Contents

Discover 125

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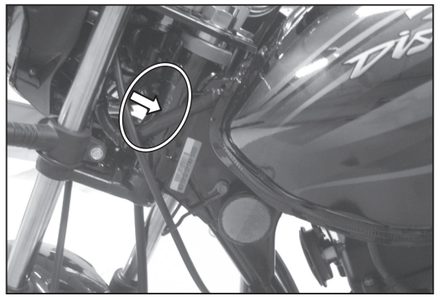
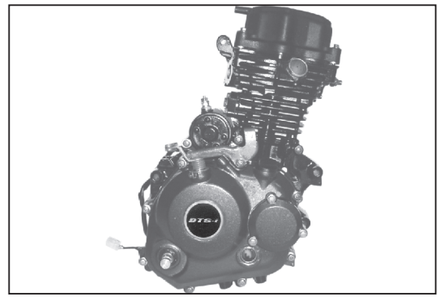
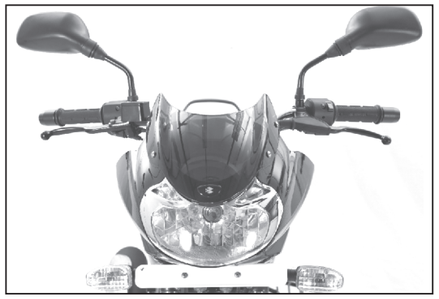
I Read ..... I Learn

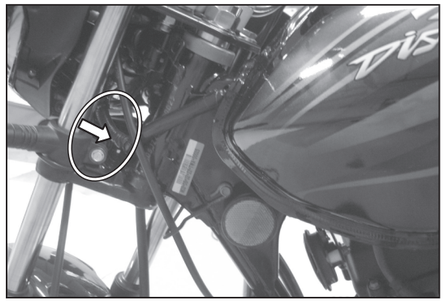




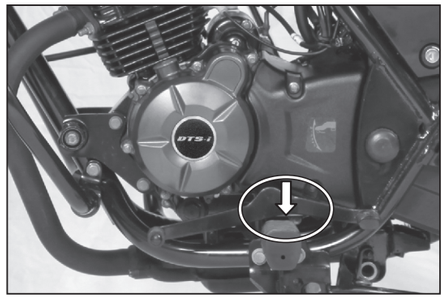


IDENTIFICATION

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

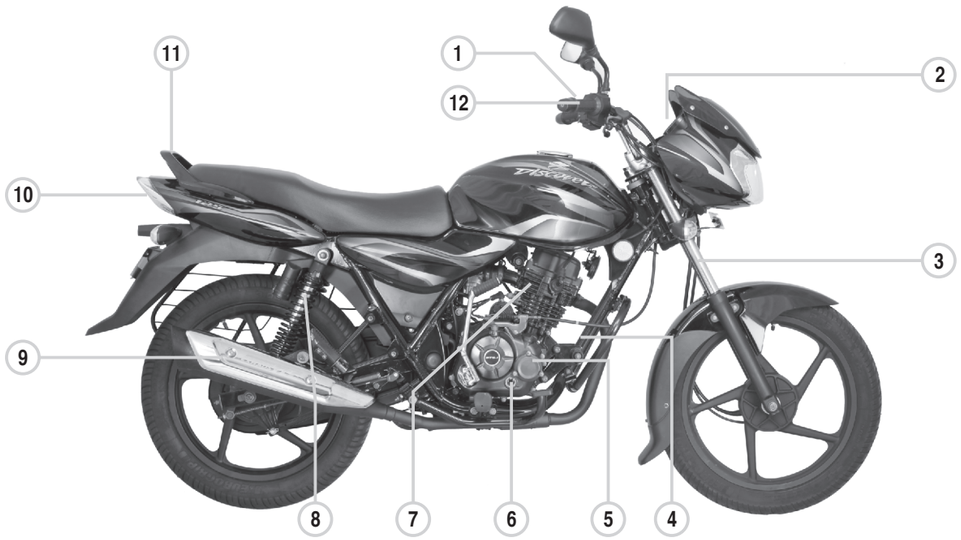


Frame Number Location
On LH Side of Steering Tube
(Alpha-Numeric - 17 Digits)



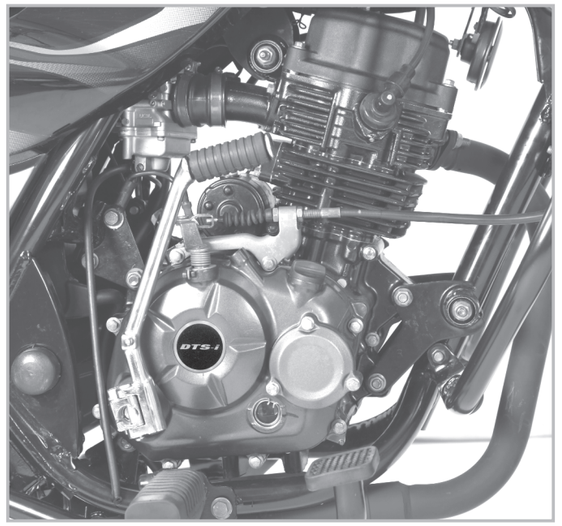
Engine Number Location
On LH Side Crankcase Near Gear Change Lever
(Alpha-Numeric - 11 Digits)

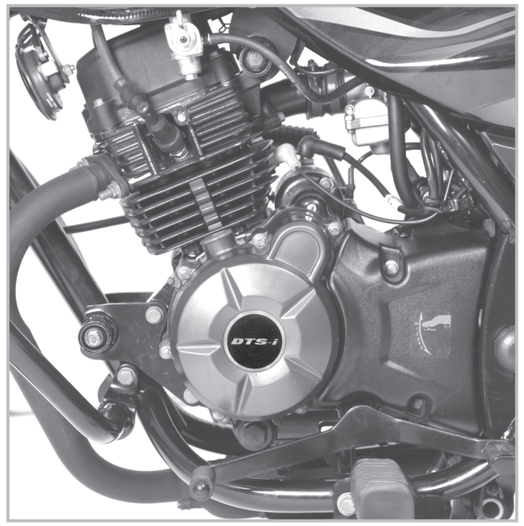
1. LH Control Switch
2. Speedo Console
3. Front Fork with Anti Friction Bush
4. Semi Double Cradle
5. Paper Oil Filter
6. Engine Oil Level Window
7. DTS-Si Engine - 5 Speed Transmission
8. Nitrox Rear Suspension
9. Silencer
10. LED Tail Lamp with Twin Colour Lens
11. Grab Handle
12. RH Control Switch



SALIENT FEATURES

PERFORMANCE





Features	Advantages	Benefits
DTSi engine - 124.6 cc Engine power : 8.08 kW, 11.0 PS Engine torque : 10.80 N.m, 1.1 kgm	New generation technology engineered for best mileage and performance as well.	Better mileage and power.
5 Speed Transmission ExhausTEC	Wider range of gear ratios to utilize high torque of engine	Better drive-ability and the best fuel economy
Molycoat piston Nozzle oil jet in lubrication circuit	Reduced friction Better cooling of piston Protection from seizure	Increased fuel efficiency. Better life of component.
Electric start DC ignition & Digital CDI Auto choke	Quick and easy starting. Consistent engine performance	Feather touch engine starting No hassle of choke operation. Consistent mileage, power and pick up.
Optimum ride control switch	Indicates optimum throttle opening for best mileage.	Enhanced fuel efficiency. Greater safety while driving.
DC Lighting system	Intensity & illumination of head light do not change with engine / vehicle speed	Constant bright beam from head light even at low engine / vehicle speed.

STYLE

Features	Advantages	Benefits
Athletic and muscular petrol tank, side covers and seat cowling.	Stylish and eye catching looks Combination of Black & Chrome styling	Sporty styling Improves personality of the rider.
New head lamp with attractive fairing and twin pilot lamps.		
Innovative and Distinctive Graphics.		
LED tail lamp having bright chrome masking.		
Front Blinkers mounted on front fork pipes.		
Black colored engine, wheels, silencer and other components.		

COMFORT AND CONVENIENCE

Features	Advantages	Benefits
Trip meter	For recording distance covered in a trip / tour. Also helps in calculating mileage.	Easy to record trip distance.
Fuel Gauge	Displays approx. petrol qty. remaining in the petrol tank.	More convenience.
Low battery indicator	Reminds user to get battery charged in time.	For maintaining battery in healthy condition.
Engine 'Oil Level Window'	For easy inspection & monitoring oil level.	No hassle of removing, cleaning, dipping 'Dip Stick' to check oil level.
Telescopic front fork with anti-friction bush & 130 mm stroke. Nitrox Rear Suspension with 110 mm wheel travel.	Minimum friction between fork pipes. Longest suspension stroke in its class of bikes.	Comfortable ride on any type of roads and for any distance. Better life of front fork oil seal & other parts of fork.
MF battery (ES version) with unique vent mechanism.	Low maintenance - No spillage of electrolyte.	No hassle of frequent topping up of battery.
Clear lens LED Tail Lamp with 12 nos. of LEDs	Stylish looks. Minimum consumption of battery. Long life.	Low Maintenance cost and enhanced battery life.

SAFETY

Features	Advantages	Benefits
Robust semi double cradle frame with longest wheel base - 1305 mm - in its class of motorcycles.	Excellent ride and handling stability, balance and vehicle dynamics.	Safe to drive on highway.
200 mm dia front disc (Disc Version), 130 mm diameter front drum (drum Version) brake & 130 mm dia rear brake drum.	Efficient and effective braking.	Safety.
Powerful head light, Number Plate lamp, and Pass switch.	Bright and powerful illumination. Clear visibility of rear number plate from long distance. Pass switch facilitates over taking.	Safe night driving.
Alloy wheels & unidirectional tyres.	Better road grip and nimble handling.	Easy to maneuver and safe to drive. No maintenance of spoke tightening.
Disc brake system with disc cover.	Enhanced life of disc pads.	For maintaining disc brake good condition & durability.

Engine & Transmission

Type		:	Four stroke, Natural air cooled
No. of cylinders		:	One
Bore		:	54.00 mm
Stroke		:	54.4 mm
Engine displacement		:	124.6 cc
Compression ratio		:	9.8 $\pm$ 0.5 :1
Idling Speed		:	1400 $\pm$ 100 rpm in warm condition
Max. net power		:	8.08 kW, 11.0 PS @ 8000 rpm
Max. net torque		:	10.8 N.m, 1.1 kgm @ 5500 rpm
Ignition System		:	DC, Microprocessor controlled Digital CDI with TRICS
Ignition Timing		:	Twin map CDI
Fuel		:	Unleaded Petrol, 87 RON Minimum
Carburettor		:	UCAL VM20
Spark Plug		:	Champion PRZ9HC & BOSCH UR4AC (Resistive)
Spark Plug Gap		:	0.7 to 0.8 mm
Lubrication		:	Wet sump, Forced Lubrication
Starting		:	Kick Start, Electric Start
Clutch		:	Wet Multi Disc Type
Transmission		:	5 Speed
Primary reduction		:	3.571 : 1 (75/21)
Gear Ratios	1st Gear	:	2.833 : 1 (34/12)
	2nd Gear	:	1.824 : 1 (31/17)
	3rd Gear	:	1.333 : 1 (28/21)
	4th Gear	:	1.087 : 1 (25/23)
	5th Gear	:	0.909 : 1 (20/22)
Final Drive Ratio		:	3.071 : 1 (43/14)
Overall Gear Ratios	1st Gear	:	31.08 : 1
	2nd Gear	:	20.00 : 1
	3rd Gear	:	14.63 : 1
	4th Gear	:	11.92 : 1
	5th Gear	:	9.97 : 1

Chassis & Body

Frame Type		:	Semi Double Cradle
Suspension	Front	:	130 mm Fork travel, Telescopic
	Rear	:	110 mm Rear Wheel travel, Nitrox (Gas Filled)
Brakes	Front & Rear	:	Front - Disc & Rear - Mechanically expanding shoes
Brake Size	Front	:	200 mm Disc (disc version) / 130 mm drum (drum version)
	Rear	:	130 mm Drum
Tyres	Front	:	2.75 x 17, 41 P, Unidirectional
	Rear	:	3.00 - 17 x 17, 50 P, Unidirectional
Tyre Pressure	Front	:	1.75 kg / Cm^2 (25.0 PSI)
	Rear (Solo)	:	2.00 kg / Cm^2 (28.5 PSI)
	Rear (with Pillion)	:	2.25 kg / Cm^2 (32.0 PSI)
Rims	Front	:	1.4 x 17" Die Cast Al. Alloy Wheel
	Rear	:	1.6 x 17" Die Cast Al. Alloy Wheel
Fuel Tank Capacity		:	8.0 Liters
Usable Reserve		:	1.5 Liters
Unusable Reserve		:	0.8 Liter

TECHNICAL SPECIFICATIONS

Controls

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

Electricals

System	:	12 V (DC)
Battery	:	12V 5Ah MF Type (Electric Start)
Head Lamp	:	12 V 35/35 W
Tail / Stop Lamp	:	LED Type
Side Indicator Lamp	:	12 V 10 W (4 Nos. - Amber Bulbs)
Position Lamp	:	12 V 3 W (2 Nos.)
Rear Number Plate Lamp	:	12 V 5 W
Fuel Meter illumination Bulb	:	2.0 W (1 Nos.)
Speedometer Back light	:	2.0 W (1 Nos.)
Neutral Indicator	:	2.0 W
Turn Signal Indicator	:	2.0 W
Hi-beam Indicator	:	2.0 W
Battery Low Charge Indicator	:	2.0 W
Horn	:	12 V DC
Fuel Gauge	:	Cross Coil Movement

Dimensions

Length	:	2035 mm
Width	:	760 mm
Height	:	1087 mm
Wheel Base	:	1305 mm
Saddle Height	:	800 mm
Turning Circle Radius	:	2100 mm (min)
Ground Clearance	:	165 mm

Weights

Vehicle Kerb Weight	:	119.2 kg (Disc Version) 118.5 kg (Drum Version)
Gross Vehicle Weight	:	249.2 kg (Disc Version) 248.5 kg (Drum Version)

Performance

Maximum speed	:	100 Kmph (with single rider 68 kg)
Climbing ability	:	25% (14^0 Max)

Notes :

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

FREQUENTLY ASKED QUESTIONS - FAQ's

What are the distinct features of Discover 125?

Following are the distinct features of Discover 125

- Combination of Optimal Mileage & Power - Delivers Best Mileage in 125cc category.
- 5 Speed Transmission - Ensures optimum utilization of Power & torque .
- Quick throttle response - Max. power 11PS @8000 rpm & 10.8 N.m @5500 rpm
- Best power to weight ratio in its class 92.8 PS/Ton - helps in better riding in difficult terrains
- Auto Choke - Hassle free starting in all weather conditions.

What is the current Discover portfolio & what is the need & scope of Discover 125?

Discover Portfolio

Discover currently has two exciting offerings which are catering to the requirement of two distinct sets of commuters:

Discover 100 for mileage conscious commuters looking for higher category features, available at an attractive price

Discover 150 for higher power & performance conscious commuters, available at an affordable price

Need & Scope

The existing Discover variants are essentially catering to the requirements of the two ends of the commuter segment. There is still a significant base of commuters who prefer optimum combination of mileage & power of the above two variants. They desire to upgrade from 100 cc but are averse to take the cost & risk of a leap jump to 150 cc.

Discover 125 is expected to cater to the unfulfilled need of the above set of commuters. Its performance is pegged between the performances of the existing two variants. It is an attempt to bring in best of both the worlds i.e. Mileage & power. The intervention is expected to strengthened & spread the Discover excitement across the commuter segment.

How Discover 125 will be different from Discover 100 & 150 in terms of form & graphics?

Discover 125 will have the form & build similar to Discover 100 & 150. But it will have a distinct graphics & color combination which would be the key visual differentiation from the other variants.

Thus all Discover variants will have a distinct graphics helping them to differentiate with each other.

Why similar kind of looks like Discover 100 & 150 is provided in Discover 125?

The frame & style of Discover is very popular & has been highly appreciated by the customer since long. Discover 125 has been conceived to drive on that popularity & fulfill the requirements of significant chunk of customers who desires for best of both the worlds i.e. Mileage & Power. It will also ensure similarity across the Discover portfolio.

Which competition bike Discover 125 is targeted at?

Discover 125 is essentially expected to draw in 100cc customers who desires to upgrade but don't want to take the cost risk of a leap jump to 150cc. Therefore key source of business for Discover 125 would largely come from:

Splendor Pro

Passion Pro

What would be the key driver for Discover 125 purchase?

The desire to upgrade to higher cc bike & get the best of both worlds i.e. mileage & power without loosing out much in terms of cost would be the strong driver for purchase.

What is going to be the role of Discover 125 in short to medium /long term?

Short Term: Upgrade customers from Discover 100 to higher cc Discover & that is why the initial pricing is much closer to Discover 100

Long Term: Gain from Splendor & Passion as Discover 125 as an offering is an optimal combination for power, mileage & value. Therefore anticipating good shift from competition brand to Discover 125

FREQUENTLY ASKED QUESTIONS - FAQ's

How Discover 125 is different from Discover 100 & 150 in key technical parameters?

	Discover 100	Discover 125	Discover 150
Engine cc	94.38 DTS-Si	124.6 DTSi	144.8 DTSi
Power PS	7.7 @ 7500	11 @ 8000	13 @ 7500
Torque NM	7.85 @ 5000	10.8 @5500	12.5 @ 5500
Kerb Weight Kg	115	118.5	121

What is the difference between earlier Discover 125 & New Discover 125?

Specification	New Discover 125	Old Discover 125
Bore	54.00 mm	57.00 mm
Stroke	54.4 mm	48.8 mm
Compression Ratio	9.8 ± 0.5 :1	9.5 ± 0.5 :1
Gear	5 Speed gear	4 Speed gear
Chassis	Semi Double Craddle	Double Craddle type
Engine	Black Colour	Silver Colour Engine
Style	Stylish Look	Regular Looks
Weight (GVW)	249.2 Kg	259 Kg
Auto choke	Available	Not Available
Thermal sensor	Available	Not Available
Ignition System	DC Ignition	AC Ignition
Rear Suspension	Nitrox (Gas Filler)	SuspensionRegular Suspension

COMPARISON WITH COMPETITORS VEHICLES

Description	"Discover 125"	Hero Honda Passion Pro	Hero Honda Splendor Pro	Advantages of "Discover 125"
POWER AND PERFORMANCE				
Engine Cubic Capacity	**4 Stroke 124.6 CC**	4 Stroke 97.2 CC	4 Stroke 97.2 CC	Optimum combination of mileage & power
Engine Horse Power	**11 PS @ 8000 rpm**	7.8 PS @ 7500 rpm	7.8 PS @ 7500 rpm	Power to stay ahead
Engine Torque	**10.80 Nm @ 5500 rpm**	8.04 Nm @ 4500 rpm	8.04 Nm @ 4500 rpm	Unparalled pulling powers in all gears
Transmission	**5 Speed**	4 speed	4 speed	Better fuel efficiency & Smoother Cruising
Max. Speed	**100 Kmph**	82.5 Kmph	82 Kmph	High- speed ability when needed
Ignition System	**DC Twin map CDI**	Electronic CDI	Digital CDI	Seamless changes in ignition maps according to change in vehicle load. Quick & effort less engine starting.
Trics	**Yes**	Not available	Not available	
Exhaus TEC	**Yes**	Not available	Not available	Effortless pulling ability at low speed even in top gear
Starting Mechanism	**Electric + Kick Start**	Kick Start (Electric Start Optional)	Electric + Kick Start	Soft & easy self start.
Power to weight ratio	**92.8 ps/ton**	64.99 ps/ton	68.8 ps/ton	Better throttle response , Better Pick up in difficult terrains.
STYLE				
Styling	**Sporty Looks**	Conventional	Conventional	Premium, Sporty & attractive look The best in its class of bikes
Graphics	**Unique Graphics**	Regular Graphics	Regular Graphics	
Head Light with Fairing	**Fairing with visor.**	Regular design	Multi reflector	

COMPARISON WITH COMPETITORS VEHICLES

Description	"Discover 125"	Hero Honda Passion Pro	Hero Honda Splendor Pro	Advantages of "Discover 125"
Tail Lamp	**LED**	Multi reflector	Regular	Minimum consumption of battery energy. Long life & premium styling.
Rear Number Plate Lamp (For clear visibility)	**YES**	Not available	Not available	Clear visibility even from long distance.
Twin Prismatic Pilot Lamps	**Twin Pilot lamp**	Not available	Not available	Safe driving during low light condition of dusk / dawn.
Front Suspension	**Front Telescopic Fork 130 mm (Stroke)**	Telescopic Fork.	Telescopic Fork.	Longest suspension travel in its class of bikes.
Front Suspension	**Nitrox (Gas Filled) Suspension With 110mm rear wheel travel 5 step adjustable**	Hydraulic rear Shock Absorbers. 5 step. adjustable	Hydraulic rear Shock Absorbers. 5 step. adjustable	The best ride comfort on any type of road for any distance.
Auto Choke	**YES**	Not available	Not available	Easy & quick engine starting even in severe cold conditions.

PERIODIC MAINTENANCE & LUBRICATION CHART

Sr. No.	Operation	Servicing	RECOMMENDED FREQUENCY 1st	2nd	3rd	4th	5th	6th	7th	
		Kms	750	5000	10000	15000	20000	25000	30000	
1.	Servicing		✓	✓	✓	✓	✓	✓	✓	1st - 750 Kms / 30 Days 2nd @ 5000 Kms onwards
2.	Engine idling speed / CO%	A	A	A	A	A	A	A	A	
3.	Valve tappet clearance	A	A	A	A	A	A	A	A	
4.	Engine oil* - Bajaj DTS-i 10000	R	R	Top up#	R	Top up#	R	Top up#	R	Replace at 10000 Kms*
5.	Oil strainer / Centrifugal filter	CL	CL		CL		CL		CL	Clean at 10000 Kms
6.	Engine oil filter / Paper oil filter	R	R	R	R	R	R	R	R	Replace at every service
7.	Spark plug functioning / Gap (2 nos.)	C, A, R	C, A	C, A	C, A	R	C, A	C, A	R	Replace at every 15000 Kms
8.	Air cleaner element Clean / Replace**	CL, R	CL	CL	CL	R	CL	CL	R	Clean at every 5000 Kms Replace at every 15000 Kms
9.	Air filter cover 'O' Ring	R					R			Replace at every 20000 Kms
10.	Fuel cock sediment bowl cleaning	CL		CL	CL	CL	CL	CL	CL	
11.	Carburettor float bowl cleaning	CL			CL		CL		CL	Clean at every 10000 Kms
12.	Carburettor rubber duct	C, R	C	C	C	C	R	C	C	Replace at every 20000 kms
13.	Fuel pipes	C, R	C	C	C	C	R	C	C	Replace at every 20000 kms
14.	Battery electrolyte level	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
15.	Clutch lever free play	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
16.	Throttle grip play	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
17.	Rear brake pedal free play	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
18.	Brake lining or pad wear	CL, R		CL	CL	CL, R	CL	CL	CL, R	Replace at every 15000 kms
19.	Brake fluid level / Top up / Replace	C, A, R	C, A	C, A	C, A	C, A	C, A	C, A	R	Replace at every 30000 kms
20.	Master cylinder cup and dust seal	R							R	Replace at every 30000 kms
21.	Caliper piston seal and dust seal	R							R	Replace at every 30000 kms
22.	Brake hose pipe	C, R							C, R	Replace at every 30000 kms
23.	Brake cam & pedal pivot pin	L				L			L	
24.	Steering play	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	
25.	Steering stem bearing	C, L, R			C,L,R		C,L,R		C,L,R	
26.	All fasteners tightness	C, T	C, T	C, T	C, T	C, T	C, T	C, T	C, T	
27.	Rear sprocket fasteners	C, T	C, T	C, T	C, T	C, T	C, T	C, T	C, T	
28.	Rear wheel rubber shock damper	C, R			C, R		C, R		C, R	Replace at every 10000 kms
29.	Silencer drain hole cleaning	CL	CL	CL	CL	CL	CL	CL	CL	Clean at every 5000 Kms
30.	Cylinder head de-carbonising, valve lapping & Replace valve oil seals	CL				CL			CL	Clean at every 15000 Kms
31.	Engine air breather tube	R					R			Replace at every 20000 Kms
32.	Drive chain slackness adjustment & lubrication	C, A, L	C,A,L	C,A,L	C,A,L	C,A,L	C,A,L	C,A,L	C,A,L	Lubricate at every 500 kms. A- slackness whenever reqd.
33.	Drive chain remove, clean, insp. & lubricate (O/H)	CL, L			CL, L		CL, L		CL, L	At every 10000 Kms
34.	Drive chain link lock	R			R		R		R	Replace at every 10000 Kms
35.	Wheel bearing (for non sealed bearings only)	C, L					C, L			At every 20000 Kms

PERIODIC MAINTENANCE & LUBRICATION CHART

Sr. No.	Operation		RECOMMENDED FREQUENCY							
		Servicing	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	750	5000	10000	15000	20000	25000	30000	
36.	Tyre tread wear (replace if worn out till TWI limit)	C, R			C, R	C, R	C, R	C, R	C, R	At every 5000 kms i.e. at every service after 2nd service
37.	Front fork oil	R					R			Replace at every 20000 Kms
38.	TPS, Thermal sensor & Auto choke functioning	C, A	C, A	C, A	C, A	C, A	C, A	C, A	C, A	At every 5000 Kms
39.	Rear shock absorber- Check gas pressure	C, A					C, A			At every 20000 Kms.
40.	Starter clutch bush kit	CL, R				CL, R			CL, R	
41.	Clutch switch cleaning	CL			CL		CL		CL	
42.	General lubrication	L	L	L	L	L	L	L	L	
43.	Swing arm pivot pin lubrication	L					L			Lubricate at every 20000 Kms

● : Indicates operation to be performed.

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

A - Adjust • C - Check • CL - Clean • L - Lubricate • T - Tighten • R - Replace

Note :

Parts / Lubricants to be replaced as per Periodic Maintenance & Lubrication Chart are mandatory and the same are chargeable to customer.

Recommended Oil :

A high performance engine oil developed by Bajaj auto, specially formulated for vehicles with DTS-i engine.

Bajaj Auto recommends engine oil for drain interval, better performance of engine components & warranty benefits.

Engine Oil Grade	SAE 20W50 of API 'SL', JASO MA Grade.
Replacement Frequency*	1st replacement at 750 Kms. / 1st service. Thereafter at every 5,000 Kms.
Recommended Quantity	Drain & Refill 1000 ml., Engine Overhaul 1100 ml.

Battery Checking during PDI :

Always confirm the charge condition of the battery using a load tester at PDI stage (If the voltage measured is less than 12.3 volts & the battery load tester LED glow yellow / red then battery needs to be charged) "Never crank battery which does not pass load test.

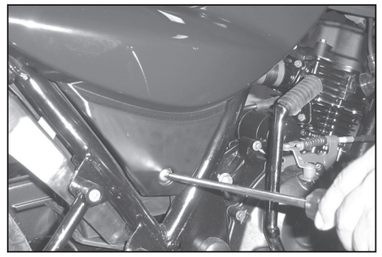
⚠ **CAUTION :**

It is most important to adhere to recommended grade & frequency of oil change for the purpose of long life of critical engine components. For details refer P.M. chart.

Do not reuse drained oil.

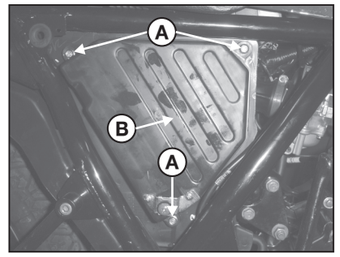
SKILL TIP FOR REMOVAL & FITMENT OF AIR FILTER

Skill Tip for Removal & Fitment of Air Filter



Remove :

- RH side panel by loosening a Phillips screw.
- 3 flange bolts (A) (8m A/F).
- Air filter cover (B)



Remove :

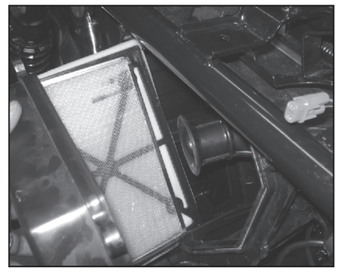
- Air filter element assembly along with its cage.
- Separate foam filter from cage.

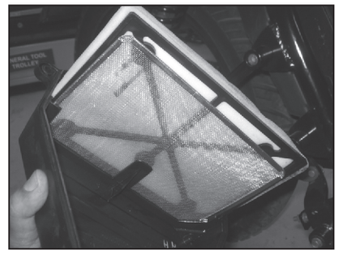
Note / Skill Tip :

Clean flame arrestor in kerosene & blow air.

First assemble air filter along with cage & flame arrestor into 'Cover Air Filter'. Then slide this assembly by matching air filter w.r.t. groove provided inside the 'Box Air Filter.

Ensure that rubber 'O' ring is placed properly before fitting cover.





NOTES

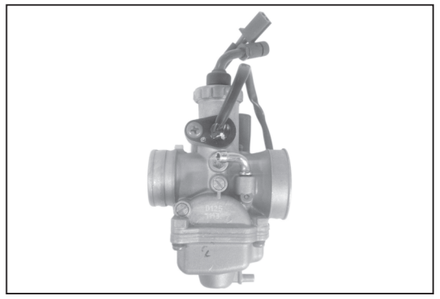
2

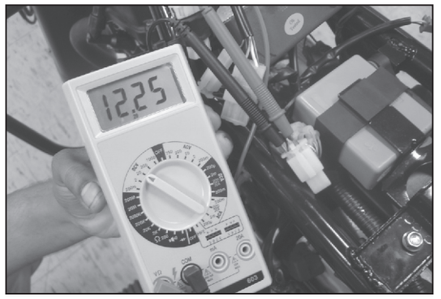
Fuel System

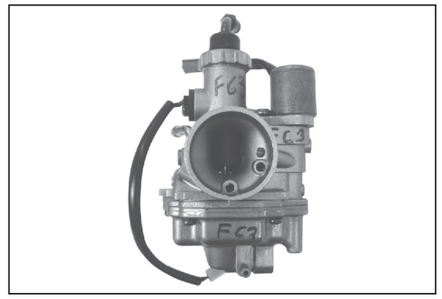
Carburettor Specifications

CO Checking & Setting

Tune Up for Optimum Mileage

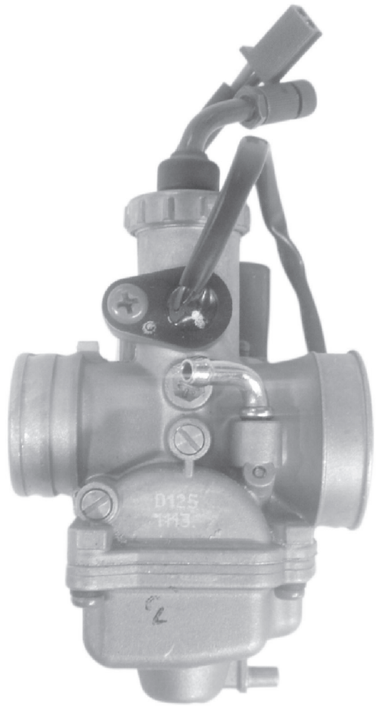


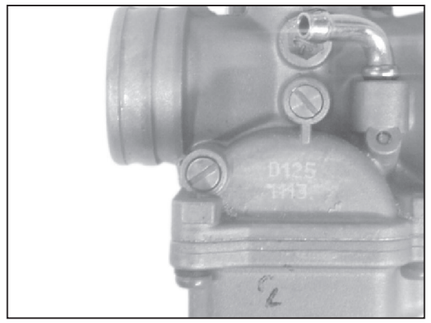




CARBURETTOR SPECIFICATIONS

UCAL





Item	Specification
Make	UCAL India
Type	UVD 20
Idling Speed	1400 ± 100 rpm
Air Screw / Pilot Screw Setting	Adjust Air Screw to get CO 2%
Main Jet	# 95
Jet Needle mark	U-4 HL5
Needle Jet Marking	0 - 0 M
Jet Needle 'e' clip Position	1st Groove from TOP
Pilot Jet	# 17.5
Throttle valve Mark	3 (W-1.5 x 0.4)
Starter Jet	Gs1 : 30 & Gs2 : 0.8
Float Height	14.4 mm
Choke	Solenoid Operated Auto Choke

CO CHECKING AND SETTING

Readiness of CO Gas Analyser

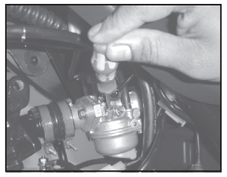
Warm up the CO Gas Analyzer for 10~15 minutes before proceeding further. Warming up is essential every time machine is put on to purge out any gases left in side.

Carry out Span Check as per manufacturer's Recommendation to confirm the OK condition of the Equipment (If Span Check does not confirm the reading, then carry out Gas Calibration as per mfgrs. recommendation). Set the Equipment display to Zero before taking the reading.

Readiness of the Vehicle

Before checking CO emission, prepare the vehicle for checking the CO.

- Warm up the engine to its normal operating temp. by riding 5~6 Kms. The c'case cover should be warm enough by feel. (Engine Oil Temp. = 60°C).



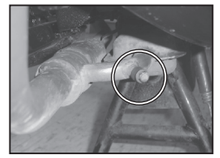
Caution: In choke 'ON' condition CO % is high : 9~10%. Hence warming up of engine is a must.

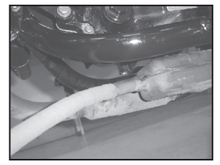
- Screw in Air Screw completely. Engine should die down in this condition.

Note: If engine does not go off, then attend to the additional air supply problem in the carburetor circuit & intake system. After solving the problem once again confirm that engine should die down on closing the Air Screw.

- Confirm the Air Screw setting as per specification.
- Set Idling speed to specified Idling 1400 ± 100 rpm. Raise the engine to moderate speed at no load condition for about 15 seconds. Then bring back to specified idling RPM.

Taking the Reading





- Remove M-5 bolt & aluminum washer fitted to the nozzle (12mm OD) shown in figure, of the connecting tube welded to silencer pipe before CAT converter.
- Use a Silicon Rubber tube of approximately 300mm to fit onto the nozzle. Only a Silicon rubber tube should be used, as it has better high temp. resistance & will not deform / melt due to high temp. at the nozzle.
- Connect the other end of the Silicon Rubber tube to the flexible probe pipe of machine. Ensure that the inner diameter of Silicon tube perfectly matches with outer diameter of flexible probe pipe of Gas Analyzer.
- The Silicon rubber tube must fit snugly onto the nozzle to prevent any air / exhaust gas leakage.
- Note the CO / HC readings when the reading display stabilizes.
- As per Emission Norms the recommended CO% for 2 Wheelers is 3.5% at idling RPM. But CO% for Bajaj Vehicles, for best results in terms of fuel efficiency are different for different models. **The ideal CO% is between 1.5 to 2.5% at idling RPM = 1400 ± 100.**
- If the reading is shown excess or less than BAL specifications, try to achieve by adjusting Air Screw.
- Turning in Air Screw will lead to more CO% and turning out will lead to less CO%.

Note: Remember the Air Screw should not be taken out more than the recommended position. Every time Air Screw setting is changed specified Idling RPM must be restored and then reading should be considered.

- If the CO% is not falling within recommended % in spite of adjusting the Air Screw then find out the cause & rectify. After rectifying the problem confirm the CO% in the same way as mentioned above.

Important: For Better Mileage and Performance, achieve CO% as recommended.

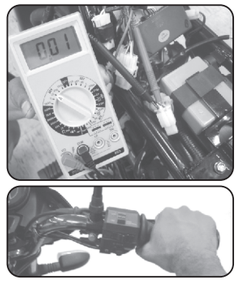
In **Discover 125** motorcycle for better mileage & performance achieve values given below.

Recommended CO% value w.r.t. Air Screw and Idling RPM for Better Fuel Efficiency			
Model	Recommended CO%	Air Screw Position	Recommended Idling RPM
Discover 150	1.5% ~ 2.5%	Set air screw to get CO 2%	1400 ± 100 rpm

TPS - Hall Sensor Checking

Continuity check in coupler disconnected condition :
SOP :
Disconnect TPS coupler
Check Continuity between Pink & Black / Yellow wire
There should NOT BE any continuity.

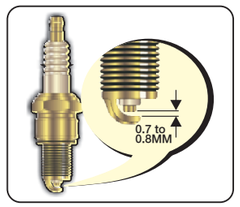
Input supply voltage check :
SOP :
Connect TPS coupler
Switch 'ON' ignition key.
Check voltage between Brown and Black / Yellow wires of TPS Hall Sensor.
Standard value : 12.5 ± 0.4 volts (Battery voltage).



Voltage check in POT condition:
SOP :
TPS coupler is in connected condition.
Switch 'ON' ignition key.
Check voltage between Pink & Black / Yellow wire in Partial Open Throttle (POT) condition.
Standard value : 0 ~ 0.7 volts in Partial Open Throttle (POT) position.

Voltage check in WOT condition:
SOP :
TPS coupler is in connected condition.
Switch 'ON' ignition key.
Check voltage between Pink & Black / Yellow wire in Wide Open Throttle (POT) condition.
Standard value : 4.0 ~ 4.7 volts in Wide Open Throttle position.

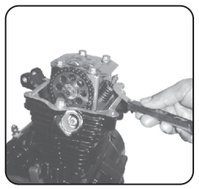
Engine Tune-Up



SPARK PLUG :
Champion PRZ9HC, BOSCH UR4AC
Spark Plug Gap :
0.7 ~ 0.8 mm.
Replace at Every :
15000 Kms

AIR FILTER :
Clean at Every :
5,000 Kms.
Replace at Every :
15,000 Kms.

COMPRESSION PRESSURE
Standard :
11 to 13 kg/cm^2
Service Limit :
9.5 kg/cm^2



TAPPET CLEARANCE
Inlet Valve :
0.05 mm
Exhaust Valve :
0.1 mm

CARBURATTOR
Idling : 1400 ± 100 rpm.
Jet Needle Clip Position :
For UCAL : 1st from top
CO % : 2.0 ± 0.5 %.
Set air screw to get CO 2 %

Other Mandatory Checks

a. Ensure no fuel leakage through fuel cock, fuel lines.
b. Ensure free rotation of both wheels.
c. Ensure correct tyre pressure - Front wheel : 25 PSI, Rear wheel : 32.0 PSI
d. Set control cable free play:
   Clutch lever 2~3 mm.
   Front brake lever 2~3 mm. (for disc version)
   Front brake lever 4~5 mm. (for drum version)
   Rear brake pedal 15~20 mm.
e. Chain slackness : 20~25 mm.
f. Check & confirm proper functioning of both spark plugs.
g. Check & confirm resistance of thermal sensor at room temp. (25°C ~ 35°C). It must be 7K ohm ~ 10.5K ohm.
h. Ensure that thermal sensor wire is firmly connected.
i. Ensure that the solenoid operated auto choke is switching 'OFF' once engine cylinder block temp. reaches ≥ 30°C (greater than or equal to 30°C temp.).

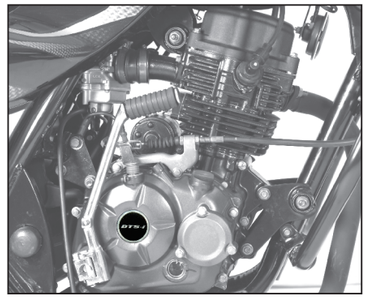
3

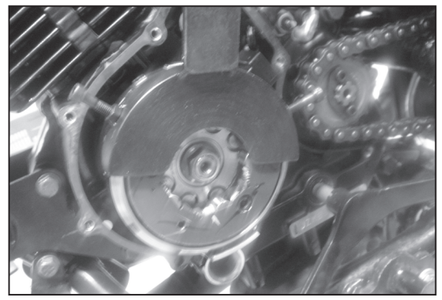
Engine & Transmission

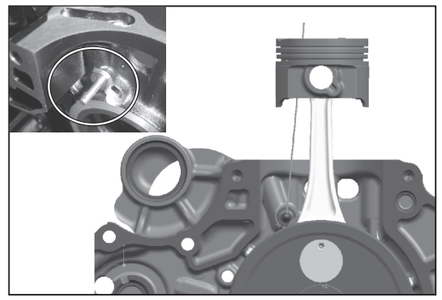
Special Tools

Service Limits

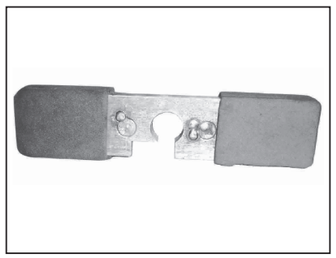
Tightening Torques







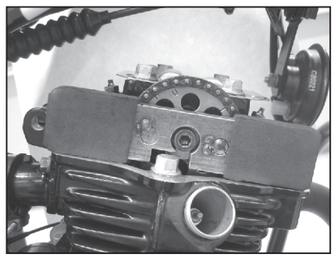
Special Tools

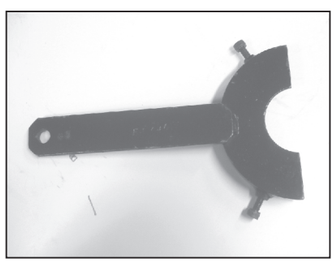


Cam Sprocket Holder

Part No. : F41ZJZ47

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

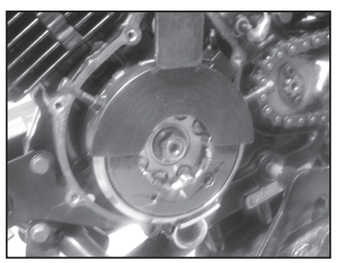


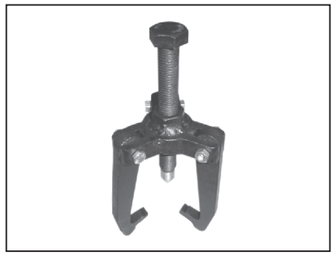


Magneto Rotor Holder (For Self Start)

Part No. : F41ZJZ44

Application : To hold rotor while loosening / tightening its nut.

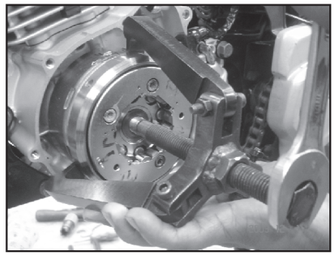




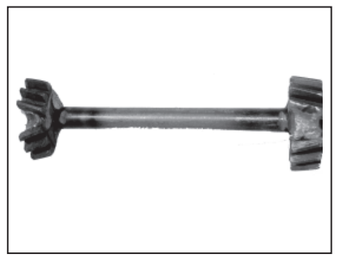
Magneto Rotor Puller (For Self Start)

Part No. : F41ZJZ46

Application : To pull out the rotor from crankshaft assembly.



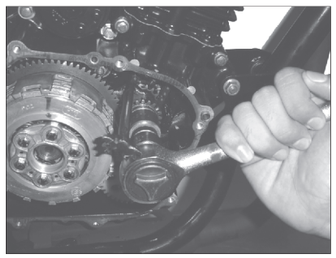
Special Tools

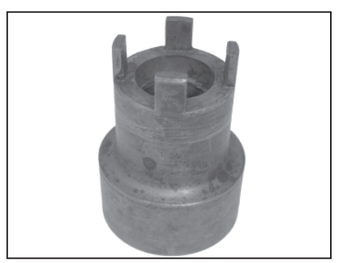


Primary Gear Holder

Part No. : F41AJA11

Application : To hold primary and secondary gear while loosening/tightening the primary gear nut & special nut securing clutch.

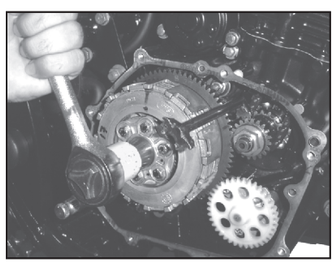


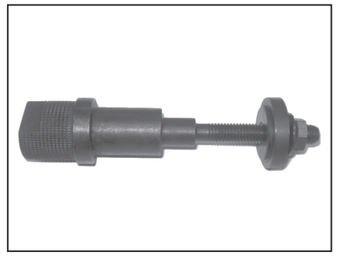


Socket for Clutch Nut

Part No. : F41ZJA54

Application : To loosen / tighten special nut securing clutch.

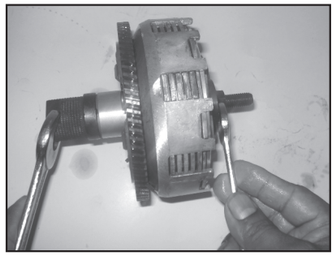


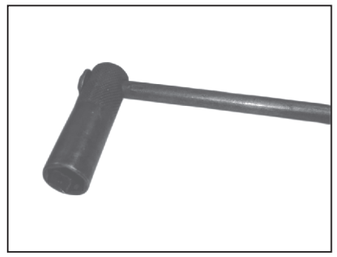


Clutch Dismantling Tool

Part No. : F41AJA58

Application : To dismantle & assembled clutch of DISCOVER DTS-Si kick start as well as self start vehicle.

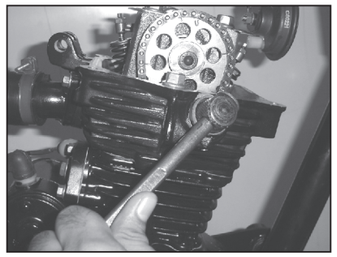




Spark Plug Spanner

Part No. : 37 1040 51

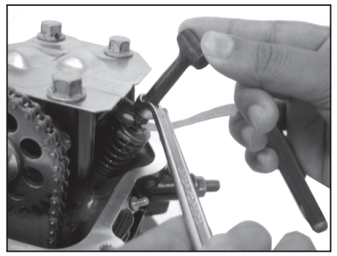
Application : For removing and refitting spark plug R.H. and L.H. side.



Valve Tappet Adjuster

Part No. : F41ZJW33

Application : To hold the Valve Tappet screw while adjusting tappet clearance.

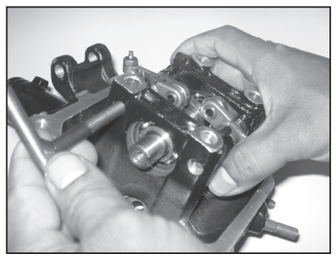


Special Tools

Rocker Shaft Remover

Part No. : 37 10CS 22

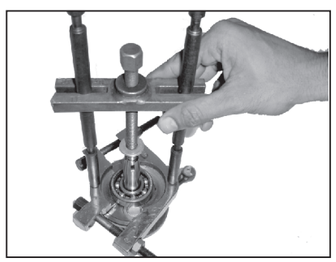
Application : To remove Rocker Shaft from cylinder head.

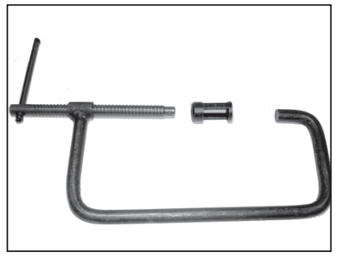


Bearing Extractor

Part No. : 37 1030 48

Application : To Pull out main ball bearing from crankshaft



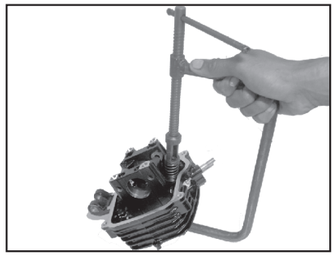


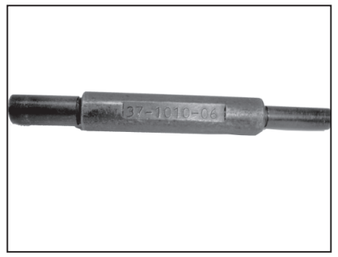
Adaptor & Valve Spring Compressor

Adaptor Part No. : 37 1031 08

Valve Spring Compressor : 37 1031 07

Application : To assemble / dismantle intake, exhaust valve by compressing spring in cylinder head.

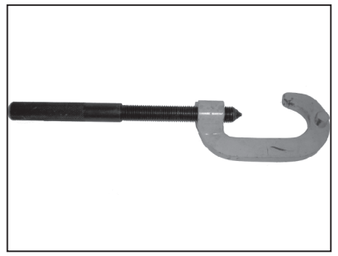




Drift Piston Pin

Part No. : 37 1010 06

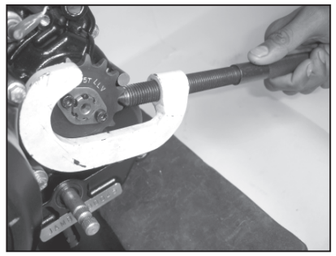
Application : To remove refit piston pin.



Output Sprocket Holder

Part No. : 37 1030 53

Application : To hold the output sprocket while removing sprocket allen bolts.

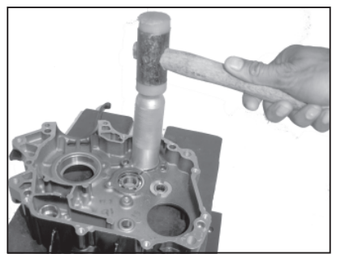


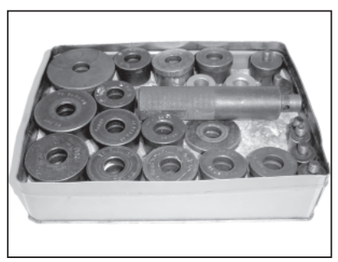
Special Tools

Driver for Fitting Bushing Gear Shift Drum

Part No. : E6101100TE

Application : To assemble “Bushing with PTFE Lining” at parent hole of crankcase RH for “Gear Shift Drum” mounting.

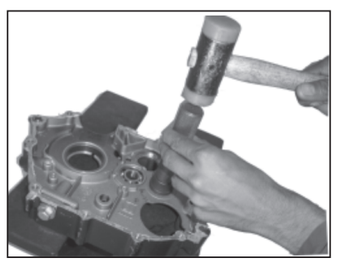




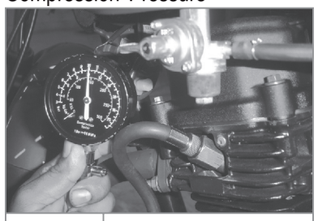
Bearing Driver Set

Part No. : 37 1030 61

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

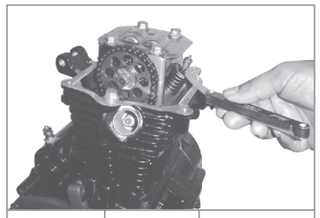


Compression Pressure



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

Valve Clearance

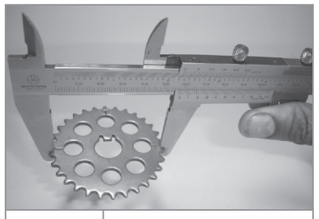


	Intake	Exhaust
Std. Limit	0.05	0.10
Ser. Limit	—	—

Rocker Arm Shaft Diameter

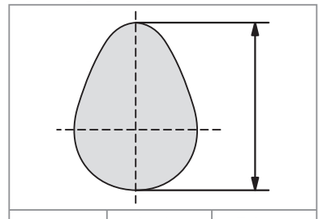
Std. Limit	7.994 ~ 8.0
Ser. Limit	7.98

Cam Sprocket Diameter



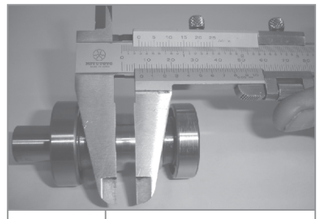
Std. Limit	61.165 ~61.285
Ser. Limit	60.865 ~ 61.285

Cam Height



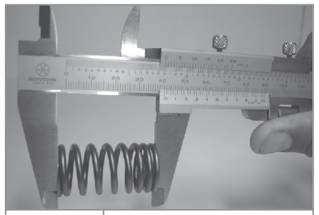
	Intake	Exhaust
Std. Limit	30.084	30.122
Ser. Limit	30.009	30.047

Cam Lobe Width



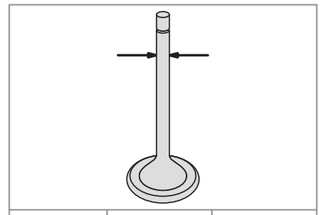
Std. Limit	7.0
Ser. Limit	—

Valve Spring Free Length



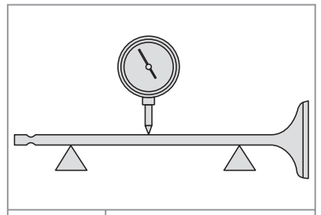
Std. Limit	38.74
Ser. Limit	35.29

Valve Stem Diameter



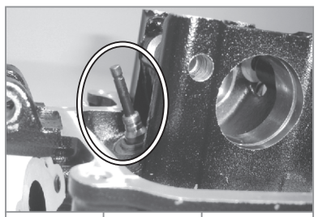
	Intake	Exhaust
Std. Limit	4.475~4.49	4.455~4.47
Ser. Limit	4.46	4.45

Valve Stem Bend



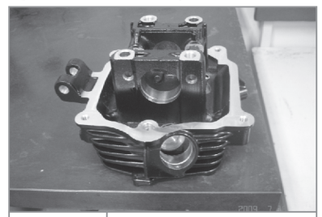
Std. Limit	TIR 0.01
Ser. Limit	> 0.01 Replace

Valve Stem to Guide Clearance



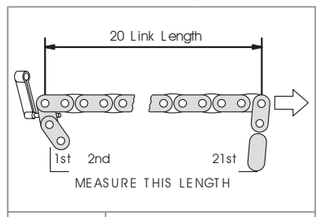
	Intake	Exhaust
Std. Limit	0.01~0.37	0.025~0.052
Ser. Limit	0.07	0.07

Cylinder Head Warp



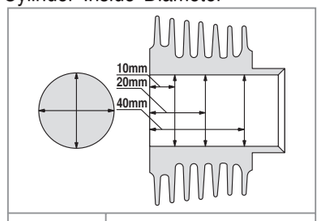
Std. Limit	0.03
Ser. Limit	0.05

Camshaft Chain Length



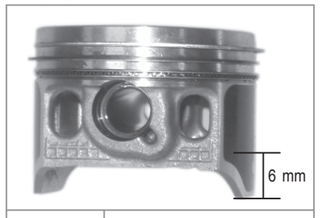
Std. Limit	127.00 ~ 127.48
Ser. Limit	128.9

Cylinder Inside Diameter



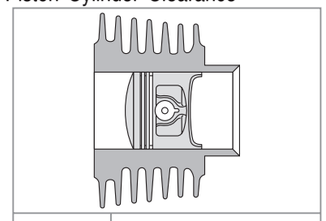
Group A	54.008 ~ 54.018

Piston Diameter



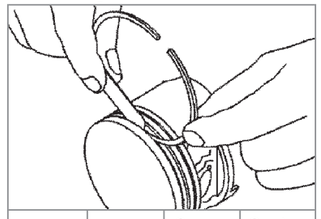
Group A	53.969 ~ 53.981

Piston Cylinder Clearance



Std. Limit	0.027 ~ 0.049
Ser. Limit	0.06

Piston Ring Groove Clearance

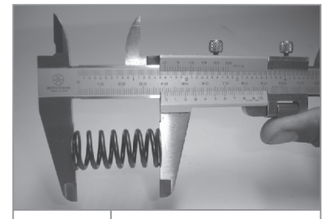


	Top	Second	Oil Ring
Std. Limit	0.03~0.07	0.02~0.06	0.03~0.11
Ser. Limit	0.15	0.15	—

Piston Ring End Gap

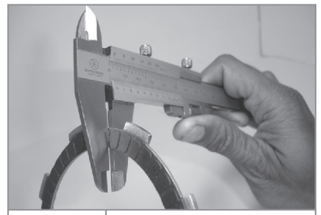
	Top	Second	Oil Ring
Std. Limit	0.1~0.25	0.3~0.45	0.2~0.7
Ser. Limit	0.4	0.6	—

Clutch Spring Free Length



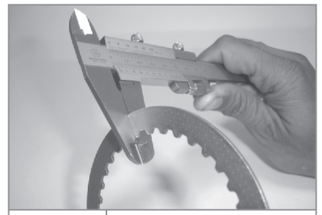
Std. Limit	25.5
Ser. Limit	24.5

Friction Plate Thickness



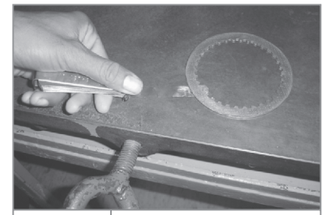
Std. Limit	2.95 ~ 3.05
Ser. Limit	2.7

Steel Plate Thickness



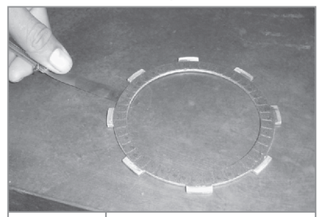
Std. Limit	1.6 ~ 1.7
Ser. Limit	1.55

Steel Plate Warp



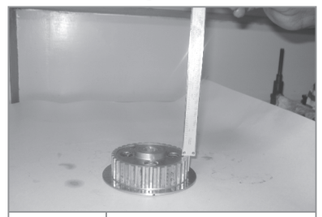
Std. Limit	0.1
Ser. Limit	0.15

Friction Plate Warp



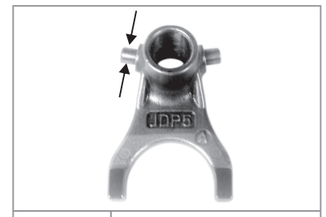
Std. Limit	0.1
Ser. Limit	—

Clutch Hub Height



Std. Limit	24.1
Ser. Limit	–

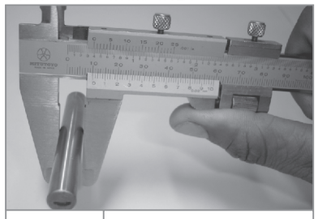
Shift Fork Guide Pin Diameter



Std. Limit	4.45 ~ 4.49
Ser. Limit	4.4

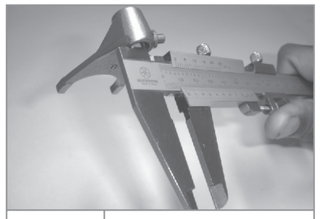
SERVICE LIMITS - ENGINE

Shaft Fork Shift O.D.



Std. Limit	9.972 9.987
Ser. Limit	9.96

Fork Shift I.D.

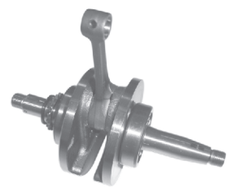


Std. Limit	10.0 10.022
Ser. Limit	10.03

Shift Drum Groove Width

Std. Limit	4.55 4.7
Ser. Limit	4.75

Crankshaft Run Out



Std. Limit	0.02
Ser. Limit	0.05

Connecting Rod Side Clearance

Std. Limit	0.1 0.35

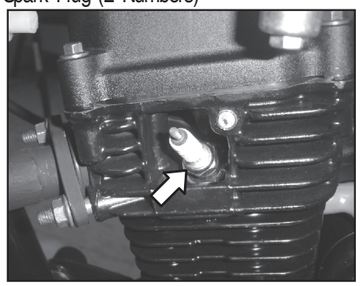
Clutch Stackup Height

Std. Limit	22.17 21.57
Ser. Limit	20.3

ALL DIMENSIONS ARE IN MM

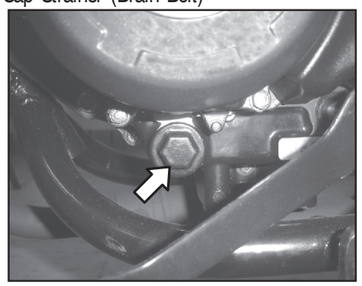
TIGHTENING TORQUES - ENGINE

Spark Plug (2 Numbers)



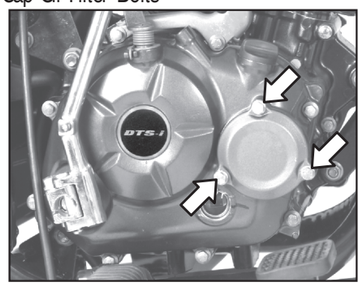
1.3 1.5 kgm

Cap Strainer (Drain Bolt)



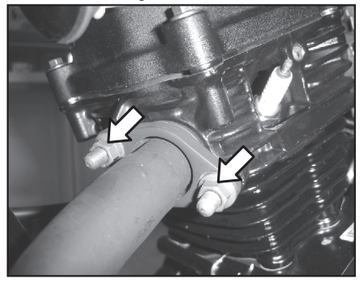
0.9 1.1 kgm

Cap Cl Filter Bolts



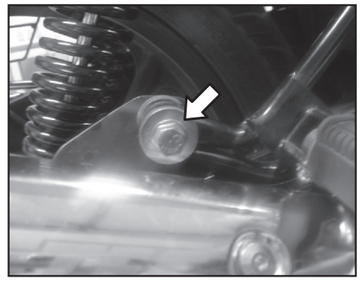
0.9 1.1 kgm

Silencer Mounting Nuts



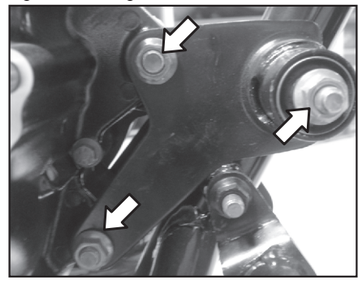
2.0 2.2 kgm

Silencer Bracket Bolt



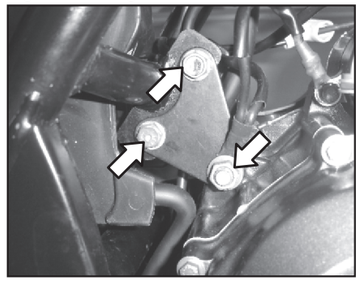
3.5 kgm

Engine Mounting Bolts



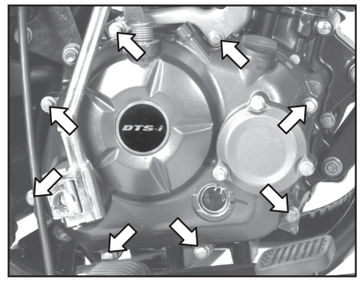
2.0 2.2 kgm M8 : 12 MM

Engine Mounting Bolts



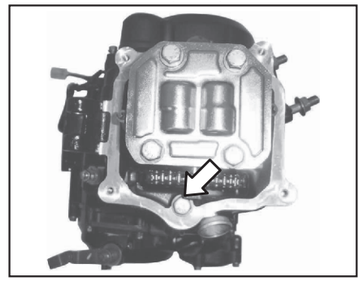
3.0 3.2 kgm M10 : 14 MM

Clutch Cover Bolts



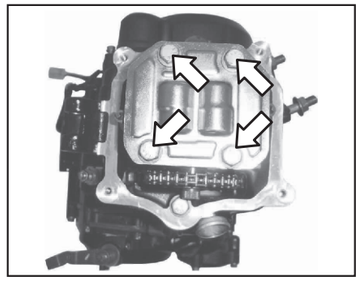
0.9 1.1 kgm

Cylinder Head Bolts (Short)



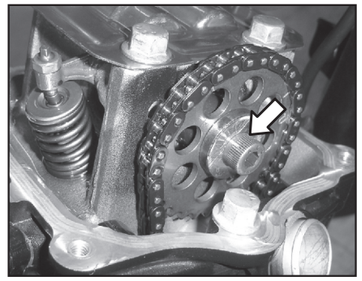
2.2 ~ 2.5 kgm

Cylinder Head Bolts (Long)



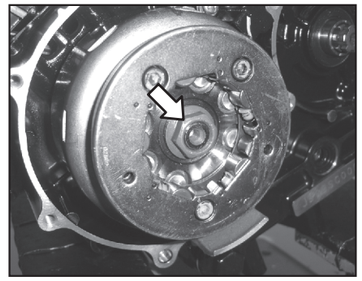
2.2 2.5 kgm

Cam Sprocket Allen Bolt



1.6 1.8 kgm

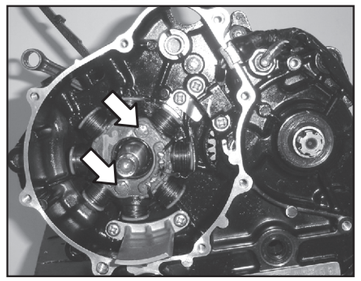
Rotor Mounting Nut



5.0 5.5 kgm

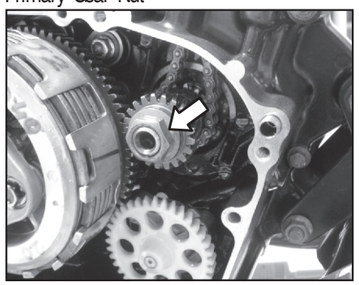
TIGHTENING TORQUES - ENGINE

Stator Plate Bolts



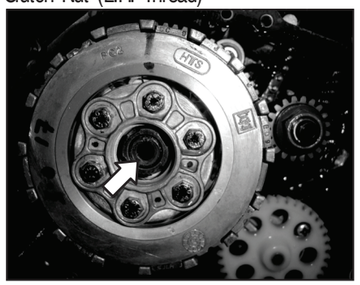
0.9 1.1 kgm

Primary Gear Nut



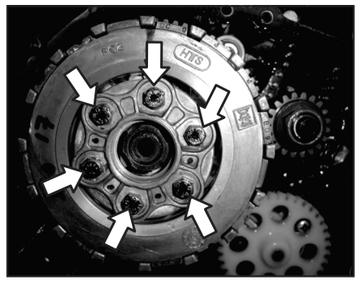
5.0 5.5 kgm

Clutch Nut (L.H. Thread)



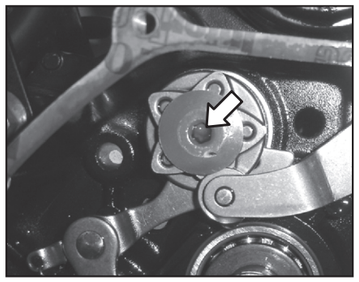
5.0 5.5 kgm

Clutch Holder Bolts



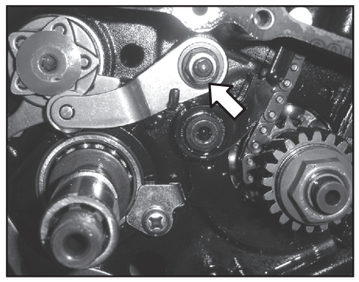
1.1 1.0 kgm

Guide Gear allen Bolt



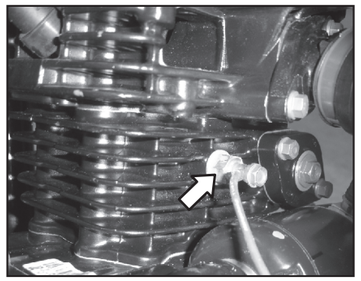
0.9 ~ 1.1 kgm

Stud Inhibitor Nut



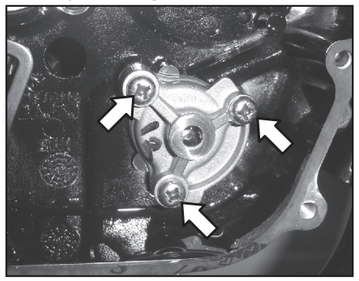
0.9 1.1 kgm

Thermal Sensor



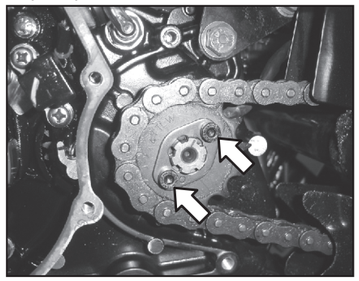
0.5 kgm

Oil Pump Mounting Screws



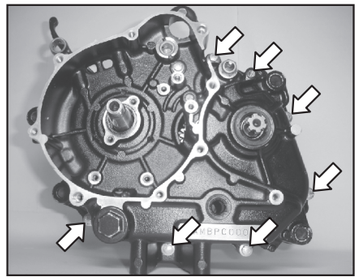
0.5 0.7 kgm

Output Sprocket Bolts



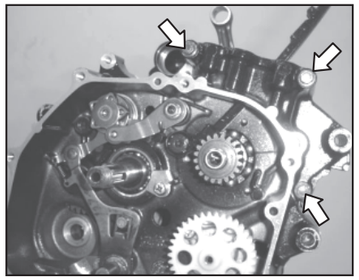
0.8 kgm

Crankcase Joining Bolts



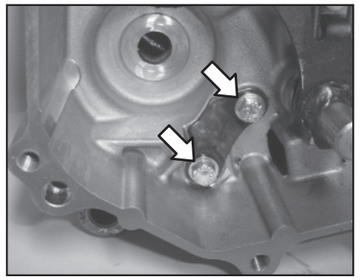
0.9 1.1 kgm

Crankcase Joining Bolts



0.9 1.1 kgm

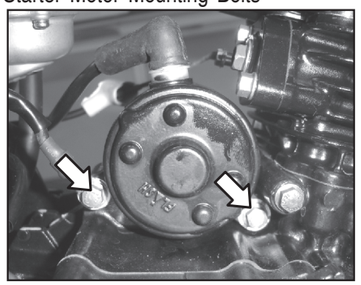
Kick Guide Bolts



0.9 1.1 kgm

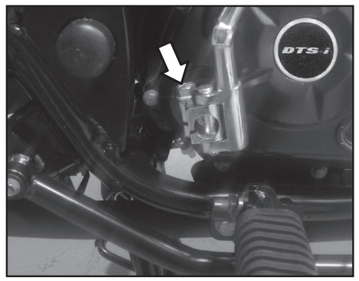
TIGHTENING TORQUES - ENGINE

Starter Motor Mounting Bolts



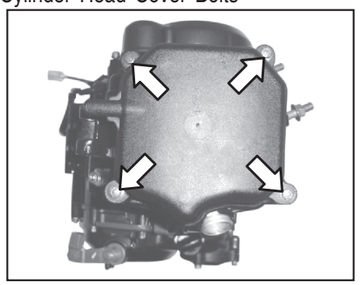
0.9 1.1 kgm

Bolt Kick Lever



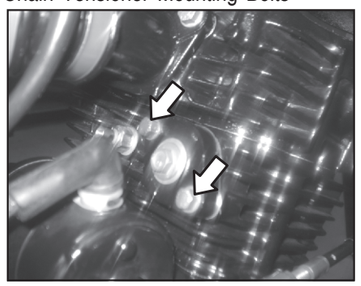
2.0 2.2 kgm

Cylinder Head Cover Bolts



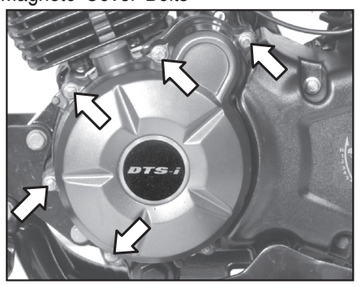
0.9 1.1 kgm

Chain Tensioner Mounting Bolts



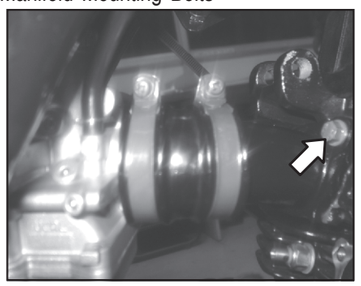
0.9 1.1 kgm

Magneto Cover Bolts



0.9 1.1 kgm

Manifold Mounting Bolts

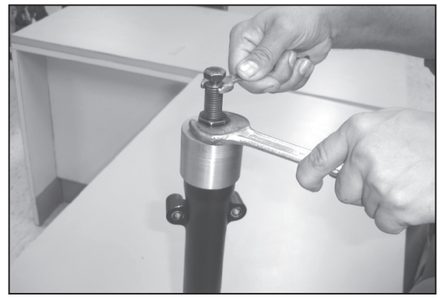


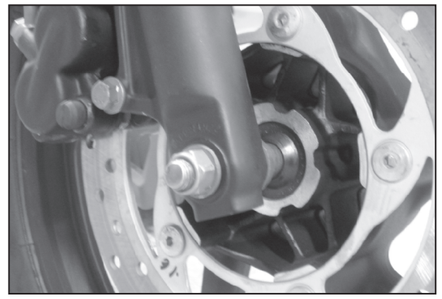
0.9 1.1 kgm

NOTES

4

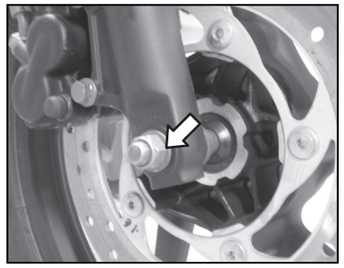
Vehicle (Frame)





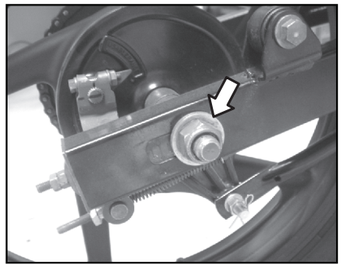
TIGHTENING TORQUES - FRAME

Front Axle Nut



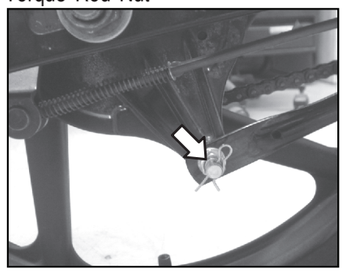
4.5 ~ 5.5 kgm

Rear Axle Nut



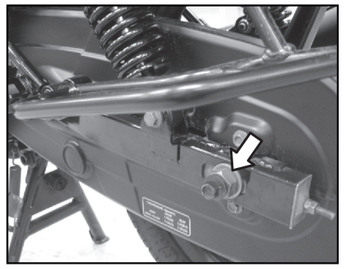
8.0 ~ 10.0 kgm

Torque Rod Nut



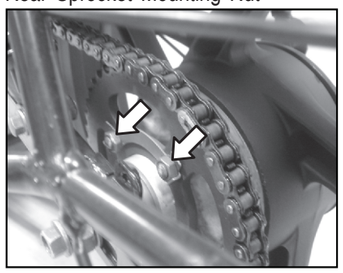
3.0 ~ 3.2 kgm

Rear Sleeve Nut



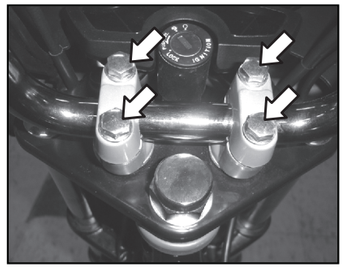
8.0 kgm

Rear Sprocket Mounting Nut



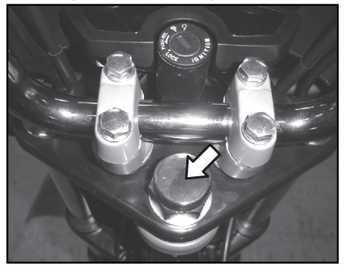
3.2 ~ 3.8 kgm

Handle Bar Holder Bolts



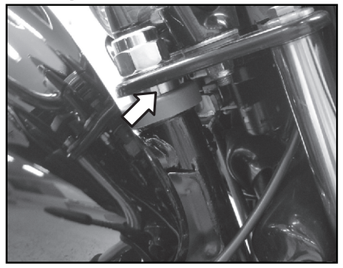
2.0 ~ 2.2 kgm

Steering Stem Head Special Nut



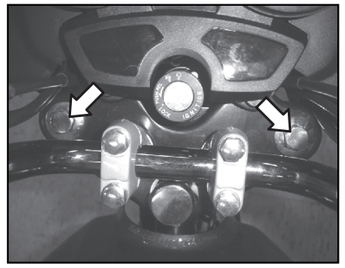
4.5 ~ 5.0 kgm

Steering Stem Nut Slotted



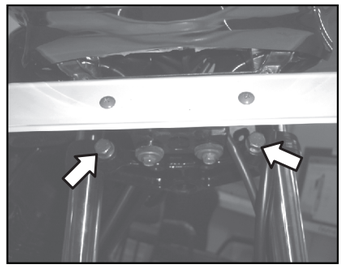
0.5 kgm

Fork Pipe Top Bolts



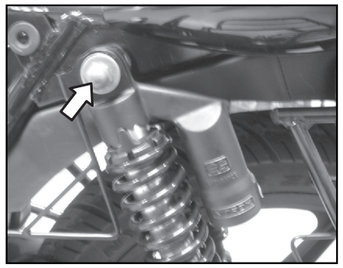
3.0 ~ 3.2 kgm

Fork Under Bracket Bolts



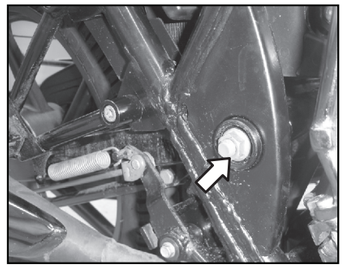
2.5 ~ 3.0 kgm

RSA Mounting Nut (Upper)



3.0 ~ 3.2 kgm

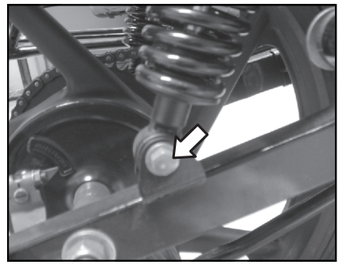
Swing Arm Shaft



4.5 ~ 5.5 kgm

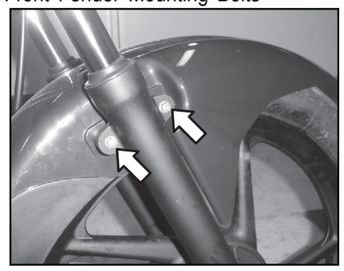
TIGHTENING TORQUES - FRAME

RSA Lower Bolt



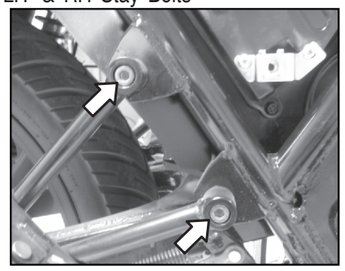
3.0 ~ 3.2 kgm

Front Fender Mounting Bolts



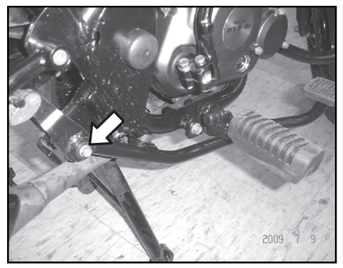
1.0 ~ 1.2 kgm

LH & RH Stay Bolts



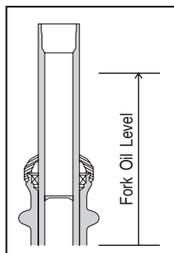
2.0 ~ 2.2 kgm

Rear Brake Pedal Bolt



2.0 ~ 2.2 kgm

Front Fork Oil Grade & Capacity



Grade :
SAE 10W20
Bajaj Genuine
Fork Oil

Quantity :
140 ± 2.5 ml /
Fork Leg Assly
(Drain & Refill)

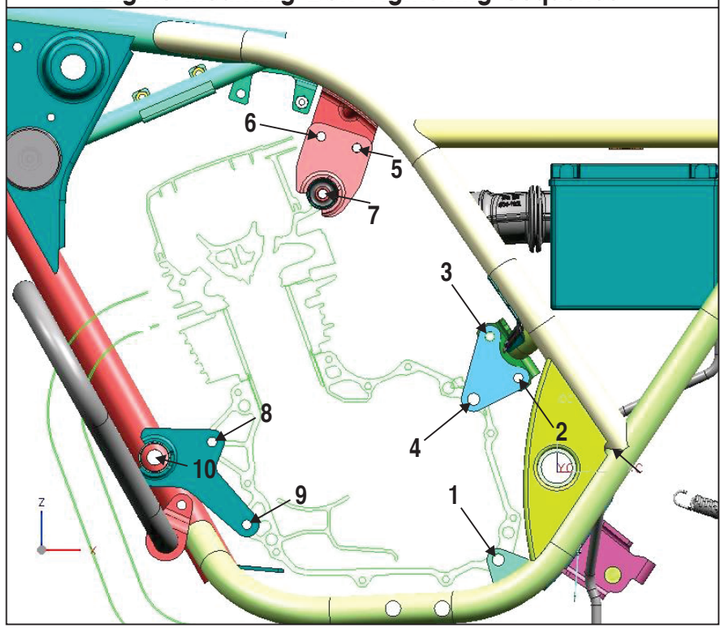
Grease Application Points

S.N.	Vehicle Component	Type of Grease
1.	Bearing balls of steering	Servo GEM RR3 grease
2.	Swing arm shaft & Bushes	
3.	Front wheel axle	
4.	Rear wheel axle	
5.	Brake pedal pivot	
6.	Center stand shaft	
7.	Side stand 'U' bracket	

Loctite Applications

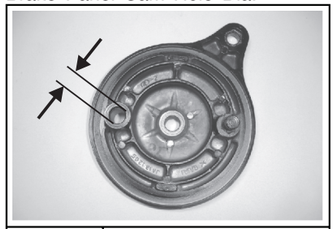
S.N.	Vehicle Fastener	Type of Loctite & Loctite Colour
1.	Rider step mtg. bolts	243 Dark Blue colour
2.	RSA lower bolt	
3.	Front Number Plate Bolts / Screws	

Engine Mounting Bolt Tightening Sequence



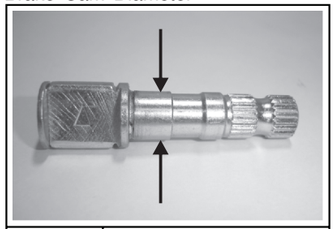
SERVICE LIMITS - FRAME

Brake Panel Cam Hole Dia.



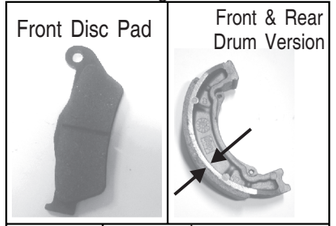
Std. Limit	12.00 ~ 12.027
Ser. Limit	12.18

Brake Cam Diameter



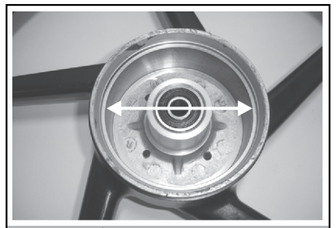
Std. Limit	11.95 ~ 11.98
Ser. Limit	11.83

Brake Shoe Lining Thickness



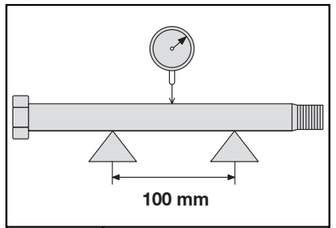
Std. Limit	5.0 (Frt)	3.9~4.5 (Fr & Rr)
Ser. Limit	1.0 (Frt)	2 (Fr & Rr)

Rear Brake Drum Inside Dia. (Fr. & Rr.)



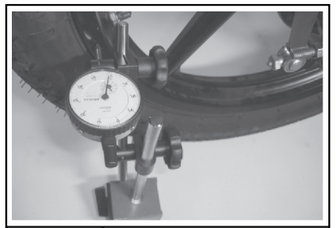
Std. Limit	130~130.16
Ser. Limit	130.75

Axle Run Out



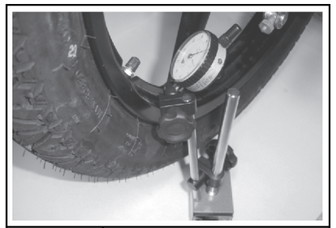
Std. Limit	TIR 0.1
Ser. Limit	TIR 0.2

Axial Wheel Run Out



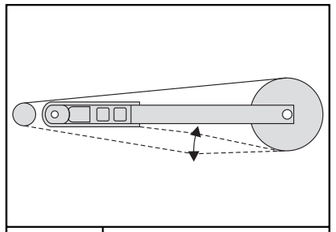
Std. Limit	TIR 0.5 or Less
Ser. Limit	TIR 2.0

Radial Wheel Run Out



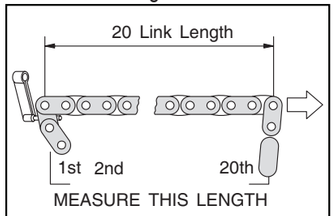
Std. Limit	TIR 0.5 or Less
Ser. Limit	TIR 2.0

Drive Chain Slack



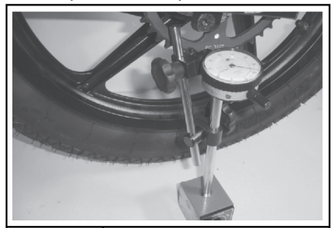
Std. Limit	20 ~ 25
Ser. Limit	35

Drive Chain Length



Std. Limit	254.0 ~ 254.6
Ser. Limit	260.0

Rear Sprocket Warp

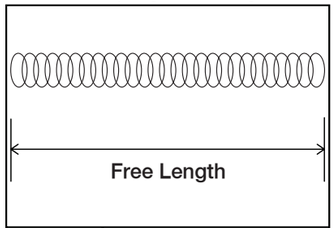


Std. Limit	TIR 0.4 or Less
Ser. Limit	0.5

Tyre Tread Depth

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

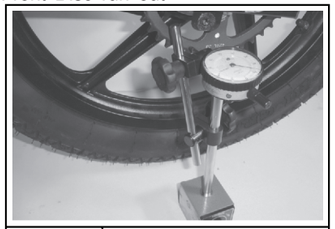
Front Fork Spring Free Length



Std. Limit	392.5 + 4.0
Ser. Limit	387.5

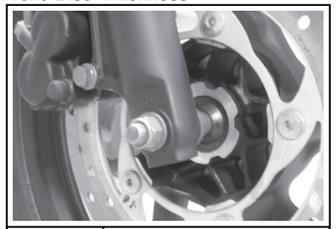
SPECIAL TOOLS - VEHICLE

Front Disc run out



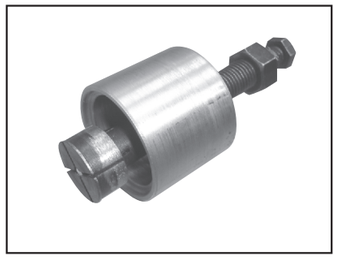
Std. Limit	TIR 0.1
Ser. Limit	TIR 0.3

Front Disc Thickness



Std. Limit	4.0 mm
Ser. Limit	3.6 mm

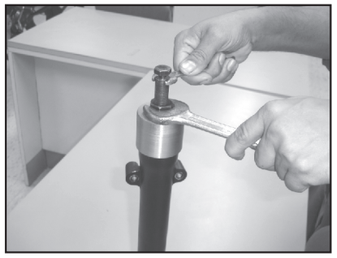
Special Tools

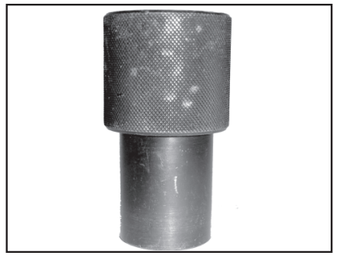


Special Tool to Remove Anti-Friction Bush

Application :

To remove anti-friction & oil seal bush from front fork outer pipe.



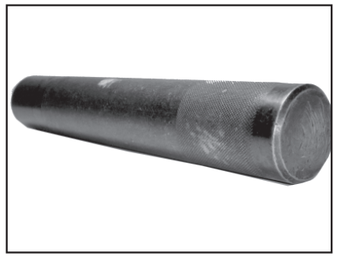


Fork Oil Seal Driver

Part No. : 37 1830 07

Application :

To fit fork oil seal in its seat provided at outer pipe ID.

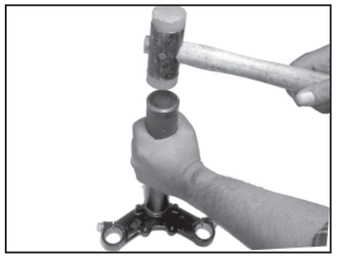


Stem Bearing Driver

Part No. : 37 1830 05

Application :

To fit bearing race on fork under holder bracket

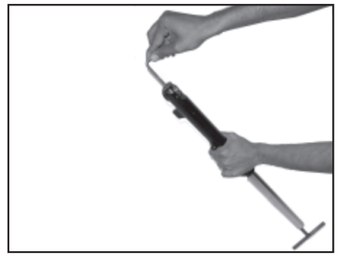


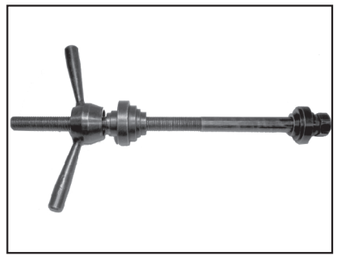
Front fork cylinder holder handle with adaptor

Part No. : 37 1830 06

Application :

To hold fork cylinder while loosening / tightening fork allen head bolt at bottom.





Installer Upper & Lower Bearing Race Frame

Part No. : 37 1801 06

Application :

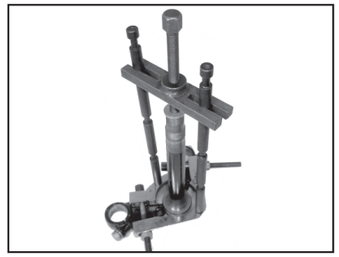
To install upper & lower steering races / cones into their seats inside frame.

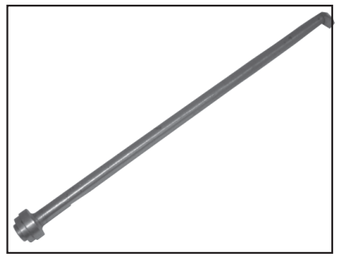
Bearing Race Extractor

Part No. : 37 1030 48

Application :

To Pull out steering race from ' Fork Under Holder bracket'



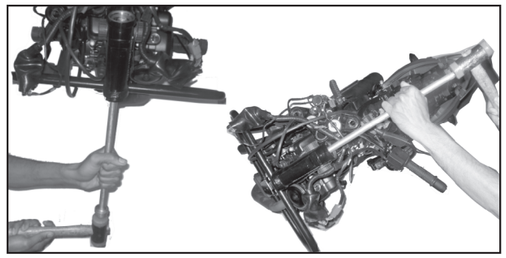


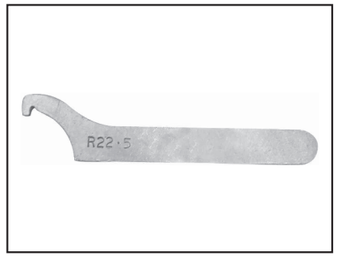
Steering Cone Remover

Part No. : 37 1805 06

Application :

To remove steering cones from frame.



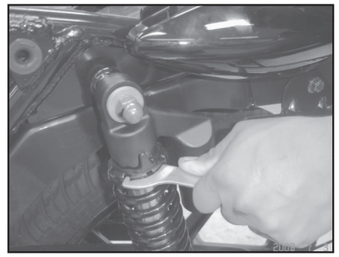


Special Tool to Adjust RSA Spring

Part No. : 37 00DS 01

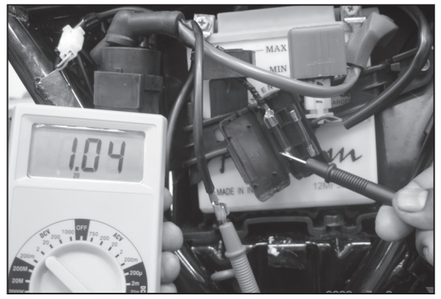
Application :

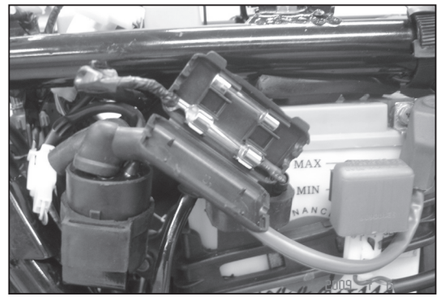
To adjust rear shock absorber spring tension by adjusting the position of spring cam between 1st to 5th notch position.

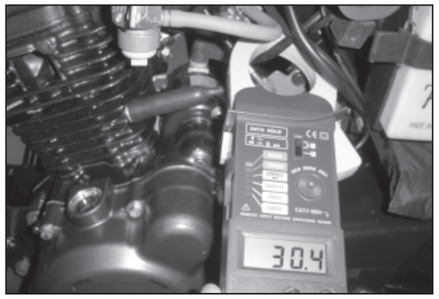


5

Electricals







NOTES

BATTERY

Battery Technical Specification

	For Self Start
• Make	Exide
• Voltage	12 Volt
• Type	MF Battery
• Capacity	5 Ah
• Specific gravity of electrolyte for initial filling of new battery	1.24 for use above 10°C, 1.28 for use below 10°C
• Initial charging duration	10 ~15 hrs (depending upon the condition of the battery
• Charging current specification	0.5 Amp

Initial Charging Procedure for dry charged Battery

Fill each cell with battery grade sulfuric acid of the correct sp. gravity (1.24 at room temp. for use above 10°C & 1.28 at room temp. for use below 10°C)

Allow the battery to stand for 30 min. after filling.

Keep vent plugs open. Connect battery to charger & charge at 0.5 Amp. Charging voltage of charger should be 14.5 volt min. without connecting the battery.

Charge continuously for 10 to 15 hours (charging duration will depend upon the condition of the battery) Specific gravity of fully charge battery after rest period of 1 hour will be 1.24 & battery voltage will be 12.5.

After charging push vent plugs strip firmly into place & wash off acid spillage with water & dry the battery.

Using the battery load tester confirm for good indication of state of charge of battery.

Battery Charging Procedure

In case battery is discharged follow the procedure given below by using constant current. “Battery Charger” of 0.5 Amp. charging current specification for 5 Ah battery

Remove battery from vehicle

Clean battery throughly

Remove vent / filler plug strip

Top up level with distilled water in between Min and Max. level

Connect to battery charger & ensure respective terminal are connected properly

Set charging current at 0.5 A DC for 5 Ah Battery. Charging voltage of charger should be more than 14.5 volt without connecting the battery .

Charge battery (battery charging time depends upon the charging condition of the battery)

Check specific gravity of each cell & voltage after 1 hour it should be 12.5 volt & specific gravity 1.24 for the fully charged battery.

Disconnect the battery from the changer.

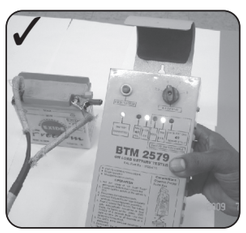
Fit vent / filler plug strip firmly.

Reconnect battery terminals

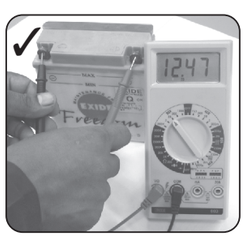
Apply petroleum jelly to the battery terminals.

Battery

Dos



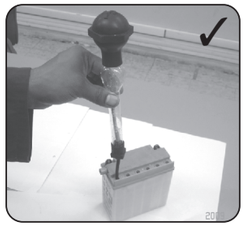
- Use battery load tester for checking battery charge condition.



- Check open circuit voltage by multi meter.

- Do hold the box.

- Apply petroleum jelly to poles / terminals.

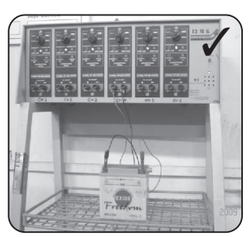


- Use proper equipments for checking specific gravity & voltage.

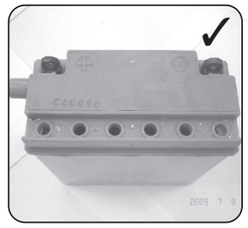
Battery

Dos

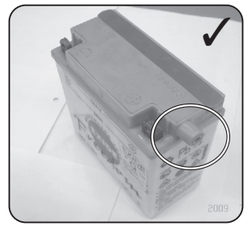
- Use proper tools.



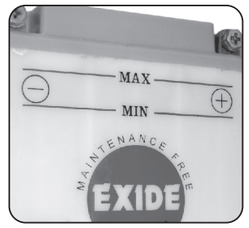
- Always charge battery by constant current method with the help of specified charger.

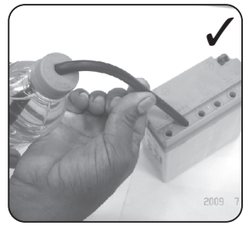


- Always maintain battery top cover clean and dry. Always keep Vent Mechanism area clean & clear.



- Always maintain electrolyte level between maximum & minimum level marks.

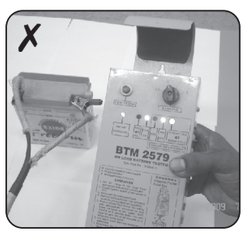




- Use only distilled water to top up battery.

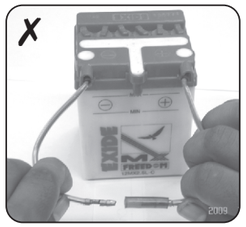
Battery

✗ Don'ts

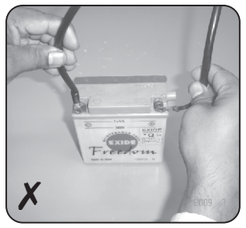


- Never crank the battery which does not pass the load test.

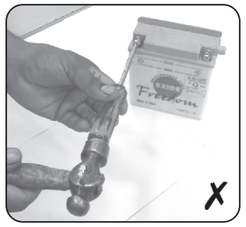
- Do not apply grease to poles / terminals.



- Do not short circuit the leads.



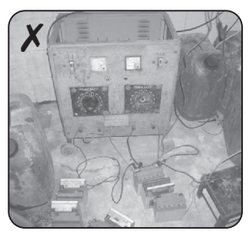
- Do not short circuits the poles.



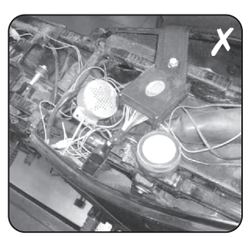
- Do not use improper tools.

Battery

✗ Don'ts



- Do not quick charge battery by current higher than specified current.
- Constant voltage charging method must be strictly avoided.
- Do not use local make battery charger.



- Do not fit extra electrical accessories (Tampering of wiring for fitting buzzer etc.) other wise wiring would get short & battery would get discharged. This will shorten the life of battery.
- Do not increase the level of electrolyte beyond maximum level mark otherwise it would over flow through Vent Mechanism & damage other parts.

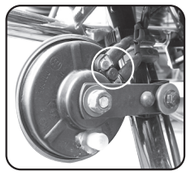
- Do not use mineral water, drinking water to top up battery.

HORN

☑ Dos

Ensure that horn is firmly fitted on frame

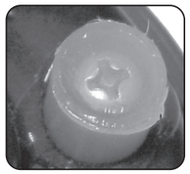
Ensure that horn is free from dust and mud accumulation.



Ensure that horn wires are intact.

Ensure that horn switch button is operating freely.

Ensure that battery is fully charged.

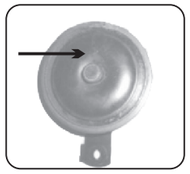


Adjust horn by phillips screw driver
- without removing silicon sealant from the adjustment screw.
- by rotating the screw in the direction of arrow provided in the screw.

Ensure that resonator is not pressed by any portion of cables or wiring harness as it will result in distorted sound.

☒ Don'ts

Never remove resonator cap as it could result in water entry & subsequent malfunctioning of horn



Do not apply pressurised water jet directly on horn resonator.

Never adjust nut on horn cap side & bracket end (back side) as it will result in horn malfunctioning & failure.

Do not remove silicon sealant from adjustment screw as it will result in water entry in horn.

Do not hit by mallet / screw driver on horn resonator.

IGNITION SYSTEM

☑ Dos

Always install recommended capacity of battery on the bike.

Always replace spark plug by correct heat range plug.

Check & adjust spark plug gap periodically. Adjust it to 0.6~ 0.7mm by feeler gauge.

Replace spark plug at every 15,000 kms.

Check for firm fitment of spark plug in cylinder head -Tightening torque 13. ~ 1.5 Kgm.

Ensure H.T. cable secondary connection is firmly fitted in spark plug cap and H.T. coil.

Check that CDI coupler is tightly fitted.

Check for proper functioning of TPS - Hall sensor.

Ensure that magneto coupler is firmly fitted.

Ensure that rubber cap on magneto and CDI coupler are intact & grease used in CDI and magneto coupler is in place.

Always use a right size socket during removal and re-installation of spark plug.

During periodic service make use of spark plug cleaning & testing machine to clean spark plug electrodes & to check proper functioning of both the spark plugs.

During periodic service check & confirm resistance of thermal sensor & proper

Functioning of auto choke.

☒ Don'ts

Do not replace spark plug by non recommended one (different heat range).

Do not replace CDI by local make or different make.

Never short circuit H.T. coil primary wire to ground. It could lead to CDI failure.

Do not remove grease from CDI and magneto coupler as it is provided for rust prevention.

Do not adjust the spark plug gap with any instruments like screw Driver, pliers etc.

Do not drive the vehicle without battery. Driving motorcycle in battery removed condition could cause damage to electrical components like voltage regulator because of no load Condition.

LIGHTS

Dos

Check that all bulbs are firmly fitted in bulb holder.

Ensure that there is no dust and water entry in bulb housing.

Ensure that all fixing screw of bulb housing are intact.

Ensure that Reflector / Glass of Head Lamp, Tail Lamp, Side indicator is intact.

Check DC Voltage Regulator's output voltage periodically. Ensure that voltage is within specified limits.

Check that couplers and wires of bulbs are in good condition.

Check flashing rate of indicator bulbs.

Don'ts

Do not install a lower / higher capacity battery than what is recommended.

Do not use Higher / Lower wattage Bulbs.

While washing Vehicle do not direct pressurized water jet on Head Light, Tail Light,Indicators.

Do not ride on brakes.

Do not start Vehicle with light control switch in ON condition.

SWITCHES

Dos

Always clean switch assembly with soft cloth.

After washing the vehicle ensure to apply dry air on switches before operation.

Ensure that rear brake switch is free from dust, dirt and mud Accumulation.

Always ensure that grommets provided on clutch switch, front brake switch and rear brake switch are intact.

Always apply WD-40 Rust Spray to sticky switches.

Don'ts

Do not apply direct pressurized water jet on control switches.

Do not lubricate electrical switches by oil or grease.

Do not over tighten the switches.

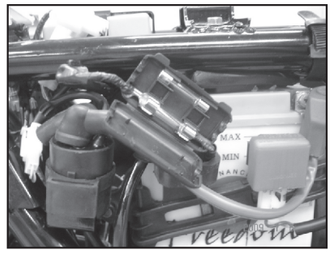
During warranty period do not dismantle control switches.

Do not add extra electrical loads e.g. musical horns, additional horns, buzzers as it will reduce switch contact life & battery life &battery life.

Do not tamper / alter rear brake switch spring.

Do not operate switch immediately after water servicing.

Fuse Inspection (Capacity = 10 Amp)



Fuse

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

Note : Never use higher capacity fuse.

Caution : When replacing a fuse be sure the new fuse matches the specified fuse rating for that circuit. Installing that a fuse with a higher rating may cause damage to wiring & components.

Front Brake Light Switch

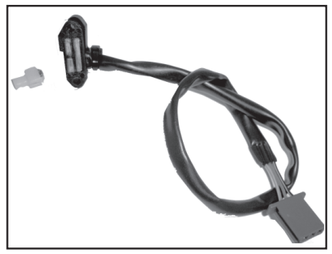
Turn 'ON' the ignition switch.
The brake light LED bank should glow brightly when the front brake lever is pressed.
If it does not, check the front brake switch.

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

Rear Brake Light Switch

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

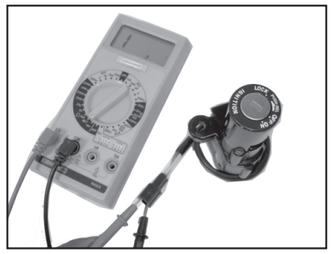
	Brown	Blue	Continuity check by multimeter
Brake Pedal Pressed	●	●	Continuity is shown
Brake Pedal Released	●	●	No Continuity



Clutch Switch

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

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



Ignition Switch

Measuring & Testing Equipment : Multimeter

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

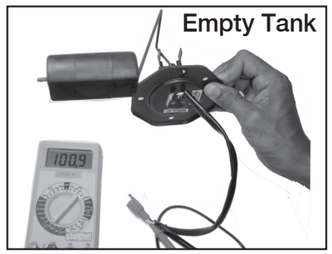
SOP :

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

Standard Value :

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

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



Fuel Gauge - Tank Unit

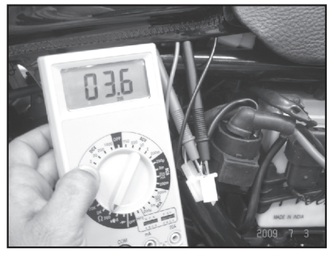
Measuring & Testing Equipment : Multimeter

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

Standard Value :-

Fuel Level	Fuel Quantity Liter	Standard value Ohm	Reading on Fuel Meter
Empty Tank	1.4	98 ± 5	'E' mark (Lower end)
Reserve	2.3	81 ± 4	'E' mark (Upper end)
Half Tank	5.0	44 ± 4	2nd Line
Full Tank	8.0	9 ± 3	4th Line

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



Starter Relay

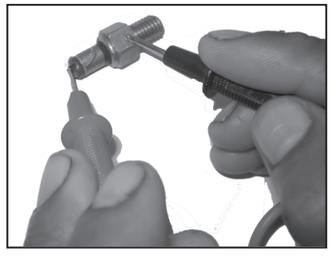
Measuring & Testing Equipment : Test Jig or Multimeter

Connection : Test Jig - Connect starter relay coupler to Test Jig & it show result as OK / Defective

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

SOP :

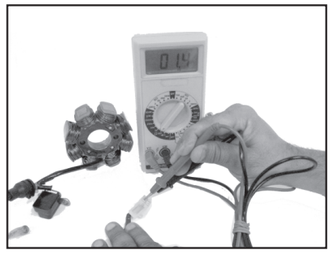
Switch OFF engine.
Disconnect coupler from Relay.
Connect multimeter to Starter Relay coil terminals.
Check resistance.



Engine Thermal Sensor

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	
	Meter +ve	Meter -ve	Engine Temp (^{o}C)	Resistance K Ohms(Ω)
20 K Ohms	Black / White	Earth / Ground	@ 25 ^{o}C	9.7 to 11.2 KΩ
			@ 30 ^{o}C	7.5 to 8.6 KΩ
			@ 40 ^{o}C	5.0 to 6.0 KΩ

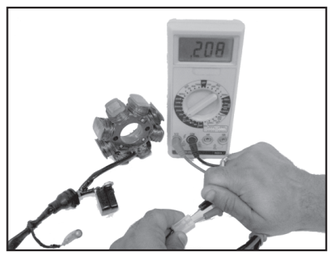


Battery Charging Coil

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
200 Ohms	Meter +ve	Meter -ve	0.8 ± 0.2 Ohms at 25^{o}C	---------
	Blue / White	Blue / White		

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



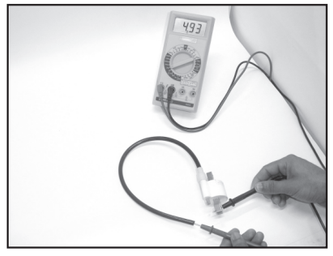
Pick-up Coil

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
2 K Ohms	Meter +ve	Meter -ve	195 ~ 235 Ohms	---------
	White / Red	Black / Yellow		

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

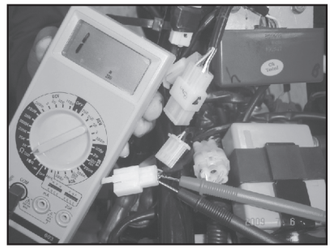
Note: Ensure gap 0.5~0.7 mm between pole of pick-up coil & rotor peep.



H. T. Coil Inspection

H.T. Coils : (Inspection Using Multimeter)
Measure the primary winding resistance as follows
Connect the multimeter between primary terminal & core.
Measure the secondary winding resistance as follows
Remove the plug cap by turning it counter clockwise.
Connect the multimeter between HT cable & core.
Measure primary winding & secondary winding resistance.
If the value does not match as per, specifications replace the coil.
If the meter reads as specified, the ignition coil windings are probably good. However, if the ignition system still does not perform as it should after all other components have been checked replace the coil with one OK coil.
Visually inspect the secondary winding lead.
If it shows any damage, replace the coil.

Primary Winding	0.3 to 0.5 Ohms at 25^{o}C
Secondary Winding	4.5 to 6.5 K Ohms at 25^{o}C



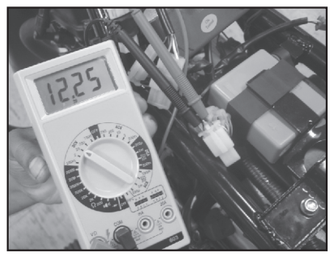
TPS-HALL SENSOR

A. Continuity Check in Coupler Disconnected condition

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
Continuity Mode	Meter +ve	Meter -ve	No continuity must be shown.	---------
	Pink	Black / Yellow		

SOP :
Disconnect TPS coupler
Check Continuity between Pink & Black / Yellow wire
There should NOT BE any continuity.

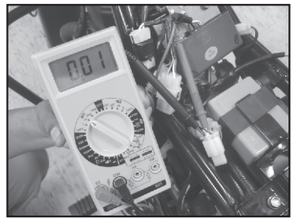


B. Input (supply) Voltage check

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
20 V DC	Meter +ve	Meter -ve	12.5 ± 0.4 Volts (Battery Voltage)	---------
	Brown	Black/ Yellow		

SOP :
Connect TPS coupler.
Switch 'ON' Ignition Key.
Check voltage between Brown & Black/Yellow wires of TPS Hall Sensor.



C. Voltage check in POT condition

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
20 V DC	Meter +ve	Meter -ve	0 ~ 0.7 V in Partial Open Throttle	---------
	Pink	Black / Yellow		

SOP :

TPS coupler is in connected condition.
Switch 'ON' Ignition key.
Check voltage between Pink & 'Black / Yellow' wire in Partial Open Throttle (POT) condition.

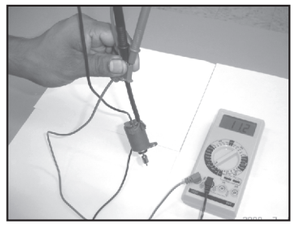
D. Voltage check in WOT condition

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
20 V DC	Meter +ve	Meter -ve	4 ~ 4.7 V in WOT position	---------
	Pink	Black / Yellow		

SOP :

TPS coupler is in connected condition.
Switch 'ON' Ignitions key.
Check voltage between Pink & Black / Yellow wire in Wide Open Throttle condition (WOT).



Auto Choke Solenoid Coil

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
200 Ohms	Meter +ve	Meter -ve	12 ± 10 % Ohms	---------
	Brown	Orange/Brown		

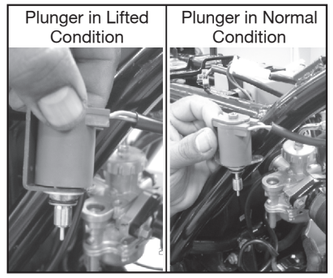
SOP :

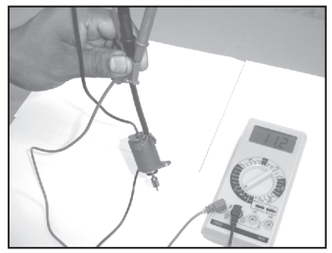
Disconnect coupler of solenoid operated choke.
Connect Multimeter lead wires to Brown & Orange / Brown wires.
Check resistance of Coil

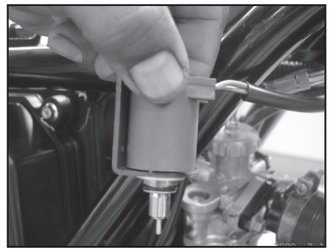
Auto Choke Working

In Engine running condition & when engine RPM is greater than 900±25 the solenoid operated choke is switched 'ON' for specified time depending upon engine temperature. The chart of choke operation vis-a-vis engine temperature is given below.

Engine RPM	Temperature of Engine Sensed by Thermal Sensor	Approximate time for which solenoid choke is 'ON'
RPM > 900±25	< 15°C	A minute or Two
	15 ~ 20°C	Few Seconds
	20 ~ 25°C	Fewer Seconds
	25 ~ 30°C	Very Few Seconds
	> 30°C	CHOKE OFF







Auto Choke Functional Check

Visual Confirmation on component :
Check 1:

Remove Choke Unit from Carburettor assembly.
Switch 'ON' Ignition Key.
Solenoid operated choke plunger must get lifted for a second & then again plunger must fall down in engines OFF condition. With one Rotation of crankshaft i.e. one pulse, choke is on for approx. 10 Sec. If engine temperature is less than 30°C

Check 2 :

Connect solenoid operated choke connection to external supply of 12volt DC & check / confirm the working of choke (whether solenoid operated choke gets 'ON' i.e. plunger remaining lifted as long as the external supply is in connection.

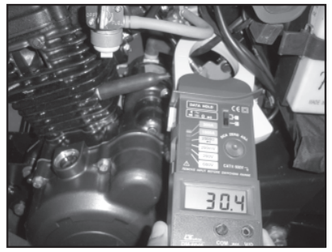
Connection of External Supply (Another battery)	
+ ve terminal	- ve terminal
Brown	Orange / Brown

Check 3 :

Remove Choke Unit from carburettor assembly but coupler is connected to harness.
Disconnect Black/White wire of Thermal Sensor. (Means thermal sensor is in 'Open' condition)
Solenoid operated choke plunger must get lifted for few seconds (Approximately 10 seconds) in engine idling condition.

Check 4 :

Remove Choke Unit from carburettor assembly but coupler is connected to harness.
Short Black / White wire to ground /earthing. (Means thermal sensor is in 'Short' condition).
Solenoid operated choke plunger must get lifted for few seconds (Approximately 10 seconds) in engine idling condition.



Starter Motor - Current Drawn

Measuring & Testing Equipment : DC Clamp Meter

Meter Range	Connections	Standard Value	Measured Value
200 DC A	Encircle clamp meter transformer jaws around thick Red wire of starter motor.	30 ~ 38 Amps Spark Plug Caps removed	---------

SOP :

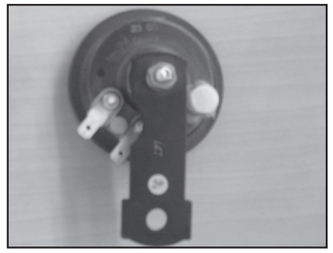
Switch 'ON' Ignition Key & disconnect both spark plug caps (care to be taken so that spark plug does not jump to metal part)

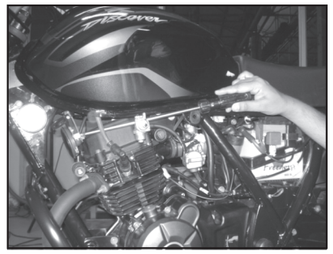
Select range & set clamp meter Zero reading.

Encircle red input wire of starter motor by clamp meter jaws.

Crank engine by pressing self starter button.

Press self starter button 3 seconds & check cranking current displayed on clamp meter LCD display.





Horn

Measuring & Testing Equipment : DC Clamp Meter

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

SOP :

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

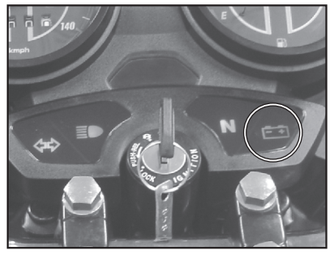
Skill Tip for Horn Adjustment :

Use long size phillips screw driver for adjusting the horn setting screw.

Speedometer

Twin pod analog type speedometer houses :

- Speedo-Odometer unit
- Trip meter with push type 'Knob / Lever' for resetting zero.
- Fuel meter.
- Turn signal indicator.
- High beam indicator.
- Neutral indicator.
- Low battery indicator.



Low battery indicator

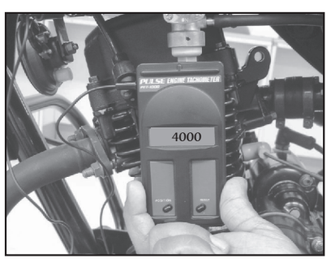
When ignition switch is turned 'ON', battery indicator glows on 

Upon Starting Engine :-

Condition 1 : Battery indicator goes off if battery charging system is OK / battery is in charged condition.

Condition 2 : Battery indicator continuously glows on  if battery terminal voltage goes below 12 V.

Thus low battery indicator reminds to charge battery / correct battery charging system in time.



DC Charging Voltage Measurement

Use fully charged battery while measuring

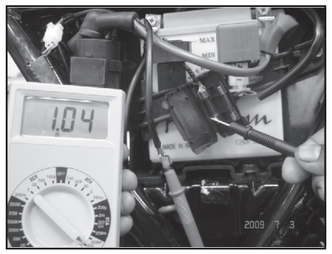
Ensure V_B = 12.5 ± 0.3 V before checking

V_B = Battery open circuit terminal voltage with Battery terminals in disconnected condition.

To measure the DC voltage; set the meter at 20V DC range. Connect the meter +ve lead to Battery +ve terminal & meter -ve lead to battery -ve terminal without disconnecting battery wires. Start the engine & set it at 4000 RPM. Measure the voltage with headlight switch in 'ON' position. Switch OFF Ignition key & disconnect the meter leads after measurement.

Meter Range	Meter Connections		Specified at 4000 RPM
20 V DC	+ve lead	-ve lead	14.5 ± 0.2 Volts
	Battery +ve terminal	Battery -ve terminal	

Note : For DC voltage measurement connect multimeter in parallel circuit.



Battery DC Charging current

Use fully charged battery while measuring.

Ensure V_B = 12.5 ± 0.3 V before checking.

To measure the DC charging current, set the meter to 10A DC range. Disconnect Red wire from Battery +ve terminal connect meter +ve lead to Red wire of wiring harness & -ve lead to +ve terminal of battery. Start the engine & set it at 4000 RPM. Switch ON the headlight & measure the DC charging current. The DC charging current should be 0.7 A max. Switch OFF Ignition key & disconnect the meter leads. Connect the RR unit & battery.

Meter Range	Meter Connections		Specification	Measured Value
DC 10 Amp	Meter +ve	Meter -ve	0.7* A Max. @ 4000 RPM with fully charged battery	---------
	Red wire of Harness	Battery +ve Terminal		

* Current will depend upon the condition of the battery

Note : For DC current measurement connect multimeter in series circuit.

HEAD LIGHT CONTROL UNIT CHECKING PROCEDURE

A) Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
200 Ohms	Meter +ve	Meter -ve	0.8±0.2 Ohms at 25°C	---------
	Blue / White	Blue / White		

SOP :

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

B) Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
20 V DC	Meter +ve	Meter -ve	12 V DC	---------
	Violet Wire	Black / Yellow		

SOP :

Switch ON Ignition Key.
Switch ON RH Side H/L Switch to head light ON position
Start Engine.
Measure voltage between Violet wire & Ground earth i.e. Black / Yellow wire

C) Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value	Measured Value
20 V DC	Meter +ve	Meter -ve	12 V DC	---------
	Yellow/ Blue	Black / Yellow		

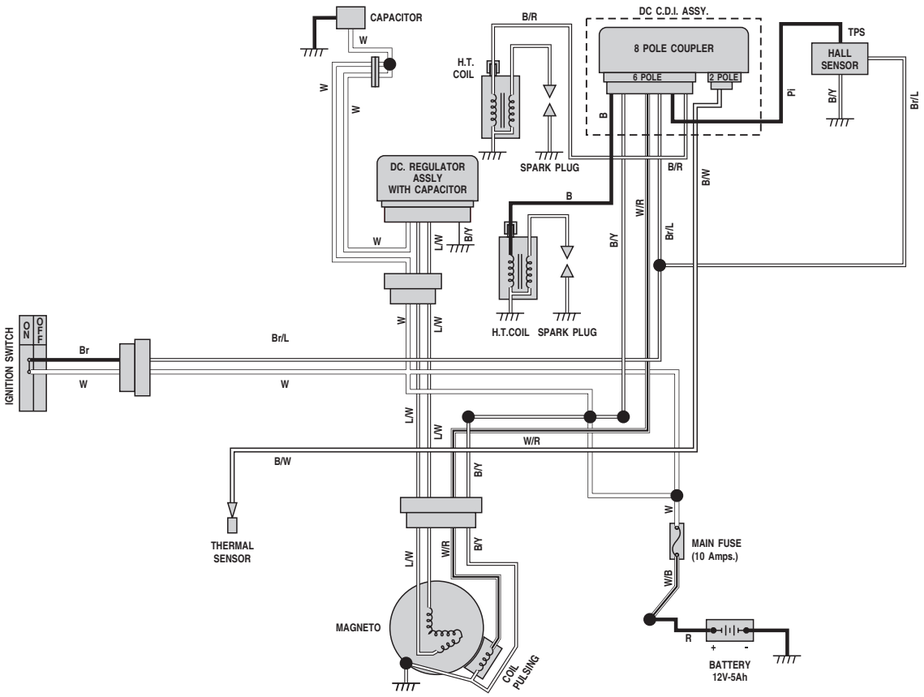
SOP :

Switch ON Ignition Key.
Switch ON RH Side H/L Switch to head light ON position
Measure voltage between Yellow / Blue & Ground earth i.e. Black / Yellow wire

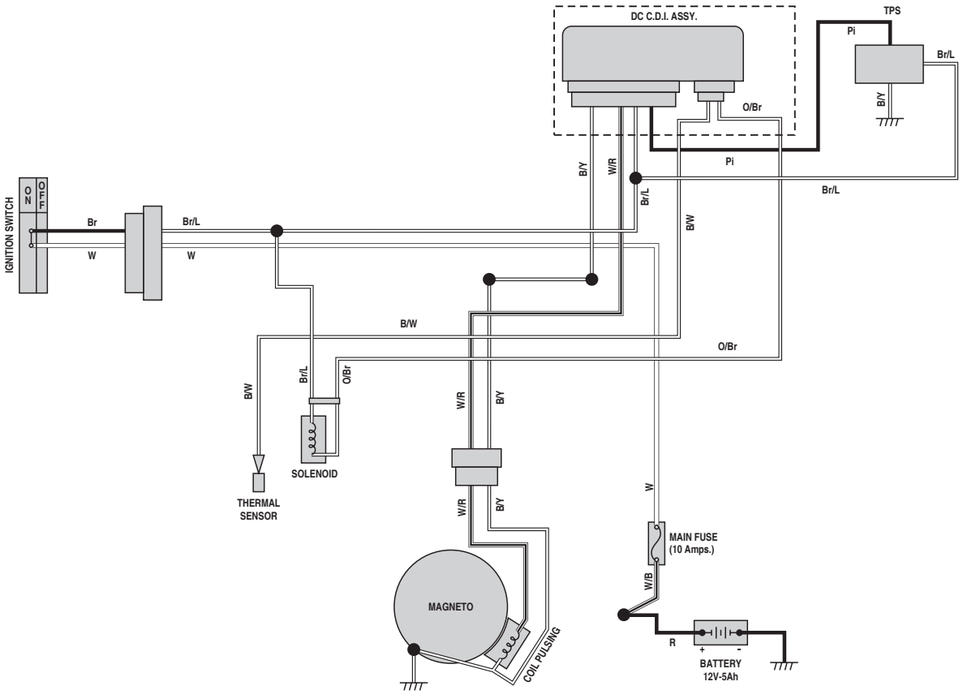
D) If there is Input Voltage at Yellow / Blue & Black / Yellow wire then -

First check the resistance of magneto coil. Rectify / Replace coil if resistance is not as per Specifications.
If there is no Input voltage between Yellow / Blue & Black / Yellow wire, check/ rectify RH control switch & its wiring harness.
If there is Input voltage between Yellow/ Blue & Black / Yellow wire but no Output voltage between Violet wire & Black / Yellow wire, while engine is running; replace 'Head Light Control Unit.

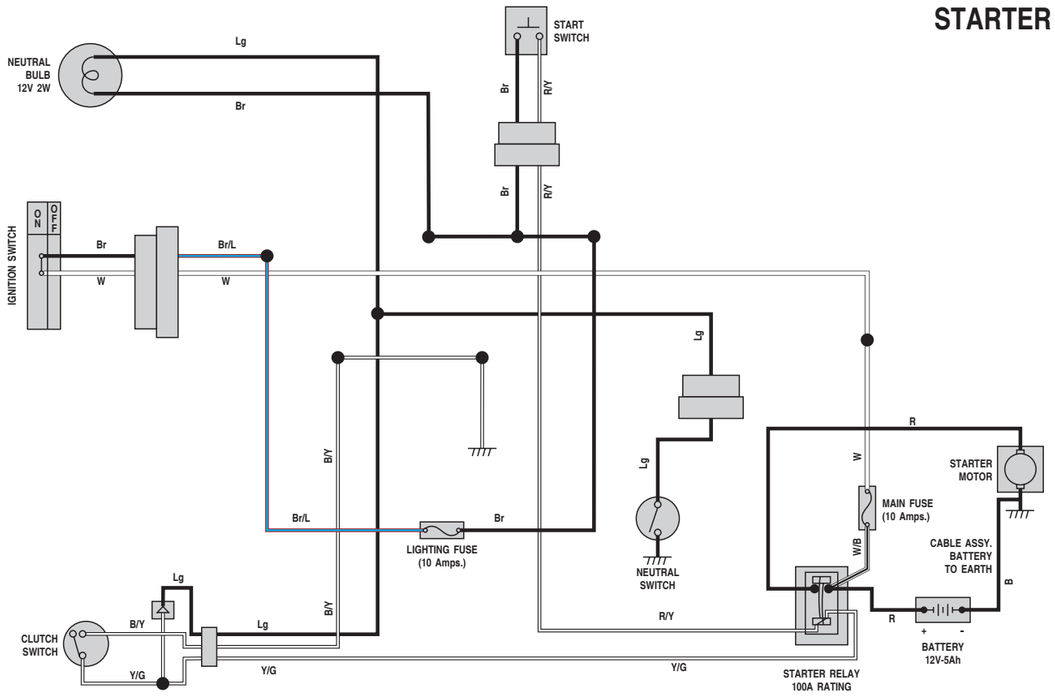
IGNITION CIRCUIT



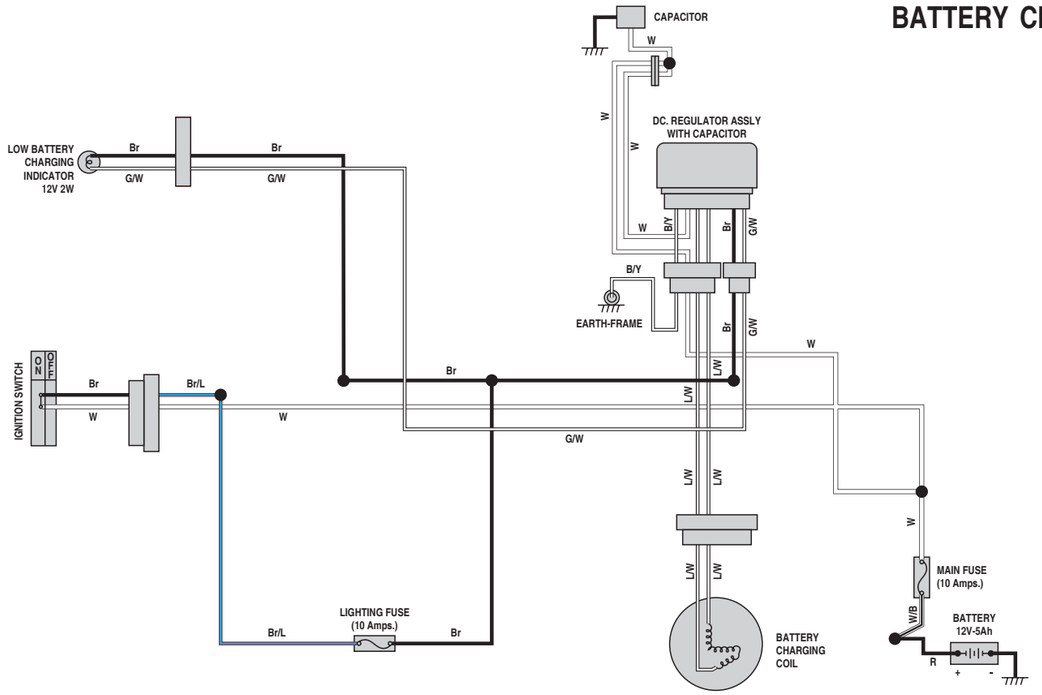
AUTO CHOKE CIRCUIT



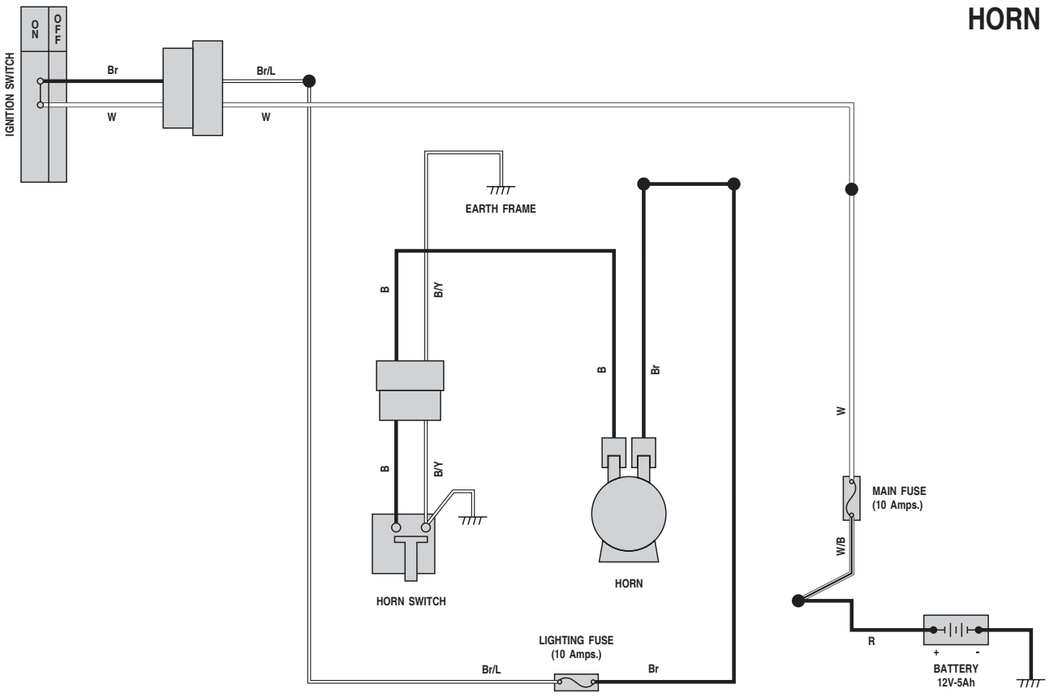
STARTER MOTOR CIRCUIT



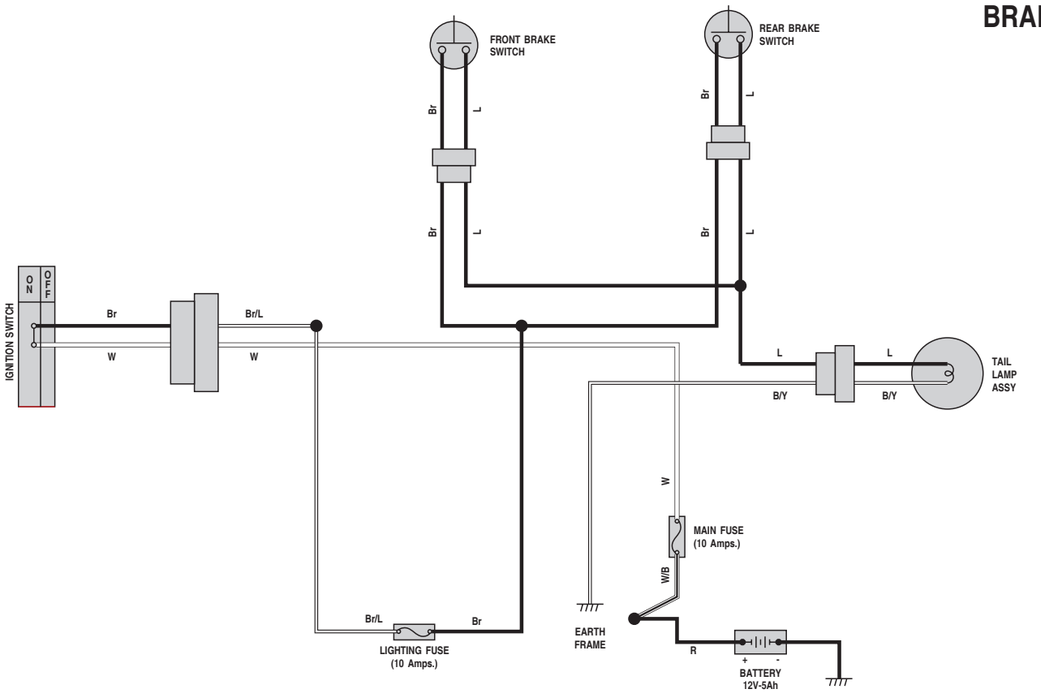
BATTERY CHARGING CIRCUIT



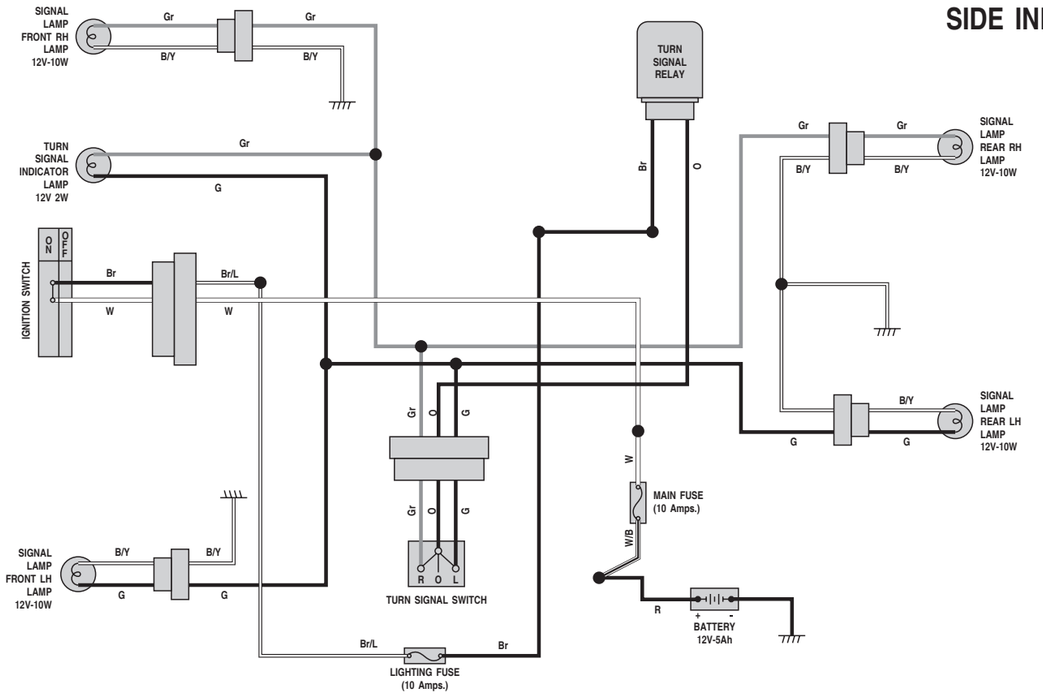
HORN CIRCUIT



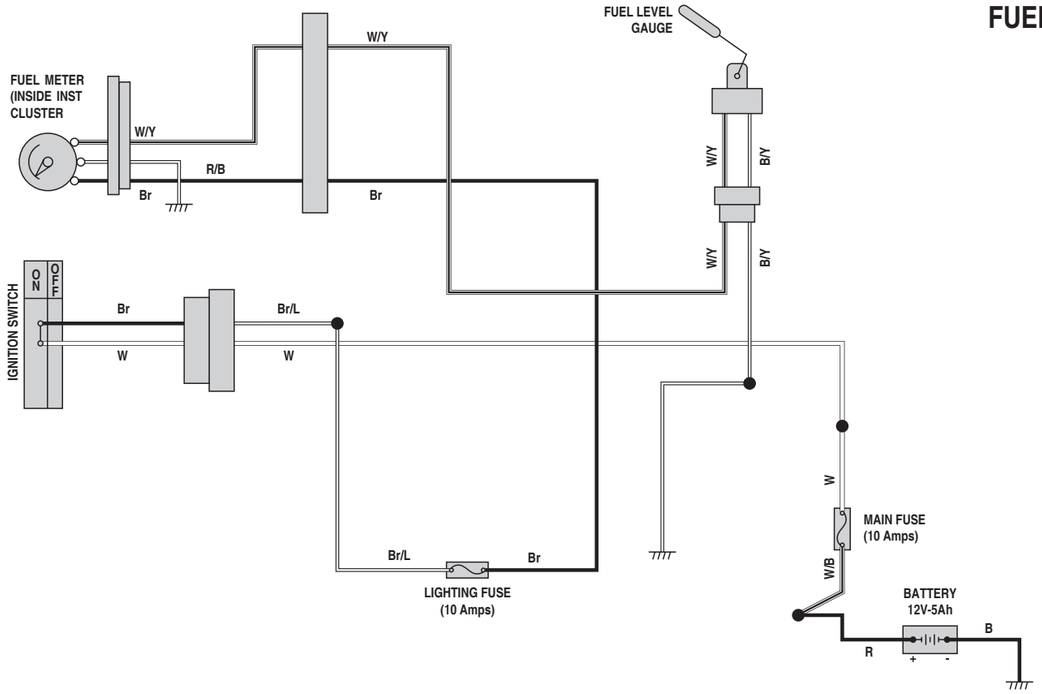
BRAKE LAMP CIRCUIT



SIDE INDICATOR CIRCUIT



FUEL GAUGE CIRCUIT



ELECTRICAL CIRCUIT DIAGRAMS

LIGHT SYSTEM CIRCUIT