



ROYAL ENFIELD SERVICE MANUAL

HIMALAYAN

Carburettor Version Model

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 manual will help in complete understanding of systematic procedures for dismantling, inspection, diagnosis and reassembly for the new Royal Enfield **Himalayan** motorcycle, in a simple and scientific manner.

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 be different from some of the parts fitted in the motorcycle.

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

Royal Enfield, A Unit of Eicher Motors Limited,

Thiruvottiyur High Road, Thiruvottiyur, Chennai - 600 019.

E-mail: Support@royalenfield.com

Website: www.royalenfield.com

Part No: 888435 / Jan. '17

HIMALAYAN - VEHICLE VIEWS

VEHICLE VIEW LH



VEHICLE VIEW RH



VEHICLE VIEW FRONT



VEHICLE VIEW BACK



VEHICLE VIEW TOP



TABLE OF CONTENTS

SL.NO.	DESCRIPTION	PG.NO.	SL.NO.	DESCRIPTION	PG.NO.
1.	Technical Specifications	8	12.	Rear Suspension	
2.	Periodical Maintenance	10	12.1	Rear Wheel	110
3.	Special Tools Usage List	11	12.2	Rear Sprocket / Drive Chain Adjustment	111
4.	Engine Dismantling from Frame & Reassembly .	12	12.3	Rear Mudguard	113
5.	Rider & Pillion Seat	47	12.4	Mono Shockabsorber	114
6.	Control Cables	50	12.5	Drag & Drop Links	115
7.	Air Filter	57	12.6	Swing Arm	116
8.	Pulse Air Valve	63	13.	Hydraulic Disc Brakes -Front & Rear	127
9.	Fuel Tank	67	14.	Carburetor	161
10.	Exhaust Pipe & Silencer	71	15.	Electrical Components	175
11.	Front Suspension		16.	Electricals	184
11.1	Front Mudguard	84	17.	Wiring Harness	206
11.2	Front Wheel	85	18.	Trouble Shooting	210
11.3	Front Fork	86			
11.4	Handle Bar	89			
11.5	Steering Stem	90			

SECTION 01 - TECHNICAL SPECIFICATION

VEHICLE & VEHICLE SYSTEMS											
A.	ENGINE:	LS 410									
B.	CHASSIS:										
1.	Frame	Half duplex split cradle									
2.	Suspension										
	Front	Telescopic, Hydraulic Damping, Front wheel travel: 200 mm									
	Front fork oil grade	2W 35									
	Capacity / leg	455ml/leg									
	Rear	Swing arm with Linkage type Hydraulic damping Mono shock, Rear wheel travel: 180 mm									
3.	Brakes										
	Front Disc	300mm Dia disc.									
	Rear Disc	240mm Dia disc.									
	Hydraulic oil Grade	DOT3 / DOT4									
	Hydraulic oil reservoir capacity - Front & Rear	50ml.									
4.	Tyre size										
	Front	90 / 90 - 21									
	Rear	120 / 90 - 17									
5.	Tyre Pressures	<table> <tr> <th></th><th>Solo</th><th>With Pillion</th></tr> <tr> <td>Front</td><td>25 PSI / 1.75Kg/cm²</td><td>27 PSI / 1.89Kg/cm²</td></tr> <tr> <td>Rear</td><td>32 PSI / 2.25 Kg/cm²</td><td>34 PSI / 2.39 Kg/cm²</td></tr> </table>		Solo	With Pillion	Front	25 PSI / 1.75Kg/cm ²	27 PSI / 1.89Kg/cm ²	Rear	32 PSI / 2.25 Kg/cm ²	34 PSI / 2.39 Kg/cm ²
	Solo	With Pillion									
Front	25 PSI / 1.75Kg/cm ²	27 PSI / 1.89Kg/cm ²									
Rear	32 PSI / 2.25 Kg/cm ²	34 PSI / 2.39 Kg/cm ²									
6.	Steering lock	In Built									
7.	Fuel Tank	* Values below are approximate & actual capacity may vary with each fuel tank .									
	Tank capacity	15+0.5 litres approx.*									
	Reserve	3.0 + 0.5 Litres approx.*									
	Low fuel warning - Fuel Gauge (Red zone)	5.5+0.50 litres approx.*									
	Dead stock (unusable fuel)	0.5 litre approx.*									

VEHICLE & VEHICLE SYSTEMS		
C.	ELECTRICALS:	
	Generation	Alternator
	System	12V - DC
	Battery	12V - 8 AH MF
	Head lamp Bulb	H4 12V 60/55W
	Tail lamp / Brake lamp	2V- 4/1W LED
	License Plate illuminator	12V- LED
	Front position lamp	12V- LED
	Speedometer lamp	12V- LED
	Hi beam indicator	12V- LED
	Neutral lamp telltale	12V- LED
	Turn signal telltale	12V- LED
	Turn signal	12V - 10W
	Horn	12V, 2.5 Amp
	Starter Motor	12V. 0.7 KW
	Instrument Cluster	Digital cluster with LCD panel
	Side Stand indicator	LCD Indication
D.	DIMENSIONS:	
	Length	2190mm
	Width	840mm
	Height	1360mm
	Wheel base	1465mm
	Ground clearance	220mm
	Saddle Height	800mm
E.	WEIGHTS:	
	Kerb weight with (90% fuel & oil)	182 Kg.
	Max. permissible load.	183 Kg.

SECTION 02 - PERIODICAL MAINTENANCE

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 Himalayan 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 Authorised Dealer / Service Center to carry out the periodical maintenance and for any expert advice.

S. No.	DESCRIPTION	FREE SERVICE					PAID SERVICE					
		whichever is earlier					whichever is earlier					
	Kms (X 1000)	0.5	5	10	15	20	25	30	35	40	45	50
	Months	1	6	12	18	24	30	36	42	48	54	60
1	HT leads for crack	I	I	I	I	I	R	I	I	I	I	I
2	Air Filter Element	C	C	R	C	R	C	R	C	R	C	R
		Clean/ Replace more Frequently if motorcycle always used in dusty / off Road conditions.										
3	Accelerator Cable	I	I	R	I	R	I	R	I	R	I	R
4	Clutch Cable	I	I	R	I	R	I	R	I	R	I	R
5	Clutch Free Play	Adjust every 1000 Kms or earlier as required										
6	Steering ball races #	I & A	I & A	I & A	I & A	I & A	I & R	I & A	I & A	I & A	I & A	I & R
7	Front Fork oil	I	I	I	R	I	I	R	I	I	R	I
8	Fuel Filter in Fuel Tap	C		C		C		C		C		C
9	Fuel Hose	I	I	R	I	R	I	R	I	R	I	R
10	Battery terminals (apply petroleum jelly)	C	C	C	C	C	C	C	C	C	C	C
11	Earth wire eyelet Tightness			I		I		I		I		I
12	Hydraulic Brake Fluid - Front & Rear #	I	I	R	I	R	I	R	I	R	I	R
13	Hydraulic brake hose & Washers - Front & Rear #	I	I	I	I	R	I	I	I	R	I	I
14	Brake Pads - Front & Rear #	I	I	R	I	R	I	R	I	R	I	R
15	Tyre wear pattern (Front & Rear)#	I	I	I	I	I	R	I	I	I	I	R
16	Spokes tightness / Wheel rim run out front & rear #	I	I	I	I	I	I	I	I	I	I	I
17	Front & Rear wheel bearings for play #	I	I	I	I	I	I & R	I	I	I	I	I & R
18	Swing arm Pivot bearings #	I	I	I & L	I	I & L	I & R	I	I & L	I	I & L	I & R
19	Rear Suspension Linkages #	I	I & L	I & L	I & R	I & L	I & L	I & R	I & L	I & L	I & R	I & L
20	Rear Drive Chain #	Clean, Lubricate & Adjust every 1000 Kms or earlier as required										
21	Drive chain & Sprockets set #	I	I	R	I	R	I	R	I	R	I	R
22	Rear wheel cushdrive rubbers#	I	I	R	I	R	I	R	I	R	I	R
23	All Mounting Fasteners in vehicle for tightness #	I	I	I	I	I	I	I	I	I	I	I
24	Hand levers, side stand, Rider & Pillion foot rest Pivots	Lubricate every 1000 Kms or earlier as required										

A : Adjust **C : Clean** **I : Inspect** **L : Lubricate** **R : Replace**

* Refer Service Manual. # Check every time after vehicle is used for off road riding

NOTE:

For maintenance after 50,000 Kms, please repeat the same frequency levels specified above.

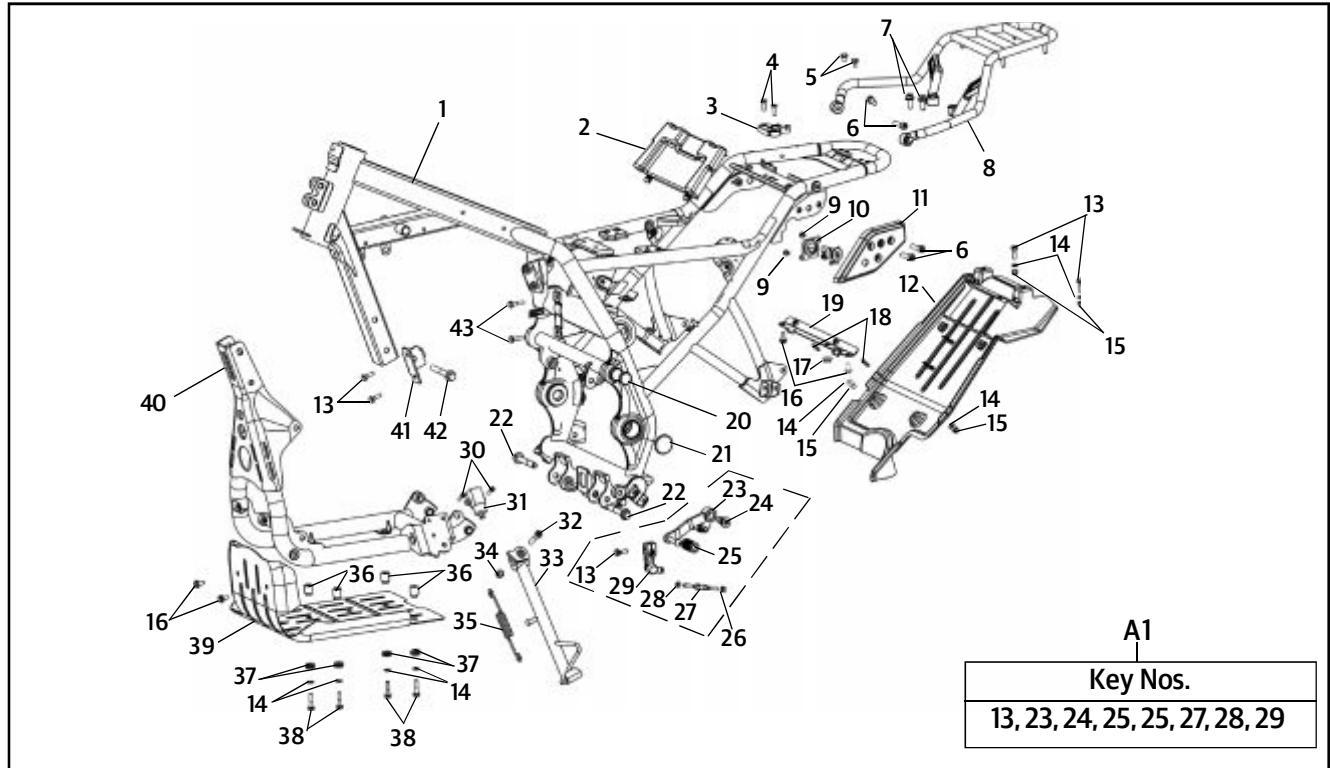
SECTION 03 - SPECIAL TOOLS USAGE LIST

PART NO.	DESCRIPTION	PHOTOS	APPLICATION
ST-26461-2	Front Fork Assembling & Dismantling Tool		To hold pipe seat inside fork main tube for loosening / tightening of Allen bolt on bottom tube.
ST-26485-3	Front Fork Oil Seal Driver		To drive slide bush and fork oil seals into bottom tube
ST-25244-4	Special spanner adjuster		To adjust rear shock absorber spring pre tension

SECTION 04 - ENGINE DISMANTLING FROM FRAME & REASSEMBLY

EXPLODED VIEWS

FRAME LH

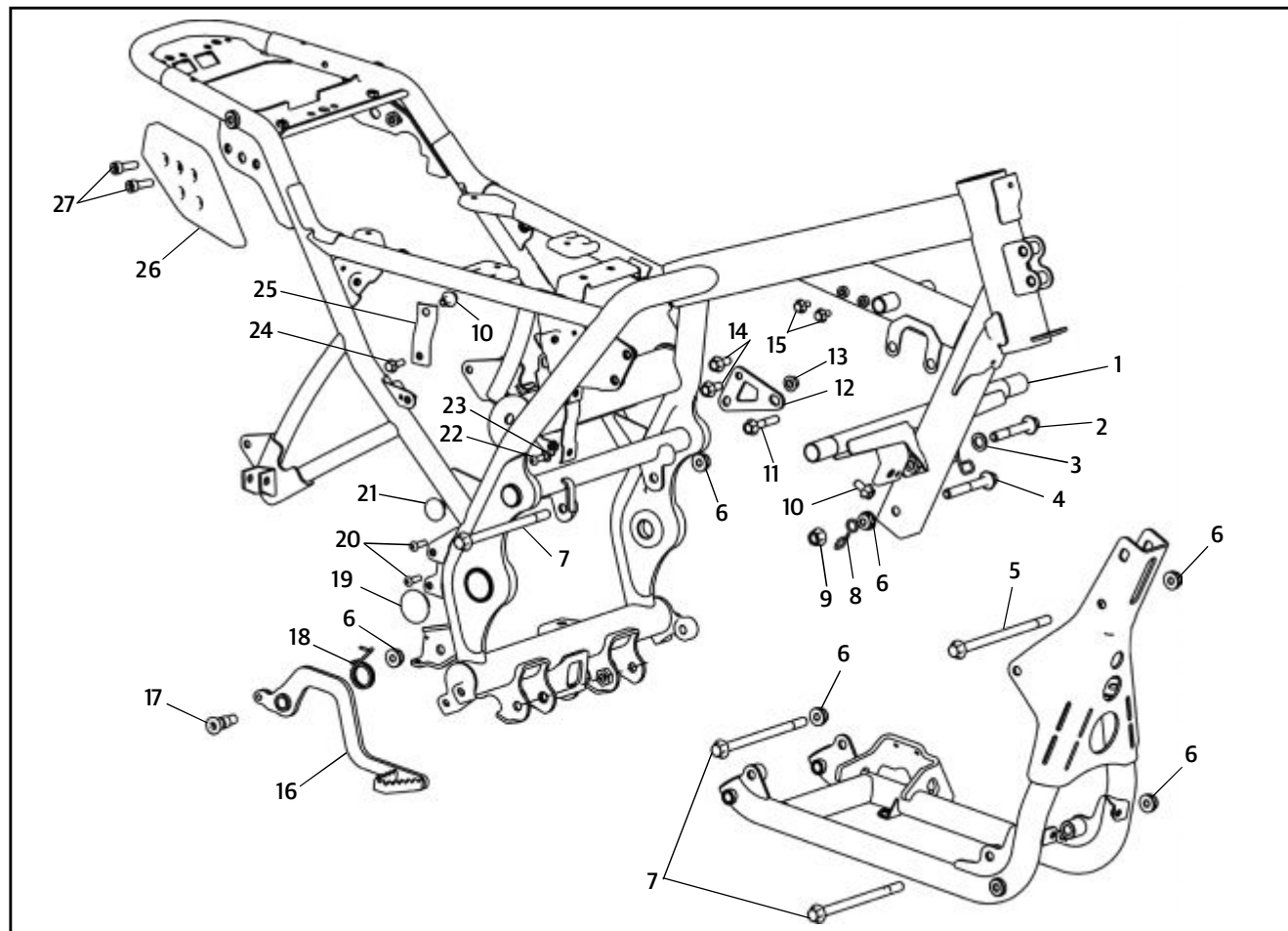


S.NO.	DESCRIPTION	QTY.
A1	Gear Shift Lever Kit	1
1	Main Frame- Black	1
2	Utility Box	1
3	Seat Latch	1
4	Counter Sunk Screw M6 X1X 20	2
5	Flanged Hex Bolt M6 X1X10	2
6	Hex Socket Head Screw M8 X1.25 X 25	4
7	Flanged Hex Bolt M8 X1.25 X 20	2
8	Grab Rail Black	1
9	Mushroom Head Screw M6 X 8 X 1	2
10	Plate Seat Lock	1
11	Saddle Bag Mtg - LH	1
12	Piece Mudguard	1
13	Flanged Hex Bolt M6 X1X 20	5
14	Plain Washer	8
15	Hex Nut with nylon insert	4
16	Flanged Hex Bolt, M6 X1X14	6
17	Grommet	1
18	Stud	2
19	Crossbar Assy	1
20	Dust Cap-Frame Top	1
21	Dust Cap-Frame	1

S.NO.	DESCRIPTION	QTY.
22	Flanged Hex. Bolt M10 X1.25 X 66	2
23	Toe Lever Comp	1
24	Pivot Pin- Gear Shifter	1
25	Sleeve, Gear Lever	1
26	Hex Nut	1
27	Link Rod	1
28	Hex Nut (LH Thread)	1
29	Gear Shift Lever Comp-Short	1
30	Hex Socket Head Cap Screw - M5 X 20	2
31	Switch-Side Stand	1
32	Hex Socket Head Screw M8 X1.25 X 35	1
33	Side Stand Assy	1
34	Hex Nyloc Nut M8 X 9.5	1
35	Spring	1
36	Support Bush Skid Plate	4
37	Damper - Oil Cooler	4
38	Flanged Hex Bolt M6 X1X 35	4
39	Skid Plate	1
40	Cradle Frame	1
41	Bracket Assy-Oil Cooler	1
42	Flanged Hex Bolt, M10 X1.25 X 75	1
43	Flanged Hex Bolt M6 X1X 27	2

EXPLODED VIEWS

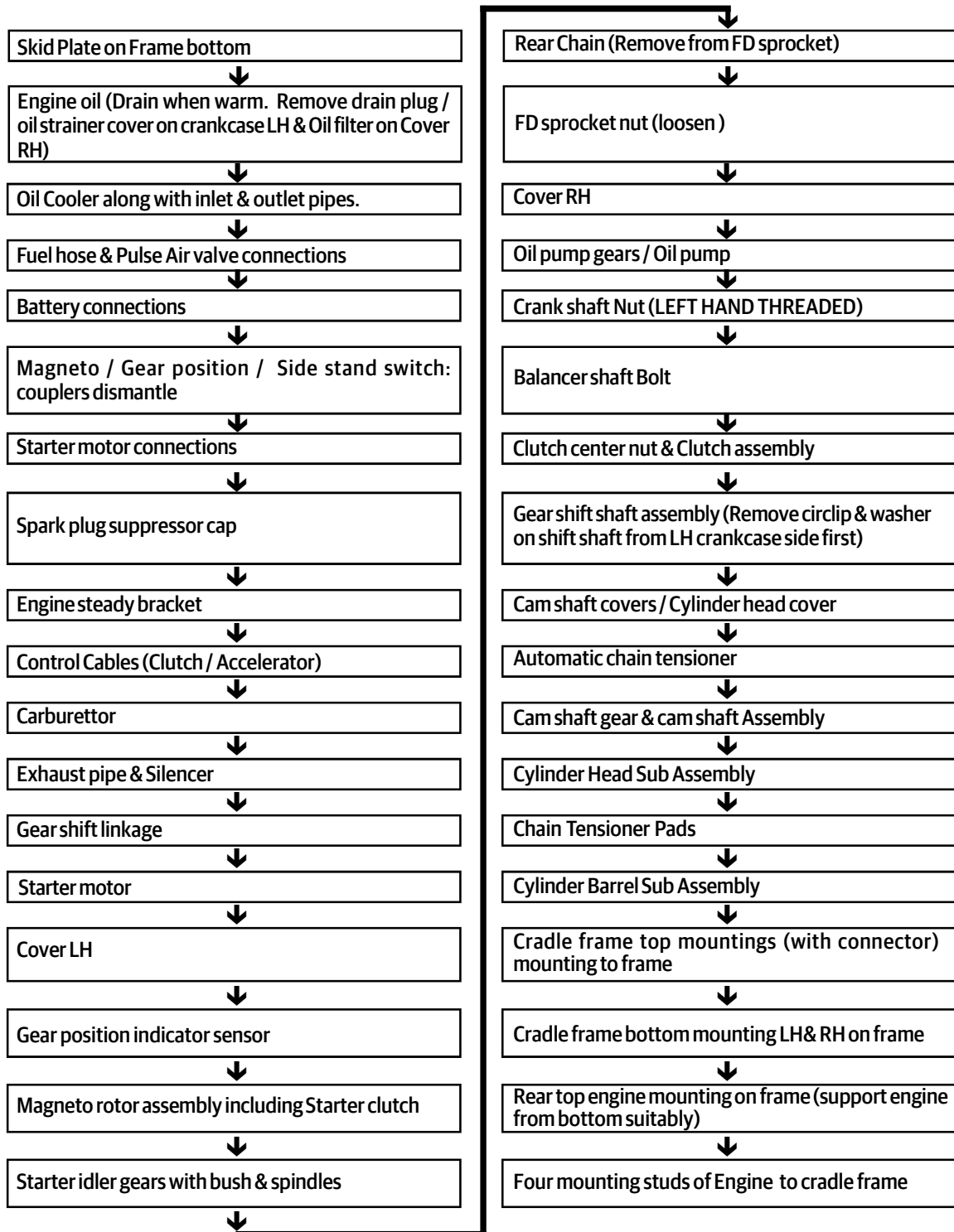
FRAME RH



S.NO.	DESCRIPTION	QTY.
1	Connector Complete Black	1
2	Flanged Hex. Bolt M10 X 1.25 X 66	1
3	Plain Washer	1
4	Flanged Hex Bolt, M10 X 1.25 X 75	1
5	Flange Hex Bolt M10 X 1.25 X 165	1
6	Flange U Nut M10 X 1.25	6
7	Flange Hex Bolt M10 X 1.25 X 183	3
8	Clutch Clamp	1
9	Flanged Hex nut M10X1.25	1
10	Flanged Hex Bolt M8 X 1.25 X 16	2
11	Flanged Hex. Bolt M8 X 1.25 X 45	1
12	Steady Bracket Black	1
13	Flanged Hex. Nut M8 X 1.25	1
14	Flanged Hex Bolt M8 X 1.25 X 20	2

S.NO.	DESCRIPTION	QTY.
15	Flanged Hex Bolt M6 X 1 X 14	2
16	Brake Pedal Comp - RH	1
17	Pivot Pin-Brake Pedal	1
18	Spring-Pedal Return	1
19	Dust Cap-Frame	1
20	Hex Socket Button head Screw M6 X 1	2
21	Dust Cap-Frame Top	1
22	Hex.Socket Button Head Screw M6 X 1 X 16	1
23	plain washer M6	1
24	Flanged Hex Bolt M6 X 1 X 20	1
25	Bracket Assy. - Air Filter	1
26	Saddle Bag Mtg- RH	1
27	Hex Socket Head Screw M8 X 1.25 X 25	2

COMPONENTS DISMANTLING SEQUENCE TO REMOVE ENGINE FROM FRAME



ENGINE DISMANTLING FROM FRAME

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.1	Skid plate - Loosen & remove 6 Flanged Hex screws (2 in front & 4 in bottom. - Remove the spacers and washers between the skid plate and frame.	Flanged Hex Screw: M6 Socket Spanner: 10mm NOTE: Ensure the engine oil is drained from the engine.  
4.2	Oil Cooler - Remove Inlet & Outlet Banjo union bolts from LH & RH Crankcase respectively & allow oil to drain. - Ensure the 4 washers are removed from the oil pipes / banjo Union - Remove 2 Hex flange bolts securing oil cooler to the frame - Remove oil cooler along with inlet & outlet pipes. (Ensure the Oil pipe No 2 on RH side between engine & frame is taken out carefully, while dismantling the oil cooler.)	Banjo Union Bolts: M14 Socket spanner: 19mm Flanged Hex bolts: M6 Socket spanner: 8mm.  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.3	Wind Shield Assembly - Remove 4 Hex socket head cap screws holding the Wind shield assembly to the top frame. - Remove the 4 plastic washers along with the screws and remove wind shield.	Hex Soc Hd. Cap Screw: M5 Allen Key: 4mm NOTE: Hold the rubber mounted nuts from behind while loosening screws. 
4.4	Trafficator front LH, RH & cover cockpit LH, RH. - Disconnect Trafficator wiring couplers below headlamp. - Remove hex socket head screw mounting the trafficators to the top frames on LH & RH sides. - Gently pull out Cover cockpit LH & RH from the rubber grommets in the top frame LH & RH.	NOTE: Couplers are color coded as: LH side: Green RH side: Red Hex socket hd. Screw: M5 Allen key: M4   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.5	Headlamp Assembly ■ Disconnect head lamp wiring coupler below head lamp. ■ Remove the dust caps from the mounting holes in top frame LH & RH. ■ Remove 2 hex socket head screws holding headlamp assembly to top frame LH & RH & remove head lamp assy.	  Hex Socket Hd. screw: M5 Allen Key: 6mm
4.6	Top frame LH & RH ■ Remove 2 Flanged Hex bolts holding the top frame LH & RH to Instrument cluster bracket. ■ Remove the 2 dust caps from the connector in the frame. ■ Loosen 2 hex socket head screw clamping top frames LH & RH, to connector tube. ■ Gently rotate & pull out top frames LH & RH from connector tube.	Flanged hex bolts: M8 Socket Spanner: 12mm Hex Socket Hd. screws: M6 Socket Spanner: 10mm CAUTION Take care not to damage fuel tank while rotating & removing the side support brackets.  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.7	Pillion & Rider Seat ■ Unlock pillion seat by turning key clockwise & lift pillion seat from front end to release rear tab & remove. ■ Lift rider seat from rear end to release front tab & remove.	
4.8	Fuel tank - Dismantling ■ Remove Seat Assembly ■ Disconnect fuel hose from carburetor end. ■ Remove 2 Hex screws from the rear end of fuel tank. ■ Disconnect fuel gauge coupler wire by lifting the tank slightly. ■ Slide fuel tank towards rear to release front clamp from frame ■ Remove tank along with the overflow tube carefully.	CAUTION: Drain the fuel completely from the fuel tank. 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 EVAP hose  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.9	Steady Engine Bracket ■ Hold U nut at the cylinder head mounting area with a double end spanner and loosen Hex bolt at the front of the steady engine bracket. ■ Remove the bolt and nut. ■ Support steady engine bracket, Loosen & remove the 2 Flanged hex bolts at the rear end of the bracket and remove the bolts and steady engine bracket.	Flanged hex bolt: M10 Socket Spanner: 12mm Flanged hex nut: M10 Socket Spanner: 12mm  
4.10	Throttle cable ■ Push rubber grommets down and loosen hex nuts completely. ■ Gently pull throttle cable from bracket to release the threaded position from the bracket. ■ Remove inner cable from the Carburetor.	Double End Spanner: 13mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.11	Clutch Cable - Loosen & remove outer locknut from the rear of the cable adjuster. - Loosen inner locknut fully & push adjuster fully into bracket. - Release inner cable from the clevis in the clutch shaft - Remove rubber grommet & outer lock nut & remove clutch cable from the bracket.	Hex Nut: M8 D E Spanner: 12mm NOTE: Gently push the rubber grommet away from the adjuster while removing nut. 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.12	Side Panel LH ■ Remove 3 Hex socket Button head screws (except left bottom one). ■ Gently pull out to release locator from frame rubber Grommet.	Hex. Socket Button Hd Screw M6X12 Allen Key: M5 
4.13	Side Panel RH ■ Remove 3 Hex socket Button head screws (except right bottom one). ■ Gently pull out to release locator from frame rubber Grommet.	Hex. Socket Button Hd Screw M6X12 Allen Key: M5 

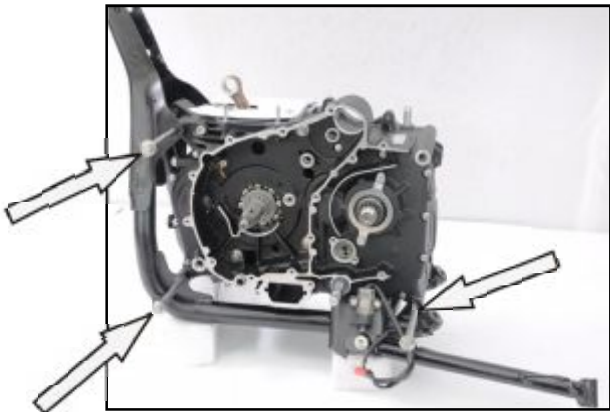
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.14	Electrical connections A. Battery ■ Remove negative terminal screw and disconnect negative battery cable. ■ Remove positive terminal screw and disconnect positive battery cable. B. Starter Motor ■ Remove the Hex nut securing the wire eyelet to starter motor terminal and remove the wire. ■ Remove flanged hex bolt securing the earth wire eyelet to crankcase.	Philips Hd screw driver  Socket Spanner: 10mm CAUTION Ensure Ignition switch & engine stop switch are in OFF position before disconnection battery & wiring couplers. 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.14	Electrical connections H. Magneto coupler ■ Disconnect white coupler from LH side. ■ Disconnect small Black coupler (Pulsar wire connections from LH Side. I. Gear position switch coupler ■ Disconnect BIG & SMALL Black coupler from LH side. J. Side stand switch coupler ■ Disconnect Red coupler from LH side.	   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.14	Electrical connections K. Horn Terminals ■ Disconnect horn terminals. L. Spark plug suppressor cap ■ Disconnect suppressor cap from sparkplug.	 
4.15	Exhaust pipe & Silencer ■ Remove 2 flanged Hex nuts along with washers at the cylinder head end. ■ Release the clamp from the studs. ■ Remove 2 Hex bolts & nuts at the silencer mounting bracket end. ■ Support the silencer and remove the bolt. ■ Gently pull out the exhaust pipe from the cylinder head and remove exhaust pipe with silencer from the vehicle.	Hex Nuts: M8X1.25 Tubular spanner - 12mm NOTE Remove copper washer in cylinder head, exhaust pipe seating area after removing exhaust pipe. Hex bolts: M8 X 1.25X45 Hex Nuts: M8 X1.25 Socket spanner -12mm Double End Spanner: 12mm  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.16	Gear shifter/ linkage - Loosen Hex bolt on small gear lever mounted on gear shaft on LH side of engine. - Slide out small lever from shaft.	Hex flange bolt: M6 Socket spanner: 10mm 
4.17	Rear Chain Link Lock - Loosen rear wheel axle nut sufficiently. - Loosen the chain adjuster nuts on LH & RH sides of the swing arm and push the rear wheel inside, to create sufficient slack in the rear chain - Remove chain link lock and remove chain from the engine sprocket.	  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.18	Cradle frame with Engine, separation from Main frame - Support cradle frame / engine suitably at the bottom such that it will not drop off when mounting bolts are removed. - Loosen Flanged Hex., holding cradle frame top, to main frame. - Remove bolt & connector complete. (Ensure the top frame LH&RH and horn connections are removed from the connector tube.) - Loosen Flanged Hex bolt from the rear top location of the engine. DO NOT REMOVE THE BOLT FROM THE FRAME. - Loosen & remove 2 flanged Hex bolts from the cradle frame rear bottom on both LH & RH sides. - Remove the Flanged Hex bolt (loosened earlier) from the rear top location of the engine. - Loosen & remove Flanged Hex bolt along with oil cooler bracket, holding oil cooler bracket & cradle frame to main frame. - Gently remove the support from the bottom of the cradle frame / engine and simultaneously remove cradle frame with crankcase from main frame.	 Hex flange bolt: M10X66 Socket Spanner: 14mm  Hex flange bolt: M10X183 Socket Spanner: 14mm Hex flange bolts: M10X65 Socket Spanner: 14mm Hex flange bolts: M10X75 Socket Spanner: 14mm

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.19	Engine separation from cradle frame ■ Hold flanged Hex bolt on Cradle frame top RH side, and remove Flanged U nut on the cradle frame top LH side. ■ Hold flanged Hex bolt on Cradle frame bottom RH side, and remove Flanged U nut on the cradle frame bottom LH side, ■ Hold flanged Hex bolt on Cradle frame rear RH side, and remove Flanged U nut on the cradle frame rear LH side. ■ Remove the 3 studs from the cradle frame & gently lift up the engine away from the frame.	Hex flange bolt: M10X165 Hex U Nut: M10X1.25 Socket Spanner: 14mm Ring Spanner: 14mm  Hex flange bolts: M10X183 Hex U Nuts: M10X1.25 Socket Spanner: 14mm Ring Spanner: 14mm 

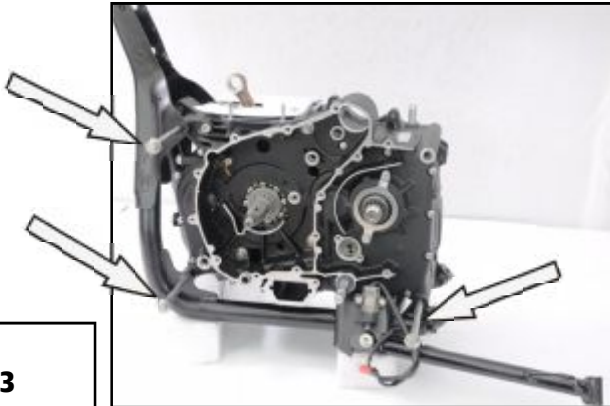
INSPECTION & PRECAUTIONS

- Inspect all the studs & bolts for bends, distortion, thread wear , threads stripped off etc
- Inspect all nuts for thread wear , threads stripped off etc
- **DO NOT REUSE** Nylock Nuts and Hex U nuts, and Pre coated fasteners once they have been tightened and removed. Replace them every time they have been removed.
- **DO NOT REUSE** Washers, O Rings, Oil seals, Dust seals, rubber and plastic material rubber parts, plastic parts, gaskets etc once they have been used and removed
- Inspect all control cables for internal cables fraying / damage
- Carefully inspect studs and nuts that are welded in the frame for any thread damage. If found damaged, use suitable thread cleaning dies to repair the damages. If the threads are beyond repair, remove the damaged studs/ nuts and reweld new studs / nuts correctly.
- Clean the threads in the frame carefully using suitable cleaning and solving agents to clean off dirt and scales
- Apply suitable thread locking liquid as appropriate on non precoated fasteners before assembling and tightening to torque.
- Always tighten fasteners diagonally and evenly to the correct specified torque values
- Clean, and repaint rusted areas in frame and other parts before assembly

TORQUE VALUES

S. No.	Aggregate	Fastener	Torque		Min. Torque		Max. Torque	
			NM	Kg.M	(Nm)	(Kg.M)	(Nm)	(Kg.M)
1	Engine Mtg to Cradle Frame - front top	Flanged Hex Bolt M10X1.25X165	50	5.0	42.5	4.3	57.5	5.8
2	Engine Mtg to Cradle Frame - front Bottom	Flanged Hex Bolt M10X1.25X183	50	5.0	42.5	4.3	57.5	5.8
3	Engine Mtg to Cradle Frame - Rear Bottom	Flanged Hex Bolt M10X1.25X183	50	5.0	42.5	4.3	57.5	5.8
4	Cradle frame Mtg to Frame top	Flanged Hex Bolt M10X1.25X60	50	5.0	42.5	4.3	57.5	5.8
5	Cradle frame Mtg to Frame rear bottom	Hex Flange Bolt M10X1.25X65	50	5.0	42.5	4.3	57.5	5.8
6	Oil Cooler Mtg to frame	Hex Flange M6X1X20	10	1.0	8.5	0.9	11.5	1.2
7	Steady Bracket Mtg to Cylinder head	Hex Flange Bolt M10X1.25X47	50	5.0	42.5	4.3	57.5	5.8
8	Steady Bracket Mtg to Frame	Hex Flange Bolt M8X1.25X20	25	2.5	21.3	2.1	28.8	2.9
9	Skid Plate Mtg to Cradle frame	Hex Flanged Bolt M6X1X10	10	1.0	8.5	0.9	11.5	1.2
10	Side Panels mounting to frame	Hex Button Head M6X1X12	5	0.5	4.3	0.4	5.8	0.6
11	Gear Shift Linkage Mtg to Frame	M10X1.25	30	3.0	25.5	2.6	34.5	3.5
12	Gear Shift Linkage to Shift shaft	M6X1	10	1.0	8.5	0.9	11.5	1.2
13	Fuel tank Mtg to frame	Hex Flange M6X1X27	5	0.5	4.3	0.4	5.8	0.6
14	Exhaust Pipe Mtg to Cyl Head	Flanged Hex Nut M8X1.25	10	1.0	8.5	0.9	11.5	1.2
15	Silencer Mtg to Frame	Hex Socket M8X1.25X25	25	2.5	21.3	2.1	28.8	2.9
17	Rear Wheel Spindle Nut	Hex U Nut M16X1.5	70	7.0	59.5	6.0	80.5	8.1
18	Chain Adjuster Lock nut	Hex Nut M8X1.25	25	2.5	21.3	2.1	28.8	2.9
19	Head Lamp Mtg to Support Brackets	Hex Soc. Hd. screw M8X1.25X25	10	1.0	8.5	0.9	11.5	1.2
20	Trafficators Mtg to Support Brackets	Button Head M6X1X20	5	0.5	4.3	0.4	5.8	0.6
21	Windshield Mtg to Support Brackets	Hex Socket Head Screws M5X16	5	0.5	4.3	0.4	5.8	0.6

ENGINE ASSEMBLY TO FRAME

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.20	Engine on Cradle Frame ■ Locate Engine on cradle frame & ensure the 3 mounting holes of the cradle frame and the engine are aligned. ■ Insert Hex bolt M10X165 from RH side and assemble U nut M10X1.25. DO NOT TIGHTEN FULLY. ■ Insert 2 flanged Hex bolts M10X183 from the front & rear bottom RH side and assemble U nut M10X1.25. DO NOT TIGHTEN FULLY. ■ Tighten all the mountings diagonally to torque.	 Hex flange bolts: M10X165 & M10X183 Hex U Nuts: M10X1.25 Ring Spanner: 14mm. Socket Spanner: 14mm. Torque: 50 Nm (5.0 Kg.M)
4.21	Cradle frame with engine, on Main Frame ■ Locate cradle frame / engine from underneath main frame and lift up with suitable support under engine such that the stud mounting holes align as follows: - Crankcase rear top hole with frame mounting. - 2 mounting holes of cradle frame with 2 holes in frame down tube. - 2 mounting holes at the rear bottom of cradle frame with 2 holes in main frame. ■ Insert flanged Hex Bolt M10X 183 at rear top of engine and assemble U nut. DO NOT TIGHTEN FULLY.	 Hex flange bolts: M10X183 & M10X165 Hex U Nuts: M10X1.25 Ring Spanner: 14mm. Socket Spanner: 14mm. Torque: 50 Nm (5.0 Kg.M)

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.21	Cradle frame with engine, on Main Frame ■ Locate 2 flanged Hex bolts M10X65, at rear bottom, LH & RH sides and assemble U nuts DO NOT TIGHTEN FULLY. ■ Position Oil cooler mounting bracket in frame with its small tab resting on the frame inside. ■ Align the mounting hole with the lower mounting hole in frame. ■ Locate Flanged Hex bolt M10X75, over oil cooler bracket and assemble U nut. DO NOT TIGHTEN FULLY. Tighten all the mountings diagonally to torque.	 Hex flange bolt: M10X75 Hex U Nut: M10X1.25 Ring Spanner: 14mm. Socket Spanner: 14mm. Torque: 50 Nm (5.0 Kg.M)
4.22	Rear chain assembly and chain adjustment ■ Place vehicle on center stand with the rear wheel off the ground. ■ Ensure rear axle nut, lock nuts & adjuster nuts on the LH & RH chain adjusters are loosened fully. ■ Push wheel fully inside. ■ Route rear chain through final drive sprocket and locate it on rear wheel sprocket ■ Ensure 'O' rings are located on the chain link and Insert link from the inside of the chain.	 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.22	Rear chain assembly and chain adjustment ■ Assemble 'O' Rings on the chain link and assemble the link plate. ■ Assemble chain link lock on the chain link, ensuring the closed end of the lock is towards the normal direction of rotation of the chain. ■ Tighten adjuster nuts on LH & RH side evenly till the chain has a slack of 20 to 25 mm on its top run. ■ Ensure the reference lines on the LH & RH chain adjusters are matching at the same reference lines in the swing arm on LH & RH sides. ■ Tighten rear wheel axle nut to torque. ■ Tighten lock nuts against the adjuster nuts on LH & RH sides.	  Hex U Nut: M17 Socket Spanner: 24mm. Torque: 70-80Nm (7.0-8.0Kg.M)
4.23	Gear Shifter / Linkage ■ Locate small lever on gear shift shaft, ensuring, small lever is vertical to ground and the gear shift pedal is parallel to rider footrest LH. ■ Assemble Hex bolt on gear shift lever short from the front side and tighten to torque.	Hex Flange Bolt : M6X20 Socket Spanner : 10mm. Torque: 10Nm(1.0Kg.M) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.24	Pulse air valve Connections Braided hose (PAV to Cylinder head) ■ Locate gasket on cylinder head with a little grease to hold it in position. ■ Locate PAV pipe flange on the gasket. ENSURE THE OPEN END OF THE PIPE IS FACING UPWARDS. ■ Tighten PAV pipe to cylinder head with 2 hex socket head cap screws. ■ Locate braided hose with worm clip on the PAV outlet pipe and tighten screw.	Hd. Cap screws: M6X20 Allen Key: M5 Torque : 
4.25	Exhaust pipe & Silencer ■ Locate a new exhaust pipe gasket on the exhaust pipe. ■ Locate exhaust pipe into the cylinder head, position the clamp over the studs on the cylinder head & assemble 2 hex nuts M8 DO NOT TIGHTEN FULLY. ■ Position silencer mounting bracket against the frame at the rear and insert flanged hex bolt. Assemble hex nut over bolt. ■ Tighten the 2 hex nuts at the cylinder head, first and then the silencer bracket nut.	NOTE Assemble new exhaust pipe gasket before locating exhaust pipe in cylinder head. Hex Nuts: M8X1.25 Socket spanner -12mm Torque: 10Nm (1.0Kg.M.) Hex bolts: M8 X1.25X45 Hex Nuts: M8 X1.25 Socket spanner -12mm Double End Spanner: 12mm Torque: 25Nm (2.5Kg.M)  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.26	Throttle Cable ■ Ensure hex nut and rubber grommet are located on the inner cable properly. ■ Locate inner cable in the Carburetor. ■ Gently pull outer cable upwards till the inner cable can be located into the bracket slot and release slowly till the threaded portion of the outer cable is fully resting on the bracket. ■ Tighten outer cable to bracket using the hex nut M6. ■ Slide the rubber grommets over the threaded sleeve on outer cable. ■ Adjust the throttle cable free play correctly.	 Hex nut : M6 Double end spanner : 10mm

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.27	Steady engine plate - Position steady engine plate such that the single mounting hole aligns with the cylinder head mounting location & the 2 mounting holes align with the welded nuts in the frame. - Locate 2 Flanged Hex Bolts over the steady engine plate. DO NOT TIGHTEN FULLY. - Locate Flanged Hex Bolt at the front end of the steady bracket, through the cylinder head & assemble flange U Nut. Tighten all the bolts to torque.	 Flanged hex bolts: M10X20 Socket Spanner: 12mm Torque: 20Nm. (2.0Kg.M)  Flanged hex bolt: M10X47 Socket Spanner: 12mm Flanged hex nut: M10X1.25 Ring Spanner: 12mm Torque: 50Nm(5Kg.M.)
4.28	Electrical connections A. Starter Motor Connections: - Position earth wire eyelet on outer mounting hole of starter motor & tighten with flanged hex bolt. - Locate Relay starter cable on the starter motor terminal & tighten with Hex nut.	Socket Spanner: 10mm Hex flange bolt: M6 X 30 Socketspanner: 8mm Torque: 8-12Nm (.8-1.2Kg.M) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.29	Electrical connections G. Magneto ■ Connect white coupler on LH side to wiring harness H. Gear position switch ■ Connect BIG & SMALL Black coupler to wiring harness on LH side.	CAUTION Ensure Ignition switch & engine stop switch is in OFF position before connecting any wiring couplers.   NOTE Ensure Protection couplers are correctly slid over the coupler after connecting. Ensure wiring harness is correctly strapped to frame after connecting couplers. 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.29	Electrical connections I. Side stand switch coupler ■ Connect Red coupler to wiring harness on LH side. J. Battery Connections ■ Connect Positive terminal (Red) to the positive terminal of the battery. ■ Connect negative terminal (Black) to negative terminal of the battery.	 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.30	Fuel tank - Assembly ■ Position fuel tank such that the front mounting clamps are correctly located on the rubber supports on the frame. ■ Gently push fuel tank forward to lock in place. ■ Lift rear end of the tank slightly and : - Route the drain hose between the frame without any kinks. - Connect blue coupler of Low fuel sensor to wiring harness ■ Ensure rubber grommets are in place in the rear mounting holes and align mounting holes to the frame, ■ Locate 2 washers on the hex flange bolts, assemble the bolts and tighten to torque. ■ Connect fuel hose to fuel tap and carburetor and lock the clips in place.	  Hex Flange Bolt M6 Socket Spanner 10 mm Torque 5 NM (0.5 Kg.M)
4.31	Side Panel LH & RH ■ Locate the tab of the side panel in the rubber grommet in frame and press in gently. ■ Assemble 3 Hex socket Button head screws over the panel and tighten.	Hex. Soc Button Hd Screw: M6X12 Allen Key: M5 Torque: 5Nm(0.5Kg.M) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.32	Side Panel RH ■ Locate the tab of the side panel in the rubber grommet in frame and press in gently. ■ Assemble 3 Hex socket Button head screws over the panel and tighten.	Hex. Soc Button Hd Screw M6X12 Allen Key: M5 Torque: 5Nm (0.5Kg.M) 
4.33	Rider & Pillion Seat ■ Locate the rider seat tab under the fuel tank and position the locking plate centrally on the frame. ■ Locate rear seat tab in the frame, align lock pin with the seat latch and gently press on seat to lock. ■ Remove key after locking pillion seat.	
4.34	Connector tube & Top frames ■ Position connector tube from inside the frame such that the horn mounting bracket is on the RH side. ■ Align mounting holes with the upper mounting hole in Frame.	Hex flange bolt: M10X75 Socket Spanner: 14mm. Torque: 50 Nm (5.0 Kg.M) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.34	Connector tube & Top frames ■ Locate Flanged Hex bolt from LH side & thread into the welded nut ■ Ensure the 2 Hex socket screws in top frames LH & RH are loose & locate on the connector tube till they are flush with the outer surface of the connector tube. Do not tighten the screws. ■ Align the mounting holes of top frames LH & RH with the holes in the cockpit mounting bracket assembly and tighten using Hex bolts. ■ Tighten the 2 hex socket head cap screws on the top frame LH & RH to clamp them against the connector tube. ■ Ensure the dust caps are fitted on the connector.	Hex Socket Hd. Cap screws: M6 Allen Key: M5 Flanged hex bolts: M8 Socket Spanner: 12mm Torque: 25Nm(2.5 Kg.M) Flanged Hex Bolts: M8 Socket Spanner: 12mm Torque: 25Nm(2.5Kg.M) NOTE Take care not to damage fuel tank or fork legs while assembling the top frames.  
4.35	Horn ■ Locate horn in the bracket and tighten. ■ Connect horn terminals	

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.36	Trafficator front LH ■ Locate the front lug of the cockpit cover into the rubber grommet in top frame LH. ■ Insert trafficator with GREEN wire coupler into cover cockpit on LH side. ■ Tighten trafficator to the top frame with hex socket button head screw & hex nut. ■ Connect the wiring coupler to the wiring harness	Hex Socket Hd. Cap screws: M6X20 Allen Key: M5 Hex Nut: M6 Double end spanner:10mm Torque: 10Nm.(1.0Kg.M.) NOTE: Couplers are color coded as: LH side: Green RH side: Red  
4.37	Trafficator front RH ■ Locate the front lug of the cockpit cover into the rubber grommet in top frame RH. ■ Insert trafficator with RED wire coupler into cover cockpit on RH side. ■ Tighten trafficator to the top frame with hex socket button head screw & hex nut. ■ Connect the wiring coupler to the wiring harness	Hex Socket Hd. Cap screws: M6X20 Allen Key: M5 Hex Nut: M6 Double end spanner:10mm Torque: 10Nm.(1.0Kg.M.) NOTE: Couplers are color coded as: LH side: Green RH side: Red  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.38	Headlamp Assembly ■ Position head lamp assembly between top frames LH & RH and ensure the mounting holes are aligned. ■ Locate 2 Hex socket head screws on either sides of the top frame and tighten. ■ Connect head lamp wiring coupler. ■ Ensure the dust caps are fitted in the slots on LH & RH sides.	Hex Socket Hd. Cap screws: M8X25 Allen Key: M6 Torque: 10Nm.(1.0Kg.M.) NOTE: Ensure the head lamp beam is properly aligned before final torqueing 
4.39	Windshield Assembly ■ Locate 4 rubber nuts in the top frame LH & RH. ■ Locate wind shield on the top frame, ensure the mounting holes are aligned on both sides and tighten using 4 Pan head screws with plastic washers..	Pan Head screws: M8X25 Philips screw driver Torque: 5Nm.(0.5Kg.M.) 

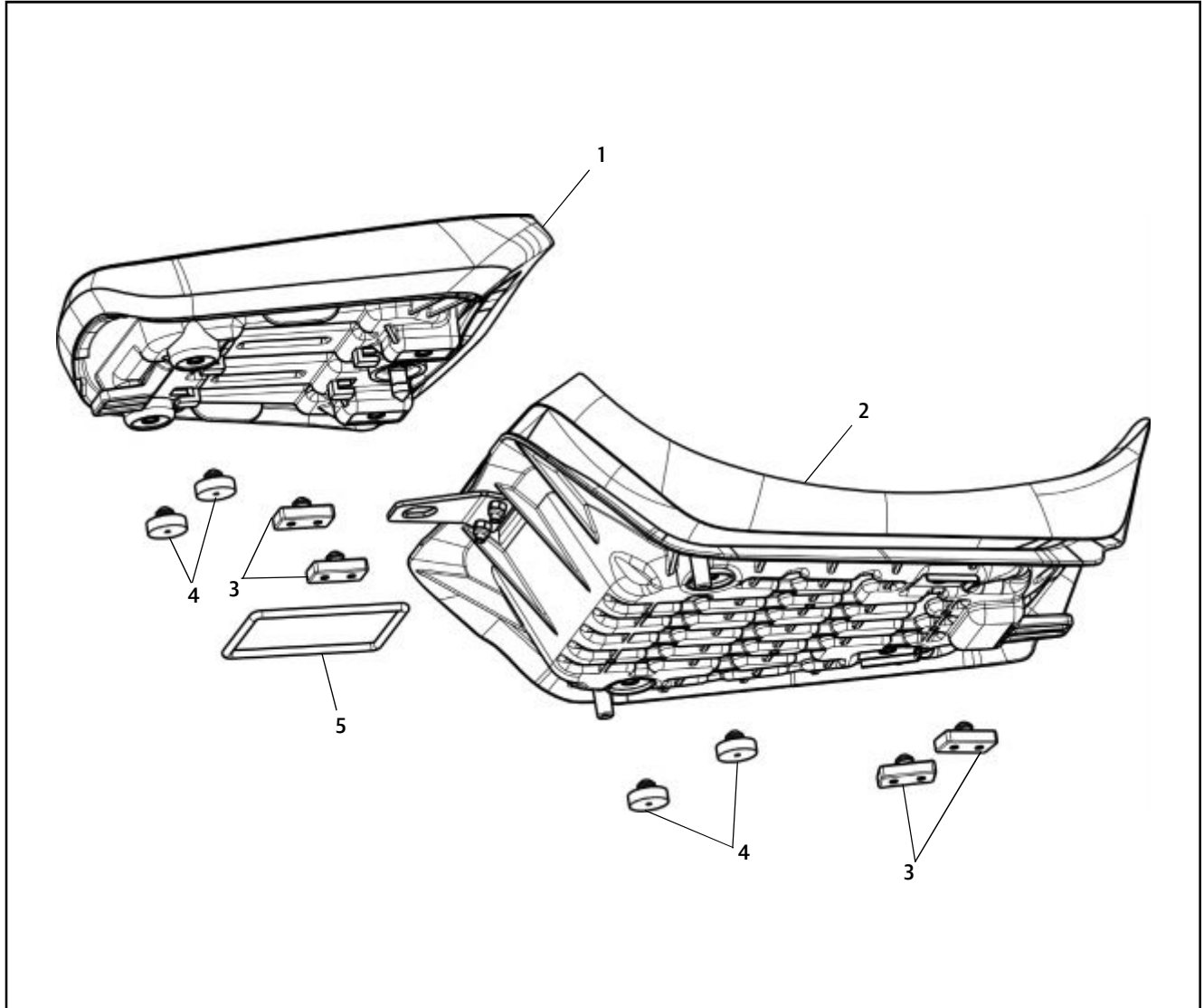
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.40	Clutch Cable Assembly ■ Ensure proper location of inner cable in clutch lever & outer cable in LH bracket at handle bar end. ■ Ensure proper routing of cable along the frame and insert into the bracket in cover RH. ■ Assemble outer lock nut & larger end of rubber grommet on the adjuster. ■ Lock inner cable in the clevis on Cover RH, gently pull cable outwards till resistance is felt & thread out inner lock nut so that it rests against the bracket ■ Ensure 2-3 mm clutch lever free play at handle bar end by suitably turning inner lock nut on cable cable. ■ Tighten outer lock nut against cable bracket.	NOTE: Ensure the rubber grommet is correctly positioned between adjuster & clutch lever on RH cover 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.41	Oil Cooler ■ Insert Oil cooler pipe No 2 from the left side to the Right side, between the engine and the cradle frame. ■ Position Oil cooler mounting holes with the bracket on LH side & tighten with 2 flanged Hex bolts ■ Position 1 each aluminum washer on either sides of the hose banjo union of Hose no.2 and tighten to cover RH with Banjo union bolt. ■ Position 1 each aluminum washer on either sides of the hose banjo union of Hose no.1 and tighten to crankcase LH with Banjo union bolt.	Flanged Hex bolts: M6X20 Socket spanner: 8mm. Torque: 10Nm.(1.0Kg.M.)  Banjo Union Bolts: M14 Socket spanner: 19mm. Torque: 38Nm.(3.8Kg.M.) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
4.42	Skid Plate ■ Assemble the 4 rubber bushes in the bottom mounting holes of the Skid plate and locate 4 damper bushes on the rubber bushes. ■ Position the Skid plate under the cradle frame and align the mounting holes. Ensure the damper bushes do not fall off. ■ Assemble 4 Flanged Hex Bolts M6 X1 X 35 at the bottom of the Skid plate. ■ Assemble 2 Flanged Hex Bolts, M6 X 1 X 14 at the front of the skid plate. ■ Tighten all the 6 bolts evenly and diagonally.	  Flanged Hex Screw: M6 Socket Spanner: 10mm Torque: 10Nm (0.1 Kg.M)

SECTION 05 - RIDER & PILLION SEAT

EXPLODED VIEWS RIDER & PILLION SEAT



S.NO.	DESCRIPTION	QTY.
1	Pillion Seat Assy	1
2	Rider Seat Assy	1
3	Rubber Support - Front	4

S.NO.	DESCRIPTION	QTY.
4	Rubber Support - Rear	4
5	Tool Kit Strap	1

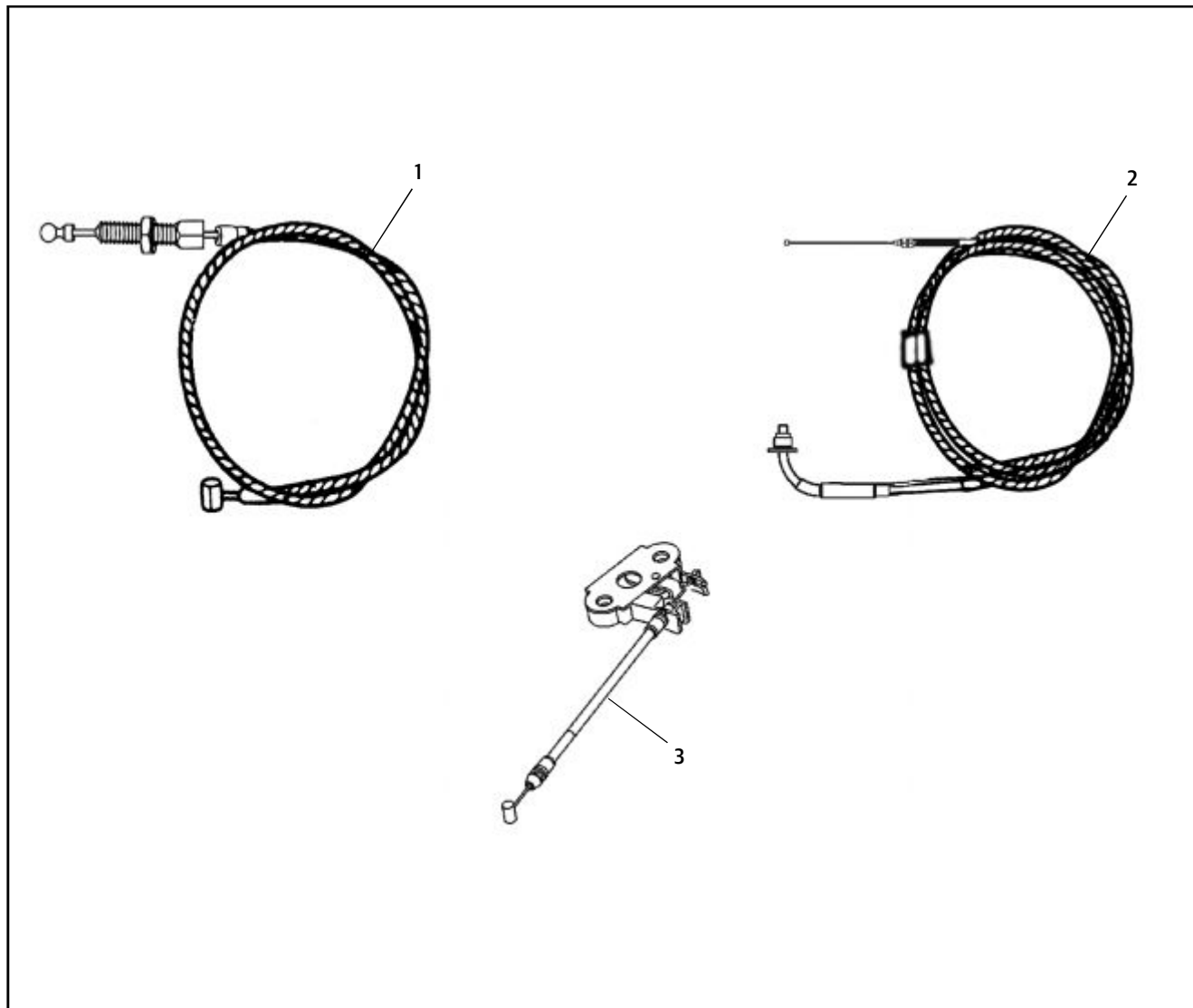
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.1	Rider & Pillion Seat Dismantling ■ Unlock pillion seat by turning key clockwise & lift pillion seat from front end to release rear tab & remove. ■ Lift rider seat from rear end to release front tab & remove.	  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
5.2	Rider & Pillion Seat Assembly ■ Locate the rider seat tab under the fuel tank and position the locking plate centrally on the frame. ■ Locate rear seat tab in the frame, align lock pin with the seat latch and gently press on seat to lock. ■ Remove key after locking pillion seat.	  

SECTION 06 - CONTROL CABLES

EXPLODED VIEWS

CONTROL CABLES



S.NO.	DESCRIPTION	QTY.
1	Clutch Cable Assy.	1
2	Throttle Cable Assembly	1
3	Seat Latch Cable Assy	1

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.1	Clutch Cable Removal from Cover RH end - Loosen outer lock nut of the cable adjuster on Cover RH, completely. - Loosen inner locknut sufficiently such that the adjuster can be pushed in to release inner cable from clutch lever. - Release the inner cable from the clevis in the clutch lever on cover RH - Remove the rubber grommet from the clutch cable - Remove the outer lock nut from the clutch cable - Pull out the clutch cable from the front end of the bracket. Removal from Handle bar end - Remove the outer cable from the clutch lever holder assembly at the handle bar end. - Remove clutch cable inner from the clutch lever - Remove the clutch cable	Hex Nut: M8 D E Spanner: 12mm  NOTE: Gently push the rubber grommet away from the adjuster while removing nut.   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.2	Throttle Cable Removal from Carburetor end ■ Loosen bottom hex nut and unscrew till it is free from the throttle cable adjuster. ■ Loosen top lock nut till it is resting against the top of the adjuster. ■ Lift throttle rotor up till cable becomes free from the rotor, gently rotate the cable and remove from the rotor eyelet. ■ Remove the bottom lock nut from the cable ■ Remove cable adjuster and inner cable from the bracket. Removal from Handle bar end ■ Loosen & remove throttle cable stop plate screw at the bottom of the throttle rotor grip housing on handle bar RH ■ Loosen & remove 2 screws at the bottom of the throttle rotor grip housing on handle bar RH. ■ Lower the housing and release the inner cable from the eyelet on the throttle rotor ■ Remove the inner cable on the throttle rotor housing bottom	

INSPECTION

- Carefully inspect inner cable top and bottom ends for frayed strands, loose nipples on the cable and/ or uneven wear of the nipple surfaces
- Free movement of the inner cable inside outer cable.
- Carefully inspect the outer cables for cuts / damages.
- Brittleness of the cables and no flexibility.

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.3	Clutch Cable Assembly at Handle bar end ■ Locate inner cable nipple in the slot in clutch lever ■ Locate outer cable in the clutch lever bracket. ■ Route cable suitably along the frame from the LH side such that the other end is towards the clutch cover. Assembly at Clutch cover end: ■ Insert inner cable into the clutch bracket on Cover RH till the inner lock nut on threaded adjuster is resting on the bracket. (Ensure inner locknut is fully threaded into adjuster) ■ Insert the outer lock nut through the inner cable and thread it on the adjuster by 3 or 4 turns. ■ Insert larger end of the rubber grommet on the inner cable and position it on the adjuster. ■ Locate the inner cable on the clutch lever clevis. ■ Gently pull the cable adjuster out of the bracket - as far as possible and tighten outer lock nut against the bracket. ■ Check clutch lever free play is between 2-3 mm and tighten /loosen inner lock nut. ■ Tighten outer locknut against clutch bracket.	    NOTE: Ensure proper seating of rubber grommet on the cable adjuster. Hex Nut: M8 D E Spanner: 12mm

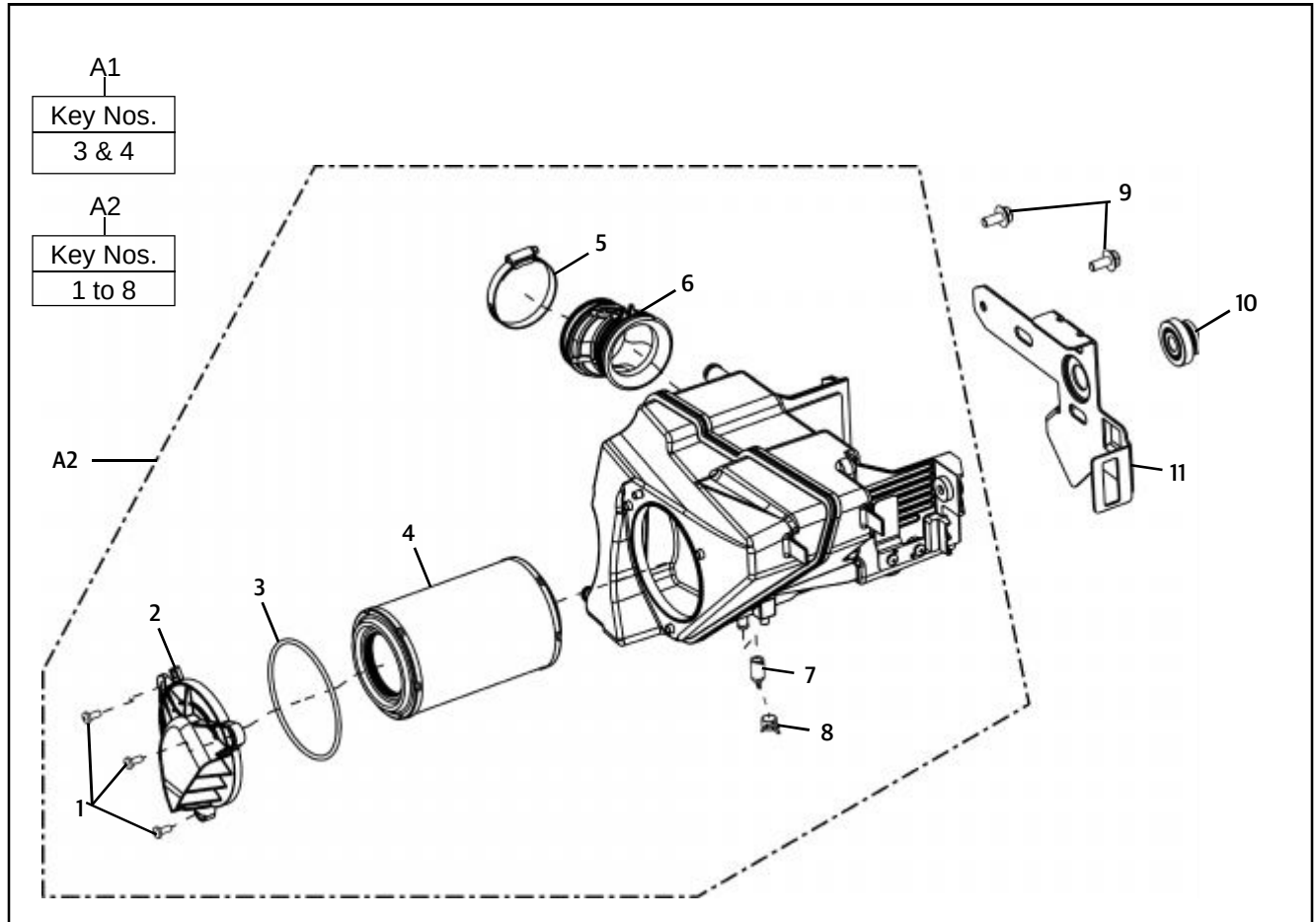
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	Throttle cable Assembly at Handle bar end ■ Route throttle cable inner through the bottom half of the throttle rotor housing. ■ Insert throttle rotor on handle bar RH and locate inner cable in the rotor eyelet ■ Support bottom half of the throttle rotor housing against handle bar and ensure proper resting of throttle rotor on top of the housing. ■ Position top housing over bottom housing, ensuring the mounting holes are matching and the throttle rotor is located in the slot in the housing and rotates freely. ■ Locate long head screw in front mounting hole and the short screw in rear mounting hole of bottom housing and tighten evenly till the housing are firmly tightened against handle bar. ■ Locate throttle cable stop plate on outer cable and tighten to bottom housing with screw. ■ Route the throttle cable below fuel tank and strap properly to frame.	NOTE: Ensure free rotation of the throttle rotor in handle bar. NOTE: Ensure free movement of throttle rotor and cable before tightening the screws fully. Philips head screw driver

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
6.4	Throttle cable Assembly on carburetor end ■ Ensure top lock nut in the cable adjuster is fully threaded into adjuster and insert cable into the bracket on carburetor end. ■ Assemble bottom lock nut on cable adjuster. ■ Locate inner cable in the throttle rotor eyelet . ■ Gently pull the adjuster upwards and tighten top lock nut against the bracket ■ Ensure free play of 2 - 3mm at the throttle rotor at the handle bar end and adjust top lock nut accordingly. ■ Tighten bottom lock nut against the bracket at carburetor end	Hex Nut: M6 D E Spanner: 10mm

SECTION 07 - AIR FILTER

EXPLODED VIEWS

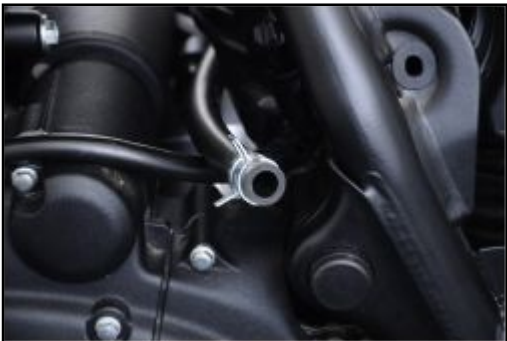
AIRFILTER



S.NO.	DESCRIPTION	QTY.
A1	A/F Element Kit	1
A2	Air Filter Box Assembly	1
1	Pan Head Screw M5 X12	3
2	Inlet Cover	1
3	Seal	1
4	Element Air Filter	1
5	Clamp	1
6	Pipe Outlet	1

S.NO.	DESCRIPTION	QTY.
7	Drain Tube	1
8	Clip	1
9	Hex Flange Bolt, M6 X 1 X 14	2
10	Rear Damper - Tank	1
11	Lid - Battery Carrier	1

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.1	Air filter Element from housing ■ Remove 2 hex socket button head screws from the LH side panel. ■ Pull out the side panel gently to release from the grommet in the frame. ■ Loosen & Remove the 3 Pan head screws from the air filter cover. ■ Remove Cover. ■ Remove air filter element from housing.	Pan head Screw M5 Allen Key 4mm  Pan head Screw M5 Allen Key 4mm   

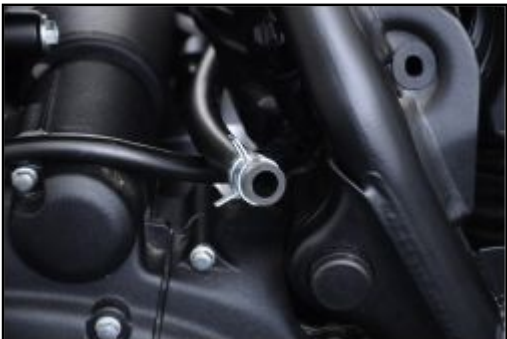
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.2	Air filter Housing from frame ■ Disconnect battery terminals and remove from air filter housing. (refer electricals section for dismantling battery) ■ Remove 4 flanged hex bolts and remove piece mudguard. ■ Disconnect breather hose from air filter housing ■ Loosen carburetor worm clip sufficiently. ■ Loosen & remove 2 flanged hex bolts, holding air filter housing to frame ■ Gently pull out Fuse box along with its rubber holder from air filter housing ■ Remove RR unit with its rubber holder from air filter housing ■ Loosen and remove 3 flange hex bolts holding the cross bar assembly below air filter housing to frame ■ Remove cross bar assembly ■ Loosen flanged Hex bolt, holding bracket air filter to frame and remove the bolt and bracket air filter. ■ Remove air filter housing from rear side of the frame.	Hex Bolts: M6 Socket spanner: 8mm Screw driver Hex Bolts: M8 Socket spanner: 12mm NOTE: Ensure the wiring connections are removed Hex Bolts: M6 Socket spanner: 10mm Hex Bolts: M8 Socket spanner: 12mm   

INSPECTION & CLEANING

- 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.
- Clean Air filter element every 5,000 Kms OR more frequently if motorcycle is used in dusty / Off road conditions.
- Gently Tap filter element with minimum force to dislodge heavy / embedded dust particles.
- Use compressed air from the outside of the filter element to remove dust particles
- Clean the element on the inside and outside using a soft cloth
- Clean the insides of the air filter housing and cover using a soft cloth
- Replace seals, 'O' Rings and rubber parts whenever the induction system is serviced.
- Replace Air filter element every 15,000 Kms or earlier if motorcycle is used in dusty / off road conditions.

TORQUE VALUES

S. No.	Aggregate	Fastener	Torque		Min. Torque		Max. Torque	
			NM	Kg.M	(Nm)	(Kg.M)	(Nm)	(Kg.M)
1	Bracket Assy-Airfilter top	Flanged Hex Bolt M8 X 1.25 X 16	22.5	2.25	20	2.0	25	2.5
2	Bracket Assy-Airfilter bottom	Flanged Hex Bolt M6 X 1 X 20	10	1.0	8	0.8	12	1.2
3	Crossbar Assy	Flanged Hex Bolt, M6 X 1 X 14	10	1.0	8	0.8	12	1.2
4	Piece mudguard	Flanged Hex Bolt, M6 X 1 X 20	10	1.0	8	0.8	12	1.2
5	Lid battery carrier	Flanged Hex Bolt, M6 X 1 X 14	10	1.0	8	0.8	12	1.2

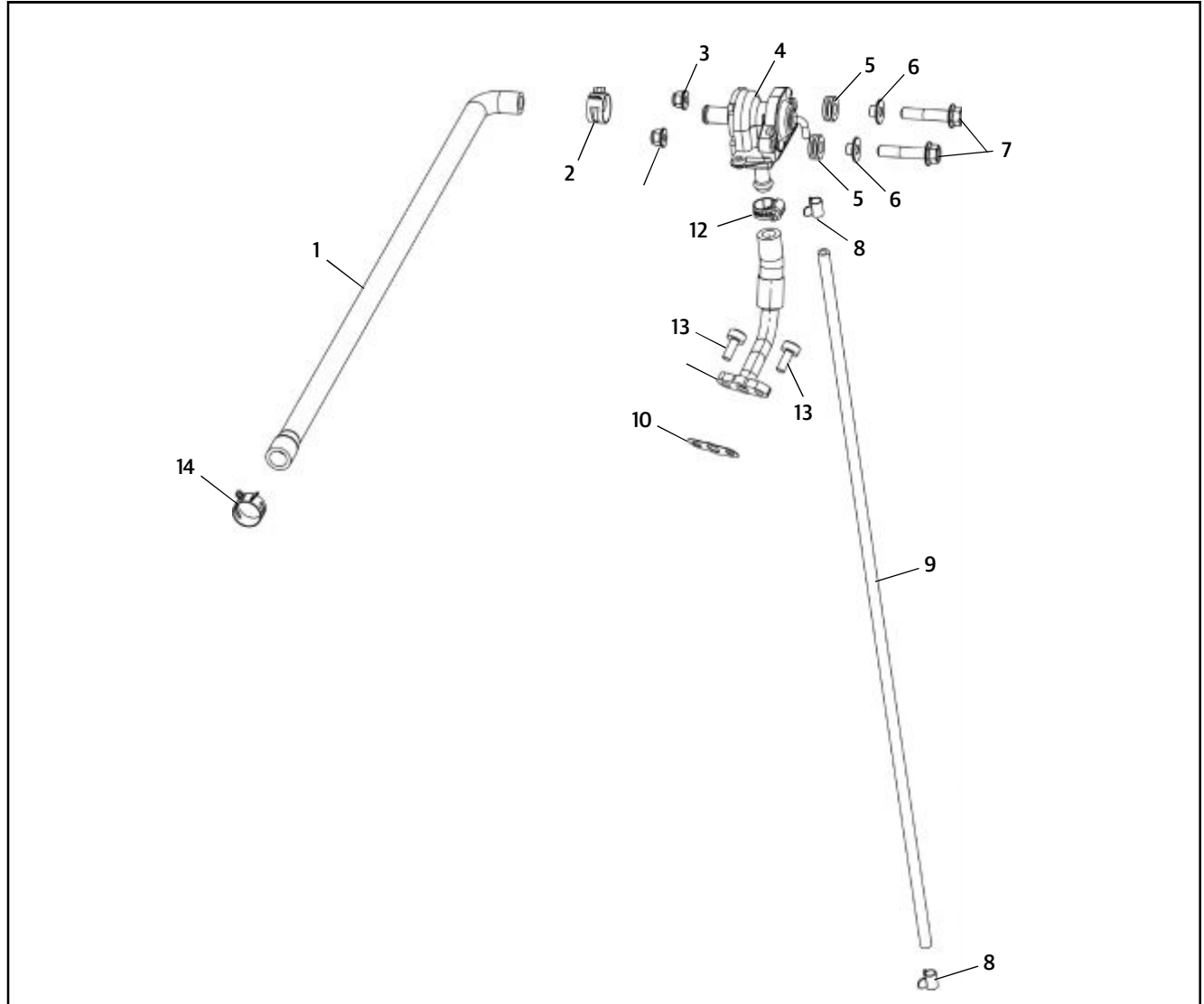
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.3	Air filter Housing on frame - Position air filter housing inside frame from rear side with its outlet hole facing carburetor. - Ensure connecting is correctly & fully seated on both air filter and carburetor & tighten hose clip to prevent slipping of the connection tube - Locate cross bar assembly under air filter housing and tighten to frame using 2 flanged hex bolts. - Position bracket assembly, air filter on frame RH side and tighten using flanged hex bolt M8 on top and 2 M6 flanged hex bolts at bottom. - Assemble piece mudguard and tighten to frame with flanged bolts, washers and nylock nuts. - Assemble battery, connect terminals, locate lid battery carrier in housing and tighten with hex bolts. (Refer electricals section for battery assembly)	Screw driver  Flanged Hex Bolts: M6 Socket spanner: 8mm Torque: 8-12Nm (0.8-1.2 KgM.)  Flanged Hex Bolt: M8 Socket spanner: 12mm Torque: 20-25Nm (2.0-2.5 KgM.)  Flanged Hex Bolt: M6 Socket spanner: 8mm Torque: 8-12Nm (0.8-1.2 KgM.)

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
7.4	Air filter Element into housing ■ Locate air filter element in housing such that the open end of the element is facing outside. ■ Locate cover on the air filter housing such that the locating pegs and the three mounting holes are aligned. ■ Tighten cover with 3 screws evenly and firmly ■ Locate side panel with its bottom leg located in the rubber grommet ■ Tighten side panel with 2 hex socket button head screws	  Philips head screw driver  Pan head screw M5 Allen Key 4mm 

SECTION 08 - PULSE AIR VALVE

EXPLODED VIEWS

PULSE AIR VALVE



S.NO.	DESCRIPTION	QTY.
1	PAV - Air Filter Hose	1
2	Clip	1
3	Flange Nyloc Type Nut M6 X 1	2
4	Pulse Air Valve	1
5	Damper - Oil Cooler	2
6	Spacer - Oil Cooler	2
7	Hex flange bolt M6 X 30	2

S.NO.	DESCRIPTION	QTY.
8	Clip - PAV Adaptor	2
9	PAV Adaptor Hose	1
10	Gasket Mounting Plate	1
11	Braided Hose assy	1
12	SS Hose Clip	1
13	Hex Socket Head Cap Screw M6 X 20	2
14	Clip - PAV air filter hose	1

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
8.1	Pulse air valve pipe connections ■ Remove fuel tank from frame. ■ Gently expand the clip and disconnect rubber hose from inlet manifold. ■ Disconnect air inlet hose from pulse air valve. Pulse air valve braided hose: ■ Loosen screw on the SS hose clip. ■ Loosen & remove 2 hex socket head cap screws holding braided hose flange to cylinder head on the exhaust end. ■ Gently pull out braided hose from pulse air valve bottom tube and remove along with gasket. Pulse air valve from frame: ■ Holding the nuts on the inside, loosen and remove the 2 flanged hex bolts from frame ■ Remove pulse air valve from frame, taking care not to drop the spacers and dampers	 Screw driver Hex. Soc head cap screw: M6X20 Allen Key 5mm  Hex bolts & nuts: M6 Double end spanner: 8mm

INSPECTION

- Inspect the hoses for ageing, cuts and / or cracks. Replace as recommended.
- Inspect braided hose for any leaks, cracks and proper sealing at cylinder head

TORQUE VALUES

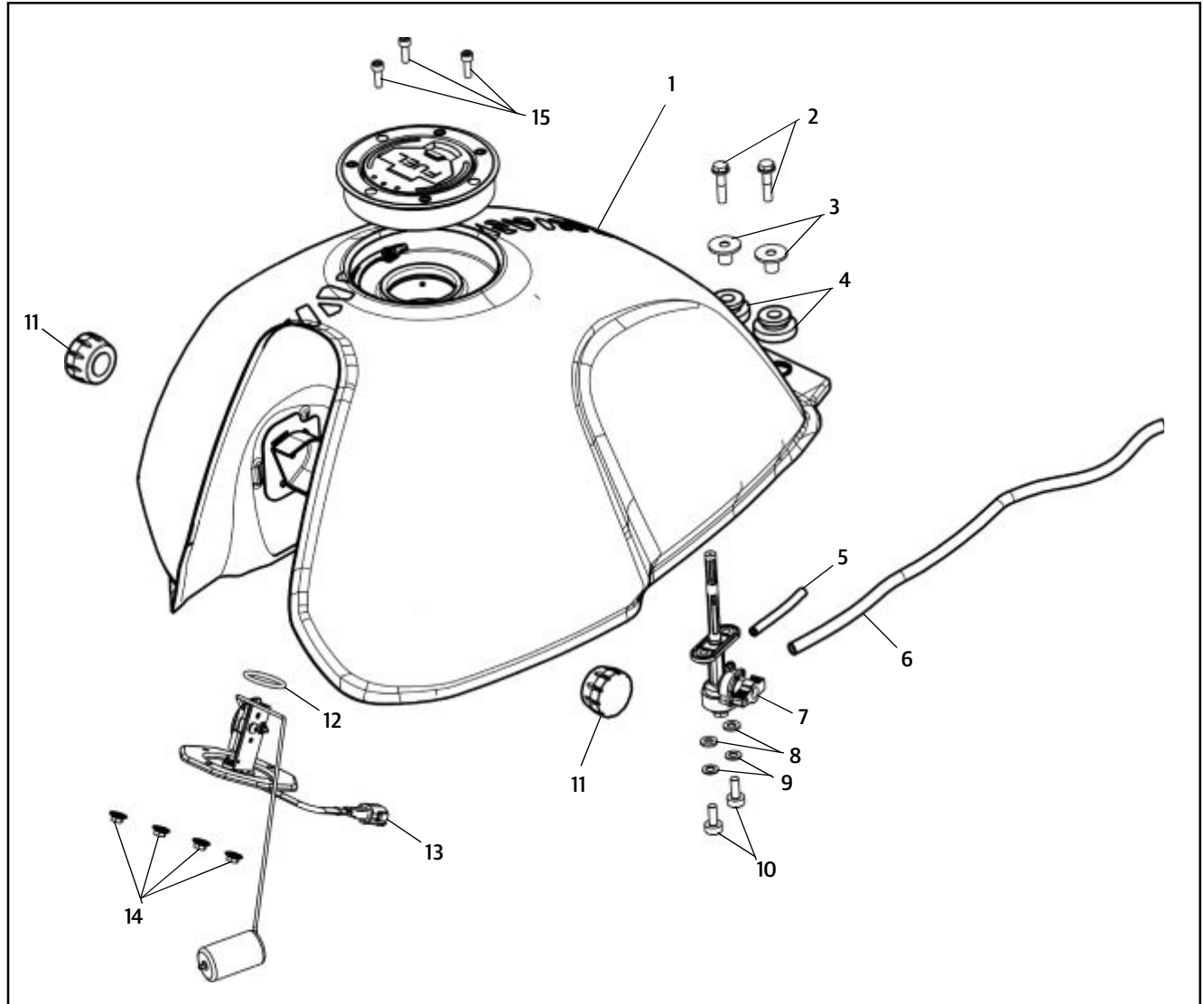
S. No.	Aggregate	Fastener	Torque		Min. Torque		Max. Torque	
			NM	Kg.M	(Nm)	(Kg.M)	(Nm)	(Kg.M)
1	Braided hose mtg to cyl head	Hex Socket Head Cap Screw M6 X 20	10	1.0	8	0.8	12	1.2
2	PAV mtg to frame	Hex flange bolt M6 X 30	10	1.0	8	0.8	12	1.2

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos	
8.2	Pulse air valve on frame ■ Locate pulse air valve in the frame such that the outlet is facing down, the inlet from carburetor is on the RH side and the inlet from air filter is on the Left side of the frame ■ Ensure the dampers and spacers are in place in the mounting locations and tighten with 2 hex flange bolts M6X30 ■ Apply grease on the gasket and locate it on the cylinder head ■ Locate worm clip on the braided hose and assemble braided hose on the outlet tube of the pulse air valve ■ Position braided hose flange over the gasket on cylinder head, align the holes and tighten with two hex socket head cap screws ■ Tighten worm clip over the braided hose. ■ Connect the rubber hoses from airfilter and inlet manifold respectively and slide the clips in place.	Flanged Hex Bolts: M6 Socket spanner: 8mm Torque:10-12Nm (1.0-1.2 Kg.M) 	Screw driver Hex soc hd cap screws: M6X20 Allen key: M5 Torque:10-12Nm (1.0-1.2 Kg.M) 

SECTION 09 - FUEL TANK

EXPLODED VIEW

FUEL TANK



S.NO.	DESCRIPTION	QTY.
1	Fuel Tank With Sticker	1
2	Flanged Hex Bolt M6 X 1 X 27	2
3	Bush - Fuel Tank	2
4	Rear Damper-Tank	2
5	Fuel Hose	1
6	Drain Hose	1
7	Fuel Tap Assy	1
8	Plain Washer	2

S.NO.	DESCRIPTION	QTY.
9	Fiber Washer	2
10	Hex socket head cap screw M6X16	2
11	Front Damper-Tank	2
12	O Ring-Fuel Gauge	1
13	Fuel Level Sensor Unit	1
14	Hex Flange Nut M5 X 0.8	4
15	Hex socket head cap screw M5X16	3

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
9.1	Fuel tank - Dismantling ■ Remove Seat Assembly ■ Disconnect fuel hose from carburetor end. ■ Remove 2 Hex screws from the rear end of fuel tank. ■ Disconnect fuel gauge coupler wire by lifting the tank slightly. ■ Slide fuel tank towards rear to release front clamp from frame. ■ Remove tank along with the overflow tube carefully.	CAUTION: Drain the fuel completely from the fuel tank. 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 EVAP hose 

INSPECTION

- Carefully inspect fuel hose and vent hose for damage, cuts, cracks, holes, wear 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 VALUES

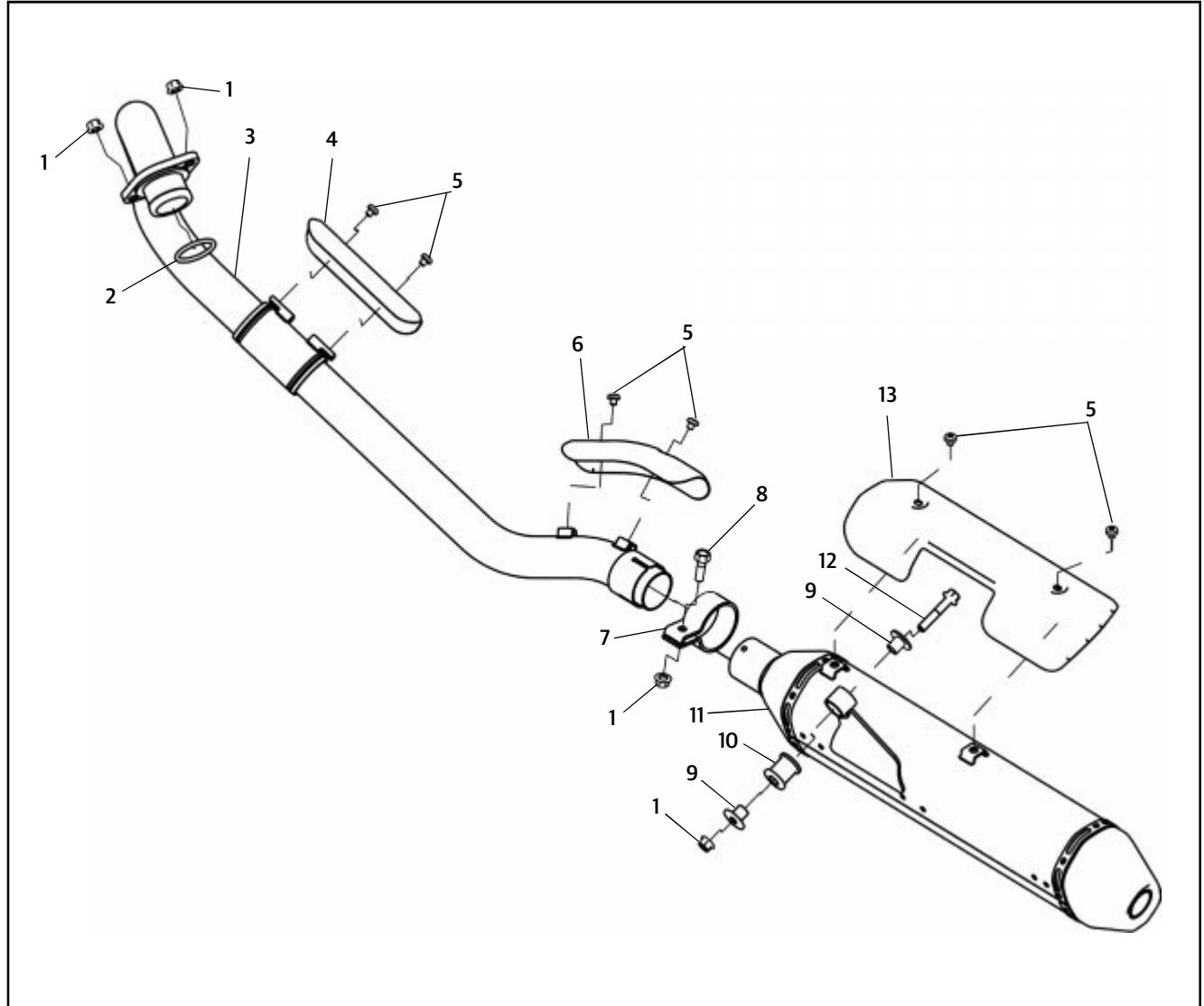
Aggregate	Component	Fastener	Torque Range	
			NM	Kg-M
Fuel Tank	Fuel tank Mounting	Flanged Hex Bolt M6 *1*27	5	0.5

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
9.2	Fuel tank - Assembly ■ Position fuel tank such that the front mounting clamps are correctly located on the rubber supports on the frame. ■ Gently push fuel tank forward to lock in place. ■ Lift rear end of the tank slightly and : - Route the drain hose between the frame without any kinks. - Connect blue coupler of Low fuel sensor to wiring harness ■ Ensure rubber grommets are in place in the rear mounting holes and align mounting holes to the frame, ■ Locate 2 washers on the hex flange bolts, assemble the bolts and tighten to torque. ■ Connect fuel hose to fuel tap and carburetor and lock the clips in place.	  Hex Flange Bolt M6 Socket Spanner 10 mm Torque 5 NM (0.5 Kg.M)

SECTION 10 - EXHAUST PIPE & SILENCER

EXPLODED VIEWS

EXHAUST PIPE & SILENCER



S.NO.	DESCRIPTION	QTY.
1	Flanged Hex. Nut M8 X 1.25	4
2	Exhaust Gasket	1
3	Exhaust Pipe Assy	1
4	Guard, Cat Pipe	1
5	Philips Pan Head Screw M6 X 6	6
6	Guard Exhaust Pipe	1
7	Clamp Silencer	1

S.NO.	DESCRIPTION	QTY.
8	Hex Flange Bolt M8 X 1.25 X 38	1
9	Pin Damper	2
10	Damper Bush	1
11	Silencer Assy	1
12	Hex Flange Bolt M8 X 1.25 X 55	1
13	Guard Silencer	1

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.1	Exhaust pipe & Silencer - Remove 2 flanged Hex nuts along with washers at the cylinder head end. - Release the clamp from the studs. - Remove 2 Hex bolts & nuts at the silencer mounting bracket end. - Support the silencer and remove the bolt. - Gently pull out the exhaust pipe from the cylinder head and remove exhaust pipe with silencer from the vehicle.	Hex Nuts: M8X1.25 Socket spanner -12mm NOTE: Remove copper washer in cylinder head, exhaust pipe seating area after removing exhaust pipe.  Hex bolts: M8 X 1.25X45 Hex Nuts: M8 X1.25 Socket spanner - 12mm Double End Spanner: 12mm 

INSPECTION

- Inspect Silencer and Exhaust assemblies for any damages / dents as it might cause damage to the internals.
- 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

- Copper gasket between exhaust pipe and cylinder head whenever exhaust pipe is dismantled from cylinder head.

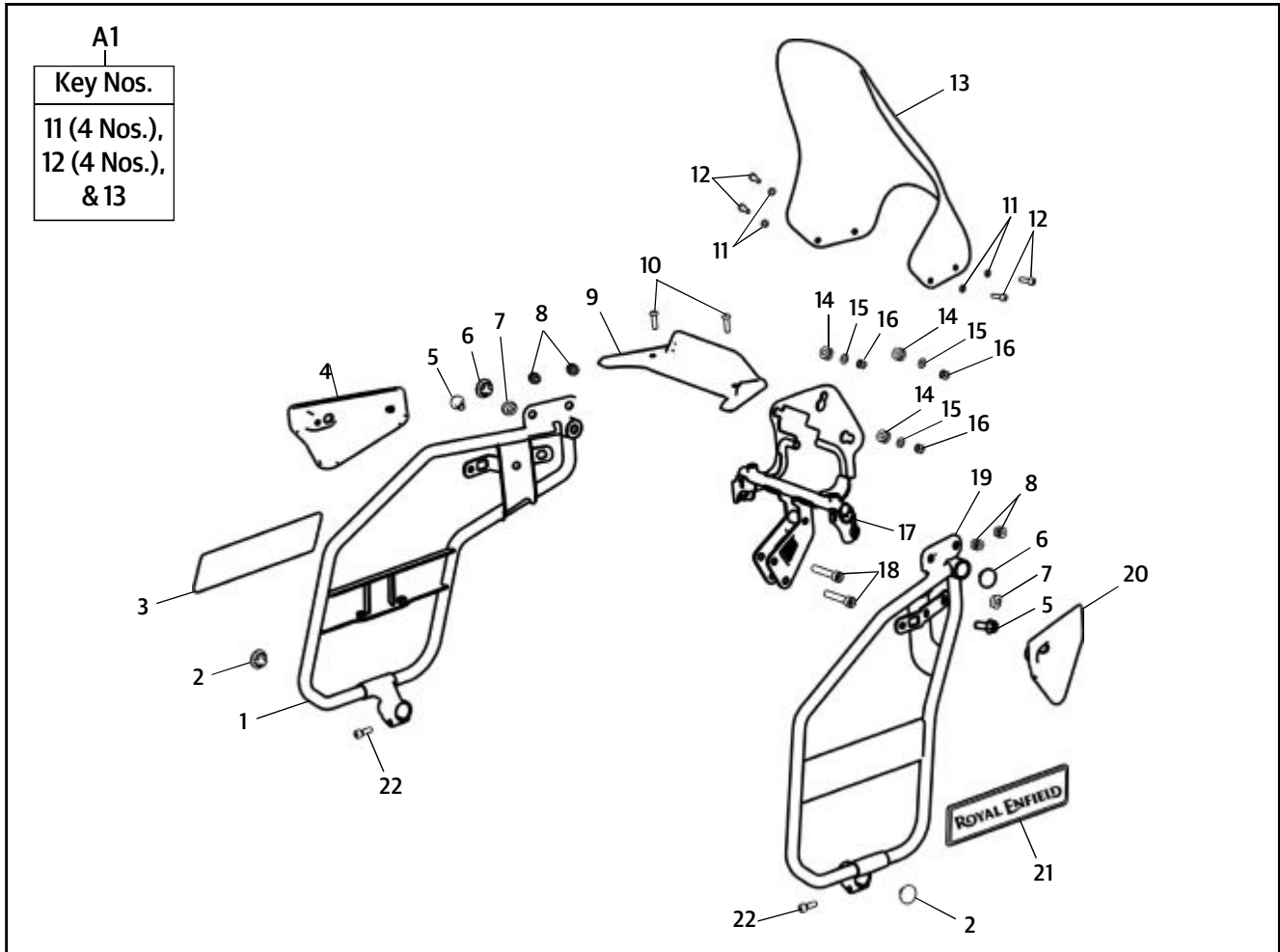
S No.	Aggregate	Fastener	Torque Range	
			NM	Kg-M
1	Exhaust Pipe Mounting to Cyl.head	Flanged Hex Bolt M8 X 1.25 X 16	10	1
2	Silencer Mounting to Frame	Hex Socket M8X1.25X25	25	2.5

No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
10.2	Exhaust pipe & Silencer ■ Locate a new gasket on the exhaust pipe. ■ Locate exhaust pipe into the cylinder head, position the clamp over the studs on the cylinder head & assemble 2 hex nuts M8 DO NOT TIGHTEN FULLY. ■ Position silencer mounting bracket against the frame at the rear and insert flanged hex bolt. Assemble hex nut over bolt. ■ Tighten the 2 hex nuts at the cylinder head, first and then the silencer bracket nut.	Hex Nuts: M8X1.25 Socket spanner -12mm Torque: 10Nm (1.0Kg.M.)  Hex bolts: M8 X 1.25X45 Hex Nuts: M8 X1.25 Socket spanner -12mm Double End Spanner: 12mm Torque: 25Nm (2.5Kg.M) 

SECTION 11 - TOP BRACKET, HANDLE BAR, FRONT MUDGUARD, FRONT WHEEL FRONT SUSPENSION & STEERING STEM

EXPLODED VIEWS

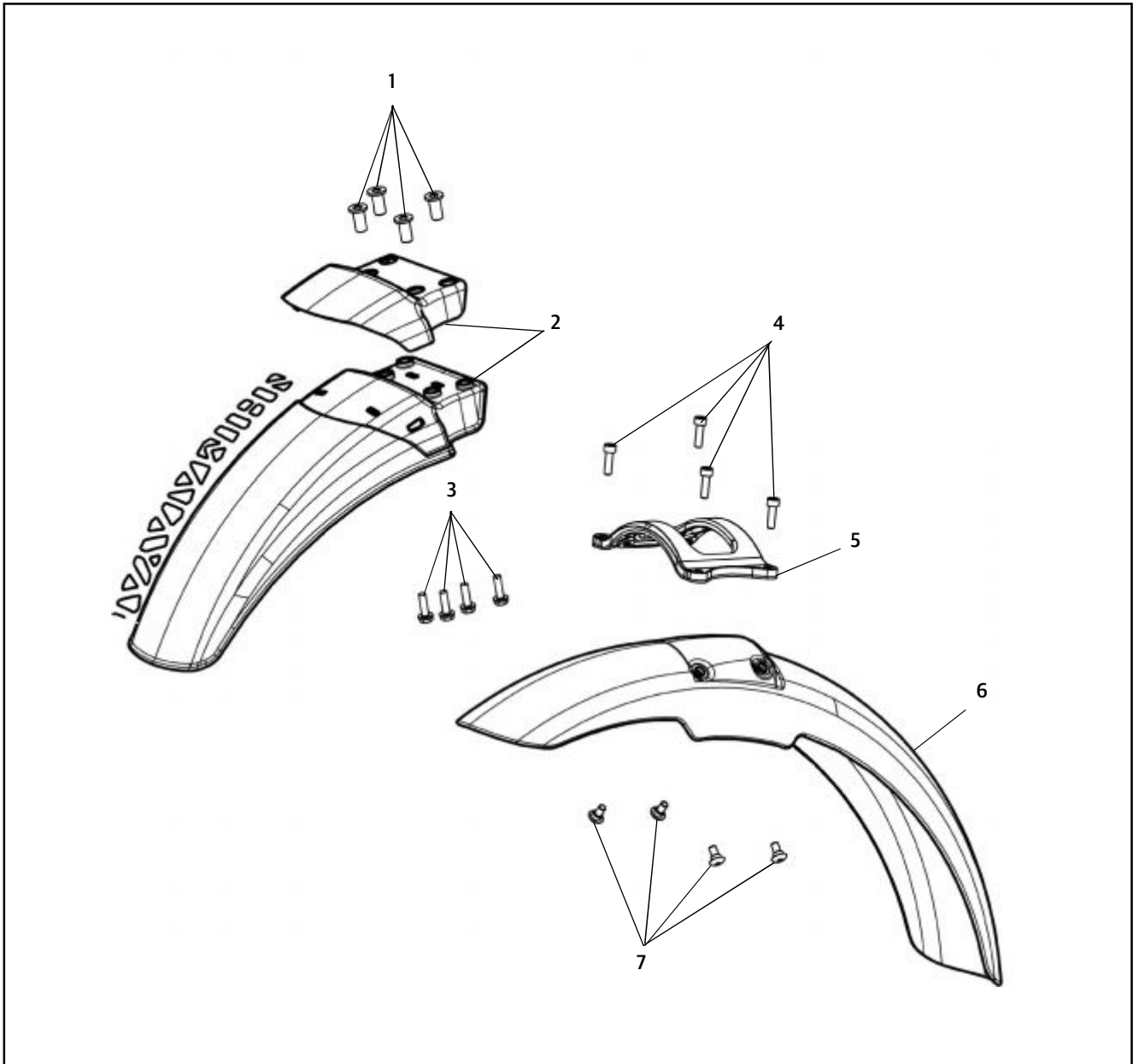
TOP FRAME, WINDSCREEN & COCKPIT BRACKET



S.NO.	DESCRIPTION	QTY.
1	Top frame LH with Decal	1
2	Dust Cap - Connector Comp	2
3	Decal LH	1
4	Cover Cockpit LH	1
5	Flanged Hex Bolt M8	2
6	Dust Cap-Frame Top	2
7	Grommet	2
8	Rubber Nut-M5	4
9	Cover Cockpit Top	1
10	Hex.Socket Button Head Screw M6X1	2
11	Washer Plastic	4

S.NO.	DESCRIPTION	QTY.
12	Hex socket head cap screw M5X16	4
13	Wind Shield	1
14	Grommet-Cluster	3
15	Plain Washer	3
16	Hex Nut M6 with nylon insert	3
17	Cockpit Mtg bracket- Black	1
18	Hex Socket Head Cap Screw M8 X 45	2
19	Top frame RH with Decal	1
20	Cover Cockpit RH	1
21	Decal RH	1
22	Hex Socket Head Cap Screw-M6	2

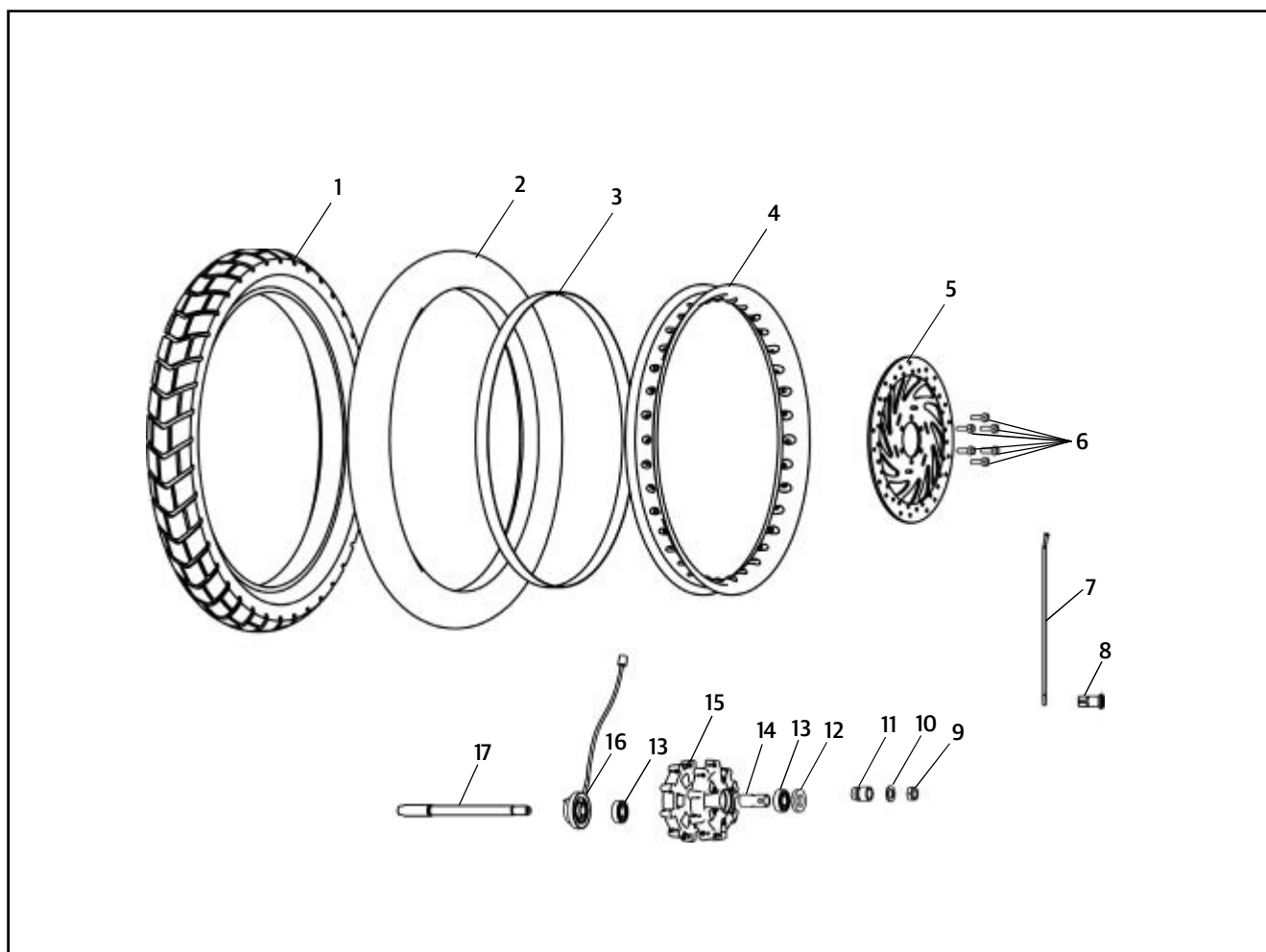
FRONT MUDGUARD



S.NO.	DESCRIPTION	QTY.
1	Insert- Front Fender	4
2	Front Mudguard with sticker assy - Black	1
3	Flanged Hex Bolt M6 X 1 X 27	4
4	Hex. Socket Head Cap Screw- M6 X 20	4

S.NO.	DESCRIPTION	QTY.
5	Fork Brace- Yenmar Bronze	1
6	Front Mudguard - Bottom	1
7	Hex. Socket Button Head Screw M6 X 1	4

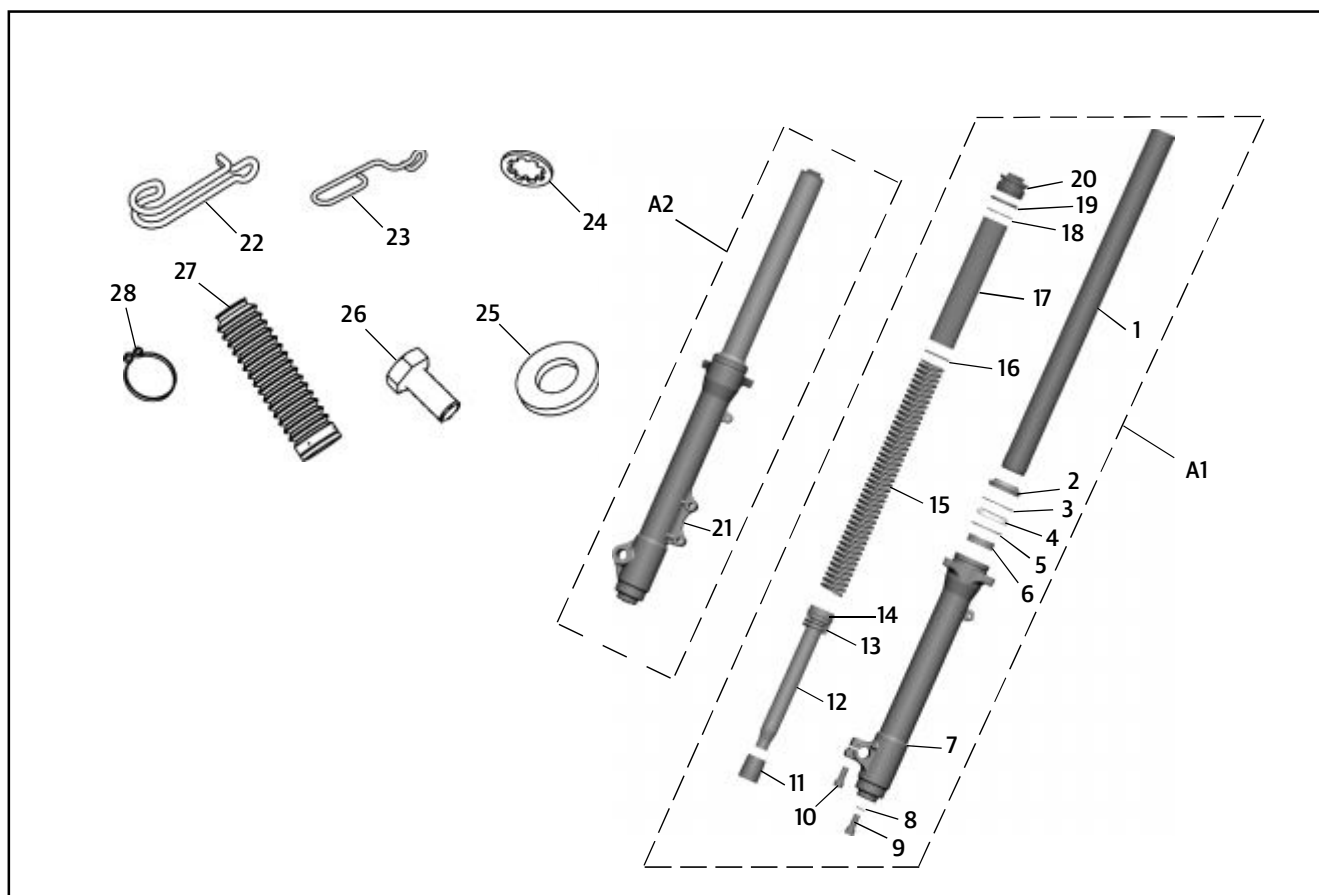
FRONT WHEEL



S.NO.	DESCRIPTION	QTY.
1	Tyre - Front	1
2	Tube - Front	1
3	Rim Tape- Front	1
4	Rim Front	1
5	Disc- Front	1
6	Hex Flanged Bolt M8 X 1.25 X 25	6
7	Spokes Front	36
8	Nipple	36
9	Hex U Nut M16 X1.5	1
10	Washer	1

S.NO.	DESCRIPTION	QTY.
11	Spacer	1
12	Grease Seal, ,25x40x7	1
13	Deep Groove Sealed Ball Bearing 6203 (17 X 40 X 12)	2
14	Spacer - Front Hub	1
15	Front Hub Assy	1
16	Wheel Speed Sensor Assy	1
17	Spindle - Front Wheel	1

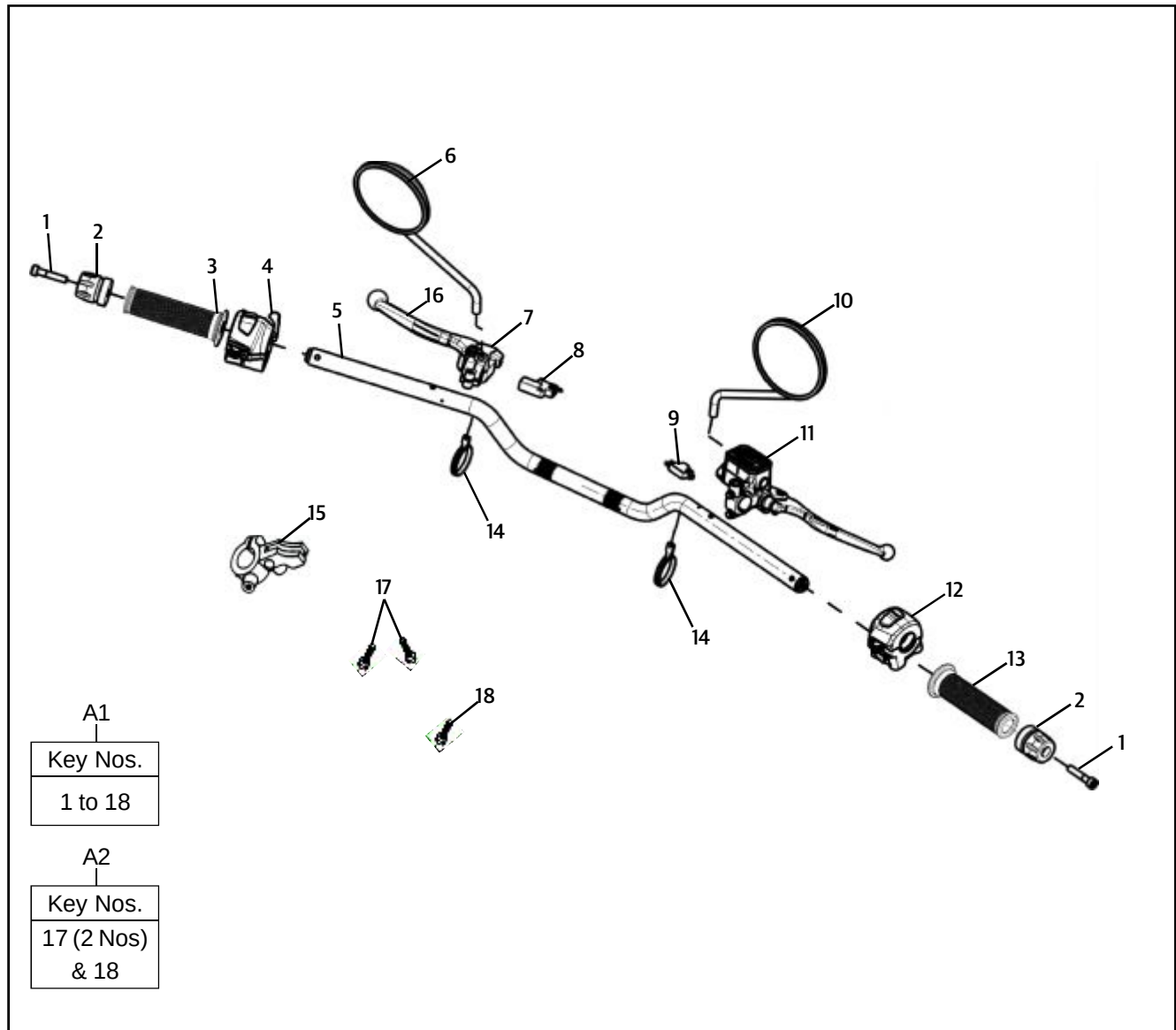
FRONT FORK



S.NO.	DESCRIPTION	QTY.
A1	Front Fork Assy. LH	1
A2	Front Fork Assy. RH	1
1	Inner Tube Assy.	2
2	Dust Seal	2
3	Circlip (Snap - Ring	2
4	Oil Seal	2
5	Bush Washer	2
6	Bush (Outer Tube)	2
7	Outer Tube RH	1
8	Gasket	2
9	Bolt M10X1	2
10	Hex Socket Head Screw M8 X 1.25 X 25	1
11	Spindle Taper	2
12	Piston - Front Fork	2
13	Spring - 2 (Short)	2

S.NO.	DESCRIPTION	QTY.
14	Piston Ring	2
15	Spring - 1 (Long)	2
16	Washer Spring Top	2
17	Spacer	2
18	Washer - 2	2
19	'O' Ring	2
20	Bolt Cap	2
21	Outer Tube LH	1
22	Cable Guide - Brake Hose	1
23	Cable Guide - Speedo Cable	1
24	Lock Washer, M6	2
25	Plain Washer	2
26	Hex. Bolt M6 X 12	2
27	Bellow Fork	2
28	Fork Gaiter Clip	2

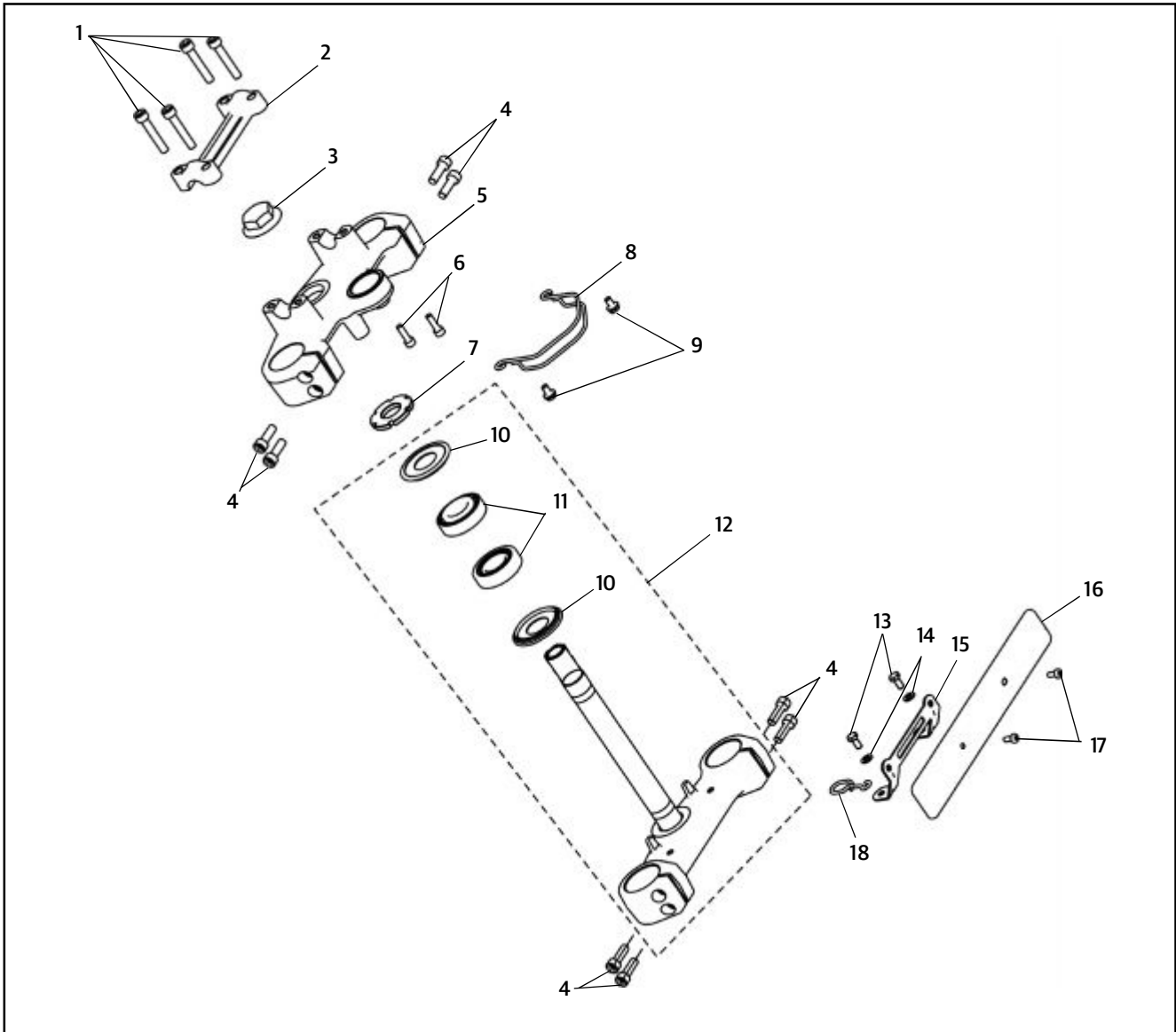
HANDLE BAR



S.NO.	DESCRIPTION	QTY.
A1	Handle Bar Assy Comp with Switch etc	1
A2	Clamp Kit Front M/C	1
1	Hex Socket Head Screw M8 X 48	2
2	Counter Weight Assy	2
3	Hand Grip LH	1
4	Switch Module LH	1
5	Handle Bar Complete	1
6	Rear View Mirror LH	1
7	Lever & Holder Assy- LH	1
8	Clutch Switch	1

S.NO.	DESCRIPTION	QTY.
9	Front Brake Switch	1
10	Rear View Mirror RH	1
11	Master Cylinder - Front	1
12	Switch Module RH	1
13	Grip Comp. Throttle RH	1
14	Mountable Strap- Handle bar	2
15	Bracket - Lever, Clutch LH	1
16	Clutch Lever	1
17	Screw - Clutch Switch	2
18	Screw Brake lever fixing	1

STEERING STEM



S.NO.	DESCRIPTION	QTY.
1	Hex Socket Head Screw M8 X 45	4
2	Top Raiser-Handle Bar	1
3	Lock Nut	1
4	Hex Socket Head Screw M8 X 1.25 X 25	8
5	Top Yoke	1
6	Hex. Socket Head Cap Screw- M6 X 20	2
7	Ring Nut	1
8	Clip Holder Assy - Wiring Harness	1
9	Flanged Hexagonal Bolt M6 X 1 X 10	2

S.NO.	DESCRIPTION	QTY.
10	Dust Seal-Steering Assy	2
11	Tapered Roller Bearing - 30205 (25 X 52)	2
12	Steering Stem Assy. with Bearings & Dust Seals	1
13	Hex Bolt - M6 X 1 X 12	2
14	Plain Washer	2
15	Bracket Comp Number Plate	1
16	Number Plate - Front	1
17	Cross Recessed Pan Head Screw M5 X 0.8 X 12	2
18	Clamp-Wheel Speed Sensor	1

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.1	Top Frame LH & RH Wind Shield Assembly - Remove 4 Hex socket head cap screws holding the Wind shield assembly to the top frame. - Remove the 4 plastic washers along with the screws and remove wind shield.	Hex Soc Hd. Cap Screw: M5 Allen Key: 4mm NOTE: Hold the rubber mounted nuts from behind while loosening screws. 
11.2	Trafficator front LH, RH & cover cockpit LH, RH. - Disconnect Trafficator wiring couplers below headlamp. - Remove hex socket head screw mounting the trafficators to the top frames on LH & RH sides. - Gently pull out Cover cockpit LH & RH from the rubber grommets in the top frame LH & RH.	NOTE: Couplers are color coded as: LH side: Green RH side: Red Hex Soc Hd. Cap crews: M5 Allen Key: 4mm Hex Nut: M6 Double end spanner: 10mm   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.3	Headlamp Assembly ■ Disconnect head lamp wiring coupler below head lamp. ■ Remove the dust caps from the mounting holes in top frame LH & RH. ■ Remove 2 hex socket head screws holding headlamp assembly to top frame LH & RH & remove head lamp assy.	  Hex soc hd. cap screws: M8 Allen Key: 6mm
11.4	Top frame LH & RH ■ Remove 2 Flanged Hex bolts holding the top frame LH & RH to Instrument cluster bracket. ■ Remove the 2 dust caps from the connector in the frame. ■ Loosen 2 hex socket head screw clamping top frames LH & RH, to connector tube. ■ Gently rotate & pull out top frames LH & RH from connector tube.	  Flanged hex bolts: M8 Socket Spanner: 12mm Hex Socket Hd. screws: M6 Socket Spanner: 10mm CAUTION: Take care not to damage fuel tank while rotating & removing the side support brackets.

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.5	Instrument cluster Ignition switch & Cockpit mounting bracket ■ Disconnect the instrument cluster wiring coupler ■ Loosen and remove the 3 Hex cap nuts along with the washers. ■ Remove the Instrument cluster from the cockpit bracket ■ Disconnect ignition switch wiring coupler. ■ Loosen and remove 2 hex socket head cap screws beneath switch and remove switch. ■ Remove 2 Allen screws mounting the Instrument cluster bracket to frame head tube.	CAUTION: Instrument cluster must always be stored vertically and away from magnetic objects to prevent damage to the compass and displays. Hex cap nuts: M6 Socket Spanner: 10mm Hex soc. Hd. cap Screw: M5 Allen key: 4mm Hex soc. Hd. cap Screw: M8 Allen key: 6mm    

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.6	Front Mudguard Front Mudguard Top ■ Remove 4 Hex bolts from inside of mudguard. ■ Remove front mudguard top.	Hex bolt: M6 D E Spanner: 10mm NOTE: Ensure the 4 inserts are removed from the top of the mudguard.  
11.7	Front Mudguard Bottom ■ Remove 4 Allen screws securing fork brace to fork legs. ■ Remove 4 Allen screws inside front mudguard bottom to separate mudguard from fork brace.	Hex soc. Hd. cap Screw: M5 Allen key: 4mm Hex soc. Hd. cap Screw: M5 Allen key: 4mm  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.8	Front Wheel ■ Support vehicle suitably such that the front wheel is off the ground. ■ Hold front wheel axle on fork end RH & loosen hex nut. ■ Remove hex nut and washer. ■ Loosen pinch bolt from bottom of fork end RH. ■ Support wheel and pull out spindle from RH side, taking care not to drop the spacers. ■ Remove wheel from between the fork ends along with wheel speed sensor and spacer. ■ Remove wheel speed sensor from the hub.	Hex nut: M16 Ring Spanner: 24mm  Hex soc. Hd. cap Screw: M8 Allen key: 6mm  CAUTION: Take care not to damage the wheel speed sensor while removing front wheel  CAUTION: Place a suitable spacer of 4 mm thickness, between the brake pads to prevent them from coming out too far, incase brake lever is depressed accidentally.

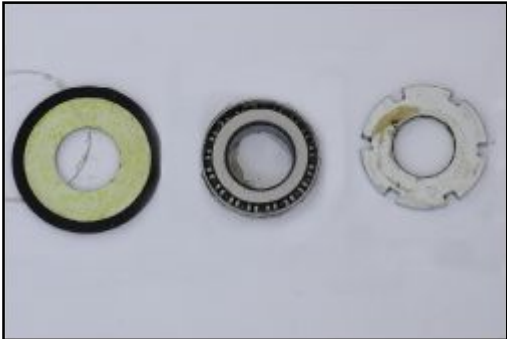
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.9	Front Fork Assy LH & RH Fork assy from vehicle - Remove 2 Hex bolts holding brake caliper to fork LH. - Loosen 2 each hex socket head cap bolts on the LH & RH side fork crown plate. - Loosen 2 each hex socket head cap bolts on the LH & RH side on steering stem assy. - Rotate main tube & simultaneously pull out from fork crown plate and steering stem assembly. - Repeat same process with other fork assembly.	Hex bolt: M8 T Spanner: 12mm NOTE: Support the wheel caliper suitably to prevent damage to it. Ensure front wheel, wheel speed sensor connecting wire & front mudguards are already removed Hex soc. Hd. cap Screw: M8 Allen key: 6mm   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.10	Front Fork Internals - Hold fork assembly in a bench vise with soft jaws, approximately 6 inches from the top and loosen cap nut. - Remove fork assembly from the bench vise, hold upright and remove cap nut with washer slowly to allow the main spring to expand completely. - Remove washer, spacer and washer spring top and main spring from the inner tube. - 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.	Hex cap nut : M16 Ring spanner: 24mm    Fork oil capacity: 455ml/leg 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.11	Front Fork Internals ■ Insert special tool from the main tube end & Locate on the guide tube to prevent it from rotating. ■ Remove Allen screw at the bottom. ■ Remove special tool from inner tube. ■ Remove the dust seal, retainer clip, and fork seal from the outer tube. ■ Separate fork tubes by sharply pulling inner tube out of the outer tube along with the guide bush, seat pipe assembly, rebound spring and cap oil lock.	Hex soc hd. cap screw: M8 Allen key: 6mm  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.12	Handle Bar Assembly ■ Remove rear view mirrors LH & RH from handle bar ■ Disconnect clutch and throttle cables. (refer section 5) ■ Disconnect wiring couplers of LH and RH switch assemblies from the wiring harness ■ Disconnect Front Brake Switch wire connections. ■ Disconnect clutch switch wiring coupler. ■ Remove 2 Hex bolts from master cylinder top mounting bracket on handle bar RH and remove master cylinder complete with brake lever from handle bar. ■ Remove 4 Hex socket screws mounting top raiser to steering stem top bracket & remove handle bar with top raiser.	Hex nut: M10 Double end spanner: 14mm   Hex bolt: M6 Socket spanner: 8mm  Hex soc hd. cap screw: M8 Allen key: 6mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.13	Steering stem assembly ■ Ensure following are removed: - Mirrors LH & RH, Windshield - Headlamp & trafficators. - Instrument cluster. - Ignition switch. - Electrical connections to wheelspeed sensor, clutch switch & front brake switch. - Top frames LH, RH & cockpit bracket - Clutch and throttle cables from handle bar. - Front disc brake system from handle bar & fork end LH - Top raiser and handle bar assembly - Front wheel. - Top & front mudguards - Fork assemblies LH & RH ■ Loosen top nut on steering stem and remove ■ Support steering stem from bottom and remove adjuster nut at the top	Hex nut : M24 Double end Spanner : 30mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.13	Steering stem assembly ■ Remove dust washer from the top ■ Remove steering stem from the frame ■ Remove taper roller bearing from the frame head tube.	  NOTE: The bottom taper roller bearing will be tight in the steering stem and will have to be pulled out of the stem using suitable puller. 

INSPECTION

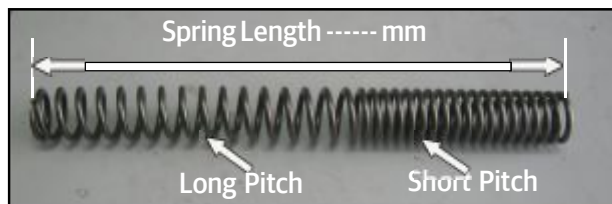
- Inspect steering stem ball races for uneven wear, damage and rusting
- Steering stem for bend
- Inspect front forks for oil leaks
- Spokes for looseness / breakages
- Wheel out of trueness
- Tyre for uneven tread wear, cuts, cracks
- Wheel bearings for sticky rotation, wear out, loose in hub
- Brake pads for uneven / completely worn out

TORQUE VALUES

S. No.	Aggregate	Fastener	Torque		Min. Torque		Max. Torque	
			NM	Kg.M	(Nm)	(Kg.M)	(Nm)	(Kg.M)
1	Wind shield Mtg	Hex Socket Head Screws M5X16	5	0.5	4.25	0.43	5.75	0.58
2	Head Lamp Mtg	Hex socket head screw M8X1.25X25	10	1.0	8.50	0.85	11.50	1.15
3	Trafficator Mtg	Button Head M6X1X20	5	0.5	4.25	0.43	5.75	0.58
4	Handle Bar End Mass Mtg	Hex socket cap screw M8x1.25X50	25	2.5	21.25	2.13	28.75	2.88
5	Top Raiser Mtg	Hex socket Head screw M8X1.25X45	25	2.5	21.25	2.13	28.75	2.88
6	Top Yoke Mtg	Hex socket head screw M8X1.25X25	25	2.5	21.25	2.13	28.75	2.88
7	Front Number Plate	Cross Recessed M5X0.8X12	5	0.5	4.25	0.43	5.75	0.58
8	Bottom Yoke Mtg	Hex socket head screw M8X1.25X25	25	2.5	21.25	2.13	28.75	2.88
9	Steering Stem Lock Nut	M24X1-7H	60-70	6.0-7.0	60.00	6.00	70.00	7.00
10	Front Fender Top	M6X1X27	5	0.5	4.25	0.43	5.75	0.58
11	Front Fender Bottom	M6X1X13	5	0.5	4.25	0.43	5.75	0.58
12	Fork Brace Mtg	Hex socket head screw M6X1X20	10	1.0	8.50	0.85	11.50	1.15
13	Front Wheel Spindle Nut	Hex U Nut M16 X1.5	70	7.0	59.50	5.95	80.50	8.05
14	Fork Pinch Bolt	Hex Socket head screw M8X1.25X30	10	1.0	8.50	0.85	11.50	1.15
15	Front Caliper Mtg	Hex Flange Bolt M8X1.25X55	25	0.3	21.25	0.21	28.75	0.29
16	Front Disc Plate Mtg	Hex Flange bolt M8X1.25X25	25	0.3	21.25	0.21	28.75	0.29

WEAR LIMIT

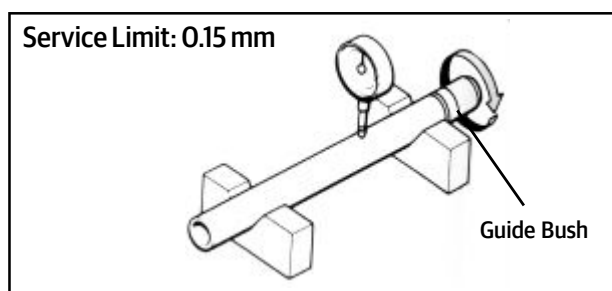
■ Fork spring long



■ Fork spring short



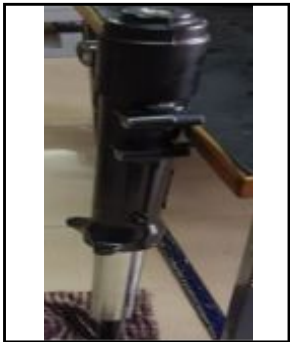
Main tube straightness



S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.14	Steering stem assembly ■ Assemble taper roller bearing on the steering stem such that the taper is facing upwards ■ Insert the steering stem into the frame head tube from the bottom. ■ Support steering stem and assemble taper roller bearing on top of the frame head tube with the taper facing downwards ■ Assemble dust seal washer over the frame head tube. ■ Assemble adjuster nut on steering stem and tighten till there is no sideways play of the steering stem. ■ Rotate steering stem and check for free & smooth rotation on both LH & RH. ■ Locate top yoke over the steering stem ■ Assemble top nut over the top yoke. Do not tighten fully.	NOTE: Ensure taper roller bearings are greased well before assembly.    

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.14	Steering stem assembly ■ The adjustment should be carried out only after assembly of the following. - Cable bracket on top yoke bottom. - Handle bar on Top yoke. - Top mudguard on steering stem. - Front disc brake master cylinder on handle bar RH. (Route the brake hose & wheel caliper towards the left side of vehicle). - Clutch and throttle cables. - Cockpit bracket & Top frames LH & RH. - Electrical connections to clutch switch & front brake switch. - Ignition switch. - Instrument cluster. - Headlamp & trafficators. - Mirrors LH & RH - Windshield - Front fork assembly LH & RH - Wheel Caliper on fork end LH - Front Wheel ■ Hold both forks at wheel axle end and check for any axial play. ■ Turn handle bar to both LH & RH Check for : - Free movement without any stickiness. ■ Loosen / tighten adjuster nut on steering stem to correct axial play and / or sticky movement of steering assembly. ■ Tighten top nut stem to torque on steering.	Steering Stem locknut : M24 Socket Spanner - 30mm Torque - 70 Nm (7.0 Kg.m)

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.15	Handle Bar Assembly ■ Locate handle bar on top yoke. ■ Assemble top raiser over handle bar and tighten with 4 hex socket head screws. ■ Locate Master cylinder on handle bar RH side. ■ Locate top clamp over bracket and tighten with 2 Hex bolts. (Route the brake hose & wheel caliper towards the left side of vehicle) ■ Connect Front Brake Switch wire connections. ■ Connect clutch and throttle cables. (refer section 5) ■ Connect clutch switch wiring coupler. ■ Connect wiring couplers of LH and RH switch assemblies from the wiring harness ■ Assemble rear view mirrors LH & RH from handle bar.	Hex sochd. capscrew: M8 Allen key: 6mm Torque: 25Nm (2.5Kg.M)    

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.16	Front Fork Assy LH & RH Front Fork Internals ■ Locate dust cap, oil seal with its spring facing downwards and spacer from the bottom of inner tube assembly. ■ Assemble spring 2 (short) on piston - front fork and insert tapered end into main tube from the top. ■ Locate spindle taper with a little bit of grease to hold it in position, on the piston - front fork ■ Insert special tool into inner tube assembly, from top to hold piston - front fork.	 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.16	Front Fork Assy LH & RH Front Fork Internals ■ Assembly Outer tube over inner tube assembly bottom such that it is seated fully against the spindle taper. ■ Locate copper washer on hex socket screw and tighten outer tube to piston – front fork. ■ Remove special tool ■ Gently tap plastic spacer and oil seal, into fork end till the oil seal is below the lock ring groove in the fork end ■ Assemble lock ring over oil seal on the main tube ■ Press dust cap into fork end till it is seated flush in fork end. ■ Insert closed coil end of the spring 1 (long) into inner tube. ■ Fill 455ml of fork oil per leg ■ Locate thrust washer and tube spacer inside inner tube. ■ Assemble plain washer over spacer and tighten with the special hex cap nut. ■ Repeat process to assemble other fork.	Fork oil capacity: 455ml/leg

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.17	Front Fork Assy LH & RH Fork assy on steering stem ■ Insert fork assy LH from LH side of steering stem bottom till it is seated into the top yoke and flush with the top of the top yoke. ■ Insert fork assy RH from RH side of steering stem bottom till it is seated into the top yoke and flush with the top of the top yoke. ■ Tighten 4 Hex socket head screws on the LH and RH sides of the steering stem assembly sufficiently. ■ Tighten 4 Hex socket head screws on LH and RH sides of the top yoke sufficiently. ■ Assemble front mudguard and brace ■ Locate front wheel caliper on fork Lh and tighten with 2 Hex flange bolts.	Hex. Socket screw : M8 Allen head socket : 6mm Torque : 22.5 Nm (2.25 Kg.m) Hex. Socket screw : M8 Allen head socket : 6mm Torque : 22.5 Nm (2.25 Kg.m)   

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.18	Front Mudguard Front Mudguard Bottom ■ Locate fork brace over front mudguard bottom and tighten with 4 hex screws ■ Locate front mudguard bottom with brace between fork legs and tighten with 4 hex socket head screws. Front Mudguard Top ■ Locate insert fender into the mounting holes in front mudguard ■ Locate front mudguard top below the steering stem and ensure mounting holes are aligned. ■ Tighten front mudguard top to steering stem using 4 hex bolts from inside of mudguard.	    Hex Bolt : M6 D.E. Spanner : 10 MM Hex. Socket Head Cap screw : M5 Allen key : 4mm

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.19	Front wheel ■ Remove the wedge placed between the brake pads in the caliper. ■ Ensure pinch bolt on fork end LH side is loose. ■ Apply grease on the spacer and locate inside hub on brake disc side. ■ Locate wheel speed sensor on the hub RH side. ■ Position wheel between the front forks duly ensuring. - Brake disc is correctly positioned between the brake pads. - Wheel speed sensor is positioned in the fork end LH. ■ Locate spacer between wheel speed sensor and fork end RH and insert spindle through the fork end LH completely. ■ Assemble washer and Hex nut on the spindle. Hold spindle and tighten axle nut to torque. ■ Tighten the pinch bolt on fork end LH. ■ Remove the support provided under the vehicle.	NOTE: Ensure inner lugs are properly seated in the slots in wheel hub. NOTE: Ensure outer lug is aligned with the slot in fork end RH NOTE: ● Do not force the spindle through as it will damage the bearing and the threads in the spindle. Hex. Nut : M16 Ring Spanner : 24 mm Torque : 70Nm / 7Kg.M Hex. Soc. Head Cap Screw : M8 Allen Key : 6mm   

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.20	Top Frame LH & RH Cockpit mounting bracket, instrument cluster & Ignition switch ■ Locate Ignition switch in top yoke and tighten with 2 Hex socket head screws. ■ Connect ignition switch wiring coupler to ignition switch ■ Position cockpit mounting bracket on frame head tube and tighten with 2 Allen screws . ■ Locate instrument cluster on cockpit moutnig bracket ■ Assemble 3 washers on the studs and tighten with 3 cap nuts ■ Connect instrument cluster wiring coupler.	Hex Soc Hd. Cap Screw: M5 Allen Key: 4mm Torque : Hex soc. Hd. cap Screw: M8 Allen key: 6mm Torque : CAUTION: Instrument cluster must always be stored vertically and away from magnetic objects to prevent damage to the compass and displays. Hex cap nuts: M6 Socket Spanner: 10mm Torque :    

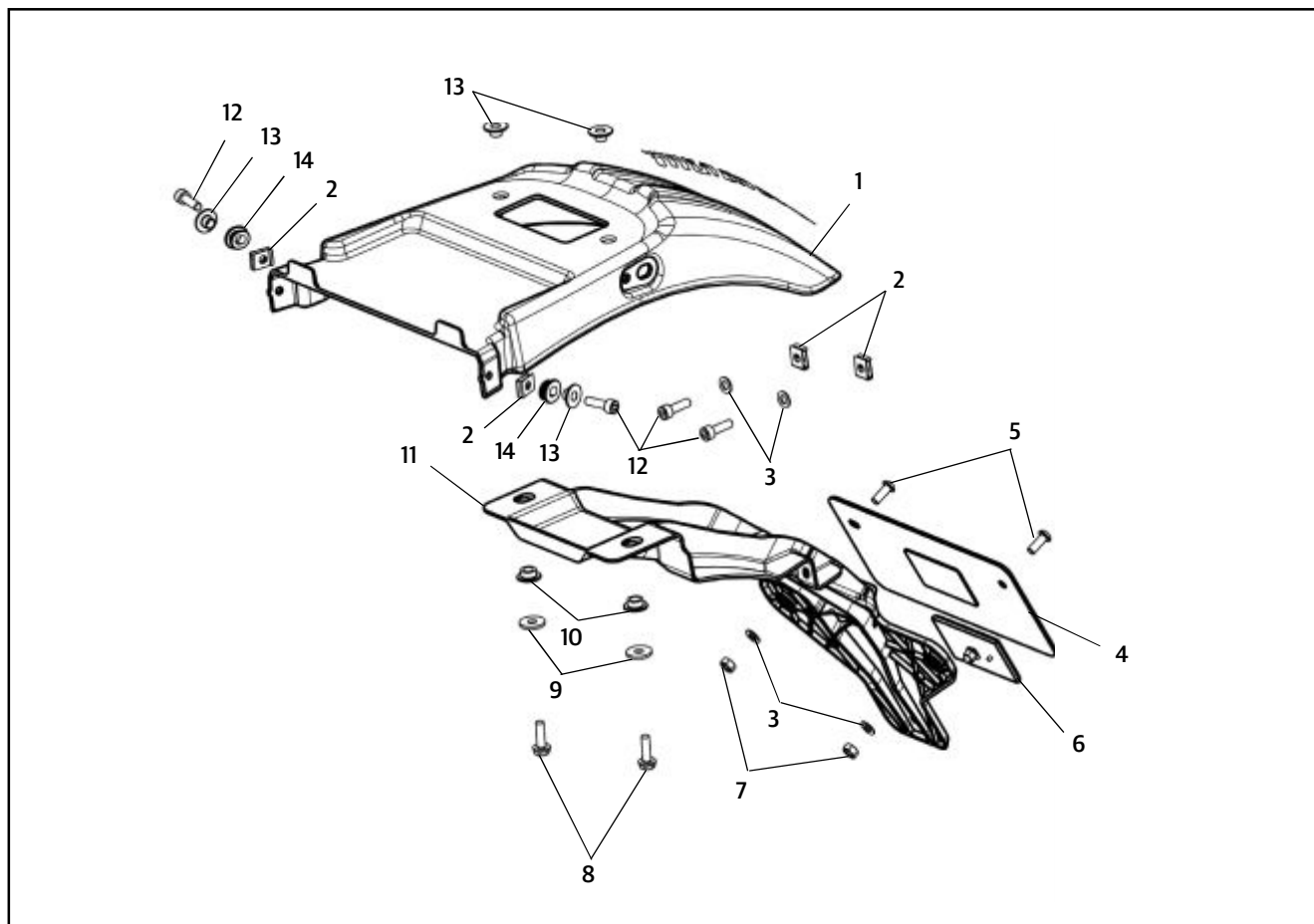
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.21	Top Frame LH & RH ■ Locate top frames LH & RH on connector tube in frame and press in till the mounting holes are flush. ■ Align top mounting hole to cockpit bracket mounting hole ■ Assemble 2 Flanged Hex bolts on top frame LH & RH and tighten to cockpit mounting bracket. ■ Tighten the 2 hex socket head screw clamping top frames LH & RH, to connector tube ■ Assemble 2 dust caps on the connector tube. Headlamp Assembly ■ Position Headlamp housing between top frame LH & RH and tighten with 2 hex socket head screws. ■ Assemble 2 dust caps in the mounting holes in top frame LH & RH. ■ Connect head lamp wiring coupler below head lamp.	Flanged hex bolts: M8 Socket Spanner: 12mm Torque : CAUTION: Take care not to damage fuel tank while assembling top frames. Hex Socket Hd. screws: M6 Socket Spanner: 10mm Torque :    

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
11.22	Trafficator front LH, RH & cover cockpit LH, RH ■ Locate Cover cockpit LH & RH in the rubber grommets in the top frame LH & RH ■ Locate traficator on the cover cockpit and tighten with hex socket head screw. ■ Repeat above process to assemble the other trafficator ■ Connect Trafficator wiring couplers below headlamp. Wind Shield Assembly ■ Locate windshield assembly on top frame. ■ Assemble plastic washers on the 4 Hex socket head cap screws and tighten to top frame LH & RH.	Hex Soc Hd. Cap screws:M5 Allen Key: 4mm Hex Nut: M6 Double end spanner:10mm Torque : NOTE: Couplers are color coded as: LH side: Green RH side: Red NOTE: Hold the rubber mounted nuts from behind while Tightening screws.    

**SECTION 12 - REAR WHEEL, CHAIN &
SPROCKET, SAREE GUARD, CHAIN GUARD,
REAR GUARDS, SHOCK ABSORBER, DRAG &
DROP LINKS, SWING ARM, REAR CHAIN
ADJUSTMENT AND WHEEL ALIGNMENT**

EXPLODED VIEWS

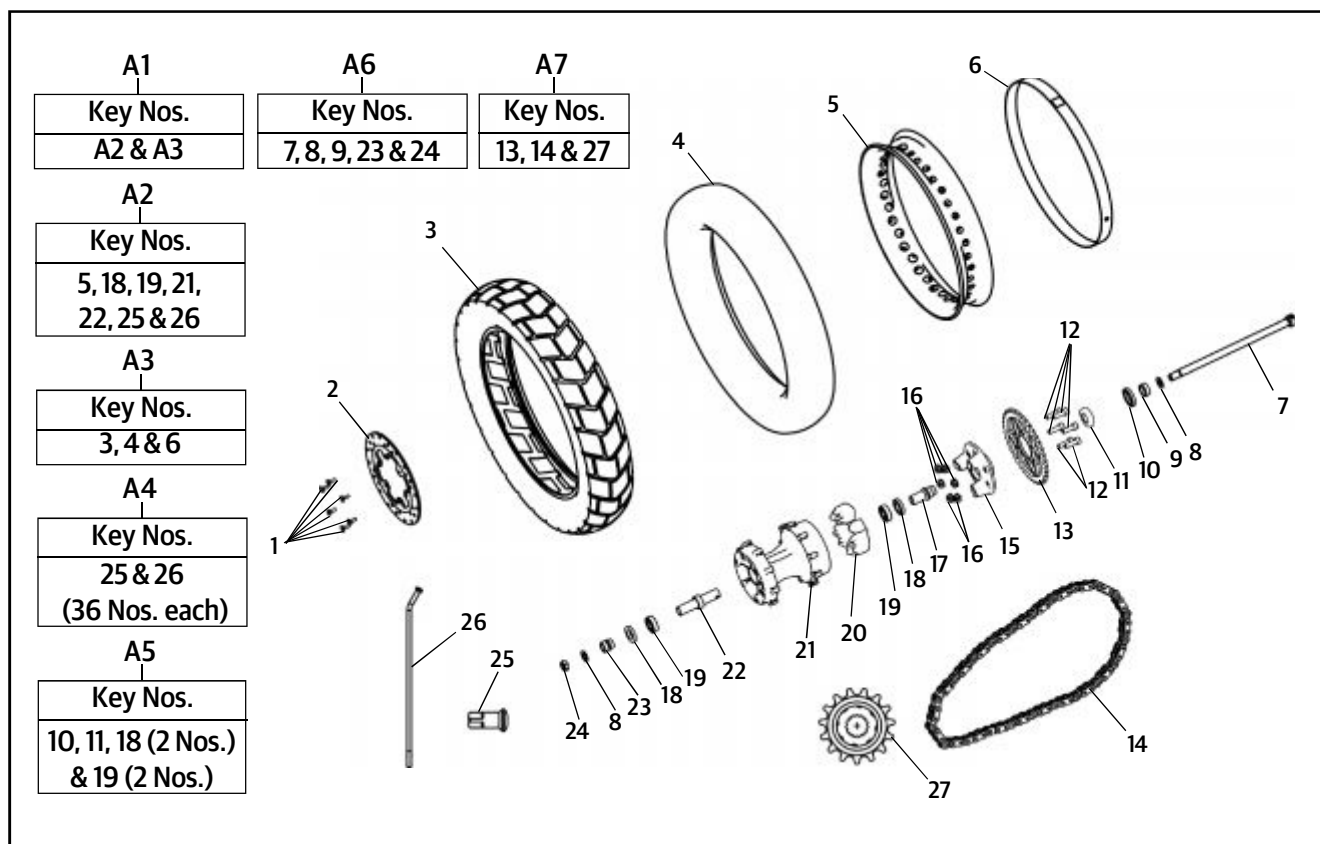
REAR MUDGUARDS



S.NO.	DESCRIPTION	QTY.
1	Rear Mudguard with sticker	1
2	Clip Nut M5	4
3	Plain Washer	4
4	Rear Number Plate Assy	1
5	Hex.Socket Button Head Screw M6 X 1 X 16	2
6	Reflector	1
7	Hexagonal Nut M6 X 1	2

S.NO.	DESCRIPTION	QTY.
8	Flanged Hex Bolt M6 X 1 X 20	2
9	Plain Washer M6	2
10	Grommet - Rear Mudguard	2
11	Mudflap - Rear	1
12	Hex socket head cap screw M5X16	4
13	Spacer- Oil Cooler	4
14	Grommet	2

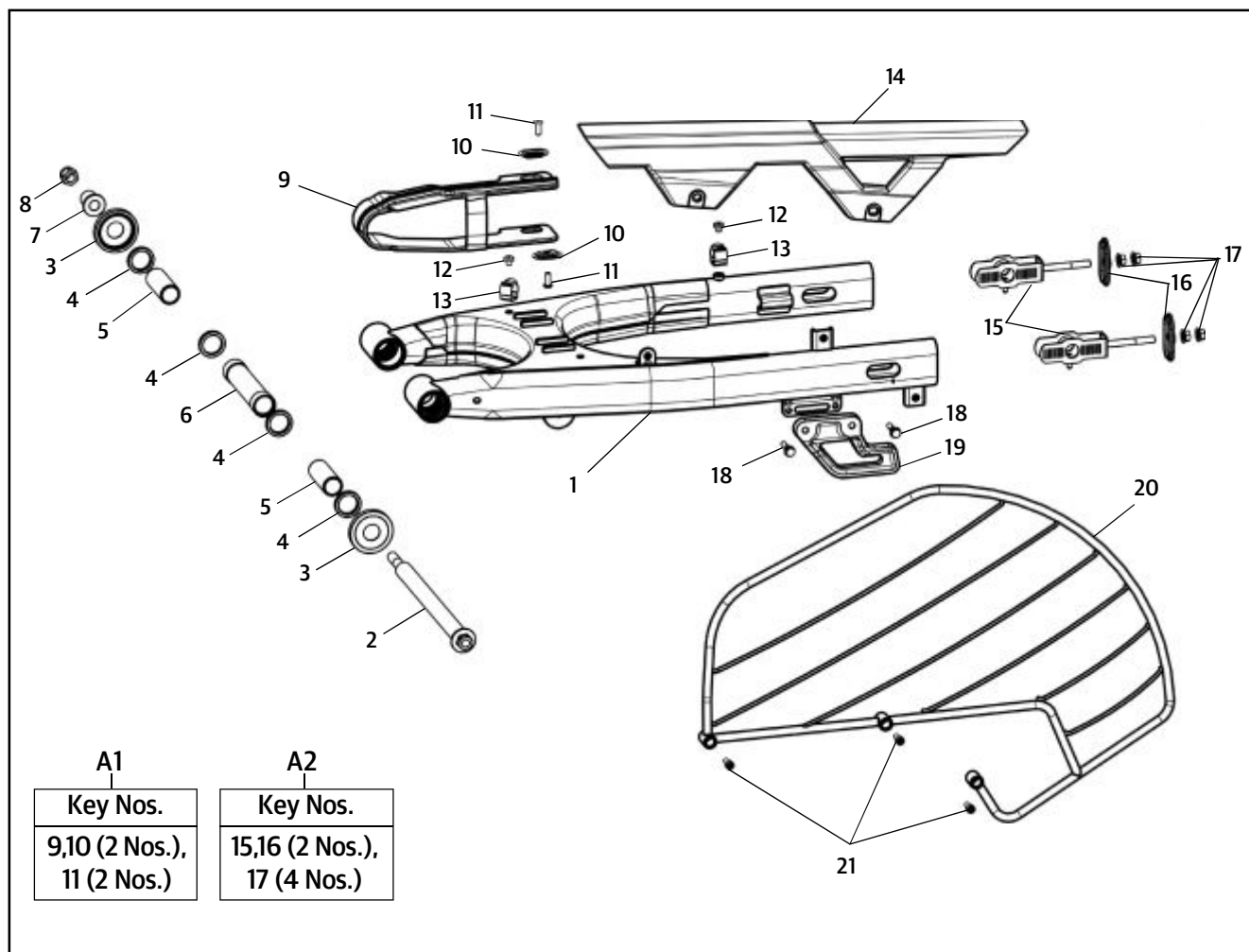
REAR WHEEL



S. NO.	DESCRIPTION	QTY.
A1	Rear Wheel Assy	1
A2	Rear Wheel Kit without tyre, tube and rim tape	1
A3	Tyre & Tube Kit - Rear Wheel	1
A4	Spokes & Nipples Kit	1
A5	Wheel Bearing & Seals Kit	1
A6	Rear Wheel Spindle & Spacer Kit	1
A7	Chain & Sprocket Kit	1
1	Hex Socket Button Head Screw M6X1X14	6
2	Rear Disc Plate	1
3	Tyre-Rear	1
4	Tube-Rear	1
5	Rim Rear	1
6	Rim Tape- Rear	1
7	Spindle - Long	1
8	Washer	2
9	Spacer - Sprocket Side Rear	1
10	Rear Hub Grease Seal	1
11	Ball Bearing 6005 (25 X 47 X12) [Double Side Rubber Sealed]	1

S. NO.	DESCRIPTION	QTY.
12	Socket Head Bolt M10 X 1.25 X 30	6
13	Sprocket - Rear Drive	1
14	Chain- Rear	1
15	Adaptor - RD Sprocket	1
16	Flanged Hex nut M10X1.25	6
17	Spindle Short	1
18	Grease Seal, ,25x40x7	2
19	Deep Groove Ball Bearing 6203 (17 X 40 X12) [Double Side Sealed]	2
20	Cushion Rubber	3
21	Rear Hub Assy	1
22	Spacer Assy-Rear Hub	1
23	Spacer-Disc Side Rear	1
24	Hex U Nut M16X1.5	1
25	Nipple	36
26	Spokes Rear	36
27	FD Sprocket comp	1

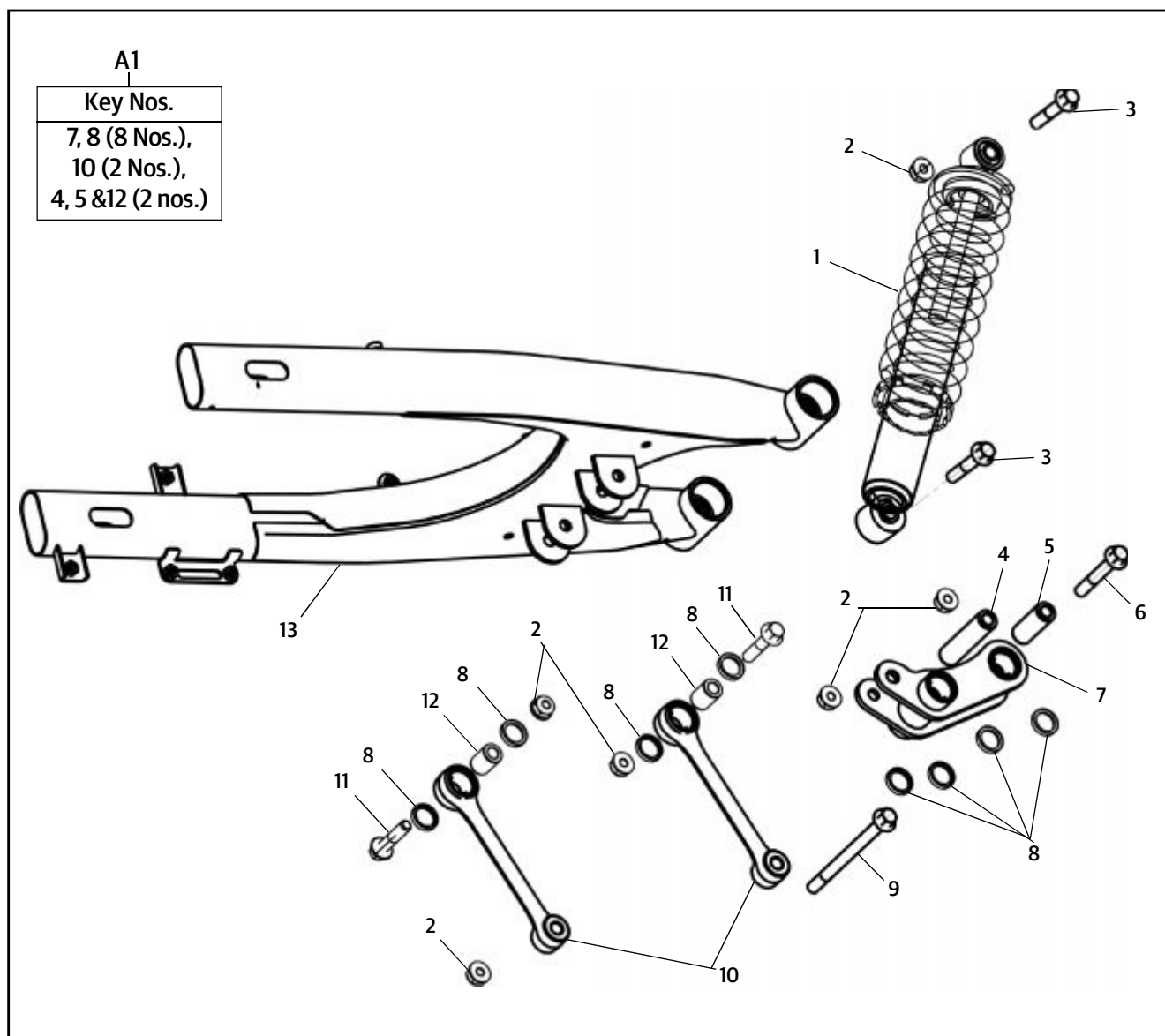
REAR SWING ARM, BEARINGS, CHAIN ADJUSTERS, GUARD, PAD & SAREE GUARD



S.NO.	DESCRIPTION	QTY.
A1	Chain Pad Kit	1
A2	Chain Tensioner Kit	2
1	Swing Arm with bearing-Assy	1
2	Spindle - Swing Arm	1
3	End Cup - Swing Arm	2
4	Oil Seal - Swing Arm	4
5	Inner Race - Needle Bearing	2
6	Inner Spacer - Swing Arm	1
7	Spacer - Swing Arm	1
8	Hex Nut With Nylock M12 X 1.5	1
9	Rear Chain-Pad	1
10	Washer-Chain Pad	2

S.NO.	DESCRIPTION	QTY.
11	Hex.Socket Button Head Screw M6 X 1 X 16	2
12	Philips pan head screw M6X6	2
13	Clip - Rear Disc Hose	2
14	Chain Guard	1
15	Chain Tensioner comp- LH	2
16	Plate - Chain Adjuster	2
17	Flanged Hex. Nut M8 X 1.25	4
18	Flanged Hex Bolt M6 X 1 X 27	2
19	Chain - Guide	1
20	Saree Guard	1
21	Hex socket head screw M6X1X14	3

REAR SUSPENSION



S.NO.	DESCRIPTION	QTY.
A1	Link Assy Kit	1
1	Mono Shock	1
2	Flange U Nut M10 X 1.25	6
3	Flanged Hex. Bolt M10 X 1.25 X 52	2
4	Inner Race- Drag Link Back	1
5	Inner Race- Drag Link Front	1
6	Flanged Hex. Bolt M10 X 1.25 X 66	1

S.NO.	DESCRIPTION	QTY.
7	Drag link Assy with bearing	1
8	Dust Seal Linkage	8
9	Flanged Hex. Bolt M10X1.25 X 132	1
10	Drop link Assy with bearing	2
11	Flanged Hex. Bolt M10X1.25 X 47	2
12	Inner Race- Drop Link	2
13	Swing Arm with bearing-Assy	1

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.1	Rear Wheel Chain & Sprocket ■ Ensure motorcycle is placed on its centre stand with the rear wheel off the ground. ■ Gently release brake hose along with its rubber grommets from the locating clips on swing arm. ■ Loosen rear axle nut on RH side and remove along with washer. ■ Loosen chain adjuster, inner & outer lock nuts on both LH and RH side completely to increase chain slack. ■ Remove Chain Link Lock. ■ Remove Chain link plate, 'O' rings and link to disconnect rear chain from sprocket.	 Hex nut: M16 Ring Spanner: 24mm  Hex nut: M6 Double end Spanner: 12mm  Small Nose pliers.

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.1	Rear wheel, chain & sprocket ■ Pull out wheel axle from LH side, taking care not to drop the spacers & rear wheel sprocket. ■ Remove brake caliper assembly from the slot in swing arm. ■ Remove Rear wheel along with sprocket assembly from swing arm. ■ Gently pull out sprocket with adaptor from the wheel hub. ■ Holding Hex Nylock nut at the sprocket adaptor end, loosen and remove six Hex socket head cap screws. ■ Separate sprocket from the adaptor.	CAUTION: Place a suitable spacer of 4 mm thickness, between the brake pads to prevent them from coming out too far, incase brake pedal is depressed accidentally. Support caliper suitably, to avoid damage to the brake hose. NOTE: Take care not to drop the Cush rubbers from the hub.   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.2	Saree & Chain guards ■ Remove 2 hex socket head cap screws at the top and 1 hex socket head cap screw at the bottom of saree guard. ■ Remove saree guard and chain guard from swing arm.	Hex soc hd. cap screws: M6 Allen Key: 5mm 
12.3	Piece mudguard ■ Remove 4 Hex bolts (2 at the top & 2 at the bottom) ■ Remove piece mudguard	Hex Bolt: M6 Socket spanner: 10mm  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.3	Mud flap rear - Remove 2 hex socket head cap screws with washers, holding mud flap to rear mudguard bottom. - Remove 2 hex bolts holding mud flap to rear mudguard top & remove mud flap. (Ensure 2 rubber grommets & 2 faced spacers are removed). - Disconnect Trafficator couplers LH & RH.	Hex Soc. Hd cap screws:M5 Allen key: 4mm Hex bolt: M6 Socket spanner:10mm NOTE: Support mud flap and disconnect number plate illuminator coupler 
12.4	Rear Mudguard - Remove 2 each hex socket head cap screws from saddle bag mounting plates LH & RH. - Support rear mudguard and remove 2 hex socket head cap screws on LH & RH side and remove rear mudguard.	NOTE: Couplers are color coded : LH side: Green RH side: Red NOTE: Support saddle mounting plate LH to prevent damage to seat latch cable. Hex Soc. Hd cap screws: M5 Allen key:4mm   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.5	Mono shock absorber ■ Ensure Air filter housing and piece mudguard are removed. ■ Hold hex bolt and loosen hex U nut at shock absorber bottom mounting to drag link. ■ Hold hex bolt and loosen hex U nut at shock absorber Top mounting to frame ■ Remove shock absorber.	Hex nut: M10 Hex bolt M10 Double end spanner:17mm Ring spanner: 14mm  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.6	Drag & Drop Links ■ Hold long hex bolt and loosen nut, holding drop links to drag link. ■ Remove long hex bolt. ■ Support swing arm and remove inner race – drag link back, to separate drop links from drag link. ■ Remove the dust seals. ■ Hold hex bolt and loosen nut holding drag link to frame. ■ Support drag link and remove hex bolt to remove drag link from frame along with dust seals. ■ Hold hex bolts and loosen hex U nuts holding the 2 drop links to swing arm bottom. ■ Remove the 2 hex bolts one after the other to release drop links along with dust seals and inner race from swing arm.	Hex nut: M10 Hex bolt M10 Double end spanner:17mm Ring spanner: 14mm NOTE: It will be required to dismantle centre stand from frame for dismantling drag link assembly. NOTE: The needle bearings pressed into the drag and drop links cannot be replaced. In case of bearing worn out or damaged, the entire drop links and/or drag link should be replaced.   

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.7	Swing arm assembly ■ Remove the 2 dust caps from the swing arm mounting holes in the frame. ■ Support the swing arm suitably. ■ Hold swing arm spindle from LH side and remove hex nut from RH side. ■ Remove swing arm assembly along with the spacers, dust seals and inner race from the frame assembly.	Hex nut: M12 Spindle M12 Socket spanner: 17mm NOTE: The needle bearings pressed into the swing arm cannot be replaced individually. In case of bearing worn out or damaged, the entire swing arm assembly should be replaced.     

INSPECTION

- Spokes for looseness / breakages
- Wheel out of trueness
- Tyre for uneven tread wear , cuts, cracks
- Wheel & sprocket bearings for sticky rotation, wear out , loose in hub
- Brake pads for uneven / completely worn out
- Needle bearings / inner races in drag link, drop links and swing arm assembly for damages rust stiff rotation
- Dust seals in swing arm, drag link and drop links for damages

TORQUE VALUES

S. No.	Aggregate	Fastener	Suggested Torque		Min. Torque		Max. Torque	
			NM	Kg.M	(Nm)	(Kg.M)	(Nm)	(Kg.M)
1	Drop Link Bottom	Hex Flanged Bolt M10X1.25X65	50.0	5.0	42.50	4.25	57.50	5.75
2	Drop Link Assy	Hex Flanged Bolt M10X1.25X132	50.0	5.0	42.50	4.25	57.50	5.75
3	Shock absorber Top& Bottom Mtg	Hex Flanged Bolt M10X1.25X55	50.0	5.0	42.50	4.25	57.50	5.75
4	Drag link to swing arm Mtg	Hex Flanged Bolt M10X1.25X47	50.0	5.0	42.50	4.25	57.50	5.75
5	Swing Arm Pivot	M12X1.5	70.0	7.0	59.50	5.95	80.50	8.05
6	Chain Guide Mtg	Hex Flange Bolt M6X1X27	10.0	1.0	8.50	0.85	11.50	1.15
7	Rear Wheel Spindle	Hex U Nut M16X1.5	70.0	7.0	59.50	5.95	80.50	8.05
8	Chain Adjuster	Hex Nut M8X1.25	25.0	2.5	21.25	2.13	28.75	2.88
9	Rear Disc Mtg	Button Head Collar Bolt M6X1X14	10+12	1.0 01.2	10.00	1.00	12.00	1.20
10	Rear Wheel Sprocket Mtg	Hex Soc Screw M10X1.25X30 / Flange U Nut M10X1.25	50.0	5.0	42.50	4.25	57.50	5.75
11	Rear Number Plate Mtg	Button Head M6X1X15	5.0	0.5	4.25	0.43	5.75	0.58
12	Tail lamp Illuminator Mtg	Button Head M5	5.0	0.5	4.25	0.43	5.75	0.58
13	Mudguard to Mudflap	Hex Socket Cap Screw M5X0.8X16	5.0	0.5	4.25	0.43	5.75	0.58
14	Rear Trafficator Mtg	Button Head M6X1	5.0	0.5	4.25	0.43	5.75	0.58
15	Tail Lamp Bkt Mtg	Hex Flange M6X1X20	10.0	1.0	8.50	0.85	11.50	1.15
16	Rear Mudguard Mtg	Hex Flange M6X1X20	10.0	1.0	8.50	0.85	11.50	1.15

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.8	Drag & Drop Links ■ Locate larger end of drop link with inner race and dust seal in place in swing arm and assemble hex bolt. ■ Assemble flange U nut and tighten to torque ■ Repeat above process to assemble second drop link in swing arm. ■ Ensure free movement of both drop links. ■ Ensure the drag link is positioned such that the longer side is facing towards the mounting hole in frame. ■ Position drop links with dust seals on either side of the drag link, ensure the holes are aligned and insert inner race - drag link back, through the drop link till it is flush on either sides of the drop links. ■ Assemble long hex bolt and hex nut. DO NOT TIGHTEN ■ Support swing arm and position drag link with inner race - drag link front and dust seals in the mounting bracket in frame, ensure holes are aligned and insert hex bolt to lock drag link to frame. ■ Assemble hex nut on bolt. ■ Tighten all fasteners of drag and drop links to torque. ■ Ensure free movement of swing arm, drag and drop links.	NOTE: Ensure the needle bearings and inner races are greased well before assembly. Hex nut: M10 Hex bolt M10 socket spanner:17mm Ring spanner: 14mm Torque: 50Nm(5 KgM) Hex nut: M10 Hex bolt M10 socket spanner:17mm Ring spanner: 14mm Torque: 50Nm(5 KgM)

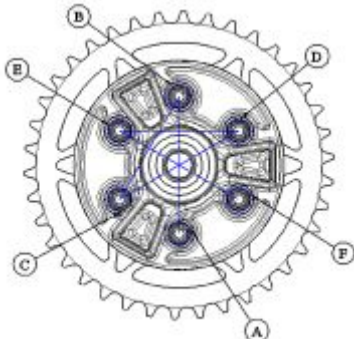
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.9	Mono shock absorber ■ Locate shock absorber in position between drag link and frame. ■ Align top mounting hole, insert hex bolt, assemble hex nut ■ Align bottom mounting hole, insert hex bolt, assemble hex nut ■ Tighten top and mounting fasteners to torque. ■ Assemble Air filter housing	Hex nut: M10 Hex bolt M10 Double end spanner:17mm Ring spanner: 14mm Torque: 50Nm(5KgM.)
12.10	Rear Mudguards Rear Mudguard ■ Locate rear mudguard in frame, assemble 2 hex socket head cap screws on LH & RH side frame and tighten to torque ■ Position saddle bag mounting LH & RH on frame and tighten with 2 each hex socket head cap screws to torque.	Hex Bolt: M6 Socket spanner:10mm Hex Soc. Hd cap screws: M6 Allen key: 5mm

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.8	Swing arm ■ Ensure rear chain pad is assembled on the swing arm RH side ■ Locate the 2 inner races inside the needle bearing in the swing arm ■ Locate new dust seals in the swing arm on either sides of the inner races on the swing arm. ■ Position the swing arm correctly between the frame and locate new end cups on either side of the swing arm outer and frame inner. ■ Locate inner spacer between the swing arm eyelets in the centre. ■ Ensure all mounting holes of the swing arm spacers, swing arm, inner spacer are aligned and insert spindle fully into frame from the LH side. ■ Assemble spacer washer and hex nylock nut on the spindle RH side and tighten to torque. ■ Ensure free and smooth up and down movement of swing arm.	NOTE: Ensure the needle bearing and inner races are greased well before assembly.      Hex nut: M12 Spindle: M12 Socket spanner: 17mm Torque: 70Nm(7 KgM)

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.9	Drag & Drop Links ■ Locate larger end of drop link with inner race and dust seal in place in swing arm and assemble hex bolt. ■ Assemble flange U nut and tighten to torque ■ Repeat above process to assemble second drop link in swing arm. ■ Ensure free movement of both drop links. ■ Ensure the drag link is positioned such that the longer side is facing towards the mounting hole in frame. ■ Position drop links with dust seals on either side of the drag link, ensure the holes are aligned and insert inner race - drag link back, through the drop link till it is flush on either sides of the drop links. ■ Assemble long hex bolt and hex nut. DO NOT TIGHTEN ■ Support swing arm and position drag link with inner race - drag link front and dust seals in the mounting bracket in frame, ensure holes are aligned and insert hex bolt to lock drag link to frame. ■ Assemble hex nut on bolt. ■ Tighten all fasteners of drag and drop links to torque. ■ Ensure free movement of swing arm, drag and drop links.	NOTE: Ensure the needle bearings and inner races are greased well before assembly. Hex nut: M10 Hex bolt M10 socket spanner:17mm Ring spanner: 14mm Torque: 50Nm(5 KgM) Hex nut: M10 Hex bolt M10 socket spanner:17mm Ring spanner: 14mm Torque: 50Nm(5 KgM)   

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.10	Mono shock absorber ■ Locate shock absorber in position between drag link and frame. ■ Align top mounting hole, insert hex bolt, assemble hex nut ■ Align bottom mounting hole, insert hex bolt, assemble hex nut ■ Tighten top and mounting fasteners to torque. ■ Assemble Air filter housing	Hex nut: M10 Hex bolt M10 Double end spanner:17mm Ring spanner: 14mm Torque: 50Nm(5KgM.)  
12.11	Rear Mudguards Rear Mudguard ■ Locate rear mudguard in frame, assemble 2 hex socket head cap screws on LH & RH side frame and tighten to torque ■ Position saddle bag mounting LH & RH on frame and tighten with 2 each hex socket head cap screws to torque.	Hex Bolt: M6 Socket spanner:10mm Hex Soc. Hd cap screws: M6 Allen key: 5mm   

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.12	Mud flap rear ■ Position mud flap in frame ■ Locate the 2 spacers from the top of the frame, position rear mudguard in frame, ensure the rubber grommets are in place and tighten with 2 hex bolts to rear mudguard top & remove mud flap. ■ Locate 2 hex socket head cap screws with washers, on the rear front end of mud flap and tighten to rear mudguard bottom.	NOTE: Support mud flap and connect number plate illuminator coupler & trafficators LH & RH NOTE: Couplers are color coded : LH side: Green RH side: Red Hex bolt: M6 Socket spanner:10mm Hex Soc. Hd cap screws: M5 Allen key:4mm 
12.13	Piece mudguard ■ Locate piece mudguard and tighten with 4 Hex bolts (2 at the top & 2 at the bottom)	Hex bolt: M6 Socket spanner:10mm  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.14	Saree & Chain guards - Position chain guard on swign arm top and saree gurad over the chain guard - Assemble 2 hex socket head cap screws at the top and 1 hex socket head cap screw at the bottom of saree guard. - Tighten all fasteners diagonally and evenly to torque.	Hex soc hd. cap screws: M6 Allen Key: 5mm Torque: 
12.15	Rear Wheel Chain & Sprocket Assembly - Ensure proper seating of bearing and dust seal in adaptor - Locate rear wheel sprocket on the adaptor. - Ensure the 6 mounting holes are aligned - Locate six hex socket head cap screws from the sprocket end. - Assemble 6 Nylock nuts on the screws at the adaptor end. - Tighten the 6 bolts diagonally and evenly to torque following the sequence shown.	NOTE: Apply Loctite 270 on the Allen screws before assembling nuts.  Allen screw: M10 Allen key: M8 Hex nut: M10 Ring spanner: 12mm Torque: 50Nm (5Kg.M) Tightening Sequence A-B-C-D-E-F 

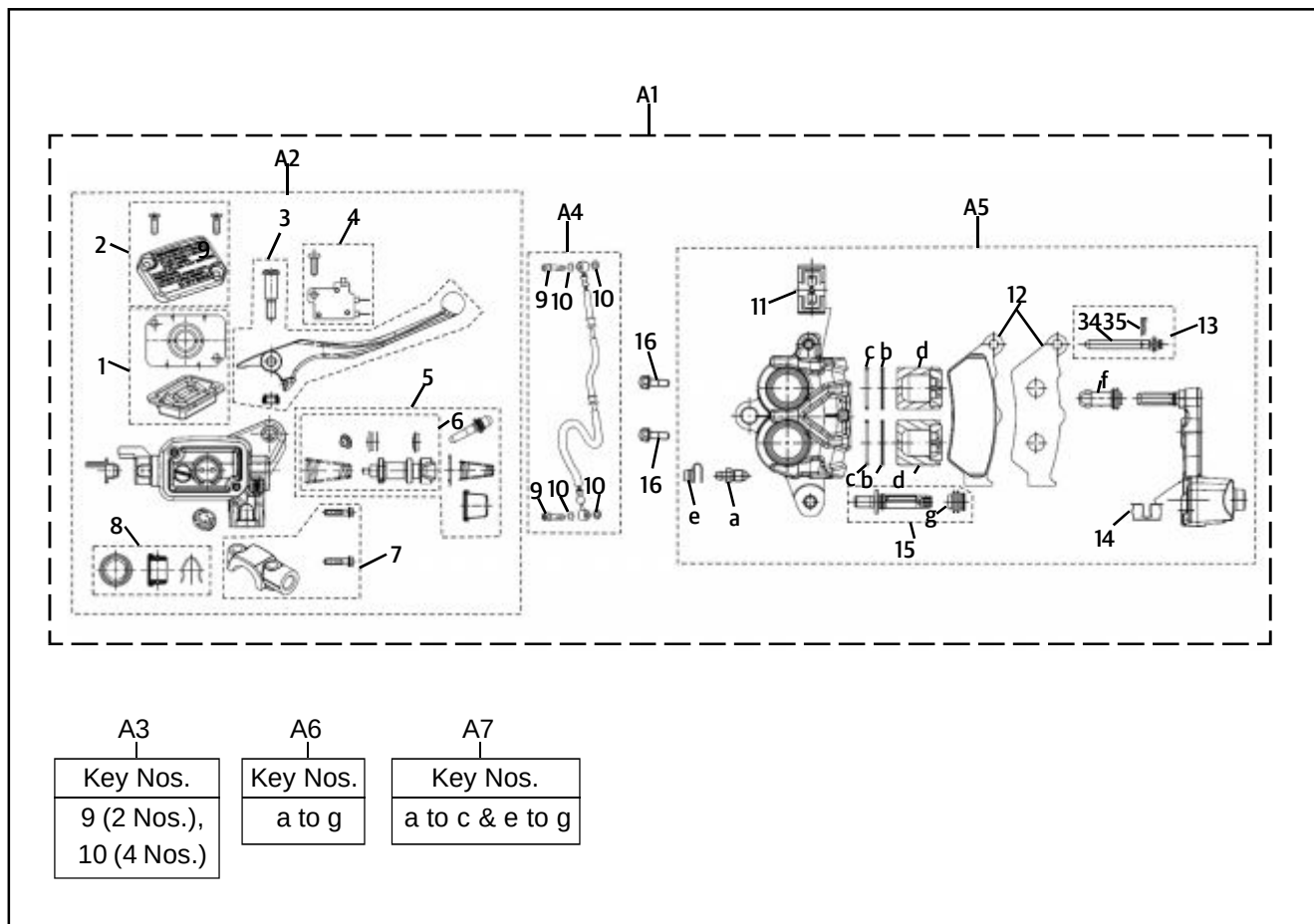
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.16	Rear Wheel Reassembly ■ Ensure the cush rubber are located properly in the wheel hub. ■ Position wheel assembly between the swing arms and locate rear wheel sprocket with chain, on the rear wheel correctly. ■ Position the caliper correctly over the brake disc and locate the caliper bracket slot on the lug in the swing arm. ■ Position the respective spacers on the LH& RH sides of the wheel hub. ■ Insert wheel axle from LH side of swing arm and gently tap it in, till it is seated against swing arm. ■ Assemble washer and Hex nut on RH side and tighten ■ Locate the brake hose pipe in swing arm clips properly. ■ Check rear brake for effectiveness and correct functioning before using the motorcycle.	NOTE: ● Remove the spacer between the brake pads. ● Ensure rear wheel sprocket lugs are located correctly in the cush rubbers. CAUTION: ● Ensure the axle mounting hole in the swing arm, chain adjusters, wheel hub and caliper bracket are all aligned. ● Do not force the spindle through as it will damage the threads Hex nut: M16 Socket Spanner: 24mm Torque: 70Nm (7.0Kg.M.) NOTE: Rotate rear wheel, apply rear brake sharply and hold the pedal depressed. DO NOT RELEASE TILL REAR AXLE NUT IS TIGHTENED. CAUTION: ● Ensure correct chain tension and rear wheel alignment with front wheel ● Ensure brake hose is correctly positioned on the clips, without any twist, sharp kinks or damage as it will seriously affect brake efficiency. 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
12.17	Chain tension adjustment ■ Ensure vehicle is on its centre stand on level ground ■ Loosen rear axle nut. ■ Loosen the locknut on chain adjuster LH. ■ Loosen / tighten inner nut on chain adjuster LH to increase/ decrease chain slackness.	Hex nut: M16 Socket Spanner: 24mm Tommy Bar Hex nut: M8 Double end Spanner: 12mm NOTE: Ensure chain slackness of 20 to 25 mm on its top run. 
12.18	Wheels alignment ■ Check the matching position of the reference lines on the chain adjuster LH and swing arm LH ■ Loosen lock nut on chain adjuster RH ■ Loosen/ tighten inner nut on chain adjuster RH such that the reference lines on chain adjuster RH and swing arm RH aligns at the same reference as in the LH side. ■ Hold the inner nuts firmly and tighten the lock nuts on chain adjusters LH & RH against the inner nuts while ensuring they are held firmly. ■ Tighten the rear wheel axle nut for torque.	CAUTION: Ensure chain adjuster LH nut is not disturbed while adjusting on the RH side. Hex nut: M8 Double end Spanner: 12mm NOTE: Rotate rear wheel, apply rear brake sharply and hold the pedal depressed. DO NOT RELEASE TILL REAR AXLE NUT IS TIGHTENED Hex nut: M16 Socket Spanner: 24mm Torque: 70Nm (7.0Kg.M.) 

SECTION 13 - HYDRAULIC DISC BRAKES

EXPLODED VIEWS

HYDRAULIC DISC BRAKE SYSTEM - FRONT

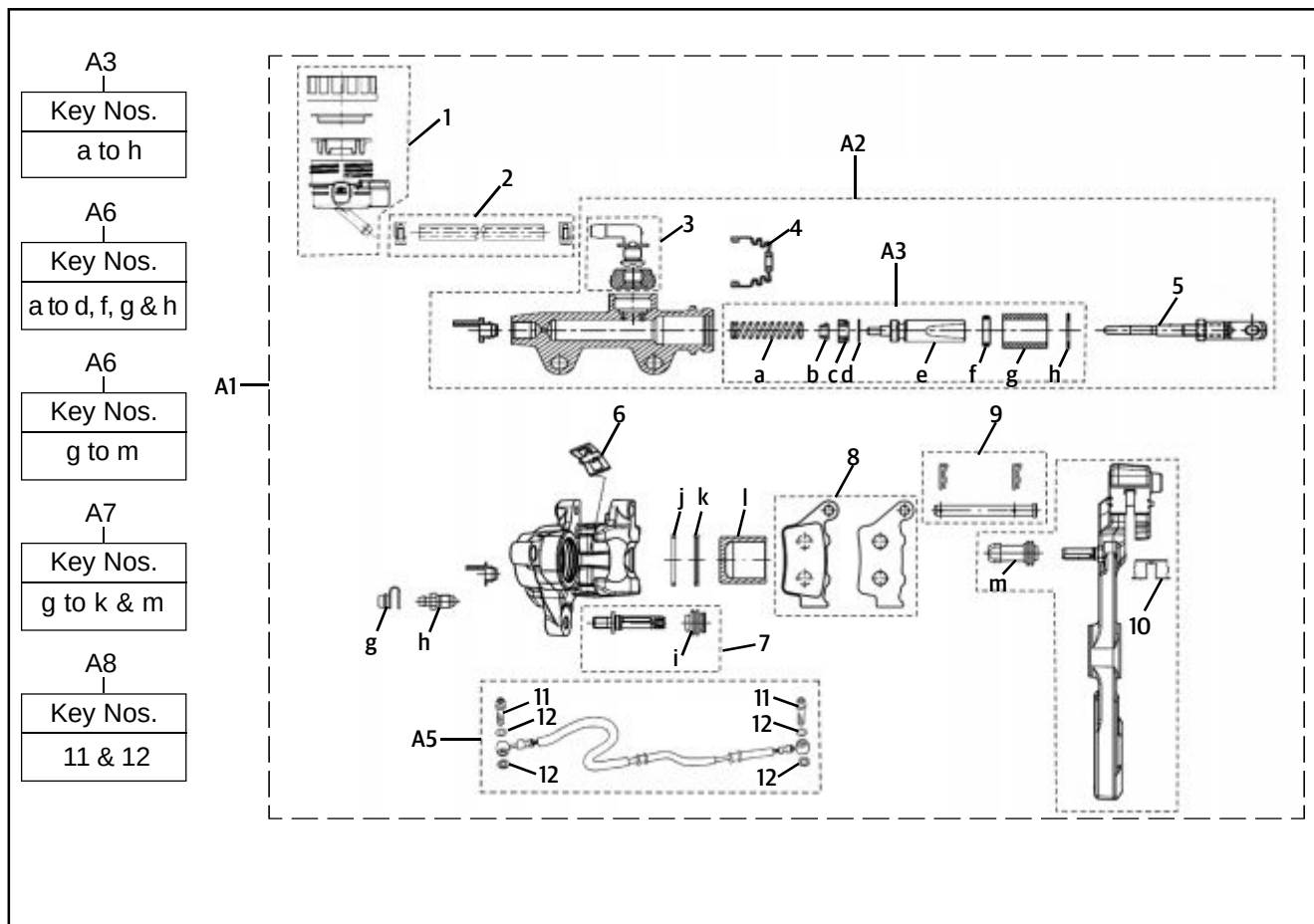


S.NO.	DESCRIPTION	QTY.
A1	Disc Brake System Assembly Kit Front	1
A2	Master Cylinder Assembly with Brake Lever - (BBI)	1
A3	Banjo Bolt Kit	1
A4	Front Brake Hose Assy and Banjo Bolt Kit Front M/C	1
A5	Caliper Assy Front	1
A6	Major Kit Front Caliper	1
A7	Minor Kit Front Caliper	1
1	Diaphragm Kit Front M/C	1
2	Reservoir Cover Kit Front M/C	1
3	Lever Kit Front M/C	1
4	Front Brake Switch	1

S.NO.	DESCRIPTION	QTY.
5	Major Kit Front M/C	1
6	Minor Kit Front M/C	1
7	Clamp Kit Front M/C	1
8	Oil Window Assembly Kit	1
9	Banjo Bolt	2
10	Washer	4
11	Pad Spring	1
12	Disc Pad Kit - Front Caliper - (BBI)	1
13	Pad Pin Kit Front Caliper	1
14	Wear pad	1
15	Primary Pin Kit Front Caliper	1
16	Flanged Hex. Bolt M8 X 1.25 X 55	2

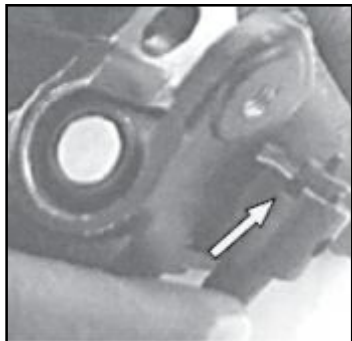
EXPLODED VIEWS

HYDRAULIC DISC BRAKE SYSTEM - REAR



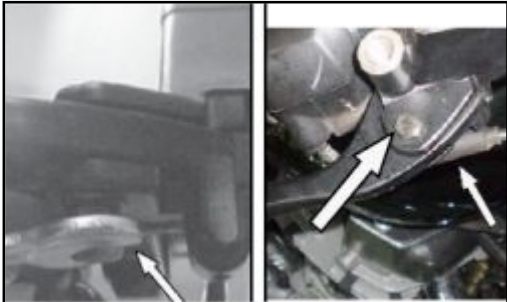
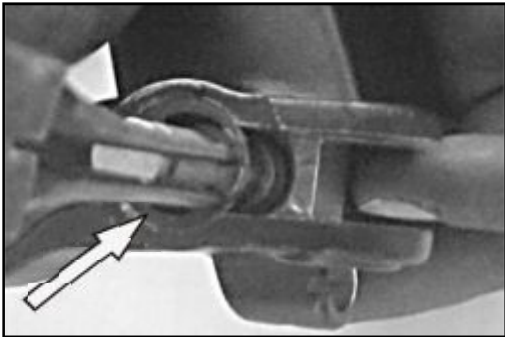
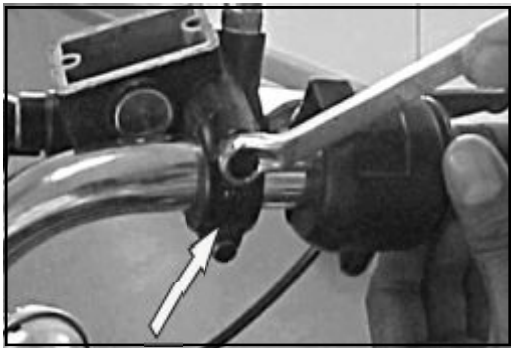
S.NO.	DESCRIPTION	QTY.
A1	Disc Brake Assembly Rear	1
A2	Rear Master Cylinder Assembly	1
A3	Major Kit Rear M/C	1
A4	Minor Kit Rear M/C	1
A5	Rear Brake Hose Assy with Banjo bolt kit	1
A6	Major Kit Rear Caliper	1
A7	Minor Kit Rear Caliper	1
A8	Banjo Bolt Kit	1
1	Reservoir Kit Rear M/C Threaded	1
2	Reservoir Tube Kit Rear M/C	1

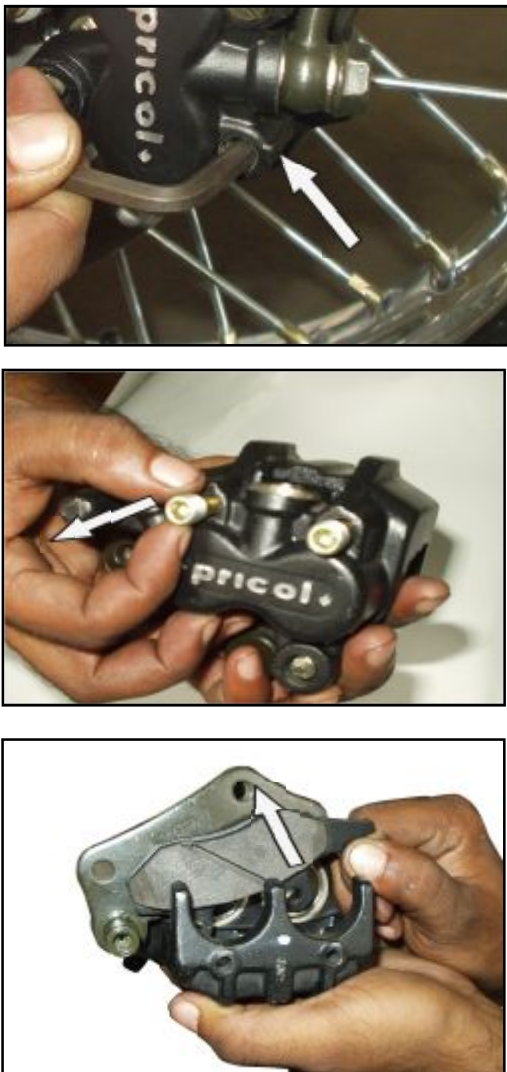
S.NO.	DESCRIPTION	QTY.
3	Connector Kit Rear M/C	1
4	Boot Rear M/C	1
5	Push Rod kit- Rear M/C	1
6	Pad Spring- Rear	1
7	Primary Pin Kit Rear Caliper	1
8	Brake Pad Kit Rear Caliper - BBI	1
9	Pad Pin Kit Rear Caliper	1
10	Wear pad	1
11	Banjo Bolt	2
12	Washer	4

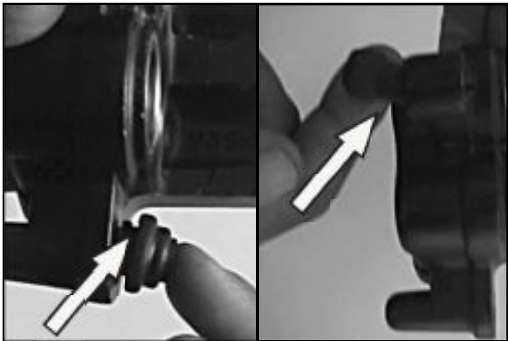
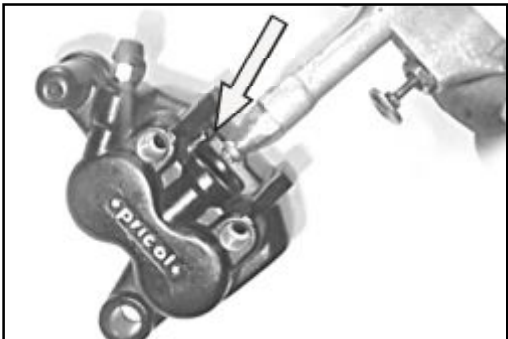
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.1	Front Disc Brake	
13.1.1	Master cylinder from handle bar ■ Remove rear view mirror RH. ■ Disconnect front brake Switch coupler. ■ Gently depress the lock tab of front brake switch with a blunt object to release from the bracket and remove switch. ■ Remove protective rubber cap on bleeder nipple on the caliper. ■ Loosen bleeder nipple by about 2 turns.	Double end spanner: 14mm    Ring Spanner: 10mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.1	Front Disc Brake 13.1.1 Master cylinder from handle bar ■ Connect one end of a transparent flexible tube of length about 12" (30cms.) firmly to the bleeder nipple. ■ Insert the other end of the tube into a clean glass or plastic container to collect the brake fluid. ■ Gently depress brake lever slowly and release to drain the brake fluid through the bleeder screw. Repeat this process several times till the fluid is completely drained from the brake system.	CAUTION: Brake fluid is extremely corrosive hence ensure it does not spill on any painted, rubber parts. 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.1	Front Disc Brake	
13.1.1	Master cylinder from handle bar - Place a clean tray below brake caliper to collect residual brake fluid from the brake system. - Loosen and remove the banjo bolt along with sealing washers from the brake hose at wheel caliper end. - Loosen and remove the banjo bolt along with sealing washers from the brake hose at master cylinder end. - Remove the brake hose from vehicle. - Remove 2 slotted screws from the top cover. - Remove top cover diaphragm plate and rubber diaphragm from master cylinder.	Ring Spanner: 14mm NOTE: Ensure brake fluid does not spill while removing the brake hose. Double end Spanner: 14mm Philips screw driver    

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.1	Front Disc Brake	
13.1.1	Master cylinder from handle bar ■ Remove the brake lever pivot lock nut, brake lever pivot from bracket. ■ Remove brake lever and protective rubber boot from master cylinder. ■ Remove Circlip from the Master cylinder body slowly and carefully. ■ Remove conical spring and piston with seals from master cylinder housing.	Screw driver & Double end spanner: 8mm  CAUTION: Spring loaded. Remove with care.  Hex nut: M6 Ring spanner: 8mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.1	Front Disc Brake	
13.1.2	Wheel caliper from fork end LH - Loosen the 2 hex bolts holding brake caliper to fork end. - Remove caliper assembly from fork end.	Hex nut: M10 Ring spanner: 12mm 
13.1.3	Brake pads from caliper - Remove the 2 grub screws on the caliper body. - Loosen and remove 2 socket headed pin screws from the caliper body. - Remove the brake pad from Caliper Assembly.	Screw Driver Allen screws : 4mm Allen key : M5 

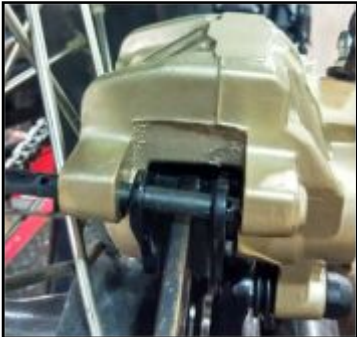
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.1.3	Brake pads from caliper ■ Remove Mounting Bracket from the Caliper Assembly. ■ Remove the Pad tensioner spring plate from caliper.	 
13.1 13.1.4	Front Disc Brake Pistons & seals from caliper ■ Remove the bellow & boot from the caliper assembly. ■ Hold the caliper body with the pistons facing downwards. ■ Blow low pressure compressed air with a nozzle into the oil passage hole on the caliper, to drive out the pistons from the caliper bores. ■ Gently remove the seals from caliper using a blunt and soft tool.	 

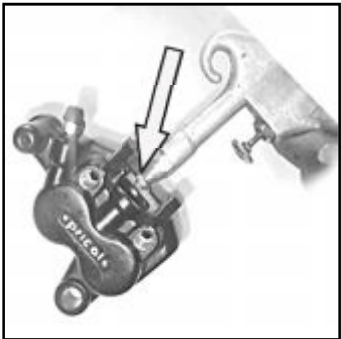
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.2	Rear Disc Brake	
13.2.1.	Fluid draining ■ Remove protective rubber cap on bleeder nipple on the caliper. ■ Connect one end of a transparent flexible tube of length about 12" (30cms.) firmly to the bleeder nipple. ■ Insert the other end of the tube into a clean glass or plastic container to collect the brake fluid. ■ Loosen bleeder nipple by about 2 turns. ■ Gently depress brake pedal slowly and release to drain the brake fluid through the bleeder screw. Repeat this process several times till the fluid is completely drained from the brake system. ■ Remove the brake hose with rubber grommets from the swing arm.	    Bleeder Nipple Ring spanner: 10mm

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.2	Rear Disc Brake	
13.2.1	Fluid draining - Loosen and remove the banjo bolt along with sealing washers from the brake hose at wheel caliper end. - Disconnect the rear brake light switch coupler (black) from wiring harness near battery. - Using a double end spanner, loosen the hex nut cum brake light switch and remove - Remove the brake hose from vehicle.	Banjo bolt Ring spanner: 12mm NOTE: Place a clean tray below brake hose to collect residual brake fluid. Brake light switch Double end spanner: 14mm NOTE: Remove the sealing washers from either side of the brake hose banjo.   
13.2.2	Master cylinder reservoir Unscrew lid from master cylinder reservoir and remove lid along with diaphragm.	

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.2	Rear Disc Brake	
13.2.1.	Master cylinder reservoir ■ Release metal clip and disconnect hose from reservoir to master cylinder. ■ Loosen and remove hex socket screw holding reservoir to frame and remove reservoir along with hose. ■ Remove split pin from the pin on brake pedal ■ Remove pin and disconnect brake pedal from the link rod in master cylinder. ■ Loosen 2 socket head screws holding master cylinder to frame.	 Hex soc Hd screw : M4 Allen key : 5mm  Split pin Nose pliers  Hex soc Hd screw : M4 Allen key : 5mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.2	Rear Disc Brake	
13.2.3	Master cylinder ■ Remove protective rubber boot from master cylinder. ■ Remove Circlip from the Master cylinder body slowly and carefully. ■ Gently pull out piston with bush, seals, spring guide and conical spring from master cylinder housing.	 Circlip Circlip pliers  CAUTION: Do not use any sharp tool to pull out the piston from the master cylinder. Pull out gently with minimum force. 
13.2	Front Disc Brake	
13.2.4	Brake pads from wheel caliper ■ Remove 2 locking clips from the brake pad pivot in wheel caliper	

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.2	Rear Disc Brake	
13.2.4.	Brake pads from wheel caliper ■ Pull out the pivot pin from the inside of the caliper. ■ Remove the brake pads from the caliper.	 
13.2.5.	Wheel caliper from swing arm ■ Loosen and remove rear wheel axle nut. ■ Pull out the pivot pin from the inside of the caliper. ■ Separate the Mounting Bracket from the Caliper Assembly by gently pulling them apart.	 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.2 13.2.5	Rear Disc Brake Wheel caliper from swing arm Remove the Pad tensioner spring plate from caliper and mounting bracket.	
13.2 13.2.5	Rear Disc Brake Piston & seal from caliper - Hold the caliper body with the piston facing downwards. - Blow low pressure compressed air with a nozzle into the oil passage hole on the caliper, to drive out the piston from the caliper bore. - Gently remove the piston with seal from caliper using a blunt and soft tool.	CAUTION: Do not use high pressure air. Support piston while removing from caliper. Ensure the bore in the caliper does not get scored or damaged. Ensure piston outside surfaces does not get scored or damaged. 

GENERAL PRECAUTIONS

- Check the system for any fluid leaks at banjo union joints, damaged brake hose etc. at periodic intervals as detailed in the maintenance schedule.
- Whenever checking brake fluid level, ensure vehicle is on its centre stand and the fluid reservoir is parallel to the ground, whenever checking fluid level.
- Cover motorcycle painted surfaces, plastic and rubber parts while overhauling or bleeding a brake system. Do not allow brake fluid to come in contact with any parts of the motorcycle as brake fluid has highly corrosive properties.

CLEANING

- Clean master cylinder filler cap before removing.
- Use only fresh brake fluid to clean rubber and other parts of the hydraulic brake system. DO NOT use any petroleum based cleaning solvents, water or detergents etc.

INSPECTION:

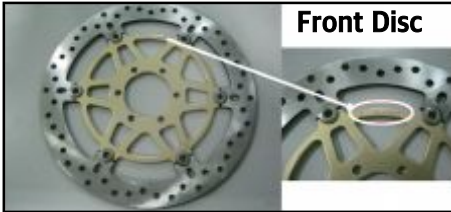
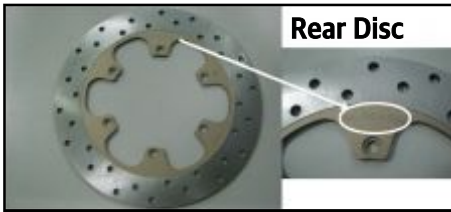
- Inspect brake fluid level is always between the MAX and MIN level markings in the reservoir.
- Prior to riding the motorcycle every time, check brake disc inside and outside surfaces carefully for any contamination with oil, grease, slippery substances, brake fluid etc. as these will render the braking system ineffective. In case of any contamination, wash the brake disk with water and mild detergent to remove the contaminations, clean well with a good degreasing agent, blow compressed air to dry the brake disc thoroughly.
- Inspect brake hose joints; reservoir and wheel caliper ends for any traces of fluid seepage or leaks. Check and correct the leaks immediately, if any noticed.
- Inspect Brake hoses for any damage, cracks or cuts, ageing etc and replace damaged parts immediately.
- Inspect brake pads for embedded foreign objects, abnormal wear, age hardening of friction material etc.
- Inspect and ensure the pads are not worn out beyond the wear indication limit marks on the pads. Replace pads as soon as they have reached the wear limit marks
- Check rubber seals on the plunger for wear, cracked edges or any other damage. Replace seals whenever the plunger is removed
- Check master cylinder housing and piston for any scoring, pitting due to corrosion or any other damages.
- Check the master cylinder bore for any damages, scoring marks etc.
- Check piston outside surfaces for any damages, scoring marks, corrosion etc. Replace pistons if any of the above is observed.

CAUTION:

- **Use only DOT 3 or DOT 4 grade brake fluid from a sealed container.** Do not mix different types of brake fluid as they may not be compatible.
- Whenever the disc brake system is overhauled, ensure that the old fluid is drained out completely and then filled with fresh brake fluid **ONLY** from a sealed container.
- In case of any brake fluid contamination in the brake system, the contaminated brake fluid must be flushed out completely from the entire system, the internal parts cleaned well, filled with fresh brake fluid and the brake system bleeding must be carried out.

- Always replace brake pads as a set only.
- Always replace banjo union washers, 'O' rings, diaphragm washers, dust seals and piston seals whenever the hydraulic disc brake system is overhauled.
- Always replace damaged parts like pistons, fixing pin etc. **DO NOT attempt to repair damaged pistons, pins, master cylinder, caliper etc.** as it may render the disc brake system to become ineffective and seriously affect braking efficiency.
- Ensure the brake disc is clean and dry at all times for the brakes to work at peak efficiency.

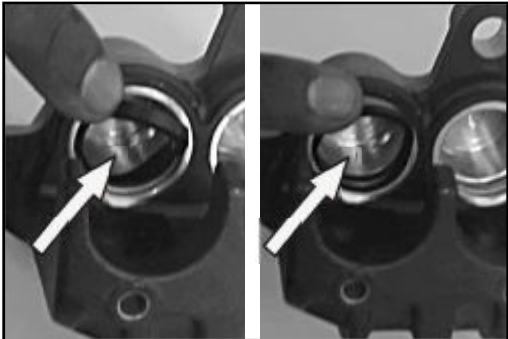
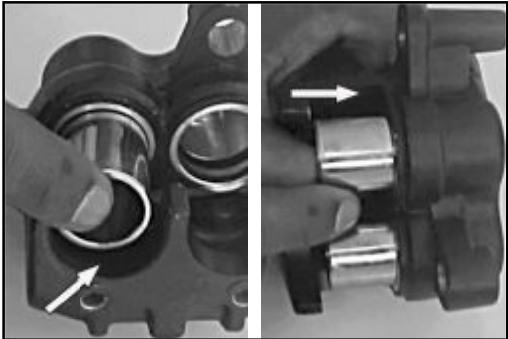
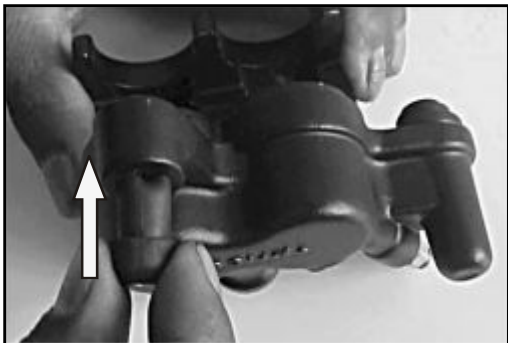
WEAR LIMITS

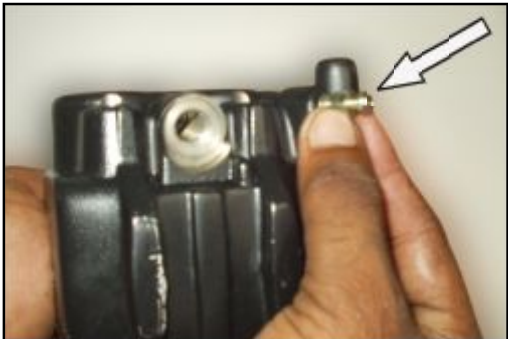
Component	What to Measure	Service Limit	Where to Measure
Brake Disc plate	Thickness of the disc plate	Minimum disc thickness as engraved on the disc	 Front Disc  Rear Disc
	Flatness of the disc plate	0.1 mm	
	Runout of the disc plate	0.3 mm	

Component	What to Measure	Service Limit	Where to Measure
Brake pads	Wear out of brake pads	As marked in the brake pads	 
Master cylinder bore ID	Wear out of the cylinder	12.76 mm	
Master cylinder Piston OD	Wear out of piston	12.64 mm	
Wheel caliper cylinder bore ID	Wear out of the cylinders	25.46 mm	
Wheel caliper Pistons OD	Wear out of pistons	25.31 mm	

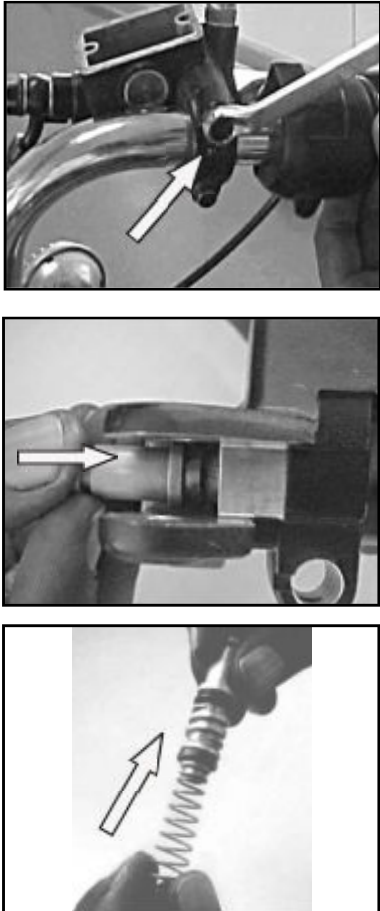
TORQUE VALUES

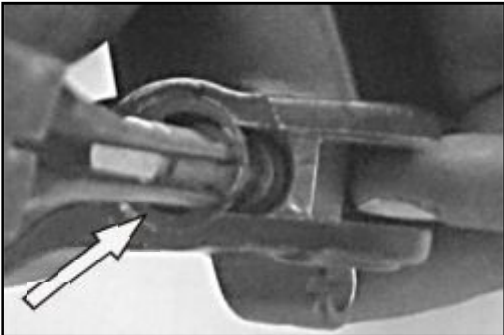
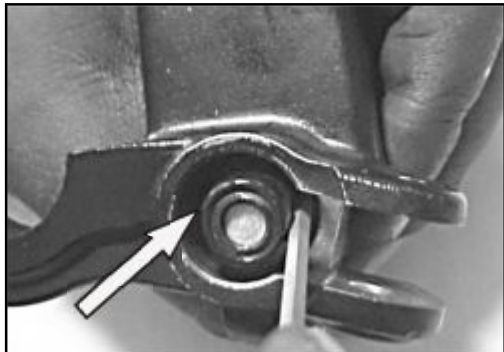
S. No.	Aggregate	Fastener	Suggested Torque	
			NM	Kg.M
1	Master cylinder assembly clamp	Hex Bolt M6	9.0	0.9
2	Brake lever pivot	Pivot bolt.	6.0	0.6
3	Brake lever pivot lock nut.	Pivot bolt lock nut	6.0	0.6
4	Brake hose banjo bolts	Banjo bolts	35.0	3.5
5	Master cylinder cover screws	Slotted screws	1.5	0.15
6	Brake pad pin bolts	Socket pin bolts	20.0	2.0
7	Grub screw, brake pad in bolts	Grub screw	3.0	0.3
8	Bleeder nipple	Hex nipple	10	0.1
9	Wheel caliper mounting on fork end LH	Hex Nut M8X1.25	30.0	3.0

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3 13.31	Front Disc Brake Pistons & seals in caliper ■ Coat fresh brake fluid on new dust seals and piston seals. ■ Install piston seals in the inner groove and dust seals in the outer groove in the bore in caliper assembly. ■ Coat the caliper cylinders and pistons with fresh brake fluid. ■ Insert the closed end of the pistons into the caliper bores and gently press it into caliper fully till the open ends of the piston are flush with the caliper bore outer edge. ■ Smear fresh brake fluid on the caliper boot and bellow and assemble them on the caliper body.	NOTE: Do not apply force while assembling the pistons into the caliper. Press only with minimal hand pressure. Assemble pistons one at a time into the caliper.    

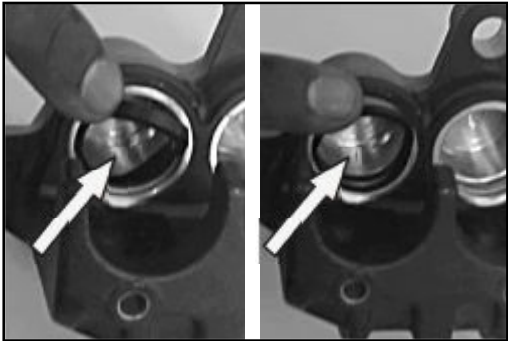
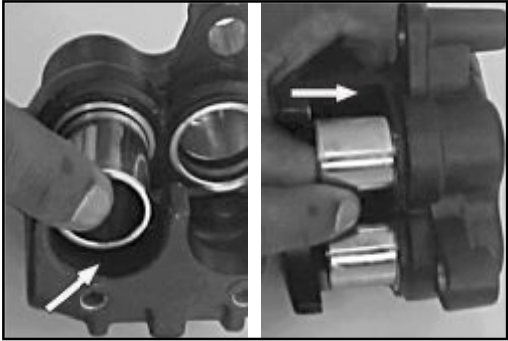
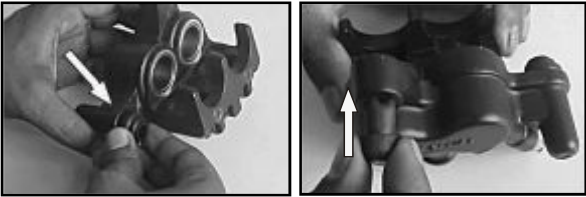
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3 13.3.1	Front Disc Brake Pistons & seals in caliper ■ Install the pad tension spring plate in the Caliper body. ■ Assemble Bleed screw with the dust cap on the caliper body. ■ Assemble the Mounting Bracket on the caliper Body.	 Ring Spanner: 8 mm Torque: 10Nm (0.1Kgm)  

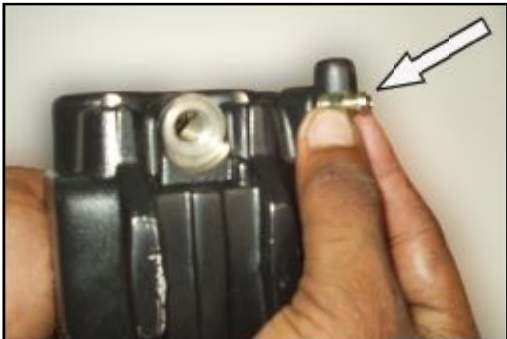
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3	Front Disc Brake	
13.3.2	Brake pads in caliper ■ Install brake pad on the piston side first with its friction material facing outside. ■ Install the other brake pad with the friction material facing the opposite brake pad. ■ Apply Silicon grease on the pin OD and assemble the Pin bolt by pressing gently through the brake pads into caliper body. ■ Tighten the pins to the caliper body. ■ Assemble Grub screws on the pins and tighten.	NOTE: Ensure pads are positioned and locked correctly in the mounting bracket lug.   Brake pad pins Allen key: 5mm Torque: 20Nm (2.0Kgm)  Grub screws Screw driver Torque: 3Nm (0.3Kgm) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3 13.3.3	Front Disc Brake Wheel caliper on fork end LH ■ Locate caliper on fork end LH and ensure the brake disc is positioned between the brake pads. ■ Tighten caliper assembly to fork end with 2 hex bolts.	Hex bolt: M10 Socket spanner: 12mm Torque: 30Nm (3.0Kgm) 
13.3 13.3.4	Front Disc Brake Master cylinder on handle bar ■ Locate master cylinder assembly on the handle bar. ■ Locate clamp on handle bar and tighten the master cylinder assy. To handle bar with 2 hex bolts. ■ Smear the piston, seals and cylinder bore with fresh brake fluid and assemble piston sub-assembly into the master cylinder by gently pushing it into the bore.	Hex Bolts : M6 Socket spanner : 8mm Torque : 9Nm (0.9 KgM)  NOTE: Ensure the circlip is seated correctly inside the groove.

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3	Front Disc Brake	
13.3.4	Master cylinder on handle bar ■ Locate the conical spring on the piston, compress and assemble Circlip into the groove of the master cylinder. ■ Assemble the rubber Boot. ■ Apply Silicon grease on the Lever pivot hole and on the Piston surface. ■ Position brake lever inside the bracket, locate pivot screw from the top and tighten to bracket. ■ Assemble lock nut below and tighten. ■ Assemble the Brake Switch on the bracket. ■ Connect the brake light switch.	 CAUTION: Do not use tools with sharp ends.  Hex Screw Hex nut : M5 Screw driver Spanner: 8mm Torque: 6Nm(0.6 KgM)  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3	Front Disc Brake	
13.3.5	Brake hose on master cylinder and wheel caliper - Position brake hose against the mounting hole on master cylinder such that it is pointing downwards correctly.. - Locate 2 new copper washers on either sides of the brake hose banjo and tighten with banjo bolt. - Route the brake hose correctly from the right side towards the wheel caliper in fork end LH. - Position brake hose against the mounting hole on wheel caliper correctly. - Locate 2 new copper washers on either sides of the brake hose banjo and tighten with banjo bolt. - Fill fresh brake fluid in the Master cylinder till "MAX" mark - Assemble the diaphragm, plate and cover. - Tighten screws gently.	 Banjo bolt : M8 Socket Spanner : 12mm Torque : 38Nm (3.8 KgM)   Slotted screws Screw driver Torque: 15Nm(.15KgM) 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.3 13.3.5	Front Disc Brake Brake hose on master cylinder and wheel caliper ■ Assemble the rear view mirror. ■ Bleed the air out of the hydraulic brake system.	
13.4 13.4.1	Rear Disc Brake Piston & seals in caliper ■ Coat fresh brake fluid on new dust seals and piston seals. ■ Install piston seals in the inner groove and dust seals in the outer groove in the bore in caliper assembly. ■ Coat the caliper cylinder and piston with fresh brake fluid. ■ Insert the closed end of the piston into the caliper bore and gently press it into caliper fully till the open ends of the piston are flush with the caliper bore outer edge.	 NOTE: Do not apply force while assembling the piston into the caliper. Press only with minimal hand pressure.  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.4	Rear Disc Brake	
13.4.1	Piston & seals in caliper ■ Install the pad tension spring plate in the Caliper body. ■ Assemble Bleed screw with the dust cap on the caliper body. ■ Position the guides on the Caliper and mounting bracket correctly on the rubber boot and assemble caliper body in the mounting bracket	 Ring Spanner: 8 mm Torque: 10Nm (0.1Kgm)  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.4 13.4.1	Rear Disc Brake Wheel caliper on swing arm ■ Locate caliper with mounting bracket on the swing arm such that the brake disc is correctly positioned inside the caliper. ■ Assemble wheel axle through the caliper bracket on the swing arm. ■ Assemble axle nut and tighten to torque.	
13.4.2	Brake pads on wheel caliper ■ Locate the brake pads inside the caliper on either sides of the disc with the friction material facing the disc. ■ Locate the pivot pin from the inside of the caliper correctly. ■ Assemble the 2 locking clips on the brake pad pivot pin.	  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.4 13.4.3	Rear Disc Brake Master cylinder ■ Locate new O ring inside the master cylinder bore. ■ Assemble the spring guide on the small end of the spring. ■ Locate the peg on the piston, on the spring guide ■ Locate large bush over the piston. ■ Insert the large end of the spring along with the piston and guide bush into the master cylinder bore and hold it in compressed position inside the master cylinder. ■ Assemble Circlip in the master cylinder body and ensure it is locked properly in the groove ■ Assemble the protective rubber boot on the master cylinder.	CAUTION: Do not use any sharp tool to assemble the O ring or piston in the master cylinder.  Circlip Circlip pliers  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.4	Rear Disc Brake	
13.4.3	Master cylinder ■ Position Master cylinder on frame and ensure the mounting holes are aligned. ■ Assemble 2 socket head screws on the mounting holes and tighten master cylinder to frame.x ■ Insert link rod in master cylinder and align mounting eyelet with brake pedal eyelet correctly. ■ Insert lock pin from outside and assemble split pin on lock pin on the inside.	Hex soc Hd screw:M4 Allen socket:5mm Torque: 10Nm(0.1Kg.M)  Split pin Nose pliers 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.4 13.4.4	Rear Disc Brake Master cylinder reservoir - Align reservoir mounting hole to frame and tighten with hex socket head screw. - Connect rubber hose to reservoir and master cylinder and lock metal clip in place firmly at both ends.	Hex soc Hd screw : M4 Allen key : 5mm  
13.4.5	Brake hose - Position brake hose against the mounting hole on master cylinder such that it is pointing inwards correctly. - Locate 2 new copper washers on either sides of the brake hose banjo. - Assemble Banjo bolt with brake switch on the brake hose banjo, and tighten banjo to master cylinder. - Connect brake light switch coupler to main harness.	Brake light switch Double end spanner: 14mm NOTE: Ensure proper routing of brake hose before tightening.  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.4	Rear Disc Brake	
13.4.5	Brake hose ■ Locate rubber grommets on the brake hose in the clips in swing arm ■ Position brake hose against the mounting hole on wheel caliper correctly. ■ Locate 2 new copper washers on either sides of the brake hose banjo and tighten with banjo bolt. ■ Fill fresh brake fluid in the Master cylinder till "MAX" mark ■ Bleed the air out of the hydraulic brake system.	Banjo bolt Ring spanner: 12mm  

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.5	Disc brake bleeding ■ Ensure the bleeding screw is fully tight. ■ Fix a transparent flexible tube of length 12" (30 cms.) firmly on the bleeder nipple and insert the other end into a glass or plastic container containing about 100ml of fresh brake fluid. ■ Ensure the tube end is fully immersed in the fluid. This will prevent atmospheric air from getting sucked into the caliper unit during the bleeding process. ■ Ensure the master cylinder reservoir is filled with fresh brake fluid from a sealed container up to "MAX" level. ■ Fix the diaphragm, plate and top cover and tighten cover just sufficiently. ■ Depress brake lever / brake pedal completely and release fully to allow the brake fluid to fill up in the brake system and caliper. ■ Repeat above step several times while periodically inspecting the fluid level in the reservoir. Top as required to maintain level at "MAX" ■ When a slight firmness is felt on the lever / pedal and travels only up to halfway, hold the lever/ pedal firmly depressed in that position. DO NOT RELEASE THE LEVER.	Screw driver CAUTION: Fill only with DOT3 or DOT4 brake fluid. Do not mix DOT 3 & DOT 4 fluids. NOTE: Do not tighten the cover fully since it may be required to top up fluid during bleeding process.    

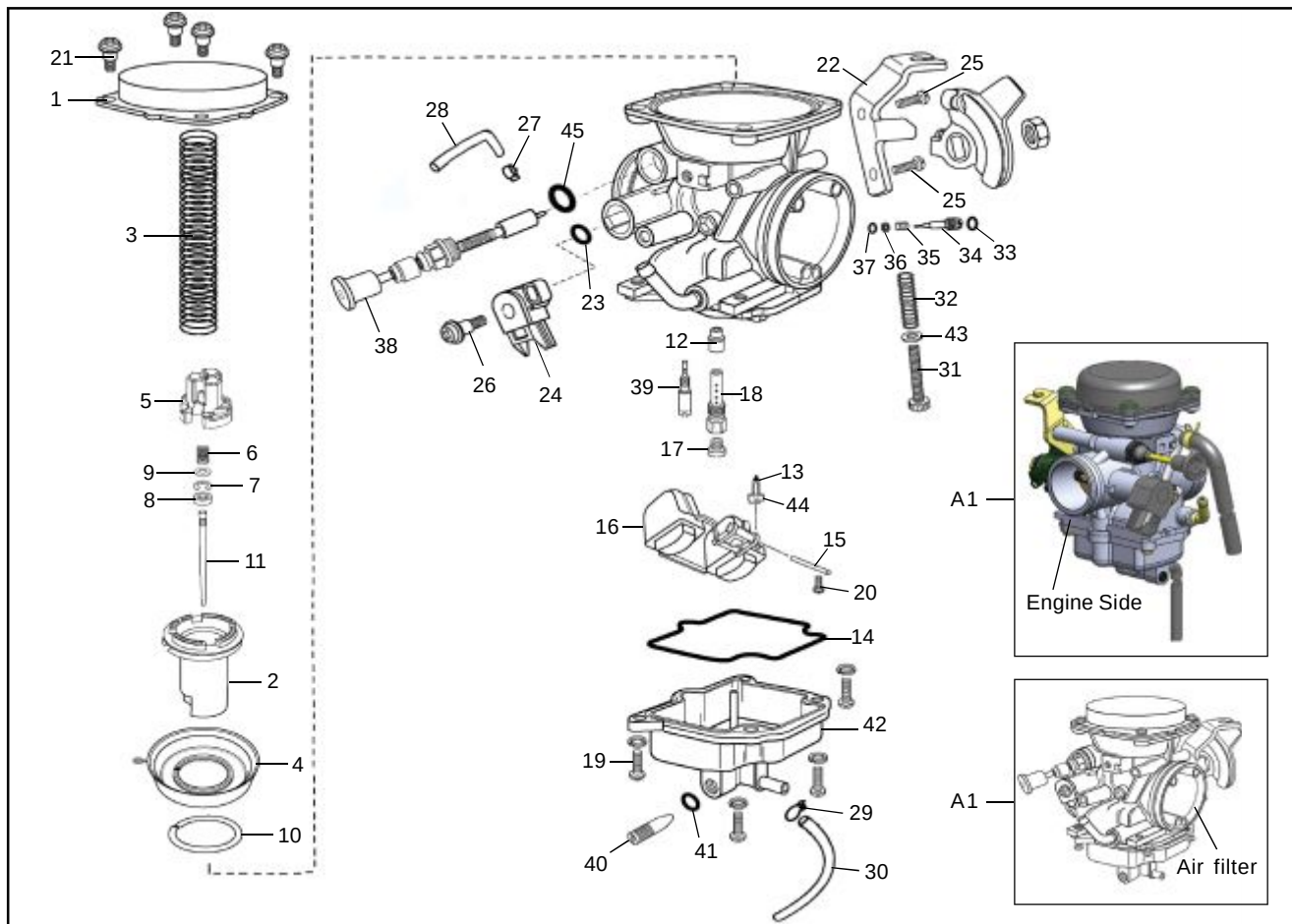
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.5	Disc brake bleeding - Loosen the bleeder screw at caliper end by $\frac{1}{2}$ to 1 turn to allow air bubbles in the brake system to escape into the transparent tube connected to the nipple. - When the bleeder screw is loosened and air escapes from the brake system along with brake fluid through the bleeder nipple, the brake lever / pedal will depress further. DO NOT RELEASE THE LEVER BUT HOLD IT FIRMLY AT THIS POSITION. - After all the air bubbles escape thro the bleeder nipple, tighten bleeder screw firmly and then only release brake lever / pedal. - Check and top up brake fluid in the master reservoir up to "MAX" level. - Repeat the steps above, till the brake lever / pedal movement is minimal and locks firmly without any sponginess in applied position. - Also check and ensure there are no more air bubbles being carried out by the fluid while bleeding the system.	Bleeder Nipple: M6 Ring spanner: 10mm Torque: 10Nm (0.1KgM)

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
13.5	Disc brake bleeding ■ Ensure the bleeder screw is tightened fully and fix the dust cap. ■ Check and top up brake fluid in the master cylinder reservoir up to For front brake master cylinder ■ Assemble diaphragm, plate and top cover and tighten with 2 slotted screws on the front brake master cylinder. For front brake master cylinder ■ Tighten the cover firmly on the reservoir in the rear brake master cylinder.	Slotted screw Philips head Screw driver Torque: 1.5Nm (0.015KgM) NOTE: Check and ensure there is no sponginess of the brake lever / pedal when brakes are applied. Carry out a road test to check the braking efficiency. Check for any leaks at the banjo or the bleeding screw areas and ensure all tightness of all fasteners.

SECTION 14 - CARBURETOR

EXPLODED VIEWS

CV CARBURETOR (UCD 33)



S.NO.	DESCRIPTION	QTY.
A1	UCD 33 Carb Complete Assy.(LS410)	1
1	Diaphragm Cover Top	1
2	Piston Valve Assembly	1
3	Spring (CO) Diaphragm	1
4	Diaphragm	1
5	Holder Needle	1
6	Spring (JN) Needle	1
7	E - Ring Jet Needle	1
8	Ring (Shim)	1
9	Washer (PV) Needle	1
10	Ring (PV) Piston Valve	1
11	Jet Needle (JN)	1
12	Needle Jet (NJ) P-OM	1
13	Needle Assy. Float	1
14	'O' Ring (FCB) Float Chamber	1
15	Pin (Float)	1
16	Float Assembly	1
17	Main Jet (MJ-125)	1
18	Jet Holder (JH)	1
19	Screw Assy. (FCB) Bowl Mtg.	4
20	Screw (Float)	1
21	Screw (DH. Cover)	4
22	Bracket (TH Cable)	1

S.NO.	DESCRIPTION	QTY.
23	'O' Ring (TPS)	1
24	Throttle Position Sensor	1
25	Screw Bracket (TH Cable)	2
26	Screw (TPS) Mtg.	1
27	Clip (Air Vent Hose)	1
28	Hose (Air Vent)	1
29	Clip (Drain)	1
30	Hose (Drain)	1
31	Adjuster (Idle Screw)	1
32	Spring (Idle Adjuster)	1
33	'O' Ring Mixture Screw (Head)	1
34	Adjuster (Pilot Screw)	1
35	Spring (CO) (Pilot Screw)	1
36	Washer (Pilot Screw)	1
37	'O' Ring (Pilot Screw) Front	1
38	Plunger Assembly Choke	1
39	Pilot Jet - 15	1
40	Drain Screw	1
41	'O' Ring (Drain)	1
42	Float Body Assy.	1
43	Packing (Idle Screw)	1
44	Clip (Needle Valve)	1
45	'O' Ring Plunger Assy. Choke	1

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.1	Dismantling from vehicle ■ Ensure Ignition switch and engine kill switch are in OFF position. ■ Ensure fuel tap is in OFF position. ■ Release the clips on the fuel hose and disconnect from carburetor and fuel tap. ■ Release clip and disconnect PAV inlet tube from carburetor end. ■ Disconnect TPS (black) coupler from carburetor LH side. ■ Loosen cable lock nuts & push adjuster fully into bracket. ■ Disconnect inner cable from carburetor rotor. ■ Remove bottom nut from adjuster and pull up till it is free of the bracket & slide inner cable out of bracket. ■ Loosen screw on the worm clip on inlet manifold. ■ Loosen screw on worm clip on the air filter connection tube. ■ Gently slide carburetor towards the rear such that it comes out of the inlet manifold. ■ Tilt carburetor towards RH side and remove from air filter connection tube.	Double End Spanner: 10mm Screw driver CAUTION : Ensure the worm clips are loosened sufficiently before removing carburetor. NOTE: Ensure the vent and drain hoses are free from the frame when removing carburetor.

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.2	Carburetor internals ■ Drain fuel from the carburetor bowl by loosening the drain screw at the bottom of the bowl, before dismantling. ■ Hold carburetor in inverted position and remove 4 slotted head screws along with spring washers. ■ Gently remove bowl assembly from body along with rubber ring. ■ Loosen and remove slotted screw holding float pin to carburetor body. ■ Gently remove float assembly along with pin and needle assembly from carburetor body. ■ Remove float pin from float assembly ■ Release float needle clip from the tab in float assembly and remove float needle from float assembly. ■ Holding the jet holder with a spanner loosen and remove main jet ■ Loosen and remove jet holder from carburetor body.	CAUTION : Fuel is extremely explosive and highly inflammable. Ensure there are no sparks, open flames etc. nearby. Drain fuel with care and do not spill. Dismantle carburetor only in a clean and well ventilated area. Slotted Screw Driver D.E Spanner : 8mm Slotted Screw Driver CAUTION : Ensure Needle jet does not fall out of the body while removing jet holder. Remove needle jet after removing jet holder.   

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.2	Carburetor internals - Loosen and remove pilot jet from carburetor body. - Loosen and remove 4 slotted head screws on top of the diaphragm cover. - Remove diaphragm top cover from carburetor body top. - Remove spring from piston valve assembly. - Gently pullout piston valve assembly along with diaphragm from the carburetor top. - Remove Pilot screw assembly along with O Rings, washer and spring from the carburetor body.	Slotted Screw Driver  Slotted Screw Driver  CAUTION : Gently depress and hold diaphragm cover while removing the screws slowly and evenly, to prevent the spring from recoiling and pushing cover up. NOTE: It is not recommended to remove the diaphragm from the throttle valve or disturb the setting of the jet needle - unless there is a defect in these components.  Screw Driver 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.2	Carburetor internals Loosen Hex nut and remove Starter plunger assembly along with "O" ring from the carburetor body.	D.E spanner: 14 mm 

GENERAL PRECAUTIONS

- Please refill fuel only from a good and quality fuel station, to avoid getting adulterated or fuel with sediments.
- Always maintain a full tank of fuel to prevent fine dust and sediments from getting into the carburetor from fuel tank.
- Drain the carburetor every three thousand kms by removing the drain screw to drain all the deposits that may collect at the bottom of the float bowl.
- Please clean and maintain the carburetor at periodical intervals to avoid blockage of jets and passages.
- Clean Air-filter regularly as specified in the maintenance schedule since a blocked or damaged air-filter will adversely affect vehicle performance and also cause damage to the carburetor internals.

CLEANING

- Use a recommended carburetor spray to clean all passages in the carburetor body.
- Spray the main jet, pilot jet, pilot air screw passages, bypass holes etc in the main carburetor body, in the reverse direction of normal flow to fuel to remove blockages, dirt, deposits etc.
- Clean all the jets and other parts of the carburetor only with carburetor spray.

CAUTION:

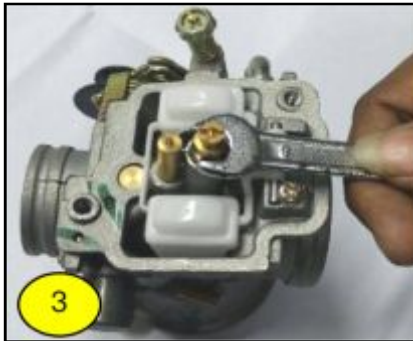
- Do not use any other cleaning solvents to clean the carburetor body and other parts as it can cause damage, rust etc to the parts and carburetor.
- Do not use metal object or cable strands to clean the jets or the carburetor passages.
- Use only a low pressure compressed air to clean out the spray residuals.
- Always replace gaskets, rubber parts, 'O' rings, washers etc whenever the carburetor is dismantled and reassembled.
- DO NOT over tighten jets, and fixing screws as the screw driver slots will not only get damaged BUT will also result in difficulty during subsequent removals. Always adhere to the specified torque values
- DO NOT over tighten the pilot air screw as it will not only cause damage to the pointed tip of the air screw BUT also affect the performance of the vehicle.
- DO NOT alter the locking position of the E ring on the jet needle or use under / over sized jets to improve the performance AND/ OR fuel efficiency. Use of non specified jets can seriously affect the performance of the vehicle and also cause major harm to the engine internals.

INSPECTION

- Inspect carburetor jets carefully for any gumming, hard carbon deposits, deterioration of the jet holes etc.
- Inspect the throttle valve and jet needles for any abnormal wear.
- Inspect pilot air screw tip for any wear, damage or bend.
- Inspect float needle tip for any abnormal wear and for proper spring action of the pin in the float needle.
- Check float height and ensure it is as per specifications.
- Ensure that the seating area of the choke plunger assembly is not worn or damaged. If worn or damaged, replace the plunger assembly.

TIGHTENING TORQUE SPECIFICATION

Pilot Jet	8 ± 2 kgf-cm
Holder Main Jet	18 ± 5 kgf-cm
Main Jet	18 ± 5 kgf-cm
Float Pin Fixing Screw	20 kgf-cm
Bowl Fixing Screw	35 ± 10 kgf-cm
Drain Screw	20 ± 5 kgf-cm
Starter Choke Guide Holder	25 ± 5 kgf-cm
Diaphragm Top Cap Screw	35 ± 10 kgf-cm

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.3	Carburetor internals ■ Insert Starter plunger assembly along with "O" ring and hex gland nut into carburetor body and tighten. ■ Assemble Pilot jet in carburetor body and tighten gently. ■ Insert the small dia face of the needle jet into the main jet holder hole in carburetor body. ■ Locate main jet holder in carburetor body and tighten. ■ Assemble Main jet on holder	D.E Spanner : 14 mm Torque: 18 ± 5 Kgf Screw driver Torque: 8 ± 2Kgf CAUTION : Ensure the Needle jet is assembled correctly. D.E Spanner : 8 mm Torque: 18 ± 5 Kgf Screw driver Torque: 18 ± 5 Kgf    

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.3	Carburetor internals ■ Hold the float assembly such that the larger ends of the floats are facing downwards. ■ Locate float needle clip on the tab in float assembly from below. ■ Locate float hinge pin in float assembly. ■ Locate float needle into carburetor body and ensure the float hinge pin is seated correctly in carburetor body. ■ Locate slotted screw over hinge pin and tighten to carburetor body. ■ Ensure free up & down movement of the float. Float height setting procedure ■ Hold carburetor in inverted position. ■ Using a vernier caliper / depth gauge, measure the height of the individual floats from the carburetor body bowl seating area. ■ Gently bend the tab of the needle pin seating area in the float, to adjust the height. ■ Recheck and ensure the correct float height is maintained at both float ends after the adjustments are carried out.	D.E Spanner : 14 mm Torque: 18 ± 5 Kgf  CAUTION : Ensure the individual floats do not get dislocated during assembly. Screw driver Torque: 20Kgf Float height : 17.1mm CAUTION : Exercise utmost caution while adjusting the float height to prevent damage to the floats.

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.3	Carburetor internals ■ Locate float bowl along with rubber ring on carburetor body ■ Ensure spring washers are assembled on the 4 slotted head screws and tighten bowl to carburetor body. ■ Insert piston valve assembly with diaphragm rubber into the top bore in carburetor body. ■ Assemble spring in the piston valve assembly. ■ Position top cover over the spring, gently compress till the cover rests on carburetor body and the mounting holes are aligned. ■ Tighten cover to body with the three screws. ■ Assemble spring, washer, inside and outside O rings on pilot air screw ■ Locate pilot air screw in carburetor body and gently tighten till resistance is felt and screw cannot be tightened further. ■ Loosen pilot air screw by 1½ TO 2 FULL TURNS.	NOTE: Ensure proper seating of rubber ring in the groove in float bowl. Do not apply any adhesive to seat the rubber ring. Screw driver Torque : 35 ± 10 Kgf NOTE: Ensure the locating peg of the diaphragm is correctly and properly seated in the carburetor body. Screw driver Torque : 35 ± 10 Kgf NOTE: DO NOT over tighten the pilot screw as it will cause damage to the pointed tip.     

S. No.	Aggregate to Assemble / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
14.4	Assembling on vehicle ■ Connect inner cable to the eyelet and route inner cable in the groove in throttle drum ■ Gently pull up adjuster till resistance is felt and unscrew top locknut till it is resting on the cable adjuster bracket. ■ Check throttle cable free play at handle bar end and adjust top nut on cable adjuster till a free play of 3 - 4 mm is available at the throttle grip end. ■ Hold top lock nut and tighten bottom lock nut firmly against bracket ■ Connect TPS (black) coupler to carburetor on LH side. ■ Connect fuel hose to carburetor and fuel tank.	NOTE: Ensure proper seating of rubber ring in the groove in float bowl. Do not apply any adhesive to seat the rubber ring. 

S. No.	Aggregate to Dismantle / Instructions	Fastener, Size, Tool Usage, Precautions, Photos
145	Carburetor Tuning ■ Warm up engine for 3 to 4 minute set the idling screw so that the engine runs at 1500 rpm. ■ Turn pilot airscrew IN or OUT slowly till the RPM increases progressively become stable. ■ Adjust idle screw till idling is around 1050 ± 200 RPM. ■ Check CO% (1 to 1.5%) and readjust pilot air if necessary. ■ After adjusting idling speed, check for its stability / flat spot / missing if any, by accelerating 3 to 4 times. Repeat above said the steps until engine speed increases smoothly. Check engine idling stability and drive vehicle to check for smooth operation (no misfiring or flat spot).	Optimum Air Screw setting    CAUTION : During idle speed turn the handle bar to extreme right or left hand side, if any change in idle speed noticed, the throttle cable may be improperly adjusted or wrongly routed. Correct the same before test ride.

CARBURETOR TROUBLE SHOOTING

PROBLEM	CAUSE	RECTIFICATION
STARTING TROUBLE	Clogged starter circuit	Clean starter circuit with carburetor cleaner
	Pilot jet clogging	Clean jet with spray / replace it if necessary
	Low fuel Level	Check and adjust float height.
	Flooding	Check float for damage or incorrect float height.
IDLING NOT STABLE	Pilot jet clogging	Clean jet with air / replace it if required
	Incorrect pilot screw setting.	Adjust pilot screw as per specification.
	Improper fitment of carb	Ensure correct fitment.
	High / Low fuel level	Adjust float height to spec.
	Piston valve sticky	Clean piston valve / mixing body and ensure no damage in piston valve and diaphragm.
FLOODING	High fuel level	Adjust float height to spec.
	Improper seating of needle valve in valve seat	Clean needle valve/replace if necessary.
	Float puncture	Replace float.
POOR PICKUP	Main / pilot jet clogged	Clean / replace
	High/Low fuel level	Adjust float height to spec.
	Incorrect E-ring position in Jet needle.	Assemble E-ring in correct position
POOR MILEAGE	Clogging of main air / pilot air circuit.	Clean with carburetor Cleaner
	High fuel level	Adjust float height to spec.
	Incorrect E-ring position	Assemble E-ring in the correct notch.
BLOCKING OF FUEL	Clogging of fuel hose coming from fuel tank	Change the fuel hose
	Clogging of fuel inlet nipple	Remove the dust with small needle and clean with air
MISFIRE	Clogging of pilot jet.	Clean with carburetor Cleaner
	Part missing	Check the presence of Ball plugs and Air jets

SECTION 15 - ELECTRICAL COMPONENTS

STARTER MOTOR

TECHNICAL SPECIFICATIONS

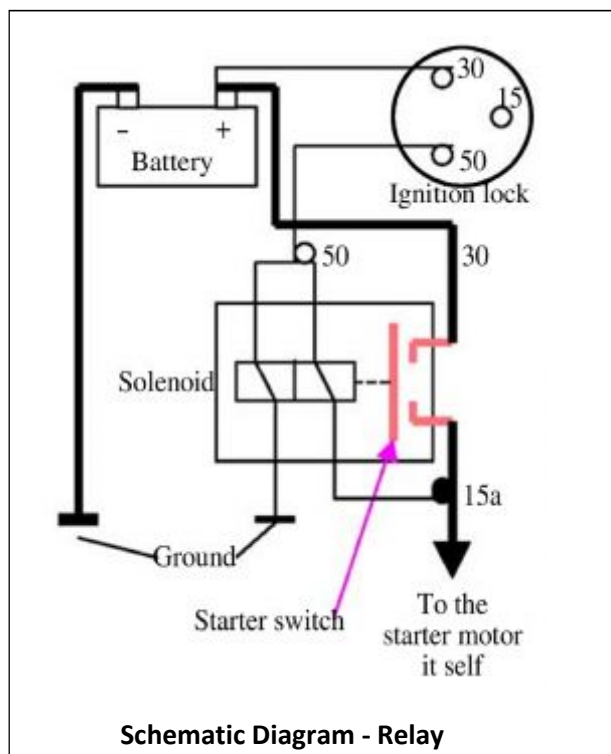
System / Battery	12V DC / 12V 14 Ah
Starter Motor	0.9 KW
Solenoid Switch	Magnetic Relay type

INSPECTION

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

RELAY STARTER

WIRING LAYOUT



INSPECTION

1. COIL RESISTANCE CHECK

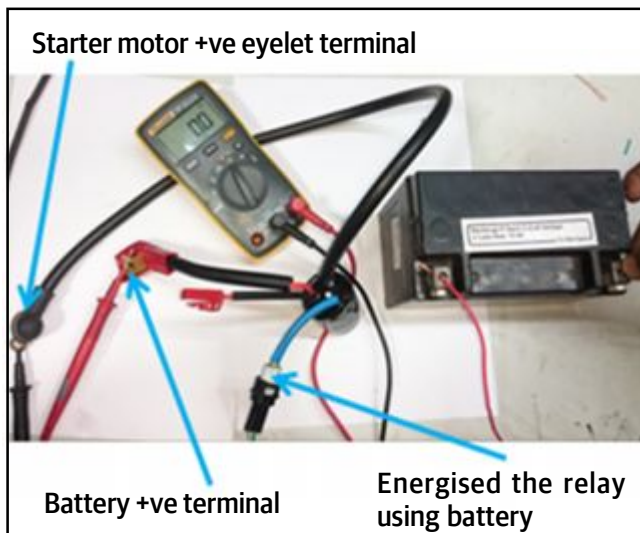
- Set the Multimeter in Resistance check mode.
- Keep the positive (Red) probe of the Multimeter on coil positive and Negative probe (Black) of the Multimeter on coil negative.(Refer the below table for polarity identification).
- Resistance Spec unit - 3.96 Ω
- If resistance deviates from the specification or if coil is open/short, Relay starter to be replaced.

Sl.No.	BS 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:

- 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.
- After energizing the coil, check the continuity between Battery +ve terminal and Starter +ve terminal (Ring terminal) using Multimeter. If the Multimeter indicates OÜ 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.

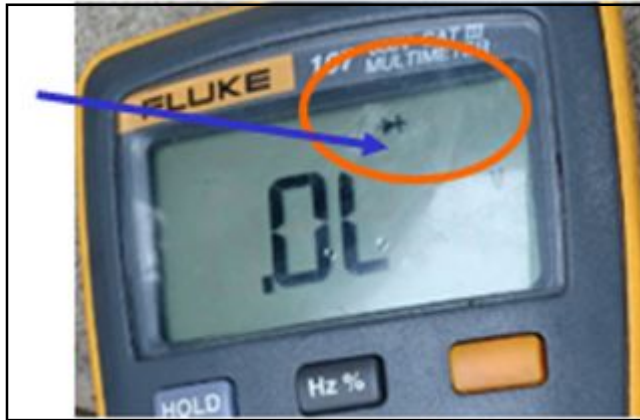


INSPECTION

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 :

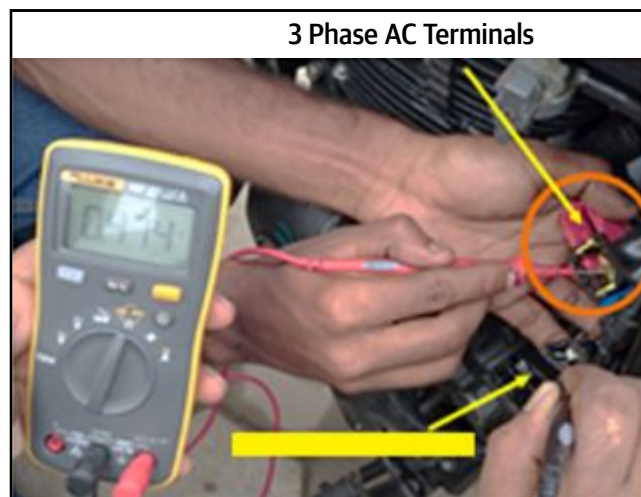
Before checking the diode, internal capacitor of RR unit to be discharged. Else, the diode drop will not be correct. So short the positive and negative terminal of RR Unit DC output(black and red wires) to discharge the capacitor.

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.



SUPPRESSOR 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.

FLYWHEEL MAGNETO

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 - $1.5 \pm 15\%$ (0.59 to 0.79 ohms)
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

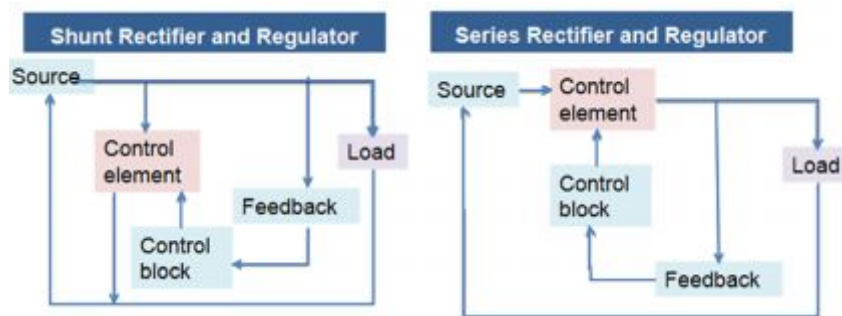
1. For checking the insulation strength, keep the multimeter in continuity mode and check continuity between any 3 phase terminals and engine body. If there is a body short (insulation failure), multimeter will indicate 0 ohms (or resistance value ~ 50 ohms) with a beep sound.

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.

SL NO	COMPONENT	PART NOS	SPECIFICATION
1	IGNITION COIL(350cc)	Ignition coil RH-1040217 Ignition coil LH-581027	Primary resistance - $4.5\Omega \pm 10\%$ Secondary resistance - $13.5k\Omega \pm 10\%$
	IGNITION COIL (500cc/535cc)- High energy coil	1010013 - CLASSIC 500 1010022 - GT	Primary resistance - $2\Omega \pm 10\%$ Secondary resistance - $13.5k\Omega \pm 10\%$
2	FLYWHEEL MAGNETO ASSY (350CC)	572385 - (Varroc) 572384 - (Ducati)	Stator coil Phase to Phase resistance - $500m\Omega \pm 15\%$ (Varroc) $585m\Omega \pm 10\%$ (Ducati)
	FLYWHEEL MAGNETO ASSY(500CC/535cc)	1040062 - (Ducati)	Stator coil Phase to Phase resistance - $660m\Omega \pm 10\%$

COMPARISON



SL NO	SHUNT RR	EXISTING SERIES RR
1	In a shunt Rectifier and Regulator the control element is connected in parallel to the load.	In a series Rectifier and Regulator the control element is connected in series to the load.
2	The excess power from the magneto is returned back to the source through the control element	The excess power will not be returned back to the source
3	When magneto output voltage goes beyond the setting voltage (Eg: $14.5 \pm 0.2V$) the control element gets turned ON and shunts the power to the source.	The control device gets turned OFF when the magneto o/p volatge goes beyond the setting voltage.
4	a) can start the vehicle in batteryless condition	a) Cannot start the vehicle in Batteryless condition.
	b) Bump/push start can be done	b) Bump/push startability is not possible
5	Voltage controlled device, irrespective of the current flowing through the device.	Current controlled device, control depends on the current flowing through the device.
6	Higher current capability can be achieved	At higher current application large amount of heat is generated and component life will be reduced.

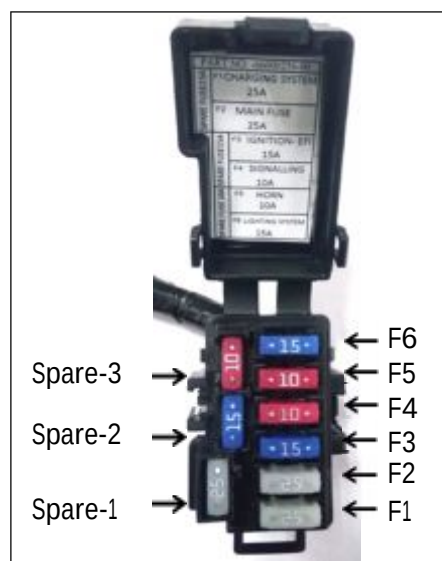
FUSES

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

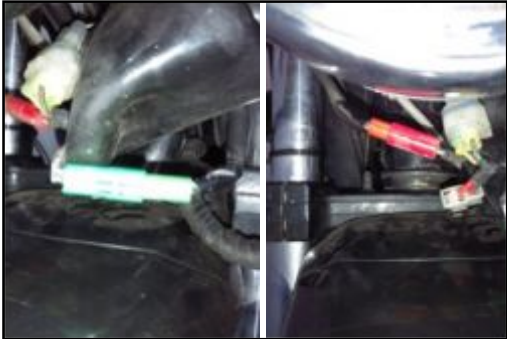
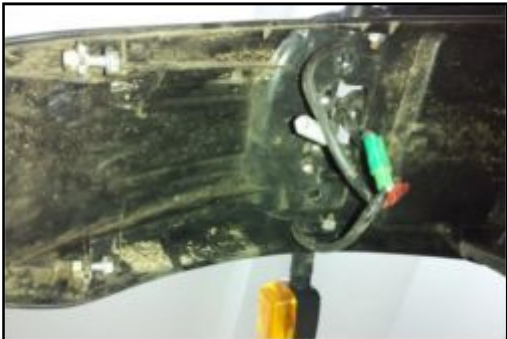


ID No.	Function	Rating
F1	CHARGING FUSE	25A
F2	MAIN FUSE	25A
F3	IGNITION - EFI FUSE	15A
F4	INSTRUMENT CLUSTER/ SIGNALLING FUSE	10A
F5	HORN FUSE	10A
F6	LIGHTING FUSE	15A
SPARE-1	SPARE FUSE 1	25A
SPARE-2	SPARE FUSE 2	15A
SPARE-3	SPARE FUSE 3	10A

SECTION 16 - ELECTRICALS

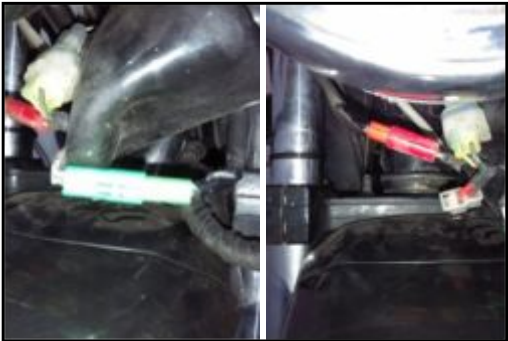
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.1	Battery ■ Remove side panel on the right side by unscrewing 2 hex socket button head screws. ■ Unlock (turn the key clockwise) and remove the pillion seat. ■ Remove front seat. ■ Disconnect battery terminals: positive terminal first & negative terminal next ■ Remove flasher unit along with its rubber holder from battery strap. ■ Disconnect starter relay couplers - White colour from wiring harness - Red colour from Battery. ■ Remove starter relay along with its rubber holder from battery strap. ■ Remove Hex screw from battery strap front. ■ Release battery strap from the slot in the rear and remove strap. ■ Remove battery from the housing.	  CAUTION: Ensure starter relay to starter motor wire is removed from the slot in battery strap before removing starter relay. Hex head screw: M6 Socket Spanner: 10mm 

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.2	Headlamp Assembly ■ Disconnect head lamp wiring coupler below head lamp. ■ Remove 2 Allen screws holding headlamp assy to LH& RH Top bracket & remove head lamp assy.	Hex Socket cap screw M8 Allen Key M6  
16.3	Instrument Cluster Assy ■ Disconnect Instrument cluster wiring coupler ■ Remove 3 Hex cap nuts along with washers. ■ Remove instrument cluster from its mounting bracket.	Hex Cap nut: M6 T spanner: 10mm  

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.4	Trafficator front LH& RH ■ Disconnect Trafficator wiring couplers below headlamp. ■ Remove Allen screw mounting the trafficator to the side support bracket. ■ Pull out the decorative cover from the rubber grommet in the side support bracket.	NOTE: The couplers are color coded as: LH side: Green RH side: Red Hex Socket Cap screw M6 Allen key: 4 mm  
16.5	Trafficator Rear LH& RH ■ Disconnect Trafficator couplers red & green ■ Remove the screw from the trafficator housing back side. ■ Remove outer lens. ■ Remove the fused bulb by pushing and turning anticlockwise.	
16.6	Tail Lamp & Number plate illuminator ■ The tail lamp has a LED lighting system. In the event of failure, the entire tail lamp assembly should be replaced.	

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.7	Battery Reassembly ■ Position battery in the battery carrier such that the terminals are facing inside. ■ Ensure ignition switch is in "OFF" condition. ■ Connect red wire to the positive terminal of the battery first. ■ Connect black wire to the negative terminal of the battery. ■ Locate starter relay along with its rubber holder from battery strap. ■ Install Hex screw on battery strap front. ■ Locate battery strap from the slot in the rear and remove strap. ■ Locate side panel on the right side by installing 2 hex socket button head screws. ■ Lock (turn the key Anti-clockwise) and locate the pillion seat. ■ Locate the front seat	NOTE: Ensure wire terminals are free of corrosion. Apply petroleum jelly over the terminals after connecting battery.  Hex head screw: M6 Socket Spanner: 10mm 

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.8	Headlamp Assembly ■ Install 2 Hex cap screws holding headlamp assy to LH& RH Top bracket & locate head lamp assy. ■ Connect head lamp wiring coupler below head lamp	Allen screw: M8 Allen Key: M6  
16.9	Instrument Cluster Assy ■ Locate instrument cluster on its mounting bracket. ■ Install 3 Hex cap nuts along with washers. ■ Connect Instrument cluster wiring coupler.	Hex Cap nut: M6 Allen Key: 5 mm  

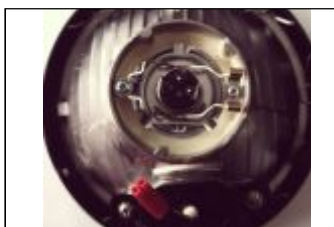
S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.10	Trafficator front LH& RH ■ Push inside the decorative cover on the rubber grommet in the side support bracket ■ Install Allen screw mounting the trafficator to the side support bracket. ■ Connect Trafficator wiring couplers below headlamp.	Hex Cap Screw M6 Allen key: 5 mm NOTE: The couplers are color coded as: LH side: Green RH side: Red  
16.11	Trafficator Rear LH& RH ■ Locate the bulb by pushing and turning clockwise. ■ Locate outer lens ■ Install the screw on the trafficator housing back side. ■ Connect Trafficator couplers red & green	

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.12	Handle Bar Switch LH ■ Open cable straps to release the wiring harness. ■ Disconnect wire coupler from main cable harness near Steering stem on LH side. ■ Remove 2 Philips head screw from bottom of switch LH.	NOTE: The straps fixed in the handle bar are reusable hence do not remove them from the handle bar if not required to be removed. Screw driver 
16.13	Handle Bar Switch RH ■ Open cable straps to release the wiring harness. ■ Disconnect wire coupler from main cable harness near Steering stem on RH side. ■ Remove 2 Philips head screw from bottom of switch RH.	NOTE: The straps fixed in the handle bar are reusable hence do not remove them from the handle bar if not required to be removed. Screw driver 
16.14	Clutch Switch ■ Release coupler lock from the switch on Handle bar LH, bottom. ■ Loosen 2 screws holding clutch switch to switch module LH and remove clutch switch	

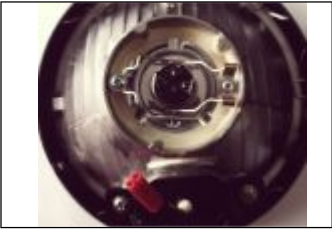
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.15	Front Brake Switch ■ Remove wire connections to the front brake switch on handle bar RH bottom ■ Release lock and gently pull switch out of the front brake bracket.	
16.16	Ignition Switch ■ Disconnect ignition switch wiring coupler. ■ Remove 2 Hex screws from bottom of switch housing and remove switch.	  Hex Cap Screw: M6 Allen key: 5 mm
16.17	Side stand switch coupler ■ Remove strap to frame ■ Pull the bellow down ■ Disconnect Red coupler from LH side.	

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.18	Handle Bar Switch LH ■ Install 2 Philips head screw on bottom of switch LH ■ Connect wire coupler on main cable harness near Steering stem on LH side. ■ Close cable straps to lock the wiring harness.	NOTE: The straps fixed in the handle bar are reusable hence do not remove them from the handle bar if not required to be removed. Screw driver 
16.19	Handle Bar Switch RH ■ Install 2 Philips head screw on bottom of switch RH. ■ Connect wire coupler on main cable harness near Steering stem on RH side. ■ Close cable straps to lock the wiring harness.	NOTE: The straps fixed in the handle bar are reusable hence do not remove them from the handle bar if not required to be removed. Screw driver 
16.20	Clutch Switch ■ Install 2 screws holding clutch switch to switch module LH and locate clutch switch ■ Locate coupler lock on the switch on Handle bar LH, bottom.	

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.21	Front Brake Switch ■ Locate lock and gently push switch inside the front brake bracket. ■ Locate wire connections to the front brake switch on handle bar RH bottom	
16.22	Ignition Switch ■ Install 2 Hex screws from bottom of switch housing and locate switch. ■ Connect ignition switch wiring coupler.	Hex Cap Screw: M6 Allen key: 5 mm  
16.23	Side stand switch coupler ■ Connect Red coupler from LH side. ■ Push the bellow upwards. ■ Locate strap to frame	

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.24	Headlamp Bulb - Remove the 2 screws holding the head lamp rim to the housing. - Gently pull out the head lamp rim along with reflector assembly. - Disconnect head lamp coupler. - Remove the protective rubber cap over the bulb. - Gently press the bulb holding clip and release it from the slot in the reflector. - Remove the bulb from the reflector.	      NOTE: Never touch the bulb with your fingers. Finger prints will etch the glass and decrease bulb life. Always hold the bulb with clean dry cloth during handling. Don't disturb the vent cap provided in the inner body mould.

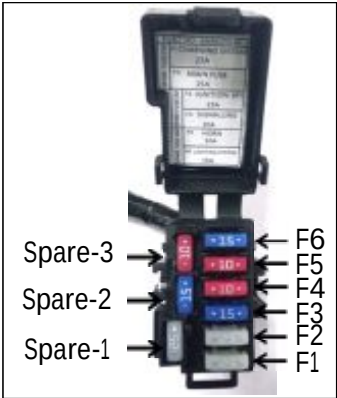
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.25	Trafficator bulbs ■ Remove the screw from the trafficator housing back side. ■ Remove outer lens. ■ Remove the fused bulb by pushing and turning in anticlockwise direction. ■ Position the new bulb inside the holder, ensuring that the pins in the bulb, match with slots in the holder. ■ Push the bulb and turn clockwise direction to lock the bulb in the holder. ■ Refit the trafficator cover with reflector and tighten the screw.	

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.26	Head Lamp Bulb ■ Locate the 3 lugs in the bulb correctly in the reflector. ■ Locate bulb holding clip over the bulb and lock it in the slot in the reflector ■ Locate protective rubber cap over the bulb correctly such that the vent pipe is facing downwards. ■ Position wiring coupler over the bulb terminals correctly and press it in gently to lock the coupler, Locate head lamp rim in the housing correctly such that it locks in place and the 2 mounting holes at the bottom of the rim are aligned. Tighten with 2 Philips head screws firmly.	      NOTE: Do Not over tighten the mounting screw as it can cause damage to the threads in the lens

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.27	Trafficator Bulb ■ Position bulb in the reflector, ensuring that the pins in the bulb, match with slots in the holder ■ Locate bulb correctly in the reflector, gently press bulb and turn clockwise to lock bulb in holder. ■ Refit trafficator cover with reflector into the housing and tighten the screw.	

S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.28	RR Unit ■ Remove single pole black connector (chassis ground). ■ Pull the bellow down on middle RH side and disconnect 2 pole T-type connector to main harness. ■ Loosen 2 hex bolts holding RR unit to frame. ■ Remove RR unit mounting from frame.	Hex Flange Bolt : M6 Socket Spanner : 10 mm
16.29	HT Coil Assy ■ Disconnect the white coupler from the main wiring harness HT coil. ■ Loosen the 2 Hex flange bolts mounted on the welded nut in frame. ■ Remove HT Coil assy from frame.	Hex Flange Bolt : M6 Socket Spanner : 10 mm

S. No.	Aggregate to Assemble/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos
16.30	RR Unit ■ Position RR unit on the frame and align the mounting holes tighten RR Unit to frame using 2 hex bolts. ■ Push the bellow upwards on middle RH side and connect 2 pole T-type connector to main harness. ■ Locate single pole black connector (chassis ground)	Hex Flange Bolt : M6 Socket Spanner : 10 mm
16.31	HT Coil Assy ■ Position the HT coil on the frame such that the coupler is on the left side and the HT coil is towards the rear of the frame ■ Assemble 2 Hex flange bolts M6X14 into the welded nut in frame ■ Tighten the bolts using 8 mm socket spanner to a torque of 10-12 Nm (1.0-1.2 KgM) ■ Connect the white coupler on the main wiring harness HT coil.	Hex Flange Bolt : M6 Socket Spanner : 10 mm Torque : 10 Nm

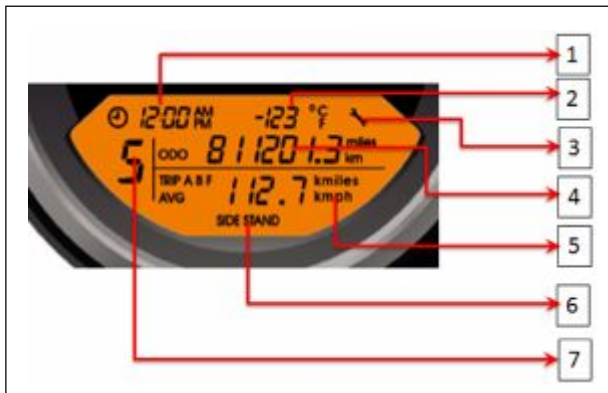
S. No.	Aggregate to Dismantle/ Instructions	Fastener, Size, Tool Usage, Precautions, Photos																														
16.32	Fuses ■ Fuse carrier is located under the rider seat. ■ Remove pillion seat & rider seat. ■ Open the fuse carrier lid & replace fuse as indicated inside the lid. ■ Replace the required fuse with the spare fuse available in the fuse carrier.																															
16.33	BLADE FUSE USAGE LIST	<table border="1"> <thead> <tr> <th>ID No.</th><th>Function</th><th>Rating</th></tr> </thead> <tbody> <tr> <td>F1</td><td>CHARGING FUSE</td><td>25A</td></tr> <tr> <td>F2</td><td>MAIN FUSE</td><td>25A</td></tr> <tr> <td>F3</td><td>IGNITION - EFI FUSE</td><td>15A</td></tr> <tr> <td>F4</td><td>INSTRUMENT CLUSTER/ SIGNALLING FUSE</td><td>10A</td></tr> <tr> <td>F5</td><td>HORN FUSE</td><td>10A</td></tr> <tr> <td>F6</td><td>LIGHTING FUSE</td><td>15A</td></tr> <tr> <td>SPARE-1</td><td>SPARE FUSE 1</td><td>25A</td></tr> <tr> <td>SPARE-2</td><td>SPARE FUSE 2</td><td>15A</td></tr> <tr> <td>SPARE-3</td><td>SPARE FUSE 3</td><td>10A</td></tr> </tbody> </table>	ID No.	Function	Rating	F1	CHARGING FUSE	25A	F2	MAIN FUSE	25A	F3	IGNITION - EFI FUSE	15A	F4	INSTRUMENT CLUSTER/ SIGNALLING FUSE	10A	F5	HORN FUSE	10A	F6	LIGHTING FUSE	15A	SPARE-1	SPARE FUSE 1	25A	SPARE-2	SPARE FUSE 2	15A	SPARE-3	SPARE FUSE 3	10A
ID No.	Function	Rating																														
F1	CHARGING FUSE	25A																														
F2	MAIN FUSE	25A																														
F3	IGNITION - EFI FUSE	15A																														
F4	INSTRUMENT CLUSTER/ SIGNALLING FUSE	10A																														
F5	HORN FUSE	10A																														
F6	LIGHTING FUSE	15A																														
SPARE-1	SPARE FUSE 1	25A																														
SPARE-2	SPARE FUSE 2	15A																														
SPARE-3	SPARE FUSE 3	10A																														

INSTRUMENT CLUSTER



A. Main LCD	E. Mode button
B. Speedometer	F. Select button
C. Tell tales	G. Compass LCD
D. Tachometer	H. Fuel gauge

A. MAIN LCD



1. Clock
2. Ambient Temperature
3. Service reminder
4. Odometer
5. Trip Value(A/B & F), AVG speed A/B
6. Side Stand indication
7. Gear position indication

CLOCK

- Display in 12 hour format with AM/PM indication.
- Will reset to 12:00 AM when battery is disconnected.



CLOCK SETTING

Function	Switch	Pressure time (sec)	Action
CLOCK SETTING MODE	SELECT & MODE pressed with No Speed input	≥ 3 sec	In ignition key ON position Enters into clock setting mode and hour digits starts to blink
	SELECT	< 1 sec	Hours value shall increment by 1 accordingly for no of press
	SELECT	≥ 3 sec	Hour value saved and minute digits starts to blink
	SELECT	< 1 sec	Minutes value will increase by 1 by each press of the "Select" button
	SELECT	≥ 3 sec	Minute value save and PM/AM digits starts to blink
	SELECT	< 1 sec	PM / AM is interchangeable by each press of the "Select" button
	SELECT	≥ 3 sec	PM / AM save and exit from clock set mode
	NO ACTION	20 sec	Auto exit without saving changes and continue with previous setting

WARNING

NEVER attempt to operate the select or reset buttons while riding the motorcycle. Failure to do so may cause loss of concentration and unstable riding, leading to a potential accident, resulting in serious injury to both rider and other road users, besides causing severe damage to the motorcycle.

AMBIENT TEMPERATURE INDICATION

- Ambient temperature display can be changed from Celsius to Fahrenheit and vice versa.
- The temperature indication may increase during vehicle riding/engine ON condition due to increase of engine temperature.
- Ambient temperature indication tolerance is $\pm 2^{\circ}\text{C}$.



NOTE

The ambient temperature valve should be referred to only when the engine is switched "OFF" and the engine is in cold condition.

The temperature displayed will be higher if the engine is running or immediately after it is switched "OFF" since the sensor will only pickup the higher temperature surrounding it.

TEMPERATURE UNIT CHANGEOVER



Temperature sensor push button management.

Required button

- Mode

Function	Button	Pressure time (sec)	Action
TEMPERATURE UNIT CHANGE OVER	MODE	≥ 10 secs	In ignition key ON position, long press and hold MODE button for period ≥ 10 secs to reset temperature units from degree Celsius to Fahrenheit and vice versa.

SERVICE REMINDER

- Service reminder is provided to remind about service due.
- Spanner symbol will flash till vehicle is serviced at service center.
- Service reminder can be reset ONLY by authorized personnel at service center after service is completed.
- Service reminder symbol will flash on as per below distance input from odometer.
 - 1st service – 450 kms
 - 2nd service – 4900 kms
 - from there on for every 5000 kms from previous value (ex: 9900, 14900 etc.)



WARNING

DO NOT use high pressure water jet directly on instrument cluster for cleaning. Use only water spray cleaning and wipe it with soft dry cloth.

ODOMETER

- Displays the cumulative kilometers the vehicle has covered.



TRIP A/B & AVG SPEED A/B

- Trip A/B indicates distance travelled in particular trip.
- Avg A/B indicates average speed of vehicle in particular trip mode.



Function	Switch	Pressure time (sec)	Action
TRIP A	SELECT	<1sec	In ignition key ON position, Move to: AVA A
	SELECT	> 2.5 sec	TRIP A/AVG A RESET
AVG A	SELECT	<1sec	Move to: TRIP B
	SELECT	> 2.5 sec	TRIP A/AVG A RESET
TRIP B	SELECT	<1sec	Move to: AVG B
	SELECT	> 2.5 sec	TRIP B/AVG B RESET
AVG B	SELECT	<1sec	Move to: TRIP A
	SELECT	> 2.5 sec	TRIP B/AVG B RESET

TRIP "F" MODE

- The word, Trip "F" will flash when the Trip "F" mode is active.
- Trip "F" is provided to measure distance travelled by the vehicle when fuel level in the vehicle is 5.5 ± 0.5 lts. in the fuel tank so that the rider can plan fuel filling accordingly based on his trip requirements, Trip "F" will get activated when needle on fuel gauge enters the red zone.

- Trip F mode would come into function automatically.
- Trip F mode would de-activate automatically if fuel is filled above 5.5 ± 0.5 lts.
- During Trip F mode rider can toggle between Trip A/B but mode will return automatically to Trip "F" after 25 ± 5 secs.



NOTE

- Trip "F" will stop displaying at approximately 90 ± 5 seconds AFTER fuel level in tank is above 5 ± 0.5 litres, side stand is fully retracted AND Ignition is switched ON.

WARNING

NEVER attempt to operate the select or reset buttons while riding the motorcycle. Doing so may cause loss of concentration and unstable riding, leading to a potential accident, resulting in serious injury to both rider and other road users, besides causing severe damage to the motorcycle.

6. SIDE STAND INDICATOR

- Indicates when side stand is extended.

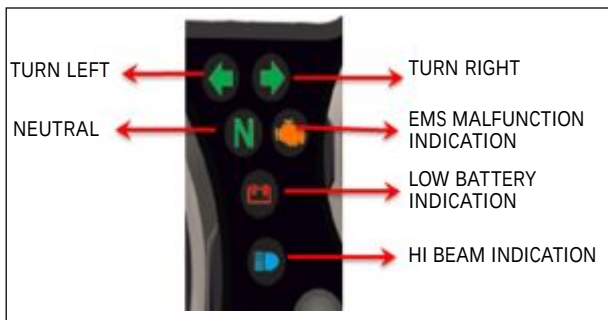


GEAR POSITION INDICATION

- Displays the gear position in which the vehicle is traveling.
- When in neutral the indication will be “0”.
- When in gear the appropriate number between 1 to 5 will be displayed.



C. TELL TALES



1. **Turn Left** : Left turn signal ON.
2. **Turn right**: Right turn signal ON.
3. **Neutral** : Transmission is in Neutral.
4. **Low Battery Indication**: Indicator will glow continuously if ignition switch is ON & engine is not running. Indication will switch off as soon as engine is started. If battery voltage is below 12 V, indicator will glow continuously indicating a low battery.
5. **High Beam Indication**: Head lamp high beam ON.

D. TACHO METER



1. Indicates the RPM at which engine is working.
2. Useful for right selection of gear with respect to engine RPM.

WARNING

- Do not run engine with gears in neutral as RPM will go beyond red zone.
- Do not ride motorcycle in lower gears with high acceleration as it will cause RPM to start to red zone & affect the main parts inside engine.

G. COMPASS LCD



- Useful for Navigation during riding.
- Text indicates heading direction of vehicle. (N, S, E, W, NE, NW, SE, SW)
- Arrow will always point to North.
- Eg. if heading Northwest, text will display NW and arrow **will be in top right corner to indicate North.**

CAUTION

1. Avoid using magnetic key chains, magnetic/ferrous materials or electronic components with interference around cockpit area to avoid malfunctioning of digital compass.
2. If compass LCD enters into calibration mode("CA" flashing) ride vehicle in "8" direction slowly to calibrate the compass or approach nearest authorized service center for assistance and proper calibration.
3. Indication fluctuation during riding is normal operation due to impact of road irregularities.
4. Compass indication tolerance is $\pm 45^\circ$.

WARNING

DO NOT focus on the compass while riding. Doing so may cause loss of concentration and unstable riding, leading to a potential accident, resulting in serious injury to both riders & other road users besides causing severe damage to the motorcycle.

H. FUEL GAUGE



- Indicates fuel level in tank

WARNING

Do not use the motorcycle for long duration with the fuel indication in red zone. Refuel at the earliest.

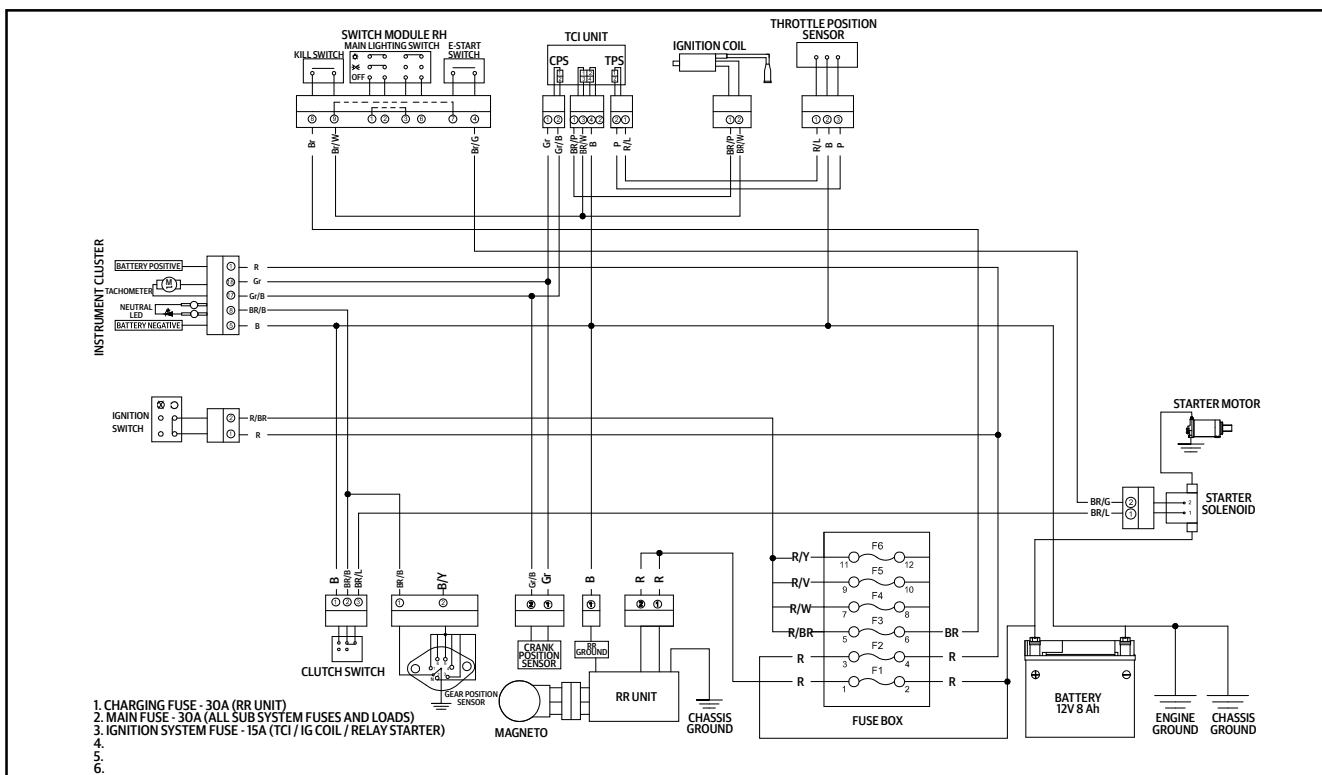
Failure to do so may cause the motorcycle to run out of fuel and get stranded, in addition to causing serious damage to the fuel pump.

SECTION 17 - WIRING HARNESS

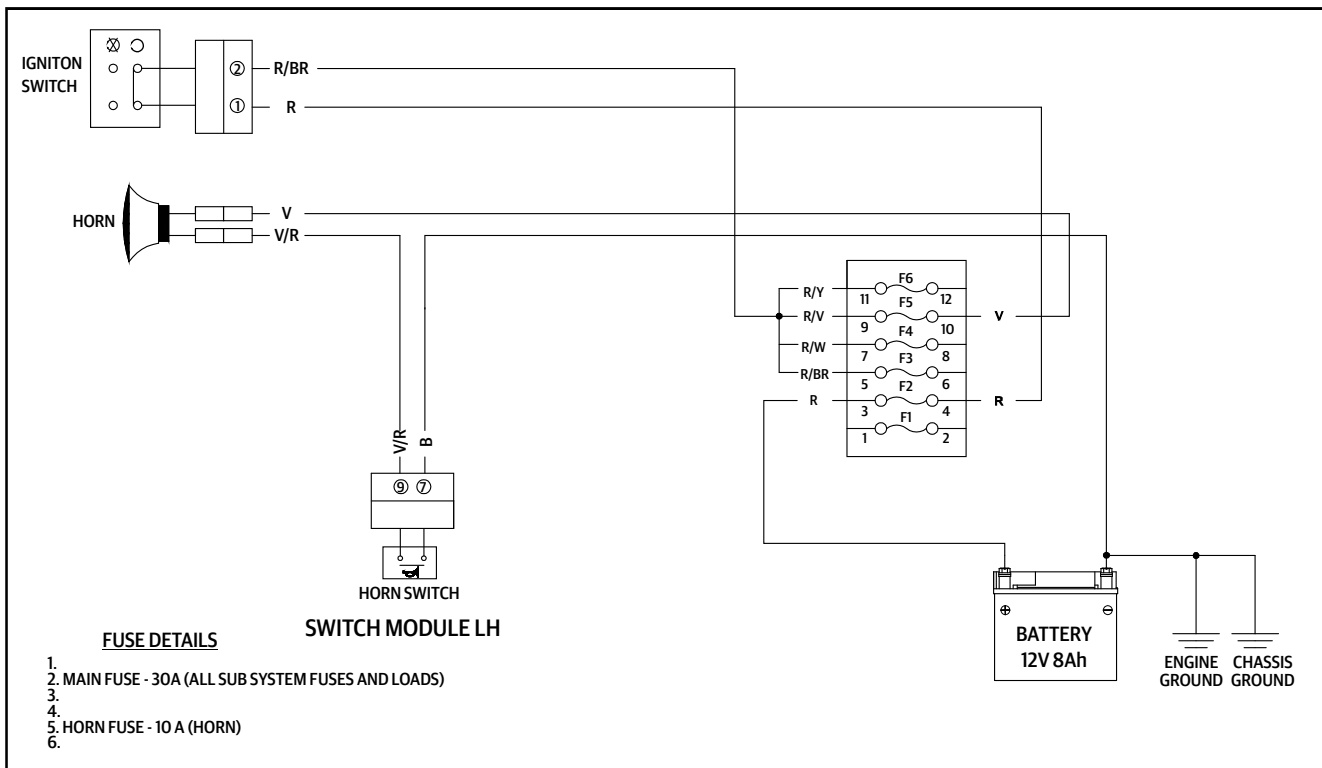
COMPLETE DIAGRAM - LS 410 (HIMALAYAN)



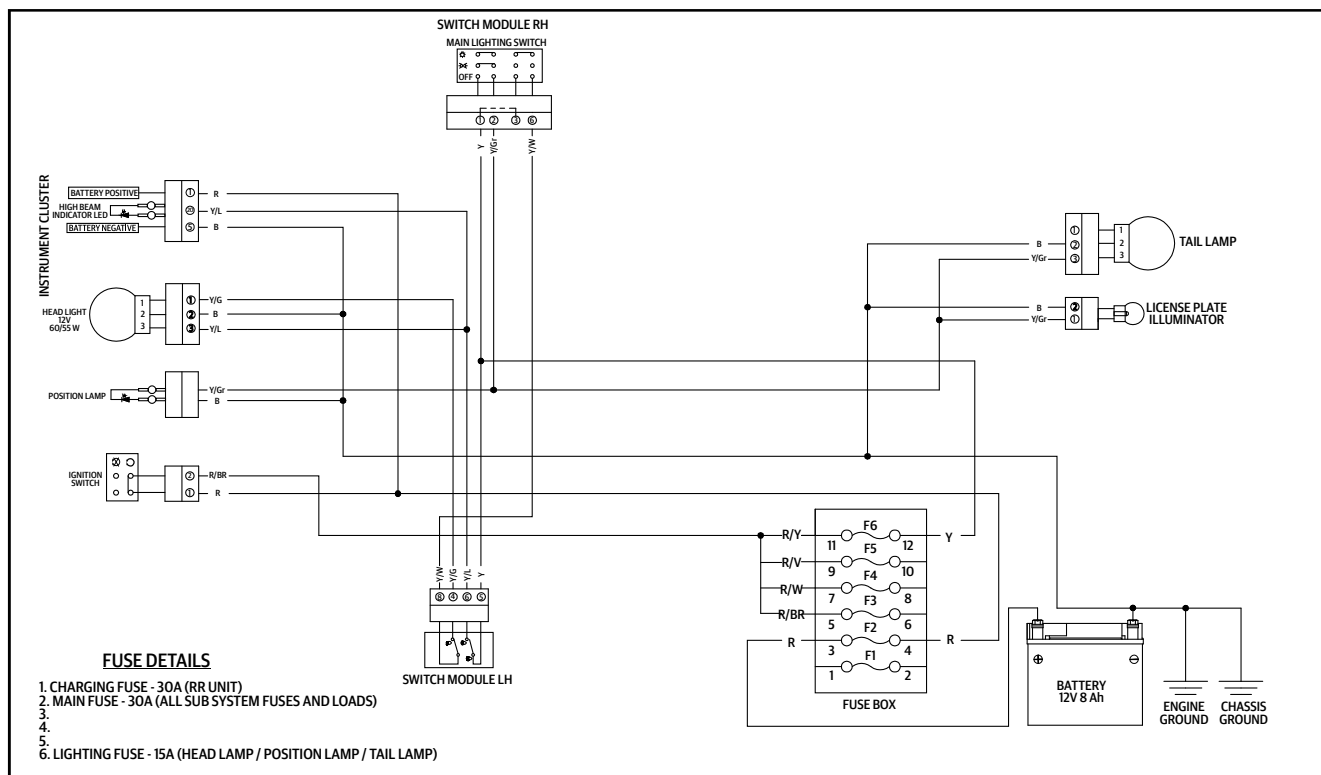
STARTING, CHARGING & IGNITION - HIMALAYAN



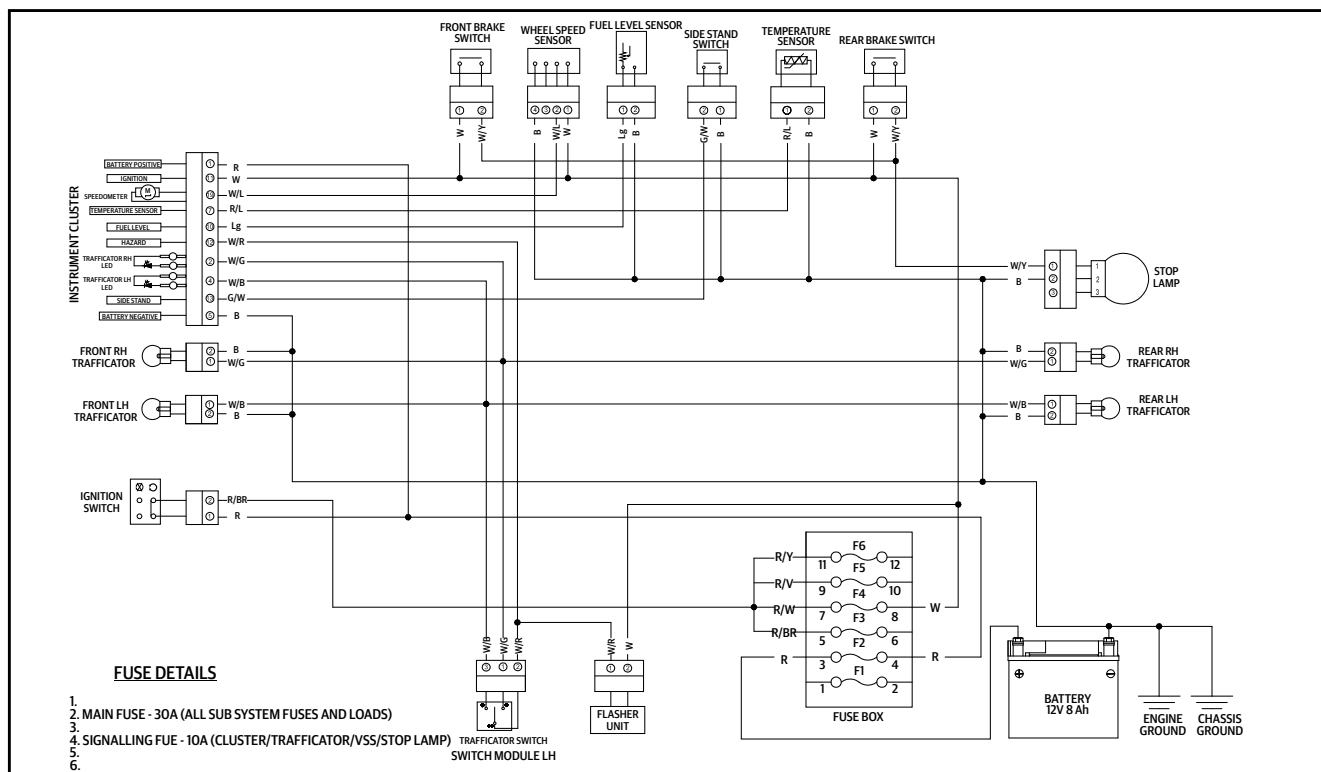
CIRCUIT DIAGRAM HORN - HIMALAYAN



CIRCUIT DIAGRAM LIGHTING SYSTEM - HIMALAYAN



CIRCUIT DIAGRAM SIGNALLING SYSTEM - HIMALAYAN



18. TROUBLE SHOOTING

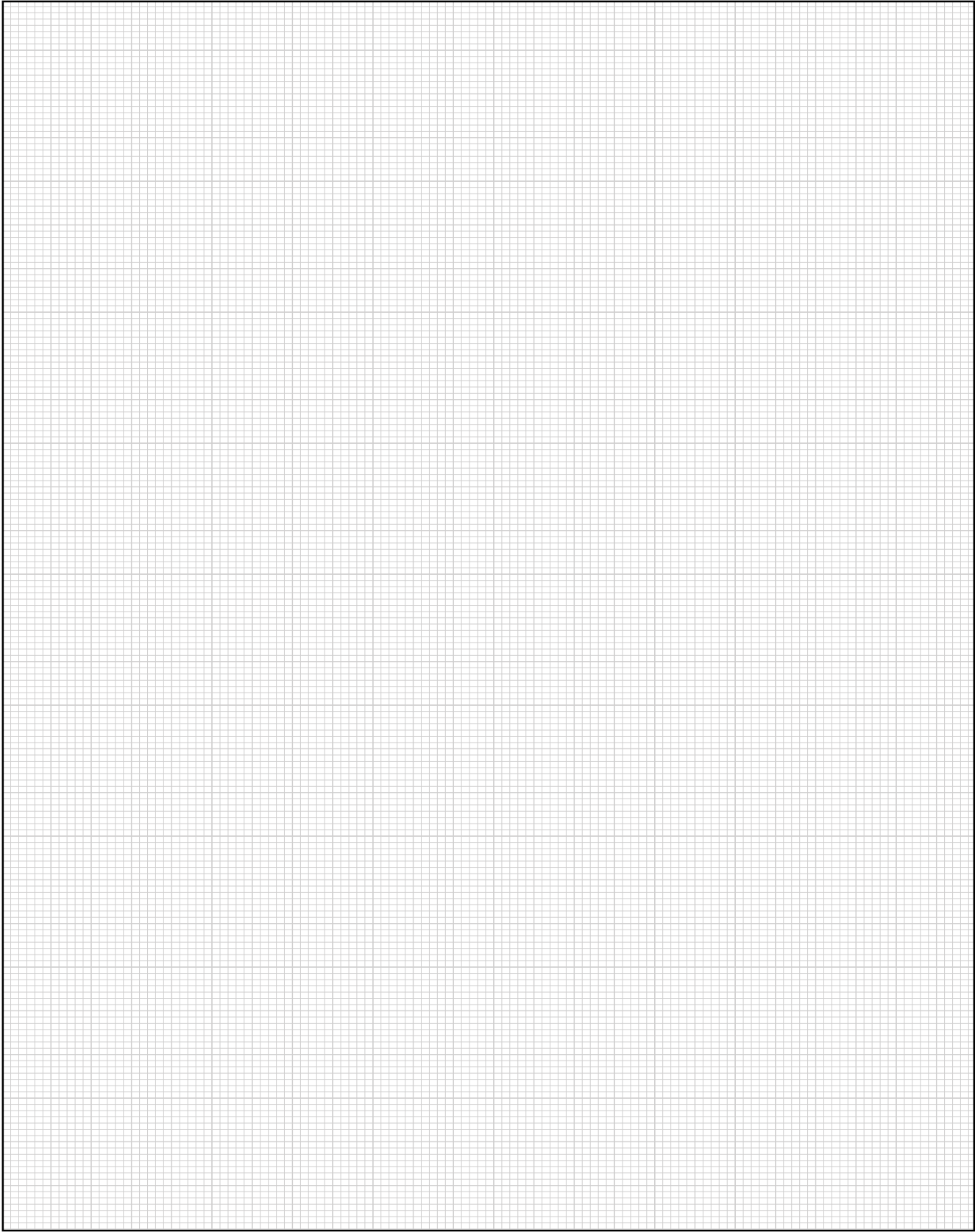
WARNING

The trouble shooting section of this Service 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) Fuse failed	Replace with new fuse
II. ENGINE MISFIRING	
1) Loose spark plug gap	Fix cap / lead firmly
2) Spark plug fouled	Clean spark plug or non specified heat range plug.
3) 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
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.

CAUSES	REMEDIES
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
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

NOTES





ROYAL ENFIELD

ROYALENFIELD.COM