

**2019年CTCC中国房车锦标赛**

**超级杯车型注册表-副表3发动机注册表**

**2019 China Touring Car Championship**

**HOMOLOGATION FORM FOR MODLE IN SUPER CUP-ENGINE**

**车型注册号码/HOMOLOGATION NUMBER**

|  |
| --- |
| CTCC-XXX-1901-YYY-ZZZ-A |

**发动机注册号码/ENGINE HOMOLOGATION NUMBER**

|  |
| --- |
| CTCCES-XXX-1901-YYY-ZZZ-A |

**注册人/APPLICANT**

|  |
| --- |
| XXX |

**注册有效期/ HOMOLOGATION VAILD**

|  |
| --- |
| 2019年 |

**审核人/AUDIT SIGNATURE**

|  |  |  |
| --- | --- | --- |
| 姓名  签字 | 姓名  签字 | 姓名  签字 |

Part 1. 原型发动机信息/ORIGINAL ENGINE INFORMATION

**1.** 一般项目/ GENERAL

**1.1.** 制造商/ MANUFACTURER

|  |
| --- |
| 填写/Description |

**1.2.** 商品名称-型号和类型/ COMMERCIAL NAME(S)-MODEL AND TYPE

|  |
| --- |
| 填写/Description |

**1.3.** 气缸容积/ CYLINDER CAPACITY

|  |  |  |
| --- | --- | --- |
| a) 气缸容积/ Cylinder capacity | 填写/Description | cm³ |
| b) 修正气缸容积/ Corrected cylinder capacity | 填写/Description×填写/Description=填写/Description | cm³ |

**1.4.** 单个燃烧室最小容积/ MINIMUM VOLUME OF A COMBUSTION CHAMBER

|  |
| --- |
| 填写/Description cm³ |

**1.5** 压缩比/ COMPRESSION RATIO (IN RELATION WITH THE UNIT)

|  |
| --- |
| 最大/Max.填写/Description :1 |

**2.** 缸体/ CYLINDER BLOCK

**2.1.** 曲轴轴承座直径/DIAMETER OF CRANKSHAFT BEARINGS

|  |
| --- |
| 填写/Description +0/-0.1mm |

**2.2.** 缸体最小高度/ MIN. HEIGHT OF THE CYLINDER BLOCK

|  |  |  |
| --- | --- | --- |
| a) 安装油底壳平面到缸垫平面之间  Between sump and head gasket planes | 填写/Description | mm |
| b) 曲轴中心线到缸垫平面之间  Between crankshaft centreline and head gasket plane | 填写/Description | mm |

I2-1）高度测量/Height measurement

|  |
| --- |
| 添加图纸  Drawing |

**2.3.** 缸套/ SLEEVES

|  |  |
| --- | --- |
| a) 材质/Material | 填写/Description |

P2-1）拆下的缸套/ Sleeve dismounted

|  |
| --- |
| 添加照片  Photo |

**3.** 活塞/ PISTON

|  |  |  |  |
| --- | --- | --- | --- |
| a）材质/Material | 填写/Description | | |
| b）活塞环数量/Number of rings | 填写/Description | | |
| b1）活塞环厚度/Thickness of rings | 填写/Description ±0.1mm | | |
| c）最小重量/Min. weight | 填写/Description g | 带活塞环、销、卡子、轴承  With pin, bearing, clips and rings | |
| d）活塞销中心线到活塞顶的距离  Distance from gudgeon pin center line to top of piston crown | 填写/Description ±0.1mm | | |
| e）位于上止点时活塞顶部到缸垫平面的距离  Distance from gudgeon pin center line to top of piston crown | 填写/Description ±0.15/-0.3mm  +上面/above，-下面/below | | |
| f）活塞槽体积（顶部）  Piston groove volume (top) | 填写/Description ±0.5cm³ | | |
| g) 活塞冷却系统/ Piston cooling system | 有/Yes单项勾选/Single choice | | 无/No单项勾选/Single choice |

P3-1）活塞，从顶部3/4角度看 P3-2）活塞，从底部3/4角度看

Piston from 3/4 top Piston from 3/4 bottom

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

I3-1）活塞销

Piston pin

|  |
| --- |
| 添加图纸  Drawing |

**4.** 曲轴/ CRANKSHAFT

|  |  |  |
| --- | --- | --- |
| a) 曲拐轴最大直径/ Maximum diameter of crank pins | | 填写/Description mm |
| b）材质/Material | 填写/Description | |
| c）制造工艺/Manufacturing process | 铸造/Cast 单项勾选/Single choice | |
| 锻造/Forged 单项勾选/Single choice | |
| 原材料加工/Machined from raw 单项勾选/Single choice | |
| d）轴承直径/Diameter of bearings | 填写/Description +0/-0.1 mm | |
| e）轴承盖材质/Bearing caps material | 填写/Description | |
| f）裸曲轴的最小重量  Min. weight of bare crankshaft | 填写/Description g | |
| g）曲柄直径/Diameter of crank pins | 填写/Description +0/-0.1 mm | |

P4-1）从曲轴前3/4角度看 P4-2）从曲轴后3/4角度看

Crankshaft from 3/4 front Crankshaft from 3/4 rear

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

**5.** 气缸盖/ CYLINDER HEAD

|  |  |
| --- | --- |
| a）最小高度/Min. height | 填写/Description mm |
| b）测量位置/Where measured | 填写/Description mm |

**6.** 气缸垫/ CYLINDER GASKET

|  |  |
| --- | --- |
| 压紧的气缸垫厚度  Thickness of tightened cylinderhead gasket | 填写/Description ±0.2mm |

**7.** 凸轮轴/ CAMSHAFT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a）轴承直径/Diameter of bearings | | | 填写/Description ±0.1mm | |
| b）凸轮尺寸  Cam dimensions | A=  B= | 进气/Intake | 排气/Exhaust |  |
| 填写/Description ±0.1 mm | 填写/Description ±0.1 mm |
| 填写/Description ±0.1 mm | 填写/Description ±0.1 mm |
| A和B的公差值必须与表内数值相符  The tolerances must be used with the same sign for A and B | |

**8.** 正时/ TIMING

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a）理论间隙  Theoretical clearance | 进气/Intake | 填写/Description mm | | | 排气/Exhaust | | 填写/Description mm |
| b）凸轮升程/毫米（卸载凸轮轴）  Cam lift in mm(dismounted camshaft) | | | | 填写/Description ±0.2mm | | | |
| c）最大气门升程  Max. valve lift | 进气/Intake | | 排气/Exhaust | | | 包括8.a)项理论间隙  with clearance according to Art.8.a) | |
| 填写/Description ±0.2 mm | | 填写/Description ±0.2 mm | | |

**9.** 进气/INTAKE

|  |  |
| --- | --- |
| a）每阀弹簧数量/ Number of springs per valve | 填写/Description |
| b）弹簧最大高度/ Max. length of the spring | 填写/Description mm |
| b1）测量负载/Load of measurement | 填写/Description N |
| c）弹簧外径/ External diameter of springs | 填写/Description ±0.2mm |
| d）弹簧圈数/Number of rings | 填写/Description |
| e）弹簧钢丝直径/ Diameter of spring wire | 填写/Description ±0.1mm |
| f）弹簧最大自由高度/Max. free length of springs | 填写/Description mm |

**10.** 排气/EXHAUST

|  |  |
| --- | --- |
| a）每阀弹簧数量/ Number of springs per valve | 填写/Description |
| b）弹簧最大高度/ Max. length of the spring | 填写/Description mm |
| b1）测量负载/Thickness of rings | 填写/Description N |
| c）弹簧外径/ External diameter of springs | 填写/Description ±0.2mm |
| d）弹簧圈数/Number of rings | 填写/Description |
| e）弹簧钢丝直径/ Diameter of spring wire | 填写/Description ±0.1mm |
| f）弹簧最大自由高度/Max. free length of springs | 填写/Description mm |
| g）从歧管到第一消声器间排气管直径  Diameter of pipe between manifold and first silencer | 填写/Description mm ±5% |

**11.** 污染控制系统/ ANTI-POLLUTION SYSTEM

|  |  |
| --- | --- |
| 描述/ Description | 填写/Description |

**12.** 点火系统/ IGNITION SYSTEM

|  |  |  |  |
| --- | --- | --- | --- |
| a）类型/ Type | 填写/Description | b）线圈数量/ Nb. of coils | 填写/Description |

**13.** 冷却系统/ COOLING SYSTEM

|  |  |
| --- | --- |
| 容积/ Capacity | 填写/Description 升/ litres |

**14.** 冷却风扇/ COOLING FAN

|  |  |  |
| --- | --- | --- |
| a）数量/ Number | 填写/Description | |
| b）风扇直径/ Diameter of the screw | 填写/Description mm | |
| c）风扇材料/ Material of the screw | 填写/Description | |
| d）叶片数量/ Number of blades | 填写/Description | |
| e）驱动类型/ Type of drive | 填写/Description | |
| f）自动切断/ Automatic cut off | 是/Yes单项勾选/Single choice | 否/No单项勾选/Single choice |

**15.** 润滑系统/ LUBRICATION SYSTEM

|  |  |  |
| --- | --- | --- |
| a）总容积/ Total Capacity | 填写/Description 升/ litres | |
| b）机油散热器/ Oil cooler(s) | 有/Yes单项勾选/Single choice | 无/No单项勾选/Single choice |
| b1）数量/ Number | 填写/Description | |
| c）散热器位置/ Location of the coolers | 填写/Description | |
| d）散热器类型/ Type of the coolers | 填写/Description | |

|  |
| --- |
| 补充信息/ COMPLEMENTARY INFORMATION |
|  |

Part 2. 发动机延伸注册信息/EXTENSION ENGINE INFORMATION

**1.** 一般项目/ GENERAL

**1.1.** 气缸容积/ CYLINDER CAPACITY

|  |  |  |
| --- | --- | --- |
| a) 单缸/ Unitary | 填写/Description | cm³ |
| b) 总容积/ Total | 填写/Description | cm³ |
| c) 最大允许总容积/ Max. total allowed | 填写/Description | cm³ |

**1.2.** 压缩比/ COMPRESSION RATIO(IN RELATION WITH THE UNIT)

|  |
| --- |
| 最大/Max.填写/Description :1 |

**1.3.** 缸径/ BORE

|  |
| --- |
| 填写/Description +0/-0.1mm |

**1.4.** 冲程/ STROKE

|  |
| --- |
| 填写/Description +0/-0.1mm |

P1-1）从侧面看拆下的发动机 - 左 P1-2）从侧面看拆下的发动机 - 右

Dismounted engine Dismounted engine

- seen from the lift side - seen from the right side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P1-3）拆下的气门室盖 - 外侧 P1-4）拆下的气门室盖 - 内侧

Dismounted cylinder head cover Dismounted cylinder head cover

- outer side - inner side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P1-5）发动机，安装在机舱内

Engine in its compartment

|  |
| --- |
| 添加照片  Photo |

**2.** 缸体/ CYLINDER BLOCK

**2.1.** 缸体/ CYLINDER BLOCK

|  |  |  |
| --- | --- | --- |
| a) 材质/ Material | 填写/Description | |
| b) 最小重量  Min. weight | 填写/Description g | 没有曲轴轴承盖、轴承盖固定螺栓、缸筒和油底壳  Without crankshaft bearings caps, without fixing studs of bearing caps, of cylinder head and of oil sump |

P2-1）裸缸体从上面看 P2-2）裸缸体从下面看

Bare cylinder block seen form above Bare cylinder block seen form underneath

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P2-3）裸缸体从右侧看 P2-4）裸缸体从左侧看

Bare cylinder block seen form right side Bare cylinder block seen form lift side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P2-5）从正时侧看到的裸缸体 P2-6）从飞轮侧看到的裸缸体

Bare cylinder block seen form timing side Bare cylinder block seen form flywheel side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P2-7）曲轴轴承盖 P2-8）发动机缸体油底导油装置

Crankshaft bearing caps Oil deflector on engine block

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

**2.2.** 缸体最小高度/ MIN. HEIGHT OF THE CYLINDER BLOCK

|  |  |  |
| --- | --- | --- |
| a) 安装油底壳平面到缸垫平面之间  Between sump and head gasket planes | 填写/Description | mm |
| b) 曲轴中心线到缸垫平面之间  Between crankshaft centreline and head gasket plane | 填写/Description | mm |

I2-1）高度测量/Height measurement

|  |
| --- |
| 添加图纸  Drawing |

**2.3.** 缸套/ SLEEVES

|  |  |  |
| --- | --- | --- |
| a) 加套缸体/Sleeved cylinder block | 是/Yes单项勾选/Single choice | 否/No单项勾选/Single choice |
| b) 材质/Material | 填写/Description | |
| b) 类型/Type | 湿式/Wet单项勾选/Single choice | 干式/Dry单项勾选/Single choice |

P2-9）拆下的缸套/ Sleeve dismounted

|  |
| --- |
| 添加照片  Photo |

**3.** 活塞连杆组/ PISTON AND CONNECTING ROD

**3.1.** 活塞/ PISTON

|  |  |  |
| --- | --- | --- |
| a）材质/Material | 填写/Description | |
| b）活塞环数量/Number of rings | 填写/Description | |
| b1）活塞环厚度/Thickness of rings | 填写/Description +0.1/-0.05mm | |
| c）最小重量/Min. weight | 填写/Description g | 带活塞环、销、卡子、轴承  With pin, bearing, clips and rings |
| d）最低压缩高度  Min. compression height | 填写/Description mm | |

P3-1）活塞，从顶部3/4角度看 P3-2）活塞，从底部3/4角度看

Piston from 3/4 top Piston from 3/4 bottom

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

I3-1）活塞 - 设计图/ Piston - Drawing

|  |
| --- |
| 添加图纸  Drawing |

P3-3）活塞环/ Piston rings

|  |
| --- |
| 添加照片  Photo |

I3-2）活塞销 I3-3）最低压缩高度

Piston pin Min. compression height

|  |  |
| --- | --- |
| 添加图纸  Drawing | 添加图纸  Drawing |

**3.2.** 连杆/ CONNECTING ROD

|  |  |
| --- | --- |
| a）材质/Material | 填写/Description |
| b）大端类型/Big end type | 填写/Description |
| c）大端内径（无轴瓦）  Interior diameter of the big end (without shell bearings) | 填写/Description +0.1/-0 mm |
| d）轴间长度/Length between axes | 填写/Description ±0.1 mm |
| e）最小重量/Min. weight | 填写/Description g |

P3-4）连杆，从大端侧3/4角度看 P3-5）连杆，从小端侧3/4角度看

Connecting rod from ¾ on big end side Connecting rod from ¾ on small end side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

**4.** 曲轴飞轮组/ CRANKSHAFT AND FLYWHEEL

**4.1.** 曲轴/ CRANKSHAFT

|  |  |
| --- | --- |
| a）是否使用原厂曲轴？/Use original crankshaft?  注/Note：   * 仅在排量不能满足的情况下可以申请使用改装曲轴 / Application of using of modified crankshaft only allowed when capacity cannot be achieved * 如使用原厂曲轴则无需填写下面内容 / Below information not needed if using original crankshaft | 填写/Description |
| a1) 申请文件编号/Document code of application | 填写/Description |
| a2) 生产类型/Type of manufacture | 填写/Description |
| b）材质/Material | 填写/Description |

|  |  |
| --- | --- |
| c）制造工艺/Manufacturing process | 铸造/Cast 单项勾选/Single choice |
| 锻造/Forged 单项勾选/Single choice |
| 原材料加工/Machined from raw 单项勾选/Single choice |
| d）轴承直径/Diameter of bearings | 填写/Description +0/-0.1 mm |
| e）轴承盖材质/Bearing caps material | 填写/Description |
| f）裸曲轴的最小重量  Min. weight of bare crankshaft | 填写/Description g |
| g）曲柄直径/Diameter of crank pins | 填写/Description +0/-0.1 mm |

P4-1）从曲轴前3/4角度看 P4-2）从曲轴后3/4角度看

Crankshaft from 3/4 front Crankshaft from 3/4 rear

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

**4.2.** 飞轮/ FLYWHEEL

|  |  |  |
| --- | --- | --- |
| a）材质/Material | 填写/Description | |
| b）最小重量/Min. weight | 填写/Description g | 带固定螺丝和启动环  With fixings and starter ring |
| c）启动环外径  External diameter of the starter ring | 填写/Description ±3 mm | |
| d）启动环齿数  Number of teeth of the starter ring | 填写/Description | |
| e）启动环厚度  Thickness of the starter ring | 填写/Description ±1mm | |

P4-3）从飞轮前3/4角度看 P4-4）从飞轮后3/4角度看

Flywheel from 3/4 front Flywheel from 3/4 rear

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

**5.** 气缸盖/ CYLINDER HEAD

|  |  |  |
| --- | --- | --- |
| a）材质/Material | | 填写/Description |
| b）最小高度/Min. height | | 填写/Description mm |
| c）测量位置/Where measured | | 填写/Description mm |
| d）进气门和缸垫平面之间的角度  Angle between intake valve and cylinder head gasket plane | | 填写/Description deg ±30’ |
| e）排气阀和缸垫平面之间的角度  Angle between exhaust valve and cylinder head gasket plane | | 填写/Description deg ±30’ |
| f）单个燃烧室最小容积  Min. volume of a combustion chamber | | 填写/Description cm³ |
| g）最小重量/Min. weight | 填写/Description g | 带凸轮轴轴承盖，轴承盖螺栓，缸盖罩，歧管  With camshaft bearings caps, fixing studs of bearing caps, of cylinder head cover, of manifolds |

P5-1）从顶部看裸气缸盖（凸轮轴侧） P5-2）从底部看裸气缸盖（燃烧室侧）

Bare cylinder head seen from top Bare cylinder head seen from underneath

(camshaft side) (chamber side)

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P5-3）从进气侧看裸气缸盖 P5-4）从排气侧看裸气缸盖

Bare cylinder head seen from intake side Bare cylinder head seen from exhaust side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P5-5）从正时侧看裸气缸盖 P5-6）从飞轮侧看裸气缸盖

Bare cylinder head seen from timing side Bare cylinder head seen from flywheel side

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P5-7）燃烧室 I5-1）气缸垫

Combustion chamber Cylinder gasket - Drawing

|  |  |
| --- | --- |
| 添加照片  Photo | 添加图纸  Drawing |

进气/ INTAKE

|  |
| --- |
| 气缸盖端口图纸-对尺寸的公差: ±1%  Drawings of cylinder head ports - tolerances on dimensions : ±1% |

I5-2）气缸盖，歧管侧/ Cylinder head, manifold side

|  |
| --- |
| 添加图纸  Drawing |

排气/ EXHAUST

|  |
| --- |
| 气缸盖端口图纸-对尺寸的公差: ±1%  Drawings of cylinder head ports - tolerances on dimensions : ±1% |

I5-3）气缸盖，歧管侧/ Cylinder head, manifold side

|  |
| --- |
| 添加图纸  Drawing |

**6.** 燃油泵（高压油泵）/ FUEL PUMP (HIGH PRESSURE)

仅适用于直喷发动机/Only applicable to GDI engine

|  |  |  |  |
| --- | --- | --- | --- |
| a）HP（高压油泵）泵凸轮升程，单位毫米，精度0.1  HP pump cam lift in mm, accuracy 0.1  注：旋转角度为对应凸轮轴转角，其0度为第一缸压缩上止点位置，延曲轴旋转方向转动并记录升程  Note: Rotation angle refers to cam angle, 0deg is Cylinder1 compression TDC. Rotation is in same direction as crankshaft. | | | |
| 旋转角度（度）  Rotation angle (degrees) | 升程/ Lift in mm  (±0.05 mm) | 旋转角度（度）  Rotation angle (degrees) | 升程/ Lift in mm  (±0.05 mm) |
| 0 | 填写/Description |  | |
| 10 | 填写/Description | 190 | 填写/Description |
| 20 | 填写/Description | 200 | 填写/Description |
| 30 | 填写/Description | 210 | 填写/Description |
| 40 | 填写/Description | 220 | 填写/Description |
| 50 | 填写/Description | 230 | 填写/Description |
| 60 | 填写/Description | 240 | 填写/Description |
| 70 | 填写/Description | 250 | 填写/Description |
| 80 | 填写/Description | 260 | 填写/Description |
| 90 | 填写/Description | 270 | 填写/Description |
| 100 | 填写/Description | 280 | 填写/Description |
| 110 | 填写/Description | 290 | 填写/Description |
| 120 | 填写/Description | 300 | 填写/Description |
| 130 | 填写/Description | 310 | 填写/Description |
| 140 | 填写/Description | 320 | 填写/Description |
| 150 | 填写/Description | 330 | 填写/Description |
| 160 | 填写/Description | 340 | 填写/Description |
| 170 | 填写/Description | 350 | 填写/Description |
| 180 | 填写/Description | 360 | 填写/Description |

P6-1）燃油泵 – 拆下状态 P6-2）燃油泵 – 在安装位置

Fuel pump(s) - dismounted Fuel pump(s) - in its location

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

**7.** 燃油喷射 - 电子产品/ FUEL FEED BY INJECTION - ELECTRONICS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a）ECU注册于官方套件/ECU registered in official kit | | | | 直接/Direct |
| b）喷油器位置/Injectors position | | | | 缸盖/Cylinder head |
| c）发动机控制系统传感器列表/ List of engine control system sensors | | | | |
| C1 | 填写/Description | C15 | 填写/Description | |
| C2 | 填写/Description | C16 | 填写/Description | |
| C3 | 填写/Description | C17 | 填写/Description | |
| C4 | 填写/Description | C18 | 填写/Description | |
| C5 | 填写/Description | C19 | 填写/Description | |
| C6 | 填写/Description | C20 | 填写/Description | |
| C7 | 填写/Description | C21 | 填写/Description | |
| C8 | 填写/Description | C22 | 填写/Description | |
| C9 | 填写/Description | C23 | 填写/Description | |
| C10 | 填写/Description | C24 | 填写/Description | |
| C11 | 填写/Description | C25 | 填写/Description | |
| C12 | 填写/Description | C26 | 填写/Description | |
| C13 | 填写/Description | C27 | 填写/Description | |
| C14 | 填写/Description | C28 | 填写/Description | |
| d）发动机控制系统执行器列表/ List of engine control system actuators | | | | |
| A1 | 填写/Description | A7 | 填写/Description | |
| A2 | 填写/Description | A8 | 填写/Description | |
| A3 | 填写/Description | A9 | 填写/Description | |
| A4 | 填写/Description | A10 | 填写/Description | |
| A5 | 填写/Description | A11 | 填写/Description | |
| A6 | 填写/Description | A12 | 填写/Description | |

P7-1）喷射系统/Injection system

|  |  |  |  |
| --- | --- | --- | --- |
| 添加照片  Photo  C1 | 添加照片  Photo  C2 | 添加照片  Photo  C3 | 添加照片  Photo  C4 |
| 添加照片  Photo  C5 | 添加照片  Photo  C6 | 添加照片  Photo  C7 | 添加照片  Photo  C8 |
| 添加照片  Photo  C9 | 添加照片  Photo  C10 | 添加照片  Photo  C11 | 添加照片  Photo  C12 |
| 添加照片  Photo  C13 | 添加照片  Photo  C14 | 添加照片  Photo  C15 | 添加照片  Photo  C16 |
| 添加照片  Photo  C17 | 添加照片  Photo  C18 | 添加照片  Photo  C19 | 添加照片  Photo  C20 |
| 添加照片  Photo  C21 | 添加照片  Photo  C22 | 添加照片  Photo  C23 | 添加照片  Photo  C24 |
| 添加照片  Photo  C25 | 添加照片  Photo  C26 | 添加照片  Photo  C27 | 添加照片  Photo  C28 |

|  |  |  |  |
| --- | --- | --- | --- |
| 添加照片  Photo  A1 | 添加照片  Photo  A2 | 添加照片  Photo  A3 | 添加照片  Photo  A4 |
| 添加照片  Photo  A5 | 添加照片  Photo  A6 | 添加照片  Photo  A7 | 添加照片  Photo  A8 |
| 添加照片  Photo  A9 | 添加照片  Photo  A10 | 添加照片  Photo  A11 | 添加照片  Photo  A12 |

I7-1）传感器和执行器位置/ LOCATION OF SENSORS AND ACTUATORS

|  |
| --- |
| 添加图纸  Drawing |

**8.** 凸轮轴/ CAMSHAFT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a）驱动方式/Drive system | | | 填写/Description | |
| b）轴承直径/Diameter of bearings | | | 填写/Description ±0.1mm | |
| c）凸轮尺寸  Cam dimensions | A=  B= | 进气/Intake | 排气/Exhaust |  |
| 填写/Description ±0.1 mm | 填写/Description ±0.1 mm |
| 填写/Description ±0.1 mm | 填写/Description ±0.1 mm |
| A和B的公差值必须与表内数值相符  The tolerances must be used with the same sign for A and B | |
| d）最小重量/Min. weight | | 填写/Description kg | 填写/Description kg |

**9.** 正时/ TIMING

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a）理论间隙  Theoretical clearance | 进气/Intake | | 填写/Description mm | | | | 排气/Exhaust | | | 填写/Description mm |
| b）凸轮升程/毫米（卸载凸轮轴）  Cam lift in mm (dismounted camshaft) | | | | | | 填写/Description ±0.2mm | | | | |
| c）最大气门升程  Max. valve lift | 进气/Intake | | | 排气/Exhaust | | | | 包括9.a)项理论间隙  with clearance according to Art.8.a) | | |
| 填写/Description ±0.2 mm | | | 填写/Description ±0.2 mm | | | |
| 进气/INTAKE | | | | | | | | | | |
| 旋转角度（度）  Rotation angle (degrees) | | 升程/ Lift in mm  (±0.05 mm) | | | 旋转角度（度）  Rotation angle (degrees) | | | | 升程/ Lift in mm  (±0.05 mm) | |
| 0 | | 填写/Description | | |  | | | | | |
| -5 | | 填写/Description | | | +5 | | | | 填写/Description | |
| -10 | | 填写/Description | | | +10 | | | | 填写/Description | |
| -15 | | 填写/Description | | | +15 | | | | 填写/Description | |
| -30 | | 填写/Description | | | +30 | | | | 填写/Description | |
| -45 | | 填写/Description | | | +45 | | | | 填写/Description | |
| -60 | | 填写/Description | | | +60 | | | | 填写/Description | |
| -75 | | 填写/Description | | | +75 | | | | 填写/Description | |
| -90 | | 填写/Description | | | +90 | | | | 填写/Description | |
| -105 | | 填写/Description | | | +105 | | | | 填写/Description | |
| -120 | | 填写/Description | | | +120 | | | | 填写/Description | |
| -135 | | 填写/Description | | | +135 | | | | 填写/Description | |
| -150 | | 填写/Description | | | +150 | | | | 填写/Description | |
| -165 | | 填写/Description | | | +165 | | | | 填写/Description | |
| -180 | | 填写/Description | | | +180 | | | | 填写/Description | |
| 整个测量过程中最多允许±2度的偏转  A shift of ± 2 degrees of the whole measurement is accepted | | | | | | | | | | |
| 排气/EXHAUST | | | | | | | | | | |
| 旋转角度（度）  Rotation angle (degrees) | | 升程/ Lift in mm  (±0.05 mm) | | | 旋转角度（度）  Rotation angle (degrees) | | | | 升程/ Lift in mm  (±0.05 mm) | |
| 0 | | 填写/Description | | |  | | | | | |
| -5 | | 填写/Description | | | +5 | | | | 填写/Description | |
| -10 | | 填写/Description | | | +10 | | | | 填写/Description | |
| -15 | | 填写/Description | | | +15 | | | | 填写/Description | |
| -30 | | 填写/Description | | | +30 | | | | 填写/Description | |
| -45 | | 填写/Description | | | +45 | | | | 填写/Description | |
| -60 | | 填写/Description | | | +60 | | | | 填写/Description | |
| -75 | | 填写/Description | | | +75 | | | | 填写/Description | |
| -90 | | 填写/Description | | | +90 | | | | 填写/Description | |
| -105 | | 填写/Description | | | +105 | | | | 填写/Description | |
| -120 | | 填写/Description | | | +120 | | | | 填写/Description | |
| -135 | | 填写/Description | | | +135 | | | | 填写/Description | |
| -150 | | 填写/Description | | | +150 | | | | 填写/Description | |
| -165 | | 填写/Description | | | +165 | | | | 填写/Description | |
| -180 | | 填写/Description | | | +180 | | | | 填写/Description | |
| 整个测量过程中最多允许±2度的偏转  A shift of ± 2 degrees of the whole measurement is accepted | | | | | | | | | | |

P9-1）凸轮轴 – 拆下状态 I9-1）副车架 – 特征尺寸

Camshaft - dismounted Camshaft - Typical dimensions

|  |  |
| --- | --- |
| 添加照片  Photo | 绘图和尺寸  Drawing with dimensions |

P9-2）摇臂 – 拆下状态 I9-2）摇臂 – 特征尺寸

Rocker arm - dismounted Rocker arm - Typical dimensions

|  |  |
| --- | --- |
| 添加照片  Photo | 绘图和尺寸  Drawing with dimensions |

P9-3）挺杆 – 拆下状态 I9-3）挺杆 – 特征尺寸

Tappet - dismounted Tappet - Typical dimensions

|  |  |
| --- | --- |
| 添加照片  Photo | 绘图和尺寸  Drawing with dimensions |

P9-4）正时皮带或链条 – 拆下状态 I9-3）正时皮带或链条 – 明确说明

Timing belt or chain - dismounted Timing belt or chain - Specify

|  |  |
| --- | --- |
| 添加照片  Photo | 齿节/齿数/长/宽  Pitch/Nb. of teeth/Length/Width |

**10.** 进气/ INTAKE

|  |  |
| --- | --- |
| a）歧管材质/Material of manifold | 填写/Description |
| b）歧管元件数量/ Number of manifold elements | 填写/Description |
| b1）歧管的内部容积/ Internal volume of manifold | 填写/Description ±0.1dm³ |
| b2）歧管的最小重量/Min. weight of manifold | 填写/Description g |
| b3）进气管节流阀尺寸/ Dimensions of the intake pipe at the throttle valve | 填写/Description ±0.25mm |
| c）阀头的最大直径/ Max. diameter of the valve head | 填写/Description ±0.25mm |
| c1）阀头的角度/ Angle of valve head | 填写/Description deg±30min |
| d）阀杆在导管内部分的直径/ Diameter of valve stem in guide | 填写/Description +0/-0.2mm |
| e）阀门长度/ Valve length | 填写/Description ±1.5mm |

P10-1）进气歧管 – 拆下状态 P10-2）进气歧管 – 拆下状态

Intake manifold - dismounted Intake manifold - dismounted

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P10-3）进气歧管 – 拆下状态 P10-4）进气歧管 – 拆下状态

Throttle unit - dismounted Throttle unit - dismounted

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P10-5）泄压阀 – 拆下状态 P10-6）进气歧管 – 歧管上安装位置

Pressure relief valve - dismounted Pressure relief valve – Mounted on manifold

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

I10-1）节气门的剖面图 – 拆下状态

Section drawing of the throttle-unit

|  |
| --- |
| 绘图和尺寸  Drawing with dimensions |

进气/ INTAKE

|  |
| --- |
| 歧管的端口图纸 - 尺寸公差： ±1％  Drawings of manifold ports - tolerances on dimensions : ±1% |

I10-2）歧管，缸盖侧 / Manifold, cylinder head side

|  |
| --- |
| 添加图纸  Drawing |

I10-3）歧管，进气口横截面/ Manifold cross section

|  |
| --- |
| 添加图纸  Drawing  定义按照 FIA J-251-2.3.4  DEFINITION PER FIA J-251-2.3.4 |

**11.** 排气/ EXHAUST

|  |  |
| --- | --- |
| a）歧管材质/Material of manifold | 填写/Description |
| b）歧管元件数量/ Number of manifold elements | 填写/Description |
| c）歧管出口的内部尺寸/ Internal volume of manifold | 填写/Description ±0.2mm±2.0mm如果是原装未加工  if raw and not fabricated |
| c1）管的最小厚度/Min. thickness of tubes | 填写/Description mm |
| d）阀门的最大直径/ Max. diameter of the valve | 填写/Description mm |
| d1）阀头的角度/ Angle of valve head | 填写/Description deg±30min |
| e）阀杆在导管内部分的直径/ Diameter of valve stem in guide | 填写/Description +0/-0.2mm |
| e）阀门长度/ Valve length | 填写/Description ±1.5mm |

P11-1）进气歧管 – 拆下状态 P11-2）进气歧管 – 拆下状态

Exhaust manifold - dismounted Exhaust manifold - dismounted

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

排气/ EXHAUST

|  |
| --- |
| 歧管的端口图纸 - 尺寸公差： ±1％  Drawings of manifold ports - tolerances on dimensions : ±1% |

I11-1）歧管，缸盖侧 / Manifold, cylinder head side

|  |
| --- |
| 添加图纸  Drawing |

**12.** 冷却系统/ COOLING SYSTEM

|  |  |
| --- | --- |
| a）水泵的类型和来源/Type and origin of the water pump | 填写/Description |

P12-1）水泵 – 拆下状态 P12-2）水泵安装在发动机上的位置

Water pump - dismounted Water pump Mounted on engine

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P12-3）水泵的叶轮 I5-1）水泵的叶轮 - 设计图

Turbine wheel of water pump Turbine wheel of water pump - Drawing

|  |  |
| --- | --- |
| 添加照片  Photo | 绘图和尺寸  Drawing with dimensions |

**13.** 润滑系统/ LUBRICATION SYSTEM

|  |  |
| --- | --- |
| a）油底壳材质/ Material of oil sump | 填写/Description |
| b）油底壳容量/ Capacity of oil sump | 填写/Description ±0.5 liter |

P13-1）油底壳 – 拆下状态 P13-2）油底壳 – 拆下状态

Oil sump - dismounted Oil sump - dismounted

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P13-3）机油泵 – 拆下状态 P13-4）机油泵 – 拆下状态

Oil pump - dismounted Oil pump - dismounted

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

P13-5）机油泵 – 拆下状态

Oil pump - Mounted in its location

|  |
| --- |
| 添加照片  Photo |

**14.** 涡轮增压器和配套冷却器/ TURBOCHARGING SYSTEM

|  |  |  |  |
| --- | --- | --- | --- |
| a）涡轮增压器注册于官方指定产品注册表中/ Turbocharger registered in official parts form | | | |
| b）压力调节类型  Type of pressure adjustment | 旁通/Pass  单项勾选/Single choice | 泄压/Relief valve  单项勾选/Single choice | 其他/Other  单项勾选/Single choice |
| b1）压力调节类型  Type of pressure adjustment | 如其他/If other  填写/Description | | |

P14-1）调节涡轮压力的设备 – 拆下状态 P14-1）调节涡轮压力的设备 – 在安装位置

Device regulating turbocharger pressure Device regulating turbocharger pressure

- dismounted - Mounted in its location

|  |  |
| --- | --- |
| 添加照片  Photo | 添加照片  Photo |

I14-1）调节涡轮压力的设备 / Device regulating turbocharger pressure

|  |
| --- |
| 添加图纸  Drawing |