Vehicle Generators

- High Performance
- Extremely Quiet
- Water-Cooled
- Compact
- Light

Power Systems for Mobile and Stationary Applications
Panda Vehicle Generators

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

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 200 kW.

Fischer Panda generators feature an effective water-cooling system and a lightweight compact construction. This ensures Fischer Panda generators are the No. 1 in Europe 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.

Mobile and Stationary Applications

Developed for use in special and diverse areas of the vehicle industry, Fischer Panda generators can be found supplying power to a vast range of applications worldwide.

Recreational & Touring
- Motorised RVs
- Expedition Vehicles
- Mobile Homes
- Luxury Motor Coaches
- Limousine Coaches
- Holiday Homes

Communications & Promotion
- Mobile Broadcasting & Communications
- Mobile Stages
- Trade Show Vehicles
- Formula 1 Team Vehicles
- Border Control & Customs
- Commercial Vehicles

Emergency & Specialist Services
- Emergency Command Centres
- Police / Ambulance / Fire-Fighting
- Mobile Blood Donor Units
- Environmental Monitoring
- Railway & Track Maintenance
- Tactical Shelters

Fischer Panda generators can be found installed in the smallest and tightest places onboard.
Compact, Quiet Vehicle Generators

The most significant advantage of the Fischer Panda generator is the very low sound level. There are many components required to work together to achieve this result. As no cooling air flow inside of the capsule is required, this also ensures that ambient temperatures remain constant. An efficient water-cooling system requires that the radiator be installed separately from the generator.

Super-Silent Sound Insulation System

Fischer Panda generators up to 25 kW are delivered with a GFK sound insulation capsule with “3D” sound insulation material as standard (optional: sound insulation material “4DS”). From 30 kW, the capsule is delivered as a stainless steel-version MPL. The MPL sound insulation casing can be split up and consists of 6 - 11 parts, depending on the size of the generator. The MPL capsules are also available at an extra cost for generators from 6 kW to 25 kW.

Different versions of sound insulation material are available:
- **3D**: 3 layers, up to 25 mm thick
- **4DS**: up to 5 layers, up to 40 mm thick
- **6DS**: up to 6 layers, up to 60 mm thick

Water-cooled Exhaust Silencer

PVME-N, PVK-U and PVK-UK generators (up to 25 kW) are fitted with a water-cooled exhaust silencer.

Vehicle Installation - roof-mounted radiator

The radiator must be installed where good access for fresh-air circulation is guaranteed. The best location is horizontally on the roof of the vehicle. The radiator has an integrated expansion tank.

Vehicle Installation - side-mounted radiator

A radiator can be fitted to the vehicle’s side if there is no room on the roof.

Vehicle Installation - underneath chassis

It may be possible to mount a radiator under the chassis if it is not possible to mount the radiator on the roof or the vehicle’s side. Note: Sufficient clearance must be available to allow the air to circulate correctly so that warm air does flow back over the radiator.

Marine Installation - keel cooling

An interesting alternative to seawater cooling for marine vessels is using a Fischer Panda vehicle generator in conjunction with a keel cooler. This eliminates the need for raw water pumps, strainers and an inboard heat exchanger.
Remote Control Panel P4 Plus

<table>
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Available in three different versions:

- **Single Phase - HP1**
  230 V - 50 Hz AC or 120 V / 240 V - 60 Hz
  The HP1 is the standard version for 230 Volt 50 Hz (120 / 240 V - 60 Hz) AC. This is available up to 25 kW. From 12 kW, a three phase version should be considered, as the Panda generator permits asymmetrical loads up to 50% per phase. A check should always be made as to whether a DC-AC Power System would be the better solution for small to middle ranged power systems. (See DC-AC Power System)

- **Three Phase - HP3**
  400 V - 50 Hz AC or 208 V - 60 Hz AC
  The 400 Volt three phase winding has the highest level of efficiency and the best qualities. Also, this winding can supply single phase AC with the appropriate phase distribution. This enables each phase to be overloaded by up to 50%.
  A three-phase generator should always be chosen above 25 kW (from Panda 30 NE).

- **Dual Voltage System (DVS)**
  Combined unit with single and three phase windings
  The "DVS" Combi-Winding is a special version for 50 Hz generators consisting of two separate coils without additional costs. A 400 Volt three-phase winding is combined with a one phase winding. This permits the use of three phase motors (i.e. compressors for air conditioners and power tools etc). The separate one phase winding can supply full nominal performance of the generator without "dissymmetrical load problems" to a phase, which simplifies the electrical installation.
  Note: Generators with a DVS winding supply approximately 85% of the nominal performance compared with the HP1 or HP3 windings.

**Extremely Clean Sine Wave**

The Panda asynchronous generator supplies a particularly clean sine wave and achieves the best result from numerous tests in this category. This guarantees the smooth running of electronic devices such as air conditioners, charging devices, etc.

**Tolerance of ±3V with patented Voltage Control System**

The Fischer Panda Voltage Control System (VCS) has been used for more than ten years to regulate the generator and engine. The engine speed is progressively adjusted which ensuring that the voltage of the asynchronous generator has a tolerance of ±3 volts. The Fischer Panda generator combines all the advantages of the asynchronous generator with the voltage control of a synchronous generator.
Complete Program - AC and DC Generators

Professional solutions for all recreational and commercial power applications

Fischer Panda has a wide range of generator types for use in mobile power applications:

1. Panda Asynchronous Generators (PSA and PSA-HD), which directly produce alternating current (AC) whilst running. These generators are ideal if your power is required in continuous operation.

2. Permanent Magnet Generators (AGT-DDC) produce direct current (DC) and function as part of a DC Hybrid Power System. A battery bank is used with an inverter within this system to supply the power circuit onboard. The level of the batteries can be monitored and the batteries can be automatically charged by an AGT Generator. This system is optimal if your power is required in interval operation throughout the day.

3000 rpm - The ideal speed for powering up to 30 kW

Low frequencies contain more energy and their energy-rich vibrations are transmitted to all components within the surrounding area. You will “notice” the generator throughout the whole vehicle. A correctly installed 3000 rpm generator that is housed within an insulation capsule is quieter than a slow-runner (often the opposite is presumed).

Generators running at 1500 rpm are heavier and larger than their counterparts operating at 3000 rpm. As weight and space play such an important role in modern vehicle constructions, the smaller generator with 3000 rpm has considerable advantages. The high reliability and longer lifespan of a slow-runner is not always an important aspect, because the modern diesel engine operates within its ideal speed range. This is closer to 3000 / 3600 revolutions per minute than 1500 / 1800.

As a result of their effective water-cooling, even at higher surrounding temperatures, Panda generators can be up to 20% more efficient than other units of a comparable size. Your individual application and installation requirements should be considered in each case.

3000 / 3600 rpm = Panda PSA
1500 / 1800 rpm = Panda PSA-HD

Hybrid Power Systems

The Fischer Panda innovative and integrated energy systems provide on-board power for vehicles and marine vessels without the requirement to have a permanently running generator.

The extremely robust AGT generators have proven their reliability under extremely adverse conditions. Problems concerning empty batteries and independent power supplies are impressively solved using this Fischer Panda technology. The 75 lifeboats of the Royal Navy Lifeboat Institute are a great example of their reliability. The Fischer Panda AGT Generators installed on these boats have been in operation since 1997.

Longer lifespan for generator
Reduced maintenance costs
Reduced environmental pollution
Reduced exhaust emissions
Reduced fuel consumption
Less noise onboard & outside
Longer battery life
Smaller battery bank possible
Up to 30% smaller and lighter
Automatic start as standard (manual start as option)
Fischer Panda generators are available in different versions to suit your needs

Fischer Panda generators are compactly constructed and highly suited for applications which have limited space available for installation. Generators are available for internal installation within the vehicle and external mounting on the chassis. The modular versions PVMV-N, PVM-NE and PVK-U have been designed to be installed with an external radiator. The most effective cooling is usually achieved using a cooling system with a roof-mounted radiator.

**Panda PVMV-N**
Vehicle generator with sound insulation capsule, integrated water-cooled vertically mounted pre-silencer and main silencer
- Easy to install
- Requires external radiator
- Suitable for keel cooling on boats
- Suitable for internal installation
- Best choice, when space and length are available
- Water-cooled silencer completely integrated within the capsule
- Reinforced glass fibre (GRP) capsule is standard for models up to 12 kW
- Stainless steel capsule (MPL) for models from 15 kW and above

**Panda PVM-NE**
The PVM-NE is similar to the PVMV-N version except that the silencer is externally mounted on the capsule which is not water-cooled. This is the standard version for generators over 30kW. No additional silencer is necessary. This version must be installed in a well-ventilated area due to the heat absorbed by the silencer. The generator is housed within a sound insulation capsule.
- Suitable for internal installation
- Requires external radiator
- Easy to install

**Panda PVK-U**
Panda Vehicle Generator with internal water-cooled silencer for mounting externally on the vehicle chassis
- Designed for external mounting
- Assembly bolts pre-fitted to housing
- Metal capsule with a heavy duty cover construction
- Wide access hatch for easier access
- Sound insulation capsule
- Water-cooled exhaust silencer inside capsule
- No additional exhaust silencer required
- Integrated radiator and cooling system

**Panda PVK-UK**
Panda Vehicle Generator "Compact Construction" with integrated cooling system for mounting externally on the vehicle chassis
- Designed for external mounting
- Assembly bolts pre-fitted to housing
- Metal capsule with a heavy duty cover construction
- Wide access hatch for easier access
- Sound insulation capsule
- Water-cooled exhaust silencer inside capsule
- No additional exhaust silencer required
- Integrated radiator and cooling system

**Panda PSC (V)**
These fully self-contained generators are fitted with an integrated cooling system, fuel tank and electrical cabinet.
- Integrated fuel tank
- Vertically mounted radiator
- Suitable for external mounting
- Sound insulation capsule
- Water-cooled exhaust silencer inside capsule
- No additional exhaust silencer required
- Integrated radiator and cooling system

**Panda PSC (H)**
These fully self-contained generators are fitted with an integrated cooling system, fuel tank and electrical cabinet.
- Integrated fuel tank
- Horizontally mounted radiator
- Suitable for external mounting
- Sound insulation capsule
- Water-cooled exhaust silencer inside capsule
- No additional exhaust silencer required
- Integrated radiator and cooling system

**Panda PVMV-N**
Vehicle generator with sound insulation capsule, integrated water-cooled vertically mounted pre-silencer and main silencer
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Panda Vehicle Generator with internal water-cooled silencer for mounting externally on the vehicle chassis
- Designed for external mounting
- Assembly bolts pre-fitted to housing
- Metal capsule with a heavy duty cover construction
- Wide access hatch for easier access
- Water-cooled exhaust silencer mounted inside capsule
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<tr>
<td>Nominal Performance</td>
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<tr>
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<td>HP2</td>
<td>HP3</td>
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<tr>
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<td>Z 482</td>
<td>D 902</td>
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### Inverter Line - Panda Generators with fixed speed technology

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### Basic Line - Panda NE Generators - 3000 rpm - 50 Hz Panda Vehicle Generators with electronic regulation

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### Premium Line - Panda 5000 LPE - 3000 rpm - 50 Hz Panda Vehicle Generators with VCS Voltage Control System

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### AGT-DDC Battery Charging Generators with VCS Voltage Control System

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<tr>
<th>Generator</th>
<th>Voltage Range</th>
<th>Frequency</th>
<th>Voltage Tolerance</th>
<th>Engine Type</th>
<th>Dimensions L x W x H (mm)</th>
<th>Weight incl. Capsule (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panda 4000</td>
<td>400 V/400 V 3-phase</td>
<td>50 Hz</td>
<td>±3 V</td>
<td>Kubota EA300</td>
<td>1400 x 710 x 710</td>
<td>105/105/665</td>
</tr>
<tr>
<td>Panda 6000</td>
<td>400 V/400 V 3-phase</td>
<td>50 Hz</td>
<td>±3 V</td>
<td>Z 482</td>
<td>1490 x 760 x 765</td>
<td>165/165/670</td>
</tr>
<tr>
<td>Panda 12000</td>
<td>400 V/400 V 3-phase</td>
<td>50 Hz</td>
<td>±3 V</td>
<td>D 902</td>
<td>1490 x 760 x 765</td>
<td>195/195/685</td>
</tr>
</tbody>
</table>
## Complete Program - Radiator Options

### Roof mounted Radiators

<table>
<thead>
<tr>
<th>Radiator</th>
<th>Approx. Dimensions (L x B x H) mm</th>
<th>Weight (dry) kg</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD 1.2</td>
<td>705 x 390 x 308</td>
<td>18</td>
<td>x</td>
</tr>
<tr>
<td>RD 2.2</td>
<td>930 x 515 x 317</td>
<td>28</td>
<td>x</td>
</tr>
<tr>
<td>RD 3.2</td>
<td>1055 x 515 x 312</td>
<td>32</td>
<td>x</td>
</tr>
<tr>
<td>RD 3.2</td>
<td>1055 x 515 x 352</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Side mounted Radiators

<table>
<thead>
<tr>
<th>Radiator</th>
<th>Approx. Dimensions (L x B x H) mm</th>
<th>Weight (dry) kg</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV 2.2</td>
<td>615 x 330 x 214</td>
<td>13</td>
<td>x</td>
</tr>
<tr>
<td>RV 2.2</td>
<td>760 x 450 x 224</td>
<td>21</td>
<td>x</td>
</tr>
<tr>
<td>RV 2.2</td>
<td>900 x 450 x 224</td>
<td>24</td>
<td>x</td>
</tr>
<tr>
<td>RV 2.2</td>
<td>900 x 450 x 254</td>
<td>30</td>
<td>x</td>
</tr>
<tr>
<td>RV 3.3</td>
<td>900 x 450 x 254</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RV 3.3</td>
<td>900 x 450 x 254</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RV 5.2</td>
<td>610 x 380 x 358</td>
<td>32</td>
<td>x</td>
</tr>
<tr>
<td>RV 13.160</td>
<td>600 x 719 x 436</td>
<td>52</td>
<td>x</td>
</tr>
<tr>
<td>RV 14.100</td>
<td>780 x 690 x 420</td>
<td>48</td>
<td>x</td>
</tr>
<tr>
<td>RV 14.160</td>
<td>780 x 690 x 460</td>
<td>55</td>
<td>x</td>
</tr>
<tr>
<td>RV 7.2</td>
<td>1000 x 800 x 420</td>
<td>63</td>
<td>x</td>
</tr>
<tr>
<td>RV 8.2</td>
<td>1100 x 1000 x 420</td>
<td>78</td>
<td>x</td>
</tr>
<tr>
<td>RV P75 MB-2xFE056</td>
<td>1900 x 990 x 531</td>
<td>xrequest</td>
<td>x</td>
</tr>
<tr>
<td>RV P75 MB-2xFE080</td>
<td>1270 x 1100 x 455</td>
<td>xrequest</td>
<td>x</td>
</tr>
</tbody>
</table>

### Expansion Tank

**Note:** No value — on request. Fischer Panda GmbH reserves the right to change technical information without prior notice.

[Image of Radiator Options]
Marine Generators - PMS
The world famous Panda Generators with sea-water cooled heat exchanger, dual-circuit cooling and wet exhaust.

Vehicle Generators - PVMV-N
With integrated water-cooled primary- and secondary silencer. Suitable for stationary operation. The PVMV-N generator is a compact, standard solution for use in vehicle applications.

Vehicle Generators - PVMV-N
Generators housed in sound-insulated stainless steel capsules which are suitable for mounting externally beneath vehicles.

Vehicle Generators - PVMV-N
Extremely compact and quiet generating set for vehicles featuring an integrated radiator. Suitable for mounting externally beneath vehicle.

AGT DC Battery Charging Generators
Diesel battery-charging generators with 12, 24 or 48 V. The “AGT” technology is available from 2.5 to approx. 50 kW. Very efficient, compact with hidden cooling system and only available from Fischer Panda.

AGT-DE Drive Generators
Specially designed generators for diesel-electric drive systems. Highly efficient and economical operation are particular characteristics of this generator.

High-Performance Alternators
Compact “High Output” alternators up to 3.2 kW, charging rate up to 260 A at 12 V DC. Available in 12 or 24 volt DC.

Radiators and Installation Parts
All vehicle and stationary generators are cooled either via an integrated or external DC/AC radiator. Solutions for specific customer requirements are possible. Installation parts for vehicle and marine generators are part of the standard product range.

Whisperprop-System with Diesel-Electric Drive
Complete drive system comprising generator and electric motor with control. The AGT-DE Generator and permanent magnet motor are extremely efficient and compact. Can completely replace existing on-board power systems when combined with a Victron Power System.

AC Distribution Boxes
A reliable and safe electrical supply is an absolute “must”. For a safe supply from multiple sources such as shore power, generator and inverter to each of the electrical consumers and serves as a central location for the AC system’s circuit breakers.

Parallel Transfer Units
These units are designed for synchronizing two Fischer Panda AC Generators in parallel so the load can be switched or combined to double the total power available.

VICTRON Battery Chargers, Inverters and Combi-units up to 12.5 kW
Fischer Panda in cooperation with Victron Energy. Victron inverters are available for 12, 24 and 48 V DC which can supply up to 12.5 kW parallel or be switched to a 3-phase system. Professional charging units in 12, 24 and 48 V DC with up to 600A. Combi-units including high performance battery chargers are also available.

Battery Monitors
Easy to use and convenient battery monitoring. The charge level is displayed and prevents batteries from being unexpectedly discharged. This device can automatically start and stop the generator.

System Control Board
Features a touch screen and gives you full control of your on board devices and displays status including level indicators for batteries, supply, fuel and water levels of devices on board. Devices, including generator, can be switched “on” and “off” via the panel.