thoosa 12000 is made for boats at 35-45 feet.

SECURITY AND COMFORT

An electric motor starts every time - just turn the key, adjust the throttle and GO. With our electric motor, the power kicks in immediately, making harbor maneuvering easier and more accurate.

The system is virtually silent and allows people on deck to speak with each other while maneuvering in harbors, making the event enjoyable, safer and relaxing.

The low weight of the electric motor solution also improves the maneuvering abilities of the boat since the heaviest part of the system (the batteries) can be moved into e.g. the keel.

ENVIRONMENT AND COMFORT

Not only does an electric motor solution free the harbor and sea from oil spills, it also frees you from the smell of diesel and exhaust fumes, providing you with a clean engine room, making the onboard environment more pleasant.

INSTALLATION

Due to the motor and gearing console's low weight, the motor is easy to align without the need for heavy tools.

The motor controller is designed for easy installation so throttle, key-lock, charger, battery monitor and DC-DC converter can be connected by "plug and sail".

MAINTENANCE

The cost of maintenance is very low since it is only needed for two parts.

The brushes have a lifetime of 4000 hours.

The gear belt has a life time of 3000 hours.

Both parts are easy to replace.

FUNCTIONALITY & EFFICIENCY

The electric motor has a stationary magnetic field (stator) and a rotating magnetic field (rotor) that either attracts or repels each other and thereby creates rotation.

Where an "ordinary" DC motor uses standard magnets and a cylindrical rotor, the motor in the Thoosa 12000 system uses double Neodymium magnets and a disc shaped rotor. This makes the motor very powerful and very efficient.

The rpm on the motor are regulated by adjusting the voltage with the motor controller. The motor controller chops the voltage from the batteries into small pulses. The longer the pulses it sends to the motor, the more power and rpm are provided by the motor. This makes the system more efficient.

POWER CHARACTERISTICS

An internal combustion engine idles at 700-800 rpm – and must rotate at 1500- 2000 rpm to make enough torque to drive the boat forward.

Our electric system does not idle and provides full torque at any speed if it runs at full current. This gives you have a very high torque available for acceleration.

The main power consumption is used to accelerate the boat up to the desired speed. Thereafter, the power consumption drops significantly when using an electric motor.

All in all, this shows that an electric motor solution is a feasible and efficient alternative to a combustion engine.

REGENERATION: CHARGING BATTERIES WHILE SAILING

The Thoosa 12000 has a build in regenerative function (RG).

By RG the motor works as a generator and sends a positive charge to the battery bank, while the boat is driven by wind/sails. What is achieved through regeneration is supplemental, much as you would receive from wind or solar. For more information on regeneration speak with your dealer.

THOOSA 12000



Technical data



CUSTOMER SERVICE

Standard design proposal for the specific boat is always included in our offer, free of charge.

If you have special mechanical or electrical requirements to any of our THOOSA systems, please contact us for further information.

Technical data	
Motor type:	AM 180 / 135
Voltage	72 V DC
Current:	180 Amp (limited by motor controller)
Power output:	12.0 KW
Average efficiency:	93%
Battery recharge function:	Yes
Rated speed engine:	3.240 rpm
Rated torque:	35.3 Nm
Speed constant:	45 rpm/V
Peak current:	400 Amps
Peak Power:	24.2 KW
Peak torque:	71.3 NM
Reduction:	AM D/03
Standard gearing:	22:56 wheel combination
Gear Belt:	624
Standard Rpm propeller shaft:	1270 Rpm
Option Rpm propeller shaft:	990 Rpm
Option Rpm propeller shaft:	790 Rpm
Weight of motor and console:	30 kilo
Weight of Thoosa 12000 system:	44 kilo
Recommended boat size:	35-45 feet

THOOSA 12000



Motor, included console, with reduction and mounting brackets



Motor Controller



Key Switch

Additional System Components



THROTTLE
Dual top mounted throttles for twin engine applications



Side mounted throttle - programmed for port or starboard mount



BATTERY MONITOR
Standard battery monitor
Other monitors are available