

-  **MARINE ENGINES**
-  **VEHICLE ENGINES**
-  **INDUSTRIAL ENGINES**
-  **ENGINEERING**

## **DIESEL MONOBLOCK**

CYLINDER  
[4][6] [HYBRID  
SYSTEMS]



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# MARINE ENGINES

## COMPETENCE THROUGH EXPERIENCE

STEYR MOTORS originates from the former Steyr-Daimler-Puch group and was founded as an entirely independent company following a management buyout in 2001. Drawing from the extensive know-how and experience of 150 years of engineering history, STEYR MOTORS focuses on the development of high-performance engines and propulsion technologies for current and future demands.

The company has a worldwide reputation for being an expert in engineering and manufacturing of high-performance diesel engines and hybrid systems. STEYR MOTORS provides strong solutions for use at land and sea, i.e. for the marine industry, for special land and amphibious vehicles and for industrial use. The product range includes diesel engines and diesel-electric solutions as well as highly-specialized engineering services for specific requirements. Great importance is placed on quality management in every step of the production and service chain. Therefore, the company consistently passes quality audits and certification procedures.

A recent milestone in the company's history was a remarkable investment in the expansion of the Austrian facilities doubling the premises and capacities. The extended R&D headquarter was inaugurated in May 2015. It is the heart of STEYR MOTORS' innovation and engineering competence, ensuring cutting-edge developments and product launches for the future.



## DIESEL MONOBLOCK

All engines of STEYR MOTORS are based on a well-proven Monoblock design, capable of fulfilling highest demands in operational reliability. Durability, safety and robust cooling behavior were the guidelines of the design and led to an unrivalled product range of compact and lightweight high-performance diesel engines.

The STEYR Monoblock is a highly efficient single casting from special high tensile alloy. Its key characteristic is a modular, compact design allowing for effective cooling through an unrestricted flow of coolant. The elimination of cylinder head warping and the reduction of mechanical and thermal forces within the Monoblock material lead to significantly improved durability and robustness of STEYR MOTORS' engines. Furthermore, due to the lack of cylinder head bolts and anchoring threads, the Monoblock design enables shorter, slimmer and more lightweight solutions.



## FORWARD THINKING

### LIGHTWEIGHT POWER PLAYERS

Our specialty is the design of engines and aggregates featuring one of the best power to weight ratio in the market. Though lightweight and compact, STEYR MOTORS' products are also very robust and provide remarkable performance. While downsizing became a trend in the common industry over the last years, STEYR MOTORS has always focused on small and lightweight solutions with high power density and with the same durability and reliability as heavier products competing in the same power range.

### EFFICIENT TECHNOLOGIES FOR THE FUTURE

The product portfolio of STEYR MOTORS includes diesel engines and diesel-electric solutions for a wide range of applications in the marine, vehicle and industrial business segment. The future engineering strategy continues to focus on diesel and hybrid solutions complying with leading industry standards, such as the ISO 9001:2008 certification, and also emphasizes environmental effects, targeting reduced fuel consumption and emissions.



# MO 4-CYLINDER ENGINE SERIES



## FACTS

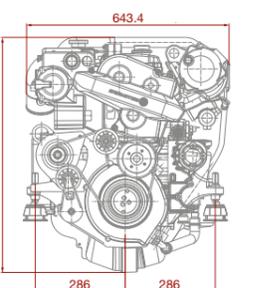
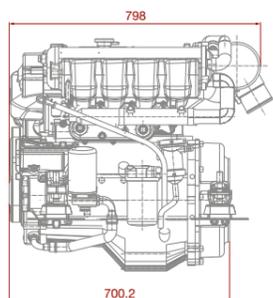
- Monoblock design
- Patented 2-stage UI system
- Robust, reliable technology
- Corrosion resistant materials

**4**  
CYLINDER



Marine engines of STEYR MOTORS are manufactured using high alloy materials to provide enduring longevity for all running components. The proven and trusted MO 4-cylinder engine series is a reliable propulsion system based on STEYR MOTORS' patented 2-stage unit injector technology and the unique Monoblock design. It complies with SOLAS regulations, the Recreational Craft Directive (RCD 2003/44), IMO emission specifications as well as BSO II regulations. Depending on the respective MO 4-cylinder engine model, the installation of different driving systems is possible.

For more details on the series and the engine models, please ask for our MO 4-cylinder data sheet or contact your local distributor.



MO 4-CYL SERIES	
NUMBER OF CYLINDERS	4 in-line
INJECTION SYSTEM	2-stage unit injector
DISPLACEMENT (LT)	2.1
POWER RANGE (KW/PS)	55/75 - 125/170
TORQUE RANGE (NM)	190 - 330
DRY WEIGHT (KG)	243 - 276

# SE 4-CYLINDER ENGINE SERIES



## FACTS

- More torque at lower speed
- New E-Box and ITD
- Sterndrive capable
- EPA Tier III certified

**4**  
CYLINDER



The SE 4-cylinder series is based on the well-proven MO series, but designed for more torque at lower speed. Besides the exceptional performance, it is also SOLAS-approved, EPA Tier III certified, RCD compliant and fulfills the requirements of the US Coast Guard. The power range and variety will be further increased in the future to allow an even wider application potential. The series is especially intended for installation with sterndrive systems. The SE engines are available as STEYR marine diesel packages with BRAVO I, II or III and also as repower kits for most common sterndrives.

For more details on the series and the engine models, please ask for our SE 4-cylinder data sheet or contact your local distributor.



SE 4-CYL SERIES	
NUMBER OF CYLINDERS	4 in-line
INJECTION SYSTEM	2-stage unit injector
DISPLACEMENT (LT)	2.1
POWER RANGE (KW/PS)	106/144 - 120/163
TORQUE RANGE (NM)	315 - 330
DRY WEIGHT (KG)	277

# SE 6-CYLINDER ENGINE SERIES



## FACTS

- Compact & lightweight
- Enduring & robust
- Excellent torque and speed range

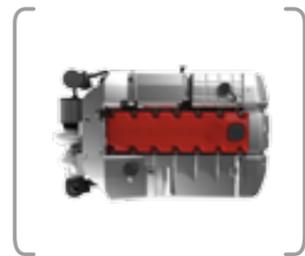
**6**  
CYLINDER

The SE 6-cylinder series of STEYR MOTORS is an efficient and flexible marine propulsion system for leisure and commercial applications. The Monoblock design is key to a most compact core engine while the surrounding housings, manifolds and auxiliaries can be easily adapted to many requirements. Compared to larger and heavier engines, the SE 6-cylinder series is a high-performer while remaining lightweight, compact and robust.

As a standard feature, all STEYR marine engines are built with corrosion resistant materials for the entire seawater system in the dual circuit cooling system. Furthermore, the engines show a similar form factor across a wide power range. Consequently, they are perfectly applicable in fleet logistics, ensuring lean logistic practices due to a wide variety of models and many interchangeable parts.

The unrivaled cooling capacity, direct intercooling and diverse options for oil sumps, front-end accessory drives and transmission flanges are additional features of the SE 6-cylinder engine series. A variety of other options is available to equip the engines according to specific needs, including but not limited to:

- preparation for keel cooling systems to increase cooling capability and simplify installation by eliminating hull fittings, strainers and hoses
- block heating device (enabling a launch temperature down to -30 °C)
- STEYR Hybrid Drive System (in-line hybrid with 4 operational modes)
- additional alternators (12 V/24 V)
- engine system (24 V)
- two pole electrical systems
- A/C compressor
- power take-off pulley
- hydraulic pump

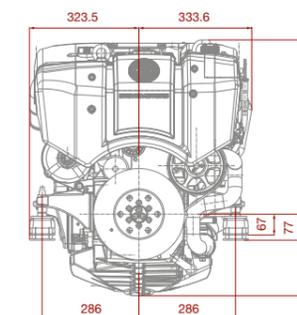
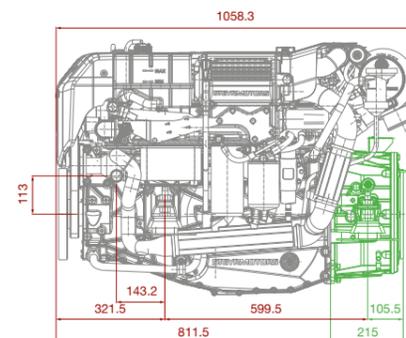


## PROPULSION SYSTEMS

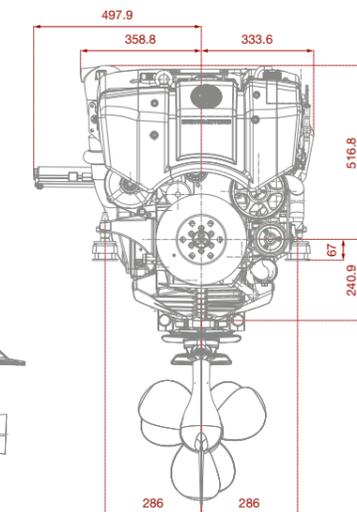
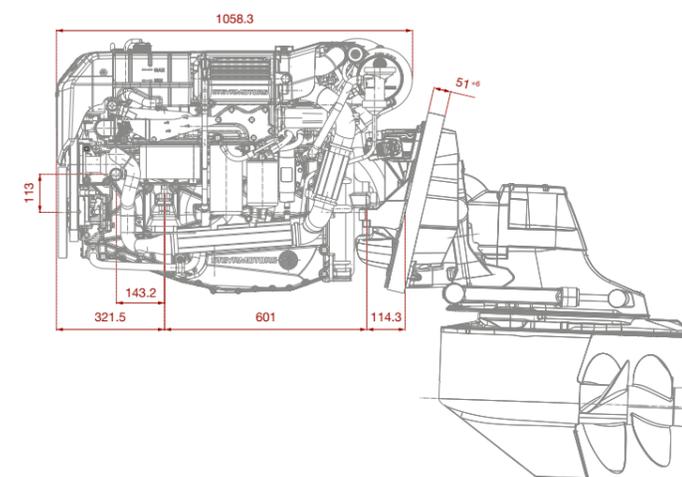
The SE 6-cylinder engine series allows the installation of different propulsion systems. Special STEYR marine diesel packages with BRAVO I, II or III and also repower kits for most common sterndrives are available.

- Direct shaft/Bobtail
- Sterndrive
- Water jet

Direct shaft with additional STEYR HDS (Hybrid Drive System)



Sterndrive



## SE 6-CYL SERIES

<b>NUMBER OF CYLINDERS</b>	6 in-line
<b>INJECTION SYSTEM</b>	2-stage unit injector
<b>DISPLACEMENT (LT)</b>	3.2
<b>POWER RANGE (KW/PS)</b>	88/120 - 215/292
<b>TORQUE RANGE (NM)</b>	390 - 600
<b>DRY WEIGHT (KG)</b>	340

For more details on the series and the engine models, please ask for our SE 6-cylinder data sheet or contact your local distributor.



## SAFETY OF LIFE AT SEA

The International Convention for the Safety of Life at Sea (SOLAS) is a maritime safety treaty that ensures safety standards in construction, equipment and operation. The detailed regulations in the SOLAS treaty are managed and maintained by the International Maritime Organization (IMO).



**4**  
CYLINDER

STEYR MOTORS' 4- and 6-cylinder engine series are designed and manufactured for extreme conditions, having passed stringent testing to guarantee the engines' durability and reliability. Due to the remarkable robustness and quality, the company obtained the SOLAS approval as well as other certifications for its engines. In addition, an extensive network of distributors and dealers ensures qualified local service as well as global availability of spare parts.



**6**  
CYLINDER

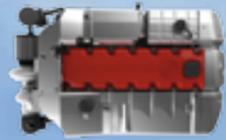
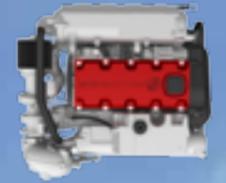
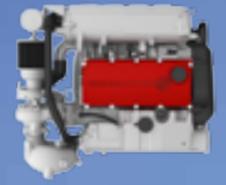
## BASIC SOLAS FEATURES

- Engines equipped to endure vessel capsizing
- Immediate start even in very low temperatures (-15 °C)
- Continuous running up to an angle of 30°
- Withstanding a drop from heights over 30 meters (free fall boats)

## APPLICATIONS

High-quality engines fulfilling highest safety standards are required for leisure and commercial applications likewise, and even more so for rescue and protection purposes.

STEYR MOTORS has a lot of experience in equipping tender boats, fast rescue boats and lifeboats, including davit launched lifeboats and free-fall lifeboats. A drop of a lifeboat from an height of more than 60 meters (around 200 ft) or an immediate start of the engine even in arctic temperatures? Easy to realize with STEYR MOTORS' marine engines, because accomplishing high demands is our core competence.



# STEYR HDS IN-LINE HYBRID



## FACTS

- Power output: 7 kW at 48 V (56 V charging)
- Hybrid unit weight: 75 kg (excl. batteries)
- Additional length: 100 mm
- 4 operational modes

### STARTER MODE

The combustion engine can be started with the electric motor. The conventional starter motor can be eliminated or will remain redundant.

### GENERATOR MODE

The extended battery pack is optimized and charged.

### ELECTRIC CRUISE MODE

The boat is driven purely by the electric motor. The battery pack is constantly monitored on its state of charge and battery condition. This is brought to the attention of the driver through the STEYR Control Center (SCC).

### BOOST MODE

In lower speed range, depending on dynamic requirements of the driver and the battery condition, the Boost Mode is used to support the combustion engine by the massive torque of the electric motor. The electric motor supports the coupling and decoupling of the combustion engine and enables an improved response of the drive unit. The control units of the combustion engine and hybrid unit are finely tuned to each other, perfectly regulating the torque composition of drive units. In parallel, the continuous monitoring of the component's condition secures a smooth operation.

## ZERO EMISSIONS AND NOISELESS DRIVING

STEYR MOTORS' environmentally friendly Hybrid Drive System (HDS) was first introduced in 2008, marking a new chapter in the history of pleasure boat propulsion systems. Further enhanced ever since its introduction, the in-line hybrid ensures zero emissions and low speed maneuvering in harbours as well as noiseless drive on inland waters, refuges and nature reserves.

Moreover, it eliminates the need for separate generator units for other onboard equipment. The electric drive mode allows a speed of up to 5 knots using solely electric propulsion. When running the combustion engine, the STEYR HDS in boost mode enables quicker acceleration while lowering fuel consumption and improving response and dynamics. Significantly reduced maintenance costs and improved ease of service are additional benefits of the in-line hybrid.

The Hybrid Drive System can be installed on all STEYR MOTORS engines as well as with different drive combinations.



# ACCESSORY

## STEYR CONTROL CENTER 2

### FACTS

- More comfort & safety
- Improved functionality
- Engine diagnostics added



### THE SCC'S NEW GENERATION WITH ENHANCED FEATURES

The established STEYR Control Center (SCC) is now available in a new generation with the SCC 2 replacing the former version. The SCC 2 offers enhanced features and an even more intuitive user interface for best handling and highest comfort.

#### 1 NEW INTERFACE DESIGN FOR MORE COMFORT AND SAFETY

- Full-color, 7-inch bonded LCD for brighter, smoother graphics and best-in-class sunlight readability
- IP66 and 67, front and back
- Storage temperature: -40 °C to +85 °C
- Different menus and options available, display configurations can be personalized

#### 2 IMPROVED FUNCTIONALITY

- RPM gauge and coolant gauge include engine-specific warning signal
- Automatic setting of battery charge indication gauge (12 V/24 V depending on alternator model)
- Size of fuel tank incl. low level alarm, gear ratio and propeller pitch configurable via the display unit
- Optional: Fuel tank level indication via engine CAN bus
- Optional: Display of fuel density and manifold exhaust temperature (requires Fuel Compensation Kit)

#### 3 ENGINE DIAGNOSTICS FOR EASY TROUBLE SHOOTING

- Active service codes are shown and can be deleted (alarm menu)
- Live graphs of three individually selectable parameters are displayed (diagram menu)

# ACCESSORY

## THROTTLE LEVER

### FACTS

- Unique, timeless design
- Cutting-edge technology (WiFi web server)
- Reliable proven components



### STEYR FEATURES MAREX ECS BY AVENTICS

Easy to operate with a unique design and extensive options: the STEYR Marex ECS meets highest production and quality standards and provides captains with maximum reliability, as proven by endurance testing with one million lever actuations. The well-established CAN bus technology ensures reliable communication between the components. Sophisticated automated diagnostics inform the operator of the current operating state. The system is especially designed for small pleasure and work boats.

#### DESIGN

- Timeless & unique
- Easy to integrate
- With backlight illumination
- Single control head and twin control head available

#### USER EXPERIENCE

- WiFi web server
- Automatic configuration
- Language-independent icons

#### SAFETY

- Reliable, well-proven components
- ABYC and DIN EN 25197 compliant



- 1** YACHTS, SAILBOATS  
e.g. AMEL, Nautor's Swan, Spirit Yachts
- 2** POWERBOATS, CATAMARANS  
e.g. Piculjan, Swipewipes, Port Arthur
- 3** LUXURY TENDERS, WATER TAXI  
e.g. Fassmer, Vikal
- 4** WORKBOATS, RIBS  
e.g. Norsafe AS, Willard, Zodiac Milpro
- 5** LIFEBOATS, TENDERS  
e.g. Norsafe AS / Diamond Princess
- 6** HYBRID INSTALLATIONS  
e.g. Fast RSQ, Da Vinci, Dirk Blom

**INDIVIDUAL SOLUTIONS**

The products of STEYR MOTORS are designed and constructed by highly-skilled engineers with valuable experience in order to create compact, lightweight but also powerful engines that fulfill the demands of various applications.

In general, our marine engines are built for series production to cover the needs of large scale marine production e.g. as required for fleets. However, they are also engineered as flexible as possible to enable adaptations. Whether it is a specific color for the engine to fit into the luxurious appearance of a yacht or a special requirement for onboard installation, individual solutions for unique applications are what STEYR MOTORS is renowned for.

Quality in every step of the production process is of great importance for us. Therefore, we do not stop at quality assurance of incoming goods and products in assembly but also monitor closely every single engine on our state-of-the-art test benches before approving a product for delivery.

STEYR MOTORS is dedicated to the global marine market and its demands, ever striving towards new developments and innovations for the future.

**GLOBAL NETWORK**

Worldwide availability of products and spare parts as well as local service partners are the key to best customer support. STEYR MOTORS has an extensive, constantly growing network of distributors and dealers to ensure fast and competent service wherever a customer needs assistance.

Find your nearest distributor or dealer on our website:  
[www.steyr-motors.com/network](http://www.steyr-motors.com/network)



See more applications on our website or contact us for further references.