INDEX 指数

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Abbreviations List 缩略语清单

A	Ampere安培	N	Newton牛顿
AC	Alternating Current交流电	Nm	Newton x metro牛顿 x 米
°C	Degrees Celsius摄氏度	Pa	Pascals帕斯卡
DC	Direct current直流电	HP	Horse Power马力
g	Grams克数	psi	Pound/square inch磅/平方英寸
h	Hours小时数	rpm	Revolution per minute每分钟转数
L	Liters公升数	V	Volts伏特
m	Meters米	W	Watts瓦特
min	Minutes分钟数	Ω	Ohms欧姆

ABDC	After Bottom Dead Center	BDC	Bottom Dead Center
ATDC	After Top Dead Center	BTDC	Before Top Dead Center
BBDC	Before Bottom Dead Center	TDC	Top Dead Center

GENERAL INFORMATION 通用信息

Before Service 售前服务

Before starting an inspection service or performing a disassembly and reassembly operation on a motorcycle, please read the precautions listed below. To facilitate actual operations, detailed notes, illustrations, photographs, cautions, and descriptions have been included in each chapter whenever necessary. 在开始检查或对摩托车进行拆卸和重新组装操作之前，请阅读下列预防措施。为了便于实际操作，每一章都有详细的注释、插图、照片、注意事项和说明。

Battery ground 蓄电池地线

Before completing any service on the motorcycle, disconnect the battery cables. Disconnect the ground wire (-) first and then the positive (+). When finished with service, first connect positive (+) battery cable. 在完成对摩托车的任何维修之前，要断开蓄电池的电缆。首先断开接地线（-），然后断开正极（+）。当完成维修后，首先连接电池正极（+）线。

Protection gloves 防护手套

Wear protective gloves to avoid injury from the sharp surfaces of motorcycle components. 戴上防护手套，避免被摩托车部件的尖锐表面伤害。

Vehicle cleaning 车辆清洗

Clean the vehicle well before disassembling it. Dirt or other foreign materials that enter sealed areas during vehicle disassembly can cause excessive wear and decrease vehicle performance. Do not apply high pressure water directly to electrical components or intake systems. 在拆解车辆之前，要充分清洁车辆。在车辆拆卸过程中，灰尘或其他异物进入密封区域，会造成过度磨损，降低车辆性能。不要将高压水直接用于电气元件或进气系统。

Repair and cleaning of removed parts 修理和清洁拆下的部件

The disassembled parts are easy to confuse. Arrange the parts in the order they were disassembled and clean the parts. 拆卸下来的零件很容易混淆。按照拆卸的顺序排列零件，并清洗零件。

Once all the parts have been cleaned, store them in a clean area, cover them to protect them from any foreign material that may accumulate before reassembling. 一旦所有部件都被清洗干净，将它们存放在一个干净的地方，在重新组装之前，盖上盖子以保护它们免受任何可能积累的异物。

Inspection 检查

Visually inspect the removed parts for corrosion, discoloration, or other damage. See the appropriate sections of this manual for service limits for individual parts. Replace parts if any damage has been found or if the part is beyond its service limit. 目视检查拆下的零件是否有腐蚀、变色或其他损坏。关于各个部件的维修极限，请参见本手册的相应章节。如果发现有任何损坏，或者零件超过了使用期限，请更换零件。

Replacement parts 替换零件

Use only replacement parts authorized by Auteco Mobilty. Self-locking gaskets, oil seals, circlips, pins and nuts should be replaced with new ones when disassembled. 只能使用 Auteco Mobilty 授权的替换零件。自锁垫圈、油封、卡环、销钉和螺母在拆卸时应更换为新的。

Tightening sequence and torque 拧紧顺序和扭矩

When installing a part with multiple bolts, nuts, or screws, start putting them all into their holes and hand-tighten them. Then tighten them according to the specified sequence to avoid warping. When loosening the bolts, nuts, or screws, first loosen all of them about a quarter turn and then remove them. If the specified tightening sequence is not indicated, alternately tighten the screws diagonally.

Apply the specified tightening torque for each screw to avoid parts damage. 当安装一个有多个螺栓、螺母或螺钉的部件时，先把它们全部放入孔中，用手拧紧。然后按照规定的顺序拧紧，以避免翘起。松开螺栓、螺母或螺钉时，首先将所有的螺栓、螺母或螺钉松开约四分之一圈，然后再将其取出。如果没有标明规定的拧紧顺序，则交替着拧紧螺丝。对每个螺钉都要使用规定的紧固扭矩，以避免零件损坏。

Pressed components 压制件

For parts such as bearings or oil seals that need to be pressed into place, apply a small amount of oil to the contact area. Be sure to maintain correct alignment and use gentle strokes when installing. 对于需要压入的部件，如轴承或油封，在接触区涂上少量的油。确保保持正确的对准，安装时使用柔和的笔触。

Ball bearing and needle bearings 滚珠轴承和滚针轴承

Remove the bearings only if absolutely necessary. Replace them with new ones when they are removed. Press the bearings with the manufacturer's identification and size markings outward. 只有在

绝对必要的情况下，才可以拆卸轴承。当它们被卸下时，请用新的取代它们。将有制造商标识和尺寸标记的轴承向外压。

Lubrication 润滑剂

It is important to lubricate rotating or sliding parts during assembly to minimize wear during initial operation. Apply the specific oil or grease as specified. 在装配过程中，对旋转或滑动部件进行润滑是很重要的，以减少初始运行时的磨损。按照规定使用特定的油或润滑脂。

VEHICLE IDENTIFICATION 车辆识别

Left side view 左侧视图



Right side view 右侧视图



Vehicle Identification Number (VIN)车架打刻	Engine Number 发动机打刻号
	

Technical Specifications 技术规格

Dimensions	
Length × Width × Height 长宽高	2005*830*1060mm
Distance between axis 轴间距离	1370mm
Ground clearance 离地间隙	180mm
Distance from seat to ground 座位到地面的距离	790mm
Curb weight (total mass of a vehicle with standard equipment and all necessary operating consumables such as motor oil, transmission oil, brake fluid, coolant, air conditioning refrigerant, and full tank of fuel, while not loaded with either passengers or cargo) 整车整备质量（车辆总重量，包括标准设备和所有必要运行消耗品，如机油、变速箱油、刹车油、冷却剂、空调制冷剂、满箱燃油，不载乘客货物）	132Kg
Gross weight (Curb weight + maximum payload of passengers and cargo) 毛重（整车整备质量+最大可载荷量的乘客和货物的重量）	282Kg
Maximum weight capacity 最大承重	150 Kg
Fuel tank capacity 油箱容量	15L
Engine 发动机	

Type 类型	RW163FML
Cooling system 冷却系统	Oil cooling
Bore × stroke 孔径×行程	63.5mm×63mm
Displacement 排量	199.5ml
Compression ratio 压缩比	9.5:1
Maximum power 最大功率	11.5kw/7500rpm
Maximum torque 最大扭矩	15.5N•m/6000rpm
Fuel system 燃油系统	carburetor
Air filter type 空滤器类型	Self priming
Start System 启动系统	Electric
Ignition system 点火系统	Ignition advance angle mode
Ignition advance 点火提前量	12°
Spark plug 火花塞	B7RTC_带电阻
Lubrication system 润滑系统	Pressure lubrication
Idle speed 怠速	1500±150r/min
Spark plug gap 火花塞间隙	0.6-0.7 mm
Engine Oil 发动机油	
Type 类型	Synthetic oil
Viscosity 粘度	10W-40
Capacity (how much oil to put in the engine) When Refilling 加注时容量（在发动机中放多少机油）。	1.2L
Capacity (how much oil to put in the engine) When engine dismantling 发动机放油时放多少油量	1L
Carburetor 化油器	
Main jet 主喷嘴	10/4/1.5 （2.6/3.6)
Pilot Jet 启动喷嘴	K112
How many positions does the needle have? 油针有多少个位置？	5
Position of the needle pin 油枕针脚的位置	2/5
Float level height 浮筒油面高度（化油器浮筒室内,浮筒浮起而顶住针阀,堵住进油口,使油不	2.5±1

Transmission 传动装置	
Clutch type 离合器类型	Multi plate wet clutch
Transmission type 传动类型	Chain drive
Chain type 链条类型	Drive chain
Chain length 链条长度	428H-124L
1st	3.083
2nd	2.063
3rd	1.45
4th	1.13
5th	0.957
6th	0.815
Frame 车架	
Type 类型	Steel pipe frame
Front suspension 前减震	Hydraulic shock absorber
Rear suspension 后减震	Hydraulic shock absorber
Turning radius 转弯半径	2,400mm
Tires 轮胎	
Front tire 前轮胎	Rubber tyre
Rear tire 后轮胎	Rubber tyre
Brakes 刹车	
Front brake type 前刹类型	Disc brake
Front brake size 前刹尺寸	外径φ256±0.5,厚度 4
Rear brake type 后刹类型	Disc brake
Rear brake size 后刹尺寸	外径Φ220,厚度 4
Electrical system 电气系统	
Battery 电池	蓄电池规格：12N5-3B；额定容量：5Ah
Front light bulb 前灯灯泡	5W LED
Back light bulb 后灯灯泡	后尾灯灯泡采用 0.5W12 颗 28*35 点亮左右两边 7 字形半透明与 1W4 颗低亮点亮左右两边反光碗（红光）；制动灯采用 1W4 颗高亮点亮左右两边反光碗与 0.5W4 颗 28*35 点亮高位制动灯（红光）
Fuses 保险丝	15A
Position light 位置灯	位置灯 10 颗 0.5W

Blinkers indication bulb in dashboard 仪表板上的转向灯指示灯泡	液晶 LED
High beam indication bulb in dashboard 仪表板上的远光灯指示灯泡	液晶 LED
Dashboard backlight bulb 仪表板背光灯泡	液晶 LED

PERIODIC MAINTENANCE CHART 定期维护表

I : Inspect 检查　　**A** : Adjust 调整
C : Clean 清洁　　**L** : Lubricate 润滑
R : Replace 替换

Frequency 频率 / **Inspection 检查**	**Period 周期**	**Odometer reading (km) 里程表读数（公里）**				
		500	**5.000**	**10.000**	**15.000**	**20.000**
Engine oil 发动机油	Year 年	R – Cada xxxx km				
Transmission oil 变速器油	Year 年	R – Cada xxxx km				
Oil filter 机油过滤器	Year 年	R – Cada xxxx km				
Fuel filter 燃油过滤器		C	C	C	C	C
Fuel hoses 燃油软管			I	I	I	I
carburetor cleaning and adjustment 化油器清洁和调整						
Throttle operation 节气门操作		I	I	I	I	I
Carburetor choke 化油器扼流圈			I	I	I	I
Air filter 空滤器	Nota 1		C	C	R	C
Spark plug 火花塞		I	I	R	I	R
Valve gauge 气门嘴		I	I	I	I	I
Refrigeration system 制冷系统						
Oil sieve 油筛	Year	C	C	C	C	C
Distribution chain tension 分销链张力		A	A	A	A	A
Idle speed 怠速		I	I	I	I	I
Traction chain 牵引链		I, L	I, L	I, L	I, L	I, L
Battery 电池	Month	I	I	I	I	I
Wear of brake bands and brake pads 刹车带和刹车片的磨损			I	I	I	I
Brake fluid (DOT4) 刹车油（DOT4）	Year	I	I	I	I	R
Rear brake system 后刹车系统		I	I	I	I	I
Front brake system 前刹车系统		I	I	I	I	I
Suspension Oil (Grade: 10W) 悬架油（等级：10W）	Year					R
Brake light switch 刹车灯开关		I	I	I	I	I
Streetlight beam adjustment 路灯光束调整		I	I	I	I	I
Clutch 离合器		I	I	I	I	I
Side cat 边锚			I	I	I	I
Suspension 悬挂		I	I	I	I	I

Nuts and bolts 螺母和螺栓		I	I	I	I	I
Tires and wheels 轮胎和车轮		I	I	I	I	I
Direction 方向		I			I	
SAI system maintenance SAI 系统维护		I		I		I

Fasteners Torques - Frame 紧固件扭矩 – 车架

Item 项目	Torque (Nm) 扭矩 (Nm)
平叉轴	60-80N.m
上连接板	60-80 N.m
后轮轴	60-80 N.m
前轮轴	45-60 N.m
前、后碟刹	35-45 N.m
后减震	45-55 N.m
发动机悬挂	35-45 N.m

General torques General torques

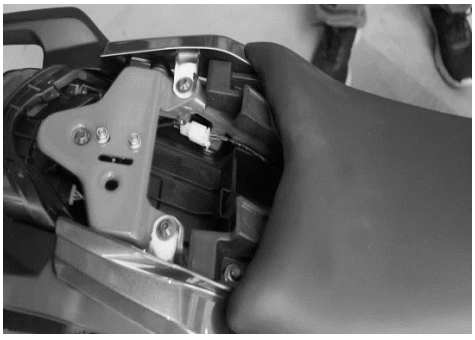
Thread diameter (mm) 螺纹直径(毫米)	Torque (Nm) 扭矩 (Nm)
5	3.4 – 4.9
6	5.9 – 7.8
8	14 – 19
10	25 – 34
12	44 – 61
14	73 – 98
16	115 – 155
18	165 – 225
20	225 - 325

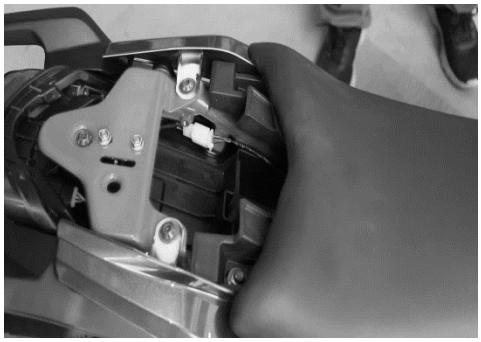
Fasteners Torques - Engine 发动机紧固件扭矩

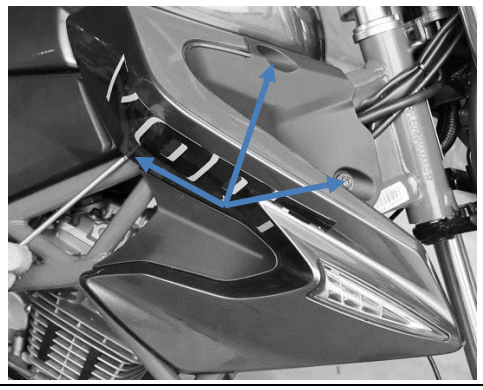
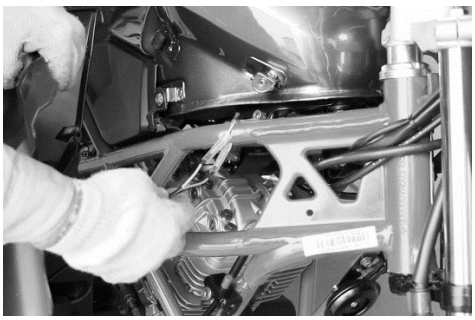
Description 描述	Torque (Nm) 扭矩
Cylinder head cover bolts 缸头盖盖板螺栓	10-15 N.m
Cylinder head bolts 缸头盖螺栓	10-15 N.m
Spark Plug 火花塞	25 N.m
Camshaft-sprocket screw 凸轮轴-链轮螺钉	8-12 N.m
Chain tensioner bolts 链条张紧器螺栓	10-15 N.m
Clutch nut 离合器螺母	50-60 N.m
Primary gear nut 主齿轮螺母	50-60 N.m
Chain guide screw 链条导向螺丝	10-15 N.m
Oil filter bolts 机油过滤器螺栓	18-24 N.m
Crankcase joints bolts 曲轴箱连接螺栓	10-15 N.m
Oil pump bolts 油泵螺栓	8-12 N.m
Flywheel cover screws 飞轮盖螺丝	10-15 N.m
Magneto plate screws 磁板螺丝	60-70 N.m
Flywheel nut 飞轮螺母	10-15 N.m
Intake manifold bolts 进气歧管螺栓	10-15 N.m

Please state the procedure to remove the plastic components to access the mechanical components (side covers, fairings, seat). 请说明拆卸塑料部件以接触机械部件（侧盖、整流罩、座椅）的程序

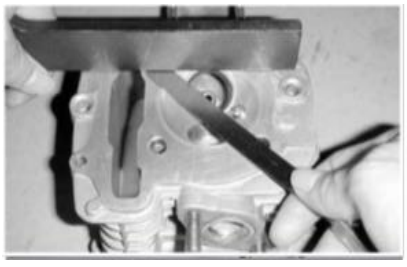
Please include photos of the removal and installation of each component 请附上每个部件的拆除和安装的照片

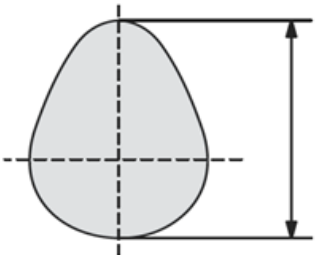
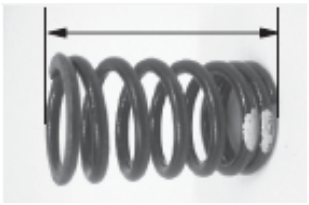
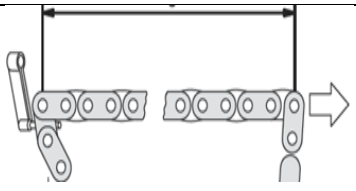
Removal of seat 拆除座椅	
	（1） 将车身左方座垫锁打开，抓住副座垫从前向后抽出副座垫。
	（2） 松开座垫固定螺栓，取出座垫
Installing seat cushion 安装坐垫	

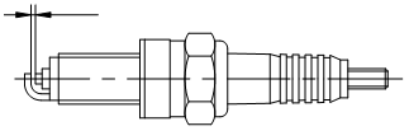
	（1） 将座垫前方支耳插入车架的插口处。
	（2） 按住座垫下压并向前推，将座垫固定螺栓旋紧，注意安装完成后确认座垫是否安装牢固。

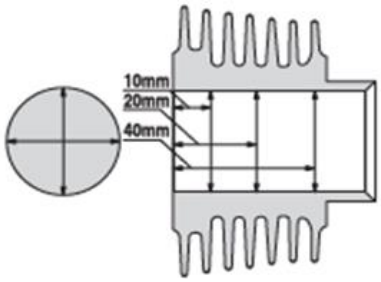
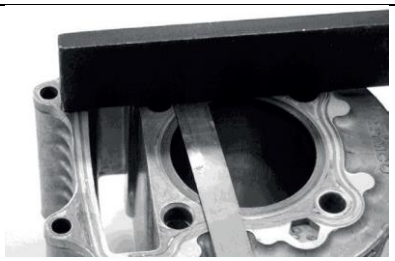
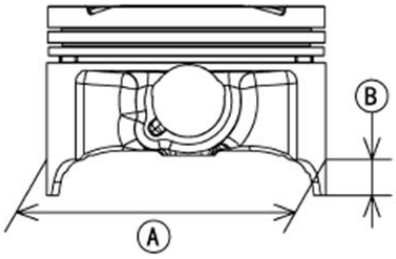
Removal of fairings 拆除整流罩	
	**（1）** 将导流罩固定螺栓旋出取下导流罩。
	（2） 取出时注意断开灯光电缆连接。

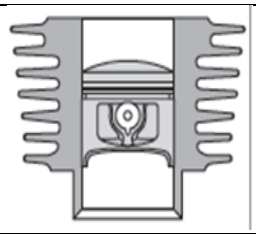
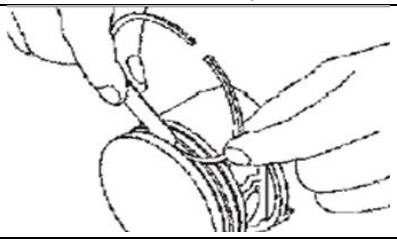
ENGINE, CLUTCH Y TRANSMISSION 发动机、离合器和变速器

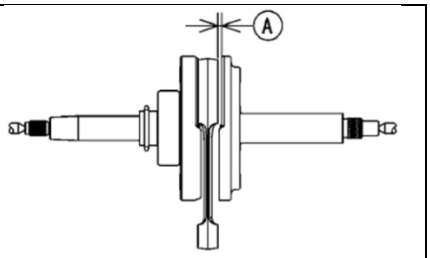
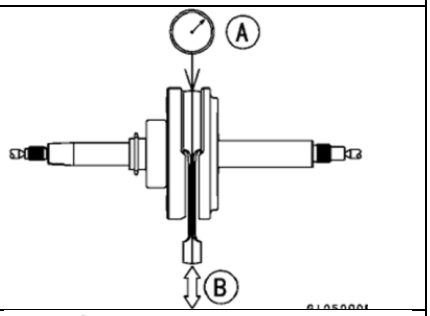
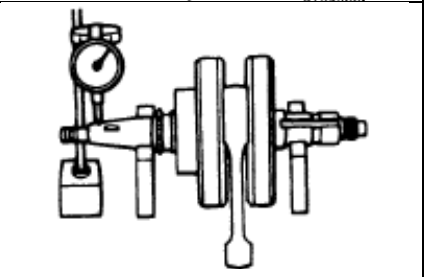
Name 名称	Description 描述	Standard value 标准值	Images 图片
Cylinder head 气缸头	Engine time location 发动机正时位置	手指轻轻压紧链条，正时链轮标记与缸头齐平。	
	Compression of the engine 发动机的压缩	10KMa 以上	
	Valve tappet clearance 气门挺柱间隙	进排：0.03-0.05mm 使用 0.04mm 塞尺调节	
	Cylinder head warpage 气缸盖翘曲	0.05mm	

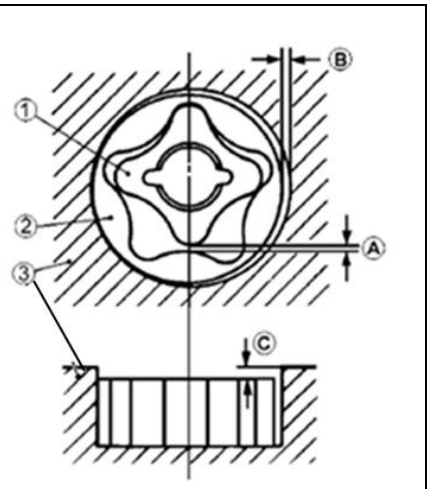
Cylinder head 气缸头	Internal diameter of rocker arm 摇臂内径	12mm	
	External diameter of the rocker arm shaft 摇臂轴外径	12mm	
	Height of the cam 凸轮高度	Intake Value 进气值 6.53mm Exhaust Value 排气值 6.36mm	
	Valve spring free length 气门弹簧自由长度	40.5mm	
	Outer diameter of the valve stem 阀杆外径	5.5mm	
	Length of the camshaft chain. (Please include the length measured on how may links) 凸轮轴链条的长度	63.5mm	

Cylinder head	（请包括测量链接的长度）		
	Spark plug gap 火花塞间隙	0.7mm	

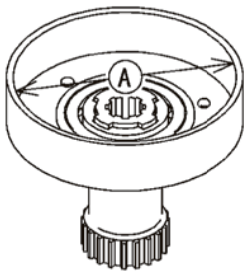
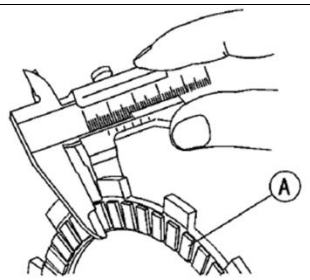
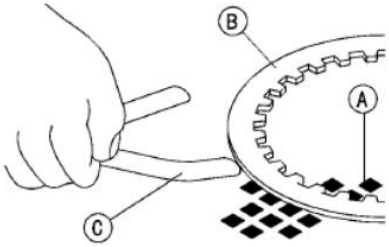
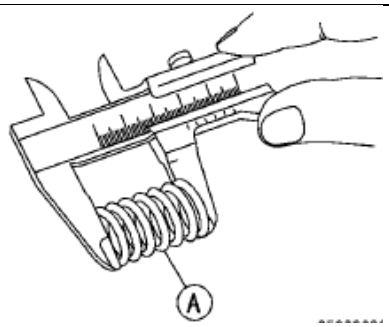
Cylinder 气缸体	Cylinder internal diameter 气缸内径	Value 值 10 mm 62mm Value 值 20 mm 62mm Value 值 40 mm 62mm	
	Cylinder warpage 气缸翘曲	Value 值 0.05mm	
	Piston outer diameter 活塞外径	Value 值 A 62mm Value 值 B 8mm	

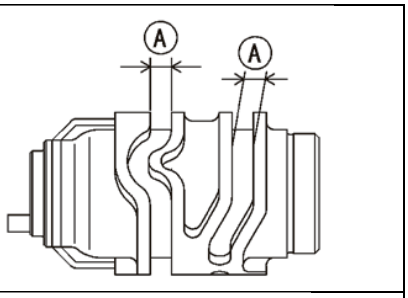
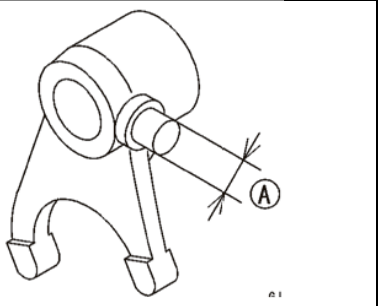
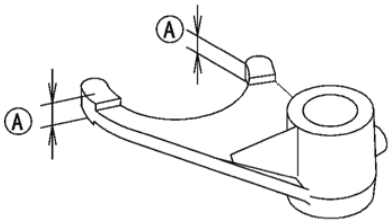
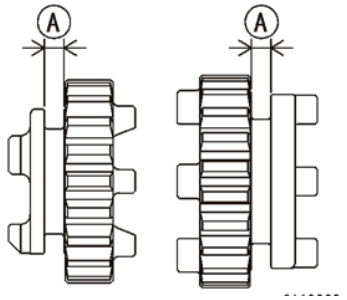
cylinder	Clearance between piston and cylinder 活塞与气缸之间的间隙	Value 值 0.02- 0.04mm	
	Clearance of piston ring groves against the piston ring 活塞环凹槽与活塞环的间隙	1° Value 值 1mm	
		2° Value 值 1mm	
		Lubrication Value 2 mm	
	Piston ring closing gap (place the piston ring inside the cylinder, open it and measure the gap)活塞环闭合间隙（将活塞环放入气缸内，打开并测量间隙）	Value 0.2-0.4mm	
	Piston pin hole diameter 活塞销孔直径	Value 值 15mm	
	Piston pin shaft outer diameter 活塞销轴外径	Value 值 15mm	

Crankshaft 曲轴	Axial clearance of crankshaft-connecting rod 曲轴连杆轴向间隙	Value 值 0.1-0.3mm	
	Radial clearance of crankshaft-connecting rod 曲轴连杆径向游隙	Value 值 0.008-0.016mm	
	Crankshaft runout 曲轴跳动	Value 值 0.03mm	

Lubrication 润滑	Oil pump clearance 油泵间隙	A: IN rotor-EX rotor 进气-排气转子 Value 0.1-0.15mm	
		B: Body-outer rotor 转子外部 Value 0.1-0.15mm	
		C: Warpage 翘曲 Value	

		0.05mm	

Clutch 离合	Primary clutch drum internal diameter 主离合器鼓内径	Value 112mm	
	Friction plate thickness 摩擦片厚度	Value 3mm	
	Metallic plate warpage 金属板翘曲	Value 0.1mm	
	Clutch sprigs free play 离合器弹簧正常放置时	Value 33.5mm	

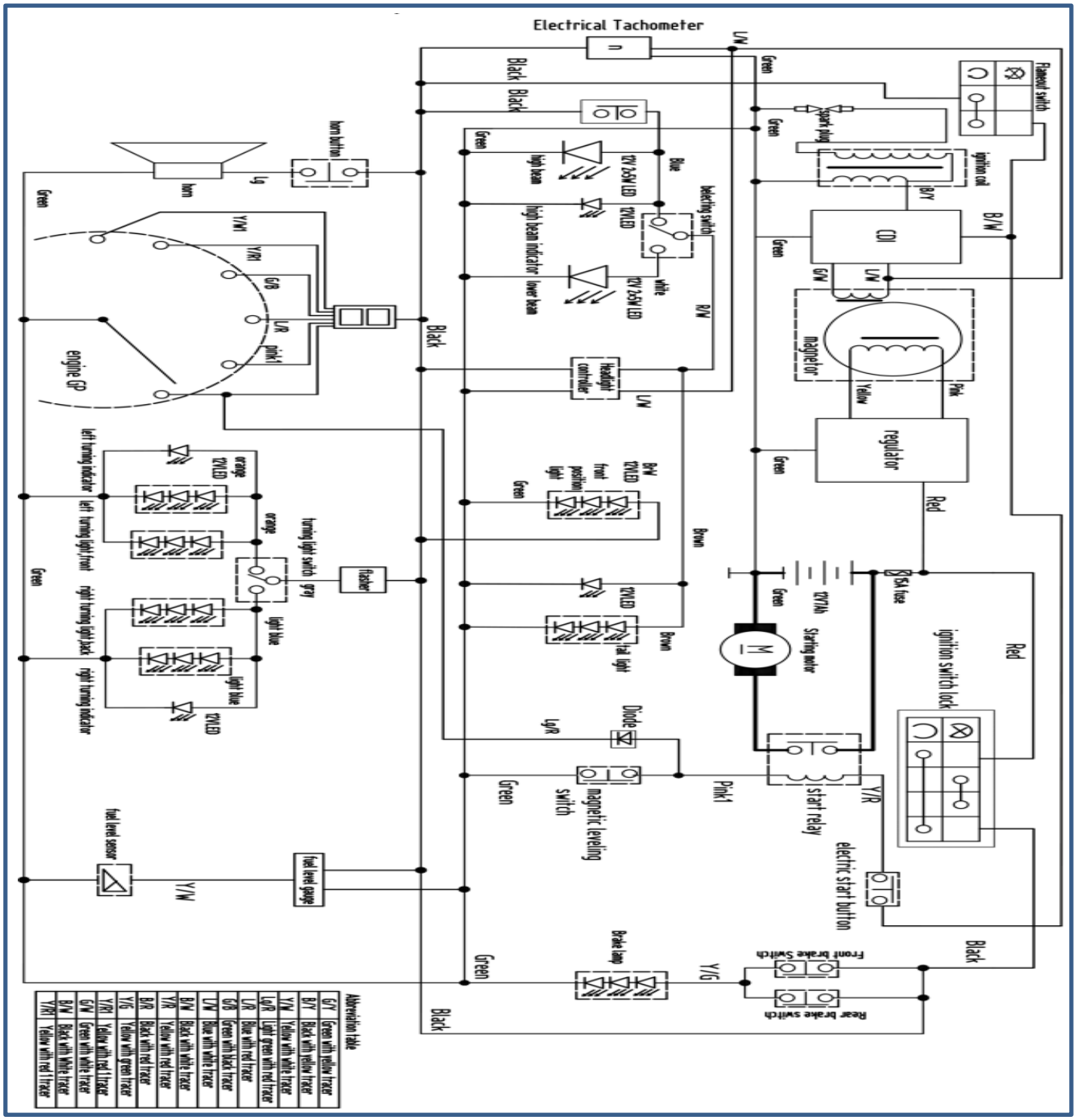
Transmission 传动装置	Gear drums groove thickness 齿轮鼓槽的厚度	Value 7mm	
	Shift fork pin outer diameter 换挡叉销外径	Value 7mm	
	Shift fork claws thickness 变速叉爪的厚度	Value 5mm	
Transmission 传动装置	Shift fork grove thickness 换挡叉槽厚度	Value 5mm	

FUEL FEED SYSTEM 燃料供给系统

Carburetor technical specifications 化油器技术规格	
Diameter of Venturi 化油器	27
Pilot jet 化油器主量孔	MJ112
Main jet 主喷嘴	10/4/1.5 (2.6/3.6)
Float level height 浮筒油面高度（化油器浮筒室内,浮筒浮起而顶住针阀,堵住进油口,使油不再流入浮筒室时,油面的高度）	2.5±1
Needle quantity of groves 针数	RT1+2/5
Idle speed 怠速	SJ35
Pilot screw position (turns from the close position) 引导螺钉的位置（从关闭位置开始转）。	1Q--3Q

ELECTRICAL SYSTEM 电气系统

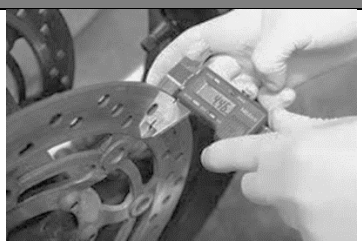
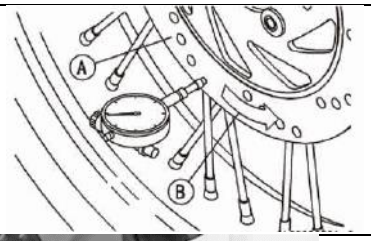
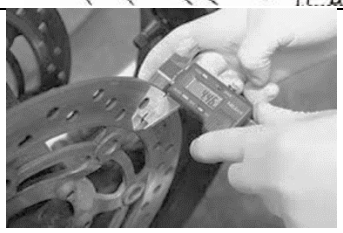
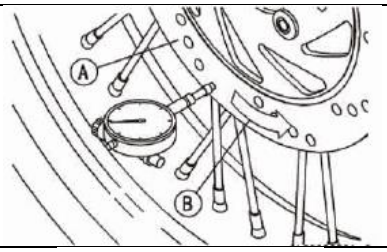
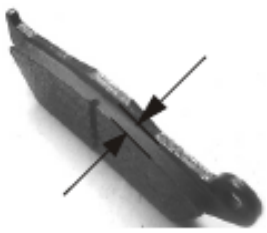
Electric diagram 电气图

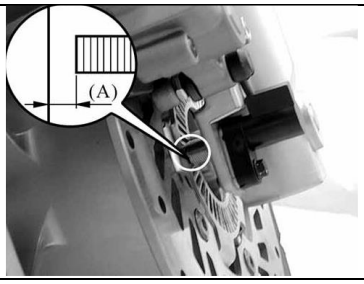
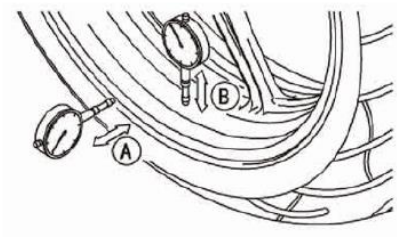


Technical data 参数表

Item 项目	Description 描述	Multimeter range 万用表范围	Value 值
CHARGING COILS 充电线圈	RESISTANCE 电阻	200Ω	150±10Ω
	AC VOLTAGE AC 电压	200 VAC	12V
RECTIFIER REGULATOR 整流稳压器	OUTPUT VOLTAGE 输出电压	20 VDC	14.5±0.5V
	CHARGING CURRENT 充电电流	20 A	10A
PULSE COIL 脉冲线圈	RESISTANCE 电阻	200Ω	
IGNITION COIL 点火线圈	RESISTANCE 电阻	200Ω	10±1KΩ
HIGH COIL 高压线圈	Ω FROM PRIMARY WINDING (coil disconnected) Ω 来自初级绕组（线圈断开）	200 Ω	0.3±0.1Ω
	SECONDARY WINDING Ω (coil disconnected) 次级绕组 Ω（线圈断开）	20 KΩ	5.1KΩ±0.5KΩ
SPARK PLUG CAP 火花塞帽	Ω OF THE CAP Ω 盖帽	20 KΩ	5KΩ±0.5KΩ
FUEL METER 燃油表 37300-K600300-0001	SUPPLY VOLTAGE 电源电压	20 VDC	5±0.2 VDC
	VOLTAGE EMPTY SIGNAL 电压空信号		1.54±0.05 VDC
	SIGNAL VOLTAGE FULL 信号电压满		0.13±0.05 VDC
	EMPTY SIGNAL RESISTANCE 空信号电阻	200Ω	98Ω
	SIGNAL RESISTANCE FULL 信号电阻满		8Ω
VSS (SENSOR-HALL-SPEED) 传感器霍尔速度	SUPPLY VOLTAGE (disconnect sensor) 电源电压（断开传感器）	20 VDC	4.4±0.2 VDC
	SIGNAL VOLTAGE activated 信号电压激活		<0.3 VDC
	SIGNAL VOLTAGE deactivated 信号电压已停用		4.4±0.2 VDC
START RELAY 启动继电器	Ω START RELAY 启动继电器 Ω	200 Ω	3.5Ω±0.5Ω
STARTING MOTOR 启动电机	CURRENT CONSUMPTION 目前消耗	200 A	空载≤30A；负载≤130A；制动≤300A
HORN 喇叭	CURRENT CONSUMPTION 目前消耗	200 A	2A

FRAME

Item 项目	Description 描述	Standard value 标准值	Image 图片
Brakes 制动	Front brake disc thickness 前碟刹盘厚度	4±0.1mm Service limit 维修极限:2mm	
	Front brake disc runout 前制动盘跳动	<0.05mm	
	rear brake disc thickness 后碟刹盘厚度	4±0.1mm Service limit 维修极限:2mm	
	Rear brake disc runout 后碟刹盘跳动	<0.05mm	
	Rear brake pads friction compound thickness 后刹车片摩擦材料厚度	7mm Service limit 维修极限: 5mm	

	Speed sensor gap 速度传感器间隙	1mm	
Ruedas	Wheel rim runout 轮辋跳动	Value A <3mm Value B <2mm	
	Drive chain free play 链条自由摆动	20-25mm	