
torqeedo
STARNBERG.GERMANY
Silver
2015

10 years of making a difference.

Making mobility more sustainable is a task for our generation.

When we founded Torqeedo 10 years ago, many buzzwords of today's discussion on mobility were not yet coined. Nobody talked about electric mobility or about cleantech. But the fundamental drivers of electric mobility were clear as day already then: An ever increasing world population, a doubling of the global middle class in our decade, limited oil with rising cost, efforts to reduce global warming and an increasing trend towards sustainable lifestyles.

It is not without pride that we are celebrating 10 years of Torqeedo in 2015. Our short history is a succession of industry firsts: the first brushless motors in the marine industry, the first lithium propulsion-batteries, the first outboards with integrated batteries, the lightest outboards on the market, the first GPS-based range calculation for outboards, the first smartphone app with real-time range information shown on a map and the first electric high power propulsion system from serial production, just to name the most significant.

We've taken on boating.

Our pioneering role in electric boating was well rewarded in these 10 years: We have received the trust and the goodwill of tens of thousands of customers and decision-makers in the marine industry, making us by far the leading player in electric boating worldwide.

We are thankful for the trust and goodwill we have received from you for our work. Our international team is determined to continue setting the pace for electric boating – because making mobility more sustainable is a task for our generation. And because we are here to make a difference.

Highlights 2015

Deep Blue Hybrid 46
Cruise - New Generation 28
Deep Blue Tiller Version 38
New Travel Battery with USB Adapter 24
New Solar Charger Sunfold 37 for Travel 54

Torqeedo for pleasure

A clean and contemporary style of boating

With Torqeedo your marine leisure activity becomes a modern, clean, green, and safe pastime. Our electric motors are leading-edge high-tech design products propelled by the most powerful and safest high-performance batteries of their kind.

Join clean boating

- Simple operation
- A clean business
- High operating safety
- Exemplary carbon footprint
- Contemporary style

Join the Torqeedo fan community!

https://www.facebook.com/torqeedo

The economic case for electric boating

Save 100% of your gasoline or diesel cost
\+ Spend a fraction of the saved cost for electricity and battery write-off
\+ Profit from lower maintenance cost
\+ Enjoy high reliability

= If you are out on the water 100 days per year or more, you may save money by going electric

That you are protecting our waters and atmosphere counts as a bonus.

Our 80 HP equivalent **Deep Blue** models can help you to save cost if your gasoline or diesel cost amount to EUR 4,800 per year or more. See page 38 for more details.

If you are using 10 litres of fuel per day while going at slow speeds, our 8 HP equivalent **Cruise** models may help you to save more than EUR 1,000 per year.

Contact us or your local Torqeedo dealer for details.


DEEP BLUE

Leave nothing in your wake – boat electric

Electric motors are kinder to the environment than combustion engines

- Zero emissions when underway
- No water pollution with exhausts
- Less noise – when starting up or travelling over water

Torqeedo motors have an exemplary carbon footprint

It's perfectly obvious that Torqeedo motors produce **no exhaust gases or carbon emissions** during use. What is more important is that they also offer excellent "well-to-wheel" efficiency – with an extremely small carbon footprint.
Firstly, Torqeedo drive systems **conserve resources and protect the climate** thanks to their **lightweight construction**.

Secondly, in **operation**, it's their **outstanding efficiency** that ensures Torqeedo motors protect the environment and climate better than other drive systems. A Torqeedo Travel, for example, can travel more than 10 nautical miles with a battery consumption equivalent to 40 grams of petrol.

Well-to-wheel analysis
A well-to-wheel analysis is used for vehicles to investigate the direct and indirect carbon dioxide emissions that are caused directly or indirectly during all stages of production and energy supply for a motor. It provides a complete picture of the impact that a motor has on the earth's atmosphere.

Advantage Torqeedo

One HP is one HP. Isn't it?

Standardisation of power is nothing new, it goes back to James Watt who defined horsepower in the 18th Century to demonstrate the performance of his steam engine. Since then, it's been measured uniformly in HP or, in honour of its inventor, in Watts. And with that, everything should be clear, shouldn't it? Not completely! It depends where and how you measure.

The **most meaningful performance indicator** of a drive system is **propulsive power**, which indicates the performance actually delivered by the boat's motor, taking all losses, including propeller losses, into account. This method has been used in commercial shipping for nearly 100 years.

For petrol and conventional electrical outboard motors the propulsive power is not normally revealed. Instead, less meaningful indicators are used, such as the **shaft power**, **input power** or even the **static thrust**.

That wouldn't be so bad if the differences between the various power ratings were minimal. But they aren't; they're very large. The propulsive power of a petrol outboard with 4 HP shaft power, for example, is just 1 HP. The differences between outboards related to their efficiency are enormous. We'll shed some light on them.

Shaft power: Power rating of petrol outboards, comparable with cars (torque x angular velocity). The rating is expressed in HP or kW but does not take propeller loss into account, which can vary between 30% and 80%.

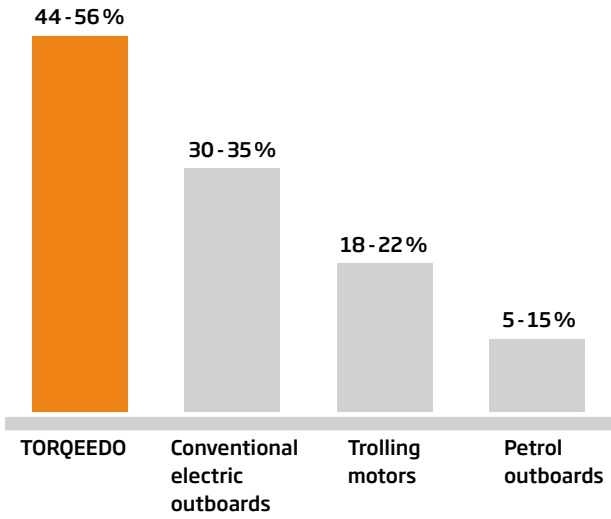
Superior propulsive power and superior overall efficiency

Our focus on optimising propulsive power and our use of the newest technologies means Torqeedo has the highest overall efficiency on the market. That is, every Torqeedo drive converts its available battery power to propulsive power better than any other outboard. This is very important for electric drives because it means more power and range from limited battery capacity.

Input power: a drive's power consumption. Often used as a performance indicator for electric outboards (current x voltage), expressed in Watt or HP. Does not reflect any losses in the system.

Propulsive power: Performance indicator used by commercial shipping and Torqeedo (thrust x speed). It is expressed in HP or kW and takes all losses into account, including propeller loss, and clearly indicates the actual power delivered by the drive system for propulsion.

Overall efficiencies of various outboards

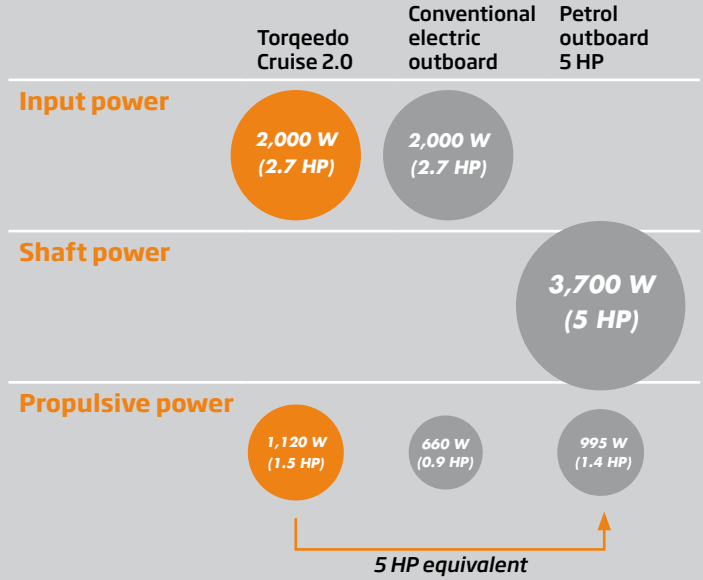


Comparing the power of electric and petrol outboards – Torqeedo's HP equivalent

Electric motors can achieve the same propulsive power as combustion engines with significantly lower shaft power. The reason lies in the different torque curves of electric motors and petrol engines: While the torque curve of combustion engines features a prominent peak, with maximum torque being available only in a limited working point, electric motors feature a much flatter torque curve, with ample torque available at any rotational speed. This characteristic allows them to run substantially higher efficiency propellers than combustion engines. Propeller efficiencies in the lower horsepower class can vary by a factor of 3 between petrol outboards and Torqeedo electric outboards.

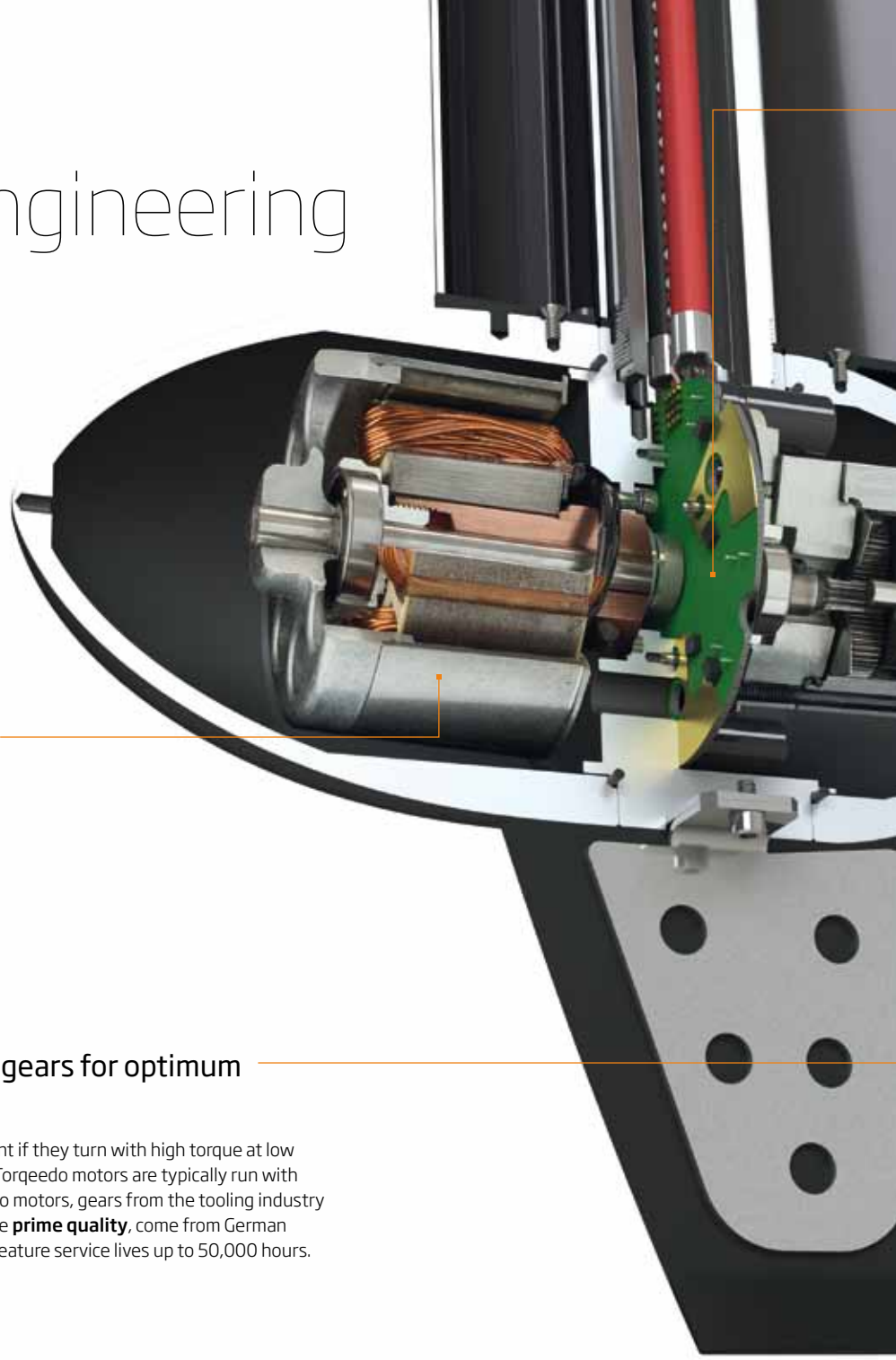
To make the comparison easy for boaters used to shaft power ratings of petrol outboards, we always compare the actual propulsive power of our outboards versus petrol outboards. On the following pages, a Torqeedo outboard specified as a „3 HP equivalent", provides the same propulsive power as a 3 HP petrol outboard – even though its shaft power and input power may be substantially lower.

In the Technical Data section of this catalogue, we provide all information on input power, propulsive power, overall efficiency and comparable petrol outboards for your reference.



Superior drive train engineering

Superior propulsive power and overall efficiency don't just fall out of the sky. They come from inhouse development that works uncompromisingly towards optimising propulsive power and overall efficiency. It comes from using the newest technology for every component. It comes from using tailor-made components where appropriate, instead of off-the-shelf solutions. And it comes from carefully matching all components of the drive train for performance. That is what superior drive train engineering is about.



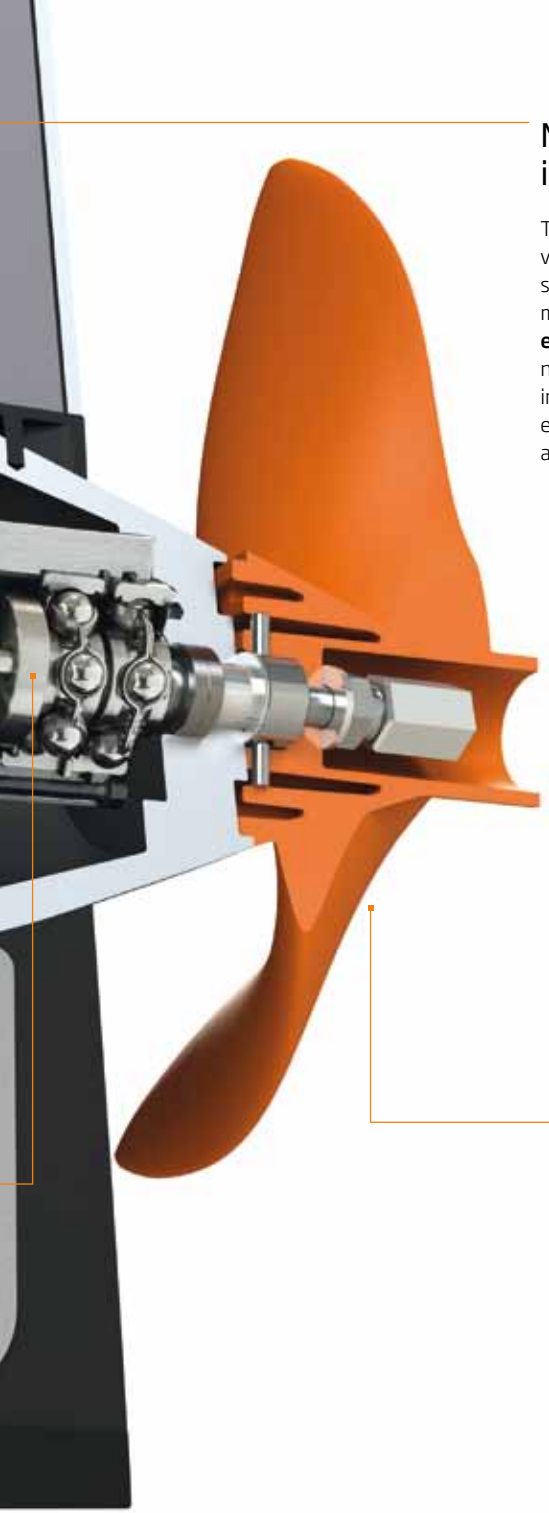
Torqeedo motors are real power packages

Different design, higher torque density – We have always concentrated on **brushless**, **electronically commutated motors** from our earliest beginnings. It is not just the design that ensures better power development but also superior materials. By using **rare-earth magnets**, which have about 5 to 6 times the strength of regular hexaferrites, we obtain the maximum possible torque in the smallest of spaces.

Drive train engineering is our focus – because efficiency matters

Carefully selected gears for optimum torque and speed

Propellers are run most efficient if they turn with high torque at low rotational speed. That is why Torqeedo motors are typically run with **planetary gears**. For Torqeedo motors, gears from the tooling industry are typically used. They feature **prime quality**, come from German precision manufacturing and feature service lives up to 50,000 hours.



Maximum levels of efficiency from integrated power electronics

Torqeedo motors create the alternating current they need to run via contactless **electronic digital switching**, which requires no so-called "brushes". The power electronics system controls how the motor runs with extreme precision, achieving **maximum levels of efficiency** in the entire drive train. And because there are no brushes, no maintenance is required – there is no wear, no electromagnetic interference from "brush sparking", no friction loss. The power electronics of Torqeedo motors is never an off-the-shelf product, it is always **tailor-made for highest efficiency and performance**.

Superior propeller design with methods from commercial shipbuilding

The biggest efficiency losses in a drive train typically occur in the propeller. **Minimizing propeller losses** is done on the one hand by optimising motor and gear for high torque at all rpm-levels. On the other hand, it comes from applying **state-of-the-art propeller design**: shaping all propeller geometries, not just diameter and pitch, and tailoring them onto the torque characteristics of the motor and for the required application in a boat.

Leading-edge propeller design

Leading-edge propeller design comes from following conventional wisdom and from applying advanced propeller calculation methods.

According to **conventional wisdom**, there are three main characteristics of efficient propellers

1. Large diameter
2. High pitch
3. Low rotational speed

To spin large-diameter high-pitch propellers slowly, motors need to deliver high torque along their entire rpm-range. In other words: motors with a suitable torque curve can work efficient propellers; motors with low torque or a strongly curved torque characteristics can't. But conventional wisdom is not everything.

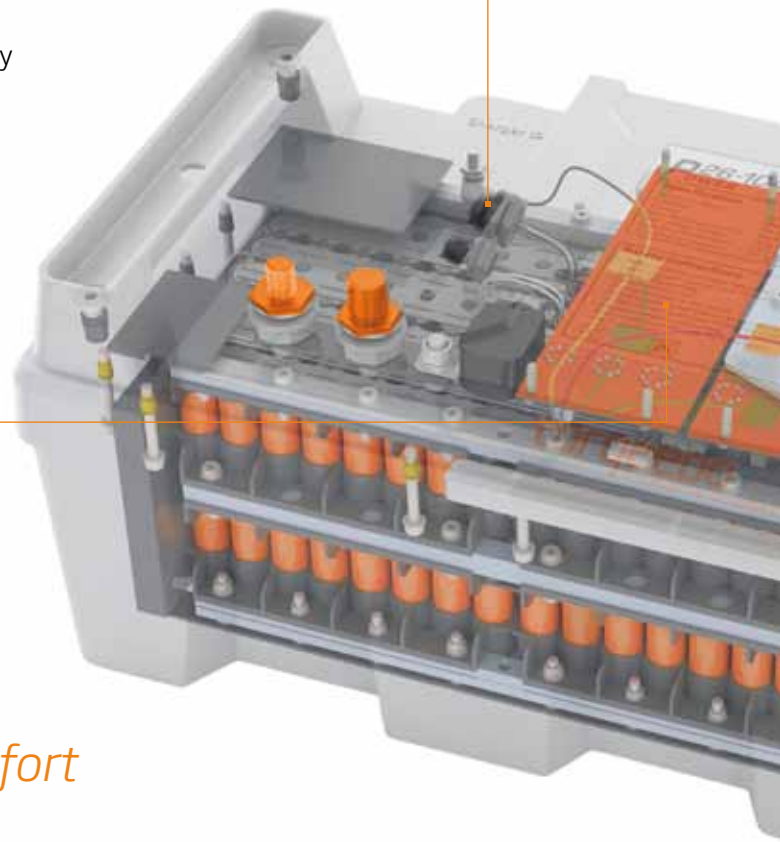
Many outboard propellers, especially in the low horsepower classes, look very similar. **Torqeedo propellers look differently**. They are calculated with the same methods (and by the same experts) that are used to calculate propellers for the most advanced commercial ships and submarines. Using **advanced propeller calculation methods**, all propeller parameters – diameter, chord length, pitch, skew, rake, thickness and camber – are calculated in a multidimensional process, over many thousands iterations.

Superior battery technology

Safe performance – designed in every detail for exacting use

Lithium-based batteries are the technology of choice for electric mobility applications: they store significantly more energy than other batteries, they deliver their capacity even under high loads – a very important benefit for electric propulsion; they don't lose their charge, work in the cold and have no memory effect. Plus, they deliver more cycles.

For 10 years, Torqeedo has continually led the way in marine lithium battery development. Improving our batteries every year, we have created the most comprehensive protection and safety concept for marine lithium batteries on the market – bringing together performance, safety and ease of use.



Intelligent Battery Management-System (BMS)

The BMS **monitors and protects Torqeedo batteries** against overcharging, overcurrent, deep discharge, short-circuit, overheating, wrong polarity, etc. They are constructed according to a **redundant safety principle**: any component with a safety-critical function is backed up by a redundant component that duplicates the safety function. In addition the BMS protects the battery's life expectancy with balancing and deep-sleep functionality.

Best comfort

Powerful performance

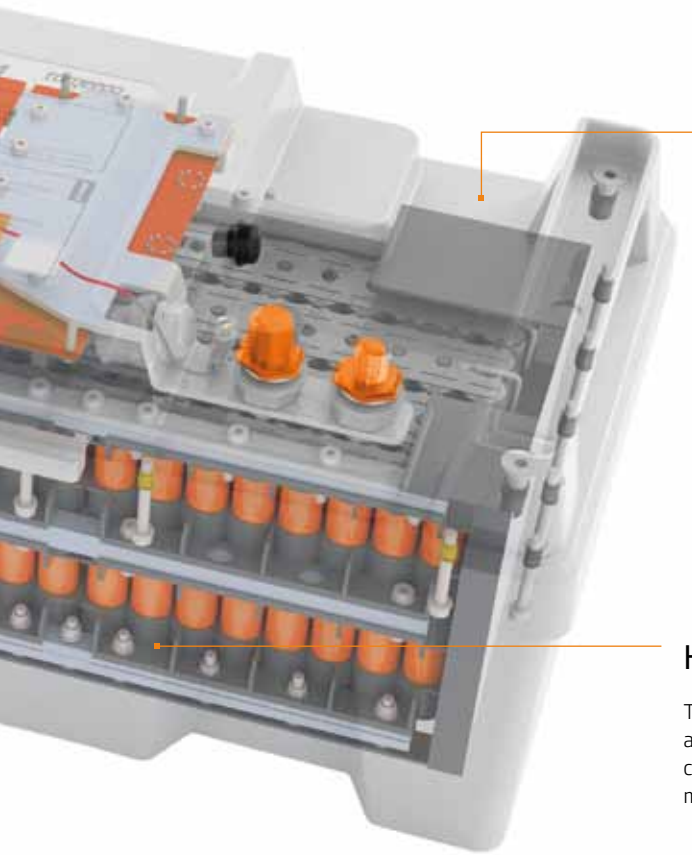
Comfortable and easy transport

Thanks to the **high-energy density** of lithium batteries, their volume and weight is up to 70% below comparable AGM- or lead-gel solutions. Our low-voltage batteries are easy to handle, light to carry. Plus: Torqeedo Power and Deep Blue batteries can be switched on and off, allowing them to be **safely transported and installed** and protecting them against unintentional discharge.

System communication

Detailed information about the state of the battery is communicated to the on-board computer of the propulsion system.

Highly reliable & safe



Completely waterproof

Waterproof housing (IP67). Even if battery submersion should generally be avoided, all Torqeedo batteries are, without exception, completely waterproof. The waterproof characteristics of each battery are individually tested prior to delivery. **Waterproof data connections**. Whether plugged or not, all cable connectors are completely waterproof to IP67.

High quality safety cells

Three hardware mechanisms in every single cell provide additional safety. Torqeedo only uses cells from the clean, **precision production processes** of reputable manufacturers in Japan and the USA.

Lithium battery safety

Along with performance, safety is a key requirement for lithium batteries. From our point of view, there are **5 requirements that a safe lithium battery must fulfill:**

1. **Safe battery chemistry**, e.g. LiFePo or LiNMC. These are now commonplace.

2. **Safe packaging of individual cells:** Torqeedo uses only safety cells, i.e. welded steel cylinders equipped with multiple safety mechanisms. Other packaging – foil-welded cells – offers a reduced level of safety because they don't provide effective protection against internal short circuits (exceptions are foil-welded cells with ceramic separators, which provide safe packaging but are very expensive and very rare).

3. **Precise and clean production processes** at the cell manufacturer level. Torqeedo only uses cells produced by renowned manufacturers in Japan and the USA.

4. **Battery-Management-System (BMS) with redundant safety:** Unlike lead-based batteries, lithium batteries generally need a BMS to perform balancing and safety functions.
   If the BMS fails, it can itself become a safety problem. Which is why, with Torqeedo, all safety-relevant components are duplicated. The same method is used e.g. in the automotive industry and medical technology.

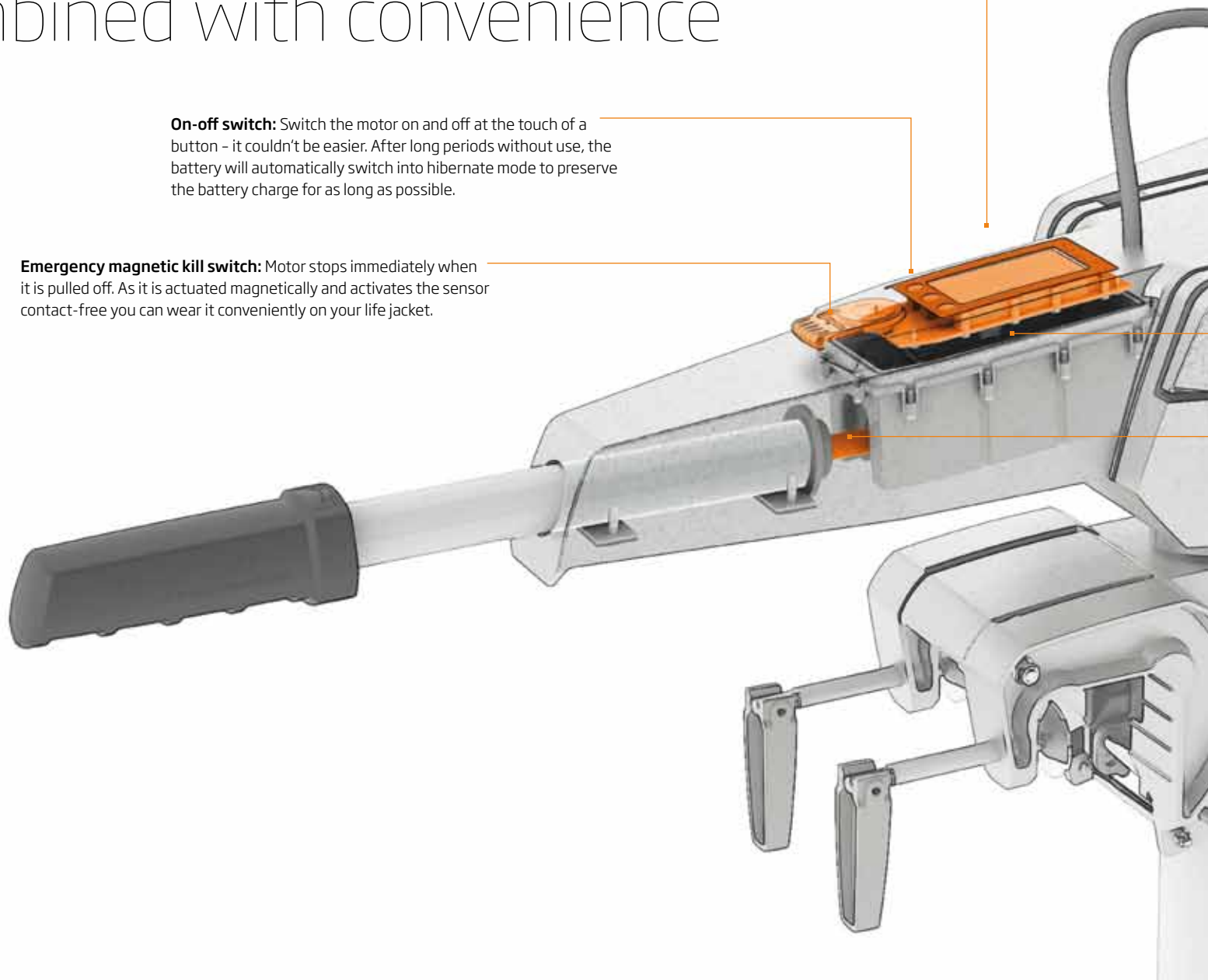
5. **Waterproof IP67:** water inside a lithium battery can cause numerous problems, including corrosion of the BMS and the development of detonating gas. Therefore, lithium batteries on-board must be waterproof.

Performance is best enjoyed when it's combined with convenience

Use it intuitively

On-off switch: Switch the motor on and off at the touch of a button – it couldn't be easier. After long periods without use, the battery will automatically switch into hibernate mode to preserve the battery charge for as long as possible.

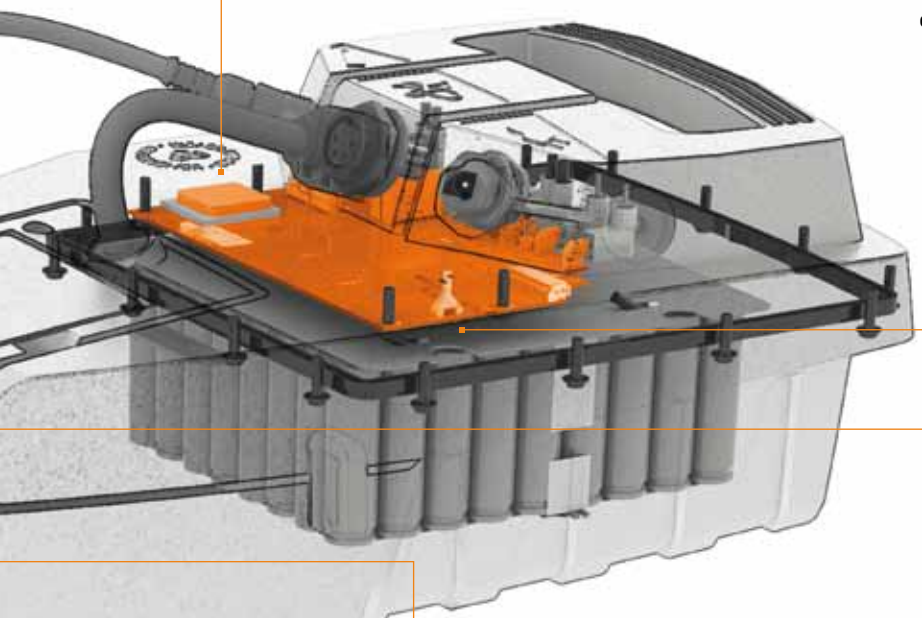
Emergency magnetic kill switch: Motor stops immediately when it is pulled off. As it is actuated magnetically and activates the sensor contact-free you can wear it conveniently on your life jacket.



Audible alarm: Just like in your car. The on-board computer will warn you by sounding an alarm when the power supply is on reserve. Very explicitly with the Travel and Cruise T, telling you it is time to head for the shore or reduce speed to increase range.

Knowing it all. All the time.

Every Torqeedo motor has an **integrated on-board computer with GPS receiver**.



Navigating with TorqTrac: Enjoy a zoomable map view showing you your exact GPS position and remaining range. Record your trips and see your estimated time of arrival. Just what you need for a trip on the water.

Battery information: How much of the battery charge is left in the battery? What is the temperature of the battery? How much current is it delivering? The battery management system knows it all – and shares its knowledge. With you. And with the other components in the system.

From the **information display** you can see the battery charge status, current speed over ground as well as remaining range and time. In real time, all the time. In your preferred units of measure.

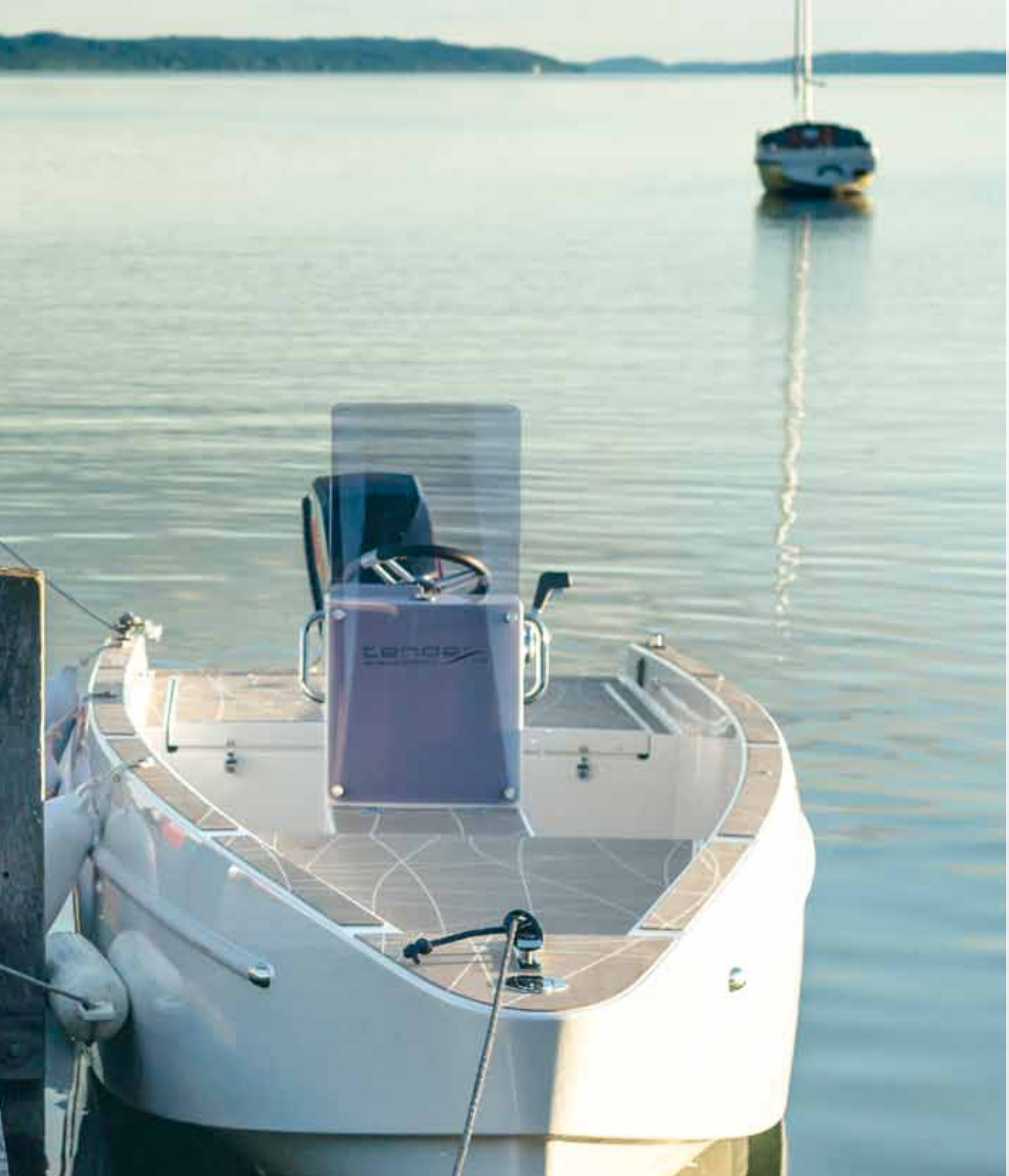
Waterproof connections: When using the tiller throttle, control information is transmitted magnetically to a sensor in the control box. And the **plug connectors on the data cables** are completely waterproof to IP67 – whether connected or unplugged.

A clean affair

No smells, no leaks: Whether in use or in storage, with Torqeedo motors there are no unpleasant oil smells or petrol stains. Your hands and clothes will stay clean even when you are handling the outboard. We are sure you will appreciate that.

No noise: Torqeedo motors are not completely silent but they are significantly quieter than comparable combustion motors. You might even find a stowaway on board enjoying the peaceful planing over the water.

Motors & Batteries



Ultralight 403

For kayaks and very light boats

1 HP
Equivalent*

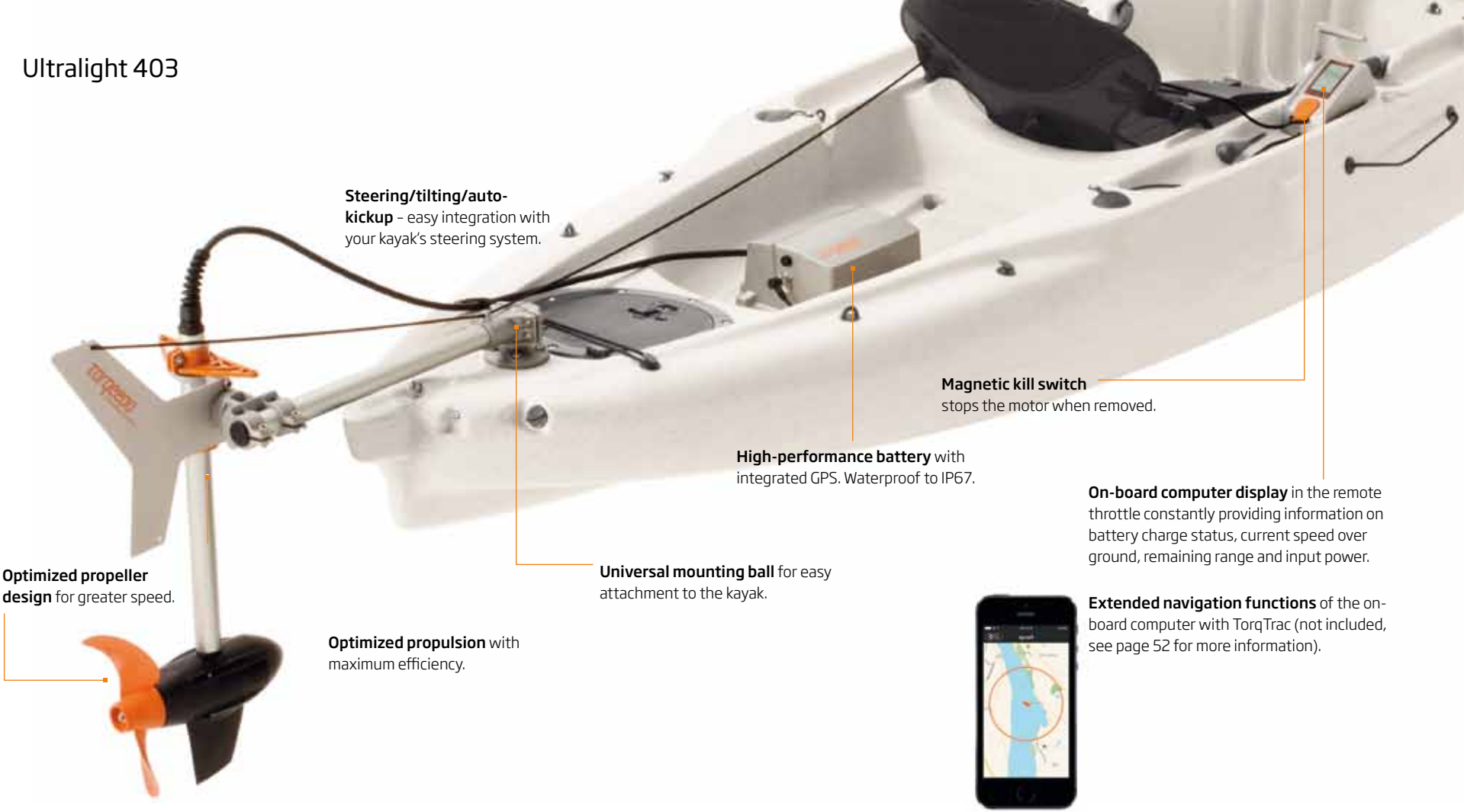
Our extreme lightweight packs a powerful punch: maximum speed up to 10 km/h and a range up to 40 km.

Free yourself from tired arms and the nearest power socket. You can fill up everywhere with the solar charger. And since the Ultralight 403 is electric, you can even travel on protected waters. Ultra clean Ultralight 403.

* Ultralight 403: Input power 400 W, propulsive power comparable to 1 HP gasoline outboard, see page 11.


Lightweight:
7 kg including battery
Untiring:
up to 40 km range
Intelligent:
on-board computer with GPS
Communicative:
connects to your smartphone
Lively:
speed up to 10 km/h

Ultralight 403



Steering/tilting/auto-kickup – easy integration with your kayak's steering system.

Magnetic kill switch stops the motor when removed.

High-performance battery with integrated GPS. Waterproof to IP67.

On-board computer display in the remote throttle constantly providing information on battery charge status, current speed over ground, remaining range and input power.

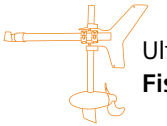
Optimized propeller design for greater speed.

Universal mounting ball for easy attachment to the kayak.

Optimized propulsion with maximum efficiency.

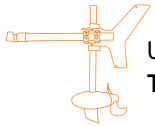
Extended navigation functions of the on-board computer with TorqTrac (not included, see page 52 for more information).

Performance: Speed and range



Ultralight 403 with lithium battery (29.6 V / 11 Ah)
Fishing kayak (4.1 m / 26.3 kg, Model: Hobie Mirage Revolution)

	Speed in km/h	Range in km	Running time in hours : minutes
● ○ ○ Slow	4.2	35.2	8:20
● ● ○ Half throttle	6.0	25.0	4:10
● ● ● Full throttle	9.3	7.4	0:48



Ultralight 403 with lithium battery (29.6 V / 11 Ah)
Touring kayak (4.7 m / 23 kg, Model: Prijon Prilite T470)

	Speed in km/h	Range in km	Running time in hours : minutes
● ○ ○ Slow	4.2	42.0	10:00
● ● ○ Half throttle	6.2	26.0	4:10
● ● ● Full throttle	9.8	7.8	0:48

Ordering information Ultralight 403

Equipment included

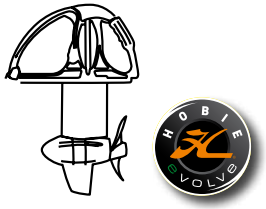
- Ultralight outboard (1 hp equivalent*, weight including battery: 7 kg)
- High-performance lithium battery (320 Wh) with integrated computer and GPS
- Remote throttle with display
- Mounting ball
- Charger
- Magnetic kill switch
- Bag

Part no. 1403-00

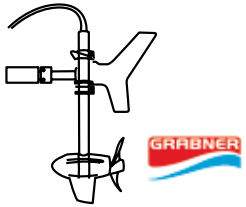
Accessories	Part no.
Spare battery	1413-00
Fast charger	1131-00
Solar charger 45 W	1130-00
Replacement charger	1127-00
TorqTrac ***NEW***	1924-00
Motor cable extension 2 m	1920-00
Ultralight remote throttle extension cable 1.5 m	1921-00
Ultralight remote throttle extension cable 5 m	1922-00
Replacement propeller v10/p350	1912-00

* Ultralight 403: Input power 400 W, propulsive power comparable to 1 HP gasoline outboard, see page 11.

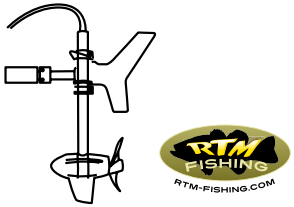
Mounting



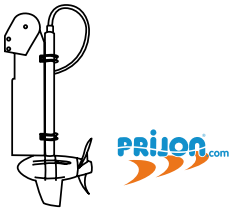
Use with Hobie kayaks: We recommend the Hobie "eVolve" product (available from Hobie dealers).



Use with Grabner kayaks: Please use the Grabner mounting kit.



Use with Rotomod kayaks: You can use the standard Ultralight mounting.



Use with Prijon kayaks: Please use the Prijon rudder mounting.

All others: The Ultralight 403 can be mounted on just about any kayak using the mounting ball provided.

FAQ

What power does the integrated battery deliver?
The battery has a capacity of 320 Wh, i.e. 11 Ah at 29.6 V.

How long does it take to recharge the battery?
When the battery is completely discharged it takes approx. 12 hours to fully recharge it. A full recharge using the fast charger (not included) only takes approx. 4 hours. With the solar charger 45 W (accessory) you can charge anytime, during travel and while the sun is out.

What useful life can I expect the lithium batteries to have?
The life expectancy of lithium batteries in recreational use is,more or less, independent of charging cycles. There is no memory effect either, i.e. you can fully charge them after each trip irrespective of the charge status shown in the display. Generally speaking, a capacity loss of approx. 4 % per year is to be expected. Capacity loss will, however, accelerate if the battery is permanently exposed to heat. Also storing the battery always fully charged will accelerate ageing. There are no concerns about using the battery in high temperatures, we recommend that you take the battery out of the sun and store it in a cool place after use. Your battery must be returned to a Torqeedo Service Centre for service 8 years after the date of manufacture.

Can the Ultralight 403 be connected to the steering system?
Yes, the Ultralight 403 can be connected to your kayak's steering system. Please refer to your kayak's instructions and our information on mounting.

What happens if I capsize?
If the kayak capsizes, the motor stops automatically to prevent injury – provided the magnetic kill switch is attached to your wrist or life jacket. The motor only runs when the magnetic kill switch is placed in the prescribed position on the remote throttle. Should you fall overboard, the magnetic kill switch will go with you and the motor will stop immediately.

What is the warranty on the Ultralight 403?
The Ultralight 403 has a 2-year warranty from the date of purchase for recreational use.

Travel 503/1003

For tenders, dinghies and daysailers up to 1.5 tons

1.5 HP Equivalent*

3 HP Equivalent**

There is an alternative to small petrol outboards. With its integrated battery it is as handy as a small petrol outboard. It provides the same propulsive power and it will cover the same distance as a small petrol outboard with an integrated tank. Yet it has many advantages.

NEW The lithium battery of the Travel now has a USB adapter, allowing you to charge your smartphone or power a lamp for trips in the dark.

* Travel 503: Input power 500 W, propulsive power comparable to 1.5 HP gasoline outboard, see page 11.

** Travel 1003: Input power 1,000 W, propulsive power comparable to 3 HP gasoline outboard, see page 11.

- ☐ Solar chargeable
- ☐ Cleaner in every way: no petrol, no oil, no leak, no smell, no pollution
- ☐ Same propulsive power as a 1.5 or 3 HP petrol outboard
- ☐ Comes with an on-board computer and GPS based range calculation
- ☐ Connects with your smartphone to show range on map
- ☐ Waterproof IP67
- ☐ Easy handling: motor without battery weighs < 9 kg
- ☐ Always starts at a push of a button

Travel 503/1003

Audible alarm signal indicates low battery charge.

On-board computer display in the tiller or remote throttle provides constant information on battery charge status, current speed over ground, remaining range and input power.

Two shaft lengths – just as you need: 62.5 or 75 cm.

Maximum-efficiency propulsion for premium performance and range.

High-performance battery with integrated GPS.

Solar charging socket: for solar charging on the move on water or when moored.

Optimized propeller design for greater propulsive power.

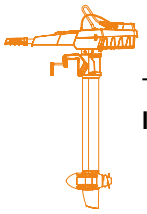
NEW **USB adapter:** use your Travel battery as a power source for electronic devices (included in scope of delivery).

Extended navigation functions of the on-board computer with TorqTrac (not included, see page 52 for more information).

Performance: Speed and range

Travel 1003 (≡ 3 hp) with lithium battery (29.6 V / 18 Ah)
Inflatables, dinghies and daysailers up to 1.5 tons

	Speed in knots (km/h)	Range in nm (km)	Running time in hours : minutes
Slow	approx. 2.0 (3.7)	approx. 20.0 (37.0)	10:30
Half throttle	approx. 3.0 (5.5)	approx. 10.5 (19.4)	3:30
Full throttle	approx. 5.0 (9.2)	approx. 2.8 (5.2)	0:35



Travel 503 (≡ 1.5 hp) with lithium battery (29.6 V / 11 Ah)
Inflatables, dinghies and sailboats up to 750 kg

	Speed in knots (km/h)	Range in nm (km)	Running time in hours : minutes
Slow	approx. 2.0 (3.7)	approx. 12.8 (23.7)	6:20
Half throttle	approx. 3.0 (5.5)	approx. 6.4 (11.9)	2:08
Full throttle	approx. 4.0 (7.4)	approx. 2.8 (5.2)	0:42

Ordering information
Travel 503 / 1003

Equipment included

- Outboard (Travel 503: 1.5 hp* / Travel 1003: 3 hp**) with display in tiller control
- High-performance lithium battery (Travel 503: 320 Wh / Travel 1003: 520 Wh) with integrated on-board computer and GPS
- Magnetic kill switch
- Charger
- USB adapter

- Travel 503 S	Part no. 1140-00
- Travel 503 L	Part no. 1141-00
- Travel 1003 S	Part no. 1142-00
- Travel 1003 L	Part no. 1143-00

Accessories	Part no.
Spare battery Travel 503 (320 Wh)	1146-00
Spare battery Travel 1003 / 503 (530 Wh)	1147-00
Replacement charger	1127-00
Fast charger	1131-00
Sunfold 37 ***NEW***	1132-00
TorqTrac ***NEW***	1924-00
Travel bags (2-piece) ***NEW***	1925-00
Travel battery bag ***NEW***	1926-00
Outboard cover for Travel ***NEW***	1931-00
Motor cable extension	1920-00
Remote throttle (including 1.5 m and 5 m connection cables)	1918-00
Remote throttle extension cable 1.5 m	1921-00
Remote throttle extension cable 5 m	1922-00
Replacement propeller v9/p790 (2-blade, for Travel 503 / 1003)	1917-00
Replacement propeller v8/p350 (for Travel 503 until production end 2014)	1901-00
Long tiller arm (60 cm)	1919-00

* Travel 503: Input power 500 W, propulsive power comparable to 1.5 HP gasoline outboard, see page 11.
** Travel 1003: Input power 1,000 W, propulsive power comparable to 3 HP gasoline outboard, see page 11.

Mounting

You can easily attach the Travel to the stern of your boat using the integrated mounting bracket – no special tools required.

FAQ

Which Travel for which boat?
Both models are suitable for inflatables and other small boats. For sailboats up to 750 kg we recommend the Travel 503. The Travel 1003 easily propels up to 1.5 tons. Both models provide similar performance on the same boat at the same speed. However, the Travel 1003 has higher maximum power and offers over 60% more battery capacity, providing longer range.

And when the battery is empty, how long does it take before I can be on the move again?
That depends on the solution you have opted for. You could of course take a spare battery with you, which will ensure you can be on the move again immediately. Or you could connect a solar charger (accessory) and charge it while you're on the move. Or you could charge from the 12 V on-board power system direct. Or you could connect the battery to an electric socket using the charger provided – it will take approx. 5 hours to fully charge a Travel 503 or approx. 7 hours to charge a Travel 1003.

How does solar charging work?
Two different solar chargers are available for the Travel, depending on the model year. Check page 54 for details. Unfold the solar charger, apply its waterproof connector to the Travel and get started. You can use it while being out on the water and while operating the motor or you can use it on land.

What is the life expectancy of lithium batteries?
The life expectancy of lithium batteries in recreational use is, more or less, independent of charging cycles. There is no memory effect either, i.e. you can fully charge them after each trip irrespective of the charge status shown in the display. Generally speaking, a capacity loss of approx. 4 % per year is to be expected. Capacity loss will, however, accelerate if the battery is permanently exposed to heat. Also storing the battery always fully charged will accelerate ageing. There are no concerns about using the battery in high temperatures, we recommend that you take the battery out of the sun and store it in a cool place after use. Your battery must be returned to a Torqeedo Service Centre for service 8 years after the date of manufacture.

Heat – don't batteries suffer damage at high temperatures?
No, because we've integrated a temperature protection mode. Motor power is automatically reduced before the battery gets too hot until the temperature returns to a level where there is no risk of damage to the battery. This function is represented in the display with a thermometer.

What capacity does the integrated battery provide?
The Travel 503 battery has a capacity of 320 Wh, which means 11 Ah at 29.6 V. For the Travel 1003 this is an impressive 530 Wh, or 18 Ah at 29.6 V.

What is the warranty on the Travel?
There is a 2-year warranty on the Travel from the date of purchase for non-commercial use.

Cruise 2.0 / 4.0 **NEW GENERATION**

For boats on Green Lakes, for sailboats and for commercial users

5 HP Equivalent*

8 HP Equivalent**

These lightweight power packs feature unrivalled overall efficiency – taking you further over water than any other outboard from a comparable battery supply.

Ruggedness taken seriously

The new 2015 models have been improved to meet the demanding challenges of every day commercial use; making them ready to take on the harshest environmental conditions.

Despite being tougher on the outside, the Cruise retains its core of hightech and intelligent features that have made it so popular: its advanced power electronics, the integrated on-board computer displaying speed over ground and remaining range or the readiness to work with cool accessories like our smartphone app, TorqTrac, just to name a few.

* Cruise 2.0: Input power 2,000 W, propulsive power comparable to 5 HP gasoline outboard, see page 11.

** Cruise 4.0: Input power 4,000 W, propulsive power comparable to 8 HP gasoline outboard, see page 11.

- **Improved Ruggedness:**
  - Improved protection from impact damage
  - Improved protection against damage from fishing lines and debris
  - Leading-edge corrosion protection for any environment
  - Everything waterproof to IP67

- Minimum weight, maximum power

- **Unrivalled overall efficiency:** more range or more power from limited battery supply than any other outboard

- **Intelligent**: on-board computer with GPS-based indication of remaining range

Cruise 2.0 / 4.0

On-board computer display in the tiller or the remote throttle constantly provides information on battery charge status, current speed over ground, remaining range and input power.

Two shaft lengths – just as you need: 62.5 (S) or 75 cm (L).

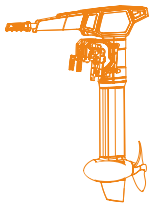
Record level of overall efficiency for unparalleled performance and range.

Solid aluminium housing protects against damage from running aground.

Optimized propeller design for a choice between more thrust or more speed.

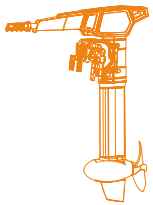
Extended navigation functions of the on-board computer with TorqTrac: featuring range on map, waypoints and estimated time of arrival (not included, see page 52 for more information).

Performance: Speed and range



Cruise 2.0 with 2 x 12 V / 200 Ah AGM batteries (battery weight approx. 120 kg, can alternatively be run with 1 or more Power 26-104)
Dinghies and sailboats up to 3 tons

	Speed in knots (km/h)	Range in nm (km)	Running time in hours : minutes
Slow	approx. 2.7 (5.0)	approx. 27 (50)	10:00
Full throttle	approx. 6.0 (11.1)	approx. 12 (22)	2:00

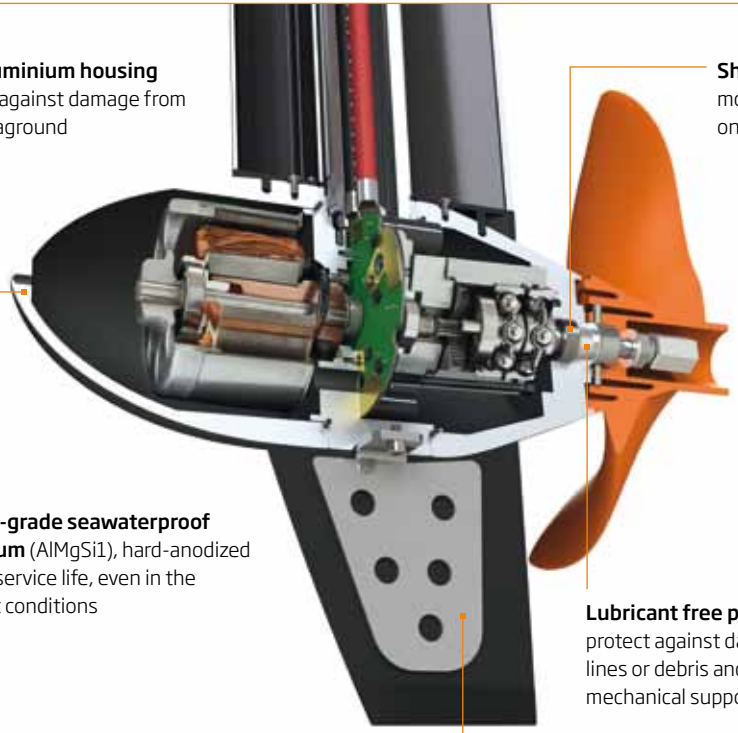


Cruise 4.0 with 2 x Power 26-104 (26 V / 104 Ah, battery weight 48 kg)
Motorboats and sailboats up to 4 tons

	Speed in knots (km/h)	Range in nm (km)	Running time in hours : minutes
Slow	approx. 2.7 (5.0)	approx. 29 (54)	10:45
Full throttle	approx. 7.0 (13.0)*	approx. 8 (15)	1:10

*** Planing with Cruise outboards** Light boats can reach planing speeds of up to 15 knots (28 km/h) with single Cruise motors. For some boats, the use of Twin Cruise 4.0 motors allows for planing speeds.

Rock solid – The new protective design for the 2015 Cruise models



Solid aluminium housing protects against damage from running aground

Shaft sealant rings mounted in protected area on the inside of the pylons

Highest-grade seawaterproof aluminium (AlMgSi1), hard-anodized for long service life, even in the harshest conditions

Lubricant free polymer plain bearings protect against damage from fishing lines or debris and provide improved mechanical support for propeller shaft

Comprehensive galvanic corrosion protection through careful matching of all materials and meticulous isolation of materials with different electrochemical properties

Aluminium fin coated in polyurethane foam provides additional protection from impacts

Cruise 0.8 – for even longer running time

The Cruise 0.8 is ideal when long running times are more important than power. Whether for special applications such as rental or schools, or simply because your priorities are set on staying power – simply contact our sales team to discuss the special version Cruise 0.8. Learn more about the Cruise 0.8 at info@torqeedo.com.

Energy supply – lithium or lead?

Cruise outboards can be operated from advanced lithium batteries or from conventional AGM- or lead-gel batteries.

Lithium batteries are the technology of choice if weight matters or if high performance is required. In electric boating applications, lithium batteries easily **save more than 70% of battery weight**. They feature a number of advantages:

- Substantially higher energy densities
- Ability to deliver their rated capacity at faster discharge rates (e.g. in 5 hours)
- Higher charge stability over time
- Better performance in the cold

Torqeedo's lithium battery **Power 26-104** connects with the Cruise motors' information system. This way, the on-board informaton system can provide complete visibility over the entire integrated drivetrain and provide meaningful information on battery charge and remaining range automatically.

AGM- or lead-gel batteries are the technology of choice for lower-cost electric boating systems or if weight and volume are not critical. When equipping electric propulsion systems with AGM or lead-gel batteries, be sure to choose models with declared deep cycle capabilities. Batteries without deep cycle capabilities, such as most starter batteries, cannot withstand deep discharges. As deep discharges do happen in electric boating, these batteries can reach the end of their service life extremely quickly.

	Cruise 2.0		Cruise 4.0		Twin Cruise 4.0	
Battery options for Cruise	**AGM / lead-gel batteries**	**Power 26-104 (lithium battery)**	**AGM / lead-gel batteries**	**Power 26-104 (lithium battery)**	**AGM / lead-gel batteries**	**Power 26-104 (lithium battery)**
Required battery voltage	24 V	24 V	48 V	48 V	48 V	48 V
Number of batteries	2	1	4	2	8	4
Nominal charge Ah (20 hour discharge rate)	150	104	150	208	300	416
Nominal capacity kWh	3.6	2.7	7.2	5.4	14.4	10.8
Capacity not available in typical electric boating application (5 hour discharge rate)	20%	n/a	20%	n/a	20%	n/a
Capacity not available if deep discharge damage is to be avoided	20%	n/a	20%	n/a	20%	n/a
Useable energy for electric boating kWh	2.2	2.7	4.3	5.4	8.6	10.8
Battery bank weight (in kg)	88	24	176	48	352	96

Ordering information Cruise 2.0 / 4.0

Equipment included

- Cruise 2.0: 5 HP equivalent*
  Cruise 4.0: 8 HP equivalent**
- Integrated on-board computer with GPS and display
- Fuse and main switch
- Magnetic kill switch
- 25 mm^2 cable set (3m)
- Cable bridges for connection of batteries
- Tiller control (Cruise T models) or remote throttle (Cruise R models)
- Remote steering connector (Cruise R models)

- Cruise 2.0 TS	Part no. 1234-00
- Cruise 2.0 TL	Part no. 1235-00
- Cruise 2.0 RS	Part no. 1230-00
- Cruise 2.0 RL	Part no. 1231-00
- Cruise 4.0 TS	Part no. 1236-00
- Cruise 4.0 TL	Part no. 1237-00
- Cruise 4.0 RS	Part no. 1232-00
- Cruise 4.0 RL	Part no. 1233-00

Accessories	Part no.
Power 26-104	2103-00
TorqTrac ***NEW***	1924-00
Remote throttle extension cable 1.5 m	1921-00
Remote throttle extension cable 5 m	1922-00
Motor cable extension Cruise	1204-00
Replacement propeller v19/p4000 (fast, efficient, weedless)	1916-00
Replacement propeller v30/p4000 (for high-speed applications)	1923-00
Replacement propeller v8/p350 (less speed, greater thrust)	1901-00
Long tiller arm, 60 cm	1919-00
Twin Cruise extension for twin motors	1217-00

* Cruise 2.0: Input power 2,000 W, propulsive power comparable to 5 HP gasoline outboard, see page 11.
** Cruise 4.0: Input power 4,000 W, propulsive power comparable to 8 HP gasoline outboard, see page 11.

Mounting

The only tool required to mount Cruise T models is a 13 mm wrench to fix the cable set to the battery terminals. Mounting Cruise R models requires additionally a 10mm wrench and an open 28 mm wrench or, alternatively, a set of adjustable pliers to fix the steering.

FAQ

Which Cruise for which boat?
All Cruise models are suitable for inflatables and other small boats. For dinghies and sailboats up to 2.5 tons, we recommend the Cruise 2.0. The Cruise 4.0 easily propels up to 4 tons.

Is the on-board computer compatible with my lead batteries?
Yes, but with limitations. If the Cruise is operated with lead batteries the charge status indicator (and with it the remaining range indicator) is based on estimates derived from battery information entered during initial motor setup.

What are the advantages of the Power 26-104 lithium battery for the Cruise?
As a lithium battery, the Power 26-104 provides far greater performance with lower weight than conventional lead batteries. In other words, it does not weigh down your boat unnecessarily – and you benefit in terms of range and power. You can find more information on pages 34-37. Additionally, the integrated battery electronics of the Power 26-104 are designed to communicate with the on-board computer, meaning that the values provided by the battery, such as remaining range and capacity, are always exact.

What does the on-board computer do?
The on-board computer, which is integrated in the remote throttle with the Cruise R and in the tiller with the Cruise T, analyses information from the motor and combines it with GPS data. Motor consumption and GPS speed are always exact. When the Cruise is operated with the Power 26-104, the information on the battery and on range with remaining capacity is also exact because both products communicate with each other. That is very convenient.

What requirements must my boat meet for twin motors – the Twin Cruise?
A **Twin Cruise outboard system** consists of two **Cruise models** (2.0 R or 4.0 R) and the **Twin Cruise extension set**, which contains a dual throttle and tie bar. The tie bar is used to connect the two Cruise outboards to the same steering mechanism. The standard Twin Cruise mounting assumes a transom width of at least 76 cm.

What is the warranty on the Cruise?
The Cruise models have 2-year warranty from the date of purchase for recreational use.

Power 26-104

High-performance lithium batteries for electric boating and power supply on board

When choosing lithium batteries, you are always choosing high-performance. When choosing Power 26-104, you are also choosing professional safety. Power 26-104 is equipped with a comprehensive safety system designed to meet general safety requirements as well as marine-specific requirements.

Leading edge performance and safety

- ☑ 4-level safety cut-out mechanism to protect against short-circuits and overcurrent integrated in battery
- ☑ 3-level protection against incorrect charging
- ☑ Protection against polarity reversal
- ☑ Individual cell voltage monitoring
- ☑ Cell temperature monitoring and battery electronics temperature monitoring
- ☑ Current interruption device and safety vent for each cell
- ☑ Deep discharge battery protection when discharging
- ☑ Waterproof IP67
- ☑ Automatic shutdown in the event of submersion


Simple operation
Saves up to 70% battery weight vs. AGM or lead-gel batteries
Waterproof to IP67
State-of-the-art safety system integrated in the battery

Power 26-104

Integrated information system: Identifies the battery and communicates with the Cruise on-board computer.

Waterproof housing and sockets (IP67): Waterproof in connected and disconnected condition.

Plug & play with the Cruise on-board computer: Plug the data cable in, "electronic handshake", finished.

Water sensor: Notices when the battery is submerged and automatically switches the voltage off at the terminals. In the event that water gets into the boat, electrolysis and formation of detonating gas are prevented.

Waterproof vent: Deals with temperature and pressure differences without compromising waterproofness.

Leading-edge battery management system (BMS): The BMS features numerous protective functions as well as balancing functions for a long battery life.

Voltage can be shut off from the terminals: For safe transport and installation. And preventing unintentional discharging when stored for long periods.

High-performance lithium battery cells: Highest quality, from renowned Japanese manufacturers with comprehensive quality management only and from fully automated production.

Safety cells offering hardware safety mechanisms on cell level: The individual battery cells consist of welded steel cylinders each of which is equipped with several hardware safety mechanisms.

Ordering information Power 26-104

Equipment included

- Lithium high-performance battery with 2,685 Wh (25.9 V / 104 Ah)
- Data cable for connection to Cruise drive system

Part no. 2103-00

Accessories	Part no.
On/off switch (required if the Power 26-104 is not operated with the Cruise R or T)	2304-00
Charger 350 W	2206-20
Charger 1,200 W ***NEW***	2208-00
Solar charge controller	2207-00

Battery capacity rating: All Torqeedo battery capacity ratings refer to useable energy. That means that we only rate that part of a battery capacity that is intended for use without damaging the battery. Other battery manufacturers often rate capacities that should not be completely used if damage to the battery is to be avoided. When dealing with a Torqeedo battery rated at 2.7 kWh capacity, the energy you can use is 2.7 kWh.

Technical data summary

Capacity	2,685 Wh
Nominal voltage	25.9 V
Nominal charge	104 Ah
Weight	24.3 kg
Energy density (weight)	110 Wh / kg
Maximum discharge rate	180 A (4,500 W @ nominal voltage)
Dimensions	577.5 x 218.5 x 253.5 mm

Battery chemistry	Li NMC
Cycle lifetime	800 cycles at 100% depth of discharge at 25°C result in approx. 25% capacity loss
Average capacity loss per year	4 %
Max. connections	2S8P or 1S16P
Price-performance ratio	0.93 EUR/Wh*

FAQ

What type of appliance can I use the Power 26-104 with?
Power 26-104 serves as a power supply for electric boating and it powers any 24 V on-board energy supply.

What is the life expectancy of the Power 26-104?
Life expectancy of a lithium battery is driven by calendaric lifetime and cycle lifetime. Generally, in recreational use, cycle lifetime usually play a minor role, as high usage cycles (>500) are often never achieved. Calendaric ageing plays an important role though; lithium batteries age with passing time since production. This ageing is accelerated, the more the battery is exposed to high temperatures. So lithium batteries can be used also in intensive heat, but they should be kept cool whenever possible. On average, a capacity loss of some 4% per year can be expected.

What temperatures must be taken into account during operation, when charging and for storage?
Operating temperatures can be between -20 °C and +60 °C, and for charging between 0 °C and +55 °C. Storage temperature can be between -30 °C and +55 °C, with room temperature or below having a positive effect on life expectancy. Power 26-104 is equipped with a temperature monitoring, preventing damage from operation outside the specified temperatures.

I rarely use my battery and store it for long periods. Will this damage a Power 26-104?
2015 models of Power 26-104 come with an automatic switch-off mode. 48 hours after the last use, the battery electronics are switched off and the battery goes into deep sleep mode. If the battery is charged more than 30% it can be stored for 1 year in this mode. Nevertheless, when storing the batteries for long periods of time, charge status should be checked every second month. After every deep discharge the batteries should be charged again quickly. Discharging a battery followed by a long storage period (without prior recharging) will damage any battery and should be avoided at all times.

How long does the Power 26-104 take to fully recharge?
Charging takes approx. 11 hours using the 350 W charger supplied (from complete discharge, i.e. 100% depth of discharge).

Why does the battery have a power limit?
One of the advantages of lithium batteries is that they can deliver very high currents. The flipside of this is that lithium batteries can do substantial damage in a short circuit situation, if high short circuit currents are not prevented. In Power 26-104, this important safety features is integrated into every battery, as part of the battery management system. If higher power limits are required, batteries can be connected in parallel, this way the maximum power limit can be multiplied.

What is the warranty on the Power 26-104?
As any Torqeedo product, Power 26-104 comes with a 2 year limited warranty for recreational use starting with the date of purchase of the final customer.

Deep Blue

For commercial operators and green boaters

40 HP Equivalent*

80 HP Equivalent**

Electric boating meets power. Deep Blue takes electric boating to a new level.

It is not just power and performance that make Deep Blue the first of its kind. It is unparalleled performance combined with full system integration and ground-breaking safety levels that set Deep Blue apart from all other electric propulsion systems on the market.

Waterproofing of all components, pilot lines along all high voltage cables and connections, insulation monitoring along the entire system, automotive-grade lithium batteries and many other safety features make Deep Blue unique in high power electric boating.

And if that weren't enough: Deep Blue also comes with a 9 year battery capacity warranty (that's right, 9 years) – making electric boating not only powerful and safe but also economical, especially for heavy users.

* Deep Blue 40: Input power 33 kW, propulsive power comparable to 40 HP gasoline outboard, see page 11.

** Deep Blue 80: Input power 65 kW, propulsive power comparable to 80 HP gasoline outboard, see page 11.

- World's first high power electric drive system from serial production
- 9-year warranty on battery capacity
- Safety concept unique in electric boating
- Fully integrated system
- Marrying performance, safety and convenience

Deep Blue System

The first electric high-power propulsion system from serial production. A fully integrated system in which all components are designed to match each other seamlessly and to work together perfectly on the water. A unique level of performance, safety and convenience.

12 V battery: Provides the power signal required to switch on the high-voltage batteries from sleep mode. Supplies 12 V for the on-board network and is automatically charged from the high-voltage battery, no additional 12 V charger required.

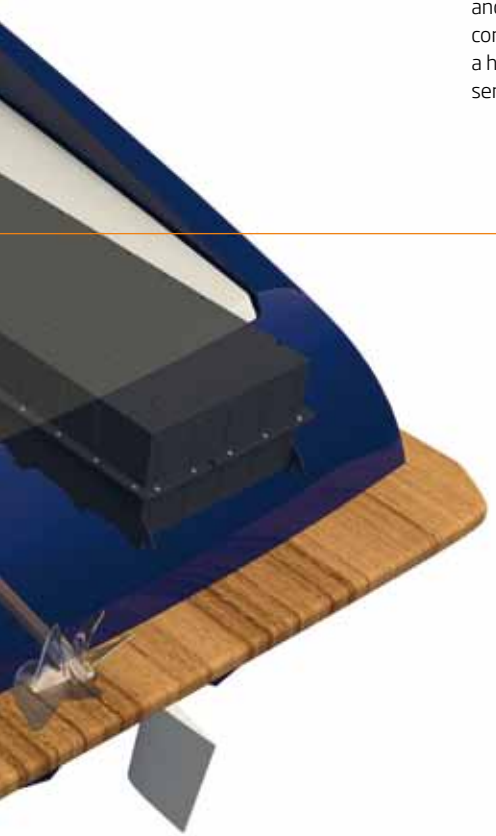
Charger: Advanced automotive charger. Waterproof to IP67. Charging rate can be controlled via the display. Up to three chargers may be used for each motor – for shorter charging times.

Automotive grade high-voltage battery: Adapted for marine use. Waterproof to IP67 with unique venting and breathing seal combination. Completely integrated into the Deep Blue information and safety system. Comes with capacity warranty: 80% of battery capacity remaining after 9 years, even if used every day. See warranty conditions for details.

On-board computer with touch-screen display: Waterproof 5.7" display with 14 different screens. Shows real-time information on remaining range, waypoints, estimated time of arrival, compass heading, speed over ground, battery charge status etc.

Electronic throttle with key switch and kill switch: including neutral lock. Outboard throttle includes power-trim-and-tilt functions. Activating the emergency stop will shut down entire system including high-voltage power supply, chargers, etc.

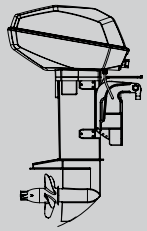
Connection box: This is where all electrical and signal cables come together. It provides connections for 1-4 batteries and includes a hardware-based safety system and water sensor. Waterproof to IP66.



High-voltage electric motor: Specially developed for the requirements of the Deep Blue system. Vector-controlled brushless motor with outstanding efficiency (98%). Suitable for salt water cooling. Waterproof to IP67. With CAN interface NMEA2000 / J 1939.

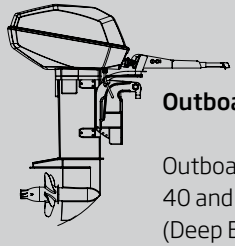
High voltage cables and connectors with pilot lines and isolation monitoring: Standard safety feature for high-voltage equipment on land but uncommon in boating: Pilot lines and isolation monitoring covering the entire system protect from high-voltage dangers at all times.

Deep Blue motor models



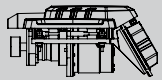
Outboard

Outboard motors for remote steering and throttle, 40 and 80 HP equivalents, various shaft lengths (Deep Blue 40 RL / RXL and 80 RL / RXL models).



Outboard tiller

Outboard motors for tiller steering and throttle, 40 and 80 HP equivalents, various shaft lengths (Deep Blue 40 TL / TXL and 80 TL / TXL models).



Inboard

Inboard shaft drive motors, 40 and 80 HP equivalents, various RPM levels (Deep Blue 40i 1400 and 1800 / Deep Blue 80 i 1400 and 1800 models).

Professional safety

Powerful electric propulsion systems require industrial-level safety and engineering. Developing high-voltage propulsion systems in adherence to recognised standards and providing appropriate safety standards is a multi-year effort involving experts from various fields of technology.

With the groundbreaking development of Deep Blue, Torqeedo has set the standard for safety in high-power electric boating.

Other industries, such as high power machinery or automotive, offer well-established safety standards that can be applied for electric boating. But adopting these safety standards is not sufficient. Due to their unique characteristics, marine propulsion systems require a set of specific safety measures, not to be found in other industries.

Here are some examples of Deep Blue's comprehensive safety features. They represent essential safety aspects that all high power electric propulsion systems must contain.

Pilot-Line: A pilot line covers the entire high-voltage system of Deep Blue. It runs through all the shielded high-voltage cables and through all the high-voltage connectors. It constantly monitors all cables and connector for any irregularity, such as damaged cable insulation or loose connectors. If damaged cables or open plug connections are detected, the pilot line shuts off the system voltage immediately to prevent electric shock. Pilot lines are standard for high-voltage equipment in other industries but require a substantial investment in development, so one-off electric propulsion solutions usually do not have them.

Comprehensive insulation monitoring: Constantly monitors that the high-voltage battery and all components associated with the high voltage supply are completely insulated from the boat. Comprehensive insulation monitoring is a standard requirement for high-voltage equipment in other industries, but is not commonplace in high-power electric boats.

All components are waterproof: Components developed for industries other than boating are seldom waterproof. One-off electric propulsion solutions often use some components that are waterproof, while others are not. It should be obvious that all high-voltage components on a boat must be waterproof. Which is why at Torqeedo they are. All of them.

Automotive battery safety: As a result of the cooperation between Torqeedo and Johnson Controls, advanced automotive lithium batteries are available for the first time in the marine industry. The integration of an automotive battery into a propulsion system requires several man-years of R&D effort to embed the battery properly into the safety scheme of the propulsion system. For Deep Blue we have taken it a step further: over the course of the integration project, Johnson Controls' battery underwent additional development to meet the unique demands of marine use.

Battery venting: In the unlikely event that the redundant safety mechanisms of a battery fail, the individual cells inside Deep Blue's battery have their own additional hardware safety mechanisms. Among others, they can exhaust through a valve to vent excess gas and reduce their temperature in an emergency. The gases emitted in this unlikely situation are hot, toxic, flammable and heavier than air. In electric cars, batteries are positioned in a way that they simply vent to the streets. In electric boats, the gases must be channeled safely off the vessel. Torqeedo is the first company in the world to develop a safe venting system for boats.

Battery damping: Fast boats and seagoing boats can subject components to high levels of shock which can exceed 12 G. Typically, batteries and their battery management systems are not designed to withstand those repeated impacts. In cars and buses, batteries are mounted in the shock-protected area of the vehicle. In boats exposed to high shock-levels, batteries must have their own shock-absorption (in addition to the shock-absorption mechanisms inside the battery). Torqeedo is the first company worldwide addressing this topic for marine use.

Recognised safety – rewarded with its very own insurance tariff

Electric drive systems are gaining ground – also on the water. Many systems on the market however represent one-off solutions from small companies without comprehensive engineering for safety. The result: A high rate of dangerous incidents on and damages to boats equipped with these systems.

Given this history, it is a real accolade that PANTAENIUS, Europe's leading specialist in yacht insurance, rewards Deep Blue with a special insurance tariff, setting it apart from damage-prone one-off systems. For owners of boats equipped with Deep Blue, PANTAENIUS now offers a special collective tariff, featuring improved protection and lower cost compared to the regular insurance tariff for high-power electric boats.

"A large number of claims received with respect to high-powered electric yachts in the last few years were the result of use of unsuitable components or based on the individual components in the drive system not fully matching each other. DEEP BLUE is the first system that, in our opinion, is convincing with coherent use of suitable components and professional overall system coordination. This was the reason why we have decided to offer a special tariff reflecting our assessment."

Holger Flindt, Managing Director, PANTAENIUS

PANTAENIUS
Yachtversicherungen

Sound cost calculation – no surprises

Is your petrol bill higher than EUR 4,800 per year? If it is, you may profit from going electric:

Deep Blue will save gasoline cost and protect you from expected petrol price increases. While saving money, you'll be setting an example for sustainability in boating. You will less pollute the water, emit less noise and leave a smaller carbon footprint.

9-year capacity warranty on battery bank

A reliable battery lifespan is key for electric boating economics. That is why Deep Blue comes with a long-term battery capacity warranty: 9 years after commissioning, the batteries will still have 80 % of their original capacity, even if you use them every day.* Battery ageing is transparent and can be tracked by the user in the on-board computer at any time.

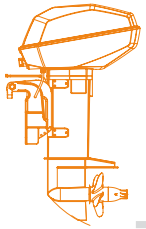
Lower maintenance cost

An electric drive system requires less maintenance than comparable combustion engines.

Model	**Deep Blue 40**	**Deep Blue 80**	**Deep Blue 80**	**Deep Blue 80**
Number of batteries	1	2	3	4
Battery bank capacity in kWh	12.8	25.6	38.4	51.2
Upfront investment				
Inboard / outboard system MSRP in EUR (excluding batteries)	17,999	17,999	17,999	17,999
Battery bank MSRP in EUR	14,899	29,798	44,697	59,596
Comparing battery and electricity cost vs. petrol cost				
Annualised battery cost per year in EUR**	1,920	3,840	5,760	7,680
Electricity cost per kWh in EUR***	0.257	0.257	0.257	0.257
Cost per single charge (80%) in EUR	3.29	6.58	9.87	13.16
Total battery & electricity cost per year @ 150 usage cycles per year	2,413	4,827	7,240	9,654
Total battery & electricity cost per year @ 200 usage cycles per year	2,578	5,156	7,734	10,312

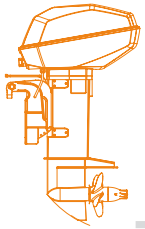
If annual gasoline cost are higher than values above, switching to electric propulsion may be profitable.

Speed and range performance examples



Deep Blue 80 with 2 batteries

		Speed in km/h (knots)	Range in km (nm)	Running time in hours : minutes
● ○ ○	Slow	7.5 (4.0)	40-120 (22-65)	5:20 - 16:00
● ● ●	Full throttle	36-54 (19-29)	18-27 (10-15)	0:30



Deep Blue 40 with 1 battery

		Speed in km/h (knots)	Range in km (nm)	Running time in hours : minutes
● ○ ○	Slow	7.5 (4.0)	37-60 (20-32)	5:00 - 8:00
● ● ●	Full throttle	32-44 (17-24)	16-22 (9-12)	0:30

* Adherence to warranty conditions required, see Deep Blue battery capacity warranty under www.torqeedo.com for details.
** Assuming a financing with annual interest rate of 5%
*** German electricity cost level. Most other countries with significantly lower electricity cost: e.g. France -50%, UK -40%, USA -65%

Ordering information
Deep Blue

Equipment included

- Outboard or inboard motor system including power electronics
- Connection box
- Charger
- Remote throttle or tiller
- On-board computer with 5.7‘‘‘ touch-screen display
- Cabling
- Key switch & kill switch
- Inboard scope of delivery encompasses a cooling pump and a constant velocity joint (shaft and propeller are not included in inboard scope of delivery)

Models		Part no.
Deep Blue 40 RL	(=40 HP, 20“ shaft, remote throttle)	3203-00
Deep Blue 40 RXL	(=40 HP, 25“ shaft, remote throttle)	3204-00
Deep Blue 80 RL	(=80 HP, 20“ shaft, remote throttle)	3201-00
Deep Blue 80 RXL	(=80 HP, 25“ shaft, remote throttle)	3202-00
Deep Blue 40 TL	(=40 HP, 20“ shaft, tiller control)	3205-00
Deep Blue 40 TXL	(=40 HP, 25“ shaft, tiller control)	3206-00
Deep Blue 80 TL	(=80 HP, 20“ shaft, tiller control)	3207-00
Deep Blue 80 TXL	(=80 HP, 25“ shaft, tiller control)	3208-00
Deep Blue 40i 1800	(=40 HP, inboard 1,800 rpm)	3301-00
Deep Blue 40i 1400	(=40 HP, inboard 1,400 rpm)	3302-00
Deep Blue 80i 1800	(=80 HP, inboard 1,800 rpm)	3301-00
Deep Blue 80i 1400	(=80 HP, inboard 1,400 rpm)	3302-00

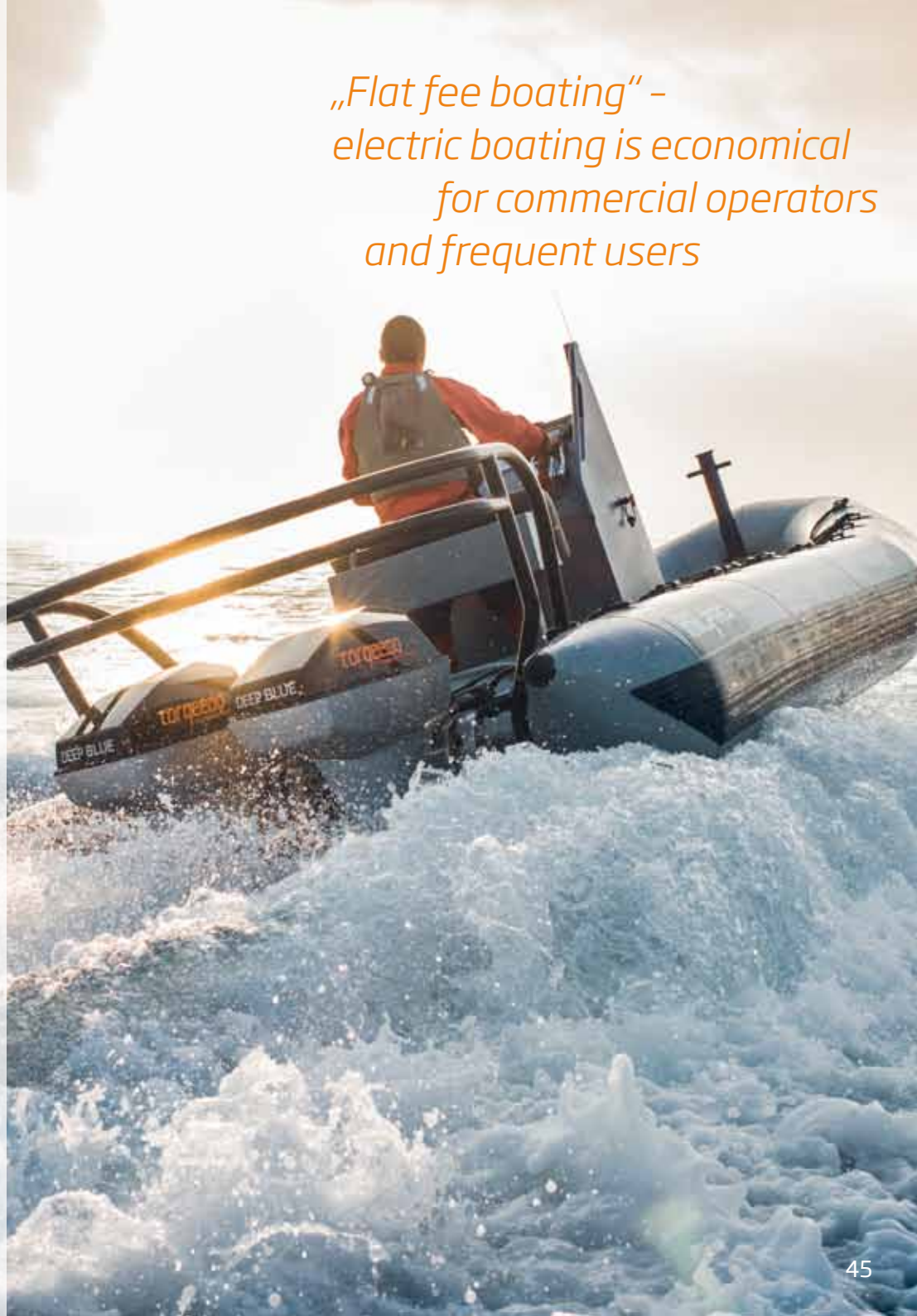
Battery

Deep Blue high-voltage battery	4101-00

Mounting kits and throttle alternatives

Battery mounting kit, slim (suspension kit plus battery plates)	3931-00
Battery mounting kit, low (suspension kit plus battery plates)	3932-00
Suspension kit	3933-00
Additional charger for high-voltage battery	4201-00
Top-mount throttle (replaces standard side mount throttle if ordered)	3903-00
Twin remote throttle (for Deep Blue Twin installations; replaces the drive system’s standard remote throttle)	3904-00

„Flat fee boating“ – electric boating is economical for commercial operators and frequent users



Deep Blue Hybrid

For sailboats between 40 and 80 ft. and for commercial hybrid vessels

Luxury meets sustainability

More luxury

- Enjoy air conditioning at night without generator noise
- Motor silently with only the sound of the water flow
- Enjoy abundant electric power on board, everything can be powered silently

More environmental friendliness

- No engine noise and pollution
- Energy on board is powered by renewable energies from the wind and the sun
- Quiet generator is used only when other power input sources are not keeping up with power loads

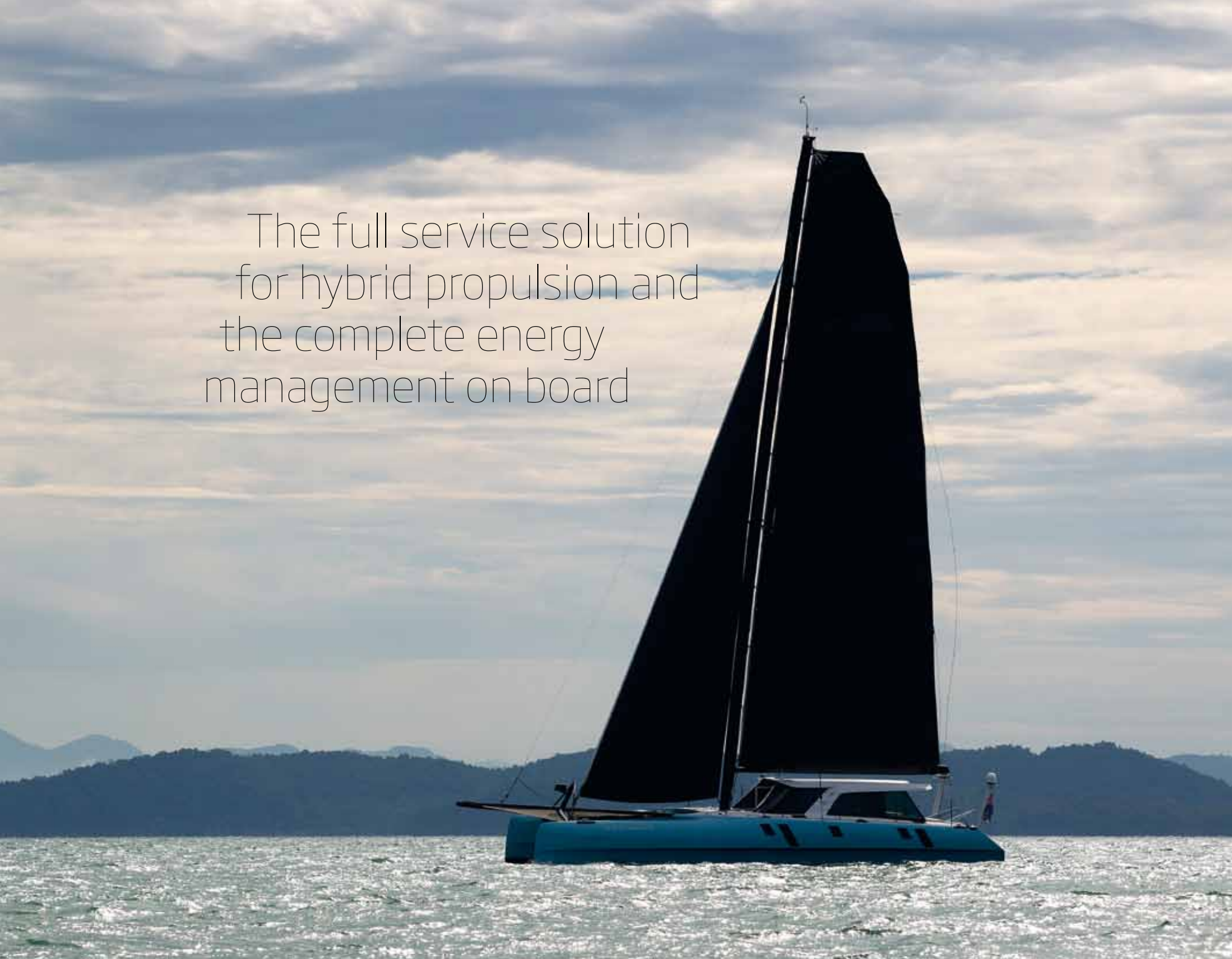
More simplicity

- Joystick docking takes all the stress out of maneuvering
- Only one type of fuel is needed – and less of it

More independence

- Less dependence from shore power
- Less need to go to marinas

* Deep Blue 40: Input power 33 kW, propulsive power comparable to 40 HP gasoline outboard, see page 11.
** Deep Blue 80 / Twin Deep Blue 40: Input power 65 kW, propulsive power comparable to 80 HP gasoline outboard, see page 11.
*** Twin Deep Blue 80: Input power 130 kW, propulsive power comparable to 160 HP gasoline outboard, see page 11.


The full service solution
for hybrid propulsion and
the complete energy
management on board

Deep Blue Hybrid

Deep Blue Hybrid is the first fully integrated system, offering hybrid propulsion and providing the complete energy management on board.

1 **HV electric drives:** available as shaft drives, saildrives or outboards, 98% motor efficiency

2 **HV DC batteries:** automotive grade lithium batteries adapted to marine use, 9 year capacity warranty

3 **LV AGM batteries:** required to switch on batteries and generators

4 **HV DC diesel generators:** charge HV batteries if required

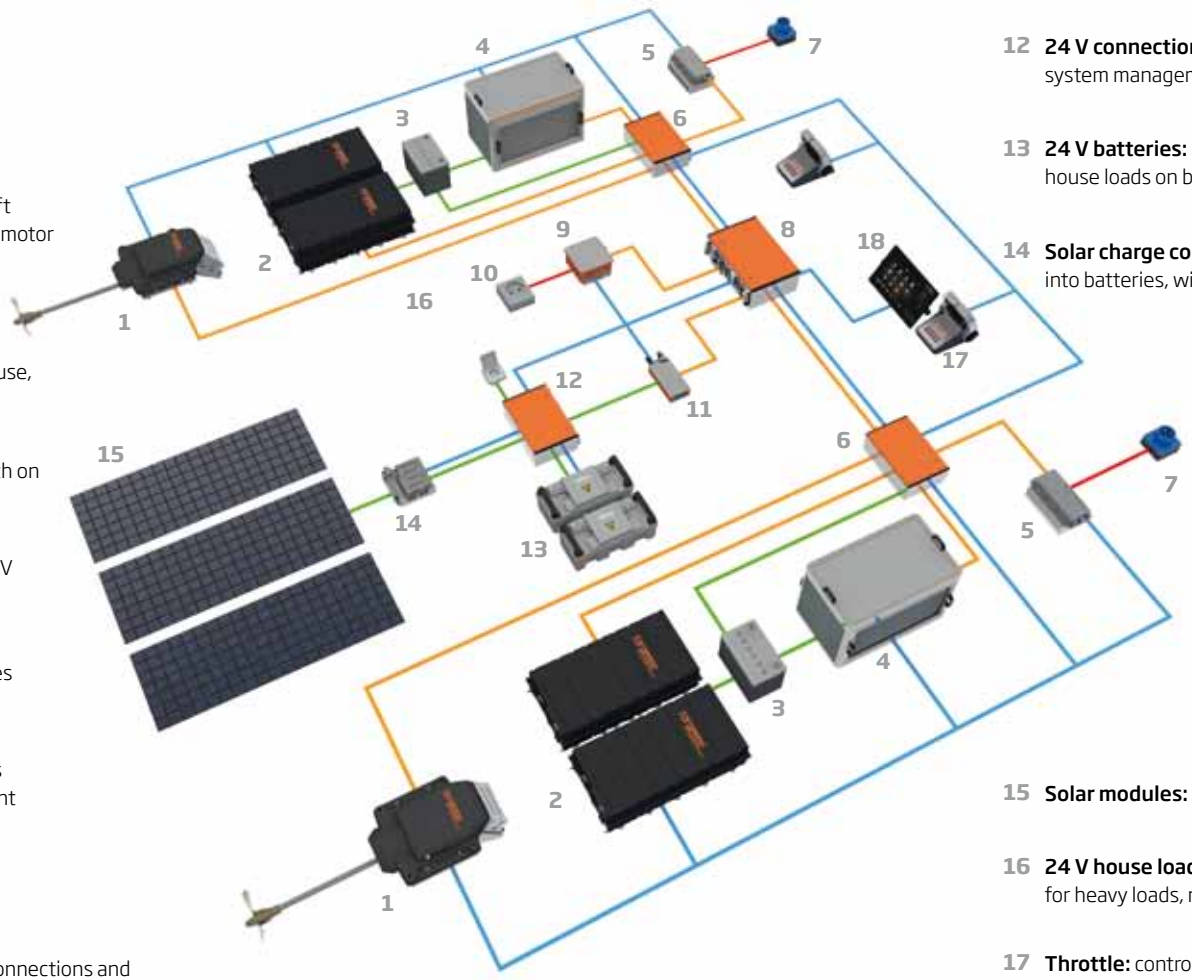
5 **HV AC chargers:** charge HV batteries from shore power

6 **Drivetrain connection box:** houses connections and system management functions on drivetrain level

7 **Shore power**

8 **System Connection Box:** houses connections and system management functions on system level

9 **DC-AC converters:** inverts HV DC battery power into 100-240 VAC power to cater for house loads



System structure and components

10 **AC house loads** (100-240 VAC)

11 **DC-DC inverter:** allow for bidirectional exchange between battery banks (HV DC and 24 VDC)

12 **24 V connection box:** houses connections and system management functions for 24 V network

13 **24 V batteries:** provide energy for 24 V house loads on board

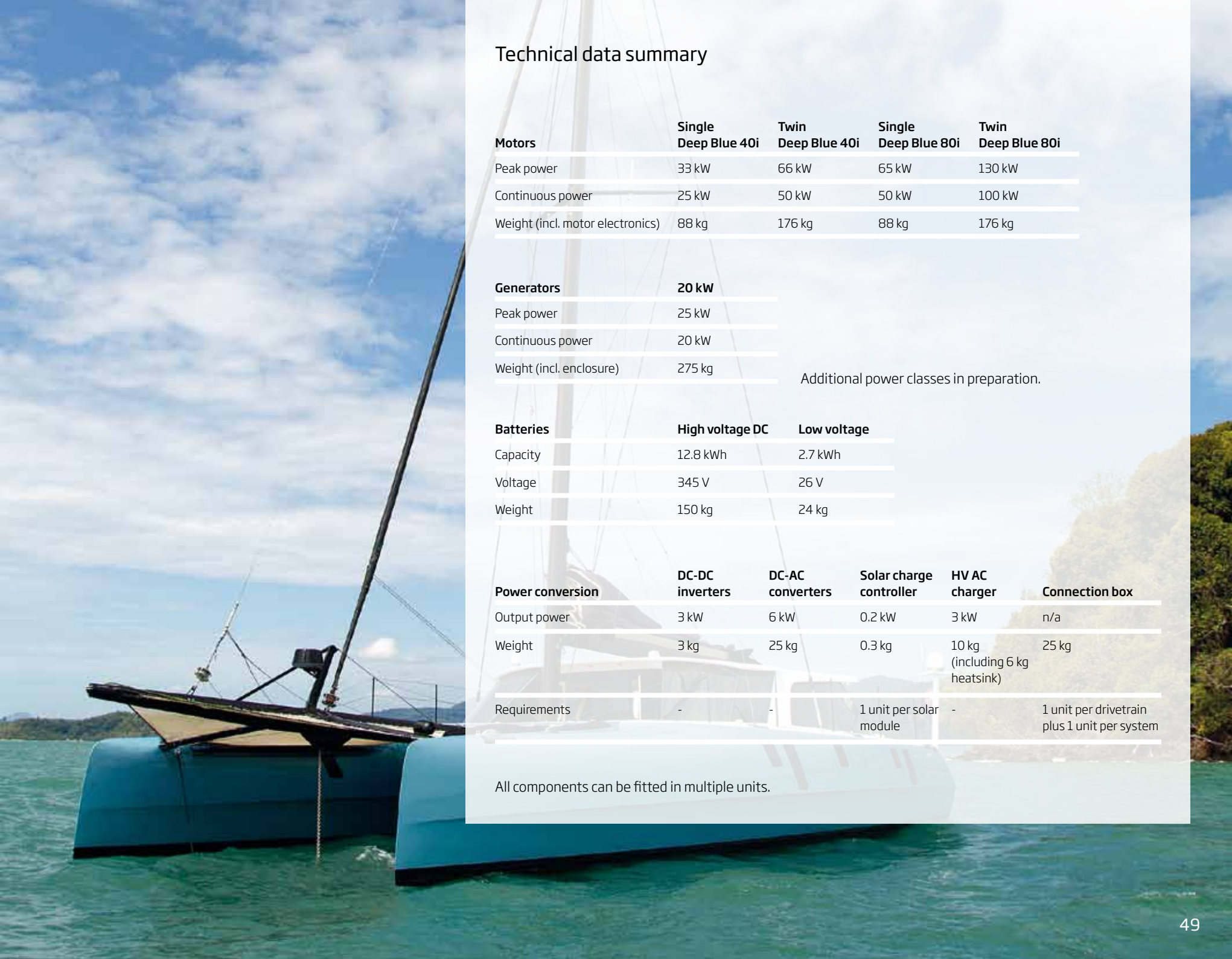
14 **Solar charge controller:** charges solar power into batteries, with high efficiency MPPT tracking

15 **Solar modules:** generate solar power

16 **24 V house loads:** available in different profiles for heavy loads, normal loads, safety loads

17 **Throttle:** controls operation of electric drives and other system functions

18 **Deep Blue Hybrid information system:** can be displayed on standard multifunction displays, iOS devices and on throttle displays



Technical data summary

Motors	Single Deep Blue 40i	Twin Deep Blue 40i	Single Deep Blue 80i	Twin Deep Blue 80i
Peak power	33 kW	66 kW	65 kW	130 kW
Continuous power	25 kW	50 kW	50 kW	100 kW
Weight (incl. motor electronics)	88 kg	176 kg	88 kg	176 kg

Generators	20 kW
Peak power	25 kW
Continuous power	20 kW
Weight (incl. enclosure)	275 kg

Additional power classes in preparation.

Batteries	High voltage DC	Low voltage
Capacity	12.8 kWh	2.7 kWh
Voltage	345 V	26 V
Weight	150 kg	24 kg

Power conversion	DC-DC inverters	DC-AC converters	Solar charge controller	HV AC charger	Connection box
Output power	3 kW	6 kW	0.2 kW	3 kW	n/a
Weight	3 kg	25 kg	0.3 kg	10 kg (including 6 kg heatsink)	25 kg
Requirements	-	-	1 unit per solar module	-	1 unit per drivetrain plus 1 unit per system

All components can be fitted in multiple units.

Accessories

TorqTrac *NEW*

The upgrade for the on-board computer on your smartphone.
With convenient navigational functions and GPS data in real time.

For motor models Ultralight 403
Cruise 2.0 / 4.0
Travel 503 / 1003

Clearly arranged: Everything is easy to read on your smartphone display, even at night.

See how far you can still travel: The remaining range is displayed on the map in real time.

Exact positioning: Call up your exact position with GPS data on the map.

Navigation almost like in a car: Use waypoints for navigation and estimated time of arrival, zoom into the map and save your favourite places.

Ordering information
TorqTrac

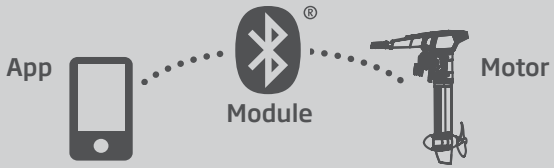
Equipment included

- Bluetooth® transmitter module
- App (can be downloaded free of charge from the Apple and Google app stores)

Part no. 1924-00

System requirements

TorqTrac communicates wirelessly using a Bluetooth® transmitter module that you can purchase from your dealer or online. Your smartphone must support Bluetooth® 4.0 with LE (low energy) technology.



Check here to see whether your smartphone has Bluetooth® 4.0. Find out whether your device also supports the necessary Bluetooth® low-energy (BLE) technology by contacting your mobile phone provider or the manufacturer of the device.

Solar charging

Electric boats make it possible to use clean and renewable energy for marine propulsion. Start now and enjoy the simplicity and independence provided by Torqeedo's solar charging options. Making a statement for energy transition is rarely such a treat.

Solar Charger 45 W

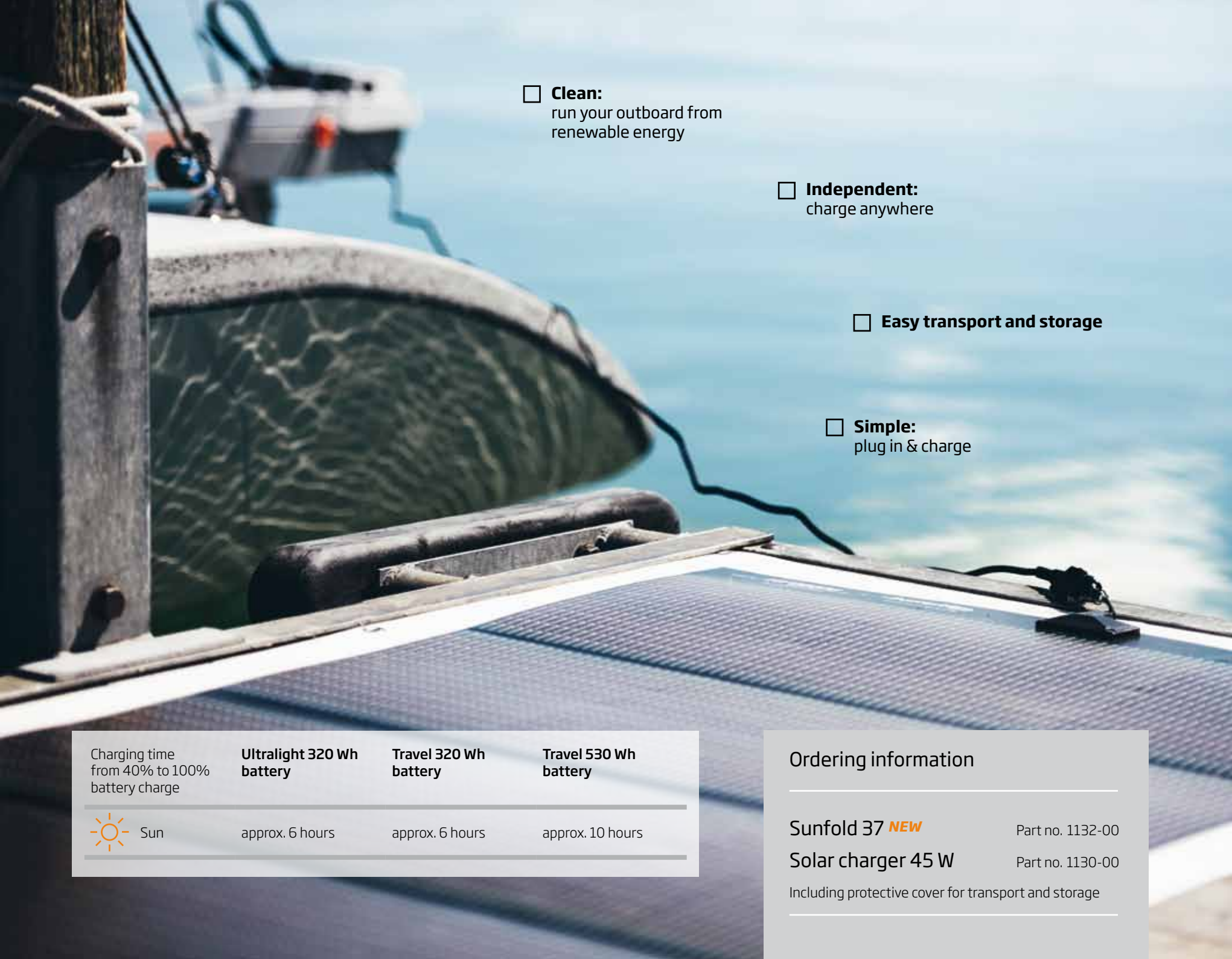
Provides simple plug & play charging for Ultralight models. The rollable thin film solar module is extremely weatherproof and was successfully tested even in full salt water immersion. Comes with protective case for transport and storage.

Nominal output power	45 W
Cells	Amorphous Silicium
Efficiency	Cell efficiency: 7% Module efficiency: 5.5%
Measures	100 x 16 cm rolled up 147 x 91 cm unfolded (1.3 m^2)
Weight	1.3 kg
Waterproof	IP65

Sunfold 37 ***NEW***

Torqeedo's new solar panel folds into a handy briefcase format of 30 x 30 cm for easy transport and storage. Despite its small size, Sunfold 37 delivers plenty of energy for your Travel battery or other 12 V devices – thanks to its monocrystalline, high-performance solar cells.

Nominal output power	37 W
Cells	Monocrystalline high-performance
Efficiency	Cell efficiency: 22% Module efficiency: 16% Inverter efficiency: 97%
Measures	30 x 30 cm folded 90 x 30 cm unfolded (0.27 m^2)
Weight	1 kg
Waterproof	IP65
Useable for other 12 V devices	



- **Clean:** run your outboard from renewable energy
- **Independent:** charge anywhere
- **Easy transport and storage**
- **Simple:** plug in & charge

Charging time from 40% to 100% battery charge	**Ultralight 320 Wh battery**	**Travel 320 Wh battery**	**Travel 530 Wh battery**
Sun	approx. 6 hours	approx. 6 hours	approx. 10 hours

Ordering information

Sunfold 37 ***NEW*** Part no. 1132-00

Solar charger 45 W Part no. 1130-00

Including protective cover for transport and storage

Travel Bags *NEW*

Securely packed and stowed away:
the travel bags for your Travel motor and spare battery are indispensable companions when travelling to the water.

For motor models Travel 503/1003
Travel spare battery

Ordering information

Travel Bags (2-piece)

Equipment included

- Carry bag for Travel motor
- Carry bag for Travel battery

Part no. 1925-00

Travel battery bag

Equipment included

- Carry bag for spare Travel battery

Part no. 1926-00

Well packaged for easy transport:
You cut a fine figure
everywhere with Travel bags.

Ordering Information

Motors & Batteries

Part no.	Product	Description
ULTRALIGHT		
1403-00	Ultralight 403	Ultralight outboard, 1 HP equivalent, with integrated 320 Wh high-performance lithium battery, including charger, remote throttle, integrated on-board computer with GPS-based range calculation, magnetic kill switch and drybag
1413-00	Spare battery Ultralight 403	High-performance lithium battery with integrated GPS receiver, 320 Wh, 29.6 V, 11 Ah
TRAVEL		
1140-00	Travel 503 S	High-efficiency outboard with integrated 320 Wh high-performance lithium battery, 1.5 HP equivalent, integrated on-board computer with GPS-based range calculation, magnetic kill switch, charger; short shaft version
1141-00	Travel 503 L	As part no. 1140-00, but with long shaft
1142-00	Travel 1003 S	High-efficiency outboard with integrated 530 Wh high-performance lithium battery, 3 HP equivalent, integrated on-board computer with GPS-based range calculation, magnetic kill switch, charger; short shaft version
1143-00	Travel 1003 L	As part no. 1142-00, but with long shaft
1146-00	Spare battery Travel 503 ***NEW***	High-performance lithium battery with integrated GPS receiver, 320 Wh, 29,6 V, 11 Ah. New features: faster charging and USB-connector to power other electric devices
1147-00	Spare battery Travel 1003/503 ***NEW***	High-performance lithium battery with integrated GPS receiver, 530 Wh, 29,6 V, 18 Ah. New features: faster charging and USB-connector to power other electric devices
CRUISE		
1234-00	Cruise 2.0 TS ***NEW***	High-efficiency outboard, 5-6 HP equivalent. With tiller control, integrated on-board computer with GPS-based range calculation, 25 mm² cable set (3 m) including fuse and main switch; short shaft version. New features: improved robustness and corrosion protection
1235-00	Cruise 2.0 TL ***NEW***	As part no. 1234-00, but with long shaft
1236-00	Cruise 4.0 TS ***NEW***	High-efficiency outboard, 8-9.9 HP equivalent. With tiller control, integrated on-board computer with GPS-based range calculation, 25 mm² cable set (3 m) including fuse and main switch; short shaft version. New features: improved robustness and corrosion protection
1237-00	Cruise 4.0 TL ***NEW***	As part no. 1236-00, but with long shaft
1230-00	Cruise 2.0 RS ***NEW***	High-efficiency outboard, 5-6 HP equivalent. Includes remote steering connector, remote throttle, integrated on-board computer with GPS-based range calculation, 25 mm² cable set (3 m) including fuse and main switch; short shaft version. New features: improved robustness and corrosion protection
1231-00	Cruise 2.0 RL ***NEW***	As part no. 1230-00, but with long shaft
1232-00	Cruise 4.0 RS ***NEW***	High-efficiency outboard, 8 – 9.9 HP equivalent. Includes remote steering connector, remote throttle, integrated on-board computer with GPS-based range calculation, 25 mm² cable set (3 m) including fuse and main switch, short shaft version. New features: improved robustness and corrosion protection
1233-00	Cruise 4.0 RL ***NEW***	As part no. 1232-00, but with long shaft
1217-00	Twin-Cruise Control Set	For twin applications with Cruise 2.0 R and 4.0 R models, consists of aluminium twin throttle lever with dual info display and 56 cm tie bar for connecting the two motors

Part no.	Product	Description
POWER		
2103-00	Power 26-104	High-performance lithium battery, 2,685 Wh, nominal voltage 25.9 V, charge 104 Ah, weight 24.3 kg, including battery management system with integrated protection against overload, short-circuit, deep-discharge, wrong polarity connection, overtemperature, and submersion, waterproof to IP67
2206-20	Charger 350 W for Power 26-104	Charge current 10 A, charges Torqeedo Power 26-104 from 0-100% in max. 11 hours, waterproof to IP65
2208-00	Charger 1200 W for Power 26-104 ***NEW***	Charge current 40 A, charges Torqeedo Power 26-104 from 0-100% in max. 3 hours, waterproof to IP65
2304-00	On/off switch for Power 26-104	Switch to activate and deactivate Power 26-104, IP65, with LED indicator displaying on/off status, required if Power 26-104 is used without Cruise outboards
2207-00	Solar charge controller for Power 26-104	Solar charge controller tailored specifically to the characteristics of Power 26-104. Allows for safe and convenient charging of Power 26-104 from standard photovoltaic modules (PV modules not included in scope of delivery). Integrated MPPT ensures maximum possible power yield from the attached PV modules. Very high efficiency. Output power max 232 watts (8 A, 29.05 V)
DEEP BLUE		
3201-00	Deep Blue 80 RL	Deep Blue outboard system, 66 kW peak power, 80 HP equivalent. Includes: outboard motor, connection box, charger, remote throttle, integrated on-board computer with touch-screen; long shaft version (high-power batteries not included)
3202-00	Deep Blue 80 RXL	As part no. 3201-00, but with extra long shaft
3205-00	Deep Blue 80 TL ***NEW***	As part no. 3201-00, but with tiller control
3206-00	Deep Blue 80 TXL ***NEW***	As part no. 3201-00, but with extra long shaft and tiller control
3203-00	Deep Blue 40 RL	Deep Blue outboard system, 33 kW peak power, 40 HP equivalent. Includes: outboard motor, connection box, charger, remote throttle, integrated on-board computer with touch-screen; long shaft version (high-power batteries not included)
3204-00	Deep Blue 40 RXL	As part no. 3203-00, but with extra long shaft
3207-00	Deep Blue 40 TL ***NEW***	As part no. 3203-00, but with tiller control
3208-00	Deep Blue 40 TXL ***NEW***	As part no. 3203-00, but with extra long shaft and tiller control
3301-00	Deep Blue 80i 1800	Deep Blue inboard system, 66 kW peak power, 80 HP equivalent (max. 1,800 rpm). Includes: inboard motor with motor electronics, constant velocity joint, connection box, charger, remote throttle, integrated on-board computer with touchscreen, cable set, cooling pump (high-power batteries, shaft and propeller not included)
3302-00	Deep Blue 80i 1400	As part no. 3301-00, but with 1,400 rpm propeller speed
3303-00	Deep Blue 40i 1800	Deep Blue inboard system, 33 kW peak power, 40 HP equivalent (max. 1,800 rpm). Includes: inboard motor with motor electronics, constant velocity joint, connection box, charger, remote throttle, integrated on-board computer with touchscreen, cable set, cooling pump (high-power batteries, shaft and propeller not included)
3304-00	Deep Blue 40 i 1400	As part no. 3303-00, but with 1,400 rpm propeller speed
4101-00	Deep Blue high-voltage battery	High-power lithium battery, useable energy 12.8 kWh, nominal voltage 345 V
4201-00	Charger for Deep Blue high-voltage battery	Additional charger for shorter charging times, 3 kW output power
3903-00	Top-mount throttle	If chosen, replaces side-mount throttle included in the scope of delivery of the Deep Blue system package.
3904-00	Twin throttle	For Deep Blue twin installations. If chosen, replaces side-mount throttles included in the scopes of delivery of the Deep Blue system packages.
3931-00	High voltage battery mounting kit, slim ***NEW***	Allows for shock protected installation of one HV battery, includes 2 aluminium mounts and 4 heavy duty 3-axis metal dampers slim mounting option

Part no.	Product	Description
3932-00	High voltage battery mounting kit, low ***NEW***	Allows for shock protected installation of one HV battery, includes 2 stainless steel mounts and 4 heavy duty 3-axis metal dampers for low mounting option
3933-00	Suspension kit ***NEW***	Set includes 4 heavy duty 3-axis damping springs (for one battery at a time)

Accessories

ACCESSORIES

1925-00	Travel bags (2 pieces)	Bags for motor and battery of Travel models
1926-00	Travel battery bag	Bag for spare battery of Travel models
1931-00	Outboard cover for Travel ***NEW***	For Travel 1003 and 503 models. Protects motor cable from UV fading and shaft head from dirt. 95% waterproof, 5% breathable
1924-00	TorqTrac ***NEW***	Smartphone app with improved onboard computer functions. Suitable for Travel 503/1003, Ultralight, Cruise R and Cruise T models. Including data cable with bluetooth module to connect outboard and smartphone.
1905-00	Sacrificial anode for Cruise ***NEW***	Sacrificial anode for all Cruise models

CHARGERS

1132-00	Sunfold 37 ***NEW***	Foldable solar panel with 37 W, handy format, high efficiency, plug-and-play connections for watertight charging of Travel 503/1003, compatible only with batteries part no. 1146-00 and 1147-00.
1130-00	Solar charger 45 W	Solar module, can be rolled up, extremely weatherproof, built especially for use on water, plug-and-play connections for watertight charging of the Travel batteries part no. 1144-00 and 1145-00 and Ultralight battery part no. 1413-00. Including protective cover for easy transport and storage. Phased-out model – available while stocks last.
1127-00	Charger for Travel 503 / 1003 and Ultralight 403 batteries	40 watt charger for power outlets between 100-240 V and 50-60 Hz. Use only with Travel battery part no. 1144-00 and 1145-00 and Ultralight 403 battery.
1131-00	Fast charger for Travel 503 / 1003 and Ultralight 403 batteries	120 W charger for power outlets between 100-240 V and 50-60 Hz. Use only with Travel battery part no. 1144-00 and 1145-00 and Ultralight 403 battery.
1133-00	Charger 90 W for Travel 503 / 1003 battery ***NEW***	90 W charger for power outlets between 100-240 V and 50-60 Hz. Use only with Travel battery part no. 1146-00 and 1147-00.

2207-00

1931-00

1131-00

1918-00

1919-00

1914-00

1917-00

1413-00

9145-00

Find more pictures on www.torqedo.com

Part no.	Product	Description

PROPELLERS & FINS

1912-00	Spare propeller v10/p350	For Ultralight 402 and 403 (Ø 200 mm)
1917-00	Spare propeller v9/p790	For Travel 503 and Travel 1003 (Ø 292 mm)
1915-00	Spare propeller v8/p350	For Cruise models with production year 2009 onwards (serial numbers >5000), slower speed, lower efficiency but higher thrust. (Ø 300 mm)
1916-00	Spare propeller v19/p4000	For Cruise models with production year 2009 onwards (serial numbers >5000), fast, efficient, weedless. (Ø 300 mm)
1923-00	Spare propeller v30/p4000	Highspeed propeller for Cruise models with production year 2009 onwards (serial numbers >5000), for planing applications with lighter boats. (Ø 320 mm)
1901-00	Spare propeller v8/p350	For the Travel models 401, 801, 503, BaseTravel models, and Cruise models of production years 2006-2008 (serial numbers <5000). (Ø 300 mm)
9145-00	Fin for Travel 503/1003 models	Protects the outboard in case of grounding
9234-00	Fin for Cruise R and T models	Protects the outboard in case of grounding, for Cruise models with article numbers 1209-00 bis 1223-00
9258-00	Fin for Cruise R/T ***NEW***	Aluminium fin coated with polyurethane (PU) foam for the Cruise models with part no. 1230-00 to 1237-00, improved protection in case of grounding

THROTTLES & CABLES

1918-00	Remote throttle	Allows installation of Travel 503/1003 models with remote throttle instead of tiller, including integrated display with information about battery status, GPS-based speed and remaining range calculation, including 1.5 m and 5 m connection cable between motor and throttle. Use also as spare part for Cruise and Ultralight models.
1919-00	Long throttle arm	Longer tiller handle, 60 cm long, for Travel and Cruise T models
1920-00	Motor cable extension Travel and Utralight models	Extension for cable connection between battery and motor for Ultralight 403 and Travel 503/1003 models. Allows for longer distance (2 m) between battery and motor, with waterproof plug/connectors
1204-00	Motor cable extension Cruise models	Extension for Cruise cable set, 2 m long, with high current plugs
1921-00	Throttle cable extension, 1.5 m	Extension cable connection for Travel 503/1003, Ultralight and Cruise T as well as Cruise R models. Allows for longer distance between the throttle/tiller and motor
1922-00	Throttle cable extension, 5 m	As part no. 1921-00, length 5 m
1914-00	Magnetic kill switch	Emergency-stop and immobiliser for Travel, Cruise and Ultralight models
1927-00	Spare parts kit Travel	Set for Travel models consisting of magnetic kill switch, large battery fixing pin and small steering fixing pin
1128-00	Charging cable 12 V Travel and Ultralight models ***NEW***	Allows charging of Travel 503/1003 and Ultralight 403 models from 12 V power supply.

Technical Data

Outboards < 20 HP Equivalent

	ULTRALIGHT 403	TRAVEL 503 S/L	TRAVEL 1003 S/L	CRUISE 2.0 TS/TL	CRUISE 4.0 TS/TL	CRUISE 2.0 RS/RL	CRUISE 4.0 RS/RL	TWIN CRUISE 2.0 R	TWIN CRUISE 4.0 R
Input power in watts	400	500	1,000	2,000	4,000	2,000	4,000	4,000	8,000
Propulsive power in watts	180	220	480	1,120	2,240	1,120	2,240	2,240	4,480
Comparable combustion outboards (propulsive power)	1 HP	1.5 HP	3 HP	5 HP	8 HP	5 HP	8 HP	8 HP	15 HP
Comparable combustion outboards (thrust)	2 HP	2 HP	4 HP	6 HP	9.9 HP	6 HP	9.9 HP	12 HP	20 HP
Maximum overall efficiency in %	45	44	48	56	56	56	56	56	56
Static thrust in lbs*	33	40	68	115	189	115	189	230	378
Integrated battery	320 Wh Li-Ion	320 Wh Li-Ion	530 Wh Li-Ion	-	-	-	-	-	-
Nominal voltage	29.6	29.6	29.6	24	48	24	48	24	48
Final charging voltage	33.6	33.6	33.6	-	-	-	-	-	-
Total weight in kg	7.3	12.9 (S) / 13.5 (L)	13.4 (S) / 14.0 (L)	17.5 (S) / 18.6 (L)	18.3 (S) / 19.4 (L)	15.3 (S) / 16.2 (L)	16.1 (S) / 17.0 (L)	31.0 (S) / 33.1 (L)	32.5 (S) / 34.5 (L)
Motor weight without battery in kg	4.4	8.9 (S) / 9.5 (L)	8.9 (S) / 9.5 (L)	-	-	-	-	-	-
Weight of integrated battery in kg	2.9	4.0	4.5	-	-	-	-	-	-
Shaft length in cm	45	62.5 (S) / 75 (L)	62.5 (S) / 75 (L)	62.5 (S) / 75.5 (L)	62.5 (S) / 75.5 (L)	62.5 (S) / 75.5 (L)	62.5 (S) / 75.5 (L)	62.5 (S) / 75.5 (L)	62.5 (S) / 75.5 (L)
Standard propeller (v = speed in km/h at p = power in watts)	v10/p350	v9/p790	v9/p790	v19/p4000	v19/p4000	v19/p4000	v19/p4000	v19/p4000	v19/p4000
Alternative propeller options	-	v8/p350	-	v8/p350 v30/p4000	v8/p350 v30/p4000	v8/p350 v30/p4000	v8/p350 v30/p4000	v8/p350 v30/p4000	v8/p350 v30/p4000
Maximum propeller speed in rpm	1,200	700	1,200	1,300	1,300	1,300	1,300	1,300	1,300
Control	Remote throttle	Tiller	Tiller	Tiller	Tiller	Remote throttle	Remote throttle	Remote throttle	Remote throttle
Steering	Provision to connect to kayak rudder; lockable	360° lockable	360° lockable	360° lockable	360° lockable	Provision to connect to standard remote steering; lockable	Provision to connect to standard remote steering; lockable	Provision to connect to standard remote steering; lockable	Provision to connect to standard remote steering, lockable
Tilting device	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection	Manual with grounding protection
Trim device	-	Manual, 4-step	Manual, 4-step	Manual, 4-step	Manual, 4-step	Manual, 4-step	Manual, 4-step	Manual, 4-step	Manual, 4-step
Stepless forward/reverse drive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Integrated on-board computer with display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* Torqeedo static thrust measurement is based on internationally accepted ISO standards. Static thrust figures for conventional trolling motors are typically measured differently, which results in higher values.
To compare Torqeedo static thrust data with conventional trolling motors, add approximately 50% to the Torqeedo static thrust values.

Outboards & Inboards 40 / 80 HP Equivalent

DEEP BLUE SYSTEM	DEEP BLUE 40 RL / RXL	DEEP BLUE 80 RL / RXL	DEEP BLUE 40 TL / TXL	DEEP BLUE 80 TL / TXL	DEEP BLUE 40i 1800 / 1400	DEEP BLUE 80i 1800 / 1400
Input power (peak) in kW	33	66	33	66	33	66
Input power (continuous) in kW	25	50	25	50	25	50
Propulsive power in kW	16.2	32.4	16.2	32.4	> 16.2	> 32.4
Comparable petrol outboards (propulsive power)	40 HP	80 HP	40 HP	80 HP	40 HP	80 HP
Maximum overall efficiency in %	54	54	54	54	> 54	> 54
Usable energy in kWh	12.8	25.6 - 51.2	12.8	25.6 - 51.2	12.8	25.6 - 51.2
Nominal voltage	345 V	345 V	345 V	345 V	345 V	345 V
Final charging voltage	389 V	389 V	389 V	389 V	389 V	389 V
Motor weight without battery, including electronics in kg	139 (L) / 145 (XL)	139 (L) / 145 (XL)	145 (L) / 151 (XL)	145 (L) / 151 (XL)	80	80
Weight of 1 battery in kg	149	149	149	149	149	149
Total system weight example in kg (long shaft version, 1 charger, including connection box, display, throttle and cabling)	313 (with 1 battery)	462 (with 2 batteries)	319 (with 1 battery)	468 (with 2 batteries)	254 (with 1 battery)	410 (with 2 batteries)
Shaft length	20" / 51 cm (L) 25" / 63.5 cm (XL)	20" / 51 cm (L) 25" / 63.5 cm (XL)	20" / 51 cm (L) 25" / 63.5 cm (XL)	20" / 51 cm (L) 25" / 63.5 cm (XL)	-	-
Standard propeller	v50/p50k	v50/p50k	v50/p50k	v50/p50k	-	-
Maximum propeller speed in rpm	2,400	2,400	2,400	2,400	1,800 / 1,400	1,800 / 1,400
Steering	Standard remote steering	Standard remote steering	Tiller with throttle	Tiller with throttle	-	-
Tilting device	Electric from throttle	Electric from throttle	Tiller skewing and throttle	Tiller skewing and throttle	-	-
Trim device	Electric from throttle	Electric from throttle	Electric from tiller	Electric from tiller	-	-
Integrated on-board computer with touch-screen display	Yes	Yes	Yes	Yes	Yes	Yes

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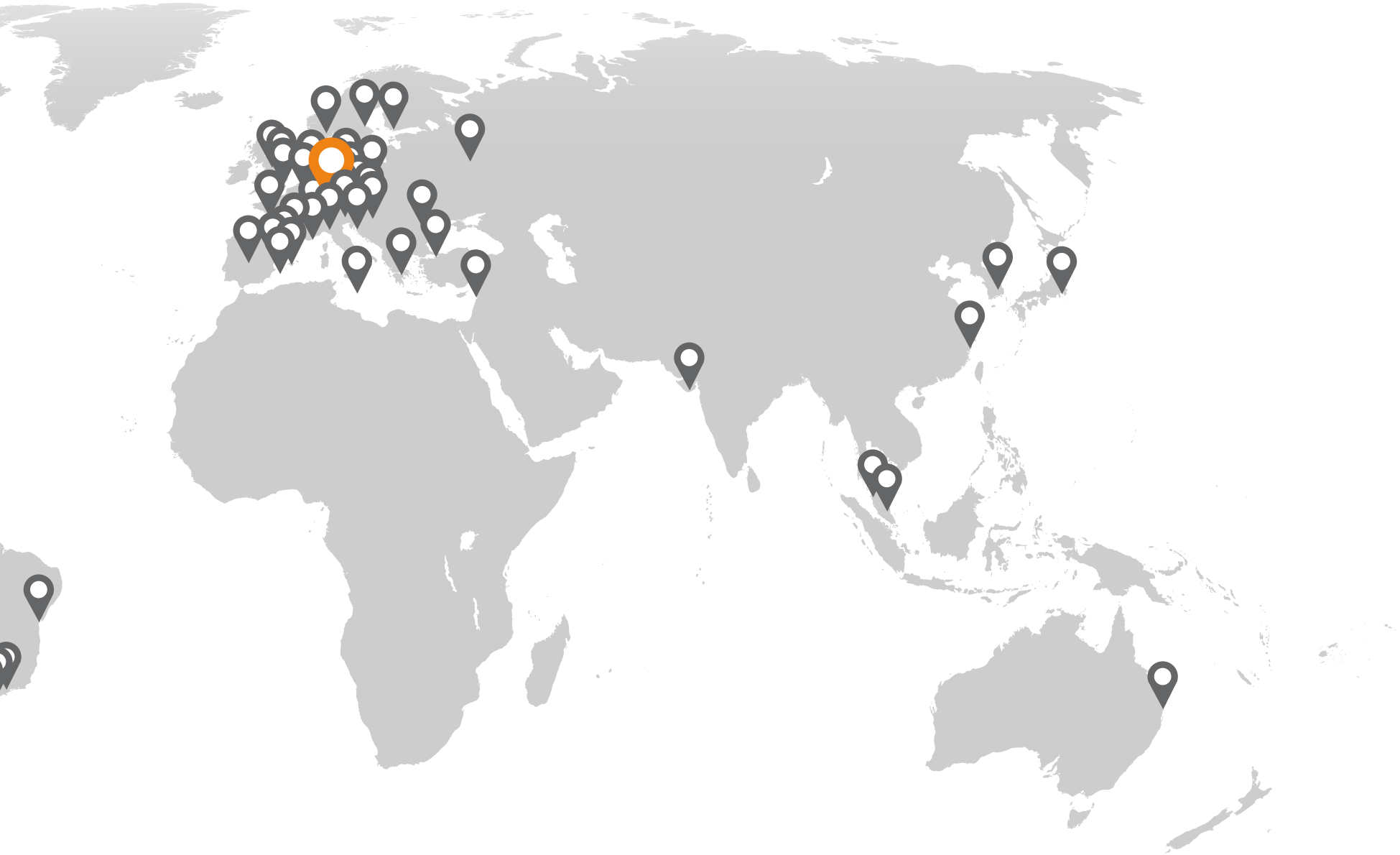

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