

Liebherr Diesel Engines

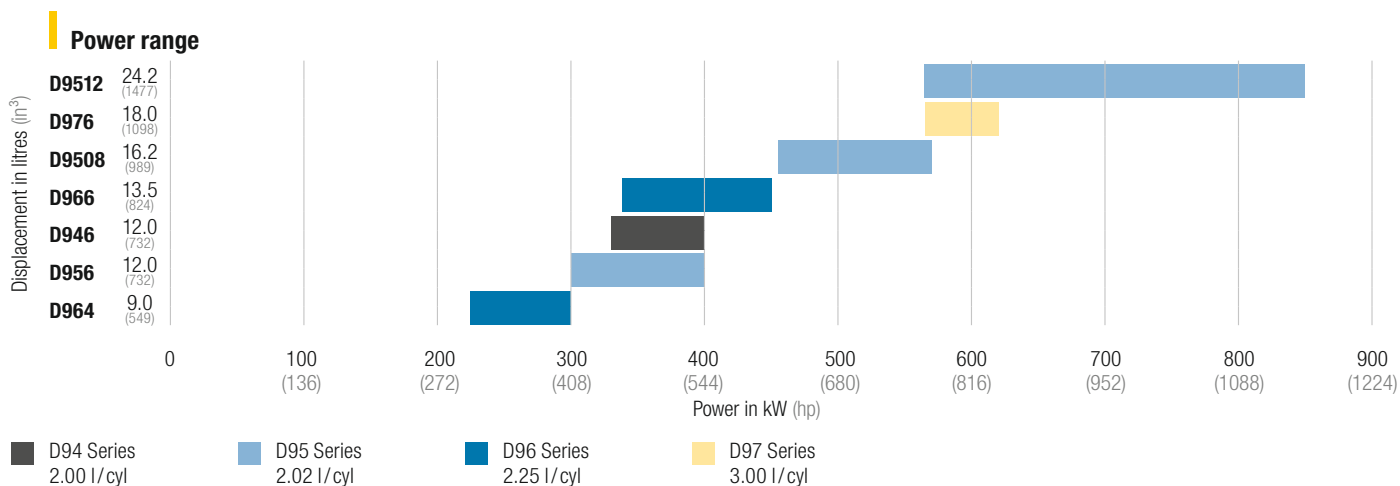
for **Agriculture and Forestry**



LIEBHERR

Liebherr Combustion Engines for Agriculture and Forestry

Agriculture and construction share many similarities in their requirements for tough, efficient and torque producing power solutions. Our engines comply with all worldwide emission standards and are able to cover the entire industry cycle from seeding to harvesting. Liebherr engines are particularly appreciated for the increase in efficiency they offer and their reduced total cost of ownership.



Low total cost of ownership (TCO)

Long maintenance intervals and short service operations ensure the high availability of Liebherr engines. Furthermore, thanks to lower fluid consumption and longer oil change intervals, our engines contribute substantially to the increase of efficiency of our customers' machinery. The option of a general overhaul or remanufacturing of the engines to an as-new status enables the service life of the engines to be significantly extended, thus reducing the total cost of ownership (TCO) and the environmental footprint.

Your engineering partner

Currently, around 250 engineers are continuously working on further engine developments and improvements. Proof of our engineering expertise is the numerous companies which have sought to partner with Liebherr for the development of new engine series in the past years.

From 225 kW to 450 kW



Engine	D964		
Bore	mm (in)	135	5.31
Stroke	mm (in)	157	6.18
Displacement	dm ³ (in ³)	9.0	549
Power rating	kW (hp)	225–300	302–402
Rated speed	rpm	2,100	
Peak torque	Nm (lb-ft)	1,731 at 1,400 rpm	2,041 at 1,400 rpm
Dry weight	kg (lb)	827	1,824
Dimensions (LxWxH)	mm (in)	1,057x827x1,140	416x326x449
Fuel rail pressure	bar	2,200	
Min brake specific fuel cons.	g/kWh	190	



Engine	D956		
Bore	mm (in)	130	5.12
Stroke	mm (in)	150	5.91
Displacement	dm ³ (in ³)	12.0	732
Power rating	kW (hp)	300–400	402–536
Rated speed	rpm	2,100	
Peak torque	Nm (lb-ft)	2,524 at 1,400 rpm	1,861 at 1,400 rpm
Dry weight	kg (lb)	1,199	2,216
Dimensions (LxWxH)	mm (in)	1,378x852x1,161	543x335x457
Fuel rail pressure	bar	2,200	
Min brake specific fuel cons.	g/kWh	192	



Engine	D946		
Bore	mm (in)	130	5.12
Stroke	mm (in)	150	5.91
Displacement	dm ³ (in ³)	12.0	732
Power rating	kW (hp)	330–400	443–536
Rated speed	rpm	1,900	
Peak torque	Nm (lb-ft)	2,335 at 1,350 rpm	1,722 at 1,350 rpm
Dry weight	kg (lb)	1,199	2,644
Dimensions (LxWxH)	mm (in)	1,391x821x1,106	54.76x32.32x43.54
Fuel rail pressure	bar	2,000	
Min brake specific fuel cons.	g/kWh	192	

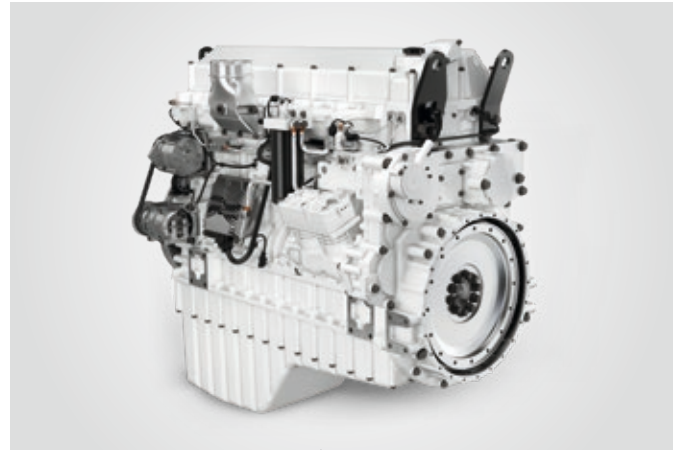


Engine	D966		
Bore	mm (in)	135	5.31
Stroke	mm (in)	157	6.18
Displacement	dm ³ (in ³)	13.5	824
Power rating	kW (hp)	338–450	450–603
Rated speed	rpm	2,100	
Peak torque	Nm (lb-ft)	2,767 at 1,400 rpm	2,041 at 1,400 rpm
Dry weight	kg (lb)	1,012	2,231
Dimensions (LxWxH)	mm (in)	1,378x852x1,161	543x335x457
Fuel rail pressure	bar	2,200	
Min brake specific fuel cons.	g/kWh	192	

From 565 kW to 850 kW



Engine		D9508	
Bore	mm (in)	128	5.04
Stroke	mm (in)	157	6.18
Displacement	dm ³ (in ³)	16.2	989
Power rating	kW (hp)	455–570	610–764
Rated speed	rpm	2,100	
Peak torque	Nm (lb-ft)	3,624 at 1,400 rpm	2,673 at 1,400 rpm
Dry weight	kg (lb)	1,859	4,099
Dimensions (LxWxH)	mm (in)	1,676x1,282x1,618	660x505x637
Fuel rail pressure	bar	2,000	
Min brake specific fuel cons.	g/kWh	195	



Engine		D976	
Bore	mm (in)	148	5.83
Stroke	mm (in)	174	6.85
Displacement	dm ³ (in ³)	18.0	1,098
Power rating	kW (hp)	565–620	758–831
Rated speed	rpm	1,900	
Peak torque	Nm (lb-ft)	3,650 at 1,500 rpm	2,692 at 1,500 rpm
Dry weight	kg (lb)	1,800	3,969
Dimensions (LxWxH)	mm (in)	1,548x997x1,262	609x393x497
Fuel rail pressure	bar	2,200	
Min brake specific fuel cons.	g/kWh	190	

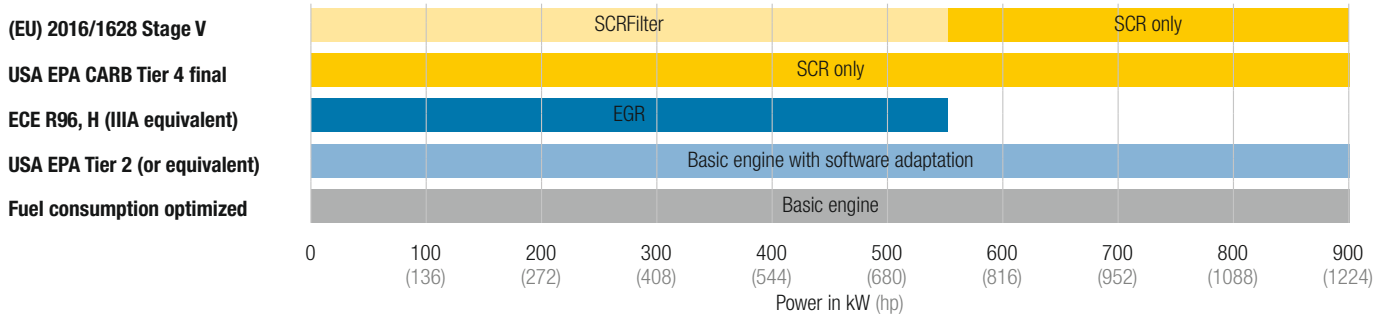


Engine		D9512	
Bore	mm (in)	128	5.04
Stroke	mm (in)	157	6.18
Displacement	dm ³ (in ³)	24.2	1,477
Power rating	kW (hp)	565–850	758–1,140
Rated speed	rpm	2,100	
Peak torque	Nm (lb-ft)	5,327 at 1,400 rpm	3,928 at 1,400 rpm
Dry weight	kg (lb)	2,150	4,741
Dimensions (LxWxH)	mm (in)	1,895x1,226x1,256	746x483x494
Fuel rail pressure	bar	2,000	
Min brake specific fuel cons.	g/kWh	190	

Emission Standards

Diesel engines from Liebherr preserve the environment and resources with low fuel consumption and reduced emissions. Liebherr offers exhaust gas aftertreatment systems that are adapted to the application and to legislative requirements applicable in each region respectively.

Aftertreatment technologies



Model

	D94 In-line	D95 In-line	D96 In-line	D97 In-line	D95 V-engine
Configuration	6	6	4/6	6	8/12
(EU) 2016/1628 Stage V	•	•	•	•	•
USA EPA CARB Tier 4 final	•	•	•	•	•
ECE R96, H (IIIA conform)	•	•	•		•
Tier 2 (or equivalent)				•	
Fuel consumption optimized	•	•	•	•	•

Modular system

Modularity is at the core of Liebherr's diesel engines development: Each engine exists as a base version that can receive different exhaust gas aftertreatments to meet the required emission standards, including the most stringent global requirements. For Tier 4 final, Liebherr relies fully on an inno-

vative SCR only system, and for Stage V on the SCRFilter system, both inhouse developments. Keywords being: compactness and a low TCO for the end customer. This means that OEMs only require one machine design to comply with all relevant industry standards and norms.

From Dust to Green

Most of industrial engines are first developed as on-road engines. Liebherr develops engines first hand as heavy-duty off-road engines. It means that the whole architecture is designed to withstand the harshest of conditions such as brutal accelerations and decelerations, cold environment, dust, heat or low oxygen. Our engines are calibrated to deliver power and torque at low rpm and are suitable for the most demanding applications: In mining excavators our engines are in service over 5,000 hours per year.



Heavy duty to the core

Liebherr is developing and producing its own subcomponents such as oil lubricated common rail pumps and high pressure injectors, fuel-cooled electronic units and softwares.

Diagnostic tools

LiDIA is a user-friendly diagnostics tool, which requires no configuration and reduces the complexity of diagnostic procedures to the bare essentials: It allows the visualisation of subsystems such as injection and EAS.

Matching options

In addition to Liebherr engines a broad range of additional options, from power takeoffs to air compressors and in-house developed and produced hydraulic units can be selected.



Service

Our diesel engines are designed to provide the highest level of serviceability. The clear arrangement of the installed parts and a well-structured documentation facilitate the efficient performance of maintenance work. Ongoing training makes effective and accurate customer service operations possible. Original spare parts are available quickly. The practically oriented assembly of maintenance and repair sets also contribute towards maximum operational readiness of the equipment.



Service operations

When required, customers are supported by experienced Liebherr service technicians worldwide in customer support operations and trained on site.

Maintenance and spare parts sets

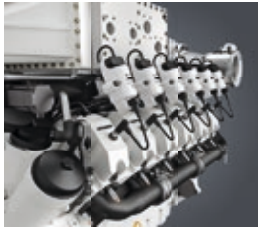
Practically oriented maintenance and repair kits, such as packs of seals, facilitate combined ordering of parts which need to be replaced together and ensure a high level of repair quality.

Digitalization

Very soon, thanks to the development of condition monitoring and predictive maintenance many more possibilities for scheduling services, fluid changes and maintenance will be available.



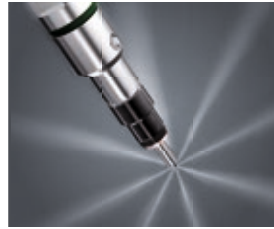
Liebherr Components



Gas engines



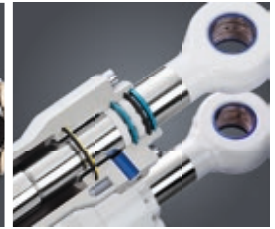
Diesel engines



Fuel injection systems



Axial piston hydraulics



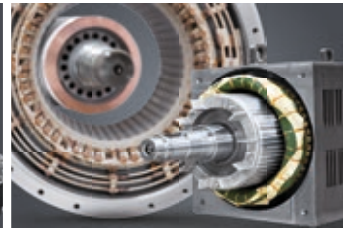
Hydraulic cylinders



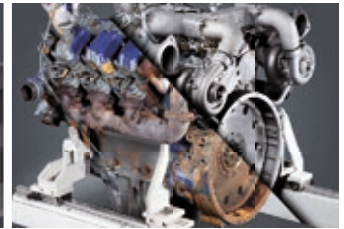
Slewing bearings



Gearboxes and winches



Electric machines



Remanufacturing



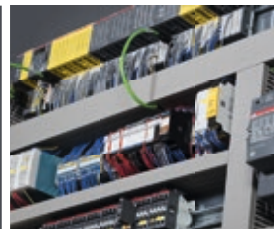
Human-machine interfaces and gateways



Control electronics and sensor technology



Power electronics



Control cabinets



Software

From A to Z – the components division of the Liebherr Group offers a broad range of solutions in the area of mechanical, hydraulic, electric and electronic drive system and control technology. The efficient components and systems are produced at a total of ten production sites around the world to the highest standards of quality. Central contact persons for all product lines are available to our customers at Liebherr-

Components AG and the regional sales and distribution branches.

Liebherr is your partner for joint success: from the product idea to development, manufacture and commissioning right through to customer service solutions like remanufacturing.

components.liebherr.com