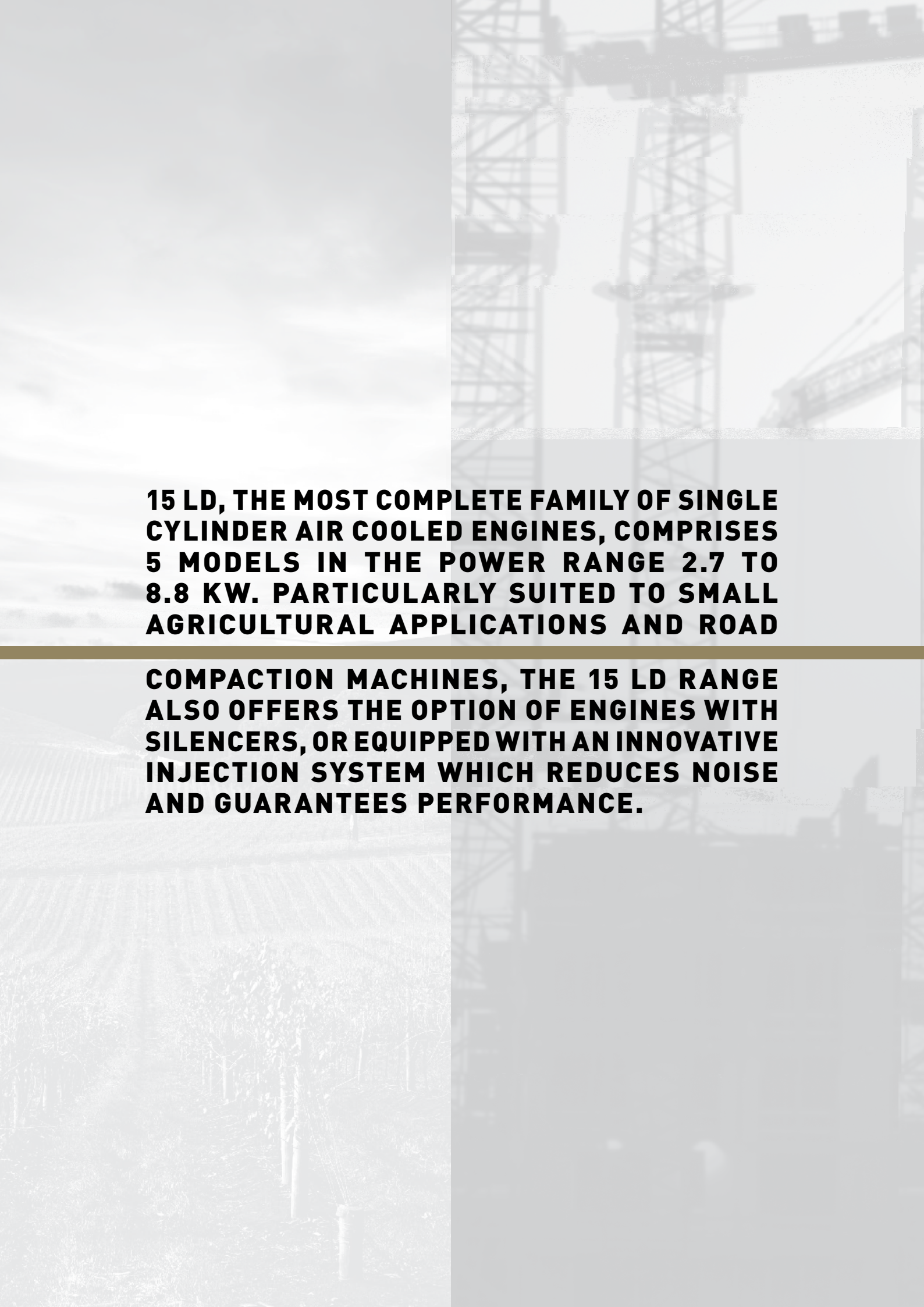


Air cooled Diesel engines

2.7-8.8 kW



 **LOMBARDINI**[®]
A **KOHLER** COMPANY



15 LD, THE MOST COMPLETE FAMILY OF SINGLE CYLINDER AIR COOLED ENGINES, COMPRISES 5 MODELS IN THE POWER RANGE 2.7 TO 8.8 KW. PARTICULARLY SUITED TO SMALL AGRICULTURAL APPLICATIONS AND ROAD

COMPACTION MACHINES, THE 15 LD RANGE ALSO OFFERS THE OPTION OF ENGINES WITH SILENCERS, OR EQUIPPED WITH AN INNOVATIVE INJECTION SYSTEM WHICH REDUCES NOISE AND GUARANTEES PERFORMANCE.

EXCELLENT FUEL EFFICIENCY

LOW OIL CONSUMPTION

LONG SERVICE INTERVALS



BENEFITS

FLEXIBLE FOR EACH APPLICATION

REDUCED NOISE

COMPACT

AIR COOLED DIESEL ENGINES

2.7-8.8 KW

STANDARD EQUIPMENT

Recoil starting
Automatic compression release §
Fuel tank
Fuel filter
Dry air cleaner
Muffler with guard
Accelerator and stop manual control
Manual compression release*
Automatic deaeration on injection pump
Net oil filter
Conical power take-off
External fuel filter
Automatic mechanical fuel supplement
Hydraulic tappets (KD15 440)
User maintenance and spare parts booklet

ACCESSORIES ON DEMAND

Power take-off flywheel side
(engines with electrical starting)
Power take-offs with flanging and special shaft
Power take-off on camshaft*
Lateral power take-off*
Internal dynamic balancer
Oil bath air cleaner
Electric start 12V / 24 V
Keyswitch panel
Emergency stop through electrovalve
Accelerator and stop remote control
Fuel lift pump
Oil pressure switch
Oil temperature switch
Cylinder head temperature switch
Glow plug on intake manifold
Recoil with denoising cover
Grass protection for engine cooling
Alternator with voltage regulator 12 V or 24 V
Oil level sensor switch
Oil refill on crankcase side
High capacity oil sump
(15 LD 350 and KD15 440)
High capacity oil and fuel filters
for remote assembly
Stop with solenoid valve

§ Not on 15 LD 500 model

* On 15 LD 500 model only





15 LD 225

QUICK SPECIFICS

1

CYLINDER

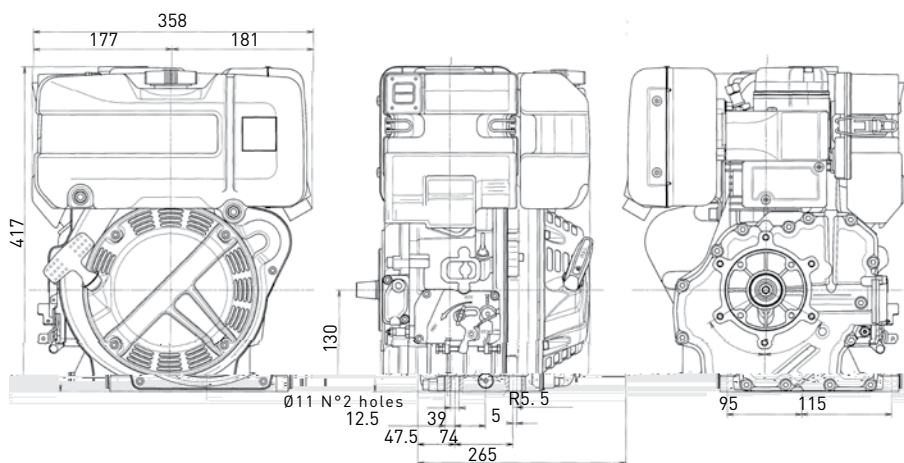
4.8 | **3.5** @ 3600 rpm
HP kW

10.4 @ 2400 rpm
Nm

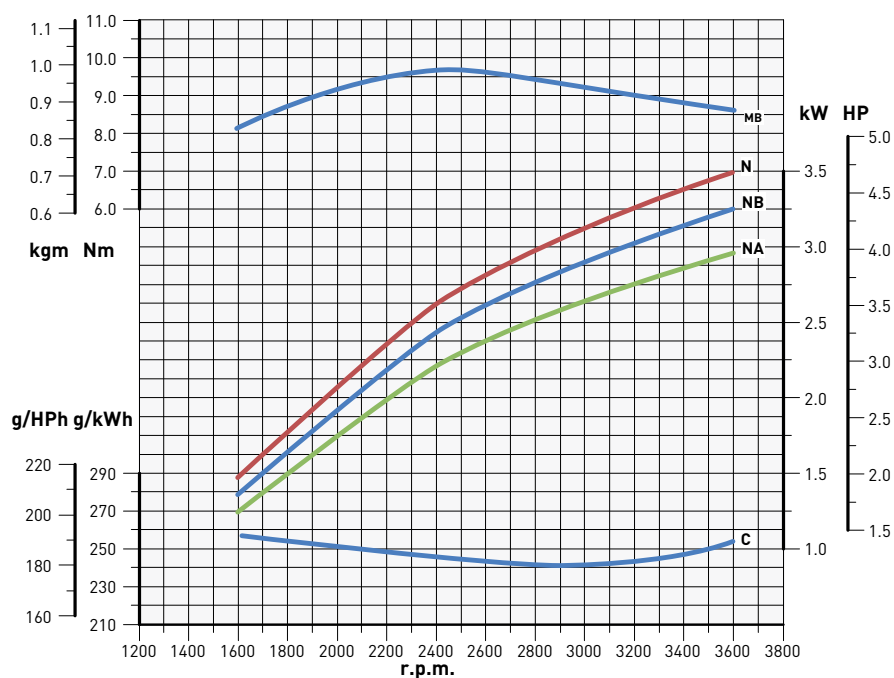


DATA

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.

15 LD 225S



QUICK SPECIFICS

1

CYLINDER

3.7
HP

2.7
kW

@ 3000 rpm

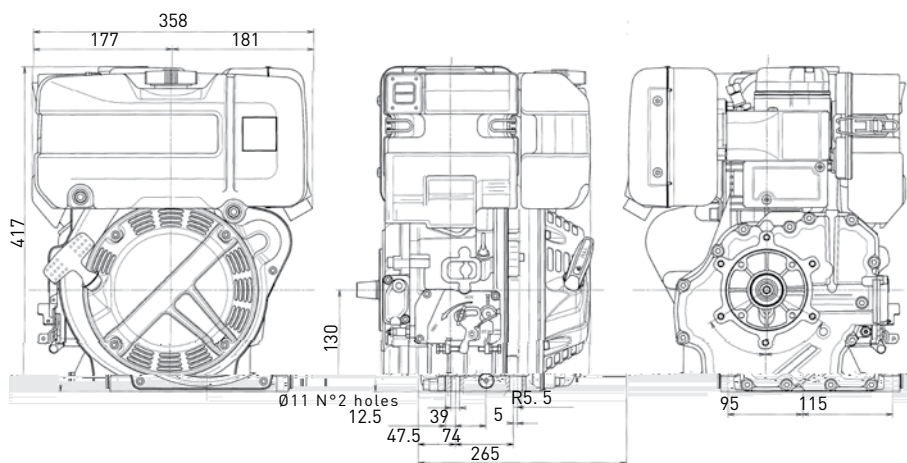
9.8

Nm

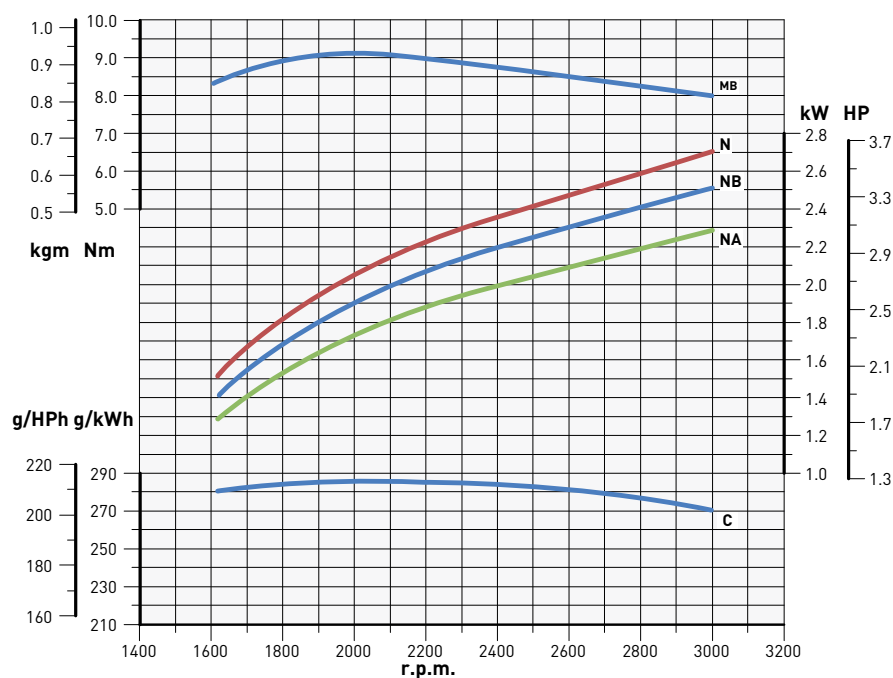
@ 2000 rpm

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.



Sound pressure level up to 2 dB(A)
less than the standard version

15 LD 350

QUICK SPECIFICS

1

CYLINDER

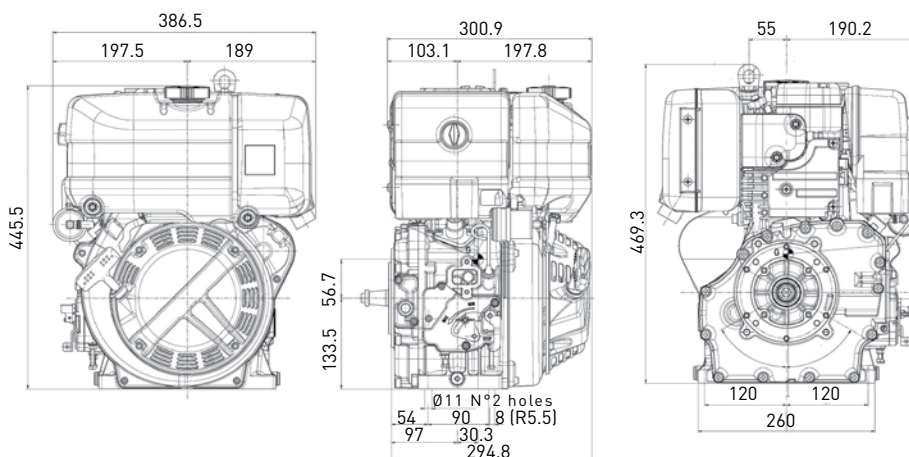
7.5 | **5.5** @ 3600 rpm
HP kW

16.6 @ 2400 rpm
Nm

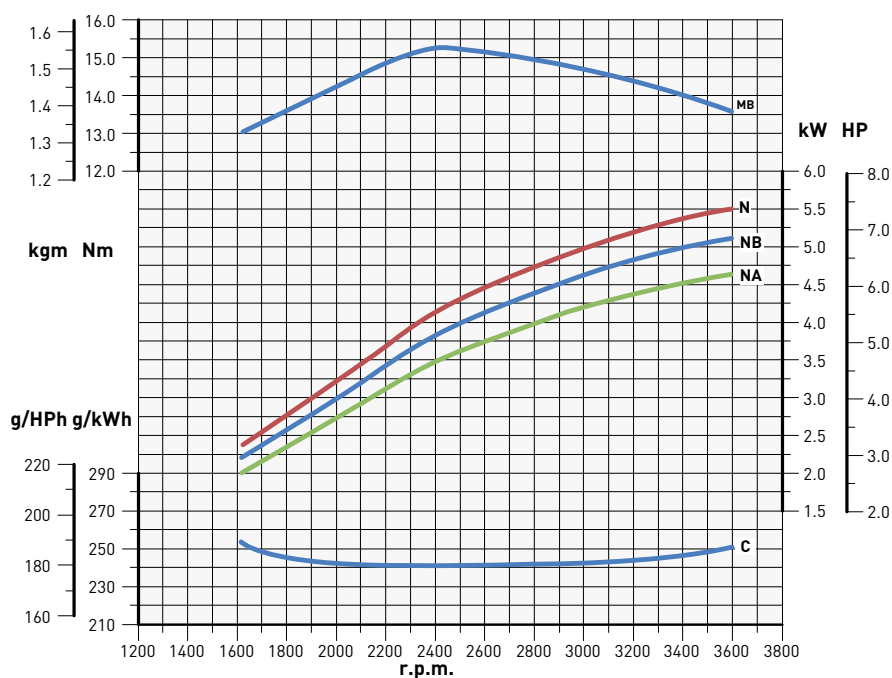


DATA

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.



15 LD 350S

QUICK SPECIFICS

1

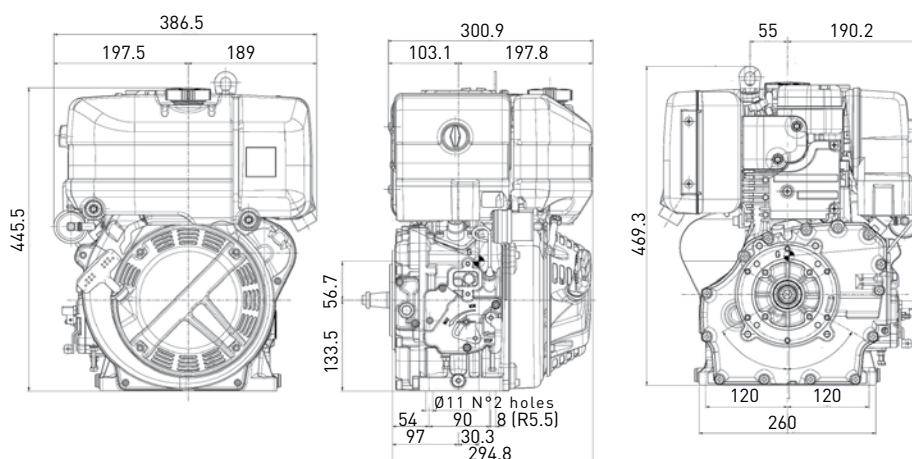
CYLINDER

6.8 | **5.0** @ 3600 rpm
HP kW

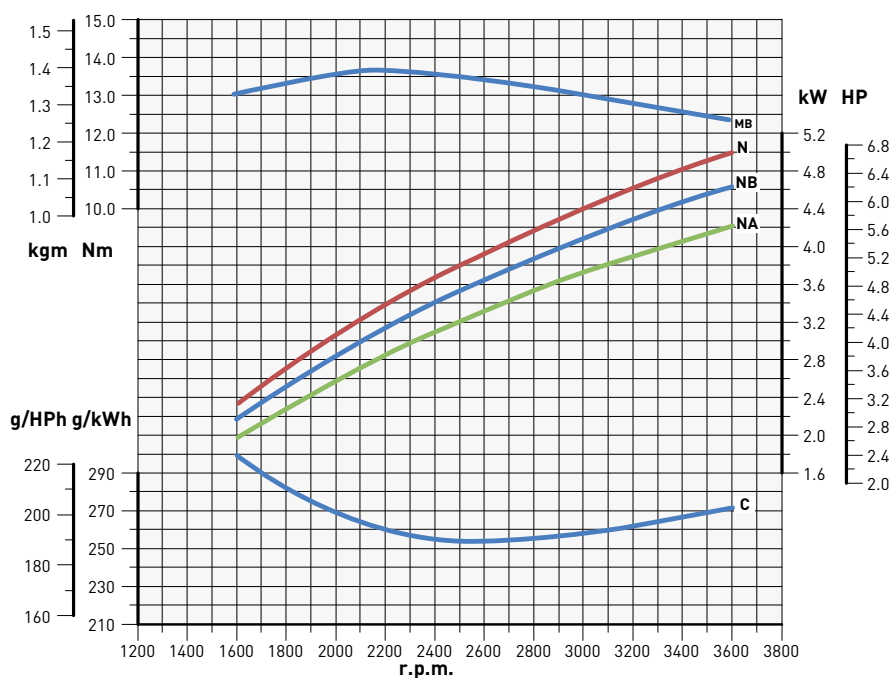
14.7 @ 2200 rpm
Nm

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.



Sound pressure level up to 2 dB(A)
less than the standard version

15 LD 500

QUICK SPECIFICS

1

CYLINDER

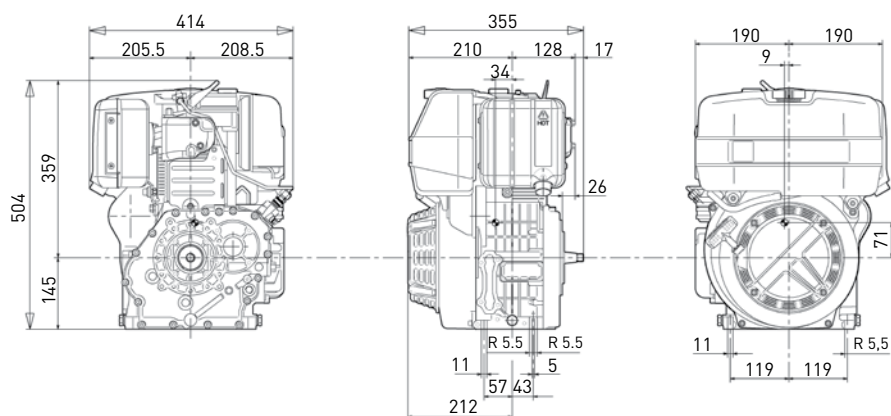
12.0 | **8.8** @ 3600 rpm
HP kW

30.0 @ 2200 rpm
Nm



DATA

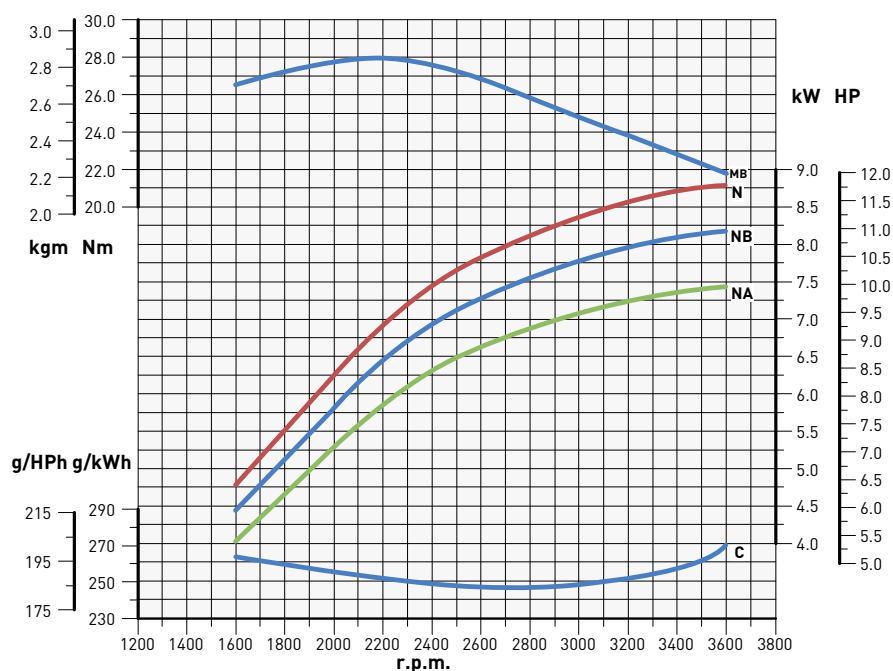
DIMENSIONS (mm)



SETTING @ 3000 RPM

Max. Power N* (kW)	Max. Torque (Nm)
8.2 @ 3000 rpm	30 @ 2200 rpm

PERFORMANCE CURVES (IFN- ISO 3046 AND ISO 14396)



N - Power curve - 80/1269/CE E-ISO 1585

NB - Power curve - ISO 3046/1 - IFN

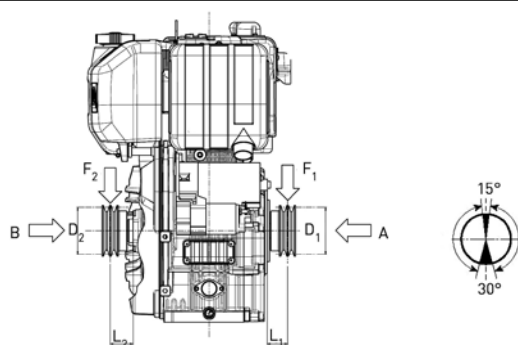
NA - Power curve - ISO 3046/1 - ICXN

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.

APPLICATIONS SPECS



15 LD 225-225S

Minimum pulley diameters for belt drive

$$D_2 \text{ (mm)} \geq 740 [90 + L_2 \text{ (mm)}] \frac{N \text{ (kW)}}{n \text{ (rpm)}}$$

$$D_1 \text{ (mm)} \geq 820 [55 + L_1 \text{ (mm)}] \frac{N \text{ (kW)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A - B = 150 kg

Max radial force on pulley for belt drive

$$F_2 \text{ (N)} \leq \frac{77000}{90+L_2 \text{ (mm)}}$$

$$F_1 \text{ (N)} \leq \frac{70000}{55+L_1 \text{ (mm)}}$$

15 LD 350-350S

Minimum pulley diameters for belt drive

$$D_2 \text{ (mm)} \geq 860 [60 + L_2 \text{ (mm)}] \frac{N \text{ (kW)}}{n \text{ (rpm)}}$$

$$D_1 \text{ (mm)} \geq 820 [55 + L_1 \text{ (mm)}] \frac{N \text{ (kW)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A - B = 200 kg

Max radial force on pulley for belt drive

$$F_2 \text{ (N)} \leq \frac{67000}{60+L_2 \text{ (mm)}}$$

$$F_1 \text{ (N)} \leq \frac{70000}{55+L_1 \text{ (mm)}}$$

15 LD 500

Minimum pulley diameters for belt drive

$$D_2 \text{ (mm)} \geq 900 [48 + L_2 \text{ (mm)}] \frac{N \text{ (kW)}}{n \text{ (rpm)}}$$

$$D_1 \text{ (mm)} \geq 570 [55 + L_1 \text{ (mm)}] \frac{N \text{ (kW)}}{n \text{ (rpm)}}$$

Max intermittent axial load in both directions A - B = 200 kg

Max radial force on pulley for belt drive

$$F_2 \text{ (N)} \leq \frac{64000}{48+L_2 \text{ (mm)}}$$

$$F_1 \text{ (N)} \leq \frac{100520}{55+L_1 \text{ (mm)}}$$

GENSET RATINGS

	Rpm	Engine model	NET ENGINE POWER*		ELECTRICAL POWER**				Flanging	Emission compliance available	Max. Emission compliance available***
			Stand-by	Prime	Intermittent (Stand-by)		Continuous (Prime)				
					kW-HP	kW-HP	kVA	kW			
50 Hz	3000	15 LD 225	3,0 - 4,8	2,7 - 3,7	2,8	2,2	2,6	2,1	CONO Ø 23	EU not required	EU not required
		15 LD 350	4,7 - 6,3	4,2 - 5,7	4,6	3,7	4,3	3,5	CONO Ø 23	EU not required	EU not required
		KD15 440	6,8 - 9,3	6,2 - 8,4	7,0	5,6	6,2	5,0	CONO Ø 23	EU not required	EU not required
		15 LD 500	7,8 - 10,6	7,1 - 9,6	8,0	6,4	7,2	5,8	CONO Ø 24	EU not required	EU not required
60 Hz	3600	15 LD 225	3,3 - 4,5	3,0 - 4,1	3,1	2,5	2,9	2,3	CONO Ø 23	-	-
		15 LD 350	5,1 - 7,0	4,6 - 6,3	5,1	4,1	4,7	3,8	CONO Ø 23	Tier 4 i	Tier 4 F
		KD15 440	7,4 - 10,1	6,7 - 9,1	7,5	6,0	6,8	5,4	CONO Ø 23	Tier 4 i	Tier 4 F
		15 LD 500	8,2 - 11,1	7,5 - 10,1	8,7	7,0	7,8	6,3	CONO Ø 24	-	-

* Engine power rating ISO IFN (Stand-by) and ICXN (Prime) according to ISO 3046 and ISO 14396, after running-in period at ambient condition +25°C, relative humidity 30%, and ambient pressure 100 kPa (1 bar). Fuel specification EN590

**Electrical power includes fan power absorption, typical alternator efficiency and a power factor (cos ø) of 0.8.

Continuous (Prime) power can be overloaded of 10% for 1 h every 12 hours operation. Intermittent (Standby) power cannot be overloaded.

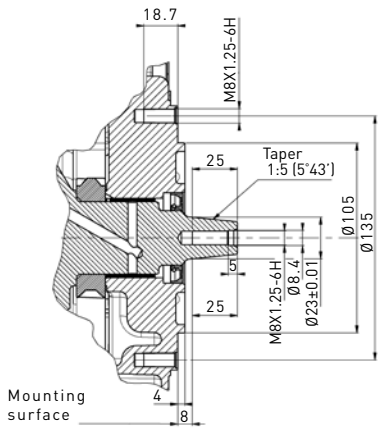
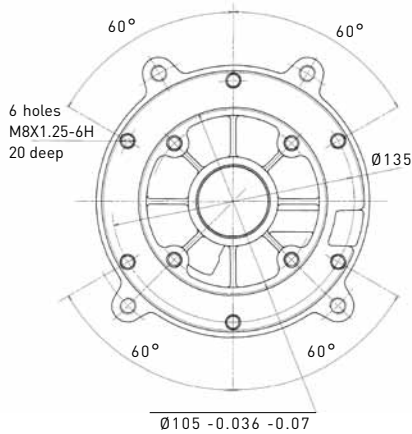
*** Possible de-rating might have to be taken in consideration to ensure emission compliance.

AVAILABLE FLANGES*

Standard version - 15 LD 225-225S / 15 LD 350-350S

Flange standard - 15 LD 225-225S / 15 LD 350-350S

Industrial version



Flange type A - 15 LD 225-225S

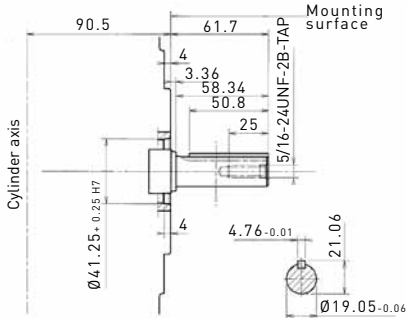
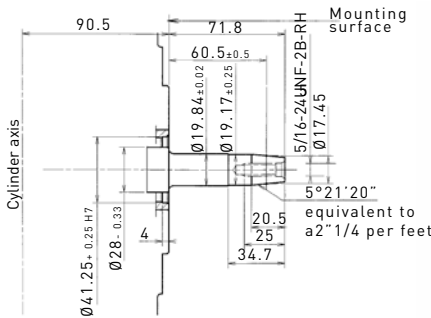
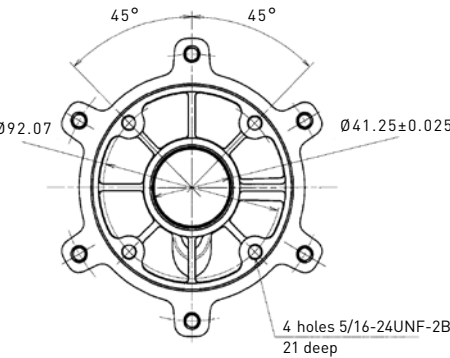
Genset version

Industrial version

Flange SAE J609a

EXT a4 J609a

EXT 3 SAE J609a



Flange type B - 15 LD 350-350S

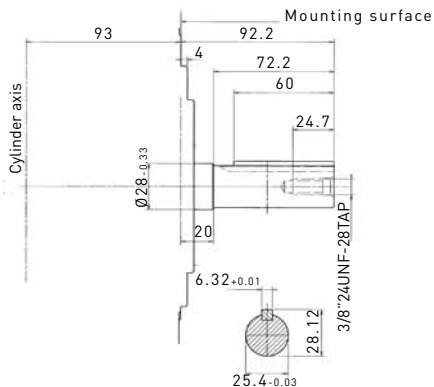
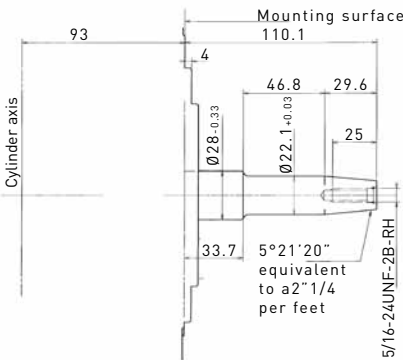
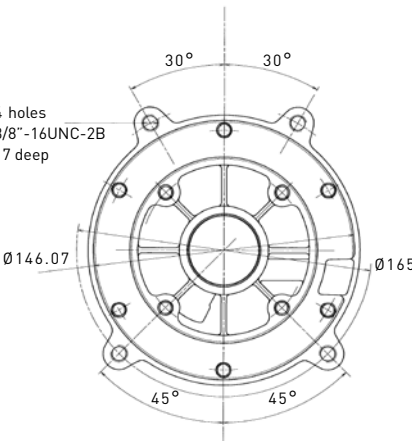
Genset version

Industrial version

Flange SAE J609a

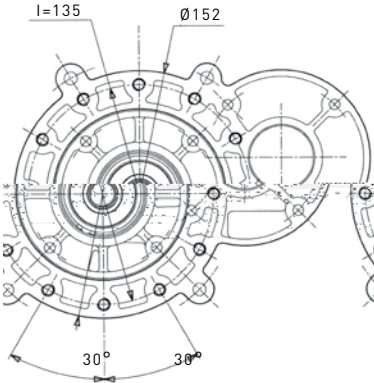
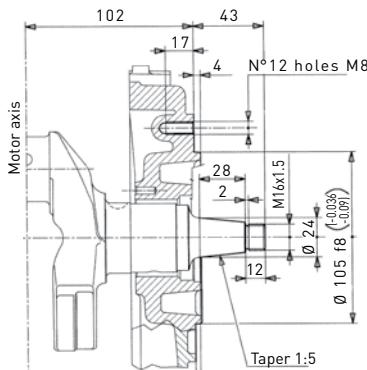
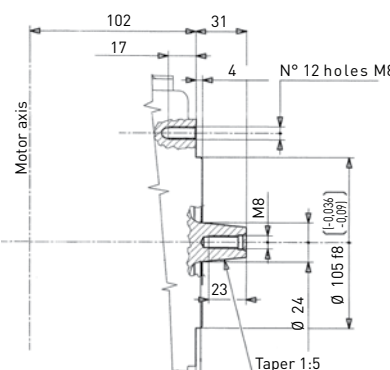
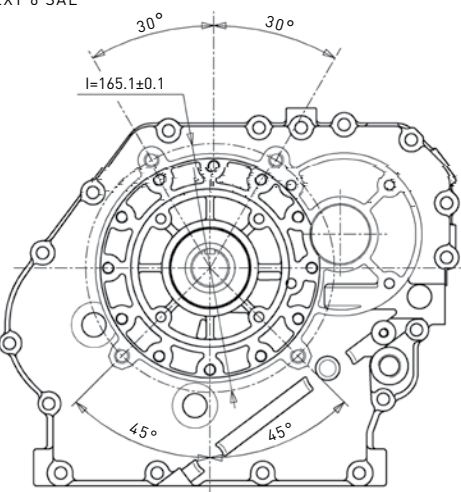
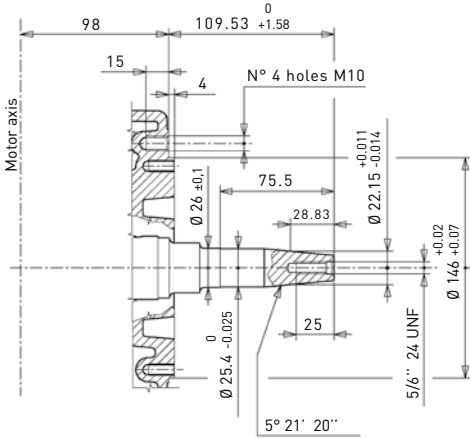
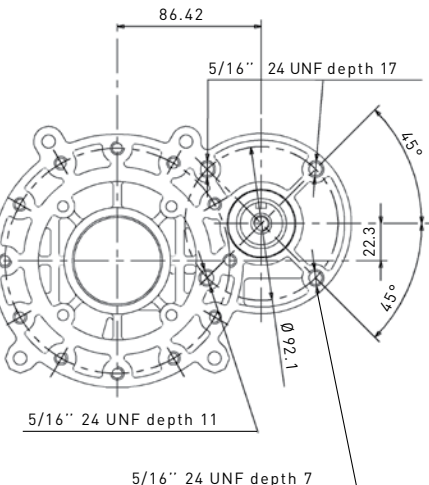
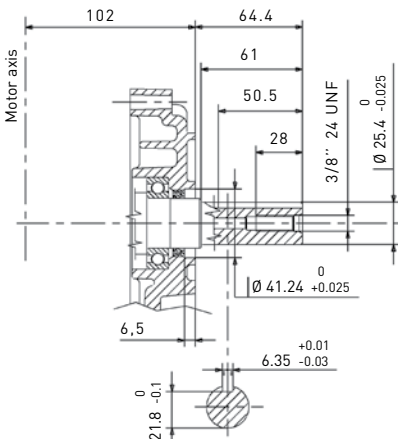
EXT 6 SAE

EXT.4 SAE



15 LD 350-350S

AVAILABLE FLANGES*

Flange standard type - 15 LD 500		Standard version	Genset version
15 LD 500			
Flange type B - 15 LD 500		Genset version	
15 LD 500	EXT 6 SAE 		
PTO on camshaft			
15 LD 500			

*Other flanges available on request

TECHNICAL SPECIFICATIONS

Model		15 LD 225	15 LD 225S	15 LD 350		15 LD 350S
Engine specs	4 stroke air cooled diesel engine	•	•	•		•
	Conical power take-off on crankshaft	•	•	•		•
	Anticlockwise rotation	•	•	•		•
	Forced lubrication with oil pump	•	•	•		•
	Centrifugal mass governor	•	•	•		•
	Built-in full flow oil filter	•	•	•		•
	Oil breathing blow-by with safety device	•	•	•		•
	Automatic extra fuel starting device	•	•	•		•
	Self bleeding fuel system	•	•	•		•
	Torque adjuster	•	•	•		•
	Automatic compression release	•	•	•		•
	Die-cast aluminum crankcase with integral cast iron cylinder liner	•	•	•		•
	Re-borable independent cast iron cylinders	-	-	-		-
	Aluminum cylinder head	•	•	•		•
	Built-in rigid feet	•	•	•		•
	Hydraulic tappets	-	-	-		-
Technical features	Cylinder	1	1	1		1
	Bore (mm)	69	69	82		82
	Stroke (mm)	60	60	66		66
	Engine displ (cm³)	224	224	349		349
	Injection system	DI	DI	DI		DI
	Compression ratio	21:1	21:1	20.3:1		20.3:1
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	3.5 /4.8 3.3 /4.5 3.1 /4.2	(3000 rpm) 2.7 /3.7 2.5 /3.4 2.3 /3.1	5.5 /7.5 5.1 /7.0 4.7 /6.4	- 4.6/6.3 4.1/5.6	5.0 /6.8 4.6 /6.2 4.1 /5.6
	Max torque (Nm@rpm)	10.4@2400	9.8@2000	16.6@2400	12.2@3600	14.7@2200
	Min idling speed	950 ÷1000	950 ÷1000	950 ÷1000		950 ÷1000
Fuel compatibility	EN 590	•	•	•		•
	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	Fuel tank capacity (l)	3	3	4.3		4.3
	Oil sump capacity (l)	0.9	0.9	1.2		1.2
	Oil consumption (kg/h)	0.0021	0.0021	0.0032		0.0032
	Oil change interval std/synthetic (hr)	250**	250**	250**		250**
	Oil filter change interval std/synthetic (hr)	500	500	500		500
	Dry air cleaner change interval (hr)	250	250	250		250
	Valve adjustment	500	500	500		500
Physical characteristics	H×L×W (fan excluded) (mm)	417×358×265	417×358×275	445.5×386.5×300.9		445.5×386.5×310.5
	Dry weight (kg)	28	28	33		33
	Daily service points - positions	1 side service	1 side service	1 side service		1 side service
	Ambient operating temps (°C)	-10 to +50	-10 to +50	-10 to +50		-10 to +50
	Gradeability-all round (intermittent -30 min) (deg)	25°	25°	25°		25°
	Gradeability-all round (peak value -1 min) (deg)	35°	35°	35°		35°
	Cap. of air required for correct combustion @3600 (l/min)	350	290	540		540
	Cap. of air required for correct cooling @3600 (l/min)	3800	3200	5000		5000
Lubrication	Oil type	SAE 5W 40 API SERVICE CF	SAE 5W 40 API SERVICE CF	SAE 5W 40 API SERVICE CF		SAE 5W 40 API SERVICE CF

* With restrictions ** According to operating conditions

Model		KD15 440 / 15 LD 440		KD15 440S / 15 LD 440S	15 LD 500	
Engine specs	4 stroke air cooled diesel engine	•		•	•	
	Conical power take-off on crankshaft	•		•	•	
	Anticlockwise rotation	•		•	•	
	Forced lubrication with oil pump	•		•	•	
	Centrifugal mass governor	•		•	•	
	Built-in full flow oil filter	•		•	•	
	Oil breathing blow-by with safety device	•		•	•	
	Automatic extra fuel starting device	•		•	•	
	Self bleeding fuel system	•		•	•	
	Torque regulator	•		•	•	
	Automatic compression release	•		•	•	
	Die-cast aluminum crankcase with integral cast iron cylinder liner	•		•	-	
	Re-borable independent cast iron cylinders	-		-	•	
	Aluminum alloy cylinder head	•		•	•	
	Built-in rigid feet	•		•	•	
	Hydraulic tappets	•		•	-	
Technical features	Cylinder	1		1	1	
	Bore (mm)	86		86	87	
	Stroke (mm)	76		76	85	
	Engine displ (cm³)	441		441	505	
	Injection system	DI		DI	DI	
	Compression ratio	20.3:1		20.5:1	19:1	
Performance	Emission compliance	ECE R 24	EPA TIER 4	-	ECE R 24	-
	Rating (kW/HP) N (80/1269/CEE)ISO 1585 NB ISO 3046 IFN NA ISO 3046 ICXN	8.0 /10.9 7.4 /10.1 6.7 /9.1	6.8 /9.2 6.1 /8.2	7.3 /10.0 6.8 /9.2 6.2 /8.4	(3000 rpm) 8.2 /11.1 7.8 /10.6 7.1 /9.6	(3600 rpm) 8.8 /12 8.2 /11.1 7.5 /10.2
	Max torque (Nm@rpm)	24.5@2200		22.5@2100	30.0@2200	
	Min idling speed	950 ÷1000		1150	1200	
	EN 590	•		•	•	
	No 1 Diesel (US) - ASTM D 975-09 B - Grade 1-D S 15	•		•	•	
Fuel compatibility	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*	•		•	•	
	Fuel tank capacity (l)	4.3		4.3	5	
	Oil sump capacity (l)	1.2		1.2	1.5	
Service features	Oil consumption (kg/h)	0.0032		0.0032	0.0055	
	Oil/filter change interval std/synthetic (hr)	250**		250**	250**	
	Oil filter change interval std/synthetic (hr)	500		500	500	
	Dry air cleaner change interval (hr)	500		500	250	
	Valve adjustment	500		500	500	
	H×L×W (fan excluded) (mm)	493.1×412.8×340		493.1×412.8×352	504x415x355	
	Dry weight (kg)	45		45	48	
Physical characteristics	Daily service points - positions	1 side service		1 side service	1 side service	
	Ambient operating temps (°C)	-10 to +50		-10 to +50	-10 to +50	
	Gradeability-all round (intermittent -30 min) (deg)	25		25	25°	
	Gradeability-all round (peak value -1 min) (deg)	35		35	35°	
	Cap. of air required for correct combustion @3600 (l/min)	640		640	800	
	Cap. of air required for correct cooling @3600 (l/min)	5500		5500	8700	
	Lubrication	SAE 5W 40 API SERVICE CF		SAE 5W 40 API SERVICE CF	SAE 5W 40 API SERVICE CF	
	Oil type	SAE 5W 40 API SERVICE CF		SAE 5W 40 API SERVICE CF	SAE 5W 40 API SERVICE CF	

* With restrictions ** According to operating conditions



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