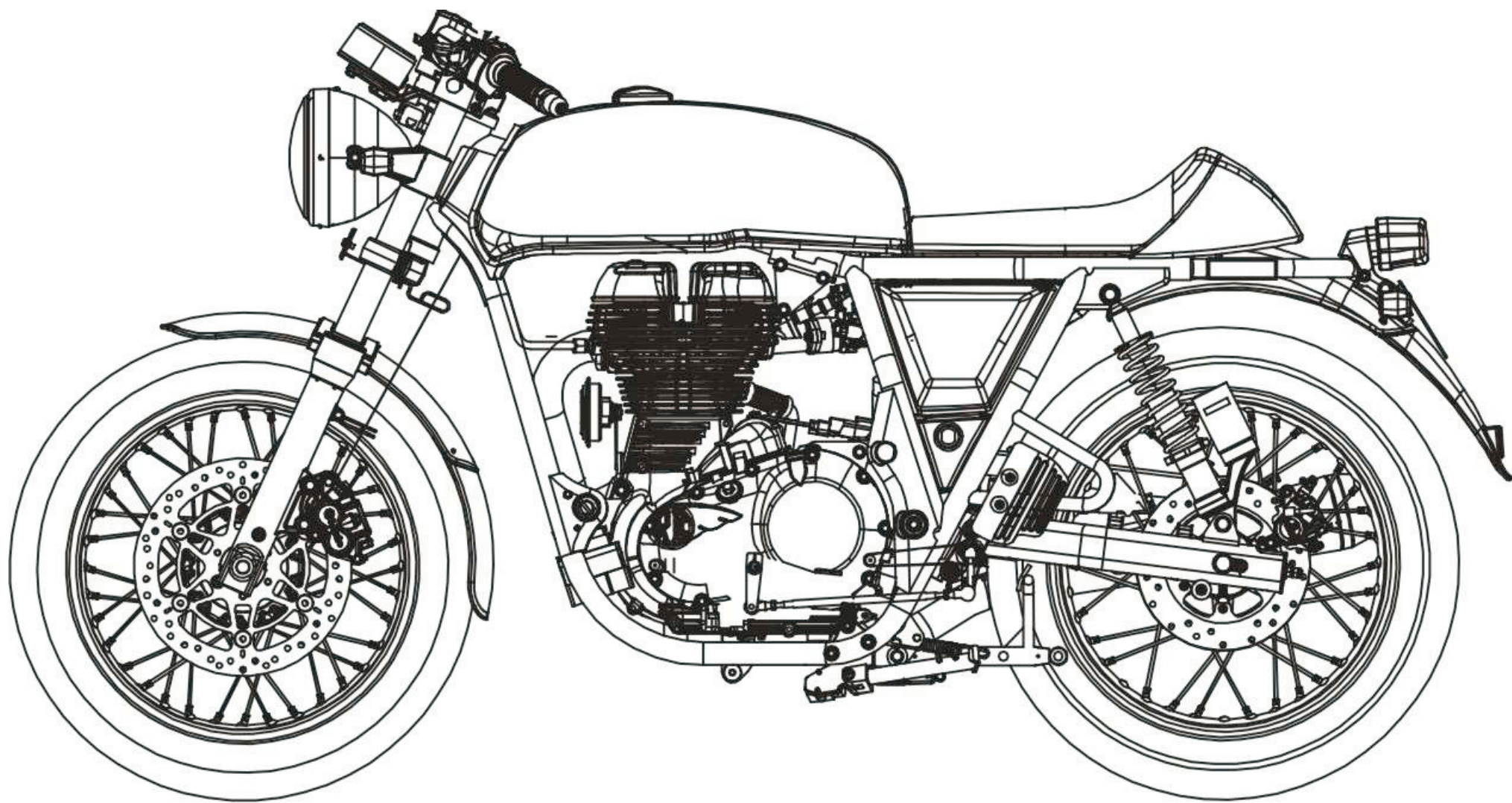


Service Training Manual



USA/CALIFORNIA



PREFACE

Royal Enfield is pleased to release the service training manual on Continental GT model. This guide contains specifications/values, function, check/test methods and troubleshooting /diagnosis skills for various components of this model.

Royal Enfield is committed to upgrade the knowledge and skills of Technician who ever repair our products.

While this guide is updated with latest information and specification of the bike, the data, diagram etc., in this guide may not be similar to what appear on the actual bike due to continuous improvement happening in our bike.

However if you have any queries, clarification, suggestions/feedback, please write to us or e-mail at “customerservice@royalenfield.com”

Best Wishes

Service Training Centre
Royal Enfield

SERVICE HEAD QUARTERS

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TECHNICAL SPECIFICATION - CONTINENTAL GT

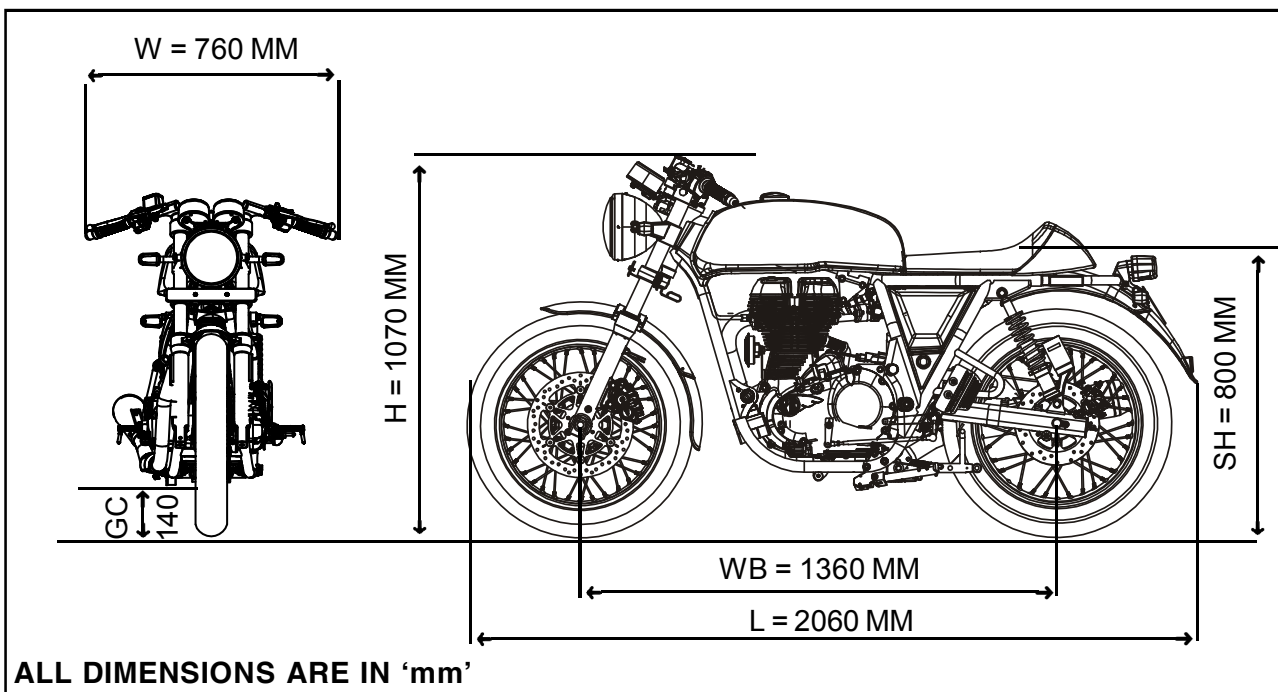
ENGINE		
Type	Single Cylinder, 4 stroke, Air cooled	
Displacement	535 cc	
Bore x stroke	87mm x 90mm	
Compression Ratio	8.5:1	
Maximum Power	29.1 bhp (21.4 kW) @ 5100 rpm	
Maximum Torque	44 Nm @ 4000 rpm	
Ignition System	Digital Electronic Ignition	
Clutch	Wet, multi-plate	
Lubrication	Wet sump	
Engine Oil	15 W 50 API SL JASO MA EASTER Semisynthetic Oil	
Engine Oil Capacity	2.75 Ltrs., (2.5 Ltrs. during oil filter element & oil replacement)	
Fuel Supply	Electronic Fuel Injection Programmed (PGM-EFI)	
Air Cleaner	Paper Element Filter Type	
Engine Start	Electric / Kick	
Idle Speed	1050 ± 200 RPM	
TRANSMISSION		
Clutch	Wet Multiplate (7 Plates)	
Primary drive	Duplex Chain	
Primary Drive Ratio	2.15 : 1	
Gear box	Constant Mesh 5 Speed	
Gear shift pattern	1 - N - 2 - 3 - 4 - 5	
Gear Ratios	1st: 3.06:1 / 2nd: 2.01:1 / 3rd: 1.52:1 / 4th: 1.21:1 / 5th: 1:1	
Secondary Drive (F.D. Sprocket)	18 Teeth	
Rearl Wheel Driven Sprocket	36 Teeth	
Final Drive Ratio	2.00:1	
Drive Chain Links	100 Links	
CHASSIS & SUSPENSION		
Frame Type	Cradle frame - Twin downtube type	
Fuel tank capacity	13.5 Litres***	Note: ***Fuel tank capacity given here is approximate. It can vary marginally from this specified value.
Low fuel warning	3.00 Litres***	
Suspension	Front: Telescopic, 41mm dia fr. forks, Stroke 110mm travel Rear: Gas charged shock absorbers with adjustable preload, 80mm travel	
Front fork oil capacity & grade	430 ml per leg & Oil Grade - Gabriel Fork Oil 2W 35	
TYRES & BRAKES		
Tyre Front	100/90-18, 56 H Pirelli Sport Demon	
Tyre Rear	130/70-18, 63 H Pirelli Sport Demon	
Brake Front	300mm dia Floating Disc, 2 Piston floating caliper	
Brake Rear	240mm dia Disc, Single Piston floating caliper	
Brake oil capacity	Front: 50 ml Rear: 100 ml	
Brake oil grade	DOT 3 or DOT 4	

ELECTRICALS

Electrical System	12 volt - DC, Alternator	WARNING  Using bulbs / other electrical gadgets other than specified rating may lead to over loading / erratic behaviour / premature failure of electrical system. Modifications on the bike which are not approved by Royal Enfield may not only disqualify for warranty, but also affects performance of the bike.
Battery	12 volt, 14 AH	
Head Lamp	12V, 50 / 35 W	
Brake / Tail Lamp	12V 21W / 5W	
Turn Signal Lamp	12V 10W (4 Nos)	
Instrument cluster	Digital instrument Cluster with LCD	
High beam indicator	12V, 0.2W (L.E.D.)	
Term signal telltale	12V (L.E.D.)	
Neutral Telltale Bulb LH & RH	12V, 1.12W	
Horn (Dual)	12V, 2.5A (dual tone - LT, HT)	
Starter Motor	12V, 0.9KW	

DIMENSIONS

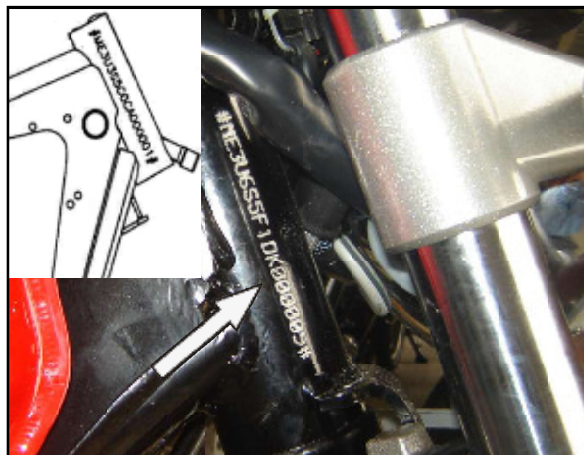
Wheelbase	1360 mm
Ground Clearance	140 mm
Length	2060 mm
Width	760mm (Without Mirrors)
Height	1070mm (Without Mirrors)
Seat Height	800 mm
Kerb Weight (Engine Oil & 90% Fuel capacity)	185 Kgs
Gross Vehicle Weight	365 Kgs

VEHICLE OVERALL DIMENSIONS

NOTE :

1. Above Values / Dimensions are given for your guidelines / reference only.
2. In view of continuous improvements, specifications are likely to change without notice.

GENERAL VEHICLE INFORMATION

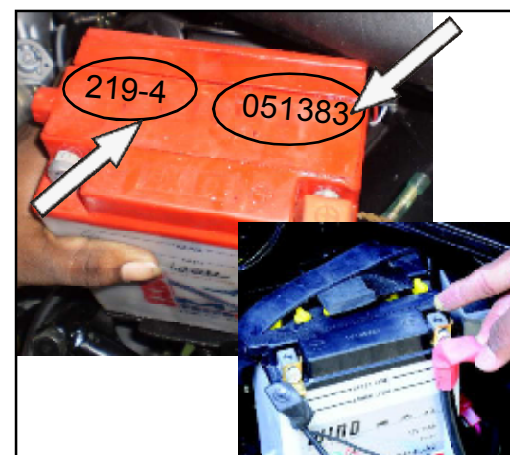
CHASSIS NO.



ENGINE NO.



BATTERY NO.



VEHICLE IDENTIFICATION NUMBER - DETAILS

The VIN is a 17 digit number punched on right side of the steering head tube and in the information plate rivetted to the frame down tube.

Sample VIN : ME3 FSV XX X X X XXXXXX

Manufacturer Make and Class code	ME3	FSV	XX	X	X	X	XXXXXX
Decipherable information							
Capacity / Horse power							
Check digit No							
Year of Manufacture							
Place of Manufacture							
Code for 535cc							
Frame Sl. No.							

ENGINE NUMBER - DETAILS

The engine number is punched on the left hand side top of the LH Crank-case. It is the means of identification of the Engine and its production details. Please do not tamper with the number as it is prohibited by law.

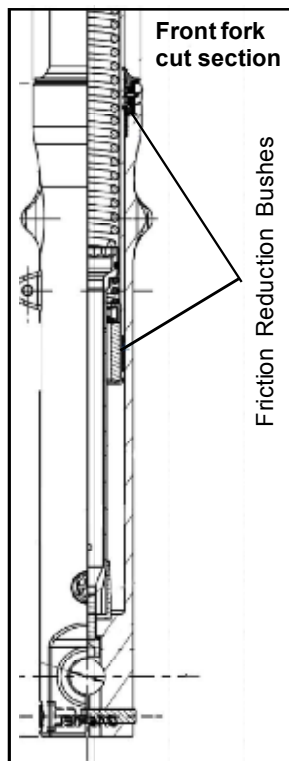
	U	6	S	5	F	0	D	G	XXXXXX
Engine Family									
Engine Capacity									
Type of Start									
Transmission									
Fuel Feed									
Assembly Factory									
(0-Chennai, 1-Kanchipuram)									
Year of Manufacture									
(2009-9, 2010-A, 2011 -B,...)									
Production Month									
(A - Jan., h - Aug., K - Sep., N - DEC.)									
Production Serial Nos.									

SALIENT FEATURES - CONTINENTAL GT

- Unique Silencer assembly.
- Unique Rear Disc Brake (unique rear wheel hub, Sprocket, brake and rear swing arm)
- Sports Racing Style fuel tank.
- Digital Instrument Cluster (MPH & KMPH Speedometer)
- New design air filter box.
- Seat with saddle lock (Cable type)
- Combination lock (Ignition & steering lock combined in one set)
- Foldable type footrest - Rider & Pillion.
- 41 mm robust straight front fork
- Gas charged Rear Shock Absorbers.

FRONT WHEEL

- Front tyre** : 100/90 -18", 56H Pirelli Sport Demon
- Front hub** : New design hub integrated with adaptor disc, Powder Coated - Dark Metallic Silver colour
- Spokes & Nipples** : Straight stainless steel spokes & brass nipples Qty. 36 Nos.
- Front brake** : Disc - M/s. Brembo 300mm Dia - Brass Gold Powder coat. Floating Type Disc - 2 Piece construction + 6 rivets.
Double Piston (Dia 30 & 32mm) Floating Caliper with brass gold powder coat & Metal braided hose.
- Wheel Rim** : Aluminium Spokes Rim 2.15 X 18"



FRONT SUSPENSION

- Steering stem assy.** : Dark metallic silver coated bottom yoke with double steering ring nut.
- Fork LH & RH assy.** : New fork assy. with 41mm dia pipe-non threaded type, Friction reduction bushes (Guide bush & Slide bush type)
- Front mudguard** : Top Mounting Mudguard Plastic (ABS) in Fork Brace + Detachable extension in black colour
- Fork Brace** : Aluminium Brace for extra reinforcement.
- Wheel speed sensor** : Electronic wheel speed sensor - position guided in fork.

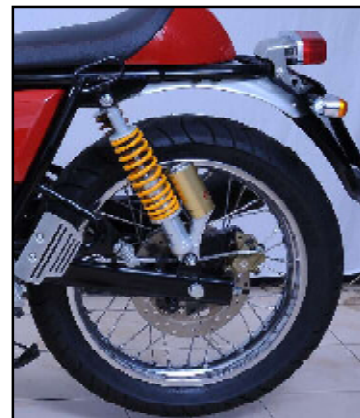
BENEFITS

- Improved ride comfort
- Better handling
- Higher rigidity of front end
- Improved Fork life

SALIENT FEATURES - CONTINENTAL GT

REAR WHEEL

- Rear Tyre / Make** : 130 / 70-18", 63H Pirelli Sport Demon
- Rear Hub** : Powder Coated - Dark Metallic Silver colour
- Spokes & Nipples** : Stainless steel spokes (Qty. 18 Nos. each inner and outer) and brass nipples
- Rear Brake** : Disc brake - M/s. Brembo 240mm disc (Brass Gold Powder Coat)
Single Piston (Dia 32mm) floating Caliper with Metal braided hose.
- Wheel Rim** : Aluminium Spokes Rim 3.0 X 18"



ADVANTAGES

- Improved brake feel & less Operator fatigue
- Positive braking in rainy weather
- Auto-Adjustment for brake pad wear
- Easy pad replacement
- Maintenance free working

SWINGARM & SPROCKET

Rigid oval section swingarm with needle roller bearing pivot system.

Aluminium adaptor with detachable steel driven sprocket (36 Teeth).

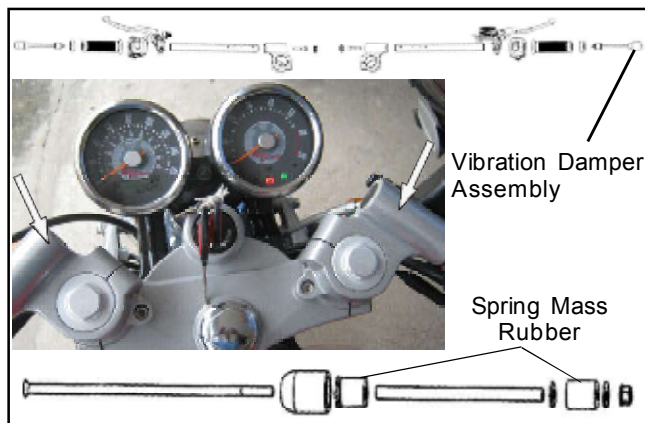


BENEFITS

- Improved handling
- Prolonged life of chain and sprocket

HANDLE BAR

New design CLIP ON handle bar LH & RH split type with spring mass damper handle bar.

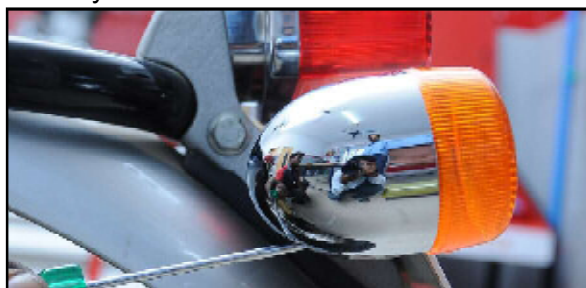


ADVANTAGES

- Mounted above top bridge plate with guide screw for handle bar position.
- New type spring mass damper will reduce vibrations in handle bar assy., will enhance riding comfort.

TRAFFICATORS

New stylish trafficators.

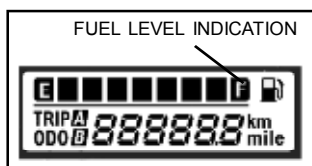


SALIENT FEATURES - CONTINENTAL GT

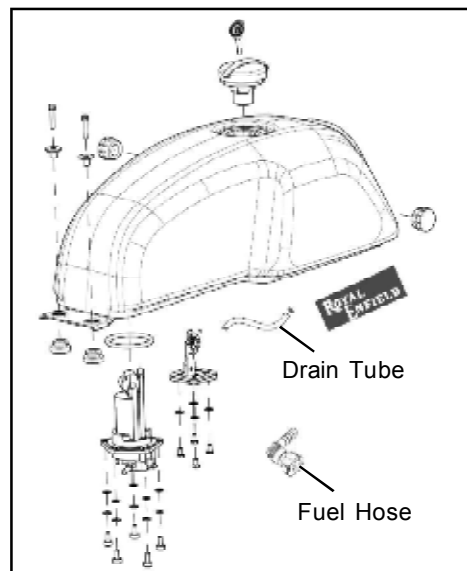
FUEL SYSTEM

Fuel Tank : New Sports look tank, rubber mountings on frame.

Fuel Gauge : New Fuel gauge - Bar code display in Instrument cluster.



Fuel Pump : Electrical sub-merged pump mounted under the tank.



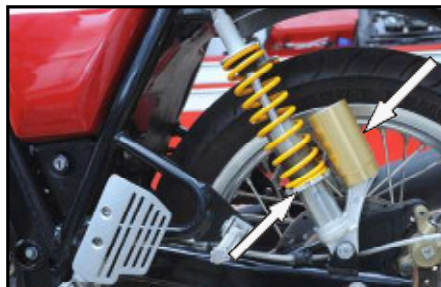
INTEGRATED IGNITION SWITCH & STEERING LOCK

New Integral ignition switch cum steering lock.



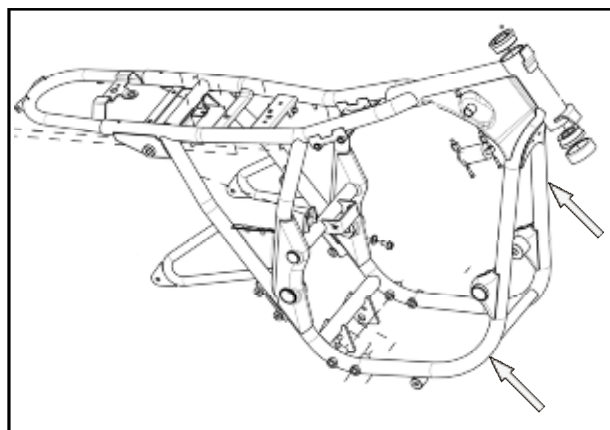
REAR SHOCK ABSORBERS

Gas charged rear shock absorbers - Paioli. Travel 80mm stroke (Adjustable by thread & special nut)



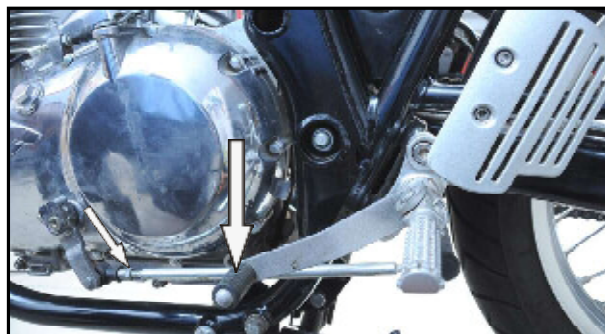
FRAME

Cradle type - twin down tube frame.



GEAR CHANGER

Universal joint operated gear changer. Height adjustable according to rider comfort by rod and adjuster nut.



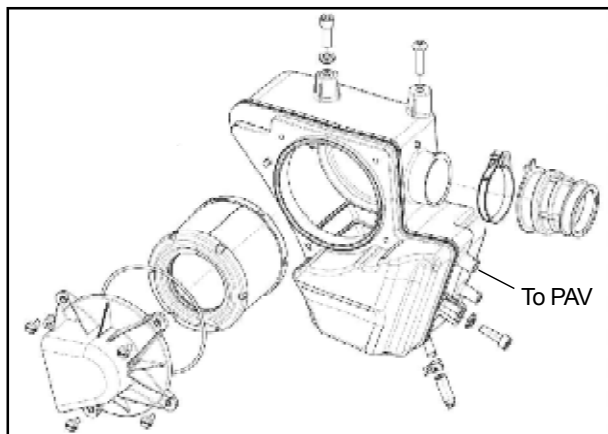
ADVANTAGES

- More stability and rigid.
- Reduced vibration.

SALIENT FEATURES - CONTINENTAL GT

AIR FILTER BOX

New designed air filter box. Improved volume to 4.5 litre (approx.) capacity.

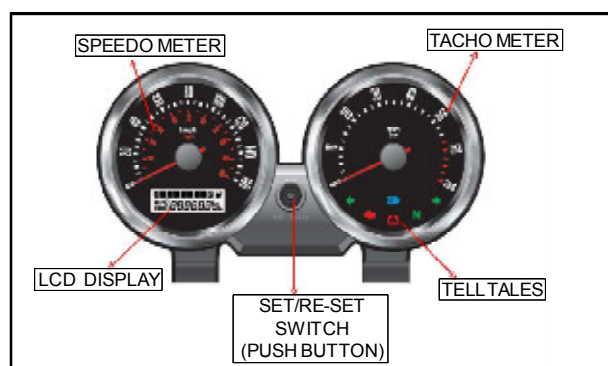


ADVANTAGES

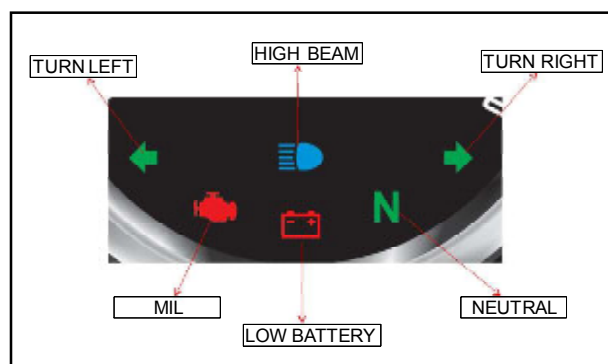
- Better acceleration and pickup.

DIGITAL INSTRUMENT CLUSTER

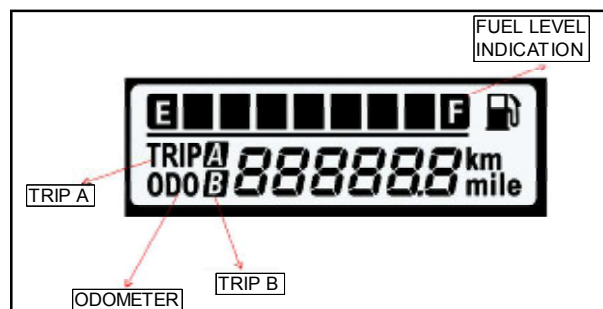
Stepper motor driven speedometer & tachometer.



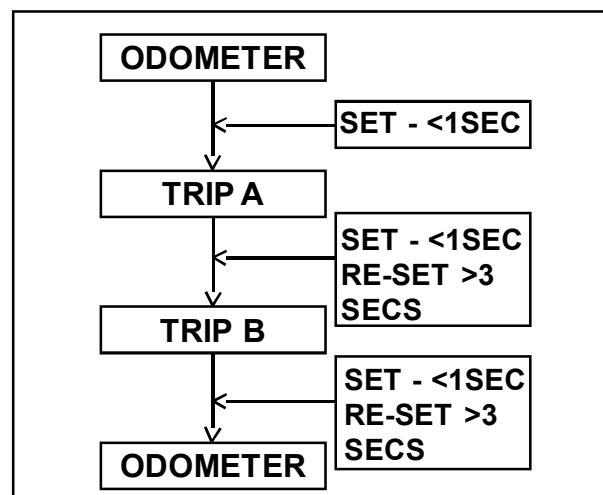
TELL TALES



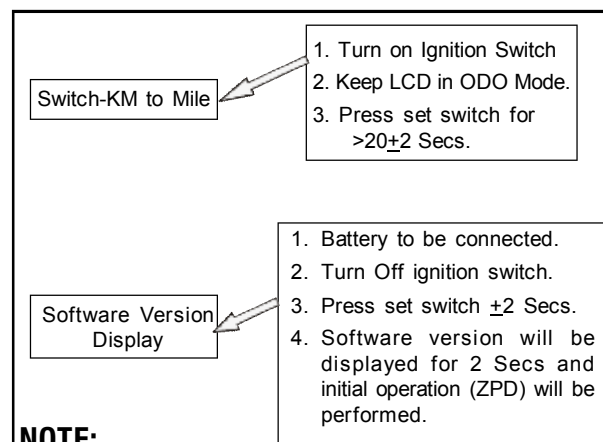
LCD FEATURE



LCD DISPLAY PATTERN



OTHER PUSH BUTTON MANAGEMENT

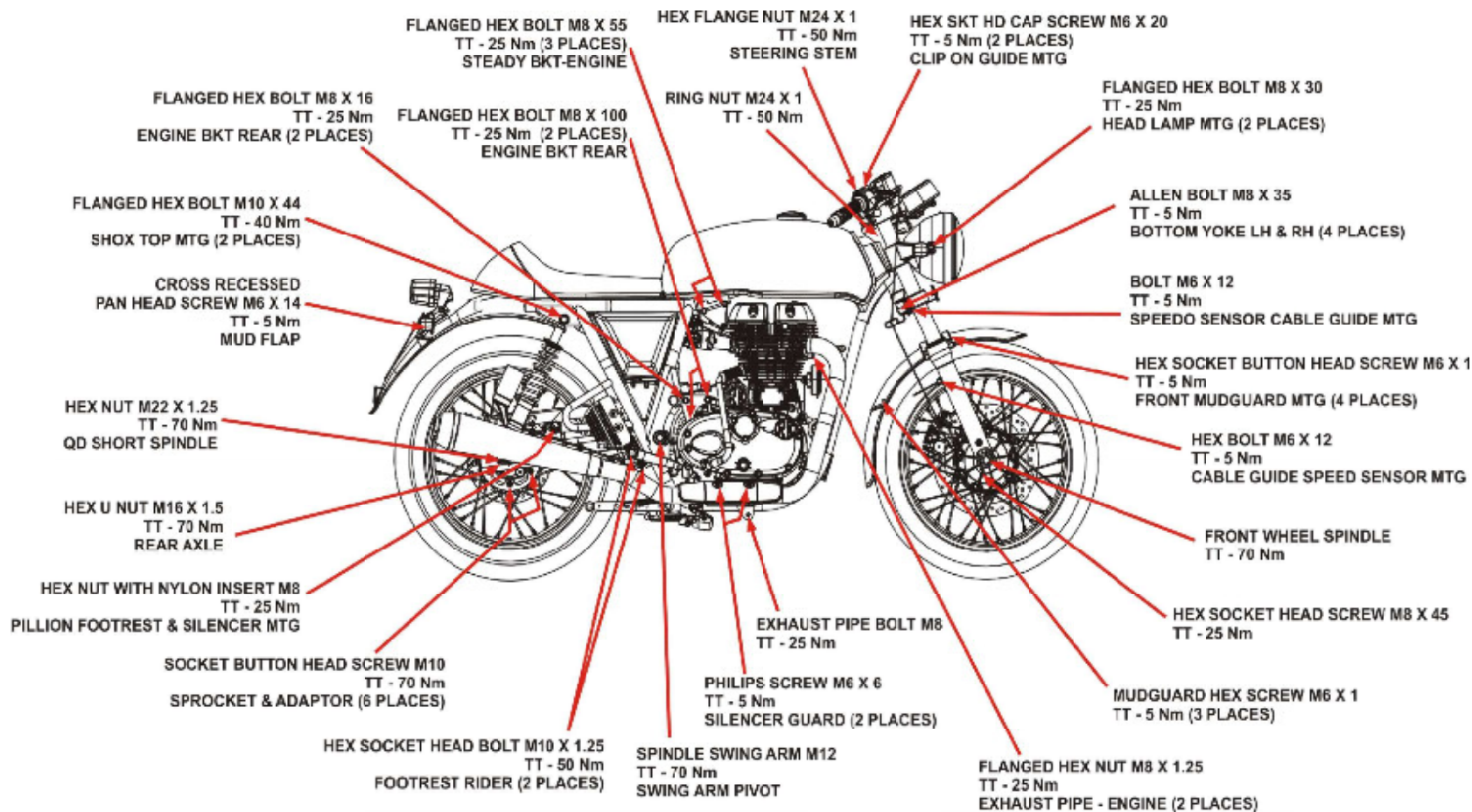


NOTE:

Both Unit change over and software version display key operation usage is restricted to assembly operators and service personnels. Not to be shares with customers.

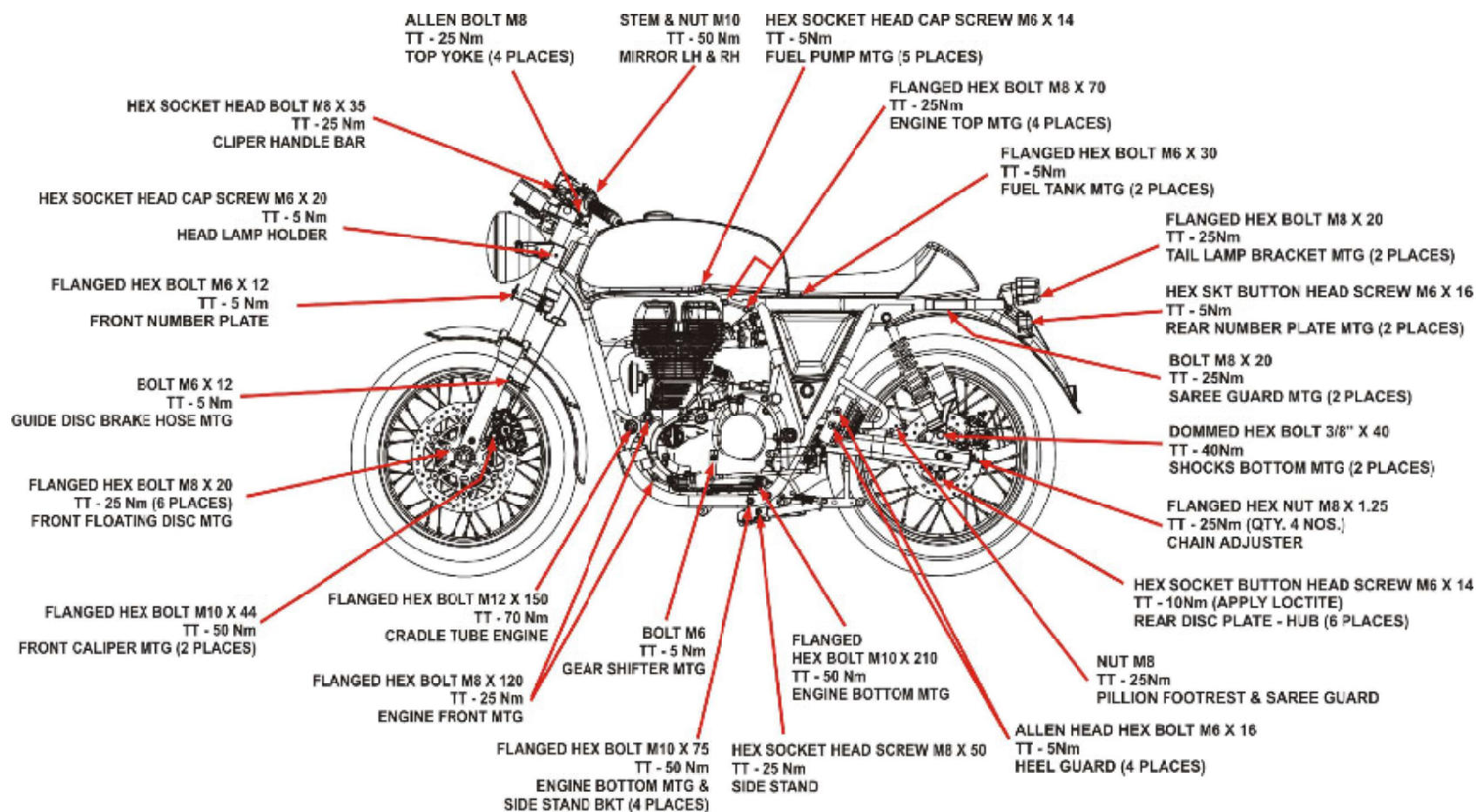
TORQUE VALUES - CONTINENTAL GT

RIGHT SIDE VIEW



TORQUE VALUES - CONTINENTAL GT

LEFT SIDE VIEW



PERIODICAL MAINTENANCE - CONTINENTAL GT

The maintenance schedule detailed here will help you maintain your CONTINENTAL GT Motorcycles meticulously and to get a long trouble free service. The schedule provided herein is based upon average riding conditions and indicates the Kms at which regular inspections, adjustments, replacements and lubrications are to be carried out.

The frequency of the maintenance must be shortened depending upon the severity of the driving condition or if the motorcycle is used in a very dusty environment, severe cold, extreme heat, bad roads, standing water etc.,

S. No.	DESCRIPTION	FREE SERVICE Whichever is earlier				PAID SERVICE							
		Kms (x 1000)	0.5	3	6	9	12	15	18	21	24	27	30
	Months	1.5	3	6	9								
1	Engine Oil	R		R		R		R		R		R	
		Check level at every 1000 Kms or earlier as required											
2	Engine oil filter element	R	C	R		R		R		R		R	
3	Engine sump filter (oil strainer)	C	C	C		C		C		C		C	
4	Magnetic drain plug under gear box and secondary drain plug under crankshaft in crankcase RH	C	C	C		C		C		C		C	
5	Spark plug	C&A	C&A	C&A	C&A	C&A	R	C&A	C&A	C&A	C&A	C&A	R
6	HT lead for crack	I	I	I	I	I	I	I	I	I	I	I	I
7	Fuel hose & clip / Injector 'O' Ring / Seal Ring	I	I	I	I	R	I	I	I	I	R	I	I
8	Fuel Pump	Check for screw tightness in all services											
9	Accelerator & Throttle pulley cable free play	A	A	A	A	A	A	A	A	A	A	A	A
10	Rubber hose, Air filter to Throttle body	I	I	I	I	R	I	I	I	I	R	I	I
11	Rubber hose, Inlet manifold	I	I	I	I	R	I	I	I	I	R	I	I
12	Air filter paper element	C	C	C	C	R	C	C	C	C	R	C	C
13	Inlet / Exhaust valve seating						I						I
14	Cylinder head (Combustion chamber)												D
15	Exhaust pipe												D
16	Clutch lever free play	Adjust every 1000 Kms or earlier as required											
17	Rear brake pedal pivot	L	L	L	L	L	L	L	L	L	L	L	L
18	Battery terminals (apply petroleum jelly)	C	C	C	C	C	C	C	C	C	C	C	C
19	Battery Electrolyte level	I	I	I	I	I	I	I	I	I	I	I	I
20	Earth wire eyelet contact (below ECU Mounting)					I							I
21	Rear Wheel Drive Chain	Adjust every 1000 Kms or earlier as required											
		Lubricate every 3000 Kms or earlier as required											
22	Front Fork oil / leak	I	I	I	R	I	I	I	R	I	I	I	I
23	Steering ball races / play adjustment		A	L	A	R	A	L	A	R	A	L	
24	Spokes tightness / Wheel rim run out front & rear	I		I		I		I		I		I	
25	Rear wheel cush rubbers					I & R				I & R			
26	Tyre wear front & rear			I	I	I	I	I	I	I	I	I	I
27	Hand levers & Kick starter pivot	Lubricate every 1000 Kms or earlier as required											
28	Brake Oil level check / Replacement	I	I	I	I	I	I	I	I	R	I	I	I
29	Pivot-Side Stand / Center Stand pivot	L	L	L	L	L	L	L	L	L	L	L	L
30	Rider & Pillion Foot rest pivot	L	L	L	L	L	L	L	L	L	L	L	L
31	Swing arm needle bearings and spindle					L					L		
32	Vent Pipe under air filter box		I & C	I & C	I & C	I & C	I & C	I & C	I & C	I & C	I & C	I & C	I & C
33	Throttle body - cleaning spray*			C		C		C		C		C	
34	PAV pipes & hose clip	I	I	I	I	I	I	I	I	I	R	I	I
35	Front & Rear brake hose and Banjo Bolt	I	I	I	I	I	I	I	I	I	I	I	R

A : Adjust C : Clean D : De-carbonise I : Inspect L : Lubricate R : Replace

NOTE:

For Maintenance after 30,000 Kms, Please repeat the same frequency specified above.

Do not mix DOT 3 and DOT 4 brake fluid together.

*Carbo cleaner / Carbclik or Fuel Line Cleaner Spray. (Make - Wurth or ITW Chemin)

PERIODICAL MAINTENANCE

THROTTLE CABLE FREE PLAY ADJUSTMENT (CONTINENTAL GT)

(A) ADJUSTMENT OF FREE PLAY AT ROTOR THROTTLE) GRIP FREE PLAY : 2 TO 3 MM

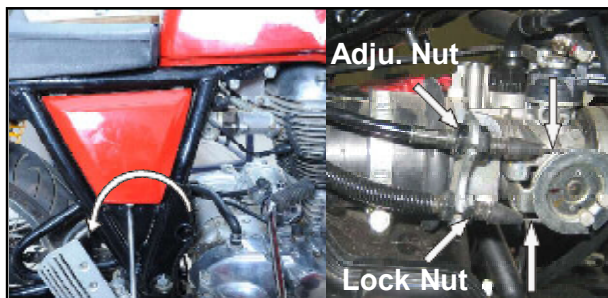
- Check throttle radial free play 2-3 mm. If excess play then adjust throttle cable as shown Fig.



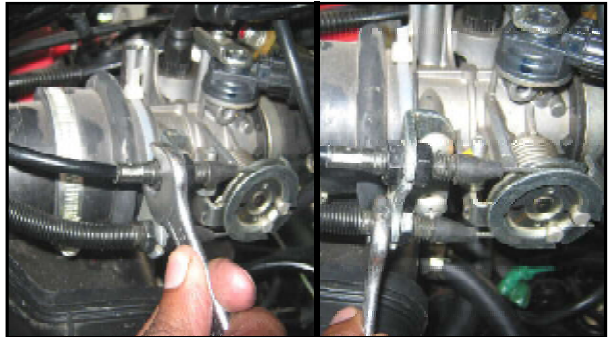
- Slide the rubber boot, use 10 mm double end spanner to adjust cable outer and lock the nut. Adjust both cables uniform and tighten the lock nuts. After adjustment move the rubber boot over the lock nuts.

(B) CHECKING PROCEDURE OF THROTTLE BODY ROTOR CABLES FREE PLAY

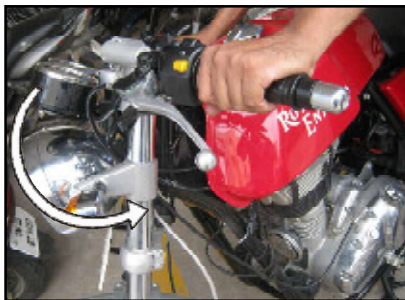
- To achieve proper response from EFI Throttle body, fuel injection and ignition timing change over after 15% operation of rotor grip. Adjustment in the throttle body bracket v/s rotor pulley.
- For checking remove RH side panel, it is recommended to maintain 1mm free play in inner cable end.



- Loosen the lock nuts on both the cables.
- Adjust both cables free play uniform and tighten the lock nuts.



- Check point – after adjustment of throttle cables (Top & Bottom), start the bike and turn the handle bar from left to right side extremely. Ensure that there is no change in idle rpm or cable stretch / cable pulling.



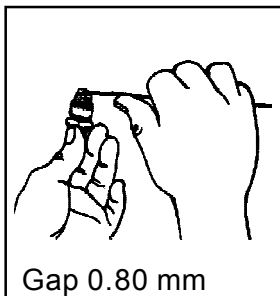
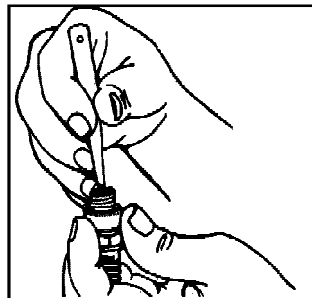
THROTTLE CABLE ASSY. REPLACEMENT (CONTINENTAL GT)

- While replacing throttle cable following procedure is recommended
 - (A) Remove RH side cover and seat assembly while replacing throttle cable.
 - (B) Connect throttle cables to Rotor / throttle grip assembly at handle bar.
 - (C) Connect cables another end to the throttle body rotor pulley and ensure the recommended free play.
 - (D) Route them and strap it the cables properly.

SPARK PLUG - M14 (WQR8DC)

CLEAN AND ADJUST : EVERY 3000 KMS

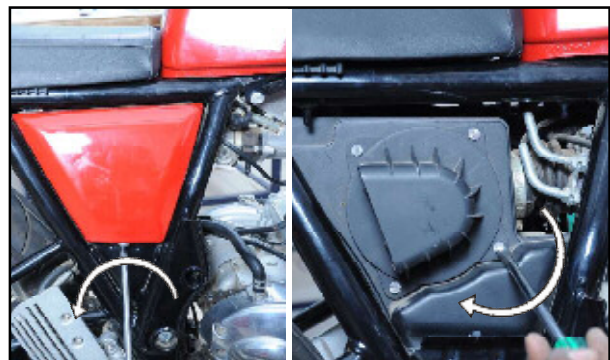
- Clean insulator tip and electrodes using a pointed scrapper or plug cleaning sand blaster machine.
- Measure and adjust the gap.



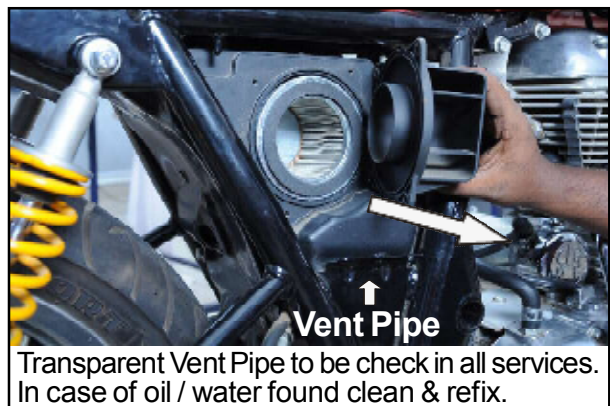
AIR FILTER PAPER ELEMENT

CLEAN AND REFIX : EVERY 3000 KMS

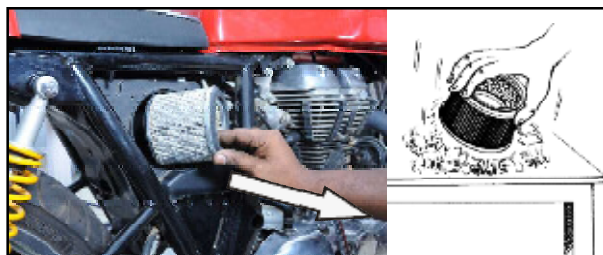
- Remove the screw from the side cover bottom side and then take out RH side cover.



- Remove the air filter cover screws and then takeout air filter box cover.



- Takeout air filter paper element and check for dirt. Gently tap it as shown in fig and fix it back .



NOTE :

It is adviceable to replace air filter paper element once in 10,000 KMS. In case of vehicle running in dusty / mud road condition it may be replaced as earlier as required.

Usage of high pressure compressed air is not recommended to clean air filter paper element.

Fitment of air filter paper element is reverse order of removal process.

BRAKE FLUID

FRONT



REAR



Check if oil is below "MIN" level. To top up, remove cover with diaphragm and top up with either DOT 3 or DOT 4 as specified.

CAUTION :

Please take care that it does not spill over on any other parts of the motorcycle. Please wipe the spilled brake fluid immediately, if there is any spill over, using a soil cloth (preferably a wet cloth) to avoid damage to paint work or other parts.

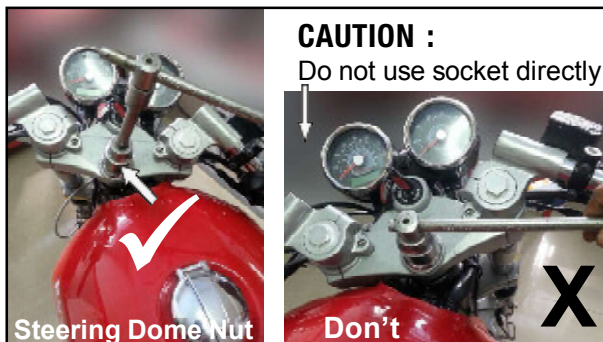
Don't Mix DOT 3 & DOT 4 Brake Fluid together.

STEERING STEM PLAY ADJUSTMENT

- Place Motorcycle on Center Stand
- Keep a wooden plank under the stand to Rise the Front Wheel
- Hold the Fork pipe (Main Tube) pull and push simultaneously lift the front wheel upwards, check Steering play as shown in Fig. A.



- Rock the front wheel down wards and feel the play / sound at stem top dome nut by fingers as shown in above fig B.
- If felt, adjust the steering free play as per following procedure.
- Loosen the steering dome nut by 30 mm socket with long extension rod and tommy bar as shown in fig.



- Loosen the pinch bolts in bottom yoke by using Allen key 6mm LH and then RH side.



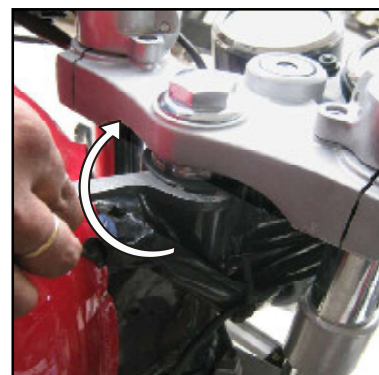
- Loosen the lock ring nut before adjusting steering play.



- In case of excessive steering play tighten the steering ring nut by using special tool (C spanner)



- After adjusting the play then tighten lock nut against ring nut as shown in fig.



- After adjusting the play then tighten Dome nut to Torque 5.0 kg/Nm.



- Again check and confirm the steering free play.



CAUTION :

Do not use Ring spanner directly to tighten dome nut.



- Tighten the pinch bolts in bottom yoke LH and then RH by using Allen key 6mm (Torque 25 N-m).



- Now Check the handle bar free movement by turning extreme Left to Right side.



NOTE :

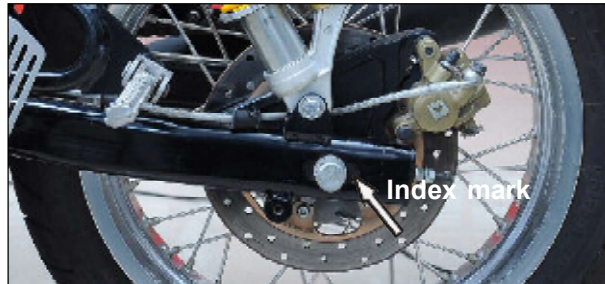
Take a small test ride to ensure that

- Steering free movement.
- No dragging.
- No sound from steering stem / mounting area.

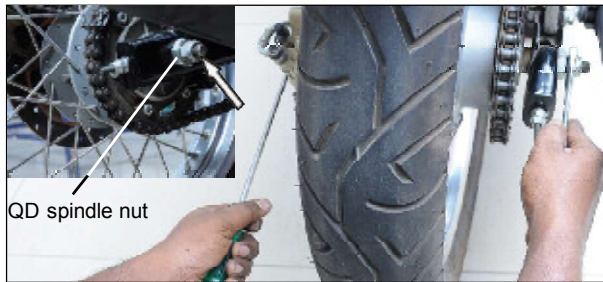
REAR WHEEL DISMANTLING & ASSEMBLING / BRAKE PAD REPLACEMENT

REAR WHEEL DISMANTLING

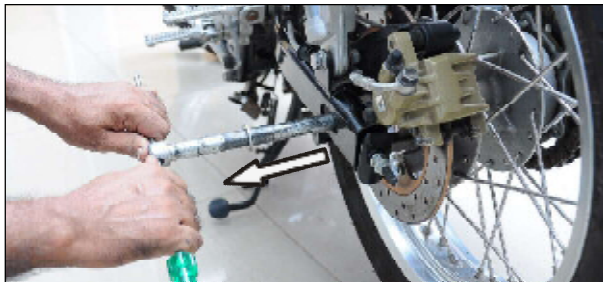
- Place the vehicle on center stand on a firm and flat surface.
- Observe and mark the alignment index marks in the both sides of swing arm.



- Remove axle nut on the RH side.



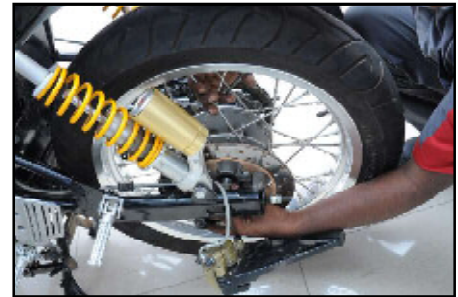
- Remove wheel spindle from LH side.



- Remove the caliper assembly by pulling out from the swing arm slot.



- Remove the distance collar.
- Tilt the motorcycle and take out the rear wheel assembly conveniently.



CAUTION :

Do not press the rear brake pedal when wheel is removed as this will result in the brake pads coming too far out of the brake caliper.

- Place a 4 mm thick wooden piece or cardboard sheet between the brake pads to avoid pads activation in the event the rear brake pedal is accidentally pressed.

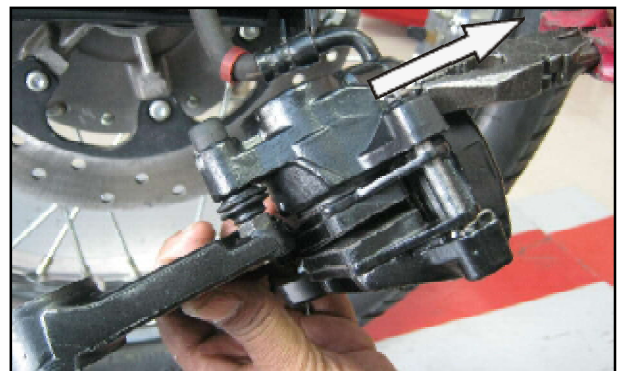
REAR BRAKE PAD REPLACEMENT

PAD DISMANTLING

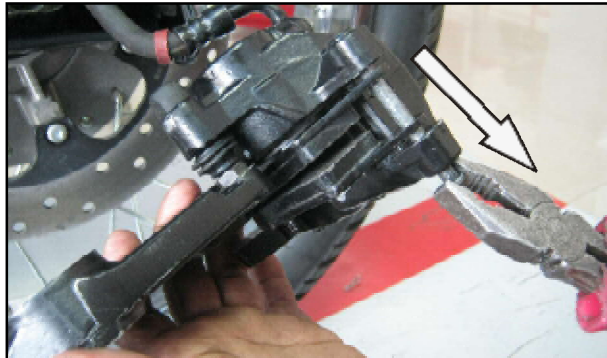
- Remove the wooden piece / card board sheet in between the brake pads.



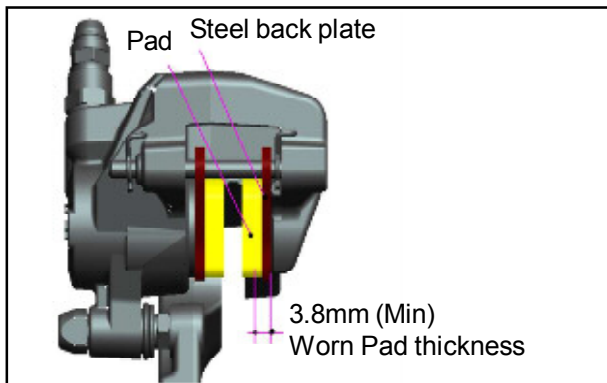
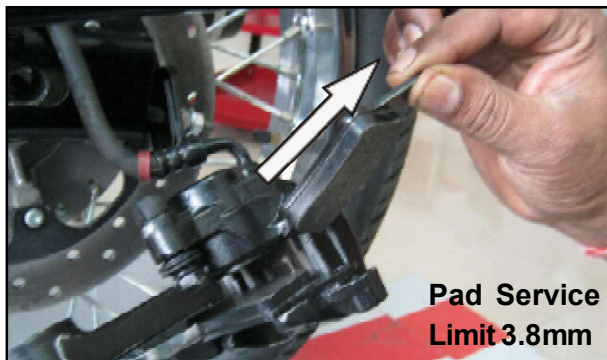
- Remove the clip hanger from the caliper assembly by using combination plier.



- Remove the pad pin from the caliper assembly by using combination plier.



- Remove the worn out brake pad from the caliper assembly.



- Clean the caliper assembly by dry / clean cloth.

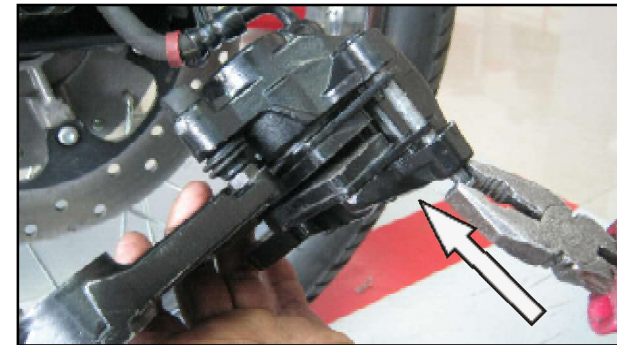


PAD ASSEMBLING

- Place the new brake pad into caliper assembly as shown.



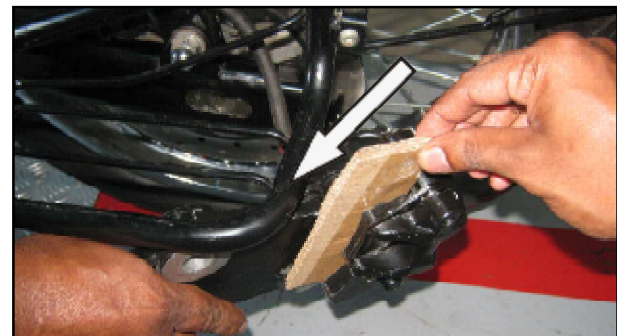
- Insert the pad pin in caliper assembly by using combination plier.



- Insert the clip hanger in caliper assembly.

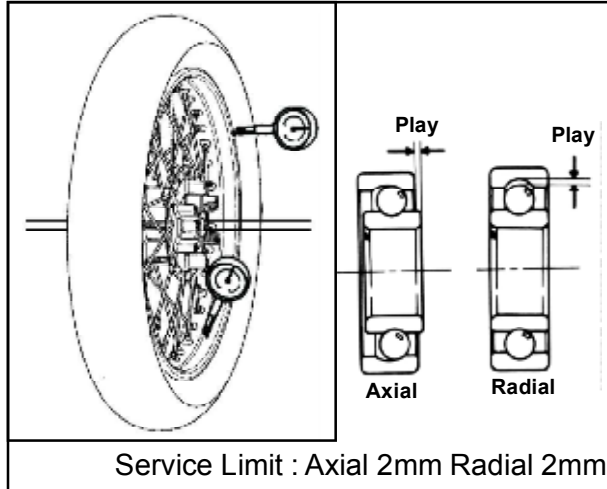


- Place the wooden piece / card board sheet in between the brake pads.



REAR WHEEL ASSEMBLING

- Before fix the wheel assembly into the vehicle check the rim run out by wheel truing guage and wheel bearings play.



- Remove the wooden piece / card board sheet placed between the brake pads.
- Ensure the four cush rubbers are in position inside the rear wheel hub.



- Tilt vehicle to right and insert wheel assembly between the swing arms.



- Position the rear wheel with cush rubber on the rear driven flange.



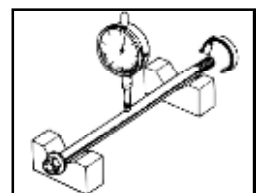
- Remove the wooden piece / card board sheet in between the brake pads.



- Insert the caliper assembly by pushing in the projection given inside the swing arm. Ensure the brake disc is located in between the brake pads.



- Align the caliper bracket, wheel and swing arm holes in-line and ensure distance collar is placed in hub dust seal.
- Before insert the front wheel spindle check the spindle run out.

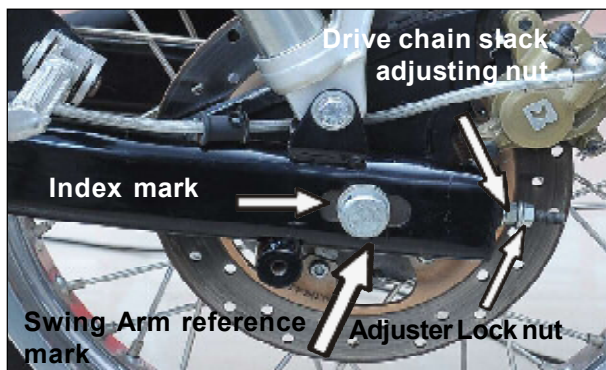


- Insert and tap the rear wheel axle gently.

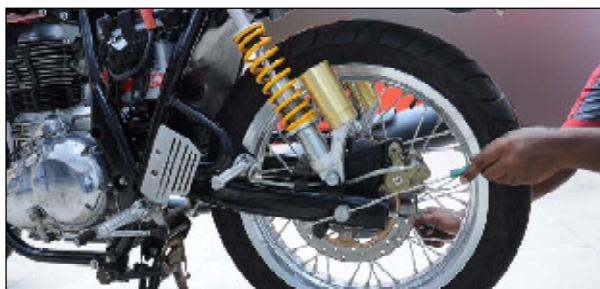
CAUTION :

Do not force the spindle into the wheel as the threads may get damaged. Tap it through the wheel gently.

- Ensure the index marks alignments on both sides of the swing arm are in same position for proper wheel alignment.



- Tighten the axle nut firmly by holding another end of axle as shown in fig.



- Ensure that swing arm end plate is seated properly and the chain adjuster nuts are correctly tightened and Locked.

**WARNING**

Ensure the vehicle do not come out of center stand while dismantling and assembling the wheel assembly. Failure to adhere could result in damage or injury.

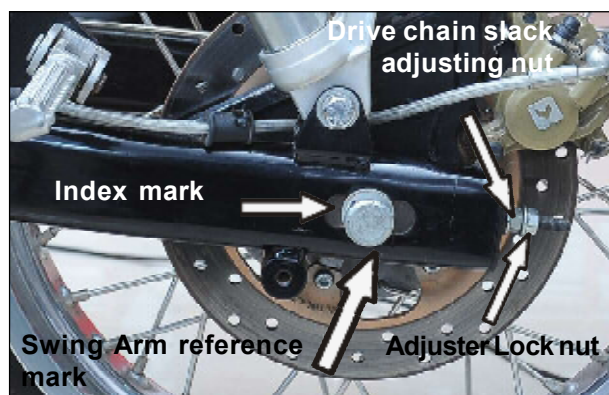
CAUTION :

Please check brake hose pipe routing from reservoir to master cylinder, master cylinder to rear wheel caliper.

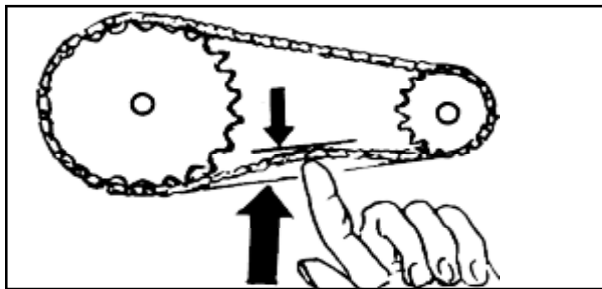
There should not be any twist or pinch in routing which may affect braking performance.

DRIVE CHAIN FREE PLAY (PLAY 20 TO 25 MM)

- Place motor-cycle on its center stand on a firm & flat surface.
- Shift the gear into the neutral position



- Measure the drive chain free play as shown. The drive chain free play is 20 to 25 mm.



1. If the drive chain free play is incorrect adjust as follows:

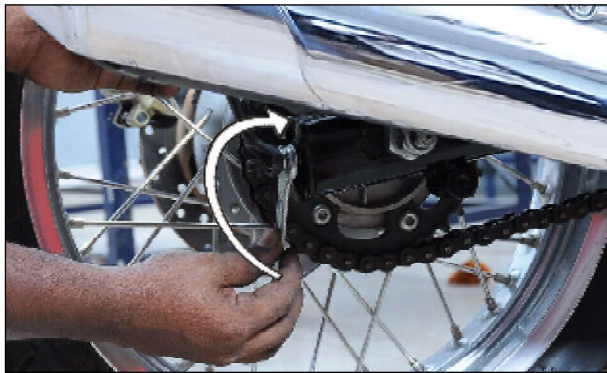
- a. Loosen the axle nut of the rear wheel axle.



- b. Loosen the sprocket QD spindle nut.



- c. Loosen the lock nut at both end of the swing arm.
d. To reduce the free play, turn the drive chain slack adjusting nut in clockwise direction.



- e. To increase the free play, turn the drive chain slack adjusting nut in anticlockwise direction and push the rear wheel forward.
f. Later adjust the nut on Lh side by matching the index mark with respect to Rh side index.
g. Ensure that both the sides are in same index marks.
h. Finally torque the spindle and axle nuts to 7 kgm.



- i. Tighten the adjuster lock nut by 13mm spanner against chain slack adjusting nut.



WARNING

Chain slackness beyond 30mm will lead to chain slippage.

Maintain drive chain slackness within the specified limits at every 1000 kms interval.

Please Check the front and rear wheels are correctly aligned, after the chain adjustment.

CHAIN LOCK FITMENT



The open end of the chain master link lock should face opposite to normal direction of chain rotation.

WARNING

The fitment of lock in wrong direction other than shown above can lead to its falling off, and thus can cause the sudden disconnection of the chain during the drive.

FRONT WHEEL, FORK OIL REPLACEMENT & FRONT FORK OVERHAULING

FRONT WHEEL REMOVAL

- Place the vehicle on center stand
- Place a wooden block the front end of engine to support the vehicle.



- Loosen the pinch bolt on the RH fork guide by 6 mm allen key. Hold the axle head by double end spanner while loosening the axle nut.



NOTE :

In case of not holding axle head by double end spanner may cause fork bottom lug fork ovality and create sound.

- Remove the axle nut along with washer.



- Tap and remove the front wheel spindle.



- Tilt the vehicle to RH Side and take out the wheel along with wheel speed sensor and LH side spacer.



CAUTION :

Do not press the front brake lever when wheel is removed as this will result in the brake pads coming too far out of the brake caliper.

- Place a 4 mm thick wooden piece or cardboard sheet between the brake pads to avoid pads activation in the event the front brake lever is accidentally pressed.

FRONT FORK DISMANTLING

- Place motorcycle on centre stand.
- Remove front wheel (ref page no. 22)



- Remove the clip - speedo drive wire guide from RH front fork.
- Remove the front caliper top and bottom mounting bolts by using 13 mm T spanner. Gently take out caliper brake hose from the hose guide hook above front mudguard.



NOTE :

place the wooden or cardboard sheet in between brake pads.

CAUTION :

Care to be taken not to operate disc brake.

- By using 5 mm allen key to remove the brace cum mudguard mounting bolts (4 Nos.) from the fork bottom leg and take out mudguard along with fork brace gently (without scratching paint).



- Remove head lamp holding bracket RH mounting bolt and then LH. Loosen both side bracket pinch bolt.



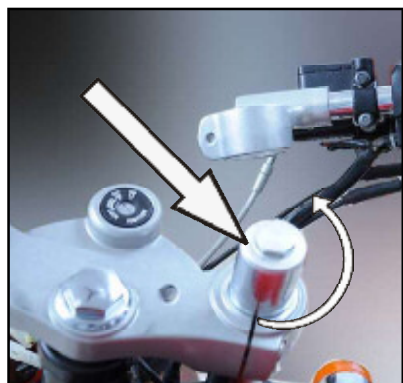
- Loosen the top yoke fork two pinch bolts on LH and then RH by using Allen key 6mm.



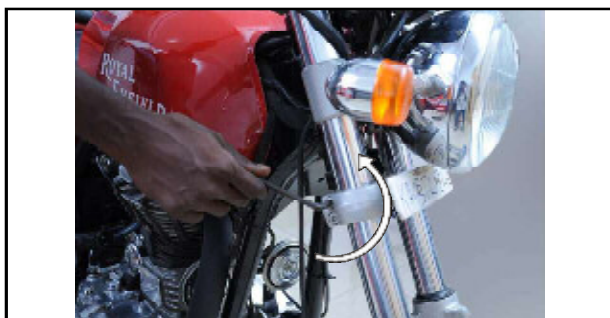
- Remove CLIP-ON handle bar LH & RH mounting screw by 5mm allen key.
- Shake and turn to take out CLIP-ON handle bar RH then LH as shown in fig.



- Loosen the fork cap nut in vehicle itself, by using 22 mm socket with tommy bar.



- Loosen the fork pinch 2 bolts each from steering bottom yoke RH and then LH.



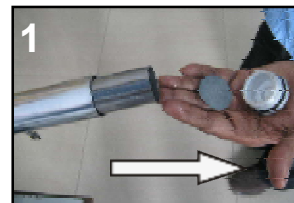
- Remove the front fork assy. left and then right. Take care of head light assy. and head lamp holders & wiring couplers properly.



- For Front fork refitting process Ref. page no. 28.

FRONT FORK OIL REMOVAL

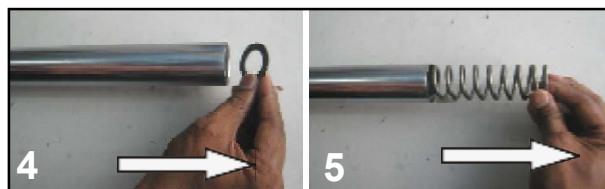
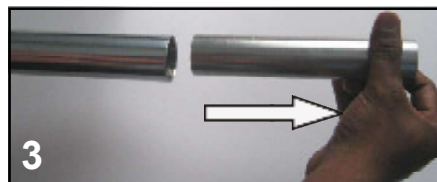
- Remove the fork cap nut with 'O' ring and Plain washer (fig. 1).



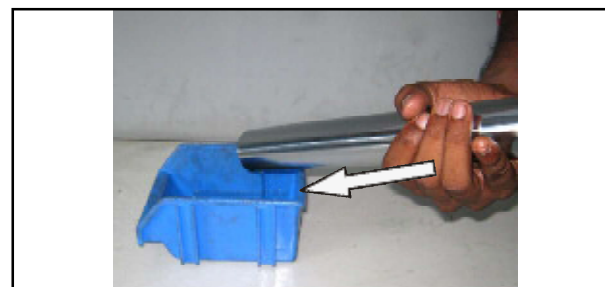
- Expand the cap nut 'O' ring and remove from the cap nut (fig. 2).



- Remove the spacer (fig. 3), washer spring top (fig. 4) and main spring (fig. 5) from fork.



- Remove the fork oil from the front fork by push and pull several times, so that complete oil will drain out.



- For Front fork oil refilling process Ref. page no. 27.

FRONT FORK OVERHAULING

FRONT FORK DISMANTLING

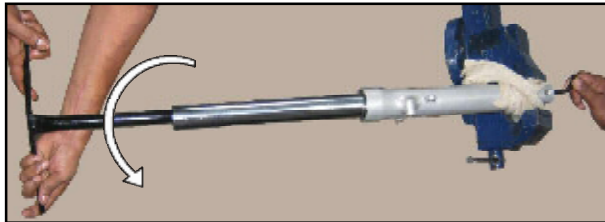
- Place the fork - outer tube bottom rectangle section in bench vice and remove the allen fork piston mounting Allen bolt as explained below process.



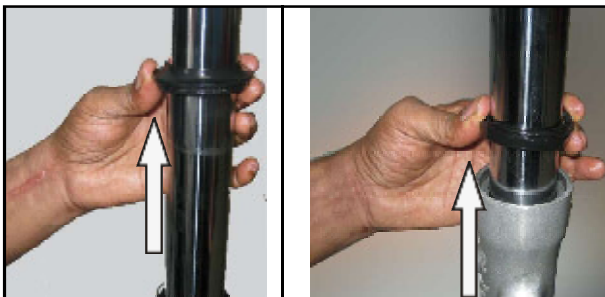
NOTE :

To avoid crack / scratch in fork bottom tube use cloth while fixing to bench vice

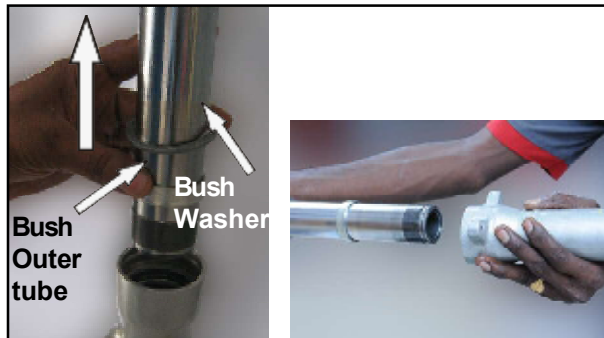
- Insert the special tool into the fork inner tube to lock the piston head and remove the Allen bolt and washer by using 8mm Allen key.



- Remove the dust seal and circlip from the outer tube then take out fork oil seal.



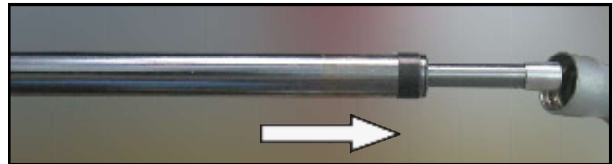
- Separate the inner tube from outer tube



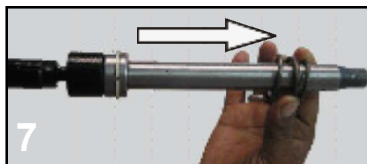
NOTE :

Pull out the inner tube with big washer and slide bush with outer tube.

In case of found difficulty, it is advised to warm up by electrical stove or heater/hot plate, then apply pressure for pulling outside.



- Remove the cap oil lock (fig. 6), piston sub assembly (fig. 7) and piston ring by expanding the ring (fig. 8)



NOTE :

While overhauling the front fork, always replace piston ring (plastic), oil seal, dust seal, cap bolt "O" ring and bottom allen bolt copper washer along with fork oil is recommended.

FRONT FORK ASSEMBLING

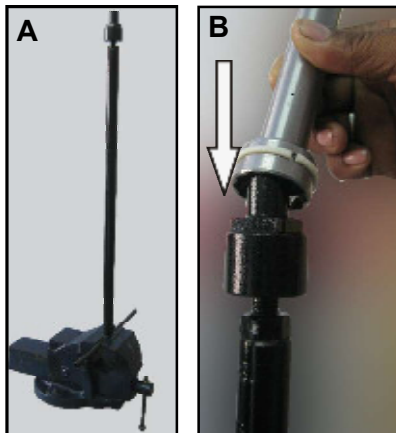
- Expand and fix the new plastic piston ring on fork piston as shown in fig.



- Check the piston sub (rebound) spring length with vernier caliper.



- Hold the fork special tool in bench vice as shown in fig A.
- Place the piston sub assembly on fork tool fig. B.

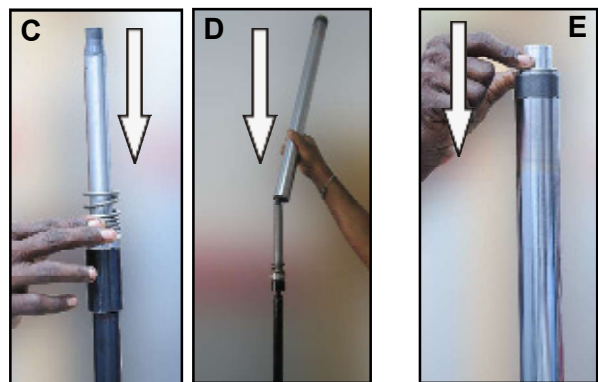
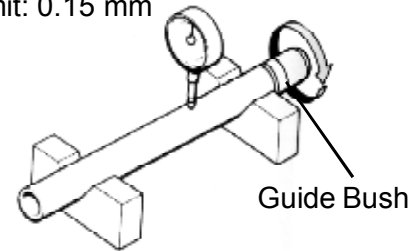


NOTE :

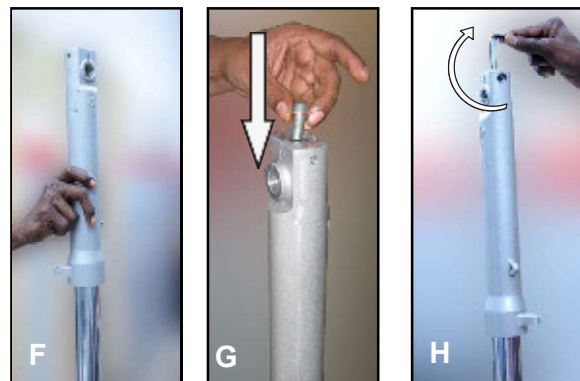
Ensure the special tool tip square 22mm has been properly seated inside the piston.

- Fix rebound spring on the piston sub assembly fig. C.
- Place the fork inner tube upside down (fig. D) and then assemble cap oil lock piece (fig. E) as shown in fig.
- Check the inner tube run out (keeping guide bush area away from the 'V' Block)

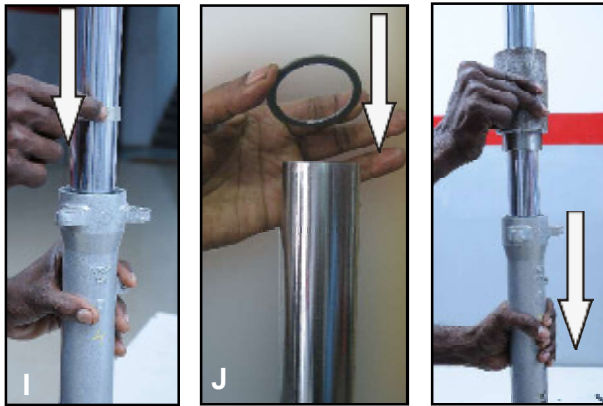
Service Limit: 0.15 mm



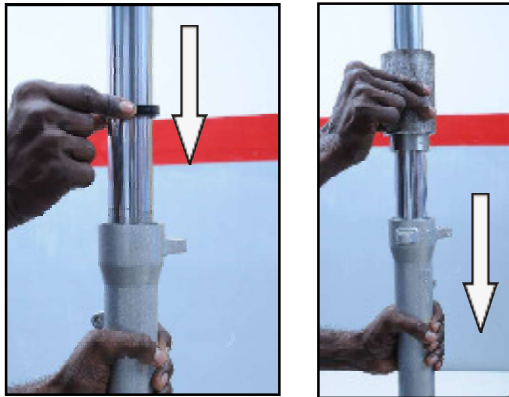
- Place the fork outer tube upside down (fig. F), fix the allen bolt with new copper washer (fig. G) and tighten the allen bolt by using 8mm allen key (Torque 30 N-m) (fig. H).



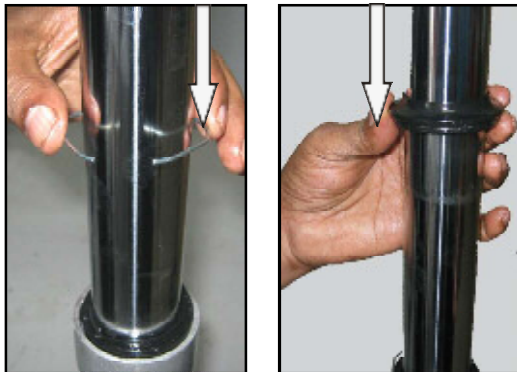
- Remove the front fork from the special tool.
- Fix the slide bush (fig. I) and big washer (fig. J) on outer tube by using special tool



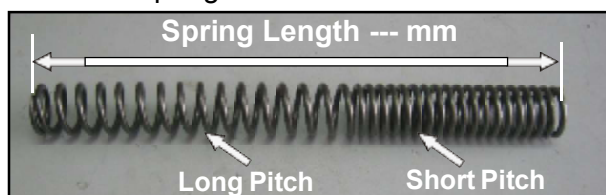
- Smear grease inside the new oil seal then fix and outer tube by using special tool - oil seal driver. Drive the oil seal into fork outer tube.



- Fix the circlip and then dust seal.

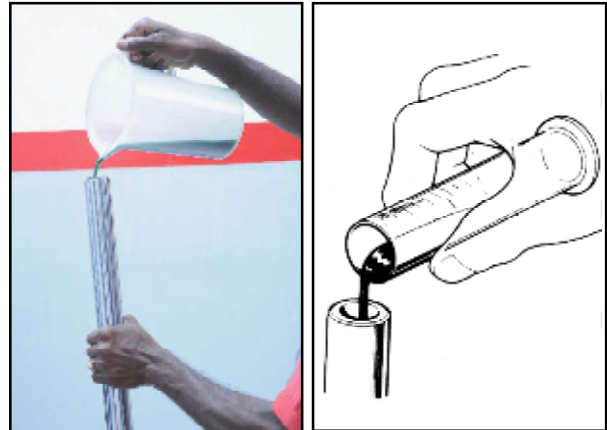


- Check the main spring length, if length difference is more than 5mm in between new and old spring, then replace both side fork springs.

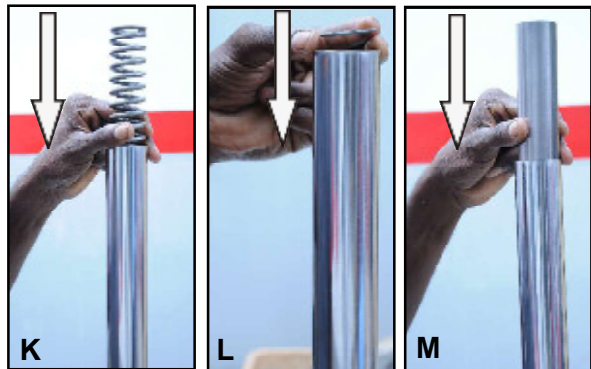


FRONT FORK OIL FILLING

- Pour new fork oil 430 ml per leg (Make - Gabriel fork oil, Grade - 2W 35)



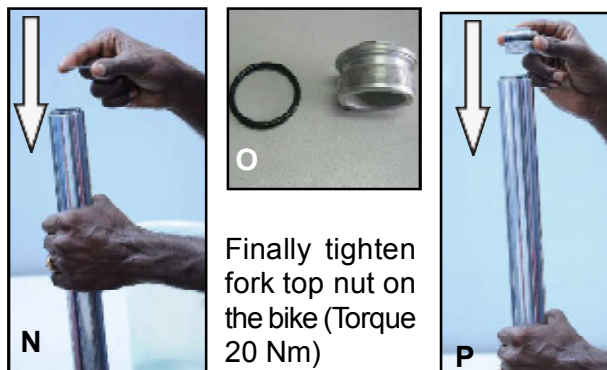
- Place the main spring (fig. K) , washer spring top (fig. L) and spacer tube (fig. M) into the inner tube as shown in fig.



NOTE :

Place the Main spring long coil pitch facing upwards as shown in fig. K.

- Place the plain washer (fig. N) and cap nut with new "O" ring (fig. O), then tighten the cap nut (fig. P) properly.



Finally tighten fork top nut on the bike (Torque 20 Nm)

FRONT FORK OVERHAULING / OIL REPLACEMENT

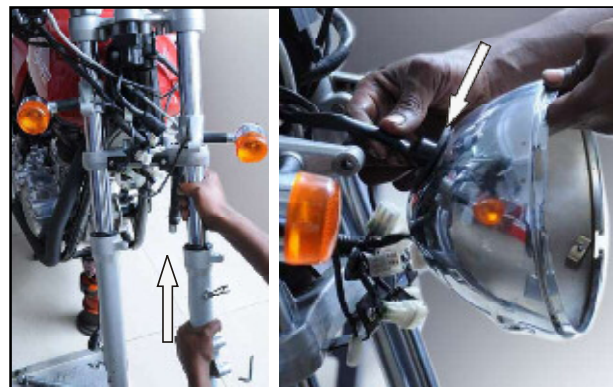
FRONT FORK REFITTING



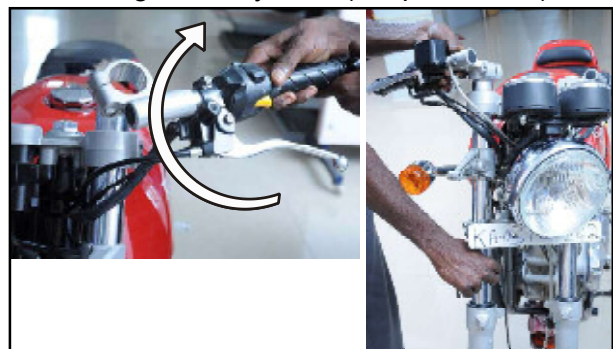
- Refix the front fork leg assy. RH and then LH.

NOTE :

Take care of head light assy., head lamp holders & Wiring harness / couplers are routed inside rubber grommet properly.



- Place the CLIP-ON handle bar LH and then RH. Tighten the pinch bolts in top yoke by using Allen key 6mm (Torque 25 N-m).

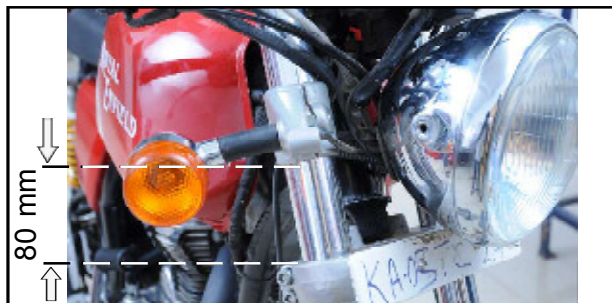


NOTE :

Ensure that CLIP-ON handle bar top surface aligned with fork top nut level then tighten the top yoke 2+2 pinch bolt.

- Check the alignment of head lamp holder LH & RH in both directions to get proper headlight focus.

- Fix the head lamp holder bolt and nut and tighten them.

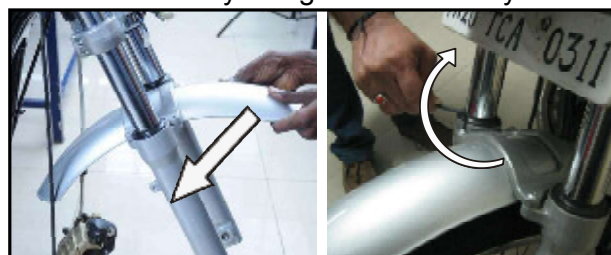


- Tighten the pinch bolt in steering bottom yoke.

NOTE :

Ensure that 80mm approximate gap between headlamp holder and steering stem bottom yoke as shown in above fig.

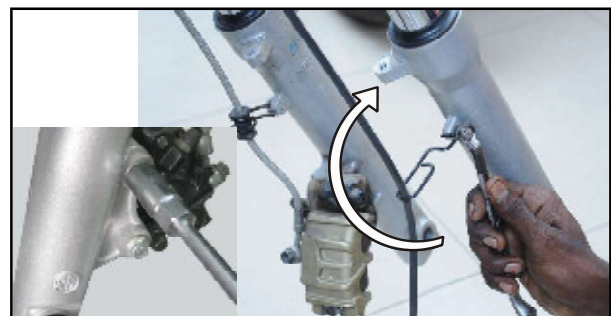
- Place the mudguard with brace gently (without scratching paint). In between both front fork legs.
- Fix the mudguard mounting allen screw (4 Nos.) from the top side on the front shock absorber by using 5 mm allen key.



- Refix the front caliper top and bottom mounting bolts by using 13 mm T spanner. Gently routing caliper brake hose to the hose guide hook on the front mudguard

CAUTION :

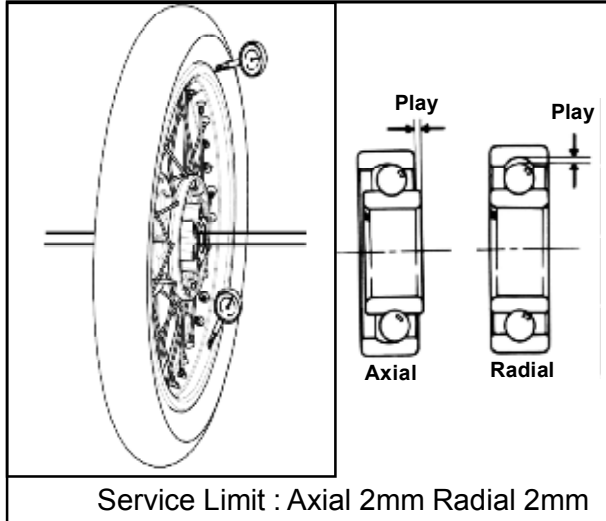
Care to be taken not to operate disc brake.



- In case of shims observed fix it back in the same location while mounting caliper assy on front fork.

FRONT WHEEL REASSEMBLY

- Remove the wooden piece / card board sheet placed between the brake pads.
- Before fixing the front wheel assembly into the vehicle, check wheel rim run out by wheel truing gauge & wheel bearings play.



- Place the wheel speed sensor in fork guide position.



NOTE :

Ensure slot on hub and speedo sensor is matched correctly.

- Insert the wheel along with wheel speed sensor & LH spacer between the front fork ends. Ensure the brake disc is located in between the brake pads.



- Insert and tap the front wheel axle gently inside.



- Refit the washer and tighten the nut by using 24mm socket RH end by using 16mm double end spanner (Torque 70 N-m)
- Tighten the pinch bolt on the RH fork guide.



- Rotate the wheel and check for smooth rotation.
- Ensure wheel speed sensor wire coupler is being connected to cluster unit and then check for proper working of speedo meter.
- Press brake lever 2 or 3 times to check front brake efficiency.

SERVICE LIMITS OF VARIOUS COMPONENTS

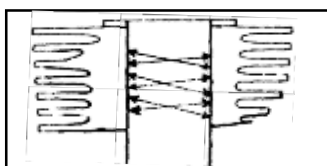
Wear limits are given as new min, new max and service limits.

New components must be within the limits specified. Components within service limits may be reused after careful inspection. Use of parts beyond service limit can reduce the operating life of the component and may affect the motorcycle performance seriously.

Cylinder bore



Cylinder bore :
Point of measurement



	UCE 535
New Min.	87.045 mm
New Max.	87.074 mm
Service Limit	87.190 mm

Ring to groove clearance : Comp. Top ring



	UCE 535
New Min.	0.03 mm
New Max.	0.07 mm
Service Limit	0.11 mm

Piston



	UCE 535
New Min.	86.940 mm
New Max.	86.970 mm
Service Limit	86.890 mm

Ring to groove clearance: Comp. ring - Middle



	UCE 535
New Min.	0.05 mm
New Max.	0.09 mm
Service Limit	0.15 mm

Piston to bore clearance



	UCE 535
New Min.	0.095 mm
New Max.	0.114 mm
Service Limit	0.30 mm

Ring to groove clearance : Oil rings



	UCE 535
New Min.	0.16 mm
New Max.	0.38 mm
Service Limit	0.44 mm

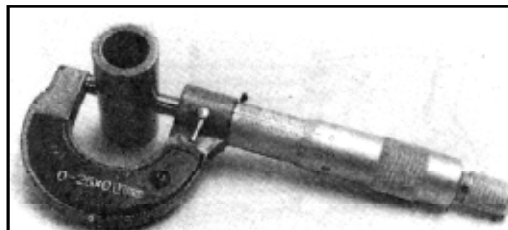
SERVICE LIMITS OF VARIOUS COMPONENTS

Piston ring end gap : compression rings



	UCE 535	
From top	1st	2nd
New Min.	0.20 mm	0.35 mm
New Max.	0.35 mm	0.50 mm
Service Limit	0.70 mm	0.85 mm

Piston Pin diameter



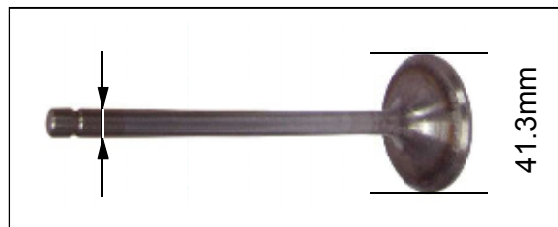
	UCE 535
New Min.	19.992 mm
New Max.	19.997 mm
Service Limit	19.982 mm

Piston ring end gap oil rings - Top and bottom rail



	UCE 535
New Min.	0.20 mm
New Max.	0.70 mm
Service Limit	0.90 mm

Valve stem OD (Inlet)



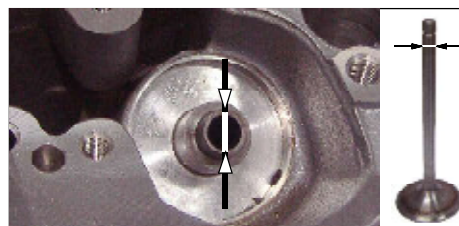
	UCE 535
New Min.	6.965 mm
New Max.	6.980 mm
Service Limit	6.955 mm

Valve stem OD (Exhaust)



	UCE 535
New Min.	6.945 mm
New Max.	6.960 mm
Service Limit	6.935 mm

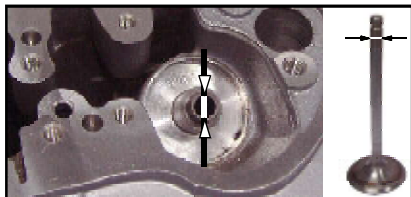
Valve to guide (inlet) clearance



	UCE 535
New Min.	0.02 mm
New Max.	0.05 mm
Service Limit	0.08 mm

SERVICE LIMITS OF VARIOUS COMPONENTS

Valve to guide (Exhaust) Clearance



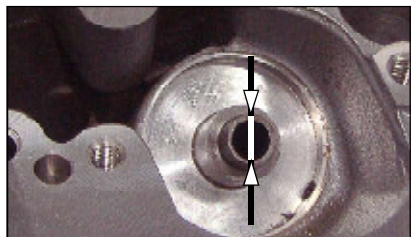
	UCE 535
New Min.	0.04 mm
New Max.	0.07 mm
Service Limit	1.00 mm

Throttle cable free play



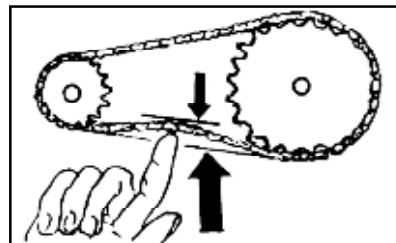
	UCE 535
New Min.	-
New Max.	1 mm
Service Limit	2 mm

Valve guide bore



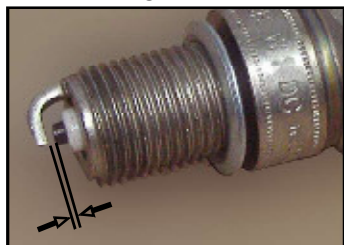
	UCE 535
New Min.	7.00 mm
New Max.	7.015 mm
Service Limit	7.25 mm

Drive chain : slackness



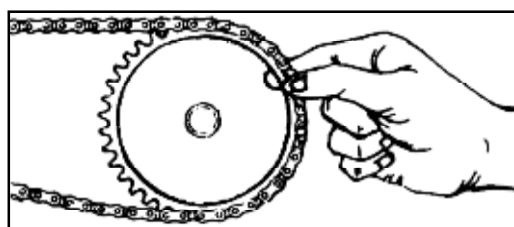
	UCE 535
New Min.	20.00 mm
New Max.	25.00 mm
Service Limit	30.00 mm

Spark Plug Gap (M14 - WQR8DC)



	535CC
New Min.	0.80 mm
New Max.	0.90 mm
Service Limit	-

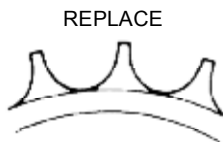
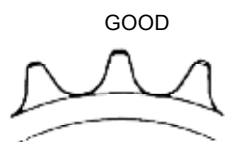
Rear Sprocket chain pull off



	UCE 535
New Min.	-
New Max.	-
Service Limit	5.00 mm

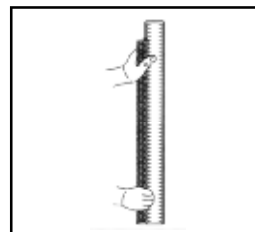
SERVICE LIMITS OF VARIOUS COMPONENTS

FD and Rear Driven - Sprocket



	UCE 535
New Min.	Sharp, bend broken teeth
New Max.	
Service Limit	

Front fork (GIL) assembly spring : length



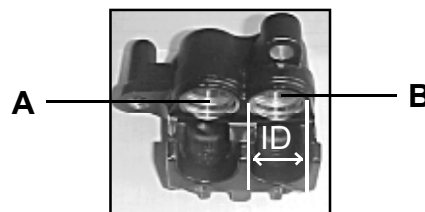
	UCE 535
New Min.	
New Max.	
Service Limit	Difference between old and new spring length 5mm

Drive chain length across 21 pins



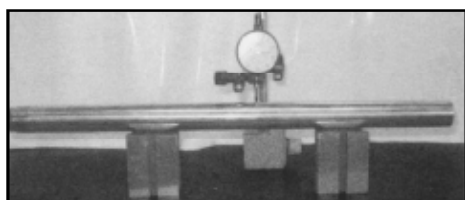
	UCE 535
New Min.	320 mm
New Max.	322 mm
Service Limit	328 mm

Front Caliper Bore Inner Diameter (Brembo)



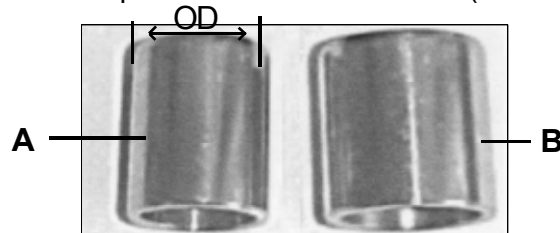
	UCE 535	
	A	B
New Min.	-	-
New Max.	30.00 mm	32 mm
Service Limit	-	-

Front Fork Main tube (GIL) - Run out



	UCE 535
New Min.	0.00 mm
New Max.	0.04 mm
Service Limit	0.15 mm

Front Caliper Piston Outer Diameter (Brembo)



	UCE 535	
	A	B
New Min.	30.00 mm	32 mm
New Max.	-	-
Service Limit	-	-

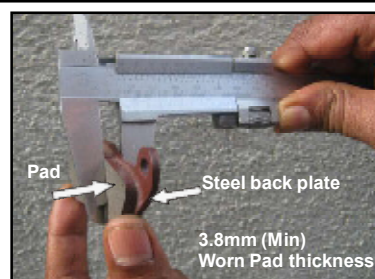
SERVICE LIMITS OF VARIOUS COMPONENTS

Front Master Cylinder piston OD (BBI)



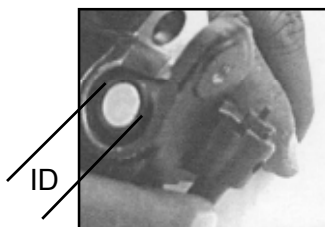
	UCE 535
New Min.	-
New Max.	-
Service Limit	mm

Front brake
pad lining
(Brembo)



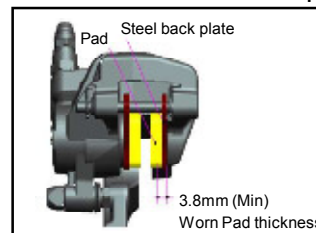
	UCE 535
New Min.	-
New Max.	-
Service Limit	3.8 mm

Front Master Cylinder Bore (BBI)



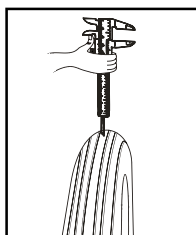
	UCE 535
New Min.	13.00 mm
New Max.	-
Service Limit	mm

Rear brake pad lining



	UCE 535
New Min.	-
New Max.	-
Service Limit	3.8 mm

Front / Rear Tyre tread : Depth



	UCE 535
New Min.	-
New Max.	-
Service Limit	1.00 mm

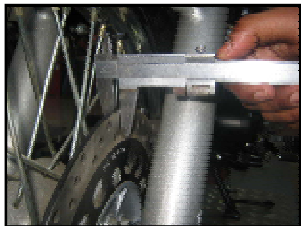
Front / Rear Wheel



Tyre wear indicator

	UCE 535
New Min.	-
New Max.	-
Service Limit	1.00 mm

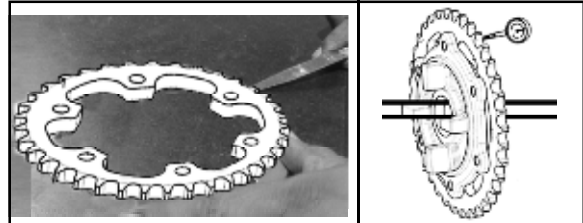
SERVICE LIMITS OF VARIOUS COMPONENTS

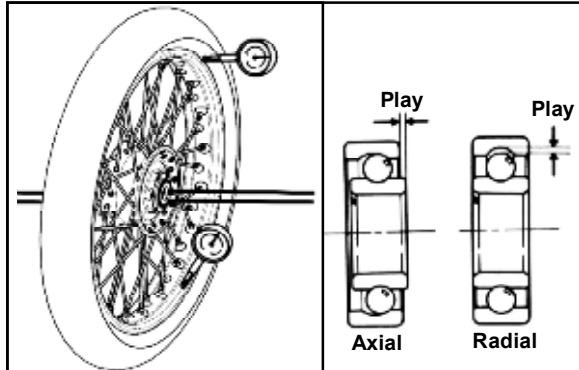
 Front Disc thickness (BBI)	
	UCE 535
New Min.	5.00 mm
New Max.	-
Service Limit	4.2 mm

 Rear Disc Thickness (BBI)	
	UCE 535
New Min.	5.00 mm
New Max.	-
Service Limit	4.5 mm

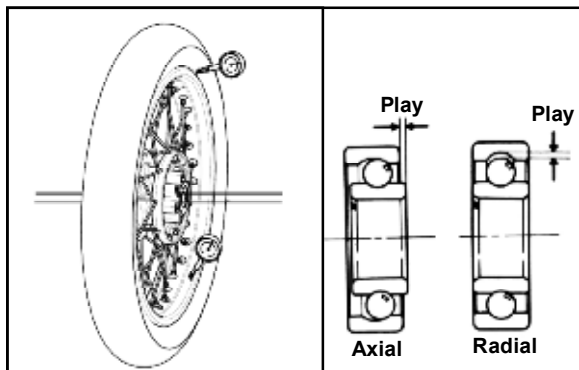
	UCE 535
New Min.	5.00 mm
New Max.	-
Service Limit	4.5 mm

Final Driven Sprocket 36T-Flatness & Run out

	
	UCE 535
New Min. Flatness	0.00 mm
New Max. Flatness	0.40 mm
Service Limit : Run out	0.35 mm

 Rear wheel run out	
	UCE 535
New Min.	-
New Max.	-
Axial & Radial Service Limit	2.00 mm

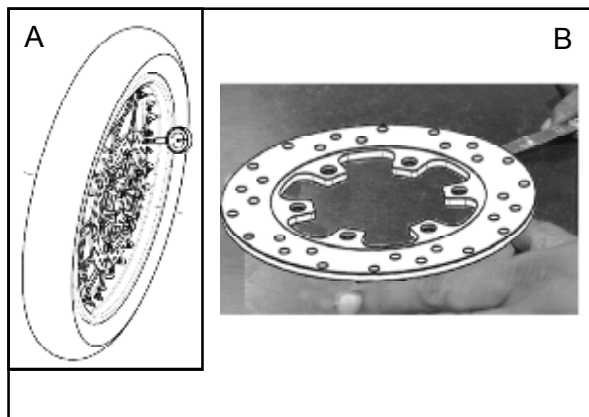
	UCE 535
New Min.	-
New Max.	-
Axial & Radial Service Limit	2.00 mm

 Front wheel run out	
	UCE 535
New Min.	-
New Max.	-
Axial & Radial Service Limit	2.00 mm

	UCE 535
New Min.	-
New Max.	-
Axial & Radial Service Limit	2.00 mm

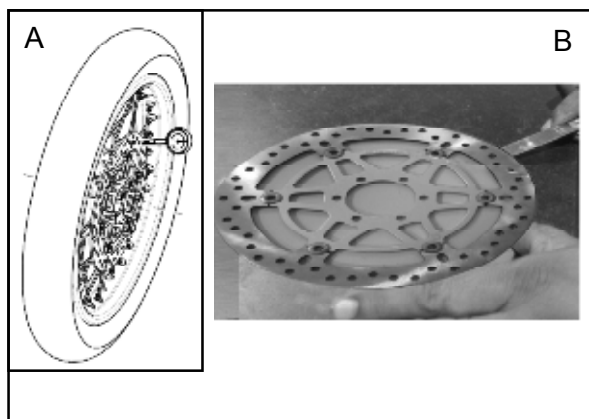
SERVICE LIMITS OF VARIOUS COMPONENTS

Rear wheel disc flatness & run out



	UCE 535	
	A	B
New Min. Flatness	0.00 mm	0.00 mm
New Max. Flatness	-	0.10 mm
Service Limit : Run out - disc		

Front wheel disc flatness & run out



	UCE 535	
	A	B
New Min. Flatness	0.00 mm	0.05 mm
New Max. Flatness	-	0.08 mm
Service Limit : Run out - disc		

BRAKE PADS

Wear indication marks on pads



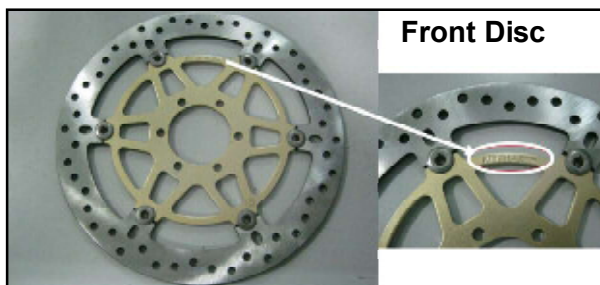
Front wear Pad



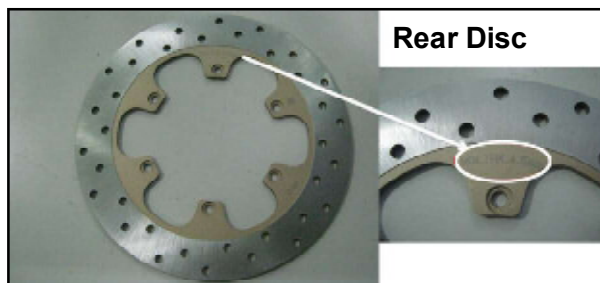
Rear wear Pad

BRAKE DISC

Minimum disc thickness marked on disc



Front Disc



Rear Disc

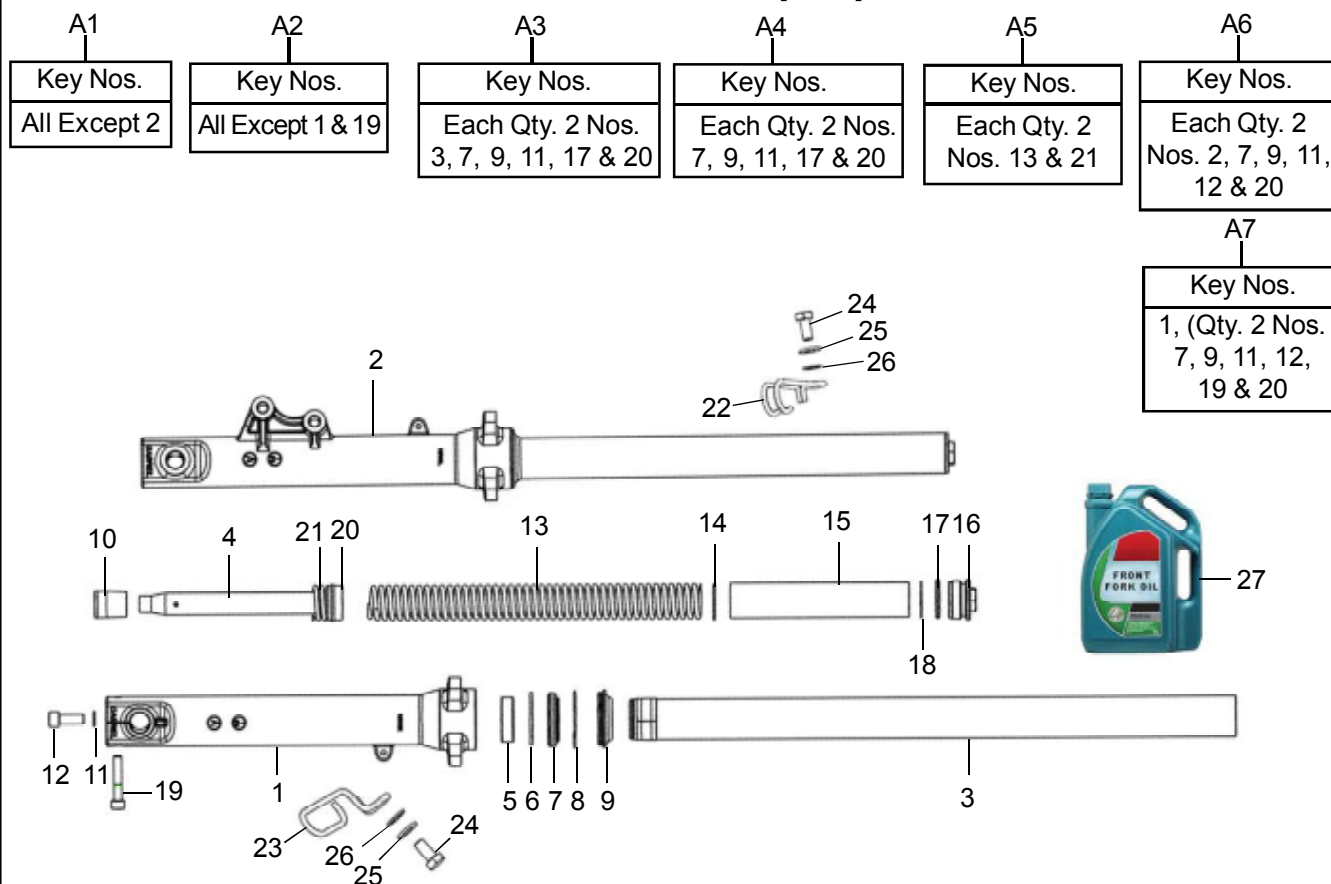
NOTE :

- 1) Ensure free sliding of caliper on caliper bracket- if necessary lubricate using silicon base grease.
- 2) Inspect during every service Rubber & Plastic parts, If found any cracks, broken & damages to be replace.

BRAKE FLUID

Replace brake fluid every two years. (In severe operating conditions - replace every year)

FRONT FORK (GIL)



KEY NO.	DESCRIPTION	QTY.	REMARKS
A1	Front Fork Assy. LH - Continental GT	1	
A2	Front Fork Assy. RH - Continental GT	1	
A3	Fork Pipe Spinning Replacement Kit	1	
A4	Fork Oil Seal, 'O' Ring & Piston Ring Kit	1	
A5	Main Spring Fork Major Kit	1	
A6	Bottom Tube LH Sub Assy. Kit	1	
A7	Bottom Tube RH Sub Assy. Kit	1	
1	Outer Tube - RH	1	
2	Outer Tube - LH	1	
3	Inner Tube Assy.	2	
4	Piston	2	
5	Bush (Outer Tube)	2	
6	Bush Washer	2	
7	Oil Seal	2	
8	Circlip (Snap -Ring)	2	
9	Dust Seal	2	
10	Spindle Taper Oil Lock	2	

KEY NO.	DESCRIPTION	QTY.	REMARKS
11	Gasket	2	
12	Bolt M10X1	2	
13	Spring - 1	2	
14	Washer Spring Top	2	
15	Spacer	2	
16	Bolt Cap	2	
17	'O' Ring	2	
18	Washer - 2	2	
19	Bolt M8X1.25X45	1	
20	Piston Ring	2	
21	Spring - 2	2	
22	Cable Guide - Brake Hose	1	
23	Cable Guide - Speedo Cable	1	
24	Hex. Bolt M6 X 12	2	
25	Plain Washer	2	
26	Lock Washer, M6	2	
27	Oil	2	

STEERING STEM ASSEMBLY

KEY NO.	DESCRIPTION	QTY.	REMARKS
A1	Ball Race Kit with Cover - Continental GT 535cc	1	
1	CABLE GUIDE-SPEEDO CABLE	1	
2	Steering Stem Assembly	1	
3	Dust Seal - Bottom Yoke	1	
4	Ball Race	1	
5	Ball Dia 6.35 (Dia ¼")	38	
6	Dust Cap - Top Yoke	1	
7	Ball Race - Top Yoke	1	
8	Ring Nut	2	
9	Lock Nut	1	
10	Hex. Socket Head Screw M8 X 1.25	4	
11	Bracket - Number Plate Front	1	
12	Number Plate - Front	1	
13	Hex. Flange Bolt M5 X 12	2	
14	Hex. Nut M5	2	
15	Hex. Bolt M6 X 1 X 12	3	

HANDLE BAR ASSEMBLY

KEY NO.	DESCRIPTION	QTY.	REMARKS
A1	Spring Mass Vibration Damper Assy. Kit	2	Replace along with Key No. 1 or 2
1	Handle Bar Assy. - LH	1	
2	Handle Bar Assy. - RH	1	
3	Top Yoke	1	
4	Hex. Socket Head Screw M8 X 35	4	
5	Ignition Switch with Steering Lock Assy.	1	
6	Hex. Socket Head Cap Screw M6 X 20	4	
7	Instrument Cluster	1	
8	Rear View Mirror - RH	1	
9	Rear View Mirror - LH	1	
10	Hex. Socket Head Bolt M8 X 35	2	
11	Soc. HD Cap Screw M6 X 16	4	
12	Grommet - Clip ON	2	
13	Screw Countersunk - Long	1	N.S. Service inKit Ref. A1
14	VibrationDamper - Chrome Plated	1	N.S. Service inKit Ref. A1
15	Rubber Mass	2	N.S. Service inKit Ref. A1
16	Sleeve (Pipe)	1	N.S. Service inKit Ref. A1
17	Washer	2	N.S. Service inKit Ref. A1
18	Flanged Hex. Nut	1	N.S. Service inKit Ref. A1

**ROYAL
ENFIELD**

A1	A2	A3	A4	A5	A6	A7
Key Nos.	Key Nos.	Key Nos.	Key Nos.	Key Nos.	Key Nos.	Key Nos.
11, 12, 13, (Qty. 18 Nos. 14 & 15), 18 to 24	21, (Qty. 2 Nos. 22)	16 & 17	21, (Qty. 2 Nos. 22), 27 & 28	(Qty. 18 Nos. 14, 15), 18	3 & 10	7 to 9

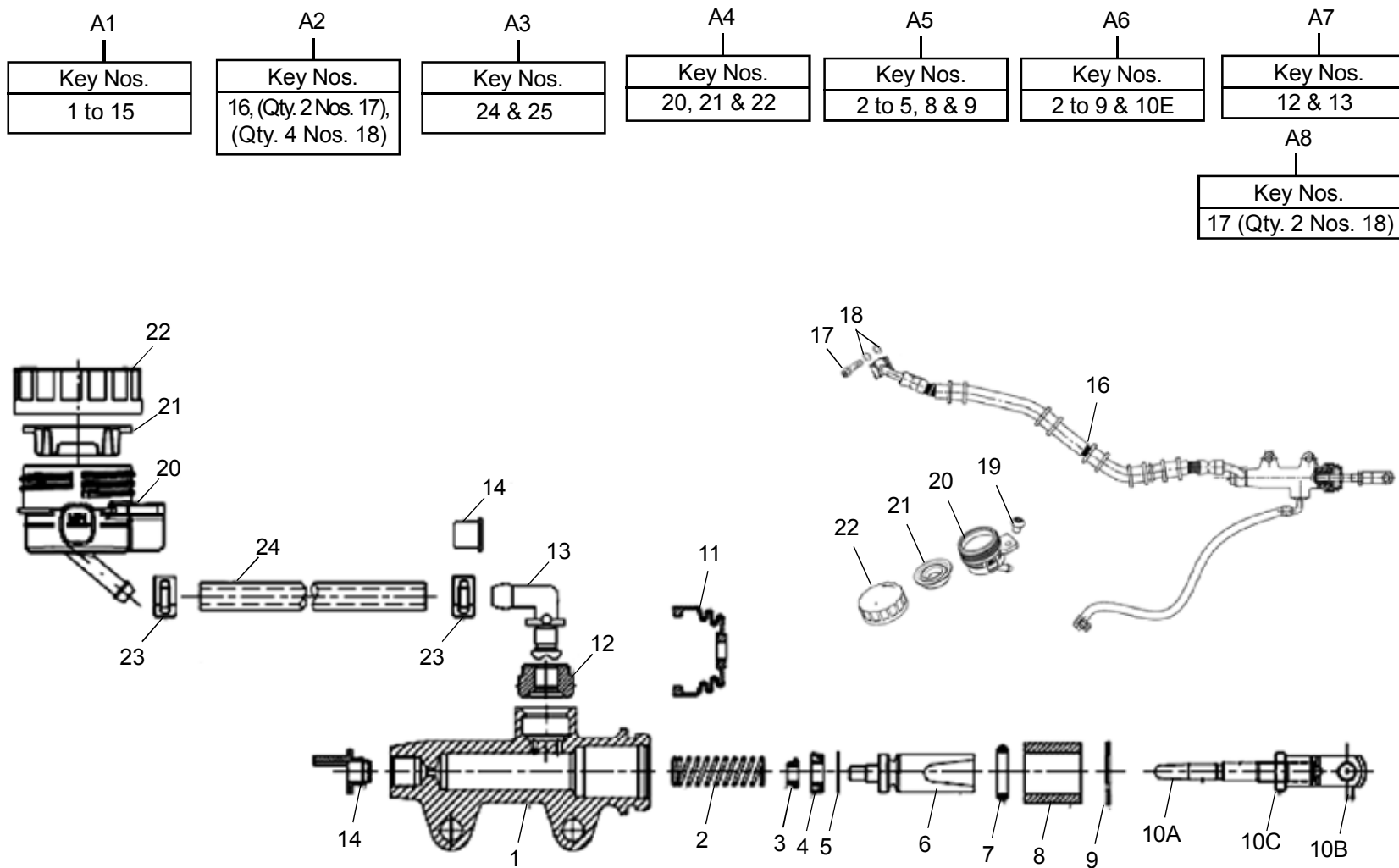


REAR WHEEL ASSEMBLY

KEY NO.	DESCRIPTION	QTY.	REMARKS
A1	Rear Wheel Sub Assembly without Tyre & Tube	1	
A2	Rear Wheel Bearing Kit	1	
A3	Rear Wheel Tyre & Tube Kit - 130/80 - 18"	1	
A4	Bearing and Seal Kit Rear Wheel - Continental GT	1	
A5	Wheel Spokes and Nipple Kit - Continental GT	1	
A6	Short Spindle and Nut Kit	1	
A7	Rear Spindle, Washer and Nut Kit	1	
1	Rear Wheel Assy.	1	
2	Rear Sprocket – Adaptor Assy.	1	
3	Spindle - Short	1	
4	Spacer - Sprocket Side	1	
5	Spacer – Disc Side	1	
6	Caliper Assy. - Rear	1	
7	Washer	1	
8	Spindle - Long	1	
9	Hx. Lock Nut	1	
10	Hex. Nut M16 X 1.5	1	
11	Centre Hub - Rear	1	

KEY NO.	DESCRIPTION	QTY.	REMARKS
12	Rear Disc Plate	1	
13	Rim Rear (Steel) 3 X 18"	1	
14	Spokes Inner - Rear	18	
15	Spokes Outer Rear	18	
16	Rear Tube - 130/80-18"	1	N.S., Served in Ki Ref. A3
17	Rear Tyre - 130/80-18"	1	N.S., Served in Ki Ref. A3
18	Brass Nipples	36	
19	Head Socket Head Screw M6 X 14	6	
20	Rim Tape	1	
21	Grease Seal	1	
22	Deep Groove Ball Bearing 6203 (17 X 40 X 12) (Double Side Rubber Sealed)	2	
23	Rear Hub Spacer Assembly	1	
24	Cushion Rubber	4	
25	Sprocket - Rear Drive	1	
26	Adaptor – RD Sprocket (Metalic Silver)	1	Alt. No. 585310/A
27	Bearing 6005 C3 (25 X 47 X 12) (Double Side Rubber Sealed)	1	
28	Dust Seal - RD Sprocket	1	
29	Socket Button Head Cap Screw	6	

REAR MASTER CYLINDER ASSEMBLY

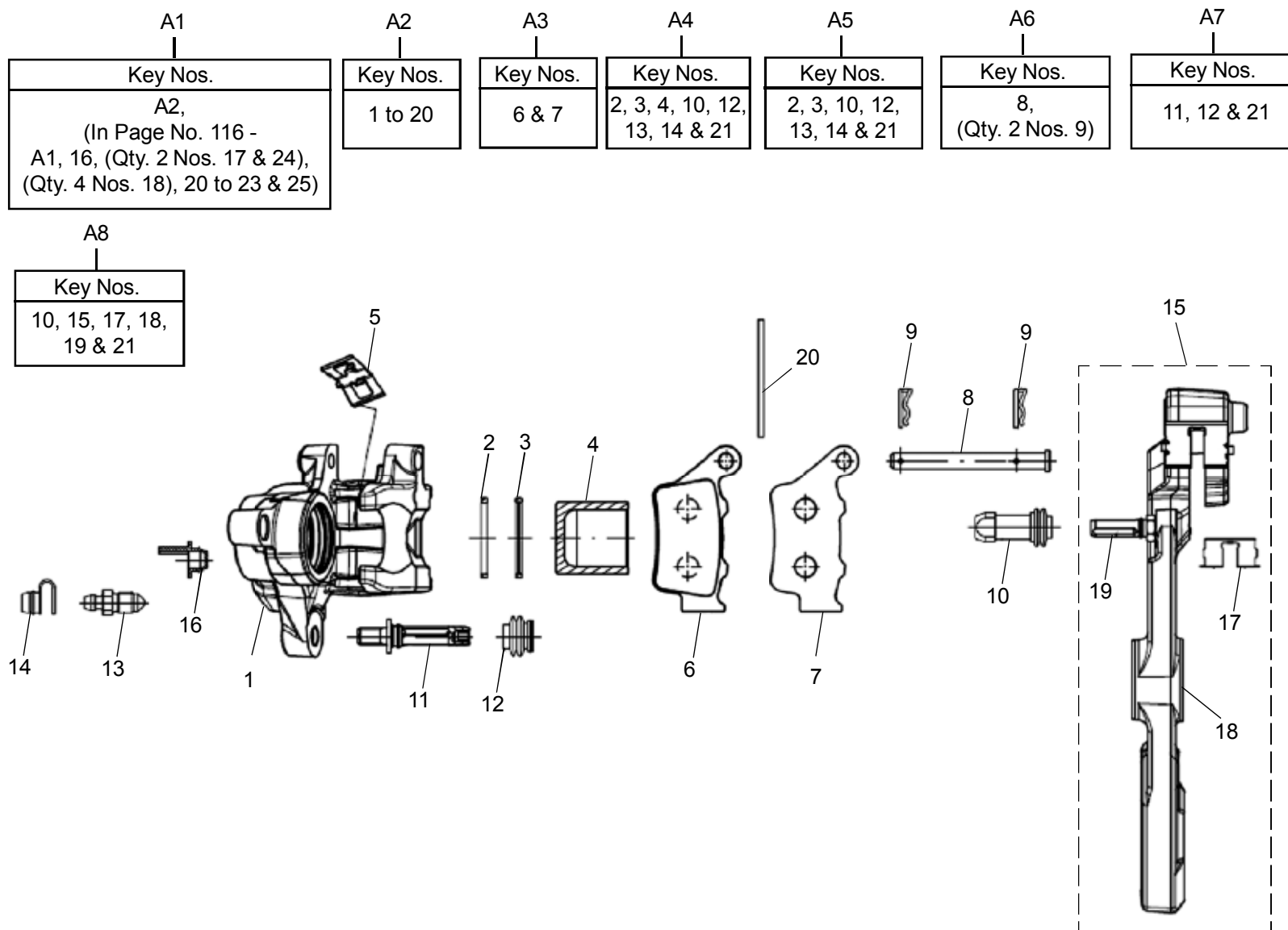


REAR MASTER CYLINDER ASSEMBLY

KEY NO.	DESCRIPTION	QTY.	REMARKS
A1	Rear Master Cylinder Assembly	1	
A2	Rear Brake Hose Assy Kit with Banjo Bolt	1	
A3	Reservoir Tube Kit Rear M/C	1	
A4	Reservoir Kit Rear M/C Threaded	1	
A5	Minor Kit Rear M/C	1	
A6	Major Kit Rear M/C	1	
A7	Connector Kit Rear M/C	1	
A8	Banjo Bolt Kit (Disc Brake)	1	
1	Master Cylinder M/C - Rear Body	1	N.S., Ref. A1
2	Spring Rear M/C	1	(N.S.) Served in Kit, Ref.A6, A7
3	Spring Guide Rear M/C	1	(N.S.) Served in Kit, Ref.A6, A7
4	Primary Seal Rear M/C	1	(N.S.) Served in Kit, Ref.A6, A7
5	Primary Washer	1	(N.S.) Served in Kit, Ref.A6, A7
6	Piston - Rear Master Cylinder	1	(N.S.) Served in Kit, Ref. A7
7	Seal ('O' Ring) Rear M/C	1	(N.S.) Served in Kit, Ref. A7
8	Spacer Rear M/C	1	(N.S.) Served in Kit, Ref.A6, A7
9	Circlip Rear M/C	1	(N.S.) Served in Kit, Ref.A6, A7
10	Push Rod Assembly Kit Rear M/C	1	(N.S.) Served in Kit
10A	Push Rod Rear M/C	1	(N.S.) Served in Kit, Ref. Key 10
10B	Fork Push Rod Rear M/C	1	(N.S.) Served in Kit, Ref. Key 10
10C	Lock Nut Rear M/C	1	(N.S.) Served in Kit, Ref. Key 10

KEY NO.	DESCRIPTION	QTY.	REMARKS
10D	Push Rod Assembly Rear M/C	1	(N.S.) Served in Kit, Ref. Key 10
11	Boot Rear M/C	1	(N.S.) Served in Kit, Ref. A1
12	Bush Rear M/C	1	(N.S.) Served in Kit, Ref. A8
13	Connector Rear M/C	1	(N.S.) Served in Kit, Ref. A8
14	Cap - Dust Protector	1	N.S.
15	Thread Protector	1	N.S.
16	Brake Hose Rear (Metal Braided)	1	(N.S.) Served in Kit, Ref. A2
17	Banjo Bolt (Black Tri-Valent)	2	(N.S.) Served in Kit, Ref. A2, A9
18	Copper Washer Disc	4	(N.S.) Served in Kit, Ref. A2, A9
19	Hex. Socket Button Head Screw M6 X 1	1	(N.S.) Served in Kit, Ref. A4
20	Reservoir Rear (Threaded)	1	(N.S.) Served in Kit, Ref. A4, A5
21	Diaphragm Rear Disc Reservoir	1	(N.S.) Served in Kit, Ref. A4, A5
22	Lid Reservoir Threaded	1	(N.S.) Served in Kit, Ref. A4, A5
23	Clip (Reservoir)	2	(N.S.) Served in Kit, Ref. A3
24	Rubber Tube - Rear Disc	1	(N.S.) Served in Kit, Ref. A3

REAR CALIPER ASSEMBLY



REAR CALIPER ASSEMBLY

KEY NO.	DESCRIPTION	QTY.	REMARKS
A1	Disc Brake Assembly Rear - BBI	1	
A2	Caliper Assembly Rear - BBI	1	
A3	Disc Pad Kit Rear Caliper - BBI	1	
A4	Major Kit Rear Caliper	1	
A5	Minor Kit Rear Caliper	1	
A6	Pad Pin Kit Rear Caliper	1	
A7	Primary Pin Kit Rear Caliper	1	
A8	Bracket Sub Assembly Rear Caliper	1	
1	Caliper Body (Brass Gold P.C.)	1	(N.S.) Served in Kit, Ref. A1
2	Piston Seal Rear Caliper	1	(N.S.) Served in Kit, Ref. A4, A5
3	Scraper Ring Rear Caliper	1	(N.S.) Served in Kit, Ref. A4, A5
4	Piston - Rear Caliper (Dia 32mm)	1	(N.S.) Served in Kit, Ref. A4
5	Pad Spring Rear Caliper	1	
6	Pad (Piston Side) Rear Caliper	1	(N.S.) Served in Kit, Ref. A3
7	Pad (Opposite Piston Side) Rear Caliper	1	(N.S.) Served in Kit, Ref. A3
8	Pad Pin Rear Caliper	1	(N.S.) Served in Kit, Ref. A6
9	Clip Hanger Rear Caliper	2	(N.S.) Served in Kit, Ref. A6

KEY NO.	DESCRIPTION	QTY.	REMARKS
10	Insulator Rubber Rear Caliper	1	(N.S.) Served in Kit, Ref. A4, A5, A8
11	Primary Pin Rear Caliper	1	(N.S.) Served in Kit, Ref. A7
12	Dust Cover Rear Caliper	1	(N.S.) Served in Kit, Ref. A4, A5, A7
13	Bleeder Screw Rear Caliper	1	(N.S.) Served in Kit, Ref. A4, A5
14	Bleeder Cap Rear Caliper	1	(N.S.) Served in Kit, Ref. A4, A5
15	Bracket Sub Assembly Rear Caliper	1	(N.S.) Served in Kit, Ref. A2, A8
16	Thread Protector	1	N.S., Ref. A2
17	Wear Pad Rear Caliper	1	(N.S.) Served in Kit, Ref. A8
18	Bracket Machined Rear Caliper	1	(N.S.) Served in Kit, Ref. A8
19	Secondary Pin Rear Caliper	1	(N.S.) Served in Kit, Ref. A8
20	Pad Spacer	1	N.S., Ref. A2
21	Grease Pouch (Reference Only)		(N.S.) Served in Kit, Ref. A4, A5, A7, A8

ENGINE MOUNTING ON FRAME ASSEMBLY

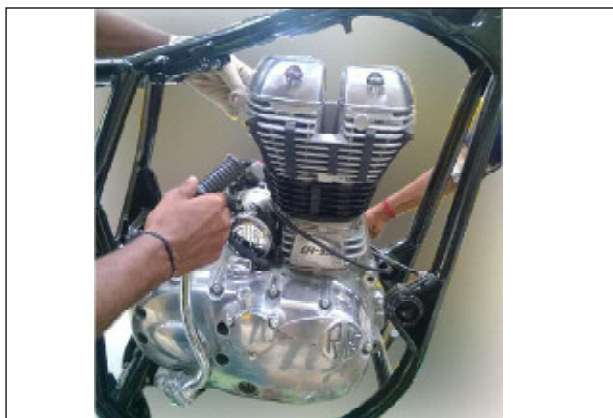
- Fit the ignition coil on the frame.



NOTE :

Be ensure that before fixing the engine on frame, throttle body, breather pipe, nipple and rear mounting brackets are removed, other wise engine entering in to frame will be difficult.

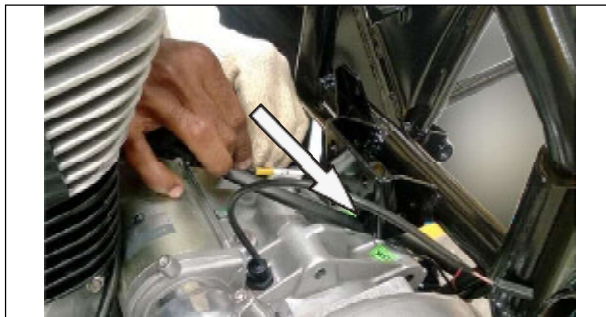
- Insert the engine assembly on the frame (during that time slightly tilt the engine).



- Fix the engine front mounting bracket on the engine along with horn bracket.



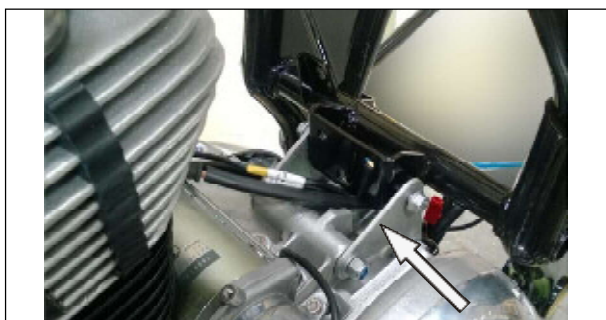
- Route the relay starter harness & alternator wires below the engine Rr mounting bracket.



- Fix the engine rear mounting bracket "R" Index Mark facing right side as shown.



- Fix the engine rear mounting bracket on the frame with slight lifting the engine.



- Fix the side stand with bracket on the LH side of frame and engine rear bottom mounting bracket on the RH side.



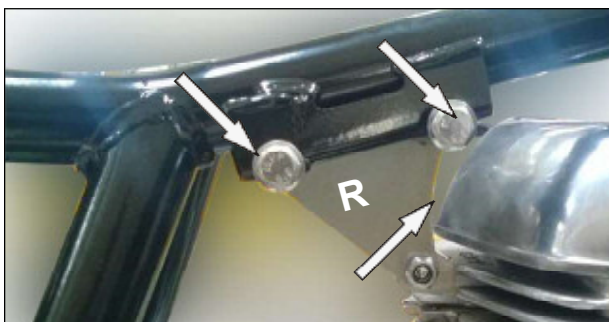
- Insert the engine rear bottom mounting bracket "R" Index Mark facing right side as shown in fig and then fix axle in to the frame.



- Fix the engine eye steady mounting bracket "R" Index Mark facing right side as shown in fig on the frame.



- Fix the engine eye bolts and nut tightened to Torque TT - 25 Nm.



NOTE :

Ensure "R" facing bracket curvature located towards cylinder head as shown in above fig.

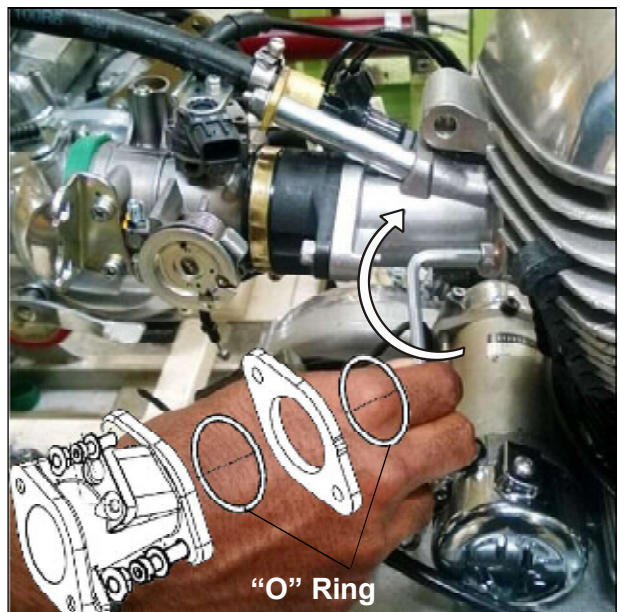
- Fix the front engine mounting spacer as shown in fig.



- Fix the engine front mounting bolt and nut tightened to Torque TT - 70 Nm.



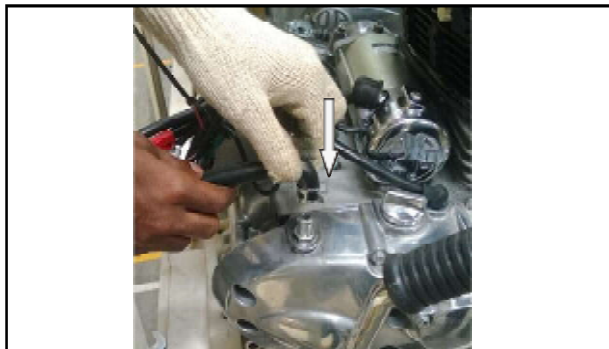
- Fit the throttle body assembly on the cylinder head and then tighten allen screw M6 (1.0 Kgm).



NOTE :

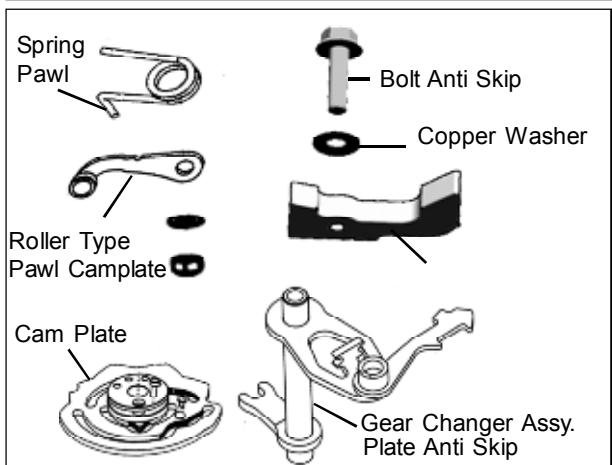
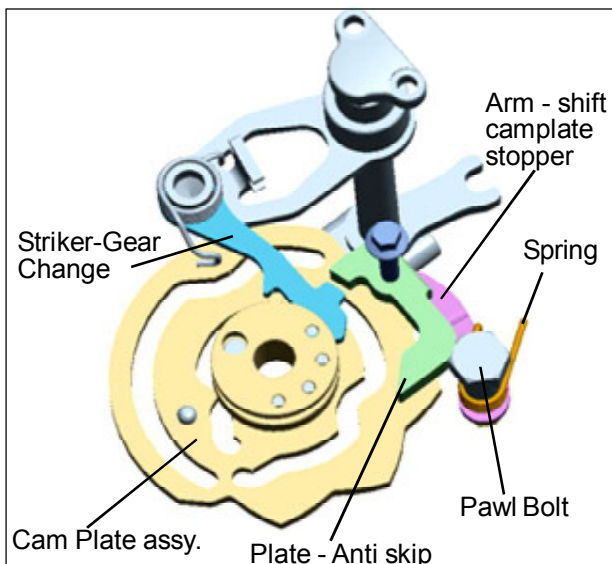
Ensure that "O" Ring insulator facing towards the cylinder head as shown in above fig.

- Fit the engine breather hose and adopter on the engine



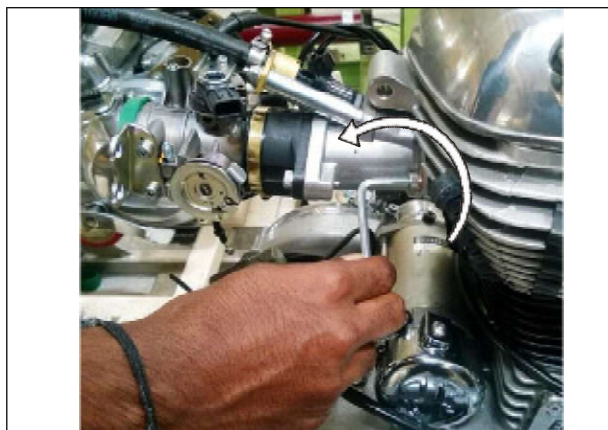
- Ensure the engine tightening torque as specified (Ref. Page 10 & 11).
- Connect the all wiring couplers such as magneto, injector, TPS, MAP, neutral switch, starter motor. etc...

ANTI SKIP MECHANISM

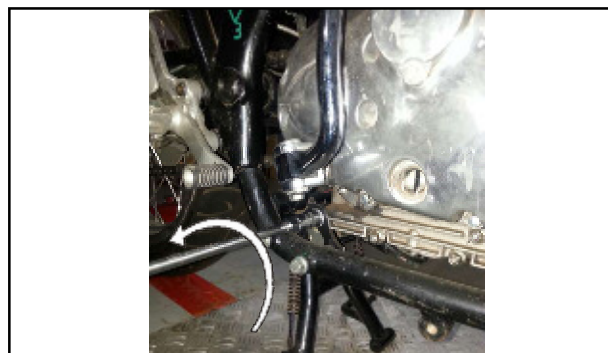


ENGINE DISMOUNTING FROM FRAME ASSEMBLY

- Engine Dismounting from the frame is the reverse procedure of the fitting.
- Remove Throttle Body Complete Assy From The Cylinder Head.



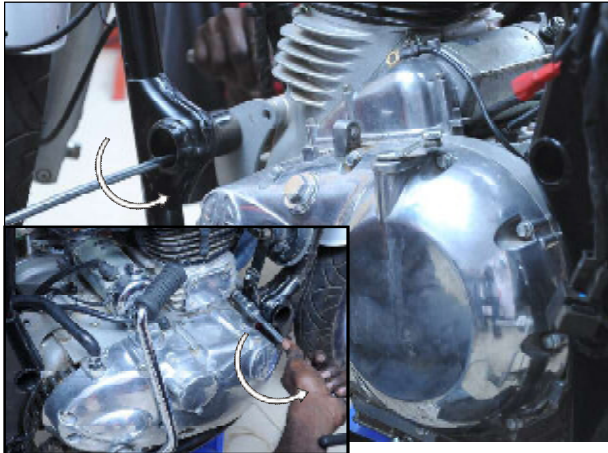
- Remove Engine bottom bedding bolt.



- Remove Engine bottom bedding mounting bracket bolts from the Frame RH & LH 2 Nos. each.



- Loosen the engine front top mounting bolt and nut.



- Disconnect all wiring couplers such as magneto, injector, TPS, MAP, neutral switch, starter motor. etc.. and chain master link.
- Remove engine rear mounting as shown in fig.



- Remove the engine rear mounting brackets LH & RH side from the engine.



- Remove the horn bracket both the side.



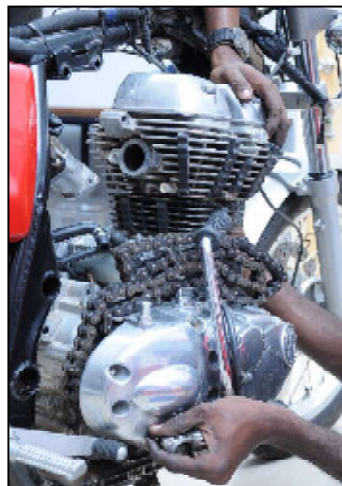
- Remove the engine front mounting brackets LH & RH side from the engine.



- Disconnect engine breather pipe from the engine RH cover and then remove the breather adopter nipple.



- Take out engine assy from the frame gently.



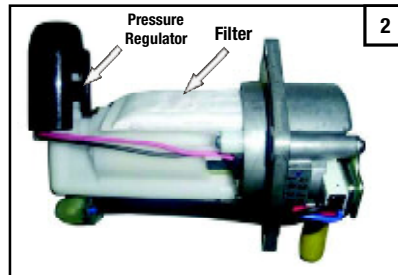
NOTE :

Care to be taken, while taking out engine from chassis to avoid scratch / dent.

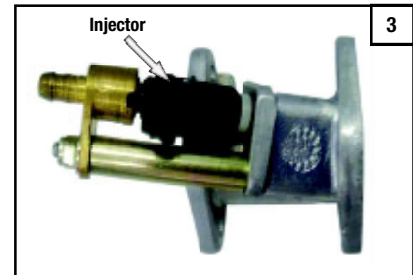
ENGINE MANAGEMENT SYSTEM - EMS (535CC)



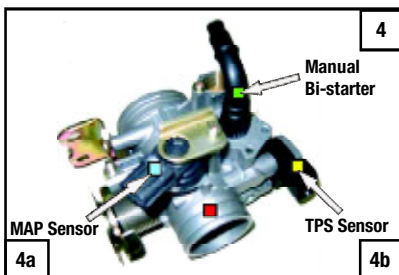
ELECTRONIC CONTROL UNIT (ECU)



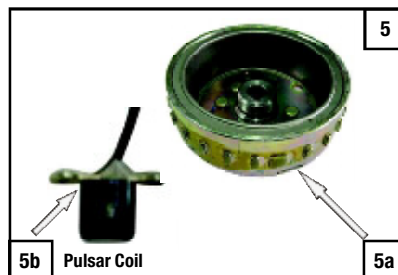
FUEL PUMP MODULE



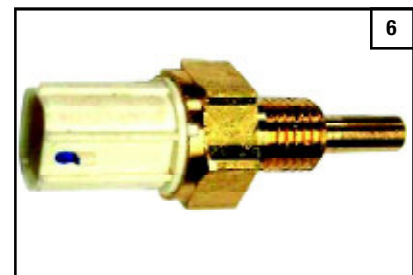
FUEL INJECTOR ASSEMBLY



THROTTLE BODY ASSEMBLY (Venturi dia 34mm)



CRANK POSITION SENSOR (CPS)



ENGINE OIL TEMPERATURE (EOT) SENSOR



ROLL OVER SENSOR (ROS)

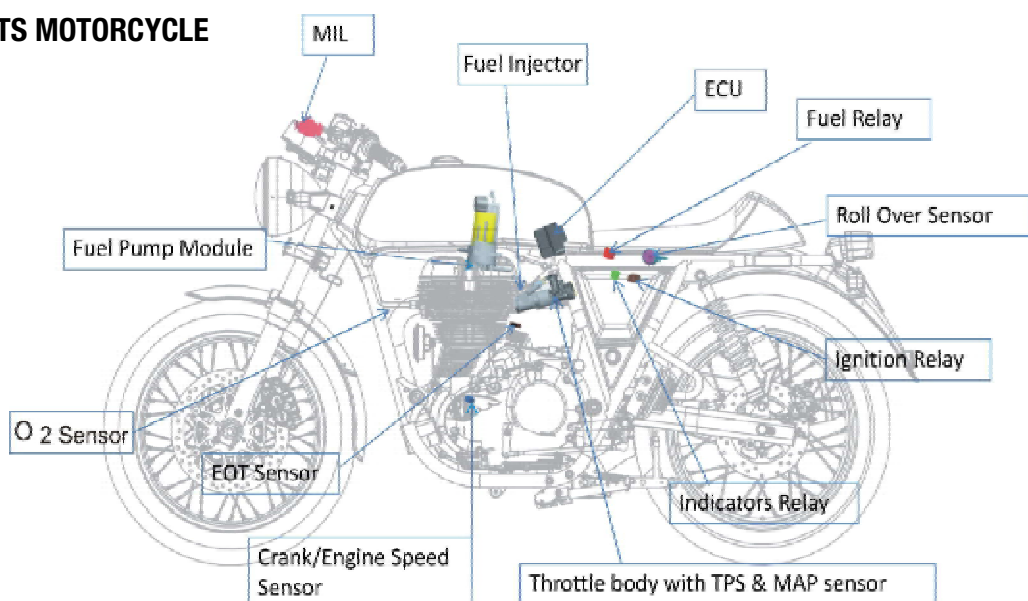


MALFUNCTION INDICATOR LAMP (MIL)



LAMDA (O2) SENSOR

EFI COMPONENTS MOTORCYCLE LAYOUT



ENGINE MANAGEMENT SYSTEM - EMS (535CC)

1 ELECTRONIC CONTROL UNIT (ECU)

Operating Voltage : 8 – 16 V.
Sensor Supply Voltage : 5 V.
Operating temperature : –10° C to + 60° C.
Storage Temperature : –20° C to + 80° C.
Current Consumption : Less than 0.3AMP
(Excluding source current)

2 FUEL PUMP MODULE

Operating Voltage : 6 – 14 V,
Operating temperature : –20° C to + 60° C.
Controlled Pressure Regulator : 294 KPa.
Inbuilt Filter Capability : Upto 10 Microns
Delivery Flow = 25 Ltr. / Hr. @ 294 Kpa.
Current : 2.2 AMP Max.

3 FUEL INJECTOR

Operating Voltage : 10 – 14 V DC
Operating temperature : –30° C to + 120° C.
Fuel Injection pressure : 343.2 Kpa
Solenoid Operating Resistance : 10.3 ± 0.5 Ohms

4 THROTTLE BODY ASSEMBLY - 535cc

4a. MANIFOLD ABSOLUTE PRESSURE SENSOR
4b. THROTTLE POSITION SENSOR (TPS)
Operating Voltage : 5 V.
Out Put Voltage : 0 – 3.8V.
Throttle Angle : 0 – 80°
Throttle Resistance Maximum : 5 Kilo Ohms
Throttle Out Put Voltage at Idling : 0.6 ± 0.02 V.
Storage Temperature : –20° C to + 80° C
4c. Venturi Dia : 34mm

5 CRANK POSITION SENSOR (CPS)

5a. ROTOR ASSEMBLY
23 Short Pegs for Speed sensing
1 Long Peg for Ignition index reference
5b. PULSAR COIL ASSEMBLY
Resistance : 215 ± 21.5 Ohms
Output Voltage : 3 to 5 Volt AC

6 ENGINE OIL TEMPERATURE SENSOR (EOT)

Operating temperature : –30° C to +150° C
Operating Voltage : 5 ± 0.5 V.
Resistance Value w.r.t. Temperature

° C	Resistance KΩ	Current μAmp
–20° C	18.80 Kilo Ohms	10
+ 40° C	1.136 Kilo Ohms	100
+ 100° C	0.1553 Kilo Ohms	100

7 ROLL OVER SENSOR (ROS)

Operating Voltage : 12V.
Operating Angle : 60° + 10°.
Operating Temperature : –20° C to + 85° C.

8 MAL FUNCTION INDICATOR (MIL)

Operating Voltage : 12 V.
Bulb Rating : LED 12V, 0.25W X 1 No

9 O2 SENSOR

Operating Voltage : 16V (Max)
Operating temp : 600 - 950° C
Tightening torque : 24.5 ± 4.5 Nm

ENGINE MANAGEMENT SYSTEM - EMS (535CC)

EFI TESTING PROCEDURE

There are three levels of identifying a malfunction in the ECU or the sensors.

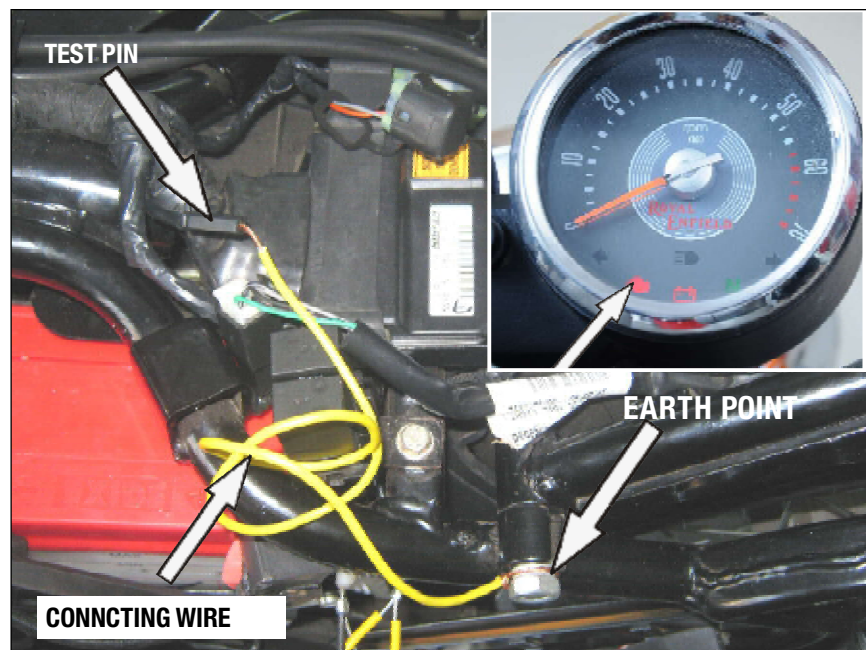
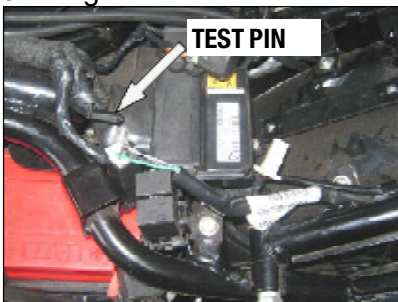


a. Visual Method

This is indicated by the lamp in the MIL glowing continuously. Check for any sensor loose connections and plug in properly. If still MIL GLOWS, then check for the problem by Test Pin or by DOL TOOL.

b. Test pin method

An open single pole connector (Black Colour) is provided close to the ECU. By inserting a piece of wire into this connector and grounding it to an earth, the defective sensor can be identified by the following frequency of the MIL blinking.



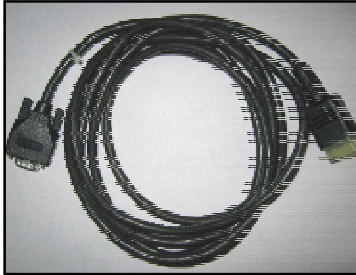
MIL BLINK	MAL FUNCTION INDICATION
MIL will glow continuous. Engine will start but not perform to its potential.	
LONG 0 SHORT 6	Throttle Position Sensor (TPS) circuit malfunctioning
LONG 0 SHORT 9	Manifold Absolute Pressure (MAP) circuit malfunctioning
LONG 1 SHORT 1	Engine oil Temperature (TE) circuit malfunctioning
LONG 1 SHORT 7	O2 Sensor circuit malfunctioning
LONG 4 SHORT 5	O2 Sensor heater circuit malfunctioning
MIL will glow continuous. Engine will NOT Start but will crank.	
LONG 1 SHORT 5	Rollover Sensor circuit malfunctioning
LONG 3 SHORT 3	Injector circuit malfunctioning
LONG 3 SHORT 7	Ignition Coil circuit malfunctioning
LONG 4 SHORT 1	Fuel Pump circuit malfunctioning
LONG 6 SHORT 6	Crankshaft position circuit malfunctioning

ENGINE MANAGEMENT SYSTEM - EMS (535CC)

c. DIAGNOSIS ONLINE (DOL) Tool

This is done by connecting a DOL tool to the connector (Covered **K-Line** Coupler) near the ECU. This will accurately determine the defective sensor and show the details on the diagnostic screen. A detailed code list is given in Next page.

MAIN COMPONENTS



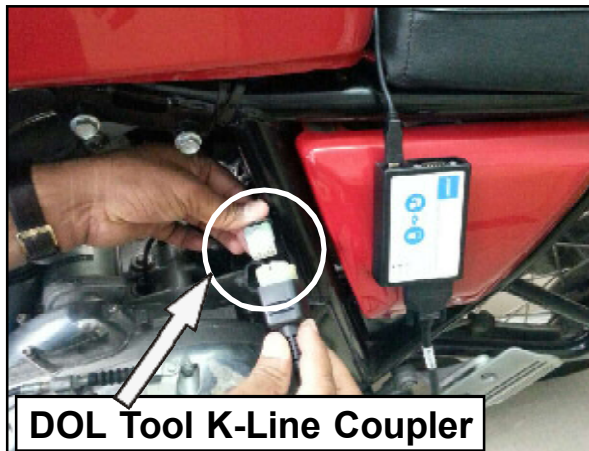
RS 232 Cable (DHOD - 003 - 37R) for ECU Coupler (K-Line) to Communication Adaptor



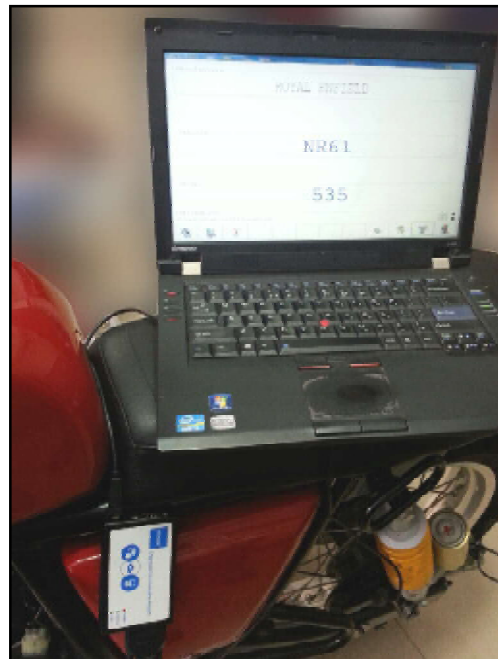
USB Cable for Communication Adaptor to Computer System



Communication Adaptor
(A link between ECU & Computer System)

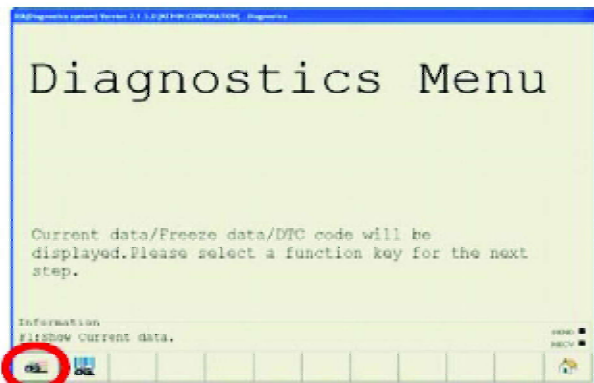


DOL Tool K-Line Coupler



(1)

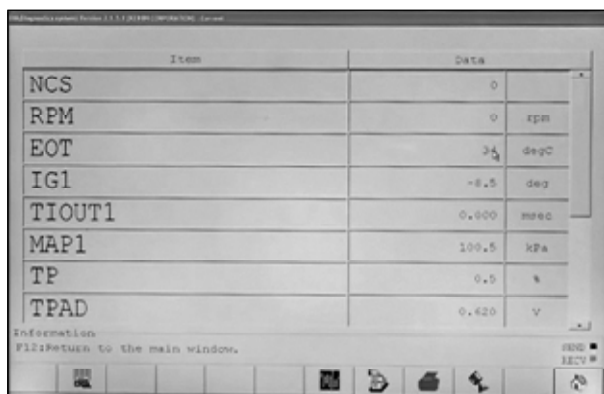
Starting Window



(2)

Diagnostic Menu

ENGINE MANAGEMENT SYSTEM - EMS (535CC)

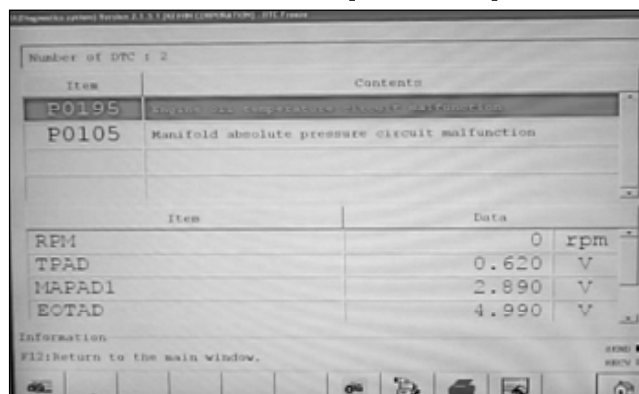


Item	Data
NCS	0
RPM	0 rpm
EOT	34 degC
IG1	-8.5 deg
TIOUT1	0.000 msec
MAP1	100.5 kPa
TP	0.5 %
TPAD	0.620 V

Information
F12:Return to the main window.

DIAGNOSTIC SCREEN

Code	Description	Specification
NCS	Non Conformance Sensors	0
RPM	Revolution Per Minute	1050+/- 50
EOT	Engine Oil Temperature	80+/-5 degree centigrade
IG1	Ignition timing	5+/-2 degrees
O2 HT1	O2 Sensor heater circuit	ON
T1OUT1	Fuel injection time from the injector in milli seconds	2.5+/-0.5 Msecs
MAP1	Manifold Air Pressure in Kpa	27.2+/-2 Kpa
TP	Throttle position angle in percentage	0.5+/- 0.5 %
TPAD	Throttle position angle in Voltage	0.61+/- 0.5V
AP	Atmospheric pressure in Kpa	101+/- 3 Kpa
O2 AD1	O2 Sensor operating voltage	0.1 - 0.8 V
VB	Battery charging voltage	13.5+/-2 V
FP	Fuel pump	ON
REV/CRK	Reverse Cranking Protection	Normal
ROLL OVER	Roll over sensor	Normal
TEST	Test condition	Open



Item	Contents
P0195	Engine oil temperature circuit malfunction
P0105	Manifold absolute pressure circuit malfunction

Item	Data
RPM	0 rpm
TPAD	0.620 V
MAPAD1	2.890 V
EOTAD	4.990 V

Information
F12:Return to the main window.

DIAGNOSTIC TROUBLE CODE

P Code	MAL FUNCTION INDICATION
MIL will glow continuous. Engine will start but not perform to its potential.	
P0120	Throttle Position Sensor (TPS) circuit malfunctioning
P0105	Manifold Absolute Pressure (MAP) circuit malfunctioning
P0195	Engine oil Temperature (TE) circuit malfunctioning
P0130	O2 Sensor circuit malfunctioning
P0135	O2 Sensor heater circuit malfunctioning
Engine will NOT Start but will crank. MIL will glow continuous	
P1630	Rollover Sensor circuit malfunctioning
P0201	Injector circuit malfunctioning
P0351	Ignition Coil circuit malfunctioning
P0230	Fuel Pump circuit malfunctioning
P0335	Crankshaft position circuit malfunctioning

DO'S

- DO start the engine only when it is in centre stand or when rider sitting on the vehicle with both the stands retracted.
- Switch ON the ignition key and wait (for app. 3 Sec) until the MIL (MALFUNCTION INDICATOR LAMP) comes ON and goes off, Start the engine only after this happens.

DONT'S

- DO ensure the battery is in good condition & fully charged.
- DO NOT remove the fuel hose (high pressure) from the fuel pump to fuel injector, when engine

DO'S & DONT'S

- DO NOT remove any of the sensor connections / couplers / Battery connections when the Ignition switch is ON OR when the engine is running.
- is running OR when ignition switch is ON. Fuel flows at a very high pressure during such time.
- DO NOT use a booster or high voltage-charging unit instead of a battery. Use only a good, correctly charged battery to start OR check the motorcycle.
- DO NOT rev the engine fully – immediately after starting OR just before shutting off the engine.
- DO NOT use high pressure water jet to clean the ECU / Throttle Body / any of the sensors. Keep them well protected while washing the vehicle.

ENGINE MANAGEMENT SYSTEM - EMS (535CC)

TROUBLE SHOOTING (EMS)

S No	Symptom	Possible Cause	Remedy
1	MIL does not glow when ignition key switched ON	Engine stop switch is in OFF position	Switch engine stop switch ON
		Battery discharged	Check battery electrolyte level & Sp. gravity. Recharge battery
		Fuse blown.	Check all fuses. Assess cause of failure, rectify & replace fuse
2	MIL glows Continuously	Sensor couplers / wires loose contact.	Check all sensor and wiring harness connections for proper connectivity
A	E Start related	Battery discharged	Check battery electrolyte level & Sp. gravity. Recharge battery
		Starter motor cables loose connection.	Check cable connections for proper tightness.
		Relay starter not working.	Check resistance across relay starter (between blue & white wire) Replace relay starter if faulty.
		Starter motor does not rotate	Check for firm wire connections. Check if motor is jammed. Replace starter motor.
B	Ignition Related	Ignition coil power relay defective / loose connections	Check power relay connection or replace if found to be faulty.
		Roll over sensor not connected / loose connection.	Check roll over sensor coupler connection
C	Fuel Pump	Fuel pump relay does not work	Check proper connectivity in wiring harness & coupler continuity with voltmeter. Check fuel pump relay resistance. Replace relay if defective
		Fuel pump clogged / internal short	Check for proper connectivity in wiring harness & continuity with voltmeter. Check fuel pump resistance. Repair electrical connections/loose contact. Replace pump if defective
D	Fuel Related	Fuel air mixture too rich due to extreme cold weather & repeated cranking without using Manual Bi starter.	Hold throttle fully open. Hold Manual Bi starter and start engine. Release throttle as soon as engine starts.
		Manual Bi starter vent hole clogged / plunger stuck in cold position due to extreme cold condition/icing	Clean Throttle body to ensure vents are clean. Check proper working of Bi starter plunger.
		No pressure buildup in fuel main line	Check fuel pump for proper working. Correct fuel hose if kinked /jammed / leaking at joints. Correct as necessary.

ENGINE MANAGEMENT SYSTEM - EMS (535CC)

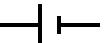
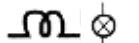
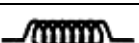
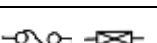
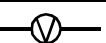
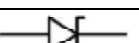
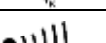
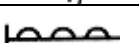
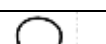
S No	Symptom	Possible Cause	Remedy
E	Ignition related	Spark plug Fouled	Replace spark plug
		Spark plug cap shorting	Replace spark plug cap
		Ignition coil wire loose connection or broken.	Check for proper wire connection. Replace damaged wire connections
		Faulty HT coil power relay.	Check power relay resistance / wire connections. Replace if faulty.
		Faulty H T coil	Replace H T coil
		No output from Magneto	Check pulser coil / Magneto output connections
3	Vehicle Starts but Switches off	Crank speed sensor loose connections/ faulty	Check Crank sensor & its connections
		Roll over Sensor Loose connections /	Check Roll over sensor & its connections
4	High fuel consumption / Uneven Idling / Poor Pick up / Smoky Exhaust / Engine runs badly	Injector holes clogged	Replace injector.
		Loose inlet manifold / Leak in inlet manifold	Check & correct
		Loose connections or problem in manifold pressure sensor	Check continuity and correct
		Stuck butterfly in throttle body / broken throttle Cables	Check & correct
		Loose connections or problem in throttle position Sensor.	Check continuity and correct Check & correct
		Defective temperature sensor.	Check & correct
5	Battery discharging frequently	Poor Output from charging coils in magneto	Check Output voltage (10V -16v AC @ 1000rpm)
		Poor charging by RR Unit	Check RR unit & Replace
		Weak battery cells	Replace the battery.
6	Battery not Charging	Charging circuit fuse Blown	Check wiring harness connections & replace fuse
		Low or weak electrolyte.	Check battery & correct
		Cells weak	Check battery & replace
		No output from RR Unit. Poor connection/RR unit failed	Check & correct / replace RR unit
		No output from magneto burnt coils in magneto unit	Check for loose connections /

NOTE :

During trouble shooting of EFI Model. It is advised to begin -

- a) With discussion / interview with customer.
- b) A check of the Petrol level in the Fuel Tank.
- c) Check of battery voltage, terminal loose connection / sulphation.

ELECTRICALS & ELECTRONICS

01.	Alternating current (AC)	
02.	Direct current (DC)	
03.	Wired across	
04.	Connected Wires	
05.	Switch	
06.	Two way Switch	
07.	Push Switch	
08.	Ground	
09.	Cell	
10.	Battery	
11.	Bulb	
12.	Coil	
13.	Resistor / Resistance (R)	
14.	Capacitor	
15.	Armature and brush	
16.	Fuse	
17.	Volt meter	
18.	Ammeter	
19.	Transformer / H.T.Coil	
20.	Transistor	
21.	Rectifier / Diode	
22.	Zener Diode	
23.	Silicon Controlled Rectifier	
24.	Buzzer / Beep	
25.	Rectified DC Current	
26.	Ohm	
27.	Volt	V
28.	Ampere	A

BATTERY

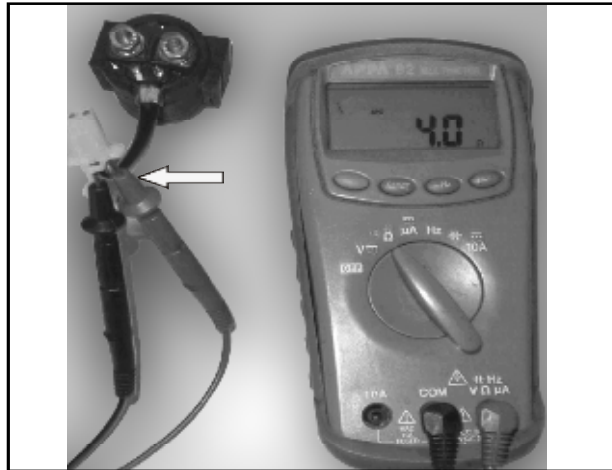
CONSTRUCTION

- Positive Plate - Porous mass of lead dioxide (PbO_2) (Positive active material)
- Negative Plate - Porous mass of spongy Lead (Pb) (Negative active material)
- Electrolyte - Diluted sulphuric acid (H_2SO_4)
- Separator - Micro porous, acid resistant electrical insulator between positive & negative plates
- Container - Polypropylene casing to house the plate group & electrolyte
- Cover - To seal the battery container
- Filling Plugs - To facilitate filling of electrolyte and water topping up.
- Gang Piece - To vent gases through common manifold and exhaust nozzle
- Terminals - To make connections to the electrical loads.
- Intercell Poles - To connect the cells in series internally.
- Exhaust Tube - To discharge the vent gases.
- Exhaust Seal Cap - To protect the dry charged plates from oxidation.

VARIOUS ELECTRICALS & ELECTRONICS COMPONENTS INSPECTION

STARTER RELAY

Give 12V DC supply to the starter relay coupler and check for the continuity between the two bolted terminals. If continuity shows then component is OK.



E- STARTER MOTOR

SPECIFICATION

Resistance 0.3 to 0.5 ohms.

CHECKING PROCEDURE

Set the multimeter in resistance mode.

Check the Resistance between motor terminal & aluminium body.



STARTER MOTOR

Connect DC supply +ve to the motor terminal and -ve to the body of the motor.

Direction of rotation - Clockwise

IC FLASHER

CHECKING PROCEDURE

Ensure Battery voltage > 12 V, all indicator bulbs are ok. Then starts the vehicle and turn the indicator switch to LH or RH mode.

If indicators not functional replace it by a new IC Flasher.



CAUTION :

Never try to repair / tamper IC Flasher.

RR UNIT

CHECKING PROCEDURE

Set the multimeter in voltage mode (DCV 20). Connect the multimeter to Battery terminals and then check the voltage as shown in Fig.

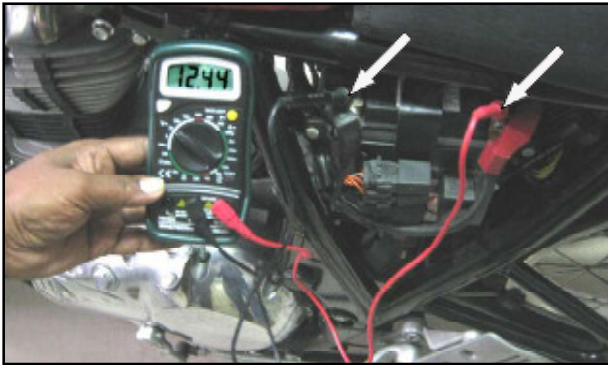
a. When Ignition switch is "OFF" condition. Check voltage 11.5 to 12.5 as per figure.



Sample Reading (A): 12.55

b. Now Turn Ignition switch is "ON" condition. Check voltage 11.5 to 12.5 as per figure and note down reading.

VARIOUS ELECTRICALS & ELECTRONICS COMPONENTS INSPECTION



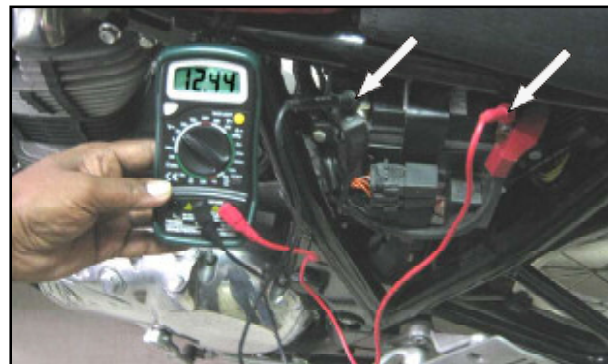
Sample Reading (B): 12.44

c. Again Turn back Ignition switch to "OFF" condition. Now Check voltage 11.5 to 12.5 as per figure and note down reading.



Sample Reading (C): 12.55

- In case there is no marginal change in voltage 0 to -0.2 V then RR unit defective (Internal Short Circuit) OR wiring harness problem, may be some main wire insulation damage OR exposed to earth which causes voltage leak.



Sample Reading: 12.44

- In case there is marginal variance observed upto 0.1 to 0.5 volt (=Sample Reading A-Samples Reading B).

Then bike electricals are O.K., wiring harness O.K. (Good Condition) RR unit is also O.K. may be battery needs bench charging OR replacement of battery.



Sample Reading: 11.99

ONLINE CHARGING TEST

Start and accelerate upto 2000 RPM and then check online voltage inbetween 11.98 to 14.5 voltage with "HEADLIGHT ON" Position.



Sample Reading: 14.00

NOTE :

Repeat the above test with head light on and OFF condition. If RR unit is defective will not fall above specified voltage.

VARIOUS ELECTRICALS & ELECTRONICS COMPONENTS INSPECTION

CLUTCH SWITCH

Check the continuity for the following wires

Clutch lever in normal condition : Brown and Black ; if no continuity, switch is not ok.

Clutch lever in pressed condition : Black and Green; if no continuity, switch is not ok.

CLUTCH SWITCH			
MODE	BROWN	BLACK	LIGHT GREEN
NORMAL			
PRESS			

E-STARTER & IGNITION KILL SWITCH

Check the continuity between Red/Blue wire and Blue/white wire of Switch module RH coupler when switch is pressed.

ES & IGNITION KILL SWITCH				
MODE	RED/BLACK	BLACK/RED	RED/BLUE	BLUE/WHITE
 (OFF)				
 (ON)				
 (ES)				

CHECK THE CONTINUITY FOR OTHERS SWITCHES

DIPPER / PASS BY				
MODE	YELLOW/RED	BLUE	GREEN	YELLOW
 (HI)				
 (LO)				
 (PASS)				

BLINKER			
MODE	BLACK/WHITE	WHITE	BLACK/GREEN
 (L)			
 (R)			

COMBINATION LOCK			
MODE	RED	RED/BLACK	KEY REMOVABILITY
ON			NO
OFF			YES
LOCK			YES

FRONT & REAR BRAKE SWITCH		
MODE	GREEN	RED/WHITE
NORMAL		
PRESS		

HORN		
MODE	VIOLET	BLACK
OFF		
		

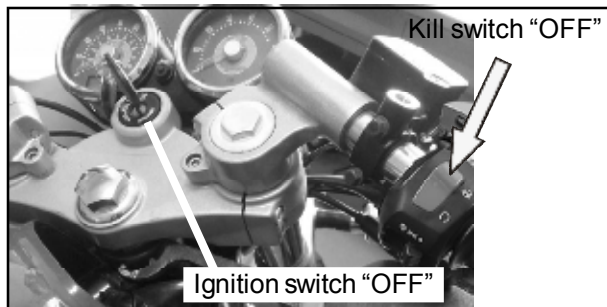
ENGINE COMPRESSION TEST

STEP-A

- Start and warmup the engine to normal running temperature.
- Remove the spark plug & connect compression gauge.
- Please ensure that
 - a) Choke "OFF" position (normal running condition)



- b) Ignition & engine Stop switch "OFF" condition.



- Hold throttle / rotor grip at "FULL" position & then kick several times (5 to 6 times).
- Note down the reading and repeat the above process 3 times. Take the average mean reading to know actual compression pressure. Specified engine compression pressure 80 to 145 PSI.

STEP-B

- In case compression pressure less than 80 PSI, then refit spark plug & start again to warmup the engine.



- a) Remove spark plug & put few drops of engine oil into the combustion chamber.
- b) Connect compression gauge & repeat above said procedure as explained in the step-A.
- If compression pressure reading increases, then check for
 - Improper alignment of piston ring end gap position.
 - piston ring jamed in groove.
 - scoring / seizure of cylinder barrel / piston
 - worn out piston/rings
 - worn out cylinder barrel
- If compression pressure does not increase, then check for
 - blown out cylinder head gasket
 - improper torque of Rocker bearing bolts or cylinder head nuts.
 - valve seat damage / leakage
 - valve stem bend
 - cylinder head warpage
 - improper valve timing
 - Auto decompressor

STEP-C

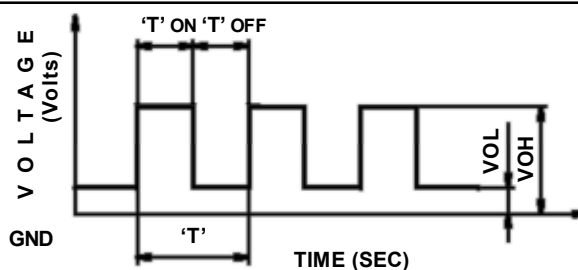
- In case compression pressure is more than 145 PSI then engine requires Decarbonisation of cylinder head / piston (combustion chamber). Also check for smoky exhaust problem.

WHEEL SPEED SENSOR

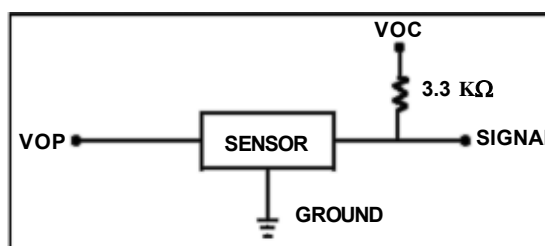
BLOCK DIAGRAM



Working System - HALL SENSOR TYPE



OUTPUT WAVE FORM OF SPEED SENSOR



INSTRUMENT CLUSTER

PUSH BUTTON MANAGEMENT AND LOW BATTERY INDICATION

LOW BATTERY INDICATOR : RED LED

- LED glow based on low battery indication function.
- Driven by software controlled
- Input signal: Battery +ve and RPM

IG "ON" +0 and no RPM	Ignition "ON" and RPM ≥ 700 + / - 160 for 2.5+0.5 sec	Ignition "ON" and RPM ≤ 500 + / - 160 for 2.5+0.5 sec
Low battery indicator : "ON"	1. Low battery indicator : "OFF" if battery voltage $\geq 12V^{+0.3V}$ for 2.5+0.3 sec 2. Low battery indicator: "ON" if battery voltage $< 12V^{-0.3V}$ for 2.5+0.3 sec	Low battery indicator : "ON"

PUSH BUTTON MANAGEMENT

- Management by one (set / Reset) push button placed on Bottom of cluster.

Function	Pressure Time (Sec)	Action
ODO	$0.2 < t < 1$	ODO > TRIP A > TRIP B > ODO
	> 3	No function
Trip A	$0.2 < t < 1$	Move to: TRIP A > TRIP B > ODO > TRIP A
	> 3	TRIP A RESET
Trip B	$0.2 < t < 1$	Move to: TRIP > ODO > TRIP A > TRIP B
	> 3	TRIP B RESET

CHANGING ELECTRICAL COMPONENTS

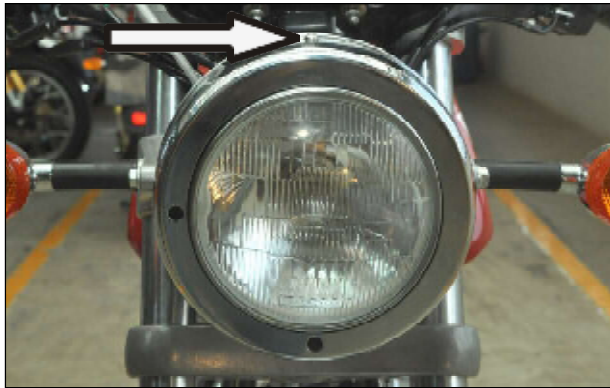
CHANGING ELECTRICAL COMPONENTS

HEADLAMP

The headlamp is sealed beam type. When replacement is required use only the specified sealed beam unit available from your dealer. Using a wrong sealed beam may harm the electrical system in the motorcycle.

REMOVING THE HEADLAMP SEALED BEAM

- Loosen the rim holding screws and take out the head lamp assembly.



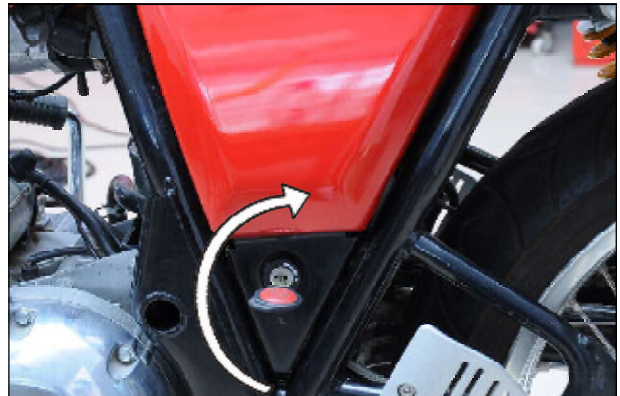
- Disconnect the electrical connections, remove the rubber grommet and the sealed beam.

REASSEMBLING THE HEADLAMP SEALED BEAM

- Refix the new sealed beam in the headlamp rim.
- Fit the rubber grommet and connect the electrical connections
- Position head lamp on the head lamp casing and tighten the mounting screws.

TAIL LAMP BULB REPLACEMENT

- Unlock the battery cover



- Remove the seat assembly by pulling seat lock cable.



- Remove the tail light glass by unscrewing its mounting screw



- Remove the tail light bulb from its holder.
- Replace the bulb.

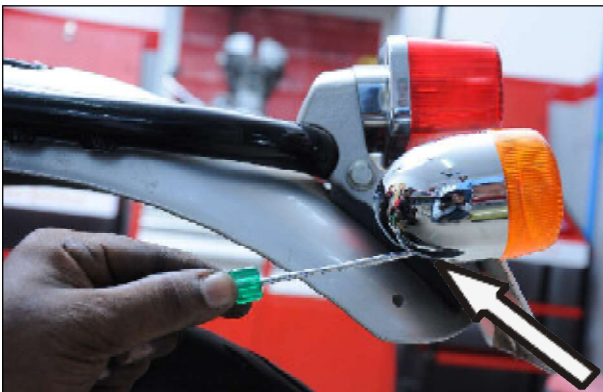


- Assemble back the tail light in the reverse order of dismantling.



TRAFFICATOR BULB REPLACEMENT

- Remove the screw from the trafficator housing back side.



- Open the Indicator housing.
- Take out the bulb holder.



- Take out the bulb and replace the same.



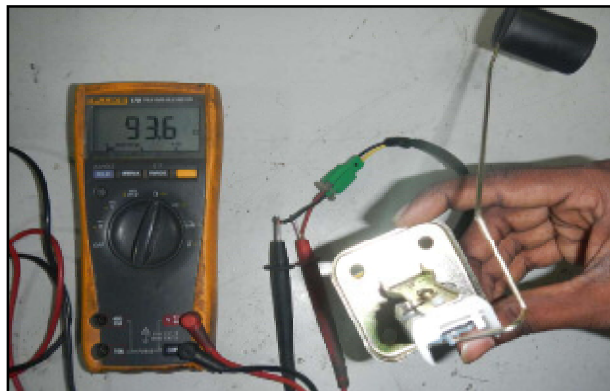
- Refit the holder.



- Assemble back the indicator cover.

FUEL GAUGE FLOAT UNIT

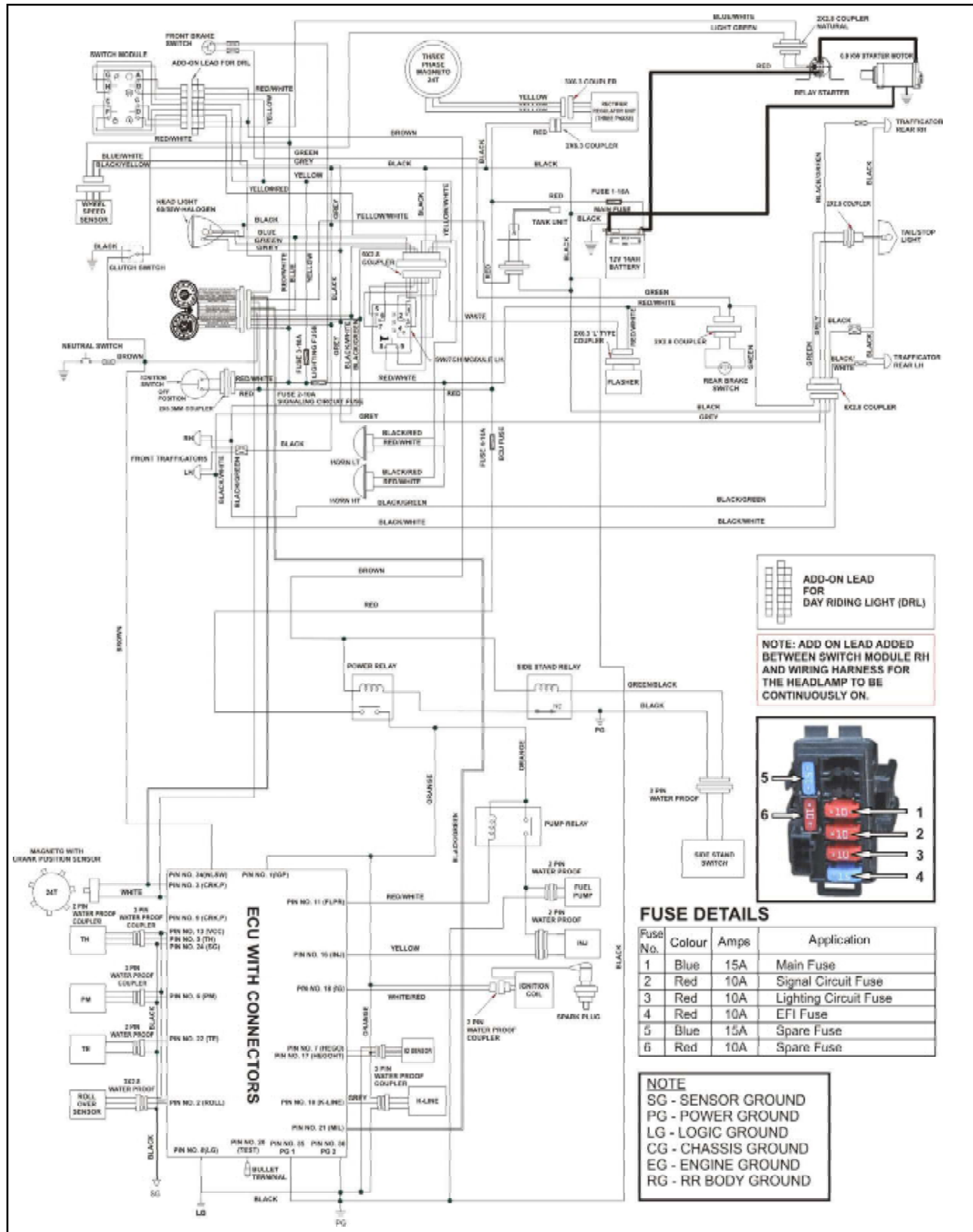
It is recommended to check float unit resistance @ Empty, Reserve, Half & Full conditions by multimeter as shown (Ref. resistance spec.).



RESISTANCE SPEC.

	Indication	Resistance Value	Tank Level
1.	1st Segment blinking	110 $\pm$ 3	Reserve
2.	2nd Segment on	103 $\pm$ 3	
3.	3rd Segment on	83 $\pm$ 2.5	
4.	4th Segment on	68 $\pm$ 2.5	Half
5.	5th Segment on	55 $\pm$ 2.5	
6.	6th Segment on	40 $\pm$ 2	
7.	7th Segment on	10 to 20 $\pm$ 2	Full

WIRING DIAGRAM COMPLETE - CONTINENTAL GT



LIST OF SPECIAL TOOLS & ITS APPLICATION

SL. NO.	PART NO.	DESCRIPTION	APPLICATION
1	ST-26199-3	Cylinder head nut tightening tool	To remove and tightening of cylinder head nut.
2	ST-25123-1	Valve spring compressor	To compress the valve spring for removal and fitting of valve.
3	ST-25612-4	Rotor tightening & loosening tool	To hold magneto rotor while loosening magneto nut.
4	ST-25128-2	Puller for magneto rotor	Removal of magneto rotor assy.
5	ST-25592-4	Connecting rod locking tool	To hold connecting rod in its top position.
6	ST-25151-4	Puller for chain case outer	To remove Crankcase LH cover.
7	ST-25591-4	Sprocket & Clutch tightening tool	To hold the clutch housing and sprag sprocket while dismantling & assembly.
8	ST-25594-4	Clutch plate tightening tool	To compress clutch springs while dismantling & reassembling of clutch plates.
9	ST-25153-4	Extractor for gear box rocker pivot pin	Removal of rocker shaft spring top pivot pin and camplate pivot pin.
10	ST-25835-2	Front drive sprocket removing tool	To remove FD sprocket on the sleeve gear.
11	ST-25244-4	Special spanner adjuster Rear Shox	To adjust gas filled shock absorber spring load.
12	ST-26461-2	Front Fork Assembling & Dismantling Tool Dia 41mm	To hold pipe seat of front fork while dismantling & tightening of front fork main tube with bottom tube (fork end end)
13	ST-26485-3	Front Fork Oil Seal Driver (Dia 41mm)	Fitment of slide bush and fork oil seal into front fork bottom case.
14	ST-26455-4	Steering Ring Nut 'C' Spanner	To adjust steering free play by ring nut setting.
15		Idle Adjusting Tool	To turn the idling adjuster screw in throttle body while setting idel RPM
16		Swing Arm NRB Puller	To remove defective needle roller bearing from swing arm while replacement

Cylinder head nut tightening tool



ST-26199-3

Application : To remove and tightening of cylinder head nut.

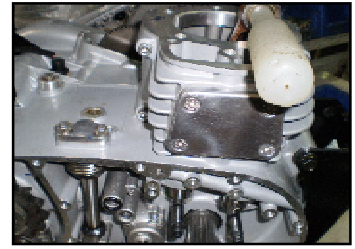


Connecting rod locking tool



ST-25592-4

Application : To hold the connecting rod in its top position.

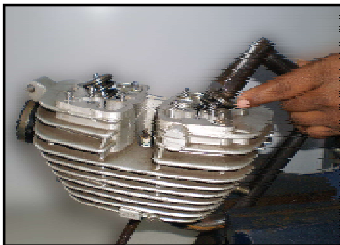


Valve spring compressor



ST-25123-1

Application : To compress the valve spring for removal and fitting of valve.

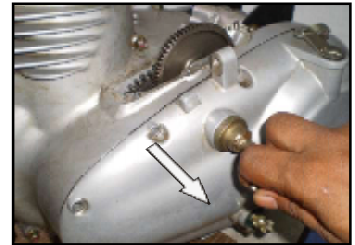


Puller for chain case outer



ST-25151-4

Application : To remove Crank case LH cover.



Rotor tightening & loosening Tool



ST-25612-4

Application: To hold magneto rotor while loosening of magneto nut.

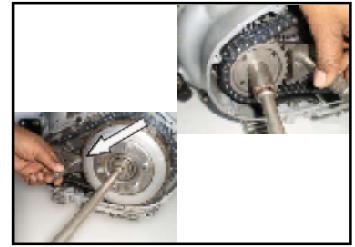


Sprocket & clutch tightening tool



ST-25591-4

Application : To hold Clutch housing & sprag sprocket while dismantling / tightening the Clutch & Sprag Sprocket bolt.



Puller Magneto (Rotor Extractor)

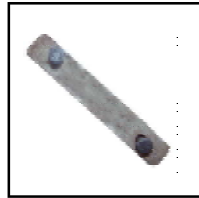


ST-25128-2

Application : Removal of magneto rotor assy.



Clutch plate tightening tool



ST-25594-4

Application : To compress clutch springs while dismantling & reassembling of clutch plates.

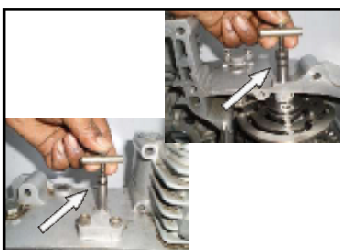


Extractor for Gear box rocker pivot pin



ST-25153-4

Application : To remove gear rocker shaft spring top pivot pin and gear cam plate pivot pin.



Front Fork Oil Seal Driver (Dia 41mm)

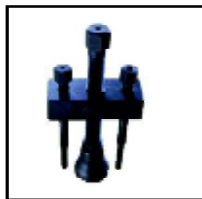


ST-26485-3

Application : Fitment of slide bush and fork oil seal into front fork bottom case.



FD sprocket removing tool

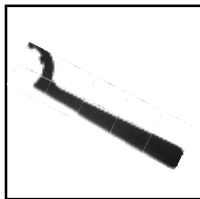


ST-25835-2

Application : To remove front drive sprocket from Sleeve Gear.

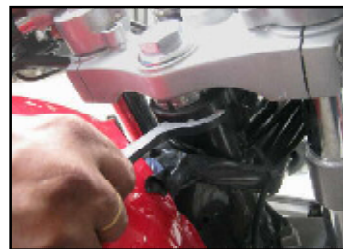


Steering Ring Nut 'C' Spanner

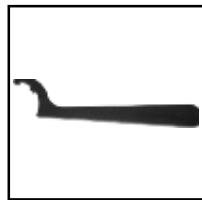


ST-26455-4

Application : To adjust steering free play by ring nut setting.

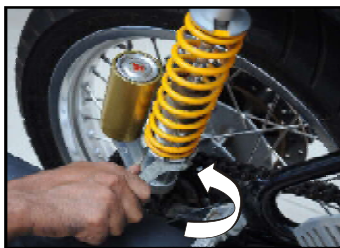


Special spanner adjuster Rear Shox

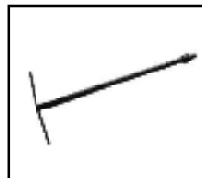


ST-25244-4

Application : To adjust gas filled shock absorber spring load.

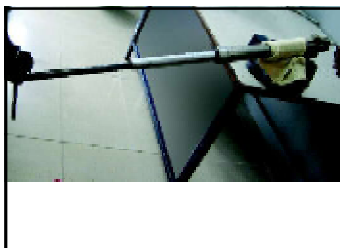


Front Fork Assembling & Dismantling Tool Dia 41mm



ST-26461-2

Application : To hold pipe seat of front fork while dismantling & tightening of front fork main tube with bottom tube (fork end).



PDI CHECKLIST - CONTINENTAL GT

Model :		Engine No :							
Dealer's Name :		Location :							
Colour :		Key Number :		Lock Number:					
Battery Number		Battery Make :		Tyre Number		Front		Rear :	
Aggregate		Area	Defect Code	Measure	Defect #1	Defect #2	Defect #3	Remarks	
CHASSIS / ENGINE NUMBER	1	Engine / Vehicle Number Details	DF	Same					
CONNECT BATTERY / Check Voltage	2	Battery Charging & Vent pipe connection	D / NC / Weak Cell	12.6 V BATTERY					
ENGINE OIL	3	Replace oil & oil filter / Check Oil level (Loose three Drain Bolts)	EO - (Drained Oil Level)	2.5 Litres (Capacity is 2.75 Litres) - Loose three Drain Bolts to Drain Oil					
	4	Clean Oil Strainers	-	Clean					
LOCK OPERATION	5	Ignition Cum steering/ Side cover Lock / Cap Fuel Tank Lock	H / LF / NW	Same					
PETROL	6	Fill Petrol	-	3 Litres					
FUEL TANK	7	Fuel Leak	L	No Leak (Tank, Pump, hose)					
	8	Fuel Tank Alignment	M	Straight					
	9	Tank Monogram LHS & RHS alignment check up	M						
FRONT WHEEL	10	Caliper Mfg BOLT	LF	2.7 to 3 Kgm					
	11	Fr.Wheel Rotation	W / T / LF / N	Free (Check Spokes, Looseness & Runout)					
	12	Front Mudguard Alignment	M / RB	Straight					
	13	Front Wheel Nut	LF	7.0 to 7.7 Kgm					
	14	Front Tyre Condition (Check Tyre Line Seating)	WF	Good					
	15	Front Tyre Pressure	LESS	22PSI					
	16	Front Brake Light	NW / F						
	17	Speedo sensor cable coupler connection & function	WF / NW						
CLUTCH	18	Clutch Operation	H / N	Smooth					
	19	Clutch Lever Free Play	EP / V / T	2 - 3 mm					
HANDLE BAR CONTROLS & ELECTRICAL SWITCH OPERATIONS	20	Accelerator Operation	T / SY	Smooth					
	21	Lever Brackets Tightness	LF	Tight					
	22	Switch Modules Tightness	LF	Tight					
	23	Steering Movement	T	Free					
	24	Clip on Handle Bar fasteners	LF						
	25	DOME Lock Nut T- Stern	LF	4.5 to 5.5 Kgm					
ELECTRICALS	26	Brake / Tail Light	NW / F	No Defects					
	27	Electrical Switch Operation	NW / F	No Defects					
	28	Head lamp Low & High beam light	NW / F	No Defects					
	29	Parking light	NW / F	No Defects					
	30	Front / Rear brakes switch operation	NW / F	No Defects					
INSTRUMENT CLUSTER	31	Initial (ZPD) operation	NW / F	No Defects					
	32	Neutral Lamp	NW / F	No Defects					
	33	Speedo / odo working	NW / F	No Defects					
	34	Battery indication	NW / F	No Defects					
	35	Trip A Check up	NW / F	No Defects					
	36	Trip B Check up	NW / F	No Defects					
	37	Cluster Illumination check	NW / F	No Defects					
	38	High beam tell tale	NW / F	No Defects					
	39	Trafficator tell tale	NW / F	No Defects					
	40	Fuel level Indication	NW / F	No Defects					
SEAT ASSY	41	Seat Alignment	M						
	42	Seat Lock Cable	H / NW / LF						
	43	Seat Catcher Mounting Bolt	LF						
	44	Seat Cover	Fit and finish						

REAR WHEEL	45	Rz. Brake Padal Free Play	T / EP	10-15mm				
	46	Brake Fluid maximum level check up in the rear Master Cylinder	Low					
	47	Routing of brake hose, twist or routing of hose.	WF					
	48	Drive Chain Tension / slackness	T / EP	20 -25 mm				
	49	Rear Wheel Rotation	W / T / LF / N	Free (Check Spokes Looseness & Runout				
	50	Rear Sprocket Mounting Screws	LF					
	51	Chain Guard Position	M / WF					
	52	Rear Mudguard Alignment	M	Straight				
	53	Rear Tyre Pressure	LESS	32PSI				
	54	Rear Tyre Condition (Check Tyre Line Seating)	WF	Good				
SWING ARM / FOOT REST	55	RR Shock Absorber Operation / Adjustment	H / N / AD	Smooth				
	56	Swing Arm Bolts Fitment	LF					
	57	Rider Foot Rest Foldable Function LH / RH	H / NW					
	58	Presence of Foot Rest Peg / clip	Missing					
AESTHETICS	59	Mudguards - Paint Related	SC / PD / R / DN	No Defects				
	60	Fuel Tank - Paint Related	SC / PD / R / DN	No Defects				
	61	side panel - Paint Related	SC / PD / R / DN	No Defects				
	62	Powder Coated Parts (Scratch/ Rust/ Chipped OFF)	SC / PD / R	No Defects				
	63	Plated Parts (Scratch/ Rusty)	SC / R / PQ	No Defects				
	64	Indicators Alignment	M	No Defect				
OTHERS	65	Nuts, bolts, fasteners (Torque)	LF	Tight (RH, LH Cover / Engine Foundation / Accessories/ Wheel Nut)				
	66	Owner's Manual & Tool Kit Content	-	-				
	67	Spare fuse in fuse carrier	NA	-				
TEST RIDE	68	Starting (Kick Start / Self Start)	ST / N	Easy Start				
	69	Front / Rear Brakes Effectiveness/ Feel	AD / SG	Sharp				
	70	One side pulling	P	Straight				
	71	Excessive Vibration	V					
	72	Wobbling	W	No Defects				
	73	Fork / Chain Noise	N	No Defects				
	74	Engine Performance / Gear Shifting	N / ST / J / H	Smooth				
	75	Silencer Heat shield / Exhaust pipe guard	LF / V / SC / DN / R / PQ	No Defects				
	76	Any Rattling / Squeaking Noise	N	Nil (Silencer / Accessories / Body Parts / Suspension)				
STATIC CHECK (AFTER TEST RIDE)	77	Easy Start (Hot condition)	ST / NW					
	78	Leak	L	No Leak (Oil/ Fuel/ Hydraulic/ Acid leakage)				
	79	Smoke	SK / EO	No Smoke				
	80	Cam Noise / Top End Noise	N					
Any OTHER								
Note **	Please inform plant in case of any engine dismantling during the PDI stage							

INSTRUCTIONS

1. Check the vehicle thoroughly for any transit damages or shortage of parts.
2. Carry out all jobs listed under Pre-delivery Inspection Schedule.
3. Thoroughly road - test the vehicle for performance.
4. Please ensure delivery of the vehicle in brand new condition.
5. Claim transit loss and damage through 'TRANSIT' insurance only.
6. Claim Parts replaced for Manufacturing defects only under warranty.

Misalignment	Noise	Vibration	Leak	Starting Trouble/Missing	Less	Wobbling	Loose Fitment	Discharging	Tight	Fused	Scratch	Pulling	Dent	Wrong Fitment	Hard	Jerking
M	N	V	L	ST	LESS	W	LF	D	T	F	SC	P	DN	WF	H	J

Excess Play	Different	Spongy	Sticky	Not Available	Smoke	Adjustment	Not Working	Paint Defect	Rust	Peel Off	Dull	Excessive Oil	Rubbing	Not Charging
EP	DF	SG	SY	NA	SK	AD	NW	PD	R	PO	DU	EO	RB	NC

PERSONAL INFORMATION

Name :

Address :

.....

.....

Contact Phone No. : Mobile :

E-mail :

D.L. No. : Renewal Due :

In emergency Contact Mr.

Insurance Policy No. : Amount Rs. Premium Due Dt :

Insurance Policy No. : Amount Rs. Premium Due Dt :

.....

Vehicle Registration No. Make :

Vehicle Insurance No..... Amount Rs. Renewal Due Dt :

Passport No. : Validity :

Blood Group : Specs Lense L/R:

Allergic Medicines :

Height: Weight: On Date:.....



SERVICE TRAINING CENTRE

GUIDELINES FOR UNDERGOING TRAINING COURSE

Name (with Surname)																		Batch Code :
----------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--------------

- Report to Training Center / Venue before 9:00 am in the morning & leave only after taking permission of the RE trainer.
- Lunch & Tea will be provided by RE at Training Centre / Venue.
- Carry your Identity card / Address, contact phone number for any Emergency purpose.
- Alcohol consumption is strictly prohibited during Training period.
- Do not move at the place of training as a single person, move in a groups to visit plant / factory or practical test.
- It is advisable to take safety measures while doing practicals or test ride the Motorcycle to avoid any personal injury or accident.
- Do not bring camera, mobile cum camera inside the RE TVT / Training Centre / Venue. Photography prohibited during RE Training.
- It is advised to not to attend mobile phone calls during training session.
- Any activity beyond mentioned by the Training Centre / Venue is restricted & is not the responsibility of RE.

Herewith I read & understood the above guidelines & promise to abide by the same. In case I am found guilty, company is free to take any action against me.

PLACE :

(Signature & Name of Candidate)

DATE :

(Designation)

SERVICE TRAINING CENTRE NOMINATION FOR SERVICE TRAINING PROGRAMME

Attach 3 Passport Size Photographs

1 for Nomination Form
2 for ID Card
3 for Certificate

Name (with Surname)

Father's name

Age & Date of Birth Yrs. DD MM YYYY

Driving Licence No. Blood group

Workshop Name & Place	Personal Address & Phone / Mobile No.

JOB EXPERIENCE

Brand Store / Dealership / ASP / Own workshop Name	No. of years worked	Job / Worked Duration		Designation	Make & Models, Jobs attend.
		From	To		

EDUCATIONAL QUALIFICATION

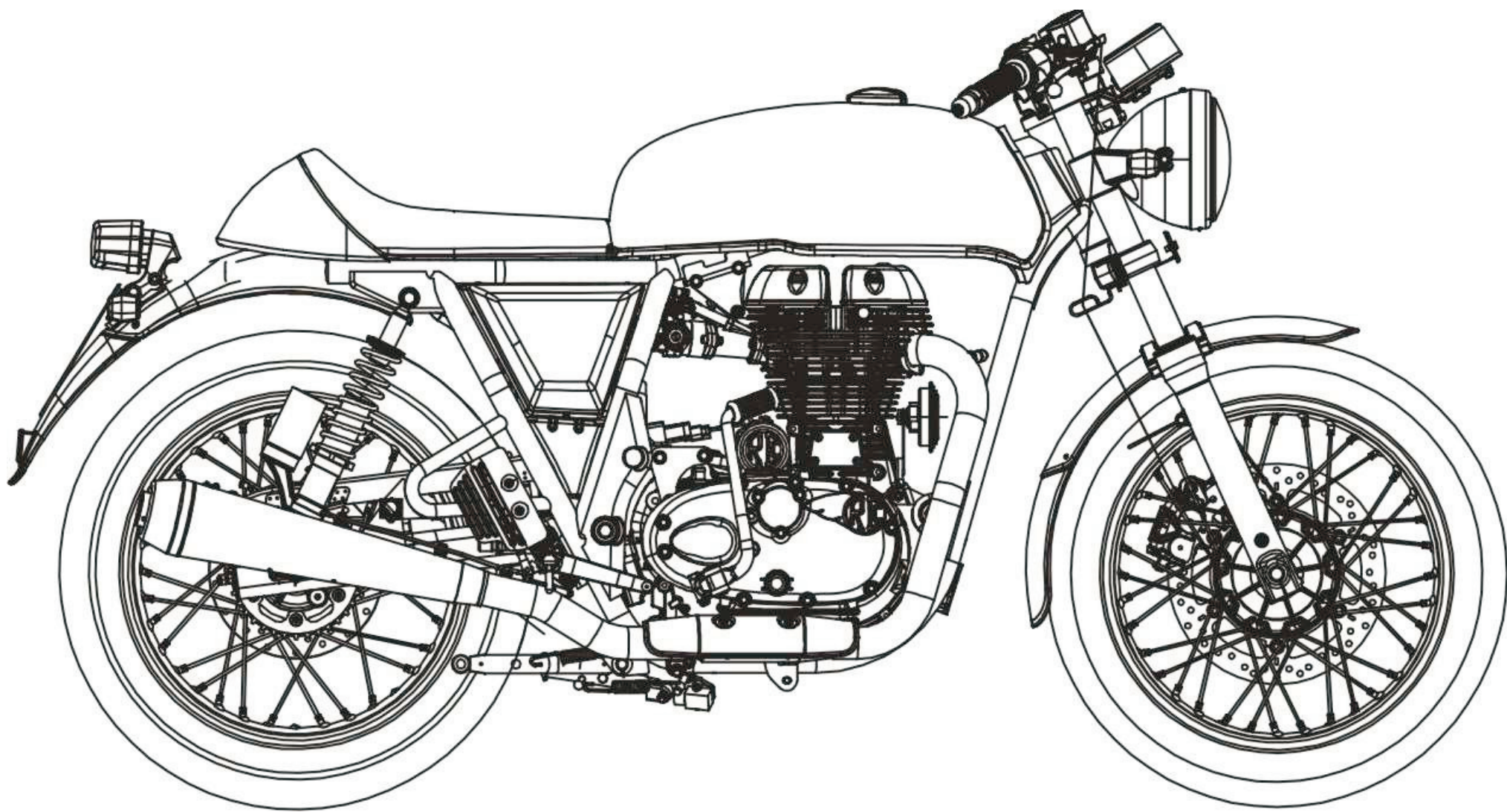
Class / Degree (Highest → Low)	Year of passing	Place	Name of the Institute / School

RSM / TSM / ASM Comments	Candidate Signature

Trainer Comments / Observation	Trainer Name / Signature

Grade Allotted		Attendance P/A						Test marks scored	
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(TRAINING MANAGER)



ROYALENFIELD.COM/CONTINENTALGT

ROYAL ENFIELD