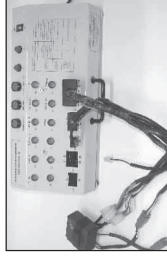




LCD Speedo Console Test

- Connect wiring harness number 2 to C2 connector.
- After connecting speedo console wait until console LCD goes blank.
- Now press speedo console test switch to start the test.
- Observe for working of speedo console till test ends.



Body Control Unit (BCU) Test

- Connect wiring harness number 3 to C3, C4 and C5 connectors respectively.
- Press the BCU test switch.
- At the end of complete test, Green colour glowing of 'Result' LED indicates BCU test passed.
- At the end of complete test, Red glowing of 'Result' LED indicates BCU test failed at respective Red indications.

Details of Exclusive Special Tool

For carrying out repairs / overhauls, 1 new special tools for Pulsar DTS-i UG III have been developed. Rest of the special tools required remains the same which were earlier required for Pulsar and Pulsar DTSi

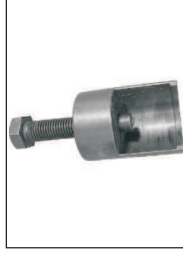
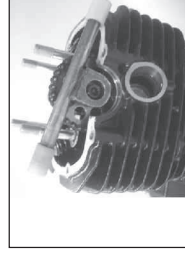
Engine



Sprocket Catcher

Drawing No.:
37 10DH 36

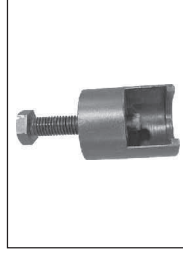
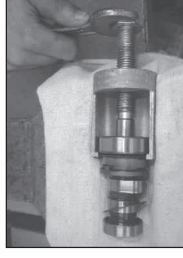
Application :
For holding sprocket during removal / refitting of Cam sprocket allen bolt.



Camshaft Big Bearing Puller

Drawing No.:
37 10DH 32

Application :
To remove bearing (Decompression assembly side) of camshaft.



Camshaft Small Bearing Puller

Drawing No.:
37 10DH 31

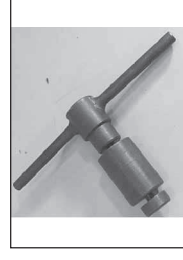
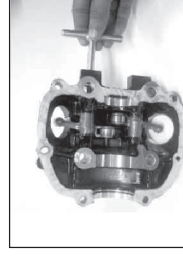
Application :
To remove small bearing of camshaft.



Rocker Pin Remover

Drawing No.:
37 10DH 35

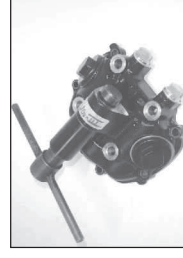
Application :
To remove rocker pin from cylinder head.



Silent Bush Puller

Drawing No.:
37 10DH 33

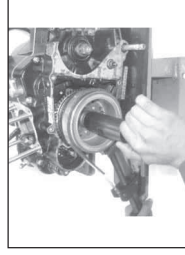
Application :
To remove silent bush from cylinder head cover.



**Rotor puller with Butt Pin**

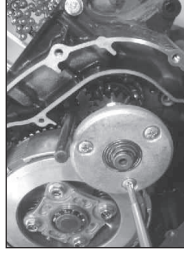
Drawing No.:
37 10DJ 32

Application :
Used to pull out the rotor from
crankshaft assembly.

**Primary Gear Holder**

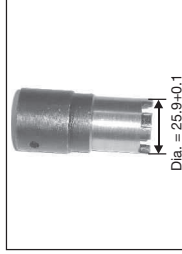
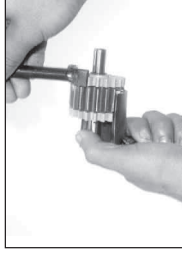
Drawing No.:
37 10DJ 28

Application :
Use to hold primary gear while
loosening / tightening the clutch nut.

**Balancer Gear Holder**

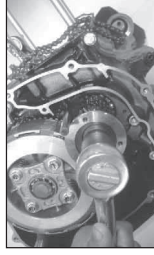
Drawing No.:
37 10DJ 63

Application :
Used to load the pre-tensioned
scissor gears of Assy balancer idler
gear.

**Special Nut**

Drawing No.:
37 10DJ 43

Application :
Used to remove / fit of centrifugal
oil filter nut.

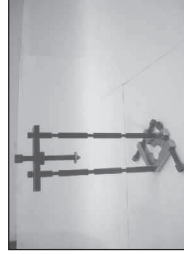


Note : Existing tool can be used by reducing diameter to 25.9 ± 0.1 mm

**Piston Ring Holder**

Drawing No.:
37 10DJ 30

Application :
Used for compressing the piston
rings when assembly piston in the
cylinder block.

**Bearing Race Extractor**

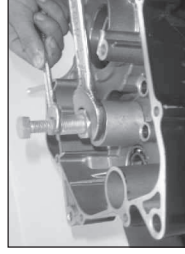
Drawing No.:
37 00DJ 01

Application :
Used for removing the lower bearing
race from 'T'

**Bearing Extractor**

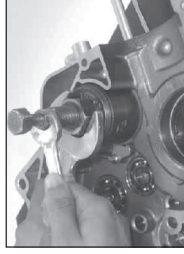
Drawing No.:
37 10DJ 76

Application :
Used to extract the input shaft
bearing from crankcase LH.

**Bearing Puller**

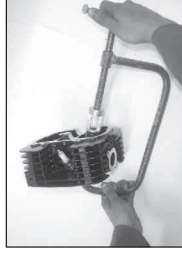
Drawing No.:
37 10DJ 77

Application :
Used to pull out the bearing for
body balancer from crankcase LH.

**Adaptor & Valve Spring compressor**

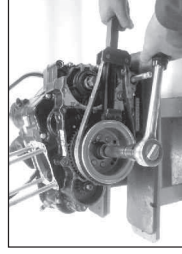
Adaptor - Drawing No.: 37 10DJ 78
Valve Spring Compressor - Drawing
No.: 37 1031 07

Application :
Used for assembling / dismantling
inlet, exhaust valves by compressing
spring in cylinder head.

**Rotor Holder**

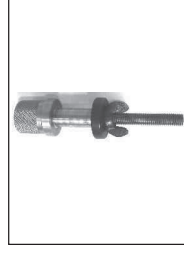
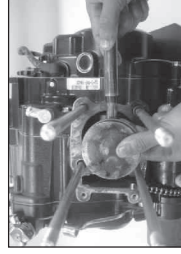
Drawing No.:
H6 0721 00

Application :
To hold rotor while loosening bolt.

**Drift**

Drawing No.:
74 9309 89

Application :
To remove piston pin.

**Thrust plate aligner/holder**

Drawing No.:
T-1011168

Application :
To align the clutch hub concentricity
w.r.to clutch wheel, clutch housing
and thrust plate



**Crankshaft Bearing Extractor**

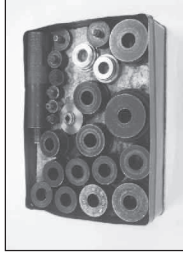
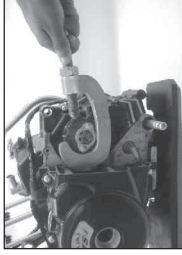
Drawing No.:
37 1001 14

Application :
To remove bearing from crankshaft

**Output Sprocket Holder**

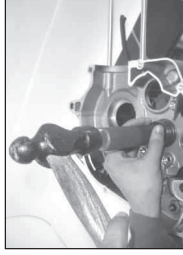
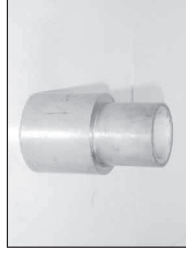
Drawing No.:
37 1030 53

Application :
To hold the output sprocket while removing sprocket bolt

**Bearing Driver Set**

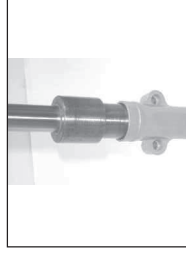
Drawing No.:
37 1030 61

Application :
Common bearing driver set for fitting and removing bearings from crankcase.

**Chassis****Fork oil seal fitment punch**

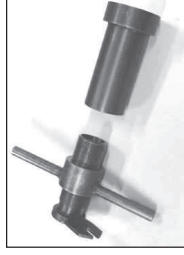
Drawing No.:
37 0040 03

Application :
To fit fork oil seal on outer pipe

**Rear Shock absorber adjuster**

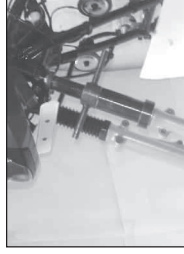
Drawing No.:
37 00DH 14

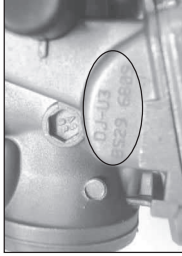
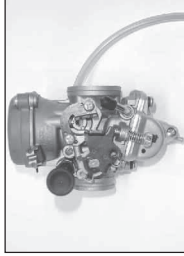
Application :
For adjusting the notch position of RSA to achieve hard or soft rear suspension

**Fork Inner & Outer Tube Extractor**

Drawing No.:
74 9310 15

Application :
Used for removing front fork inner tube from outer tube.



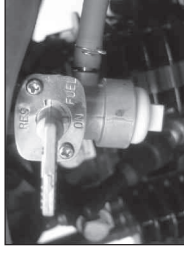


Carburettor

Specifications :

Item	Pulsar 180cc
Make and Type	Ucal-Mikuni BS29
Identification No.	DJ - U3
Idling Speed	1400 $\pm$ 100
VC Screw setting	2.5 $\pm$ 2 turns out
Main Jet	117.5
Jet needle mark	4DHL42
Needle jet mark	922MP-1
Jet needle clip position	2nd from top
Pilot Jet	17.5
Starter jet	Fixed type
Throttle valve	Fixed type
Chock Lever	2 stage with push pull type mechanism

Notes :

[illegible]

Remove :

- Side cover LH and RH by unlocking it with key.

Note : To remove the side covers LH and RH, unlock with the key then hold the front end of the cover and pull the front end out then pull the cover in forward direction to remove it from the lug.

Remove :

- Pull the cable from the cover LH to unlock the seat lock
- Seat assembly

Note : To remove the seat assembly hold the seat assembly and lift it from the rear end and pull it back.

Remove :

- 1 bolt (A).
- Fuel gauge wiring connection.
- Drain pipe connection.
- Fuel pipe connection.
- Fuel tank assembly

Note : To remove the fuel tank assembly from the chassis lift the fuel tank assembly by holding it at the rear end and pull it back.

Fuel Tank Inspection

Remove the hoses from the fuel tank, and open the tank cap. Check to see if the breather pipe and water drain pipe in the tank for clogging. If they are clogged, remove the tank and drain it, and then blow pipes free with compressed air.

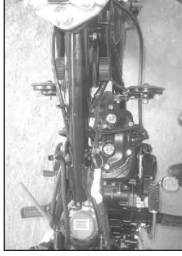
Fuel Tank Cleaning

Warning : Clean the tank in well ventilated area, and take care that there are no smokes or flame anywhere near the working area. Because of the danger of highly flammable liquids, do not use gasoline or low-flash point solvents to clean the tank.





- Remove the fuel tank and drain it.
- Pour some high-flash point solvent into the fuel tank and shake the tank to remove dirt and fuel deposits.
- Pour the solvent out of the tank.
- Dry the tank and the fuel tap with compressed air.
- Install the fuel tank.



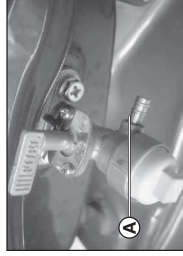
Note : While installing the fuel tank on chassis make sure that the dampers (A) on petrol tank are mounted on the chassis.



Fuel Tank Cap Dismantling

To unlock the Fuel tank cap, insert the key in the key slot and turn it anticlockwise direction and lift open the tank cap.

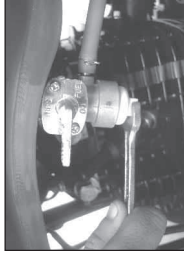
Now remove the anti theft screw and then remove the allen bolts (A) and remove the fuel tank cap assembly from the fuel tank. Fitting is the reverse procedure of dismantling. But take care that the vent hole is free from any foreign particles that may clog the hole. To lock the fuel tank cap, just press the cap without key.



Fuel Cock Removal

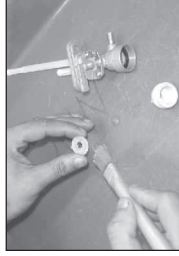
Remove :

- 2 bolts (A)
- Fuel cock assembly from the fuel tank.



Note :

- Always loosen the bowl of the fuel cock on vehicle itself
- Check the fuel cock strainer for any breaks or deterioration.
- If the fuel cock strainer have any breaks or are deteriorated, they may allow dirt to reach the carburettor, causing poor running. Replace the strainer.

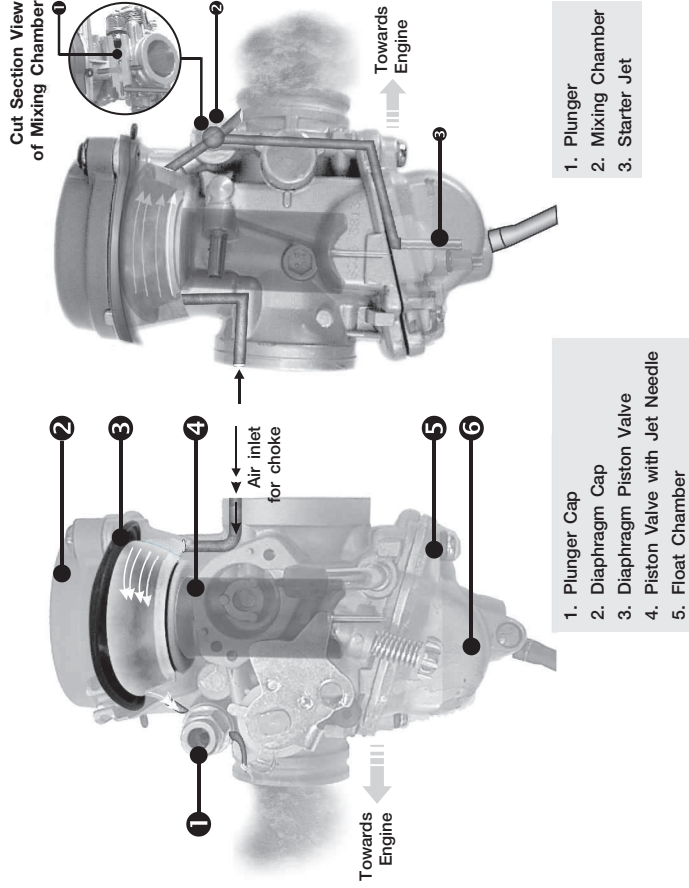


- Clean the fuel cock strainer in a high-flash point solvent.
- Pour high flash point solvent through the cock in all lever positions.
- Dry the tank and the fuel cock with compressed air.
- Install the cock in the tank.



- Bowl
- Strainer
- Gasket
- Selector Body
- 2 hole rubber seal

Notes :

Starter Circuit : Constant Velocity Carburettor**Function**

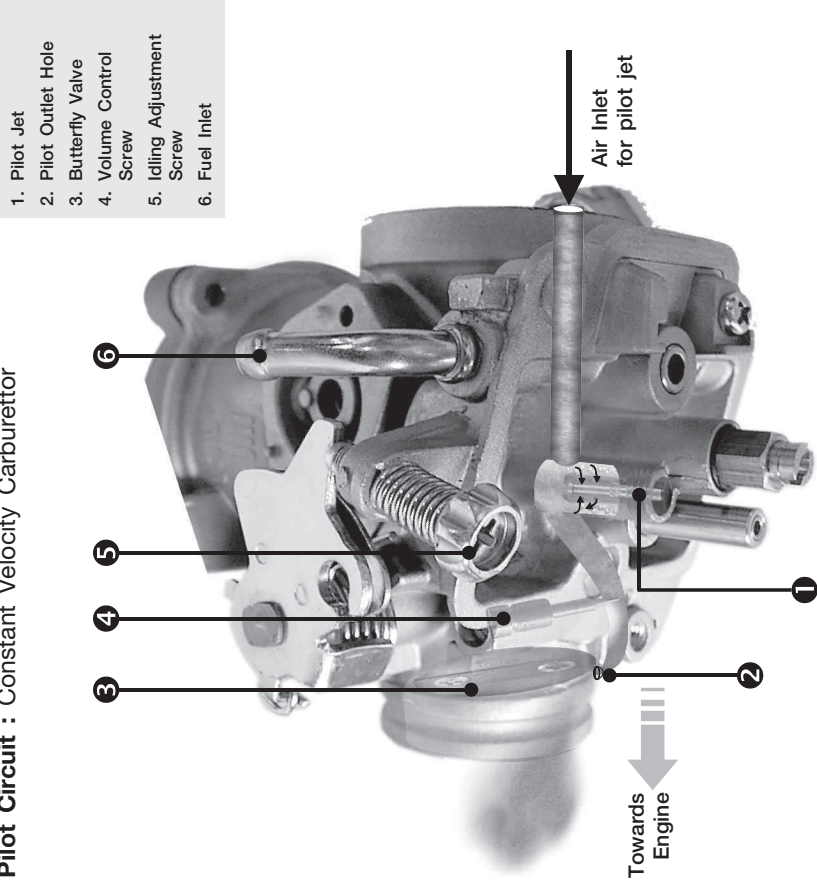
The function of starter circuit is to provide rich air fuel mixture on starting / cold starting. At cold engine condition the air is dense also the engine parts are cold enough this does not allow the petrol to vaporize properly this leads to starting trouble.

Construction

The Starter Circuit consists of a starter jet and a plunger. The starter jet is used to meter the fuel and a plunger that opens an air passage from the inlet of the carburettor (underneath the diaphragm) which passes the mixture to the manifold.

Working

On pulling the choke lever the plunger is lifted by a cable. This uncovers the fuel passage that leads to the starter jet, air inlet passage and the outlet passage towards the manifold. This creates enough suction to draw fuel up from the bowl into the mixing chamber (below the plunger). Here the fuel is mixed with the air and the mixture is drawn into the engine through the outlet passage.

Pilot Circuit : Constant Velocity Carburettor**Function**

As the air enters the pilot air inlet the fuel is metered by pilot jet and air quantity is metered by pilot air jet. The atomized / vaporized mixture is discharged through the pilot outlet. The pilot outlet is located on the manifold side of the carburettor. Since the throttle valve is almost at fully closed position, air fuel mixture is supplied mainly by pilot outlet only. Air fuel mixture volume is adjusted by volume control (VC) screw and mixture becomes lean when volume control (VC) screw turned clockwise and rich when it is turned Anticlockwise direction.

Construction

The pilot circuit consists of pilot jet, pilot air jet and volume control screw. The pilot jet meters the fuel and the pilot air jet meters the air quantity. The volume control (VC) screw controls the amount of air fuel mixture flowing through the pilot outlet.

Working

As the air enters the pilot air inlet the fuel is metered by pilot jet and air quantity is metered by pilot air jet. The atomized / vaporized mixture is discharged through the pilot outlet. The pilot outlet is located on the manifold side of the carburettor. Since the throttle valve is almost at fully closed position, air fuel mixture is supplied mainly by pilot outlet only. Air fuel mixture volume is adjusted by volume control (VC) screw and mixture becomes lean when volume control (VC) screw turned clockwise and rich when it is turned Anticlockwise direction.

Progression Circuit : Constant Velocity Carburettor**Function**

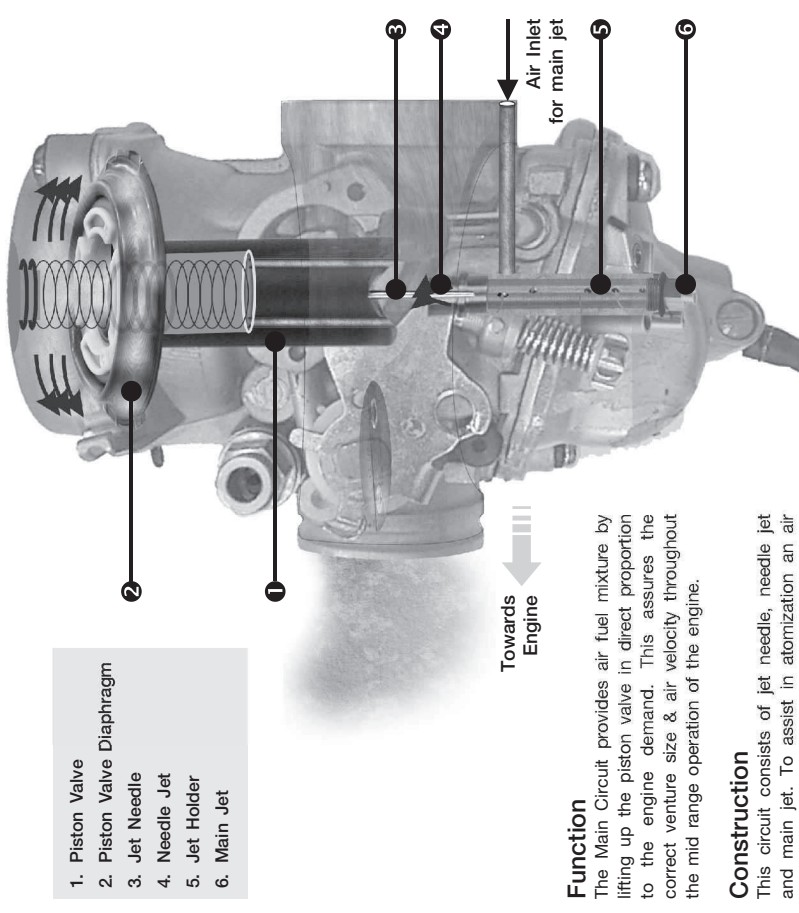
The progression circuit provides the air / fuel mixture at small throttle opening when pilot circuit is still working but unable to meet the engine demands on small throttle opening.

Construction

The progression circuit follows the path of pilot circuit and the construction is same as that of pilot circuit.

Working

As like pilot circuit the fuel is metered by pilot jet and air volume is metered by pilot air jet. This mixture in vaporized / atomized form is discharged through the bypass ports when the butterfly valve is opened from idling further.

Main Circuit : Constant Velocity Carburettor**Function**

The Main Circuit provides air fuel mixture by lifting up the piston valve in direct proportion to the engine demand. This assures the correct venturi size & air velocity throughout the mid range operation of the engine.

Construction

This circuit consists of jet needle, needle jet and main jet. To assist in atomization an air bleed circuit is incorporated in the main metering system and it aids fuel vaporization by introducing the air into the fuel before it enters the main air stream.

The piston valve movement is controlled by spring and carburettor venturi vacuum which is generated below the piston valve diaphragm.

Working

When the butterfly valve is opened and air flow through the venturi increases, the air pressure in the venturi (and the upper chamber) decreases.

As the atmospheric pressure in the bottom chamber is greater than the venturi pressure above the diaphragm, the piston valve along with jet needle is pushed up and more air fuel mixture is drawn into the engine from main jet through needle jet into the main air stream.

When the butterfly valve is closed, air flow through the venturi decreases; air pressure in the venturi increases and approaches atmospheric pressure, & the spring pushes the piston valve along with jet needle down.



Handling



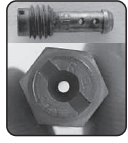
- Use appropriate screw drivers.

Cleaning



- For cleaning always use carburettor cleaner like
 - Acetone
 - Carbon Tetra chloride
 - Aerosol
 - CVC spray

Maintenance



- Ensure
 - Jets
 - Holes are clean.
 - Holes are not worn out.
 - Size as per specification.



- Float is in good condition.



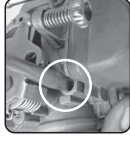
- Float Pin
 - Tip having no wear mark.
 - Spring loaded pin is free in movement.



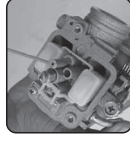
- Needle Jet
 - No wear at taper portion.
 - Circlip position is in specified groove.



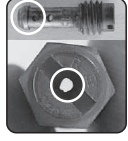
- Piston valve
 - No wear mark.
 - Diaphragm condition.



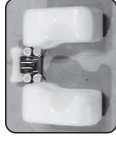
- Never use oversize screw drivers.
- Do not over tighten the jets and screws.
- These will damage the jets and their seats.



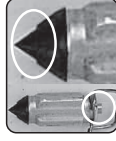
- Never clean the carburettor with water.
- Jets & air passages will get clogged due to sediments if cleaned by water.



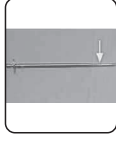
- Replace
 - Jets
 - Worn out jet.
 - Incorrect size jet.



- Punctured, Squeezed and distorted float.



- Worn out tip.
- If spring loaded pin is sticky.



- Needle worn out at taper portion.



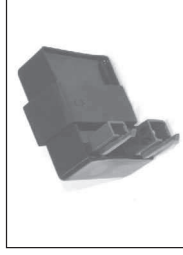
- Piston valve worn out.
- Scoring marks.
- Diaphragm punctured.

Overhaul carburettor at every 10,000 kms. and inspect the parts.

Pulsar DTSi is the first bike in the world (In small cc engine) to have twin spark ignition system.



1. The most obvious feature is the Twin Spark Plug configuration of the Engine. The cylinder head has 2 spark plugs one on either side. The spark plugs are of the smae Heat range (Champion RG4HC/Bosh UR3DC (Resistive) and have similar electrode gaps. These also spark simultaneously, This has been done to improve the combustion process by reducing the time of combustion. The end results are low emissions, good fuel economy and good driveability



2. To enable the sparking of the 2 spark plugs, a intelligent CDI capable of handling this was developed. Further more, the ignition timing has been optimised to give the best output from engine (10° BTDC @ 1500 rpm, 28° BTDC @ 3500 rpm). To enable optimum ignition timing for part throttle loads and full throttle loads, there are separate ignition maps stored in the memory of the CDI. These are activated depending on the throttle opening and engine speed. The Digital CDI has a bit Microprocessor which handles all these inputs and gives out the required and correct spark advance. The intelligent CDI can be easily identified by 2 green dots marked on CDI case.



3. To enable switching the required ignition maps, a magnetically operated need switch is incorporated on the carburettor throttle shaft and carburettor body. This is known as TRICS. Throttle Responsive Ignition Control System.

4. These engines are capable of of reviving very high, quite easily. To keep them mechanically safe, a engine rpm limiter has been incorporated in the Digital CDI. This curtails the sparks to the spark plugs thereby limiting the engine rpm Max upto 9000 and thus keeps the engine mechanically safe. There are 2 spark plugs. LH spark plug fires at 350 rpm and then continues to give spark till at 9000 rpm of engine. The spark is cut off from LH plug 9000 rpm to protect engine from excessively high speed.

RH spark plug gives spark at 750 rpm and then continues to give till 6000 rpm of engine. If engine rpm exceeds 6000 rpm then RH plug is cut off. This is done to reduce combustion noise created in engine.

5. This engine has been extensively tuned for more Power and Torque.

6. The DTSi technology has enabled the Pulsar to meet 2006 norms without any Secondary air injection devices.

Troubleshooting :

- Malfunctioning of the Reed switch assly will not harm the engine, neither it will give any physical indicators like starting trouble or misfiring.

However checking of proper functioning of Reed Switch Assly at PDI and at every service is essential.

- Following symptoms may indicate as malfunctioning of **Reed Switch Assly** as one of the cause.

Symptom	Cause	Remedy
Sudden drop in mileage & power lack in mid range rpm	The ignition systems is working only in 2nd map due to reed switch is stuck in open circuit	Replacement of Reed Switch Assly

Customer Education Tips :

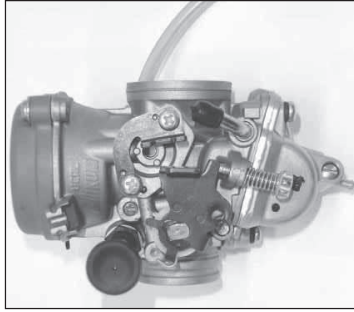
- While starting the engine in any case throttle should not be rotated more. Even if this happens, engine will start, but the engine rpm will shoot up too much (due to too high throttle opening)
- Whenever there is a sudden substantial drop in mileage, customer should report to Bajaj Auto's Authorised Service Centres.

CO % Checking and Tune Up (To ensure better mileage) :**Check following before CO % checking / Tune up -**

- Air filter connections, intake manifold, insulator fitment, connecting tube fitment.
- Spark Plug gap (0.7 to 0.8 mm)
- All pipes and connections of fuel system for any cracks, leakage, plucking, pinching and loose connections.
- Ensure Tappet Clearance :
Inlet : 0.05 mm
Exhaust : 0.1 mm
- Ensure compression pressure inside the cylinder (6 to 10 Kg/cm²)
- Check the Ignition timing (10° BTDC at 1500 rpm and 28° BTDC at 3500 rpm)

CO % checking and carburettor VC screw setting

- Start and warm up the engine
- The oil temperature should be above 60° C. This can be achieved by running vehicle in top gear at the speed of minimum 40 Kmph for 5 ~ 6 Kms.
- Adjust the engine speed to 1400 ± 100 rpm with idling adjustment screw of carburettor.
- Adjust the CO with the VC screw. It should be in between 1.75 to 2.25 %
- Confirm the engine speed whether it is within 1400 ± 100 rpm or not. When setting Idle CO %, idle rpm and VCS have to be adjusted together to achieve 2 % CO and 1400 ± 100 engine rpm.

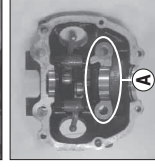


Item	Pulsar 180cc
Make	Ucal-Mikuni BS 26
Identification No	DJ - U3
Type	CV Type
Idling Speed	1400±100
VC Screw Setting	2.5±2 turns out
Main Jet	117.5
Jet needle mark	4DHL42
Needle jet mark	922MP-1
Jet needle clip position	2 from top
Pilot Jet	17.5
Starter Jet	Fixed type
Throttle valve	Fixed type
Chock lever	2 stage with push pull type mechanism

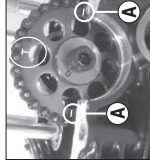
- Remove the 'Allen Head Grub Screw' before removing the 'Sleeve Spark Plug'.
- Before fitting the 'Sleeve Spark Plug' apply thin layer of molybdenum disulphide grease on the entry chamfers for the 'O' rings for smooth sliding inside.



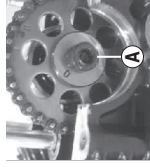
- Do not apply liquid gasket at location (A) which may block the lubrication passage.

**Valve timing**

- Ensure the sprocket marks (A) are aligned horizontally with cylinder head top machined face and the piston is at TDC.



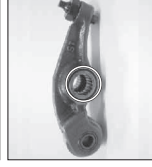
- Secure the 'Cam Chain Sprocket' in the special tool firmly and then tighten the sprocket allen bolt (A).
- Ensure that the 'O' mark on washer always faces outwards when tightening the allen bolt.



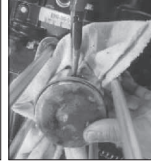
- 'Inlet Rocker Arm Shaft' is longer in length.



- Rocker arm has 20 Rollers inside the outer cage.
- Doesn't have inner cage.
- Take utmost care while dismantling. Rollers should not fall inside engine.
- Apply grease for fixing needle rollers inside rocker arm.

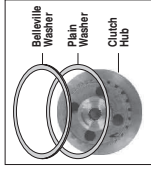
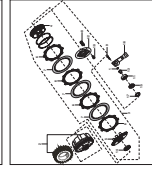
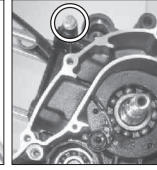
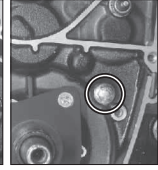


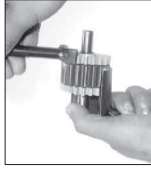
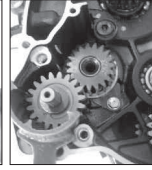
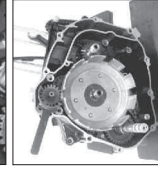
- While removing / refitting of piston pin circlip, cover the crankcase chamber with clean cotton cloth to avoid falling of circlip inside the engine.



- Blow pressurised air to oil passages in reverse direction to that of oil flow.

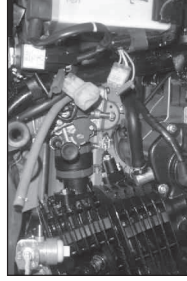


	Ensure While assembling hub clutch place plain washer first and then place Belleville washer. Concave face should be upwards i.e. toward technician.
	- After placing Belleville, fit clutch plate with 48 friction material cubs (A) with more I.D. 4 Nos. of clutch plates with 36 friction material cubs (B) alternatively along with steel plates. - Fit top clutch plate with 40 friction material cubs (C).
	- Input shaft has special nut. - Thick spacer washer tapered I.D. it should be placed on tapped portion of Input Shaft. - Input Shaft has left hand threads.
	When splitting crankcase always remove 1 long bolt fitted from clutch side first.
	- Remove long bolt immediately after removal of long bolt clutch side. - Ensure proper fitment of bolt with copper washer to avoid oil leakage.
	- Shifter fork is having a roller. These roller are one side tapered inner dia. - Taper portion of roller should face towards fork gear shift.
	Ensure damper rubber fitment on magneto side guide plate.
	- Fit primary gear drive (A). - The mark teeth of the primary gear should match with the line mark on the c case. This indicated that the piston is at TDC position. This procedure should be carried before fitting the 'Clutch Housing' & this position should not be disturbed while fitting the 'Clutch Housing'.

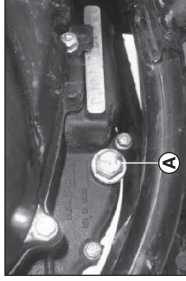
	Load the assy balancer idler gear with 2 teeths from either side using the special tool.
	- Take the 'Assembly Balancer Idler Gear' along with Thrust Washer which is pre-loaded and is held in special tool. Slide down the special tool with 'Gear' to engage the bottom half of the 'Assembly Balancer Idler Gear' with the 'Body Balancer Gear Assembly' - Fit 'Thrust washer' on the other side. - On assembly of 'Assembly Balancer Idler Gear' the itched/Dot mark of 'Body Balancer Gear Assembly' should match with the line mark on the 'Crankcase'.
	Holding the 'Assembly Balancer Gear' in special tool now slide inside the 'Clutch Housing' so that the 'Clutch Housing' smoothly engages with the top half of 'Assembly Balancer Idler Gear'. - Remove the special tool gently. - Fit 2 dowels and Assly Balancer Idler Gear Cover - Ensure perfect marking of gear marks with respect to crankcase mark.

**Removal of Engine from Frame :****Remove :**

- Put OFF the fuel cock
- Side panel LH
- Side panel RH

**Remove :**

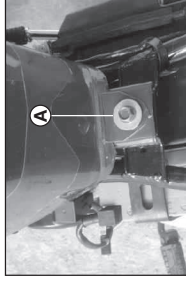
- Seat assembly by pulling the cable for seat lock release located on RH side.
- Disconnect the negative terminal of the battery.
- Disconnect the wiring harness socket for fuel level Indicator.
- Fuel pipe connections and moisture drain pipe from fuel tank.
- Disconnect stator plate harness
- Disconnect neutral switch coupler

**Remove :**

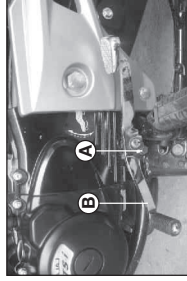
- Drain bolt (A) and drain out the oil from engine.
- Refit the drain bolt with gasket & tighten it.

Recommended Oil Grade and Qty

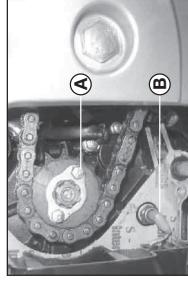
Grade	SAE 20W50 of API 'SG' + JASO 'MA'
Quantity	Drain & Refill 1000 ml. Engine Overhaul 1100 ml.

**Remove :**

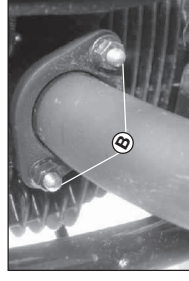
- Bolt (A)
- Petrol tank assembly.

**Remove :**

- Bolts (A)
- Gear shift pedal bolt (B)
- Drive sprocket cover LH.

**Using Special Tool : Sprocket Holder - 37 1030 53****Remove :**

- Bolts (A)
- Plate drive sprocket
- Drive sprocket along with the chain.
- Neutral switch coupler (B).

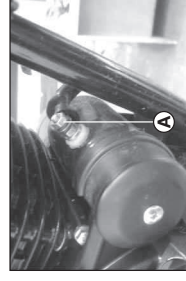
**Remove :**

- 2 nuts (B) for silencer flange

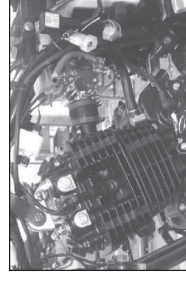
Note : Always remove the flange mounting first and then rear mounting to avoid misalignment of studs.

**Remove :**

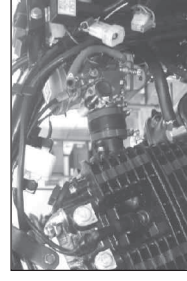
- Bolt (A) of silencer bracket mounted on pillion RH side footstep.
- Silencer assembly.

**Remove :**

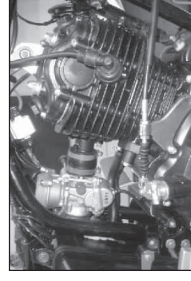
- Starter motor connection (A)

**Remove :**

- PCV pipe from breather

**Remove :**

- Disconnect the reed switch coupler.
- Spark plug cap LH

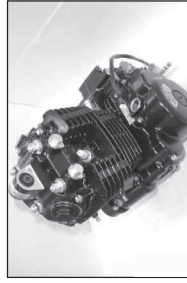
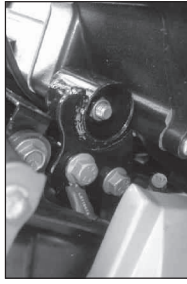
**Remove :**

- Air filter mounting bolts to facilitate the removal of carburettor with reed switch.
- Clamps of carburettor and disconnect carburettor along with insulator and dismantle cables from it.
- Bracket bolts securing clutch cable on clutch cover.
- Spark plug cap RH

**Remove :**

- While removing engine foundation bolts, first remove the topmost bolt and then go down progressively.

Note : Bolts (A) holding the engine to the chassis. (4 bolts of 12 mm and 1 bolt needs deep socket for removing it).



- Lift up the engine off the chassis and place it on engine stand.

Note : After disconnecting all the sub assemblies and control cables from the engine lift up the engine and remove it from RHS of the vehicle.

**Engine Top End Dismantling :****Remove :**

- Pull out the cover on the spark plug cap RH and the spark plug cap itself
- Using a plug spanner, loosen and remove the spark plug RH
- Loosen and unscrew the allen head grub screw of the sleeve spark plug

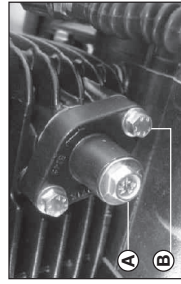


Note : Wrap a piece of cloth around the protruding edge of the sleeve spark plug and using a plier, pull out the sleeve.

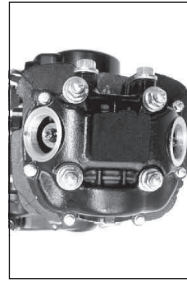
**Remove :**

- There are 2 'O' rings fitted in the cylinder head, one on the cam chain wall and the other near the spark plug threading
- Using a thin, sharp pointed tool pierce the 'O' rings and remove them. (If required)

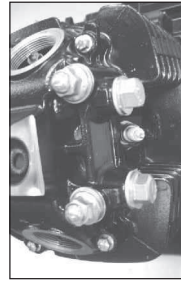
Note : Remove these only if the 'O' ring protrusion in the bore is non-existent (which means that the 'O' ring has set and it has lost its compression or sealing ability.)

**Remove :**

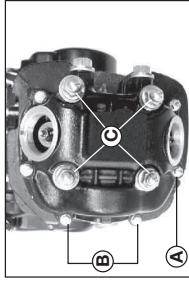
- Loosen bolt (A) and unscrew chain tensioner plunger
- Cam chain tensioner assembly 2 bolts (B)
- Cam chain tensioner assembly

**Remove :**

- Both tappet caps
- Magneto cover cap seal and rotate crankshaft to get piston at TDC.
- Ensure both tappets are at free state (i.e. at the end of compression stroke)

**Remove :**

- 2 dummy plug
- 2 gaskets

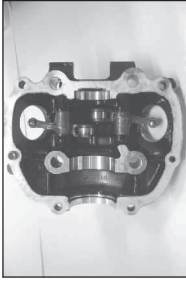
**Remove :**

- Cylinder head securing head cover 2 bolts (A)
- Cylinder head securing head cover 4 bolts (B)
- Cylinder head securing head cover 4 domed cap nuts (C)
- 4 copper plated steel washers

Note : Improper tightening sequence may cause warpage in cylinder head cover and it can be damaged permanently.

Remove :

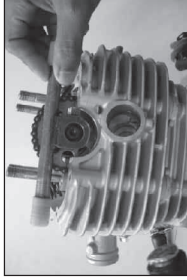
- Cylinder head cover complete
- Cam shaft cap



Using Special Tool : Sprocket Catcher - 3710 DH 36

Using Sp. Tool : Sprocket Catcher - 3710 DH 36**Remove :**

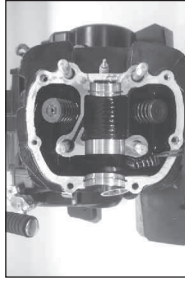
- Allen bolt
- Spacer
- Cam sprocket
- Collar
- Cam shaft assly

**Sprocket Catcher**

Note : Hold the cam chain up right using soft copper wire or thread. Do not use cotton waste for holding the cam chain.

Remove :

- Cylinder head assembly
- 2 dowels
- Gasket cylinder head

**Remove :**

- Non tensioner side chain guide
- Cylinder block assembly

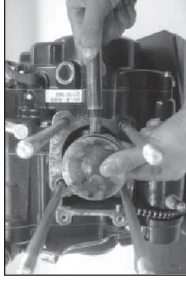
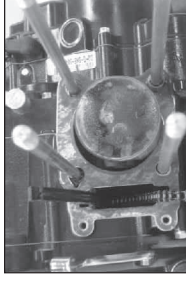
**Remove :**

- Piston pin lock LH & RH side

Note : Place a piece of clean cloth above hollow portion of crankcase to arrest piston pin circlip if it falls during fitment.

**Using Special Tool :
Drift 74 9309 89****Remove :**

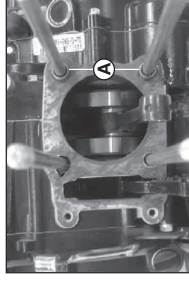
- Remove piston pin
- Piston assembly



Caution : When tapping the drift for removal of piston pin, confirm that the connecting rod is held firmly against the direction of tapping to avoid damage to big end bearing connecting rod of crankshaft.

Remove :

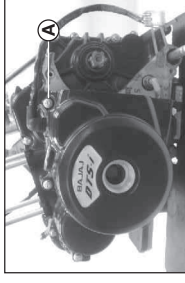
- Block gasket
- 2 dowels (A)



Note : Tie the cam chain firmly using soft copper wire/thread firmly to avoid slipping down into crankcase.

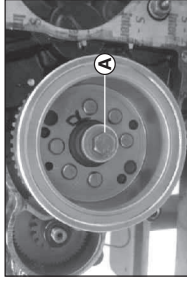
Engine LH (Magneto Side) :**Remove :**

- 5 bolts (A)

**Remove :**

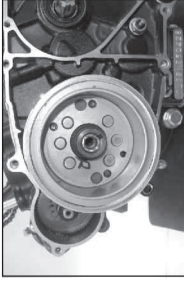
- Cover magneto.





Using Special Tool : Rotor Holder - H6 0721 00

- Hold the rotor assembly
- Remove :**
- Rotor bolt (A)
- Washer



Using Special Tool - Rotor Puller with butt pin: 37 10DJ 32

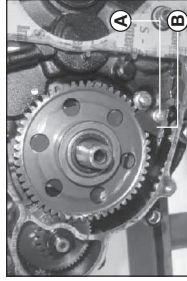
- Remove :**
- Rotor assembly
 - Woodruff key.



Note : Holding the gear complete starter clutch rotate the rotor and pull it out in Anticlockwise direction to prevent rollers and springs coming out. Rotor puller has left hand threads.

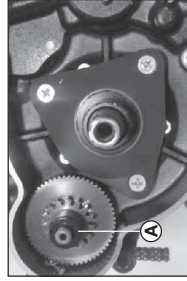
Warning :

- These components remain hot for a long time especially if removed from a hot engine. Wear suitable hand protection to prevent burns.
- Rotor puller has left hand threads



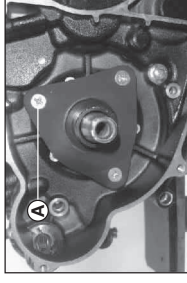
Remove :

- Gasket
- Bolt (A)
- Plate starter clutch gear return (B)
- Gear starter clutch



Remove :

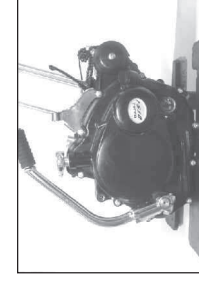
- Collar (A)
- Shaft
- Gear comp. starter counter assy



Remove :

- 3 Screw (A)
- Guide starter assembly along with oil seal.

Caution : Ensure that the woodruff key of rotor is removed prior to the removal of guide starter assembly. The lips of magneto oil seal housed in guide starter assembly will get damaged if not done so.



Engine RH : (Clutch Side)

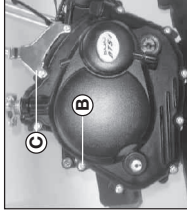
Remove :

- Kick starter bolt
- Kick starter



Remove :

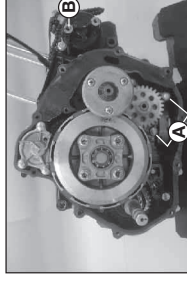
- 1 screw - (A)
- Starter motor cover



Remove

- 12 Clutch cover bolts (B)
- Bracket clutch cable (C)
- Clutch cover

Note : The rod clutch lifter, plunger oil, plate plunger oil and spring joint may fall out of their respective places into the oil collection tray. If so, ensure that these are collected & accounted for before proceeding.

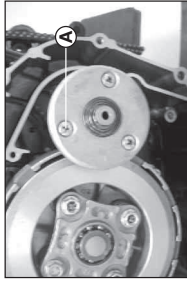


Remove :

- 3 bolts (A)
- Oil pump assembly
- 2 Dowels
- Clutch cover gasket
- Starter Motor (B)

Warning : The oil pump may be hot, hence use suitable hand protection. Also, since the oil pump houses the oil strainer / mesh also, it may retain some quantity of oil. This oil may be hot. Hence proper care should be taken to drain it.

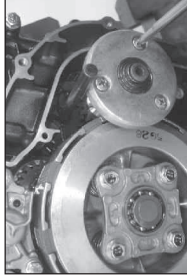
Note : The oil which is in the oil pump housing should also be drained out into the oil drain tray for measuring drained oil.



Using Special Tool : Primary Gear Holder 37 10DJ 28

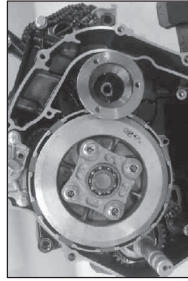
Remove :

- 3 phillips head screws (A)
- Centrifugal oil filter cover
- Gasket



Warning : These parts may be hot, if removed from a hot engine. Use gloves for protection.

Note : Some amount of oil is trapped in cover and body of centrifugal oil filter, this oil should be drained into the oil tray.



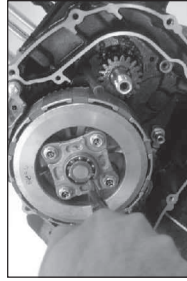
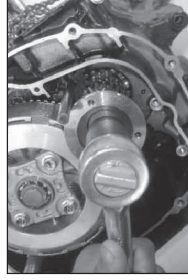
Using Special Tool :

Special Nut Puller 37 10DJ43

Primary Gear Holder 3710 DJ28

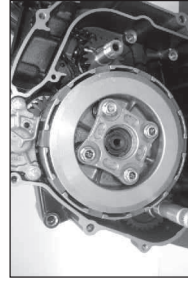
Remove :

- Centrifugal oil filter special nut
- Belleville washer
- Body centrifugal oil filter assy



Remove :

- Bearing with plunger

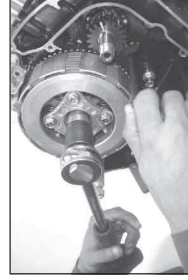


Using Special Tool : Special Nut Puller 37 10DJ 43

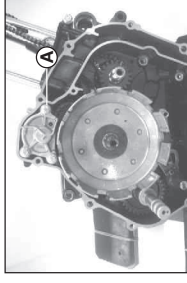
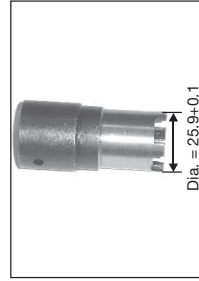
Primary Gear Holder 3710DJ28

Remove :

- Input shaft special nut
- Belleville washer
- Clutch assy comp
- Spacer

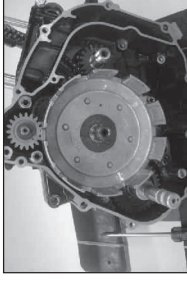


Note : The existing Special Nut Puller 37 10DJ 43 can be used by grinding the tool OD to 25.9 + 0.1 mm



Remove :

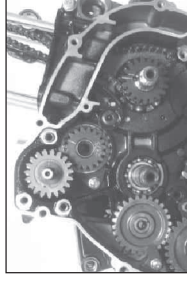
- 3 Assy balancer idler gear cover bolts (A)
- Cover
- Washer
- 2 Dowel



Remove :

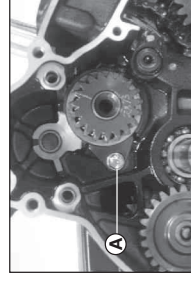
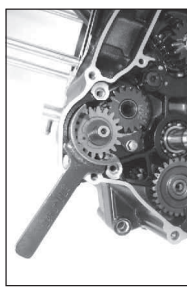
- Clutch housing

Note : For ease in removal of clutch house insert special tool (P. No.-37 10DJ 63) in Assy Balancer Idler Gear.



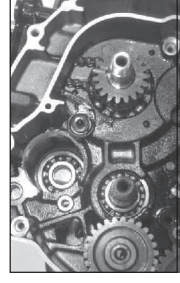
Remove :

- Assy Bal. idler gear
- 2 Washer



Remove :

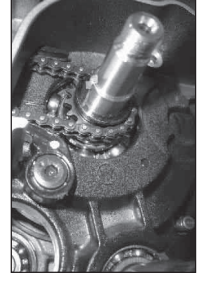
- Bolt (A)
- Locking plate
- Body balancer gear assy



Remove :

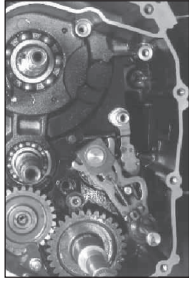
- Primary gear
- Square key

Note : Take care that square key does not fall inside the crankcase hollow portion while removing.



Remove :

- Cam chain
- Cam chain sprocket
- Parallel Pin

**Remove :**

- Gear change lever

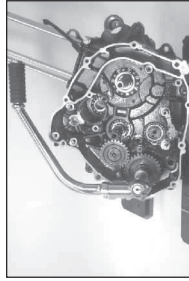
**Remove :**

- Spring
- Allen bolt (A)
- Guide gear
- Spacer
- Parallel Pin

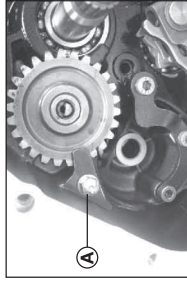
Note : Check and inspect the drum change arm stopper for free movement always.

Using Kick starter lever**Remove :**

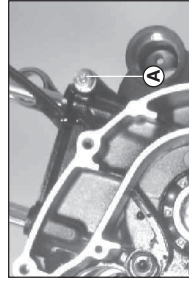
- Washer
- Kick shaft assly comp



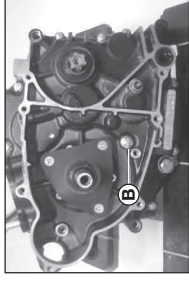
Note : Rotate the kick starter lever in Anticlockwise direction for removing the Kick shaft assly.

**Remove :**

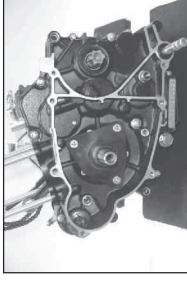
- Bolt (A)
- Locking Plate
- Kick idler gear

**Engine Central Part :****Remove :**

- Bolt (A) on RH side crankcase (Clutch side)

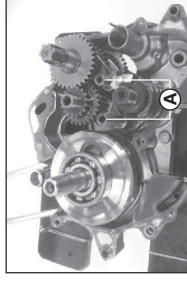
**Remove :**

- Bolt (B) on LH side crankcase (Magneto side)

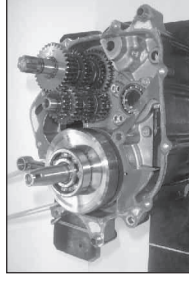
**Remove :**

- 8 bolts on LH side crankcase
- Split the Crankcase halves.

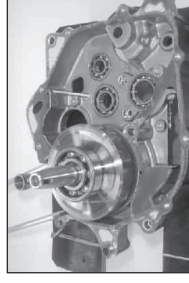
Note : Before separating crankcase halves confirm that all the crankcase joining bolts are removed and the sprocket cam drive with parallel pin on crankshaft assembly is removed.

**Remove :**

- Kick spring
- 2 Shafts (A) & (B) of gear shifter fork.
- 3 fork shifts (1 small for input 2 big for output shaft.
- 3 Rollers
- Drum change

**Remove :**

- The entire gear box assembly together

**Remove :**

- Crankcase gasket
- 2 dowels
- Crankshaft assly