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CF625-3      Service  
CF500-6      Manual

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# FORWARD

This manual introduces Z6/Z5EFI version (CF625-3/CF500-6) maintenance information, disassembly procedure, check & adjustment methods, troubleshooting and technical specifications. There are illustrations, drawing to guide your operations.

Chapter 1 mainly introduces general operation information, tools, vehicle structure and basic specifications.

Chapter 2 mainly introduces check & adjustment methods and how to do vehicle maintenance.

Chapter 3 mainly introduces disassembly, installation, adjustment, maintenance and troubleshooting information.

**CFMOTO reserves right to make improvements and modifications to the products without prior notice. Overhaul and maintenance should be done according to actual condition of vehicle.**

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Conversion table

Item	Example	Conversion
Pressure	200 kPa (2.00kgf/cm <sup>2</sup> ) 33kPa (250mmHg)	1kgf/cm <sup>2</sup> =98.0665kPa 1kpa=1000Pa 1mmHg=133.322Pa=0.133322kPa
Torque	18N · m (1.8kgf-m)	1kgf · m=9.80665N · m
Volume	419ml	1ml=1cm <sup>3</sup> =1cc 1l=1000cm <sup>3</sup>
Force	12N (1.2kgf)	1kgf=9.80665N

# 1 Maintenance information

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## Cautions

### Safety Cautions

1. Hazardous components in exhaust. Do not run the engine in a enclosed or poorly ventilated place for long time.
2. Do not touch the engine or muffler with bare hands after the engine has just stopped to avoid scalding. Wear long-sleeve work clothes and gloves for operation.
3. Battery liquid (dilute sulfuric acid) is highly caustic and may cause burns to skin and eyes. Flush with water if splashed to skin and get immediate medical attention. Flush with water if splashed to clothes to avoid burns. Keep battery and liquid away from reach of children
4. Coolant is poisonous. Do not drink or splash to skin, eyes or clothes. Flush with plenty of soap water if splashed to skin. If splashed into eyes, flush with water and consult the doctor. If drinking the coolant, induce vomit and consult the doctor. Keep coolant away from reach of children.
5. Wear proper work clothes, cap and boots. If necessary, wear dust-glass, gloves and mask.
6. Gasoline is highly flammable. No smoking or fire. Also keep against sparks. Vaporized gasoline is also explosive. Operate in a well-ventilated place.
7. When charged, Battery may generate hydrogen which is explosive. Charge the battery in a well-ventilated place.
8. Be careful not to get clamped by the turning parts like wheels and clutch.
9. When more than two people are operating, keep reminding each other for safety purpose.

### Cautions for Disassembling and Assembling

1. Use genuine CFMOTO parts, lubricants and grease
2. Clean the mud, dust before overhauling
3. Store the disassembled parts separately in order for correct assemble.
4. Replace the disassembled washers, o-rings, piston pin retainer, cotter pin with new ones.
5. Elastic retainers might get distorted after disassembled. Do not use the loosened retainers.
6. Clean and blow off the detergent after disassembling the parts. Apply lubricants on the surface of moving parts. Measure the data during disassembly for correct assembling.
7. If you do not know the length of screws, install the screws one by one and make sure they are screwed in with same depth.

14. Turn the inner and outer rings of ball bearing to make sure the bearing will turn smoothly.  
Replace if the axial or radial play is too big.  
If the surface is uneven, clean with oil and replace if the cleaning does not help. When pressing the bearing into the machine or to the shaft
15. Install the one-side dust-proof bearing in the right direction. When assembling the open type or double-side dustproof bearing, install with manufacturer's mark outward.
16. Keep the bearing block still when blowing dry the bearing after washing clean. Apply oil or lubricant before assembling.
17. Install the elastic circlip properly. Turn the circlip after assembling to make sure it has been installed into the slot.
18. After assembling, check if all the tightened parts are properly tightened and can move smoothly.
19. Brake fluid and coolant may damage coating, plastic and rubber parts. Flush these parts with water if splashed.
20. Install oil seal with the side of manufacturer's mark outward.  
Do not fold or scratch the oil seal lip.  
Apply grease to the oil seal lip before assembling
21. When installing pipes, insert the pipe till the end of joint. Fit the pipe clip, if any, into the groove. Replace the pipes or hoses that cannot be tightened.
22. Do not mix mud or dust into engine and/or the hydraulic brake system.
23. Clean the gaskets and washers of the engine casing before assembling. Remove the scratches on the joint faces by polishing evenly with an oilstone.
24. Do not twist or bend the cables too much. Distorted or damaged cables may cause poor
25. When assembling the parts of protection caps, insert the caps to the grooves, if any.

## Engine Brake-in

There're many movable components inside engine, such as piston, piston ring, cylinder, gears and so on. During initial use period, good run-in for every critical component is necessary. Break-in can help components match each other better and adjust working condition. Good engine performance and reliability rely on good break-in. It's very important to break-in.

Recommended break-in period: 20 Hours

Operation guide:

### 0-10 Hours

Avoid to run continuously at more than 50% throttle position. Change speed frequently and run with different throttle position. Cool down engine 5 -10 minutes after every 1 hour running. Avoid sudden acceleration, and operate throttle steadily.

### 10-20 Hours

Avoid long-time run at more than 75% throttle position. Do not open throttle completely during the period.

**Attention:** Maintain and repair as regular procedures during break-in period.

- After break-in, do not forget check and maintain engine before normal use.

# 1 Maintenance information

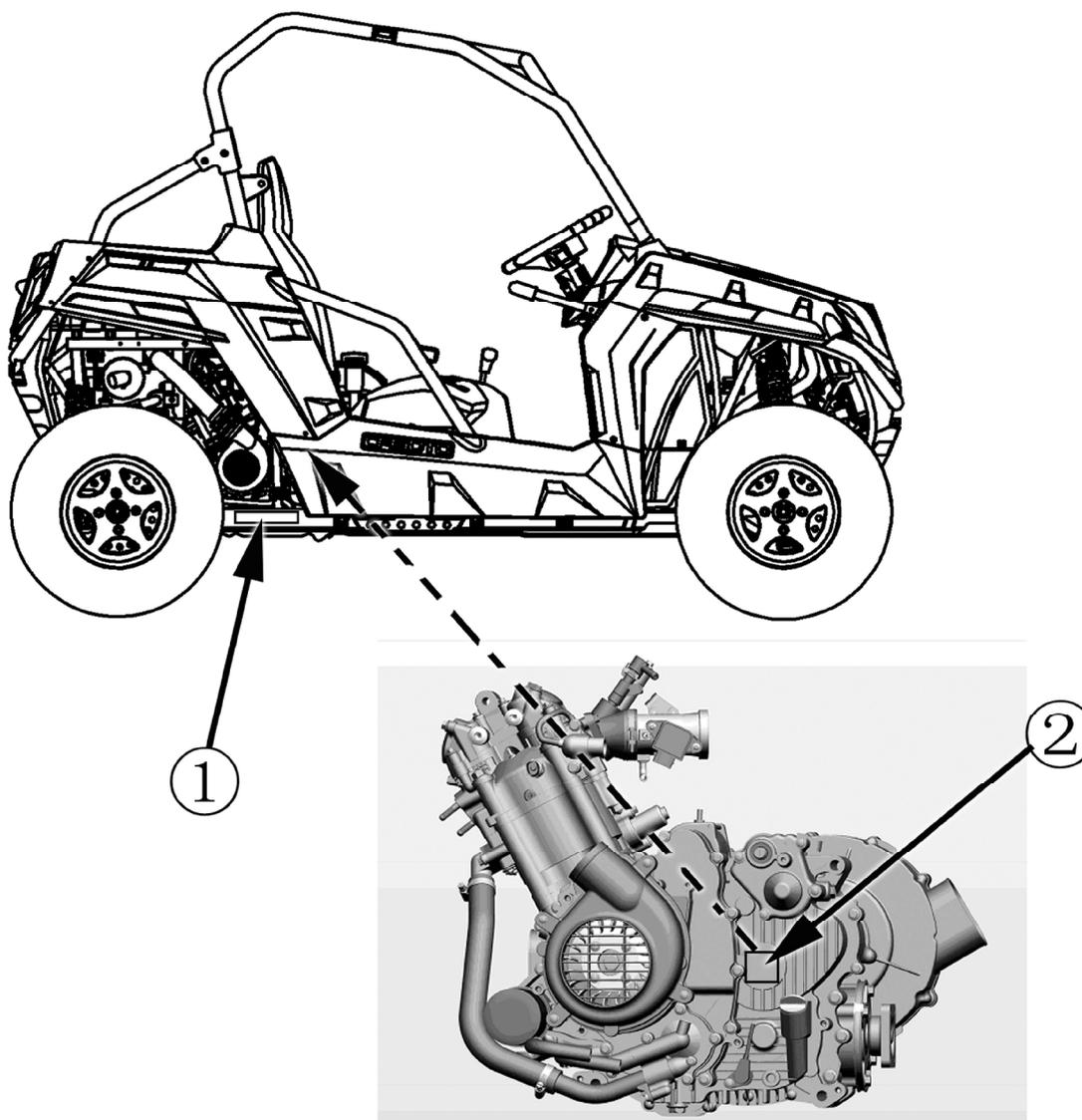
## Location of marking

Model : CF625-3/CF500-6

① VIN No: LCELDUS3~/LCELDTZ3~

② Engine No: 196S-C~/CF188-C~

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## Main parameters

Item		Specifications
Vehicle Model		CF625-3/CF500-6
Length		2630mm
Width		1320mm
Weight		1800mm
Wheel base		1960mm
Engine Model		196S-C/CF188-C
Displacement		594ml/493ml
Fuel type		RQ-93 or over grade gasoline
Gross weight		495 kg
Passengers		2 (including driver)
Max. load		250 kg
Tire specifications	Front tire	25×8-12 77J
	Front tire	205/80-12 77J
	Rear tire	25×10-12 85J
	Rear tire	255/65-12 85J
Min. ground clearance		240mm
Min. turning radius(from outer tire)		5000mm
Engine	Starting type	Electric starting
	Engine type	Single cylinder、4 stroke、water-cooled engine、4-valves、SOHC
	Chamber type	Triangle
	Valves system	SOHC /chain-drive
	Bore×Stroke	196S-C: 96mm×82.0mm
		CF188-C:87.5mm×82.0mm
	Compression ratio	196S-C:10:1/CF188:10.2:1
	Lubricant type	Pressure splash
	Oil pump	Rotor
	Oil filter element	Full flow filter paper
	Oil type	SAE15W-40/Sf or over
	Cooling type	Closed-loop cooling system
Coolant type	-30℃ anti-freezing	

# 1 Maintenance information

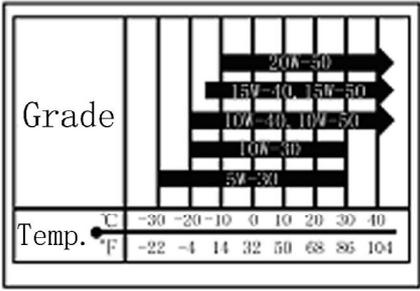
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Item		Parameters		
Fuel device	Air filter type	Sponge filter element		
	Throttle body	Type	196S-C:196S-B-173000 CF188-C:CF188-B-173000	
Powertrain	Clutch type	Wet shoe-type automatic centrifugal		
	Transmission	( CVT ) + Gear shift when parking		
	Gear changes	Two forward and one reverse		
	Gear shift/orders	Manually/L-H-N-R		
	( CVT ) ratio	2.88~0.70		
	Gear ratio	Final output	1.333 ( 24/18, Bevel gear )	
		Second output	1.952 ( 41/21 )	
		Gear shift ratio	Low gear: 2.25(36/16); High gear: 1.350(27/20); Reverse gear: 1.471(25/17)	
		Other	Low gear:5.857; High gear: 3.514; Reverse gear: 3.828	
	Transmission ratio	Front axle	33 / 9 = 3.667	
Rear axle		33 / 9 = 3.667		
Output type	Front & Rear output			
Rotation direction	Clockwise (view from rear part of engine when gear in forward position)			
Steering device	Steering angle	Inner	30°	
		Outer	30°	
Suspension system	Travel of front wheel	136mm		
	Travel of rear wheel	128mm		
Toe-in	0-10mm			
Suspension system	Travel of front suspension	80mm		
	Travel of rear suspension	80mm		
Kingpin angle	3.5°			
Brake system	Front	Hydraulic brake		
	Rear	Hydraulic brake		
Suspension	Type	Double wishbone and independent		
Frame type	Steel tube and steel plate			

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## Maintenance parameters

### Lubricant device

Item		Standard	Limit
Oil capacity	Oil change	2500mL	—
	Full capacity	2800mL	—
Recommended oil ( See below )		<ul style="list-style-type: none"> <li>· Specially for 4-stroke engine oil SAE-15V/SF</li> <li>· If substitute oil used, please make sure in below range.</li> <li>· API: SF or SG grade oil</li> <li>· SAE: Choose according to left table</li> </ul>	
			
Rotor of oil pump	Clearance between inner and outer rotors	0.03~0.1mm	0.15mm
	Clearance between outer rotor and pump body	0.03~0.1mm	0.12mm
	Oil pressure	130-170Kpa at 3000r / min	

### Air intake system

Item		Standard
Fuel tank	Full capacity	27L
Throttle body type		196S-C: 196S-B-173000 CF188-C: CF188-B-173000
Air pressure sensor type		CF188-B-175000
Air temp. sensor type		CF188-B-177000
Air by-pass valve type		CF188-B-172000
Injector type		CF188-B-171000
Idle speed		1400±100r / min

# 1 Maintenance information

## Cooling device

Item		Standard value		Limit	Remarks
Coolant capacity	Full capacity	2720ml			
	Reservoir capacity	250 ml ~300ml			
	Standard density	50%			
Opening pressure of thermostat		108kpa(1.1kgf/cm <sup>2</sup> )			
Thermostat	Opening temp.	71±3℃			
	Fully opening temp.	88℃			
	Travel if fully opening	95℃ 3.5~4.5mm			
Relations of resistance of water temp. sensor and water temp.	Temp. (℃)	Resistance of B terminal (Ω)	Resistance of A & C terminal (kΩ)		
	-20	----	13.71-16.94		
	25	-----	1.825-2.155		
	50	176-280	----		
	80	63.4-81.4	0.303-0.326		
	110	24.6-30.6	0.138-0.145		
Working temp. of thermal switch	OFF-ON	Around 88℃	Around 88℃		
	ON-OFF	Around 82℃	Around 82℃		
Coolant type	-30℃ anti-freezing and high boiling point				

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## Front wheel

Item		Standard	Limit
Front wheel	Jump of rim	Longitude	1.0mm
		Transverse	1.0mm
	Tire	Remaining groove	—
		Air pressure	70kPa ( 0.70kgf / cm <sup>2</sup> )

## Rear wheel

Item		Standard	Limit
Rear wheel	Jump of rim	Longitude	1.0mm
		Transverse	1.0mm
	Tire	Remaining groove	—
		Air pressure	84kPa ( 0.84kgf / cm <sup>2</sup> )

## Braking system

Item		Standard	Limit
Diameter of master cylinder			
Front brake	Thickness of brake disc	4.0mm	2.5mm
	Thickness of brake pad	6.0mm	Marking place
Rear brake	Thickness of brake disc	4.0mm	2.5mm
	Thickness of brake pad	6.0mm	Marking place
	Play of brake pedal	0mm	—

# 1 Maintenance information

## Battery, Charging, Pick-up coil

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Item		Standard	
AC Flywheel	Type	flywheel-rotor permanent-magnet generator	
	Output	3 phase AC	
	Resistance of charging coil (20? )	0.5Ω-1.5Ω	
	Resistance of pick-up coil of flywheel	110Ω-130Ω	
	No-load voltage of flywheel ( cold engine )	> 100V ( AC ), 5000r/min	
	Max. output power	300W, 5000r/min	
	Stable voltage	13.5V-15.0V, 5000r/min	
Peak voltage of pick-up coil	≥1.5V, 200 r/min		
Regulator		three-phase supply power of thyristor trigger circuit	
Battery	Capacity	12V 18Ah	
	Terminal voltage	Fully charged	12.8V
		Undercharge	Under 11.8V
	Charging current / time	Standard	0.9A / 5~10H
Quick		4A / 1H	

## Ignition system

Item		Standard
Ignition type		ECU
Spark plug	Type	Resistant-type
	Standard	DPR7EA-9(NGK)
	Optional	DR8EA、D7RTC
	Clearance	0.8-0.9mm
Characteristic	> 8mm, under 1 Kpa	
Ignition time	BTDC10° 1500r/min	
Resistance of ignition coil	First	0.74Ω-0.78Ω
	Second	10.1kΩ-11.1 kΩ
Peak voltage	First	> 150V
	Pulse voltage	2V
Resistance of starter relay coil		3Ω-5Ω
Resistance of auxiliary relay coil		90Ω-110Ω

## Lighting, Dashboard, Switch

Item		Standard
Fuse	Main	20A
	Auxiliary	10A×3 15A×2 7.5A×1
Lighting and bulb	Headlight ( Hi / Lo )	12V—35W/35W×2
	Front position light	12V—5W×2
	Brake light / Retail light	12V—21W/5W×2
	Front turning light	12V—21W×2
	Rear turning light	12V—10W×2
	Dashboard	LCD

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## Valves/Cylinderhead

(mm)

Item	Standard		Limit	Remarks
Diameter of valve head		196S-C	CF188-C	
	Inlet	32.6	30.6	——
	Outlet	29	27	——
Valve clearance(cold condition)	Inlet	0.05-0.10		——
	Outlet	0.17-0.22		——
Clearance of valve guide and valve stem	Inlet	0.010-0.037		——
	Outlet	0.030-0.057		——
Inner diameter of valve guide	Inlet & Outlet	5.000-5.012		——
Outer diameter of valve stem	Inlet	4.975-4.990		——
	Outlet	4.955-4.970		——
Jump of valve stem	Inlet & Outlet	——		0.05
Length of valve stem end	Inlet & Outlet	2.9-3.1		2.3
Thickness of valve head	Inlet & Outlet	——		0.5
Jump of seal band of valve head	Inlet & Outlet	——		0.03
Width of seal band of valve seat	Inlet & Outlet	0.9-1.1		——
Length of valve spring	Inlet & Outlet	40		38.8
Elasticity of valve spring	Inlet & Outlet	Elasticity is 182-210N when pressing to 31.50mm		——
Height of Cam	Inlet	33.430-33.490		33.130
	Outlet	33.500-33.560		33.200
Clearance of outer diameter of camshaft and hole	φ22	0.032-0.066		0.150
	φ17.5	0.028-0.059		0.150
Outer diameter of camshaft	φ22	21.959-21.980		——
	φ17.5	17.466-17.484		——
Inner diameter of camshaft hole	φ22	22.012-22.025		——
	φ17.5	17.512-17.525		——
Jump of camshaft	——		0.10	
Inner diameter of rocker hole	Inlet & Outlet	12.000-12.018		——
Outer diameter of rocker shaft	Inlet & Outlet	11.973-11.984		——
Contact flatness of cylinder head	0.03		0.05	
Contact flatness of cylinder head cover	0.03		0.05	

# 1 Maintenance information

## Cylinder+Piston+Piston-ring+Crankshaft

(mm)

Item	Standard		Limit	Remarks
Cylinder pressure	1000kPa		————	
Clearance of piston and cylinder	196S-C:0.048-0.068		0.15	
	CF188-C:0.030-0.051			
Diameter of piston skirt	196S-C:95.960-95.980 Measure position of 4mm away from piston skirt end		95.880	
	CF188-C:87.460-87.480 Measure position of 10mm away from piston skirt end		87.380	
Inner pressure of cylinder	196S-C: 96.018-96.038		————	
	CF188-C:87.500-87.522			
Contact flatness of cylinder	0.015		0.05	
Free gap of piston ring	1ring	R	Around 11.7	8.9
	2ring	R	Around 12	9.5
Closed gap clearance of piston ring	1ring	196S-C:0.20-0.35		0.60
		CF188-C:0.15-0.30		
	2ring	0.15-0.30		0.60
	1ring	0.04-0.08		0.180
Clearance of piston groove	2ring	0.03-0.07		0.150
	1ring	0.97-0.99		————
Thickness of piston ring	2ring	1.17-1.19		————
	1ring	1.03-1.05		————
Width of piston groove	2ring	1.22-1.24		————
	Oil ring	2.51-2.53		————
Inner diameter of piston pin hole	23.002-23.008		23.030	
Outer diameter of piston pin hole	22.995-23.000		22.980	
Inner diameter of small end of connecting rod	196S-C:23.015-23.020		23.040	
	CF188-C:23.006-23.014			
Side clearance of big end of connecting rod	0.10-0.55		1.0	
Thickness of big end of connecting rod	24.95-25.00			
Jump of crankshaft	0.03		0.08	

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**Clutch+Powertrain****(mm)**

Item	Standard	Limit	Remarks
Inner diameter of clutch disc	140.00-140.15	140.50	
Contact rotation speed of clutch	1800-2400r/min	————	
Locked rotation speed of clutch	3300-3900r/min	————	
Width of drive belt	35.2	33.5	
Free length of driven pulley spring	168	160	
Clearance of gear shift fork and groove	0.10-0.40	0.50	
Thickness of left gear shift fork	5.8-5.9	————	
Thickness of right gear shift fork	5.8-5.9	————	
Goove width of gear shift guide	6.0-6.2	————	
Goove width of driven output gear	6.0-6.2	————	

# 1 Maintenance information

## Tightening torque

Item	Torque N · m (kgf · m)	Item	Torque N · m (kgf · m)
5mm Bolt、Nut	5 (0.5)	5mm Screw	4 (0.4)
6mm Bolt、Nut	10 (1.0)	6mm Screw	9 (0.9)
8mm Bolt、Nut	20 (2.0)	6mmSH Flange bolt	10 (1.0)
10mm Bolt、Nut	34 (3.5)	6mm Flange bolt, nut	12 (1.2)
12mm Bolt、Nut	54 (5.5)	8mm Flange bolt, nut	20 (2.0)
		10mm Flange bolt, nut	39 (4.0)

Tighten as standard torque if without torque written.

Note: Coat engine oil on screw thread and contact interface

Item	Diameter of thread (mm)	Qty	Torque	Remarks
Mounting bolt of engine	GB5789 M12×1.25×145	2	50~60	
Mounting shaft of front rocker	9060-050103	4	40~50	
	M10×1.25×240			
Mounting shaft of rear rocker	9060-060102	2		
	M10×1.25×238			
Bolt, rear rocker (lower)	GB5789 M10×1.25×90	4		
Bolt, front shock absorber	M10×1.25×55	4	40~50	
Bolt, rear shock absorber	M10×1.25×55	4	40~50	
Bolt, rear wheel axle bracket	M10×1.25×90	4	40~50	
Mounting nut, rim	901-07.00.02 M20	16	50~60	
Nut, rim shaft	901-07.00.03 M10	4	110~130	
Mounting screw, rear master cylinder	M6×25	2	18~22	
Bolt, rear brake caliper	M10×1.25×20	2	40~50	
Bolt, rear brake disc	901-08.00.03 M8×24	8	25~30	
Bolt, rear brake caliper	M8×35	4	16~20	
Nut, steering rod	M10×1.25	4	40~50	
Locking nut, steering shaft	M14×1.5	1	100~120	
Bolt, exhaust pipe	M8×14	1	16~20	
Mounting bolt, rear axle	M10×1.25×130	2	40~50	
Mounting bolt, rear axle	M10×1.25×90	1	40~50	
Mounting bolt, rear axle	M10×1.25×25	2	40~50	
Thermal switch	CF250T-420500	1	9~12	

## 196S-C/CF188-C engine tightening torque table

Item	Qty	Thread size (mm)	Torque (N.m)	Remarks
Reverse sensor	1	M10×1.25	20	
Spark plug	1	M12×1.25	18	
Water temp. sensor	1	M12×1.5	12.3	Locking glues coated
Adjust nut, valve clearance	4	M5	10	
Nut, drive pulley	1	M20×1.5	115	
Nut, driven pulley	1	M20×1.5	115	
Round nut, driven pulley	1	M30×1	100	
Nut, front output shaft	1	M14×1.5	97	
Nut, drive bevel gear	1	M22×1	145	
Nut, driven bevel gear	1	M16×1.5	150	
Fixing nut, clutch	1	M18×1.5	70	rotate left
Bearing retainer nut, driven bevel gear	1	M60	110	Seal glues coated
Bearing retainer nut, front output shaft	1	M55	80	Seal glues coated, rotate left
Bolt, rocker shaft	2	M14×1.25	28	
Drain oil bolt	1	M12×1.5	30	
Mounting bolt, overriding clutch	6	M8	26	Locking glues coated
Mounting bolt, flywheel stator	3	M6	10	Locking glues coated
Screw, CVT windshield	3	M6	10	Locking glues coated
Hinge bolt, oil pipe	2	M14×1.5	18	
Mounting bolt, oil pump	3	M6	10	
Mounting bolt, pressure limiting valve	2	M6	10	
Bolt, cover of drive bevel gear	4	M8	32	
Bolt, cover of driven bevel gear	4	M8	25	
Position bolt, gear shift	1	M14×1.5	18	
Flange bolt, fan	1	M10×1.25	55	

# 1 Maintenance information

Continued

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Item	Qty	Diameter of thread (mm)	Torque (N.m)	Remarks
Bolt, crankcase	14	M6	10	
	3	M8	25	
Bolt, driven sector gear of shift	1	M6	12	
Mounting bolt, oil filter	1	M20×1.5	63	
Mounting bolt, starting motor	2	M6	10	
Mounting bolt, cylinder head	4	M10	46	
Mouning nut (both sides), cylinder head	2	M6	10	
	1	M8	25	
Mounting bolt, cylinder	4	M6	10	
Mounting bolt, cylinder head cover	12	M6	10	
Mounting bolt, chain tensioner	2	M6	10	
Mounting nut, chain tensioner	1	M8	8	
Mounting bolt, fan motor	3	M6	10	
Mounting bolt, cover of thermostat	2	M6	10	
Bolt, water pump cover	3	M6	6	
Mounting bolt, water pump	2	M6	10	
Fixing bolt, timing chain sprocket	2	M6	15	Glues coated
Other non-mentioned bolt		M5	4.5-6	
		M6	8-12	
		M8	18-25	

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## Engine overhaul tools

Measuring tools				
Item	Tool name	Specifications	Purposes	Remarks
1	Vernier caliper	0-150mm	Measure length and thickness	
2	Micrometer	0-25mm	Measure outer diameter of rockershaft, valve stem, camshaft	
3	Dial gauge	25-50mm	Measure Max. travel of camshaft	
4	Dial gauge	75-100mm	Measure size of piston skirt	
5	Inner diameter of cylinder meter		Measure cylinder size & pressure	
6	Inside caliper micrometer	10-34mm	Measure inner diameter of rocker and piston pin hole, connecting rod hole	
7	Dial indicator	1/100	Measure jump	
8	Knife straight edge		Measure flatness	
9	Feeler gauge		Measure flatness and adjust valve clearance	
10	Oil gauge		Measure fuel level of carburetor	
11	Plastigauge		Measure fit clearance	
12	Spring balance		Measure elasticity of spring	
13	RPM meter		Measure RPM	
14	Cylinder pressure meter		Measure engine cylinder pressure	
15	Oil pressure meter		Measure oil pressure	
16	Air pressure meter		Measure opening pressure of radiator cover	
17	Ohmmeter		Measure resistance and voltage	
18	Amperometer		Measure current of switch	
19	Thermometer		Measure coolant temp.	
20	Timing light		Measure ignition timing	
21	Torque measuring wrench	One set	Measure tightening torque	
General and auxiliary tools				
22	Alcohol light		Warm up or increase temp.	
23	Magnetism meter seat		Mounting dial indicator	
24	Plate		Auxiliary measurement	
25	V-shaped bluff		Auxiliary measurement for jump	
26	Nipper		Mounting valve lock-clip	
27	Double clip reed		Disassembly and assembly of double clip	
28	Pinching tools		Disassembly and assembly of retainer	
29	Impact driver		Disassembly of crosshead bolt	
30	Screw driver			
31	Plus driver			

# 1 Maintenance information

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Special tools				
Item No.	Tool name	Specifications	Purposes	Remarks
1	Special wrench, spark plug	172MM-022400-922-004	Disassembly/assembly of spark plug	
2	CVT wrench for rotation stop	CF188-051000-922-001 CF188-052000-922-001	Disassembly/assembly of nut of CVT drive and driven pulley	
3	Special wrench for oil filter	CF188-011300-922-001	Disassembly/assembly of oil filter	
4	Tool for piston pin	CF188-040004-922-002	Disassembly of piston pin	
5	Remover of rotor	CF188-031000-922-001	Disassembly of flywheel rotor	
6	Seperator of crankcase		Split left and right crankcase	
7	Remover of crankshaft		Remove crankshaft from left crankcase	
8	Assembly tool for crankcase		Assembly crankshaft on left crankcase	
9	Tool for compressing valve spring	CF188-022006-922-001	Disassembly/assembly for valve spring	
10	Valve grinder	CF188-022004-922-001	Grinder valve	
11	Wrench for round nut	CF188-052000-922-003	Disassembly and assembly of CVT driven pulley	
12	Fixture of driven pulley	CF188-052000-922-004	Disassembly and assembly of CVT driven pulley	
13	Compressor of driven pulley	CF188-052000-922-002	Disassembly and assembly of CVT driven pulley	
14	Wrench for bearing retainer nut of driven bevel gear	CF188-062204-922-001	Disassembly and assembly of bearing retainer nut of driven bevel gear	
15	Mounting tool for bearing	set	Assembly for bearing and oil seal	
16	Disassembly tool for bearing	set	Disassembly for bearing	
17	Disassembly tool for oil seal		Disassembly for oil seal	
18	Wrench for bearing retainer nut of front output shaft	CF188-060008-922-001	Disassembly of bearing retainer nut of front output shaft	
19	Rotation stop wrench for fan flange	CF188-A-180003-922-003	Disassembly and assembly for fan flange and adjustment of valve clearance	
20	PDA		Diagnosis of EFI troubles	
21	Clip pliers of Oetiker		Assembly and disassembly of special clip of high-pressure fuel pipe	

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## Grease/sealing materials

Coating area	Attention points	Grease
Bearing Throttle cable connecting point Throttle pedal fixing point Brake pedal fixing point Suspension arm Steering column Seat lock Gear shifting points		Multi-purpose grease

### Engine oil/Grease/Coolant/Glues

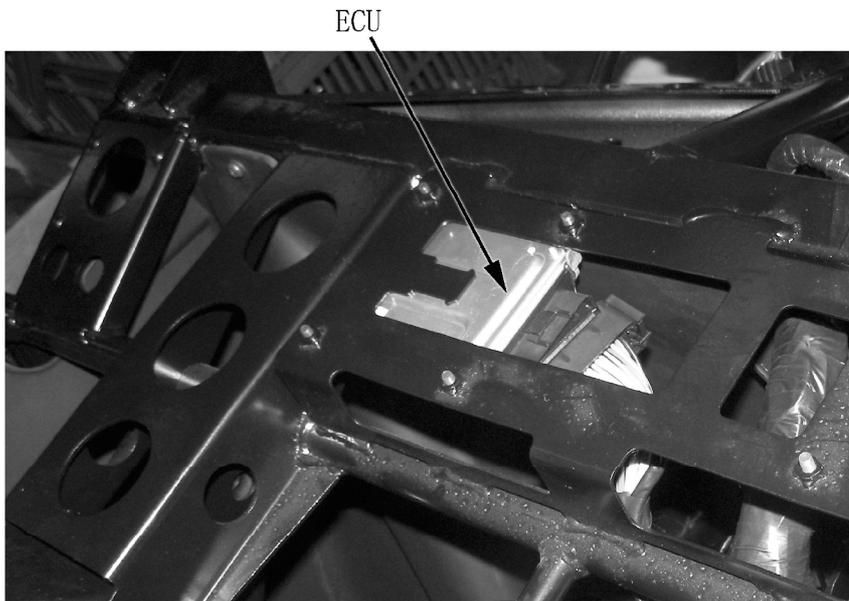
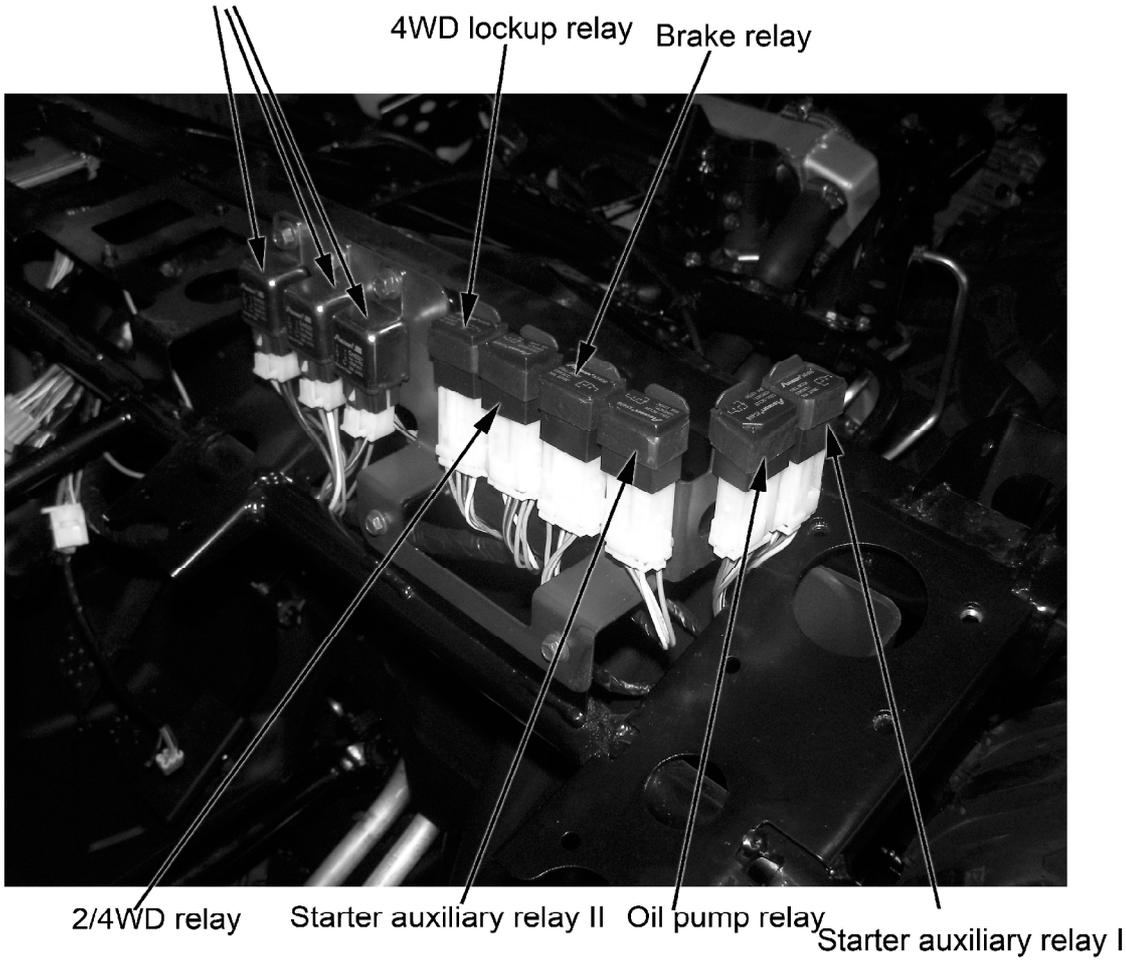
Engine oil, grease, coolant and glues are necessary to keep engine working in a good performance.

Item	Specification	Using areas	Remarks
Engine oil /grease	SAE15W-40 API: SF or SG grade ( Substitution oil, please refer to 1-3 )	Inside cylinder Inside crankcase Inside cylinder head Details please see ( 5-14 )	Volume 1900m L ( Change oil ) 2000 m L ( Replace oil filter ) 2200 m L ( Engine overhaul ) , not including oil radiator
Grease		Piston pin, connecting rod, valve seals and camshaft	
Grease/butter	No. 3 MoS <sub>2</sub> grease	Oil seal, O-ring and other rubber seals, bearing and CVT bearing as well as bushing	
Coolant	-30 ℃ anti-freezing, anti-corrosive , high boiling point coolant	Engine cooling system	
Seal glues		Contact surface between crankcase and cylinder, cylinder head and its cover	
Locking glues		For screws and bolt threads	

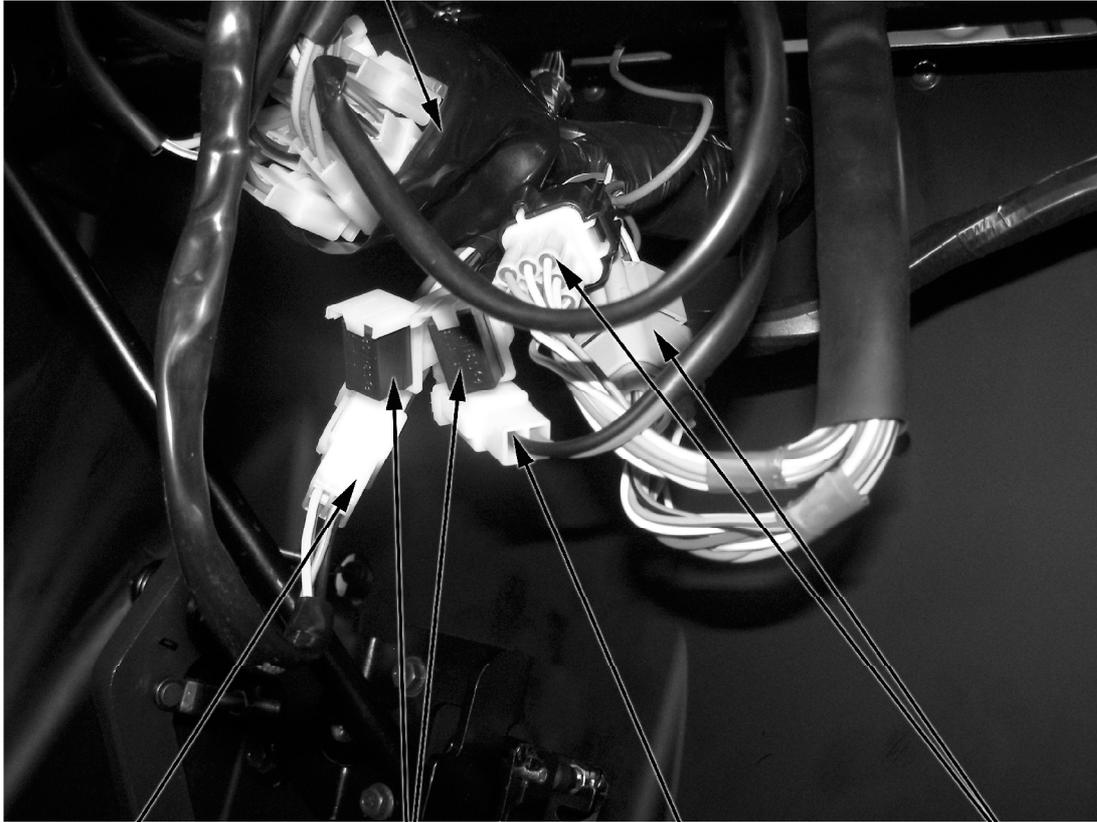
# 1 Maintenance information

## Wiring/Pipes/Cables

High beam relay/Low beam relay/Fan relay



Connectors for flameout switch/Steering switch/Clock setting switch/Alerting signal lamp switch/Horn switch/High and low beam switch/lighting switch/booster switch, etc



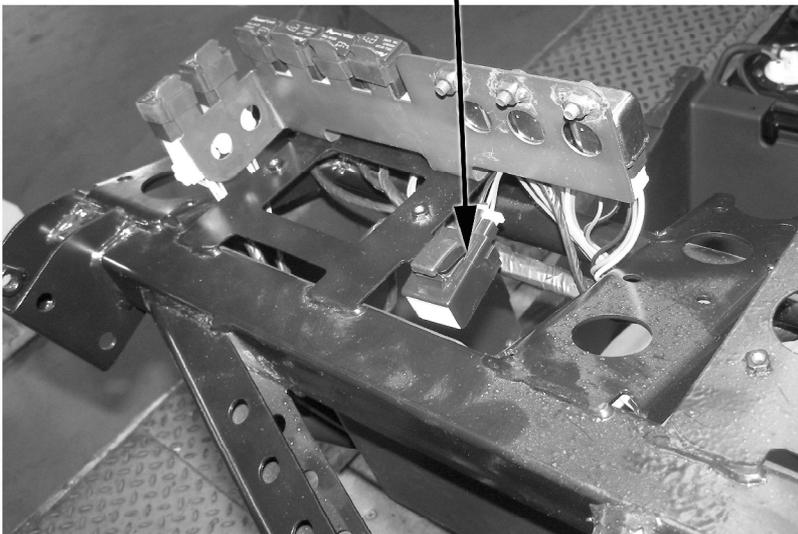
Connector for ignition switch

Starting diode

Connector for auxiliary power output socket

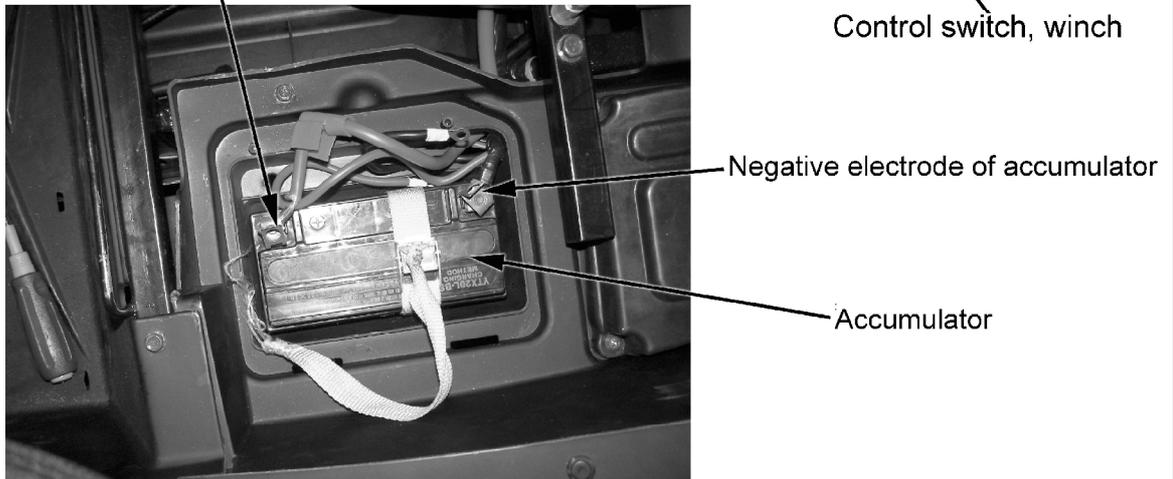
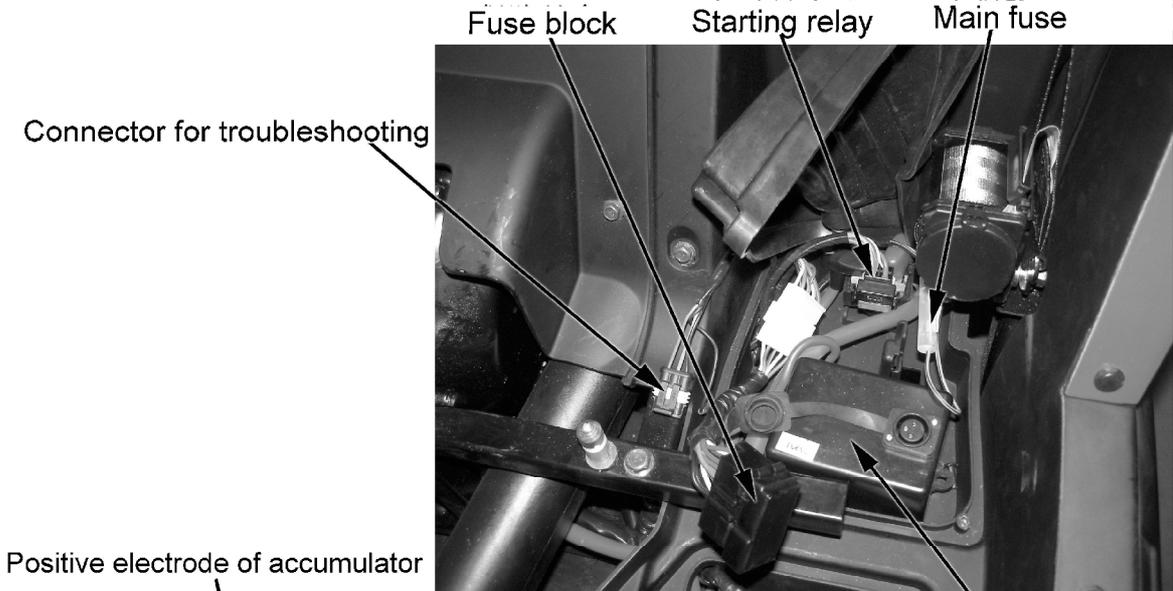
Meter connectors

Flash unit

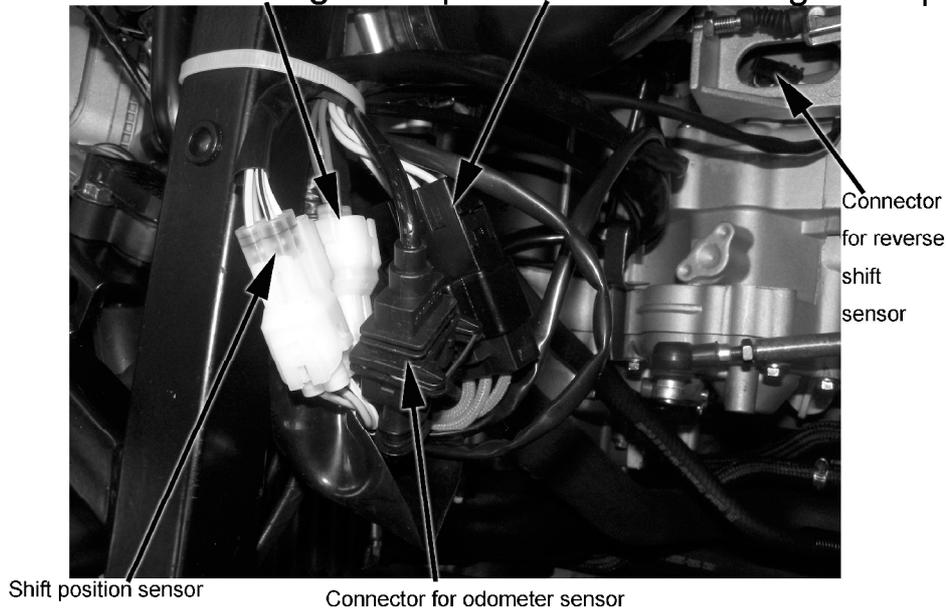


# 1 Maintenance information

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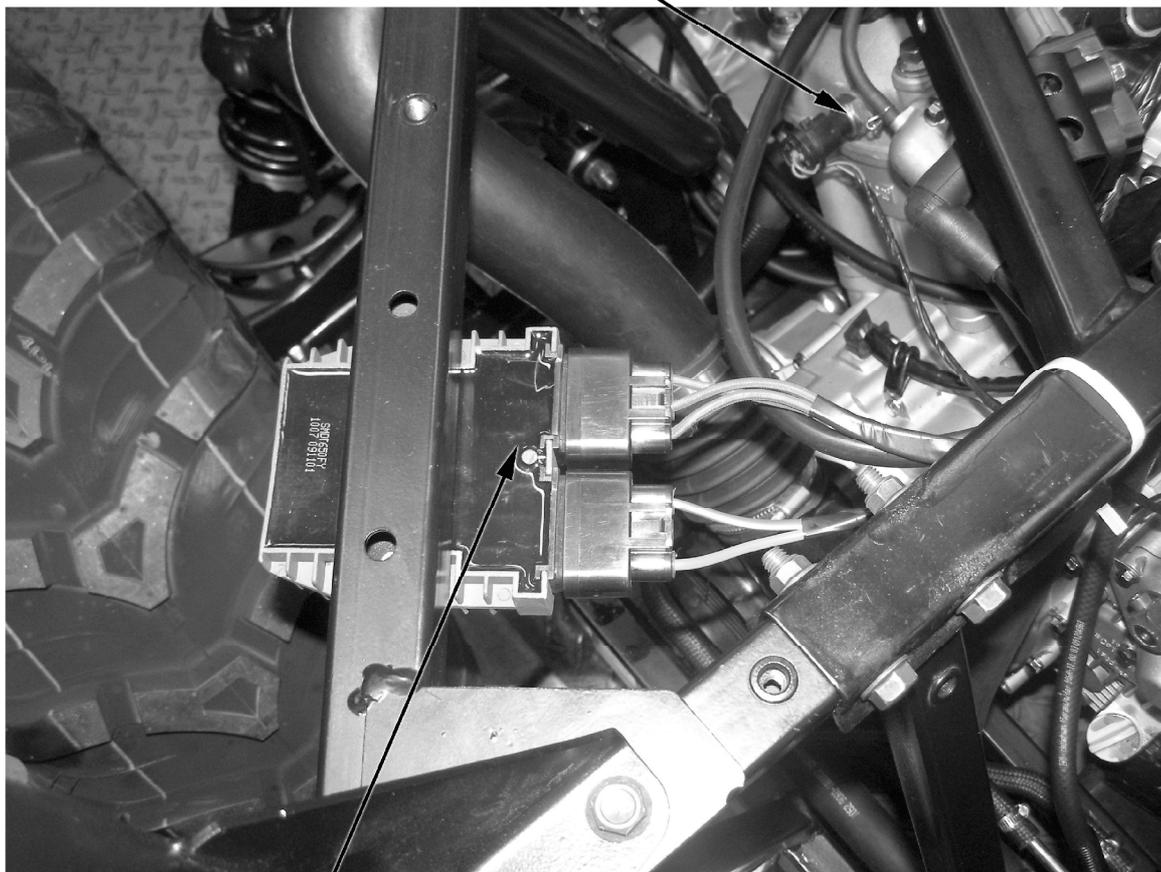


Connector for magneto 2p Connector for magneto 3p

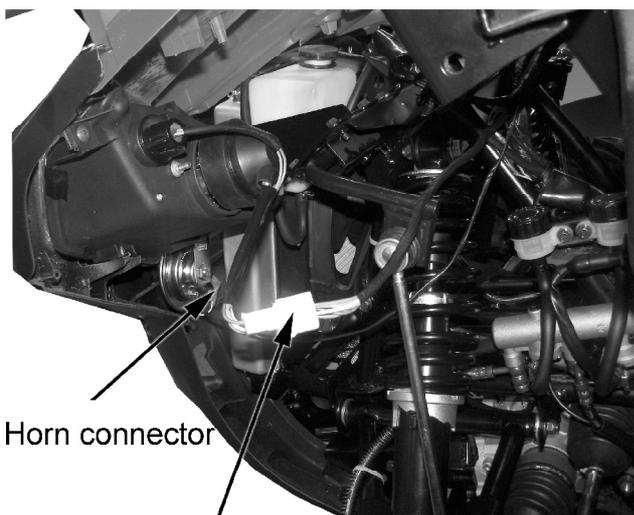


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Water temperature sensor

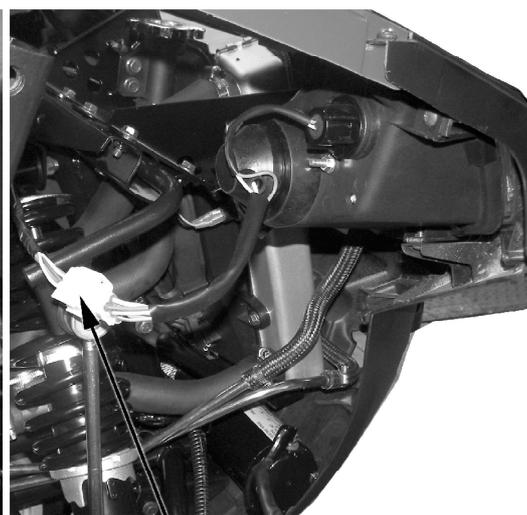


Variable voltage rectifier



Horn connector

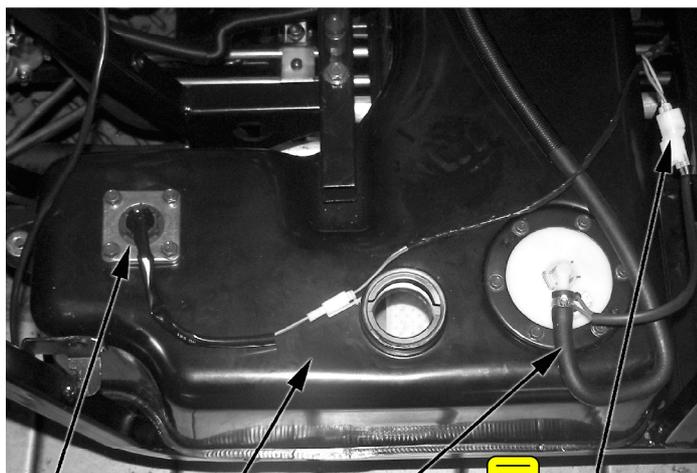
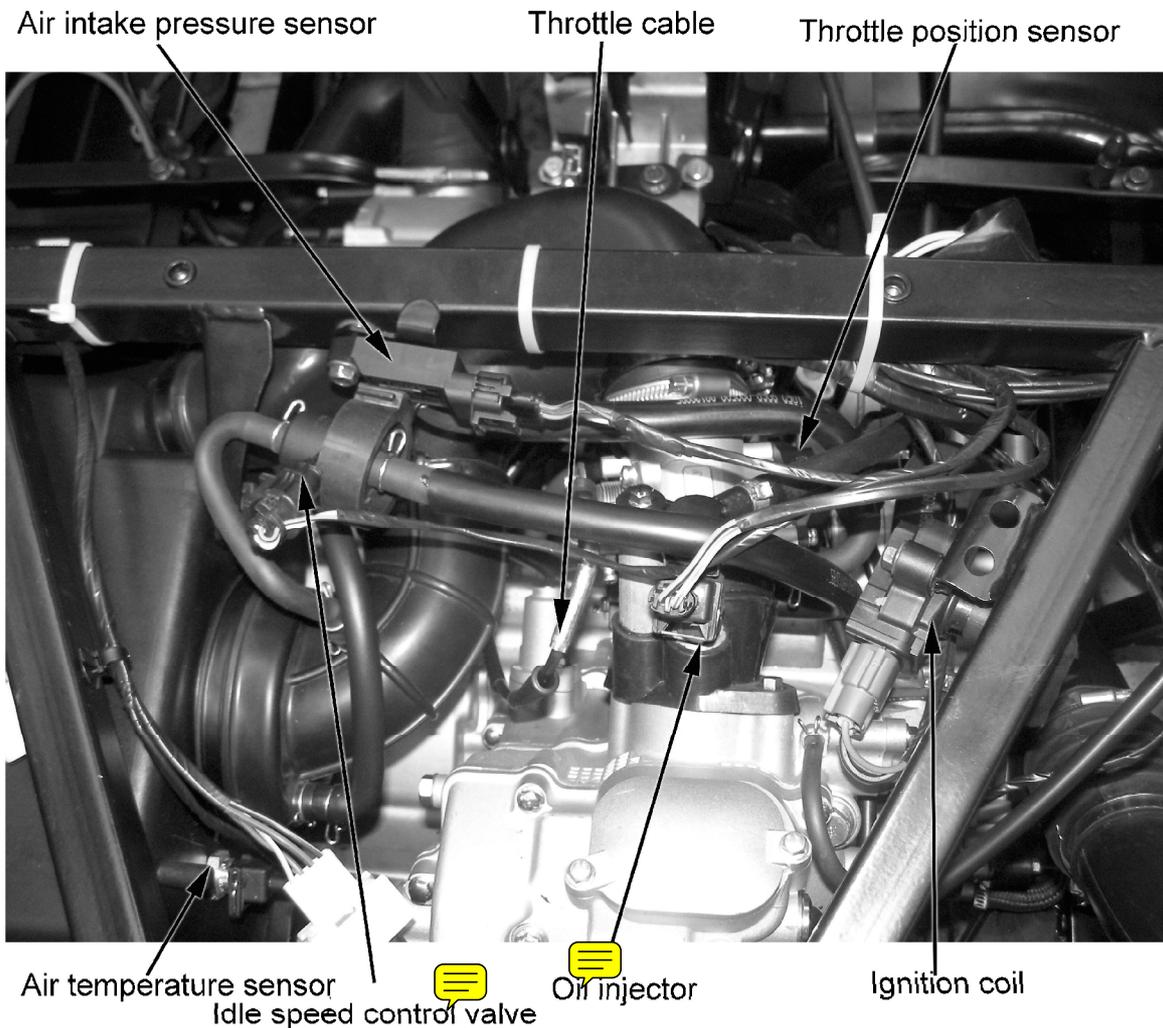
Connector for left headlamp



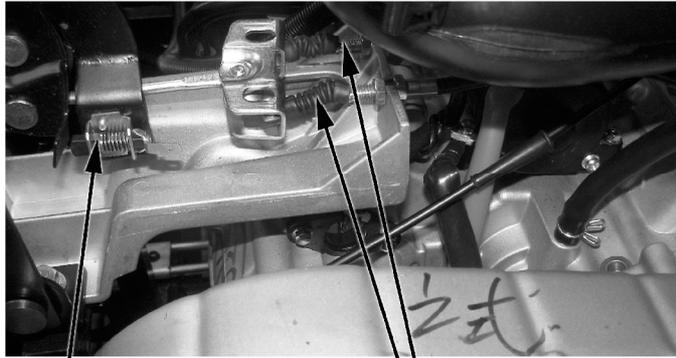
Connector for right headlamp

# 1 Maintenance information

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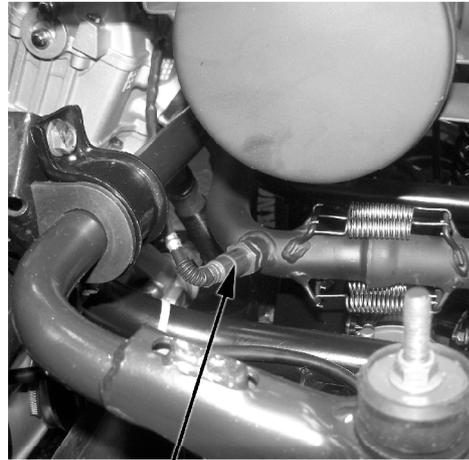


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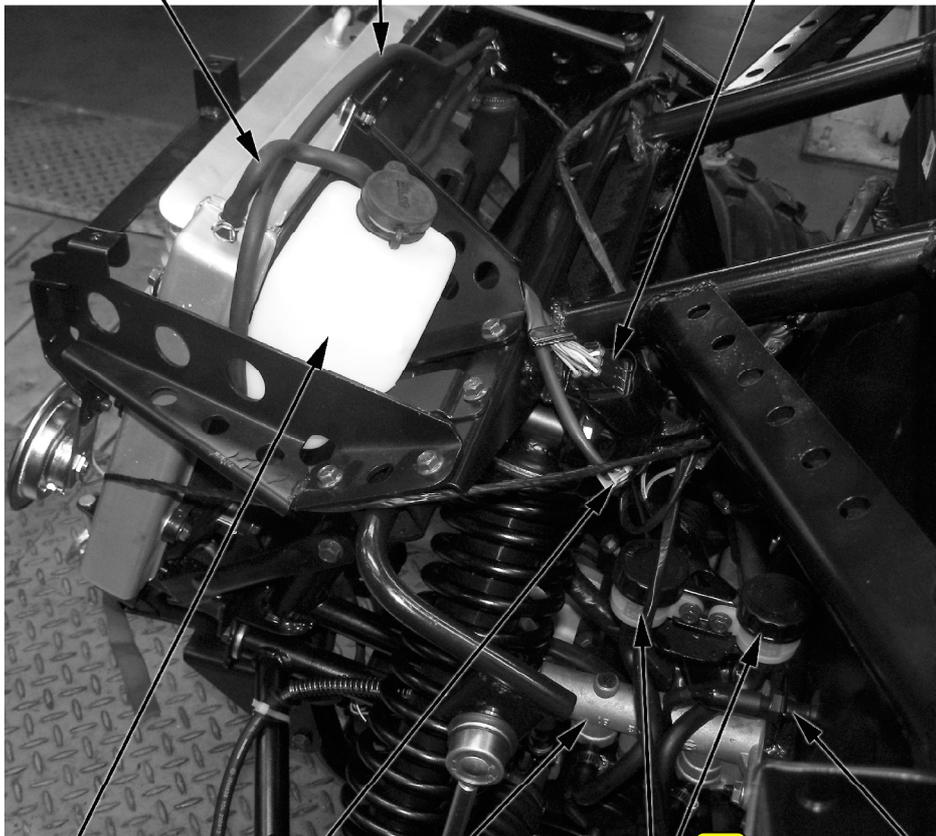
Parking switch

Parking cable



Oxygen sensor

Overflow pipe of Radiator    Water pipe of reservoir tank    Differential connector



Reservoir tank

Fan connector

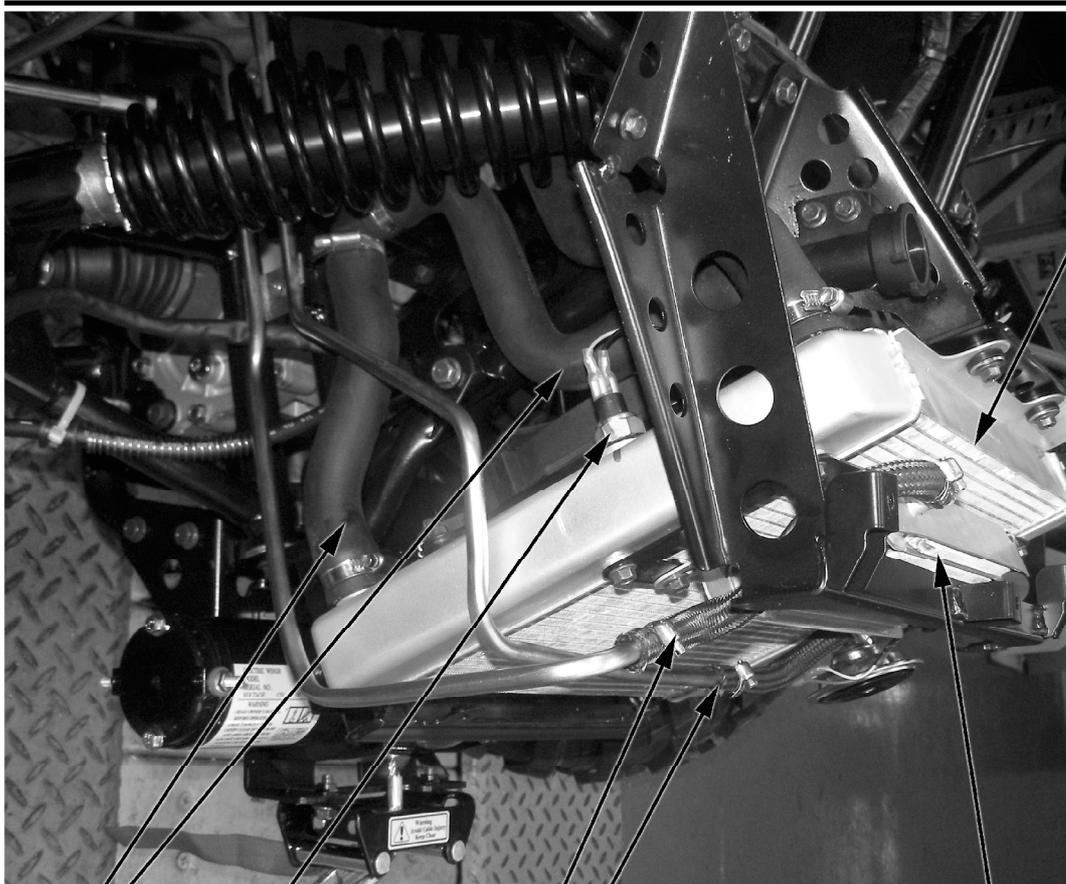
Brake pump

Brake oil cup

Brake switch

# 1 Maintenance information

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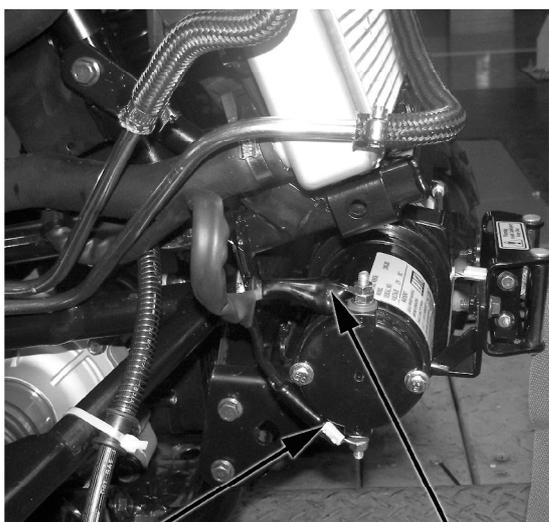
Water pipe

Thermo switch

Engine oil pipe

Engine oil radiator

Radiator



Negative pole of windlass motor

Positive pole of windlass motor

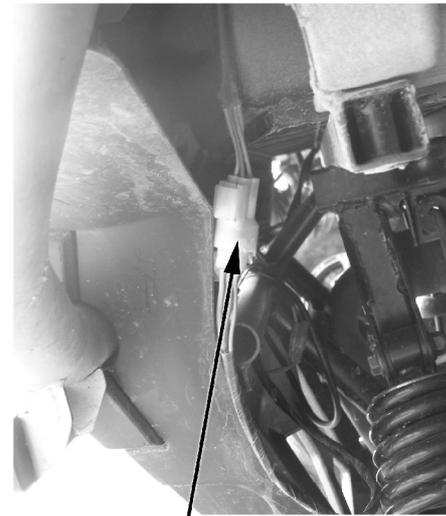


Connector for rear license plate light

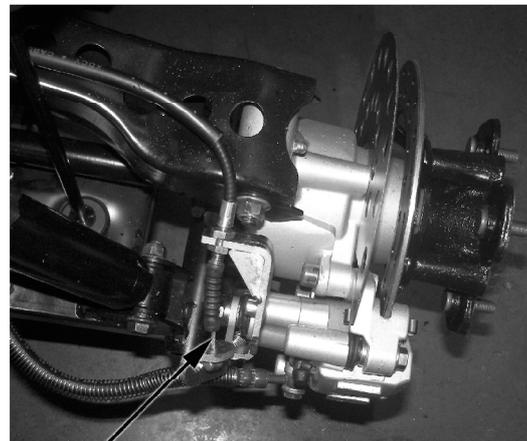
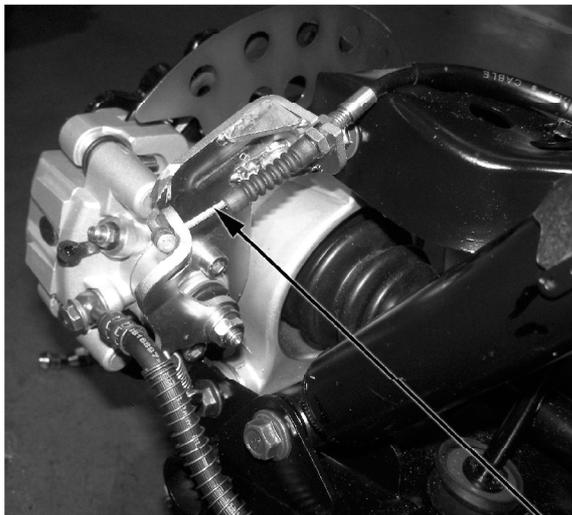
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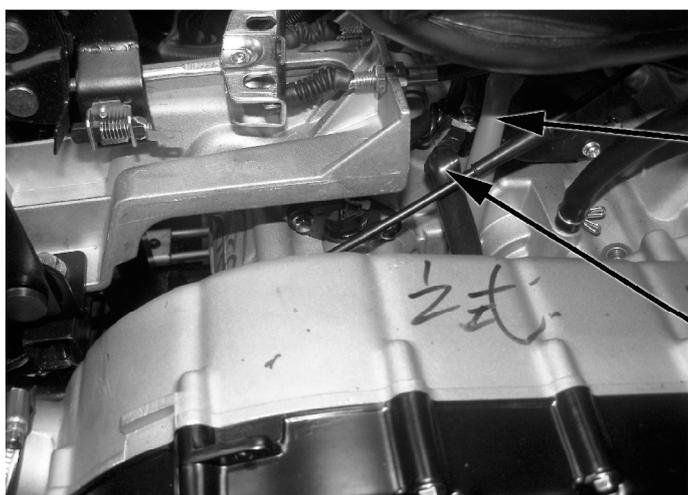
Connector for left tail lamp assembly



Connector for right tail lamp assembly



Parking cable



Positive pole cable of starter motor

Negative pole cable of starter motor