

# FUJIAN EPOS ELECTRIC MACHINERY CO., LTD

**EMEAN**  
POWER

**WEICHAI**  
潍柴

ENGINE MODEL: 12M33D1210E200

EMEAN POWER


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WHATSAPP



WECHAT



	机型: <b>12M33D1210E200</b> Model:	日期: 01/02/22 Date:
	<b>发动机数据单</b> <b>Engine Datasheet</b>	

<b>转速Speed</b> <b>r/min</b>	<b>发动机功率</b> <b>Gross Engine Output</b>		
	持续功率 kW COP kW	常用功率 kW PRP kW	备用功率 kW ESP kW
1500	/	1100	1210

**功率定义解释 Ratings definitions :**

<b>功率分类</b> <b>Ratings Definitions</b>	<b>运行条件</b> <b>Operating condition</b>
持续功率 COP	<ol style="list-style-type: none"> <li>1、每年运行时间不限； Unlimited using time per year;</li> <li>2、在恒定的 100%负荷下运行； Continuous power is the maximum power available at a constant load factor;</li> <li>3、不具备超负荷能力。 No overload capability is allowed.</li> </ol>
常用功率 PRP	<ol style="list-style-type: none"> <li>1、每年运行时间不限； Unlimited using time per year;</li> <li>2、运行24h上平均负荷率不能超过70%； The average load rate is no more than 70% over 24 hours;</li> <li>3、每 12h 内，可超负荷 10%运行 1h。 Overloading 10% for 1h within 12 hours of operation is allowed.</li> </ol>
备用功率 ESP	<ol style="list-style-type: none"> <li>1、每年运行时间不超过200h； The annual operating time shall not exceed 200h;</li> <li>2、运行24h以上，平均负荷率不超过70%； The average load rate shall not exceed 70% over 24h operation cycle;</li> <li>3、不具备超负荷能力； No overload capability is allowed;</li> <li>4、柴油机启动加速按照 Q/WCG136.13 进行，没有热机过程，由启动加速到标定转速需在 10s 内完成。自然吸气柴油机，环境温度在 5℃以下时，需增加预热设施保证柴油机出水温度在 30℃以上；环境温度 5℃以上时，无需预热设施。增压柴油机环境温度 10℃以下时，需增加预热设施保证柴油机出水温度在 30℃以上；环境温度 10℃以上</li> </ol>

	<p>时, 无预热设施。</p> <p>The acceleration of starting of diesel engines are carried out in accordance with Q/WCG136.13, and there' s no engine process. From acceleration of starting to calibration speed shall be completed within 10s. Natural aspirated diesel engine, when the environment temperature is below 5°C , need to increase preheat facilities to ensure that diesel engine water temperature above 30°C. When environment temperature over 5°C, no preheating facilities are required.</p> <p>Supercharged diesel engine, when the environment temperature is below 10°C, need to increase preheat facilities to ensure that diesel engine water temperature above 30°C. When environment temperature over 10°C, no preheating facilities are required.</p>
限时使用功率 LTP	<p>1、不具备超负荷功率； No ability to overload;</p> <p>2、恒定负荷条件下，运行时间每年不超过 500h。 The annual operating time shall not exceed 500h while supplying a variable electrical load.</p>
数据中心功率 DCP	<p>1、具有 10%超负荷能力； It has 10% overload capacity;</p> <p>2、每年运行时间不限； Annual run time is unlimited;</p> <p>3、在≤100%的可变或持续负荷下工作； Working under variable or continuous load of less than 100%;</p> <p>4、当设备持续运行时，功率负荷不大于标定功率的 70%。 The power load shall not exceed 70% of the calibration power when the device is running continuously.</p>

备注 Descriptions	<p>1) 所有功率基于标准 ISO 8528-1, ISO 3046, DIN6271 , 误差范围± 5%。 All ratings are based on operating conditions under ISO 8528-1,ISO 3046, DIN6271. Performance tolerance of ±5%.</p> <p>2) 测试条件：大气压力 100kPa，25℃，相对湿度 30%，燃油密度 0.84kg/L；其他环境条件下可能需要进行功率修正，详情请与厂家联系。 Test conditions : 100 kPa, 25°C air inlet temperature, relative humidity of 30%, with fuel density 0.84 kg/L. Derating may be required for conditions outside these; please contact the factory for details.</p> <p>3) 所有的数据均基于发动机带燃油系统、水泵、机油泵时获得的，而不带有交流发电机、风扇、其它选用设备和被驱动的附件。 Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump, without battery charging alternator, fan and optional equipment.</p>
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### 基础数据 Essential Data

发动机类型 Engine Type	柴油机 Diesel Engine
气缸/气门数量 N° of Cylinders / Valves	12/48
气缸分布型式 Cylinders arrangement	V 型 V-Type
缸径×行程 ( mm ) Bore x Stroke ( mm )	150×185
排量(L) Displacement(L)	39.2
燃油系统型式 Fuel System	. 机械泵+电子调速器 Mechanical Pump+Electronic Speed Governor
进气形式 Aspiration	增压中冷 Turbocharging and intercooling
压缩比 Compression ratio	
飞轮壳尺寸 Flywheel housing	SAE 0
飞轮尺寸 Flywheel	18"
飞轮齿圈齿数 N° of teeth on flywheel ring gear	194
飞轮转动惯量 (kg/m <sup>2</sup> ) Inertia of flywheel (kg/m <sup>2</sup> )	7.18
曲轴转动惯量 (kg/m <sup>2</sup> ) Inertia of crankshaft (kg/m <sup>2</sup> )	4.52
排放阶段 Emission standard	无排放 Non
发动机尺寸(长×宽×高) Overall Dimensions without radiator (L x W x H) (mm)	2524×1312×1731 ( 以外形图为准 The outer chart shall prevail )
发动机干重 (kg) Engine dry weight (kg)	3590
不带辅助启动装置时最低冷启动温度 (°C) Min.cold start temperature without auxiliary starting device(°C)	-5

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带辅助启动装置时最低冷启动温度 (°C) Min. cold start temperature with auxiliary starting device (°C) ..... -10

包装尺寸(长×宽×高) Packing size (L x W x H) (mm) ..... 880×1710×2215

运输重量 Packaging quality(kg)..... 4268

**进气系统 Air intake system**

在涡轮增压器前允许的最大的进气温升(°C) Air intake temperature rise (°C) ..... 5

清洁滤芯进气阻力 (kPa) Air intake restriction clean filter (kPa)..... ≤3.0

脏滤芯进气阻力 (kPa) Air intake restriction dirty filter (kPa)..... ≤6.5

额定工况下进气流量 (kg/h) Recommended air flow @ PRP (kg/h)..... 5520

应急备用工况下进气流量 (kg/h) Recommended air flow @ ESP (kg/h)..... 5938

推荐最小进气管直径(mm) Min. diameter of intake pipe (mm)..... 220

**中冷系统 Intercooling system**

25°C环境温度下的最高进气温度 (°C) Max. intake temperature @ 25°C ambient temperature (°C). .....55

进气温度与环境温度的最大温差 (°C) Max. difference between intake temperature and ambient temperature (°C) ..... ≤30

中冷器允许的最大压力降 (kPa) Max. intake pressure drop of intercooler (kPa) .....12

**冷却系统 Cooling system**

发动机允许的最高使用环境温度 (°C) System designed for ambient temperature up to (°C) .....50

进出水外部管路的最小内径 (mm) Min. inside diameter of coolant outlet pipe (mm) ..... 45

出水管报警温度 (°C) Coolant alarm temperature (°C)..... 101

节温器初开/全开温度 (°C) Thermostat opening temperature/full open temperature (°C) ..... 80±2/92

冷却系统内最小保持压力 (kPa) Min. pressure in cooling system (kPa).....50

发动机本身冷却液容量 (L) Coolant capacity of the engine (L) ..... 83

**排气系统 Exhaust system**

允许最大排气背压 (kPa) Max. exhaust back pressure (kPa) .....7.5

最大的排气温度 (涡轮前) (°C) Max. exhaust temperature before turbocharger (°C) ..... 750

最大的排气温度 (涡轮后) (°C) Max. exhaust temperature after turbocharger(°C) ..... 550

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额定工况下排气流量 (kg/h) Exhaust flow @ PRP (kg/h) .....	5739
应急备用工况下排气流量 (kg/h) Exhaust flow @ ESP (kg/h) .....	6181
推荐排气管最小直径(mm) Min. diameter of exhaust pipe (mm) .....	220
涡轮增压器法兰处允许的最大弯矩(Nm) Max. bending moment of exhaust gas exit flange (Nm) .....	/

### 润滑系统 Lubrication system

油底壳机油最小/最大容量 (L) Oil capacity Low / High (L).....	117/155
怠速时机油压力 (kPa) Oil pressure in normal condition idle speed (kPa) .....	≥200
在额定转速下的机油压力 (kPa) Oil pressure in normal condition at rated speed .....	400~650
机油压力低报警值(kPa) Lowest oil pressure alarm value (kPa) .....	200
机油压力低停机值(kPa) Lowest oil pressure shutdown value (kPa).....	/
额定工况主油道内机油温度范围 The oil temperature range of the main oil passage under rated working condition ( °C ) .....	85~105
机油流量 (L/min) Oil flow (L/min) .....	390
额定工况机油燃油消耗比 Oil fuel consumption ratio based on engine fuel consumption data under rated working condition .....	≤0.3%

### 噪声 Noise

发动机噪声 (声功率级) (dB(A)) Diesel engine noise (Acoustic power level) (dB(A)) .....	121.6
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### 燃油系统 Fuel system

喷油泵进油口最大进油阻力 (kPa) Max. restriction at fuel pump inlet (kPa) .....	13
喷油泵最大回油阻力 (kPa) Max. fuel return restriction (kPa) .....	15
燃油最高进油温度 (°C) Max. fuel inlet temperature (°C).....	45
供油流量 (L/h) Fuel supply flow (kg/h) .....	/
输油泵最小压力 (kPa) Min. pressure of fuel pump (kPa).....	35
燃油进油管最小直径 (mm) Min. diameter of inlet pipe (mm).....	12
燃油回油管最小直径 (mm) Min. diameter of return pipe (mm) .....	12

### 电器系统 Electrical system

电气系统电压 (负极接地) (V) Electrical system voltage (negative to ground) (V) .....	24
起动机功率(kW) Starter power (kW) .....	10
充电发电机额定电流 (A) Battery charger current (A).....	55

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启动回路最大电阻 (mΩ) Max. electric resistance of starting circuit (mΩ).....0.008  
 启动回路导线最小截面积(mm<sup>2</sup>) Min. sectional area of wire (mm<sup>2</sup>) .....70  
 加热格栅工作电压(V)/电流(A) Heat The Grille Voltage(V)/Current(A) ...../

**热平衡测试数据 (环境温度 40.3°C)Heat balance test data ( 40.3°C )**

发动机进/出水压力 Coolant inlet/ output pressure ( kPa )	额定工况 Rated working condition	左 Left ( -18.8/65.60 ) 右 Right ( -31.0/84.6 )
	超负荷工况 Overload working condition	左 Left ( -12.4/50.7 ) 右 Right ( -28.4/67.2 )
冷却液流量 Coolant flow ( m <sup>3</sup> /h )	额定工况 Rated working condition	左 Left ( 41.5 ) 右 Right ( 38.8 )
	超负荷工况 Overload working condition	左 Left ( 38.5 ) 右 Right ( 35.3 )
发动机进/出水温度 Coolant inlet/output temperature ( °C )	额定工况 Rated working condition	左 Left ( 85.4/89.7 ) 右 Right ( 85.4/89.9 )
	超负荷工况 Overload working condition	左 Left ( 84.4/89.9 ) 右 Right ( 84.4/89.8 )
中冷器前/后温度 Intercooler inlet/output temperature ( °C )	额定工况 Rated working condition	左 Left ( 208.0/58.2 ) 右 Right ( 202.0/58.6 )
	超负荷工况 Overload working condition	左 Left ( 213.0/57.4 ) 右 Right ( 212.0/58.6 )
中冷器前/后压力 Intercooler inlet/output pressure ( kPa )	额定工况 Rated working condition	左 Left ( 209.0/195.9 ) 右 Right ( 212.6/193.8 )
	超负荷工况 Overload working condition	左 Left ( 239.6/223.8 ) 右 Right ( 232.9/214.2 )
发动机总热量 Engine total heat ( kJ/s )	额定工况 Rated working condition	2563.3
	超负荷工况 Overload working condition	2839.5
中冷器散热量 Intercooler heat dissipating capacity ( kJ/s )	额定工况 Rated working condition	248.2
	超负荷工况 Overload working condition	280.6
排气带走的热量 The heat taken away by the exhaust ( kJ/s )	额定工况 Rated working condition	840.6
	超负荷工况 Overload working condition	927.7
冷却液带走的热量	额定工况 Rated working condition	411.5

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The heat taken away by the coolant ( kJ/s )	超负荷工况 Overload working condition	450.6
发动机表面辐射热量 Radiation heat of the engine surface ( kJ/s )	额定工况 Rated working condition	128.2
	超负荷工况 Overload working condition	142.0
<p>注：因测量等误差原因，表面辐射热量按发动机总热量的 5% 计算。</p> <p>Note: Because of test errors and other reasons, the surface radiation heat is 5% of the engine total heat.</p>		



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## 性能数据 Performance data

活塞平均速度 (m/s) Mean Piston Speed (m/s) .....	9.25
平均有效压力 (MPa) .....	2.24
最高爆发压力(MPa) Maximum Burst Pressure(MPa) .....	17
最低空载稳定转速(r/min) Minimum No-load Speed(r/min).....	700-750
发火次序 Ignition Order .....	A1-B2-A5-B4-A3-B1-A6-B5-A2-B3-A4-B6
旋转方向 Sense of Rotation .....	逆时针 ( 面对飞轮 ) Anticlockwise ( In the Face of Flywheel )

备注：所有参数如有更改，恕不另行通知。

Remark: All Parameters If Changed Without Prior Notice.