

# MARINE PROPULSION

## LDW/KDW Series





# KDW (FOCS)

## FULLY OVERHEAD CONTROLLING SYSTEM

4-stroke diesel engines, fresh water cooled via heat exchanger, complete with zinc anode protection, cast-iron engine block (aluminium for KDW 502M), reborable liners, one piece aluminium cylinder head, indirect injection with unit injector pump in the cylinder head, overhead camshaft with timing belt, vane type lubrication pump on crankshaft, fresh water cooling pump in the engine block, stainless steel water injected exhaust elbow, self-priming sea water pump, air filter, anti-corrosion surface treatment.

## ROBUSTNESS, STURDINESS AND MINIMUM WEIGHT

The original design concept as the pearlitic grey cast iron cylinder head with integral reborable “twin” arranged liners, with cross flow intake and exhaust pipes, has allowed the reduction of the engine length assuring at the same time an exceptional sturdiness. The KDW 502M, which has been built with an aluminium engine block and reborable liners, is the lightest of the FOCS series.

## LOW NOISE

Excellent results have been obtained in reducing noise emission thanks to the location of the injection system in the cylinder head, to a ribbing system along the engine structure and to the complete absence of gears. The overhead camshaft is driven through a cogged belt, especially designed for heavy duty applications to ensure longevity of belt life. The lubrication system is fed by a “gerotor” oil pump driven directly by the crankshaft.

## HIGH PERFORMANCES

The utilization of newly developed and patented pump-injector units, in place of a conventional system, incorporating separate fuel injection pumps and injectors, allows the elimination of fuel pipes and consequently provides a better injection timing with the result of great performance advantages.

## LOW EXHAUST EMISSIONS

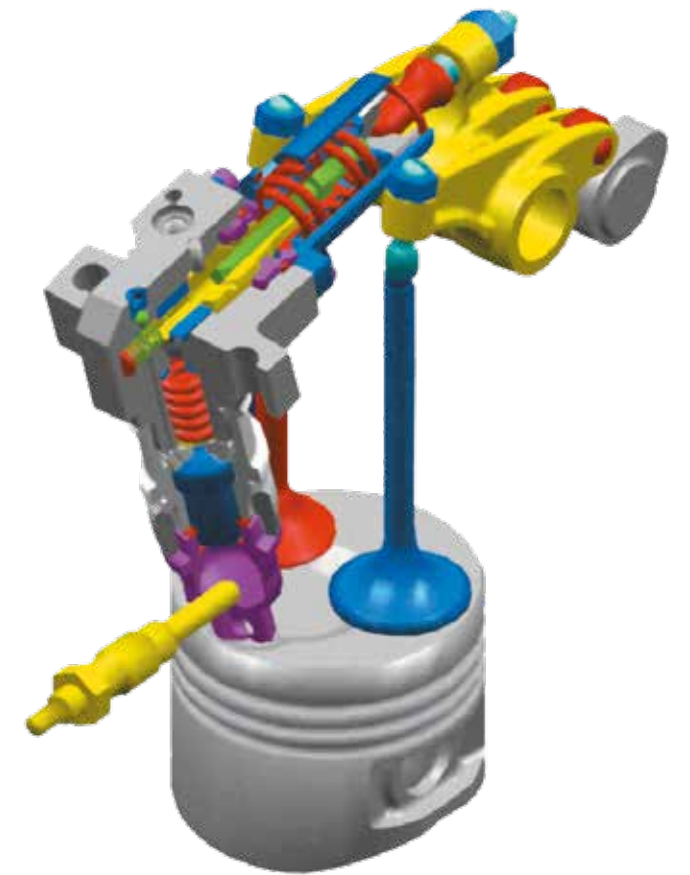
The patented injection system has been tested for exhaust emission levels to the lowest limits. FOCS engines achieved high acclaim with regard to exhaust emissions being well below the EEC requirements.

## ABSENCE OF VIBRATIONS

The very accurate balancing of the moving components together with optimum combustion allows low vibration levels at all engine speeds.

## LOW SERVICING COSTS

Components subject to more frequent checking are located in the upper part of the engine, just under the cover. This allows easy and low cost equipment maintenance.





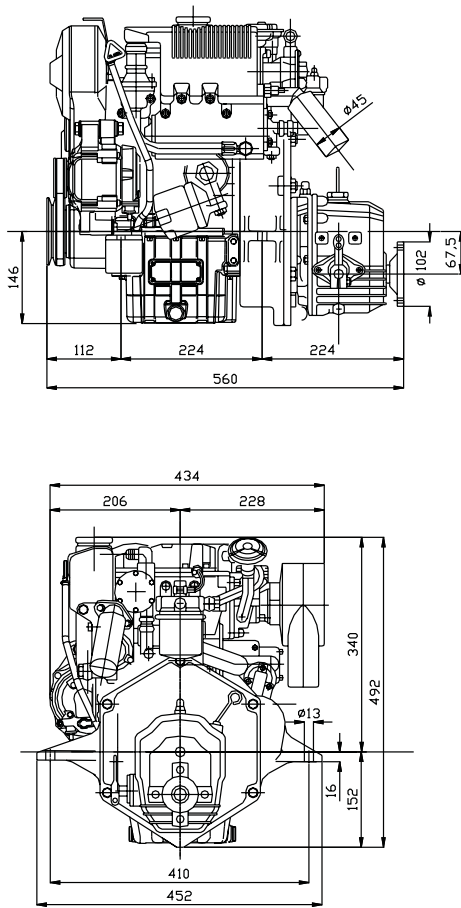
LDW/KDW

502M



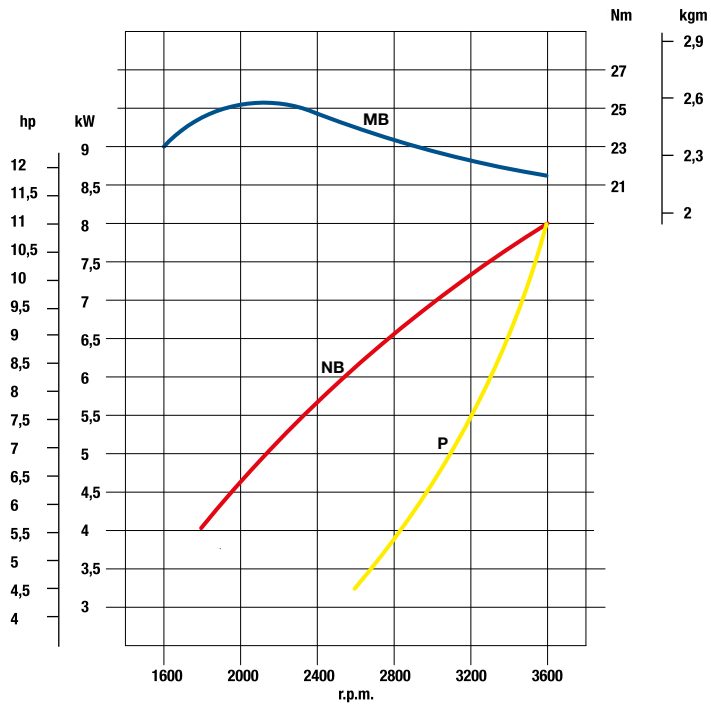
DATA

Dimensions (mm)



PERFORMANCE CURVES

(IFN-ACCORDING TO ISO 3046 and ISO 14396)



- MB – Torque curve (NB curve)
- NB – Power curve - ISO 3046/1-IFN
- P – Propeller demand curve

Rating refers to engine after running in with reversing gear, air cleaner and water injected stainless steel exhaust elbow under environment conditions of 20°C. Max. rating certified within 5%. Derating 1% approx. every 100 mt. altitude and 2% approx. every 5°C beyond 20°C.

Quick specifications

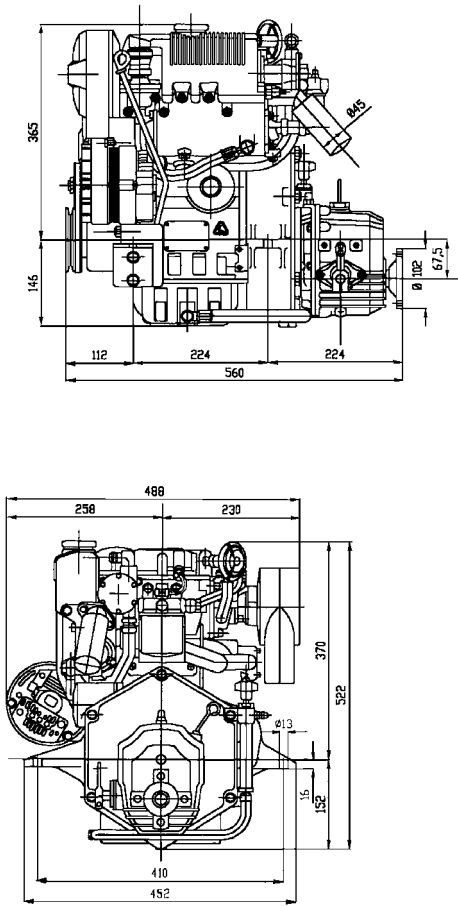
CYLINDERS	2
MAX POWER kW (hp)@rpm	8.0 (11.0) @ 3600

LDW/KDW  
702M



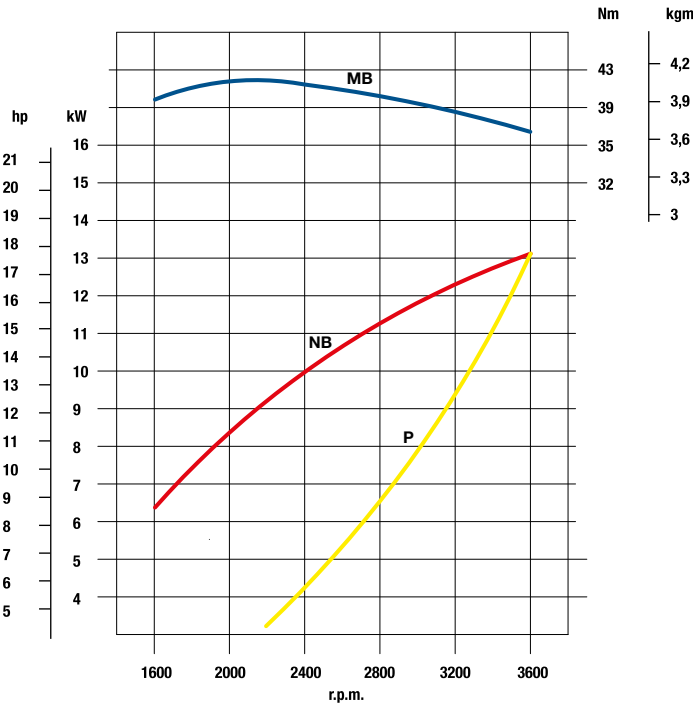
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Dimensions (mm)



PERFORMANCE CURVES

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Quick specifications

CYLINDERS	2
MAX POWER kW (hp)@rpm	13.2 (18.0) @ 3600

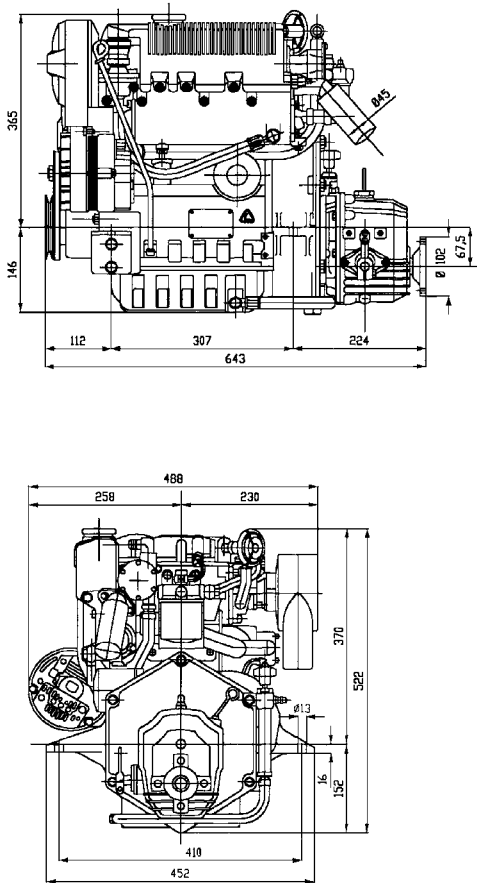
# LDW/KDW

## 1003M



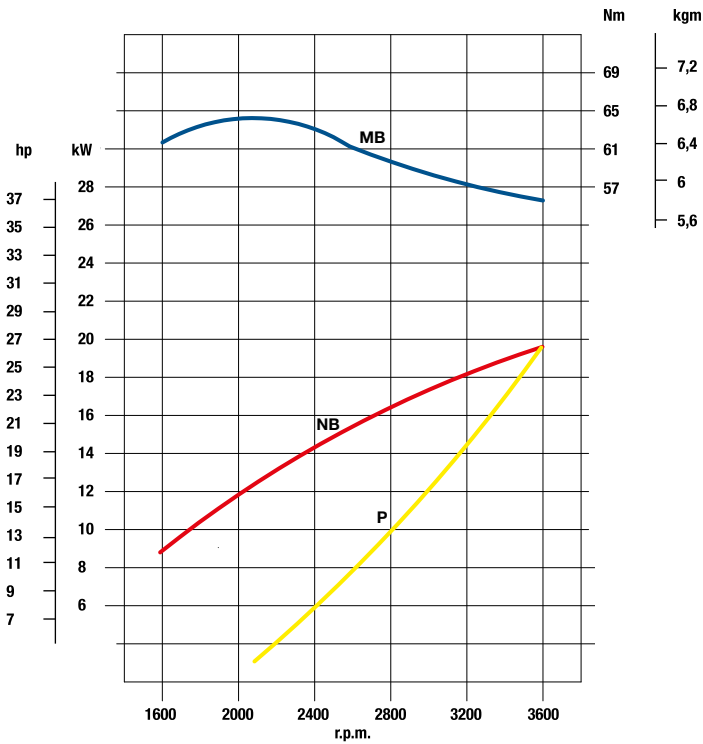
### DATA

Dimensions (mm)



### PERFORMANCE CURVES

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- P – Propeller demand curve

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#### Quick specifications

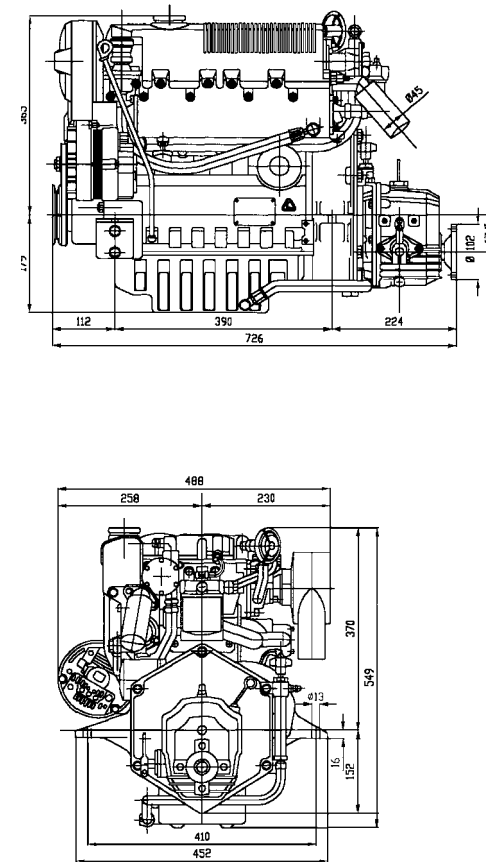
CYLINDERS	3
MAX POWER kW (hp)@rpm	19.5 (27.0) @ 3600

# 1404M



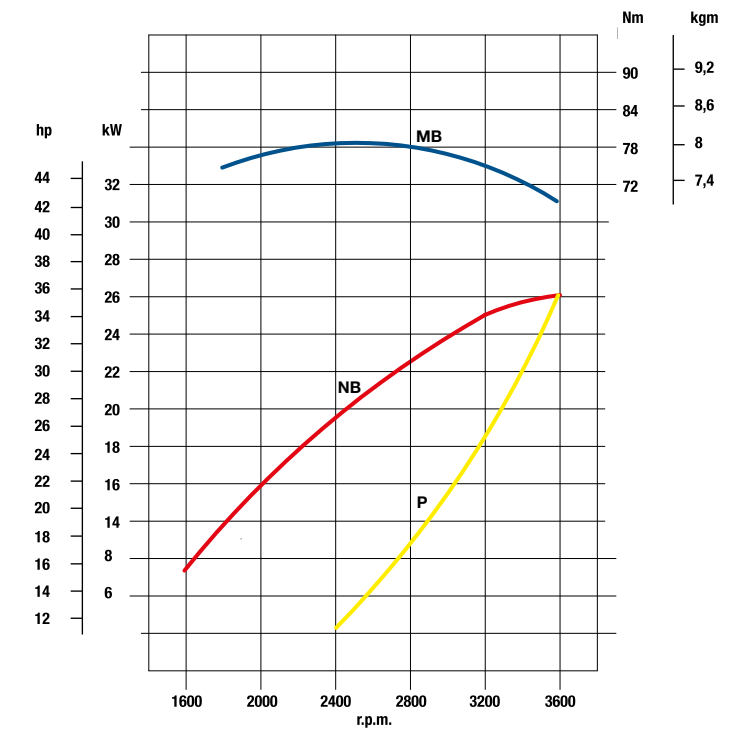
## DATA

Dimensions (mm)



## PERFORMANCE CURVES

(IFN-ACCORDING TO ISO 3046 and ISO 14396)



- MB – Torque curve (NB curve)
- NB – Power curve - ISO 3046/1-IFN
- P – Propeller demand curve

Rating refers to engine after running in with reversing gear, air cleaner and water injected stainless steel exhaust elbow under environment conditions of 20°C. Max. rating certified within 5%. Derating 1% approx. every 100 mt. altitude and 2% approx. every 5°C beyond 20°C.

## Quick specifications

CYLINDERS	4
MAX POWER kW (hp)@rpm	26 (35.0) @ 3600



# S-DRIVE

The Lombardini Marine S-Drive transmission (11÷35 hp) have been developed from our experience gained from years of sailboat racing. This experience in collaboration with many professional skippers helped us to devise transmissions featuring the essential requirements of sturdiness and reliability whilst, at the same time, offering the minimum water resistance during sailing.

Helical gears reduction ratio  $R=2.18:1$   
(for S-Drive - FOCS engines)  
- S-Drive FOCS engines:  
propeller direction of rotation LH or RH

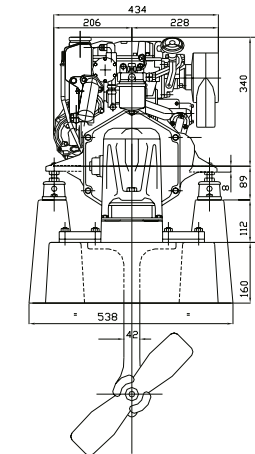


Transmission S-Drive

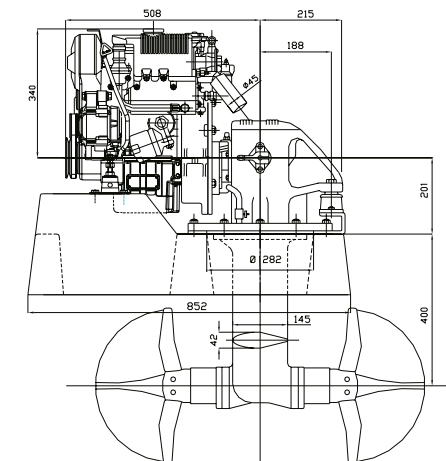


# DIMENSIONS

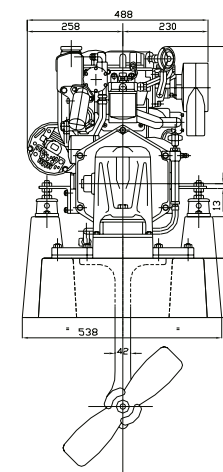
## FOCS engines with S-Drive transmission



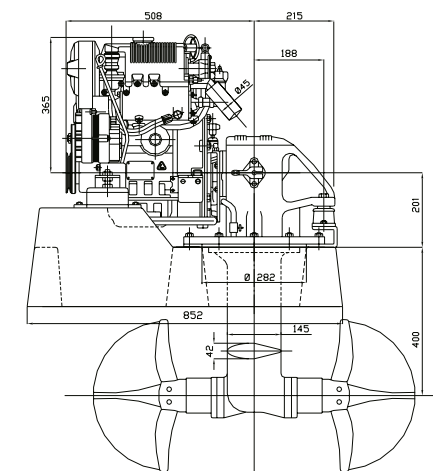
KDW 502 SD



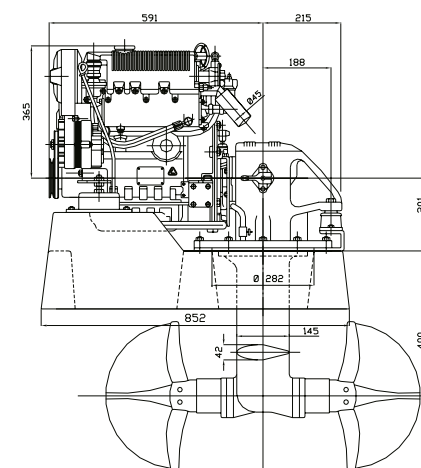
KDW 502 SD



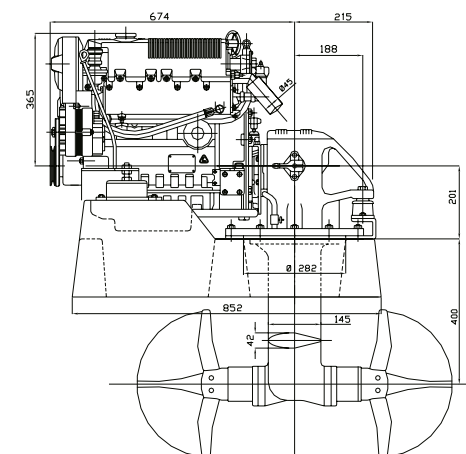
KDW 702 SD - 1003 SD - 1404 SD



KDW 702 SD



KDW 1003 SD



KDW 1404 SD

# FEATURES AND OPTIONS

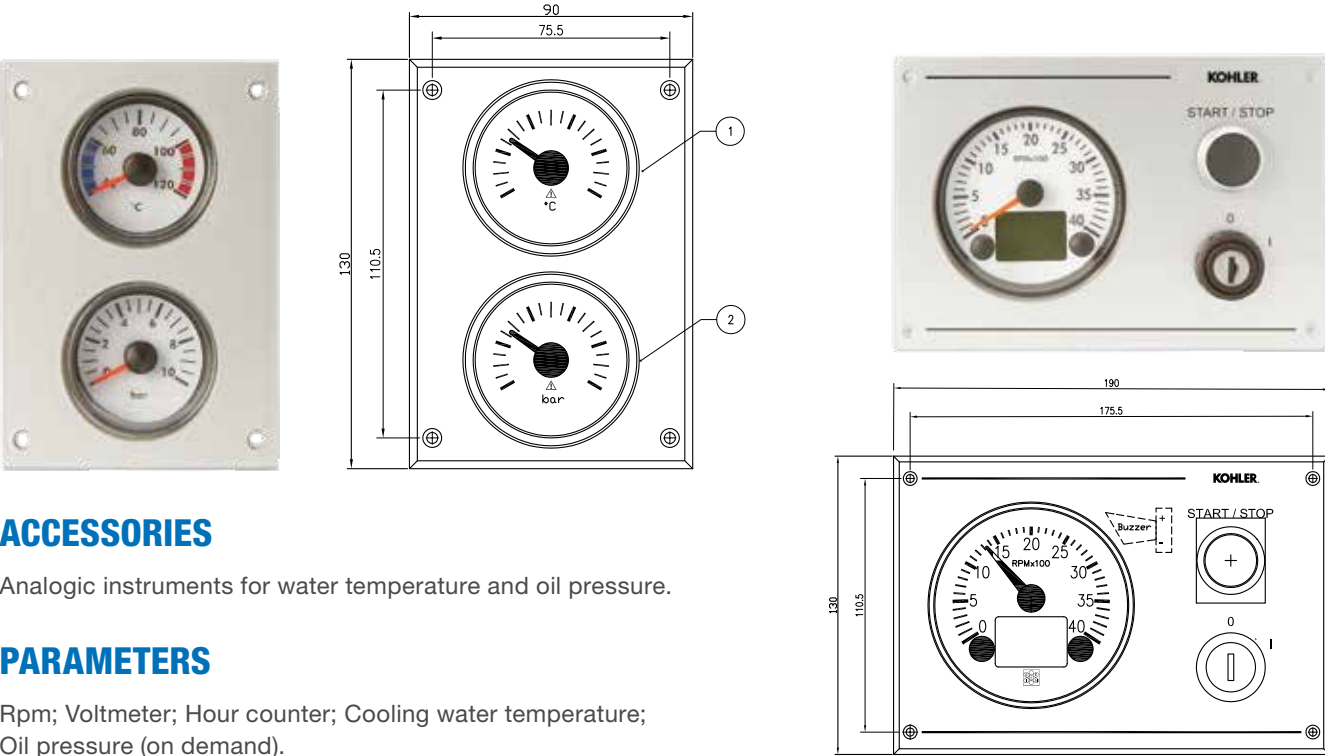


Model	LDW/KDW 502M	LDW/KDW 702M	LDW/KDW 1003M	LDW/KDW 1404M
N. Cylinders	2	2	3	4
Bore & stroke	72x62	75x77.6	75x77.6	75x77.6
Displacement cm³	505	686	1028	1372
Power	HP	11	18	27
	kW	8	13.2	19.5
Compliant	EU RCD Stage 2	EU RCD Stage 2	EU RCD Stage 2	EU RCD Stage 2
RPM	3600	3600	3600	3600
Weight kgs (dry)	82 •	99 •	115 •	133 ••
Weight kgs (dry) S-Drive engines	108	125	141	160

## RUBBER MOUNTS

KDW 502M	KDW 702M - KDW 1003M KDW 1404M

## DELUXE PANEL



### ACCESSORIES

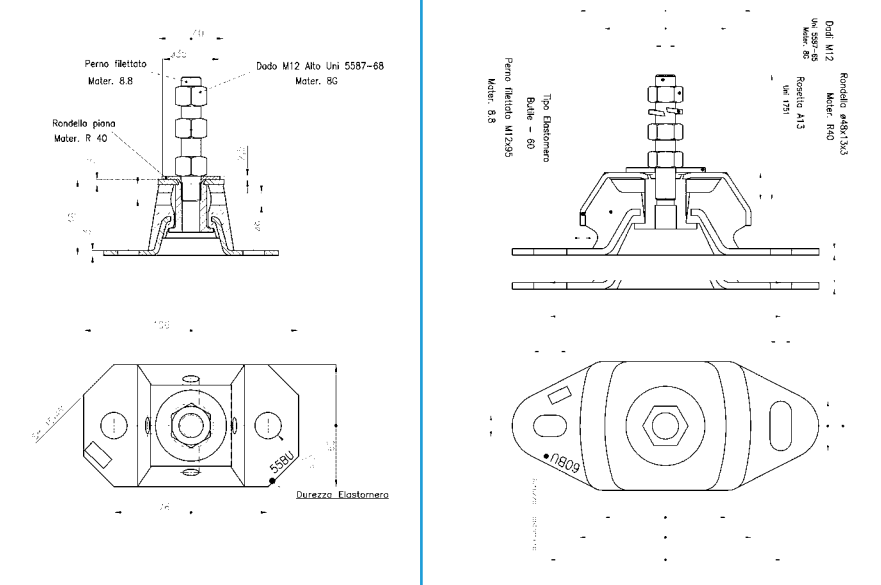
Analogue instruments for water temperature and oil pressure.

### PARAMETERS

Rpm; Voltmeter; Hour counter; Cooling water temperature; Oil pressure (on demand).

### ALARMS

Hight fresh water temperature; Low oil pressure; Alternator charge; Service intervals.





Lombardini Marine is a division  
of Lombardini Srl, part of Kohler Group.

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Printed in Italy

ED0035585260

Rev.05 07/21

KOHLER CO.