EURO IV - VEHICLE SERVICE MANUAL

Classic Bullet EFI

Bullet EFI

Continental GT

PREFACE

"FIRST TIME RIGHT" is a very important element for enhancing Customer Satisfaction.

Royal Enfield is committed to upgrade the skills and knowledge of technicians so that they follow scientific repair techniques to ensure "FIRST TIME RIGHT" practices and carry out repairs accurately so that customers will enjoy trouble free performance at all times.

This Maintenance and service manual is specifically for the following EURO IV Regulation models being currently sold only in UK & European countries.

- BULLET EFI
- BULLET CLASSIC EFI
- CONTINENTAL GT

This Manual is intended for use primarily by a person who is well versed with basic repair technique of a motorcycle & usage of general purpose tools and special service tools & diagnostic tools, while basic & routine service maintenance may be in the event of not having possibility in carrying out using basic tools, required tools it is recommended that the motorcycle may please be get inspected and serviced through an Authorized Royal Enfield Service Station.

This manual will help in guide in the basic servicing, periodical maintenance, systematic disassembly, Parts inspection and assembling procedures of various mechanisms / systems of the motorcycle which has to be carried out in Royal Enfield Authorised Dealership or Service Station.

While this manual is updated with latest Information and Specifications, at the time of going to print, due to continuous improvements being done to improve performance, some of the data, illustrations etc., in this manual may differ from the actual parts fitted in the engine.

Subsequent & continuous improvement that may be done on the motorcycles to enhance customer satisfaction, will be uploaded also in the RMI portals & also available with Royal Enfield Authorised dealer & Service Station.

Please do feel free to write to us at **support@royalenfield.com.** if you have any queries, clarification, suggestions or feedback.

With warm regards

SERVICE HEAD QUARTERS

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Part No: 888569 / Feb. '17

EURO IV BIKES – VEHICLE VIEWS

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SECTION 01 - TECHNICAL SPECIFICATION

TECH SPEC POINT	BULLET CLASSIC EFI | BULLET EFI	CONTINENTAL GT
ENGINE		
Engine	4 Stroke, air cooled, single cylinder	4 Stroke, air cooled, single cyl., OHV, SI
Capacity	499 cc (Displacement)	535 cc
Bore	84 mm	87 mm
Stroke	90 mm	90 mm
Compression ratio	8.5 : 1	8.5 : 1
Max. Power @ RPM	20.3 Kw @ 5250 RPM	21.4 kw @ 5100 RPM
Max. Torque @ RPM	41.3 Nm @ 4000 RPM	44 Nm @ 4000 RPM
Air filter Element	Paper Element	Paper Element
Lubrication	Forced Lubrication, Wet Sump	Forced Lubrication, Wet Sump
Fuel Supply	Electronic Fuel Injection	Electronic Fuel Injection
IGNITION SYSTEM		
Ignition system	Digital Electronic Ignition	Electronic Ignition
Spark plug gap	0.8 mm	0.8 - 0.9 mm
Spark plug	WQR8DC (Bosch)	WQR8DC (Bosch)
TRANSMISSION		
Clutch	Wet Multiplate	Wet Multiplate (7 Plates)
Drive Chain links	102 pitch | 101 pitch	101 Pitch
Primary drive	Duplex Chain drive 3/8" pitch	Duplex Chain
Gear box	5 Speed Constant Mesh	Constant Mesh 5 Speed
Gear Ratios	I - 3.063 : 1	I - 3.063 : 1
	II - 2.013 : 1	II - 2.013 : 1
	III - 1.522 : 1	III - 1.522 : 1
	IV - 1.212 : 1	IV - 1.212 : 1
	V - 1.000 : 1	V - 1.000 : 1
Primary Drive Ratio	2.15 : 1	2.15 : 1
Secondary Drive	Chain Drive	18 Teeth (F.D. Sprocket)
Secondary ratio	2.235:1	2.12:1
ELECTRICALS		
Generation	Alternator	Alternator
System	12V DC	12V DC
Battery	12V - 14 AH	12V - 14 AH
Head lamp	12V, 60/55 W	12V, 60/55 W, Halogen Bulb
Tail / Brake lamp	12V, 5/21 W	5/21 W
Turn signal	12V, 10W X 2 Nos.	12V, 10W X 4 Nos.
Pilot lamp	12V, 2 W X 2 Nos. / 12V, 4 W X 1 No.	NA
Instrument Cluster	NA	Digital instrument Cluster with LCD
High beam indicator	NA	12V, 0.2W (LED)
Neutral Indicator	NA	12V, 1.12W
Horn	12V, 2.5 Amp (Max.)	12V, 2.5A (Dual tone-LT, HT)
Starter Motor	NA	12V, 0.9 KW

TECH SPEC POINT	BULLET CLASSIC EFI	BULLET EFI	CONTINENTAL GT
CHASSIS			
Frame	Tubular Frame		Tubular steel double cradle
Tyre size	Fr : 90 / 90-19"-52 V Rr : 110 / 80-18"-58 V	3.25 X 19" 3.50 x 19"	110/90-18 M/C 56H 130/70-18 M/C 63H
Tyre pressure	Front-Solo: 18 PSI Pillion: 20 PSI		Front- Solo:1.41 Kg/cm2 (20 PSI) Pillion:1.55 Kg/cm2 (22 PSI)
	Rear-Solo: 28 PSI Pillion: 30 PSI		Rear- Solo:2.11 Kg/cm2 (30 PSI) Pillion:2.25 Kg/cm2 (32 PSI)
Fuel tank capacity	14.5 ± 1 Litres		13.5 Litres***
Suspension	Front: Telescopic, Hydraulic Damping stroke 110 mm		Front:Telescopic, Stroke 110mm
	Rear: Swing arm with gas filled shockabsorbers with adjustable 5 step spring tension load.		Rear:Twin - Gas Charged, Stroke 80 mm
Front fork oil capacity	430 ml per leg		430 ml per leg
Front fork oil	Gabriel Fork Oil 2W 35		Gabriel Fork Oil 2W 35
Brakes	Hydraulic Disc Brakes Front & Rear with ABS System		Hydraulic Disc Brakes Front & Rear with ABS System
	Front: 300 mm dia disc with twin piston caliper		Front:300 mm dia floating disc, twin piston floating caliper
	Rear: 240 mm dia disc with single piston & floating caliper		Rear:240mm dia disc, single piston floating caliper
Brake oil grade	DOT 4 or above		DOT 4 or above
Brake oil capacity	Front:60 ml Rear: 100 ml		Front:50 ml Rear: 100 ml
Speedometer lamp	12V, 3.4 W X 1 No.		NA
Turn signal / High beam indicator	12V, 1.7 W each		NA
Neutral Indicator	12V, 1.7 W X 1 No.		NA
DIMENSIONS			
Length	2140 mm		2060 mm
Width	800 mm		760 mm
Height	1080 mm		1070 mm
Wheel base	1360 mm		1360 mm
Saddle height	805 mm	790mm	810 mm
Ground clearance	140 mm		140 mm
WEIGHTS			
Mass of motorcycle in running order	270 Kg		267 Kg
Max pay load	95 Kg		98 Kg
Max technical permissible mass	365 Kg		365 Kg
PERFORMANCE			
Maximum Speed	128 kmph		137 Kmph

- Values / Dimensions mentioned above are for reference only.
- In view of continuous improvements being done on our motorcycles, the specifications are subject to change without prior notice.

BULLET CLASSIC EFI & BULLET EFI

The Periodical maintenance schedule detailed below is based upon average riding conditions and indicates the Intervals at which regular inspections, adjustments, replacements and lubrications must be carried out to help maintain your motorcycle meticulously.

If in case the motorcycle is used frequently in very dusty environment / severe climatic conditions / Poor Roads / stagnant water etc., the maintenance will need to be done earlier as may be required.

Contact a nearest Royal Enfield Authorized Dealer / Service Center to carry out the periodical maintenance and for any expert advice.

S. No.	DESCRIPTION	SCHEDULE										
	Kms (x 1000)	**0.5**	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**	**27**	**30**
	Miles (x 1000)	**0.3**	**2**	**3.75**	**6**	**7.5**	**9.5**	**11.25**	**13**	**15**	**17**	**18.75**
1	Engine Oil	R		R		R		R		R		R
		Check level every 500 Kms or earlier as required										
2	Engine oil filter element	R		R		R		R		R		R
3	Engine sump filter (oil strainer)	C		C		C		C		C		C
4	Magnetic drain plug under gear box and secondary drain plug under crankshaft in crankcase right	C		C		C		C		C		C
5	Spark plug	A	A	A	A	A	R	A	A	A	A	R
6	HT lead	I	I	I	I	I	I	I	I	I	I	I
7	Fuel hose	I	I	I	I	R	I	I	I	R	I	I
8	Fuel Pump	Check for screw tightness in all services										
9	Accelerator cable play	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	R	I	I
11	Rubber hose, Inlet manifold / Adaptor	I	I	I	I	R	I	I	I	R	I	I
12	Airfilter paper element	C	C	C	C	R	C	C	C	R	C	C
13	Inlet/Exhaust valve seating (compression/vaccum test)						I					I
14	Cylinder head											D
15	Exhaust system											D
16	Clutch 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
18	Battery terminals (apply petroleum jelly)	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
20	Earth wire eyelet (behind battery carrier)					I						I
21	Rear Wheel Drive Chain	Lubricate & Adjust every 1000 Kms/Clean, Lubricate &										
		Adjust every 3000 Kms or earlier as required										
22	Front Fork oil				R			R			R	
23	Rear brake play	Adjust every 1000 Kms or earlier as required										
24	Rear brake cams			L		L		L		L		L
25	Steering ball races play	I	A	L	A	L	A	L	A	R	A	L
26	Spokes tightness / Wheel rim run out front & rear	I		I		I		I		I		I
27	Pivot-Side Stand, Center Stand, Pillion Foot Rest	L	L	L	L	L	L	L	L	L	L	L
28	Tyre wear pattern (Front & Rear)	I	I	I	I	I	I	I	I	I	I	I
29	Hand levers pivot	Lubricate every 1000 Kms or earlier as required										
30	Front Disc Brake Oil level check	I	I	I	I	I	R	I	I	I	I	R
31	Evaporative Emission Equipment rubber hoses	I	I	I	I	R	I	I	I	R	I	I

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

NOTE:

For maintenance after 30,000 Kms, (18,750 miles) please repeat the same frequency levels specified above, in consultation with a Royal Enfield Authorized Dealer.

CONTINENTAL GT

The Periodical maintenance schedule detailed below is based upon average riding conditions and indicates the Intervals at which regular inspections, adjustments, replacements and lubrications must be carried out to help maintain your motorcycle meticulously.

If in case the motorcycle is used frequently in very dusty environment / severe climatic conditions / Poor Roads / stagnant water etc., the maintenance will need to be done earlier as may be required.

Contact a nearest Royal Enfield Authorized Dealer / Service Center to carry out the periodical maintenance and for any expert advice.

S. No.	DESCRIPTION	SCHEDULE										
	Kms (x 1000)	**0.5**	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**	**27**	**30**
	Miles (x 1000)	**0.3**	**2**	**3.75**	**6**	**7.5**	**9.5**	**11.25**	**13**	**15**	**17**	**18.75**
1	Engine Oil	R		R		R		R		R		R
		Check level every 500 Kms or earlier as required										
2	Engine oil filter	R		R		R		R		R		R
3	Engine sump filter	C		C		C		C		C		C
4	Magnetic drain plug under gear box on crankcase right	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	R
6	HT lead	I	I	I	I	I	I	I	I	I	I	I
7	Fuel hose	I	I	I	I	R	I	I	I	R	I	I
8	Fuel Pump	Check for screw tightness in all services										
9	Accelerator cable play	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	R	I	I
11	Rubber hose, Inlet manifold	I	I	I	I	R	I	I	I	R	I	I
12	Airfilter element	C	C	C	C	R	C	C	C	R	C	C
13	Inlet / Exhaust valve seating											I
14	Cylinder head											D
15	Exhaust pipe											D
16	Clutch free play	Adjust every 1000 Kms (600 Miles) or earlier as required										
17	Rear brake pedal pivot	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
19	Battery Electrolyte level	I	I	I	I	I	I	I	I	I	I	I
20	Earth wire eyelet contact					I						I
21	Rear Chain	Adjust every 1000 Kms (600 Miles) or earlier as required										
		Lubricate every 3000 Kms (1800 Miles) or earlier as required										
22	Fork oil					R				R		
23	Steering ball races			A		L		A		L		A
24	Spokes tightness	I		I		I		I		I		I
25	Wheel rim run out			I		I		I		I		I
26	Tyre wear		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	R	I	I	I
29	Pivot-Side Stand	L	L	L	L	L	L	L	L	L	L	L
30	Center Stand pivot	L	L	L	L	L	L	L	L	L	L	L
31	Pillion Foot rest pivot	L	L	L	L	L	L	L	L	L	L	L
32	Swing arm bearings					L				L		
31	Evaporative Emission Equipment rubber hoses	I	I	I	I	R	I	I	I	R	I	I

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

NOTE:

For maintenance after 30,000 Kms, (18,750 miles) please repeat the same frequency levels specified above, in consultation with a Royal Enfield Authorized Dealer.

SECTION 03 - SPECIAL TOOLS USAGE LIST

PART NO.	DESCRIPTION	PHOTOS	APPLICATION
ST-25834-2	Front fork Dismantling tool		To hold pipe seat of front fork while dismantling & tightening of front fork main tube with bottom case (fork end assy.).
ST-25114-4	Extractor for fork oil seal		To remove oil seal in front fork bottom case.
ST-25113-4	Mandrel for oil seal		Fitment of oil seal into front fork bottom case.
ST-25112-4	Expander for front fork Oil seal		Expanding the oil seal lip while inserting main tube into bottom case of front fork
ST-25110-3	Gauge plate for tightening chain stay		Alignment of Swing Arm while mounting tightening into chassis.
ST-25244-4	Special spanner adjuster		To adjust gas filled shockabsorber spring load.
ST-25833-4	Front Fork Tool 1/2 SD		To Loosen and tightening of front fork assembly from the head lamp casing.
ST-26461-2	Front Fork Assembling & Dismantling Tool		To hold pipe seat of front fork while dismantling & tightening of front fork main tube with bottom tube (fork end).
ST-26485-3	Front Fork Oil Seal Driver (Dia 41mm)		Fitment of slide bush and fork oil seal into front fork bottom case.

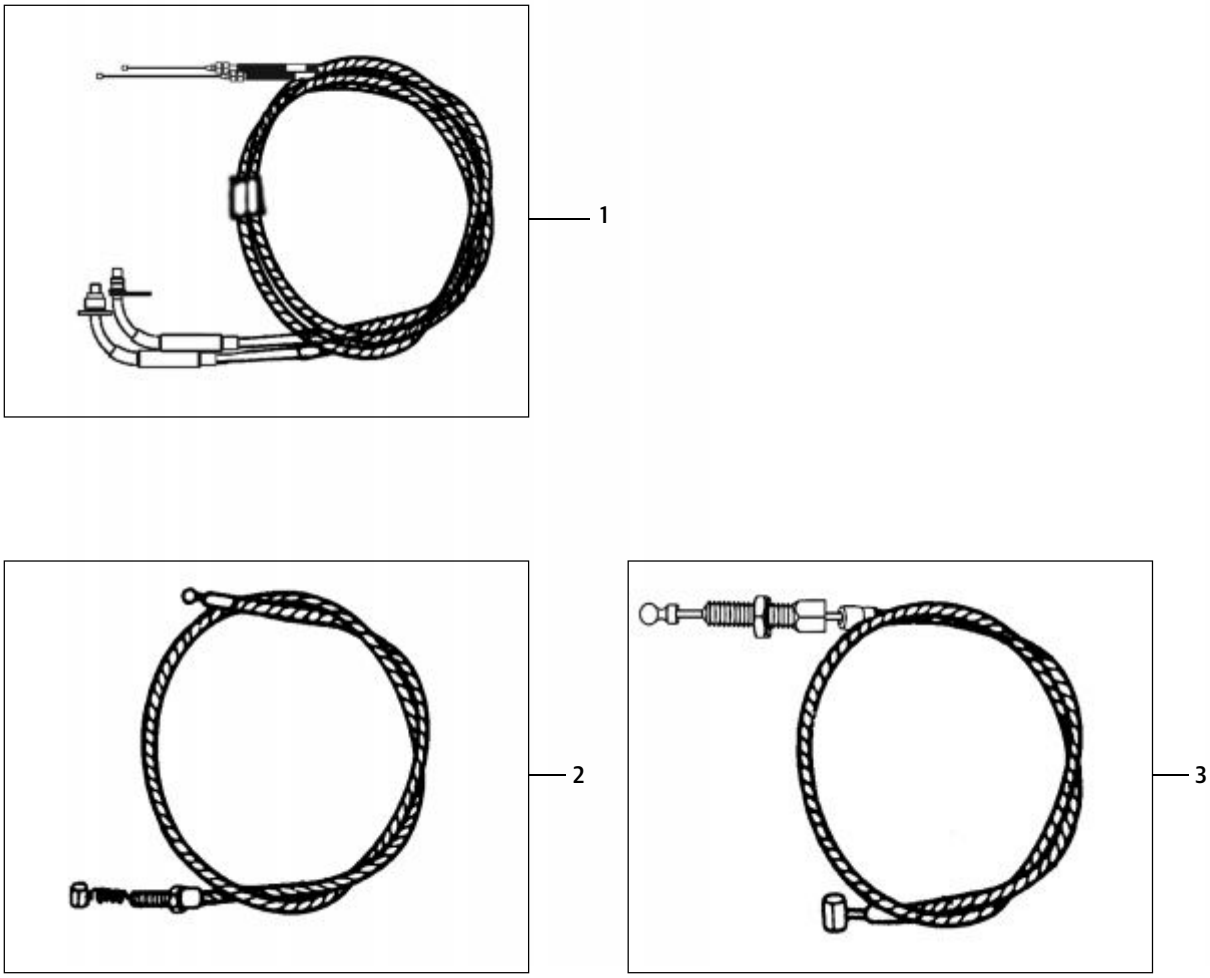
Bullet Classic EFI / Bullet EFI / Continental GT

- Disconnect alternator leads.
- Disconnect the spark plug suppressor cap.
- Disconnect the fuel pipe.
- Remove throttle body along with throttle cable.
- Remove the air filter assy.
- Remove the exhaust pipe and silencer.
- Disconnect the engine steady bolt.
- Remove the rear chain.
- Remove the LH Foot rest.
- Support the engine on a suitable box or wooden block.
- Remove the center stand and the stand stop.
- Remove the front engine plates and the small bolt fixing the stand spring bracket.
- Remove the stud securing the rear engine plate to the frame Slide out the engine.

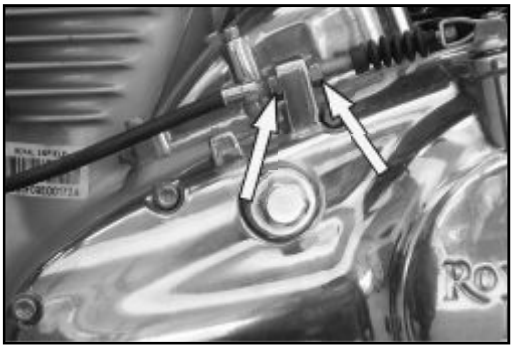
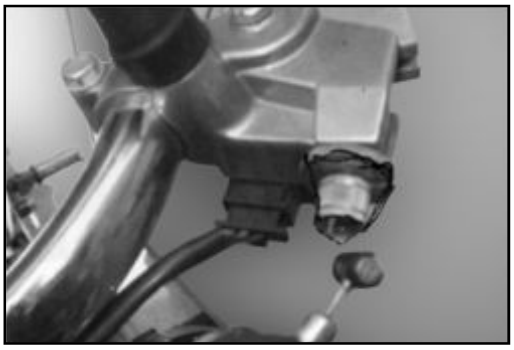
SECTION 05 - VEHICLE AGGREGATES

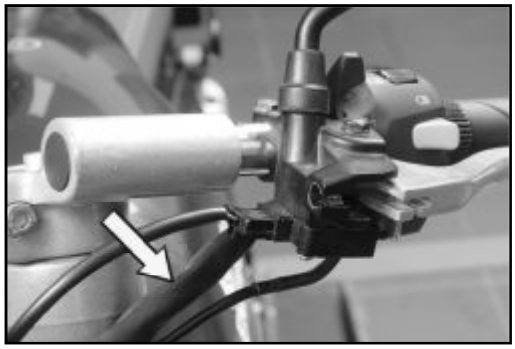
EXPLODED VIEWS

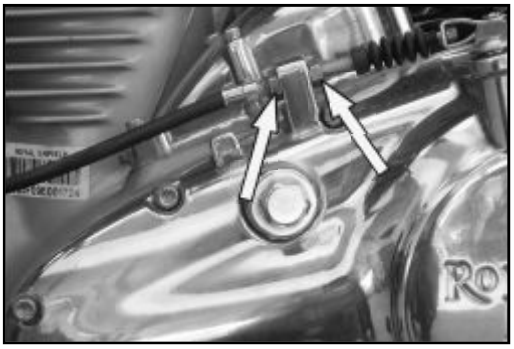
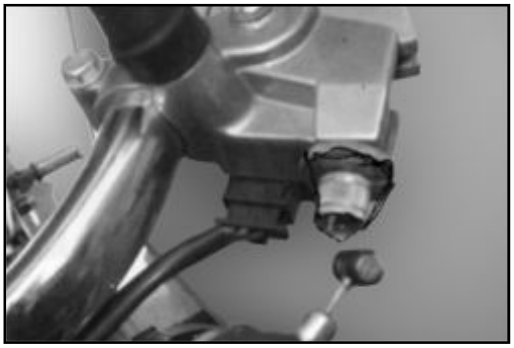
BULLET CLASSIC EFI / BULLET EFI / CONTINENTAL GT

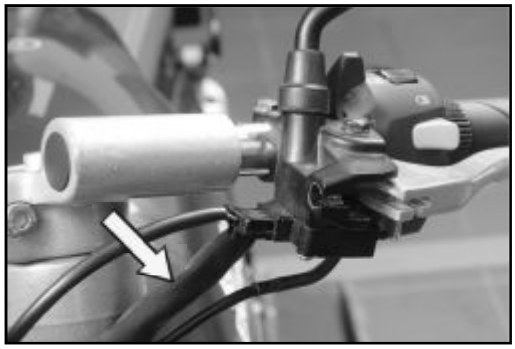


S. NO.	DESCRIPTION	QTY.
1	Throttle Cable Assembly (Twin Cable)	1
2	BI Starter Cable	1
3	Clutch Cable Assembly	1

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.1	**Clutch Cable Assembly** **Bullet Classic EFI/ Bullet EFI/ Continental GT** **Dismantling** ■ Slacken the adjuster at the clutch cover end and disconnect the cable from the lever. ■ Gently pull out part of the clutch cable from the cover. ■ Remove the clutch cable from the clutch lever at handle bar end.	 
5.1	**Throttle Cable Assembly (Twin Cable)** **Bullet Classic EFI/ Bullet EFI/ Continental GT** **Dismantling** ■ Slacken the adjusters at the throttle body end for both cables. ■ Gently remove the Throttle cable assembly.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.1	**Bi Starter Cable** **Bullet Classic EFI/ Bullet EFI/ Continental GT** **Dismantling** ■ Slacken the adjuster at the Bi starter cable end and disconnect the cable from the lever. ■ Gently pull out the part of Bi starter cable. ■ Remove the Bi starter cable from the clutch lever at handle bar end.	

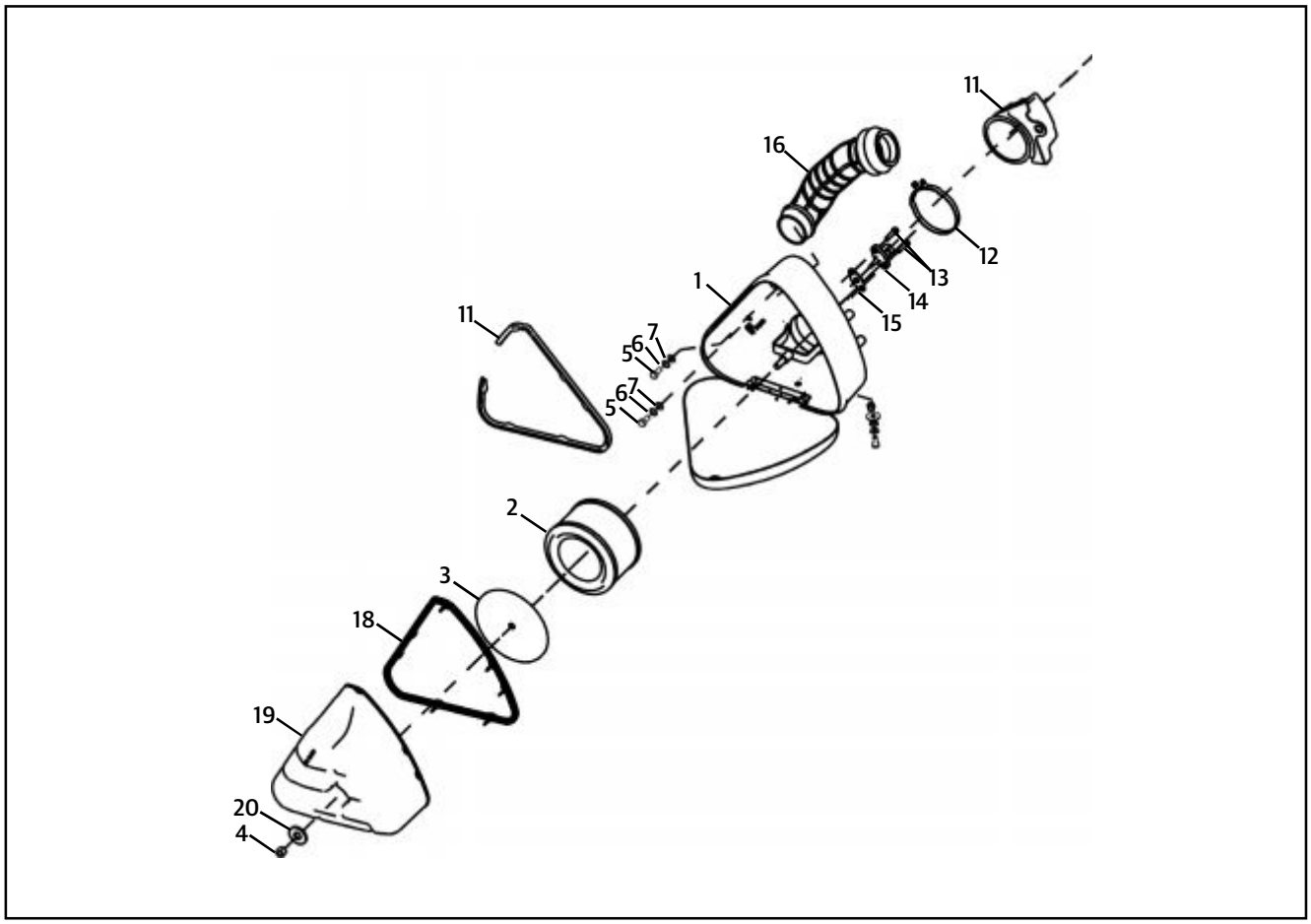
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.1	**Clutch Cable Assembly Bullet Classic EFI/ Bullet EFI/ Continental GT Assembling** ■ Locate the clutch cable in clutch lever at handle bar end. ■ Locate part of clutch cable in the cover. ■ Slacken the adjuster at the clutch cover end and Connect the cable in the lever.	 
5.1	**Throttle Cable Assembly (Twin Cable)** **Bullet Classic EFI/ Bullet EFI/ Continental GT** **Assembling** ■ Locate the Throttle cable assembly. ■ Slacken the adjusters at the throttle body end for both cables.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.1	**Bi Starter Cable** **Bullet Classic EFI/ Bullet EFI/ Continental GT** **Assembling** ■ Locate the Bi starter cable in the clutch lever at handle bar end. ■ Locate the part of Bi starter cable. ■ Slacken the adjuster at the Bi starter cable end and Connect the cable in the lever.	

SECTION 5.2 - AIR FILTER PAPER ELEMENT

EXPLODED VIEWS

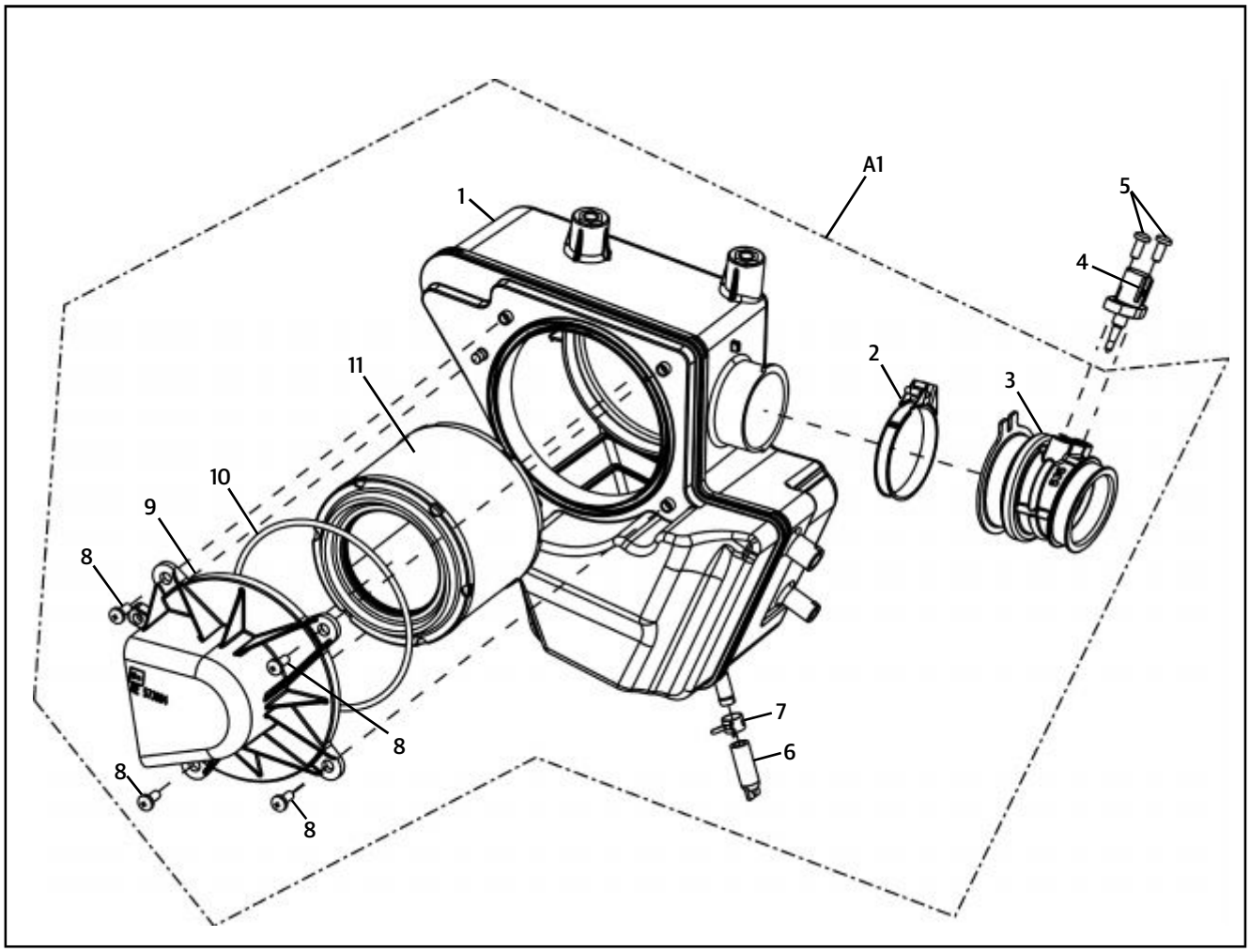
BULLET EFI, BULLET CLASSIC EFI



S. NO.	DESCRIPTION	QTY.
1	Air Filter Box Assembly with sticker	1
2	Air filter element 500cc	1
3	Cover Filter element	1
4	Hex Nylock Nut M8X9.5	1
5	Hex Screw M6 X 14	2
6	Lock Washer M6	3
7	Plain Washer M6	1
8	Plain Washer M6	1
9	Hex Nut M6 X 1 X 7	1
10	Hex.Bolt M6 X 1 X 12	1

S. NO.	DESCRIPTION	QTY.
11	Inlet Bellow	1
12	Clip Hose - Inlet Bellow	1
13	Hexagon Socket Head Cap screw-M5X.8X20	2
14	TA Sensor	1
15	Gasket - Air Temp Sensor	1
16	Rubber Tube - Air Filter	1
17	Beading Box Cover	1
18	Beading Cover Air Filter	1
19	Cover Assembly - Air (Plastic)	1
20	Washer - Cover M10	1

CONTINENTAL GT



S. NO.	DESCRIPTION	QTY.
1	Air Filter Box	1
2	Clamp	1
3	Pipe Outlet	1
4	TA Sensor	1
5	Hex Socket Head Cap Screw M5 X 16	2
6	Drain Pipe	1
7	Clip	1

S. NO.	DESCRIPTION	QTY.
8	Pan Head Screw M5 X 12	4
9	Inlet Cover	1
10	Seal	1
11	Element Air Filter	1

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.2	**Air Filter Element** **Bullet Classic EFI/ Bullet EFI** ■ Unlock and open the Filter box RH. ■ Loosen hex Nylock nut ■ Gently pull out the cover assembly. ■ Remove cover filter element. ■ Remove the Air filter Element.	**CAUTION:** Ensure the pillion footrest is in extended position to avoid damage to filter box lid **Hex Nyloc Nut M8**

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.2	**Air Filter Element** **Continental GT** ■ Loosen and remove the pan head screw in side panel RH bottom.	**Pan Head Screw M5 X 12** **Screw Driver** 
	■ Remove the side panel from the frame. ■ Remove the 4 pan head screws on the airfilter cover.	**Pan Head Screw M5 X 1** **Screw Driver** 
	■ Remove airfilter element from the housing.	**NOTE:** Remove rubber seal from the cover. **CAUTION:** Ensure Purge valve is placed safely to prevent from damage. 

INSPECTION

- Inspect air filter element carefully for any deformation, damages, heavily clogged with dirt, soggy condition, and / or foreign particles embedded in the element. Replace if any of these conditions are observed.
- Inspect rubber seals, hoses, for cuts, cracks, damages. Replace seals and rubber parts whenever the induction system is serviced.

FOR CONTINENTAL GT MODELS

- Inspect air filter housing and cover forany damages, cracks etc and replace entire assembly if damaged.

CLEANING

- Gently Tap filter element with minimum force to dislodge heavy / embedded dust particles.
- Using low pressure compressed air :
  - blow air from INSIDE to OUTSIDE for Bullet EFI, Bullet Classic EFI Models.
  - blow air from OUTSIDE to INSIDE for Continental GT Models.

  to remove the fine dust particles. DO NOT WASH THE ELEMENT IN WATER, GASOLINE OR ANY SOLVENTS.
- Clean Airfilter element every 3,000 Kms OR more frequently if motorcycle is used in dusty / Off road conditions.
- Clean the airfilter housing internals, retainer plate etc, with a soft damp cloth to remove the dust.

REPLACE

- All 'O' rings, rubber beadings, seals, gaskets, rubber parts etc, whenever the airfilter assembly is serviced.
- Airfilter element evedry 12,000 Kms (7,500 Miles) or earlier if motorcycle isused in dusty / Off road conditions.

CAUTION :

Do not wash filter element using water, gasoline or any solvents as it will damage the paper element.

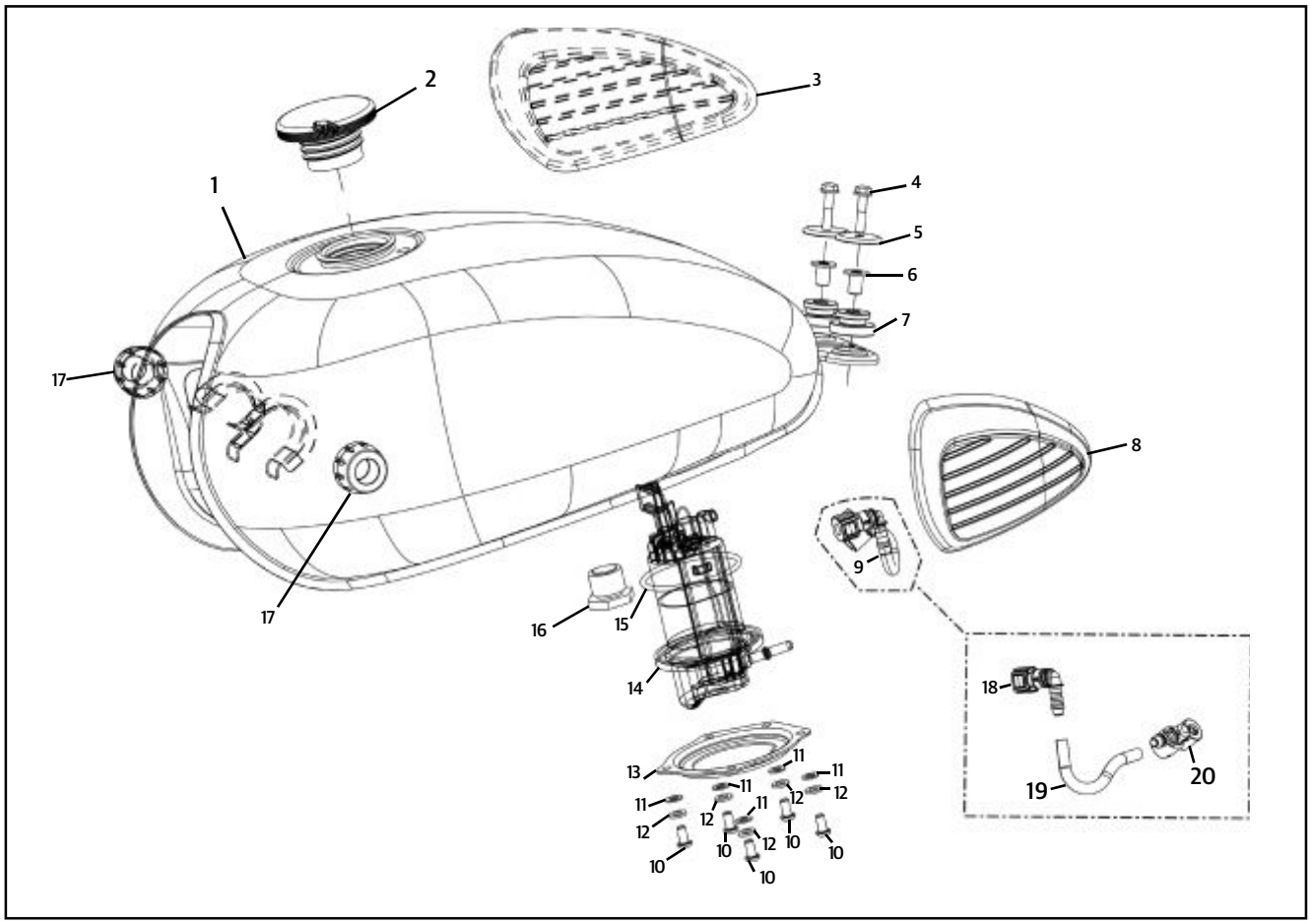
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.2	**Air Filter Element** **Bullet Classic EFI/ Bullet EFI** ■ Locate the Air filter element inside filter box RH. ■ Locate Cover filter element over filter element. ■ Ensure rubber ring is located in plastic cover assembly. ■ Locate Plastic cover assembly over air filter element in filter box RH. ■ Position washer on the mounting stud. ■ Locate nyloc nut on stud and tighten sufficiently till it is completely resting on the washer and resistance to tighten further is felt. ■ Ensure beading is correctly located on the filter box lid. ■ Close filter box lid and lock in place.	**CAUTION:** Ensure the pillion footrest is in extended position to avoid damage to filter box lid.   **Hex Nyloc Nut M8** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.2	**Air Filter Element** **Continental GT** ■ Locate Filter inside air filter box. ■ Ensure rubber ring is correctly seated in the cover air filter. ■ Ensure cover air filter is located properly on the filter box and the cover is correctly located at the mounting peg in the housing. ■ Install the 4 pan head screws on the cover and tighten evenly. ■ Ensure the rubber grommets are in place in the side panel RH. Locate side panel RH in the frame, ensuing the pegs in the frame are seated in the grommets. ■ Tighten the RH side panel at the bottom using pan head screw.	 **Pan Head Screw M5 X 12** **Allen Key 4mm**  **Pan Head Screw M5 X 12** **Allen Key 4mm** 

SECTION 5.3 - FUEL TANK ASSEMBLY

EXPLODED VIEWS

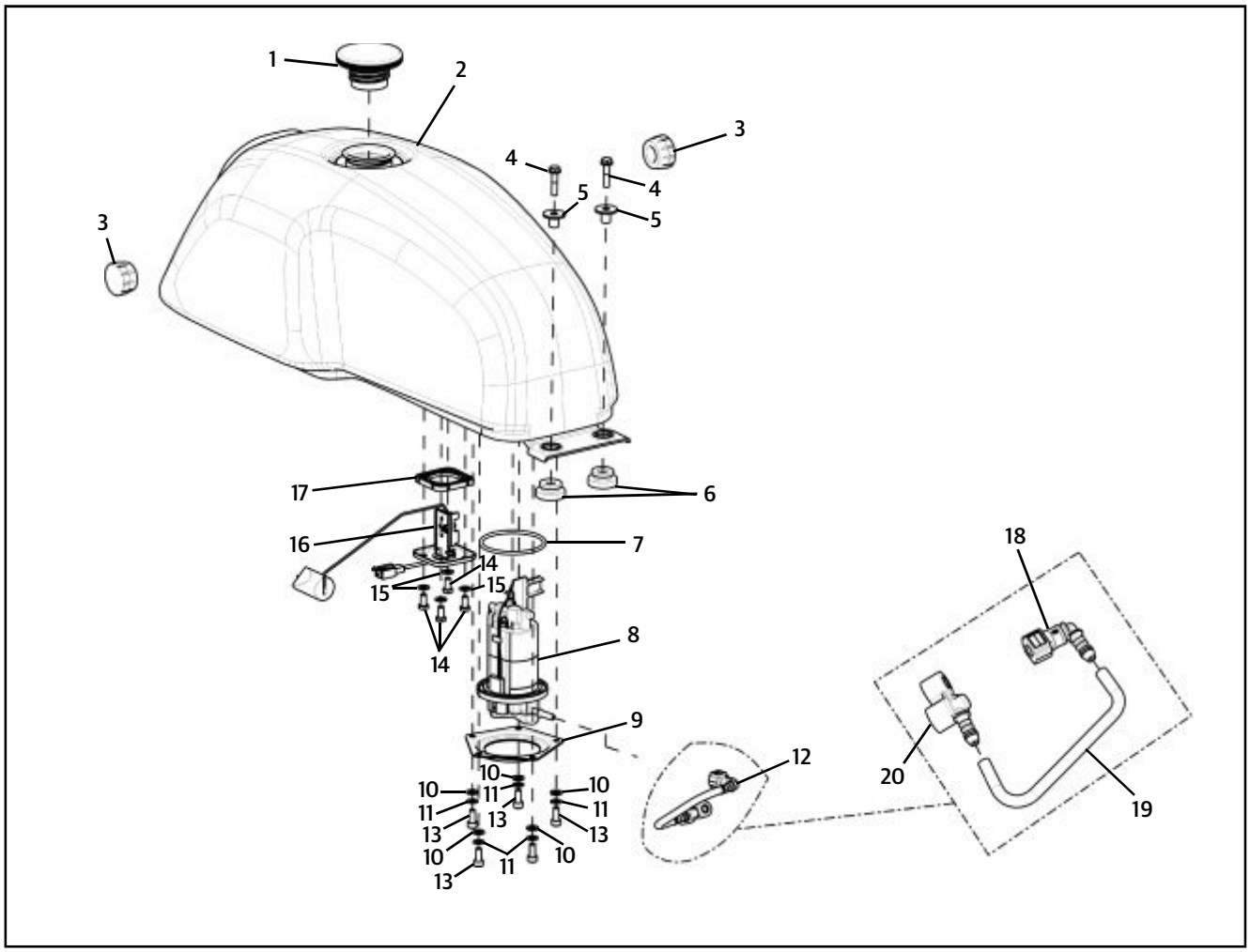
BULLET EFI, BULLET CLASSIC EFI



S. NO.	DESCRIPTION	QTY.
1	Fuel Tank With Sticker - Black	1
2	Cap-Fuel Tank	1
3	Thigh Pad R H	1
4	Flanged Hex Bolt M6X1X27	2
5	Washer-Tank	2
6	Sleeve-Tank Mtg Rear	2
7	Rear Damper-Tank	2
8	Thigh Pad L H	1
9	PA Tube Assembly	1
10	Hex Socket Button Head Cap Screw M6X12	5

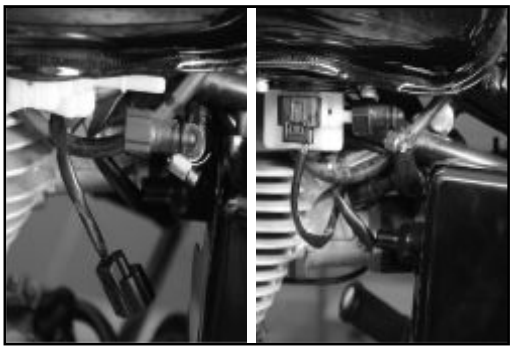
S. NO.	DESCRIPTION	QTY.
11	Washer	5
12	Washer	5
13	Clamp Plate - Fuel Pump	1
14	Fuel Pump	1
15	O Ring	1
16	Low Fuel Sensor	1
17	Front Damper-Tank	2
18	Quick Connector	1
19	Fuel Hose (Pa Tube)	1
20	Cap,Injector	1

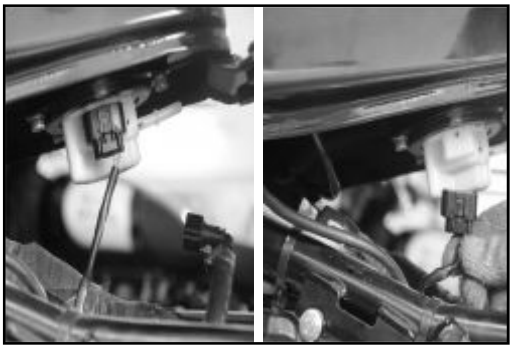
CONTINENTAL GT



S. NO.	DESCRIPTION	QTY.
1	Cap-Fuel Tank	1
2	Fuel Tank Assy With Sticker (Red)	1
3	Front Damper-Tank	2
4	Flanged Hex Bolt M6 X 1 X 27	2
5	Bush - Fuel Tank	2
6	Rear Damper-Tank	2
7	O Ring	1
8	Fuel Pump	1
9	Clamp Plate - Fuel Pump	1
10	Washer	5

S. NO.	DESCRIPTION	QTY.
11	Washer	5
12	Fuel Hose Assembly	1
13	Hex Socket Head Cap Screw M6 X 16	5
14	Hex Screw M6 X 12	4
15	Punched Washer-Fuel Gauge Mtg	4
16	Fuel Gauge Unit	1
17	O' Ring-Fuel Gauge	1
18	Quick Connector	1
19	Fuel Hose (PA Tube)	1
20	Cap, Injector	1

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.3	**Fuel tank - Dismantling** **Bullet Classic EFI/ Bullet EFI** ■ Remove Seat Assembly. ■ Disconnect fuel hose from the Fuel tank. ■ Remove 2 Hex bolts from the rear end of fuel tank along with washers,seals and rear dampers. ■ Ensure the handle bar is held at straight ahead position. ■ Place a piece of cloth between handle bar clamp bolt and fuel tank. ■ Gently lift up fuel tank at the rear end to: - Disconnect low fuel sensor coupler. - Disconnect EVAP hose from the Fuel tank. ■ Slide fuel tank towards rear to release front locking clamp from the rubber supports in frame. ■ Remove fuel tank from frame carefully.	**CAUTION:** Drain the fuel completely from the fuel tank. **CAUTION:** Ensure Ignition switch and Kill switch is in OFF Position before disconnecting hose from fuel tank or before draining the fuel. **Hex Flange Bolt M6** **Socket Spanner 10 mm** **CAUTION:** Do not lift tank too high to - Prevent accidental damage to the front end of the fuel tank. - Prevent damage to low fuel sensor coupler - Prevent damage to EVAP hose    

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.3	**Fuel tank - Dismantling** **Continental GT** ■ Remove Seat Assembly. ■ Disconnect fuel hose from the Fuel tank by removing the quick connector from the fuel pump end ■ Remove 2 Hex bolts from the rear end of fuel tank. ■ Ensure the handle bar is held at straight ahead position. ■ Place a piece of cloth at the front end of the fuel tank to prevent damage while lifting and removing tank. ■ Gently lift up fuel tank at the rear end to: - Disconnect low fuel sensor coupler. - Disconnect EVAP hose from the Fuel tank. ■ Slide fuel tank onwards rear to release front locking clamp from the rubber supports in frame. Remove tank from frame carefully.	**CAUTION:** Drain the fuel completely from the fuel tank. **CAUTION:** Ensure Ignition switch and Kill switch is in OFF Position before disconnecting hose from fuel tank or before draining the fuel. **Hex Flange Bolt M6** **Socket Spanner 10 mm** **CAUTION:** Do not lift tank too high to - Prevent accidental damage to the front end of the fuel tank. - Prevent damage to low fuel sensor coupler. - Prevent damage to EVAP hose.   

INSPECTION

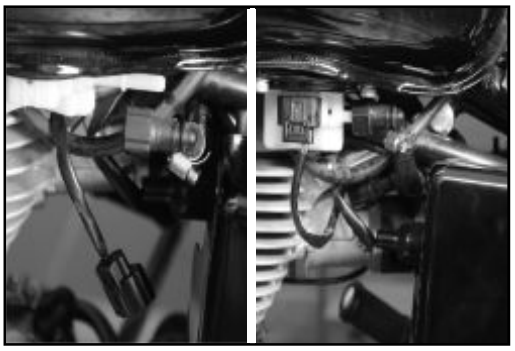
- Carefully inspect fuel hose and vent hose for damage, cuts, cracks or general deterioration. Replace if necessary.

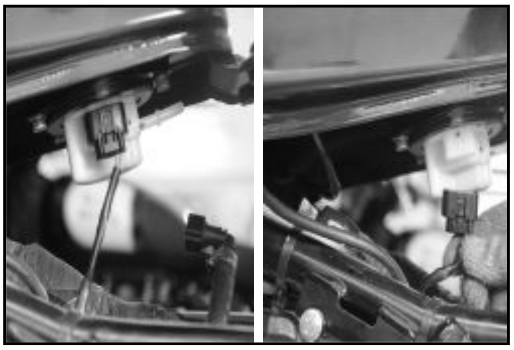
WARNING

- Gasoline is extremely flammable and highly explosive, which could result in serious injury.
- Do not smoke or allow open flame or sparks in the vicinity.
- Store the fuel carefully to avoid spillage.

TORQUE CHART

Aggregate	Component	Fastener	Torque Range	
			NM	Kg-M
Fuel Tank	Fuel tank Mounting	Flanged hex bolt M6 * 30	5	0.5

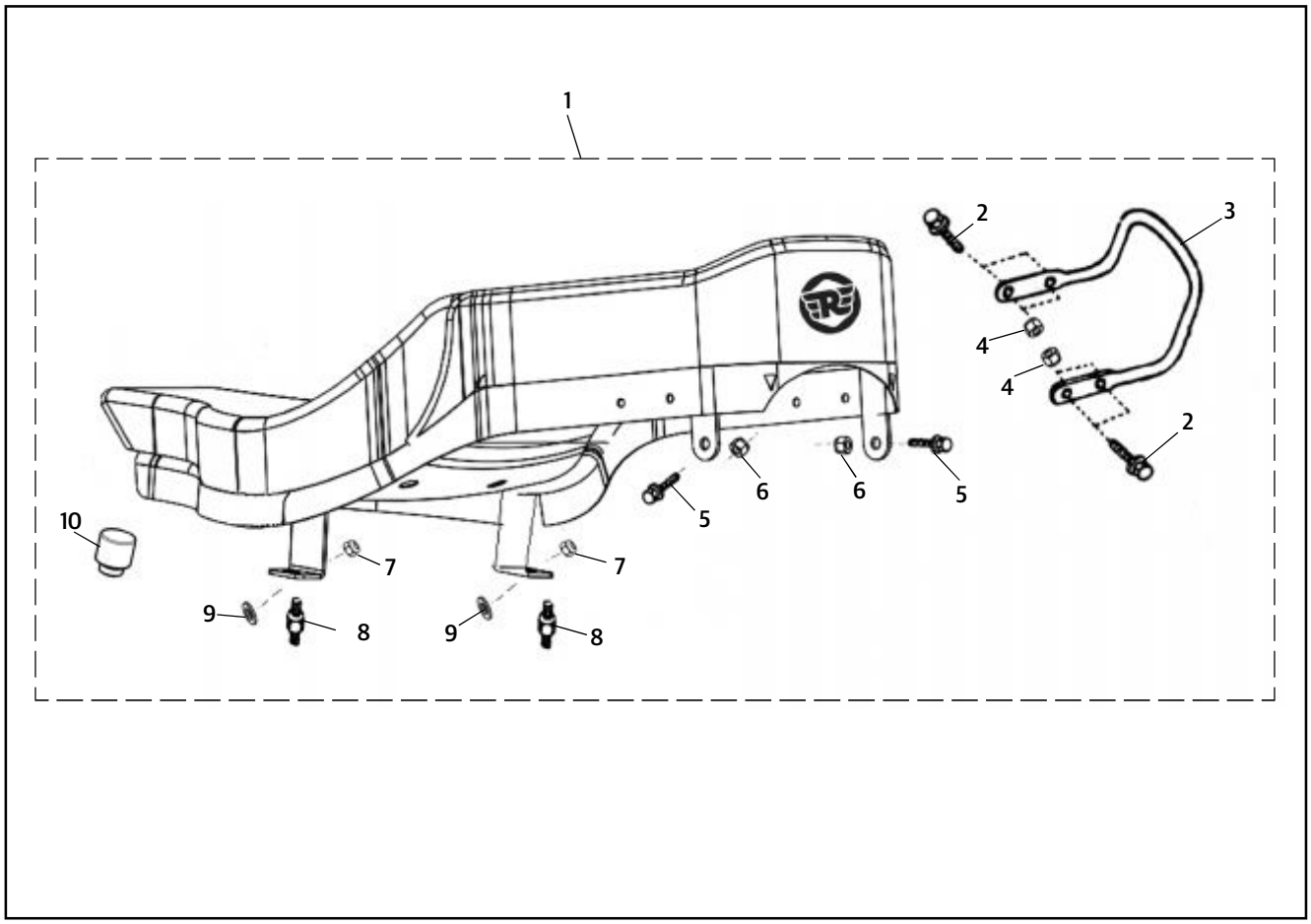
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.3	**Fuel tank - Assembly** **Bullet Classic EFI/ Bullet EFI** Ensure the handle bar is held at straight ahead position. ■ Position fuel tank on frame such that the front mounting locate on the rubber supports in the frame. ■ Gently lift up fuel tank at the end to: - Connect low fuel sensor coupler wire. - Connect EVAP hose to the Fuel tank. ■ Connect fuel hose to the fuel tank. ■ Ensure the two dampers and mounting sleeves are properly located in the mounting slots. ■ Ensure the mounting are aligned and assemble 2 hex bolts with large washers. ■ Tighten the two bolts evenly. ■ Assemble Seat. ■ Fill fuel in the tank.	Place a piece of cloth on the top, front portion of the fuel tank to avoid damage due to touching of the handle bar clamp on fuel tank.    **Hex Flange Bolt M6** **Socket Spanner 10 mm** **Torque 5 Nm** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.3	**Fuel tank - Assembly** **Continental GT** ■ Locate over flow tube carefully into the Fuel tank. ■ Install the fuel tank towards front to mount into front locking clamp into the frame. ■ Place a piece of cloth between handle bar clamp bolt and fuel tank. ■ Gently lift up fuel tank at the end and - Connect low fuel sensor coupler wire. - Connect EVAP hose into the Fuel tank. - Connect fuel hose into the Fuel tank. ■ Install 2 Hex bolts at the rear end of fuel tank along with washers,seals and rear dampers. ■ Assemble Seat. ■ Fill fuel sufficiently.	 **Hex Flange Bolt M6** **Socket Spanner 10 mm**  **Hex Flange Bolt M6** **Socket Spanner 10 mm** **Torque 5 Nm** 

SECTION 5.4 - SEAT ASSEMBLY

EXPLODED VIEWS

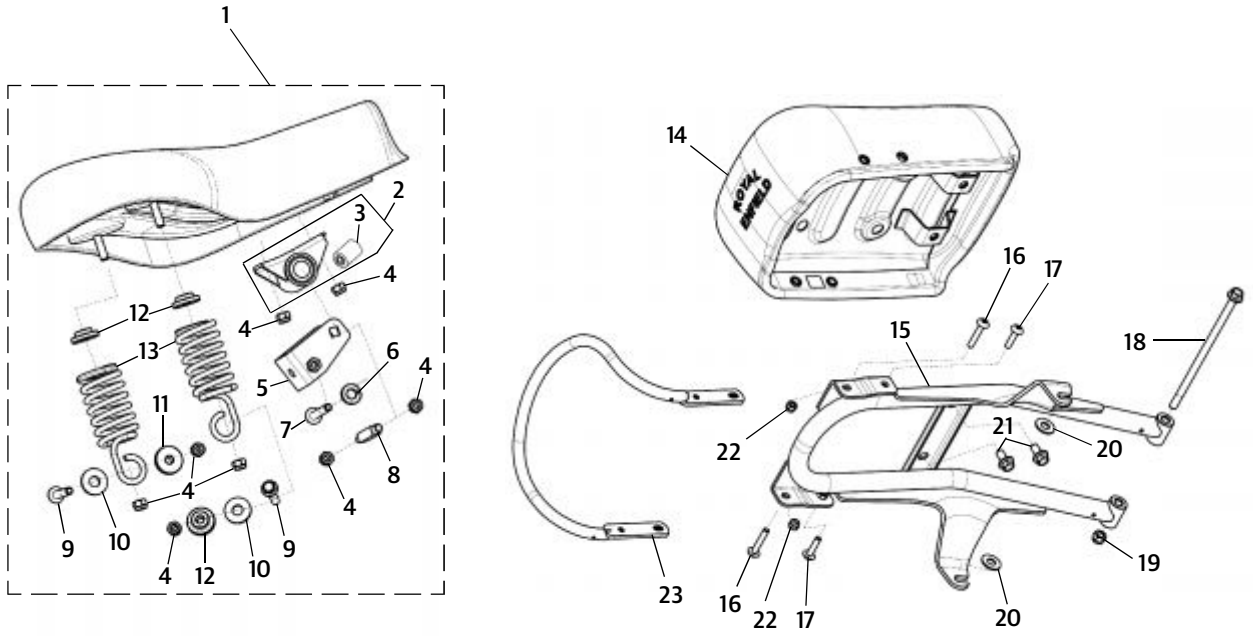
BULLET EFI



S. NO.	DESCRIPTION	QTY.
1	Complete Seat Assy	1
2	Flanged Hex. Bolt M 6 X 20	4
3	Pillion Handle	1
4	Hex Nut With Nylon Insert, M6	4
5	Flanged Hex. Bolt M8 X 20	2
6	Hex Nut With Nylon Insert, M8	2
7	Flanged Hex Nut M8 X 7.7 X 8	2

S. NO.	DESCRIPTION	QTY.
8	Stud M8	2
9	Plain Washer M8	4
10	Rubber Support Seat Front	1

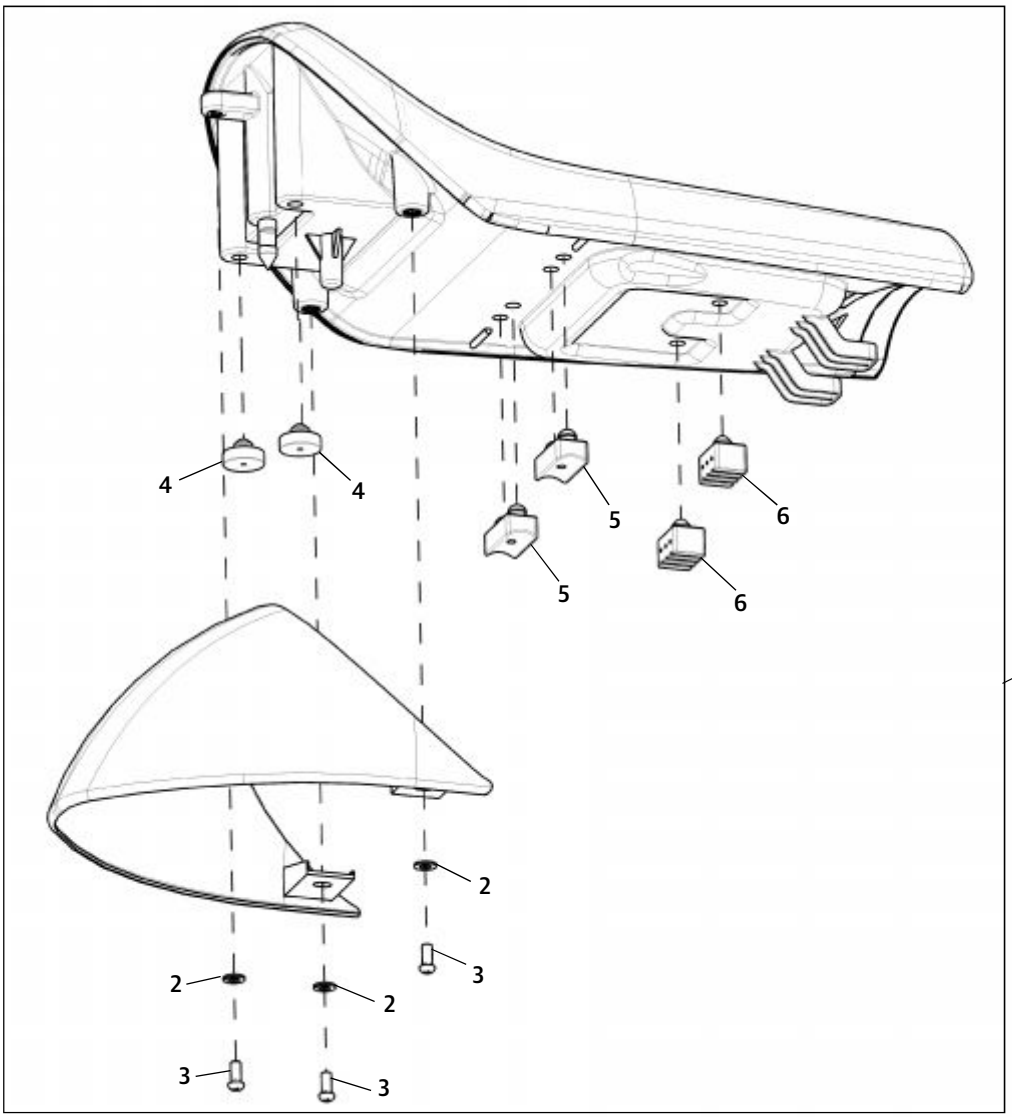
BULLET CLASSIC EFI



S. NO.	DESCRIPTION	QTY.
1	Split Seat Assy-Rider	1
2	Silent Block Bracket Assy	1
3	Silent Block Seat	1
4	Hex. Nut with Nylock insert, M8 X 9.5	8
5	Seat Hinge Mounting Assembly	1
6	Spring Washer M8	4
	Spring Washer M8 - Special	4
7	Flanged Hex. Bolt M8 X 60	1
8	Stud - Seat Mounting	1
9	Hexagonal Bolt M8 X 45	2
	Domed Cap Bolt M8 X 45 (chrome)	2
10	Washer (Classic Models)	2
	Plain Washer (Chrome)	2
11	Spring Bush	2

S. NO.	DESCRIPTION	QTY.
12	Bush - Seat Spring	4
13	Spring	2
14	Split Seat Assy. Pillion	1
15	Sub Frame - Black	1
16	Flanged Hex Bolt M6 X 1 X 35	2
17	Flanged Hex Bolt M6 X 1 X 27	2
18	Flanged Hex Bolt M8 X 170	1
19	Hex. Nut With Nylon Insert M8 X 9.5	1
20	Plain Washer	2
	Spring Washer	2
21	Flanged Hex Bolt M8 X 1.25 X 16	2
22	Hexagonal Nut M6 X 1 X 7	2
23	Pillion Handle for Rear Seat - Black	1

CONTINENTAL GT

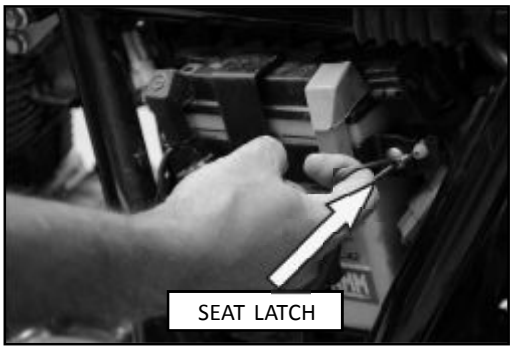
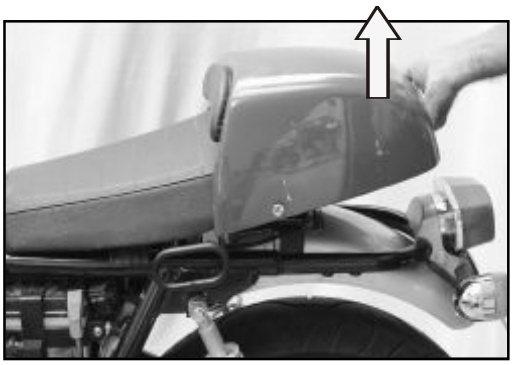


S.NO.	DESCRIPTION	QTY.
1	Single Seat Assembly with Cowl - Red	1
2	Plain Washer	3
3	Cross Recessed Pan Head Screw M6X14	3
4	Rubber Support-Rear	2

S.NO.	DESCRIPTION	QTY.
5	Rubber Support-Middle	2
6	Rubber Support-Front	2

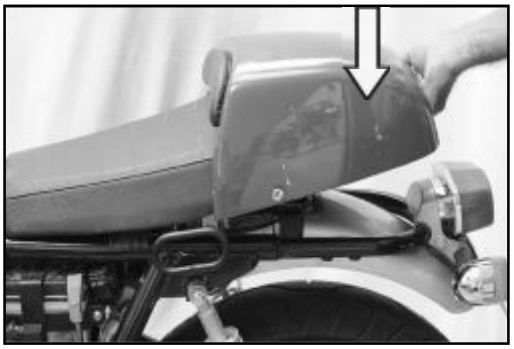
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.4	**Seat - Dismantling Bullet Classic EFI** **Rider Seat Removal** ■ Loosen hex bolt at the front end of the seat.	**Hex Nut with Nyloc Insert M8** **Socket Spanner 13 mm** 
	■ Remove the seat spring mounting bolts on LH & RH side.	**Hex Flange Bolt M8** **Socket Spanner 13 mm** 
	■ Gently remove the rider seat from the frame.	
	Rear Seat Removal ■ Hold nut and remove long mounting bolt from the sub frame.	**Flange Hex Bolt M8** **Socket Spanner 13 mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.4	**Seat - Dismantling Bullet Classic EFI Rider Seat Removal** ■ Remove Rear shockers mounting Domed hex nut from LH & RH side and loosen the bolt.	**Domed Hex Nut M8** **Double end ring spanner 17 mm** 
	■ Loosen the 2 hex bolt under the rear seat to remove seat from Sub frame.	**Flange hex Bolt M8** **Socket Spanner 13 mm** 
	Bullet EFI ■ Remove front Hex nut mounted on LH & RH side of the seats.	**Hex Flange Bolt M8** **Socket Spanner 13 mm**
	■ Remove rear hex bolt on LH & RH side of the seats. Gently lift the seat from the rear end.	**Hex Flange Bolt M8** **Socket Spanner 13 mm**

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.4	**Seat -Dismantling Continental GT** ■ Unlock & Remove Side panel LH.	
	■ Gently pull seat latch to release seat.	
	■ Remove the seat assembly.	

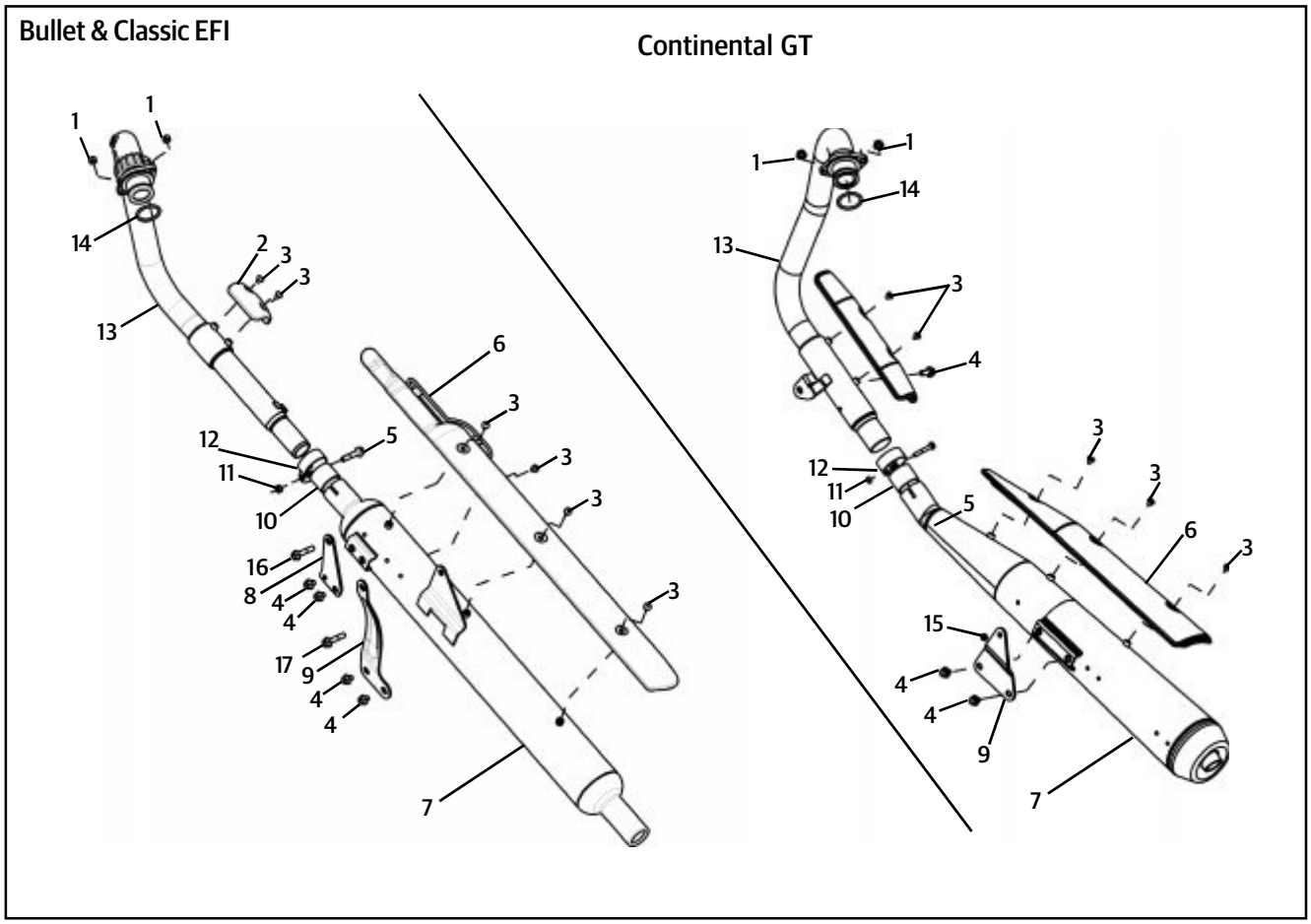
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.4	**Seat - Assembling Bullet Classic EFI Rider Seat Assembly** ■ Position the rider seat on the frame.	**Hex Nut with Nyloc Insert M8** **Socket Spanner 13 mm** 
	■ Tighten hex bolt at the front end of the seat.	**Hex Flange Bolt M8** **Socket Spanner 13 mm** **CAUTION:** Please take care not to damage the fuel tank while assy 
	■ Tighten the seat spring mounting bolts on LH & RH side.	
	Rear Seat Assembly ■ Tighten the 2 hex bolt under the rear seat to assemble seat into Sub frame.	**Flange Hex Bolt M8** **Socket Spanner 13 mm**

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.4	**Seat - Assembling** **Bullet Classic EFI** **Rider Seat Assembly** ■ Locate nut and tighten long mounting bolt into the sub frame.	**Flange hex Bolt M8** **Socket Spanner 13 mm** 
	■ Tighten Rear shockers mounting Domed hex nut & Bolt from LH & RH side.	**Flange Hex Nut M8** **Double end ring spanner 17 mm** 
	Bullet EFI ■ Locate the seat in to front end tighten rear hex bolt on LH & RH side of the seats.	**Hex Flange Bolt M8** **Socket Spanner 13 mm**
	■ Remove front Hex nut mounted on LH & RH side of the seats.	**Hex Flange Bolt M8** **Socket Spanner 13 mm**

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.4	**Seat -Assembling Continental GT** ■ Locate front end of the seat tab in the bracket in the frame. Ensure the lock pin is position on the center of the seat latch. ■ Gently press the seat rear end to lock the seat. ■ Locate the Side panel LH and lock in the seat.	 

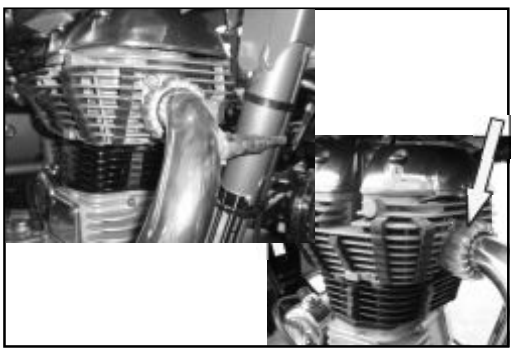
EXPLODED VIEWS

BULLET EFI, BULLET CLASSIC EFI, CONTINENTAL GT



S. NO.	DESCRIPTION	QTY.
1	Flanged Hex. Nut M8 X 1.25	2
2	Exhaust Pipe -Guard	1
3	Philips Pan Head Screw M6 X 6	5
4	Flanged Hex. Bolt M8 X 20	4
	Flanged Hex. Bolt M8 X 20	2
	Flanged Hex. Bolt M8 X 20	3
5	Flanged Hex. Bolt M6 X 35	1
6	Combined Heat Shield/Silencer Guard	1
7	Silencer CAT Assy.	1
8	Bracket front silencer	1

S. NO.	DESCRIPTION	QTY.
9	Bracket -Silencer Mounting /Bracket Silencer	1
10	Gasket - Exhaust pipe & Silencer	1
11	Hex. Nut M6	1
12	Clamp -Silencer	1
13	Exhaust Pipe Assy.	1
14	Exhaust Gasket (Copper)	1
15	Hex. Nut with Nylon Insert, M8	1
16	Flange Hex. Bolt M10 X 1.5 X 35	1
17	Hex. Screw M8 X 16	1

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.5	**Exhaust System Bullet Classic EFI/ Bullet EFI** ■ Disconnect HEGO sensor connector from the exhaust pipe by loosening the nut.	
	■ Remove the center silencer bracket mounting screw with plain washer. ■ Remove the rear mounting nut at the pillion foot rest end mounted on silencer.	**Hex Flange Bolt M8** **Socket Spanner 10 mm**
	■ Remove the flange hex nuts from cylinder head.	**Hex Flange Bolt M8** **Socket Spanner 10 mm** 
		Flange Hex Nut M8 **Socket Spanner 10 mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.5	**Exhaust System** **Continental GT** ■ Disconnect HEGO sensor connector from the exhaust pipe. ■ Remove silencer mounting bolt & nut from the frame. ■ Remove the 2 Hex flange nuts holding exhaust pipe to cylinder head. ■ Gently remove the silencer assembly with Exhaust pipe.	 **Hex Flange Bolt M8** **Socket Spanner 10 mm** **NOTE :** Ensure the copper gasket is removed from the cylinder head / exhaust pipe. **Flange Hex Nut M8** **Socket Spanner 10 mm**

INSPECTION

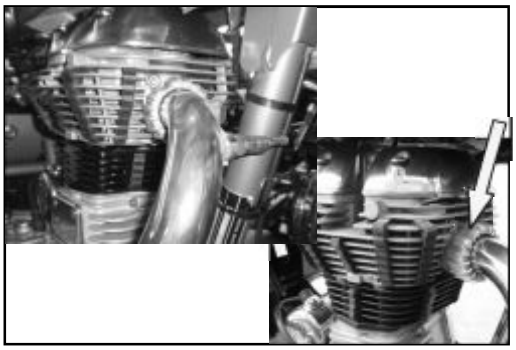
- Inspect Silencer and Exhaust assembles for any deep scoring / damages / dents as it might cause damage to the internals and the catalytic converters.
- Inspect silencer and exhaust pipe joint for any signs of exhaust gas leakage.

CAUTION :

- Do not clean the silencer and exhaust internals with any solvents, gasoline etc as it will damage the catalytic converters.

REPLACE

- Gasket between the silencer and exhaust pipe joint whenever the silencer / exhaust pipe are dismantled.
- Copper gasket between exhaust pipe and cylinder head whenever exhaust pipe is dismantled from cylinder head.
- Copper gasket in HEGO sensor whenever exhaust pipe / hego sensor is dismantled.

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.5	**Exhaust System- Assembling** **Bullet Classic EFI/ Bullet EFI** ■ Locate gasket on Exhaust pipe. ■ Position exhaust pipe on the cylinder head assembly. ■ Tighten two flange hex nuts on exhaust pipe into cylinder head. ■ Tighten the rear Mounting nut at the pillion foot rest end. ■ Tighten the center silencer bracket mounting screw with plain washer. ■ Connect HEGO sensor connector to the exhaust pipe.	**Hex Flange Bolt M8** **Socket Spanner 10 mm** **Torque 25 Nm**  **Hex Flange Bolt M8** **Socket Spanner 10 mm** **Torque 25 Nm**  **Hex Flange Bolt M8** **Socket Spanner 10 mm** **Torque 25 Nm** 

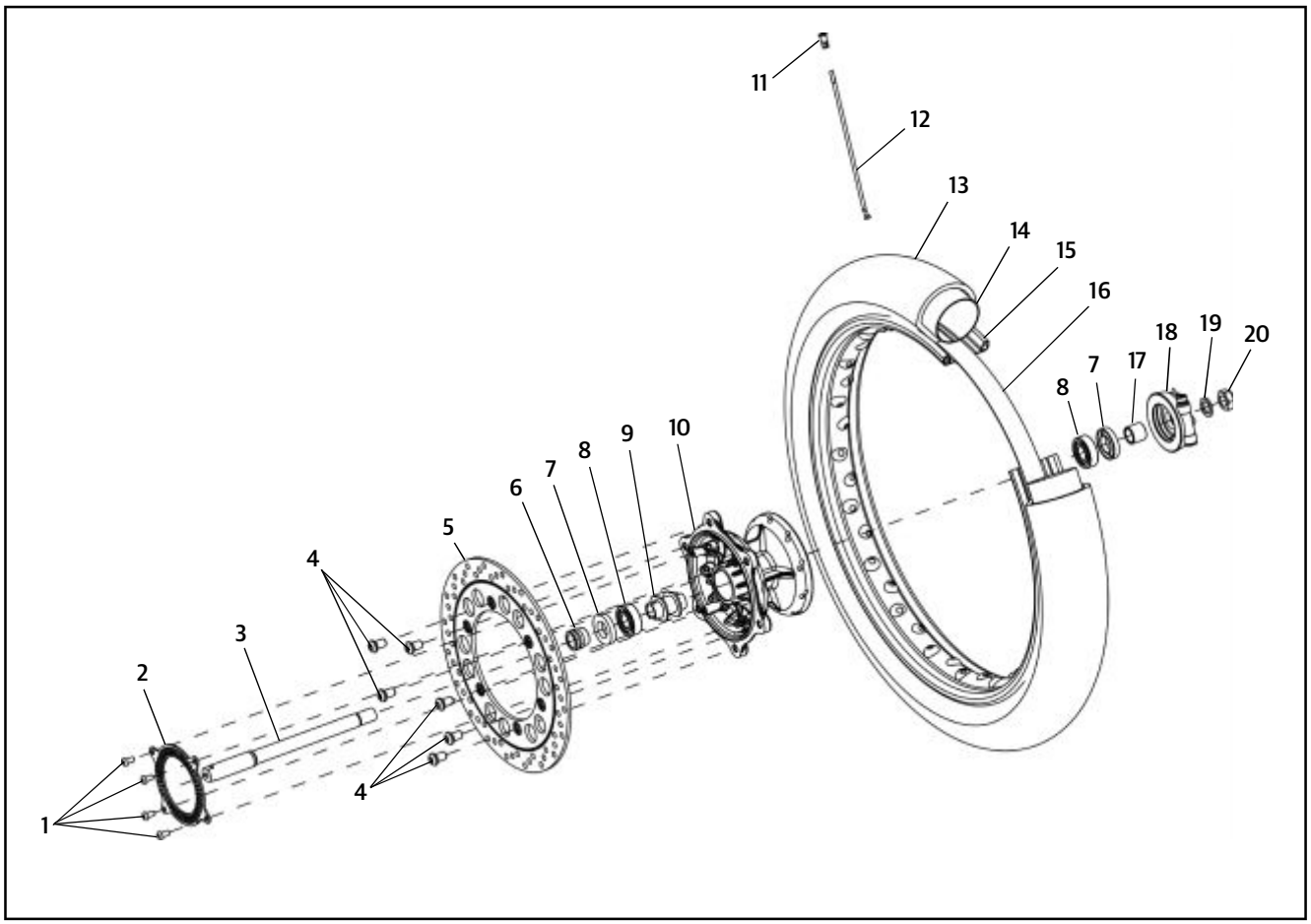
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.5	**Exhaust System-Assembling** **Continental GT** ■ Locate gasket on exhaust pipe. ■ Position exhaust pipe on the cylinder head assembly. ■ Tighten two flange hex nuts on exhaust pipe into cylinder head. ■ Tighten the rear Mounting nut at the pillion foot rest end. ■ Connect HEGO sensor connector from the exhaust pipe.	**Hex Flange Bolt M8** **Socket Spanner 10 mm** **Torque 25 Nm** **Hex Flange Bolt M8** **Socket Spanner 10 mm** **Torque 25 Nm** 

SECTION 06 - FRONT SUSPENSION

SECTION 6.1 - FRONT WHEEL

EXPLODED VIEWS

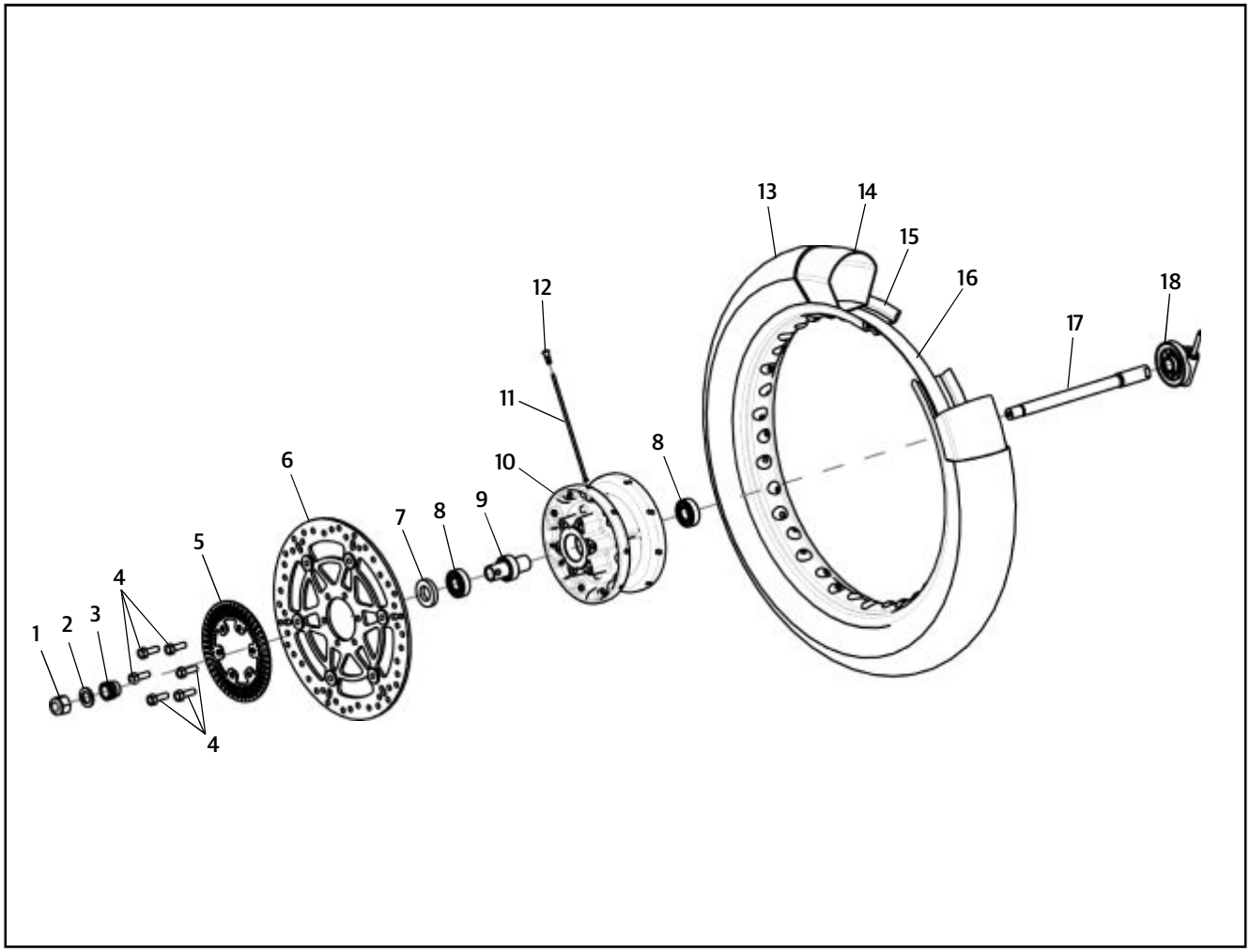
BULLET EFI, BULLET CLASSIC EFI



S. NO.	DESCRIPTION	QTY.
1	Hex Socket Button Head Screw M6*1.0	4
2	Toner Front Wheel	1
3	Spindle	1
4	Socket Button Head Cap Screw	6
5	Disc Front	1
6	Spacer, Disc Side	1
7	Grease Seal, 25 X 40 X 7	2
8	Wheel Bearing 6203 (17 X 40 X 12)	2
9	Spacer Assy	1
10	Front Hub	1
11	Brass Nipples	40

S. NO.	DESCRIPTION	QTY.
12	Spokes Front	40
13	90/90 - 19 52 V Front Tyre Import	1
14	Tube(Tyre) 3.25X19	1
15	Wheel Rim (1.85 X 19" -1.5 Thk)	1
16	Rim Tape	1
17	Spacer Speedodrive	1
18	Speedo Drlve Assy Disc Brake	1
19	Plain Washer,M16	1
20	Hex U Nut M16 X 1.5	1

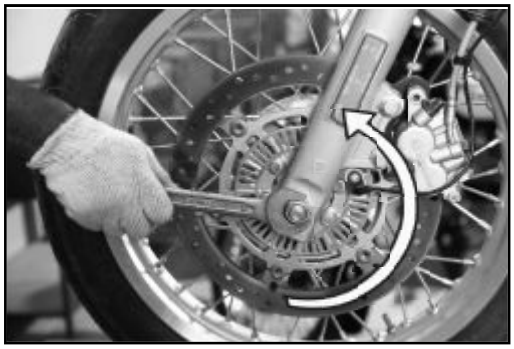
CONTINENTAL GT



S.NO.	DESCRIPTION	QTY.
1	Hex U Nut M16 X 1.5	1
2	Washer	1
3	Spacer Disc Side	1
4	Hex Flange Bolt M8 X 25	6
5	Toner-Front Wheel	1
6	Front Disc	1
7	Grease Seal,25 X 40 X 7	1
8	Deep Groove Ball Bearing 6203 (17 X 40 X12)	2
9	Bearing Spacer Assy	1
10	Hub-Front	1
11	Spokes Front	36

S.NO.	DESCRIPTION	QTY.
12	Nipple 3.6 mm	36
13	Tyre-Front 100/90-18"	1
14	Tube -Front 100/90-18"	1
15	Rim Front Aluminium(2.5X18")	1
16	Rim Tape	1
17	Spindle-Front Wheel	1
18	Wheel Speed Sensor Assy	1

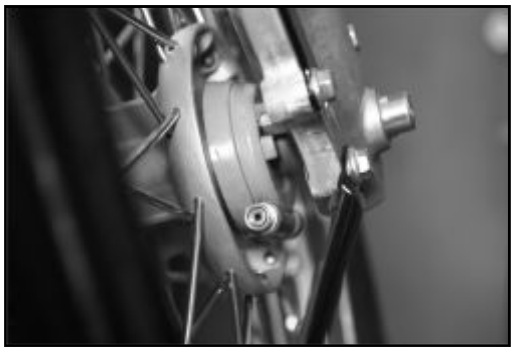
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.1	**Front Wheel Dismantling** **Bullet Classic EFI/ Bullet EFI / Continental GT** ■ Place the motorcycle on its center stand on a firm and flat surface. ■ Provide a suitable support below the front end of the engine such that the front wheel is about 4 inches (10 cms) above the ground. ■ Disconnect speedo cable at speedo drive. ■ Disconnect wheel speed sensor coupler near head lamp housing. ■ Loosen the pinch bolt on the right side fork end. ■ Hold the axle on the right side and loosen the axle nut on the left side.	 **Hex Bolt M8, Hex Nut M8** **Ring Spanner 13 mm** **Double end Ring Spanner 13 mm** 

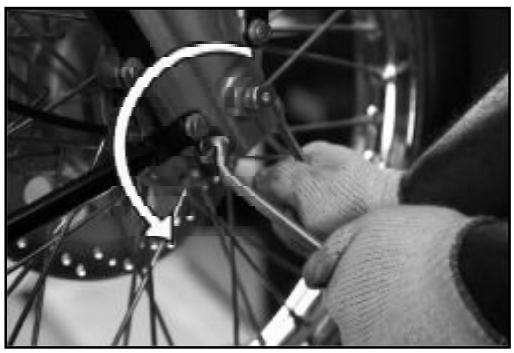
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.1	**Front Wheel Dismantling** **Bullet Classic EFI/ Bullet EFI / Continental GT** ■ Remove the axle nut and washer. ■ Tap the axle out gently from the left side and remove completely from the right side. ■ Slide out the wheel from the fork legs. ■ Remove the speedo drive after removing wheel from the fork legs. ■ Remove the wheel speed sensor and spacer after removing wheel from the fork legs.	**Hex Socket Screw M8** **Allen Key 6mm** **Torque 25 Nm (2.5 Kg-m)**  **Hex Nut M16** **Double end Spanner-24mm**  **CAUTION:** Do not depress the front brake lever when wheel is removed as this will result in the brake pads coming too far out of the brake caliper. **NOTE:** 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 Accidently depressed.

INSPECTION

- Inspect tyres for any side wall crack stone hits, bulge, proper seating in rim.
- Tyres button to be above the tyre wear indicator mark on the side walls.
- Inspect spokes for any loosening / breakage.
- Inspect hub or any damage.
- Inspect Toner ring for any damage.
- Axle & nut for thread damage.
- Inspect wheel rim for run out / "jump" it should not exceed 2 mm.

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.1	**Front Wheel Assembling** **Bullet Classic EFI/ Bullet EFI / Continental GT** ■ Remove the wooden piece / card board sheet placed between the brake pads. ■ Locate spacer & speedo drive on the right side in the hub. ■ Locate stepped spacer in the left side (disc side) of the hub with its larger face outside. ■ Locate front wheel between the fork ends duly ensuring the spacers and the speedo drive do not fall off and the brake disc is correctly positioned between the brake pads.	

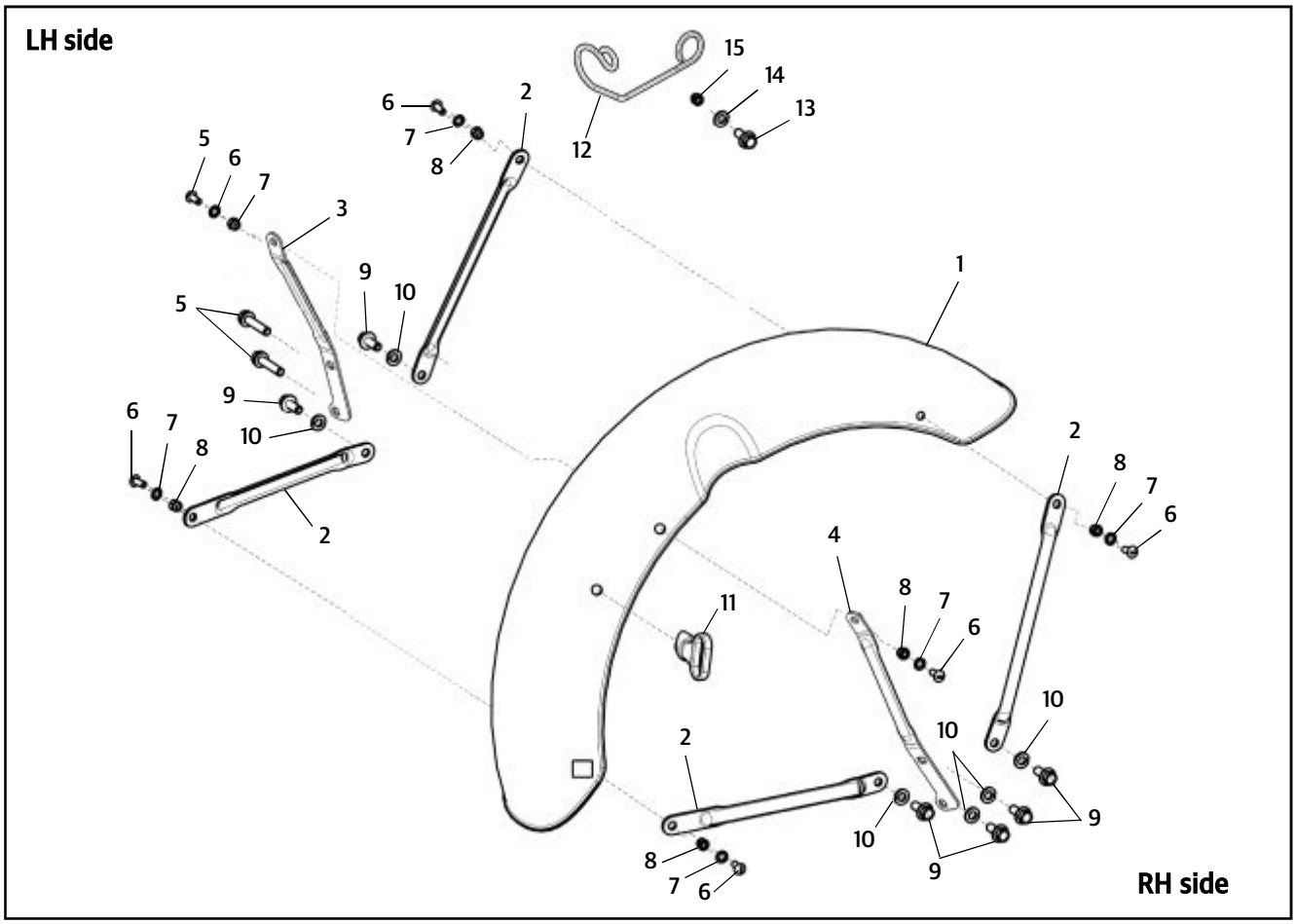
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.1	**Front Wheel Assembling** **Bullet Classic EFI/ Bullet EFI /** ■ Ensure the peg in the Speedo drive is correctly positioned in the slot in the right side fork end. **Continental GT** ■ Position wheel speed sensor such that the wire coupler can be connected and the wire is not stretched.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.1	**Front Wheel Assembling** **Bullet Classic EFI/ Bullet EFI** ■ Ensure all the mounting bolts are aligned. ■ Locate washer and nut on the left side. ■ Hold the axle from the right side and tighten nut on left side. ■ Hold the pinch bolt and tighten the nylock nut on the right side fork end. (Only Bullet Classic EFI / Bullet EFI) ■ Tighten hex socket screw on fork end RH. (Only for Continental GT) ■ Rotate the wheel and check for smooth rotation. ■ Connect the speedo cable to speedo drive and check for proper working of speedo meter. ■ Depress brake lever 2 or 3 times to check front brake efficiency.	**Hex nut M16** **Double end spanner 17mm** **Torque - 70 Nm** **NOTE:** Insert axle through the right side fork end and gently tap it in fully. **Torque 25Nm**    

SECTION 6.2 - FRONT MUDGUARD

EXPLODED VIEWS

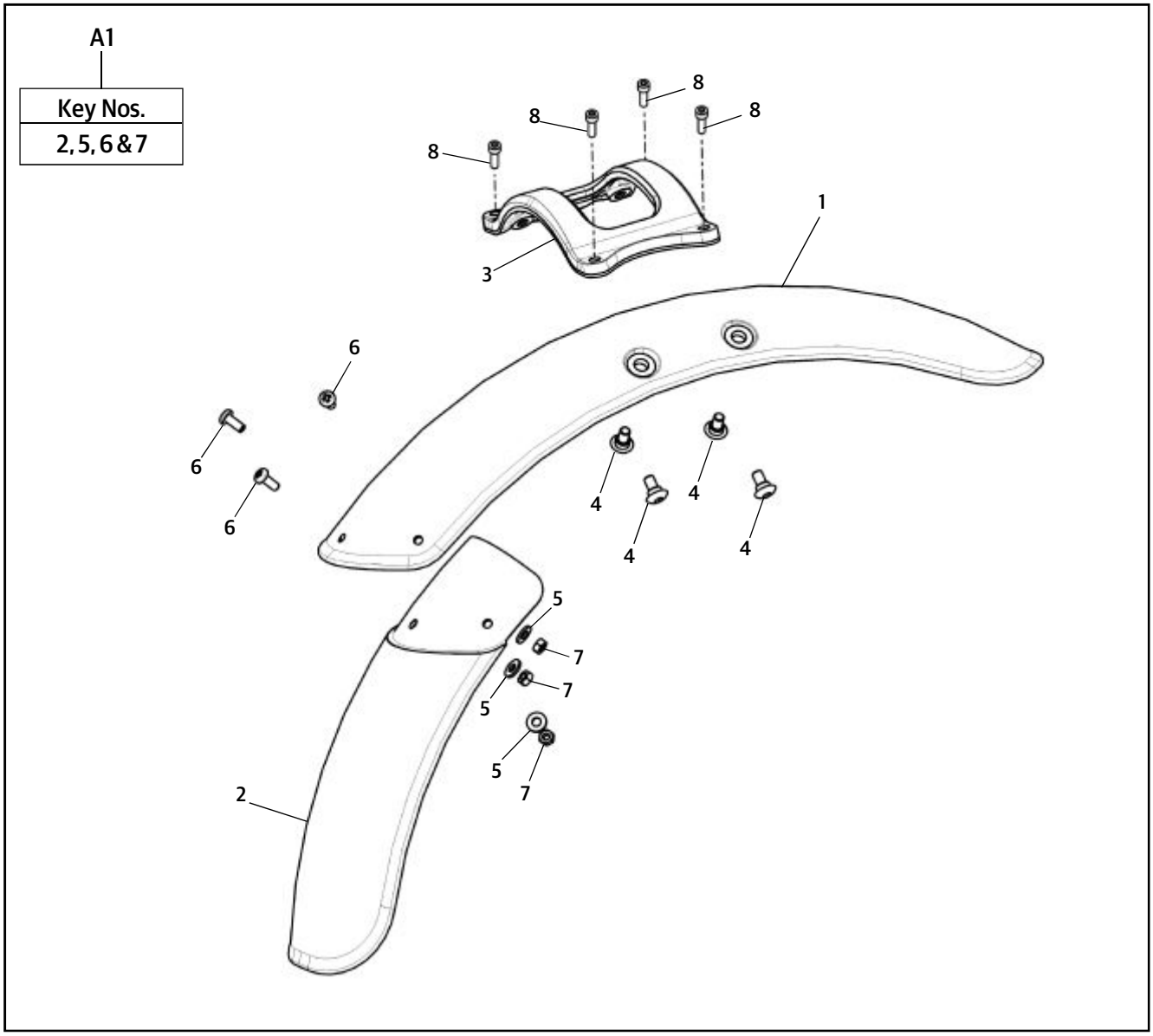
BULLET EFI, BULLET CLASSIC EFI



S. NO.	DESCRIPTION	QTY.
1	Front Mudguard-Black	1
2	Mudguard Stay Front Black Mod	4
3	Mudguard Stay Center LH Black New	1
5	Hex Flanged Bolt M8 X 1.25 X 38	2
6	Phillips Round Head Machined Screw M6 X 13	6
7	Lock Washer M6	6
8	Hex Nut M6 X 1	6
9	Flanged Hex Bolt M8 X 20	6

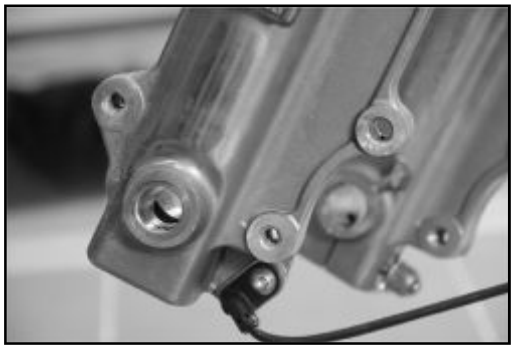
S. NO.	DESCRIPTION	QTY.
10	Spring Washer	6
11	Cable Guide	1
12	Clamp - Front Caliper Brake Hose	1
13	Cross Recessed Pan Head Screw M6 X 14	1
14	Plain Washer M6	1
15	Hex. Nut M6 X 1 X 5	1

CONTINENTAL GT

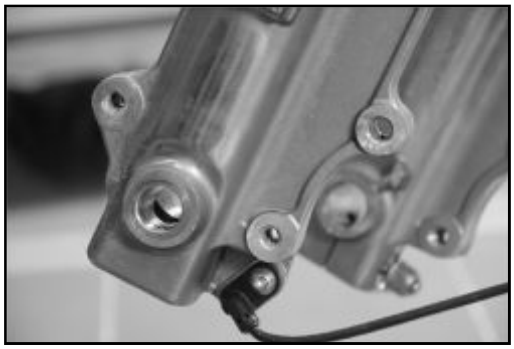


S.NO.	DESCRIPTION	QTY.
A1	Front Mudguard Mud Flap,Extension Kit	1
1	Front Mudguard	1
2	Mud - Flap Front	1
3	Fork Brace	1
4	Hex. Socket Button Head Screw M6X1	4
5	Lock Washer Internal Teeth	3

S.NO.	DESCRIPTION	QTY.
6	Pan Head Screw M5 X 0.8 X 12	3
7	Hex. Nut M8	3
8	Hex. Socket HD. Cap Screw M6X20 Stainless Steel	4

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.2	**Front Mudguard** **Bullet Classic EFI / Bullet EFI** ■ Remove Front wheel as described in **Front Wheel section** ■ Release Brake hose grommet from the holding clip in front mudguard. ■ Loosen and remove the 4 flanged hex bolts along with spring washers, holding front mudguard, front, centre & rear stays to fork end RH. ■ Loosen and remove: - 2 flanged hex bolts along with spring washers, holding front mudguard centre stay & front brake caliper to fork end LH. - 2 flanged hex bolts along with spring washers, holding front mudguard front and rear stays to fork end LH. ■ Loosen wheel speed sensor screw and remove sensor along with screw. ■ Gently rotate the mudguard stays into the mudguard and slide out of the fork legs.	**Flanged Hex bolt: M8** **Socket Spanner: 12 mm**  **Flanged Hex bolt: M8** **Socket Spanner: 12 mm**  **Socket head cap Screw: M6** **Allen Key : 5 mm**  **CAUTION:** Ensure mudguard does not get scratched while tilting and removing. 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.2	**Front Mudguard Continental GT** ■ Remove Front wheel as described in **Front Wheel section** ■ Loosen and remove the 4 socket head cap screws on the fork brace between the fork legs RH & LH. ■ Gently lift up and remove mudguard from the fork legs.	**Socket head cap Screw: M6** **Allen Key : 5 mm** 

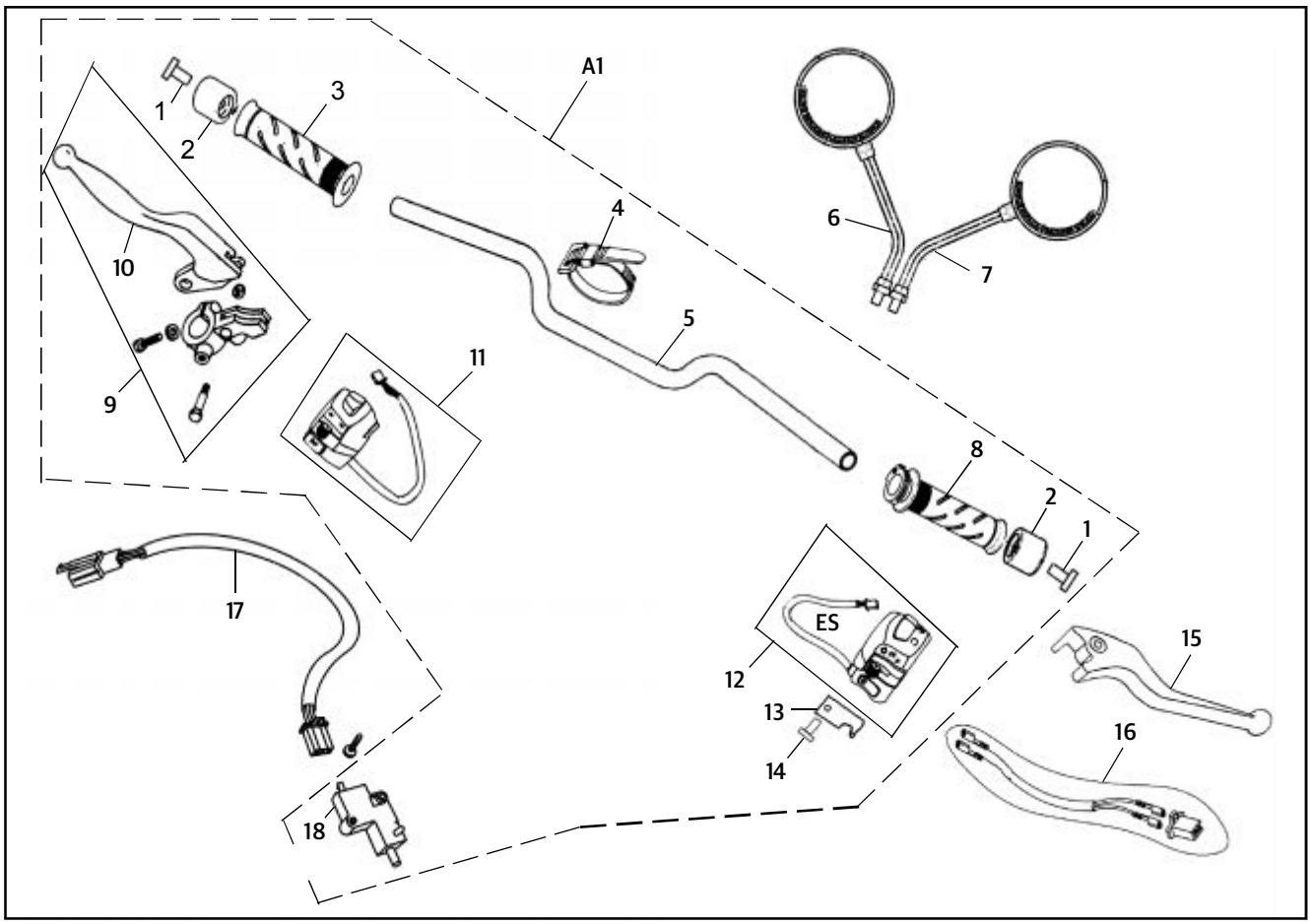
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.2	**Front Mudguard** **Bullet Classic EFI / Bullet EFI** ■ Locate Mudguard stays along with mudguard and slide into the fork legs. ■ Install wheel speed sensor screw and locate sensor along with screw. ■ Install and locate: - 2 flanged hex bolts along with spring washers, holding front mudguard centre stay & front brake caliper to fork end LH. - 2 flanged hex bolts along with spring washers, holding front mudguard front and rear stays to fork end LH. ■ Install and locate the 4 flanged hex bolts along with spring washers, holding front mudguard, front, centre & rear stays to fork end RH. ■ Locate Brake hose grommet in the holding clip in front mudguard. ■ Assemble Front wheel as described in **Front Wheel section.**	**CAUTION:** Ensure mudguard does not get scratched while assembling. **Socket head cap Screw: M6** **Allen Key : 5 mm** **Torque : 25Nm** **Flanged Hex bolt: M8 X 38 & M8 X 20** **Socket Spanner: 12 mm** **Torque : 10 Nm** **Flanged Hex bolt: M8 X 20** **Socket Spanner: 12 mm** **Torque : 10 Nm**    

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.2	**Front Mudguard Continental GT** ■ Gently lift down and locate mudguard on the fork legs. ■ Install and locate the 4 socket head cap screws on the fork brace between the fork legs RH & LH. ■ Locate Front wheel as described in **Front Wheel section.**	**Socket head cap Screw: M6** **Allen Key : 5 mm** 

SECTION 6.3 – HANDLE BAR

EXPLODED VIEWS

BULLET CLASSIC EFI / BULLET EFI



S.NO.	DESCRIPTION	QTY.
A1	Handle Bar Assembly Complete	1
1	Hex Socket Head Screw M8 X 50	2
2	Damper Weight	2
3	Hand Grip LH	1
4	Cable Strap 6"	2
	Cable Strap 8"	3
5	Handle Bar Complete	1
6	Rear View Mirror LH	1
7	Rear View Mirror RH	1
8	Grip Complete - Throttle RH	1

S.NO.	DESCRIPTION	QTY.
9	Lever & Holder Assy. LH	1
10	Clutch Lever	1
11	Switch Module LH	1
12	Switch Module RH	1
13	Rotor Plate	1
14	Pan Head Screw M5 X 10	1
15	Front Brake Lever kit	1
16	Add On Lead, Front Brake Switch	1
17	Add On Lead, Clutch Switch	1
18	Clutch Switch	1

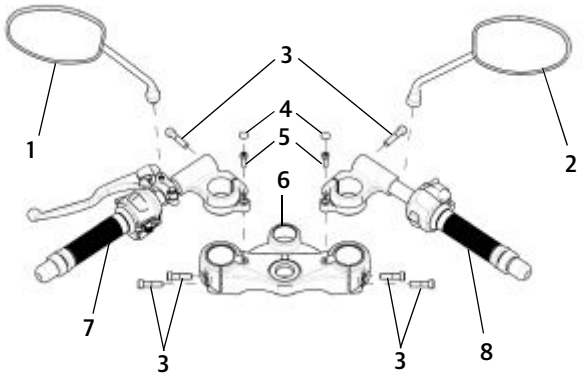
CONTINENTAL GT

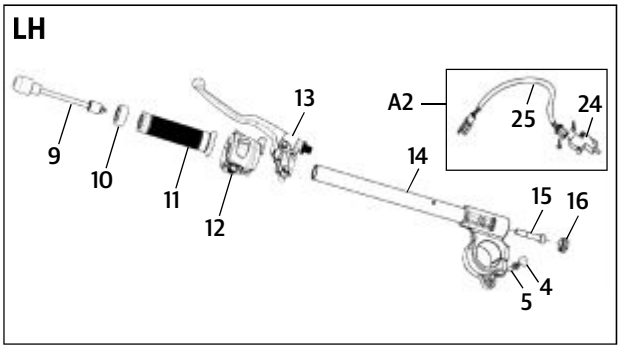
A1

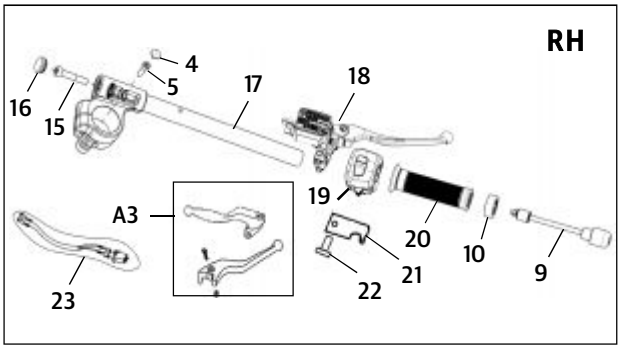
Key Nos.
1 & 2

A2

Key Nos.
24 & 25

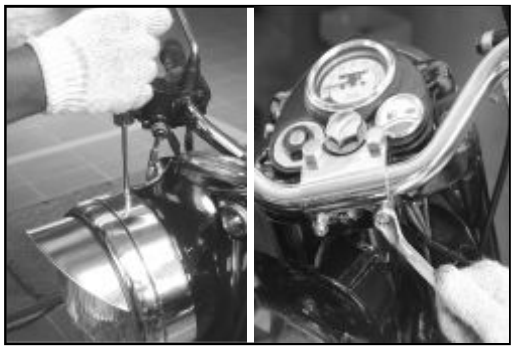


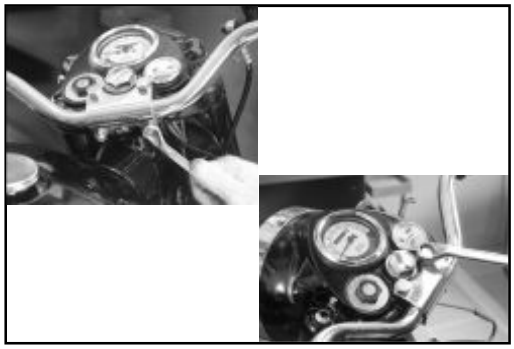


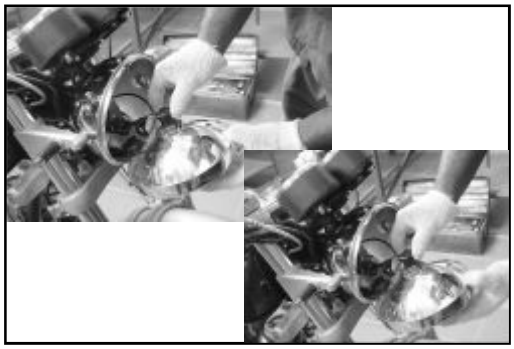


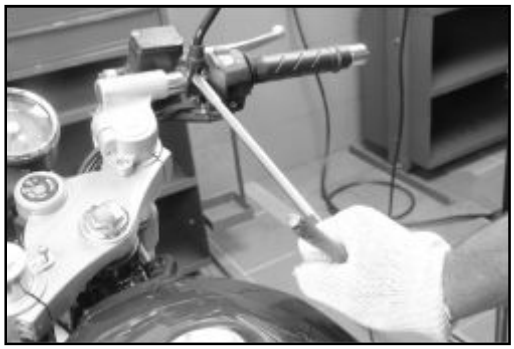
S.NO.	DESCRIPTION	QTY.
A1	Mirror Set OE - Continental GT	1
A2	Clutch Switch Repair Kit	1
A3	Clutch & Front Brake Lever Kit (Clear Coated)	1
1	Rear View Mirror - LH	1
2	Rear View Mirror - RH	1
3	Hex. Socket Head Screw M8 X 35	6
4	Grommet - Clip ON	2
5	Hex. Socket Head Cap Screw M6 X 20	4
6	Top Yoke	1
7	Handle Bar Assy. - LH	1
8	Handle Bar Assy. - RH	1
9	Counter Weight Assy.	2
10	Mirror Dummy Ring	2
11	Handle Grip - LH	1

S.NO.	DESCRIPTION	QTY.
12	Switch Module - LH	1
13	Lever & Holder Assy. - LH	1
14	Handle Bar Complete - LH	1
15	Hex. Socket Head Bolt M8 X 40	2
16	Rubber Sleeve - Handle Bar	2
17	Handle Bar Complete - RH	1
18	Master Cylinder - Front	1
19	Switch Module - RH	1
20	Grip Complete - Throttle RH	1
21	Rotor Plate - Throttle Cable	1
22	Pan Head Screw M5 X 10	1
23	Add On Lead, Brake Switch	1
24	Clutch Switch	1
25	Add On Lead, Clutch Switch	1

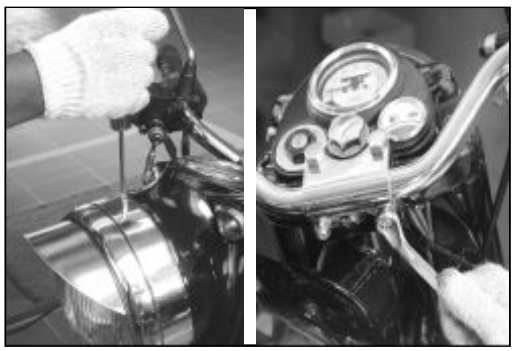
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Bullet Classic EFI / Bullet EFI** ■ Remove Headlamp from the headlamp casing and disconnect wire terminals.	**Philips head screw driver** 
	■ Disconnect wire couplers from handle bar inside the head lamp casing.	**Double end spanner 15mm** 
	■ Remove Rear view mirrors LH & RH. ■ Disconnect all control cables from the handle bar.	

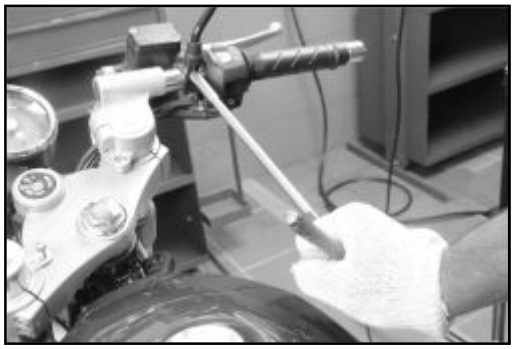
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Bullet Classic EFI / Bullet EFI** ■ Remove the 2 hex bolts on the clamp holding Front brake master cylinder to handle bar.	**Hex bolts: M6** **Socket spanner: 10 mm** 
	■ Remove master cylinder assembly from the handle bar and support suitably to prevent hydraulic oil leak from master cylinder.	**CAUTION:** Ensure the brake lever is not depressed while removing from handle bar. 
	■ Loosen and remove 2 Hex bolts along with washers from the handle bar clip top. ■ Loosen and remove 2 hex nuts along with washers from the handle bar clip bottom. ■ Remove handle bar clip from the studs in the headlamp casing and the handle bar.	**Hex SS Bolt : M12** **Socket spanner: 14 mm** **Hex Nut: M8** **Socket spanner: 12mm** 

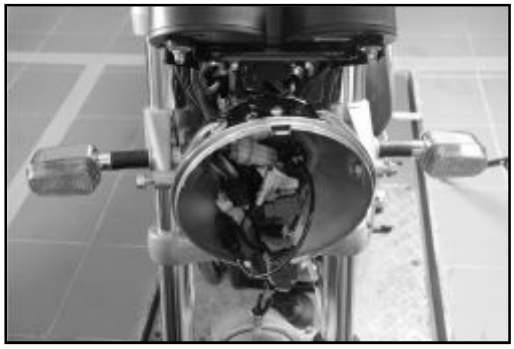
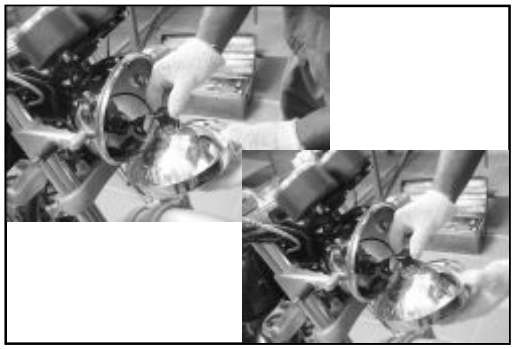
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Continental GT**	
	■ Remove Headlamp from the headlamp housing and disconnect wire terminals.	**Philips head screw driver** 
	■ Disconnect handle bar LH & RH wire couplers inside the head lamp housing. ■ Remove Rear view mirrors LH & RH.	
	■ Disconnect all control cables from the handle bar. ■ Remove the 2 hex bolts on the clamp holding Front brake master cylinder to handle bar.	**Double end spanner 15mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Continental GT** ■ Remove master cylinder assembly from the handle bar and support suitably to prevent hydraulic oil leak from master cylinder.	**Hex bolts: M6** **Socket spanner: 10 mm** 
	■ Loosen the hex socket screw clamping the handle bar assemblies LH & RH to the fork main tubes.	
	■ Remove the 2 rubber grommets on top of the handle bar LH & RH and remove the 2 hex socket head cap screws. ■ Remove handle bar LH & RH form the fork main tubes.	**Hex. Socket Head Screw: M8** **Allen Key: 6 mm** **Hex. Socket Head Screw: M6** **Allen Key: 5 mm** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Bullet Classic EFI / Bullet EFI** ■ Locate handle bar clip on the studs in the headlamp casing and the handle bar. ■ Install and locate 2 hex nuts along with washers on the handle bar clip bottom. ■ Install and locate 2 Hex bolts along with washers on the handle bar clip top. ■ Locate master cylinder assembly on the handle bar and support suitably to prevent hydraulic oil leak from master cylinder while locating. ■ Install the 2 hex bolts on the clamp holding Front brake master cylinder to handle bar.	**Hex SS Bolt : M12** **Socket spanner: 14 mm** **Hex Nut: M8** **Socket spanner: 12mm** **CAUTION:** Ensure the brake lever is not depressed while removing from handle bar. **Hex bolts: M6** **Socket spanner: 10 mm**    

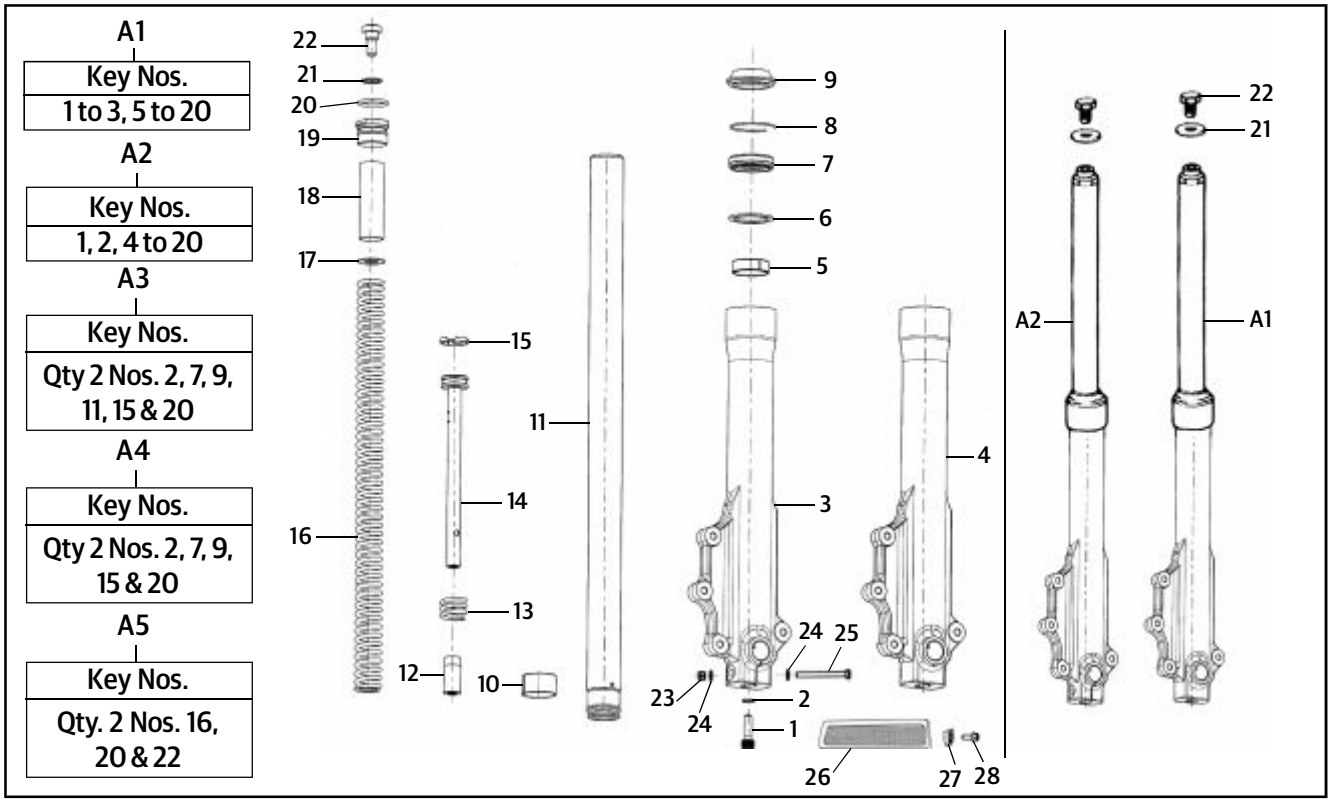
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Bullet Classic EFI / Bullet EFI** ■ Connect all control cables on the handle bar. ■ Locate Rear view mirrors LH & RH.	
	■ Connect wire couplers on handle bar inside the head lamp casing.	**Double end spanner 15mm** 
	■ Locate Headlamp in the headlamp casing and connect wire terminals.	**Philips head screw driver** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Continental GT** ■ Locate handle bar LH & RH on the fork main tubes. ■ Locate the 2 rubber grommets on top of the handle bar LH & RH and Install the 2 hex socket head cap screws.	**Hex. Socket Head Screw: M8** **Allen Key: 6 mm** **Hex. Socket Head Screw: M6** **Allen Key: 5 mm** 
	■ Install the hex socket screw clamping the handle bar assemblies LH & RH to the fork main tubes.	**Hex bolts: M6** **Socket spanner: 10 mm** 
	■ Locate master cylinder assembly on the handle bar and support suitably to prevent hydraulic oil leak from master cylinder.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	**Handle Bar** **Continental GT** ■ Install 2 hex bolts on the clamp holding Front brake master cylinder to handle bar. ■ Connect all control cables from the handle bar. ■ Locate Rear view mirrors LH & RH. ■ Connect handle bar LH & RH wire couplers inside the head lamp housing. ■ Locate Headlamp on the headlamp housing and Connect wire terminals.	**Double end spanner 15mm**   **Philips head screw driver** 

EXPLODED VIEWS

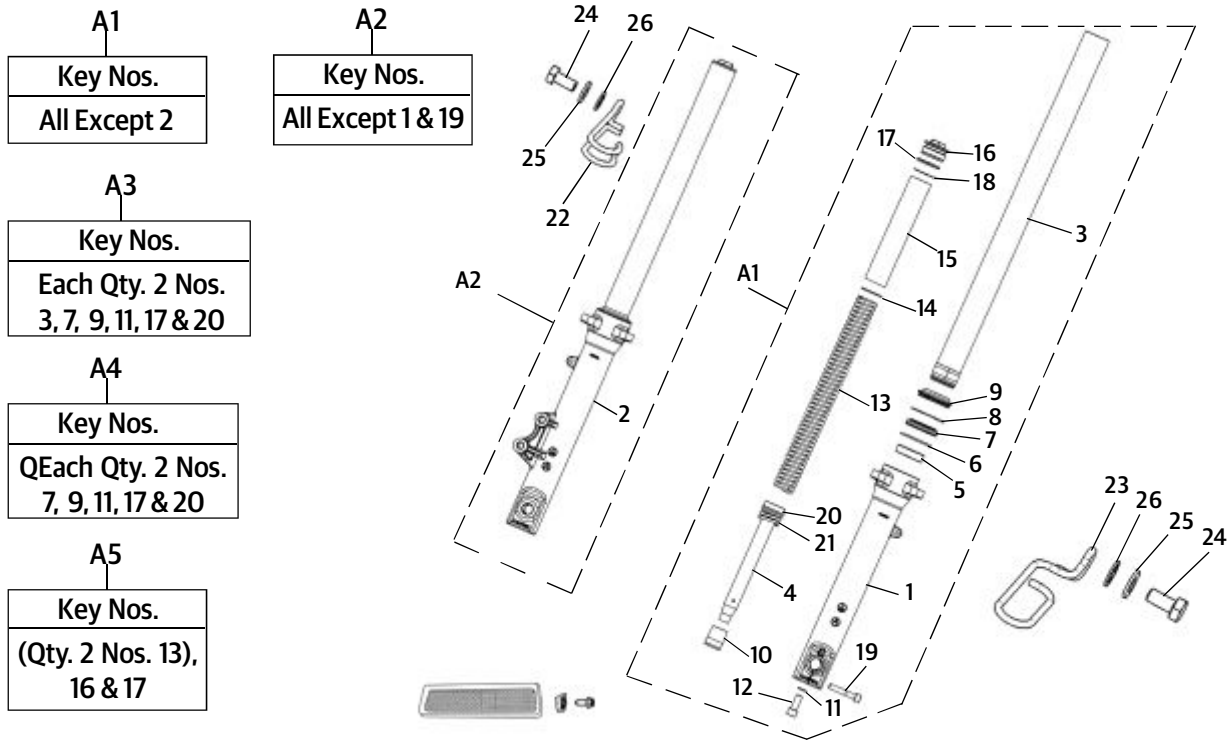
BULLET CLASSIC EFI / BULLET EFI



S. NO.	DESCRIPTION	QTY.
A1	Front Fork Assy - LH	1
A2	Front Fork Assy - RH	1
A3	Fork Pipe Spining Replacement Kit	1
A4	Fork Oil Seal, 'O'-Ring & Piston Ring Kit	1
A5	Main Spring Front Fork Replacement Kit	1
1	Socket Headed Bolt	2
2	Copper Packing Washer	2
3	Outer Tube M/C - RH (Fork End)	1
4	Outer Tube M/C - LH (Fork End)	1
5	Guide Bush	2
6	Plain Washer Big	2
7	Oil Seal - LH & RH Front Fork	2
8	Oil Seal Stopper - LH & RH	2
9	Dust Seal - LH & RH	2
10	Slide Bush	1
11	Fork Pipe Spining - Inline Fork	2
12	Cap Oil Lock (Spindle Tapper)	2

S. NO.	DESCRIPTION	QTY.
13	Rebound Spring	2
14	Seat Pipe	2
15	Piston Ring - Front Fork	2
16	Main Spring	2
17	Washer - Fork Main Spring	2
18	Spacer Tube - Front Fork	2
19	Fork Bolt - Top	2
20	'O' Ring - Fork Bolt Top	2
21	Plain Washer - Fork Bolt	2
22	Flange Bolt	2
23	Hex Nylock Nut M8 X 9.5	1
24	Punched Washer	2
25	Flanged Hex. Bolt M8 X 55 (Special)	1
26	Reflex Reflector (Amber)	2
27	Wheel Speed Sensor-ABS	1
28	Hex.Socket Button Head Screrw M6X1X16	1

CONTINENTAL GT



S.NO.	DESCRIPTION	QTY.
A1	Fork End LH assy	1
A2	Fork End RH assy	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
1	Outer Tube - RH	1
2	Outer Tube - LH	1
3	Inner Tube Assy.	2
4	Piston - Front Fork	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	2
11	Gasket	2
12	Bolt M10X1	2

S.NO.	DESCRIPTION	QTY.
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 M8 X 1.25 X 45	2
20	Piston Ring	2
21	Spring - 2	2
22	Cable Guide - Brake	1
23	Cable Guide - Speedo Cable	1
24	Hex. Bolt M6 X 12 2	2
25	Plain Washer	2
26	Lock Washer, M6	2
27	Reflex Reflector Amber	2
28	Wheel Speed Sensor-ABS	2
29	Hex.Socket Button Head Screrw M6 X 1 X 16	1

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH** **Bullet EFI / Bullet Classic EFI** ■ Remove Front wheel as described in **Front Wheel section 6.1.** ■ Remove front mud-guard as detailed in Section 6.2. ■ Ensure wheel speed sensor is removed from the fork end LH. ■ Disconnect Trafficator couplers LH & RH inside headlamp casing. ■ Loosen Hex Nylock nuts on steering stem pinch bolt LH & RH remove trafficator assembly with bracket on LH & RH side. ■ Hold the pinch bolts LH & RH and loosen hex nut Loosen nut by holding fork pinch bolt in bottom yoke (steering stem) on RH & LH side.	  **Hex Nylock Nut: M8** **Ring spanner: 12mm** **Hex bolt M8** **Hex Nylock Nut: M8** **Double end spanner: 12mm** **Ring spanner: 12mm** 

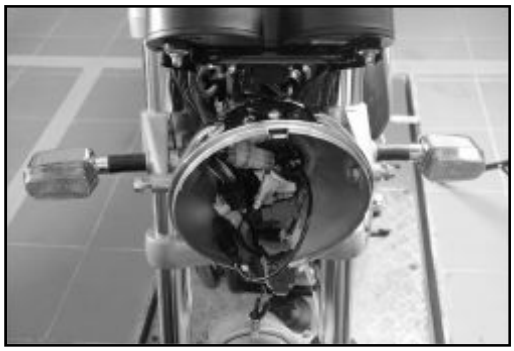
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH** **Bullet EFI / Bullet Classic EFI** ■ Loosen and remove 2 Hex socket screws from the top of the front forks on the head lamp casing. ■ Gently rotate and remove the fork assembly LH & RH from the head lamp casing and the steering stem.	 **Hex Hd Cap screw M10** **Allen Key 8 mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH** **Continental GT** ■ Remove Front wheel as described in **Front Wheel section 6.1.** ■ Remove front mud-guard as detailed above in Section 6.2. ■ Ensure front brake caliper is dismantled from the fork LH. ■ Ensure wheel speed sensor is removed from the fork end LH.	**Hex bolt M8** **T spanner 12 mm** 
	■ Remove Headlamp from the headlamp housing and disconnect all electrical connections inside headlamp housing. ■ Loosen and remove the 2 hex bolts holding head lamp housing to the holder RH & LH.	**Hex. Socket Screw M8** **Allen key 6 mm** 
	■ Loosen the 2 hex socket screws inside the head lamp holder RH & LH. Ensure the head lamp holders are free on the front fork main tube.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH** **Continental GT** ■ Loosen the 4 hex socket head cap bolts (2 each on LH & RH sides) from the steering stem. ■ Loosen the 4 hex socket head cap bolts (2 each on LH & RH sides) from the top yoke. ■ Gently rotate and remove the forks LH & RH from the steering stem and top yoke.	**Hex Screw M6** **Allen key 5 mm**  **NOTE:** Support the head lamp holders with the trafficators while removing the forks LH & RH from the steering stem. 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH** **Bullet EFI / Bullet Classic EFI** ■ Gently rotate and locate the fork assembly LH & RH on the head lamp casing and the steering stem.	**Hex Screw M10** **Allen Key 8 mm** 
	■ Install and locate 2 Hex socket screws in the top of the front forks on the head lamp casing.	
	■ Hold the pinch bolts LH & RH and Install hex nut Loosen nut by holding fork pinch bolt in bottom yoke (steering stem) on RH & LH side. ■ Install Hex Nylock nuts on steering stem pinch bolt LH & RH and locate trafficator assembly with bracket on LH & RH side. ■ Connect Trafficator couplers LH & RH inside headlamp casing.	**Hex bolt M8** **Hex Nylock Nut: M8** **Double end spanner: 12mm** **Ring spanner: 12mm**  **Hex Nylock Nut: M8** **Ring spanner: 12mm** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH** **Bullet EFI / Bullet Classic EFI** ■ Ensure wheel speed sensor is located in the fork end LH. ■ Locate front mudguard as detailed above. ■ Assemble Front wheel as described in **Front Wheel section 6.1.**	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH Continental GT** ■ Locate the fork assembly LH & RH on the head lamp casing and the steering stem. ■ Gently rotate and locate the forks LH & RH on the steering stem and top yoke.	**NOTE:** Support the head lamp holders with the trafficators while removing the forks LH & RH from the steering stem. 
	■ Install the 4 hex socket head cap bolts (2 each on LH & RH sides) on the top yoke.	**Hex Socket Screw M6** **Allen key 5 mm** 
	■ Install the 4 hex socket head cap bolts (2 each on LH & RH sides) on the steering stem. ■ Install the 2 hex socket screws inside the head lamp holder RH & LH. Ensure the head lamp holders are fixed on the front fork main tube. ■ Install and locate the 2 hex bolts holding head lamp housing to the holder RH & LH. ■ Locate Headlamp in the headlamp housing and connect all electrical connections inside headlamp housing.	 **Hex Socket Screw M8** **Allen key 6 mm** 

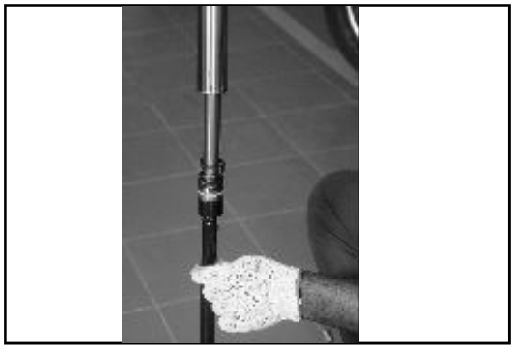
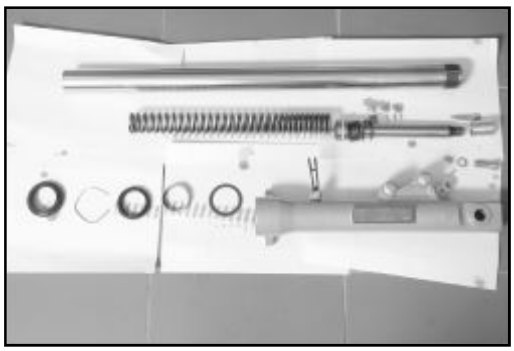
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork LH & RH Continental GT** ■ Ensure wheel speed sensor is located in the fork end LH. ■ Ensure front brake caliper is located in the fork LH. ■ Locate front mudguard as detailed above. ■ Assemble Front wheel as described in **Front Wheel section 6.1.**	**Hex bolt M8** **T spanner 12 mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork Oil Draining** ■ Hold the fork assembly in bench vice with soft jaws, approximately 6 inches from the top and loosen top nut. ■ Remove fork assembly from the bench vise. ■ Hold upright and gently remove fork top nut with washer, allowing spring to expand slowly. ■ Remove washer, spacer and washer spring top from the inner tube. ■ Remove long spring from inner tube.	**Hex nut M16** **Double end spanner 24 mm**  **NOTE:** Replace all Rubber parts, , plastic bushes, O rings, washers whenever they are removed.  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork Oil Draining** ■ Invert the fork assembly to drain out the oil from the fork. ■ Gently pump main tube into the bottom tube to drain out the oil completely. ■ Repeat the above process to drain oil from the other fork assembly.	 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork Oil Filling** ■ Fill Fork oil 195 ml/leg (For Bullet & Classic Models) and 430 ml/leg (For Conti-GT Model) with 2W 35 Grade. ■ Locate long spring into the inner tube. ■ Locate washer, spacer and washer spring top in the inner tube.	**NOTE:** Replace all Rubber parts, , plastic bushes, O rings, washers whenever they are removed.

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork Oil Filling** ■ Locate fork top nut with washer, allowing spring to compress slowly. ■ Repeat the above process to fill oil and assemble the other fork assembly.	**Hex nut M16** **Double end spanner 24 mm**  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork Assembling** ■ Remove the pinch bolt and nut on Fork RH. ■ Locate special tool inside inner tube such that it engages with the nut on the seat pipe inside. ■ Loosen and remove the hex socket head nut inside the outer tube. ■ Remove the special tool from the inner tube. ■ Remove the dust seal, retainer clip, and fork seal from the outer tube. ■ Pull out the inner tube from the outer tube sharply to remove the inner tube along with the guide bush, seat pipe assembly, rebound spring and cap oil lock.	**Hex bolt & nut: M6** **Ring spanners: 10mm** **Special Tool: ST-25834-2** **Allen Key: 10mm**    

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	**Front Fork Dismantling** ■ Pull in the inner tube on the outer tube sharply to locate the inner tube along with the guide bush, seat pipe assembly, rebound spring and cap oil lock. ■ Locate the dust seal, retainer clip, and fork seal in the outer tube. ■ Locate the special tool in the inner tube. ■ Locate and install the hex socket head nut inside the outer tube. ■ Locate special tool inside inner tube such that it engages with the nut on the seat pipe inside. ■ Locate the pinch bolt and nut on Fork RH.	    **Special Tool: ST-25834-2** **Allen Key: 10mm** **Hex bolt & nut: M6** **Ring spanners: 10mm**

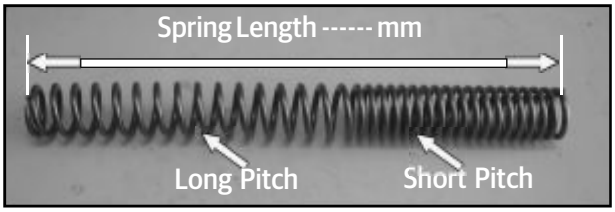
INSPECTION

Inspect front fork inner tube for any damages and bends.

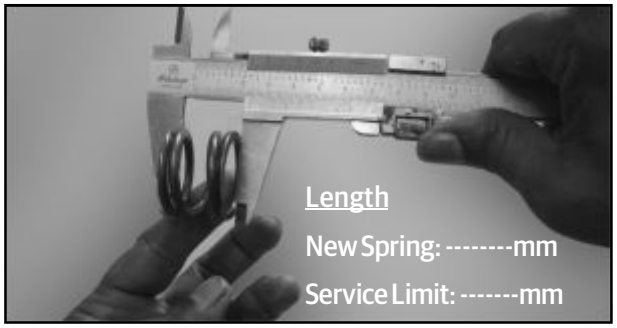
Inspect front fork outer tube for any damages, cracks at oil seal seating area.

WEAR LIMIT

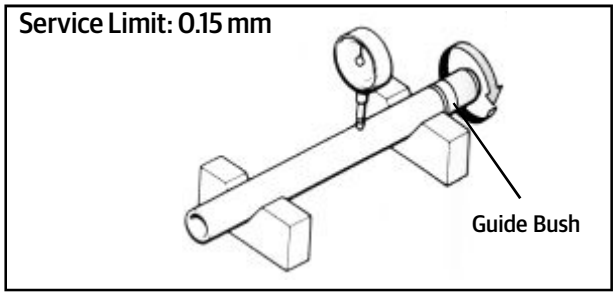
- Fork spring long



- Fork spring short

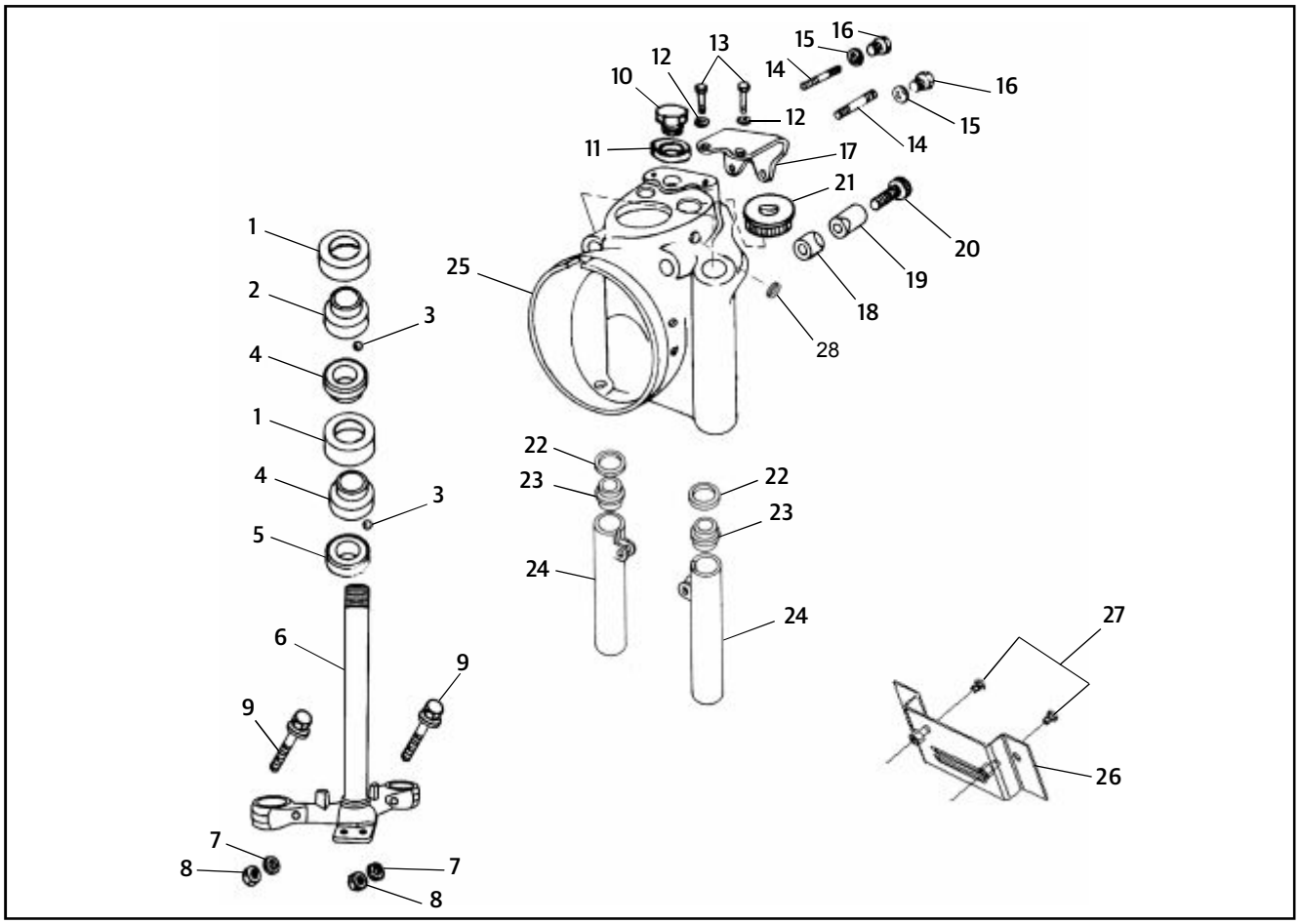


Main tube straightness



EXPLODED VIEWS

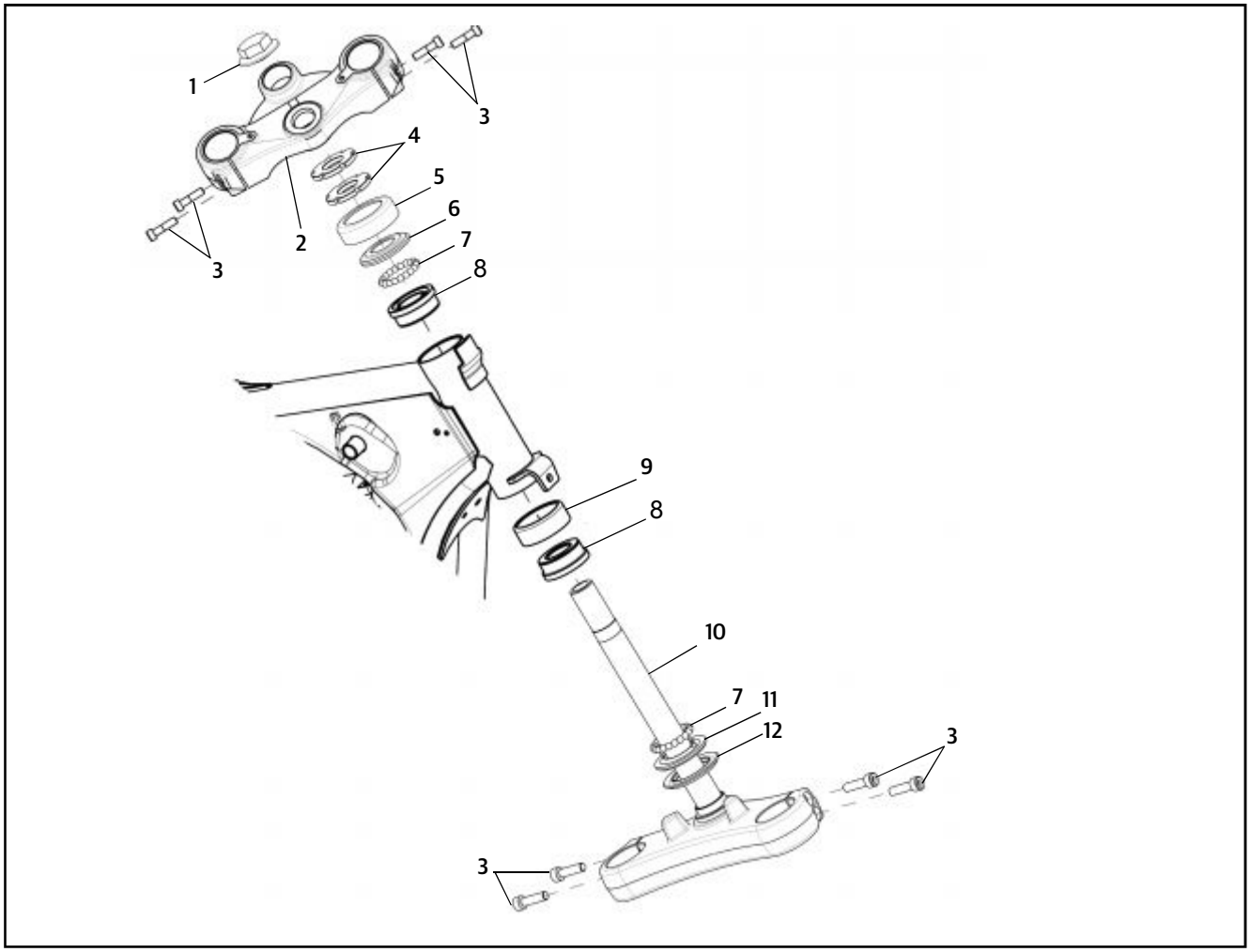
BULLET CLASSIC EFI / BULLET EFI



S.NO.	DESCRIPTION	QTY.
1	Cover	2
2	Ball Race, Head Lamp Casing	1
3	Steering Stem Ball Cage	2
4	Ball Race, Frame	2
5	Ball Race, Fork Crown	1
6	Steering Stem Assy.	1
7	Flanged Hex Nut M8 x 7.7 X 8	2
8	Hex Nut with Nylock insert - M8 X 9.5	2
9	Flange Bolt (M8 × 75)	2
10	Stem Lock Nut	1
11	Steering Stem Lock Nut Washer	1
12	Washer	2
13	Hex SS Bolt M8 x 48	2
14	Stud (M8×32)	2

S.NO.	DESCRIPTION	QTY.
15	Washer	2
16	Nut	2
17	Clip, Handle Bar	1
18	Sleeve, Threaded	1
19	Sleeve, Plain	1
20	Hex Socket head Cap Screw M10 x 1.5 x 35	1
21	Adaptor AHO	1
22	Rubber Spacer	2
23	Bush	2
24	Cover Tube	2
25	Head Lamp Casing	1
26	Rr Cover Comp C5	1
27	Slotted Rd. Hd.Screw	2
28	Rubber Grommet	2

CONTINENTAL GT

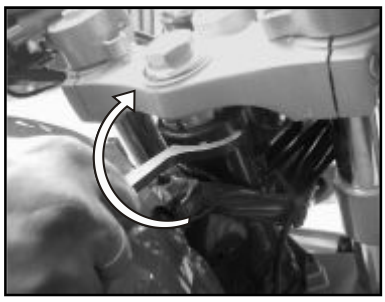
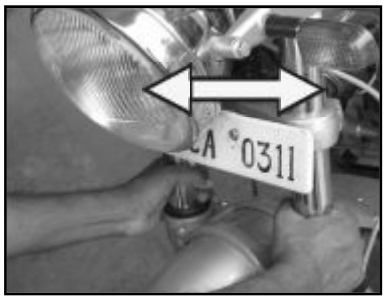


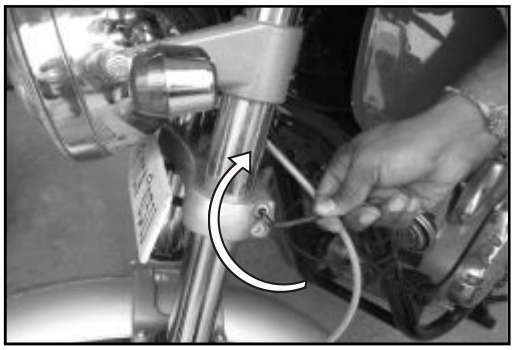
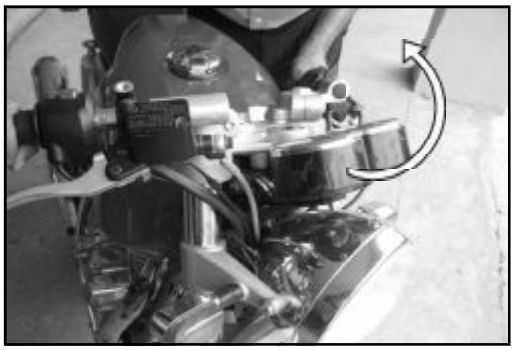
S. NO.	DESCRIPTION	QTY.
1	Lock Nut	1
2	Top Yoke	1
3	Hex. Socket Head Bolt M8 X 35	8
4	Ring Nut	2
5	Dust Cap - Top Yoke	1
6	Ball Race - Top Yoke	1
7	Steering stem - Ball Cage	2

S. NO.	DESCRIPTION	QTY.
8	Ball Race - Frame Head Tube	2
9	Dust Cap - Frame	1
10	Steering Stem Assembly	1
11	Ball Race - Bottom Yoke	1
12	Dust Seal - Bottom Yoke	1

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Steering Play Adjustment** **Bullet Classic EFI / Bullet EFI** ■ Rock the front end and feel the play at stem top end.	**NOTE:** Every 6,000 KMS, Steering Ball race adjustment should be done and on Every 12,000 Km Lubrication is recommended. 
	If felt, adjust as follows: ■ Loosen steering bottom bridge pinch bolt and nuts of Right & Left side. ■ Loosen the stem lock nut and then tight steering stem tapper nut to adjust excess play. ■ Again re-check play, it should be free without any play. ■ Finally tighten all the nuts and bolts in reverse order.	**Lock Nut M20** **Socket Spanner - 30 mm**  **Dome Lock Nut M24** **Socket Spanner - 30 mm** **Torque - 50 Nm**

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Steering Play Adjustment Continental GT** ■ 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 and check for Steering play. ■ Rock the front wheel down wards and feel the play / sound at stem top dome nut by fingers.	**CAUTION:** Do not Use Sockets Directly. **Dome Lock Nut M24** **Socket Spanner - 30 mm**
	If felt, adjust as follows : ■ Loosen the steering dome nut with long extension rod. ■ Loosen the pinch bolts in bottom yoke on LH and then RH side.	**Hex Socket Screw M5** **Allen Key 6mm**

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Steering Play Adjustment Continental GT** ■ 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).	**C Spanner** 
	■ After adjusting the play then tighten lock nut against ring nut.	**CAUTION:** Do not use Ring spanner directly to tighten dome nut. 
	■ After adjusting the play then tighten Dome nut to Torque.	**Dome Lock Nut M24** **Socket Spanner - 30 mm** **Torque - 50 Nm** 
	■ Again check and confirm the steering free play.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Steering Play Adjustment Continental GT** ■ Tighten the pinch bolts in bottom yoke LH and then RH by using Allen key.	**Hex Socket Screw M5** **Allen Key 6mm** **Torque 25 NM** 
	■ 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.  

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Headlamp Casing & Steering Stem** **Bullet Classic EFI / Bullet EFI** ■ Disconnect speedometer cable from the speedometer. ■ Disconnect wiring couplers of the speedo-meter, MIL meter, ignition switch and parking lamps from the main wiring harness. ■ Remove the clutch, throttle and bi-starter cables from the hole in the headlamp casing. ■ Loosen & remove the hex Nylock nut and bolt holding RR cover and cover tube to the steering stem. ■ Loosen socket head screw in the head lamp casing inner side by 3 to 4 threads. ■ Support the steering stem at the bottom. ■ Loosen and remove the steering stem lock nut from the headlamp casing along with the washer. ■ Remove the fork cover tubes LH & RH along with the rubber spacers and plastic bushes.	 **Hex Soc Hd Cap screw: M10** **Allen key 12 mm**  **Hex nut (Steering stem lock nut) : M24** **Ring spanner: 30mm** 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Headlamp Casing & Steering Stem** **Bullet Classic EFI / Bullet EFI** ■ Gently lower the steering stem and remove from the frame. ■ Remove the Headlamp casing from the frame.	
	■ Remove the top and bottom ball cage from the ball races.	
	■ Using a long chisel, gently tap and drive out the top and bottom races from the frame head tube along with the dust cap.	
	■ Using a short chisel, drive out the ball race along with dust cap from the headlamp casing and the ball race from steering stem.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Headlamp Casing & Steering Stem** **Bullet Classic EFI / Bullet EFI** ■ Using a short chisel, drive in the ball race along with dust cap on the headlamp casing and the ball race in steering stem. ■ Using a long chisel, gently tap and drive in at the top and bottom races on the frame head tube along with the dust cap. ■ Locate the top and bottom ball cage from the ball races. ■ Locate the Headlamp casing in the frame. ■ Loosen and remove the steering stem lock nut from the headlamp casing along with the washer. ■ Remove the fork cover tubes LH & RH along with the rubber spacers and plastic bushes. ■ Locate steering stem and assemble on the frame.	  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Headlamp Casing & Steering Stem** **Bullet Classic EFI / Bullet EFI** ■ Locate the fork cover tubes LH & RH along with the rubber spacers and plastic bushes. ■ Locate and install the steering stem lock nut in the headlamp casing along with the washer. ■ Locate the fork cover tubes LH & RH along with the rubber spacers and plastic bushes. ■ Locate and install the steering stem lock nut in the headlamp casing along with the washer. ■ Install socket head screw in the head lamp casing inner side by 3 to 4 threads. ■ Locate & Install the hex Nylock nut and bolt holding RR cover and cover tube to the steering stem. ■ Locate the clutch, throttle and bi-starter cables on the hole in the headlamp casing. ■ Connect wiring couplers of the speedometer, MIL meter, ignition switch, and parking lamps in the main wiring harness. ■ Connect speedometer cable from the speedo-meter.	  **Hex Soc Hd Cap screw: M10** **Allen key 12 mm**  **Hex nut (Steering stem lock nut) : M24** **Ring spanner: 30mm** **Torque: 70 Nm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Top Yoke & Steering Stem** **Continental GT** ■ Disconnect all wiring couplers of the instrument cluster to main wiring harness. ■ Remove speed sensor wire coupler from wiring harness. ■ Remove the top lock nut on the top yoke. ■ Remove the top yoke along with the instrument cluster and ignition switch. ■ Support steering stem and the bottom and loosen and remove the top ring nut first and the second ring nut next.	  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Top Yoke & Steering Stem** **Continental GT** ■ Gently lower the steering stem and remove from the frame. ■ Remove the top and bottom ball cage from the ball races. ■ Using a long chisel, gently tap and drive out the top and bottom races from the frame head tube along with the dust cap. ■ Using a short chisel, drive out the ball race along with dust cap from the top yoke and the ball race from steering stem.	 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Top Yoke & Steering Stem** **Continental GT** ■ Using a short chisel, drive in the ball race along with dust cap in the top yoke and the ball race on steering stem. ■ Using a long chisel, gently tap and drive in at the top and bottom races from the frame head tube along with the dust cap. ■ Locate the top and bottom ball cage in the ball races. ■ Locate steering stem and assemble on the frame.	**NOTE:** Replace all Rubber parts, , plastic bushes, O rings, washers whenever they are removed.  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.5	**Top Yoke & Steering Stem** **Continental GT** ■ Locate and install the second ring nut first and top ring nut next. ■ Locate the top yoke along with the instrument cluster and ignition switch. ■ Locate the top lock nut on the top yoke. ■ Locate speed sensor wire coupler from wiring harness. ■ Connect all wiring couplers of the instrument cluster to main wiring harness.	  

INSPECTION

Inspect the steering ball cages and ball races for any rusting, pitting and damaged balls/ races

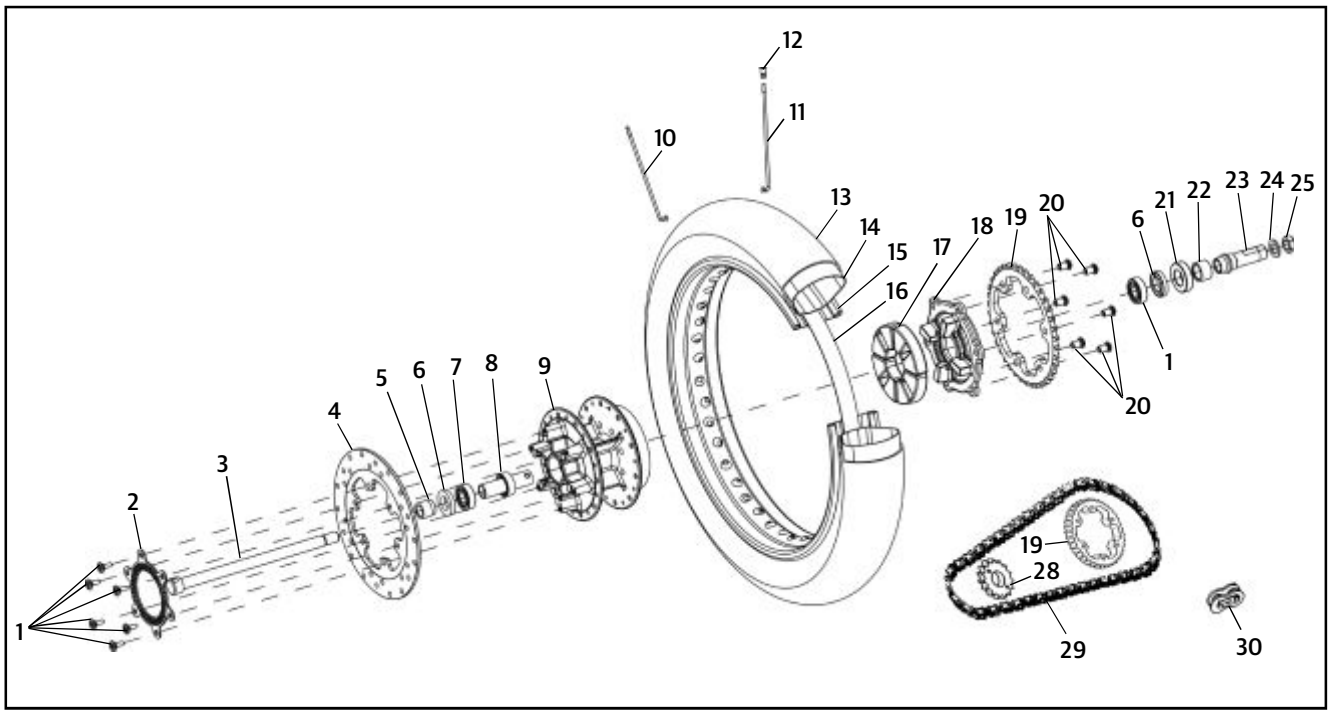
Inspect steering stem for any damages / run out as these will affect the stability and steer ability for the motorcycle

SECTION 07 - REAR SUSPENSION

SECTION 7.1 - REAR WHEEL

EXPLODED VIEWS

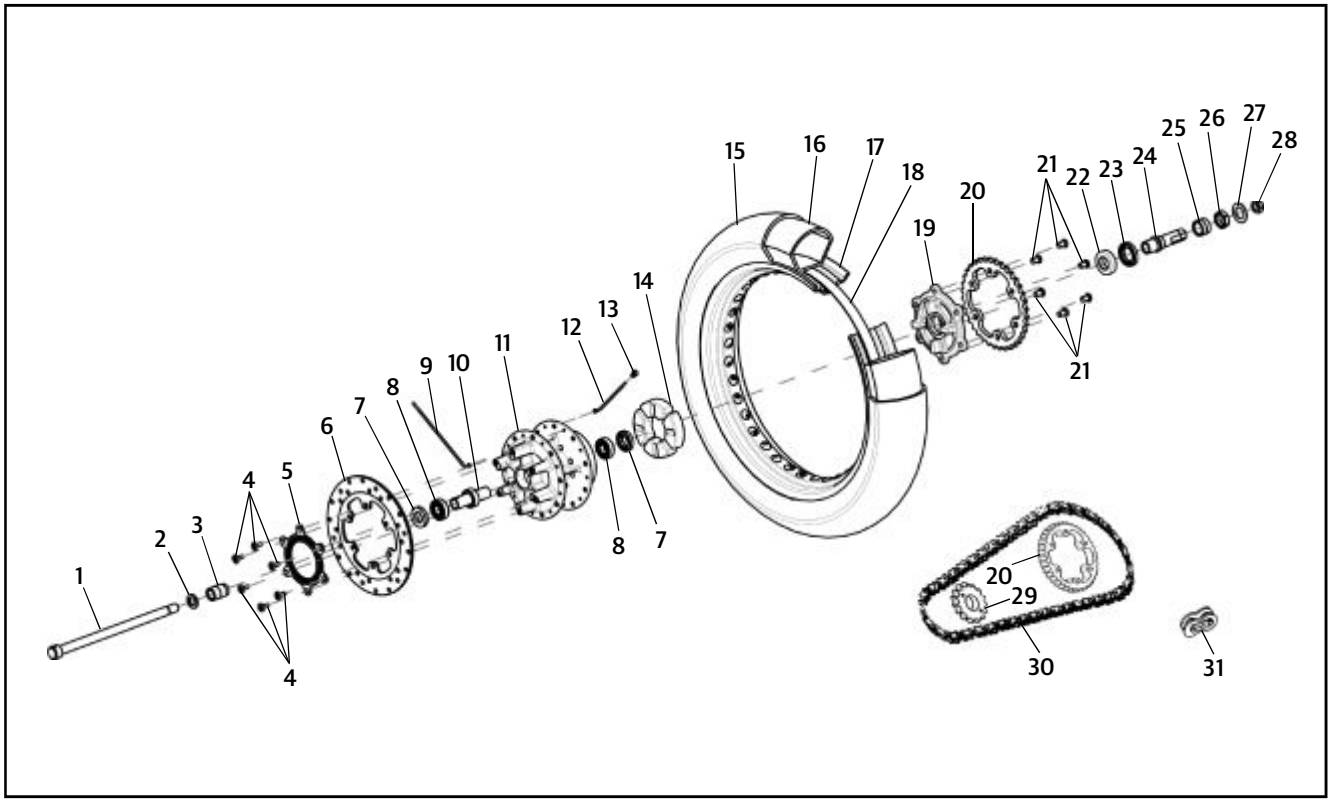
BULLET EFI, BULLET CLASSIC EFI



S.NO.	DESCRIPTION	QTY.
1	Socket Head Bolt M8 X1.25 X20	6
2	Toner-Rear Wheel	1
3	Spindle Long	1
4	Rear Disc Plate	1
5	Spacer-Disc Side	1
6	Grease Seal,25X40X7	2
7	Deep Groove Ball Bearing 6203 (17X40X12)	2
8	Rear Hub Spacer Assy	1
9	Rear Hub	1
10	Spokes Outer Rear	20
11	Spokes Inner-Rear	20
12	Brass Nipples	40
13	Tyre-Rear 110/80 - 18"	1
14	Tube-Rear 110/80 - 18"	1
15	Rim Rear	1
15	Wheel Rim Amry Og	1
16	Rim Tape	1

S.NO.	DESCRIPTION	QTY.
17	Cush Rubber	4
18	Adaptor-Rd Sprocket	1
19	Sprocket-Rear Drive	1
20	Low Head Socket Cap Screw M10 X 1.5 X 16	6
21	Bearing	1
22	Dust Seal-Rd Spracket	1
23	Spindle Short	1
24	Spacer-Sprocket Side	1
25	Hexognal Lock Nut M22X1.5	1
26	Washer	1
27	Hex U Nut M16X1.5	1
28	Final Drive Sprocket 17T	1
29	Chain Rear (102 Pitches O-ring type)	1
30	Connecting Link 'O' Ring Drive Chain - LGB	1

CONTINENTAL GT



S. NO.	DESCRIPTION	QTY.
1	Spindle Long	1
2	Washer	1
3	Spacer-Disc Side	1
4	Hex.Socket Button Head Screrw M6X1 X 14	6
5	Toner-Rear Wheel	1
6	Rear Disc Plate	1
7	Grease Seal,25X40X7	2
8	Deep Groove Ball Bearing 6203 (17X40X12)	2
9	Spokes Inner-Rear	18
10	Bearing Spacer Assy	1
11	Rear Hub Assembly	1
12	Spokes Outer-Rear	18
13	Brass Nipples	36
14	Cushion Rubber	4
15	Tyre-Rear 130/70 - 18"	1
16	Tube-Rear (130 /80 - 18")	1

S. NO.	DESCRIPTION	QTY.
17	Rim Rear	1
18	Rim Tape	1
19	Adaptor - RD Sprocket (Metalic Silver)	1
20	Sprocket-Rear Drive	1
21	Low Head Socket Cap Screw M10 X 1.5 X 16	6
22	Bearing 6005 (25 X 47 X12)	1
23	Dust Seal-Rd Spracket	1
24	Spindle Short	1
25	Spacer-Sprocket Side	1
26	Hexognal Lock Nut M22X1.5	1
27	Washer	1
28	Hex U Nut M16X1.5	1
29	Final Drive Sprocket 17T	1
30	Chain Rear (100 Pitches O-ring type)	1
31	Connecting Link 'O' Ring Drive Chain - LGB	1

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.1	**Rear Wheel Dismantling** **Bullet Classic EFI/ Bullet EFI / Continental GT** ■ Place the motorcycle on its center stand, on a firm and flat surface such that the rear wheel is about 4 inches (10 cms) above the ground. ■ Observe and mark the alignment index marks in the both sides of swing arm. ■ Hold the axle from the left side. ■ Loosen and remove the hex nut on the right side. ■ Remove wheel spindle from left side. ■ Gently release the brake hose from the holding clips in the swing arm.	 **Hex Nut M16** **Double end spanner 24mm**  

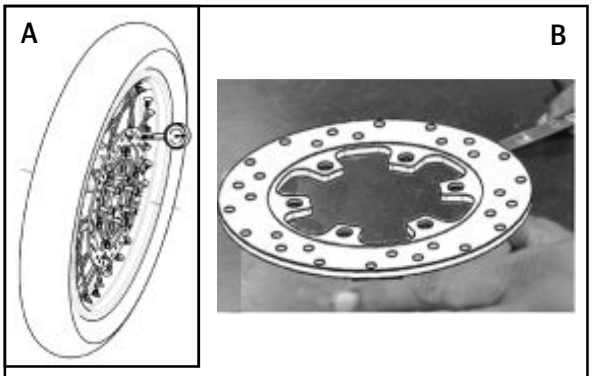
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.1	**Rear Wheel Dismantling** **Bullet Classic EFI/ Bullet EFI / Continental GT** ■ Remove the caliper assembly by gently pulling out from the swing arm slot and support the caliper suitably. ■ Ensure the spacer is removed and stored carefully. ■ Gently pull rear wheel towards the left so that the hub becomes free from the lugs in the sprocket. ■ Slide out the rear wheel assy. from the swing arm.	**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 if the rear brake pedal is accidently pressed. 

INSPECTION

- Inspect tyres for any side wall crack stone hits, bulge, proper seating in rim.
- Tyres button to be above the tyre wear indicator mark on the side walls.
- Inspect spokes for any loosening / breakage.
- Inspect hub or any damage.
- Inspect Toner ring for any damage.
- Axle & nut for thread damage.
- Inspect wheel rim for run out / "jump" it should not exceed 2 mm.
- Inspec cush rubbers for wear or deterioration and replace only as set if required.

WEAR LIMITS

Rear wheel disc flatness & run out



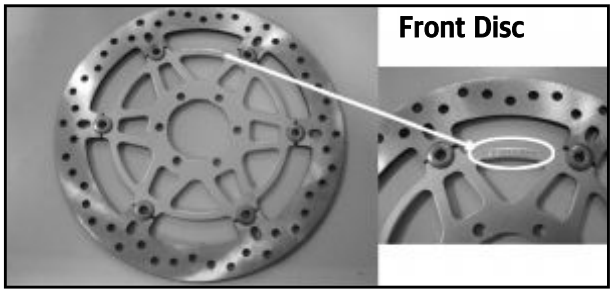
	UCE 535	
	A	B
New Min. Flatness	0.00 mm	0.00 mm
New Max. Flatness	-	0.10 mm
Service Limit : Run out - disc		

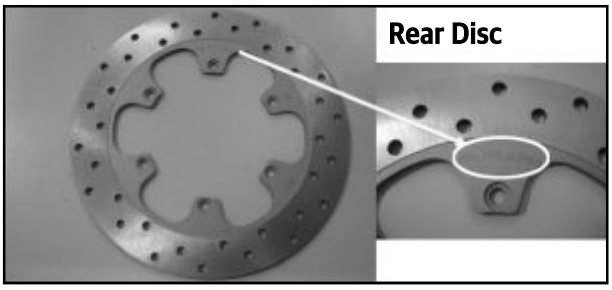
Rear Disc Thickness (BBI)

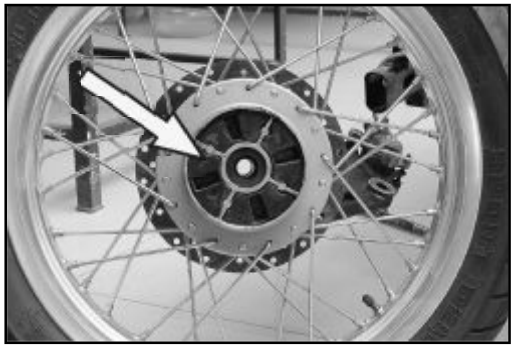
	CON. GT
New Min.	5.00 (only GT)
New Max.	-
Service Limit	4.5 mm

BRAKE DISC

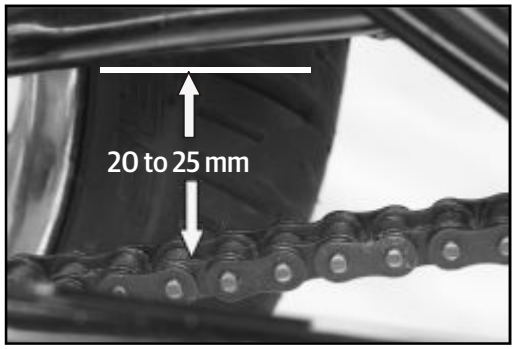
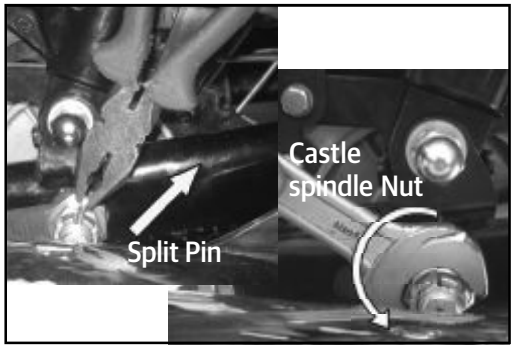
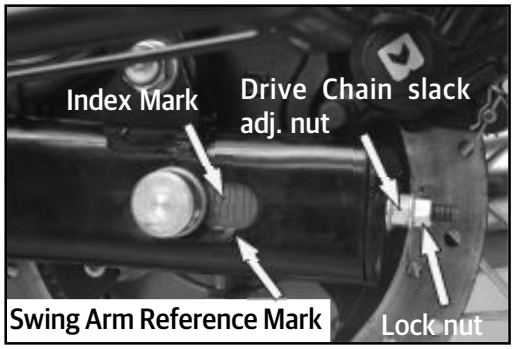
Minimum disc thickness marked on disc





S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.1	**Rear Wheel Assembling** **Bullet Classic EFI/ Bullet EFI** ■ Remove the wooden piece / card board sheet placed between the brake pads. ■ Ensure the four Cushion rubbers are in position in the rear wheel hub. ■ Position rear wheel swing arm such that he brake disc is on the left side. ■ Locate rear wheel on the sprocket, ensuring the cushion rubbers are seated on the lugs correctly. ■ Locate the caliper assembly on the lug in the swing arm.	 **NOTE :** Ensure the brake disc is located in between the brake pads. 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.1	**Rear Wheel Assembling** **Bullet Classic EFI/ Bullet EFI** ■ Ensure the Chain tensioner is correctly located inside the swing arm on the left side & firmly seated against swing arm. ■ Position the spacer correctly between the hub and the caliper assembly. ■ Align the caliper bracket, spacer, hub and chain tensioner holes. ■ Insert the wheel spindle from left side fully. ■ Hold the axle from the left side and tighten the axle nut on the right side. ■ Gently locate the brake hose into the holding clips in the swing arm.	**NOTE :** Ensure the caliper brake, spacer chain tensioner hub mounting bolts are aligned. **Hex nut M16** **Double end spanner 24mm** **Torque - 70 Nm**

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.2	**Drive chain free play adjustment** ■ Remove the split pin from the castle nut.	
	■ Loosen the Castle/ spindle nut	
	■ Loosen the locknut of each end of the swing arm.	
	■ To reduce the free play, turn the drive chain slack adjusting nut at each end of the swing arm in Clockwise direction.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.2	**Drive chain free play adjustment** ■ To increase the free play, turn the drive chain slack adjusting nut at each end of the swing arm in anticlockwise direction and push the rear wheel forward. ■ Check the front and rear wheels correctly aligned. ■ Check and ensure the alignment marks on each side of the swing arm. ■ Finally torque the castle/ spindle nut. ■ Tighten the lock nut for the chain slack adjusting nut.	 **Torque: 70 Nm** **Hex lock nut M8** **Double end spanner – 13 mm** **CAUTION:** Improper drive chain slack will overload the engine and It leads to chain slippage or breakage. It is recommended to maintain drive chain slack within the specified limits. 

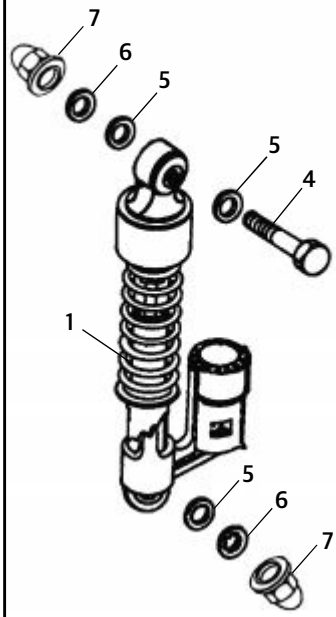
SECTION 7.3 – REAR SHOCKERS

EXPLODED VIEWS

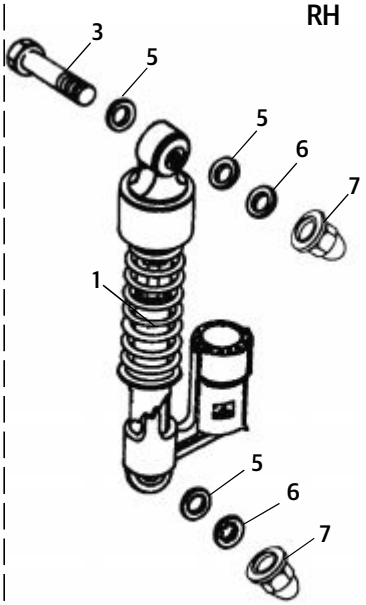
REAR SHOCKABSORBER

Bullet & Classic

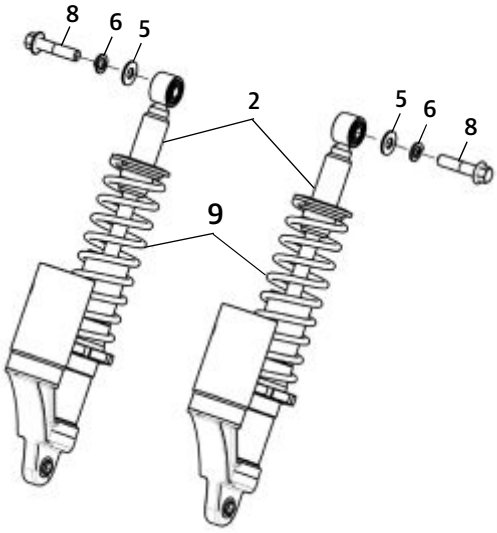
LH



RH



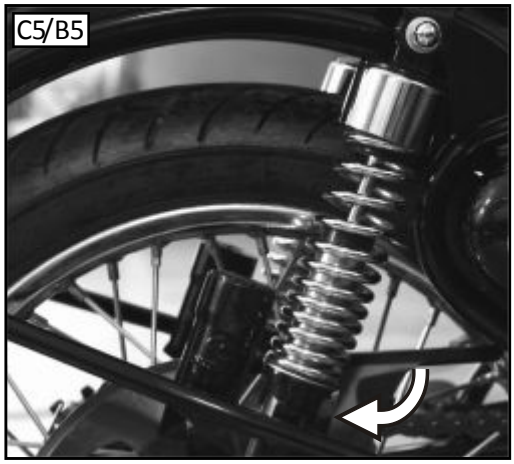
Continental GT

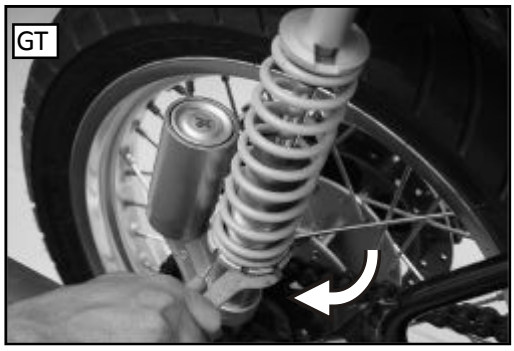


S.NO.	DESCRIPTION	QTY.
1	Shockabsorber - Chrome Plated	2
2	Shock Absorber	2
3	Hex Bolt - 3/8"X45 (For RH Side Only)	1
4	Hex Bolt - 3/8" BSF x 2" (For LH Side Only)	1
5	Plain Washer (M10)	6
	Plain Washer (M10)	2

S.NO.	DESCRIPTION	QTY.
6	Single Coil Spring Lock Washer	4
7	Domed Nut	4
8	Flanged Hex. Bolt M10 x 44	2
9	Spring - Shock Absorber	2

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.3	**Rear Shock absorber Adjustment** **Bullet Classic EFI / Bullet EFI / Continental GT** ■ The Pre-loaded spring tension shockabsorber is of adjustable type i.e., the spring tension can be increased or reduced. ■ The spring tension of the rear shockabsorbers can be increased or decreased to suit different riding conditions. ■ The adjuster provided at the bottom of the spring has five notches and can be rotated using a special 'C' spanner. ■ Rotate adjuster "clockwise" to increase spring tension and "anti-clockwise" to reduce spring tension. ■ Ensure the spring tension is the same in both the left and right side shockabsorbers ■ After adjustment, ensure the adjuster notches are seated correctly against the peg in the shockabsorber.	**CAUTION:** Riding the motorcycle with the notches adjusted in different positions can cause loss of control and may lead to an accident. Regularly inspect shock-absorbers and front forks for leaks. Replace worn parts. Worn parts can adversely affect stability and handling. **Special Tool:** **C Spanner** **NOTE:** Ensure no fouling of any accessories with rear Shock-absorber. Check for sufficient gap availability between the shockabsorber and the attachments when the rear end of the motor-cycle is fully loaded and the shock absorbers are fully compressed.





S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.3	**Rear Shockers Bullet Classic EFI / Bullet EFI Dismantling** ■ Refer Rear Mudguard Section 7.4. ■ Loosen 2 domed nuts mounted on top end of rear shock absorbers on both LH & RH sides along with single coil spring lock washer and plain washer. ■ Remove 2 Hex bolts mounted on the inner side of Rear shock absorbers top end on both LH & RH sides along with plain washer. ■ Loosen 2 Domed nuts mounted on bottom end of rear shock absorbers on both LH & RH side along with single coil spring washers and plaint washers. ■ Gently remove the Rear Shockabsorbers (Chrome plated) from LH & RH side.	**Domed Nut M10** **Hex Bolt M6** **Socket Spanner 10mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.3	**Rear Shockers** **Continental GT** ■ Loosen 2 hex bolts mounted on top end of Rear shock absorbers on both LH & RH sides along with single coil spring lock washers and plain washers. ■ Loosen 2 domed nuts mounted on bottom end of rear shock absorbers on both LH & RH sides along plain washer ■ Gently remove the Rear Shock Absorbers from LH & RH side.	**Flanged Hex Bolt M 10** **Socket Spanner 17 mm** 

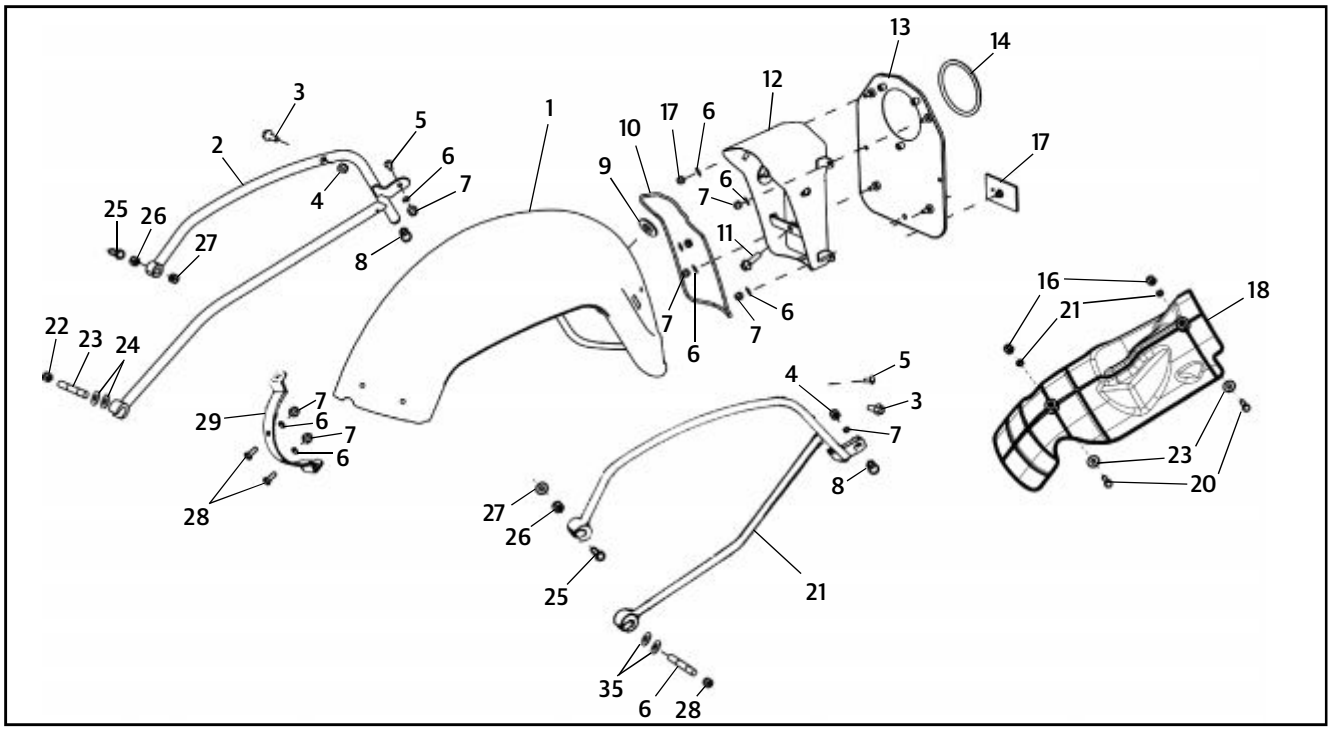
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.3	**Rear Shockers** **Bullet Classic EFI / Bullet EFI** ■ Locate Rear Shock Absorbers(Chrome plated) on LH & RH side ■ Install 2 Domed nuts on bottom end of rear shock absorbers on both LH & RH side along with single coil spring washers and plain washers. ■ Install 2 Hex bolts on the inner side of Rear shock absorbers top end on both LH & RH sides along with plain washer. ■ Install 2 domed nuts on top end of Rear shock absorbers on both LH & RH sides along with single coil spring lock washer and plain washer ■ Refer Rear Mudguard assembling Section 7.4.	**Domed Nut M10** **Hex Bolt M6** **Socket Spanner 10mm** **Torque 4 Kg-M** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.3	**Rear Shockers** **Continental GT** ■ Locate Rear Shock Absorbers on LH & RH sides. ■ Install 2 Domed nuts on bottom end of rear shock absorbers on both LH & RH side along with single coil spring washers and plain washers. ■ Install 2 hex bolts on top end of Rear shock absorbers on both LH & RH sides along with single coil spring lock washers and plain washers.	**Flanged Hex Bolt M 10** **Socket Spanner 17 mm** **Torque 4 Kg-M** 

SECTION 7.4 - REAR MUDGUARD

EXPLODED VIEWS

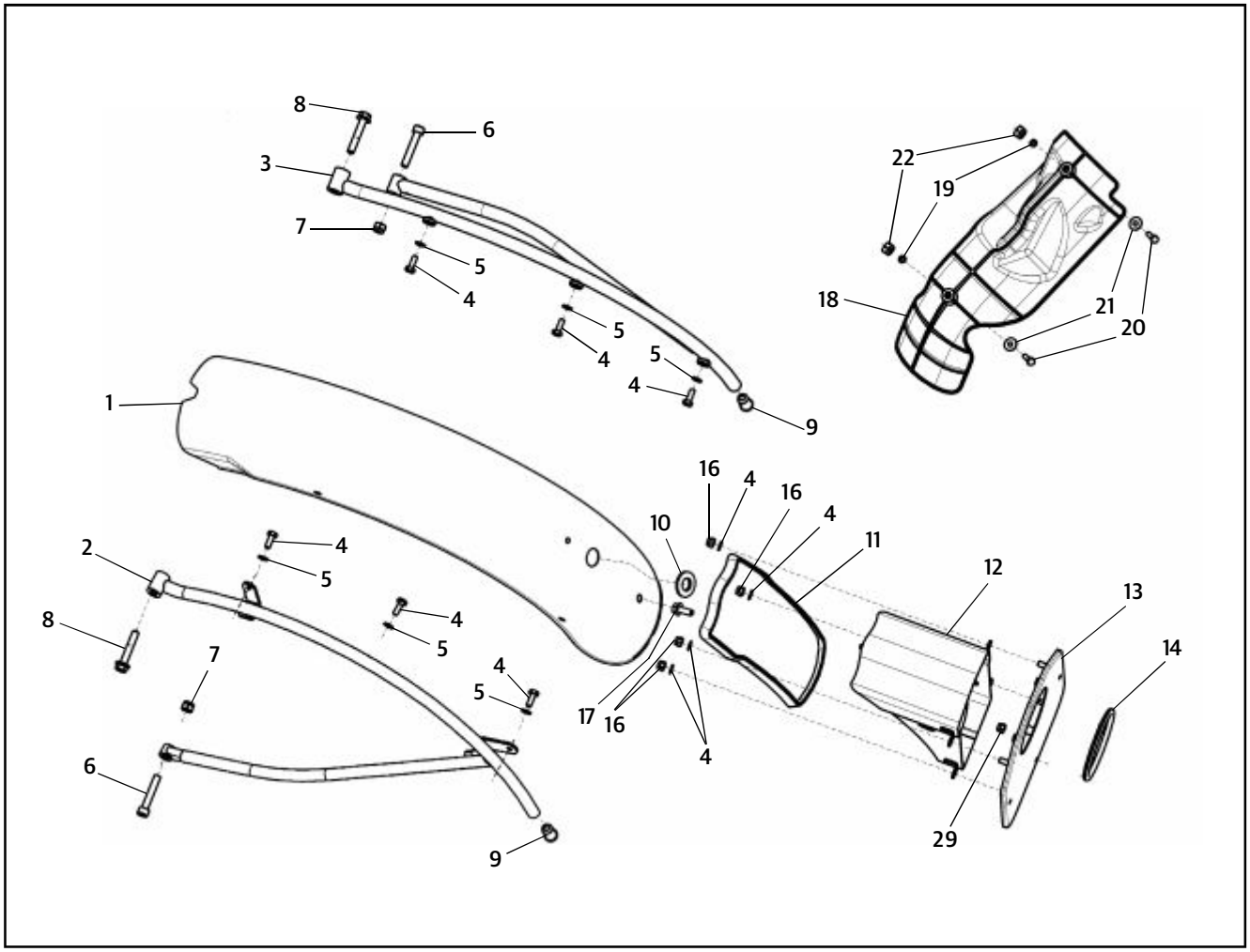
BULLET EFI



S.NO.	DESCRIPTION	QTY.
1	Rear Mudguard With Sticker Std BVI	1
2	Mudguard Carrier RH Mod Black	1
3	Flanged Hex. Bolt M8 X 20	2
4	Hex. Nut With Nylon Insert M8 X 9.5	2
5	Crossed Raised Pan Head Screw M6 X 14	2
6	Plain Washer M6	10
7	Hex. Nyloc Nut M6	9
8	Plug - Carrier End	2
9	Grommet	1
10	Beading - Rear Number Plate	1
11	Hex. Bolt, M8 X 30	1
12	Number Plate Holder Complete	1
13	Tail Lamp Bracket Complete	1
14	Beading	1
15	Reflector	1

S.NO.	DESCRIPTION	QTY.
16	Hex Nut M6X1	2
17	Lock Washer Internal Teeth M6	8
18	Piece Mudguard	1
19	Washer Plain M6	2
20	Hex. Bolt M6 X 35	2
21	Mudguard Carrier LH Mod Black	1
22	Faced Hex. Nut 1/2" CEI	2
23	Rear Mudguard Carrier Stud Bottom	2
24	Plain Washer M12	4
25	Flanged Hex Bolt M10 X 1.25 X 50	2
26	Plain Washer M10	2
27	Washer Faced Nut M10 (Metric)	2
28	Screw M6 X 15	2
29	Bridge Plate	1

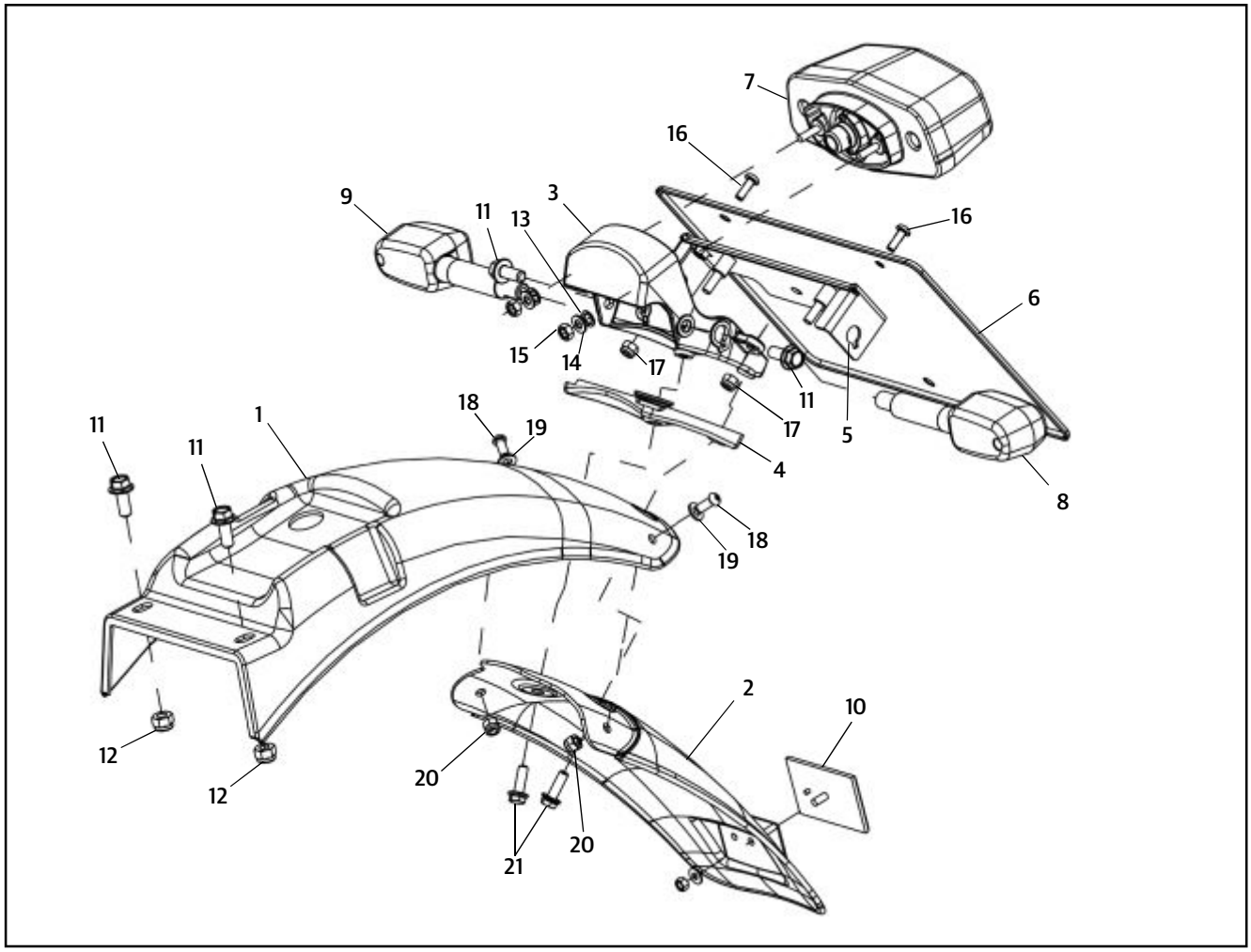
BULLET CLASSIC EFI



S.NO.	DESCRIPTION	QTY.
1	Rear Mud.Comp. W/Stick-Cl. Black BVI	11
2	Mudguard Carrier Assy LH - C5 Black	1
3	Mudguard Carrier Assy RH Classic Black	1
4	Plain Washer M6	6
5	Hex. Screw M6 X 1 X 16	6
6	Hex. Socket Head Screw M8 X 40	2
7	Hex. Nylock Nut M8 X 9.5	2
8	Flanged Hex. Bolt M8 X 1.25 X 45	2
	Dome Cap Bolt M8 X 45 (Special)	2
9	Plug Carrier End	2
10	Grommet	1
11	Beading	1

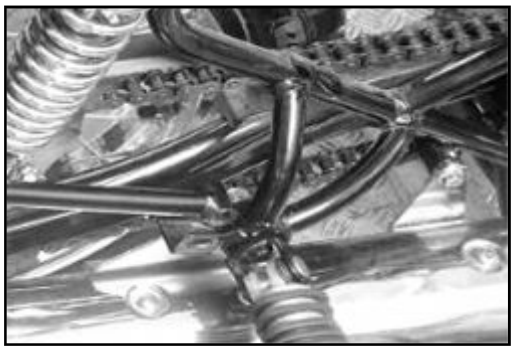
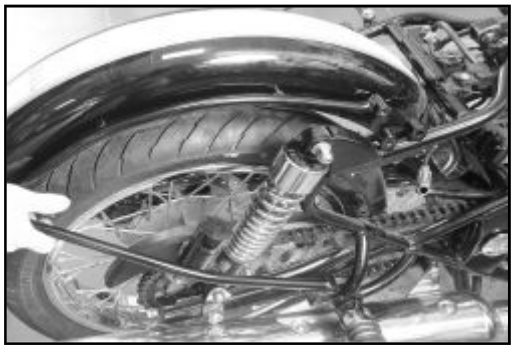
S.NO.	DESCRIPTION	QTY.
12	Number Plate Holder Comp Black	1
13	Tail Lamp Bkt Comp Black Mod	1
14	Beading	1
15	Reflector Assembly	1
16	Hexagonal Nut M6 X 1 X 7	4
17	Flanged Hex. Bolt M8 X 30	1
18	Piece Mudguard	1
19	Lock Washer,Internal Teeth	2
20	Hex Bolt, M6 X 35	2
21	Washer Plain	2
22	Hex. Nut M6	2

CONTINENTAL GT

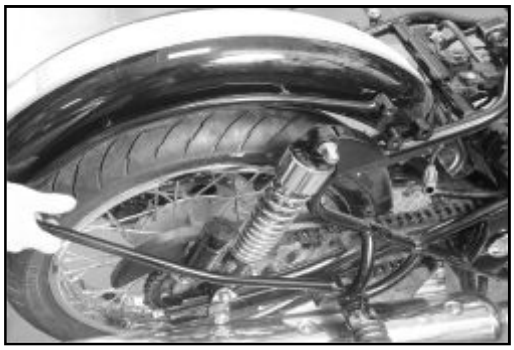
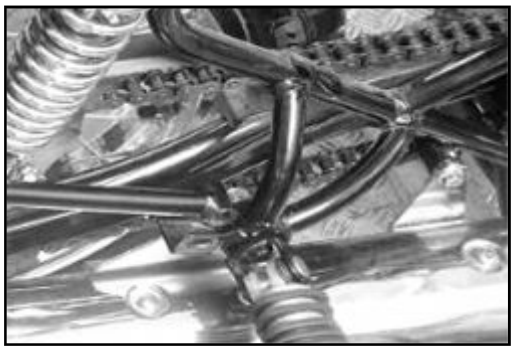


S.NO.	DESCRIPTION	QTY.
1	Rear Mudguard	1
2	Mudflap-Rear	1
3	Tail Lamp Bkt Comp	1
4	Rubber Pad-Tail Lamp	1
5	Number Plate Mtg Bracket – Rear Plate (Export)	1
6	Number Plate – Rear Export	1
7	Tail Lamp	1
8	Trafficator Assy With Bulb-Rear LH	1
9	Trafficator Assy With Bulb-Rear RH	1
10	Reflector	1
11	Flanged Hex.Bolt, M8 X 1 X 20	4

S.NO.	DESCRIPTION	QTY.
12	Hex Nut With Nylon Insert, M8	2
13	Lock Washer, M6	2
14	Washer	2
15	Hex.Nut M6	2
16	Hex.Socket Button Head Screrw M6 X 16	2
17	Hex.Nut With Nylon Insert M6	2
18	Cross Recessed Pan Head Screw M6X 4	2
19	Punched Washer M6	2
20	Hex.Nut With Nylon Insert M6	2
21	Flange Hex Bolt M6 X 20	2

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.4	**Rear Mudguard** **Bullet Classic EFI / Bullet EFI** ■ Loosen 2 hex bolts mounted on top end of Mudguard Carrier on both LH & RH side along with washer.	**Flanged Hex Bolt M8** **Socket spanner 13 mm** 
	■ Remove 2 Hex screws mounted on bottom end of Mudguard carrier on both LH & RH side.	**Hex Socket head cap Screw M8** **Allen Key 5 mm** 
	■ Gently remove the Rear Mudguard assembly along with Mudguard carriers.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.4	**Rear Mudguard Continental GT** ■ Refer Section 5.4 removal of Seat dismantling ■ Loosen 2 hex bolts mounted on top end of Rear mudguard along with Hex nuts ■ Loosen 2 hex screws mounted on rear end of Rear mudguard along with punched washers ■ Gently remove the Rear mudguard from its position	**Flanged Hex Bolt M8** **Socket Spanner 13 mm** **Cross recessed pan head screw M6** **Allen Key 5 mm**

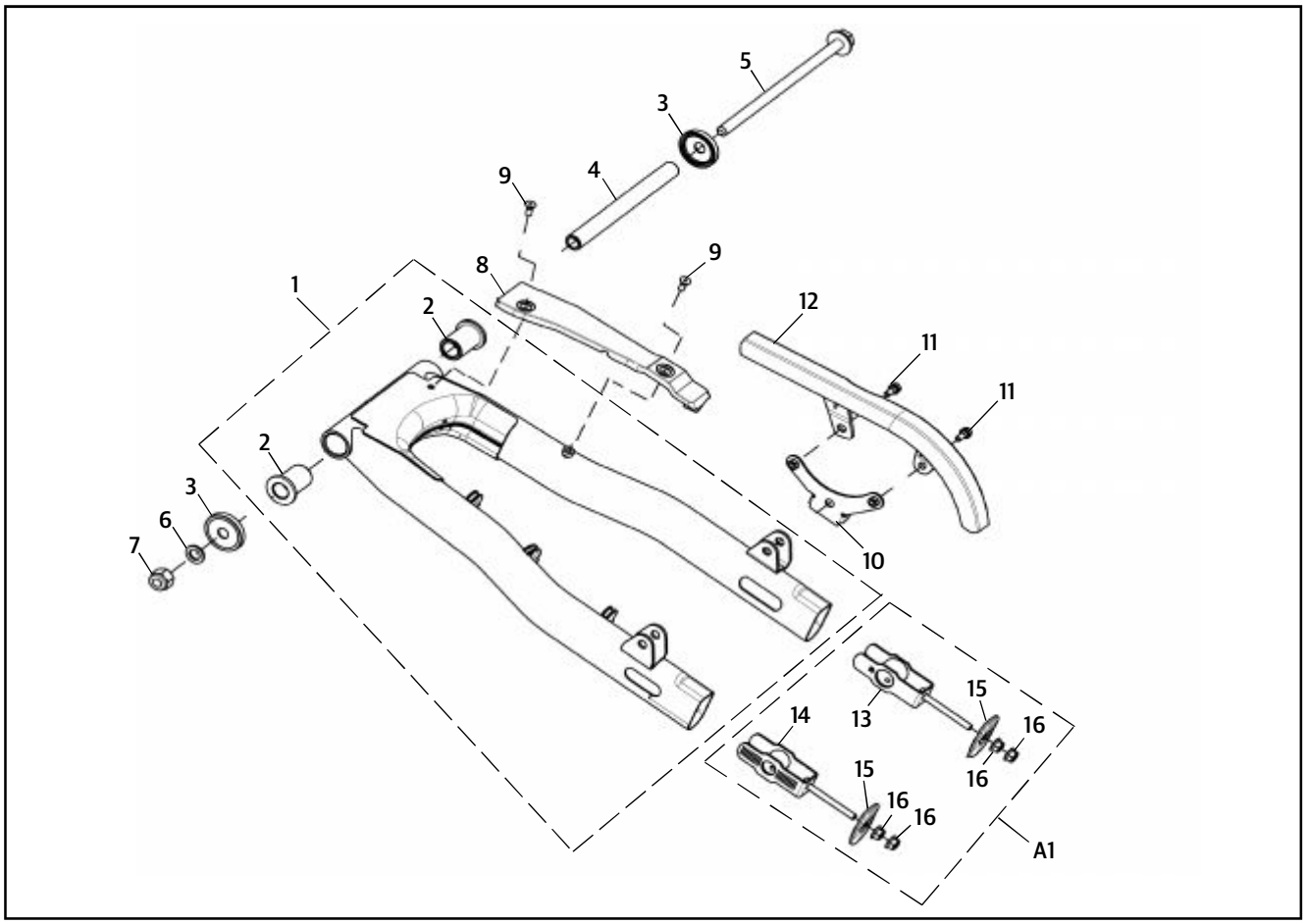
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.4	**Rear Mudguard** **Bullet Classic EFI / Bullet EFI** ■ Gently locate the Rear Mudguard assembly along with Mudguard carriers.	**Hex Socket head cap Screw M8** **Allen Key 5 mm** 
	■ Install 2 Hex screws on bottom end of Mudguard carrier on both LH & RH side.	**Flanged Hex Bolt M8** **Socket spanner 13 mm** **Torque 3 Kg-M** 
	■ Install 2 hex bolts on top end of Mudguard Carrier on both LH & RH side along with washer.	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.4	**Rear Mudguard** **Continental GT** ■ Locate the Rear mudguard on its position. ■ Install 2 hex screws on rear end of Rear mudguard along with punched washers ■ Install 2 hex bolts on top end of Rear mudguard along with Hex nuts ■ Refer Section 5.4 for assembling Seat dismantling .	**Cross recessed pan head screw M6** **Allen Key 5 mm** **Flanged Hex Bolt M8** **Socket Spanner 13 mm**

SECTION 7.5 - REAR SWING ARM

EXPLODED VIEWS

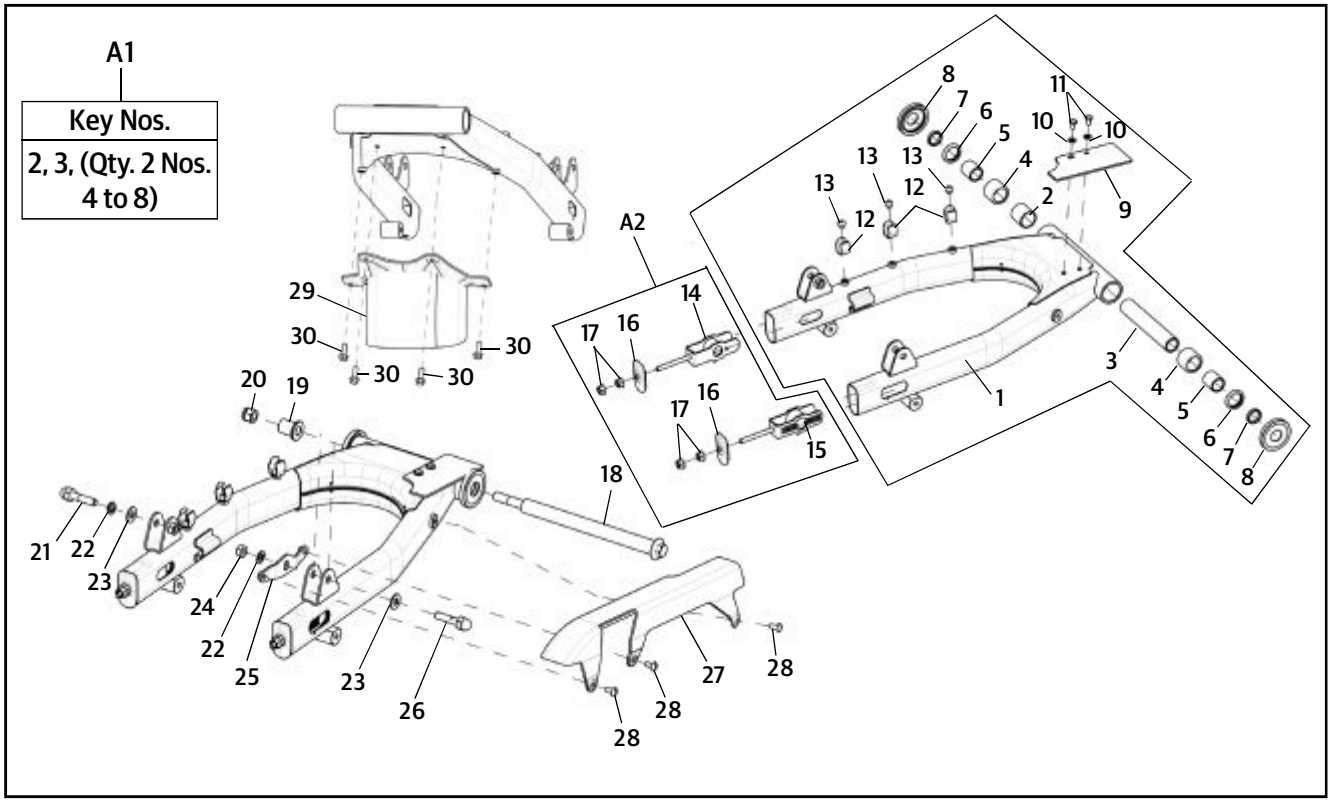
BULLET EFI, BULLET CLASSIC EFI



S. NO.	DESCRIPTION	QTY.
1	Swing Arm Sub Assembly Black	1
2	Swing Arm Bush - Celcon	2
3	End Cup	2
4	Spacer - Chain Stay	1
5	Hex. Flanged Bolt 1/2 X 16 TPI X 240 - T30	1
6	Washer - Shake Proof M12	1
7	Hex. Nylock Nut	1
8	Chain Pad	1
9	CSK Screw M6X20	2
10	Bracket Complete - Chain Guard,	

S. NO.	DESCRIPTION	QTY.
	Black-Powder Coated	1
11	Flange Bolt with Collar - M6 X 1	2
12	Chain Guard	1
13	Chain Tensioner RH	1
14	Chain Tensioner LH	1
15	Plate-Chain Adjuster	2
16	Flanged Hex. Nut M8 X 1.25	4

CONTINENTAL GT

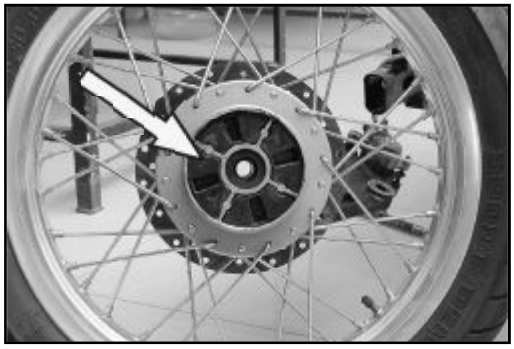


S.NO.	DESCRIPTION	QTY.
A1	Swing Arm End Cap, Bearing, Oil Seal & Spacer Kit	1
A2	Chain Adjuster Kit (RH and LH)	1
1	Swing Arm Sub Assembly	1
2	Nylon Bush - Swing Arm	1
3	Inner Spacer - Swing Arm	1
4	Needle Bearing (33 X 252 X 25)	2
5	Inner Race - Needle Bearing (IR20X25X26)	2
6	Oil Seal - Swing Arm	2
7	Spacer - Oil Seal Swing Arm	2
8	End Cap RH - Swing Arm	2
9	Rear Chain - Pad	1
10	Washer	2
11	Hex Scew M6 X 16	2
12	Clip - Rear Disc Hose	3
13	Philips Pan Head Screw M6X6	3
14	Chain Tensioner Comp. - LH	1

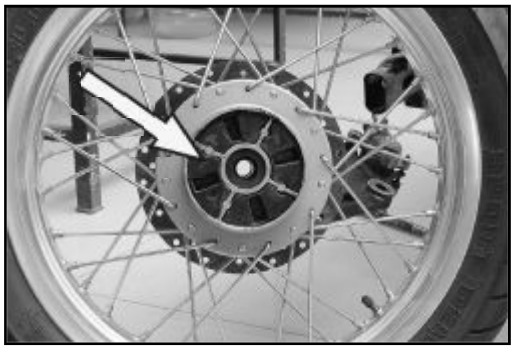
S.NO.	DESCRIPTION	QTY.
15	Chain Tensioner Comp. - RH	1
16	Plate - Chain Adjuster	2
17	Flanged Hex. Nut M8X1.25	4
18	Flanged Hex. Bolt	1
19	Spacer - Swing Arm	1
20	Hex. Nut with Nylock M12	1
21	Domed Bolt - 3/8"X40	1
22	Spring Washer - 3/8"	2
23	Plain Washer (M10)	2
24	Hex. Nut 3/8" BSF	1
25	Bracket - Plastic Chain Guard	1
26	Hex. Bolt 3/8" X 45	1
27	Chain Guard - Plastic	1
28	Slotted Head Screw M6 X 13	3
29	Cover - ABS Modulator	1
30	Flanged Hexagonal Bolt M6 X 1 X 20	4

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.5	**Rear Swing Arm** **Bullet Classic EFI / Bullet EFI** ■ Place the motorcycle on its center stand, on a firm and flat surface such that the rear wheel is about 4 inches (10 cms) above the ground. ■ Hold the Axle from the left side. ■ Loosen and remove hex nut on right side of the swing arm. ■ Remove wheel spindle from left side. ■ Gently release the brake hose from the holding clip in the swing arm. ■ Remove the caliper assembly by gently pulling out from the swing arm slot and support the caliper suitably.	 **Hex Nut M16** **Double End Spanner 24 mm**  

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.5	**Rear Swing Arm** **Bullet Classic EFI / Bullet EFI** ■ Ensure the spacer is removed and stored carefully ■ Gently pull rear wheel towards the left so that the hub becomes free from lugs in the sprocket ■ Slide out the Rear wheel assembly from the swing arm ■ Remove the Hex bolt on the other end of the swing arm along with end cups, spacer, celcon bushes, washer, hex nut. ■ Gently remove the swing arm assembly from the frame.	 **Hex Bolt M 8** **Socket Spanner 13 mm**

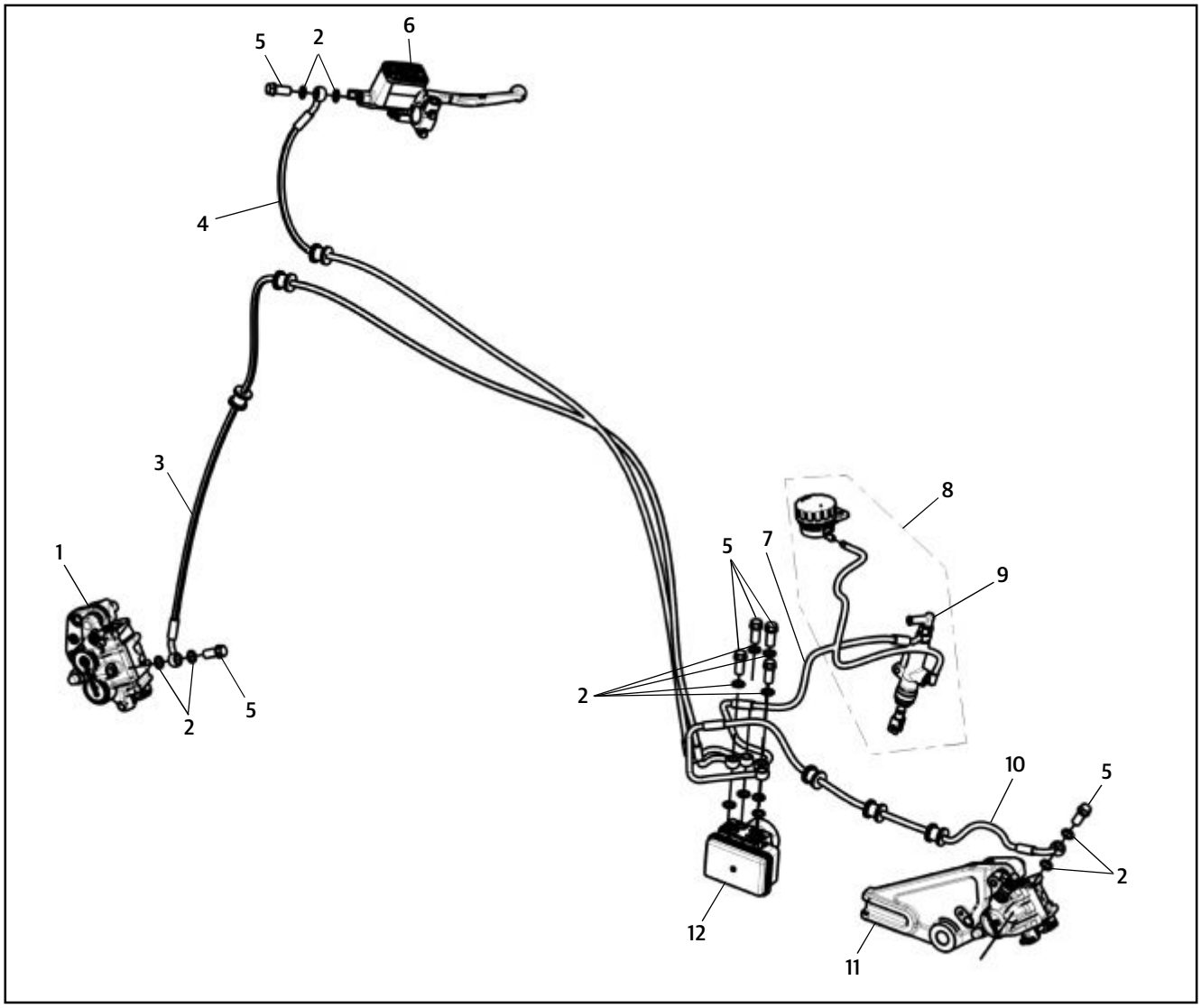
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.5	**Rear Swing Arm** **Bullet Classic EFI / Bullet EFI** ■ Locate the swing arm assembly from the frame. ■ Install the Hex bolt on the other end of the swing arm along with end cups, spacer, celcon bushes, washer, hex nut.	**Hex Nut M16** **Double End Spanner 24 mm**  

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.5	**Rear Swing Arm** **Continental GT** ■ Loosen the Hex bolt on the other end of the swing arm along with needle bearings, oil seals, spacers, end cups, spacer swing arm, hex nut. ■ Gently remove the swing arm assembly from the frame.	   

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.5	**Rear Swing Arm** **Continental GT** ■ Locate the swing arm assembly to the frame. ■ Install the Hex bolt on the other end of the swing arm along with needle bearings, oil seals, spacers, end cups, spacer swing arm, hex nut.	  

EXPLODED VIEWS

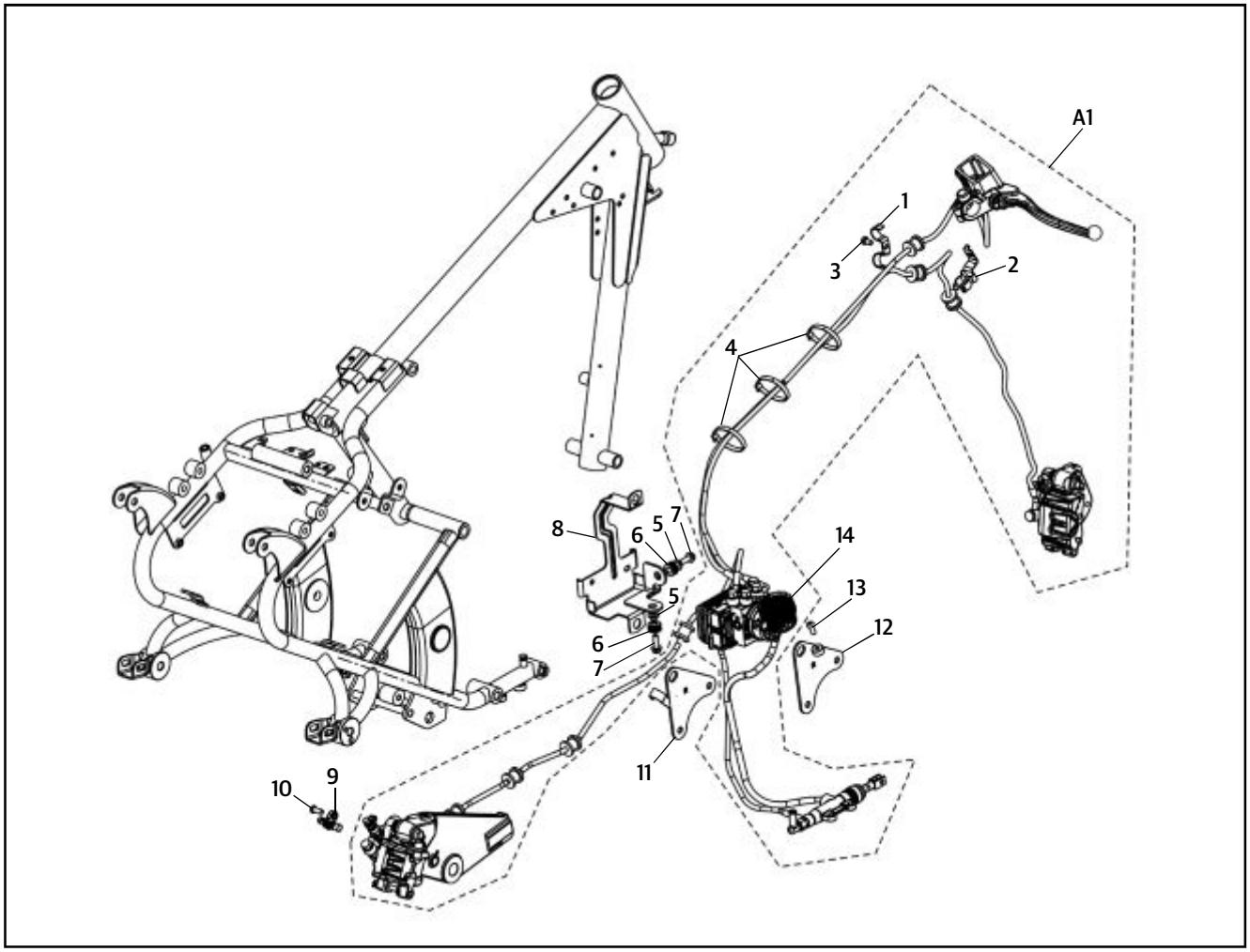
BULLET EFI, BULLET CLASSIC EFI - ANTILOCK BRAKE SYSTEM



S.NO.	DESCRIPTION	QTY.
A1	ABS System	1
1	Front Caliper	1
2	Copper Washer-Rear Disc	16
3	Brake Hose Assy-ABS To Front Caliper	1
4	Brake Hose Assy - ABS To Front Master Cylinder	1
5	Banjo Bolt-Rear Disc(Black)	7
6	Master Cylinder-Front	1

S.NO.	DESCRIPTION	QTY.
7	Brake Hose Assy-ABS To Rear Master Cylinder	1
8	Master Cylinder Assy Comp -Rear	1
9	Rear Brake Switch	1
10	Brake Hose Assy-ABS To Rear Caliper	1
11	Caliper Assy-Rear	1
12	ABS Modulator	1

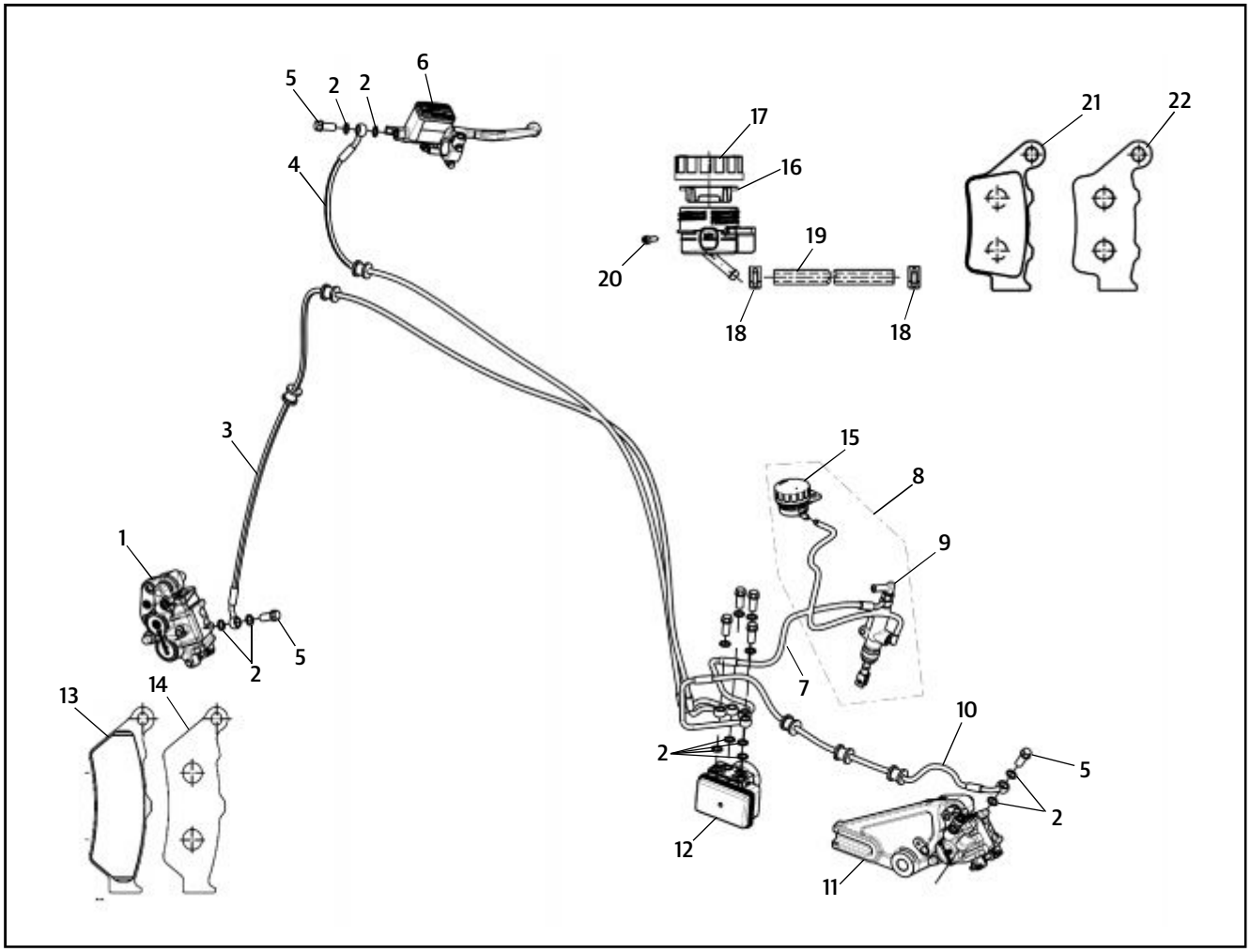
BULLET EFI & CLASSIC MODELS - ABS MOUNTING TO FRAME



S.NO.	DESCRIPTION	QTY.
A1	ABS System	
1	Clamp Brake Hose	1
2	Clamp Front Caliper Hose	1
3	Hex Bolt M6 X 1 X 10	1
4	Wire Strap	1
5	Sleeve	2
6	Rubber Grommet	2
7	Flanged Hex Bolt M6 X 1 X 20	1

S.NO.	DESCRIPTION	QTY.
8	Bracket Assy - ABS & Cover	1
9	Wheel Speed Sensor	1
10	Hex Button Head Screw M6 X 1 X 16	1
11	Engine Mounting Plate - Rear LH Black	1
12	Engine Mtg Plate - Rear RH Black	1
13	Hex Button Head Screw M6 X 1 X 16	1
14	ABS Modulator	1

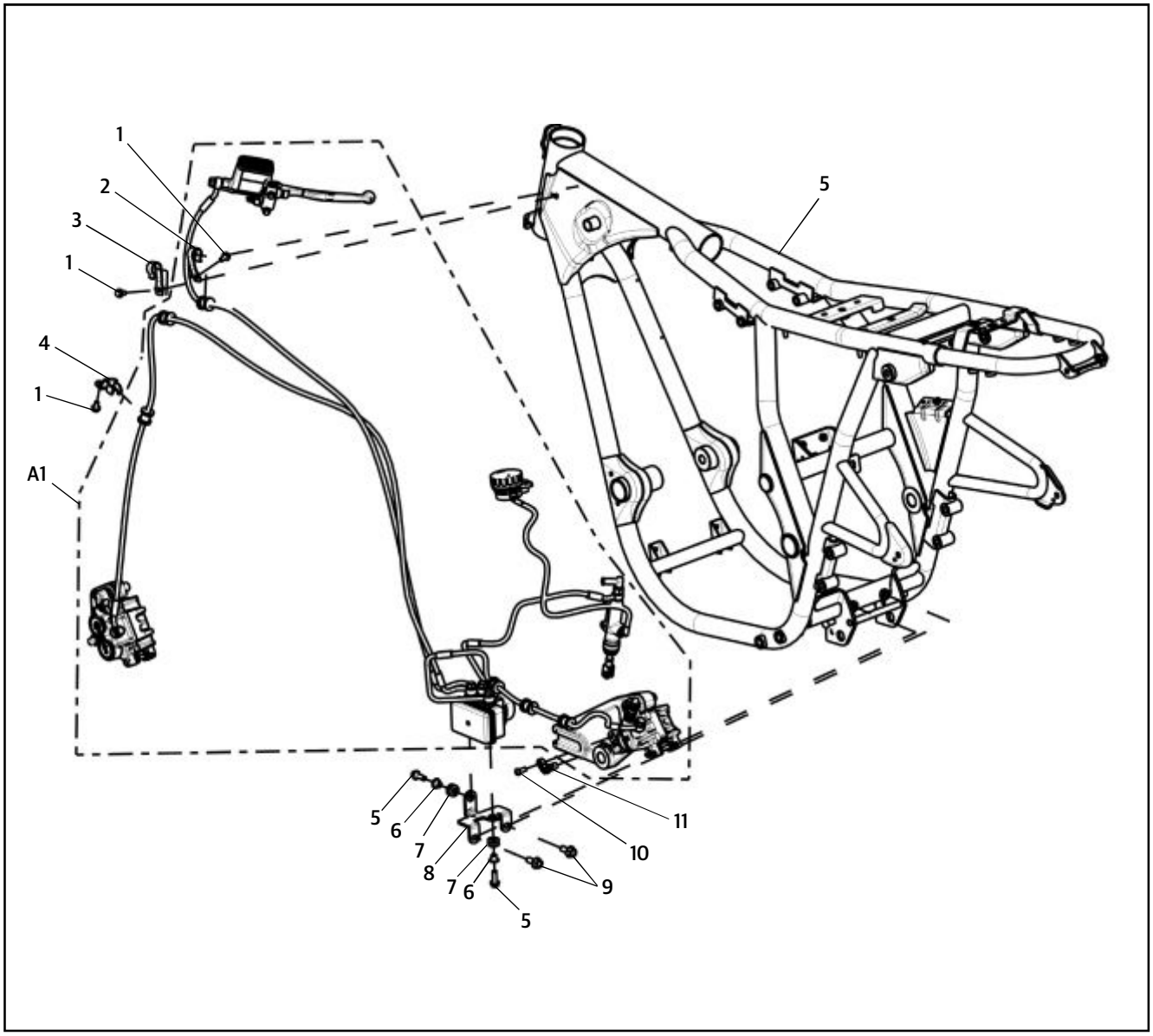
CONTINENTAL GT - ANTILOCK BRAKE SYSTEM



S.NO.	DESCRIPTION	QTY.
A1	Abs System	1
1	Front Caliper	1
2	Copper Washer	16
3	Brake Hose Assy-Abs To Front Caliper	1
4	Brake Hose Assy -Abs To Front Master Cyl	1
5	Banjo Bolt	7
6	Master Cylinder-Front	1
7	Brake Hose Assy-Abs To Rear Master Cyl	1
8	Master Cylinder Assy Comp -Rear	1
9	Rear Brake Switch	1
10	Brake Hose Assy-Abs To Rear Caliper	1
11	Caliper Assy-Rear	1

S.NO.	DESCRIPTION	QTY.
12	Abs Modulator	1
13	Brake Pad RH - Front Caliper	1
14	Brake Pad LH - Front Caliper	1
15	Reservoir (Threaded) - Rear	1
16	Diaphragm	1
17	Reservoir Cap	1
18	Clip (Reservoir)	1
19	Reservoir Hose (Rubber)	2
20	Hex.Socket Button Head Screrw M6X1	2
21	Pad- Rear Disc	1
22	Pad-Piston Side - Rear Disc	1

CONTINENTAL GT - ABS MOUNTING TO FRAME

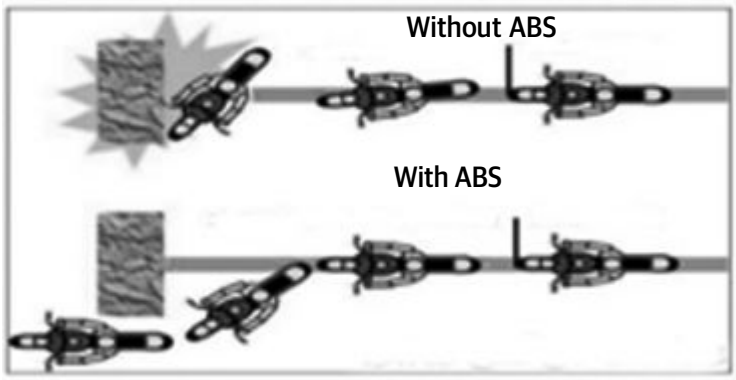


S. NO.	DESCRIPTION	QTY.
A1	ABS System	1
1	Flanged Hexoganal Bolt M6X1X10	3
2	Clamp RH - Brake Hose	1
3	Clamp LH - Brake Hose	1
4	Clamp Front - Brake Hose	1
5	Flanged Hexoganal Bolt M6X1X20	2

S. NO.	DESCRIPTION	QTY.
6	Sleeve	2
7	Grommet	2
8	Bracket - ABS Modulator	1
9	Flanged Hex Bolt M8X20	2
10	Hex. Socket Button Head Screw M6X1x16	1
11	Wheel Speed Sensor - ABS	1

Anti-Lock Braking System (ABS) fitted in Royal Enfield motorcycles, is a safety system to help the front and rear wheels maintain traction with the road surface in the event of sudden application of brakes by the rider at high speeds.

It helps prevent the brakes from "locking" the wheels which can potentially cause the motorcycle to skid and result in loss of control and an accident.



WORKING PRINCIPLE

During hard application of brakes, the sudden increase in the hydraulic force to the front and rear brakes are controlled by a hydraulic pressure moderator which constantly reduces the excessive force on the hydraulic system thereby ensuring the brake pads do not lock the brake discs. The moderator is controlled by an Electronic control unit which not only receives real time inputs on the wheel speeds through sensors fitted near the wheel hubs but also provides inputs to the valves in the moderator to regulate the hydraulic pressure such that the brake pads do not lock the brake disc and cause the motorcycle to skid during emergency brake applications.

CAUTION:

While ABS assists in improved vehicle control during braking, decreased stopping distances on dry and graveled surfaces, it may not be very effective in wet, snow covered, off road, conditions, loose gravel surfaces, hilly roads etc., since the traction of the wheel itself will be very minimal in these conditions.

As far as possible, all braking, including emergency braking should be done with the motorcycle upright and in a straight motion. Avoid hard braking when banking heavily at great speeds.

Caution must be exercised by the rider for safe riding of the motorcycle and judge stopping distances required, depending on the speed at which the motorcycle is travelling.

As soon as the ignition and engine stop switch are switched 'ON', the ABS sign will light up. The lamp will remain 'ON' till the motorcycle attains a speed of 5 Kmph. (3MPH) and then switch 'OFF'. This indicates the ABS is working properly.

In the event the lamp does not switch 'OFF' and remains continuously 'ON' at higher speeds, it is recommended not to drive the motorcycle and get the brake system inspected and corrected through a nearest authorized Royal Enfield Distributor.

8.1 LOCATION OF THE ABS SYSTEM PARTS

1. ABS INDICATOR

Bullet EFI and Classic EFI

- Located inside the small meter in the head lamp casing alongside the EMS MIL and low fuel warning lamp.

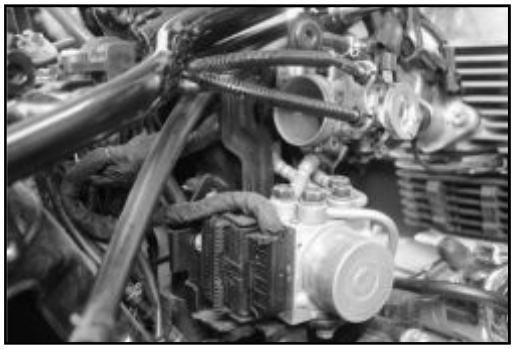
CONTINENTAL GT

- Located in the RPM meter in instrument cluster

2. MODULATOR

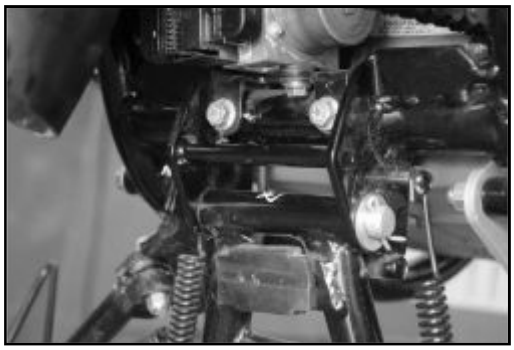
Bullet EFI and Classic EFI

- Located inside the cover near throttle body on the right side



CONTINENTAL GT

- Located above the centre stand on the frame



8.1 LOCATION OF THE ABS SYSTEM PARTS

3. ECU.

- Located adjacent to Modulator

4. FRONT BRAKE MASTER CYLINDER.

- Located on Handle bar RH side

5. FRONT WHEEL CALIPER.

- Located on the fork end LH side

6. WHEEL SPEED SENSOR - FRONT

- Located on the fork end LH side

8.1 LOCATION OF THE ABS SYSTEM PARTS

7. TONER RING - FRONT WHEEL.

- Located on front Hub centre (below brake disc)

8. REAR BRAKE MASTER CYLINDER

Bullet EFI and Classic EFI

- Located on the frame bottom on RH side (underneath engine)

CONTINENTAL GT

- Located on the frame right side near brake pedal

9. REAR HYDRAULIC FLUID RESERVOIR

- Located on the rear engine mounting brackets of Frame.

8.1 LOCATION OF THE ABS SYSTEM PARTS

10. REAR WHEEL CALIPER

- Located on swing arm LH side

11. WHEEL SPEED SENSOR - REAR

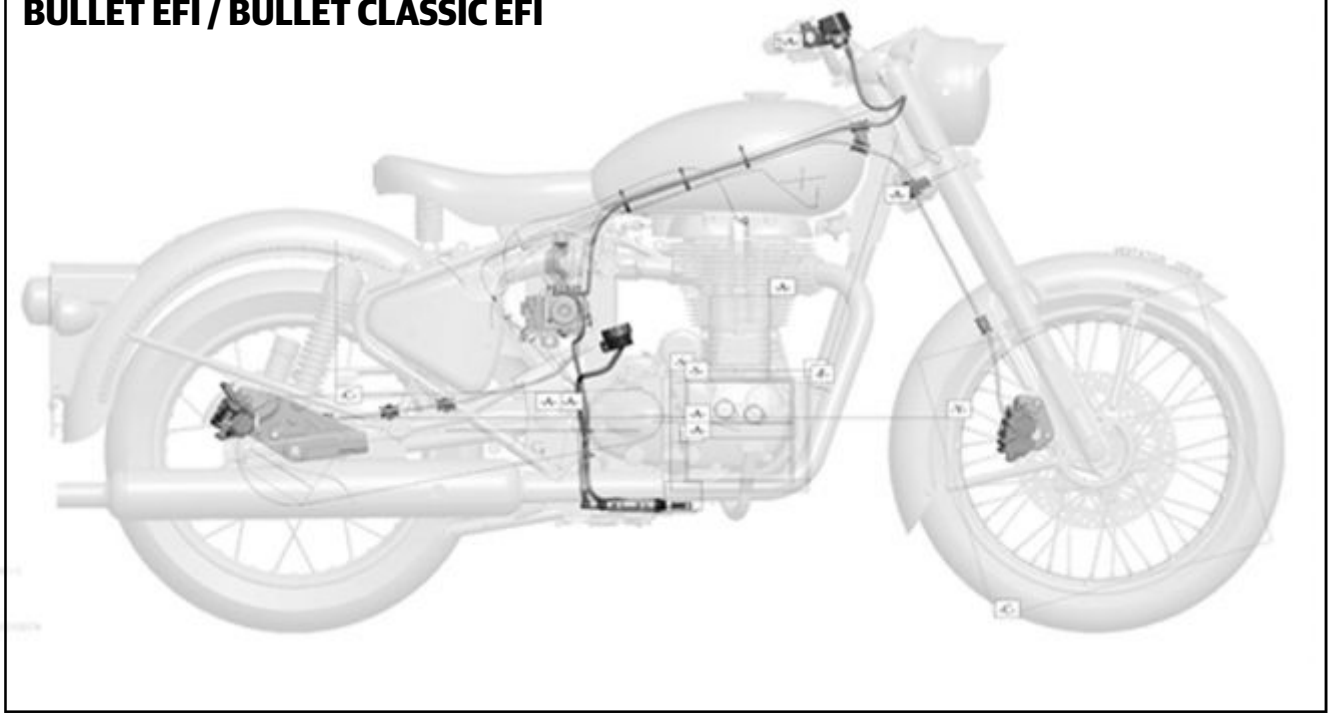
- Located on the rear caliper assembly mounting bracket

12. TONER RING – REAR WHEEL

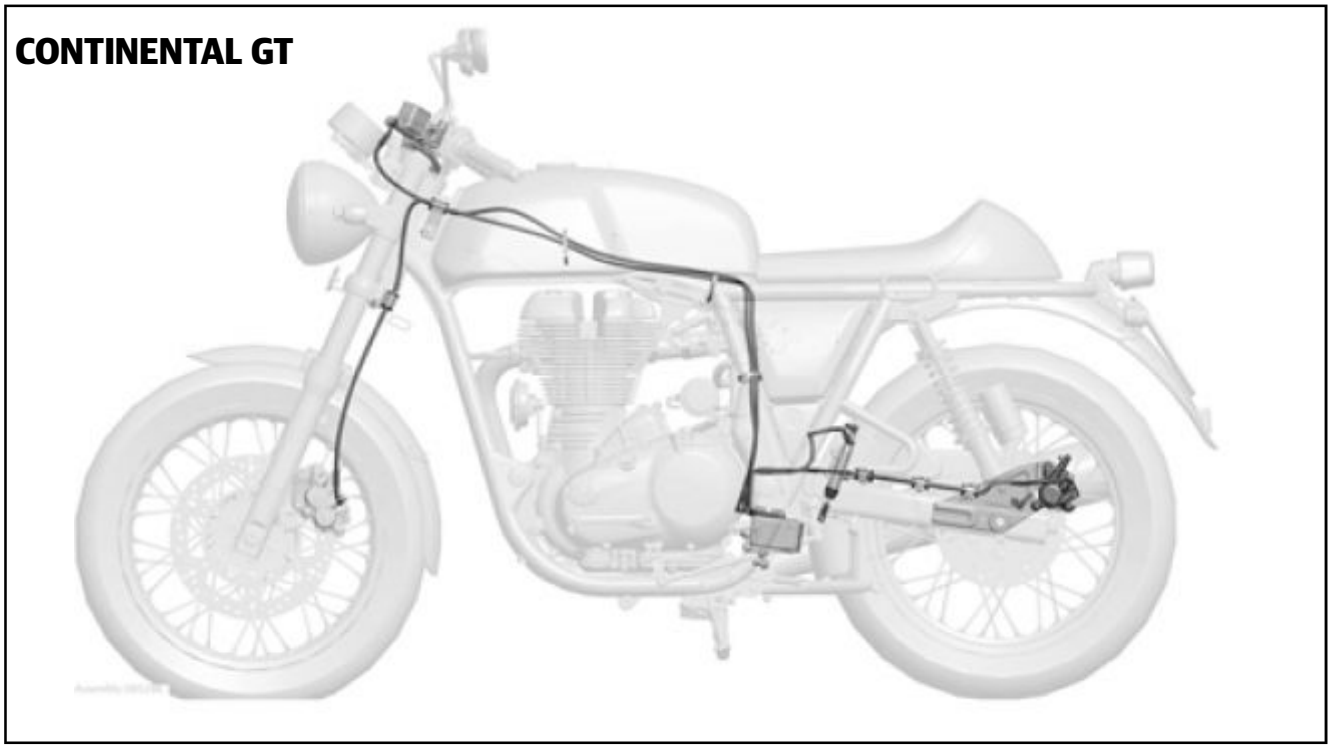
- Located on the rear hub left side below the brake disc

8.1 LOCATION OF THE ABS SYSTEM PARTS

BULLET EFI / BULLET CLASSIC EFI



CONTINENTAL GT



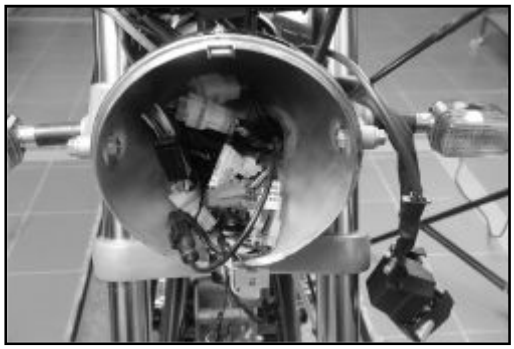
CAUTION :

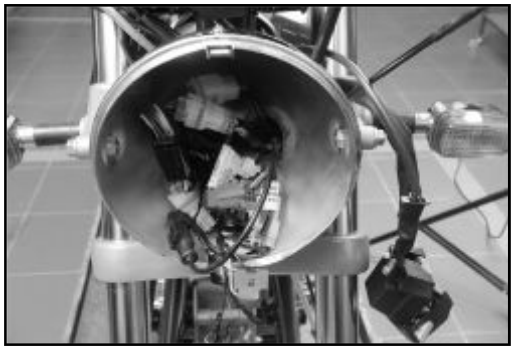
DO NOT REMOVE OR DISMANTLE ANY PART OF THE ABS SYSTEM - BRAKE HOSE CONNECTIONS, MODULATOR, ECU ETC AS IS WILL NOT ONLY AFFECT THE BRAKING EFFICIENCY SEVERELY BUT WILL ALSO DEACTIVATE THE MODULATOR AND THE ECU

DO NOT ATTEMPT TO REMOVE THE ECU OR THE ELECTRICAL CONNECTIONS FROM THE MODULATOR AS IT WILL ERASE THE MEMORY AND THE PROGRAMME.

IF FOR ANY REASON THE BRAKE HOSES OR THE MODULATOR HAS TO BE SERVICED, THEN THE ENTIRE HYDRAULIC FLUID SYSTEM BLEEDING HAS TO BE CARRIED OUT AND THE ECU HAS TO BE REPROGRAMMED.

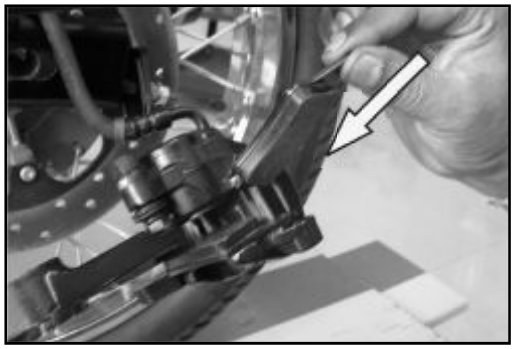
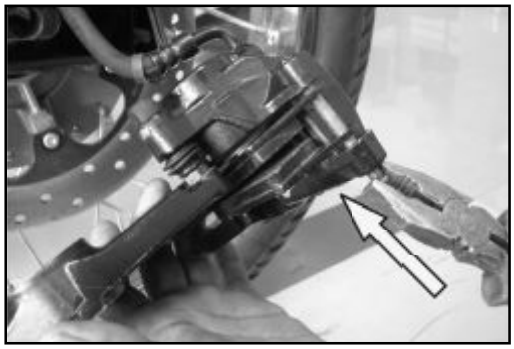
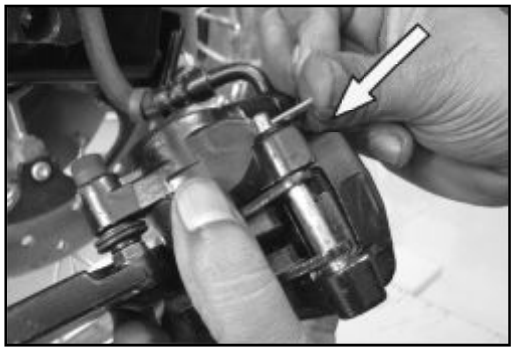
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.2	**ABS Modulator & ECU**	
	■ Drain out hydraulic brake fluid from the front and rear reservoirs and brake calipers by loosening the bleeding screws in the front and rear calipers and gently pumping the brakes.	**CAUTION:** Brake fluid is extremely corrosive and hence please take care not to spill on any part of the motorcycle
	■ Remove the ABS cover from the RH side **(Bullet & Classic Models Only)** by loosening 2 Hex bolts on the sides.	**Hex Bolt: M6** **Double end spanner: 10mm** 
	■ Loosen and remove the 4 banjo bolts holding 4 brake hoses to the modulator.	
	■ Ensure Ignition switch and engine stop switch is in OFF position.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.2	**ABS Modulator & ECU** ■ Remove wiring coupler to the ABS ECU and gently pull out ECU. ■ Remove 2 hex bolts on the sides and 1 hex bolt at the bottom, holding modulator to the mounting bracket. ■ Remove ABS assembly from the bracket.	**Hex Bolt: M6** **Double end spanner: 10mm**  

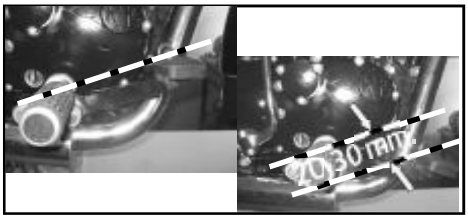
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.3	**ABS Modulator & ECU** ■ Locate ABS assembly to the bracket.	
	■ Install 2 hex bolts on the sides and 1 hex bolt at the bottom, holding modulator to the mounting bracket ■ Connect wiring coupler to the ABS ECU and gently locate out ECU.	**Hex Bolt: M6** **Double end spanner: 10mm** 
	■ Ensure Ignition switch and engine stop switch is in OFF position.	
	■ Locate and install the 4 banjo bolts holding 4 brake hoses to the modulator.	

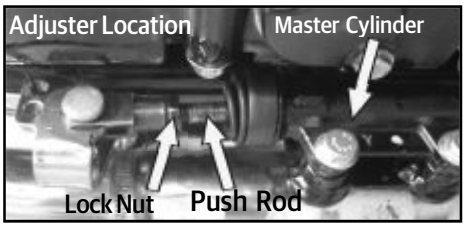
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.3	**ABS Modulator & ECU** ■ Locate the ABS cover on the RH side **(Bullet & Classic Models Only)** by installing 2 Hex bolts on the sides.	**Hex Bolt: M6** **Double end spanner: 10mm** 

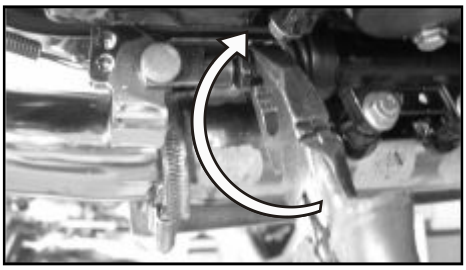
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.4	**Brake Pad Dismantling** ■ Remove the wooden piece / card board sheet in between the brake pads. ■ Remove the clip hanger from the caliper assembly by using combination plier. ■ Remove the pad pin from the caliper assembly by using combination plier. ■ Remove the worn out brake pad from the caliper assembly. ■ Clean the caliper assembly by dry / clean cloth.	    

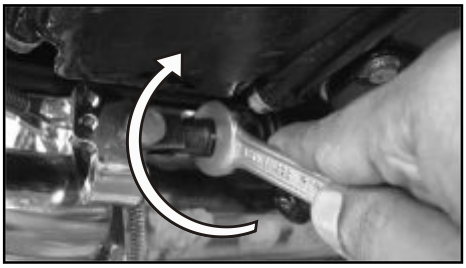
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.4	**Brake Pad Assembling** ■ Place the new brake pad into caliper assembly as shown.	
	■ Insert the pad pin in caliper assembly by using combination plier.	
	■ Insert the clip hanger in caliper assembly.	
	■ Place the wooden piece / card board sheet in between the brake pads.	

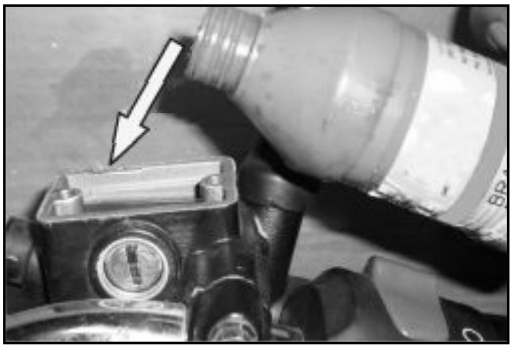
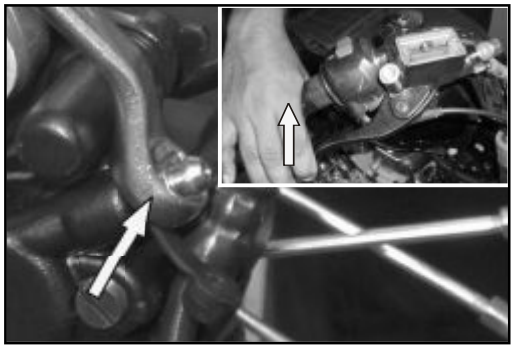
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.5	**Rear disc brake pedal free play Adjustment: (Models: Classic 500/Bullet 500/ Conti-GT)** ■ The recommended brake pedal travel is 7 to 11mm (C5/B5), 4 to 7 mm (GT) ■ Loosen the lock nut in Master cylinder push rod assembly. ■ Rotate the master cylinder push rod anti-clockwise to reduce the rear brake pedal free play. ■ Rotate the master cylinder push rod clockwise to increase the rear brake pedal free play. ■ After adjustment tighten the lock nut in master cylinder push rod assembly.	**NOTE :** Please Detach brake returns spring from Master Cylinder (Applicable for only Classic 500/ Bullet 500 Models) **Hex lock nut M8** **Double end spanner 13mm.** **NOTE :** Please connect Rear Brake pedal returns spring to Master Cylinder.

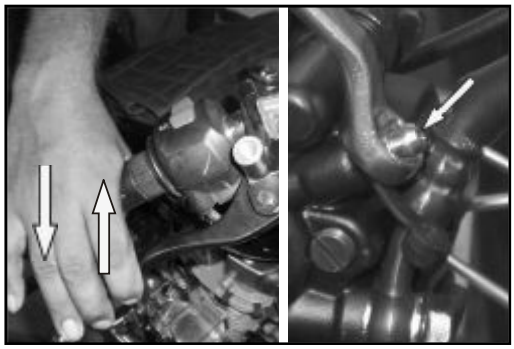


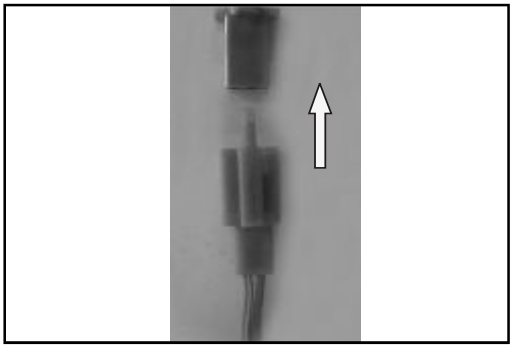


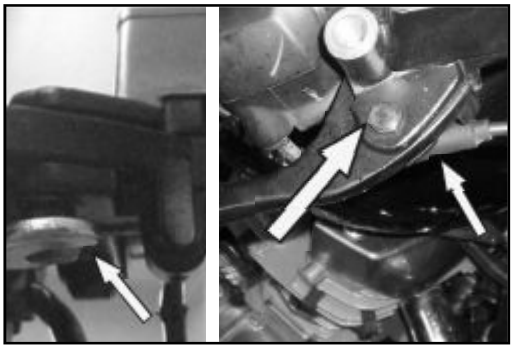
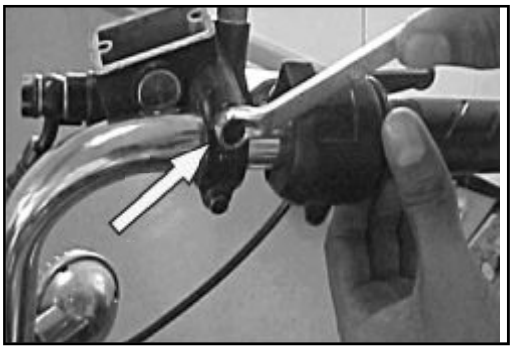
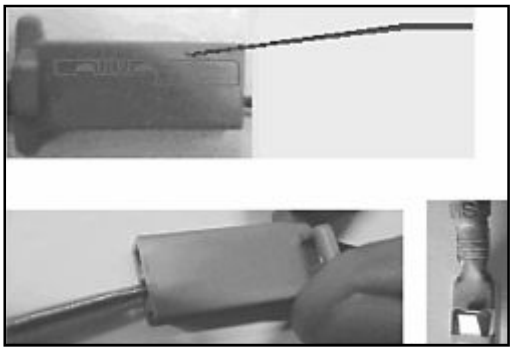


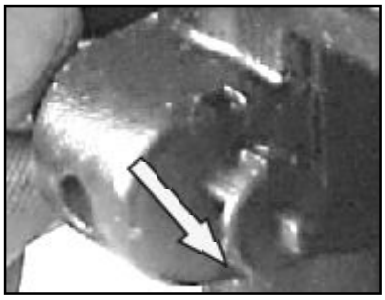
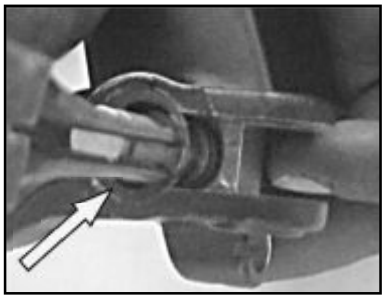
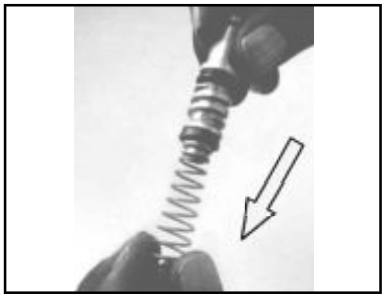


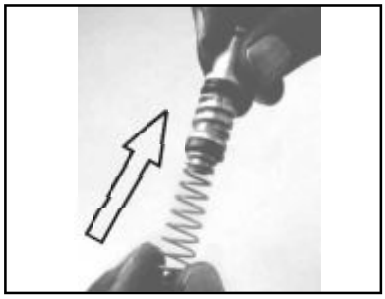
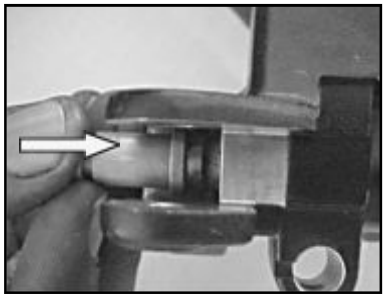
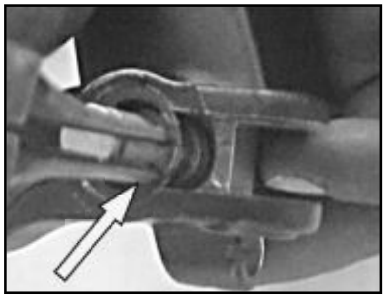
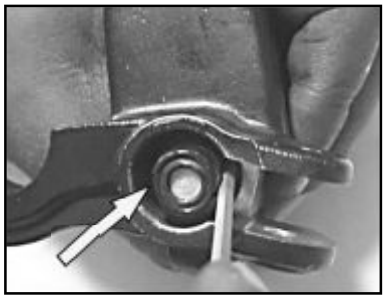
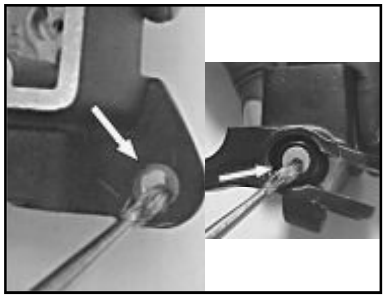
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.6	**Disc Brake Bleeding** ■ Dust cap on the bleeder screw to be removed from the Caliper assembly. Connect the transparent plastic tube with bleed screw and immerse it in a glass / transparent plastic jar which is filled with clean brake fluid. ■ Ensure that the plastic tube is below the fluid surface throughout the operation. This will prevent atmospheric air from getting sucked into caliper unit. ■ Fill the Master cylinder with 'Fresh brake fluid' from a sealed container till "MAX" level. ■ Open the bleed screw to ½ a turn.	**NOTE:** As these Euro IV Bikes are fitted with ABS, the Bleeding process consumes more time since the bleeding process has to start from master cylinder to ABS and then to Brake Caliper which consumes more time than usual bleeding time.   

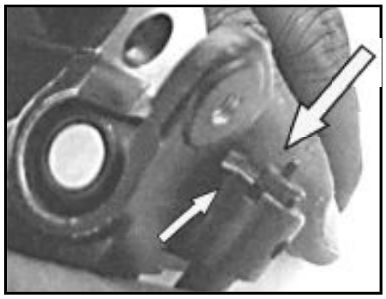
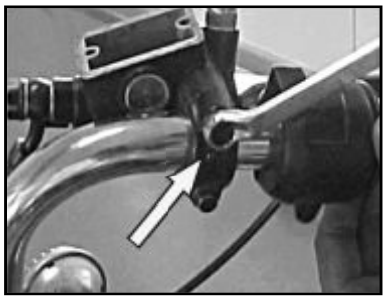
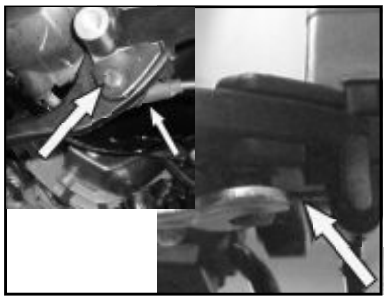
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.6	**Disc Brake Bleeding** ■ Fully press the brake lever. ■ After then tighten the bleed screw. ■ Now release the brake lever. ■ Then gently stroke the lever until, the pressure is felt at lever to a satisfactory limit and then tighten the bleed screw.	**NOTE :** Always tight top mounting bolt and then bottom mounting bolt. Check the entire system for leakage before using the vehicle on road & also ensure tightening torque of Bleed screw, Banjo bolt, Bolt clamps, screws and Caliper mounting bolts. **Torque: 4 to 7 Nm** **Hex bolt M5** **Ring Spanner 8 mm** **Torque - 12 Nm** 
	■ Repeat the above steps in a sequential manner until the fluid pressure is felt in the brake lever.	**WARNING :** Wipe out Brake fluid which is spilled on the parts thoroughly otherwise colour parts may get fade. 
	■ Relocate & tighten the Master Cylinder assembly to the original location of the handle bar and tighten the Bolt clamp	**CAUTION :** Don't Mix DOT 4 & Above Brake Fluid together 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.7	**Disassemble of Master Cylinder** ■ Connect one end of a lengthy tube to the Caliper bleed screw and the another end to a container.	
	■ Unscrew the bleed screw by 1 – 2 full turns and slowly pump the system by actuating the Lever until all the fluid is expelled, then tighten the screw.	**Hex nut M7** **Ring Spanner 11 mm** **Hex nut M8** **Double end spanner 14 mm** 
	■ Remove the rear view mirror.	
	■ Disconnect the Brake Switch coupler.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.7	**Disassemble of Master Cylinder** ■ Disconnect the Brake Hose by removing the Banjo bolt and Washers.	
	■ Remove the Nut - lever, Bolt - lever and then brake Lever.	**CAUTION :** Clean the Cover thoroughly before opening the Master cylinder reservoir. 
	■ Remove the Clamp bolts, Clamp and the Master cylinder from the handlebar.	**Hex Bolt M6** **Ring Spanner 8mm** **Hex Bolt M7** **Spanner 12 mm** **Hex Bolt M5** **Ring Spanner 8mm** 
	■ Remove the wire from the coupler by pressing the projection in terminal	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.8	**Assembly Of Master Cylinder** ■ Remove the Brake Switch.	
	■ Remove both Screws and the top cover.	
	■ Remove the Diaphragm plate and Diaphragm and empty out any remaining brake fluid by using syringe.	**CAUTION :** Clean Master cylinder bore, reservoir portion and Piston with seals, with clean new Brake fluid. Do not clean the rubber parts with petrol or any other gasoline product or water. **USE BRAKE FLUID ONLY.**
		
	■ Remove the Boot and the Circlip from the Master cylinder body.	
	■ Remove the Conical spring (piston compression spring).	

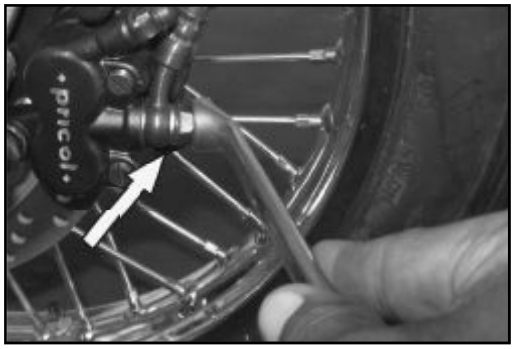
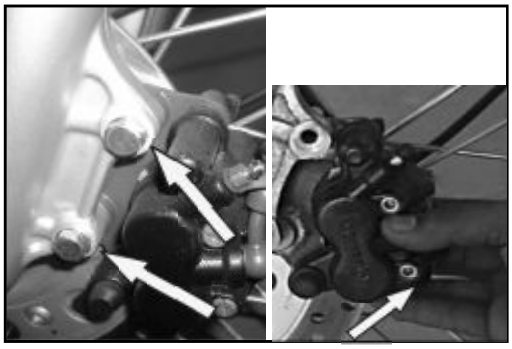
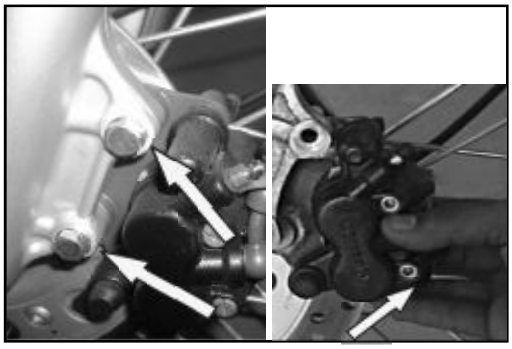
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.8	**Assembly Of Master Cylinder** ■ Assemble the conical spring (compression) with the piston. Smear the piston, seals and cylinder bore with clean brake fluid.	**Special Tool: Circlip removal tool** 
	■ Then assemble the piston sub-assembly by gently pressing into the bore.	
	■ Assemble the circlip into the groove of the master cylinder. Ensure that circlip is seated inside the groove properly.	
	■ Assemble the rubber Boot.	**CAUTION:** Do not use tools with sharp ends. 
	■ Apply Silicon grease on the Lever pivot hole and on the Piston surface	

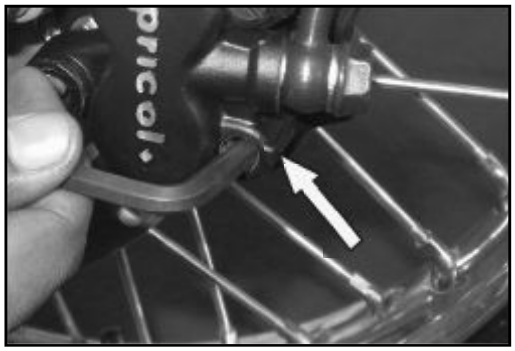
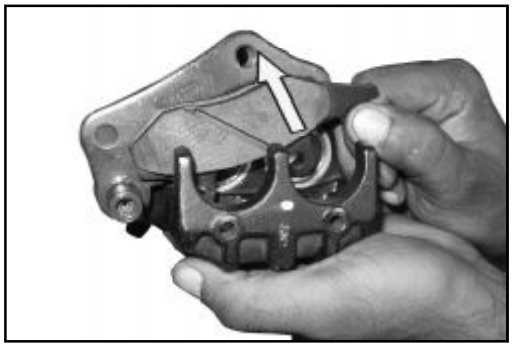
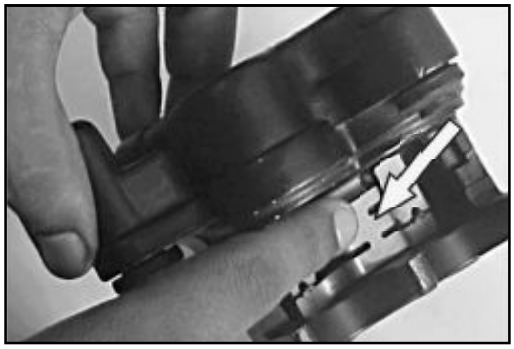
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.8	**Assembly Of Master Cylinder** ■ Assemble the Brake Switch. ■ Ensure that the projection of switch body correctly seats in the slot provided. Assemble the Coupler Terminal and ensure proper locking of wires. ■ Assemble the master cylinder assembly on the handle bar by using the clamp with ' UP' mark facing upwards. ■ Tighten the master cylinder assy. clamp top Bolt - Clamp first and then tighten the bottom Bolt. ■ Assemble the Lever, Bolt - lever and Nut-lever and tighten.	  **Torque values:** **Bolt-lever 6 Nm** **Nut-lever 6 Nm** **Hex Bolt M5** **Ring Spanner 8mm** 

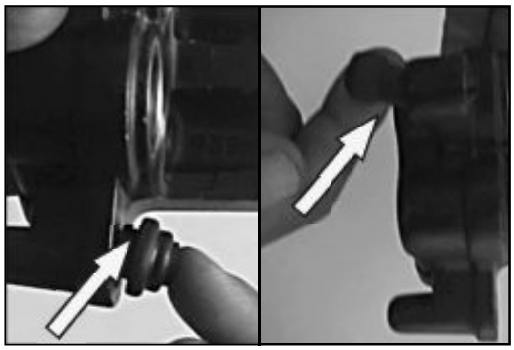
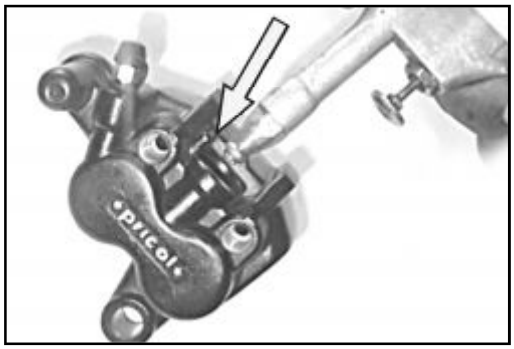
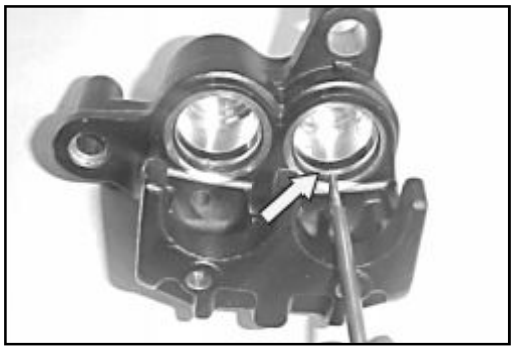
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.8	**Assembly Of Master Cylinder** ■ Connect the Brake Hose to Master cylinder by Banjo bolt with new Washers and then tighten the Banjo bolt Torque 3.5 KG-M. ■ Connect the Switch connectors properly. ■ Fill the brake fluid to the Upper level mark and bleed the system. Then assemble the Diaphragm, diaphragm plate and Cover. Tighten screws gently. ■ Assemble the rear view mirror.	**Hex Bolt M8** **Ring Spanner 13 mm** **Torque 35 Nm**  **Hex nut M8** **Double end spanner 14 mm** **Torque 15 Nm** 

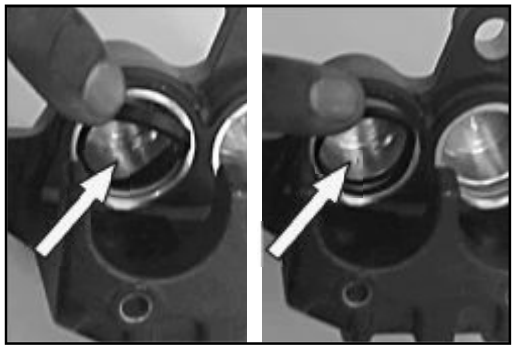
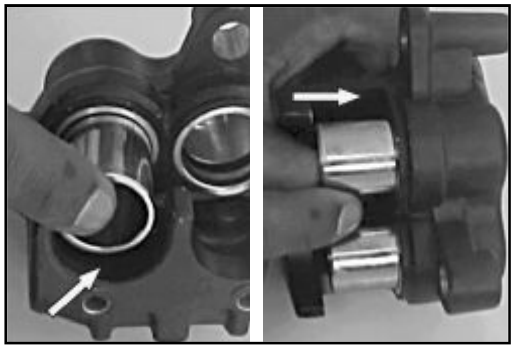
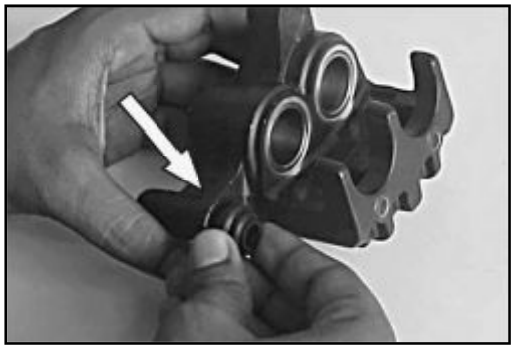
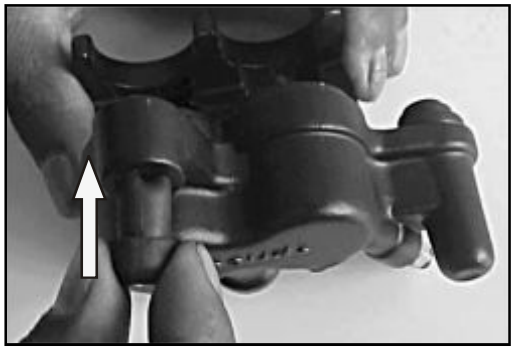
GENERAL INSTRUCTIONS – DISC BRAKE

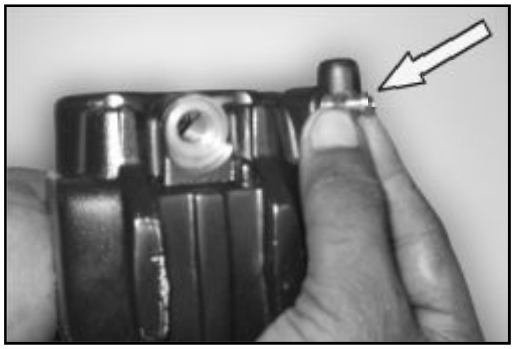
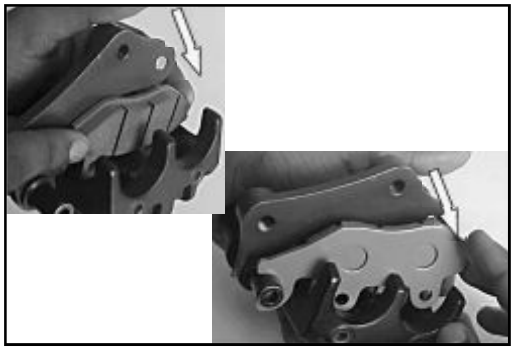
- Check, monthly or every 2000 kms., the Brake fluid level through the Sight-glass whether it is above the 'MINLINE' mark. While checking, turn the handle bar straight, until the reservoir is horizontal.
- Never mix different types of brake fluids. (DOT 4 & ABOVE Together)
- Do not clean the rubber parts with petrol or any other gasoline product or water. Use clean brake fluid only.
- In case of water contamination of Brake fluid, drain the fluid completely, refill the system and bleed.
- Do not top up brake fluid above "Max" level to avoid front wheel binding problem
- Check periodically whether the Disc has been contaminated with oil, brake fluid or grease and clean contaminated Disc with a high quality brake-degreasing agent.
- Always keep the disc clean and dry at all times for the brakes to work at peak efficiency.

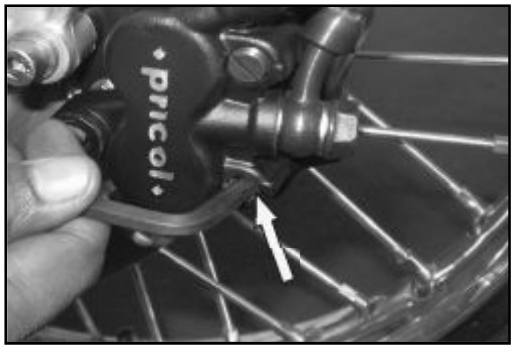
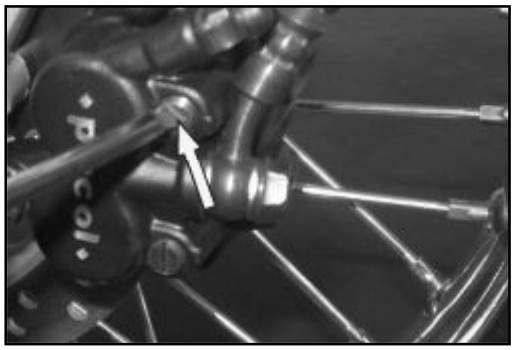
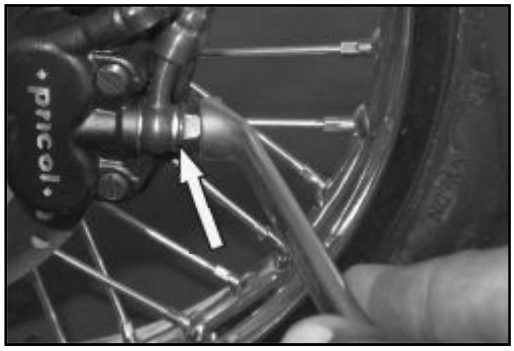
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.9	**Brake Caliper** ■ Disconnect the brake hose by removing the banjo bolt along with sealing washers at the wheel caliper end. ■ Gently pump the brake lever till the hydraulic oil is fully flushed out of the master cylinder and the hose.	**Hex bolt 12 mm** 
	■ Loosen both the Caliper mounting bolts on the fork end and remove the caliper.	**Hex Bolt 13 mm GT** **Hex Bolt 12 mm C5/B5** **Socket Spanner - 13mm/ 12mm** 
8.10	**Brake Pads** ■ Loosen both the Caliper mounting bolts on the fork end and remove the caliper.	**Hex Bolt 13 mm GT** **Hex Bolt 12 mm C5/B5** **Socket Spanner - 13mm/ 12mm** 
	■ Remove the Grub screw on the brake caliper	**Screw 11 mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.10	**Brake Pads** ■ Loosen and remove 2 hex socket head screws from the caliper body	**Hex Bolt 13 mm GT** **Hex Bolt 12 mm C5/B5** **Socket Spanner - 13mm/ 12mm**  
	■ Remove the brake pad from Caliper Assembly.	
	■ Remove the Pad tensioner spring plate.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.11	**Pistons & seals from caliper** ■ Remove Mounting Bracket from the Caliper Assembly. ■ Remove the Bellow & Boot. ■ Position the caliper body with the Pistons down and apply small squirts of air pressure to the fluid inlet hole to remove the Pistons.	**CAUTION:** Do not use high pressure air or bring the nozzle too close to the inlet. Place a shop towel over the pistons to prevent the pistons from becoming projectiles. Push the Dust seals and Piston seals in and lift them out using a blunt tool. Care should be taken to avoid any damage on the bore of the sliding surface. **CAUTION:** Enough care should be taken to avoid damages of the piston O.D. while servicing / handling. Remove the Bleed Screw    

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.11	**Pistons & seals in caliper** ■ Coat clean brake fluid on new Dust seals and Piston seals and install them in the sealgrooves of the caliper body. ■ Coat the caliper cylinders and Pistons withSilicon grease or clean brake fluid and Install the pistons into the caliper body with the dished end facing inwards.	   

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.12	**Brake pads** ■ Install the Pad tension spring plate into the Caliper body. ■ Assemble Bleed screw into caliper body. ■ Assemble the Mounting Bracket with caliper Body. ■ First install the pad near to the piston and then assemble other pad.	   

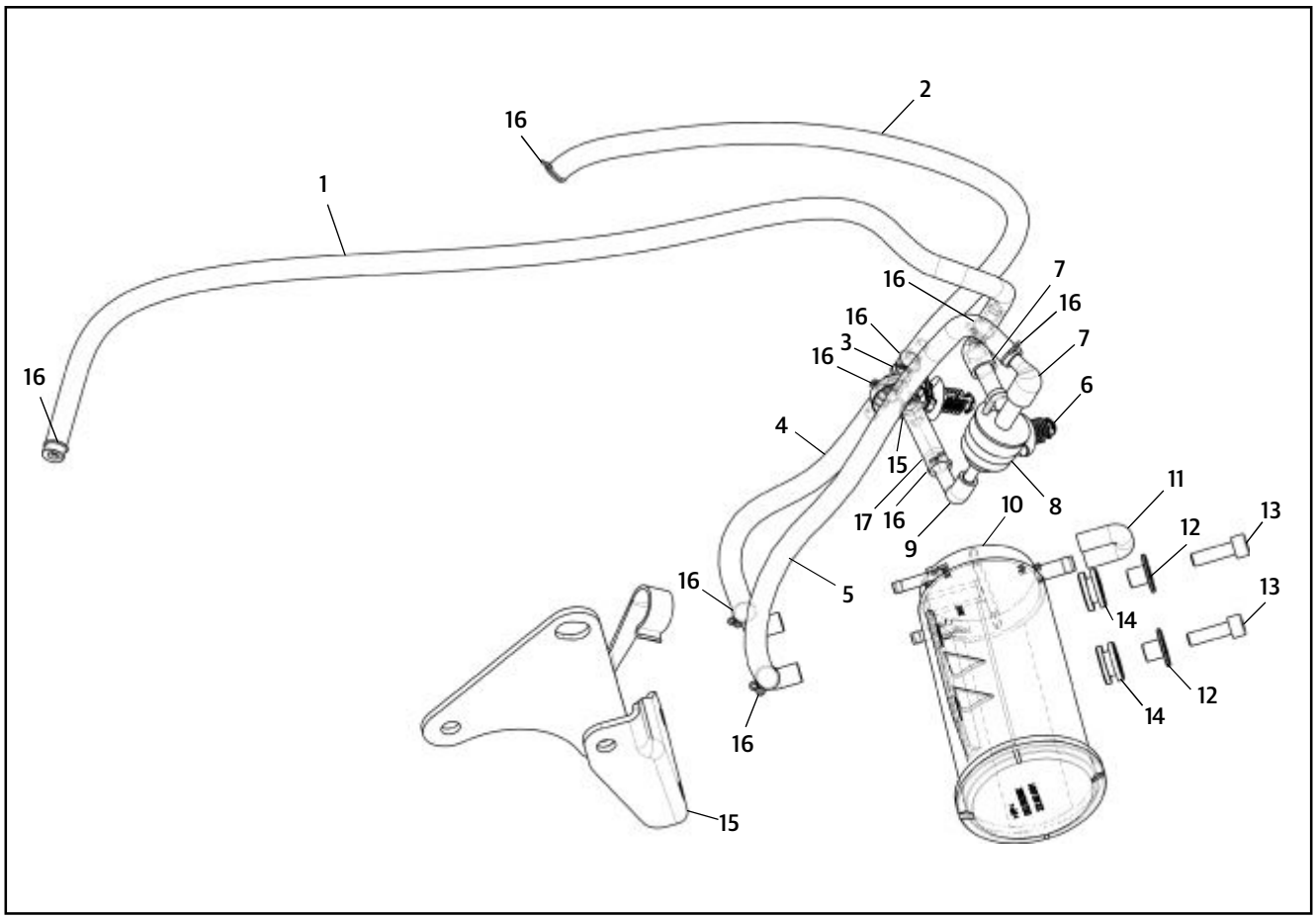
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.12	**Brake pads** ■ Apply Silicon grease on the Pin OD and then assemble the Pin bolt by pressingbrake pads into caliper body. ■ Mount the Caliper assembly into Fork andtighten the Mounting bolts. ■ Tighten the Pin bolts ■ Install the Grub screw and tighten ■ Connect the brake hose to the caliper with New sealing copper washer and then Tighten the Banjo bolt. ■ Fill the brake fluid and bleed the hydraulic brake system.	**Torque 17 Nm** **Torque 25 Nm** **Torque 35 Nm**    

ABS (ANTI-LOCK BRAKING SYSTEM) EFI TROUBLE SHOOTING CODES

S.No.	P Codes for ABS	Components monitored and malfunction type
1	5043 H	Front wheel speed sensor Disconnection/ground Short/Uz Short
2	5042 H	Front wheel speed sensor malfunction – Plausibility
3	5045 H	Rear wheel speed sensor Disconnection/ground Short/Uz Short
4	5044 H	Rear wheel speed sensor malfunction – Plausibility
5	5025 H	Deviation between Wheel speeds (WSS_GENERIC)
6	5017 H	Front Inlet Valve malfunction (EV)
7	5018 H	Front Outlet Valve malfunction (AV)
8	5013 H	Rear Inlet Valve malfunction (EV)
9	5014 H	Rear Outlet Valve malfunction (AV)
10	5035 H	Pump Motor Malfunction
11	5019 H	Valve Relay malfunction (Failsafe relay)
12	5055 H	ECU malfunction
13	5052 H	Power Supply Malfunction (Low Voltage)
14	5053 H	Power Supply Malfunction (High Voltage)
15	5122 H	Varcode EEPROM ReadError
16	5223 H	VarCode EEPROM Out Of Range
17	5331 H	Front Wheel Pressure sensor ohmic fault
18	5332 H	Front wheel pressure sensor offset/Test Pulse/POT fault
19	5333 H	External Supply for Pressure sensor failure

EXPLODED VIEWS

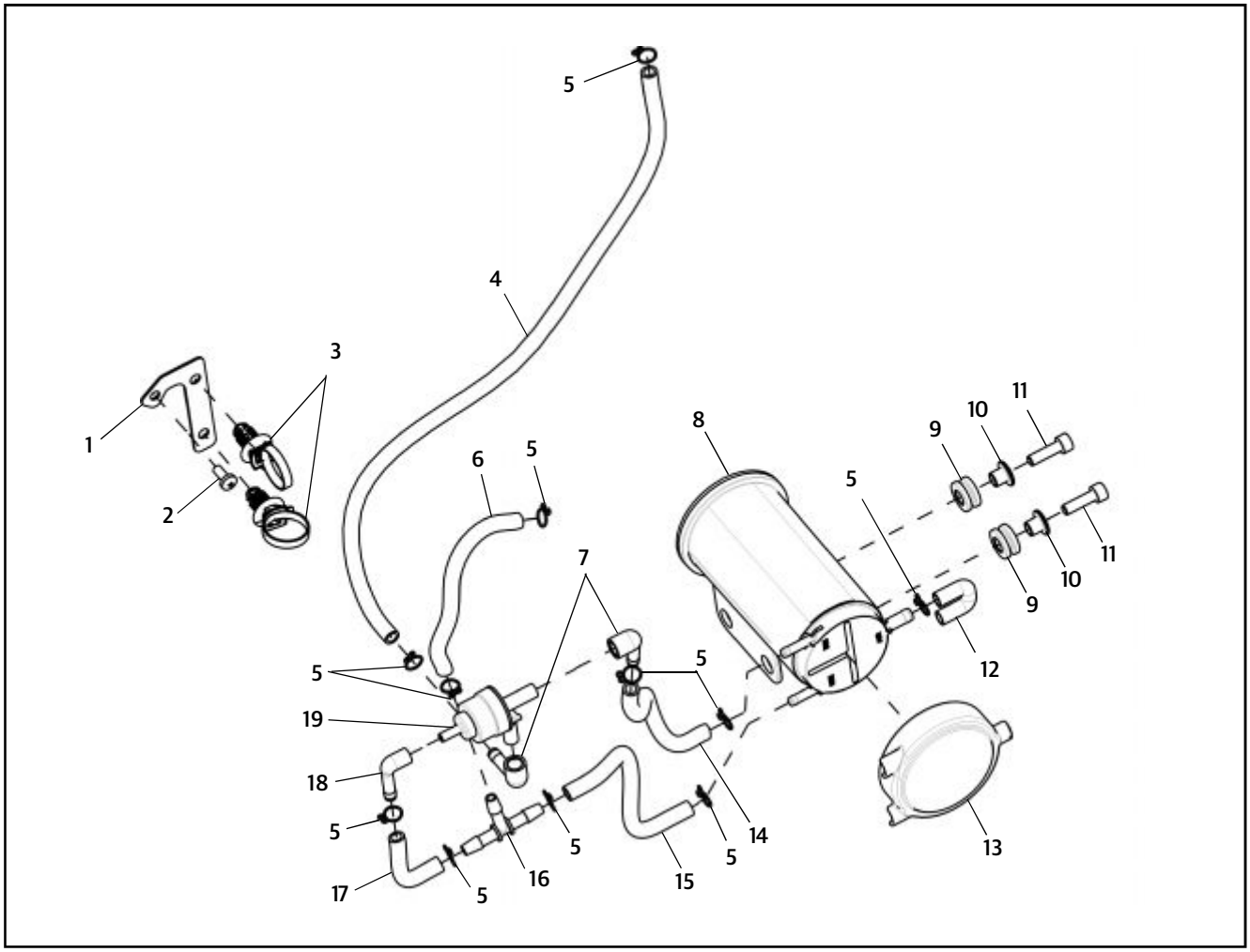
BULLET EFI, BULLET CLASSIC EFI



S.NO.	DESCRIPTION	QTY.
1	Hose Purge Valve To Tank	1
2	Hose T Connector To Throttle Body	1
3	T Connector	1
4	Hose T Connector To Canister	1
5	Hose Purge To Canister	1
6	Cable Clip Evap	2
7	Adaptor Purge Valve LH	2
8	Purge Valve	1
9	Adaptor Purge Valve RH	1

S.NO.	DESCRIPTION	QTY.
10	Canister	1
11	Hose Canister Vent	1
12	Bush Pav	2
13	Hex.Socket Hd.Cap Screw,M6 X 20	2
14	Grommet	2
15	Bracket Assy Canister Mtg	1
16	Wire Clip	11
17	Hose T Connector To Purge Valve	1

CONTINENTAL GT



S.NO.	DESCRIPTION	QTY.
1	Bracket-Purge Valve	1
2	Pan Head Screw M5 X 12	1
3	Cable Clip Evap	2
4	Hose-Purge Valve To Tank(GT)	1
5	Clip- Evap Hoses	10
6	Hose-T-Connector To Throttle(GT)	1
7	Adaptor Purge Valve LH	2
8	Canister Assy	1
9	Grommet	2
10	Sleeve	2

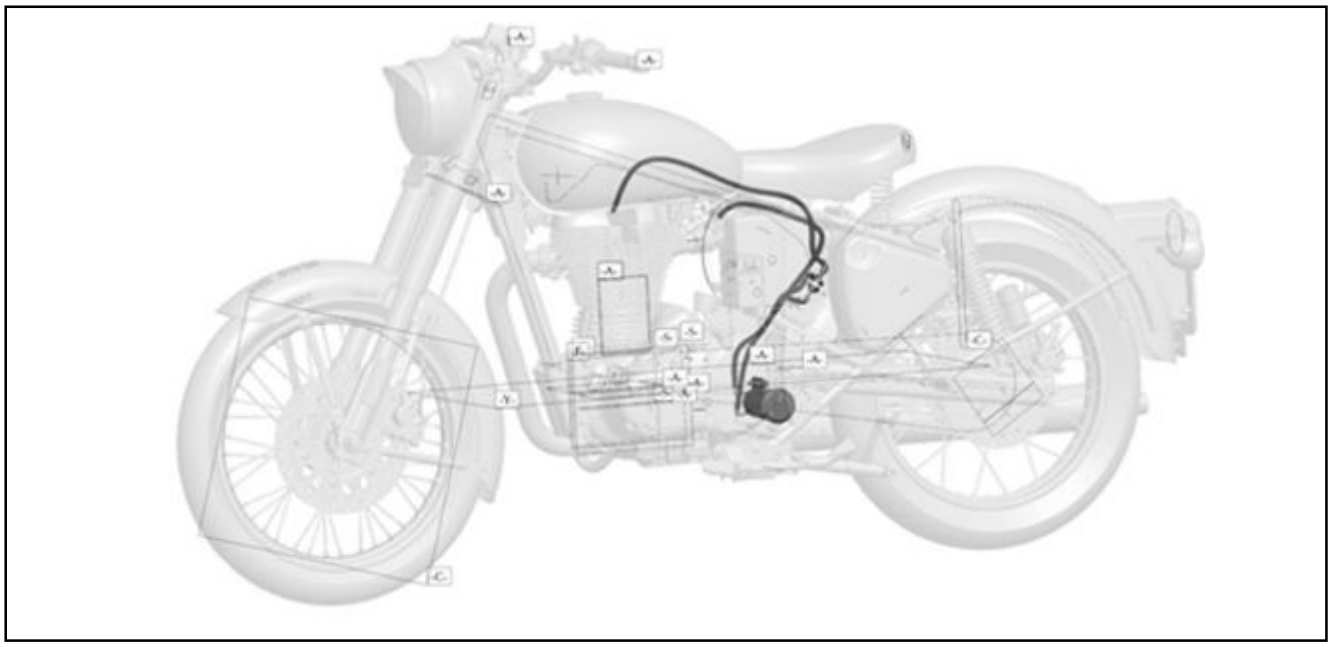
S.NO.	DESCRIPTION	QTY.
11	Hex.Socket Hd.Cap Screw,M6 X 20	2
12	Hose Canister Vent	1
13	Canister Cover	1
14	Hose- Purge Valve To Canister(GT)	1
15	Hose T-Connector To Canister(GT)	1
16	T – Connector	1
17	Hose -Purge Valve To T-Connector(GT)	1
18	Adaptor Purge Valve RH	1
19	Purge Valve	1

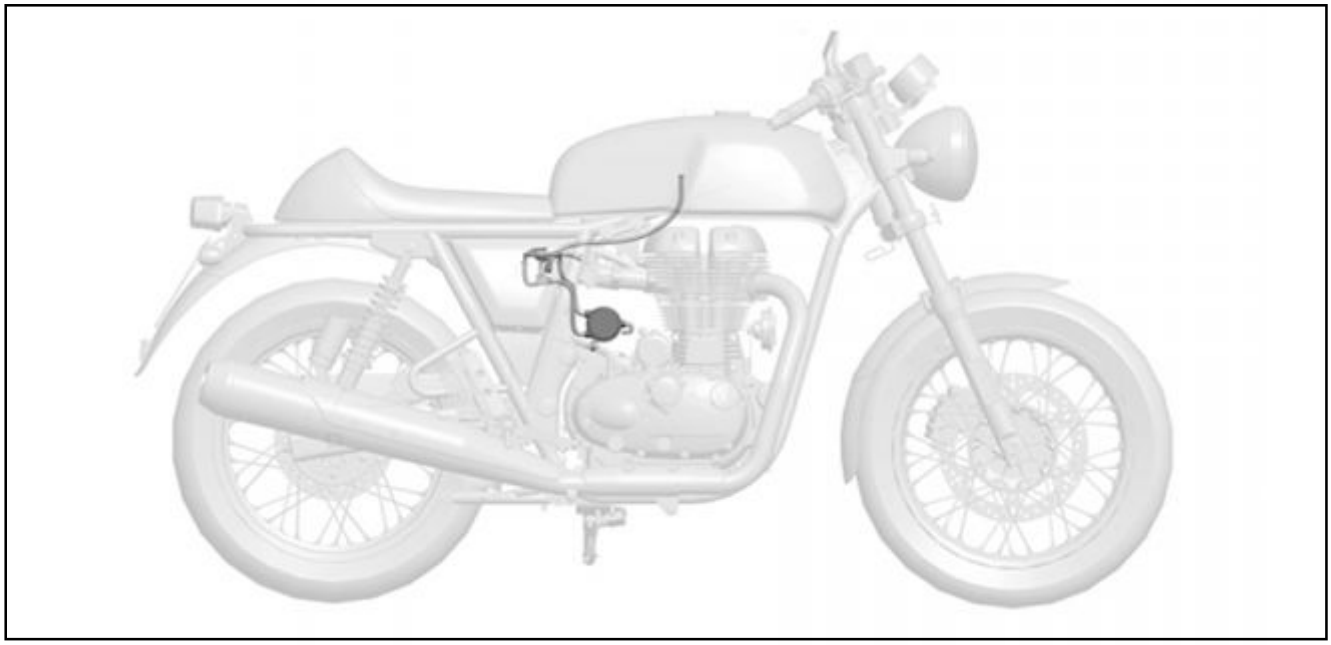
The Evaporative emission control system EVAP fitted in our motorcycles prevents gasoline vapors from escaping into the atmosphere from the vent holes provided in the fuel tank cap.

As soon as the motorcycle is parked after riding or parked under the sun, the hot radiation from the engine / sunlight causes the fuel in the tank to warm up and releases fuel vapors.

The EVAP system prevents these fuel vapors from escaping into the atmosphere and stored in a charcoal canister.

As soon as the engine is started, these vapours are purged from the canister, into the combustion chamber.



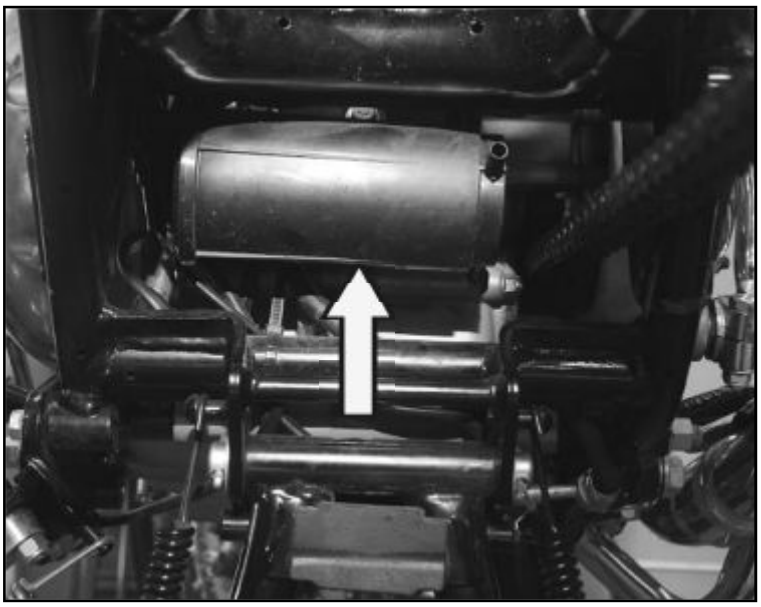


The system consists of a canister, purge valve, rubber hoses, connectors and a sealed fuel tank cap.

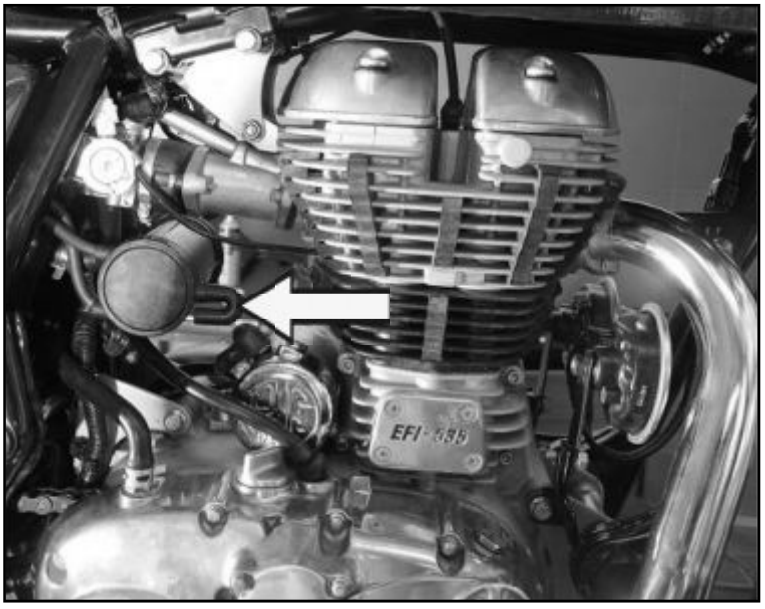
The canister is connected to the fuel tank to trap all the fuel vapours that build up in the fuel tank .

LOCATION OF EVAP

Located behind swing arm in Bullet & Classic EFI models.



Located below Throttle body in Continental GT models.



PURGE VALVE

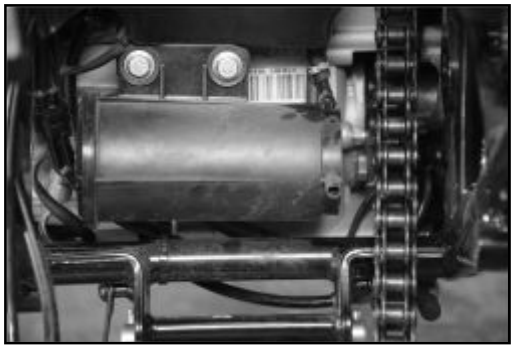
The purge valve is a mechanically controlled one way valve. When the engine is off, the purge valve is closed. When the engine is started, the vacuum created in the suction port is used to open this one way valve and allow the vapors to go into the inlet port.

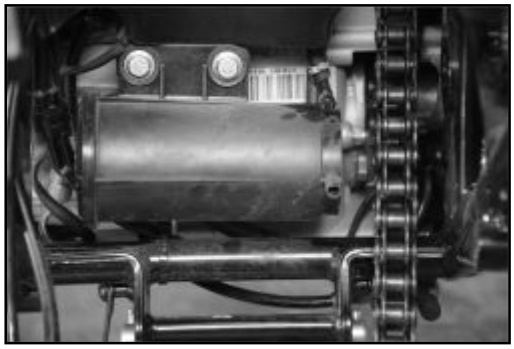
INSPECTION

Inspect rubber hoses and joints periodically for any cuts cracks or fractures. Replace if damaged.

Inspect Canister periodically for any damage to its body cuts or cracks.

Replace all rubber hoses and connectors every 12,000 Kms.

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
	Canister **Bullet Classic EFI / Bullet EFI** ■ Remove 2 bolts mounted on the Piece mudguard. ■ Remove the canister along with the tubes and connectors.	
	Canister **Continental GT** ■ Remove 2 bolts mounted on the Frame additional bracket. ■ Remove the canister along with the tubes and connectors.	

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
	Canister **Bullet Classic EFI / Bullet EFI** ■ Locate Cannister in the piece mudguard bracket such that it can be tightened with 2 hex bolts. ■ Tighten the 2 bolts.	
	Canister **Continental GT** ■ Locate Cannister in the bracket in the frame below throttle body such that it can be tightened with 2 hex bolts. ■ Tighten the 2 bolts.	

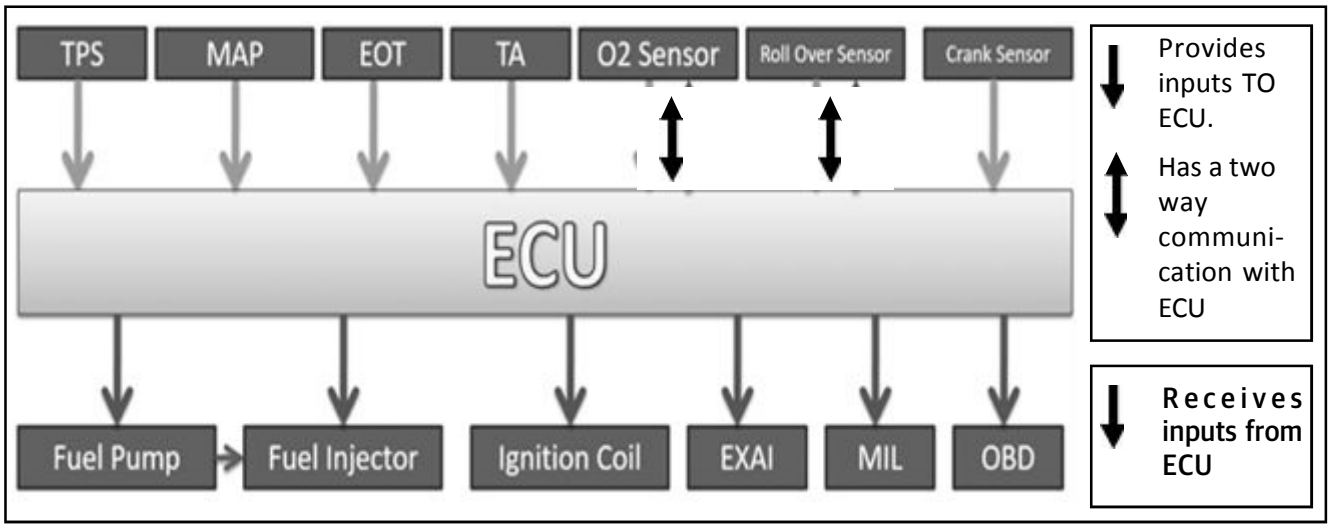
Royal Enfield Motorcycles being supplied to the European Union are fitted with an intelligent Engine Management System (EMS).

The EMS consists of an Electronic Control Unit (ECU) which constantly receives inputs like engine temperature, ambient temperature, throttle position, manifold air pressure, exhaust emissions through the various sensors provided to optimize the air fuel ratio AND crank position (from the crank position sensor) in relation to the engine RPM to optimize the ignition advance for proper combustion of the air fuel mixture.

This is very essential for:

- Compliance with EURO IV regulation related to exhaust emissions
- Optimum fuel efficiency and power output
- Excellent cold start ability and sustained high speed drive ability.

FUNCTIONAL DIAGRAM OF THE EMS



In addition to optimizing engine performance, the ECU also has an inbuilt memory by which any EMS related malfunctions will get stored and help diagnose the fault accurately.

There is also an inbuilt safety system, which, in the event of the motorcycle's banking angle is below 60° OR is involved in an accident causing the motorcycle to fall over on either of its sides with the gears engaged and the engine running, both the fuel supply and ignition will be cut off to stop the engine and prevent any further damage from being caused.

SPECIFICATIONS / FUNCTIONS OF THE VARIOUS EMS PARTS

1. ELECTRONIC CONTROL UNIT (ECU)

The Electronic Control Unit (ECU) is located inside the Electricals box on the Left side (Bullet EFI/ Classic EFI models) and under the seat (Continental GT models).

SPECIFICATION	
Operating Voltage: 8 – 16 V Sensor Supply Voltage: 5 V Operating temperature: -10ºC to + 60ºC Storage Temperature: -20ºC to + 80ºC	

The ECU consists of a microprocessor with two memories Flash Memory and E^2 PROM.

Flash memory is an exclusive recording unit. It collects different inputs from various sensors and calculates optimized values and provides the outputs to the respective controlling devices.

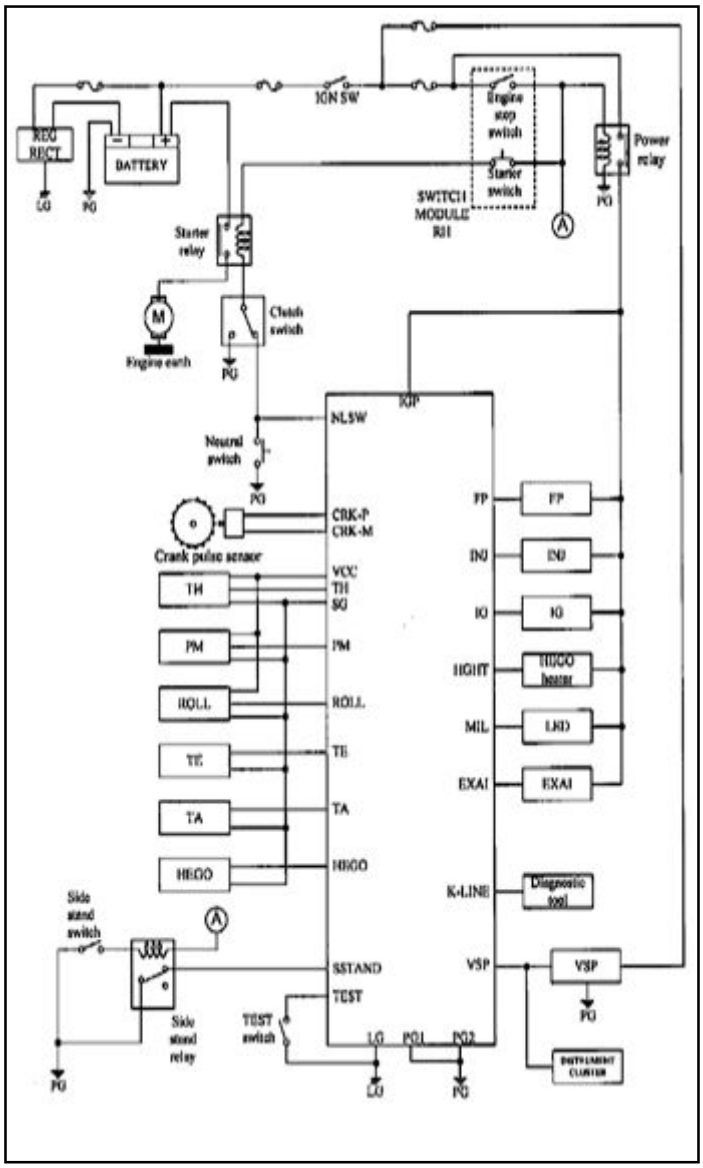
E^2PROM is an abbreviation for Electronically Erasable Programmable Read Only Memory. This memory records information related to performance of the various sensors in the EMS on a real time basis AND also records any sensor failures if it occurs during operation of the motorcycle.

The main advantage of E2PROM is it records data, even when the motorcycle's electrical system is switched OFF.

This will help in diagnosing the motorcycle performance and also to view the history and defect codes, whenever the Royal Enfield NACS II diagnostic tool is connected to the socket in the wiring harness of the motorcycle.

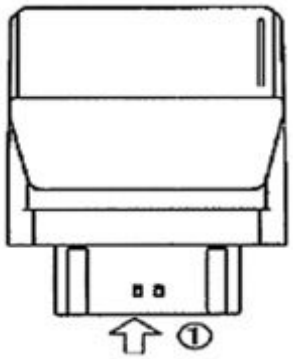
Once the defect is diagnosed and corrected, the history of the defect can be erased using the Royal Enfield NACS II diagnostic tool.

ECU LAYOUT

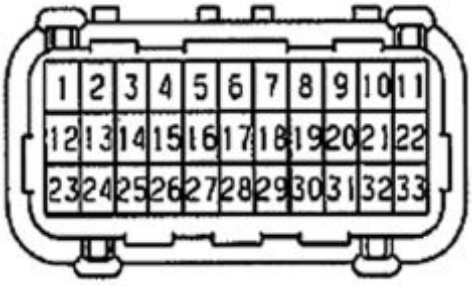


ECU PIN DETAILS

Pin No.	Name	Function
1	IGP	Ignition Power
2	LG	Logic Ground
3	HEGO	HEGO Sensor
4.	SG	Sensor Ground
5	TH	Throttle Position Sensor
6	VCC	Sensor Power Output (+SV)
7	-	-
8	FP	Fuel Pump
9	PG1	Power Ground1
10	PG2	Power Ground2
11	IG	Ignition Coil
12	CRK-P	Crank Pulse Sensor
13	-	-
14	TA	Air Temperature
15	TEST	Test Switch
16	INJ	Injector
17	VSP	Vehicle Speed Sensor
18	-	-
19	-	-
20	-	-
21	-	-
22	MIL	Multi Indicator Lamp
23	CRK-M	Crank Pulse Sensor GND
24	TW	Engine Temp. Sensor
25	SSTAND	Side Stand Switch
26	ROLL	Roll Sensor
27	PM	Manifold Pressure Sensor
28	EXAJ	Exhaust Air Injection
29	NLSW	Neutral Switch
30	K-LINE	Diagnostic Tool
31	-	-
32	-	-
33	HEGO HT	HEGO Sensor Heater



① TERMINAL LAYOUT



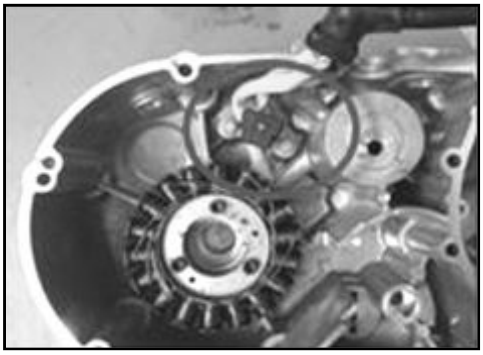
2. CRANK POSITION SENSOR

The crank position sensor sends an alternating voltage signal to the powertrain control module, which is used to determine engine speed and ignition timing. Thus the speed of the engine is instantly known by the ECU.

SPECIFICATION

Output Voltage: 3 - 5 V AC.

Resistance : 200±20 Ω



It provides an alternating electrical pulse to the ECU, to determine crankshaft speed and TDC position by scanning the 17 pips and 1 long gap between 2 particular pips on the rotor. This input helps the ECU to optimize both fuel injection as well as Ignition advance required to suit the crankshaft rotation speed (RPM).

In the event the throttle is held wide open with gears in neutral, leading to crankshaft speed above 5500 RPM, the high frequency electrical pulses from the crank position sensor will prompt the ECU to restrict fuel supply so that the crank speed reduces below 5000 RPM. This is a safety aspect to prevent damage to moving engine parts.

3. ENGINE TEMPERATURE SENSOR

The engine temperature sensor (EOT) is located on the cylinder head, below the inlet manifold on the oil passage.

SPECIFICATION

Operating Temperature: -55°C to + 250°C

Resistance:25deg (10K Ω) 5% and Resistance at 80deg (1.63K Ω) 5%

Sensor Supply Voltage: 5V

It senses the oil temperature and provides the input to the ECU on a real time basis. The ECU can then determine the fuel injector operating time to provide the required amount of vaporized fuel into the combustion chamber for optimum performance of the motorcycle and also to meet the emission norms.

4. HEGO SENSOR (O2/LAMBDA SENSOR)

The HEGO sensor is located on the exhaust down pipe, just after the cylinder head.

SPECIFICATION

Operating Voltage : 16V (Max)

Operating temperature: 600ºC - 950ºC

It detects residual oxygen in the exhaust gases versus the amount of oxygen in the atmosphere and provides the data on a real time basis to the ECU based on which the fuel injection is metered continuously to control exhaust emissions and for optimum performance of the motorcycle.

5. EXHAUST AIR INJECTION UNIT (SOLENOID)

The exhaust air injection unit (EXAI) is located underneath the fuel tank.

SPECIFICATION

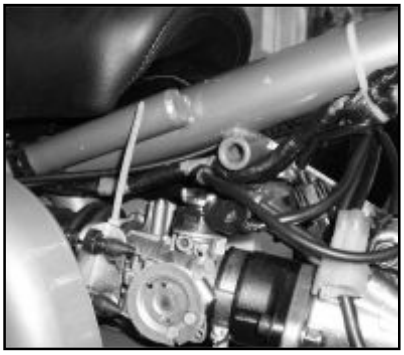
Operating voltage : 10 V to 14.5 V

Operating Temperature: - 20°C to +120°C

In addition to the Hego sensor, the EXAI gets inputs from the ECU to supply filtered air into the exhaust end of the cylinder head, primarily during idling RPM so as to meet exhaust emission specifications.

6. THROTTLE BODY

The throttle body is located below the fuel tank, between the intake side of the cylinder head & the air filter assembly.

SPECIFICATION	
Operating Voltage: 5 V. Out Put Voltage: 0 – 5V. Throttle Angle : 0 – 80º Resistance Maximum: 5 K Ω Out Put at Idling: 0.6±0.2V. Operating Temperature: -20ºC to +80ºC	 

It consists of a throttle plate (butterfly valve) to regulate the airflow into the cylinder head depending on the throttle opening and a manual Bi Starter which helps control idling RPM in extreme cold conditions.

The throttle body also has a throttle position sensor (TPS) and manifold absolute pressure sensor (MAP).

7. THROTTLE POSITION SENSOR (TPS)

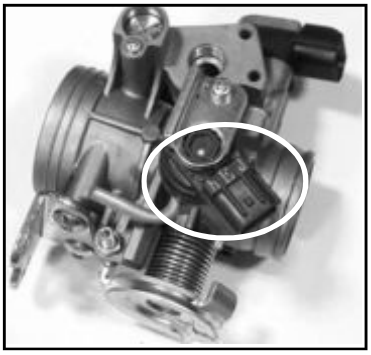
Throttle Position Sensor (TPS) is located on the throttle body at the end of the butterfly valve spindle to monitor the position of the butterfly valve.

SPECIFICATION	
Max Resistance : 5 K Ω Operating Temp : - 20°C to +80°C Supply Voltage : 5 V	

The sensor consists of a potentiometer and provides a variable resistance depending upon the position of the butterfly valve to the ECU. This helps the ECU to regulate the fuel injector opening duration to provide the required amount of vaporized fuel into the combustion chamber for optimum performance of the motorcycle.

8. MANIFOLD ABSOLUTE PRESSURE SENSOR (MAP)

The Manifold Absolute Pressure Sensor (MAP) is located on top of the throttle Body.

SPECIFICATION Operating Temperature: -20°C to +80°C Supply Voltage: 5 V	

The MAP sensor monitors the manifold pressure at the intake end and provides data to the ECU on a real time basis.

This helps the ECU to calculate the air density and the air inflow rate and determines the fuel injector opening duration to provide the required amount of vaporized fuel into the combustion chamber for optimum performance of the motorcycle.

9. AMBIENT AIR (TA) SENSOR

The TA sensor is located on the rear side of the filter box assembly in Bullet EFI / Classic EFI models and on the outlet pipe of the air filter housing in Continental GT models.

SPECIFICATION Operating Temperature: -30°C to +120°C Supply Voltage: 5 V±0.5 V	 

The ambient temperature input is provided to the ECU on a real time basis, based on which the ECU determines the fuel injector operating time to provide the required amount of vaporized fuel into the combustion chamber for optimum performance of the motorcycle.

10. FUEL PUMP ASSEMBLY

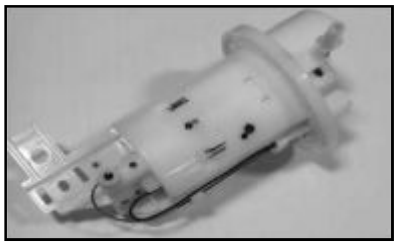
The fuel pump is located on the left side bottom of the fuel tank and submerged in the fuel so that it cannot ignite itself due to any electrical short circuits. The fuel pump has an inbuilt micro filter which helps to filter even the minute dust particles that may come in the fuel.

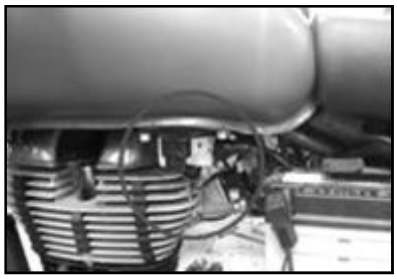
SPECIFICATION

Operating Voltage: 6 V to 15 V

Operating Temperature: -15°C to +60°C

Fuel Pressure: 294 Kpa





As soon as the Ignition switch and the engine kill switch are in ON position, the fuel pump creates a positive pressure of 294KPa in the fuel line and up to the injector. The fuel pump operation is determined by the ECU so that there is no excessive pressure in the fuel system to prevent damage to the fuel injector, fuel hose. Any excess pressure is bypassed back into the fuel tank.

11. FUEL INJECTOR

The fuel injector is located at an angle on the intake side of the cylinder head so as to maximize fuel spray and minimize wall wetting, for optimum performance of the motorcycle.

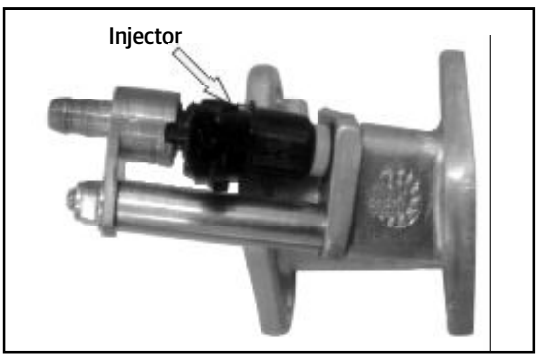
SPECIFICATION

Operating Voltage : 10 V to 16 V

Operating Temperature : -30°C to +120°C

Fuel Pressure : 343 Kpa

Resistance : 10.3 $\pm$0.5 Ohms



The Fuel Injector is a solenoid operated electromagnetic valve, which enables the pressurized fuel delivered by the fuel pump, to be atomized and sprayed into the cylinder head combustion chamber.

The fuel injector operation and duration to deliver vaporized fuel is controlled by the ECU based on the critical operating inputs received from the crank position sensor, EOT sensor, ambient air temperature sensor, throttle position sensor, manifold pressure sensor and HEGO sensor.

12. EFI ECU POWER & SIDE STAND RELAYS

There are two identical relays located inside the Electricals box LH side (on Bullet EFI & Classic EFI models) and on the battery bracket inside the LH panel (on Continental GT models).

SPECIFICATION	
Operating Voltage : 10 V to 16 V Operating Temp : - 30 ° C to + 120 ° C Fuel Pressure : 343 Kpa Resistance : 10.3±0.5 Ohms	

The EFI ECU Power relay supports functioning of the ECU and fuel pump. The Side stand relay provides the inputs regarding the position of the side stand to the ECU. In the event the side stand is NOT retracted and the motorcycle is attempted to be started, it signals the ECU which cuts off the fuel supply thus preventing the engine from starting.

13. ROLLOVER SENSOR

The rollover sensor is located on the frame under the seat.

SPECIFICATION	
Operating voltage : 10 V to 14.5 V Operating Temp : - 20 ° C to + 120 ° C	

The rollover sensor, also known as a "banking" sensor, is a safety feature. If the banking angle of the motorcycle goes below 60° OR in the event of an accident causing the motorcycle to fall over on either of its sides with the engine running, the rollover sensor will "command" the ECU to cut off both the fuel supply and ignition, thus stalling the engine to prevent any further damage from being caused by the engine that may be running with a stuck open throttle and the gears engaged.

To re activate the system, the motorcycle should be made upright in its centre stand position, the ignition switch and stop switch must be switched OFF and switched back ON after a few seconds. This will help to RESET the rollover sensor.

14. MALFUNCTION INDICATOR LAMP (MIL)

Malfunction Indicator Lamp (MIL) is located in the small meter on the Headlamp casing

SPECIFICATION Operating Voltage :	 

When both the Ignition & Engine kill switch is "ON" and after vehicle is started, MIL will glow for few seconds and switch OFF, this indicates that all the functions of EMS are functioning correctly.

In the event of any malfunction the MIL will glow continuously. The EMS should be checked using either the test pin method OR the Royal Enfield NACS II diagnostic tool connected to the socket in the wiring harness of the motorcycle.

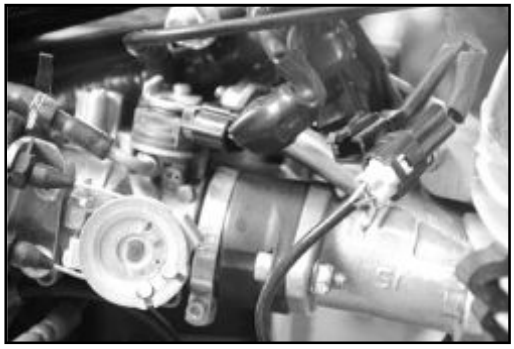
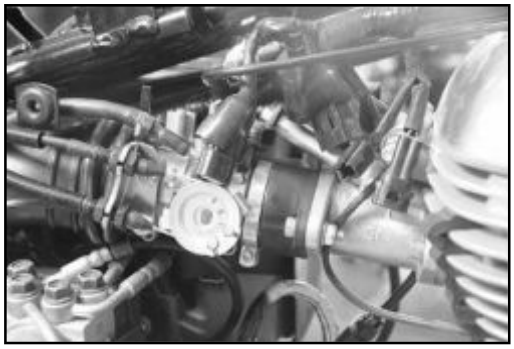
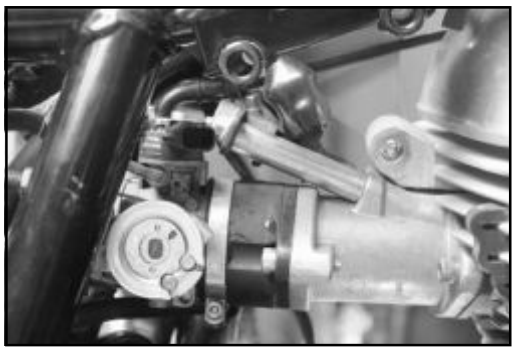
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.1	**Electronic Control Unit (ECU)** **A. Bullet EFI / Bullet Classic EFI** ■ The ECU is located inside the Electricals Box on the LH side. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Unlock the Electricals box lid. ■ Gently pull out the ECU from its rubber housing. ■ Gently release lock and disconnect the wiring coupler from the ECU. ■ Remove ECU **B. Continental GT** ■ The ECU is located under the Fuel tank. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Unlock side panel LH and remove the panel LH. ■ Gently pull seat latch cable to release seat and remove seat. ■ Gently pull out the ECU from the rubber housing located in the frame. ■ Gently release lock and disconnect the wiring coupler from the ECU. ■ Remove ECU.	**CAUTION:** ■ Ensure both Ignition and Engine kill switch are in OFF position before disconnecting ECU from the wiring harness. ■ DO NOT disconnect Battery with the Ignition switch/ Kill switch in ON position and the ECU is connected. ■ Ensure ECU is not stored near any Magnetic substances, wet surfaces, direct sunlight and hot areas as it will damage the ECU.    

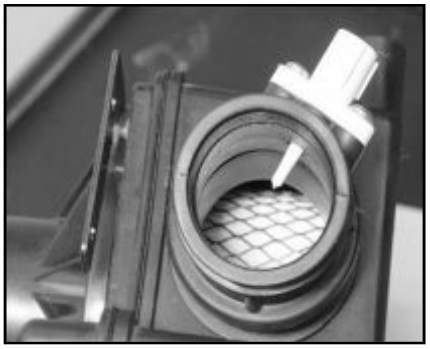
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.2	**Crank position sensor** ■ The Crank position sensor is located inside the cover RH of the engine assembly. ■ Drain engine oil from the engine. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Disconnect Magneto wiring coupler from the electrical harness. ■ Loosen and remove 2 Hex Flange Bolt M6 X 1 X 85 from cover RH front. ■ Loosen and remove 7 Hex Flange Bolt M6 X 1 X 70 from cover RH, top, centre and bottom. ■ Loosen and remove 1 Hex Flange Bolt M6 X 1 X 45 from cover RH rear. ■ It may be necessary to gently tap and remove cover RH as the magnetic forces in the rotor can be acting on the stator and making it difficult to remove. ■ Remove gasket. ■ Remove 2 Hex Flange Bolt M5 X 0.8 X 16, holding Pulsar coil to cover RH inside. ■ Remove 3 Hex Socket Head Cap Screw M5 X 30, holding stator coil to cover RH inside.	**CAUTION:** ■ Ensure stator coupler is disconnected before removing cover RH. ■ Gently tap on the tabs provided in the front and rear of Cover RH to release the cover from the crankcase. 

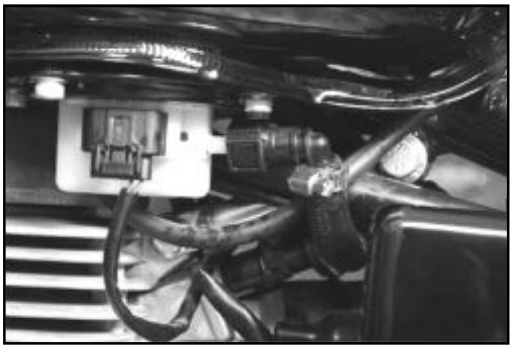
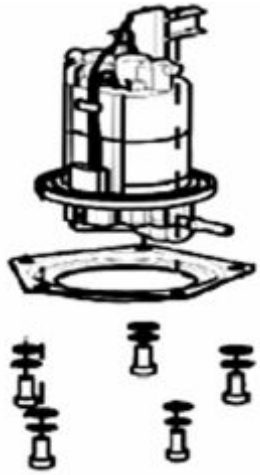
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.3	**Engine Temperature Sensor** ■ The Engine temperature sensor is located on the cylinder head right side, below the inlet manifold. ■ Ensure Ignition switch and stop switch are in OFF position Disconnect wiring harness coupler from the sensor. ■ Gently Loosen engine temperature sensor and remove along with 'O' ring.	**Deep Groove Socket bit: 17mm** 

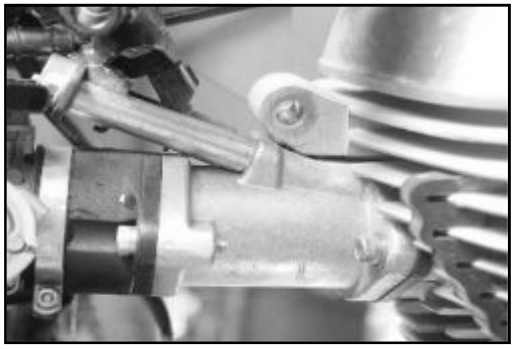
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.4	**Hego (Lambda or O2) Sensor** ■ The Hego sensor is assembled on the inner side of the exhaust down pipe near the cylinder head. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Disconnect wiring harness coupler from the sensor. ■ Loosen Hego sensor and remove along with copper washer from the exhaust down pipe.	**Deep Groove Socket: 21mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.5	**Exhaust Air Injection Unit (EXAI Solenoid)** ■ The EXAI Solenoid is located on the frame under the fuel tank along with the reed valve. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Remove Fuel tank as described in **section 2 Fuel tank.** ■ Disconnect wiring harness coupler from the EXAI solenoid. ■ Release the 2 clips on the Inlet and outlet pipes connected to the EXAI solenoid, and disconnect the pipes. ■ Loosen Gland nut at cylinder head end and disconnect braided hose connecting reed valve to cylinder head. ■ Remove the 2 Hex Screws holding the reed valve mounting bracket to frame and remove along with EXAI solenoid. ■ Remove socket head cap screw holding the EXAI solenoid to the reed valve bracket.	**Gland Nut Double end spanner: 16mm** **Soc Hd Cap Screw: M5X20** **Allen Key 4mm** **Hex Screw M6 X 16** **Socket spanner: 8mm**   **NOTE:** Ensure spacer between the EXAI solenoid. & bracket is removed. 

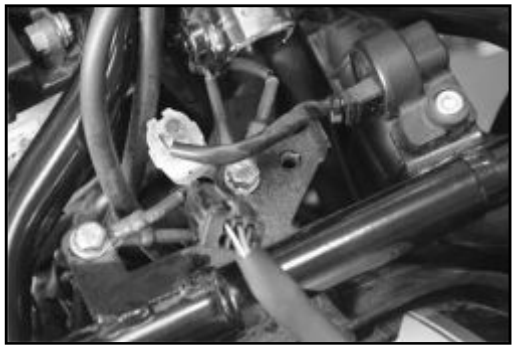
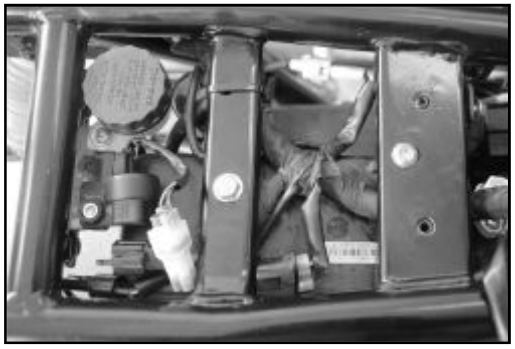
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.6	**Throttle Body** ■ The throttle body is located between the cylinder head inlet and the air filter outlet hose. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Disconnect TPS and MAP wiring couplers. ■ Slacken the locknuts on the adjusters and remove throttle cables from the throttle body. ■ Disconnect rubber hose connecting throttle body to the EVAP canister. ■ Disconnect manual Bi Starter cable from throttle body by loosening and removing the plastic nut on LH side. ■ Loosen hose clip on air inlet rubber hose. ■ Loosen hose clip on Adaptor between throttle body and cylinder head. ■ Remove throttle body by gently sliding it out of the inlet bellow and adaptor.	  **- Adjuster Nuts** **Double end spanner: 12mm** **- Hose clip screws: Flat screw driver**  **NOTE:** The throttle position sensor (TPS) and Manifold Absolute Pressure Sensor (MAP) are not serviceable and hence should not be removed from the throttle body. 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.7	**Ambient Air (TA) Sensor** **A. Bullet & Classic EFI Models** ■ The TA sensor is assembled behind the Filter box assembly and can be removed only after removing the air filter housing from the frame **(Refer section 5.2 Air filter.)** ■ Ensure Ignition switch and stop switch are in OFF position. ■ Disconnect the wiring coupler from the TA sensor. ■ Loosen and remove 2 Hex Soc Hd cap screws, holding TA sensor to Filter Box Assembly. ■ Remove TA sensor with gasket. **B. Continental GT Model** ■ The TA sensor is assembled on the pipe outlet between air filter housing and Throttle body. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Remove seat assembly **(Refer section 5.4)** ■ Disconnect the wiring coupler from the TA sensor. ■ Using a long reach Philips head screw driver, loosen and remove the 2 screws, holding TA sensor to pipe outlet. ■ Remove TA sensor along with gasket, from pipe outlet.	  **Hex Soc Hd Cap Screws: M5 X 20** **Allen Key: 4mm**  **Philips head screws** **Philips Screw driver** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.8	**Fuel Pump Assembly** ■ The fuel pump assembly is located inside the fuel tank at the left side, rear bottom. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Remove Seat assembly as described in **section 5.4 for seat dismantling.** ■ Remove fuel tank as described in **section 5.3 for Fuel tank dismantling.** ■ Loosen & remove 5 Hex Socket Button Head Cap Screws along with the copper & fibre washers. ■ Remove clamp plate. ■ Pull out fuel pump from the fuel tank. ■ Take care to remove the O ring from the fuel tank.	**CAUTION:** ■ Store fuel in a tight sealed container in a well ventilated, cool and dry place. ■ Do not smoke or allow open flame or sparks in the vicinity.  **NOTE:** Ensure Ignition switch and engine kill switch are in OFF position Drain fuel completely from fuel tank before removing fuel pump.  **Hex Soc Button Hd Cap Screws: M6 X 12** **Socket spanner: 8mm**

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.9	**Fuel Injector** ■ The fuel injector is assembled on the inlet side of cylinder head below the fuel tank. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Remove Seat assembly as described in **section 5.4 for Seat dismantling.** ■ Remove fuel tank as described in **section 5.3 for Fuel tank dismantling.** ■ Disconnect the wiring coupler from the fuel injector. ■ Loosen worm clip on the inlet fuel hose and remove fuel hose from cap injector assembly. ■ Remove hex nut from top of injector cap assembly and remove injector cap along with "O" ring. ■ Remove the spacer from the stud. ■ Gently pull out the Injector from the cylinder head.	**Hex U nut: M6 X 1** **Ring spanner: 8mm**  

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
1010	**EFI ECU Power & Side Stand Relays** **A. Bullet EFI & Classic EFI Models** ■ Two identical relays are located inside the electricals box LH. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Gently pull out the relays from their sockets to remove. **B. Continental GT** ■ Two identical relays are located near the battery. ■ Located in a rubber holder on the side of the battery carrier. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Remove side panel LH. ■ Gently pull out relay from the rubber holder and electrical socket.	 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.11	**Roll Over Sensor** ■ Located below the seat on the frame. ■ Ensure Ignition switch and engine stop switch are in OFF position. ■ Disconnect the wiring coupler from the sensor. ■ Loosen and remove the hex socket screw holding the sensor to the frame and remove the sensor.	**Hex Soc Hd Screw: M6** **Allen Key: 5mm**  

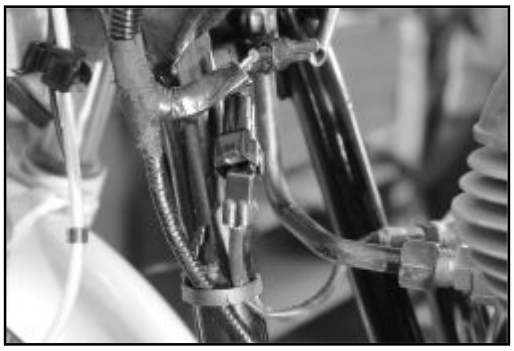
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
1012	**Malfunction Indicator Lamp** **A. Bullet EFI & Classic EFI Models** ■ Located in the small meter on Headlamp casing which also has the low fuel warning and ABS indication. ■ Ensure Ignition switch and engine stop switch are in OFF position. ■ Disconnect the wiring couplers from the meter. ■ Gently push the meter upwards from below to release it from the rubber ring. ■ There are no serviceable parts in the meter. **B. Continental GT** ■ Located in the RPM meter in the instrument cluster. ■ Ensure Ignition switch and engine stop switch are in OFF position. ■ The instrument cluster does not have any individual serviceable parts.	 

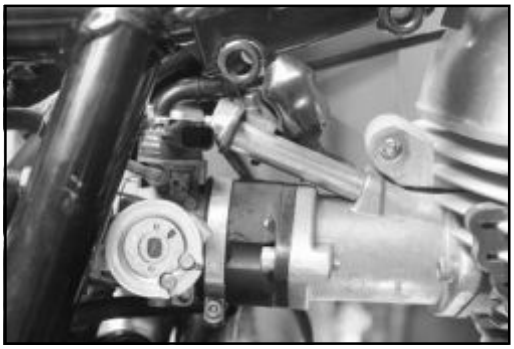
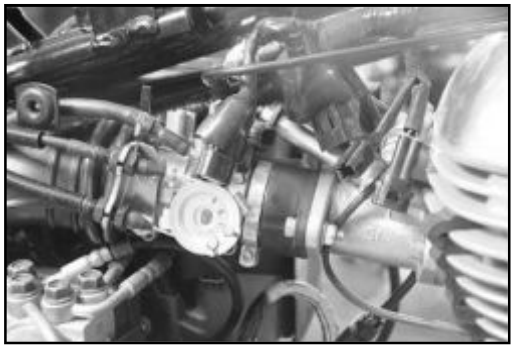
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.13	**Electronic Control Unit (ECU)** **A. Bullet EFI & Classic EFI** ■ Locate ECU inside the Electricals box on LH side. ■ Connect the wiring coupler on the ECU and gently lock. ■ Gently push the ECU on its rubber housing. ■ Lock the Electricals box lid. ■ Ensure Ignition switch and stop switch are in OFF position. **B. Continental GT** ■ Locate ECU under the Fuel tank. ■ Connect the wiring coupler on the ECU and gently lock. ■ Gently push the ECU on its rubber housing located in the frame. ■ The ECU is located under the seat. ■ Locate seat on the frame and push it for proper seating. ■ Locate the side panel LH and lock side panel LH.	**CAUTION:** ■ Ensure both Ignition and Engine kill switch are in OFF position before Connecting ECU into the wiring harness. ■ DO NOT disconnect Battery with the Ignition switch/ Kill switch in ON position and the ECU is connected. ■ Ensure ECU is not stored near any Magnetic substances, wet surfaces, direct sunlight and hot areas as it will damage the ECU.    

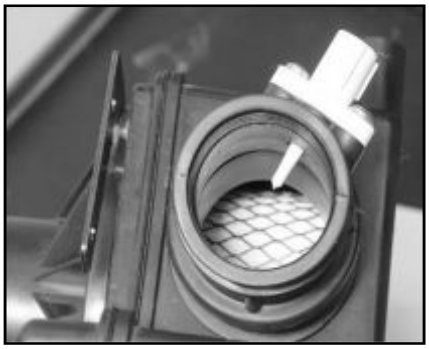
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.14	**Crank position sensor** ■ Locate Crank position sensor inside the cover RH of the engine assembly. ■ Install 3 Hex Socket Head Cap Screw M5 X 30, on stator coil to cover RH inside. ■ Install 2 Hex Flange Bolt M5 X 0.8 X 16, on Pulsar coil to cover RH inside ■ Locate gasket. ■ Install and tighten 1 Hex Flange Bolt M6 X 1 X 45 on cover RH rear ■ Install and tighten 7 Hex Flange Bolt M6 X 1 X 70 on cover RH, top, centre and bottom. ■ Install and tighten 2 Hex Flange Bolt M6 X 1 X 85 on cover RH front. ■ Connect Magneto wiring coupler in the electrical harness. ■ Fill engine oil.	**CAUTION:** ■ Ensure stator coupler is disconnected before removing cover RH. ■ Gently tap on the tabs provided in the front and rear of Cover RH to release the cover from the crankcase. 

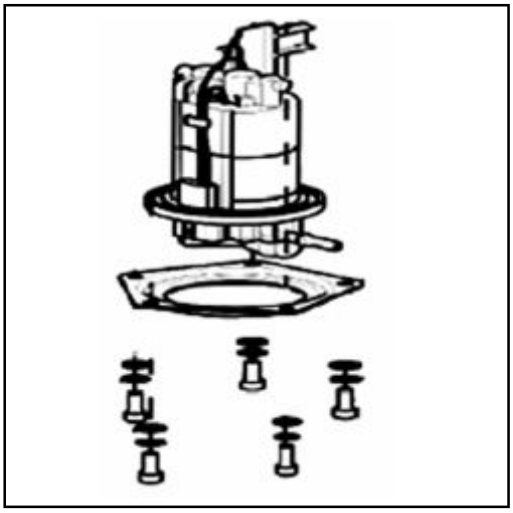
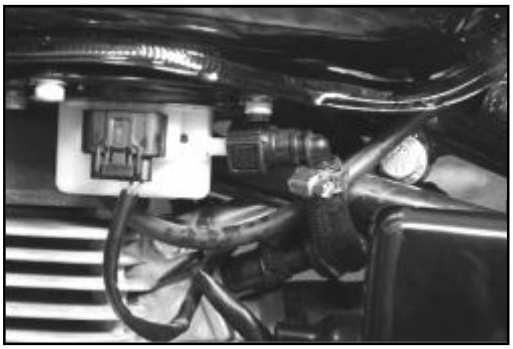
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.15	**Engine Temperature Sensor** ■ Locate engine temperature sensor along with 'O' ring on the cylinder head right side below the inlet manifold. ■ Ensure Ignition switch and stop switch are in OFF position, Connect wiring harness coupler on the sensor.	**Deep Groove Socket bit: 17mm** 

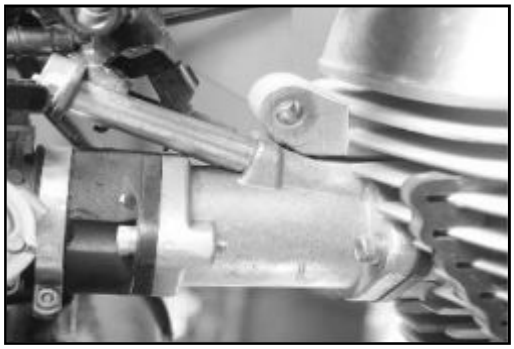
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.16	**Hego (Lambda or O2) Sensor** ■ Locate Hego sensor along with copper washer on the exhaust down pipe near the cylinder head. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Connect wiring harness coupler on the sensor.	**Deep Groove Socket: 21mm** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.17	**Exhaust Air Injection Unit (EXAI Solenoid)** ■ Locate socket head cap screw on the EXAI solenoid to the reed valve bracket. ■ Install the 2 Hex Screws on the reed valve mounting bracket to frame. ■ Locate EXAI Solenoid on the frame under the fuel tank along with the reed valve. ■ Install Gland nut at cylinder head end and connect braided hose connecting reed valve to cylinder head. ■ Connect 2 clips on the Inlet and outlet pipes connected to the EXAI solenoid. ■ Ensure Ignition switch and stop switch are in OFF position, Connect wiring harness coupler in the EXAI solenoid. ■ Assemble Fuel tank as described in **section 2 Fuel tank.**	**Gland Nut** **Double end spanner: 16mm** **Soc Hd Cap Screw: M5X20** **Allen Key 4mm** **Hex Screw M6 X 16** **Socket spanner: 8mm**  **NOTE:** Ensure spacer between the EXAI solenoid. & bracket is removed.  

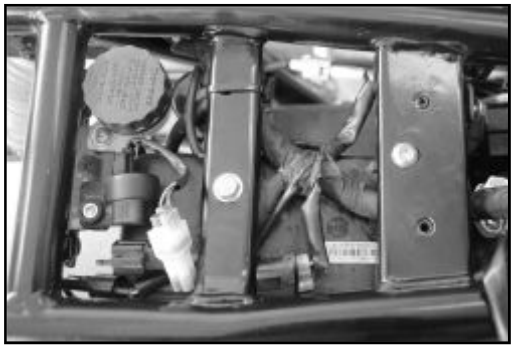
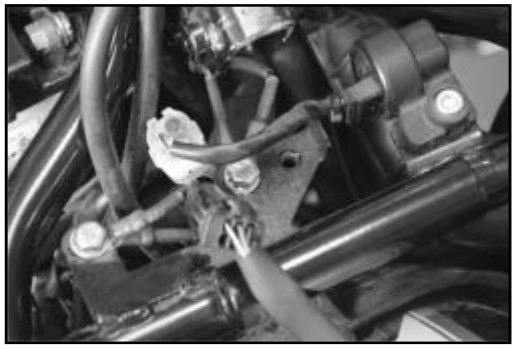
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.18	**Throttle Body** ■ Locate throttle body between the cylinder head inlet and air filter outlet house. ■ Gently slide throttle body on the inlet bellow and adaptor. ■ Locate hose clip on Adaptor between throttle body and cylinder head. ■ Locate hose clip on air inlet rubber hose. ■ Connect manual Bi Starter cable on throttle body by tightening and locating the plastic nut on LH side. ■ Connect rubber hose from throttle body to the EVAP canister. ■ Locate the locknuts on the adjusters and locate throttle cables on the throttle body. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Connect TPS and MAP wiring couplers.	  **- Adjuster Nuts Double end spanner: 12mm** **- Hose clip screws: Flat screw driver**  **NOTE:** The throttle position sensor (TPS) and Manifold Absolute Pressure Sensor (MAP) are not serviceable and hence should not be removed from the throttle body. 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.19	**Ambient Air (TA) Sensor** **A. Bullet & Classic EFI Models** ■ Locate TA sensor along with gasket on pipe outlet, behind the filter box assembly. ■ Install 2 Hex Soc Hd cap screws, on TA sensor to Filter Box Assembly. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Connect the wiring coupler on the TA sensor. **B. Continental GT Model** ■ Locate TA sensor along with gasket on pipe outlet between air filter housing and throttle body. ■ Using a long reach Philips head screw driver, Install 2 screws, holding TA sensor to pipe outlet. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Connect the wiring coupler in the TA sensor. ■ Assemble seat assembly **(Refer section 5.4)**	**Hex Soc Hd Cap Screws: M5 X 20** **Allen Key: 4mm** **Philips head screws** **Philips Screw driver**    

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.20	**Fuel Pump Assembly** ■ Locate the O ring in the fuel tank. ■ Locate fuel pump assembly inside the fuel tank at left side. ■ Install clamp plate. ■ Install 5 Hex Socket Button Head Cap Screws along with the copper & fibre washers. ■ Install fuel tank as described in **section 5.3 for Fuel tank assembly.** ■ Assemble Seat assembly as described in **section 5.4 for Seat assembly.**	**NOTE:** Ensure Ignition switch and engine kill switch are in OFF position. **Hex Soc Button Hd Cap Screws: M6 X 12** **Socket spanner: 8mm**  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.21	**Fuel Injector** ■ Locate fuel Injector on the inlet side of the cylinder head below the fuel tank. ■ Locate the spacer in the stud. ■ Locate hex nut from top of injector cap assembly and place injector cap along with "O" ring. ■ Locate worm clip on the inlet fuel hose and locate fuel hose on cap injector assembly. ■ Ensure Ignition switch and stop switch are in OFF position. ■ Connect the wiring coupler from the fuel injector. ■ Install fuel tank as described in **section 5.3 for Fuel tank assembly.** ■ Assemble Seat assembly as described in **section 5.4 for Seat assembly.**	**Hex U nut: M6 X 1** **Ring spanner: 8mm**  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.22	**EFI ECU Power & Side Stand Relays** **A. Bullet EFI & Classic EFI Models:** ■ Ensure Ignition switch and stop switch are in OFF position. ■ Gently push the two identical relays in their sockets inside the electrical box LH. **B. Continental GT** ■ Ensure Ignition switch and stop switch are in OFF position. ■ Gently push the two identical relays in the rubber holder and electrical socket. ■ Locate in a rubber holder on the side of the battery carrier. ■ Locate side panel LH.	 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.22	**Roll Over Sensor** ■ Locate the hex socket screw on the sensor to the frame and install the sensor which is located below the seat on the frame. ■ Connect the wiring coupler from the sensor. ■ Ensure Ignition switch and engine stop switch are in OFF position.	**Hex Soc Hd Screw: M6** **Allen Key: 5mm**  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.23	**Malfunction Indicator Lamp** **A. Bullet EFI & Classic EFI Models** ■ Gently push the meter downwards from top to locate it on the rubber ring. ■ Ensure Ignition switch and engine stop switch are in OFF position. ■ Connect the wiring couplers from the meter. ■ There are no serviceable parts in the meter. **B. Continental GT** ■ Ensure Ignition switch and engine stop switch are in OFF position. ■ Locate the RPM meter in the instrument cluster. ■ The instrument cluster does not have any individual serviceable parts.	 

EMS FAULT DIAGNOSIS & TROUBLE SHOOTING

NOTE:

- During diagnosis the motorcycle should be parked in its center stand, the side stand in fully retracted position and with the gears in neutral .
- The battery should be in fully charged and proper working condition.
- There should be no external electrical sources or interferences near the motorcycle.

TYPES OF DIAGNOSIS

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

LEVEL 1 VISUAL

As soon as the ignition switch, engine stop switch are in ON position and the side stand is in fully retracted position, the MIL will glow and will switch OFF after a few seconds after the engine is started. This indicates the EMS system is in its auto diagnostic mode and the EMS is working perfectly.

In the event the MIL glows continuously and does not switch off, it indicates a malfunction in the EMS.

LEVEL 2 TEST PIN

In the event the MIL is continuously ON and does not switch OFF, the test pin method will help narrow down to the sensor / electrical connection that caused the malfunction.

LEVEL 3 GENERIC SCAN TOOL (NACS II DIAGNOSTIC TOOL)

A generic scan tool supplied by Royal Enfield will help identify the exact cause of the malfunction in the EMS, when connected between the motorcycle and a computer.

The tool will take inputs from the ECU and provide to the computer to display the defect code that will help identify the specific sensor/connections.

In addition the generic scan tool can also help download the history of the vital parameters of the EMS, engine performance and earlier defects for detailed analysis and records.

The generic scan tool will also be able to erase previous defects after the same has been rectified.

METHOD OF CHECKING

LEVEL 1 VISUAL

- Switch OFF the ignition and engine stop switch.
- Check for any loose coupler connections at the sensor end. Correct loose connections if any.
- Switch ON ignition and engine stop switch. Ensure side stand is fully retracted.
- Check for MIL Indication in the cluster/Console.
  - Start the engine.
  - Allow engine to run in idling RPM for about 30 seconds and switch off engine.
  - Repeat the above process for 2 more times.

- Ensure MIL Indications goes off after above method.
- This will help to recalibrate the MIL and store the error code in the ECU.

- If in case the defect is not eliminated and the MIL glows continuously, proceed to **level 2 test pin method** to resolve the defect.

LEVEL 2 TEST PIN METHOD

An open single pole connector is provided close to the UCE.

- Connect a piece of wire to this connector and suitably ground it to the motorcycle body.
- Switch ON ignition and engine stop switch and observe the MIL keenly for a series of short and long blinks at different intervals, to identify the defective sensor / wiring connection as detailed in the table below,

MIL BLINK CODES DESCRIPTION

MIL BLINK	MALFUNCATION INDICATION
MIL will glow continuous. Engine will start but not perform to its potential	
Long 0 Short 6	Throttle position sensor Malfunction
Long 0 Short 9	Manifold Air Pressure sensor Malfunction
Long 1 Short 2	Engine oil temperature sensor Malfunction
Long 1 Short 3	Intake Air temperature sensor Malfunction
Long 1 Short 7	O2/HEGO Sensor Malfunction
Long 4 Short 5	O2 Sensor heater circuit Malfunction
Long 5 Short 4	EXAI Circuit Malfunction
MIL will glow continuous. Engine will NOT start but will crank	
Long 6 Short 6	Crankshaft position sensor Malfunction
Long 1 Short 5	Roll over sensor Malfunction
Long 3 Short 3	Fuel Injector Circuit Malfunction
Long 3 Short 7	Ignition Coil Circuit Malfunction
Long 4 Short 1	Fuel pump relay circuit Malfunction
Long 7 short 0	Vehicle/Wheel speed sensor Malfunction(only for Continental GT Model)

LEVEL 3 GENERIC SCAN TOOL METHOD

When the fault is detected, the GST raises a flag to conform readiness Permanent/Confirmed/Pending DTC. If some DTCs are defined for a sensor or device, a readiness for the sensor or device is judged as formed when one of readiness for the DTCs is formed.

- NACS II Diagnostic Tool can read the error codes (P – codes in the adjacent table) to easily diagnose the system causing the malfunction.
- It can also be used to capture engine data for future reference for saving data regarding issues of engine malfunction before in the process of resolving engine malfunction.

DIAGNOSTIC TROUBLE CODES DESCRIPTION

Items	Parameters	Description	DTC
Throttle position sensor	TH	Too low input voltage	P0120
		Too High input voltage	P0123
Manifold Air Pressure sensor	PM	Too low input voltage	P0107
		Too High input voltage	P0105
Engine Oil Temperature Sensor	TW	Too low input voltage	P0117
		Too High input voltage	P0115
Intake Air Temperature Sensor	TA	Too low input voltage	P0112
		Too High input voltage	P0110
Rollover Sensor	RO	Too low input voltage	P1630
		Too High input voltage	
O2 Sensor	HG	Short circuit to ground or open circuit (low or open)	P0130
Fuel Injector	IJ1	Short circuit to ground or open circuit	P0201
		Short circuit to Battery	
Ignition Coil	IG1	Short circuit to ground or open circuit	P0351
		Short circuit to Battery	
Fuel Pump Relay	FLR	Short circuit to ground or open circuit	P0230
		Short circuit to Battery	
O2 sensor Heater	HR	Short circuit to ground or open circuit (low or open)	P0030
Vehicle / Wheel speed sensor	VSP	The Sensor circuit malfunction	P0500
AIR System Switching Valve "A" Circuit	EXAI	Short circuit to ground or open circuit (low or open)	P0412
Crankshaft position sensor	CRK	The Sensor circuit malfunction	P0335

INSTRUCTIONS (DO'S & DON'T'S)

1) DO NOT remove any of the sensor connections / couplers / Battery connections when the Ignition switch is ON OR the engine is running.

2) DO ensure the battery is in good condition & Fully Charged Battery.

3) DO start the engine only when it is in centre stand or when rider sitting on the vehicle with both the stands retracted. **(Engine will NOT Start OR switch OFF if side stand is extended).**

4) DO NOT rev the engine fully – immediately after starting OR just before shutting off the engine.

5) DO NOT remove the fuel hose (high pressure) from the fuel pump to fuel injector, when engine is running OR with the ignition switch ON. Fuel flows at a very high pressure during these times.

6) 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.

7) 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.

1. HARDWARE COVERAGE

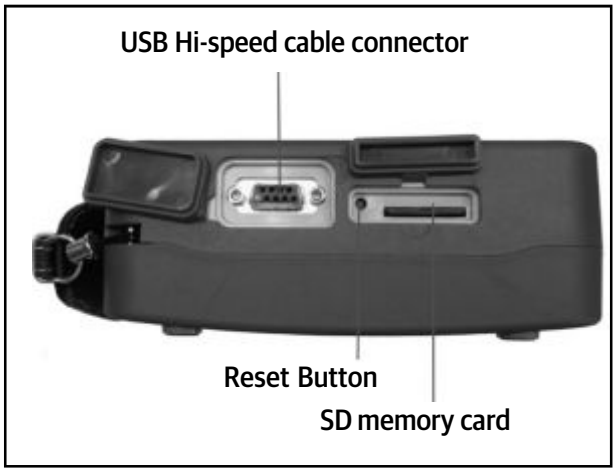
1. NACS II-ROYAL Interface
2. Main cable (Transfer cable)
3. Diagnostic cable (6 PIN)

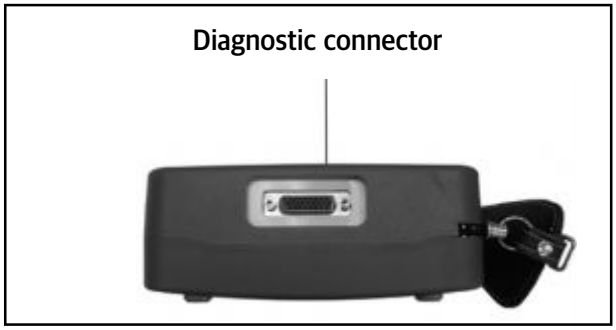
4.USB Hi-speed cable
5. Cigarette lighter cable
6. SD memory Card

7. SD card reader
8. Carrying Box
9. Installation CD
10. User Manual (Included on CD)

2. NACS II-ROYAL DIAGNOSTIC TOOL KIT

NACS II-ROYAL Interface





3. PRODUCT SPECIFICATION

Dimension	L:173.78mm x W:134.66mm x H:60.91mm
Weight	660g
Operating Voltage	DC 8~18V
Operating Current	300mA
Operating Temperature	0°C~+70°C
Dust and water resistance	IP55 Standard

4. HARDWARE CONNECTION DIAGRAM

Connect NACS II-ROYAL diagnostic tool kit as below before performing diagnosis.

1. HAND-HELD

NACS II - ROYAL interface ➔ Main cable ➔ Diagnostic cable ➔ Motorcycle (IG ON)

2. PC

PC ➔ USB Hi-Speed Cable ➔ NACS II-ROYAL interface ➔ Main Cable ➔ Diagnostic Cable ➔ Motorcycle (IG ON)

5. WARNING

- When NACS II is already connected to the motorcycle, do NOT plug in AC Adaptor.
- Do not remove SD card when you are using NACS II.
- The failure caused by the use of unapproved cables, accessories is out of warranty.
- The warranty will become void if NACS II is disassembled or altered.
- We recommend you to back up the SD-card data to avoid data loss due to various reasons.

‘

6. TROUBLE SHOOTING

▲ Why I can not install the software successfully?

A: If you are using Windows 7, 8, 10, please check whether you have turned UAC off before installation. (Please refer to item No. 8, PC settings.)

▲ I have already installed the software. Why the software can not be opened?

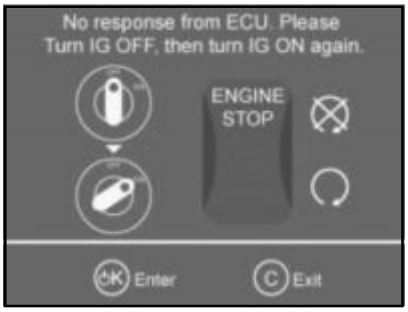
A: Check whether you have run the software as administrator. Right click ICM logo on the desktop. Choose 'Run as admministrator".

▲ Why there is a pop-up-window displaying "cannot find COM port".?

A: Check whether the driver of USB Hi-speed cable is installed. If USB port is not recognized, please install USB driver.

▲ There is a warning message showing on the screed. Wht's wrong?

A: It means communication breakdown. Please check whether the cables are connected well.



7. PC REQUIREMENTS

Operating system	Windows XP, Vista, Windows 7 /8 / 10
CPU	CPU 1.6 GHz or higher
RAM	2GB or larger
Display	Resolution 1024*768
Hard Disk Space	Free space more than 1GB (on C driver)
Notes	When you use Windows Vista or Windows 7/8, you need to close "User Account Control (UAC)" first. Please refer to item No. 7. PC Settings.

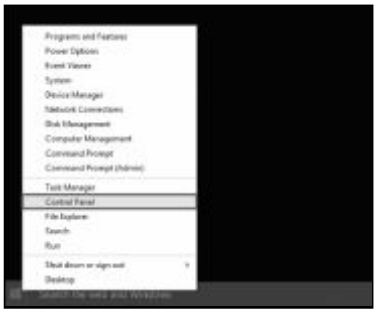
8. PC SETTINGS

When you use Windows 7 /8 / 10, please finish the setting below to run out software successfully.

First, you need to disable "User Account Control (UAC)" before installing our software. The way to disable UAC is as follows.

8.1

Click 'Start button' and select 'Control Panel'.

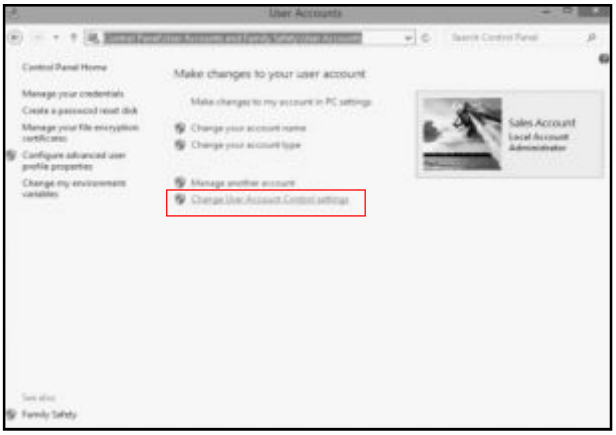


8.2.

Click 'User Accounts'

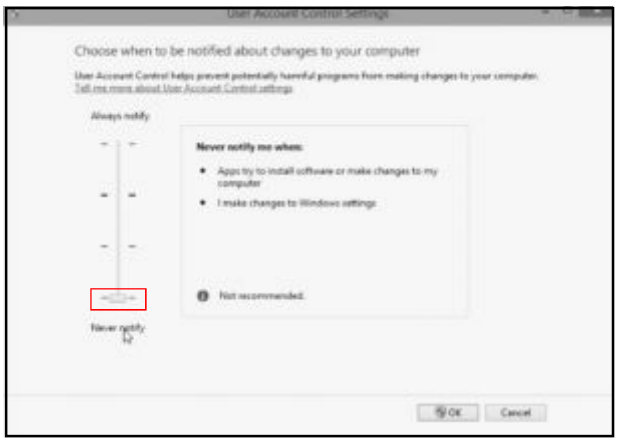
8.3.

Click 'Changer User' Account Control Settings".



8.4.

Move the slider to the Never notify position, Click "OK" to make the change effective.



9. SOFTWARE INSTALLATION

9.1. Start the computer.

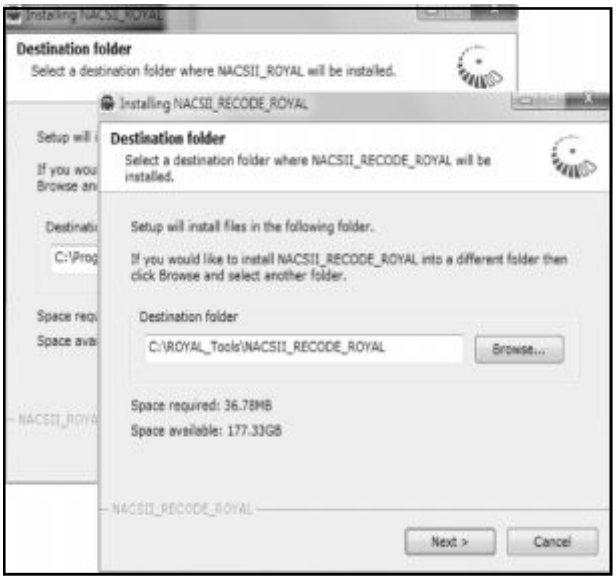
9.2. Insert installation CD to CD-ROM drive and install following software.

a. Main software: NACSII_ROYAL_V0.03_install.exe

b. Recording data analyzing software: NACSII-RECORD_ROYAL-V0_01_setup

9.3.

Click 'Finish' to complete the installation



9.4.

Click 'Finish' to exit installation

9.5.

After installing Firmware program, USB high speed driver will start installation. Click 'Extract' to install.

9.6.

Click 'Next' to continue

9.7.

Click 'Finish' to complete the installation

10. SOFTWARE REMOVAL

10.1.

Click 'Star Menu' - 'All Programs' - 'Control Panel'

10.2.

Click 'Uninstall' a program'

ROYAL ENFIELD NACS II DIAGNOSIS

10.3.

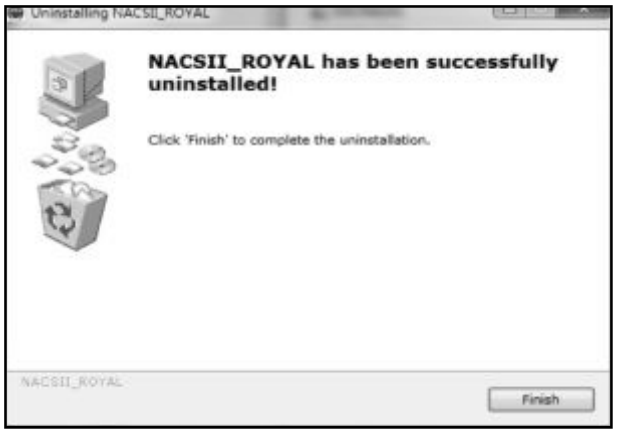
Find 'NACSII_ROYAL' and click 'Change / Remove'.

10.4.

When 'Unistalling NACSII_ROYAL' window pops up. please click 'Next'.

10.5.

Click 'Finish' to exit uninstall.



11. DIAGNOSTIC SOFTWARE FOR HANDHELD TOOL

11-A.

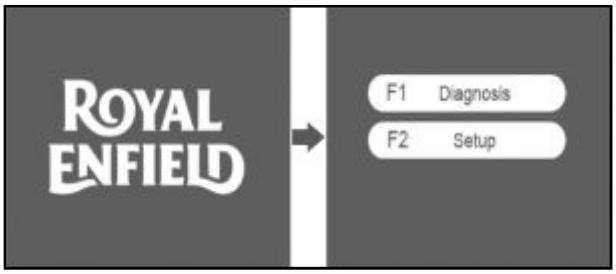
Diagnosis

11-A1.

Please connect your NACSII-ROYAL diagnostic tool kit with your motorcycle. NACSII-ROYAL interface-maincable → Diagnostic cable → Motc⇄/cle Orange light indicates whether the system is communicating.

11-A2.

When the IG of the motorcycle is ON, the system starts to run, entering welcome page 'ROYAL ENFIELD'. Press (F1) Diagnosis.



ROYAL ENFIELD NACS II DIAGNOSIS

11-A3.

Select 'Royal Enfield 534 EFI'. Press (OK) to continue.

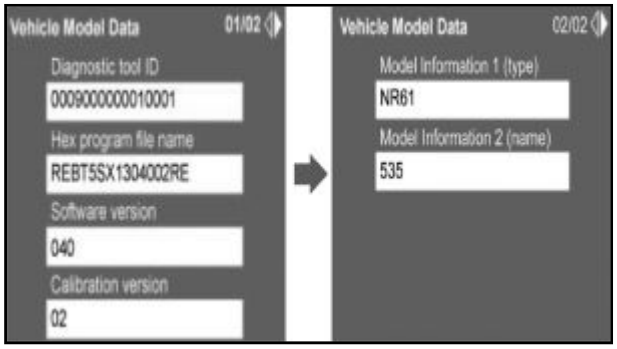
11-A4.

NACS II will automatically detect which system the vehicle is. Select 'KEIHIN Engine System' or 'BOSCH ABS System'.

Press (OK) to continue.

11-A5.

Take 'KEIHIN Engine System' as an example. After pressing (OK) the system will display 'Vehicle Model Data'. Press to view the 2nd page of vehicle information. Press to return to last page.



11-A6.

Press to (C) exit 'Vehicle Info' page. The page will return to the main menu.

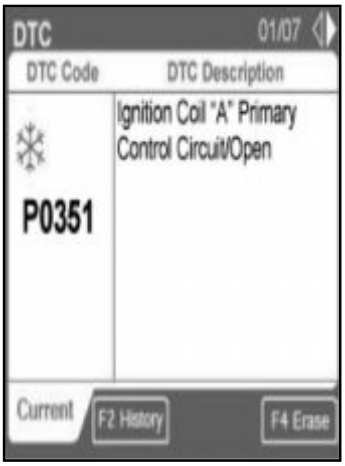
11-A7.

Using and to move the cursor. Move the cursor to select 'Diagnostic Trouble Code'.

Press (OK) to see the content.

11-A8.

Diagnostic trouble code page includes 'F1 Current', 'F2 History' and 'F4 Erase'. 'Current' is for the DTC occurred at the time and 'History' is for DTC occurred in the past. 'Erase' is for erasing current DTC and History DTC. Press (OK) to view 'Current' DTC.

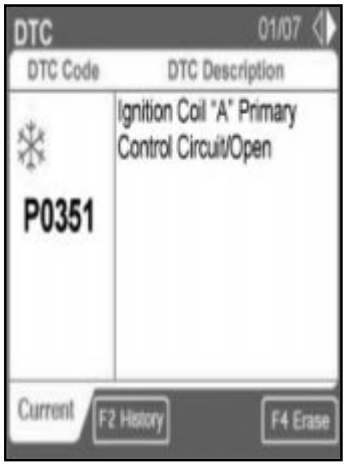


11-A9.

Press (F2) to view 'History ' DTC.

Press to view next page and press to view last page. After viewing all the current DTC.

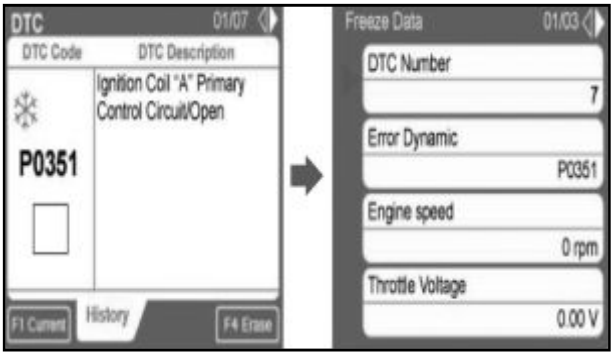
Press (C) to exit. The screen will return to the previous page.



11-A10.

Freeze Data. 'Freeze Data' is the data recorded when First DTC occured, and one time only record One DTC freeze data. It's for saving the engine dynamic data for further analysis.

When displays on the screen, press (OK) to view freeze data. Press and to view next page and last page. After viewing all content, press (C) to exit. The screen will return to the previous page.

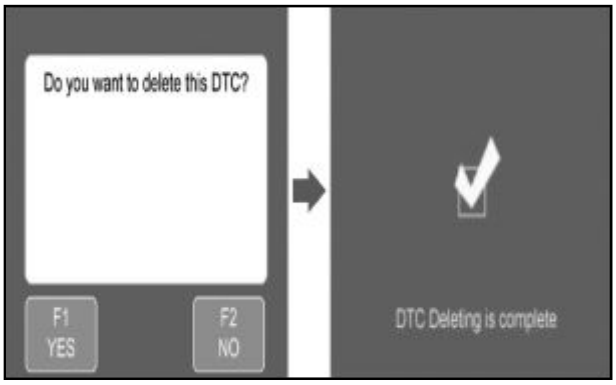


11-A11.

Erace DTC. It's the function to erace Diagnostic Trouble Code in both 'Current' and 'History'.

Press (F4) to erace. To confirm erasing DTC. Press (F1) 'Yes'.

When showing on the screen, it means the DTC has been erased. Press to go back to the main menu.



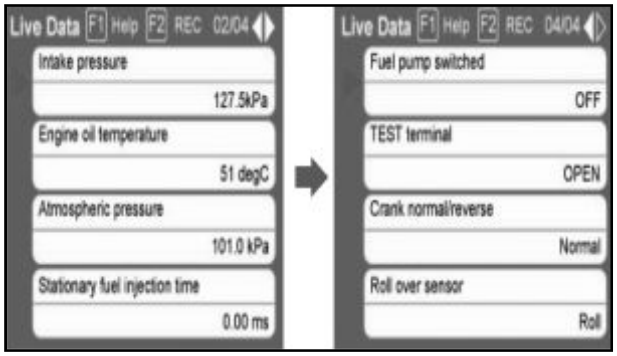
11-A12.

When the screen returns to the main menu, move the cursor to 'Live Data' and Press (OK) to view the content.

ROYAL ENFIELD NACS II DIAGNOSIS

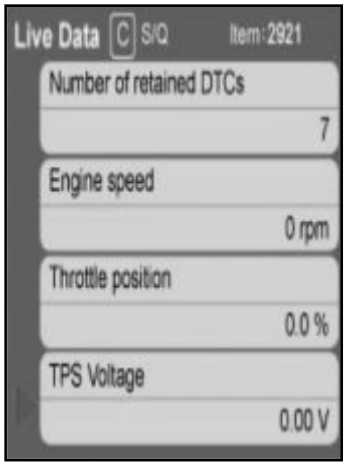
11-A13.

Press ↑ and ↓ to view all the content.



11-A14.

Record data. 'F2 REC' is for recording Live data. When viewing 'Live Data', click (F2) to record current values. Press (C) to stop recording



11-A15.

Press (F1) to save the file.

11-A16.

Back to the main menu, move the cursor to 'Special Function' and Press (OK)

'Special function' is customized functions provided to specific vehicles.

11-A17.

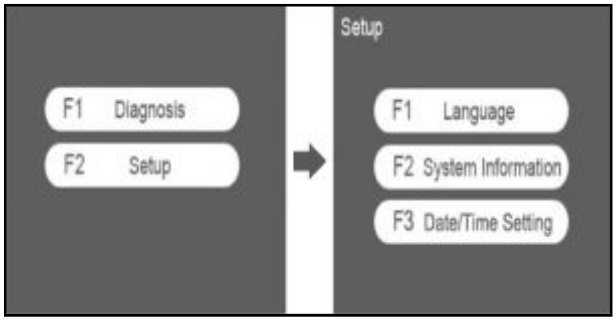
Select "CO Adjustment", press (F3) and (F4) to adjust the CO value. (F3) is for increasing fuel injection value. (F4) is for decreasing fuel injection value.

After finish adjustment, press (OK) to save. Press (C) to exi t. If you want to go back to the main page, press (C) unti l the page return to the top of the page.

11-B.

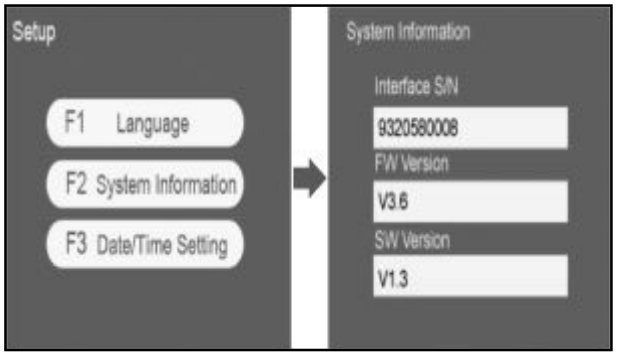
11-B1.

"F2 Setup" page contains setting Language, viewing System Information and setting Date / Time.



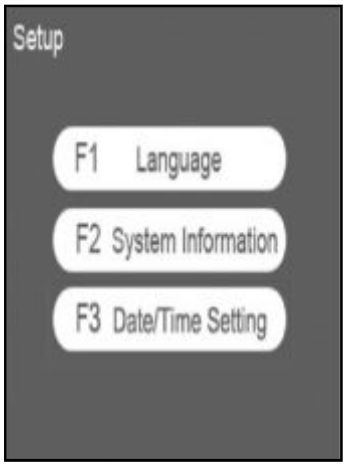
11-B2.

Press (F2) to view System Information.



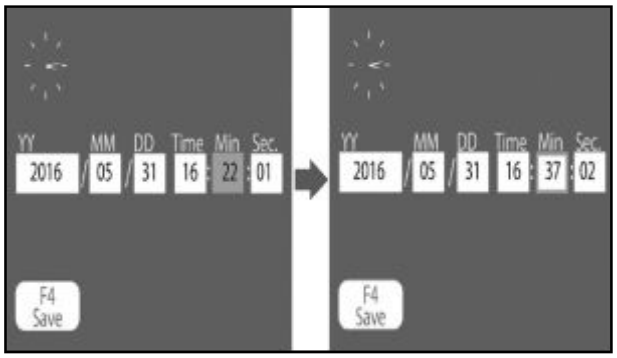
11-B3.

Press (F3) to set Date and Time.



11-B4.

Using (1) and (3) to move the cursor. Press (OK) to select the item. Change figure using (4) or (2) and press (OK) to confirm the item. At this time, the pink block will return to white. Press (F4) to apply the setting.



11-C.

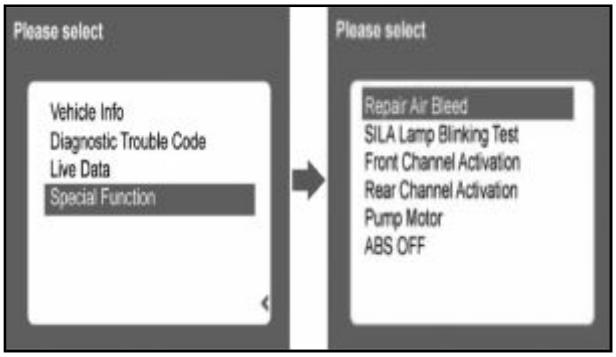
ABS Functions

11-C1.

Select 'BOSCH ABS System'. Press (OK) to continue.

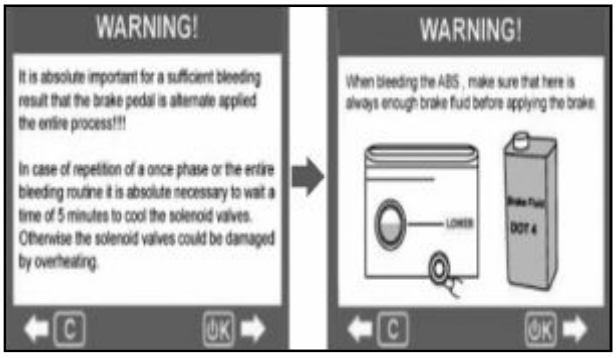
11-C2.

Select 'Special Function'. Then, select 'Repair Air Bleed'.



11-C3.

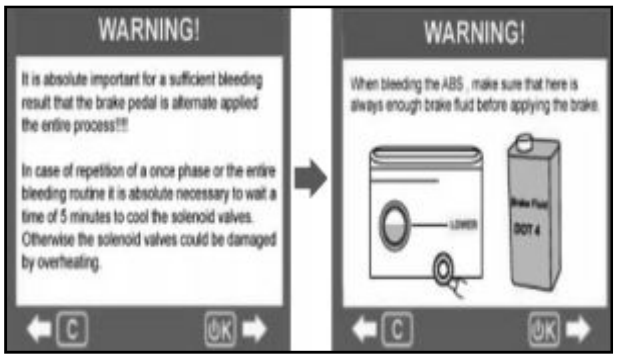
Read the warning first before start operating air bleeding.



ROYAL ENFIELD NACS II DIAGNOSIS

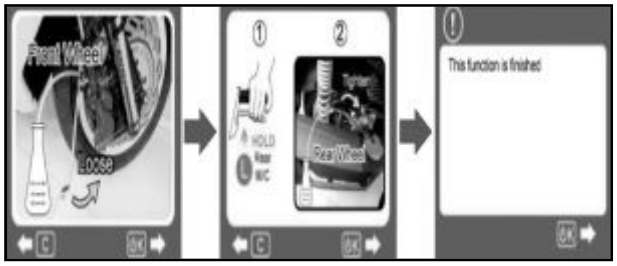
11-C3.

Read the warning first before start operating air bleeding.



11-C4.

Follow each step on thescreen to finish the procedure.



11-C5.

SILA Lamp Blinking Test

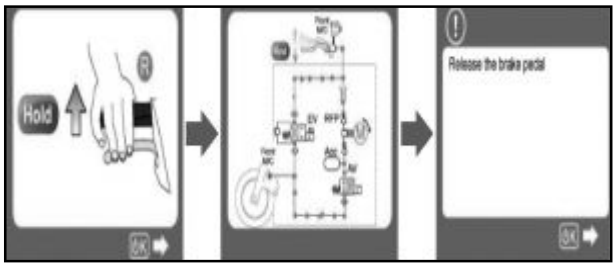
Follow the screen guide to finish the test.

11-C6.

Front Channel Activation

11-C7.

Follow the instructions on screen to finish the activation.



11-C8.

Follow the instructions on screen to finish the activation.

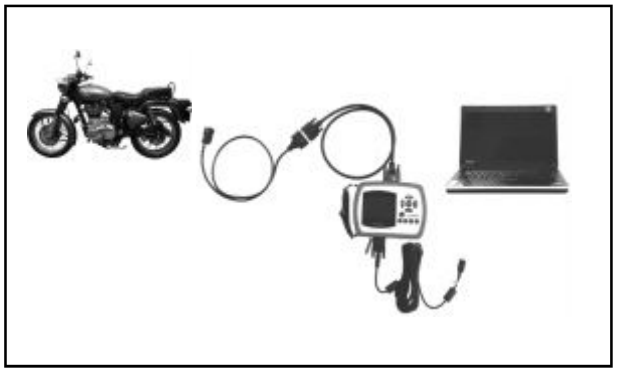
ROYAL ENFIELD NACS II DIAGNOSIS

12. Diagnostic software for PC base

12-1.

Before diagnosis, please connect your NACSII-ROYAL diagnostic took kit with your motor cycle.

PC → USB Hi-Speed Cable → NACSII-ROYAL interface → Main Cable → Diagnostic Cable → Motorcycle (IG ON)



12-2.

Double click NACSII_ROYAL onthe desktop to open diagnostic software.

12-3.

When the first time you use software, the software will enter register process automatically. 'Please make sure your PC is connected to the internet. When the window displays 'Product key', click 'NEXT'. Software will get the password by itself.

12-4.

Registration is completed. Click 'EXIT'.

12-5.

This is the page showing your connected system.

12-6.

Click Info to show Interface info and Contact info of I.C.M.

12-7.

Click ENG to switch language.

After selecting language.

Click ✓ to confirm setting

Click Next to continue.

12-8.

Connecting to engine system. Please wait...

12-9.

There are various green buttons on the right. i button is for displaying all the vehicle info.

12-10.

Click to read the Diagnostic Trouble code. Click 'Current' toread current DTC. Click 'History' to read history DTC.

12-11.

If you want to print trouble code, click Print to print DTC data. It will take a moment.

12-12.

The window will pop up for selecting printer.

12-13.

If you want to freeze DTC data, select the code which has mark. Click to freeze data

12-14.

This is the page of freeze data. 'Freeze Data' is the data racorded when FIRST Diagnostic Trouble Code occurred, and one time only record one Diagnostic Trouble Code freeze data, it's for saving the engine dynamic data for further analysis. Click to return to Diagnostic Trouble Code page.

12-15.

To erase the Diagnostic Trouble Code, click

Note : if you click the erase button, all Diagnostic Trouble Code in 'Current' and 'History' will be erased!

12-16.

Click to see specification of live data.

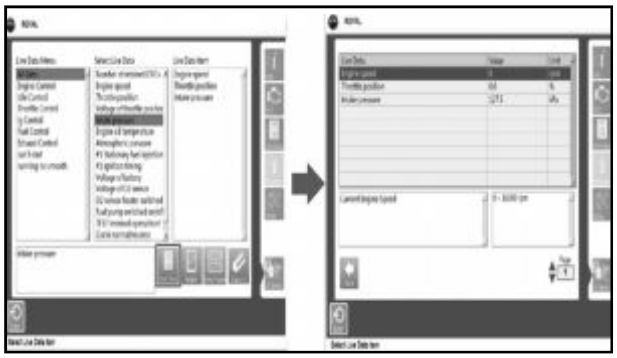
12-17.

Click to see the live data. You can select 'All Data' to view all live data or select the item which used often. Selected items will be listed in the block of 'Live Data Item'.

ROYAL ENFIELD NACS II DIAGNOSIS

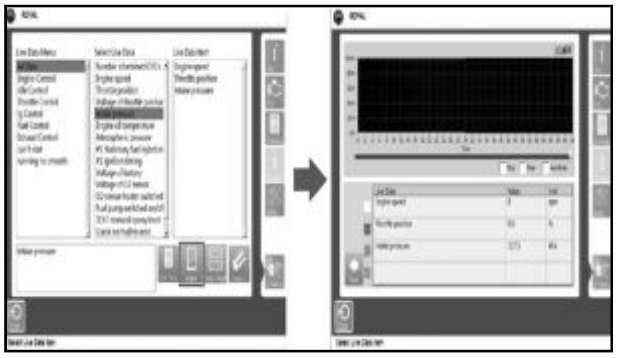
12-17-A.

Click  to view selected data values.



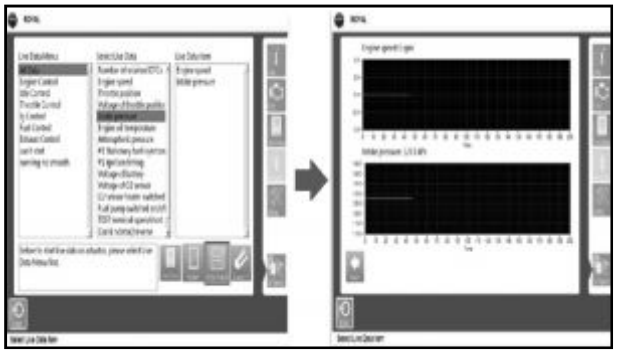
12-17-B.

Click  to view wave chart.



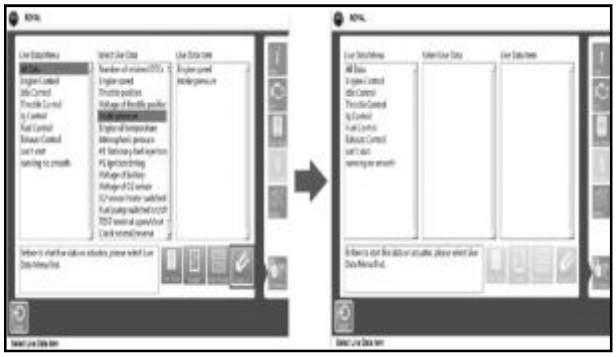
12-17.

Click  to view chart of 2 live data items at the same time.



12-17-D.

Click  to erase ALL selected live data. If you want to erase only one item, please press and hold 'Shift' key and select the item that you want to delete. Then, click  button. The selected item will be erased.



12-18.

This button  is for special function. Functions depend on ECU type. Take 'CO adjustment' as an example. Select the item and click 

12-19.

The page will display 'What to do' for next step. Click  to continue.

12-20.

Adjust CO value by clicking ◀ and click ▶ to Save save adjusted value.

13-2.

Select Record Date and File name, then click ➡

13. RECORD ANALYZING SOFTWARE

This software is for reading NACS II handheld recorded data. Please take out SD card from NACS II handheld tool and insert SD card to PC.

13-3.

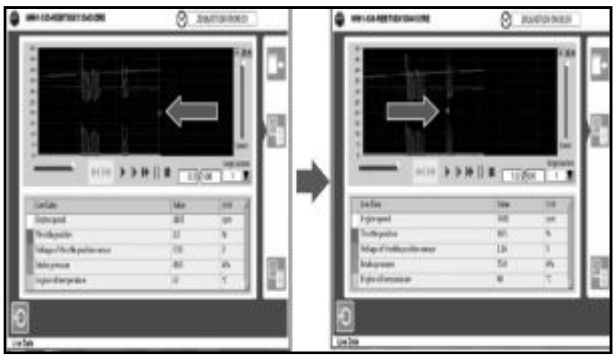
Select the items which used often. Selected items will be listed in the block of 'Live Data Item'. Click  to view wave chart of selected items.

13.1.

Open the software of 'NACSII_Record_Royal'. Select 'Analyze Record Data'.

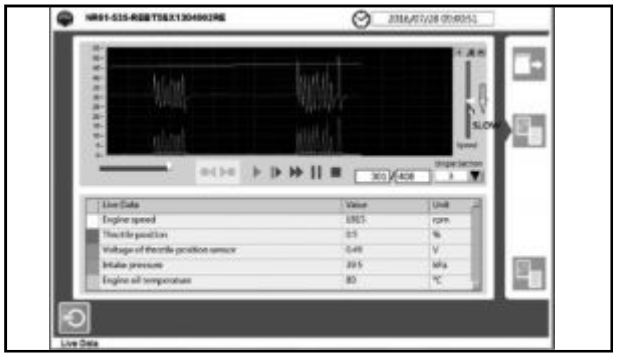
13-4.

Wave chart starts running until press 'Stop' button. Drag Yellow line forward and back to view recorded live data values.



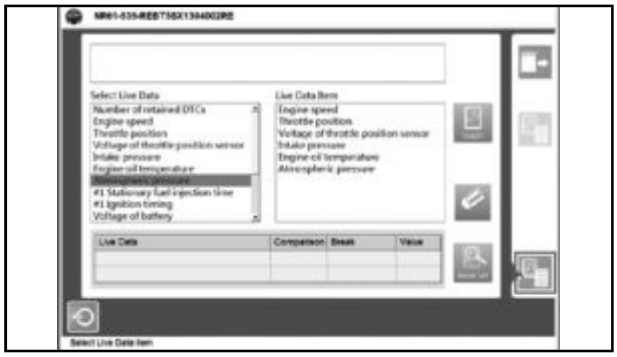
13-5.

To slow down the playing speed of wave chart, please drag the slider down.



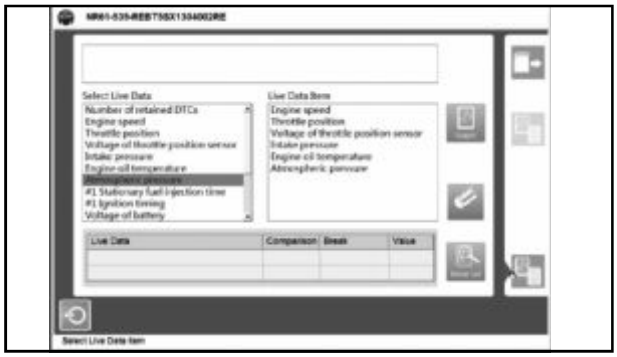
13-6.

To view different sections of wave chart, please click to select page number. Click the 2nd to go back to last page.



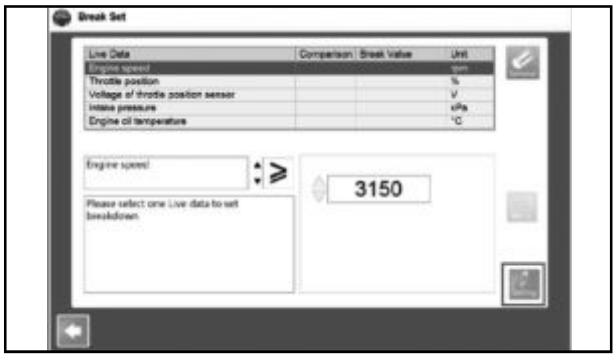
13-7.

Select items to set breakdown point for analysis. After selecting items, click



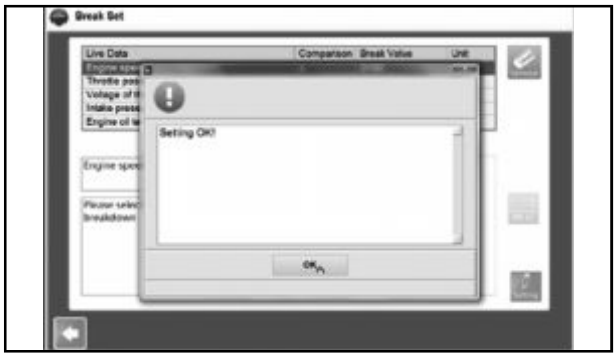
13-8.

For example, setting Engine speed grater than 3150, enter 3150 in the right block. Click to confirm the setting value.



13-9.

When window pops up 'Setting OK', the setting is completed.

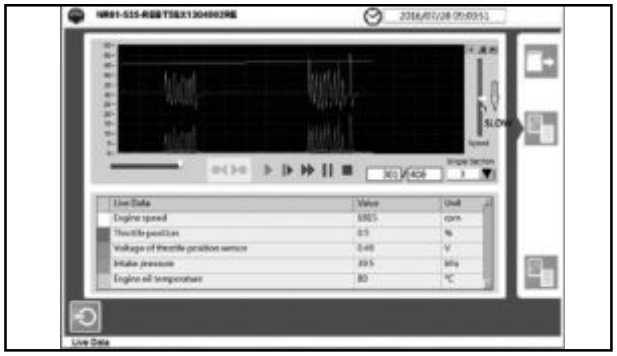


13-10.

The setting value will display in the blockunder 'Break' Click to view wave chart.

13-11.

Click to quickly find matched point of setting value.

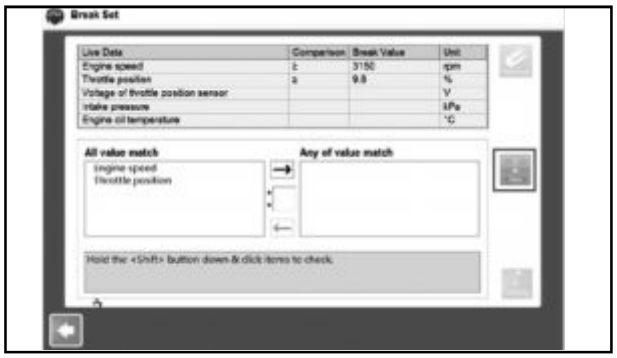


13-12.

Sometimes, setting only one value still can not find the main problem which causes malfunction. In this case, setting the 2nd value or more values can help user to find satisfied conditions. To set the second value please select Live data item. Take throttle position as an example. Enter throttle position grater than 9.8 in the right block and click to finish setting.

13-13.

After Setting 2 values of the 2 items, the 2 items will be listed in the block of 'All value match' Click to go back to Live data selection page.

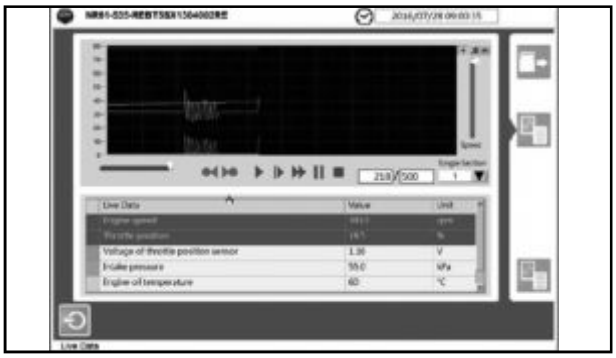


13-14.

Back to Live data selection page, click to view wave chart of the 2 setting values.

13-15.

Click to quickly find the 2 matched conditions.



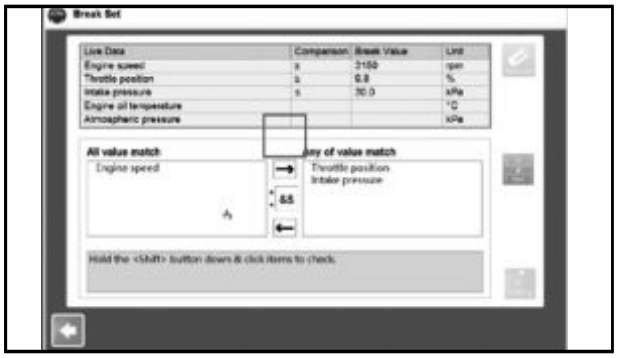
13-16.

Back to Live data selection page, setting the 3rd value as the same way as step 18-8. Click to finish setting.

13-17.

The 3 setting items will be listed in 'All value match' block. To analyze conditions and differences of values, it's necessary to select match items. Select the items and then → The selected items will be listed in 'Any of value match' block. Continue to set match conditions : AND, OR &&, AND : All conditions of setting items must be satisfied.
OR : One of or any of selected items must be satisfied. && : Setting items listed in 'All value match' and 'Any of value match' must be satisfied. If there isno matched condition, the window will pop up showing condition can't match.

After setting condition, click  to go back to Live data selection page.

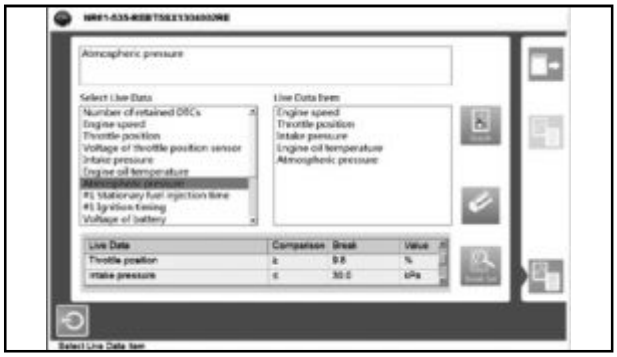


13-18.

Click to wave chart.

13-18.

Click to quick find matched conditions.

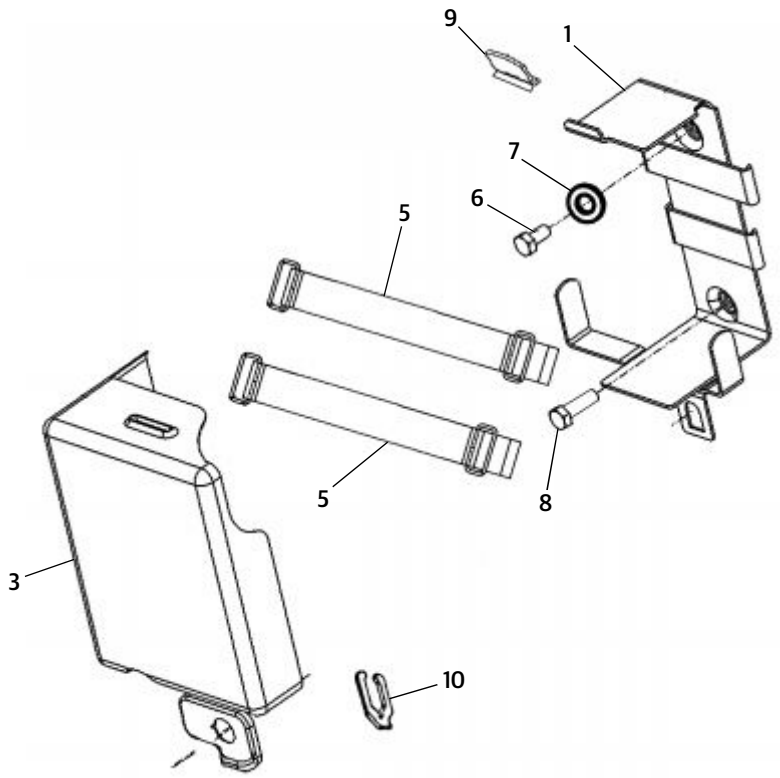


SECTION 12 - ELECTRICALS

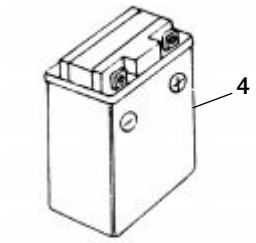
SECTION 12.1 - BATTERY

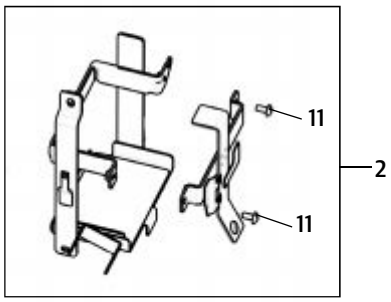
EXPLODED VIEWS

BULLET EFI, BULLET CLASSIC EFI, CONTINENTAL GT



Continental GT





S.NO.	DESCRIPTION	QTY.
1	Battery Carrier Assy	1
2	Battery Carrier Assy	1
3	Cover - Battery Black New	1
4	Battery - 12V 14AH	1
5	Strap Battery	2
6	Hex Bolt M8 X 1.25 X 16	1

S.NO.	DESCRIPTION	QTY.
7	Washer	1
8	Hex. Flanged Bolt M8 X 1.25 X 45	1
9	Cap Battery Carrier - Rubber Rectangle	1
10	Clip Lock	1
11	Phillips Round Head Machined Screw M6X13	2

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.1	**Battery - Dismantling** **Bullet Classic EFI/ Bullet EFI** ■ The battery is located on the left side of the motorcycle. ■ Ensure the motorcycle is parked on its center stand, in a well ventilated area. ■ Ensure the ignition switch and engine stop switch are in OFF position. ■ Unlock and remove the battery cover. ■ Remove the two straps holding the battery to the battery carrier. ■ Pull the battery out slightly from the battery carrier. ■ Remove the battery from the carrier.	 **NOTE:** Disconnect -VE terminal FIRST and the +VE terminal NEXT.  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.1	**Battery - Dismantling** **Continental GT** ■ The battery is located on the left side of the motorcycle. ■ Ensure the motorcycle is parked on its center stand, in a well ventilated area. ■ Ensure the ignition switch and engine stop switch are in OFF position. ■ Unlock and remove the battery cover. ■ Remove the battery carrier bracket by loosening the two screws. ■ Pull the battery out slightly from the battery carrier. ■ Remove the battery from the carrier.	 **NOTE:** Disconnect -VE terminal FIRST and the +VE terminal NEXT.

INSPECTION

NOTE:

Always disconnect -ve cable FIRST and then +ve cable next from the battery terminals.

- Clean the terminals using a soft wire brush to remove any oxidations.
- Check the electrolyte level to see if it is between MAX and MIN lines.
- Check and ensure the specific gravity of the electrolyte and the terminal voltage are as per the recommendations of the battery manufacturer.
- Inspect the battery screws, clamps and cables for oxidation, breakage, loose connections and corrosion.
- Clean the battery well using a soft and wet cloth.
- Inspect the battery carefully for any deformation of its housing. If found deformed, replace the battery immediately.

CAUTION:

If necessary top up ONLY with pure and clean distilled water till the level is between the MAX and MIN lines. DO NOT OVERFILL as it will overflow through the vent hole of the battery and cause irreparable damage to the motorcycle parts.

WARNING

Motorcycle batteries contain lead and lead components, acids and chemicals known to cause cancer, birth defects or other reproductive harm. Exercise extreme caution while handling a battery. Wash hands thoroughly whenever a Battery is handled.

- Do not smoke or allow open flame or sparks in the vicinity.
- Store the battery carefully and ensure the terminals dok not come into contact with any metal surface which will result in a short circuit.
- Do not short the battery terminals as it might result in an explosion of the battery.

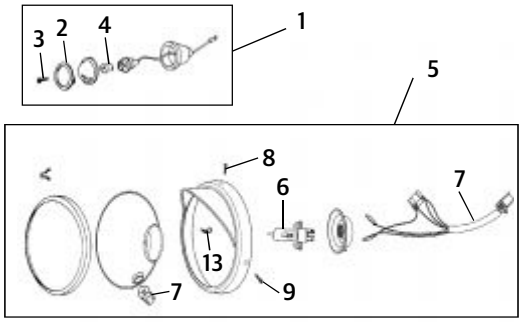
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.1	**Battery - Assembling** **Bullet Classic EFI/ Bullet EFI** ■ Locate the battery in the carrier with the terminals facing inside. ■ Connect the +VE terminal wire first. ■ Connect the -VE terminal wire next. ■ Ensure the terminals are firmly connected. ■ Apply a coat of petroleum jelly or battery terminal protector to prevent oxidation of the terminals. ■ Ensure the protective covers are properly located over the terminals to prevent any metal coming in contact with the terminals and causing a short circuit ■ Position the battery correctly and fully inside the carrier and strap the battery securely using the two rubber straps. ■ Locate the battery cover over the battery and lock it in place.	  

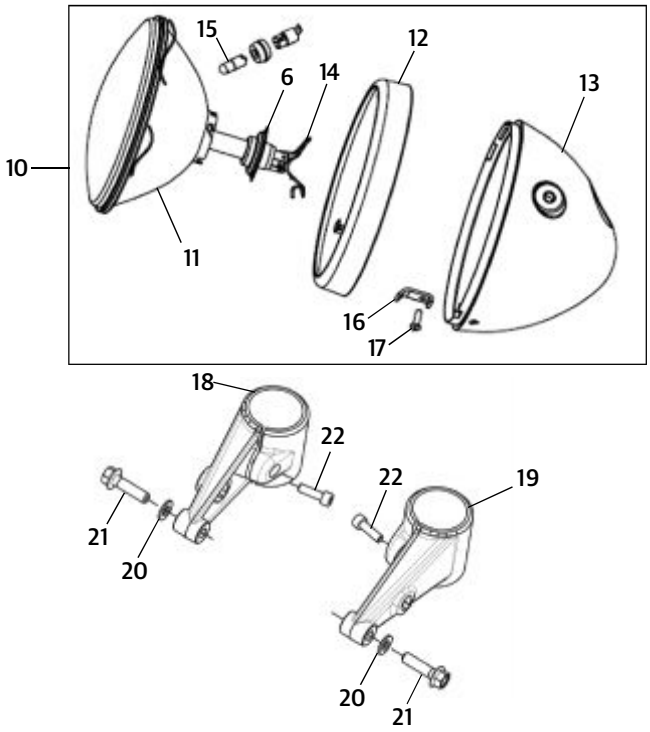
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.1	**Battery - Assembling** **Continental GT** ■ Locate the battery in the carrier with the terminals facing inside. ■ Connect the +VE terminal wire first ■ Connect the -VE terminal wire next. ■ Ensure the terminals are firmly connected. ■ Apply a coat of petroleum jelly or battery terminal protector to prevent oxidation of the terminals. ■ Ensure the protective covers are properly located over the terminals to prevent any metal coming in contact with the terminals and causing a short circuit. ■ Position the battery correctly and fully inside the carrier. ■ Locate the battery cover over the battery and lock it in place.	

SECTION 12.2 - HEAD LAMP, TAIL LAMP, TRAFFICATOR, CLUSTER & ITS BULBS

EXPLODED VIEWS

HEAD LAMP & PILOT LAMP

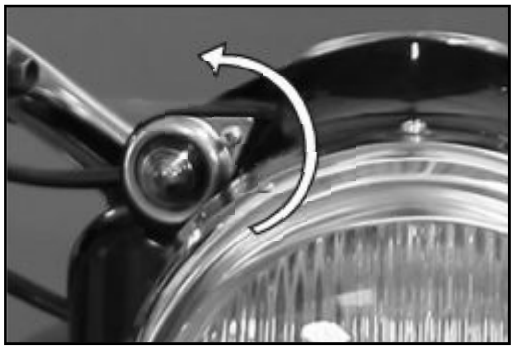




Continental GT

S.NO.	DESCRIPTION	QTY.
1	Pilot Lamp With Bulb	2
2	Bulb	2
3	Screw Pilot Lamp Rim Fixing	2
4	Bulb 12V - 2W Ba 7S Cap	2
5	Head Lamp Assy. with Halogen Bulb LHT	1
6	Head lamp Bulb 12V, 60 / 55W Halogen	1
7	Bulb 12V - 4W BA 7S Cap	1
8	Screw Rim Fixing Top with Clamp	1
9	Pan Head Screw M5 X 0.8 X 12	2
10	Head Lamp Assy. with Bulb	1
11	Lens and Reflector Assy	1

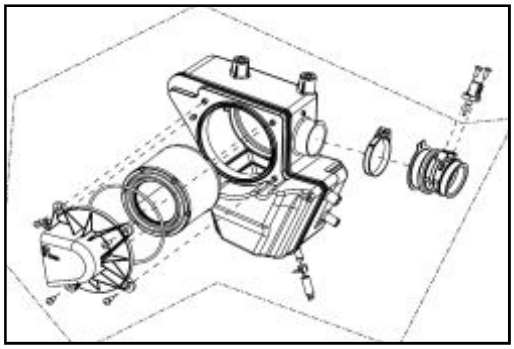
S.NO.	DESCRIPTION	QTY.
12	Rim Assy.	1
13	Housing Assy.	1
14	Bulb Holding Spring	1
15	Bulb 12V (T4W)	1
16	Housing Locating Bracket	1
17	Pan Head Screw	1
18	Head Lamp Holder RH	1
19	Head Lamp Holder LH	1
20	Washer	2
21	Flanged Hex. Bolt M8 X 30	2
22	Hex. Socket Head Cap Screw M6 X 20	2

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Pilot Lamp** **Bullet EFI/Bullet Classic EFI** **Dismantling** ■ Loosen 2 pilot lamp rim fixing screw on LH & RH side. ■ Gently remove the bulb from its holder	

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Pilot Lamp** **Bullet EFI/Bullet Classic EFI** **Assembling** ■ Locate the Pilot lamp bulb in the holder ■ Install 2 pilot lamp rim fixing screw on LH & RH side.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Head Lamp** **Bullet Classic EFI/ Bullet EFI** **Dismantling** ■ Loosen rim fixing top with clamp screw mounted on head lamp rim assembly ■ Loosen 2 pan head screws on LH & RH side mounted on head lamp housing assembly. ■ Gently Remove head-lamp assembly. ■ Remove the rubber grommet from the bulb ■ Gently Press the clip by thumb to release the free end from bulb holder. ■ Gently pull out the bulb.	 **Pan Head Screw M5** **Philips Screw Driver**  **CAUTION:** Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Head Lamp Continental GT Dismantling** ■ Loosen screw fixing top with clamp pan head lamp mounting assembly. ■ Loosen 2 hex bolt along with washer on LH & RH side mounted on the front end of the headlamp Holder. ■ Remove 2 hex socket head cap screws from the inner side of head lamp holder on LH & RH side. ■ Gently remove the headlamp assy. ■ Thumb push and remove the bulb holding clamp. ■ Gently remove the bulb.	**Philips Screw Driver** **Flanged Hex Bolt M8** **Socket spanner 13 mm** **Hex Socket head cap screws M6** **Philips Screw Driver**  **CAUTION:** Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Head Lamp Bulb Bullet Classic EFI / Bullet EFI Assembling** ■ Locate the bulb into reflector unit of the headlamp.	
	■ Gently press the bulb holding clip and lock the free end in its slot.	
	■ Locate the rubber grommet.	
	■ Connect the electrical connections carefully & assemble the headlamp.	

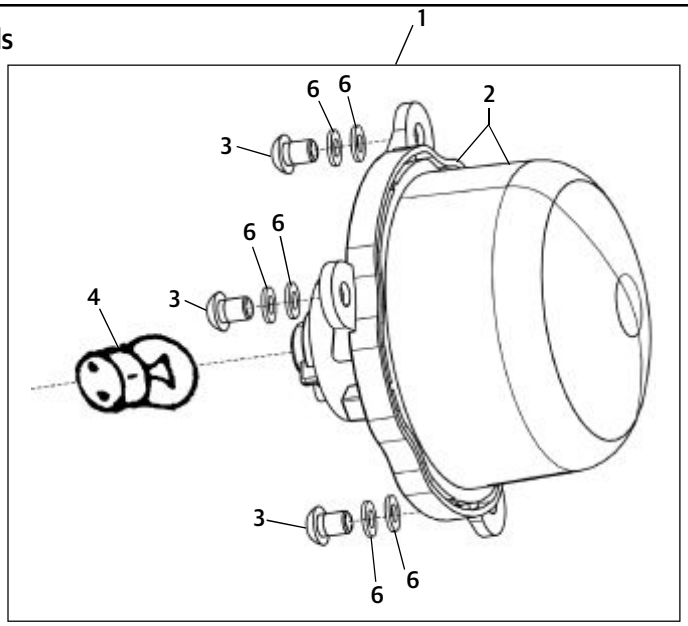
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Head Lamp** **Bullet Classic EFI/ Bullet EFI** **Assembling** ■ Locate head lamp assembly. ■ Install 2 pan head screws on LH & RH side mounted on head lamp housing assembly. ■ Install Screw on rim fixing top with clamp mounted on head lamp rim assembly.	**Pan Head Screw M5** **Philips Screw Driver**  

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Head Lamp Bulb Continental GT Assembling** ■ Install the bulb holding clamp. ■ Connect the Electrical connections.	
	■ Locate the headlamp assembly. ■ Install 2 hex socket head cap screws on the inner side of head lamp holder on LH & RH side. ■ Install 2 hex bolt along with washer on LH & RH side and mount on the front end of the headlamp Holder. ■ Install screw fixing top with clamp on head lamp mounting assembly.	**Hex socket head cap screw M6** **Philips Screw Driver** **Flanged Hex Bolt M8** **Socket spanner 13 mm** **Philips Screw Driver** 

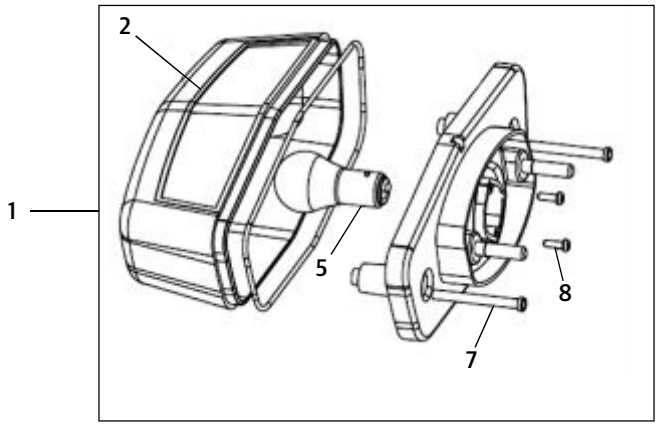
EXPLODED VIEWS

TAIL LAMP

Bullet & Classic Models

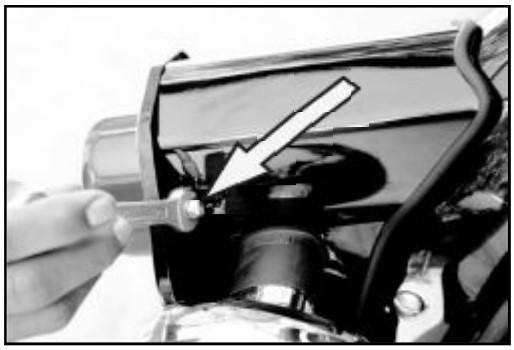


Continental GT

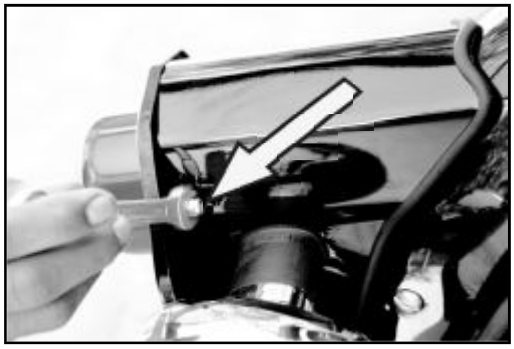


S.NO.	DESCRIPTION	QTY.
1	Tail Lamp	1
2	Lens & Base Sealed, Classic	1
	Lens Complete - Tail Lamp	1
3	Cross Recessed Pan Head Screw M6 X 14	3
4	Bulb - Tail Lamp 12V, 21/5 W	1

S.NO.	DESCRIPTION	QTY.
5	Bulb 12V 21/5W - Tail Lamp	1
6	Plain Washer M6	6
7	Pan Head Tapping Screw - Tail Lamp	2
8	Tapping Screw - Tail Lamp	2

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Tail Lamp** **Bullet Classic EFI/ Bullet EFI** **Dismantling** ■ Loosen 2 Nyloc nuts mounted on LH & RH side on the complete tail lamp bracket. ■ Disconnect the tail lamp coupler. ■ Gently pull out Tail Lamp assembly along with tail lamp bracket ■ Gently rotate the bulb holder in anticlockwise to remove the bulb from its holder assembly. ■ Gently pull out the bulb.	**Hex Nyloc Nut M6** **Double end spanner 8mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Tail Lamp Continental GT Dismantling** ■ Refer Section 5.4 for seat removal. ■ Loosen 2 pan head tapping screws mounted on tail lamp LH & RH sides ■ Remove 2 tapping screws mounted on inner side of tail lamp on both LH & RH sides	**Pan head tapping screw** **Philips Screw Driver**  **CAUTION:** Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 
	■ Gently remove the Tail lamp assembly	**Tapping screws** **Philips Screw Driver** 

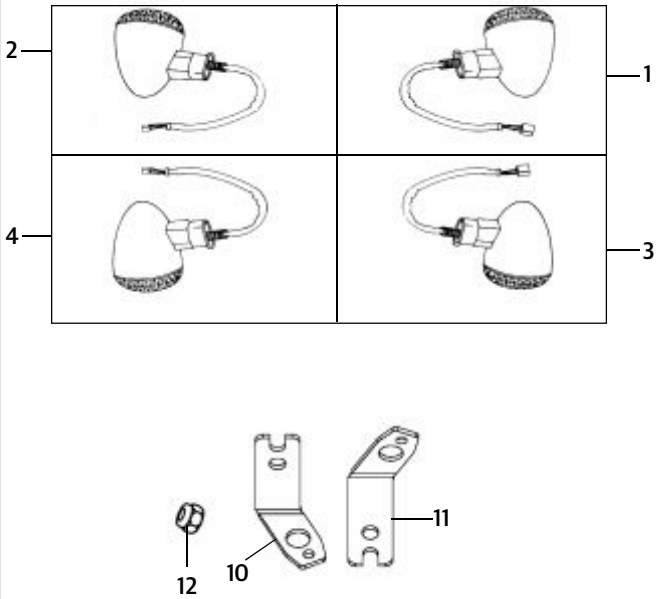
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Tail Lamp** **Bullet Classic EFI/ Bullet EFI** **Assembling** ■ Locate the bulb in the tail lamp ■ Locate Tail Lamp assembly on the tail lamp bracket ■ Connect the tail lamp coupler ■ Install 2 Nyloc nuts mounted on LH & RH side on the complete tail lamp bracket.	**Hex Nyloc Nut M6** **Double end spanner 8mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Tail Lamp Continental GT Assembling** ■ Gently hold the bulb, push inside & rotate clockwise to locate the bulb on the holder.	**CAUTION:** Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 
	■ Locate Tail lamp assembly. ■ Install 2 tapping screws and mount on inner side of tail lamp on both LH & RH sides	
	■ Install 2 pan head tapping screws and mount on tail lamp LH & RH sides. ■ Refer Section 5.4 for seat assembly	**Pan head tapping screw** **Philips Screw Driver** **Tapping screws** **Philips Screw Driver** 

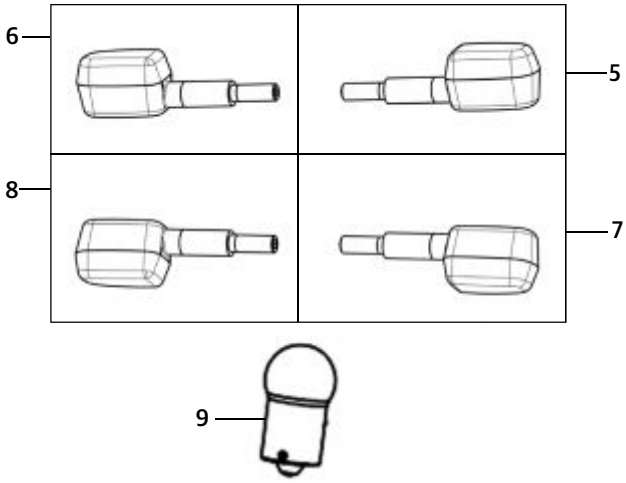
EXPLODED VIEWS

TRAFFICATOR LIGHTS

Bullet & Classic Models



Continental GT



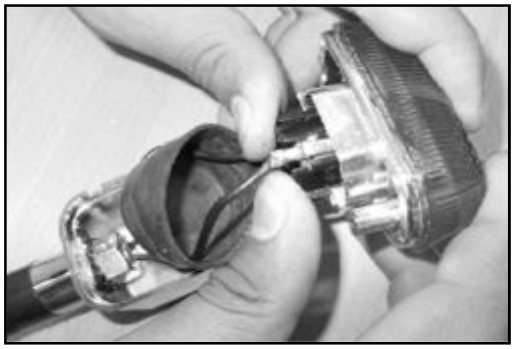
S. NO.	DESCRIPTION	QTY.
1	Trafficator Assy. - RH - Front	1
2	Trafficator Assy. - LH - Front	1
3	Trafficator Assy. - RH - Rear	1
4	Trafficator Assy. - LH - Rear	1
5	Trafficator Assy. - With Bulb - Front RH	1
6	Trafficator Assy. - With Bulb - Front LH	1
7	Trafficator Assy. - With Bulb - Rear LH	1

S. NO.	DESCRIPTION	QTY.
8	Trafficator Assy. - With Bulb - Rear RH	1
9	Bulb 12V 10W	4
10	Bracket LH, Front - Black	1
11	Bracket RH, Front - Black	1
12	Nut, Nylock M8 X 9.5	2

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Trafficator** **Bullet Classic EFI/ Bullet EFI** **Dismantling** ■ Loosen 2 Nyloc nuts mounted on RH & LH Bracket in the trafficator ■ Gently remove the Trafficator assembly on LH & RH side	**Nyloc Nut M8** **Double End Spanner 13 mm** 
	■ Press bulb gently & Turn anticlockwise to take out the bulb.	Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Trafficator Continental GT Dismantling**	
	■ Loosen 2 hex screws on LH & RH side mounted on the rear end of the headlamp holder. ■ Gently remove the Trafficator assembly on LH & Rh side from the headlamp holder	**Hex socket head cap screw M6** **Socket spanner 10mm** 
	■ Pull out the Indicator housing.	Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Trafficator** **Bullet Classic EFI/ Bullet EFI** **Assembling** ■ Press bulb gently & Turn clockwise direction to locate the bulb in the holder.	
	■ Locate the Trafficator assembly on LH & RH side. ■ Install 2 Nyloc nuts on RH & LH side of the brackets.	**Nyloc Nut M8** **Double End Spanner 13 mm** 

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Trafficator Continental GT Assembling**	
	■ Locate the bulb	Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling. 
	■ Locate Trafficator assembly into the headlamp holder on LH & RH side. ■ Tighten 2 hex screws on LH & RH side and mount on the rear end of the headlamp holder.	**Hex socket head cap screw M6** **Socket spanner 10mm** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Console** **Bullet Classic EFI/ Bullet EFI** **Dismantling** ■ Refer Section 11.2 for Headlamp dismantling ■ Disconnect the coupler mounted on speedometer. ■ Loosen the nut mounted on bottom side of speedometer in clockwise direction. ■ Gently push the speedometer upwards from bottom end of speedometer unit such that it will come out from the speedometer slot.	
12.2	**Instrument Cluster Continental GT Dismantling** ■ Disconnect the coupler ■ Loosen 4 hex screws on both LH & RH side mounted on the Instrument cluster bracket assembly.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Console** **Bullet Classic EFI/ Bullet EFI** **Assembling** ■ Gently push the speedometer downwards from top end of speedometer unit such that it will get seated in the speedometer slot. ■ Install the nut on bottom side of speedometer in Anti-clockwise direction ■ Connect the coupler mounted on speedometer ■ Refer Section 11.2 for Headlamp Assembling.	
12.2	**Instrument Cluster Continental GT Assembling** ■ Install 4 hex screws on both LH & RH side on the Instrument cluster bracket assembly. ■ Connect the Couplers.	

CONSOLE BULBS REPLACEMENT

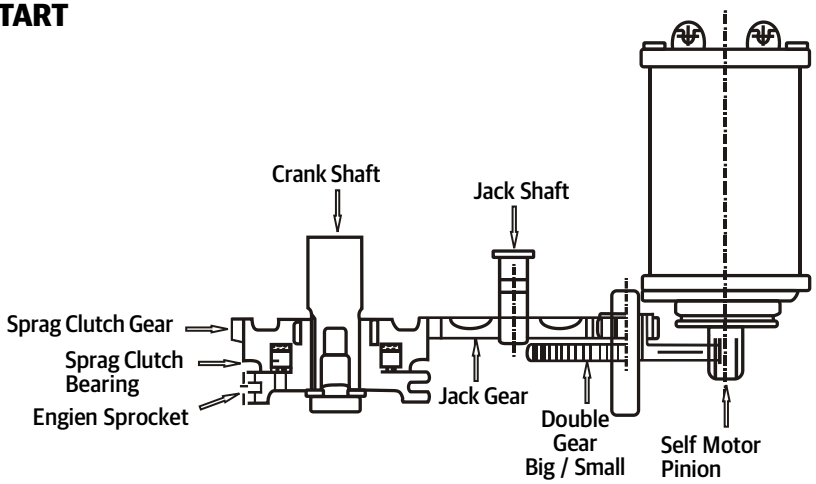
S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Console Bulb** **Bullet Classic EFI / Bullet EFI** **Dismantling** ■ Disconnect the couplers ■ Gently pull out the bulb (Speedo meter/Neutral/ High beam& Low beam/ Turn Signal Bulbs) from its holder.	
12.2	**Cluster Bulb** **Continental GT** **Dismantling** ■ Disconnect the couplers. ■ Gently pull out the out the bulb.	Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling.

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	**Console Bulb** **Bullet Classic EFI / Bullet EFI** **Dismantling** ■ Gently fix the bulb (Speedo meter/Neutral/ High beam& Low beam/ Turn Signal Bulbs) on the holder. ■ Connect the couplers.	Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling.
12.2	**Cluster Bulb** **Continental GT** **Dismantling** ■ Gently locate bulb on the holder. ■ Connect the couplers	Never touch the bulb with your fingers, Finger prints will etch the glass and decrease bulb life. Always hold the bulb with paper or clean dry cloth during handling.

SECTION 12.3 - ELECTRICAL COMPONENTS

WIRING LAYOUT

SCHEMATIC DIAGRAM OF E-START MECHANISM - UCE MODELS



TECHNICAL SPECIFICATIONS

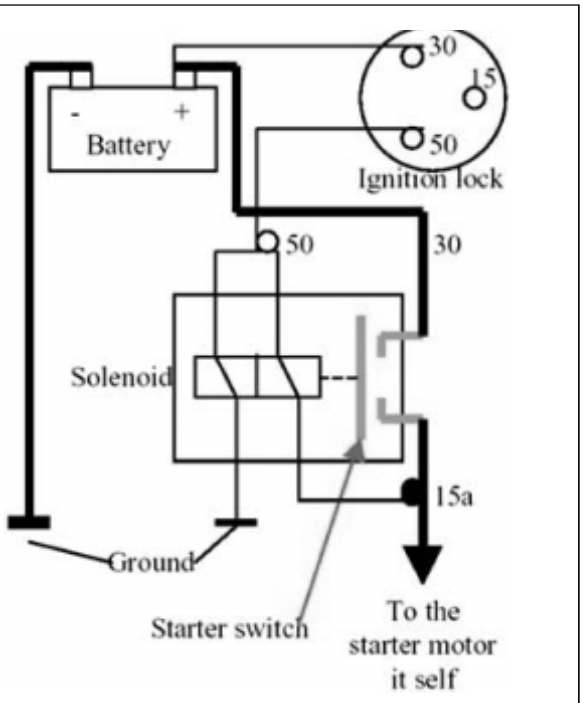
System / Battery	12V DC / 12V 14 Ah
Starter Motor	0.9 KW
Solenoid Switch	Magnetic Relay type

INSPECTION

Ensure earth terminal is located on the outside hex flange bolt of the starter motor before tightening both bolts.

RELAY STARTER

WIRING LAYOUT



Schematic Diagram - Relay

INSPECTION

1. COIL RESISTANCE CHECK

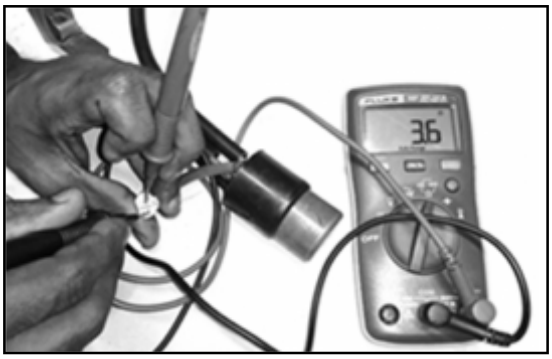
a. Set the Multimeter in Resistance check mode.

b. Keep the positive (Red) probe of the Multimeter on coil positive and Negative probe(Black) of the Multimeter on coil negative.(Refer the below table for polarity identification).

c. Resistance Spec – 3.24 to 3.96 Ω

d. If resistance deviates from the specification or if coil is open/short , Relay starter to be replaced.

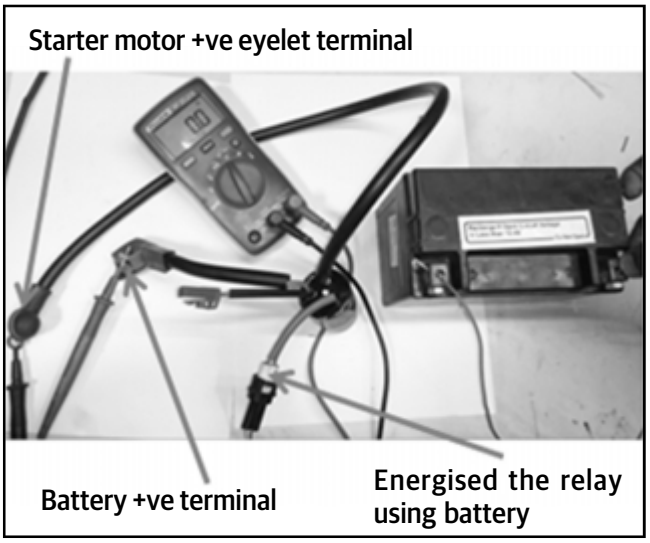
Sl.No.	Euro IV	Coil Polarity & Wire Color
1.	Classic 500 Model	Coil +ve = Blue Coil -ve = White
2.	GT Model	Coil +ve = Brown / Green Coil -ve = Brown / Blue



1. TO CHECK -CONTACT CLOSURE AFTER ENERGISING:

1. Give a supply voltage of 12V across the relay coil (2 pole female terminal). Battery positive on coil positive and Battery negative on coil negative.

2. After energizing the coil, check the continuity between Battery +ve terminal and Starter +ve terminal (Ring terminal) using Multimeter. If the Multimeter indicates OÙ with a beep sound, the contacts have got closed. If the Multimeter indicates as open (OL) ,contacts have not closed and hence the Relay starter has to be replaced.



INSPECTION

STEP 1 :

Check the condition of the six diodes used in the RR Unit.

Take the Multimeter and change the mode to diode check mode. Diode mode would be available in continuity mode.

NOTE :

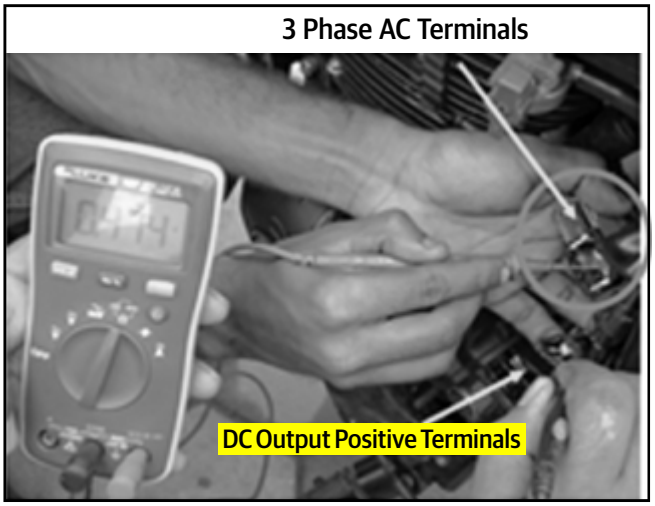
Before checking the diode, internal capacitor of RR unit to be discharged. Else, the diode drop will not be correct. So short the positive and negative terminal of RR Unit DC output(black and red wires) to discharge the capacitor.

STEP 2 :

To check the condition of 3 positive diodes of RR unit, keep the positive probe (Red) of the multimeter in any one of the 3phase terminals (yellow wire inserted in black/red connector) and the negative probe (Black) of multimeter on the positive terminal of DC output (red wire inserted in two pole connector) and check for the condition of diode as shown in the below image.

If the diode is good, then the multimeter will show a voltage drop of 0.4~0.7V.

If diode has failed, multimeter will show either open or short with beep sound, then Replace the RR unit.



STEP 3:

The positive probe of the multimeter shall be kept on all the 3 phase terminals one by one and the condition of the 3 diodes to be checked as mentioned in Step 2.

STEP 4:

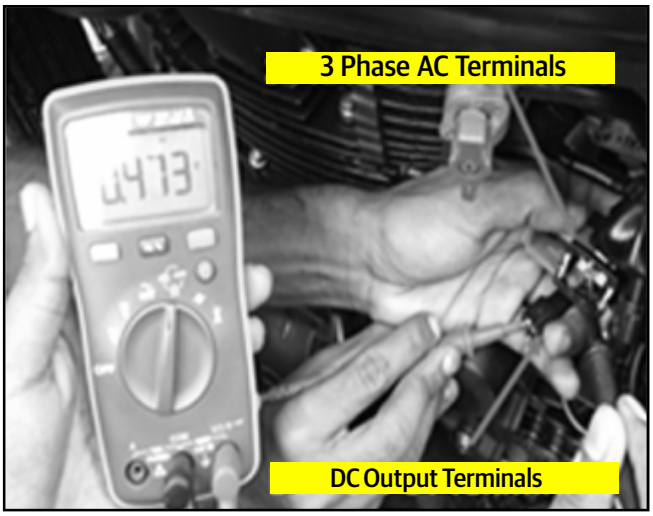
To check the condition of other 3 negative diodes, positive probe (Red colour) of the multimeter shall be kept on the negative terminal of DC output (black wire with eyelet/single pole connector) and negative probe (Black colour) of the multimeter shall be kept on anyone of the 3 phase terminals (yellow wire).

If the diode is good, then the multimeter will show a voltage drop of 0.4~0.7V.

If diode has failed, multimeter will show either open or short with beep sound, then Replace the RR unit.

STEP 5:

All the three diodes to be checked by keeping the multimeter negative probe on all the 3 phase terminals one by one. If the RR Unit is not working, replace with good working RR Unit.



SUPRESSOR CAP

INSPECTION

STEP 1 :

1. Set the Multimeter in Resistance check mode.
2. Keep the positive(Red) and negative (Black)probes of the multimeter on two ends of the suppressor cap.
3. Resistance shall be 3.75 to 6.25 Kilo Ohms

4. If resistance deviates from the specification or open , Suppressor cap to be replaced.

INSPECTION

A) PHASE TO PHASE RESISTANCE CHECK

1. Phase to phase resistance of the magneto shall be checked by setting multimeter in resistance mode.
2. Phase to Phase resistance – 0.59 to 0.72 Ω
3. If the resistance deviates from the spec, then cover shall be opened and checked if stator coil has burnt. If stator coil is burnt then replace the magneto.

If multimeter shows open during resistance check, the coil has got cut or short with the core and magneto has to be replaced.

B) INSULATION TEST

1. For checking the insulation strength, keep the multimeter in continuity mode and check continuity between any 3 phase terminals and engine body. If there is a body short(insulation failure), multimeter will indicate 0ohms (or resistance value ~ 50 ohms) with a beep sound.

If insulation failure is observed, failed magneto to be replaced with new magneto.

2. During visual inspection, if stator coil has burnt, magneto shall be replaced with new magneto.

HORN

INSPECTION

STEP 1 :

1. Set the Multimeter in Continuity check mode.
2. Check for presence of continuity by keeping the horn coupler.

FUSE - USAGE LIST

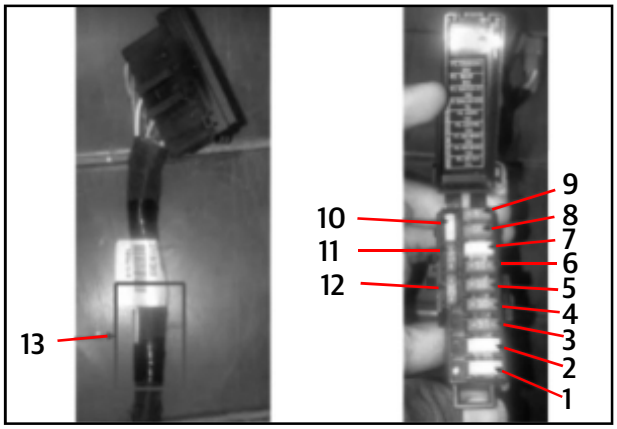
For easy reference the individual fuse ratings and its function is mentioned inside the lid of the fuse box.

- Whenever a spare fuse is used, please ensure it is replenished at the earliest opportunity
- Always get the circuit checked to ascertain the cause of a fuse blowout and rectify to prevent fuses blowing frequently.

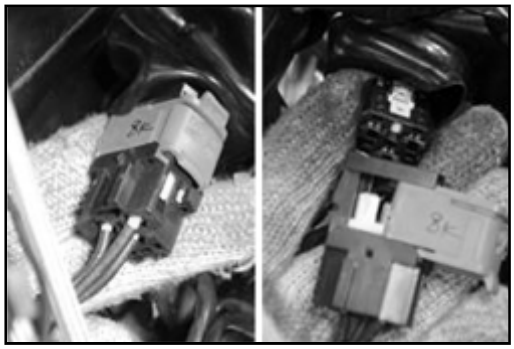
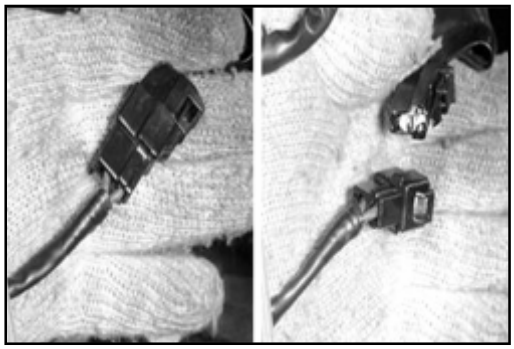
BLADE FUSE USAGE LIST - BULLET CLASSIC EFI /BULLET EFI

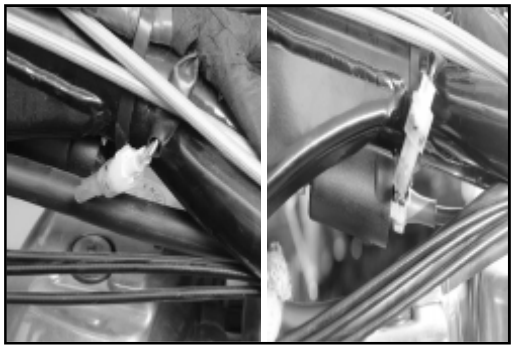
Fuse No.	Colour	Remarks
1	White	Charging Fuse (25A)
2	White	Main Fuse (25A)
3	Blue	Ignition - EFI Fuse (15A)
4	Red	Signalling / Horn Fuse (10A)
5	Brown	Spare Fuse (5A)
6	Blue	Lighting Fuse (15A)
7	White	ABS Main Fuse 1 (25A)
8	Red	ABS Main Fuse 2 (10A)
9	Brown	ABS ECU (5A)
10	White	Spare Fuse (25A)
11	Blue	Spare Fuse (15A)
12	Red	Spare Fuse (10A)

BLADE FUSE USAGE LIST - CONTINENTAL GT



Fuse No.	Colour	Remarks
1	White	Charging Fuse (25A)
2	White	Main Fuse (25A)
3	Blue	Ignition - EFI Fuse (15A)
4	Red	Signalling / Horn Fuse (10A)
5	Red	Horn Fuse (10A)
6	Blue	Lighting Fuse (15A)
7	White	ABS Main Fuse 1 (25A)
8	Red	ABS Main Fuse 2 (10A)
9	Brown	ABS ECU (5A)
10	White	Spare Fuse (25A)
11	Blue	Spare Fuse (15A)
12	Red	Spare Fuse (10A)
13	Brown	Spare Fuse (5A)

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	**Electrical connections** **A. Magneto coupler** ■ Disconnect yellow wired Black coupler from LH side.	
12.3	**B. Pulsar Coil coupler** ■ Disconnect Green wired Black coupler from LH side.	
12.3	**C. Pulsar Coil coupler** ■ Disconnect Green wired Black coupler from LH side.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	**Electrical connections** **D. Relay Starter Coupler** ■ Disconnect Relay starter (WHITE) and Battery Coupler (RED) from LH Side.	
12.3	**E. Ignition Coil Coupler** ■ Disconnect white coupler from LH side.	
12.3	**F. ECU Power Relay & Side stand Switch indication relay** ■ Disconnect ECU Power relay and side stand switch relay.	

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	**Switch Module RH** **Bullet Classic EFI / Bullet EFI / Continental GT** ■ Loosen the 2 Pan head screws mounted on bottom side of Switch Module RH ■ Gently open the RH switch module top and bottom portion to access the RH Switch. ■ Remove 2 pan head screws mounted on RH switch on LH & RH side. ■ Gently remove the switch module RH	**Pan head hex Screw M5** **Philips Screw Driver**  

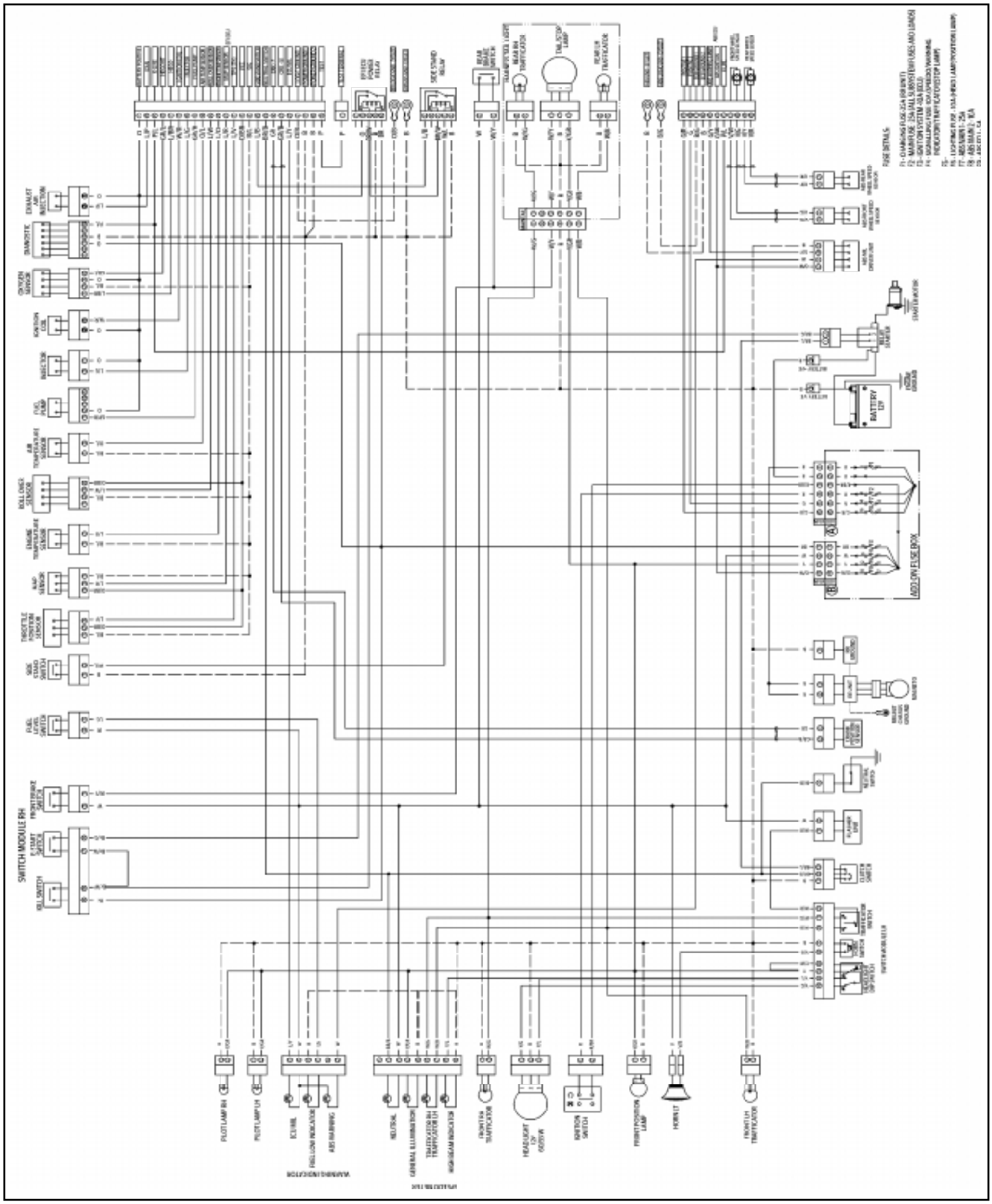
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	**Switch Module RH** **Bullet Classic EFI / Bullet EFI / Continental GT** ■ Locate the RH switch module ■ Install 2 pan head screws on RH switch on LH & RH side. ■ Close the RH Switch module cover top and bottom portion ■ Install the Pan head screw mounted on bottom side of Switch Module RH	 **Pan head hex Screw M5** **Philips Screw Driver** 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	**Switch Module LH** **Bullet Classic EFI / Bullet EFI / Continental GT** ■ Loosen the 2 Pan head screws mounted on bottom side of Switch Module LH ■ Gently open the LH switch module top and bottom portion to access the LH Switch ■ Gently remove the switch module LH	**Pan head hex Screw M5** **Philips Screw Driver**  

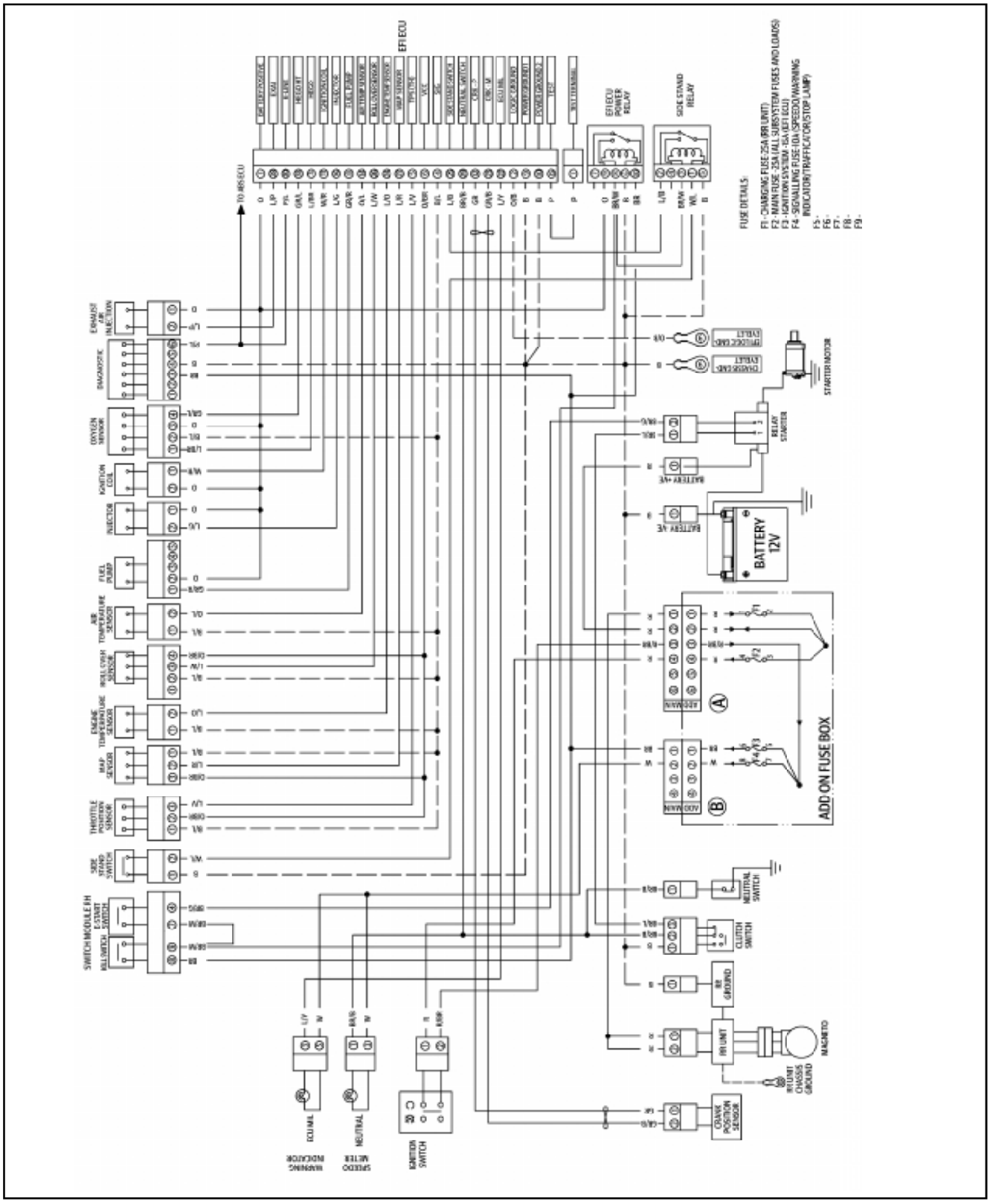
S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	**Switch Module LH** **Bullet Classic EFI / Bullet EFI / Continental GT** ■ Locate the LH switch module	
	■ Close the LH Switch module cover top and bottom portion ■ Install 2 Pan head screwS mounted on bottom side of Switch Module LH	**Pan head hex Screw M5** **Philips Screw Driver** 

SECTION 12.4 - WIRING DIAGRAM

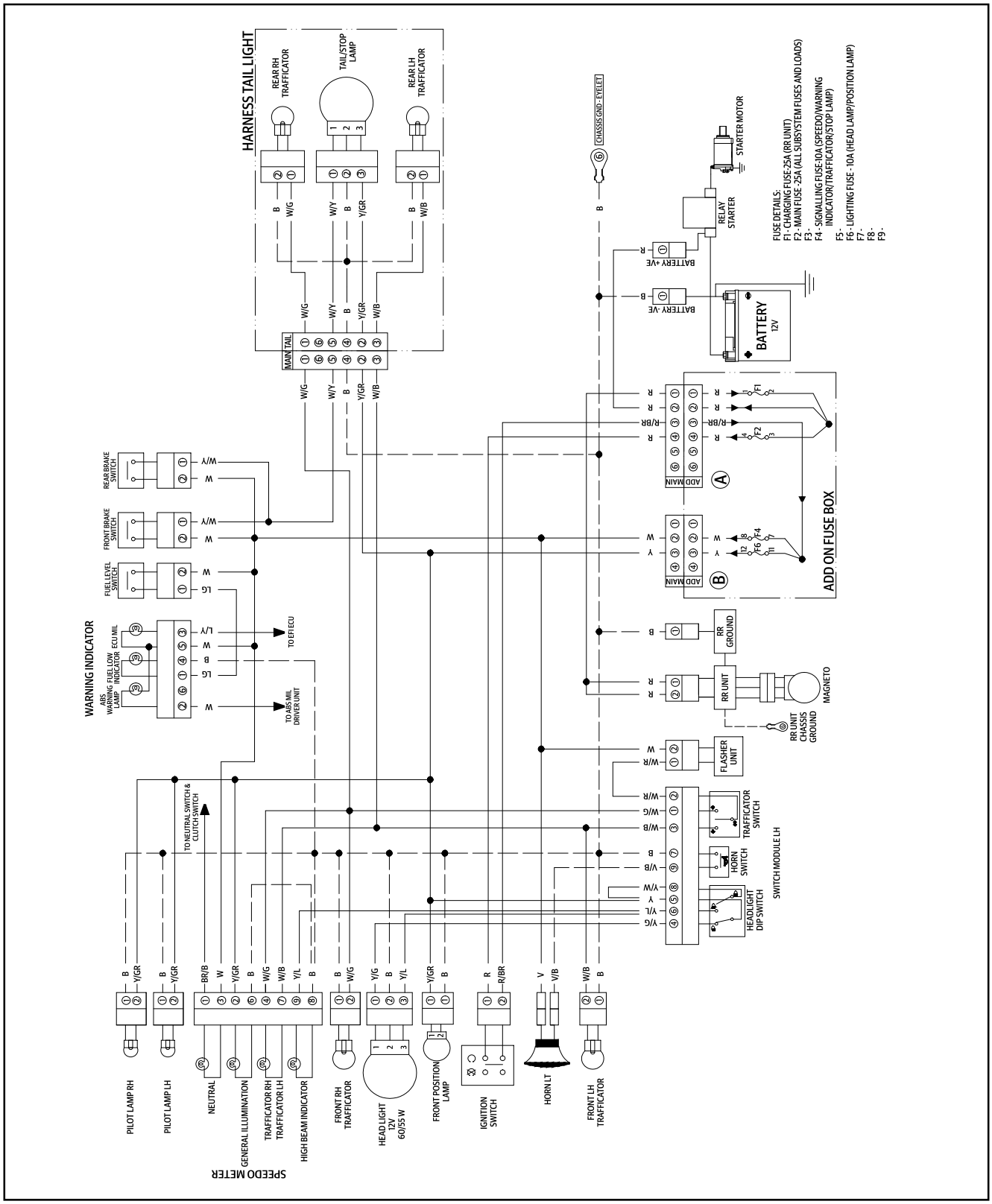
BULLET EFI / BULLET CLASSIC EFI - WIRING HARNESS CIRCUIT



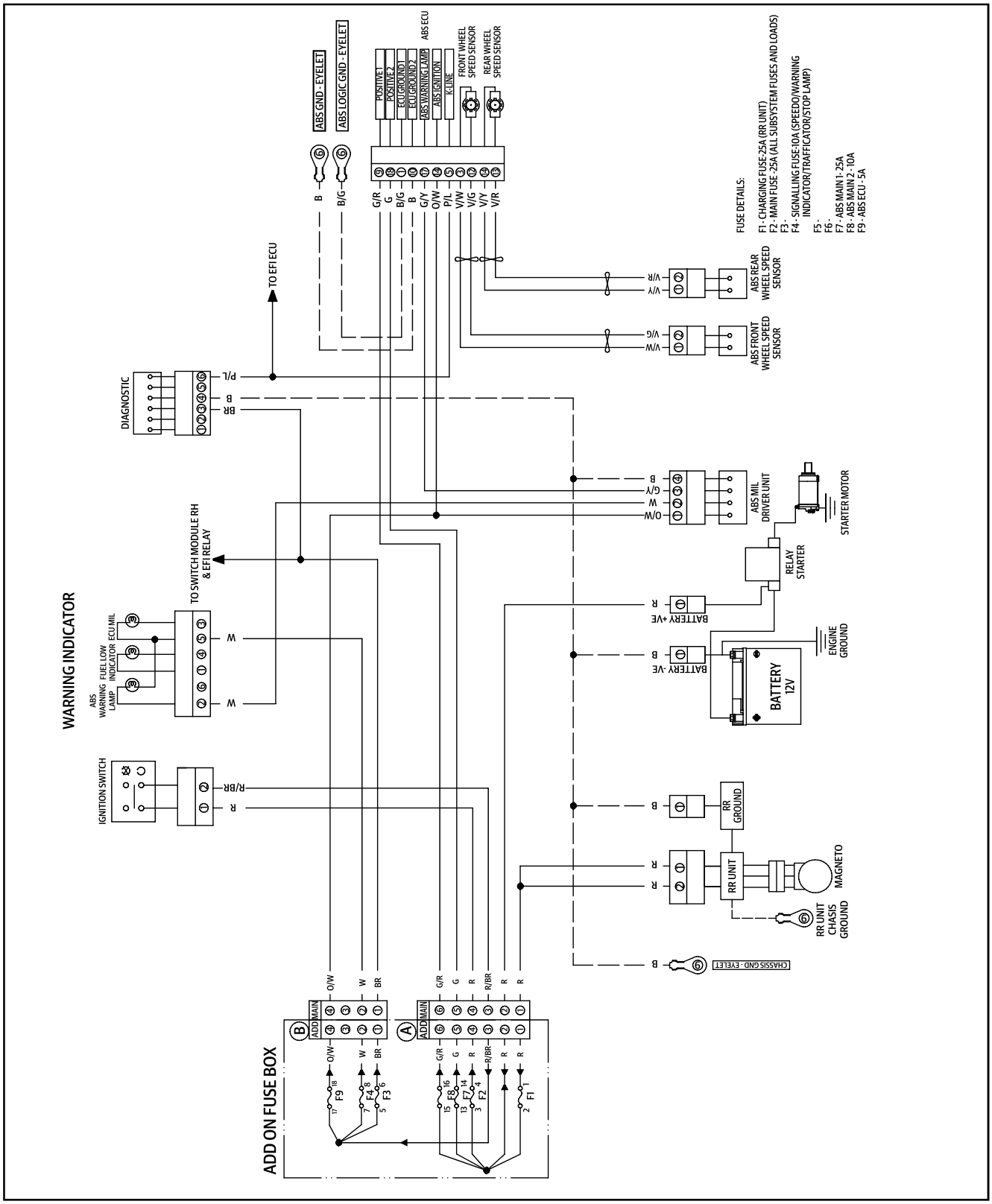
BULLET EFI / BULLET CLASSIC EFI - STARTING, CHARGING & IGNITION (EFI) SYSTEM



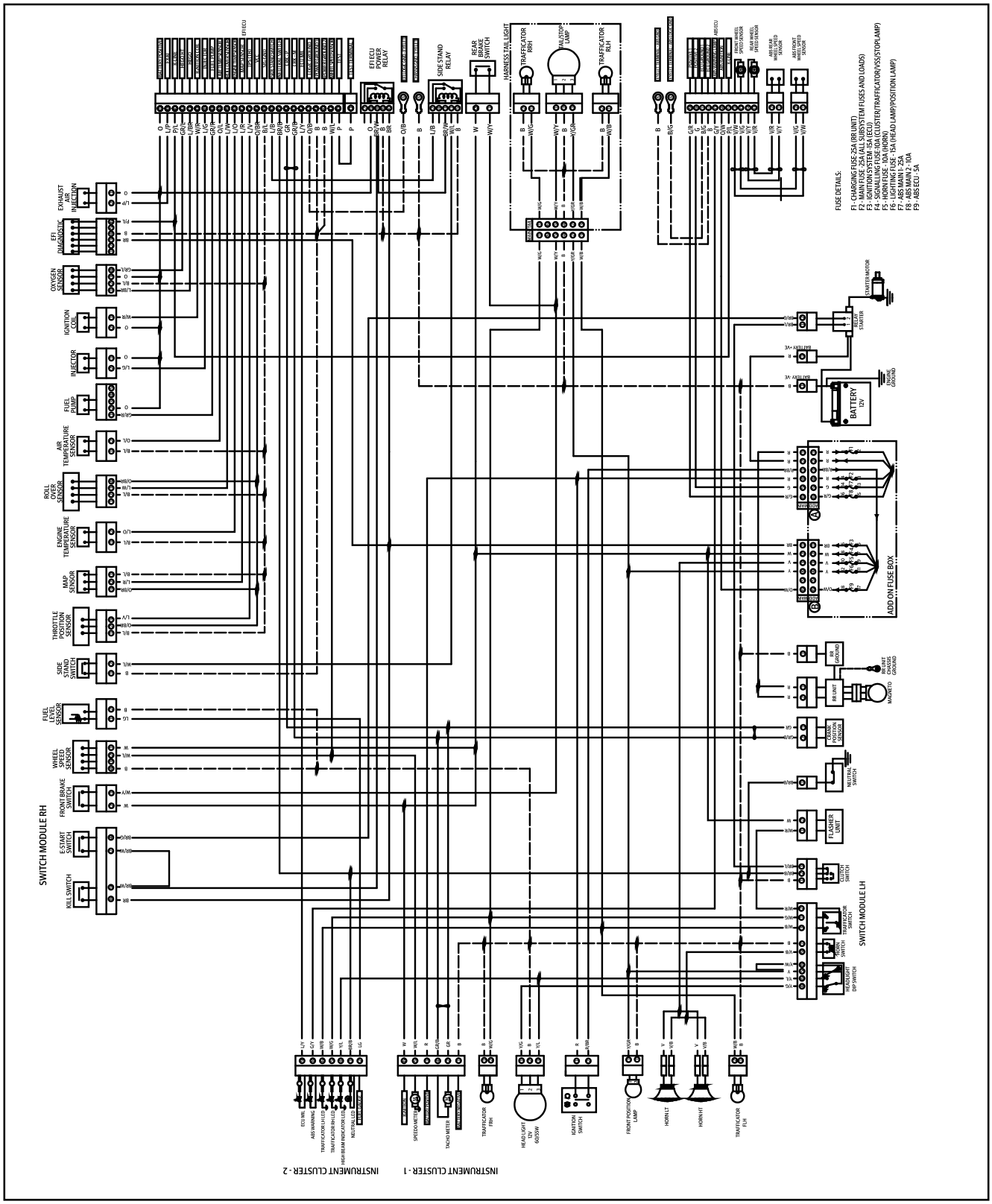
BULLET EFI / BULLET CLASSIC EFI - LIGHTING & SIGNALING SYSTEM



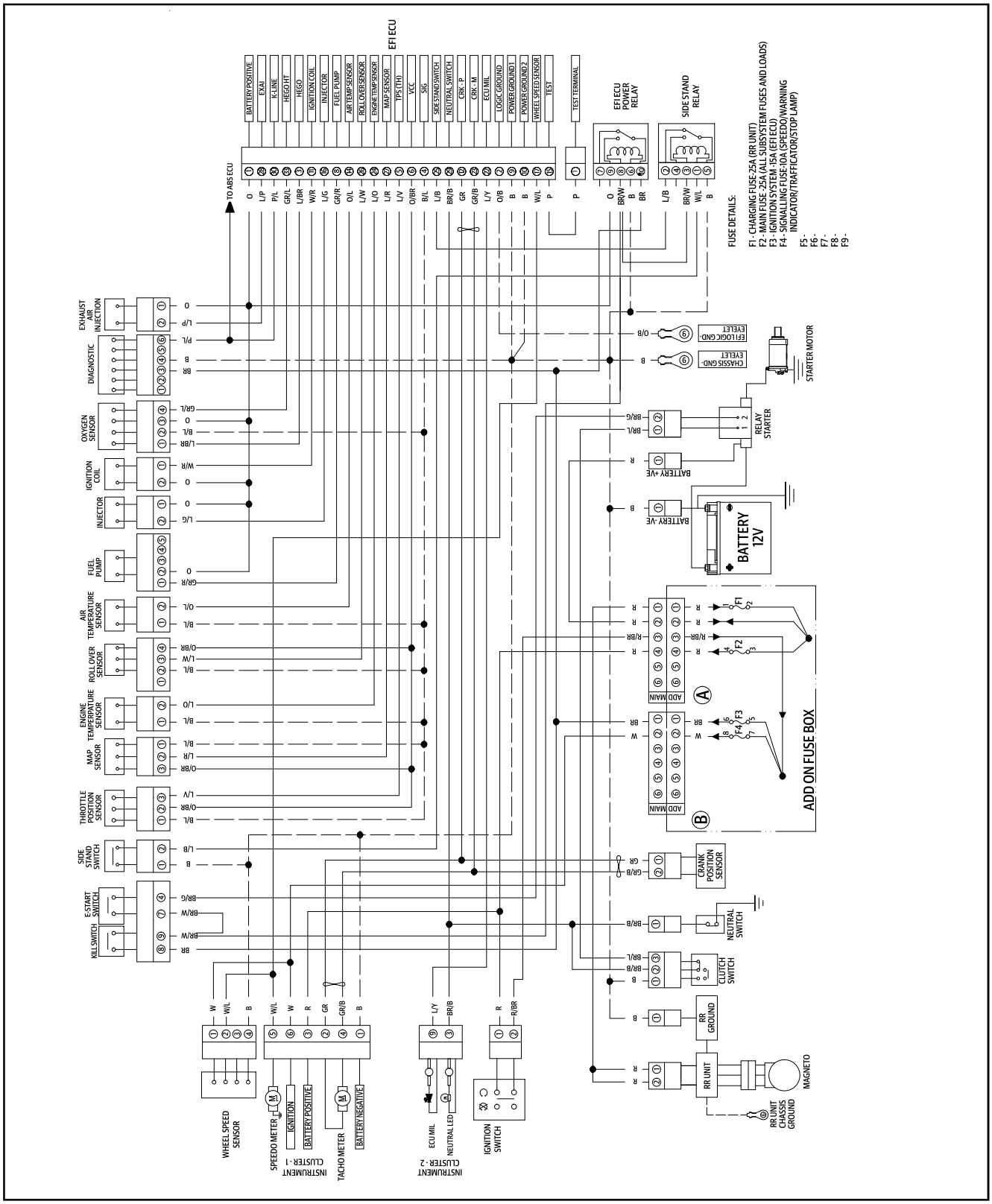
BULLET EFI / BULLET CLASSIC EFI - WIRING HARNESS-ABS SYSTEM



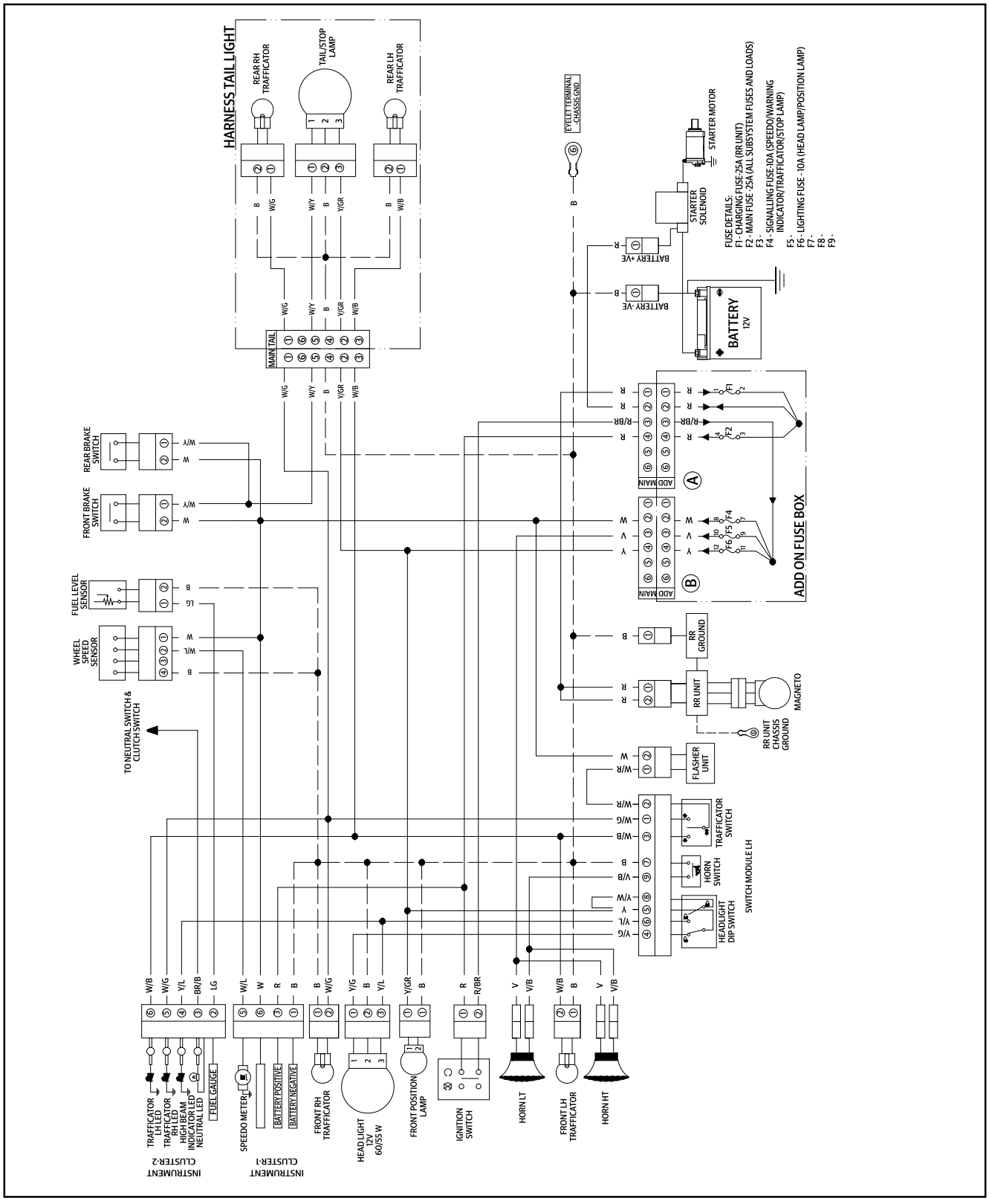
CONTINENTAL GT - WIRING HARNESS CIRCUIT



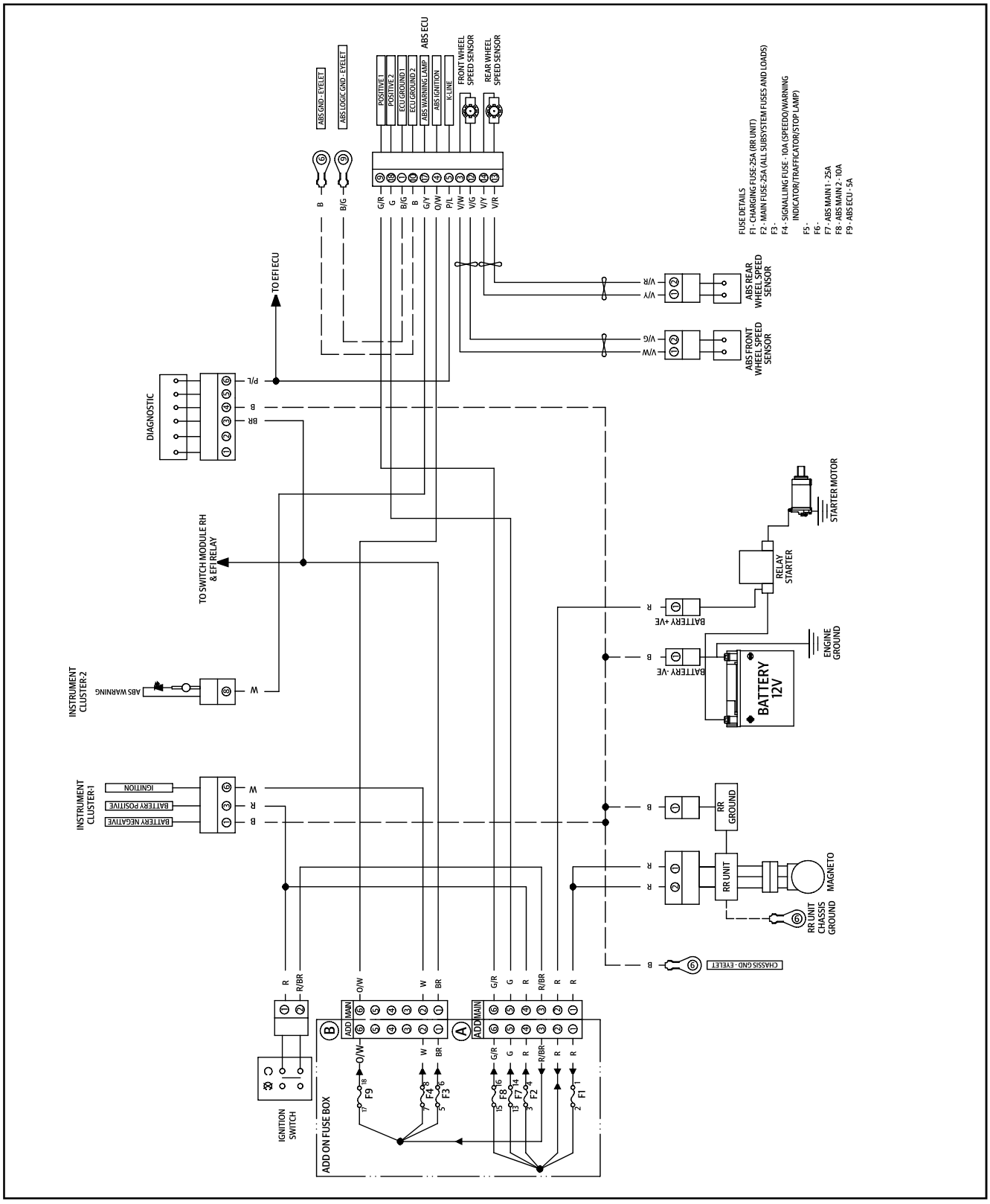
CONTINENTAL GT - STARTING, CHARGING & IGNITION (EFI) SYSTEM



CONTINENTAL GT - LIGHTING & SIGNALING SYSTEM



CONTINENTAL GT - WIRING HARNESS-ABS SYSTEM



SECTION 13 - TROUBLE SHOOTING

SECTION 13.1 - VEHICLE TROUBLE SHOOTING

WARNING

The trouble shooting section of this Owner's Manual is intended solely as a guide for diagnosing problems. Carefully read the appropriate sections of this manual before performing any work. Repair and maintenance operations not listed in this Owner's Manual should be performed by your Royal Enfield Authorized Dealer only. Improper repair / maintenance could result in the motorcycle not functioning properly or injury seriously.

WARNING

The trouble shooting section of this Owner's Manual is intended solely as a guide for diagnosing problems. Carefully read the appropriate sections of this manual before performing any work. Repair and maintenance operations not listed in this Owner's Manual should be performed by your Royal Enfield Authorized Dealer only. Improper repair / maintenance could result in the motorcycle not functioning properly or injury seriously.

CAUSES		REMEDIES
I. ENGINE FAILS TO START		
1)	Stop switch in 'OFF' Position	Push stop switch to 'ON' position.
2)	Side stand not retrieved	Retrieve side stand.
3)	Vent hole clogged in fuel tank cap	Clean vent hole.
4)	Spark plug cap / lead not connected	Fix cap / lead firmly
5)	Spark plug electrode dirty / fouled	Clean spark plug
6)	Spark plug insulation cracked	Replace spark plug
7)	Clutch slipping	*Adjust clutch cable free play
8)	Main or EFI Fuse failed.....	Replace with new fuse
II. ENGINE MISFIRING		
1)	Loose spark plug cap	Fix cap / lead firmly
2)	Spark plug fouled	Clean spark plug or non specified heat range plug.
3)	Any sensor loose connections	* Check MAP or EOT or TPS sensor wiring / coupler loose connections
4)	Water in petrol tank	* Clean petrol tank. Fill tank with fresh petrol.
III. POOR PICKUP		
1)	Brake pedal adjusted too tight	*Re-adjust properly
2)	Choked air filter	Clean / Replace air filter
3)	Rear chain adjusted too tight	*Re-adjust properly
4)	Under inflated tyres	*Inflate to correct pressure
5)	Accelerator cable free play excessive	Adjust cable free play
6)	Clutch Slipping	*Adjust clutch cable free play
7)	Faulty fuel supply Fuel pump, filter / injector blocked	*Remove fuel pump & clean.

CAUSES	REMEDIES
IV. WHITE/BLUE SMOKE	
1) Oil level in sump above the Top line. in the oil level window	*Check and drain excess oil
V. ENGINE OVERHEATING	
1) Low engine oil level	Check and top-up if necessary
2) Clutch slipping	* Check and correct
3) Cylinder fins not clean	Clean the cylinder fins at regular intervals
VI. EXCESSIVE FUEL CONSUMPTION	
1) Under inflated tyres	Inflate to correct pressure
2) Choked air filter	Clean / Replace
3) Fuel leakage	*Check and rectify, tank float unit, drain pipe, breather pipe, fuel line / pump.
VII. BRAKES POOR	
1) Brake pad worn / Uneven wear	*Replace Brake pads
2) Oil/grease on disc.	*Clean and refit
3) spongy brake	*fill brake fluid & remove air from the system.
VIII. MOTORCYCLE WOBBLES	
1) Under inflated tyres	Inflate to correct pressure
2) Loose / Broken spokes	* Tighten / Replace spokes
3) Wheels misaligned	* Ensure proper alignment
4) Wheel rim runout	* Rectify
5) Tyres not fitted correctly	* Refit tyres correctly
IX. ELECTRICALS	
Bulbs do not glow	
1) Bulb fused	* Replace bulb
2) Fuse blown	* Check and Replace fuse.
3) Loose / improper connection	* Check and correct
Horn not working	
1) Fuse blown	Check and correct
2) Loose connections	Check and correct
Trafficators not working	
1) Loose / improper connections	Check and correct
2) Bulb fused	Replace

CAUSES	REMEDIES
Brake light remains on	
1) Switch not adjusted properly	* Adjust connecting links properly
2) Switch sticky	* Replace switch
Horn not working	
1) Fuse blown	Check and correct
2) Loose connections	Check and correct
Trafficators not working	
1) Loose / improper connections	Check and correct
2) Bulb fused	Replace
Brake light remains on	
(1) Switch not adjusted properly	* Adjust connecting links properly
(2) Switch sticky	* Replace switch
X. ELECTRONIC FUEL INJECTION (EFI)	
Malfunctioning Indicator Lamp (MIL) glowing continuously	
(1) Sensor Coupler Loose Connection	* Check for any EFI sensor coupler loose connection and correct them
(2) Any EFI Sensor Failure	* Check & replace the same
XII. ABS (ANTI LOCK BRAKING SYSTEM)	
1) ABS lamp continuously ON.	Take the vehicle to service center for diagnosis

1. ENGINE CRANKS BUT DOES NOT START		
Symptom	**Probable Cause**	**Remedy**
A. Ignition spark weak	Battery voltage low	Recharge/ replace battery
	Spark plug cap / high tension wire loose / shorted / defective	Check & correct
	Spark plug incorrect	Replace with correct spark plug
	Spark plug sooty / wet	Check &clean spark plug
	Spark plug gap incorrect	Correct spark plug gap
	Spark plug insulator cracked	Replace spark plug
	No spark from Ignition coil	Check & Replace Ignition coil
	Pulsar coil defective	Check & Replace
B. No Ignition spark	Battery dead	Recharge/ replace battery
	Spark plug cap / high tension wire shorted / defective / disconnected	Check & correct
	Spark plug insulator cracked	Replace spark plug
	No spark from Ignition coil	Check & Replace Ignition coil
	Pulsar coil defective	Check & Replace
C. Fuel related	No Fuel in fuel tank	Fill fuel tank.
	Stale / adulterated fuel	Clean fuel tank Fill with fresh fuel
	Fuel Tap in Closed Position	Turn fuel knob to On/Reserve
	Air vent blocked in fuel cap	Clean air vent/s
	Fuel filter clogged	Clean fuel filter
	Fuel line pinched	Check & correct fuel line
	Ambient temperature too low for engine to start	Use Choke for starting in cold conditions
	Choke Left ON	Shut OFF choke
D. Compression related	Spark plug loose	Tighten spark plug to torque
	Tappets adjusted too tight	Check & adjust tappets to specn
	Cylinder head gasket blown	Check & replace
	Cylinder head nuts loose	Check & tighten to torque
	Cylinder head warped	Check & replace
	Valve stem bent, seating area burnt, excess carbon deposit on seating area, Valve springs broken	Check & replace
	Piston rings sticky/ worn-out	Check & replace
	Cylinder barrel / Piston excess clearance	Check & replace

2. ENGINE DOES NOT CRANK		
Symptom	**Probable Cause**	**Remedy**
A. Starter motor does not rotate	Ignition key not in ON position	Switch ON ignition key
	Engine Kill switch in OFF position	Switch ON engine Kill switch
	Gears not in neutral (neutral lamp not glowing)	Depress clutch / shift to correct neutral & start
	Battery voltage low	Check battery. Recharge replace battery
	Starter circuit Fuse blown	Check all fuses & replace blown fuse
	Starter motor connections loose	Check & tighten connections
	Starter relay connections loose	Check & tighten connections
	Ignition Switch defective	Check & replace Ignition switch
	Starter button defective	Check & replace RH switch.
	Starter relay failed	Check & replace starter relay
	Starter motor failed	Check & replace starter motor
	Major short in Wiring harness	Check & correct wiring harness
B. Starter motor rotates BUT engine does not crank	Motor rotates slowly due to low battery / worn out starter motor brush	Check & correct battery / starter motor
	Magneto rotor woodruff key broken	Check & replace woodruff key
	Starter clutch assembly slipping	Check & replace starter clutch assy
C. Engine does not crank and sounds locked.	Inlet/ Exhaust rocker arm seized in rocker shaft	Investigate cause of seizure, check & correct as required
	Cam shaft seized in cylinder head/cover	Investigate cause of seizure, check & correct as required
	Cam chain jammed in sprocket gears	Investigate cause of seizure, check & correct as required
	Piston Seized in cylinder barrel	Investigate cause of seizure, check & correct as required
	Piston Pin seized in connecting rod small end	Investigate cause of seizure, check & correct as required
	Big end bearing seized in Crank pin / connecting rod big end	Investigate cause of seizure, check & correct as required
	Crankshaft bearings in LH/RH crankcases seized	Investigate cause of seizure, check & correct as required

3. IDLING ERRATIC / ENGINE MISFIRING AT LOW RPM		
Attribute	**Probable Cause**	**Remedy**
A. Ignition related	Battery voltage low	Recharge/ replace battery
	Suppressor cap/ H T lead loose	Check & correct as required
	Suppressor cap/ H T lead defective	Check & correct as required
	Spark plug fouled / wet	Replace / clean spark plug
	Electrode gap too less/excessive	Check and correct electrode gap
	Spark plug wrong specifications	Replace with correct spark plug
	Ignition coil defective	Check & replace
	Pulsar coil / Magneto defective	Check & replace
B. Fuel / Induction related	Adulterated / Bad fuel	Clean fuel tank. Fill with fresh fuel
	Air vent holes in Fuel tank cap	Check & clean air vents partially blocked
	Fuel flow partially blocked	Check & clean fuel tap / filter
	Air filter dirty / clogged	Check & clean / replace
	Pulse air valve pipe connections loose / cracked	Check & correct
C. Compression related	Spark plug loose	Check & tighten to torque
	Inlet / Exhaust tappets adjusted wrongly	Check & correct
	Cylinder head gasket blown	Check & correct
	Cylinder head studs loose	Check & tighten to torque
	Cylinder head seating area warped	Check & replace
	Cam shaft sticky rotation /seized in cylinder head	Check & correct
	Valve spring broken or weak	Check & replace
	Valve not seating properly (stem bent. Heavy carbon deposit on seating surface)	Check & replace
	Piston rings worn out/ broken / stuck in ring groove	Check & replace
	Cylinder / piston worn	Check & replace

4. PICKUP POOR / SLUGGISH		
Attribute	**Probable Cause**	**Remedy**
A. Ignition related	Suppressor cap/ H T lead defective	Check & correct as required
	Spark plug fouled / wet	Replace / clean spark plug
	Electrode gap too less/excessive	Check and correct electrode gap
	Spark plug wrong specifications	Replace with correct spark plug
	Ignition coil defective	Check & replace
	Pulsar coil / Magneto defective	Check & replace
B. Fuel / Induction related	Adulterated / Bad fuel	Clean fuel tank. Fill with fresh fuel
	Fuel flow partially blocked	Check & clean fuel tap / filter
	Air filter dirty / clogged	Check & clean / replace
	Pulse air valve pipe connections loose / cracked	Check & correct
C. Compression related	Spark plug loose	Check & tighten to torque
	Inlet / Exhaust tappets adjusted wrongly	Check & correct
	Cylinder head gasket blown	Check & correct
	Cylinder head studs loose	Check & tighten to torque
	Cylinder head seating area warped	Check & replace
	Cam shaft sticky rotation /seized in cylinder head	Check & correct
	Valve spring broken or weak	Check & replace
	Valve not seating properly (stem bent. Heavy carbon deposit on seating surface)	Check & replace
	Piston rings worn out/ broken / stuck in ring groove	Check & replace
	Cylinder / piston worn	Check & replace
D. Transmission related	Rear chain tension too slack / tight	Check & correct
	No free play in clutch / clutch release sticky	Check & correct
	Engine oil quantity too high	Check & correct
	Engine oil wrong grade/ high viscosity	Check & correct
	Clutch plates worn out / warped / sticky release / burnt	Check & correct
E. Others	Front / rear brakes jamming	Check & correct
	Front / rear wheel bearing jammed	Check & correct

5. ENGINE MISFIRING AT HIGH SPEEDS/ HIGH RPM.		
Attribute	**Probable Cause**	**Remedy**
A. Ignition related	Spark plug electrode gap too less/ excessive	Check and correct electrode gap
	Spark plug wrong specifications	Replace with correct spark plug
	Spark plug insulator cracked	Check & replace
	Suppressor cap/ H T lead loose	Check & correct as required
	Suppressor cap/ H T lead defective	Check & correct as required
	Ignition coil defective	Check & Replace
	Pulsar coil / Magneto defective	Check & replace
B. Fuel / Induction related	Adulterated / stale fuel / water content in fuel	Check, Clean fuel tank. Fill with fresh fuel
	Fuel flow partially blocked	Check & clean fuel tap / filter
	Inlet manifold loose / cracked	Check & tighten / replace inlet manifold
	Spark plug loose	Tighten spark plug to torque
C. Compression Related	Tappets adjusted too tight	Check & adjust tappets correctly
	Cylinder head bolts loose	Check & tighten to torque
	Cylinder head gasket damaged	Check & Replace
	Cylinder head warped	Check & Replace
	Valve spring broken or weak	Check & Replace
	Valve not seating properly (valve bent, worn, carbon accumulation on the seating surface.)	Check & Replace
	Excessive Carbon in combustion chamber	Check & Clean
	Piston ring bad (worn, weak, broken, or sticking)	Check & Replace
	Piston rings clearance excessive	Check & Replace
	Cylinder, piston worn	Check & Replace

6. EXHAUST SMOKE EXCESS		
Symptom	**Probable Cause**	**Remedy**
A. Black smoke	Adulterated / Bad fuel	Clean fuel tank Fill with fresh fuel
	Spark plug Electrode gap too less	Check and correct electrode gap
	Spark plug wrong specifications	Replace with correct spark plug
	Air Filter element clogged	Check & Clean
	Pulse air valve pipe connections loose / cracked	Check & correct
	Ignition coil defective	Check & replace
B. Brown smoke	Adulterated / Bad fuel	Clean fuel tank. Fill with fresh fuel
	Air filter box poorly sealed / element partially clogged	Check & correct
C. Bluish / White smoke	Engine oil level too high	Check & Maintain Oil level as Recommended
	Valve stem seal damaged	Check & correct
	Excess clearance between valve stem & guide	Check & correct
	Oil scrapper ring worn out	Check & correct
	Cylinder barrel / piston clearance high	Check & replace

7. ENGINE HEAT EXCESSIVE		
Attribute	**Probable Cause**	**Remedy**
A. Driving / traffic related	Prolonged driving in low gear at High speeds / High gear at Low speeds	Ride in appropriate gear as required by traffic conditions
	Engine in Idling RPM for prolonged periods	Switch off Engine if required to be in standstill traffic for more than 2 minutes.
	Vehicle in standstill with gear engaged and clutch depressed for prolonged periods	Shift to neutral & release clutch
	Engine RPM high when vehicle at standstill position	Allow engine to run in idling RPM when in neutral
	Riding in traffic with brakes partially engaged for prolonged periods	Release both brakes and drive at appropriate speeds
B. Ignition Related	Spark plug electrode gap too less/excessive	Check and correct electrode gap
	Spark plug wrong specifications	Replace with correct spark plug
	Spark plug insulator cracked	Check & replace
	Suppressor cap/ H T lead loose	Check & correct as required
	Suppressor cap/ H T lead defective	Check & correct as required
	Ignition coil defective	Check & Replace
	Pulsar coil / Magneto defective	Check & replace
C. Fuel / Induction related	Adulterated / Bad fuel	Clean fuel tank Fill with fresh fuel
	Air filter dirty / clogged	Check & clean / replace
D. Compression Related	Spark plug loose	Tighten spark plug to torque
	Tappets adjusted too tight	Check & adjust tappets correctly
	Excessive Carbon in combustion chamber	Check & Clean
	Poor compression due to cyl. head gasket blown, Valve seating improper, Piston rings worn out / broken, Piston/Cyl. worn out	Check & correct
E. Others	Engine oil less viscous / wrong specification / level too low	Check & correct
	Oil cooler fins dirty / blocked	Check & clean oil cooler fins
	Clutch slipping	Check & correct
	Front / Rear brakes jammed	Check & correct
	Engine oil pressure less	Check & correct
	Silencer choked	Check & clean

8. ENGINE NOISY

Attribute	Probable Cause	Remedy
A. Knocking noise	Prolonged driving in low gear at High speeds / High gear at Low speeds	Ride in appropriate gear as required by traffic conditions
	Excessive Engine heat	Check & correct
	Adulterated / Bad fuel	Clean fuel tank. Fill fresh fuel
	Incorrect plug gap. Wrong spec spark plug	Check & correct gap
	Excessive carbon in combustion chamber	Check & correct
	Pulse air valve pipe connections loose / cracked	Check & correct
	Exhaust pipe & cylinder head joint not sealed correctly	Check & tighten exhaust flange nuts / replace gasket
B. Lubrication related	Engine oil less viscous/wrong specification / level too low	Check & correct
	Oil filter element blocked	Replace filter element
	Oil pressure low	Check & correct
C. Top End noise	Tappets clearance excessive correctly	Check & adjust tappets
	Camshaft sticky rotation	Check & correct
	Cam lobes in camshaft uneven wear	Check & replace
	Cylinder head gasket blown	Check & replace
	Valve spring broken / weak	Check & replace
	Valve stem squeaky noise	Replace stem seals
	Valve stem to guide clearance high	Check & replace
D. Cylinder barrel / central portion noise	Piston rings broken	Check & replace
	Cylinder / Piston scored / housing also for damages	Check & replace. Check air filter
	Excess clearance between piston / barrel (Piston slap)	Check & replace
	Cam chain pads worn out	Check & replace
	Auto chain tensioner jammed	Check & replace
	Excessive clearance between Cam chain / sprockets	Check & replace
	Connecting rod small end / piston pin clearance excess	Check & replace
E. Bottom end noise	Connecting rod bent	Check & replace crankshaft
	Excess clearance between connecting rod big end / crank pin	Check & replace crankshaft
	Crankshaft / balancer shaft support bearings worn	Check & replace
	Crankshaft run out excessive	Check & replace
	Balancer shaft / crankshaft gears backlash	Check & correct
F. Transmission noise	Clutch housing/friction plate clearance excessive	Check & replace
	Clutch housing gear / crank gear backlash	Replace matched gears
	Drive / counter gears backlash	Check & replace
	Drive / Countershaft bearings worn out	Check & replace
	Gears / bushes seized in drive /counter shaft	Check & replace

9. GEAR SHIFTING HARD / SLIPS		
Attribute	**Probable Cause**	**Remedy**
A. Clutch cable related	Routing improper	Check & correct
	Strapped too tight to frame	Check & correct
	Inner cable sticky	Check & replace
	Inner/outer cable damaged	Check & replace
	Free play excess	Correct free play to 2-3mm
B. Oil related	Oil less / more viscous. Wrong specification	Check & correct
	Oil level too high / too low	Check & correct
C. Shift lever / linkage / shifting Mechanism related	Gear lever position incorrect	Check & correct
	Shift lever sticky / jammed on pivot pin	Check, clean & lubricate pivot pin
	Gear shift linkage ball joint stuck/worn out	Check & correct
	Return spring weak / broken	Check & replace
	Indexing pawl pins worn out	Check & replace
	Shift forks sticky in pin / selector drum	Check & correct
	Shift forks / pins worn out	Check & replace
	Selector drum grooves worn out	Check & replace
D. Clutch assembly related	Clutch pad sticky / worn out	Check & replace
	Clutch plates movement sticky	Check & correct
	Springs weak / broken	Check & replace
	Friction plates worn out / burnt	Check & replace
	Steel plates warped	Check & replace
	No end float of clutch assembly in shaft	Check & correct
E. Gears does not engage	Shift forks sticky in pin / selector drum	Check & correct
	Selector drum rotation sticky	Check & correct
	Sliding gear movement sticky in shaft	Check & correct
	Gears / bushes partially seized in shaft	Check & correct
F. Gears overshifts	Shift forks / pins worn out	Check & replace
	Selector drum grooves worn out	Check & replace
	Sliding Gear dogs worn out	Check & replace
	Drive shaft/counter shaft splines worn out	Check & replace
	Drive / counter shaft bearings wornout	Check & replace

ISSUE DESCRIPTION	EMS COMPONENT	CHECK POINTS
Vehicle not starting	ECU	Check for P codes/blink pattern as mentioned in previous slide for ECU internal error or any other internal issues.
	Fuel Injector, Roll Over Sensor	* Check for Connector loose fitment, terminal back out or wire cut etc. * Check for supply voltage, battery voltage etc.
	Ignition Coil	* Check for Connector loose fitment, terminal back out or wire cut etc. * Check for supply voltage, battery voltage etc.
		* Check for harness continuity.
		* Check for suppressor cap loose connection
		* Check for sparkplug contamination
	Crank Position Sensor	* Check for Connector loose fitment, terminal back out or wire cut etc.
		* Check for crank shaft position sensor resistance.
	Flywheel Magneto Assy	* Check for stator short circuit. * Check for connector loose fitment.
DTC History not able to clear	ECU	Clear DTC using only scan tool, do not re-set ECU by test pin method
Fuel pump Continuous ON	ECU	ECU internal short, replace ECU
Fuel Pump Not working	Fuel Pump	Check for Connector loose fitment, terminal back out or wire cut etc. Check for supply voltage, battery voltage etc.
Fuel pressure loss/ no fuel supply	Fuel Pump	Check for leakage near connectors Check for clogged filter
Fuel pump short Pulse	Fuel Pump	Fuel pump Primes for 2 Sec, If priming cycle is less than 2 sec check for Ignition coil Connector.
Fuel dripping through Pump Nipple	Fuel Pump	Check for Pressure Lock in tank, if pressure lock is not there replace the pump If Pressure Lock is there check for Tank Cap and EVAP Purge valve.

ISSUE DESCRIPTION	EMS COMPONENT	CHECK POINTS
Poor Feeling of acceleration, hesitation, Vehicle Could not reach Max Speed	Fuel Injector	Check for Injector Block Check if Pressure is built by pump, Check for any Kinks in Fuel hose.
Vehicle mis-firing/ tachometer fluctuation	Crank Position Sensor Throttle Position Sensor	Check for crankshaft position sensor mounting Check for supply voltage, battery voltage etc.
Low battery	Flywheel Magneto Assy	* Check for stator short circuit. * Check for connector loose fitment.
Heater Circuit Failure	HEGO Sensor	Check for Connector loose fitment, terminal back out or wire cut etc.
Sensor Circuit Failure	HEGO Sensor	Check for Connector loose fitment, terminal back out or wire cut etc.
Sensor Circuit Malfunction	Engine Oil Temperature (TE) Sensor	* Check Connectors for loose pin * If the issue still persists Replace Sensor
	TA Sensor	Check for Connector loose fitment, terminal back out or wire cut etc.
	MAP Sensor	Check for Connector loose fitment, terminal back out or wire cut etc.
	EXAI Sensor	* Check for Connector loose fitment, terminal back out or wire cut etc.
		* If terminals are in good condition replace Solenoid.
	Throttle Position Sensor	* Check for Connector loose fitment, terminal back out or wire cut etc.
		* Check for Supply Voltage
MIL distance not showing in diagnostic tool	Vehicle Speed Sensor	* Check for Connector loose fitment, terminal back out or wire cut etc. * Check for Supply Voltage

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