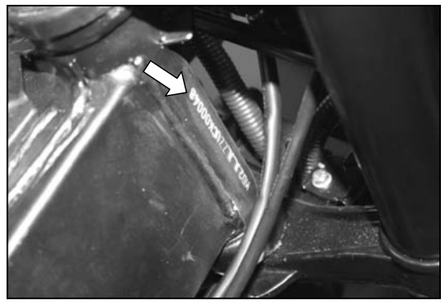
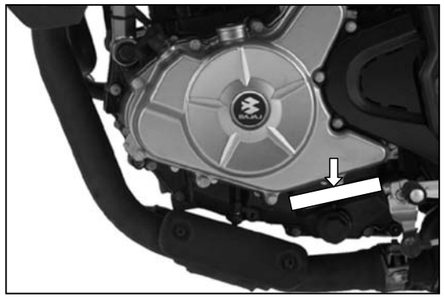
Contents

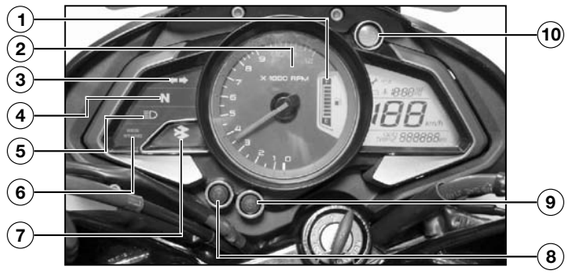
The Frame and Engine serial numbers are used to register the motorcycle. They are the unique alpha-numeric codes to identify your particular vehicle from others of the same model and type.



Frame Number Location
On Steering Tube
(Alpha-Numeric - 17 Digits)

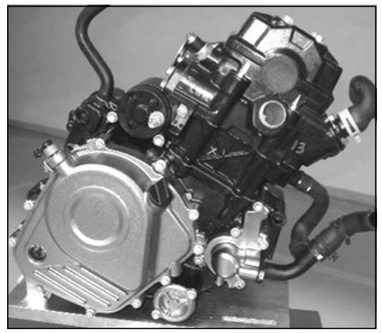


Engine Number Location
On LH Side Crankcase Near Gear Change Lever
(Alpha-Numeric - 11 Digits)



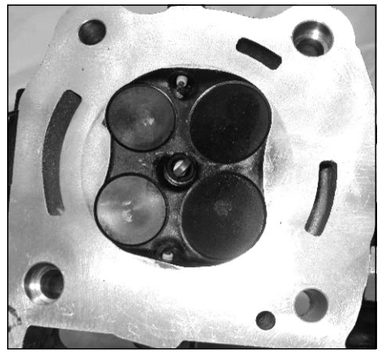
1. **Fuel Level Indicator :** Fuel level indicator shows available fuel in fuel tank.
2. **Tachometer Dial :** It shows engine speed in RPM.
3. **Turn Signal Indicator (LH & RH) :** When turn signal switch is turned to Left or Right, Turn pilot indicator - LH or RH will flash.
4. **Neutral Indicator :** When the transmission is in Neutral & Ignition switch 'ON', Neutral indicator is lit.
5. **Hi Beam Indicator :** When Headlight is 'ON' & Hi beam is selected with engine running, Hi beam indicator will lit.
6. **Side Stand Indicator :** When Side stand is 'ON', the Side stand indicator will lit.
7. **Logo : It indicates 'Bajaj'**
8. **Mode Button :** Mode button used for changing the mode while setting Trip1, Trip2 Clock & Service reminder.
9. **Set Button :** Set button used for setting Trip 1, Trip 2 Clock & Service reminder.
10. **Reserve/Engine Rev Indicator :** It glows continuously when petrol level in tank reaches reserve level. It also blinks when engine RPM cross 10000 RPM mark.
11. **Service Reminder** (🔧) **:** 'Wrench' symbol glows when ODO meter reading reaches to set Kms. for service. This Icon will flash at -
    1st : 450 km. 2nd : 4950 km.
    3rd : 9950 km. 4th : 14950 km.
    and subsequently at each 5000 km. Icon will continue to glow till it is reset. This icon is to be reset after service is carried out.
12. **Low Battery Indicator (🔋) :** It indicates battery needs charging.
13. **Trip Meter :** Trip 1 & Trip 2 shows the distance traveled since it was last reset to zero.
14. **Coolant Temperature Indicator (🌡) :** It blinks when engine coolant temp. is more than 115° centigrade.
15. **Odometer :** The Odometer shows the total distance that the vehicle has covered. Odometer can not be reset to 'Zero'.
16. **Speedometer :** Vehicle speed will be displayed in digital form in Km / Hr.
17. **Digital Clock :** It indicates **time in HR : MM** (AM/PM)
18. **Low Oil Pressure Indicator** : It blinks when engine oil pressure is low.

Performance



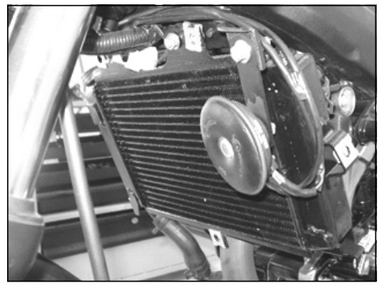
Features :

- Engine : 199.4 cc
- Power : 23.5 Ps at 9500 RPM
- Torque : 18.3 Nm at 8000 RPM



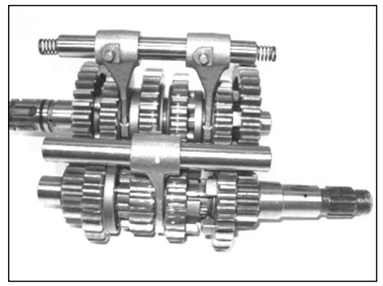
Features :

- Triple spark technology
- 4 Valve engine



Features :

- Water cooled engine
- 6 speed gear box



Advantages:

- Innovative and advanced technology engineered for best engine performance at all engine speeds.
- Greater power and performance.
- Smooth engine running across the entire rpm band.
- Better efficiency in terms of mileage and emissions.

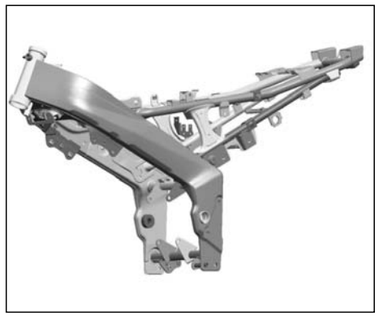
Benefits:

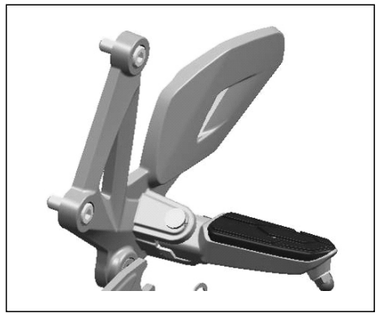
- Great performance across the entire rpm band and all gears giving the Pulsar 200NS a true sports bike character.

Style

Features :

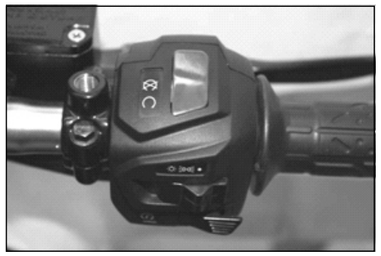
- Brawny masculine looks of a Naked Sports bike
- Muscular perimeter frame

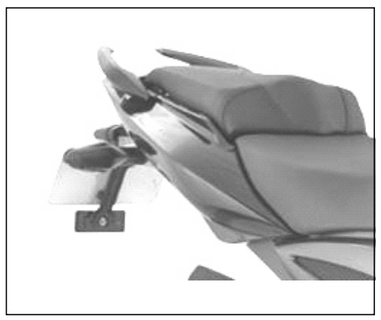




Features :

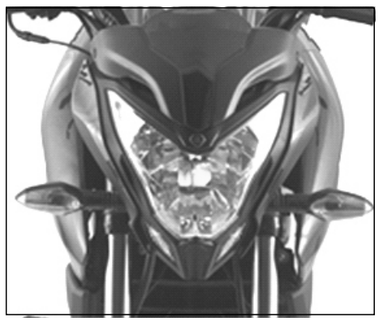
- Specially designed foot pegs, switches
- Stylish split seats





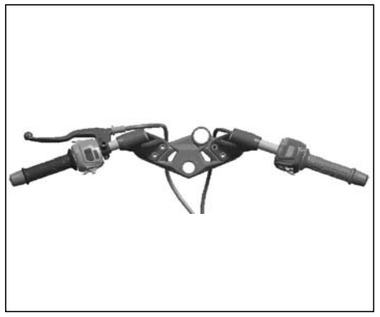
Features :

- New 2 piece grab rail
- New head lamp



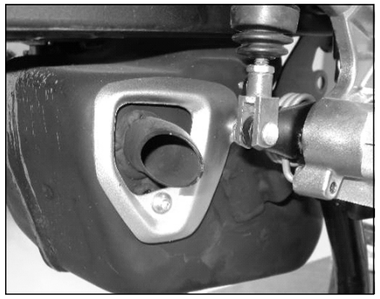
Features :

- Sporty naked chain with 'O' ring
- Clip on handle bar



Features :

- New look alloy wheels
- Broad rear tyre and petal disc brakes
- New look underbelly exhaust



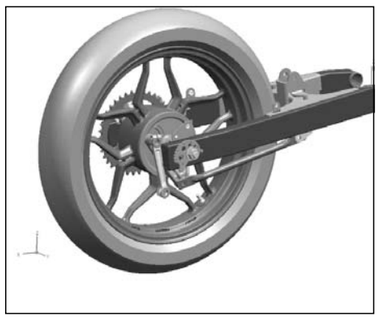
Advantages:

- Bold assertive stance and sporty riding position.
- Aggressive and sporty looks.

Benefits:

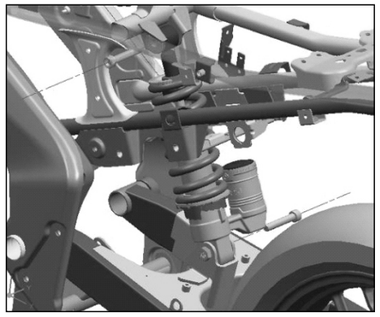
- Streefighter looks gives the Pulsar 200NS unmatched character on the road.

Comfort and Convenience



Features :

- Perimeter frame and new swing arm
- Good bike ergonomics and weight distribution



Features :

- Rear nitrox mono suspension
- Large 37 mm dia front fork with single antifriction bush
- Broad front and rear tyres

Advantages:

- **Handling comfort:** The perimeter frame, swing arm and features like underbelly exhaust and rear mono suspension give the bike a better weight distribution and center of gravity.
- **Riding comfort:** Broad and comfortable seats, a sporty riding posture, clip-on handle bars, nitrox rear mono suspension give a more plush and comfortable ride.

Benefits:

- Better concerning ability and high speed stability.
- Plush ride comfort for rider as well as pillion on all road conditions.

Safety

Features :

- Front & rear petal disc brakes
- Tubeless tyres
- High strength chassis – Perimeter frame and swing arm
- Powerful DC head lamp

Advantages:

- Confident braking.
- No tyre bursts nor immediate deflation.
- Better strength and stability on drive.
- Better illumination during low idling speeds too.
- Better grip and stability.

Benefits:

- More confidence in your ride. Be it the daily commute or a long road trip – the Pulsar 200NS has been designed for utmost safety and performance.

Engine & Transmission

Type		:	4 stroke, single cylinder water cooled
No. of cylinders		:	One
Bore		:	72.0 mm
Stroke		:	49.0 mm
Engine displacement		:	199.4 cc
Compression ratio		:	11:1
Idling Speed		:	1400 $\pm$ 50 rpm
Max. net power		:	23.5 PS @ 9500 rpm
Max. net torque		:	18.3 Nm @ 8000 rpm
Ignition System		:	DC, Microprocessor controlled Digital CDI with TPS
Ignition Timing		:	Variable Timing with Multiple maps
Fuel		:	Unleaded Petrol
Carburettor		:	BS33, push pull choke with Continuous TPS
Spark Plug		:	3 Plugs
Spark Plug Gap		:	0.7 ~ 0.8 mm
Lubrication		:	Wet sump, Forced Lubrication
Starting		:	Electric Start
Clutch		:	Mechanically Actuated
Transmission		:	6 Speed Constant Mesh
Primary reduction		:	3.272
Gear Ratios	1st Gear	:	2.83
	2nd Gear	:	2.07
	3rd Gear	:	1.56
	4th Gear	:	1.24
	5th Gear	:	1.05
	6th Gear	:	0.92
Final Drive Ratio		:	2.6 : 1 (39/15)

Chassis & Body

Frame Type		:	Perimeter
Suspension	Front	:	130mm Fork travel, Telescopic, Single antifriction bush
	Rear	:	120mm wheel travel, Mono suspension with Nitrox
Brakes	Front	:	Hydraulically operated disc type
	Rear	:	Hydraulically operated disc type
Brake Size	Front	:	280 mm Disc brake
	Rear	:	230 mm Disc brake
Tyres	Front	:	100/80, 17, 52 P Tubeless
	Rear	:	130/70, 17, 61 P Tubeless
Tyre Pressure	Front	:	1.75 Kg / Cm^2 (25.0 PSI)
	Rear (Solo)	:	2.00 Kg / Cm^2 (28.0 PSI)
	Rear (with Pillion)	:	2.25 Kg / Cm^2 (32.0 PSI)
Rims	Front	:	2.5 x 17" 10 Spoke Alloy Wheel
	Rear	:	3.5 x 17" 10 Spoke Alloy Wheel
Fuel Tank Capacity		:	12.0 Liters
Usable Reserve		:	2.4 Liters
Unusable Reserve		:	0.2 Liter

Controls

Steering		:	Handlebar
Accelerator		:	On handle bar, RH grip
Gears		:	Left foot pedal operated, 1 down 5 up, Step shift
Brakes	Front	:	On handle bar, RH lever.
	Rear	:	Pedal operated by RH foot

Electricals

System	:	12 V (DC)
Battery	:	12V 8Ah VRLA (Valve regulated lead acid)
Head Lamp	:	12 V 55/60 W, (Halogen)
Tail / Stop Lamp	:	LED Type
Side Indicator Lamp	:	12 V 10 W (4 Nos. - Amber Bulbs)
Position Lamp	:	12 V 3 W (2 Nos.)
Rear Number Plate Lamp	:	12 V 3 W
Speedometer Back light	:	LCD Back light
Neutral Indicator	:	LED
Turn Signal Indicator	:	LED
Hi-beam Indicator	:	LED
Reserve Indicator	:	LED
Horn	:	12 V DC, Type 2A (70 mm dia.)
Fuel Gauge	:	TFR Type

Dimensions

Length	:	2017 mm
Width	:	804 mm
Height	:	1195 mm
Wheel Base	:	1363 mm
Saddle Height	:	807 mm
Turning Circle Radius	:	2500 mm (min)
Ground Clearance	:	167 mm

Weights

Vehicle Kerb Weight	:	145.0 Kg (Electric Start)
Gross Vehicle Weight	:	275.0 Kg (Electric Start)

Performance

Maximum speed	:	136 Kmph (with single rider 68 Kg)

Notes :

- Values given above are nominal & for guidance only, 15% variation is allowed to cater for production & measurement.
- All dimensions are under un-laden conditions.
- Definitions of terminologies wherever applicable are as per Relevant IS/ISO standards.
- Specifications are subject to change without notice.

Frame No. | | | | | | | | | | | | | | | | |

Engine No. | | | | | | | | | | | | | | | | |

Dealer's Name _____ **Dealer's Code** _____

Date of PDI _____ **PDI done by** _____

Please insure that following checks are carried out during PDI before delivery of vehicle.

To Check	Check For	✓ if OK or ✗ if NOT OK	Observations / Remarks
ENGINE			
Engine oil "BAJAJ DTS-i 1000"	Oil level between upper & lower mark provided on oil level gauge / Top up if required	☐	
	Oil leakage if any - Specify source of oil leakage	☐	
Idling RPM (Warm up)	Check in warm up condition - 60°C / Adjust if required (1400 ± 50 RPM)	☐	
Gear Shifting	Smooth operation	☐	
Engine Noise	No abnormal noise	☐	
Silencer Noise	No abnormal noise	☐	
Fasteners (Check torque)	Magneto, Clutch & Oil filter cover bolts - 1.0 ~ 1.2 Kgm	☐	
	Engine foundation nut / bolts	☐	
	a. LH Engine stay upper bolts- 2.4 ~ 2.6 Kgm	☐	
	b. RH Engine stay upper bolts- 2.4 ~ 2.6 Kgm	☐	
	c. Engine stay lower nut - 3.4 ~ 3.6 Kgm	☐	
	Silencer clamp bolt- 1.8 ~ 2.0 Kgm	☐	
	Gear shifter lever pivot bolt- 1.8 ~ 2.2 Kgm	☐	
COOLING SYSTEM			
Coolant Leakage	No leakage	☐	
Coolant Level	Ensure level between MIN & MAX mark in Reservoir tank in cold condition	☐	
Radiator Mounting	Ensure no touching to silencer pipe	☐	
Radiator Hose	Hose clamp fitment on white dot mark or 3mm away from hose pipe open ends.	☐	
Radiator Fan	Working of radiator fan after coolant temperature reaches 98° C	☐	
FUEL SYSTEM			
Fuel Tank / Pipes	No leakage / Correct fitment	☐	
Fuel Cock	Smooth operation	☐	
Tank Cap	Petrol tank cap screw fitment	☐	
FRAME		☐	
Tyre Pressure	Front : 1.75 Kg / Cm^2 (25.0 PSI) Rear (with Pillion) : 2.25 Kg / Cm^2 (32.0 PSI)	☐	
Front & Rear Wheel	Free rotation	☐	
Side Stand & Center Stand	Smooth operation	☐	

PDI CHECKLIST

To Check	Check For	✓ if OK or ✗ if NOT OK	Observations / Remarks
Mirror	Proper fitment, Clear rear view		
Head Lamp	Focus adjustment	☐	
CONTROLS	Steering cum Ignition, Seat, LH side cover lock	☐	
	Front a. No oil leakage from master cylinder & caliper	☐	
	b. Check oil level in master cylinder (Visual inspection)	☐	
	Rear a. No oil leakage from master cylinder & caliper	☐	
	b. Check oil level in reservoir (Visual inspection)	☐	
Throttle	Grip free play - 2 ~ 3 mm. Smooth operation	☐	
Clutch Cable	Smooth operation, Free play - 2 ~ 3 mm	☐	
Speedo Cable	Proper routing	☐	
Drive Chain	Slackness standard - 15 ~ 25 mm	☐	
	Equal marking of chain adjuster on both side	☐	
	Drive chain link lock position & proper fitment	☐	
SUSPENSION			
Front Fork	No leakage(Visual inspection), Smooth working	☐	
Rear Shock Absorber	Spring adjuster notch position : 2nd notch (Standard)	☐	
Steering	Smooth operation (No excess play / No sticky movement)	☐	
Lock Operation	Steering lock operation(Only on LH side), Seat lock, Petrol tank lock	☐	
Fasteners (Check Torque)	Front axle nut - 9.0 ~ 11.0 Kgm	☐	
	Rear axle nut - 10.0 ~ 12.0 Kgm	☐	
	Fork under bracket bolts - 2.5 ~ 3.0 Kgm	☐	
	Fork upper bracket bolts - 1.8 ~ 2.0 Kgm	☐	
	Holder handle upper bolts (4 Nos) - 1.8 ~ 2.0 Kgm	☐	
	Steering stem top bolt - 4.8 ~ 5.2 Kgm	☐	
	Rear shock mounting bottom nut / bolt - 3.2 ~ 3.8 Kgm	☐	
	Swing arm shaft - 13.0 ~ 15.0 Kgm	☐	
	Front Caliper mounting bolts - 2.2 ~ 2.8 Kgm	☐	
	Side stand mounting bracket bolt- 1.8 ~ 2.2 Kgm	☐	
	Main step holder bolt- 1.8 ~ 2.2 Kgm	☐	
	Stay LH / RH mounting bolt - 1.8 ~ 2.2 Kgm	☐	
	Rear brake pedal pivot bolt- 1.8 ~ 2.2 Kgm	☐	
Tail Lamp	No excess / uneven gap between tail lamp & seat cowl	☐	
ELECTRICAL			
Battery	Open circuit voltage (13 to 13.2 V DC) & Charge status by VRLA battery tester	☐	
	Tightness of battery terminals / cables	☐	
Fuse	Position of fuse box	☐	

PDI CHECKLIST

To Check	Check For	✓ if OK or ✗ if NOT OK	Observations / Remarks
Kill Switch	In OFF position check for no Speedometer display & no self start working.	☐	
All Bulbs Working	Head light, Pilot lamps-2, LED tail/stop, Side indicators, Number plate lamp	☐	
Switch Operation	RH & LH control switch, Ignition switch & Brake switch (Front & Rear)	☐	
Starter Motor	Firm connections of terminal cable	☐	
	Working / Engagement in gear & neutral	☐	
	No abnormal noise	☐	
Speedometer	No excess gap & uneven gap	☐	
	Working of Speedometer, Odometer & Trip meter, Clock	☐	
	Working of all signal indicators icons (Turn pilot, Neutral, High beam, Side stand, Battery charge & Bajaj logo)	☐	
Horn	Ensure no distorted sound	☐	
TEST DRIVE			
Starting	Cold start & warm start	☐	
	Idling speed (Warm condition) (1400 ± 50 rpm)	☐	
Drive ability	Throttle response	☐	
	Brakes effectiveness- Front & Rear	☐	
CO % Check	CO should be 1.5 to 2.5 % in engine warm condition at idling RPM (before cat converter)	☐	
Cleaning	Wash & Clean vehicle properly	☐	

Important Note :

1. **Look for any external damages in transit : Please check, record & rectify send report with photos.**

Sr. No.	Operation		RECOMMENDED FREQUENCY							Subsequent
		Servicing	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500 ~ 750	4500 ~ 5000	9500 ~ 10000	14500 ~ 15000	19500 ~ 20000	24500 ~ 25000	29500 ~ 30000	
1.	Servicing		◂	◂	◂	◂	◂	◂	◂	1st - 500~750 Kms / 30~45 days,2nd onward@5000Kms
2.	Idle speed / CO%	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
3.	Valve tappet clearance	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
4.	Engine oil (Bajaj DTSI 10000 oil)*	C,A,R	R	Top-up	R	Top-up	R	Top-up	R	Top-up @every 5000 Kms. Replace in 1st service & at every 10000 Kms
5.	Oil strainer (Bajaj DTSi 10000 oil)*	CL	CL		CL		CL		CL	
6.	Engine oil filter (Bajaj DTSi 10000 oil)*	R	R		R		R		R	Replace at every oil change
7.	Body centrifugal filter -- Pulsar / Platina	CL	CL				CL			
8.	Spark plug gap	CL,A	CL,A	CL,A	CL,A	CL,A		CL,A	CL,A	
9.	Spark plug	R					R			Replace at every 20000kms
10.	Air cleaner element***	CL, R	CL	CL	CL	R	CL	CL	R	Replace at every 15000kms
11.	Air filter cover 'O' ring	R				R			R	Replace at every 15000kms
12.	In line paper filter along with hose & clamps**	R				R			R	Replace at every 15000kms
13.	Fuel cock sediment bowl cleaning	CL		CL	CL	CL	CL	CL	CL	
14.	Fuel cock-Paper filter element & seal**	R				R			R	Replace at every 15000kms
15.	Carburettor	CL,A				CL,A			CL,A	
16.	Carburettor float chamber cleaning	CL			CL		CL		CL	
17.	Carburettor rubber duct	C,R					C,R			Check & replace if required
18.	Fuel pipes	C,R	C	C	C	R	C	C	R	Replace at every 15000kms
19.	Coolant level check in expansion tank**	C,A	C,A	C,A	C,A	C,A	C,A	C,A		At every service
20.	Coolant in expansion tank**	R	Replacement at every 30000 Kms or 2 year (whichever occurs earlier)							
21.	Coolant hose damage/clamps/leakage**	C,R		C,R	C,R	C,R	C,R	C,R	C,R	Check & replace if required
22.	Coolant hose damage/clamps/leakage**	R	Replacement at every 35000 Kms or 3 years (whichever occurs earlier)							
23.	Radiator fins**	C,CL		C,A	C,A	C,A	C,A	C,A	C,A	
24.	Battery electrolyte level & specific gravity**	C,A	C	C	C	C	C	C	C	
25.	Battery connections	C,T		C,T	C,T	C,T	C,T	C,T	C,T	
26.	Clutch plate	C,R					C,R			Check & replace if required
27.	Clutch play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
28.	Throttle play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
29.	Brake play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
30.	Brake lining or pad wear	C,R	C,R	C,R	C,R	R	C,R	C,R	C,R	Replace at every15000 Kms
31.	Brake fluid level / top up**	C,A	C,A	C,A	C,A	C,A	C,A	C,A		Check & Top up if required in every service
32.	Brake fluid	R							R	
33.	Front brake hose	R							R	
34.	Master cylinder piston kit	R							R	
35.	Caliper piston seal and Dust seal	R							R	
36.	Brake cam & pedal pivot pin**	L		L	L	L	L	L	L	
37.	Rear sprocket fasteners	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
38.	Rear wheel rubber shock damper	C,R			C,R		C,R		C,R	Check & replace if required
39.	Silencer drain hole cleaning	CL		CL	CL	CL	CL	CL	CL	

Sr. No.	Operation		RECOMMENDED FREQUENCY							Subsequent
		Servicing	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500 ~ 750	4500 ~ 5000	9500 ~ 10000	14500 ~ 15000	19500 ~ 20000	24500 ~ 25000	29500 ~ 30000	
40.	Silencer tail pipe cleaning-Pulsar 150/180	CL		CL	CL	CL	CL	CL	CL	
41.	Engine compression pressure	C					C		C	
42.	Cylinder head de-carbonising	CL					CL			If required
43.	Engine air breather tube	R					R			Replace at 20000 Kms
44.	Drive chain slackness	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
45.	Drive chain lubrication on vehicle	C,L	C,L							
46.	Drive chain link lock	R		R	R	R	R	R	R	Whenever drive chain opened.
47.	Drive chain wear -- Remove & Lubricate	C,L		C,L	C,L	C,L	C,L	C,L	C,L	
48.	Drive chain ("O" ring design)**	L	Lubricate at every 500 km.(By customer)							
49.	Wheel bearing	C,R			C,R	C,R	C,R	C,R	C,R	Check & replace if required
50.	Spoke tightening-Front & Rear**	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
51.	Tyre tread wear	C,R			C,R	C,R	C,R	C,R	C,R	Check & replace if required
52.	Front fork oil	R			R		R		R	Replace at every 10000kms
53.	Front fork oil seal	R			R		R		R	Replace at every 10000kms
54.	Auto choke**	C		C	C	C	C	C	C	
55.	Gap betn Reed switch & TPS magnet**	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
56.	Rr. Shock Absorber- Check gas pressure**	C,A					C,A			Not required for new design (Filling from bottom)
57.	Starter Clutch** (Dry Application)	L		L	L	L	L	L	L	
58.	Wiring harness	C		C		C		C		
59.	Ignition switch contacts cleaning	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	
60.	Clutch switch & brake switch (Horizontal base) contacts cleaning**	C,CL,L			C,CL,L		C,CL,L		C,CL,L	
61.	Clutch switch (Vertical base)**	C,R			C,R		C,R		C,R	Check & replace if required
62.	Rear brake switch	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
63.	Starter motor connections**	C,T		C,T	C,T	C,T	C,T	C,T	C,T	
64.	Starter relay connections**	C,T		C,T	C,T	C,T	C,T	C,T	C,T	
65.	HT coil connections	C,T		C,T	C,T	C,T	C,T	C,T	C,T	
66.	Oil pressure indicator check on console**	C	C	C	C	C	C	C	C	
67.	General lubrication	L	L	L	L	L	L	L	L	
68.	Main stand & side stand pin**	C,L			C,L		C,L		C,L	
69.	Swing arm pivot pin (for non silent bush)**	L		L	L	L	L	L	L	
70.	Engine foundation silent bushes**	R				R			R	Replace at every 15000Kms
71.	Steering play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
72.	Steering stem bearing***	C,CL,L,R			C,CL,L,R		C,CL,L,R		C,CL,L,R	Check & replace if required
73.	Cap steering bearing (Plastic)**	C,R			C,R		C,R		C,R	
74.	Step -Pillion LH & RH (Ball & Plate)**	C,CL		C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	
75.	All fasteners tightness	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	

* It is strongly recommended to use only "Bajaj DTS-i 10000" Genuine engine oil. In case any other engine oil of same specifications is used, the frequency of Sr. No. 4, 5 & 6 will be every 5000 Kms.

** As applicable to model

*** More frequent cleaning may be required when driving in dusty condition.

C : Check, A : Adjust, CL : Clean, R : Replace, T : Tighten, L : Lubricate

Note : Periodic parts/lubricants to be replaced as per Periodic Maintenance and Lubrication Chart are mandatory & the same are chargeable to customer.

Periodic Maintenance (in accordance with the periodic maintenance chart) of a vehicle it is utmost important to prolong vehicle life, trouble free running & ensure safety while driving.

Washing (Water Servicing) - Dos & Don'ts

Do's

✓ Rinse the Bike thoroughly with water to remove loose dirt and mud.

✓ Clean the Bike with a Sponge or soft cloth using water.

✓ Clean the exterior surfaces of engine metal parts by kerosene / diesel spray & plastic / nylon brush.

✓ Cover silencer tail end by PVC cap.

✓ Clean the plastic parts using a soft cloth or sponge dampened with a solution of mild car shampoo / liquid soap & water. Rub the soiled area gently rinsing it frequently with fresh water.

Don'ts

✗ Do not direct pressurized water jet on head lamp glass, tail lamp glass, electrical components (H.T. Coil, C.D.I., Flasher, Horn & all electrical digit console switches) to avoid water entry & subsequent damage.

✗ Do not direct pressurized water jet on steering races (cones) to avoid rusting & subsequent pitting of steering balls & races.

✗ Do not direct high pressurized water jet on plastic, spark plug cap don't direct jet on components especially on decals.

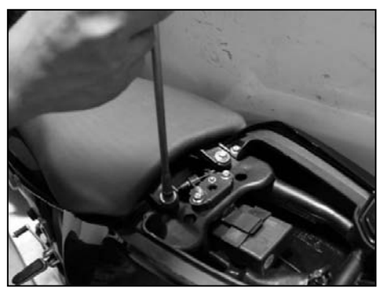
✗ Avoid directing water jet in to silencer muffler outlet.

✗ Do not use detergent or strong solvent to clean painted / plated parts. Avoid cleaning products that are not specifically designed for automobile surfaces. Strong detergent residues can corrode alloy parts and also painted surfaces loose their shine / gloss.

Side Cover LH /RH Removal

- Insert vehicle key in pillion seat lock & rotate key clockwise to remove pillion seat.

- Take out pillion seat from vehicle.



- Remove 2 Nos. M-10 Bolts Securing front seat.

- Take out front seat from vehicle

- Remove 2 nos. phillips head screws securing side cover LH.

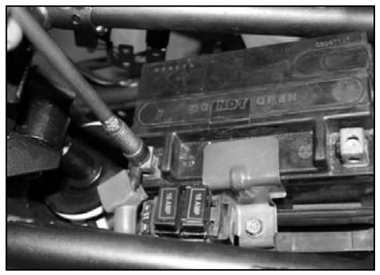
- Hold the cover on both sides & pull out side cover LH.

- Remove 2 nos. phillips head screws

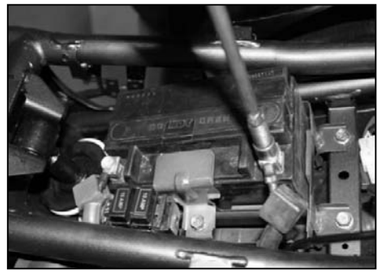
- Hold the cover on both sides & pull out side cover RH.

VRLA Battery Removal

- Take out front seat from vehicle.
- Remove 2 nos. PVC caps on battery terminals.



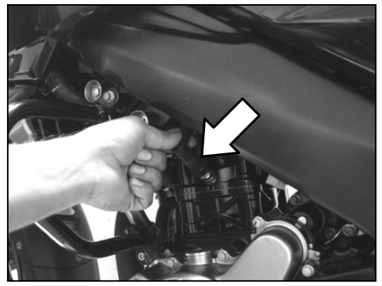
- Remove -ve terminal first use M10 T spanner



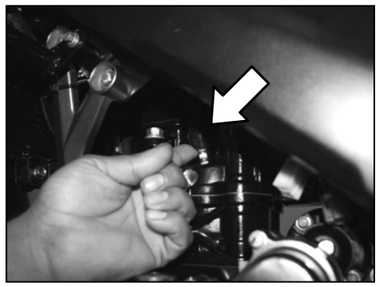
- Remove +ve terminal, use M10 'T' spanner

- Take out battery from vehicle

Spark Plug Cleaning SOP



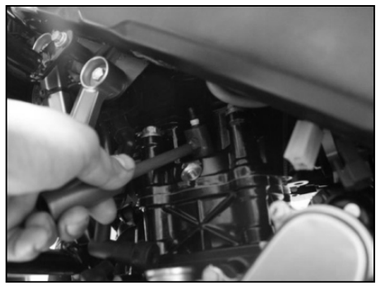
- Remove LHS plug cap.



- Remove central plug cap which is located above LHS plug

- Remove RHS plug cap

- Using special plug spanner remove LHS plug



- Remove central plug using special plug spanner.

Note : Before removing central plug. It is mandatary to remove LHS plug.

- Remove RHS special plug using special plug spanner.

Remove :

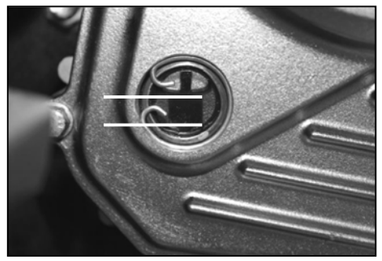
- Clean spark plug with the help of spark plug cleaning machine.

Recommended Spark Plug	Central- BOSCH YR5NE / Champion RER6YCA
	LHS & RHS - Champion PRG6HCC
Electrode Gap	0.7 ~ 0.8 mm
Replace Spark Plug	After every 20,000 Kms.

Coolant Level Inspection & Top up

- Park the vehicle upright while checking coolant level.
- Check coolant level in engine cold condition only.
- Ensure coolant level is between Min. & Max. mark.
- Always top up coolant through reservoir cap.
- Always replace coolant with recommended brand only. (Radicool from Castrol, or Motul - Green colour ready to use).
- Use nitrile rubber hand glows while draining & refilling coolant.
- Do not top up coolant through radiator cap.

Engine Oil Level Checking



- Park the vehicle on level surface upright check the oil level.
- Inspect the oil level through oil inspection window.
- It should be in between two lines as shown in figure.
- Top up if required.

Recommended Oil :
"Bajaj DTS-i 10000" a high performance engine oil developed by Bajaj auto, specially formulated for vehicles with DTS-i engine.

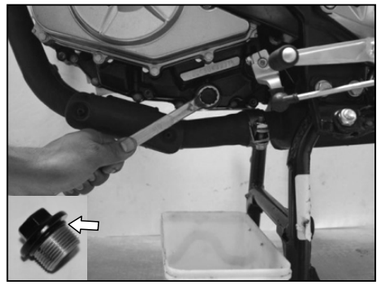
Bajaj Auto recommends "Bajaj DTS-i 10000" engine oil for 10,000 kms drain interval, better performance of engine components & warranty benefits.

Bajaj DTS-i 10000	SAE 20W50 of API 'SL', JASO MA Grade.
Replacement Frequency*	1st replacement at 750 Km/ 1st service. Thereafter at every 10,000 Kms.
Recommended Quantity	Drain & Refill 1200 ml., Engine Overhaul 1400 ml.

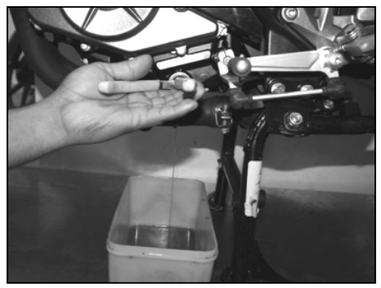
⚠ **CAUTION :**

- It is most important to adhere to recommended grade and frequency of oil change for the purpose of long life of critical engine components. For details refer P.M. chart.
- Do not reuse drained oil.

Engine Oil Drain / Strainer Cleaning SOP



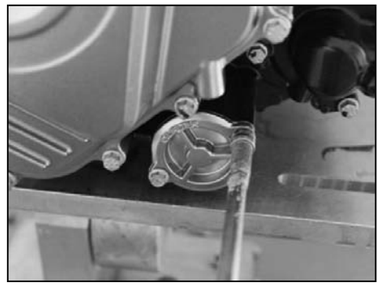
- Warm up engine for 2-3 minutes.
- Remove drain plug located on LHS using 18 no. spanner.
- Check condition of 'o' ring.



- Pull out strainer.

Oil Filter Replacement SOP

- Oil filter is located on RHS just above exhaustech



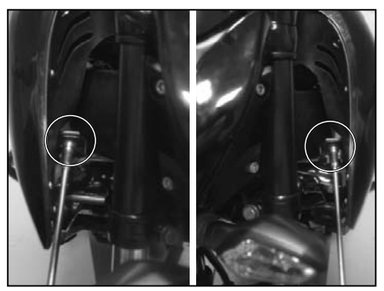
- Remove 2 nos. M8 bolts of oil filter cover.

- Using external circlip plier pull out oil filter.

Note : Do not clean & re-use oil filter. Replace oil filter at every 10,000 Km.

- Collect oil in clean plastic jar.
- Check quality & quantity of engine oil.

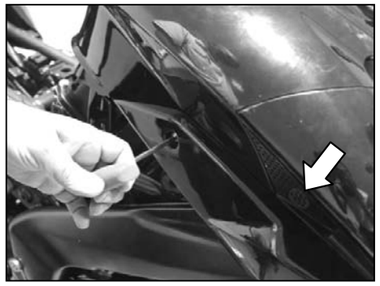
Air Filter Element Cleaning SOP



- Remove front seat & side cover LH & RH (Refer Side Cover LH/RH Removal SOP, given on page no. 9).
- Remove 2 nos. M10 bolts of fuel tank cover located on either side of front fork assembly.

- Remove 2 nos. M5 allen bolts located on top side near petrol tank cap using 5 mm allen key.

- Remove tank cover grill rubber plug of LHS.
- Remove 2 nos. M5 allen bolt with 5 mm allen key from left hand side.



- Remove tank cover grill rubber plug of RHS.
- Remove 2 nos. M5 allen bolt with 5 mm allen key located on right hand side of petrol tank cover.

- Remove 2 nos. phillips head screw with plastic washer located on rear side of petrol tank cover.

- Pull cover side ways & lift it, simultaneously pull the cover towards rear side & take out petrol tank cover.

- Remove 2 nos. M12 petrol tank mounting bolts from rear side.

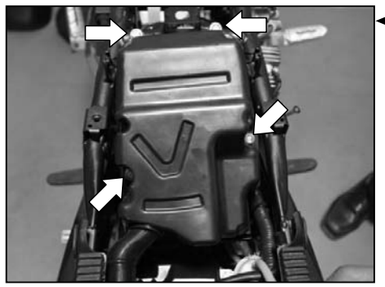
- Remove 1 nos. M12 petrol tank mounting bolts from front side.

- Push breather pipe locking clip backwards & pull out breather pipe from petrol tank.

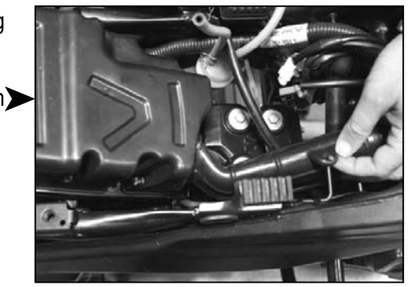
- Put off petrol cock.

- Lift petrol tank upwards & remove petrol pipe from petrol cock.

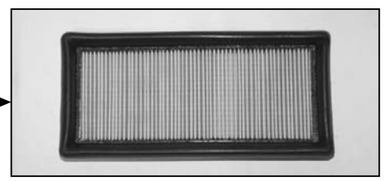
- Remove fuel gauge coupler.
- Take out petrol tank assembly complete along with 5 nos. dampers & fuel gauge.



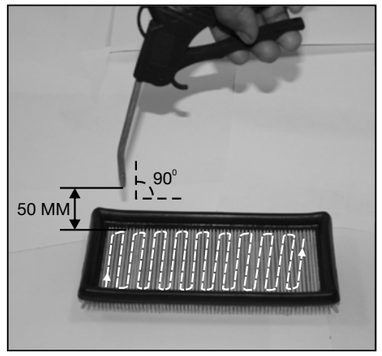
- Remove 4 nos. M10 bolts securing air filter cover.
- Remove intake duct pipe from locking clamp.



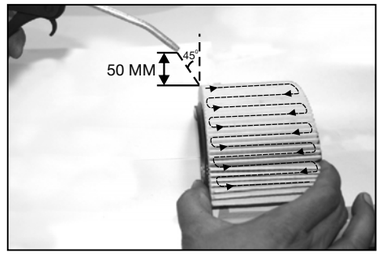
- Take out air intake duct cover along with paper filter
- Take out paper filter element.



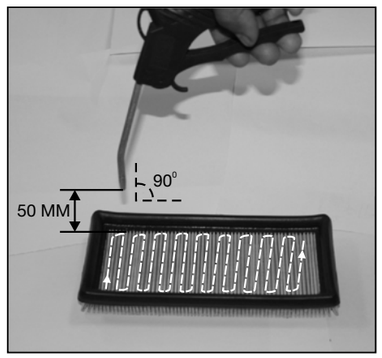
Paper Filter Element Cleaning



- Use filtered compressed air of pressure less than 2 bar.
- Position air gun straight at 90 Deg. angle & 50 mm away from paper filter.
- Move the air gun along the fold line.



- Positions air gun at 45 Deg. angle & 50 mm away from paper filter.
- Slightly twist the paper filter. Move the air gun along the fold line.



- Keep air gun straight at 90 Deg. angle & 50 mm away from paper filter.
- Blow off remaining dust by moving air gun along the fold line.

Do's :

- ***Clean paper filter at every 5000 Kms.***
- ***Increase cleaning frequency in dusty area.***
- ***Replace paper filter at 15000 Kms.***
- ***Hold filter element by its PU foam.***

Don'ts :

- ***Don't clean paper filter element with petrol / Diesel / Kerosene / water.***
- ***Don't apply oil on paper filter element.***
- ***Don't touch paper filter surface by hand.***
- ***Don't wipe paper filter by cloth, abrasive paper.***

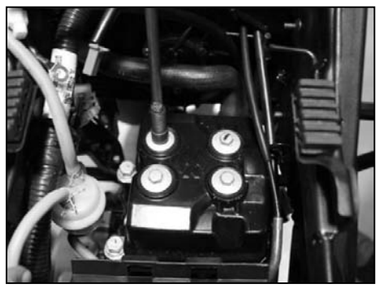
Post Cleaning Actions :

- Assemble filter element into the air filter box. Maintain tightening torque as per specification over the mounting bolts of assembly cover side.
- Assemble back seat assembly in the vehicle after the complete assembly of air filter assembly.

Tappet Setting SOP

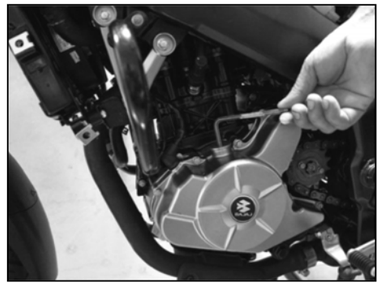
- Follow SOP till Air filter element removal, then refer steps given below.

Press Accelerator cable to RHS.

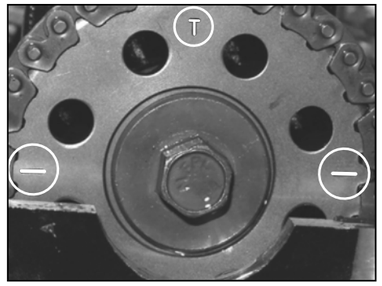


- Remove 4 Nos. M10 hex bolts of cylinder head cover in criss-cross fashion

- Pull out cylinder head cover

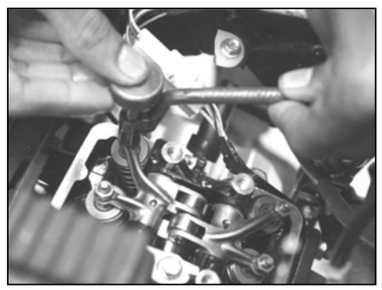


- Remove nut securing magneto timing window & remove cap.



- Rotate engine with the cam sprocket special bolt till two line marks on sprocket are parallel to cylinder head surface and ‘T’ mark is at top position.

- Ensure the 'T' mark on rotor align with crankcase mark.



- Set intake & Exhaust valve clearance separately.

  Intake - 0.05 mm

  Exhaust - 0.08 mm

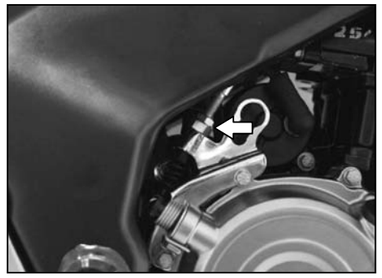
Note : Set tappet clearance in engine cold condition only.

Tyre Air Pressure

- Inflate tyres as per recommended pressure to get better tyre life & optimum mileage.
- Check tyre pressure every week.

Front	1.75 Kg/ cm^2 (25 PSI)
Rear - with Solo	2.00 Kg/ cm^2 (28.0 PSI)
Rear - with Pillion	2.25 Kg/ cm^2 (32.0 PSI)

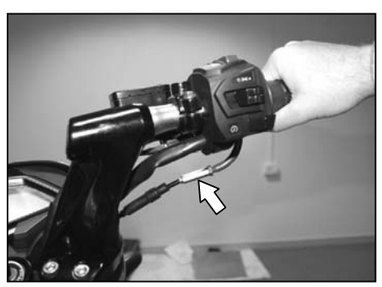
Clutch Lever Free Play Adjustment



- Slide the dust cover at lever yoke end.
- Check that the clutch cable outer end is fully seated in the adjuster.
- Turn the adjuster until the proper amount of free play can be obtained.
- Tighten the lock nut against the adjuster. If the clutch free play cannot be adjusted with the adjuster at the handle bar end, use the adjuster at the lower ends of the clutch cable secured on clutch cover.
- Loosen the 2 lock nuts (12mm A/F) on clutch cable bracket and adjust threading in the adjuster provided on the clutch cover. Tighten both the lock nuts on clutch cable bracket by holding one nut and tightening the other, after the required free play is set.

Clutch Lever Free Play : 2 ~ 3 mm

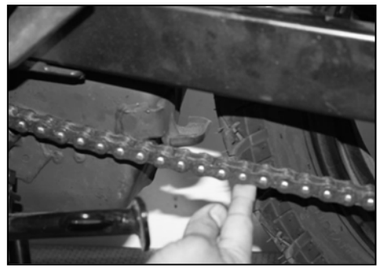
Accelerator Free Play Adjustment



- Turn the adjuster until the proper amount of free play can be obtained.
- Tighten the lock nut against the adjuster.
- If the accelerator free play can not be adjusted with the adjuster at the handle bar end, use the adjuster at the lower ends of the accelerator cable situated on carburettor.
- Loosen the 2 lock nuts on accelerator cable bracket end & adjust free play by adjuster provided on the cable.
- Tighten both the lock nuts on bracket by holding one nut and tightening the other, after ensuring the required free play.

Accelerator Grip Free Play : 2 ~ 3 mm

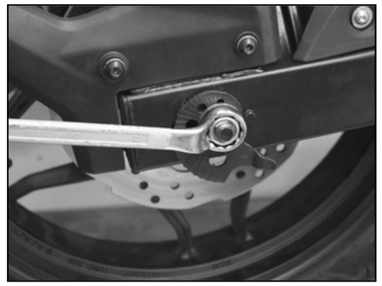
Drive Chain Slackness



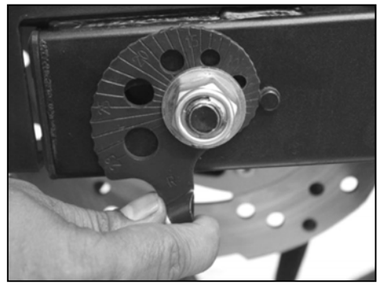
- Park the motorcycle upright.
- Rotate the rear wheel to find the position where the chain is tightest & measure the vertical movement midway between the sprockets.
- If the drive chain is too tight or too loose, adjust within the standard limit.
- Check drive chain slackness at every 1000 kms.

Drive Chain Slackness • Standard : 15 ~ 25 mm • Service Limit : 30 ~ 40 mm

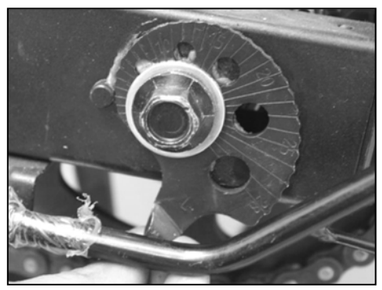
Chain Slack Adjustment SOP

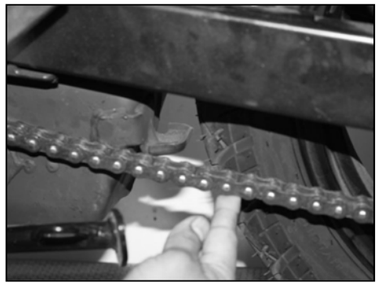


- Loosen the rear axle nut (M22).

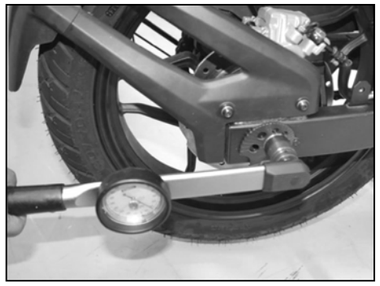


- Adjust LH/RH chain adjuster equally as per marking on chain adjuster.





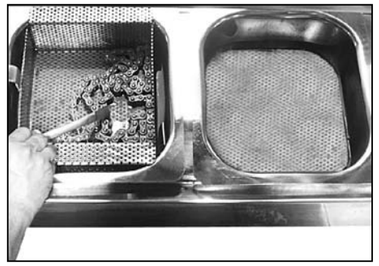
- Ensure drive chain slickness is in specified limit.



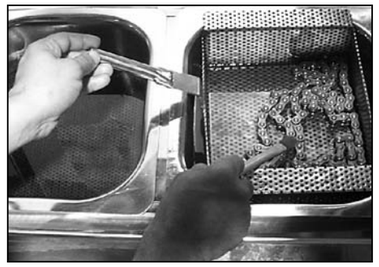
- Tighten the rear axle nut to specified torque.

Notes

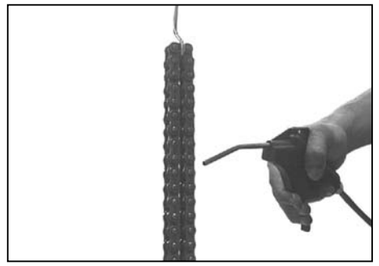
'O' Ring Drive Chain Cleaning by Removing from Vehicle (Diesel + SAE 90 oil 1:1)



1st Stage: Clean with Diesel + oil 1:1

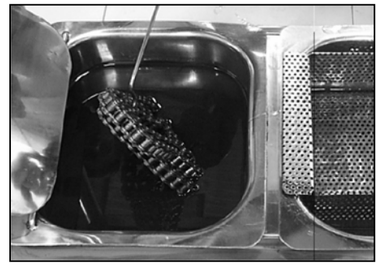


2nd Stage: Clean with Diesel + oil 1:1

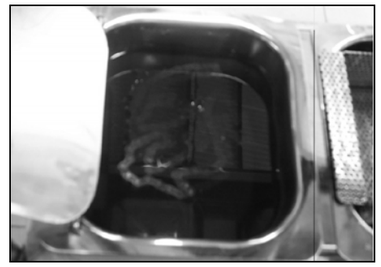


Blow Low Pressure Compressed Air

3rd Stage: Dip into SAE 90 oil



Soak into SAE 90 oil



Final Stage : Hook chain for dripping of excess oil

Note :

- ***During re-assembly of drive chain always use new link lock.***
- ***Ensure 'O' ring fitment.***

'O' Ring Drive Chain Lubrication

- Place the bike upright.
- Normal dust should be wiped clean using a lint free cloth.
- Hold the Chain Lube Spray Can (OKS Spray) vertically upright & shake it vigorously till the noise of steel ball inside the can is heard uniformly. Fix the extension tube (red pipe provided with the can).

- Hold the can at the back of the rear sprocket in line with chain rotation and keep the nose of the extension tube at about 5~10 cms away from the chain.
- Rotate the wheel in reverse direction & spray the lube on the middle portion of the chain so that lubricant will get spread on roller & bushes and on both sides of the chain.
- Spray the lube on full length of chain by rotating the wheel to a complete rotation.

- After completing this, rotate the wheel 3 ~ 4 times so that the lubricant spreads & settles.
- Wipe out any excess lubricant if it has dripped down or sprayed on the wheel / tyre.

Nitrox Mono Rear Shock Absorber

Mono RSA with Nitrox

Adjusting Spring Tension

- RSA spring tension can be adjusted with the help of 9 stepped adjuster cam to suit individual requirement as per load & road conditions.
- Turn the adjuster cam on shock absorber to required position. Setting the adjuster cam to higher notch position increases the spring stiffness & vice-versa (Tool Part No.: 37 0041 70)
- Shock Absorbers adjusted either too soft or too stiff could adversely affect riding comfort & vehicle stability.

Notch Position	1	2	3	4	5	6	7	8	9
Spring Action	Soft	→	→	→	→	→	→	→	Stiff

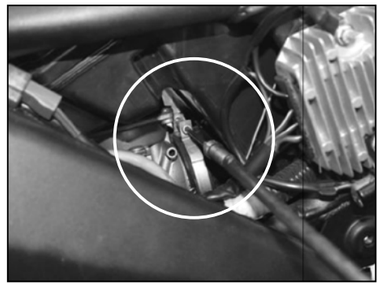
Note: Standard setting is done in 2nd notch.

Notes

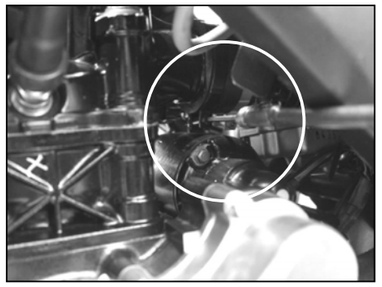
UCAL

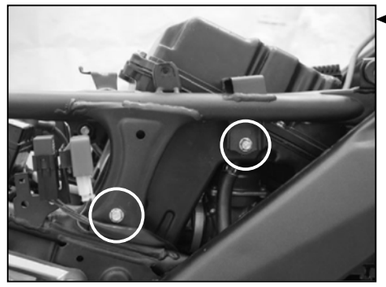
Item	Specification
Make	UCAL
Type	BS33 with Continuous TPS
Idling Speed	1400 ± 50 rpm
Main Jet	107.5
Jet Needle Mark	U-4E0K1
Needle Jet Marking	0-2M (971)
Pilot Jet	12.5
Throttle Valve Mark	125
Choke	Manual Push Pull Choke

Carburettor Removal

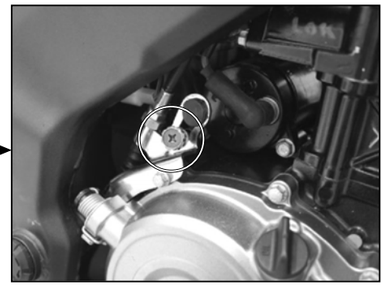


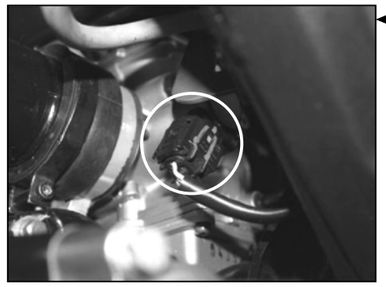
- Loosen carburettor rubber hose clamps (3 mm allen key)



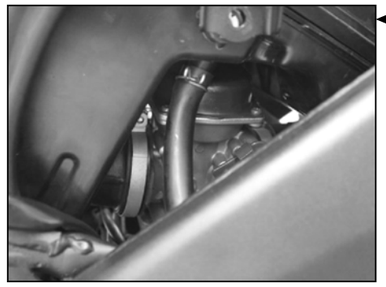


- Remove 2 nos. air filter assly fitment bolts (10 mm T spanner).
- Remove idling screw cable.





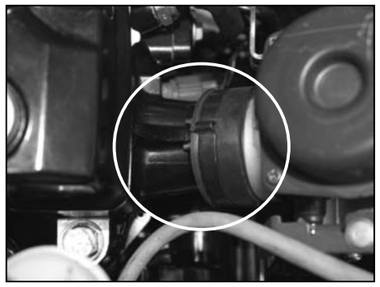
- Remove TPS connection
- Remove accelerator cable.



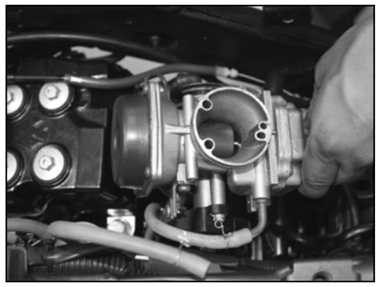
- Remove breather tube.
- Remove air filter drain tube.

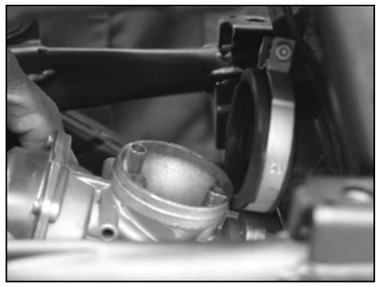
- Pull the air filter assly along with carburettor.

Carburettor Fitment

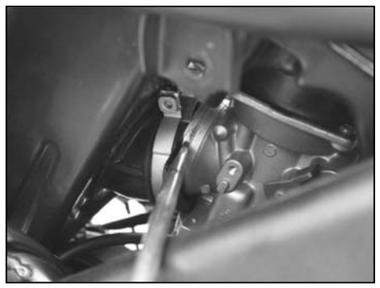


- Align the lug of carburettor rubber hose with intake manifold & hold the carburettor vertically as shown.





- Match the air filter connecting tube with carburettor intake pipe & push the air filter assly downward along with carburettor.

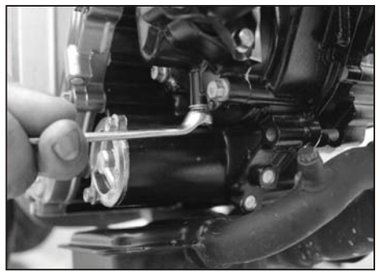


- Align air filter connecting tube with carburettor intake side by using screw driver.
- Tighten the clamps.
- Fit the breather tube, Drain tube, accelerator cable, idling screw cable & TPS connection.
- Tighten the air filter assly bolts.

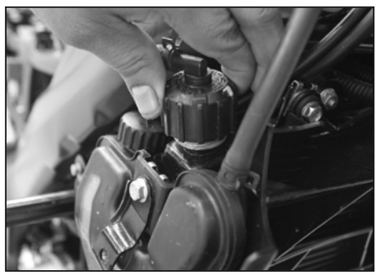
Remove

- Rear seat.
- Front seat.
- RHS & LHS side cover.
- Fuel tank & Fuel tank cover.
- Disconnect the negative (-) terminal of the battery.
- Idle speed adjuster cable.
- Accelerator cable.
- Carburettor TPS connection.
- Hose clamp.
- Air filter duct along with carburettor.

- Drain engine oil.

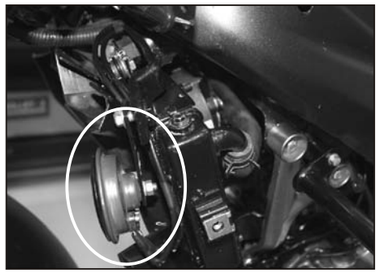


- Remove the coolant drain bolt.

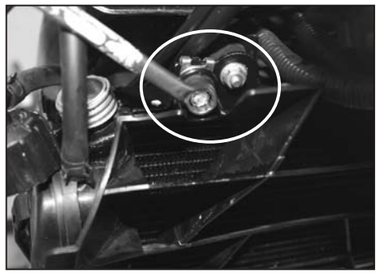


- Open the radiator cap and drain the coolant. Check & measure the coolant quantity.

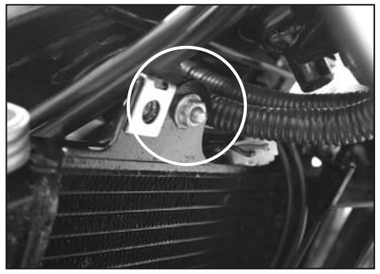
- Remove LH side & RH side shroud assembly of radiator.



- Remove the horn. (M-10 one bolt).



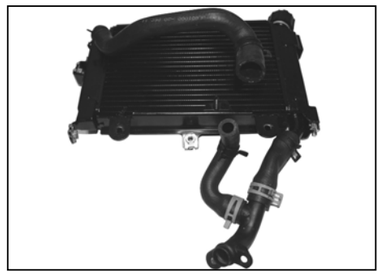
- Remove radiator cowl. (3 nos. M6 flange bolt)



- Remove the radiator mounting nut. (4 nos. M6 flange nuts).

- Remove the radiator hose clamp.

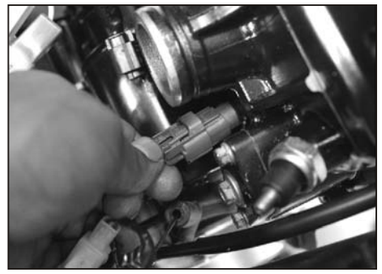
- Remove fan motor connection.



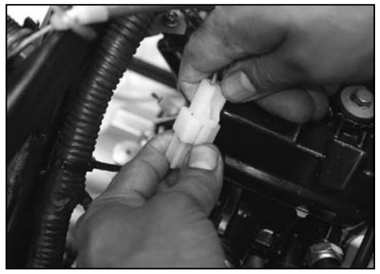
- Remove the radiator assembly.

- Remove clutch cable along with bracket. (2 nos. M-8 bolt)

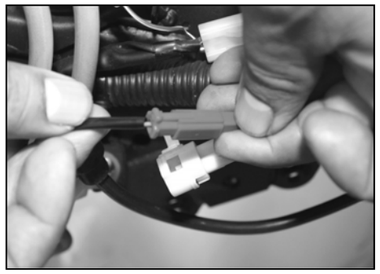
- Remove the spark plug caps (3 nos.)



- Remove coolant temperature sensor connection.

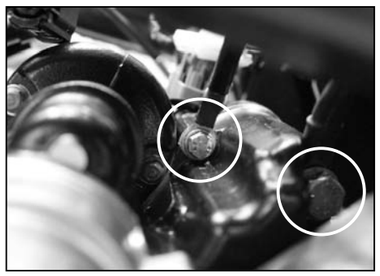


- Remove stator & main wiring harness coupler connection.

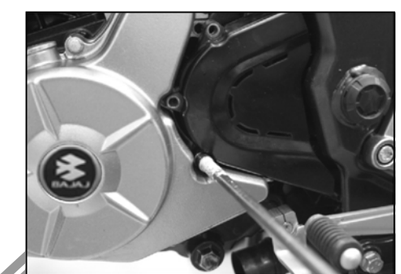


- Remove neutral switch connection.

- Remove the starter motor connection.

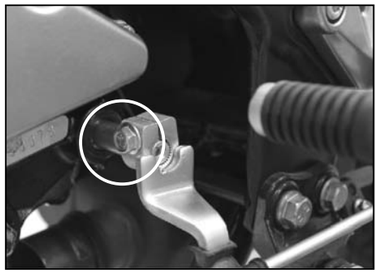


- Remove the earthing connection.

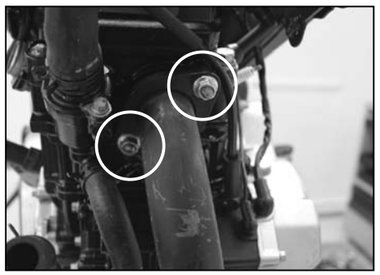


- Remove chain half cover. (3 nos. M-8 bolts).

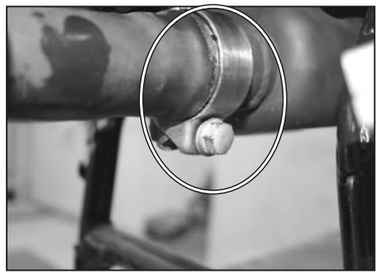
- Loose drive chain
- Remove drive sprocket from output shaft along with chain.



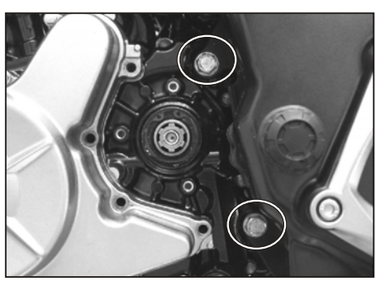
- Remove gear lever bolt. (M-8)



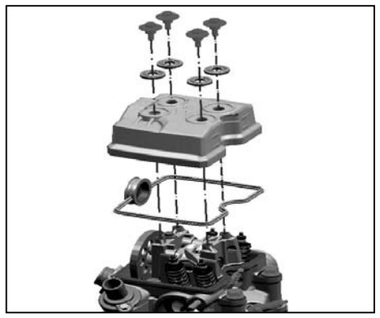
- Remove the exhaust pipe. (2 no. M-10 nut & 1 clamp).



- Give support to engine from bottom side.
- Remove RH side and LH side engine stay bolt along with leg guard. (2 nos. M-8).



- Remove the upper & lower engine mounting bolt & take out the engine assembly from vehicle.



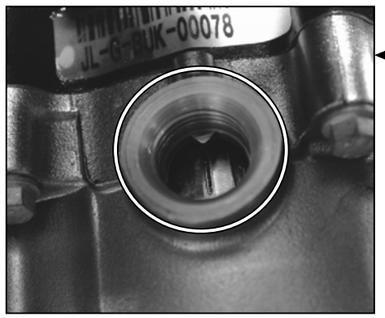
Dismantling - Cover Cylinder Head

Remove

- 4 Bolts (10mm A/F)

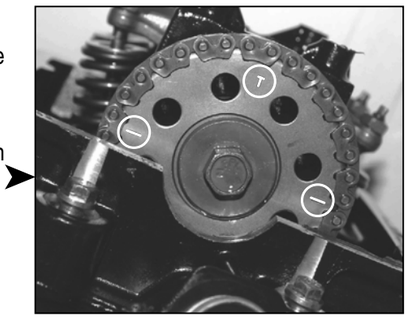
Skill Tip : Always loosen cylinder head cover bolts in criss - cross pattern.

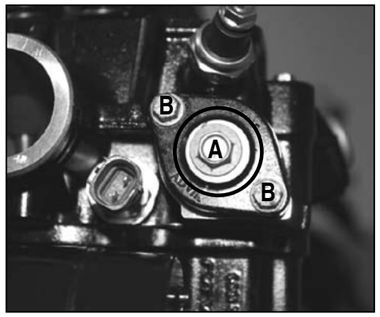
- Cylinder head cover with gasket (rubber beading type)



Check TDC Position

- Align rotor mark w.r.t. Crankcase LH.
- Check cam sprocket marks from RH side.

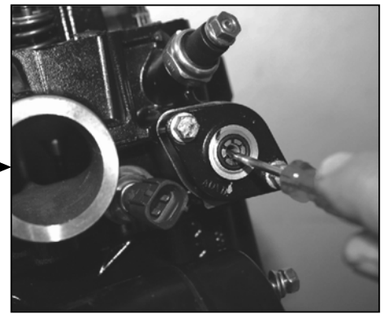


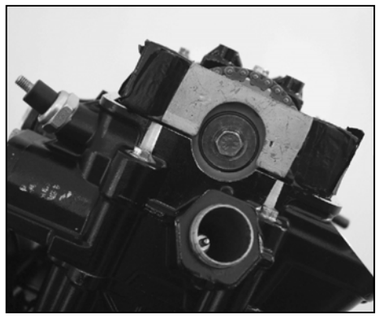


Cam Chain Tensioner

Remove

- One Bolt (A) (10 mm A/F)
- 'O' Ring
- Rotate chain tensioner's screw in clockwise direction to take plunger backward & lock it .
- Two bolts (B) (8mm A/F) M6
- Take out tensioner.
- Take out gasket chain tensioner.





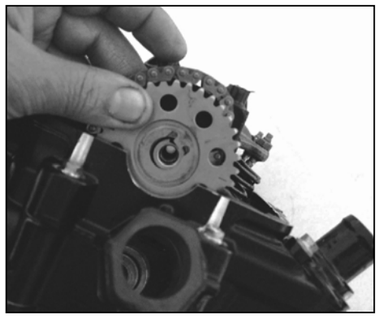
Cam Sprocket

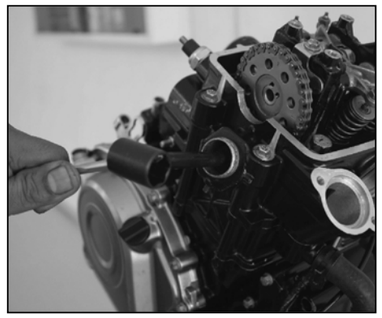
Using Special tool 37 1042 54 Cam Sprocket holder

Remove

- Bolt special flanged (12mm A/F)
- Cam Sprocket
- Spacer cam shaft

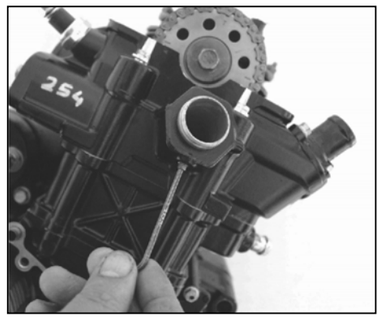
Skill Tip : Tie chain by soft copper wire.





Remove

- Spark plug RH

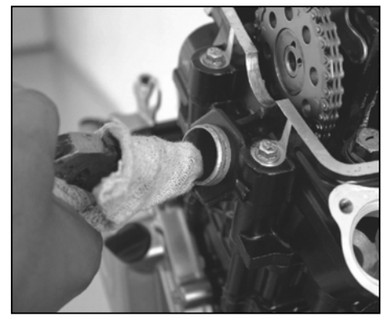


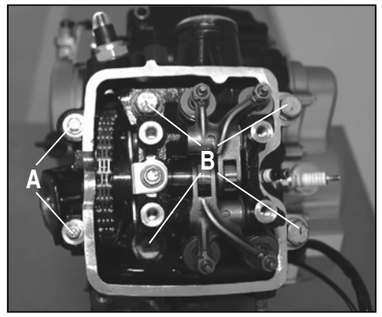
Remove

- Grub screw
- Sleeve spark plug RH.

Skill Tip : Rotate sleeve before pulling out Cover sleeve portion by cotton cloth & then pull out by plier.

CAUTION
Do not pull out sleeve directly by plier otherwise it would get damaged.



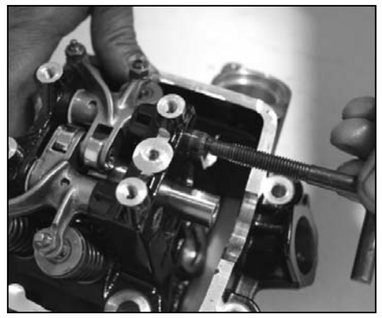


Cylinder Head Bolts

Remove

- 2 Cylinder head short bolt (A) (8 mm A/F) M6 x 120
- 4 Cylinder head long bolts (B) (12 mm A/F) M10 x 147
- Take out cylinder head assembly complete

Skill Tip : Always loosen smaller bolts of cylinder head first & then loosen longer bolts in crisscross pattern to avoid cylinder head warpage.

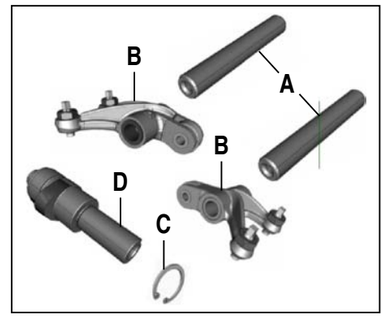


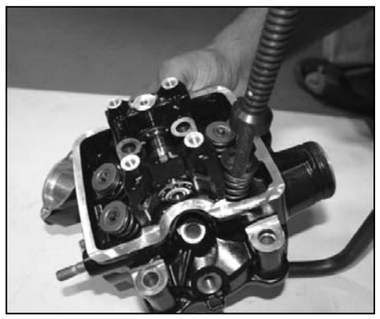
Cylinder Head Complete

Using Special tool 3710DH35 for Rocker Shaft remover

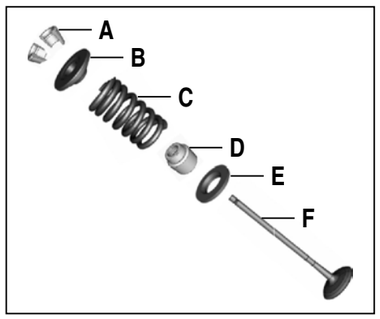
Remove

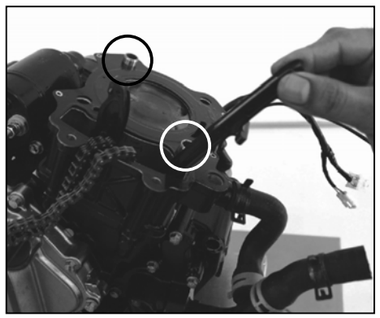
- 2 Rocker shaft (A)
- 2 Rocker arms (B)
- Circlip (C)
- Cam Shaft (D)





Using Valve Spring Compressor -
Adaptor - 37103108
Remove
- Collets (A)
- 4 Retainers (B)
- 4 Valve Springs (C)
- 4 Valve Oil Seals (D)
- Valve Spring Seats (E)
- 2 Exhaust & 2 Intake Valves (F)

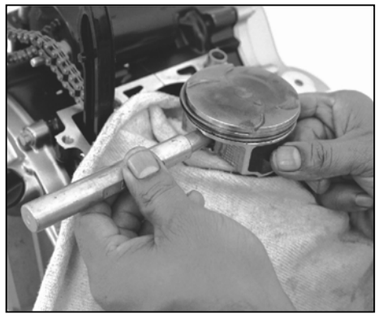


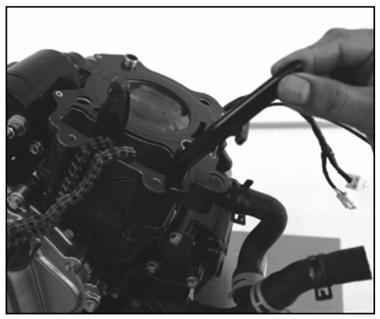


Cylinder Piston Assly.
Remove
- Gasket Cylinder Head
- Chain Guide
- 2 Dowels
- Cylinder Block

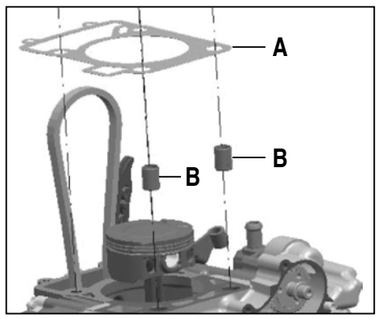
Using Piston Pin Drift
Part No: 37101006
Remove
- Snap ring (Circlip)
- Piston pin
- Piston Assembly

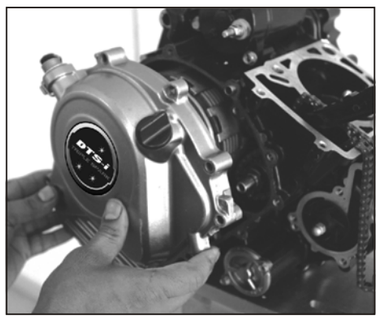
Skill Tip : Cover crankcase bore by clean lint free cloth while dismantling piston circlip / snap ring.



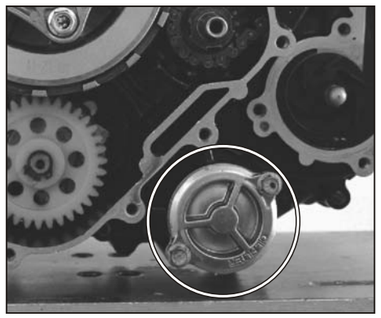


Remove
- Gasket cylinder block (A)
- 2 Dowels (B)

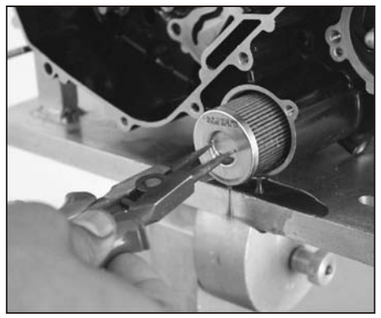


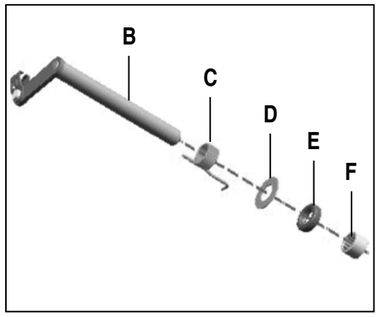


CLUTCH SIDE DISMANTLING
Cover Clutch
Remove
- 11 Bolts (8mm A/F) M6 x 30.
- Clutch Cable Bracket
- Cover clutch
- Clutch cover gasket.
- 2 dowels.

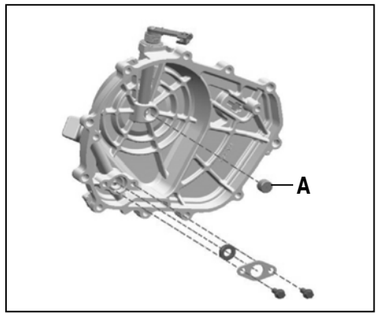


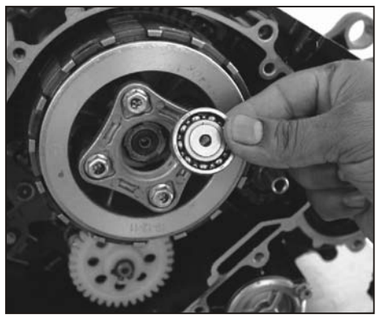
Oil Filter
Remove
- 2 flanged bolts (8mm A/F) M5 x 16
- 'O' ring.
- Cap oil filter.
- Oil filter.



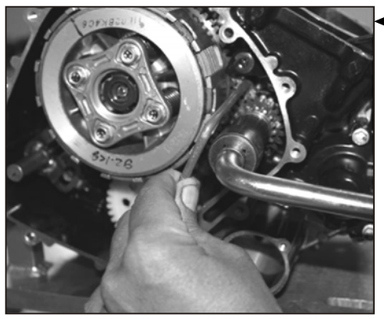


Shaft Clutch Release
Remove
- Push rod (A).
- Shaft clutch release (B)
- Spring (C) (lever clutch)
- Plain washer (D).
- Seal oil (E).
- Needle bearing (F).



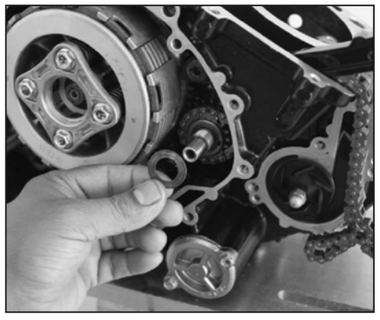


Remove
- Clutch lifter bearing.

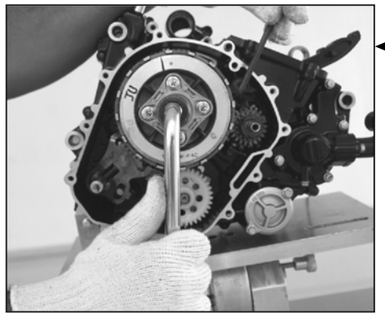


Using Primary Gear Holder Special Tool 37004154 & Special Socket for Clutch Nut 3710DJ43
Remove
- Nut sprocket drive lock.

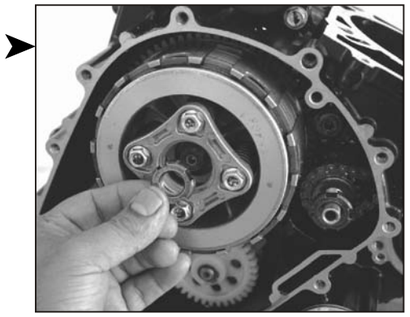
Skill Tip : Lock Special tool between the teeth of primary gear & clutch housing gear from top.

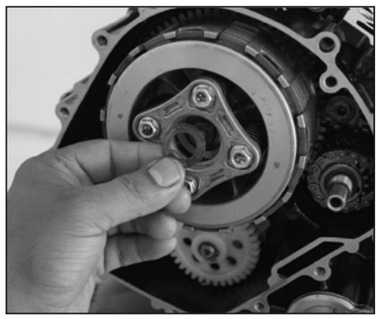


- Remove Belleville washer.

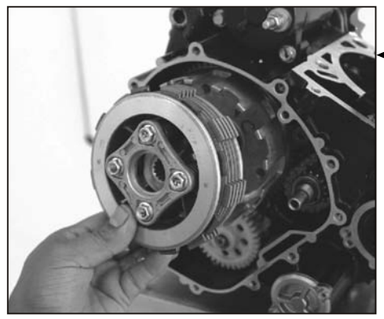


Remove
- Special nut for clutch



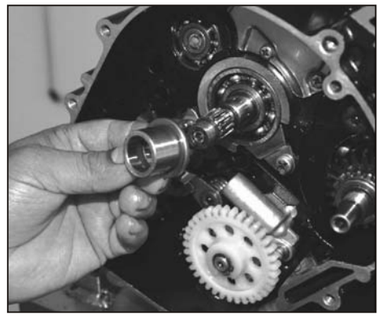


- Belleville washer

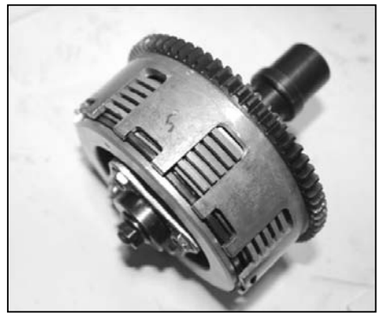


Remove
- Clutch stack complete
- Plain washer
- Timing chain
- Clutch housing

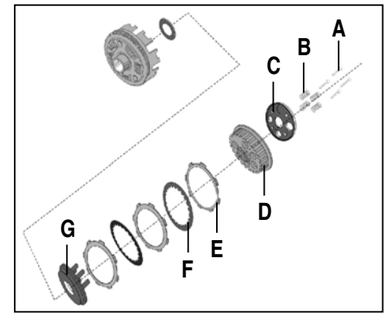
Skill Tip : Clutch Nut must be removed by rotating it in clockwise direction.



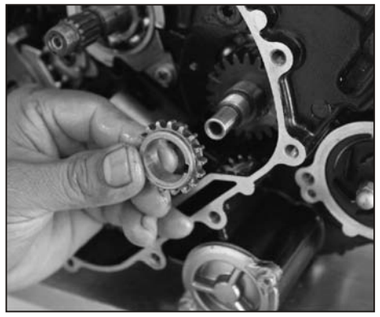
- Remove Collar bush.

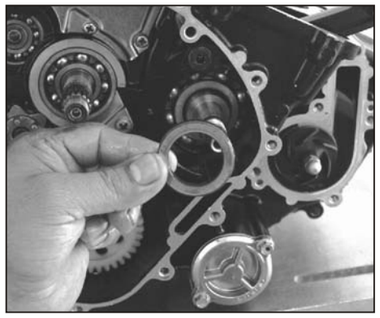


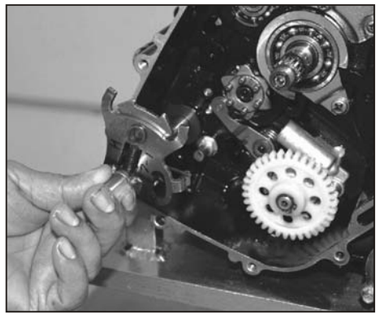
By using Clutch Dismantling Special Tool Pulsar
Remove
- 4 bolts (A) (10mm A/F)
- 4 springs (B)
- Holder Clutch (C)
- Clutch Hub (D)
- Friction Plates (E)
- Steel Plates (F)
- Wheel Clutch (G)



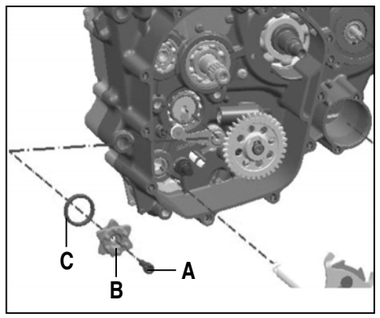
Removal of Primary Gear
Remove
- Sprocket crankshaft.
- Gear primary drive with wood ruff key.
- Spacer crankshaft.



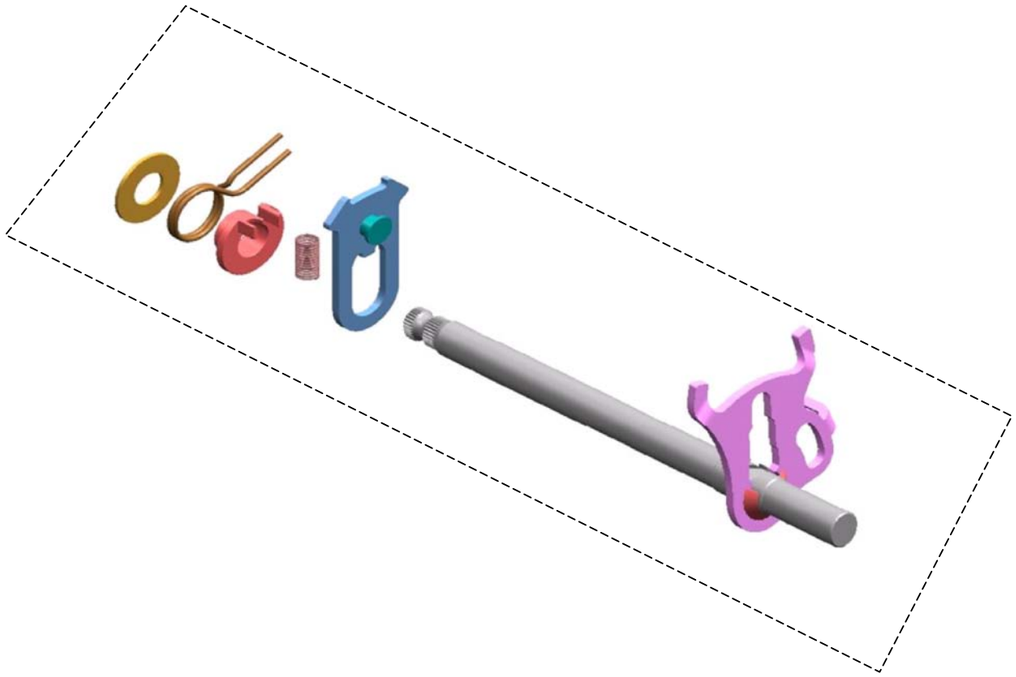


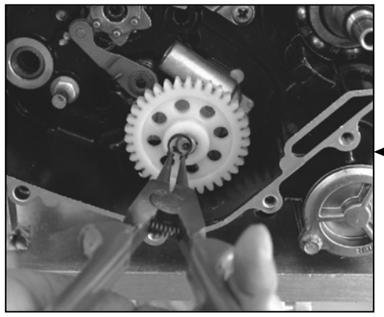


Gear Shift Mechanism
Remove
- Lever gear change shaft.
- Stopper drum bolt (mm A/F).
- Washer (bigger dia).
- Inhibitor gear shift lever.
- Washer (smaller dia).
- Drum stopper spring.



Remove
- Allen bolt (A).
- Gear shift guide (B).
- Spacer (C).

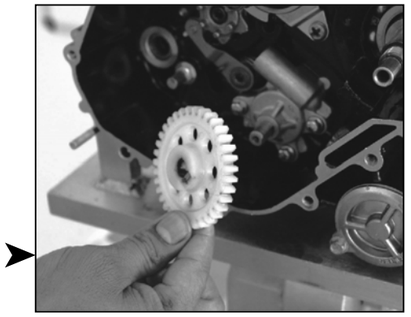


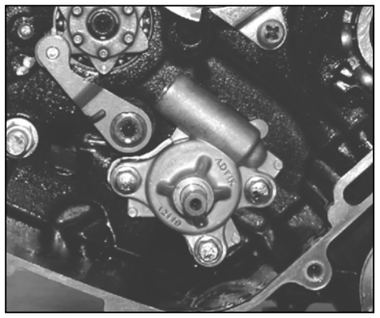


LUBRICATION SYSTEM DISMANTLING

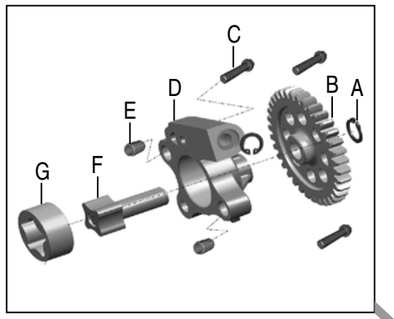
OIL PUMP

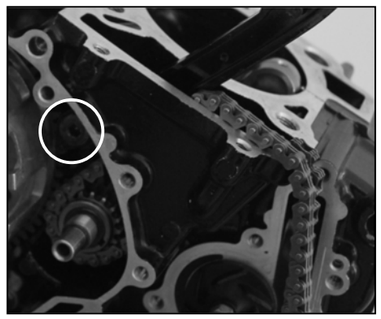
Remove
- Circlip (A).
- Oil pump drive gear (B).



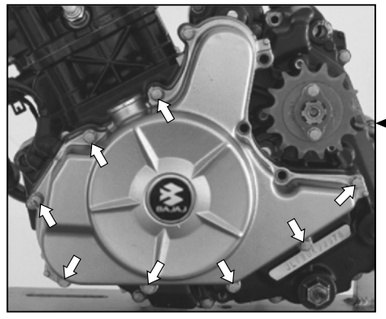


Remove
- 3 flanged bolts (C) (8mm A/F) M6 x 30.
- Oil pump body (D).
- 2 Dowels (E)
- Inner (F) & outer (G) rotor





Remove
- Pivot bolt
- Chain Guide (Slack Side)
- Cam / Timing Chain

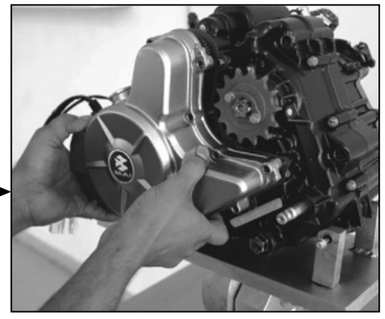


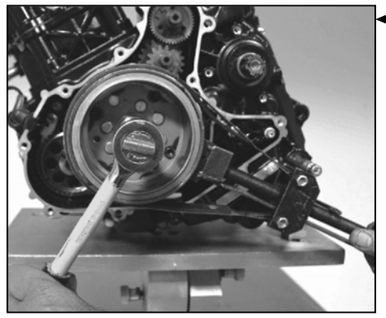
MAGNETO DISMANTLING

Dismantling - Cover Magneto

Remove
- 9 bolts (8mm A/F) M6 X 30
- Magneto Cover

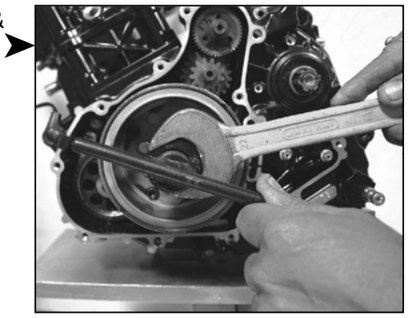
Skill Tip : Loosen magneto cover bolts in criss-cross pattern.

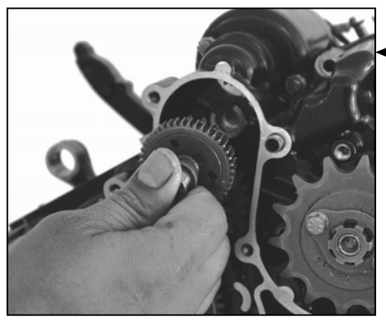




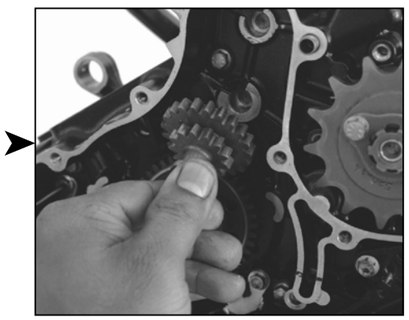
Using Rotor Holder H6 0721 00 & Rotor Puller 37 0041 55

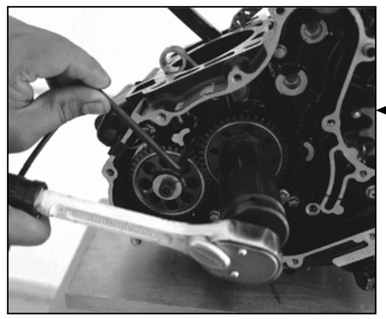
Remove
- Hex flanged bolt (14 mm A/F)
- Belleville washer (A)
- Rotor (B) & its key.





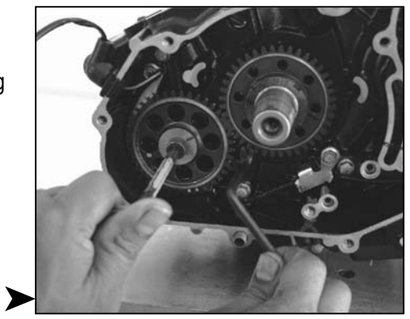
Remove
- Starter counter gear 1.
- Starter counter gear 2.

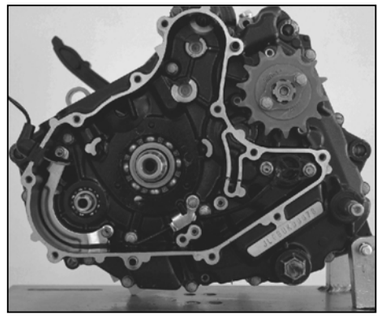




Balancer Drive & Driven Gear

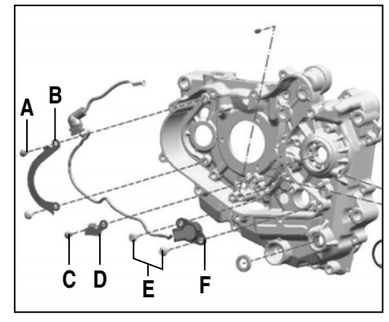
Remove
- Nut balancer drive lock by using special tool.
- Belleville washer.
- Balancer drive gear.
- Key wood ruff.
- Allen bolt.
- Special washer.
- Gear balancer driven.
- Square key.



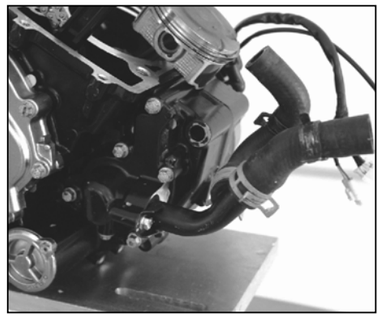


Neutral Indicator Switch

Remove
- 2 bolts (A) (8 mm A/F) M5x10
- Bracket harness upper (B).
- 1 bolt (C) (8 mm A/F) M5x10
- Bracket harness lower (D).
- 2 bolts (E) (8 mm A/F) M5x16
- Neutral indicator switch (F).

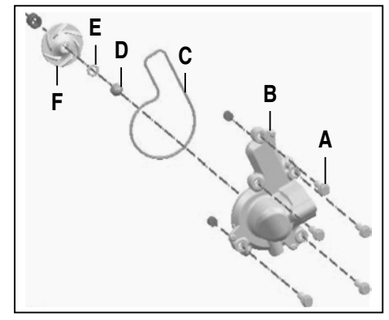


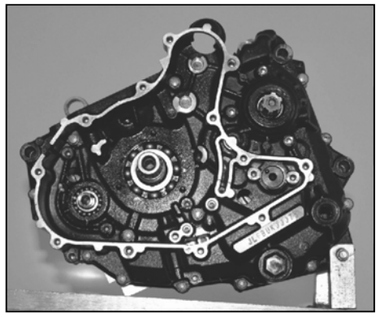
Remove
- 2 bolts (8 mm A/F) M5 x 13.
- Pick up coil
- 1 Bolt (8mm A/F) (B) M5 x 6
- Stopper plate (D).
- Stator plate assembly 3 allen bolts (4 mm A/F) M5 x 0.8 x 35



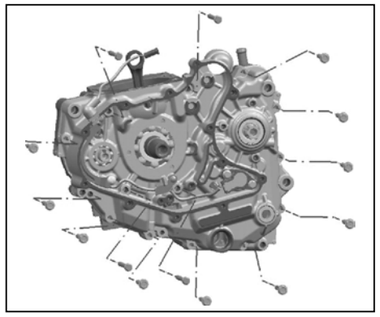
WATER PUMP REMOVAL

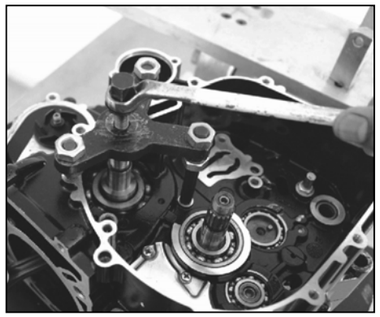
Remove
- 5 bolts (A) (8mm A/F) M6x20
- Water pump cover (B).
- 'O' ring (C).
- Domed nut (D).
- Washer (E).
- Water pump rotor (F).



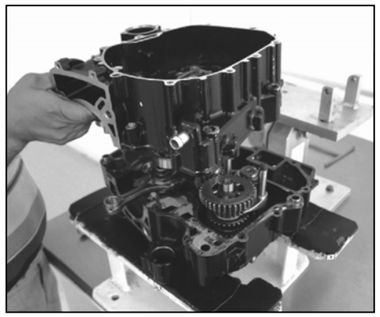


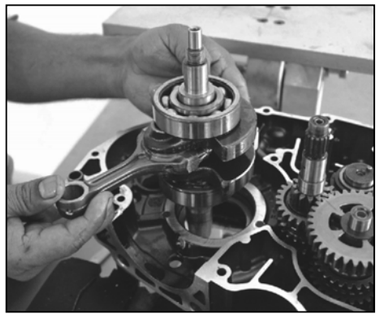
CRANKCASE SPLITTING
Remove
- 4 long bolt (A) (8mm A/F) M6 x 60
- 10 Short Bolt (B) Magneto Side (8mm A/F) M6 x 45





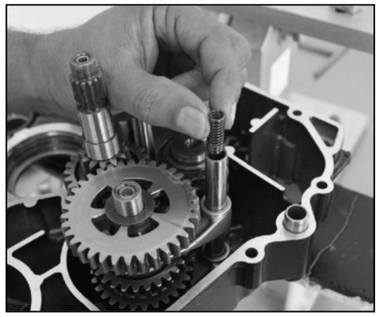
Dismantling - Crankcase
By using Crankcase Splitting Special Tool
Remove
- Remove RH side crankcase.
- Crankcase gasket.
- 2 dowels (dia 14)



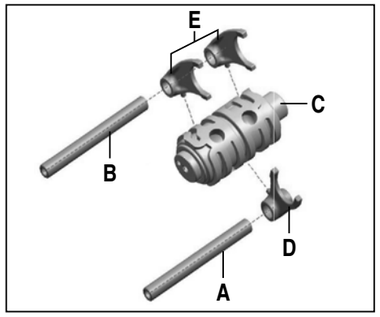


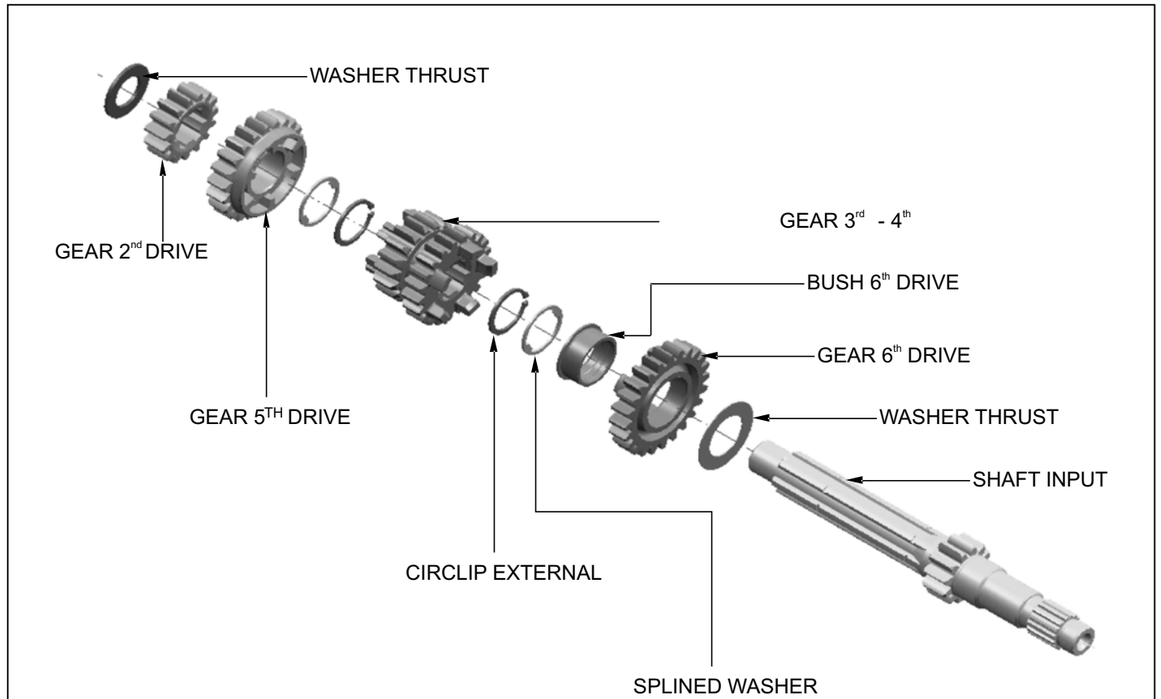
Crankshaft Removal

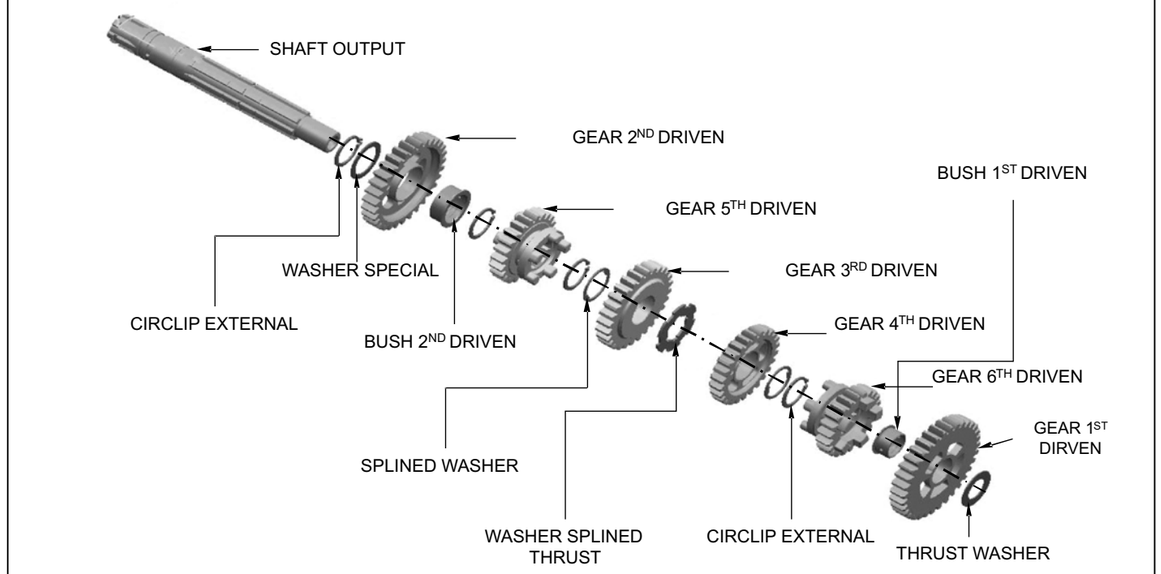
Remove Crankshaft



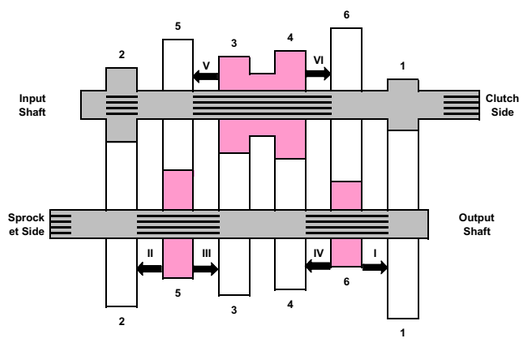
Crankshaft Removal
Remove
- Shaft Fork Shift (A) Input & Output (B) with 2 springs.
- Gear Change Drum (C)
- Washer 1st Gear Output.
- Washer below 2nd gear Input
- Shift Fork - Input (D) / Output (E).
- Input shaft assembly
- Output shaft assly.



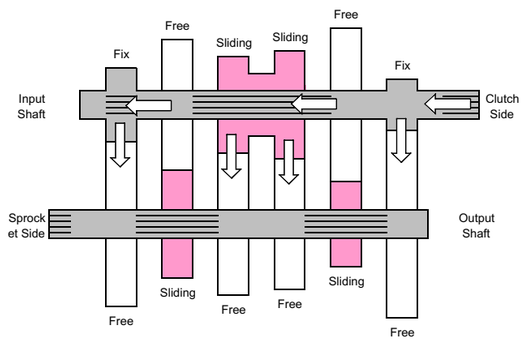




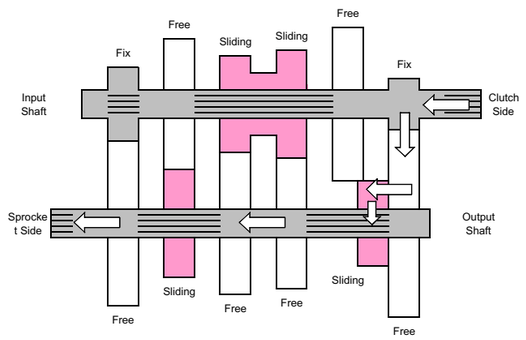
Summary - Gear Shifting in 6 Speed Gear Box of Pulsar 200



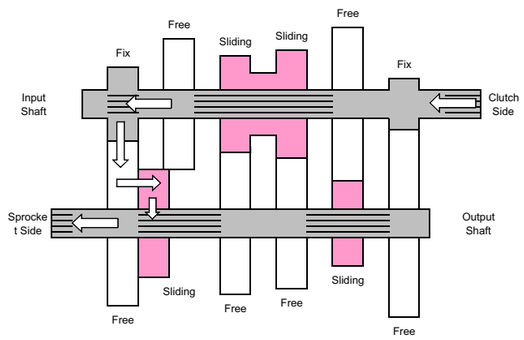
Power Flow in Neutral Position



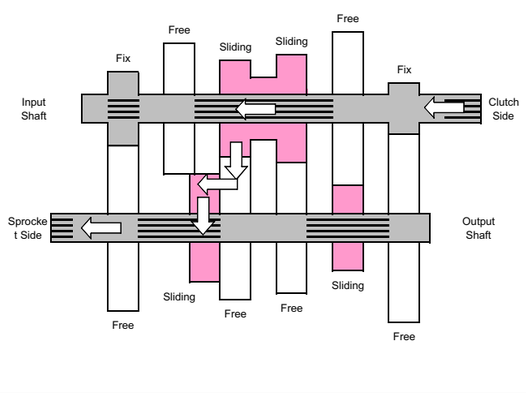
Power Flow in First Gear Position



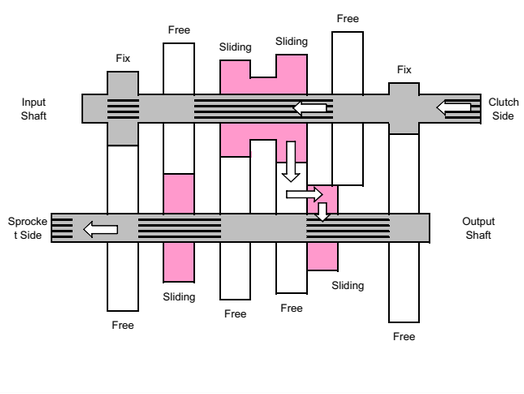
Power Flow in Second Gear Position



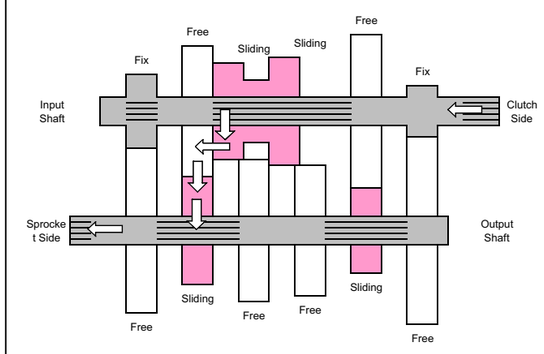
Power Flow in Third Gear Position



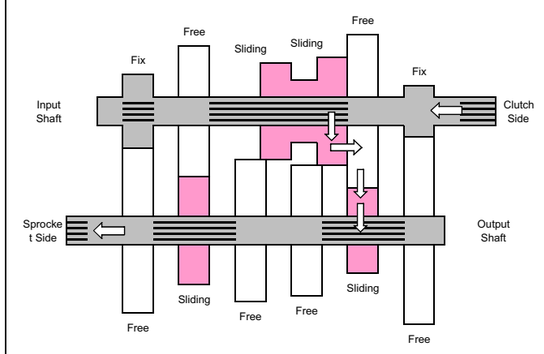
Power Flow in Forth Gear Position



Power Flow in Fifth Gear Position

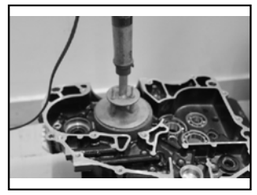


Power Flow in Sixth Gear Position

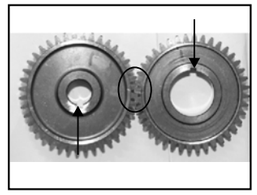


Skill Tips for Assembly

- During assembly, balancer gear shaft should be fitted from clutch side & ensure the bearing lock fitment.
- Always replace ‘O’ rings, oil seals, block, head & crankcase joining gasket whenever engine opening is carried out.
- While assembling always apply specified torque to engine components e.g. clutch nut, magneto nut, head bolts etc.
- Use lint free cloth.
- Crankshaft fitting : always use crankcase heater & heat RH crankcase area before fitting crankshaft.



- Match etching mark on balancer drive & driven gear.
- Key way position of balancer gear & drive gear should be directly opposite (180^0).



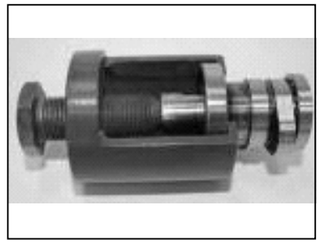
- Use plastic tray so that parts / color will not get damage.

Camshaft Big End Bearing Extractor

Part No. : 37 1042 57

Application :

For removing cam shaft big end bearing.



Crank Shaft remover

Part No. : 37 1042 52

Application :

For removing crank shaft assembly

Spark Plug Spanner 3 in one

Part No. : 37 1042 55

Application :

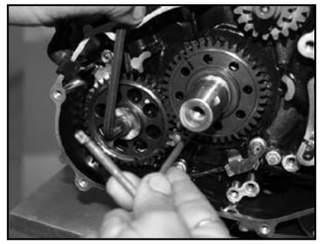
For removing LHS / RHS & Central plug from cylinder head while engine is mounted on vehicle

Primary Gear Holder + Balancer Drive Driven gear holder

Part No. : 3 70041 54

Application :

Special tool for holding Balancer drive & driven gears during tightening / Removing.

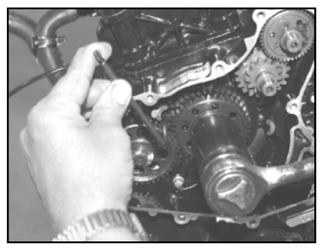


Balancer lock nut tightening/removing tool

Part No. : 37 0041 60

Application :

Special tool for Balancer lock nut (tightening / Removing) on Balancer drive gear



Balancer Bearing Extractor Tool

Part No. : 37 2240 16

Application :

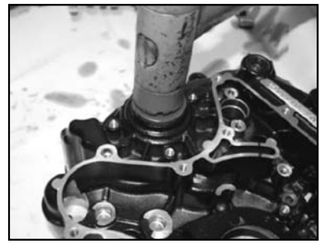
For removing balancer bearings.

Output shaft oil seal fitment tool

Part No. : 37 1041 56

Application :

For pressing oil seal on output shaft

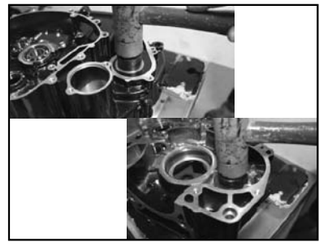


Balancer + Radiator pump oil seal fitment tool

Part No. : 37 0042 56

Application :

For fitting 2 nos back to back oil seals for balancer & Radiator pump

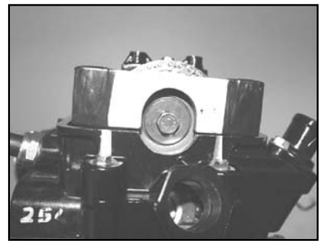


Cam Sprocket Holder

Part No. : 37 1042 54

Application :

For holding cam sprocket during removal & re-fitting of cam sprocket hex bolt.

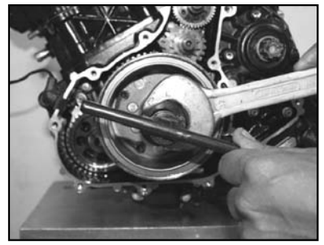


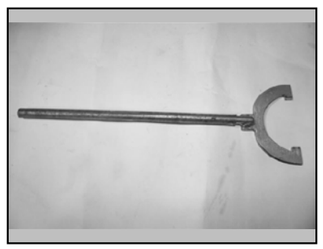
Magneto Rotor Puller

Part No. : 37 0041 55

Application :

For pulling out magneto rotor from crank shaft.



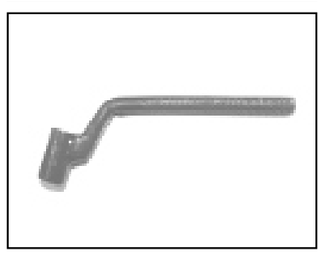


RSA Adjusting

Part No. : 37 0041 70

Application :

For adjusting required notch position of mono shock absorber.

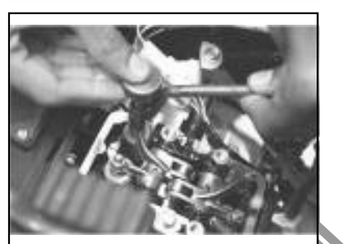


Tappet Adjuster Spanner Tool

Part No. : 37 2240 15

Application :

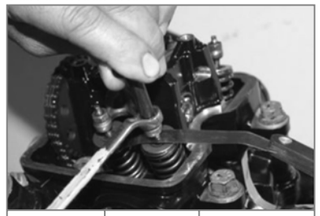
For adjustment of tappet clearance.



Compression Pressure

Std. Limit	11.0 ~ 13.0 kg/cm^2
Ser. Limit	9.5 kg/cm^2

Valve Clearance



	Intake	Exhaust
Std. Limit	0.05	0.08
Ser. Limit	—	—

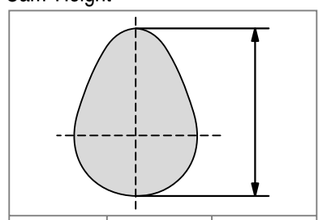
Rocker Arm Shaft Diameter

Std. Limit	9.0 mm
Ser. Limit	—

Cam Sprocket Diameter

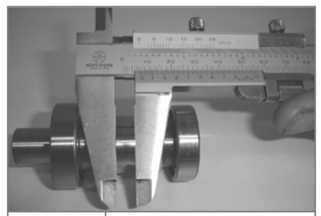
Std. Limit	65.52 mm
Ser. Limit	65.22 mm

Cam Height



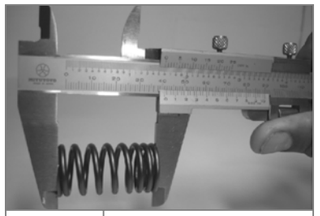
	Intake	Exhaust
Std. Limit	36.18	36.08
Ser. Limit	36.13	36.03

Cam Lobe Width



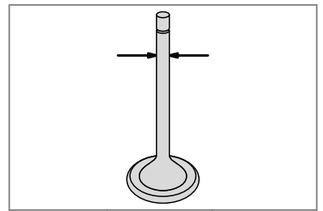
Std. Limit	9.0
Ser. Limit	—

Valve Spring Free Length



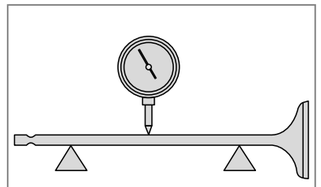
Std. Limit	38.51
Ser. Limit	37.7

Valve Stem Diameter



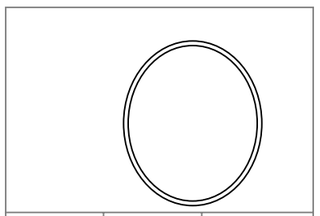
	Intake	Exhaust
Std. Limit	4.483 mm	4.463 mm
Ser. Limit	4.465 mm	4.445 mm

Valve Stem Bend



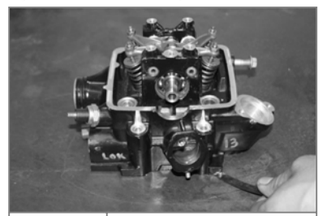
Std. Limit	TIR 0.01 mm
Ser. Limit	TIR 0.02 mm

Valve Stem to Guide Clearance



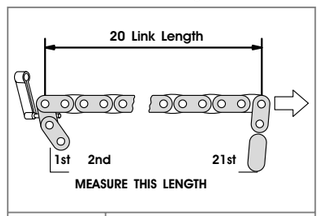
	Intake	Exhaust
Std. Limit	0.01~0.037	0.03~0.057
Ser. Limit	0.047 mm	0.067 mm

Cylinder Head Warp



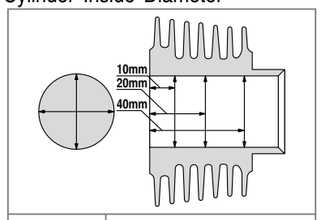
Std. Limit	0.05
Ser. Limit	—

Camshaft Chain Length



Std. Limit	127 ~ 127.48
Ser. Limit	128.9

Cylinder Inside Diameter

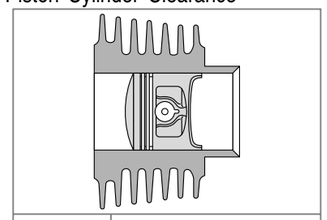


Std. Limit	72.006 ~ 72.013

Piston Diameter

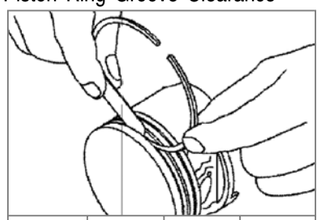
Std. Limit	71.97

Piston Cylinder Clearance



Std. Limit	0.02 ~ 0.04
Ser. Limit	0.06

Piston Ring Groove Clearance

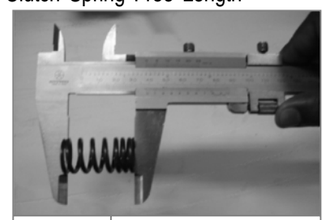


	Top	Second	Oil Ring
Std. Limit	0.020~0.055	0.02~0.060	0.035~0.110
Ser. Limit	—	—	—

Piston Ring End Gap

	Top	Second	Oil Ring
Std. Limit	0.015~0.030	0.030~0.050	0.20~0.70
Ser. Limit	—	—	—

Clutch Spring Free Length

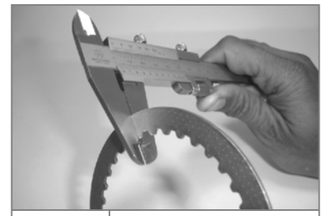


Std. Limit	38.4
Ser. Limit	37.3

Friction Plate Thickness

Std. Limit	3.0
Ser. Limit	2.8

Steel Plate Thickness

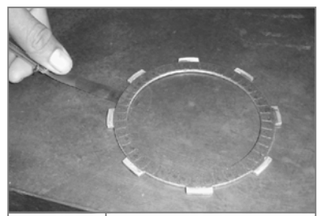


Std. Limit	1.6
Ser. Limit	—

Steel Plate Warp

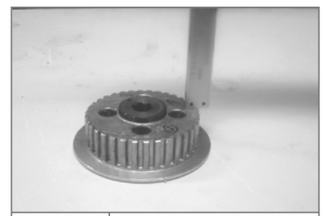
Std. Limit	0.1
Ser. Limit	—

Friction Plate Warp



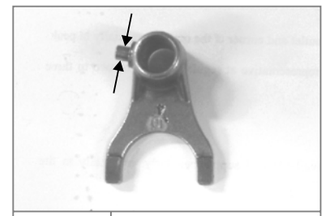
Std. Limit	0.1
Ser. Limit	—

Clutch Hub Height



Std. Limit	21.0 ~ 21.2
Ser. Limit	21.4

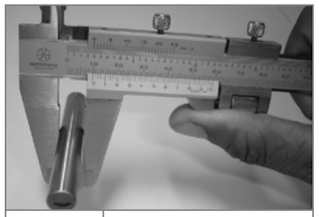
Shift Fork Guide Pin Diameter



Std. Limit	4.45 ~ 4.49
Ser. Limit	4.4

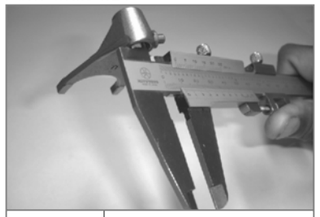
SERVICE LIMITS - ENGINE

Shaft Fork Shift O.D.



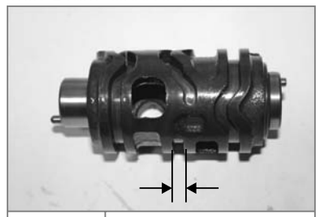
Std. Limit	11.966 ~ 11.984
Ser. Limit	—

Fork Shift I.D.



Std. Limit	12.0
Ser. Limit	—

Shift Drum Groove Width



Std. Limit	4.55 ~ 4.70
Ser. Limit	4.75

Crankshaft Run Out

Std. Limit	0.02
Ser. Limit	—

Con Rod Side Clearance

Std. Limit	—
Ser. Limit	—

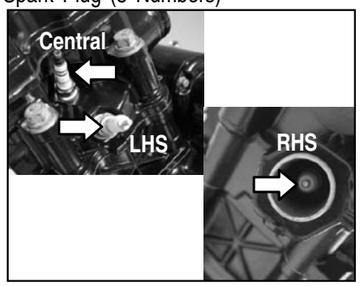
Clutch Stackup Height

Std. Limit	22.17 ~ 21.57
Ser. Limit	20.3

ALL DIMENSIONS ARE IN MM

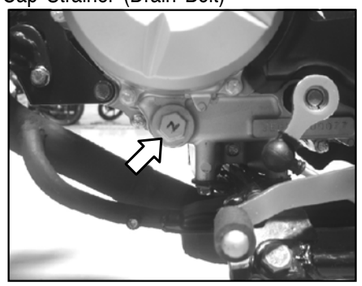
TIGHTENING TORQUES - ENGINE

Spark Plug (3 Numbers)



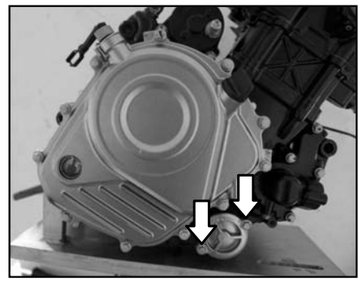
1.3 ~ 1.5 kgm

Cap Strainer (Drain Bolt)



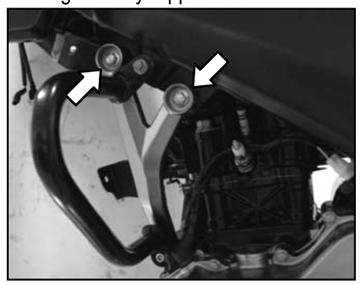
0.9 ~ 1.1 Kgm

Oil Filter Cover Bolt



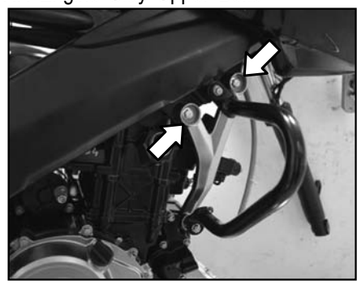
1.0 ~ 1.2 Kgm

LH Engine Stay Upper Bolts



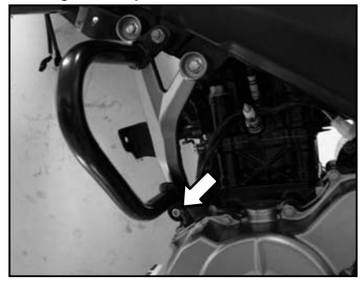
2.5 ~ 2.7 Kgm

RH Engine Stay Upper Bolts



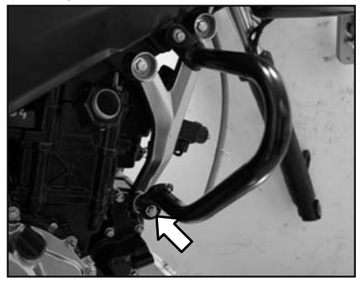
2.5 ~ 2.7 Kgm

LH Engine Stay Lower Nut



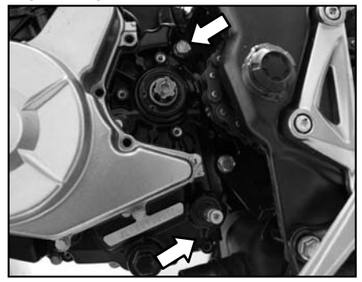
2.5 ~ 3.0 Kgm

RH Engine Stay Lower Bolt



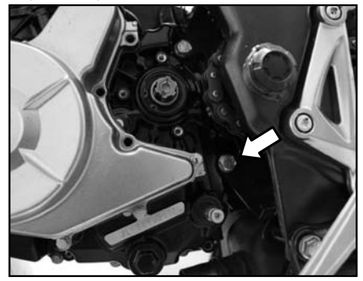
2.5 ~ 3.0 Kgm

Engine mtg. Rear Upper Bolt



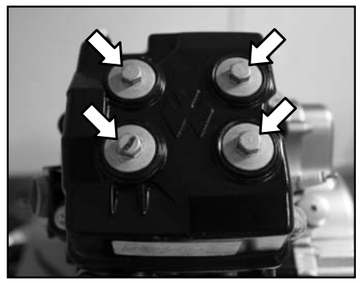
2.5 ~ 3.0 Kgm

Engine mtg. Rear Lower Bolt



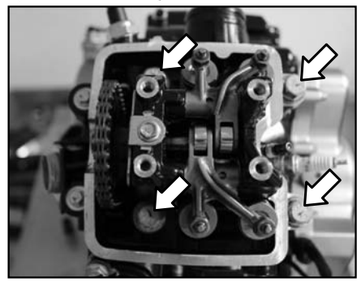
2.5 ~ 3.0 Kgm

Cylinder Head Cover Bolts



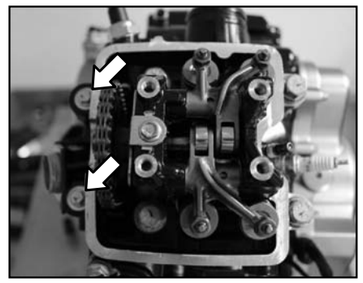
1.0 ~ 1.2 Kgm

Cylinder Head Big Bolts



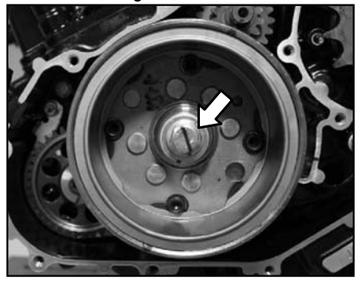
4.5 ~ 4.8 Kgm

Cylinder Head Small Bolts



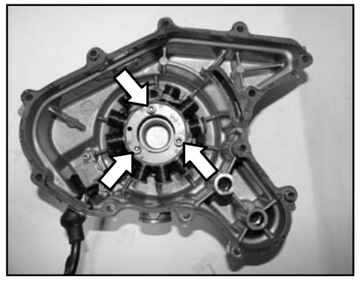
1.0 ~ 1.2 kgm

Rotor Mounting Nut



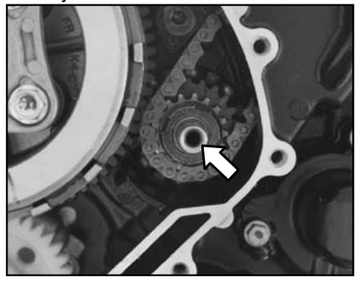
5.9 ~ 6.1 kgm

Stator Plate Bolts



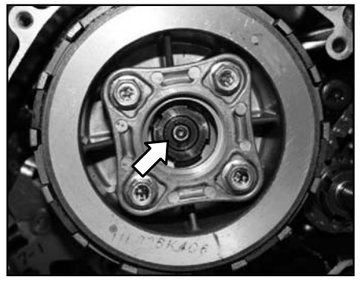
0.7 ~ 0.8kgm

Primary Gear Nut



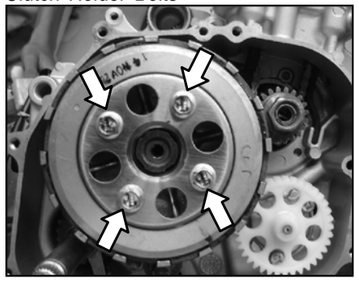
5.9~6.1 kgm

Clutch Nut



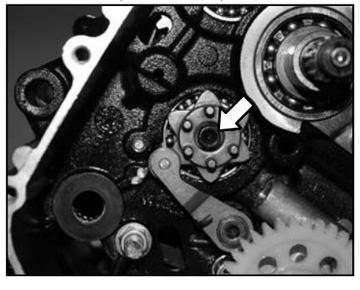
7.0 ~ 7.1 kgm

Clutch Holder Bolts



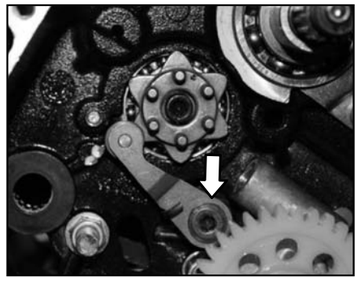
1.1 ~ 1.0 Kgm

Guide Gear (Drum Cam) allen Bolt



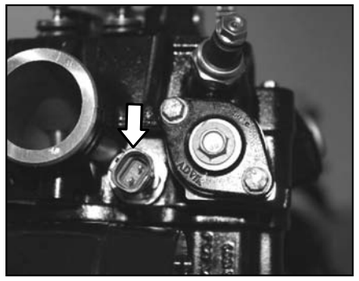
1.0 ~ 1.2 Kgm

Inhibitor bolt



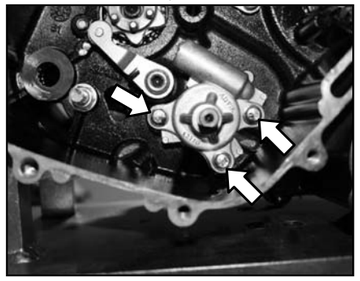
1.0 ~ 1.2 Kgm

Coolant Temperature sensor



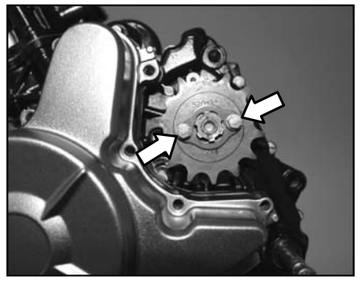
1.2 ~ 1.4kgm

Oil Pump Mounting Bolts



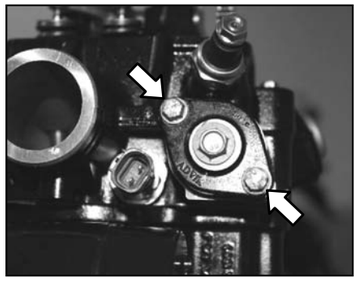
1.0 ~ 1.2 Kgm

Output Sprocket Bolts



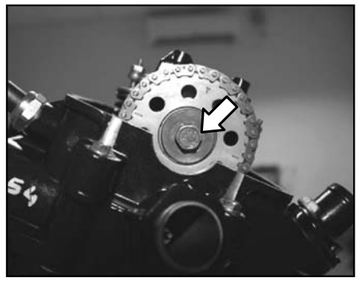
1.0 ~ 1.2 Kgm

Chain Tensioner Mounting Bolts



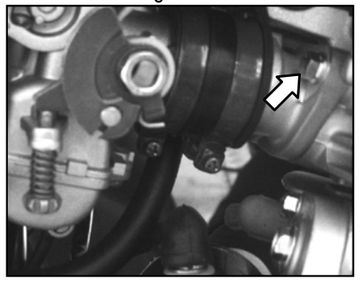
1.0 ~ 1.2 Kgm

Cam Sprocket Hex Bolt



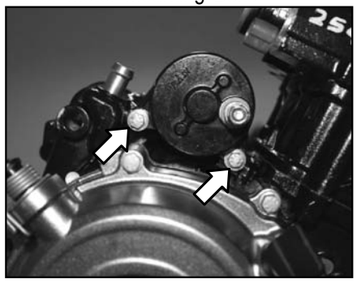
2.5 kgm

Manifold Mounting Bolts



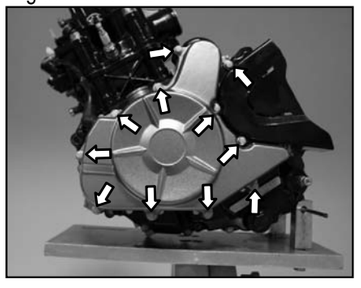
0.9 ~ 1.1 Kgm

Starter Motor Mounting Bolts



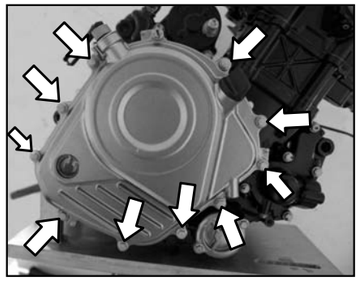
1.0 ~ 1.2 Kgm

Magneto Cover Bolts



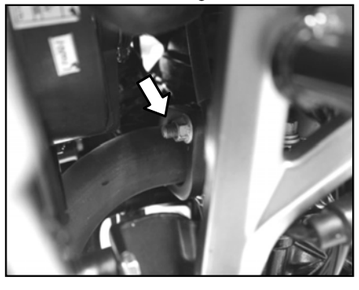
1.0 ~ 1.2 Kgm

Clutch Cover Bolts



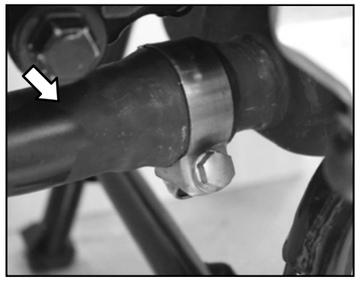
1.0 ~ 1.2 Kgm

Silencer Mouth Holding Bolts



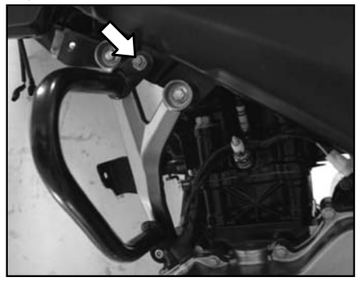
0.8 Kgm

Silencer Joint Nut



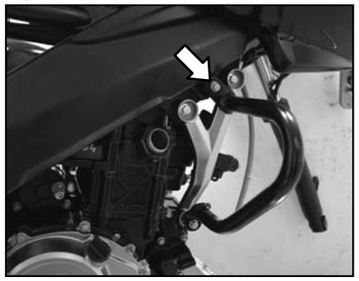
1.0 ~ 1.2 Kgm

Leg Guard Top Bolt LHS



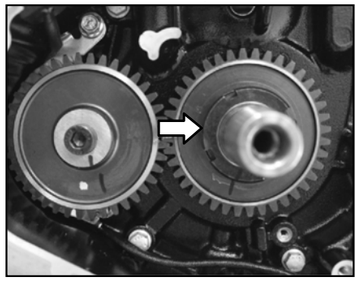
1.0 ~ 1.2 Kgm

Leg Guard Top Bolt RHS



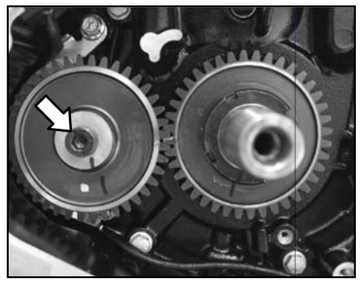
1.0 ~ 1.2 Kgm

Balancer Drive Gear Special Nut



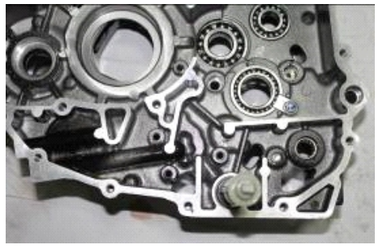
5.9 ~ 6.0 Kgm

Balancer Driven Gear Allen Bolt



2.2 ~ 2.5 Kgm

Oil Sump



Oil Strainer

Oil Pump Inlet

Oil Pump Outlet

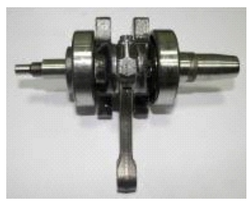
Relief Valve

Paper oil filter

Clutch Cover

Magnet Side Crankcase

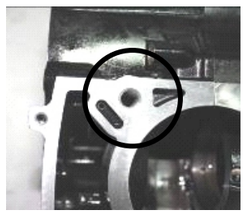
Crankshaft



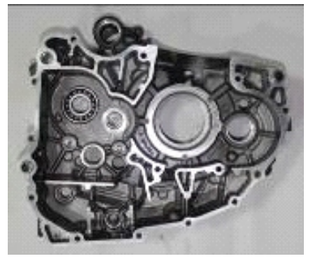
Clutch cooling nozzle

Crank Case (Clutch)

Head (Camshaft)



Magnet Side Crankcase



Input Shaft (Rotating Gear)

Output Shaft (Rotating Gear)

Piston Cooling nozzle

Cooling System consists of following parts :

a. Radiator :

Radiator is a type of heat exchanger. It is design to transfer heat from hot coolant that flows through it to the air blown over it by the fan. The coolant flows from the inlet to the outlet though many tubes mounted in a parallel arrangement. The fins conduct the heat from the tubes & transfer it to the air flowing over the radiator.

b. **Thermostat :**

The function of thermostat is to regulate flow of coolant coming from radiator to engine. Thus it keeps the engine at a operating temperature.

Working : It blocks flow of coolant to radiator until the engine has warmed up when the engine is cold no coolant flows through the radiator. Thermostat start opening at $88^0C \pm 2^0C$ & fully open at $96^0C \pm 2^0C$

Thermostat reduces engine wear deposits & emissions by allowing it to warm up as quickly as possible.

c. **Radiator Hose :**

For carrying coolant from radiator to pump & engine to radiator.

d. **Radiator Clamps :**

For firm fitting of radiator hose. These clamps have a specific location marked by white color (3 mm below open end) on hose pipe. Always ensure to fix new clamps at same location otherwise these may crack & coolant leakage may occur.

e. **Reservoir Tank (Expansion Tank) :**

This is a see through plastic container that can be seen mounted in to the overflow tube from the radiator. This is a addition tank for supply of coolant to the radiator. The coolant in the engine expands as the engine heats up instead of dripping out of the overflow tube on to the ground & being lost out of the system the coolant flows in to the expansion tank when the engine cools a vacuum is created in the cooling system. The vacuum sucks some of the coolant back into the radiator from the expansion tank.

f. **Fan Motor :**

For cooling of radiator coolant.

g. Radiator Cap :

- Radiator Cap pressurizes the system. This is a special cap & contains 2 nos. inbuilt valves.
- Pressure valve opens at 1.4 Kg/cm^2 & allows the coolant to flow to reservoir.
- Vacuum valve opens when engine cools down & allows the coolant to flow to pump.

Function of Cooling System : Quick warm up of engine & control of engine temperature.

Coolant Quantity : 1000 ml. (750 to 780 ml. in radiator & 220 to 230 ml. in reservoir)

Coolant required for drain & refill : 1000 ml.

Recommended coolant :

- Radicool from Castrol
- Motul - Green colour ready to use

Coolant Properties & Precautions :

- **Danger of scalding :** During motorcycle operation, the coolant gets very hot and is under pressure. Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.
- **Danger of poisoning :** Coolant is poisonous and causes health hazard. Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.

☑ Dos

- Top up coolant through reservoir cap.
- Top up quantity should be less than 200ml. if more quantity of coolant is required to be filled it means air bleeding is required.
- Park the vehicle upright while checking coolant level.
- Coolant level should be between min. & Max. marks of reservoir tank.
- Always replace coolant with recommended brand only Radicool from Castrol, or Motul - Green colour ready to use.
- Check coolant level in engine cold condition only.
- Use nitrile rubber hand glows while draining & refilling coolant
- Always replace copper washer of drain plug at every opening
- While draining coolant follow sequence as follows.
- Engine must be in cold condition.
- Drain coolant from radiator & system through drain plug.
- Drain coolant from reservoir tank.
- Carry out repairs at authorized dealership only.

☒ Don'ts

- Do not top up coolant through radiator cap.
- Do not check coolant level while vehicle is parked on side stand.
- Do not open radiator cap in hot condition.
- Do not drain coolant through pump inlet hose connection.
- If coolant alarm icon is glowing in speedometer then do not drive the vehicle.
- Do not re-use drain plug copper washer.
- Do not carry out any repairs through local garage.

Cooling System Control :

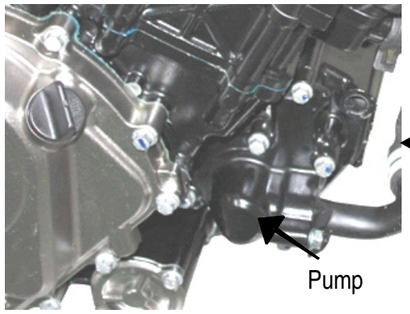
- Thermostat operating start at $88^0C \pm 2^0C$ & fully open at $96^0C \pm 2^0C$.
- Fan motor starts at 98^0.
- Fan motors stops at 92^0.
- Alarm icon glows in speedo console at 115^0.

Thermostat Checking SOP :

Wax type thermostat opening can be checked by inserting in hot water or hot oil.

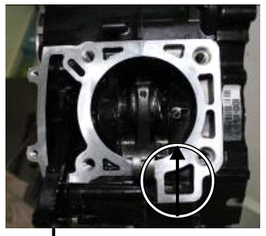
Thermostat opening starts at $88^0C \pm 2^0C$

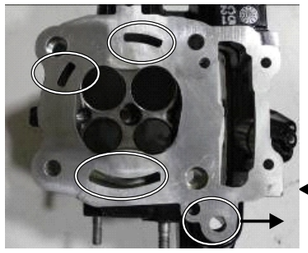
Thermostat is fully open at $96^0C \pm 2^0C$



Pump

Cylinder block passage
(Through Clutch side crankcase)





Cylinder Head

Thermostat valve

Coolant Temp
Less than 88°C

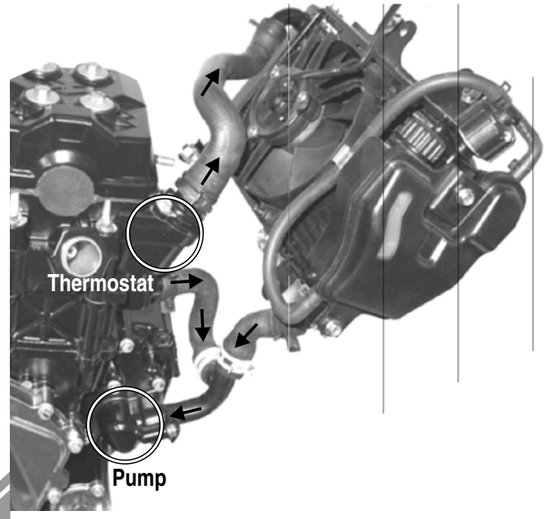
Coolant Temp
more than 88°C

Pump through Bypass pipe

Radiator LHS Top

Radiator RHS Bottom

Pump



Faults	Possible Cause	Action
Engine overheats	Too little coolant in cooling system	Check the cooling system for leakage. Check & top up the coolant level.
	Radiator fins very dirty	Clean the radiator fins.
	Foam formation in cooling system	Drain the coolant Fill/bleed the cooling system
	Thermostat defective	Check the thermostat.
	Fuse blown	Change the fuse.
	Radiator relay defective	Check & replace
	Radiator fan motor defective	Check & replace
	CDI defective - radiator relay circuit failure.	Check & replace
Coolant temperature icon glowing in speedometer	Fan motor not running even in engine hot condition.	Check supply to fan motor. If OK, replace fan motor. If not OK, check radiator relay / CDI
Radiator fan motor running continuously	Radiator relay stuck up	Check & replace
Coolant colour blackish	Engine oil mixed with coolant	• A bad shaft seal will allow coolant to dribble out of the vent hole just under water pump shaft. • Defective gasket or 'O' ring sealing pump to engine front cover can also leak coolant. • Always replace block, head & crankcase joining gasket whenever engine opening is carried out.
Frequent drop in coolant level	Radiator cap defective	Check & replace
Coolant mix in engine oil	Gasket not sealing	Replace gaskets & coolant pump seals

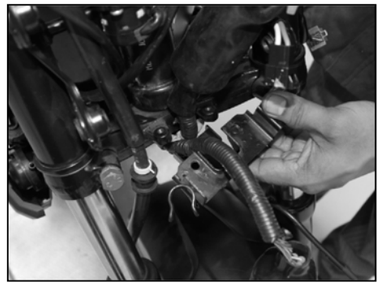
Steering Overhaul

- Remove Petrol tank cover & petrol tank

- Remove 4 allen bolts of Head lamp assembly.

- Pull out Head Lamp assembly & disconnect the couplers.

- Take out H/L assembly with speedometer



- Remove harness & brake hose clamping bracket

- Remove Front caliper assembly

- Remove Front Axle

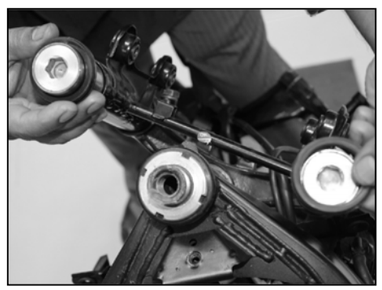
- Remove Front wheel assembly

- Remove front fender.

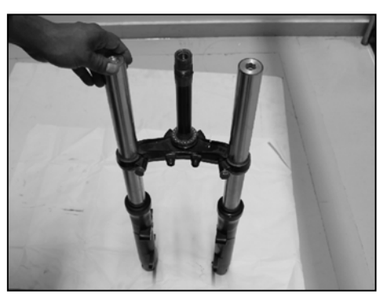
- Loosen upper bracket Allen bolts 2 nos.

- Remove fork central bolt.
- Lift handle bar assembly to right side

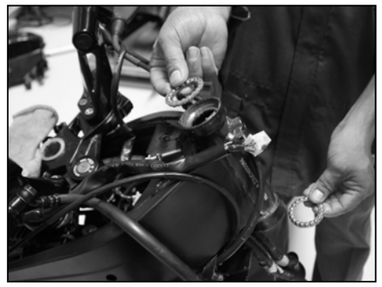
- Remove slotted nut



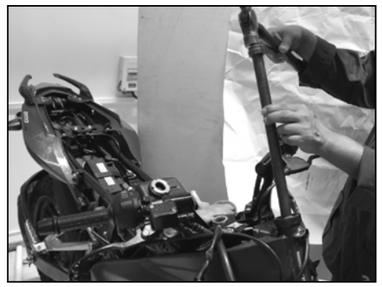
- Remove 2 dust seal.
- Remove head light support bracket.



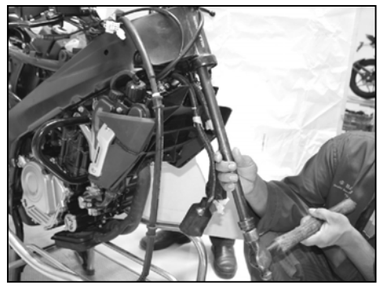
- Take out front fork assembly

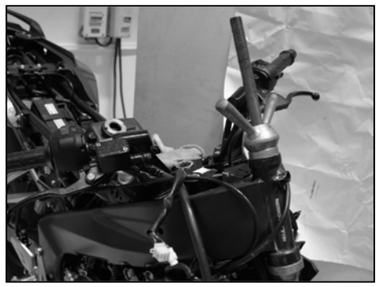


- Remove upper & lower steering ball cage.



- Remove upper & lower cones by using Cone removal tool.





- Fit the upper & lower cones by using special tools.

- Carry out greasing / steering ball replacement activity (Use RR3 grease).
  - Upper race 19 balls
  - Lower race 20 balls

Swing Arm Overhaul

- Remove cover mud flap (2 nos. Allen bolt by 5mm Allen key)

- Remove rear axle nut 22 nos. with washer

- Remove the hose pipe cover & remove hose pipe from clamp

- Remove rear caliper assembly complete

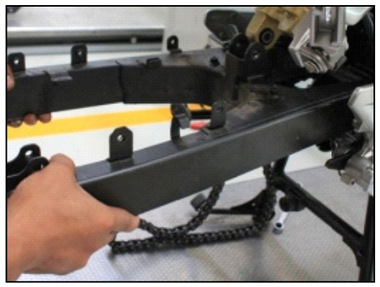
- Remove the chain cover assembly with saree guard.

- Remove the muffler top & bottom mounting from LHS & RHS & take out muffler assembly.

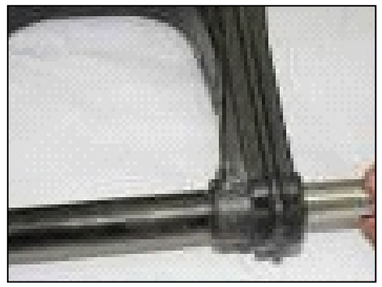
- Remove rear axle & take out rear wheel assembly

- Remove mono shock absorber bottom Allen bolt.

- Remove swing arm / pivot cap & loose the nut



- Take out axle & swing arm from vehicle



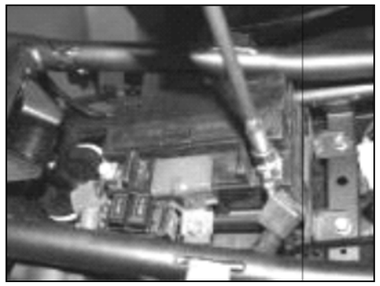
- Remove sleeve from RHS & LHS & spacer chain adjuster, coil seal.

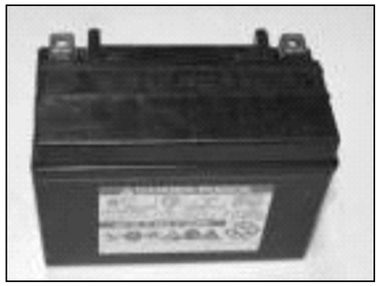
- Remove needle bearing by using special tool (Part No. 74 9309 93)

- Fit new needle bracket with special tools.

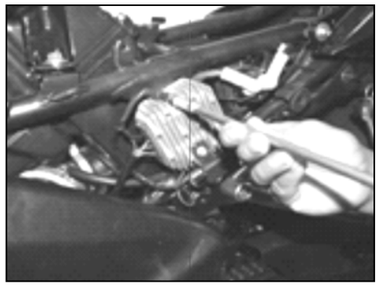
Removal of Rear Suspension

- Remove Pillion & Rider Seat
- Disconnect Battery Terminals

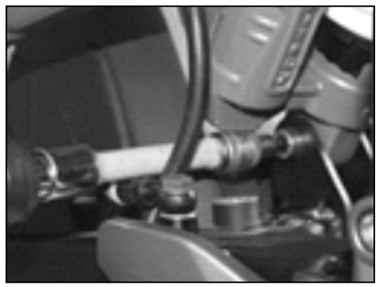




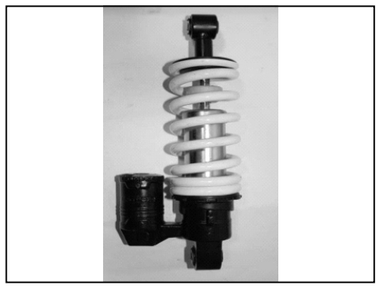
- Remove Battery
- Remove Battery Bracket



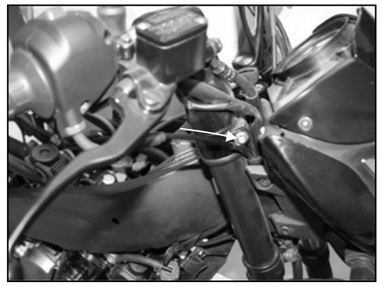
- Remove RR Unit
- Remove RSA top Allen bolt



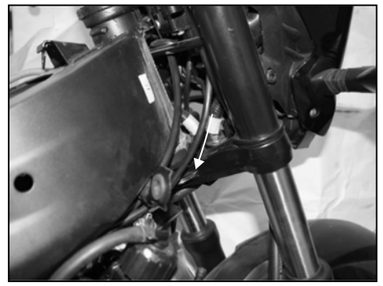
- Remove RSA lower Allen bolt
- Pull out RSA



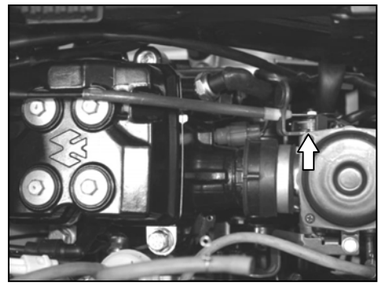
Accelerator Cable Routing



- Route the accelerator cable as shown in photograph between right fork leg & chassis member.

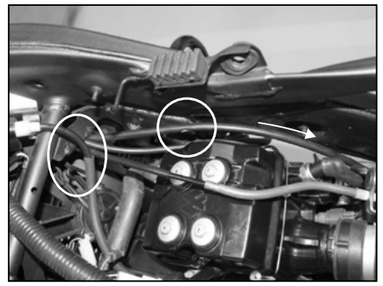


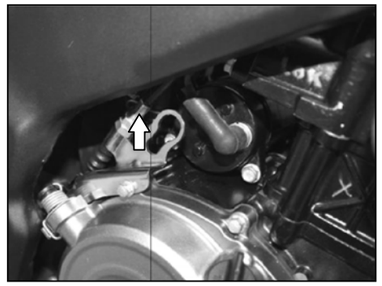
- Route the cable above cylinder head cover shown in photograph.
- Clamp the cable in hook / bracket provided on carburettor.
- Connect the cable at carburettor end.



Clutch Cable Routing

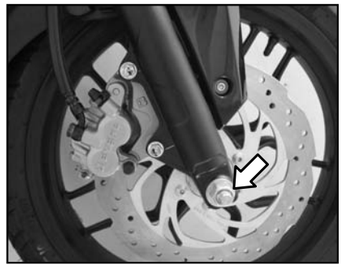
- Route the clutch cable as shown in photograph-1.
- Route the clutch cable through the clamp welded on RHS of chassis.





- Route the clutch cable through clutch cable bracket mounted on clutch cable.

Front Axle Nut



9.0 ~ 10. Kgm

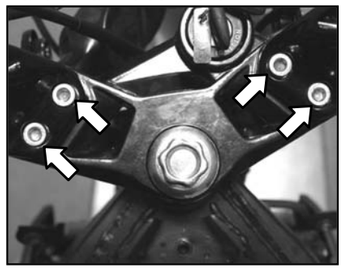
Rear Axle Nut

10.0 ~ 12.0 Kgm

Rear Sprocket Mounting Nut

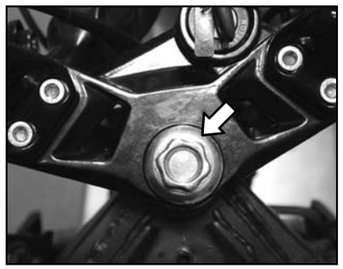
3.2 ~ 3.8 Kgm

Handle Bar Holder Bolts



1.8 ~ 2.0 Kgm

Fork Center Nut

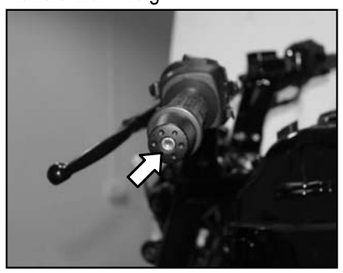


4.8 ~ 5.2 Kgm

Steering Stem Nut Slotted

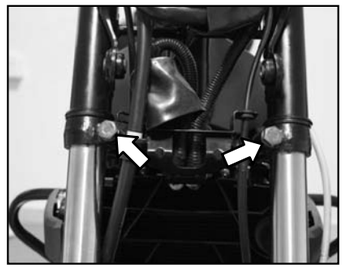
0.5 Kgm

Handle Bar Weight



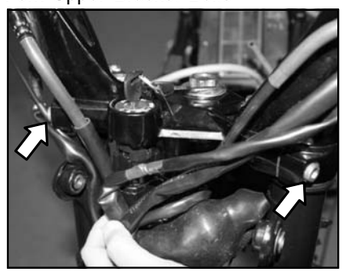
0.8 ~ 1.2 Kgm

Fork Under Bracket Bolts



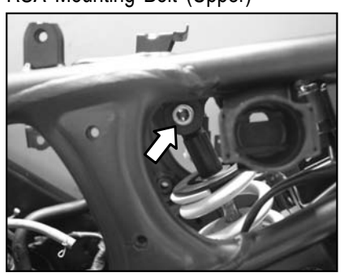
2.5 ~ 3.0 Kgm

Fork Upper Bracket Bolts



1.8 ~ 2.0 Kgm

RSA Mounting Bolt (Upper)

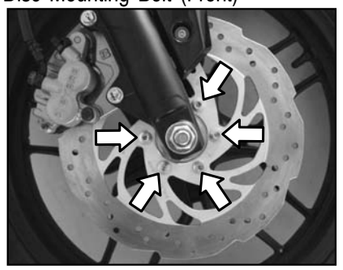


3.2 ~ 3.8 Kgm

RSA Mounting Bolt (Lower)

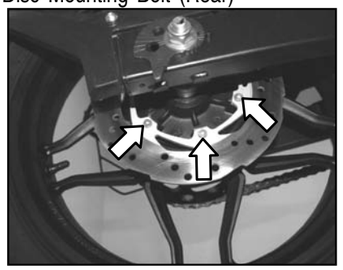
3.2 ~ 3.8 Kgm

Disc Mounting Bolt (Front)



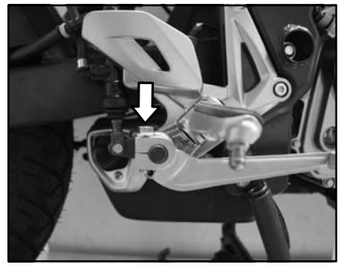
2.6 ~ 3.2 Kgm

Disc Mounting Bolt (Rear)



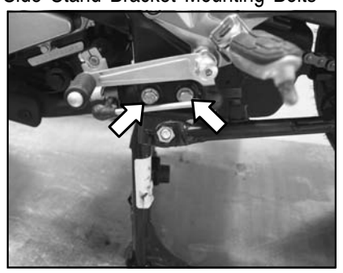
2.6 ~ 3.2 Kgm

Rear Brake Pedal Bolt



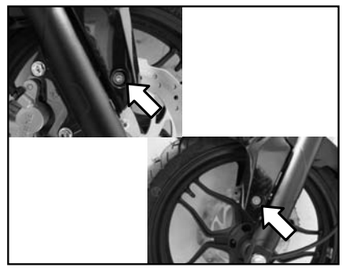
2.0 ~ 2.2 Kgm

Side Stand Bracket Mounting Bolts



1.8 ~ 2.2 Kgm

Front Fender

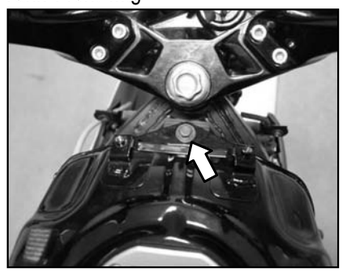


0.8 - 1.0 Kgm

Side Stand

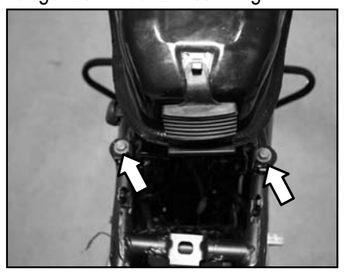
2.5 - 3.0 Kgm

Tank Front Mtg



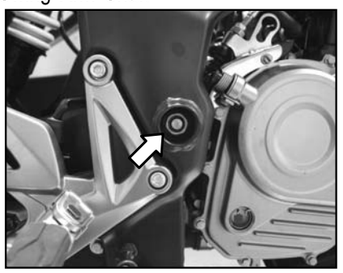
1.8 - 2.2 Kgm

Flange Bolt - Tank Rear Mtg



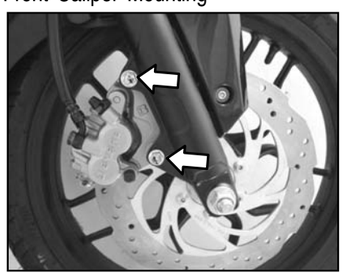
1.8 - 2.2 Kgm

Swing Arm Shaft



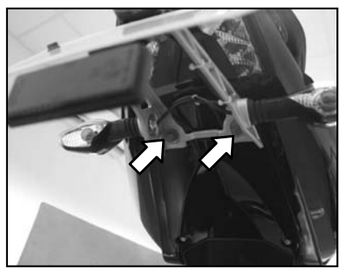
13.0 ~ 15.0 Kgm

Front Caliper Mounting



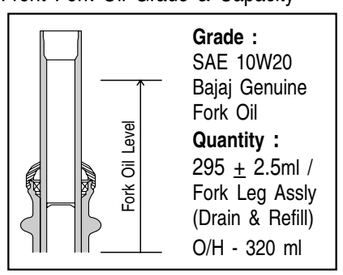
2.2 - 2.8 Kgm

Bracket Rear No. Plate



1.8 - 2.2 Kgm

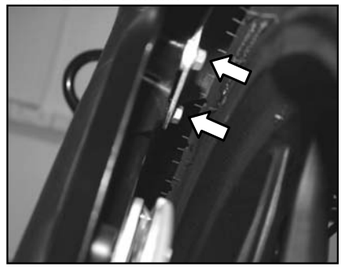
Front Fork Oil Grade & Capacity



Grade :
SAE 10W20
Bajaj Genuine
Fork Oil
Quantity :
295 ± 2.5ml /
Fork Leg Assly
(Drain & Refill)
O/H - 320 ml

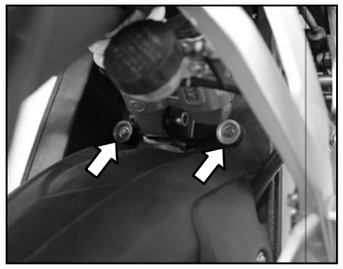
TIGHTENING TORQUES - FRAME

Front Brace Fender



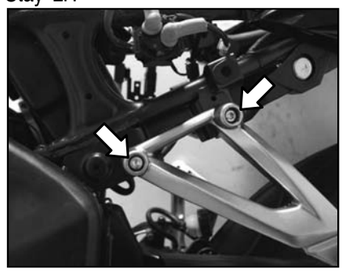
1.8 - 2.0 Kgm

Fender Rear Front



0.8 - 1.0 Kgm

Stay LH



1.8 ~ 2.2 Kgm

Stay RH

1.8 ~ 2.2 Kgm

Grease Application Points		
S.N.	Vehicle Component	Type of Grease
1.	Bearing balls of steering	HP Lithon RR3 grease
2.	Swing arm shaft	Multi purpose grease
3.	Front wheel axle	
4.	Rear wheel axle	
5.	Brake pedal pivot	
6.	Center stand shaft	
7.	Side stand 'U' bracket	
8.	Gear shifter lever pivot	

Loctite Applications		
S.N.	Vehicle Fastener	Type of Loctite & Loctite Colour
1.	Rider step mtg. bolts	243 Dark Blue colour
2.	RSA lower bolt	

Engine Mounting Bolt Tightening Torque

LH Engine Stay Upper Bolts

2.4 ~ 2.6 Kgm

RH Engine Stay Upper Bolts

2.4 ~ 2.6 Kgm

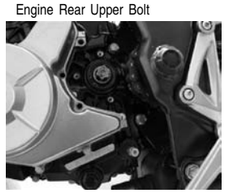
LH Engine Stay Lower Nut

3.4 ~ 3.6 Kgm

RH Engine Stay Lower Bolt

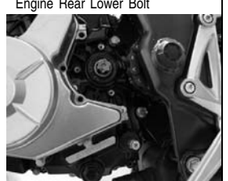
3.4 ~ 3.6 Kgm

Engine Rear Upper Bolt



2.5 ~ 3.0 Kgm

Engine Rear Lower Bolt



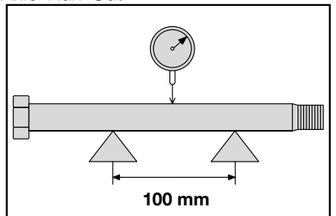
2.5 ~ 3.0 Kgm

SERVICE LIMITS - FRAME

Disc Pad

Front Disc Pad	Rear Disc Pad	
		
Std. Limit	Front : 7.4	Rear : 7.3
Ser. Limit	Front : 3.8	Rear : 2

Axle Run Out

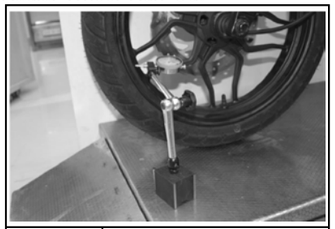


Std. Limit	TIR 0.1 or Less
Ser. Limit	TIR 0.2

Axial Wheel Run Out

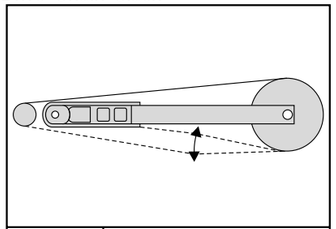
Std. Limit	TIR 1.0 or Less
Ser. Limit	TIR 2.0

Radial Wheel Run Out



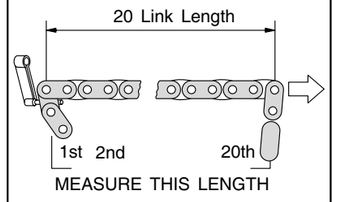
Std. Limit	TIR 0.8 or Less
Ser. Limit	TIR 2.0

Drive Chain Slack



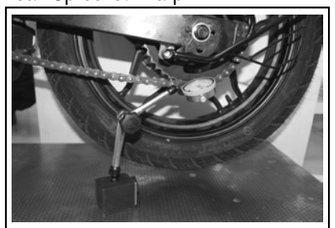
Std. Limit	15 ~ 25
Ser. Limit	30 ~ 40

Drive Chain Length



Std. Limit	301.6 ~ 302.1 (19 link)
Ser. Limit	307

Rear Sprocket Warp

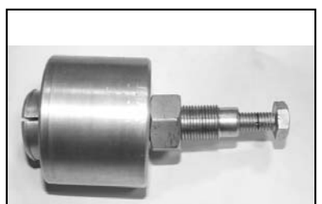


Std. Limit	TIR 0.4 or Less
Ser. Limit	0.5

Tyre Tread Depth

Std. Limit	Front : 5.0	Rear : 6.0
Ser. Limit	Upto TWI 1.0	

EXCLUSIVE SPECIAL TOOLS - FRAME



Front fork oil seal & antifriction bush extractor tool

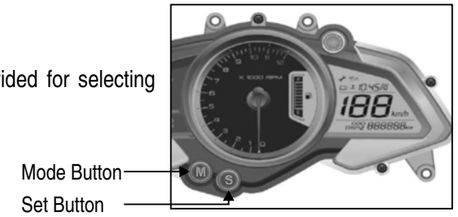
Part No. : 37 0041 83

Application :

For removing oil seal & antifriction bush from front fork.

Clock Setting in Speedometer

- Digital clock indicates time in HR : MM
- Initially ':' will be blinking
- Clock setting is possible in TRIP 1 mode only. Mode push button is provided for selecting 'ODO/TRIP1/TRIP2'



1	Press mode push button for less than 2 sec.	TRIP1 Mode selected
2	Press mode & set push button together for more than 2 sec.	':' stops blinking & digits starts blinking
3	Press mode button for less than 1 sec.	Hour digits will increases by one.
4	Press set button for less than 1 sec.	Minutes digits will increases.
5	Press mode & set button together for more than 2 sec.	Set value will be saved Exit clock setting mode Digits stop blinking & ':' start blinking
6	Clock set mode is selected & no editing is carried out for more than 5 sec.	Auto exit without saving set value. If engine / vehicle rpm is given then system will exit from clock set mode without saving set value.

Note : Incase battery connection get disconnected you have to reset the clock.

Service Reminder icon resetting

'Wrench' symbol glows when ODO meter reading reaches to set Kms.

Mode push button is provided for selecting 'ODO/TRIP1/TRIP2' & Set Push button for resetting the values.

1	Press mode push button for less than 2sec. & select TRIP2.	TRIP2 Mode selected
2	Press Mode & Set button for more than 5 sec. continuously.	Service reminder icon will be reset.

Trip meter resetting

'Wrench' symbol glows when ODO meter reading reaches to set Kms.

Mode push button is provided for selecting 'ODO/TRIP1/TRIP2' & Set Push button for resetting the values.

1	Press mode push button for less than 2 sec.	Mode changes from ODO/TRIP1/TRIP2
2	Press Set button for more than 5 sec.	Selected mode TRIP1/TRIP2 will reset. Other TRIP mode will continued to update.
Note: Engine & Vehicle speed should be zero.		

Battery Technical Specification

• Make	Exide
• Voltage	12 Volt
• Type	VRLA Battery
• Capacity	8 Ah
• Charging current specification	4.0 Amp
• Charging voltage specification	14.5 ± 0.1 V

Battery Features

- Top up not required.
- Low self discharge.
- Totally maintenance free.
- No possibility of spillage of electrolyte.
- Enhanced safety
- Compact design & High efficiency.

Checking Condition of Battery

For checking condition of VRLA battery, a new load tester as per following specifications is to be used :

Make **Midtronics**

Model **PBT50**

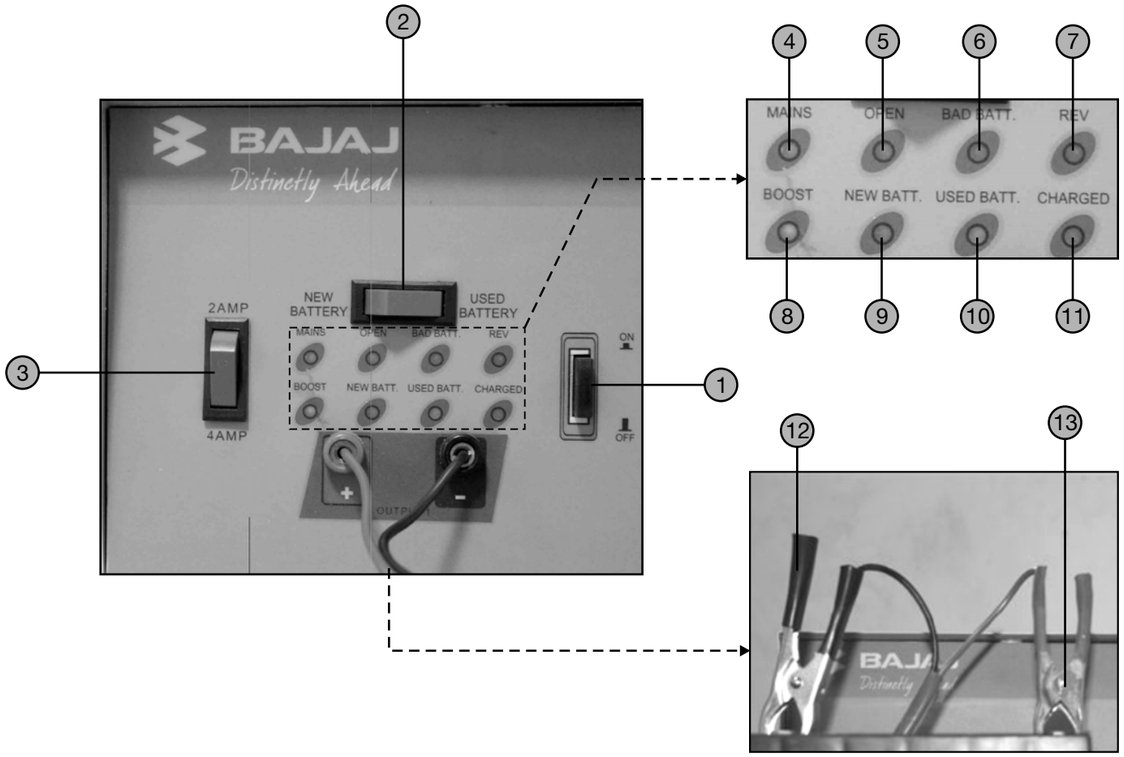
Procedure for checking battery condition

- Disconnect battery +ve & -ve terminals.
- Confirm battery type & reference no.
- Connect load tester's Red & Black cable to battery +ve & -ve terminal respectively.
- Press test button.

LED Indication	Status	Result	Action
Green LED glowing	OK	Battery is fully charged	Battery can be used on the vehicle.
Green & Yellow LED glowing	OK / LOW	Battery is partially discharged.	Charge the battery on Metafab battery charger
Yellow LED glowing	LOW	Battery is discharged & needs charging	Charge the battery on Metafab battery charger
Red LED glowing	✗	Not OK	• Try charging on Metafab charger.
			• Observe for half an hour if charger gives indication of 'bad battery', then discontinue charging and scrap the battery.
			• If there is no bad battery indication then continue charging till charging is over.
			• Again test battery condition using PBT 50 load tester. If result is OK, then put the battery on vehicle.

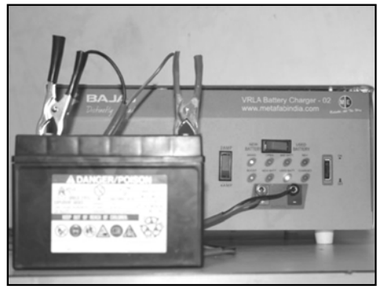
Note : Do not use Teknikraft make Battery load tester for testing load condition of VRLA battery. It may give wrong results.

Metafab VRLA Battery Charger Indication Display



1. On / off Switch
2. New battery / use battery switch
3. 2Amp/4Amp current selection Switch
4. Main power supply indication light (Green)
5. Open circuit indication light (Red)
6. Bad battery indication light (Red)
7. Reverse polarity indication light (Red)
8. Boost indication light (White)
9. New battery indication light (Yellow)
10. Use battery indication light (Blue)
11. Charged indication light (Green)
12. -ve terminal (Black)
13. +ve terminal (Red)

Battery Charging Procedure for Metafab make VRLA Battery Charger



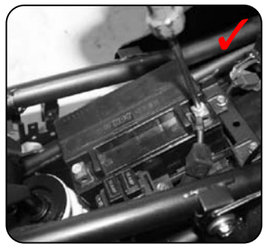
Charging SOP	Refer Charger Photo
Remove battery from vehicle & Clean battery thoroughly.	—
Connect battery charger to 230 V AC single phase power supply & switch on the button of main supply.	—
Connect battery charger leads to battery terminals. Red lead to +ve terminal & Black lead to -ve terminal.	13 12
Switch on the battery charger main switch. Green LED will glow.	4
If Red LED glows it indicates reverse polarity connection.	7
Select charging current 2 Amps or 4 Amps. ***(2 Amps for 3 Ah / 4 Ah / 5 Ah VRLA batteries, 4 Amps for 6 Ah / 8 Ah / 10 Ah VRLA batteries).***	3
Select & press the charging switch for new battery or use battery (Green & Blue LED glow for new & use battery)	2 4 10
If Red LED blinks it indicates open circuit situation.	5
Battery charger detects the battery voltage. If it is less than 5 volts it will switch over to Boost charging mode White LED below the “Boost” will glow	8
Battery charger detects battery voltage after every 3 minutes. If voltage increases above 5 volts it switches over to selected charging mode ie NEW / USED.	9 10
Charging duration in this mode is 30 minutes. If the battery voltage is less than 5 volts after 30 minutes a Red LED indicating a bad battery will glow. This indicates the battery is not suitable for charging.	6
If battery charger is switches to NEW/USED charging mode, the battery would undergo charging for 5 to 14 hours depending on battery condition.	—
After completion of battery charging a Green LED will glow to indicate completion of charging.	11
Switch off the main switch and disconnect the battery from the charger	—
Reconnect the battery terminals on vehicle.	—
Apply petroleum jelly to battery terminals.	—

Note : During charging if the battery is disconnected, an audio indicator will beep for 2 minutes with a Red LED blinking to indicate open circuit situation.

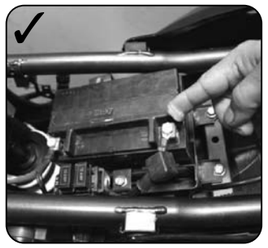
☑ Dos

- Use midtronics makes battery load tester for checking battery charge condition.

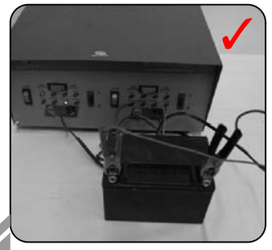
- Check open circuit voltage by multi meter.



- Use philips head screw driver / T spanner for removing battery connection.

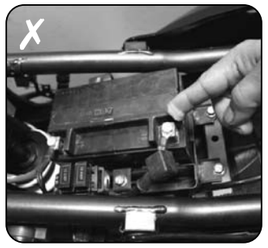


- Apply petroleum jelly to poles / terminals.



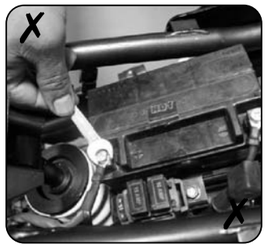
- Always charge battery using metafab make VRLA battery charger.

✗ Don'ts

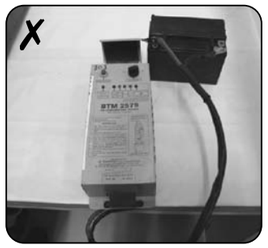


- Do not apply grease to poles / terminals.

- Do not short circuits the poles for checking condition of battery.

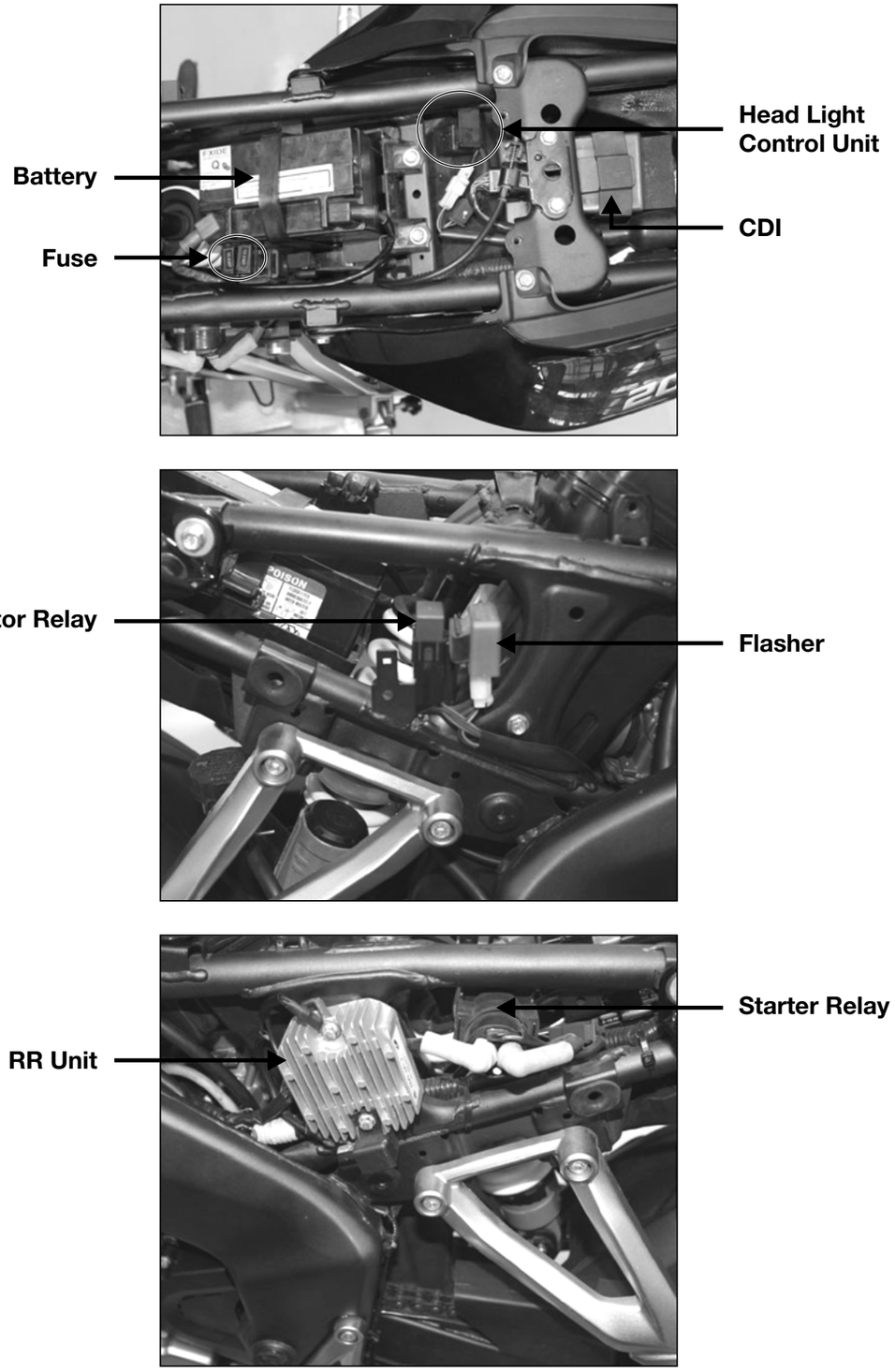


- Do not use side spanner for removing battery connection.

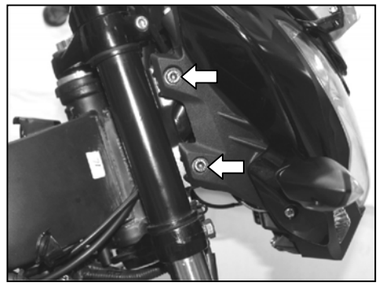


- Do not use teknikraft make battery load tester for checking battery condition.

- Do not charge battery using teknikraft make battery charger.



Head light bulb Replacement SOP



- Remove 4 nos. M-8 allen head bolts located on either side of head light assembly using 6 mm allen key.

- Pull out head light fairing

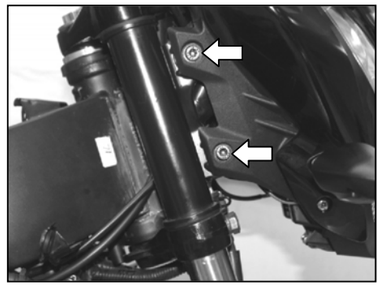
- Remove PVC cap on head light socket

- Pull out head light bulb 3 pin socket

- Remove head light bulb locking pin

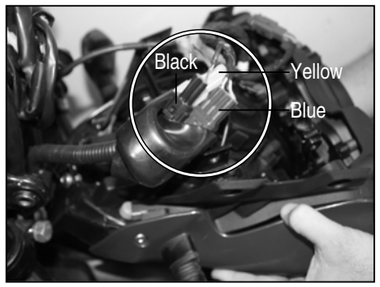
- Take out head light bulb

Digital Speedometer Replacement SOP

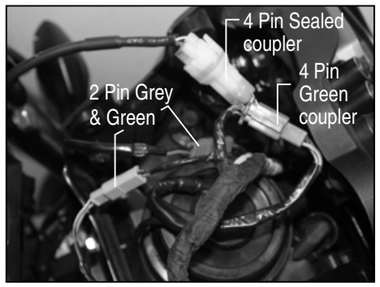


- Remove 4 nos. M-8 allen head bolts located on either side of head light assembly using 6 mm allen key.

- Pull out head light fairing



- Remove 6 pin blue & yellow couplers & 2 pin black coupler of speedometer console.

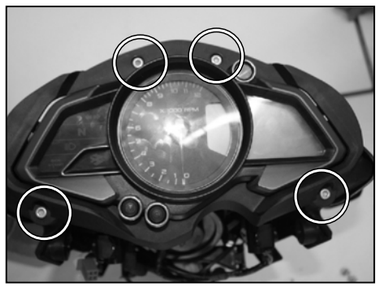


Remove

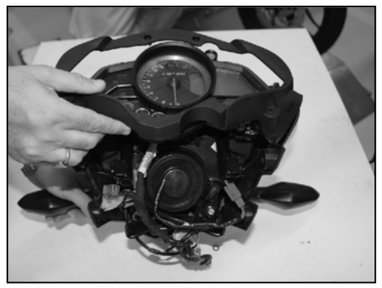
- 4 pin sealed coupler of wheel sensor
- 4 pin green coupler
- 2 pin green & grey coupler

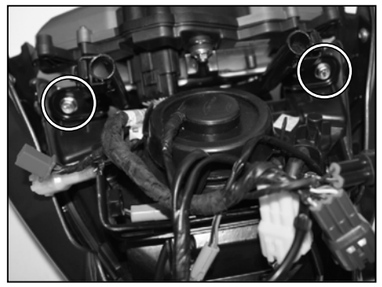
and take out head light assly with speedometer

- Remove wind shield assly by loosening 2 nos. side allen screw by 3 no. allen key.

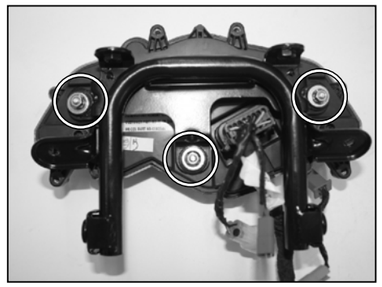


- Remove 4 no. speedometer cover mounting allen bolts & pull out speedo flap.

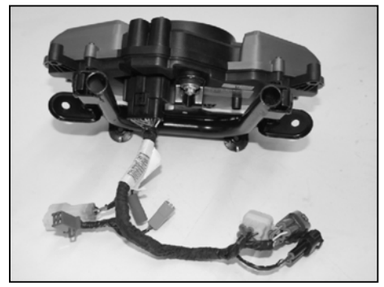




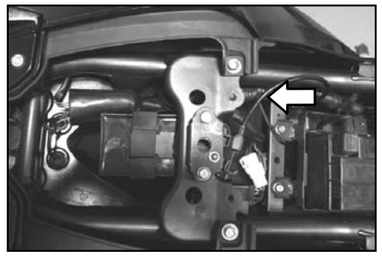
- Remove 2 nos. M6 meter bracket holding bolts & take out the meter assembly along with bracket.



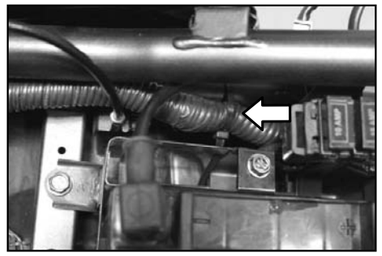
- Remove 3 nos. flange bolts & separate meter assembly from the bracket.
- Remove 16 pin coupler of speedo console.



Wiring Harness Routing

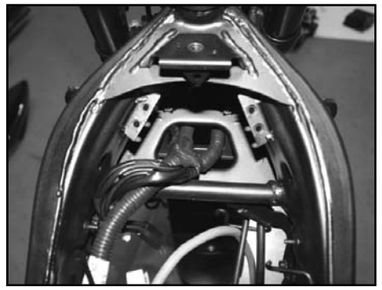


Route wiring harness from LHS adjuscent to CDI & clamp it near battery bracket in front of head light controller.

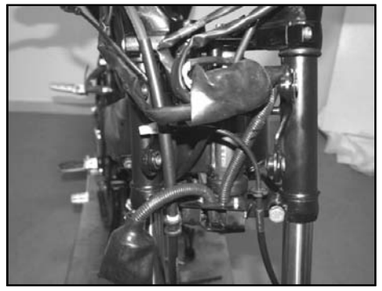


Route wiring harness from LHS & clamp it near fuse box in front of battery.

Route wiring harness from LHS & clamp it on either side of fuel filter.



Route 2 branches of wiring harness though bracket located in between 2 nos. HT coils towards head lamp.



Connect couplers in 2 nos. bellows of 2 branches of wiring harness to respective couplers.

Rear Indicator Replacement

- Remove rear seat.

- Disconnect the indicator coupler.

- Remove the white wiring tag.

- Loose indicator mounting nut.

- Remove no. plate bracket.

- Take out the indicator assembly.

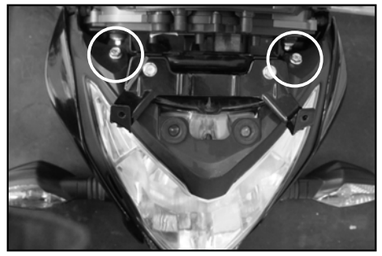
- During fitment ensure the alignment of indicator mounting, wiring routine & always put new tag.

Front Indicator Replacement

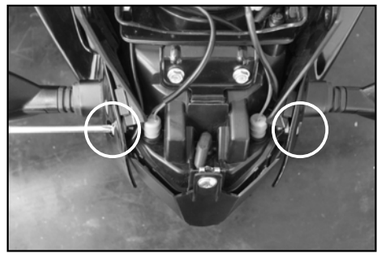
- Remove 4 nos. M8 allen head bolts located on either side of head light assembly using 6 mm allen key.

- Remove the 4 nos. of wiring couplers & take out head light assembly.

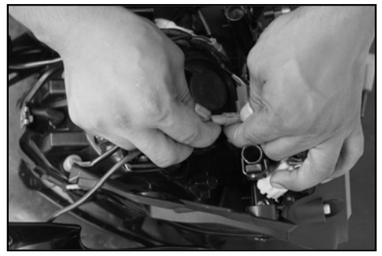
- Remove wind shield assembly by loosening 2 nos. side allen screw by 3 mm allen keys.



- Take out the indicator assembly by removing
  1. 2 nos. M8 bolts



  2. 3 hex screws



  3. Indicator couplers.

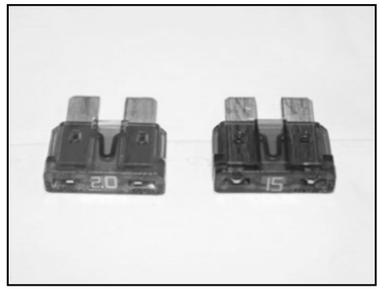
- Remove the indicator RH / LH.

Precautions to be taken in field to avoid wiring harness failures.

1. Ensure wiring harness is properly routed & clamped.
2. Ensure firm connections of all couplers.
3. Ensure wiring harness couplers are placed properly in bellows provided at head lamp fairing & tail lamp side.
4. Ensure correct routing of wiring harness which will avoid pinching of wires.
5. Do not apply pressurized water jet on wiring harness.
6. Do not fit extra electrical accessories. Such as-
   - Remote
   - Extra & bigger horns
   - Musical brake light
   - Buzzer
   - Higher wattage Headlamp bulb.
   - Flasher operating all 4 side indicators simultaneously
7. Do not replace fuse with higher capacity fuse.
8. Do not cut wiring conduit / wires midway.
9. Never remove conduit from wiring harness
10. Never bypass fuse.
11. Do not repair wiring harness instead replace for safety.
12. Do not ground any wire for checking current-spark.

Wiring harness failure due any one of the reason mentioned above should not be covered under warranty replacement.

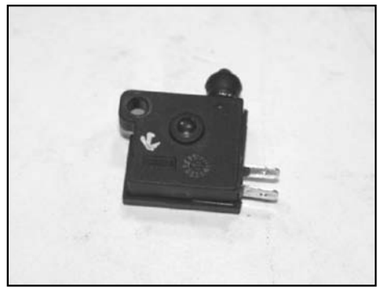
Fuse Inspection



Fuse

- Inspect the fuse element.
- Check continuity of fuse.
- If it is blown out, replace.
- If a fuse fails repeatedly, check the electrical system to determine the cause. Replace it with a new fuse of proper amperage capacity.
- If fuse is replaced by lower capacity fuse, it may lead to repetitive fuse blowing problem.

Caution : When replacing a fuse be sure the new fuse matches the specified fuse rating for that circuit. Installing that a fuse with a higher rating may cause damage to wiring & components. Do not by-pass the fuse.



Front Brake Light Switch

- Turn 'ON' the ignition switch.
- The brake light LED bank should glow brightly when the front brake lever is pressed.
- If it does not, check the front brake switch.

	Brown	Blue	Continuity check by multimeter
Lever Pressed	●	●	Continuity is shown
Lever Released	●	●	No continuity

Rear Brake Light Switch

- Turn 'ON' the ignition switch.
- Check the operation of the rear brake light switch by depressing the brake pedal.
- If it does not operate check continuity of rear brake switch.

	Brown	Blue	Continuity check by multimeter
Brake Pedal Pressed	●	●	Continuity is shown
Brake Pedal Released	●	●	No continuity

Clutch Switch

The clutch switch has 3 wires. In neutral conditions, clutch switch is in non-operated condition closing 'C' & 'NC' terminals. In gear condition, clutch switch is operated there by connecting 'C' & 'NO' terminals.

Meter Range	Light Green	Yellow / Green	Black /Yellow
OFF - Clutch lever not pressed	●	●	●
ON - Clutch lever pressed	●	●	●

Ignition Switch

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Continuity Check
Continuity Mode	Meter +ve	Meter -ve	OFF - No continuity
	Brown	White wire	ON - Continuity

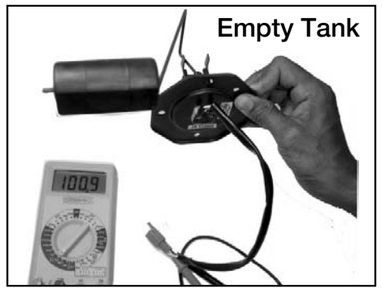
SOP :

- Switch OFF Ignition key.
- Disconnect Ignition switch's coupler.
- Remove Ignition Switch from vehicle .
- Check continuity between wires in 'ON' & 'OFF' position.

Standard Value :

- Beep Sound & Continuity in 'ON' position. No continuity in 'OFF' position.

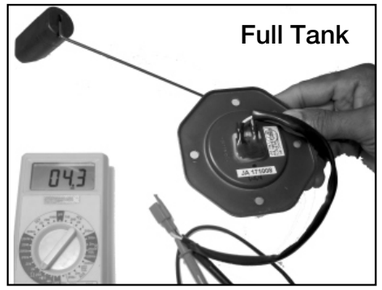
Note:
- Don't use duplicate or non-OE Ignition key.
- Never lubricate Ignition switch by oil / grease.



Fuel Gauge - Tank Unit

Measuring & Testing Equipment : Multimeter

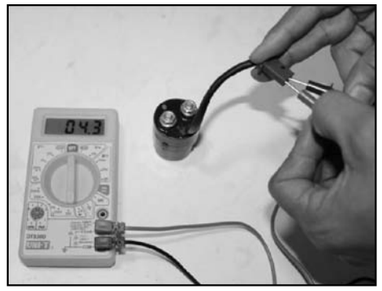
Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	As per chart given below
	White / Yellow	Black / Yellow	



Standard Value :-

Resistance (±3 ohm)	Bars on Speedometer
40	8
50	7
60	6
70	5
80	4
90	3
97	2
103	1
110	0

Note: If display in speedo console is not proper then please check following
- Battery Voltage
- Speedometer coupler & fuel gauge tank unit coupler connection is firm.



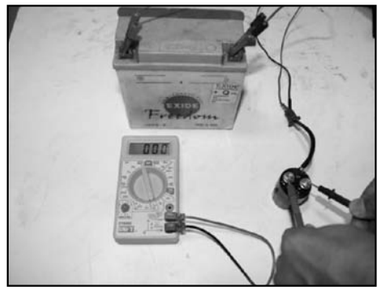
Starter Relay Coil Resistance Checking

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	3.9 Ohms ± 10%
	Starter Relay Coil Red - Yellow Wire	Starter Relay Coil Black Wire	

SOP :

- Switch OFF engine.
- Disconnect coupler from Relay.
- Connect multimeter to Starter Relay coil terminals.
- Check resistance.

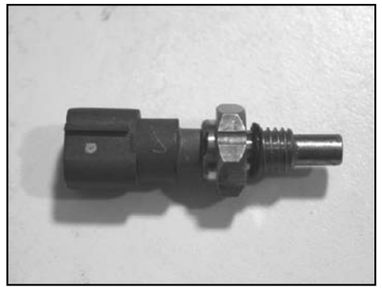


Starter Relay Continuity Checking

Measuring & Testing Equipment : Multimeter

SOP :

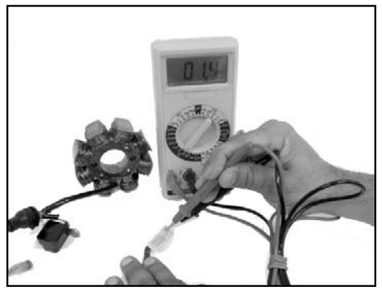
- Connect external 12V DC supply to starter relay coil terminals.
- 'Tuk' sound will be heard.
- Set multimeter on continuity mode.
- Connect multimeter at to relay contact terminals.
- Continuity (beep sound) indicates starter relay is OK.



Coolant Temperature Sensor

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	
	Meter +ve	Meter -ve	Temperature	Resistance K Ohms
20 K Ohms	Coupler Pin 1	Coupler Pin 2	0	5.31 ~ 6.11
			10	3.44 ~ 3.92
			20	2.28 ~ 2.58
			25	1.88 ~ 2.12
			30	1.55 ~ 1.75
			40	1.06 ~ 1.21
			50	0.75 ~ 0.86



Battery Charging Coil

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	0.8~1.1 Ohms at 25°C
	Blue / White	Blue / White	

SOP :
- Switch OFF engine.
- Disconnect stator plate coupler
- Connect multimeter between two Blue / White wires.
- Check resistance value between Blue / White & Blue / White.

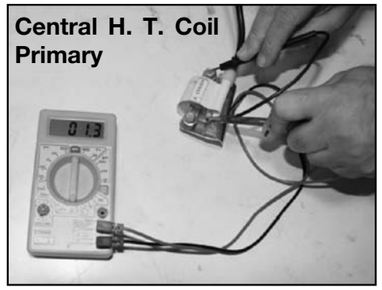
Pick-up Coil

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
2 K Ohms	Meter +ve	Meter -ve	180 ~ 245 Ohms
	White / Red	Black / Yellow	

SOP :
- Switch Off Ignition Key.
- Disconnect Stator Plate Coupler
- Connect multimeter between White / Red & Black / Yellow wires.
- Measure resistance

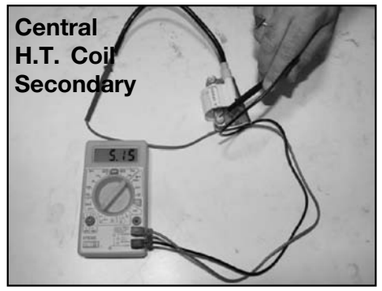
Note: Ensure gap 0.5~0.7 mm between pole of pick-up coil & rotor peep.



H. T. Coil Resistance Checking (Central)

Measuring & Testing Equipment : Multimeter
- Measure the primary winding resistance as follows

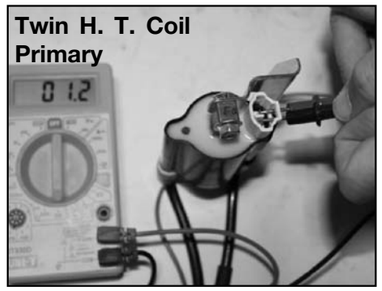
Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	0.3 ~ 0.5 Ohms at 25°C
	White / Yellow	Black / Yellow	



- Measure the secondary winding resistance as follows
- Remove the plug cap by turning it counter clockwise.

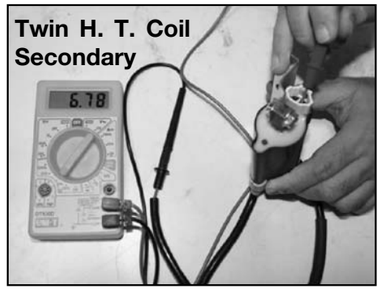
Meter Range	Connections		Standard Value
20 K Ohms	Meter +ve	Meter -ve	4.5 ~ 6.5 K Ohms at 25°C
	White / Yellow	Black / Yellow	

- If the value does not match as per, specifications replace the coil.
- If the meter reads as specified, the ignition coil windings are probably good. However, if the ignition system still does not perform then check spark output of HT coil using CDI / HT coil tester.



H. T. Coil Resistance Checking (Twin)

Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	0.45 ~ 0.55 Ohms at 25°C
	White / Yellow	Black / Yellow	



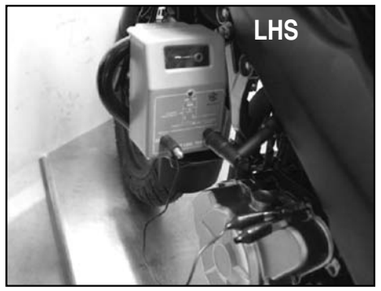
Meter Range	Connections		Standard Value
20 K Ohms	Meter +ve	Meter -ve	5.8 ~ 7.2 K Ohms at 25°C
	Coupler Pin 1	Coupler Pin 2	

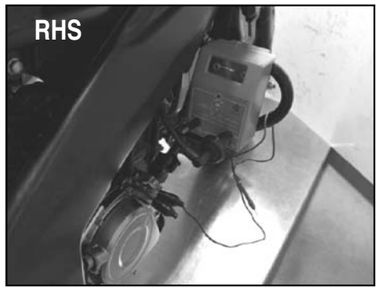
CDI Assembly

Identification :

- Case colour - Brown
- Coupler - Single black colour 12 pin.
- Make - Varroc

Measuring & Testing Equipment : CDI / HT Coil Tester.





SOP for CDI / H.T. Coil Checking

Measuring & Testing Equipment : CDI / HT Coil tester.

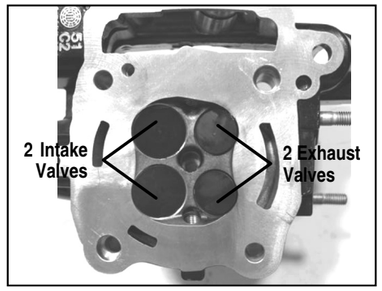
- Hang the unit on leg guard of the vehicle.
- Remove Spark Plug cap & connect to suitable terminal S1/S2 on the unit.
- Connect 'Red' probe of the unit to HT coil primary terminal.
- Connect 'Black' probe to earth.
- Start the engine.
- Status of LED & Spark window indicates the result as below.

S.N.	LED Status	Spark Status	Conclusion
1.	Glows	Continuous Bluish Spark	Ignition system is OK
2.	Glows	No Spark	HT Coil / Spark plug / Plug cap may be defective
3.	Glows	Intermittent Spark	HT Coil / Spark plug / Plug cap may be defective
4.	Does not Glow	No Spark	Check pick up coil & Exciter coil if found OK then replace CDI

Spark Plug

3 nos. spark plugs are fitted in this vehicle.

- LHS & RHS spark plug - Make - Champion
  Type - PRG6HCC
  Signal from twin output HT coil.
- Central spark plug - Make - Bosch / Champion
  Type - YR5NE / RER6YCA
  Signal from single output HT coil.
- Spark Plug Gap 0.7 ~ 0.8 mm
- Replacement frequency 20000 Kms.



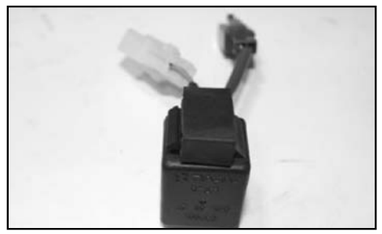
Horn

Measuring & Testing Equipment : DC Clamp Meter

Meter Range	Connections	Standard Value
200 DC A	Encircle clamp meter jaws around Brown wire of horn	2.2 Amps

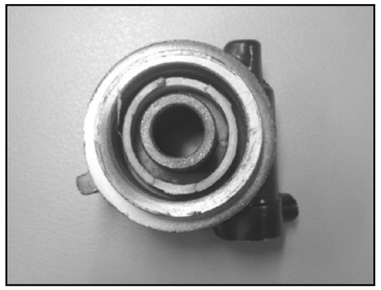
SOP :

- Encircle clamp meter jaws around Brown wire of Horn.
- Press horn switch & check instantaneous current drawn by horn.



Head Light Controller

- It is also called as battery protector unit.
- Head light will get ‘ON’ if -
- Ignition switch is in ‘ON’ position.
- Engine is running.
- Head light control switch is switched ‘ON’.



Vehicle Speed Sensor

- Non contact Wheel Sensor - In LCD speedo console there are no moving parts as wheel speed is sensed through a non contact hall effect sensor. The hall sensor is an electronic switch which operates due to magnetic field. The sensor has 3 wires - Supply, Earth & Output. This sensor converts one rotation of front wheel into 8 pulses & these are transmitted to digital speedometer through a sensor cable.

Do's & Don'ts

- Do not apply pressurized water jet on vehicle speed sensor.
- Handle wheel sensor carefully while working on front brake drum related repairs.
- Ensure sensor cable is intact & not fouling with any other part.
- Speed sensor should not physically touch to magnetic ring.

Note: Gap between speed sensor & magnetic ring must be : max 4 mm & min - 0.5 mm. Ensure intact condition of 'O' Ring for speed sensor. Use correct size 'O' Ring in case of replacement.

SOP for checking wheel sensor

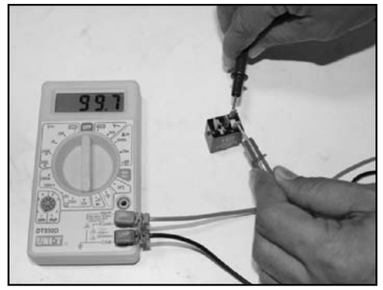
Measuring & Testing Equipment : Multimeter

1. Set multimeter to 20 VDC
2. Connect multimter to 4 pole coupler of wheel sensor as per table given below.

Multimeter +ve	Blue-White wire
Multimeter -ve	Black-Yellow wire

3. Switch ON ignition switch
4. Rotate front wheel slowly, mark on the tyre for identification and to ensure that one rotation is complete.
5. In one rotation of front wheel, 8 pulses are generated per revolution. The reading on multimeter will vary between 4~4.5 VDC & 0VDC 8 times.
6. Conclusion -

Wheel Sensor OK	If 8 times reading on multimeter varies between 4 ~ 4.5 VDC and 0 VDC in one rotation of front wheel.
Wheel sensor Faulty	If reading on multimeter does not vary & remains continuously in the range of 4~4.5 VDC
	If reading on multimeter does not vary & remains continuously in the range of 0VDC.



Radiator Relay Coil Resistance Checking

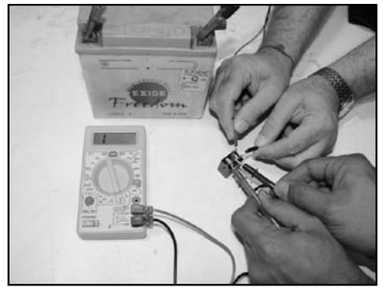
Radiator relay is located on RHS near flasher.

Measuring & Testing Equipment : Multimeter.

Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	110 Ohms ± 10%
	Radiator Relay Coil Red-Yellow Wire	Radiator Relay Coil Black Wire	

SOP :

- Switch OFF engine.
- Disconnect coupler from Relay.
- Connect multimeter to Radiator Relay coil terminals.
- Check resistance.



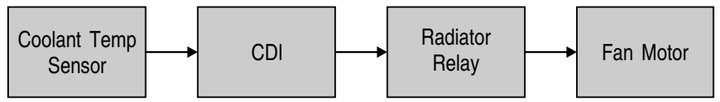
Radiator Relay Continuity Checking

Measuring & Testing Equipment : Multimeter

SOP :

- Connect external 12V DC supply to Radiator relay coil terminals.
- 'Tuk' sound will be heard.
- Set multimeter on continuity mode.
- Connect multimeter at to relay contact terminals.
- Continuity (beep sound) indicates Radiator relay is OK.

Working of Radiator Relay & Fan Motor



Coolant temperature sensor senses temp. of coolant & gives information to

↓

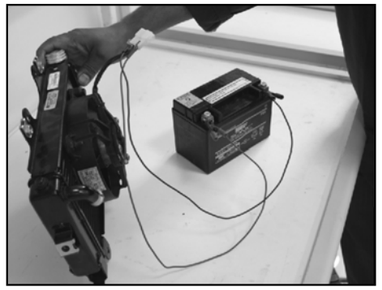
CDI operates radiator relay if coolant temperature is more than 98°c

↓

Fan motor starts running

↓

If fan motor is defective & does not run, then coolant temperature increases. If temperature increases upto 115°c then a fault indication icon is displayed in speedometer console indicating rider about excessive coolant temperature.



Fan Motor Checking

Measuring & Testing Equipment : Multimeter

SOP :

- Connect external 12V DC supply to fan motor terminals.
- Ensure fan is running smoothly.

TPS - Continuous Potentiometer Type

A. Voltage check at 0% Throttle (In accelerator closed position)

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
20 V DC	Meter +ve	Meter -ve	0.7 V ± 10%
	Pink	Black / Yellow	

B. Voltage check at 100% Throttle position.
(In accelerator completely opened condition).

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
20 V DC	Meter +ve	Meter -ve	3.4 ~ 3.8 V
	Pink	Black / Yellow	

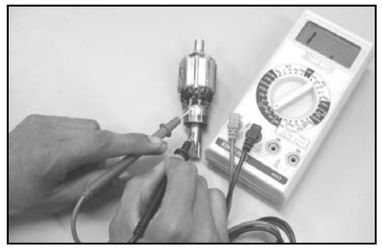
Starter Motor - Current Drawn

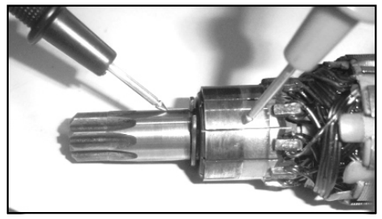
Measuring & Testing Equipment : DC Clamp Meter

Meter Range	Connections	Standard Value
200 DC A	Encircle clamp meter transformer jaws around thick Red wire of starter motor	30 ~ 38 Amps Spark plug caps removed

SOP :

- Switch 'ON' Ignition Key & disconnect both spark plug caps (care to be taken so that spark plug does not jump to metal part)
- Select range & set clamp meter Zero reading.
- Encircle red input wire of starter motor by clamp meter jaws.
- Crank engine by pressing self starter button.
- Press self starter button 3 seconds & check cranking current displayed on clamp meter LCD display.





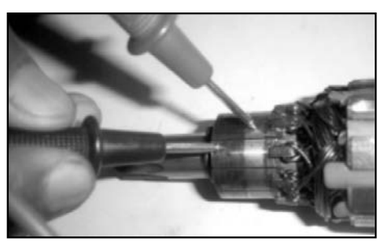
Starter Motor Armature

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
Continuity mode	Meter +ve	Meter -ve	No continuity is shown
	Commutator segment	Shaft	

SOP :

- Dismantle starter motor & take out Armature.
- Check continuity between starter motor shaft & each segment on commutator.
- Replace armature if continuity is shown.



Starter Motor Armature

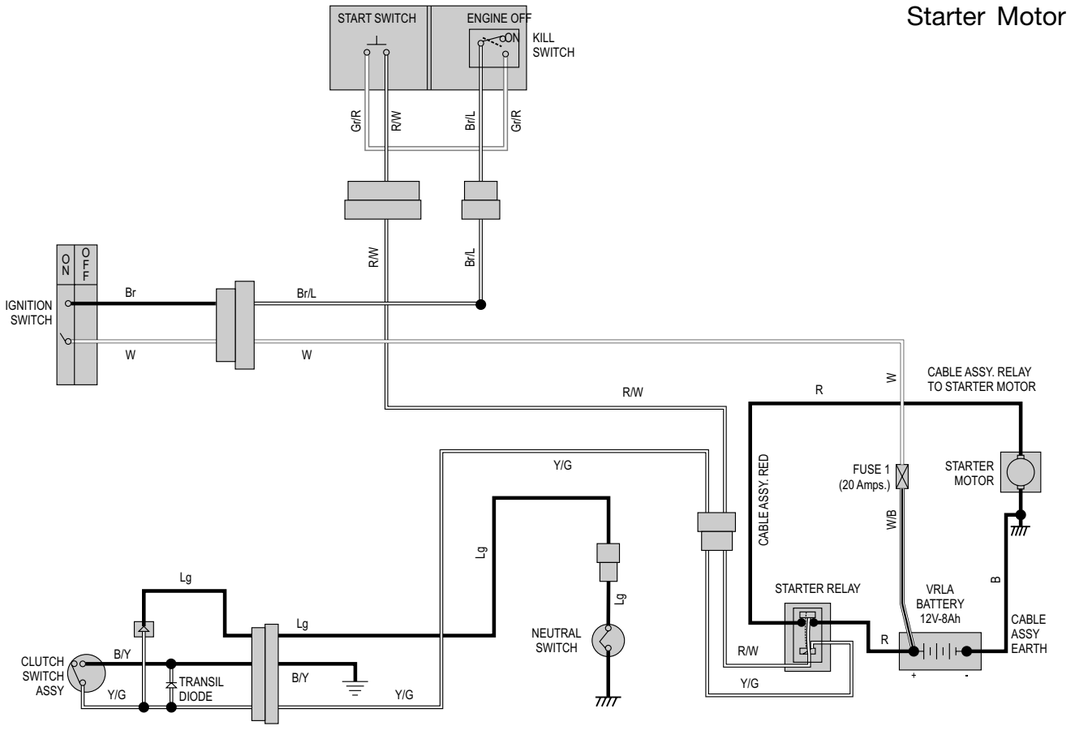
Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
Continuity mode	Meter +ve	Meter -ve	Continuity is shown
	Any segment on commutator	Adjacent segment on commutator	

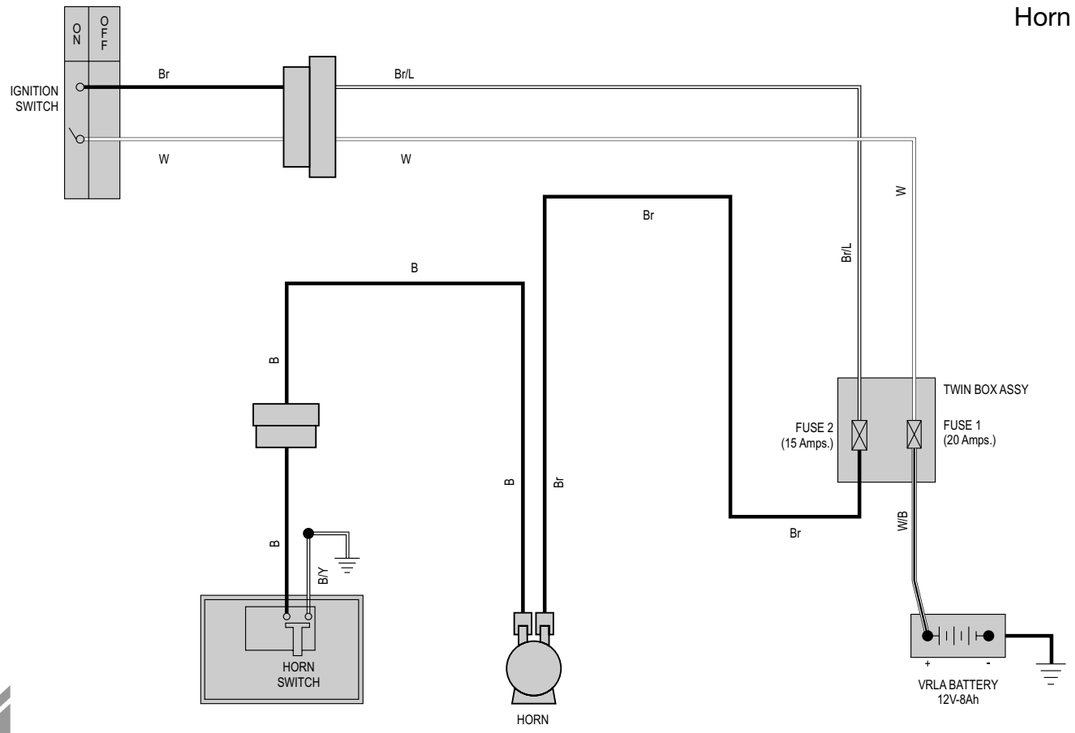
SOP :

- Dismantle starter motor & take out armature
- Check continuity between each pair of adjacent segments on commutator.
- Replace armature if 'No' continuity is shown between any two adjacent pair of commutator segments.

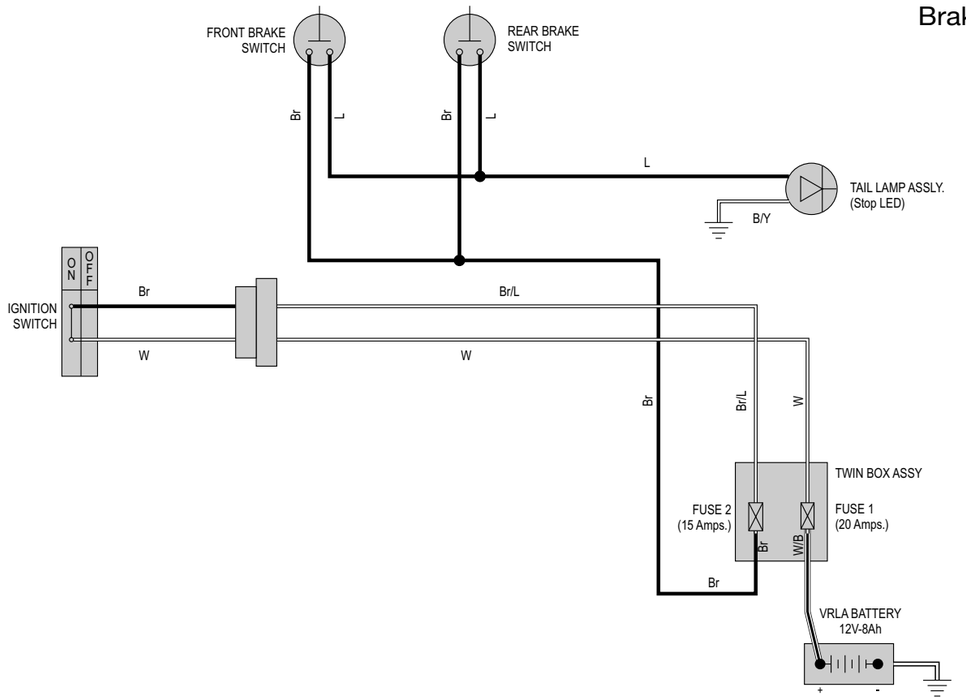
Starter Motor Circuit



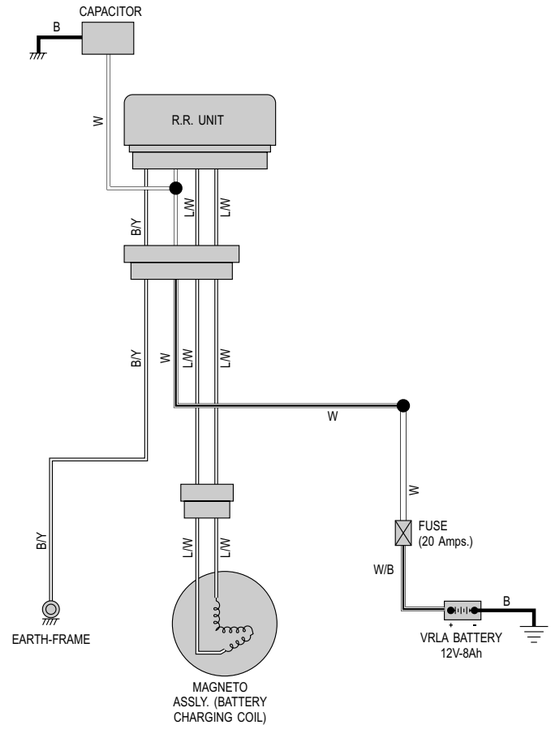
Horn Circuit



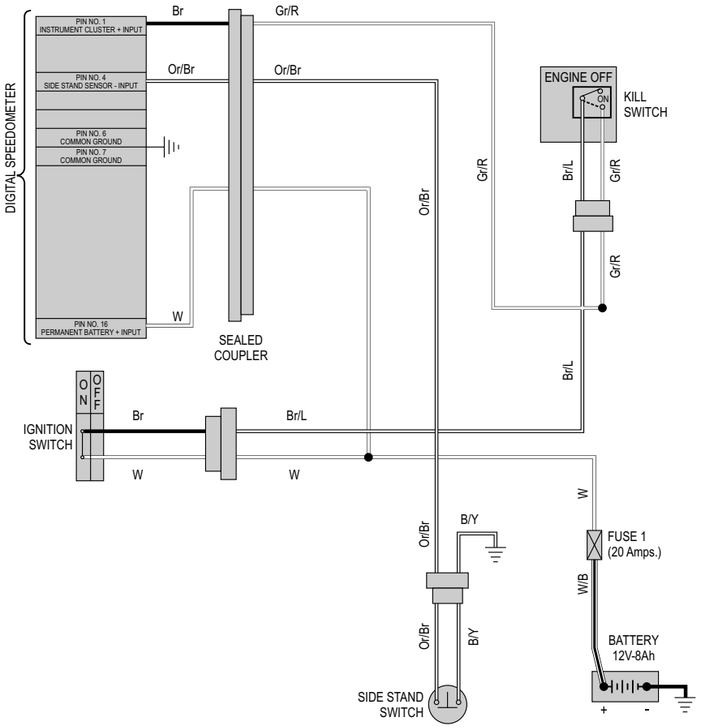
Brake Light Circuit



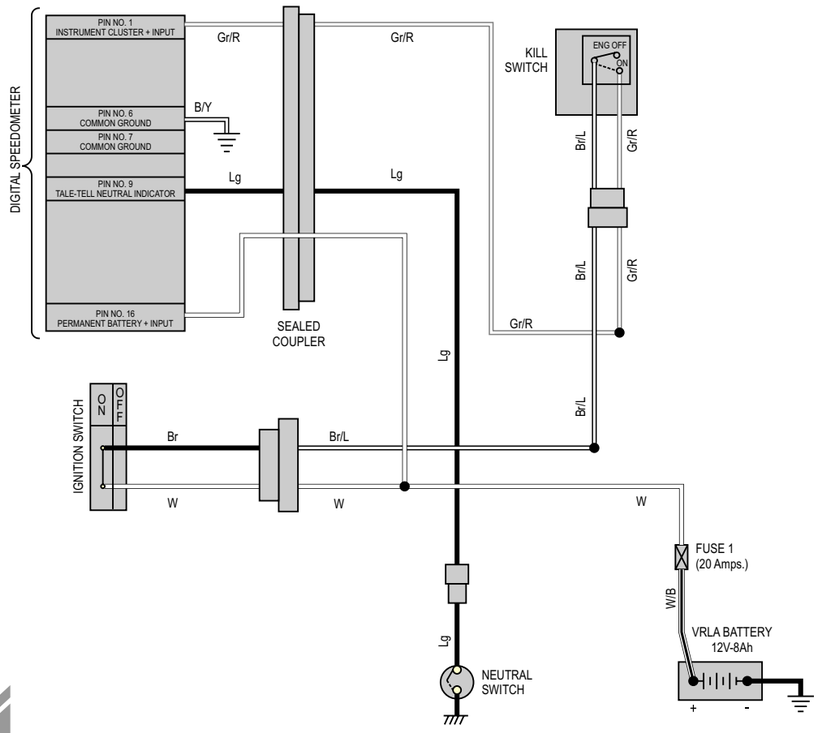
Battery Charging Circuit



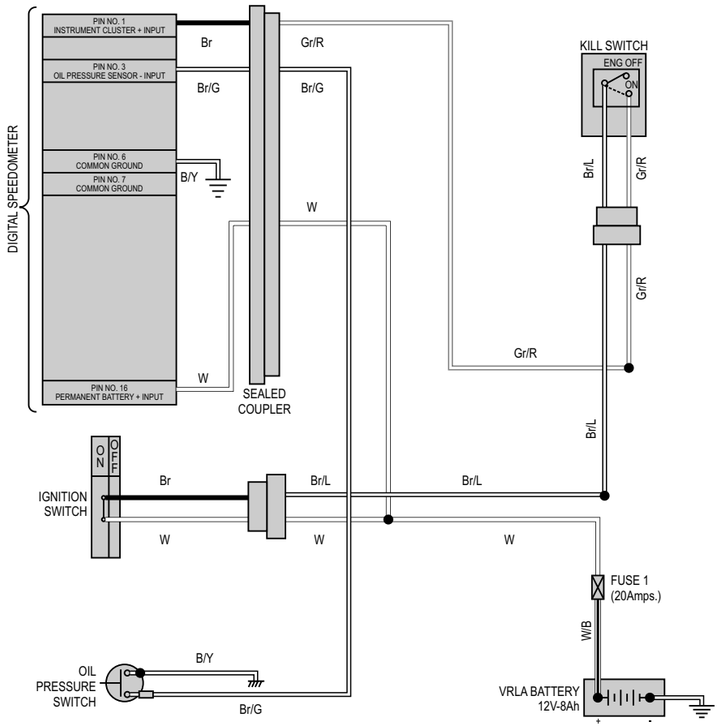
Side Stand Indicator Circuit



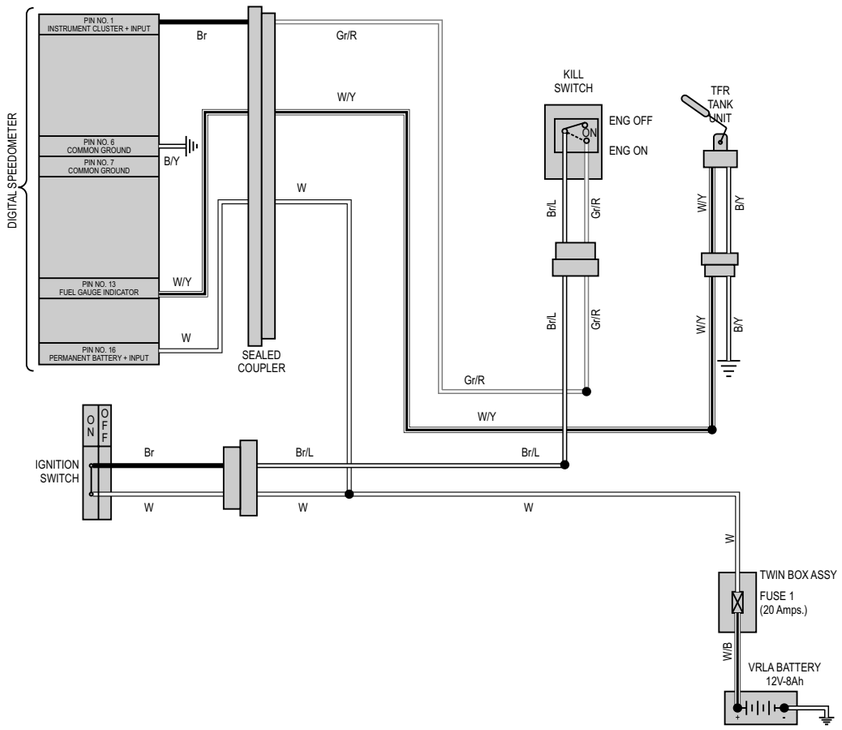
Neutral Lamp Circuit



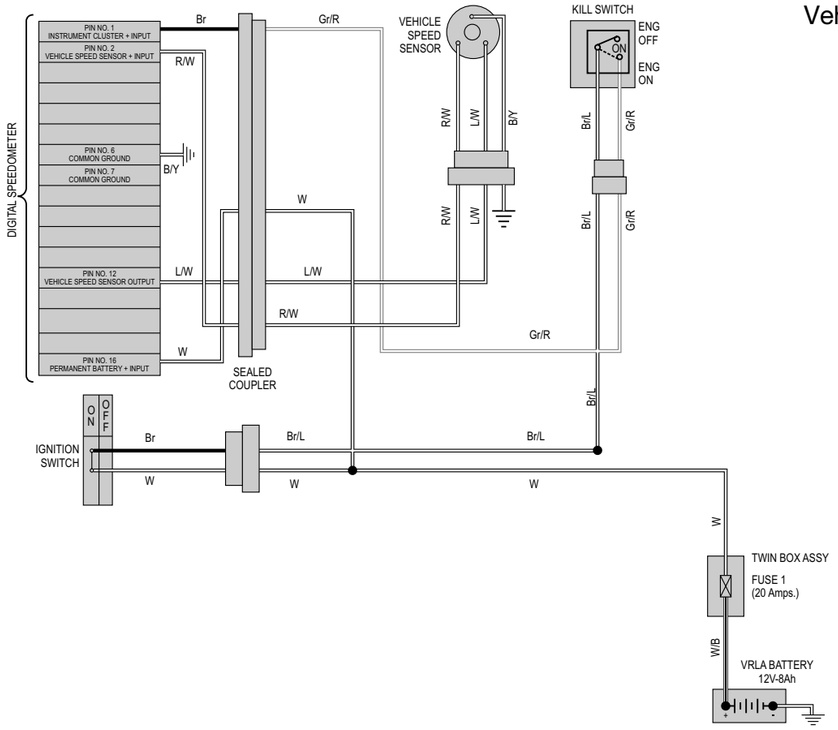
Oil Pressure Switch Circuit



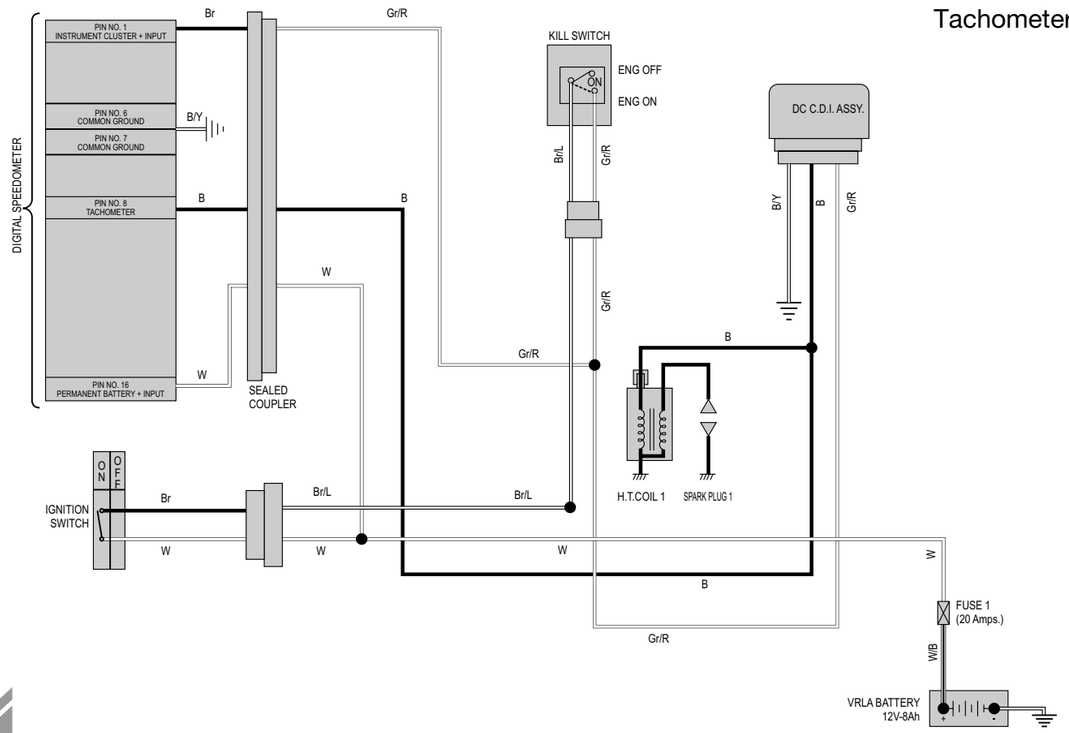
Fuel Gauge Circuit



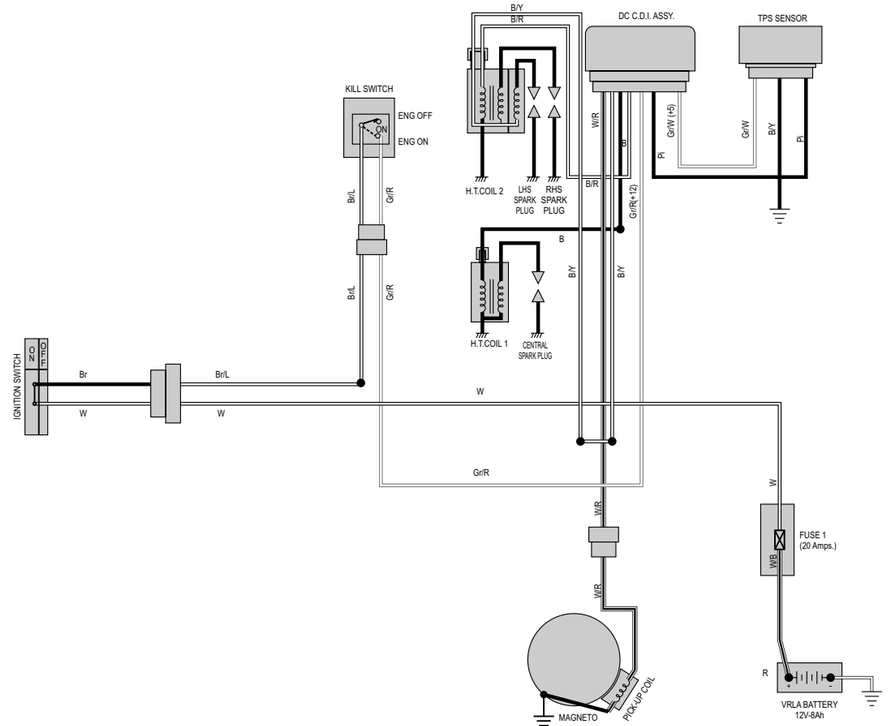
Vehicle Speed Sensor Circuit



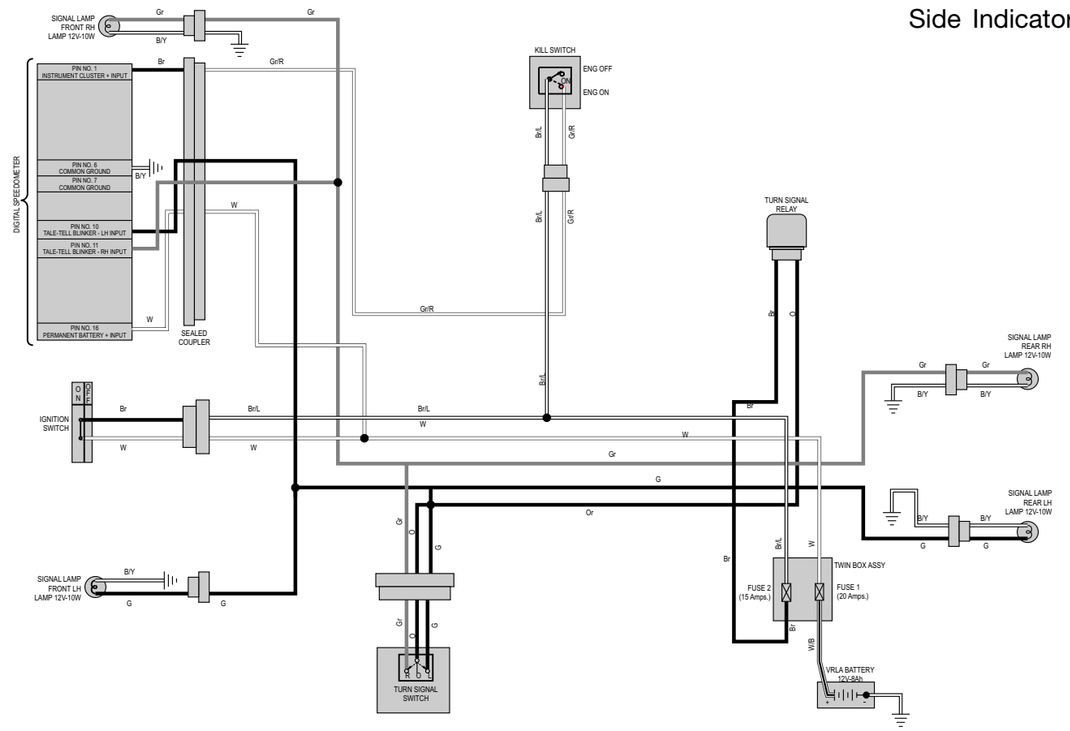
Tachometer Circuit



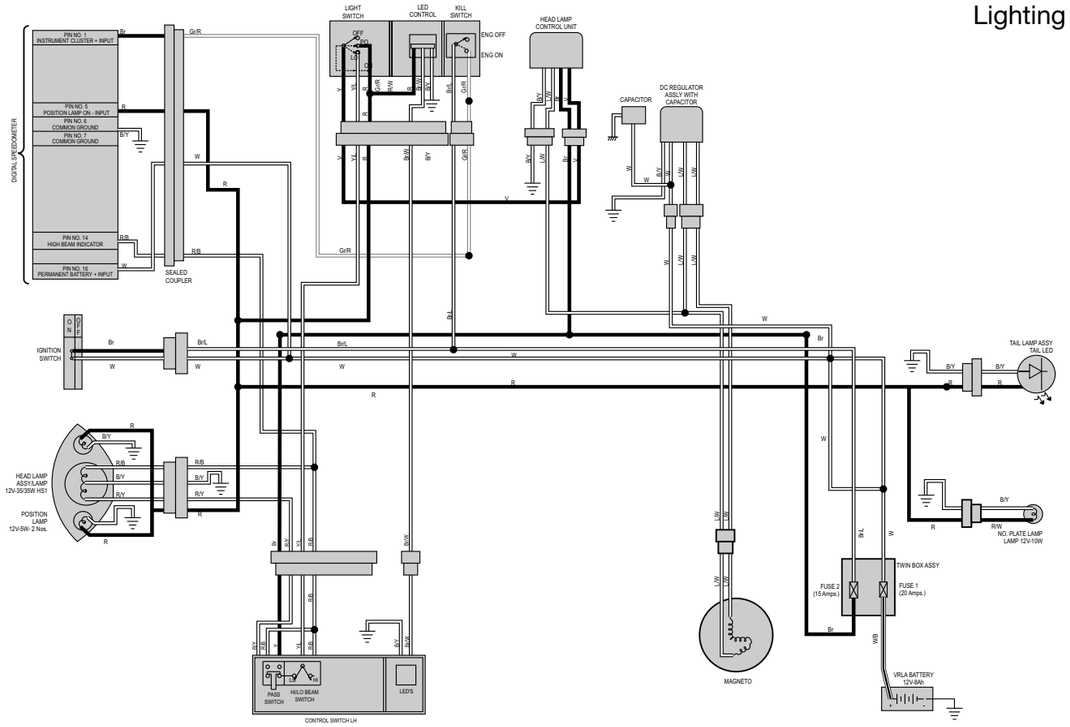
Ignition Circuit



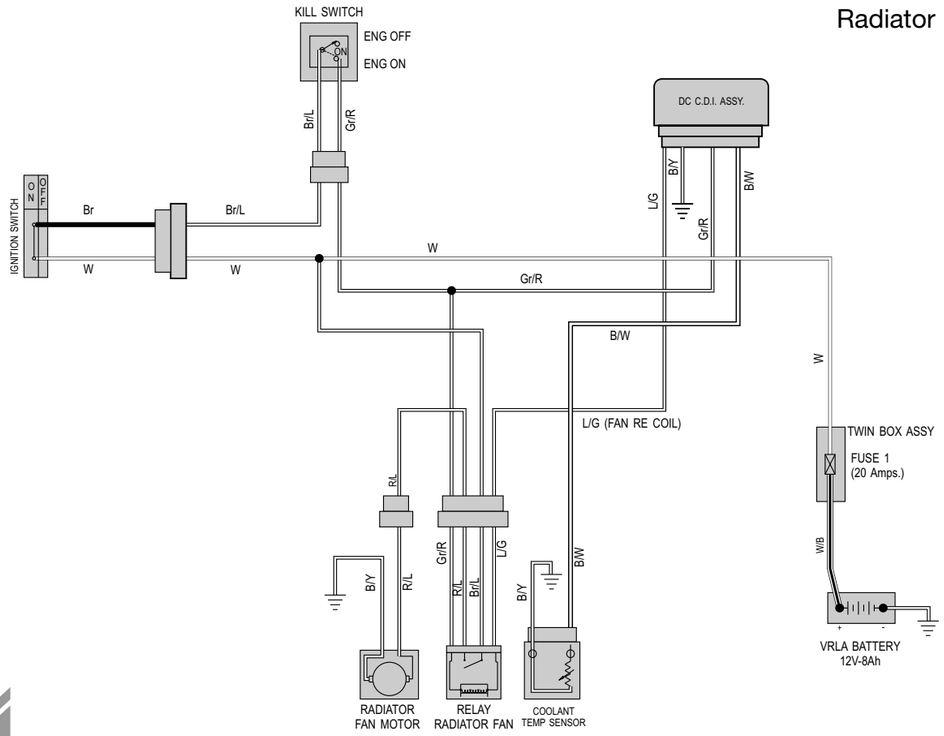
Side Indicator Circuit

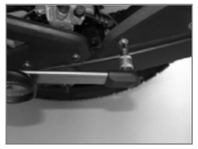


Lighting Circuit



Radiator Fan Motor Circuit



ALLEN SOCKET SIZE	LOCATION & TORQUE VALUE (kgm)			
3 mm	Carburettor Hose Clamp			
				
4 mm	Fuel Tank Cap	Cover Mud Flap		
				
	0.4~0.5 Kgm	0.5 Kgm		
5 mm	Handle Bar Weight	Front Disc	Rear Disc	Leg Guard
				
	0.8~1.2 Kgm	3.0 Kgm	0.9~1.1 Kgm	0.8~1.0 Kgm
	Rear Hugger Mounting	Chain Cover	Front Fender Mounting Bolt	Saree Guard
				
	2.0~2.2 Kgm	0.5 Kgm	0.6~0.8 Kgm	0.8~1.0 Kgm
6 mm	Grab Rail	Handle Holder Mounting	Rider Foot Rest	Stay Bracket
				
	1.8~2.0 Kgm	1.8~2.0 Kgm	1.8~2.2 Kgm	1.8~2.2 Kgm
	Fork Upper Bolt - LH/RH	Head Light Assly Mounting		
				
	1.8~2.2 Kgm	1.8~2.2 Kgm		
8 mm	Rear Shock Absorber Bottom & Top bolt			
				
	3.2~3.8 Kgm			

COOLING SYSTEM

Coolant level inspection & top-up during periodic service

- Engine should be in cold condition
- Coolant level should be upto max mark in expansion tank
- Coolant should be in green colour
- If level is found less then top-up with coolant upto max mark
- Recommended brand - Radicool from Castrol, or Motul - Green colour ready to use

Coolant draining

During motorcycle operation, the coolant gets very hot & is under pressure. Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down.

- Stand the motorcycle upright.
- Place a suitable container under engine.
- Remove coolant drain screw.
- Take off the radiator cap.
- Completely drain the coolant from radiator & expansion tank.
- Mount screw with a new sealing ring and tighten it.

Important Data

- Thermostat opening start at - $88^{0}c \pm 2^{0}C$
- Thermostat fully opens at - $96^{0}c \pm 2^{0}C$
- Fan motor start at - $98^{0}c$
- Fan motor stop at - $92^{0}c$
- Coolant temp. icon start blinking at - $115^{0}c$

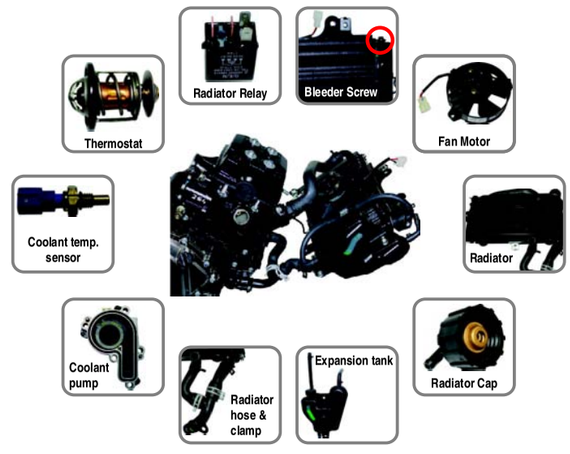
Coolant refilling & Air bleeding

- Remove radiator cap.
- Remove bleeder screw.
- Pour in coolant until it emerges without bubbles at the vent hole, then mount and tighten the bleeder screw immediately.
- Fill the radiator completely with coolant. Mount the radiator cap.
- Rest the vehicle on the side stand.
- When the engine is cool, check the coolant level in the radiator and, if necessary, add coolant.
- Remove the cap of the expansion tank (reservoir) and add coolant until the coolant level is up the MAX mark.
- Mount the cap of the expansion tank.

Precaution for avoiding coolant & oil mixing

- Always replace cylinder head gasket by new one.
- Always replace cylinder block gasket by new one.
- Cylinder block gasket identification - Grey colour (9016)
- Always replace grey colour paper gasket whenever crankcase splitting is done.
- Always replace radiator pump oil seals whenever crankcase splitting is done.

Cooling system parts



- Radiator : To cool the coolant as it flows through the fins.
- Bleeder Screw : For removing air from coolant.
- Radiator Cap : Suction & delivery of coolant in expansion tank as per temperature & pressure of coolant.
- Thermostat : To regulate the flow of coolant for quick warm up & cooling of engine.
- Radiator Hose : For carrying coolant from radiator to pump & engine to radiator.
- Radiator Clamps : For firm fitting of radiator hose.
- Expansion Tank : This is an additional tank for supply of coolant to radiator.
- Coolant Temperature Sensor : Senses coolant temperature.
- Radiator Relay : For controlling fan motor operation.
- Fan Motor : For cooling of radiator coolant.
- Coolant Pump : For circulation of coolant in the system.