



# Technical Specifications

**WP4-B90**  
(WP4D100E201)

**WEICHAI**



**WEICHAI POWER CO., LTD.**  
[www.weichai.com](http://www.weichai.com)





## Brief Description

We compile the technical specifications in order to maximize customer satisfaction.

WP4 series diesel engine was developed based on Germany Deutz 226B series diesel engine .

WP4D100E20 is one type of turbocharger centering structure generating diesel engine, which developed in 2012.

Manufactured by the joint venture company established by Weichai Power and DEUTZ AG.



**WEICHAI**

Authorized Distributor and  
Spare Parts Center for  
Ecuador / Southamerica





## 二、柴油机主要技术参数 (Main technical parameters)

柴油机型号： Diesel Model	WP4D100E201 (WP4-B90)
柴油机型式： Type	直列、4冲程、水冷、湿式缸套、增压中冷 In-line、4-Stroke、Water cooled、Wet cylinder liner、Turbocharged and Intercooled
气缸数/气阀数： No. of cylinders / valves	4/8
缸径/行程： Bore/Stroke	105mm/130mm
压缩比： Compression Ratio	18 : 1
排量： Displacement	4.5L
额定功率： Rated Power	90kW
超负荷功率： Overload Power	100kW
额定转速： Rated Speed	1800r/min





怠速 $\boxtimes$ 速: Idle Speed	650 $\pm$ 25 r/min
$\boxtimes$ 火循序: Fire Sequence	1-3-2-4
曲 $\boxtimes$ 旋 $\boxtimes$ 方向 Crankshaft Rotating Direction	逆 $\boxtimes\boxtimes$ (从 $\boxtimes\boxtimes$ 端看) Counterclockwise facing flywheel
$\boxtimes\boxtimes$ 方式: Starting method	DC24V $\boxtimes\boxtimes\boxtimes$ DC24V Electrical Start
起 $\boxtimes$ 机功率/ $\boxtimes\boxtimes$ : Starting motor Power/voltage	6kW/24V
$\boxtimes$ 速方式: Governing control	$\boxtimes$ 子 $\boxtimes$ 速/机械 $\boxtimes$ 速 Electrical / Mechanical speed governor
冷却方式: Cooling mode	$\boxtimes$ 式水冷 Closed water cooled
允 $\boxtimes$ 机体 $\boxtimes$ 行的最低冷却液温度: Min. coolant temperature of engine working	40
$\boxtimes\boxtimes$ 机本身冷却液容量: Coolant capacity	5.3L



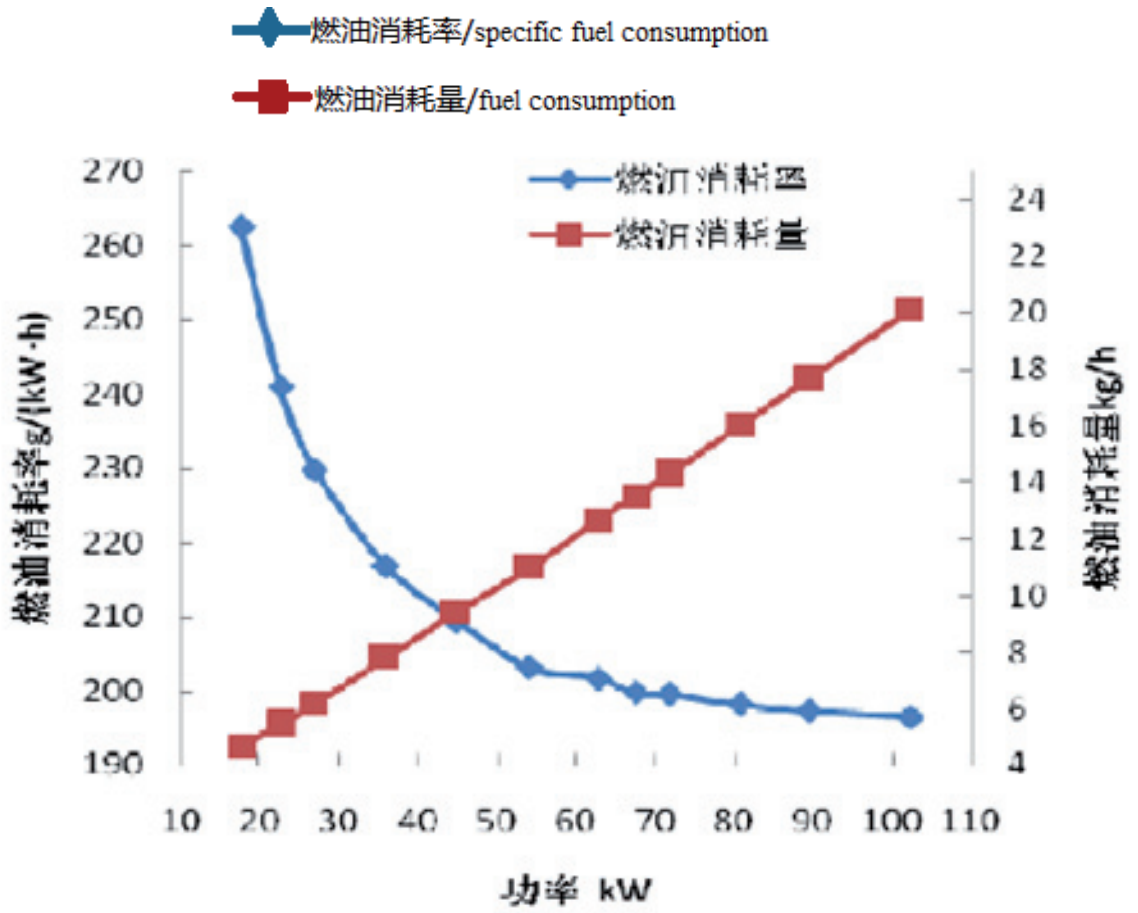


油底容量： The capacity of oil sump	10L (以油尺为准) 10L(follow the oil dipstick)
机重 (kg)： Net weight	550± 50
外形尺寸 (长×宽×高) (mm)： Size of shape (length× width× height)：	1543× 751× 1139 (外形图) 1543× 751× 1139 (outline drawing)

### 三、柴油机主要性能参数(Main performance parameters)

稳速率： Steady governing rate	电子:≤ 3%;机械:≤ 5% Electronic:≤ 3%; mechanical≤ 5%
额定转速波动率： Rated speed fluctuation rate	≤ 0.5%
怠速转速波动率： Idling speed fluctuation rate	≤ 2.5%
额定工况燃油耗： Fuel consumption at rated working condition	≤ 205g/kW· h± 3%
机油燃油消耗比： Consume ratio of oil and fuel	≤ 0.2%







## 四、推荐柴油机配套使用参数

力出口: Power output:	SAE3 号/11.5 # SAE3 flywheel housing /11.5 # flywheel
空器流量: Air filter flow	$\geq 350\text{kg/h}$
最小气管直径: Min. diameter of intake pipe	60mm
消音器流量: Muffler flow	$\geq 360\text{ kg/h}$
排气管最小直径: Min. diameter of exhaust pipe	65mm
允最大排气背: Max. exhaust back pressure	6.5kPa
最大排气温度 (后): Max. exhaust temperature ( After the turbocharger)	550
增器法允的最大弯矩: Max. bending moment of turbocharger flange	27N· m





机油力低警: Alarm value of low oil temperature	120 kPa
机油力高警: Alarm value of high oil temperature	800 kPa
在机运行 30s 以后始测机油力 Please measure oil pressure after running 30s	
出水管水温警温度: Alarm value of water outlet temperature	96
机油温度高警 Alarm value of high oil temperature	120
速高警 Alarm value of high speed	110%定速 110% rated speed
机油力低停 Stopping value of low oil pressure	80kpa
速高停 Stopping value of high speed	120%定速 120% rated speed
燃油油管最小直径: Min. diameter of fuel inlet pipe	12mm
燃油回油管最小直径: Min. diameter of fuel return pipe	12mm







柴油机外部允许的冷却系阻力(定工况): Cooling system resistance of engine external (Rated working condition)	45kPa
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平衡数据 (环境温度：43.1 )		
机出水力 (kPa/kPa)	定工况	水：1.9\出水：13.1
冷却水流量 (m3/h)	定工况	8.5
机出水温度 (°C/ )	定工况	水：82.7\出水：86.4
中冷器前后温度气温 (°C/ )	定工况	前：135.5\后：49.5
中冷器前后气 (kPa/kPa)	定工况	前：107.8\后：107.9
冷却液走的量 (kJ/s)	定工况	36.4
中冷器散量 (kJ/s)	定工况	11.5
排气走的量 (kJ/s)	定工况	57.6
机散量 (kJ/s)		117.7

Data of thermal equilibrium(entironment temperature:)		
the pressure of water into and out of diesel(kPa)	Declared working condition	1.9\13.1
flux of cooling fluid (m3/h)	Declared working condition	8.5
the temperature of water into and out of diesel( )	Declared working condition	82.7\86.4
the temperature of airr into and	Declared working condition	135.5\49.5





out of intercooler( )		
the pressure of air into and out of intercooler(kPa)	Declared working condition	107.8\107.9
calorie brought out by cooling fluid(kJ/s)	Declared working condition	36.4
calorie brought out by intercooler (kJ/s)	Declared working condition	11.5
calorie brought out by exhaust system(kJ/s)	Declared working condition	57.6
total calorie brought out(kJ/s)		117.7

## 五、 柴油机使用环境 (Ambiance condition)

1. 柴油机在下列条件下，能输出定功率：

The diesel engine should be able to output rated power in the following conditions.

a) 大气压力,  $P_X$  : 100kPa (或海拔高度 0 米) ；

Atmospheric pressure,  $P_X$ :100kPa (or 0 meter above sea level);

b) 环境温度,  $T_r$  : 298K (25 ) ；

Ambiance temperature ,  $T_r$ : 298K(25 ) ；

c) 空气相对湿度 $\Phi_r$  : 30%。

Relative air humidity $\Phi_r$  : 30%。

2. 柴油机在下列条件下，能并可靠地工作：





The diesel engine should be able to work continuously and reliably in the following conditions.

a) 海拔高度不超 4000m ；

The altitude does not exceed 4000 m.

b) 环境温度：下限 -10 ， 上限 50 ；

Range of ambience temperature:  $-10 \leq T \leq 50$  ；

c) 空气相对湿度：最湿月平均最高相对湿度 90%（指该月的月平均最低温度 25 ）

Relative air humidity : the max relative humidity is 90% of the wettest month in a year(It means that the lowest average temperature of this month is 25 )

d) 工作环境中无爆炸性气体、无尘埃。

The working environment should be without explosive gas and electric mote.

e) 工作环境中如有任何特殊的危险条件（如爆炸大气环境和易燃气体）用提前加以说明。

The customer should illuminate in advance if there has any especial and dangerous condition at the working space (for example, explosive and flammable gas).

## 六、 柴油机供货范围 (Scope of supply of diesel engine)

用柴油机/Generating Diesel engine	1 台
空器/ Air filter	1 件
机安装支架/ Bracket	4 件
充机/ Charging alternator	1 件
起机/ Starter	1 件





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风扇 / Fan	1 件
冷却水出水管 / Cooling water inlet/outlet pipe	2 件
消音器 / Muffler	1 件
散热器 / Radiator	1 件
七、 柴油机可选配件 (diesel engine optional accessories)	
13021962 停止电磁阀 (Electromagnetic valve for stopping)	
13057165 泄油总成 (Oil Draining Pump)	

