Liquid cooled Diesel engines

8.6-26.0 kW

KOHLER® Engines

WATER COOLED DIESEL ENGINES
8.6-26.0 KW

STANDARD EQUIPMENT
External oil filter
Exhaust manifold
Intake manifold
Intake fan
Accelerator control
Electric starter and 12V alternator
Thermostatic valve
Flywheel with ring gear
Fuel feed diaphragm pump
Starter plate
Water pump
Flanging plate
Electric stop
Electronic plant for plugs
Alternators 12V or 24V
Fuel filter on engine
User maintenance &
spare parts booklet

ACCESSORIES ON DEMAND
Different guards according to use
Clutch flywheels
Flanges
Trasmission adaptors
Keyswitch panel
Radiators
Blowing fan
Engine feet
Fuel tanks
Mufflers
Dry air cleaners mounted and separated
Cyclonic precleaners
High capacity oil sumps*
Cab heating system
Hydraulic pump adaptors
Vacuum system adaptors
Electrical fuel feeding pump

* Not on KDW 502 /LDW 502 model


KOHLER

KDW 502
LDW 502

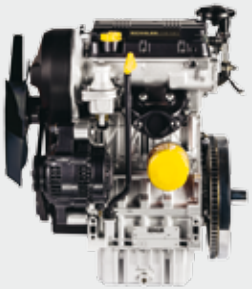
QUICK SPECIFICS

2
CYLINDERS

11.5 HP | **8.6** kW @ 3600 rpm

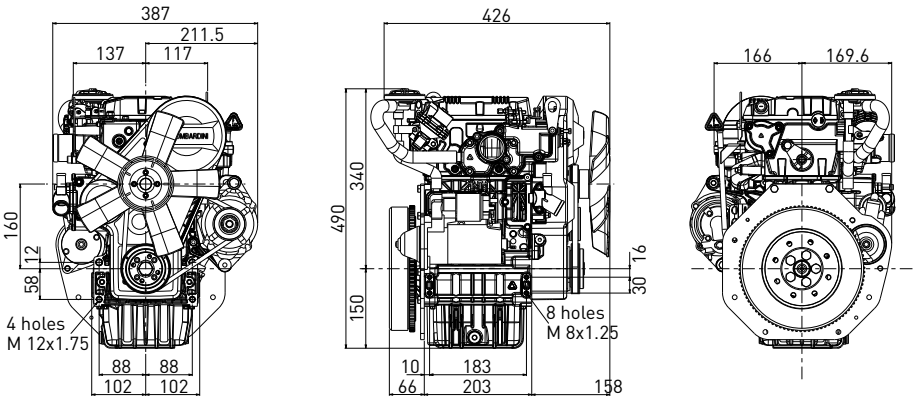
24.5 Nm @ 2200 rpm

(Power & torque N curve - 80/1269/CE E-ISO 1585)

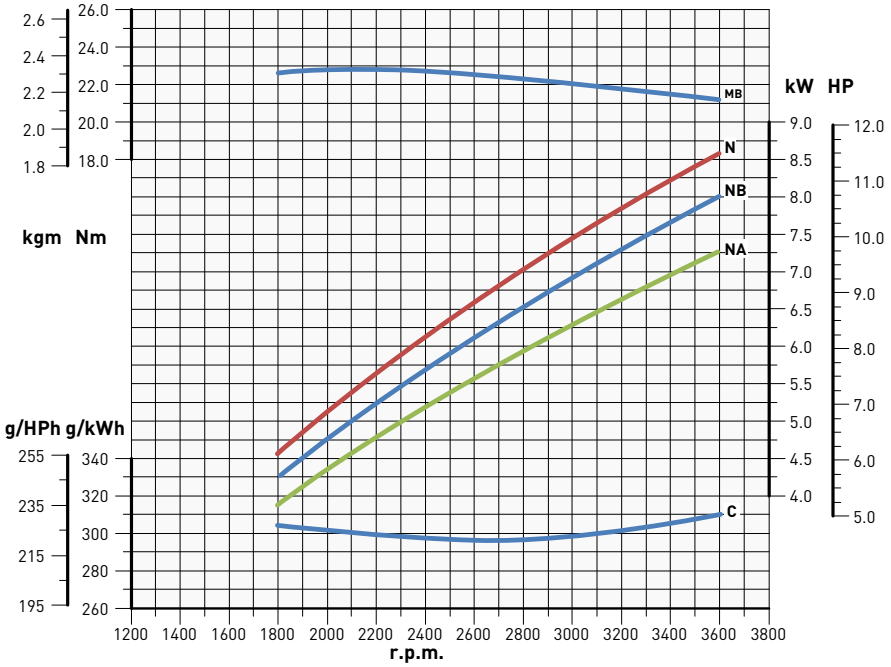


DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



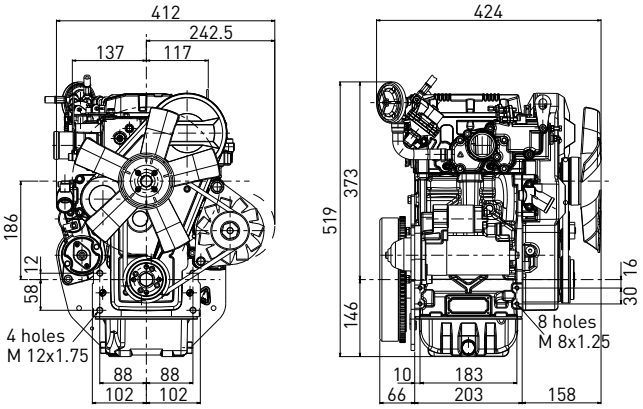
N - Power curve - 80/1269/CE E-ISO 1585
NB - Power curve - ISO 3046/1 -IFN
NA - Power curve - ISO 3046/1 - ICXN
MB - Torque curve - (NB curve)
C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

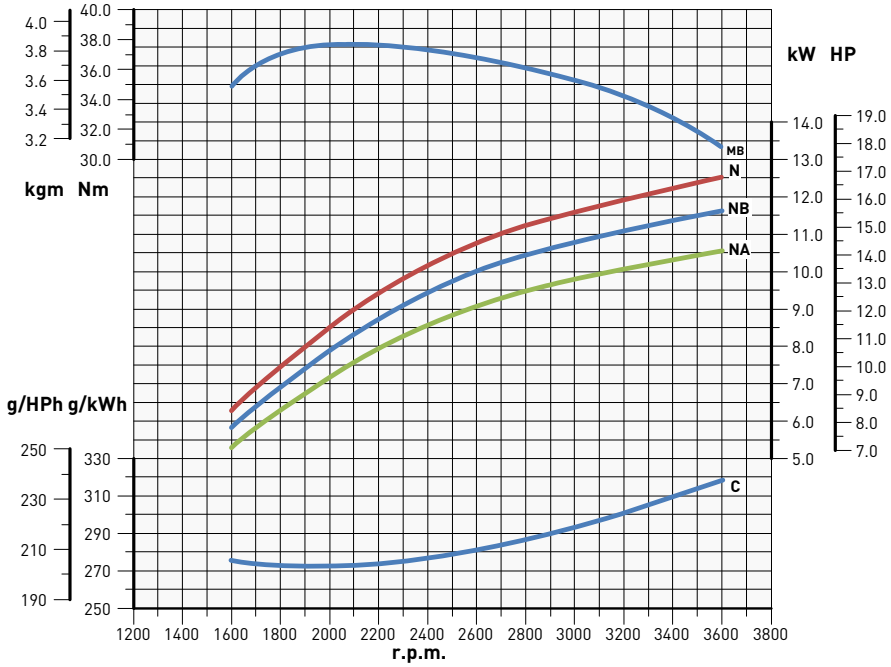
KDW 702
LDW 702

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



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Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

QUICK SPECIFICS

2
CYLINDERS

16.8 HP | **12.5** kW @ 3600 rpm

40.5 Nm @ 2000 rpm

(Power & torque N curve - 80/1269/CE E-ISO 1585)

SETTING @ 3000 rpm

Power max. NB* (kW)	Torque max. (Nm)
10.5 @ 3000 rpm	38.5 @ 2200 rpm

KDW 1003
LDW 1003

QUICK SPECIFICS

3
CYLINDERS

26.8 HP | **20** kW @ 3600 rpm

67 Nm @ 2000 rpm

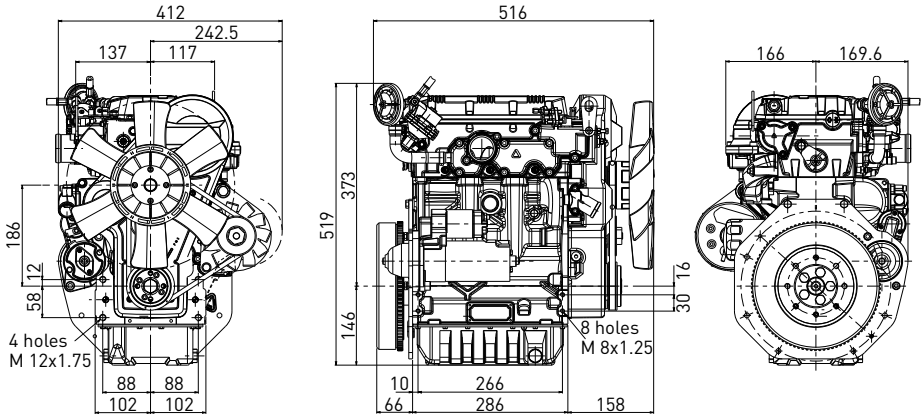
(Power & torque N curve - 80/1269/CE E-ISO 1585)

OTHER AVAILABLE SETTINGS

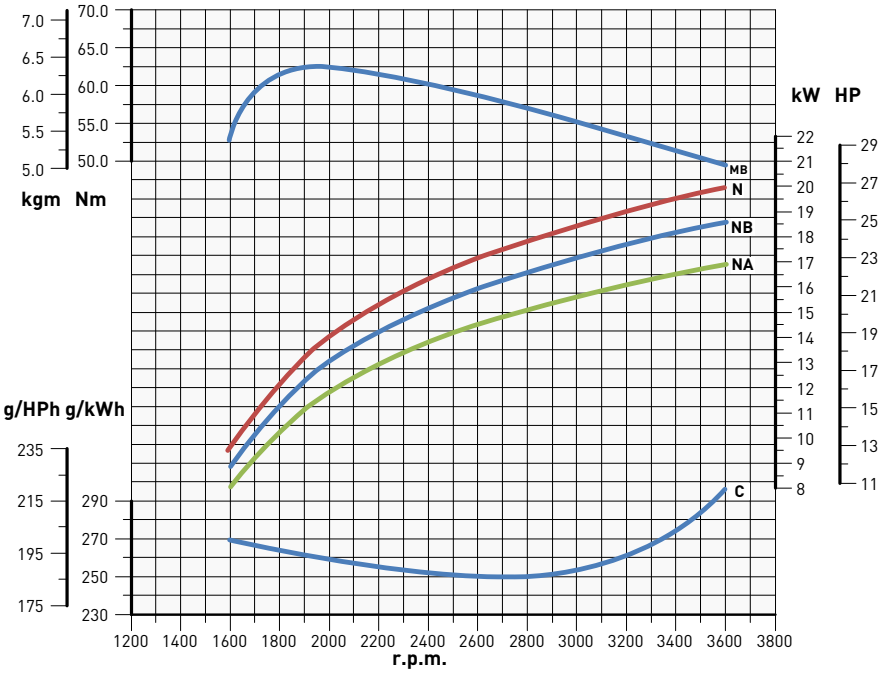
Power max. NB* (kW)	Torque max. (Nm)
16.2 @ 3000 rpm	59 @ 2000 rpm
13.5 @ 2500 rpm	57.5 @ 1700 rpm

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



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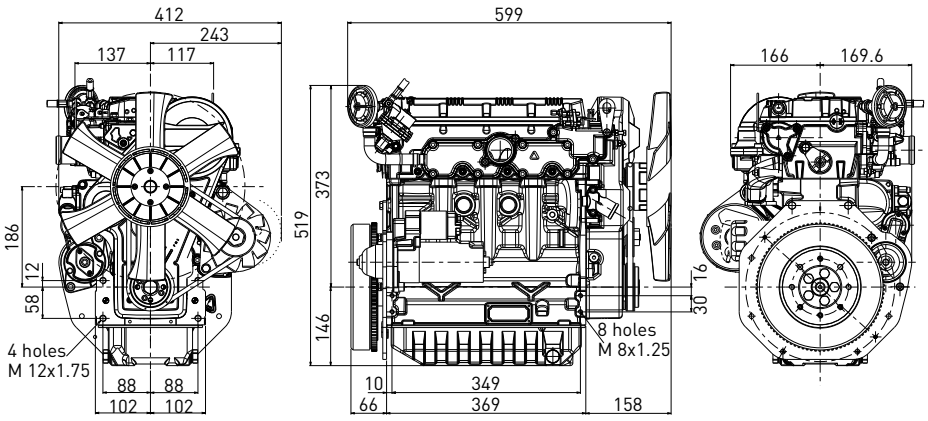
NB - Power curve - ISO 3046/1 -IFN
NA - Power curve - ISO 3046/1 - ICXN
MB - Torque curve - (NB curve)
C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

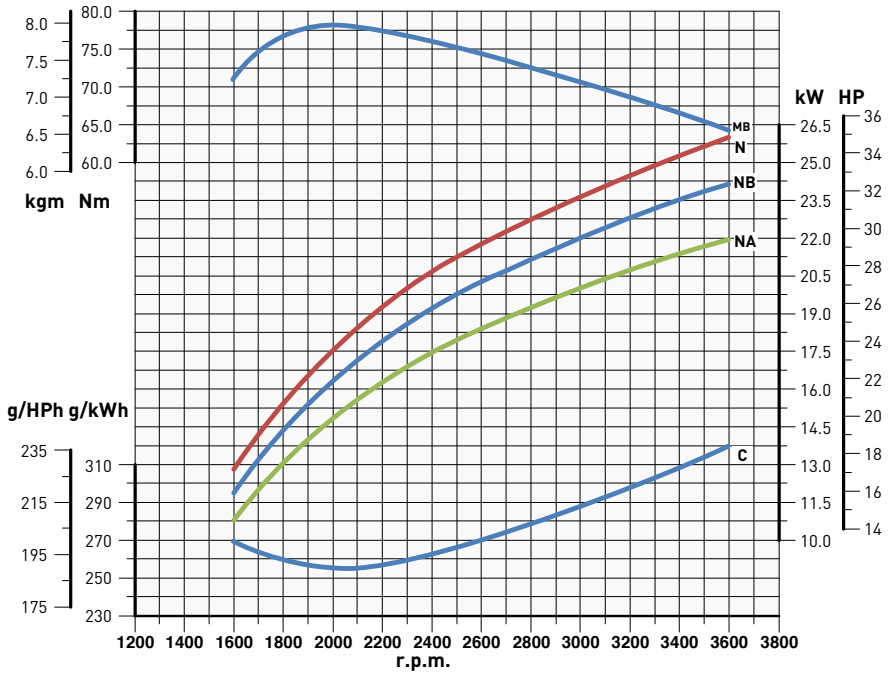
KDW 1404
LDW 1404

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



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NB - Power curve - ISO 3046/1 -IFN
NA - Power curve - ISO 3046/1 - ICXN
MB - Torque curve - (NB curve)
C - Specific fuel consumption - (NB curve)

Power ratings refer to engines equipped with air filter, standard muffler, after running-in period at ambient conditions of +25°C, relative humidity 30% and 1 bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C.

QUICK SPECIFICS

4
CYLINDERS

34.8 HP | **26** kW @ 3600 rpm

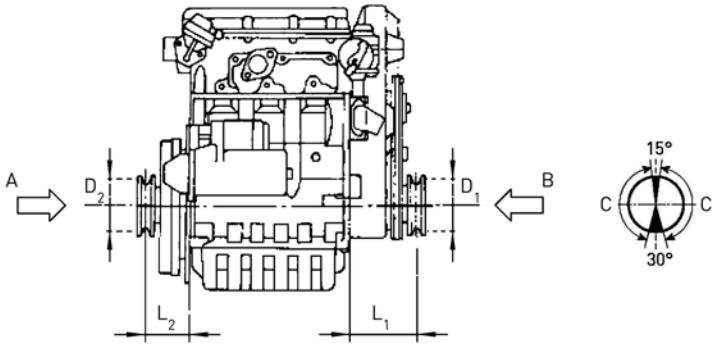
84 Nm @ 2000 rpm

(Power & torque N curve - 80/1269/CE E-ISO 1585)

OTHER AVAILABLE SETTINGS

Power max. NB* (kW)	Torque max. (Nm)
21.8 @ 3000 rpm	77.5 @ 1900 rpm
18 @ 2500 rpm	76 @ 1600 rpm

APPLICATIONS SPECS



KDW 502 / LDW 502

Minimum pulley diameters for belt drive

V BELT

$$D_2\ (mm) \geq 116\ [191 + L_2(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

COGGED BELT

$$D_1\ (mm) \geq 89\ [191 + L_1(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

Max intermittent axial load in both directions A-B= 300 kg

C - Zone in which the radial loads can be applied

KDW 702 / LDW 702

Minimum pulley diameters for belt drive

V BELT

$$D_2\ (mm) \geq 143\ [101 + L_2(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

COGGED BELT

$$D_1\ (mm) \geq 99\ [101 + L_1(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

Max intermittent axial load in both directions A-B= 300 kg

C - Zone in which the radial loads can be applied

KDW 1003 / LDW 1003

Minimum pulley diameters for belt drive

V BELT

$$D_2\ (mm) \geq 114\ [101 + L_2(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

COGGED BELT

$$D_1\ (mm) \geq 79\ [101 + L_1(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

Max intermittent axial load in both directions A-B= 300 kg

C - Zone in which the radial loads can be applied

KDW 1404 / LDW 1404

Minimum pulley diameters for belt drive

V BELT

$$D_2\ (mm) \geq 110\ [101 + L_2(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

COGGED BELT

$$D_1\ (mm) \geq 72\ [101 + L_1(mm)]\frac{N\ (kW)}{n\ (rpm)}$$

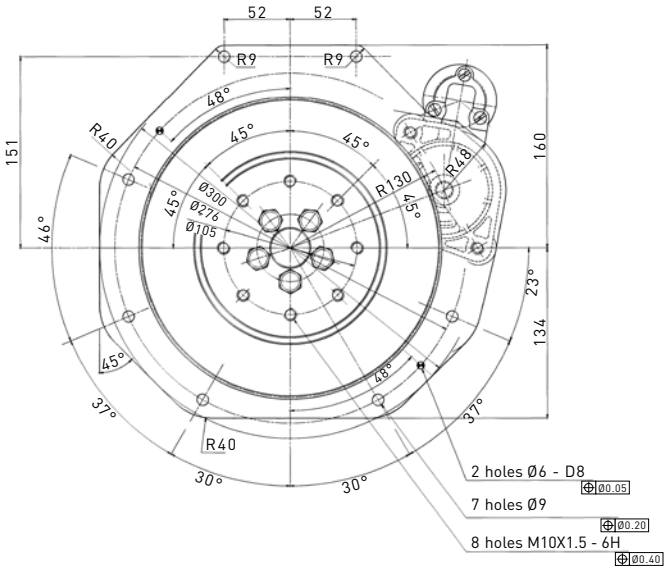
Max intermittent axial load in both directions A-B= 300 kg

C - Zone in which the radial loads can be applied

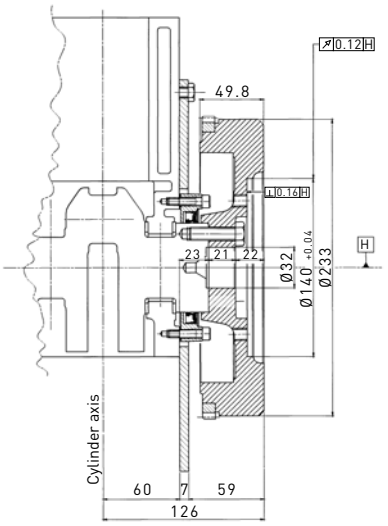
AVAILABLE FLANGES*

Standard version - KDW 502 / KDW 702 / KDW 1003 / KDW 1404 LDW 502 / LDW 702 / LDW 1003 / LDW 1404

Flange standard type KDW 502 / KDW 702 / KDW 1003 / KDW 1404 LDW 502 / LDW 702 / LDW 1003 / LDW 1404

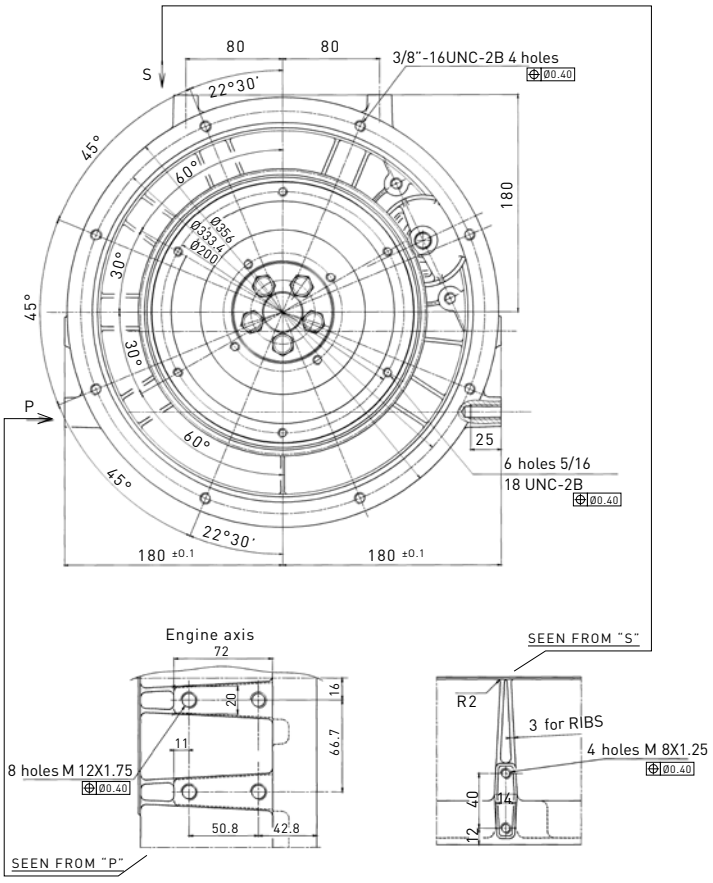


Standard version

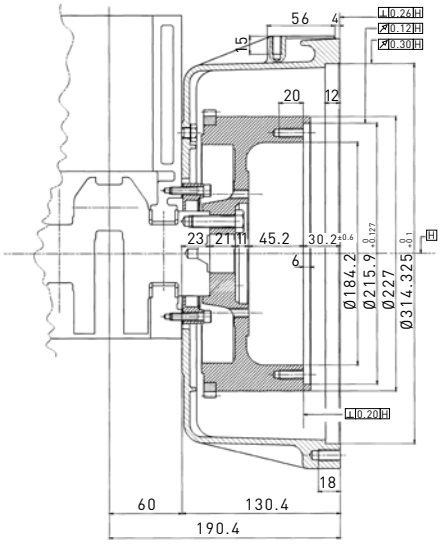


Version Genset - KDW 502 / KDW 702 / KDW 1003 / KDW 1404 LDW 502 / LDW 702 / LDW 1003 / LDW 1404

Flange Genset KDW 502 / KDW 702 / KDW 1003 / KDW 1404 LDW 502 / LDW 702 / LDW 1003 / LDW 1404



Standard version



*Other flanges available on request

TECHNICAL SPECIFICATIONS

Model		KDW 502 LDW 502	KDW 702 LDW 702	
Engine specs	4 stroke diesel engine with cylinders in line	•	•	
	Liquid cooled with axial fan	•	•	
	Indirect injection with injector pump on head	•	•	
	Single –shaft distribution in head	•	•	
	Double PTO on crankshaft	•	•	
	3rd PTO on the distribution	•	•	
	Counterclockwise rotation (1st PTO)	•	•	
	Forced lubrication with vane pump on the crankshaft	•	•	
	Full flow external oil filter	•	•	
	Water pump in the engine block	•	•	
	Automatic extra fuel starting device	•	•	
	Centrifugal governor	•	•	
	Torque regulator	•	•	
	Aluminum cylinder head	•	•	
	Cast iron engine block with re-borable integral liners	-	•	
	Die-cast aluminum engine block with reinforced structure	•	-	
	2 valves per cylinder	•	•	
	Overhead camshaft on head driven by cogged belt	•	•	
	Breather return oil steam	•	•	
	Heating cab system predisposition	•	-	
Technical features	Cylinder	2	2	
	Bore (mm)	72	75	
	Stroke (mm)	62	77.6	
	Engine displ (cm^3)	505	686	
	Injection system	IDI	IDI	
	Compression ratio	22.8:1	22.8:1	
Performance	Emission compliance	ECE R 24	ECE R 24	EPA TIER 4
	Rating (kW/HP): N (80/1269/CEE)ISO 1585 NB ISO 3046 IFN NA ISO 3046 ICXN	8.6 /11.7 8.0 /10.8 7.25 /9.8	12.5 /17.0 11.7 /16.0 10.7 /14.5	- 11.5 /15.6 # 10.5 /14.3 #
	Max torque (Nm@rpm): N (80/1269/CEE)ISO 1585	24.5 @ 2200	40.5 @ 2000	34.0 @ 2200
	Min idling speed (rpm)	900	900	
Fuel compatibility	UNI EN 590-2010	•	•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 15	•	•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 500	•	•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 15	•	•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 500	•	•	
	ARCTIC EN 590/ASTM D 975-09 B	•	•	
	High Sulfur Fuel < 5000 ppm (< 0.5%)	•	•	
	High Sulfur Fuel > 5000 ppm (> 0.5%)	•	•	
	Military NATO Fuels F34 - F35 - F44 - F63 - F64 - F65 *	•	•	
	Military US Fuels JP5 - JP8 (AVTUR) *	•	•	
	Civil Jet Fuels Jet A/ A1*	•	•	
Service features	Oil sump capacity (l)	1.4	1.6	
	Oil consumption (kg/h)	0.007	0.009	
	Oil change interval std/synthetic (hr)	150**	250**	
	Oil filter change interval std/synthetic (hr)	150**	250**	
	Valve adjustement	500	500	
	Oil consumption (% fuel)	<0.2	<0.2	
Physical characteristics	H × L × W (mm)	490 × 426 × 387	519 × 424 × 412	
	Dry weight (kg)	54	66	
	Ambient operating temps (°C)	-15 +50***	-15 +50***	
	Gradeability-all round (intermittent -30 min) (deg)	25	25	
	Gradeability-all round (peak value -1 min) (deg)	35	35	
	Cap. of air required for correct combustion @3600 (l/min)	910	1240	
	Cap. of air required for correct cooling @3600 (m^3/min)	65 (1:1.23)	65 (1:1.23)	
Cooling & lubrication	Heat rejection to coolant (includes oil cooler) (kW)	8.6	12.5	
	Cooling fluid: 50/50 water/antifreeze	•	•	
	Oil type	SAE 5W 40 API SERVICE CF	SAE 5W 40 API SERVICE CF	
Auxiliary PTOs (3rd optional)	Max torque (Nm)	-	37.0 @ 1800 rpm	
	Drive ratio	0.5:1	0.5:1	

* With restrictions ** According to operating conditions *** -32° on demand # Net power rating without cooling fan

Model		KDW 1003 LDW 1003		KDW 1404 LDW 1404	
Engine specs	4 stroke diesel engine with cylinders in line	•		•	
	Liquid cooled with axial fan	•		•	
	Indirect injection with injector pump on head	•		•	
	Single –shaft distribution in head	•		•	
	Double PTO on crankshaft	•		•	
	3rd PTO on the distribution	•		•	
	Counterclockwise rotation (1st PTO)	•		•	
	Forced lubrication with vane pump on the crankshaft	•		•	
	Full flow external oil filter	•		•	
	Water pump in the engine block	•		•	
	Automatic extra fuel starting device	•		•	
	Centrifugal governor	•		•	
	Torque regulator	•		•	
	Aluminum cylinder head	•		•	
	Cast iron engine block with re-borable integral liners	•		•	
	Die-cast aluminum engine block with reinforced structure	-		-	
	2 valves per cylinder	•		•	
	Overhead camshaft on head driven by cogged belt	•		•	
	Breather return oil steam	•		•	
	Heating cab system predisposition	-		-	
Technical features	Cylinder	3		4	
	Bore (mm)	75		75	
	Stroke (mm)	77.6		77.6	
	Engine displ (cm^3)	1028		1372	
	Injection system	IDI		IDI	
	Compression ratio	22.8:1		22.8:1	
Performance	Emission compliance	ECE R 24	EPA TIER 4	ECE R 24	EPA TIER 4
	Rating (kW/HP): N (80/1269/CEE)ISO 1585 NB ISO 3046 IFN NA ISO 3046 ICXN	20.0 /26.8 18.6 /24.9 17.0 /22.8	- 17.7 /24.1 # 16.1 /21.9 #	26.0 /35.2 24.5 /33.3 22.4 /30.5	(@ 2700) 17.9 /24.3 # 16.3 /22.2 #
	Max torque (Nm@rpm): N (80/1269/CEE)ISO 1585	67.0 @ 2000	50.0 @ 2600	84.0 @ 2000	70.0 @ 1600
	Min idling speed (rpm)	900		900	
Fuel compatibility	UNI EN 590-2010	•		•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 15	•		•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 500	•		•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 15	•		•	
	No 2 Diesel (US) - ASTM D 975-09 B - Grade 2-D S 500	•		•	
	ARCTIC EN 590/ASTM D 975-09 B	•		•	
	High Sulfur Fuel < 5000 ppm (< 0.5%)	•		•	
	High Sulfur Fuel > 5000 ppm (> 0.5%)	•		•	
	Military NATO Fuels F34 - F35 - F44 - F63 - F64 - F65 *	•		•	
	Military US Fuels JP5 - JP8 (AVTUR) *	•		•	
	Civil Jet Fuels Jet A/ A1*	•		•	
Service features	Oil sump capacity (l)	2.4		3.2	
	Oil consumption (kg/h)	0.013		0.017	
	Oil change interval std/synthetic (hr)	250**		250**	
	Oil filter change interval std/synthetic (hr)	250**		250**	
	Valve adjustement	500		500	
	Oil consumption (% fuel)	<0.2		<0.2	
Physical characteristics	H×L×W (mm)	519×516×412		519×599×412	
	Dry weight (kg)	85		98	
	Ambient operating temps (°C)	-15 +50***		-15 +50***	
	Gradeability-all round (intermittent -30 min) (deg)	25		25	
	Gradeability-all round (peak value -1 min) (deg)	35		35	
	Cap. of air required for correct combustion @3600 (l/min)	1850		2470	
	Cap. of air required for correct cooling @3600 (m^3/min)	80 (1:1)		115 (1:1)	
Cooling & lubrication	Heat rejection to coolant (includes oil cooler) (kW)	19.5		26.0	
	Cooling fluid: 50/50 water/antifreeze	•		•	
	Oil type	SAE 5W 40 API SERVICE CF		SAE 5W 40 API SERVICE CF	
Auxiliary PTOs (3rd optional)	Max torque (Nm)	37.0 @ 1800 rpm		37.0 @ 1800 rpm	
	Drive ratio	0.5:1		0.5:1	

* With restrictions ** According to operating conditions *** -32° on demand # Net power rating without cooling fan

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KOHLER. Engines

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EUROPE
Lombardini Srl
Via Cav. del lavoro
A. Lombardini n° 2
42124 Reggio Emilia, ITALY
T. +39-(0)522-389-1
infodiesel@kohler.com

UK
Lombardini U.K. Ltd
1, Rochester Barn - Eynsham Road
OX2 9NH
Oxford, UK
T. +44-(0)1865-863858
F. +44-(0)1865-861754

FRANCE
Lombardini France S.a.s.
47 Allée de Riottier,
69400 Limas, FRANCE
T. +33-(0)474-626500
F. +33-(0)474-623945

DEUTSCHLAND
Lombardini Motoren GmbH
Fritz-Klatte-Str. 6, Bürogebäude 2
65933 Frankfurt am Main,
DEUTSCHLAND
T. +49-(0)69-9508160
F. +49-(0)69-95081630

ESPAÑA
Lombardini ESPAÑA, S.L.
P.I. Cova Solera 1-9
08191 - Rubí (Barcelona)
ESPAÑA
T. +34-(0)9358-62111
F. +34-(0)9369-71613

ROAPAC
Kohler Singapore Pte Ltd (Kohler Power Systems)
7 Jurong Pier Road
SINGAPORE 619159
T. +65-63020701
Sgsalesall@kohler.com