# GENERAL INFORMATION 一般信息

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## GENERAL PRECAUTIONS 一般注意事项

**⚠ WARNING 警告**

- ❖ Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the vehicle. 正确的维修和保养程序对于维修技工的安全以及车辆的安全性和可靠性至关重要。
- ❖ When 2 or more persons work together, pay attention to the safety of each other. ❖当两个以上的人一起工作时，请注意彼此的安全。
- ❖ When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors. 当需要在室内运转发动机时，请确保将废气排到室外。
- ❖ When working with toxic or flammable materials, make sure that the area you work in is well-ventilated and that you follow all off the material manufacturer's instructions. ❖使用有毒或易燃材料时，请确保工作区域通风良好，并遵守所有材料制造商的要求。
- ❖ Never use gasoline as a cleaning solvent. ❖切勿使用汽油作为清洁溶剂。
- ❖ To avoid getting burned, do not touch the engine, engine oil or exhaust system during or for a while after engine operation. ❖为避免烫伤，在发动机运行时或运行之后，请勿触摸发动机、发动机机油或排气系统。
- ❖ After servicing fuel, oil, exhaust or brake systems, check all lines and fittings related to the system for leaks. ❖维修燃油、机油、排气或制动系统后，检查与系统相关的所有管路和配件是否有泄漏。

**⚠ CAUTION 注意**

- ❖ If parts replacement is necessary, replace the parts with Genuine Parts or their equivalent. 如果需要更换零件，请用原厂零件或同等零件更换。
- ❖ When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order and orientation. ❖卸下要重复使用的零件时，请有序摆放，以便可以按正确的顺序和方向重新安装它们。
- ❖ Be sure to use special tools when instructed. 请务必按照指示使用特殊工具。
- ❖ Make sure that all parts used in reassembly are clean, and also lubricated when specified. ❖确保重新组装使用的所有零件都是干净的，并且在安装时也要润滑。
- ❖ When use of a certain type of lubricant, bond, or sealant is specified, be sure to use the specified type. 当使用某种指定类型的润滑剂，粘合剂或密封剂时，请务必使用指定的类型。
- ❖ When removing the battery, disconnect the negative cable first and then positive cable. When reconnecting the battery, connect the positive cable first and then negative cable, and replace the terminal cover on the positive terminal. 取出电池时，请先断开负极电缆，然后再断开正极电缆。重新连接电池时，请先连接正极电缆，然后再连接负极电缆，然后装回正极端子上的端子盖。
- ❖ When performing service to electrical parts, if the service procedures do not require use of bat- tery power, diconnect the negative cable at the battery. 在对电气部件进行维修时，如果维修方法不需要使用电池电源，请在电池上断开负极电缆。
- ❖ Tighten cylinder head and case bolts and nuts, beginning with larger diameter and ending with smaller diameter, from inside to outside diagonally, to the specified tightening torque. 从内到外对角拧紧气缸盖和外壳的螺栓和螺母（从大直径开始到小直径），直到达到指定的拧紧扭矩。
- ❖ Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, cotter pins, circlips, and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any leftover material from the mating surfaces. 每当您卸下油封、垫圈、密封垫、O形圈、锁紧垫圈、开口销、弹性挡圈以及指定的某些其它零件时，请确保将其更换为新的。另外，在安装这些新零件之前，请确保从配合面上清除所有残留物。

❖ Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted. 切勿重复使用卡簧。当安装新的弹性挡圈时，请注意不要将端隙扩大到比将弹性挡圈滑过轴所需的间隙更大。安装弹性挡圈后，请务必确保将其完全固定在凹槽中并牢固安装。

❖ Do not use self-locking nuts a few times over. 请勿多次使用自锁螺母。

❖ Use a torque wrench to tighten fasteners to the torque values when specified. Wipe off grease or oil if a thread is smeared with them. 指定扭矩时，使用扭矩扳手将紧固件拧紧至扭矩值。如果螺纹上沾有油脂，请擦拭干净。

❖ After reassembly, check parts for tightness and operation. ❖重新组装后，检查零件是否紧固和工作正常。

❖ To protect environment, do not unlawfully dispose of used motor oil and other fluids: batteries, and tires. 为了保护环境，请勿非法处置用过的机油和其他液体、电池和轮胎。

❖ To protect Earth's natural resouces, properly dispose of used vehicles and parts. 为了保护地球的自然资源，请妥善处理二手车和旧零件。




EXTERIOR PHOTOGRAPH 外部照片


| ***N O T E 注意*** |
| --- |
| ***Difference between photographs and actual motorcycles depends on the markets. 照片与实际摩托车之间的差异取决于市场。*** |



**FUNCTION OF EI SENSOR EI 传感器的功能**

**★ ECU (Engine Control Unit, EI Control Unit) ECU（发动机控制装置，EI 控制装置）**

: ECU decide the fuel injection volume and ignition time to adjust the fuel injector opening and closing rate which is considered the engine speed, intake air pressure, intake air volume, engine temperature, oxygen volume and throttle opening angle, etc. ECU决定喷油量和点火时间，以调整喷油器的开闭率，这要考虑发动机转速，进气压力，进气量，发动机温度，氧气量和节气门开度等。

**★ EI (Electric fuel Injector) EI（电喷）**

: EI spray the fuel to intake pipe by ECU's injection signal. EI通过ECU的喷射信号将燃油喷入进气管。

Fuel which is needed combustion in the combustion chamber is supplied from the fuel tank. 燃烧室中需要燃烧的燃料从燃料箱供应。

**★ GP switch (Gear Position Switch) GP开关（齿轮位置开关）**

: GP switch is used when start / stop and control ECU as the converted electrical signal of the gear position is supplied ECU. ：在起/停和控制ECU时使用GP开关，因为ECU会提供齿轮位置转换后的电信号。

**★ IAP sensor (Intake Air PRESSURE : IAPS) IAP传感器（进气温度传感器）**

: IAP sensor measure the pressure which is generated from the intake pipe and compare with the provided absolute pressure, then analogize the air volume indirectly and help to work the fuel injector properly. ：IAP传感器测量进气管产生的压力，并与提供的压力进行比较绝对压力，然后间接模拟空气量，并有助于正确操作喷油器。

**★ IAT sensor (Intake Air Temperature Sensor : IATS) IAT传感器（进气温度传感器：IATS）**

: IAT sensor perceive the atmospheric temperature and is located the air cleaner case. IAT传感器可感知大气温度，并且位于空气滤清器外壳中。

**★ ISC solenoid (Idle Speed Control Solenoid) ISC电磁阀（怠速控制电磁阀）**

: ISC solenoid is interlocked with the throttle body, so ECU control the engine idle speed. ISC螺线管与节气门体互锁，因此ECU控制发动机怠速。

**★ $O_2$ sensor (Oxygen Sensor : $O_2S$) 氧气传感器（氧气传感器：氧气）**

: $O_2$ sensor measure the oxygen volume from the exhaust gas and convert the oxygen volume into voltage value, then communicate the output voltage to ECU. O2传感器测量废气中的氧气量，并将氧气量转换为电压值，然后将输出电压传送给ECU。

**★ Pick-up Coil传感线圈**

: Pick-up coil perceive the front and rear cylinder's engine speed and realtime of piston position. 传感线圈可感知前后气缸的发动机转速和活塞位置的实时性。

**★ PV (Purge control Valve) PV（碳罐控制阀）**

: Purge control valve is part of the evaporative emission control system. The purge control valve closes to prevent the vapor from reaching the engine when it is turned off. When the engine is started and is ready to receive the canister's contents, the purge control valve opens to allow the vapor flow. 排放控制阀是蒸发排放控制系统的一部分。 排气控制阀关闭，以防止蒸汽在关闭时进入发动机。当发动机启动并准备好接收碳罐中的物品时，放气控制阀将打开以允许蒸气流动。

**★ RO switch (Roll Over Switch) RO开关（倾倒开关）**

: RO switch is the fuel cut-off system when the motorcycle is leaned over 60°for upset accident. RO开关是摩托车倾斜60度以防翻倒事故时的燃油切断系统。

**★ TP sensor (Throttle Position Sensor : TPS) TP传感器（油门位置传感器：TPS）**

: TP sensor detect the throttle opening angle and is located the throttle body. TP传感器检测节气门开度并位于节气门体上。

It decide the fuel injection volume and compensate the ignition time as inform idle· acceleration· deceleration condition and throttle full opening etc. to ECU.

它决定燃油喷射量并补偿点火时间，同时将怠速·加速·减速条件和节气门全开等告知 ECU。



**★ WT sensor (Water Temperature Sensor : WTS) WT传感器（水温传感器：WTS）**

: WT sensor is located on the cylinder block's water jacket, the intake pipe or the cylinder head coolant passage's thermostat part for contact with the coolant. WT传感器位于气缸体的水套，进气管或气缸盖冷却液通道的恒温器部件上，用于与冷却液接触。

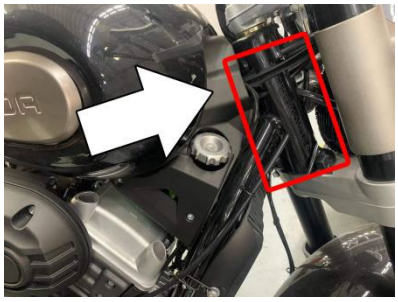
WT sensor is the NTC (Negative Temperature Coefficient) resister that measure the coolant temperature and inform ECU. WT传感器是NTC（负温度系数）电阻，可测量冷却液温度并通知ECU。

# SERIAL NUMBER LOCATION 序列号位置

The frame serial number or V.I.N. (Vehicle Identification Number) is stamped on the steering head tube. The engine seri- al number is located on the left upside of crankcase assembly. 框架序列号或V.I.N. （车辆识别号）印在转向头管上。 发动机系列号位于曲轴箱总成的左上方。

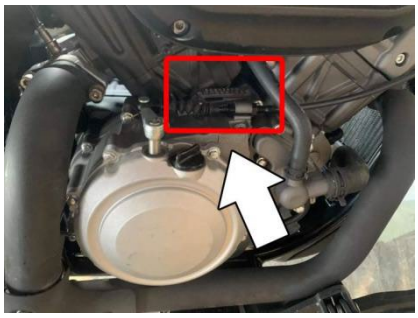
These numbers are required especially for registering the machine and ordering spare parts. 这些号码是注册机器和订购备件配件时特别需要的。

## ◉ FRAME SERIAL NUMBER车架序列号



◉

## ◉ ENGINE SERIAL NUMBER发动机序列号





**FUEL AND OIL RECOMMENDATION 燃油和机油需知**

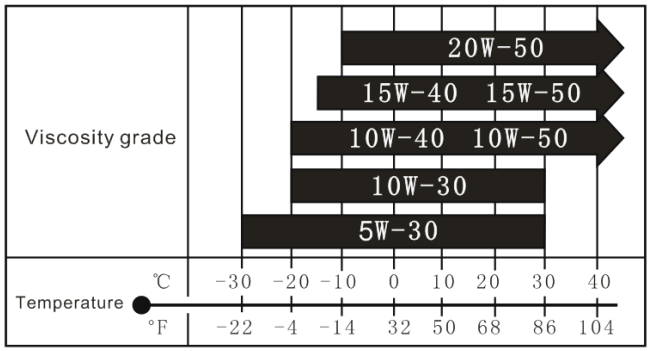
◉ **FUEL燃油**

**Gasoline used should be graded 92 octane (Research Method) or higher. An unleaded gasoline type is recommended. 使用的汽油应为最低92辛烷值（研究方法）或更高。 建议使用无铅汽油。**

◉ **ENGINE OIL发动机机油**

ENGINE OIL SPECIFICATION发动机机油规格

| Classification system分类体系 | Grade等级 |
|---|---|
| API | Over SL |
| SAE | 10W-40 |




- *If an SAE 10W-40 motor oil is not available, select*

an alternative according to the following chart. 如果没有SAE 10W-40机油，请

根据下表选择。

**Use a premium quality 4-stroke motor oil to ensure longer service life of your motorcycle.** 使用优质的四冲程机油以确保摩托车的使用寿命更长。

**⚠ WARNING警告**

- ❖ **Don t mix the unrecommended oil. It could damage the engine.** 请勿混合使用不推荐的油。 否则可能会损坏发动机。
- ❖ **When refilling the oil tank, don t allow the dust to get inside.** 在加油时，不要让灰尘进入内部。
- ❖ **Mop the oil spilt.** 擦去油污。
- ❖ **Don t put the patch on the cap. It could disturb the oil to be provided and damage the engine.** 请勿将杂物放在帽子上。 它可能会干扰要提供的机油并损坏发动机。

## ◉ BRAKE FLUID刹车油

Specification and classification: DOT4规格分类：DOT4

**⚠ WARNING警告**

**Since the brake system of this motorcycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.** 由于制造商会在摩托车的制动系统中填充基于乙二醇的制动液，因此请勿使用或混合其他类型的液压油（例如硅树脂和石油基液压油）来重新填充系统，否则会造成严重损坏。

**Do not use any brake fluid taken from old or used or unsealed containers.** 请勿使用取自旧容器，旧容器或未密封容器的制动液。

**Never re-use brake fluid left over from a previous servicing, which has been stored for a long period.** 切勿重复使用长期维修后遗留下来的制动液。

## ◉ ANTIFREEZE防冻液

**Antifreeze selection: 防冻液选择：**

1. Antifreeze must not be mixed using. 1.禁止混用防冻液。

2.The freezing point of antifreeze is normally lower than the local minimum ambient temperature 5-10 degrees. 防冻液的凝固点通常低于当地最低环境温度 5-10 度。

3. The boiling point of antifreeze is more than 107 ° C. 防冻液的沸点大于 107°C。

**⚠ WARNING警告**

**This motorcycle engine is water cooling system. During motorcycle running, the antifreeze is high temperature and high pressure in the cooling system. So, it is strictly forbidden opening the radiator cap in this state, avoiding burn. 本摩托车发动机是水冷却系统。 在摩托车行驶过程中，防冻液在冷却系统中高温和高压的。 因此，严禁在这种状态下打开散热器盖，以免烫伤。**

**The antifreeze must be added in a timely manner and sufficient amount to prevent damaging the engine. 必须及时添加防冻剂，其用量应足以防止损坏发动机。**

**The antifreeze must be added after the engine is stopped and cooled. 发动机停止冷却后，必须添加防冻剂。**

**⚠ WARNING警告**

**Antifreeze belongs to chemicals, which include toxic substances. If the antifreeze gets into your eyes or skin, wash with plenty of water immediately. 防冻液属于化学物质，属有毒物质。 如果防冻剂进入眼睛或皮肤，请立即用大量水冲洗。**



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# BREAK-IN PROCEDURES 新车磨合

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to BREAK-IN before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows: 在制造过程中，只使用了尽可能最好的材料，并且所有机加工零件都以很高的标准进行了精加工，但是在使发动机承受最大应力之前，仍然有可能让运动中的零件断裂。 发动机的未来性能和可靠性取决于在其早期使用寿命中所进行的保养和约束。 一般规则如下：

- Keep to these break-in procedures:请遵循以下程序

| | |
|---|---|
| **Initial最初 800km** | **小于Less than 1/2 throttle** |
| **Up to到达 1,600km** | **小于Less than 3/4 throttle** |

- Upon reaching an odometer reading of 1,600 km you can subject the motorcycle to full throttle operation. ●里程表读数达到1600公里时，您可以对摩托车进行全油门操作。

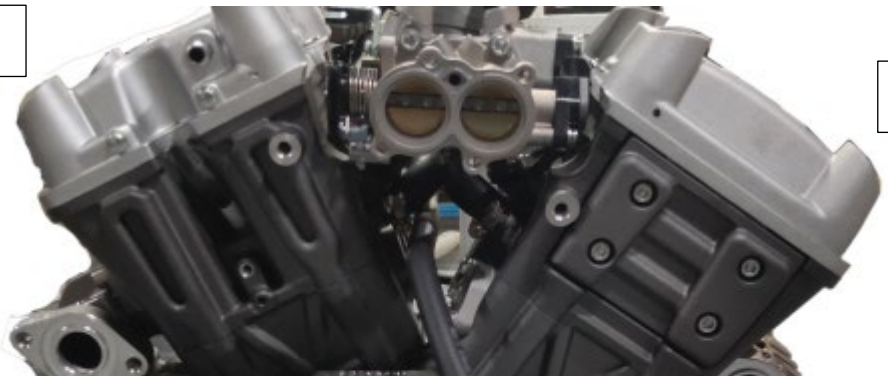
Do not maintain constant engine speed for an extended period during any portion of the break-in. Try to vary the throttle position. 在磨合的任何部分期间，请勿长时间保持发动机恒定转速。 尝试改变油门位置。

# CYLINDER CLASSIFICATION 气缸分类

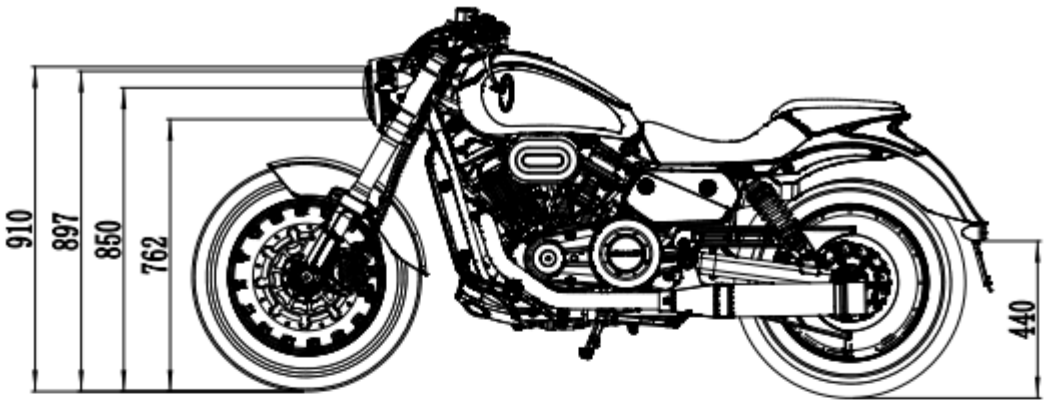
The engine of BD300-15 is composed of the two cylinder, is classified into the front cylinder and rear cylinder as basis of the motorcycle ahead. BD300-15 的发动机由两个气缸组成，分为前气缸和后气缸，这是前面的摩托车的基础。

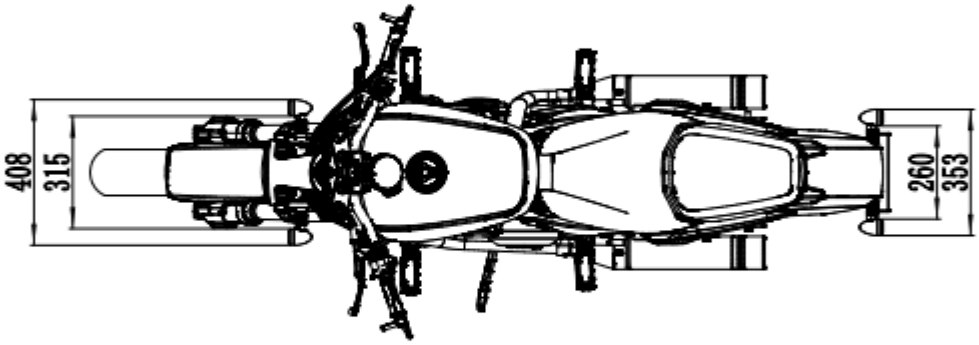
后汽缸 前汽缸

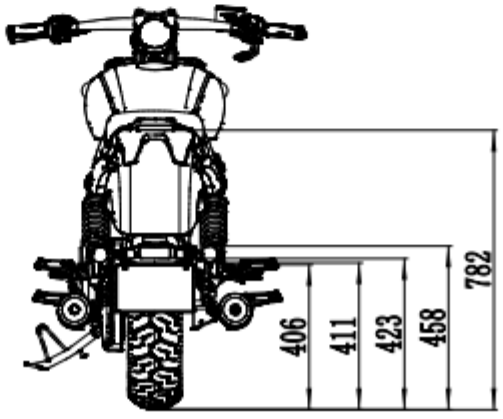
Rear cylinder



Front cylinder




## EXTERIOR ILLUSTRATION 外部插图



## SPECIFICATIONS 技术参数

## ⊙ DIMENSIONS AND MASS 尺寸和质量

| ITEM分类 | BD300-16 |
|---|---|
| Overall length总长度 | 2225 mm |
| Overall width整体宽度 | 853 mm |
| Overall height总高 | 1072 mm |
| Wheelbase轴距 | 1520 mm |
| Minimum ground clearance最小离地间隙 | 173 mm |
| Overall mass整体质量 | 198 kg |

## ⊙ ENGINE 发动机

| ITEM分类 | BD300-16 |
|---|---|
| Type 类型 | V-type Duplex cylinder, 4-stroke, water cooling V型双缸4冲程水冷 |
| Number of cylinder缸数 | V-2 cylinderV-2气缸 |
| Bore缸径 | 58.0 mm |
| Stroke行程 | 56.4mm |
| Total displacement总排量 | 298 |
| Fuel system燃油系统 | #92 or higher unleaded gasoline＃92或更高的无铅汽油 |
| Starter system起动系统 | Electric starter电动启动器 |
| Lubrication system润滑系统 | Pressure and splashing压力和飞溅 |

## ⊙ TRANSMISSION 传动系统

| ITEM分类 | | BD300-16 |
|---|---|---|
| Clutch离合器 | | Wet type normal pressure multi disc湿式常压多片 |
| Transmission档位 | | Foot operated 6-gear transmission脚踏式6档变速箱 |
| Primary reduction ratio一次减速比 | | 3.238 |
| Final stage reduction ratio末级减速比 | | 3.714 |
| Gear ratio变速比 | 1st | 2.42 |

| | | |
|---|---|---|
| | 2nd | 1.53 |
| | 3rd | 1.18 |
| | 4th | 1.04 |
| | 5th | 0.91 |
| | 6th | 0.81 |
| Drive belt 传动皮带 | | STD1816 |



## CHASSIS 机身

| ITEM分类 | BD300 |
|---|---|
| Front suspension前减震 | Spring oil damping弹簧油阻尼 |
| Rear suspension后减震 | Spring oil damping弹簧油阻尼 |
| Steering angle转向角 | 35° (right & left) 35°（左右） |
| Front brake前制动 | Disk brake盘式制动器 |
| Rear brake后刹车 | Disk brake盘式制动器 |
| Front tire size前轮胎尺寸 | 130/90-16 |
| Rear tire size后轮胎尺寸 | 150/80-16 |
| Front fork stroke前叉间距 | 216 mm |

## ⊙ ELECTRICAL 电器部分

| ITEM分类 | BD300 | |
|---|---|---|
| Ignition type点火方式 | ECU | |
| Ignition timing点火时间 | BTDC 12°/1900rpm and30°/7000rpm | |
| Spark plug火花塞 | CR8E | |
| Battery电池 | 12V 11.2Ah | |
| Fuse保险丝 | ABS IGN ABS 点火电路 | 1A |
| | HEAD LIGHT 前大灯电路 | 20A |
| | ABS ECU ABS ECU 电路 | 10A |
| | ABS MOTOR ABS 电机电路 | 15A |
| | ECU ECU 电路 | 15A |
| | MAIN 主电路 | 20A |
| | SPARE 备用件 | 20A |
| | | 15A |
| | | 1A |

| | |
|---|---|
| Head light specification前照灯规格 | 12V 35W/35W |
| Turning light转向灯 | 12V LED |
| Brake light / rear-position light刹车灯/后排灯 | LED TYPE |
| Rear license plate lamp后牌照灯 | LED TYPE |
| Meter indicator light仪表指示灯 | LED TYPE |
| Horn model喇叭规格 | 13V 3A 105-118dB |

**※LED：Light Emitting Diode　LED：发光二极管**
**LCD：Liquid Crystal Display　LCD：液晶显示器**



# BRIEF DESCRIPTION 简介

**Engine and the chassis separation:** 发动机与整车脱离

1. Remove the seat and fuel tank (Tubing and trachea and power cord coupler). 拆卸鞍座、油箱（油管、气管、电源接插件）；
2. Drain the engine oil and antifreeze. Remove the air cleaner. 排除机油及发动机却液、拆卸空滤器；
3. Remove the throttle cable, stepper motor, throttle open power cord, clutch cable, muffler, front right footrest.油门线、步进电机接口、节气门开度电源接口；离合线、消音器、右前搁脚；
4. Remove the drive chain, Disconnect the battery lead wire and magneto coupler and gear display switch. Remove the gear shift cam lever and left footrest. Remove the starting motor. 拆卸传动链条、拆卸电瓶线、磁电机线等接插件、档显开关；拆卸变档杆、左前搁脚、拆卸启动电机；
5. Remove the left frame cover, front and rear tubing, tubing three-wire, upper water pipe, Ignition coil, intake air temperature sensor (IATS), fuel injector power cord, horn wire, thermostat comp. 拆卸左护照、前后油管、油管三通、上水管、高压包组合、进气温度传感器、喷油嘴电源、喇叭线、节温器等。
6. Remove the oxygen sensor, water temperature sensor, stepper motor, throttle open power cord, engine mounting bolts. Remove the engine from the frame. 拆下氧传感器接口、水温感应器接口、发动机与车体链接螺栓、取下发动机；

**Engine decomposition:** 发动机分解：

1. Remove the throttle body, intake air connector, muffler connector comp. 拆卸节气门、进气接口、消音器接口弯管；
2. Remove the cylinder head cover, magneto cover bolt, observation hole bolt. 拆卸气

门室盖、磁电机塞子和观察孔螺栓；

3. Remove the engine sprocket outer cover, adjust the timing sprocket. Remove the chain drive sprocket. 拆卸配气链轮盖，调整正是，拆下配气链轮；

4. Remove the front cylinder head, cylinder comp, piston comp. 拆卸前汽缸头总成、气缸体、活塞组合；

5. Remove the rear cylinder head, cylinder comp, piston comp, engine oil filter comp, Magneto. 拆卸后汽缸头总成、气缸体、活塞组合、机油滤清器、磁电机；

6. Remove the clutch inner and drive gears. 拆卸离合器总成、驱动齿轮等；

7. Remove the gear shift shaft comp, oil pump, camshaft plate, oil pump idle gear, gear shift cam driven gear, crankshaft bearing limit plate, cam chain tension plate.拆卸变档轴、机油泵、凸轮轴压板、机油泵惰轮、变档轮轴棘轮、曲轴轴承限位板、配齐链条涨紧板；

8. Remove the left and right crankcase fixing bolts, open the left and right crankcase, 拆卸中箱固定螺栓，打开中箱；

9. Remove the gear shift fork, gear shift pawl return spring, remove the camshaft and drive shaft, counter shaft. 拆下变档拨叉，变档限位弹簧、取下变档凸轮轴、主轴、付轴；；

10. Decomposition the cylinder head. 汽缸头组合分解；

11. Decomposition the piston. 活塞分解；

**Maintenance section:** 维修部分

1. Cylinder head combination Check repair; 缸头组合检查修复；
2. Piston combination Check repair; 活塞组合检查修复；
3. Crankshaft Check repair; 曲轴组合检查修复；
4. Magneto combination inspection repair; 磁电机组合检查修复;
5. Starting motor combination inspection repair; 电启动系统检查修复；
6. Clutch inspection repair; 离合器检查修复；
7. Crankcase inspection repair. 箱体部分检查修复。

**Assembly considerations:** 装配注意事项

1. When reassembling the engine, do so in the reverse order as when decomposition and removal occur. 根据分解时的相反顺序组装发动机；

2. In the assembly of the left and right box to apply sealant evenly, do not let the sealant into the oil passage and water passage. 在装配左右箱体时要均匀涂抹密封胶，不要使密封胶进入油道和水道；

3. According to the requirements of assembly torque, the bolts in each part are tightened. 根据装配力矩对各部位螺栓进行锁紧；

4. Fill with lubrication oil and antifreeze as required. 根据要求加注润滑机油和冷却液。

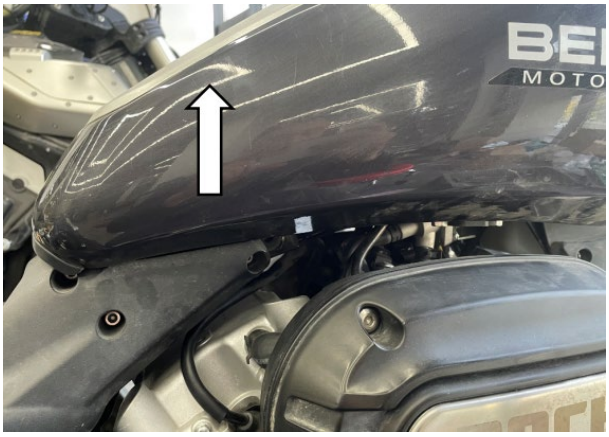


## Engine and the chassis separation: 发动机与车架分离

Open the cushion lock and remove the saddle backward; 打开坐垫锁，向后取下鞍座

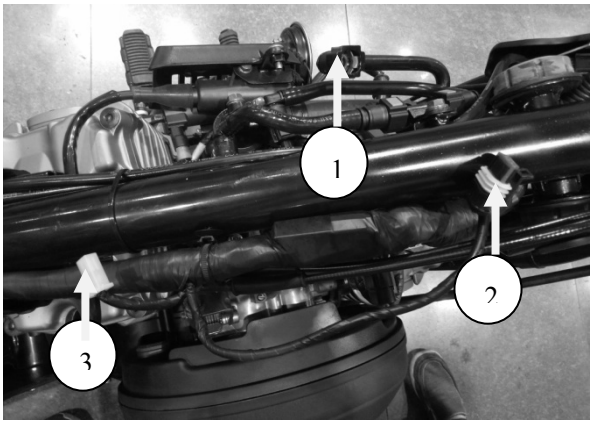
Remove fixed bolts on the left and right sides of the tank. 拆下油箱左右两侧固定螺栓；

After exiting the tank backwards, gently lift the rear of the tank to facilitate the removal of the lower switch of the tank; 将油箱向后退出后，轻轻抬起油箱后部，便于拆卸油箱下部开关；

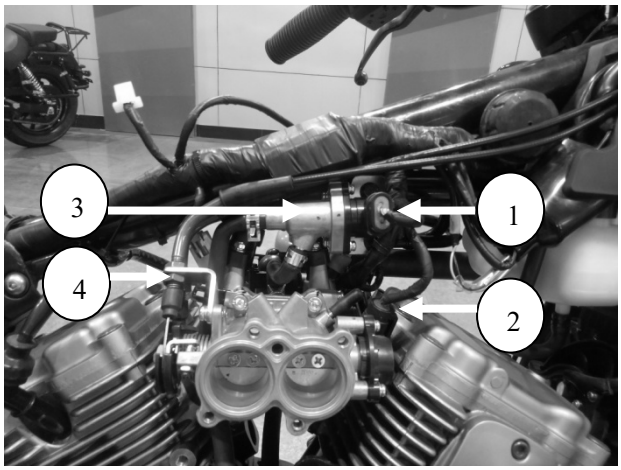


Remove the injection pump tubing 1, fuel pump power supply 2, fuel sensor 3. 拆卸喷油泵油管 1、油泵电源 2；燃油传感器 3；

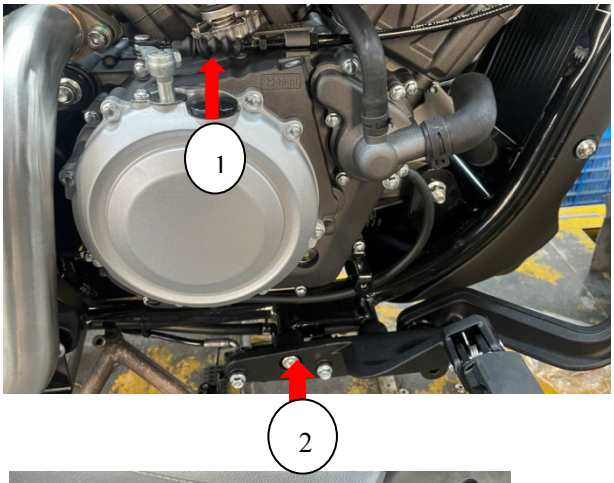
Reverse operation during installation, requires installation in place. 注意：安装时反向操作，要求安装到位



Remove the idle speed control solenoid coupler 1. 拆下步进电机接线 1
Remove the throttle position sensor (TPS) coupler 2. 拆下节气门开度感应器接线 2
Remove the ISC 3. 插下步进电机 3
Remove the throttle cable 4. 拆下油门线 4




Remove the clutch cable 3. 拆下离合线 1
Remove the front right footrest 4. 拆下右前搁脚总成（后刹车固定一起）2




Remove the right side cover. 拆下右车体护照

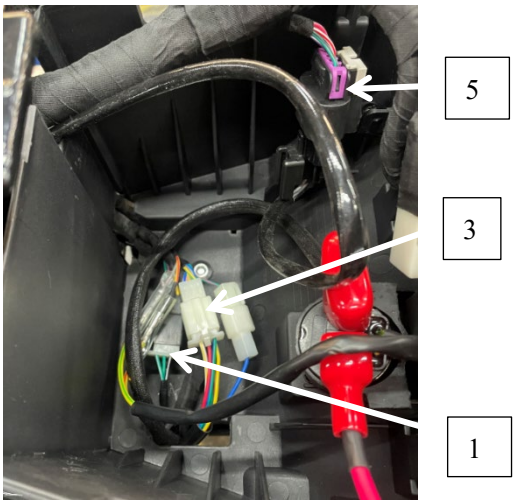
Disconnect the side stand switch 1. 断开侧撑熄火线路 1

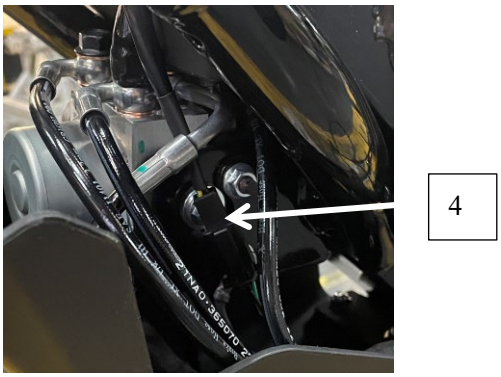
Disconnect magneto coupler 2 断开磁电机充电照明线路 2

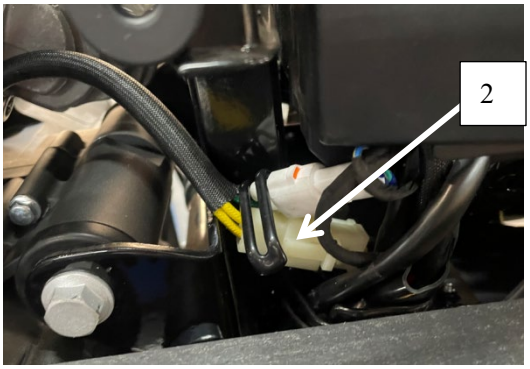
Disconnec the gear position switch coupler 3. 断开档显开关线路 3

Disconnect the brake switch coupler 4. 断开刹车开关线路 4

Disconnect the rear cylinders oxygen sensor coupler 5. 断开后缸氧传感器线路 5



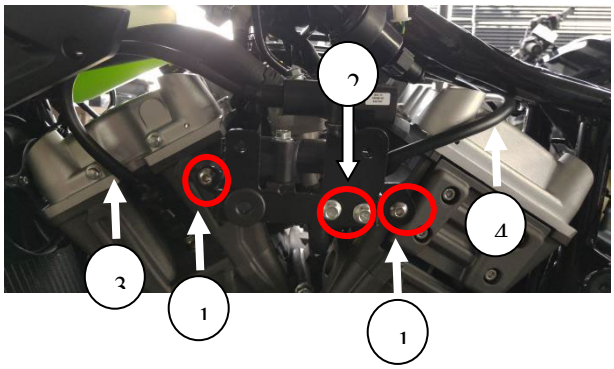



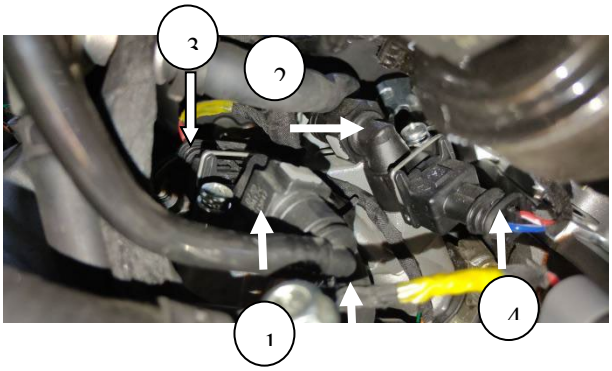

## NOTE 注意

**The installation is connected by wire color and interface shape and must be installed accurately.** 安装时按电线颜色和接口形状连接，必须安装到位。

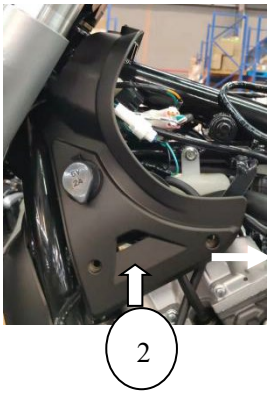
Remove the high-pressure package assembly 1
拆下高压包组件 1
Remove thermostat 2
拆下节温器 2
Remove the front and rear high voltage package assembly cables 3 and 4
拆下前后高压包组件线缆 3、4

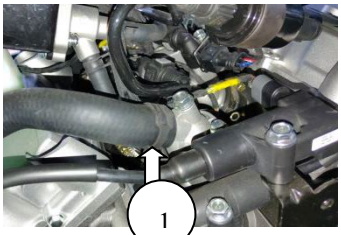


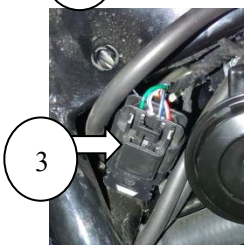
Remove the fuel injection nozzle link pipe 1 and 2
拆下喷油嘴链接油管 1、2
Remove the electrical plug-ins of the front and rear fuel injection nozzles 3 and 4
拆下前后喷油嘴电器插件 3、4



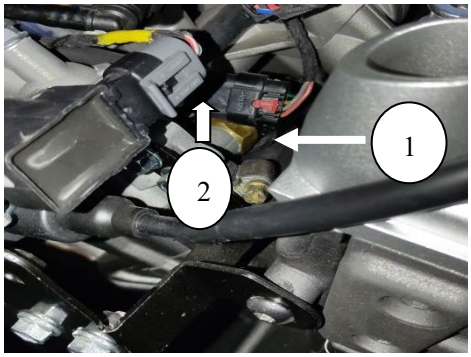
Remove the hose 1.拆下上水管 1
Remove the front left trim cover of the fuel tank 2.
拆下油箱前左装饰罩 2
Remove the front cylinder oxygen sensor 3.拆开前缸氧传感器接口 3





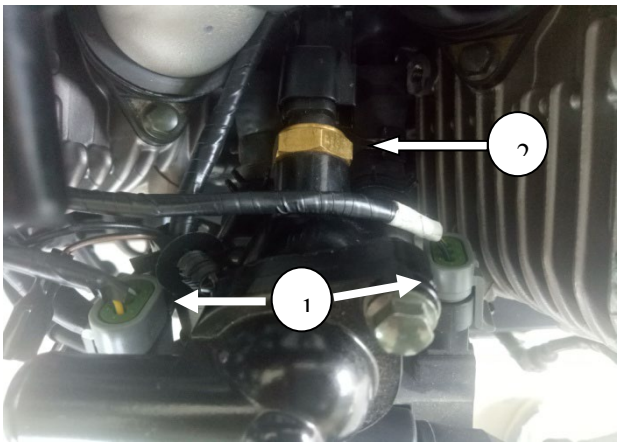


Remove the thermostat connector 1.
拆下节温器接插件 1
Remove the pressure sensor plug-in 2
拆下压力传感器插件 2



Disconnect the ignition coil coupler 1. 拆下前后高压包接插件 1

Remove the thermostat connector 2. 拆下节温器接插件 2




**NOTE 注意**

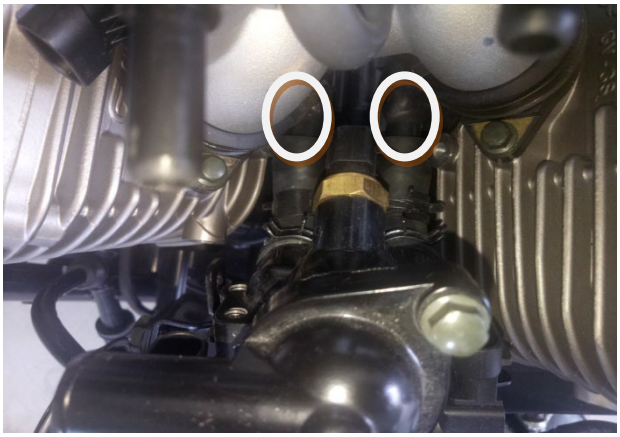
**Ignition coil coupler with white marked as front cylinder during installation.** 前缸电线大带白色标记

Remove the thermostat power cord. 拔下节温器电源线。

Remove the antifreeze circulation pipe. 拆下冷却液循环水管

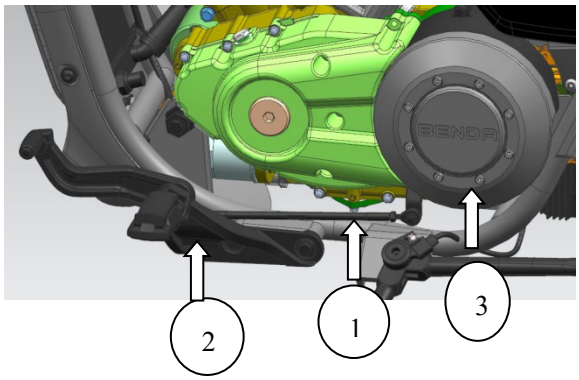
Remove the ignition coil 拆下高压包

Remove the thermostat power. 断开节温器电源。



Remove the gear shift cam lever 1.
拆下变档杆 1
Remove the left footrest 2.
拆下左前搁脚 2

Remove the engine sprocket outer cover 3.
拆下小链轮罩 3

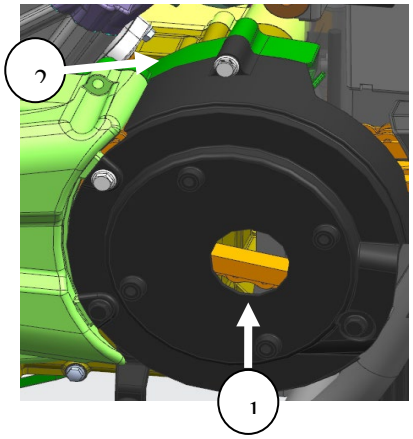


Remove drive belt 1. 拆下传动皮带 1

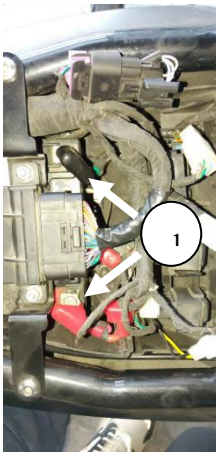
| NOTE 注意 |
| --- |
| Be careful not to use sharp objects to lift the belt<br>注意不能使用尖锐物品去翘取皮带 |

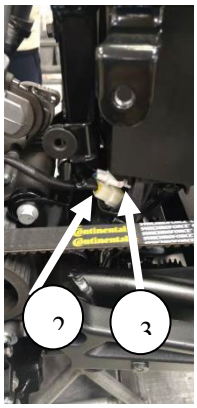



Remove the sprocket cover mounting seat 1
拆下链轮罩安装座 1
Remove the mounting bracket of sprocket cover 2
拆下链轮罩安装座支架 2



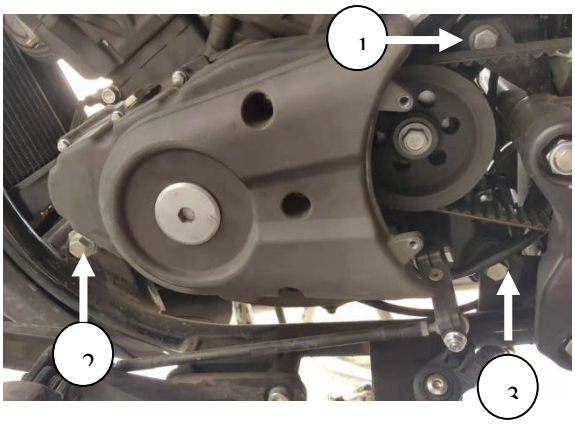

Disconnect the battery lead wire 1. 拆下电瓶线 1
Remove the engine ground wire and the main harness link port 2. 拆下发动机搭铁线与主线束链接端口 2
Remove the starter motor lead wire 3. 拆下启动电机连接线 3



## NOTE 注意

**Place all connectors between the engine and the body harness in order.** 将发动机与车体线束所有链接线有序排放




Remove the engine's three fixing bolts. 拆下发动机三个固定螺栓

Remove the left-hand fixed connection plate at the front of the engine. 拆下发动机前部左侧固定链接板，

Lift the engine out of the left side of the body. 将发动机在左侧抬出



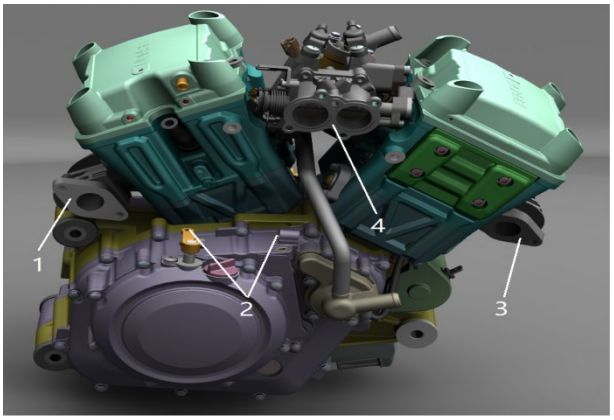
**Engine decomposition** 发动机分解

Loosen the rear cylinder inlet bending pipe 1. 拆下后缸进气弯管 1

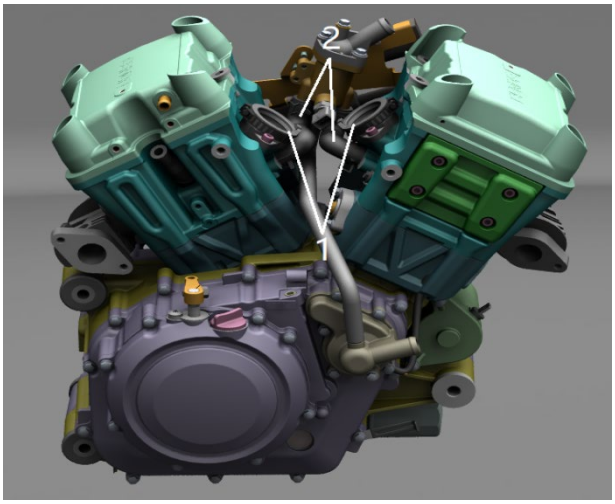
Remove the clutch cable 2. 拆下离合线 2

Loosen the front cylinder inlet bending pipe 3. 拆下前缸进气弯管 3

Remove the valve body 4. 拆下节气门阀体 4



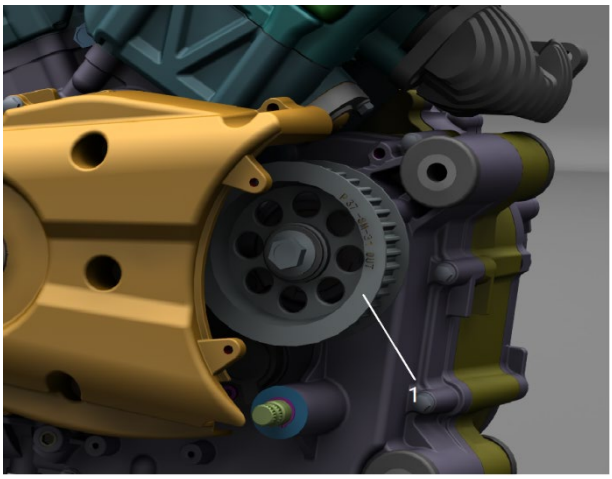
Remove the front and rear cylinder intake connector1. 拆下前后气缸进气接口 1
Remove the thermostat antifreeze connection tube 2. 拆下节温器冷却液连接管 2




## NOTE 注意

**The tube port of the thermostat connecting the elbow should be oriented in the direction of the magnet.** 节温器连接弯管口朝磁电机方向

Remove the engine sprocket 1. 拆下小带轮 1



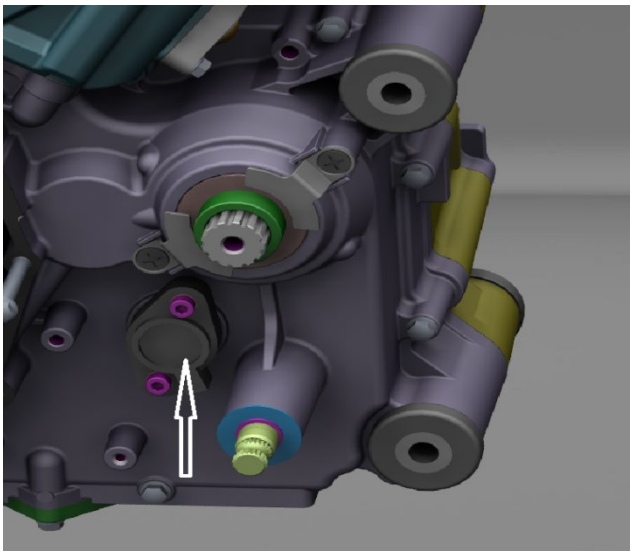

## NOTE 注意

**Engine sprocket mounting lock nut torque requirement80-100Nm.** 小带轮安装锁紧螺母力矩要求 80-100Nm，

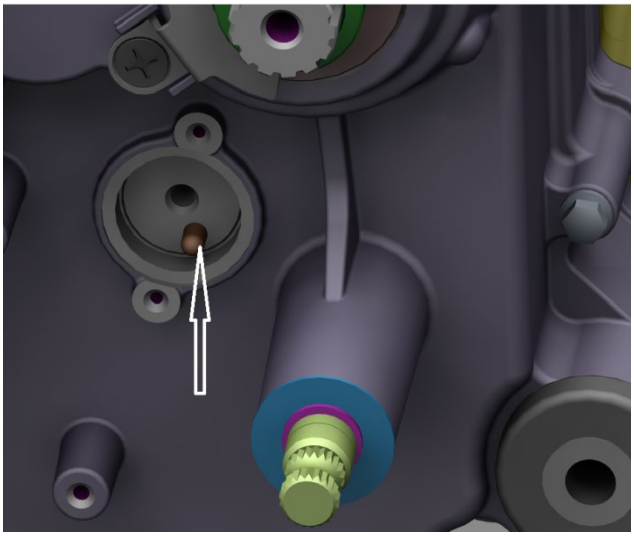
**After the nut is locked, raise the edge of the stop gasket to prevent the nut from loosening during operation.** 锁紧后将止退垫片翘起，防止运行中螺母松脱。



Remove the gear shift switch. 拆下档位显示器

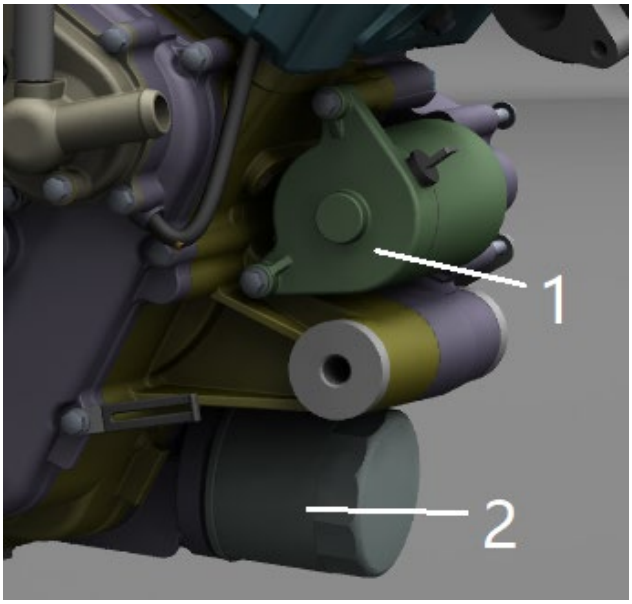


Remove gear shift switch contact and spring. 取下触点和弹簧



Remove the starting motor1. 拆下启动电机 1

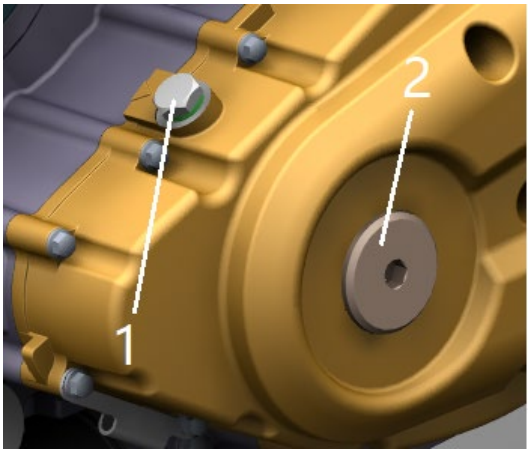
Remove the oil filter2. 拆下机油滤清器 2



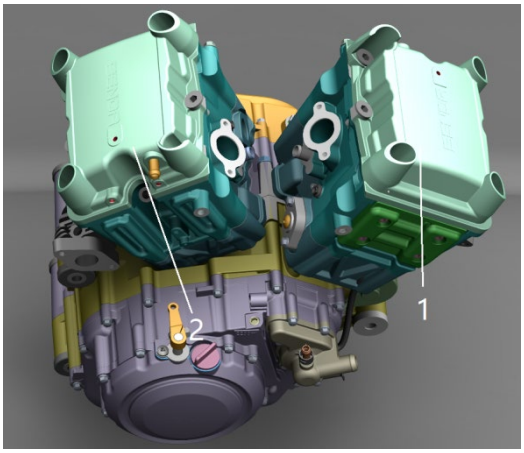



Remove the magnetic motor gas timing observation hole mounting bolt 1. 拆磁电机配气正时观察空螺栓 1

Remove the magnetic motor cover bolt 2. 拆下转曲轴孔塞 2

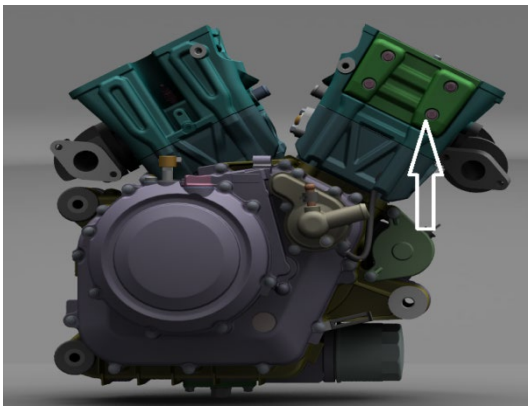


Remove the front cylinder head cover 1. 拆下前气缸盖罩 1；
Remove the rear cylinder head cover 2. 拆下后气缸盖罩 2

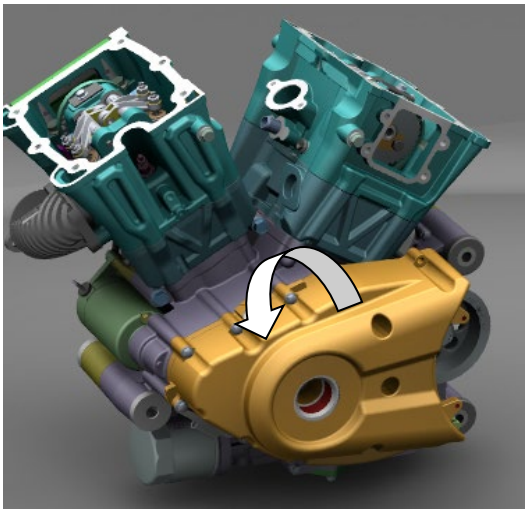



| NOTE 注意 |
| --- |
| **The front and rear valve covers are not interchangeable when reassembling.** 修复安装时前后气缸盖罩不能互换！ |

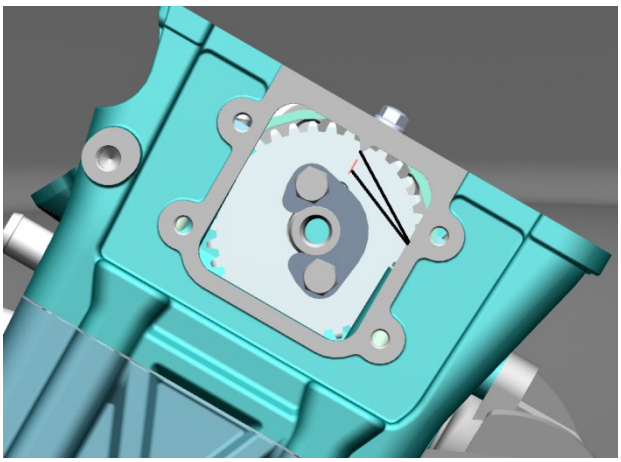
Remove the cylinder head side cover. 拆下气缸盖侧盖。



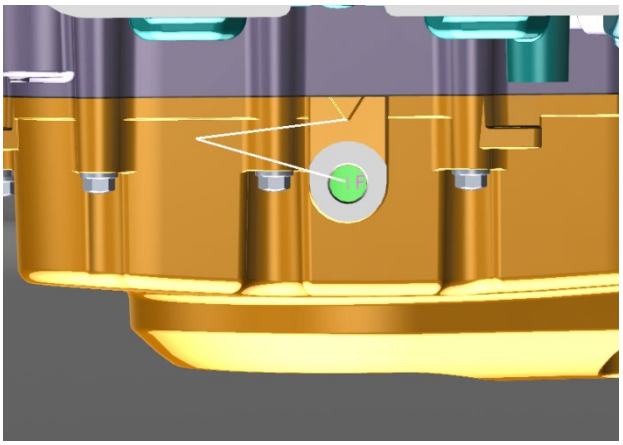
Turn the crankshaft counterclockwise. 逆时针转动曲轴。



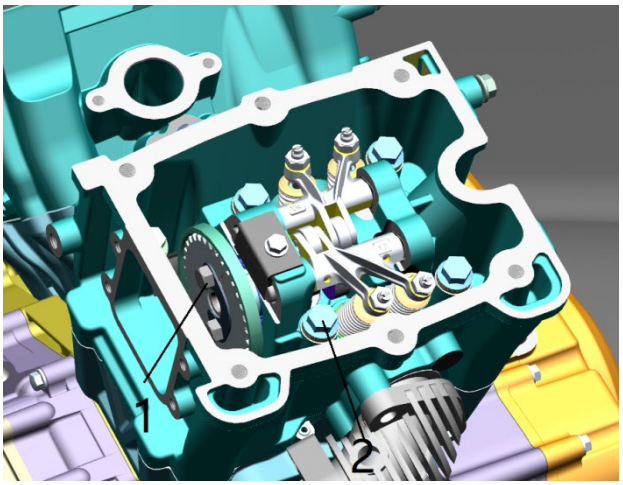
Front cylinder head with sprocket marked in a straight line. 前缸缸头正时链轮标记成直线。



Align the arrow with the magnetor rotor timing "F".使磁电机正时标记“F”对齐箭头。

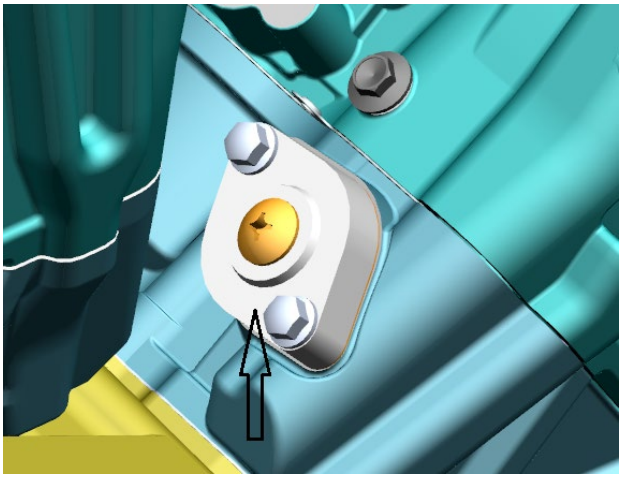


Remove the sprocket and remove the positioning pin 1 拆下正时链轮链条，取下定位销 1
Remove cylinder head six fixing Bolts 2. 拆下气缸盖六个固定螺栓 2

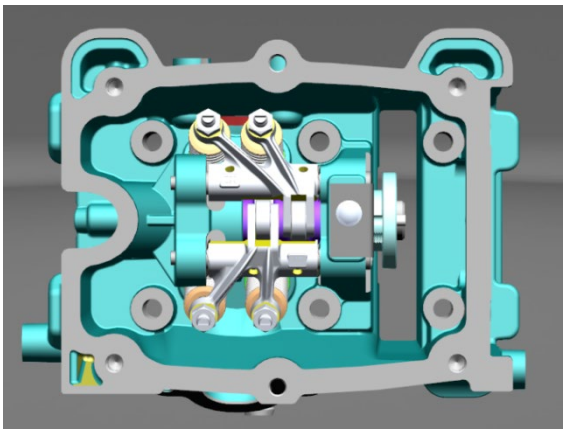



| NOTE 注意 |
| --- |
| Six fixed bolt torque values of 30Nm at assembly. 装配时六个固定螺栓力矩 30Nm |

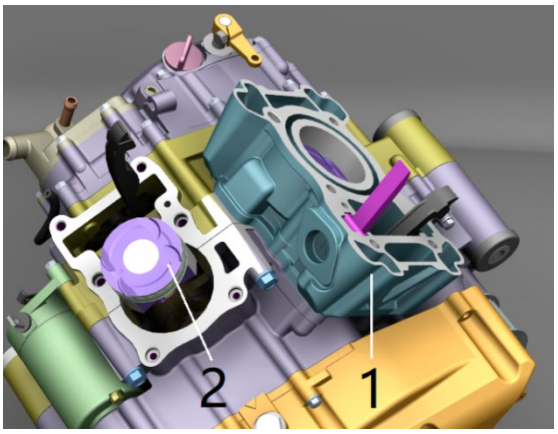
Remove the chain tensioning device. 拆下正时链条张紧器



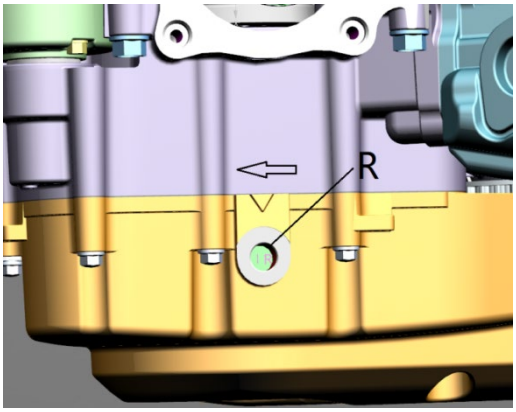
Remove the front cylinder head. 取下前气缸盖总成



Remove the cylinder 1. 拆下气缸体 1
Remove the piston 2. 拆下活塞 2



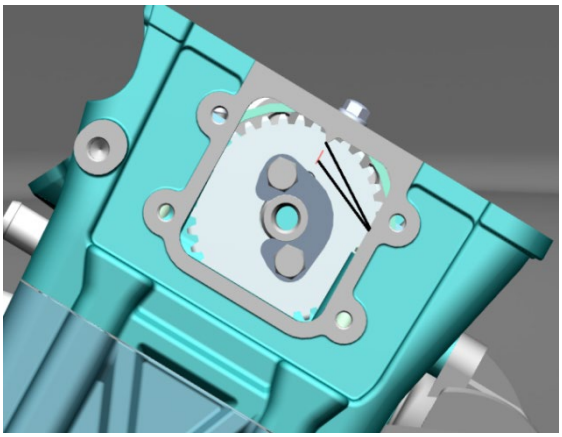

Remove the rear cylinder head. Cylinder and Piston: The steps are the same as the front cylinder. 拆卸后缸盖组合、气缸体、活塞组合：步骤如前缸。



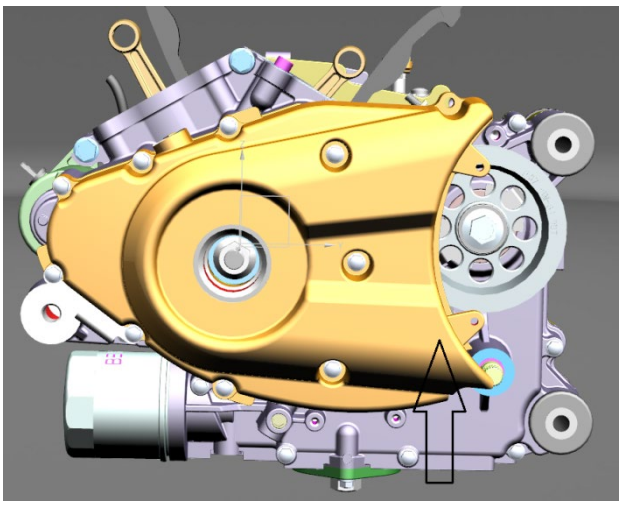

**NOTE 注意**

**Turn the magneto rotor counterclockwise, rotate the 300°, Mark the "R" Alignment arrow.** 逆时针转动磁电机转子,旋转 300°，使转子上标记“R“对准箭头，

Rear cylinder head with sprocket marked in a straight line. 后缸盖正时链轮标记成直线。



Remove 9 bolts and remove the magneto cover. 拆下 9 个螺栓，取下左侧盖；

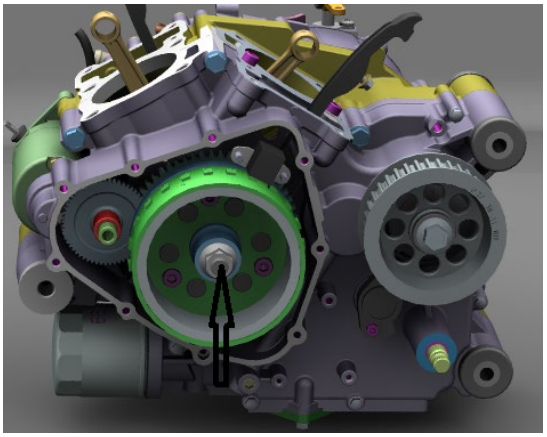


**NOTE 注意**

**That the stator coil is fixed on the inside.** 定子线圈固定在内侧；

Stator Coil fixing. 定子线圈固定

Remove the crankshaft nut. 拆下曲轴螺母；



**NOTE 注意**

**Torque 50-60N·m when mounting nuts.** 安装螺母时力矩 50-62Nm；

Remove the rotor with special tools. 用磁电机拉码取下转子；



Remove the semicircle key 1. 取下半圆键 1
Starter idle gear 2. 启动双联齿轮 2
Electric start clutch 3. 起动从动齿轮组件 3

Remove the bolt and remove the cam chain guide. 拆下配气链条涨紧轨道螺栓，取下涨紧导轨

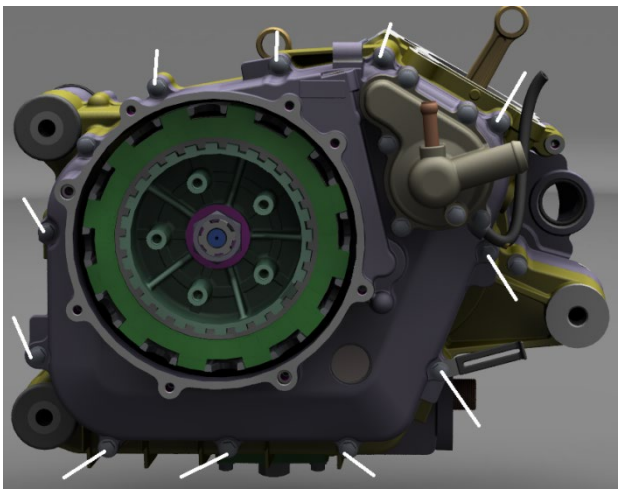
Remove 11 right cover bolts and remove the right cover. 拆下 8 个离合器盖组件紧固螺栓，取下离合器盖组件；

| NOTE 注意 |
| --- |
| **Torque Requirements During installation 8-12Nm.** 安装时力矩要求 8-12Nm |

Remove 5 clutch press plate fixing bolts. 拆下 5 个离合器压盘固定螺栓；

| NOTE 注意 |
| --- |
| **Diagonal fastening torque requirements during installation 6-10Nm.** 安装时对角紧固力矩要求 6-10Nm |

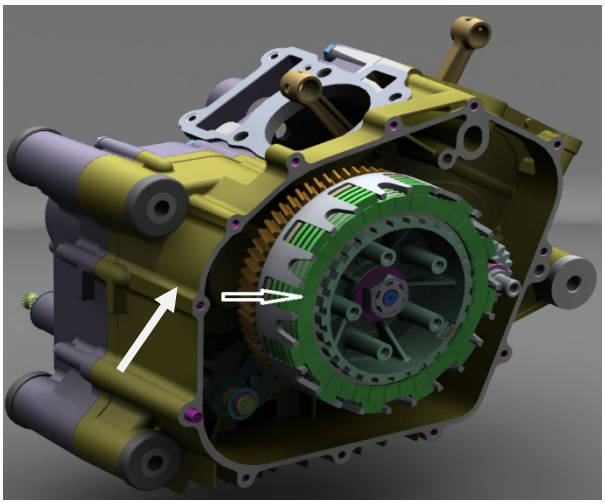
拆下 12 个右侧盖的固定螺栓；



| NOTE 注意 |
| --- |
| **Diagonal fastening torque requirements during installation 6-10Nm.** 安装时对角紧固力矩要求 6-10Nm |



Remove the clutch friction sheet. 取下离合器摩擦片



Disassembly clutch Large hub fixing nut 1. 拆卸离合器大毂固定螺母 1；

Mounting torque 30-50Nm. 安装力矩 30-50Nm

Remove the drive gear fixing nut 2. 拆下驱动齿轮

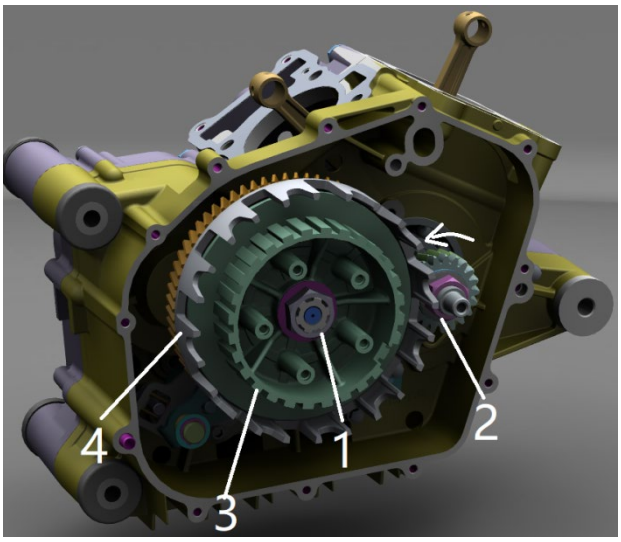
固定螺母 2；

Mounting torque 40-60Nm. 安装力矩 40-60Nm

| NOTE 注意 |
| --- |
| **The nut is left-handed and the gasket convex is outward oriented.** 螺母为左旋,垫片凸面向外； |

Remove Clutch small Hub 3. 拆下离合器小毂 3

Demolition of clutch Large hub 4. 拆下离合器大毂 4

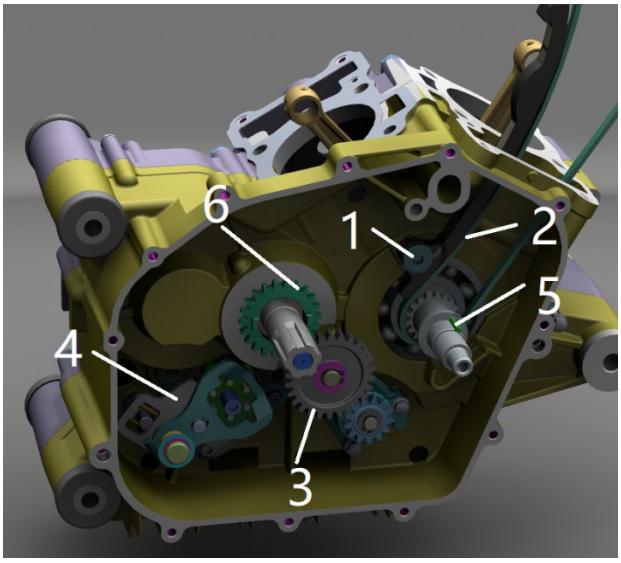



Remove the gas distribution chain tightening guide rail 1. 拆下正时链条张紧板 1;

Remove the gas distribution chain 2. 拆下正时链条 2;

Remove the machine oil pump drive inert wheel 3. 拆下油泵惰齿轮 3 和油泵主动齿轮 6;

Remove the variable shaft 4. 拆下变档杆组合 4；



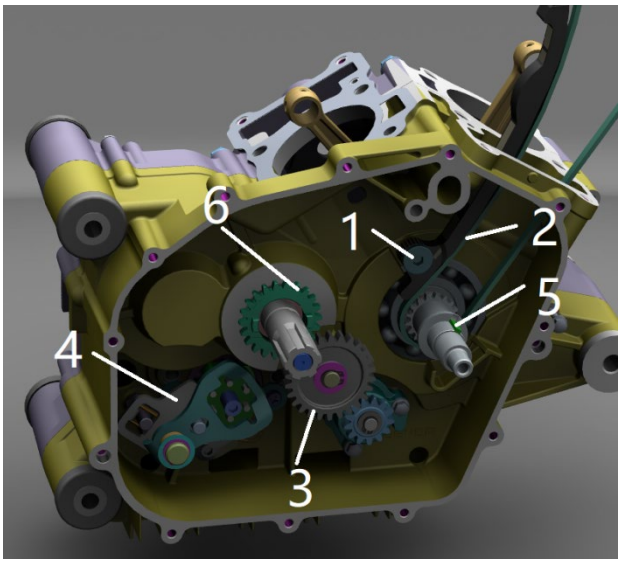

| NOTE 注意 |
| --- |
| The installation is assembled in the opposite order, This location is gap position. 安装时按此次相反顺序装配，此位置为空挡 |

Remove the gas distribution chain tightening guide rail 1. 拆下正时链条张紧板 1;

Remove the gas distribution chain 2. 拆下正时链条 2;

Remove the machine oil pump drive inert wheel 3. 拆下油泵惰齿轮 3 和油泵主动齿轮 6;

Remove the variable shaft 4. 拆下变档杆组合 4；

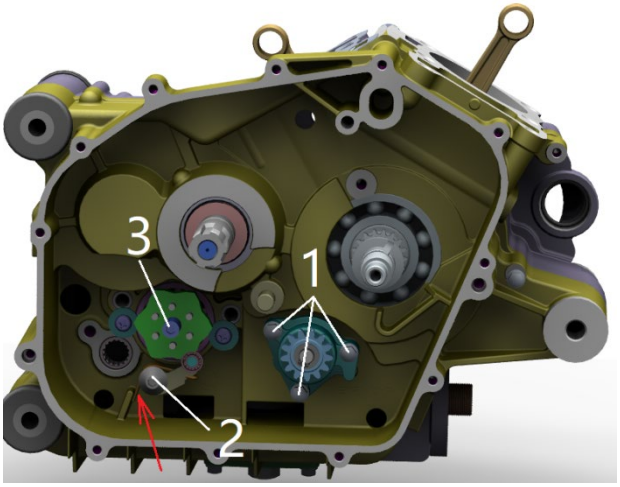



| NOTE 注意 |
| --- |
| The installation is assembled in the opposite order, This location is gap position. 安装时按此次相反顺序装配，此位置为空挡 |

Remove 3 bolts from the pump and remove the oil pump 1. 拆下机油泵 3 个螺栓，取下机油泵 1;

Remove the variable camshaft bezel 2 bolts and remove the bezel 2. 拆下定位轮螺栓 M6，取下变速鼓定位轮 2;

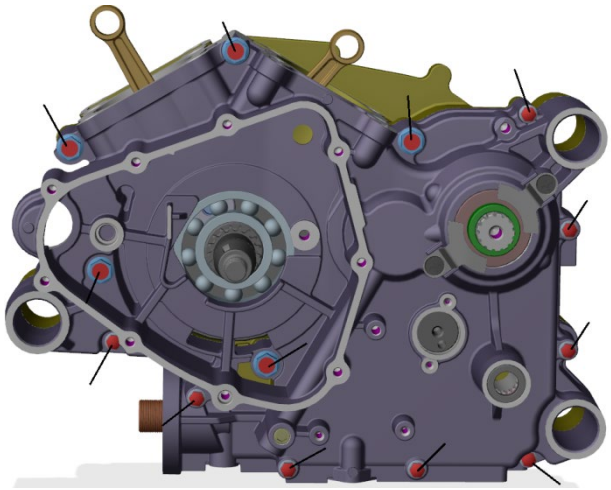
Remove the variable camshaft holder 2 bolts and remove the cage 3. 拆下五星轮螺栓，取下五星轮组件;




| NOTE 注意 |
| --- |
| 安装变速鼓定位轮时，弹簧要卡在箭头所示位置 |



Remove 12 box fixing bolts on the left side of the engine. 在发动机左侧拆下 13 个箱体固定螺栓；



| NOTE 注意 |
| --- |
| **Diagonal disassembly.** 对角拆装； |

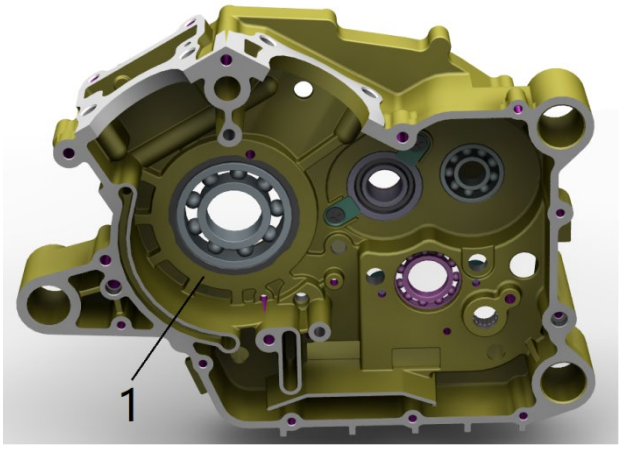
Assembly torque M8 Bolt 18-28Nm.
装配力矩 M8 螺栓 18-28Nm；

Assembly torque M6 Bolt 8-12Nm. 装配力矩 M6 螺栓 8-12Nm；

分离发动机曲轴箱：在箱体右侧（离合器一侧）使用专用工具（箱体分离拉马），以曲轴为中心，找到三个着力点，安装好拉马，转动拉马中心螺栓，使箱体分开；

| NOTE 注意 |
| --- |
| **Only the right box can be separated.** 只能在右侧分离箱体！ |

Remove the right crankcase comp 1. 拆下右曲轴箱组件 1。



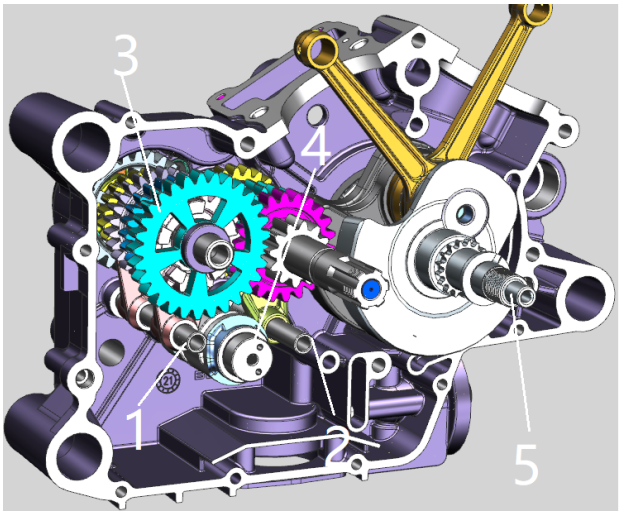

Remove the gear shift fork shaft, remove gear shift fork 1. 拆下副轴变档拨叉轴，取下两个拨叉 1；

Remove the gear shift fork shaft and remove gear shift fork 2. 拆下主轴变档拨叉轴，取下一个拨叉 2；

To remove the main and pay shafts together two sets of gears 3. 一起拆下主、副轴两组齿轮 3；

Remove the camshaft 4. 取下变档凸轮轴 4

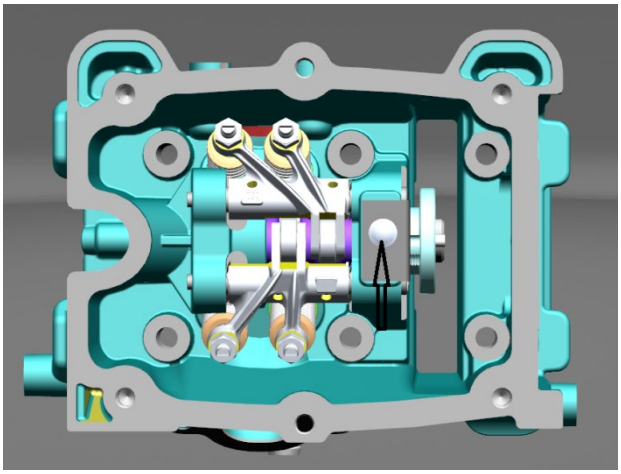
Remove the crankshaft assembly 5. 拆下曲轴总成 5；






Cylinder head combination decomposition. 气缸头分解：

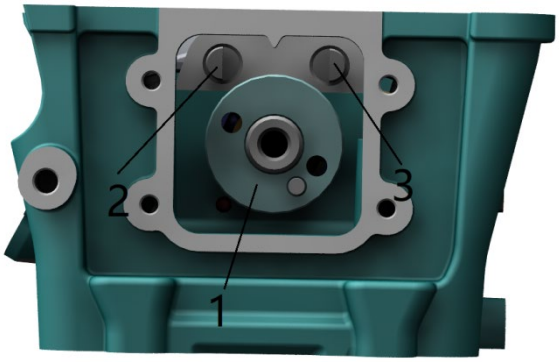
Remove the camshaft and rocker shaft limit plate. 拆下凸轮轴和摇臂轴限位板



Remove Camshaft1. 取下凸轮轴 1

Remove the intake valve rocker shaft 2. 拆下进气门摇臂轴 2

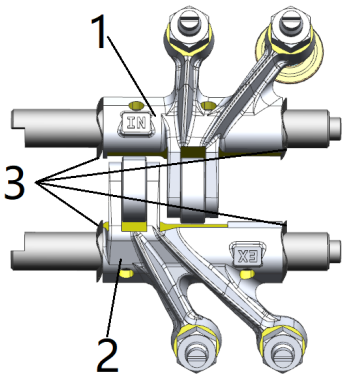
Remove the exhaust valve rocker shaft 3. 拆下排气门摇臂轴 3




Remove the intake valve rocker and the exhaust valve rocker arm. 取下进排气门摇臂

Intake valve rocker (IN)1. 进气门摇臂（标记 IN）1；

Exhaust valve rocker (EX) 2. 排气门摇臂（标记 EX）2；

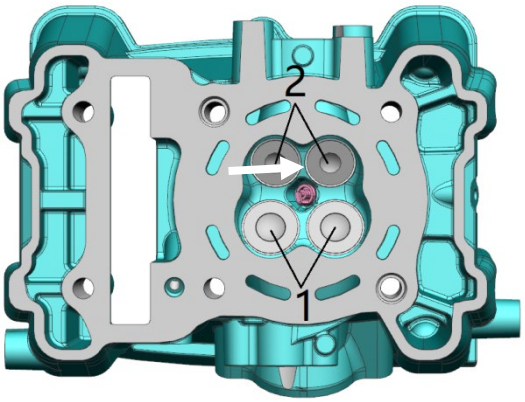



| NOTE 注意 |
| --- |
| **Do not miss the gasket of each rocker shaft during assembly.** 装配时每个摇臂轴止退垫片 3 不要漏装！ |

See if the valve room is carbon-accumulating. 检查进排气门是否有积碳

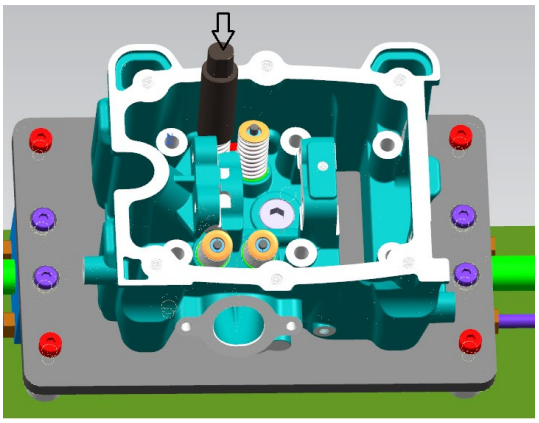
2 Intake valve, slightly larger in diameter. 两个进气门伞径大 1

2 Exhaust valve, slightly smaller in diameter. 两个排气门伞径小 2

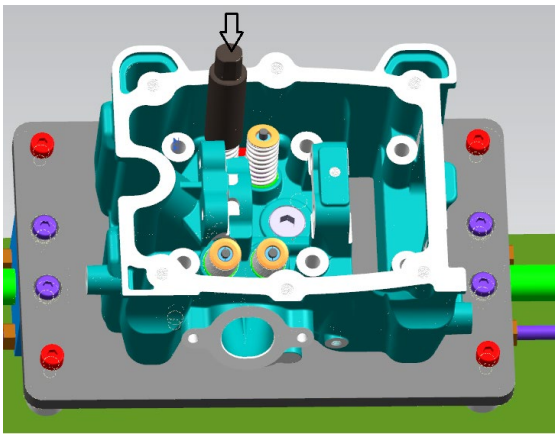


Pressurized gas door lock disassembly device, remove the lock plate, remove the valve base, valve oil seal. 压下气门锁夹拆卸器，拆下气门锁夹、拆下气门底座、气门油封；

**The same removal method for the intake and exhaust valves.** 进排气门方法拆卸方法相同。



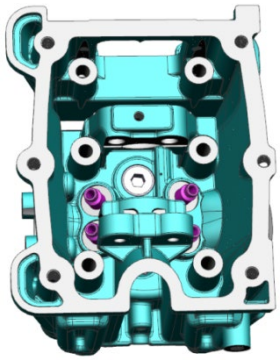
Valve lock plate 1. 气门锁夹 1；
Valve retainer 2. 气门上座 2；
Valve spring 3. 气门弹簧 3；
Valve oil seal 4. 气门油封 4；
Valve spring seat 5. 气门下座 5；
Valve 6. 气门 6；

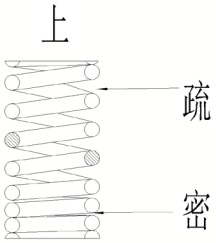


## NOTE 注意

**When combining the cylinder heads, use a special tool (valve lock chip installer) to press down the valve spring to install the lock gasket in place.** 组合气缸盖时，应使用专用气门锁片安装器，压下气门弹簧，将锁片安装到位。

Cylinder head. 气缸盖





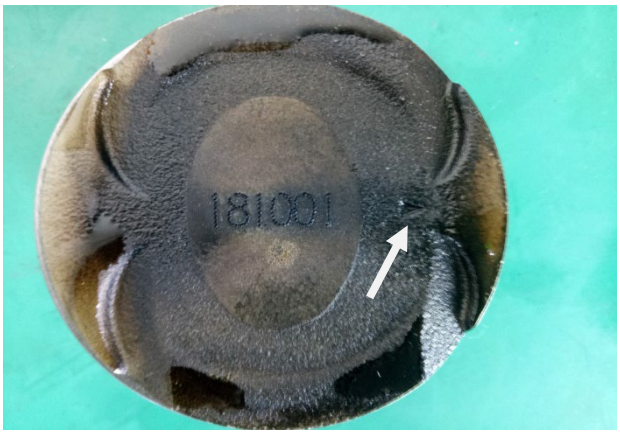

## NOTE 注意

安装时，气门弹簧密端朝下

When the piston ring is installed, 3 ring openings are staggered 120° respectively. 活塞环在安装时三道环口分别错开 120°，防止窜气；

## NOTE 注意

**When installing the piston, the top notch portion corresponds to the valve and the arrow markings on the piston face the exhaust valve.** 安装活塞时，顶部缺口与气门相对应，并且活塞上的箭头标记朝排气门



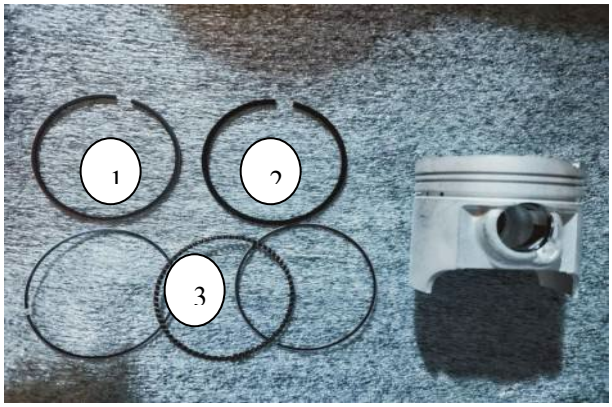

## NOTE 注意

**Note When replacing:** 更换活塞环时注意，环上标记朝上

**A gas ring chrome plating 1.** 一道气环镀铬 1；

**Two air ring Black 2.** 二道气环黑色 2；

**Three oil ring combination up and down a scraper ring, the middle is a spring-like oil storage ring 3.** 三道油环组合，上下两个刮油环、中间弹簧状储油环 3



Engine assembly Considerations:

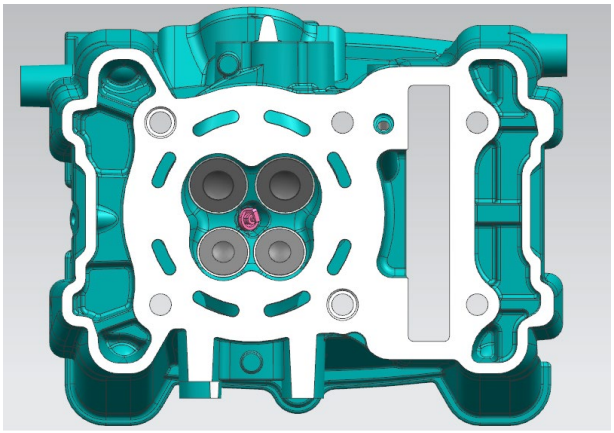
发动机装配注意事项：

1. Reverse operation in the above order. 按以上顺序反向操作；
2. The disassembled engine must be cleaned clean. 经拆卸后的发动机必须清洗干净
3. When the left and right box is merged, apply the sealant evenly and the fixing bolt diagonally according to the torque requirement to lock. 合并箱体时均匀涂抹密封胶、固定螺栓对角按力矩要求锁紧；
4. When installing the piston, apply lubricating oil. 安装活塞时涂抹是润滑油；
5. The mounting cylinder head must be aligned with the timing mark, the requirement corresponds to the magneto rotor mark, the fixed bolt diagonally according to the torque requirements locking, the valve clearance must be within the specified value. 安装气缸头必须对准正时标记，要求与磁电机标记对应，固定螺栓对角按力矩要求锁紧 、气门间隙必须在规定值内；
6. Clutch large hub, magneto rotor, small sprocket according to the torque requirements of the lock. 离合器组件、磁电机转子、小链轮按力矩要求锁紧；
7. Engine using oil model SAE10W-40. Oil volume 1450ml. 发动机使用机油标号 SAE10W-40、油量 2200ml；
8. Water tank filling antifreeze 0.1L, required between the upper and lower scales. 水箱加注防冻液 0.1L,要求在上下刻度之间；
9. 0.9L of antifreeze in radiator. 散热器内加注防冻液 0.9L；

# ENGINE COMPONENT INSPEC TION AND SERVICE 发动机组件的检查和维修

**⚠ CAUTION警告**

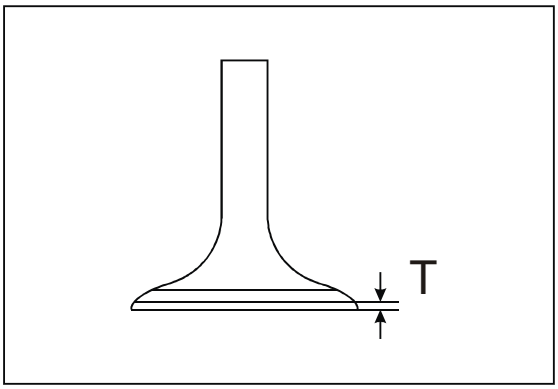
**Be sure to identify each removed part as to its location, and lay the parts out in groups designated as "Front cylinder", "Rear cylinder", "Exhaust", "Intake", so that each will be restored to the original location during assembly.每个拆下的零件都要标识清楚具体的位置，并将零件按"前气缸盖"，"后气缸盖"，"排气"，"进气"分组放置，以便在恢复过程中将其还原到原始位置。**



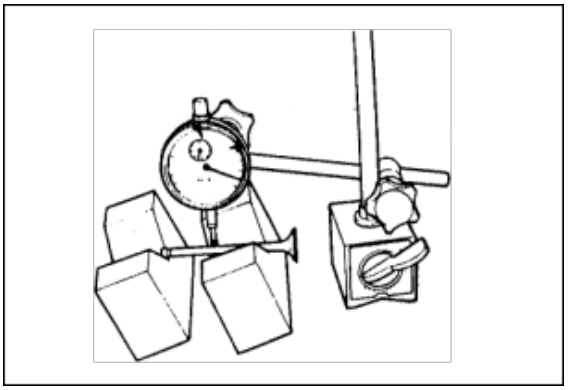
## CYLINDER HEAD DISTORTION 气缸盖变形

Decarbonate in combustion chamber.由燃烧室脱碳所致

Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder head. 用直尺和厚度计检查气缸盖的密封表面是否变形，并在所示的多个位置读取间隙读数。 如果在直尺的任何位置上的读数差超过限制，请更换气缸盖。




| Cylinder head distortion气缸盖变形量 | Service limit极限值 |
|---|---|
| | 0.05 mm |



**TOOL Thickness gauge : 09900-20806**

**测量仪器**

## VALVE FACE WEAR 断面磨损

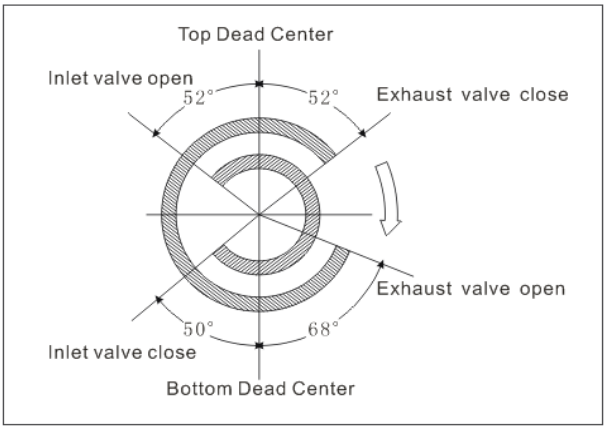
Visually inspect each valve face for wear. Replace any valve with an abnormally worn face. The thickness of the valve face decreases as the face wears. Measure the valve head T. If it is out of specification, replace the valve with a new one. 目视检查每个端面是否磨损。 任何阀表面的异常磨损都需要更换。随着面的磨损阀面的厚度而减小。 测量阀头 T。如果超出规格，请更换新的阀。

| Valve face wear气门面磨损 | Service limit极限值 |
|---|---|
| | 0.5 mm |

TOOL **Vernier calipers： 游标卡尺 ：**



## VALVE STEM RUNOUT 气门杆弯曲

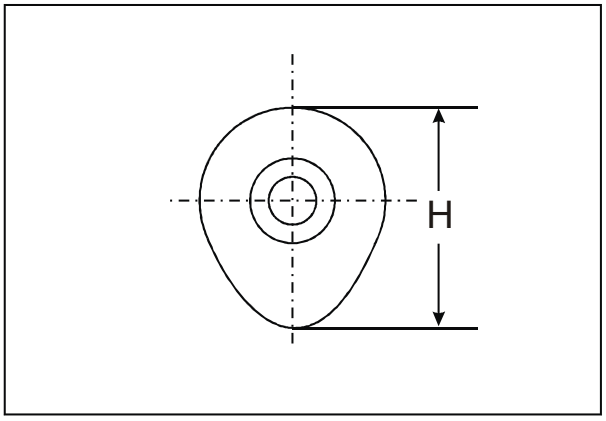



Check the valve stem for abnormal wear or bend. 检查气门杆是否异常磨损或弯曲。

Place the valve on V-blocks and measure runout. 将气门放在 V 型块上并测量跳动。

If the service limit is exceeded or abnormal condition exists, replace the valve. 如果超过维修极限或存在异常情况，请更换阀门。

| Valve stem runout阀杆弯曲 | Service limit极限值 |
|---|---|
| | 0.05 mm |




TOOL **Dial gauge :千分表**

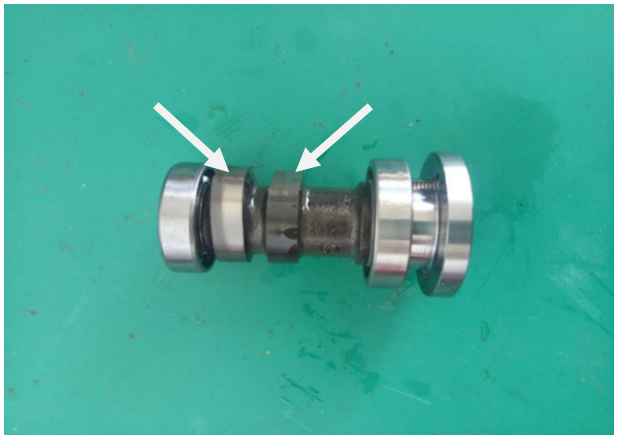
TOOL **Magnetic stand :磁力架**

**V-block :V 型铁**

## CAMSHAFT 凸轮轴

The camshaft should be checked for runout and

also for wear of cams and journals if the engine has been noted to produce abnormal noise or vibration or a lack of out- put power. Any of these abnormality could be caused by a worn camshaft. 如果发动机产生异常噪音、振动或输出功率不足，则应检查凸轮轴是否偏心，以及凸轮和轴颈是否磨损。 这些异常均可能是凸轮轴磨损引起的。



**CAMSHAFT WEAR 凸轮轴磨损**

Worn-down cams are often the cause of mistimed valve operation resulting in reduced output power. 输出功率降低通常是由于气门操作错误导致的凸轮异常磨损。

The limit of cam wear is specified for both intake and exhaust cams in terms of cam height H, which is to be measured with a micrometer. 进气凸轮和排气凸轮的凸轮磨损程度是根据凸轮高度 H 确定的，该高度应使用千分尺进行测量。

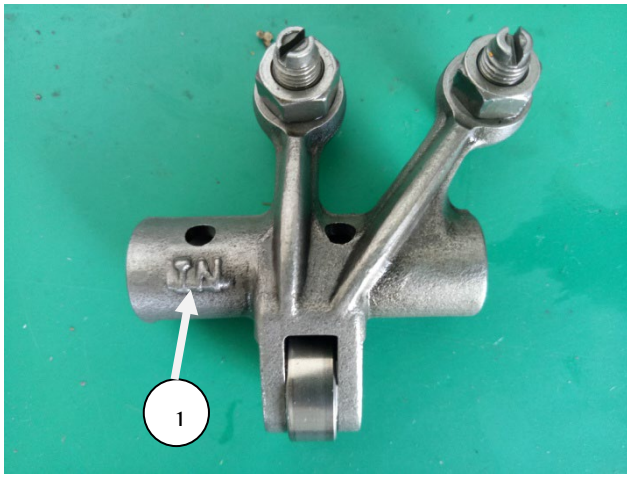
Replace camshafts if found it worn down to the limit. 如果发现凸轮轴磨损到极限，请更换凸轮轴。

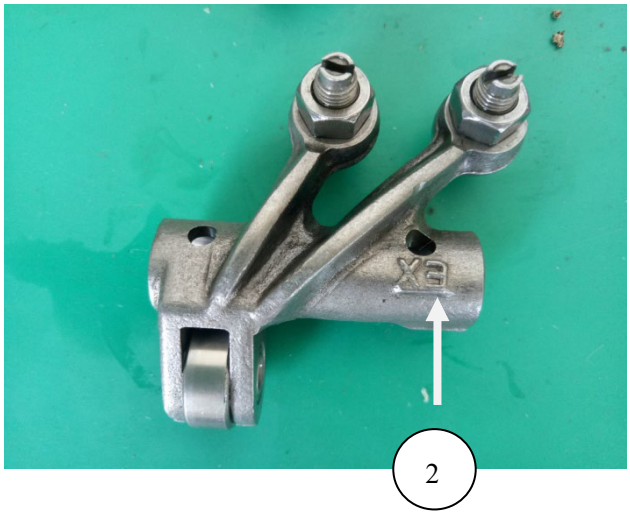
| Cam height H凸轮高度 H | Service limit 极限值 |
|---|---|
| Intake cam进气凸轮 | 29.67mm |
| Exhaust cam排气凸轮 | 30.04mm |

TOOL **Micrometer(25~50 mm) 千分尺（25～50 mm）: 09900-20202**

**Valve rocker arm 气门摇臂组件**

If the engine produces abnormal noise or vibration or the output power decreases, the valve rocker arm should be checked, and any of these anomalies may be caused by the worn valve rocker arm. 如果发动机产生异常噪音、振动或输出功率降低，则应检查气门摇臂组件，其中的任何异常都可能是由气门摇臂组件磨损引起的。



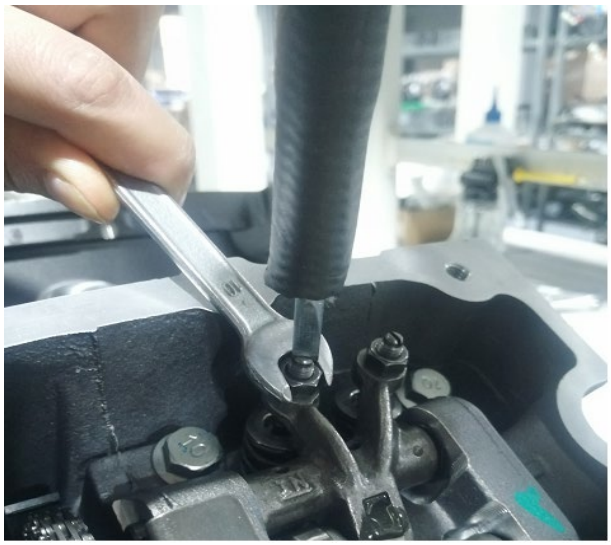

Intake valve rocker arm 1（IN）进气门摇臂组件 1（IN）

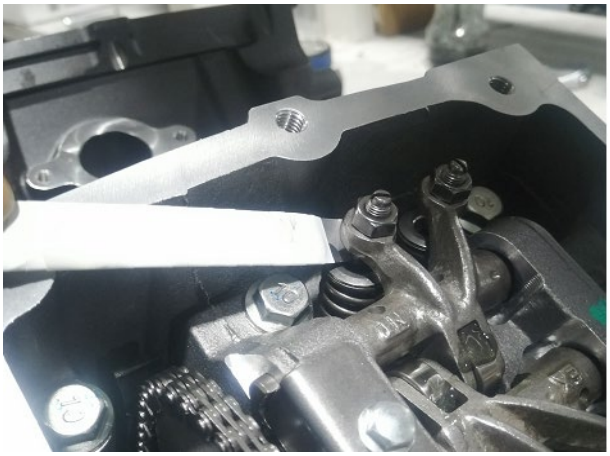
Exhaust valve rocker arm 2(EX) 排气门摇臂组件 2（EX）

## Tappet & shimwear 挺杆和垫片磨损

When measuring the valve clearance, the clearance should be within the standard range. 测量气门间隙时，间隙应在标准范围内。

| | |
|---|---|
| Valve clearance气门间隙 | Standard(When cold) 标准（冷时） |
| Intake valve进气门 | 0.08±0.01mm |
| Exhaust valve排气门 | 0.11±.0.01mm |





Inspect the tappet for wear and scratch. 检查挺杆是否磨损和划伤。

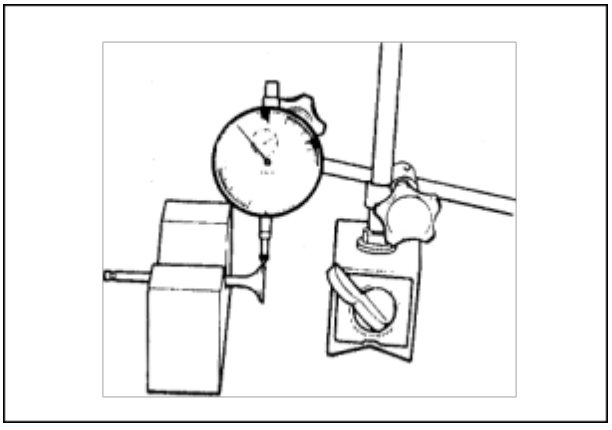
如果有异常或刮痕，请重新调整间隙。

## VALVE HEAD RADIAL RUNOUT 阀头径向圆度

Place a dial gauge as shown and measure valve head radial runout. 如图所示放置百分表并测量气门的径向圆度。

If the service limit is exceeded, replace the valve. 如果超出维修极限，请更换阀门。

| | |
|---|---|
| Valve head radial runout阀头径向圆度 | Service limit极限值 |
| | 0.03 mm |



TOOL **Dial gauge 千分表 ：09900-20606**

**Magnetic stand 磁力架: 09900-20701**

**V-block V 型块 ：09900-21304**

**VALVE GUIDE-VALVE STEM CLEARANCE 气门导管-气门间隙**

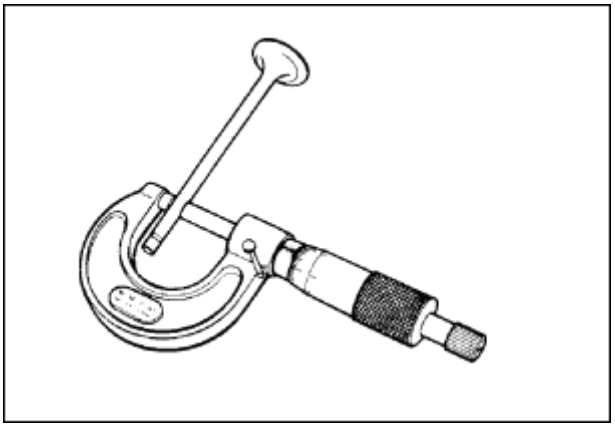
Measure the clearance in the valve guide-valve stem, by rigging up the dial gauge as shown. If the clearance is measured exceeds the limit specified below, then deter- mine whether the valve or the guide should be replaced to reduce the clearance to within the standard range: 如图所示，通过安装百分表来测量气门导管中的间隙。 如果间隙的测量值超过了以

下规定的限值，请确定是否应更换阀门或导向装置，以将间隙减小到标准范围内：

| Valve guide-valve stem clearance气门导管阀杆间隙 | Standard标准值 |
|---|---|
| IN.进气 | 0.010~0.037 mm |
| EX.排气 | 0.030~0.057 mm |

TOOL **Dial gauge 千分尺 : 09900-20606**

**Magnetic stand 磁力架: 09900-20701**



## VALVE STEM DIAMETER 气门杆直径

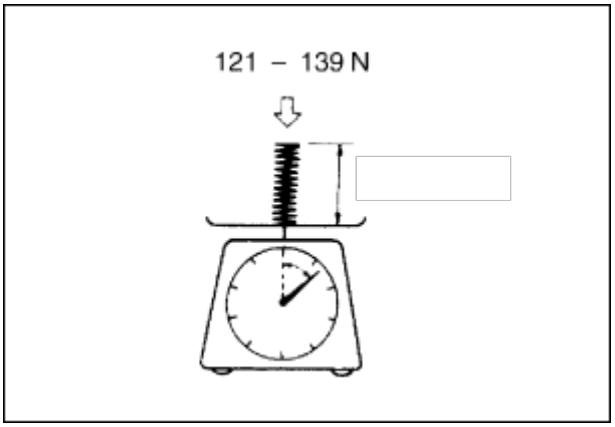
Measure the valve stem outside diameter. 测量气门杆外径。

If the diameter measured exceeds the standard, replace the valve. 如果测量的直径超出标准，请更换气门。

| Valve stem diameter气门杆直径 | Standard标准值 |
|---|---|
| IN.进气 | 4.975~4.990 mm |
| EX.排气 | 4.955~4.970 mm |

TOOL **Micrometer 千分尺 (0~25 mm) : 09900-20201**

**VALVE SPRING 气门弹簧**




The force of the coil spring keeps the valve seat tight. A weakened spring results in reduced engine power out- put and often accounts for the chattering noise coming from the valve mechanism. 弹簧的弹力使气门座保持紧密。 弹簧弹力减弱会导致发动机输出功率降低，并且通常会导致气门机构的颤动和噪声。

Check the valve springs for proper strength by measuring their free length and also by the force required to compress them. If the spring length is less than the ser- vice limit or if the force required to compress the spring does not fall within the specified range, replace both the inner and outer springs as a set. 通过测量气门弹簧的自由长度以及压缩气门弹簧所需的力，检查气门弹簧是否具有适当的强度。如果弹簧长度小于服务极限，或者压缩弹簧所需的力不在规定范围内，请同时更换气门内部和外部弹簧。

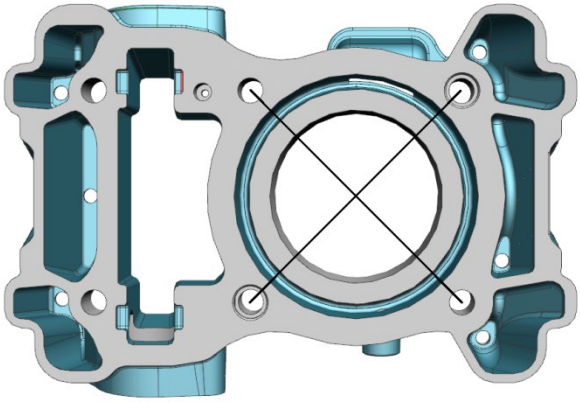
| **Valve spring free length(IN. & EX.) 气门弹簧自由长度** | Service limit极限值 |
|---|---|
| | 38.2 mm |

TOOL **Venier calipers 游标卡尺 ：09900-20101**

| **Valve spring tension (IN. & EX.) 气门弹簧张力** | Standard标准值 |
|---|---|
| | 19.4~22.4kgf (at length 31.5mm) |

## CYLINDER DISTORTION 气缸变形

Check the gasketed surface of the cylinder for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder.
用直尺和测厚仪检查气缸的表面是否变形，并在所示的多个位置读取间隙读数。
如果在直尺的任何位置上的最大读数超过限制，请更换气缸。

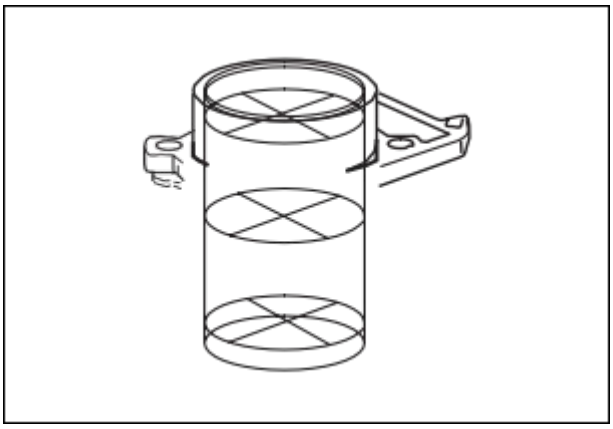


| Cylinder distortion气缸变形 | Service limit极限值 |
|---|---|
| | 0.05 mm |

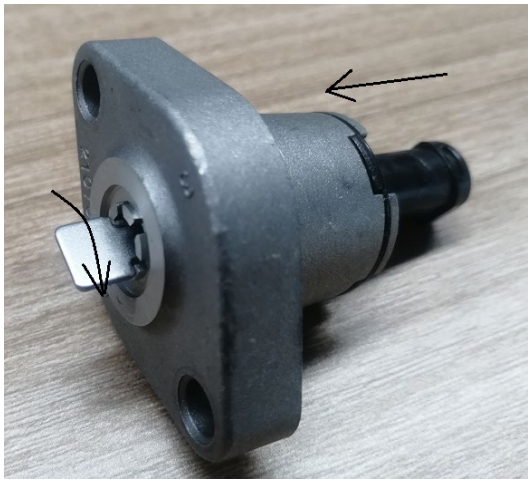
TOOL **Thickness gauge 测厚仪 ：09900-20806**

## CYLINDER BORE 圆柱孔

Measure the cylinder bore diameter at six place.
If any one of the measurements exceeds the limit, overhaul the cylinder and replace the piston with an oversize, or replace the cylinder.
在六个位置测量气缸孔直径。
如果任何一项测量值超出限制，请检修气缸，然后更换大号活塞，或者更换气缸。



| Cylinder bore 圆柱孔 | Standard标准值 | Service limit极限值 |
|---|---|---|
| | 58.000~58.015 mm | 58.040 mm |



TOOL **Cylinder gauge set 气缸量规套件 ：09900-20508**

## CAM CHAIN TENSION ADJUSTER 凸轮链张力调节器

Check that the push rod slides smoothly with

the lock shaft handle ① clockwise ( ).

用锁定轴手柄①顺时针（ ）检查推杆是否滑动平稳。

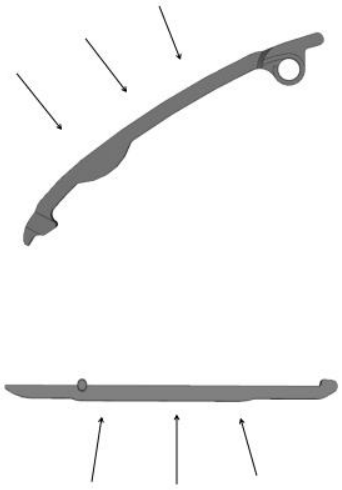
If it does not slide smoothly, replace the cam chain tension adjuster with a new one. 如果滑动不平稳，请更换新的凸轮链张力调节器。



**CAM CHAIN TENSIONER 凸轮链张紧器**

Check the contacting surface of the cam chain tensioner. 检查凸轮链张紧器的接触面。

If it is worn or damaged, replace it with a new one. 如果磨损或损坏，请更换新的。



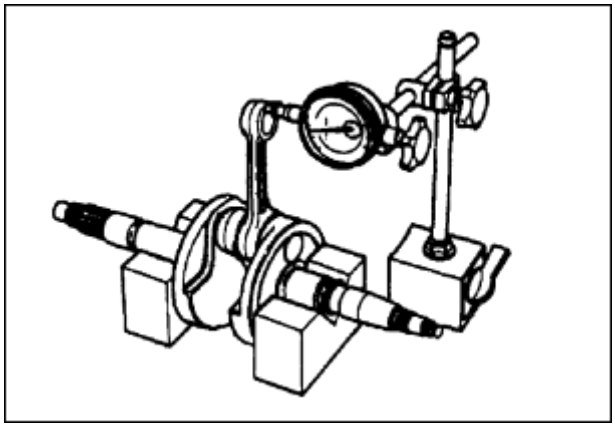
**CAM CHAIN AND CAM CHAIN GUIDE 凸轮链和凸轮链维护方法**

Check the cam chain for wear, damage and kinked or binding links. If any defects are found, replace it with a new one. 检查凸轮链是否有磨损，损坏和扭结或捆绑。 如果发现任何缺陷，请更换新链条。

Check the cam chain guide for wear and damage. If it is found to be damaged, replace it with a new one. 检查凸轮链导向器是否磨损和损坏。 如果发现损坏，请更换新的。

**CONROD SMALL END INSIDE DIAMETER INSPECTION 连端直径测量**

Using a dial calipers, measure the conrod small end inside diameter both in vertical and horizontal directions. If any of the measurements exceeds the service limit, replace the conrod. 使用游标卡尺在垂直和水平方向上测量连杆小端内径。 如果任何一项测量值超过极限值，请更换连杆。

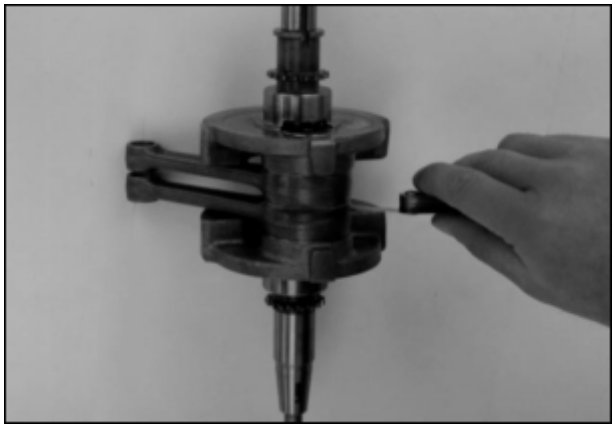


| Conrod small end inside diameter连杆小端内径 | Standard标准值 | Service limit极限值 |
|---|---|---|
| | 13.006~13.014 mm | 13.040 mm |

TOOL **Dial calipers 游标卡尺 ：09900-20605**

**CONROD BIG END SIDE CLEARANCE INSPECTION 大端间隙测量**

Using a thickness gauge, measure the side clearance at the conrod big end. If the measurement is out of stan- dard value, measure the conrod big end and the crank pin widths individually to determine which one is to be replaced. 使用测厚仪测量连杆大端的侧隙。 如果测量值超出标准值，请分别测量连杆的大头和曲柄销的宽度，以确定要更换的那个。

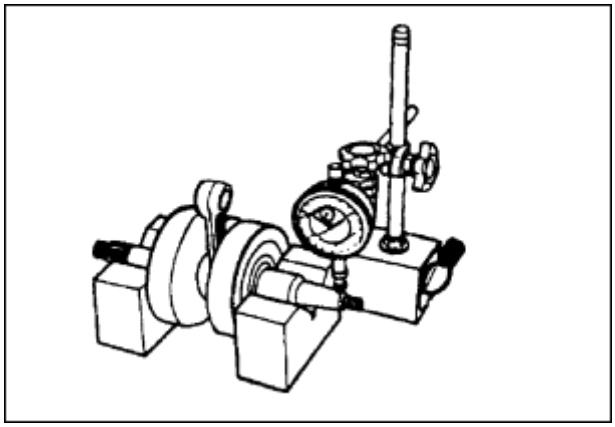


| Conrod big end side clearance大头间隙 | Standard标准值 | Service limit极限值 |
|---|---|---|
| | 0.40~0.85 mm | 1.0 mm |

TOOL **Thickness gauge 测厚仪 ：09900-20806**

**CRANKSHAFT RUNOUT INSPECTION 曲轴跳动检查**

With the right and left crank journals supported with V- block, turn the crankshaft slowly. At this time, measure the crankshaft end runout using a dial gauge. If the runout exceeds the service limit, replace the crankshaft. 用 v 块支撑住左右曲柄轴颈，慢慢转动曲轴。此时，使用表盘测量曲轴端部跳动。如果跳动超过使用限制，请更换曲轴。



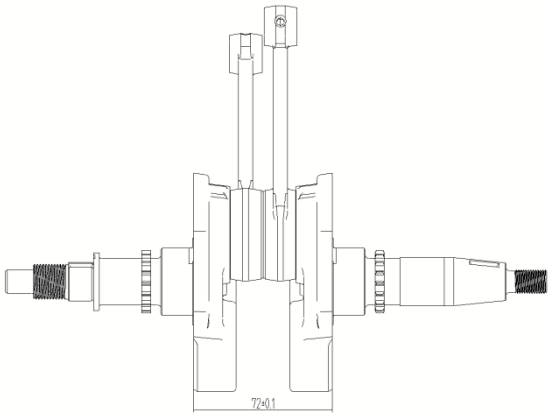
| | Service limit极限值 |
|---|---|
| **Crankshaft runout曲轴跳动** | 0.05 mm |

TOOL **Magnetic stand 磁力架: 09900-20701**
**Dial gauge 百分表 : 09900-20606**
**V-block V 型铁: 09900-21304**

## CRANKSHAFT REASSEBLY 曲轴重新安装

Measure the width between the webs referring to the figure below when rebuilding the crankshaft. 重新安装曲轴时，请参考下图测量腹板之间的宽度。

| Width between webs<br>腹板之间的宽度 | Standard标准值<br>72±0.1 mm |
|---|---|




## MAGNETO COVER 磁电机盖

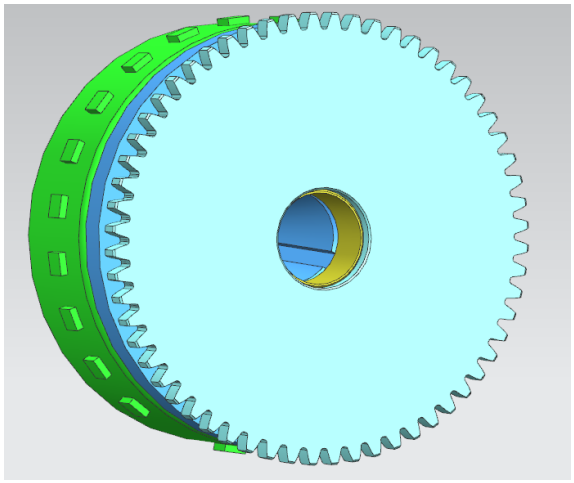
### MAGNETO INSPECTION 磁电机检测

### DISASSEMBLY 拆卸

Remove the stator.拆下定子

### STARTER CLUTCH 启动离合器

Install the starter driven gear onto the starter clutch and turn the starter driven gear by hand(the gear turns in only one direction). The starter driven gear should turn smoothly. If excessive resistance is felt while turning the starter driven gear, inspect the starter clutch. Also, inspect the surface of the starter driven gear which contacts the starter clutch, for wear or damage. If any wear or damage is found, replace the defective part(-s). 将起动机驱动齿轮安装在起动机离合器上，用手转动起动机齿轮（齿轮只向一个方向转动)。起动机齿轮应平稳转动。如果在转动起动机齿轮时感觉到过大的阻力，请检查起动机离合器。此外，检查与起动机离合器连接的起动机齿轮的表面是否磨损或损坏。如果发现任何磨损或损坏，请更换有缺陷的部件（-s)。



### DISASSEMBLY 拆卸

Hold the magneto rotor with the rotor holder and remove the starter clutch bolts. 用转子支架固定磁电机转子，然后拆下起动离合器螺栓。

**REASSEMBLY 重新组装**

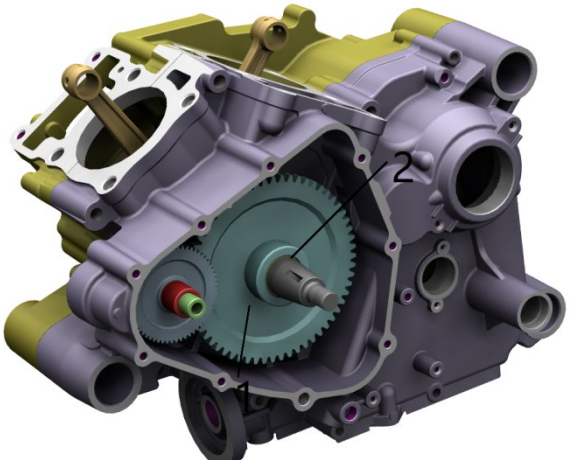
Apply a small quantity of THREAD LOCK“1324” to the starter clutch bolts and tighten them to the specified torque while holding the rotor holder. 在起动机离合器螺栓上施加少量的螺纹锁“ 1324”，并在握住转子支架的同时将其拧紧至规定的扭矩。

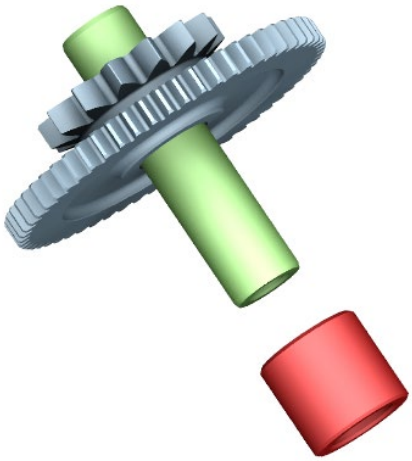
**Thread Lock“1324”** 螺纹锁
**Rotor holder 转子支架: 09930-44510**
**Starter clutch bolt 启动离合器螺栓**
**23~28 N·m(2.3~2.8 kg·m)**

## STARTER DRIVEN GEAR 启动机齿轮

**STARTER DRIVEN GEAR BUSHING 启动机齿轮套**

Install the starter driven gear bushing ① and gear ②onto the crankshaft and turn the starter driven gear by hand. Inspect the starter driven gear bushing for smooth rotation and any abnormal noise. If the bushing does not turn smoothly or there is any abnormal noise, replace it. 将起动机从动齿轮衬套①和齿轮②安装到曲轴上，并用手转动起动机从动齿轮。 检查起动机从动齿轮衬套的旋转是否平稳以及是否有异常声音。 如果套管转动不平稳或有异常声音，请更换它。

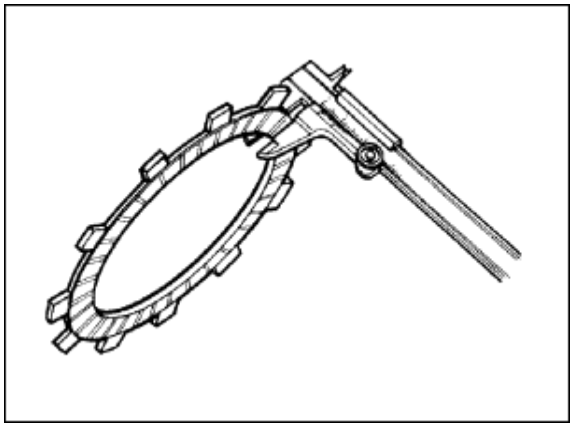


**Electric starting motor idler wheel assembly 电启动马达惰轮总成**

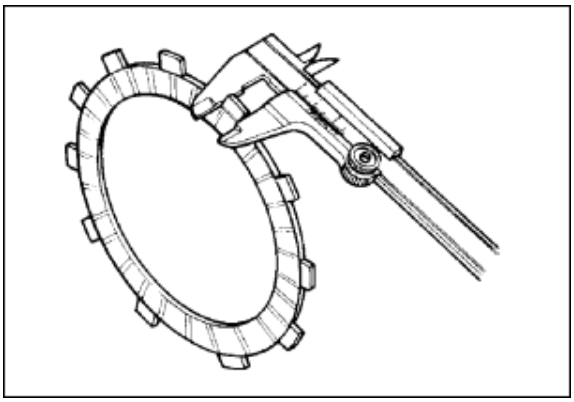
**CLUTCH DRIVE PLATES 离合器主动摩擦片**

Measure the thickness and claw width of the clutch drive plates using vernier calipers. If a clutch drive plate is not within the service limit, replace the clutch plates as a set. 使用游标卡尺测量离合器主动摩擦片的厚度和爪形宽度。 如果离合器驱动盘不在维修限制范围内，请更换离合器主动摩擦片。



| Clutch drive plate thickness离合器主动摩擦片厚度 | Standard标准值 | Service limit极限值 |
|---|---|---|
| | 2.9~3.1 mm | 2.6 mm |

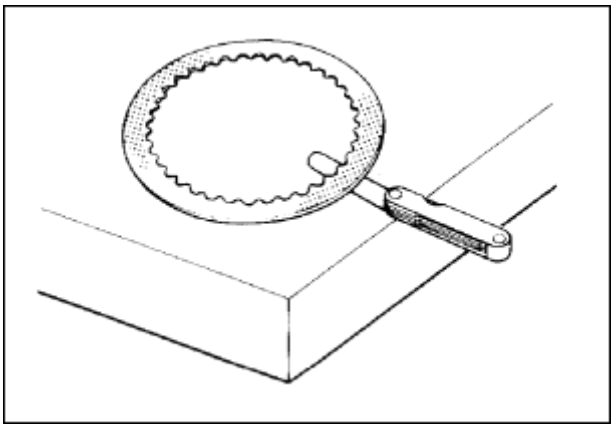
TOOL **Vernier calipers 游标卡尺 ：09900-20101**



| Clutch drive plate claw width离合器主动摩擦片爪形宽度 | Standard标准值 | Service limit极限值 |
|---|---|---|
| | 11.8~12.0 mm | 11.0 mm |

**CLUTCH DRIVEN PLATES 离合器从动片**

Measure each clutch driven plates for distortion using the thickness gauge. If a clutch driven plate is not within the service limit, replace the clutch plates as a set. 使用测厚仪测量每个离合器从动盘的变形量。 如果离合器从动盘不在使用限制范围内，请按组更换离合器盘。

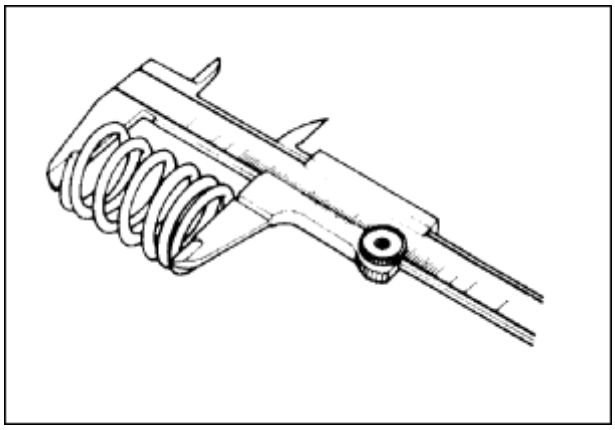


| Clutch driven plate distortion离合器从动盘变形 | Service limit极限值 |
|---|---|
| | 0.1 mm |

TOOL **Thickness gauge 测厚仪: 09900-20806**

### CLUTCH SPRING FREE LENGTH 离合器弹簧自由长度

Measure the free length of each clutch spring using vernier calipers. If any spring is not within the service limit, replace all of the spring. 使用游标卡尺测量每个离合器弹簧的自由长度。 如果任何弹簧不在使用极限范围内，请更换所有弹簧。

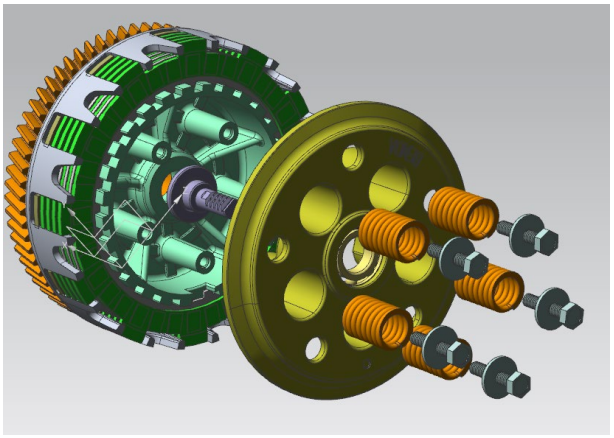


| | |
|---|---|
| Clutch spring free length 离合器弹簧自由长度 | Service limit极限值 |
| | 34.3mm |

TOOL **Vernier calipers 游标卡尺 : 09900-20101**

### CLUTCH RELEASE BEARING 离合器平面轴承

Inspect the clutch release bearing for any abnormality, especially cracks. When removing the bearing from the clutch, decide whether it can be reused or if it should be replaced. 检查离合器分离轴承是否异常，尤其是裂纹。 从离合器上拆下轴承时，请决定是否可以重复使用或是否应该更换。



Smooth engagement and disengagement of the clutch depends on the condition of this bearing. 离合器的平稳接合和分离取决于该轴承的状况。

### PRIMARY DRIVEN GEAR 主传动齿轮

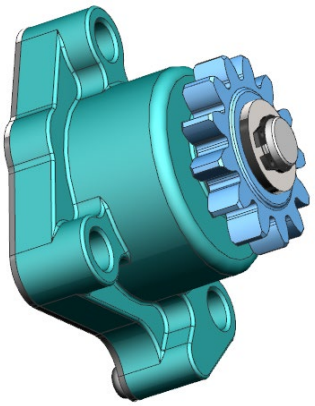
Inspect the primary driven gear bearing for any damage. 检查主从动齿轮轴承是否有损坏。

If any abnormal condition are found, replace the primary driven gear.

如果发现任何异常情况，请更换主从动齿轮。

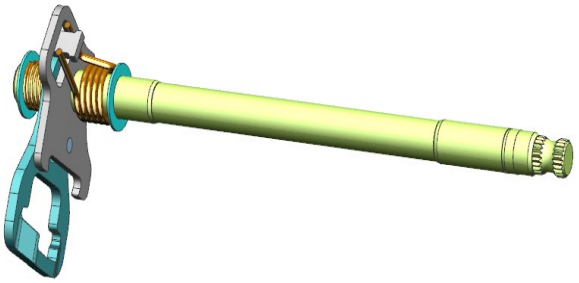
**OIL PUMP 机油泵**

Turn the oil pump shaft and check that rotation is smooth. If any abnormal condition is found, replace the oil pump with new one. 转动机油泵轴并检查旋转是否平稳。 如果发现任何异常情况，请更换新的油泵。



**GEARSHIFT SHAFT 齿轮轴**

Disassemble and reassemble the gearshift shaft as shown in right picture. 如右图所示，拆卸并重新组装变速轴。



**TRANSMISSION 传输齿轮**

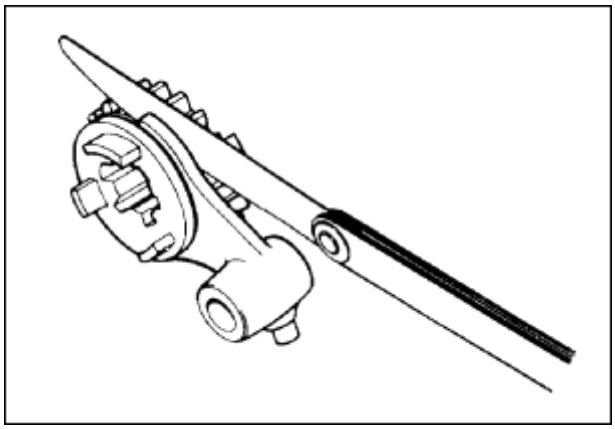
**INSPECTION 齿轮检查**

**GEAR-SHIFTING FORK 齿轮拨叉**

Using a thickness gauge, check the clearance between in the groove of its gear and shifting fork. 使用测厚仪检查其齿轮凹槽和拨叉之间的间隙。

The clearance for each of the three shifting forks plays an important role in the smoothness and positiveness of shifting action. 三个拨叉的间隙在换挡动作的平稳性和积极性方面起着重要作用。

If the clearance checked is noted to exceed the limit specified, replace the fork or its gear, or both. 如果发现检查的间隙超过规定的极限，请更换货叉或对应齿轮，或两者都更换。

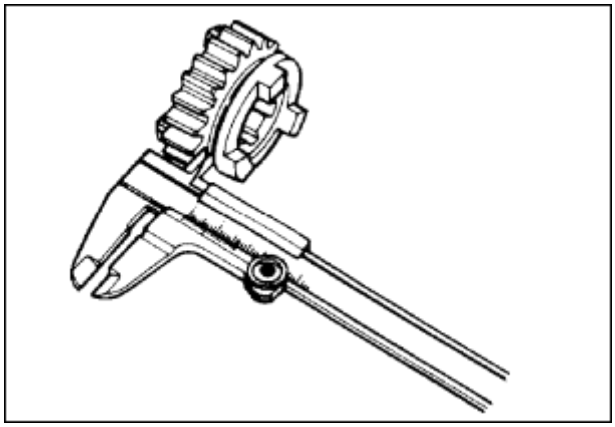


| Shift fork-groove clearance拨叉槽间隙 | Standard标准值 | Service limit极限值 |
|---|---|---|
| | 0.10~0.30 mm | 0.5 mm |

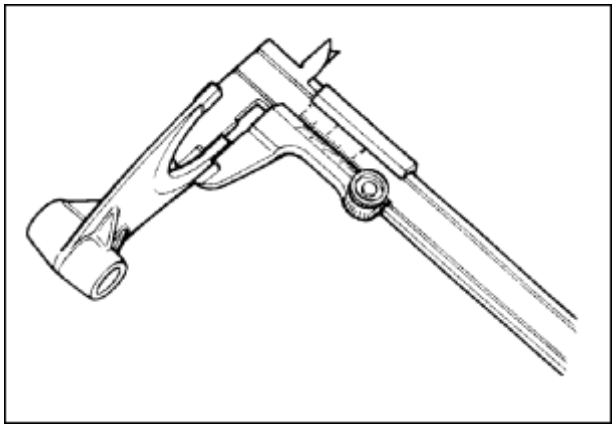
TOOL **Thickness gauge 测厚仪 ：09900-20806**

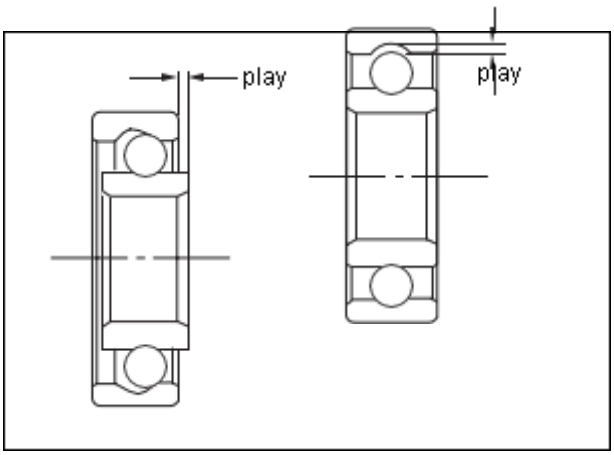
**Vernier calipers 游标卡尺: 09900-20101**

| Shift fork groove width 拨叉槽间隙 | Standard标准值 |
|---|---|
| NO.1 & NO.2 | 5.0~5.1 mm |
| NO.3 | 5.0~5.1mm |



| Shift fork thickness拨叉厚度 | Standard标准值 |
|---|---|
| NO.1 & NO.2 | 4.8~4.9 mm |
| NO.3 | 4.8~4.9 mm |






**CRANKCASE 曲轴箱**

**BEARING INSPECTION 轴承检查**

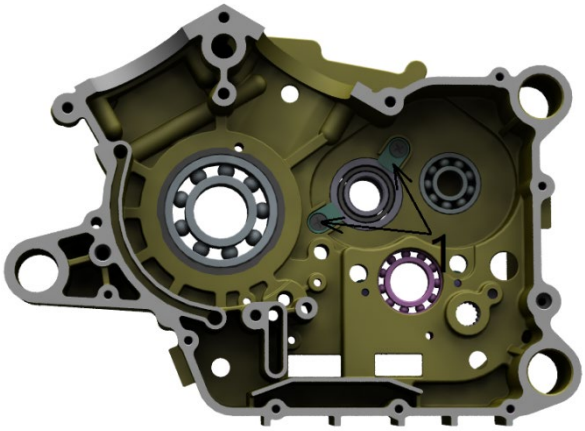
Rotate the bearing inner race by finger to inspect for abnormal play, noise and smooth rotation while the bearings are in the crankcase. 用手指旋转轴承内圈，以检查轴承在曲轴箱中时是否有异常游隙，噪音和平稳旋转。

Replace the bearing in the following procedure if there is anything unusual. 如果发现异常，请按照以下步骤更换轴承。

**DISASSEMBLY 轴承拆卸**

**RIGHT CRANKCASE BEARING** 右曲轴箱轴承

Remove the bearing retaine1r. 拆下轴承挡板 1。

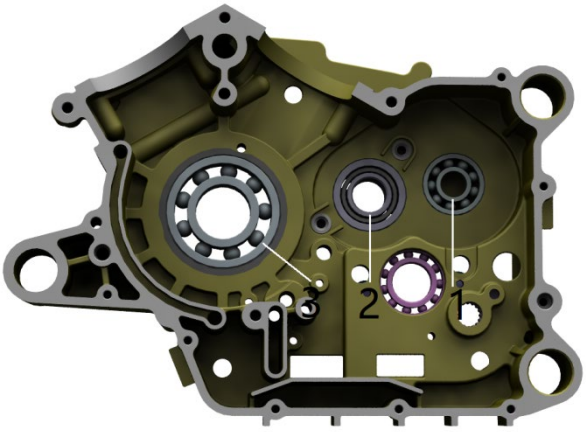



Remove the bearings ① and ②. 拆下轴承①和②。

TOOL **Bearing remover 轴承拆卸器(17 mm) : 09923-73210**

**Bearing remover 轴承拆卸器(20~35 mm) : 09923-74510**

TOOL **Bearing installer 轴承安装器: 09913-76010**



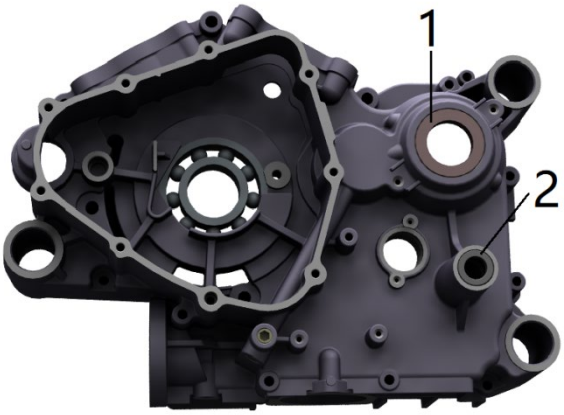

**⚠ CAUTION 警告**

**The removed bearing should be replace with a new one. 拆下的轴承应更换新的轴承。**

**LEFT CRANKCASE BEARING 左曲轴箱轴承**

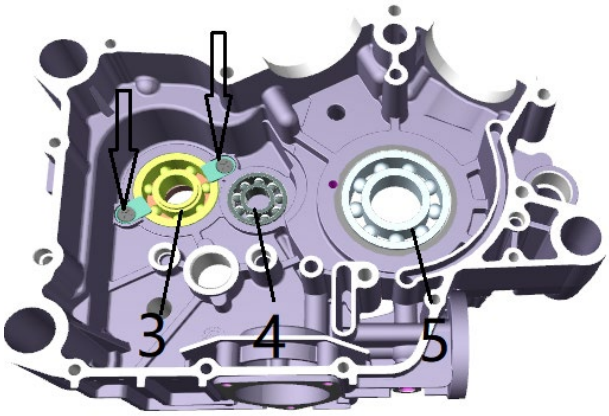
Remove the oil seals 1 and 2. 拆下油封 1 和 2。

TOOL **Oil seal remover 油封去除器 : 09913-50121**



Remove the bearing retainer. 拆下轴承挡板。

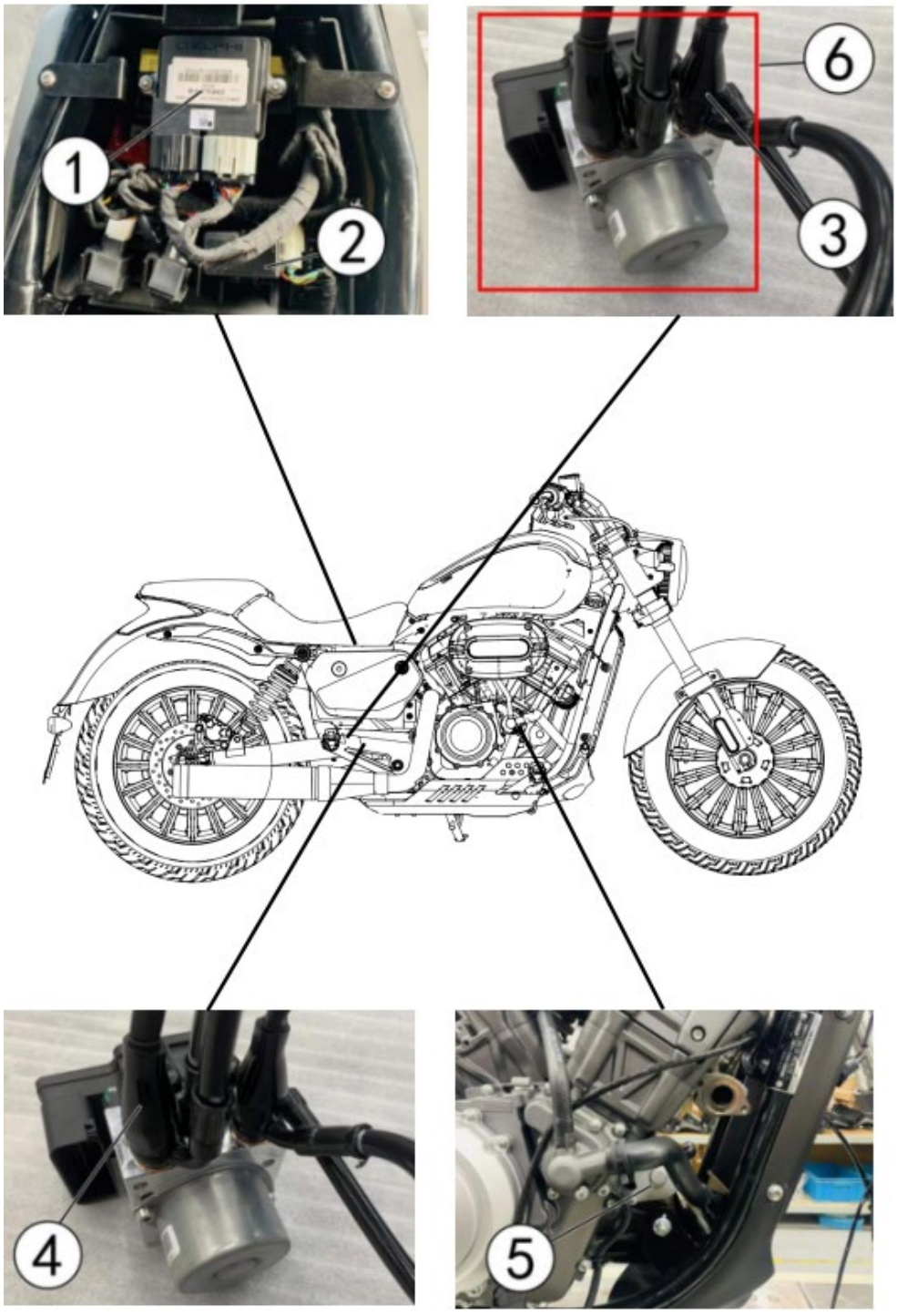
Remove the bearings 3,4 and 5. 拆下轴承 3,4 和 5。




TOOL **Bearing remover 轴承拆卸器(17 mm) : 09923-73210**

**Bearing remover 轴承拆卸器(20~35 mm) : 09923-74510**

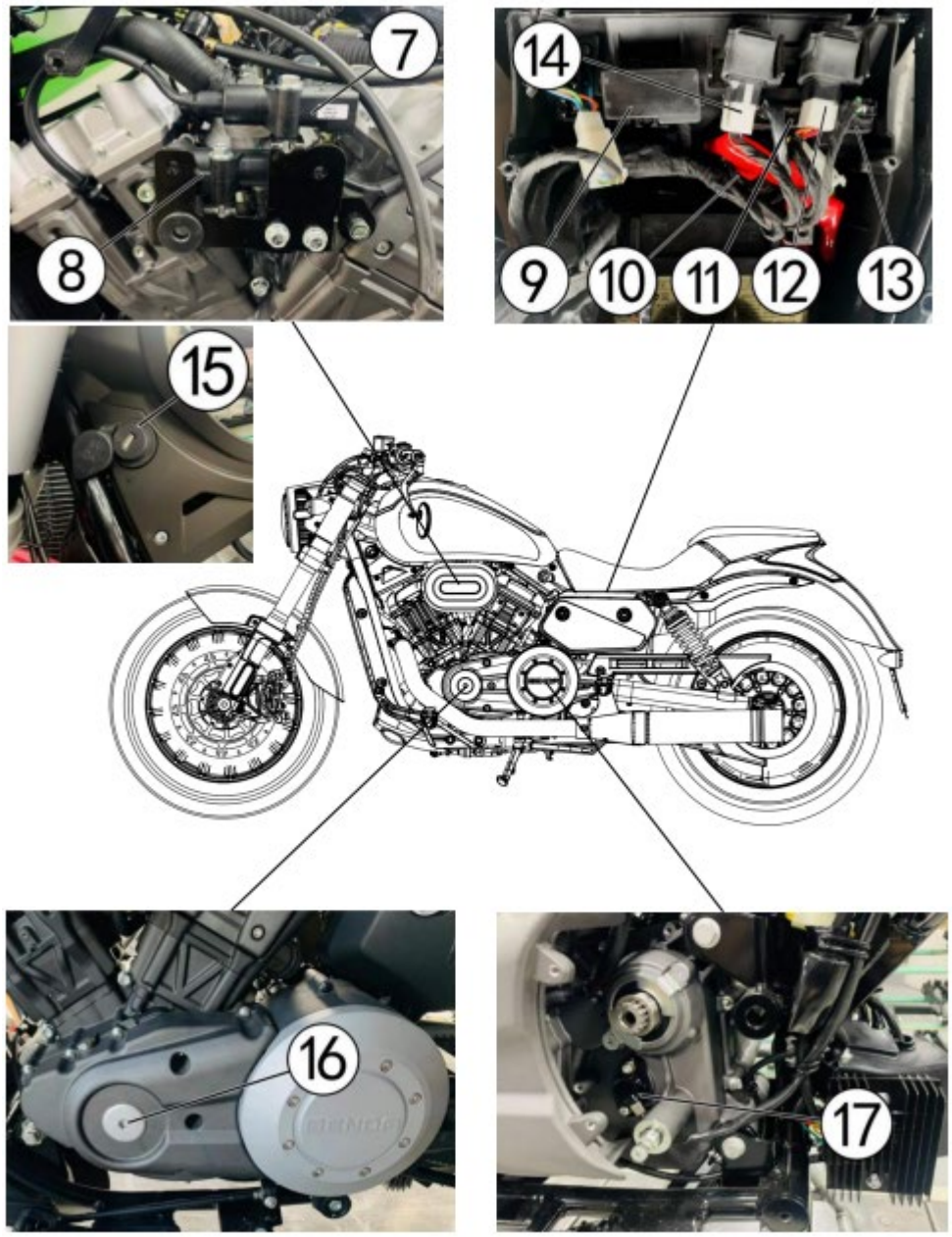
# LOCATION OF ELECTRICAL COMPONENTS 电气元件的位置




| | | | | | |
|---|---|---|---|---|---|
| ① | ECU | ② | Fuse保险丝 | ③ | Front brake lamp switch前刹车灯开关 |
| ④ | Rear brake lamp switch后刹 | ⑤ | Starter motor启动电机 | ⑥ | ABS |

| | | | | | |
|---|---|---|---|---|---|
| | 车灯开关 | | | | |





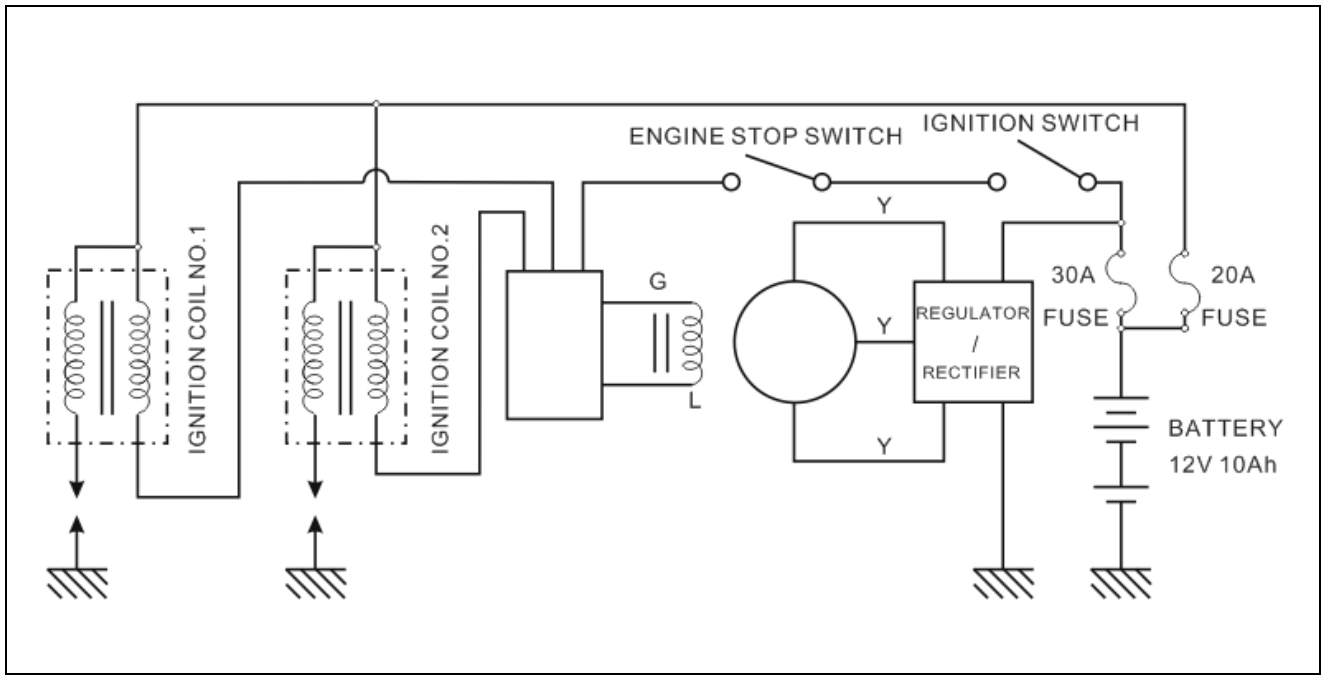

| | | | | | |
|---|---|---|---|---|---|
| ⑦ | Ignition coil (NO.1 FRONT) 高压包（1号前） | ⑧ | Ignition coil (NO.2 REAR) 高压包（2号后） | ⑨ | ECU fuse box ECU保险盒 |
| ⑩ | Main relay 主继电器 | 11 | (RO) switch（倾倒）开关 | 12 | Logic relay1 逻辑继电器1 |
| 13 | Flasher 闪光器 | 14 | Logic relay2 逻辑继电器2 | 15 | USB socket USB插座 |
| 16 | Magneto 磁电机 | 17 | Gear position switch 档位开关 | | |

**⚠ CAUTION 警告**

**Be sure not to misassemble the position of battery plus & minus terminal.** 确保不要弄错电池正负端子的位置。



## IGNITION SYSTEM点火系统



## □ INSPECTION 检查

### □ MAGNETO磁电机

□ Using the pocket tester, measure the resistance between the lead wires in the following table. 使用万用表测试仪，测量下表中导线之间的电阻。

□ If the resistance is not within the specified value, replace the stator coil, with a new one.

如果电阻不在指定值内，请更换新的定子线圈。

| Stator coil resistance定子线圈电阻 | Standard标准 |
|---|---|
| Pick-up coil 感应线圈 | G－L 约Approx. 95 ~ 125 Ω |
| Charging coil充电线圈 | Y－Y 约Approx. 0.3 ~ 0.6 Ω |

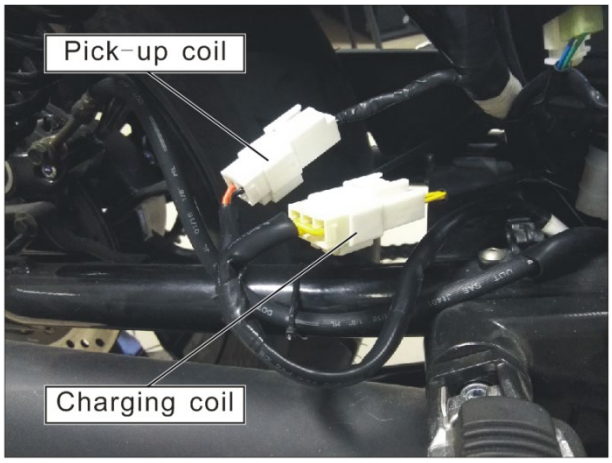
**Pocket Tester :09900-25002**

**万用表测试仪：09900-25002**

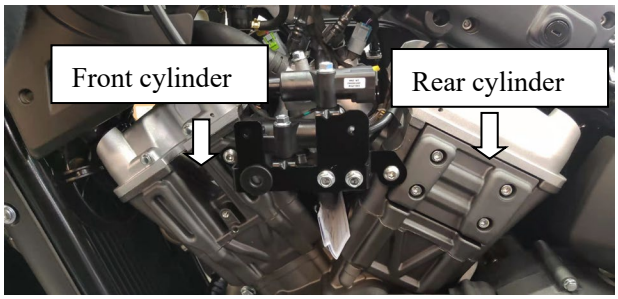
**Tester knob indication : Resistance(Ω) 测试仪旋钮指示：电阻（Ω）**

***NOTE 注意***

***When making above test, it is not necessary to remove the magneto. 进行上述测试时，无需卸下磁电机。***

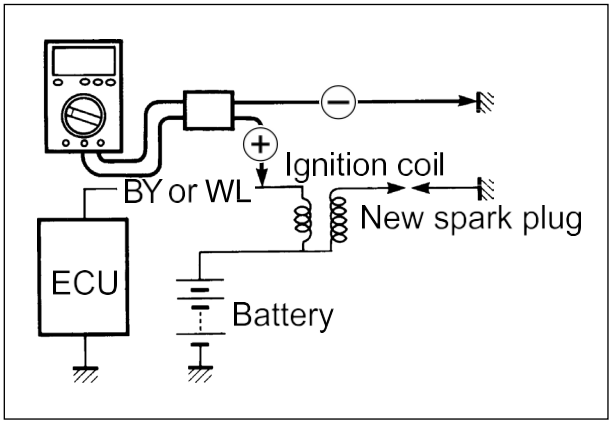


## IGNITION COIL PRIMARY PEAK VOLTAGE INSPECTION 点火线圈主峰值电压检查




- Remove the fuel tank and frame cover. 拆下燃油箱和车架盖。
- Disconnect the two spark plug caps. 断开两个火花塞盖。
- With the spark plug cap connected, place a new spark plug on the engine to ground it. 连接好火花塞盖后，将新的火花塞放在发动机上接地。

| ***NOTE 注意*** |
|---|
| ❖ ***Check that all the couplers are connected. 检查是否已连接所有耦合器。*** <br> ❖ ***Check that the all battery is fully charged. 检查所有电池是否充满电。*** |

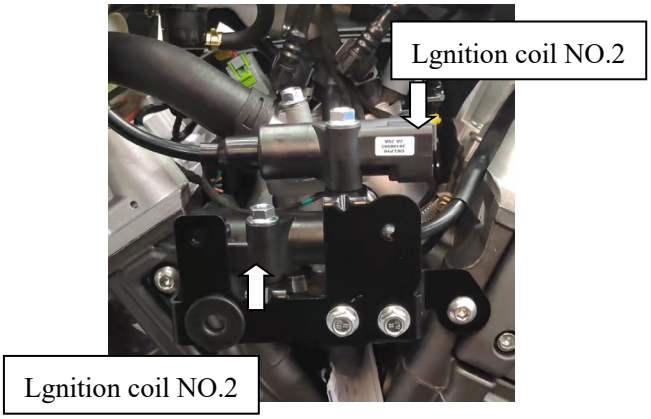



Measure the No.1 and No.2 ignition coil primary peak voltage using the tester in the following procedure. 按照以下步骤，使用测试仪测量 1 号和 2 号点火线圈的一次峰值电压。

- Connect the tester as follows. 如下连接测试仪。

| **NO.1 Ignition coil 1号点火线圈** | |
|---|---|
| ⇒ | ⊕ Probe : BY lead wire terminal探头：BY引线端子 |
| | ⊖ Probe : Ground探头：地面 |

| **NO.2 Ignition coil 2号点火线圈** | |
|---|---|
| ⇒ | ⊕ Probe : WL lead wire terminal探头：WL引线端子 |
| | ⊖ Probe : Ground探头：地面 |




| ***NOTE 注意*** |
|---|
| ***Do not disconnect the ignition coil / plug cap lead wire couplers. 请勿断开点火线圈/插头盖导线耦合器。*** |

- Shift the transmission into the neutral and then turn the ignition switch to the “ON” position. 将变速箱换至空挡，然后将点火开关转到“ ON”位置。
- Squeeze the clutch lever. 压下离合器杆。
- Press the starter switch and allow the engine to crank for a few seconds, and then measure the ignition coil primary peak voltage. 按下起动器开关，让发动机起动几秒钟，然后测量点火线圈的一次峰值电压。

● Repeat the above procedure a few times and measure the highest ignition coil primary peak voltage.
重复上述步骤几次，并测量最高的点火线圈初级峰值电压。

| Ignition coil primary peak voltage<br>点火线圈一次峰值电压 | 400 V and more<br>400 V及更高 |
|---|---|

Pocket tester : 09900-25002

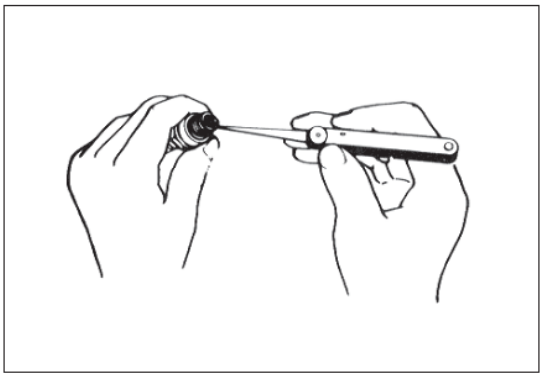
Tester knob indication : Voltage (⎓)

万用表测试仪：09900-25002

测试仪旋钮指示：电压

## ■ SPARK PLUG 火花塞

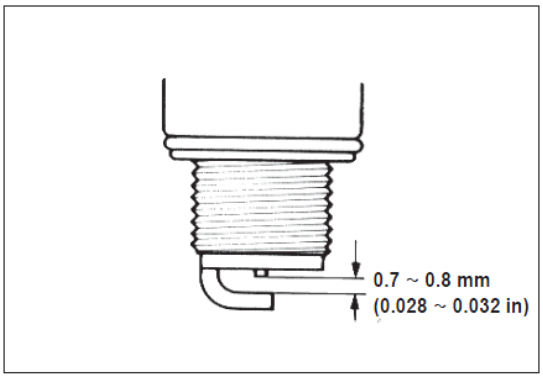
### ▷ CARBON DEPOSITS碳存量



Check to see if there are carbon deposits on the spark plug. 检查火花塞上是否有积碳。

If carbon is deposited, remove it with a spark plug cleaner machine or carefully use a tool with a pointed end. 如果有积碳，请用火花塞清洁机清除碳，或小心使用尖端的工具清洁。

### ▷ SPARK PLUG GAP火花塞间隙




Measure the spark plug gap with a thickness gauge. 用测厚仪测量火花塞间隙。

If the spark plug gap is out of specification, adjust the gap. 如果火花塞间隙超出规格，请调整间隙。

| | |
|---|---|
| Spark plug gap火花塞间隙 | 0.7 ~ 0.8 mm (0.028 ~ 0.032 in) |

TOOL Thickness gauge : 09900-20806
TOOL 测厚仪：09900-20806

### ▷ ELECTRODE'S CONDITION电极的状况

Check to see the worn or burnt condition of the electrodes. 检查电极的磨损或燃烧状况。

If it is extremely worn or burnt, replace the spark plug 如果磨损严重或燃烧过量，请更换火花塞。

Replace the spark plug if it has a broken insulator, damaged thread, etc. 如果火花塞的绝缘端子断裂，螺纹损坏等，请更换。

⚠ CAUTION警告

**Use recommended spark plug only. 只能使用推荐的火花塞。**
**A spark plug of the wrong rating may shorten engine life and cause loss of performance. 额定值错误的火花塞可能会缩短发动机寿命并造成性能损失。**

### ▷ SPARK PLUG INSTALLATION 火花塞安装

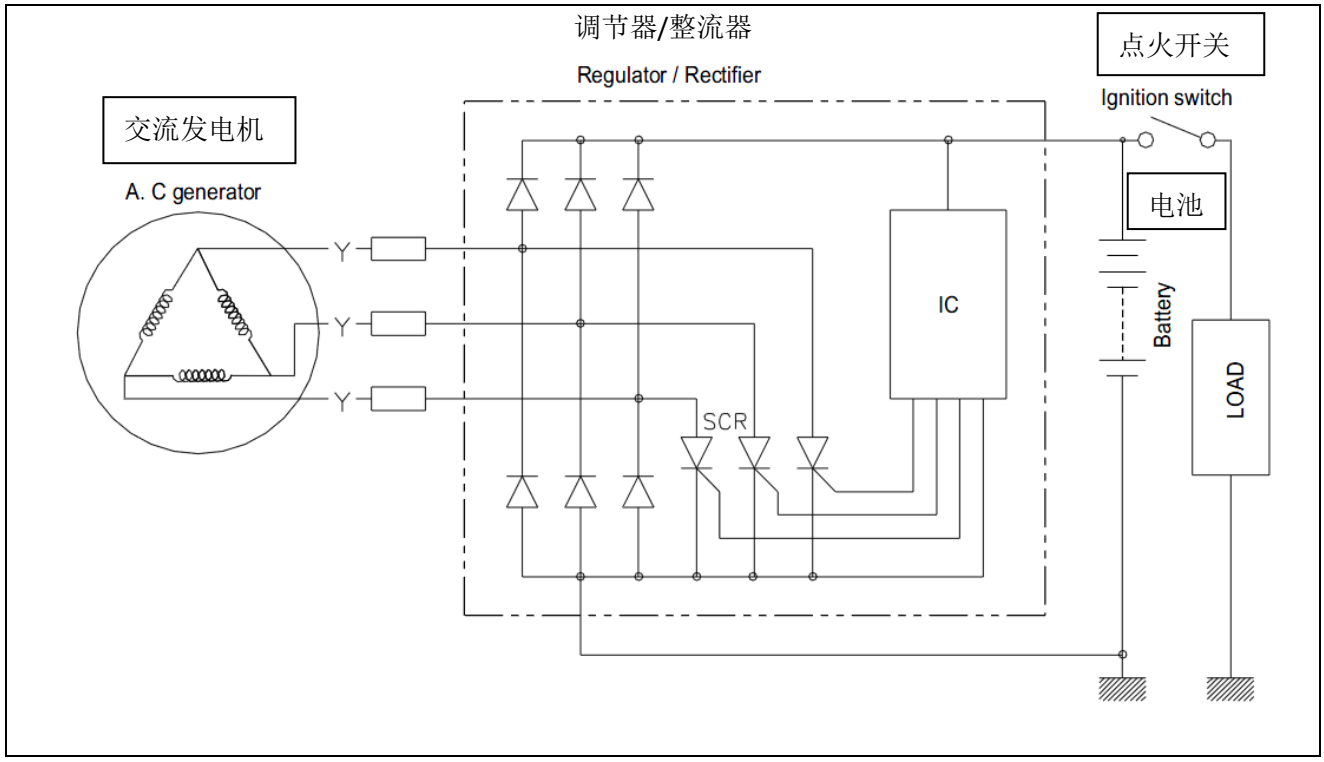
**⚠ CAUTION 警告**

**Before tightening the spark plug to the specified torque, carefully turn the spark plug by finger into the threads of the cylinder head to prevent damage the aluminum threads. 在将火花塞拧紧到规定的扭矩之前，请用手指小心地将火花塞旋入气缸盖的螺纹中，以免损坏铝螺纹。**

● First, finger tighten the spark plug, and then tighten them to the specified torque. 首先，用手指拧紧火花塞，然后将其拧紧至规定的扭矩。

Spark plug火花塞扭力
: 15 ~ 20 N·m (1.5 ~ 2.0 kgf·m)

# CHARGING SYSTEM充电系统



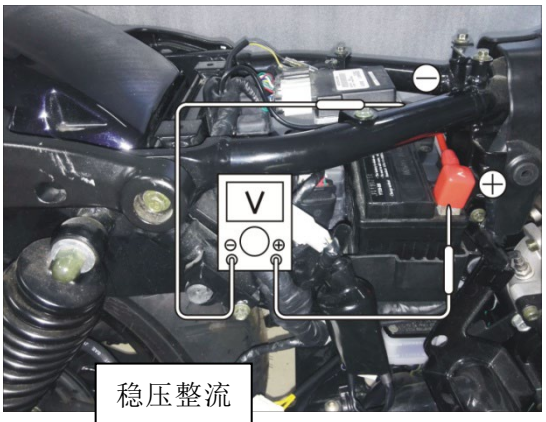

## INSPECTION检查

### CHARGING OUTPUT CHECK充电输出检查

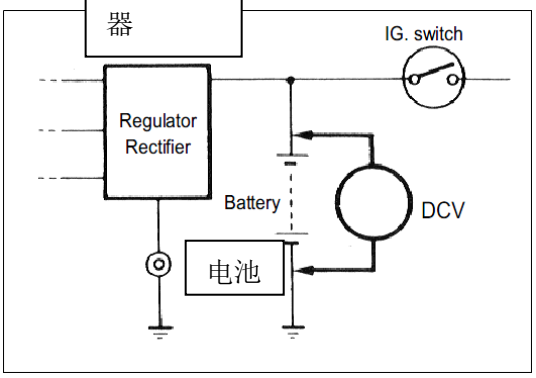
Start the engine and keep it running at 5,000 rpm. 启动发动机并使其以5,000 rpm的速度运转。

Using the pocket tester, measure the DC voltage between the battery terminal ⊕ and ⊖.使用万用表测试仪测量电池端子和之间的直流电压。

If the voltage is not within the specified value, check the magneto no-load performance and regulator / rectifier. 如果电压不在规定值内，请检查磁电机的空载性能和调节器/整流器。




稳压整流器




**⚠ CAUTION警告**

**When making this test, be sure that the battery is full-charged condition. 进行此测试时，请确保电池已充满电。**

| | |
|---|---|
| **Standard charge标准电压** | 13.5 ～ 15.0 V (at 5,000 rpm) |

Pocket tester : 09900-25002

Tester knob indication : Voltage (⎓)

万用表测试仪：09900-25002

测试仪旋钮指示：电压

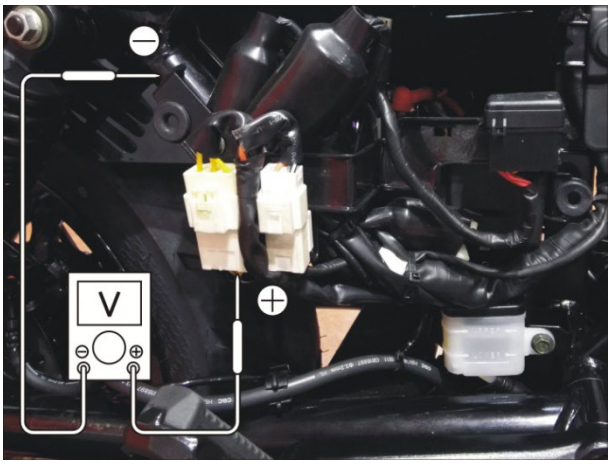
## MAGNETO NO-LOAD PERFORMANCE 磁电机空载性能

Disconnect the three lead wires from the magneto terminal. 从磁电机端子上断开三根导线。

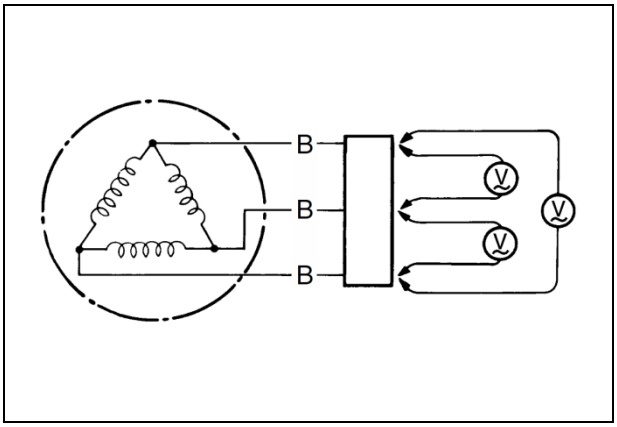
Start the engine and keep it running at 5,000 rpm. 启动发动机并使其以 5,000 rpm 的速度运转。

Using the pocket tester, measure the AC voltage between the three lead wires. 使用万用表测试仪测量三根导线之间的交流电压。

If the voltage is under the specified value, replace the magneto with a new one. 如果电压低于指定值，请用新的磁电机更换。




| | |
|---|---|
| **Standard no-load performance of magneto 磁电机的标准空载性能** | Over 60 V (at 5,000 rpm) |




**Pocket tester : 09900-25002**

万用表测试仪：09900-25002

**Tester knob indication : Voltage (~)**

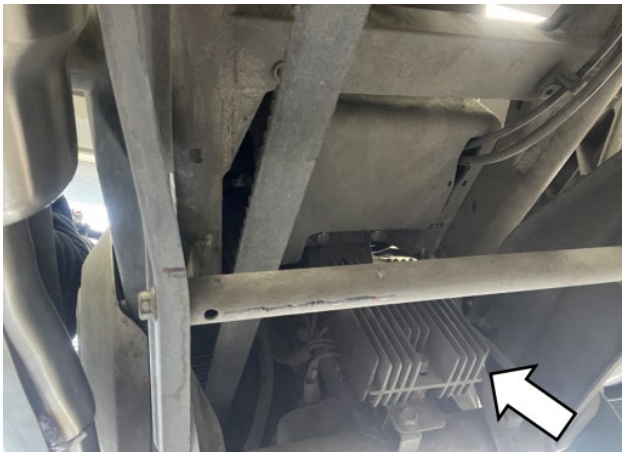
**测试仪旋钮指示：电压（～）**

## REGULATOR / RECTIFIER 调节器/整流器

Disconnect the regulator / rectifier couplers. 断开调节器/整流器耦合器。

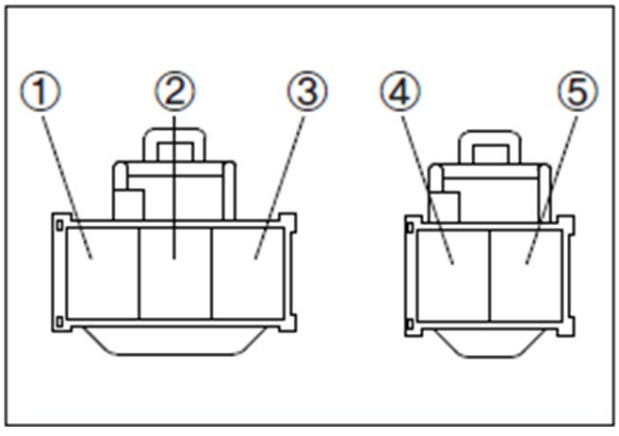
Measure the voltage between the terminals using the pocket tester as indicated in the table below. 如下表所示，使用便携式测试仪测量端子之间的电压。

If the voltage is not within the specified value, replace the regulator / rectifier with a new one. 如果电压不在指定值内，则用新的稳压器/整流器更换。



Unit 单位: V

| – Tester probe 测试仪探头 | + Tester probe 测试仪探头 | | | | | |
|---|---|---|---|---|---|---|
| | ⑤ | ④ | ③ | ② | ① | |
| | 0.4~0.7 | 0 | 0 | 0 | \ | ① |
| | 0.4~0.7 | 0 | 0 | \ | 0 | ② |
| | 0.4~0.7 | 0 | \ | 0 | 0 | ③ |
| | 1.8 ~ 2.1 | \ | 0 | 0 | 0 | ④ |



| | | | | | | |
|---|---|---|---|---|---|---|
| | ⑤ | 0 | 0 | 0 | 0 | |

**Pocket tester : 09900-25002**

**万用表测试仪：09900-25002**

**Testerknobindication:Diodetest (⊣←)**

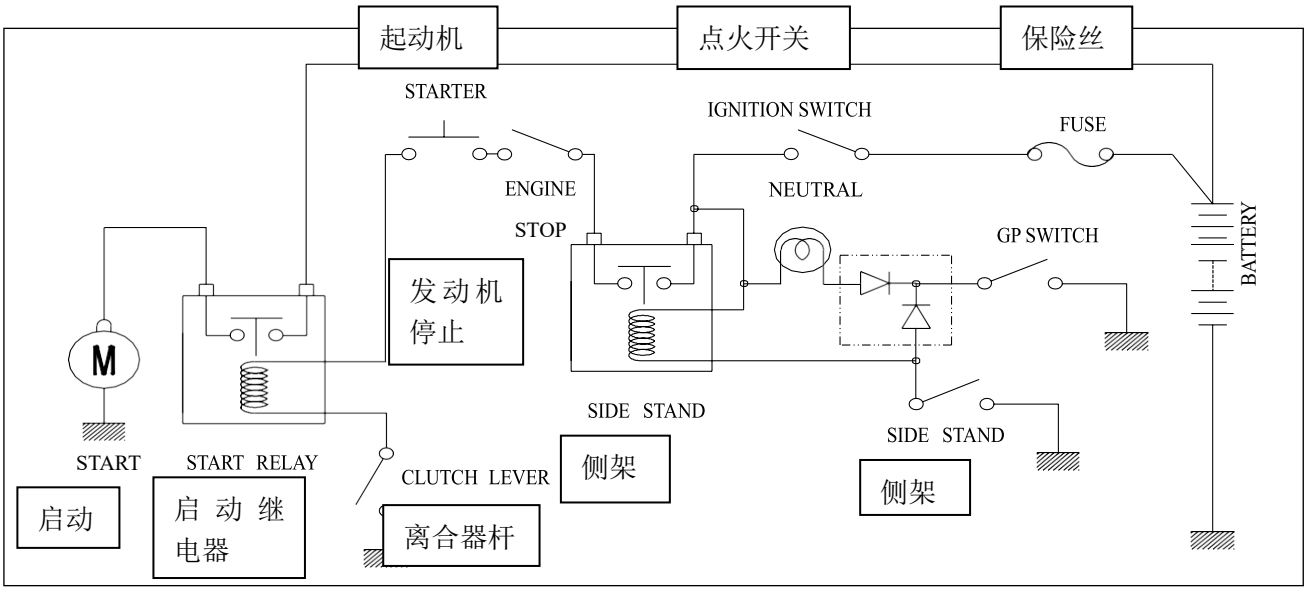
测试仪旋钮指示：二极管测试（）

# STARTER SYSTEM AND SIDE STAND IGNITION INTERLOCK SYSTEM 起动器系统和侧架点火联锁系统

## ⊙ STARTER SYSTEM DESCRIPTION 起动器系统说明

The starter system consists of the following components : the starter motor, starter relay, clutch lever switch, side stand switch, GP switch, starter switch, engine stop switch, ignition switch and battery. 起动器系统由以下组件组成：起动器电动机，起动器继电器，离合杆开关，侧支架开关，GP开关，起动器开关，发动机停止开关，点火开关和电池。

Pressing the starter switch (on the right handlebar switch) energizes the starter relay, causing the contact points to close, thus completing the circuit from the starter motor to the battery. 按下起动器开关（位于右侧车把开关上）会给起动器继电器通电，使触点闭合，从而完成从起动器电动机到电池的电路。






## SIDE STAND / IGNITION INTERLOCK SYSTEM DESCRIPTION 侧架/点火联锁系统说明

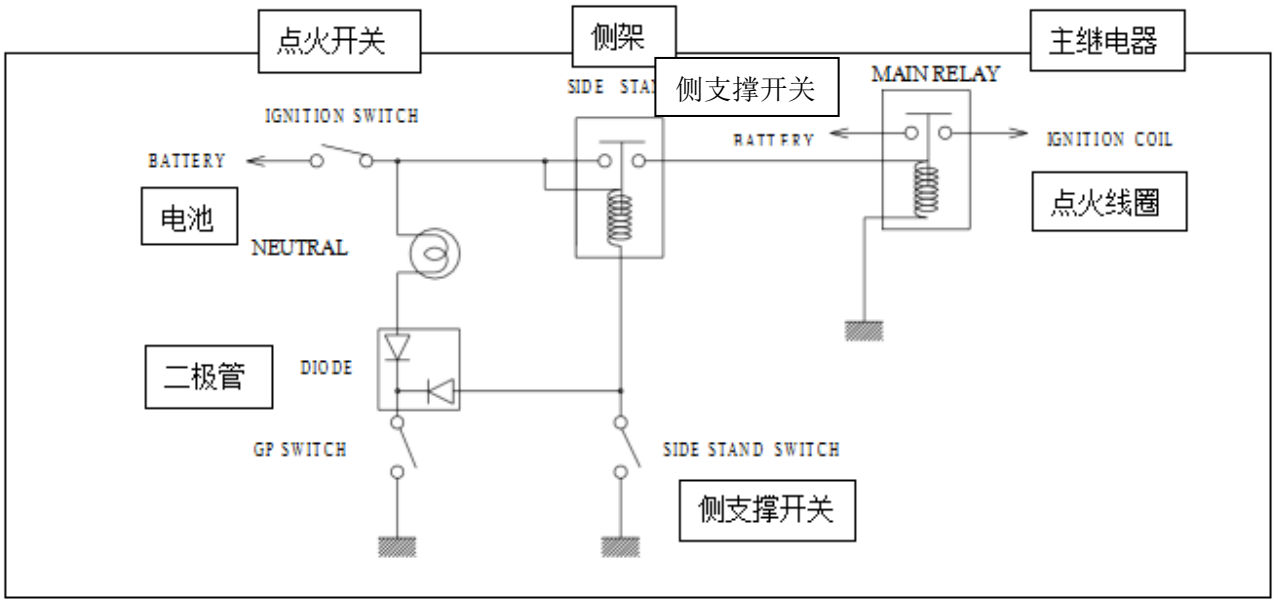
This side stand / ignition interlock system prevents the motorcycle from being started with side stand down. 该侧支架/点火互锁系统可防止摩托车在侧支架朝下的情况下启动。

The system is operated by an electric circuit provided between the battery and ignition coil. 该系统由电池和点火线圈之间的电路操作。

The circuit consists of the neutral indicator light and switches. 该电路由指示灯和开关组成。

The ignition coils will send voltage to the spark plugs depending on what gear the transmission is in and whether the side stand is either up or down. 点火线圈将根据变速器所处的档位以及侧支架是向上还是向下来向火花塞发送电压。

The gear position and side stand switches work together in this system. The ignition coil work only in two situations as follows. 档位开关和侧支架开关在该系统中协同工作。 点火线圈有两个

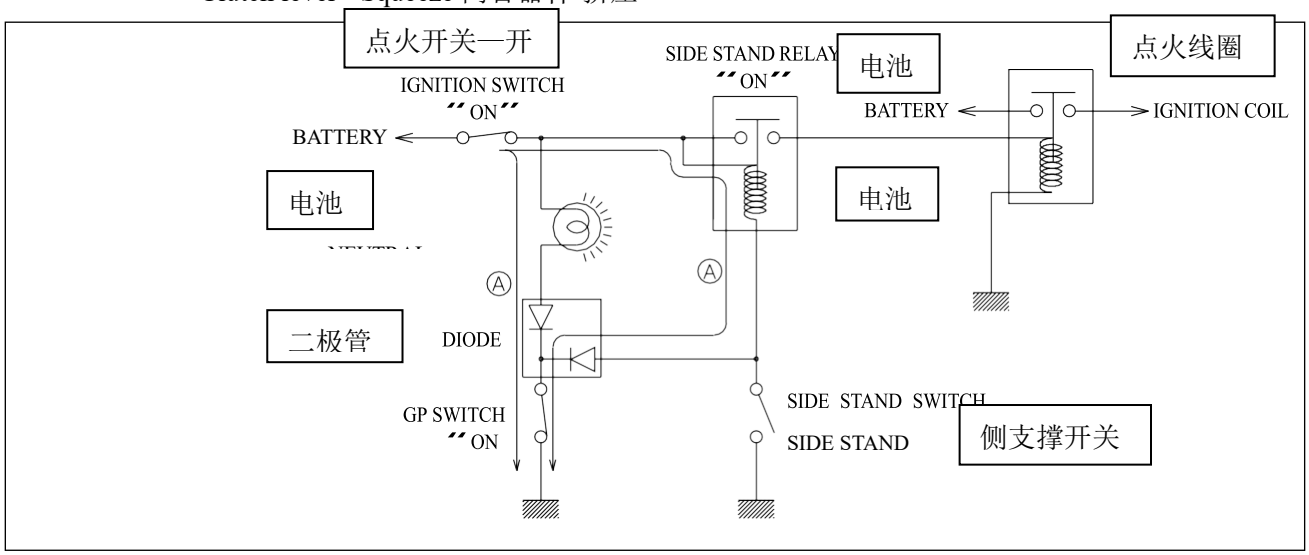





**TRANSMISSION :** Neutral – ″ON″ 变速箱：空挡—“开”
Side stand - Down 侧面支架-向下

侧撑继电器

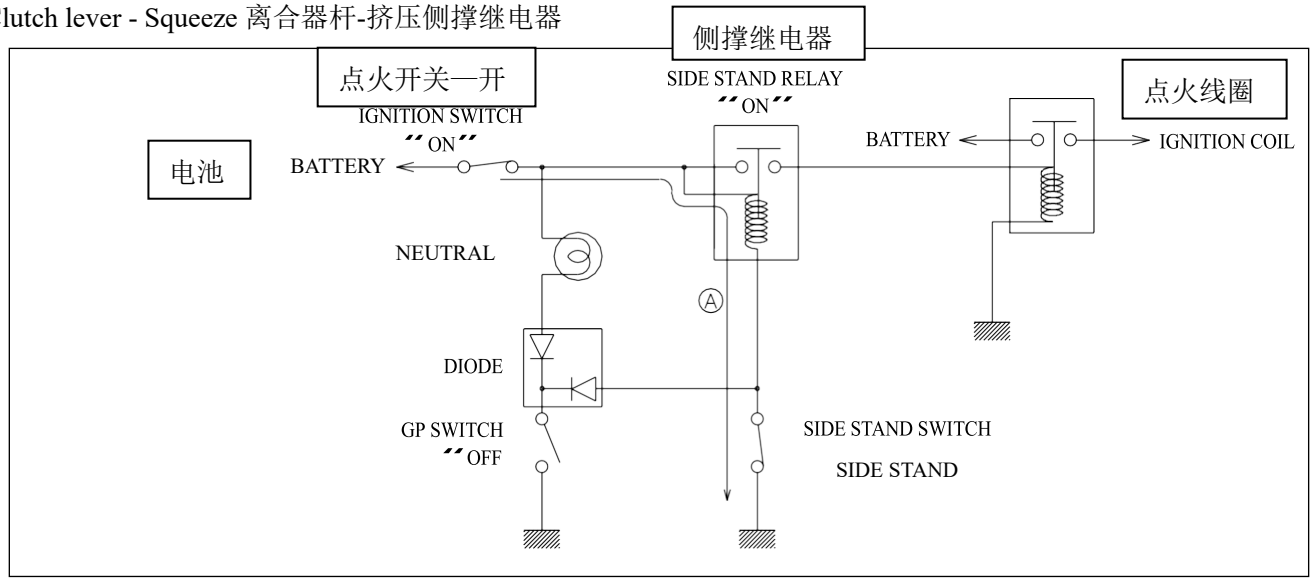
Clutch lever - Squeeze 离合器杆-挤压




**TRANSMISSION :** Neutral - 〞OFF〞 变速箱：空挡—“关”

Side stand - Up 侧面站立-向上

Clutch lever - Squeeze 离合器杆-挤压侧撑继电器




BD300-16 are equipped with the side stand ignition interlock system.

BD300-16配备了侧支架点火联锁系统。

If the transmission is in neutral, the engine can be started. If the transmission is not in neutral, the clutch lever must be pulled to start the engine.

如果变速箱处于空档，可以启动发动机。 如果变速箱处于非空档状态，必须拉动离合器杆来启动发动机。

二极管

| NO | Neutral switch 空档开关 | Clutch lever 离合器杆 | Side stand 侧架 | Engine Start发动机启动 |
|---|---|---|---|---|

侧支撑开关

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | ● | △ | △ | Possible可以 | ***N O T E注意*** | |
| 2 | △ | ● | ● | Possible可以 | | |
| 3 | △ | ● | △ | Possible可以 | ● | ***On or Up 开启或向上*** |
| 4 | △ | △ | ● | Impossible不可以 | △ | ***Off or Down 关闭或向下*** |
| 5 | △ | △ | △ | Impossible不可以 | | |



## STARTER MOTOR REMOVAL AND DISASSEMBLY 起动电机的拆卸


- Disconnect the starter motor lead wire ②. (Refer to page 3-6) 断开起动电机的导线②。（请参阅第3-6页）
- With loosen the bolt ①, remove the starter motor. (Refer to page 3-6) 松开螺栓①，然后拆下起动电机。 （请参阅第3-6页）
- Disassemble the starter motor. 拆卸起动电机。

## ◉ STARTER MOTOR INSPECTION起动

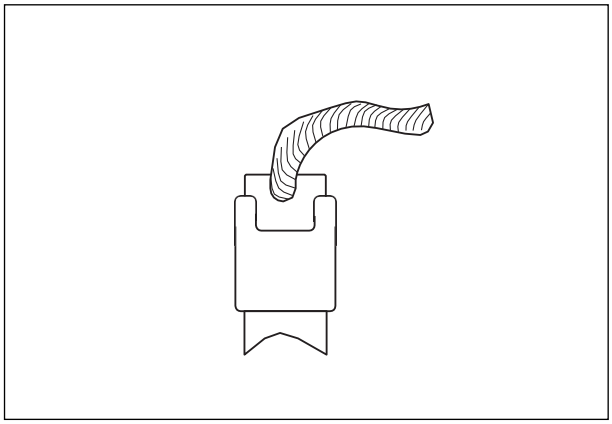
### 马达检查

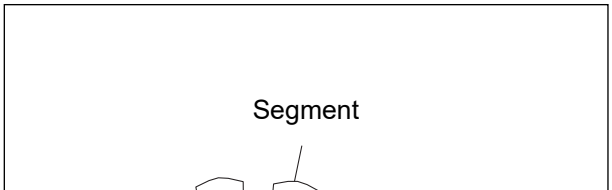
□ **CARBON BRUSH碳刷**

Inspect the brushes for abnormal wear, crack or smoothness in the brush holder. 检查电刷架中的电刷是否异常磨损、破裂或光滑。

If the brush has failed, replace the brush sub assy.

如果刷子发生故障，请更换刷子组件。





**COMMUTATOR 换向器**

Inspect the commutator for discoloration, abnormal wear or undercut ③. 检查换向器是否变色，异常磨损或咬边③。

If the commutator is abnomally worn, replace the armature. 如果换向器异常磨损，请更换电枢。

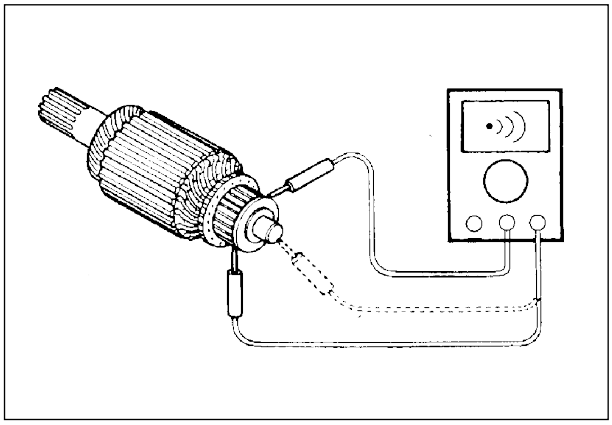
When surface is discolored, polish it with #400 sand paper and clean it with dry cloth. 当表面变色时，用＃400 砂纸打磨并用干布清洁。

**ARMATURE COIL INSPECTION 电枢线圈检查**

Check for continuity between each segment. 检查每个段之间的连续性。

Check for continuity between each segment and the armature shaft. 检查各节和电枢轴之间的导通性。

If there is no continuity between the segments or there is continuity between the segment and shaft, replace the starter motor with a new one. 如果各节之间没有连通性，或者各节与轴之间没有连通性，请更换新的起动马达。



TOOL **Pocket tester : 09900-25002**

TOOL **万用表测试仪：09900-25002**

**Tester knob indication**
**: Continuity test ( •))) )**

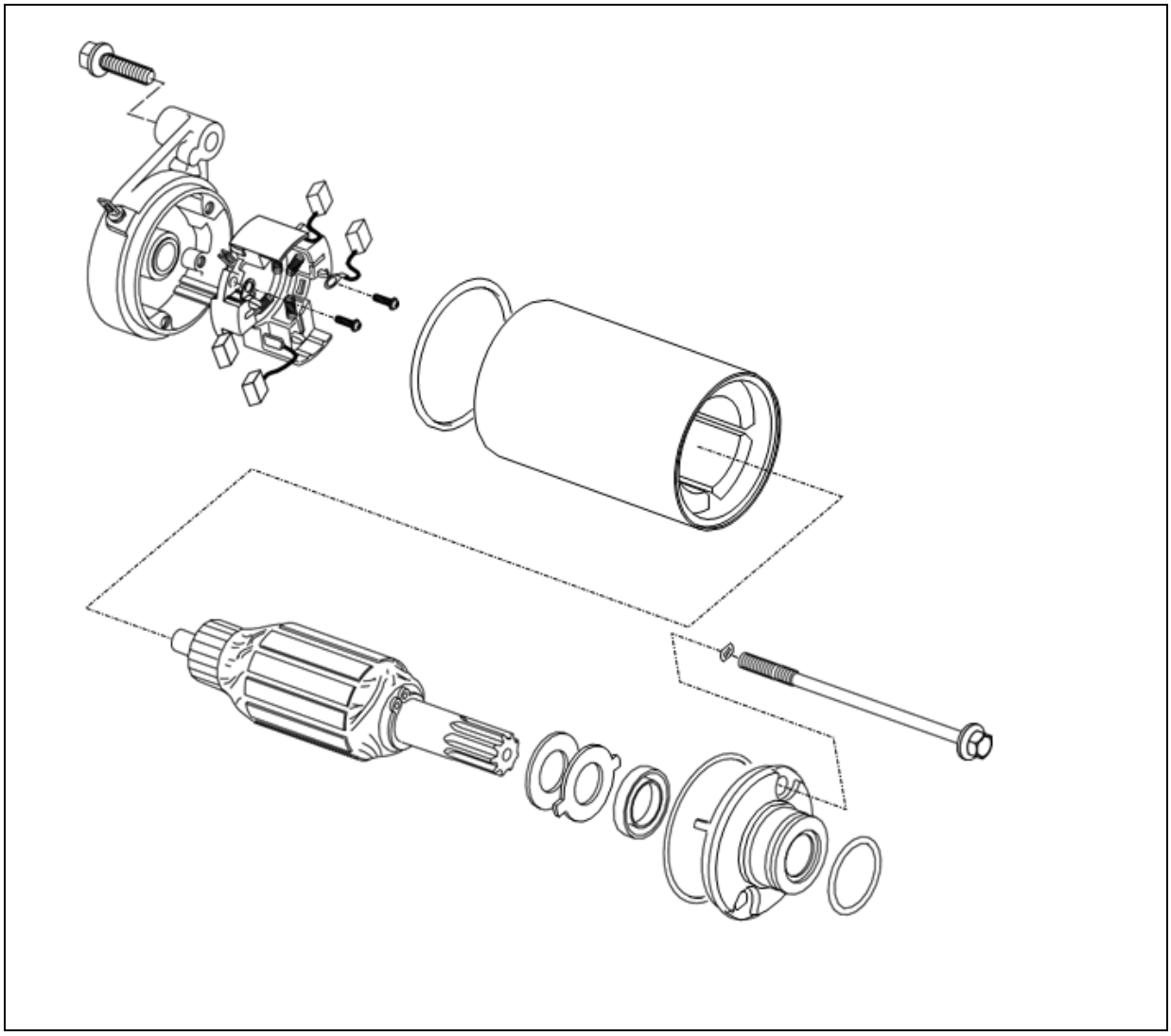
测试仪旋钮指示：连续性测试



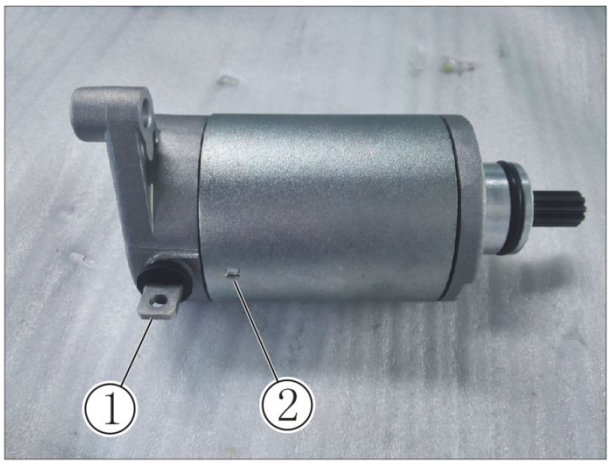
□ **STARTER MOTOR REASSEMBLY起动电动机的重新组装**

Reassembly the starter motor. Pay attention to the following points : 重新组装起动电机。 请注意以下几点：

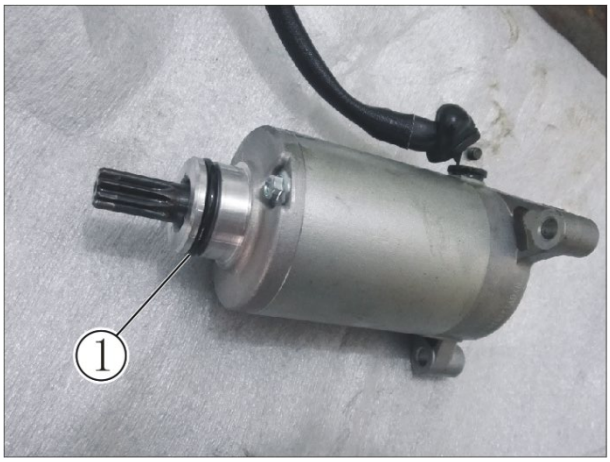
- Reassembly the starter motor as shown in the illustration. 如图所示，重新组装起动电机。



- Align the mark ① on the housing with the line ② on the housing end. 将外壳上的标记①与外壳末端上的线②对齐。



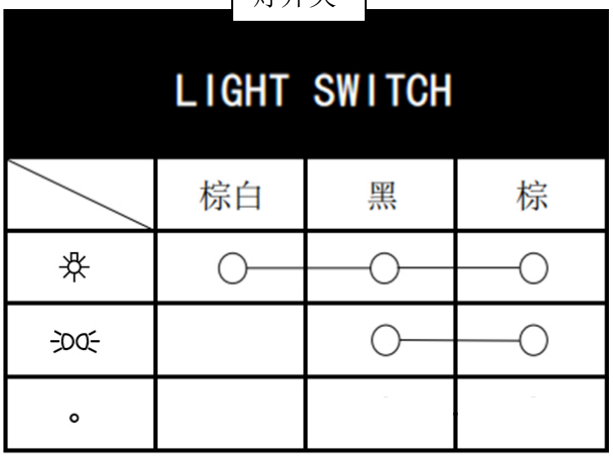

- Apply GREASE to the O-ring ① and remount the starter motor. 在 O 形圈①上涂抹油脂，然后重新安装起动电机。



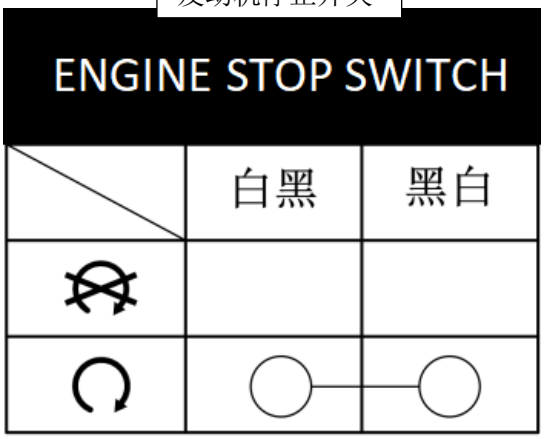
## SWITCHES 开关

Measure each switch for continuity using a tester. If any abnormality is found, replace the respective switch assemblies with new ones. 使用测试仪测量每个开关的导通性。 如果发现任何异常，请更换新的开关组件。

灯开关

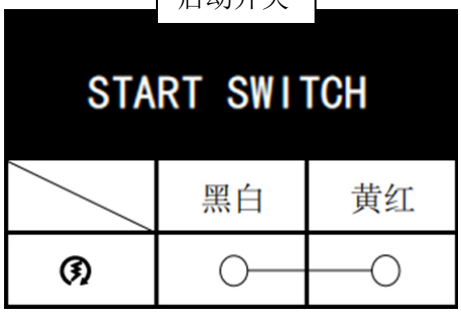



发动机停止开关

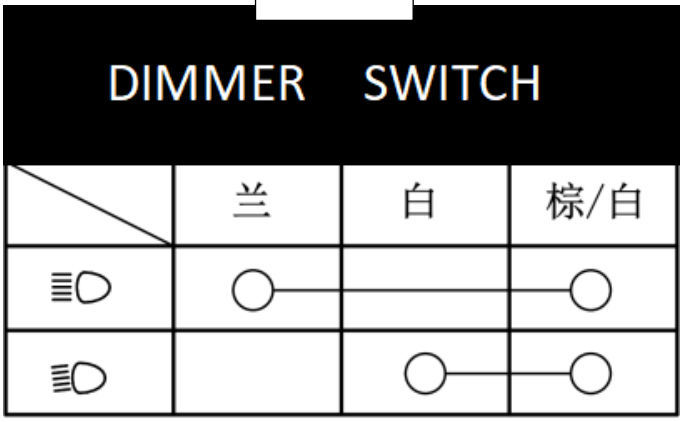



警示开关

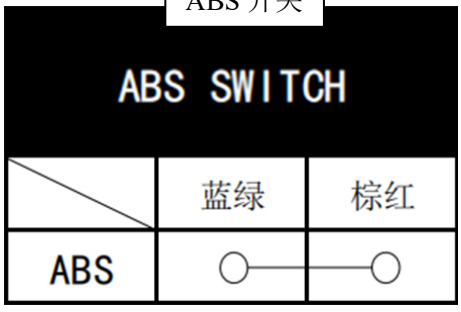

启动开关




变光开关

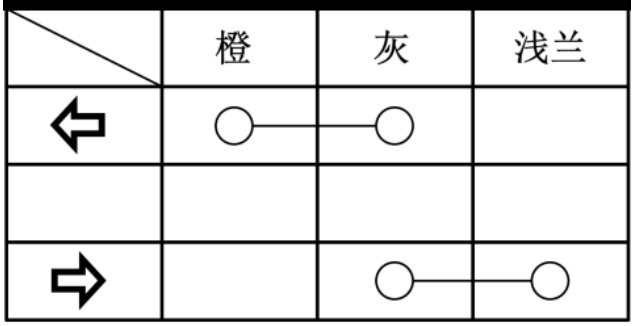



ABS 开关



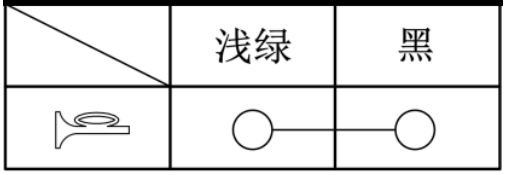
转向灯开关

TURN SIGNAL SWITCH




喇叭开关

HORN SWITCH

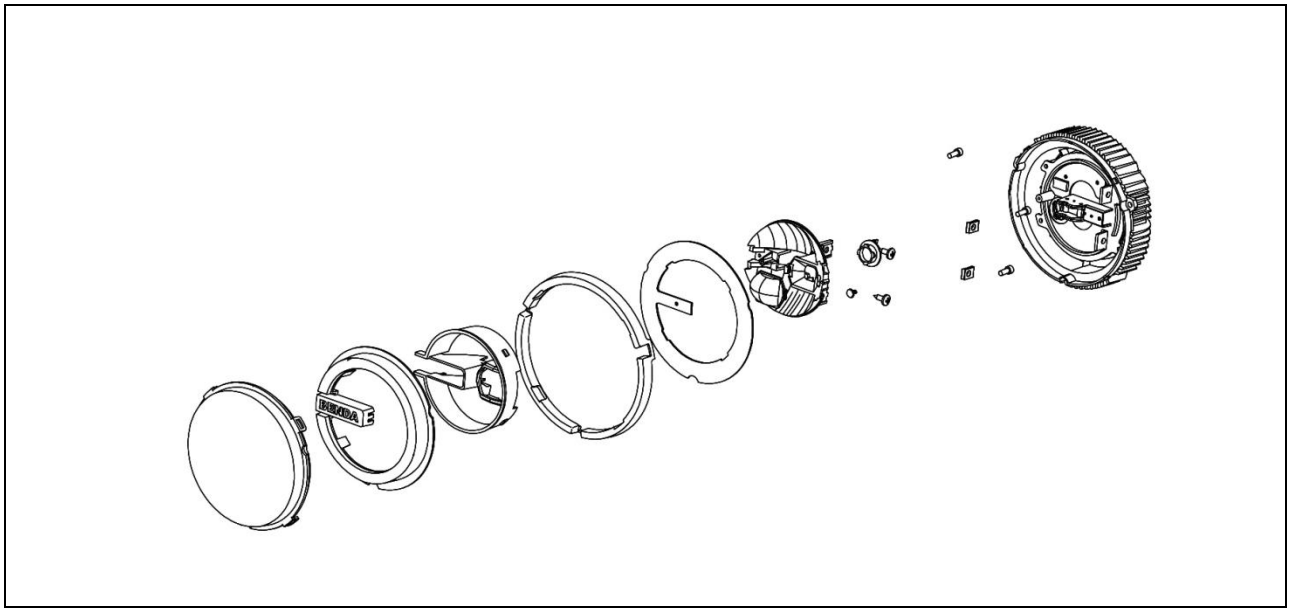


# LAMP 灯

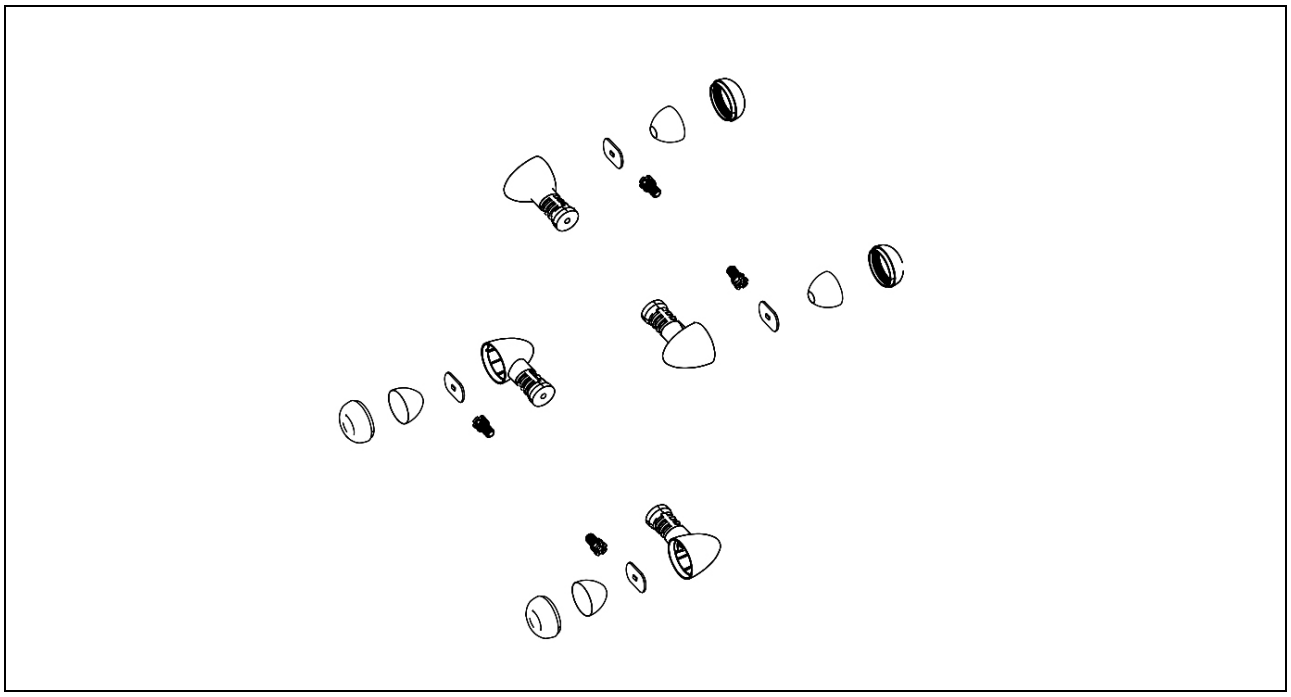
**⚠ CAUTION警告**

**If you touch the bulb with your bare hands, clean the bulb with a cloth moistened with alcohol or soapy water to prevent premature bulb failure. 如果赤手触摸灯泡，请用蘸有酒精或肥皂水的布清洁灯泡，以防止灯泡过早损坏。**

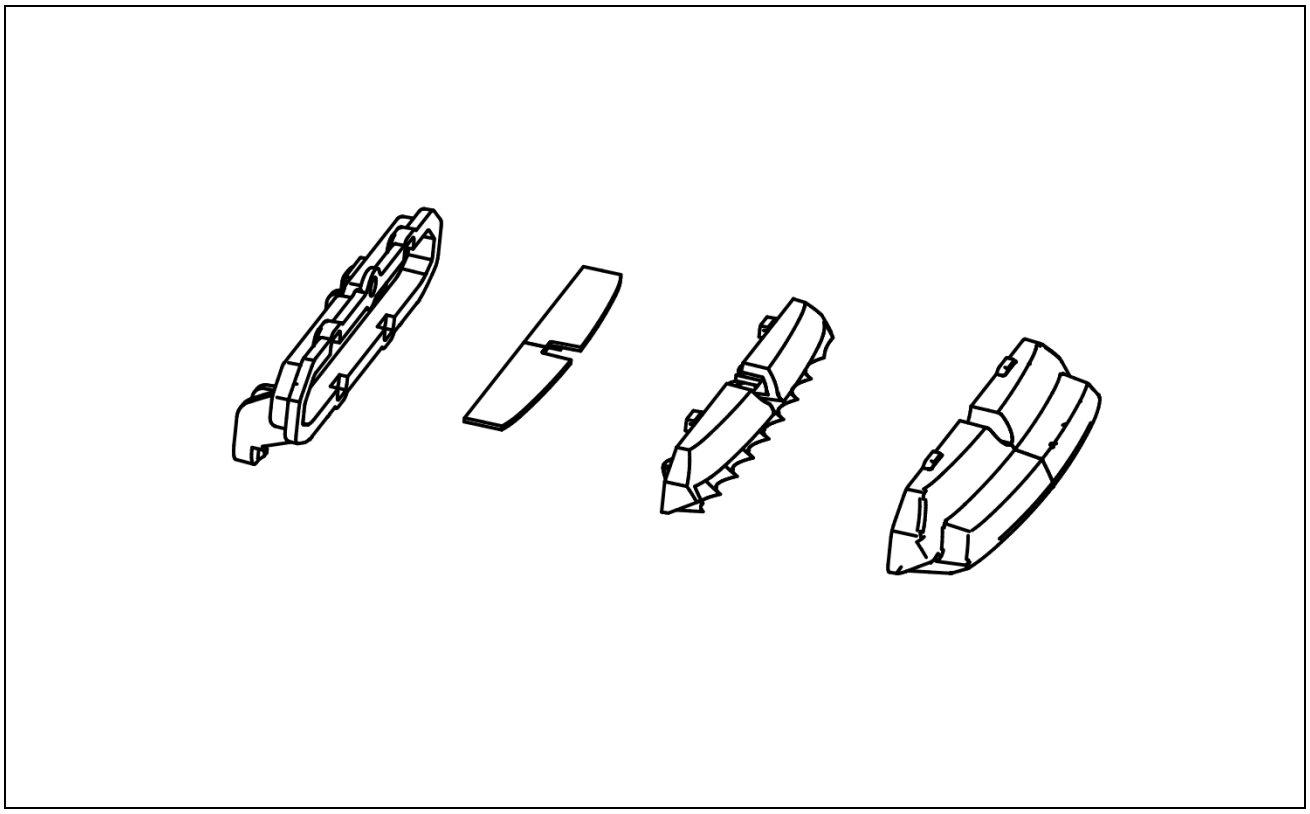
## ◉ HEADLAMP头灯



## ◉ TURN SIGNAL LAMP转向灯



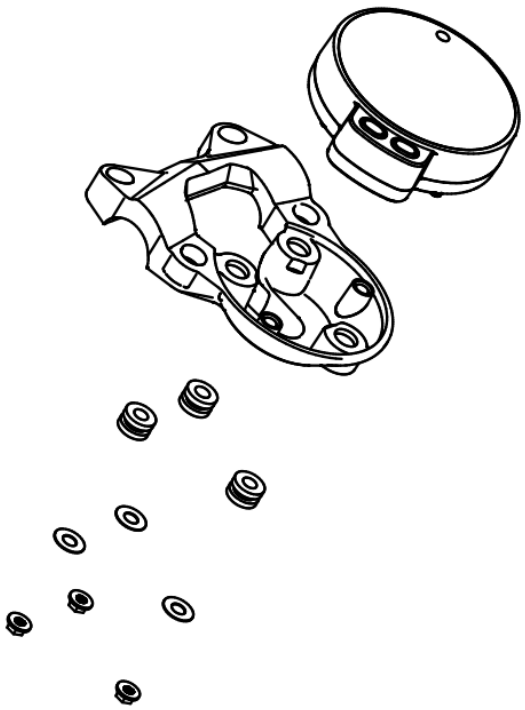
◉ **TAIL / BRAKE LAMP尾灯/刹车灯**



## COMBINATION METER 仪表组合

Remove the combination meter. 拆下仪表组合。

Disassemble the combination meter as shown in the illustration. 如图所示，拆卸仪表组合。



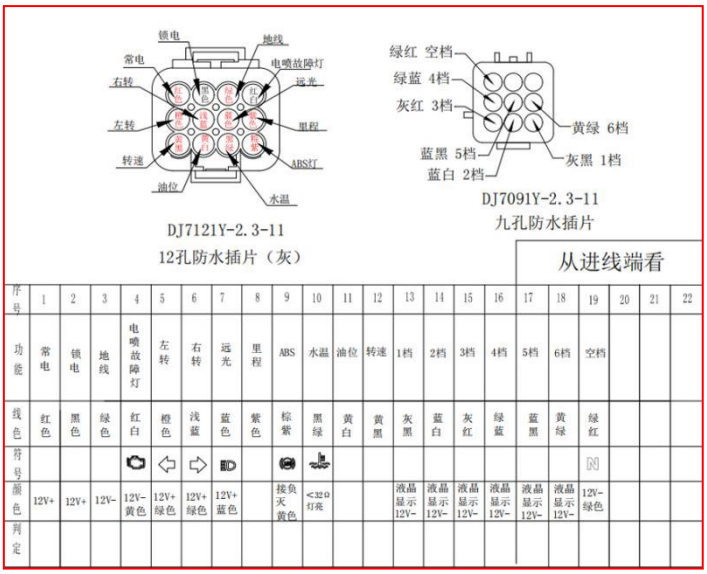
### INSPECTION 检查

Using the pocket tester, check the continuity between lead wires in the following illustration. 下图使用测试仪检查导线之间的导通性。

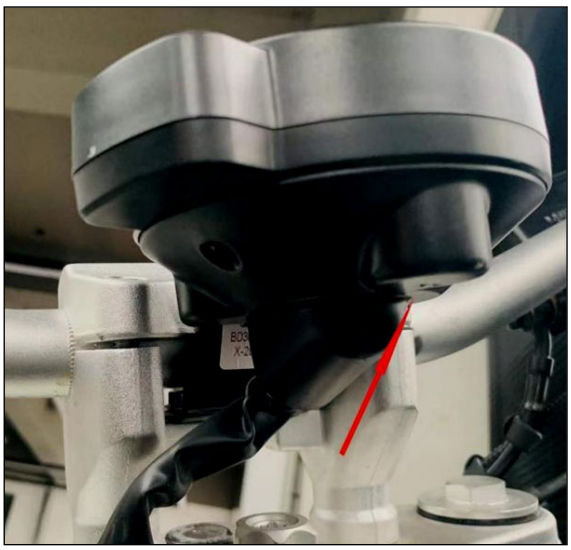
If the continuity measured incorrect, replace the respective part. 如果导通性测量不正确，请更换相应的零件。

**⚠ CAUTION警告**

**When making this test, it is not necessary to remove the combination meter. 进行此测试时，无需卸下仪表组合。**




| 序号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 功能 | 常电 | 锁电 | 地线 | 电喷故障灯 | 左转 | 右转 | 远光 | 里程 | ABS | 水温 | 油位 | 转速 | 1档 | 2档 | 3档 | 4档 | 5档 | 6档 | 空档 | | | |
| 线色 | 红色 | 黑色 | 绿色 | 红白 | 橙色 | 浅蓝 | 蓝色 | 紫色 | 棕紫 | 黑绿 | 黄白 | 黄黑 | 灰黑 | 蓝白 | 灰红 | 绿蓝 | 蓝黑 | 黄绿 | 绿红 | | | |
| 符号 | | | | | | | | | | | | | | | | | | | | | | |
| 颜色 | 12V+ | 12V+ | 12V- | 12V-黄色 | 12V+绿色 | 12V+绿色 | 12V+蓝色 | | 接负灭黄色 | <32Ω灯亮 | | | 液晶显示12V- | 液晶显示12V- | 液晶显示12V- | 液晶显示12V- | 液晶显示12V- | 液晶显示12V- | 12V-绿色 | | | |
| 判定 | | | | | | | | | | | | | | | | | | | | | | |



# BATTERY 电池 (免维护)

**⚠ CAUTION警告**

**Use only the genuine BENDA battery on BD300. 只能使用 BD300 上的原装奔达电池。**

电压低于 12V 时需要即时充电。

## 3-19 ELECTRICAL SYSTEM 电器系统

### ◉ BRAKES刹车

The BD300 uses disc brakes. BD300利用盘式制动器。

Properly operating the brake systems is vital to safe riding. Be sure to perform the brake inspection requirements as schedules. 正确操作制动系统对于安全行驶至关重要。 确保按要求执行制动器检查要求。

The brakes should be inspected at periodic inspection by your authorized BENDA dealer. 应在授权的奔达经销商进行定期检查时检查制动器。

**⚠ WARNING警告**

**Failure to properly inspect and maintain your motorcycle brake systems can be hazardous. 未能正确检查和维护摩托车制动系统可能会造成危险。**
**Improper maintenance of the brakes increases your chances of having an accident. 制动器保养不当会增加发生事故的机会。**
**Be sure to inspect the brakes before each use of the motorcycle according to the INSPECTION BEFORE RIDING section. 在每次使用摩托车之前，请务必根据“骑行之前的检查”部分检查制动器。**
**Always maintain your brakes according to the MAINTENANCE SCHEDULE. 请始终按照“维修时间表”维修制动器。**

**⚠ WARNING警告**

**Operating the motorcycle in harsh condition can be hazardous if you do not inspect brake wear often. 如果您不经常检查制动器的磨损，在恶劣的条件下操作摩托车会很危险。**
**Operating in mud, water, sand, or other extreme conditions can cause accelerated brake wear. This could lead to an accident. 在泥，水，沙或其他极端条件下运行会导致加速的制动器磨损。 这可能会导致事故。**
**If you operate your motorcycle under these conditions, the brakes must be inspected more often than recommended in the MAINTENANCE SCHEDULE. 如果您在这些条件下操作摩托车，则必须比维修计划时间表中建议的检查次数更多地检查制动器。**

### ◉ ABS (Anti-lock Brake System) ABS（防抱死制动系统）

The ABS unit, which consists of a hydraulic unit, ABS control unit, and return pump, is installed inside the right decoration cover. 由液压系统，ABS控制系统和回油泵组成的ABS系统安装在右装饰盖内。

A wheel speed sensor is located at the front and rear wheels. 车轮速度传感器位于前轮和后轮上。

**⚠ WARNING警告**

**□ ABS cannot function properly if certain modifications have been made such as shorter or longer suspension travel, other rim diameters, other tires, an incorrect tire air pressure, other brake pads, etc. 如果进行了某些修改，例如缩短或增加的悬架行程，安装其它直径轮辋，其它轮胎，轮胎气压不符合标准，使用其它刹车片等，则ABS无法正常工作。**

**□ ABS will only function correctly if the spare parts used in the brake system and the tires have been approved and/or recommended by BENDA.在制动系统和轮胎中使用的备件只能是由奔达批准或推荐的时，ABS才能正常工作。**

**□ Maintenance work and repairs must be carried out professionally. (Your authorized BENDAworkshop will be glad to help.) 维护和修理必须专业人事进行。 （您授权的奔达经销商将很高兴为您提供帮助。）**

ABS is a safety system that prevents locking of the wheels when driving straight ahead without the influence of lateral forces. ABS是一种安全系统，可防止在直线行驶时车轮锁定，而不会受到侧向力的影响。

ABS operates with two independent brake circuits (front and rear brakes). ABS带有两个独立的制动回路（前制动和后制动）。

During normal operation, the brake system operates like a conventional brake system without ABS. 在正常运行期间，制动系统的运行类似于不带ABS的常规制动系统。

When the ABS control unit detects a locking tendency in a wheel, ABS begins regulating the brake pressure. The regulating process causes a slight pulsing of the front brake lever and rear brake pedal. 当ABS控制单元检测到车轮发生锁定趋势时，ABS开始调节制动压力。 调节过程会导致前制动杆和后制动踏板略微跳动。

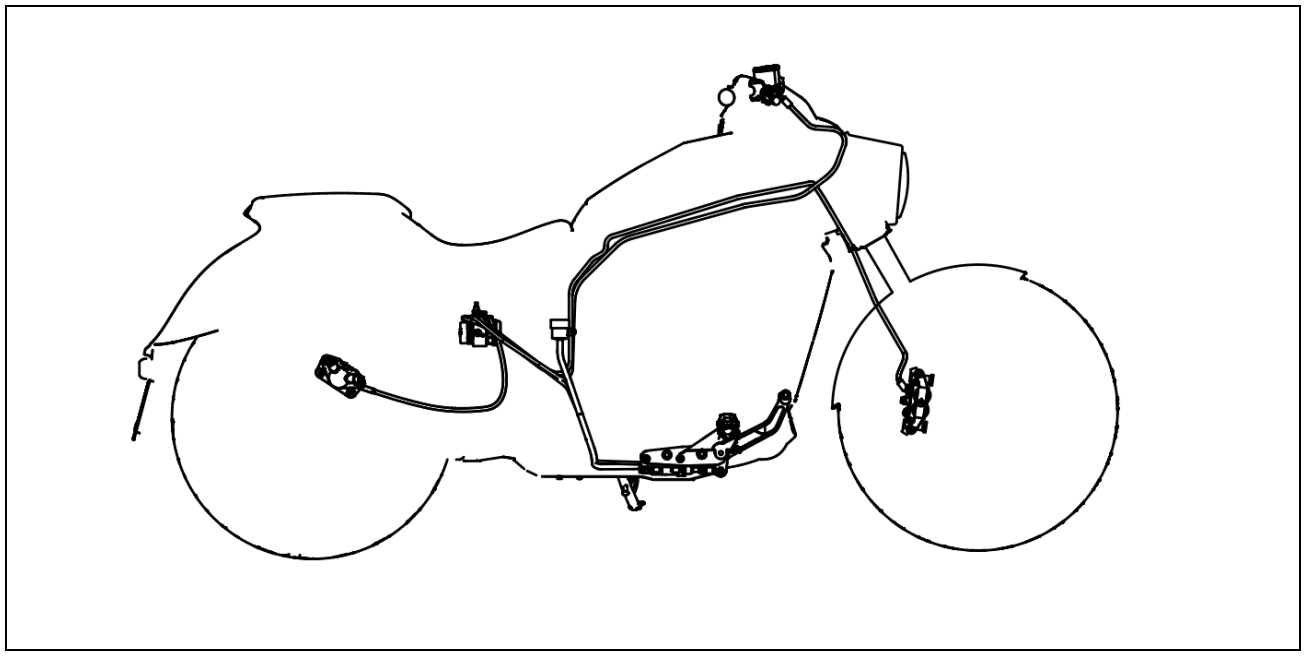


ABS warning lamp will light up after the ignition switch is set to “ON” position and the vehicle has traveled until a speed of 5 km/h (3 mph) for a self-diagnosis test, and will go out after the vehicle has traveled over a speed of 5 km/h (3 mph). 点火开关置于“ ON”位置并且车辆行驶至自诊断测试的速度5 km / h（3 mph）以内时，ABS警告

灯将点亮，并在车辆行驶速度超过5 km / h（3 mph）后熄灭。 If it does not go out after the vehicle has traveled over a speed of 5 km/h (3 mph) or if it lights up while riding, this indicates a fault in ABS system. 如果车辆以超过5 km / h（3 mph）的速度行驶后仍未熄灭，或者在行驶过程中点亮，则表明ABS系统故障。 In this case, ABS is no longer enabled and the wheels may lock during braking. The brake system itself stays functional ; only ABS control is not available. 在这种情况下，系统将不再启用ABS，制动过程中车轮可能会锁定，制动系统本身保持功能；仅ABS控制系统不可用。

The ABS warning lamp may also light up if the rotating speeds of the front and rear wheels differ greatly under extreme riding conditions, for example when making wheelies or if the rear wheel spins. 如果在极端的骑行条件下，例如前轮和后轮旋转时，转速差异很大，则 ABS 警告灯也会亮起。

This causes ABS to switch off. 这将导致 ABS 关闭。To reenable ABS, the vehicle must be stopped and the ignition switch is set to “OFF” position. ABS is reenabled when the vehicle is switched on again. The ABS warning lamp goes out when you start off. 要重新启用 ABS，必须将车辆停车并将点火开关置于“ OFF”位置。再次打开车辆时，将重新启用 ABS。 启动时，ABS 警告灯熄灭。



**ABS**

ABS (Anti-lock Brake System) features a dual electronic control system, which acts on the front and rear brakes independently. ABS（防抱死制动系统）具有双电子控制系统，可独立作用于前后制动器。

Operate the brakes with ABS as you would conventional brakes. ABS操作系统与传统制动器一样。

If the ABS is activated, a pulsating sensation may be felt at the brake lever or brake pedal. 如果激活了ABS，则

在制动杆或制动踏板上可能会感觉到脉动感。

In this situation, continue to apply the brakes and let the ABS work ; do not “pump” the brakes as this will reduce braking effectiveness. 在这种情况下，继续制动并让ABS起作用； 不要“间歇”刹车，因为这会降低刹车效果。

**⚠ WARNING 警告**

**Always keep a sufficient distance from the vehicle ahead to match the riding speed even with ABS. 即使使用ABS，也应始终与前方车辆保持与行驶速度相匹配的制动距离。**

**□ ABS performs best with long braking distances. ABS在长制动距离下表现最佳。**

**□ On certain surfaces, such as rough or gravel roads, the braking distance may be longer with the ABS than without. 在某些表面上，例如崎岖不平的路面或砾石路面，使用ABS的制动距离可能会比不使用ABS的制动距离更长。**

## 3-19 ELECTRICAL SYSTEM 电器系统

ABS is monitored by an ECU, which will revert the system to conventional braking if a malfunction occurs. ABS 由ECU监控，如果发生故障，它将使系统恢复为常规制动。

**⚠ CAUTION 警告**

**ABS performs a self-diagnosis test each time the vehicle first starts off after the key is turned to “ON” and the vehicle has traveled until a speed of 5 km/h (3 mph) or higher. 每次在钥匙转到“ ON”后首次启动车辆并且车辆行驶到5 km / h（3 mph）或更高的速度时，ABS都会执行一次自诊断测试。**

**During this test, a “clicking” noise can be heard from inside the right decoration cover, and if the brake lever or brake pedal is even slightly applied, a vibration can be felt at the lever and pedal, but these do not indicate a malfunction. 在此测试期间，可以从右装饰盖内部听到“喀哒”声，并且即使稍微踩下制动杆或制动踏板，也可以在制动杆和踏板上感觉到振动，但这并不表示故障。**

***NOTE 注意***

**Keep any type of magnets (including magnetic pick-up tools, magnetic screwdrivers, etc.) away from the front and rear wheel’s, tone wheels, otherwise the front and rear wheel’s tone wheel may become magnetized, resulting in improper performance of ABS system. 保持任何类型的磁铁（包括磁性拾取工具，磁性螺丝刀等）远离前后轮，刹车轮，否则前后轮的刹车轮可能被磁化，从而导致ABS系统性能不佳。**

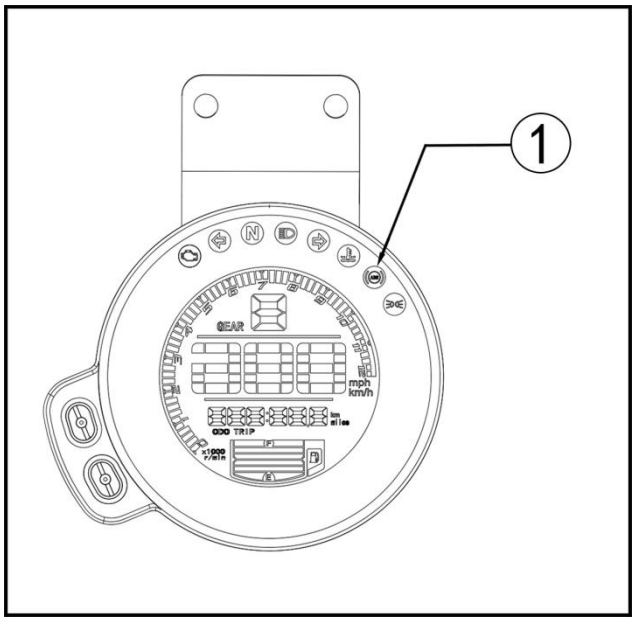
**ABS WARNING LAMP ABS警告灯**

ABS warning lamp will light up after the ignition switch is set to “ON” position and the vehicle has traveled until a speed of 5 km/h (3 mph) for a self-diagnosis test and will go out after the vehicle has traveled over a speed of 5 km/h (3 mph). 点火开关置于“ ON”位置并且车辆行驶至自诊断测试的速度为5 km / h（3 mph）以内时，ABS警告灯将点亮，并在时速超过5 km / h（3 mph）后熄灭。

If ABS system fails, ABS warning lamp lights up and remains lit after the vehicle has traveled over a speed of 5 km/h (3 mph). 如果ABS系统出现故障，则当车辆以超过5 km / h（3 mph）的速度行驶时，ABS警告灯将点亮并保持点亮。

**⚠ CAUTION警告**

**If ABS warning lamp does not light up after the ignition switch is set to “ON” position and the vehicle has traveled until a speed of 5 km/h (3 mph) or fail to go out after the vehicle has traveled over a speed of 5 km/h (3 mph), contact an authorized BENDA dealer. 如果将点火开关置于“ ON”位置后ABS警示灯不点亮，并且车辆行驶至5 km / h（3 mph）的速度，或者在行驶速度超过5 km / h后未能熄灭，请联系奔达授权经销商。**



# TROUBLESHOOTING 故障排除

## ⊙ MALFUNCTION CODE AND DEFECTIVECONDITION 故障代码和故障状态

| MALFUNCTION CODE 故障代码 | DETECTED ITEM 检测项目 | | DETECTED FAILURE CONDITION 检测到的故障情况<br>CHECK FOR 检查 |
|---|---|---|---|
| noEr<br>无 | NO FAULT 没有故障 | | — |
| **P0031** | NO.1 $O_2$Sheater Circuit 氧传感器 1（加热电路） | Low Voltage 低电压 | After engine running, if oxygen sensor heater signal open or is happened the ground short fault for 1 second by 10 times in 12 times test cycle, the code 0031 is indicated. 发动机运行后，如果氧传感器加热器信号打开或在 12 次测试循环中发生 10 次接地短路故障 1 秒，则显示代码 0031。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0032** | | High Voltage 高电压 | After engine running, if oxygen sensor heater signal is happened the high short fault for 1 second by 10 times in 12 times test cycle, the code 0032 is indicated. 发动机运行后，如果在 12 次测试循环中发生 10 次 1 秒的高短路故障，则出现氧气传感器加热器信号，则指示代码 0032。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0037** | NO.2 $O_2$Sheater Circuit 氧传感器 2（加热电路） | Low Voltage 低电压 | After engine running, if oxygen sensor heater signal open or is happened the ground short fault for 1 second by 10 times in 12 times test cycle, the code 0037 is indicated. 发动机运行后，如果氧传感器加热器信号打开或在 12 次测试循环中发生 10 次接地短路故障 1 秒，则显示代码 0037。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0038** | | High Voltage 高电压 | After engine running, if oxygen sensor heater signal is happened the high short fault for 1 second by 10 times in 12 times test cycle, the code 0038 is indicated. 发动机运行后，如果在 12 次测试循环中发生 10 次 1 秒的高短路故障，则出现氧气传感器加热器信号，则指示代码 0038。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0107** | IAP&TS (Temperature function) Circuit 进气空气压力和空气温度传感器(压力） | Low Voltage or Open 低电压或断路 | The sensor should produce following voltage. 传感器电压应在以下范围内。<br>0.15 V≤Sensor output voltage0.15V≤传感器输出电压<br>Without the above range for 2.2 sec. and more,0107 is indicated. 如果 2.2 秒以上没在在上述范围内，显示 0107。 |
| | | | Intake air pressure sensor, lead wire / coupler connection. 进气压力传感器，导线/耦合器连接。 |
| **P0108** | | High Voltage 高电压 | The sensor should produce following voltage. 传感器电压应在以下范围。Sensor output voltage≤5 V 传感器输出电压≤5V<br>Without the above range for10.0sec.and more,0108 is indicated. 如果 10.0 秒以上没在上述范围内，显示 0108。 |
| | | | Intake air pressure sensor, lead wire / coupler connection. 进气压力传感器，导线/耦合器连接。 |

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|---|---|---|---|
| **P0112** | IAP&TS (Temperature function) Circuit 进气空气压力和空气温度传感器(温度） | Low Voltage 低电压 | The sensor voltage should be the following. 传感器电压应在以下范围。<br>0.1 V ≤Sensor output voltage0.1 V≤传感器输出电压<br>Without the above range for 6.25sec.and more,0112 is indicated. 如果 6.25 秒及以上没在上述范围内，则显示 0112。 |
| | | | Intake air temperature sensor, lead wire / coupler connection. 进气温度传感器，导线/耦合器连接。 |
| **P0113** | | High Voltage or Open 高电压或断路 | The sensor voltage should be the following. 传感器电压应在以下范围。Sensor output voltage ≤4.9V 传感器输出电压≤4.9V<br>Without the above range for 6.25sec.and more,0113 is indicated. 如果 6.25 秒及以上没有在上述范围内，则显示 0113。 |
| | | | Intake air temperature sensor, lead wire / coupler connection. 进气温度传感器，导线/耦合器连接。 |



| MALFUNCTION CODE 故障代码 | DETECTED ITEM 检测项目 | | DETECTED FAILURE CONDITION 检测到的故障情况 |
|---|---|---|---|
| | | | CHECK FOR 检查 |
| **P0117** | WTS Circuit 水温传感器 | Low Voltage 低电压 | The sensor voltage should be the following. 传感器电压应在以下范围。<br>0.1 V ≤Sensor output voltage0.1 V≤传感器输出电压<br>Without the above rangefor6.25sec.and more,0117is indicated. 如果 6.25 秒及以上没有在以上范围，则显示 0117。 |
| | | | Water temperature sensor, lead wire / coupler connection. 水温传感器，导线/耦合器连接。 |
| **P0118** | | High Voltage or Open 高电压或断路 | The sensor voltage should be the following. 传感器电压应在以下范围。<br>Sensor output voltage ≤5V 传感器输出电压≤5V<br>Without the above range for6.25sec.and more,0118 is indicated. 没如果没有上述范围持续 6.25 秒及以上，则显示 0118。 |
| | | | Water temperature sensor, lead wire / coupler connection. 水温传感器，导线/耦合器连接。 |
| **P0122** | TPS Circuit 节流阀定位传感器 | Low Voltage or Open 低电压或断路 | The sensor should produce following voltage. 传感器电压应在以下范围内。<br>0.2 V≤Sensor output voltage0.2V≤传感器输出电压<br>Without the above range for7.8sec.and more,0122 is indicated. 如果没有在上述范围内持续 7.8 秒及以上，则显示 0122。 |
| | | | Throttle position sensor, lead wire / coupler connection. 节气门位置传感器，导线/耦合器连接。 |
| **P0123** | | High Voltage 高电压 | The sensor should produce following voltage. 传感器电压应在以下范围内。Sensor output voltage ≤4.9 V 传感器输出电压≤4.9V<br>Without the above range for7.8sec.and more,0123 is indicated. 如果没有在上述范围内持续达 7.8 秒以上，则显示 0123。 |
| | | | Throttle position sensor, lead wire / coupler connection. 节气门位置传感器，导线/耦合器连接。 |

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|---|---|---|---|
| **P0131** | NO.1 $O_2$SCircuit 氧传感器 1（感应电路） | Low Voltage 低电压 | After engine running, the oxygen sensor signal is inputted in ECU since then 300 sec. 发动机运转后，氧气传感器信号从 300 秒后开始输入 ECU。<br>In this case, the sensor voltage should be the following. 正常情况下，传感器电压应为以下电压。30 mV ≤ Sensor output voltage30 mV≤传感器输出电压<br>Without the above range for 28.1 sec. and more, 0131 is indicated. 如果没有在上述范围内持续达 28.1 秒及以上， 则显示 0131。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0132** | | High Voltage 高电压 | After engine running, the oxygen sensor signal is inputted in ECU since then 300 sec. 发动机运转后，氧气传感器信号从 300 秒开始输入 ECU。<br>In this case, the sensor voltage should be the following.<br>在这种情况下，传感器电压应为以下电压。<br>Sensor output voltage ≤ 1.0V 传感器输出电压≤1.0 V<br>Without the above range for 29.4 sec. and more, 0132 is indicated. 如果没有在上述范围内持续 29.4 秒及以上，则显示 0132。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0137** | NO.2 $O_2$SCircuit 氧传感器 2（感应电路） | Low Voltage 低电压 | After engine running, the oxygen sensor signal is inputted in ECU since then 300 sec. 发动机运转后，氧气传感器信号从 300 秒开始输入 ECU。<br>In this case, the sensor voltage should be the following. 在这种情况下，传感器电压应为以下电压。30 mV ≤Sensor output voltage30 mV≤传感器输出电压<br>Without the above range for 28.1 sec. and more, 0137 is indicated. 如果没有在上述范围内持续 28.1 秒及以上， 则显示 0137。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |
| **P0138** | | High Voltage 高电压 | After engine running, the oxygen sensor signal is inputted in ECU since then 300 sec. 发动机运转后，氧气传感器信号从 300 秒开始输入 ECU。<br>In this case, the sensor voltage should be the following.<br>在这种情况下，传感器电压应为以下电压。<br>Sensor output voltage ≤1.0V 传感器输出电压≤1.0V<br>Without the above range for 29.4 sec. and more, 0138 is indicated. 如果没有在上述范围内持续 29.4 秒及以上， 则显示 0138。 |
| | | | Oxygen sensor, lead wire / coupler connection. 氧气传感器，导线/耦合器连接。 |

| MALFUNCTION CODE 故障代码 | DETECTED ITEM 检测项目 | | DETECTED FAILURE CONDITION 检测到的故障情况<br>CHECK FOR 检查 |
|---|---|---|---|
| **P0171** | Fuel Injection Circuit Malfunction 燃油喷射电路故障 | Injection Fuel Shortage 喷油不足 | After engine running, rate of fuel calibration remains less than standard value (0.7) for 10 sec. and more, the code P0171 is indicated. 发动机运行后，燃油校准率保持低于标准值（0.7）的时间为 10 秒钟及以上，则显示代码 P0171。 |
| | | | ECU, O2 sensor, Fuel pump, Fuel hose line 氧传感器，燃油泵，燃油软管线 |
| **P0172** | | Injection Fuel Excess 喷油过量 | After engine running, rate of fuel calibration remains less than standard value (01.3) for 10 sec. and more, the code P0172 is indicated. 发动机运行后，燃油校准率保持高于标准值（1.3）的时间为 10 秒钟及以上，则显示代码 P0171。 |
| | | | ECU, O2 sensor, Fuel pump, Fuel hose line 氧传感器，燃油泵，燃油软管线 |
| **P0201** | NO.1 Fuel Injector Circuit Malfunction NO.1 喷油器电路故障 | | After engine running, if NO.1 fuel injector signal open or is happened the high / ground short fault for 1 second by 5 times in 10 times test cycle, the code 0201 is indicated. 发动机运行后，如果 NO.1 喷油器信号断开或在 10 次测试循环中发生 5 次高压/接地短路故障 1 秒，则显示代码 0201。 |
| | | | Injector, wiring / coupler connection, power supply to the injector. 喷油器，接线/耦合器连接，喷油器的电源。 |
| **P0202** | NO.2 Fuel Injector Circuit Malfunction 2 号喷油器电路故障 | | After engine running, if NO.2 fuel injector signal open or is happened the high / ground short fault for 1second by 5 times in 10 times test cycle, the code 0202 is indicated. 发动机运行后，如果 NO.2 喷油器信号断开或在 10 次测试循环中发生 5 次高压/接地短路故障 1 秒，则显示代码 0202。 |
| | | | Injector, wiring / coupler connection, power supply to the injector. 喷油器，接线/耦合器连接，喷油器的电源 |
| **P0230** | Fuel pump relay Circuit 燃油泵继电器电路 | Low Voltage or Open 低电压或断路 | After engine running, if fuel pump relay signal open or is happened the ground short fault for 1 second by 10 times in 20 times test cycle, the code 0230 is indicated. 发动机运行后，如果燃油泵继电器信号断开或在 20 次测试循环中发生 10 次接地短路故障 1 秒，则显示代码 0230。 |
| | | | Fuel pump relay, connecting lead wire, power source to fuel pump relay, fuel injector. 燃油泵继电器，连接导线，燃油泵继电器的电源，喷油器。 |
| **P0232** | | High Voltage 高电压 | After engine running, if fuel pump relay signal is happened the high short fault for 1 second by 10 times in 20 times test cycle, the code 0232 is indicated. 发动机运行后，如果燃油泵继电器信号断开或在 20 次测试循环中发生 10 次高压故障 1 秒，则显示代码 0232。 |
| | | | Fuel pump relay, connecting lead wire, power source to fuel pump relay, fuel injector. 燃油泵继电器，连接导线，燃油泵继电器的电源，喷油器。 |
| **P0336** | | Noisy Signal 噪音信号 | After engine running, if the magneto rotor tooth's error is happenedcontinuouslyby10timesin100timestestcycle,the code 0336 is indicated. 发动机运行后，如果在 100 次测试循环中连续 10 次发生磁电机转子齿的错误，则会显示代码 0336。 |

| | | | |
|---|---|---|---|
| | Pick-up coil 感应线圈 | | Pick-up coil wiring and mechanical parts.(Pick-up coil lead wire coupler connection) 感应线圈接线和机械零件（感应线圈引线耦合器连接） |
| **P0337** | | No Signal 没信号 | After engine running, if the pick-up coil signal does not reach ECU for more than 0.5 sec., the code 0337 is indicated. 发动机运行后，如果感应线圈信号在 0.5 秒内未到达 ECU，则显示代码 0337。 |
| | | | Pick-up coil wiring and mechanical parts. (Pick-up coil, lead wire coupler connection) 感应线圈接线和机械零件（感应线圈引线耦合器连接） |
| **P0351** | NO.1 IG coil Malfunction 高压包 1 故障 | | After engine running, if NO.1 ignition coil signal open or is happened the high / ground short fault for 1 second by 5 times in 10 times test cycle, the code 0351 is indicated. 发动机运行后，如果 10 次测试循环中 5 次 NO.1 点火线圈信号断开或发生高压/接地短路故障 1 秒钟，则显示代码 0351。 |
| | | | Ignition coil, wiring / coupler connection, power supply from the battery. 点火线圈，接线/耦合器连接，电池供电。 |
| **P0352** | NO.2 IG coil Malfunction 高压包 2 故障 | | After engine running, if NO.2 ignition coil signal open or is happened the high / ground short fault for 1 second by 5 times in 10 times test cycle, the code 0352 is indicated. 发动机运行后，如果 10 次测试循环中 5 次 NO.2 点火线圈信号断开或发生高压/接地短路故障 1 秒钟，则显示代码 0351。 |
| | | | Ignition coil, wiring / coupler connection, power supply from the battery. 点火线圈，接线/耦合器连接，电池供电。 |



| MALFUNCTION CODE 故障代码 | DETECTED ITEM 检测项目 | DETECTED FAILURE CONDITION 检测到的故障情况<br>CHECK FOR 检查 |
|---|---|---|
| **P0500** | Speed sensor<br>Malfunction 速度传感器故障 | Motorcycle speed＜10km/h 摩托车速度＜10km / h<br>Water temperature＜20℃水温＜20℃<br>IAP&TS pressure＞40kpa 进气空气和空气温度压力＞ 40kpa<br>20%＜TPS open angle＜100% 20%＜节流阀开度＜100%<br>2,000rpm＜Engine speed ＜6,000rpm<br>2,000rpm ＜发动机转速＜6,000rpm<br>If the above conditions are maintained for 32.5sec.and more,<br>The code P0500 is indicated 如果上述条件持续时间 32.5 秒以上，显示代码 P0500 |
| | | Speedo sensor, wiring/coupler connection to ECU 速度传感器，至 ECU 的接线/耦合器连接 |
| **P0505** | ISC Error 步进电机故障 | After engine running, if idle speed is different to 500 rpm from the specified range in 25 seconds test cycle, the code 0505 is indicated. 发动机运转后，如果在 25 秒的测试周期内空转速度不同于指定范围的 500 rpm，则会显示代码 0505。 |
| | | Idle speed control solenoid, wiring / coupler connection. 怠速控制电磁阀，接线/耦合器连接。 |

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|---|---|---|---|
| **P0562** | Battery Voltage 电池电压 | Low 低 | The battery voltage should be the following following 电池电压应为以下<br>9 V ≤Battery voltage9 V≤电池电压<br>Without the above range for3.125sec.andmore,0562 is indicated. 如果没有在上述范围内显示 3.125 秒或更长时间，显示 0562。 |
| | | | Battery, wiring / coupler connection to ECU. 电池，接线/耦合器与 ECU 的连接。 |
| **P0563** | | High 高 | The battery voltage should be the following. 电池电压应为以下<br>Battery voltage ≤16V 电池电压≤16V<br>Without the above range for 3.125 sec.andmore,0563 is indicated. 如果没有在上述范围内 3.125 秒及以上，显示 0563. |
| | | | Battery, wiring / coupler connection to ECU. 电池，接线/耦合器与 ECU 的连接。 |
| **P0601** | ECU Fault<br>ECU 故障 | | When ML on The ECU will check malfunction code, if there's<br>ECU error the code P0601 is indicated. 当 ECU 上的 ML 打开时将检查故障代码，如果 ECU 错误，则显示代码 P0601。 |
| | | | The fuel injection will be cut off Accordingly ECU 燃油喷射将被切断相应的 ECU |
| **P0650** | Engine warning lamp Circuit Malfunction 发动机警告灯电路故障 | | After engine running, if "FI" check lamp signal open or is happened the high / ground short fault for 1 second by 40 times in 80 times test cycle, the code 0650 is indicated. 发动机运行后，如果" FI"检查灯信号打开或在 80 次测试循环中发生 40 秒高压/接地短路故障 1 秒，则显示代码 0650。 |
| | | | "FI" check lamp, wiring / coupler connection. " FI"检查灯，接线/耦合器连接。 |
| **P0850** | GP or Clutch lever Switch Circuit Malfunction档位<br>离合器或离合器杆开关电路故障 | | If gear position or clutch lever switch signal feedback is not active in continuous by 20 times in fully power down cycles,<br>the code 0850 is indicated. 如果在完全断电循环中连续20次<br>未连续进行档位或离合器杆开关信号反馈，则会显示代码<br>0850。<br>(Fully power down cycle : Ignition switch "ON" "OFF" position)<br>（完全关机：点火开关" ON" " OFF"位置） |
| | | | Gear position or clutch lever switch, wiring / coupler connection,<br>gearshift cam etc. 档位或离合器杆开关，接线/耦合器连接，<br>变速凸轮等 |

## ⊙ ENGINE 发动机

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Engine will not start or is hard to start. 发动机无法启动或难以启动。** | **Compression too low 空气压缩比太低** | |
| | 1. Tappet clearance out of adjustment. 挺杆间隙不可调。 | Adjust. 调整。 |
| | 2. Worn valve guides or poor seating of valves. 气门导管磨损或气门座不好。 | Repair or replace. 维修或更换。 |
| | 3. Mistimed valves. 阀门损坏。 | Adjust. 调整。 |
| | 4. Excessively worn piston rings. 活塞环过度磨损。 | Replace 更换 |
| | 5. Worn-down cylinder bore. 气缸孔磨损。 | Replace. 更换 |
| | 6. Starter motor cranks too slowly. 起动马达曲柄过慢。 | See electrical section. 参见电气部分。 |
| | 7. Poor seating of spark plugs. 火花塞座不良。 | Retighten. 紧固 |
| | **Plug not sparking 火花塞不火花** | |
| | 1. Fouled spark plugs. 火花塞堵塞。 | Clean. 清洁。 |
| | 2. Wet spark plugs. 火花塞潮湿。 | Clean and dry. 清洁并干燥。 |
| | 3. Defective ignition coils. 点火线圈不良。 | Replace. 更换。 |
| | 4. Open or short in high-tension cord. 高压线断路或短路。 | Replace. 更换。 |
| | 5. Defective pick-up coil. 拾取线圈不良。 | Replace. 更换。 |
| | 6. Defective ECU. ECU不良。 | Replace. 更换 |
| | 7. Open-circuited wiring connections. 接线断开。 | Repair or replace. 维修或更换。 |
| | **No fuel reaching the intake pipe 进气管无燃油进入** | |
| | 1. Clogged fuel filter or fuel hose. 燃油滤清器或燃油软管堵塞。 | Clean or replace. 清洁或更换。 |
| | 2. Defective fuel pump. 燃油泵不良。 | Replace. 更换。 |
| | 3. Defective fuel pressure regulator. 燃油压力调节器不良。 | Replace. 更换。 |
| | 4. Defective fuel injector. 喷油嘴不良。 | Replace. 更换。 |
| | 5. Defective fuel pump relay. 燃油泵继电器不良。 | Replace. 更换。 |
| | 6. Defective ECU. ECU不良。 | Replace. 更换。 |
| | 7. Open-circuited wiring connections. 接线断开。 | Check and repair. 检查并修理。 |

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| | **Incorrect fuel / air mixture 燃油/空气混合物不正确**<br>1. Defective fuel pump. 燃油泵不良。<br>2. Defective fuel pressure regulator. 燃油压力调节器不良。<br>3. Defective pick-up coil. 感应线圈不良。<br>4. Defective IAP sensor. 进气空气压力传感器不良。<br>5. Defective ECU. ECU不良。<br>6. Defective ET sensor. 水温传感器不良。<br>7. Defective IAT sensor. 空气温度传感器不良。<br>8. Defective TP sensor. 节流阀定位传感器不良。 | <br>Replace. 更换。<br>Replace. 更换。<br><br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。 |



| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Engine idles poorly. 发动机怠速不好。** | 1. Tappet clearance out of adjustment. 挺杆间隙不可调。<br>2. Poor seating of valves. 阀座不良。<br>3. Defective valve guides. 气门导管不良。<br>4. Worn down camshafts.凸轮轴磨损。<br>5. Too wide spark plug gaps. 火花塞间隙太大。<br>6. Defective ignition coils. 点火线圈不良。<br>7. Defective pick-up coil. 感应线圈不良。<br>8. Defective ECU. ECU不良。<br>9. Defective fuel pump. 燃油泵不良。<br>10. Imbalanced throttle valve. 节气门不平衡。<br>11. Damaged or cracked vacuum hose. 真空软管损坏或破裂。<br>12. Defective TP sensor. 节流阀定位传感器不良。 | Adjust. 调整。<br>Replace or repair. 更换或修理。<br>Replace. 更换。<br>Replace. 更换。<br>Adjust or replace. 调整或更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Adjust. 调整。<br>Replace. 更换<br><br>Replace. 更换 |
| **Engine stalls often. 发动机经常不加速。** | **Incorrect fuel / air mixture 燃油/空气混合不良**<br>1. Defective IAP sensor or circuit. 进气空气压力传感器或电路不良。<br>2. Clogged fuel filter. 燃油滤清器堵塞。<br>3. Defective fuel pump. 燃油泵不良。<br>4. Defective fuel pressure regulator. 燃油压力调节器不良。<br>5. Defective ET sensor. 水温传感器不良。<br>6. Defective IAT sensor. 空气温度传感器不良。<br>7. Damaged or cracked vacuum hose. 真空软管损坏或破裂。<br>**Fuel injector improperly operating 喷油器工作不正常**<br>1. Defective fuel injectors. 喷油嘴不良。 | <br>Repair or replace. 维修或更换。<br><br>Clean or replace. 清洁或更换。<br>Replace. 更换。<br>Replace. 更换。<br><br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br><br><br>Replace. 更换。 |

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| | 2. No injection signal from ECU. 没有来自ECU的喷射信号。 | Repair or replace. 维修或更换。 |
| | 3. Open or short circuited wiring connection. 接线断路或短路。 | Repair or replace. 维修或更换。 |
| | 4. Defective battery or low battery voltage. 电池不良或电池电压低。 | Replace or recharge. 更换或充电。 |
| | **Control circuit or sensor improperly operating 控制电路或传感器运行不正常** | Replace. 更换。 |
| | 1. Defective ECU. ECU不良。 | Replace. 更换。 |
| | 2. Defective fuel pressure regulator. 燃油压力调节器不良。 | Replace. 更换。 |
| | 3. Defective IAT sensor. 进气空气压力传感器不良。 | Replace. 更换。 |
| | 4. Defective pick-up coil. 感应线圈不良。 | Replace. 更换。 |
| | 5. Defective ET sensor. 水温传感器不良。 | Replace. 更换。 |
| | 6. Defective fuel pump relay. 燃油泵继电器不良。 | Replace. 更换。 |
| | 7. Defective TP sensor. 节流阀定位传感器不良。 | Replace. 更换。 |
| | **Engine internal parts improperly operating 发动机内部零件运行不正常** | Clean. 清洁。 |
| | 1. Fouled spark plugs. 火花塞堵塞。 | Replace. 更换。 |
| | 2. Defective pick-up coil or ECU. 感应线圈或ECU不良。 | Clean. 清洁。 |
| | 3. Clogged fuel hose. 燃油软管堵塞。 | Adjust. 调整。 |
| | 4. Tappet clearance out of adjustment. 挺杆间隙不可调。 | |



| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Noisy engine.发动机有噪声** | **Excessive valve chatter 阀门震动过多** | |
| | 1. Too large tappet clearance. 挺杆间隙过大。 | Adjust. 调整。 |
| | 2. Weakened or broken valve springs. 气门弹簧减弱或损坏。 | Replace. 更换。 |
| | 3. Worn tappet or cam surface. 挺杆或凸轮表面磨损。 | Replace. 更换。 |
| | 4. Worn and burnt camshaft journal. 凸轮轴轴颈磨损和烧毁。 | Replace. 更换。 |
| | **Noise seems to come from piston 可能来自活塞的噪音** | |
| | 1. Worn down pistons or cylinders.活塞或气缸磨损。 | Replace. 更换。 |
| | 2. Combustion chambers fouled with carbon. 燃烧室有积碳。 | Clean. 清洁。 |
| | 3. Worn piston pins or piston pin bore. 活塞销或活塞销孔磨损。 | Replace. 更换。 |
| | 4. Worn piston rings or ring grooves. 活塞环 | Replace. 更换。 |

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| | 或环槽磨损。 | |
| | **Noise seems to come from cam chain 可能来自凸轮链的噪音** | Replace. 更换。 |
| | 1. Stretched chain. 链条拉伸。 | Replace. 更换。 |
| | 2. Worn sprockets. 链轮磨损。 | Repair or replace. 维修或更换。 |
| | 3. Tension adjuster not working. 张紧器损坏。 | |
| | **Noise seems to come from clutch 可能来自离合器的噪音** | Replace. 更换。 |
| | 1. Worn splines of countershaft or hub. 副轴或轮毂的花键磨损。 | Replace. 更换。 |
| | 2. Worn teeth of clutch plates. 离合器片的齿磨损。 | Replace. 更换。 |
| | 3. Distorted clutch plates, driven and drive. 离合器片变形，从动和驱动。 | Replace. 更换。 |
| | 4. Worn clutch release bearing. 离合器分离轴承磨损。 | Replace the primary driven gear. 更换主从动齿轮。 |
| | 5. Weakened clutch dampers. 离合器阻尼器变弱。 | |
| | **Noise seems to come from crankshaft 可能来自曲轴的噪音** | Replace. 更换。 |
| | 1. Rattling bearings due to wear. 轴承因磨损而嘎嘎作响。 | Replace. 更换。 |
| | 2. Worn and burnt big-end bearings. 大头轴承磨损和烧毁。 | Replace. 更换。 |
| | 3. Worn and burnt journal bearings. 轴颈轴承磨损和烧毁。 | |
| | **Noise seems to come from transmission 可能来自其它方面传播噪音** | Replace. 更换。 |
| | 1. Worn or rubbing gears. 齿轮磨损或摩擦。 | Replace. 更换。 |
| | 2. Worn splines. 花键磨损。 | Replace. 更换。 |
| | 3. Worn bearings. 轴承磨损。 | Replace. 更换。 |
| | 4. Worn or rubbing primary gears. 主齿轮磨损或摩擦。 | |

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Engine runs poorly in high speed range. 发动机在高速运行时运行不良。** | **Defective engine internal / electrical parts 发动机内部/电气部件不良** | |
| | 1. Weakened valve springs. 气门弹簧弹力减弱。 | Replace. 更换。 |
| | 2. Worn camshafts. 凸轮轴磨损。 | Replace. 更换。 |
| | 3. Valve timing out of adjustment. 气门正时失调。 | Adjust. 调整。 |
| | 4. Too narrow spark plug gaps. 火花塞间隙太窄。 | Adjust. 调整。 |
| | 5. Ignition not advanced sufficiently due to poorly working timing advance circuit. 由于定时提前电路工作不当，点火未充分提前。 | Replace ECU. 更换ECU。 |
| | 6. Defective ignition coils. 点火线圈不良。 | Replace. 更换。 |
| | 7. Defective pick-up coil. 感应线圈不良。 | Replace. 更换。 |
| | 8. Defective ECU. ECU不良。 | Replace. 更换。 |
| | 9. Clogged fuel hose, resulting in inadequate fuel supply to injector. 燃油软管堵塞，导致喷油器燃油供应不足。 | Clean and prime. 清洁和疏通。 |
| | 10. Defective fuel pump. 燃油泵不良。 | Replace. 更换。 |
| | 11. Defective TP sensor. 节流阀定位传感器不良。 | Replace. 更换。 |
| | 12. Clogged air cleaner element. 空气滤清器滤芯堵塞。 | Clean. 清洁。 |
| | **Defective air flow system 气流系统不良** | |
| | 1. Clogged air cleaner element. 空气滤清器滤芯堵塞。 | Clean or replace. 清洁或更换。 |
| | 2. Defective throttle valve. 节气门不良。 | Adjust or replace. 调整或更换。 |
| | 3. Sucking air from throttle body joint. 从节气门体接头吸入空气。 | Repair or replace. 维修或更换。 |
| | 4. Defective ECU. ECU不良。 | Replace. 更换。 |
| | **Defective control circuit or sensor 控制电路或传感器不良** | |
| | 1. Low fuel pressure. 燃油压力低。 | Repair or replace. 维修或更换。 |
| | 2. Defective IAT sensor. 进气空气压力传感器不良。 | Replace. 更换。 |
| | 3. Defective pick-up coil. 感应线圈不良。 | Replace. 更换。 |
| | 4. Defective IAP sensor. 进气空气温度传感器不良。 | Replace. 更换。 |
| | 5. Defective ECU. ECU不良。 | Replace. 更换。 |
| | 6. Defective TP sensor. 节流阀定位传感器不良。 | Replace. 更换。 |

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| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Engine lacks power.** 发动机动力不足。 | **Defective engine internal / electrical parts发动机内部/电气部件不良** | |
| | 1. Loss of tappet clearance. 无挺杆间隙。 | Adjust. 调整。 |
| | 2. Weakened valve springs. 气门弹簧弹力减弱。 | Replace. 更换。 |
| | 3. Valve timing out of adjustment. 气门正时失调。 | Adjust. 调整。 |
| | 4. Worn piston rings or cylinders. 活塞环或气缸磨损。 | Replace. 更换。 |
| | 5. Poor seating of valves. 阀座不良。 | Repair. 修理。 |
| | 6. Fouled spark plugs. 火花塞堵塞。 | Clean or replace. 清洁或更换。 |
| | 7. Incorrect spark plug gaps. 火花塞间隙不正确。 | Adjust or replace. 调整或更换。 |
| | 8. Clogged injectors. 喷油器堵塞。 | Clean. 清洁。 |
| | 9. Clogged air cleaner element. 空气滤清器滤芯堵塞。 | Clean. 清洁。 |
| | 10. Sucking air from throttle valve or vacuum hose. 从节气门或真空软管中吸入空气。 | Retighten or replace. 重新紧固或更换。 |
| | 11. Too much engine oil. 机油过多。 | Drain out excess oil. 排干多余的油。 |
| | 12. Defective fuel pump or ECU. 燃油泵或ECU不良。 | Replace. 更换。 |
| | 13. Defective pick-up coil and ignition coils. 感应线圈和点火线圈不良。 | Replace. 更换。 |
| | 14. Defective TP sensor. 节流阀定位传感器不良。 | Replace. 更换。 |
| | **Defective control circuit or sensor控制电路或传感器不良** | |
| | 1. Low fuel pressure. 燃油压力低。 | Repair or replace. 维修或更换。 |
| | | Replace. 更换。 |
| | | Replace. 更换。 |
| | | Replace. 更换。 |
| | | Replace. 更换。 |
| | | Replace. 更换。 |
| | | Replace. 更换。 |

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|---|---|---|
| | 2. Defective IAT sensor. 进气空气压力传感器不良。<br>3. Defective pick-up coil. 感应线圈不良。<br>4. Defective IAP sensor. 进气空气温度传感器不良。<br>5. Defective ECU. ECU不良。<br>6. Defective TP sensor. 节流阀定位传感器不良。<br>7. Defective GP switch. 档位传感器或离合器杆开关不良。 | |
| **Engine overheats. 发动机过热。** | **Defective engine internal parts发动机内部零件损坏**<br>1. Heavy carbon deposit on piston crowns. 活塞顶有大量积碳。<br>2. Not enough oil in the engine. 发动机中的机油不足。<br>3. Defective oil pump or clogged oil circuit. 油泵不良或油路堵塞。<br>4.<br>5. Sucking air from intake pipes. 从进气管吸入空气。<br>6.<br>7. Use incorrect engine oil. 使用不符合的机油。<br>8. Defective oil cooler. 油冷却器不良。<br>**Lean fuel / air mixture缺少燃料/空气混合物**<br>1. Short-circuited IAP sensor / lead wire. 进气空气压力传感器/导线短路。<br>2. Short-circuited IAT sensor / lead wire. 进气空气温度传感器/导线短路。<br>3. Sucking air from intake pipe joint. 从进气管接头吸入空气。<br>4.<br>5. Defective fuel injectors. 喷油嘴不良。<br>6. Defective ET sensor. 水温传感器不良。<br>**The other factors其他因素**<br>1. Ignition timing too advanced due to defective timing advance system (ET sensor, pick-up coil, GP switch and ECU). 由于定时提前系统（水温传感器，感应线圈，档位传感器或离合器杆开关和ECU）故障，点火定时太提前。 | Clean. 清洁。<br>Add oil. 加油。<br>Replace or clean. 更换或清洁。<br>Retighten or replace. 重新拧紧或更换。<br>Change. 更改。<br>Clean or replace. 清洁或更换。<br>Repair or replace. 维修或更换。<br>Repair or replace. 维修或更换。<br>Repair or replace. 维修或更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Adjust. 调整。 |

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| | 2. Drive chain is too tight. 传动链太紧。 | |

## 4-10 SERVICING INFORMATION 信息服务

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Dirty or heavy exhaust smoke. 脏烟或浓烟。** | 1. Too much engine oil in the engine. 发动机中的机油过多。 | Check with inspection window, drain out excess oil. 用检查窗口检查，排出多余的油。 |
| | 2. Worn piston rings or cylinders. 活塞环或气缸磨损。 | Replace. 更换。 |
| | 3. Worn valve guides. 气门导管磨损。 | Replace. 更换。 |
| | 4. Cylinder wall scored or scuffed. 气缸壁划伤或磨损。 | Replace. 更换。 |
| | 5. Worn valves stems. 阀杆磨损。 | Replace. 更换。 |
| | 6. Defective stem seals. 阀杆密封不良。 | Replace. 更换。 |
| | 7. Worn side rails. 侧轨磨损。 | Replace. 更换。 |
| **Slipping clutch. 滑动离合器。** | 1. Weakened clutch springs. 离合器弹簧弹力变弱。 | Replace. 更换。 |
| | 2. Worn or distorted pressure plates. 压板磨损或变形。 | Replace. 更换。 |
| | 3. Distorted clutch plates or pressure plates. 离合器盘或压盘变形。 | Replace. 更换。 |
| **Dragging clutch. 拉动离合器。** | 1. Some clutch springs weakened while others are not. 部分离合器弹簧减弱，而另一部分则没有减弱。 | Replace. 更换。 |
| | 2. Distorted pressure plates or clutch plates. 压力板或离合器板变形。 | Replace. 更换。 |
| **Transmission will not shift.** | 1. Broken gearshift cam. 换档凸轮损坏。 | Replace. 更换。 |
| | | Replace. 更换。 |
| | | Replace. 更换。 |

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| **传输不能改变。** | 2. Distorted gearshift forks. 换档拨叉变形。<br>3. Worn gearshift pawl. 换档棘爪磨损。 | |
| **Transmission will not shift back. 传输不能退回。** | 1. Broken return spring on shift shaft. 换档轴上的复位弹簧损坏。<br>2. Rubbing or sticky shift shaft. 变速轴摩擦或发粘。<br>3. Distorted or worn gearshift forks. 换档拨叉变形或磨损。 | Replace. 更换。<br>Repair or replace. 维修或更换。<br>Replace. 更换。 |
| **Transmission jumps out of gear. 变速箱档位跳动。** | 1. Worn shifting gears on driveshaft or countershaft. 驱动轴或副轴上的换档齿轮已磨损。<br>2. Distorted or worn gearshift forks. 换档拨叉变形或磨损。<br>3. Weakened stopper spring on gearshift stopper. 变速挡块上的挡块弹簧变弱。 | Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。 |

## RADIATOR (COOLING SYSTEM) 散热器（冷却系统）

| Complaint 故障 | Symptom and possible causes可能原因 | Remedy措施 |
|---|---|---|
| **Engine overheats. 发动机过热。** | 1. Not enough engine coolant. 发动机冷却液不足。<br>2.<br>3. Radiator core clogged with dirt or scale. 散热器芯被污垢或水垢堵塞。<br>4. Faulty cooling fan. 冷却风扇故障。<br>5. Defective cooling fan thermo-switch. 冷却风扇温度开关不良。<br>6. Clogged water passage. 水通道堵塞。<br>7. Air trapped in the cooling circuit. 空气滞留在冷却回路中。 | Add coolant.<br>添加冷却剂<br>。<br>Clean. 清洁。<br>Repair or replace.<br>维修或更换。<br>Replace. 更换。<br>Clean. 清洁。<br>Bleed out air. |

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| | 8. Defective water pump. 水泵不良。<br>9. Use of incorrect engine coolant. 使用不正确的发动机冷却液。<br>10. Defective thermostat. 恒温器不良。 | 放空空气。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。 |
| **Engine overcools.** 发动机过冷。 | 1. Defective cooling fan thermo-switch. 冷却风扇温度开关不良。<br>2. Extremely cold weather. 极端寒冷的天气。<br>3. Defective thermostat. 恒温器不良。 | Replace. 更换。<br>Put on the radiator cover. 盖上散热器盖。<br>Replace. 更换。 |



## ⊙ ELECTRICAL 电气件

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **No sparking or poor sparking.** 无火花或火花不良。 | 1. Defective ignition coils or spark plug caps. 点火线圈或火花塞盖不良。<br>2. Defective spark plugs. 火花塞不良。<br>3. Defective pick-up coil. 感应线圈不良。<br>4. Defective ECU. ECU不良。<br>5. Defective RO switch. 倾倒开关不良。<br>6. Open-circuited wiring connections. 接线断开。 | Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Check and repair. 检查并修理。 |

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| **Spark plug soon become fouled with carbon. 火花塞很快被积碳污染。** | 1. Mixture too rich. 混合物太浓。<br>2. Idling speed set too high. 空转速度设置过高。<br>3. Incorrect gasoline. 使用的汽油不正确。<br>4. Dirty element in air cleaner. 空气滤清器中有脏物。<br>5. Spark plugs too cold. 火花塞太冷。 | Inspect EI system. 检查EI系统。<br>Inspect EI system. 检查EI系统。<br>Change. 更改。<br>Clean or replace. 清洁或更换。<br>Replace by hot type plug. 用热型插头更换。 |
| **Spark plug become fouled too soon. 火花塞过早结垢。** | 1. Worn piston rings. 活塞环磨损。<br>2. Pistons or cylinders worn. 活塞或气缸磨损。<br>3. Excessive clearance of valve stems in valve guides. 气门导管中气门杆的间隙过大。<br>4. Worn stem oil seal. 阀杆油封磨损。 | Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。 |
| **Spark plug electrodes overheat or burn. 火花塞电极过热或燃烧。** | 1. Spark plugs too hot. 火花塞太热。<br>2. The engine overheats. 发动机过热。<br>3. Spark plugs loose. 火花塞松动。<br>4. Mixture too lean. 混合物太稀。 | Replace by cold type plug. 更换为冷型插头。<br>Tune up. 调高。<br>Retighten. 收紧<br>Inspect EI system. 检查EI系统。 |
| **Magneto charge, but charging rate is below the specification. 电磁充电，但充电速率低于规格。** | 1. Lead wires tend to get shorted or open-circuited or loosely connected at terminals. 引线在端子上容易短路，断路或连接松动。<br>2. Grounded or open-circuited stator coils of magneto. 磁电机的定子线圈接地或开路。<br>3. Defective regulator / rectifier. 调节器/整流器不良。<br>4. Defective cell plates in the battery. 电池中的电池板不良。 | Repair or retighten. 修理或重新紧固。<br>Replace. 更换。<br>Replace. 更换。<br>Replace the battery. 更换电池。 |
| **Magneto overcharges. 磁电过充。** | 1. Internal short - circuit in the battery. 电池内部短路。<br>2. Resistor element in the regulator / rectifier damaged or defective. 稳压器/整流器中的电阻元件损坏或有缺陷。<br>3. Regulator / rectifier poorly grounded. 稳压器/整流器接地不良。 | Replace the battery. 更换电池。<br>Replace. 更换。<br>Clean and tighten ground connection. 清洁并拧紧接地连接。 |
| **Magneto does not charge.磁电机不充电** | 1. Open - or short - circuited lead wires, or loose lead connections. 导线断开或短路，或导线连接松动。<br>2. Short - circuited, grounded or open stator coil. 定子线圈短路，接地或断开。<br>3. Short - circuited or punctured regulator / rectifier. 调节器/整流器短路或刺穿。 | Repair or replace or retighten. 修理或更换或重新拧紧。<br>Replace. 更换。<br>Replace. 更换。 |
| **Unstable** | 1. Lead wire insulation frayed due to vibration resulting in | Repair or replace. 维修或更 |

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| **charging. 充电不稳定。** | intermittent shorting. 引线绝缘层由于振动而磨损，导致间歇性短路。<br>2. Magneto internally shorted. 磁电机内部短路。<br>3. Defective regulator / rectifier. 调节器/整流器不良。 | 换。<br>Replace. 更换。<br>Replace. 更换。 |
| **Starter switch is not effective. 起动器开关无效。** | 1. Battery run down. 电池电量耗尽。<br>2.<br>3. Defective switch contacts. 开关触点不良。<br>4. Brushes not seating properly on commutator in starter motor. 电刷未正确安装在起动电机的换向器上。<br>5. Defective starter relay / ignition interlock switch. 启动继电器/点火互锁开关不良。<br>6. Defective main fuse. 主保险丝不良。 | Recharge or replace. 充电或更换。<br>Replace. 更换。<br>Repair or replace. 维修或更换。<br>Replace. 更换。<br>Replace. 更换。 |



## BATTERY 电池

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Battery runs down quickly. 电池电量很快耗尽。** | 1. The charging method is not correct. 充电方式不正确。 | Check the generator, regulator/rectifier and circuit connections, and make necessary adjustments to obtain specified charging operation. 检查发电机，调节器/整流器和电路的连接，并进行必要的调整以获得规定的充电操作。 |
| | 2. Cell plates have lost much of their active material as a result of over-charging. 由于过度充电，反应板失去了许多活性物质。 | Replace the battery, and correct the charging system. 更换电池，然后更正充电系统。 |
| | 3. Battery is too old. 电池太旧。 | Replace the battery. 更换电池。 |
| **Reversed battery polarity. 电池极性接反。** | The battery has been connected the wrong way round in the system, so that it is being charged in the reverse direction. 电池在系统中的连接方式错误，因此以相反的方向充电。 | Replace the battery and be sure to connect the battery properly. 更换电池，并确保正确连接电池。 |
| **Battery discharges too rapidly. 电池放电太快。** | 1. Dirty container top and sides. 容器顶部和侧面脏污。 | Clean. 清洁。 |

## CHASSIS 车体

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Steering feels too heavy or stiff. 转向感觉太沉重或僵硬。** | 1. Steering stem nut overtightened. 转向杆螺母拧得太紧。<br>2. Worn bearing or race in steering stem. 转向杆轴承或座圈磨损。<br>3. Distorted steering stem. 转向杆变形。<br>4. Not enough pressure in tires. 轮胎压力不足。 | Adjust. 调整。<br>Replace. 更换。<br>Replace. 更换。<br>Adjust. 调整。 |
| **Steering oscillation. 转向振动。** | 1. Loss of balance between right and left front suspensions. 左右前悬架之间失去平衡。<br>2. Distorted front fork. 前叉变形。<br>3. Distorted front axle or crooked tire. 前轴变形或轮胎弯曲。 | Replace. 更换。<br>Repair or replace. 维修或更换。<br>Replace. 更换。 |
| **Wobbling front wheel.前轮摇摆。** | 1. Distorted wheel rim. 轮辋变形。<br>2. Worn-down wheel bearings.车轮轴承磨损。<br>3. Defective or incorrect tire. 轮胎损坏或安装错误。<br>4. Loosen nut on axle. 车轴上的螺母松动。 | Replace. 更换。<br>Replace. 更换。<br>Replace. 更换。<br>Retighten. 紧固 |

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| **Front suspension too soft. 前悬架太软。** | 1. Weakened springs. 弹簧弹性变弱。<br>2. Not enough fork oil. 叉油不足。 | Replace.<br>更换。<br>Refill.添加 |
| **Front suspension too stiff. 前悬架太僵硬。** | 1. Fork oil too viscous. 叉油太粘。<br>2. Too much fork oil. 叉油过多。 | Replace. 更换。<br>Drain excess oil. 排干多余的油。 |
| **Noisy front suspension. 前悬架有杂音。** | 1. Not enough fork oil. 叉油不足。<br>2. Loosen nuts on suspension. 悬架上的螺母松动。 | Refill. 添加<br>Retighten.<br>紧固 |
| **Wobbling rear wheel. 后轮摆动。** | 1. Distorted wheel rim. 轮辋变形。<br>2. Worn-down rear wheel bearing. 后轮轴承磨损。<br>3. Defective or incorrect tire. 轮胎损坏或安装错误。<br>4. Loose nut on axle. 轴上的螺母松动。<br>5. Worn swing arm bushing or bearing. 摆臂衬套或轴承磨损。<br>6. Loosen nut on the rear shock. 后减震器上的螺母松动。 | Replace.<br>更换。<br>Replace.<br>更换。<br>Replace.<br>更换。<br>Retighten.<br>收紧<br>Replace.<br>更换。<br>Retighten.<br>收紧 |
| **Rear suspension too soft. 后悬架太软。** | 1. Weakened springs. 弹簧弹性变弱。<br>2. Rear suspension adjuster improperly set. 后悬架调节器设置不正确。 | Replace.<br>更换。<br>Adjust. 调整。 |
| **Rear suspension too stiff. 后悬架太硬。** | 1. Rear suspension adjuster improperly set. 后悬架调节器设置不正确。<br>2. Worn swing arm bushing or bearing. 摆臂衬套或轴承磨损。 | Adjust.<br>调整。<br>Replace.<br>更换。 |
| **Noisy rear suspension. 后悬架** | 1. Loosen nuts on suspension. 悬架上的螺母松 | Retighten.<br>紧固 |

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| 有杂音。 | 动。<br>2. Worn swing arm bushing or bearing. 摆臂衬套或轴承磨损。 | Replace.<br>更换。 |



## BRAKES 刹车

| Complaint 故障 | Symptom and possible causes 可能原因 | Remedy 措施 |
|---|---|---|
| **Poor braking (FRONT and REAR) 制动不良（前轮和后轮）** | 1. Not enough brake fluid in the reservoir. 油箱中的制动液不足。<br>2. Air trapped in brake fluid circuit. 空气滞留在制动液回路中。<br>3. Pads worn down. 摩擦片磨损。<br>4. Too much play on brake lever or pedal. 制动杆或踏板上的间隙太大。<br>5. Shoes worn down. 鞋子磨损。 | Refill to level mark. 补充到水平标记。<br>Bleed air out. 排气。<br>Replace. 更换。<br>Adjust. 调整。<br>Replace. 更换。 |
| **Insufficient brake power. 制动功率不足。** | 1. Leakage of brake fluid from hydraulic system. 制动液从液压系统泄漏。<br>2. Worn pads. 摩擦片磨损。<br>3. Oil adhesion of engaging surface of pads. 垫片接合表面的油粘附力强。<br>4. Worn disk. 磁盘磨损。<br>5. Air in hydraulic system. 液压系统中有空气。 | Repair or replace. 维修或更换。<br>Replace. 更换。<br>Clean disk and pads. 清洁磁盘和垫片。<br>Replace. 更换。<br>Bleed air. 放气。 |
| **Brake squeaking. 刹车有吱吱声。** | 1. Carbon adhesion on pad surface. 碳附着在摩擦片表面上。<br>2. Tilted pad. 摩擦片倾斜。 | Repair surface with sandpaper. 用砂纸修复表面。 |

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| | 3. Damaged wheel bearing. 车轮轴承损坏。<br>4. Loosen front-wheel axle or rear-wheel axle. 松开前轮轴或后轮轴。<br>5. Worn pads. 摩擦片磨损。<br>6. Foreign material in brake fluid. 制动液中有异物。<br>7. Clogged return port of master cylinder. 主缸回油口堵塞。 | Modify pad fitting. 修正改垫配件。<br>Replace. 更换。<br>Tighten to specified torque. 拧紧至规定的扭矩。<br>Replace. 更换。<br>Replace brake fluid. 更换制动液。<br>Disassemble and clean master cylinder. 拆卸并清洁主缸。 |
| **Excessive brake lever stroke. 制动杆行程过大。** | 1. Air in hydraulic system. 液压系统中有空气。<br>2. Worn brake lever cam. 制动杆凸轮磨损。<br>3. Insufficient brake fluid. 制动液不足。<br>4. Improper quality of brake fluid. 制动液质量不当。 | Bleed air. 放气。<br>Replace brake lever. 更换制动杆。<br>Replenish fluid to specified level ; bleed air. 补充液体至规定水平; 放气。<br>Replace with correct fluid. 更换正确的刹车液体。 |
| **Leakage of brake fluid. 制动液泄漏。** | 1. Insufficient tightening of connection joints. 连接接头紧固不足。<br>2. Cracked hose. 软管破裂。<br>3. Worn piston and/or cup. 活塞和/或油杯磨损。 | Tighten to specified torque. 拧紧至规定的扭矩。<br>Replace. 更换。<br>Replace piston and/or cup. 更换活塞和/或油杯。 |

## CHASSIS 车体

| ITEM项目 | N – m | kg – m |
|---|---|---|
| Rear shock absorber fitting nut (Upper) 后减震器安装螺母（上） | 20 ~ 30 | 2.0 ~ 3.0 |
| Rear shock absorber fitting nut (Lower) 后减震器安装螺母（下） | 35 ~ 55 | 3.5 ~ 5.5 |
| Rear sprocket nut后链轮螺母 | 20 ~ 30 | 2.0 ~ 3.0 |
| Rear axle nut后轮轴螺母 | 90 ~ 140 | 9.0 ~ 14.0 |
| Swing arm pivot nut摆臂枢轴螺母 | 45 ~ 70 | 4.5 ~ 7.0 |
| Steering stem nut转向杆螺母 | 40 ~ 50 | 4.0 ~ 5.0 |
| Steering stem head nut转向杆头螺母 | 80 ~ 100 | 8.0 ~ 10.0 |
| Front brake disc bolt前制动盘螺栓 | 18 ~ 28 | 1.8 ~ 2.8 |
| Front brake master cylinder mounting bolt前制动总泵安装螺栓 | 5 ~ 8 | 0.5 ~ 0.8 |
| Front brake caliper air bleeder valve前制动钳排气阀 | 6 ~ 9 | 0.6 ~ 0.9 |
| Front brake caliper mounting bolt前制动钳安装螺栓 | 18 ~ 28 | 1.8 ~ 2.8 |
| Front brake hose union bolt前制动软管活接螺栓 | 20 ~ 25 | 2.0 ~ 2.5 |
| Front axle前轴 | 50 ~ 80 | 5.0 ~ 8.0 |
| Front axle pinch bolt前轴压紧螺栓 | 15 ~ 25 | 1.5 ~ 2.5 |
| Front fork damper rod bolt前叉阻尼杆螺栓 | 15 ~ 25 | 1.5 ~ 2.5 |
| Front fork cap clamp bolt前叉盖固定螺栓 | 22 ~ 35 | 2.2 ~ 3.5 |
| Front fork lower clamp bolt前叉下夹紧螺栓 | 15 ~ 30 | 1.5 ~ 3.0 |

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|---|---|---|
| Front fork upper bolt前叉上螺栓 | 22 ~ 35 | 2.2 ~ 3.5 |
| Front footrest bolt前脚踏板螺栓 | 40 ~ 60 | 4.0 ~ 6.0 |
| Handlebar clamp bolt车把夹紧螺栓 | 24 ~ 28 | 2.4 ~ 2.8 |
| Handlebar holder lower nut车把支架下螺母 | 40 ~ 60 | 4.0 ~ 6.0 |



## CLUTCH 离合器

Unit : mm

| ITEM<br>项目 | STANDARD<br>标准 | LIMIT<br>极限 |
|---|---|---|
| Clutch cable play离合器拉线 | 4 | ——— |
| Drive plate thickness驱动板厚度 | 2.9~3.1 | 2.6 |
| Drive plate claw width驱动板爪宽度 | 11.8~12.0 | 11.0 |
| Driven plate distortion驱动板变形 | ——— | 0.1 |
| Clutch spring free length离合器弹簧自由长度 | 36.3 | 34.3 |

## TRANSMISSION + DRIVE CHAIN 变速箱+传动链

Unit : mm

| ITEM<br>项目 | STANDARD标准 | | LIMIT极限 |
|---|---|---|---|
| Primary reduction ratio一次减速比 | 3. 238 | | ——— |
| Final stage reduction ratio末级减速比 | 3. 714 | | ——— |
| Gear ratio齿轮比 | 1st | 2. 42 | ——— |
| | 2nd | 1. 53 | ——— |
| | 3rd | 1. 18 | ——— |
| | 4th | 1. 04 | ——— |
| | 5th | 0. 91 | ——— |
| | 6th | 0. 81 | ——— |
| Shift fork to groove clearance拨叉至凹槽间隙 | 0.10~0.30 | | 0.5 |
| Shift fork groove width拨叉槽宽度 | NO.1 & NO.2 | 5.0~5.1 | ——— |
| | NO.3 | 5.0~5.1 | ——— |
| Shift fork thickness拨叉厚度 | NO.1 & NO.2 | 4.8~4.9 | ——— |
| | NO.3 | 4.8~4.9 | ——— |
| Drive belt 传动皮带 | Type | STD1816 | ——— |

## ⊙ EI SYSTEM PARTS　EI 系统零件

| ITEM<br>项目 | N－m | kgf－m |
|---|---|---|
| Water temperature sensor (WT sensor) 水温传感器（WT传感器） | 5 ~ 8 | 0.5 ~ 0.8 |
| Fuel injector mounting bolt喷油器安装螺栓 | 5 ~ 8 | 0.5 ~ 0.8 |
| Intake air temperature & temperature sensor (IAP&T sensor) 进气温度和温度传感器（IAP＆T传感器） | 5 ~ 6 | 0.5 ~ 0.8 |



## ⊙ THROTTLE BODY 节流阀体

| ITEM项目 | SPECIFICATION规格 | NOTE注意 |
|---|---|---|
| I.D. No.编码 | 13400KH9100 | |
| Bore size缸径 | ⌀ 28 | |
| Idle rpm怠速 | 1,500 ~ 1,700 rpm | |
| Throttle cable play油门线 | 0.5 ~ 1.0 mm (0.02 ~ 0.04 in) | |

## ⊙ FUEL INJECTOR + FUEL PUMP 燃油喷射器+燃油泵

| ITEM项目 | SPECIFICATION规格 | NOTE注意 |
|---|---|---|
| Fuel injector resistance喷油器阻力 | 11.4 ~ 12.6 Ω at 20℃ (68℉) | |
| Fuel injector voltage喷油器电压 | Battery voltage电池电压 | |
| Fuel pressure of fuel pump燃油泵燃油压力 | 350 kPa | |



## ⊙ ELECTRICAL 电气件

Unit : mm (in)

| ITEM项目 | SPECIFICATION规格 | NOTE注意 |
|---|---|---|

| | | | |
|---|---|---|---|
| Ignition timing点火时间 | BTDC 12° /1900rpm and30° /7000rpm | | |
| Spark plug火花塞 | Type类型 | CR8E | |
| | Gap间隙 | 0.7 ~ 0.8 (0.028 ~ 0.032) | |
| | Hot type热型 | CR7E | |
| | Standard type标准型 | CR8E | |
| | Cold type冷型 | CR9E | |
| Spark performance火花性能 | More than 8 (0.32) 大于8（0.32） | | |
| Ignition coil primary peak voltage点火线圈一次峰值电压 | 400 V and more400 V及更高 | | |
| Ignition coil resistance点火线圈电阻 | Primary主电阻 | 0.52 ~ 0.64 Ω | 1st ⊕ - ⊖ |
| | Secondary次电阻 | 6.4 ~ 7.8 kΩ | 2nd ⊕ - ⊖ |
| Spark plug cap resistance火花塞盖电阻 | 10 kΩ | | |
| Ignition coil secondary/ Spark plug cap resistance点火线圈次级/火花塞帽电阻 | 16.4 ~ 17.8 kΩ | | spark plug cap - ⊖ |
| Stator coil resistance定子线圈电阻 | Pick-up coil感应线圈 | 约Approx. 95 ~ 125 Ω | G - L |
| | Charging coil充电线圈 | 约Approx. 0.3 ~ 0.6 Ω | Y - Y |
| Magneto no-load performance磁电机空载性能 | Over 60 V / 5,000 rpm | | |
| Battery standard charging voltage电池标准充电电压 | 13.5 ~ 15.0 V / 5,000 rpm | | |
| Battery电池 | Type类型 | MG14ZS-C | |
| | Capacity容量 | 12V 11.2Ah/10HR | |
| Fuse size 保险丝规格 | ABS IGN ABS点火电路 | 1A | |
| | HEAD LIGHT 前大灯电路 | 20A | |
| | ABS ECU ABS ECU电路 | 10A | |
| | ABS MOTOR ABS电机电路 | 15A | |
| | ECU ECU电路 | 15A | |
| | MAIN 主电路 | 20A | |
| | SPARE备用件 | 20A | |
| | | 15A | |
| | | 1A | |

## WATTAGE 耗电量

Unit:W

| ITEM<br>项目 | SPECIFICATION<br>规格 |
|---|---|
| Head lamp头灯 | 12V—HS1 : 35W/35W |
| Position lamp位置灯 | 12V – 5W |
| License lamp牌照灯 | 12V – 0.5W |
| Brake/Tail lamp刹车/尾灯 | 8V – 1W/0.5W |
| Turn signal lamp转向灯 | 12V 1W x 4 |
| Speedometer lamp车速表灯 | LED TYPE |
| Engine warning lamp发动机警示灯 | LED TYPE |
| Turn signal indicator lamp转向信号灯 | LED TYPE |
| High beam indicator lamp远光灯 | LED TYPE |
| Odometer/ Trip meter/ clock<br>里程表/行程表/时钟 | LCD TYPE |
| Fuel meter/ Coolant temp. meter<br>燃油表/冷却液温度 仪表 | LCD TYPE |
| Neutral indicator lamp中立指示灯 | LED TYPE |

※ LED: Light Emitting Diode 发光二极管
LCD: Liquid Crystal Display 液晶显示器

**⚠ CAUTION警告**

**Do not use except the specified bulb (Wattage). 除指定的灯泡（瓦数）外，请勿使用。**

| 冷态下轮胎气压<br>Code Tyre pressure | Cold inflation tire pressure (Solo riding)<br>单人骑乘 | | | Cold inflation tire pressure (Dual riding)<br>双人骑乘 | | |
|---|---|---|---|---|---|---|
| | kPa | kgf/cm2 | psi | kPa | kgf/cm2 | psi |
| 前轮 FR TYRE | 225 | 2.25 | 33 | 225 | 2.25 | 33 |
| 后轮 RR TYRE | 225 | 2.25 | 33 | 225 | 2.25 | 33 |



**TIRE轮胎**

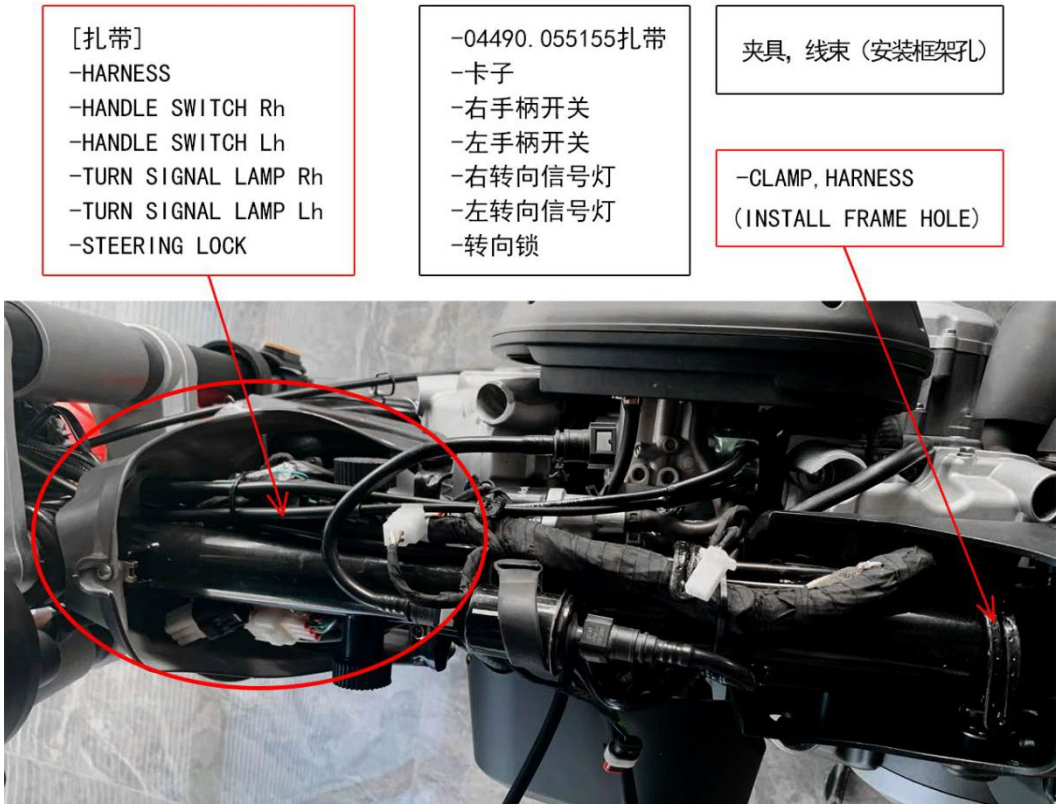
## FUEL + OIL 燃油+机油

| ITEM项目 | SPECIFICATION规格 | | NOTE注意 |
|---|---|---|---|
| Fuel type燃油类型 | The gasoline used shall be unleaded gasoline above 95# grade.所使用的汽油应为95#号以上无铅汽油。 | | |
| Fuel tank capacity油箱容量 | Including reserve<br>包括储备油 | 15 L | |
| | Reserve储备油 | 5 L | |
| Engine oil type机油类型 | SG 15W-40 | | |

| | | | |
|---|---|---|---|
| Engine oil capacity机油容量 | Change更换机油 | 2000 ml | |
| | Filter change更换机油和精滤器 | 2200 ml | |
| | Overhaul发动机大修 | 2000 ml | |

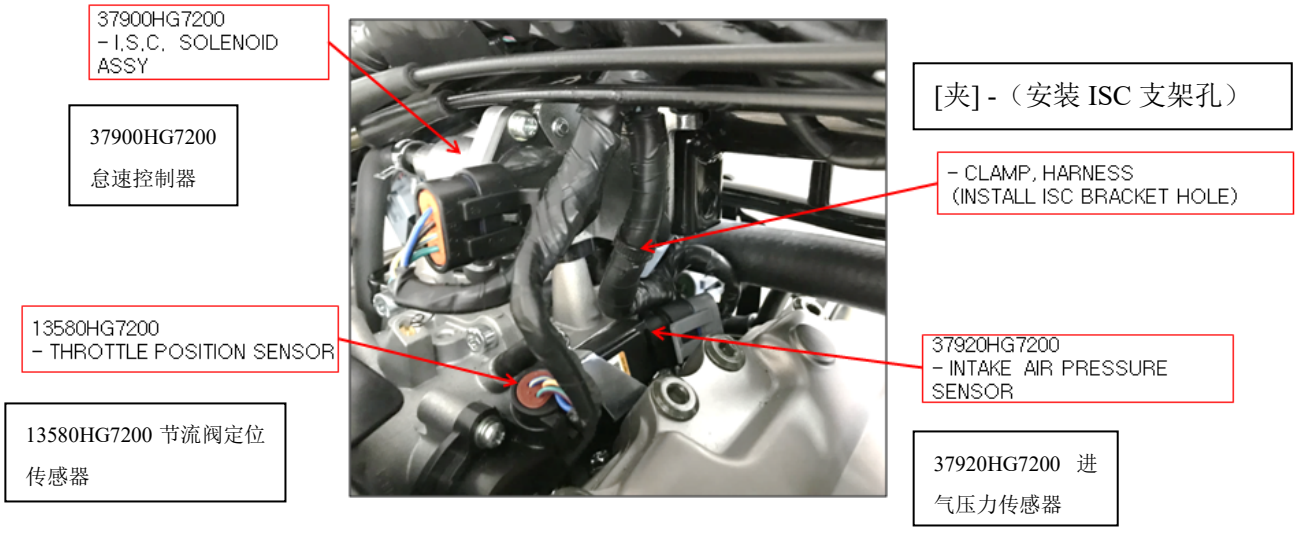


## WIRING AND CABLE ROUTING 接线和电缆布线




-SPEEDMETER
-THROTTLE CABLE
21NA0.375010
离合器线
-CLUTCH CABLE
-HANDLE SWITCH Lh
21NA0.483011 左手柄开关
21NA0.375030 油门返回线
-THROTTLE RETURN CABLE
布线（电锁罩内）右手柄开关线
#ROUTING(INSIDE KEY BOX)-HANDLE SWITCH Lh LEAD WIRE
SPEEDOMETER BRACKET(HOOKING CLUTCH CABLE)
导钩（连接离合器线）
21NA0.483012
右手把开关
-HANDLE SWITCH Rh
#ROUTING(INSIDE KEY BOX)
-Ft,BRAKE HOSE
-HANDLE SWITCH Rh LEAD WIRE
布线（电锁罩内）
-前刹，制动软管
-右手柄开关线




37900HG7200
- I.S.C. SOLENOID ASSY
37900HG7200
怠速控制器
[夹] -（安装 ISC 支架孔）
- CLAMP, HARNESS (INSTALL ISC BRACKET HOLE)
13580HG7200
- THROTTLE POSITION SENSOR
13580HG7200 节流阀定位传感器
37920HG7200
- INTAKE AIR PRESSURE SENSOR
37920HG7200 进气压力传感器


[CLAMP]-FRONT ABS SPEED SENSOR
[卡夹]-前 ABS 速度传感器

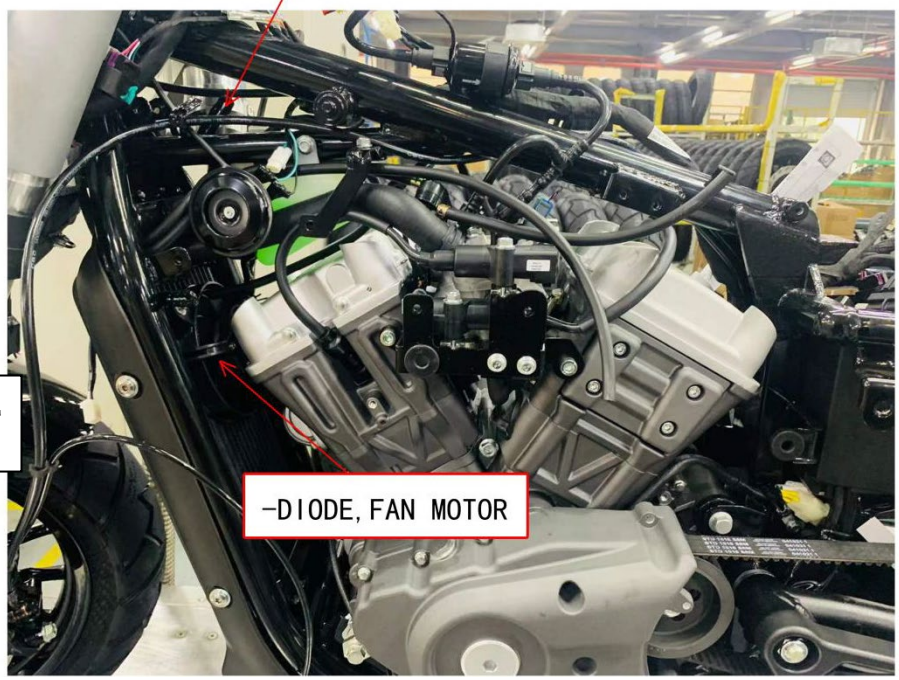
[卡夹]-前 ABS 速度传感器

[卡夹]-前 ABS 速度传感器



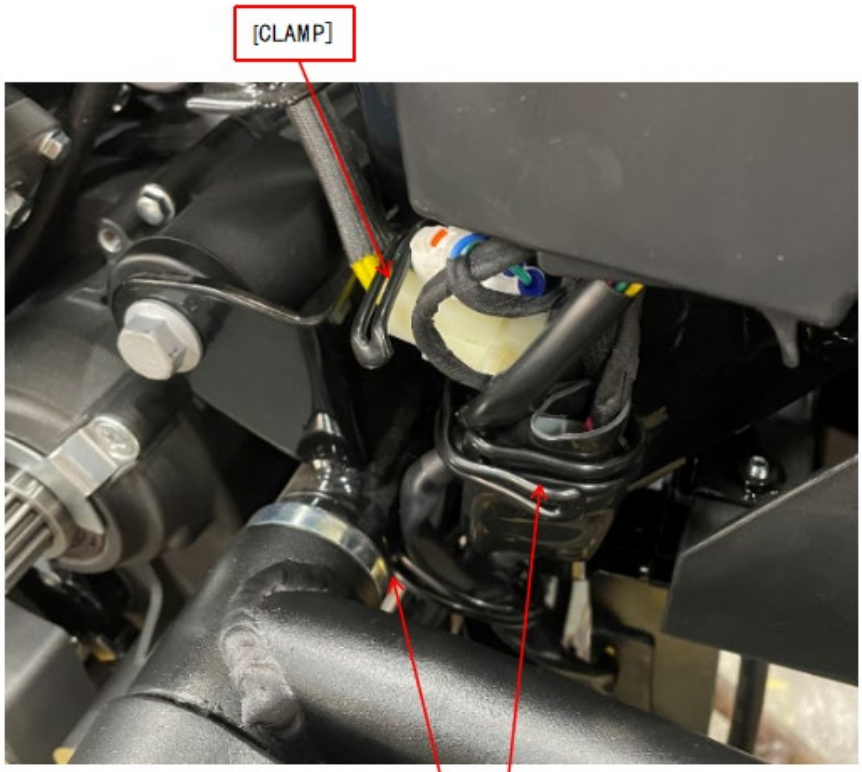
[CLAMP]
-HARNESS,WIRING

21M00.503050[裹塑线夹]-线束，接线



二极管，风扇电机

-DIODE,FAN MOTOR






线束夹

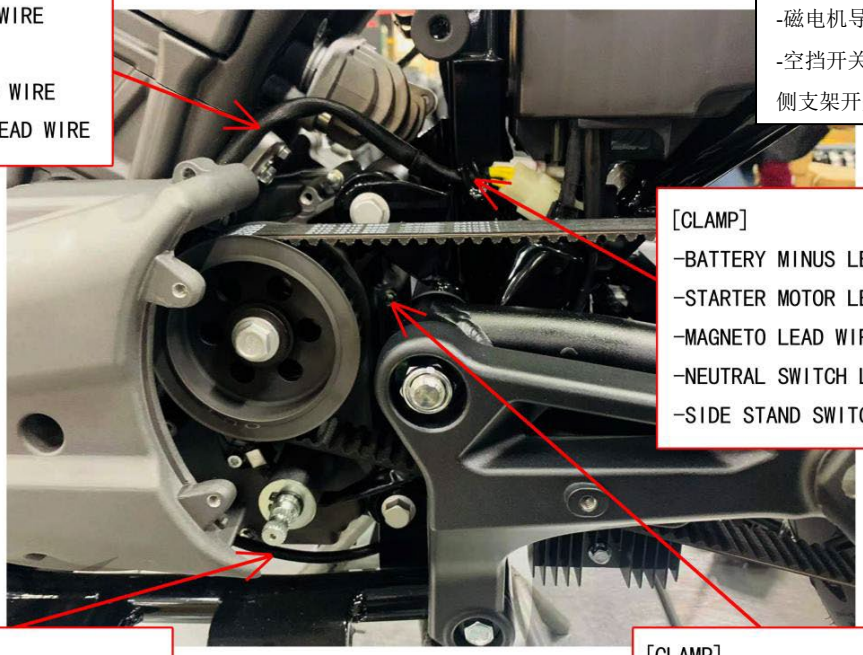
21M00.503050[卡夹]

[卡夹]-外套（电池+接头）（电池-接头）

[CLAMP]
-HARNESS
(BATTERY PLUS CONNECTOR)
(BATTERY MINUS CONNECTOR)

[CLAMP]
-电池-导线
-启动电机导线
-磁电机导线
-空挡开关导线
侧支架开关导线

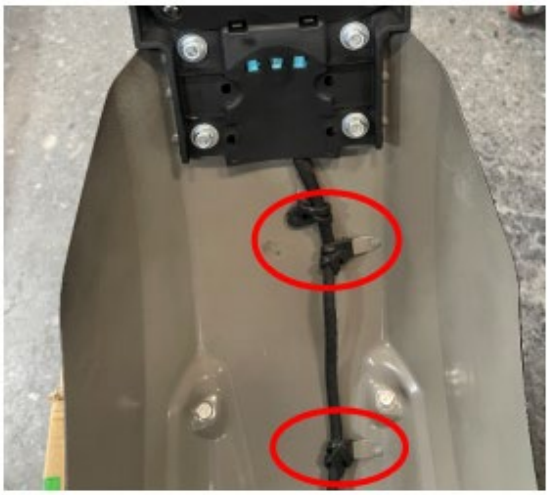
[CLAMP]
-STARTER MOTOR LEAD WIRE
-MAGNETO LEAD WIRE
-NEUTRAL SWITCH LEAD WIRE
-SIDE STAND SWITCH LEAD WIRE



[CLAMP]
-BATTERY MINUS LEAD WIRE
-STARTER MOTOR LEAD WIRE
-MAGNETO LEAD WIRE
-NEUTRAL SWITCH LEAD WIRE
-SIDE STAND SWITCH LEAD WIRE

[CLAMP]
-SIDE STAND SWITCH LEAD WIRE

[CLAMP]
-STARTER MOTOR LEAD WIRE



PLASTIC WRAPPED CLAMP

裹塑线夹

# WIRING DIAGRAM 接线图