POWERED BY QUALITY

CRAFTED WITH CRAFTSMAN MARINE

CRAFTSMAN MARINE

CATALOGUE

CRAFTED WITH CRAFTSMAN MARINE

ABOUT CRAFTSMAN MARINE

"We are highly motivated to provide you with smart solutions, you can simply enjoy the water!"

Craftsman Marine is one of the leading companies in designing and engineering a wide variety of innovative products for pleasure craft and light commercial vessels. From our home base in The Netherlands we distribute our products throughout the entire globe, using an extensive network of certified dealerships and distributors.

Craftsman Marine is based in Dordrecht – The Netherlands – and is part of Craftsman Automation, one of the largest industrial companies of India, specialised in designing and manufacturing world class products.

WORLD-WIDE DISTRIBUTION AND SERVICE

See our website for a dealer near you or contact the importer for your country.

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THE PROPULSION OF YOUR BOAT

"The Craftsman Marine inboard diesel engines are powerful, responsive, fuel efficient and power dense."

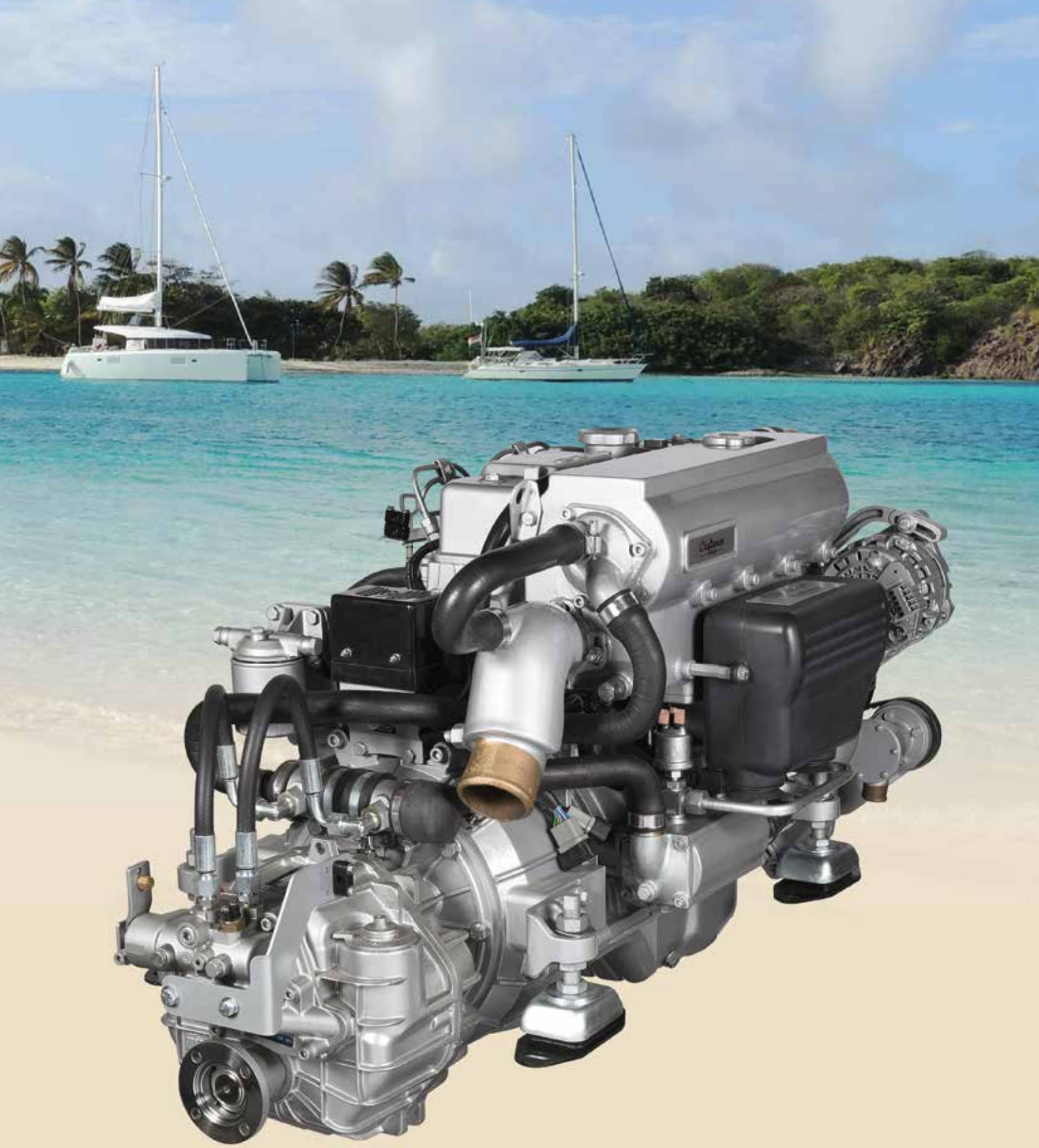
Designing and engineering reliable, safe and smooth-running marine engines is part of Craftsman Marine's core expertise. The shift in focus over the last decade, to create more energy-efficient engines, has influenced our industry and subsequently our entire product range. All new marine diesel engines must meet increasingly stringent emission requirements. Our Mitsubishi and Hyundai based diesel engines totally comply with the latest iteration of the European Recreational Craft Directive (RCD).

At Craftsman Marine, we embrace all requirements concerning energy efficiency, emission and noise level reduction and vibration and friction control. It keeps us up to speed with all the latest technologies and, most of all, it keeps us on the front stage of marine engineering and forces us to innovate continuously.

Craftsman Marine designs and supplies all propulsion components such as propellers, noise reducing exhaust systems, flexible couplings and entire propeller shaft assemblies. All these components are perfectly matched so that installing and refitting these products is relatively easy to accomplish.

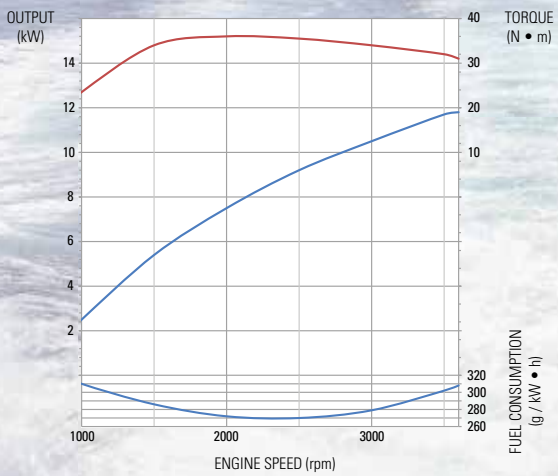
All our diesel engines are fully tested according to the latest international requirements. Because we have extensive knowledge regarding the latest requirements for robust diesel engine testing, you can be sure your engine will run smoothly and consistently.

We design every component with the future in mind. A Craftsman Marine Diesel engine is engineered according to the latest (tested and verified) technology. Of course, regular maintenance checks help your engine to last longer and to optimise performance and reliability.



Diesel engines

Our two-cylinder engine is built around a reliable Mitsubishi base that has earned its merits as a sturdy and reliable industrial engine. It has been converted into a fine marine diesel engine in accordance with the latest know-how and technology. Craftsman Marine has selected these base engines on three principles: power, reliability and fuel efficiency. This engine is powerful for its small size and due to the compact build will fit even the smallest engine room. The CM2.16 engine is a well-balanced engine with vibration-free running and measures up to the latest European Recreational Craft Directive (RCD). It will also meet the upcoming new legislation that will be enforced from January 2016 (2013/53/EU).



Optional temperature sensor for cooling water
For better insight into the temperature of the cooling water on your boat a temperature sensor and gauge can be added.

Air inlet silencer
The inlet silencer is designed for optimal air flow to your engine, whilst minimising the noise coming back from your engine through the air intake. Made from durable synthetic material, the air inlet silencer ensures a carefree and relaxed boating experience.

Optional extended dipstick
When installing the engine in a small space, checking the oil level of your engine can be a pain. With the optional Craftsman Marine extended dipstick this becomes a thing of the past.

AA.200.90125

General specifications

Basic engine:	Mitsubishi
Output at flywheel:	11.8kW/16HP (ISO 8665/3046)
Maximum torque:	36 Nm
Number of cylinders:	2
Capacity:	635 cm^3
Aspiration:	natural
Alternator:	70 A / 12V Bosch
Sensors:	*see page 27*
Max. installation angle:	15° (backwards)
Maximum revolutions:	3600 rpm
Cooling system:	indirect, with heat exchanger
Flexible engine mountings:	CM type 2
Calorifier connection:	optional
Exhaust diameter:	ø40 mm
Electronic protection:	10A circuit breaker
Stop solenoid:	Energised to stop
Weight:	90 kg

Optional:

ALFA 10E

AB.010.20000

*See **page 50** for the complete range of engine panels.*

Optional oil pressure sensor (instead of switch)
For better insight into the oil pressure on your boat you can replace your oil pressure switch with an oil pressure sensor and gauge.

6 YEAR WARRANTY Craftsman

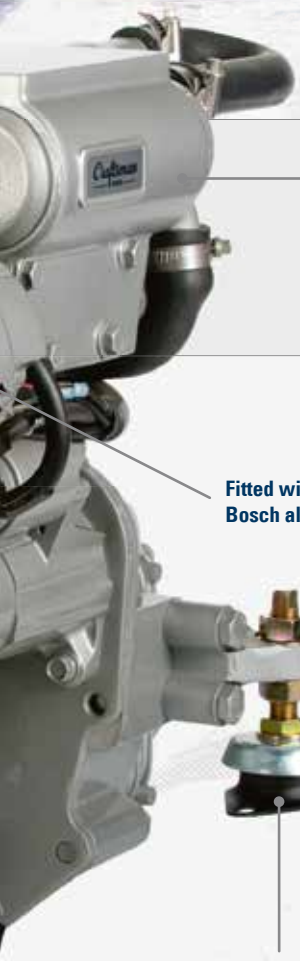
CM2.16 11.8KW/16HP

ISO 8665/3046

Assets:

- Seawater resistant cast exhaust bend, providing a long and efficient service life
- Supplied with oil suction pump
- Based on a Mitsubishi industrial engine, proven worldwide and with equally worldwide support

ALSO AVAILABLE AS KEELCOOL



Cupronickel heat exchanger and exhaust bend - no zinc anode required

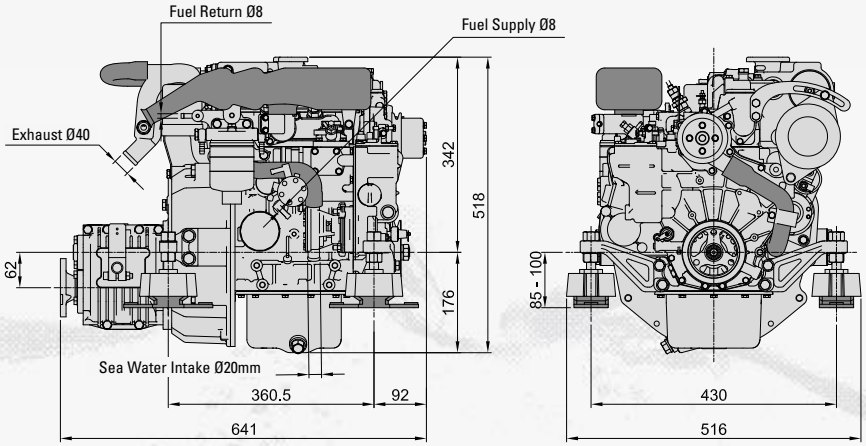
This Copper-Nickel alloy has better heat dissipation than steel or aluminium, ensuring better heat regulation for the engine. The heat exchanger also functions as an expansion tank for the cooling liquid of the engine. On top of that, the material is highly resistant to corrosion in seawater, making the use of an anode unnecessary.

IP67

Waterproof cable connectors

The engine cable loom is equipped with waterproof (IP67) cable connectors to ensure that no moisture or dust can penetrate to the cable terminals.

Fitted with a 70A Bosch alternator



Four flexible engine mountings

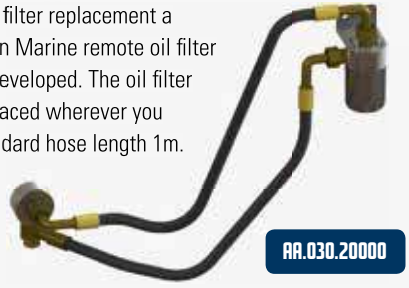
*See **page 31** for the complete range of flexible engine mountings.*

CALORIFIER KIT CM2.16 & CM3.27

AA.020.20000

Optional remote oil filter

Changing the oil filter can become difficult once the engine is fully installed in your boat. In order to accommodate an easier and faster oil filter replacement a Craftsman Marine remote oil filter kit was developed. The oil filter can be placed wherever you like. Standard hose length 1m.

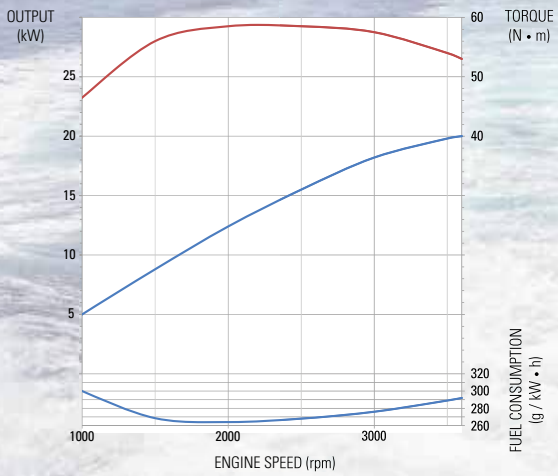


AA.030.20000

For detailed specifications, drawings, manuals, certificates and warranty go to **www.craftsmanmarine.com**

Diesel engines

Our Mitsubishi-based three-cylinder engine is built around a robust and reliable industrial engine. It has been converted into a smart marine diesel engine in accordance with the latest know-how and technology. Craftsman Marine has selected these base engines on three principles: power, reliability and fuel efficiency. The CM3.27 engine is a well-balanced engine with vibration-free running and measures up to the latest European Recreational Craft Directive (RCD). It will also meet the upcoming new legislation that will be enforced from January 2016 (2013/53/EU).



Cupronickel heat exchanger and exhaust bend - no zinc anode required
This Copper-Nickel alloy has better heat dissipation than steel or aluminium, ensuring better heat regulation for the engine. The heat exchanger also functions as an expansion tank for the cooling liquid of the engine. On top of that, the material is highly resistant to corrosion in seawater, making the use of an anode unnecessary.

Exhaust temperature alarm

10A circuit breaker

Waterproof connectors (IP67)

Optional extended dipstick
When installing the engine in a small space, checking the oil level of your engine can be a pain. With the optional Craftsman Marine extended dipstick this becomes a thing of the past.

AA.300.90125

General specifications

Basic engine:	Mitsubishi
Output at flywheel:	20kW/27.2HP (ISO 8665/3046)
Maximum torque:	58,5 Nm
Number of cylinders:	3
Capacity:	952 cm^3
Aspiration:	natural
Alternator:	70 A / 12V Bosch
Sensors:	*see page 27*
Max. installation angle:	15° (backwards)*
Maximum revolutions:	3600 rpm
Cooling system:	indirect, with heat exchanger
Flexible engine mountings:	CM type 3 (front) & CM type 4 (back)*
Calorifier connection:	optional
Exhaust diameter:	ø40 mm
Electronic protection:	10A circuit breaker
Stop solenoid:	Energised to stop
Weight:	113 kg

Optional:

ALFA 20E

AB.020.20000

*See **page 50** for the complete range of engine panels.*

For detailed specifications, drawings, manuals, certificates and warranty go to **www.craftsmanmarine.com**

** 4 Flexible engine mounts CM type 9 are required for installation angles above 8°. Optional for extra comfort.*

6 YEAR WARRANTY Craftsman

CM3.27 20KW/27.2HP

ISO 8665/3046

Assets:

- Seawater resistant cast exhaust bend, providing a long and efficient service life
- Fitted with a 70A Bosch alternator
- Supplied with oil suction pump
- Based on a Mitsubishi industrial engine, proven worldwide and with equally worldwide support

ALSO AVAILABLE AS KEELCOOL

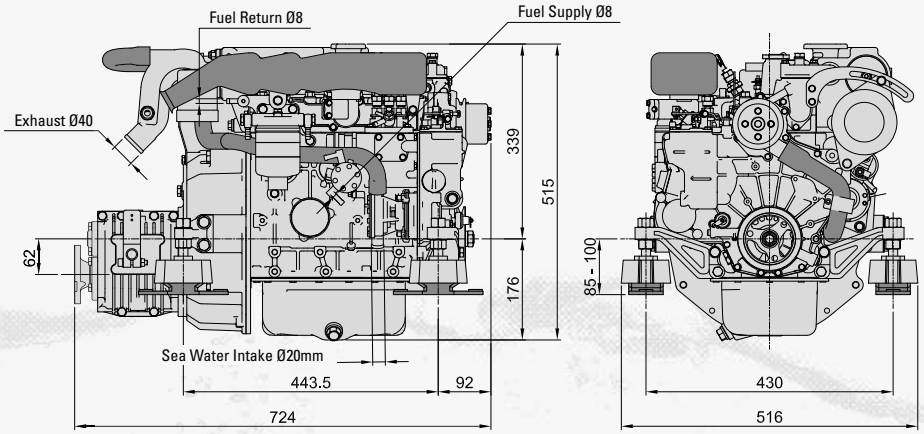
Optional temperature sensor for cooling water

Air inlet silencer

The inlet silencer is designed for optimal air flow to your engine, whilst minimising the noise coming back from your engine through the air intake. Made from durable synthetic material, the air inlet silencer ensures a carefree and relaxed boating experience.

All year long, use a good quality anti-freeze product, protecting your engine against corrosion and frost damage.

Always use good quality diesel fuel, free from water and/or other impurities.



Four flexible engine mountings

*See **page 31** for the complete range of flexible engine mountings.*

Manual stop button

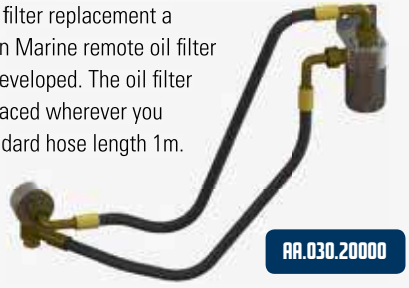
Additional mechanical engine stop button.

CALORIFIER KIT CM2.16 & CM3.27

AA.020.20000

Optional remote oil filter

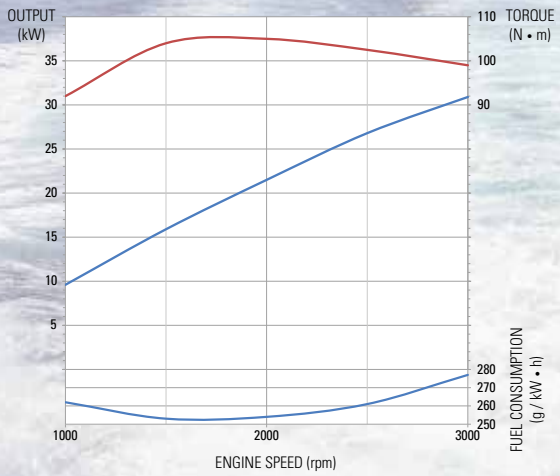
Changing the oil filter can become difficult once the engine is fully installed in your boat. In order to accommodate an easier and faster oil filter replacement a Craftsman Marine remote oil filter kit was developed. The oil filter can be placed wherever you like. Standard hose length 1m.



AA.030.20000

Diesel engines

Our four-cylinder engine is built around a reliable Mitsubishi base that has earned its merits as a sturdy and reliable industrial engine. It has been converted into a fine marine diesel engine in accordance with the latest know-how and technology. Craftsman Marine has selected these base engines on three principles: power, reliability and fuel efficiency. This engine is known for its quiet and vibration-free running and measures up to the latest European Recreational Craft Directive (RCD). Even the new iteration (2013/53/EU) that will be enforced from January 2016 is no match for this Craftsman Marine engine.

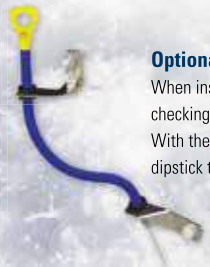


Optional temperature sensor for cooling water

For better insight into the temperature of the cooling water on your boat a temperature sensor and gauge can be added.

Air inlet silencer

The inlet silencer is designed for optimal air flow to your engine, whilst minimising the noise coming back from your engine through the air intake. Made from durable synthetic material, the air inlet silencer ensures a carefree and relaxed boating experience.



Optional extended dipstick

When installing the engine in a small space, checking the oil level of your engine can be a pain. With the optional Craftsman Marine extended dipstick this becomes a thing of the past.

AA.450.90125

General specifications

Basic engine:	Mitsubishi
Output at flywheel:	30.9kW/42HP (ISO 8665/3046)
Maximum torque:	105 Nm
Number of cylinders:	4
Capacity:	1758 cm^3
Aspiration:	natural
Alternator:	90 A / 12V Bosch
Sensors:	*see page 27*
Max. installation angle:	15° (backwards)
Maximum revolutions:	3000 rpm
Cooling system:	indirect, with heat exchanger
Flexible engine mountings:	CM type 5*
Calorifier connection:	optional
Exhaust diameter:	ø50 mm
Electronic protection:	10A circuit breaker
Stop solenoid:	Energised to stop
Weight:	175 kg

** 4 Flexible engine mounts CM type 10 are required for installation angles above 8°. Optional for extra comfort.*

Optional:

ALFA 20E

AB.020.20001

*See **page 50** for the complete range of engine panels.*

For detailed specifications, drawings, manuals, certificates and warranty go to **www.craftsmanmarine.com**

6 YEAR WARRANTY

CM4.42 30.9KW/42HP

ISO 8665/3046

Assets:

- Seawater resistant cast exhaust bend, providing a long and efficient service life
- Supplied with oil suction pump
- Fitted with electric fuel lift pump
- Based on a Mitsubishi industrial engine, proven worldwide and with equally worldwide support

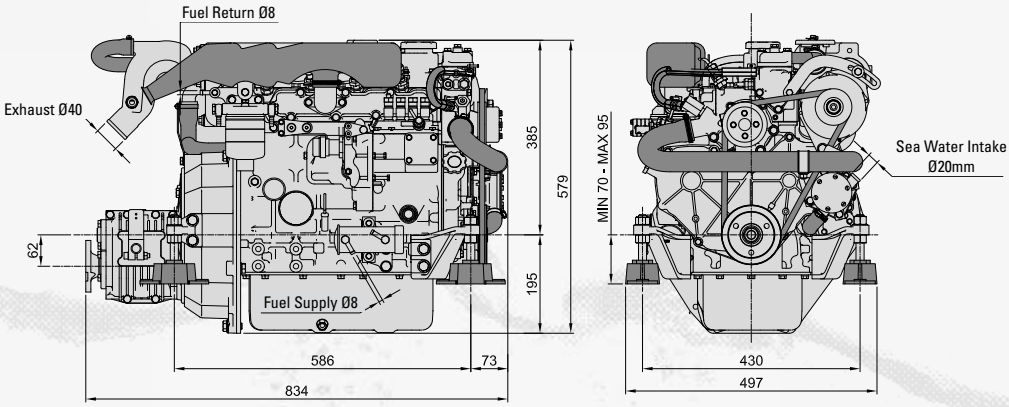
ALSO AVAILABLE AS KEELCOOL

Cupronickel heat exchanger and exhaust bend - no zinc anode required

This Copper-Nickel alloy has better heat dissipation than steel or aluminium, ensuring better heat regulation for the engine. The heat exchanger also functions as an expansion tank for the cooling liquid of the engine. On top of that, the material is highly resistant to corrosion in seawater, making the use of an anode unnecessary.

Always use good quality diesel fuel, free from water and/or other impurities.

Fitted with a 90A Bosch alternator



When a hydraulic gearbox is fitted to the engine, an additional oil cooler set is essential. This kit includes all necessary hoses and brackets to connect the oil cooler.

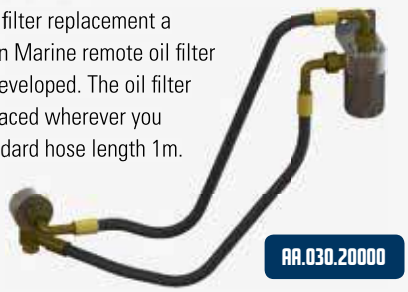
OILCOOLER SET CM4.42

AA.010.20010

CALORIFIER KIT CM4.42 AA.020.20010

Optional remote oil filter

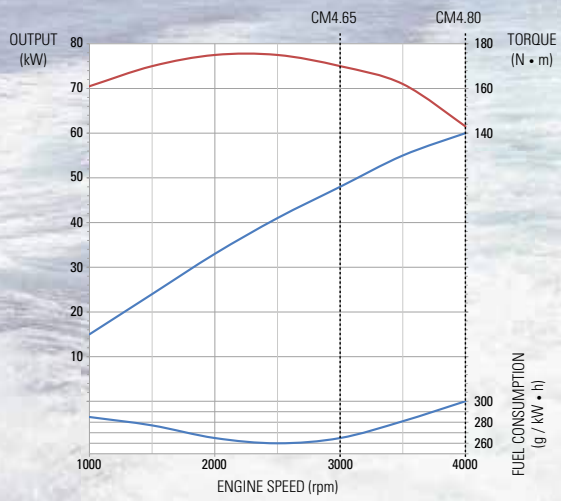
Changing the oil filter can become difficult once the engine is fully installed in your boat. In order to accommodate an easier and faster oil filter replacement a Craftsman Marine remote oil filter kit was developed. The oil filter can be placed wherever you like. Standard hose length 1m.



AA.030.20000

Diesel engines

Our Hyundai-based engines have been converted into fine marine diesel engines in accordance with the latest know-how and technology. Craftsman Marine has selected these base engines on three principles: power, reliability and fuel efficiency. On top of that, these engines are known for their quiet and vibration-free running, and of course they measure up to the latest European Recreational Craft Directive (RCD).



Standard fitted long dipstick
For easy inspection of the oil level of your engine.

Standard fitted with dual station throttle kit
For connecting a dual station control (see page 47).

Fuel filter
Easy accessible fuel filter for quick inspection and easy replacement.

10A circuit breaker

Waterproof connectors (IP67)

General specifications

Basic engine:	Hyundai
Output at flywheel:	48kW/65HP (ISO 8665/3046)
	59kW/80HP (ISO 8665/3046)
Maximum torque:	175 Nm
Number of cylinders:	4
Capacity:	2607 cm^3
Aspiration:	natural
Alternator:	110 A / 12V Bosch
Sensors:	*see page 27*
Max. installation angle:	10° (backwards)
Maximum revolutions:	3000 rpm (CM4.65)
	4000 rpm (CM4.80)
Cooling system:	indirect, with heat exchanger
Flexible engine mountings:	CM type 7
Calorifier connection:	standard
Exhaust diameter:	ø60 mm (CM4.65)
	ø76 mm (CM4.80)
Electronic protection:	10A circuit breaker
Stop solenoid:	Energised to run
Weight:	235 kg

Optional:

ALFA 30E

AB.030.20000

*See **page 50** for the complete range of engine panels.*

For detailed specifications, drawings, manuals, certificates and warranty go to **www.craftsmanmarine.com**

** 4 Flexible engine mounts CM type 10 are required for installation angles above 8°. Optional for extra comfort.*

6 YEAR WARRANTY Craftsman

CM4.65 48KW/65HP ISO 8665/3046
CM4.80 59KW/80HP ISO 8665/3046

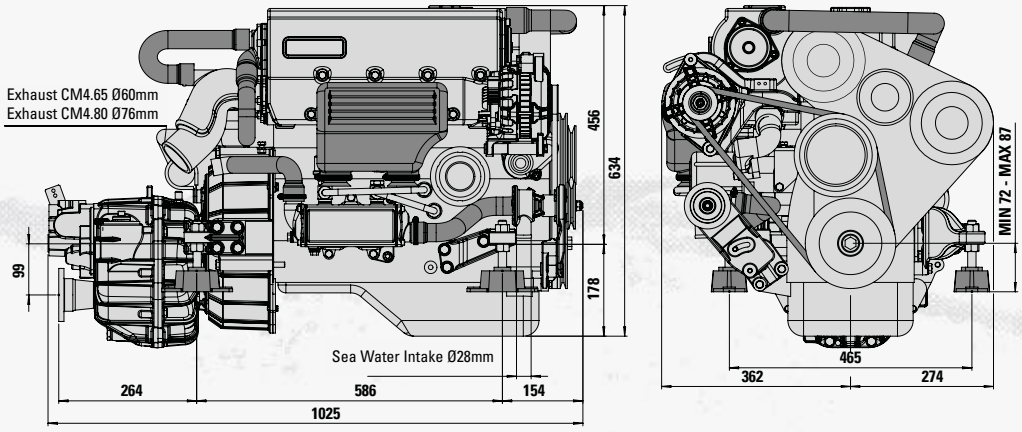
Assets:

- Quiet running with less vibrations due to a specially designed flywheel
- Seawater resistant cast exhaust bend, providing a long and efficient service life
- Supplied with oil suction pump
- Fitted with electric fuel lift pump
- Based on a Hyundai industrial engine, proven worldwide and with equally worldwide support
- Air intake with noise reducing properties

Cupronickel heat exchanger and exhaust bend - no zinc anode required
This Copper-Nickel alloy has better heat dissipation than steel or aluminium, ensuring better heat regulation for the engine. The heat exchanger also functions as an expansion tank for the cooling liquid of the engine. On top of that, the material is highly resistant to corrosion in seawater, making the use of an anode unnecessary.

Check the wet exhaust on your transom for the proper flow of cooling water each time you start the engine to make sure enough water runs through the engine's system.

Fitted with a 110A Bosch alternator



Air inlet silencer
The inlet silencer is designed for optimal air flow to your engine, whilst minimising the noise coming back from your engine through the air intake. Made from durable synthetic material, the air inlet silencer ensures a carefree and relaxed boating experience.

Fitted with oil and temperature sensor

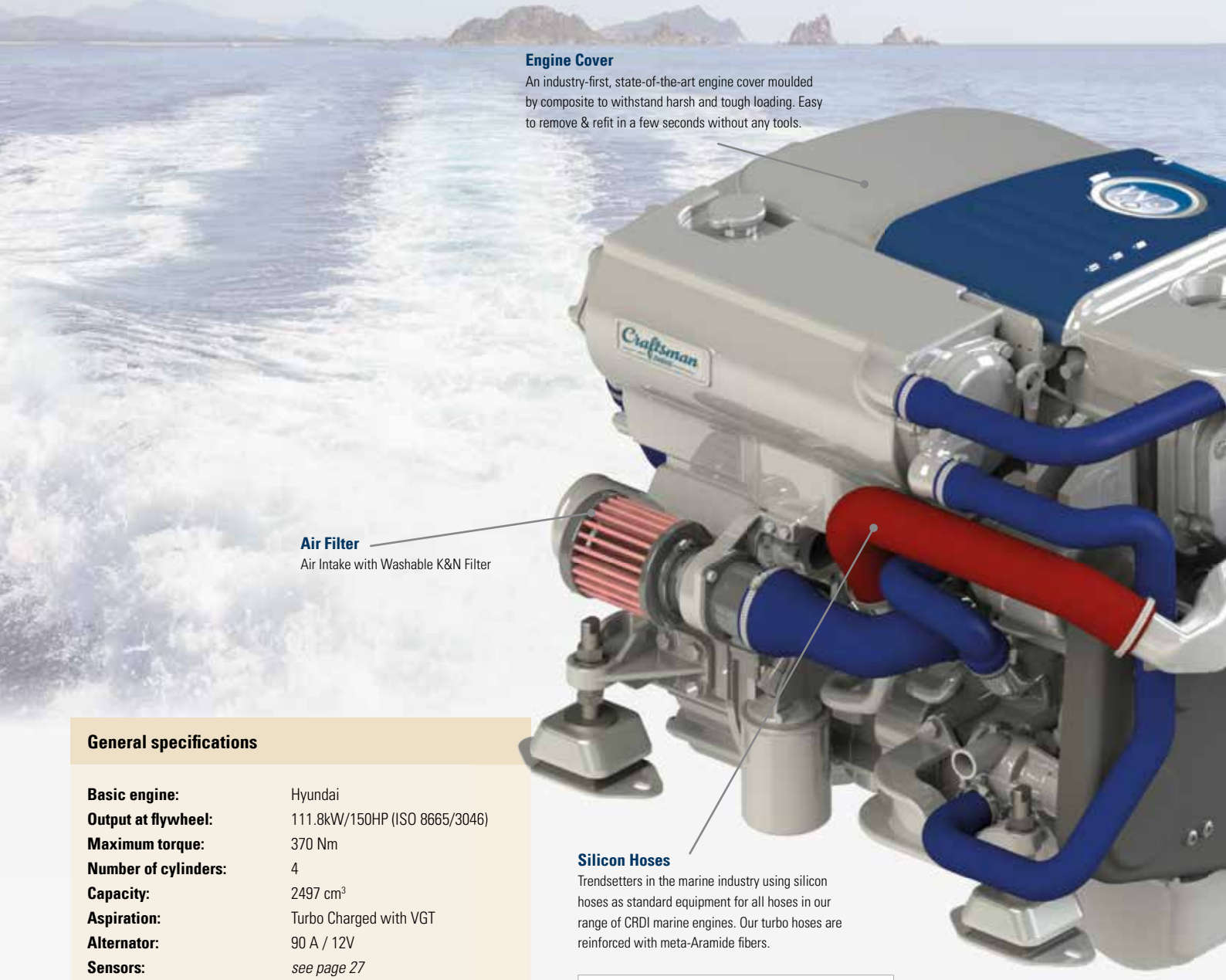
When a hydraulic gearbox is fitted to the engine, an additional oil cooler set is essential. This kit includes all necessary hoses and brackets to connect the oil cooler.

OILCOOLER SET CM4.65/CM4.80

AA.010.20020

Diesel engines

Our base blocks are from Hyundai, which have been converted into fine marine diesel engines in accordance with the latest know-how and technology. Craftsman Marine has selected these base engines on three principles: power, reliability and fuel efficiency. On top of that, these engine bases are known for their quiet and vibration-free running, and of course they measure up to the European Recreational Craft Directive (RCD).



Engine Cover
An industry-first, state-of-the-art engine cover moulded by composite to withstand harsh and tough loading. Easy to remove & refit in a few seconds without any tools.

Air Filter
Air Intake with Washable K&N Filter

Silicon Hoses
Trendsetters in the marine industry using silicon hoses as standard equipment for all hoses in our range of CRDI marine engines. Our turbo hoses are reinforced with meta-Aramide fibers.

General specifications

Basic engine:	Hyundai
Output at flywheel:	111.8kW/150HP (ISO 8665/3046)
Maximum torque:	370 Nm
Number of cylinders:	4
Capacity:	2497 cm^3
Aspiration:	Turbo Charged with VGT
Alternator:	90 A / 12V
Sensors:	*see page 27*
Max. installation angle:	10° (backwards)
Maximum revolutions:	3800 rpm
Cooling system:	indirect, with heat exchanger
Flexible engine mountings:	CM type 11
Calorifier connection:	optional
Exhaust diameter:	ø100 mm
Electronic protection:	Fuse 10A, 15A, 30A
Stop solenoid:	Energised to run
Weight:	355 kg

Optional:

ALFA 20E

AB.020.20000

*See **page 50** for the complete range of engine panels.*

For detailed specifications, drawings, manuals, certificates and warranty go to **www.craftsmanmarine.com**

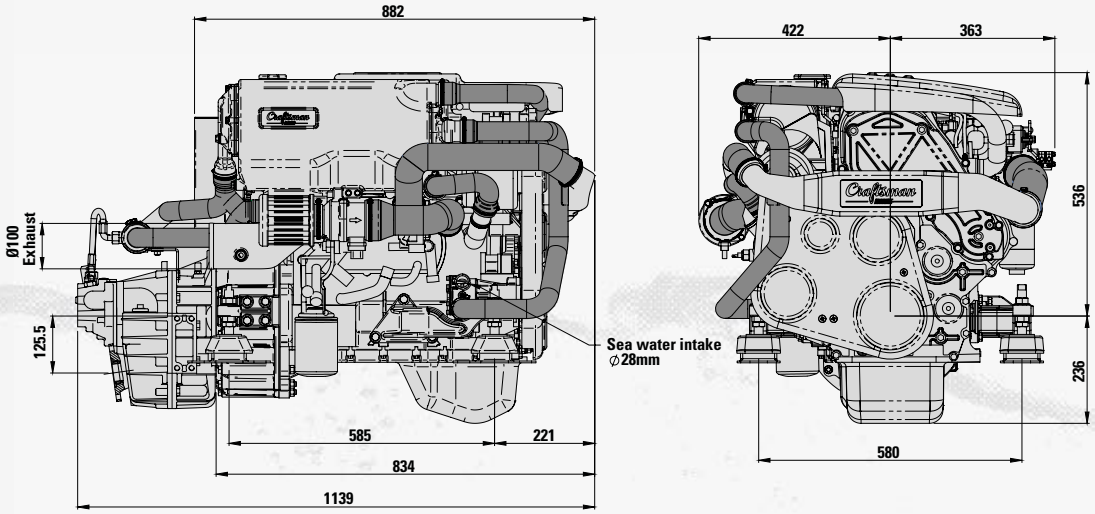
CM4.150 111.8KW/150HP

ISO 8665/3046

Assets:

- Quiet running with less vibration due to a specially designed flywheel
- Seawater resistant cast exhaust bend, providing a long and efficient service life
- Supplied with oil suction pump
- Fitted with electric fuel lift pump
- Based on a Hyundai industrial engine, proven worldwide and with equally worldwide support

Check the wet exhaust on your transom for the proper flow of cooling water each time you start the engine to make sure enough water runs through the engine's system.



Electrical Panel

Our CRDI wiring is simple & easily traceable like normally aspirated diesel engine on the market. Easy-to-access electrical panel box along with the ECU. No more probing in the dark, our LED indicators will help you identify the blown fuse.

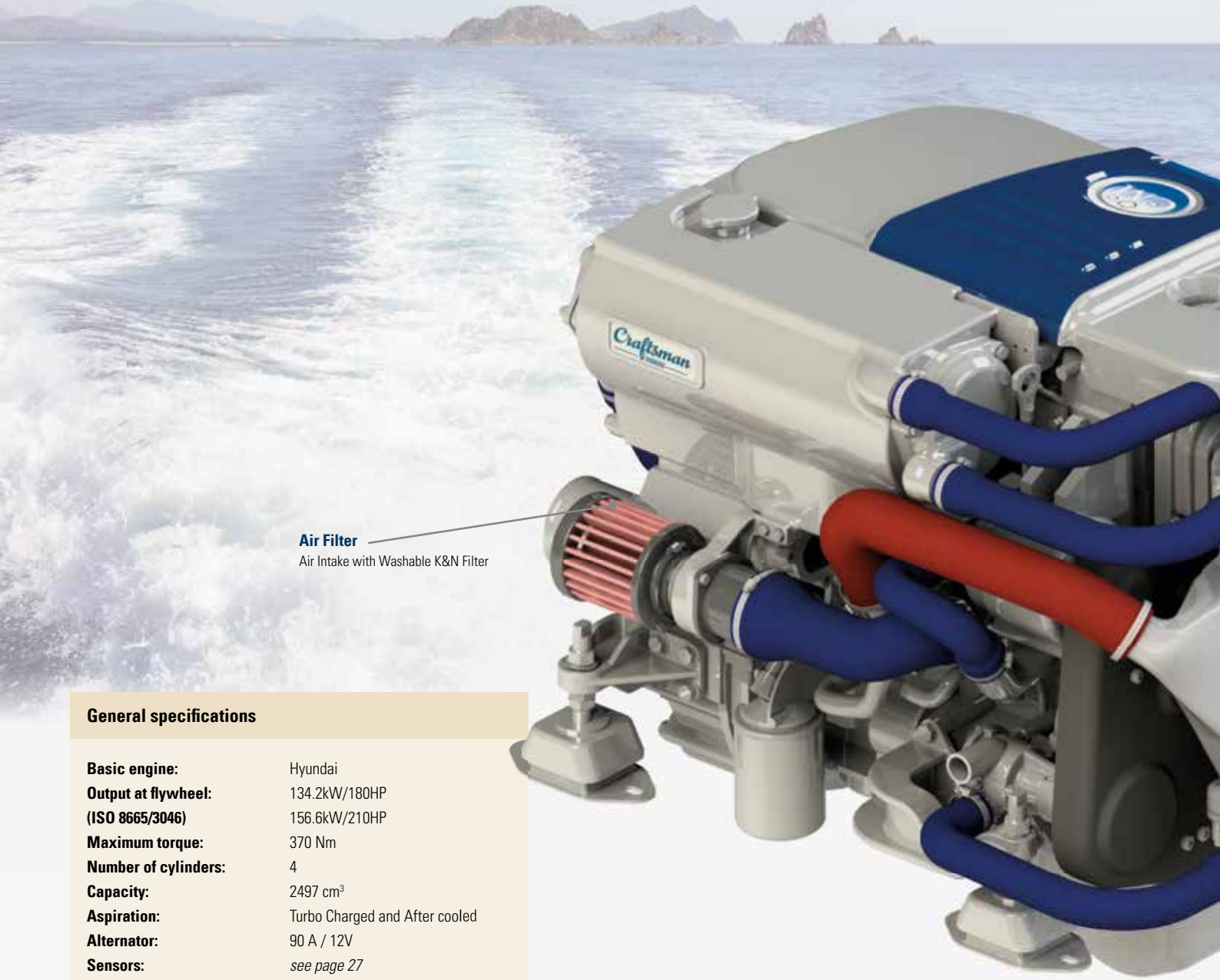
When a hydraulic gearbox is fitted to the engine, an additional oil cooler set is essential. This kit includes all necessary hoses and brackets to connect the oil cooler.

OIL COOLER SET CM4.150/CM4.180/CM4.210

AR.010.20030

Diesel engines

Our base blocks are from Hyundai, which have been converted into fine marine diesel engines in accordance with the latest know-how and technology. Craftsman Marine has selected these base engines on three principles: power, reliability and fuel efficiency. On top of that, these engine bases are known for their quiet and vibration-free running, and of course they measure up to the European Recreational Craft Directive (RCD).



Air Filter
Air Intake with Washable K&N Filter

General specifications

Basic engine:	Hyundai
Output at flywheel:	134.2kW/180HP
(ISO 8665/3046)	156.6kW/210HP
Maximum torque:	370 Nm
Number of cylinders:	4
Capacity:	2497 cm^3
Aspiration:	Turbo Charged and After cooled
Alternator:	90 A / 12V
Sensors:	*see page 27*
Max. installation angle:	10° (backwards)
Maximum revolutions:	3800 rpm
Cooling system:	indirect, with heat exchanger
Flexible engine mountings:	CM type 11
Calorifier connection:	optional
Exhaust diameter:	ø100 mm
Electronic protection:	Fuse 10A, 15A, 30A
Stop solenoid:	Energised to run
Weight:	420 kg

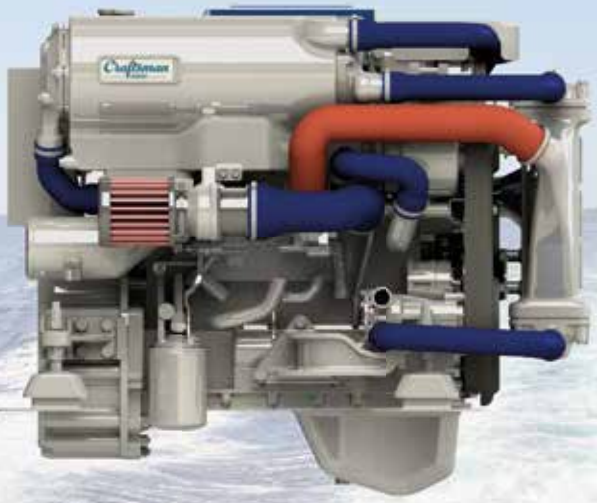
Optional:

ALFA 30E

AB.030.20001

*See **page 50** for the complete range of engine panels.*

For detailed specifications, drawings, manuals, certificates and warranty go to **www.craftsmanmarine.com**



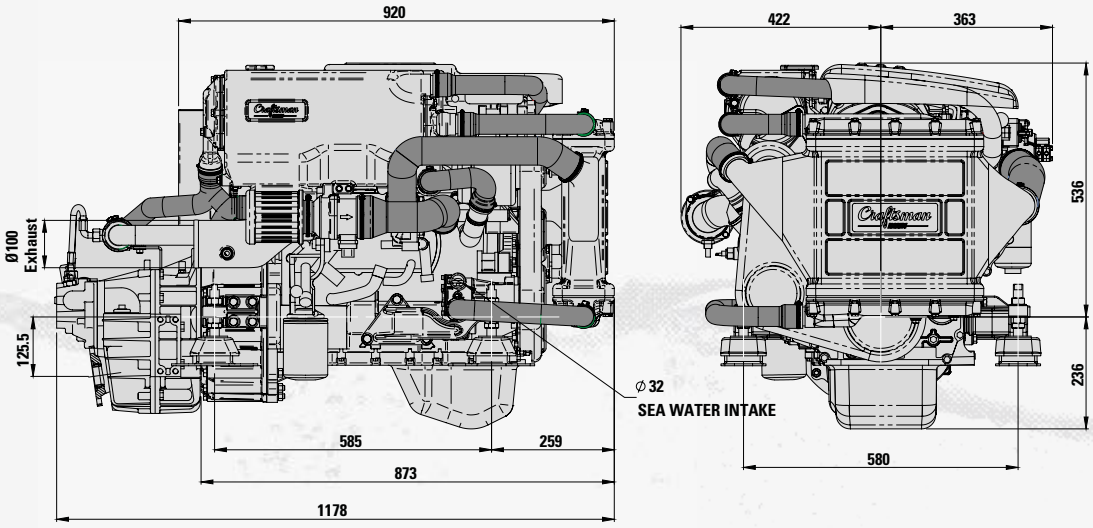
CM4.180 134.2KW/180HP ISO 8665/3046
CM4.210 156.6KW/210HP ISO 8665/3046

Assets:

- Quiet running with less vibration due to a specially designed flywheel
- Seawater resistant cast exhaust bend, providing a long and efficient service life
- Supplied with oil suction pump
- Fitted with electric fuel lift pump
- Based on a Hyundai industrial engine, proven worldwide and with equally worldwide support

After Cooler
An industry first using finned Cupro Nickel tubes for increased heat transfer efficiency, which results in a sleek and compact design.

Check the wet exhaust on your transom for the proper flow of cooling water each time you start the engine to make sure enough water runs through the engine's system.



When a hydraulic gearbox is fitted to the engine, an additional oil cooler set is essential. This kit includes all necessary hoses and brackets to connect the oil cooler.

OIL COOLER SET CM4.150/4.180/CM4.210
AR.010.20030

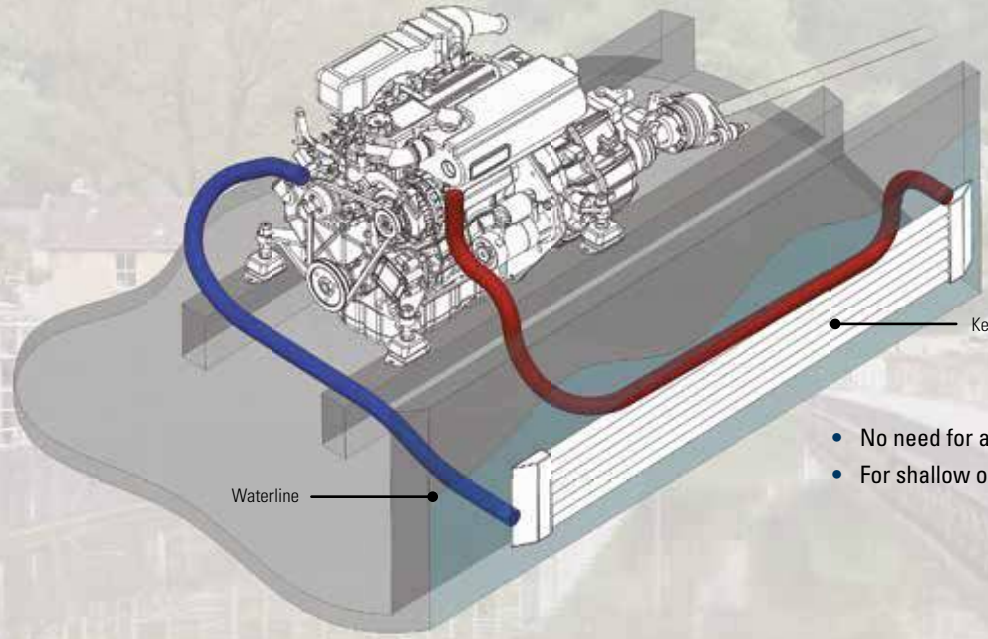
Keel cooling

All Craftsman Marine diesel engines are now suitable for use in a keel-cooling setup. This can be very beneficial when taking your boat through shallow or muddy waters or for shallow draft boats going through waters with limited depth. These keel-cooling engines are the perfect solution for a smooth journey through waters where mud, sand or debris can potentially damage and clog up a conventional water-cooled system. An additional advantage is the elimination of the continuous splashing noise of the water coming from your exhaust when the engine is running.

Our keel-cooled engines are engineered with the same eye for detail as our intercooled engines. Because there is no need for a raw water pump, an important service point from your engine has been eliminated. These engines reduce maintenance costs and minimise downtime. When using keel cooling, the engine coolant circulation pump will run the cooling liquid through the engine and the keel cooler element on the hull.

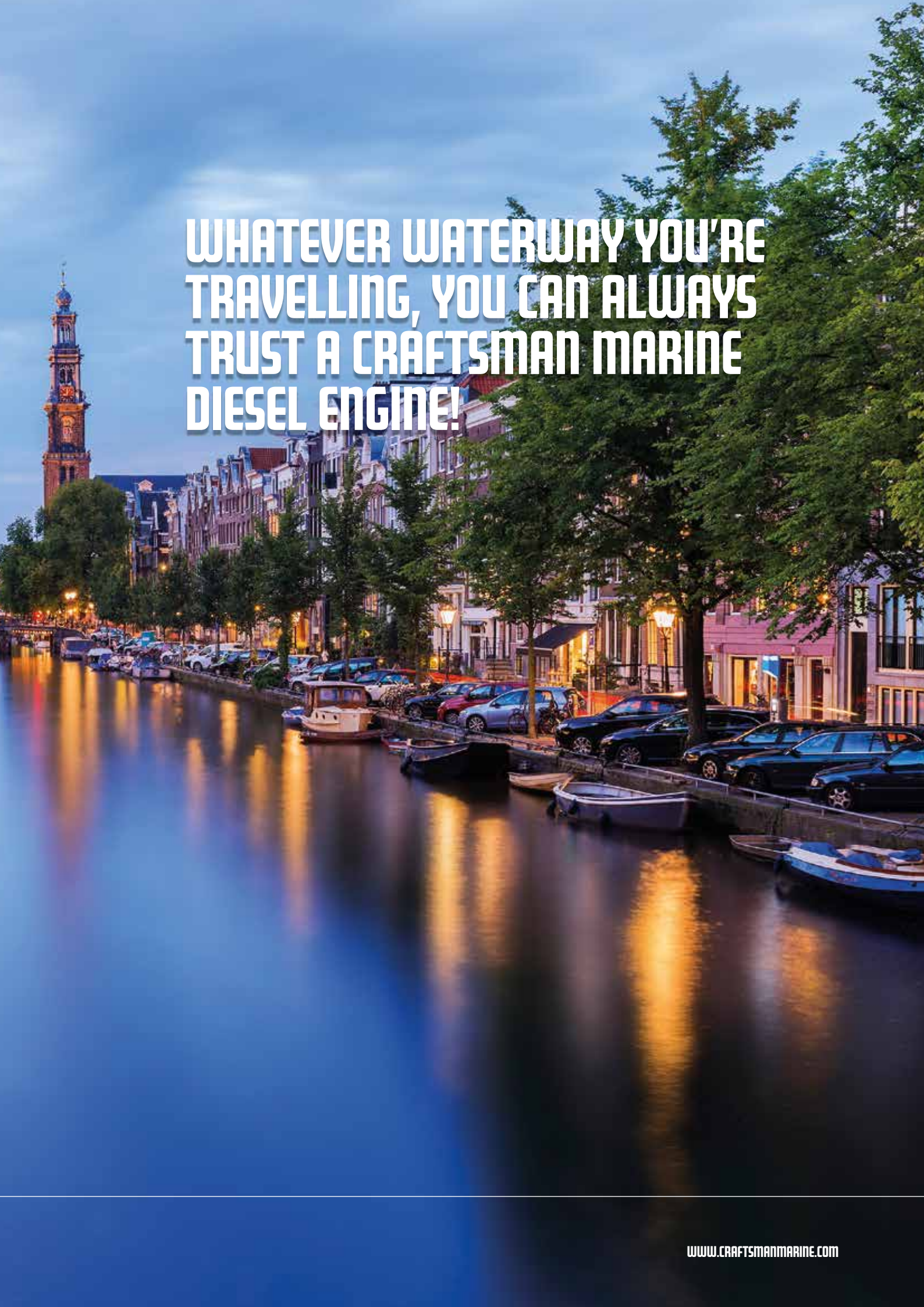
	CM2.16 Keel cooled	CM3.27 Keel cooled
Exhaust diameter	BSP G1¼ thread	BSP G1¼ thread
Second alternator	No	No
Suitable for gearbox with oil cooler	No	No
Hose connection cooler Ø	-	-
Available with separate expansion tank	No	No

These engines can be supplied with the same gearboxes as the intercooled engines. For engine specifications please check out the intercooled versions on the previous pages.



- No need for a raw waterpump
- For shallow or muddy waters

	CM4.42 Keel cooled	CM4.65 / CM4.80 Keel cooled
Exhaust diameter	BSP G1½ thread	BSP G2 thread
Second alternator	Optional (90A)	Optional (110A)
Suitable for gearbox with oil cooler	Yes	Yes
Hose connection cooler Ø	32mm	32mm
Available with separate expansion tank	Yes	Yes



WHATEVER WATERWAY YOU'RE TRAVELLING, YOU CAN ALWAYS TRUST A CRAFTSMAN MARINE DIESEL ENGINE!

WWW.CRAFTSMANMARINE.COM

Selection chart of available engine and gearbox combinations

Craftsman Marine engines can be fitted with a selection of ZF/PRM gearboxes or Saildrives. Below are the possible combinations with our engines to suit your need. When in doubt, consult your dealer to determine which reduction will suit your boat and propeller. For the hydraulic gearboxes a separate oil cooler set is available.

OTHER GEARBOXES AVAILABLE ON REQUEST






	CM2.16	CM3.27	CM4.42	CM4.65/CM4.80	CM4.150	CM4.180/CM4.210
ZF10M	R=2.05	R=2.05	-	-	-	-
PRM80	R=2.50	R=2.50	-	-	-	-
ZF12M	R=2.14 R=2.63	R=2.14 R=2.63	R=2.14 R=2.63	-	-	-
ZF15M	-	-	R=1.88	-	-	-
ZF15MA	-	-	R=2.14 R=2.63	-	-	-
ZF25	-	-	R=1.97 * R=2.80 *	R=1.97 R=2.80	-	-
ZF25A	-	-	R=1.93 * R=2.71 *	R=1.93 R=2.71	-	-
ZF25M	-	-	R=1.88 * R=2.74 *	R=1.88 R=2.74	-	-
ZF45-1	-	-	-	-	R=2.20 R=2.51	R=2.20 R=2.51
ZF45-A	-	-	-	-	R=2.03 R=2.43	R=2.03 R=2.43
Saildrive SD10	R=2.23	R=2.23	R=2.23	-	-	-
Saildrive SD12	-	-	-	R=2.49	-	-

** Please check the engine configuration chart on our website. Other gearboxes are available on request*

When a hydraulic gearbox is fitted to the engine, an additional oil cooler set is essential. This kit includes all necessary hoses and brackets to connect the oil cooler.

OILCOOLER SET CM4.42
AA.010.20010

OILCOOLER SET CM4.65/CM4.80
AA.010.20020

OIL COOLER SET CM4.150/CM4.180/CM4.210
AA.010.20030

Selection chart for choosing your engine panel and sensors

Craftsman Marine offers a wide range of engine panels. See page 50 for details about the engine panels. The engines are fitted with several sensors, which match a panel as described below. When choosing a different panel, ensure that you upgrade the engine with the correct sensors. When installing a fly-bridge panel ensure that you have the right connection cables and interface cards; see page 28.






	CM2.16	CM3.27	CM4.42	CM4.65/CM4.80	CM4.150	CM4.180/CM4.210
Cables supplied with engine	2m, Type A 2m, Type B	4m, Type A 4m, Type B	4m, Type A 4m, Type B	4m, Type A 4m, Type B	4m, Type A 4m, Type B	4m, Type A 4m, Type B
Engine fitted with sensors for						
Exhaust temperature alarm	✓	✓	✓	✓	✓	✓
Oil pressure alarm	✓	✓	✓	✓	✓	✓
Oil pressure gauge	-	-	-	✓	✓	✓
Coolant temperature alarm	✓	✓	✓	✓	✓	✓
Coolant temperature gauge	-	-	-	✓	✓	✓
Required sensors						
ALFA10 	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*
ALFA20 	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*
ALFA20 (voltmeter replaced with temperature gauge)	Temperature sensor/ switch DB.020.20002 	Temperature sensor/ switch DB.020.20002	Temperature sensor DB.020.20003 	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*
ALFA30 	Temperature sensor/ switch DB.020.20002 Oil pressure sensor/ switch DB.020.20001 	Temperature sensor/ switch DB.020.20002 Oil pressure sensor/ switch DB.020.20001	Temperature sensor DB.020.20003 Oil pressure sensor/ switch DB.020.20001	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*
ALFA40 	Temperature sensor/ switch DB.020.20002 Oil pressure sensor/ switch DB.020.20001	Temperature sensor/ switch DB.020.20002 Oil pressure sensor/ switch DB.020.20001	Temperature sensor DB.020.20003 Oil pressure sensor/ switch DB.020.20001	*No extra sensor required*	*No extra sensor required*	*No extra sensor required*

Selection chart for fly-bridge panels

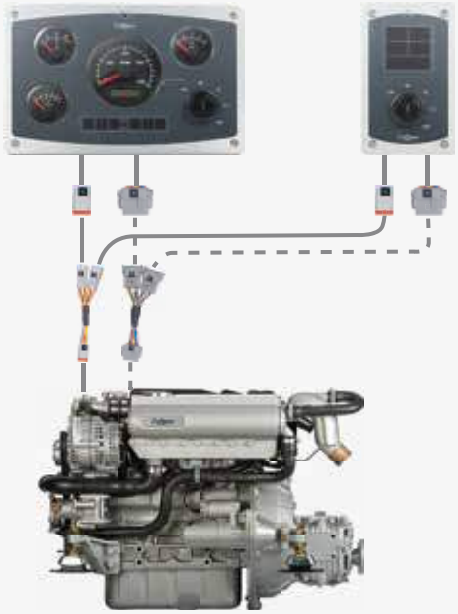
To connect a fly-bridge engine panel, the following connection parts are required.

Fly-bridge combinations	Required parts			Configuration
	Splitter cables		Fly-bridge connection card	
	Type A AB.050.20000	Type B AB.050.21000	Code AB.060.20000	
ALFA10 + ALFA10	✓	✓	-	1
ALFA10 + ALFA20	✓	✓	-	1
ALFA10 + ALFA20 (ALFA20 voltmeter replaced by temperature gauge)	✓	✓	-	1
ALFA10 + ALFA30	✓	✓	-	1
ALFA10 + ALFA40	✓	✓	-	1
ALFA20 + ALFA30	✓	✓	-	1
ALFA20 + ALFA30 (ALFA20 voltmeter replaced by temperature gauge)	✓	-	✓	2
ALFA20 + ALFA40	✓	✓	-	1
ALFA20 + ALFA40 (ALFA20 voltmeter replaced by temperature gauge)	✓	-	✓	2
ALFA30 + ALFA30	✓	-	✓	2
ALFA30 + ALFA40	✓	-	✓	2
ALFA40 + ALFA40	✓	-	✓	2

Fly-bridge connection card

Fly-bridge configuration 1

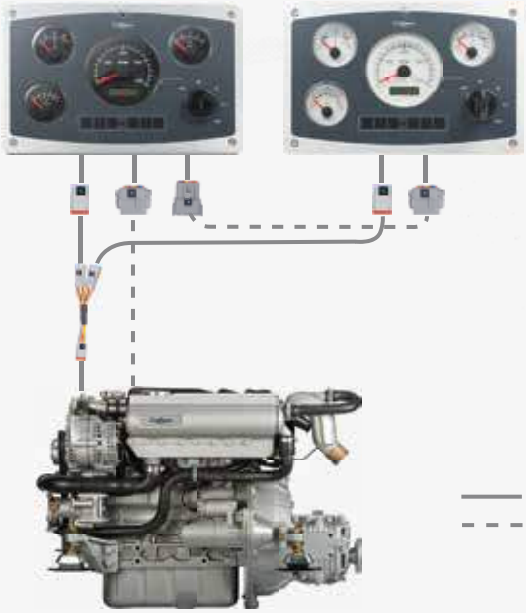
For this configuration the connection card is not required.



Fly-bridge configuration 2

For this configuration the connection card is required.

Panel fitted with fly-bridge connection card



Cable type A (power)
Cable type B (signals)

Engine connection cables

To connect the Craftsman Marine engine with a Craftsman Marine engine panel, 2 cables are required. Cable type A is for power and cable type B is for signals. The cables are available in lengths of 2m, 4m, 6m and 10m. It is possible to connect different cable lengths.

To protect the electrical installation against moisture, salt, water, dust or dirt, all cables are fitted with waterproof connectors. Each engine comes standard with cable A and B, with lengths of 4 metres each (CM2 with 2 metre).

SPLITTER CABLE TYPE A **AB.050.20000**

SPLITTER CABLE TYPE B **AB.050.21000**

- Waterproof connectors IP67 rubber sealing
- Latch lever lock, to ensure a 100% tight connection, also in case of vibrations

Article codes	
AB.050.20002	Connection cable engine panel 2m, type A
AB.050.20004	Connection cable engine panel 4m, type A
AB.050.20006	Connection cable engine panel 6m, type A
AB.050.20010	Connection cable engine panel 10m, type A
AB.050.21002	Connection cable engine panel 2m, type B
AB.050.21004	Connection cable engine panel 4m, type B
AB.050.21006	Connection cable engine panel 6m, type B
AB.050.21010	Connection cable engine panel 10m, type B

Flexible engine mounts

Craftsman Marine flexible engine mounts absorb engine vibrations. The new CM type 9 and 10 are extra flexible to absorb more vibrations in light boats that would otherwise be transferred to the hull. Especially when used in combination with our new Vector Drive (see page 44).

Type		Article code	Stud	Hole spacing	Max. load	Stiffness
CM type 2		AA.200.90018	M16 fine	100 mm	45 kg	45 shore
CM type 3		AA.300.90018	M16 fine	100 mm	35 kg	45 shore
CM type 4		AA.300.90019	M16 fine	100 mm	45 kg	55 shore
CM type 5		AA.400.90018	M16 fine	100 mm	50 kg	50 shore
CM type 6		AA.400.90019	M16 fine	100 mm	75 kg	60 shore
CM type 7		AA.480.90018	M18 fine	138 mm	100 kg	45 shore
CM type 8		AA.480.90017	M18 fine	138 mm	150 kg	55 shore
CM type 9		AA.300.90017	M16 fine	174 mm	40 kg	40 shore
CM type 10		AA.400.90017	M16 fine	174 mm	70 kg	50 shore
CM Type 11		AA.500.90018	M20 fine	138 mm	200 kg	45 shore
CM Type 12		AA.500.90019	M20 fine	138 mm	200 kg	55 shore

CRAFTSMAN MARINE SPARE PARTS

The Craftsman Marine special service kit, for the most essential spare parts.

Our dealers are glad to assist you in selecting the parts you require. They will be pleased to carry out any specialist fittings you might need.

Our dealers will also make sure that all service jobs are neatly recorded in your maintenance and service manual which you receive together with your Craftsman Marine engine.

This way you will have a clear and accurate record of all maintenance jobs that have been done on your engine.

We have collected the most essential spare parts for you in a special service kit. Here you will find an oil and fuel filter, a V-belt and an impeller.

MAINTENANCE TIP:
We recommend that you, as a boat owner, store at least this kit on board, as well as the required tools for replacement fitting.

SERVICE KIT CM2.16 & CM3.27
AA.200.90054

SERVICE KIT CM4.42
AA.400.90006

SERVICE KIT CM4.65 & CM4.80
AA.480.90010

SERVICE KIT CM4.150, CM4.180 & CM4.210
AA.500.90002

SAILDRIVE FOR YOUR ENGINE

A Craftsman Marine saildrive is a thoroughly reliable means of propulsion, designed for easy control and minimal service.

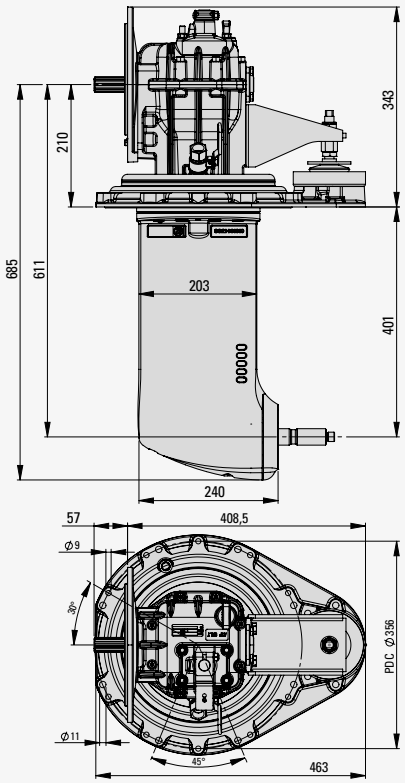
MAINTENANCE TIP:
Do not use copper containing anti-fouling to protect the saildrive, correct any scratches on the protective coating and replace the anode when it has dissolved by more than 50%.

SAILDRIVE SD10
AJ.010.21022

SAILDRIVE SD12
AJ.010.22025

The assets and advantages of a Craftsman Marine saildrive:

- Dual sealing diaphragm with water indicator for maximum security
- Forward and backward installation are both possible
- Easy and simple installation, as well as very few vibrations, compared with a conventional shaft assembly
- A completely dry system. No water lubricated shaft.
- High efficiency, on account of the thrust power running parallel with the propulsion direction
- Water inlet positioned at a low level prevents pollution of the cooling system
- No alignment whatsoever required
- Suitable for twin engine installations



	SD10	SD12
Gear ratio:	2.23:1	2.49:1
Weight:	40 kg	40 kg
Input power capacity:	67hp (@3200rpm) - 75hp (@3600rpm)	82hp (@3200rpm) - 92hp (@3600rpm)

More and more yacht builders install a saildrive

Unlike a conventional shaft assembly, a saildrive does not require any alignment to ensure good efficiency and fewer vibrations. The fact that the thrust power is in the same sphere as the direction of the boat ensures an efficient propulsion mode.

A saildrive is utterly reliable, requires very little maintenance and can be equipped with a large selection of fixed or folding propellers. Contrary to older sail drive models, the Craftsman Marine saildrive features a dual sealing diaphragm, ensuring that the risk of leakage is reduced to an absolute minimum. Should the outside diaphragm become damaged for any reason, the inside diaphragm will keep the boat completely dry. A water indicator provides an early warning against possible leakage, in a convenient manner.

Because of the low positioning of the cooling water openings, mostly clean water will be taken in. Even so, the use of a Craftsman Marine water strainer (AG.010.20019) is also recommended with this saildrive. The water flow is then easily visible and the risk of clogging in the cooling water circuit is avoided.

By installing a saildrive, positioning of the engine becomes much more flexible. When required, the engine can be installed behind the saildrive to make optimum use of available space.

In the case of e.g. a catamaran, the saildrive can also be supplied with a reversed reduction gear, so that a left-handed and a right-handed propeller can be fitted.

In order to facilitate the installation in an optimal way, Craftsman Marine offers a special universal foundation to be bonded into the boat.

FOUNDATION FOR CM2.16, CM3.27 & CM4.42
AJ.010.20000

FOUNDATION FOR CM4.65 & CM4.80
AJ.010.20010

CLEAR SKIES OR MISTY WATERS, YOU CAN ALWAYS RELY ON OUR PRODUCTS TO GET YOU WHERE YOU WANT TO GO!

Photo by Goos Watersport (The Netherlands)
Boat: Espevaer 22-open
Engine: CM3.27

CRAFTSMAN MARINE SOUNDLOCK

Craftsman Marine has developed a totally new concept for its exhaust assemblies, resulting in optimal noise reduction and drastically reduced installation time.

For hoses see page 114

Exhaust connection

Craftsman Marine offers **polished stainless steel** and composite exhaust connections with a **polished high-gloss stainless steel ring**, which also covers the screws. The angled exhaust connections make it easy to use the exhaust hose as a goose neck.

TIP!

An engine with an indirect cooling system (with heat exchanger) itself can run "dry" for a couple of minutes, without raw water cooling. But the components of the exhaust system can most certainly NOT! The impeller of the raw cooling water pump will quickly become damaged if forced to run dry. Therefore, before starting the engine, always make sure that the raw water seacock is opened.



	Angled	Straight	Stainless steel
ø30	AC.050.25530	-	-
ø40	AC.050.25540	AC.050.20040	AC.050.21040
ø45	-	AC.050.20045	AC.050.21045
ø50	AC.050.25550	AC.050.20050	AC.050.21050
ø60	AC.050.25560	AC.050.20060	AC.050.21060
ø76	AC.050.25576	AC.050.20076	AC.050.21076
ø90	-	-	AC.050.21090
ø100	-	-	AC.050.21100

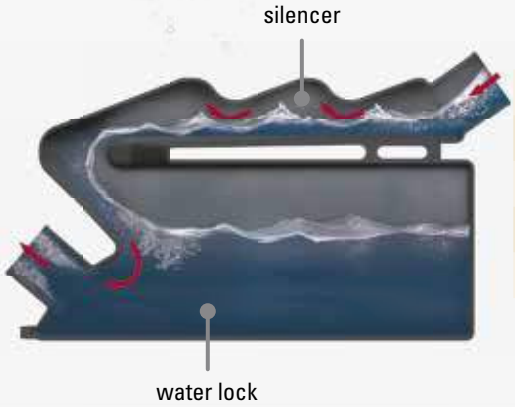
Most engine installations feature a wet exhaust system

When using a wet exhaust system, the gases from the engine are mixed with raw cooling water from the heat exchanger. The lower temperature in the exhaust not only makes the use of synthetic materials possible, but also reduces the sound level. In order to reduce the noise level even further, an additional silencer may be installed. In addition to a silencer, a proper assembly also needs a water lock.
The function of a water lock is to collect the cooling water when the engine is stopped, so that the water cannot flow back into the engine.

In order to simplify the rather complicated engine installation, Craftsman Marine has combined the silencer and the water lock in one single unit, called the Soundlock. The result is: lower costs and less installation time, while the unit also takes up less space on board. Mounting materials are included.

Drain plug from 76mm model and up.

Patented design combines water lock and silencer in one unique product



	30/40MM	50/60MM	76MM	90/100MM
Article code:	AC.010.200xx *	AC.010.200xx *	AC.010.20076	AC.010.20090
Connection exhaust hose:	ø30 / ø40	ø50 / ø60	ø76	ø90 / ø100
Material:	Synthetic	Synthetic	Synthetic	Synthetic
Reservoir volume:	2.6 L	7.0 L	17 L	23 L
Dimensions (mm):	410 x 110 x 190	530 x 150 x 240	620 x 190 x 360	630 x 210 x 395

** Must be replaced by the desired hose diameter e.g. 40 (for 40 mm).*

CRAFTSMAN MARINE PROPELLER SHAFT ASSEMBLIES

Especially designed for minimal maintenance and a long lifespan.

In order to make full use of the power of our engines, Craftsman Marine offers a large variety of essential "around the engine" components. One of the most important parts thereof is the propeller shaft assembly.

Craftsman Marine propeller shafts are made of seawater-resistant materials and machined with the utmost precision, to ensure both a simple installation procedure and trouble-free use of your boat.

Stern tubes

Made of seawater-resistant brass, featuring a cutlass bearing at one end. In order to replace the outside bearing in an effortless manner, the tube is provided with two slits. **Available in lengths from 500 to 2500mm.**

Article code	For shaft (mm)	Outside diameter (mm)
AD.020.225xx	ø25	ø40
AD.020.230xx	ø30	ø45
AD.020.235xx	ø35	ø55
AD.020.240xx	ø40	ø60

Article code

A	D	.	0	2	0	.	2	D		L	

D For shaft diameter

25	25 mm
30	30 mm
35	35 mm
40	40 mm

L Length

05	0.50 mtr
10	1.00 mtr
15	1.50 mtr
20	2.00 mtr
25	2.50 mtr

Propellers

Top class material casting, balancing, finishing and quality control are the elements that determine an excellent propeller.

Craftsman Marine propellers are made of manganese bronze, which makes them not only extremely strong, but also sufficiently flexible to cope with solid obstacles under water (logs, sandy bottom, etc.) And in the case of severe damage, the propeller can almost always be repaired and restored to its original state.

Your Craftsman Marine dealer will gladly advise you about the right propeller, in combination with your boat, engine and gearbox.

Propellers

Craftsman Marine propellers are machined with a tapered shaft hole (1:10) and a keyway. They are well balanced and finely machined at the edges, to prevent **"propeller singing"**. The 3-bladed propellers have a Fa/F ratio of 0.52 (52% blade surface) and the 4-bladed propellers 0.69 (69%).

For the dimensions of the shaft hole per propeller, please consult the table. Craftsman Marine offers the 4-bladed propellers in both left and right handed from stock. The 3-bladed propellers are available from stock only in right handed propellers (turning to the right).

OTHER SIZES AVAILABLE ON REQUEST

3-blade	Shaft diameter (mm)	Key (mm)	Hub length (mm)
12" - 15"	ø25	8	60
16" - 18"	ø30	8	80
19" - 21"	ø35	10	90

4-blade	Shaft diameter (mm)	Key (mm)	Hub length (mm)
21" - 22"	ø40	12	100

Other sizes and configurations are available on request.

You can easily compose the article code with the aid of the data below.

For instance:
The code for a propeller with 17"diameter and a pitch of 14" reads: AE.010.17142.
This propeller suits a ø30 mm propeller shaft.

Article code	B		D		P	
A E	0	0	.			2

B Blades	
1	3-blades
2	4-blades
D Diameter	
12	12"
up to	22"
P Pitch	
07	7"
up to	21"

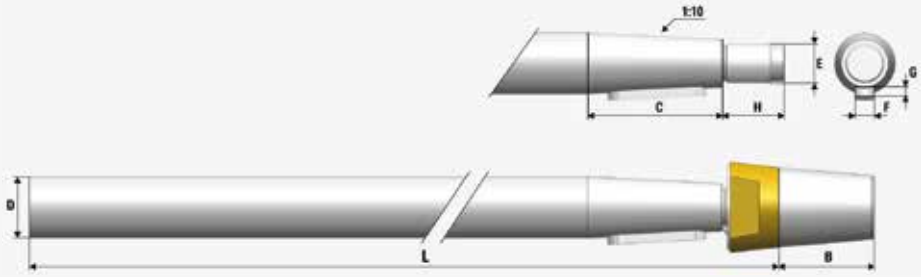
Propeller shafts

Craftsman Marine propeller shafts are made of stainless steel, type Duplex 1.4462.
Duplex 1.4462 is the combination of the best properties of all types of stainless steel. The result is an excellent resistance against pit corrosion and it is even **more rustproof than AISI 316**. Duplex steels are magnetic, a property that can be used to easily differentiate them from common austenitic grades of stainless.

The elastic limit (or: yield point), which is more than double that of AISI 316, a lower expansion coefficient and less tendency to torsion, make this the ideal basic material for a top-notch propeller shaft.

Craftsman Marine propeller shafts are carefully straightened and fine-machined, complete with taper 1:10, keyway and thread for the nut cap. Key, brass nut cap and zinc anode are included. **Available from 1 to 3 metres in 0.5 metre increments.**

Article code							D	L
A	D	.	0	1	0	.	2	



B (mm)	C (mm)	D (mm)	E	F (mm)	G (mm)	H (mm)
39	55	ø25	M16x1.5	8	3	25
52	75	ø30	M20x1.5	8	3	30
54	85	ø35	M24x2	10	3	35
64	95	ø40	M24x2	12	3	35

L = length in decimetre.

Anodes

To protect your installation against galvanic corrosion Craftsman Marine offers sacrificial anodes that fit on the propeller shaft.

Shaft	Zinc
ø25	AD.010.91025
ø30	AD.010.91030
ø35 / ø40	AD.010.91035

Mounting flanges

Made from seawater-resistant bronze, these flanges are perfect for mounting the Craftsman Marine stern tubes.

The outer flange incorporates a rubber O-ring to seal perfectly on the tube and keep your boat dry while keeping the possibility to replace the stern tube easily without the need of re-embedding the flange to the hull.

Article code*	For shaft (mm)	Stern tube (mm)
AD.040.22025	ø25	ø40
AD.040.22030	ø30	ø45
AD.040.22035	ø35	ø55
AD.040.22040	ø40	ø60

** Set includes inner and outer flanges.*

Flexible inner bearings

No leaking propeller shaft anymore! Doesn't that sound great? This is ensured by using a Crafsman Marine water-lubricated inner bearing.

Made of bearing bronze and provided with a dual Viton seal, which ensures a care-free propeller shaft sealing. Being almost maintenance-free the bearing takes care of a dry bilge for many, many years to come. Water lubrication by means of the exhaust water coming from the engine or through a separate water scoop. The unit is supplied complete with high quality silicone grease for the seals.

Article code	For shaft (mm)	Total Length (mm)
AD.040.21025	ø25	134
AD.040.21030	ø30	134
AD.040.21035	ø35	160
AD.040.21040	ø40	160

Flexible coupling GYRO FLEX

By fitting a flexible coupling between the gearbox and the propeller shaft, vibrations in the boat are largely eliminated. The flexible coupling ensures fewer vibrations and less noise to a great extent. The average noise reduction amounts to about 5 dBa, or up to 30%. Misalignment of the propeller shaft can also be compensated, with the result that gearbox and shaft bearing are less subjected to wear and tear.

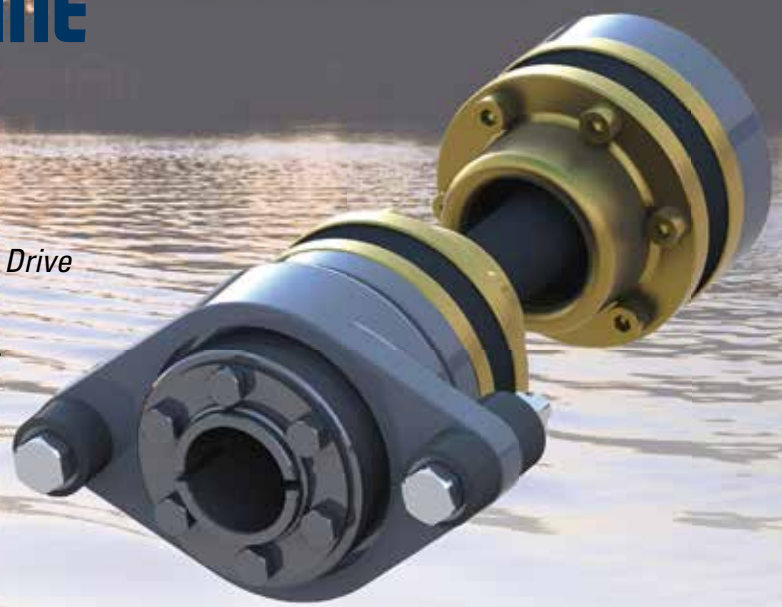
- High elasticity and free from lateral and axial clearance are the characteristics that dampen the engine vibrations. The effect is even more noticeable at lower engine revolutions.
- Contact noise is insulated to around 5 dBa, or up to 30%.
- The flexible coupling compensates small misalignments, especially angular misalignments, thus ensuring less wear and tear on the gearbox and the shaft bearings.
- The axial thrust of the propeller shaft, both forward and backwards, is transmitted to the thrust bearing inside the gearbox.
- The connection with the propeller shaft is made by a cylindrical clamping box, so that further machining of the propeller shaft is not required.
- The coupling is electrically insulating, therefore offering good protection against electrolysis.
- Maximum misalignment error of the propeller shaft is permitted up to 2°.

Temperatures are allowed between – 45 and + 80°C

Article code	For shaft	Diameter	For gearbox	Weight	Max. axial thrust	Torque (pleasure craft)	Torque (commercial vessels)
AI.030.22025	ø25	101 mm	ZF and PRM	2.1 kg	2.1 kN	280 Nm	175 Nm
AI.030.22030	ø30	101 mm	ZF and PRM	2.1 kg	2.1 kN	280 Nm	175 Nm
AI.030.24030	ø30	132 mm	ZF and PRM	3.9 kg	4.2 kN	560 Nm	350 Nm
AI.030.24035	ø35	132 mm	ZF and PRM	3.9 kg	4.2 kN	560 Nm	350 Nm

CRAFTSMAN MARINE VECTOR DRIVE

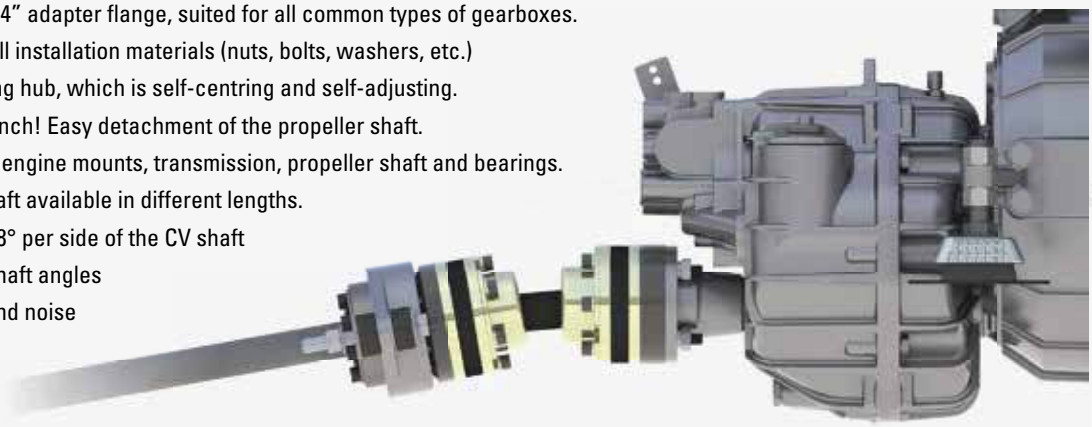
More comfort, less wear and maintenance. The installation of a Craftsman Marine Vector Drive results in an enormous reduction of engine vibrations and noise. Fewer vibrations always result in less wear, meaning lower maintenance cost and longer life of all the components in your drive train, including the engine itself.



Vector Drive

The vector drive is available for shaft torques up to 1100 Nm and thrust forces up to 11.5 kN.

- Maintenance free and no more need for yearly engine alignment
- Standard supplied with a 4" adapter flange, suited for all common types of gearboxes.
- Supplied complete with all installation materials (nuts, bolts, washers, etc.)
- Easily accessible clamping hub, which is self-centring and self-adjusting.
  No need for a torque wrench! Easy detachment of the propeller shaft.
- Less wear on the engine, engine mounts, transmission, propeller shaft and bearings.
- Constant velocity (CV) shaft available in different lengths.
- Permissible angles up to 8° per side of the CV shaft
- Compensates propeller shaft angles
- Reduction of vibrations and noise
- Easy installation



Type	Max. torque	Max. trust	Bearing Length (Lb)	Bearing Diameter (D)	Adapter Length (La)	Bolts (B)	Bolt Spacing (S)
600	600 Nm	6 kN	85 mm	114.5 mm	21 mm	M12	157 mm
800	800 Nm	8 kN	110 mm	148 mm	21 mm	M12	170 mm
1100	1100 Nm	11.5 kN	120 mm	148 mm	25 mm	M12	170 mm

How it works

When not using a Vector Drive, the propeller shaft is directly attached to the gearbox (whether using a flexible coupling or not. This has two undesirable results: the engine vibrations are transferred to the rest of the drive train and the rest of the boat. Secondly the thrust force generated by the propeller is transferred to the engine.

The drive is installed between the gearbox and inner bearing. The propeller shaft is fixed in the thrust bearing, which is attached to the hull to transfer the thrust force. The connection between the bearing and gearbox is made by the double headed constant velocity shaft. Both ends of this shaft can make an angle of up to 8 degrees, while transferring the rotation at a constant velocity.

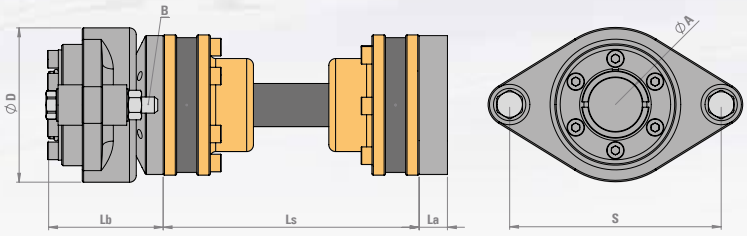
TIP!

When selecting the drive that suits your installation, use the torque on the propellor shaft. You can calculate this by multiplying the max. engine torque with the reduction of the gearbox.

For example: If your engine has a max. torque of 105 Nm and a gearbox with a reduction of 1.93 the propeller shaft torque is 105 * 1.93 = 202.65 Nm.

This results in the following:

- Alignment of engine and propeller shaft is less critical. Neither during installation nor during yearly maintenance.
- The engine can move independently of the propeller shaft. No vibrations are transferred.
- Because the flexible engine mounts no longer have to absorb the thrust force a softer type can be used. These softer mounts absorb more vibrations.



OTHER SIZES AVAILABLE ON REQUEST

Type	Shaft (mm) Diameter (A)	CV shaft length (Ls)				
		147 mm	167 mm	182 mm	197 mm	227 mm
600	25 mm	AI.020.26011	AI.020.26021		AI.020.26031	
	30 mm	AI.020.26012	AI.020.26022		AI.020.26032	
	35 mm	AI.020.26013	AI.020.26023		AI.020.26033	
	40 mm	AI.020.26014	AI.020.26024		AI.020.26034	
800	35 mm	AI.020.28011	AI.020.28021		AI.020.28031	
	40 mm	AI.020.28012	AI.020.28022		AI.020.28032	
	45 mm	AI.020.28013	AI.020.28023		AI.020.28033	
1100	35 mm			AI.020.21111		AI.020.21121
	40 mm			AI.020.21112		AI.020.21122
	45 mm			AI.020.21113		AI.020.21123

Sizes available on request.

Mechanical remote control QUADRA

To complete the beautifully finished range of engine panels and control panels, a mechanical engine remote control in matching style is available.

Single lever control of your engine and gearbox. Solidly engineered, it will provide smooth control for the life of your boat. Ball bearings minimise friction and corrosion-resistant materials make sure minimum maintenance is required. Can be mounted from the outside. Prepared for an optional neutral safety switch.

Especially with dual station controls, the optional neutral safety switch is essential. It prevents the engine from being started with the gears engaged. The switch can be easily implemented in a Craftsman Marine engine installation.

Neutral safety switch: AF.030.20000

Mechanical remote control CIRCA

Single lever remote control for side mounting. Available in a classic and modern design. Both types are fitted with a safety lock switch to prevent the gear from being engaged accidentally. The handle is made from durable plastic material.

Push-Pull cables

The Craftsman Marine push-pull cables ensure a smooth operation of engine and gearbox. They can be installed with a small bend radius. However, a bend radius as large as possible is recommended for lower friction and wear.

Travel: 90mm
Thread: 10-32 UNF

Article code	Length	Article code	Length
AF.020.20005	0.5 m	AF.020.20055	5.5 m
AF.020.20010	1.0 m	AF.020.20060	6.0 m
AF.020.20015	1.5 m	AF.020.20065	6.5 m
AF.020.20020	2.0 m	AF.020.20070	7.0 m
AF.020.20025	2.5 m	AF.020.20075	7.5 m
AF.020.20030	3.0 m	AF.020.20080	8.0 m
AF.020.20035	3.5 m	AF.020.20085	8.5 m
AF.020.20040	4.0 m	AF.020.20090	9.0 m
AF.020.20045	4.5 m	AF.020.20095	9.5 m
AF.020.20050	5.0 m	AF.020.20100	10.0 m

Single engine control VECTRA

Stainless steel look with high-quality chrome finish, to give your boat that classic look. There is no easier way to control your engine with the dual function lever. Operate your gear and throttle with a single lever. Standard fitted with a neutral safety switch to prevent start in gear (when connected) and engine warm-up feature. Top mounted.

AF.010.27000

Dual engine control VECTRA

The same stainless steel classic looks but now for twin engine control. These controls incorporate dual function levers, standard neutral safety switch and engine warm-up feature. It has never been easier to control both your engines with a single control.

AF.010.27010

Dual lever, single engine control MARINE

Each lever controls throttle or shift for the ultimate control of your engine with the time proven classic design. Top mounted. Recommended for long or difficult cable runs.

AF.010.27050

Dual Station unit

The Dual Station unit makes it possible to install a second remote control in your boat. Now you can control your engine outside when docking or inside your pilothouse when it's raining cats and dogs.

Craftsman Marine 4-cylinder engines are standard equipped for double throttle cables, so the Dual Station unit is only needed for the gearbox. It is best to mount the unit on the engine to accommodate vibrations. Made from corrosion resistant materials to minimise maintenance.

AF.030.25000

Craftsman Marine Benelux (The Netherlands)
Boat: Portland 780 Classic
Engine: CM4.42

Water strainers

Make sure that you have an efficient raw water flow to your engine, by including a water strainer in the suction line. Even small dirt particles can damage the impeller of the water pump, or are the cause of clogging-up in the cooling water channels in the longer run.

The water strainer must be fitted above the waterline, so that there is no water intrusion when the seacock is not closed while opening the filter.

Having a water strainer installed, this facilitates the adding of anti-freeze to the raw water circuit, when winterizing the engine. The filter element can easily be removed and cleaned and the transparent cover enables an efficient checking of the water flow.

Article code	Hose connections
AG.010.20019	ø19
AG.010.20025	ø25

Raw water strainer	side/side connection	side/bottom connection
Bronze 1"	AG.015.20025	AG.015.25025
Bronze 1" 1/4	AG.015.20032	AG.015.25032
Bronze 1" 1/2	AG.015.20038	AG.015.25038
Bronze 2"	AG.015.20051	AG.015.25051

Article code	Description	Connection pillars	Micron
AH.010.20008	Water separator 180ltr	8 mm	10
AH.010.90001	Water separator element	N/A	10

Fuel filter with water separator

A first-class fuel system contains a primary and a secondary fuel filter. The secondary filter on the engine is standard with each Craftsman Marine engine, but the primary filter – preferably incorporating a water separator – is often positioned in the fuel system as an extra. When this filter is not fitted, the secondary filter on the engine will be clogged up much sooner. Also the proper functioning of the fuel lift pump can be impeded by even small particles of dirt in the fuel.

Replace the filters in accordance with the prescribed service intervals. The cost of a filter is next to nothing, compared with the inconvenience of a stalled engine and the possible danger it entails.

CRAFTSMAN MARINE ENGINE PANELS

The engine control panel enables the skipper to control the engine and monitor the status of the engine at a glance.

ALFA 10E

AB.010.20000

IP66 PROTECTION ON FRONT SIDE

ALFA 20E

WHITE GAUGES

AB.020.20001

BLACK GAUGES

AB.020.20000

** Supplied with front seal, fasteners, dust cap for starter switch and 3 keys.*

ALFA 30E

BLACK GAUGES

AB.030.20000

WHITE GAUGES

AB.030.20001

High exhaust temperature

Low oil pressure in engine

Battery charging current

Sensor for backlight dimmer module (not for ALFA10)

Temperature inner cooling circuit

Pre-heating of the engine

Low oil pressure in the gearbox (optional)

ALFA 40E

AB.040.20000

Engine Panels

A wide range of panels are available with several types of gauges. With the ALFA40 panel and separate gauges you can even create your own dashboard by fitting the gauges in your own style. Each panel is machined out of a solid plate of aluminium and anodised for maximum protection against weather influences.

All our panels come completely pre-wired, including a multi-plug and splashproof cover for the ignition switch. Gauges with double glazing are used to prevent condensation inside; you will have a clear read-out at all times.

A well-considered beautiful design that suits every boat! Remember, the panel is the only item you will see after the installation of your engine.

ALFA20
Pre-wired cabling to replace the voltmeter with a temperature gauge.

Alarm indication with LED's on all panels, including acoustic alarm.
Replacement of alarm lights is history.

- Waterproof connectors IP67
- Rear cover, protection of electrical parts (not for ALFA40)
- Easy calibration of the tachometer with the supplied stylus
- Double connection on the Voltmeter to interconnect the backlight power supply of other gauges (fuel, water, waste water, etc.)
- All gauges are provided with backlight. When using the optional automatic dimmer module the backlight of these instruments will dim
- Tachometer with digital hour counter. Starts counting when the speed of the engine is above 400 rpm
- Ultraviolet sunlight resistant foil at the front
- Double glass, to prevent condensation
- Stainless steel screws
- Gasket for dashboard mounting
- Ignition switch with re-start protection
  Supplied with 3 keys. Dust cover included.
- Printed wiring board with conformal coating for protection against humidity

	ALFA 10E	ALFA 20E	ALFA 30E	ALFA 40E
Power supply:	12V DC	12V DC	12V DC	12V DC
Automatic dimmer:	-	Optional	Optional	Optional
Revolution/hour counter:	-	✓	✓	Optional
Voltmeter:	-	✓	✓	Optional
Temperature gauge:	-	Optional	✓	Optional
Oil pressure gauge:	-	-	✓	Optional
Automatic pre-heating:	Optional	Optional	Optional	Optional
Panel dimensions:	100 x 166 mm	198 x 166 mm	260 x 166 mm	150 x 50 mm
Built-in dimensions:	76 x 138 mm	175 x 143 mm	237 x 143 mm	102 x 34 mm
Built-in depth:	114 mm	114 mm	114 mm	114 mm

Create your personal instrument panel
Panel supplied with ignition switch, pre-wired cables for temperature gauge, oil pressure gauge, voltmeter and tachometer.

Easy plug-in of the connectors, all wires are labeled.
- Cableloom of 50cm in length
- Gauges are optional

*See **page 92** for more details.*

CRAFTSMAN MARINE THRUSTERS

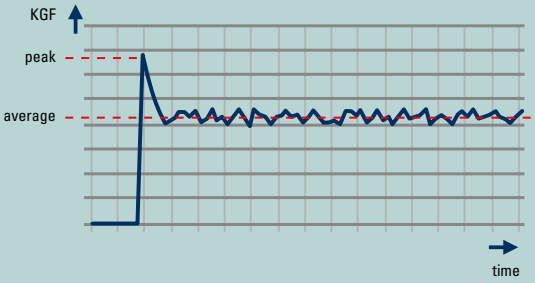
Bow and stern thrusters have become an important device when moving at low speed. It makes manoeuvring easier, safer and quicker.

Thrusters for pleasure craft have to be small, easy to install, reliable, efficient, long-lasting and easy to handle from the console.
The robust and versatile Craftsman Marine thrusters meet all these requirements.

Our thruster propellers are designed to achieve maximum thrust in a relatively small tunnel diameter. Made of maintenance-free synthetic material, these propellers are capable of running in both directions, producing thrust to port and starboard.

Depending on your hull structure, length and your vessel's water displacement, you can select the right thruster for your vessel.

Craftsman Marine specifies the average force of the thrusters, however the starting peak force (1 second) can easily be 60% higher.



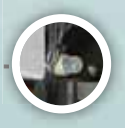
FAN for extra cooling
(except for 55 kgf)

Motor temperature
protection switch

Easily accessible battery
connection terminals

Protection cover for
electrical components

Oil expansion tank for models
125 kgf, 150 kgf and 170 kgf



5A circuit breaker for
the control panel

Waterproof and latch lock connector for
the control panel. A 100% guaranteed
connection also in case of vibrations.

Flexible coupling to
absorb vibrations

Supplied with 1mm and 2mm
gasket to centre the propeller
inside the tunnel

Brass tail piece

Optimised 7 blade propeller
for maximum thrust

Replaceable zinc or
aluminium anode

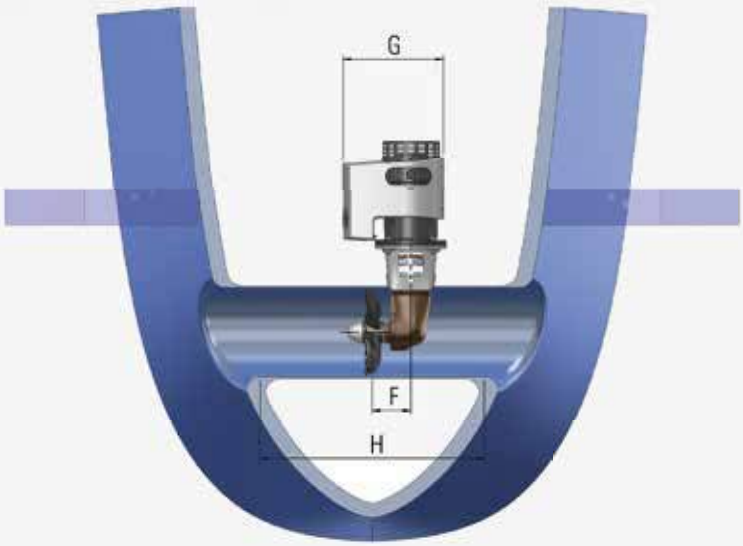
Thruster selection

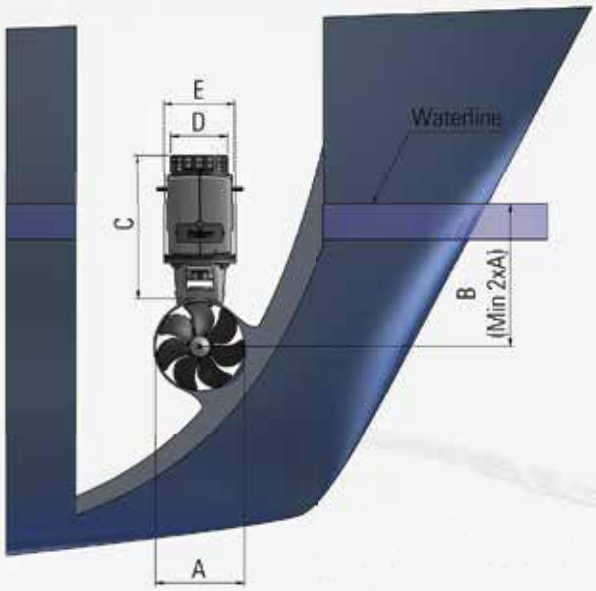
Choosing the right thruster for your boat is not easy. Many factors play a role when making a selection. Not only the length and height of the boat are important, but also the type of boat. A light displacement boat requires less force to manoeuvre than a heavy displacement boat and then there is the weather to take into account.
When the wind speed is twice as much, the wind force acting on the boat is four times as high. So when you always sail with your boat in perfect weather you can choose a smaller thruster, but when you want to be able to control your boat under all weather conditions you need to install a more powerful thruster.

Light displacement

Medium displacement

Heavy displacement





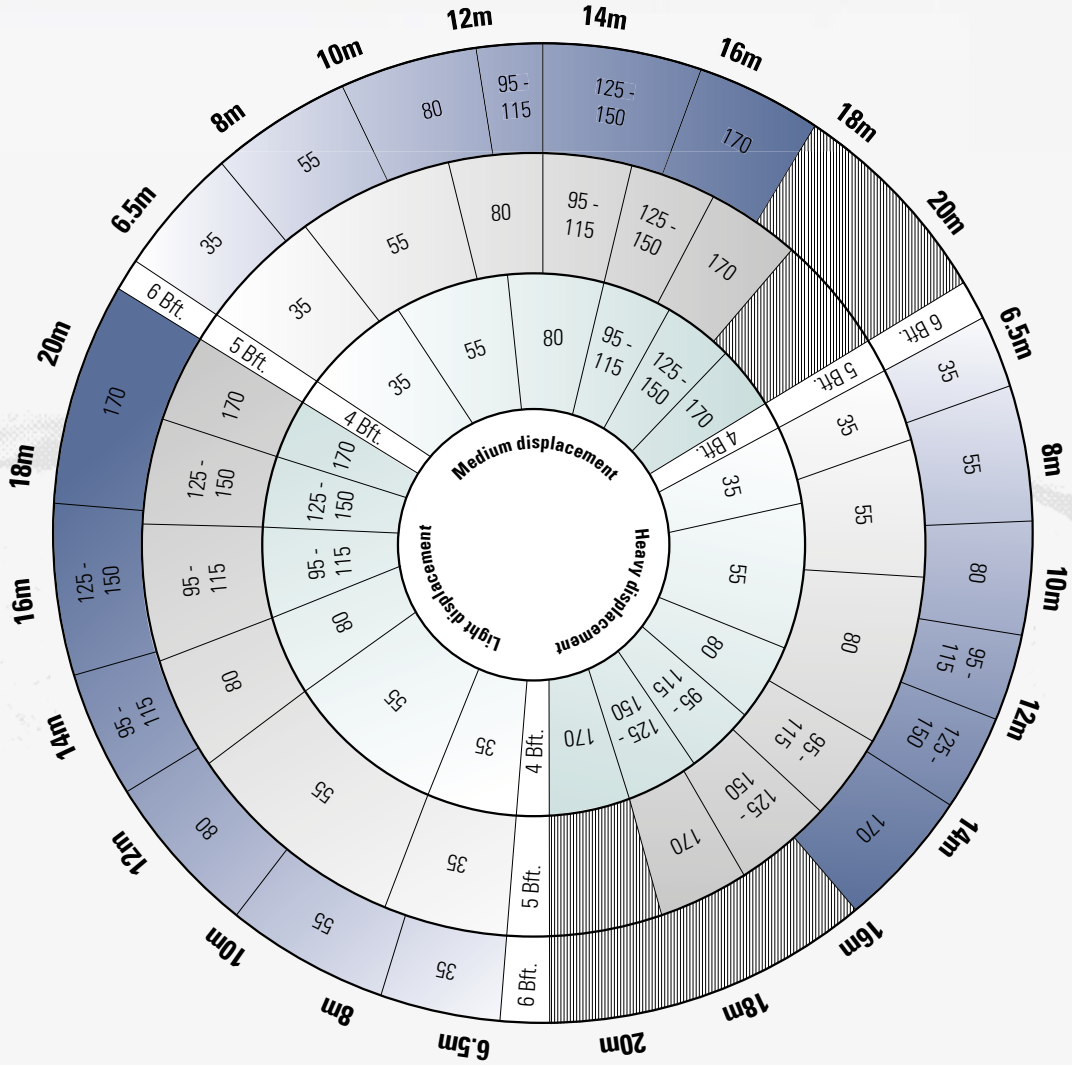
	Thruster 35kgf 12V	Thruster 55kgf 12V	Thruster 80kgf 12V	Thruster 80kgf 24V	Thruster 95kgf 12V	Thruster 115kgf 24V	Thruster 125kgf 12V	Thruster 150kgf 24V	Thruster 170kgf 24V
A	ø110 mm	ø150 mm	ø185 mm	ø185 mm	ø185 mm	ø185 mm	ø250 mm	ø250 mm	ø250 mm
B (min.)	220 mm	300 mm	370 mm	370 mm	370 mm	370 mm	500 mm	500 mm	500 mm
C	276 mm	303 mm	344 mm	307 mm	372 mm	372 mm	404 mm	404 mm	422 mm
D	ø114 mm	ø128 mm	ø126 mm	ø128 mm	ø160 mm	ø160 mm	ø160 mm	ø160 mm	ø172 mm
E	ø175 mm	ø175 mm	ø175 mm	ø175 mm	ø200 mm	ø200 mm	ø200 mm	ø200 mm	ø200 mm
F	68 mm	68 mm	68 mm	68 mm	68 mm	68 mm	115 mm	115 mm	115 mm
G	238 mm	238 mm	238 mm	294 mm	294 mm	294 mm	294 mm	294 mm	301 mm
H (min.)	110 mm	150 mm	185 mm	185 mm	185 mm	185 mm	250 mm	250 mm	250 mm

We have made a thruster selection guide to give you an idea of the thruster suitable for your boat.
Your dealer will assist you in selecting the correct thruster.

Follow the steps below to find your Craftsman Marine thruster:

Step 1.	**Select your type of boat. In the graph are three boat types: light displacement, medium displacement and heavy displacement.** *Rotate the graph so that your boat type is facing upward.*
Step 2.	**Select the length of your boat.**
Step 3.	**Choose under what wind conditions you want to be able to manoeuvre the boat. You can choose between 4bft, 5bft or 6bft (bft = beaufort).**

As you will see, the type of bowthruster can vary by as much as three types depending on the chosen weather conditions. Take into consideration that most of the times manoeuvring will be in a sheltered harbor. Manoeuvring with the wind on the bow will also require less force than wind from the side, so choose your berth carefully. For installation of the biggest thruster possible you not only require batteries with a higher capacity but also thicker cables and bigger fuses.



Optional equipment: *please see page 83 for a complete overview of remote controls.*

	THRUSTER 35kgf 12V	THRUSTER 55kgf 12V	THRUSTER 80kgf 12V
Article code:	BA.110.20012	BA.150.20012	BA.185.20012
Thrust force @ 10.5V:	35 kgf	55 kgf	80 kgf
Tunnel diameter:	110 mm	150 mm	185 mm
Power of electric motor:	2.4 kW (3.3 hp)	3.5 kW (4.8 hp)	4.0 kW (5.4 hp)
Motor type:	12V DC	12V DC	12V DC
Motor temperature switch:	✓	✓	✓
Operating time:	2min/hr	2min/hr	2min/hr
Current consumption:	340 A	400 A	420 A
Min. battery capacity: *	105 Ah	140 Ah	140 Ah
Main fuse slow-blow, type ANL: *	250 A	300 A	355 A
Battery cable, total length of plus and minus: *	0-9m / 50mm^2 9-13m / 70mm^2	0-6m / 50mm^2, 6-11m / 70mm^2 11-14m / 95mm^2	0-10m / 70mm^2 10-14m / 95mm^2
Connection battery cable:	M8	M10	M10
Weight:	12 kg	18 kg	19 kg

** The recommended battery capacity, and cable ratings are based on an operation time of 2 minutes. Short cable lengths in combination with a higher battery capacity may overheat the electromotor. Depending on the boat installation and the distance between thruster and battery, other ratings can be chosen.*

All thrusters are fitted with a zinc anode as standard. Aluminium anodes are available separately.

Optional equipment: *please see page 84 for a complete overview of the fuse and fuse holder.*

	THRUSTER 80kgf 24V	THRUSTER 95kgf 12V	THRUSTER 115kgf 24V
Article code:	BA.185.20024	BA.185.25012	BA.185.25024
Thrust force @ 10.5V:	80 kgf	95 kgf	115 kgf
Tunnel diameter:	185 mm	185 mm	185 mm
Power of electric motor:	4.0 kW (5.4 hp)	5.95 kW (8.1 hp)	5.95 kW (8.1 hp)
Motor type:	24V DC	12V DC	24V DC
Motor temperature switch:	✓	✓	✓
Operating time:	2min/hr	2min/hr	2min/hr
Current consumption:	240 A	640 A	320 A
Min. battery capacity: *	2*95 Ah	2*180 Ah	2*105 Ah
Main fuse slow-blow, type ANL: *	200 A	425 A	250 A
Battery cable, total length of plus and minus: *	0-19m / 35mm^2 19-27m / 50mm^2	0-9m / 95mm^2 9-12m / 120mm^2	0-20m / 50mm^2 20-28m / 70mm^2
Connection battery cable:	M10	M10	M10
Weight:	17 kg	25 kg	25 kg

Optional equipment: *please see page 86 for a complete overview of the battery main switches.*

	THRUSTER 125kgf 12V	THRUSTER 150kgf 24V	THRUSTER 170kgf 24V
Article code:	BA.250.20012	BA.250.20024	BA.250.25024
Thrust force @ 10.5V / 21V:	125 kgf	150 kgf	170 kgf
Tunnel diameter:	250 mm	250 mm	250 mm
Power of electric motor:	6.5 kW (8.8 hp)	6.5 kW (8.8 hp)	11.3 kW (15.4 hp)
Motor type:	12V DC	24V DC	24V DC
Motor temperature switch:	✓	✓	✓
Operating time:	2min/hr	2min/hr	2min/hr
Current consumption:	750 A	380 A	520 A
Min. battery capacity: *	2*230 Ah	2*105 Ah	2*180 Ah
Main fuse slow-blow, type ANL: *	500 A	250 A	355 A
Battery cable, total length of plus and minus: *	0-10m / 120mm^2 10-13m / 150mm^2	0-23m / 70mm^2 23-31m / 95mm^2	0-23m / 95mm^2 23-30m / 120mm^2
Connection battery cable:	M10	M10	M10
Weight:	33 kg	33 kg	38 kg

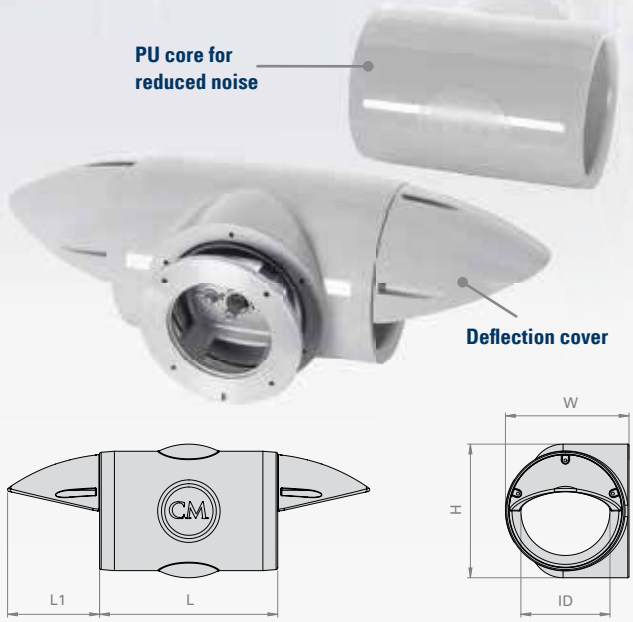
** The recommended battery capacity, and cable ratings are based on an operation time of 2 minutes. Short cable lengths in combination with a higher battery capacity may overheat the electromotor. Depending on the boat installation and the distance between thruster and battery, other ratings can be chosen.*

All thrusters are fitted with a zinc anode as standard. Aluminium anodes are available separately.

Stern Thruster tunnel deluxe

Craftsman Marine stern thruster tunnels are built from a glassfiber reinforced polyester filled with PU foam. This sandwich construction creates a great look and helps to reduce noise.

Shallow draft vessels might need an additional deflection kit to use the stern tunnel. These additional covers are mounted on the tunnel and minimise the amount of false air being sucked into the tunnel.



Article codes	
BB.010.20150	Stern thruster tunnel 150mm
BB.050.20150	Deflection covers 150mm
BB.010.20185	Stern thruster tunnel 185mm
BB.050.20185	Deflection covers 185mm

	150 mm	185 mm
H	225	230
ID	150	185
L	300	330
L1	155	190
W	208	236.5

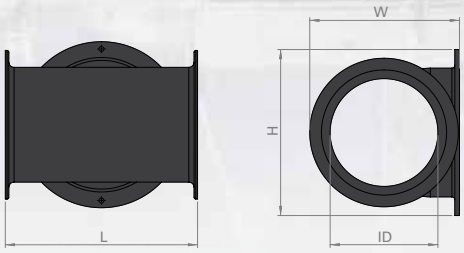
Anodes

The anodes are available in both **zinc** and **aluminium**. For boats that are mainly used on fresh water aluminium is advised, while zinc is best suited for saltwater applications.

Thruster	Aluminium	Zinc
35 kgf	BA.110.95007	BA.110.90007
55 kgf	BA.150.95007	BA.150.90007
80 / 95 / 115 kgf	BA.185.95007	BA.185.90007
125 / 150 / 170 kgf	BA.250.95007	BA.250.90007

Stern Thruster tunnel basic

When aestetics are less important the new more simple stern thruster tunnel is the choice for you. It is strong and functional but lacks the elegance that made the original Craftsman Marine stern thruster stand out.



	BB.010.25110	BB.010.25150	BB.020.25185	BB.020.25250
H	240	260	285	285
ID	110	150	185	250
L	280	300	330	450
W	180	221.5	242	322

GRP: Glassfiber reinforced polyester

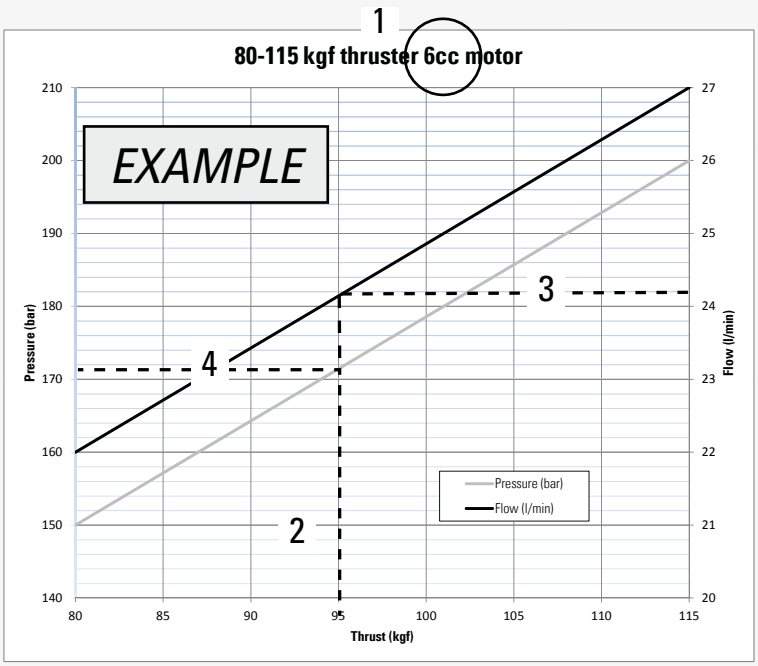
Thruster Tubes

Craftsman Marine supplies the required tunnels in various lengths and diameters. The diameter of the tunnel depends on the chosen thruster. Tubes are made from steel or GRV (glass fibre reinforced vinylester). Vinylester is equally strong as polyester but does not absorb water.

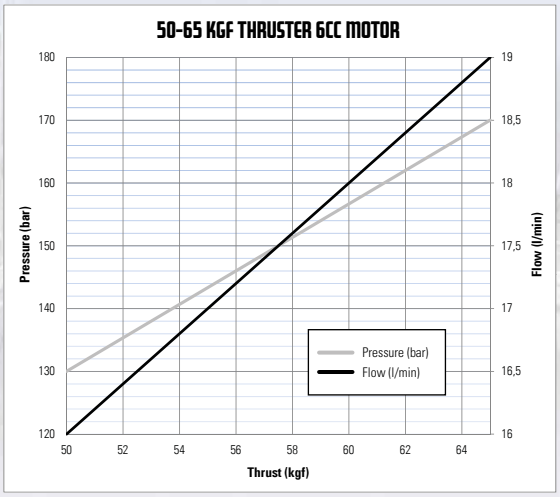
Article codes	
BG.110.21100	GRV tunnel 110mm L=1.000mm
BG.110.21300	GRV tunnel 110mm L=3.000mm
BG.150.21100	GRV tunnel 150mm L=1.000mm
BG.150.21300	GRV tunnel 150mm L=3.000mm
BG.185.21100	GRV tunnel 185mm L=1.000mm
BG.185.21300	GRV tunnel 185mm L=3.000mm
BG.250.21100	GRV tunnel 250mm L=1.000mm
BG.250.21150	GRV tunnel 250mm L=1.500mm
BG.110.22100	Steel tunnel 110mm L=1.000mm
BG.150.22100	Steel tunnel 150mm L=1.000mm
BG.185.22100	Steel tunnel 185mm L=1.000mm
BG.250.22100	Steel tunnel 250mm L=1.000mm

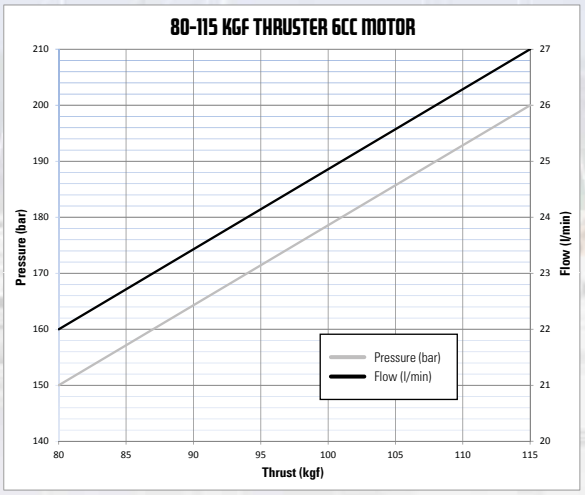
HYDRAULIC THRUSTERS FOR YOUR BOAT

Use the following performance curves to check the necessary flow and pressure for your hydraulic thruster.



1. Carefully check if the correct thruster is selected with the correct hydraulic motor.
2. Choose the desired thrust in the bottom of the graph and draw a vertical line upwards.
3. Where the vertical line intersects the black line, draw a horizontal line to the right and find the necessary flow.
4. Where the vertical line intersects the grey line, draw a horizontal line to the left and find the necessary pressure.





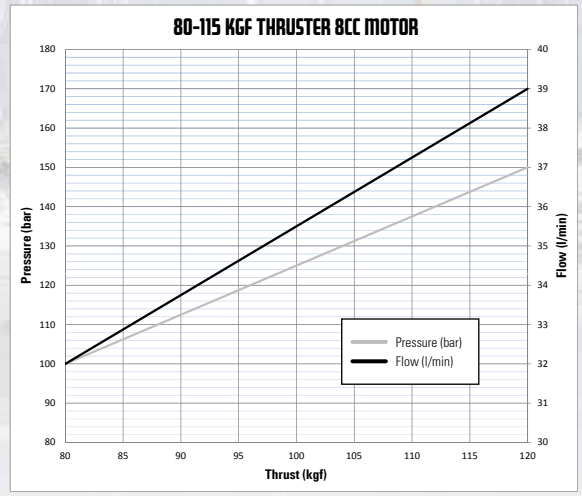
Optional equipment: *please see page 71 for a complete range of thruster panels.*

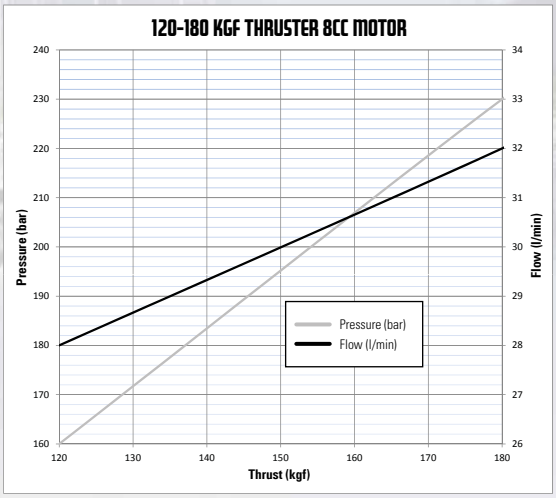
	HYDRAULIC THRUSTER 50-65 kgf 6cc
Article code:	BA.150.20006
Thrust:	50-65 kgf
Inside diameter of tunnel:	150 mm
Weight:	6.5 kg
Hydraulic motor:	6 cc/rev
Power:	3-3.8 kW
Pressure:	130-170 bar
Flow rate:	16-19 l/min
Hose connections:	G1/2
Drain:	G1/4

Optional equipment: *please see page 83 for a complete range of remote controls.*

	HYDRAULIC THRUSTER 80-115 kgf 6cc
Article code:	BA.185.20006
Thrust:	80-115 kgf
Inside diameter of tunnel:	185 mm
Weight:	8 kg
Hydraulic motor:	6 cc/rev
Power:	4-6 kW
Pressure:	150-200 bar
Flow rate:	22-27 l/min
Hose connections:	G1/2
Drain:	G1/4

All thrusters are fitted with a zinc anode as standard. Aluminium anodes are available separately.





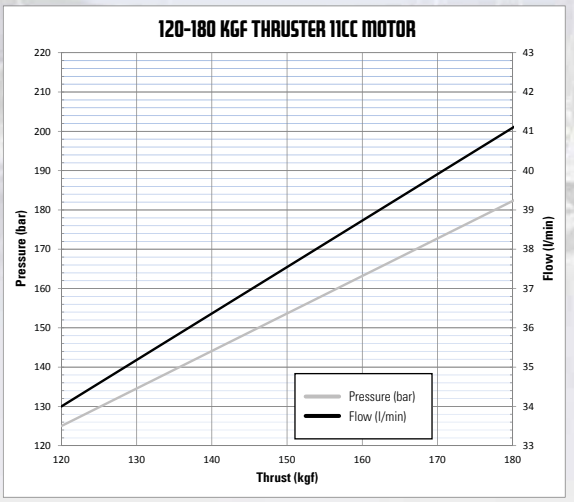
Optional equipment: *please see page 71 for a complete range of thruster panels.*

	HYDRAULIC THRUSTER 80-115 kgf 8cc
Article code:	BA.185.20008
Thrust:	80-115 kgf
Inside diameter of tunnel:	185 mm
Weight:	8 kg
Hydraulic motor:	8 cc/rev
Power:	4-6 kW
Pressure:	100-150 bar
Flow rate:	32-39 l/min
Hose connections:	G1/2
Drain:	G1/4

Optional equipment: *please see page 83 for a complete range of remote controls.*

	HYDRAULIC THRUSTER 120-180 kgf 8cc
Article code:	BA.250.20008
Thrust:	120-180 kgf
Inside diameter of tunnel:	250 mm
Weight:	12 kg
Hydraulic motor:	8.4 cc/rev
Power:	6.5-12 kW
Pressure:	160-230 bar
Flow rate:	28-32 l/min
Hose connections:	G1/2
Drain:	G1/4

All thrusters are fitted with a zinc anode as standard. Aluminium anodes are available separately.



Optional equipment: *please see page 71 for a complete range of thruster panels.*

	HYDRAULIC THRUSTER 120-180 kgf 11cc
Article code:	BA.250.20011
Thrust:	120-180 kgf
Inside diameter of tunnel:	250 mm
Weight:	12 kg
Hydraulic motor:	10.8 cc/rev
Power:	6.5-12 kW
Pressure:	125-180 bar
Flow rate:	34-41.5 l/min
Hose connections:	G1/2
Drain:	G1/4

Hydraulic thruster panels

When you are looking for a switch-joystick to control your hydraulic thruster, searchlight or any other application that requires just a simple switch, the Craftsman Marine joystick is the control for you. It matches the looks and feel of the microprocessor controlled thruster panels.

- Maximum switching current 10A
- One step switch joystick

All thrusters are fitted with a zinc anode as standard. Aluminium anodes are available separately.

CRAFTSMAN MARINE THRUSTER PANELS

Bow and stern thrusters make short handed manoeuvring a breeze.

The Craftsman Marine thruster control panels contribute to optimum ease of operation. It is just a push on the button, or to the joystick that triggers a range of complex movements in the simplest way.

In the case of only a bow thruster, a single panel is used. Dual panels serve the purpose of using both a bow and stern thruster. In that case, each thruster is operated by its own joystick. The top sides of the panels are waterproof in accordance with the protection classification IP66.

Craftsman Marine thruster control panels are milled from an aluminium plate and anodised to ensure perfect protection against all (marine) weather conditions.

ALFA 20T 81 x 85mm
BC.010.20002

ALFA 30T 81 x 136mm
BC.010.20003

ALFA 10T 81 x 85mm
BC.010.20001

Thruster panels

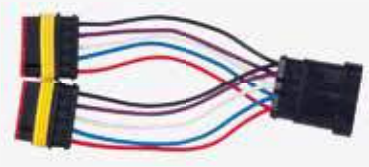
All panels work with a very wide voltage input of 10.5-28V DC. The panel has a dip-switch which makes it possible to change factory settings to your own wishes. This makes the panels suitable for all boat types. With the splitter cables a connection to a fly-bridge panel can be made very easily.

The following functions are controlled by a microprocessor:

- **Visual and audible alarms**
- **Automatic switch-off of the panel**
  - switch-off after 30 (factory setting), 60 or 120 minutes
  - don't switch-off automatically
- **Time delay of 1 second** when changing the direction switch from/to starboard and portside (factory setting). This function can be disabled.
- **Protection against continuous operation** This function can be disabled, but as extra the LED and audible alarm will indicate that the thruster is continuously enabled for a longer time than 2 minutes
- **Built-in temperature protection** Automatic switch-off of the thruster when the thruster motor temperature is too high. In case of a high temperature it is always possible to use the thruster in a "pulse mode" by releasing the push button or joystick and then activating it again; the thruster motor will be enabled for 3 seconds, each time until the temperature is cooled down
- **"Child protection"** to ensure that the panels are not switched on by accident
- **Wire break detection.** Visual alarm if the electrical connection to the thruster relay is broken

Extension cables for thrusters and anchor windlasses

The Craftsman Marine extension cables are available in lengths of 7m, 10m, 15m and 20m. It is possible to connect different cable lengths together. To protect the electrical installation against moisture, salt, water, dust or dirt, all our cables are fitted with waterproof connectors.



- Waterproof connectors IP67 rubber sealing
- Latch lever lock, to ensure a 100% tight connection, also in case of vibrations.
- With the splitter cable it is very easy to make the connections for fly-bridge panels

Article codes	
BF.010.20000	Fly-bridge splitter cable
BF.010.20007	Connection cable 7m
BF.010.20010	Connection cable 10m
BF.010.20015	Connection cable 15m
BF.010.20020	Connection cable 20m

Hydraulic thruster panels

When you are looking for a switch-joystick to control your hydraulic thruster, searchlight or any other application that requires just a simple switch, the Craftsman Marine joystick is the control for you. It matches the looks and feel of the microprocessor controlled thruster panels.

- Maximum switching current 10A
- One step switch joystick

CRAFTSMAN MARINE HYDRAULIC STEERING SYSTEMS

Craftsman Marine Hydraulic Steering Systems are easy to use and install, maintenance free and offer steering precision with no muscle required.

A hydraulic steering system has two main components: the pump at the helm and the cylinder, which moves the rudder. Turning the steering wheel pumps hydraulic fluid through the lines into the cylinder, either extending or retracting the cylinder rod.

Craftsman Marine hydraulic steering systems are suitable for twin rudder and/or dual station applications. Contact your local Craftsman Marine representative for assistance with selecting suitable components.

TIP!

The strength required to turn the wheel is proportional to the number of turns from lock to lock. The more turns, the less power is required. The number of turns is the ratio between the pump capacity and cylinder volume.

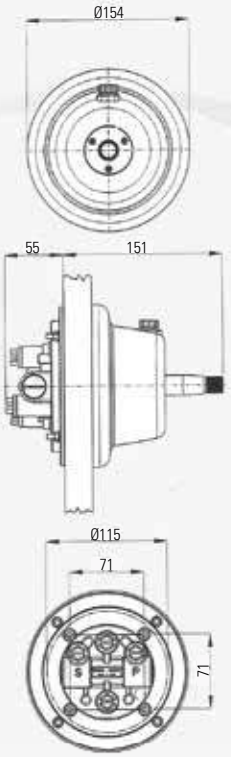
For example an installation with a 20cc pump and a 57cc cylinder requires 57/20 = 2.85 turns from lock to lock.

Steering pumps AVERIS, RETRO & ALEGRO

Pump features

- Ball bearing piston race
- Integral relief valve
- 3/4" conical stainless steel
- Built-in lock valve
- Available in half-flush, front or rear mounting

Article code	Displacement	Pistons	Weight	Max. Pressure	Installation
BK.010.20020	20	5	4.6 kg	50 bar	Half flush
BK.010.20028	28	7	4.8 kg	70 bar	Half flush
BK.010.20034	34	7	4.8 kg	70 bar	Half flush
BK.010.20039	39	7	4.8 kg	70 bar	Half flush
BK.020.20020	20	5	4.6 kg	50 bar	Rear
BK.020.20028	28	7	4.8 kg	70 bar	Rear
BK.020.20034	34	7	4.8 kg	70 bar	Rear
BK.020.20039	39	7	4.8 kg	70 bar	Rear
BK.030.20020	20	5	4.6 kg	50 bar	Front
BK.030.20028	28	7	4.8 kg	70 bar	Front
BK.030.20034	34	7	4.8 kg	70 bar	Front
BK.030.20039	39	7	4.8 kg	70 bar	Front

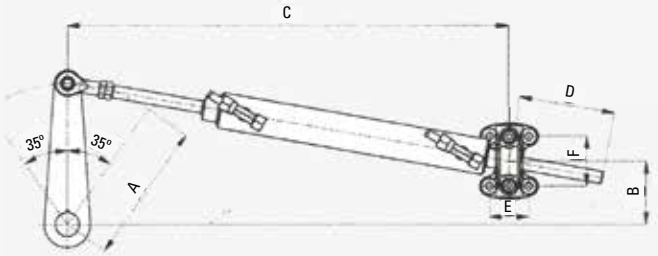


Steering cylinders MITTO

Cylinder features

- Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa
- Patented system
- 1/4" fittings
- Aluminium anodised liner
- Chromium plated steel stem

CE type examination in conformity with ISO 10592:1995



Article code	Diameter mm	Stroke mm	Output Kg	Shank mm	Vol. cc	MT Kgm	A mm	B mm	C mm	D mm	E mm	F mm
BL.010.20025	25	150	264	12	57	34	131	107	458	97	44	56
BL.010.20032	32	178	455	14	116	71	155	127	499	110	44	56
BL.010.20038	38	178	652	16	166	101	155	127	504	112	48	66
BL.010.20040	40	228	701	18	228	140	199	163	590	141	48	66

Steering wheel TRIVERE

The Craftsman Marine steering wheel is made from durable stainless steel. The rim is fitted with a rubber grip for safety as well as good looks.

- Rubber grip
- 350mm diameter

BM.010.20000

Accessories

Craftsman Marine offers a range of accessories to complete your steering system (for hoses see page 114).

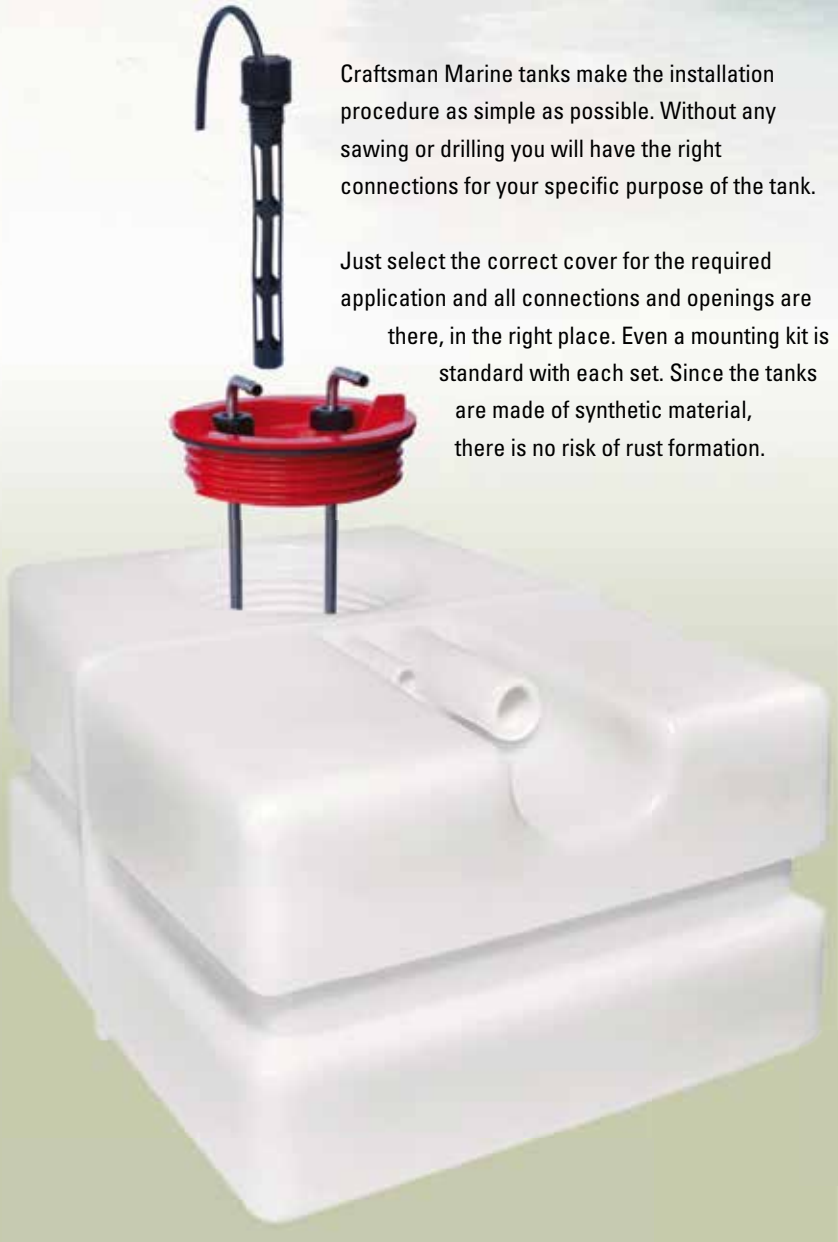
Article codes	
BM.020.20000	Hydraulic oil 1 ltr
BM.020.20010	Filling kit
BM.020.20030	T Union 10/8 ¼"
BM.020.20040	Elbow fitting 10/8 ¼"
BM.020.20050	Straight connector fitting 10/8 1/4"
BM.020.20060	Hose connector for nylon hose straight

PROVIDING RELIABLE PRODUCTS, THAT'S WHAT MAKES OUR ENGINE RUN!

Photo by Goos Watersport (The Netherlands)
Boat: Primeur
Engine: CM4.42

CRAFTSMAN MARINE STORAGE SOLUTIONS

"Modern and maintenance-free storage tanks for your boat."



Craftsman Marine tanks make the installation procedure as simple as possible. Without any sawing or drilling you will have the right connections for your specific purpose of the tank.

Just select the correct cover for the required application and all connections and openings are there, in the right place. Even a mounting kit is standard with each set. Since the tanks are made of synthetic material, there is no risk of rust formation.

When in use as a diesel fuel tank, condensation inside is absolutely minimal, compared to a metal fuel tank.

Owing to the large cover, it's easy and it takes little time to inspect and clean the inside of the tank. All Craftsman Marine tanks, whether used as diesel fuel tank or (waste) water tank, are certified for installation in boats that are built in accordance with the directives for pleasure craft 94/25/EC, revised by 2003/44/EC.

See page 97 for a complete overview of the tank sensors.

CRAFTSMAN MARINE TANK COVERS

Well-thought-out design, hard-wearing materials, no maintenance ... everything is readily prepared for care-free use.

TANK COVER WASTE WATER

CB.010.20010

TANK COVER POTABLE WATER 13MM

CB.010.20020

TANK COVER DIESEL FUEL 8MM

CB.010.20030

TANK COVER BLIND

CB.010.20040

The storage solutions offer you a very smart installation procedure. All our tanks are fitted with large covers and different connections. By simply choosing the correct tank cover for the required application, the right connections are immediately available.

All connections can be rotated 360 degrees and you have the choice between an ø8 mm connection for the fuel tank, a ø13 mm for the fresh water tank or a ø38 mm for the waste water tank. All covers are available with a level sensor. For the entire range of the Craftsman Marine fluid level sensors please see page 97.

CRAFTSMAN MARINE STORAGE TANKS

Craftsman Marine tanks are made of synthetic material, which makes them extremely strong and virtually indestructible.

By virtue of the excellent insulating properties, condensation in the tank is much less than in the case of steel or another metal and there is not the slightest risk of rust formation.

Easy cleaning of the tanks is ensured by the large inspection cover.

For deckfillers see page 116.

	TANK 33LTR	TANK 50LTR	TANK 65LTR	TANK 80LTR
Article code:	CA.010.20033	CA.010.20050	CA.010.20065	CA.010.20080
Net volume:	33 liter	50 liter	65 liter	80 liter
Filling hose connection:	ø38	ø38	ø38	ø38
Breather connection:	ø19	ø19	ø19	ø19
Weight:	4.1 kg	6.5 kg	7.3 kg	7.8 kg
Outside dimensions:	420 x 380 x 250 mm	600 x 380 x 250 mm	800 x 380 x 250 mm	1000 x 380 x 250 mm

Smell absorbers

Nasty smells from the diesel fuel tank or from the waste water tank may well spoil your boating pleasure.

The solution is simple: Each tank requires a ventilation (or: breather) opening. Just fit a Craftsman Marine smell absorber into the breather line, before it leaves the boat. No more bad smells in the cockpit and no more angry looks from the neighbours.

The filters are provided with an active carbon filter element. Naturally these are separately available and it is recommended to replace them before the start of the new boating season. The old elements can be disposed of in the regular garbage.

The filters are available for hose diameters of ø16, ø19 and ø25 mm ***(see page 114 for the hoses).***

ALSO AVAILABLE IN Ø 16 MM

REPLACEMENT FILTER

CF.010.90001

Article code	Description	Hose connections
CF.010.20016	Smell absorber 16mm waste water	16mm
CF.010.20019	Smell absorber 19mm waste water	19mm
CF.010.20025	Smell absorber 25mm waste water	25mm
CF.020.20016	Smell absorber 16mm diesel fuel	16mm
CF.020.20019	Smell absorber 19mm diesel fuel	19mm
CF.020.20025	Smell absorber 19mm diesel fuel	25mm
CF.010.90001	Spare element smell absorber	

CRAFTSMAN MARINE ELECTRONICS

"Attention to every detail."

Electronics are a basic necessity for modern vessels these days. Even the smallest boats have some kind of electrical system.
For boat owners rigged or low quality electronics can be an inconvenience.
High quality electronics are essential to keep your vessel operational, to keep you safe and ready for any kind of weather.

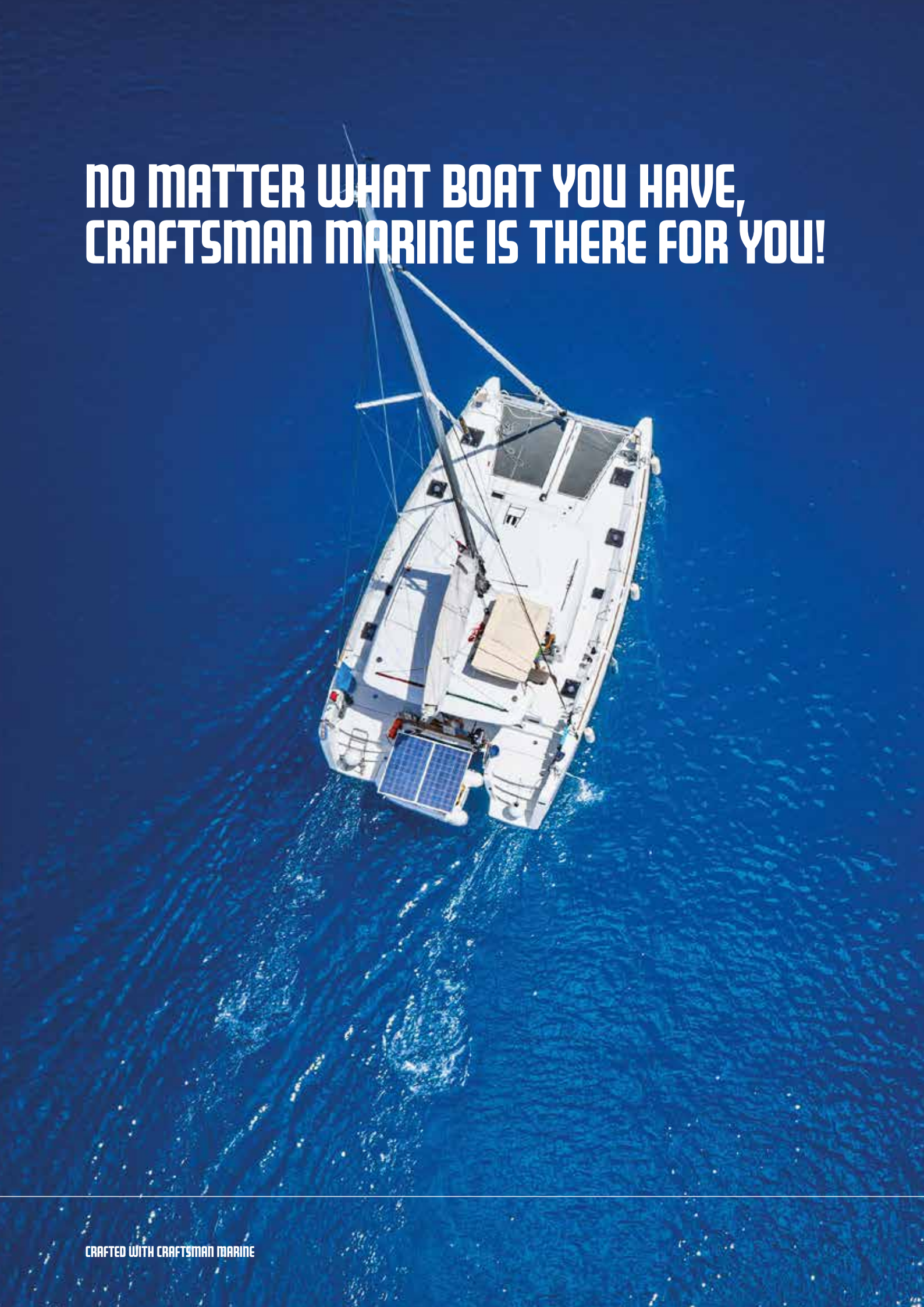
Electrical equipment on vessels must comply with relevant standards and regulations, must stand the test of time and must be protected with the right conformal coating to offer protection against all possible environmental conditions such as humidity and salty air.

All Craftsman Marine electrical components are developed with the greatest care. Every component and application is thoroughly tested and investigated on a number of quality requirements.

Craftsman Marine offers you a wide variety of electronic components such as batteries, fuse holders, main battery switches, cables, cable terminals and much more. Because we believe in giving attention to every detail, you can be sure all our electronic components are made of quality materials and are developed according to the latest marine standards.


CRAFTSMAN
MARINE POWER

NO MATTER WHAT BOAT YOU HAVE, CRAFTSMAN MARINE IS THERE FOR YOU!



CRAFTED WITH CRAFTSMAN MARINE

Wireless remote

The new wireless remote control by Craftsman Marine is one of a kind in pleasure craft. It utilises the 2.4 GHz ISM band and can be used for a multitude of devices. It gives you control over the operations of your choice.

Five different layouts are available for you to choose from, for your bowthruster, stern thruster or windlass. The Craftsman Marine remote control is a perfect addition to your thruster panel to give you even more flexibility. It is IP67 waterproof rated and floats when dropped overboard! Controlling your thruster or windlass has never been easier.

How it works

The wireless remote uses a constant changing frequency in the 2.4GHz range to get a stable communication without interference from engine noise, WiFi equipment or any other wireless equipment.

Multiple transmitters can be used with a single receiver. The transmitters and receivers use a unique 32 bit code, named Electronic Serial Number (ESN). After pairing the transmitter with the receiver it is impossible to get interference from your neighbour with the same system. The range exceeds 20 metres. The transmitter uses a replaceable button cell that will last for several years with regular use.

Specifications	
Operating voltage receiver	8-30V DC
IP rating transmitter	IP67
Dimensions transmitter	40 x 120 x 15mm
Range	max. 150m
Battery life transmitter	> 1 year
Approvals	CE and ETSI (Europe) IC and FCC (USA)

Fuse holder

Developed in-house and offers many advantages. During the development stage, extensive research is done in regard to application area, power range, type of material, easy installation and use of the fuse holder. With the Craftsman Marine fuse holder you can rely on a quick and easy installation and an excellent performance.

BUS BAR DD.045.20000

Article codes	
DD.030.20000	Fuse holder incl. cover, 500A
DD.040.20040	ANL fuse 40A
DD.040.20050	ANL fuse 50A
DD.040.20063	ANL fuse 63A
DD.040.20080	ANL fuse 80A
DD.040.20100	ANL fuse 100A
DD.040.20125	ANL fuse 125A
DD.040.20160	ANL fuse 160A
DD.040.20200	ANL fuse 200A
DD.040.20250	ANL fuse 250A
DD.040.20300	ANL fuse 300A
DD.040.20355	ANL fuse 355A
DD.040.20425	ANL fuse 425A
DD.040.20500	ANL fuse 500A
DD.045.20000	Copper bus bar 500A

Specifications of Fuse	
Maximum voltage:	80V DC
Type of Fuse:	ANL "slow-blow", DIN 43560/1 Closed housing with glass inspection window
Terminals:	For M10 bolts
Material:	40A - 80A: zinc 100A - 500A: nickel plated copper

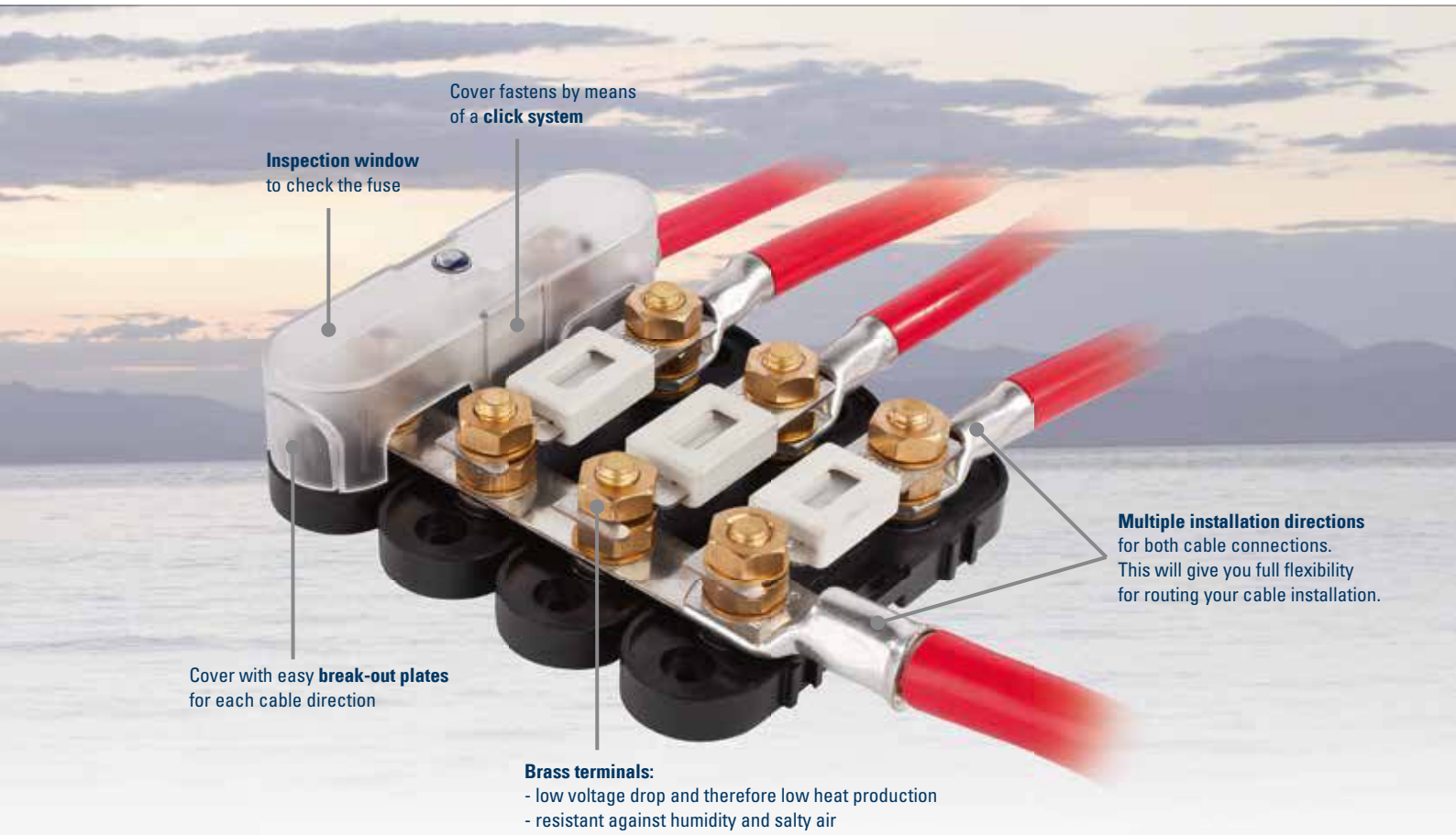
Specifications of Fuse Holder	
Maximum voltage:	48V DC
Type of Fuse:	ANL "slow-blow", maximum 500A
Terminals:	M10, bolts and nuts Maximum torque 11Nm
Dimension:	125 x 35 x 42mm

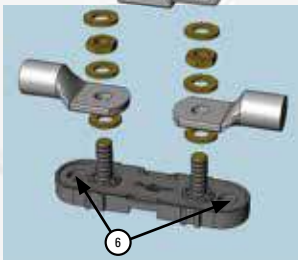
When choosing the fuse amperage, please observe that the fuse is of the "slow-blow" type.

Example:
Fuse amperage = 80A
Load = 120A = 150%: time to trip is longer than 1 hour
Load = 200A = 250%: time to trip is between 0.8-10 seconds

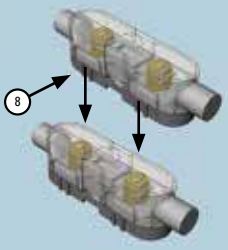
Trip Characteristics:

Load	Trip time (blow-out time)
150%	Longer than 1 hour
180%	Less than 1 hour
220%	Maximum 60 seconds
250%	0.8-10 seconds
400%	0.2-2 seconds

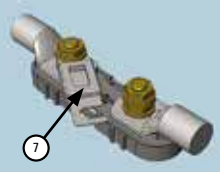




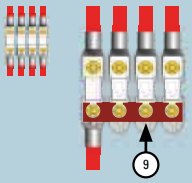
Stable and reliable installation, owing to the installation holes on the outer side, which prevent rotation of the base plate when tightening the connection terminals.



Stacking of fuse holders, thanks to slide system in the sides.



Quick and easy **replacement of the fuse**, without removing the nuts and the cables.



Bus bar, simplifies your installation and lowers the cost thereof.

Battery main switches

A battery main switch by Craftsman Marine is a "must" for each electrical installation on board. With the use of one of these three models, even the most complicated electrical installation is perfectly secured. All components of these switches have been extensively tested, giving much attention to the materials to be used, such as the massive copper switch contacts and the sturdy M10 connections, which enable a high peak load.
Duplicate keys for the 100A and 250A models are available.

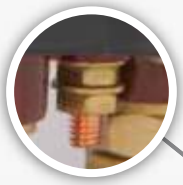
- **Copper switch contacts** and connection bolts, brass nuts:
  - low voltage drop and therefore a minimum of heat development
  - accepts high peak loads; see table with specifications
  - resistant against humid surroundings and salty air
- **Rubber dust cover** for the 100A and 250A models.
  Protects the innards of the switch when the key is removed.
- **Removable key** in the "off" position for the 100A en 250A models.
  Additional keys are available for these models. A dust cover is integrated in the key.
- Extra **thick base nut**.
  Easily blocked by means of an open-ended spanner.
  This will prevent the connection bolts from turning when the outer nuts are being secured.

BATTERY MAIN SWITCH 100A

DD.050.20100

BATTERY MAIN SWITCH 250A

DD.050.20250



Auxiliary contact
in the 600A type

BATTERY MAIN SWITCH 600A

DD.050.20600

KEY AND DUST COVER FOR 100A SWITCH

DD.050.90100

KEY AND DUST COVER FOR 250A SWITCH

DD.050.90250

	Battery main switch 100A	Battery main switch 250A	Battery main switch 600A
Load			
continuous	100A	250A	600A
5 seconds	500A	2500A	4000A
Auxiliary contact	-	-	5A, single pole
Maximum voltage	24V DC	24V DC	24V DC
Removable key	yes	yes	no
Additional key	yes	yes	no
Type of contact	Single pole, 2 positions, "on" and "off".	Single pole, 2 positions, "on" and "off".	Single pole, 2 positions, "on" and "off".
Battery connections	M10. Copper bolts, brass nuts Maximum torque 11Nm	M10. Copper bolts, brass nuts Maximum torque 11Nm	M10. Copper bolts, brass nuts Maximum torque 11Nm
Protection	IP65	IP65	IP65

Battery cables

- Very flexible cables
- Double insulated (size 16mm² to 120mm²)
- Oil resistant
- RCD 2003/44/EC and ISO1013300:2000 certified

Article codes			
DD.070.22063	Twinflex cable 2 x 6mm²	**DD.070.20501**	Battery cable 50mm² black
DD.070.22103	Twinflex cable 2 x 10mm²	**DD.070.20502**	Battery cable 50mm² red
DD.070.20161	Battery cable 16mm² black	**DD.070.20701**	Battery cable 70mm² black
DD.070.20162	Battery cable 16mm² red	**DD.070.20702**	Battery cable 70mm² red
DD.070.20251	Battery cable 25mm² black	**DD.070.20951**	Battery cable 95mm² black
DD.070.20252	Battery cable 25mm² red	**DD.070.20952**	Battery cable 95mm² red
DD.070.20351	Battery cable 35mm² black	**DD.070.21201**	Battery cable 120mm² black
DD.070.20352	Battery cable 35mm² red	**DD.070.21202**	Battery cable 120mm² red

Batteries

Craftsman Marine batteries are designed for use in pleasure craft or any comparable application.

- VRLA (valve regulated lead acid), no filling with water required
- Maintenance free and completely sealed
- Lead-calcium battery plates
- Low self-discharge
- Resistance against vibrations and shocks
- Deep cycle (140Ah, 180Ah, and 230Ah)
- Centred cell connections improve the distribution of the charging current

Type	Product code	Voltage	Capacity C20	Cold Cranking amps CCA (EN)	Weight (kg)	Dimension WxDxH (mm)
VMF60L	DE.010.20060	12V	60Ah	470A	14.2	242 x 175 x 175
VMF70L	DE.010.20070	12V	70Ah	680A	16.7	278 x 175 x 175
VMF95L	DE.010.20095	12V	95Ah	720A	21.3	353 x 175 x 190
VMF105L	DE.010.20105	12V	105Ah	680A	22.6	330 x 172 x 242
VMF140L	DE.010.20140	12V	140Ah	800A	39.0	513 x 189 x 223
VMF180L	DE.010.20180	12V	180Ah	1000A	46.3	513 x 189 x 223
VMF230L	DE.010.20230	12V	230Ah	1150A	59.5	518 x 276 x 242

PASSION FOR PRODUCTS THAT STAND THE TEST OF TIME AND ALL WEATHER CONDITIONS!

CRAFTED WITH CRAFTSMAN MARINE

Cable and battery terminals

These Craftsman Marine terminals, ostensibly a minor item, have attained full focus from our designing engineers. As said, it seems to be a simple product, but it is in actual fact a very important part of your electrical installation.

These connections form part of a proper electrical conduction. A bad connection may cause too great a drop in voltage, generate too much heat, resulting in molten cables or even fire on board. It is therefore of the utmost importance to provide your electrical installation with the right terminals.

DD.060.21010

- Full-brass battery terminal including the M10 integrated bolt, tin plated
- Supplied as a set of plus and minus terminals
- For cables up to 150mm²

DD.060.22010

- Full-brass battery terminal tin plated
- Supplied as a set of plus and minus terminals
- For cables from 10 to 70mm²

DD.060.23010

- Full-brass battery terminal tin plated
- Supplied as a set of plus and minus terminals
- For cables from 10 to 70mm²
- Two cable inputs

Cable terminals

1. **Massive copper, tin plated** by means of electrolysis:
   - minimal voltage drop and heat generation
   - resistant against humid surroundings and salty air
2. Sleeve provided with a **cable guide**
   - easy cable entry owing to the enlarged opening
3. **Inspection opening**
   To verify that the cable is entirely inserted
4. **Extra long sleeve**
   Provides for a larger contact surface and therefore a lower transfer resistance, minimal voltage drop and minimal heat generation

PERFECT ELECTRICAL CONDUCTION FOR LOW VOLTAGE DROP!

Article codes					
DD.010.20606	Cable terminal 06mm² M6	**DD.010.22510**	Cable terminal 25mm² M10	**DD.010.27008**	Cable terminal 70mm² M8
DD.010.20608	Cable terminal 06mm² M8	**DD.010.23506**	Cable terminal 35mm² M6	**DD.010.27010**	Cable terminal 70mm² M10
DD.010.21006	Cable terminal 10mm² M6	**DD.010.23508**	Cable terminal 35mm² M8	**DD.010.29508**	Cable terminal 95mm² M8
DD.010.21008	Cable terminal 10mm² M8	**DD.010.23510**	Cable terminal 35mm² M10	**DD.010.29510**	Cable terminal 95mm² M10
DD.010.21010	Cable terminal 10mm² M10	**DD.010.25008**	Cable terminal 50mm² M8	**DD.010.21201**	Cable terminal 120mm² M10
DD.010.22508	Cable terminal 25mm² M8	**DD.010.25010**	Cable terminal 50mm² M10	**DD.010.21501**	Cable terminal 150mm² M10

GAUGES AND ACCESSORIES

Highly tested quality components, for endurance and longevity.

Gauges are essential to give the right information at the right time. And yes, even gauges should look good and act accordingly. Designing and developing gauges and indicators goes beyond mere aesthetics.

First and foremost, gauges need to be resistant against the worst environmental conditions such as salty air, high humidity, variations in temperature, vibrations and UV-light. Second, gauges must be easy to install and must be finished with the appropriate coatings.

Craftsman Marine offers a wide variety of gauges for any marine application. All our gauges are tested in certified laboratories with high-quality test equipment. This guarantees the endurance and longevity of these products as well as their safety and functionality.

** Black or white standard supply with the gauge.*

CHROME BEZEL FOR 52mm GAUGE
DB.010.20052

CHROME BEZEL FOR 85mm GAUGE
DB.010.20085

General features for all Craftsman Marine gauges

- Double lens *, no condensation. Lens is replaceable. IP67 protection on the front side
- Panel mount or flush
- Easy-to-change bezel
  Available in black, white or chrome
- Backlight through transparent dial
  Automatic dimmer option with engine panels
- Fluorescent pointer for perfect readings in any lighting condition
- Easy installation with supplied bracket
- Standard 6.3 blade electrical connections

** Optional for the rudder gauge.*

DB.010.20001

DB.010.21001

Tachometers

- Very accurate and stable indication due to the microprocessor controlled stepper motor
- LCD with hour counter and backlight. Hour counter starts counting when the speed of the engine is above 400rpm and is indicated with an hourglass icon in the display
- Diameter 85mm
- Operating voltage 10.5 – 28V DC
- Suitable for input signals from alternator (W signal) or an inductive pickup sensor (0.5 – 399 pulses/revolution)
- Easy calibration with a micro push button on the back

Oil pressure switch/sensor

- Switching point 0.5 bar
- R 1/8 thread

DB.020.20001

DB.010.20002

DB.010.21002

Oil pressure gauges

- Operating voltage 12V DC
- Pressure indication 0-10 bar and 0-145 psi
- Input resistance range:
  0 ohm = 0 bar, 52 ohm = 2 bar
  88 ohm = 4 bar, 124 ohm = 6 bar, 180 ohm = 10 bar
- Diameter 52mm
- Built-in damping for smooth pointer movement

Temperature switch/sensor

- Switching point 105 °C
- M16x1.5 thread

DB.020.20002

Temperature sensor

- M16x1.5 thread

DB.020.20003

DB.010.20003

DB.010.21003

Temperature gauges

- Operating voltage 12V DC
- Temperature indication 40-120 °C and 105-250 °F
- Input resistance range:
  287 ohm = 40 °C, 134 ohm = 60 °C
  69 ohm = 80 °C, 38 ohm = 100 °C, 23 ohm = 120 °C
- Diameter 52mm
- Built-in damping for smooth pointer movement

DB.010.20004

DB.010.21004

Voltmeters

- Voltage indication 8-16V DC
- Diameter 52mm
- Built-in damping for smooth pointer movement

Waste-water gauges

- Operating voltage 12V DC or 24V DC
- Input resistance range: 0 ohm = E, 100 ohm = ½, 180 ohm = F
- Diameter 52mm
- Built-in damping for smooth pointer movement

DB.010.20005 12V
DB.010.21005 12V
DB.010.22005 24V
DB.010.23005 24V

Fuel gauges

- Operating voltage 12V DC or 24V DC
- Input resistance range: 0 ohm = E, 100 ohm = ½, 180 ohm = F
- Diameter 52mm
- Built-in damping for smooth pointer movement

DB.010.20006 12V
DB.010.21006 12V
DB.010.22006 24V
DB.010.23006 24V

Water gauges

- Operating voltage 12V DC or 24V DC
- Input resistance range: 0 ohm = E, 100 ohm = ½, 180 ohm = F
- Diameter 52mm
- Built-in damping for smooth pointer movement

DB.010.20007 12V
DB.010.21007 12V
DB.010.22007 24V
DB.010.23007 24V

Rudder gauges

- Operating voltage 12V DC and 24V DC
- Accurate indication due to stepper motor control
- Input resistance range: 0-190 ohm
- LED background light in 2 colours: yellow and red
- Diameter 52mm
- Single glass with anti-fog coating, double glass is optional

DB.010.20008
DB.010.21008

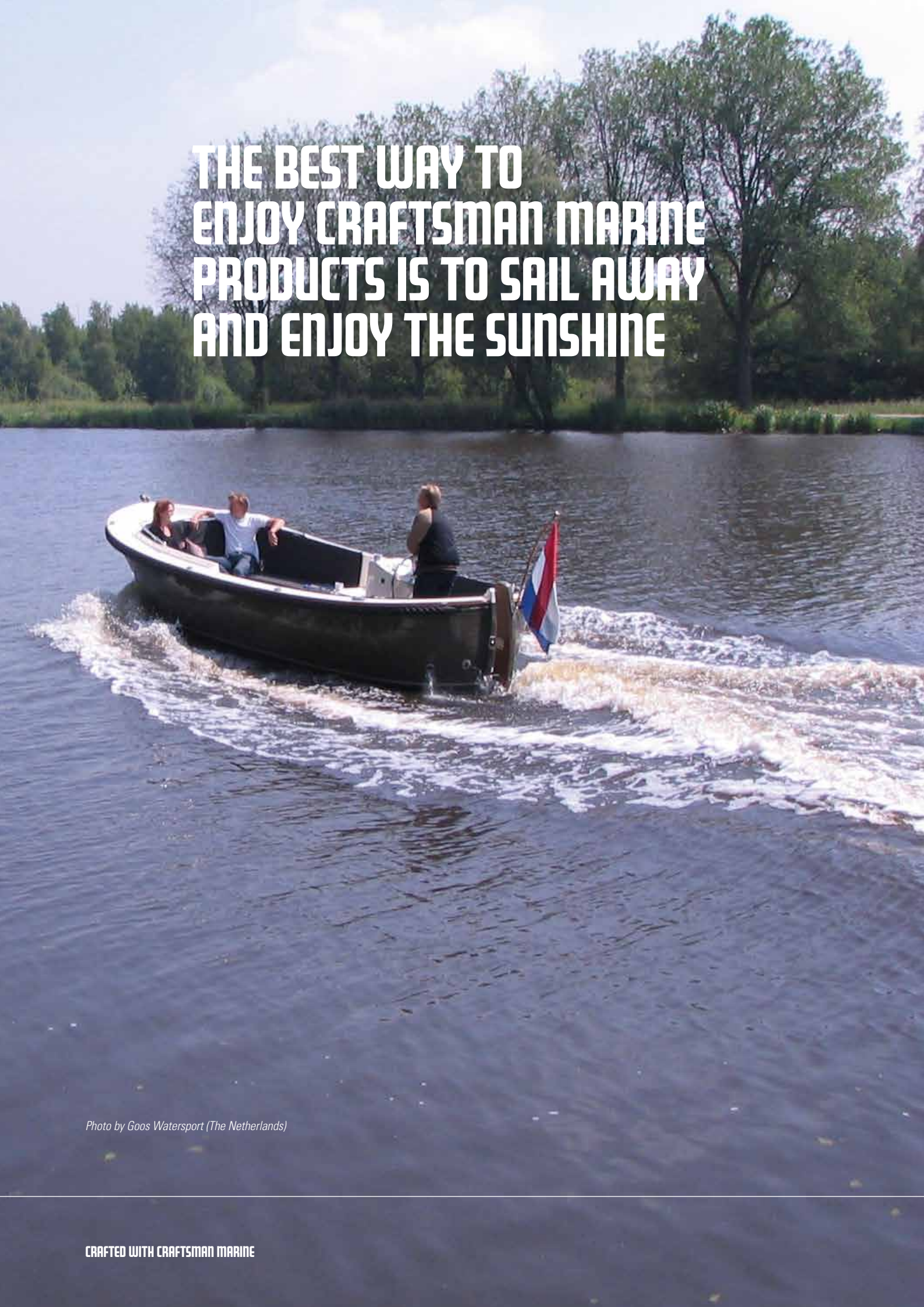
Rudder sensor

- 0-190 ohm

DB.010.25008

Double glass

DB.010.90003



THE BEST WAY TO ENJOY CRAFTSMAN MARINE PRODUCTS IS TO SAIL AWAY AND ENJOY THE SUNSHINE

Photo by Goos Watersport (The Netherlands)

Backlight dimmer module

With the Craftsman Marine dimmer module manual dimming of the backlight is no longer required. This microprocessor controlled dimmer module will automatically dim the backlight very smoothly when it becomes dark.
At daylight it will increase the intensity of the backlight.

with automatic backlight dimmer module

Just plug-in the module on the rear side of the engine panel:

- Maximum load 5A
- Printed wiring board with conformal coating for environmental protection.

AB.020.20002

** Automatic dimming of the backlight*

Instrument panel for 52mm gauge

- Machined out of a solid plate of aluminium. Anodised to protect against weather influences.
- Suitable for two 52mm gauges
- Supplied with: gasket, brackets to fit the gauges, 4 stainless steel screws and protection cover.

DC.010.20000

** Supplied without gauges*

Tank sensors

The Craftsman Marine capacitive tank sensor is based on electronic detection without any moving parts. This ensures a long lifetime as there is no mechanical wear. The sensor can be used with the Craftsman Marine tank gauge or any other gauge with the appropriate resistance input.

Capacitive tank sensor

The capacitive tank sensor can only be used for measuring **diesel fuel.**

- Maximum measuring depth of 20cm
- Resistance output from tank empty to full in variable steps: 10ohm - 180ohm
- Voltage 10.5 – 28VDC
- Threading M27
- Temperature range -10 up to 70° C

CG.010.20020

Reed switch tank sensor

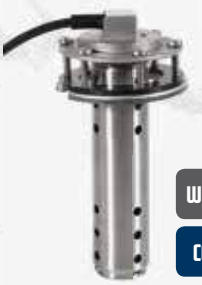
The reed switch sensors can be used for measuring diesel, potable water and waste water. All sensors use a stainless steel pipe and have a SAE5 mounting flange. The maximum measuring depth is 20cm. The resistance output from tank empty to tank full is in seven steps from 10 to 180 ohm.

TANK COVER DIESEL FUEL INCL. SENSOR

CB.010.25030

TANK COVER POTABLE WATER INCL. SENSOR

CB.010.25020



WASTE WATER SENSOR

CG.010.26020

- Measures the tank content from ¼ of the tank depth up to the maximum level.
- Stainless steel filter, possible to disassemble for cleaning purposes.

CRAFTSMAN MARINE PORTHOLES & HATCHES

Made from high-quality seawater-resistant anodised aluminium, stainless steel and fiber reinforced synthetic materials, our portholes and hatches are built to last. Designed to keep the weather out and the light in.

Whether you are looking to fit out your new boat or need to replace your existing portholes and hatches, the finish of our products will certainly live up to your expectations. Frames are polished by hand before anodising, to remove the smallest impurities from the material.

Easy installation, replaceable sealings and full support for spare parts guarantee long lasting service. Smoke grey acrylic is used in all portholes and hatches to ensure your privacy inside the boat but still maintain sufficient light transmission.

All hatches can be opened from the inside and outside and can be locked from the inside. To keep your boat well ventilated while you are away, the hatches can even be locked in a ventilation position. Smooth finish of the inside of the frame ensures easy access for crew or equipment. Mosquito screens are available for all hatches and are even standard supply for all portholes.

CE certification comes standard with all portholes and hatches.

FOR THE TOUGHEST CONDITIONS

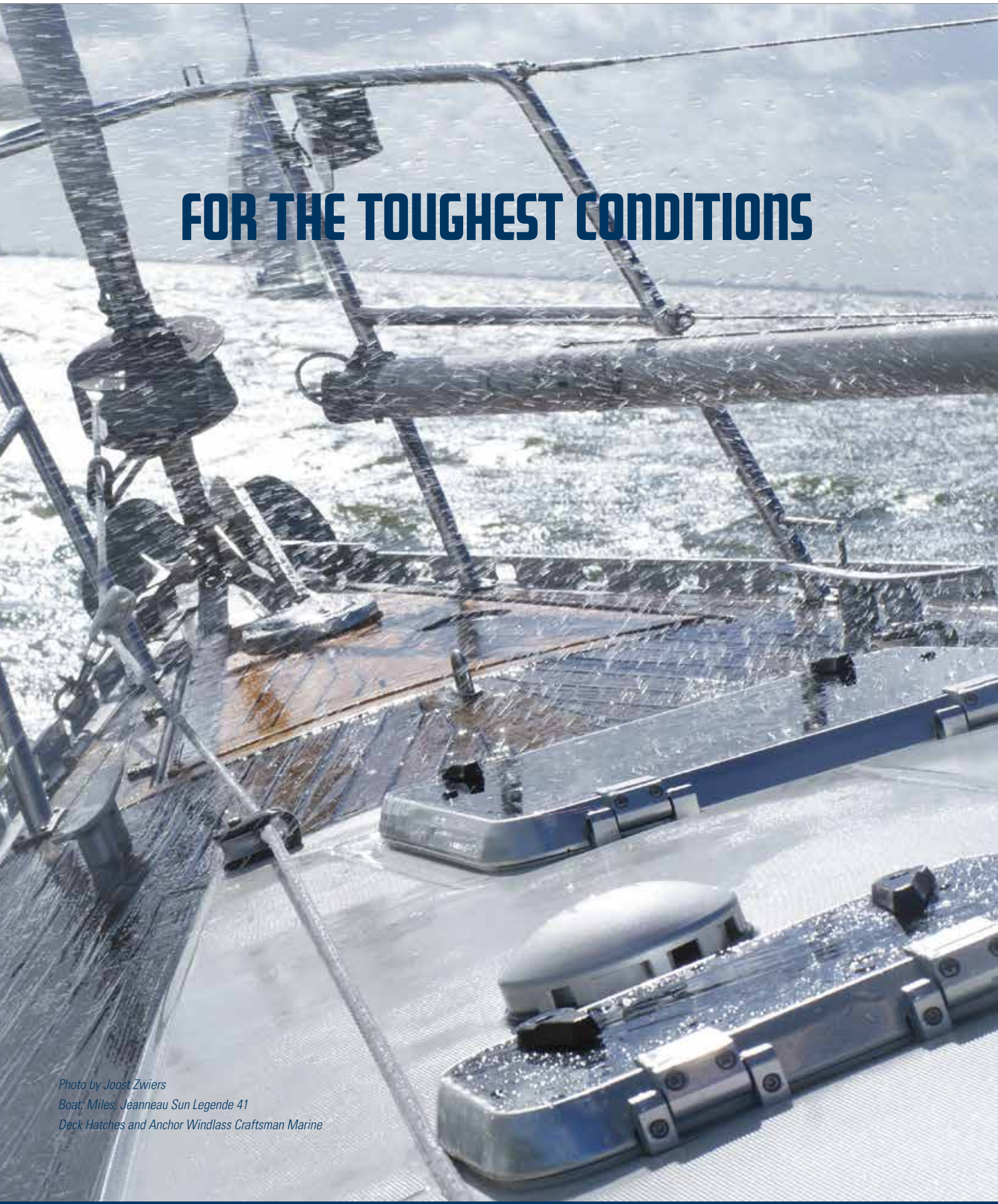


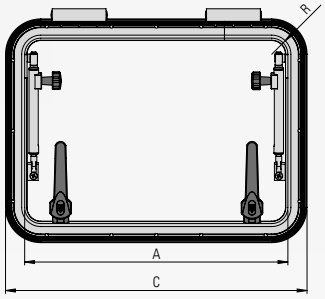
Photo by Joost Zwiers
Boat: Miles, Jeanneau Sun Legende 41
Deck Hatches and Anchor Windlass Craftsman Marine

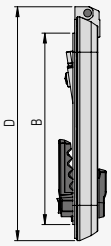
SIRIUS

CE CLASS
AREA II A

Our top-notch offshore hatch for the toughest conditions. Hand-polished aluminium frame finished to a high standard. Stainless steel struts to keep the hatch opened in any position from 0 to 110° (FB.010.20010 and FB.010.20020 are without struts). Handles with integrated locking system and softgrip for effortless handling. All SIRIUS hatches can be opened from outside when not locked. Easy when changing sails in bad weather or when used as an escape hatch. Only rustproof materials are used. Mosquito screens are optional.

- Tough design with frame
- CE Area IIa
- Lockable ventilation position





A mosquito screen is available as an option.

Model	Overall dimensions (CxD)	Cutout size (AxB)	Corner radius	Mosquito screen
FB.010.20010 *	254x254	200x200	32mm	**FB.010.21010**
FB.010.20020 *	394x249	340x195	32mm	**FB.010.21020**
FB.010.20030	504x374	450x320	32mm	**FB.010.21030**
FB.010.20035	504x374	450x320	55mm	**FB.010.21035**
FB.010.20040	554x424	500x370	32mm	**FB.010.21040**
FB.010.20045	554x424	500x370	55mm	**FB.010.21045**
FB.010.20050	464x464	410x410	32mm	**FB.010.21050**
FB.010.20055	464x464	410x410	55mm	**FB.010.21055**
FB.010.20060	554x554	500x500	32mm	**FB.010.21060**
FB.010.20065	554x554	500x500	55mm	**FB.010.21065**
FB.010.20070	674x674	620x620	32mm	**FB.010.21070**
FB.010.20075	674x674	620x620	55mm	**FB.010.21075**
FB.010.20080	754x754	700x700	32mm	**FB.010.21080**
FB.010.20085	754x754	700x700	55mm	**FB.010.21085**
FB.010.20090	854x854	800x800	32mm	**FB.010.21090**
FB.010.20095	854x854	800x800	55mm	**FB.010.21095**

*Other sizes available on request. * These sizes are without struts.*

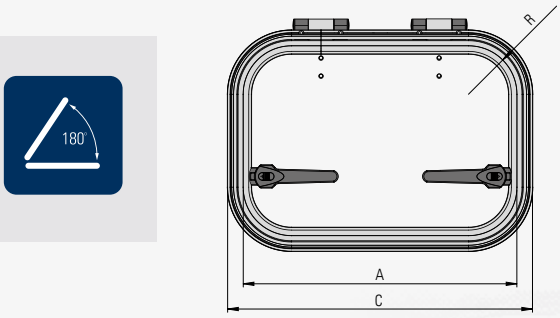
AQUILA

CE CLASS
AREA II A

Our entry model but with the same excellent finish as all other Craftsman Marine products. Low profile design hatch with friction hinges for easy one-handed operation. 12mm smoke grey acrylic assures that even when you step onto the hatch it won't break. Comes standard with installation manual and drill pattern. All AQUILA hatches open 180°.

OTHER SIZES AVAILABLE ON REQUEST

- CE Area IIa
- Easy operation
- For wall thickness 4-22mm
- Lockable ventilation position



A mosquito screen is available as an option.

Model	Overall dimensions (CxD)	Cutout size (AxB)	Corner radius	Mosquito screen
FB.020.20005	279x279 mm	230x230 mm	75 mm	**FB.020.21005**
FB.020.20010	349x279 mm	300x230 mm	75 mm	**FB.020.21010**
FB.020.20020	389x259 mm	340x210 mm	75 mm	**FB.020.21020**
FB.020.20030	423x423 mm	374x374 mm	75 mm	**FB.020.21030**
FB.020.20040	473x343 mm	424x294 mm	75 mm	**FB.020.21040**
FB.020.20050	473x473 mm	424x424 mm	75 mm	**FB.020.21050**
FB.020.20060	520x520 mm	471x471 mm	75 mm	**FB.020.21060**
FB.020.20070	624x624 mm	575x575 mm	75 mm	**FB.020.21070**

Other sizes available on request.

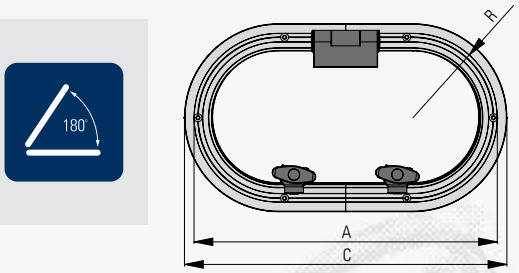
OMEGA STANDARD

CE CLASS AREA II A

OTHER SIZES AVAILABLE ON REQUEST

Comes standard with mosquito screen and hand-polished anodised finish. Easy operation and fixed opening positions. All portholes are supplied with inner frames for easy mounting and a professional finish. Small knobs for closing the ports assure optimum visibility. Good water drainage because of the angled outside frame design.

- CE Area IIa
- Easy operation
- For wall thickness 4-22mm
- Good water draining



A mosquito screen is included.

Model	Overall dimensions (CxD)	Cutout size (AxB)	Corner radius
FA.010.20010	246 x 150 mm	222 x 126 mm	63 mm
FA.010.20020	296 x 175 mm	272 x 151 mm	75.5 mm
FA.010.20030	346 x 203 mm	322 x 179 mm	89.5 mm
FA.010.20040	364 x 150 mm	340 x 126 mm	63 mm
FA.010.20050	392 x 226 mm	368 x 202 mm	101 mm
FA.010.20060	504 x 257 mm	480 x 233 mm	116.5 mm
FA.010.20070	624 x 203 mm	600 x 179 mm	89.5 mm
FA.015.20010 *	246 x 150 mm	222 x 126 mm	63 mm
FA.015.20020 *	296 x 175 mm	272 x 151 mm	75.5 mm
FA.015.20030 *	346 x 203 mm	322 x 179 mm	89.5 mm
FA.015.20040 *	364 x 150 mm	340 x 126 mm	63 mm

Black anodised portholes and other sizes available on request.

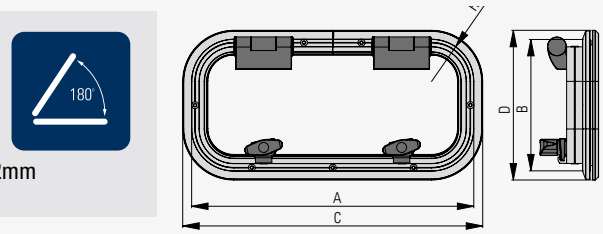
** Deadlights (non-opening)*

OMEGA RECTANGULAR

CE CLASS AREA II A

Comes standard with mosquito screen and hand-polished anodised finish. Easy operation and fixed opening positions. All portholes are supplied with inner frames for easy mounting and a professional finish. Small knobs for closing the port assure optimum visibility. Good water drainage because of the angled outside frame design.

- CE Area IIa
- Easy operation
- Good water draining
- For wall thickness 4-22mm



A mosquito screen is included.

Model	Overall dimensions (CxD)	Cutout size (AxB)	Corner radius
FA.020.20080	300 x 163 mm	279 x 142 mm	51
FA.020.20090	350 x 173 mm	329 x 152 mm	51
FA.020.20100	365 x 182 mm	343 x 160 mm	51
FA.020.20110	365 x 198 mm	343 x 176 mm	51
FA.020.20120	399 x 190 mm	377 x 168 mm	51
FA.020.20130	399 x 234 mm	377 x 212 mm	51
FA.020.20140	450 x 273 mm	429 x 252 mm	51
FA.020.20150	496 x 276 mm	475 x 255 mm	51
FA.020.20160	651 x 201 mm	630 x 180 mm	51
FA.025.20080 *	300 x 163 mm	279 x 142 mm	51
FA.025.20090 *	350 x 173 mm	329 x 152 mm	51
FA.025.20100 *	365 x 182 mm	343 x 160 mm	51
FA.025.20110 *	365 x 198 mm	343 x 176 mm	51
FA.025.20120 *	399 x 190 mm	377 x 168 mm	51

Black anodised portholes and other sizes available on request.

** Deadlights (non-opening)*

OMEGA ROUND

CE CLASS AREA II A

Comes standard with mosquito screen and hand-polished anodised finish.
Easy operation and fixed opening positions.
All portholes are supplied with inner frames for easy mounting and a professional finish.
Small knobs for closing the port assure optimum visibility. Good water drainage because of the angled outside frame design.

BLACK ANODISED
FA.030.25XXX

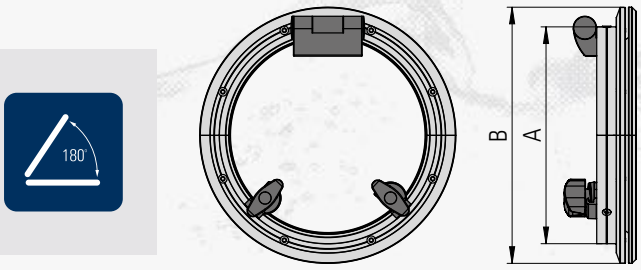
DEADLIGHTS
FA.035.20XXX

FA.030.20XXX

10mm acrylic

DEADLIGHTS
FA.035.25XXX

- CE Area IIa
- Easy operation
- For wall thickness 4-22mm
- Good water draining



A mosquito screen is included.

Model	Overall dimensions (B)	Cutout size (A)	Radius
FA.030.20170	200 mm	179 mm	89.5 mm
FA.030.20180	223 mm	202 mm	101 mm
FA.030.20190	254 mm	233 mm	116.5 mm
FA.030.20200	374 mm	353 mm	176.5 mm
FA.035.20170 *	200 mm	179 mm	89.5 mm
FA.035.20180 *	223 mm	202 mm	101 mm

Black anodised portholes and other sizes available on request.
** Deadlights (non-opening)*

CRAFTSMAN MARINE ANCHOR WINDLASS

"Easy anchoring when and where you desire."

Enjoying your boat is not only sailing with it. It's also relaxing. What can beat lying at anchor in the spot you choose, for the time you like with the people you like? On board at anchor is like living on your private island and you can do what you like. Take a swim in clear water, dive or simply relax and read a book. Watch the stars at night and wake up to an astonishing sunrise!

But what is holding you back? The hassle with the chain, the mud, the dirty hands, the broken back? Lifting your anchor when it's 30 degrees Celsius is not something to look forward to. With a Craftsman Marine windlass it is all the push of a button away. When your helm position has a clear view of the windlass, it's even easy to recover the anchor single handed, while standing at the helm.

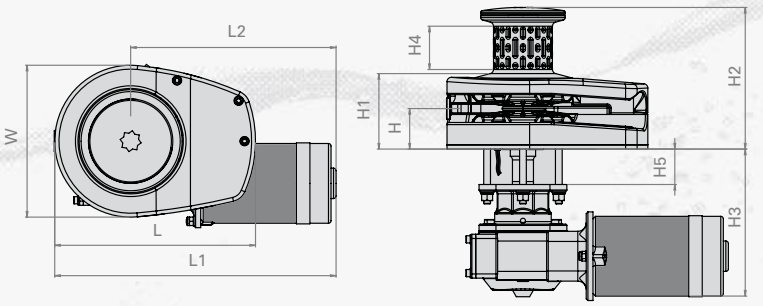
The anchor not holding very well? With the push of a button, you bring it back up and try it a few metres further on, without breaking a sweat! And for a good night's rest, you simply pay out a little extra chain because no extra effort is needed to recover it.

Windlass selection

Probably the first item to determine the size of the windlass is the chain used. When retrofitting, there is already an anchor rode on board that determines the gypsy to be used. With a new fitting, this doesn't apply. Secondly, the size of the windlass depends on the size and weight of the boat. Chain size is determined by the size of the boat and the type of cruising you do. Craftsman Marine windlasses can be fitted with gypsies for several chain sizes to make a balanced combination for your boat. Only calibrated chains can be used in the windlasses.

The weight of the chain and anchor determine the power required. Anchor windlass specifications contain the working load (getting in the chain) and a maximum pull (breaking out the anchor). When you anchor in shallow water, you might only have to lift 3-4 metres of chain off the seabed. But when you plan to anchor in deeper waters, the working load will increase. When properly used, the required windlass is not that bulky and will be cheaper to purchase and install. You can consider the windlass as a direct replacement of your body. By hand you will not pull the boat towards the anchor. Instead you will use the power of the engine to move towards the anchor and just lift the anchor chain off the bottom. Breaking out the anchor can also be done by reversing the boat. Installing a smaller windlass means less space needed, thinner cables, smaller fuses, and a reduced load on your batteries.

Stainless steel 316



	H	H1	H2*	H3	H4	H5	L	L1	L2	W
400W	44	77.5	138	150	36.5	25	182.5	292.5	225	135
700W	48	91	168	174	52	42	238	333.5	243.5	180
1000W	48	91	168	184	52	42	238	338	248	180

** Version with capstan.*

Windlass types

Craftsman Marine offers vertical windlass designs to minimise deck clutter. The electric motor and gearbox are installed below decks and are IP66 rated. The chain runs 180 degrees around the gypsy resulting in unmatched resistance against slippage. In comparison, a horizontal windlass design will have all its components above deck level, making it bulky and bringing more weight high above the waterline. The chain only runs 90 degrees around the gypsy, making it more prone to slippage than a vertical windlass design.

Capstan

A windlass with capstan can be useful for handling a "rope only" secondary anchor rode, for lifting the dinghy or taking in a mooring line. The capstan must never be used to haul a person up the mast. With the use of a chain stopper on the primary anchor rode, the secondary "rope only" anchor rode can be retrieved with the chain of the all chain anchor rode still in the windlass.

Anchor windlass

In the table below you can find the corresponding article codes and specifications for each windlass type. A version with a capstan is available for every type. Our windlass has a freefall function to drop the chain quickly when necessary. It can handle chain and rope. Craftsman Marine can also supply the DIN766 calibrated chain.

	400W / 12V	700W / 12V	1000W / 12V	1000W / 24V
Work load	100kg	115kg	145kg	145kg
Maximum pull	280kg	450kg	800kg	800kg
Maximum chain speed	27m/min	30m/min	30m/min	30m/min
Pulling Chain speed @ workload	15m/min	18m/min	16m/min	16m/min
Current @ workload	105A	140A	110A	50A
Weight	10.7kg	13.5kg	16kg	16kg
Chain	6mm	8 or 10mm	8 or 10mm	8 or 10mm
Rope	8-10mm	14-16mm	14-16mm	14-16mm
6mm gypsy	FC.010.20006			
6mm gypsy with capstan	FC.010.20506			
8mm gypsy		FC.020.20008	FC.030.25008	FC.030.26008
8mm gypsy with capstan		FC.020.20508	FC.030.25508	FC.030.26508
10mm gypsy		FC.020.20010	FC.030.25010	FC.030.26010
10mm gypsy with capstan		FC.020.20510	FC.030.25510	FC.030.26510

Standard supply

Every windlass comes with most of the required components needed for installation. A base gasket seal between the windlass and deck, two circuit breakers (automatic), a heavy duty relais complete with cable loom, a winch handle to control the clutch and of course a drill pattern. Cables, control panel and tools are not included.

TIPS FOR SAFE USE

- Always have the engine running when using your windlass. When running the engine, the alternator will keep the battery topped up and the voltage higher
- Always keep your hands, clothing or jewellery clear of the windlass
- Pick your spot to drop your anchor and make a full circle around to check water depth
- Slowly lower your anchor and pay out chain or rope at the same pace as the boat is drifting with the wind. When there is no wind use the engine to reverse slowly. Do not drop all your chain on top of the anchor
- For a short lunch break use a 3:1 scope (three times the depth of the water including the height of the hull). Increase to at least 7:1 scope when leaving the boat unattended or in heavy weather
- Attach the chain to the boat using a chain stopper or snubbing line. Don't let the windlass take the load when at anchor
- Reverse the boat slowly until the anchor holds.
- When at anchor, check your position from time to time

Anchor windlass control panel

Milled from an aluminium plate anodised to ensure perfect protection against all (marine) weather conditions.
The microprocessor based panel features many advantages. Operate the winch by simply pushing the up or down button.
The panel has a visual and audible alarm indication.

FD.010.20000 | 81 x 85mm

Features of the anchor windlass control:

- **Visual and audible alarms**
- **Automatic switch-off of the panel**
  User selectable:
  - switch-off after 30 (factory setting), 60 or 120 minutes
  - don't switch-off automatically
- Coated printed wiring board and rear cover to protect against humidity and salt air
- **"Child protection"** to ensure that the panels are not switched on by accident
- **Wire break detection.** Visual alarm if the electrical connection to the windlass relay is broken.
- Voltage supply 10.5-28V DC

Anchor windlass control switch

In case of little space this switch could be a good alternative to control your windlass. The switch is supplied with gasket and a connection cable set with pre-wired connectors. All connectors have a latch lever lock, to ensure a 100% connection also in case of vibrations.

Maximum voltage: 24V DC
Maximum current: 15A
Frontside: IP66
Dimensions: 49 x 24 x 37.5mm

FD.010.20001

FG.020.20000

Fixed bow roller

Polished stainless steel 316
Dimensions: 170x62x74mm (LxWxH)
For 6-10mm chain

FG.030.20000

Chain stopper

Polished stainless steel 316
For 6-10mm chain

TIPS FOR SAFE USE

The chainstopper is no substitute for a snubbing line. It is only there to keep your anchor in place in case the clutch of the windlass slips when sailing or to temporarily take the load off the windlass.

EFFORTLESS ANCHORING

Anchor chain 6mm 8mm 10mm

Craftsman Marine DIN766 calibrated chain assures trouble-free operation of the windlass. Can also be used in other windlasses suitable for calibrated chain. Galvanised steel chain for reliable anchoring.

6mm	8mm	10mm
FG.010.20600	FG.010.20800	FG.010.21000

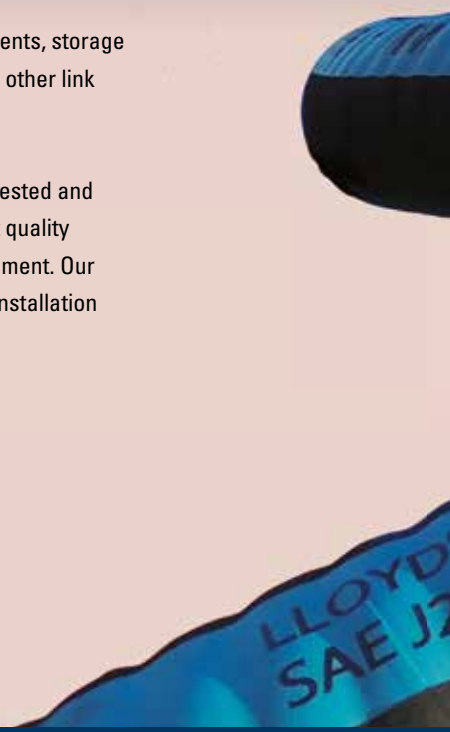
CRAFTSMAN MARINE ACCESSORIES

"Thoroughly tested with a perfect fit."

Hoses for sanitation, water hoses, smart reducers to make sure all your hoses can be matched to your system, these are some of the items we call 'accessories'.

The Craftsman Marine accessories product line is constantly expanding with new and innovative products, all specially designed and manufactured for marine use. Flexible when needed, connecting engine components, storage tanks, exhaust components and any other link between existing installations.

All our accessories are thoroughly tested and designed to meet the most stringent quality requirements for the marine environment. Our accessories are designed for easy installation and ensure a perfect fit.




EXHAUST HOSE
Craftsman MARINE
LOYD'S REGISTER TYPE APPROVAL
SAE J2006 R1 & R2 CERTIFIED

Exhaust hose

Flexible exhaust hose for installations in tight compartments. Small bending radius of only 1.5x the diameter. For hoses larger than 152mm the bending radius is 2x the diameter. Operational temperature range -30°C to +100°C with a short peak load of 115°C.

Type approval: Lloyd's Register certificate No. 02/0029
SAE J 2006 R1 and R2

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
GA.010.20030	ø30 x 38	0.55	48
GA.010.20040	ø40 x 48	0.79	60
GA.010.20045	ø45 x 53	0.88	68
GA.010.20050	ø51 x 59	1.1	77
GA.010.20057	ø57 x 65	1.1	86
GA.010.20060	ø60 x 68	1.2	90
GA.010.20065	ø65 x 73	1.3	98
GA.010.20075	ø76 x 84	1.4	114
GA.010.20090	ø90 x 98	1.9	135
GA.010.20100	ø102 x 110	2.3	153
GA.010.20125	ø127 x 137	3.3	191
GA.010.20150	ø152 x 163	4.4	228
GA.010.20200	ø203 x 218	6.8	406

Reinforced hydraulic hose

Flexible hose for hydraulic steering systems.

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
BM.020.20020	ø8 x 14	0.2	46

Fuel filling hose

Lloyd's approved high quality fuel filling hose with steel spiral. To provide a flexible connection between the fuel tank and the fill pipe. It is exceptionally flexible and can withstand temperatures of -30°C to +100°C.

Complies with SAE J 1527 and ISO 7840-MARINE FUEL A2

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
GA.020.20038	ø38 x 50	1.1	76
GA.020.20051	ø51 x 63	1.5	102

Fuel hose

To connect your fuel tank and filters to the engine.
A1 quality to be used with diesel fuel and petrol.
May also be used as breather line.

Complies with ISO 7840-MARINE FUEL A1

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
GA.030.20008	ø8 x 16	0.24	30
GA.030.20010	ø10 x 18	0.28	35
GA.030.20013	ø13 x 22	0.39	50
GA.030.20015	ø15 x 25	0.45	60
GA.030.20019	ø20 x 28	0.52	80

Sanitation hose SBR

Non-permeable sanitation hose for waste water system. With SBR cover and incorporated steel spiral. Operational temperatures between -40° C and +70° C.

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
GA.040.20016	ø16 x 26	0.45	50
GA.040.20019	ø19 x 29	0.55	65
GA.040.20025	ø25 x 36	0.72	75
GA.040.20038	ø38 x 48	1.15	100

Sanitation hose

Water suction and discharge hose. Can be used for water and waste water. Made of PVC with internal spiral. Operational temperatures between -5° C and +65° C.

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
GA.045.20020	ø20 x 27	0.32	50
GA.045.20025	ø25 x 33	0.53	65
GA.045.20038	ø38 x 47	0.8	90

Water hose

Smooth PVC water hose with steel spiral. Can be used between -5° C and +65° C.

Article code	Diameter (mm)	Weight (kg/m)	Bending radius (mm)
GA.050.20016	ø16 x 22	0.23	35
GA.050.20019	ø19 x 26	0.32	50
GA.050.20025	ø25 x 33	0.53	60
GA.050.20032	ø32 x 40	0.65	75
GA.050.20038	ø38 x 47	0.8	90
GA.050.20040	ø40 x 49	0.87	95

Reducers

Synthetic reducers to connect different hoze sizes. Suitable for hoses with an internal diameter from 16 to 38mm. Unlike many other reducers on offer the Craftsman Marine reducers can be used in hot water systems and the material is generally accepted for drinking water systems.

Article code	Diameter (mm)
GB.050.21619	Reducer 16-19mm
GB.050.21925	Reducer 19-25mm
GB.050.22532	Reducer 25-32mm
GB.050.22538	Reducer 25-38mm
GB.050.23238	Reducer 32-38mm

Airvent nipple

Produced from stainless steel 316 or chrome-plated brass (CPB) MS58. Suitable for 16mm or 19mm internal diameter hose. Straight or 90° angled.

	CPB	Stainless steel
Straight 16mm	CD.010.21016	CD.010.21116
Straight 19mm	CD.010.21019	-
Angled 16mm	CD.010.22016	CD.010.22116

Airvent nipple flush

Flush design. Produced from stainless steel 316 and available in straight or angled design. Suitable for 16mm and 19mm internal diameter hose.

Straight 19mm
CD.010.21119

Angled 16mm
CD.010.22316

Deck fillers

Stainless steel (AISI316) deck filler. With O-ring seal and key to prevent unauthorised opening. Hose connection ø38 mm. Flange diameter 73mm.

DIESEL FUEL (38mm)	WATER (38mm)	WASTE (38mm)
CC.010.20010	CC.010.20020	CC.010.20030

Cross Bollard Single

Finished to a high gloss and made from durable stainless steel 316, these bollards are made to last. Available as bolt-on base type or weld down fixing.

Height	Diameter	with baseplate	direct welding
90mm	ø38 mm	FH.010.20090	FH.010.25090
100mm	ø50 mm	FH.010.20100	FH.010.25100
115mm	ø60 mm	FH.010.20115	FH.010.25115
150mm	ø76 mm	FH.010.20150	FH.010.25150
160mm	ø89 mm	FH.010.20160	FH.010.25160
180mm	ø102 mm	FH.010.20180	FH.010.25180

Deck cleat

Stainless steel 316 deck cleats with blind mountings so no visible fasteners. High-gloss polished finish.

Length	Stainless steel
150mm	FH.020.20010
205mm	FH.020.20020
265mm	FH.020.20030
310mm	FH.020.20040

Valves and fittings

Craftsman Marine only supplies high-quality CR (corrosion resistant) brass that is suitable for continuous immersion in salt water. Regular brass should never be used below the waterline when sailing in salt water. This is because regular brass is an alloy of copper and zinc and is prone to a form of corrosion called dezincification. Zinc is leached from the metal and the remaining copper shell becomes porous and fragile.

Thru-hull fitting

Produced from stainless steel 316 or CR Brass.

	CR Brass	Stainless steel
G 3/4	GB.030.20019	GB.035.20019
G 1	GB.030.20025	GB.035.20025
G 11/4	GB.030.20032	GB.035.20032
G 11/2	GB.030.20038	GB.035.20038
G 2	GB.030.20051	GB.035.20051

Ball valves

Easy and quick to operate, with immediate visual indication. Produced from stainless steel 316 or CR brass.

	CR Brass	Stainless steel
G 3/4	GB.010.20019	GB.015.20019
G 1	GB.010.20025	GB.015.20025
G 11/4	GB.010.20032	GB.015.20032
G 11/2	GB.010.20038	GB.015.20038
G 2	GB.010.20051	GB.015.20051

Hose pillar

Produced from stainless steel 316 or CR Brass.

	CR Brass	Stainless steel
G 3/4-19mm	GB.020.21919	GB.025.21919
G 1-25mm	GB.020.22525	GB.025.22525
G 11/4-32mm	GB.020.23232	GB.025.23232
G 11/2-38mm	GB.020.23838	GB.025.23838
G 11/2-51mm	GB.020.23851	GB.025.23851
G 2-51mm	GB.020.25151	GB.025.25151

Water scoop

Produced from stainless steel 316 or CR Brass.

	CR Brass	Stainless steel
G 3/4	GB.040.20019	GB.045.20019
G 1	GB.040.20025	GB.045.20025
G 11/4	GB.040.20032	GB.045.20032
G 11/2	GB.040.20038	GB.045.20038
G 2	GB.040.20051	GB.045.20051