CECTEK

GLADIATOR
&
QUADRIFT

SERVICE MANUAL

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▲ Chassis
Service Manual

Power-Train & Control Introduction

Engine Specification

Type: 4 Stroke、Single Cylinder
SOHC 、 4 Valve

Displacement: 497 cc

Bore x Stroke: 90 x 78 mm

Compression Radio: 10.0

Power: 15kW@5000rpm
(homologation)

Max Power: 30kW@7000rpm

Torque: 40Nm@5500rpm

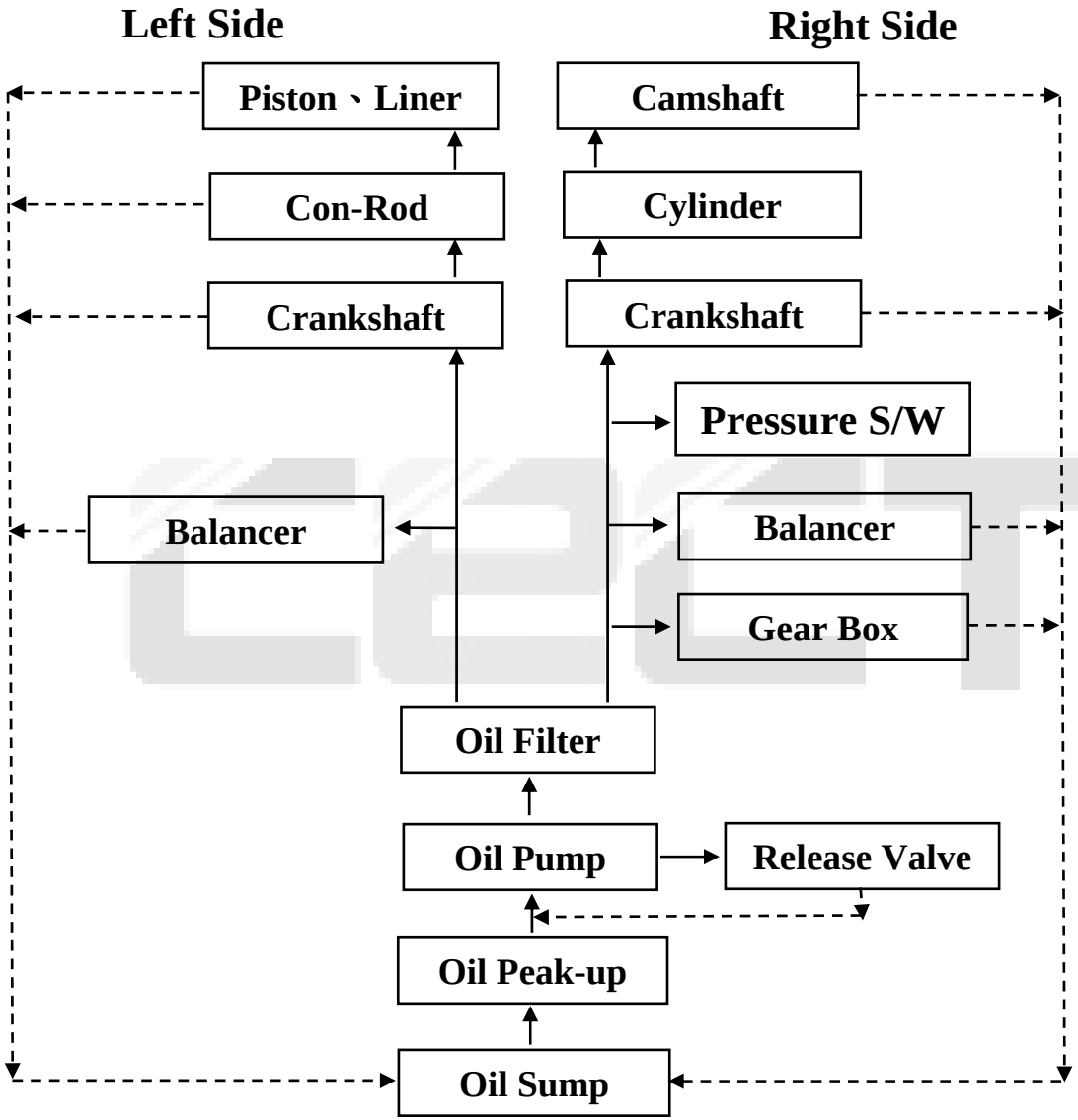
Max. rev.: 7500rpm

Transmission: CVT 、 V-belt

Emission: 2002/51/EC

Weight: 67kg

Engine Lubrication System



Lubrication: Wet Sump

Oil Pump: Rotor Type

Oil Filter: Paper Type

Oil Type: 10W40 SJ

Oil Volume: 3.0 L
3.5 L (Replace Filter)

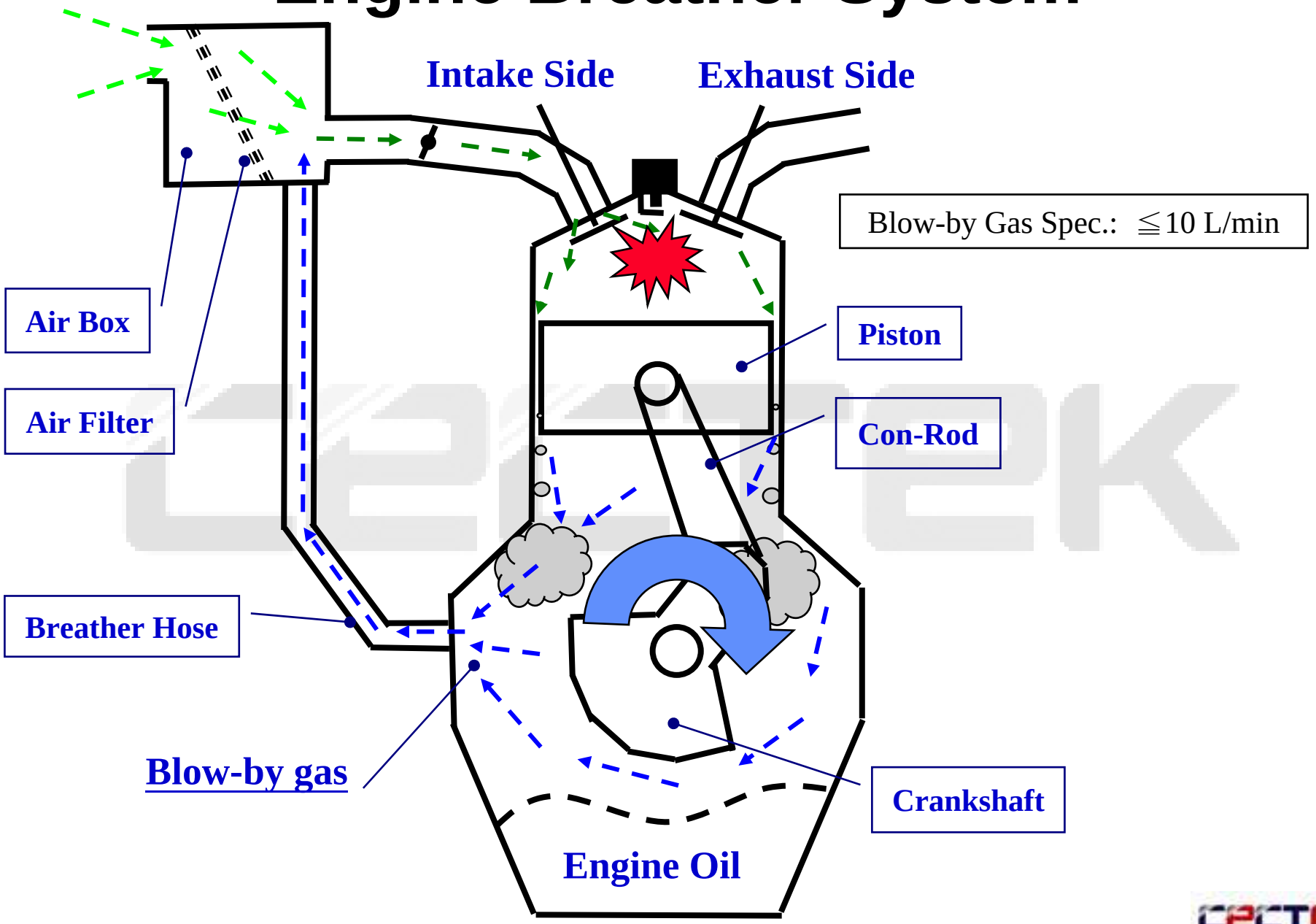
Pressure Release: 4.5 kg/cm2

Pressure S/W: 0.2 kg/cm2

Oil Inlet: ——→

Oil Return: - - - - →

Engine Breather System



CVT System

CVT Belt Type:

- DAYCO P/N:
  Off Road: 5324
  On Road: 5324

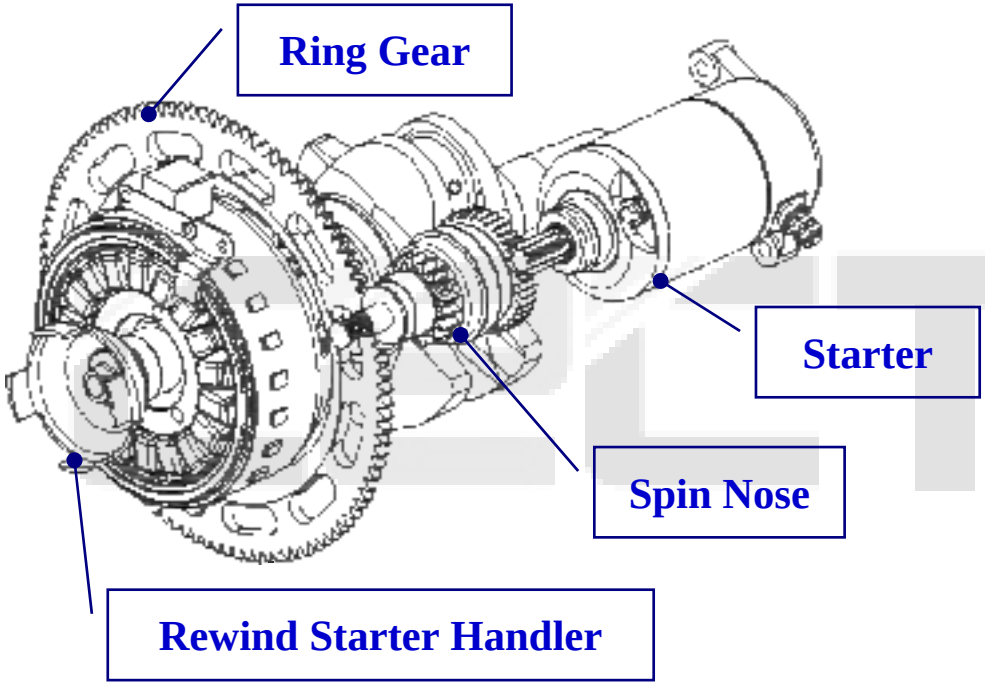
- CVT:
  Drive Wheel
  Tightening Torque 40~45Nm

  Driven Wheel
  Tightening Torque 120Nm

  Ratio: Min. Max.
  0.316 ~ 1.581

  Engine Speed Limit: 7500rpm

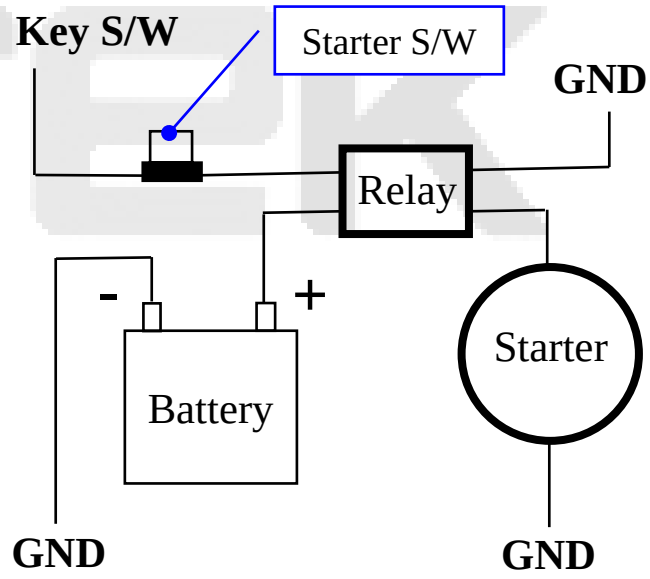
Start System



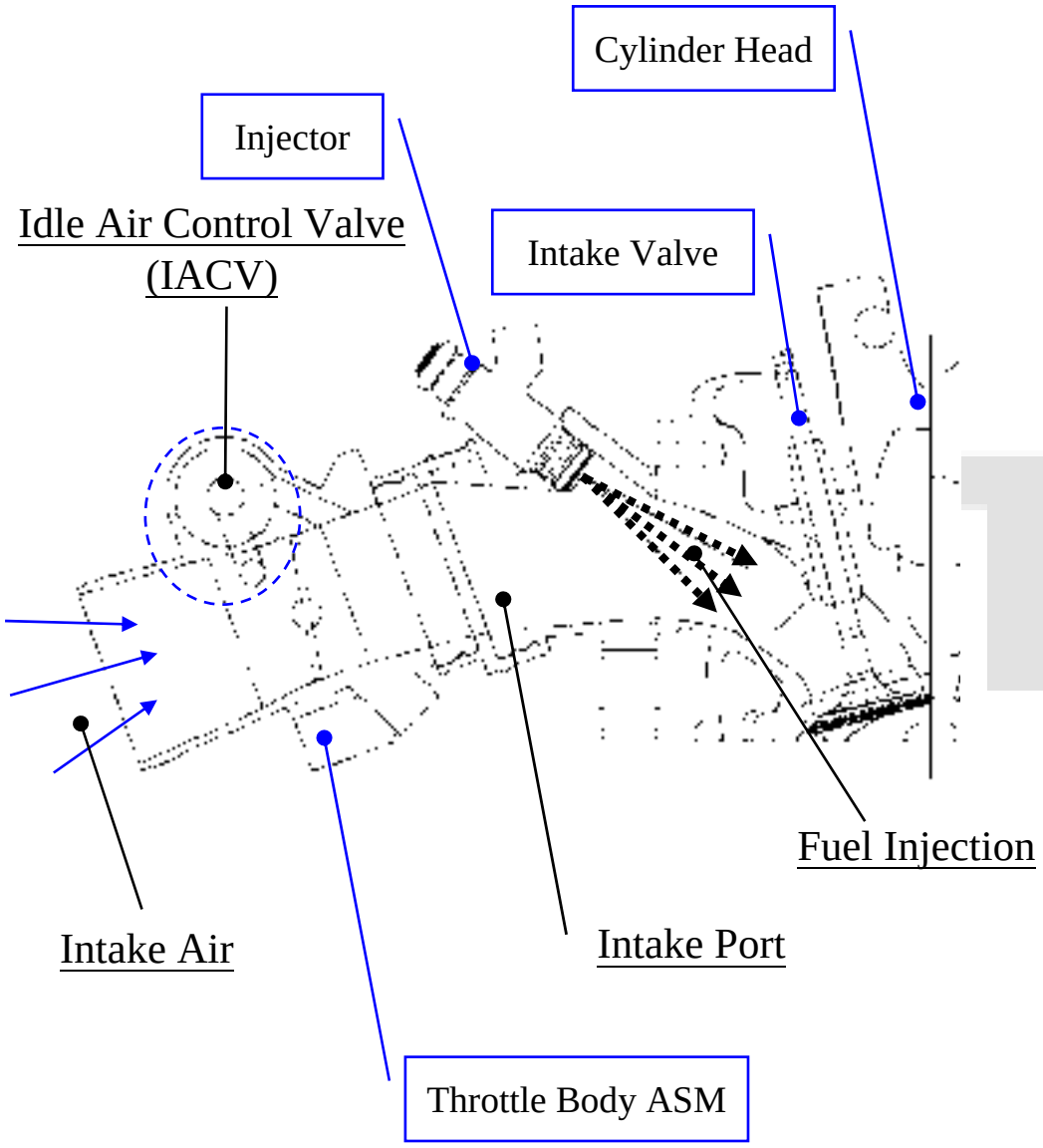
Starter Specification:

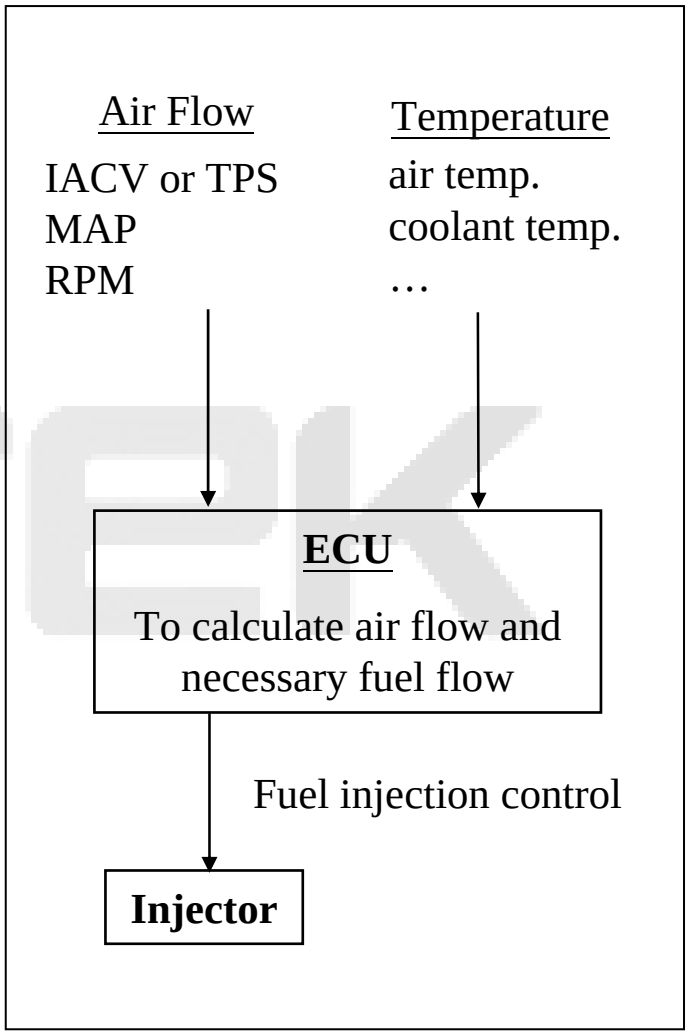
- CECTEK Type: 40196007
- Output: 0.7 kW
- Operation Voltage: 12 V
- Temperature Range: -10~+120℃

Starter Circuit Diagram :

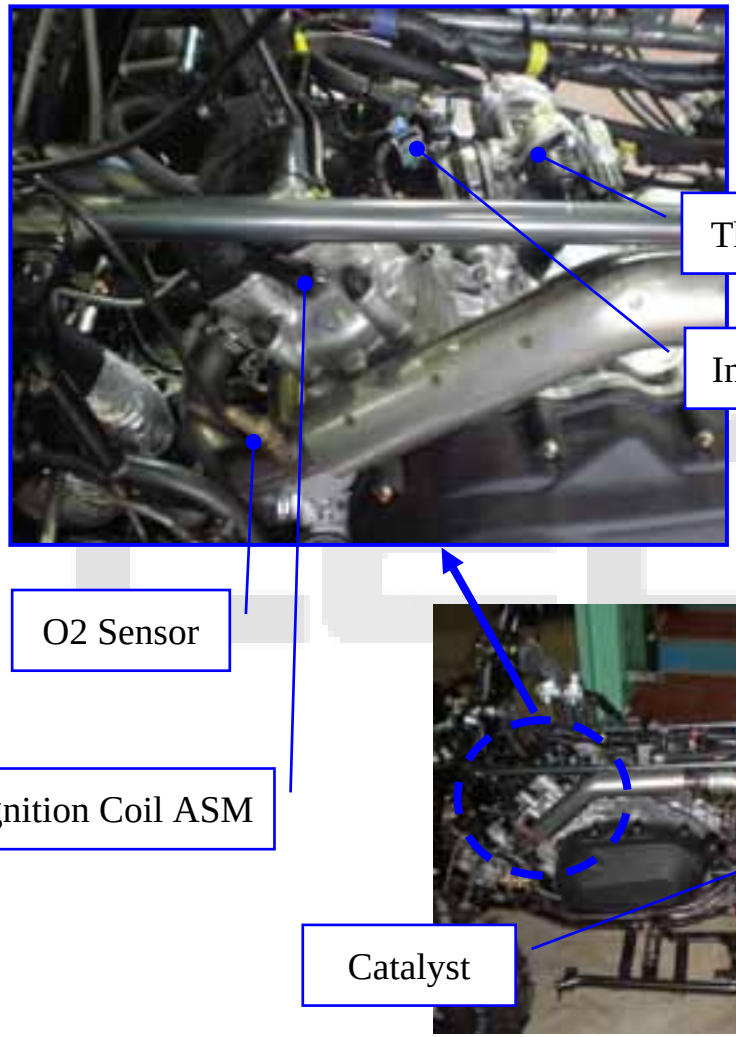


Injection System





Emission Control System

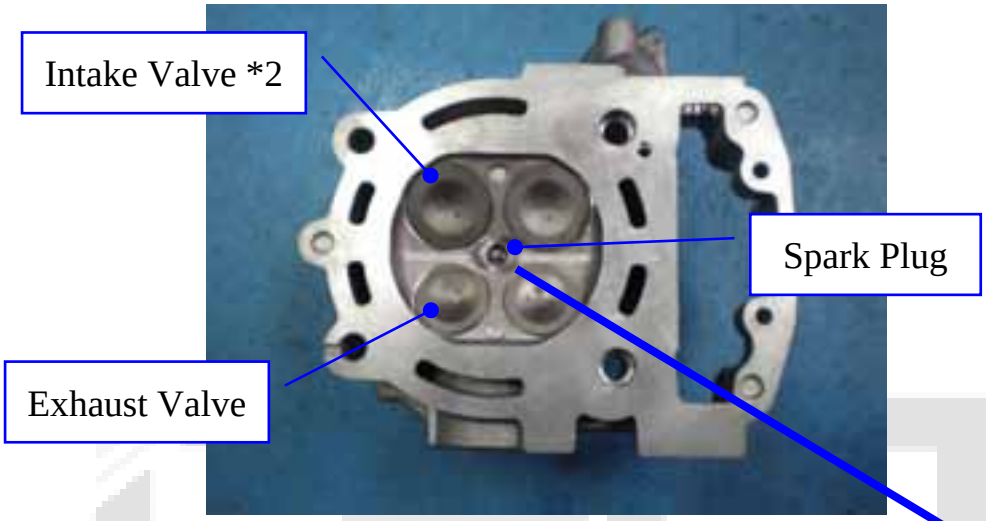


Emission relational part:
- ECU
- Throttle Body ASM
- Injector
- Spark Plug
- Ignition Coil ASM
- O2 Sensor
- Catalyst

Catalyst :
- 100 cells/in2
- Volume: 116 cc

Emission:
- Updated 2002/51/EC

Cylinder Head/Block



Cylinder Head ASM
- Aluminum Alloy: AC4B+T6
- SOHC (Chain Drive)
- 4 Valves
- Spark Plug: Champion PRG7C

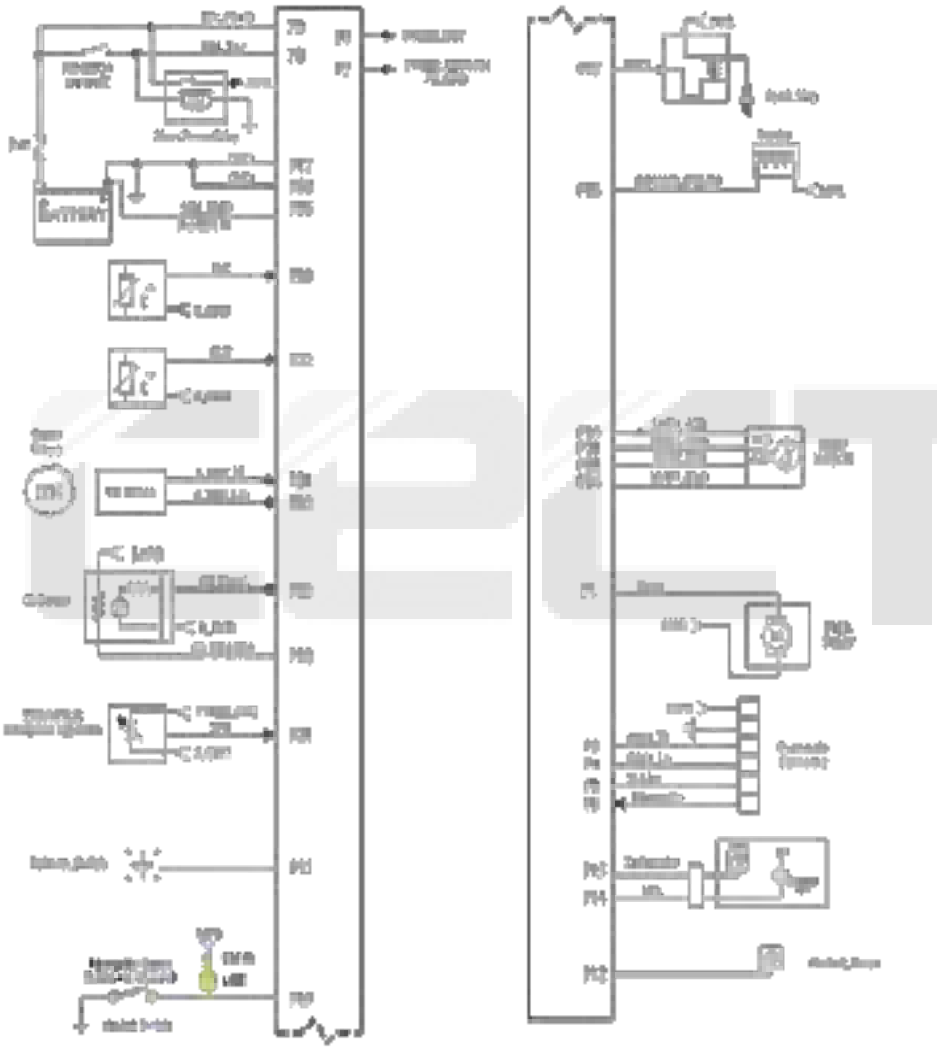
Cylinder Block ASM
- Liner Material: FC250
- Aluminum Alloy: ADC12

Cast-in Liner

Spark Plug

EMS System

Block Diagram

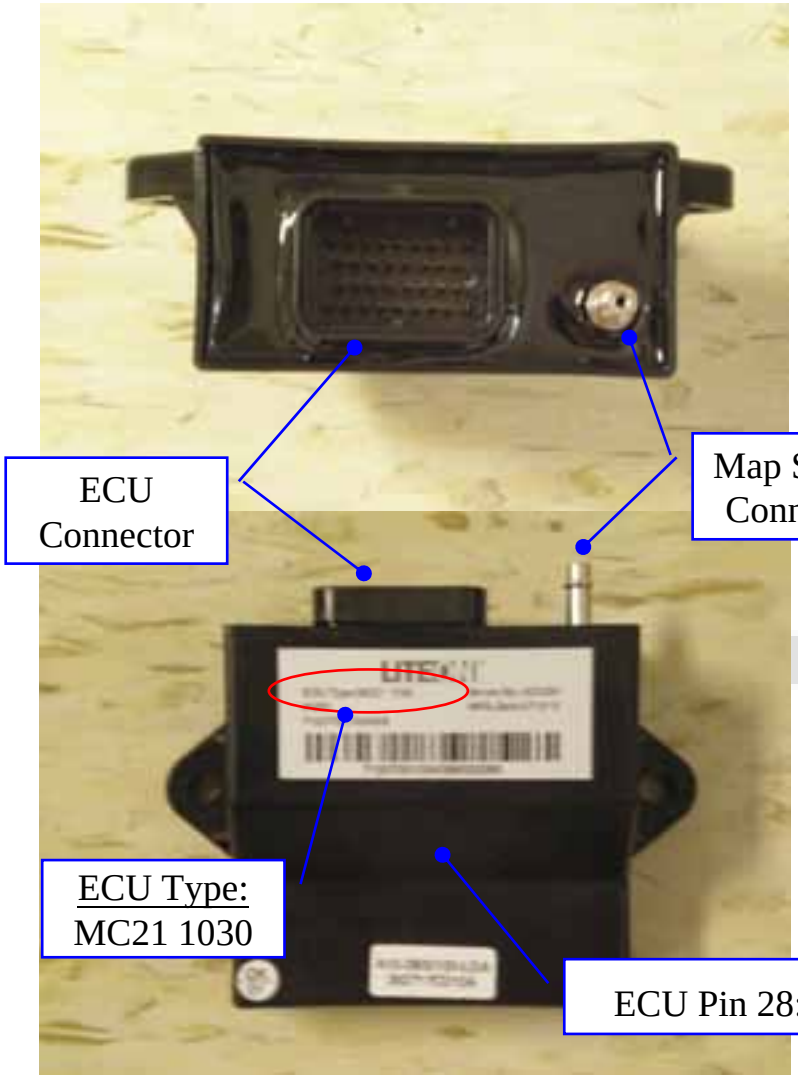


CONNECTOR:
A. ON BOARD CONNECTOR: AMP 4-1437290-0

Pin Assignment

Pin Number	Pin def	Operation Voltage			Operation Current(A) at Voltage(V)	
		Min	Normal	Max	Max	
		V	V	V	mA	V
1	PUMP	9	12	16	4000	16
2	K-LINE	0	N/C	16	50	16
3	CAN_Hi	0	N/C	4.5	100	4.5
4	CAN_Lo	0	N/C	2.25	100	2.25
5	Diagnostic	0	N/C	16	0.5	16
6	5VREF_OUT	4.81	5	5.19	50	5.19
7	5VREF_RETURN / S_GND	N/C	N/C	N/C	N/C	N/C
8	IGN_KEY	9	12	16	500	16
9	12V Power	9	12	16	1000	16
10	O2_HEATER	9	12	16	2000	16
11	Rollover_Switch	0	N/C	16	0.5	5.19
12	Coolant_Gauge	9	12	16	500	16
13	NA	N/C	N/C	N/C	N/C	N/C
14	MIL	9	12	16	500	16
15	Tachometer	9	12	16	500	16
16	NA	N/C	N/C	N/C	N/C	N/C
17	GND	N/C	N/C	N/C	N/C	N/C
18	NA	N/C	N/C	N/C	N/C	N/C
19	Neutral_Switch	0	N/C	16	0.5	5.19
20	IAT	0	N/C	16	5	5.19
21	TPS	0	N/C	16	5	5.19
22	CLT	0	N/C	16	5	5.19
23	O2 Signal	0	N/C	16	5	5.19
24	IACV_AHI	9	12	16	250	16
25	IACV_ALO	9	12	16	250	16
26	IGN_GND	N/C	N/C	N/C	N/C	N/C
27	EST1	9	12	16	13000	16
28	INJ1	9	12	16	2000	16
29	NA	N/C	N/C	N/C	N/C	N/C
30	GND	N/C	N/C	N/C	N/C	N/C
31	S_REF_Hi	0.6	12	80	250	80
32	S_REF_Lo	0.6	12	80	250	80
33	IACV_BHI	9	12	16	250	16
34	IACV_BLO	9	12	16	250	16

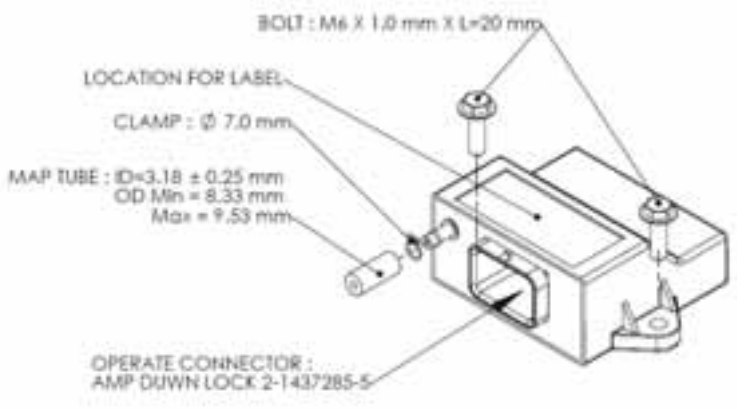
ECU



Part Introduction

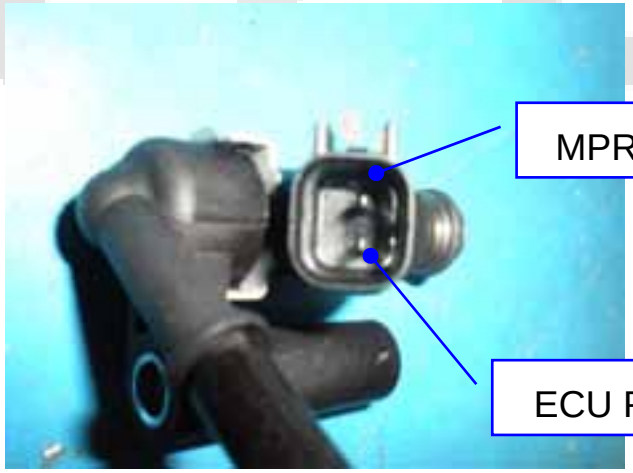
ECU Type: MC21 1030

Assembly:



Electrical Characteristic:
Operation Voltage Range: 9~16V
Storage Temperature Range: -40~70℃
Operation Current: <500mA

Injector



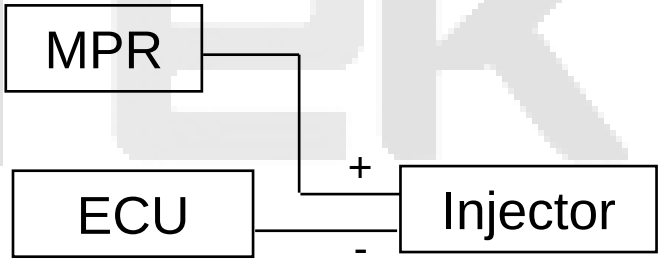
Part Introduction

Identification Code: 28140652

Injector holes: 4ea

Circuit Diagram :

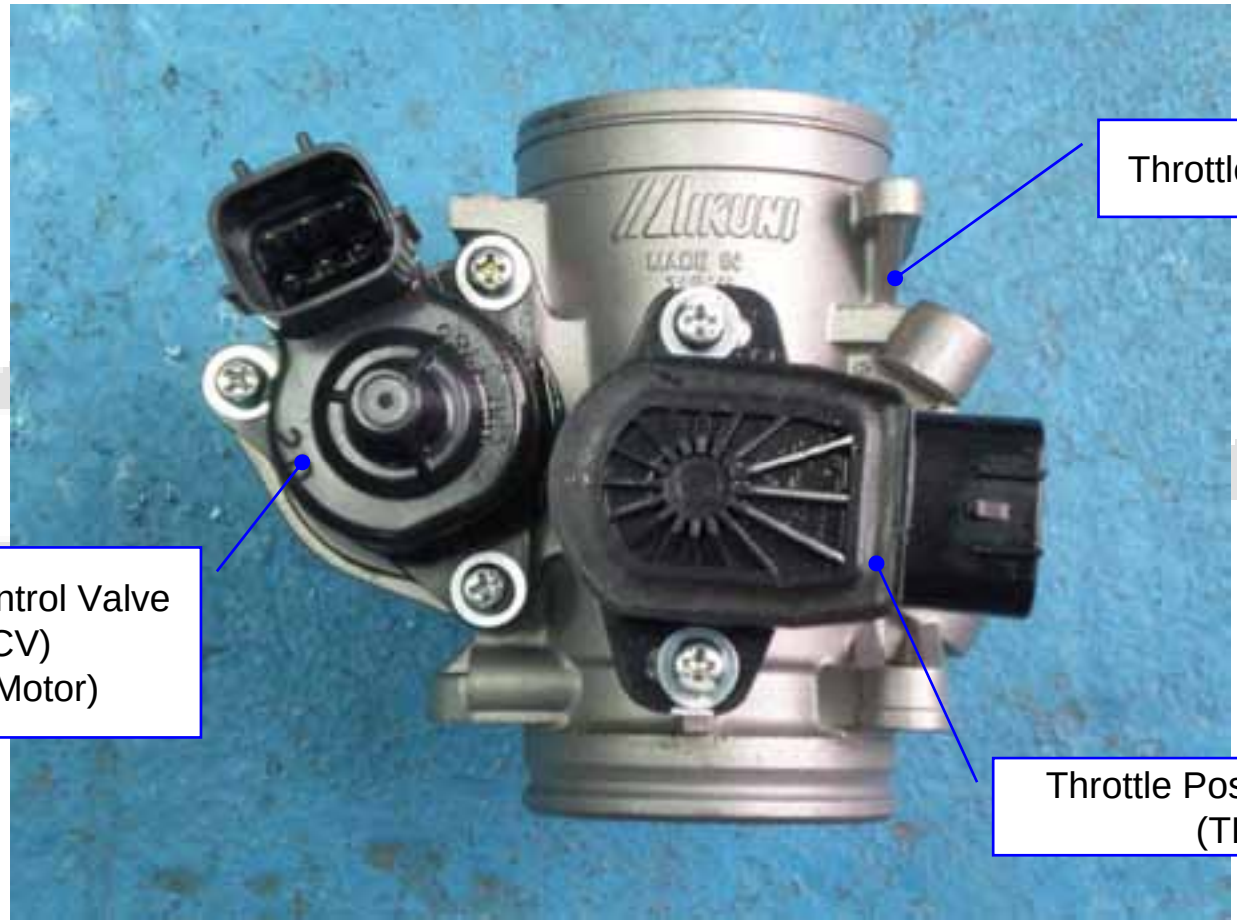
Main Power Relay



Pin 28

Measurement
Resistance: 12.0±0.6Ω

Throttle Body ASM

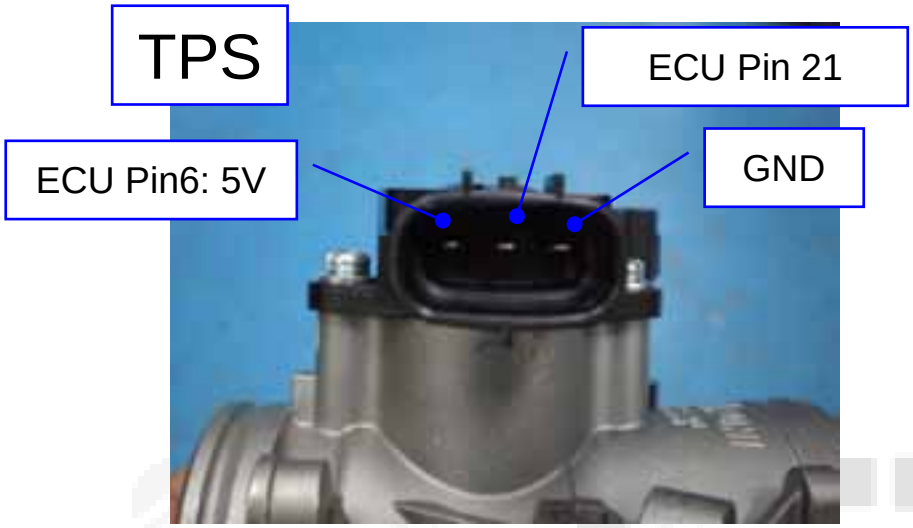


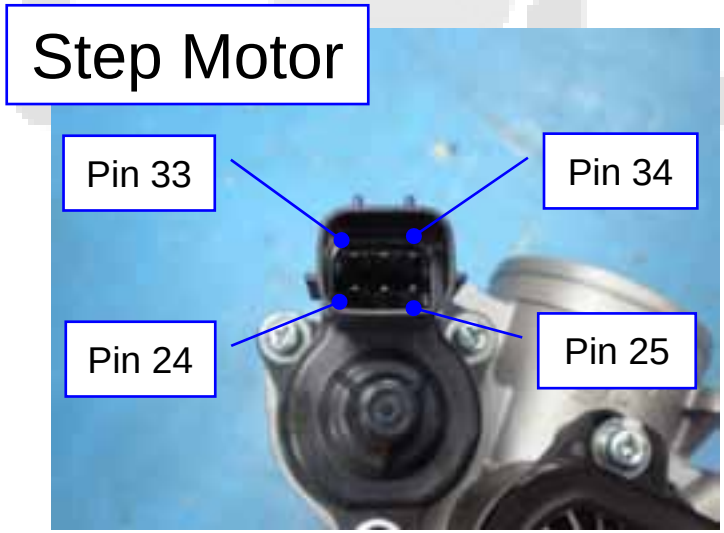
Throttle Body

Idle Air Control Valve
(IACV)
(Step Motor)

Throttle Position Sensor
(TPS)

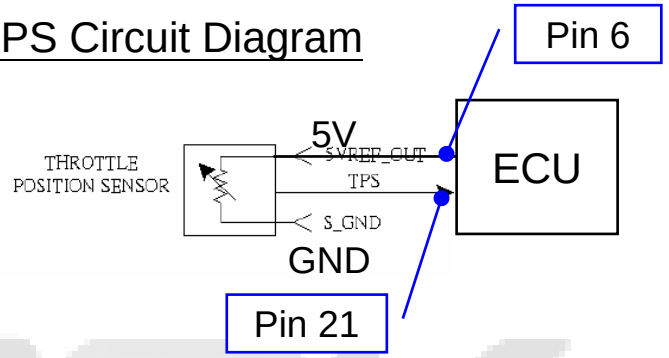
Throttle Body - TPS、Step Motor



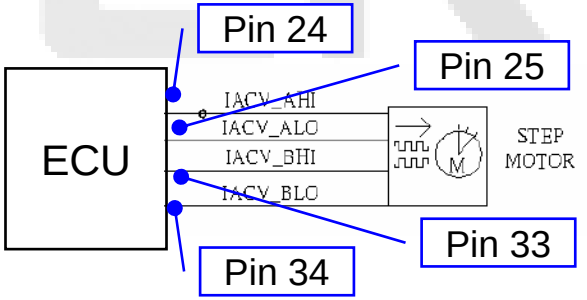


Part Introduction

TPS Circuit Diagram

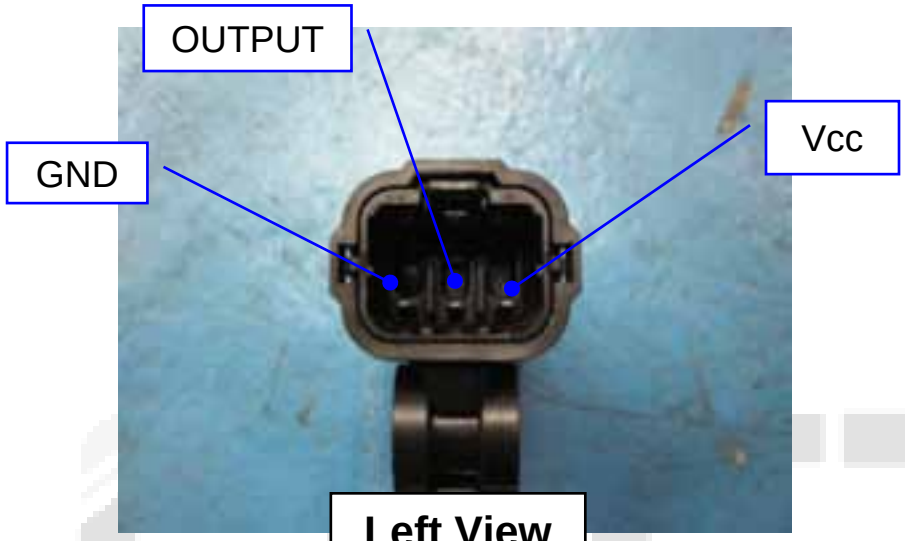


Step Motor Circuit Diagram



Measurement (ECU Pin 21、GND)
TPS Resistance: 1~2 kΩ

Rollover Sensor
(Fuel-cut Sensor)



Left View

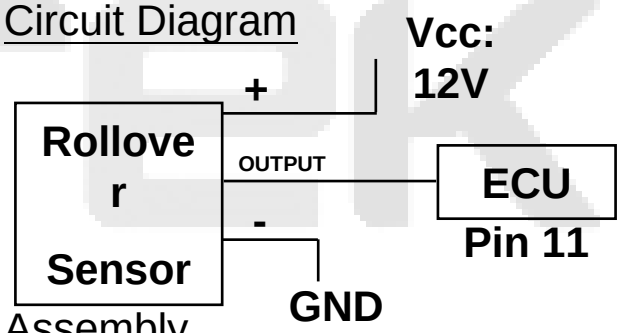
Top View

Part Introduction

Sensor Characteristic

- Voltage: 12V (Vcc)
- Pitch Angle: 65±10°
- Roll Angle: -20~+20 °
- Temperature: -10~+60 ℃

Circuit Diagram



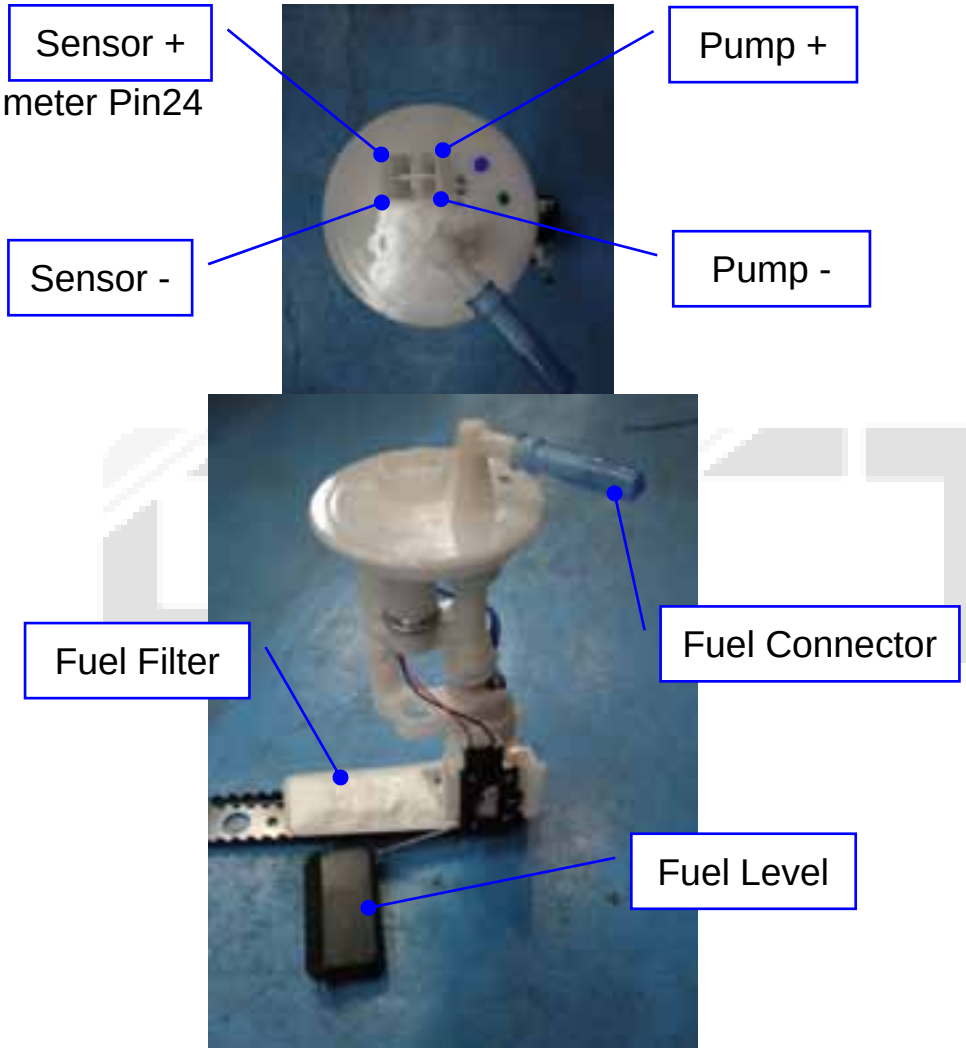
Assembly

- Bolt: M4 (2ea)
- Tighten Torque: 1.5~2.5Nm

Measurement

- Vcc–OUTPUT: 3.9 kΩ

Fuel Pump

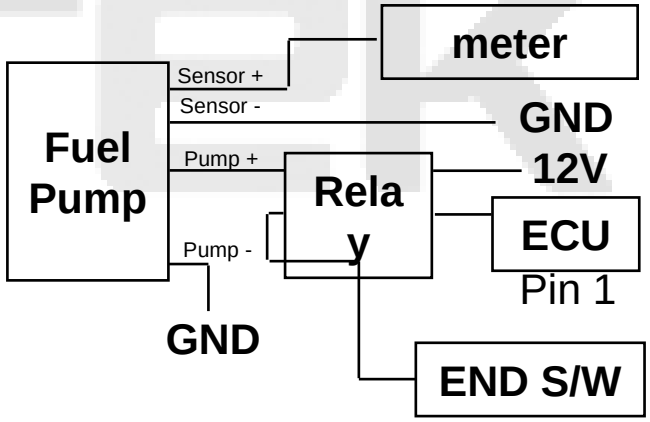


Part Introduction

Pump Characteristic

- Voltage: 12V (Pump -)
- Feed Fuel Pressure: 250±10 kpa
- Feed Fuel Rate: 30.6 L/hr Min.

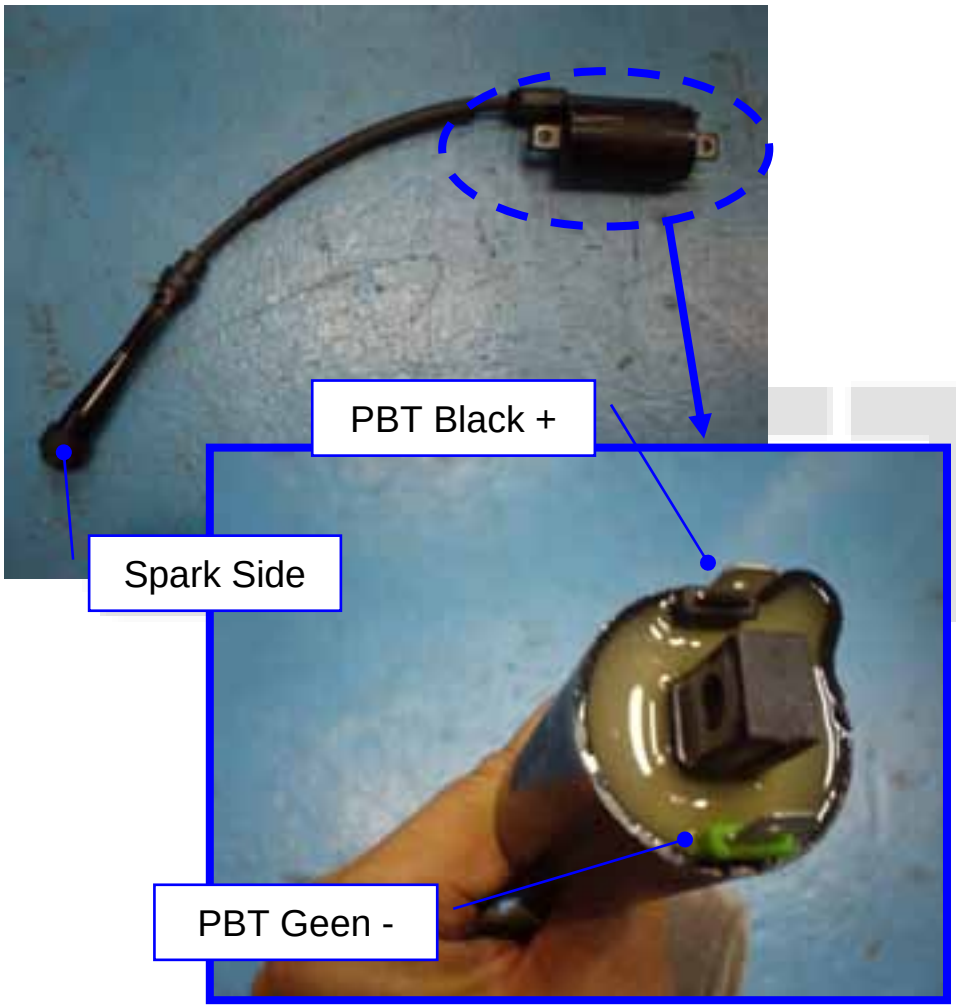
Circuit Diagram



Measurement

- Full Stop : 4~10 Ω
- Empty Stop: 93~100 Ω

Ignition Coil

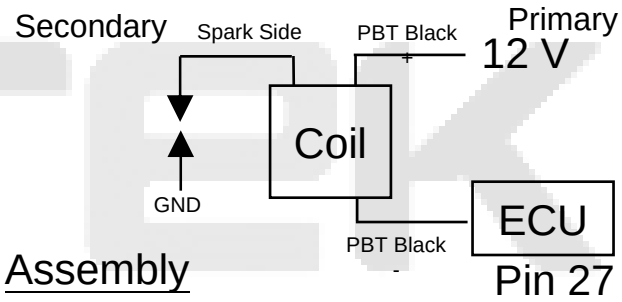


Part Introduction

Sensor Characteristic

- Voltage: 12V (Vcc)
- Temperature: -10~+60 ℃

Circuit Diagram



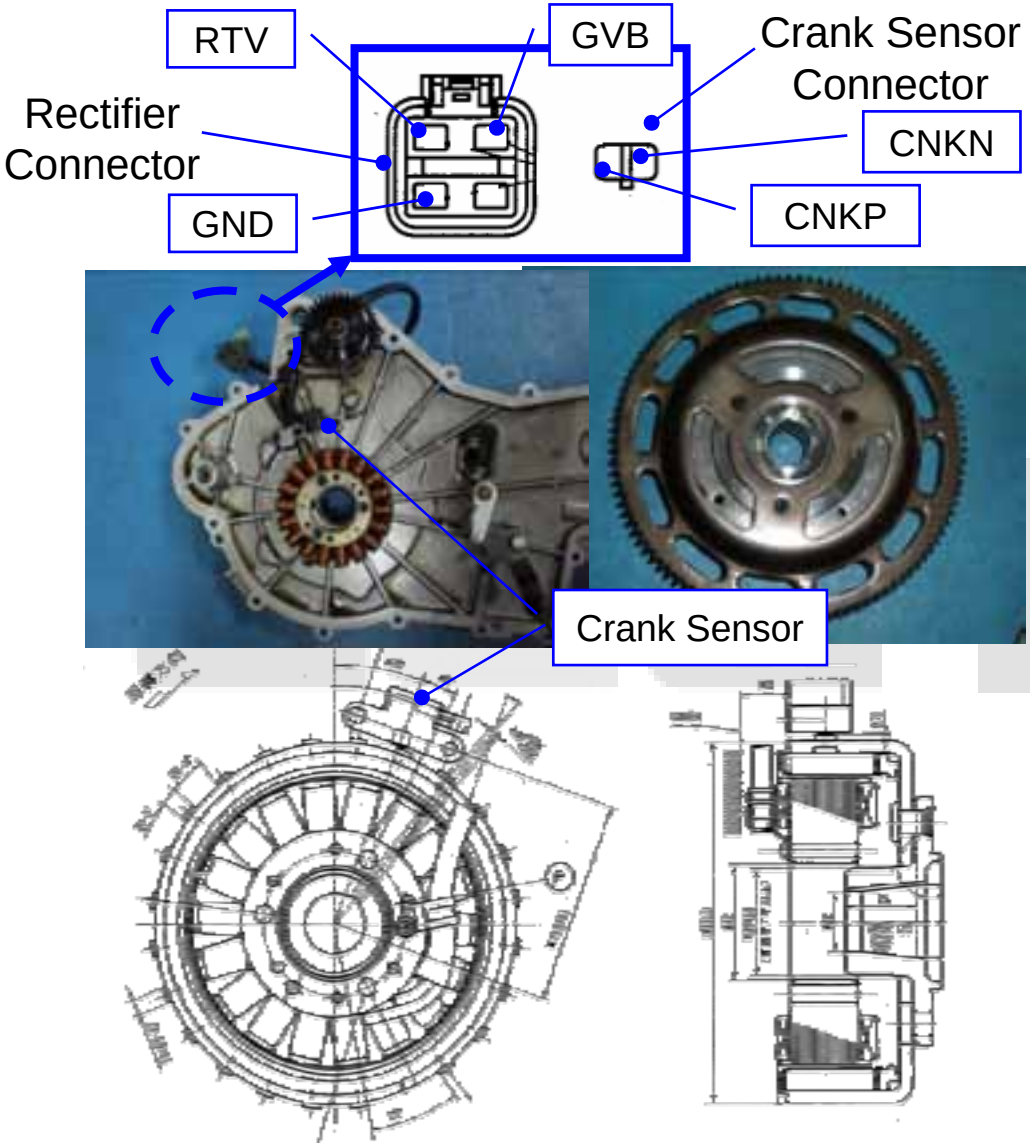
Assembly

- Bolt: M6 (2ea)
- Tighten Torque: 10±2Nm

Measurement

- Primary: 2.9 Ω±10%
- Secondary : 15 kΩ±10%

Alternator



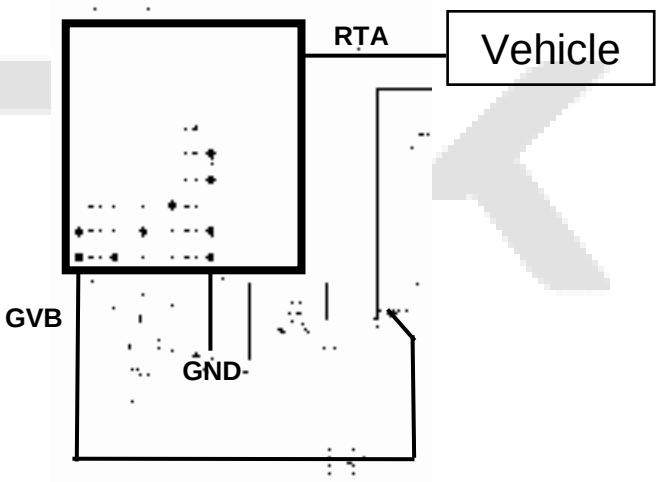
Part Introduction

Electric Characteristic

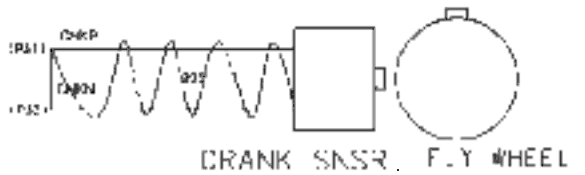
- Voltage: 12V
- Output: 16V/1500rpm ↑

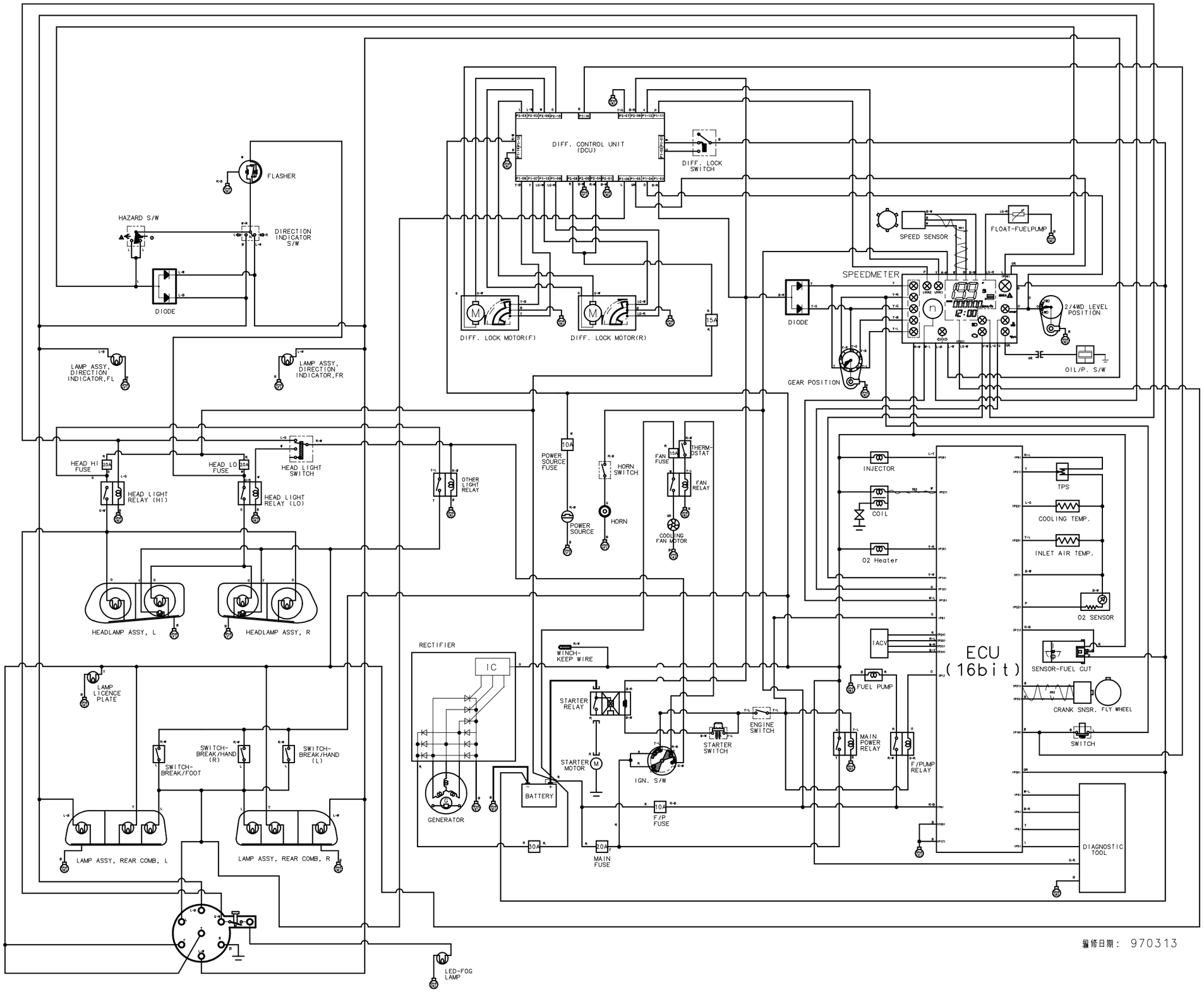
Circuit Diagram

Rectifier



Crank Sensor





編修日期： 970313

SERVICE MANUAL

FOR 500cc EFI ENGINE

CECTEK 500cc EFI ENGINE

DISMANTLE

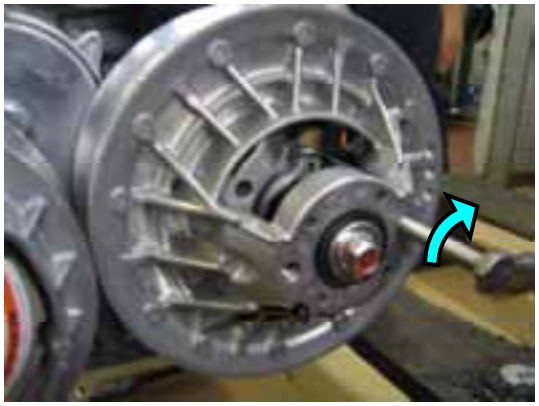
CAUTION：

Only trained and certificated technician can disassembly the CECTEK RSGA 500 EFI ENGINE. Improper disassembly may damage the engine. CECTEK can not provide the warranty to the engine which has not been properly disassembled and assembled by trained and certificated technician.

CVT COVER DISMANTLE

	**Loosen the CVT cover bolts*8**
	**Remove the CVT cover**
	**The CVT cover**

CVT BELT DISMANTLE



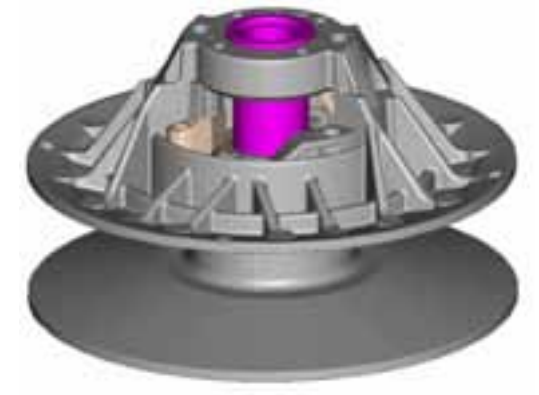
Screw the ***Belt Removal Tool*** to end to open the driven pulley , then removal the belt

The belt

※Reinstall , the installer must can read the printed word on the belt

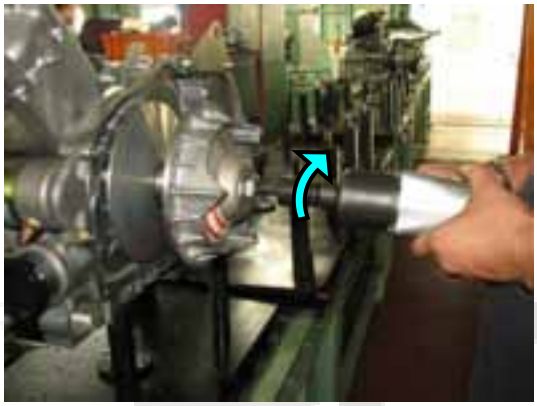
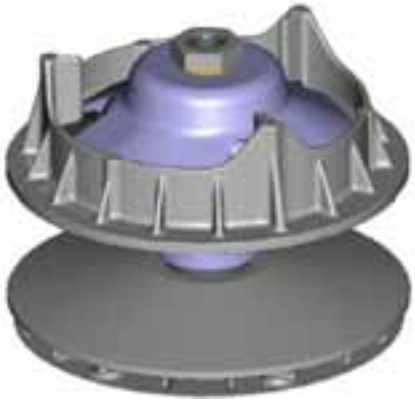
CVT DRIVEN PULLEY DISMANTLE

Loosen the driven pulley bolt , then remove the driven pulley

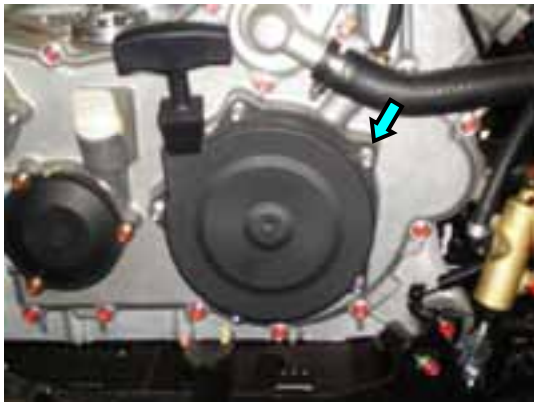


The Driven pulley

CVT DRIVING PULLEY DISMANTLE

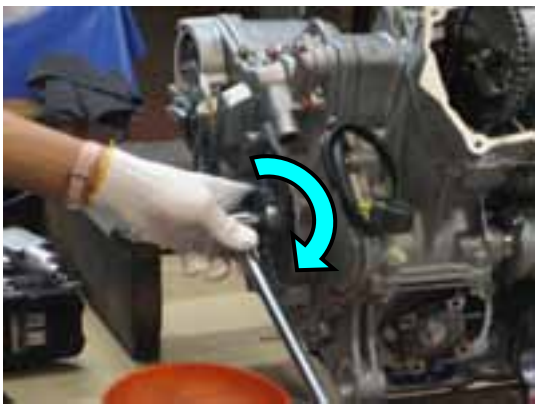
	**Loosen the driving pulley bolt**
	**Screw the *CVT Puller* by air wrench to remove the drive pulley**
	**The drive pulley**

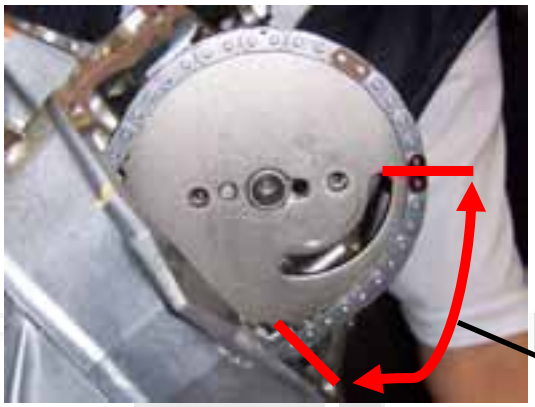
REWIND STARTER DISMANTLE

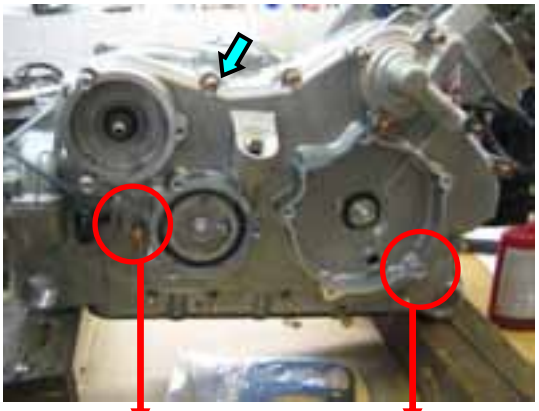
	**Loosen the rewind starter bolt*5**

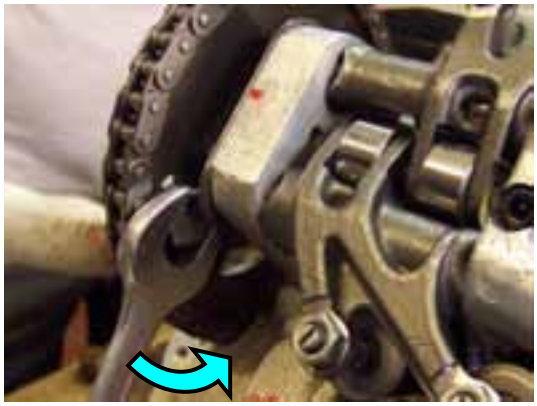
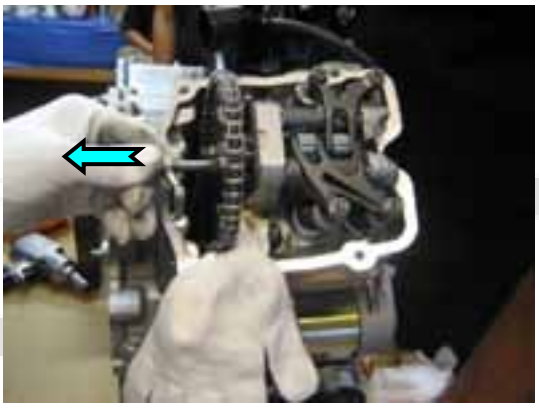
	**The rewind starter**

TIMING CHECK
※before dismantle engine must be check the chain timing

	**Loosen the cam cover bolts*4 , then remove the cam cover**
	**Loosen the taper plug for check the timing**
	**Use the *Rewind Starter Stooper* clockwise rotate crankshaft then check chain timing**

	**ALT rotor mark meet the accessory cover mark**
	**When ALT mark correct , then check cylinder head sprocket have six pieces counter from cylinder head**

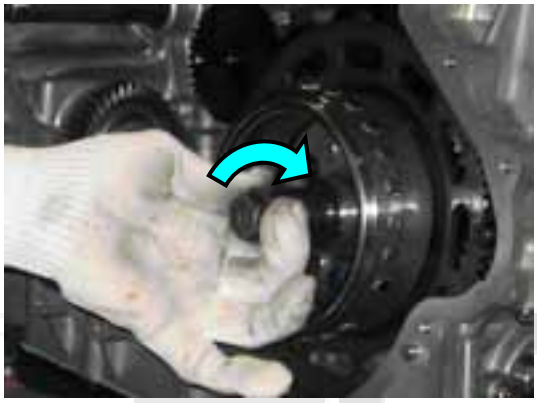
ACCESSORY COVER DISMANTLE	
	**Loosen the accessory cover bolt*11**
	**Raise the accessory cover by screwdriver from the prominence of case**
	**When remove the accessory cover be care the spin nose antithrust spring and washer**

START PRESSURE RELEASE MECHANISM DISMANTLE	
	**Loosen the discompressor mechanism bolt by open wrench**
	**Pull out the discompressor mechanism**
	**The discompressor mechanism , and notice the spring**

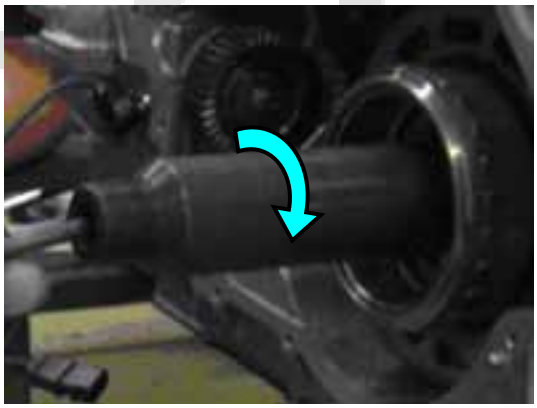
ALTERNATOR ROTOR DISMANTLE

Loosen the ALT rotor nut by air wrench

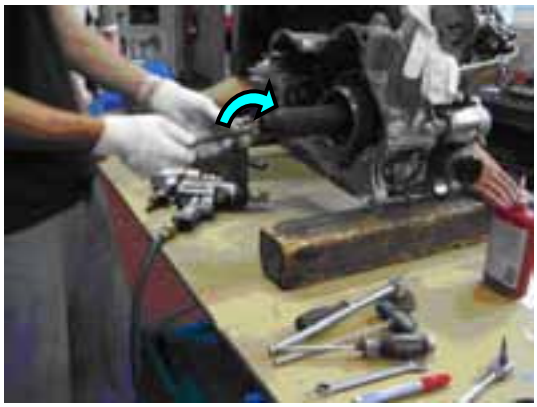
※The socket deep 85mm



Screw *Crankshaft Protector* to end on crankshaft

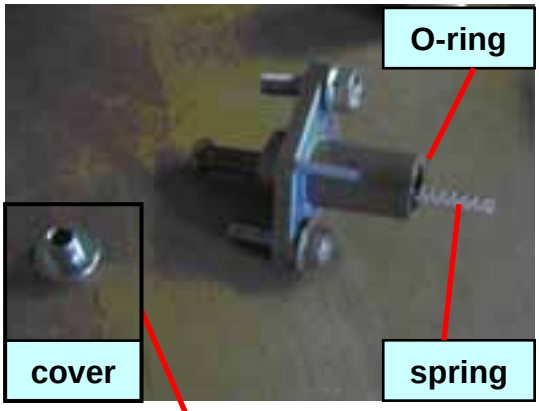
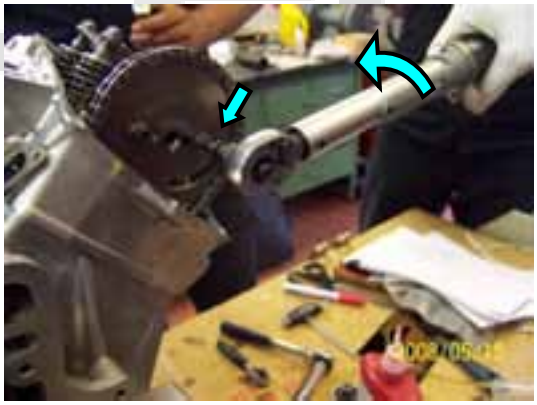
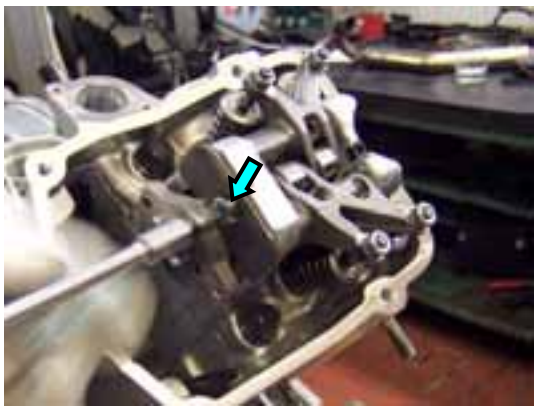


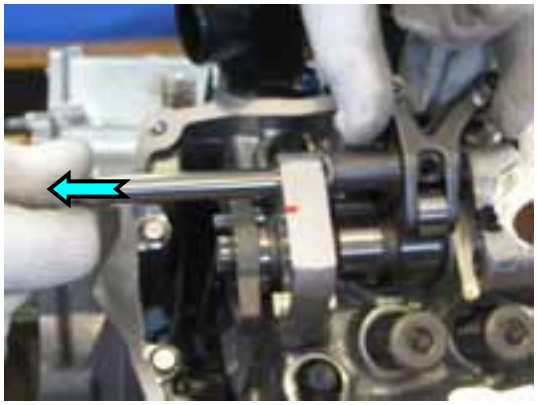
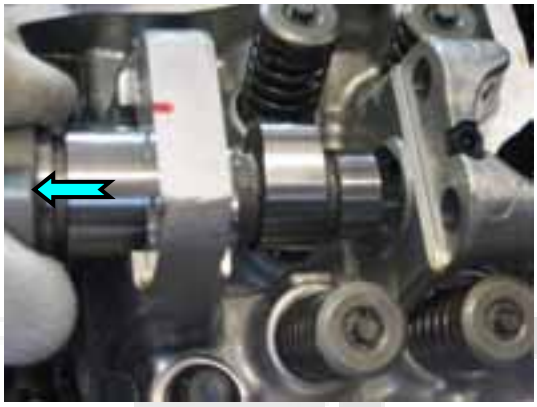
Screw the *ALT Puller* to end on ALT rotor



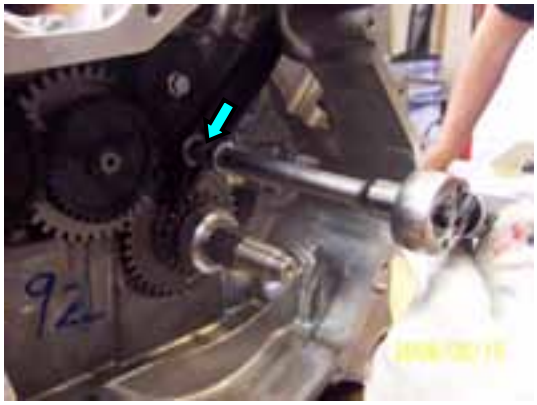
Screw the *CVT Puller* on *ALT Puller* by air wrench , then remove the ALT rotor

CAM SHAFT DISMANTLE

	**Loosen the tensioner cover , and notice the spring and O-ring**
	**Loosen the tensioner bolts*2 , then remove the tensioner**
	**Loosen the cam sprocket bolts*2 , then remove the cam sprocket**
	**Loosen the cam antitrust plate Bolt , then remove the plate**

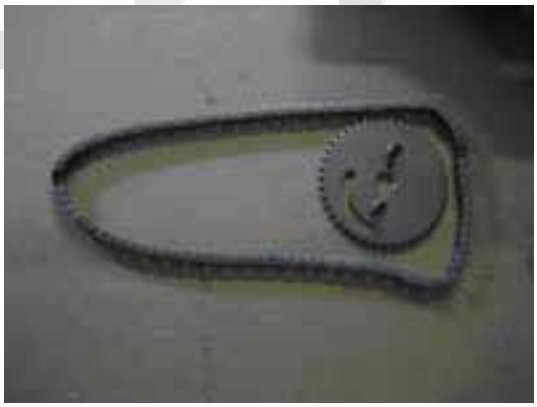
	**Pull out intake and exhaust rock arm shaft by magnet**
	**Pull out the cam shaft**
	**The rock arms and cam trust plate**
	**The cam shaft**

CHAIN DISMANTLE



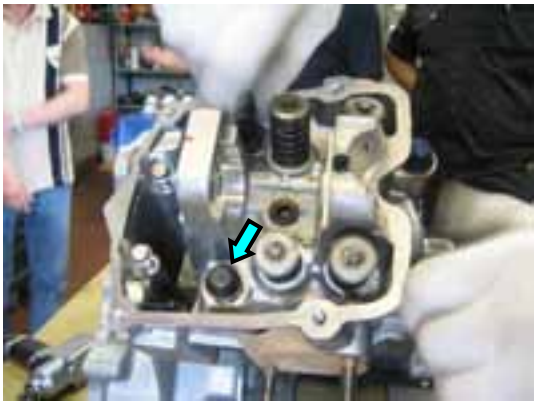
Loosen the chain guide bolt , then remove the chain

Notice the bosh

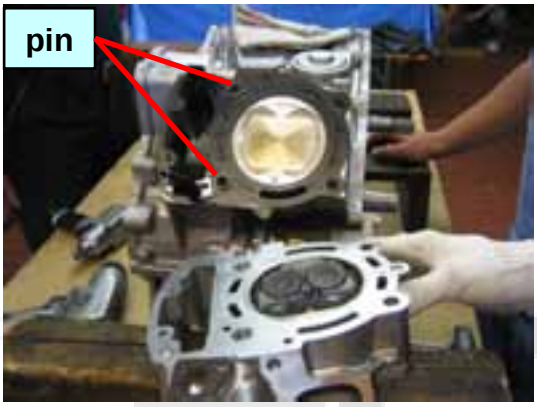


The chain

CYLINDER HEAD DISMANTLE

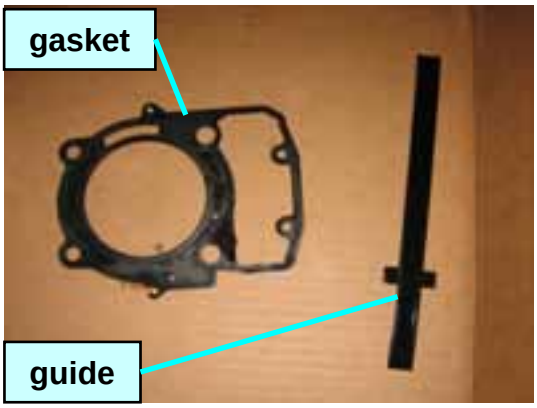


Loosen the cylinder head bolts*4



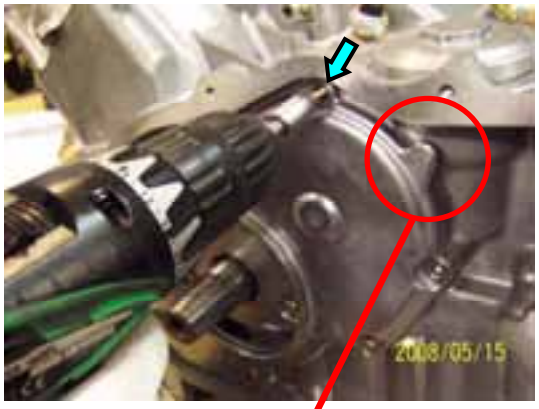
Remove the cylinder head , and notice the lock pins

Remove the gasket and chain guide



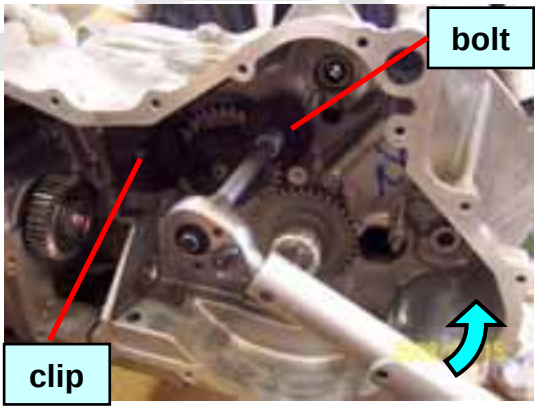
The cylinder head gasket and chain guide

BALANCER DISMANTLE

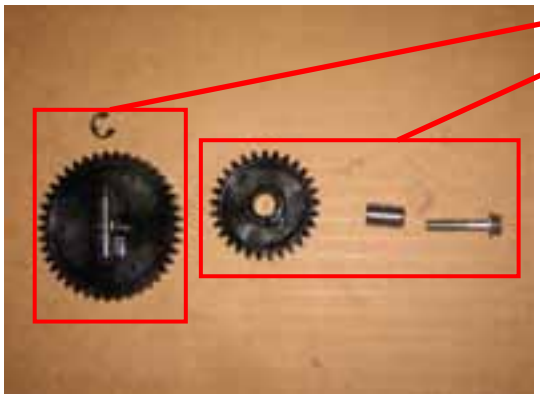


Loosen the balancer cover bolts*8

Raise the balancer cover by screwdriver from the prominence of case



Loosen the water pump idle pulley bolt and unclip the oil pump gear clip



The oil pump gear

The water pump idle gear

	**Loosen the balancer bolts by use screwdriver stop the balancer**
	**The balancer**

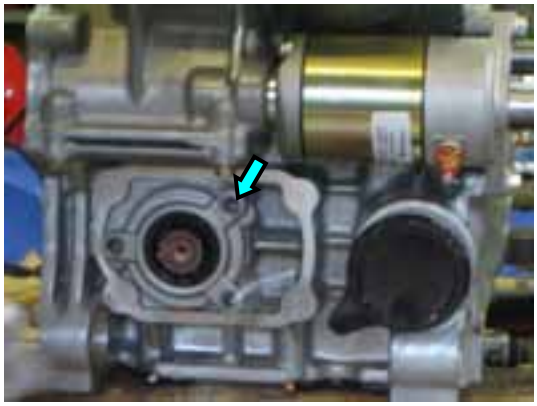
THE OIL PUMP DISMANTLE

	**Loosen the oil pump bolts*3 and unclip the oil pump gear clip**
	**The oil pump and back plate**

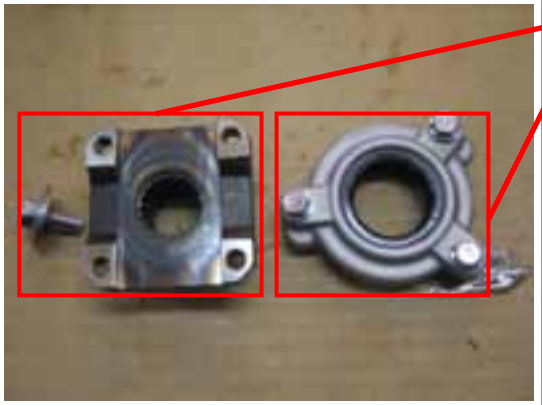
Remove the spin nose and washer

THE DRIVESHAFT DISMANTLE

Loosen the front driveshaft yoke bolts , then remove the yoke

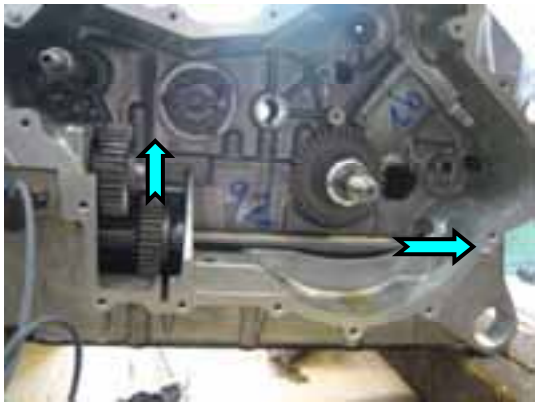


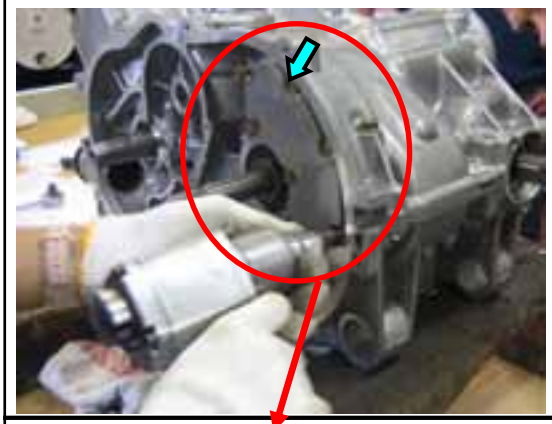
Loosen the front driveshaft seal cover bolt*3 , then remove the cover



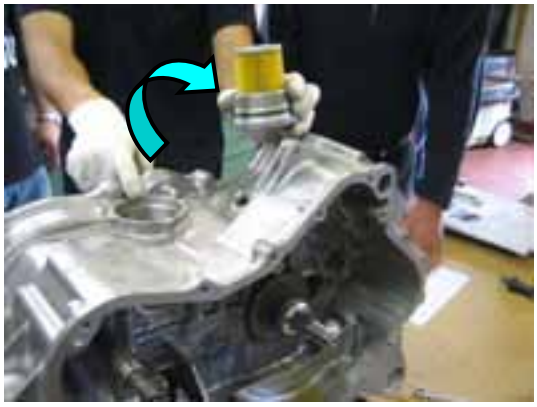
The yoke

The seal cover

	**Use the box end (loosen ALT rotor nut) , screw the Pull the front driveshaft and remove the 4WD gear**
	**The 4WD gear**
	**Remove the rear driveshaft yoke and seal cover** **(same procedure of front driveshaft)**
	**Loosen the starter bolts*2 , then remove the starter** 

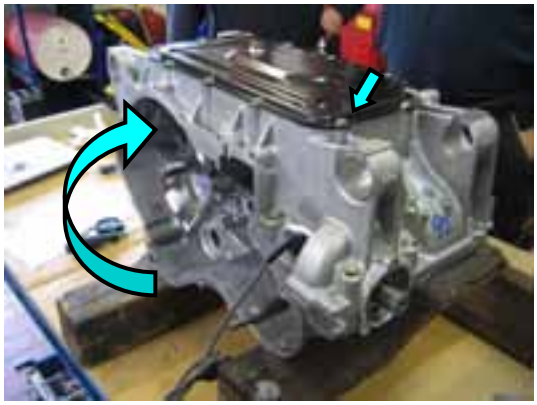
	**Loosen the shift drum cover bolts*7**
	**Loosen the shift drum antitrust plate**

THE OIL MAIN CIRCUIT DISMANTLE

	**Loosen the oil filiter cover**
	**Remove the oil filter**

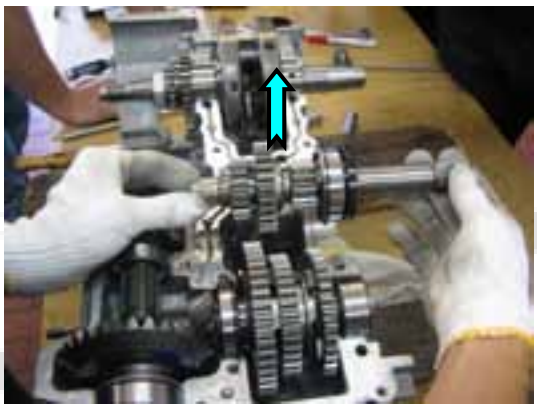
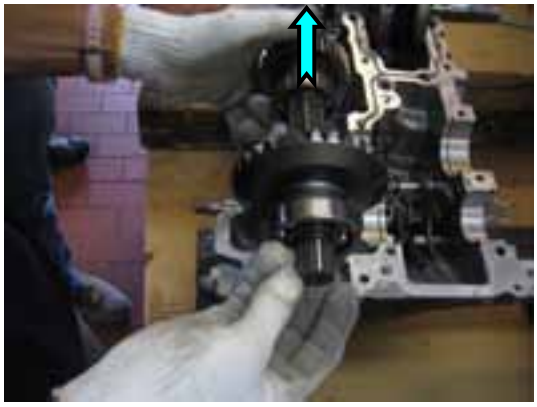
	**Loosen the main circuit bolt , then remove the main circuit**
	**The main circuit**

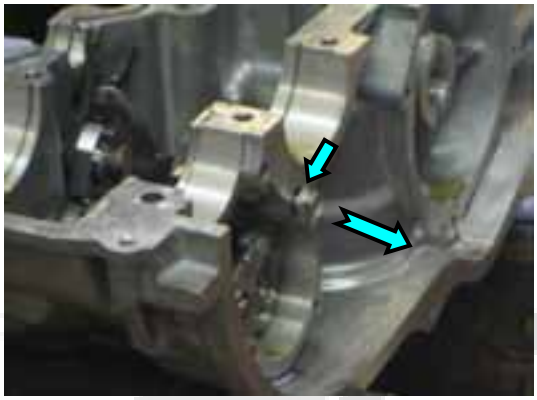
THE CYLINDER BLOCK DISMANTLE

	**Remove the rear driveshaft yoke and seal cover**
	**Reversal the engine , and loosen the oil sump bolts*12**

	**Use scraper and hammer to open the oil sump**
	**The oil sump** **※When reinstall must clean the surface of the oil sump**
	**Loosen the crankcase bolts*12**
	**Raise the crankcase by screwdriver from the prominence of case**

	**The crankcase** **※When reinstall must clean the surface of the crankcase**

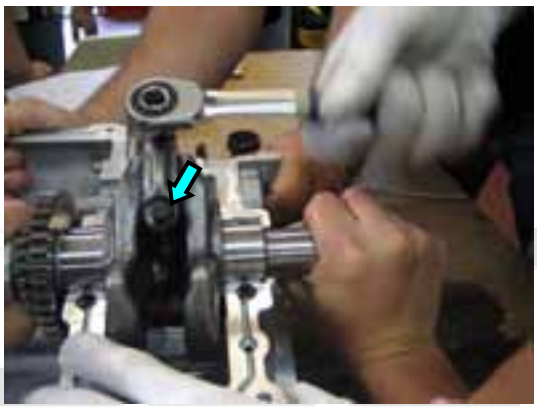
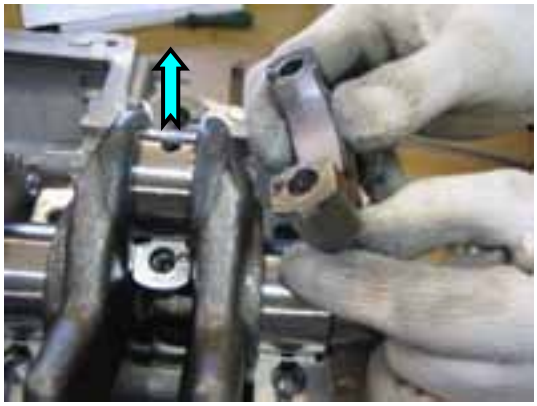
THE TRANSMISSION GEAR DISMANTLE	
	**Remove the main shaft**
	**Remove the layshaft**
	**Remove the rear shaft**

	**The cylinder block** **※When reinstall must clean the surface of the crankcase**
	**Loosen the shift fork bolt , then pull out the shift fork shaft and remove the fork**
	**The shift fork**
	**Loosen the shift position rotor bolt , then remove the parking shaft plate**

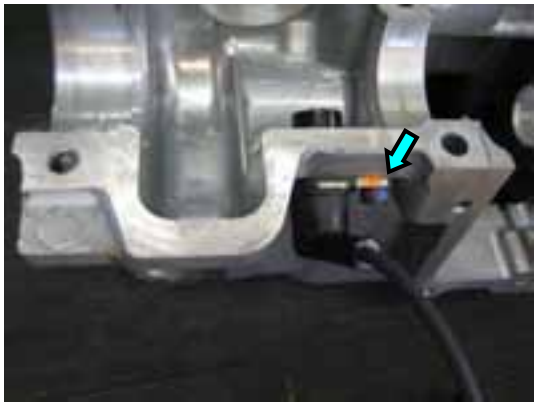
	**The shift position rotor and parking shaft plate** **THE PARTS ONLY APPLY THE VEHICLE HAVE GEAR PARKING FUNCTION**
	**Pull out the shift drum from the cylinder block**
	**The shift drum**

THE OIL RELEASE VALVE DISMANTLE	
	**Loosen the oil release valve bolt , then remove the oil release valve by magnet**

	**The oil release valve**

THE CRANKSHAFT DISMANTLE	
	**Loosen the connecting rod bolts*2**
	**Remove the connecting rod cap , then remove the crankshaft**
	**The cylinder block** **※When reinstall must clean the surface of the crankcase**

THE PISTON DISMANTLE

	**Pull out the piston** **※Must clean the carbon on piston**
	**Piston ring inspection** **The second ring top side**
	**Loosen the speed sensor bolt , then remove the speed sensor**

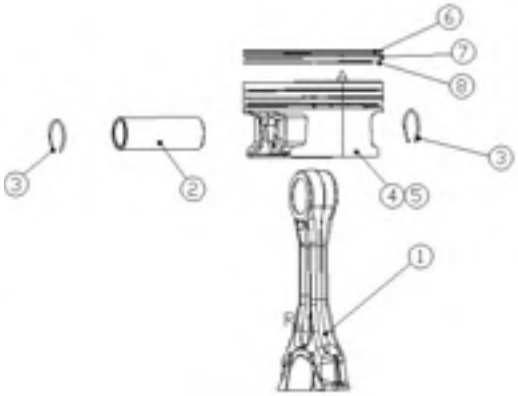
CECTEK 500cc EFI ENGINE ASSEMBLY

CAUTION：

Only trained and certificated technician can disassembly the CECTEK RSGA 500 EFI ENGINE. Improper disassembly may damage the engine. CECTEK can not provide the warranty to the engine which has not been properly disassembled and assembled by trained and certificated technician.

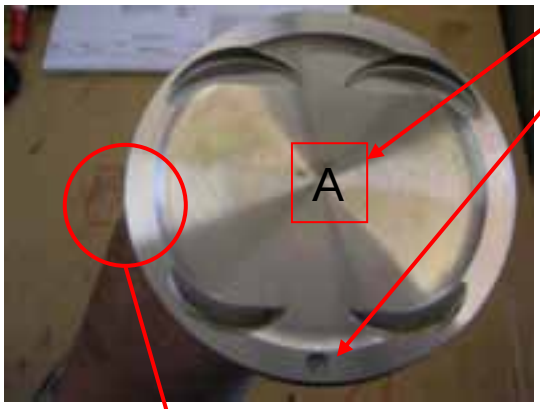
THE PISTON AND CONNECTION ROD ASSEMBLY

NO.	PART NAME	PART NO.
1.	CONROD ASSY.	40098013
2.	PISTON PIN	40090024
3.	CLIP	40090027
4.	PISTON-A	40096011
5.	PISTON-B	40096012
6.	PISTON RING TOP	40096013
7.	PISTON RING SECOND	40096014
8.	PISTON RING OIL CONTROL	40096015



1.Before assembly , must confirm if the piston (4,5) is matching the category of liner
2.A category piston only can be installed on A category liner
3.A category piston only can be installed on B category liner

4.Make sure the liner size mark of the cylinder block



5.The piston size mark on top (A or B)

6.Confirm： when you face the piston , the piston (4,5) exhaust mark is in the down side

7.Confirm：the connecting rod (1) right side mark R is same side of piston

8.Install one clip (3) into the piston clip groove firmly

9.Install pin (2) into pin groove

10.Install the clip (3) into the other side groove to stop the pin (2)

11.Then sequentially install parts (8) , (7) , (6) , the crevice position of each ring as figure A shows

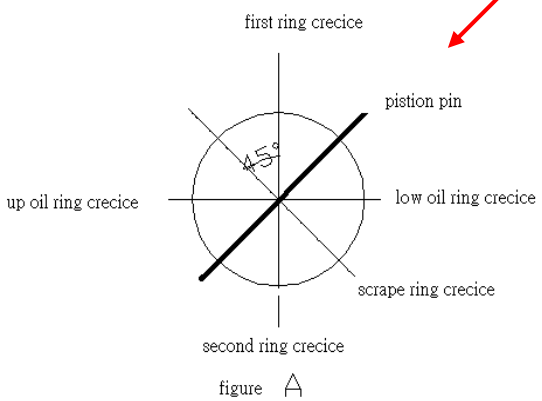


figure A

12.The opening of ring (8) of spacer shall be upward as figure B shows

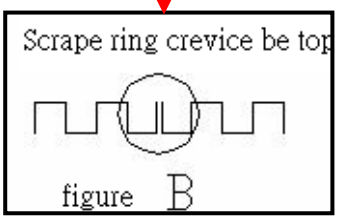


figure B

THE BALANCER ASSEMBLY		
NO.	PART NAME	PART NO.
1.	RETAIN E-RING	RES009
2.	GEAR (37T)	40150030
3.	PIN	40130083
4.	BALANCER SHAFT ASSY.	40128004

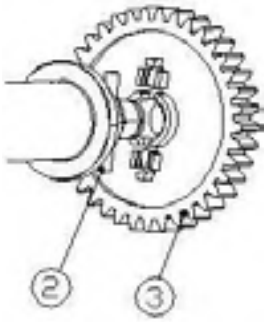
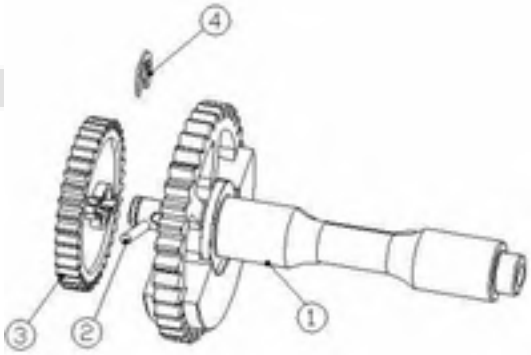


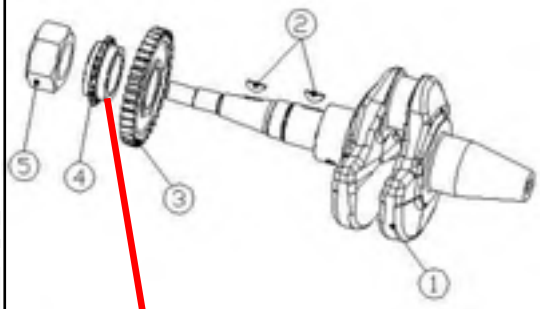
figure A

1.Install pin (2) into balancer shaft (1)
2.Install gear-oil pump driver (3) into balancer , reference to figure A



3.Clip the E-ring (4) check the retain E-ring install into the groove of balancer shaft

THE BALANCER ASSEMBLY		
NO.	PART NAME	PART NO.
1.	CRANKSHAFT	40110023
2.	KEY	40110108
3.	GEAR (36T)	40120018
4.	PCAM CHAIN SPROCKET	41010004
5.	NUT (M30)	40110024



1.Install key (2) into crankshaft (1) , keep the key parallel with crankshafttaper
2.Install gear (3) into crankshaft (1) , gear groove must be alignment key of crankshaft

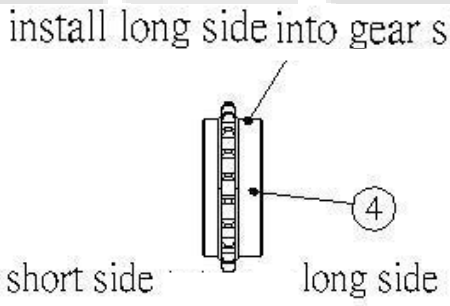
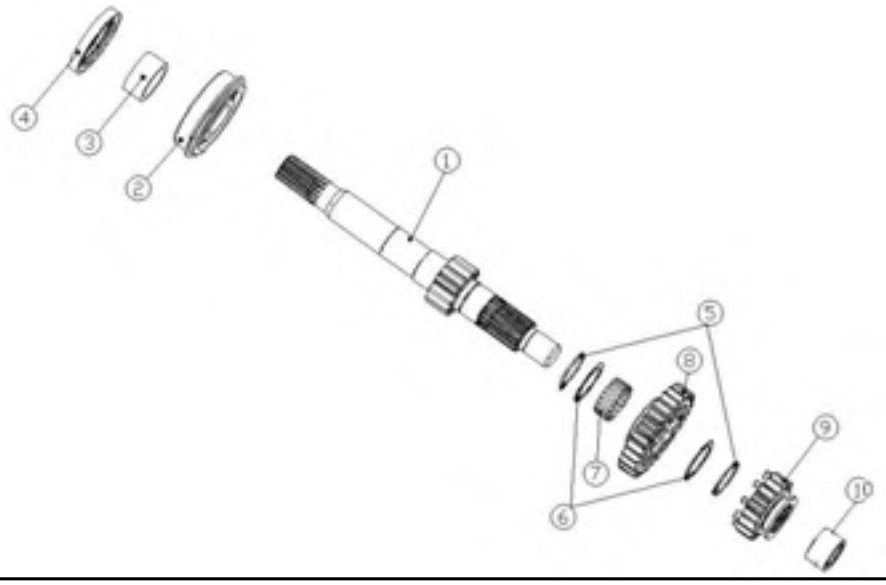


figure A

3.Install cam chain sprocket (4) into crankshaft (1) , be shall install long side into gear side of crankshaft , reference to figure A
4.Screw nut (5) to crankshaft (1) , tighten torque 250Nm

THE MAIN SHAFT ASSEMBLY		
NO.	**PART NAME**	**PART NO.**
1.	**MAIN SHFAT**	**46030001**
2.	**BEARING**	**46030034**
3.	**SPACER**	**46010003**
4.	**LIP SEAL**	**40016004**
5.	**RETAIN C-RING**	**RCS025**
6.	**WASHER**	**46030010**
7.	**NEEDLE BEARING (CAGE TYPE)**	**46030030**
8.	**HIGH SPEED DRIVE GEAR (27T)**	**46030003**
9.	**LOW SPEED DRIVE GEAR (18T)**	**46030004**
10.	**NEEDLE BEARING (OPEN TYPE)**	**46030028**



Before install gear and bearing , please lubricate with 10W/40 oil

1.Install bearing (2) into main shaft (1) , be shall bearing of ring side install to main shaft of gear side

2.Install spacer (3) into main shaft , then install seal (4) into spacer (3)

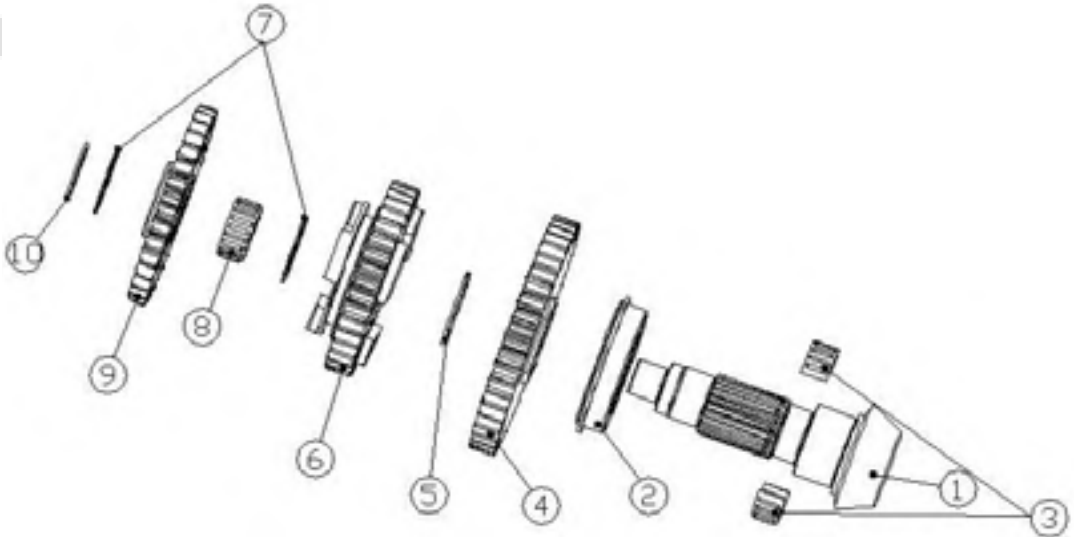
3.Install a C-ring (5) into main shaft of groove , then put a washer (6) into main shaft

4.Install needle bearing (7) and high gear (8) into main shaft , be shall install high gear of raised side into main shaft of gear side

5.Install a washer (6) into main shaft then install C-ring (5) into main shaft of outside groove

6.Install low gear (9) into main shaft then install needle bearing (10) into main shaft , be shall low gear of forl groove in the outside

THE LAY SHAFT ASSEMBLY		
NO.	PART NAME	PART NO.
1.	LAY SHFAT	46030002
2.	CYLINDRICAL ROLLER BEARING	CRBNU1007NR
3.	NEEDLE BEARING (HALF CAGE TYPE)	46030031
4.	LOW SPEED DRIVEN GEAR (45T)	46030007
5.	RETAIN C-RING	RCS030
6.	HIGH SPEED DRIVEN GEAR (36T)	46030005
7.	WASHER	46030010
8.	HNEEDLE BEARING (CAGE TYPE)	46030030
9.	REVERSE DRIVEN GEAR (34T)	46030008
10.	RETAIN C-RING	RCS025
11.	ADJUSTING WASHER	46030016-26
12.	BEARING (DOUBLE ROW ANGULAR)	46030029
13.	WASHER	46030012
14.	FLAT HEAD SCREW	SCF060200883



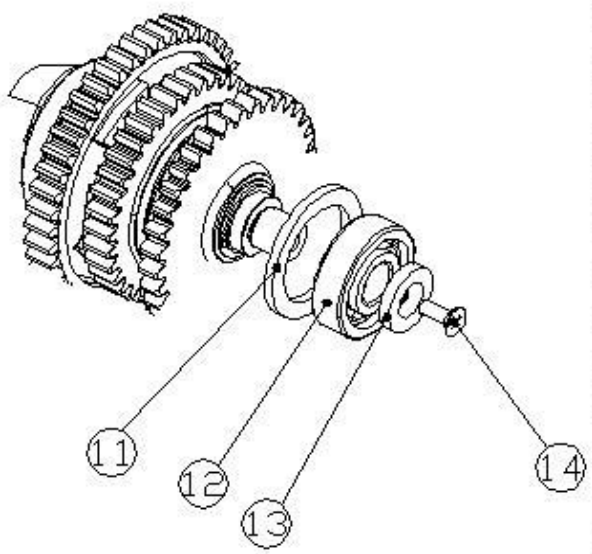
Before install gear and bearing , please lubricate with 10W/40 oil

1.Install bearing (2) into lay shaft (1) , be shall install bearing of long side into bevel gear side

2.Install needle bearing (3) into lay shaft , then install low gear (4) into lay shaft , be shall install low gear (4) of plane into bevel gear side

3.Install retain C-ring (5) into lay shaft of groove

4.Install high gear (6) into lay shaft , be shall install high gear (6) of fork groove side into another bevel gear side



Before install gear and bearing , please lubricate with 10W/40 oil

5.Install washer (7) into lay shaft , then install needle bearing (8) into lay shaft

6.Install reversal gear (9) into lay shaft , then put a washer (7) into lay shaft , be shall install reversal gear (9) of groove side into bevel gear side

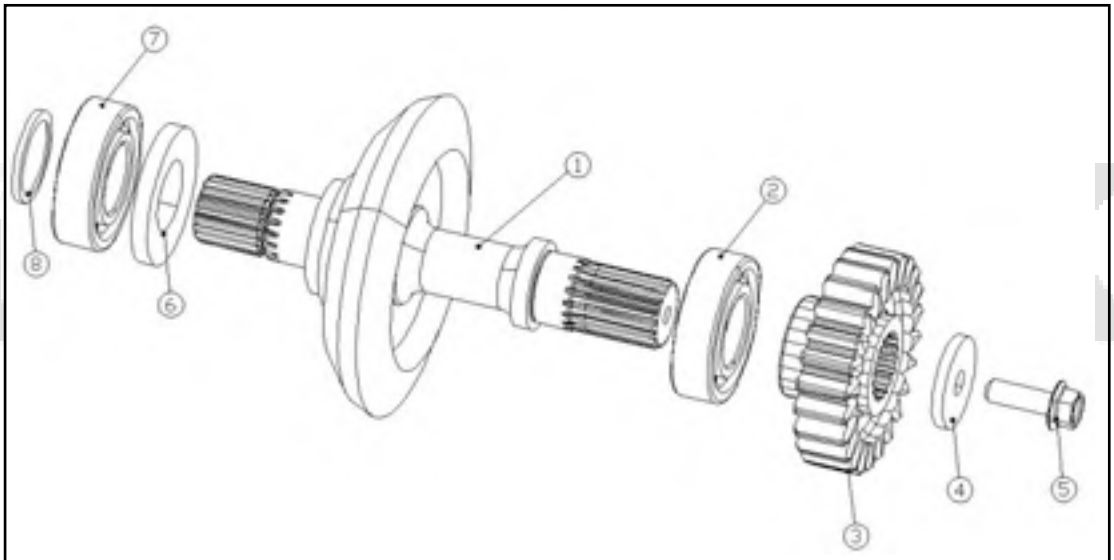
7.Install retain C-ring (10) into lay shaft of groove

8.Measure and calculate gear back clearance , then choose and install adjusting washer (11)

9.Install bearing (12) into lay shaft

10.Install washer (13) and screw flat head screw (14) into lay shaft , tighten torque 9Nm

THE REAR DRIVESHAFT ASSEMBLY		
NO.	PART NAME	PART NO.
1.	DRIVE SHAFT ASSY.	46058001
2.	BEARING	DGB6205
3.	GEAR	46050023
4.	WASHER	46050007
5.	BOLT	BFH080251094
6.	WASHER	46050009-19
7.	BEARING	DGB6305
8.	O-RING	46050025



Before install gear and bearing , please lubricate with 10W/40 oil

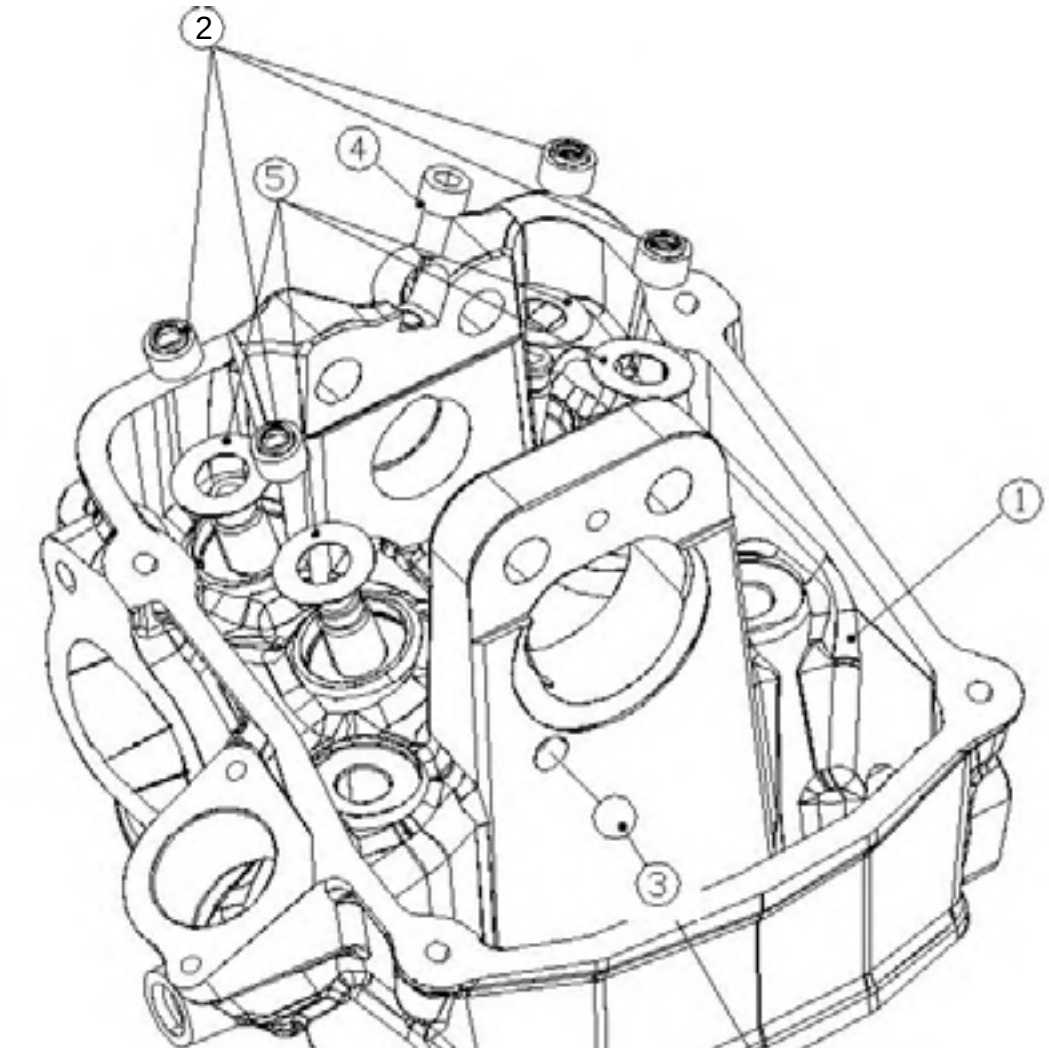
1.Press the bearing (2) into the shaft (1) thoroughly.

2.Install the gear (3) into shaft (1).

3.Tighten the bolt(5) with washer (4) on the shaft (1) , the tighten torque 20Nm

4.Install the washer (6) which thickness shall be measured in advance into shaft (1) , then press the bearing (7) into shaft (1) , finally intsall the O ring (8)

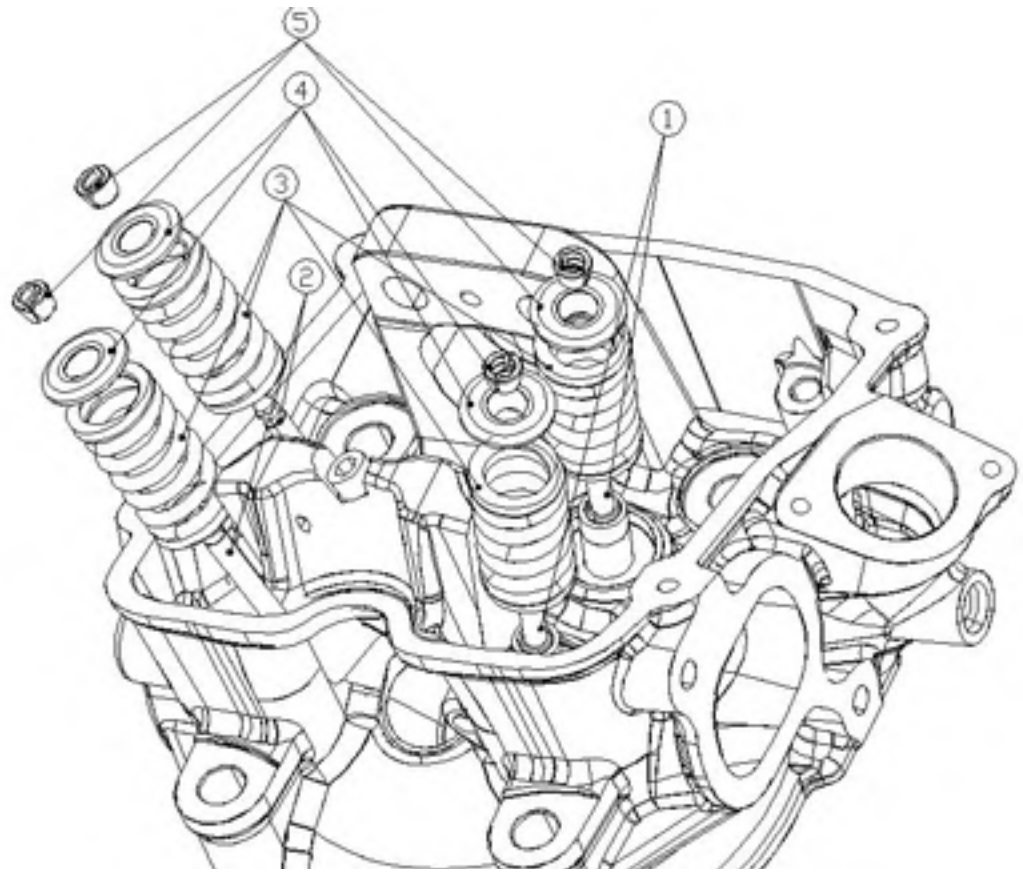
THE CYLINDER HEAD ASSEMBLY (1/3)		
NO.	**PART NAME**	**PART NO.**
1.	**CYLINDER HEAD ASSY.**	**40058011**
2.	**VALVE STEM SEAL**	**40056002**
3.	**SEALING BALL**	**40070031**
4.	**HEXAGON SOCKET SCREW**	**SC050121291**
5.	**VALVE SPRING WASHER**	**40050140**



Please clean up correlative parts and lubricate with 10W/40 oil

1.Knock the 2 balls (2) into cylinder head (1)
2.Paste the screw (4) with LT272 , tighten to cylinder head with 5Nm
3.Install the washer (5) on the valve spring seat
4.knock valve stem seal (6) into valve guide , keep distance between the bottom of seal and the top of cylinder head within 12.7±0.5 mm

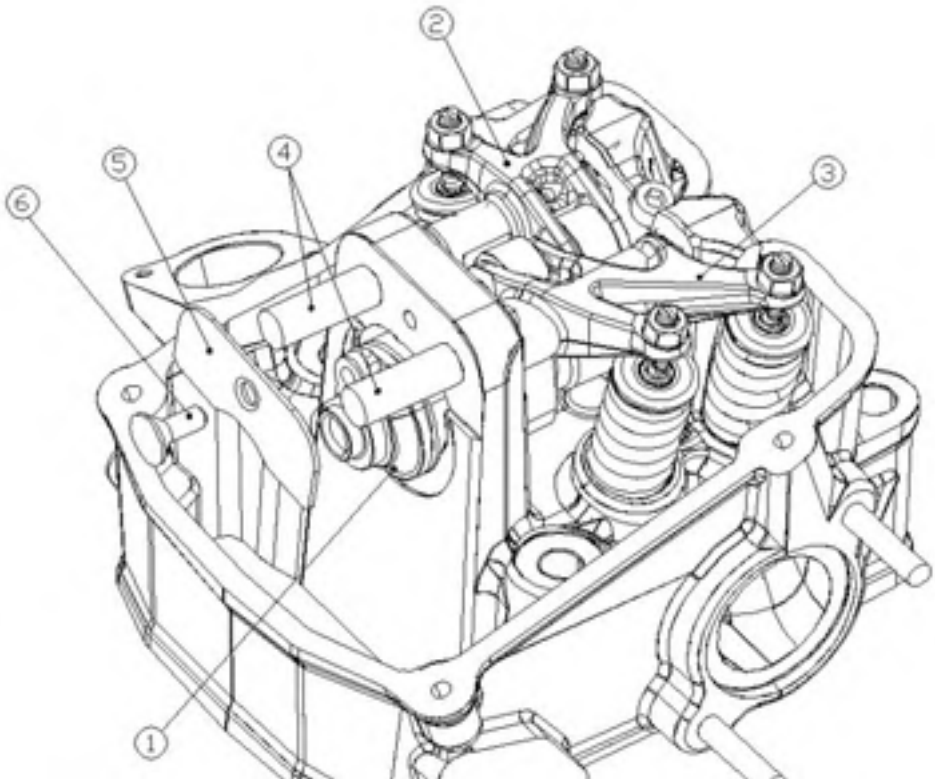
THE CYLINDER HEAD ASSEMBLY (2/3)		
NO.	**PART NAME**	**PART NO.**
1.	**VALVE (INTAKE)**	**40050133**
2.	**VALVE (EXHAUST)**	**40050134**
3.	**SPRING**	**40050135**
4.	**SRIING CAP**	**40050136**
5.	**VCOTTER**	**40056003**



Please clean up correlative parts and lubricate with 10W/40 oil

1.Install valve spring (3) x4 on the valve spring washer
2.Install cotter (5) x2 on the spring cap (4) (4pcs)
3.Install assembled spring cap (3) on the spring , with jig press it into the valve stems until a clear "clik" sound was heard
4.check the cap is firmly installed on the stem with jig

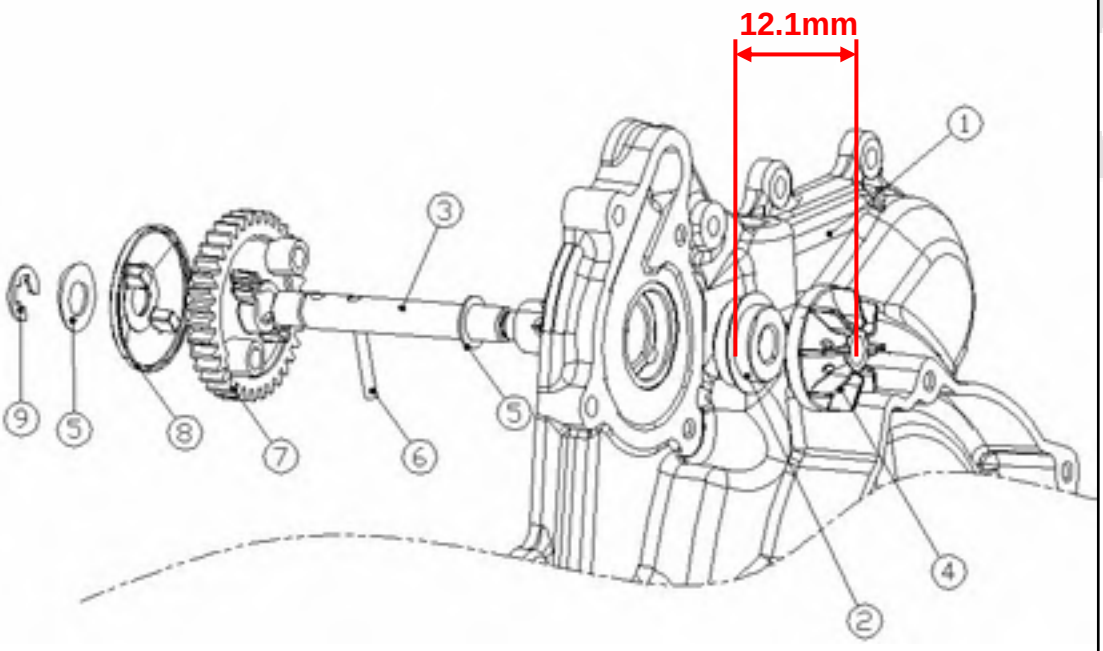
THE CYLINDER HEAD ASSEMBLY (3/3)		
NO.	**PART NAME**	**PART NO.**
1.	**CAM SHAFT**	**40070068**
2.	**ROCKER ARM ASSY. (INTAKE)**	**40078016**
3.	**ROCKER ARM ASSY. (EXHAUST)**	**40078017**
4.	**SHAFT**	**40070063**
5.	**PLATE**	**40070065**
6.	**FLAT HEAD SCREW**	**SCF060160883**



Please clean up correlative parts and lubricate with 10W/40 oil

1.Install cam (1) through cam bore
2.Install intake rocker (2) on the cam shaft , the rocker face toward intake side.
3.Install exhaust rocker (3) on the cam shaft , the rocker face toward exhaust side.
4.Install shaft roecker assy (4) x2 through intake rocker (2) and exhaust rocker (3)
5.Install the screw (6) through plate (5) and tighten to 9Nm , attention for the bottom of plate shall be clipped onto the groove of cam shaft.
6.Adjust the intake/exhaust valve gap to 0.3 mm.

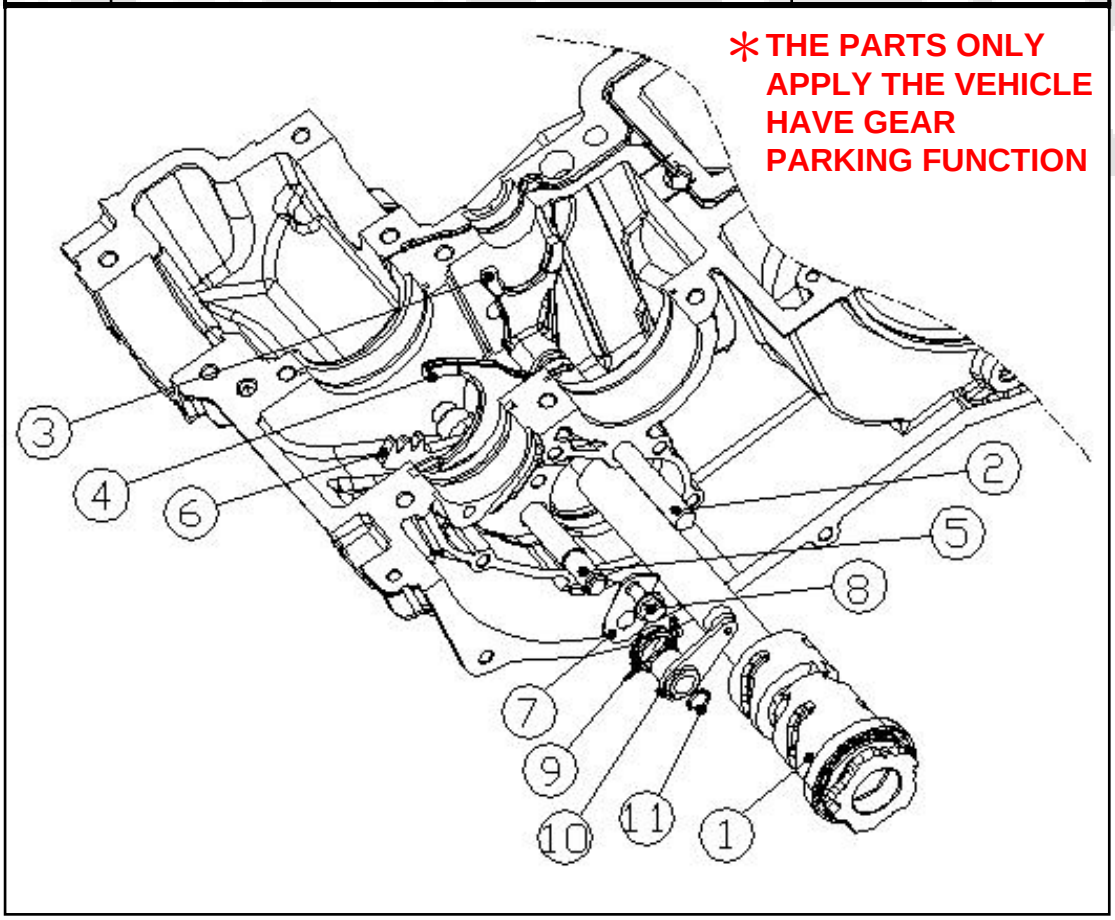
THE WATER PUMP ASSEMBLY		
NO.	PART NAME	PART NO.
1.	ACCESSORY COVER	40010053
2.	MACHANICLA SEAL	40136011
3.	SHAFT	40130075
4.	PROPELLER	40130071
5.	WASHER	40130077
6.	PIN	40130083
7.	GEAR (35T)	40130063
8.	CAP	40070064
9.	RETAIN C-RING	RCS012

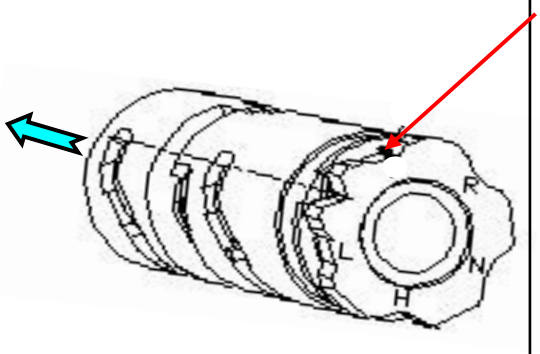


Please clean up correlative parts and keep dry

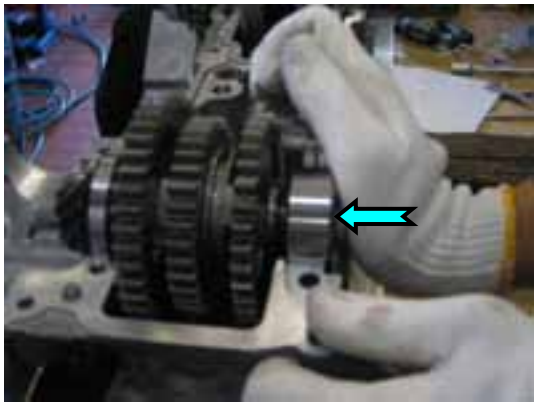
1.After install machianicla seal (2) on water pump shaft (3) and check the shaft have 12.1mm between macanicla seal and water pump shaft

THE SHIFT DRUM AND FORK ASSEMBLY		
NO.	PART NAME	PART NO.
1.	SHIFT DRUM ASSY.	46078002
2.	SHAFT (SHIFT FORK)	46070013
3.	SHIFT FORK (MAIN SHAFT)	46070001
4.	SHIFT FORK (LAY SHIFT)	46070002
5.	PARKING BREAK SHAFT ✳	46070005
6.	PARKING BREAK LEVEL ✳	46070006
7.	THRUST PLATE	46070022
8.	BOLT	BFH060120884
9.	SHIFT LOCATING SPRING	46070015
10.	SPRING BLADE	46070014
11.	RETAIN C-RING	RCS010



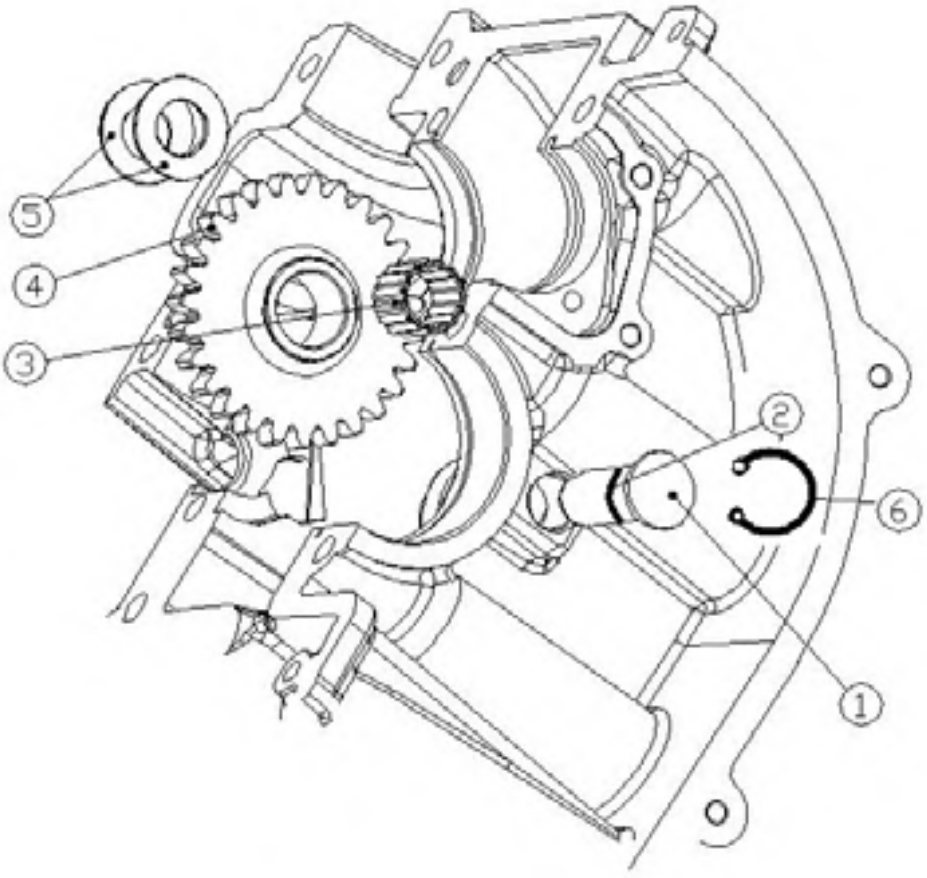
	**Shift locating rotor install position**
	**Install fork shift by plastic hammer and all parts lubricate**

THE TRANSMISSION GEAR ASSEMBLY

	**Install lay shaft to cylinder block**
	**Then push it to position**

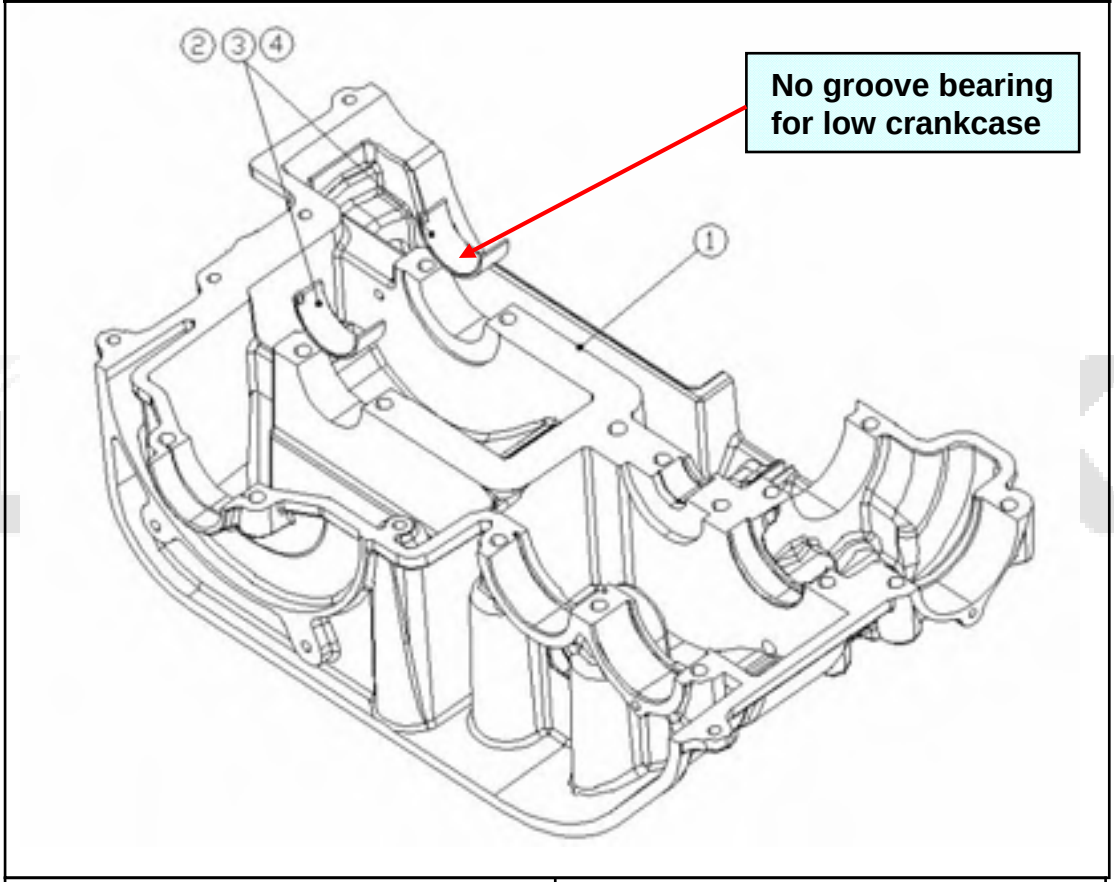
	**Install rear drive shaft to cylinder block , then push it to position**
	**Install main shaft and push the needle bearing to position**
	**Lubricate oil release valve and install valve、spring guide into cylinder block** 
	**Then screw the bolt** **※Torque 10Nm**

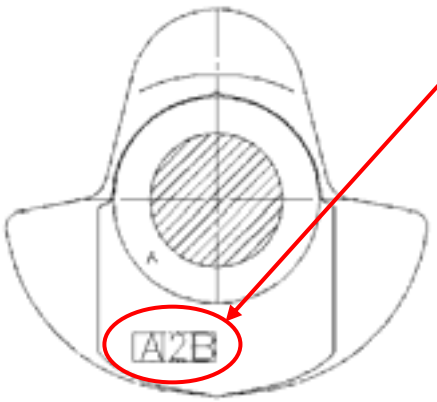
THE REAR IDLE GEAR ASSEMBLY		
NO.	**PART NAME**	**PART NO.**
1.	**SHAFT**	**46030009**
2.	**O-RING**	**46030027**
3.	**NEEDLE BEARING**	**46030032**
4.	**REVERSE GEAR (27T)**	**46030006**
5.	**WASHER**	**46030011**
6.	**RETAIN C-RING**	**RCH020**



Please clean up correlative parts and lubricate with 10W/40 oil

THE CRANKCASE AND CYLINDER BLOCK ASSEMBLY		
NO.	PART NAME	PART NO.
1.	CRANKCASE	40018014
2.	MAIN BEARING (BLACK)	888.4001.607
3.	MAIN BEARING (NO COLOR)	888.4001.608
4.	MAIN BEARING (GREEN)	888.4001.609



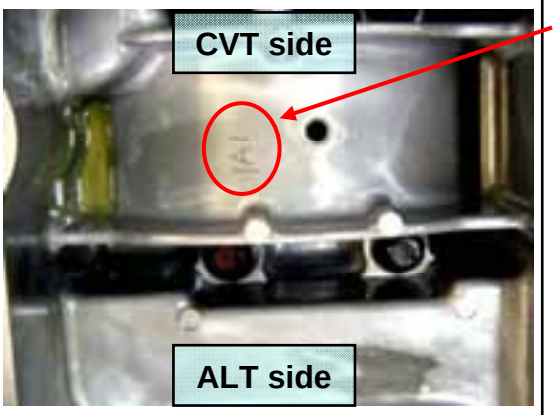


The crankshaft mark position , have 3 marks

EX：A 2 B

ALT side

CVT side



The cylinder block mark position , have 3 number

EX：1 A 1

		CYLINDER BLOCK		
		1	2	3
CRANKCASE	A	N	B	B
	B	G	N	B
	C	G	G	N

N：No color　G：Green　B：Black

Choose bearing color and install to crankcase

EX：cylinder block mark is　1 A 1
　　crankcase mark is　A 2 B

so we choose ALT side bearing color is No color (1&A)

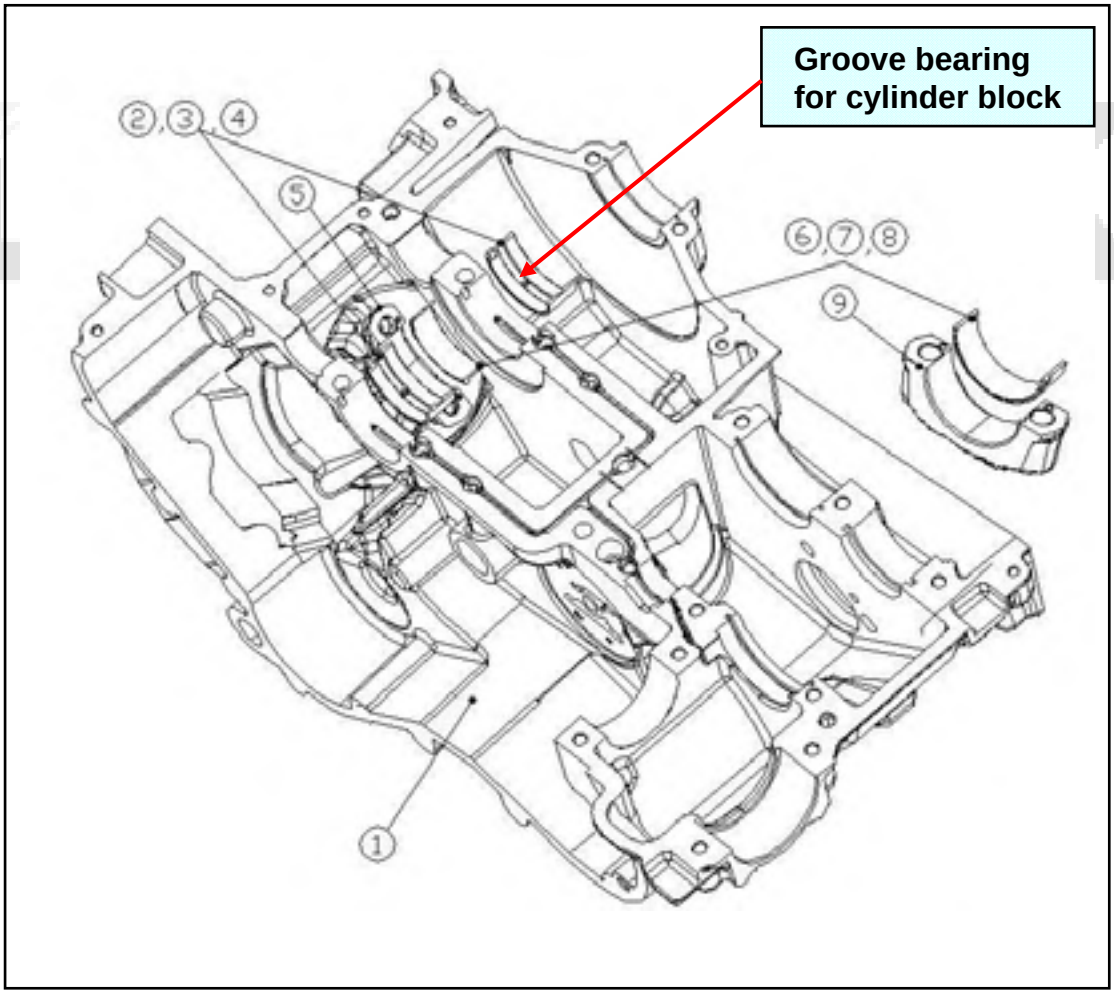
1 A 1
A 2 B

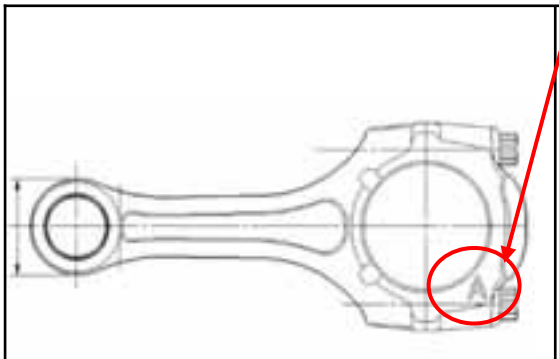
and CVT side bearing color is Green (1&B)

1 A 1
A 2 B

※up and low bearing install the same color

THE CRANKCASE AND CYLINDER BLOCK ASSEMBLY		
NO.	PART NAME	PART NO.
1.	CYLINDER BLOCK	40018014
2.	MAIN BEARING (BLACK)	888.4001.613
3.	MAIN BEARING (NO COLOR)	888.4001.614
4.	MAIN BEARING (GREEN)	888.4001.615
5.	CONROD ASSY.	40098013
6.	BEARING (BLACK)	40096025
7.	BEARING (YELLOW)	40096024
8.	BEARING (BLUE)	40096023





The connecting rod mark position

EX：A

		CONNECTING ROD	
		A	B
CRANKCASE	1	Y	B
	2	BL	Y

Y：Yellow　BL：Blue　B：Black

Choose bearing color and install to connecting rod

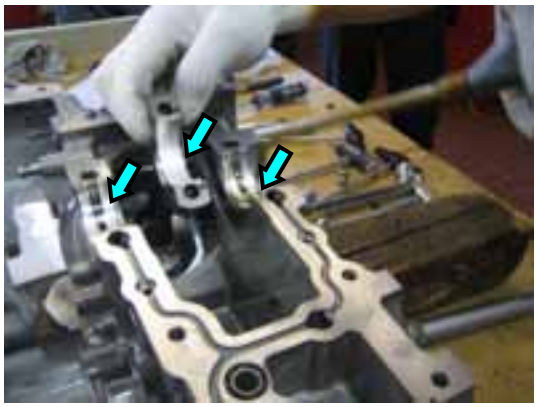
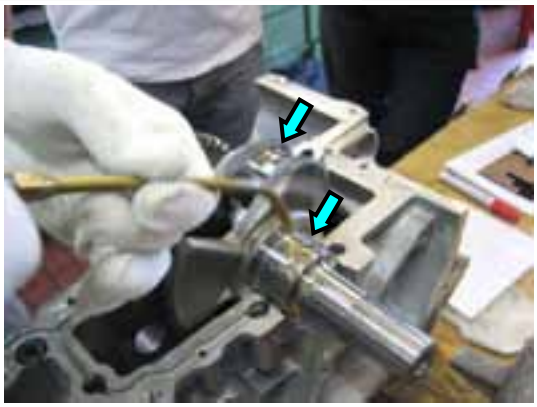
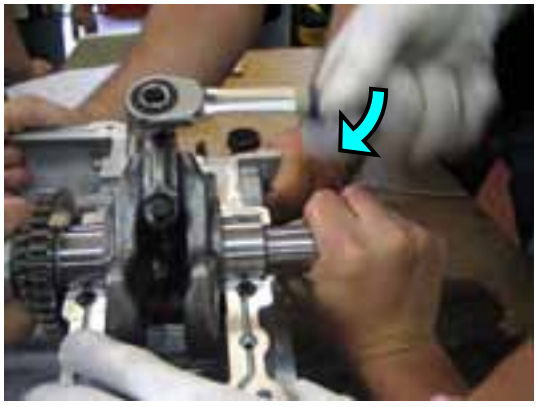
EX：connecting rod mark is　A
crankcase mark is　A 2 B

so we choose the bearing color is blue (A&2)

A A 2 B

※up and low bearing install the same color

THE BEARING AND CRANKSHAFT ASSEMBLY

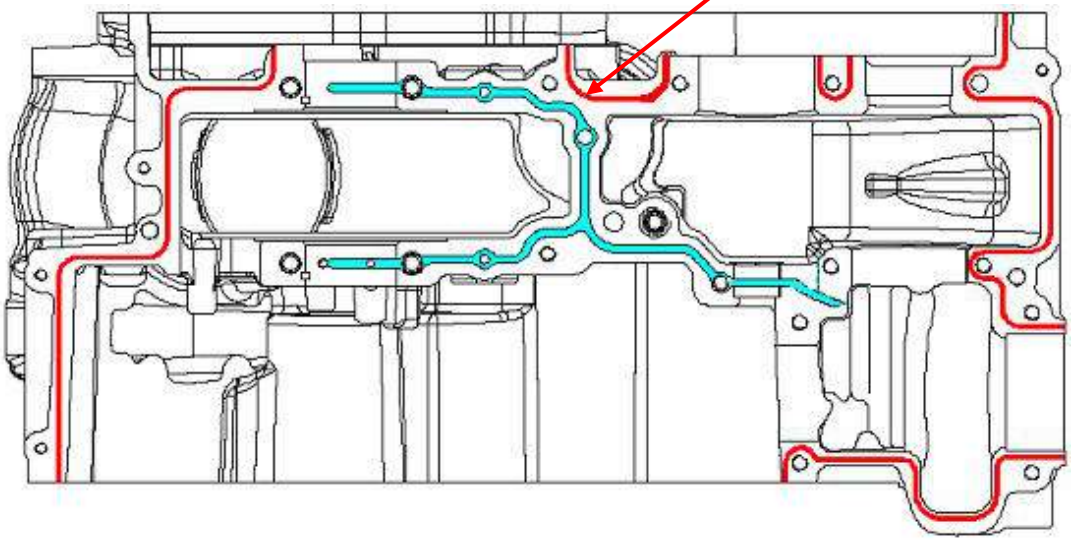
	**Lubricate all bearing**
	**Install crankshaft**
	**Lubricate all rotation position**
	**Before screw the two bolts , be lubricate connecting rod bolts ※Torque 20Nm + 90˚ + 90˚ (screw the two bolts equally)**

Lay the *Case Assembly Glue* on cylinder block according figure A and glue diameter about 1mm

Figure A

Keep away the main gallery

Lay the glue diameter about 1mm

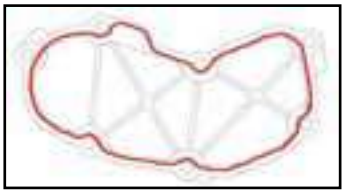


Glue Path

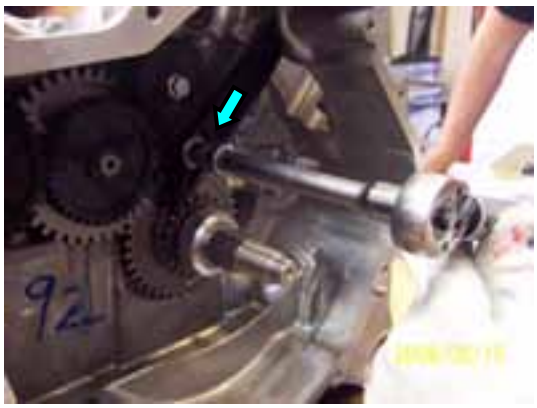
Main Gallery

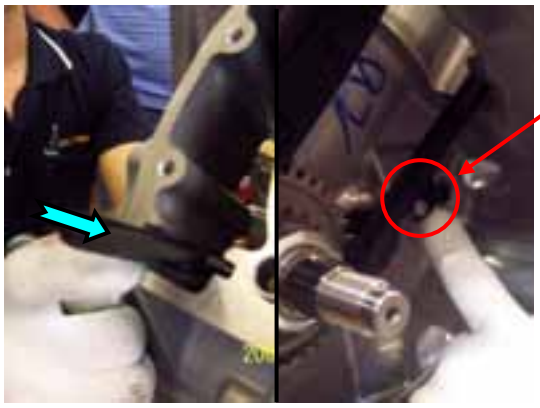
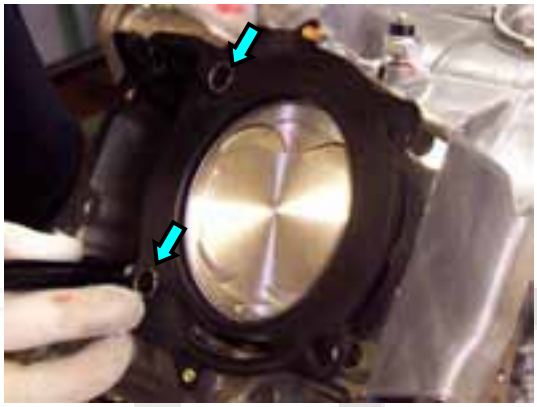
Install crankcase to cylinder block

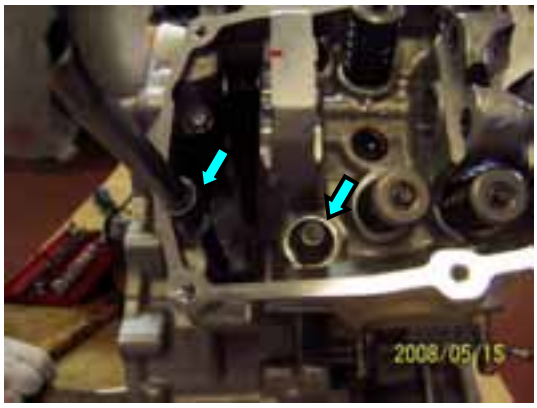
	**Lubricate the bolt and washer , then screw it** **※Torque 35Nm + 90˚** **(screw the bolts equally)**
	**Install the cylinder block bolts**
	**The tighten torque 35Nm**
	**Install shift drum antithrust plate** **※Torque 10Nm**

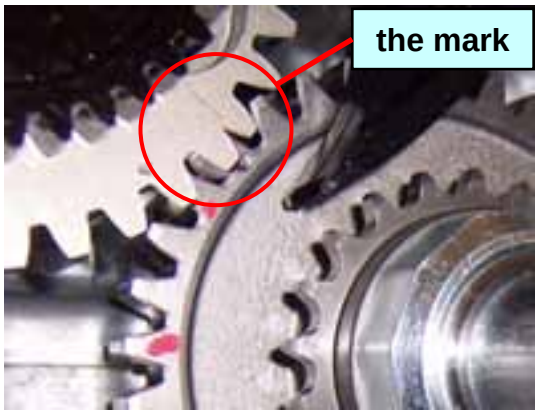
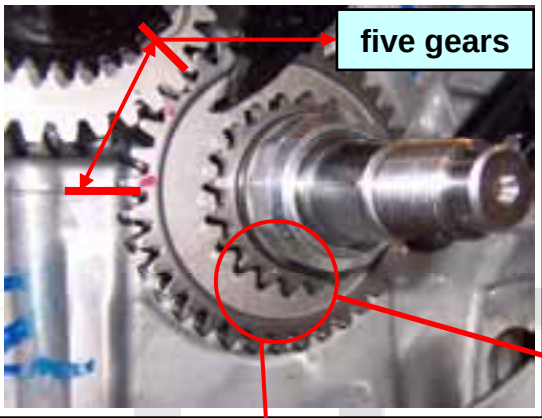
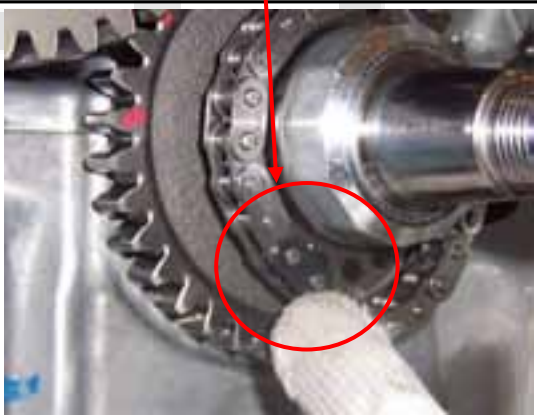
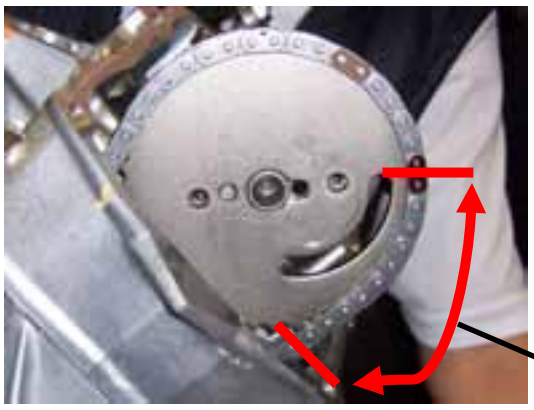
	**Lay the *Case Assembly Glue* on shift drum cover** **※Glue diameter about 1mm** 
	**Install the shift drum cover** **※The bolts torque 10Nm**
	**Reverse the engine , then screw the cylinder bolt** **※The bolts torque 20Nm**
	**Install the main circuit** **※The bolt torque 20Nm**

	**Lubricate the balancer**
	**Install balancer gear , then check crankshaft gear mark to balancer half of gear position**
	**Lay the *Bolt Glue* on the bolt , then install the balancer plate** **※The bolts torque 20Nm**
	**Lubricate the oil pump and rotor**

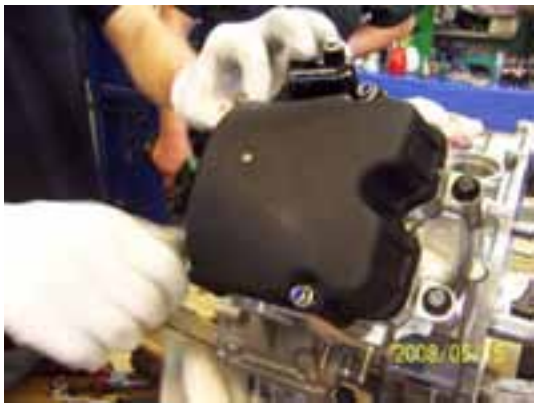
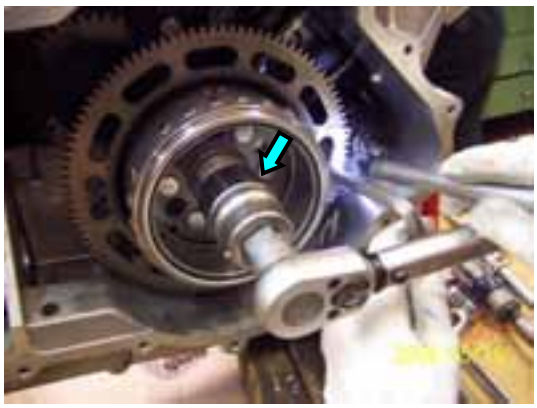
	**The bolts torque 10Nm**
	**Install the oil pimp gear , then clip the E-clip**
	**Install the water pump idle gear , then tighten the bolt** **※The bolts torque 10Nm**
	**Install the chain guide** **※Torque 10Nm**

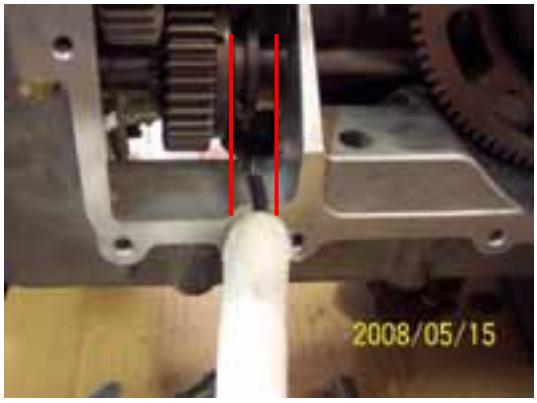
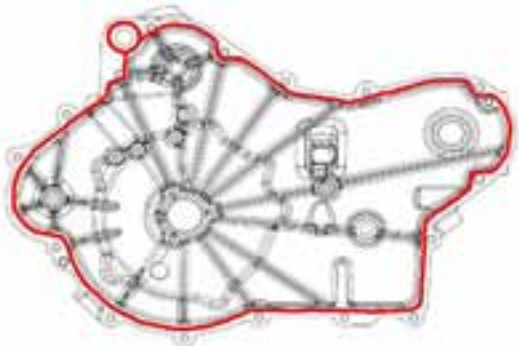
	**Install the chain guide into cylinder block and notice the lock position**
	**Install the cylinder head gasket and lock pins**
	**Install the cylinder head**
	**Lubricate the cylinder head bolts and washer**

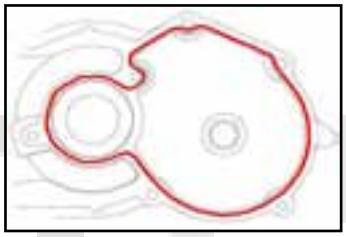
	**Screw the cylinder bolts** **※Torque 35Nm + 90˚ + 90˚** **(screw the four bolts equally)** **※The M6 bolts torque 10Nm**
	**Lubricate cam shaft**
	**Install the cam shaft into cylinder head**
	**Lubricate the rock arms and shafts , then install into cylinder head**

	Check the crankshaft gear mark and balancer mark
	Between balancer mark to crankcase mark line have five gears
	Crank sprocket mark must correct to blue mark of chain
	When crank sprocket mark correct , then check cylinder head sprocket have six pieces counter from cylinder head

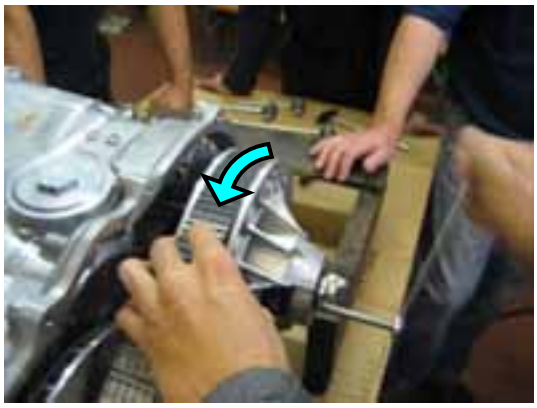
	**Install the tensioner and screw the bolts , then put the spring and screw the cover** **※The bolts torque 10Nm** **※The cover torque 10Nm**
	**Install discompressor**
	**Lay *Bolt Glue* on discompressor bolt , then screw it** **※Torque 5Nm**
	**Install the thermostat** **※Torque 10Nm**

	**Install the cylinder head cover , then screw the bolts** **※Torque 10Nm**
	**Install the spark plug** **※Torque 10~12Nm**
	**Lubricate the spin nose and , then install into cylinder block**
	**Install the fly wheel assy. and ALT rotor , then screw the nut** **※Torque 200Nm**

	**Check 4WD gear groove correct to low crankcase groove**
	**Lay the *Case Assembly Glue* on accessary cover** **※Glue diameter about 1mm**
	**Install accessary cover , then screw the bolts** **※The bolts torque 10Nm**
	**Install the drive shaft seal cover , then screw the bolts** **※The bolts torque 10Nm**

	**Lay the Bolt Glue on drive yoke bolt , then install drive yoke** **※The bolts torque 20Nm**
	**Lay the *Case Assembly Glue* on balancer cover** **※Glue diameter about 1mm** 
	**Install balancer cover , then screw the bolts** **※The bolts torque 10Nm**
	**Lay the *Case Assembly Glue* on oil sump cover** **※Glue diameter about 2mm**

	**Install oil sump , then screw the bolts** **※The bolts torque 10Nm**
	**Install the CVT drive pulley , then screw the bolt** **※The bolts torque 120Nm**
	**Install the driven pulley , then screw the bolt** **※The bolts torque 45Nm**
	**Screw the *Belt Removal Tool* to end to open the driven pulley , then install the belt**

	**Then rotate driven pulley check the belt on position**
	**Install the CVT cover , then screw the bolts** **※The bolts torque 10Nm**
	**The engine assembly complete**

SERVICE MANUAL

FOR GLADIATOR & QUADRIFT CHASSIS

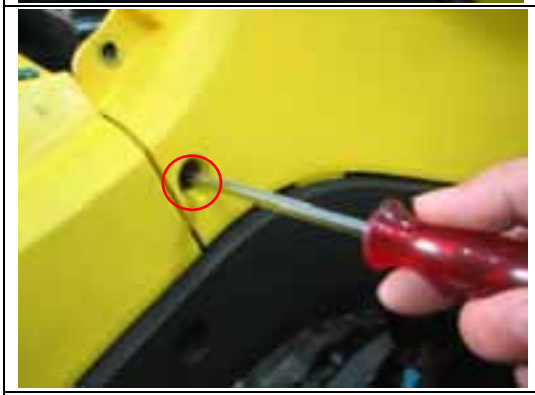
SEAT REMOVAL	
	1. Turn the steering handle to the dead left position.
	2. Push the key and turn it to “SEAT OPEN” position. 3. Then you will hear the latch release sound “Click”.
	4. Lift the seat up and draw the seat backward to remove the seat.

INSTRUMENT COVER REMOVAL	
	1. Remove the 2 screws on the upper instrument covers.

	**2. Lift the front instrument cover up from the bottom and separate if from the rear instrument cover.**
	**3. Remove the 4 screws on the rear instrument covers.** **4. The screws may fall into the chassis, be careful in catching the screws.**
	**5. Lift the rear instrument cover up and remove the seal between the instrument and the cover.**
	**6. Put the seal back on the instrument to prevent the part missing.**

SADDLE REAR COVER REMOVAL	
	1. Turn the steering handle to the dead left position.
	2. Remove the screw latch on the right forward corner of saddle upper cover.
	3. Remove the screw latch on the left forward corner of saddle upper cover.
	4. Remove the two screws on the rear of saddle upper cover.

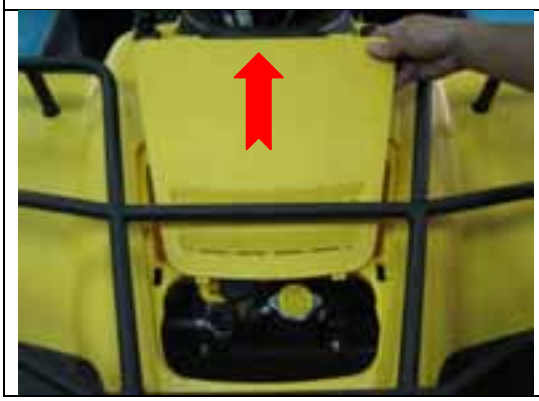
	**5. Pull the upper saddle cover backward and the lift it up to remove the cover.**

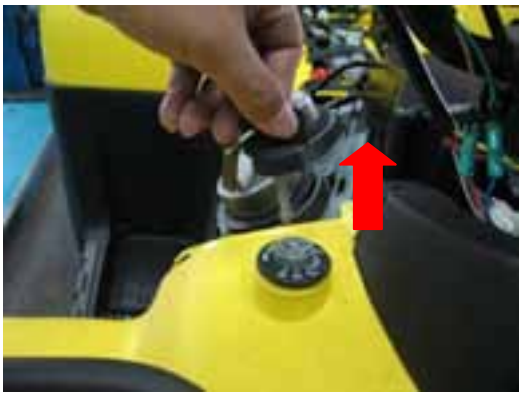
SIDE SADDLE COVERS REMOVAL	**(LHS & RHS are in same process)**
	**1. Must remove the upper saddle cover before removing side saddle cover.** **2. Remove the frame fastening screw.** **3. When install torque 10Nm.**
	**4. Remove the rear latch screw.**
	**5. Remove the front loser latch screw.**

	**6. Remove the front upper latch screw.**
	**7. Pull the cover backward (direction 1).** **8. Slightly lift the cover up and pull the cover upward (direction 2) for removing the cover.**

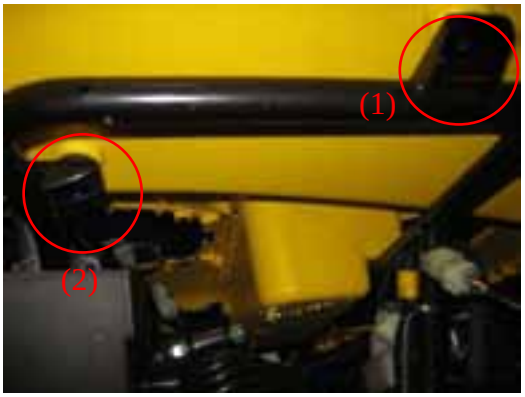
FRONT BUMPER COVER REMOVAL	**Reversely perform the below process to install.**
	**1. Remove the upper two screws on the cover.** **2. When install torque 10Nm**

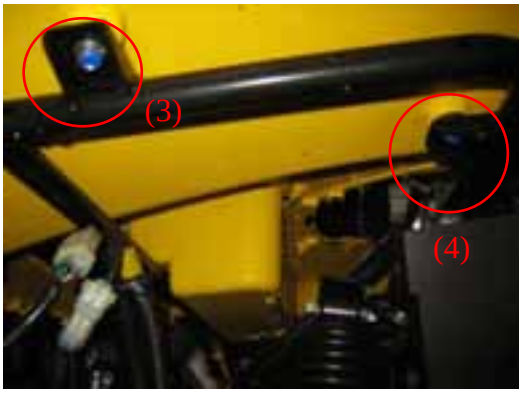
	**3. Remove the RHS screw on the cover.** **4. When install torque 10Nm**
	**5. Remove the LHS screw on the cover.** **6. When install torque 10Nm**
	**7. Pull the cover forward to remove the cover from bumper.**

MAINTENANCE ACCESS PANEL REMOVAL	Reversely perform the below process to install.
	1. Insert your two fingers into the latch hole. Press the latch to release the panel.
	2. Slide the panel out under the front rack. 3. Note: for ATV Quadrift 500 EFI, There is not rack above the maintenance access panel. You can direct lift up the panel.

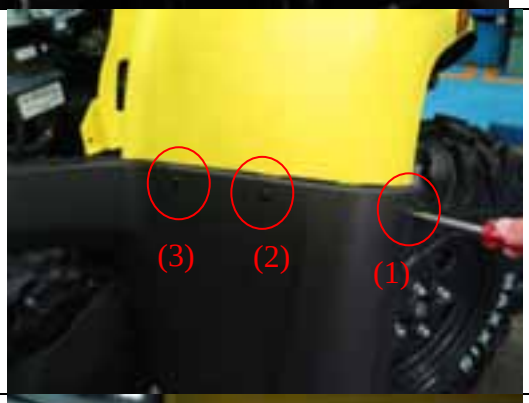
KEY POSITION COVER REMOVAL	Reversely perform the below process to install.
	1. Remove the key out.

	**2. Hold the key position cover and turn it counterclockwise to dead left point.**
	**3. Pull the key position cover out from the key hub. It could be easier that using you finger as a stop then drawing the cover out.**
	**4. Keep the cover face up to prevent the scratch on the marks.**

FRONT RACK REMOVAL	**Reversely perform the below process to install.**
	**1. Loosen the two bolts under the RHS front cover but not remove them.** **2. When install torque 10Nm.**

	3. Remove the two bolts under the LHS front cover. 4. When install torque 10Nm.
	5. Remove the front rack.

FRONT COVER REMOVAL	Reversely perform the below process to install.
	1. Remove 12V accessory plug connector.

	**2. Disconnect the headlight and direction light connectors.**
	**3. The connectors are latched, pull the latch outward and disconnect the connectors.**
	**4. Remove the RHS 3 front cover latch screws and LHS 3 front cover latch screws.**
	**5. Remove the RHS front mask cover bolt above the bumper.**

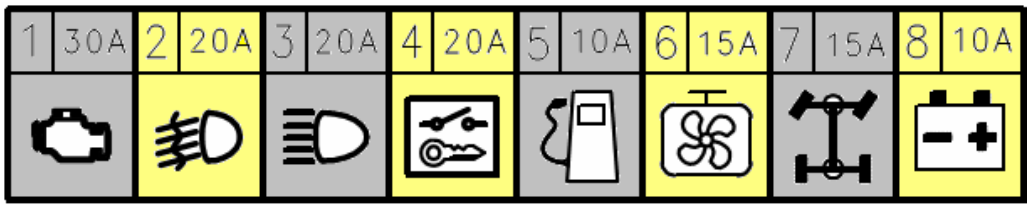
	**6. Remove the LHS front mask cover bolt above the bumper.**
	**7. Pull the foot brake fluid reservoir out from the cover.**
	**8. Release the foot brake fluid reservoir latch.**
	**9. Pull the foot brake fluid reservoir tube out from the latch gap.**

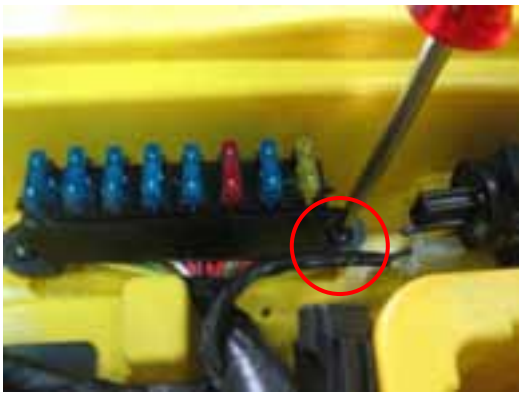
	**10.Put the reservoir on the upper right corner of the front cover.**
	**11. Pull the cove up and make sure and make sure there are no connected wires and tubes.**
	**12. Separate the cover and frame.**

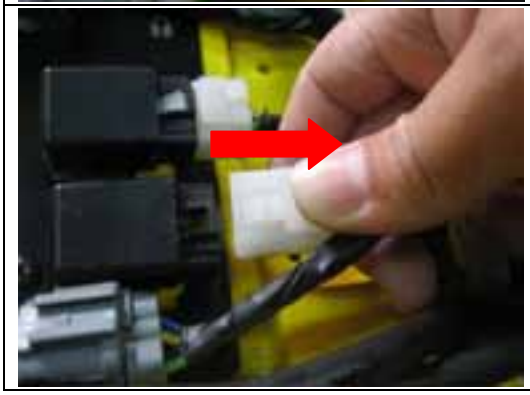
BATTERY REMOVAL	**Reversely perform the below process to install.**
	**1. Pull the rubber strip of battery out from the hook.**

	**2. Remove the strip form the other hook.**
	**3. Remove the Negative(－) pole screw of harness.**
	**4. Remove the Positive (+) pole screw of harness.**
	**5. Pull the battery out form the chamber.**

DIRECTION INDICATION LIGHTER FLASHER REMOVAL	Reversely perform the below process to install.
	1. Press the connector latch down and pull the connector out form the flasher. 2. Pull the rubber mount form the cover. 3. Remove the flasher form the rubber mount.

FUSE BOX REMOVAL	Reversely perform the below process to install.
	
The function and the Amp limit of each fuse are described as the lable on the fuse box.	
	1. Press down the latches on the both side of fuse box cover.
	2. Lift the cover up.

	**3. Remove the Front mounting screw.**
	**4. Remove the rear mounting screw.**

RELAYS REMOVAL	**Reversely perform the below process to install.**
	**1. Press down the relay connector latch.**
	**2.Remove the connector out form the relay.**

	**3. There are totally 7 relays in the chamber under the seats. Relay 1 to 6 are exactly same specifications. Relay 7 is the main switch relay.**

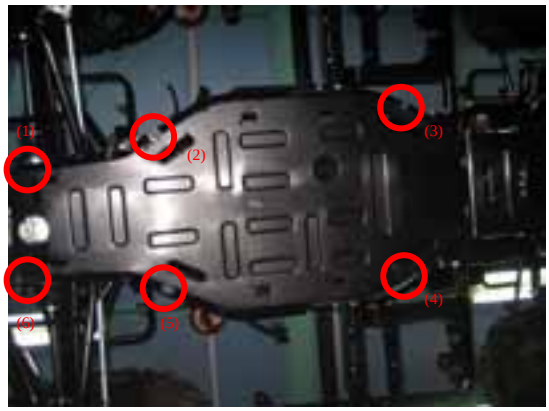
REAR RACK REMOVAL	**Reversely perform the below process to install.**
	**1. Remove 2 RHS bolts under the rear cover.** **2. When install torque 10Nm**
	**3. Remove 2 LHS bolts under the rear cover.** **4. When install torque 10Nm**
	**5. Lift the rear rack up to remove.**

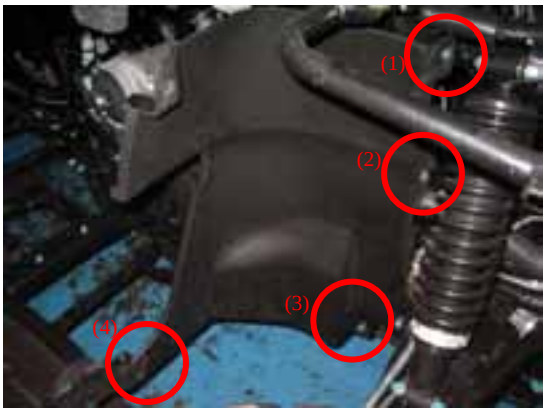
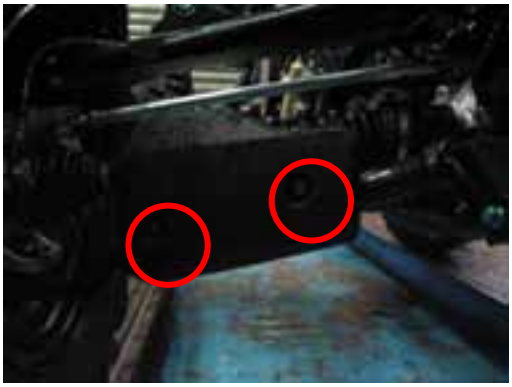
REAR COVER REMOVAL	Reversely perform the below process to install.
	1. Remove the RHS tail lights connector.
	2. Remove the LHS tail lights connector.
	3. Cut the RHS & LHS taillight harness strip.
	4. Remove the latch screws between rear cover and rear fender.

	**5. Remove the LHS screw on the license plate frame under rear cover.**
	**6. Remove the RHS screw on the license plate frame under rear cover.**
	**7. Remove the LHS screw near the taillight.**
	**8. Remove the RHS screw near the taillight.**

	**9. Remove the fuel tank cap.**
	**10. Install the fuel tank back but under the cover.**
	**11. Pull the harness out form the rear cover.**
	**12. Remove the rear cover.**

LHS & RHS FOOT REST COVERS REMOVAL	Reversely perform the below process to install.
	1. Remove the screw on the passenger foot rest mount cover.
	2. Remove the passenger foot rest chamber mount cover.
	3. Remove the 5 bolts on the foot rest cover. 4. When install torque 10Nm
	5. Lift the foot rest cover up to remove it.

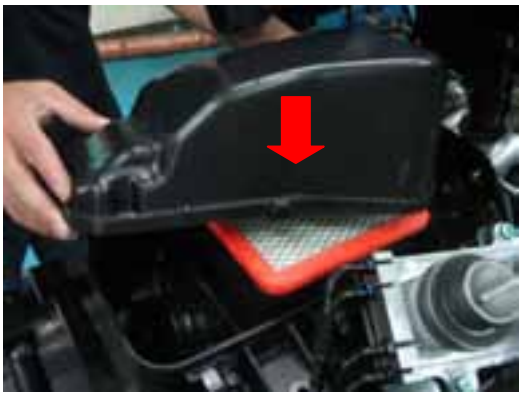
REAR BOTTOM PROTECTOR REMOVAL	Reversely perform the below process to install.
	1. Remove the 2 bolts on the rear side of rear bottom protector. 2. When install torque 10Nm
	3. Remove the 2 bolts on the LHS and RHS of rear bottom protector. 4. Pull the rear bottom protector down to remove it. 5. When install torque 10Nm.
MIDDLE BOTTOM PROTECTOR REMOVAL	**Reversely perform the below process to install.**
	1. Remove the 6 bolts on the middle bottom protector. 2. Pull the middle bottom protector down to remove it. 3. When install torque 10Nm

FRONT LHS & RHS FENDER REMOVAL	Reversely perform the below process to install.
	1. Remove the 4 bolts on the fender and lift the fender up to remove it. 2. When install torque 10Nm
FRONT LHS & RHS A-ARM PROTECTOR REMOVAL	**Reversely perform the below process to install.**
	1. Remove the 2 bolts on the A-arm protector then remove the protector. 2. When install torque 10Nm.

FRONT LHS & RHS A-ARM PROTECTOR REMOVAL	Reversely perform the below process to install.
	1. Remove the 2 bolts on the A-arm protector then remove the protector. 2. Remove the bolt on the front side of rear A-arm protector then remove the rear A-arm protector. 3. When install torque 10Nm.

AIR FILTER BOX REMOVAL	Reversely perform the below process to install.
	1. Remove the 2 bolts on the from seat clamp. 2. When install torque 10Nm.
	3. Remove the seat clamp.
	4. Release the air filter upper cover latches.
	5. Remove the air filter upper cover.

	**6. Cover the air filter by clean lining to prevent foreign object.**
	**7. Remove the bolt in the front side of air filter box.**
	**8. Remove the LHS bolt on the lower air filter box.**
	**9. Remove the RHS bolt on the lower air filter box.** **10. When install torque 10Nm.**

	**11. Reinstall the upper air filter box**
	**12. Press the latch down and disconnect harness form the IAT sensor connector.**
	**13. Release the clamp between throttle body and inlet.**
	**14. Release the clamp on engine blow-by tube.**

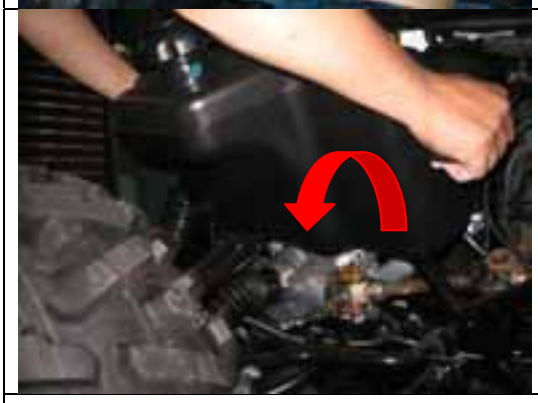
	**15. Remove engine blow-by tube.**
	**16. Cover the engine blow-by outlet by tape.**
	**17. Turn the air filter box counterclockwise along the engine center datum.**
	**18. Lift the air filter box up to remove it.**

	**19. Cover the throttle body inlet by tape.**

FUEL TANK REMOVAL	
	**1. Disconnect the fuel pump power harness connector.**
	**2. Press the latch on the both side of fuel line connector to remove fuel line from fuel pump outlet.**
	**3. Cover the fuel line connector by tape.**

	**4. Cover the fuel pump outlet by tape.**
	**5. Release the CVT ventilation outlet tube clamp.**
	**6. Press the CVT ventilation outlet rubber adapter to remove the CVT ventilation outlet tube.**
	**7. Remove the CVT ventilation outlet tube from the fuel tank protector.**

	**8. Pull the CVT ventilation outlet tube out form the frame.**
	**9. Cover the CVT cover outlet by tape.**
	**10. Remove RHS front fuel tank mounting bolt.**
	**11. Remove RHS rear fuel tank mounting bolt.**

	12. Remove LHS fuel tank mounting bolt. 13. When install torque 10Nm.
	14. Slightly lift the LHS of fuel tank up and push the RHS of fuel tank down.
	15. Slightly rotate the fuel tank along the center datum of ATV and pull the tank out from the frame.
	16. Remove the fuel tank.

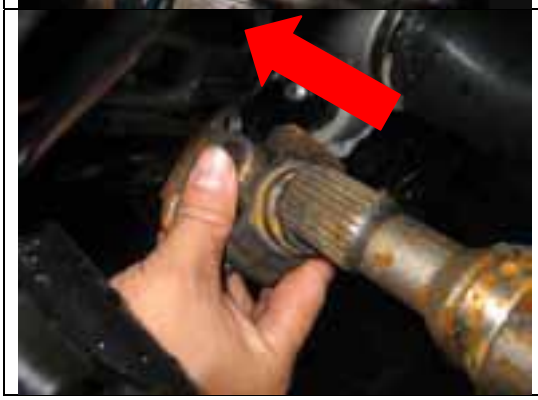
	17. Confirm no fuel spilled on the frame.

EXHAUST PIPE REMOVAL	
	1. Release the exhaust pipe clamp bolt.
	2. Release the font bolt of muffler mounting but not remove. 3. When install torque 20Nm.
	4. Remove the rear bolt of muffler mounting but not remove.

	**5. Hold the muffler and then remove the mounting bolts.**
	**6. Slightly rotate the muffler and pull it back to remove the muffler.**
	**7. Press the connector latch and disconnect the O2 sensor harness connector.**
	**8. Hold the front exhaust pipe and remove the mounting nut on the cylinder head.**

	**9. Confirm: the exhaust pipe gasket is complete without crack, damage, or break.**

FRONT & REAR WHEEL REMOVAL	
	**1. Release the wheel nut by the sequences as the mark: (1)-(2)-(3)-(4).**
	**2. Remove the wheel nut to remove the wheel from the hub.** **3. When install torque 60Nm.**

FRONT PROPELLER SHAFT REMOVAL	
	1. Remove the cutter pin on the hub nut.
	2. Remove the hub nut. 3. When install torque 100Nm.
	4. Remove the 4 bolts on the front engine output shaft coupling. 5. When install torque 25Nm.
	6. Remove the front propeller universal coupling.

	**7. Remove 4 bolts on the differential propeller shaft coupling and then remove the propeller shaft.**

REAR PROPELLER SHAFT REMOVAL	
	**1. Remove the cutter pin on the hub nut.**
	**2. Remove the hub nut.** **3. When install torque 100Nm.**
	**4. Remove the 4 bolts on the rear engine output shaft coupling.**

	**5. Slide the propeller shaft out form the engine output coupling.**
	**6. Remove 4 bolts on the differential propeller shaft coupling.** **7. When install torque 25Nm.**
	**8. Slide the propeller shaft out form the differential input coupling.**

LHS & RHS STEERING LINK REMOVAL	
	**1. Turn the steering to get the best access of ball joint nut.**

	**2. Remove the cutter pin on the ball joint mounting nut.** **3. When install torque 30Nm.**
	**4. Remove the ball joint mounting nut.** **5. When install torque 30Nm.**
	**6. Remove the nut and washer.**
	**7. Remove the ball joint form knuckle by ball joint puller.**

	**8. Remove the steering link.**
	**9. Remove the cutter pin form the ball joint nut on the steering column plate.**
	**10. Remove the ball joint nut on the steering column plate.** **11.When install torque 30Nm.**

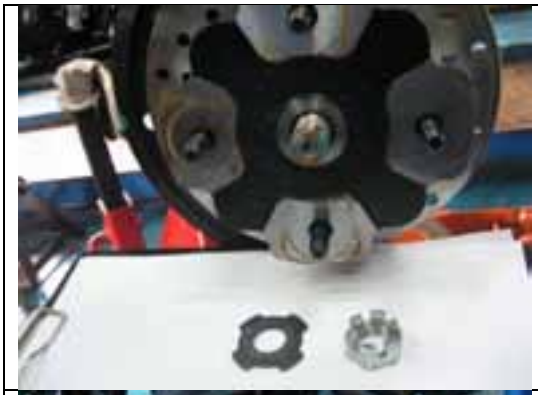
FRONT LHS & RHS BRAKE CALIPER REMOVAL	
	**1. Remove the 2 caliper mounting bolts** **2.When install torque 25Nm.**

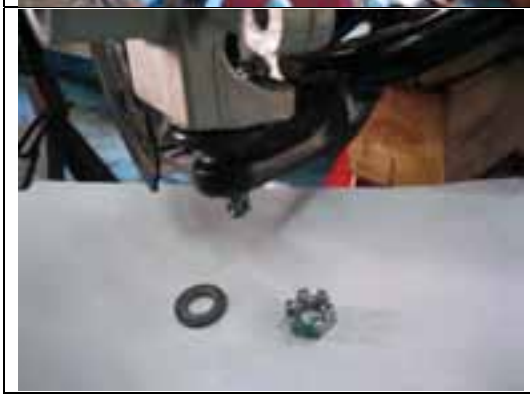
	**3.Release brake tube clamp.**
	**4.Remove the brake caliper.**

FRONT LHS & RHS SHOCK ABSORBER REMOVAL	
	**1. Hang the front upper A-arm by rope.**
	**2.Remove the shock upper mounting bolt and nut.** **3.When install torque 40Nm.**

	**4.Remove the shock lower mounting bolt and nut.** **5.When install torque 40Nm.**
	**6.Remove the shock absorber.**

FRONT LHS & RHS HUB REMOVAL	
	**1.Hang the front upper A-arm by rope.**
	**2.Remove the hub nut.** **3.When install torque 100Nm.**

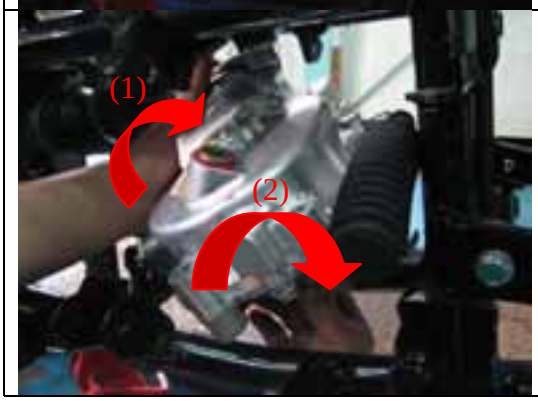
	**4.Remove the hub nut and washer.**
	**5.Use the hub CV joint bolt as the support to pull the hub out with the brake disk.**

FRONT LHS & RHS A-ARM ASSY. REMOVAL	
	**1.Remove the cutter pin on lower A-arm knuckle ball joint bolt.**
	**2.Remove the nuts and washers.** **3.When install torque 30Nm.**

	**4.Use ball joint puller to remove the front knuckle from the lower A-arm.**
	**5.Remove the cutter pin on the upper A-arm ball joint bolt.**
	**6.Remove the nut and washer on the upper A-arm ball joint bolt.** **7.When install torque 30Nm.**
	**8.Remove the knuckle form the upper A-arm.**

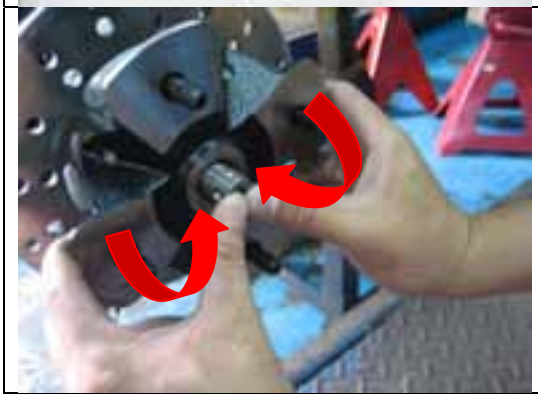
	**9.Remove the upper A-arm mounting bolt and washer.**
	**10.Remove the upper A-arm.**
	**11.Remove the lower A-arm front mounting bolt and nut.** **12.When install torque 40Nm.**
	**13.Remove the lower A-arm rear mounting bolt and nut.** **14.When install torque 40Nm.**

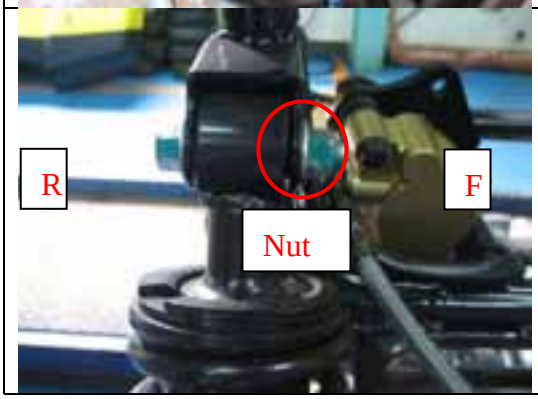
FRONT DIFFERENTIAL REMOVAL	
	**1.Drain the differential oil.** **2.Re-add 325 ± 20c.c** **Recommend oil type** **PENNZOIL 4096 80W-90 GL-5**
	**3.Hold the drive shaft and tug the drive shaft horizontally.**
	**4.Cover the differential by tape.**
	**5.Disconnect the differential lock motor harness.**

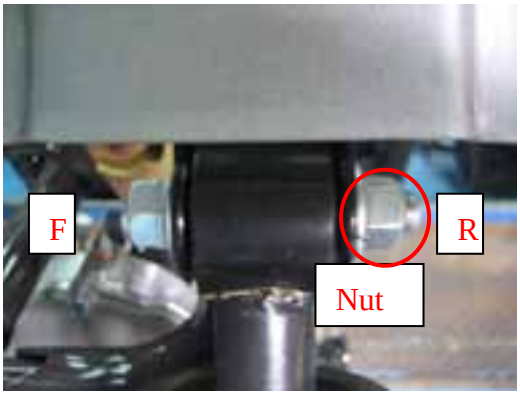
	**6. Remove the front differential mounting bolts.** **7.When install torque 40Nm.**
	**8. Remove the rear differential mounting bolts.** **9.When install torque 40Nm.**
	**10. Lift the differential up from the mounting bracket.**
	**11. Rotate the differential vertically and horizontally by 90 degree.**

	**12. Pull the differential out from the frame.**
	**13.Remove the differential.**

REAR LHS & RHS BRAKE CALIPER REMOVAL	
	**1.Remove the 2 brake caliper mounting bolts.** **2.When install torque 25Nm.**
	**3.Release the brake tube clamp and remove the caliper.**

REAR LHS & RHS HUB REMOVAL	
	1.Hang the rear A-arm by rope.
	2.Remove the hub nut. 3.When install torque 100Nm.
	4.Remove hub nut and washer.
	5.use the hub bolt as a support to pull the hub with disk out.

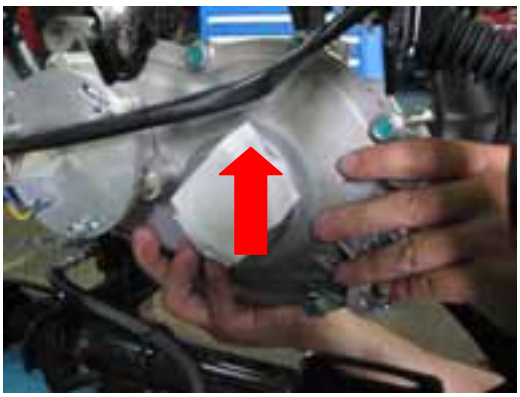
REAR LHS & RHS SHOCK ABSORBER REMOVAL	
	1.Hang the A-arm by rope.
	2.Remove the shock absorber upper mounting bolt and nut. 3.When install torque 40Nm.
	4.Remove the shock absorber lower mounting bolt and nut. 5.When install torque 40Nm.
	6.The nut of rear RHS shock upper mounting should be put toward front of ATV.

	**7.The nut of rear LHS shock upper mounting should be put toward rear of ATV.**

REAR LHS & RHS A-ARM ASSY. REMOVAL	
	**1.Remove the knuckle upper mounting bolt and nut.** **2.When install torque 40Nm.**
	**3.Remove the knuckle lower mounting bolt and nut.** **4.When install torque 40Nm.**
	**5.Remove the A-arm upper mounting bolt and nut.** **6.When install torque 40Nm.**

	**7.Remove the rear upper A-arm Assy.**
	**8.Remove the lower A-arm front mounting bolt and nut.** **9.When install torque 40Nm.**
	**10.Remove the rear lower A-arm after mounting bolt and nut.** **11.When install torque 40Nm.**
	**12.Remove the rear lower A-arm assy.**

REAR DIFFERENTIAL REMOVAL	
	**1.Drain the differential oil.** **2.Re-add 325 ± 20c.c** **Recommend oil type** **PENNZOIL 4096 80W-90 GL-5**
	**3.Hold the drive shaft and tug the drive shaft horizontally.**
	**4.Cover the differential by tape.**

	**1.Disconnect the rear differential lock harness.**
	**2.Remove the rear mounting bolt and nut.** **3.When install torque 40Nm.**
	**4.Remove the front mounting bolt and nut.** **5.When install torque 40Nm.**
	**6.Lift the differential up from the mounting bracket.**

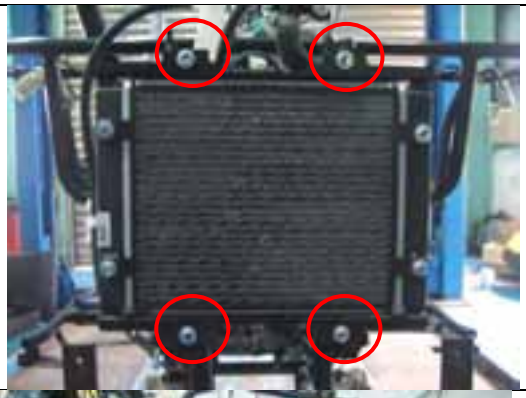
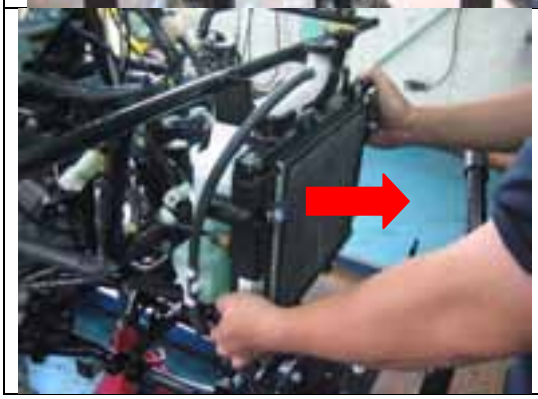
	**7.Rotate differential along the center datum of ATV.**
	**8.Pull the differential backward to remove it from frame.**

ECU REMOVAL	
	**1.Remove the MAP tube from the ECU.**
	**2.Press the connector latch down and pull the harness down.**

	**3.Remove the ECU harness connector.**
	**4.Remove rear ECU mounting bolts.** **5.When install torque 10Nm.**
	**6.Remove front ECU mounting bolts.**

RADIATOR REMOVAL	
	**1.Release the lower radiator outlet tube clamp.**

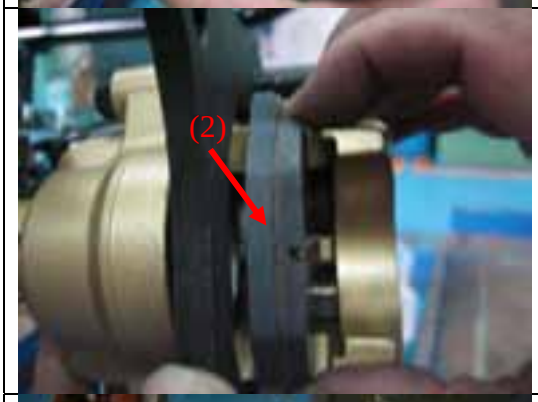
	**2.Remove the lower radiator outlet tube.**
	**3.drain all of the coolant.**
	**4.Disconnect the coolant temperature sensor connector.**
	**5.Remove the radiator cap mounting bolt.**

	**6.Remove the 4 radiator mounting bolts.** **7.When install torque 40Nm.**
	**8.Pull the radiator forward to remove it.**

INSTRUMENT REMOVAL	
	**1.Press the connector latch down.**
	**2.Pull the harness connector down to remove it.**

	**3.Remove the two mounting bolts to remove the instrument.**

FRONT BRAKE PAD REMOVAL	
	**1.Remove the 2 front brake pad mounting**
	**2.Push the brake pad piston to retract position.**
	**3.Pull the brake pad (1) out.**

	**4.Remove the brake pad (1).**
	**5.Remove the brake pad (2).**
	**6.Inspect the brake pads.**

REAR BRAKE PAD REMOVAL	
	**1.Push the caliper bracket to retract the piston.**

	**2.Push the caliper bracket to retract the piston.**
	**3.Remove the brake pads.**

FOOT BRAKE PADDLE REMOVAL	
	**1.Remove the cutter pin on the foot brake cylinder link pin.**
	**2.Remove the foot brake cylinder link pin.**

	**3.Remove the foot brake paddle hub screw.** **4.When install torque 10Nm.**
	**5.Remove the brake switch spring.**
	**6.Push the cylinder piston back.**
	**7.Pull the paddle backward to remove it.**

SPECIAL TOOLS

TOOL PHOTO	TOOL NUMBER & NAME
	**991000001** **EMS DIAGNOSTIC KIT ASSY.** **◎ Include： 991000002** **991000003** **991000004**
	**991000002** **EMS DIAGNOSTIC SOFTWARE**
	**991000003** **EMS DIAGNOSTIC CABLE**
	**991000004** **EMS DIAGNOSTIC USB ADAPTOR**

TOOL PHOTO	TOOL NUMBER & NAME
	**991000005** **REMOVER – ALTERNATOR ROTOR ASSY.** **◎ Include：991000006** **991000007** **991000008**
	**991000006** **CRANKSHAFT PROTECTOR**
	**991000007** **HOLDER – ALTERNATOR REMOVER**
	**991000008** **PULLER – CVT & ALTERNATOR** **M12＊1.5**

TOOL PHOTO	TOOL NUMBER & NAME
	**992000001** **SPANNER – FUEL RETAINER**
	**992000002** **REWIND STARTER STOPPER**
	**888.4002.653.B1** **CASE ASSEMBLY GLUE (1207F)** **Brand：ThreeBond** **Type：1207F** **(Liquid Gasket Black Silicone Type)** **Volume：333ml**
	**888.4002.670.B** **BOLT GLUE (T272)** **Brand：Loctie** **Type：272** **Volume：250ml**