



FOR COMMERCIAL USE

# MARINE POWER SOLUTIONS



**SCANIA**

# BECAUSE PERFECTION PAYS

After more than a century's experience of designing and building state-of-the-art engines for the most demanding applications, we know one thing for certain: everything starts with your needs. Therefore, industry-leading expertise and professional advice are natural parts of our offer. We assist you in creating tailored marine power solutions made to match the tough demands of your operation.

#### More than 100,000 proofs of excellence – a year

Renowned for industry-leading quality and over a hundred years of engineering expertise, Scania is considered one of the world's leading manufacturers of trucks, buses, and engines for industrial and marine applications. Each year, we produce around 100,000 engines and every unit is designed and manufactured in-house. They are the result of proven technical solutions based on constant development and cutting-edge technologies.

#### The benefits of completeness

From the very first drawings and throughout the vessel's service life, Scania stands by your side. Our complete power solution consists of everything from quality products to professional pre-installation guidance services and outstanding aftermarket support. This will help you safeguard operational efficiency and contribute to higher productivity.

#### Your new business platform

The heart of Scania power solutions is the 9-, 13-, and 16-litre marine engines. They handle every challenge with confidence – from pushing heavy barges upstream and managing heavy-duty auxiliary applications, to propelling high-speed crew transport vessels to remote off-shore locations. With the addition of our new electrical drives, battery packs and optional equipment, the power solution from Scania can truly cover the needs of both today and the future.

Our reliable, efficient, and compact engines and electrical motors are built on Scania's global modular platform. This brings benefits when it comes to cost competitiveness, parts availability, serviceability as well as our strong aftermarket support. Most of our marine power sources, including electrical systems and instrumentation, are verified and type-approved by the leading classification societies.

Through numerous optional and additional equipment choices, we can enable almost unlimited possibilities to create a solid foundation for your business. Altogether supported by Scania.



# OUR POWER SOLUTIONS

Scania's marine power solutions is a complete and flexible concept of products and services that provides industry-leading quality all the way from pre-installation to aftermarket support. With our help, you can boost your operation by improving reliability, performance, emission control, and operating economy.



# PROPULSION POWER FOR DISPLACEMENT VESSELS

Pushing a displacement hull through the water is a tough job, especially when going against the waves, moving upstream or engaging fishing gear. Therefore, every part of the propulsion system must be optimised to keep fuel consumption as low as possible. Scania is renowned for industry-leading fuel efficiency irrespective of emission standard, and a given choice for anyone who seeks to optimise fuel economy without compromising performance.

## Powered for heavy-duty work

When powered by Scania, you can expect instant response, uncompromising torque at low revs and relentless performance at any speed – and performance that can be taken even further through hybrid electric operation.

Allowing high average load factors, a Scania engine is the natural choice for heavy-duty operation in rough conditions. If you cannot afford to lose time, you have got everything to gain with an engine from Scania.

## A reliable partner

The reliability and uptime that Scania provides is perfectly suited for workboats, passenger and road ferries, short-sea cargo vessels, barges, professional fishing fleets, pushers, tugs, and similar applications. Providing long service life, instant parts availability and easy servicing, our engines contribute to minimised downtime and lowered vessel operation costs.

If you know one Scania engine, you know them all. And with a global network of Scania workshops, expert advice and Scania parts are never far away. If you choose a hybrid powertrain, your main propulsion unit also becomes its own backup propulsion unit – through the ability to operate the electric machine independently from the main engine.





# PROPULSION POWER FOR PLANING VESSELS

Saving weight is the obvious way to increase performance and reduce fuel consumption of any planing vessel. Thanks to the unrivalled power-to-weight ratio and compact dimensions of Scania marine engines, boat designers have great opportunities to optimise the installation and set new standards in operational efficiency and profitability. A bold statement perhaps, but Scania marine engines really are the lightweight champions in this field.

#### **Always ready for action**

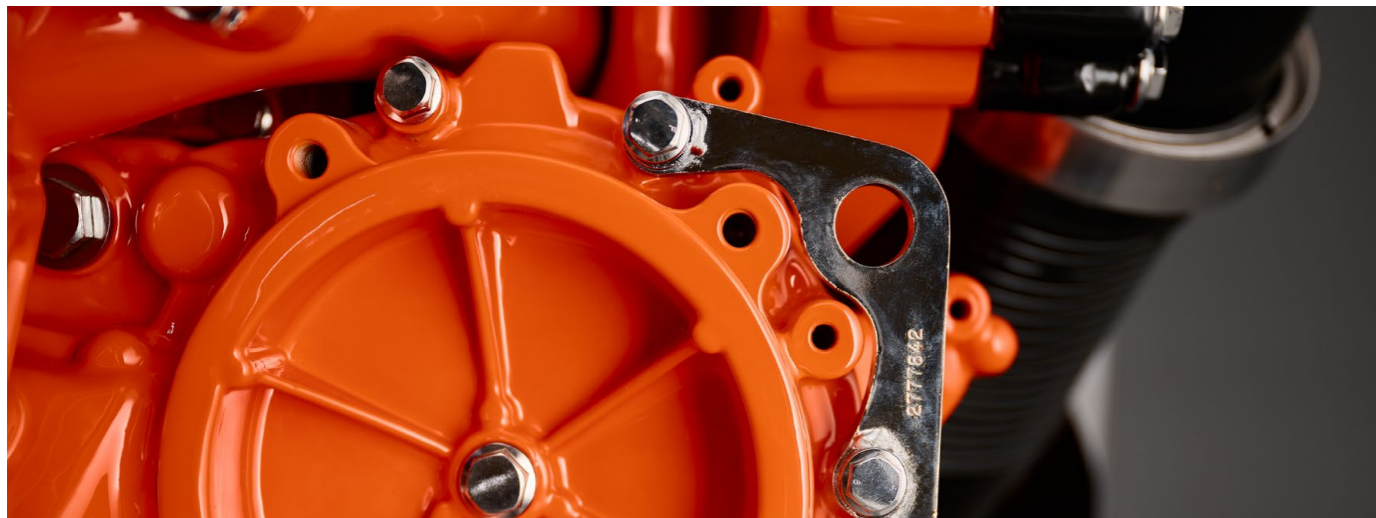
Scania has an outstanding track record for uptime and reliability. Therefore, it has been a choice of preference for demanding fast-speed applications such as search and rescue boats, pilot boats, governmental patrol and defence vessels. With prompt engine response and uncompromising low-rev performance, acceleration to maximum speed becomes a matter of seconds.

Thanks to extreme durability and long service life, Scania's marine engines contribute to safe operation and low operating costs – making them ideal for crew transfer vessels in offshore wind farms, fast-speed ferries, charter yachts and high-speed boats.

#### **Absolutely adaptable**

Our engines feature a flat power curve all the way up to maximum engine speed. This makes it easier for boat designers to match engine and propulsor for the best operating economy. Repowering is also simplified, and in many cases it is even possible to keep the existing transmission and propeller.

And with a hybrid system, one can enjoy the beauty of pollution-free and silent harbour operations or low-speed cruising on battery power.





# POWER GENERATION AND AUXILIARY POWER

Every job at sea is important. And reliable power is very much needed at any time of the voyage, whatever the task is. Be it prime power or emergency generator, work pump, fishing gear, bow thruster or any other application requiring constant speed of the engine. Scania customers can always rely on a fuel efficient and durable power unit, making the work on board smooth and cost-efficient.

Scania marine auxiliary engines are designed to secure reliable power at constant speed of 1,500 or 1,800 rpm, and can also help make your propulsion system more sustainable with auxiliary engines installed as part of a diesel-electric operation or backup engines for the fully-electric installation.

#### **Optimised solutions for diesel-electric propulsion**

In modern diesel-electric propulsion systems every single part plays a crucial role, and everything starts with power generator engines. With multi-set installations of Scania units, you reap all the benefits of our vast experience: Perfectly optimised engines delivering reliability and redundancy together with class-leading environmental performance and fuel economy.

#### **Exceptional step-load handling**

Scania-powered emergency sets are always ready to meet the toughest requirements. Whatever the cause of power loss, your Scania will respond immediately. Our engines are designed to handle high load variations effectively, with minimum recovery time.

#### **Less input. More output.**

Irrespective of size and number of cylinders, engines from Scania deliver a combination of cutting-edge fuel efficiency and extraordinary power resources. The result? More than sufficient power output and low operational costs.





# FROM DESIGN TO INSTALLATION

## Optimisation and application support

When industry-leading experience meets tough customer demands and bright design ideas, great things happen. By taking part in your process as early as possible, Scania application experts can help you make things right from the beginning, thus contributing to smart solutions, cost-efficient installation and optimised end-products.

Based on analysis of your needs, experts from Scania suggest an optimised configuration including technical specifications. The final tailored solution, along with technical information, drawings and 3D models are all parts of our pre-installation package. The next stage, the installation, is supported by comprehensive installation manuals and continuous guidance of the Scania application engineer.

## Installation approval

The Scania installation approval program is part of and concludes the installation process, including thorough inspection and participation at the sea trial. The purpose of the test runs is to make sure that the entire system performs according to specifications. Engine temperature, load at rated engine speed, boost pressure and boat speed are examples of parameters being measured with diagnostic tools. The results are collected, analysed and commented in the Scania installation report.

When necessary, Scania will help with suggestions to improve the installation. As soon as the installation complies with Scania's requirements for ideal performance, the installation approval is granted. The result is years of trouble-free operations and the best possible efficiency.



# THE ULTIMATE UPTIME SOLUTION

## Maximise your uptime

To most marine professionals, downtime is really bad news. And the longer the standstill, the harder it hits the bottom line. With this in mind, every part of the Scania marine solution is developed to maximise uptime. All the way from our engines and other hardware, to the optimisation of the products and the dedication of the people who are standing by to support you.

Further, taking the right care of machinery and equipment is key to prevent unexpected downtime. Scania's maintenance programs, as well as technical documentation, manuals and education programs, are developed in order to strengthen your business and contribute to your success.

## Outstanding parts availability

Scania's parts logistics network is one of the most advanced and reliable in the world. Thanks to our extensive service and logistics network supporting our service workshops, we can promise up to 98% of parts available within 24 hours.

The global system comprises a central hub, satellite warehouses on every continent and, of course, your local Scania representative. It enables us to deliver the right part at the right time in the right place – and this is essential to maximise your uptime.

## Worldwide service network

Our global dealer network, together with our world-famous modular concept makes it possible to offer fully equipped professional service support which is never far away.

A large share of our authorised workshops are trained to support marine engines and are reachable 365 days a year, thus ensuring maximum uptime and excellent operating economy.

# TRUE SCANIA

Scania marine engines and electrical power units are 100% designed and built in-house. They are known for industry-leading standards of quality and reliability. Most of our marine engines, as well as other components within the Scania marine power solutions, are verified and type-approved by the leading classification societies.

Taking advantage of proven Scania technologies as a basis for development, our engineers continue to take pioneering leaps. While our engines constantly become cleaner and more fuel-efficient, they never compromise on the power and torque that you expect from your Scania.

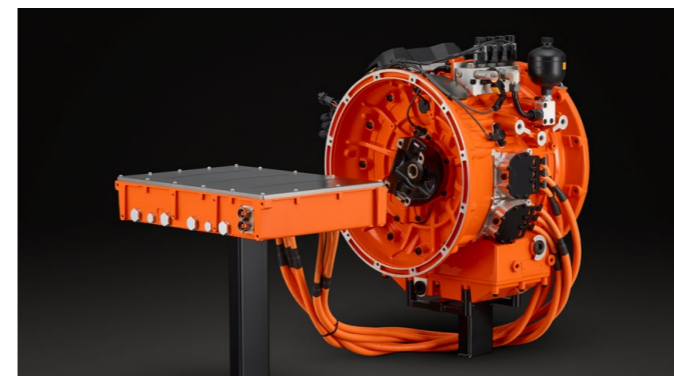
#### Our development work keeps full steam ahead

Being at the forefront of technology is part of who we are, and at Scania we are always ready to provide solutions in accordance with future demands.

We are proud to be driving change for a more sustainable tomorrow – a challenge we don't take lightly. While we believe the future is electric and lead strong research and development in this area, we also know electric solutions aren't feasible in all applications – yet.

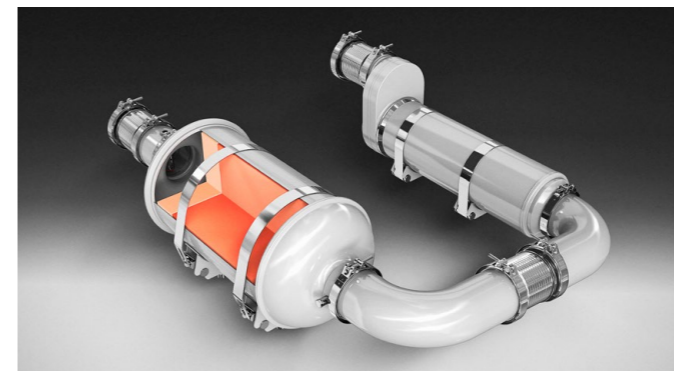
That's why we work just as hard to reduce the environmental impact of our internal combustion engine technology and will do so for as long as those solutions remain in use. Our latest range offers significantly lower CO<sub>2</sub> emissions, but this is not all. New engines are fully compatible with renewable 100% HVO fuel, ensuring you can stay on course for future emissions legislation in the way that is most viable for your business.

In parallel, we will continue to lead the transition towards electrification with our ground-breaking electric power systems.



#### Scania hybrid electric system

Scania's hybrid electric power systems allow for the engine and e-machine respectively to be run together or as standalone power sources. The adapted speed range of the electric machine means that a reduction gear can be avoided, minimising energy loss and facilitating equipment design and installation. Altogether, the system enables improved powertrain performance with exceptional torque and response directly from idling, lowered fuel consumption that reduces operational cost and emissions, as well as minimised noise when and where needed.



#### Scania SCR

Scania SCR (selective catalytic reduction) is a proven aftertreatment system which ensures that exhaust gases are released with minimum nitrogen oxide (NOx) content. By injecting a urea-based additive, AdBlue/DEF (diesel exhaust fuel), into the exhaust, a chemical reaction takes place that converts the toxic nitrogen oxides into harmless water and nitrogen gas. Scania SCR is easy to handle, very reliable and does not affect torque and power output.



#### Scania saver ring

The Scania saver ring is a good example of our in-house developed technologies. Fitted inside the cylinder, the Scania saver ring removes soot and other residue from the upper part of the piston. A unique feature that reduces wear and extends engine life, thus contributing to Scania's renowned dependability and operating economy.



#### Scania fuel injection systems

Scania has two fuel injection systems: Scania PDE (pulse detonation engine) and Scania XPI (extra high pressure injection), which is a Scania-designed common-rail fuel injection system. Both systems make continuous, precise adjustments to ensure optimal fuel delivery in all conditions without restricting torque build-up and step-load handling. With Scania XPI, pressure can be set independently of engine speed with exceptional precision, meeting performance demands ahead of legislation.



Depending on emission compliance, the rating and output range may vary. For further details, please check the technical specification sheets on Scania website in your local market.



# SERVICES TAILORED FOR YOU

## Connected services

We know unforeseen downtime has enormous consequences for businesses – both in the shape of unexpected costs and lost income.

Scania Connected services are designed to reduce that possibility and keep your operations running for longer, leveraging the power of smart engine technology, advanced sensors and wireless connectivity. With Scania's Connected services your business is better informed and better prepared, all with the purpose of unlocking higher productivity and reducing unnecessary downtime.

## Extended coverage

When choosing a Scania engine, confidence in performance and reliability is a standard feature.

Every engine is covered by a basic warranty from the day it is registered into operation. It can then be kept in peak condition with our top-quality service network, technical support and original parts. Extended coverage is our way to expand our commitment to exceptional quality and unsurpassed service. It is a full extension of the Scania Basic Warranty terms without any deductibles or hidden inclusions.

Extended coverage can be purchased for up to five years or 10,000 running hours. Either together with the engine or within the first 180 days after the Start of Warranty date. The offer is also strengthened by connectivity with instant diagnosis of technical issues via our Scania Remote diagnostics tool, free of charge. Extended coverage ensures both cost control and uptime giving you peace of mind to focus on your core business.

## Extended storage

When facing unplanned disruptions and time extensions of shipyard projects, Scania customers can be confident in their equipment.

Extended storage allows a Scania engine not yet in use, whether installed or not, to be stored either at Scania or a customer facility without initiating the Basic Warranty period.

Extended Storage prolongs the standard Basic Warranty window, providing manufacturers with additional time for installation, sales or with an opportunity to ensure end-users obtain the full Basic Warranty period.

## Power optimisation

Besides the visible hardware, today the software and calibration play a hugely important part in power system functionality and behaviour.

Scania power units are designed with an even balance between multiple factors, providing a well-rounded profile for a specific segment.

With power optimisation by Scania, which also considers adapting interfaces and adjacent components, the system and the power it provides can be calibrated and fully adapted for its specific purposes.



# TECHNICAL SPECIFICATIONS

## Reliable power at every size

Each of our engine sizes offers a variety of performance choices – depending on your needs of power, vessel operational profile and emission restrictions. This provides flexibility in power source selection which matches your vessel needs and secures performance at the optimum level. All Scania marine engines are developed on a foundation of reliability and long lifetime, ensuring that even if you push your engine hard every day – it will deliver until it's scheduled for a re-build or replacement.

## 9-litre inline

A well-proven workhorse with the lowest weight and smallest footprint out of our engine range. Operating as a reliable stand-alone propulsion powertrain for lower power needs, as an efficient low-emission auxiliary power source on larger vessels – or run in dual-engine configurations for both increased power and redundancy where more performance is needed. To sum it up: It provides all the options you could wish for.

### Configuration

5 in-line

### Displacement

9.3 litres

### Output range propulsion

162-294 kW (220-400 HP)

### Output range auxiliary

199-323 kW

### Emission standards

IMO Tier II

### Fuel system

Unit injectors (PDE)

### Cooling system

Heater exchanger, Keel cooling

### Type approvals

ABS, BV, DNV, LR and other classification societies

### Dimensions (L x W x H)

1,218 x 975 x 1,148 mm

### Weight

1,150 kg



## 13-litre inline

Built on a future-oriented new platform, this is our most advanced, reliable and fuel-efficient engine yet – with up to 50% longer service life and up to 30% increased power for the same displacement compared to our previous 13-litre engine.

Prepared for hybrid use, it can also provide options for either downsizing from a larger engine to reduce weight, emissions and increase fuel efficiency, or as a drop-in replacement upgrading your performance while simultaneously getting a sustainability boost to your operation.

### Configuration

6 in-line

### Displacement

12.7 litres

### Output range propulsion

257-772 kW (350-1,050 HP)

### Output range auxiliary

301-553 kW

### Emission standards

IMO Tier III, IMO Tier II, US Tier 3, EU RCD Stage 2

### Fuel system

Common rail (XPI)

### Cooling system

Heater exchanger, Keel cooling

### Type approvals

ABS, BV, DNV, LR and other classification societies

### Dimensions (L x W x H)

1,490 x 990 x 1,040 mm

### Weight

1,295 kg



## 16-litre V8

The Scania V8 has held legendary status among our customers for more than 50 years. This engine is known and respected for its power and performance as well as its reliability. The power source that crowned Scania as “King of the Road” brings all its benefits to the marine industry too. If you are looking for the most power we have on offer, the 16-litre V8 is the way to go. Standalone, in dual-engine configurations – or why not even in a hybrid configuration with even more added electric power on top.

### Configuration

90° V8

### Displacement

16.4 litres

### Output range propulsion

221-882 kW (300-1,200 HP)

### Output range auxiliary

430-640 kW

### Emission standards

IMO Tier III, IMO Tier II, US EPA 3, EU RCD2

### Fuel system

Common rail (XPI), Unit injectors (PDE)

### Cooling system

Heater exchanger, Keel cooling

### Type approvals

ABS, BV, DNV, LR and other classification societies

### Dimensions (L x W x H)

1,338 x 1,251 x 1,214 mm

### Weight

1,670 kg



## Battery pack B8 408

Our battery packs use the world's greenest battery cells for heavy commercial use – co-developed together with Northvolt and then assembled into battery packs in-house at Scania. The battery packs have been designed for maximum performance, reliability and longevity, and by comparison their typical operating lifetime is well past that of a combustion engine powertrain.

### Configuration

CBP MP10

### Cell chemistry

Lithium Ion NMC / graphite

### Installed energy\*

100 kWh

### System nominal voltage\*

650 VDC

## Electric machine

With our electric machine, you can reap all the benefits from the hybrid powertrains that have been used in road traffic for decades, and which have become more associated with performance and reliability for every day that the technology has matured. Instantly increased power when you need it, reduced emissions – or even completely emissions free and silent operation in sensitive waters – as well as added powertrain redundancy due to being able to operate fully independently from your combustion engine.

### Power\*

230 kW continuous @ 2,100 rpm

295 kW peak @ 1,400 rpm

### Torque\*

1,500 Nm continuous, 2,000 Nm peak @ 0-1,300 rpm

### Speed range

0 – 4,000 rpm

### System voltage

650 V (DC)

### Cooling

Oil cooled

### Interface to combustion engine and driveline

SAE1 flange

### Clutch

Integrated dog clutch to combustion engine

### Weight

280 kg (including inverter)

### Dimensions (L x W x H)

490 x 610 x 590 mm



*\*The performance figures are dependent to certain conditions.*

### Installed capacity\*

157 Ah

### C-rate (Discharge/Charge)

Up to 1.6/Up to 1.3

### Continuous power (Discharge/Charge)\*

160 kW/125 kW

### Weight

~620 kg

### Dimensions (L x W x H)

832 x 775 x 636 mm



*\*Performance figures based on beginning of life @SOH 100% and depending on usable energy factor and SOC.*

