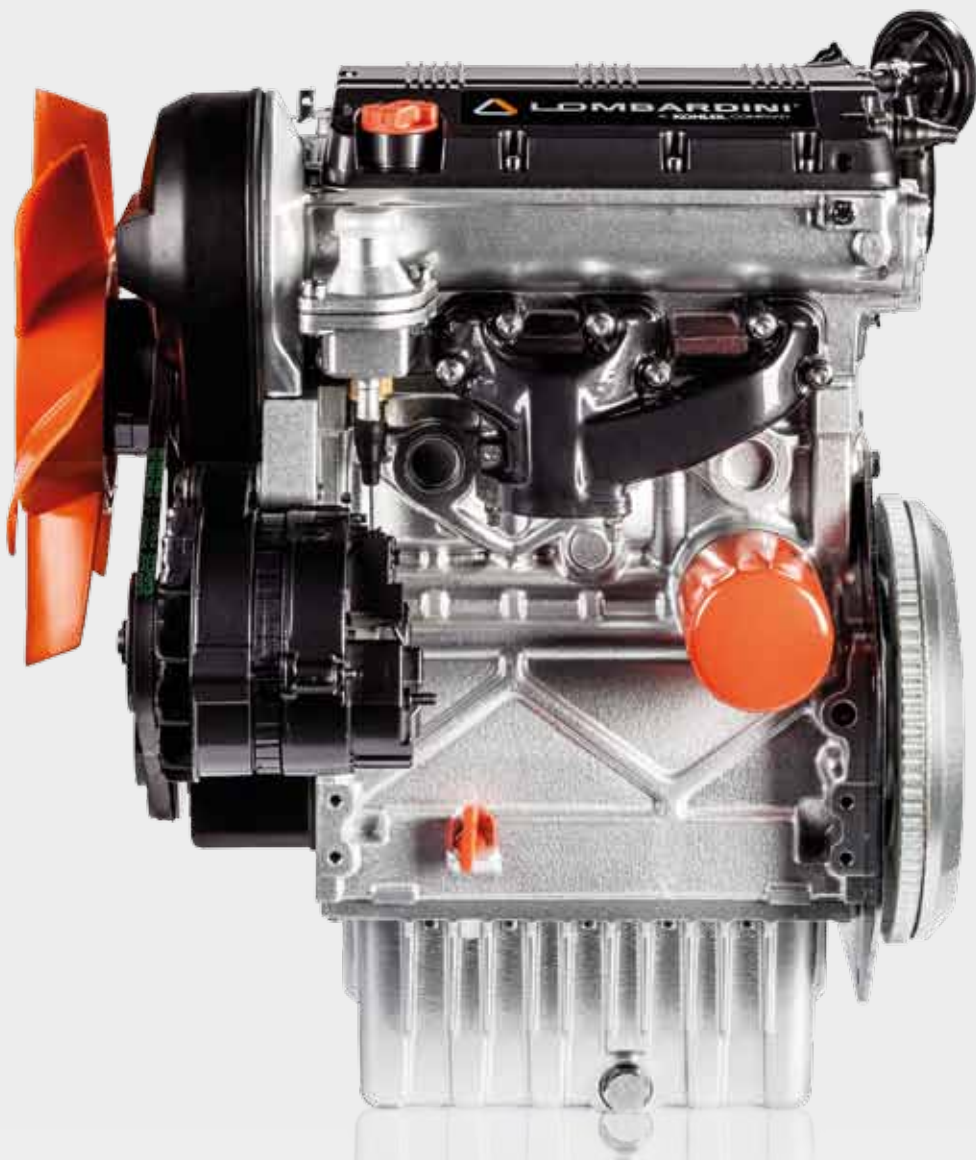


# Water cooled Diesel engines

8.6-26.0 kW



 **LOMBARDINI**<sup>®</sup>  
A **KOHLER** COMPANY

# 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
- Transmission 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 LDW502 model





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# LDW 502

## QUICK SPECIFICS

**2**  
CYLINDERS

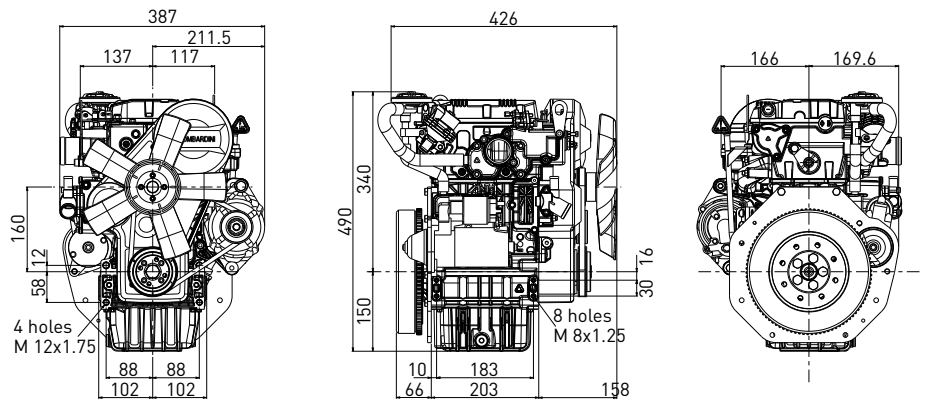
**11.5** | **8.6** @ 3600 rpm  
HP | kW

**24.5** @ 2200 rpm  
Nm

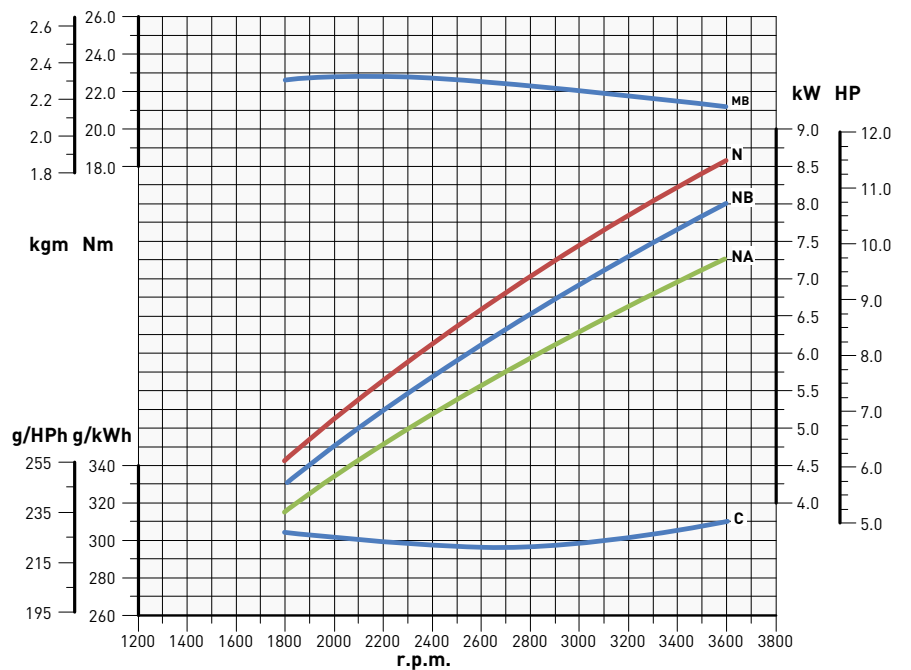


## DATA

### DIMENSIONS (mm)



### PERFORMANCE CURVES



- 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 equiped with air filter, standard muffler, after being run in and in ambient conditions of 20°C and 1 bar. Power levels drop by 1% every 100m altitude and by 2% every 5°C above 20°C.

# LDW 702



## QUICK SPECIFICS

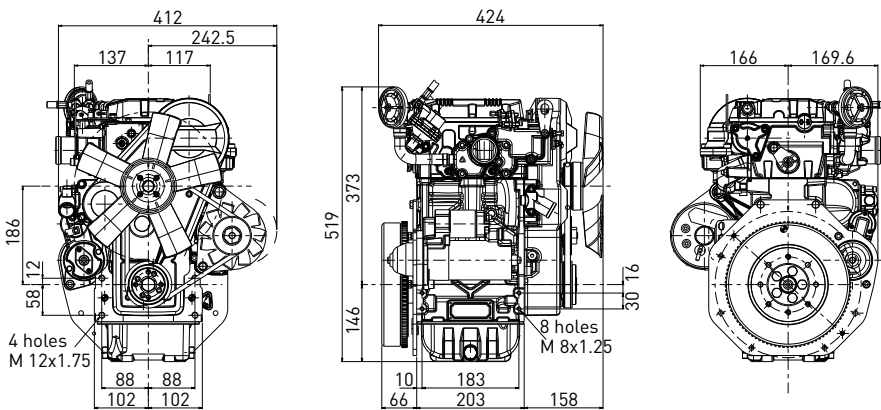
**2**  
CYLINDERS

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

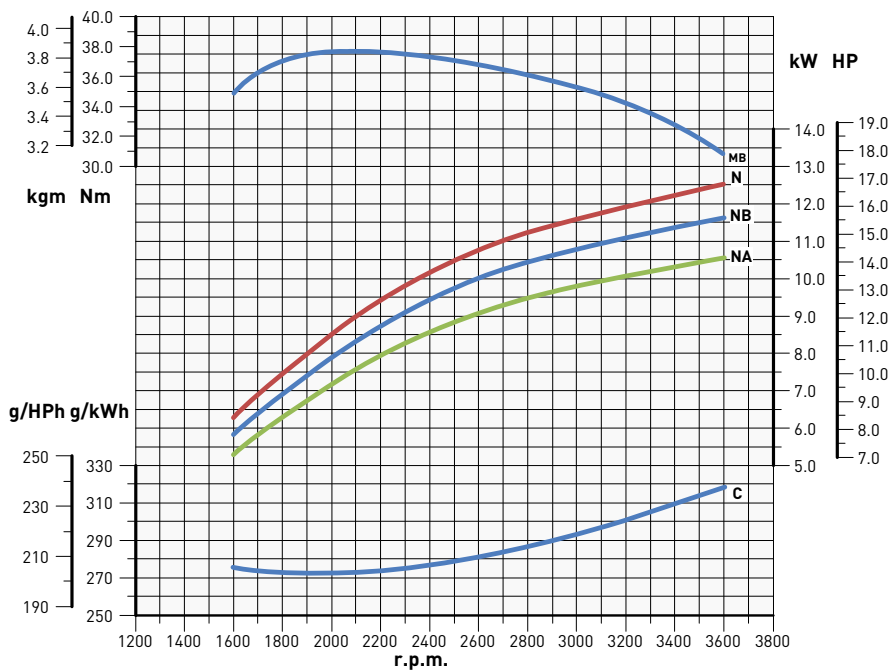
**40.5** @ 2000 rpm  
Nm

## DATA

### DIMENSIONS (mm)



### PERFORMANCE CURVES



**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 equiped with air filter, standard muffler, after being run in and in ambient conditions of 20°C and 1 bar. Power levels drop by 1% every 100m altitude and by 2% every 5°C above 20°C.

### SETTING @ 3000 RPM

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

### GENSET RATINGS

(rpm)	Intermittent [NB] (kW)	Continuous [NA] (kW)
3600	11.5	10.4
3000	11.0	10.0
1800	6.5	5.9
1500	5.5	5.0

# LDW 1003

## QUICK SPECIFICS

**3**  
CYLINDERS

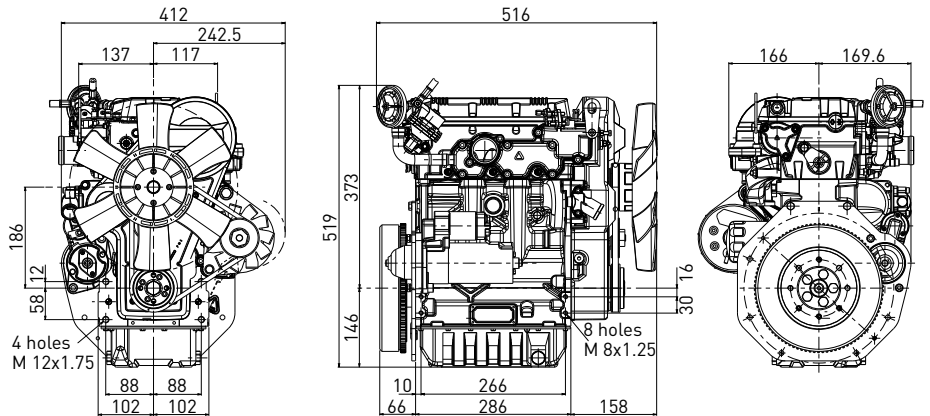
**26.1** | **19.5** @ 3600 rpm  
HP kW

**67** @ 2000 rpm  
Nm

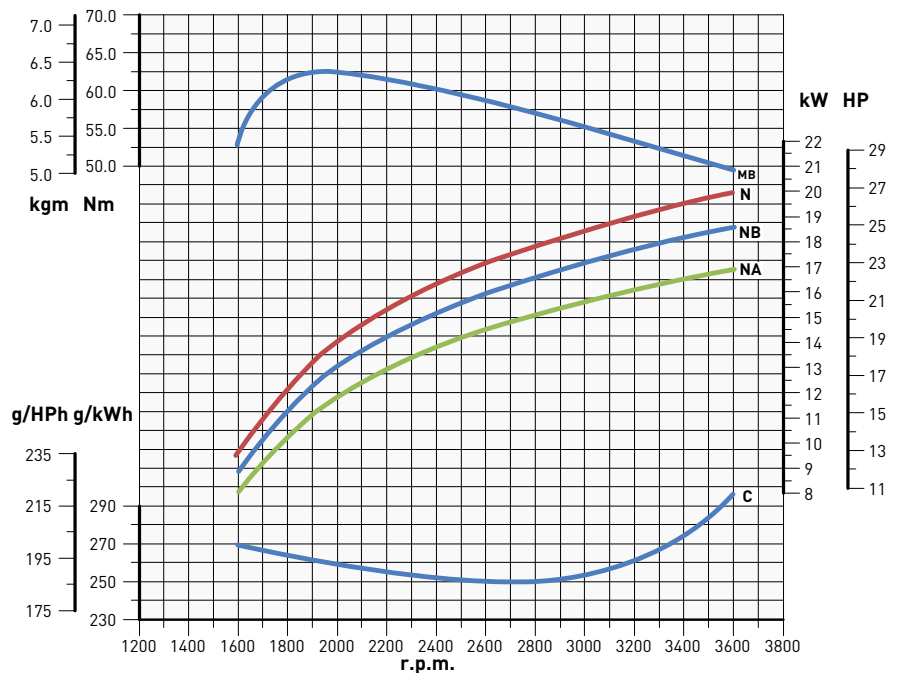


## DATA

### DIMENSIONS (mm)



### PERFORMANCE CURVES



### OTHER AVAILABLE SETTINGS

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

### GENSET RATINGS

(rpm)	Intermittent [NB] (kW)	Continuous [NA] (kW)
3600	18.0	16.4
3000	16.5	15.0
1800	10.0	9.1
1500	8.5	7.7

**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 equiped with air filter, standard muffler, after being run in and in ambient conditions of 20°C and 1 bar. Power levels drop by 1% every 100m altitude and by 2% every 5°C above 20°C.

# LDW 1404



## QUICK SPECIFICS

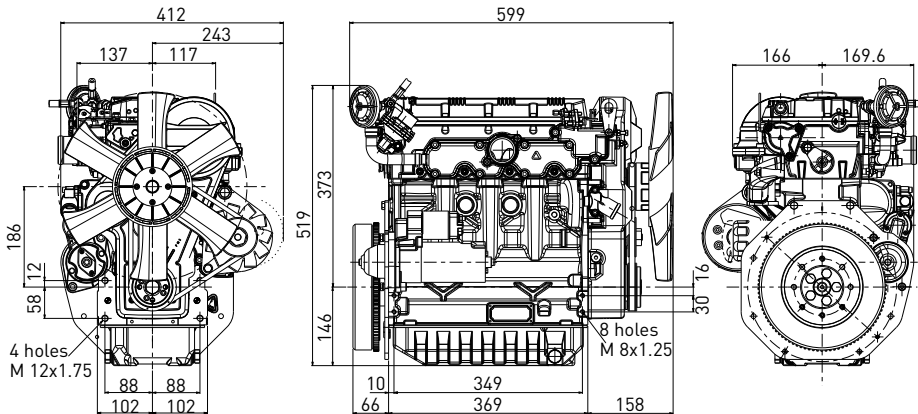
**4**  
CYLINDERS

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

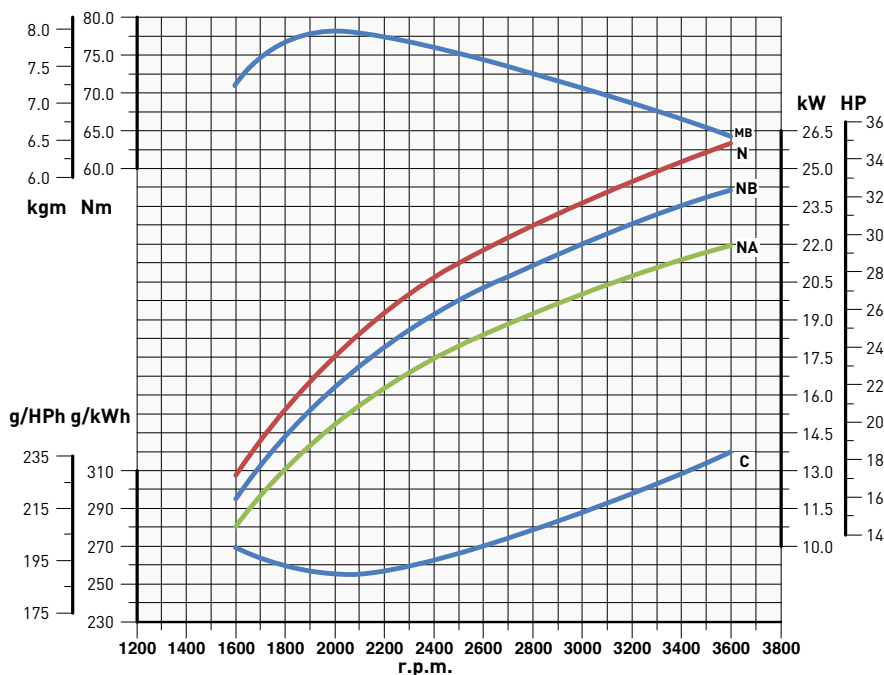
**84** @ 2000 rpm  
Nm

## DATA

### DIMENSIONS (mm)



### PERFORMANCE CURVES



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

Power ratings refer to engines equiped with air filter, standard muffler, after being run in and in ambient conditions of 20°C and 1 bar. Power levels drop by 1% every 100m altitude and by 2% every 5°C above 20°C.

### OTHER AVAILABLE SETTINGS

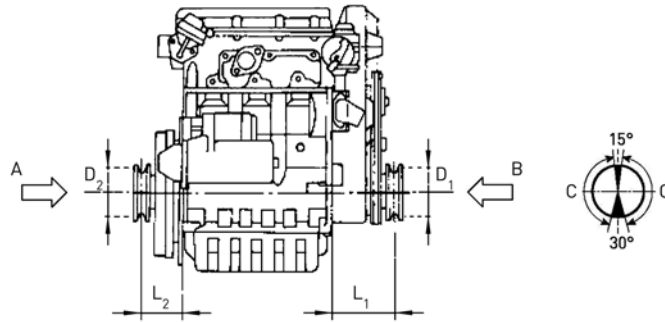
Power max. [N] (kW)	Torque max. (Nm)
21.8 @ 3000 rpm	77.5 @ 1900 rpm
18 @ 2500 rpm	76 @ 1600 rpm

### GENSET RATINGS

(rpm)	Intermittent [NB] (kW)	Continuous [NA] (kW)
3600	24.0	21.8
3000	22.0	20.0
1800	13.5	12.3
1500	11.5	10.5

## APPLICATIONS SPECS

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### LDW 502

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Minimum pulley diameters for belt drive

V belt  

$$D_2 \text{ (mm)} \geq 85 [191 + L_2 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

Cogged belt  

$$D_1 \text{ (mm)} \geq 65 [191 + L_1 \text{ (mm)}] \frac{N \text{ (HP)}}{n \text{ (rpm)}}$$

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

C - Zone in which the radial loads can be applied

### LDW 702

---

Minimum pulley diameters for belt drive

V belt  

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

Cogged belt  

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

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

C - Zone in which the radial loads can be applied

### LDW 1003

---

Minimum pulley diameters for belt drive

V belt  

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

Cogged belt  

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

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

C - Zone in which the radial loads can be applied

### LDW 1404

---

Minimum pulley diameters for belt drive

V belt  

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

Cogged belt  

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

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

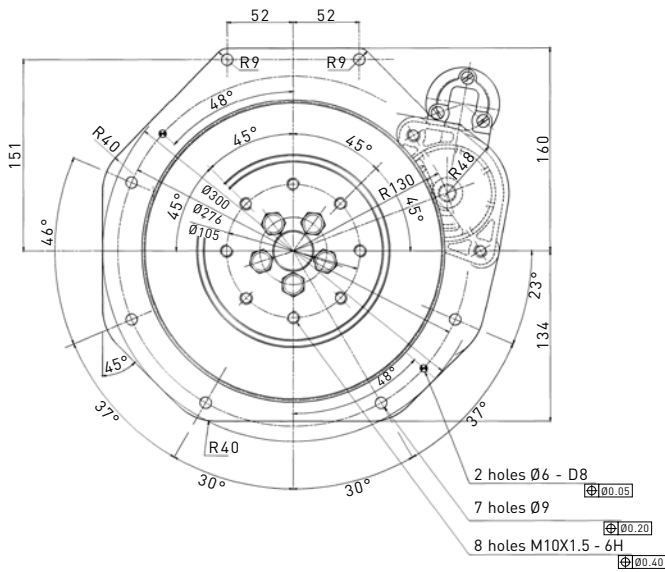
C - Zone in which the radial loads can be applied



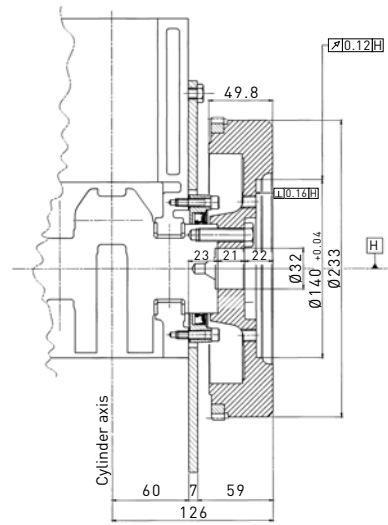
# AVAILABLE FLANGES\*

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

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

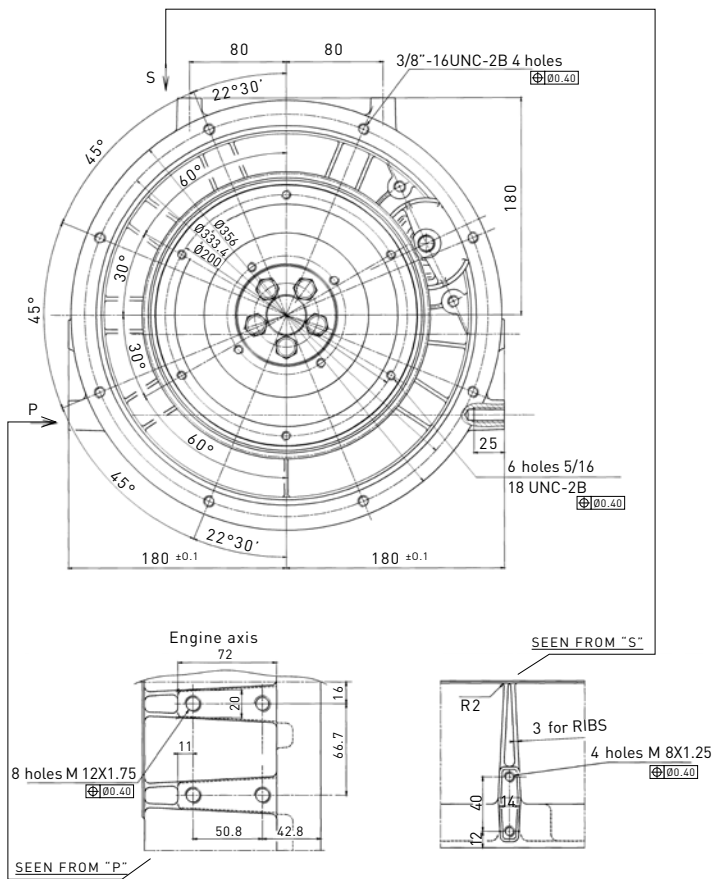


Standard version

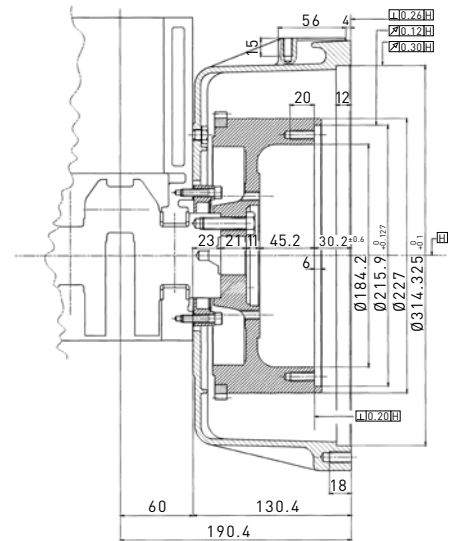


Version Genset - LDW 502 / LDW 702 / LDW 1003 / LDW 1404

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



Standard version



\*Other flanges available on request

# TECHNICAL SPECIFICATIONS

Model		LDW 502	LDW 702
<b>Engine specs</b>	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	•	•
	3 <sup>rd</sup> PTO on the distribution	•	•
	Counterclockwise rotation (1 <sup>st</sup> 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	•	-	
<b>Technical features</b>	Cylinder	2	2
	Bore (mm)	72	75
	Stroke (mm)	62	77.6
	Engine displ (cm <sup>3</sup> )	505	686
	Injection system	IDI	IDI
	Compression ratio	22.8:1	22.8:1
	Emission compliance	ECE R 24	EPA TIER 4 / ECE R 24
<b>Performance</b>	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 10.5 /14.3 @ 3600 10.7 /14.5
	Max torque (Nm@rpm)	24.5 @ 2200	40.5 @ 2000
	Min idling speed (rpm)	900	900
<b>Fuel compatibility</b>	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**	•	•	
<b>Service features</b>	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 adjustment	500	500
	Oil consumption (% fuel)	<0.2	<0.2
<b>Physical characteristics</b>	H x L x W (mm)	490 x 426 x 387	519 x 424 x 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 <sup>3</sup> /min)	65 (1:1.23)	65 (1:1.23)
<b>Cooling &amp; lubrication</b>	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
<b>Auxiliary PTOs (3rd optional)</b>	Max torque (Nm)	-	37.0 @ 1800 rpm
	Drive ratio	0.5:1	0.5:1

\* With restrictions \*\* According to operating conditions \*\*\* -32° on demand

Model		LDW 1003	LDW 1404
<b>Engine specs</b>	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	•	•
	3 <sup>rd</sup> PTO on the distribution	•	•
	Counterclockwise rotation (1 <sup>st</sup> 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	-	-	
<b>Technical features</b>	Cylinder	3	4
	Bore (mm)	75	75
	Stroke (mm)	77.6	77.6
	Engine displ (cm <sup>3</sup> )	1028	1372
	Injection system	IDI	IDI
	Compression ratio	22.8:1	22.8:1
	Emission compliance	EPA TIER 4 / ECE R 24	EPA TIER 4 / ECE R 24
<b>Performance</b>	Rating (kW/HP): N (80/1269/CEE)ISO 1585 NB ISO 3046 IFN NA ISO 3046 ICXN	- 18.4 /25.0 @ 3600 16.7 /22.7 @ 3600	19.5 /26.5 18.0 /24.5 16.5 /22.4
	Max torque (Nm@rpm)	67.0@2000	84.0@2000
	Min idling speed (rpm)	900	900
<b>Fuel compatibility</b>	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**	•	•	
<b>Service features</b>	Oil sump capacity (l)	2.4	3.2
	Oil consumption (kg/h)	0.0013	0.0017
	Oil change interval std/synthetic (hr)	250**	250**
	Oil filter change interval std/synthetic (hr)	250**	250**
	Valve adjustment	500	500
	Oil consumption (% fuel)	<0.2	<0.2
<b>Physical characteristics</b>	H x L x W (mm)	519 x 516 x 412	519 x 599 x 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 <sup>3</sup> /min)	80 (1:1)	115 (1:1)
<b>Cooling &amp; lubrication</b>	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
<b>Auxiliary PTOs (3rd optional)</b>	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



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**EUROPE**  
**Lombardini Srl**  
Via Cav. del Lavoro  
A. Lombardini n° 2  
42124 Reggio Emilia, Italy  
T. +39 0522 38 91  
F. +39 0522 389 503

**USA & CANADA**  
**Kohler Co.**  
444 Highland Drive,  
Kohler - Wisconsin (53044), US  
T. +1 920 457 4441  
F. +1 920 459 1570