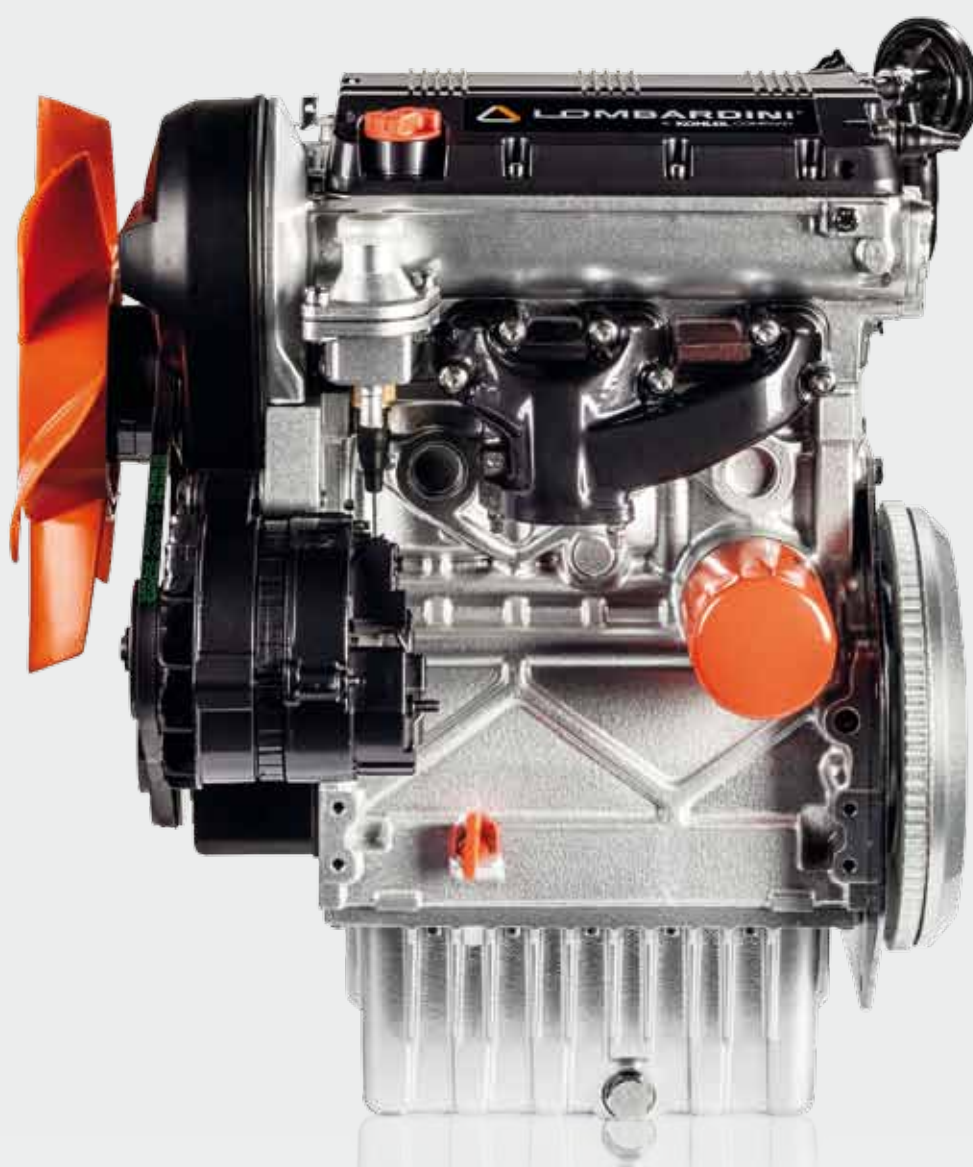


Liquid cooled Diesel engines

8.6-26.0 kW



 **LOMBARDINI**[®]
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





LDW 502

QUICK SPECIFICS

2
CYLINDERS

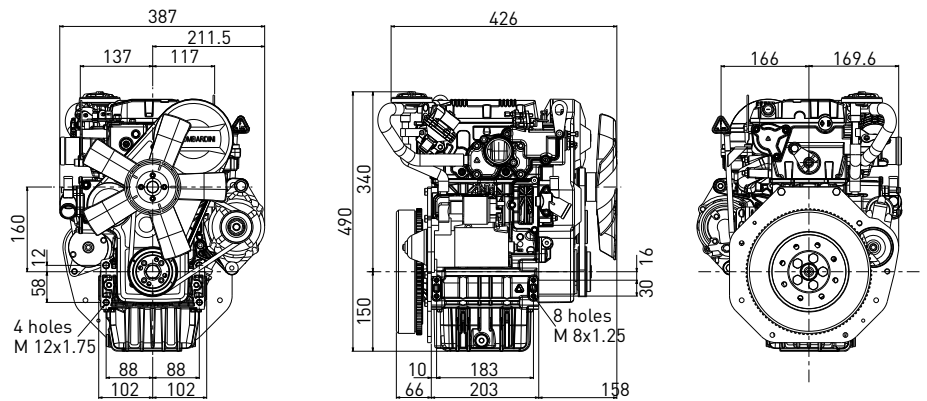
11.5 | **8.6** @ 3600 rpm
HP | kW

24.5 @ 2200 rpm
Nm

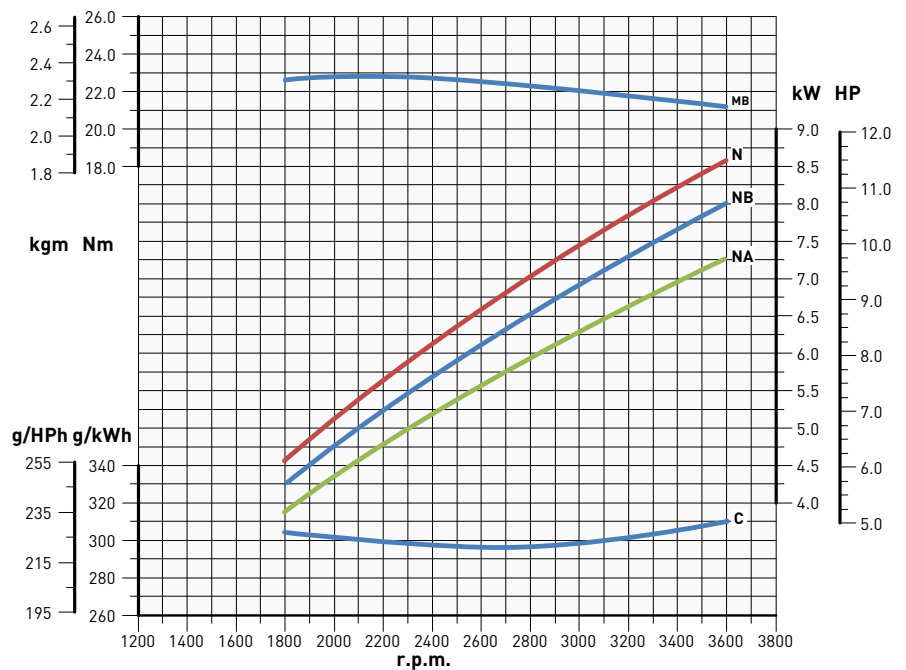


DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



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 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.

LDW 702



QUICK SPECIFICS

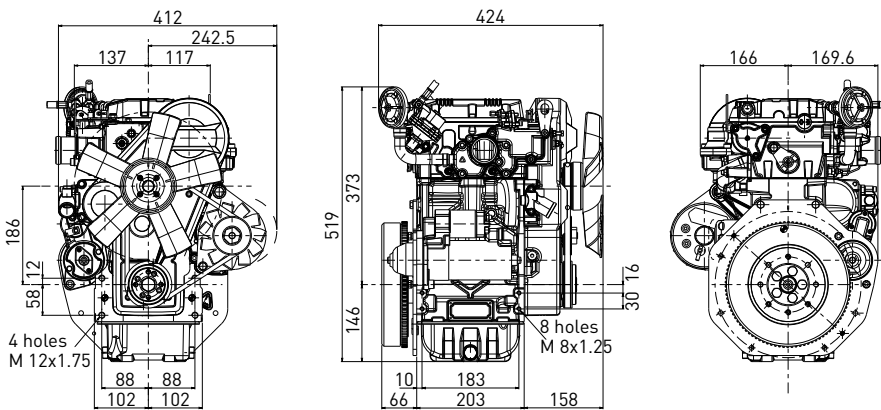
2
CYLINDERS

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

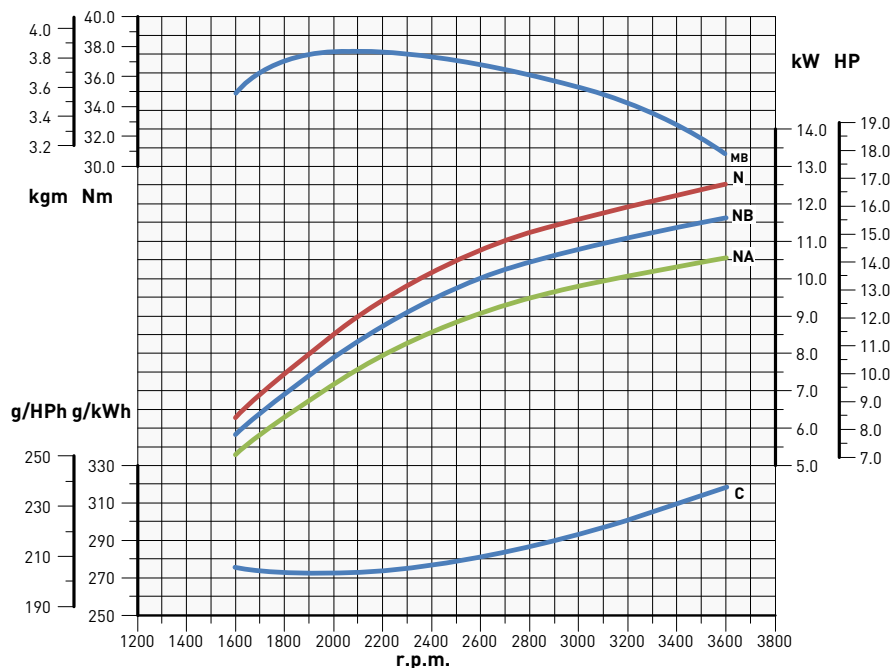
40.5 @ 2000 rpm
Nm

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



SETTING @ 3000 RPM

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

- 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 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.

LDW 1003

QUICK SPECIFICS

3
CYLINDERS

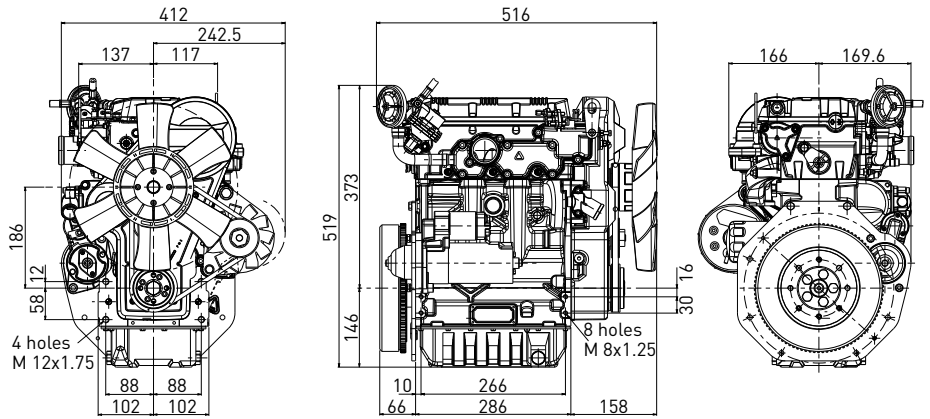
26.1 | **19.5** @ 3600 rpm
HP kW

67 @ 2000 rpm
Nm



DATA

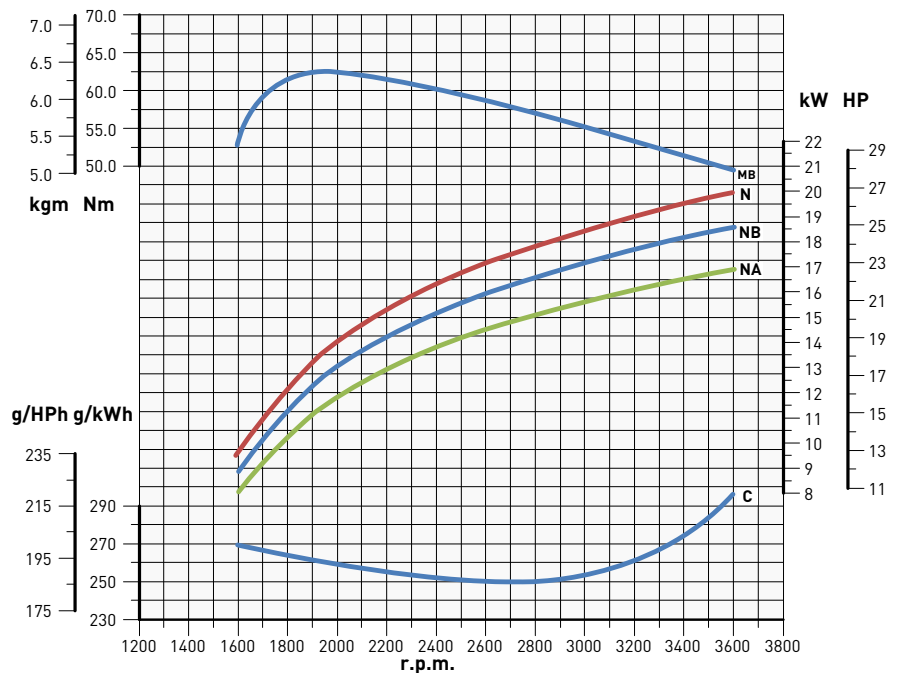
DIMENSIONS (mm)



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 |

PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



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 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.

LDW 1404



QUICK SPECIFICS

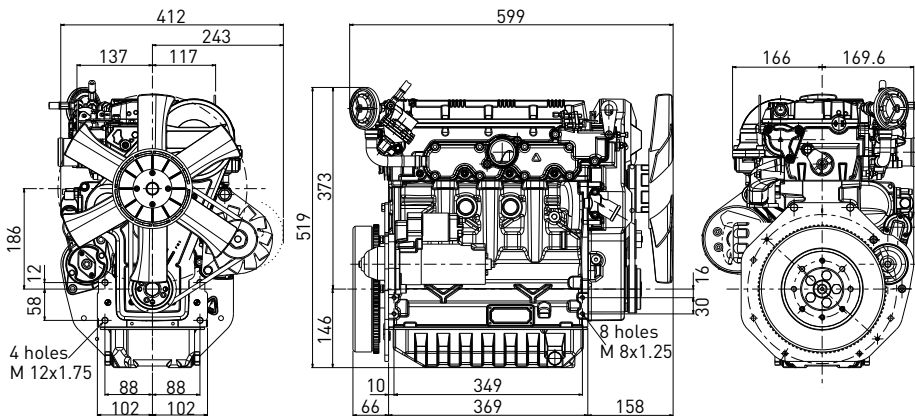
4
CYLINDERS

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

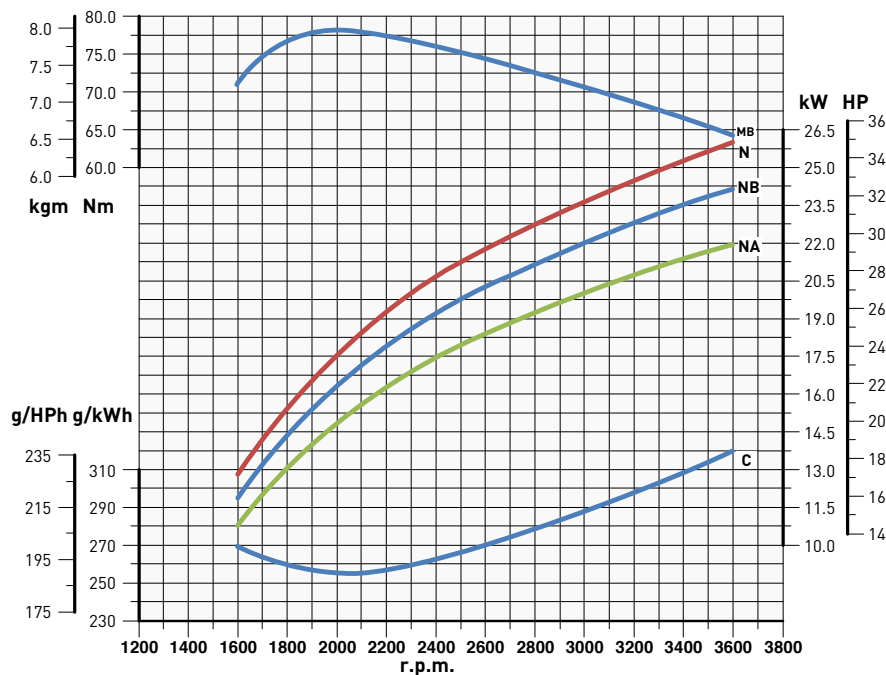
84 @ 2000 rpm
Nm

DATA

DIMENSIONS (mm)



PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



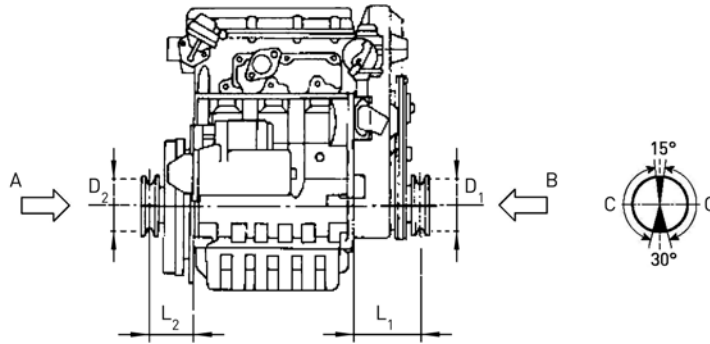
N - Power curve - 80/1269/CE E-ISO 1585
NB - Power curve - ISO 3046/1 - IFN
NA - Power curve - ISO 3046/1 - ICXN
MB - Torque curve - (NB curve)
C - Specific fuel consumption - (NB curve)

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.

OTHER AVAILABLE SETTINGS

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

APPLICATIONS SPECS



LDW 502

Minimum pulley diameters for belt drive

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

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

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

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

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

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

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

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

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

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

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

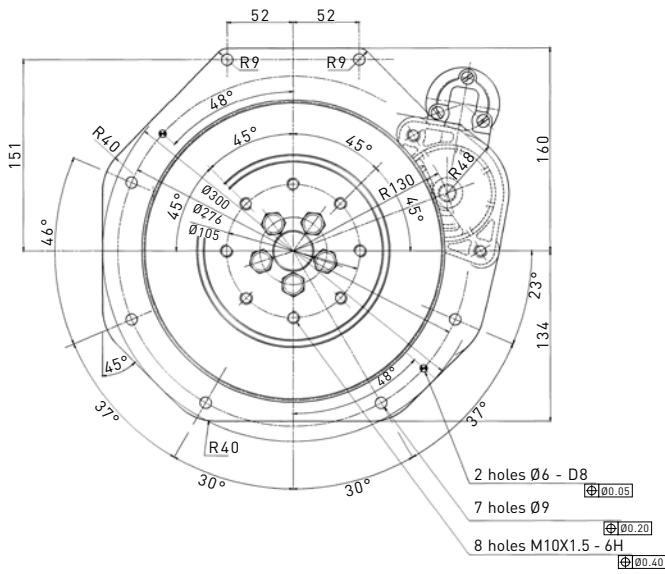
Max intermittent axial load in both directions A-B= 300 kg

C - Zone in which the radial loads can be applied

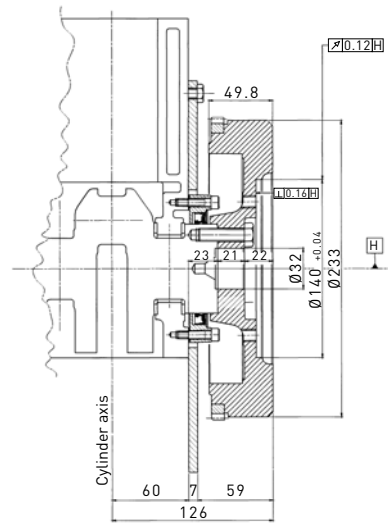
AVAILABLE FLANGES*

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

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

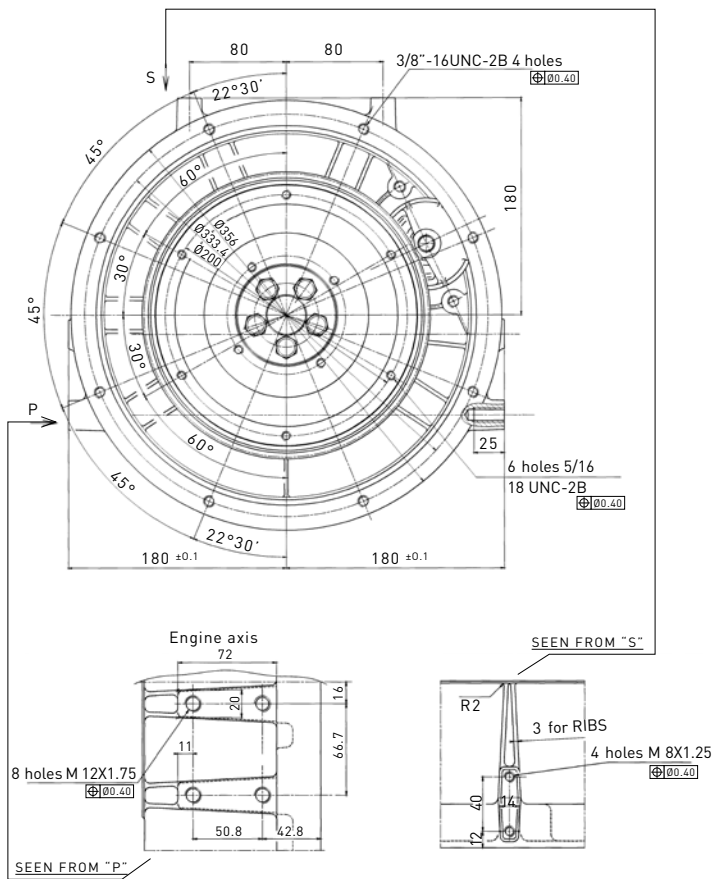


Standard version

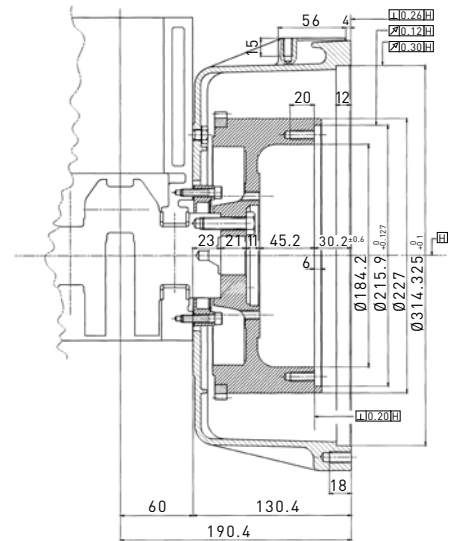


Version Genset - LDW 502 / LDW 702 / LDW 1003 / LDW 1404

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



Standard version



*Other flanges available on request

TECHNICAL SPECIFICATIONS

| Model | | LDW 502 | LDW 702 | |
|---|--|----------------------------------|-------------------------------------|---------------------------------|
| 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 | • | • | |
| | 3 rd PTO on the distribution | • | • | |
| | Counterclockwise rotation (1 st 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) | 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 adjustment | 500 | 500 | |
| | Oil consumption (% fuel) | <0.2 | <0.2 | |
| Physical characteristics | 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 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 | | LDW 1003 | | 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 | • | | • | |
| | 3 rd PTO on the distribution | • | | • | |
| | Counterclockwise rotation (1 st 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 | 19.5 /26.5 | - | 26.0 /35.2 | (@ 2700) |
| | NB ISO 3046 IFN | 18.0 /24.5 | 17.7 /24.1 # | 24.5 /33.3 | 17.9 /24.3 # |
| | NA ISO 3046 ICXN | 16.5 /22.4 | 16.1 /21.9 # | 22.4 /30.5 | 16.3 /22.2 # |
| | Max torque (Nm@rpm) | 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 adjustment | 500 | | 500 | |
| | Oil consumption (% fuel) | <0.2 | | <0.2 | |
| Physical characteristics | 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 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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