

OFF-ROAD RAIL

产品系列 / Product Range



MAN Engines







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长期运行的最佳选择

The Best Choice Mile after Mile

客户利益

- 单独定制的发动机
- 专业的安装建议
- 强劲的发动机性能
- 高效的成本收益
- 便捷的换机
- 低成本的再制造发动机
- 便捷的备件供应
- 认证的自助式服务理念
- 少量的燃油消耗
- 低廉的生命周期成本

典型应用

- 动车组
- 机车
- 轨道发电车
- 轨道工程作业车
- 轨道维护车

提供用于轨道领域的6缸和12缸高效柴油发动机，可配备内燃动车、机车、调车机车、轨道维护车、发电车等。功率范围从294kW (400hp) 到735kW (1000hp)。对于轨道发电机组，可提供从230kW到543kW (313hp 到 738hp) 的发动机。基于MAN发动机尺寸紧凑的特点，除了可以被用于传统的安装方式以外，还可以采取更节省空间的安装方式，即车厢地板以下安装或者车厢顶部安装。MAN发动机的优点还包括在满足快速负载响应和长时间经济运行的情况下满足全球的排放法规。

MAN是少有的可提供全功率段用于车厢地板以下安装或车厢顶部安装的(卧式或V型)发动机供应商。当然，包括此种类型的每一台MAN轨道用发动机，都具有高扭矩，强劲的牵引功率和快速的负载响应，并且具有较低的燃油消耗和噪声排放。

德国提供的卓越服务意味着没有任何情况可以让您偏离轨道。

MAN provides efficient diesel engines with 6 and 12 cylinders for use in railcars, long-distance and shunting locomotives, and track maintenance vehicles, and also for power supply. Ratings range from 294 kW (400 hp) for railcars or 265 kW (360 hp) for locomotives up to 735 kW (1,000 hp). MAN engines are characterized by their compact size, allowing them to be fitted conventionally in the drive module or alternatively – to save space – under the floor or in the roof. The clear benefits are in their fast load pick-up and their economical long-term usage in compliance with global emission standards.

Beside this, MAN is one of the few providers to also offer flat, horizontal engines throughout the entire power range. Of course, units of this type too – like every MAN rail engine – feature high torque, strong pulling power and fast load pick-up, coupled with low consumption and noise emissions.

And the excellent service provided by MAN means that nothing can throw you off track.

Customer Benefits

- Individually customized engines
- Expert installation advice
- Powerful engine performance
- Extreme cost-effectiveness
- Straightforward re-engining
- Low-cost reconditioned engines
- Quick availability of spare parts
- Certified self-servicing concept
- Low fuel consumption
- Low lifecycle cost

Typical Applications

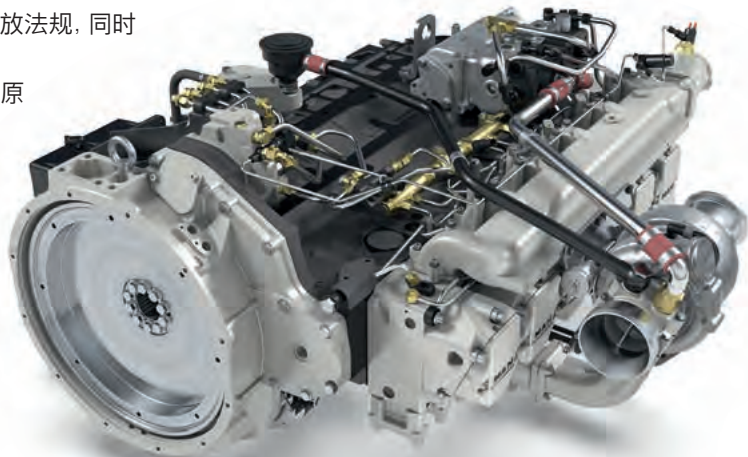
- Railcars
- Locomotives
- Train power supply
- Railway construction vehicles
- Maintenance vehicles

带选择性催化还原的排气后处理系统

Exhaust Gas Aftertreatment with SCR

MAN 发动机安装的排气后处理装置是选择性催化还原系统(SCR): 这样的技术路线可以满足04/26 EU Stage 3B 的排放法规, 同时实现较高的效率和较低的燃油消耗率。

SCR (英文: Selective Catalytic Reduction) 选择型催化还原是一个化学过程, 旨在通过还原剂的帮助选择性的降低排气中的氮氧化物, 选择性催化还原基于较低颗粒物排放的燃烧过程, 首先需要发动机来优化燃烧。选择性催化还原系统由三个连续的催化转换器组成, 包括集成在消声器上的水解催化转换器, 氨扩散器和催化器, 使用的还原剂为无公害的尿素水溶液(AdBlue)。



MAN engines are fitted with an exhaust-gas aftertreatment system in accordance with the SCR process: in this way they comply with the emission levels required by 04/26 EU Stage 3B but still achieve high efficiency and low fuel consumption figures. SCR (Selective Catalytic Reduction) is a chemical process that removes oxygen with the aid of a reducing agent, thus (selectively) reducing the nitrogen oxides in the exhaust gas. The SCR process is based on a low-particle combustion, which enables the engine to be set for optimized consumption. The SCR system consists of three successive catalytic converters; the hydrolysis catalytic converter, and the ammonia-blocking and reduction catalytic converters integrated into the silencer. The reducing agent used is a harmless aqueous urea solution (AdBlue).



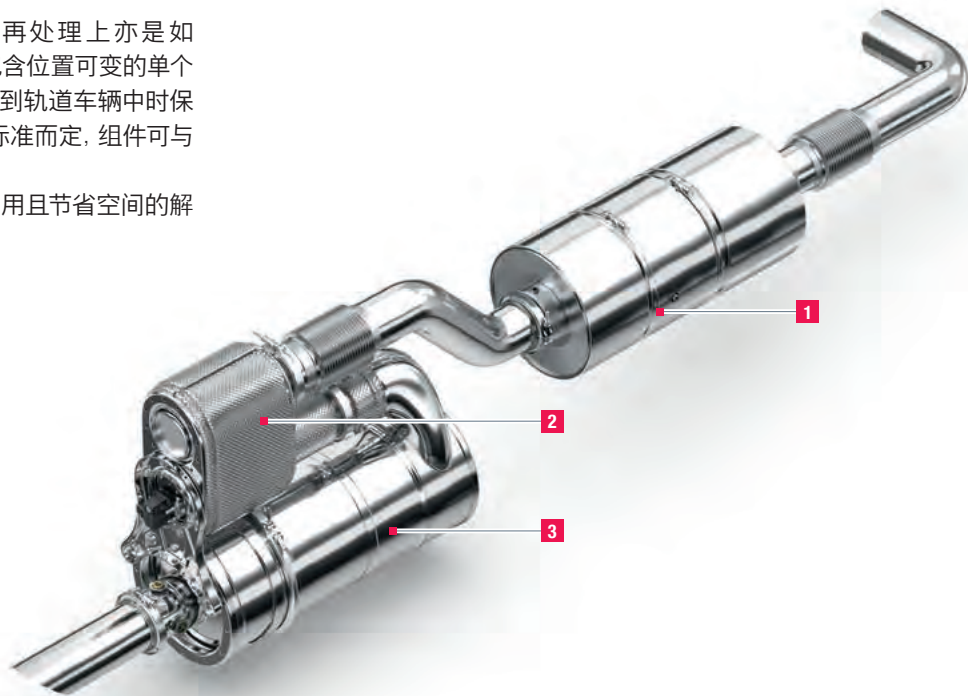
模块化废气再处理系统

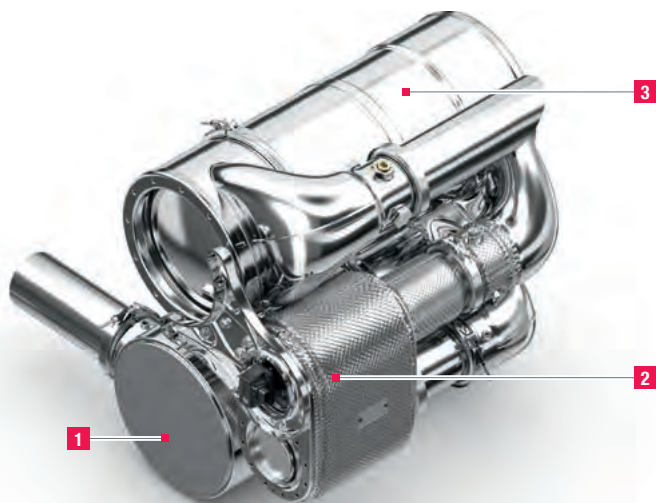
Modular Exhaust Gas Aftertreatment System

Stage V: 展望未来

灵活利用可用空间——在废气再处理上亦是如此：MAN发动机的模块化 EGA 套件包含位置可变的单个组件，从而实现不同安装方式。在安装到轨道车辆中时保证最大的设计自由。视所要求的废气标准而定，组件可与MAN 轨道用发动机进行相应的组合。

另外，预先确定的完整系统提供实用且节省空间的解决方案。





- 1 DOC / DPF
- 2 SCR 混合器 / SCR mixer
- 3 SCR 催化净化器 / SCR catalytic converter

Stage V: looking to the future

Flexibility makes use of free space – also when it comes to exhaust gas aftertreatment: Individual components of the modular EGA kit from MAN Engines, which can be positioned variably, enable a wide range of installation variants as well as maximum design freedom when installed in rail vehicles. The components can be combined with the MAN rail engines accordingly depending on the required emission standard.

Alternatively, pre-defined complete systems offer practical, space-saving solutions.



亮点：MAN D3876

The highlight: The MAN D3876



Stage V: 展望未来

性能强劲、结实耐用、尺寸紧凑——这些特性使 MAN D3876 发动机 成为轨道车辆的理想动力。该发动机提供显著的扭矩增加和稳定的高功率输出。

在动车组上采用模块化废气再处理系统，在机车上无需外部废气再处理系统即可符合 EU Stage V 的要求。

Stage V: looking to the future

Powerful, robust and with compact dimensions – these are the properties that make the MAN D3876 the ideal drive for rolling stock. This powerhouse offers intense torque increase and a high performance plateau.

A modular system ensures exhaust gas aftertreatment in rail cars, while external exhaust gas aftertreatment is not required in locomotives in order to fulfil the specifications of EU Stage V.

技术数据 / Technical data

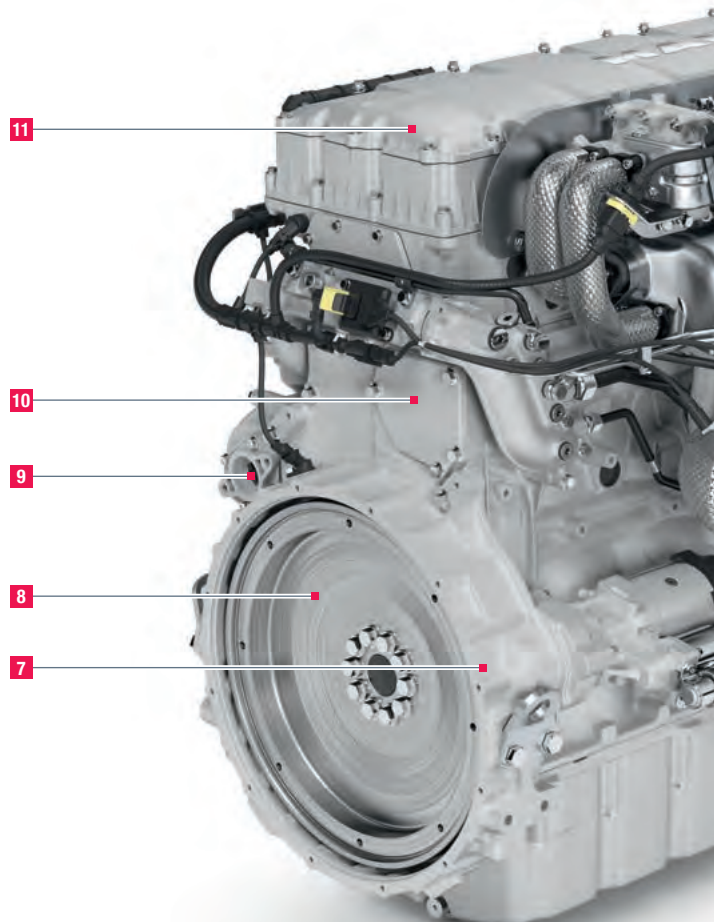
D3876	单位 / Unit	动车组 ¹⁾ / Railcars ¹⁾	机车 / Locomotives
气缸数 / Cylinders		6	6
缸径, 冲程 / Bore, stroke	mm	138, 170	138, 170
排量 / Displacement	l	15.3	15.3
功率 / Rating	kW hp	415–471 (565–640)	415–471 (565–640)
额定转速 / Nominal rpm	rpm	1 800	1 800
最大扭矩 / Maximum torque	Nm	3 000	3 000
额定转速 / at speed	rpm	1 200–1 500	1 200–1 500
长 x 宽 x 高 / Length x width x height	mm	1 484 x 978 x 1 137	1 484 x 978 x 1 137
干重 / Dry weight	kg	1 337	1 337
排气技术 / Exhaust technology		DOC/DPF, SCR	EGR
排放等级 / Emissions status		EU Stage V	EU Stage V

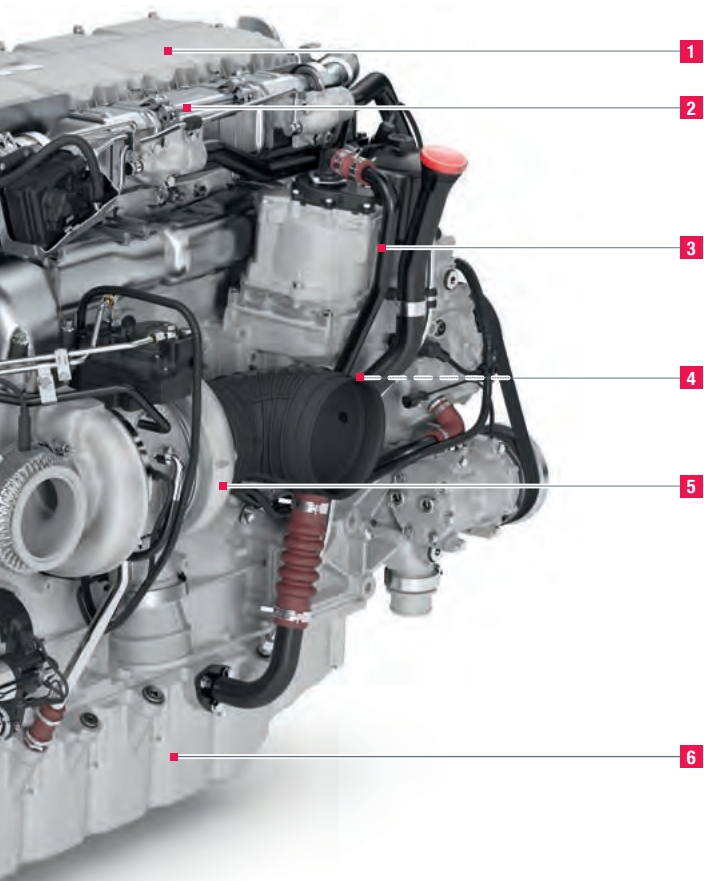
1) 需询问供货状态 / 1) Availability on request

亮点：MAN D3876

The highlight: The MAN D3876

- 铝制气门室罩盖 **1**
- 适用于轨道领域的坚固的不锈钢 EGR **2**
- 方便维护的工业布局 **3**
- 曲轴上的前 PTO (取力器) **4**
- 单级 可变截面废气涡轮增压器 (VTG) **5**
- 延长换油周期的大容量铝制油底壳 **6**
- GJS500 材质的 SAE 飞轮壳 **7**
- 14 英寸飞轮 **8**
- 选项: 双缸空气压缩机 **9**
- 选项: 飞轮侧 PTO (取力器) **10**
- 喷射压力高达 2500 bar 的共轨燃油喷射系统 **11**





- Aluminium valve cover **1**
- Robust stainless steel exhaust gas recirculation for train use **2**
- Easy-to-maintain industrial layout **3**
- Front PTO (power take-off) on crankshaft **4**
- Single-stage VTG turbo charger **5**
- Large-volume aluminium oil sump for long oil-change intervals **6**
- SAE flywheel housing made from GJS500 **7**
- 14-inch flywheel **8**
- Optional: 2-cylinder air compressor **9**
- Optional: PTO (power take-off) on flywheel side **10**
- Common Rail injection system with up to 2500 bar **11**

MAN工厂发动机再制造

Reconditioning of Engines at the MAN Plant

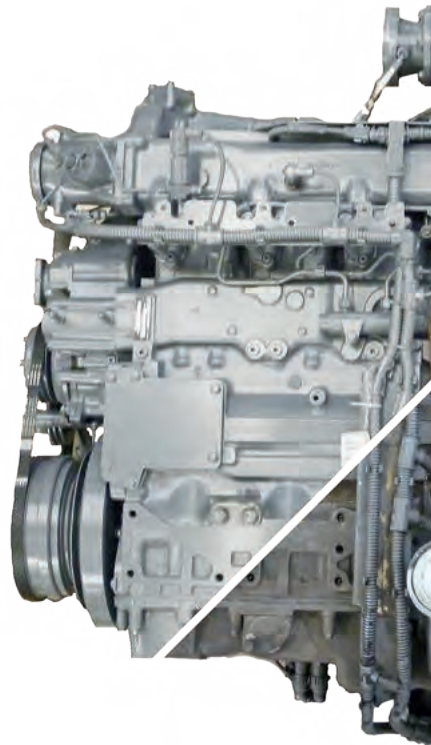
您可以两次拥有MAN发动机：MAN发动机研发，设计和制造均位于卓越的国际化中心——德国纽伦堡市，而且这里也是我们让发动机获得新生的再制造基地。这样以来，您不仅从MAN丰富的发动机制造经验和高水平的专业技术中获取益处，您还可以二次拥有相同顶级质量的MAN产品，而且是基于顶尖级技术水平的美妙重逢。

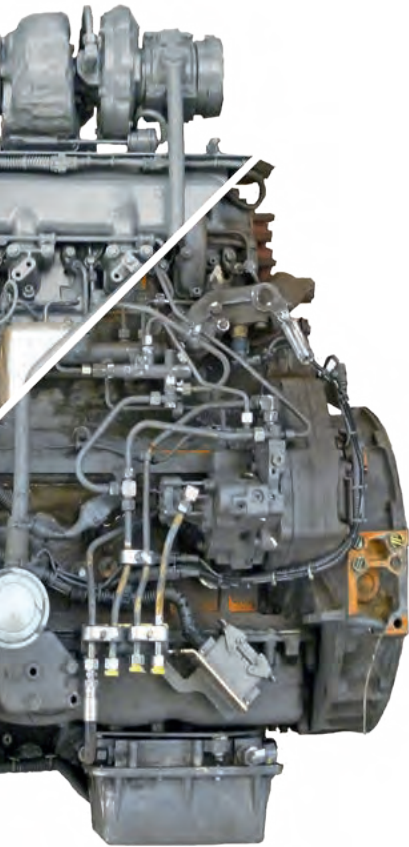
通过持续改进部件、加工与装配过程，在经过大修的发动机上仅安装符合最新技术水平的部件。以此将质量与设计上的改进融入 MAN 的所有发动机修理之中。

工厂修理

客户利益

- MAN原厂零部件
- 带试验记录的发动机热试
- 材料、喷射系统和发动机燃烧控制逻辑均来自当前量产的产品
- 基于多年项目支持的专家级的应用经验
- MAN 标准保修
- 修理后的发动机仍保有其官方认证
- 维护间隔与新发动机相同





You always meet twice: our engines are developed, designed, and manufactured at the International Centre of Excellence for Engines in Nuremberg, Germany – and that is also where they are reconditioned for a new lease of life. Therefore, you not only benefit from our engine experience and high level of technical expertise, you also get the same top MAN quality a second time around – and again with state-of-the-art technology. If that's not a positive déjà-vu experience!

The continual improvement of parts, as well as processing and assembly procedures, means that only state-of-the-art components are fitted in refurbished engines. As such, qualitative and design-related improvements are included with every instance of engine repair work at MAN.

Remanufacturing Customer Benefits

- Original MAN parts
- Heat test with a test record
- Material, injection systems, and engine maps from current series production
- Expertise in application due to many years of project support
- MAN standard warranty
- A repaired engine still retains in homologation
- Same maintenance interval as a new engine

基于产品培训的自助式服务

Self-Servicing through by Product Training

MAN发动机是轨道车辆的理想匹配动力, 可应用在机车、内燃动车、轨道维护车和轨道工程作业车等, 而且MAN发动机还可以给车辆提供电力, 发动机的可靠性和便捷的操作性组成了设备经济运行的基础。基于此原因, 除了提供专业的客户支持以外, MAN推出了弹性的自助式服务理念。

单独的产品培训保证了胜任服务工作的能力, 保养和维修集中在运营商可优化对动力系统的支持, 即有可能使整个车辆的服务能力集中于一个单独的团队。品质保证是由一个高质量的、多级认证的培训过程来保证的, 包括直接在整车现场的培训或者是在MAN培训中心进行的培训。

MAN紧凑系列化的发动机设计使得发动机便于维修保养, 而且可以降低成本, 各系列统一的结构意味着备件能兼容而且容易得到, 而且再制造意味着您的车辆总是得到顶尖级的技术及产品质量。

MAN engines provide exactly the power required for locomotives, railcars, maintenance vehicles and rail construction vehicles on the rail track. Furthermore, they supply the electricity for the train, and with their dependable operability they form the foundation for your economic success. This is why, in addition to our specialized customer support, MAN has developed a flexible self-servicing concept. Individual product training guarantees that the competence in service, maintenance and repair is concentrated on the operator resulting in optimum support for the drive system. You are able to combine vehicle competence in a single organization. Quality assurance is ensured by high-quality training courses and a multistage certification process – directly on-site at the vehicle or with us in our MAN Engine Academy.

The compact design of our engines enables uncomplicated access, accelerates maintenance, and reduces costs. Uniform design – throughout all series – means spare parts are compatible and quickly available. And the repowering option means your vehicles are always the technology and efficiency state-of-the-art.



动车组

Railcars

基础数据 / General data

柴油发动机 / Diesel engines				D2876	D2676	D2862
TYPE	气缸数	Cylinders		6	6	V12
	布置型式	Layout		卧式 horizontal	立式 vertical	扁平结构 flat
	功率	Rating	kW (hp)	301-390 (410-530)	338-382 (460-520)	588-735 (800-1 000)
	缸径	Bore	mm	128	126	128
	冲程	Stroke	mm	166	166	157
	排量	Displacement	l	12.8	12.4	24.2
	长	Length	mm	1 430	1 630	2 022
	宽	Width	mm	1 360-1 440	970	1 654
	高	Height	mm	670	1 030	849
	干重	Dry weight	kg	1 038-1 050	1 125	1 950

90° V型排列 / V = 90° V arrangement

动车组

Railcars

R6 发动机 / 6 in-line engines

特性参数	Characteristics	单位 / Unit	D2876			
发动机型号	Type designation		LUE 634 ¹⁾	LUE 635 ¹⁾	LUE 636 ¹⁾	LUE 623
通过UIC-623 认证	Homologation to UIC-623		—	—	—	—
功率 ²⁾	Rating ²⁾	kW (hp)	301 (410)	338 (460)	375 (510)	382 (520)
额定转速	at speed	rpm	1 800	1 800	1 800	1 900–2 000
最大扭矩	Maximum torque	Nm	1 900	2 200	2 300	2 350
额定转速	at speed	rpm	1 100–1 400	1 100–1 400	1 100–1 400	1 100–1 400
排放等级 ³⁾	Exhaust-gas status ³⁾		UIC-624 II	UIC-624 II	UIC-624 II	EC Stage III A

1) 需询问供货状态 / 1) Availability on request

2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each

3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624

R6 发动机 / 6 in-line engines

特性参数	Characteristics	单位 / Unit	D2876		
发动机型号	Type designation		LUE 633	LUE 632	LUE 631
通过UIC-623 认证	Homologation to UIC-623		—	—	—
功率 ²⁾	Rating ²⁾	kW (hp)	294 (400)	353 (480)	390 (530)
额定转速	at speed	rpm	1 800	1 800	1 800
最大扭矩	Maximum torque	Nm	1 900	2 200	2 300
额定转速	at speed	rpm	1 100–1 400	1 100–1 400	1 100–1 400
排放等级 ³⁾	Exhaust-gas status ³⁾		EC Stage III B	EC Stage III B	EC Stage III B

1) 需询问供货状态 / 1) Availability on request

2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each

3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624

动车组

Railcars

R6 发动机 / 6 in-line engines

特性参数	Characteristics	单位 / Unit	D2676				
发动机型号	Type designation		LE 624 ¹⁾	LE 625 ¹⁾	LE 621	LE 622	LE 623
通过UIC-623 认证	Homologation to UIC-623		✓	–	✓	–	–
功率 ²⁾	Rating ²⁾	kW (hp)	353 (480)	382 (520)	338 (460)	353 (480)	382 (520)
额定转速	at speed	rpm	1 800	1 800	1 800	1 800	1 800
最大扭矩	Maximum torque	Nm	2 300	2 400	2 200	2 300	2 400
额定转速	at speed	rpm	1 000–1 400	1 300–1 500	1 000–1 400	1 000–1 400	1 300–1 500
排放等级 ³⁾	Exhaust-gas status ³⁾		UIC-624 II	UIC-624 II	EC Stage III B	EC Stage III B	EC Stage III B

1) 需询问供货状态 / 1) Availability on request
2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each
3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624

V12 发动机 / V12 engines

特性参数	Characteristics	单位 / Unit	D2862				
发动机型号	Type designation		LE 634 ¹⁾	LE 635 ¹⁾	LE 633	LE 632	LE 631
通过UIC-623 认证	Homologation to UIC-623		—	—	—	—	—
功率 ²⁾	Rating ²⁾	kW (hp)	588 (800)	662 (900)	588 (800)	662 (900)	735 (1 000)
额定转速	at speed	rpm	1 800	1 800	1 800	1 800	1 800
最大扭矩	Maximum torque	Nm	3 650	3 650	3 650	3 900	4 150
额定转速	at speed	rpm	1 300–1 600	1 300–1 600	1 300–1 600	1 300–1 600	1 300–1 600
排放等级 ³⁾	Exhaust-gas status ³⁾		UIC-624 II	UIC-624 II	EC Stage III B	EC Stage III B	EC Stage III B

1) 需询问供货状态 / 1) Availability on request

2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each

3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624



机车

Locomotives

基础数据 / General data

柴油发动机 / Diesel engines				D2066	D2676	D2862
TYPE	气缸数	Cylinders		6	6	V12
	布置型式	Layout		立式 vertical	立式 vertical	—
	功率	Rating	kW (hp)	265 (360)	338–382 (460–520)	588–735 (800–1 000)
	缸径	Bore	mm	120	126	128
	冲程	Stroke	mm	155	166	157
	排量	Displacement	l	10.5	12.4	24.2
	长	Length	mm	1 360	1 630	2 022
	宽	Width	mm	930	970	1 654
	高	Height	mm	1 000	1 030	849
	干重	Dry weight	kg	1 100	1 125	1 950

90° V型排列 / V = 90° V arrangement

机车

Locomotives

R6 发动机 / 6 in-line engines

特性参数	Characteristics	单位 / Unit	D2066	D2676	
发动机型号	Type designation		LE 621	LE 624 ¹⁾	LE 625 ¹⁾
通过UIC-623 认证	Homologation to UIC-623		✓	✓	–
功率 ²⁾	Rating ²⁾	kW (hp)	265 (360)	353 (480)	382 (520)
额定转速	at speed	rpm	1 800	1 800	1 800
最大扭矩	Maximum torque	Nm	1 800	2 300	2 400
额定转速	at speed	rpm	1 000–1 400	1 000–1 400	1 300–1 500
排放等级 ³⁾	Exhaust-gas status ³⁾		EC Stage III B	UIC-624 II	UIC-624 II

1) 需询问供货状态 / 1) Availability on request
2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each
3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624

R6 发动机 / 6 in-line engines

特性参数	Characteristics	单位 / Unit	D2676		
发动机型号	Type designation		LE 621	LE 622	LE 623
通过UIC-623 认证	Homologation to UIC-623		✓	–	–
功率 ²⁾	Rating ²⁾	kW (hp)	338 (460)	353 (480)	382 (520)
额定转速	at speed	rpm	1 800	1 800	1 800
最大扭矩	Maximum torque	Nm	2 200	2 300	2 400
额定转速	at speed	rpm	1 000–1 400	1 000–1 400	1 300–1 500
排放等级 ³⁾	Exhaust-gas status ³⁾		EC Stage III B	EC Stage III B	EC Stage III B

1) 需询问供货状态 / 1) Availability on request

2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each

3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624

机车

Locomotives

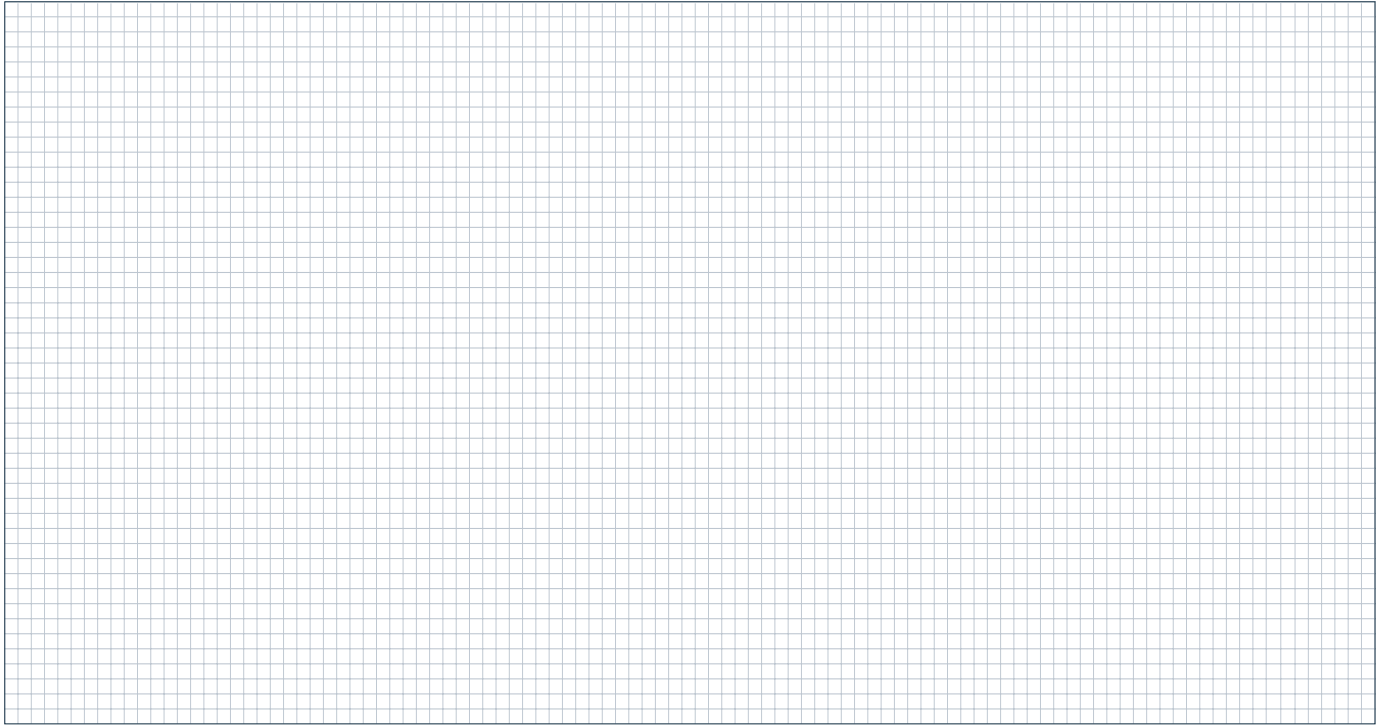
V12 发动机 / V12 engines

特性参数	Characteristics	单位 / Unit	D2862				
发动机型号	Type designation		LE 634 ¹⁾	LE 635 ¹⁾	LE 633	LE 632	LE 631
通过UIC-623 认证	Homologation to UIC-623		—	—	—	—	—
功率 ²⁾	Rating ²⁾	kW (hp)	588 (800)	662 (900)	588 (800)	662 (900)	735 (1 000)
额定转速	at speed	rpm	1 800	1 800	1 800	1 800	1 800
最大扭矩	Maximum torque	Nm	3 650	3 650	3 650	3 900	4 150
额定转速	at speed	rpm	1 300–1 600	1 300–1 600	1 300–1 600	1 300–1 600	1 300–1 600
排放等级 ³⁾	Exhaust-gas status ³⁾		UIC-624 II	UIC-624 II	EC Stage III B	EC Stage III B	EC Stage III B

1) 需询问供货状态 / 1) Availability on request
2) 在环境为298K和100kPa条件下, 净功率参照ISO 3046-1, 额定功率参照UIC 623-1 VE / 2) Net output to ISO 3046-1, rated output to UIC 623-1 VE, at 298 K and 100 kPa each
3) 根据欧盟法规满足97/68/EC Stage III A or III B, 或者UIC-624 / 3) According to EC directive 97/68/EC Stage III A or III B, or to UIC-624

便签

Notes





特种车辆

Special-purpose vehicles

- 轨道发电车
- 轨道工程作业车
- 轨道维护车
- Train power supply
- Railway construction vehicles
- Maintenance vehicles



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