

# AFTER TREATMENT SOLUTIONS

## IMO III, EPA 4 & EU Stage V Solutions

### Meeting Higher Emission Standards

Marine engines are subject to ever-increasing exhaust gas emissions restrictions. Baudouin is proud to be one of only a few high speed engine manufacturers offering an IMO III and EPA an IMO III, EPA 4 and EU Stage V certified solutions. Our advanced engines comply with the latest standards defined for international seas, US coasts, recreational crafts and inland waterways.

### Uncompromising Technology

Our Advanced M26.3 engines meet the IMO III, EPA Tier 4 and EU Stage V requirements, delivering superior fuel economy without compromising engine power.

We have completely redesigned the combustion cycle by reworking the injection system and the combustion chamber, and recalibrating the injection parameters. This achieves a cleaner engine with improved performance without sacrificing reliability. We developed an optimized Selective Catalyst Reduction System (SCR) to meet the stringent requirements of IMO III and EPA Tier 4 standards.

The Stage V waste gas treatment package is also designed to be easy to maintain thanks to accessible parts. At Baudouin, we guaranty to provide with genuine and reliable solutions for a cleaner tomorrow.

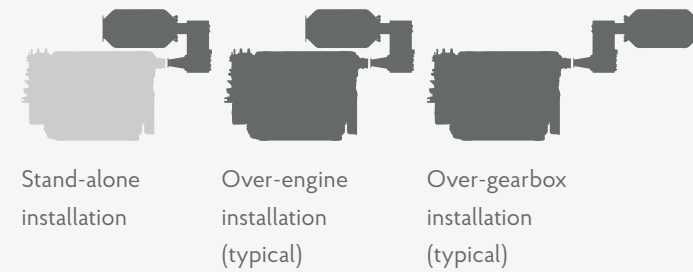
### A Compact, Flexible System

- + Easily integrated into the propulsion line
- + Re-power and new build vessels
- + Generous system component layouts
- + Adaptable SCR mounting configurations
- + A compact 'airless' urea dosing system means no additional installation is required

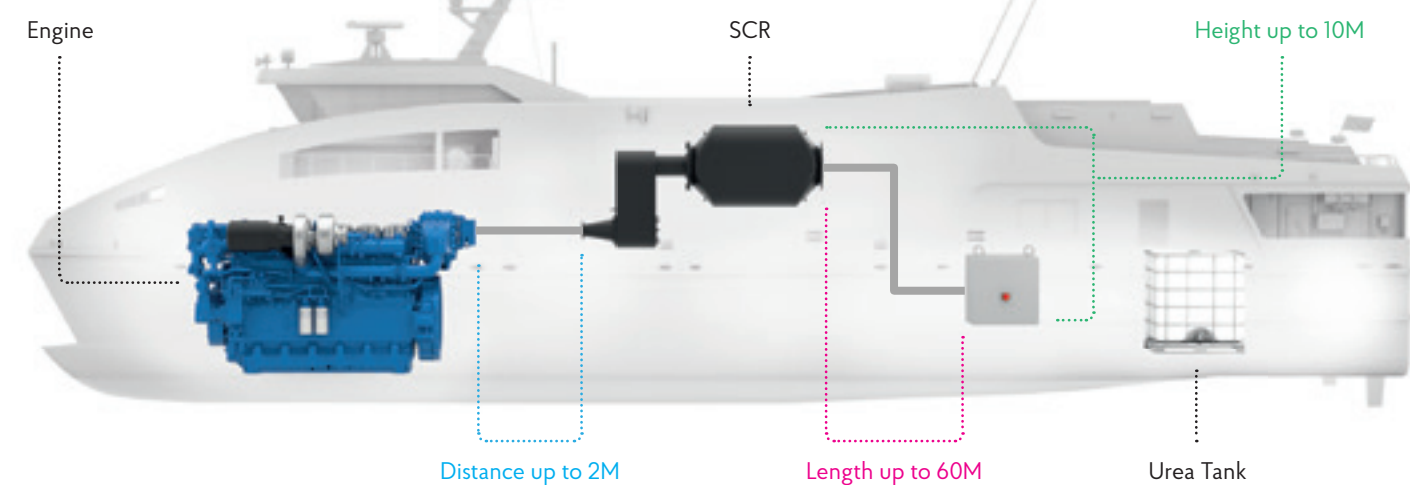
### Our Advanced Engines Deliver

- + A cleaner engine with the same power
- + Up to 5% reduction in average fuel consumption
- + Optimized maintenance schedule in line with the engine
- + An extremely compact, modular design
- + Superior installation flexibility
- + Up to 25 dB noise reduction

### Adaptable Configurations



### Superior Installation Flexibility



# FULLY INTEGRATED HYBRID SOLUTIONS

Total support from design through commissioning.

Just as we have been there for every milestone of your vessel's journey, we are ready to support your green transition to hybrid power solutions.



### Why Hybrid?

- + Emissions reduction
- + Noise reduction
- + Engine downsizing
- + Flexibility: power and fuel management
- + Optimization of the maintenance cost
- + The large bandwidth of applications: Passenger vessels, ferries, yachts

### Customer requirements

Baudouin pure marine engines are known worldwide for their reliability and durability in a challenging marine environment. We are committed to designing marine powertrains that reduce exhaust emissions and control fuel consumption at any running cycle. In synergy with our sister companies, Baudouin experts have developed environmentally-conscious hybrid systems to answer complex customer requirements.

### Partnership With Experts

Being part of the Weichai group allows Baudouin to leverage technological expertise within our group and with marine specialists to be able to provide a fully integrated hybrid solution for marine applications. Together, we offer our marine customers tailored systems that perfectly match their requirements.

### Hybrid Configuration

#### Series Hybrid with Genset

Utilizing onboard electrical generation systems, batteries can be charged and then discharged through onboard electrical motors to allow for low noise and zero-emissions operation. Efficiency improvements through optimal loading of the generators can improve fuel consumption, service costs, and exhaust emissions allowing reduced running hours and full electric operation.

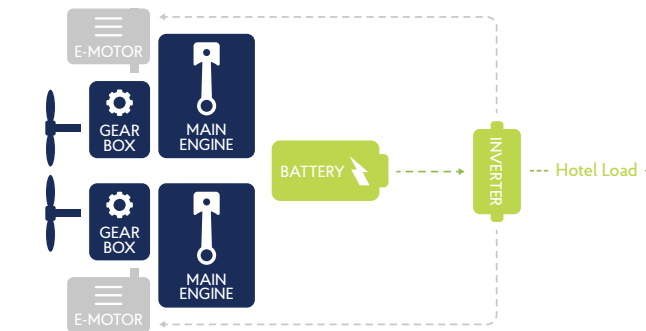
#### Parallel Hybrid with inline Electric Motor

A diesel engine is connected via a clutch and gearbox to the propeller in a standard propulsion system. Also connected in parallel to the gearbox is an electric motor and battery pack, enabling the system to switch between an electric drive or a standard diesel motor. During operation the engine can be used to recharge the batteries which are then discharged to improve overall system efficiency, reducing fuel consumption and allowing for zero-emissions running.

# HYBRID MODES

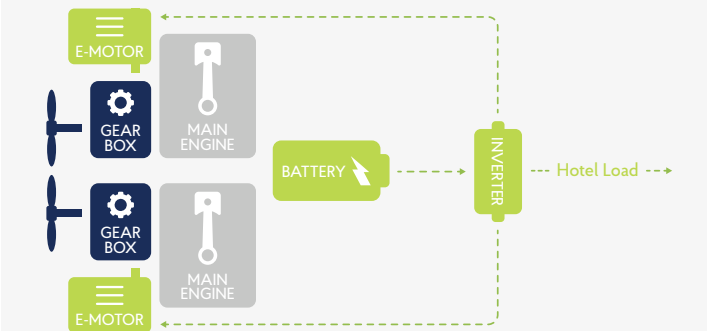
## Diesel Drive Mode

- + E-Motor off
- + Propulsion by main engine (Diesel)
- + Hotel load by main generator or battery



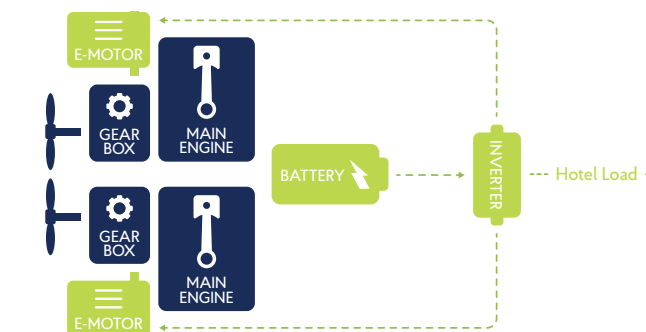
## Electric Drive Mode

- + Main engine (Diesel) off
- + Propulsion by E-motor
- + Powered by main generator or battery
- + Hotel load by main generator or battery



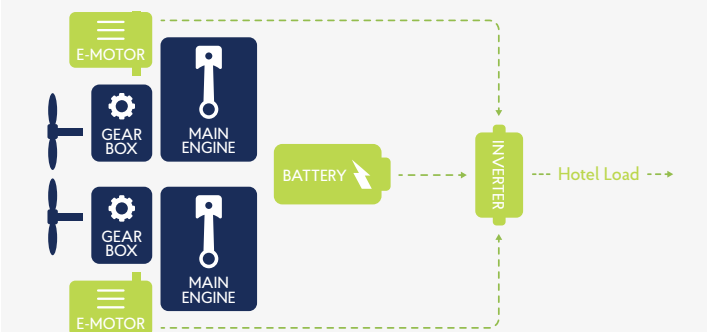
## Boost Mode

- + Main engine (Diesel) on
- + Main generator on
- + Propulsion by E-motor and main engine (Diesel)
- + Powered by main generator or battery
- + Hotel load by main generator or battery



## Generator Mode

- + Main engine (Diesel) on
- + Propulsion by main engine (Diesel)
- + E-motor as generator driven by main engine
- + Main generator only switch on if additional load of battery or hotel load is required



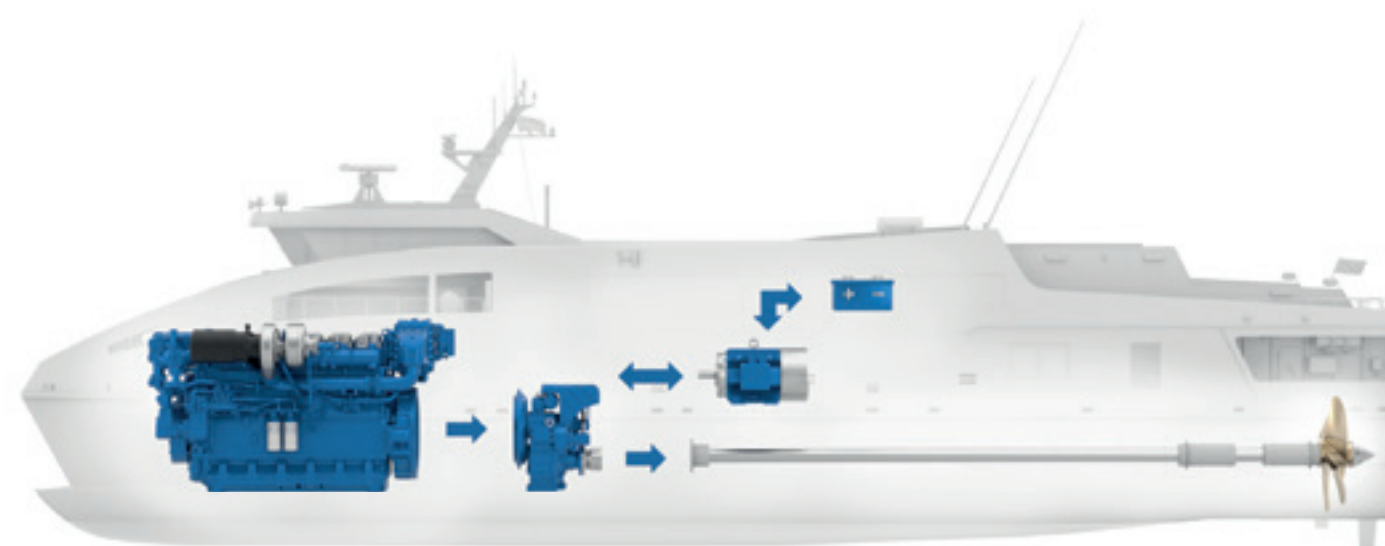
HIGH PRODUCTIVITY



REDUCED OPERATING COST



EASY MAINTENANCE



# BAUDOUIIN AT A GLANCE



20,000m<sup>2</sup> Facilities



100M € Turnover



R&D European Headquarters



210 Employee



90% Exports



Complete Propulsion Systems

## Your Complete Power Solutions Supplier

### Expertise



Certifications



Commissioning



Product Tailoring



Emission Solutions



Hybrid Marine and Power Generation

### Products



Propulsion Engines



Marine Gensets



Gearboxes



Throttles



Controls

### Service



300+ Global Service Partners



Factory Trained Technicians



Best-In-Class Warranty Terms

### Warranty Terms



12 Months  
(extendable to 18 months)

### Genuine Spare Parts



Genuine Spare Parts For Guaranteed Performance



50,000 References Held In Stock



Shipped In 24 Hours



Best-In-Class Spare Parts Warranty Terms



# NAVIGATING TO A GREENER TOMORROW



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# GREEN SOLUTIONS



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