

Liebherr Diesel Engines for the Railway Industry

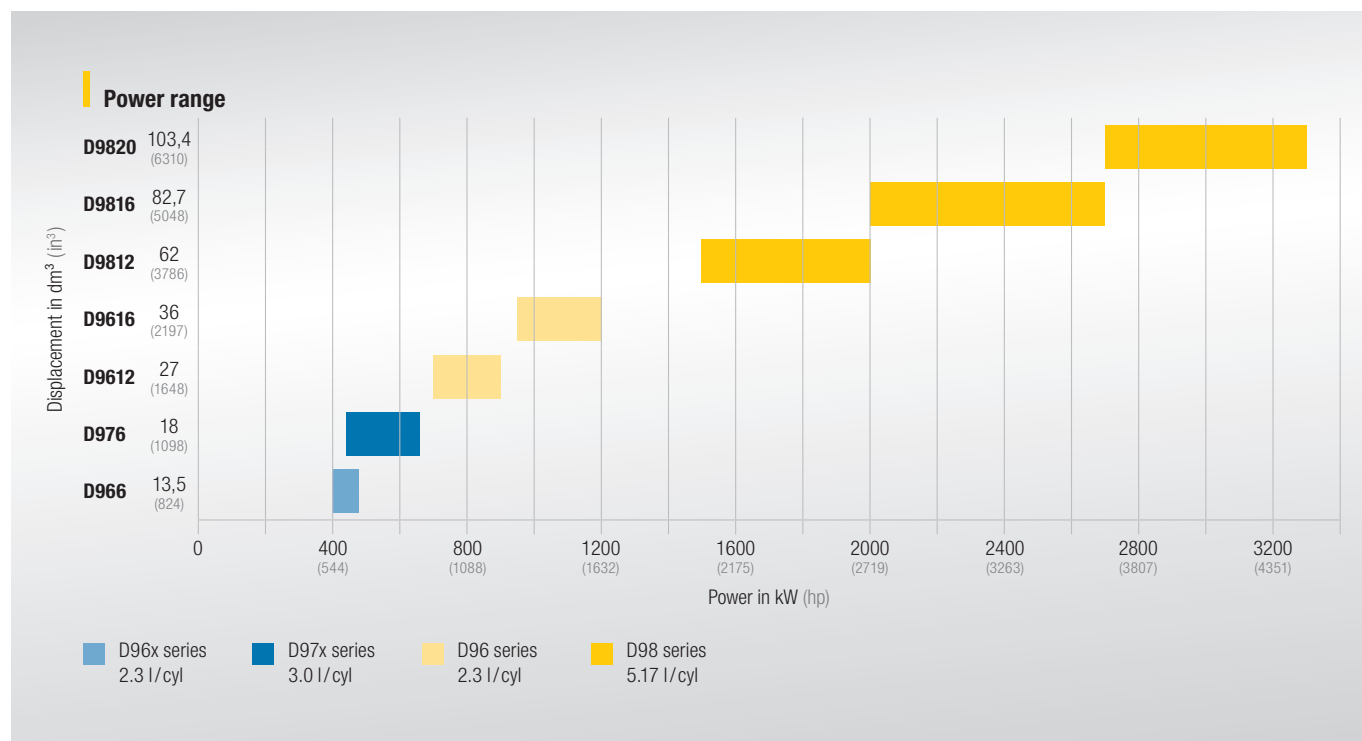


LIEBHERR

Liebherr Diesel Engines Portfolio for the Railway Industry

Since the first engine came off the production line in 1985, Liebherr has considerably improved its engines portfolio, currently covering a power range from 130 to 4,500 kW in various applications.

Besides having provided combustion engines for a variety of applications over the past decades, Liebherr has now developed a new set of engines specifically designed to meet the requirements of the railway industry and covering a power range from 400 up to 3,300 kw.



Modularity

Thanks to their modular design, Liebherr diesel engines can easily be adapted to the different applications of the railway industry such as diesel-electric or diesel-hydraulic locomotives.

High performance and uptime

Always committed to meeting highest quality standards, Liebherr has developed the D96, D97 & D98 diesel engines to achieve uncompromising performance and efficiency resulting in more uptime for our customers.

Low operating costs

Reduced fuel consumption and high reliability result in low total operating costs.

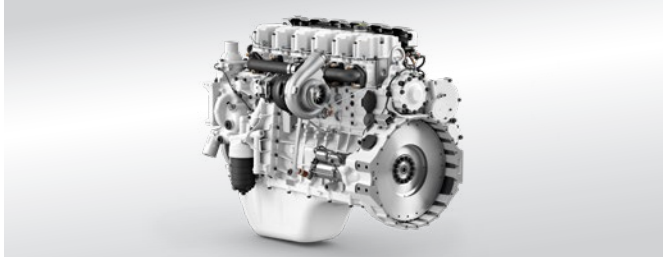
Emission standards

Our engines are provided to comply with the following applicable emission standards:

- Stage IIIA
- Stage IIIB
- Stage V (upon request)

Customized service excellence

Liebherr offers flexibility for customized and tailor-made service concepts to reach an outstanding service excellence.



D966 Engine

Bore	mm (in)	135	5.31
Stroke	mm (in)	157	6.18
Displacement per cylinder	l/cyl. (in ³ /cyl.)	2.3	137
Number of cylinders	-	6	6
Displacement	l (in ³)	13.5	824
Power Range	kW (hp)	400–480	536–644
Engine Speed	rpm	1,800–2,125	1,800–2,125



D976 Engine

Bore	mm (in)	148	5.83
Stroke	mm (in)	174	6.85
Displacement per cylinder	l/cyl. (in ³ /cyl.)	3.0	183
Number of cylinders	-	6	6
Displacement	l (in ³)	18.0	1,098
Power Range	kW (hp)	440–660	590 – 885
Engine Speed	rpm	1,800–2,100	1,800–2,100

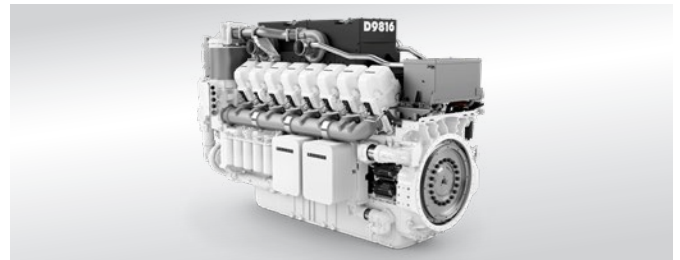


D9612 Engine

Bore	mm (in)	135	5.31
Stroke	mm (in)	157	6.18
Displacement per cylinder	l/cyl. (in ³ /cyl.)	2.3	137
Number of cylinders	-	12	12
Displacement	l (in ³)	27.0	1,648
Power Range	kW (hp)	700–900	939–1,207
Engine Speed	rpm	1,500–1,800	1,500–1,800

D9616 Engine

Bore	mm (in)	135	5.31
Stroke	mm (in)	157	6.18
Displacement per cylinder	l/cyl. (in ³ /cyl.)	2.3	137
Number of cylinders	-	16	16
Displacement	l (in ³)	36.0	2,197
Power Range	kW (hp)	950–1,200	1,274–1,609
Engine Speed	rpm	1,500–1,800	1,500–1,800



D9812 Engine

Bore	mm (in)	175	6.89
Stroke	mm (in)	215	8.46
Displacement per cylinder	l/cyl. (in ³ /cyl.)	5.17	315
Number of cylinders	-	12	12
Displacement	l (in ³)	62.0	3,783
Power Range	kW (hp)	1,500–2,000	2,012–2,682
Engine Speed	rpm	1,500–1,800	1,500–1,800

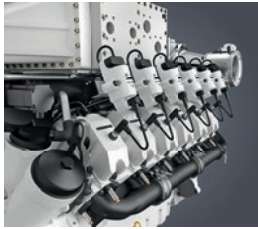
D9816 Engine

Bore	mm (in)	175	6.89
Stroke	mm (in)	215	8.46
Displacement per cylinder	l/cyl. (in ³ /cyl.)	5.17	315
Number of cylinders	-	16	12
Displacement	l (in ³)	82.7	5,047
Power Range	kW (hp)	2,000–2,700	2,682–3,621
Engine Speed	rpm	1,500–1,800	1,500–1,800

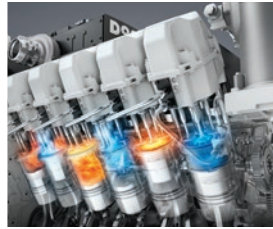
D9820 Engine

Bore	mm (in)	175	6.89
Stroke	mm (in)	215	8.46
Displacement per cylinder	l/cyl. (in ³ /cyl.)	5.17	315
Number of cylinders	-	20	20
Displacement	l (in ³)	103.4	6,310
Power Range	kW (hp)	2,700–3,300	3,621–4,425
Engine Speed	rpm	1,500–1,800	1,500–1,800

Liebherr Components



Gas engines



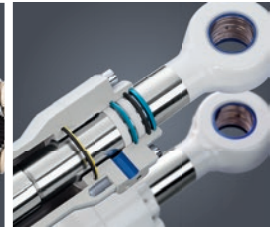
Diesel engines



Fuel injection systems



Axial piston hydraulics



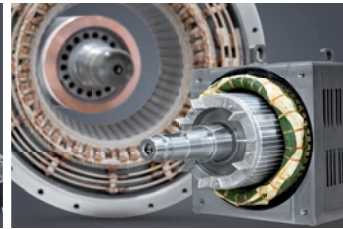
Hydraulic cylinders



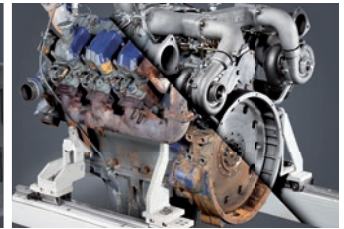
Slewing bearings



Gearboxes and winches



Electric machines



Remanufacturing



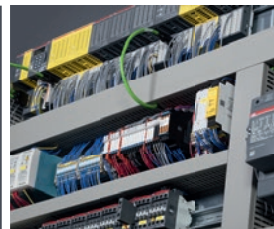
Human-machine interfaces and gateways



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