Contents

Working Thumb Rules for First Time Right

Do's

- ☑ Blow air filters in opposite to airflow to enable dust to get out freely.
- ☑ Blow dry air and confirm airflow through carburettor passages to enhance proper cleaning of passages.
- ☑ Blow compressed air in all the orifices in the engine parts and oil passages and confirm the cleanliness.
- ☑ Breather slots in the crankcase should always be kept clean to allow to escape oil fumes from engine, otherwise it may lead to oozing out of oil through oil seals and 'O' rings.
- ☑ Always apply oil during assembling, particularly at friction prone area to increase the life of the components.
- ☑ Always fit piston rings as per specified position.
- ☑ Always replace 'copper washer' whenever the engine is overhauled.
- ☑ Confirm seating of circlips by rotating on their seat to avoid further consequences.
- ☑ Confirm the crankshaft centering and free rotation after fitment.
- ☑ Whenever installing the spark plug, first screw by hand and then tighten to specified torque. This is to ensure proper fitment and avoid thread damage.
- ☑ Always ensure correct fitment of magneto rotor by rotating it.
- ☑ Always connect battery with positive terminal first, then negative to avoid damage to the electrical components in case of short circuits.
- ☑ Always maintain correct tyre pressure, otherwise incorrect tyre pressure effects on performance of the vehicle, riding comfort and safety.
- ☑ Always use only genuine Bajaj parts and recommended lubricants to increase the life of the vehicle and long term economy.
- ☑ While replacing the chain lock link, always install the open end of the lock facing against the direction of rotation of chain.
- ☑ While fitting tyres, ensure the lie running alongwith the beed wire should be equidistant to wheel rim circumference.
- ☑ Always keep the work area clean and uncluttered to create good working atmosphere.
- ☑ Clean the vehicle / engine before opening to enable to follow the repair in proper way help in proper diagnosis, etc.
- ☑ Watch for sharp edges. This avoids injury while repairing.
- ☑ Always use correct size spanners / screw drivers to avoid damages to the nuts, bolts, etc.
- ☑ Use special tools wherever recommended to help in smoother, safer and faster work.
- ☑ Whenever some part is jam, check the cause (rust etc.), tap, if necessary, by mallet to avoid damage to the component.
- ☑ Clean the mating surface scratch free to avoid permanent damage to the surface, thus leading to leakage and ultimately cost of replacement of the parts.
- ☑ Inspect the parts visually as well as dimensionally, as applicable.

Visual	Dimensional / Numerical
Abrasion / Scratches	Abrasion / Scratches
Crack	Alignment
Bent	Warp
Dent	Clearance
Wear	Any other specifications
Play / Slackness	
Seizure	
Deterioration	
Proper Threading	

Note : Recommended / Allowable Tolerances / Clearance are absolute must.

- ☑ Check the oil at drain for - Quantity, Quality, Burr Contents, Contamination, etc. this may help in diagnosing problems.
- ☑ While installing the bearings always tap on the race which is taking seat to avoid damage to the bearing as the standard axial / radial clearances may increase.
- ☑ Always use Loctite to bolts / screws wherever recommended.
- ☑ Tighten the nut / bolts to correct torque to avoid damages to the components.
- ☑ Tighten nut / bolts in criss-cross pattern for mating surface to avoid distortion of the parts which leads to leakage, etc.
- ☑ Always clean the air filter element with Kerosene / Diesel.

Notes

Don'ts

- ☒ Do not use worn tools / spanners which leads damage to parts / even accident.
- ☒ Do not apply excess force while loosening - check for rusting or jamming.
- ☒ Do not re-use 'o' rings / gaskets ' oil seals / circlips as they loose their strength/properties, once they are opened.
- ☒ Do not wash air filter element with water.
- ☒ Do not wash bearings with water otherwise they will get permanently spoiled.
- ☒ Do not over tighten the carburettor jets, it will spoil the carburettor body.
- ☒ Do not blow compressed air with float assembled otherwise float gets distorted.
- ☒ Do not use hammer for engine parts to avoid damages to the components, because engine components are critical and costly.
- ☒ Do not check the current by earthing the lead cable of ignition coil, it may damage the igniter unit /CDI unit.
- ☒ Do not remove battery terminals during engine running to avoid damages.
- ☒ Don't push start the vehicle as it gives jerks/impacts to the engine components.
- ☒ Never add acid to battery once it has undergone charging to avoid damage to the battery cells.
- ☒ Never quick charge the battery – this shortens the life of the battery. Follow proper procedure to increase the life of the battery cells.
- ☒ Never apply grease to the battery terminals. Always apply petroleum jelly to avoid corrosion at the terminals.
- ☒ Do not apply direct water jet on electrical components, otherwise it will lead to failure of electrical components.
- ☒ Do not tune the carburettor in cold condition. Always remember tuning of carburettor must be done in warm up condition of engine.
- ☒ Do not remove carburettor from engine in hot condition to avoid distortion.
- ☒ Do not adjust spark plug gap and tappet clearance with hacksaw blade or with judgement of eye otherwise, it will effect the engine performance. Always use wire gauge for spark plug and feeler gauge for tappet setting.
- ☒ Do not use of wire or pin to clean the carburettor jets. Otherwise it will damage jet sizes orclogs the jet hole if the wire get break.
- ☒ Do not use ordinary wire in place of fuse. Otherwise it may lead to severe consequences.

Salient Features

STYLE :

Features :

- Refreshing colours with dazzling premium chrome graphics *
- Unique design side panels.
- Optoprism Headlamp housed in a stylish fairing with clear lens blinkers*, and an attractive twin pod console.
- Beautiful rear panels with fluid grab rail design
- Grey coloured engine and black silencer with chrome cover to give a distinct look

Advantages :

- Exquisite Styling package

Benefit :

- Onlookers will crave to get a glimpse of this exquisite style.

POWER & PERFORMANCE :

Features :

Engine :

- Ride Control Switch **
- 4-stroke, 100cc engine with Digital CDI & TRICS delivering 8.2 bhp (6.03 kW) @ 7500 rpm and **105 kmpl#** under standard test conditions
- World First ExhausTEC (Torque Expansion Chamber) technology** for the exhaust system

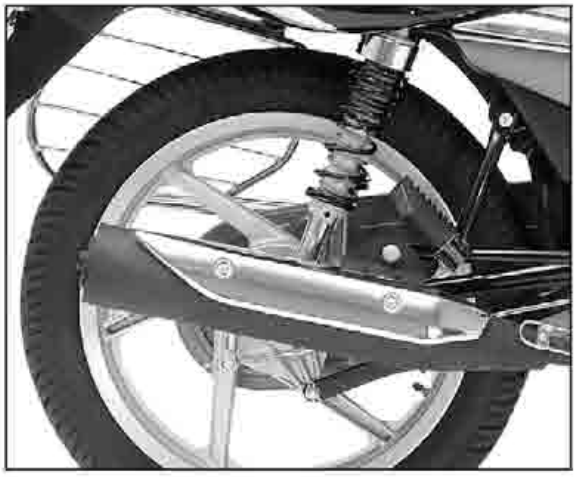
Advantages :

- Indicates optimum throttle opening for best mileage.
- Proven technology which delivers consistent and superior performance
- Improves engine torque at low rpms and is optimised to get maximum performance from engine

Benefit :

- More mileage along with good power.
- Superior engine performance for practical riding conditions

COMFORT :



Features :

- Telescopic Front suspension with travel of 125 mm.
- World first SNS (Spring-N-Spring) * Rear suspension with the longest travel in its class of 100 mm.

Advantages :

- Best in class suspension system for superior comfort

Benefit :

- Best ride comfort on any kind of road and any distance.

MANEUVERABILITY AND STABILITY

Features :

- High performance 17'' premium aluminium alloy wheels*

Advantages :

- The wheels are lighter and stronger apart from providing smashing profile looks

Benefit :

- Nimble handling for superior agility

* : Available on select variants

** : Patent applied for. # Under standard test conditions including 130 kg payload and a constant speed of 40 kmph. Mileage delivery may vary depending on individual riding habits and specific riding conditions.

Technical Specifications

ENGINE	
Type	Four stroke, Natural air cooled.
No. of cylinders	One
Bore	53.00 mm
Stroke	45.00 mm
Engine displacement	99.27 cc
Compression ratio	9.5 ± 0.5:1
Idling Speed	1300 ± 150 rpm in warm condition
Max. net power	6.03 kw (8.2 Ps) @ 7500 rpm
Max. net torque	8.05 Nm @ 4500 rpm
Ignition System	Digital CDI
Ignition Timing	10° BTDC at 1300 ± 200 rpm 32° BTDC at 4000 ± 200 rpm
Carburettor	Keihin-Fie PB16
Spark Plug	Champion PRZ9HC, MICO UR3AC
Spark Plug Gap	0.6 to 0.7 mm
Lubrication	Wet sump, Forced Lubrication
Starting	Kick Start
Clutch	Wet, Multi disc type
Transmission	4 speed constant mesh
Primary Reduction	3.476 : 1 (73/21)
Gear Ratios	
1st Gear	35.07 : 1 (37/11)
2nd Gear	19.75 : 1 (36/19)
3rd Gear	13.34 : 1 (32/25)
4th Gear	10.05 : 1 (27/28)
Final Drive Ratio	03.00 : 1 (42/14)
CHASSIS & BODY	
Frame Type	Tubular, Semi double cradle type
Suspension Front	Telescopic (Stroke 125 mm)
Rear	Trailing arm with co-axial hydraulic shock absorbers and coil springs.
Brakes Front & Rear (For Spokes Wheel)	Mechanical expanding shoe and drum type (110 mm)
Front & Rear (For Alloy Wheel)	Mechanical expanding shoe and drum type (130 mm)
Tyres Front	2.75 x 17
Rear	3.00 x 17
Tyre Pressure	
Front	1.75 Kg/cm² (25.0 PSI)
Rear Solo	2.00 Kg/cm² (28.0 PSI)
Rear Pillion	2.25 Kg/cm² (32.0 PSI)
Spokes / Alloy Front	1.60 x 17
Wheel Rim Rear	1.85 x 17
Alloy Wheels	Aluminium die cast with powder coating

CHASSIS AND BODY	
Fuel Tank Capacity	13 Liters
Reserve	2.5 Liters
Usable Reserve	1.75 Liters
CONTROLS	
Steering	Handlebar
Accelerator	Twist grip type on RH side of handlebar
Gears	Left foot pedal operated
Clutch	Lever operated on LH side of handlebar
Brakes Front	Lever operated on RH side of handlebar
Rear	Pedal operated by Right Foot
ELECTRICALS	
System	12 Volts (AC + DC)
Battery	12V 2.5 Ah
Head Lamp	35/35 W-HS1
Pilot Lamp	4 W
Tail / Stop Lamp	5/21 W
Turn Signal Lamp	10 W
Turn Signal Pilot Lamp	3 W
Hi-beam Indi. Lamp	3 W
Neutral Indicator Lamp	3 W
Speedometer Lamp	3 W
Horn	12V DC-2A
Fuel Gauge	3 W
DIMENSIONS	
Length	1990mm
Width	770mm
Height	1090mm
Wheel Base	1275mm
Turning Circle dia	4080mm (minimum)
Ground Clearance	150mm (minimum)
WEIGHTS	
Vehicle Kerb Weight	113 Kg.
Max. Total Weight	243 Kg.
PERFORMANCE	
Maximum Speed	90 Km/Hr. with single rider (68 Kg)
Climbing Ability	25% (14°)

Notes:

- Values given above are nominal and for guidance only. 15% variation is allowed to cater for production and measurement variation.
- 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.

Comparison with Competitors Vehicles

Power & Performance	CD Dawn	Splender +	Passion +	TVS Centra	Advantages of Platina
Engine Cubic Capacity	4 Stroke 97.2 cc	4 Stroke 97.2 cc	4 Stroke 97.2 cc	4 Stroke 99.8 cc	4 Stroke 99.27cc
Engine horse power	5.5 KW @ 8000 rpm	7.5 PS @ 8000 rpm	7.5 PS @ 8000 rpm	5.59 KW @ 7500 rpm	6.03 kw at 7500 rpm
Engine Torque	7.74 N.m @ 5000 rpm	Not Available	Not Available	7.5 N.m @ 5000 rpm	8.05 N-m at 5500 rpm
Max. Speed	85 Kmph	85 Kmph	85 Kmph	85 Kmph	90 Kmph
Ignition System	Electronic CDI ignition System No TRICS	Electronic CDI ignition System No TRICS	Electronic CDI Ignition No TRICS	Electronic CDI Ignition No TRICS	Electronic digital CDI, AC Ignition, TRICS
Exhaust System	No ExhausTEC	No ExhausTEC	No ExhausTEC	No ExhausTEC	ExhausTEC
Optimum Ride Control	Not provided	No Ride Control switch	No Ride Control Switch	Electrical (Needs visual attention)	Ride control switch provided
Style :					
Styling	Conventional Styling	Conventional Styling	Execute styling	Conventional Styling	Exquisite styling package
Graphics	Outdated design	Regular Graphics	Regular Graphics	Ordinary stickering	Gorgeous & highly attractive graphics
Engine & Silencer	Regular 4S Engine & plated Silencer	Regular 4S Engine & plated Silencer	Regular 4S Engine & plated Silencer	Regular 4S Engine & plated Silencer	Heat Resistant grey coloured engine & silencer
Console Unit	Regular Console	Regular Console	Regular Console	Regular Console	Highly attracive & mind catching platinum console unit
Grab Rail	Ordinary grab rail	Ordinary grab rail	Ordinary grab rail	Ordinary grab rail	Unique design & highly attractive grab rail
Comfort :					
Front Suspension	Telescopic hydraulic fork Less travel	Telescopic hydraulic fork Less travel	Telescopic hydraulic fork Less travel	Telescopic Front fork	Telescopic front fork 125mm travel
Rear Suspension	Regular hydraulic shockabsorber	Regular hydraulic shockabsorber	Regular hydraulic shockabsorber	Hydraulic with coaxial spring	SNS suspension

Maneuverability & Stability	CD Dawn	Splender +	Passion +	TVS Centra	Advantages of Platina
Wheels	18" Spoke wheels	18" Spoke Wheels	18" Spoke Wheels	18" Spoke Wheels	17" Alloy Wheels 17" Spoke Wheels
Front Tyres Rear Tyres	2.75 X 18 4 PR 2.75 X 18 6 PR	2.75 X 18 4 PR 2.75 X 18 6 PR	Zapper tyres	2.75 X 18 PR 2.75 X 18 PR	2.75 X 17 PR 3.0 X 17 PR
Wheel Base	1230 mm	1230 mm	1265 mm	1235 mm	1275 mm

Notes

FAQs (Frequently Asked Questions)

What are the special features of 'Platina' ?

'Platina' has a proven engine of 'CT100', which gives very high mileage & reasonable power. Apart from this 'Platina' has following exquisite styling elements.

- Platinium silver colour with sleek chrome graphics.
- Stylish fairing with MFR headlamp and clear lens blinkers.
- Graphite - tint engine & transmission.
- Matt finish black silencer with chrome heat shields.
- Chrome streaked blade design side panels.
- Annular chrome rings housed in a sporty console.
- Alloy wheels (variant model).

In addition, 'Platina' has

- Spring-in-Spring rear suspension with 100 mm rear wheel travel for comfortable ride in all kind of road conditions.
- Longer front suspension travel of 125mm for smooth & vibration free riding.

Overall 'Platina' looks most stylish & sturdier in it's class of bikes.

Why one more model of 100 cc engine, while 'CT100' is doing well?

In order to satisfy customer's aspirations in terms of look and style without compromising fuel economy 'Platina' is introduced.

If Alloy wheels is a superior technology then why 'Platina' is having spokes wheels?

'Platina' is available in both versions i.e. Spoke wheels and Alloy wheels. It gives an option of choice to the customer on different price point.

Alloy wheels gives better looks, better maneuverability, better road grip, better safety of tubes as inner surface of rim portion is smooth in absence of spokes & nipples.

In addition it gives better agility and nimble handling.

Note : Spoke wheels have brake drum size of 110 mm & Alloy wheels 130 mm.

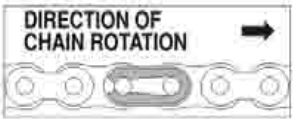
If Platina is also 100cc bike then what is difference between 'CT-100' and 'Platina' ?

The major difference between 'CT-100' and Platina is styling and looks as mentioned above for taking the aspirations of customers to a new category.

What is the purpose of keeping engine colour grey? Any special advantage? Does it fade out faster?

First of all the grey paint is to add aesthetics to the vehicle. The paint is special and it is heat resistant. Apart from improvising the looks, it also protects components from weather.

Pre Delivery Inspection

To Check	Check For
ENGINE :	
Engine oil SAE20W40 of API 'SG' + JASO 'MA' grade.	Oil level. Top up if required. Oil leakage if any.
Idling Speed	Check / Adjust if required. (1300 ± 150 rpm)
Kick operation	Smooth operation.
Fasteners (Check torque and correct if required)	Cylinder head bolts (2.0~2.4 kg.m) Engine mounting bolts (4.0~4.5 kg.m) Oil drain plug (2.7~3.3 kg.m) Spark plug (1.1~1.5 kg.m)
FUEL SYSTEM :	
Fuel Tank / Pipes	Leakages / Fitment.
Fuel Tap	Smooth Operation.
Carburetor	Leakages (External) / Fitment.
FRAME :	
Wheels	
Tyre Pressure : Front Rear (Solo) Rear (Pillon)	 1.75 Kg/cm^2 (25 PSI) 2.00 Kg/cm^2 (28.0 PSI) 2.25 Kg/cm^2 (32.0 PSI)
Rim Run out with tyre	Radial 0.5mm or less Axial 0.8 mm or less
Spokes	Check and Tighten if required
Drive Chain	Slackness (30~35mm) Lubrication (SAE 90) Check chain lock position. 
Controls	
Brakes	Front brake lever play (2~3mm) Rear brake pedal play (20~30mm)
Clutch	Lever free play (2~3mm) Smooth operation
Throttle	Grip free play 2~3 mm. Smooth operation
TPS	Self return, Cable free play, Routing and Functions of TPS
Choke	Working and Smooth operation.

To Check	Check For
Suspension	
Front Fork	Oil leakage & Smooth operation.
Rear Shockabsorber	Proper notch setting - same on both sides - 2nd notch. Smooth operation.
Steering	Smooth operation (Loose/Tight)
Lock Operation	Steering & Ignition, Fuel tank, Seat lock, Side cover LH.
Fasterners (Check torque and correct if required)	Front axle nut (5.0 $\pm$ 0.5 kgm) Rear axle nut (5.5 $\pm$ 0.5 kgm) Fork lower clamping bolt (3 $\pm$ 0.5 kgm) Trailing arm nut (4.5 $\pm$ 0.5 kgm) Rear shocker mounting nut (4.5 $\pm$ 0.5 kgm) Steering top bolt (2.5 $\pm$ 0.5 kgm) Holder handle upper bolts (4 Nos.) (1.4 $\pm$ 0.2 kgm) Holder handle flanged nuts (2 Nos.) 3.5 $\pm$ 0.3 kgm)
Electrical	
Battery	Electrolyte level to max level mark. Specific gravity 1.240. Charging status - full, Connect -ve terminal & apply petroleum jelly.
	Routing of Breather pipe, Fuse.
All bulbs Working	Head, Pilot, Tail / Stop, Speedometer, Side indicator and Fuel gauge lights.
Horn	Working
Switch Operation	LH and RH control, Ignition switch, Ride control, Brake switch (Front/Rear).
Test Drive	LH and RH control, Ignition switch, Ride control, Brake switch (Front/Rear).
Starting *	Cold start and Warm start. Idling speed (in warm condition) 1300 $\pm$ 150 rpm.
Drive Ability	Throttle response.
	Clutch operation / Gear shifting.
	Brakes (Front & Rear).
	Speedometer, Odometer & Trip meter.
CO % Check	CO should be 2.0 % in warm condition.
Cleaning	Wash & Clean vehicle properly.

*** IMPORTANT :**

BEFORE STARTING, PLEASE ENSURE FOLLOWING.

- Check the fitment of Reed Switch and Magnet.
- Max. gap between Magnet and Reed Switch to be 2.5 mm.
- Check for working of the Reed Switch assembly and Magnet by using multi meter.
- Press and Confirm that Spark Plug cap has been fitted correctly.
- Confirm tightness and correct fitment of primary lead to the H.T. Coil.

Any other defects
Look for any external damages in Transit : Please check, record and rectify. 1. Moisture / Oil collecting tube of Air Filter should be properly fitted and routed correctly.

PDI - SOP & Time Study Platina								
Sr. No.	**Description**	**Position**	**SMM**	**GP Tools**	**Spl. Tools**	**PNR & its attachment**	**Consumables**	**M & T / Service shop equipments**
1	Identify & Park Vehicle on Work Bay		0.80					Lifter Bay
2	Remove the Thermocol and additional packing if any		0.08					
3	Open Petrol tank cap & pour petrol		0.29				Petrol	Petrol Dispencer
4	Check for smooth operation of fuel cock lever		0.19					
5	Study PDI card and work content.		0.57					
6	Check & top up Transmission oil	RH	0.53	Nose plier, Oil Can, Funnel			Cloth	
7	Check All controls	RH						
	Clutch cable Adjustment /Operation	RH	0.33	12-13 OE Spanner				
	Check Choke & Adjust	RH	0.08	10-11 OE Spanner				
	Check Accelerator (throttle) & Adjust if required	RH	0.08	6" Comb. Plier				
8	Check Rear brakes for efficient working.	RH	0.23	14-15 OE Spanner				
9	Check Rear wheel Spokes Looseness & Correct (Applicable to some models)	RH	0.25	Spoke Spanner				
10	Rear wheel runout check & adjust	Rr.	0.13					
11	Check and correct tyre inflation pressure- Rear Wheel	Rr.	0.26					Pedal Operated Air Pump, Tyre Pressure Gauge

12	Lubricate chain and check/adjust chain slackness.	LH	0.47	Oil Can,14-15, 20-22, 24-27 Ring Spanner, 10-11 OE Spanner			SAE 90 Oil, Cloth	
13	Check gear shifter lever operation	LH	0.22					
14	Check Battery voltage, fill/topup electrolyte, apply petroleum jelly, connect terminals.	LH	1.22	6" comb.plier & Philips Screw Driver			Cloth, Distilled Water, Electrolyte, Petroleum Jelly	Battery load tester,multimeter Electrolyte Filling dropper, Hydrometer
15	Check front brakes for efficient working.	LH	0.28	6" comb. plier				
16	Check Front wheel Spokes for any Looseness (Applicable to some Models)	LH	0.25	Spoke Spanner				
17	Front wheel runout check & adjust	Fr.	0.13					
18	Check and correct tyre inflation pressure- FRONT	Fr.	0.30					Pedal Operated Air Pump, Tyre Pressure Gauge
19	Check & adjust steering	Fr.	0.29	14-15, 16-17 & 28 Ring Spanner				
20	Check front mudguard allignment wrt fr wheel((specific models)	Fr.	0.06					
21	Check all important nut bolts for torque and tighteness, a. Handle bar mounting bolt b. Stem under & upper bracket bolts c. Stem of bolts d. Front axle nut e. Cylinder head nuts f. Engine foundation bolts g. Tralling arm bolts i. Both LH/RH mounting bolts j. Check & tight any other fastences if reqd.	LH/RH	2.90	8-9, 10-11, 12-13, 14-15, 16-17 Ring Spanner, 16-17 OE Spanner, Philips Screw Driver		Pistol Grip PNR & Socket set		Dial type Torque wrench

22	Check-up for oil leakage and rectify if any.		0.32					
23	OE acessories fitment like	LH/RH						
	OE-acessories- Mirrors- Right		0.62	12-13 OE Spanner				
	OE-acessories- Mirrors- Left		0.51					
	OE-acessories-Leg guard	LH/RH	4.37	14-15, 16-17 Ring Spanner				
	OE-acessories-Saree guard	LH						
24	Start vehicle,Check operation of electricals a. Head light b. Tail light c. Brake light d. Horn e. Speedo meter f. Parking light g. Side indicators	LH/RH	0.35	Connecter, Philips Head Screw Driver, 10-11 Ring Spanner & 8 no. T Spanner				
25	Check Idling and CO%.		0.59	8" small Connector, 8 no.T spanner				CO-HC Analyzer, Techometer
26	Check all locks for proper operation		0.53					
27	Test Drive the vehicle and study the job card and verify workdone.Take vehicle out and park		1.22					MRTB
28	Clean/wash the vehicle before delivery						Kerosene, Cloth, Nonalkaline Multipurpose solution,Water	Car Washer, Blower
29	Repair for any other defects seen or observed during test drive.							

As Per SOP PDI Time : 18.43 Min per Vehicle

Productivity : 25 Vehicles / Technician/ Day (8 Hours)

Periodic Maintenance and Lubrication Chart

Sr. No.	Operation		Whichever comes first		RECOMMENDED FREQUENCY				
					Initial				Subsequent
			OR	Kms	750	2,500	5,000	2,500	Every 2,500 Km
				Days	30	90	150	225	Every 75 days
1.	Servicing				●	●	●	●	●
2.	Valve Clearance	A					●		Every 5000 Kms
3.	Engine oil (SAE 20W40 of API SG + JASO MA)	R			●		●		Every 5000 Kms
4.	Oil Strainer	CL			●				Every 10000 Kms
5.	Air cleaner element *	CL			●	●	●	●	●
6.	Air Cleaner element	R							Every 10000 Kms
7.	Carburetor / Idle speed / CO %	CL,A			●	●	●	●	●
8.	Fuel System leakages	C,R			●	●	●	●	●
9.	Fuel Pipes	R							Every 20000 kms
10.	Spark Plug / Gap	CL,A			●	●	●	●	●
11.	Spark Plug	R							Every 10000 Kms
12.	Brake light switch	C,A			●	●	●	●	●
13.	Clutch play	C,A			●	●	●	●	●
14.	Throttle play	C,A			●	●	●	●	●
15.	TPS adjustment and proper functioning	C,A			●	●	●	●	●
16.	Front brake lever play	C,A			●	●	●	●	●
17.	Rear brake pedal play	C,A			●	●	●	●	●
18.	Steering play	C,A,R			●	●	●	●	●
19.	All fasteners tightness including engine mounting	T			●	●	●	●	●
20.	Tyre tread wear	C,R				●	●	●	●
20.	Spoke tightness & Rim run out (If applicable)	C,A			●	●	●	●	●
21.	General lubrication	L			●	●	●	●	●
22.	Steering stem bearing	L	1 Year						Every 10000 Km
23.	Wheel bearing	L	1 Year						Every 10000 Km
24.	Swing arm mounting bush	L,R	Lubricate at 5,000 kms. Replace after every 20000 kms						
25.	Front Fork	C			●		●		Every 5000 Kms
26.	Front Fork oil	R							Every 10000 Km
27.	Rear shock absorber	C,R			●	●	●	●	●
28.	Front Brake Cable	C,R	1 Year						
29.	Drive chain wear / Remove and lubricate	C,R					●		Every 5000 Kms
30.	Engine Compression Pressure	C							Every 10000 Kms
31.	Valve Lapping	C,R							Every 30000 Kms
32.	Valve oil Seal	R							Every 30000 Kms

• : Indicates operation to be performed
* : More frequent cleaning may be required when driving in dustycondition.

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

Note :
Parts / Lubricants to be replaced as per Periodic Maintenance and Lubrication chart are mandatory and the same are chargeable to customer.

SOP for Periodic Service

Sr.	JOBS TO BE CARRIED OUT	LH / RH Side	SMM	GP Tools	Spl. Tools	PNR	PNR attachment	Consumables	M & T / Service Shop Equipment
1	Wash Vehicle thoroughly.	Both		To be done by Washing boy					Car Washer
2	Identify the vehicle		0.30						
3	Bring vehicle and position on bay		0.50						
4	Raise the Lift		0.30						Lifter Bay
5	Start vehicle and Warm up. Remove RH, LH side covers, seat, Petrol tank and keep properly	LH/RH	0.70	Philips screw driver		Pistol grip PNR	Socket set		
6	Drain Engine Oil	LH	1.30	14 mm Socket with extension, plastic tray				Cloth	Oil draining Equip., Air Gun
7	Check Battery, top up Distilled water. Clean terminals & apply Petroleum Jelly. Route cables properly and fit terminal caps properly. Recharge battery if required.	LH	1.80	6" comb. Pliers, Distilled water filler, Philips screw driver.				Cloth, fine polish paper, Petroleum Jelly, Distilled water	Hydrometer, Battery Charger, Battery Tester
8	Drain Carburetor. (Overhaul - if required)	RH	1.30	6" Cheese head and 8" Phillips head screw driver, Nylon brush 10 mm, plastic tray, 6-7, 8-9, 10-11 mm OE spanner, small connector	Float Gauge			Cloth, 20W 40 oil, Diesel	Air gun
9	Check & adjust tappet clearance. (if required) **During 4 th Servicing or after 5000 Km whichever is later**	LH		8-9 Ring spanner, 10-11,12-13, 16-17 mm OE spanner, 14 mm Box spanner with handle ratchet & Chisel screw driver	Filler gauge 0.01 to 1 mm, Tappet holder	Pistol grip PNR	Socket set	Cloth	
10	Check LH Side Important Fasteners and tight	LH	0.60	12-13, 14-15, 16-17 Ring spanner, 10 no. T spanner, 6" comb. pliers					
a	Side bolts of Front fork								
b	Top bolts of Front fork								
c	Side Stand bolt								
d	RSA top and bottom nuts								
11	Adjust chain slackness & Lubricate. Remove and clean , If required	LH,RR	3.90	10mm T spanner, 14-15, 20-22, 24-27 Ring spanner, 10-11 OE spanner, Mallet hammer, 6" comb. Pliers, 14-15 mm OE spanner				Cloth, SAE 90 oil, Diesel	Air gun
12	Check/ Adjust Rear Brake, wheel freeness and run out	RR	0.60	10-11, 14-15, 16-17, 20-22 Ring spanner, 10-11, 14-15 OE spanner 6" comb. pliers, Mallet hammer, 12" screw driver spoke Spanner		Pistol grip PNR	Socket set	Cloth, Graphite Grease, Fine polish paper	Air Gun
13	Check & adjust Rear tyre air pressure	RR	0.40						Pencil type Pressure gauge Air filling Valve
14	Clean Air filter. (Replace - if necessary)	RH	4.50	Philips screw driver, 8 no. T spanner		Pistol grip PNR	Socket set	Cloth, 20W 40 oil, Diesel, Air filter element	Filter cleaning stand, air gun

Sr.	JOBS TO BE CARRIED OUT	LH / RH Side	SMM	GP Tools	Spl. Tools	PNR	PNR attachment	Consumables	M & T / Service Shop Equipment
15	Clean Centrifugal Oil Filter & Oil Strainer. (Replace - if required) **After 1 Year or 10000 Km whichever is later**	RH		12-13 Ring spanner, 12-13 mm OE spanner, 8 mm T spanner, 8" Philips screw driver, Plastic tray		Pistol grip PNR	Socket set	Diesel, cloth, Clutch Cover Gasket, Oil Strainer	Air gun
16	Check Clutch and adjust	RH	0.30	12-13 OE spanner					
17	Fill Engine Oil	RH	1.35	6" comb. Pliers, Measuring Jar 1-Litre, Funnel				Oil 20W40, Cloth	Oil dispenser
18	Clean, Check & adjust Spark Plug (Replace - if required)	RH	2.40	Spark plug spanner, Plug cleaner, wire brush	Filler gauge 0.01 to 1 mm			Cloth, fine polish paper, Spark Plug	Spark Plug cleaning m/c
19	Check Choke and adjust	RH	0.20	10-11 OE spanner					
20	Check Accelerator and adjust	RH	0.40	6" comb. Pliers					
21	Check/ Adjust Front Brake, wheel freeness & run out	FR	0.80	10-11 mm OE spanner, 14-15, 16-17 Ring spanner, 6" comb. Pliers		Pistol grip PNR	Socket set	Cloth, fine polish paper	Air Gun
22	Check & adjust Front tyre air pressure	FR	0.40	Pencil type Pressure gauge					Analogous / Digital type Pressure gauge, Air filling Valve
23	Check and adjust steering.	FR	0.80	14-15, 16-17 Ring spanner & 28 mm Ring or OE spanner	Fork spanner				
24	Check **RH** Side Important Fasteners and tight	RH	1.30	8-9, 10-11, 12-13, 14-15, 16-17 Ring spanner, 16-17 mm OE spanner, Philips screw driver.		Pistol grip PNR	Socket set		
a	Engine foundation bolts								
b	Front axle nut								
c	Side bolts of Front fork								
d	Handle bar bolts								
e	RSA top and bottom nuts								
f	Swing Arm axle nut								
g	Silencer protective covers screws / bolts.								
h	Rear view mirrors								
25	Lubricate as per Lubrication Schedule	LH/RH	1.10	Oil Can				20W40 oil, Graphite Grease, cloth	Grease Gun
a	Fr. Brake lever								
b	Clutch lever								
c	Fr. Brake cam								
d	Rr. Brake pedal								
e	Rr. Brake Cam								
f	Pillion Foot Rest								
g	Center Stand								
h	Side Stand								
I	Kick lever boss pin								

Sr.	JOBS TO BE CARRIED OUT	LH / RH Side	SMM	GP Tools	Spl. Tools	PNR	PNR attachment	Consumables	M & T/Service Shop Equipment
26	Refit RH, LH Side Covers, Seat Assly, Petrol Tank Assly	LH/RH	0.50	8" Philips screw driver		Pistol grip PNR	Socket set		
27	Check and Clean fuel line and clean PT cover.	LH	0.50						Air Gun
28	Check all Meters for proper functioning and correct, if required.	FR	0.50						
29	**Start vehicle, check & adjust the following.**								
a	Head light.	FR	0.95	8" Phillips screw driver, 10-11 Ring spanner, 8 no. T spanner, 6" comb. Pliers					
b	Tail light.	RR		8" Phillips screw driver, 6" comb. Pliers, RSD					
c	Brake light.	RH,RR		8" Phillips screw driver, 6" comb. Pliers, RSD					
d	Horn	FR		8" Phillips screw driver, 6" comb. Pliers, RSD					
e	Speedometer, pass, parking light	FR		8" Phillips screw driver, 6" comb. Pliers, RSD					
f	Side Indicators Front & Rear both sides	Both		Small Philips screw driver					
g	Tune Engine & Carburetor.	LH	2.00	8" small connector					CO-HC analyzer; Tachometer, Proper exhaust sealing arrangement of Silencer
30	Study Job Card & verify work		1.00						
31	Lower the Lift		0.30						
32	Take out and park the vehicle		0.50						
	Sub Total		**31.50**						
33	Carry out any additional work as indicated by the Customer or as required.		10						
	Total		**41.50**						
	Expected Production/480 mnts./Man		**12**						
34	Test Ride of the vehicle if required and park		1.5	To be done by Expert					
35	Clean the vehicle at the time of delivery		1	To be done by Delivery boy					
	PNR = Pneumatic Nut Runner, **RSD** = Ratchet Screw Driver								

As per SOP Periodic Service Time :	45 Min per vehicle
Productivity :	11 Vehicles / Technician / Day (8 hours)

SOP Time Chart for Periodic Maintenance & Lubrication.

Sr. No.	Activity Description	750 Kms	2500 Kms	5000 Kms	7500 Kms	10000 Kms	12500 Kms	15000 Kms	17500 kms	20000 Kms	22500 kms	25000 kms	27500 Kms	30000 kms
		1st PS (Free)	2nd PS (Free)	3rd PS (Free)	4th PS (Free)	1st PS (Paid)	2nd PS (Paid)	3rd PS (Paid)	4th PS (Paid)	5th PS (Paid)	6th PS (Paid)	7th PS (Paid)	8th PS (Paid)	9th PS (Paid)
1	Wash the vehicle (to be done by washing boy).	12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90
2	Identify, bring vehicle & load on lift. Start vehicle, warm up. Remove side covers, Seat assly & Petrol Tank assly. Raise the lift.	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
3	Check & Adjust Valve clearance every 5000 Kms.			9.60		9.60		9.60		9.60		9.60		9.60
4a	Flush & Change Engine Oil after every 5000 Kms.	2.65		2.65		2.65		2.65		2.65		2.65		2.65
4b	Check & Top up Engine Oil Level if required.		1.35		1.35		1.35		1.35		1.35		1.35	
5	Clean Oil Strainer, Centrifugal Filter , (Replace after 10000 Kms)	17.00				17.00				17.00				17.00
6a	Clean Air Filter as per Schedule	4.50	4.50	4.50	4.50		4.50	4.50	4.50		4.50	4.50	4.50	
6b	Replace Air Filter Element after every 10000 Kms.					4.50				4.50				4.50
7	Clean & Drain Carburetor. (Overhaul, If Required).	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
8	Start veh., check idling & CO%. (Tune Engine & Carburetor if required)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
9a	Check Fuel system leakages, replace if required.	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.50
9b	Replace Fuel Pipes after every 2 Years or 20000 Kms.									0.50				
10a	Clean, Check & Adjust Spark Plug gap.	2.40	2.40	2.40	2.40		2.40	2.40	2.40		2.40	2.40	2.40	
10b	Check, Replace Spark Plug after every 10000 Kms.					2.40				2.40				2.40
11	Check Clutch, Gear, Choke, Throttle, TPS & Adjust if required.	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
12	Check , Adjust Front & Rear Brakes Play	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
13	Check & Adjust Steering Play.	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
14	Check & tight Nuts, Bolts & Fasteners to the recommended torque.	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
15	Lubricate specific points as per Lubrication Schedule.	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
16	Lubricate Steering Stem Bearing after every 10000 Kms / 1 Year.					36.00				36.00				36.00
17	Lubricate Wheel Bearing after every 10000 Kms / 1 Year.					36.00				36.00				36.00
18	Lubricate Swing Arm Pivot Pin / Bush after every 5000 Kms.			6.00		6.00		6.00		6.00		6.00		6.00
19	Check / Replace Fork Oil after every 10000 Kms.					28.00				28.00				28.00

20	Check & Adjust Rear Shock Absorber Spring / Damper position.	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
21	Check & Correct Wheel Run-out. (If Applicable).	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
22	Check & Adjust Air pressures in front & rear tyres.	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
23	Check Battery, top up Distilled water. Route the cables and fit terminal caps properly. Clean terminals & apply Petroleum Jelly (If Applicable).	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
24a	Check, Adjust Chain slackness. Clean & Lubricate as per Schedule.	3.90	3.90		3.90		3.90		3.90		3.90		3.90	
24b	Drive Chain Overhaul after every 5000 Kms.			30.00		30.00		30.00		30.00		30.00		30.00
25	Check all Meters for proper functioning.	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
26	Start vehicle, check & adjust Horn & all Lights for proper functioning.	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
27	Valve Lapping after every 30000 Kms.													90.00
28	Valve Oil Seal Replacement after every 30000 Kms.													
29	Carry out any additional work if required.	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
30	Refit side covers, Petrol Tank & seat assly. Lower the lift. Study Job card & verify the work. Take vehicle out & park.	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
31	Test Ride the vehicle & check (To be done by Expert Technician).	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
32	Clean the vehicle at the time of delivery (to be done by delivery boy)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total SMM		**75.20**	**56.90**	**99.90**	**56.90**	**216.90**	**56.90**	**99.90**	**56.90**	**216.90**	**56.90**	**99.90**	**56.90**	**306.90**

Service Wise Part Kit

Periodic Part Replacement Kit for Free Services

Type of Service	Item Description	Part Number	Qty
I st Free Service - 750 Kms	Engine Oil	NA	900 ml
	Clutch Cover Gasket	DD 1010 60	1
II nd Free Service - 2500 Kms	NIL	NIL	NIL
III rd Free Service - 5000 Kms	Engine Oil	NA	900 ml
	Drive Chain Lock & Link Set	DD 1510 19	1
IV th Free Service - 7500 Kms	NIL	NIL	NIL

Periodic Part Replacement Kit for Paid Services

Type of Service	Item Description	Part Number	Qty
1 st Paid Service - 10,000 Kms	Engine Oil	NA	900 ml
	Clutch Cover Gasket	DD 1010 60	1
	Air Filter Foam element	DP 1210 34	1
	Spark Plug	DD 1110 18	1
	Fork Oil	36 3118 08	300 ml
	Drive Chain lock and link set	DD 1510 19	1
	Steering balls	30 1810 06	46
2 nd Paid Service - 12,500 Kms	NIL	NIL	NIL
3 rd Paid Service - 15,000 Kms	Engine Oil	NA	900 ml
	Drive Chain lock and link set	DD 1510 19	1
4 th Paid Service - 17,500 Kms	NIL	NIL	NIL
5 th Paid Service - 20,000 Kms	Engine Oil	NA	900 ml
	Clutch Cover Gasket	DD 1010 60	1
	Air Filter Foam element	DP 1210 34	1
	Fuel pipe tank to cock	DU 1410 41	1
	Fuel pipe cock to Carburetor	DU 1410 41	1
	Spark Plug	DD 1110 18	1
	Fork Oil	36 3118 08	300 ml
	Drive Chain lock and link set	DD 1510 19	1
	Steering balls	30 1810 06	46

Type of Service	Item Description	Part Number	Qty
6 th Paid Service - 22,500 Kms	NIL	NIL	NIL
7 th Paid Service - 25,000 Kms	Drive Chain lock and link set	DD 1510 19	1
8 th Paid Service - 27,500 Kms	NIL	NIL	NIL
9 th Paid Service - 30,000 Kms	Engine Oil	NA	900 ml
	Clutch Cover Gasket	DD 1010 60	1
	Air Filter Foam element	DP 1210 34	1
	Spark Plug	DD 1110 18	1
	Valve Oil Seals	36 3110 08	1
	Cylinder Head Gasket	DD 1010 43	1
	Cylinder Head Stud Copper Washer	39 1612 11	4
	Steering balls	30 1810 06	46
	Fork Oil	36 3118 08	300 ml
	Drive Chain lock and link set	DD 1510 19	1

Notes

Parts Inspection Parameters

SPARK PLUG :

- Type / Heat value - MICOUR3AC, CHAMPION PRZ9HC
- Gap between electrodes - 0.6 to 0.7 mm
- Electrode condition - No errosion
- Colour at the electrodes tip - Brownish-White
- Threads of reach portion - Ok / No damage

CYLINDER HEAD :

- Mating surface : No warpage/No scratches (Service limit for warpage: 0.05mm)
- Identification mark - straight intake port
- No fins breakage
- Spark plug hole threads - Ok / No damage
- Carbon built up in combustion chamber cavity- Clean it
- Valve seat : No pitting / No carbon deposition
- Proper fitment of Dampers (4 Nos)
- Proper fitment of 'O'rings
- Proper fitment of valve stem oil seals on valve guide
- Valve guide for crack if any
- Silencer mounting studs threads - Ok / No damage

CYLINDER BLOCK :

- No fins breakage
- No Scoring marks
- No Seizure marks
- Ok Seating – mating surfaces
- Smooth Honing pattern
- Correct / Same grouping mark with respect to piston (A & B group)
- Inner diameter of block as mentioned in service data.
- Ovality - Not more then 0.05 mm.
- 3 Nos.of damper rubbers Properly fitted on fins
- Proper fitment of 'O'ring on bottom side

PISTON :

- Type / Heat value - MICOUR3AC, CHAMPION PRZ9HC
- Gap between electrodes - 0.6 to 0.7 mm
- Electrode condition - No errosion
- Colour at the electrodes tip - Brownish-White
- Threads of reach portion - Ok / No damage

RINGS :

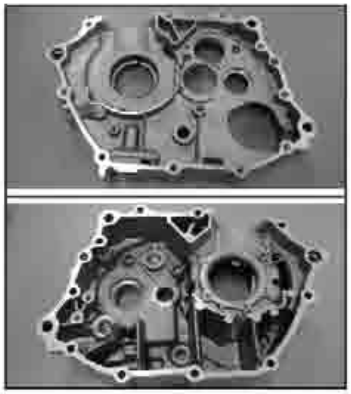
- No uneven wear around circumference / breakage
- Discoloration at working face
- Carbon built up on inner face if any
- Piston ring end gap - As per Service Data
- Piston ring width (thickness) - As per Service Data
- Free rotation of rings in pistone grooves - No stickyness

CRANKSHAFT :

- Big eng axial play : As per Service Data
- Runout : As per Service Data
- Threading Condition : Ok / No Damages
- Key way condition : Ok / No Damages
- Big end bearing : Free Rotation
- Con-rod : No bending / Twisting
- Oil Passage : No blockage
- Square slot key way for Primary Gear

CRANCASE :

- Mating Surface : Smooth / No scratches
- No cracks, damages, breakage
- Bearing seat, oil seal seat and proper pressing / positioning of oil seals, needle roller, ball bearing freely rotating.
- No blow holes in casting
- Breather pipe / hole : No clogging
- Oil passage : Clean / No clogging
- Threads of holes & studs : Ok / No damages
- Proper pressing of Gear Change Drums insert in its seat
- Visible number punching on LH Crank Case

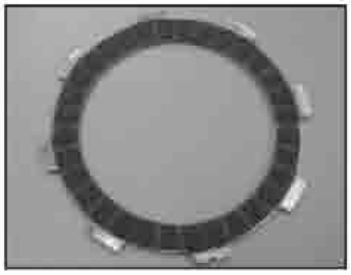


BEARINGS :

- Axial Play : Ok / Not excessive
- Radial Play : Ok / Not excessive
- Bearing seat : No sign of high spot on seating area
- Bearing class and code numbers : As per specification
- Bearing Rotation : Free Rotation

CLUTCH PLATE :

- Clutch Plates/Steel Plates - Thickness as per Service Data
- Warpage as per Service Data
- No Seizure / Damaged bonding of friction material
- Tangs (Lugs)/Teeth - No Wearing
- Identification mark - Cut mark of Tang and 'HTTS' punch mark
- No foreign material embedded
- Colour change / Signs of overheating if any
- No uneven wear pattern
- Steel plates planishing



Clutch Housing :

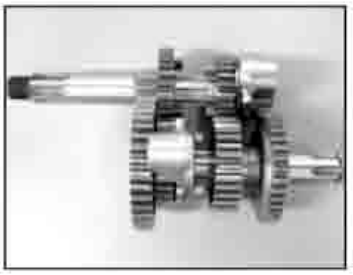
- No wear marks on slots
- Clearance between clutch plate tangs and slot in the clutch housing should not be excessive
- Free movement of plates in clutch housing slots
- Rivets of clutch housing should not be loose
- Free rotation of housing on collar and also collar should rotate freely on input shaft
- Torsion spring for proper tension/no crack - breakage

CLUTCH HUB / CLUTCH WHEEL :

- Contact surface for friction plates should not be worn out excessively
- Pressure plate free movement in clutch hub splines
- Holes for lubrication
- Clutch hub height

TRANSMISSION :

- No teeth breakage or crack
- No wear pattern on teeth
- No wear of dog teeth and dog holes on gear
- No seizure mark on gear seat
- Free movement of gears on the shaft (1st Output, 3rd Output, 4th Output and 2nd input gears are free on the respective shaft)
- Free movement of Fork shift on the pin
- Gear shift drum groove profile - Ok / No damage - Wear
- Free movement of fork shift guide pin in the drum groove



DRUM :

- Presence of Neutral rivet on the drum
- Free rotation of Drum in insert and LH crankcase parent hole
- Inner hollow portion must be free from casting dust / burr
- Groove width as per Service Data

CARBURETTOR :

- Float
  - No puncture
  - Alignment w.r.to float pin - Ok
  - Not touching to bowl walls
- Needle Valve
  - No groove formation on the tip
  - Smooth action of spring loaded pin
  - Smooth movement in its seat
- Air Screw
  - Not bent/threads Ok/Not jammed/Presence of Spring Washer and 'O' ring
- Jets
  - Correct size, no wear of jet hole, no clogging
- Piston Valve
  - Smooth free sliding clearance in its seat, no excess wear mark
- Choke Operation
  - Smooth, correct choke cable play

GUIDE KICK :

- No presence of any burr and flashes
- Face to face fitment on Crank case after tightening
- Application of loctite 638 to securing screws

Service Data - Engine

Compression Pressure

Standard	12 - 14 Kg/cm²
Service Limit	9.1 - 14 Kg/cm²

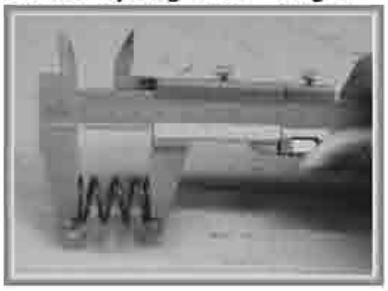
Rocker Arm Shaft Diameter

Standard	9.98 - 9.99
Service Limit	9.95

Valve Clearance

	Inlet	Exhaust
Standard	0.05	0.1

Clutch Spring Free Length

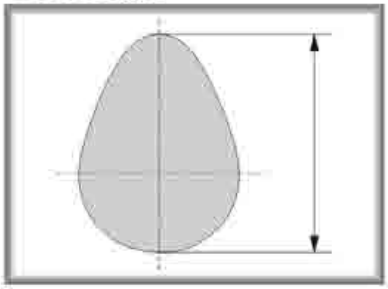


Standard	26.4 - 27.0
Service Limit	26.0

Cam Sprocket Diameter

Standard	56.71
Service Limit	56.40

Cam Height

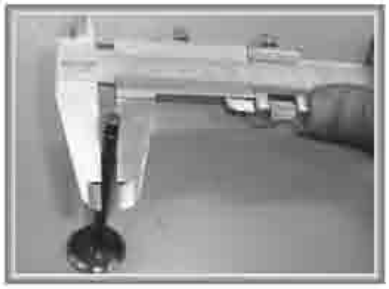


	Inlet	Exhaust
Standard	29.000	29.000
Service Limit	28.925	28.925

Valve Spring Free Length

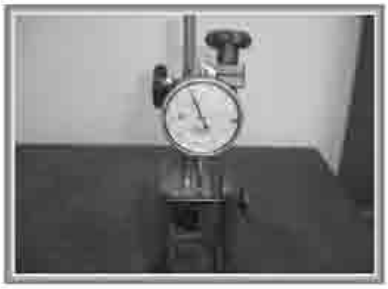
Standard	39.55
Service Limit	36.10

Valve Stem Diameter



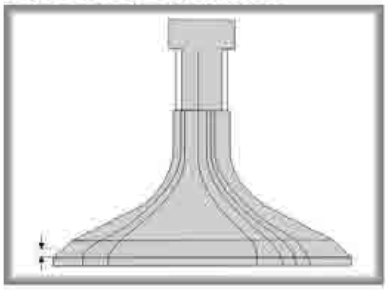
	Inlet	Exhaust
Standard	5.49~5.51	5.48~5.49
Service Limit	5.48	5.47

Valve Stem Bend



Standard	
Service Limit	0.05

Valve Head Thickness

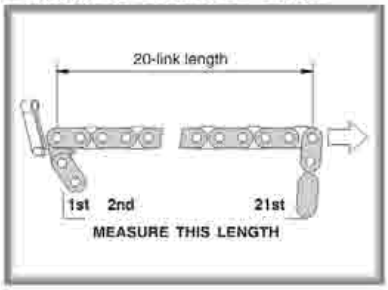


	Inlet	Exhaust
Standard	0.55~0.80	0.85~1.15
Service Limit	0.4	0.5

Cylinder Head Warpage

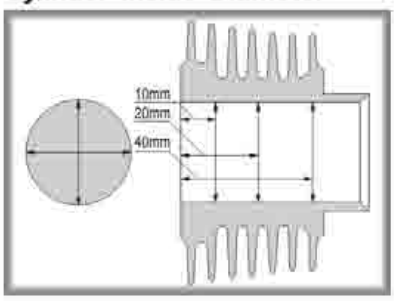
Standard	Less than 0.05
Service Limit	0.05

Camshaft Chain 20 Links



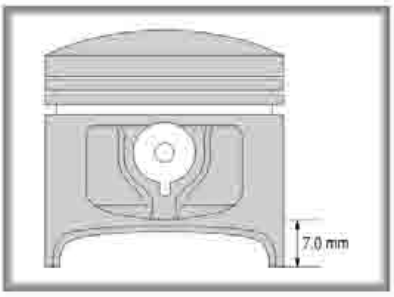
Standard	127.00 - 127.48
Service Limit	128.90

Cylinder Inside Diameter



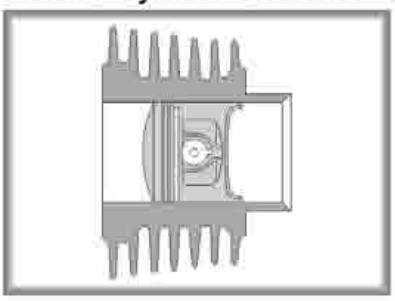
Standard	Group A: 52.997~53.003 Group B: 53.003~53.009

Piston Diameter



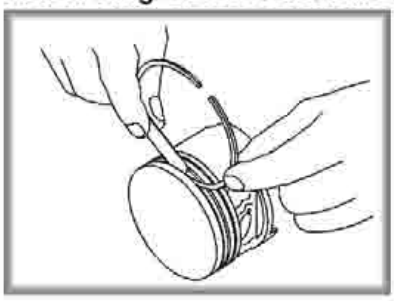
Standard	Group A: 52.981~52.986 Group B: 52.987~52.993

Piston / Cylinder Clearance



Standard	0.038 ~ 0.050
Service Limit	0.07

Piston Ring/Groove Clearance



	Top	Second
Standard	0.02~0.06	0.01~0.05
Service Limit	0.16	0.15

Piston Ring End Gap

	Top	Second
Standard	0.20~0.35	0.35~0.50
Service Limit	0.65	0.85

Friction Plate Thickness

Standard	2.90 ~ 3.05
Service Limit	2.70

Pressure Plate Warp

Standard	0.10
Service Limit	0.25

Crankshaft Run Out

Standard	TIR 0.02 Max.
Service Limit	TIR 0.05

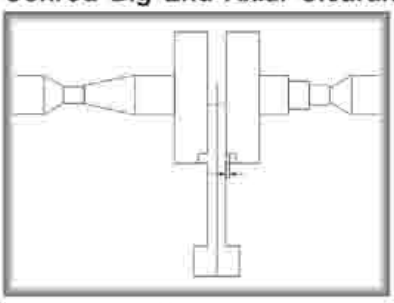
Shift Fork Guide Pin Diameter

Standard	3.9 ~ 4.0
Service Limit	3.8

Shift Drum Groove Width

Standard	5.05 ~ 5.20
Service Limit	5.30

Conrod Big End Axial Clearance



Standard	0.1 ~ 0.2
Service Limit	0.7

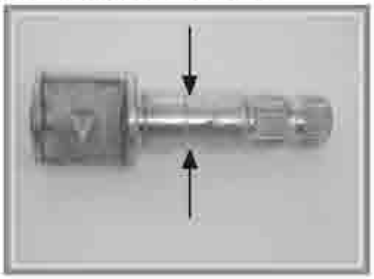
ALL DIMENSIONS ARE IN MM

Service Data - Frame

Brake Panel Cam Hole Dia.

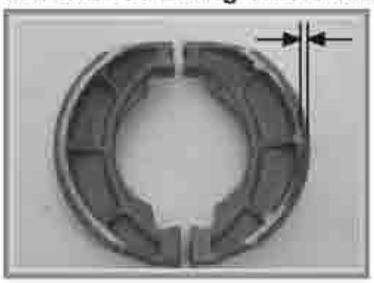
Standard	12.0 - 12.03
Service Limit	12.8

Brake Cam Diameter



Standard	11.95 - 11.98
Service Limit	11.88

Brake Shoe Lining Thickness

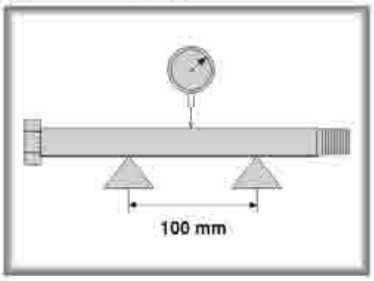


Standard	3.9 - 4.5
Service Limit	2.5

Brake Drum Inside Diameter

Standard	110.00 - 110.16
Service Limit	110.75

Axle Run Out



Standard	TIR 0.05
Service Limit	TIR 0.2

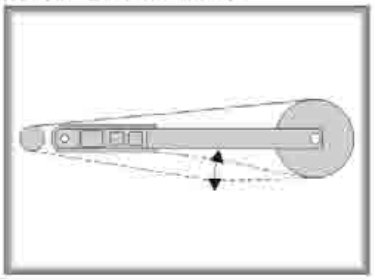
Axial Wheel Run Out

Standard	TIR 0.8 or Less
Service Limit	TIR 2.0 or Less

Radial Wheel Run Out

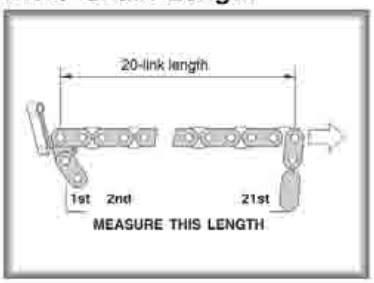
Standard	TIR 0.8
Service Limit	TIR 2.0

Drive Chain Slack



Standard	30 - 35
Service Limit	Upto 40

Drive Chain Length



Standard	254 - 254.6
Service Limit	260

Rear Sprocket Warp

Standard	TIR 0.4 or Less
Service Limit	TIR 0.5 or Less

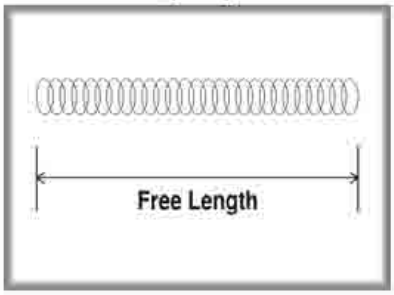
Rear Tyre Tread Depth

Standard	7.0
Service Limit	Upto TWI

Front Tyre Tread Depth

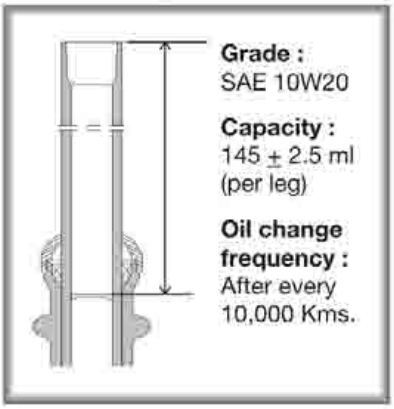
Standard	4.0
Service Limit	Upto TWI

Front Fork Spring Free Lth.



Standard	449.0 ~ 453.0
Service Limit	—

Front Fork Oil



Grade : SAE 10W20

Capacity : 145 ± 2.5 ml (per leg)

Oil change frequency : After every 10,000 Kms.

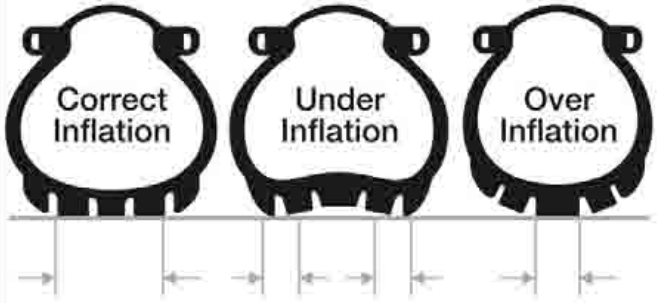
ENGINE OIL SPECIFICATIONS		
Grade	:	SAE 20W40 of API 'SG' + JASO 'MA' grade or superior.
Quantity	:	900 ml (Drain and Refill)
	:	1100 ml (Engine overhaul)
Oil Change Frequency:		Every 5,000 km.
Oil Strainer Cleaning :		Every 10,000 km.

CARBURETTOR SPECIFICATIONS	
Item	DISCOVER
Make & type Keihin	PB 16 Side Draught
Idling speed	1300 ± 150 RPM
Air screw	2.5 ± 1.5 Turns
Jet needle clip position	4th from top.
Main jet	# 85
Pilot jet	# 40
Float Height	11.7 mm
CO%	1.5 to 2.5 %

Notes

Tyre Care

Tyre Inflation :



Motorcycle tyre inflation and contact patch area

Effects of Under Inflation :

- Excessive steering efforts.
- Vehicle steers poorly on curves (wobbling).
- Tyre wear at both sides.
- High fuel consumption due to higher road resistance.
- Tyre side wall cracking.
- Tyre fabric may break.
- Reduced tyre life.

Effects of Over Inflation :

- Improper road grip.
- Vibration while riding.
- Bumpy ride.
- Tyre wear at center.

Tyre Inspection :

- Check tyre pressure every week.

- Confirm valve cap fitment to keep away dust and dirt from valve.
- Check valve stem for leakage.

- Check tyre for embedded objects in its tread.
- Check for baldging and cracks.

- Check tyre for wear and replace it if worn out upto TWI mark.
- For uneven wear and tear check suspension and other related parameters like frame alignment etc.

Puncture Care :

- Ensure the yellow mark on the tyre is aligned with valve stem for proper tyre balancing.

- Do not drive/pull the bike with the punctured tyre otherwise tube/tyre would get damaged.
- A line on side wall of tyre must be circumferentially parallel to wheel rim circumference.

Wheels

Function

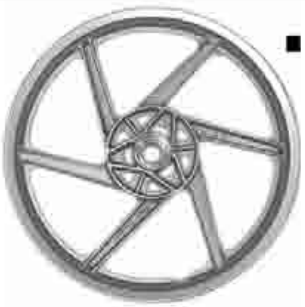
- Enables vehicle to move by rolling itself.
- Holds the tyre and tube together by providing support.
- Facilitates braking by holding brake drum / disc.
- Provides stability.

Types of Wheel

Wire Spoke Wheel

It is a structure where the outside edge part of rim & drum are connected by wires called spokes. Majorly Motorcycle wheels are of this type.

Alloy Wheel



These are made from light metals such as Aluminum & Magnesium. Aluminum wheels are used on Bajaj Motorcycles. Magnesium wheels are mainly used on racing bikes which needs lightness & high strength.

Advantages of Spoke Wheel :

- Initial Cost is Low
- Adds Sparkling looks to the vehicle because for chrome plating
- Individual Spokes can be serviced separately

Disadvantage :

- Maintenance cost is high
- Not so good resistance to road impacts.
- Get rusted quickly
- Difficult to clean and maintain.
- Frequent loosening or breakage of spokes.
- No Safety of tubes as inner surface of rim portion is prone to get rusted

Precautions :

- Always maintain correct tyre pressure
- Tighten the spokes regularly and confirm for Axial / Radial run out
- Washing the wheel using alkaline solvants may damage

Advantages of Alloy Wheel :

- Stronger and high resistance to road impacts.
- Enhanced aesthetics & sturdy look of the bike.
- Better road holding and balancing.
- Free from rusting.
- Easy to clean and maintain.
- No possibility loosening or breakage of spokes.
- Safety of tubes as inner surface of rim portion is smoothly finished
- Free from maintenance.

Disadvantage :

- Initial cost is high
- Possibility of Paint getting scratched

Precautions :

- Always maintain correct tyre pressure similar to conventional spoke wheels.
- During puncture repairs ask repairer to use levers, which do not have sharp edges or corners while removing tyre. This is to avoid getting scratches on painted surface of the wheel

Note : Axial run out and Radial run out limits are same as of spokes wheels.

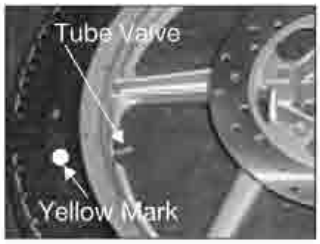
Alloy Wheel Puncture Repair SOP - Common for all Bajaj M/C

To take care from damages / scratches on the paint and to avoid damage to the rim portion of the wheel, it is essential to take certain precautions & care while carrying out repair of puncture.

Following steps should be followed.

Removal of Tyre :

- Once the wheel is removed from the vehicle, first clean the tyre & the wheel to remove dust.



- Check the yellow marking on the sidewall of the tyre.

  It should align with tube Valve as shown in photograph.
- If the marking is not visible / not noticeable, put a mark in line with the Valve and then only proceed further.

  Note : This mark is to enable to fit the tyre in right position while refitting so that the balancing of the tyre is retained.

- Wrap up tyre levers with soft clothe and then lift the tyre.

- Never use bare levers directly. This may damage edges of rim portion of the wheel

- With the help of both the levers slowly separate the tyre beading from the rim portion.

- After around 3/4th portion of tyre gets separated, then separate the tyre with hands.

- Once complete tyre gets separated, then Remove the wheel from the tyre.

After wheel is removed, then take out the tube from the tyre and carry out puncture repair as per standard practice.

Check tyre from inside for any foreign material and clean from inside thoroughly.

Re-fitting of tyre

For smooth and safe fitting of the tyre on the wheel, it is essential to take certain precautions & care.

Following steps should be followed.

- Place the tyre one of the used tyre and apply soap water on the beading portion of the tyre.

  Note : Soap water enables smooth sliding-in of the wheel in the tyre.

- Then place the wheel on the tyre by aligning from all the sides properly with inner diameter the tyre.

- Do not forget to align the yellow marking on the tyre with the Valve hole on the wheel.

- Press the wheel gently in the tyre till tyre encompasses all around the wheel.

- Once tyre fits on the wheel, then insert the tube carefully inside the tyre.

- Apply soap water once again at tyre bead portion for easy fitting.

- Start pressing the tyre from all Side to fit the bead portion in the rim portion of the wheel

- When most of the portion is fitted further fitment becomes difficult then apply more pressure.

- Carefully press with crowbar.

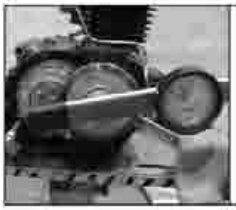
- This completes the fitment of tyre on the wheel.

Important Assembly Skill Tips

While tightening / loosening 'Cam Sprocket Allen Bolt', hold the 'Cam Sprocket' by Special Tool No. E6 1012 00.

Always use Special Tool No. E6 1011 00 for fitting insert (bush) gear drum change in Crankcase.

Always ensure fitment of special washer (Part No. DD 1014 75) above 2nd gear input. Missing washer may lead to gear slippages.

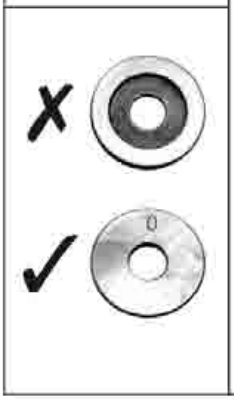


For removing & tightening centrifugal filter nut use Special Tool No.

37 10DJ 43.

Tightening torque : 9.0 to 10.0 kgm.

Use Loctite No. 243.



While assembling Cam Sprocket:

1. Ensure fitment of collar behind the Cam Sprocket.
2. Cam Sprocket special washer has 'O' mark on one side & groove step on other side. **'O' mark must face outwards.**

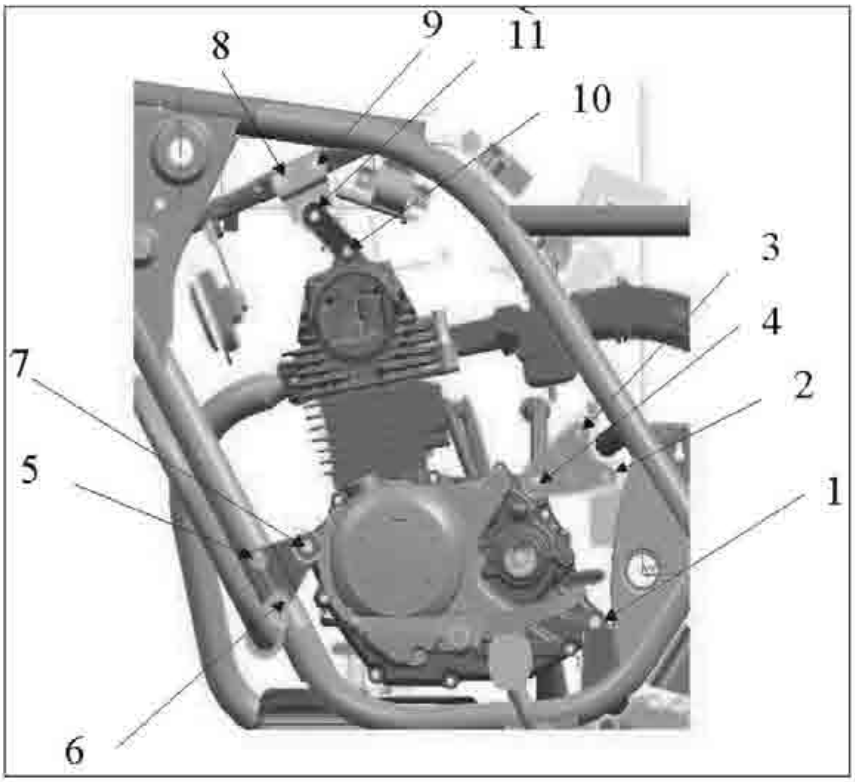
Important Note: Reverse fitment of Cam Special Washer leads to heavy engine noise from cylinder head because the sprocket fitment remains loose (play) even after tightening allen bolt.

3. Tightening Torque of allen bolt is 1.3 to 1.5 kgm. Loctite No. 243

Always fit a copper washer below 'Stopper arm G.C. drum' & after tightening the securing bolt, ensure free movement of stopper arm.

Tightening Torque : 0.9 to 1.1 kgm.

Loctite No. 222.



Engine Mounting Bolt Tightening Sequence

Whenever engine is mounted on the frame or during periodic services always tighten engine mounting bolts in the sequence shown in the figure. This will ensure proper mounting of the engine and will reduce the vibrations and also increase the life of mounting rubber bushes.

Tightening Torque - Engine

Engine Mounting Bolts

M8 - 2.3~2.9 kgm / M10 - 4.0~4.5 kgm

Engine Mounting Bolts

M8 - 2.3~2.9 kgm. / M10 - 4.0~4.5 kgm.

Engine Mounting Bolts

M8 - 2.3~2.9 kgm / M10 - 4.0~4.5 kgm.

Spark Plug

1.1 to 1.5 kgm.

Cylinder Head Bolts

M8 - 0.9 to 1.1 kgm

Cylinder Head Bolts

M8 - 2.0 to 2.4 kgm.

Intake Pipe Bolts

1.3 to 1.6 kgm.

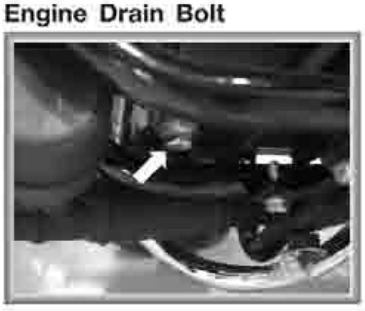
Oil Pipe Banjo Bolts

A - 1.3~1.7 kgm / B - 2.2~2.8 kgm

Silencer Mounting Nuts

1.4 to 1.9 kgm.

Engine Drain Bolt



2.7 to 3.3 kgm.

Generator Cover Mtg. Bolts

0.9 to 1.1 kgm

Clutch Cover Mtg. Bolts

0.9 to 1.1 kgm.

Bolt Stopper Comp. G.C. Drum

0.9 to 1.1 kgm (Loctite 222)

Crankcase Joining Bolts

1.0 to 1.1 kgm.

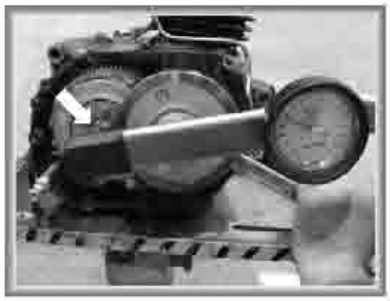
Fly Wheel Nut

5.4 to 5.6 kgm (Loctite 243)

Rotor Nut

4.0 to 4.5 kgm.

Clutch Nut



9.0 to 10.0 kgm

Chain Tensioner Mtg. Bolts

0.45 to 0.61 kgm

Shift Shaft Return Spring Pin

2.8 to 3.2 kgm (Loctite 638)

Neutral Switch

1.1 to 1.3 kgm (Loctite 243)

OHC and Tappet Cover Mtg. Bolts

0.45 to 0.61 kgm.

Cam Sprocket Mtg. Bolt

1.3 to 1.5 kgm (Loctite 243)

Valve Adj. Screw Lock Nut

0.8 to 1.0 kgm

Loctite Application for Engine

Sr.No.	Fastener Description	Loctite Application	Locite Colour
1	Kick guide securing screws	638	Green
2	Allen bolt fixing 'Guide Gear Change Drum'	242	Light Blue
3	Plate position (For Arm stopper Gear Change Drum) securing screw	222	Pink
4	Bolt for 'Arm stopper Gear Change Drum'	222	Pink
5	Allen bolts securing stator plate	242	Light Blue
6	Special nut of 'Body Centrifugal Oil Filter'	243	Dark Blue
7	Allen bolt of cam sprocket	243	Dark Blue
8	Bolt shift change	638	Green
9	Netural switch threads	243	Dark Blue

Tightening Torque - Frame

Front Axle Nut

5.0 ± 0.5 kgm

Rear Axle Nut

5.5 ± 0.5 kgm

Torque Rod Nut

6.5 + 0.5 kgm

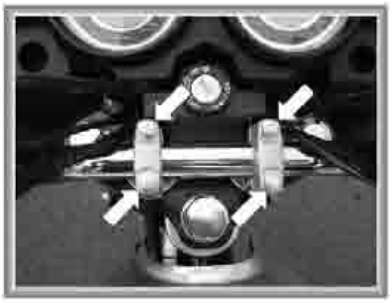
Sleeve Nut

3.5 ± 0.3 kgm

Rear Sprocket Mtg. Nut

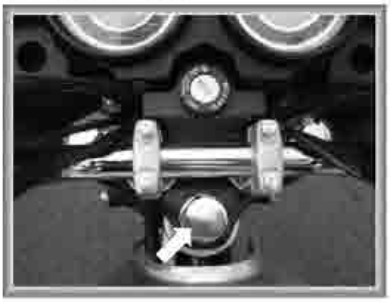
2.5 ± 0.3 kgm

Handlebar Holder Bolts



2.5 ± 0.5 kgm

Cap Nut Fork



0.5 to 0.1 kgm.

Steering Stem Nut (Slotted)

1.4 ± 0.2 kgm

Upper Fork Bolt

3.0 ± 0.5 kgm.

Lower Clamp Bolt

2.5 ± 0.5 kgm.

RSA Mtg. Nuts

2.0 ± 0.5 kgm

Swing Arm Pivot Nut

3.5 ± 0.3 kgm.

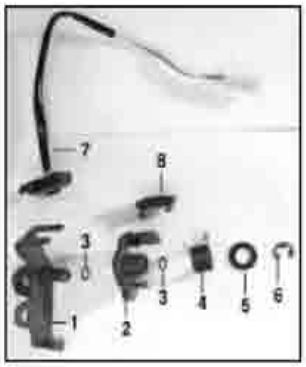
TRICS and Ignition Timing Map

Discover comes with unique 'Digital Twin Map' (DTM) Ignition System aided with the throttle Responsive Ignition Control system(TRICS).This ignition system has two ignition maps for delivering sparks in the combustion chamber at various speed and load condition with respect to throttle position.

Throttle Responsive Control System (TRICS) triggers form 1st to 2nd and 2nd to 1st Ignition map for complete combustion of air fuel mixture at different throttle position to optimum and consistent power and performance.

a. Components :

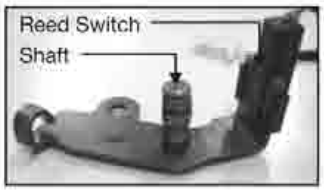
TRICS mainly consist of 'Throttle Powers sensor' (TPS) unit mounted near the carburettor and is operated by throttle cables. The various component of 'TPS' are



1. A fixed bracket
2. A swiveling bracket
3. 'O' rings (2 Nos.)
4. Torsion spring
5. Washer
6. 'E' Clip
7. Reed switch with a pigtail coupling
8. Permanent magnet

b. Construction of TPS :

- The reed switch is snap-fitted onto the fixed bracket and gets locked on the it.
- The central shaft of the fixed bracket has 4 grooves.
  - The bottom most groove is for 'O' ring.
  - Above that (which is bigger in size) is for greese
  - Next to greese groove is again for another 'O' ring.
  - The last groove is for 'E' clip for locking.
  - Both the 'O' ring avoids leakage of the greese and dust entry as well.



- General purpose Grease should be applied in the bigger groove between the 'O' rings on the shaft.
- The magnet is snap fitted onto the swiveling bracket and gets locked on it.

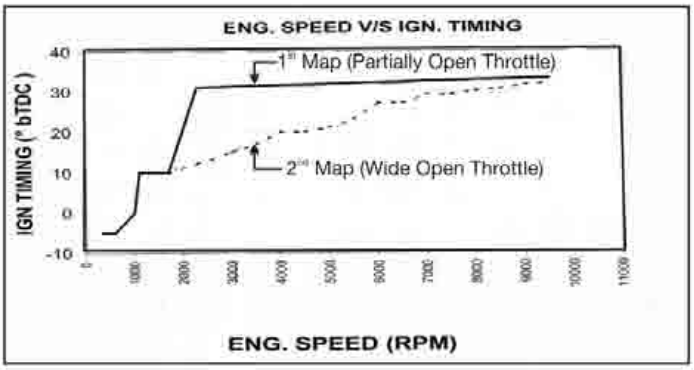
- The swiveling bracket fits onto the shaft of fixed bracket. Ensure of the free rotation of the swiveling bracket on the shaft is (small amount of stiction may exits because of the two 'O' rings.)
- One end of the Torsion spring is hooked to the slot provided on the fixed bracket, and the other end to the slot provided on the swiveling bracket.
- Over the spring plain washer is placed and locked with the 'E' Clip.

- Smooth rotation and returning back of the swiveling bracket with out any stickiness is essential and pre-requisite to the smooth functioning of the TPS.

C. Working of TPS :

The Digital twin Map Ignition system has two ignition maps i.e. two ignition paths. TRICS triggers 2nd ignition map on the principle of magnetism.

During idling rpm and slow running with certain rotation of throttle (say approximately 40% rotation), the magnet on the swivel bracket remains in front on the reed switch. Due to the magnetic forces, the reed switch plate gets attracted towards the magnet, there by closing the circuit, which activates 1st ignition map.



In 1st map, when magnet is in front of Reed switch (Partially open throttle) the ignition timing advances from 0° at 1000 rpm (While starting Engine) to 10° at 1250 ~ 1400 rpm (i.e. Idling rpm)

Timing further advances with increase in engine rpm and reaches to 33° at 4000 rpm.

It remains 33° at higher than 4000 rpm also till the magneto remains in front of reed switch

When throttle is further rotated, the magnet is moved away from the Reed switch, and its magnetism weakens to such an extent that (wide open throttle), Reed plate opens and breaks the circuit.

Here, the ignition timing suddenly drops to 16° and then steadily advances with respect to throttle position / Engine rpm and reaches to 33° BTDC at 10,000 rpm.

Suppose if the circuit is breaking at (p) rpm, the timing drops to Q° (16°) on the 2nd ignition map from there advances steadily .

On returning the throttle again when the magnet comes in front of reed switch, due to magnetic field the Reed makes the circuit for 1st ignition map and timing is maintained as per the engine rpm.

e. Checking / Setting Procedure of TPS :

Note : All adjustment / setting of the 'TPS' should be done with the engine shut off condition.

The requirement for setting up the TPS is simple Both the operation of pulling the carburettor slide and the swiveling of the magnet should be simultaneous. There should not be any lag between the two.

- Some important checks before installing of the throttle position switch:
  - Cable routing should be proper.
  - The 1x2 terminal end of the cables, which is housed in the round cylindrical sealed plastic tube, should be correctly clamped by a plastic band to the RHS of the frame tube. This to prevent any movement of cylindrical tube containing the 1x2 terminal end, whenever the throttle actuated. If this cylindrical tube is left free, its movement, whenever the throttle actuated can affect the routing and there by smooth functioning of the throttle.
  - Rotate the handlebar completely to either side and operate the throttle. The throttle feel should be smooth without any feeling of sticky / hard operation .
  - The locking clip of the cable outer to the caburettor cable adjuster should be correctly fitted. Nonfitment of this can invite potentially dangerous situation, like a stuck throttle cables leading to sudden engine raising.

- **Visual setting of the throttle position switch :** There are cable slack adjustment for both carburettor and TPS. These should be adjusted such that the components, carburettor throttle valve and the TPS should work simultaneously after the mandatory free play of the throttle grip at handle bar is adjusted.

  This can be checked visually, by the rotating the throttle grip and watching the movement of TPS. The Swiveling bracket of the TPS should start rotating once the movement of free-play throttle has been taken up.

- **Setting by feel :**
  - Set the required free-play of the throttle (2 ~ 3 mm) at the throttle grip end on the handle bar.
  - Twist the throttle bar slowly, such that, the free play is taken up.
  - Further rotation of the throttle grip will start lifting the carburettor throttle valve and the TPS movement.
  - If the TPS start the operating after the carburettor throttle valve, one should be able to perceive a step changes in the force required to operate the throttle. This means that the if adjustment is not correct and adjusters need to be adjusted to achieve simultaneous movement / operation.

    How to check the Ignition map Switching by the TPS :
  - The TPS has been designed to switch ignition maps after certain degree of throttle opening. This has been optimized and should not be tampered with, by any means.
  - Disconnect the reed switch pigtail coupler from the CDI and connect it to the Multimeter +ve and -ve lead wires.
  - Conform that both the carburettor slide opening and TPS are operating simultaneously.
  - Open the throttle progressively so that magnet moves away from the reed switch,.

- Approximately at the point, where the straight edge of the swiveling bracket aligns with the right of the fix bracket, multimeter will show

discontinuity indicating the switching ON of the 2nd Ignition map. Further opening of the throttle will show only discontinuity.

- If in the above mentioned check, the multi-does not show the discontinuity, it indicates that Reed switch is malfunctioning and the switching of the ignition map is not occurring.

- Releasing the throttle, the swiveling bracket swivels towards the Reed switch and the fixed bracket. At the point when the straight

edge of the swiveling bracket aligns with the right of the fixed bracket, the multimeter will show the continuity that indicates switching ON to the 1st ignition map, which is by default ignition map while starting the engine. (Partially open throttle)

- If, the Reed switch malfunctions (i.e. the Reed plate remain stuck open), the default ignition map will be 2nd this will affect on fuel efficiency and customer may complaint for high fuel consumption. In such cases address H.F.C complaint by immediately replacing reed switch.

How to check switching of ignition map in engine running condition by using a stroboscope / timing light ?

Caution :

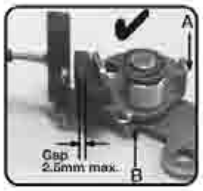
The checking of switching of ignition maps cannot and should not be done with the engine running in the conventional way, where one keeps on raising the engine rpm to check the change in ignition timing. For enabling the change over /switching to the 2nd ignition map, one will have to open the throttle to almost 50 %. This will raise the engine rpm too high and can damage the engine, hence this method is strongly not recommended.

- The CO should be checked and set to 1.5 to 2.5 % with idling rpm at 1300.
- Loosen and remove the plastic timing check bolt on the magneto cover.
- There are 4 marks on the rotor. 1st one is for TDC marked 'T', the 2nd one is for 10° mark, the 3rd is the 16° mark and 4th is the 33° mark.
- By turning the idling screw clockwise, adjust the Idling rpm to 4000.Usining a Stroboscope / timing light, check the ignition advance point of 33° + 2° (the 4th mark) and confirm that the mark in the inspection window of the magneto cover coincides with the 4th mark on the rotor corresponding to 33°+2°.This validates the 1st ignition map.
- Now, rotate the swiveling part (One holding the magnet) of the TPS to the right (clockwise) and away from the Reed switch, while watching the rotor with the stroboscope / Timing light. This rotating of the swiveling part should be done in one of quick motion (like blipping the throttle) and released, for it to snap back .Ensure that the swiveling part return back to its rest position. The ignition Timing will suddenly changes from 33° to 16° (3rd mark on the Rotor).
- This timing will validate the TPS switching over to the 2nd ignition map.
- On releasing the swiveling part back to its rest position, the ignition timing should once again return back to 33°.
- There will be an engine rpm changes, when the 2nd ignition map is switched on, which is normal hence the necessity for the quick swivel and release.

Engine Tune-Up for getting Optimum Mileage

TPS: PERIODIC MAINTENANCE

Check swivel bracket movement by roating it with hand. It should not be sticky in operation and should return back itself on releasing.



- Return spring should be OK.
- End point should be intact properly at point (A) and (B).

- Magnet should not touch with reed switch
- Gap between Magnet and Reed switch should not be more than 2.5 mm.
- Movement of accelerator/TPS cable should be free.
- Greasing on TPS pin at every 5000 Km.

TPS : SETTING

- Accelerator cable play : 2 ~ 3 mm (A)

- TPS cable free play - Zero
- Note : TPS cable free play should always be zero.(B)

- Swivel bracket must rest on stopper as shown in picture.(c)
- Never foul TPS cable by external accessories

TPS : CHECKING

Fig.1

Fig.2

- Keep throttle at zero position (Fig.1).
- On connecting multimeter to TPS coupler it should show continuity.
- When throttle is open and TPS magnet crosses to straight edge of fix bracket (Fig.2) multimeter should show discontinuity.
- On De-acceleration, when TPS magnet re-coinsides with straight edge of fix bracket (Fig.2). Multimeter should show continuity.

ENGINE TUNE -UP

SPARK PLUG : UR 3AC, PRZ 9HC.
SPARK PLUG : 0.6 to 0.7 mm gap
Replace at every : 10,000Km.

AIR FILTER :
- Clean every 2,500 Km
- Replace every 10,000 Km.

COMPRESSION PRESSURE
- Std Limit : 12 ~ 14 Kg/cm^2
- Service Limit : 10.5 Kg / cm^2

TAPPET CLEARANCE
- Inlet valve: 0.05 mm
- Exhaust valve: 0.08 mm

CARBURATTOR :
- Idling: 1300 ± 150 rpm.
- Jet needle 'E' clip position 4th from top.
- Air screw setting: 2.5 ± 1.5 turns
- CO % : 1.5 to 2.5 %.

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 : 28 PSI (Solo) 32 PSI (Pillion)
d. Set control cable free play:
   - Clutch lever 2~3 mm.
   - Choke Cable 2~3 mm
   - Accelerator Cable 2~3 mm
   - Front brake lever 2~3 mm.
   - Rear brake pedal 20~30 mm.
e. Chain slackness : 30 to 35 mm.
f. Gap between Sensor strip of Magneto Rotor and Pole of Pick-up coil 0.5~0.7 mm

Ride Control Switch

What is Ride Control Switch?

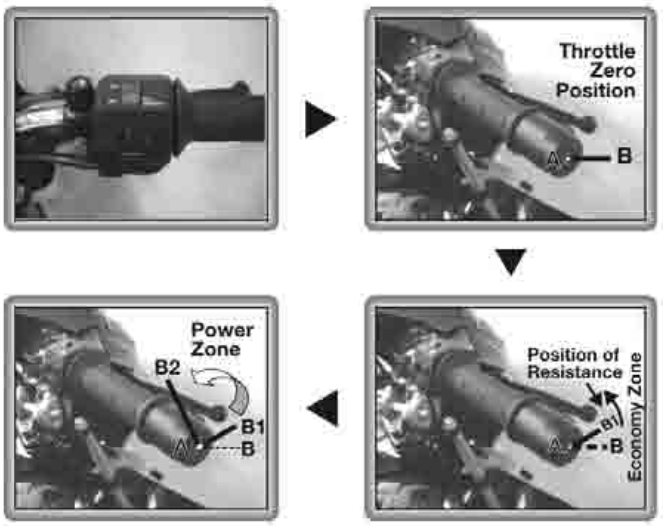
Ride Control is a 'Virtual Instructor' for the accelerator operation in terms of riding in economy and power zone.

It makes the Rider to sense the 'Fuel Efficiency Zone' of the throttle for getting better mileage.

What is 'Fuel Efficiency Zone' Ride?

To achieve maximum mileage from any bike the best riding accelerator rotation is up to certain position from the rest.

Beyond this position of the accelerator, engine runs in 'Power Zone' by crossing 'Fuel Efficiency Zone'.



How Ride Control Switch Functions?

ON Position :

When 'Ride Control Switch' is in 'ON' position, on rotating the accelerator, at specific position one will feel slight resistance to the rotation of the accelerator. This indicates the end of 'Fuel Economy Zone'.

However accelerator can be rotated further to get more power and speed. This will be a 'Power Zone'.

Note: Always maintain accelerator cable free play to 2-3 mm. Correct play will ensure right fuel economy zone.

OFF Position : When the 'Ride Control Switch' is in 'OFF' position, the resistance to the accelerator rotation is not sensed. Thus there will be no indication of 'Fuel Economy Zone'.

Advantages :

Ride control Switch is most safer and positive as far as effect to the rider is concerned as compared to other

- The sensing of crossing of 'Fuel Efficiency Zone' is sensed instantly by brain - Very less scope for crossing the mileage zone.
- No distraction of Rider's attention to notice the glowing bulb or speedo needle - Thus safer.
- Simple and Robust as no electrical connections and bulbs are present - Trouble Free and Maintenance Free.

Maintenance - Electricals

Battery :

Technical Specification :

Description	Discover
Type and Capacity	12V - 2.5Ah
Specific gravity of electrolyte for initial filling of new battery	1.24 for use above 10° C
Specific gravity of electrolyte for initial filling of new battery	1.28 for use below 10° C
Initial charging duration	10 - 15 hrs
Initial charging current	0.25 Amps

Initial Charging Procedure :

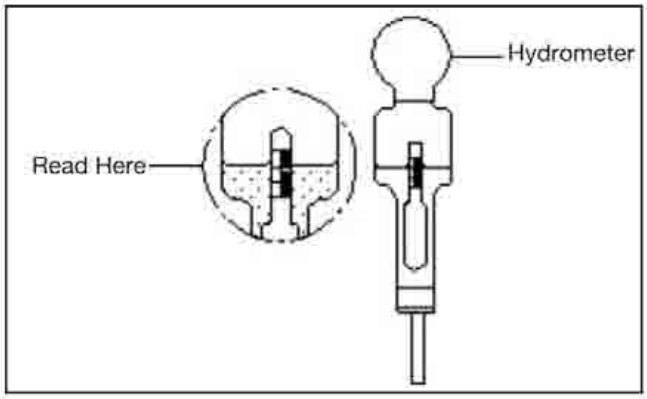
- Pull of the short plastic tube on the exhaust vent outlet and replace it with the long open tube provided with battery.
- Do not crimp or bend the exhaust tube. This is a safety device to remove fumes. Blockage of this tube is liable to cause an explosion.
- Fill each cell with battery grade sulfuric acid of the correct specific gravity (1.24 at room temp. for use above 10°C and 1.28 at room temp. for use below 10°C).
- Allow the battery after filling to stand for 30 min.
- Keep vent plugs open. Connect battery to charger and charge at 0.25 Amp.
- Charge continuously for 10 to 15 hours taking specific gravity readings every hour. Fully charged condition is indicated when all cells are gassing freely and evenly and show no rise in specific gravity over 3 successive readings.
- After charging push vent plugs firmly into place and wash off acid spillage with water and dry the battery.

Checking the Specific gravity :

The charge condition of the individual cell can be checked by measuring specific gravity of electrolyte in that cell. The specific gravity of electrolyte can be checked by using Hydrometer having small diameter spout.

For measuring the specific gravity bring the electrolyte in the Hydrometer to eye level, and read the graduation on the float scale bordering on the lower meniscus (i.e. curved down portion of electrolyte surface) as shown in the figure.

After charging is over, fit the filling caps, Wash acid spillage with water. Dry the battery. Ensure terminals are clean.



Checking Battery Specific Gravity

Battery Installation :

Install the battery on vehicle as described below:

- Ensure that in all six cells the level of electrolyte is near the maximum level mark.
- To clean & dry the surface wipe the top of the battery with a clean cloth. Install the battery inside the box provided on floor board. Fasten the battery firmly with bracket and allied fasteners.
- Connect cables to the positive and negative terminals properly. Reverse connections will damage the charging system permanently .
- Always connect the "negative (earthing) terminal last".
- Clean the battery terminals and cable connections. Smear them with petroleum jelly to avoid corrosion
- Route the battery exhaust tube properly. Do not fold or crimp as it may cause explosion of the battery.
- Check that the battery cables connections are firm and cables do not rub against any metal components

Battery Maintenance :

For the optimum performance and longer battery life the maintenance of battery is important. The condition of the battery should be checked at least once in a month as follows :-

- Always keep the battery clean and dry.
- Visually inspect the surface of the battery

container. If there are any signs of cracking or electrolyte leakage from battery, replace the battery.

- Battery electrolyte level inspection- The electrolyte level inside all the six cells should be checked fort-nightly and topped up if necessary as per procedure given below : -
- Remove cover of battery box.
- Check whether the electrolyte level of each cell is between the upper and lower level lines. If the level is low in any of the cells then remove filling caps fill distilled water until electrolyte level in each cell reaches upper level.

"NEVER ADD ACID OR ORDINARY TAP WATER FOR TOPPING SINCE THIS WILL SHORTEN BATTERY LIFE."

Non-Use Maintenance :

When the vehicle is likely to remain off-road for a longer, time (say more than a month) then non-use maintenanance should be carried out as follows otherwise the battery may get sulphated and permanently damaged.

- Remove the battery from vehicle.
- Maintain electrolyte at "UPPER LEVEL".
- During off service period, battery should be charged once a month.
- Keep the battery fully charged.
- Store the battery in cool, dry place.
- Keep the battery away from rain, dew, moisture and direct sunlight.

Battery Sulphation :

A sulphated battery is one which has been left standing in a discharged condition or undercharged to the point where abnormal lead sulphate has formed on the plates (Sulphated cells looks like white crystal like sugar). Where this happens, the chemical reactions within the battery are affected and results in loss of capacity. Mostly the causes of sulphation are as under:

- Undercharging.
- Standing in a partially or completely discharged condition for long time.
- **Low electrolyte level :**

  if electrolyte level is permitted to fall below the top of the battery plates, then the exposed surfaces will harden and will become sulphated.
- **Adding acid :**

  if acid is added to a cell in which sulphation exists the condition will be aggravated.
- High Specific Gravity :

  If specific gravity is higher than the recommended value, then sulphation may occur.
- High Temperature :

  High temperature accelerates sulphation, particularly of an idle, partially discharged battery.

Voltage of the sulphated battery : -

Cells of the sulphated battery will show low specific gravity. Follow the procedure given below.

- Check voltage before charging.
- Charge for 2 hours.
- Check voltage every one hour. If voltage increases then continue charging. But if voltage does not increase, discontinue charging. Otherwise battery charger will get permanently damaged.

If battery is not badly sulphated (i.e. voltage more than 9 volts), then battery can be revived by special treatment. In such case it is advisable to give sulphated battery to authorised dealer of battery manufacturer for necessary special treatment.

How to Determine Condition of Battery :

Specific gravity check :

Whether battery is fully charged or partially charged, it will always show same "no load voltage" of 12 volts or more (unless battery cells are damaged due to sulphation etc). But specific gravity of the fully charged battery and partially charged battery will be different. Fully charged battery will show specific gravity of 1.240 while partially charged battery will show less specific gravity. Therefore, specific gravity check is very important to know condition of the battery.

Record of Battery Condition :

Record keeping provides history of the battery. Following information should be recorded on the battery warranty card at the time of delivery and during free services.

- Record at the time of delivery: Record name and address of the customer, battery serial number, type of vehicle, vehicle registration number, chassis and engine numbers, date of sale, specific gravity of each cell, voltage, signature and stamp of the dealer etc. on the warranty card of battery.

- **Record at the time of 1st, 2nd & 3rd free services :**
  Record date of free service, specific gravity of each cell, voltage etc. on the warranty card of the battery.
- Battery warranty card, duly filled as above, should be given along with battery to the authorised dealer of the battery manufacturer otherwise battery manufacturer will not entertain the claim under warranty.

Safety :

Never bring the naked flame or spark such as a candle, lighted cigarette etc. near the battery, especially during or shortly after charge. Battery charging room should be well ventilated -

Note : These are general guidelines. For further clarification please contact battery manufacturer or their representative.

Switches :

- Front Brake Light Switch Inspection
  - Turn on the ignition switch.
  - The brake light should go on when the front brake (Lever is pressed) is applied.
  - If it does not, replace the switch.

	Brown	Blue
Lever Pressed	●	●
Lever Released	●	●

2. Rear Brake Light Timing Inspection

- Turn on the ignition switch.
- Check the operation of the rear brake light switch by depressing the brake pedal.
- It is does not as specified, adjust the brake light timing.

	Brown	Blue
Pedal Pressed	●	●
Pedal Released	●	●

3. Fuel Level Gauge

a. For knowing the quantity fo fuel inside the fuel tank at a glance, fuel meter is provided on an instrument panel. The fuel meter works on the principle of 'variable resistance'. The fuel gauge works on D.C. supply.

b. For checking the resistance across the sender and across the gauge, make the connections verify the readings as tabulated below.

Connection	Tank Float	Resistance
White / Yellow Meter 10 ohm	Full (Highest Position)	4~10 ohm
Black / Yellow	Empty (Lowest Position)	80~90 ohm

4. Neutral Switch

- The neutral switch will be in on position only when the engine is in neutral position.
- The neutral light will not glow when vehicle is in geared position.

	Black / Yellow	Light Green
'On' Veh. in Neutral)	●	●
'Off' Veh. in Gear)	●	●

Right Hand Switches

a. Lights ON-OFF Switch :

	Yellow / Blue	Yellow / Red	Red
Off	●	●	●
PO	●	●	●
On	●	●	●

Left Hand Switches

a. Pass Switch

	Red / Yellow	Red / Black	Yellow / Red
Pass	●	●	●
Off	●	●	●

b. Dipper Switch

	Red / Black	Yellow / Blue	Red / Black
Hi	●	●	●
Low	●	●	●

c. Turn Signal Switch

	Grey	Orange	Green
LH	●	●	●
Off	●	●	●
RH	●	●	●

d. Horn Switch

	Black	Black / Yellow
Off	●	●
'On' Pressed	●	●

5. Ignition Switch

	White	Brown	Black / White	Black / Yellow
'Off'	●	●	●	●
'On'	●	●	●	●

Checking Procedure:

- Switch off Vehicle
- Disconnect stator plate coupler.
- Set multi meter on Ohm range and connect as follows

6. Pick-up Coil Resistance

Range	Connections		Reading
200/ 2K ohm	Meter +ve	Meter -ve	180~240 ohm
	White / Red	Black / Yellow	

7. Stator Plate Inspection

a. Exciter Coil

Range	Connections		Reading
2 K ohm	Meter +ve	Meter -ve	270~350 ohm
	Red	Black / Yellow	

b. Battery Charging Coil

Range	Connections		Reading
200 Ohm	Meter +ve	Meter -ve	0.5~1.0 ohm
	Blue / White	Black / Yellow	

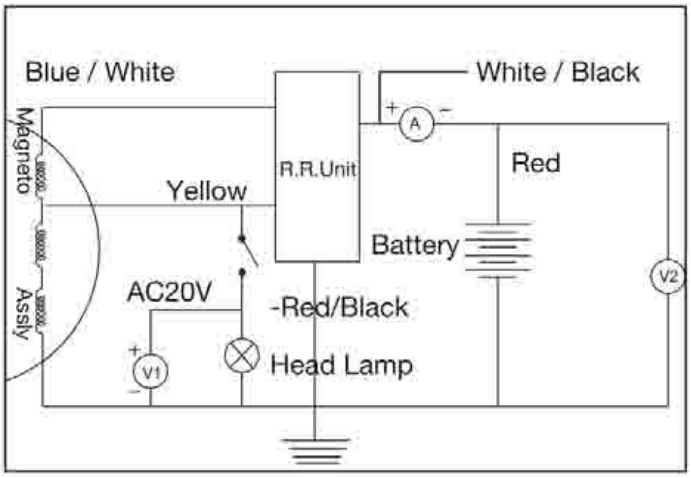
c. Lighting Coil

Range	Connections		Reading
200 ohm	Meter +ve	Meter -ve	0.5~1.0 ohm
	Yellow	Black / Yellow	

8. **Rectifier and Regulator Assembly :**

AC Voltage Measurement

To measure AC Voltage, open the headlight housing. Start the engine and set it at 4000±25 RPM. Ensure that the headlight, tail light, speedometer light are 'ON' and the dipper switch is at 'Hi beam' position.



Connect multimeter with AC 20V range in parallel across the AC circuit load at location V1 by connecting the +ve meter lead to red / black lead from the dipper switch and the -ve meter lead to ground (Ref. figure No. 1).

Measure AC lighting voltage at 4000±25 RPM. The voltage should be 13-14 V. Stop the engine. Disconnect the meter leads. Reassemble the headlight housing.

Meter Range	Meter + ve	Meter - ve	Specification at 4000 rpm
AC 20V	Red/Black	Black/Yellow	13 ~ 14 V AC

b. DC Charging Voltage Measurement :

(Use fully charged battery while measuring) To measure the DC Voltage; set the multi meter at 20V DC range at location V2. Connect the meter +ve lead to battery +ve lead, and meter -ve lead to ground. Start the engine and set it at 4000 ± 25 RPM. Measure the voltage with and without headlight switch to the ON position. (Ref. figure No. 1) Stop the engine. Disconnect the meter leads.

Meter Range	Meter + ve	Meter - ve	Specification at 4000 rpm
DC 20V	Battery +ve lead	Ground	13 ~ 15 V DC

C. Battery DC Charging current :

To measure DC charging current, set the multi meter at 10 A DC at location 'A' . Connect meter +ve lead to white / black lead from RR Unit & meter -ve lead to Battery +ve lead. (Ref. Figure No. 1)

Start the Engine & set it at 4000 RPM. Measure the DC charging current .The DC charging current should be 1 Amp @ 4000 rpm

Stop the Engine. Disconnect meter leads. Connect the RR Unit & Battery.

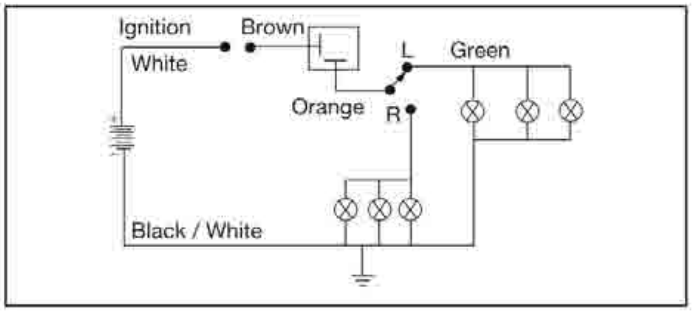
Range	Connections		Specification
10 A DC	Meter +ve	Meter -ve	1 Amp DC at 4000 rpm
	White/Black terminal from R/R	Battery (+) lead (Red)	

9. Turn Signal Relay Inspection :

- Remove the LH Cover
- Check the condition of the relay for the following troubles.

➢ **Neither right nor left turn signals come on at all :**

- Check that battery terminal voltage is normal. (12.4 V)
- Turn the meter to the 25V range, connect the (+) meter lead to the brown lead that was disconnect from the relay, and connect the (-) meter lead to the lead to the orange lead.
- With the ignition switch on, first switch the turn singal switch to the R and then to the L position.The meter should register battery voltage at either position.
- If it does not, the fuse, ignition switch or wiring is at fault.



➢ **Both right or both left turn signals come on and stay on or flash too slowly :**

- Check that battery terminal voltage is normal (12.4 V)
- Check that all wiring connections are good.
- Check that the turn signal bulbs and indicator bulbs are of the correct wattage.
- If all of the above check good, replace the relay.

➢ **Neither light on side glows :**

- Unless both lights for that side are burned Out, the trouble is with the turn signal switch.

➢ **Flashing rate is too fast :**

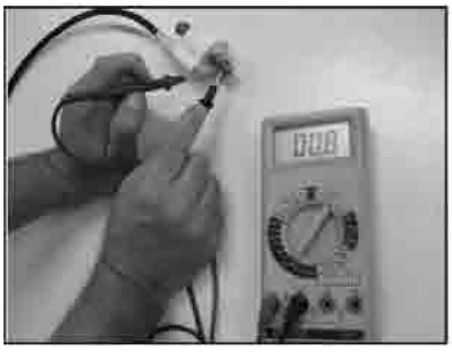
- If this occurs on both the right and left sides, check that the battery is not being over charged.
- If the magneto and the battery voltage are normal replace the turn signal bulbs are of too high a wattage.
- If one the bulbs fused off.

10. CDI Unit inspection :

CDI Unit can be checked along with OK H. T. coil will on electronic test jig.

11. H. T. Coils :

- Measure the primary winding resistance as follows.
- Connect the multi meter between the coil terminals.
- Measure the secondary winding resistance as follows.
- Remove the plug cap by turning it counter clockwise.
- Connect the multi meter between the spark plug leads.
- Measure primary winding resistance.
- Measure secondary winding resistance.
- Ignition Coil. If the multi meter does not show readings as specified, replace the coil.



HT Coil Winding Resistance :

Primary Winding	0.6 to 0.8 Ohms
Secondary Winding	4 to 5 K Ohms

- 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, test replace the coil with one known.
- Visually inspect the secondary winding lead.
- If it shows any damage, replace the coil.

12 Capacitor :

Isolate the capacitor terminal from wiring harness and check the continuity between white terminal and body. Tester Range x 10 Ohms - The value should go on increasing from 0 to ∞.

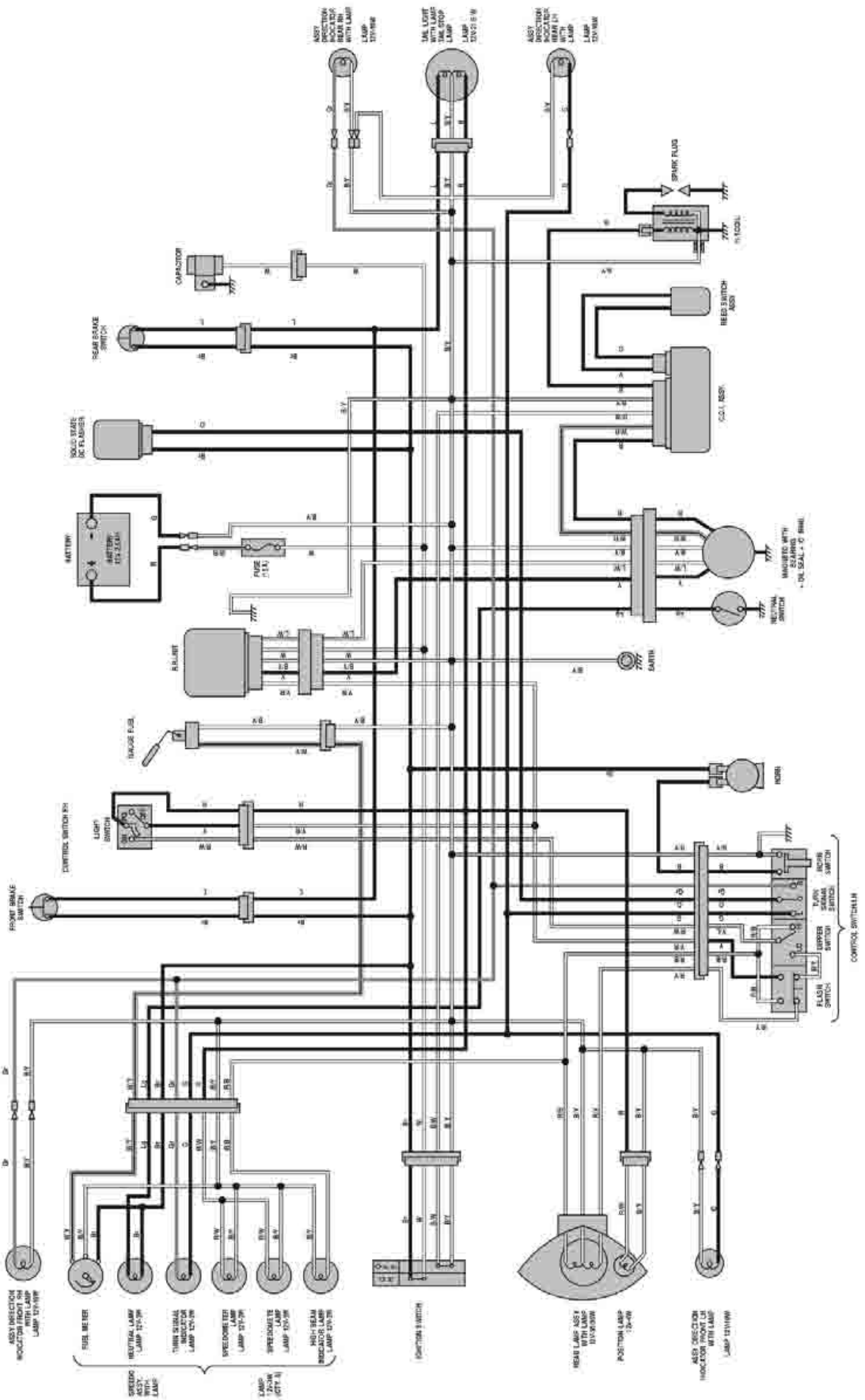
13. Fuse Inspection (10 Ampere)

- Inspect the fuse element
- If it is blown out, replace the fuse.
- If a fuse fails during operation, detect and rectify the root cause of the failure and then replace it with a new fuse of proper amperage.

Caution : While replacing a fuse be sure the new fuse matches the specified fuse rating for that circuit. Installation of a fuse with a higher rating may cause damage to wiring and components.

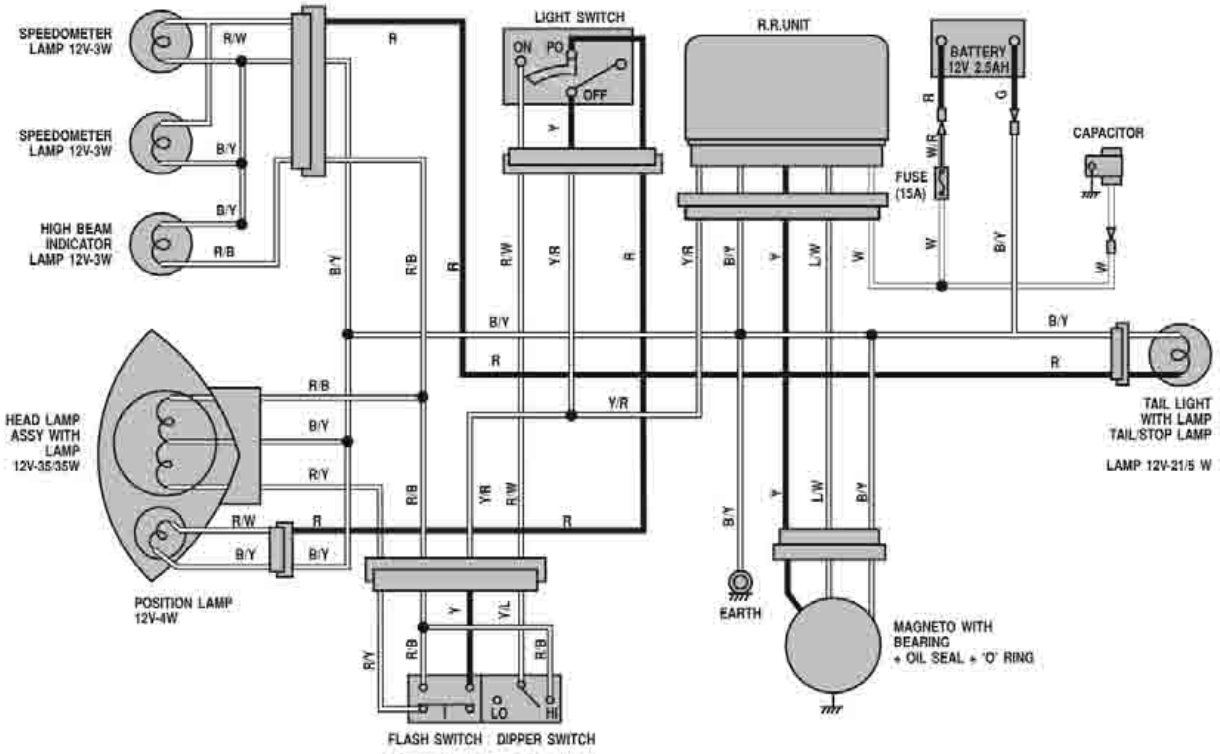
Notes

Main Electrical Wiring Diagram

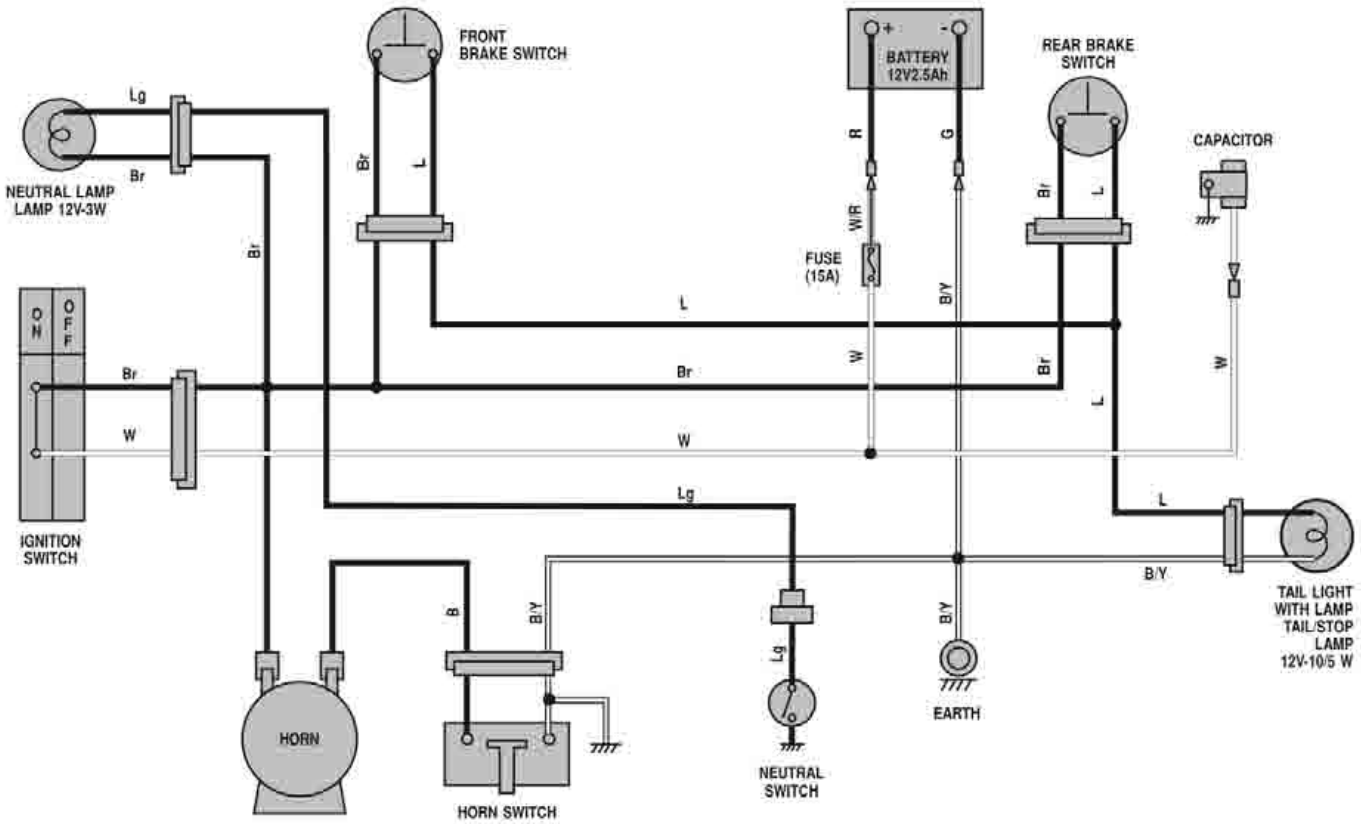


Individual Electrical Wiring Diagram

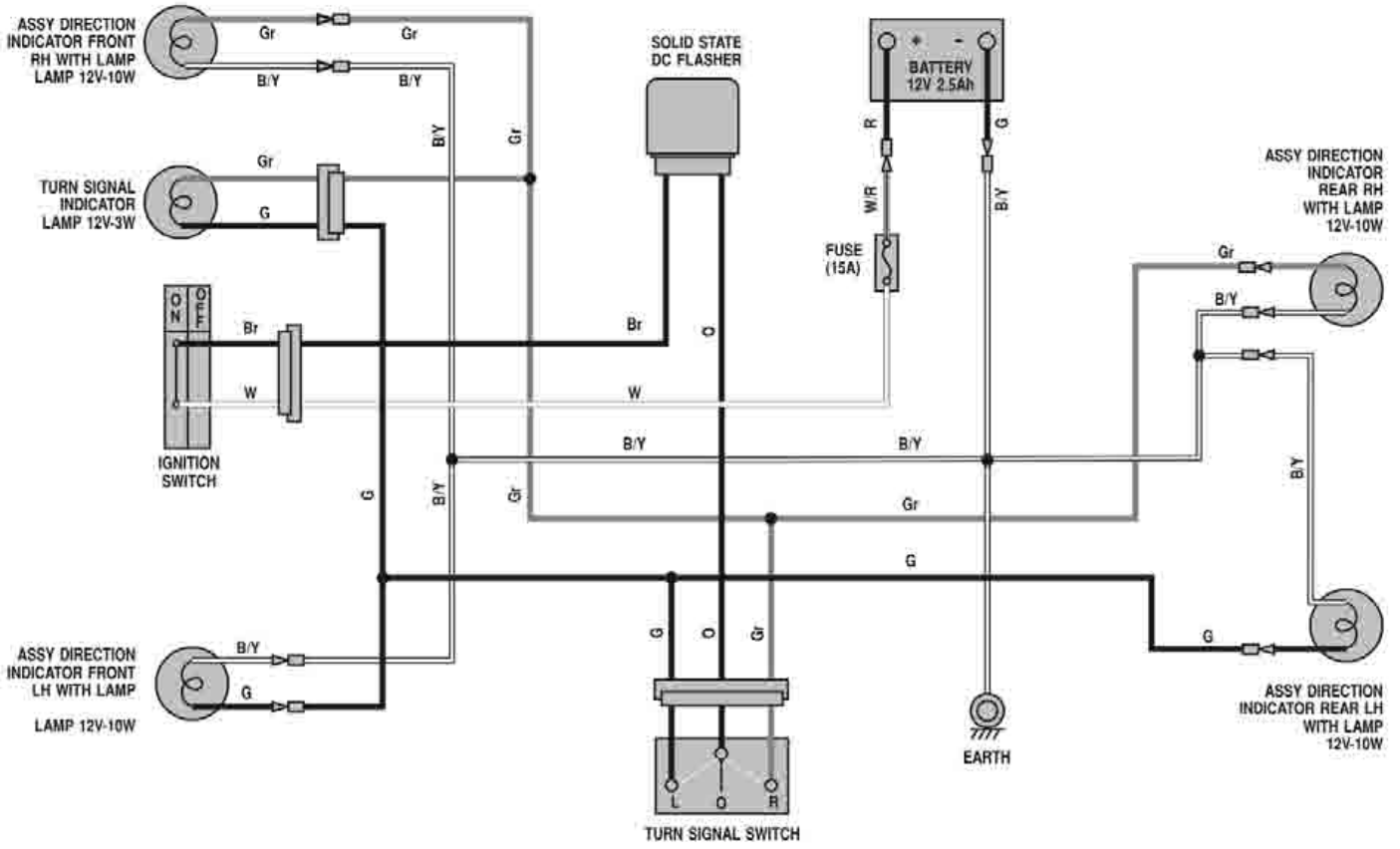
Battery Charging and AC Light Circuit



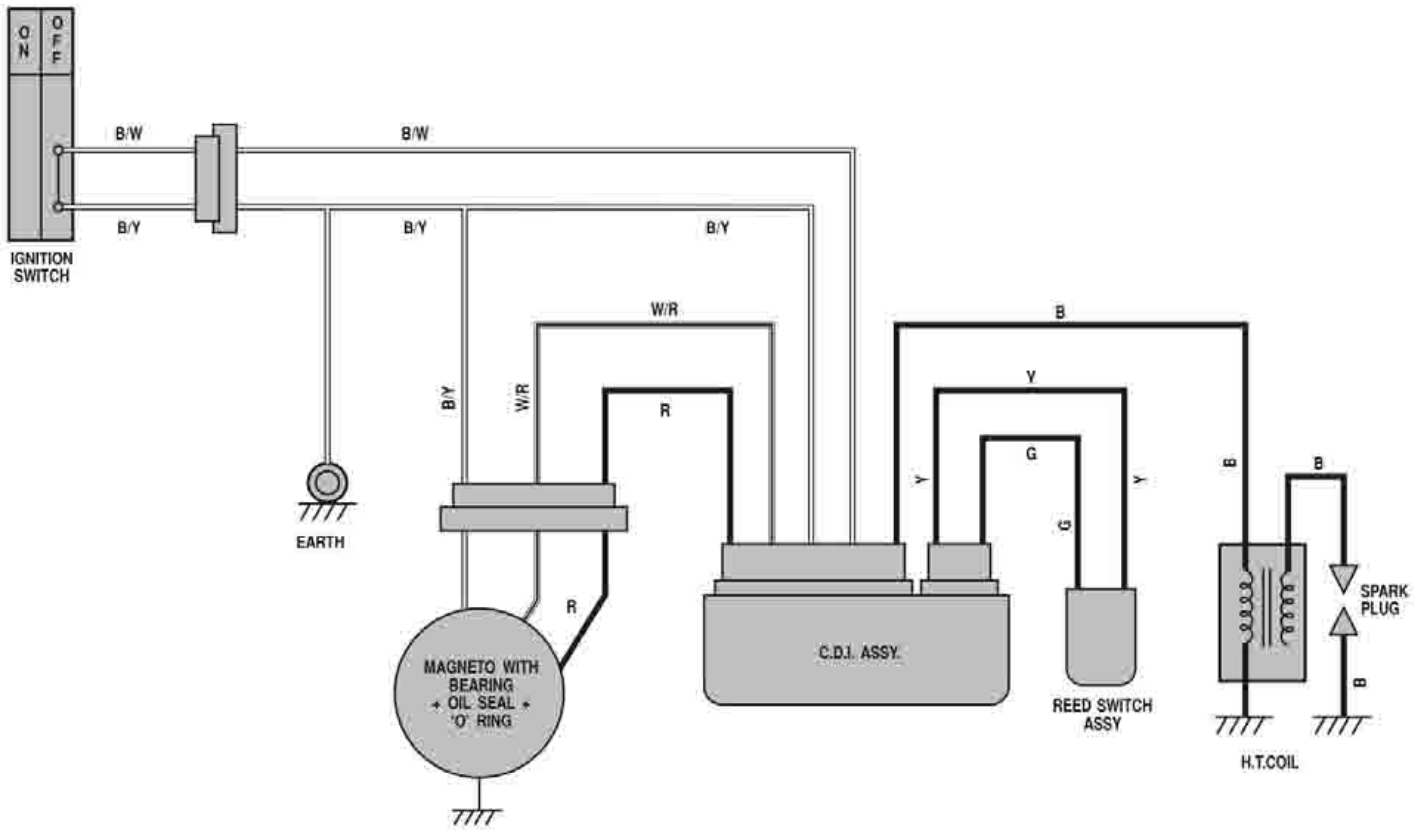
Horn, Brake Light and Neutral Light Circuit



Side Indicator Circuit



Ignition Circuit



Do's & Don'ts Charts

Battery :

Do's

- Ensure the correct type / capacity of battery is put vehicle.
- Battery should be secured firmly in the cradle.
- Always keep terminals clean and tight.
- Connect +ve of the harness to +ve of the battery and -ve of the battery to -ve of the battery.
- Apply petroleum jelly to the terminals.
- Always maintain electrolyte level up to max. mark. Top up with distilled water only.
- Keep the vent plugs clean and tight.
- Check output of R.R. unit periodically. Over or Under voltage is harmful for battery life.
- Re-charging should be done at recommended current (amps) only. i.e. charging current should be 0.25 amp for 2.5 Ah battery and 0.9 amp for 9 Ah battery.
- Ensure that rubber grommet provided on +ve and -ve terminals of battery is intact.

Don'ts

- Do not install a lower capacity battery than recommended.
- Never add acid into the battery.
- Do not add mineral water or ordinary tap water in battery as the chlorine and iron content in water will reduce battery life.
- Do not hammer down clamps onto terminal.
- Do not use grease on terminals / cable clamps.
- Do not over fill the battery.
- Do not keep your battery idle for more than three to four weeks.
- Never quick charge this battery with high current, as this will seriously affect battery life.
- Do not add extra electrical load on battery as it will draw more current and will reduce battery life.
- Do not allow the vent hose to be folded, pinched, or melted by the exhaust system.

Horn :

Do's

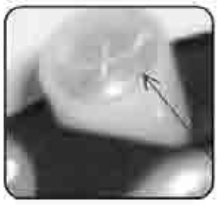
Ensure that horn is firmly fitted on chassis.

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 theadjustment 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 results in water entry which will lead to horn malfunctioning.

Do not apply pressurised water jet directly on horn resonator.

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

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

Do not change angle of horn mounting bracket.

Do not hit by mallet / screwdriver on horn resonator.

Carburettor :

Do's

Handling

- Use appropriate screw drivers.

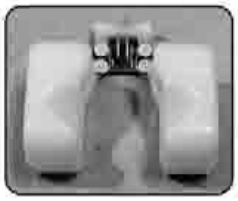
Cleaning

- For cleaning always use carburettor cleaner like
  - Acetone
  - Carbon Tetra chloride
  - Aerosol
  - CVC spray

Maintenance

Ensure

- Jets
  - Holes are clean.
  - Holes are not worn out.
  - Size as per specs.



Float is in good condition

- Float Pin
  - Tip having no wear mark.
  - Spring loaded pin is free in movement.

- Needle Jet
  - No wear at taper portion.
  - Circlip position is in specified groove.

- Piston valve
  - No wear mark.
  - Diaphragm condition.

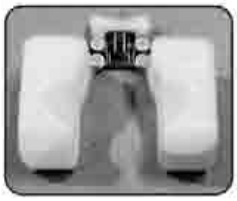
Don'ts

- Never use oversize screw drivers.
- Do not over tighten the jets and screws.
- These will damage the jets and their seats.

- Never clean the carburettor with water.
- Jets & air passages will get clogged due to sediments if cleaned by water.

Replace

- Jets
  - Worn out jet.
  - Incorrect size jet.



- Punctured, Squeezed and distorted float.

- Worn out tip.
- If spring loaded pin is sticky.

- Needle worn out at taper portion.

- Piston valve worn out. Scoring marks.
- Diaphragm punctured.

Ignition System

Do's

- Always replace spark plug by correct heat range plug.
- Check and adjust spark plug gap periodically. Adjust it to 0.7mm with filler gauge.
- Replace spark plug after 10,000 kms.
- Check for firm fitting of spark plug in cylinder head.
- Ensure H.T. cable secondary connection is firm in spark plug cap and H.T. coil end.
- Check that CDI coupler is tightly fitted.
- Check for proper function of TPS and its coupler / magnet.
- Ensure that magneto coupler is firm. Incase of CT-100 ensure rubber caps on magneto and CDI coupler are intact and grease used in CDI and magneto coupler is in place.
- Always use a right size socket during removal and re-installation of spark plug.
- Use spark plug gauge for adjusting the gap and cleaning carbon deposition.

Don'ts

- Do not change spark plug of different heat range.
- Do not replace CDI by local make or different make.
- Never short circuit H.T. coil primary wire to ground. It will 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.

Lights :

Do's

- 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 Indicators is intact.
- Check R.R. unit AC/DC voltage outputs periodically at authorised service station only. Ensure that voltage is within specified limits.
- Check that couplers and wires of bulbs are in good condition.
- Check flashing rate on indicator bulbs at authorised service station only.

Don'ts

- Do not use Higher 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 :

Do's

- 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.

Don'ts

- Do not apply direct pressurised water jet on control switches.
- Do not use any type of oil / grease / lubricatns inside the switch.
- Do not over tight 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.
- Do not tamper / alter with rear brake switch spring.
- Do not operate switch immediately after washing.

Drum Brake :

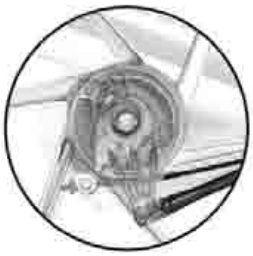
Do's

- Always Lubricate rear brake pedal linkages.
- Always ensure that while fitting brake cam arrow marking should be towards brake panel center.

- Adjust free play of brake lever and brake pedal during periodic service.

- Always replace brake shoes if wear indicator reaches maximum limit.
- Always use O.E. brake shoes while replacement.
- Ensure that there is no water / dust / oil / grease on brake shoe or drum.

Don'ts



- Do not apply pressurized water jet at brake cam, drum and front brake cable.
- Do not use hacksaw blade for cleaning brake shoe and brake drum.
- Do not use oily cloth for drum cleaning.
- Do not change cam lever angle excessively.
- Do not ride on brakes.
- Do not apply excessive grease at brake cam.

Starting Trouble

Check petrol in the petrol tank for correct quantity & quality

Not OK

1st Step : Fuel Related

Fill petrol to usable reserve level if less

If OK

Replace petrol from petrol tank, cock & carburettor bowl if contaminated / adulterated

OK

Check petrol supply from petrol tank to carburettor for proper flow

Not OK

2nd Step : Petrol Supply Related

Select petrol cock knob ON/Reserve position if not OK

If OK

Clean petrol tank cap air vent passage if clogged

If OK

Clean petrol cock if clogged

If OK

Replace petrol cock if petrol flow is less / intermittent

OK

Check ignition switch for free / smooth operation

Not OK

3rd Step : Ignition Switch Related

Replace ignition switch if sticky / jam / malfunctioning (short)

OK

Check spark plug cap for firm connection / continuity / no leakage of spark through body

Not OK

4st Step : Spark Plug Cap Related

Replace spark plug cap if holding clip given away

If OK

Replace spark plug cap if short / spark leaking through body

OK

Continued.....

OK

Check spark plug for no fouling

Not OK

5th Step : Spark Plug Related

Clean and adjust spark plug gap as per specification

	Spark Plug Heat Range	Electrode Gap
Platina	PRZ 9 HC, UR3AC	0.6 ~ 0.7 mm

If OK

OK

Replace spark plug if fouled

6th Step : Carburettor Related

Check carb. for
- No over flow / flooding
- Clear starter, pilot jet
- Correct Air Screw/ V.C. Screw setting

Not OK

Set / Re-adjust position of Air Screw / V.C. Screw as per specification

Standard Settings	
Platina	1.5~2.5 turns

If OK

Clean carburettor complete if dust found in float bowl

If OK

Replace float if punctured

If OK

Replace needle valve if tip worn out / damaged

If OK

Clean starter jet, pilot jet if clogged

OK

7th Step : H.T. Coil Related

Check H.T. coil for firm mounting / current output

Not OK

Tighten H.T. coil mounting bolt

If OK

Replace H.T. coil if partially short circuited

H.T. Coil Resistance Value		
	Primary	Secondary
Platina	0.3~0.5 Ohm	4.5~5.0 K Ohm

OK

Continued.....

OK

Check pick-up coil for
- Firm connections
- Resistance / continuity
- Gap between its pole & rotor sensing strip

Not OK

8th Step : Pick-up Coil Related

Rectify / Resolder the connections if dry solder

If OK

Replace if partially short circuited / open

If OK

Ensure correct gap between Pick-up coil pole & rotor sensor strip

Pick-up Coil Resistance	
Platina	180 ~ 240 ohm

OK

Check exciter coil for
- Soldering / Firm connections
- Resistance continuity

Not OK

8th Step : Exciter Coil Related

Rectify if dry solder

If OK

Replace excitor coil if partially short

Excitor Coil Resistance	
Platina	280~320 ohm

OK

Check CDI on CDI test jig

Not OK

10th Step : CDI Related

Replace CDI if short / intermittent spark

OK

Continued.....

OK

Check compression pressure. Perform dry & wet compression test

11th Step: Engine Compression Pressure Related

If compression pressure in wet test is **NOT OK**

Check & Rectify cylinder head related reasons

If compression pressure in wet test is **OK**

Check & Rectify cylinder block related reasons

Correct valve timing & valve tappet clearance if not as per specs.

If OK

Replace cylinder head gasket if torn / cut

If OK

Repair valve seat by valve lapping if pitted

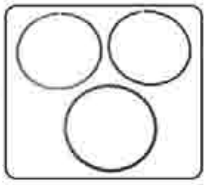
If OK

Replace valve if bent

Clean compression ring if sticky

If OK

Replace piton ring set if comp. ring worn out



If OK

Replace cyl. piston assly if seizure marks / deep scoring marks on cyl. wall & piston

OK

12th Step : Small Cam Sprocket Related

Check small sprocket on crankshaft for correct fitment

Not OK

Replace parallel pin if sheared off (Applicable to Discover DTS-i and Pulsar)

Replace crankshaft for loose small sprocket (Applicable to CT-100, Platina, Discover)

Idling instability / Erratic idling

1st Step : Idling RPM Related

Check idling rpm → Not OK → Set idling rpm as per specification by adjusting idling screw

OK

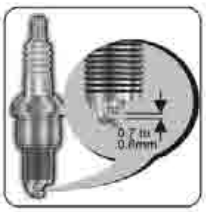
2nd Step : Fuel Related

Check fuel for no oil contamination / adulteration → Not OK → Replace fuel in the Petrol tank, cock & carb. bowl if contaminated / adulterated

OK

3rd Step : Spark Plug Related

Check spark plug for correct gap / no fouling. Check both spark plugs for DTS-i engine → Not OK → Clean & Adjust spark plug gap as per specification



	Spark Plug Heat Range	Electrode Gap
Platina	PRZ 9 HC, UR3AC	0.6 ~ 0.7 mm

If OK

Replace spark plug if oil fouled / carbon fouled / ash deposited

OK

4th Step : Air-fuel Mixture Related

Check carburettor for correct air fuel mixture with the help of CO gas analyser → Not OK → Set air screw / VC screw to achieve correct air fuel mixture as per specification

If OK

Tighten carburettor rubber holder clamps if loose

Standard Settings	
Platina	1.5~2.5 turns

If OK

Replace carb. rubber holder if cracked

If OK

OK

Tighten intake manifold bolts if loose

If OK

Replace manifold gasket (insulator) / O ring if found cracked / cut

If OK

Continued.....

If OK

Replace throttle piston valve if worn out

If OK

Clean pilot & main jet if clogged

If OK

Clean pilot circuit air passage inside carburettor assembly if clogged

OK

Check H.T. coil for firm mounting / current output

Not OK

5th Step : H. T. Coil Related

Tighten H.T. coil mounting bolts

If OK

Replace H.T. coil if partially short circuited

H.T. Coil Resistance Value		
	Primary	Secondary
Platina	0.3~0.5 Ohm	4.5~5.0 K Ohm

OK

Check for correct gap between pick-up pole coil & magneto rotor sensor strip

Not OK

6th Step : Pick-up Coil Related

Adjust gap between pick-up coil pole & rotor sensor strip to 0.7 mm if excessive

If OK

Connect wire if found dry soldered or loose

Resistance Value	
	Primary
Platina	180~230 Ohm

OK

Check exciter coil for firm connection / no dry solder / correct resistance

Not OK

7th Step : Exciter Coil Related

Connect wires properly if found dry soldered or loose

If OK

Replace exciter coil if partially short

Excitor Coil Resistance	
Platina	280~320 ohm

High Fuel Consumption

1st Step : Idling RPM Related

Check idling RPM as per specification

Not OK → Adjust idling to specified idling rpm by idling adjusting screw

Idling RPM Specification	
Platina	1300 ± 150

OK

2nd Step : Air Induction Related

Check air filter foam element for no clogging / correct oil soaking

Not OK → Clean air filter foam element as per SOP if clogged / excess oil soaked

If OK

Clean air intake duct if blocked / clogged

OK

3rd Step : Choke Related

Check free play of choke lever & free movement of choke cable

Not OK → Adjust choke lever free play if less than specified

If OK

Correct choke cable routing if incorrect

If OK

Lubricate / Replace choke cable if sticky / jam

If OK

Clean choke plunger if sticky / jam

Choke Cable Free Play
2~3 mm

OK

4th Step : TPS Cable Related

Check accelerator / TPS cable free play

Not OK → Adjust equal play in accelerator & TPS cable

If OK

Replace accelerator / TPS cable if sticky / jam

Accelerator / TPS Cable Free Play
2~3 mm

OK

Continued.....

OK

Check front wheel for free rotation

Front Brake Lever Free Play
2~3 mm

Not OK

5th Step : Front Wheel Rotation Related

Adjust front brake lever free play if less than specified

If OK

Correct front brake cable routing

If OK

Replace front brake cable complete if sticky / jam

If OK

Lubricate front brake cam if sticky / jam

If OK

Replace front brake shoes / pads if O.D. oversize / friction pad thickness more than specified

OK

Check rear wheel for free rotation

Rear Brake Pedal Free Play
20~30 mm

Not OK

6th Step : Rear Wheel Rotation Related

Adjust rear brake free play if less than specified

If OK

Lubricate rear brake pedal shaft if dry / sticky

If OK

Lubricate rear brake cam if sticky / jam

If OK

Replace / Repair brake shoes if O.D. oversize

OK

Check clutch cable for free play & smooth operation

Clutch Cable Free Play
2~3 mm

Not OK

7th Step : Clutch Cable Related

Adjust clutch lever free play if less / more than specified

If OK

Correct clutch cable routing

If OK

Replace clutch cable complete if sticky / jam

OK

Continued.....

OK

Check spark plug for no fouling / correct heat range & gap. Check both spark plug for DTS-i engine

Not OK

8th Step : Spark Plug Related

Clean & adjust spark plug gap as per specification

If OK

Replace spark plug by recommended one if incorrect heat range

If OK

Replace spark plug if fouled

OK

Check carburettor for correct air fuel mixture with the help of 'CO' gas analyser

Not OK

9th Step : Carburettor Related

Adjust air screw / V.C. screw as per specification & CO limit

If OK

Correct 'e' clip position as per specification

If OK

Clean carburettor body air passages if clogged

If OK

Replace carburettor jets if worn out

If OK

Replace needle valve & its seat if worn out

OK

Check TPS for correct gap / free movement / magnet presence / continuity

Not OK

10th Step : TPS Related

Adjust gap between magnet & reed switch as per specification if found more

If OK

Clean & Lubricate TPS switch if stuck up / sticky operation

If OK

Standard Gap Between Magnet & Reed Switch
2.5 mm

OK

Continued.....

OK

Check ignition timing

Not OK

11th Step : Ignition Timing Related

Replace CDI if timing is incorrect

If OK

Adjust gap between pick-up coil pole & rotor sensor strip if more

If OK

Replace rotor if cam position wrong leading to incorrect ignition timing

If OK

Replace magnet if missing

If OK

Replace TPS switch if reed switch short / open circuited

OK

Continued.....

OK

Check compression pressure. Perform dry & wet compression test

12th Step: Engine Compression Pressure Related

If compression pressure in wet test is **NOT OK**

Check & Rectify cylinder head related reasons

Correct valve timing if mark on cam sprocket not aligning with cyl. head when rotor 'T' mark is aligned with crankcase L.H. mark

If OK

* Reset valve tappet clearance as per specs. if found less

If OK

Clean valve guide & valve stem if gummy substance deposited

If OK

Rectify valve seat & valve face by lapping if pitted / worn out / excess carbon deposition

If OK

Replace inlet & exhaust valve if bent

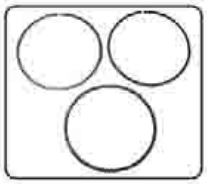
If compression pressure in wet test is **OK**

Check & Rectify cylinder block related reasons

Clean compression ring & piston groove if sticky / jam

If OK

Replace piston ring set if compression ring worn out



If OK

Replace cylinder block piston assembly if worn out / excessive clearance

If OK

Replace cylinder piston assembly if partially seized

*Tappet Standard Clearance		
	Inlet	Exhaust
Platina	0.05 mm	0.10 mm

Poor Pick-up & Poor Acceleration

1st Step : Fuel Related

Check fuel for adulteration / contamination

Not OK → Replace fuel from petrol tank, cock & carburettor bowl

OK

2nd Step : Air Induction Related

Check air induction system for no choke-up / no clogging i.e. correct quantity & smooth supply of air

Not OK → Clean air intake duct if blocked

If OK

Clean air filter foam element as per SOP if clogged / excess oil soaked

OK

3rd Step : Carburettor Related

Check carburettor for correct air fuel mixture with the help of CO gas analyser

Not OK → Re-adjust Air screw / V.C. screw as per specifications

If OK

Correct 'e' clip position as per specification and CO limit

If OK

Clean main jet, pilot jet if clogged

If OK

Clean carburettor air & mixture passages if clogged

If OK

Correct diaphragm position if wrong

If OK

Replace carburettor throttle valve assly if diaphragm punctured

OK

Standard Settings	
Platina	1.5±2.5 turns

'e' Clip Position	
Platina	4th from top

Continued.....

OK

Check compression pressure. Perform dry & wet compression test

4th Step: Engine Compression Pressure Related

If compression pressure in wet test is **NOT OK**

Check & Rectify cylinder head related reasons

Correct valve timing if not OK

If OK

Reset valve tappet clearance if not as per specifications

If OK

Tighten cylinder head bolts if loose

If OK

Replace cyl. hd. gasket if torn / cut / pressed

If OK

Replace cylinder head if spark plug mtg. hole threads washed out

If OK

Carry out surface facing / Replace cylinder head if warpage is equal to or more than 0.05 mm

If compression pressure in wet test is **OK**

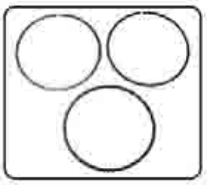
Check & Rectify cylinder block related reasons

Skill Tip :
- Do not scribe.
- Clean by Acetone/CCL4.

Clean compression ring & piston ring if sticky / jam

If OK

Replace piston ring set if compression ring worn out



If OK

Replace cylinder block piston assly if worn out / excessive clearance

Skill Tip :
Ensure cylinder & piston are of the same group while replacing.

If OK

Replace cylinder piston assembly if partially seized

Continued.....

OK

Check compression pressure. Perform dry & wet compression test

Continued.....

If compression pressure in wet test is **NOT OK**

Continued from back page

If OK

Clean valve guide & valve stem if deposited with gummy substance

If OK

Rectify valve seat & valve face by lapping if pitted / worn out / excess carbon depostion

If OK

Replace inlet / exhaust valve if bent

If compression pressure in wet test is **OK**

Continued from back page

Piston Ring to Groove Clearance		
	Std. Limit	Ser. Limit
Platina	Top Ring 0.02 mm	0.16 mm

Compression Ring End Gap		
	Std. Limit	Ser. Limit
Platina	0.20 to 0.35 mm	0.65 mm

Smokey exhaust (Blackish smoke)

1st Step : Fuel Related

Check fuel for no oil contamination & adulteration

Not OK → Replace fuel from petrol tank, petrol cock & carburettor bowl if contaminated / adulterated

OK

2nd Step : Air Induction Related

Check air filter foam element for no clogging

Not OK → Clean the air filter foam element if clogged ▶

Note: Ensure replacement of air filter foam element at every 10,000 kms. as per P.M. schedule.

OK

3rd Step : Carburettor Overflow Related

Check carburettor for no over flow / flooding

Not OK → Clean carburettor assly if dust particles found inside carburettor bowl

If OK ↓

Replace float if punctured ▶

If OK ↓

Replace needle valve if tip worn out/damaged ▶

OK

4th Step : Air-fuel Mixture Related

Check carburettor for correct air fuel mixture with the help of CO gas analyser

Not OK → Adjust air screw / VC screw as per specification and CO limit ▶

If OK ↓

Replace needle jet if missing

If OK ↓

Replace jet needle / needle jet if worn out ▶

If OK ↓

Correct 'e' clip position as per specification ▶

Standard Settings	
Platina	1.5±2.5 turns

'e' Clip Position	
Platina	4th from top

Smokey exhaust (Bluish White smoke)

Check petrol for no oil contamination / adulteration

Not OK → 1st Step : Fuel Related
Replace petrol from tank, cock & carburettor bowl

OK

Take out cyl. head assembly and check head gasket for intact condition

Not OK → 2nd Step : Head Gasket Related
Replace cylinder head gasket if torn

OK

Check oil carrying dowel of cyl. head stud for proper fitment / not missing

Not OK → 3rd Step : Dowel Related
Replace oil carrying dowel of cylinder head stud if missing

OK

Check cylinder head surface for flatness

Not OK → 4th Step : Head Surface Related
Carry out facing of cylinder head surface & confirm flatness. If warpage is still beyond service limit replace cyl. head

Note : Cylinder head surface warpage must be less than 0.05 mm

OK

Remove cyl. head complete & carry out pumping test for confirming no oil coming on piston crown

Not OK → 5th Step : Cylinder Piston Related
Clean piston rings, piston grooves if sticky & clean piston drain holes if clogged

If OK

Correct the position of piston ring end gap if not as per SOP

If OK

Fit 2nd piston ring as per SOP if fitted 'UP' side down

If OK

Fit oil expander ring as per SOP if butting ends are facing upward

If OK

OK

Continued.....

If OK

Replace piston ring set complete if worn out

If OK

Replace piston assembly complete if ring grooves worn out

If OK

Replace cylinder piston assembly if scored cylinder wall / worn out cylinder piston / excessive clearance between cylinder piston / seizure marks on piston

If OK

Replace cylinder piston assembly if liner sleeve is sunk down

OK

6th Step : Cylinder Head Related

Dismantle cyl. head assembly and check all components for no abnormal wear / no blow hole

Not OK

Replace valve guide oil seals if worn out / lips cut / missing / loosely fitting over guide O.D.

If OK

Replace cylinder head if valve guide cracked / loose in head / oval O.D. / excessive clearance between valve stem & guide

If OK

Replace cylinder head complete if found blow hole connecting oil gallery to combustion chamber

Engine Knocking

1st Step : Fuel Related

Check petrol for no adulteration / no contamination

Not OK → Replace petrol from tank, cock & carburettor bowl if found adulterated / contaminated

OK

2nd Step : Spark Plug Related

Check spark plug for correct heat range

Not OK → Replace spark plug by recommended one if hot spark plug fitted

OK

3rd Step : Lean Air Fuel Mixture Related

Check carburettor for correct air fuel mixture with the help of CO gas analyser

Not OK → Re-adjust air screw position if air screw opened more than specified turns. OR Re-adjust V.C. screw position if V.C. screw opened less than specified turns

If OK

Correct jet needle 'e' clip position if shifted to upper groove

If OK

Clean carburettor pilot jet / main jet if clogged

OK

4th Step : Compression Pressure Related

Check compression pressure of engine

Not OK → Replace cylinder head gasket if thin in thickness / non O.E.

If OK

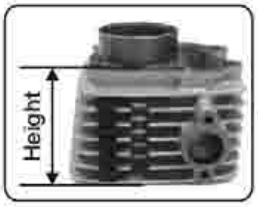
Decarbonise cylinder head & piston crown if high carbon deposition

If OK

Replace cylinder head if combustion chamber volume is less

If OK

Replace cylinder block if its height is less than standard



Compression Pressure		
	Std. Limit	Serv. Limit
Platina	12 ~ 14 kg/cm²	9.1 & 14 kg/cm²

Engine overheating

Check engine for
a. No obstruction to flow of cooling air
b. No breakage of cooling fins

Not OK →

1st Step : Air Cooling Related

a. Remove rain guard / non O.E. engine guard if found obstructing flow of cooling air

b. Replace cylinder complete / cylinder head if fins broken

OK ↓

Check front / rear wheel for free rotation

Not OK →

2nd Step : Rotation of Front / Rear Wheel Related

Adjust front / rear brake free play if less than specified

If OK ↓

Rectify / Replace front brake cable if sticky / jam

If OK ↓

Lubricate front brake cam / rear brake cam if sticky / jam

If OK ↓

Lubricate rear brake pedal & shaft if sticky movement

If OK ↓

Replace front / rear brake shoes / disc pads if friction lining thickness oversize

OK ↓

Check engine oil level

Not OK →

3rd Step : Engine Oil Level Related

Top up engine oil level to specified level if less than specified

OK ↓

Check engine oil for correct grade & OK viscosity

Not OK →

4th Step : Engine Oil Quality Related

Replace engine oil by recommended quality & quantity of oil if improper grade / improper viscosity

	Engine Oil Qty (Refill)	Grade
Platina	900 ml	20W40 API SG + JASO MA

OK ↓

Continued.....

OK

Check spark plug for correct heat range

Not OK

5th Step : Spark Plug Related

Replace spark plug by recommended one if hot spark plug fitted

OK

Check carburettor for correct air fuel mixture with the help of CO gas analyser

Not OK

6th Step : Lean Air Fuel Mixture Related

Re-adjust air screw position if air screw opened more than specified turns.
OR Re-adjust V.C. screw position if V.C. screw opened less than specified turns

If OK

Correct jet needle 'e' clip position if shifted to upper groove

If OK

Clean carburettor pilot jet / main jet if clogged

OK

Check oil pump oil delivery (quantity & pressure)

Not OK

7th Step : Oil Pump Related

Clean oil strainer & centrifugal oil filter if clogged

If OK

Tighten oil pump securing screws / bolts if loose

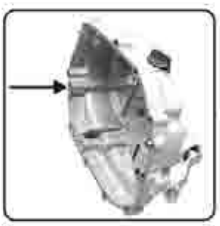
If OK

Replace oil pump 'O' rings if cut/pressed

If OK

Clean oil pump body & rotors if clogged

If OK



Clean clutch cover, crankcase oil passages & oil pipe if clogged

If OK

Replace oil pump if malfunctioning

Engine misfiring

Check spark plug for no oil fouling

Not OK → **1st Step : Spark Plug Related**

Clean & adjust spark plug gap as per specification

If OK

Replace spark plug if fouled

Spark Plug Gap	
Platina	0.6~0.7 mm

OK

Check spark plug cap for short / firm connections

Not OK → **2nd Step : Spark Plug Cap Related**

Replace spark plug cap if short circuited

If OK

Replace spark plug cap if holding clip given away

OK

Check H.T. coil for firm mounting / current output

Not OK → **3rd Step : H. T. Coil Related**

Tighten H.T. coil mounting bolt

If OK

Replace H.T. coil if partially short circuited

H.T. Coil Resistance Value		
	Primary	Secondary
Platina	0.3~0.5 Ohm	4.5~5.0 K Ohm

OK

Check pick-up coil for
- **Firm connections**
- **Resistance**
- **Gap betn its pole & rotor sensing strip**

Not OK → **4th Step : Pick-up Coil Related**

Rectify/Replace if partially short circuited

If OK

Ensure correct gap between pick-up coil pole and rotor sensor strip if not as per specifications

Pick-up Coil Resistance Value	
Platina	180~240 ohm

OK

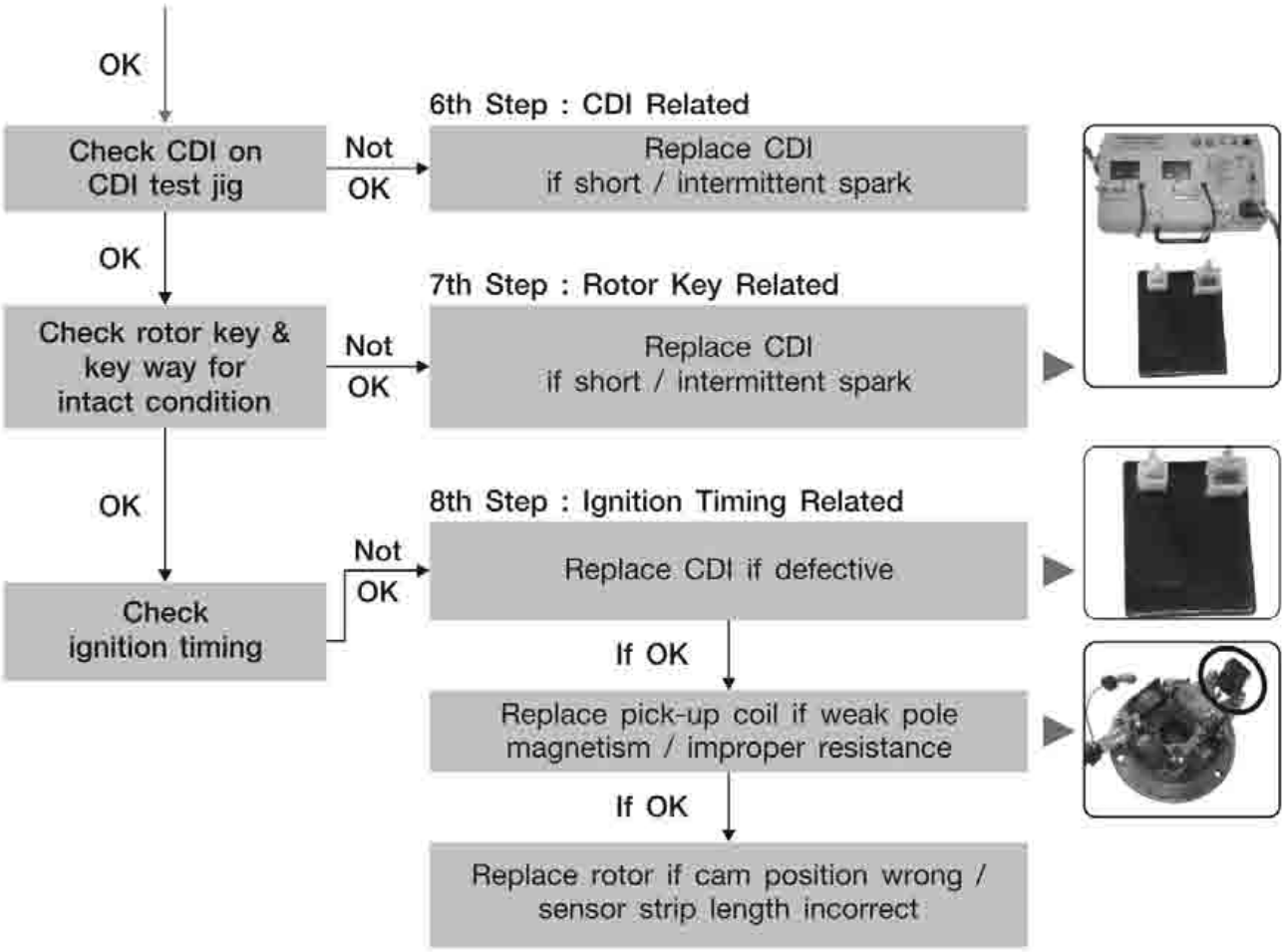
Check exciter coil for
- **Soldering / Firm Connections**
- **Correct resistance**

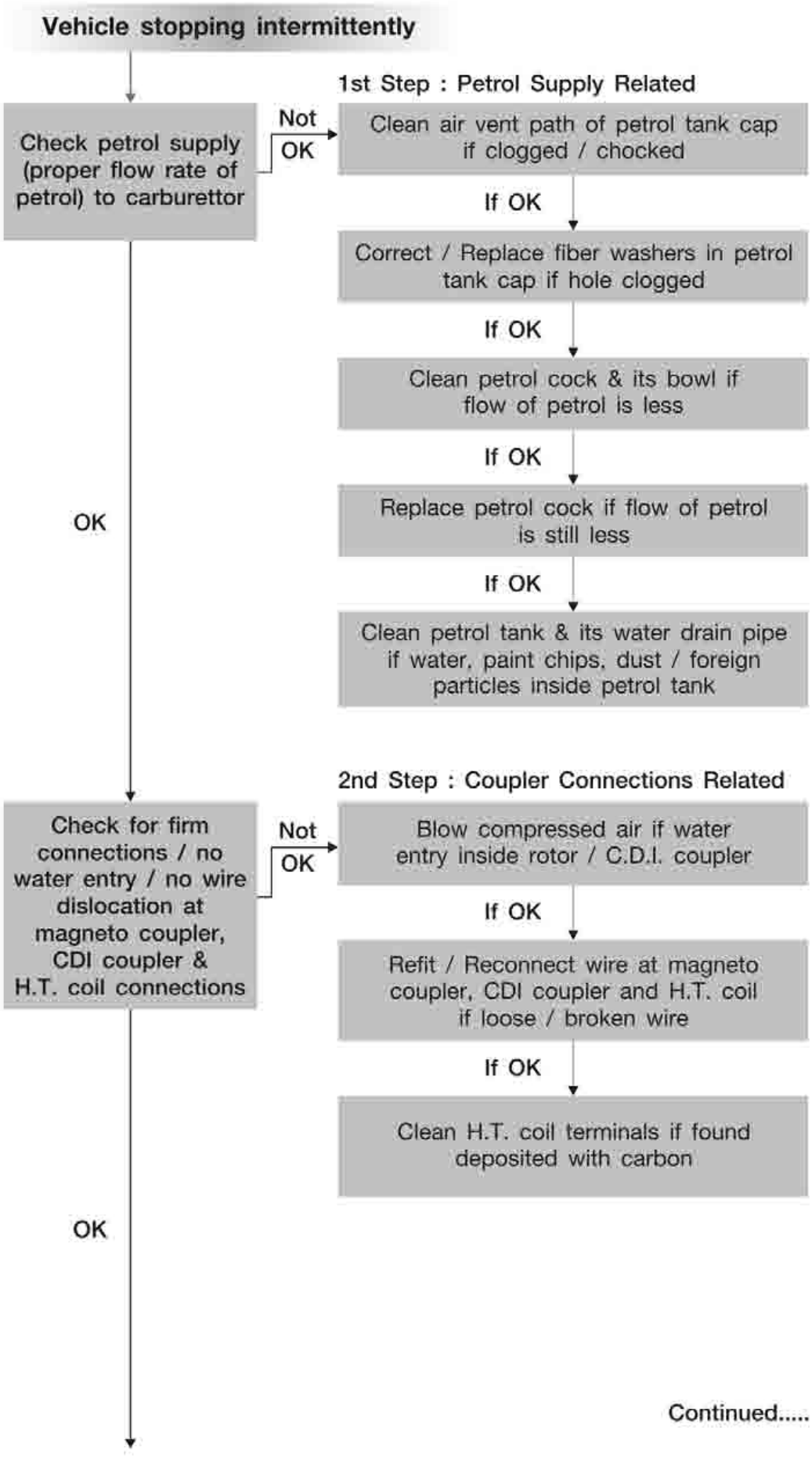
Not OK → **5th Step : Exciter Coil Related**

Rectify/Replace if partially short circuited

Exciter Coil Resistance	
Platina	280~320 ohm

Continued.....


OK
Check CDI on CDI test jig
Not OK
6th Step : CDI Related
Replace CDI if short / intermittent spark
OK
Check rotor key & key way for intact condition
Not OK
7th Step : Rotor Key Related
Replace CDI if short / intermittent spark
OK
Check ignition timing
Not OK
8th Step : Ignition Timing Related
Replace CDI if defective
If OK
Replace pick-up coil if weak pole magnetism / improper resistance
If OK
Replace rotor if cam position wrong / sensor strip length incorrect


Vehicle stopping intermittently
1st Step : Petrol Supply Related
Check petrol supply (proper flow rate of petrol) to carburettor
Not OK
Clean air vent path of petrol tank cap if clogged / chocked
If OK
Correct / Replace fiber washers in petrol tank cap if hole clogged
If OK
Clean petrol cock & its bowl if flow of petrol is less
If OK
Replace petrol cock if flow of petrol is still less
If OK
Clean petrol tank & its water drain pipe if water, paint chips, dust / foreign particles inside petrol tank
OK
2nd Step : Coupler Connections Related
Check for firm connections / no water entry / no wire dislocation at magneto coupler, CDI coupler & H.T. coil connections
Not OK
Blow compressed air if water entry inside rotor / C.D.I. coupler
If OK
Refit / Reconnect wire at magneto coupler, CDI coupler and H.T. coil if loose / broken wire
If OK
Clean H.T. coil terminals if found deposited with carbon
OK

Continued.....

Check pick-up coil for no dry solder / tight connection and correct resistance

Not OK

3rd Step : Pick-up Coil Related

Re-solder connection if dry soldered

If OK

Reconnect the coupler wire if loose/broken

If OK

Replace pick-up coil if partially short

Resistance Value	
	Primary
Platina	180~230 Ohm

OK

Check exciter coil for no dry solder / loose connection & correct resistance

Not OK

4th Step : Exciter Coil Related

Re-solder connection if dry soldered

If OK

Reconnect the coupler wire if loose/broken

If OK

Replace exciter coil if partially short

Resistance Value	
Platina	280~320 Ohm

OK

Check CDI on test jig for correct spark output

Not OK

5th Step : CDI Related

Replace CDI assembly if spark output intermittent

Engine doesn't crank

Crankshaft doesn't rotate in-spite of operating kick or self start mechanism

1st Step : Kick Mechanism Related

Check kick operation / kick mechanism for no slippage

Not OK → Refer Kick Slippage chart on page no. 5 of Engine & Transmission module in Diagnosis & Troubleshooting booklet

OK

2nd Step : Gear Starter Clutch Related

Check 'Gear Starter Clutch' for smooth rotation on crankcase / guide plate bush

Not OK → Replace bush gear starter if came out of its seat

If OK → Replace one way starter clutch rollers, springs, bushes & spring retainer if rusty. Also clean body gear starter clutch & boss gear starter clutch

Applicable to Pulsar & Discover DTS-i

OK

3rd Step : Magneto Rotor Related

Check for free rotation of magneto rotor

Not OK → Rectify if rotor obstructed by loosening of stator plate screws / bolts / rusting if magneto assembly

OK

4th Step : Clutch Related

Check free rotation of clutch housing

Not OK → Rectify if clutch obstructed by loosening of holder clutch bolts / centrifugal oil filter cover screws / foreign part

OK

5th Step : Cylinder / Piston Related

Check cylinder piston assembly for no seizure

Not OK → Replace cylinder piston assembly if seized

OK

6th Step : Crankshaft Related

Check crankshaft for free rotation

Not OK → Replace crankshaft if big end / small end seized

OK

7th Step : Transmission Gear Related

Check input & output shaft gears for free rotation on respective shaft

Not OK → Replace transmission free gear and respective shaft if seized / hole axis shifted (tilted)

Vehicle pulling to one side

Check steering for free movement by rotating handle bar on either side

Not OK

1st Step : Steering Related

If stg. jam, loosen front fork side bolts, top bolts, steering ring nut & adjust the steering for free movement. Retighten the bolts as per SOP sequence.

Tightening Torque for Steering Ring Nut : 0.5 Kgm

OK

Check rear wheel alignment w.r.t. drive chain adjusters

Not OK

2nd Step : Chain Adjuster Related

Set both side drive chain adjusters equally

OK

Check handle bar & upper holder bkt. for alignment

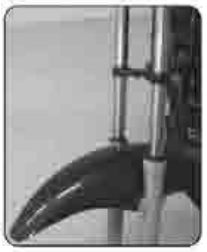
Not OK

3rd Step : Handle Bar Related

Replace handle bar if bent

If OK

Replace fork upper holder bracket if misaligned



OK

Check fork inner pipe & under holder bracket for alignment

Not OK

4th Step : Fork Inner Pipe Related

Replace fork inner pipes if bent

If OK

Replace fork under holder bracket (T) if bent

OK

Check swing arm for alignment

Not OK

5th Step : Swing Arm Related

Replace swing arm if bent

OK

Check frame for alignment

Not OK

6th Step : Frame Alignment Related

Replace frame if misaligned at steering tube area

If OK

Replace frame if mounting hole of swing arm is oblonged

Wheel wobbling / Vehicle wobbling

1st Step : Tyre Pressure Related

Check front & rear tyre pressure → Not OK → Inflate front / rear tyre to specified air pressure

OK

2nd Step : Steering Related

Check steering free movement by rotating handle bar on L.H. / R.H. side → Not OK → Refer steering sticky / jam movement chart

OK

3rd Step : Spokes Related

Check front & rear wheel spokes for tightness → Not OK → Tighten spokes & carry out wheel trueing if spokes loose.

If OK → Replace broken spokes

OK

4th Step : Tyre Related

Check front & rear tyre for
a. No wear
b. Correct fitment orientation → Not OK → Replace worn out or bald tyre

If OK → Correct front / rear tyre fitment so that reference mark line is circumferentially parallel to wheel rim circumference

OK

5th Step : RSA Spring Adjuster Related

Check RSA spring adjuster position → Not OK → Adjust L.H. & R.H. spring adjuster equally

OK

Continued.....

OK

Check front & rear wheel rim for no run-out

Not OK

6th Step : Wheel Rim Related

Carry out wheel trueing if rim run-out is more than service limit

If OK

Replace wheel rim if run-out is more than service limit even after carrying out wheel trueing.

OK

Check front & rear wheel axial play

Not OK

7th Step : Wheel Play Related

Tighten axle nut if found loose

If OK

Replace bearing if worn out, excessive play

OK

Check swing arm for axial play at pivot pin end

Not OK

8th Step : Swing Arm Related

Tighten swing arm axle nut if found loose

If OK

Replace swing arm bushes if worn out

Excessive / Uneven tyre wear

1st Step : Tyre Pressure Related

Check front / rear tyre pressure

Not OK → Correct tyre pressure as per specification

- Less than specified tyre pressure leads to tyre wear at sides.
- More than specified tyre pressure leads to tyre wear at center.

OK

2nd Step : Zapper Tyre Directional Arrow Related

Check tyre fitment directional arrow in case of Zapper tyre

Not OK → Correct the fitment of tyre

Note : Directional arrow on zapper tyre must be kept in the direction of rotation of wheel.

OK

3rd Step : Axial Play Related

Check front / rear wheel axial play

Not OK → Tighten front / rear axle nut if loose

If OK

Replace axle nut / axle if threads washed out

If OK

Replace wheel bearings if worn out / excessive play

If OK

Replace swing arm bush if excessive play at swing arm pivot

OK

4th Step : Swing Arm Alignment Related

Check swing arm for correct alignment

Not OK → Replace swing arm if misaligned

Continued.....