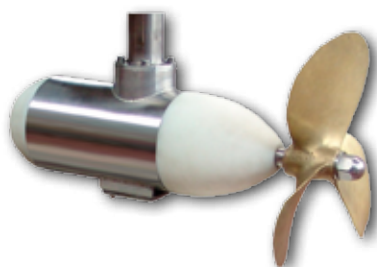




# Whisperprop Hybrid Propulsion Systems





## Whisperprop - The "Silent" Revolution

### Hybrid by Fischer Panda

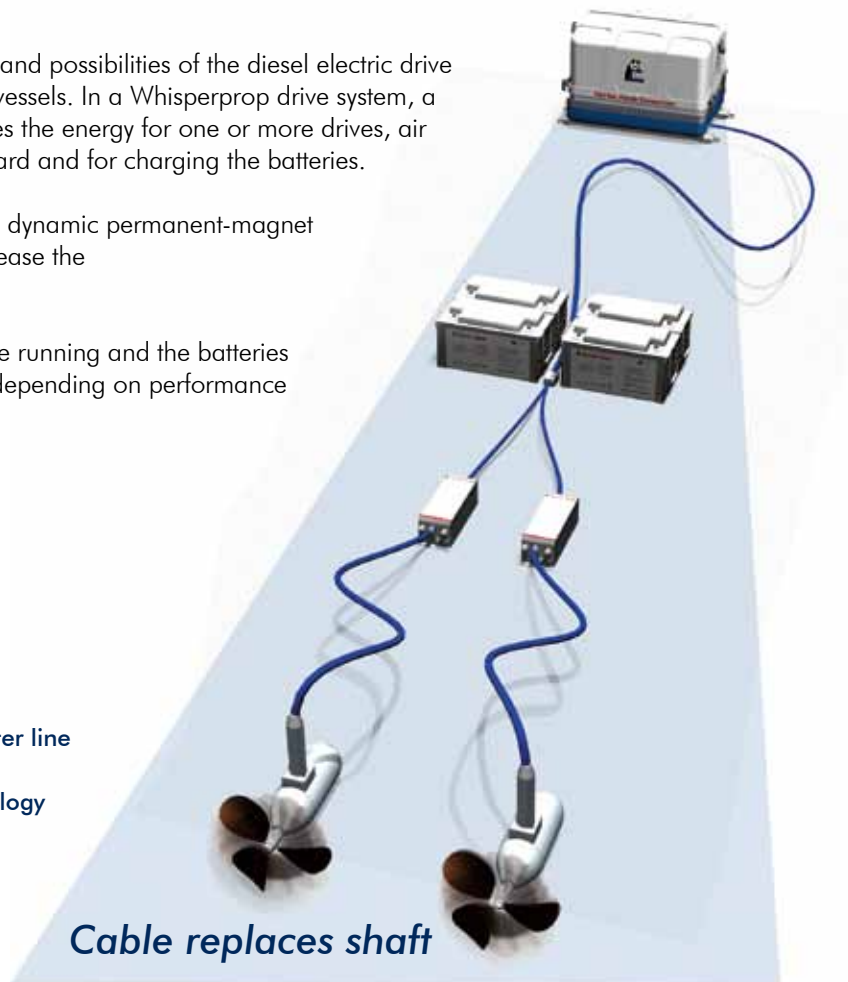
Fischer Panda has succeeded in bringing the advantages and possibilities of the diesel electric drive from large ships to smaller commercial and recreational vessels. In a Whisperprop drive system, a highly efficient diesel *Whisper eMotion* generator produces the energy for one or more drives, air conditioning systems, additional power consumers on board and for charging the batteries.

The Whisperprop drives are constructed with modern and dynamic permanent-magnet motors. These provide higher thrust and substantially increase the manoeuvrability capabilities.

Fischer Panda's Hybrid Systems allow both the motor to be running and the batteries to be charged while sailing\*. The systems are available, depending on performance required, with a voltage of 48V, 96V or 240V.

- Very quiet
- Greater thrust throughout entire speed range
- Improved manoeuvring capabilities
  
- One generator can power several drives
- Highly efficient onboard power system from same unit
- More design flexibility for layout
  
- Generator can be positioned mid-ship on the boat's center line
- Full steerage at all manoeuvring speeds
- Optimal performance using Advanced Generator Technology
  
- Multiple control stations possible
- Options for regeneration\*

\*) Regeneration options on request



*Cable replaces shaft*



## Power - wherever you are

You will always have sufficient power with a Fischer Panda generator on board

- 3 kW to 200 kW generators
- Worldwide partners near you
- Very low vibration and quiet installations
- Up to 40% weight and 60% space savings possible
- Parallel operation with multiple generators
- Integration with ship's main control systems

Fischer Panda GmbH manufactures compact and quiet diesel generators for marine and vehicle applications. These are sold in over sixty countries worldwide under the trade name "Fischer Panda."

The water-cooled diesel generators from Fischer Panda are renowned worldwide for being innovative, reliable and extremely quiet. The product range includes over two hundred different generators and covers a performance range from 2.5 kW to 100 kW.

Fischer Panda generators feature an effective water-cooling system and a lightweight compact construction. This ensures Fischer Panda generators are one of the leaders for mobile super-silent diesel generators. These highly-proven marine and vehicle generators supply power to on-board electrical systems, electric drives and complete mobile energy systems.

The company, based in Paderborn -Germany, was originally founded in 1977 under the name Icemaster GmbH and renamed to Fischer Panda GmbH in 2007.

### Worldwide Distributors and Partners

Our worldwide distributors and partners are able to help you to choose the best generator for your requirements.





## Installation and Custom Services

### Installation Kits

Fischer Panda supplies installation kits to match your requirements and provide you with all the necessary cables, hoses, connection pieces and accessories to ensure that the system can be correctly installed. This even includes when you require specific hose and cable lengths.



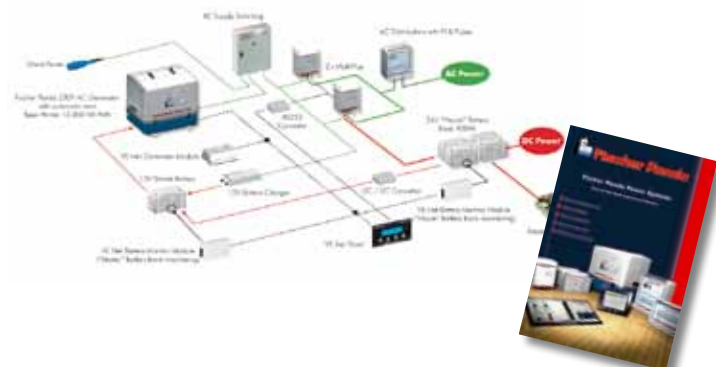
### Custom services for special requirements

Fischer Panda offers a wide range of services for customising and adapting generators for use with special equipments and commercial applications.



### Powerful Energy Systems

Fischer Panda marine generators form the backbone of our intelligent and innovative solutions ensuring you have sufficient energy even when there is no shore power connection available. It is possible to enhance an existing installation and interface with the ship's control system.



(see Fischer Panda Systems Brochure for more info).



## Service and Support

### Service Kits

Fischer Panda **Service Kits** include only original spare parts which meet their required specifications. The Fischer Panda service kits are suited for the type of servicing normally carried out by workshops.

Fischer Panda **Service Plus Kits** include only the original spare parts which meet their required specifications and all the relevant spare parts for the first 600 h service intervals. The Fischer Panda service kits are suited for the type of servicing which customers will be carrying out on board boats and vehicles. Service Plus kits are supplied in a handy waterproof plastic box so all the items are protected while storing until they are required.

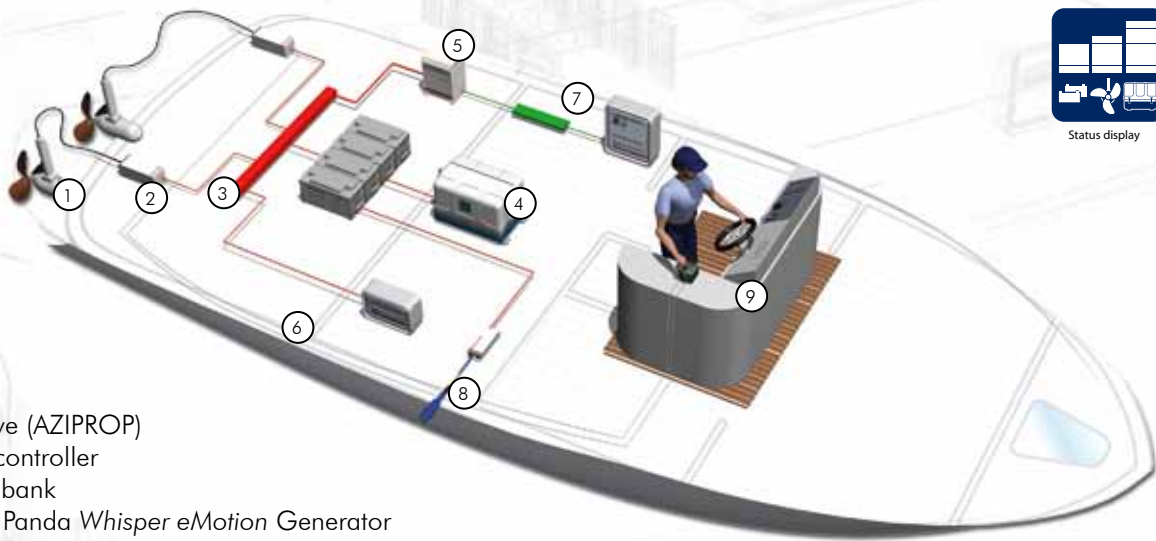
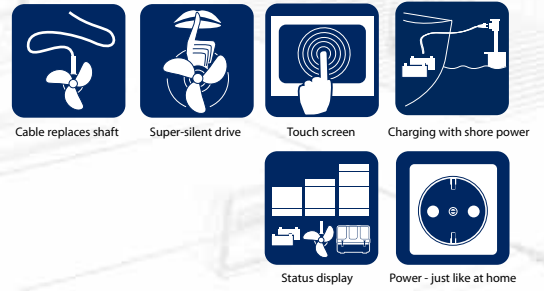
The Fischer Panda Installation Guide can be downloaded for free from the company website at:  
<http://www.fischerpanda.de/installation>

### Global Service Directory

With a coordinated network of distributors, dealers and service stations, Fischer Panda has trained specialists worldwide ready to help you. In many countries around the world, Fischer Panda has exclusive distributors responsible for a branch of the service network. They will be able to advise and recommend the best service station depending on your location, your vehicle and the type of generator system installed onboard. They will also be able to organise and coordinate resources and spares (if required) so we can provide you with the best service - wherever you are.

The Global Service Directory can be downloaded for free from the company website at:  
<http://www.fischerpanda.de/globalservice>





- 1 DE-Drive (AZIPROP)
- 2 Motor controller
- 3 Battery bank
- 4 Fischer Panda *Whisper eMotion* Generator
- 5 Inverter
- 6 12/24 V DC Bus
- 7 230V AC Power for electrical consumers
- 8 Shore power connection for battery charging
- 9 C³Cockpit and throttle

## 48V Hybrid Drive System with 10 kW (on the shaft)

The 48V drive system combines all the important components and displays these clearly on a 5,4" touch display. This drive system is the first step towards cruising comfortably in the future and taking the environment into consideration. The mechanical performance of the electric motor is 10 kW on the shaft.

### Hybrid Drive

- Extremely quiet drive unit
- *Whisper eMotion* generator for drive and onboard power - up to 10 kW mechanical performance per drive
- Highly efficient motor - up to 90%

### Always sufficient energy

- There is always sufficient energy available for your appliances.
- Efficient battery charging is carried out even when covering shorter distances.
- AC power is supplied indirectly from the battery bank and the generator is not required to run continuously every time power is needed. This is the "silent AC power"- concept.

### Advantages when using a shorepower connection

- Even with a weak shore power connection, the MultiPlus can help to cover short peak AC loads by combining shore power with energy from the batteries.
- Regulation of the amount of power drawn from the shore power connection ensures safe charging and prevents land fuses from being tripped.
- Surplus energy from the shore power connection can be used to recharge the batteries.



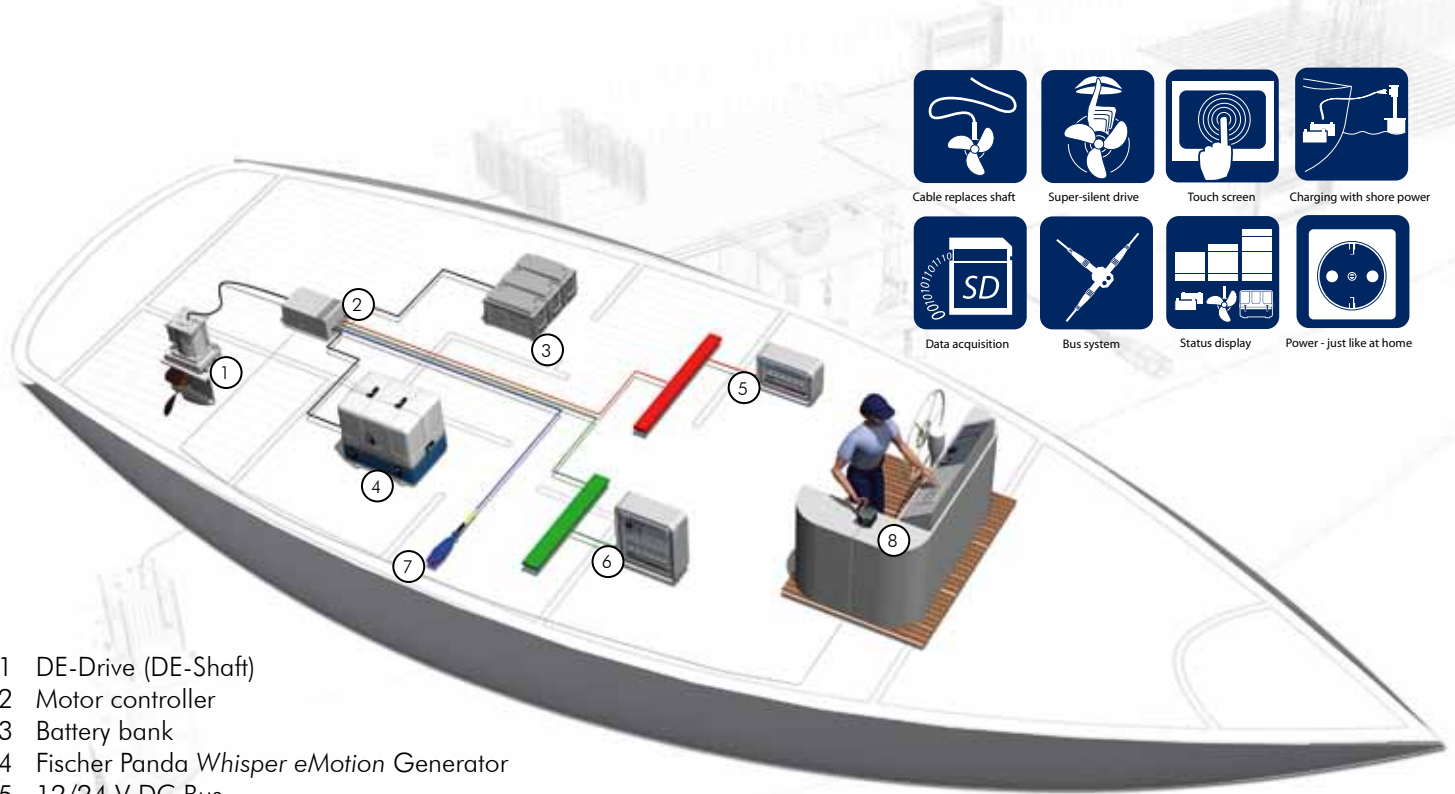
*Whisper eMotion*  
Whisper eMotion Generator



3rd Generation Fischer Panda Drives



C³Cockpit - Touch Screen



- 1 DE-Drive (DE-Shaft)
- 2 Motor controller
- 3 Battery bank
- 4 Fischer Panda *Whisper eMotion* Generator
- 5 12/24 V DC Bus
- 6 AC Power for electrical consumers
- 7 Shore power connection
- 8 C<sup>3</sup>Cockpit and throttle

## 96V/240V Hybrid Drive Systems with 15-50 kW (on the shaft)

The HybridDriveSystem is designed as an environmentally conscious system while providing a high degree of comfort. All operating data is displayed on the C<sup>3</sup>Cockpit. This motor controller is an “all-In-one” solution. This can operate a single motor or even independently control two separate motors. The controller is also responsible for the supply to the 24 V DC system and functions both as battery charger and inverter for power on board.

### Hybrid Drive

- Extremely quiet drive unit
- One *Whisper eMotion* generator for drive and onboard power - 15-50 kW mechanical performance per drive
- Highly efficient motors up to 96%

### Always sufficient energy

- Integrated battery charger inside Motor Control Unit - an additional inverter is not required
- Use of domestic appliances such as heaters, ovens, hair dryers, vacuum cleaners, coffee machines and boilers for longer periods or even simultaneously. There is always sufficient power so you do not need to return to shore or start the ship's main engine. This allows you to enjoy longer trips.

### Complete System

- Single display (C<sup>3</sup>Cockpit) for generator & drive - displays servicing intervals and information for generator, motor and cooling system etc.
- Energy from multiple sources (generator, battery bank or shore power)
- Easily start powerful consumers which require high starting power such as air conditioning units and dive compressors.



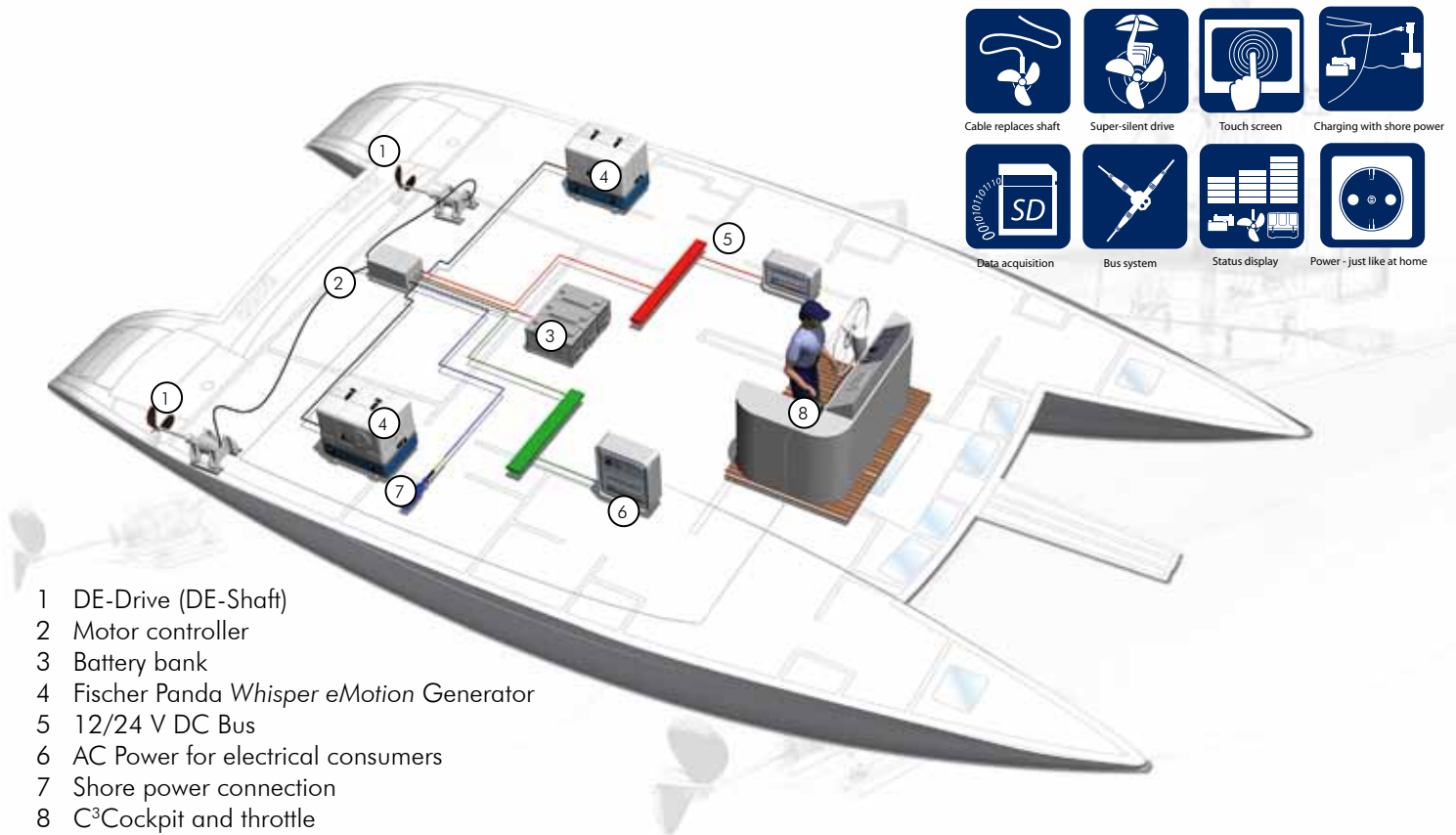
*Whisper eMotion*  
Whisper eMotion Generator



3rd Generation Fischer Panda Drives



C<sup>3</sup>Cockpit - Touch Screen  
Command Control & Communication



- 1 DE-Drive (DE-Shaft)
- 2 Motor controller
- 3 Battery bank
- 4 Fischer Panda *Whisper eMotion* Generator
- 5 12/24 V DC Bus
- 6 AC Power for electrical consumers
- 7 Shore power connection
- 8 C<sup>3</sup>Cockpit and throttle

## Hybrid Drive Systems for Catamarans & Trimarans

The HybridDriveSystem is designed as an environmentally conscious system while providing a high degree of comfort. All operating data is displayed on the C<sup>3</sup>Cockpit. The motor controller is an “all-in-one” solution with battery charging and functioning as an inverter for power on board.

The advantages of two generators on board multi-hull vessels allow optimal weight distribution and fuel savings when cruising at lower speeds. The installation of a single generator in the centre is also possible.

### Hybrid Drive

- Extremely quiet drive unit
- One generator for drive and onboard power - 15-50kW mechanical performance per drive
- Highly efficient motors up to 96%

### Always sufficient energy

- Integrated battery charger inside motor controller - an additional inverter is not required
- Use of domestic appliances such as heaters, ovens, hair dryers, vacuum cleaners, coffee machines and boilers for longer periods or even simultaneously.
- There is always sufficient power so you do not need to return to shore just to recharge the batteries. This allows you to enjoy longer trips.

### Advantages of two smaller generators

- Less consumption at lower speeds - a smaller generator efficiently covers lower energy requirements
- Optimal weight distribution with multi-hulls
- Very flexible - in cases when not enough room for a larger generator is available



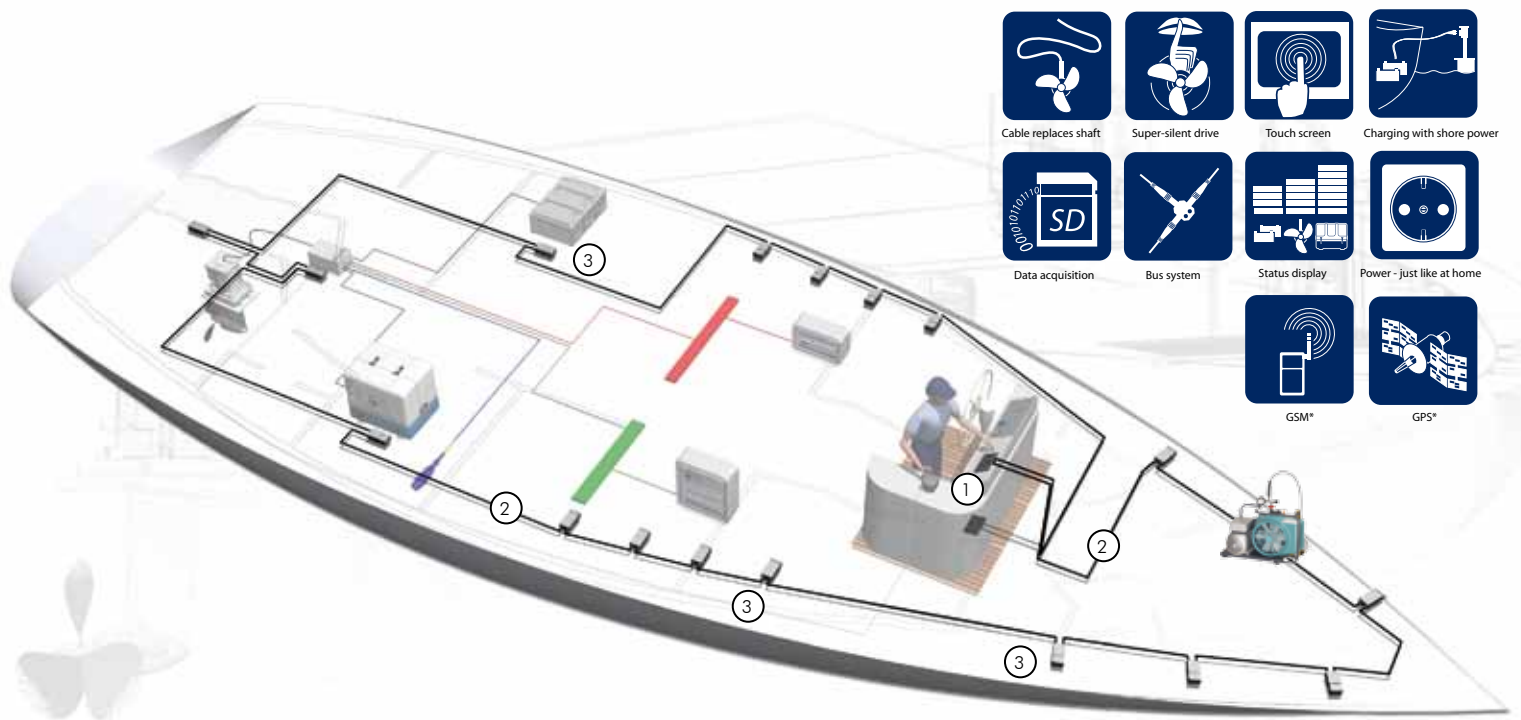
Complete Hybrid-Energy System



3rd Generation Fischer Panda Drives



C<sup>3</sup>Cockpit - Touch Screen  
Command Control & Communication



- 1 C<sup>3</sup>Cockpit
- 2 Bus System
- 3 Sensors

## C<sup>3</sup>Cockpit with Bus System

The new innovative Fischer Panda HybridDriveSystem combines a 3rd generation diesel-electric drive system with a fully integrated onboard power system. Central to this is the new Fischer Panda C<sup>3</sup>Cockpit. This provides the skipper with everything needed to control and manage power requirements on board.

Command, Control and Communication are the key elements behind the new C<sup>3</sup>Cockpit. All components are connected via a bus system so that they communicate by sending and receiving signals for further processing with each other. The status, parameters and values of all connected components such as drive system, controllers, generator, onboard power devices and batteries are displayed giving the skipper full control. The skipper has full command – he can change parameters and switch devices.

### Hybrid Drive

- More comfort on board
- 15-50 kW drive performance on the shaft available (with fully charged batteries)
- Quiet, efficient and environmentally conscious operation

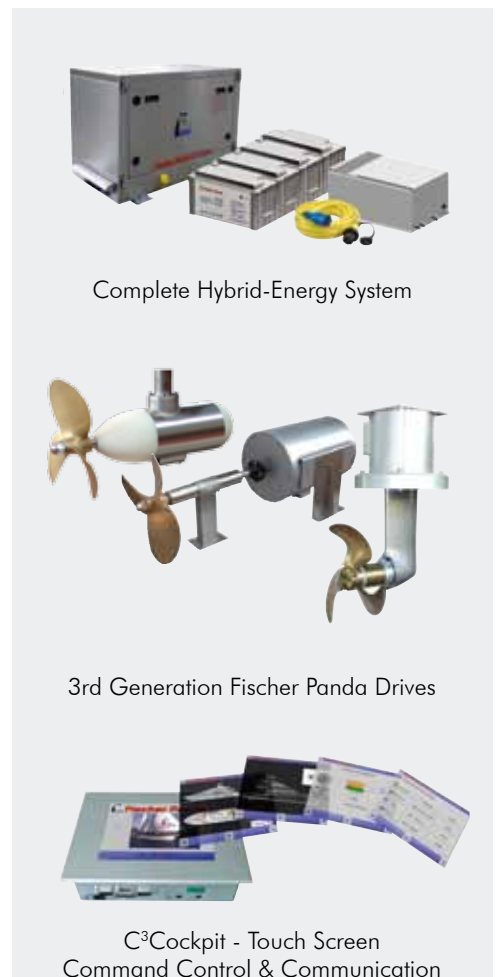
### Complete System

- C<sup>3</sup>Cockpit to control and monitor all components
- Easy to operate touch screen
- Status monitoring for safer operation

### Always sufficient energy

- Intelligent distribution of energy from multiple sources: Generator, battery bank and shore power

\*) GPS/GSM Options on request





## The Fischer Panda Warranty Plus

**More security and peace of mind with your Fischer Panda generator**

### **What is the extended Fischer Panda Guarantee?**

The extended Fischer Panda Guarantee is a component of the generator warranty. Once accepted, it applies up to the first inspection/interval service and extends thereafter automatically up to the respective next inspection/interval service at a Fischer Panda Service partner but not beyond the specified date on the certificate of guarantee.\*

### **Fischer Panda generators are issued with a Basic Guarantee.**

This extension is free of charge for you and applies generally from date of delivery by Fischer Panda provided that regular and proven maintenance with original Fischer Panda parts is carried out\*

**Commercial usage** 1 year or 1000 operation hours <sup>1)</sup>

**Private usage** 2 years or 1000 operation hours <sup>1)</sup>

The Basic Guarantee also provides for an additional 5 years from delivery date for electrical parts of the generator (stator with winding, alternator housing, sealing and all water-bearing parts). This extended warranty covers damage caused by cooling water to the above mentioned parts. An additional 10 years guarantee on the rotor from date of delivery is also included.\*

### **Warranty Pack 1000**

If your Fischer Panda generator has been installed and commissioned by an official Fischer Panda partner and the installation is confirmed by sending the commissioning protocol to Fischer Panda GmbH Germany, a 1000 Plus Warranty can be applied for. This is free of charge and extends the Basic Guarantee by 1 years. or max. 1000 operation hours. <sup>1)</sup>\*

### **Warranty Packs 1250 and 1500**

Additional warranty packs can be arranged with the purchase of the generator to provide cover for generators which will be used for longer operational periods.\*

### **Options for buyers of Fischer Panda generators whereby the previous owners did not follow the specified service intervals.**

Under certain circumstances, a "1250 Refit" warranty may be considered and granted for owners of a used Fischer Panda Generator if the previous owner did not follow specified service intervals.

\*) Please consult the Fischer Panda Warranty Plus for the exact requirements and conditions for Extended Warranty, Guarantee and Warranty packs. Furthermore, the general Guarantee Conditions for mobile and stationary Fischer Panda generators apply.

1) Whichever comes first.



## Checklist when making a request

### Important information to consider while planning your hybrid drive system

#### Boats- / Ships Information

- Boat type
- Hull form
- Hull material
- Length
- Weight
- Is the boat new or being fitted with a replacement system?

#### Drive System

- Number of drives
- Drive performance
- Type of drives
- Planned displacement per ton



**DE-Shaft**

The classical drive solution



**DE-Saildrive**

Standard solution for sailing boats



**DE-Aziprop**

Underwater drive

#### Battery System

- Number of batteries
- Are batteries already installed?
- Size of battery bank (Ah. capacity)?
- How long should (and how fast) should you be able to cruise using the batteries?
- How long should the battery bank supply electrical consumers?

#### Supply System

- Voltage
- Generator type
- Number of generators
- Cooling system
- Display size

- Onboard power, if yes: performance in kW
- Is a shore power connection required
- Typical large consumers:
- Air conditioning [kW]
- Anchor winch [kW]
- Diving compressor [kW]
- Other consumers [kW]

#### Others

- Specific norms, which have to be met
- Country where installation will take place
- Planned date for installation



Fischer Panda GmbH  
Otto-Hahn-Str. 32-34  
D-33104 Paderborn  
Germany

Tel. : +49 (0)5254 9202-0  
Fax : +49 (0)5254 9202-550  
Email : [info@fischerpanda.net](mailto:info@fischerpanda.net)  
Web : [www.fischerpanda.net](http://www.fischerpanda.net)

**Disclaimer:**

The information contained here is to the best of our knowledge accurate at the date of publication. Please note that the data in this publication reflects the technical state at time of print. Dimensions apply for the sound insulation capsule only and do not include latches, fittings etc. Additional room will need to be calculated for installation to include hoses, cables and capsule mountings. Additional components or alternators may also affect capsule dimensions. Due to our policy of continual product development, we reserve the right to alter technical specifications without notice. All performance data relates to air and water temperatures of 20°C. Performance reduction (approx. 1% per 100 m height and approx 2% per 5°C air temperature and approx. 1% per 1°C water temperature above 20°C)