

Pulsar's DTS-I



BAJAJ
MOTORCYCLES

Service Station Manual



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1	<i>Foreword</i>	1
2	<i>Workshop Safety</i>	3
3	<i>General Information</i>	7
4	<i>Customer Information</i>	15
5	<i>Technical Specifications</i>	23
6	<i>I Read I Learn</i>	31
	Vehicle Identification & Controls	32
	Salient Features	36
	FAQ's	37
	Periodic Maintenance & Lubrication Chart	39
	Pre-delivery Inspection Checklist	42
	Importance of PM Schedule Execution	44
7	<i>Fuel System</i>	73
	Co Checking & Setting	74
	Engine Tune up	75
	Standard Operating Procedure	77
	Carburettor Circuits	79
8	<i>Engine & Transmission</i>	85
	Tightening Torques	86
	Service Data	88
	Special Tools	91
	Important Points to Remember	95
	Engine Removal from Frame	99
	Engine Dismantling	102
	Engine Sub-Assemblies Dismantling	122
	Part Inspection Parameters	127
	Assembly of Engine	132
	Gear Transmission Power Flow	151
	Engine Lubrication - Flow of Oil	155

9 *Frame & Suspension* 157

Tightening Torques	158
Service Limits	160
Special Tools	162
Control Cable Routing	164
Working of Nitrox Suspension	167
SOP for Front Fork Dust Seal & Oil Seal Replacement	169
SOP for Steering Overhaul	176
SOP for Dismantling & Assembling Front Fairing	181
SOP for Swing Arm Replacement	186
Wiring Harness Routing	195
SOP for Caliper Piston Seal and Dust Seal Replacement	197
Sop for Master Cylinder Piston Kit Replacement	202
SOP for Front Brake Hose Replacement	207
SOP for Brake Fluid Replacement	209

10 *Electrical* 213

Battery	214
Electrical Checking Procedures	218
Starter Motor	230
Battery Dos & Don'ts	232
SOP for Checking Charge Condition of Battery	234
Dos & Don'ts	237
Electrical Circuit Diagrams	240

11 *Diagnosis & Troubleshooting* 247

12 *Supplementary Service Station Manual - Pulsar 180 UG + BS IV* 249

13 *Supplementary Service Station Manual - Pulsar 135 UG + BS IV* 278

14 *Supplementary Service Station Manual - Pulsar 220 UG + BS IV* 307

Foreword

This manual is designed primarily for use by trained mechanics in a properly equipped shop.

A basic knowledge of mechanics, the proper use of tools, & workshop procedures must be understood in order to carry out maintenance & repair satisfactorily.

In order to perform the work efficiently and to avoid costly mistakes, read the text, thoroughly; familiarize yourself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools or equipment are specified, do not use makeshift tools or equipment. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation.

For the duration of the warranty period, we recommend that all repairs & scheduled maintenance be performed in accordance with this service manual. Any repair procedure not performed in accordance with this manual may void the warranty.

To get the longest life out of the vehicle.

- Follow the Periodic Maintenance Chart in the Service Manual.
- Be alert for problems & non-scheduled maintenance.
- Use proper tools and genuine Bajaj motorcycle parts. Special tools, gauges, and testers that are necessary when servicing Bajaj motorcycles are introduced by the Service Manual. Genuine parts provided as spare parts are listed in the Parts Catalogue.
- Follow the procedures in this manual carefully. Don't take shortcuts.
- Remember to keep complete records of maintenance and repair with dates and any new parts installed.

How to Use This Manual

In this manual, the produce is divided into its major systems and these systems make up the manual's chapters. The contents / index guide shows you all of the product's system and assists in locating their chapters. Each chapter in turn has its own comprehensive table of contents.

For example, if you want carburettor information, to locate the Fuel System Chapter.

Whenever you see these WARNINGS and CAUTION symbols, heed their instructions! Always follow safe operating and maintenance practices.

WARNING

This manual symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

SKILL TIP / NOTE

This symbol indicates points of particular interest for more efficient and convenient operation.

★ Indicates a conditional step or what action to take based on the results of the test or inspection in the procedural step or sub-step it follows.

In most chapters an exploded view illustration of the system components are incorporated.

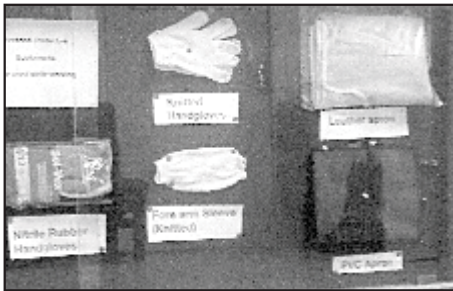
In these illustrations you will find the instructions indicating which parts require specified tightening torque, oil, grease or a locking agent during assembly.

Workshop Safety





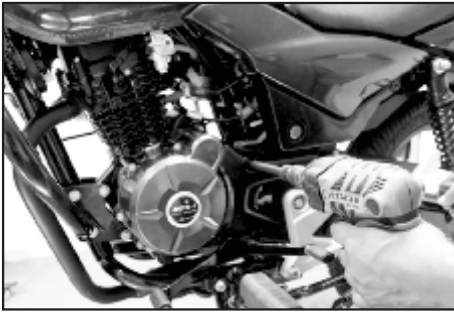
- o Technicians must put on shoes & dressing should not be very loose.
- o Technicians must use Personnel Protective Equipment (PPE) like - Hand Gloves
 - Mask
 - Safety Goggle
 - Ear Plug
- o Wear Nitrile Rubber Hand Gloves while handling petrochemicals like petrol, Oil, Kerosene etc.



- o Precautions to be taken while handling MRTB Test
 - Take care that the vehicle is properly clamped in the clamping device, otherwise it may go back with a force and can injure the rider.
 - Keep yourself cool while taking tests. It is very necessary to be alert.
 - Mount the vehicle in the center of the rollers.
 - Fuel pipe should not touch heated part of the vehicle, it may cause fire.
 - Make sure to put on air blower while conducting test to avoid engine overheating.
 - Lock the front wheel properly
 - Ensure that exhaust blower is running.
 - Wear Helmet
 - Wear ear plugs



- o Precautions to be taken while handling CO Gas Analyser
 - Use hand gloves for protection from hot silencer.
 - Use mask for protection from exhaust gases.
 - Ensure proper ventilation.
- o Fire Extinguisher
 - Install 'ISI' approved. Fire extinguishers - CO₂ gas cylinders.
 - Refill CO₂ before the gas expires.
 - Install Co₂ gas cylinder at appropriate place so that there is no obstruction / good accessibility.



o Safety Precautions while Operating Air Tools

Air tools operate on compressed air supplied by the shop air system (Compressor & Air supply system).

Observe the following safety related precautions when using an air tool.

- It is advisable to fit a pressure regulator (FRL:- Filter Regulator Lubricator) in the pneumatic line which supplies air pressure to the air tool. It regulates the outlet pressure to @6.5 Kg/cm². This avoids the risk of personal injury.
- Never use the blow gun to blow dust off your clothes and never point it at anyone. The air pressure can drive dust particles at high speed. These particles can penetrate into the flesh or eyes. High pressure air hitting on open wound can force air into the blood stream. This can result in death.
- Never look into the air outlet of a pneumatic tool.
- Never blow-clean brake or clutch parts. This could put asbestos dust particles into the air which are harmful to inhale. (These particles are cancerous - can lead to Cancer).



o Hand Tools

- Do not use worn out hand tools.

o Calibration of Workshop Equipment

- Calibrate all Workshop and M & T Equipment once in a year.

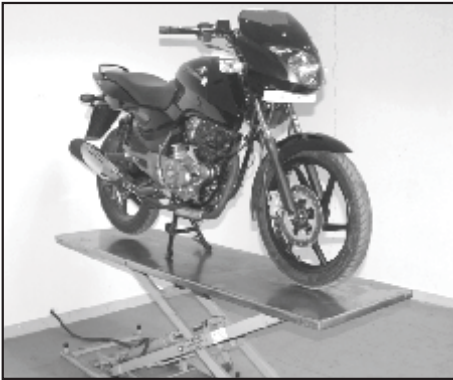
o Avoid direct body contact with Petrol, Kerosene.

Caution : Prolonged contact of used oil may cause cancer.

o Waste Oil Disposal

- Sell used oil to Government approved re-cycle agencies.
- Collect used oil in oil disposer / barrel.
- Don't throw oil into sewage line.
- Don't spill oil on the floor.



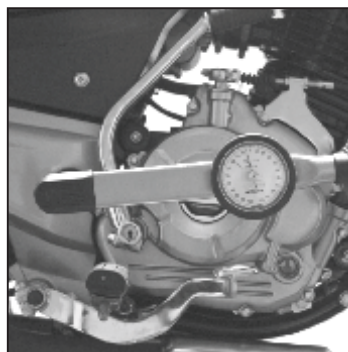


- o Precautions to be taken while handling Hydro-Electric Lift
 - While raising / lowering the lifter bay ensure that vehicle is firmly hold on the lifter bay to avoid accident.
 - After raising the lifter bay, lock the lift.
 - Don't put leg/hand in between while raising / lowering the lifter Bay.
- **Safety Tips**
 - Do not lower the lifter bay table without unlocking the mechanical lift lock.
 - Do not keep your leg between the top and bottom frame while lowering the lifter bay.
 - Do not work with loose clothing while working on the lifter bay.
 - Do not keep hydraulic joints loose.
 - Do not stand on the lifter bay's top, when it is being operated.
 - Special care is to be adopted to avoid injuries if either leg or hand is entangled between.
 - Keep off direct fire near the power pack.
 - Avoid oil spillage around the working area for safety reasons.
- o Brake Fluid Handling
 - Store brake fluid in sealed container
 - Avoid contact of brake fluid with skin.
 - Don't spill the brake fluid on painted components
- o Electrical Wiring
 - Carry out periodic checks & repairs
 - Electrical board & Main Switch must be located such that they are easily accessible.



General Information

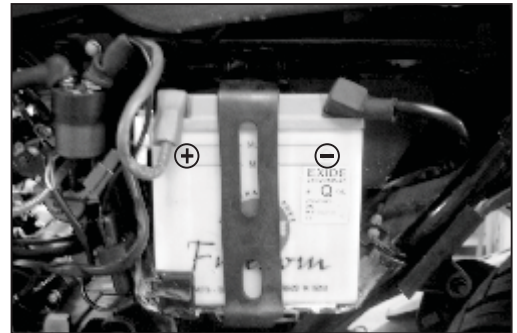
- Before Servicing



General precautions to be taken while opening, assembling & storage of engine parts.

Battery Ground

Before completing any service on the motorcycle, disconnect the battery cables from the battery to prevent the engine from accidentally turning over. Disconnect the ground cable (-) first and then the positive (+). When completed with the service, first connect the positive (+) cable to the positive (+) terminal of the battery then the negative (-) cable to the negative terminal.



Edges of Parts

Lift large or heavy parts wearing gloves to prevent injury from possible sharp edges on the parts.



Cleaning Vehicle before Disassembly

Clean the vehicle thoroughly before disassembly. Dirt or other foreign materials entering into sealed areas during vehicle disassembly can cause excessive wear and decrease performance of the vehicle.



Arrangement and Cleaning of Removed Parts

Use engine parts handling trays for storage of engine parts.



Storage of Removed Parts

After all the parts including subassembly parts have been cleaned, store the parts in a clean area. Put a clean cloth or plastic sheet over the parts to protect from any foreign materials that may collect before reassembly.



Inspection

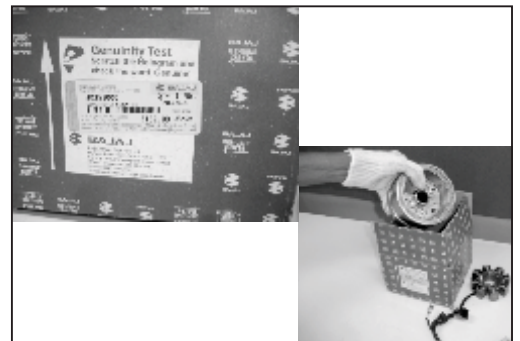
Reuse of worn or damaged parts may lead to serious accident. Visually inspect removed parts for corrosion, discoloration, or other damage. Refer to the appropriate sections of this manual for service limits on individual parts. Replace the parts if any damage has been found or if the part is beyond its service limit.

Visual Inspection of Removed Parts



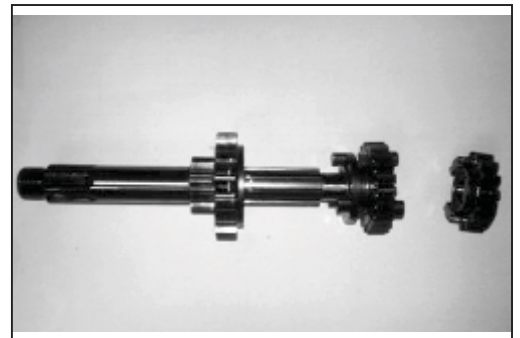
Replacement Parts

Replacement parts must be BAJAJ genuine or recommended by BAJAJ. Gaskets, O-rings, Oil seals, Grease seals, Circlips or Cotter pins must be replaced with new ones whenever disassembled.



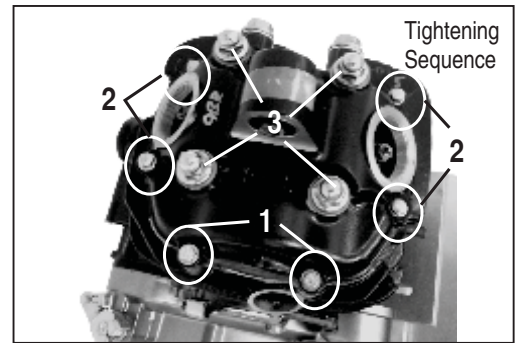
Assembly Order

In most cases assembly order is the reverse of disassembly, however, if assembly order is provided in this Service Manual, follow the procedures given.



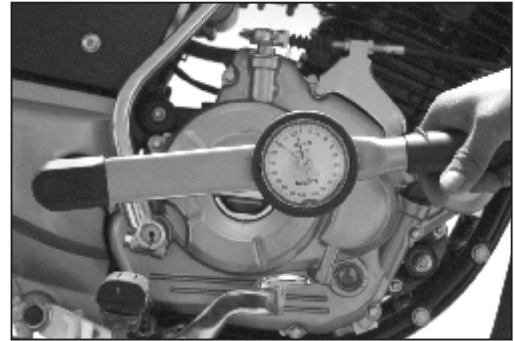
Tightening Sequence

Generally, when installing a part with several bolts, nuts, or screws, start them all in their holes and tighten them to a snug fit. Then tighten them according to the specified sequence to prevent case warpage or deformation which can lead to malfunction. Conversely when loosening the bolts, nuts or screws, first loosen all of them by about a quarter turn and then remove them.



Tightening Torque

Incorrect torque applied to a bolt, nut, or screw may lead to serious damage. Tighten fasteners to the specified torque using a good quality torque wrench.



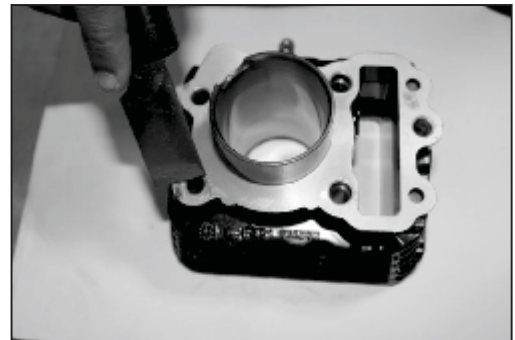
Force

Use common sense during disassembly and assembly, excessive force can cause expensive or hard to repair damage. When necessary, remove screws that have a non-permanent locking agent applied using an impact driver. Use a plastic-faced mallet whenever tapping is necessary.



Gasket, O-ring

Hardening, shrinkage, or damage of both gaskets and O-rings after disassembly can reduce sealing performance. Remove old gaskets and clean the sealing surfaces thoroughly so that no gasket material or other material remains. Install the new gaskets and replace the used O-rings when re-assembling.



Liquid Gasket, Non-permanent Locking Agent

For applications that require liquid gasket or a non-permanent locking agent, clean the surfaces so that so oil residue remains before applying liquid gasket or non-permanent locking agent. Do not apply them excessively. Excessive application can clog oil passages and cause serious damage.



Press

For items such as bearings or oil seals that must be pressed into place, apply small amount of oil to the contact area. Be sure to maintain proper alignment and use smooth movements when installing.

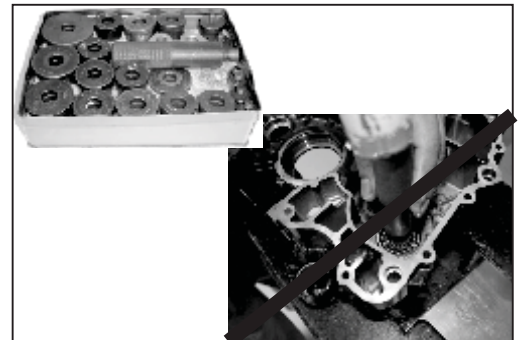
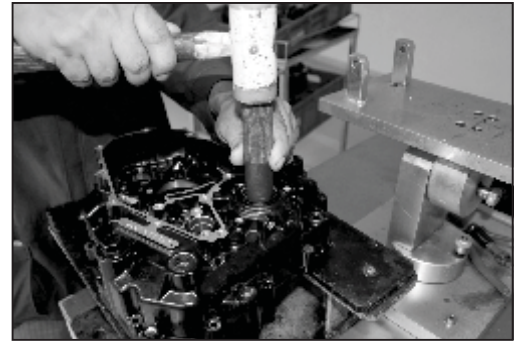
Ball Bearing and Needle Bearing

Do not remove pressed ball or needle unless removal is absolutely necessary. Replace with new ones whenever removed. Press bearings with the manufacturer and size marks facing out. Press the bearing into place by putting pressure on the correct bearing race as shown.

Pressing the incorrect race can cause pressure between the inner and outer race and result in bearing damage.

Press inner race - when bearing is to be fitted on shaft.

Press outer race - when bearing is to be fitted in the bore.

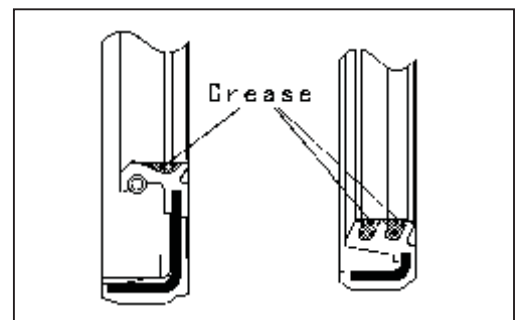


Oil Seal, Grease Seal

Do not remove pressed oil or grease seals unless removal is necessary. Replace with new ones whenever removed. Press new oil seals with manufacture and size marks facing out. Make sure the seal is aligned properly when installing.

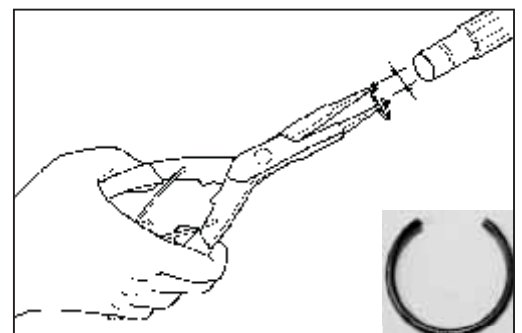


Apply specified grease to the lip of seal before installing the seal.



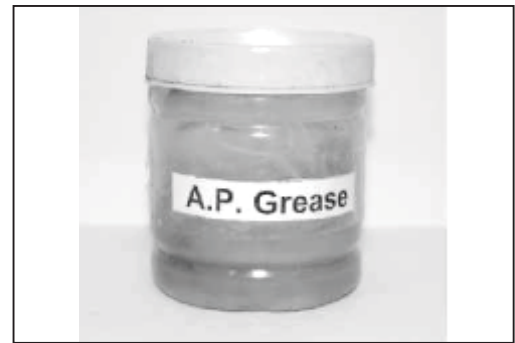
Circlips, Cotter Pins

Replace the circlips or cotter pins that were removed with new ones. Take care not to open the clip excessively when installing to prevent deformation.

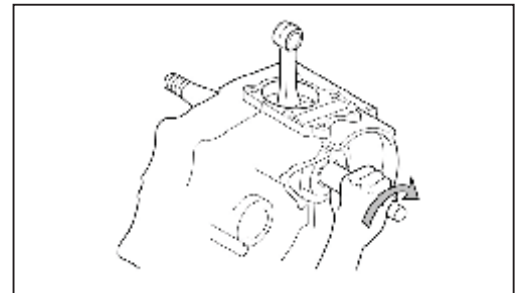


Lubrication

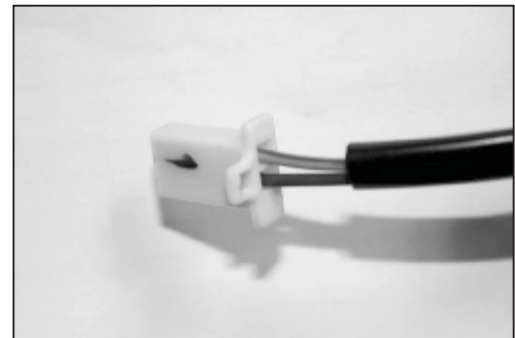
It is most important to lubricate rotating or sliding parts during assembly to minimize wear during initial operation. Apply the specific oil or grease as specified.

**Direction of Engine Rotation**

When rotating the crankshaft by hand, the free play amount of rotating direction will affect the adjustment. Rotate the crankshaft to positive direction (clockwise viewed from clutch cover side).

**Electrical Wires**

A two-colour wire is identified first by the primary colour and then the stripe colour. Unless instructed otherwise, electrical wires must be connected to those of the same colour.

**Instrument**

Use a meter that has enough accuracy for an accurate measurement. Read the manufacturer's instructions thoroughly before using the meter. Incorrect values may lead to improper adjustments.



General Precautions

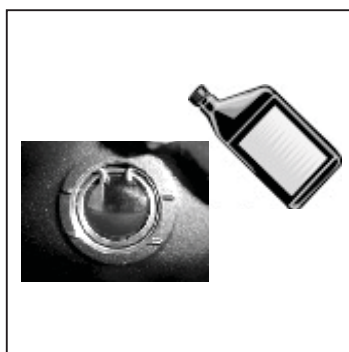
- To avoid damage to head of fasteners do not use over size or worn out tools.
- To avoid damage to painted parts, prevent spillage of battery acid & brake fluid.
- To avoid damage of machined face & color of the components store the parts in a clean plastic bin having compartments to avoid components touching to each other.
- To avoid warpage of mating / sealing faces, mounting bolts should be tightened in a criss-cross pattern.
- To avoid slippage of threads leading to components damage, do not over torque bolts, nuts or screws.
- Always install new gasket & O rings when reassembling.
- Always apply grease to the lip of seal before installing.
- Always replace circlips / cotter pins & radiator hose clamps with new ones.
- Take care not to excessively spread open circlips with tool during installing to prevent deformation.
- Always use appropriate special tool for opening & assembling parts to avoid damages.
- To avoid dust / muck entry inside the engine wash vehicle thoroughly before executing any repair work related to engine or otherwise this may lead to early failure of parts.
- Always use lint free cloth while handling engine parts.
- Always apply few oil drops between two moving parts to avoid dry run.
- Always blow high pressure compressed air through oil passage holes in reverse direction of flow of oil & ensure that the passages are clear.
- Always apply loctite to bolts, screws or nuts wherever recommended to avoid loosening & subsequent break down.
- Confirm proper seating of circlips by rotating them to avoid it from coming out.
- Do not tap engine components by hammer in order to avoid damage. Engine components are precisely machined.
- Do not fit extra electrical accessories otherwise wiring would get short & battery would get discharged.



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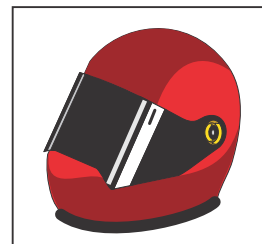
Customer Information

- Safe Riding Tips
- Daily Safety Checks
- Running In
- Fuel Saving Tips
- Non Use Maintenance
- Customer Awareness
- Bajaj Genuine Parts
- Maintenance Tips



Safe Riding Tips

- Always wear ISI helmets while driving or riding. Your helmets should conform to appropriate Indian standards.
- Read thoroughly the instructions in this manual and follow them carefully.
- Avoid unnecessary accessories for the safety of both rider and other motorists.
- Get familiar and follow traffic rules and regulations in your states as well as general traffic signs.
- Do not overload your vehicle.
- Familiarise yourself well with starting, acceleration and braking of the vehicle.
- When applying the brakes, use both, the front and rear brakes. Applying only one brake may cause the vehicle to lose control.
- During monsoon drive the vehicle more cautiously. Remember vehicles skid more easily during light showers.
- Always carry vehicle registration papers, insurance and a valid driving licence with you.



MONSOON CARE : Fit & Finish Parts

- The appropriate surface preventive coat to be applied to avoid rusting on account of adverse atmospheric conditions.
- Clean & lubricate all the important parts as detailed in a periodic maintenance chart.
- Do not obstruct engine cooling by adding mud protection sheet from front.
- Vehicle cleaning to be done with soft & clean wet cloth to avoid scratches on painted parts.
- Do not apply direct water jet on painted, electrical / electronic parts.

Daily Safety Checks

Before riding the motorcycle be sure to check the following items. If any irregularities are found during these checks, refer to the Maintenance chapter and see your dealer for the action required to return the motorcycle to a safe operating condition.

WARNING

Failure to perform these checks every day before you ride may result in serious damage or severe accident.

What to check	Check for
Fuel	Enough fuel for the planned distance of operation, no leaks in the fuel lines.
Engine Oil	Oil level between upper and lower marks.
Throttle	1. Correct free play in the throttle cable (2 to 3 mm) 2. Smooth operation and positive return of the throttle grip to the closed position.
Steering Lock	Correct operation.

What to check	Check for
Brakes	1. Correct rear brake pedal play (25~30 mm) Applicable to 150 cc. 2. Brake lining wear indicator within 'USABLE RANGE'. 3. No dragging.
Drive chain	1. Proper slack (25~35 mm). 2. Adequate lubrication.
Lighting	Operation of all lights.
Horn	Correct functions.
Steering	1. Smoothness. 2. No restriction of movement. 3. Loose or Tight.
Clutch	1. Correct lever play. (2 to 3 mm). 2. Smooth operation of lever.
Side and Center Stand	Return to their fully up position.
Tyres	1. Correct pressure. 2. Adequate tread depth. 3. No cracks or cuts.
Mirrors	Correct position.

Running In

Proper running-in is important for the better life and trouble free performance of the vehicle.

- During first 2000 kms running-in period do not exceed following speed limits.

Kms	1st	2nd	3rd	4th	5th
0 - 1000	14	22	30	37	44
1000 - 2000	18	28	38	46	55

- Always keep the speed below the limits mentioned in the table.
- Do not race the engine excessively.
- Do not start moving or race the engine immediately after starting. Run the engine for a minute at idle speed to give the oil a chance to work up into the engine.

FUEL SAVING TIPS

A well maintained vehicle and good driving can contribute a lot to the saving of petrol. Following are a few simple fuel saving tips.

- Ride smoothly and steadily at an optimum driving speed of 40 to 45 km/hr or within the economy band position.
- Avoid harsh braking.
- Change the gear judiciously according to the speed requirement.
- Don't overload the vehicle above the specified payload.
- Use the accelerator judiciously.
- Cut off the engine if you want to stop for more than two minutes.



Non-Use Maintenance

Non-use maintenance is necessary if a vehicle remains off road for a longer duration (more than 15 days**). The correct and careful non-use maintenance carried out before storing the vehicle will prevent the vehicle from rusting and from such other non-operational damages like fire hazards.

- Clean the entire vehicle thoroughly.
- Empty the fuel from the fuel tank and carburettor float bowl (if fuel is left in for a longer time, the fuel will break and gummy substance could clog the carburettor).
- Remove the spark plug and put several drops of 2T oil into the cylinder. Kick the engine over slowly a few times to coat the cylinder wall with oil and install back the spark plug.
- Set the vehicle on a box or a stand so that both the wheels are raised off the ground.
- Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or brake liners.
- Lubricate the control cables.
- Cover the entire vehicle neatly. Ensure that the storage area is well ventilated & free from any source of flames or spark.
- Fill 10% excess air pressure in both wheels.

** For Battery:

- a. Remove battery and keep it on wooden plank, in properly ventilated area.
- b. Before taking the vehicle for use.
 - Get the battery recharged from the Authorised Service Center / Battery Dealer.
 - Check and correct the electrolyte level and apply petroleum jelly on terminals.

Preparation for regular use after storage :

- Clean the vehicle
- Make sure the spark plug is tight.
- Fill the fuel tank with fuel.
- Change the engine oil.
- Check all the points listed in the Daily Safety Checks section.
- Check and inflate tyres to the proper tyre pressure.

Customer Education Points

Educate customers' during vehicle delivery on following points.

- Not to fit extra electrical accessories by cutting wiring harness. This will avoid short-circuiting & unnecessary load on the battery.
- Not to rectify wiring / electrical system related performance issues at local mechanic garages.
- In case of main / wiring fuse blowing of problem, bring vehicle to authorized Bajaj dealer by starting engine with the help of kick.



Customer Awareness Points

Customer awareness to be developed on following points for trouble free performance of vehicle :

1) Regular Checks :

- Ensure battery electrolyte level between max - min. mark.
- Always ensure tyres are inflated to specified air pressure.
- Keep vehicle clean regularly.
- Ensure engine oil level between MAX. - MIN. mark.
- Ensure brake fluid level above MIN. mark.
- Do not apply front disc brakes on turning, & on slippery, muddy roads.
- Use both brakes simultaneously while braking.
- Do not ignore brake & engine oil leakage.
- Do not ignore worn out / cut tyre condition, if found replace immediately.
- Do not ignore fuel leakage.
- Ensure specified brake free play.

2) Vehicle usage :

- Gear shifting pattern is all up.
- Auto choke is located on RH side.
- During running in period, do not exceed speed limits mentioned in owners manual. It may lead to failure of engine components.
- Do not drive vehicle above its rated payload.
- Do not drive vehicle with brake pedal partially pressed.
- Do not drive vehicle with clutch lever half pressed.
- Avoid harsh braking & do not drive the vehicle by keeping brake pedal pressed.
- Always ensure tyres are inflated to specified air pressure.
- Do not add extra electrical accessories e.g remote, horn, buzzer etc.
- Disconnect battery terminals, if vehicle is not being used for long time (more than 2 weeks)
- Do not press self start button continuously, wait for 5 secs. after each crank, this will help battery to recover.
- To take help of BAJAJ authorized workshop to bring vehicle to the workshop for repair if coolant leakage is noticed through coolant system.
- Do not drive vehicle & bring the vehicle to BAJAJ authorized workshop if coolant level in expansion tank or engine oil level is found below MIN. mark. Take help of authorized service station to take vehicle in workshop for repair.

3) Vehicle maintenance (PM schedule / service at authorized locations) :

- During periodic service replace mandatory periodic parts as per PM schedule given in owners manual.
- Follow periodic service schedule strictly for optimum engine & vehicle performance.
- Carry out any service/repairs at Bajaj authorized service centers only for quality service & genuine parts.
- Always insist on Bajaj Genuine Spare Parts in case of replacement.
- Always insist on Bajaj Genuine Oil (Bajaj DTSi 10000) for optimum engine performance & warranty benefits.
- Do not repair front fork inner pipe for bend removal & rear suspension for oil leakages in local workshop.
- Always fill fuel from reputed petrol pumps.
- Use DOT-3 / DOT-4 brake fluid for top up.
- Do not add additives in engine oil / petrol.



4) Accessories :

- Do not fit extra electrical accessories, otherwise wiring would get short & battery would get discharged. Few e.g. -
 - Remote / central locking system.
 - Extra & bigger size horns.
 - Musical brake light.
 - Buzzer.
 - Higher wattage Headlamp bulb.
 - Flasher operating all 4 side indicators simultaneously
- Do not replace fuse with higher capacity fuse.
- Never bypass fuse.
- Do not cut wiring conduit / wires midway.
- Never remove conduit from wiring harness.
- Do not repair wiring harness instead replace for safety.
- Do not ground any wire for checking current-spark.
- Wiring harness failure due any one of the reason mentioned above is not covered under warranty replacement.
- Do not fit splash guard in front of the engine.
- Do not fit accessories to carry extra load.

5) BAL warranty policy - (Fuel adulteration / local accessories fitment & vehicle maintenance as per PM schedule) :

Warranty is applicable for manufacturing defects with in a period of 2years or 30,000 kms whichever occurs earlier.

Warranty is not applicable to -

- Parts subjected to normal wear & tear like Clutch Plates, Brake Shoes, Chain, Sprockets, Fork Oil Seal, Spark Plug, Control Cables, Brake Pads.
- Replacement of bulbs, rubber components like grommets, 'O' rings, bellows & filters, packings, gaskets, fasteners etc.
- Parts of the vehicle that have been altered and modified or replaced in unauthorized manner like use of wider tyres, loud silencers etc and which in the sole judgement of the Bajaj Auto Limited affects its performance and reliability.
- Vehicles which are not being serviced at recommended dealers as per the service schedule described or which have not been operated or maintained in accordance with the instructions maintained in the Owner's Manual.
- Vehicles used for any competition or race and/or for attempting to set up any kind of record.
- Any failure arising due to use of adulterated or bad quality fuel. Parts affected due to bad fuel quality are not covered Under warranty.



Bajaj Genuine Parts

For optimum performance of vehicle

For prolonged life of
components & vehicle

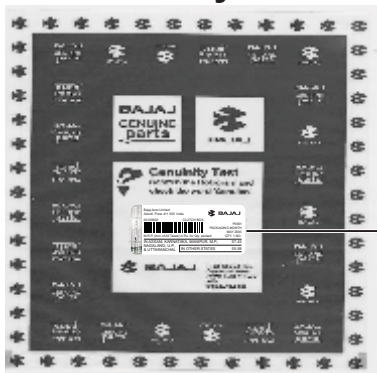
For economical maintenance cost

For rider's safety

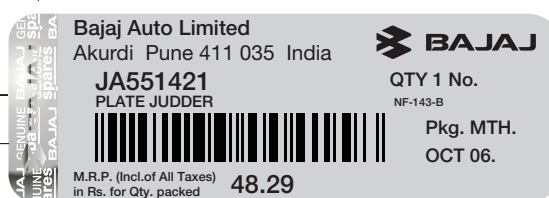
Always
Insist
on

BAJAJ GENUINE parts

Genuinity Test



Scratch Hologram to find 'Genuine'



Hologram

Price Label



Maintenance Tips



Carry out all free & paid services as per recommendations.



Follow 'Running-in' instructions & other riding tips for proper riding habits.



Insist on replacement of periodic parts as recommended in 'Scheduled for Periodic Part Replacement'.



Follow Periodic Maintenance & Lubrication Chart for specific repairs / parts replacements & lubrication.



Always use engine oil of recommended grade in specified quantity.



Area with horizontal dashed lines for notes.



Technical Specifications

- Technical Specifications
- Carburettor Specification
- Oil / Grease / Loctite application matrix



Engine and Transmission

Type	:	Four stroke DTS-i, Natural air cooled.
No. of cylinders	:	One
Bore	:	58.00 mm.
Stroke	:	56.40 mm.
Engine displacement	:	149.01 cc
Compression ratio	:	9.5 ± 0.5:1
Idling Speed	:	1400 ± 100 rpm.
Max. net power	:	10.37 KW (14.09 Ps) @ 8500 RPM
Max. net torque	:	12.76 Nm @ 6500 RPM
Ignition System	:	Microprocessor controlled digital C.D.I.
Ignition Timing	:	10° BTDC at 1400 rpm, 25° BTDC at 3000 rpm.
Fuel	:	Unleaded petrol
Carburettor	:	UCAI-MIKUNI BS26, Side Drought, CV Type.
Spark Plug	:	2 Nos. Champion RG4HC (Resistive)
Spark Plug Gap	:	0.6 to 0.8 mm.
Lubrication	:	Wet sump, Forced.
Starting	:	Kick start / Electric start.
Clutch	:	Wet, Multidisc type.
Transmission	:	5 speed constant mesh.
Primary Reduction	:	3.47 : 1 (66/19)
Gear Ratios:		
	1st gear	: 28.20 : 1 (36/13)
	2nd gear	: 19.17 : 1 (32/17)
	3rd gear	: 14.05 : 1 (29/21)
	4th gear	: 11.03 : 1 (26/24)
	5th gear	: 9.40 : 1 (24/26)
Final drive ratio	:	2.93 : 1 (44/15)

CHASSIS & BODY

Frame Type	:	Double cradle.
Suspension	Front	: Telescopic Fr. fork with Antifriction bush (Stroke 135mm)
	Rear	: Trailing arm with coaxial hydraulic cum gas filled adjustable shock absorbers, and triple rate coil springs.
Brakes	Front	: Hydraulically operated disc type.
	Rear	: Mechanically expanding shoe and drum type.
Tyres	Front	: 2.75 x 17, 41 P
	Rear	: 100 / 90 x 17, 55 P
Tyre Pressure	Front	: 1.75 kg/cm ² (25.0 Psi)
	Rear Solo	: 2.00 kg/cm ² (28.4 Psi)
	Rear Pillion	: 2.25 kg/cm ² (32.0 Psi)
Rims (Alloy Wheels)	Front	: 1.60 x 17
	Rear	: 2.15 x 17



Fuel Tank Capacity	:	15 liters Full
	:	3.2 liters Reserve
	:	2.0 liters Usable reserve

CONTROLS

Steering	:	Clip-on type handle bar
Accelerator	:	Twist grip type on RH side of handle bar
Gears	:	Left foot pedal operated
Clutch	:	Lever operated on LH side of handle bar
Choke	:	Push-Pull knob on carburettor
Brakes	Front	Lever operated on RH side of handle bar
	Rear	Pedal operated by right foot

ELECTRICALS

System	:	12 V (DC)
Battery	:	12V 7 Ah MF type.
Head Lamp	:	35/35 W-HS1
Pilot Lamp	:	5W - 2 Nos.
Tail/Stop lamp	:	LED / LED
Turn signal lamp	:	10 W (2 Nos.)
Turn signal pilot lamp	:	LED
Side stand indicator lamp	:	LED
Hi beam indicator lamp	:	LED
Neutral indicator lamp	:	LED
Speedometer lamp	:	LCD display
Rear number plate lamp	:	5 W
Horn	:	12V DC

DIMENSIONS

Length	:	2055 mm.
Width	:	790 mm.
Height	:	1100 mm.
Wheel base	:	1320 mm.
Turning circle radius	:	2320 mm. (Minimum)
Ground clearance	:	165 mm. (Minimum)

WEIGHTS

Vehicle kerb weight	:	143 Kg.
Gross vehicle weight	:	273 Kg.

PERFORMANCE

Climbing ability	:	28% (16° Maximum)
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Notes :

- Values given above are nominal and for guidance only, 15% variations is allowed to cater for production and measurement variation.
- All dimensions are under UNLADEN condition.
- Definitions of terminologies wherever applicable are as per relevant IS/ISO standards.
- Specifications are subject to change without notice.



Engine and Transmission

Type	:	Four stroke DTS-i, Natural air cooled.
No. of cylinders	:	One
Bore	:	63.50 mm.
Stroke	:	56.40 mm.
Engine displacement	:	178.60 cc
Compression ratio	:	9.5 ± 0.5:1
Idling Speed	:	1400 ± 100 rpm.
Max. net power	:	12.52 KW (17.02 Ps) @ 8500 RPM
Max. net torque	:	14.22 Nm / 1.45 Kgm @ 6500 RPM
Ignition System	:	Microprocessor controlled digital C.D.I.
Ignition Timing	:	10° BTDC at 1400 rpm, 25° BTDC at 3000 rpm.
Fuel	:	Unleaded petrol
Carburettor	:	UCAI-MIKUNI BS29, Side Drought, CV Type.
Spark Plug	:	2 Nos. Champion RG4HC (Resistive)
Spark Plug Gap	:	0.6 to 0.8 mm.
Lubrication	:	Wet sump, Forced.
Starting	:	Electric start.
Clutch	:	Wet, Multidisc type.
Transmission	:	5 speed constant mesh.
Primary Reduction	:	3.47 : 1 (66/19)
Gear Ratios:		
1st gear	:	26.93 : 1 (36/13)
2nd gear	:	18.31 : 1 (32/17)
3rd gear	:	13.43 : 1 (29/21)
4th gear	:	10.54 : 1 (26/24)
5th gear	:	8.98 : 1 (24/26)
Final drive ratio	:	2.78 : 1 (39/14)

CHASSIS & BODY

Frame Type	:	Double cradle.
Suspension		
Front	:	Telescopic Fr. fork with Antifriction bush (Stroke 130mm)
Rear	:	Trailing arm with coaxial hydraulic cum gas filled adjustable shock absorbers, and triple rate coil springs.
Brakes		
Front	:	Hydraulically operated disc type.
Rear	:	Mechanically expanding shoe and drum type.
Tyres		
Front	:	90 x 90 x 17, 49 P (Tubeless)
Rear	:	120 / 80 x 17, 61 P (Tubeless)
Tyre Pressure		
Front	:	2.00 kg/cm ² (28.4 Psi)
Rear Solo	:	2.00 kg/cm ² (28.4 Psi)
Rear Pillion	:	2.15 kg/cm ² (30.5 Psi)
Rims (Alloy Wheels)		
Front	:	1.85 x 17
Rear	:	2.50 x 17

Fuel Tank Capacity	:	15 liters Full
	:	3.2 liters Reserve
	:	2.0 liters Usable reserve

CONTROLS

Steering	:	Clip-on type handle bar
Accelerator	:	Twist grip type on RH side of handle bar
Gears	:	Left foot pedal operated
Clutch	:	Lever operated on LH side of handle bar
Choke	:	Push-Pull knob on carburettor
Brakes	Front	Lever operated on RH side of handle bar
	Rear	Pedal operated by right foot

ELECTRICALS

System	:	12 V (DC)
Battery	:	12V 9 Ah MF type.
Head Lamp	:	35/35 W-HS1
Pilot Lamp	:	5W - 2 Nos.
Tail/Stop lamp	:	LED / LED
Turn signal lamp	:	10 W (2 Nos.)
Turn signal pilot lamp	:	LED
Side stand indicator lamp	:	LED
Hi beam indicator lamp	:	LED
Neutral indicator lamp	:	LED
Speedometer lamp	:	LCD display
Rear number plate lamp	:	5 W
Horn	:	12V DC

DIMENSIONS

Length	:	2035 mm.
Width	:	750 mm.
Height	:	1165 mm.
Wheel base	:	1350 mm.
Turning circle radius	:	2500 mm. (Minimum)
Ground clearance	:	165 mm. (Minimum)

WEIGHTS

Vehicle kerb weight	:	147 kg.
Gross vehicle weight	:	280 Kg.

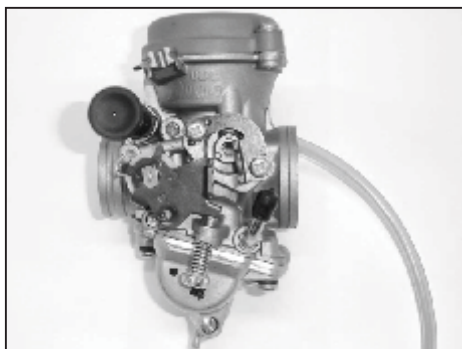
PERFORMANCE

Climbing ability	:	28% (16° Maximum)
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Notes :

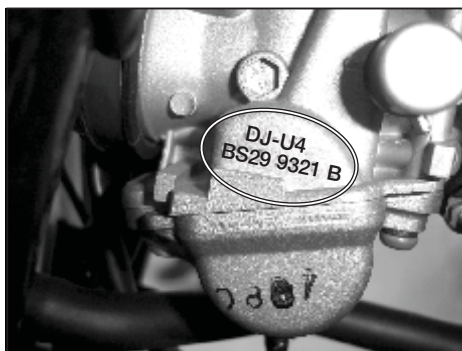
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- Specifications are subject to change without notice.

Carburettor



Carburettor Specifications of Pulsar 150 cc :

Make and Type	Ucal-Mikuni BS26, CV type
Identification No.	DH - U3
Idling Speed	1400 \pm 100
VC Screw setting	2.5 \pm 2 turns out
Main Jet	107.5
Jet needle mark	4DMP23
Needle jet mark	P-1
Jet needle clip Position	2nd from top
Pilot Jet	12.5
Starter jet	Fixed type
Throttle valve	Fixed type
Choke Lever	2 stage with push pull type mechanism (ON / OFF)



Carburettor Specifications of Pulsar 180 cc :

Make and Type	Ucal-Mikuni BS26, CV type
Identification No.	DJ - U4
Idling Speed	1400 \pm 100
VC Screw setting	2.5 \pm 2 turns out
Main Jet	112.5
Jet needle mark	4078
Needle jet mark	P-1
Jet needle clip Position	2nd from top
Pilot Jet	17.5
Starter jet	Fixed type
Throttle valve	Fixed type
Choke Lever	2 stage with push pull type mechanism (ON / OFF)

Sr. No.	Lubricant / Loctite	Grade	Application	Remark
1.	Engine oil	DTSi 10000, SAE 20W50 API 'SL' OR JASO 'MA'	Engine	Quantity : Service - 1 L Eng. O/H - 1.1 L
2.	Fork oil	SAE 10W20	Front fork	For Pulsar 150 cc Quantity / fork leg : Service - 160 ± 2.5 ml For Pulsar 180 cc Quantity / fork leg : Service - 320 ± 2.5 ml
3.	Brake fluid	DOT-3 / DOT-4	Hydraulic Brake	<ul style="list-style-type: none"> • Brake fluid top up- DOT 3 brake fluid only. • In case of non availability of DOT 3, completely drain old brake fluid & replace with DOT 4.
4.	Grease	Lithon RR-3	Steering races & balls	HP make
5.	Grease	Molycote 7325	Starter clutch dry application	Magneto is dry
6.	Grease	Silicon	Caliper assembly	Front disc brake
7.	Grease	All purpose	<ul style="list-style-type: none"> • Fr. & rear wheel axle. • Swing arm shaft • Brake pedal pivot pin • Center stand shaft • Side stand U bracket • Gear shifter pivot • Clutch & fr brake lever 	
8.	Chain spray	OKS - Chain lube spray	'O' ring drive chain	Pulsar 180 @ every 500 km
9.	Oil for drive chain	SAE 90	<ul style="list-style-type: none"> • Non 'O' ring type drive chain 	During all services



Sr. No.	Lubricant / Loctite	Grade	Application	Remark
10.	Electrical contact cleaning spray	WD-40 Spray	<ul style="list-style-type: none"> • Ignition switch • Brake & clutch switch • LH/RH control switch 	All services
11.	Loctite	Thread locker 243	Rear fender bottom mounting. <ul style="list-style-type: none"> • Cam sprocket allen bolt • Pickup coil screws • Stopper plate screws (gear starter clutch) • Kick guide bolts • Output sprocket bolts • Oil pump mounting bolt. • Allen bolt securing guide gear on shift drum. • Screw securing stopper for input shaft bearing. • Special bolt guide chain slack side. • Nut inhibitor mounting • Nut clutch mounting • Damper plate bolts clutch cover. • Damper plate bolts magneto cover. • Stator mounting bolts • Stator harness clamp plate screw. 	
12.	Liquid gasket	Loctite L 5702	<ul style="list-style-type: none"> • Crankcase joining surface. 	



I Read... I learn

- Vehicle identification & controls
- Salient Features
- Frequently Asked Questions (FAQs)
- PM Schedule
- PDI Check Sheet
- Importance of PM schedule execution.

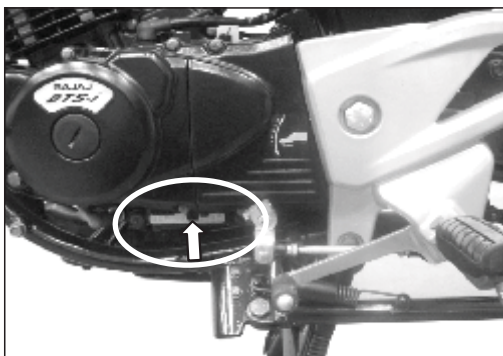


Chassis Number & Engine Number Location

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

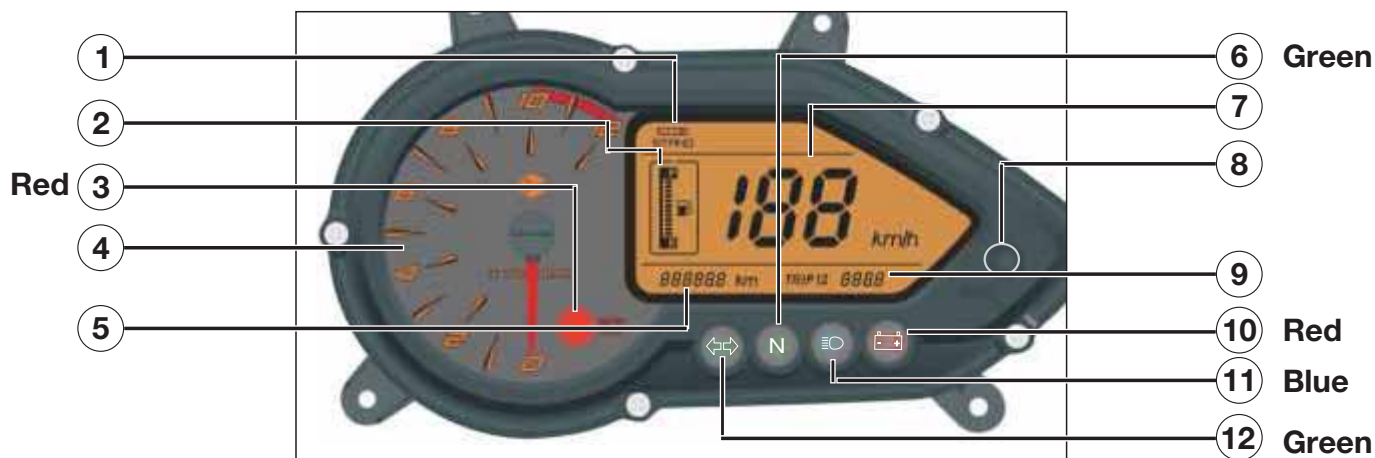


▶ Frame Number Location
On LH Side of Steering Tube
(Alpha-Numeric - 17 Digits)

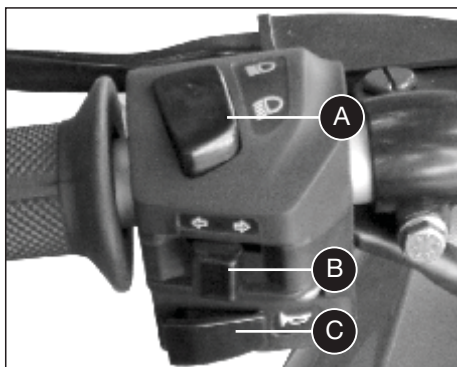


▶ Engine Number Location
On LH Side Crankcase Near Gear
Change Lever (Alpha-Numeric - 11 Digits)

speedometer Icons function





- | | |
|-------------------------------------|---|
| 1. Side Stand Indicator | : When Side stand is 'ON', the Side stand indicator will glow. |
| 2. Fuel Level Indicator | : Fuel level indicator shows available fuel in fuel tank. |
| 3. Reserve/ Engine Rev Indicator | : It glows when petrol level in tank reaches reserve level. It also blinks when engine RPM cross 9000 RPM mark. |
| 4. Tachometer Dial | : It shows engine speed in RPM. |
| 5. Odometer | : The Odometer shows the total distance that the vehicle has accumulated. |
| 6. Neutral Indicator | : When transmission is in Neutral & Ignition switch 'ON', Neutral indicator will glow. |
| 7. Speedometer | : Vehicle speed will be displayed digitally |
| 8. Trip Meter Reset Button | : Both trip meters can be reset to zero by pressing the button. |
| 9. Trip Meter | : The Trip meter shows the distance traveled since it was last reset to zero. |
| 10. Battery Indicator | : It indicates battery needs charging |
| 11. Hi Beam Indicator | : When Headlight is 'ON' & Hi beam is selected with engine running, Hi beam indicator will glow. |
| 12. Turn Signal Indicator (LH & RH) | : When Turn signal switch is turned to Left or Right, Turn pilot indicator - LH or RH will flash. |



Left Handle Bar Switches

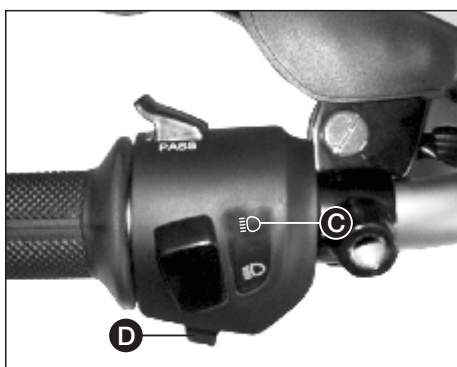
A. Dipper Switch : When headlight is ON, High or Low beam can be selected with the dipper switch. Hi beam indicator light located on Speedo console will light up when high beam is selected.

: High Beam  : Low beam 

B. Turn Signal Switch : When the turn signal knob is turned to Left () or Right () respective indicator will start blinking, to stop blinking push the knob in & release.

C. Horn Button : () Press button for sounding horn.

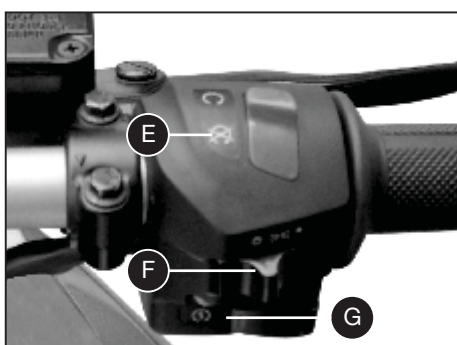
D. Pass Switch : Press the switch to flash the head light. It is used to give signal to vehicles coming from opposite side while overtaking.




Right Handle Bar Switches

E. Head Light Switch : It has 3 positions.


●	: All lamps 'OFF'.
☾☾☾	: While engine running, Tail lamp and Pilot lamps 'ON'.
☀	: While engine running, Headlamp, Pilot lamp, Tail lamp, Meter lamps 'ON'.



F. Starter Button : It operates the electric starter when clutch lever is depressed with transmission in any gear. It is recommended to start engine with transmission in neutral.

G. Engine Kill Switch : The engine kill switch is for emergency use. During emergency move the engine kill switch to the 'OFF' () position.



CAUTION : While starting ensure that engine kill switch is in ON () position. Keeping the kill switch in OFF position Engine will not start.

**Steering cum Ignition Lock :**

It has three positions.

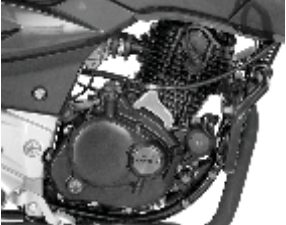
●	LOCK : Steering locked. Ignition OFF.
⊙	OFF : Steering unlock. Ignition OFF.
⊙	ON : Steering unlock. Ignition ON.

To Lock the Steering : To lock the steering, turn the handle bar to the left or right. Push & release the key. Turn the key to “LOCK” position and remove the key.


To Unlock the Steering : To unlock steering, insert the key in steering cum ignition lock & turn it clockwise to “OFF” or “ON” position.

Key : A common key is used for ‘Steering cum Ignition lock’, ‘Fuel tank cap’ & ‘Side cover lock’.


PERFORMANCE

ATTRIBUTE	KEY FEATURES	ADVANTAGES	BENEFITS
	<ul style="list-style-type: none"> • 4 stroke, DTS-i 150cc - 14.09 Ps • 4 stroke, DTS-i 180cc - 17.02 Ps • State-of-the-art features at the heart of digital biking: Digital Twin Spark Ignition, Digital DC CDI unit, TRICS-III, CV Carburetor • Controlled lubrication system. • DC ignition system • Bigger ExhaustEC. • Bigger catalytic converter 	<ul style="list-style-type: none"> • Legendary DTS-i engine unmatched in industry. • Optimum ignition timing for any engine rpm, better throttle response and reduced emissions. • Ease in starting the bike at all conditions. • Optimum transmission cooling system & smoother feel of gear shift. 	<ul style="list-style-type: none"> • Crisp Throttle response for consistent engine output for varying load and speed conditions at different levels of acceleration. More power, more mileage, ultimate refinement • Well refined engine and Optimum performance with more power.

STYLE

	<ul style="list-style-type: none"> • Brawny masculine looks • Stylish split seats • 2 piece grab rail • Tank spoiler • Wolf-eyed head lamp • LED tail Lamp • Black styling • Clip-on handlebar • Thicker and pinched clamped fork • Naked chain 	<ul style="list-style-type: none"> • A bold assertive stance, Neat looks. Brains, brawn & definitely male. 	<ul style="list-style-type: none"> • The styling and looks that let you break free.
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COMFORT

	<ul style="list-style-type: none"> • LCD Speedo Console • Self cancelling indicators • Thicker front fork and swing arm with needle roller bearing. • DC ignition system. 	<ul style="list-style-type: none"> • Easy to read & understand digital speedo, odometer display with 2 trip meters having resetting facility & warning signal. • Self cancellation indicators • Telescopic front suspension with anti friction bush & supported with Nitrox shock absorber on rear. • Easy starting. • No head light fluctuations even at lower engine rpm. 	<ul style="list-style-type: none"> • Excellent riding pleasure. • Feather touch self start. • Safe night riding.
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What are other distinguish features of new 'Pulsar DTS-i 180 cc' motorcycle in comparison with 'New Pulsar DTS-i 150 cc'?

Following are the overall features in comparison at a Glance.

Features	Pulsar DTS-i 180 cc	Pulsar DTS-i 150 cc
Cubic Capacity	178.60 cc	149.01 cc
Horse Power	17.02 PS	14.09 PS
Torque	14.22 Nm	12.76
DC Ignition	YES	YES
Starting Mechanism	Self Start Only	Self & Kick Start
Tubeless Tyre	YES	NO
Intelligent Digital CDI	YES	YES
ExhaustEC	YES	YES
Controlled Lubrication	YES	YES
Digital Control	YES	NO
Wheel Base	1350 mm	1320 mm
Front Suspension with anti friction Bush	YES	YES
Rear Suspension with Nitrox Shockers	YES	YES
LED Tail Lamp	YES	YES
Split Type Seat	YES	NO
Wheel Size (17")	YES	YES
Head Lamp Fairing	Head Lamp Fairing	Head Lamp Fairing
Decals	New decals to match to the profile of the vehicle	
Clip on type Handle Bar	YES	NO
Elliptical type swing arm with needle roller bearing	YES	NO

What is the function of Battery icon popping up in speedometer?

The icon provided in the speedometer console indicates the status of battery. When the battery voltage drops down below 11.9 volts then only it will pop up & warns the rider that battery needs charging.




What is DC Ignition & lighting system?

System works on DC electrical energy of battery. For Ignition system, supply comes from battery instead of exciter coil located inside magneto. The vehicle battery is always kept charged by the magneto.


Can we ride the bike by removing the battery?

No, not at all. Disconnecting the battery from the vehicle will disable the starting / Ignition system & vehicle cannot be started.

What is the benefit / advantage of having DC system?

-  Constant & Consistent high intensity current is available even at low engine rpm which gives improved combustion & better startability.
-  No head light voltage fluctuations resulting into brighter head light illumination consistently. It is the same existing battery i.e. MF battery (A low maintenance battery)
-  The main features of this MF battery are :-
 - Electrolyte level checking is not required frequent.
 - The unique vent mechanism provided that do not allow loss of electrolyte.
 - No drain pipe unlike in conventional type battery so no chances of spillage of electrolyte.


Does DC system vehicle cost more in maintenance?

-  No. It is important to ensure Good health of Battery that's all ! Care should be that, adding extra accessories will lead to faster draining of battery.


What is the warranty limit for this MF Battery?

-  The warranty for MF battery is 18 months from the date of vehicle sold against any manufacturing defect observed.

Why is there no Kick starter provision in Pulsar DTSi 180cc?

-  Normally sports bike having larger CC engine, do not have kick-starters for the reason that riders footrest comes in the way of kick operation necessitating folding of the footrest etc. Even if battery is discharged to the level of not able crank the engine through self start, Engine can be started by push start. (Min voltage required for ignition system i.e. 7.8 V where as self start needs 11.5 V).


Can the spoilers of New Pulsar DTSi be fitted on old Pulsar DTSi?

-  No, it is not possible as the mounting brackets for fixing the spoilers are welded on petrol tank at precise location only.

Is the tube less tyre used in both Pulsar DTSi 150cc & Pulsar DTSi 180cc?

-  The tube less tyres are used only in Pulsar DTSi 180cc only.


What is a tubeless tyre & What are its advantages?

-  The name 'Tubeless' it self indicates that the tyre is without tube. In this tyre there is inner tube which is a integral part of the tyre known as inner. The air is held between the rim & the tyre. The air filling valve is fixed air tightly on wheel rim.

Advantages :

- Better fuel efficiency.
- Better heat dissipation.
- Less chance of damage in case of flat running.
- Slow air leak.
- No tube related problems.
- Cost saving on tube.

Is the tubeless tyre repairable if get punctured?

-  YES. Puncture of Tubeless tyres can be repaired locally. There are various methods like -
 1. Filter Method
 2. Plug (Mushroom) Method
 3. Patch Method

But Bajaj Auto Limited recommends. Plug (Mushroom) method since it is more effective & safe.



Sr. No.	Operation	RECOMMENDED FREQUENCY								Subsequent
		Servicing	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500 750	4500 5000	9500 10000	14500 15000	19500 20000	24500 25000	29500 30000	
1.	Clean the vehicle with water wash & dry completely		✓	✓	✓	✓	✓	✓	✓	Ensure to prevent water entry in Petrol tank, Silencer & electrical Parts. Use caustic free detergent for washing.
2.	Engine oil (Bajaj DTSi 10000 oil) & engine oil filter*	C,R	R	Top Up	R	Top Up	R	Top Up	R	BGO DTSi 20W40 for 100cc models. BGO DTSi 20W50 for Models above 125cc.
3.	Oil strainer	CL	CL		CL		CL		CL	Oil strainer cleaning at the time of oil change.
4.	Body centrifugal filter**	CL	CL				CL		CL	
5.	Starter Clutch (Dry Type)**	L		L	L	L	L	L	L	Use recommended Molycote grease.
6.	Spark plug	CL,A,R			CL,A		CL,A		R	
7.	Air cleaner element ***& cover 'O' ring	CL,R	CL	CL	CL	R	CL	CL	R	
8.	In line paper filter or Fuel cock paper filter.	R				R			R	
9.	Fuel cock sediment bowl cleaning	CL				CL			CL	
10.	Carburettor rubber duct	C,R					C,R			
11.	Fuel pipe	C,R	C	C	C	R	C	C	R	
12.	Valve tappet clearance	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
13.	Non-Sealed drive chain cleaning & lubrication	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	
14.	Sealed drive chain cleaning & lubrication	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	Customer to apply OKS chain lub spray at every 500 kms.
15.	Engine air breather tube	C	C	C	C	C	C	C	C	
16.	Silencer drain hole cleaning	CL		CL	CL	CL	CL	CL	CL	
17.	Silencer tail pipe cleaning**	CL		CL	CL	CL	CL	CL	CL	
18.	Brake cam & brake pedal pivot pin	C,L,R	C	C,L,R	C,L,R	C,L,R	C,L,R	C,L,R	C,L,R	Use recommended AP grease.
19.	Brake lining or pad - Check wear indicator		C,R	C,R	C,R	R	C,R	C,R	R	Replace brake shoes / brake pad at every 15000 Kms.
20.	Brake fluid level ** - top up / replace	C,A,R				C,A			R	Use recommended brake fluid (DOT3/DOT4)
21.	Disc brake assly -- Check functionality, leakage or any other damage.	C			C		C		C	
22.	All cables & rear brake pedal-free play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
23.	Battery electrolyte level, specific gravity	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	Not applicable for VRLA battery
24.	Wiring harness & Battery connections- routing, tie bands & clamps tightness.	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	

Sr. No.	Operation	RECOMMENDED FREQUENCY								Subsequent
		Servicing	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500 750	4500 5000	9500 10000	14500 15000	19500 20000	24500 25000	29500 30000	
25.	Ignition switch barrel cleaning & handle bar control switches contacts cleaning.	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	Use recommended Wd40 spray
26.	Steering play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
27.	Steering stem bearing*** & Cap steering bearing (Plastic)**	C,CL,L,R			C,CL, L,R		C,CL, L,R		C,CL, L,R	Check & replace if Damaged. Use HP Lithon RR3 grease for lubrication.
28.	Main stand & side stand pin**	CL,L			CL,L		CL,L		CL,L	Use recommended AP grease.
29.	Swing arm pivot pin (for non silent bush)**	L		L	L	L	L	L	L	
30.	All fasteners tightness	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
31.	Engine foundation silent bushes**	C				C			C	
32.	General lubrication-Clutch lever, front brake lever, kick lever.	L	L	L	L	L	L	L	L	Use recommended AP grease.
33.	Idle speed / CO%	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
34.	Coolant level in expansion tank**	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	Use recommended 'Ready to use coolant'.
35.	Coolant hose damage/clamps/leakage**	C		C	C	C	C	C	C	
36.	Radiator fins**	C		C	C	C	C	C	C	
37.	Spoke tightening**-Front & Rear	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	

* It is strongly recommended to use only Bajaj genuine oil, In case of any other engine oil of same specifications is used the frequency would be every 5000 kms.

** As applicable to model

*** More frequent cleaning may be required while driving in dusty environment.

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

Note : Periodic parts, Oil, Coolant, Filters, All types of greases, Cleaning agents, Cables, Wear & tear parts, Rubber 'O' rings / oil seals / pipes, Gaskets to be replaced as per Periodic Maintenance and Lubrication Chart are mandatory and the same are chargeable to customer.

Why Periodic Maintenance

1. What is Preventive Maintenance ?

Preventive maintenance (PM) is scheduled maintenance activity aimed at the prevention of brake downs & failures. The primary goal of PM is to up keep health of product through out it's life.

2. Why Preventive Maintenance ?

Preventive Maintenance is predetermined work to -

- a. Ensure safe functioning of product with intended reliability.
- b. Reduce cost of repairs & replacement.
- c. Protect assets & prolong the useful life of component / product.

3. How to perform ?

- a. Clean / Inspect / Lubricate / Adjust / Replace as per the PM chart & encyclopedia guidelines.
- b. To correct deficiencies found through testing & inspection.

4. How to ensure execution & competency ?

- a. Training programs, encourage & appreciates for abnormality identification & prevention.
- b. Audit & review to assure quality performance.
- c. For better understanding show "Periodic Service DVD" to technicians at suitable interval.

5. How to promote compliance to PM schedule ?

a. Work shop side -

1. Ensure adherence to S.O.P. while carrying out repairs through stage wise, service wise check sheet deployment.
2. Monitor effectiveness of technicians through final inspection.
3. Monitor consumption of Periodic parts vis a vis vehicle serviced month wise.

b. Customer side -

1. Display periodic parts replacement chart in customer interaction explaining adverse effects, if not done.

6. Preventive Maintenance effectiveness - Indicators to be monitor by WM at service station

- a. Reduction in repeat complaint.
- b. Parts, components performing to intended life.
- c. Reduction in brake down.
- d. Increase in service volume through AMC engagement.



Following is the checklist for carrying out PDI of "Pulsar 150/180" motorcycle. This checklist is to understand various check points those are to be checked / inspected before delivery of the new vehicle.

Whether BAL Service Executive carries out sample PDI or Dealer staff does, each vehicle should be checked as per the points given below. This ensures trouble free vehicle delivery to the customer.

Dealer's Name		Dealer's code:	
PDI check sheet - Pulsar 150/180			
Frame No.		Date of PDI	
Engine No.		PDI done by	
Please ensure that following checks are carried out during PDI before delivery of vehicle.			
To Check	Check for	✓ if OK X if NOT OK	Observation / Remarks
ENGINE			
Engine Oil "BAJAJ DTS-i 10000" 20W50	Oil level between lower & upper mark / Top up if required Oil leakage if any, Specify source of oil leakage		
Idling RPM	Check in warm up condition 60°C / Adjust if required (1400+100 RPM)		
Kick operation	Smooth operation		
Gear shifting	Smooth operation		
Engine noise	No abnormal noise		
Silencer noise	No abnormal noise from silencer & shields		
Fasteners (Check torque)	Magneto cover bolts, - 0.9 ~ 1.1 Kgm		
	Clutch & Oil filter cover bolts - 0.9 ~ 1.1 Kgm		
	Engine foundation bolts		
	a) Front mounting bolts (Kg.m) - M8 : 2.2, M10 : 2.4		
	b) Rear mounting bolts (Kg.m) - M8 : 2.2, M10 : 2.4		
	c) Top mounting bolts (Kg.m) - 2.2		
	Silencer mounting bolt		
	a) Silencer mouth flange nut - 1.4 ~ 1.9 Kgm		
	b) Silencer bracket bolts - 3.5 ~4.0 Kgm		
FUEL SYSTEM			
Fuel Tank / Pipes	No leakage / Correct fitment		
Fuel Cock	Smooth operation		
FRAME			
Tyre Pressure	Front : 1.75 Kg / Cm ² (25PSI)		
	Rear (solo): 2.00 Kg/Cm ² (28.4PSI), (with Pillion): 2.25 Kg/Cm ² (32PSI)		
Front & Rear Wheel	Free rotation		
Side & Center stand	Smooth operation		
Mirror	Proper fitment		
	Clear rear view		
Head lamp	Focus adjustment		
CONTROLS			
Brakes	Rear - Brake pedal free play 25 ~ 30 mm		
Throttle	Grip free play - 2 ~ 3 mm. Smooth operation		
Clutch Cable	Smooth operation, Free play - 2 ~ 3 mm		
	Standard routine (From Inside leg guard)		
Speedo cable	Standard routine		



Speedo cable	Standard routine		
Drive Chain	Slackness standard - 25 ~ 35 mm		
	Drive chain lock position & standard fitment		
	Equal marking of chain adjuster on both side		
	No touching to chain case		
SUSPENSION			
Front Fork	No leakage. Smooth working		
Rear Shock Absorber	Spring adjuster notch position : 1st notch (Standard)		
Steering	Smooth operation (No play / No Sticky movement)		
Lock Operation	Steering cum Ignition lock, Seat lock, LH side cover lock, Petrol tank cap lock		
Fasteners (Check torque)	Front axle nut (150cc - 4~5 Kgm, 180cc - 8~10 Kgm)		
	Rear axle nut (150cc - 8~10 Kgm, 180cc - 8~10 Kgm)		
	Torque rod nut (150 cc & 180cc - 3~4 Kgm)		
	Steering cap bolt (150cc - 3.5 Kgm, 180cc - 5 Kgm)		
	Handle bar bolts (150cc - 2~2.2 Kgm, 180cc - 2~2.2 Kgm)		
	Caliper install bolts (150 cc & 180cc - 2.2~2.8 Kgm)		
	RSA mounting dome nut (150 cc & 180cc - 3.5~4.0 Kgm)		
	Swing arm pivot nut (150 cc & 180cc - 8~10 Kgm)		
	Brake disc allen bolts (150 cc & 180cc - 2.6~3.2 Kgm)		
	Pinch clamp bolt (180cc - 2.0~2.2 Kgm)		
ELECTRICAL			
Battery	Terminal voltage 12.4 V DC & Charge status using load tester.		
	Electrolyte level.		
	Tightness of battery terminals / cables/ petroleum jelly application		
	Proper routine of overflow pipe		
Fuse	Position of fuse box		
All Bulbs Working	Head light, Tail / stop lamp, Side indicators, Speedo bulb, Number plate lamp		
Switch Operation	RH & LH control switch, Ignition switch & Brake switch (Front & Rear)		
Starter Motor	Working / Engagement in gear & neutral		
	No abnormal noise		
Speedometer	Working of Speedometer, Odometer		
	Working of all signal indicators icons (Neutral, Turn signal High beam, & Bajaj logo)		
Headlamp assembly	No excess gap & Uneven gap		
Horn	Ensure no distorted sound		
Visual inspection	No dent / damages / scratches		
TEST DRIVE			
Starting	Cold start & Warm start		
	Idling speed (Warm condition) (1400 + 100 RPM)		
Drive ability	Throttle response		
	Brakes effectiveness - Front & Rear		
CO % Check	CO should be 1.5 ~ 2.5 % in engine warm condition at idling RPM		
Cleaning	Wash & Clean vehicle.		



Importance of PM schedule execution

Preventive maintenance (PM) is scheduled maintenance activity aimed at the prevention of brake downs & failures. The primary goal of PM is to up keep health of product through out it's life.

PM Activity	Benefits
<ul style="list-style-type: none"> Engine oil replacement / top up. Engine oil filter replacement. Oil strainer cleaning. 	<p>Better lubrication of engine components. Smooth functioning of engine parts.</p>
<ul style="list-style-type: none"> Idle speed & CO% setting. Spark plug cleaning. Air filter cleaning. Fuel cock bowl cleaning. Carburettor cleaning. 	<p>Better drive ability. consistency in mileage.</p>
<ul style="list-style-type: none"> Battery electrolyte level checking Petroleum jelly application on battery terminals Battery terminals connection tightening Electrolyte specific gravity checking Battery charge / condition checking by battery tester Charging of battery on BAL recommended battery charger 	<p>Easy self start smooth functioning of DC system.</p>
<ul style="list-style-type: none"> Clutch free play setting Accelerator free play setting Front brake free play setting (applicable to drum brake) Disc brake system checking 	<p>Smooth gear shifting, effective braking</p>
<ul style="list-style-type: none"> Drive chain (non 'O' ring) lubrication on vehicle Drive chain ('O' ring) lubrication on vehicle Drive chain (non 'O' ring) overhaul Drive chain ('O' ring) overhaul Drive chain slackness checking & adjustment 	<p>No chain noise issues. Optimum performance of drive chain.</p>
<ul style="list-style-type: none"> Wiring harness checking Ignition switch contacts cleaning checking & cleaning Clutch switch & brake switch contacts cleaning Clutch switch & replace Rear brake switch check & adjust 	<p>Smooth functioning of electrical controls.</p>
<ul style="list-style-type: none"> General lubrication / greasing. 	<p>No noise / wear & tear of parts.</p>
<ul style="list-style-type: none"> Fasteners tightening by torque wrench. 	<p>No vibration related issues.</p>

Servicing with Water Wash



1. Cover tail end of silencer with PVC cap to avoid water entry in silencer.

Caution :

Vehicle washing without covering silencer tail end will result in water entry into silencer causing rusting of silencer.

2. Set water washer pressure for vehicle washing is 25 bar max & set the nozzle in spray mode.



3. Clean the exterior surface of engine metal parts by diesel or kerosene with soft nylon brush.



4. Dismantle the small chain cover & clean the area between magneto cover and engine sprocket by using nylon brush and kerosene or diesel.



5. Wash the vehicle by keeping nozzle 2 meters away from parts.





6. Adjust nozzle to jet mode & wash under the front and rear mudguards to remove the mud & dirt.



7. Clean painted parts by gently rubbing their surface with sponge / soft cloth dampened with solution of mild car shampoo / liquid solution.



8. Rub the front and rear tyres by nylon brush to remove dirt & mud.



9. Water wash the vehicle with nozzle in spray mode & clean all soap & shampoo foam.

10. Dry the vehicle by using low pressure (2 bar) compressed air.

11. Vehicle should be wiped off by cotton cloth immediately after washing.



12. To avoid water entry & paper filter, do not apply water on area beneath seat. (applicable to Pulsar 200NS, Discover 125ST & Discover 100T).

Required Special Tools & Equipment



Water pressure gauge
on washing machine



Spray gun
adjustable spray jet



Silencer tail
end cap

Engine Oil Replacement



1. Ensure vehicle is thoroughly clean.



2. Ensure the engine is in warm condition before opening engine oil drain bolt.



3. Drain engine oil in a clean container.



4. Measure the quantity of drained oil.

5. Inspect oil quality.
6. Clean ferrous burr accumulated on the tip of magnetic drain plug and then refit.
7. Tighten drain plug to recommended torque by torque wrench.
8. It is important to measure oil quantity after draining. This is important to understand the oil consumption pattern.
9. During the interval- from one oil change to the next oil change, engine oil quantity should not be more than 50 ml. per 1000 Kms. If oil drop is more check for external oil leakage, smokey exhaust & piston ring wear.
10. Clean centrifugal oil filter (applicable for Pulsar 150 / 180 / 220 / Avenger 220).



13. Use Bajaj Genuine oil only as per the recommended grade.



14. Ensure oil filler cap 'O' ring as in good condition.



15. Ensure oil filler cap is fully tight.

Required Special Tools & Equipment



Measuring Jar



Funnel



Cleaning brush

Oil Strainer Cleaning

1. Remove the engine drain plug by using box spanner and handle.



2. Drain engine oil in a clean container.



3. Remove two bolts securing right hand side foot rest & take out the foot rest.



4. Remove bolt securing kick lever & take out kick lever from kick shaft.



5. Remove phillips screw securing 'Cover Starter Motor'. Take out the 'Cover Starter Motor'.



6. Remove 2 bolts securing 'Bracket Clutch Cable' & take out the clutch cable end terminal from 'Lever Clutch'.



7. Loosen & remove clutch cover bolts in crisscross pattern & take out clutch cover.



8. Remove the bolts securing 'Oil Pump Assembly'. Take out the 'Oil Pump Assembly'.



9. Remove the wire clip securing 'Oil Strainer' from the bottom end of 'Oil Pump Assembly' & take out 'Oil strainer'.



10. Clean the 'Oil Strainer' by kerosene / diesel & nylon brush.



11. Blow low pressure air (2 bar) on the strainer mesh in the direction opposite to flow of oil.



12. Pump the engine oil by 'Oil can' through the input passage hole of oil pump body & simultaneously rotate the oil pump shaft nylon gear in clockwise direction to ensure clear oil passage & working of oil pump.



13. Check condition of 'O' ring of 'Oil Strainer'. Re-install the oil strainer on oil pump body. Refit the clamp securing 'Oil Strainer'.

Required Special Tools & Equipment



T Spanner



Nylon Brush



Air Gun

Centrifugal Oil Filter Cleaning



1. Remove two bolts securing right hand side foot rest.

2. Take out the foot rest.

3. Remove bolt securing kick lever.



4. Take out kick lever from kick shaft.

5. Remove phillips screw securing 'Cover Starter Motor' & take out the cover.

6. Remove 2 bolts securing 'Bracket for Clutch Cable'.



7. Take out the clutch cable end terminal from 'Lever Clutch'.



8. Loosen & remove clutch cover bolts in crisscross pattern.



9. Take out clutch cover.



10. Remove centrifugal oil filter cover mounting screws.



11. Clean centrifugal oil filter by nylon brush & kerosene / diesel.



12. Replace gasket by new one.



13. Apply 0.5 Kgm torque while refitting.

14. Replace clutch cover gasket by new one.

15. Tighten clutch cover bolts in crisscross sequence.

16. Apply specific torque to clutch cover bolts.

Required Special Tools & Equipment



Phillips Screw Driver



Nylon Brush



Torque Wrench



T-Spanner

Spark Plug Gap Checking



1. Remove spark plugs using plug spanner.



2. Visually check spark plug electrode for color, erosion, crack & breakage.



3. Clean the spark plug on spark plug cleaning machine.



4. Check and adjust spark plug gap by wire gauge.

5. Check spark plug on spark plug testing machine for intensity of spark & its color. It should be blue spark with good intensity.



6. Replace spark plug as per the interval given in the Periodic Maintenance Schedule.



7. Refit spark plugs by doing pre-fitment manually & thereafter use spanner for tightening.



8. Ensure spark plug cap is firmly fitted.

Note : Replace spark plug at every 20000 Kms.

Required Special Tools & Equipment



Wire Gauge



Spark Plug
Spanner Regular

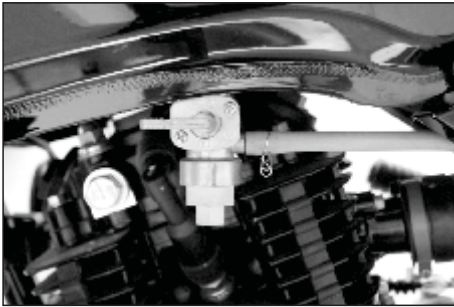


Spark Plug
Cleaning Machine



Spark Plug
Cleaning Gun

Fuel Cock Sediment Bowl Cleaning



1. Put the petrol cock knob to OFF position.



2. Remove the petrol cock sediment bowl by using a ring spanner.



3. Pour out the petrol to remove sludge and sediment from Petrol Cock Sediment Bowl.



4. Remove strainer from petrol cock body.



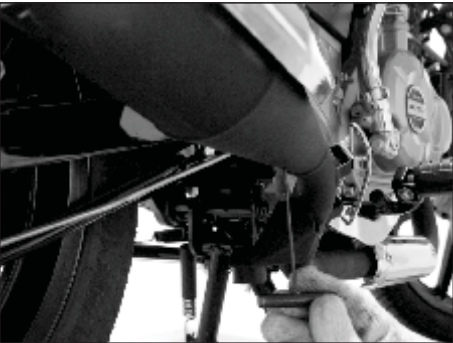
5. Clean the bowl and the strainer with the help of petrol and nylon brush.



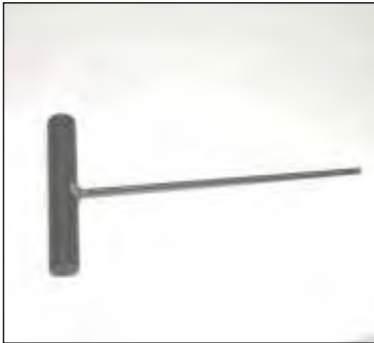
6. Refit the strainer and the bowl.

7. Put fuel cock knob in ON / Res position & confirm no fuel leakage.

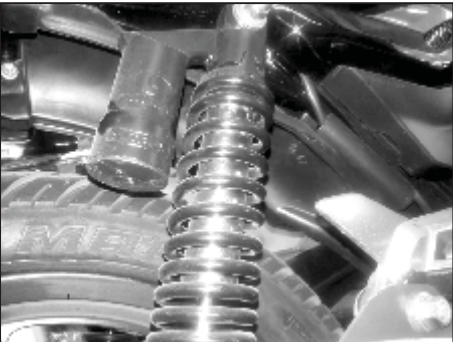
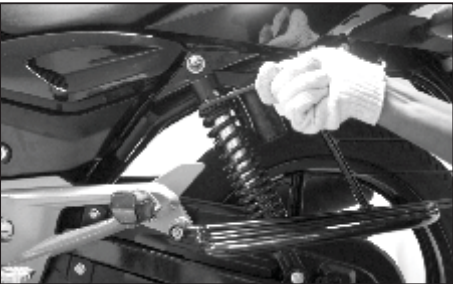
Silencer Drain Hole Cleaning



Clean the silencer drain hole by using silencer drain hole cleaning tool as shown in photograph.



Nitrox Rear Shock Absorber



Adjusting Spring Tension

- RSA spring tension can be adjusted with the help of 5 stepped adjuster cam to suit individual requirement as per load & road conditions.
- Turn the adjuster cam on each shock absorber to same required position. Setting the adjuster cam to higher notch position increases the spring stiffness & vice-versa.
- Shock absorbers adjusted either too soft or too stiff could adversely affect riding comfort & vehicle stability.

Position	1	2	3	4	5
Spring Action	Stronger →				

If the Shock Absorber sleeves on both sides are not adjusted to the same position, an unsafe riding condition may result.

Note : Std setting is done in 1st notch



CO% Setting



1. Readiness of CO gas analyzer

- Ensure the machine is in well calibrated condition & calibration certificate is available.
- Switch ON & warm up the CO gas analyzer for its recommended time.
- Then carry out various tests such as leakage test, HC residue test, IR zero test, oxygen sensor test etc.

2. Readiness of the Vehicle

- Warm up the engine. Run the vehicle on MRTB or drive the vehicle for about 3 ~ 4 kms on road.



- After warm up, check the engine oil temperature by dipping the probe of temperature indicator in the oil through oil filler cap.

It must be 60°C.



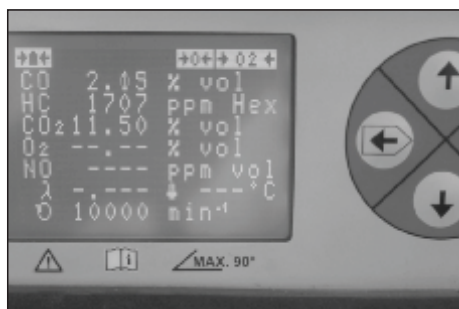
- Check & set engine idling RPM with the use of digital tachometer to 1400 ± 100 by adjusting idling screw.

- Remove bolt & washer fitted to the silencer nozzle near to ExhaustEC.



- Connect silicon tube of CO gas analyzer probe to the nozzle.

- Note the CO when reading on LCD screen of the analyzer stabilizes.



7. Set the air or VC screw to get CO value between 1.5 ~ 2.5 % at idling RPM or 1400 ± 100 .

8. Reconfirm the engine idling RPM & CO are within specified limit.
9. For getting better engine performance & optimum fuel efficiency, achieve CO% as recommended.

Required Special Tools & Equipment



Tachometer



CO Gas Analyzer



Thermometer

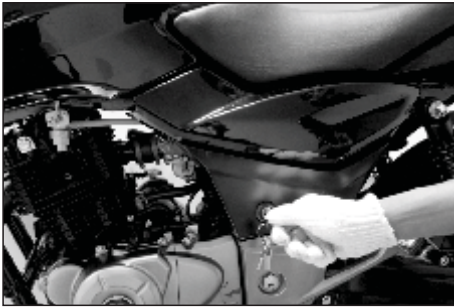


Screw Driver



Silicon Tube

Battery Electrolyte Level & Specific Gravity Checking



1. Open the side cover panel.



2. Clean the battery & battery terminal.



3. Inspect battery for damage / leakage.

4. Open all the 6 caps.



5. Check specific gravity by using hydrometer in all six cells one by one.

6. Each cell should have specific gravity of 1.240.
7. Add distilled water & maintain level in between Min & Max level.
8. Use Nitrile rubber hand gloves while topping up battery electrolyte level & checking of specific gravity.

Note :

- Dry battery (PDI) - Initial filling by electrolyte with charging for 10 ~ 12 hours.
- Wet battery (PDI / Servicing) - Add only distilled water & maintain level.

Required Special Tools & Equipment



Hand Gloves

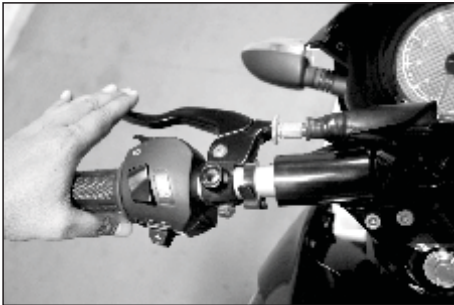


Distilled Water Bottle
with Dropper



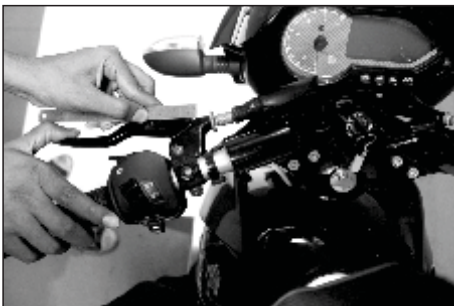
Hydrometer

Clutch Cable Free Play Checking & Adjustment



1. Press and release the clutch lever to confirm the smooth operation of clutch.

2. If clutch operation is jammed or sticky, replace clutch cable.



3. Check the clutch lever free play by steel rule.



4. If free play is less or more than standard, set it by using the adjuster provided at the clutch lever end.



5. The free play can also be set by using the clutch cover end adjuster.

Throttle Cable Free Play Checking & Adjustment



1. Check for smooth rotation of accelerator grip.



2. Check accelerator free play by scale / ruler.



3. Adjust accelerator free play.



4. Recommended free play is 2 ~ 3 mm.

Rear Brake Pedal Free Play Checking & Adjustment



1. Check for smooth operation of rear brake pedal.



2. Measure rear brake pedal free play by using a steel scale.



3. Adjust rear brake pedal free play as per specification.

4. Recommended free play (Y-X) - 25 ~ 30 mm.

Note :

Brake free play adjustment is possible in drum brake variants only.

Required Special Tools & Equipment

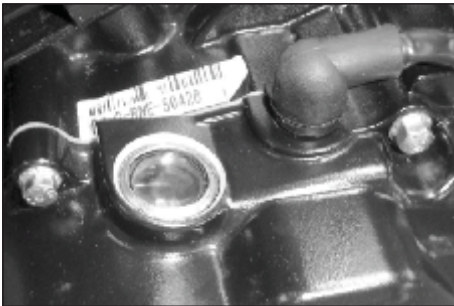


Measuring Scale

Tappet Clearance Setting



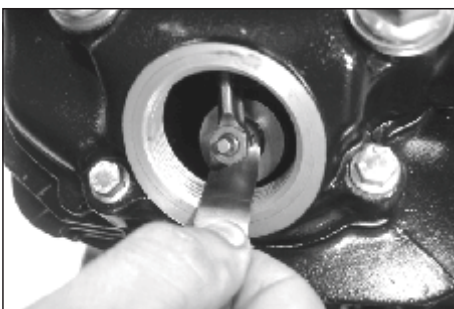
1. Do tappet setting at engine cold condition.



2. Ensure the 'T' mark on the 'Rotor' match with the mark on the 'Crankcase LH'. At this stage the 'Piston' is at TDC and both the 'Tappets' are free.



4. Put the feeler gauge, measure and adjust the clearance.



5. Lock the nut holding screw with special tool after getting desired clearance.
6. Again check the tappet clearance with gauge. The gauge should slide with slight resistance between tappet and valve stem head feeler and tighten the check nut with a spanner.

Inlet Valve : 0.05 mm • Exhaust Valve : 0.1 mm

Required Special Tools & Equipment



Filler Gauge



Tappet Adjusting Tool

Sealed Type Drive Chain Lubrication on Vehicle



1. Put vehicle on center stand. Normal dust should be wiped clean using a lint free cloth.



2. Hold the Chain Lube Spray Can (OKS Spray) vertically upright & shake it vigorously till the noise of steel ball inside the can is heard uniformly. Fix the extension tube (red pipe provided with the can).

3. Hold the can at the back of the rear sprocket in line with chain rotation and keep the nose of the extension tube at about 5~10 cms away from the chain.



4. Rotate the wheel in reverse direction & spray the lube on the middle portion of the chain so that lubricant will get spread on roller & bushes and on both sides of the chain. Spray the lube on full length of chain by rotating the wheel to a complete rotation.



5. Rotate the wheel 3 ~ 4 times so that the lubricant spreads & settles for 5~6 times.

Wipe out any excess lubricant if it has dripped down or sprayed on the wheel / tyre.

6. Adjust chain slackness as per specification.

Note :-

If drive chain is excessively dirty, then drive chain has to be removed & cleaned using mixture of chain cleaning & lubricating spray, Diesel & SAE90 oil in 1:1 ratio.

Non Sealed Type Drive Chain Lubrication on Vehicle



1. Put vehicle on center stand. Normal dust should be wiped clean using a lint free cloth (applicable for 1st Free service).



2. Lubricate chain with SAE 90 oil. Ensure oil is directed on to the ends of the bushes & links on either side.



3. Rotate the rear wheel for proper lubrication of entire chain.



4. Wipe off excess oil or dripping oil & closed the window cover.

5. Adjust chain slackness as per specification.

Note :-

If drive chain is excessively dirty, then drive chain has to be removed & cleaned using diesel & lubricated in greasinator using molten (IOC Servo compound) chain grease.

Sealed & Non Sealed Type Drive Chain Lubrication by Removing from Vehicle



1. Remove the chain cover.



2. Open the drive chain link lock.
(As applicable to model).



3. Take out the chain.



4. In first stage clean the chain in chain cleaning stand 1st pot containing.



5. In 2nd stage clean the chain in chain cleaning stand 2nd pot containing cleaner.

**Sealed
Type Chain**



**Non Sealed
Type Chain**



Diesel +
SAE90 Oil
in 1:1
proportion

Diesel /
Kerosene

Diesel +
SAE90 Oil
in 1:1
proportion

Diesel



6. Hook the chain for dripping off.

7. Refit chain on vehicle & Adjust chain slackness as per specification.

Non Sealed Lubrication :

8. Dip the chain in greasilator containing molten grease (IOC servo compound) for 2 minutes

9. Hook the chain for dripping off excess grease and refit chain on vehicle.

10. Adjust the chain slackness as per specification.

Sealed Type Chain	Non Sealed Type Chain

Required Special Tools & Equipment



T Spanner



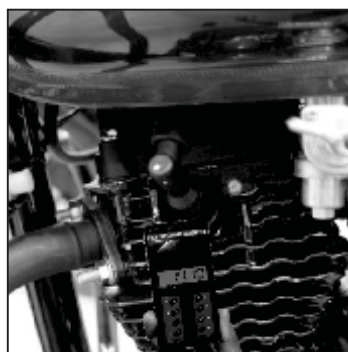
Chain Cleaning Stand



Greasilator

Fuel System

- CO Checking and Setting
- Engine Tune-up
- Standard Operating Procedure
- Carburettor Circuits



Readiness of CO Gas Analyser

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



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



Readiness of the Vehicle

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

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

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

- Set CO to 1.5 ~ 2.5 %.

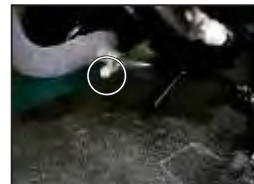
Note: If engine does not go off, then attend to the additional air supply problem in the carburetor circuit & intake system. After solving the problem once again confirm that engine should die down on closing the VC Screw.

- Set CO to 1.5 ~ 2.5 %.
- Set Idling speed to specified Idling 1400±100 rpm. Raise the engine to moderate speed at no load condition for about 15 seconds. Then bring back to specified idling RPM.



Taking the Reading

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



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

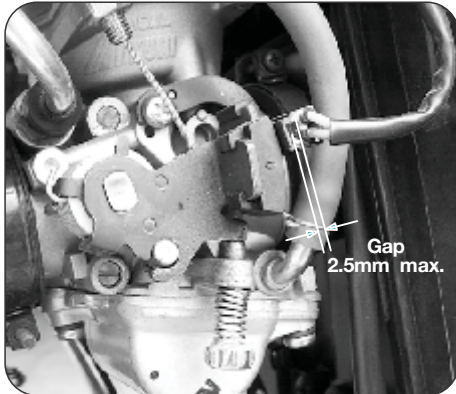
- If the CO% is not falling within recommended % in spite of adjusting the VC Screw then find out the cause & rectify. After rectifying the problem confirm the CO% in the same way as mentioned above.

Important: For better mileage & performance, achieve CO% as recommended.

In Pulsar motorcycle for better mileage and performance achieve values given below.

Recommended CO% value w.r.t. VC Screw and Idling RPM for Better Fuel Efficiency		
Recommended CO%	VC Screw Position	Recommended Idling RPM
1.5% ~ 2.5%	2.5 ± 2 turns out	1400 ± 100 rpm

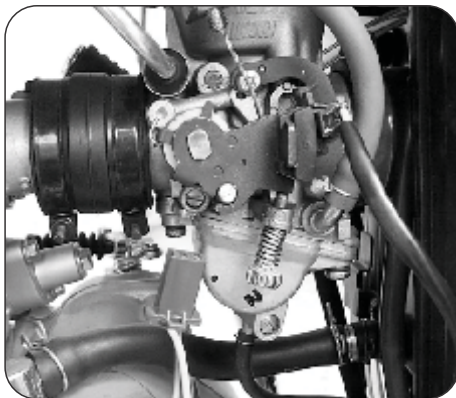
Reed Switch Setting & Checking



Check throttle lever movement by rotating it with hand. It should not be sticky in operation and should return back it self on releasing. bracket Multimeter should show continuity.

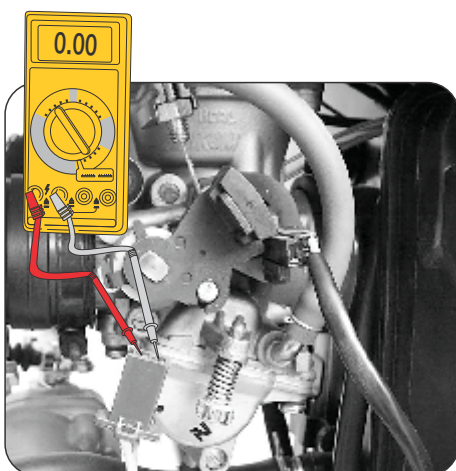
- Magnet should not touch with reed switch.
- Gap between Magnet & Reed Switch should not be more than 2.5mm.
- Movement of throttle lever with magnet assembly and Reed Switch fitted should be free.

Reed Switch : Setting

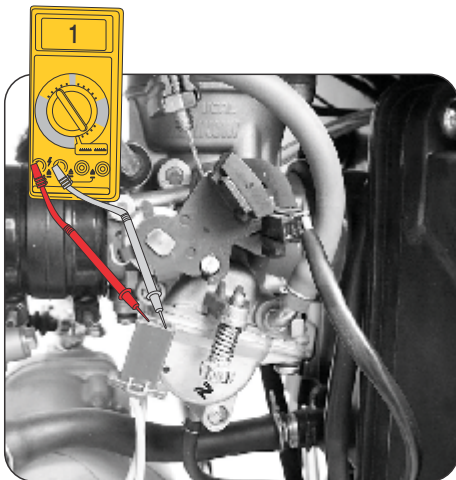


- Accelerator cable play: 2-3 mm by adjusting the Adjuster
- Protude stopper of the throttle lever bracket must on idling screw tip.

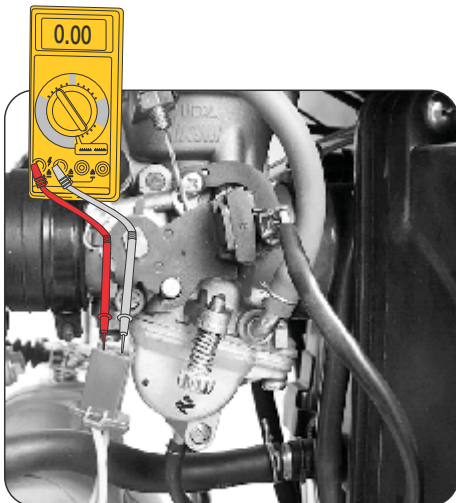
Reed Switch : Checking



- Keep throttle at zero position.
- On connecting multi meter to Reed Switch coupler it should show continuity.

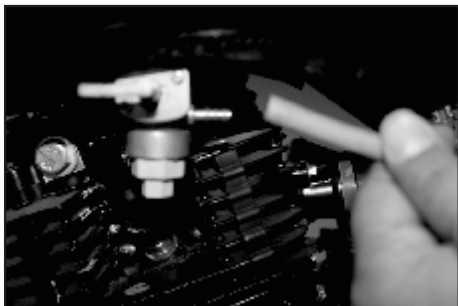


- When throttle is open and Reed Switch magnet crosses to straight edge of fix bracket of Reed Switch multimeter should show discontinuity.

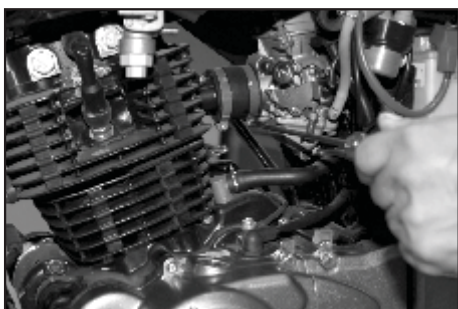
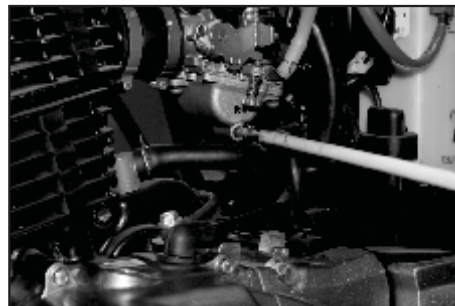


- On De-acceleration, when of Reed Switch magnet re-coinsides with straight edge of fix bracket of Reed Switch Multimeter should show continuity.

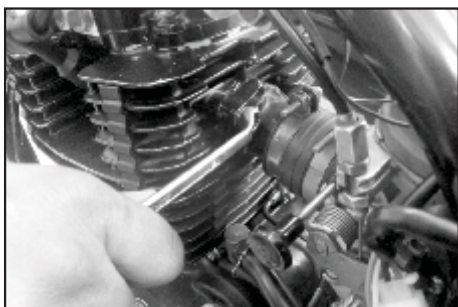
SOP for Carburettor cleaning



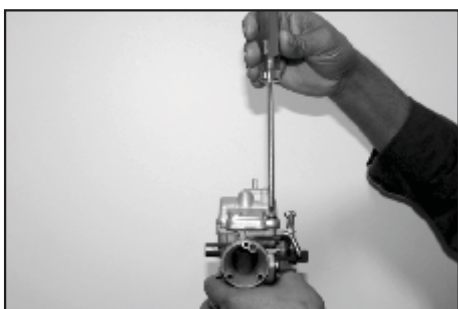
- Ensure fuel cock knob at 'OFF' position.
- Remove fuel pipe from fuel cock side.
- Loosen drain screw and flush out petrol from the "Carburetor bowl".
- Then re-tighten the drain screw.



- Loosen clamps of rubber duct.



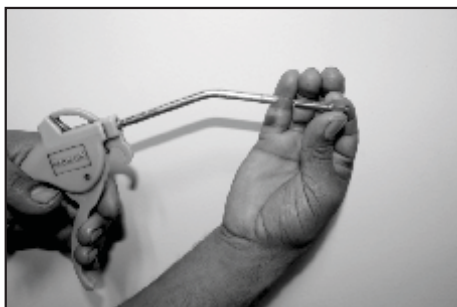
- Remove intake manifold bolts and take out carburetor.



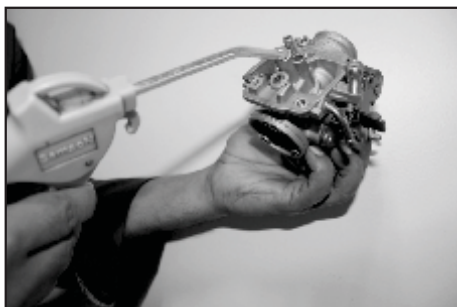
- Remove Philips screws securing the "Carburetor bowl" to the Carburetor body.
- Take out "Carburetor bowl"



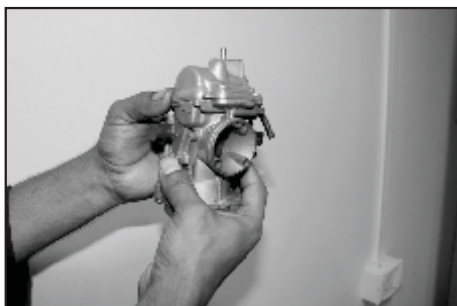
- Clean the "Carburetor bowl" by petrol & soft nylon brush.



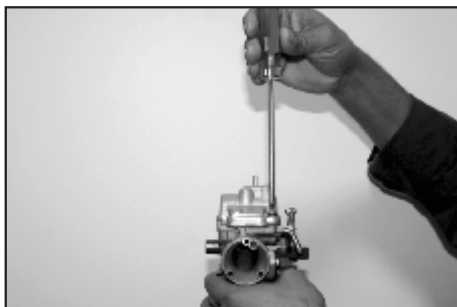
- Clean the carburettor jets by low pressure compressed air.



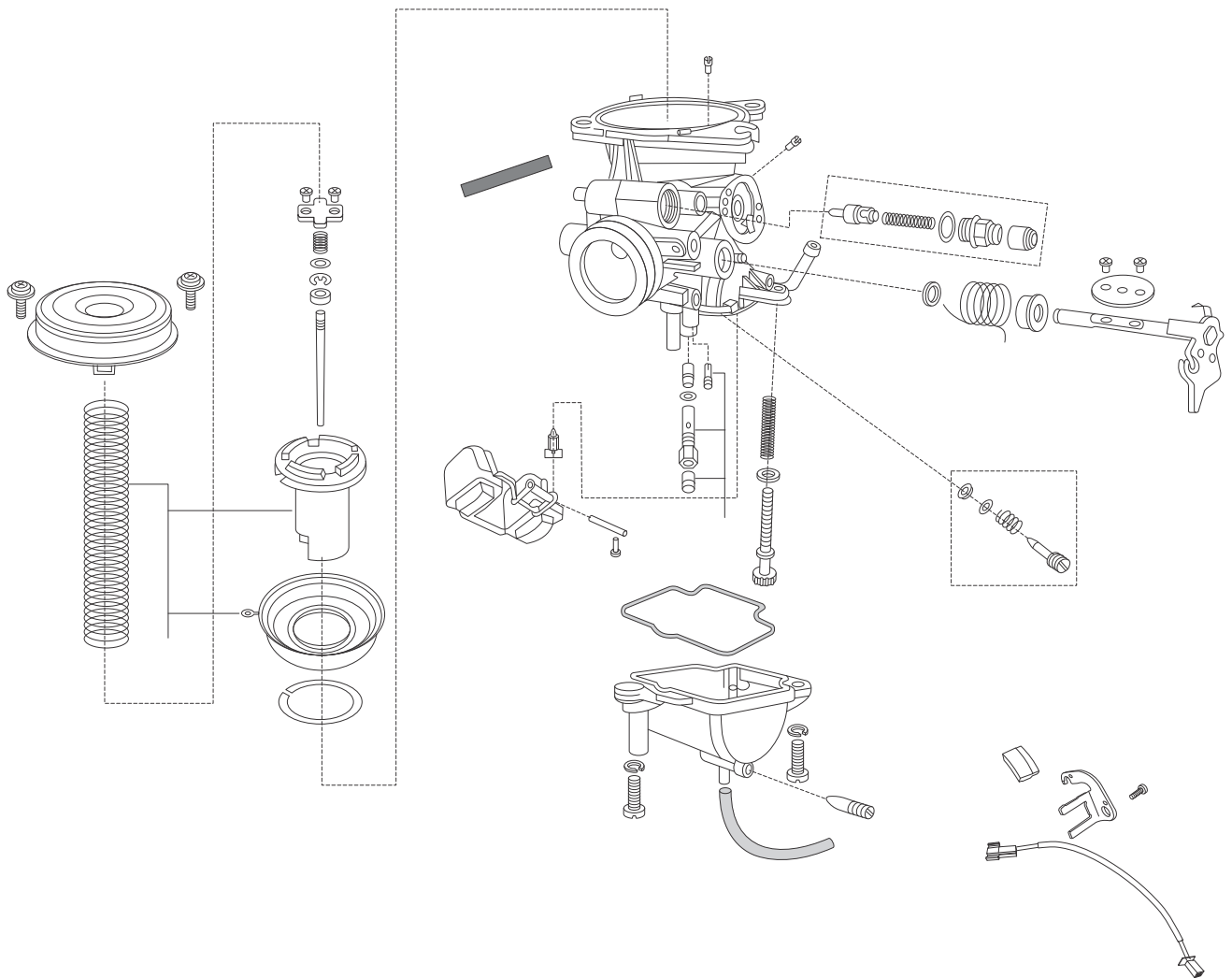
- Clean the carburettor passages by low pressure compressed air.

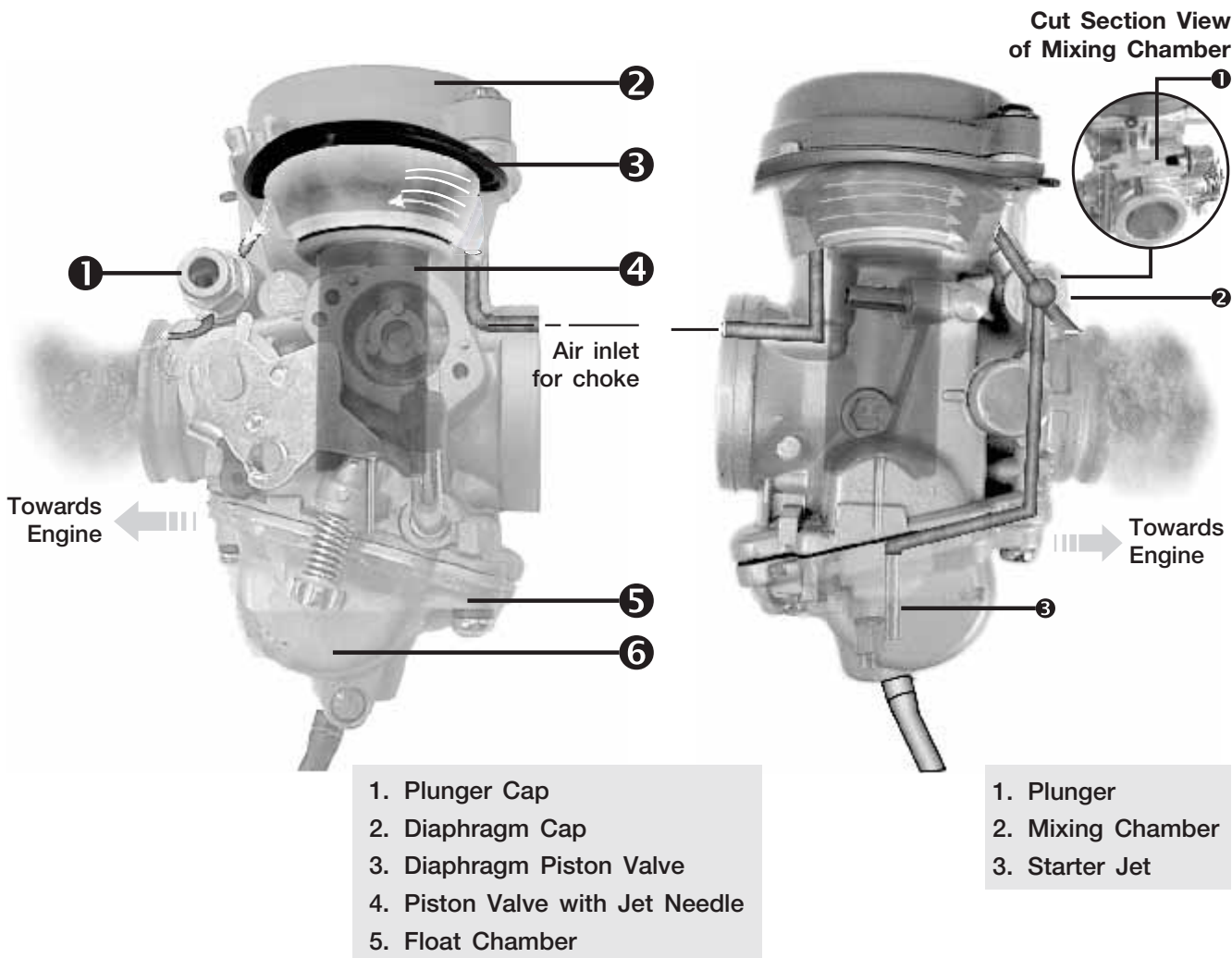


- Refit carburettor bowl.



- Tighten the screws of "Carburetor bowl"
- Refit carburettor on vehicle & confirm no fuel leakage.



Starter Circuit : Constant Velocity Carburettor**Function**

The function of starter circuit is to provide rich air fuel mixture on starting / cold starting. At cold engine condition the air is dense also the engine parts are cold enough this does not allow the petrol to vaporize properly this leads to starting trouble.

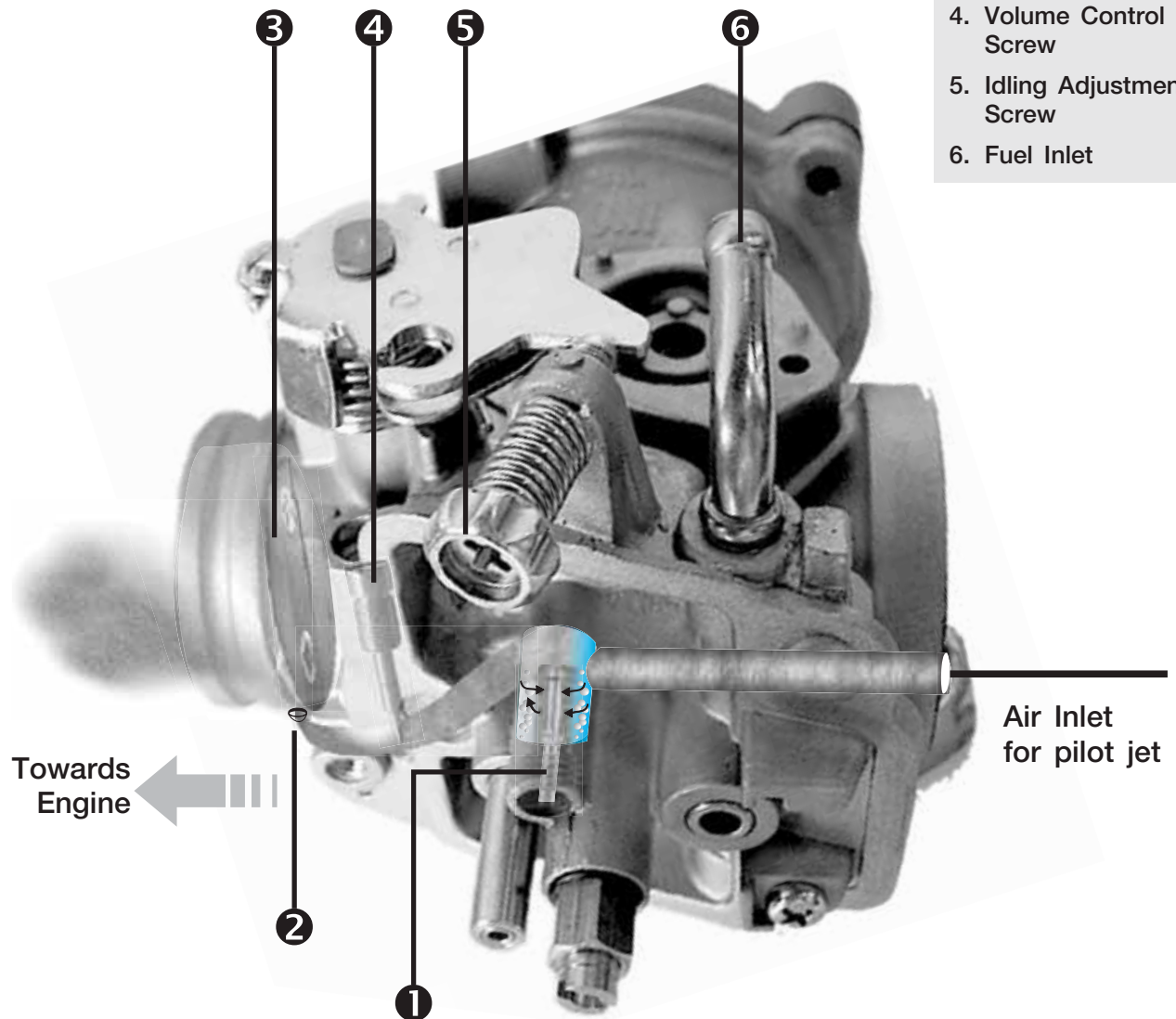
Construction

The Starter Circuit consists of a starter jet and a plunger. The starter jet is used to meter the fuel and a plunger that opens an air passage from the inlet of the carburettor (underneath the diaphragm) which passes the mixture to the manifold.

Working

On pulling the choke lever the plunger is lifted by a cable. This uncovers the fuel passage that leads to the starter jet, air inlet passage and the outlet passage towards the manifold. This creates enough suction to draw fuel up from the bowl into the mixing chamber (below the plunger). Here the fuel is mixed with the air and the mixture is drawn into the engine through the outlet passage.

Pilot Circuit : Constant Velocity Carburettor



1. Pilot Jet
2. Pilot Outlet Hole
3. Butterfly Valve
4. Volume Control Screw
5. Idling Adjustment Screw
6. Fuel Inlet

Function

The pilot circuit provides the air fuel mixture at idling when not enough air is being drawn through the carburettor to cause the main circuit to operate.

Construction

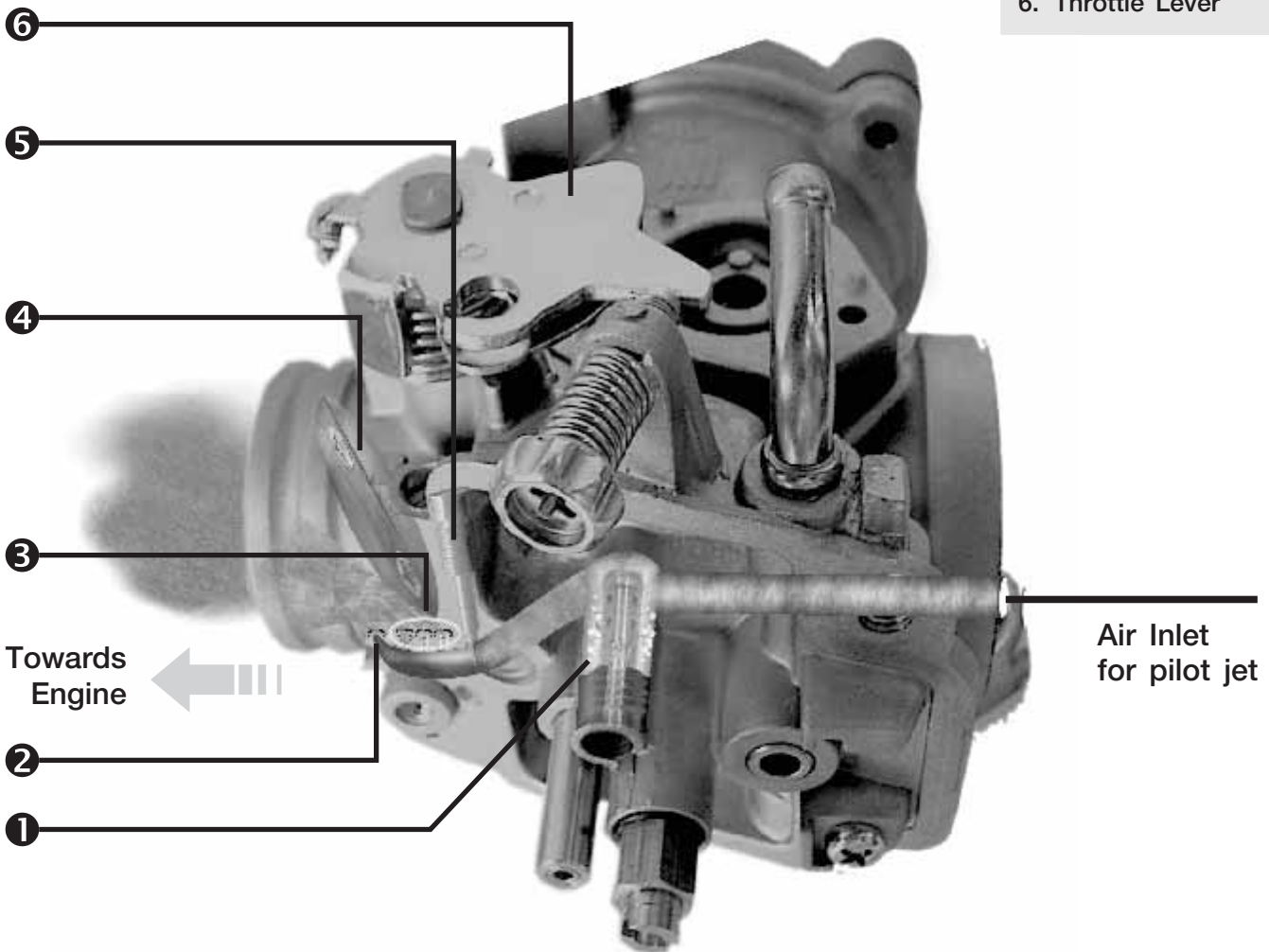
The pilot circuit consists of pilot jet, pilot air jet and volume control screw. The pilot jet meters the fuel and the pilot air jet meters the air quantity. The volume control (VC) screw controls the amount of air fuel mixture flowing through the pilot outlet.

Working

As the air enters the pilot air inlet the fuel is metered by pilot jet and air quantity is metered by pilot air jet. The atomized / vaporized mixture is discharged through the pilot outlet. The pilot outlet is located on the manifold side of the carburettor. Since the throttle valve is almost at fully closed position, air fuel mixture is supplied mainly by pilot outlet only. Air fuel mixture volume is adjusted by volume control (VC) screw and mixture becomes lean when volume control (VC) screw turned clockwise and rich when it is turned Anticlockwise direction.

Progression Circuit : Constant Velocity Carburettor

1. Pilot Jet
2. Pilot Outlet Hole
3. Bypass / Progression Holes
4. Butterfly Valve
5. Volume Control Screw
6. Throttle Lever



Function

The progression circuit provides the air / fuel mixture at small throttle opening when pilot circuit is still working but unable to meet the engine demands on small throttle opening.

Construction

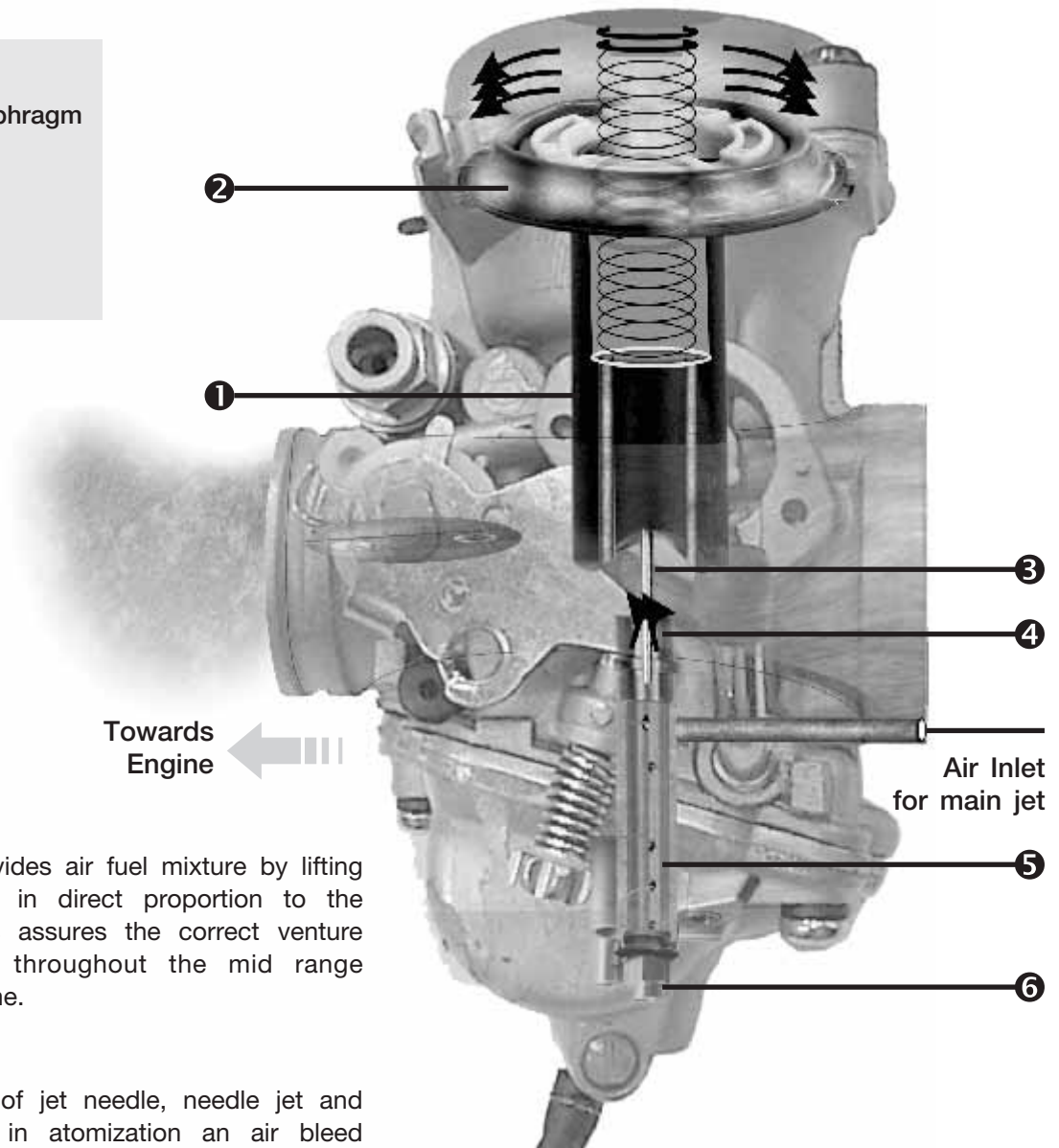
The progression circuit follows the path of pilot circuit and the construction is same as that of pilot circuit.

Working

As like pilot circuit the fuel is metered by pilot jet and air volume is metered by pilot air jet. This mixture in atomized form is discharged through the bypass ports when the butterfly valve is opened from idling further.

Main Circuit : Constant Velocity Carburettor

1. Piston Valve
2. Piston Valve Diaphragm
3. Jet Needle
4. Needle Jet
5. Jet Holder
6. Main Jet

**Function**

The Main Circuit provides air fuel mixture by lifting up the piston valve in direct proportion to the engine demand. This assures the correct venturi size & air velocity throughout the mid range operation of the engine.

Construction

This circuit consists of jet needle, needle jet and main jet. To assist in atomization an air bleed circuit is incorporated in the main metering system and it aids fuel vaporization by introducing the air into the fuel before it enters the main air stream.

The piston valve movement is controlled by spring and carburettor venturi vacuum which is generated below the piston valve diaphragm.

Working

When the butterfly valve is opened and air flow through the venturi increases, the air pressure in the venturi (and the upper chamber) decreases.

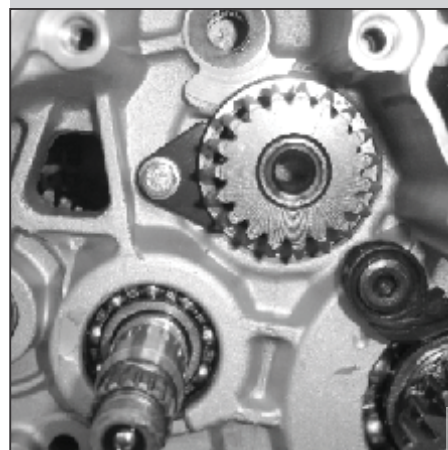
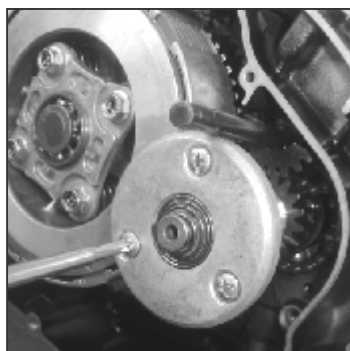
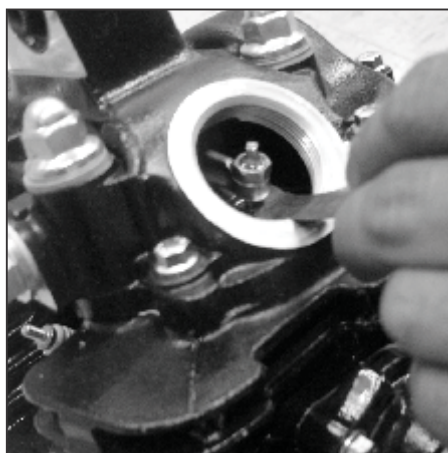
As the atmospheric pressure in the bottom chamber is greater than the venturi pressure above the diaphragm, the piston valve along with jet needle is pushed up and more air fuel mixture is drawn into the engine from main jet through needle jet into the main air stream.

When the butterfly valve is closed, air flow through the venturi decreases; air pressure in the venturi increases and approaches atmospheric pressure, & the spring pushes the piston valve along with jet needle down.

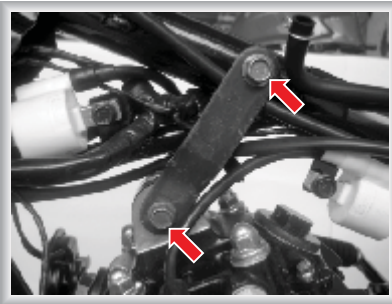
[illegible]

Engine & Transmission

- Tightening Torques
- Service Data
- Special Tools
- Important Points to Remember
- Engine Removal from Frame
- Engine Dismantling
- Engine Sub-assemblies Dismantling
- Parts Inspection
- Parameters
- Assembly of Engine
- Gear Transmission Power Flow
- Engine Lubrication - Flow of Oil

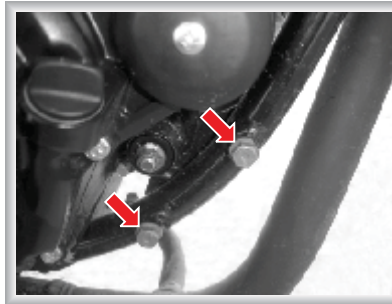


Cyl. Head Bkt. Mtg. Bolts



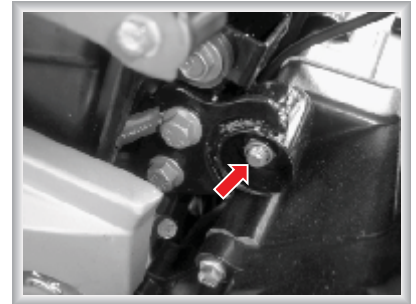
M8: 2.2 Kg.m

Engine Mounting Bolts



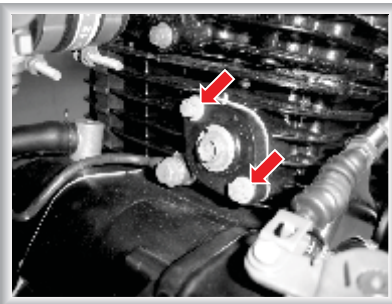
M8: 2.2 Kg.m M10: 2.4 Kg.m

Engine Mounting Nuts



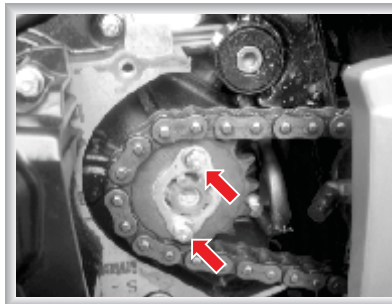
M8: 2.2 Kg.m M10: 2.4 Kg.m

Chain Tensioner Mtg. Bolts



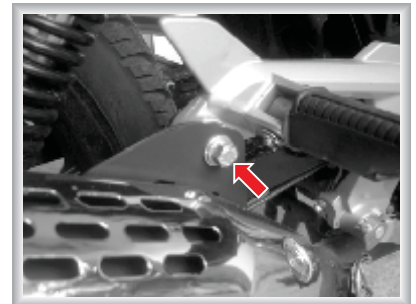
1.1 Kg.m

Output Sprocket Bolts



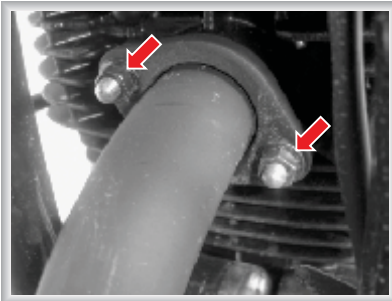
1.1 Kg.m (Loctite 243)

Silencer Mounting Bolt



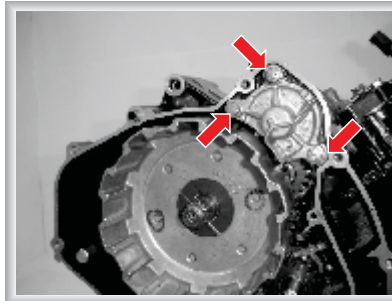
3.5 ~ 4.0 Kg.m

Silencer Mounting Nuts



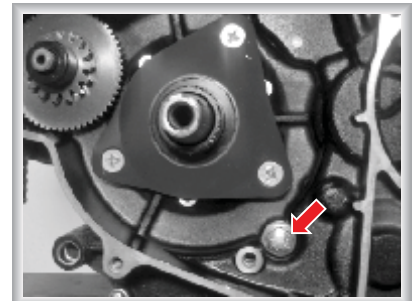
1.4 ~ 1.9 Kg.m

Balancer Gear Cover Bolts



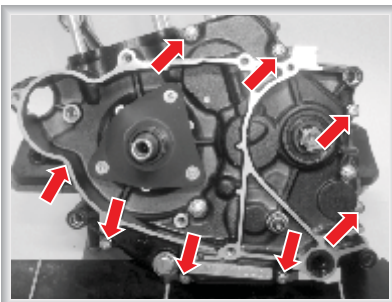
1.0 ~ 1.1 Kg.m (Loctite 243)

Crankcase Joining Bolt



1.2 Kg.m (Loctite 243)

Crankcase Joining Bolts



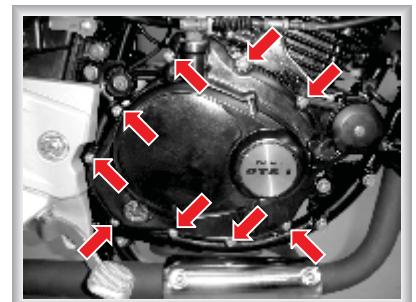
1.1 Kg.m (Loctite 243)

Crankcase Joining Bolt



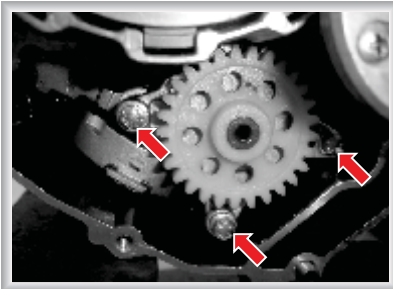
1.1 Kg.m (Loctite 243)

Clutch Cover Bolts



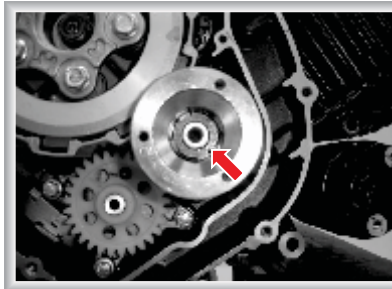
1.1 Kg.m

Oil Pump Mounting Bolts



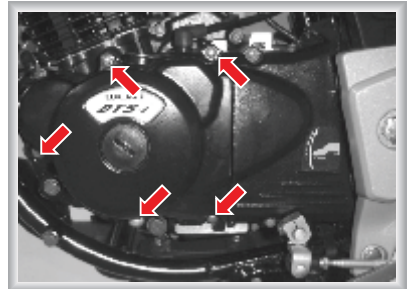
1.1 Kg.m (Loctite 243)

Centrifugal Oil Filter Nut



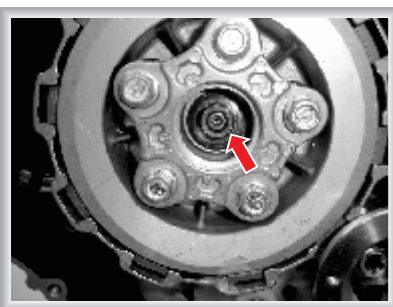
5.5 Kg.m

Rotor Cover Bolts



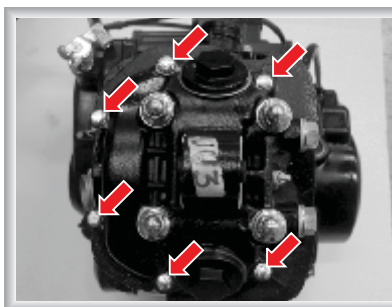
1.1 Kg.m

Clutch Nut (LH Threads)



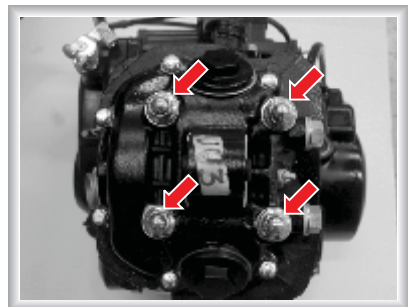
7.0 Kg.m

Cylinder Head Cover Bolts



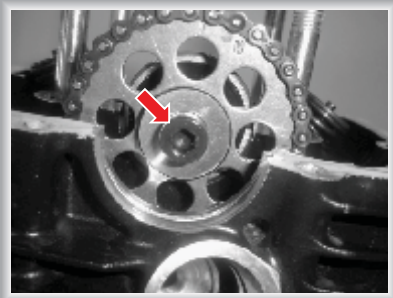
3.5 Kg.m

Cylinder Head Cover Nuts



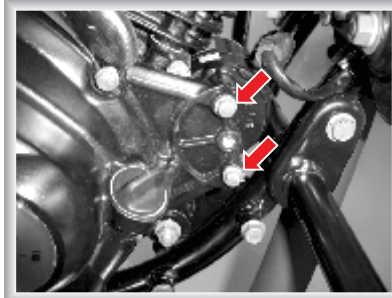
1.0 ~ 1.5 Kg.m

Camshaft Sprocket Allen Bolt



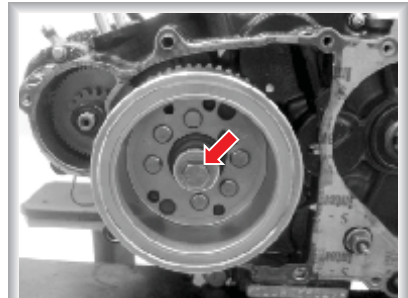
1.4 Kg.m (Loctite 243)

Starter Motor Mtg. Bolts



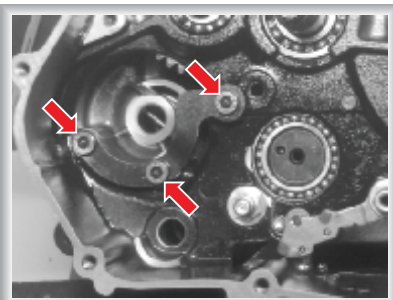
1.1 Kg.m

Rotor Mounting Bolt



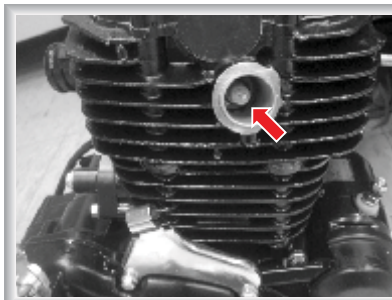
4.5 Kg.m

Kick Guide Allen Bolts



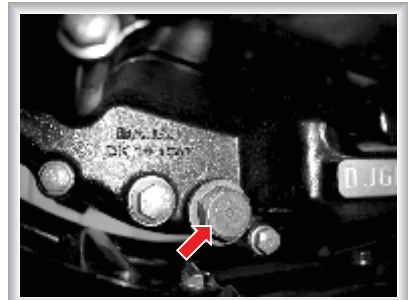
1.2 Kg.m

Spark Plugs (2 Nos.)



1.4 Kg.m

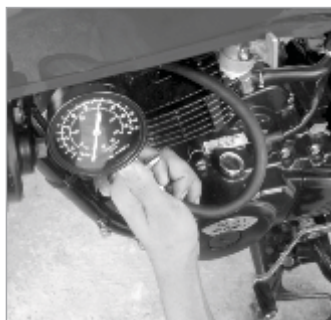
Drain Bolt



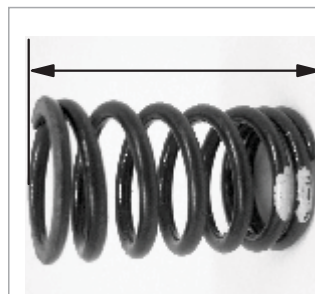
2.5 Kg.m

Compression Pressure

	Standard Limit	Service Limit
Pulsar 150 cc	6.0~10.0 Kg/Cm ²	5.0~10.0 Kg/Cm ²
Pulsar 180 cc	11.0~13.0 Kg/Cm ²	9.0~10.0 Kg/Cm ²

**Valve Spring Free Length**

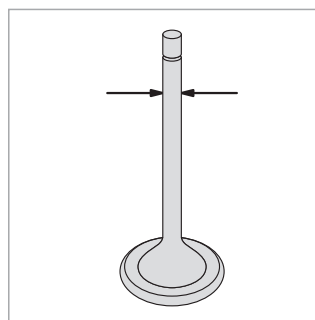
	Standard Limit	Service Limit
Pulsar 150 cc	Inner 39.10	Inner 39.0
	Outer 43.6	Outer 42.6
Pulsar 180 cc	Inner 38.6	Inner 37.6
	Outer 41.4	Outer 40.4

**Valve Clearance**

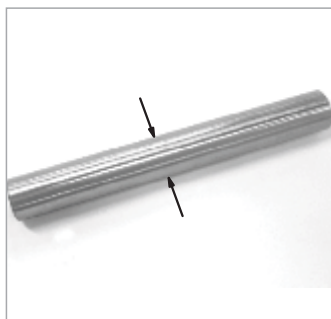
	Standard Limit	Service Limit
Pulsar 150 cc	Inlet 0.05	Inlet 0.05
	Exhaust 0.10	Exhaust 0.15
Pulsar 180 cc	Inlet 0.05	Inlet 0.03
	Exhaust 0.10	Exhaust 0.08

**Valve Stem Diameter**

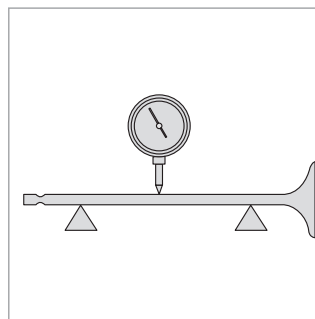
	Standard Limit	Service Limit
Pulsar 150 cc	Inlet 4.48	Inlet 4.40
	Exhaust 4.46	Exhaust 4.41
Pulsar 180 cc	Inlet 4.483	Inlet 4.63
	Exhaust 4.464	Exhaust 4.444

**Rocker Arm Shaft Dia.**

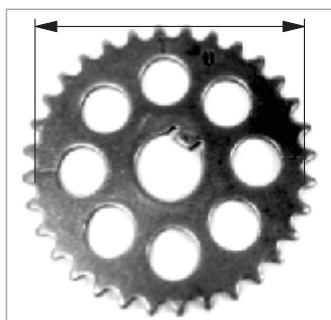
	Standard Limit	Service Limit
Pulsar 150 cc	7.994~8.0	7.98
Pulsar 180 cc	7.994~8.0	7.98

**Valve Stem Bend**

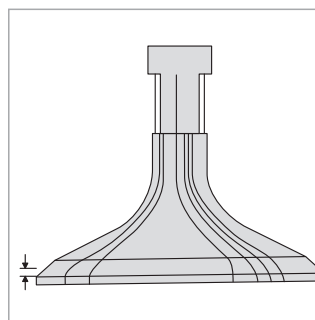
	Standard Limit	Service Limit
Pulsar 150 cc	TIR 0.01	TIR 0.03
Pulsar 180 cc	TIR 0.01	TIR 0.03

**Cam Sprocket Diameter**

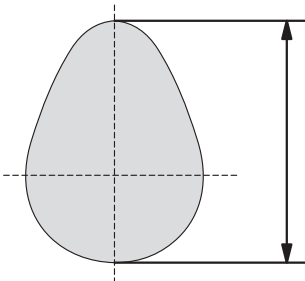
	Standard Limit	Service Limit
Pulsar 150 cc	61.285 ~ 61.165	61.1
Pulsar 180 cc	61.165 ~ 61.285	61.1

**Valve Head Thickness**


	Standard Limit	Service Limit
Pulsar 150 cc	Inlet 0.05	Inlet 0.3
	Exhaust 0.8	Exhaust 0.6
Pulsar 180 cc	Inlet 0.05	Inlet 0.3
	Exhaust 0.8	Exhaust 0.6



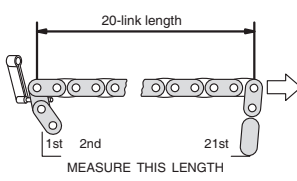
Cam Height

		Standard Limit	Service Limit
	Pulsar	Inlet	Inlet
	150 cc	31.0	30.8
		Exhaust	Exhaust
		30.4	30.2
	Pulsar	Inlet	Inlet
	180 cc	31.3	31.1
		Exhaust	Exhaust
		31.0	30.8


Cylinder Head Warp

		Standard Limit	Service Limit
	Pulsar		
	150 cc	0.05	--
	Pulsar		
	180 cc	0.05	--

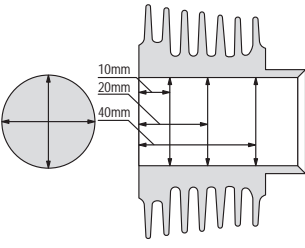
Camshaft Chain Length 20 Links

		Standard Limit	Service Limit
	Pulsar		
	150 cc	127.00 ~ 127.20	128.0
	Pulsar		
	180 cc	127.00 ~ 127.20	128.0

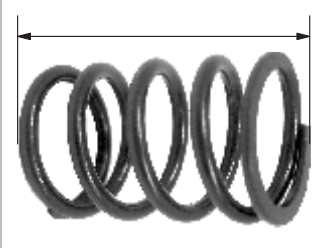
Piston Ring End Gap

		Standard Limit	Service Limit
	Pulsar	Top	Top
	150 cc	0.15~0.30	0.55
		Second	Second
		0.30~0.45	0.70
	Pulsar	Top	Top
	180 cc	0.15~0.30	0.55
		Second	Second
		0.30~0.45	0.70

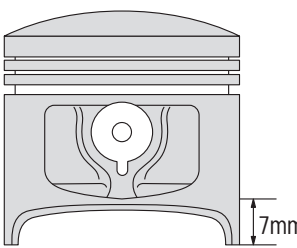
Cylinder Inside Diameter

		Standard Limit	
	Pulsar	Group A	Group B
	150 cc	58.010 ~ 58.025	58.017 ~ 58.033
	Pulsar	Group A	Group B
	180 cc	63.50 ~ 63.508	63.508 ~ 63.515

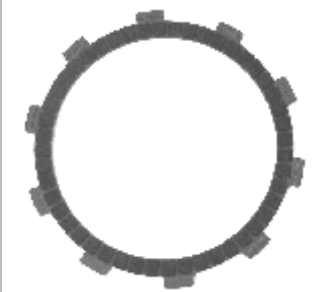
Clutch Spring Free Length

		Standard Limit	Service Limit
	Pulsar		
	150 cc	37.00	35.00
	Pulsar		
	180 cc	37.00	35.00

Piston Diameter

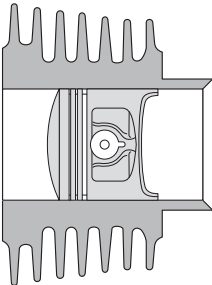
		Standard Limit	Service Limit
	Pulsar		
	150 cc	58.000 ~ 58.008	57.975 ~ 57.981
	Pulsar		
	180 cc	63.500 ~ 63.508	63.475 ~ 63.481

Friction Plate Thickness

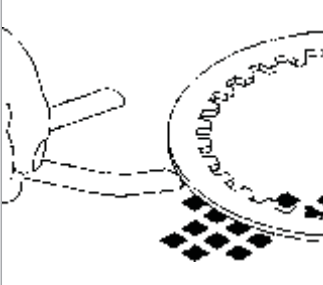
		Standard Limit	Service Limit
	Pulsar		
	150 cc	2.9 ~ 3.1	2.75
	Pulsar		
	180 cc	2.9 ~ 3.1	2.75



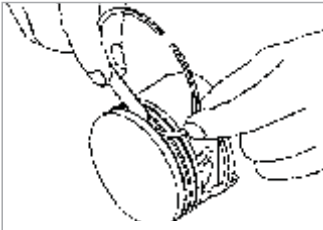
Piston / Cylinder Clearance

		Standard Limit	Service Limit
	Pulsar 150 cc	0.019	0.039
	Pulsar 180 cc	0.019	0.039


Pressure Plate Warp

		Standard Limit	Service Limit
	Pulsar 150 cc	0.2	0.3
	Pulsar 180 cc	0.2	0.3

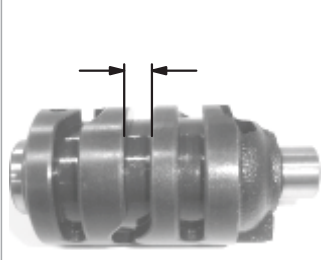
Piston Ring / Groove Clearance

		Standard Limit	Service Limit
	Pulsar 150 cc	Top 0.025 ~ 0.065 Second 0.02~0.06	Top 0.16 Second 0.15
	Pulsar 180 cc	Top 0.02 ~ 0.06 Second 0.01~0.05	Top 0.16 Second 0.15


Shift Fork Guide Pin Diameter

		Standard Limit	Service Limit
	Pulsar 150 cc	4.49	4.40
	Pulsar 180 cc	4.49	4.40

Shift Drum Groove Width

		Standard Limit	Service Limit
	Pulsar 150 cc	7.5	7.65
	Pulsar 180 cc	7.5	7.35

Crankshaft Run Out

		Standard Limit	Service Limit
	Pulsar 150 cc	0.02 Max	0.05
	Pulsar 180 cc	0.02 Max	0.05



Details of Engine Related Special Tool

For carrying out repairs / overhauls, various special tools are required. Some are commonly shared with other models also.



Crankshaft Bearing Extractor

Drawing No : JC 1010 01

Application : To remove bearing from crankshaft



Sprocket Catcher

Drawing No : 37 10DH 36

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



Camshaft Big Bearing Puller

Drawing No : 37 10DH 32

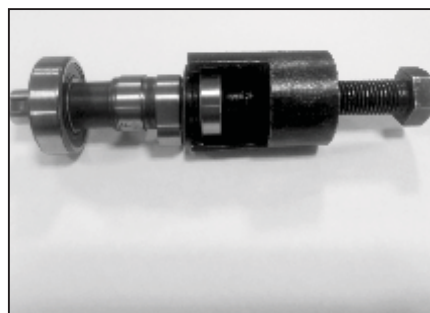
Application : To remove bearing (Decompression assembly side) of camshaft.

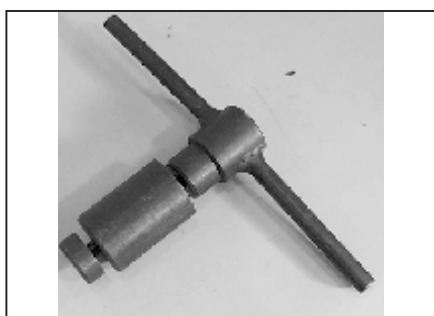
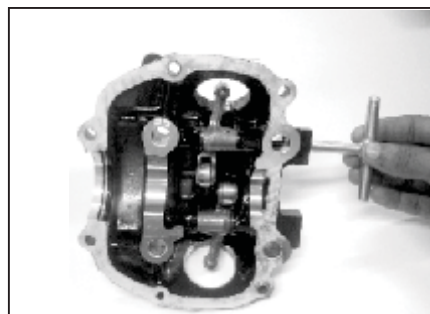
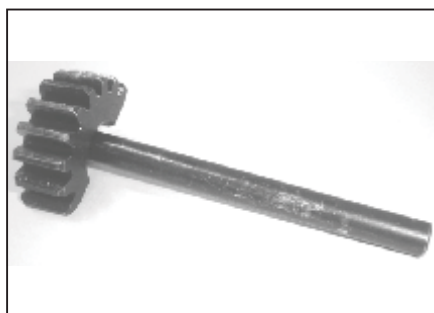
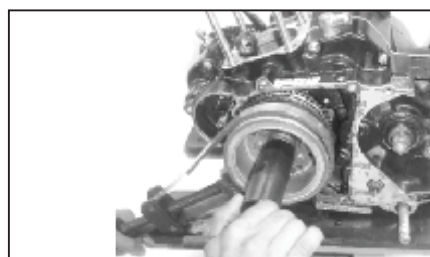
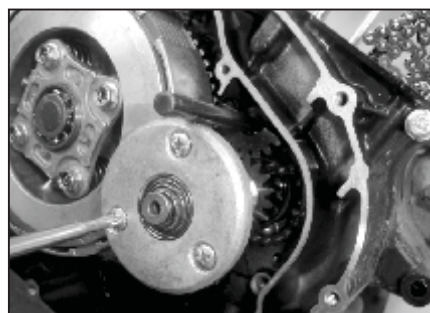


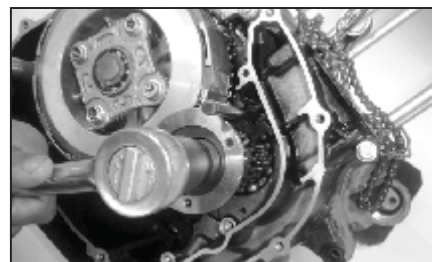
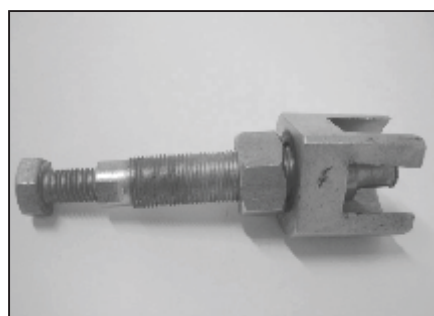
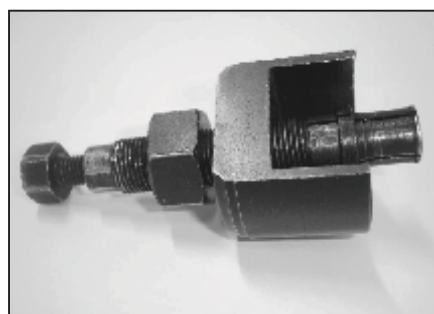
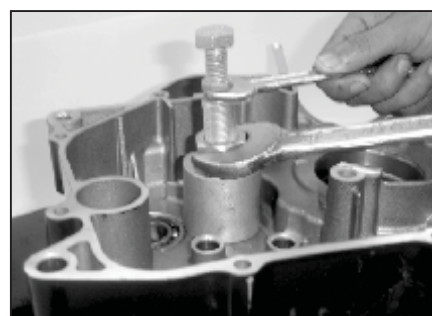
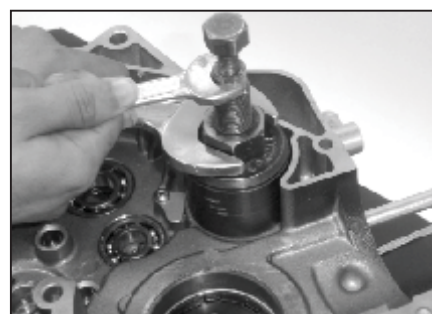
Camshaft Small Bearing Puller

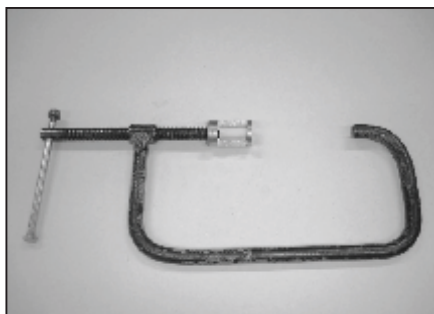
Drawing No : 37 10DH 31

Application : To remove small bearing of camshaft.



**Rocker Pin Remover****Drawing No : 37 10DH 35****Application :** To remove rocker pin from cylinder head.**Silent Bush Puller****Drawing No : 37 10DH 33****Application :** To remove silent bush from cylinder head cover.**Rotor Puller with Butt Pin****Drawing No : 37 10DJ 32****Application :** Used to pull out rotor from crankshaft assembly.**Primary Gear Holder****Drawing No : 37 10DJ 28****Application :** Use to hold primary gear while loosening / tightening the clutch nut.**Balancer Gear Holder****Drawing No : 37 10DJ 63****Application :** Used to load the pre-tensioned scissor gears of Assly balancer Idler gear.

**Special Nut****Drawing No** : 37 10DJ 43**Application** : Used to remove / fit of centrifugal oil filter nut.**Note** : Existing tool can be used by reducing diameter to**Bearing Race Extractor****Drawing No** : 37 00DJ 01**Application** : Used for removing the lower bearing race from 'T'**Bearing Extractor****Drawing No** : 37 10DJ 76**Application** : Used to extract the input shaft brg. from crankcase LH.**Bearing Puller****Drawing No** : 37 10DJ 77**Application** : Used to pull out the bearing for body balancer from crankcase LH.

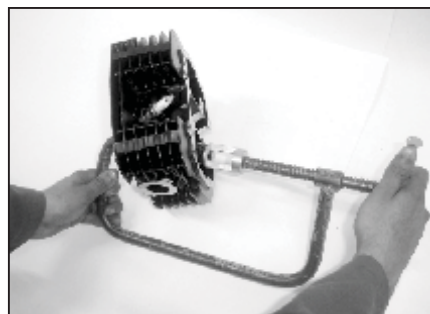


Adaptor and Valve Spring compressor

Adaptor Drawing No : 3710DJ78

Valve Spring Compressor
Drawing No.: 37 1031 07

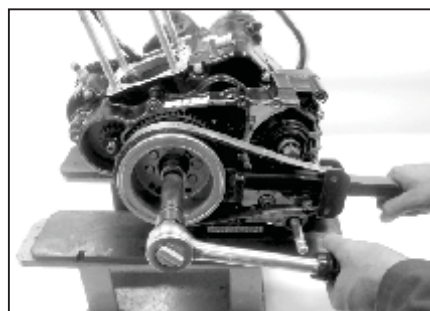
Application : Used for assembling / dismantling inlet, exhaust valves by compressing spring in cylinder head.



Rotor Holder

Drawing No : H6 0721 00

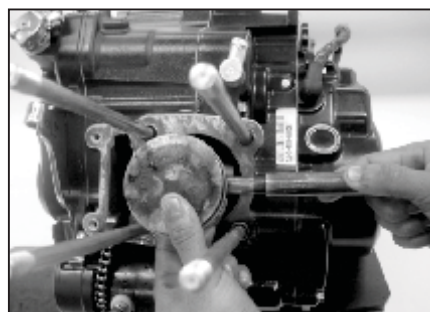
Application : To hold rotor while loosening bolt.

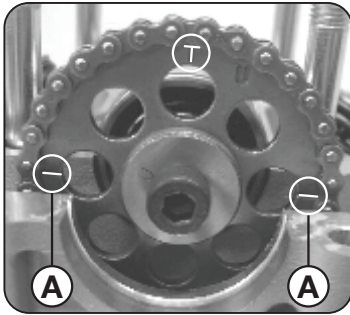


Drift

Drawing No : 74 9309 89

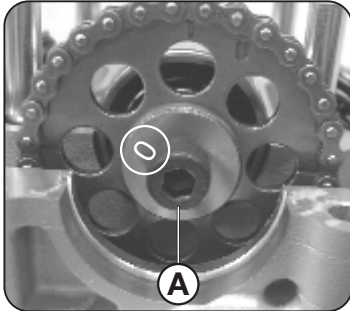
Application : To remove piston pin.





Valve timing

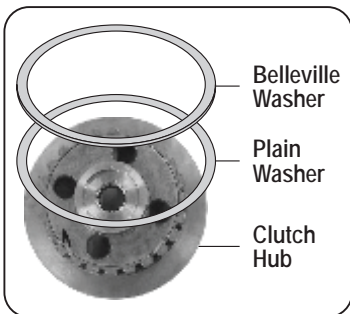
- Ensure the sprocket marks (A) are aligned horizontally with cylinder head top machined face and the piston is at TDC.



- Secure the 'Cam Chain Sprocket' in the Spl. tool firmly & then tighten the sprocket allen bolt (A).
- Ensure that the 'O' mark on washer always faces outwards when tightening the allen bolt.

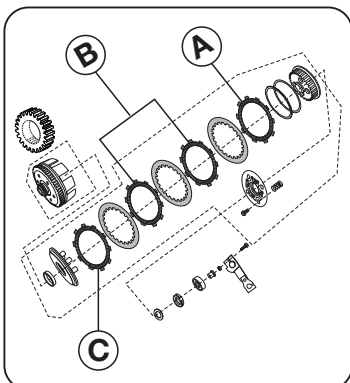


- Take utmost care while assembling.
- Fit Belleville washer in between 2 plain washers.

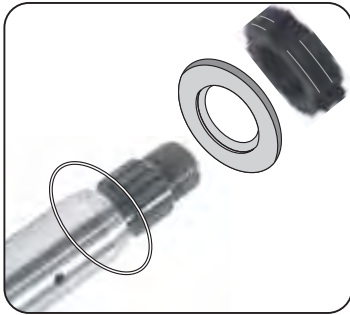


Ensure

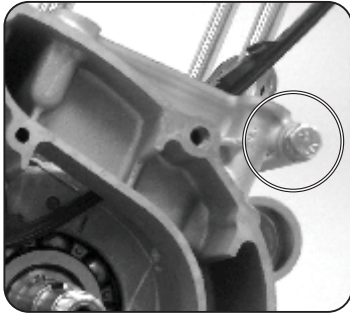
- While assembling hub clutch place plain washer first & then place Belleville washer. Concave face should be upwards i.e. towards technician.



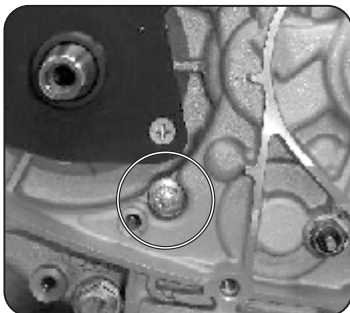
- After placing Belleville, fit clutch plate with 40 friction material cubs (A) with more I.D.
- 3 Nos. / 4 Nos. of clutch plates with 48 fiction material cubs (B) alternatively along with steel plates.
- Fit top clutch plate with 40 friction material cubs (C).



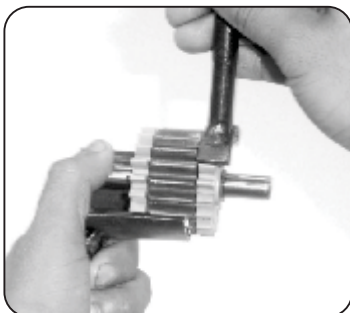
- Input shaft has special nut.
- Thick spacer tapered I.D. should be placed on tapered portion of Input Shaft.
- Input Shaft has left hand threads.



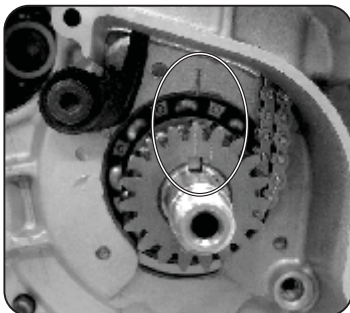
- When splitting crankcase always remove 1 long bolt fitted from clutch side first.



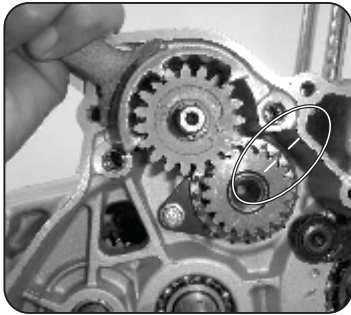
- Remove long bolt immediately after removal of long bolt clutch side.
- Ensure proper fitment of bolt with copper washer to avoid oil leakage.



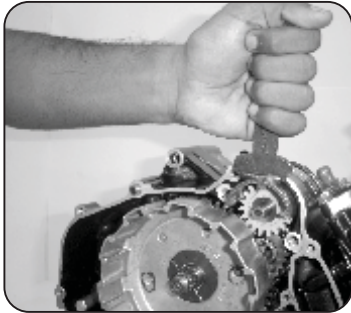
- Load the assly balancer idler gear with 2 teeth from either side using the special tool.



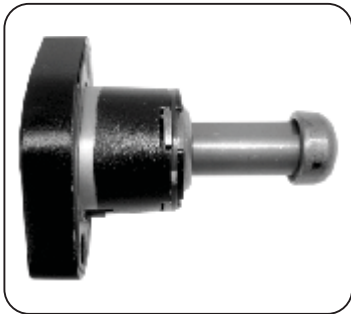
- Fit primary gear drive (A).
- The mark teeth of the primary gear should match with the line mark on the crankcase. This indicated that the piston is at TDC position. This procedure should be carried before fitting the 'Clutch Housing' and this position should not be disturbed while fitting the 'Clutch Housing'.



- Take 'Assembly Balancer Idler Gear' along with Thrust Washer which is pre-loaded and is held in special tool, Slide down the special tool with 'Gear' to engage the bottom half of the 'Assembly Balancer Idler Gear' with the 'Body Balancer Gear Assembly'
- Fit 'Thrust washer' on the other side.
- On assembly of 'Assembly Balancer Idler Gear' the itched / Dot mark of Body Balancer Gear Assembly' should match with the line mark on the 'Crankcase'.



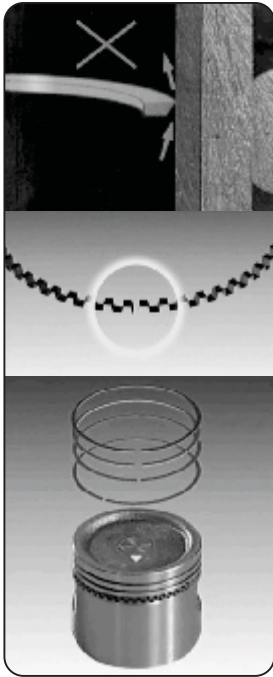
- Holding the 'Assembly Balancer Gear' in special tool now slide inside the 'Clutch Housing' so that the 'Clutch Housing' smoothly engages with the top half of 'Assembly Balancer Idler Gear'.
- Remove Spl. tool gently.
- Fit 2 dowels and Assly Balancer Idler Gear Cover
- Ensure perfect marking of gear marks with respect to crankcase mark.



- Do not dismantle the cam chain tensioner assembly.

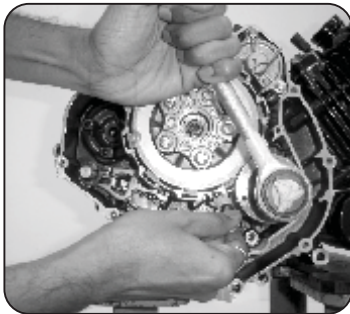


The existing special nut puller for Pulsar can be use for Pulsar UG-III and Pulsar 200 cc by reducing its diameter to 25.9 ± 0.1 mm.

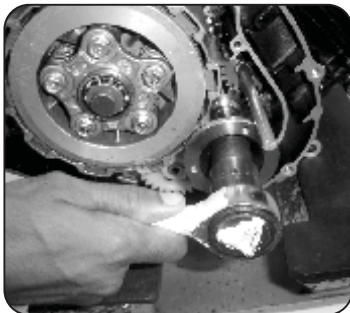


Always ensure piston ring position.

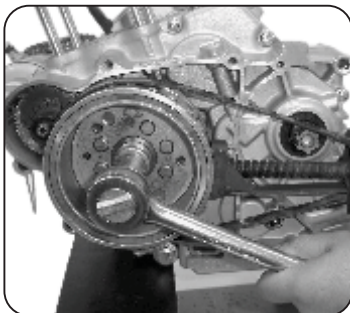
- Top Ring :
Open end facing towards exhaust.
- Second Ring :
Open end facing towards inlet.
- Upper Rail :
Open end 30° facing towards exhaust.
- Bottom Rail :
Open end 30° facing towards inlet.
- Expander :
Open ends at center and joints butting together facing down.



When tightening the special nut for centrifugal filter the Primary gear holder should hold between the 'Primary Gear' and 'Clutch Housing' from bottom side. (Note that oil pump assly is removed).



When loosening the special nut for 'Centrifugal Filter' the Primary gear holder should be hold between the 'Primary Gear' and Clutch Housing' from upper side.

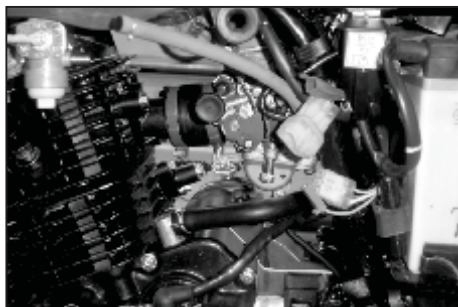


Never rest the Rotor holder against Gear change pedal lever.



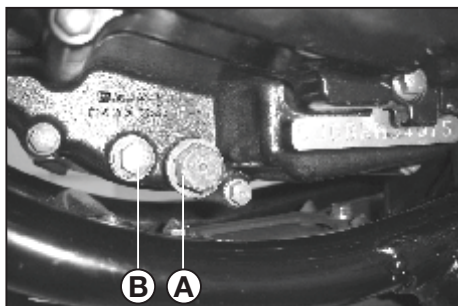
Remove :

- Put OFF the fuel cock
- Side panel LH
- Side panel RH



Remove :

- Both Seat assembly by pulling the cable for seat lock release located on LH side.
- Disconnect the negative terminal of the battery.
- Disconnect the wiring harness socket for fuel level Indicator.
- Fuel pipe connections and moisture drain pipe from fuel tank.
- Disconnect stator plate harness
- Disconnect neutral switch coupler

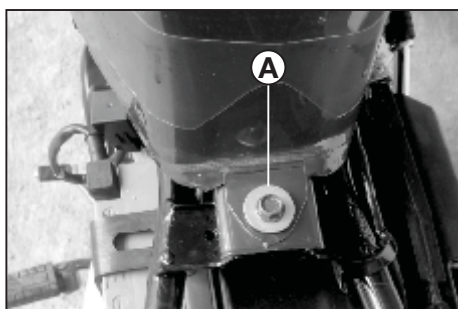


Remove :

- Engine oil temp sensor screw (B) and disconnect the wire
- Remove sensor and gasket
- Drain bolt (A) and drain out the oil from engine.
- Refit the drain bolt with gasket & tighten it.

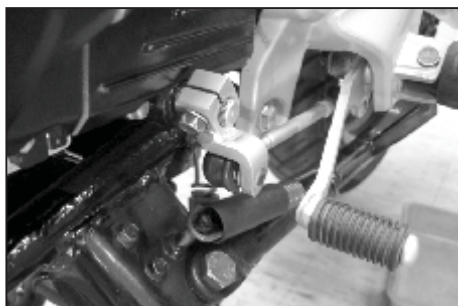
Engine Oil

Model	Grade	Quantity
Pulsar 150 CC	SAE 20W50 of API 'SJ' or 'SL' + JASO 'MA' Grade or Superior	Drain & Refill = 1000 ml.
Pulsar 180 CC	SAE 20W50 of API 'SJ' or 'SL' + JASO 'MA' Grade or Superior	Engine Overhaul = 1100 ml.



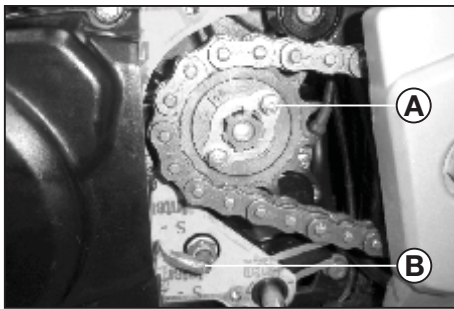
Remove :

- Bolt (A)
- Petrol tank assembly.



Remove :

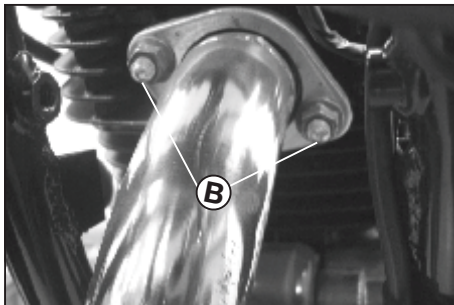
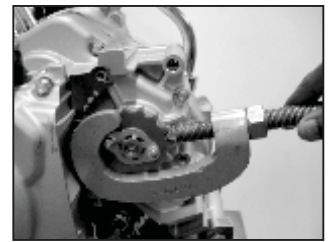
- Bolts (A)
- Gear shift pedal (B)
- Drive sprocket cover LH.



Using Special Tool : Sprocket Holder
- 37 1030 53

Remove :

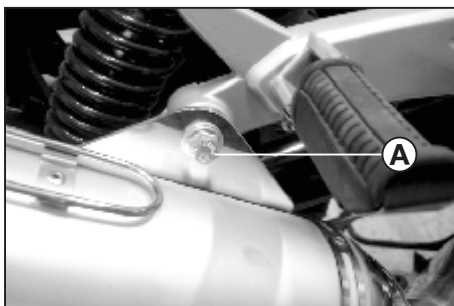
- Bolts (A)
- Plate drive sprocket
- Drive sprocket along with the chain.
- Neutral switch coupler (B).



Remove :

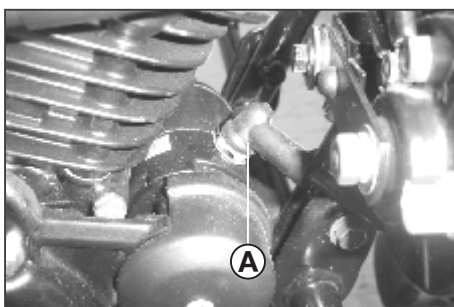
- 2 nuts (B) for silencer flange

Note : *Always remove the flange mounting first and then rear mounting to avoid misalignment of studs.*



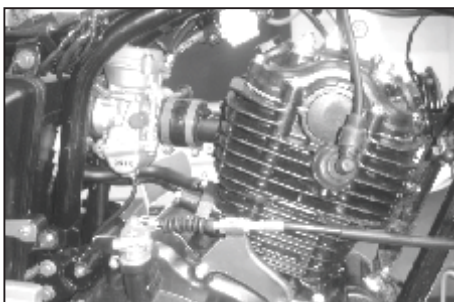
Remove :

- Bolt (A) of silencer bracket mounted on pillion RH side footstep.
- Silencer assembly.



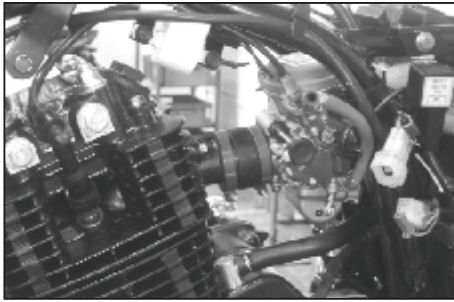
Remove :

- Starter motor connection (A)



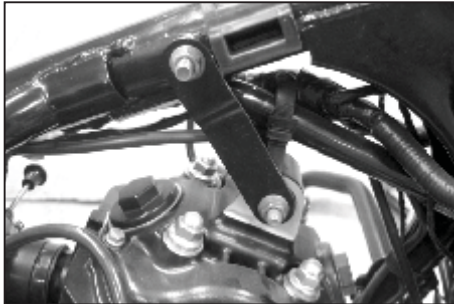
Remove :

- Air filter mounting bolts to facilitate the removal of carburettor with reed switch.
- Clamps of carburettor and disconnect carburettor along with insulator and dismantle cables from it.
- Bracket bolts securing clutch cable on clutch cover.
- Spark plug cap RH



Remove :

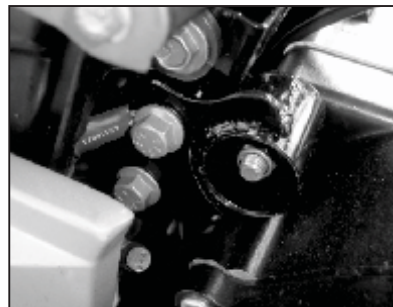
- Disconnect the reed switch coupler.
- Spark plug cap LH
- PCV pipe from breather



Remove :

- While removing engine foundation bolts, first remove the topmost bolt and then go down progressively.

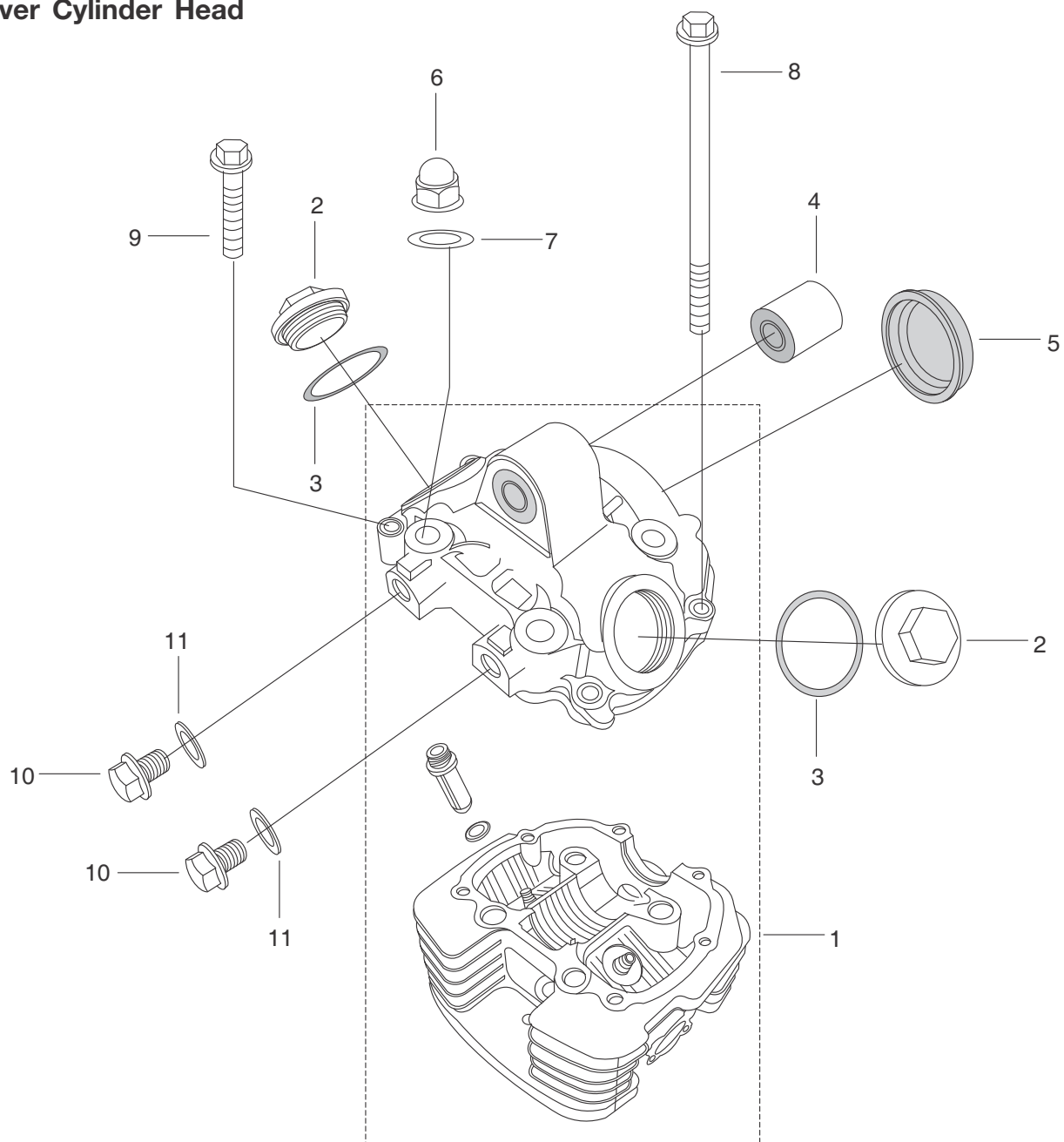
Note : Bolts (A) holding the engine to the chassis. (4 bolts of 12 mm and 1 bolt needs deep socket for removing it).



- Lift up the engine off the chassis and place it on engine stand.

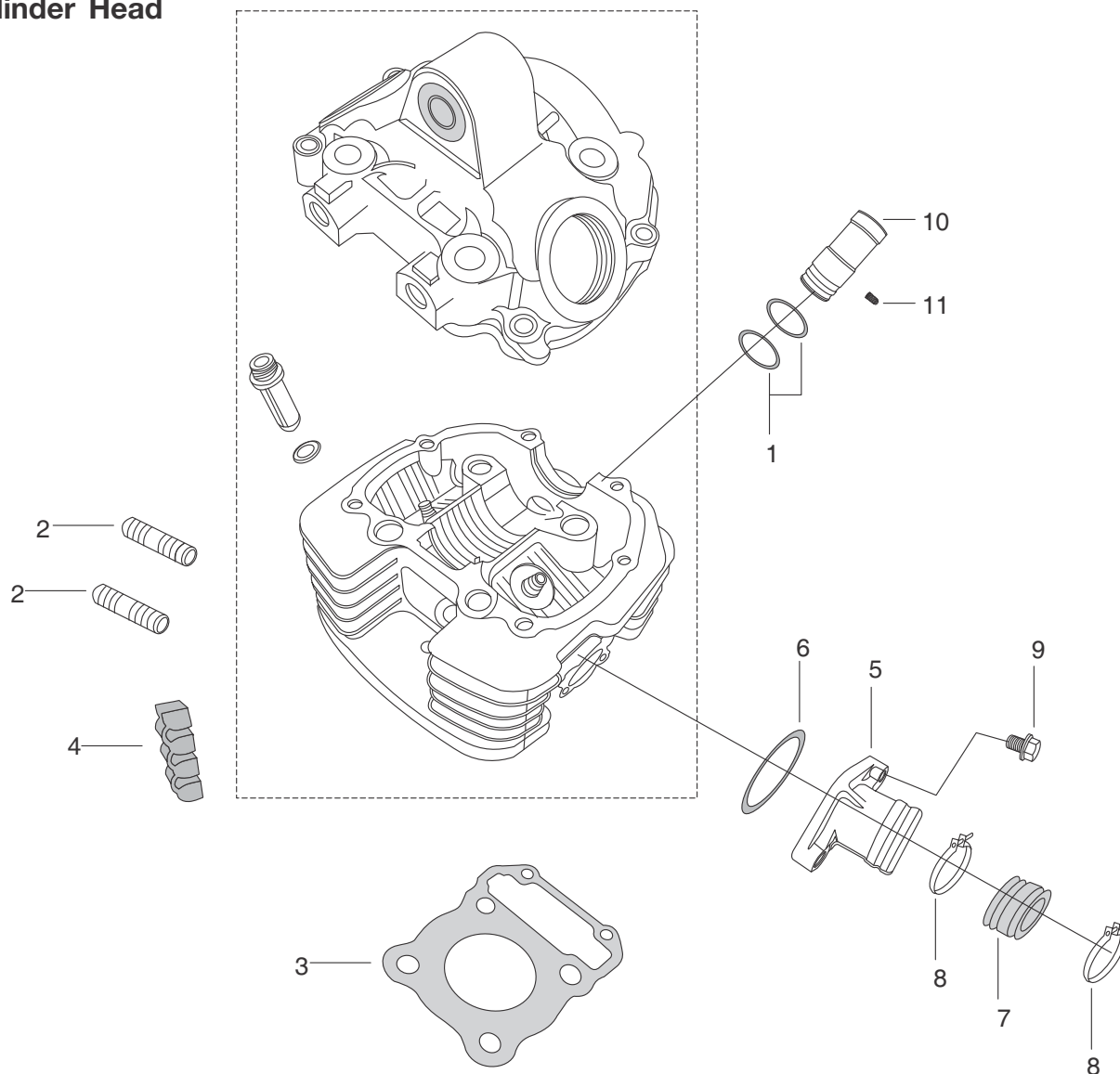
Note : After disconnecting all the sub assemblies and control cables from the engine lift up the engine and remove it from RHS of the vehicle.

Cover Cylinder Head



S.N.	Description	Qty
1	Head Cylinder with Cover	1
1	Kit Asly Cyl Head with Cover	1
2	Cover Tappet	2
3	'O' Ring Kit for Cover Cyl. Head	1
4	Silent Bush	1
5	Camshaft Cap	1

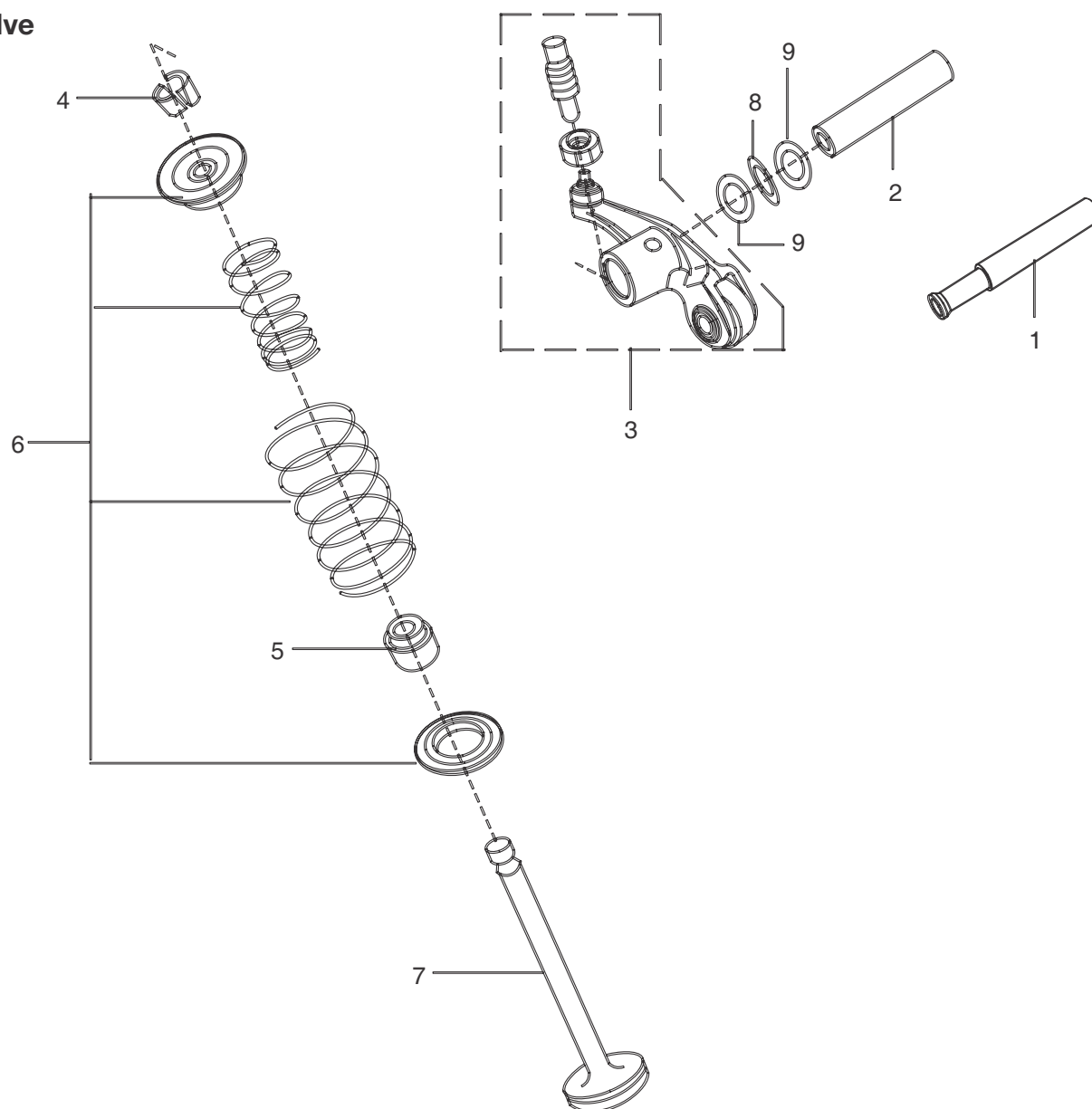
S.N.	Description	Qty
7	Copper Washer	4
8	Hex. Bolt with Flange	2
9	Hex. Bolt / Flange	4
10	Plug	2
11	Gasket	2

Cylinder Head

S.N.	Description	Qty
1	'O' Ring Kit for Cover Cyl. Head	1
2	Stud (Exhaust)	2
3	Gasket Cylinder Head	1
4	Damper Cylinder Head	5
5	Intake Pipe	1
6	'O' Ring (Intake Pipe)	1

S.N.	Description	Qty
7	Carburettor Insulator	1
8	Clamp for Insulator	2
9	Hex. Bolt / Flange	2
10	Sleeve - Spark Plug	1
11	Grub Screw	1

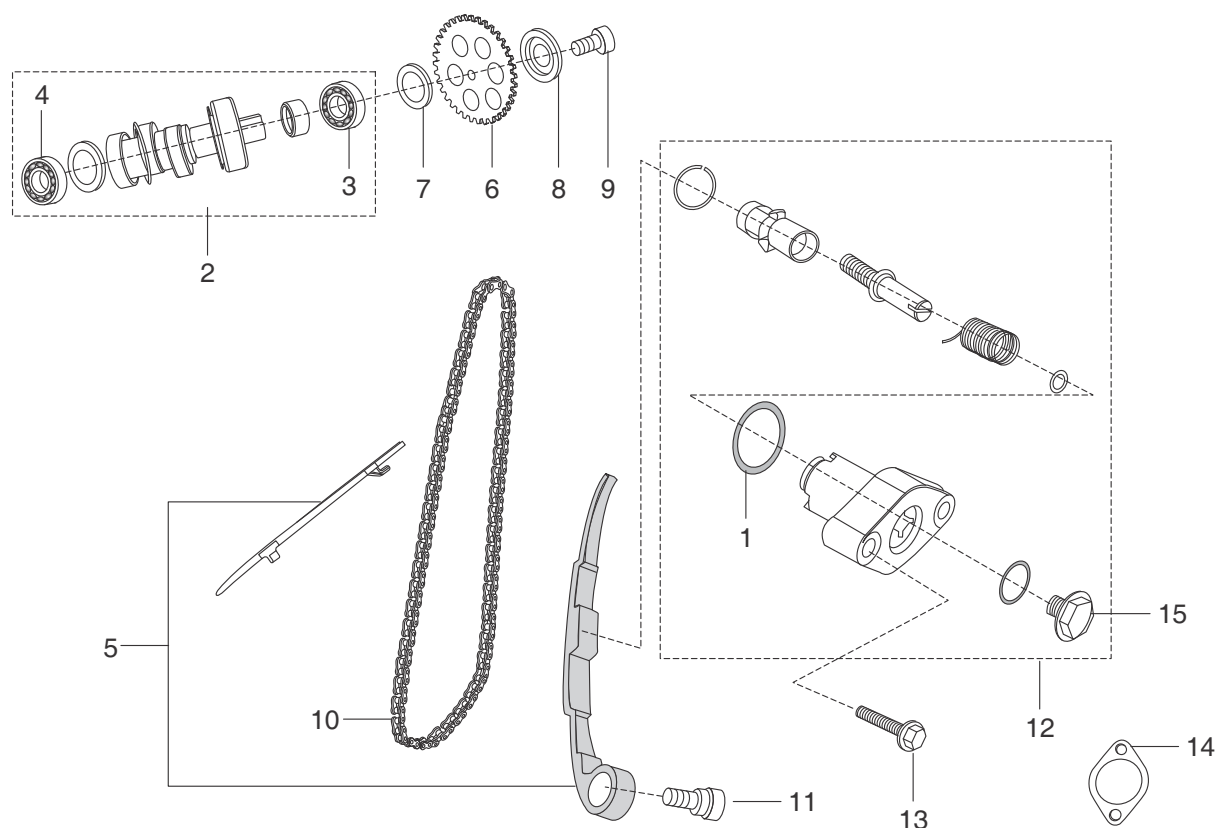
Valve



S.N.	Description	Qty
1	Rocker Arm Shaft - Intake	1
	Rocker Arm Shaft - Intake (OD 10 mm)	1
2	Rocker Arm Shaft - Exhaust	1
	Rocker Arm Shaft - Exhaust (OD 10 mm)	1
3	Rocker Arm with roller	2
	Rocker Arm without roller	2

S.N.	Description	Qty
4	Cotter valve	4
5	Seal valve stem	2
6	Valve Repair Kit	1
7	Valve Kit	1
8	Wave washer	2
9	Plain washer	4

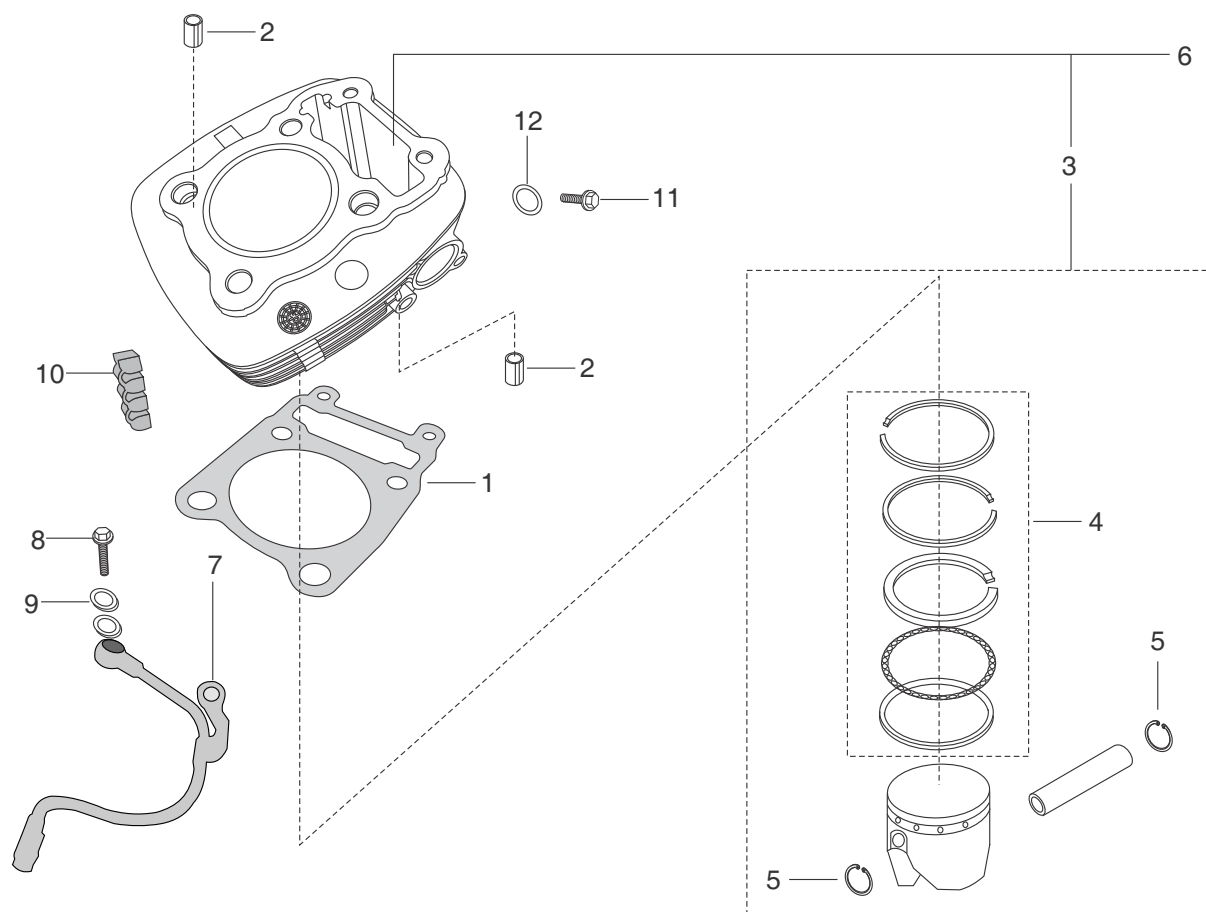
Camshaft & tensioner



S.N.	Description	Qty
1	Ring 'O'	1
2	Camshaft Assembly	1
3	Bearing cam RH side	1
4	Bearing cam LH side	1
5	Guide chain Kit	1
6	Sprocket cam Driven (32 T)	1
7	Collar cam Sprocket	1
8	Special camshaft washer	1

S.N.	Description	Qty
9	Hex. Soc. Head cap Bolt	1
10	Cam Chain	1
11	Cam chain Tensioner pivot Bolt	1
12	Tensioner Assly	1
13	Hex Bolt / Flange	2
14	Tensioner assly. gasket	1
15	Bolt	1

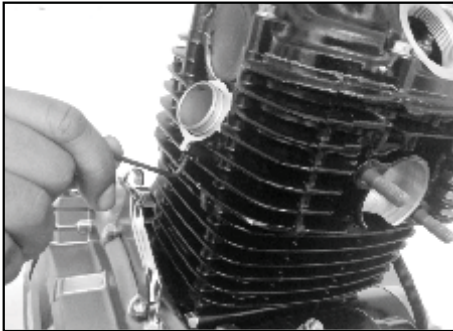
Cylinder & Piston



S.N.	Description	Qty
1	Gasket Cylinder	1
2	Pin dowel	4
3	Piston Assy. Std.	1
4	Ring Set Piston	1
5	Ring Snap	2
6	Cylinder Block / Piston Assy	1

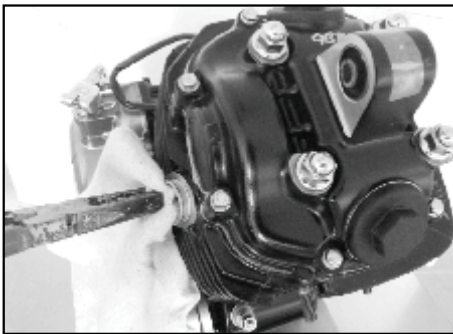
S.N.	Description	Qty
7	Oil Pipe Assy	1
8	Bolt Special	2
9	Gasket	4
10	Damper	6
11	Bolt (dummy for Temp sensor)	1
12	Washer (dummy for Temp sensor)	

Engine Top End Dismantling :

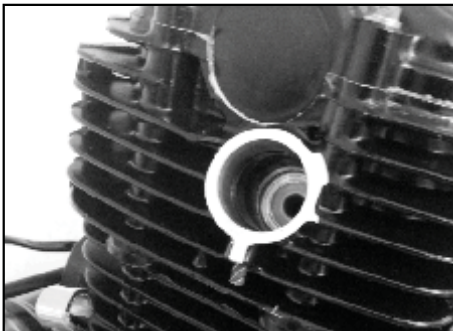


Remove :

- Pull out the cover on the spark plug cap RH and the spark plug cap itself
- Using a plug spanner, loosen the spark plug and remove the spark plug RH
- Loosen & unscrew the allen head grub screw of the sleeve spark plug RH.



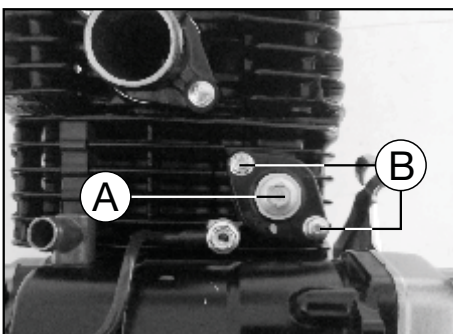
Note : *Wrap a piece of cloth around the protruding edge of the sleeve spark plug and using a plier, pull out the sleeve.*



Remove :

- There are 2 'O' rings fitted in the cylinder head, one on the cam chain wall and the other near the spark plug threading
- Using a thin, sharp pointed tool pierce the 'O' rings and remove them. (If required only)

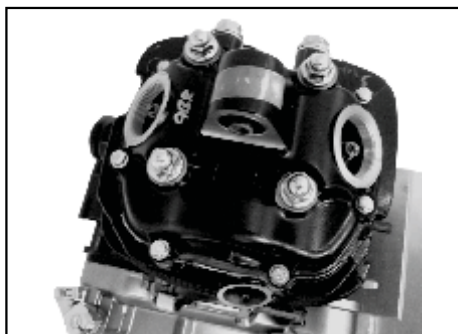
Note : *Remove these only if the 'O' ring protrusion in the bore is non-existent (which means that the 'O' ring has set and it has lost its compression or sealing ability.)*



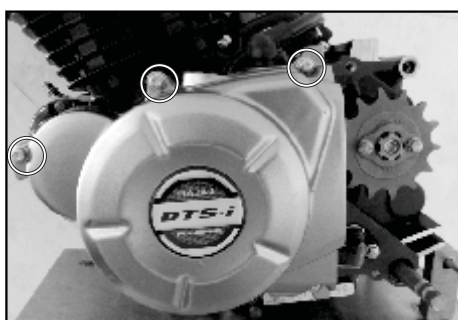
Remove :

- Loosen bolt (A) and unscrew chain tensioner plunger
- Cam chain tensioner assembly 2 bolts (B)
- Cam chain tensioner assembly
- Gasket

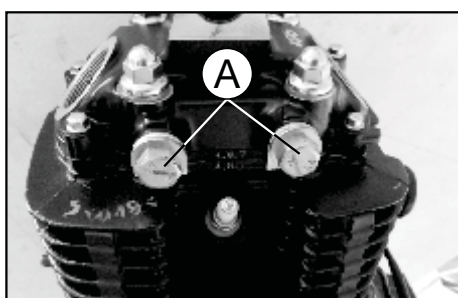


**Remove :**

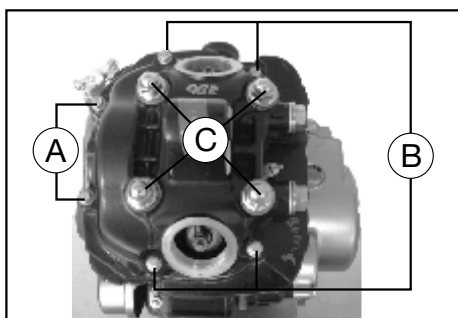
- Both tappet caps

**Remove :**

- Magneto cover 5 bolts
- Disconnect neutral switch coupler
- Magneto cover
- Rotate crankshaft to get piston at TDC.
- Ensure both tappets are at free state (i.e. at the end of compression stroke)

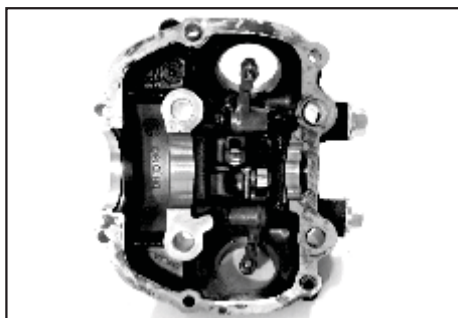
**Remove :**

- Loosen 2 dummy plug (A)

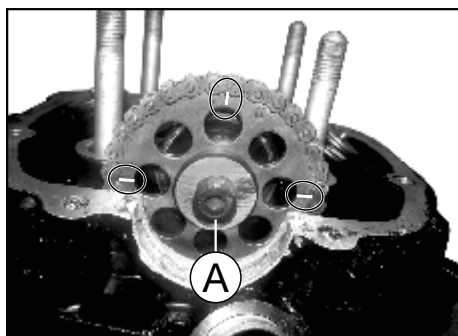
**Remove :**

- Cylinder head securing head cover 2 bolts (A)
- Cylinder head securing head cover 4 bolts (B)
- Cylinder head securing head cover 4 domed cap nuts (C)
- 4 copper plated steel washers

Note : *Improper tightening sequence may cause warpage in cylinder head cover and it can be damaged permanently.*

**Remove :**

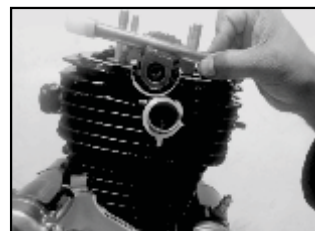
- Cylinder head cover complete
- Cam shaft cap
- 2 Dummy plugs
- Dummy plug gasket



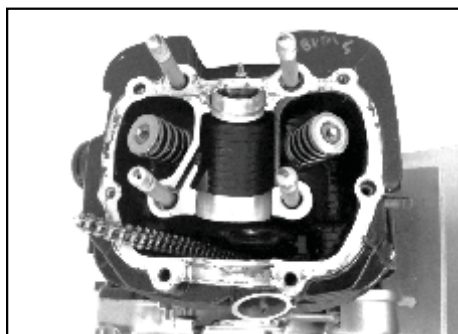
Using Special Tool : Sprocket Catcher - 3710 DH 36

Remove :

- Allen bolt (A)
- Spacer
- Cam sprocket
- Collar
- Cam shaft assly

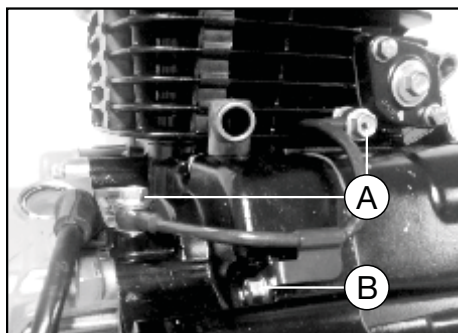


Note : Hold the cam chain up right using soft copper wire or thread. Do not use cotton waste for holding the cam chain.



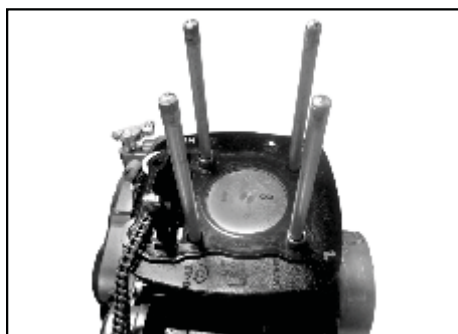
Remove :

- Cylinder head assembly
- 2 Dowels
- Gasket cylinder head



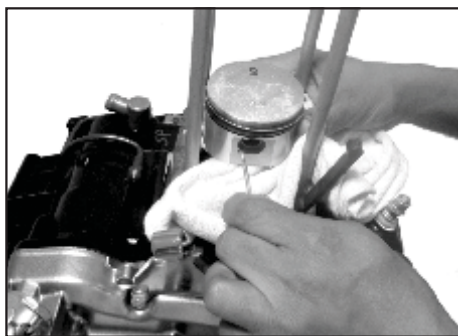
Remove :

- 2 Banjo bolts (A)
- Copper gasket
- Bolt (B)
- Oil Pipe



Remove :

- Non tensioner side chain guide
- Cylinder block assembly



Using Special Tool : Drift - 74 9309 89

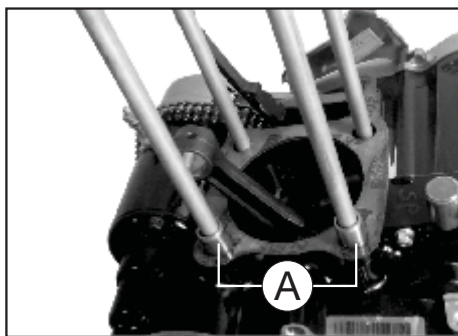
Remove :

- Piston pin lock LH & RH side
- Piston pin
- Piston assembly



Note : *Place a piece of clean cloth above hollow portion of crankcase to arrest piston pin circlip if it falls during fitment.*

Warning : When tapping the drift for removal of piston pin, confirm that the connecting rod is held firmly against the direction of tapping to avoid damage to big end bearing connecting rod of crankshaft.

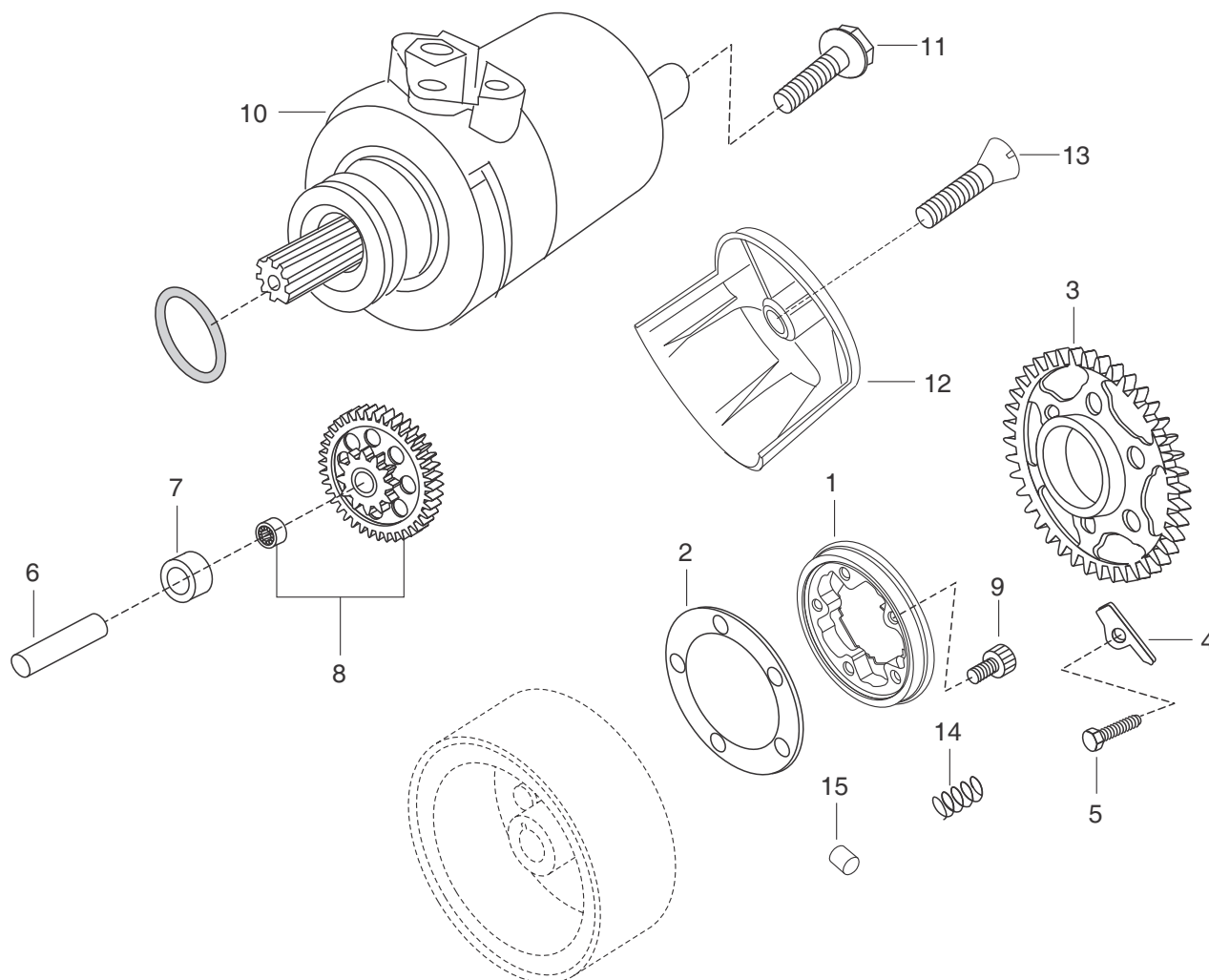


Remove :

- Block gasket
- 2 Dowels (A)

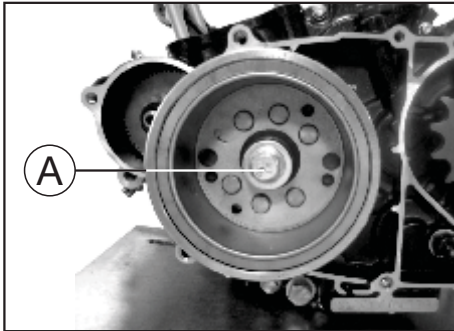
Note : *Tie the cam chain firmly using soft copper wire/thread firmly to avoid slipping down into crankcase.*

Starter Clutch



S.N.	Description	Qty
1	Body comp. starter clutch	1
2	Plate roller clutch	1
3	Gear starter clutch	1
4	Plate starter clutch gear return	1
5	Bolt	1
6	Shaft starter counter	1
7	Collar starter counter	1
8	Gear comp. starter counter assly.	1
9	Bolt socket	3

S.N.	Description	Qty
10	Motor assly. starter clutch	1
11	Bolt	2
12	Cover starter motor	1
13	Cover starter motor moonlight silver 1	1
14	Spring	5
15	Roller	5
16	Needle Roller Bearing	

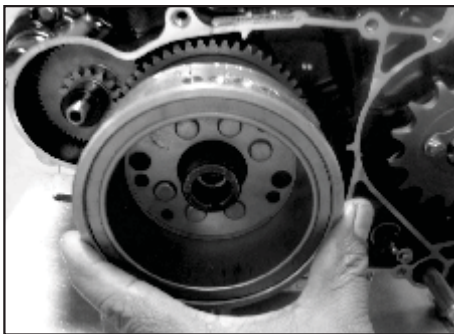
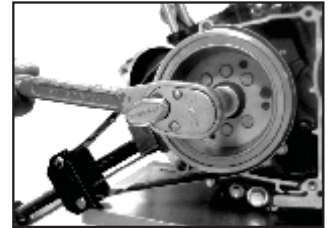
Engine LH : (Magneto Side)

Using Sp. Tool : Rotor Holder - H6 0721 00

- Hold the rotor assembly

Remove :

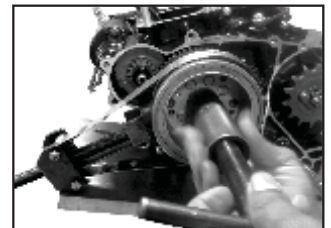
- Rotor bolt (A)
- Washer



Using Special Tool - Rotor Puller with butt pin : 37 10DJ 32

Remove :

- Rotor assembly
- Woodruff key

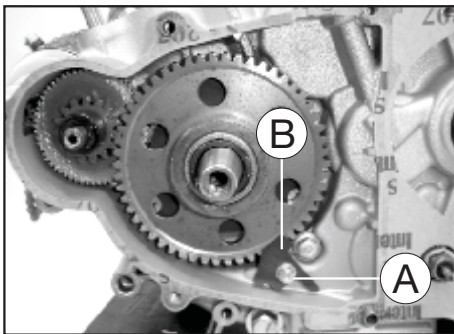


**Note :**

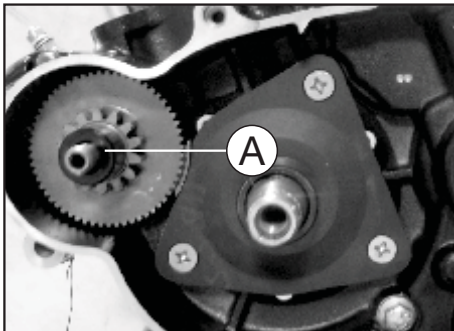
Holding the gear complete starter clutch rotate the rotor and pull it out in Anticlockwise direction to prevent rollers and

Warning :

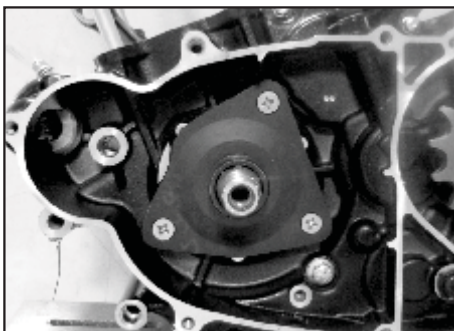
- These components remain hot for a long time especially if removed from a hot engine. Wear suitable hand protection to prevent burns.
- Rotor puller has left hand threads

**Remove :**

- Gasket
- Bolt (A)
- Plate starter clutch gear return (B)
- Gear starter clutch

**Remove :**

- Collar (A)
- Shaft
- Gear comp. starter counter assly

**Remove :**

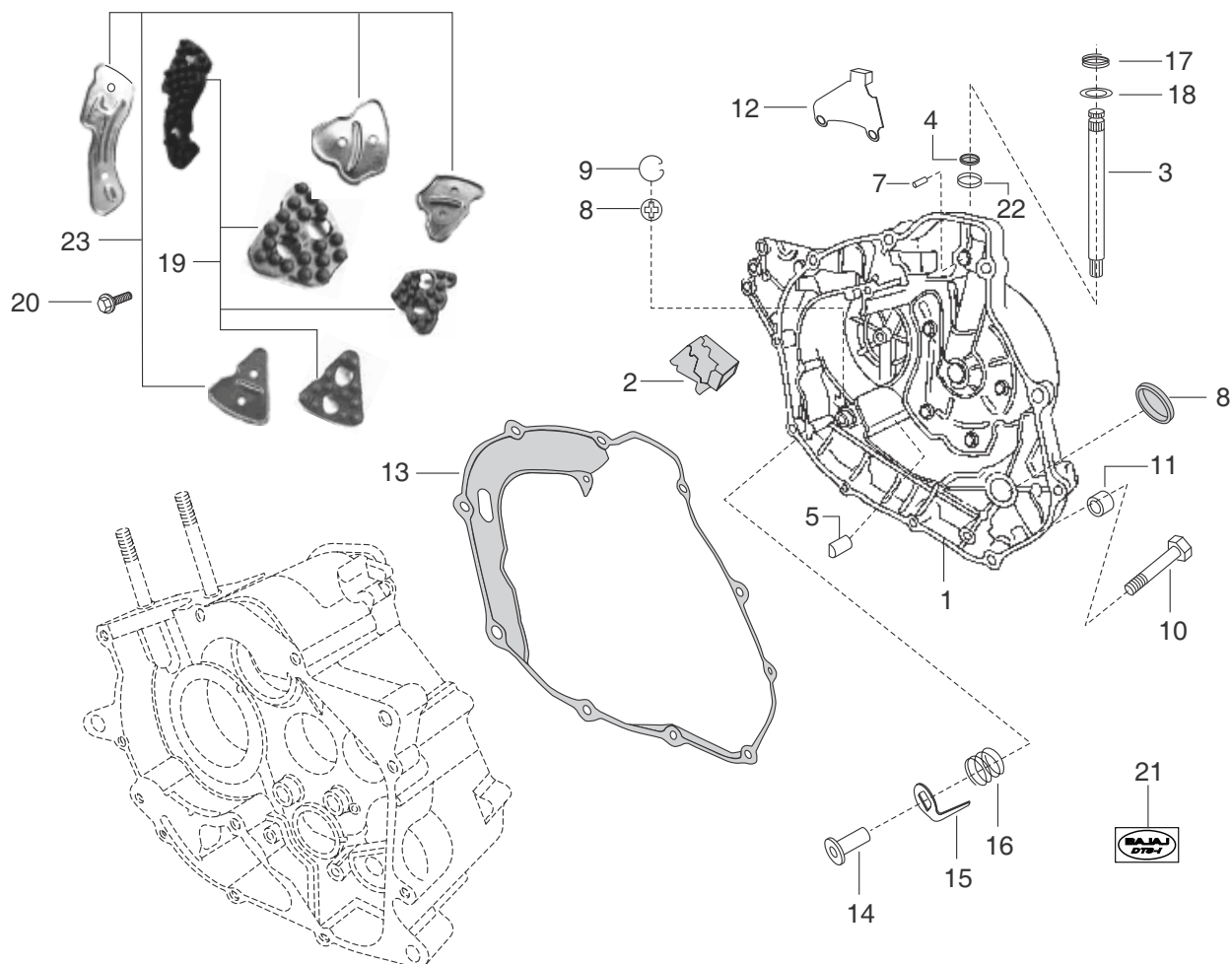
- 3 Screw (A)
- Guide starter assembly along with oil seal.

Note : Removal of guide starter assembly is to be removed only

Caution : Ensure that the woodruff key of rotor is removed prior to the removal of guide starter assembly. The lips of magneto oil seal housed in guide starter assembly will get damaged if not done so.



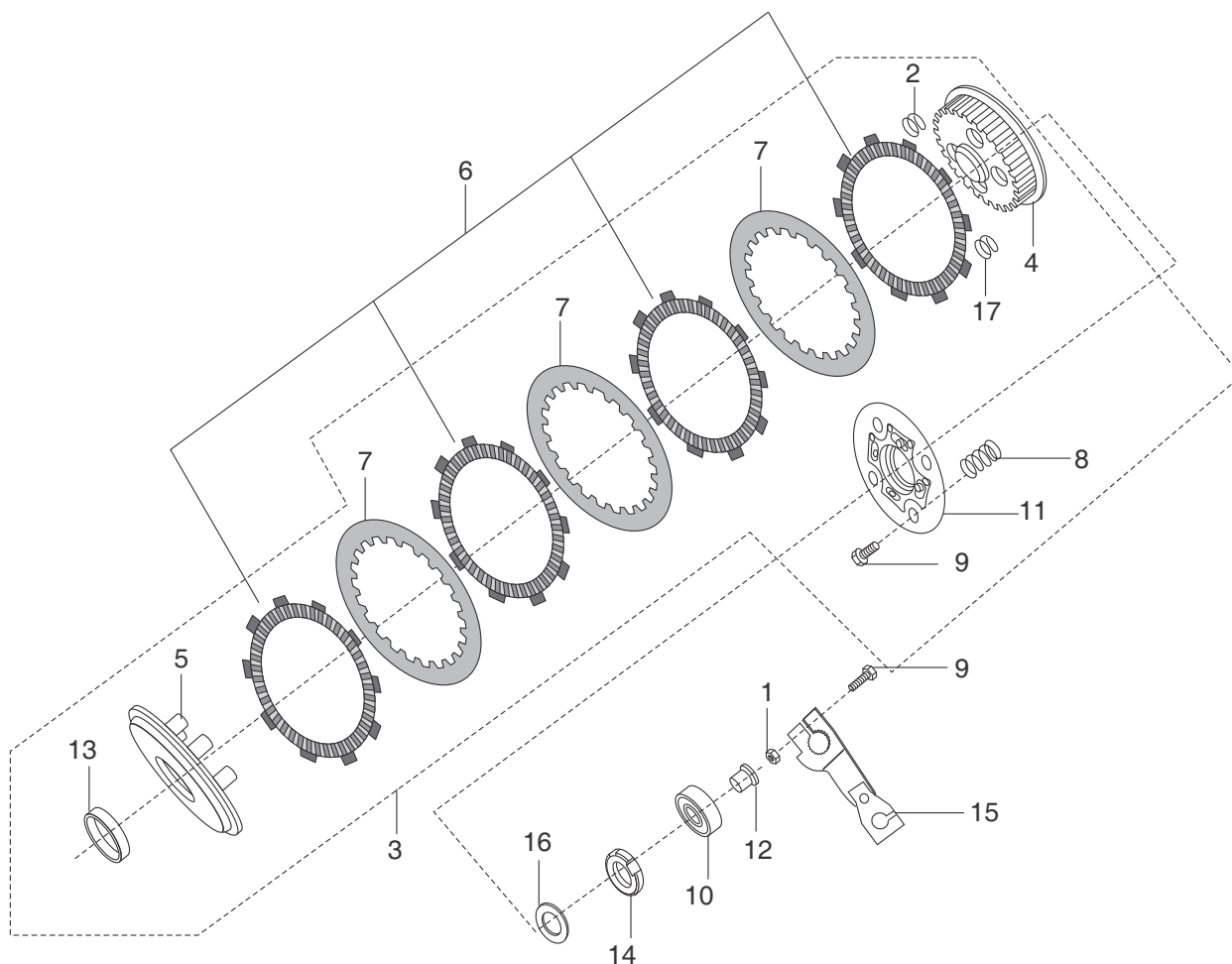
Clutch Cover



S.N.	Description	Qty
1	Cover comp RH	1
1	Cover comp RH-Flower Type	1
1	Kit Asly Cl Cover-Moonlight Silver	1
2	Grommet Breather	1
3	Shaft clutch release	1
4	Seal clutch lever	1
5	Rack	1
6	Dip stick with 'O' ring	1
7	Parallel pin	1
8	Gauge	1
9	Wire circlip	1
10	Bolt	10
11	Pin Dowel	2

S.N.	Description	Qty
13	Gasket cover RH	1
14	Plunger Oil	1
15	Plate Plunger Oil	1
16	Spring Joint 'A'	1
17	Spring torsion clutch lever	1
18	Washer	1
19	Set damper	1
20	Flanged Bolt	5
21	'Bajaj' Decal / Decal DTS-i	1
22	Bushing	1
23	Set of Plate	1
24	Plate Damper Integral	1
25	Damper Integral	1

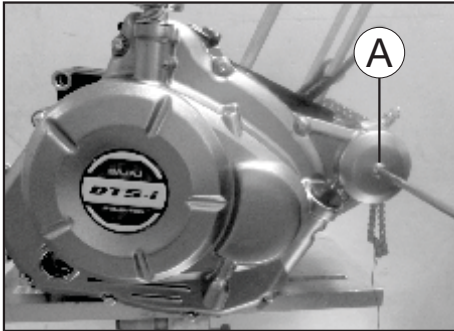
Clutch



S.N.	Description	Qty
1	Special Nut	1
2	Spring judder	1
3	Clutch Assly. Complete	1
4	Clutch Center	1
5	Plate Clutch Pressure	1
6	Friction Plate Kit	1
7	Plate Clutch	5
8	Spring Clutch Capacity	4
9	Bolt	5

S.N.	Description	Qty
10	Bearing Clutch lifter thrust	1
11	Holder Clutch	1
12	Rod Clutch lifter	1
13	Spacer clutch	1
14	Nut Primary drive lock	1
15	Lever Assly. Clutch	1
16	Washer Primary Drive Gear	1
17	Seat judder spring	

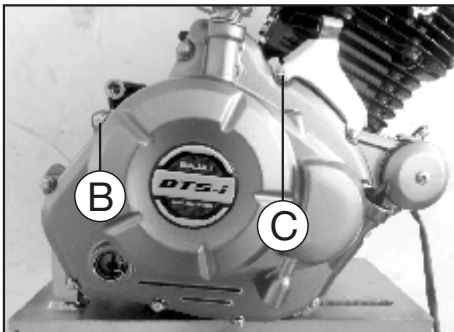
Engine RH : Clutch Side



Remove :

- 1 screw - (A)
- Starter motor cover

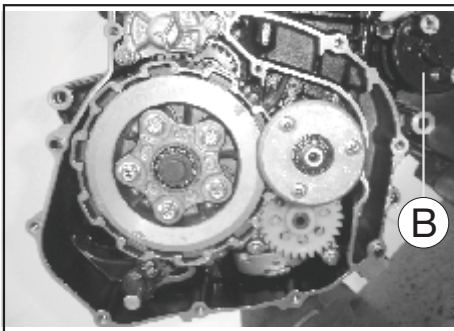
Note : The rod clutch lifter, plunger oil, plate plunger oil and spring joint may fall out of their respective places into the oil collection tray. If so, ensure that these are collected & accounted for before proceeding.



Remove :

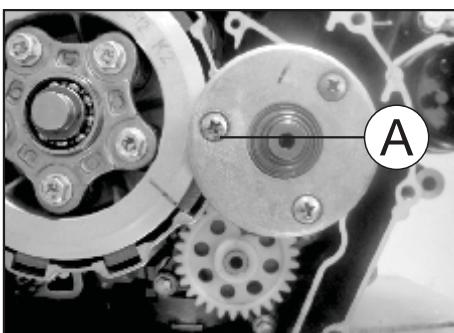
- 12 Clutch cover bolts (B)
- Bracket clutch cable (C)

Note : The rod clutch lifter, plunger oil, plate plunger oil and spring joint may fall out of their respective places into the oil collection tray. If so, ensure that these are collected & accounted for before proceeding.



Remove :

- 2 Dowels
- Clutch cover gasket
- Starter Motor (B)

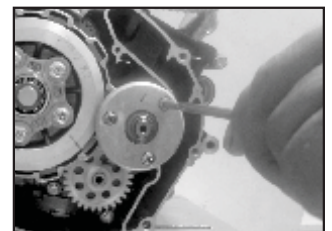


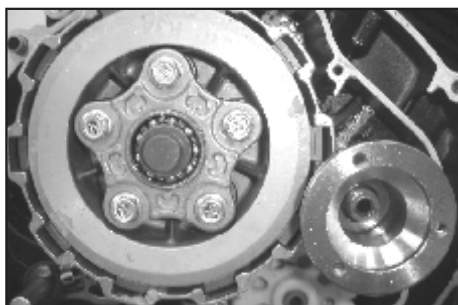
Using Sp. Tool : Primary Gear Holder 37 10DJ 28

Remove :

- 3 phillips head screws (A)
- Centrifugal oil filter cover
- Gasket

Note : Some amount of oil is trapped in cover and body of centrifugal oil filter, this oil should be drained into the oil tray.



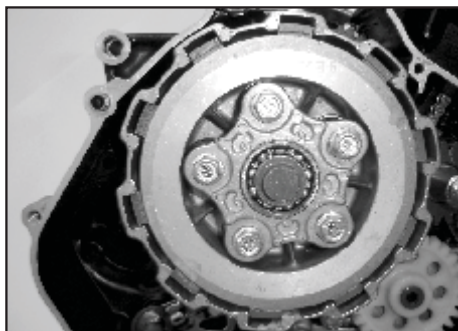


Using Sp Tool : Special Nut Puller - 37 10DJ43

Using Sp Tool : Primary Gear Holder - 3710DJ28

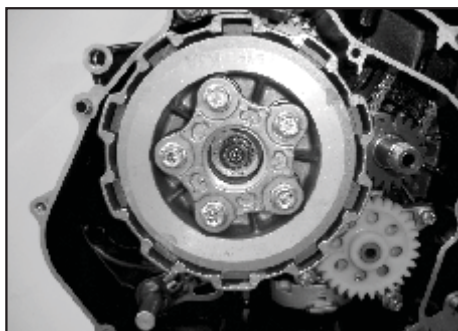
Remove :

- Centrifugal oil filter special nut
- Belleville washer
- Body centrifugal oil filter assly



Remove :

- Bearing with plunger

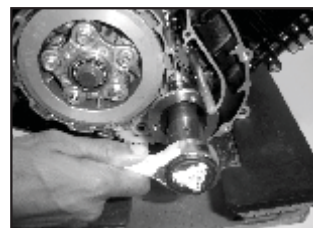


Using Sp Tool : Special Nut Puller - 37 10DJ 43

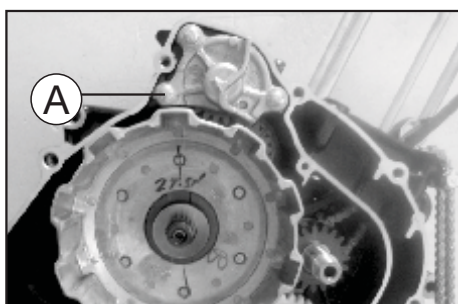
Using Sp Tool : Primary Gear Holder - 3710DJ28

Remove :

- Input shaft special nut
- Belleville washer
- Clutch assly comp
- Spacer

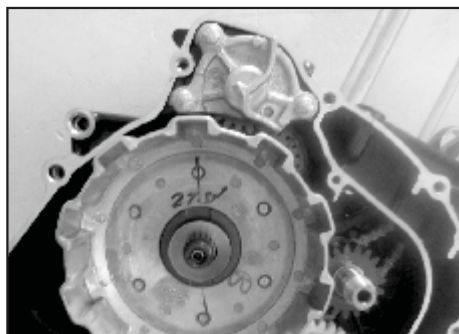


Note : The existing Special Nut Puller 37 10DJ 43 can be used by grinding the tool OD to 25.9 ± 0.1 mm



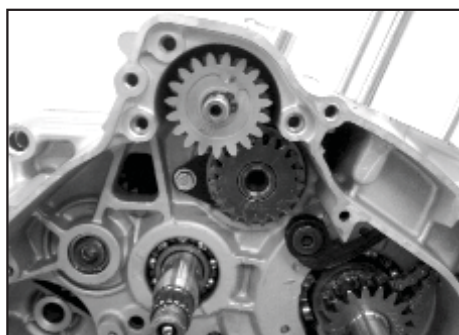
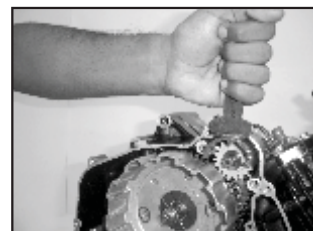
Remove :

- 3 Assly balancer Idler gear cover bolts (A)
- Cover
- Washer
- 2 Dowel

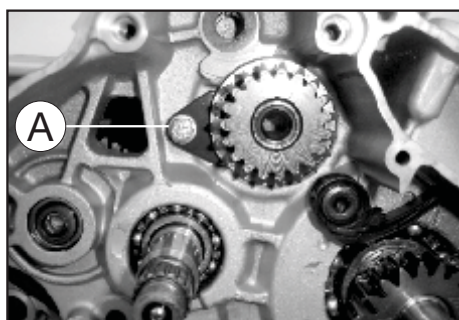
**Remove :**

- Clutch housing

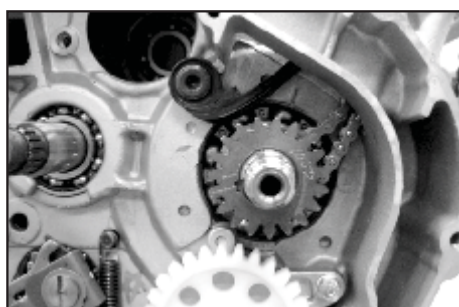
Note : For ease in removal of clutch house insert special tool (P. No.-37 10DJ 63) in Assly Balancer Idler Gear.

**Remove :**

- Assly balancer idler gear
- 2 Washer

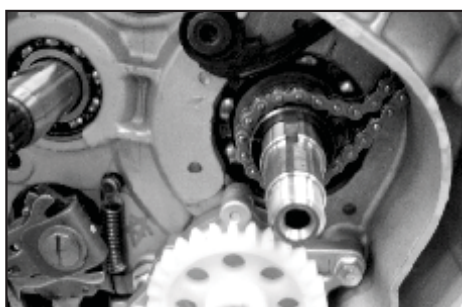
**Remove :**

- Bolt (A)
- Locking plate
- Body balancer gear assly

**Remove :**

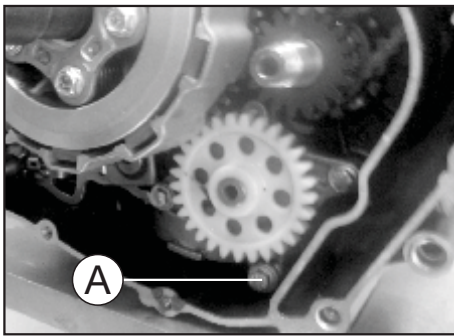
- Primary gear
- Square key

Note : Take care that square key does not fall inside the crankcase hollow portion while removing.

**Remove :**

- Cam chain
- Cam chain sprocket
- Parallel Pin



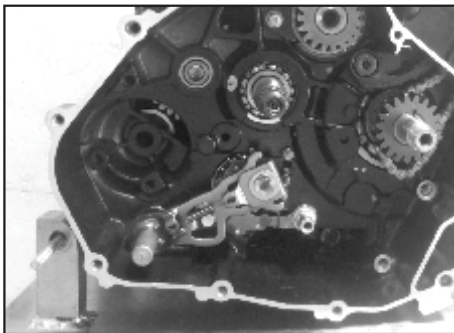


Remove :

- 3 Bolts (A)
- Oil pump assembly
- 2 Dowels

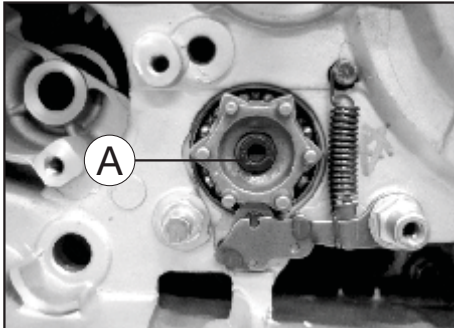
Warning : The oil pump may be hot, hence use suitable hand protection. Also, since the oil pump houses the oil strainer / mesh also, it may retain some quantity of oil. This oil may be hot. Hence proper care should be taken to drain it.

Note : The oil which is in the oil pump housing should also be drained out into the oil drain tray for measuring drained oil.



Remove :

- Gear change lever

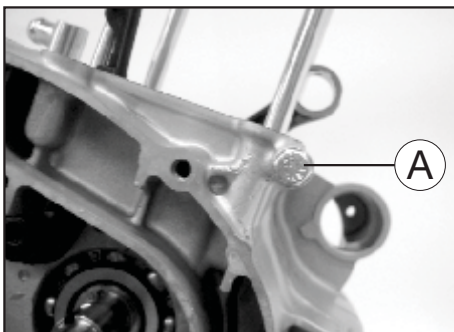


Remove :

- Spring
- Allen bolt (A)
- Guide gear
- Spacer
- Parallel Pin

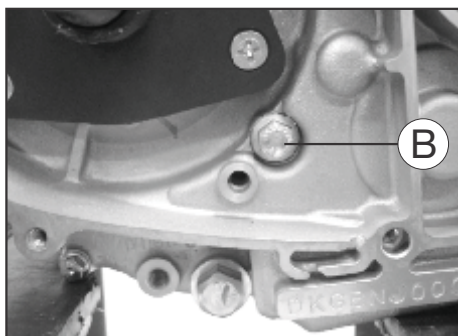
Note : Check and inspect the drum change arm stopper for free movement always.

Engine Central Part :

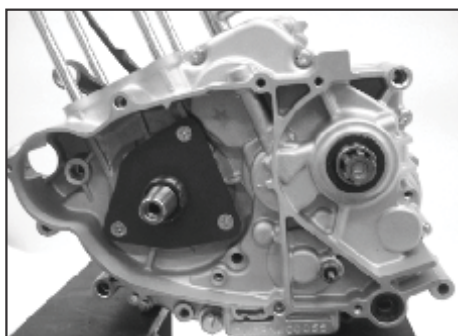


Remove :

- Bolt (A) on RH side crankcase (Clutch side)

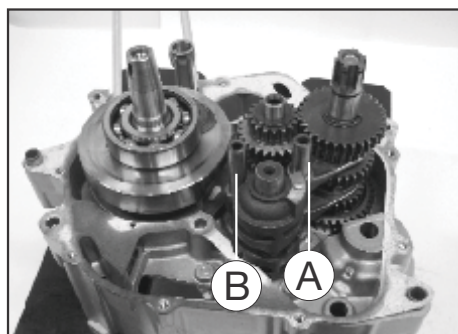
**Remove :**

- Bolt (B) on LH side crankcase (Magneto side)

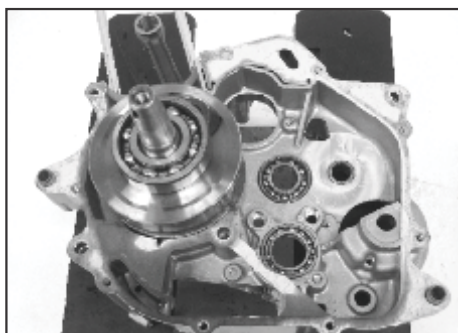
**Remove :**

- 8 bolts on LH side crankcase
- Split the Crankcase halves.

Note : Before separating crankcase halves confirm that all the crankcase joining bolts are removed and the sprocket cam drive with parallel pin on crankshaft assembly is removed.

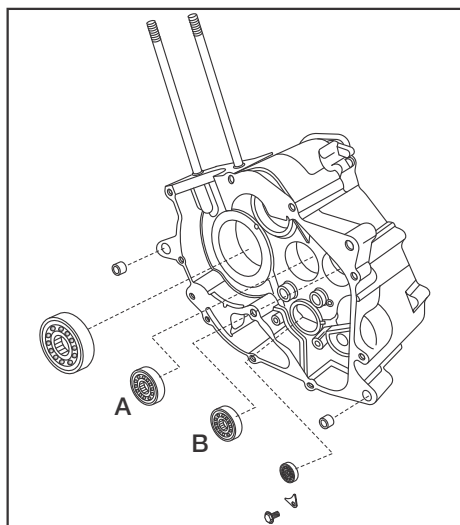
**Remove :**

- 2 Shafts (A) & (B) of gear shifter fork.
- 3 fork shifts (1 small for input 2 big for output shaft.
- 3 Rollers
- Drum change

**Remove :**

- Crankcase gasket
- 2 dowels
- Crankshaft assly

Air Filter

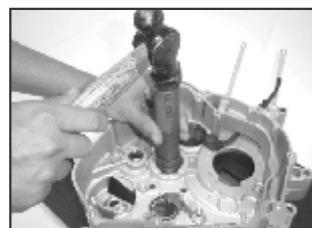


Crankcase Clutch Side :

Using Sp. Tool : Bearing Driver set-37 1030 61

Remove :

- Bearing (A) for input shaft assembly from crankcase RH



Using Sp. Tool : Bearing Extractor 37 1030 68

Remove :

- Needle roller bearing (B) for output shaft assembly from crankcase RH

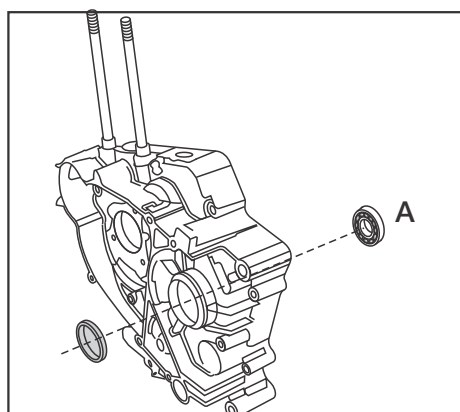
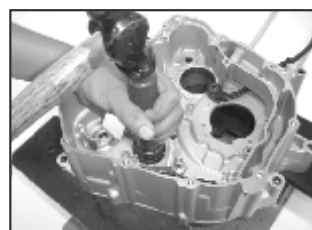


Crankcase Clutch Side :

Using Sp. Tool : Bearing Extractor 37 1030 72

Remove :

- Bearing (C) for drum change



Crankcase Magneto Side :

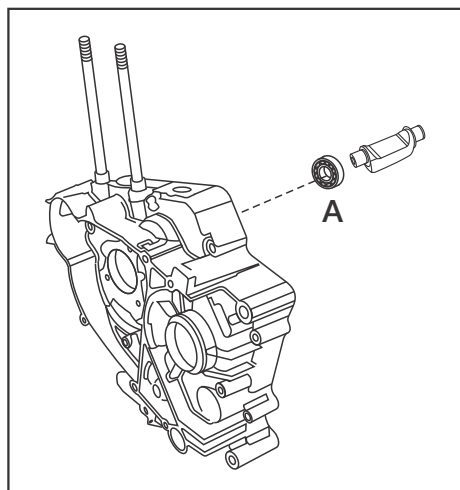
Remove :

- Oil Seal

Using Sp. Tool : Bearing Extractor 37 1030 72

Remove :

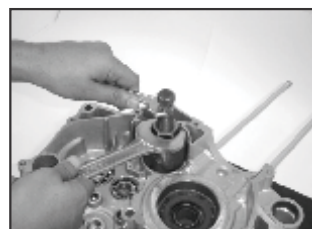
- Bearing (A) for output shaft assembly from crankcase LH

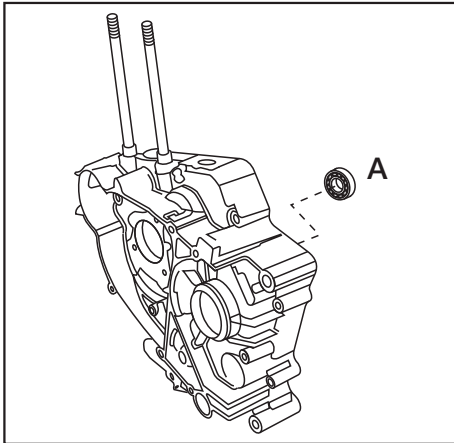


Using Sp. Tool : Bearing Extractor - 37 10DJ 77

Remove :

- Bearing (A) for body balancer gear bearing from crankcase LH

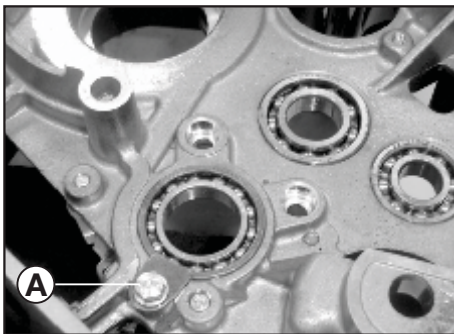
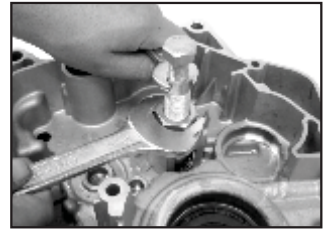




Using Sp. Tool : Bearing Extractor - 37 10DJ 76

Remove :

- Bearing (A) for input shaft assembly from crankcase LH



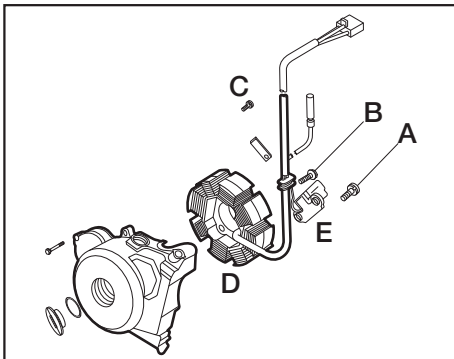
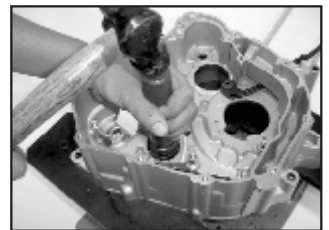
Remove :

- Bolt (A)
- Bearing stopper

Using Sp. Tool : Bearing Driver set 371030 74

Remove :

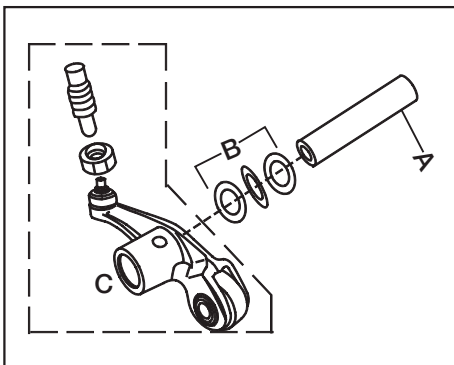
- Bearing for gear change drum from crankcase



Magneto Cover :

Remove :

- 2 phillips head screws (A) of Pulsar coil (E) mounting.
- Bolts (B) of stator assembly.
- 1 phillips head screws (C) of stopper
- Stator coil assembly (D) along with Pulsar coil.

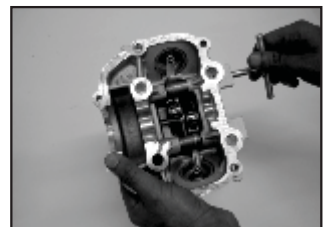


Cylinder Head Cover :

Using Sp. Tool : Rocker pin remover - 37 10DH35

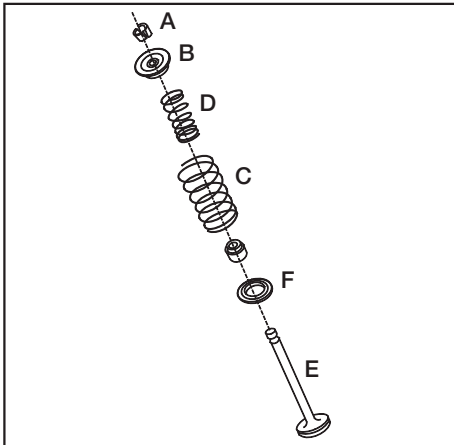
Remove :

- Rocker shaft (A)
- Rocker arm (C)
- Set of washers (1 wave & 2 plain) (B)



Note : Similarly remove the other Rocker shaft & Rocker Arm from

Top End



Cylinder Head :

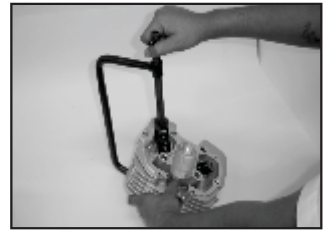
Using Sp. Tool : Valve Spring Compressor - 37 1031 07

Using Sp. Tool : Adapter - 37 10DJ 78

Remove :

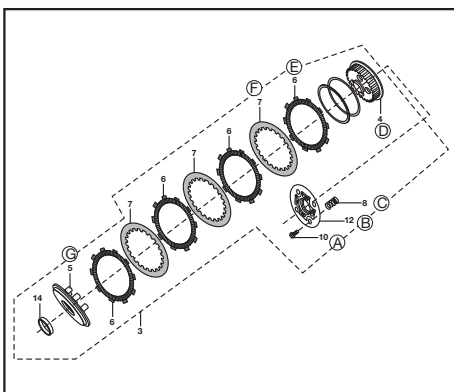
- 2 Cotter valve (A)
- Valve spring retainer (B)
- Springs inner (D)
- Spring outer (C)
- Valve from below (E)
- Washer (F)
- Valve steam seal (G)

Similarly carry out the same procedure to dismantle the other valve from the cylinder head assembly.



Chain Tensioner Assembly :

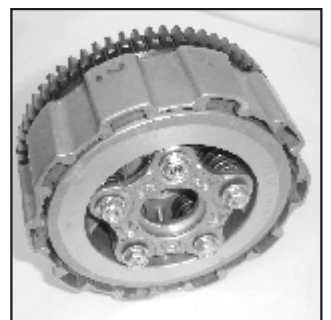
It is not recommended to Dismantled Chain Tensioner Assly.

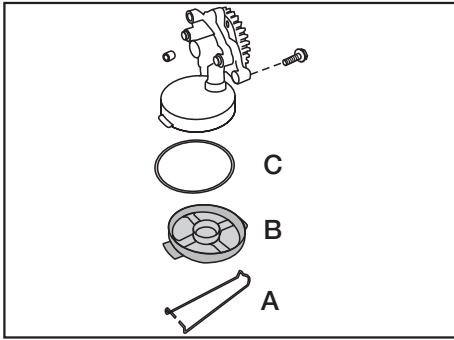


Clutch Assembly :

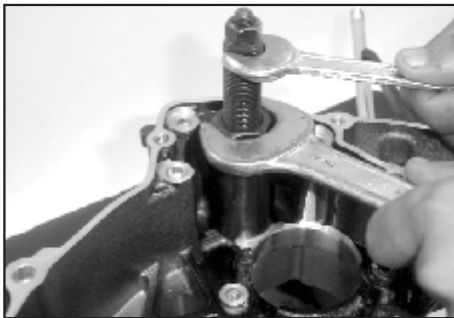
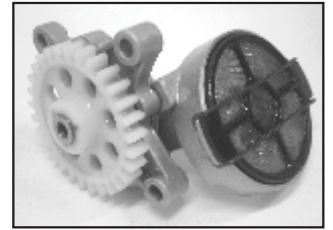
Remove :

- 4 bolts (A)
- Holder clutch (B)
- 4 springs (C)
- Clutch center (D)
- Plain washer
- Belleville washer
- Disc clutch friction (E)
- Plate clutch (F)
- Plate clutch pressure (G) (Wheel clutch)
- Clutch housing
- Thrust washer - conical from inner ID



**Oil Pump :****Remove :**

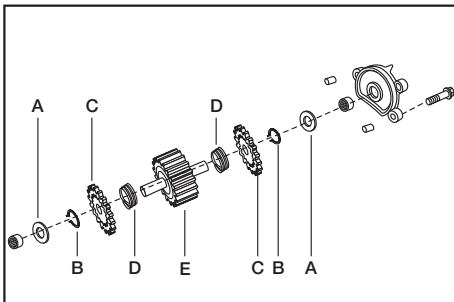
- Clip (A)
- Oil strainer element (B) with 'O' ring (C)

**Bearing Removal from Assly Balancer Idler Gear Cover and Crankcase RH**

Using Sp. Tool : Bearing Extractor - 37 10CD 30

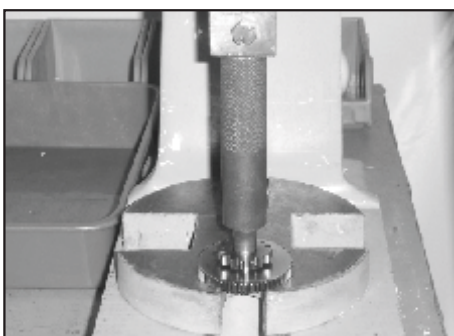
Remove :

- Needle roller bearing from RH crankcase.

**Assembly Balancer Idler Gear****Remove :**

- Thrust washers (A)
- Circlip (B) from any one side of the gear
- Scissor gear (C)
- Torsion Spring (D)

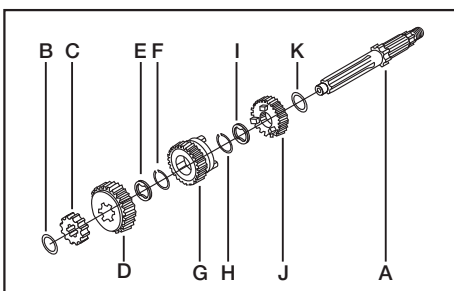
Similarly carry out the same procedure on other side of the gear to dismantle the idler gear completely.

**Gear Complete Starter Counter Assembly**

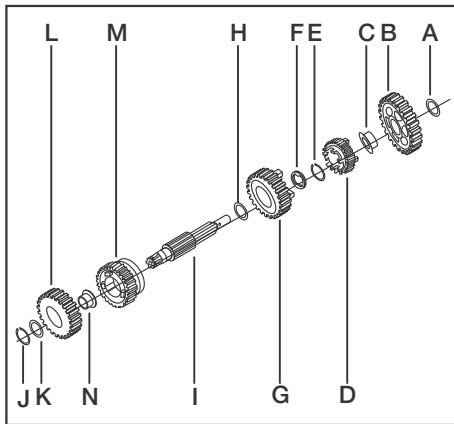
- Place the gear comp. starter counter assly on the arbor press as shown in the figure.
- Using Bearing driver set (P. No. 37 1030 61)

Remove :

- Needle roller bearing.

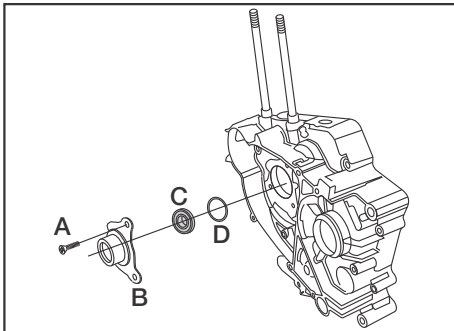
**Input Shaft Assembly**

- 1st gear is integral with the shaft (A)
- Remove thrust washer (B) and slide out gear 2nd drive (C)
- Remove gear 5th drive (D) and collect the splined washer (E) behind it.
- Remove circlip (F) and remove gear 3rd drive (G)
- Remove circlip (H) and collect the splined washer (I)
- Remove gear 4th (J) and collect the thrust washer (K) behind it.



Output Shaft Assembly

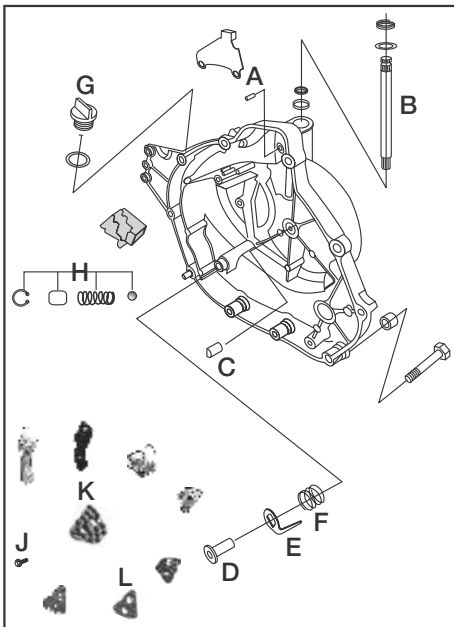
- There are no integral gears on output shaft.
- Remove thrust washer (A) and slide off the gear 1st driven (B) and collect the steel bush (1st driven gear is mounted on steel bush (C) with shoulder ring
- Slide off the gear 4th driven (D).
- Remove circlip (E) and spline washer (F). Remove the gear 3rd driven (G).
- Collect the thrust washer (H) behind the 3rd gear on output shaft (I)
- Remove circlip (J) and collect the washer (K)
- Remove gear 2nd driven (L) mounted on bush (N) with shoulder ring
- Slide out gear 5th driven (M)



Crankcase Magneto Side

Remove :

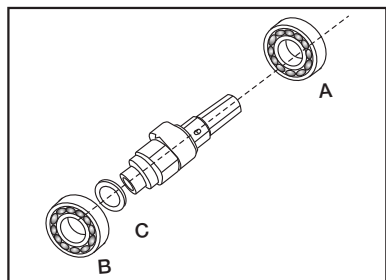
- 3 Screws (A)
- Guide starter assembly (B) on which oil seal is mounted.
- Oil seal (C)
- Damper (D)



Clutch Cover

Remove :

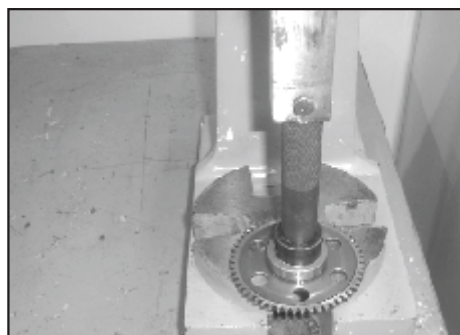
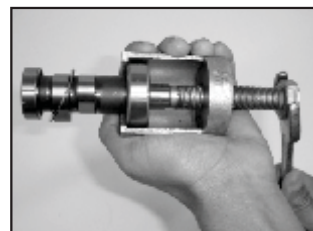
- Parallel Pin (A)
- Clutch shaft release completely (B) by slightly rotating it so,
- Rack (C)
- Plunger oil (D)
- Plate plunger oil (E)
- Spring joint 'A' (F)
- Oil filler plug (G)
- Circlip & Valve assembly (H)
- Wire clip (I)
- Oil inspection window
- Flanged bolt (8 Nos.) (J)
- Set of damper (K)
- Set of plate (L)
- Grommet (M)

**Camshaft Dismantling**

Using Special Tool : Bearing Pullers -
37 10DJ 74 for Bearing 39 2542 20, 37
10DJ 75 for Bearing 39 1880 20

Remove :

- Bigger Bearing (A) using sp. tool from camshaft assembly
- Small Bearing (B)
- Washer (C)

**Gear Starter Clutch****Remove :**

- Place the gear starter clutch on arbor press as shown in photo
- Using Bearing Driver Set (P. No.: 37 1030 61)

Remove :

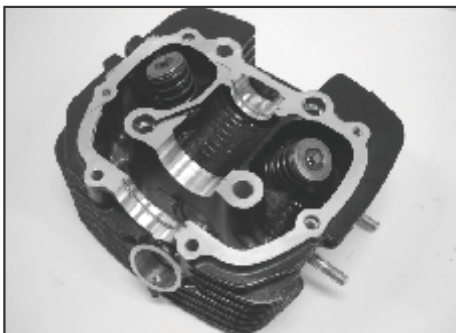
- Needle roller bearing

Spark Plug :



- Type / Heat value - RG 4 HC
- Gap between electrodes - 0.6 to 0.8 mm
- Electrode condition - No erosion
- Colour at the electrodes tip - Brownish
- Threads of reach portion - Ok / No damage

Cylinder Head & Head Cover :



- Mating surface : No warpage/No scratches (Service limit for warpage :0.05 mm)
- 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 (6 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
- Oil gallery free from deposits
- Dummy plug threads intact
- Placement of shims between rocker arm and head cover.
- Presence of 20 rollers in each outer cage of rocker arm
- Tappet screw worn out / threads damaged
- Axial play in rollers.

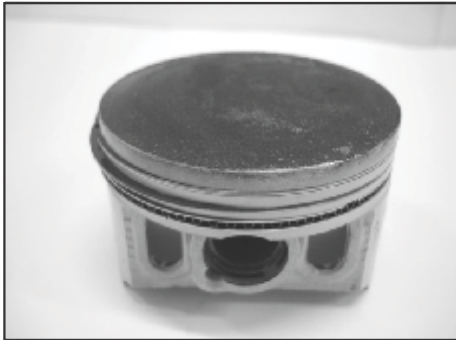
Cylinder Block :



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



Piston :



- Grouping mark with respect to cylinder block must be same.
- Diameter of the piston - As mentioned in service data
- No scoring marks on the skirt
- No blow by marks
- No seizure marks.
- Manufacturing / Identification code and date code
- Piston pin - scratches dent marks
- Groove for piston pin lock

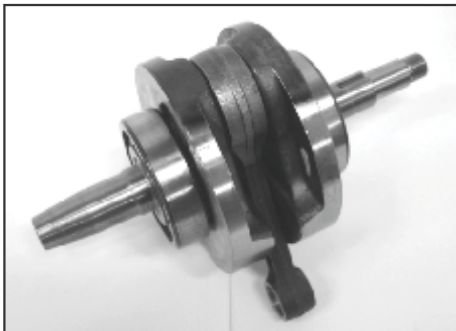
Rings :



- 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 Piston grooves - No stickyness.
- Piston ring identification mark

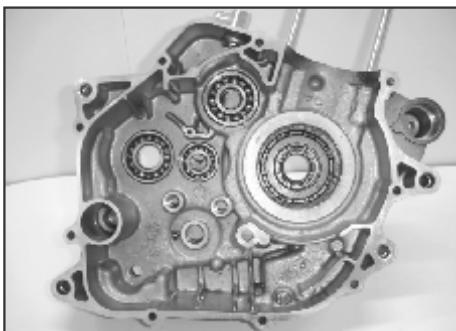
Top Ring : TOP 1, Second Ring : TOP 2

Crankshaft :



- Big end axial/radial play : As per Service data.
- Run out : As per Service data.
- Threading condition : Ok / No damages.
- Key way condition : Ok / No damages.
- Big end bearing : Free rotation / Jam
- Con-rod : No bending / twisting
- Oil passage : No blockage.
- Square slot key way for primary gear
- Identification mark 'DK' on connecting rod

Crankcase :



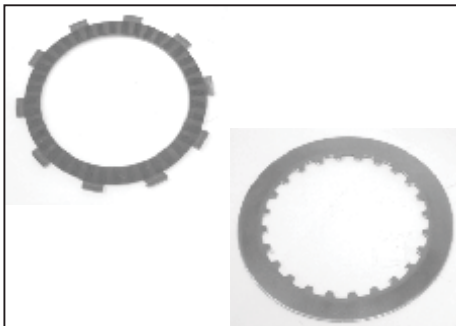
- Mating surface:Smooth / No scratches.
- No Cracks, damages, breakage.
- Bearing seat, oil seal seat and proper pressing/positioning of oil seals, needle roller, ball bearings freely rotating
- No Blow holes in casting
- Breather pipe / hole:No clogging
- Oil passage:Clean / No clogging
- Threads of holes & studs:Ok / No damages
- 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 & code : As per specification numbers
- Bearing Rotation : Free Rotation

Clutch :



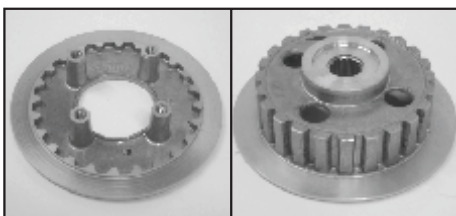
- Clutch plates / Steel plates - Thickness as per service data
- Warpage as per service data
- No Seizure / Damaged bonding of friction material
- Tangs (Lugs) / Teeth - No wearing
- Thrust plate cracked
- No Foreign material embedded
- Colour change / Signs of overheating if any
- No uneven wear pattern
- Conical face machining for spacer clutch

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 Input shaft

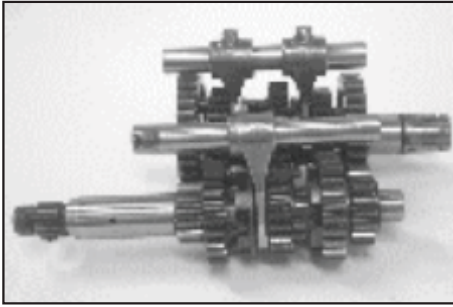
Clutch Hub / Clutch Wheel :



- 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
- Smoothness in ID of clutch wheel
- Spacer free movement on clutch wheel
- Presence of plain and wave washer in 1st clutch plate



Transmission :



- No Teeth breakage or crack
- No Wear pattern on teeth
- No Wear of dog teeth & dog holes on gear
- No Seizure mark on gear seat.
- Free movement of gears on the shaft (1st Output, 2nd Output, 3rd Output, 4th Input and 5th input gears are free on the respective shaft)
- Free movement of Fork shift on the fork shaft
- Gear shift drum groove profile - Ok / No damage - Wear
- Free movement of Fork shift guide roller in the drum groove

Drum :



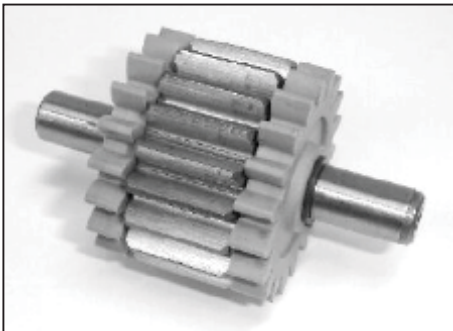
- Presence of Neutral rivet on the Drum
- Free rotation of Drum in LH crankcase parent hole.
- Inner hollow portion must be free from casting dust / burr
- Groove profile width as per Service Data
- Hole available for parallel pin
- Drum profile free from Hi-Spot for free sliding of bush

Camshaft :



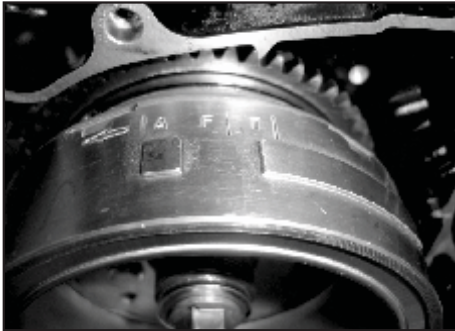
- Presence of locating washer
- Free rotation of bearing
- Lobe height - as per Service Data
- No cut / wear marks on cam

Assembly Balancer Idler Gear :



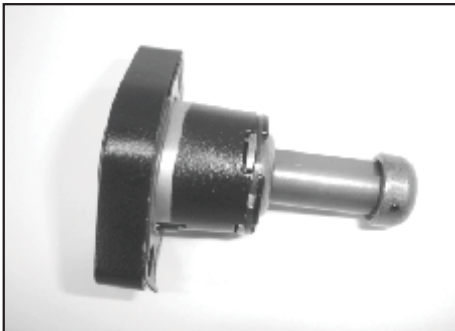
- Nylon scissor gears worn out
- Circlip on either side
- Torsion spring sustaining adequate tension
- Torsion spring locking groove / hole oblonged or damaged.

Rotor :



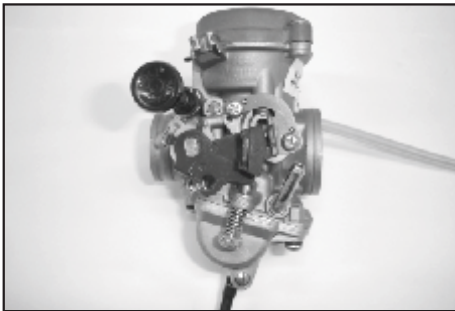
- Smoothly key way machined
- Threading for holding rotor puller
- 'T' mark / line mark punched on rotor periphery
- Body threads for allen bolt fixing intact
- One way clutch body groove profile - Ok / No wear signs
- Proper seating of rollers, springs, bush in one way clutch.

Chain Tensioner :



- Sealing bolt body threads intact
- Front free movement of push rod
- Push rod forward end cap rivet intact / loose
- Groove for circlip fitment
- Free rotation of internal screw

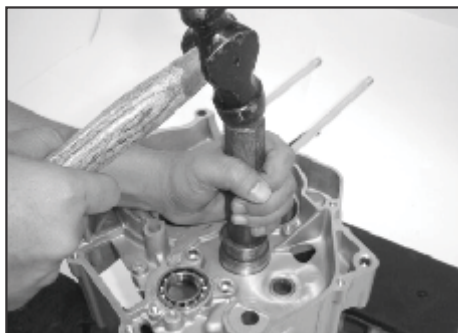
Carburettor



- Float
 - No Puncture
 - Alignment w.r.t. 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.
- Volume Control 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.



Fitting of Oil Seals and Bearings :



Crankcase RH (Clutch Side)

Use Bearing Driver set (P. No. 37 1030 74)

Fit :

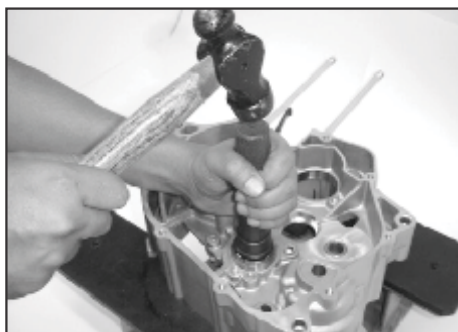
- Bearing for Input Shaft Assembly



Use Bearing Driver set (P. No. 37 1030 68)

Fit :

- Needle roller Bearing for Output Shaft Assembly



Use Bearing Driver set (P. No. 37 1030 74)

Fit :

- Bearing for drum change

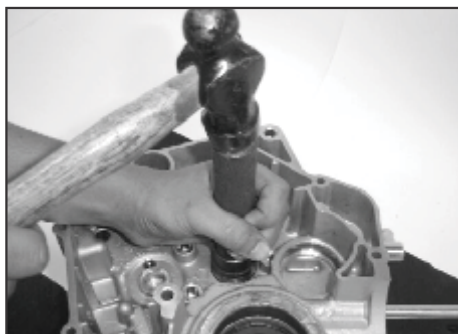


Crankcase LH (Magneto Side)

Use Bearing Driver set (P. No. 37 1030 74)

Fit :

- Bearing for Output Shaft

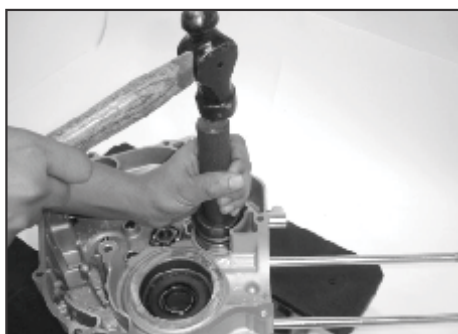


Use Bearing Driver set (P. No. 37 1030 73)

Fit :

- Bearing for Input Shaft

Note : Do not use inner guide while fitting the bearing for 'Input Shaft' in 'Crankcase LH' as this will damage the protruding lug of crankcase casting. Sealed bearings must face crankcase side / protruding lug side.



Use Bearing Driver set (P. No. 37 1030 74)

Fit :

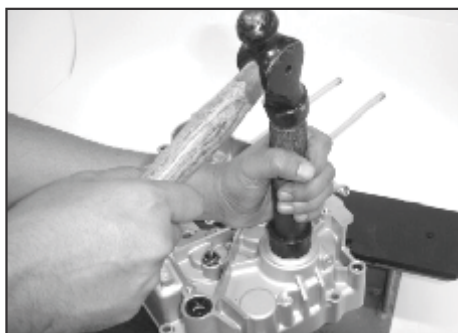
- Bearing for Body Balancer Gear Assembly



Use Bearing Driver set (P. No. 37 1030 61)

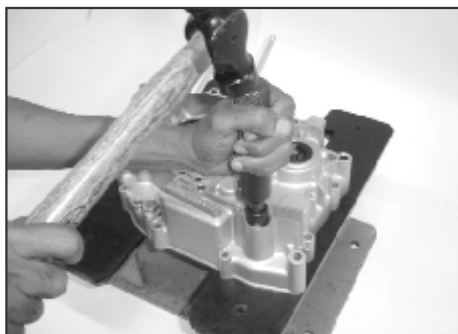
Fit :

- Oil seal on Guide Starter Assembly
- 'O' ring on Guide Starter Assembly
- Damper



Fit :

- Oil seal for Output Shaft



Fit :

- Oil seal for Gear Changer Lever

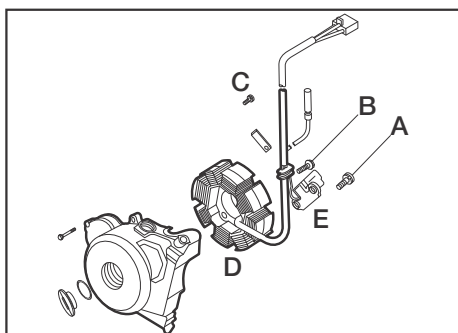


Clutch Cover

Fit :

- Oil seal for Clutch Lever on Clutch Cover

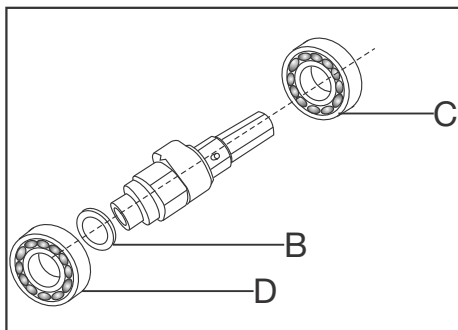
**Assembly of
Sub assemblies :**



Magneto Cover

Fit :

- Harness in the Cover
- 'Stopper' and tighten the 'Screw' (Use Loctite 243)
- 'Pulsar Coil' and tighten 2 'Screws' (Use Loctite 243)
- 'Stator Assembly' and tighten 2 bolts (Use Loctite 243)
- 2 'Dowel Pins'



Camshaft Assembly

Fit :

- Washer (B)

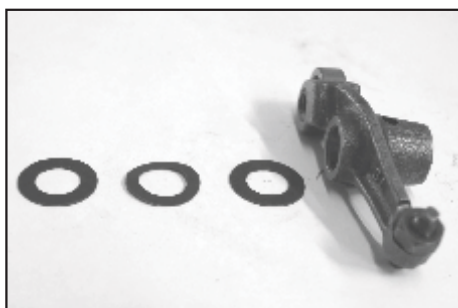


- Using Arbour Press

Fit :

- Small Bearing (D)
- Bigger Bearing (C)

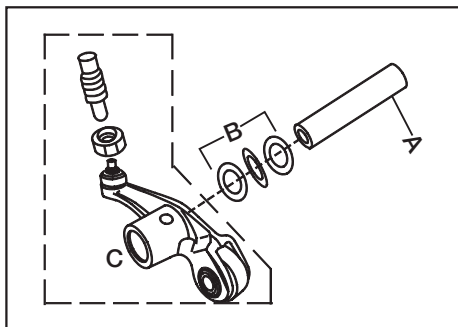
Note : Apply thin layer of oil on sliding surfaces of shaft for smooth sliding of bearing.



Assembling Head Cover

Fit :

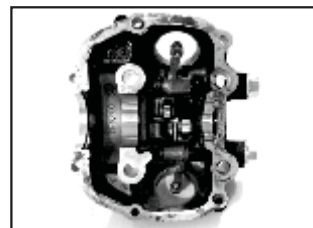
- Roller rocker arm
- Tappet screw
- Tappet nut



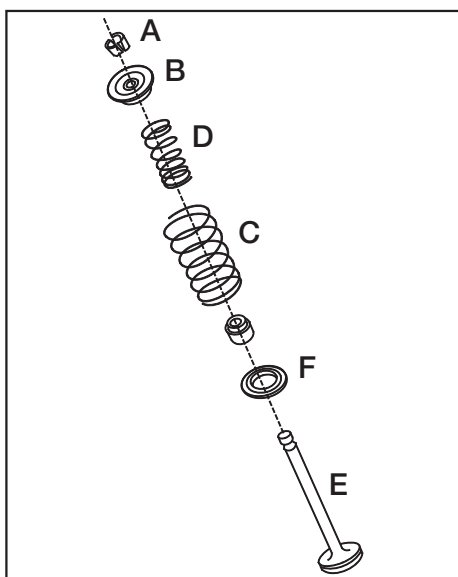
Assembling Head Cover

Fit :

- Roller rocker arm (C)
- Set of 2 plan & 1 wave washer (B)
- Rocker arm shaft (A)
- Gaskets
- Dummy plugs



Note : Repeat the same procedure for fitment of other roller rocker.



Cylinder Head

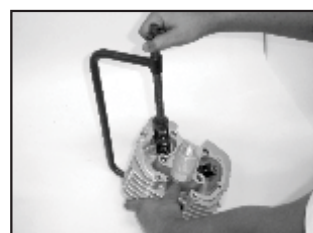
Fit :

- Valve steam seals
- Slide the valve from below
- Place the Valve Springs (C&D) (Inner & Outer closed coiled ends placed at the bottom side)
- Valve spring retainer (B)

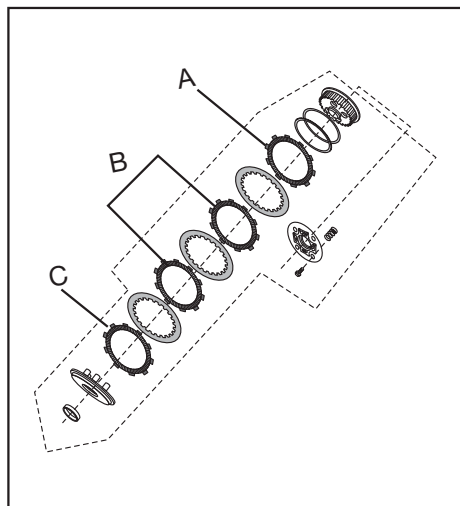
Using the Sp. Tool Valve Spring Compressor 37 1031 07 and Adaptor 37 10DJ 78

- Press the valve springs
- Fit the cotter valves (A) and release the special tool

Similarly carry out the same procedure to assemble the other Valve in the Cylinder head.



Note : Ensure that there is no valve leakage. If required pour the petrol in intake and exhaust manifold & observe leakage at



Clutch Assembly

Assemble the clutch plates and friction plates in clutch center / clutch hub.

Fit :

- Plain Washer in Clutch Center / Clutch Hub
- Belleville Washer
- Clutch Plate (A) 1 Nos
- Pressure Plate 5 Nos
- Clutch Plate (B) 4 Nos
- Clutch Plate (C) 1 Nos
- Wheel Clutch
- Springs 4 Nos.
- Thrust Plate
- Bolt



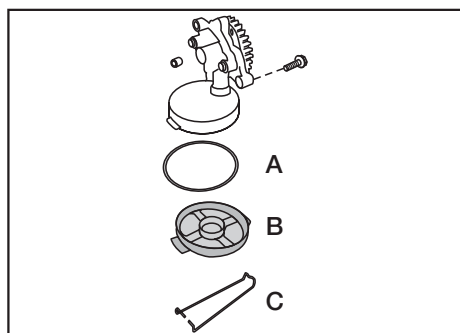
Align the Clutch Assembly into Clutch Housing

Fit :

- Spacer
- Clutch Assly

Note :

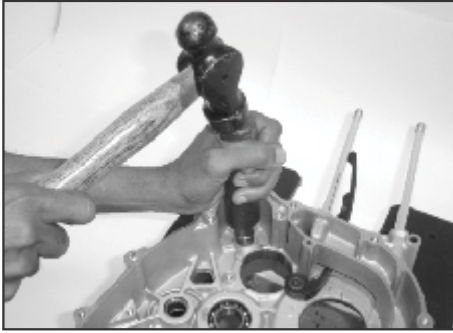
- **Ensure concentricity of Thrust Plate w.r.to Clutch Wheel, Clutch Center, Clutch Housing.**



Oil Pump

Fit :

- 'O' ring (A) on the Oil Strainer (B)
- Clip (C)



Assembly Balancer Idler Gear Bearing

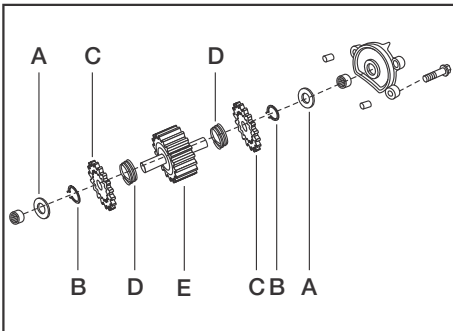
Using Bearing Driver set (P. No.: 37 1030 61)

Fit :

- Needle roller bearings in crankcase RH and Cover

Note :

Apply oil on bearing OD before pressing bearings for smooth bearing fitment.



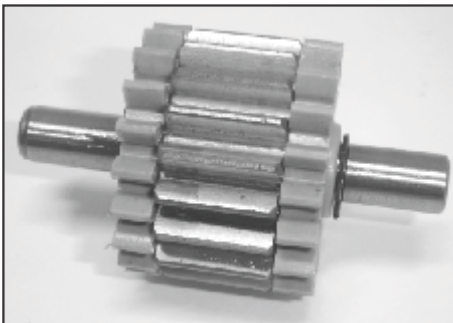
Fit :

- Springs (D)
- Scissor Gears (C)
- Circlip (B)
- Thrust washer

Similarly carry out the same procedure on other side of the gear to assemble the Balancer Idler Gear completely.

Note :

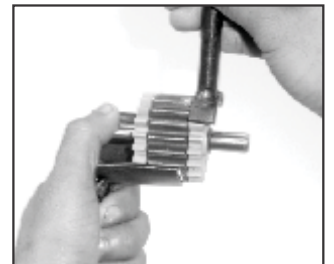
Ensure that one spring end butts against spring dowel in Balancer Idler Gear and the other end of spring should but



Loading the assembly Balancer Idler Gear

Using Sp. Tool : Balancer Gear Holder 3710DJ63

- Slide the Assembly Balancer Idler Gear in special tool (A)
- Rotate the Scissor Gear anti-clockwise till the lug contacts the torsion spring.
- Using a marker, mark the Balancer Idler Gear & Scissor Gear Tooth



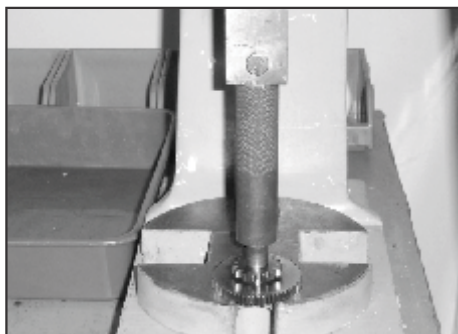
Using Special Tool

- Turn the Scissor Gear anticlockwise such that 2 teeth pre-load is achieved. This can be confirmed by the markings done previously.
- Holding the Scissor Gear pre-loaded in the above position slide the Scissor Gear into the special tool completely.

Repeat the same procedure for loading the other Scissor Gear.

Note :

Keep this Assembly balancer idler gear in loaded condition with special

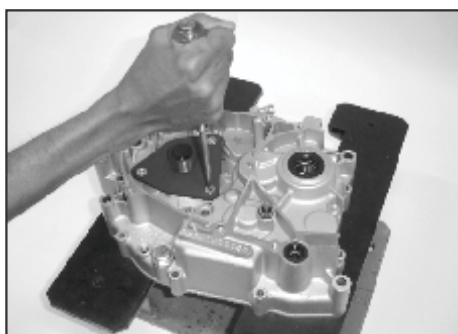


Gear Complete Starter Counter Assembly

Using Arbour Press

Fit :

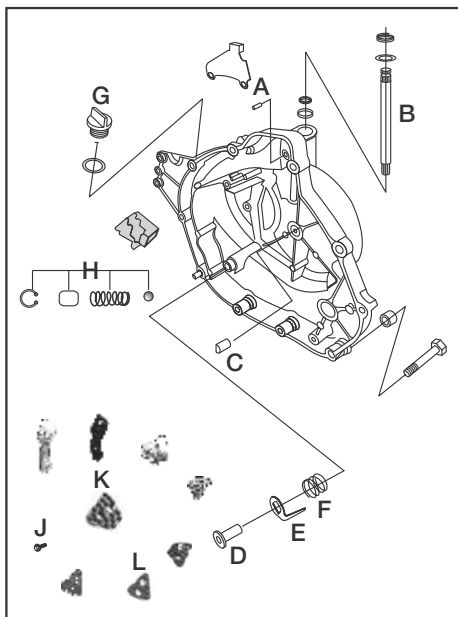
- Needle Roller Bearing



Crankcase LH (Magneto Side)

Fit :

- Guide Starter Assembly
- 3 Screws (A) (Use loctite 243)



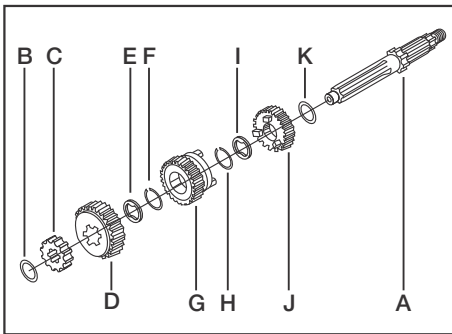
Clutch Cover

Fit :

- Valve assembly and circlip (H)
- Oil inspection window
- Wire clip (I)
- Set dampers (K)
- Set of plates (L)
- Bolts (J)
- Rack (C)
- Shaft Clutch Release (B) in Clutch Cover by rotating it slightly to match the teeth.
- Parallel Pin (A) to lock the Shaft Clutch Release
- Washer
- Spring torsion clutch lever
- External lever
- Bolt
- Spring joint 'A' (F)
- Plunger Plate (E)
- Plunger Plate (E)
- Plunger oil (D)
- 2 Dowel Pins
- Grommet (M)
- Oil feeler plug (G)

Apply loctite 243 to all damper fitment bolts.

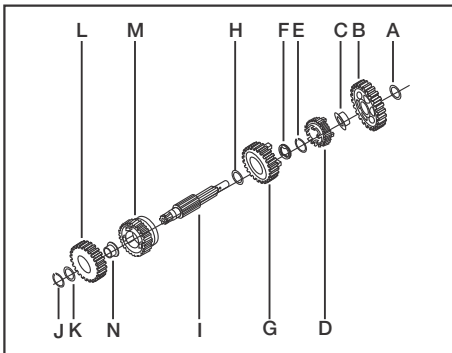
Note : Ensure fitment of set of dampers and plate before fitting the above.



Input Shaft Assembly

Fit : From LH side of shaft (A)

- Thrust washer (K)
- Gear 4th (J)
- Splined washer (I)
- Circlip (H)
- Gear 3rd drive (G)
- Circlip (F)
- Splined washer (E)
- Gear 5th drive (D)
- Gear 2nd drive (C)
- Thrust washer (B)



Output Shaft Assembly

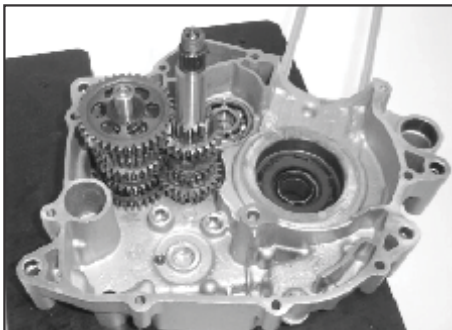
Fit : from LH side of shaft

- Gear 5th driven (M)
- Bush (N) with shoulder ring
- Gear 2nd driven (L)
- Washer (K)
- Circlip (J)

Fit : from RH side of shaft

- Thrust washer (H) behind the 3rd gear on output shaft
- Gear 3rd driven (G)
- Spline washer (F).
- Circlip (E)
- Gear 4th driven (D)
- Steel bush (C) with shoulder ring
- Gear 1st driven (B)
- Thrust washer (A)

Engine Assembling

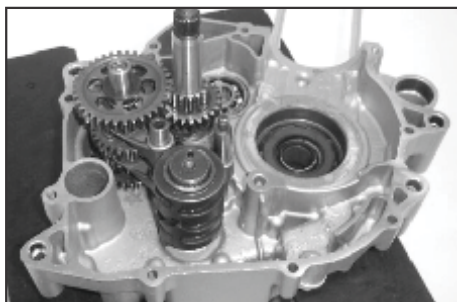


Fit : (In Magneto side Crankcase)

- Input and Output Shaft Assembly simultaneously.
- Fork shifts along with rollers on Input and Output Shaft Assembly (2 bigger fork shifts on output shaft and 1 smaller on input shaft).

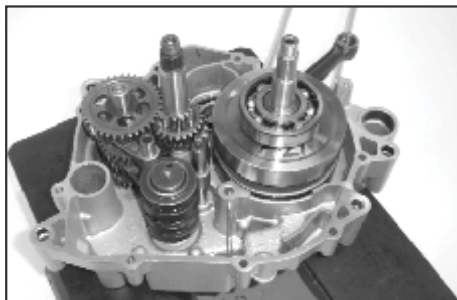
Note :

For ease of assembly of gears, remove gear 1st driven and insert both the input and output shaft assemblies with gears in mesh into their respective bearings. The gear box should be in neutral gear before 'RH Crankcase' is assembled on to 'LH Crankcase'.



Fit :

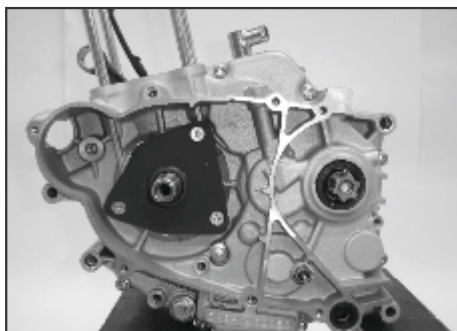
- Drum Change
- Shaft Gear Shift
- 2 Dowels
- Gasket



Fit :

- Crankshaft

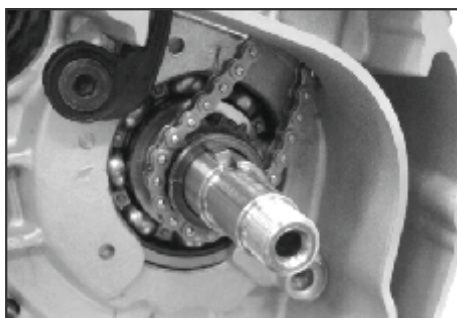
Caution : Use a sharp blade or knife to cut off any protruding 'Gasket'. This is very important for preventing any oil leakage from 'Crankcase' and 'Cylinder Block Joint'. Don't apply grease / any adhesive to 'Crankcase Gasket' as these 'Gasket' when comes in contact with oil expands and seals hidden cavities.



Fit :

- Crankcase RH
- Bolts (LH & RH Side)

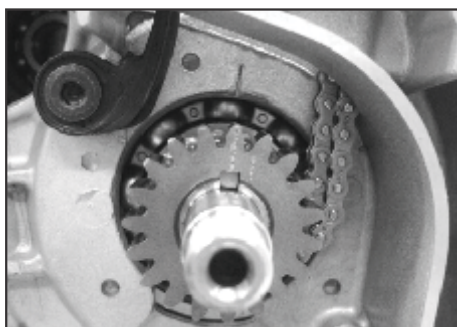
Caution : Check oil supply to big end bearing by pumping oil in the clutch side end of crankshaft and let oil come out of con-rod big end sides.



Fit :

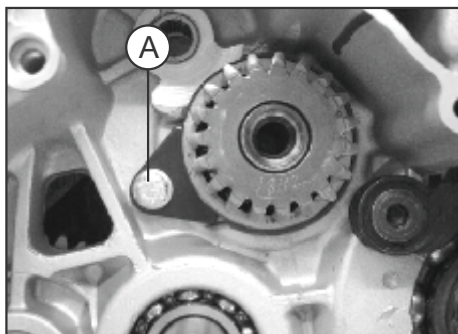
- Parallel Pin.
- Sprocket Cam Drive
- Cam Chain

Note : Hold the cam chain upright using a soft copper wire or a thread.



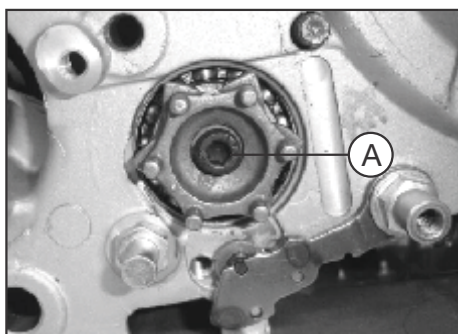
Fit :

- 'Square Key
- 'Primary Gear'.



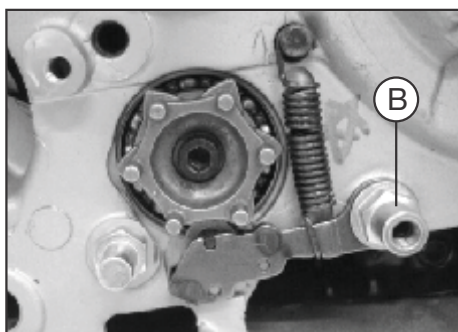
Fit :

- Body Balancer Gear
- Lock
- Bolt (A) (Use Loctite 243)



Fit :

- Parallel Pin
- Spacer
- Guide gear shifter
- Allen Bolt (A)

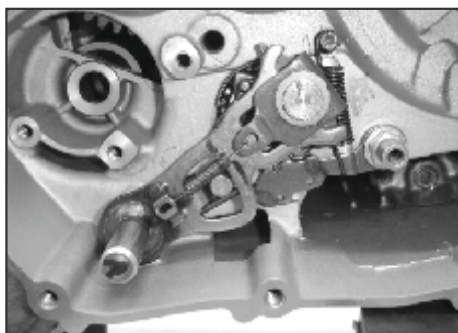


Fit :

- Spring

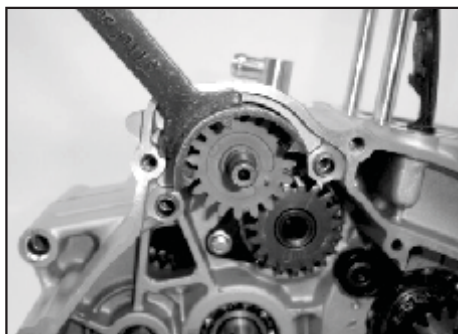
Note :

- Apply Loctite 638 at 'Bolt Shift Change' (B) if removed.**
- Ensure free movement on 'Stopper Gear Shift' in 'Bolt Shift Change'.**



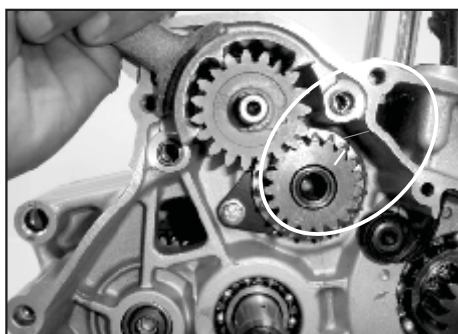
Fit :

- Gear change lever assembly



Fit :

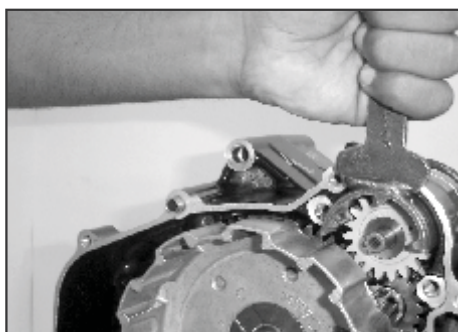
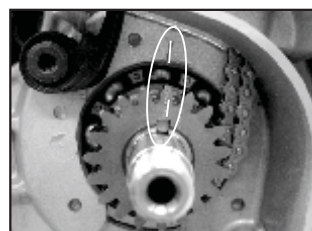
- Thrust Washer
- Assly Balancer Idler Gear with Special Tool
- Thrust washer



Fit :

Align gear timing marks of ..

- Primary gear mark w.r.t crankcase mark
- Body balancer assembly mark w.r.t crankcase mark

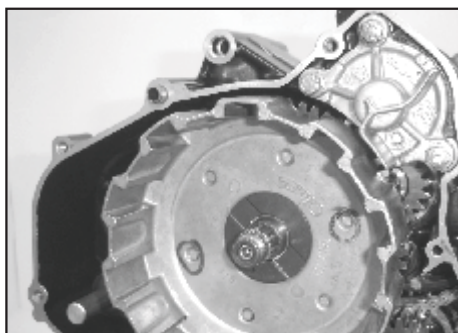


Fit :

- Clutch housing

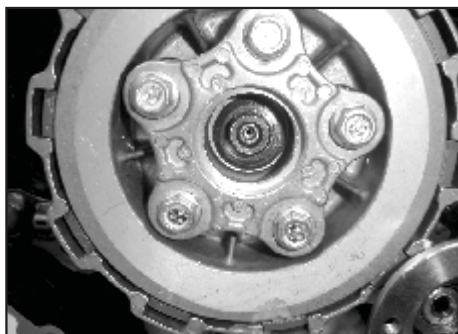
Note :

- ***Ensure perfect matching of gear alignment marks w.r.to crankcase marks.***
- ***Refer the skill tips section for understanding procedure for gear alignment marks.***



Fit :

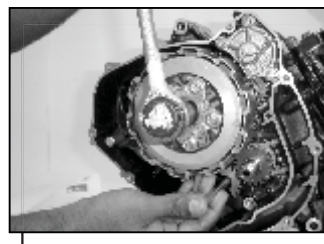
- 2 Dowels
- Assly Balancer Idler Gear Cover
- 3 Bolt



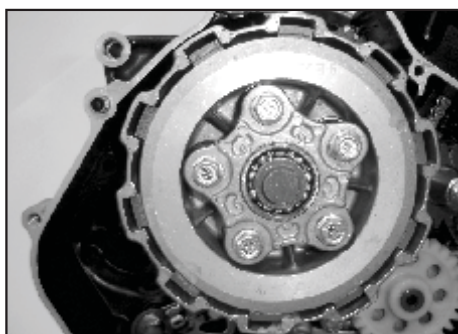
Using Spl Tool - Primary gear holder : 37 10DJ 28 & Special Nut : 37 10DJ 43

Fit :

- Spacer
- Clutch Assembly Complete
- Washer
- Special Nut

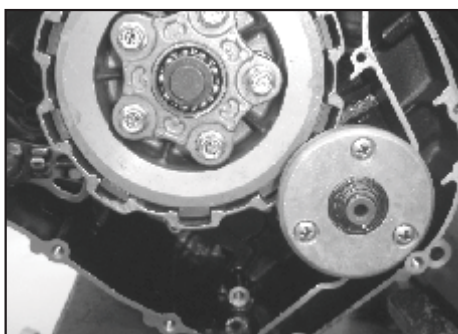


Note : Special nut for input shaft has LH threads.



Fit :

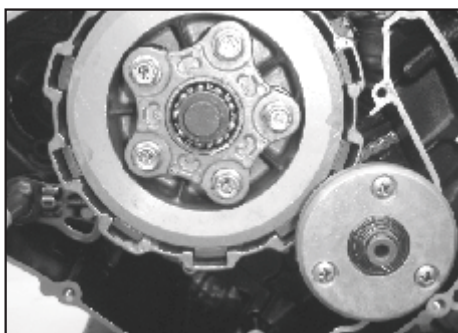
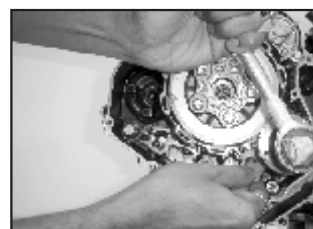
- Bearing with plunger



Using Special Tool : Primary Gear Holder - 37 10DJ 28 and Centrifugal Oil Filter Nut - 37 10DJ 43

Fit :

- Centrifugal Oil Filter
- Washer
- Special Nut

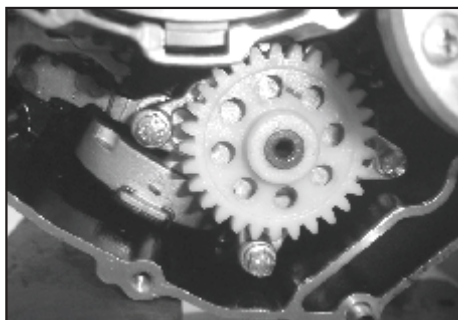


Using Special tool : Primary gear holder 37 10DJ 28

Fit :

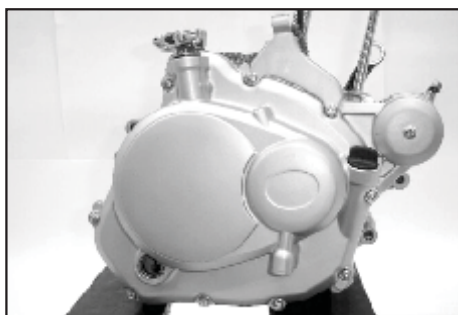
- Gasket
- 3 screws
- Cover





Fit :

- 2 Dowels
- Oil Pump Assembly
- 3 Bolts

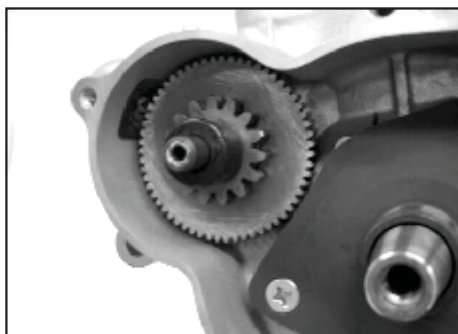


Fit :

- Starter Motor
- Clutch cover gasket
- 2 Dowels

Note : *Do not apply any grease to stick 'Gaskets' to the 'Clutch Cover / Magneto Cover' or 'Crankcase'. As grease deteriorates the gasket material and reduces sealing efficiency.*

- Clutch Cover
- 10 bolts
- Bracket Clutch Cable
- Starter Motor Cap
- Screw'

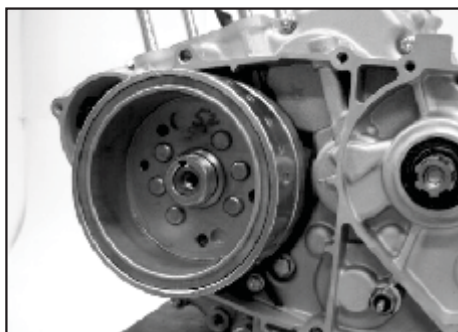


Magneto Side

Fit :

- Shaft Starter Counter
- Gear complete starter counter assly
- Collar

Note : *Always apply a thin layer of grease on to the roller bearing of gear complete starter counter assembly.*

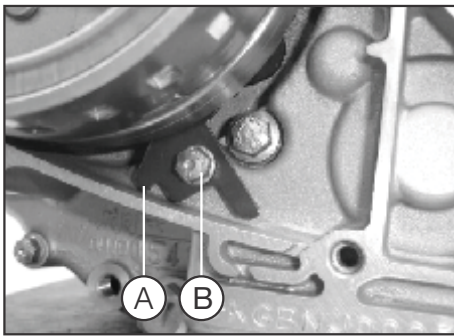


Fit :

- Woodruff key
- Magnet along with gear starter clutch

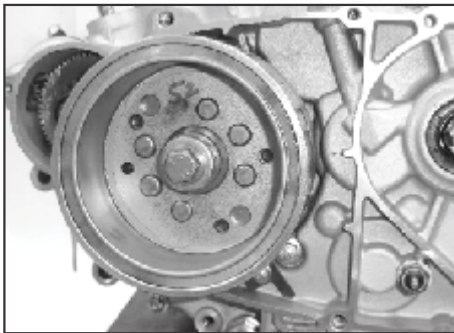
Note :

- *Always apply a thin layer of grease to the roller bearing of gear starter clutch.*
- *Lubricate the one way clutch using the Molikote grease.*



Fit :

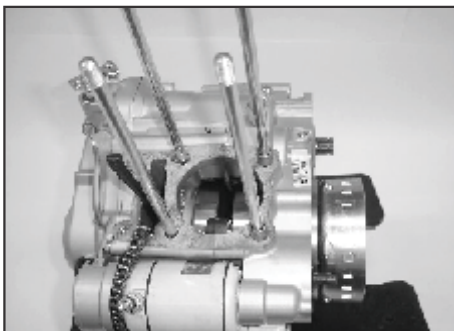
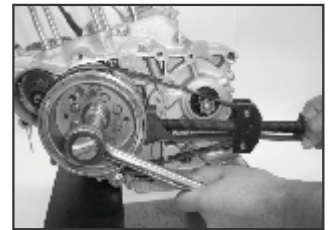
- Plate starter clutch return (A)
- Bolt (Use loctite 243) (B)



Using Special Tool : Rotor Holder H6 0721 00

Fit :

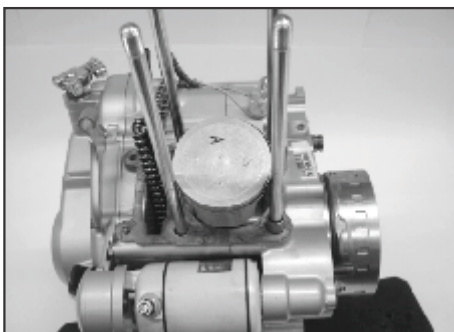
- Washer
- Bolt



Top End

Fit :

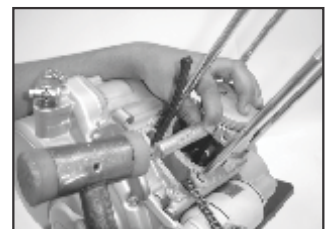
- 2 Dowels
- Block Base Gasket

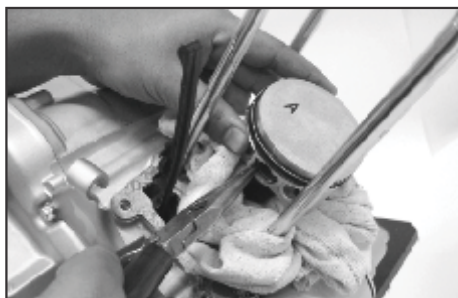


Using Special Tool : Drift 74 9309 89

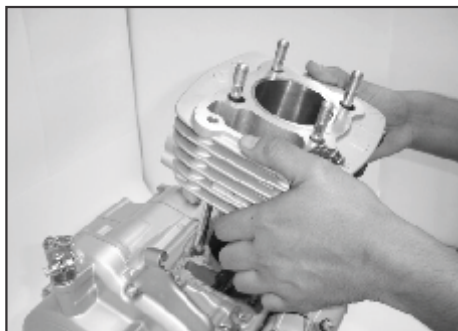
Fit :

- Piston
- Piston Pin
- Circlip





Note : Place clean piece of cloth on the 'Crankcase' bottom end because there is a chance of ring snap falling down while fitting.

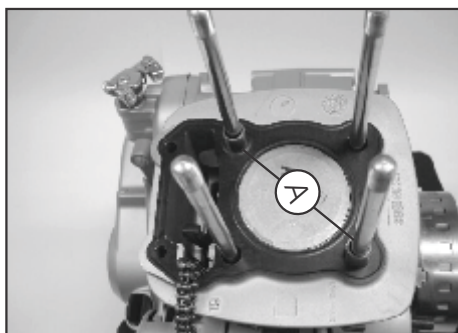


Using Special Tool : Piston Ring Holder 37 10DJ 30

Fit :

- Slide the Cam Chain upright with soft copper wire / Thread into cylinder
- Slide the piston assembly into cylinder

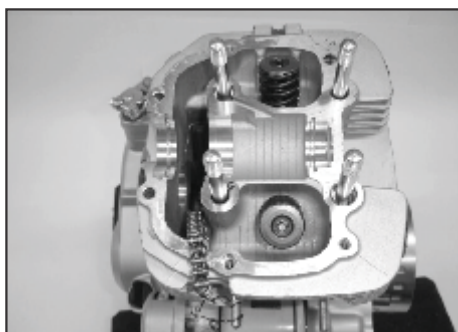
Note : Apply thin layer of oil in cylinder bore and piston assembly when sliding inside for ease in fitting.



Fit :

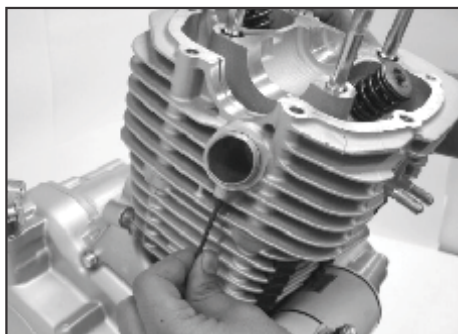
- Head gasket
- 2 Dowels (A)
- Chain Guide (Non tensioner side)

Note : Holding the chain firmly bring the piston assembly to TDC position and ensure 'T' mark on the rotor is matching with generator cover mark.



Fit :

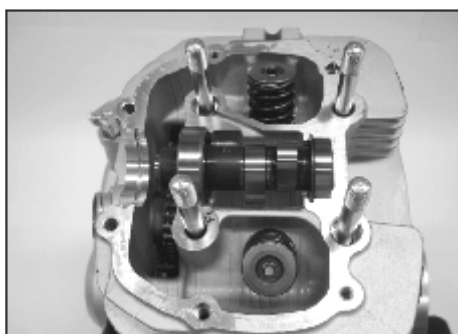
- Cylinder Head Assembly
- 2 Dowels



Fit :

- Spark Plug Sleeve
- Grub Screw
- Spark Plug

Note : Before fitting the sleeve spark plug apply thin layer of molybdenum disulfide grease on the entry chambers for the 'O' rings



Fit :

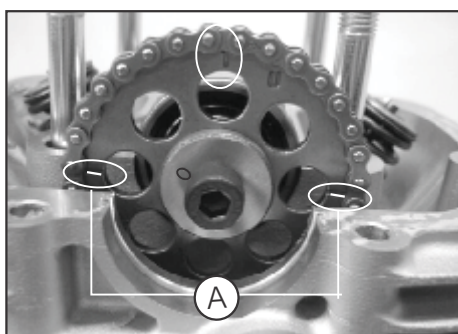
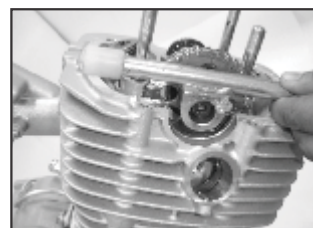
- Cam Shaft
- Collar



Using Sp. Tool - 37 10DH 36

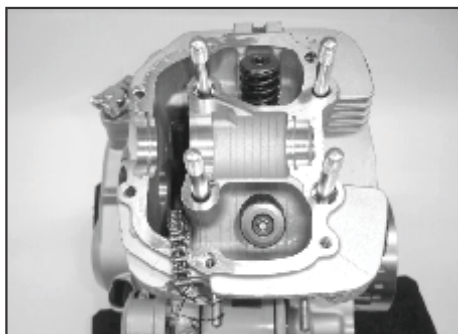
Fit :

- Cam Sprocket
- Special Washer
- Allen Bolt



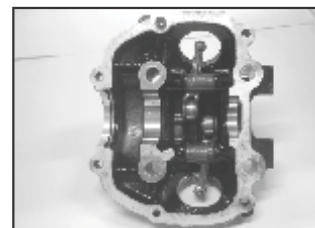
Note :

- Ensure the sprocket marks (A) are aligned horizontally with cylinder head top machined face and the piston is at TDC.
- Secure the 'Cam Chain Sprocket' in the special tool firmly and then tighten the sprocket allen bolt.
- Ensure that the 'O' mark on washer always faces outwards when tightening the allen bolt.



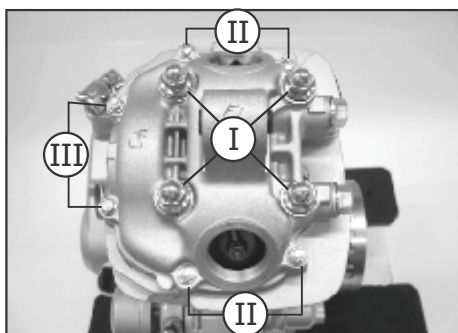
Fit :

- Cam Shaft Cap
- Apply thin layer of liquid gasket to head cover
- Head Cover



Note :

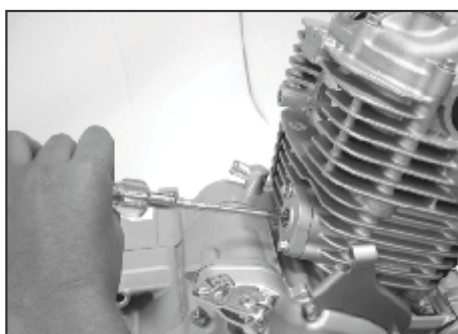
- **Do not apply liquid gasket on to the cam shaft cap and other inside mounting areas.**
- **Refer Skill Tip for more details**



Fit :

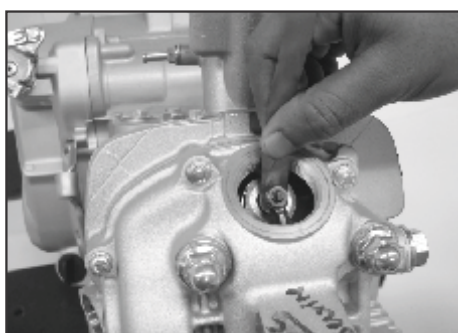
- Copper Plated Washer
 - Tighten bolts as per sequence
- Ist : 4 Domed cap nut
IIInd : 4 Long bolts of Head Cover
IIIrd : 2 Longest bolts of Head cover

Note : Improper tightening sequence of bolts may cause permanent warpage in cylinder head cover and it can get



Fit :

- Cam Chain Tensioner
- 2 bolt
- Release the tensioner plunger bolt
- Dust cap and 'O' ring'

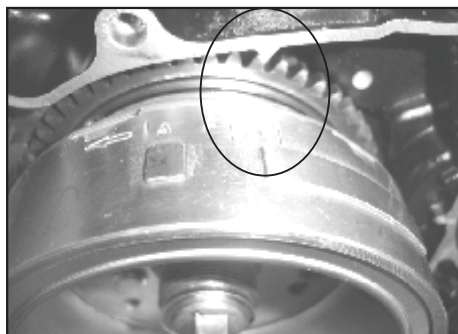


Adjust :

- Check and adjust the tappet clearance

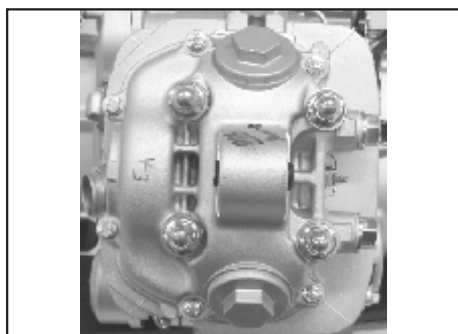


Inlet Valve	Exhaust Valve
0.05 mm	0.1 mm



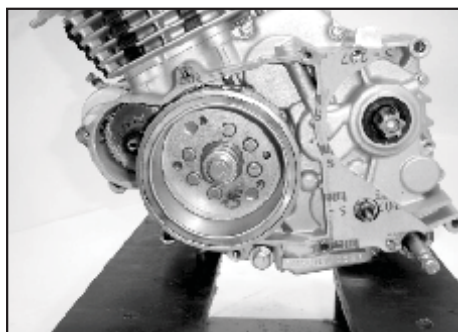
Note :

Always ensure that the piston is at the end of compression stroke and 'T' mark on rotor is in line with the crankcase mark. When adjusting tappet clearance.



Fit :

- Tappet cap with 'O' ring



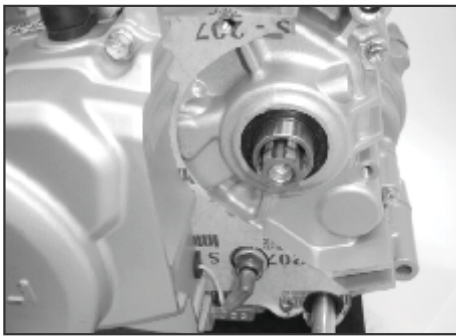
Fit :

- 2 Dowel
- Gasket



Fit :

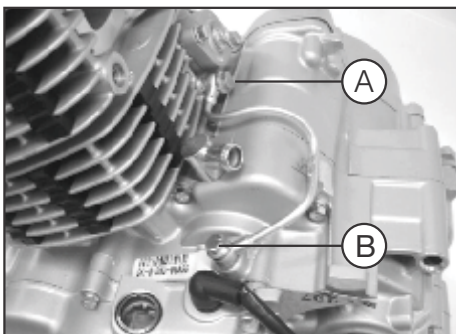
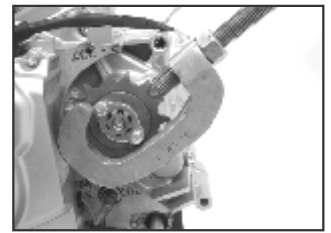
- Magneto cover
- 5 Bolts
- Neutral switch coupler



Using Special Tool - Output Sprocket
holder - 37 1030 53

Fit :

- Bush
- Sprocket
- Plate drive sprocket
- 2 bolts (Use loctite 243)

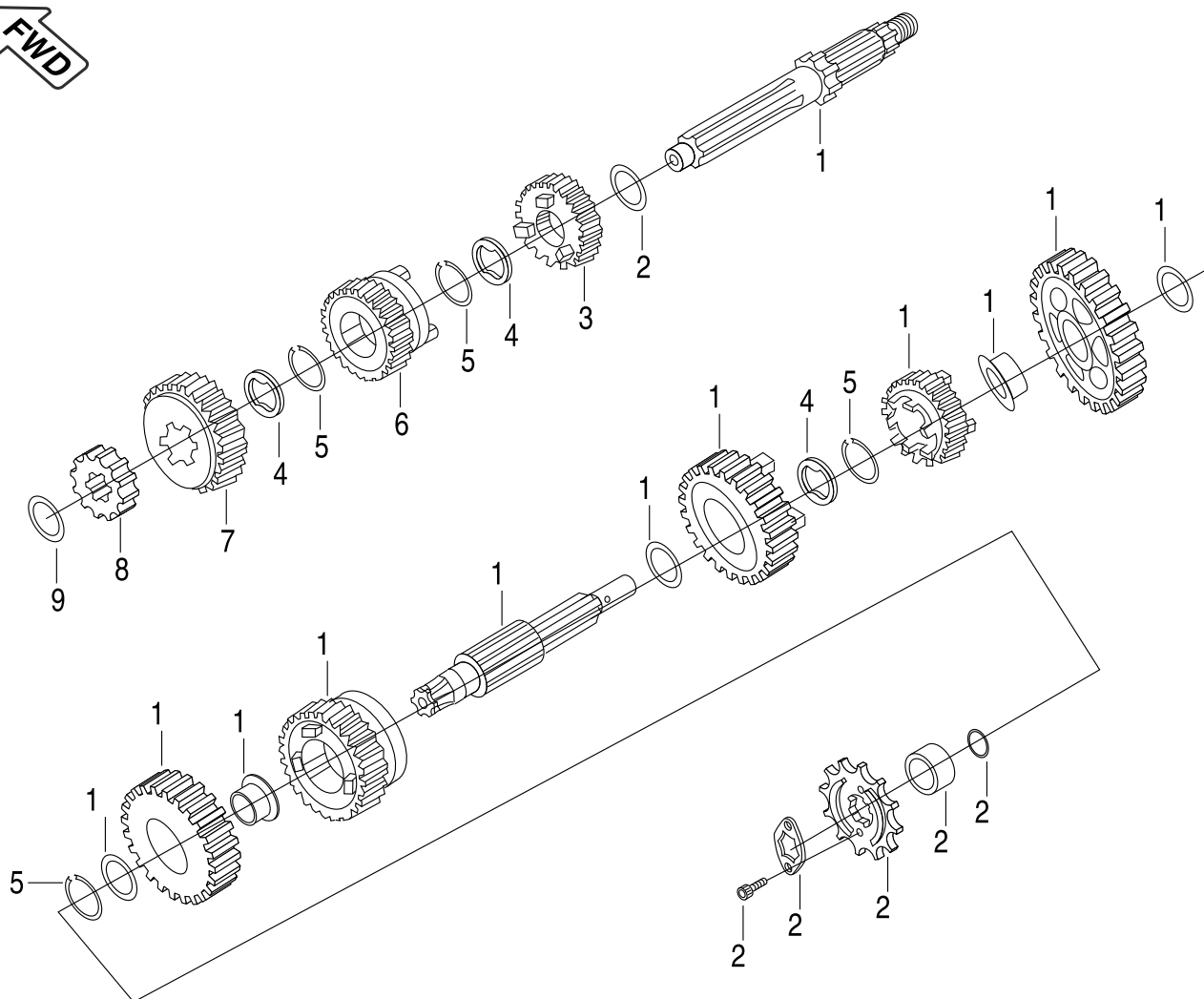


Fit :

- Oil pipe
- Copper gasket
- Banjo bolt (A)
- Bolt (B)

Notes

This image shows a blank sheet of white paper with ten horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.



S.N.	Description	Qty
1	Shaft input transmission	1
2	Plain washer	1
3	Gear 4th drive	1
4	Washer spline	3
5	External circlip	4
6	Gear 3rd drive	1
7	Gear 5th drive	1
8	Gear 2nd drive	1
9	Plain washer	1
10	Shaft output transmission	1
11	Washer thrust	2
12	Gear 3rd driven	1

S.N.	Description	Qty
13	Plain washer	1
14	Gear 4th driven	1
15	Bush 1st driven	1
16	Gear 1st driven	1
17	Gear 5th driven	1
18	Bush 2nd driven	1
19	Gear 2nd driven	1
20	Collar sprocket	1
21	O ring sprocket collar	1
22	Sprocket drive	1
23	Plate drive sprocket	1
24	Bolt drive sprocket	2



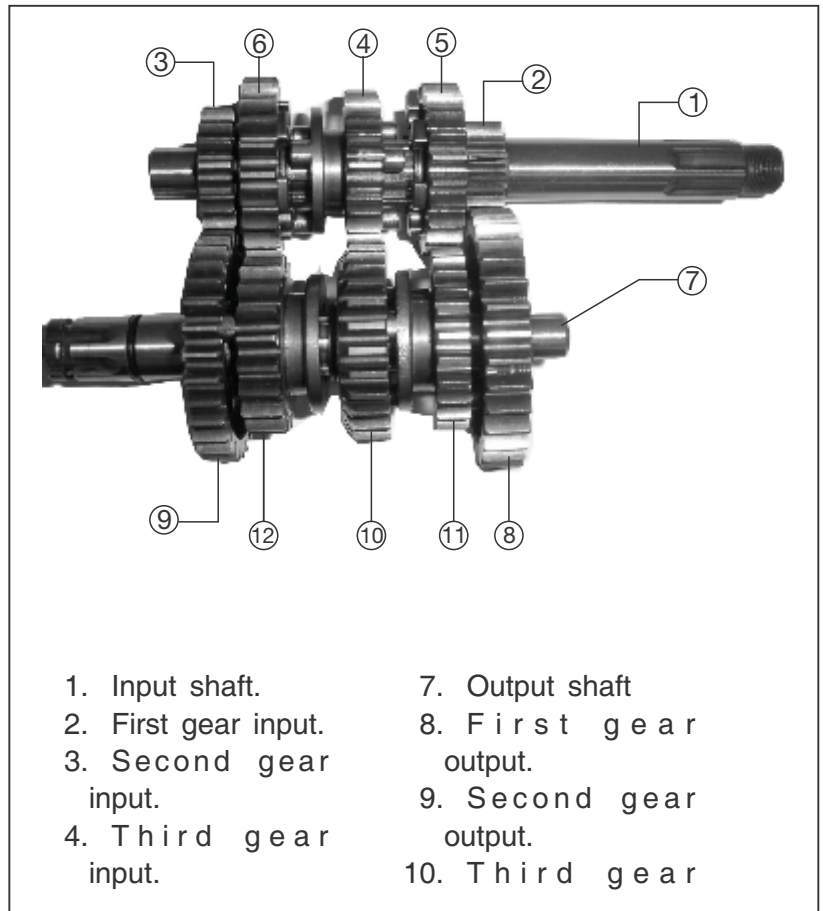
Construction & Working

Input Shaft and its gears :

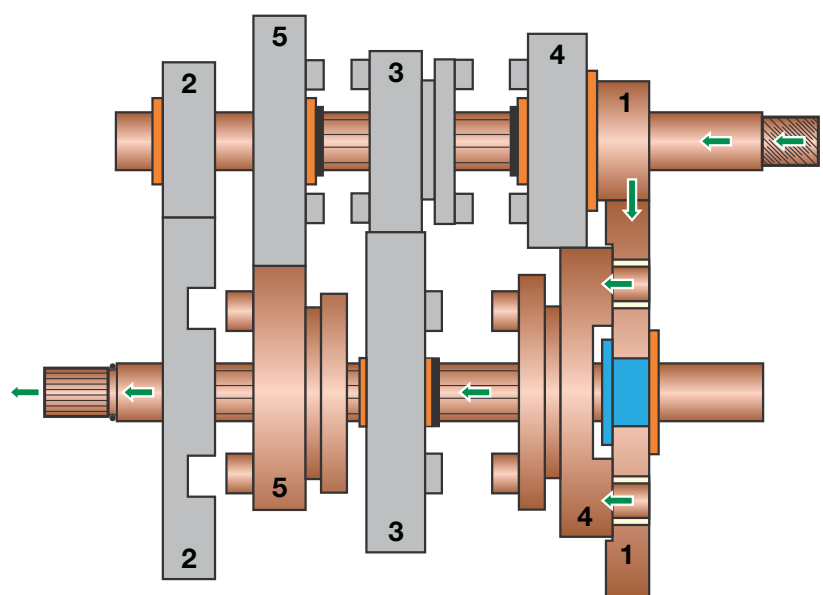
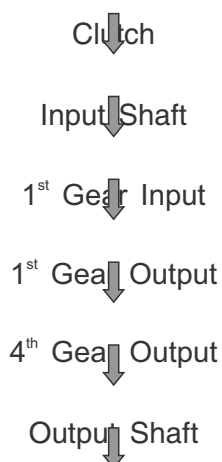
- First gear is integral with Input Shaft.
- Second gear is fixed on Input Shaft splines.
- Third gear is fixed but sliding on Input Shaft splines.
- Forth gear is a freely rotating gear on Input Shaft.
- Fifth (top) gear is freely rotating on Input splines.

Output Shaft and its gears :

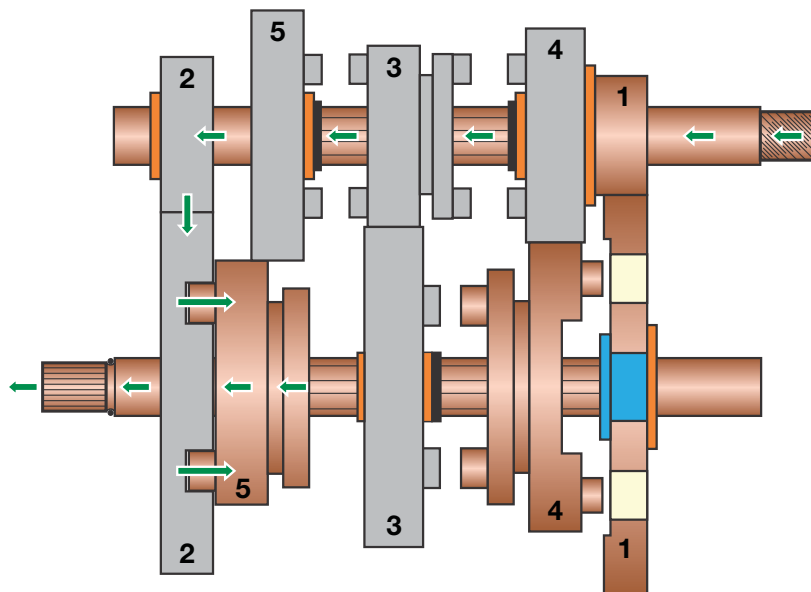
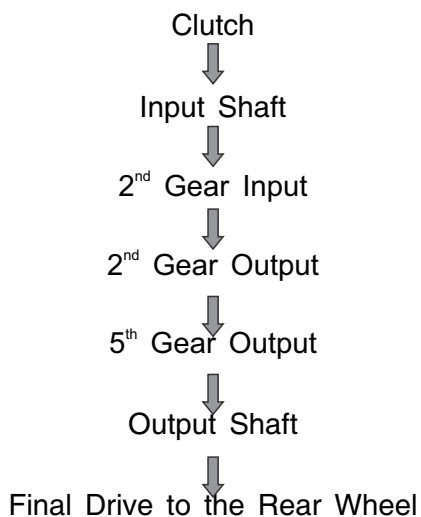
- First gear is a freely rotating gear on Output Shaft. A bush which is free inside gear I.D. & shaft O.D. is fitted between first gear and Output shaft.
- Second gear is a freely rotating gear on Output Shaft. A bush which is free inside gear I.D. & shaft O.D. is fitted between first gear and Output shaft.
- Third gear is freely rotating on Output splines.
- Forth gear is fixed but sliding on



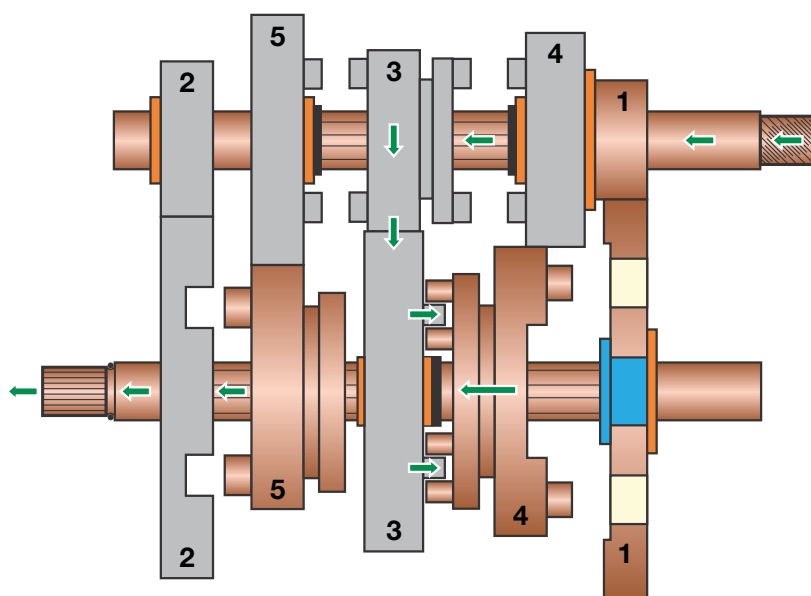
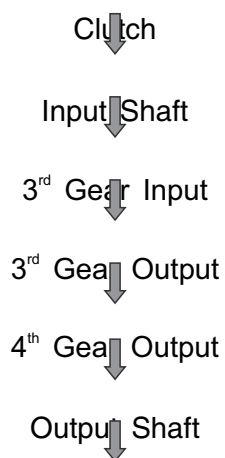
First Gear Position : When First Gear is engaged, Power from clutch flows as follows.



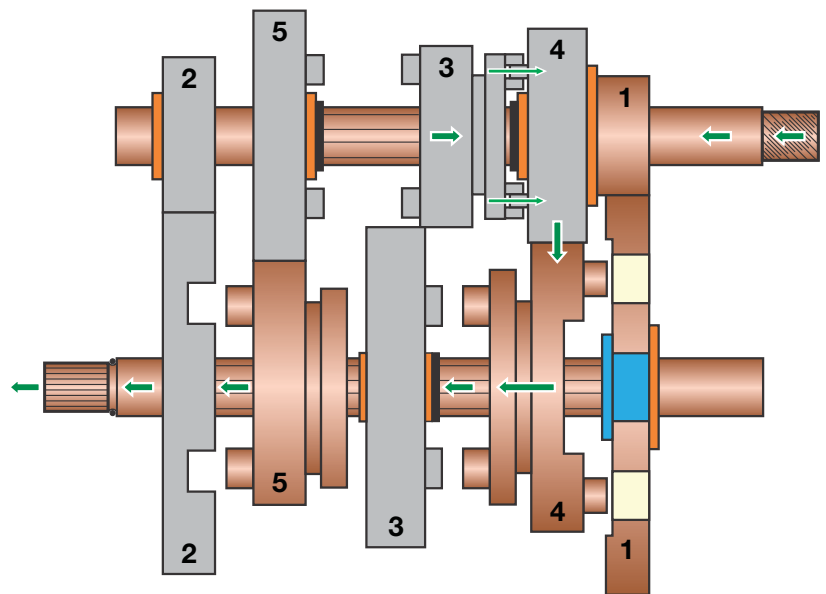
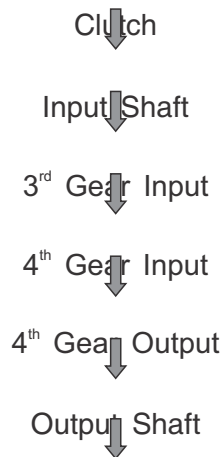
Second Gear Position : When Second Gear is engaged, power from clutch flows as follows.



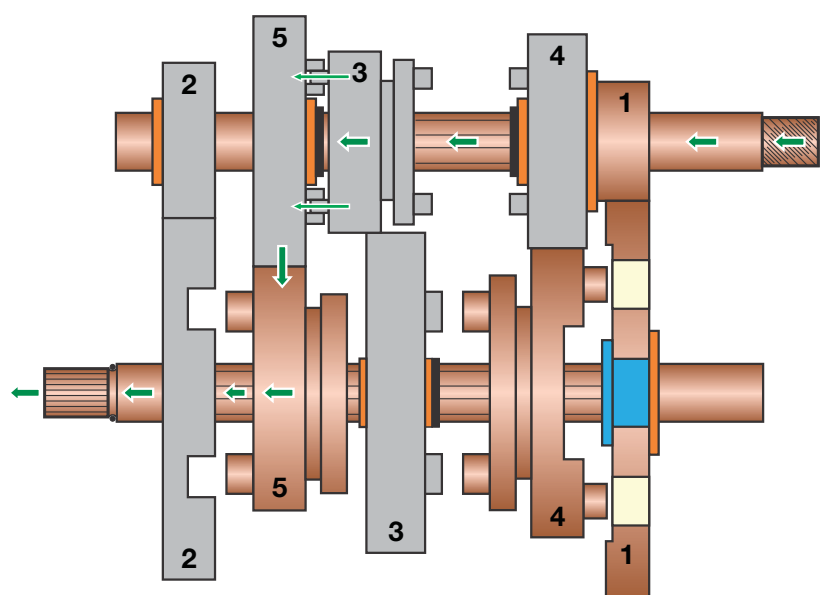
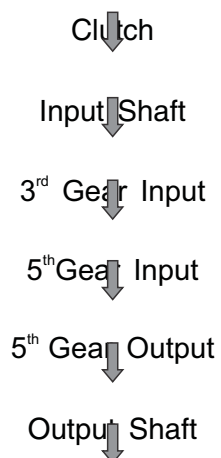
Third Gear Position : When Third Gear is engaged, power from clutch flows as follows.

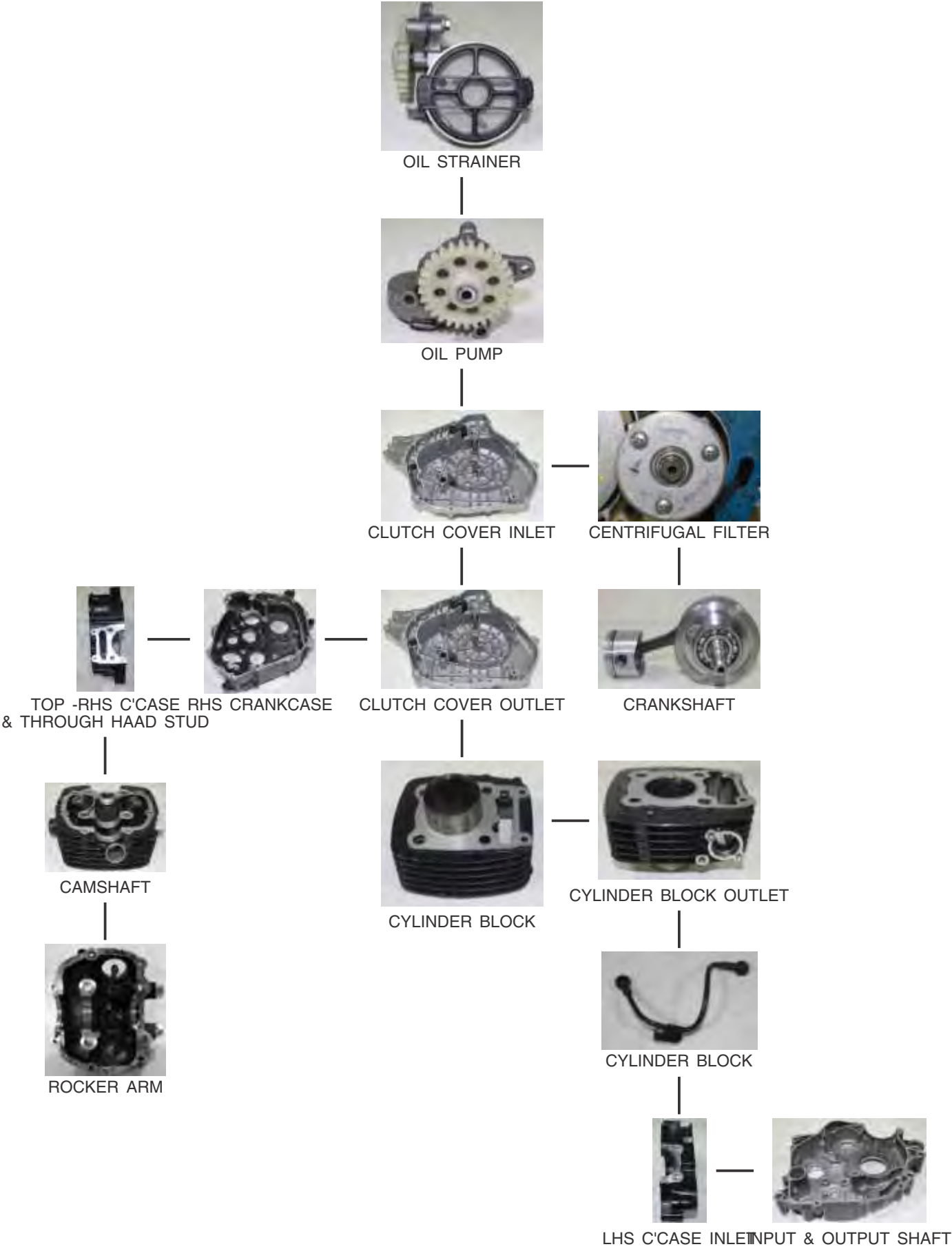


Forth Gear Position : When Forth Gear is engaged, power from clutch flows as follows.



Fifth Gear Position : When Fifth Gear is engaged, power from clutch flows as follows.

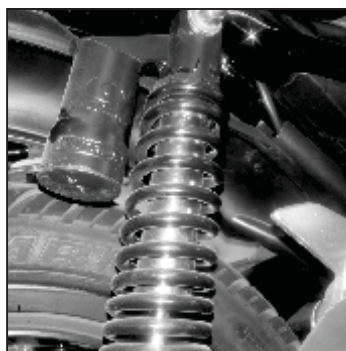
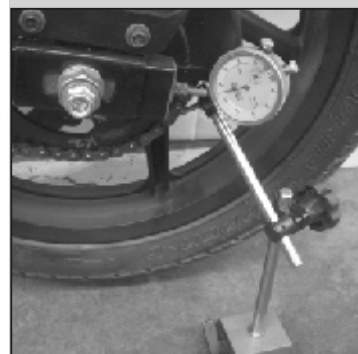




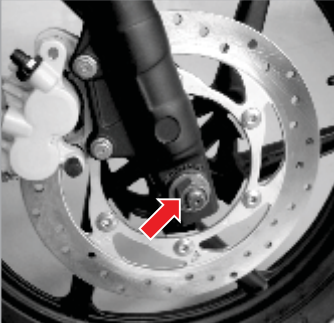
[illegible]

Frame & Suspension

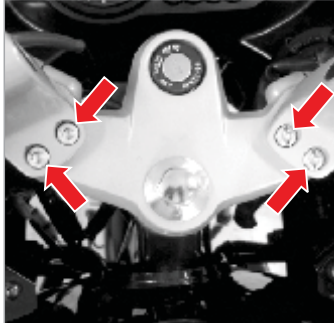
- Tightening Torques
- Service Data
- Special Tools
- Control Cable Routing
- Working of Nitrox
- Rear Suspension
- SOP for Front Fork Dust Seal & Oil Seal Replacement
- SOP for Steering O/H
- Dismantling & Assembling Front Fairing
- SOP for Swing Arm Replacement
- SOP for Caliper Piston Seal & Dust Seal Replacement
- SOP for Master Cylinder Piston Kit Replacement
- SOP for Brake Hose Replacement
- SOP for Brake Fluid Replacement



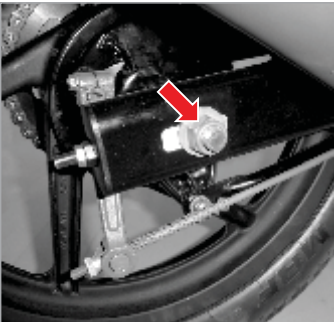
Front Axle Nut

		Torque Value in Kg.m
	Pulsar 150 cc	4.0 ~ 5.0
	Pulsar 180 cc	8.0 ~ 10.0


Handle Bar Holder Bolts

		Torque Value in Kg.m
	Pulsar 150 cc	2.0 ~ 2.2 (150 cc Photo not illustrated)
	Pulsar 180 cc	2.0 ~ 2.2

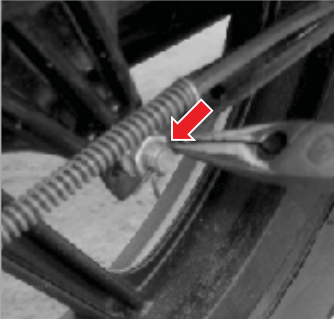
Rear Axle Nut

		Torque Value in Kg.m
	Pulsar 150 cc	8.0 ~ 10.0
	Pulsar 180 cc	8.0 ~ 10.0


Steering Top Cap Bolt

		Torque Value in Kg.m
	Pulsar 150 cc	3.5
	Pulsar 180 cc	5.0


Torque Rod Nut

		Torque Value in Kg.m
	Pulsar 150 cc	3.0 ~ 4.0
	Pulsar 180 cc	3.0 ~ 4.0

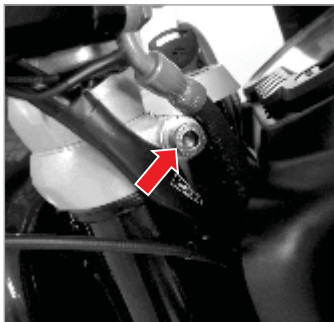
Steering Stem Nut (Slotted)

		Torque Value in Kg.m
	Pulsar 150 cc	0.5
	Pulsar 180 cc	0.5

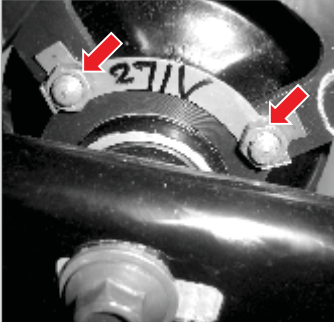
Sleeve Nut

		Torque Value in Kg.m
	Pulsar 150 cc	7.0 ~ 8.0
	Pulsar 180 cc	-- NA --

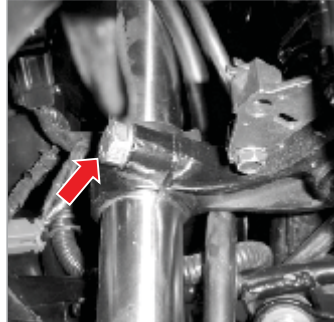
Upper Clamp Allen Bolt

		Torque Value in Kg.m
	Pulsar 150 cc	1.8 ~ 2.0
	Pulsar 180 cc	1.8 ~ 2.0

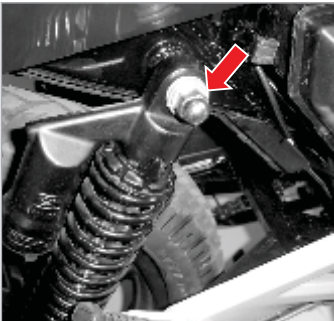
Rear Sprocket Mounting Nut

		Torque Value in Kg.m
	Pulsar 150 cc	1.8 ~ 2.5 (Loctite 243)
	Pulsar 180 cc	3.0 ~ 3.2 (Loctite 243)

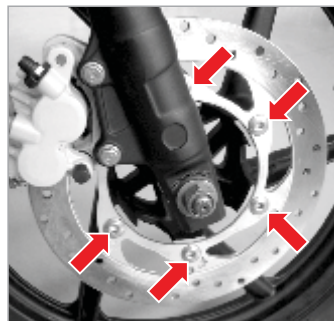
Lower Clamp Bolt

		Torque Value in Kg.m
	Pulsar 150 cc	2.5 ~ 3.5
	Pulsar 180 cc	2.5 ~ 3.5

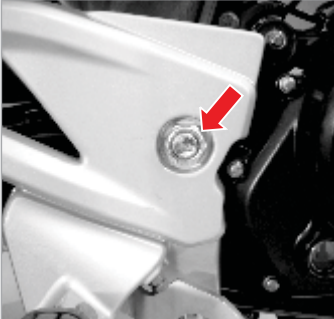
RSA Mounting Dome Nut

		Torque Value in Kg.m
	Pulsar 150 cc	3.5 ~ 4.0
	Pulsar 180 cc	3.5 ~ 4.0

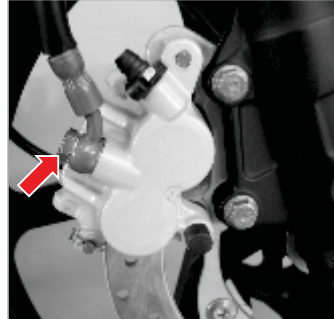
Brake Disc Allen Bolts

		Torque Value in Kg.m
	Pulsar 150 cc	2.6 ~ 3.2 (Loctite 243)
	Pulsar 180 cc	2.6 ~ 3.2 (Loctite 243)

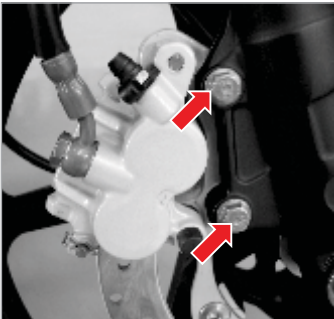
Swing Arm Pivot Nut

		Torque Value in Kg.m
	Pulsar 150 cc	8.0 ~ 10.0
	Pulsar 180 cc	8.0 ~ 10.0


Banjo Bolt Caliper

		Torque Value in Kg.m
	Pulsar 150 cc	2.2 ~ 2.8
	Pulsar 180 cc	2.2 ~ 2.8

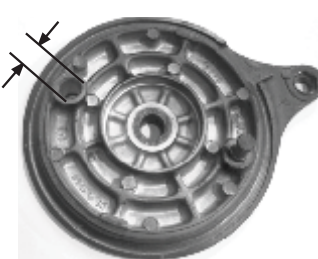
Caliper Install Bolts

		Torque Value in Kg.m
	Pulsar 150 cc	2.2 ~ 2.8
	Pulsar 180 cc	2.2 ~ 2.8

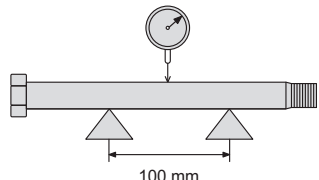
Fork Pinch Bolt

		Torque Value in Kg.m
	Pulsar 150 cc	2.0 ~ 2.2
	Pulsar 180 cc	2.0 ~ 2.2

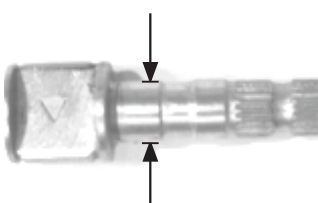
Brake Panel Cam Hole Diameter

		Standard Limit	Service Limit
	Pulsar 150 cc	12.0~12.03	12.15
	Pulsar 180 cc	14.0~14.03	14.15


Axle Run Out

		Standard Limit	Service Limit
	Pulsar 150 cc	TIR 0.1 or Less	TIR 0.2
	Pulsar 180 cc	TIR 0.1 or Less	TIR 0.2

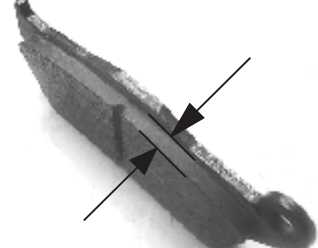
Brake Cam Diameter

		Standard Limit	Service Limit
	Pulsar 150 cc	11.95 ~ 11.98	11.88
	Pulsar 180 cc	13.95 ~ 13.98	13.88


Axial Wheel Run Out

		Standard Limit	Service Limit
	Pulsar 150 cc	TIR 1.0 or Less	TIR 2.0
	Pulsar 180 cc	TIR 1.0 or Less	TIR 2.0

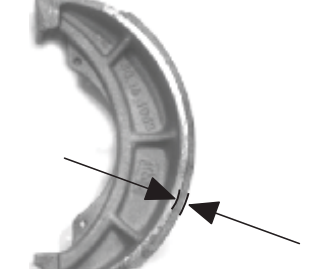
Front Brake Pad Thickness

		Standard Limit	Service Limit
	Pulsar 150 cc	7.4	3.8
	Pulsar 180 cc	7.4	3.8

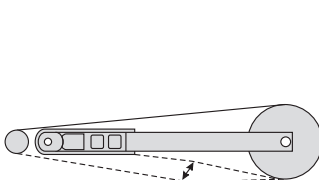
Radial Wheel Run Out

		Standard Limit	Service Limit
	Pulsar 150 cc	TIR 0.8 or Less	TIR 2.0
	Pulsar 180 cc	TIR 0.8 or Less	TIR 2.0

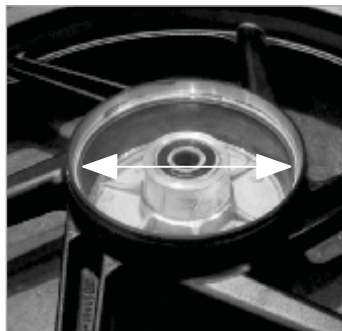
Brake Shoe Lining Thickness

		Standard Limit	Service Limit
	Pulsar 150 cc	3.85~4.15	2.0
	Pulsar 180 cc	3.85~4.15	2.0

Drive Chain Slack

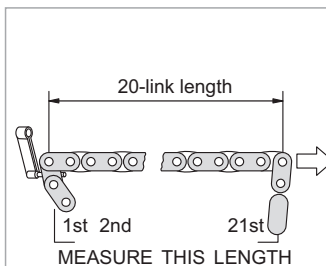
		Standard Limit	Service Limit
	Pulsar 150 cc	25 ~ 35	40 ~ 50
	Pulsar 180 cc	25 ~ 35	40 ~ 50

Brake Drum Inside Diameter



	Standard Limit	Service Limit
Pulsar 150 cc	130.0 ~ 130.16	130.75
Pulsar 180 cc	130.0 ~ 130.16	130.75

Drive Chain Length



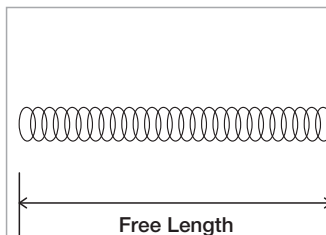
	Standard Limit	Service Limit
Pulsar 150 cc	254.0 ~ 254.6	259.0
Pulsar 180 cc	301.6 ~ 302.1	307.0

Rear Sprocket Warp



	Standard Limit	Service Limit
Pulsar 150 cc	0.4 or Less	0.5
Pulsar 180 cc	0.4 or Less	0.5

Front Fork Spring Free Length



	Standard Limit	Service Limit
Pulsar 150 cc	398.50	391.0
Pulsar 180 cc	373.0	368.0

Tyre Tread Depth



	Standard Limit	Service Limit
Pulsar 150 cc	Front 5.0	Front 1.0
	Rear 6.8	Rear 1.5
Pulsar 180 cc	Front 5.0	Front 1.0
	Rear 7.3	Rear 2.0

Grease Application Points

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

Details of Exclusive Special Tool

For carrying out repairs / overhauls, these 4 new special tools were developed earlier exclusively for Pulsar DTS-i 200cc & Pulsar DTS-Fi 220cc & can be used for Pulsar UG-4 also. Rest of the special tools required remains the same which were earlier used for Pulsar, Pulsar DTSi UG-II, Pulsar DTSi UG III.



**Fork Oil Seal
Fitment Punch :**

Drawing No : 37 1740 03

Application :

To fit fork oil seal on outer pipe.



**Fork Inner & Outer Tube
Extractor :**

Drawing No : 37 1740 04

Application :

Used for removing front fork inner tube from outer tube.

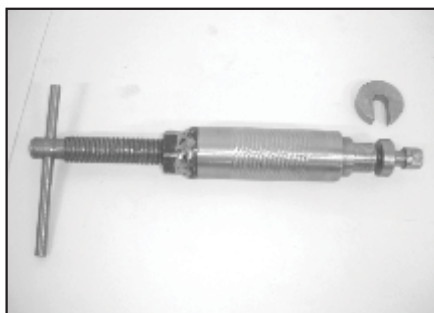


Fork Holder :

Drawing No : 37 1740 05

Application :

Used for holding the fork piston from inside.



Needle Bearing Puller :

Drawing No : 74 9309 93

Application :

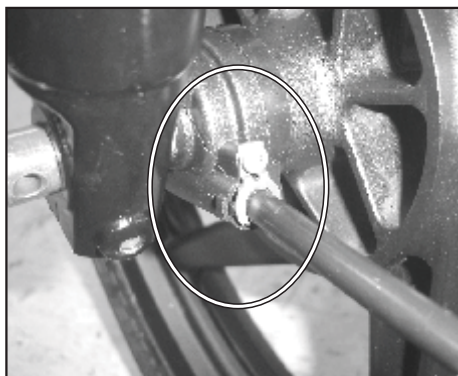
To remove & refit needle roller bearing from swing arm.



Special Tool Name	Special Tool No.	Application
Bearing Race Extractor	37 10DH 36	Used for removing the lower bearing race from 'T'
Bearing Driver Set	37 1030 61	Common bearing driver set for fitting and removing bearings from crankcase.
Rear Shock Absorber Adjuster	37 00DH 14	For adjusting the notch position of RSA to achieve hard or soft rear suspension.

[illegible]

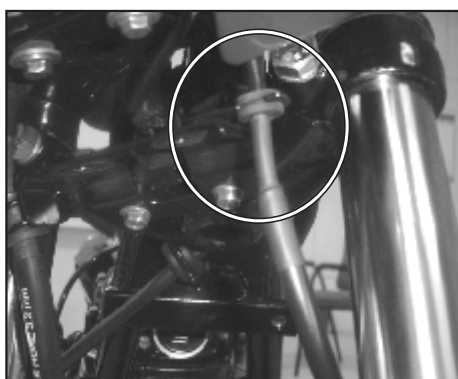
Speed Sensor Cable



- Clamp the speed sensor cable on case meter with a bracket & screw.



- Pass both the cables through flexible clamp mounted on front fender.

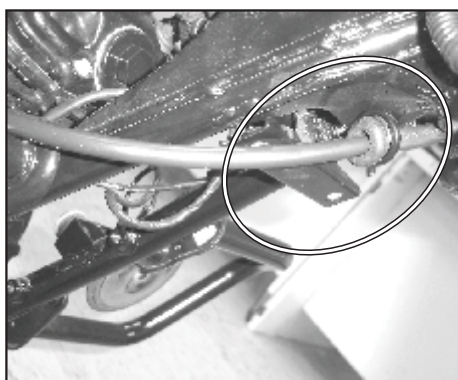


- Clamp the speed sensor cable's in a grommet of the metallic bracket.

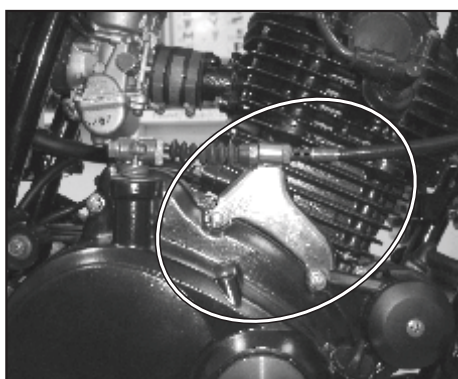
Clutch Cable



- Route clutch cable as shown in the photograph.



- Pass the cable through grommet fitted in wire clip.

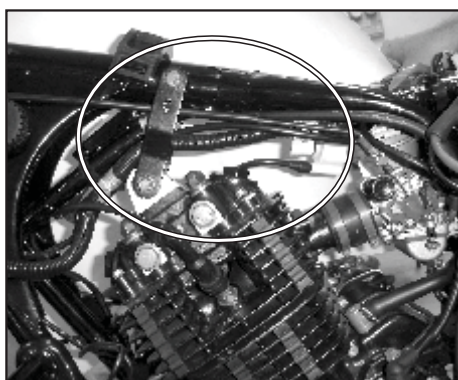


- Pass the clutch cable through clutch cover bracket & adjuster.

Accelerator Cable



- Route the accelerator cable as shown in the photograph.



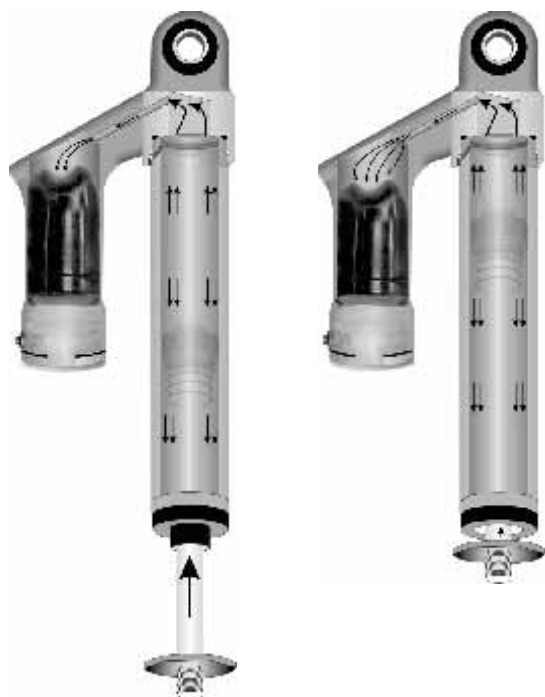
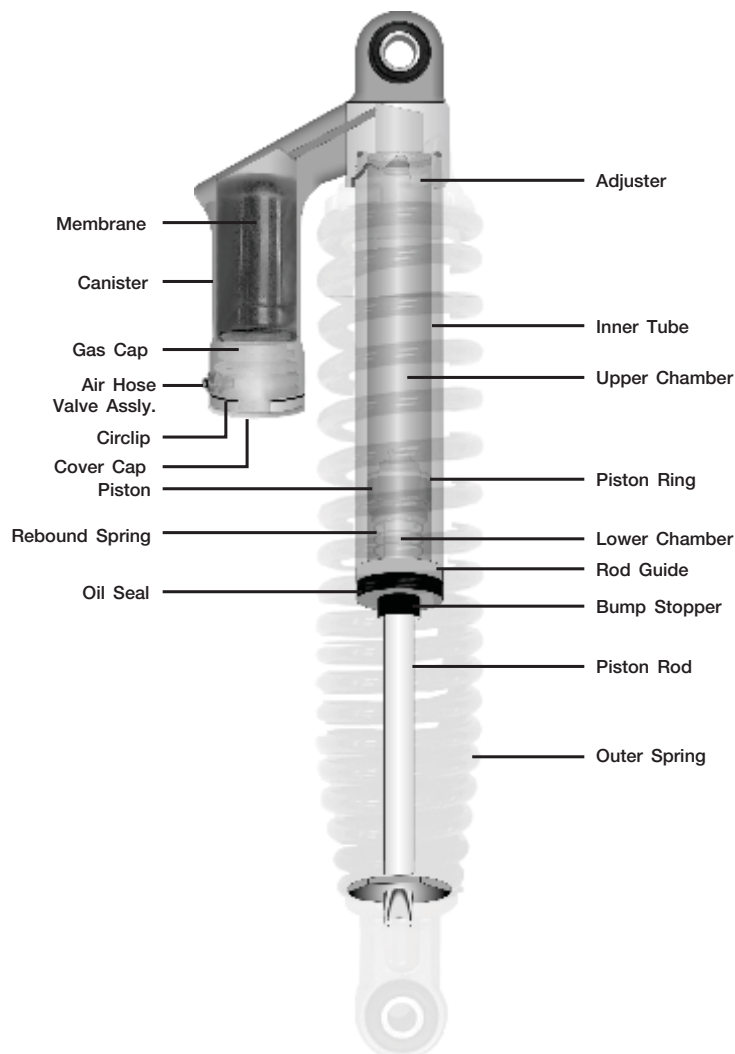
- Route the accelerator cable through the engine top end inserted in foundation bracket clamp.

Function

- To suspend rear wheel to the frame with the help of swinging trailing arm.
- To allow rear wheel to travel up and down by absorbing shocks while passing through ditches / bumps (comfortable ride for the rider and pillion rider).
- To provide stability while graduating turns.

Advantage

The gas filled shock absorber enhances the dampening performance by eliminating the formation of foam. The foam formation is eliminated by the nitrogen gas filled inside the canister. The nitrogen gas is filled in canister at a pressure which is 8 times greater than atmospheric pressure.



Working : Gas Filled Compression Stroke

In gas filled shock absorber, oil is completely filled in inner, outer tube and canister. Nitrogen gas is filled in membrane at a pressure of $6.5\sim 7.5 \text{ Kg/cm}^2$.

During this stroke, oil flows freely from 'Upper Chamber' to 'Lower Chamber' through piston valve. Simultaneously oil also flows to canister assembly through base valve and compresses the membrane filled with nitrogen gas.

At the end of the compression stroke, bump stop rubber takes load and avoids hitting of lower eyelet mounting against outer tube.



Working : Gas Filled Extension Stroke

During this stroke, oil in canister starts returning to upper chamber through base valve without any resistance due to expansion of membrane.

Simultaneously, oil from lower chamber will flow slowly into upper chamber with resistance due to piston valve.

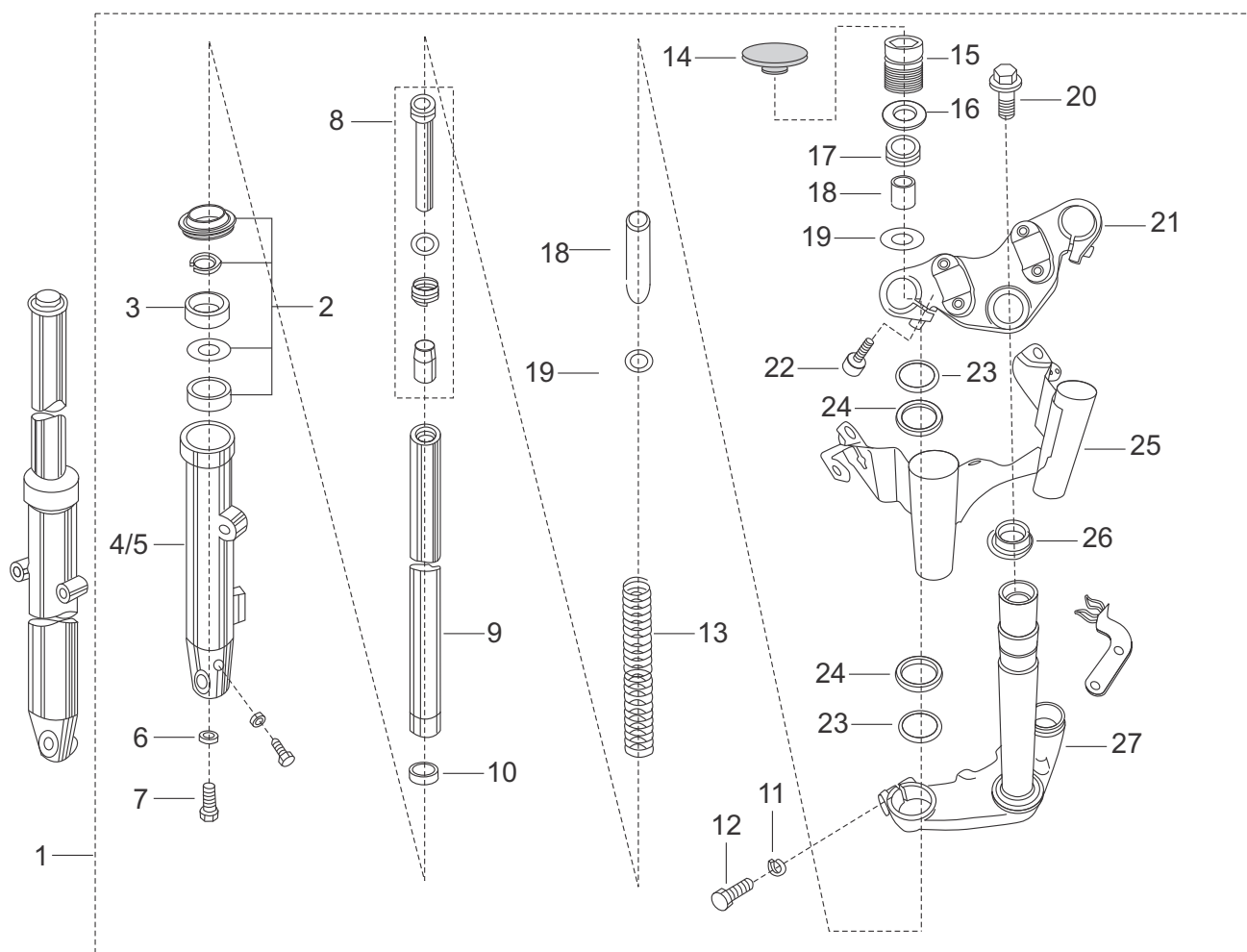
At the end of extension stroke, rebound spring avoids hitting of piston rod assembly complete against rod guide.



Procedure for gas checking and Refilling

- Remove the Phillips-headed small screw and 'O' ring.
- Clamp the cylindrical guide clamp on to the canister keeping the rubber plug in the center to support the syringe needle insertion and keeping in position.
- Hold the pump as shown and pierce the syringe needle into the center of rubber plug.
- The molded needle adaptor will rest into the clamped cylindrical guide
- Read the gas pressure on the dial gauge. If the gas pressure is below 6.5 Kg/cm^2 refill the air by pumping, keeping the needle in as it is condition without removal. As the natural air consists of 71% of nitrogen it will serve the purpose.
- To fill the air into the canister, apply full stroke of pump as shown; otherwise air will not get inflated into the pump.
- Keep on pumping the air unless you get 7.5 kg/cm^2 on the gauge
- Pull out the air pump along with needle carefully and take out the guide clamp
- Finally fix the phillips headed screw with 'O' ring.

In current produced pulsars Nitrox RSA is at bottom side & Air filling is not recommended in these rear shock absorbers.



S.N.	Description	Qty
1	Fork Front	1
2	Kit Outer Tube	1
3	Oil Seal	2
4	Outer Tube Lh	1
5	Outer Tube Rh	1
6	Gasket	2
7	Bolt	2
8	Cylinder Comp. Fork	2
9	Pipe Comp. Suspension Inner	2
10	Slide Bush	2
11	Spring Washer	2
12	Bolt	2
13	Spring Front Fork	2
14	Grommet Top	2

S.N.	Description	Qty
15	Bolt Fork	2
16	'O' Ring	2
17	Seat Fork Spring	2
18	Spacer Tube	2
19	Washer	2
20	Bolt	1
21	Holder Fork Upper	1
22	Socket Bolt	2
23	Cushion Rubber	2
24	Cover Trail B	4
25	Lamp Shade Assly.	1
26	Bearing Cone	1
27	Holder Fork Under	1





- Remove bolt securing front brake hose clamp by 8 mm T spanner



- Remove 2 nos bolts securing caliper assembly by 12mm ring spanner.



- Remove
 - a. Axle nut by 22mm ring spanner.



- b. Remove bolt holding front axle firmly on outer tube by 13mm ring spanner.



- c. Take out front axle.



- Remove speed sensor assembly & Take out front wheel assembly.



- Remove 4 no. bolts (2 nos. on both LH & RH side) securing front fender by 12mm ring spanner & take out front fender assembly.



- Remove allen bolt of upper bracket by 6mm allen key & under bracket bolt by 17 mm ring spanner.



- Take out the front fork leg assembly.



- Remove fork top bolt by 14mm Allen key.



- Remove spacer tube, washer & Front fork spring.



- Remove front fork oil & collect in measuring jar.



- Hold piston with cylinder piston holder special tool & remove Allen bolt by 6mm allen key



- Remove dust seal & oil seal lock (snap ring).



- Insert the front fork anti-friction bush & oil seal extraction special tool on fork inner pipe as per sequence shown in photograph.



- Remove handle bar holder by removing 2 nos allen bolts with 6mm allen key.



- Insert fork inner pipe along with special tool in under bracket such that special tool top portion touches to under bracket bottom edge.



- Tighten the fork upper bracket allen bolt by 6mm allen key.



- Remove outer tube by rotating special tool in clock wise direction



- Remove fork inner pipe from under bracket & take out the special tool as shown in photograph.



- Take out front fork oil seal, washer & anti-friction bush.

Assembling



- Hold fork cylinder on cylinder piston holder tool & insert spring and fork inner pipe.



- Assemble oil lock cap & outer tube followed by tightening of allen bolt (From bottom side of outer tube) by 6mm allen key.



- Hold fork leg assembly & assemble anti friction bush, washer & oil seal as shown in photographs.



Note :-

1. Never reuse oil seal.
2. Always replace the fork oil seal along with dust seal of same manufacturer.
3. Front fork oil seal fitment direction should be as shown in photograph.



- Fit the oil seal by using oil seal fitment special tool and insert the snap ring and dust seal.



- Fill recommended quantity of fork oil and insert spring, washer & spacer tube.



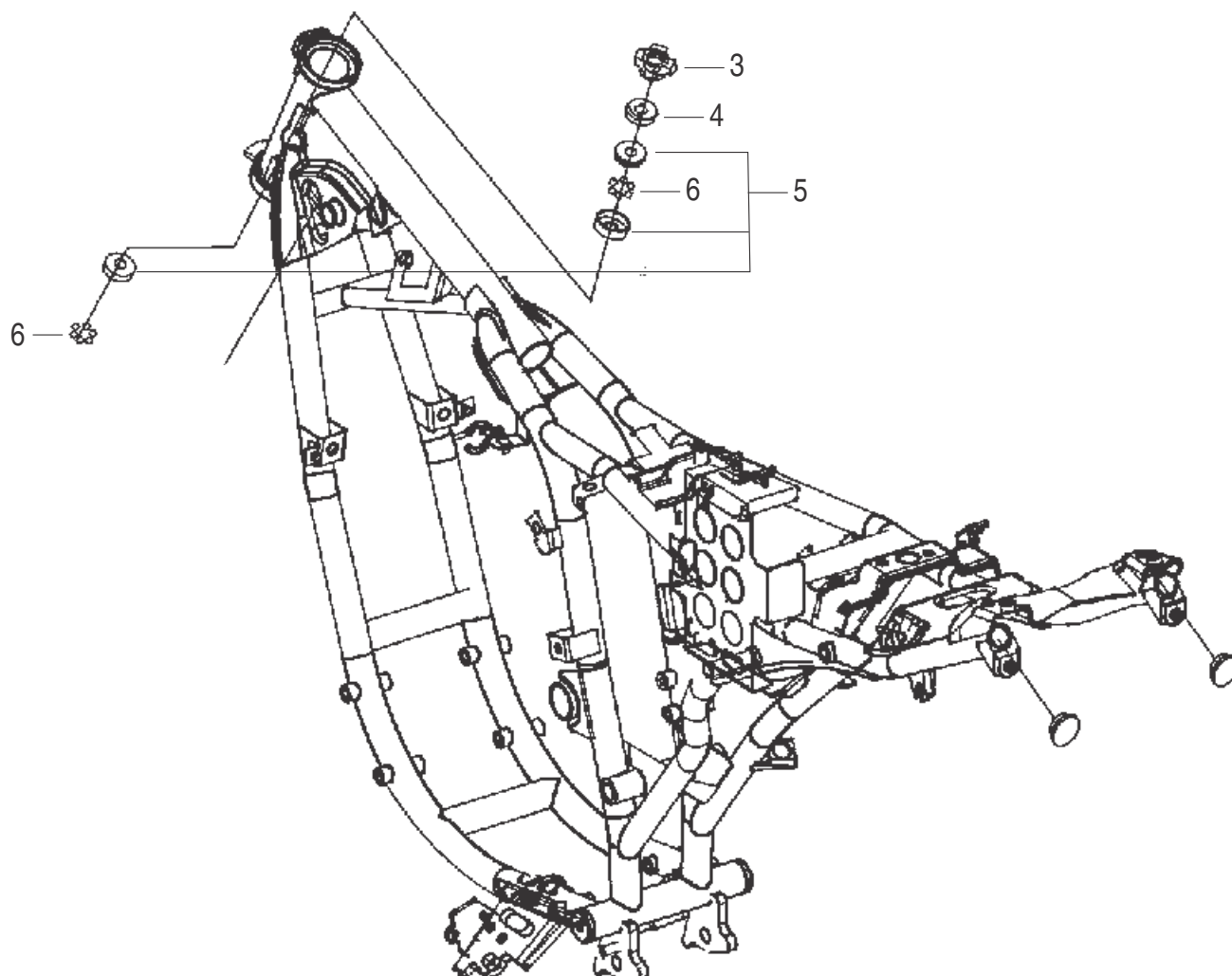
- Initially hand tighten the fork bolt by pressing it and then fully tighten by 14 mm Allen key.



- Remove fork inner pipe from under bracket & take out the special tool as shown in photograph.

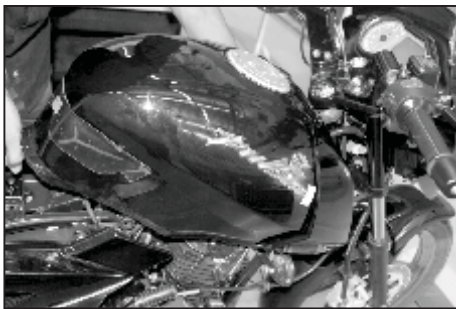
Note:

For fitment of fork leg on vehicle follow the reverse order of removal steps.



S.N.	Description	Qty
1	Frame Assly. Comp.	1
2	Cup Rear	2
3	Nut	1
4	Cup - Steering	1
5	Bearing Cone Kit	1
	Kit St Cone with RR3 Grease	1
6	Ball Steel With Cage	2





- Remove Petrol tank cover & petrol tank



- Remove 4 screws from top of speedometer and 2 bolts from bottom side.



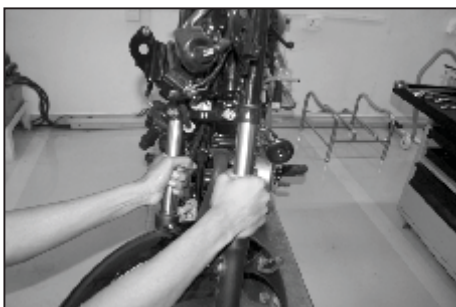
- Pull out Head Lamp assembly & disconnect the couplers.

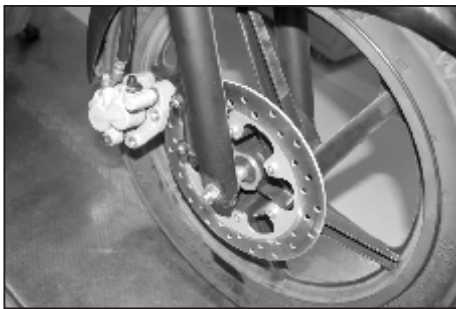


- Take out H/L assembly with speedometer



- Remove harness & brake hose clamping bracket

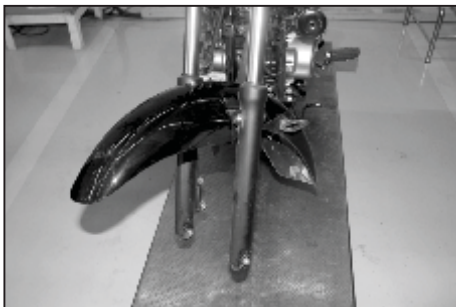




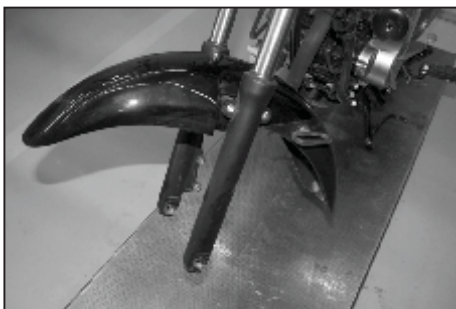
- Remove Front caliper assembly



- Remove Front Axle



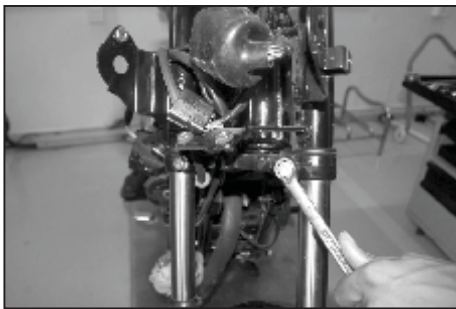
- Remove Front wheel assembly



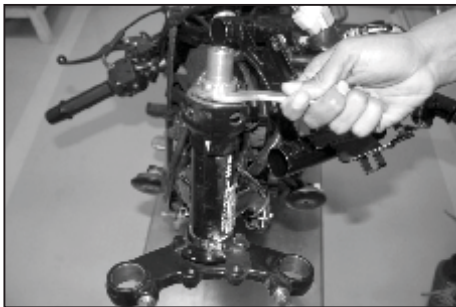
- Remove front fender.



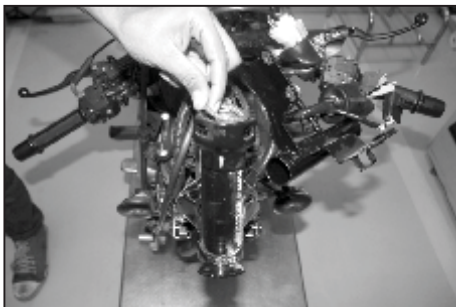
- Remove center bolt.



- Remove fork central bolt.
- Lift handle bar assembly to right side



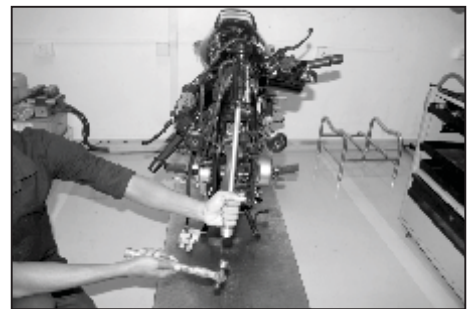
- Remove slotted nut



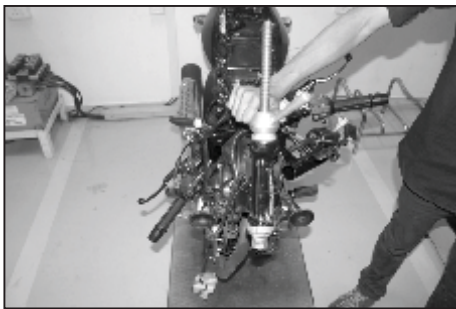
- Remove upper & lower steering ball cage.



- Remove upper & lower cones by using Cone removal tool.



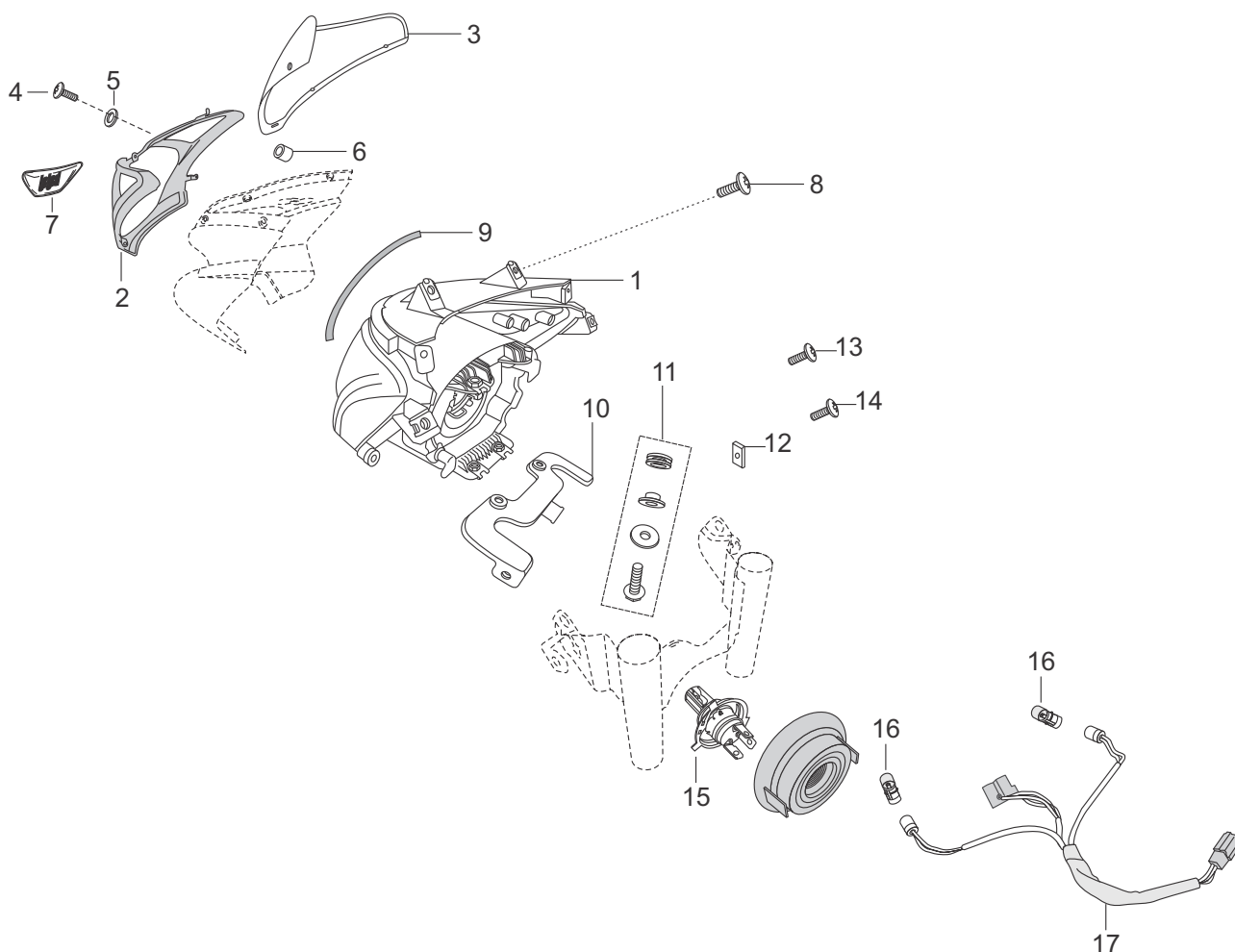
- Carry out greasing / steering ball replacement activity.
 - Upper race 19 balls
 - Lower race 20 balls



- Fit the upper & lower cones by using special tools.

Notes





S.N.	Description	Qty
1	Head Lamp Assly. Without Bulb	1
2	Back Cover	1
3	Wind Shield	1
4	Bolt M-5	4
5	Non Metallic Washer	4
6	Well Nut	4
7	Decal Wind Shield	1
8	M5 X 15 Mushroom HD	2
9	Packing Fairing	1

S.N.	Description	Qty
10	Fairing Mounting Upper Bracket	1
11	Kit Hardware Mtg. Bracket	1
12	Clip Nut	4
13	Screw Pan Cross	2
14	Screw Pan Cross	2
15	Lamp 12V 35/35W-HS1	1
16	Amber Bulb	2
17	Head Lamp Bulb Wiring Harness	1



Dismantling

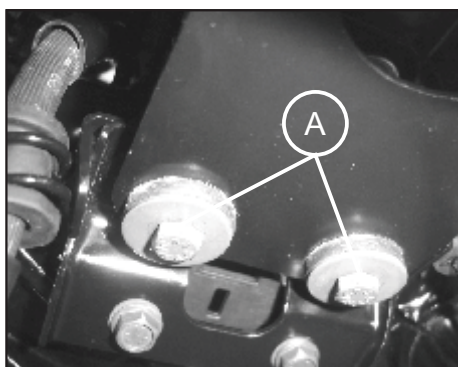


Remove :

- 4 screws
- Visor

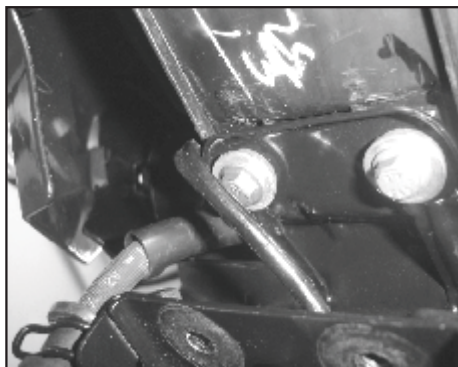
CAUTION

Keep the visor at good location to avoid scratches.



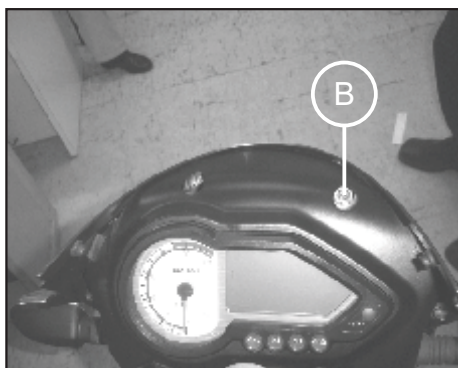
Remove :

- 2 Nos. of plate bolt (A).
- Number plate with damper rubber.



Remove :

- 2 bolts
- 2 washer



Remove :

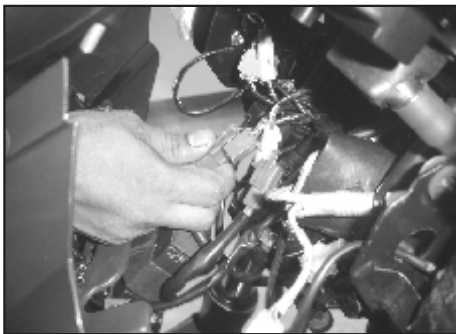
- 6 screws (B).





Remove :

- Bolt (Holding with lamp shade) LH & RH.



Remove :

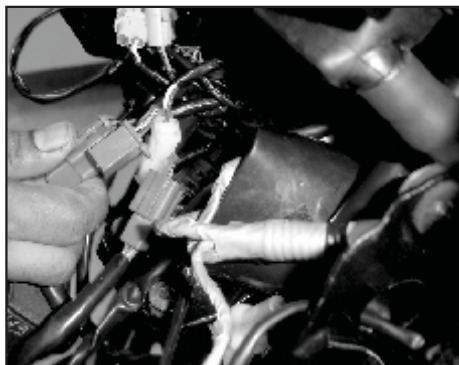
- Disconnect all couplers.
- Head light fairing assembly.



Remove :

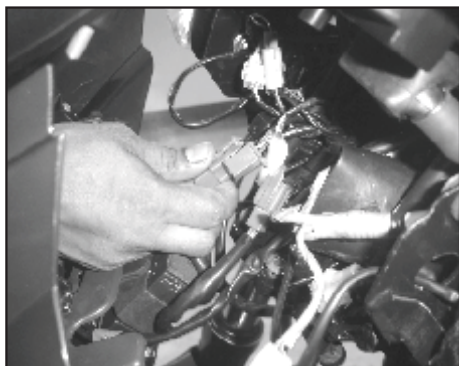
- Couplers for speedometer.
- Couplers indicator.
- Speedometer complete.

Assembling



Fit :

- Speedometer on lamp shade.
- Guide the couplers.
- Connect speedometer coupler.



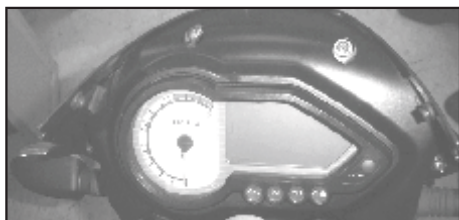
Fit :

- Connect the speedometer coupler.
- Fairing assembly.



Fit :

- 2 bolts (Holding with lamp shade) LH & RH.



Fit :

- 6 screws.



Fit :

- 2 bolts.
- 2 washers.



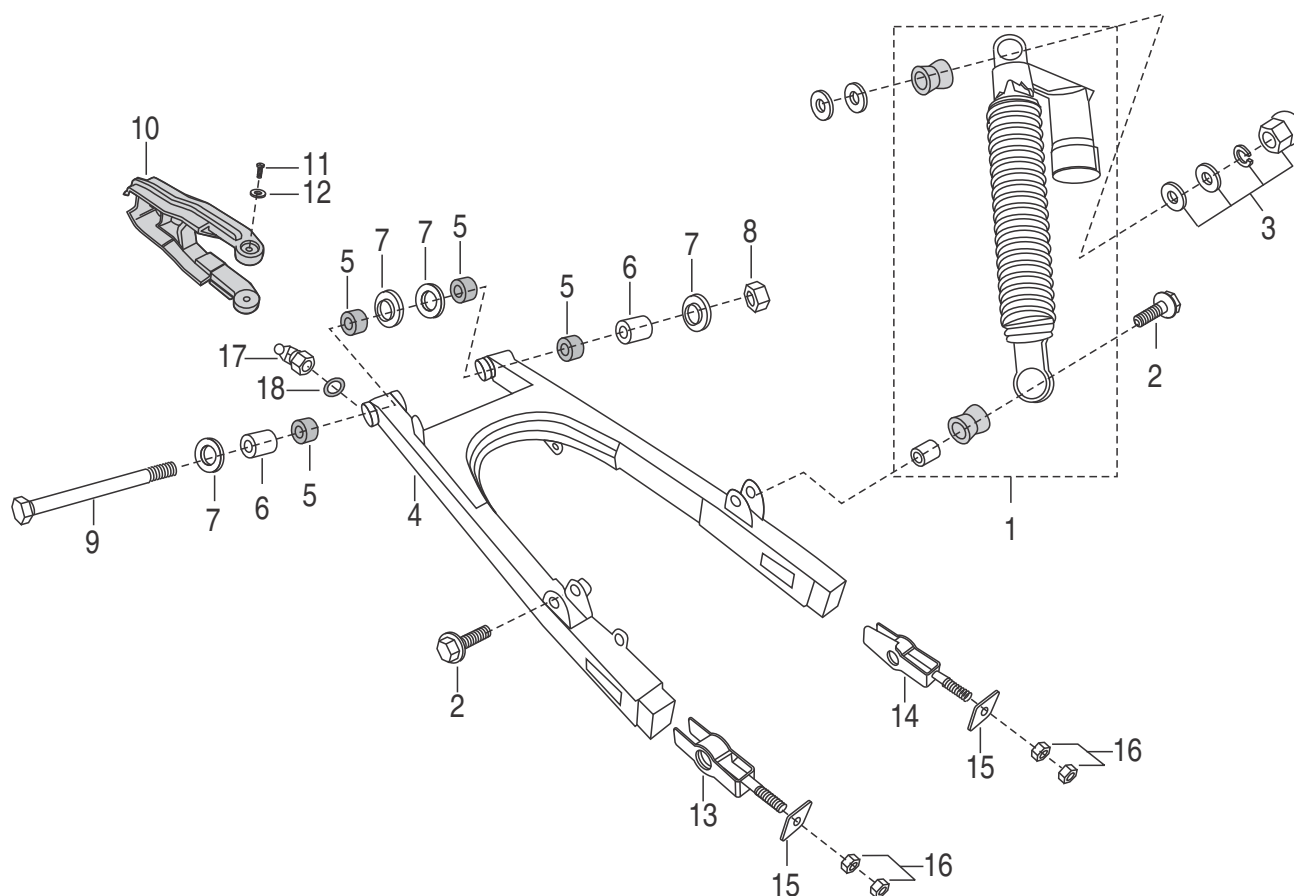
Fit :

- 2 Number plate holding bolts.
- Number plate with damper rubber.



Fit :

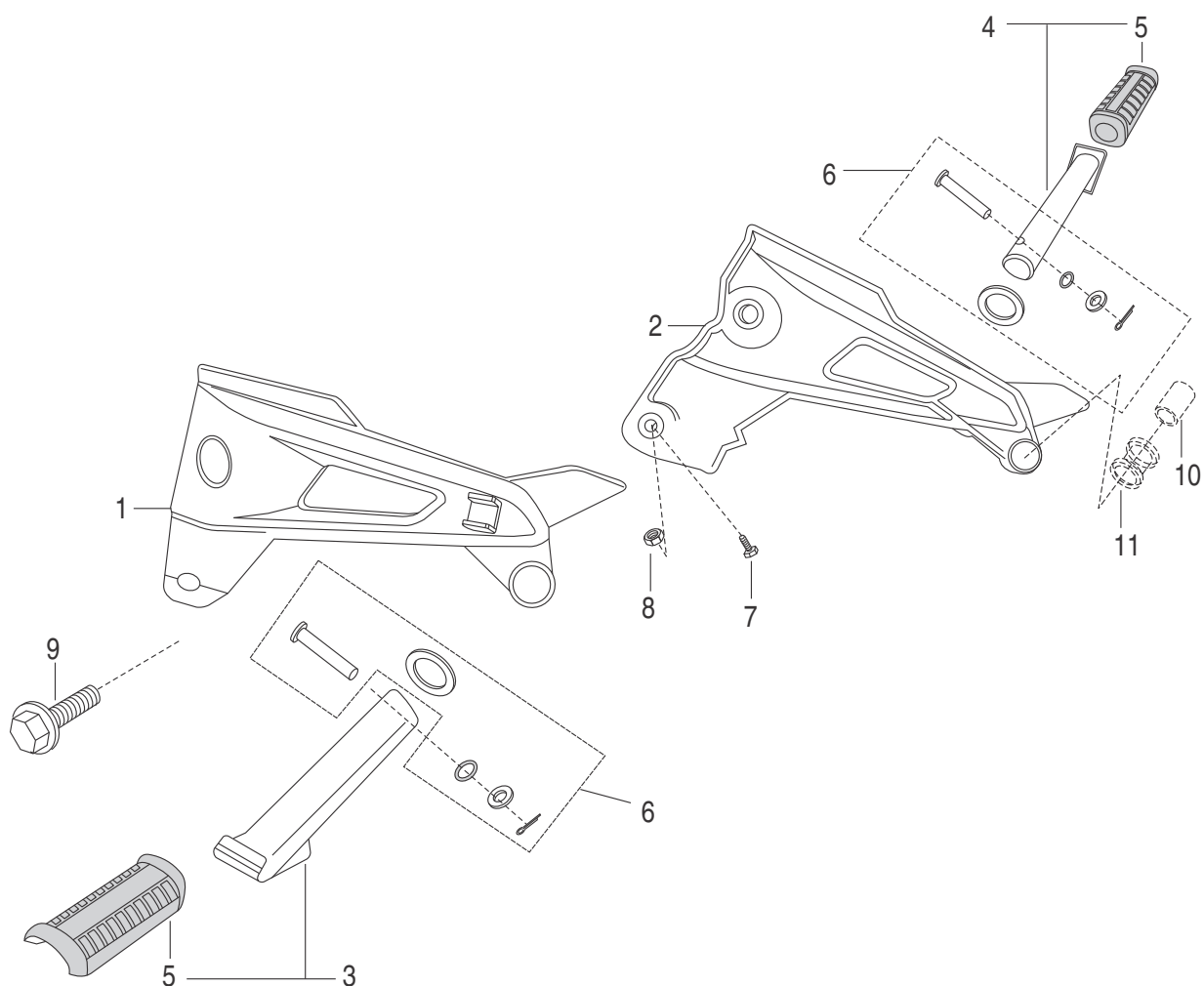
- Visor.
- 4 screws.



S.N.	Description	Qty
1	Rear Shock Absorber	2
2	Bolt Pre-coated	2
3	Kit Bush Rear Shock	1
4	Swing Arm Assly.	1
5	Bush Swing Arm	4
6	Collar Swing Arm	2
7	Dust Seal Swing Arm	4
8	'U' Nut Swing Arm	1
9	Shaft Swing Arm	1

S.N.	Description	Qty
10	Chain Slider	1
11	Screw	2
12	Plain Washer	2
13	Adjuster Chain LH	1
14	Adjuster Chain RH	1
15	Plate Chain Adjuster	2
16	Hexagon Nut	4
17	Grease Nipple	2
18	Plain Washer (nylon)	2

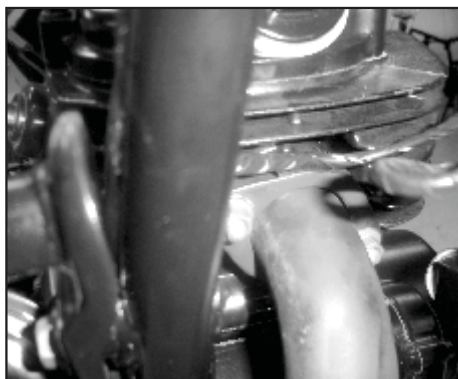




S.N.	Description	Qty
1	Holder LH Step	1
2	Holder RH Step	1
3	Pillion Step Assly. Comp. LH	1
4	Pillion Step Assly. Comp. RH	1
5	Rubber Pillion Step	2
6	Kit Hardware Pillion	2
7	Hexagonal Head Screw	2
8	Nut	1

S.N.	Description	Qty
9	Flanged Bolt	2
10	Tube Silencer Mtg.	1
11	Damper Silencer Mtg.	1
12	Flange Bolt M10	1
13	Washer Plain	1
14	U Nut M10	1
15	Grease Nipple Kit	1





Remove :

- 2 flange nuts.



Remove :

- Allen bolt.
- Nut.
- Silencer complete.

Note :

1. *Slide down the flange of silencer for easy removal of silencer assembly.*
2. *Ensure that the silencer is not in hot condition or else may cause injury / burn.*



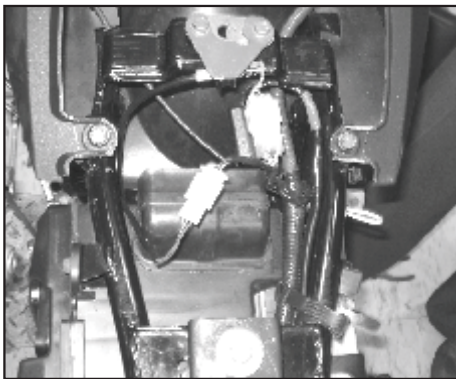
Remove :

- Circlip.
- Nut.
- Torque link rod.



Remove :

- Brake rod nut.
- Brake rod.
- Distance piece.
- Spring.



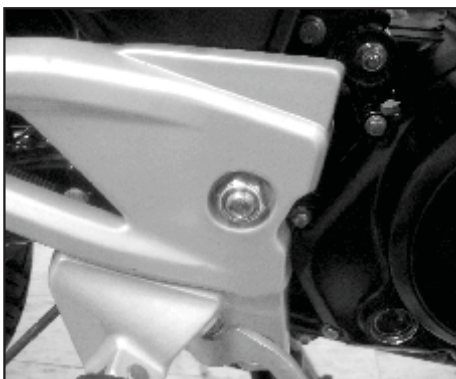
Remove :

- Rear brake switch coupler.



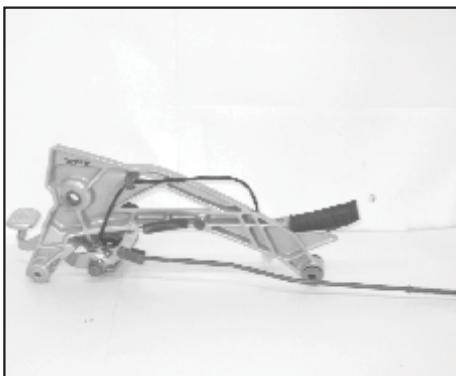
Remove :

- Bolt.



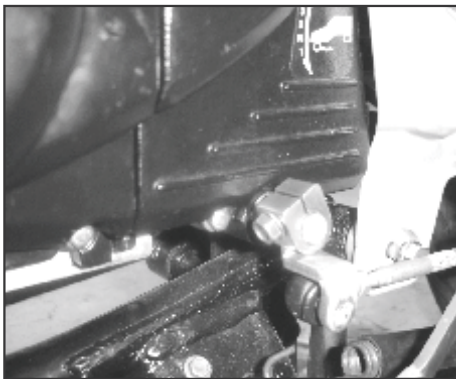
Remove :

- Swing arm RH side nut.



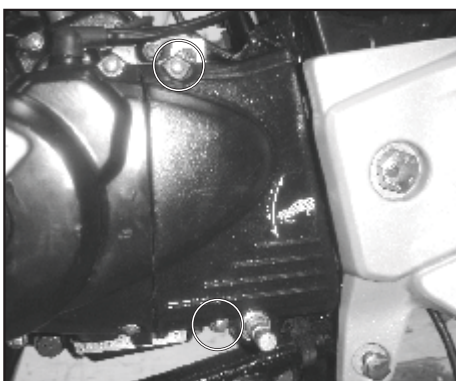
Remove :

- Step holder RH complete.



Remove :

- Bolt
- Gear pedal yoke.



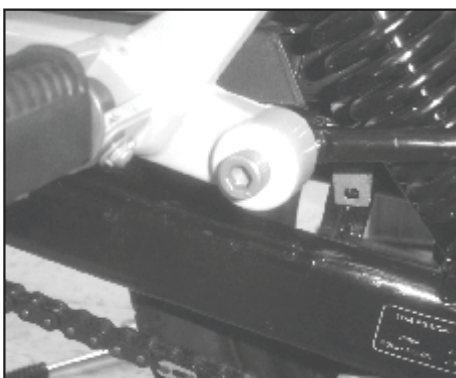
Remove :

- 2 bolt.
- Chain cover.



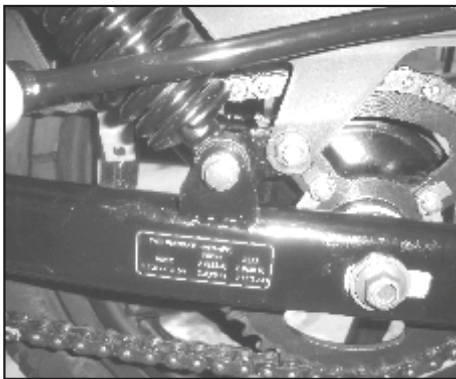
Remove :

- Bolt.



Remove :

- Allen bolt.



Remove :

- 2 bolts for chain cover.
- Chain cover.



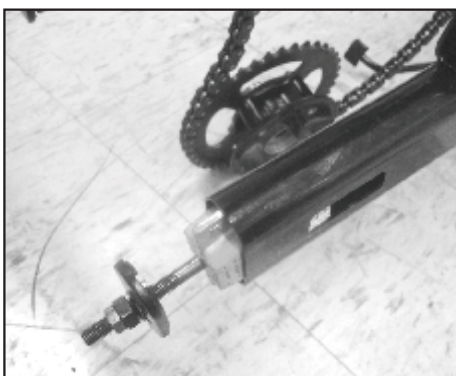
Remove :

- Axle nut
- Washer
- Distance
- Axle
- Washer



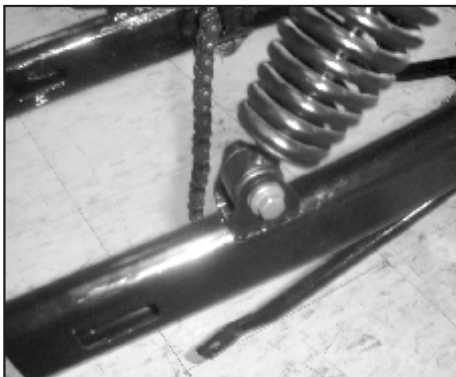
Remove :

- Drum panel plate
- Wheel



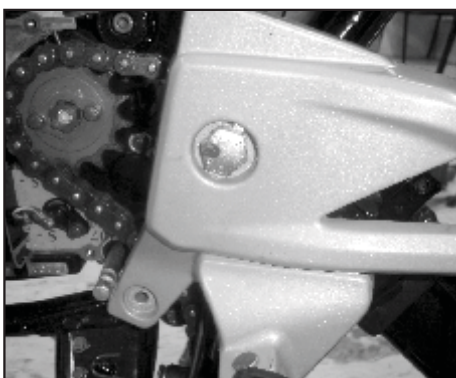
Remove :

- Chain adjuster assembly from LH / RH side.
- Rear sprocket.
- Distance central.
- Distance LH.



Remove :

- Bolt for RSA - LH & RH.



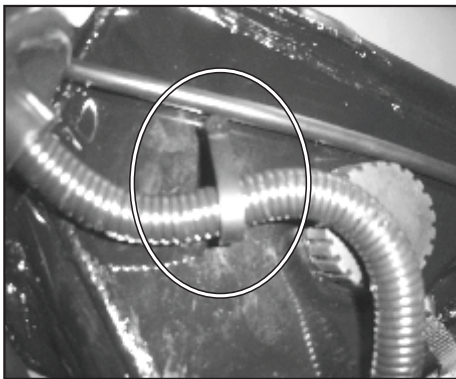
Remove :

- Axle swing arm.
- Step holder LH.

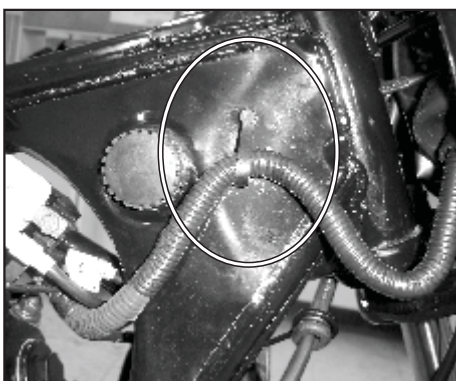


Remove :

- Guide the chain out.
- Swing arm.
- Bush LH & RH.



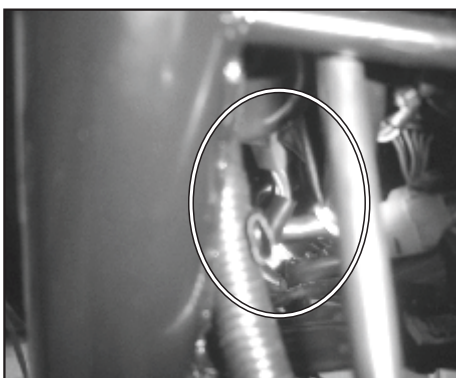
- From RH side of frame's steering tube area route the corrugated wiring harness as shown in the photograph.



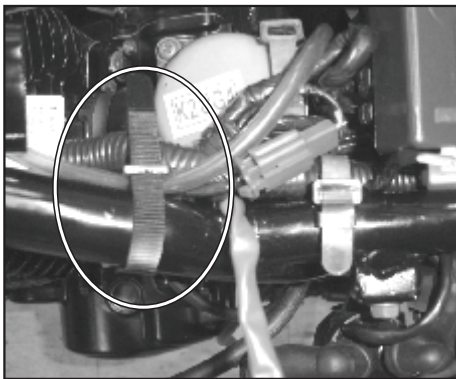
- Clamp the wiring harness at the lamp shade clamp & frame's RH side clip as shown in the photograph.



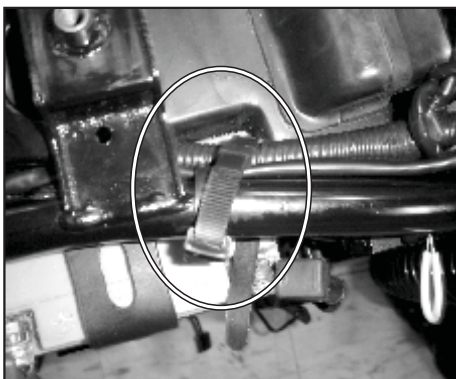
- From LH side of frame's steering tube area route the corrugated wiring harness as shown in the photograph.



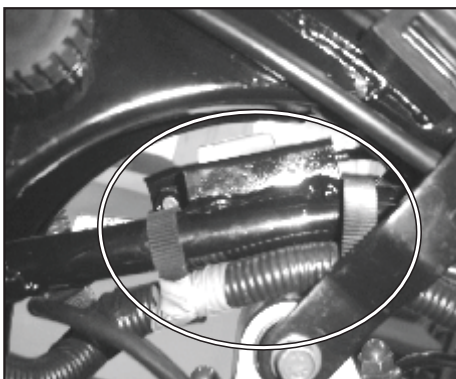
- Clamp the wiring harness at the lamp shade clamp for both side wiring harness respectively as shown in the photograph.



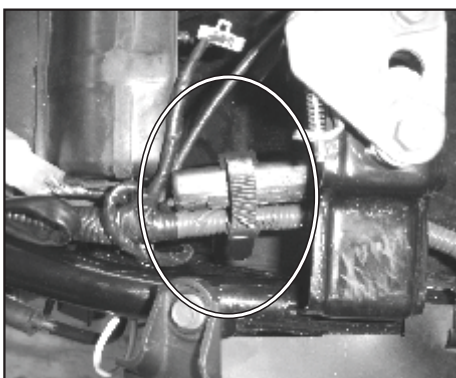
- Clamp the wiring harness on main member of frame by band as shown.



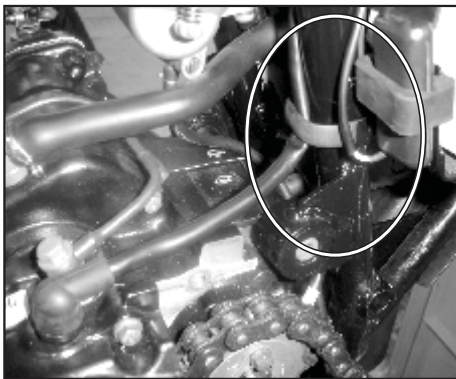
- Clamp the wiring harness on main member of frame (above the battery) by band as shown.



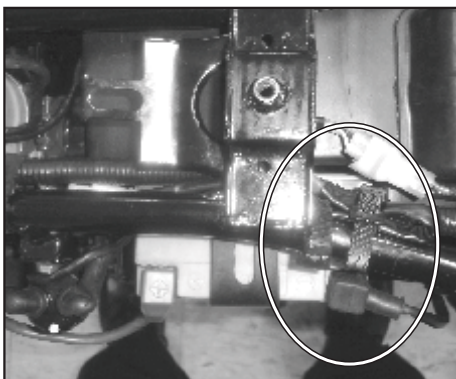
- Clamp the wiring harness on LH side long member of frame at two locations shown.



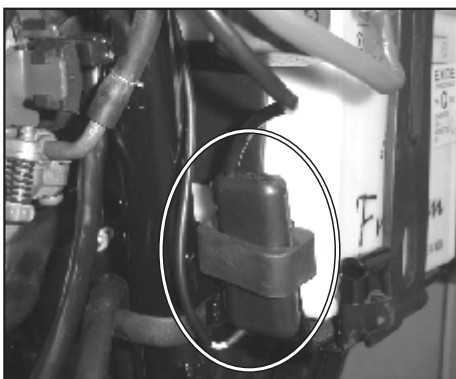
- Clamp the fuse box as shown in photograph.



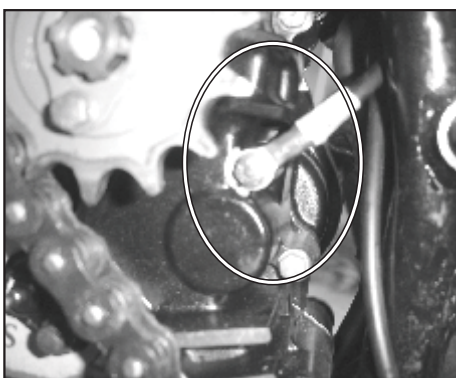
- Route the stator plate wiring through the clamp provided on frame as shown in the photograph.



- Clamp the harness with the clamp on long member as shown in the photograph.



- Position of main fuse box.



- Body earthing of starter motor & DC electrical system.



- Clean master cylinder & caliper thoroughly by low pressure water spray before opening master cylinder top cover & caliper bleeder screw.



- Drain the brake fluid from caliper assembly by loosening air bleeder screw & using transparent PVC tube which will avoid spillage of brake fluid on caliper body / disc pads & also powder coating peel off / inefficient braking.



- First remove hose pipe by removing banjo bolt & then remove caliper assembly from fork mounting location.



- Remove the allen bolt of LH caliper.



- Remove both brake pads.



- Remove holder bracket & pad spring.

- Remove piston by applying compressed air through banjo bolt hole. Due to compressed air pressure, the piston will be pushed out of caliper body.

Caution :

Do not apply high compressed air pressure >2 bar. This could cause piston to fly out from caliper body, causing damage to it & any one in the vicinity.



- Remove pistons & all rubber parts. Clean caliper body by Diesel / Kerosene. Dry caliper body by applying compressed air.





- Replace caliper assembly major / minor kit.



- Smear silicon grease on piston OD & rubber seals.



- Insert piston into caliper bore.



- Clean the anchor pin & holder bracket thoroughly.



- Smear silicon grease on anchor pins evenly.



- Fit holder bracket on caliper assembly.

- Clean brake pads by smooth emery paper.



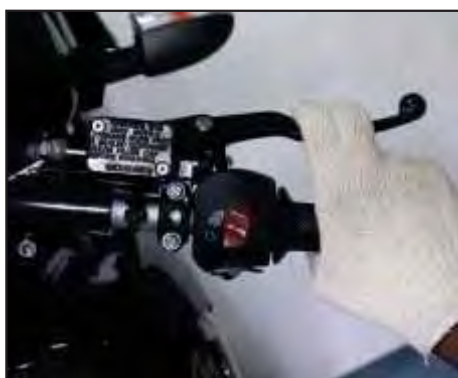
- Fit brake pads & allen bolt into the LH caliper & RH caliper.



- Fit caliper assembly on fork mounting & fit the brake hose pipe by tightening banjo bolt.



- Remove reservoir cap & rubber diaphragm. Fill brake fluid up to max level.



- Remove the air by bleeding process. Maintain oil level above MIN mark.

- Re-fit rubber diaphragm & reservoir cap. Check brake effectiveness.

- Drive the vehicle & confirm brake effectiveness.

Note :

- **Use DOT-3 / DOT-4 brake fluid from a sealed container.**
- **Ensure no leakage of brake fluid through brake hose / benjo bolts / caliper assembly.**
- **Carry out air bleeding if required.**





- Clean master cylinder & caliper thoroughly by keeping nozzle in spray mode before opening master cylinder top cover & caliper bleeder screw.



- Drain the brake fluid from caliper assembly by loosening air bleeder screw & using transparent PVC tube which will avoid spillage of brake fluid on caliper body / disc pads & also powder coating peel off / inefficient braking.



- Remove front brake switch & brake lever.



- Remove protection boot & remove the circlip with the help of plier.



- Keep the container below the master cylinder for oil collection during opening.



- Remove brake hose from master cylinder by loosening banjo bolt.



- Insert blunt tipped screw driver or steel spoke from banjo bolt side & push piston towards brake lever. (Ensure master cylinder does not get damaged due to screw driver or spoke)



- Take out piston assembly from brake lever side.

- Remove master cylinder cap, remove master cylinder from handle bar & clean internals by using brake fluid.

- Dry master cylinder by compressed air.



- Fit master cylinder on handle bar. Smear silicon grease on new piston seals of master piston kit.



- Insert piston assembly from brake lever side into master cylinder bore.



- Insert the circlip with the help of plier.



- Insert protection boot correctly so that dust will not enter.



- Refit the brake lever & front brake switch.



- Use new copper washers & fit hose pipe by tightening banjo bolt.



- Fill brake fluid up to MAX level.



- Remove the air by bleeding process. Maintain oil level in between MAX & MIN level.

- Re-fit rubber diaphragm & reservoir cap. Check brake effectiveness.

- Drive the vehicle & confirm brake effectiveness.

Note :

- *Use DOT-3 / DOT-4 brake fluid from a sealed container.*
- *Ensure no leakage of brake fluid through brake hose / benjo bolts / caliper assembly.*
- *Carry out air bleeding if required.*





- Clean brake system by keeping nozzle in spray mode.



- Drain brake fluid from caliper assembly by opening air bleeder screw.



- Remove the hose pipe fitment banjo bolt from both ends (master cylinder & caliper assembly).



- Replace the hose pipe as well as copper washers fitted at both ends.



- Route the front brake hose as shown in photographs.



- Conduct the brake bleeding procedure.



- Clean the surface area of master cylinder.



- Drain brake fluid from caliper air bleeder bolt.

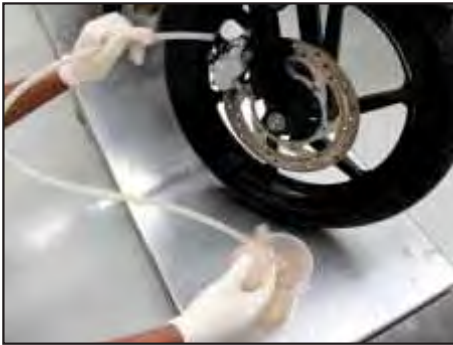


- Tighten the air bleeder bolt on caliper assembly.
- Remove reservoir cover by removing 2 nos. phillips head screws.



- Remove PVC cap & rubber diaphragm.

- Perform air bleeding of disc brake system if the brake operation is spongy.
 - a. Remove rubber cap from caliper's bleeder screw.
 - b. Fit a proper tube which fits snugly tight on the bleeder screw nipple.
 - c. Insert ring spanner through the pipe fitted on the bleeder screw nipple.



- d. Connect the tube to siphon pump's pipe and loosen the bleeder screw by the ring spanner.

- e. Press the bellow of the Siphon pump in its valve open position. Then close the valve of the pump and release the bellow. Simultaneously press the brake lever to take out air trapped in the system. Carry out the same procedure until the entire air trapped in the system gets removed.



- Fill the master cylinder reservoir by using DOT-3 / DOT-4 brake fluid.



- Fill the master cylinder reservoir by using DOT-3 / DOT-4 brake fluid.



- Fit the master cylinder cover.

- Press the front brake lever and check the operation of disc brake.



- f. During this process continuously monitor and maintain the brake fluid level in the master cylinder reservoir slightly above the minimum mark.

- For drum brake vehicles, check and adjust front brake lever free play. It should be 4 ~ 5 mm for all motorcycles.

- Ensure front wheel is rotating freely.

Note :

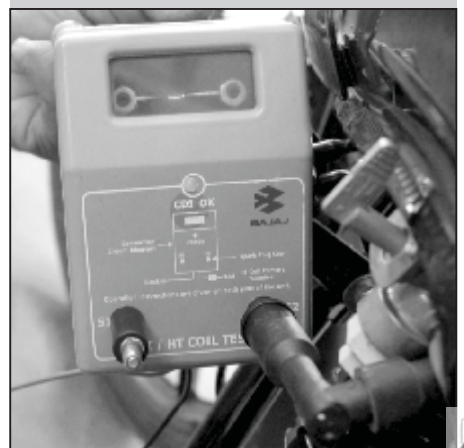
- **Use DOT-3 / DOT-4 brake fluid from a sealed container.**
- **Ensure no leakage of brake fluid through brake hose / benjo bolts / caliper assembly.**
- **Carry out air bleeding if required.**



[illegible]


Electrical

- Battery
- Electrical Checking Procedure
- Starter Motor
- Battery - Dos & Don'ts
- SOP for Checking Battery Charge Condition
- Dos & Don'ts
- Electrical Circuit Diagrams



Battery

Technical Specification :

• Type & Capacity	Pulsar 150 - 12V - 7 AH Pulsar 180 - 12V - 9 AH	
• 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	Pulsar 150 - 0.5 Amp, Pulsar 180 - 0.9 to 1 Amp	

Initial Charging Procedure

1. Fill each cell with battery grade sulfuric acid of the correct Sp. gravity (1.24 at room temp. for use above 10°C and 1.28 at room temp. for use below 10°C).
2. Allow the battery to stand for 30 min. after filling.
3. Keep vent plugs open. Connect battery to charger and charge at 0.9 Amp.
4. Charge continuously for 10~15 hours taking Sp. 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.
5. After charging push vent plugs strip firmly into place and wash off acid spillage with water and dry the battery.
6. Using the battery load tester confirm for good indication of state of charge of battery.

Checking the Specific Gravity

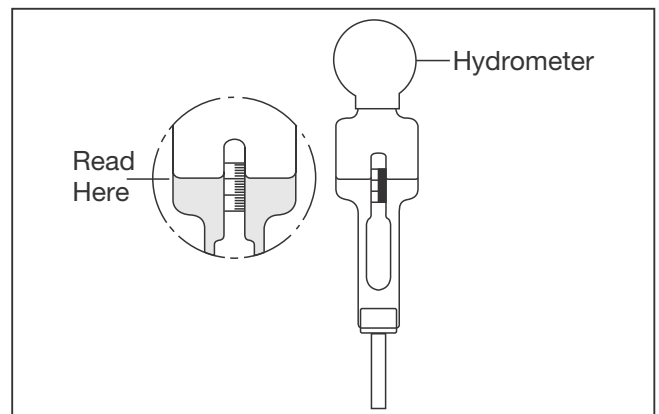
The charge condition of the individual cell can be checked by measuring Sp. gravity of electrolyte in that cell. The specific gravity of electrolyte can be checked by using Hydrometer having small diameter spout.

For measuring the Sp. gravity bring the electrolyte in the Hydrometer to eye level, and read the graduations 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 strip, wash acid spillage with water. Dry the battery. Ensure terminals are clean.

Battery Installation:

Install the battery on vehicle as described below

- a. Ensure that in all six cells the level of electrolyte is near the maximum level mark.
- b. To clean and dry the surface wipe the top of the battery with a clean cloth. Install the battery



- c. Connect cables to the positive and negative terminals properly. Reverse connections will damage the charging system permanently.
- d. Always connect "negative (earthing) terminal" at last.
- e. Clean battery terminals and cable connections. Smear them with petroleum jelly to avoid corrosion.
- g. Check that the battery cable connections are firm and cables do not rub against any metal components.

Battery Charging Procedure :

This is a M.F (Maintenance Free) battery. This battery is not having any exhaust tube instead it has a unique vent mechanism.

The electrolyte level in this M.F. battery needs to be topped up with distilled water not exceeding the max level if found that the electrolyte level is below min level / dropped down. In case battery in discharged and needs to be charged using battery charged procedure is as follows :

- Remove battery from vehicle
- Clean battery thoroughly
- Remove gang bar strip.

- Top up level with distilled water to max level when the electrolyte level is less than half of min & max level.
- Connect battery to charge & ensure respective terminal are connected properly.
- Set charging current at 0.9 A DC.
- Charge battery for 3/4 hrs., then check voltage and special gravity.
- Battery open circuit voltage should be > 12.5 volts (when disconnected from charger) & special gravity in all 6 cells should be 1.240. This is a confirmation check for a fully charged battery.
- Disconnect the battery from the charger.
- Fit gang bar plug firmly.
- Using the battery load tester confirm for good indication of state of charge of battery.
- Connect battery on to vehicle.
- Apply petroleum jelly on battery terminal.

Battery Maintenance

For the optimum performance and longer battery life the maintenance of battery is important.

- a. Always keep the battery clean and dry.
- b. Visually inspect the surface of the battery container. If there are any signs of cracking or electrolyte leakage from battery, replace the battery.

Never add acid or ordinary tap water for topping up since this will shorten Battery life.

Non Use Maintenance

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

- a. Remove the battery from vehicle.
- b. Maintain electrolyte at 'Upper Level'.
- c. During off service period, battery should be charged once a month or if the battery DC voltage drops below 12.3 V.
- d. Keep the battery fully charged.
- e. Store the battery in cool, dry place.
- f. 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 (Sulphate 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 :

- a. Undercharging.
- b. Standing in a partially or completely discharge condition for long time.
- c. 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.
- d. Adding acid : If acid is added to a cell in which sulphation exists the condition will be aggravated.
- e. High specific gravity : If specific gravity is higher than the recommended value, then sulphation may occur.
- f. High temp.: 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 1 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.

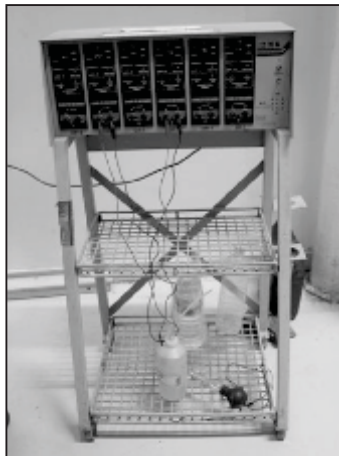
How to Determine Condition of Battery

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 Sp. 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.

Note :

Use of battery load tester will give the correct indication of state of charge of battery on load conditions.



6 Channel Battery Charger

- Make
- Model

Teknikraft

12M6, with stand

Suitable for charging 6 batteries

(2.5Ah/5Ah/7Ah/9Ah)

Constant current type having 0.25 Amp.

/0.5 Amp./0.7 Amp./0.9 Amp. current settings.



Checking Condition of Battery



For checking condition of battery, load tester as per following specifications is to be used :

Make Midtronics
Model PBT50

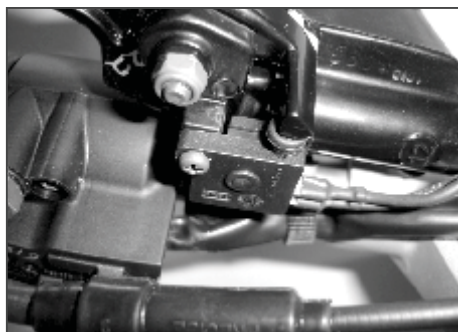


Procedure for checking battery condition

- Disconnect battery +ve & -ve terminals.
- Confirm battery type & reference no.
- Connect load tester's Red & Black cable to battery +ve & -ve terminal respectively.
- Press test button.

LED Indication	Status	Result	Action
Green LED glowing	OK	Battery is fully charged	Battery can be used on the vehicle.
Green & Yellow LED glowing	OK / LOW	Battery is partially discharged.	Charge the battery on battery charger
Yellow LED glowing	LOW	Battery is discharged & needs charging	Charge the battery on battery charger
Red LED glowing	X	Not OK	<ul style="list-style-type: none"> • Try charging on charger.
			<ul style="list-style-type: none"> • Observe for half an hour if charger gives indication of 'bad battery', then discontinue charging and scrap the battery.
			<ul style="list-style-type: none"> • If there is no bad battery indication then continue charging till charging is over.
			<ul style="list-style-type: none"> • Again test battery condition using PBT 50 load tester. If result is OK, then put the battery on vehicle.



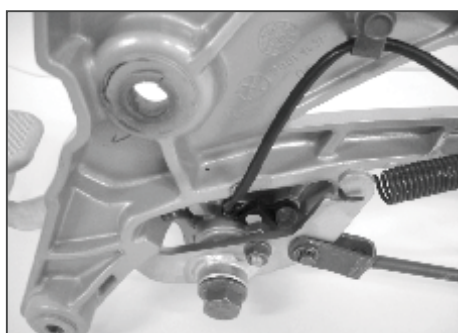


Switches :

Front Brake Light Switch Inspection :

- Turn ON the ignition switch.
- The brake Light LED Blank should get on when the front brake (Lever is pressed) is applied.
- If it does not, check the Front brake switch.

	Brown	Blue
Lever Pressed	● —	● —
Lever Released	●	●



Rear Brake Light Switch Timing Inspection :

- Turn ON the ignition switch.
- Check the operation of the rear brake light switch by depressing the brake pedal
- If it does not operate as specified, adjust the brake light switch or check the switch.

	Brown	Blue
Pedal Pressed	● —	● —
Pedal Released	●	●



Neutral Switch :

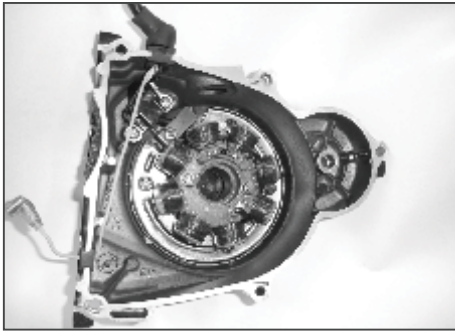
- The neutral switch will be in ON position only when the engine is in neutral.
- The neutral light will not glow when vehicle is in gear.

	Light Green	Earthing
'ON' (Vehicle in neutral)	● —	● —
'OFF' (Vehicle in gear)	●	●



Ignition Switch :

	Brown/Blue	White
'OFF'	●	●
'ON'	● —	● —

**Stator Plate Coils Inspection :**

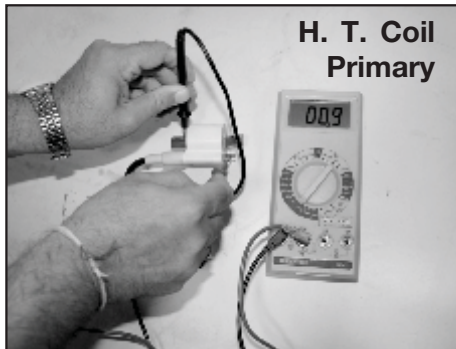
- Disconnect stator plate coupler
- Set multi meter on ohm range. (Ohm Meter)

Pickup Coil Resistance :

Range	Connections		Reading
2 K Ω	Meter +ve	Meter -ve	215 \pm 20 ohm
	White/Red	Black/Yellow	

Battery Charging Coil :

Range	Meter +ve	Meter -ve	Reading
200 Ω	Blue/White	Blue/White	0.9~1.1 Ω at 25°C

**H. T. Coil
Primary****H. T. Coil Resistance Checking**

Measuring & Testing Equipment : Multimeter

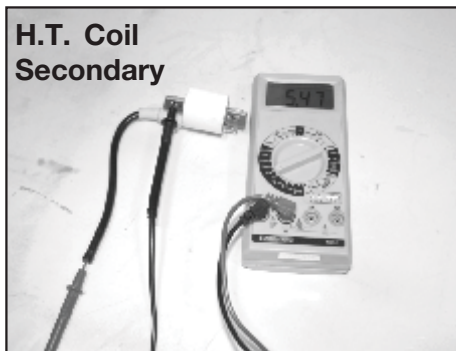
- Measure the primary winding resistance as follows

Meter Range	Connections		Standard Value
200 Ohms	Meter +ve	Meter -ve	0.3 ~ 0.5 Ohms at 25°C
	White / Yellow	Black / Yellow	

- Measure the secondary winding resistance as follows
- Remove the plug cap by turning it counter clockwise.

Meter Range	Connections		Standard Value
20 K Ohms	Meter +ve	Meter -ve	4.5 ~ 5.5 K Ohms at 25°C
	White / Yellow	Black / Yellow	

- If the value does not match as per, specifications replace the coil.
- If the meter reads as specified, the ignition coil windings are probably good. However, if the ignition system still does not perform then check spark output of HT coil using CDI / HT coil tester.

**H.T. Coil
Secondary****H. T. Coil Spark Output Checking**

S.N.	LED Status	Spark Status	Conclusion
1.	Glow	Continuous Bluish Spark	Ignition system is OK
2.	Glow	No Spark	HT Coil / Spark plug / Plug cap may be defective
3.	Glow	Intermittent Spark	HT Coil / Spark plug / Plug cap may be defective
4.	Does not Glow	No Spark	Check pick up coil & Exciter coil if found OK then replace CDI



**Fuse :**

Main Fuse Inspection (Capacity = 15 Amp) / Secondary Fuse Inspection (Capacity = 10 Amp)

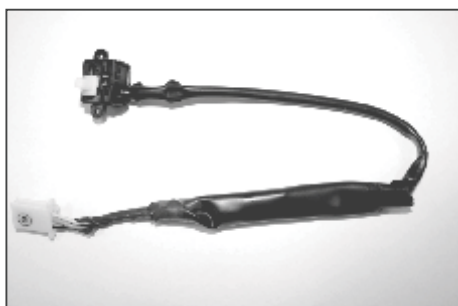
- Inspect the fuse element
- If it is blown out, replace the fuse.
- If a fuse fails during operation, the electrical system to determine the cause, and then replace it with a new fuse of proper amperage.

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

**Relay :**

Solenoid Relay (Inspection Using Multi meter)

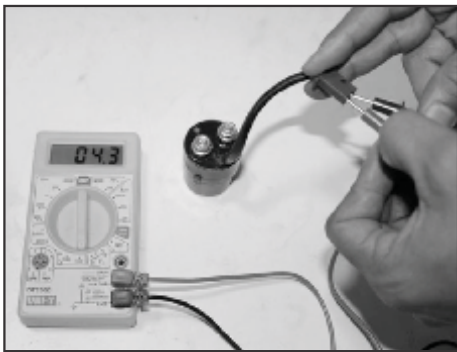
Coil Resistance	Meter +ve	Meter -ve	Reading
X 200 Ohm	Red/Yellow	Black	3.8 ± 2.0 Ohm

**Clutch Switch :**

The clutch switch has 3 wires and it has contact configuration of this vehicle is not having interlock relay Instead its working is taken care of by clutch switches.

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





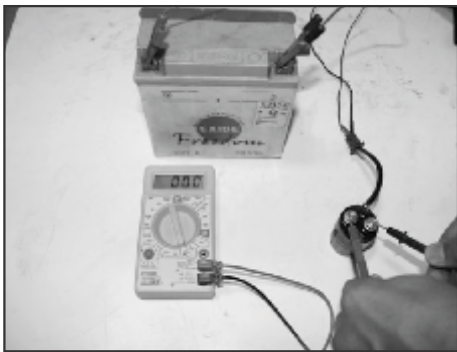
Starter Relay Coil Resistance Checking

Measuring & Testing Equipment : Multimeter

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

SOP :

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



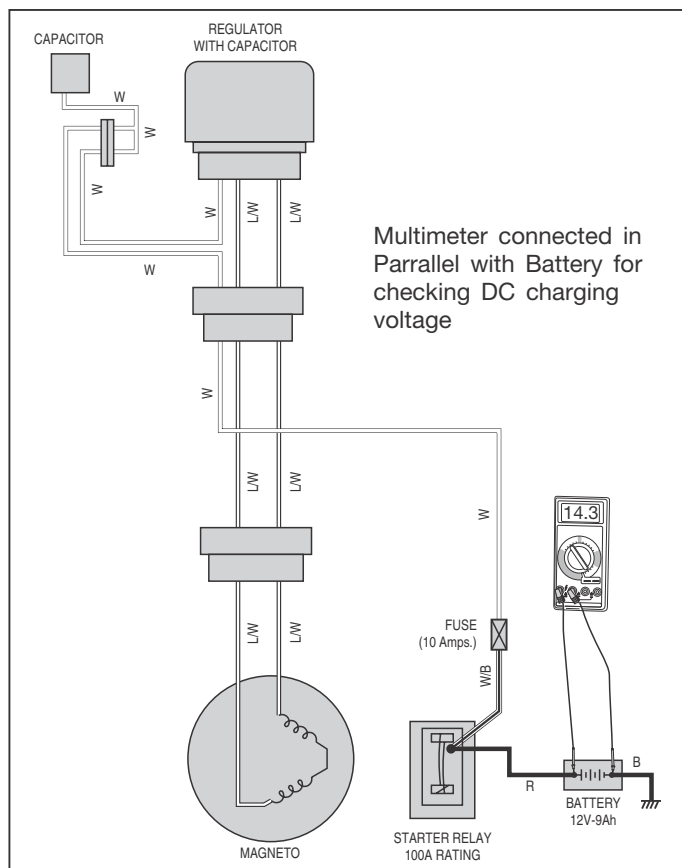
Starter Relay Continuity Checking

Measuring & Testing Equipment : Multimeter

SOP :

- Connect external 12V DC supply to starter relay coil terminals.
- 'Tuk' sound will be heard.
- Set multimeter on continuity mode.
- Connect multimeter at to relay contact terminals.
- Continuity (beep sound) indicates starter relay is OK.

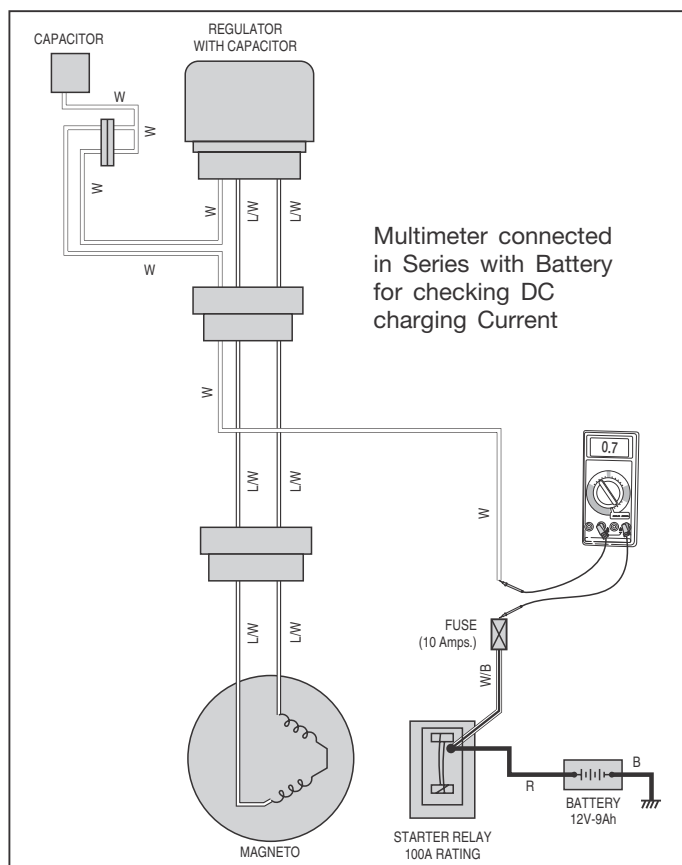




DC Charging Voltage Measurement : (Use fully charged battery while measuring)

To measure the DC voltage; set the meter at 20VDC range. Connect the meter +ve lead to white from RR unit 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. Stop the engine disconnect the meter leads.

Meter Range	Specification at 4500 RPM
DC 20 Volt	14.3 to 14.7 V



Battery DC Charging current : (Use fully charged battery ensuring battery voltage = 12.5 ± 0.3 V before measuring)

To measure the DC charging current, set the meter at 20ADC. Connect meter +ve lead to White/black lead from RR Unit and meter -ve lead to battery +ve lead.

Start the engine and set it at 4000 ± 25 RPM. Measure the DC charging current. The DC charging current should be 0.7 A max stop the engine and disconnect meter leads. Connect the RR unit and battery.

Meter Range	Connection		Specification
DC10A	Meter +ve White/Black terminal of R/R	Meter -ve Battery (+) lead (White)	0.7 A max at 4000 ± 25 RPM

Note :

Connect multi meter in series with the circuit while conducting above test.





Fuel Gauge - Tank Unit

Measuring & Testing Equipment : Multimeter

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



Standard Value : (For 150 CC & 180 CC)

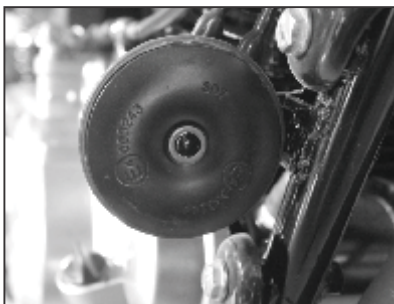
Fuel Level on	Fuel Quantity	Standard value	Graphical Bar Instrument cluster
Empty Tank	1.25+0.3 Liter	93~101 Ohm	0 Bar
Reserve	2.8 Liter	67~77 Ohm	2 Bars
Just Above Reserve	3.5 Liter	58~62 Ohm	3 Bars
Half Tank	4.5 Liter	36~44 Ohm	4 Bars

Note: Before checking the above, please confirm

- Battery Voltage
- Speedometer coupler & fuel gauge tank unit coupler connection is firm.

Note: Before checking the above, please confirm

- Battery Voltage
- Speedometer coupler & fuel gauge tank unit coupler connection is firm.



Horn

Measuring & Testing Equipment : DC Clamp Meter

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

SOP :

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



Speedometer Console : The speedometer has a wide Digital LCD screen with a orange backlit display mode for superb visibility of display during night riding condition.

This entire speedo console houses following :

- A large analogue tachometer with self check mechanism.
- A red LED indicator showing low fuel level (Reserve-3.6 Lit) inside the fuel tank.
- Digital Displays for - linear speed in Kmph.
 - Odometer
 - Trip meter (Unique facility of resetting the trip meter 1 and 2 respectively)
- A row of indication LED displaying functioning of
 - Neutral Light
 - High beam
 - Turn signal
 - Side stand on indication



Additional battery charge status indication system is provided. The glowing of this icon indicates

Low Battery Voltage

Please ignore battery icon during cranking



as Battery Voltage drops < 11.9 V during cranking

A unique Day-Night mode functioning feature is provided it means the LED glows intensely in day time and in evening and night time LED glows dim. This feature is provided for riders convenience and Safety.

Maintenance :

- Do not apply pressurized water jet on speedo console.
- Speedo console should not be kept inverted.
- Ensure no scratches / breakage of glass of speedo console
- Ensure Speedo console coupler is firmly fitted.
- Try to park the vehicle in shadow & avoid direct facing to sun rays.

Note :

The speedometer console has a unique built in memory logic function which stores on the data in its memory even if DC supply is disconnected.





Tail LED Lamp :

The illumination for Tail lamp and Brake lamp are done through 2 rows of LED's each. These are high intensity LED's.

The main advantage of these LED's is that;

- They consume very less power. i.e LED consumes 3W power against 21 W power of a conventional brake lamp.
- Life of LED is infinite.
- Light output is equivalent to that of a bulb.
- With this tail LED lamp battery discharge possibility is very minimum in case of a brake switch short condition.

When you operate light control switch to glow, the intensity is low. As soon as you operate brake switch the brightness of LED increases to show you bright light.

This changeover of intensity is maintained with the help of electronic circuit placed inside Tail Lamp Console assly and is a totally sealed unit.



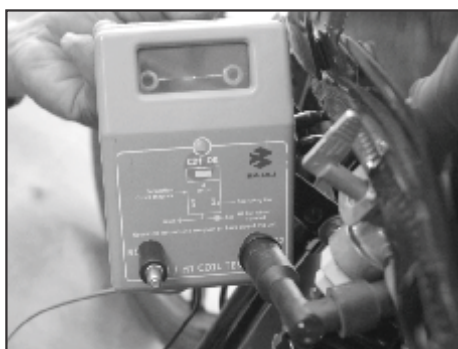


CDI Assembly

Identification :

- Case colour - Black for Pulsar 150
- Coupler - White 2 coupler with sealed type.
- Case colour - Brown for Pulsar 180
- Coupler - Black 2 coupler with sealed type.
- Make - Varroc

Measuring & Testing Equipment : CDI / HT
Coil Tester.



SOP for CDI/H.T. Coil Checking

Measuring & Testing Equipment : CDI / HT Coil tester.

- Hang the unit on leg guard of the vehicle.
- Remove Spark Plug cap & connect to suitable terminal S1/S2 on the unit.
- Connect 'Red' probe of the unit to HT coil primary terminal.
- Connect 'Black' probe to earth.
- Start the engine.
- Status of LED & Spark window indicates the result as below.

S.N.	LED Status	Spark Status	Conclusion
1.	Glow	Continuous Bluish Spark	Ignition system is OK
2.	Glow	No Spark	HT Coil / Spark plug / Plug cap may be defective
3.	Glow	Intermittent Spark	HT Coil / Spark plug / Plug cap may be defective
4.	Does not Glow	No Spark	Check pick up coil & Exciter coil if found OK then replace CDI

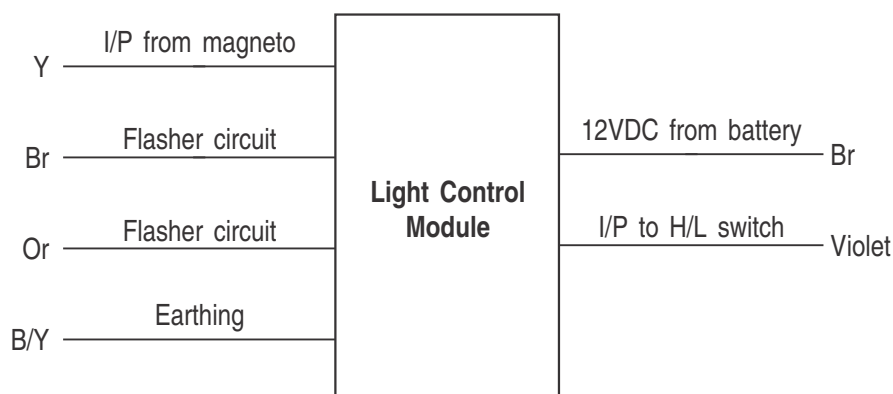
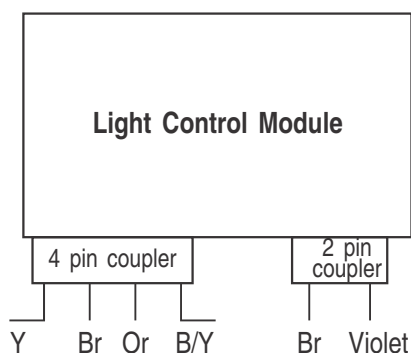


Light Control Module

Location : Mounted on bracket above high beam projector lamp.
This unit is a combination of head light controller & flasher unit.

Function :

The flasher circuit controls the flashing rate & operation of side indicators.
The light control module switches ON head light (Low beam & High beam) only when engine is in running condition.



Measuring & Testing Equipment : Multimeter.

SOP :

- Switch ON ignition switch & kill switch.
- Set multimeter to 20 VDC.
- Connect multimeter as shown in table given below.

Sr.	Condition	Wire connections		Std Reading
		Meter +ve	Meter -ve	
1.	Ignition switch ON & kill switch ON.	Br (2 pin coupler)	B/Y	12 VDC
2.	Engine is running - H/L switch OFF.	Violet	B/Y	14.5 VDC
3.	Engine is running - H/L switch ON.	Violet	B/Y	13.5 VDC





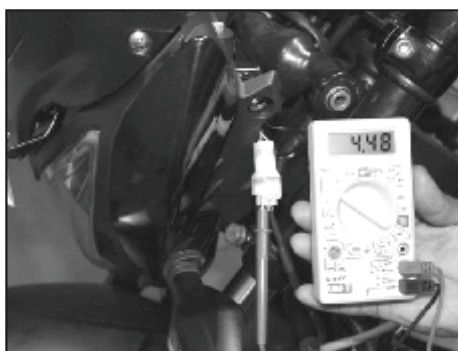
Vehicle Speed Sensor

- Non contact Wheel Sensor - In LCD speedo console there are no moving parts as wheel speed is sensed through a non contact hall effect sensor. The hall sensor is an electronic switch which operates due to magnetic field. The sensor has 3 wires - Supply, Earth & Output. This sensor converts one rotation of front wheel into 8 pulses & these are transmitted to digital speedometer through a sensor cable.

Do's & Don'ts

- Do not apply pressurized water jet on vehicle speed sensor.
- Handle wheel sensor carefully while working on front brake drum related repairs.
- Ensure sensor cable is intact & not fouling with any other part.
- Speed sensor should not physically touch to magnetic ring.

Note: Gap between speed sensor & magnetic ring must be : max 4 mm & min - 0.5 mm. Ensure intact condition of 'O' Ring for speed sensor. Use correct size 'O' Ring in case of replacement.



SOP for checking wheel sensor

Measuring & Testing Equipment : Multimeter

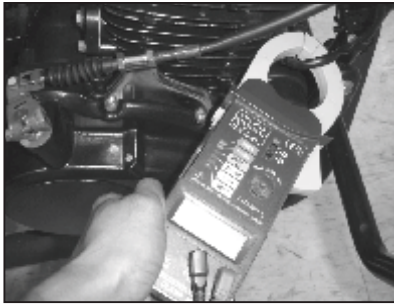
1. Set multimeter to 20 VDC
2. Connect multimeter to 4 pole coupler of wheel sensor as per table given below.

Multimeter +ve	Blue-White wire
Multimeter -ve	Black-Yellow wire

3. Switch ON ignition switch
4. Rotate front wheel slowly, mark on the tyre for identification and to ensure that one rotation is complete.
5. In one rotation of front wheel, 8 pulses are generated per revolution. The reading on multimeter will vary between 4~4.5 VDC & 0VDC 8 times.
6. Conclusion -

Wheel Sensor OK	If 8 times reading on multimeter varies between 4 ~ 4.5 VDC and 0 VDC in one rotation of front wheel.
Wheel sensor Faulty	If reading on multimeter does not vary & remains continuously in the range of 4~4.5 VDC
	If reading on multimeter does not vary & remains continuously in the range of 0VDC.





Starter Motor - Current Drawn

Measuring & Testing Equipment : DC Clamp Meter

Meter Range	Connections	Standard Value
200 DC A	Encircle clamp meter transformer jaws around thick Red wire of starter motor	30 ~ 38 Amps Spark Plug Caps removed (Measured at 27°)

SOP :

- Switch 'ON' Ignition Key & disconnect both spark plug caps (care to be taken so that spark plug does not jump to metal part)
- Select range & set clamp meter Zero reading.
- Encircle red input wire of starter motor by clamp meter jaws.
- Crank engine by pressing self starter button.
- Press self starter button 3 seconds & check cranking current displayed on clamp meter LCD display.



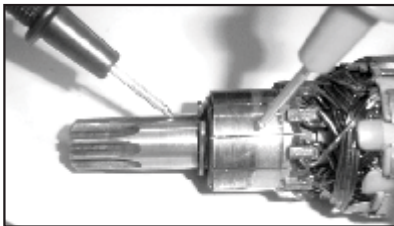
Starter Motor Armature

Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
Continuity mode	Meter +ve	Meter -ve	No continuity is shown
	Commutator segment	Shaft	

SOP :

- Dismantle starter motor & take out Armature.
- Check continuity between starter motor shaft & each segment on commutator.
- Replace armature if continuity is shown.

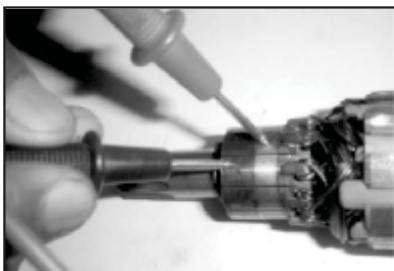


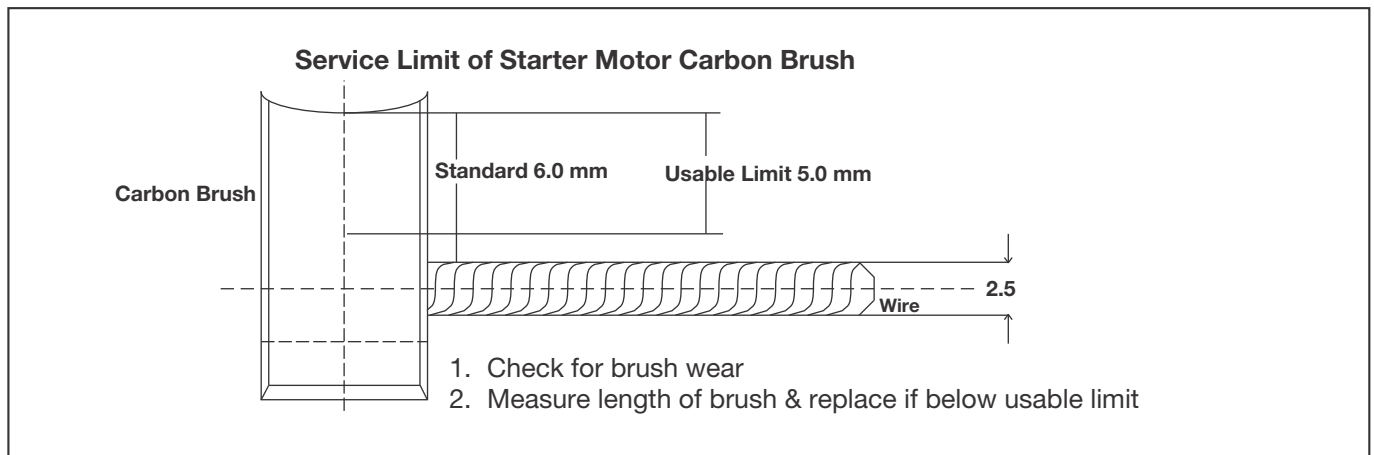
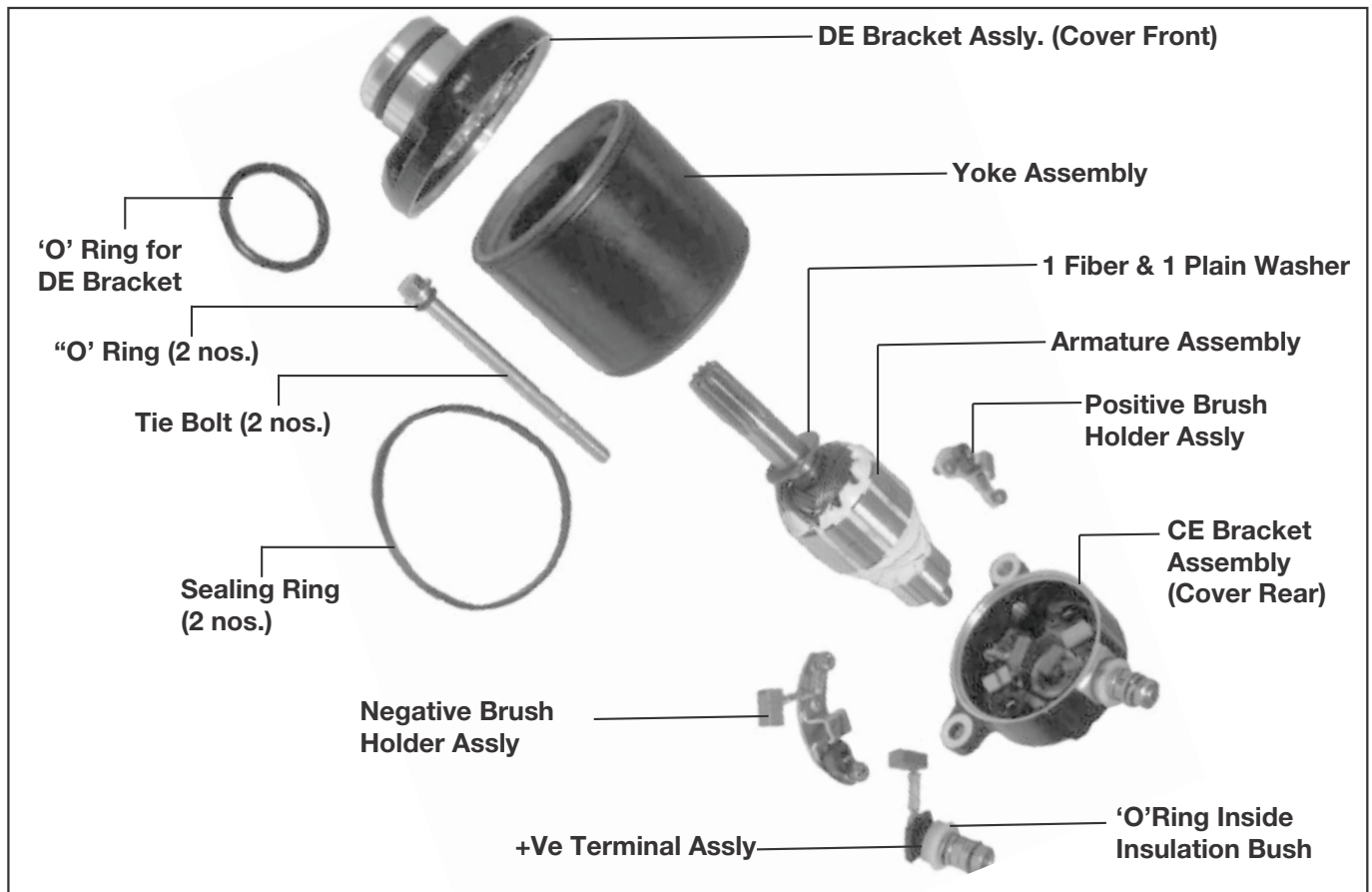
Measuring & Testing Equipment : Multimeter

Meter Range	Connections		Standard Value
Continuity Mode	Meter +ve	Meter -ve	Continuity is shown
	Any segment on commutator	Adjacent segment on commutator	

SOP :

- Dismantle starter motor & take out armature
- Check continuity between each pair of adjacent segments on commutator.
- Replace armature if 'No' continuity is shown between any two adjacent pair of commutator segments.

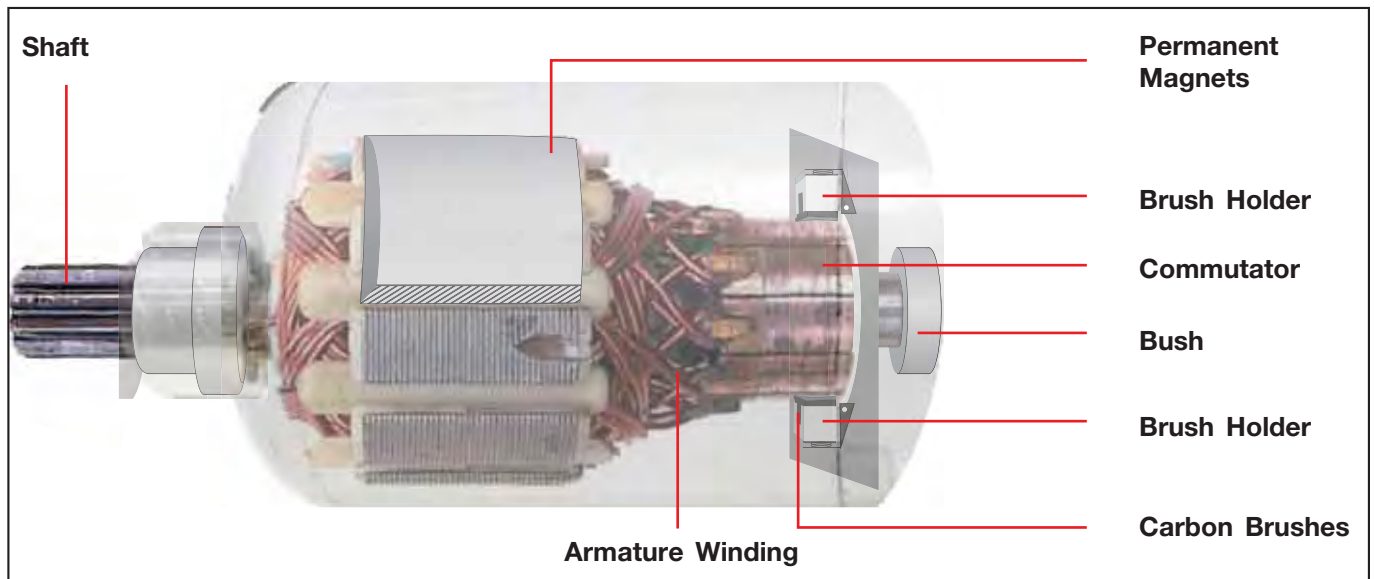




Periodic Maintenance (After warranty period)

- Check, Inspect & if required Replace carbon brushes, Springs at every 15,000 Kms
- Remove carbon particles from commutator slots.
- Clean commutator segments.
- Lubricate brass bush by 2 ~ 3 drops of Servo 32 oil & NR Bearing by high temperature-high speed OKS410 grease
- Check as per SOP the continuity between 2 adjacent segments of commutator with the help of Multimeter.
- Replace Yoke Sealing Rings & tie bolt 'O' Rings whenever starter motor is dismantled.

Note : Do not dismantle starter motor within warranty period.



Do's

- Remove carbon particles from commutator slots by sharp blade / knife.
- Clean commutator segments by soft cloth.
- Lubricate brass bush by 2~3 drops of Servo 32 oil & NR Bearing by high temperature-high speed OKS410 grease .
- Clean the carbon particles deposited inside the rear end cover.
- Remove all accumulated rust particles by paper.
- Ensure firm connection of Red wire of starter motor
- Replace the Yoke sealing Rings if worn out / broken.
- Ensure the +ve brush holder assly securing nut is fully tight.
- Use correct capacity and fully charged battery.
- Starter switch should be released immediately once the engine starts.
- Assemble Starter Motor front cover such that the mark on it matches with 2 marks on body. Assemble rear cover such that mark on it matches with 1 mark on body. Otherwise motor will rotate in reverse direction due to reverse polarity of magnets. This will give cranking trouble.
- Replace Yoke Sealing Rings & tie bolt 'O' Rings whenever starter motor is dismantled.
- Put few drops of oil on starter motor front cover 'O' ring before assembling starter motor.



Don'ts

- Do not drop down the motor.
- Don not Clean Commutator segments by polish paper.
- Do not wash or clean the armature and carbon with kerosene or petrol.
- Do not hit the motor body by hammer or screw driver as it will lead to magnet breakage.
- Do not use worn out / broken sealing rings of Yoke assly as this would lead to water entry.
- Do not direct pressurized water jet on motor body during washing.
- Do not crank the engine continuously in case the engine does not start. Analyze the cause and correct. Otherwise battery will get drained and the starter motor will get damaged.
- Do not energize the starter motor when the engine is running. Serious damages will occur to the drive mechanism.
- Don't press starter switch more than 3 seconds. After 3 successive cranking, if engine doesn't start, wait 15 ~ 20 seconds for battery to recover & then crank for next cycle.



Battery

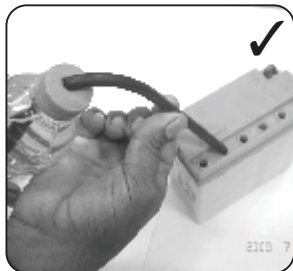
✓ Dos



- Apply petroleum jelly to poles / terminals.



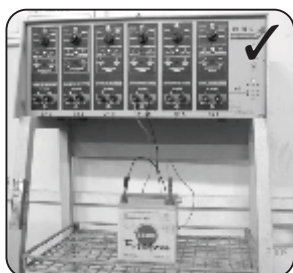
- Use proper tools.



- Use only distilled water to top up battery.



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



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

✗ Don'ts



- Do not apply grease to poles / terminals.



- Do not hammer battery terminals.



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



- Do not increase the level of electrolyte beyond maximum level mark otherwise it would over flow through Vent Mechanism & damage other parts.



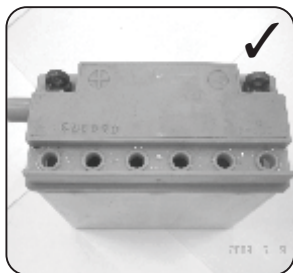
- Do not quick charge battery by current higher than specified current.
- Constant voltage charging method must be strictly avoided.
- Do not use local make battery charger.

Battery

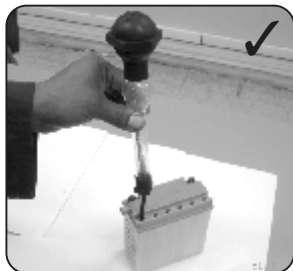
✓ Dos



- Check open circuit voltage by multi meter.



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

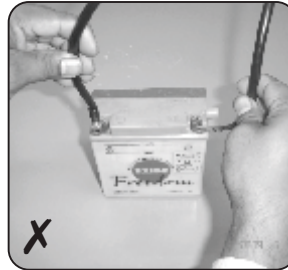


- Use hydrometer for checking specific gravity

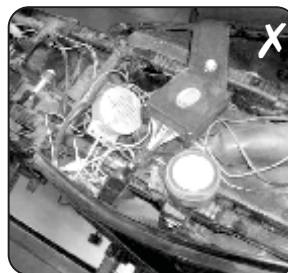


- Use midtronics battery tester for checking battery charge condition.

✗ Don'ts



- Do not short circuits the poles.



- Do not fit extra electrical accessories (Tampering of wiring for fitting buzzer etc.) other wise wiring would get short & battery would get discharged. This will shorten the life of battery.

SOP for Checking Charge Condition of Battery



- Ensure Ignition switch of the vehicle is in OFF position.



- Disconnect battery terminals. Always remove negative wire first, then remove positive wire



- Confirm battery type, & check for reference no. printed on the back side of the instrument



Connect Battery tester clamps to battery terminals, observing correct polarities.

- Connect + ve & - ve wire clamps of Battery to +ve & -ve terminals of the Battery tester.



- Confirm display indication on LCD.
- Clamps connection is not firm, remove dirt, dust, rust if any from battery terminals.



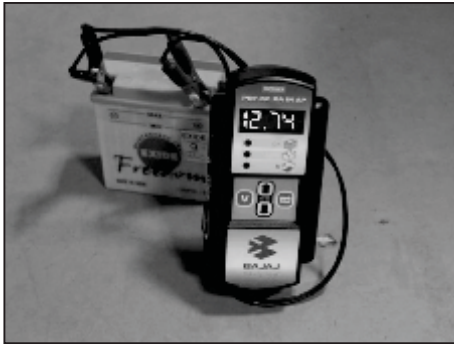
- Battery voltage is less than 8VDC.
- Internal disconnection of battery terminal



- This is reference no. typed when used last time. Set correct reference no. of battery to be tested using UP/DOWN keys & reference no. chart printed on back side of the instrument.



- Push "TEST" button for checking condition of battery tester
- Voltage indication & Green LED is glowing-Battery is OK & can be used on vehicle.



- Voltage indication and green & yellow LED's are glowing-Battery is partially charged. Charge the battery using Metafab make VRLA battery charger



- Voltage Indication & yellow LED is glowing-Battery is discharged. Charge the battery using Metafab make VRLA battery charger



- Voltage indication & red LED is glowing-Battery is deep discharged. Charge battery on Metafab VRLA battery charger for 30 minutes. If battery can not be charged, BAD battery indication will be displayed on charger & battery needs to be disposed off, If no such indication is displayed then continue charging till charging is over.

HORN

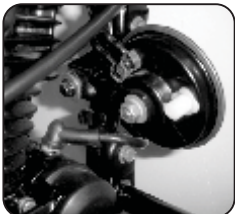
✓ Dos



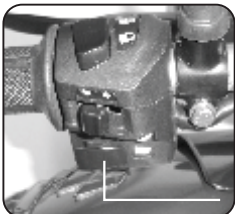
Ensure that horn is firmly fitted on frame



Ensure that horn is free from dust and mud accumulation.



Ensure that horn wires are intact.



Ensure that horn switch button is operating freely.



Ensure that battery is fully charged.



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

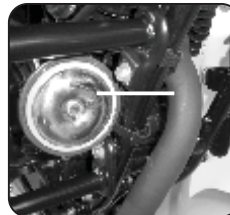


Ensure that resonator is not pressed by any portion of cables or wiring harness as it will result in distorted sound.

✗ Don'ts



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



Do not apply pressurised water jet directly on horn resonator.



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



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



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

IGNITION SYSTEM

✓ Dos



- Always install recommended capacity of battery on the bike.
- Always replace spark plug by correct heat range plug.
- Check & adjust spark plug gap periodically. Adjust it to 0.7~0.8mm by feeler gauge.
- Replace spark plug at every 30,000 kms.
- Check for firm fitment of spark plug in cylinder head - Tightening torque 1.3 ~ 1.5 Kgm.
- Ensure H.T. cable secondary connection is firmly fitted in spark plug cap and H.T. coil.
- Check that CDI coupler is tightly fitted.
- Ensure that magneto coupler is firmly fitted.
- Always use a right size socket during removal and re-installation of spark plug.
- During periodic service make use of spark plug cleaning machine to clean spark plug electrodes & check proper functioning of both the spark plugs.

✗ Don'ts

- Do not replace spark plug by non recommended one (different heat range).
- Do not replace CDI by local make or different make.
- Never short circuit H.T. coil primary wire to ground. It could lead to CDI failure.
- Do not adjust the spark plug gap with any instruments like screw Driver, pliers etc.
- Do not drive the vehicle without battery. Driving motorcycle in battery removed condition could cause damage to electrical components like voltage regulator because of no load Condition.



LIGHTS



Do's

- Check that all bulbs are firmly fitted in bulb holder.
- Ensure that all fixing screw of bulb housing are intact.
- Ensure that Reflector / Glass of Head Lamp, Tail Lamp, Side indicator is intact.
- Check that couplers and wires of bulbs are in good condition.



Don'ts

- Do not install a lower / higher capacity battery than what is recommended.
- Do not use Higher / Lower wattage Bulbs.
- While washing Vehicle do not direct pressurized water jet on Head Light, Tail Light, Indicators.
- Do not ride on brakes.
- Do not start Vehicle with light control switch in ON condition.

SWITCHES



Do's

- After washing the vehicle ensure to apply dry air on switches before operation.
- Always ensure that grommets provided on clutch switch, front brake switch and rear brake switch are intact.
- Always apply WD-40 Rust Spray to sticky switches.

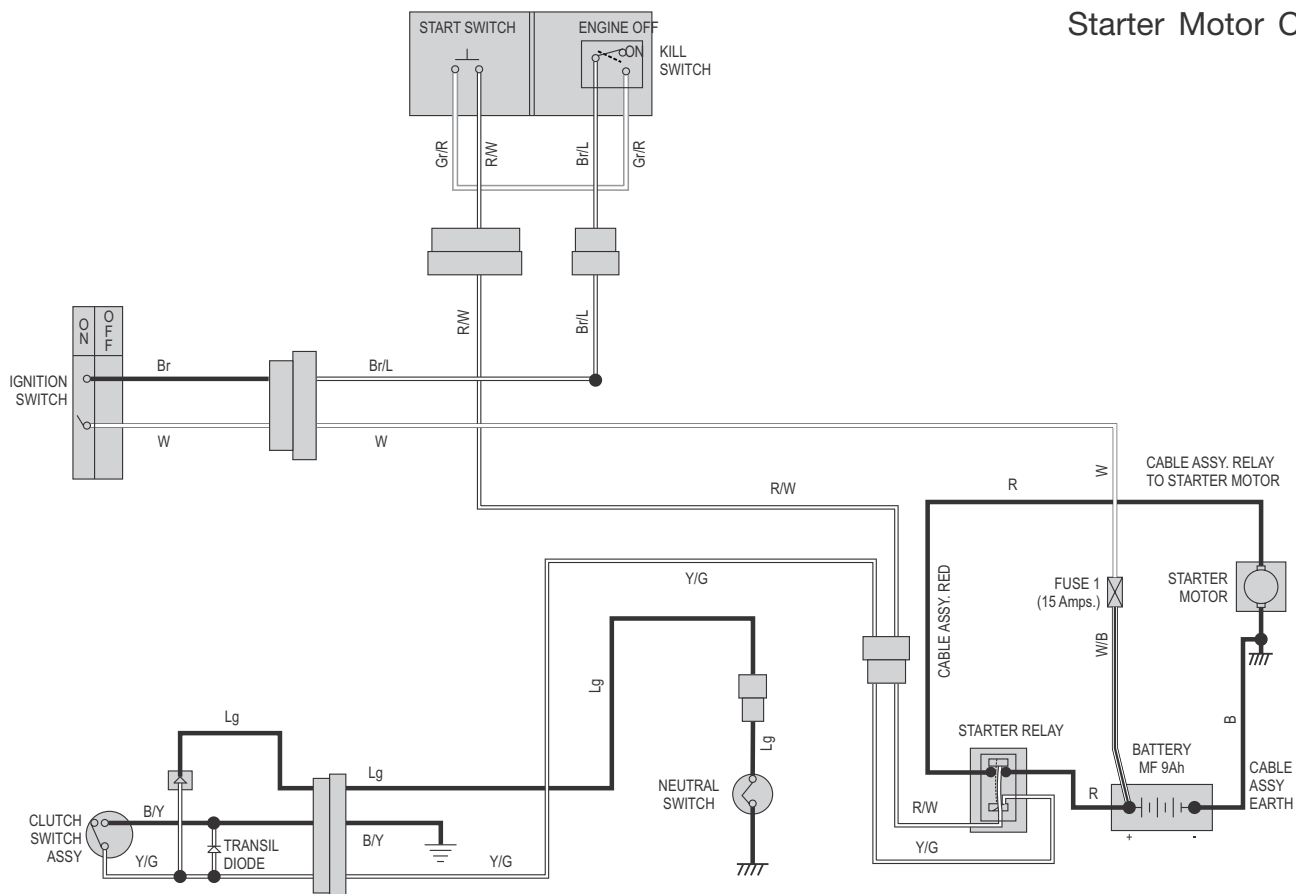


Don'ts

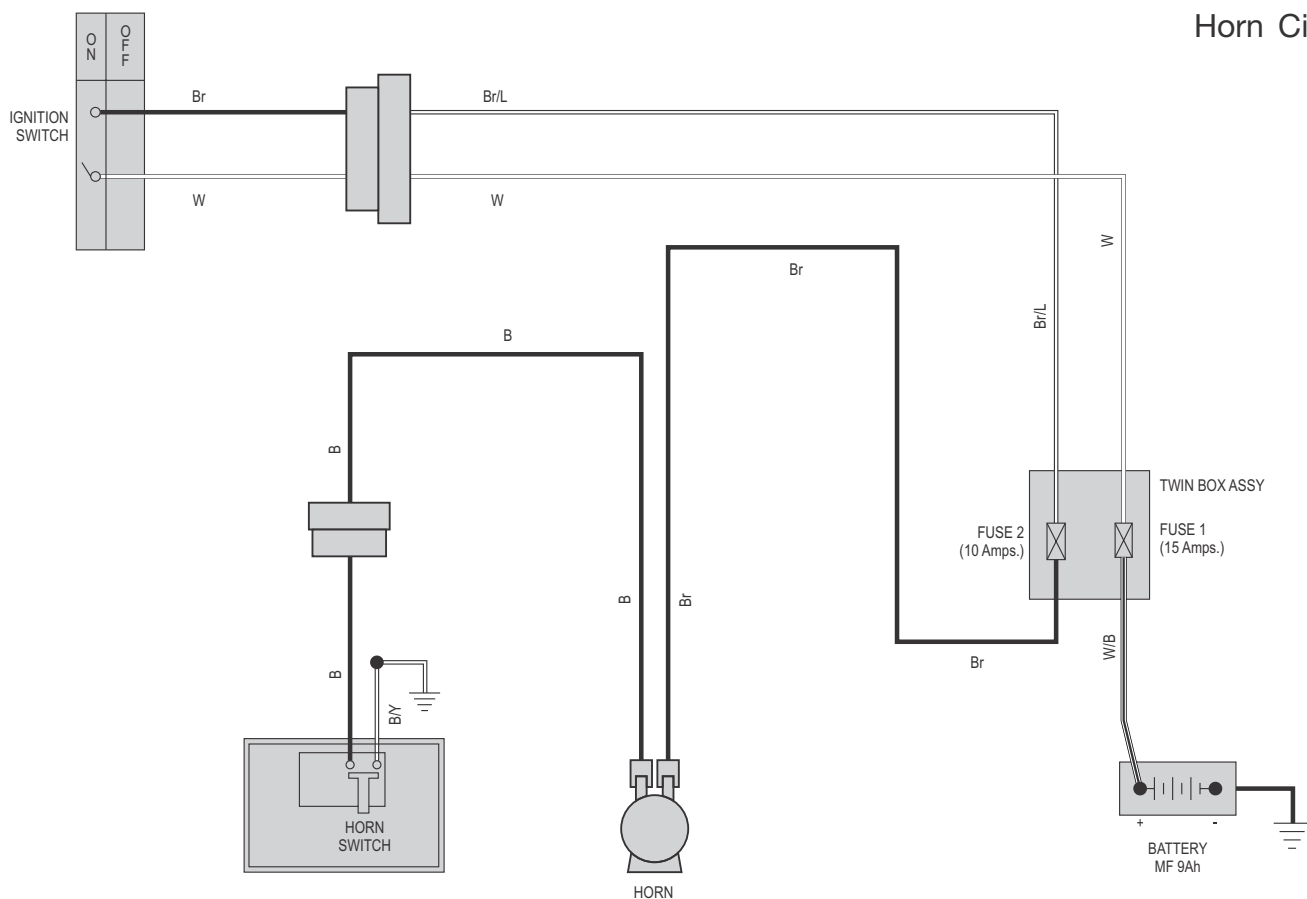
- Do not apply direct pressurized water jet on control switches.
- Do not lubricate electrical switches by oil or grease.
- Do not over tighten the switches.
- During warranty period do not dismantle control switches.
- Do not add extra electrical loads e.g. musical horns, additional horns, buzzers as it will reduce switch contact life & battery life & battery life.
- Do not operate switch immediately after water servicing.



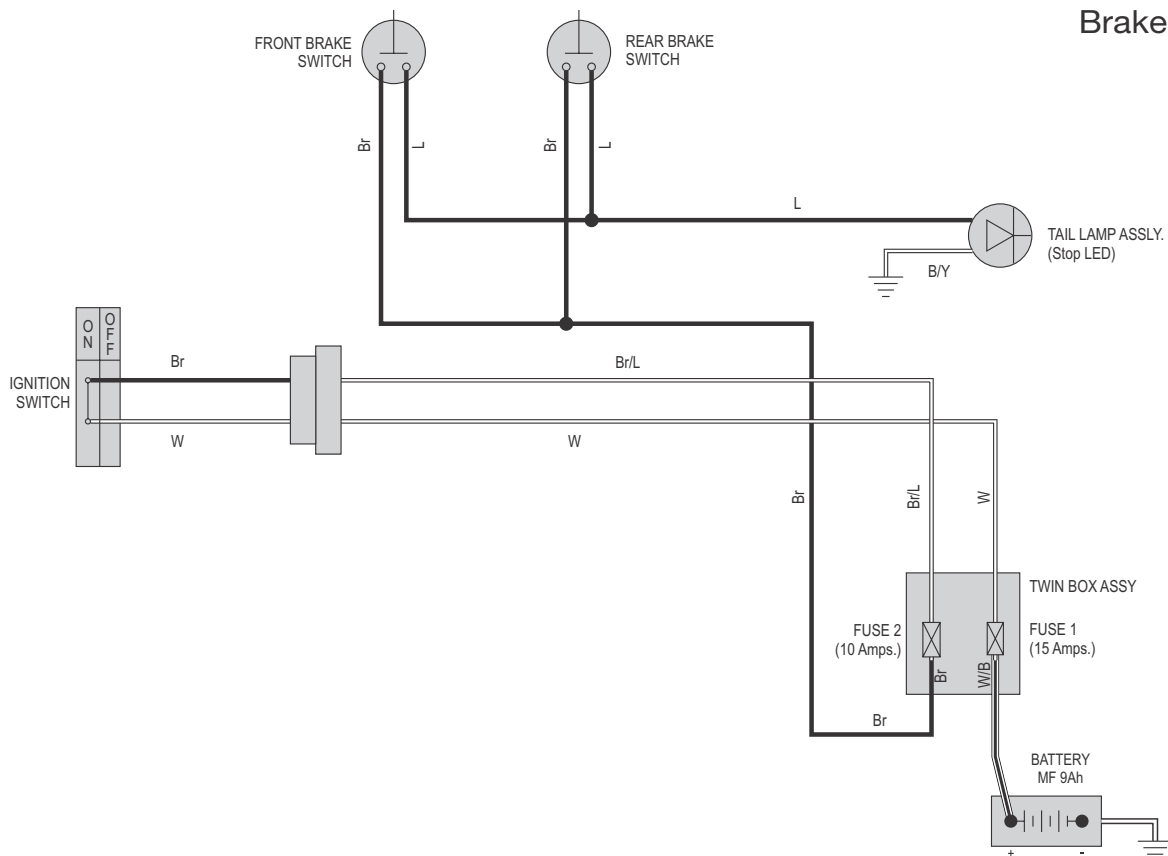
Starter Motor Circuit



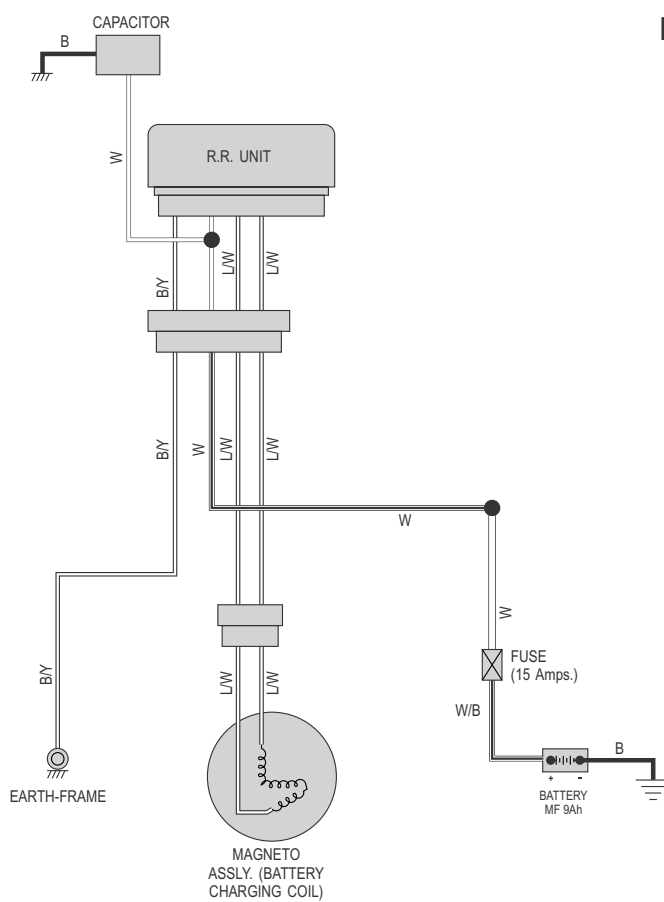
Horn Circuit



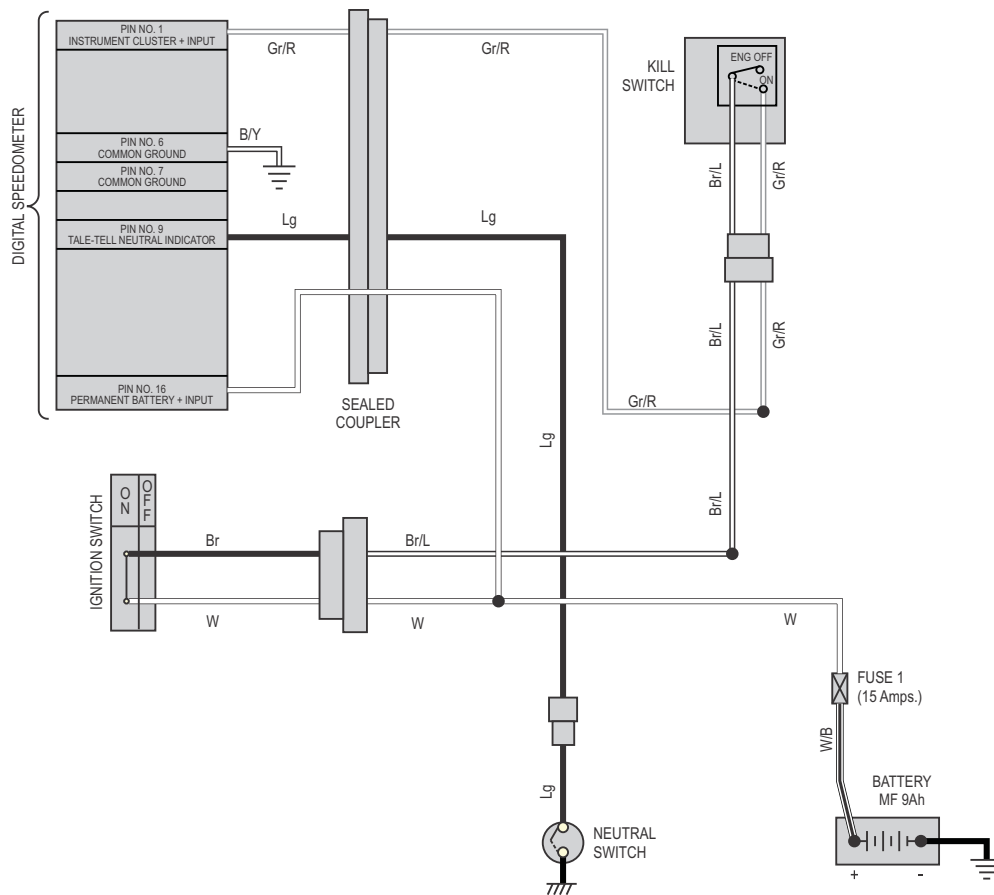
Brake Light Circuit



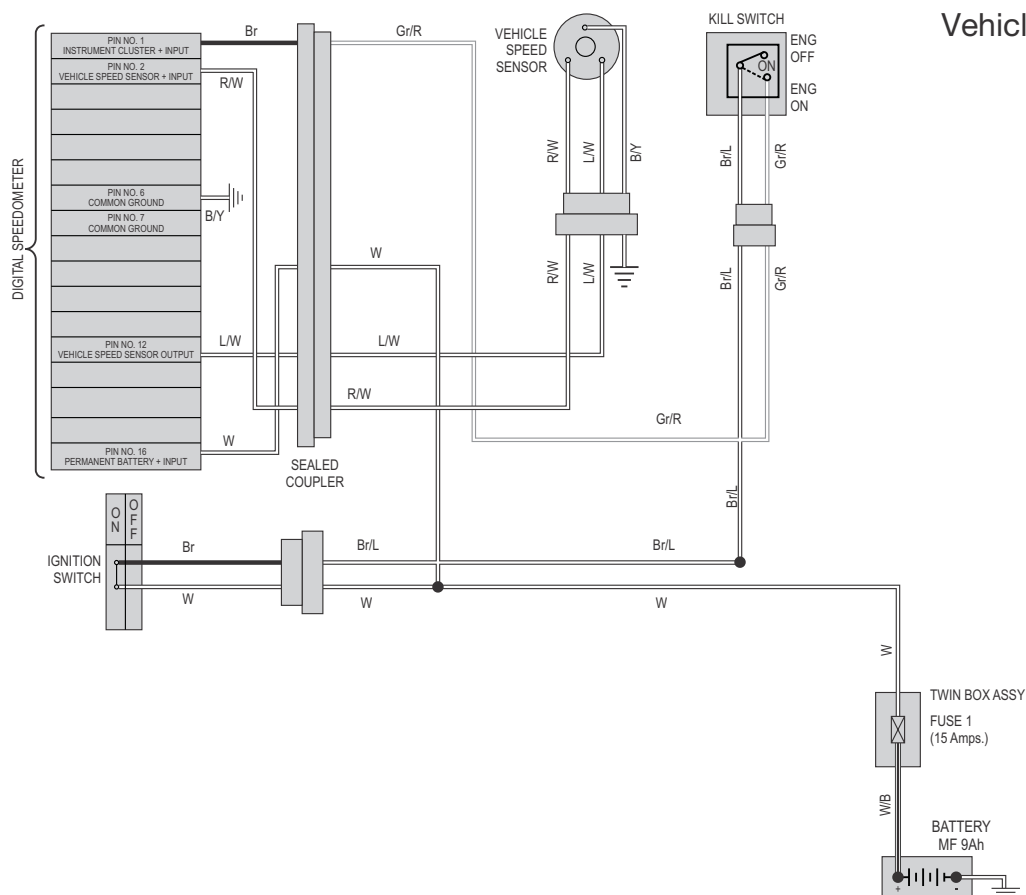
Battery Charging Circuit



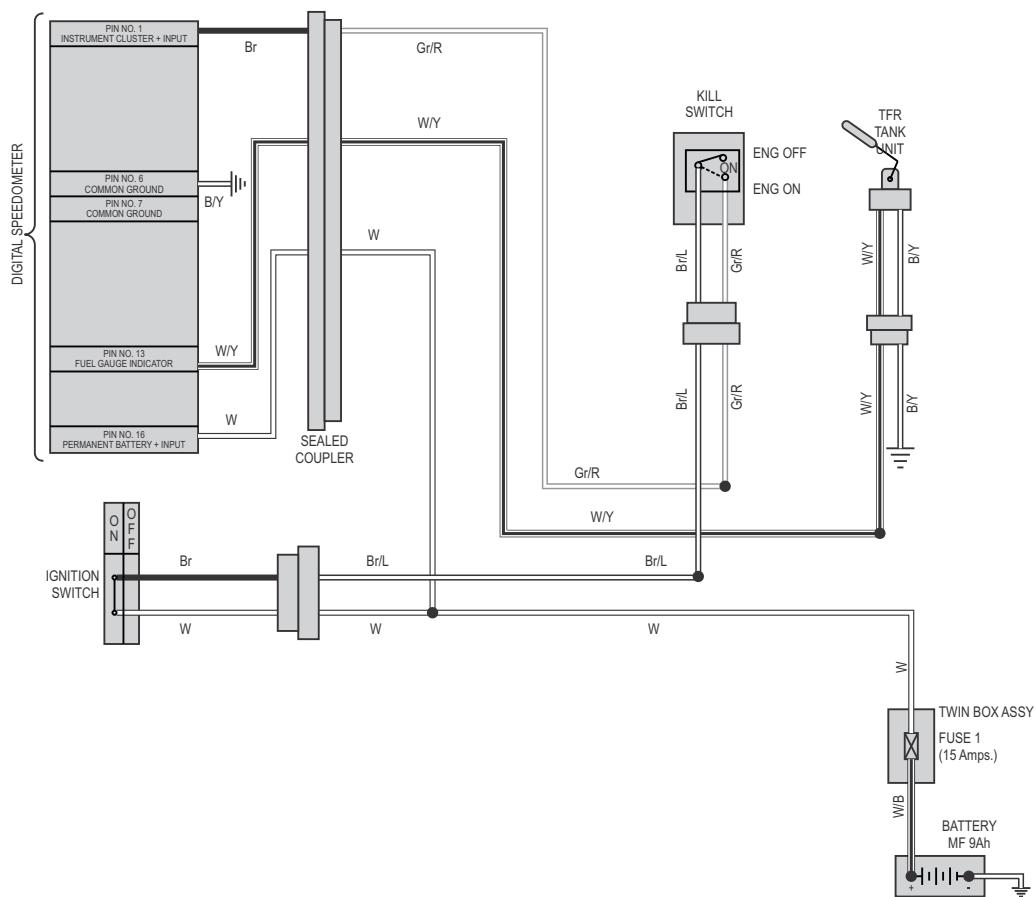
Neutral Lamp Circuit



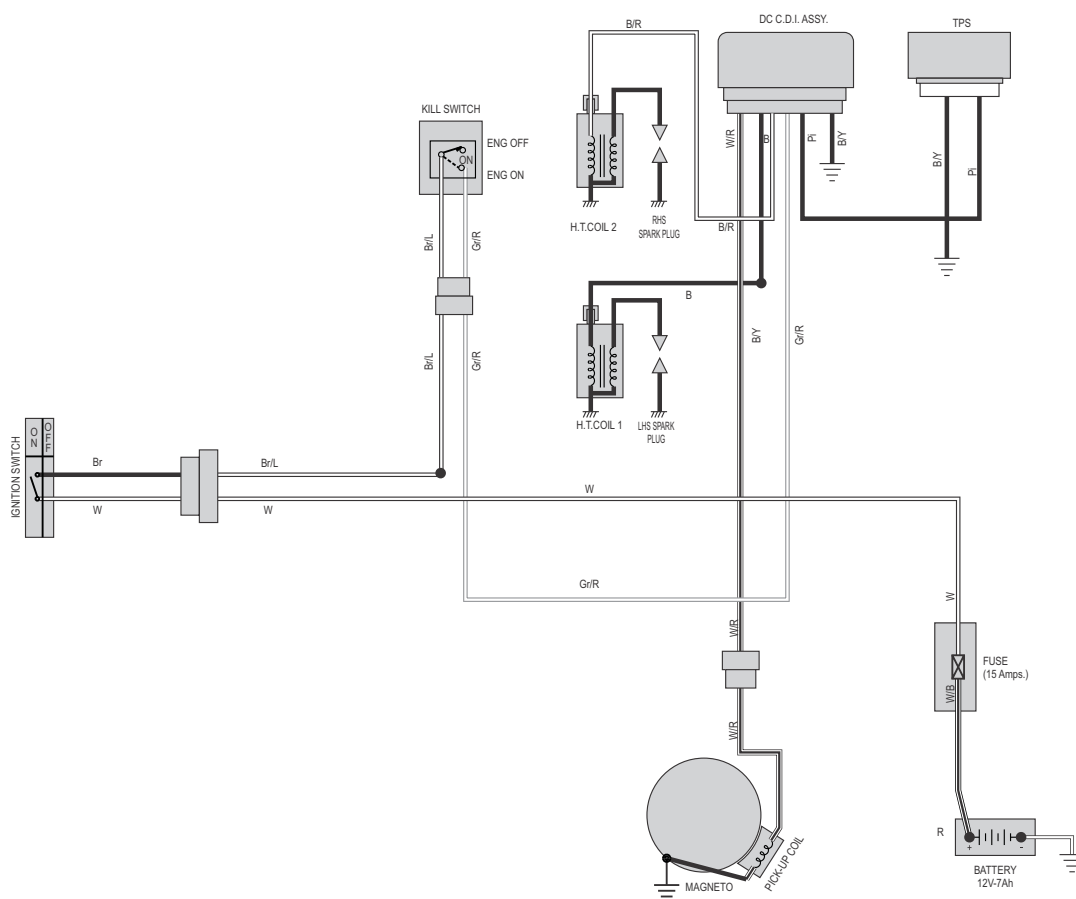
Vehicle Speed Sensor Circuit



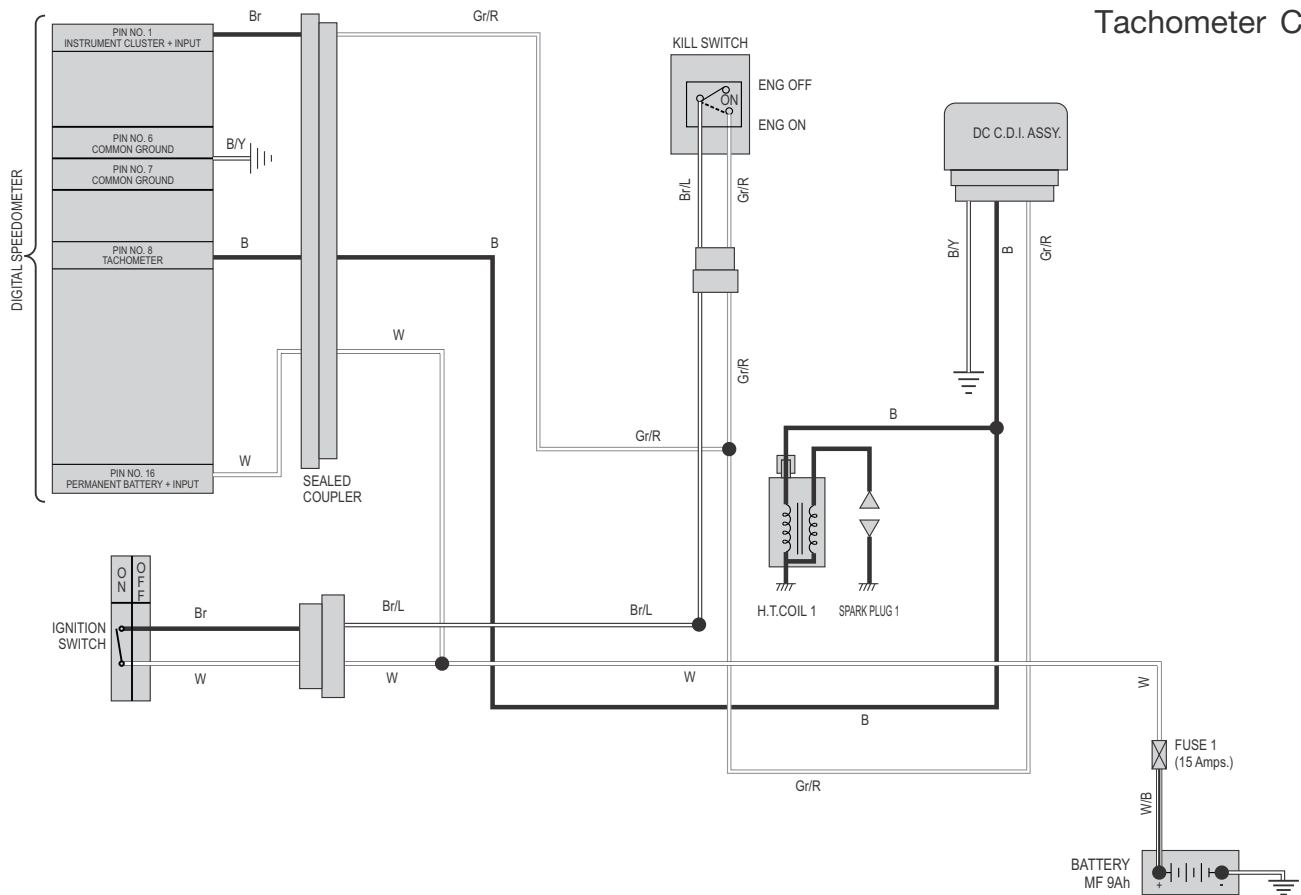
Fuel Gauge Circuit



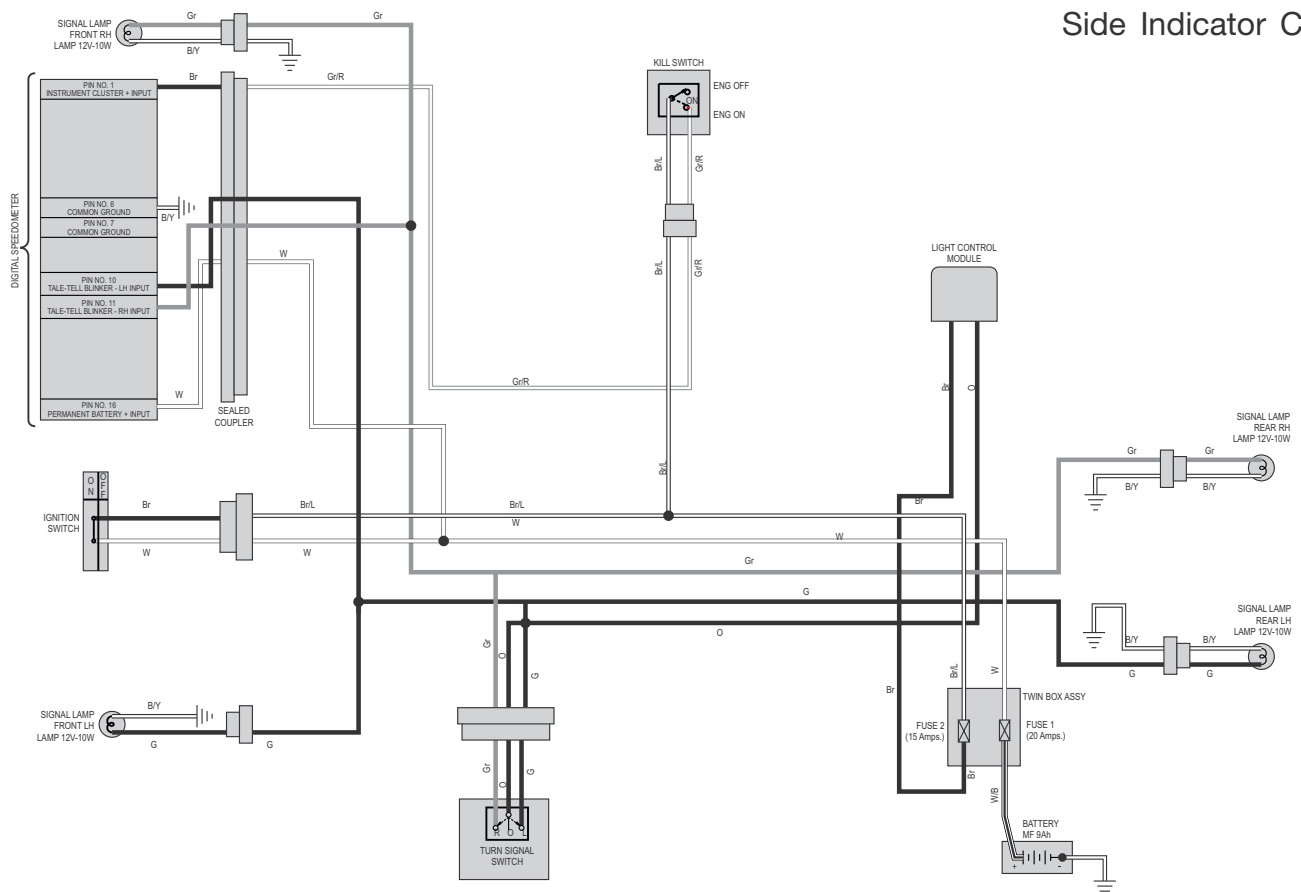
Ignition Circuit



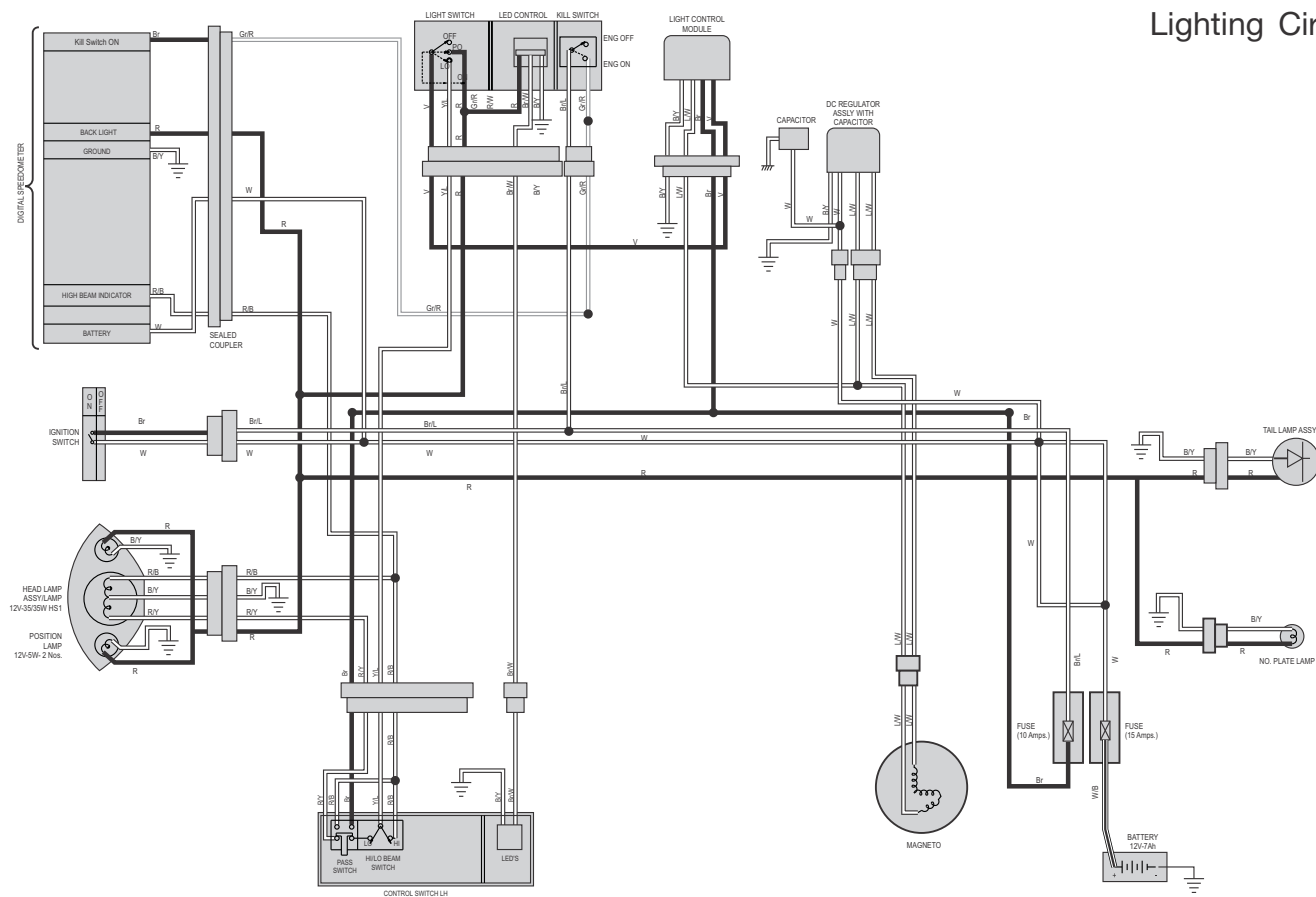
Tachometer Circuit



Side Indicator Circuit



Lighting Circuit



This image shows a full page of a handwriting practice worksheet. It consists of multiple rows of horizontal dashed lines spaced evenly down the page, providing a guide for letter height and placement. The background is plain white, and there are no margins or additional markings.

Diagnosis & Troubleshooting



For Diagnosis & trouble shooting refer trouble shooting encyclopedia uploaded on portal.




Troubleshooting Encyclopedia

Supplementary Service Station Manual Pulsar 180 UG + BS IV

- Revised Technical Specifications
- Revised Periodic Maintenance & Lubrication Chart
- Revised Pre - Delivery Inspection Checklist
- Revised Torque Values
- Revised Service Limits
- Part Identification
- Electrical Circuit Diagrams

Parameter	Specifications	
	Pulsar 180	Pulsar 180 BS IV
Brake	Rear – Drum Brake, dia 130 mm	Rear – Disc Brake , 230 mm dia disc
Tyre Pressure – Rear Solo	28.4 PSI (2.000 Kg / cm ²)	30 PSI (2.10 Kg / cm ²)
Tyre Pressure – Rear Pillion	30.5 PSI (2.15 Kg / cm ²)	32 PSI (2.25 Kg / cm ²)
Width	750 mm	765 mm
Height	1165 mm	1115 mm
Wheelbase	1350	1345 mm
Choke	Push-Pull type	Lever type
TPS	With TPS	Without TPS

Carburetor Specification :-

Parameter	Specification	Photograph
Make	UCAL	
CO% - With SAI	< 1 %	
Idling RPM - With SAI	1350 – 1450 RPM	
CO% - Without SAI	4.5 % - 5.5 %	
Idling RPM - Without SAI	1300 – 1400 RPM	
Choke	Manual	

REVISED PERIODIC MAINTENANCE & LUBRICATION CHART



Sr No	PM Check Point	Recommended Frequency								Remark
		Service	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500	4500	9500	14500	19500	24500	29500	
			~	~	~	~	~	~	~	
			750	5000	10000	15000	20000	25000	30000	
1	Servicing with water wash		✓	✓	✓	✓	✓	✓	✓	Ensure to prevent water entry in Petrol tank, Silencer & electrical parts. Use caustic free detergent for washing.
2	Engine oil (Bajaj DTSi 10000 oil) & engine oil filter*	C,R	R	Top Up	R	Top Up	R	Top Up	R	"BGO DTS-i 10W30 for 100cc models. BGO DTS-i 20W50 for models above 125cc. "
3	Oil strainer, Body centrifugal filter**	CL	CL		CL		CL		CL	Oil Strainer Cleaning at the time of oil Change Clean body centrifugal filter at 750 Km & at 20K-Platina & Pulsar
4	Starter Clutch (Dry Type)**	L		L	L	L	L	L	L	Use recommended molycote grease
5	Spark plug	CL,A,R			CL,A		CL,A		R	
6	Air Cleaner Element *** & Cover "O" Ring	CL,R	CL	CL	CL	R	CL	CL	R	Foam & Paper as applicable. O ring check at every service & Replace if cut/damaged
7	In line paper filter or Fuel cock paper filter	R				R			R	
8	Fuel cock sediment bowl cleaning	CL				CL			CL	
9	Carburetor rubber duct	C,R					C,R			Check & replace if required
10	Fuel pipe	C,R	C	C	C	R	C	C	R	
11	Valve tappet clearance	C,A			C,A		C,A		C,A	
12	Non-Sealed drive chain cleaning & lubrication	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	<ul style="list-style-type: none"> • During 1st free service : Use lint free cloth for cleaning & SAE 90 oil for lubrication without removing from vehicle. (If chain is excessively dirty, then chain has to be removed, cleaned using diesel & lubricated using molten IOC servo compound chain grease.) • During all other services: Remove, clean using diesel & lubricated using molten IOC servo compound chain grease.
13	Sealed drive chain cleaning & lubrication	CL,L,A		CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	<ul style="list-style-type: none"> • During regular service use OKS spray for chain cleaning, without removing chain from vehicle. • If chain is excessively dirty, then chain has to be cleaned by removing from vehicle. (Customer to apply OKS chain lube spray at every 500 Kms)
14	Engine air breather tube	C	C	C	C	C	C	C	C	Replace if damaged
15	Silencer drain hole cleaning	CL		CL	CL	CL	CL	CL	CL	
16	Silencer tail pipe cleaning **	CL		CL	CL	CL	CL	CL	CL	
17	Brake lining or pad wear & lubricate brake cam & pivot pin** Check pad wear indicator	C,L,R	C	C,L,R	C,L,R	R	C,L,R	C,L,R	R	Replace brake shoe/pads at every 15,000 kms



REVISED PERIODIC MAINTENANCE & LUBRICATION CHART

Sr No	PM Check Point	Recommended Frequency								Remark
		Service	1st	2nd	3rd	4th	5th	6th	7th	
			500	4500	9500	14500	19500	24500	29500	
		Kms	~	~	~	~	~	~	~	
			750	5000	10000	15000	20000	25000	30000	
18	Brake fluid level ** - top up / replace	C,A,R				C,A			R	Use recommended brake fluid (DOT3 / DOT4)
19	Disc brake assembly--check functionality, leakage or any other damage	C			C		C		C	Replace if damaged
20	All cables & rear brake pedal - free play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
21	Battery electrolyte level , specific gravity	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	Not applicable for VRLA batteries
22	Wiring harness & battery connection - routing, tie bands & clamps tightness	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	
23	Ignition switch barrel cleaning & handle bar control switches contacts cleaning	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	Use recommended Wd40 spray
24	Steering play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
25	Steering stem bearing *** & cap steering bearing (Plastic)**	C,CL, L,R			C,CL, L,R		C,CL, L,R		C,CL, L,R	Check & replace if damaged. Use HP Lithon RR3 grease for lubrication
26	Main stand & side stand pin **	CL,L			CL,L		CL,L		CL,L	Use recommended AP grease
27	Swing arm pivot pin (For non silent bush)**	L		L	L	L	L	L	L	Not applicable in case of needle roller bearing
28	All fasteners tightness	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
29	Engine foundation silent bushes **	C				C			C	Replace if damaged
30	General lubrication - clutch lever, front brake lever, kick lever	L	L	L	L	L	L	L	L	Use recommended AP grease
31	Idle speed / CO%	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
32	Coolant level in expansion tank**	C,A	C,A	C,A	C,A	C,A	C,A	C,A	R	Use recommended 'Ready to Use coolant'. Replace at every 30000 Kms or 2 years (Whichever occurs earlier)
33	Coolant hose damage / clamps / leakage **	C		C	C	C	C	C	C	Check & replace if required
34	Radiator fins **	C		C	C	C	C	C	C	Check & replace if required
35	Spoke tightening ** - Front & Rear	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
36	Front fork dust seal area & inner pipe cleaning**	CL		CL	CL	CL	CL	CL	CL	Applicable for front fork with rubber bellow
37	SAI system / EVAP hoses - Check functionality, leakage or any other damage**	C, R	C, R	C, R	C, R	C, R	C, R	C, R	C, R	Replace if cut / damaged
38	Pillion foot rest hinge lubrication**	L	L	L	L	L	L	L	L	Use RR 3 Grease
39	EVAP Y connector drain tube **	CL	CL	CL	CL	CL	CL	CL	CL	

* It is strongly recommended to use only Bajaj genuine oil, in case of any other engine oil of same specification is used the would be every 5000 kms.

** As applicable to model.

*** more frequent cleaning is required while driving in dusty environment.

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

Note :- Periodic parts / lubricants as per periodic maintenance & Lubrication chart are mandatory & the same is chargeable to customer.



PDI Check sheet Common for all models (Torque Values given for Pulsar 180 BS IV)

Dealer's Name		Dealer's code	
Model		City	
Frame No		Date of PDI	
Engine No		PDI done by	

1. Check points before starting of the vehicle

Check & correct the below check points before starting the vehicle

To Check	Check for	✓ If Ok	
		X If Not Ok	
Engine oil	Oil level between lower & upper mark / Top up if required		
Fuel tank / Pipes	No leakage / Correct fitment		
Mirror	Fitment & adjustment to ensure clear rear view		
Coolant	Coolant level between MIN & MAX mark, top up if required in cold condition		
	Ensure no leakage		
Lock Operation	Steering cum Ignition lock, Seat lock, LH side cover lock, Petrol tank cap lock		
Battery	Terminal voltage 12.4 V D.C for MF battery & 12.8 V DC for VRLA Battery using battery tester		
	Tightness of battery terminals / cables / Petroleum Jelly application		
Tyre Pressure	Front : 1.75 Kg / cm ² (25 PSI)		
	Rear (with pillion) : 2.25 Kg / cm ² (32 PSI)		
Brakes	Brake lever free play 4 ~ 5 mm (For drum brake only)		
	Brake pedal free play (For drum brake only)		
Clutch / throttle cable	Free play 2 ~ 3 mm		
Drive chain	Slackness 20 ~ 25 mm		
	Equal marking of chain adjusters on both side		
	No touching to chain case		



Fasteners (Check torque) Recommended torque wrench to be used for applying torque on nut - bolts as mentioned in PDI check sheet using reference torque chart given in Annexure 4. However if any major parts are required to be removed (Except side cover & seat) for accessibility of torque wrench, in those cases the tightness can be ensured using open end / ring spanner / box type spanner as applicable without removing those major parts	Engine foundation bolts	
	Front mounting bolts : 2.0 ~ 2.2 Kg.m (19.6 ~ 21.6 N.m)	
	Rear mounting bolts : 2.0 ~ 2.2 Kg.m (19.6 ~ 21.6 N.m)	
	Front axle nut : 8.0 – 10.0 Kg.m (78.5 – 98.1 N.m)	
	Rear axle nut : 8.0 – 10.0 Kg.m (78.5 – 98.1 N.m)	
	Swing arm shaft nut : 8.0 – 10.0 Kg.m (78.5 – 98.1 N.m)	
	RSA Mounting nut Top / Bottom : 3.2 – 3.5 Kg.m (31.4 – 34.3 N.m)	
	Front fork top bolts : 2.0 – 2.2 Kg.m (19.6 – 21.6 N.m)	
	Front fork under bracket bolts : 3.0 – 3.2 Kg.m (29.4 – 31.4 N.m)	
2. Check points during / after starting the vehicle		
Check & correct the below check points during / after starting the vehicle		
Switch operation	RH & LH control switch, ignition switch, clutch switch & brake switch (Front & Rear)	
Horn	Ensure no distorted sound	
All Bulbs working	Headlight, Tail / Stop lamp, Side indicators, Speedo bulbs, Number plate lamp,	
Speedometer	Working of speedometer, Odometer, Trip meter, Fuel gauge , Clock	
	Working of all signal indicators icons (Neutral, Turn signal, High beam, Clock, Low battery indicator, Service reminder & Bajaj Logo)	
Headlamps	Focus confirmation	
3. Check points during Test ride		
Check & correct the below check points during Test ride		
Gear shifting	Smooth operation	
Drive-ability	Throttle response	
	Brake effectiveness - Front & Rear	



REVISED PRE-DELIVERY INSPECTION CHECKLIST



Engine noise	No abnormal noise	
Front fork / steering	Smooth working by pumping movement & smooth operation (No play / No Sticky movement)	
Oil / Coolant leakages	Specify source of leakages	
4. Idling RPM / CO%		
Check & correct the below check points in engine warm condition		
Idling RPM	Check in warm up condition at 60° (SAI connected 1350 – 1450 RPM & SAI disconnected 1300 – 1400 RPM)	
CO % Check	CO Check in engine warm condition at idling RPM (SAI connected < 1% & SAI disconnected 4.5 % – 5.5 %)	
5. Visual inspection for dent, scratches, rust ...		
6. Clean the vehicle thoroughly before delivery to customer.		


Note :- If performance related issue is observed in vehicle, then carry out Idling RPM & CO% Check activity.





Parameter	Pulsar 180 BS IV	
	Kg.m	N.m
Rear Sprocket Mounting nuts	3.2 – 3.8	31.4 – 37.3
Handle Bar Holder bolts	2.2 – 2.5	21.6 – 24.5
Fork Center Nut	5.0 – 5.2	49.1 – 51.0
Fork Pipe Top side bolts	2.0 – 2.2	19.6 – 21.6
Fork underbracket Bolt	3.0 – 3.2	29.4 – 31.4
RSA Mounting Nut – Upper & Lower	3.2 – 3.5	31.4 – 34.3
Disc Mounting Bolts – Front & Rear	1.0 – 1.2	9.8 – 11.8

REVISED SERVICE LIMITS



Parameter	Standard Specification	Service Limit
Disc pad thickness – Rear	6.5 mm	3.3 mm
Brake disc thickness - Rear	4.0 mm	3.5 mm
Drive Chain Slackness	20.0 – 25.0 mm	30.0 – 35.0 mm
Drive Chain 20 Links length	314.4 mm	320.7 mm

Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Engine Mounting Bracket Top	Engine Mounting Bracket Top
Part No	LH – JC161028, RH – JC161015	LH - DK161415, RH-DK161416
Description	<ul style="list-style-type: none"> • Without Hook • Profile is different than Pulsar 180 BS IV 	<ul style="list-style-type: none"> • With Hook • Profile is different than Pulsar 180
Identification	Visual	Visual

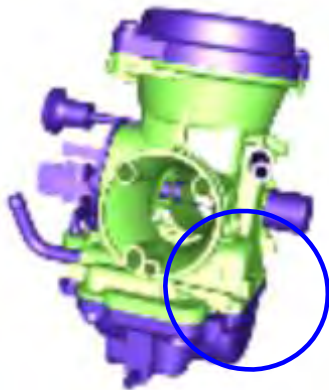

Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Rear Fender	Rear Fender
Part No	DK161085	DK161338
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 180
Identification	Visual	Visual





Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Speedometer Assembly	Speedometer Assembly
Part No	Dh191065	Dh191066
Description	<ul style="list-style-type: none"> Dial graphics & LCD Artwork different than Pulsar 180 BS IV 	<ul style="list-style-type: none"> Dial graphics & LCD Artwork different than Pulsar 180
Identification	Visual	Visual

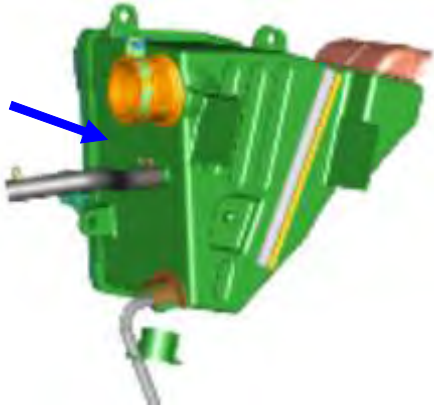
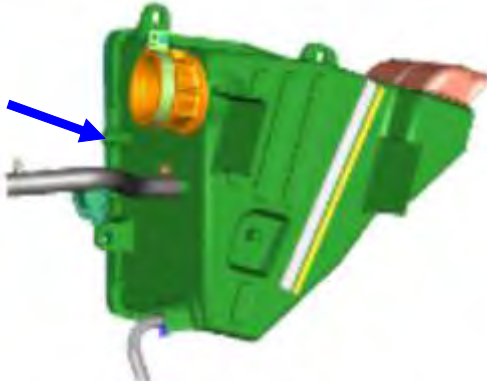
Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Intake Pipe	Intake Pipe
Part No	DJ101215	DJ121090
Description	<ul style="list-style-type: none"> Without nipple connector 	<ul style="list-style-type: none"> With nipple connector
Identification	Visual	Visual


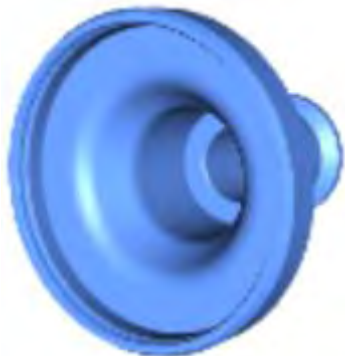


Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Carburetor Assembly	Carburetor Assembly
Part No	DJ121041	DJ121091
Description	<ul style="list-style-type: none"> • Without provision for supply of evaporated fuel 	<ul style="list-style-type: none"> • With provision for supply of evaporated fuel
Identification	Visual	Visual

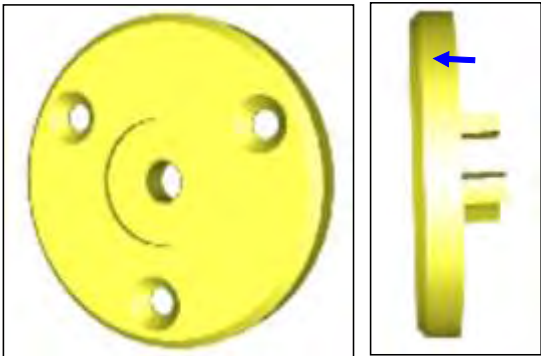
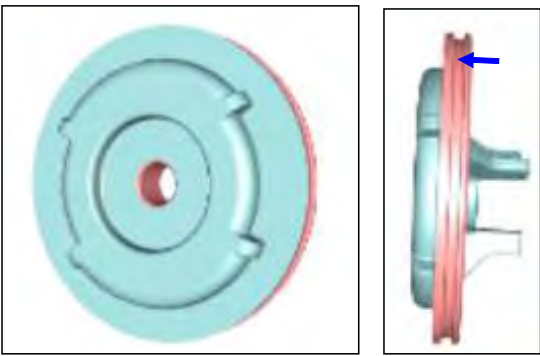
Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Cam Shaft Cap	Cam Shaft Cap
Part No	DS101096	Dh102201
Description	<ul style="list-style-type: none"> • Cam shaft cap without fins 	<ul style="list-style-type: none"> • Cam shaft cap with fins
Identification	Visual	Visual





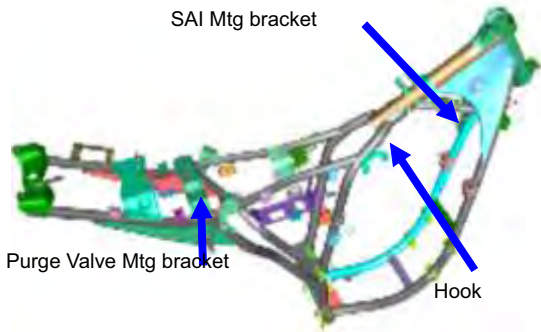
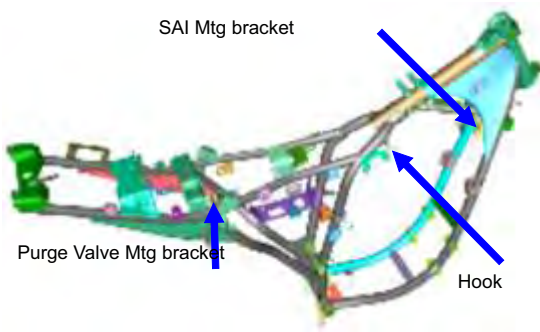
Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Air Filter Assembly	Air Filter Assembly
Part No	DJ121071	DJ121087
Description	<ul style="list-style-type: none"> • Without provision for supply of fresh air to SAI 	<ul style="list-style-type: none"> • With provision for supply of fresh air to SAI
Identification	Visual	Visual



Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Body Centrifugal Oil Filter	Body Centrifugal Oil Filter
Part No	DH101064	DH102151
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 With mounting holes for cover fitment 	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 BS IV • Without mounting holes for cover fitment
Identification	Visual	Visual







Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Cover Centrifugal Filter	Cover Centrifugal Filter
Part No	DH101065	DH102153
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 BS IV • Without Slot 	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 • With Slot
Identification	Visual	Visual

Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	CDI	CDI
Part No	DJ111092	DJ111097
Description	<ul style="list-style-type: none"> • Brown color coupler • Part No "DJ111092" embossed on housing 	<ul style="list-style-type: none"> • Natural color coupler • Part No "DJ111097" embossed on housing
Identification	Visual	Visual



Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Frame	Frame
Part No	JC161031	DJ161401
Description	<ul style="list-style-type: none"> • Without SAI unit mounting bracket • Without bracket purge valve mounting • Without hooks for SAI hose routing 	<ul style="list-style-type: none"> • With SAI unit mounting bracket • With bracket purge valve mounting • With hooks for SAI hose routing
Identification	Visual	Visual

Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Guide Gear Shift	Guide Gear Shift
Part No	DK101361	DH102189
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 180
Identification	Visual	Visual



Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Gear Change Drum	Gear Change Drum
Part No	DK101732	DH102192
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 180
Identification	Visual	Visual

Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Petrol Tank	Petrol Tank
Part No	JC141031	DH141066
Description	<ul style="list-style-type: none"> • Without provision for supply of evaporated fuel to canister 	<ul style="list-style-type: none"> • With provision for supply of evaporated fuel to canister
Identification	Visual	Visual



Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Cap petrol Tank	Cap petrol Tank
Part No	DK141014	DH141078
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 180 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 180
Identification	Visual	Visual

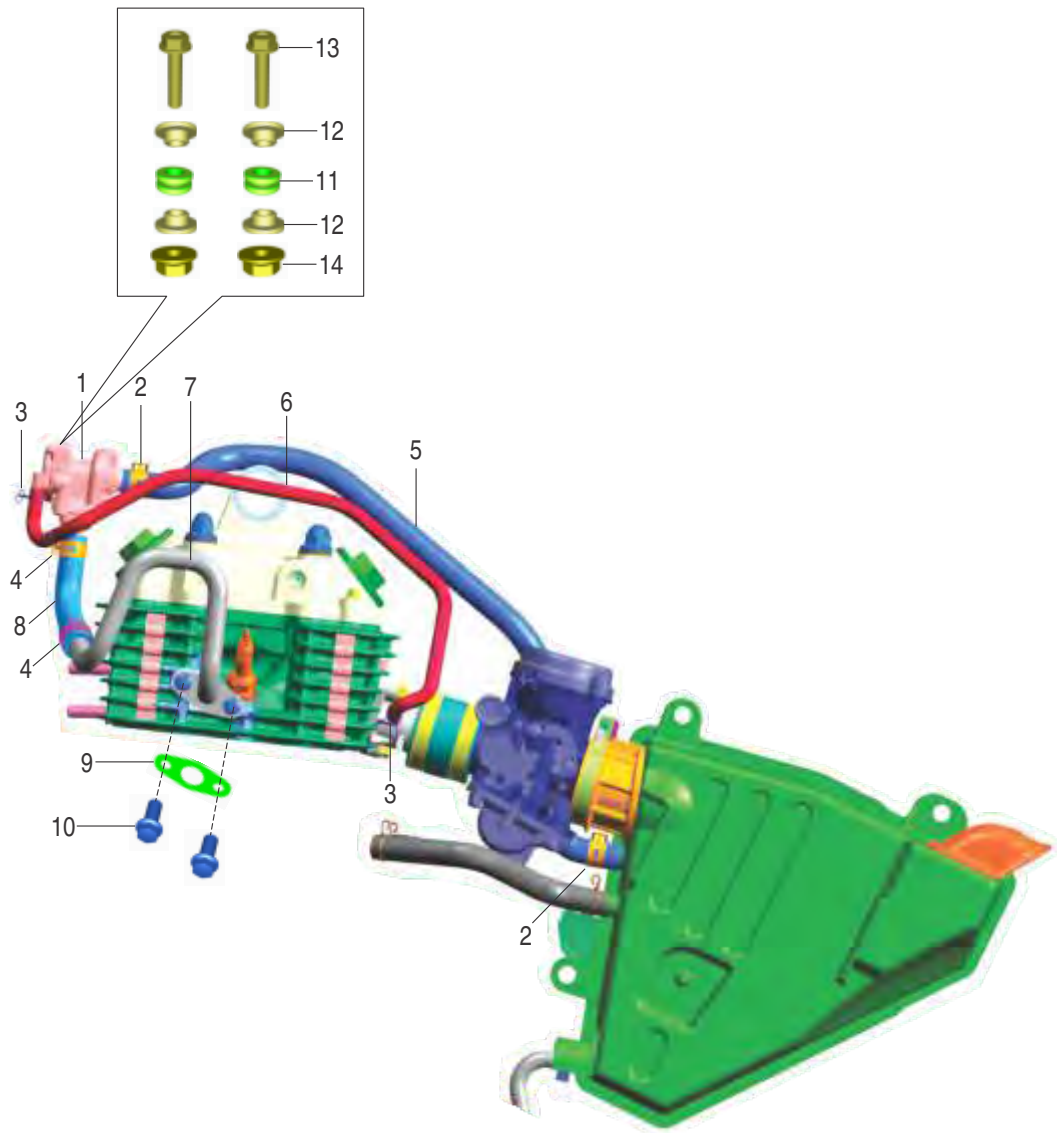
Model	Pulsar 180	Pulsar 180 BS IV
Photograph	<p>Front</p> 	<p>Front</p>  <p>Rear</p> 
Part Name	Brake Disc	Brake Disc
Part No	Front – DK151027, Rear – Not Applicable	Front – DK151096, Rear – DK151097
Description	<ul style="list-style-type: none"> • Without Black color 	<ul style="list-style-type: none"> • Black color disc
Identification	Visual	Visual

Model	Pulsar 180	Pulsar 180 BS IV
Photograph		
Part Name	Caliper Assembly	Caliper Assembly
Part No	DK151054	JF131806
Description	• Gold color & Split type	• Brass Gold color & Integral type
Identification	Visual	Visual

Fuel Gauge

Pulsar 180		
Float Position	Volume in Liters	Resistance (Ω)
Full	8.5	6.0 – 10.0
Half	4.5	36.0 – 44.0
Reserve	2.8	67.0 – 77.0
Empty	-	93.0 – 101.0

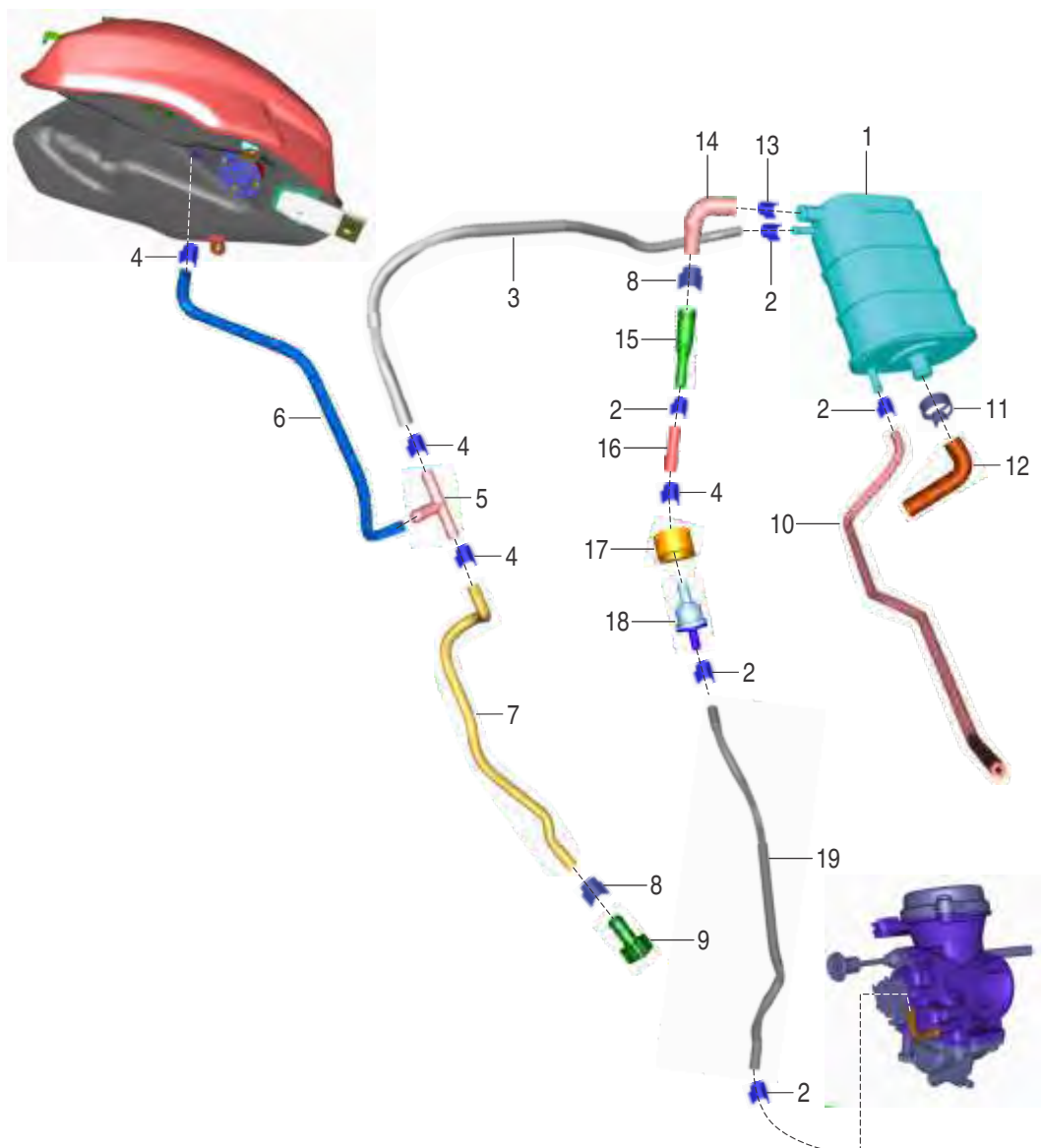
Pulsar 180 BS IV		
Float Position	Volume in Liters	Resistance (Ω)
Full	12	9.0 – 15.0
Half	8.4	28.0 – 38.0
Reserve	3.6 \pm 0.2	74.0 – 84.0
Empty	-	95.0 – 105.0



S. N.	Description	Qty.
1	SAI Unit	1
2	Clamp SAI Pipe	2
3	Clamp	2
4	Clamp Hose SAI	2
5	Tube SAI Air Filter	1
6	Hose SAI Unit To Manifold	1
7	Metal Pipe With Flange SAI	1
8	Hose SAI Unit To SAI Pipe	1

S. N.	Description	Qty.
9	Gasket Metal Pipe With Flange SAI	1
10	Flanged Bolt	2
11	Grommet SAI Unit	2
12	Sleeve SAI Unit	4
14	Bolt Flanged	2
15	Nut Hex Flanged	2



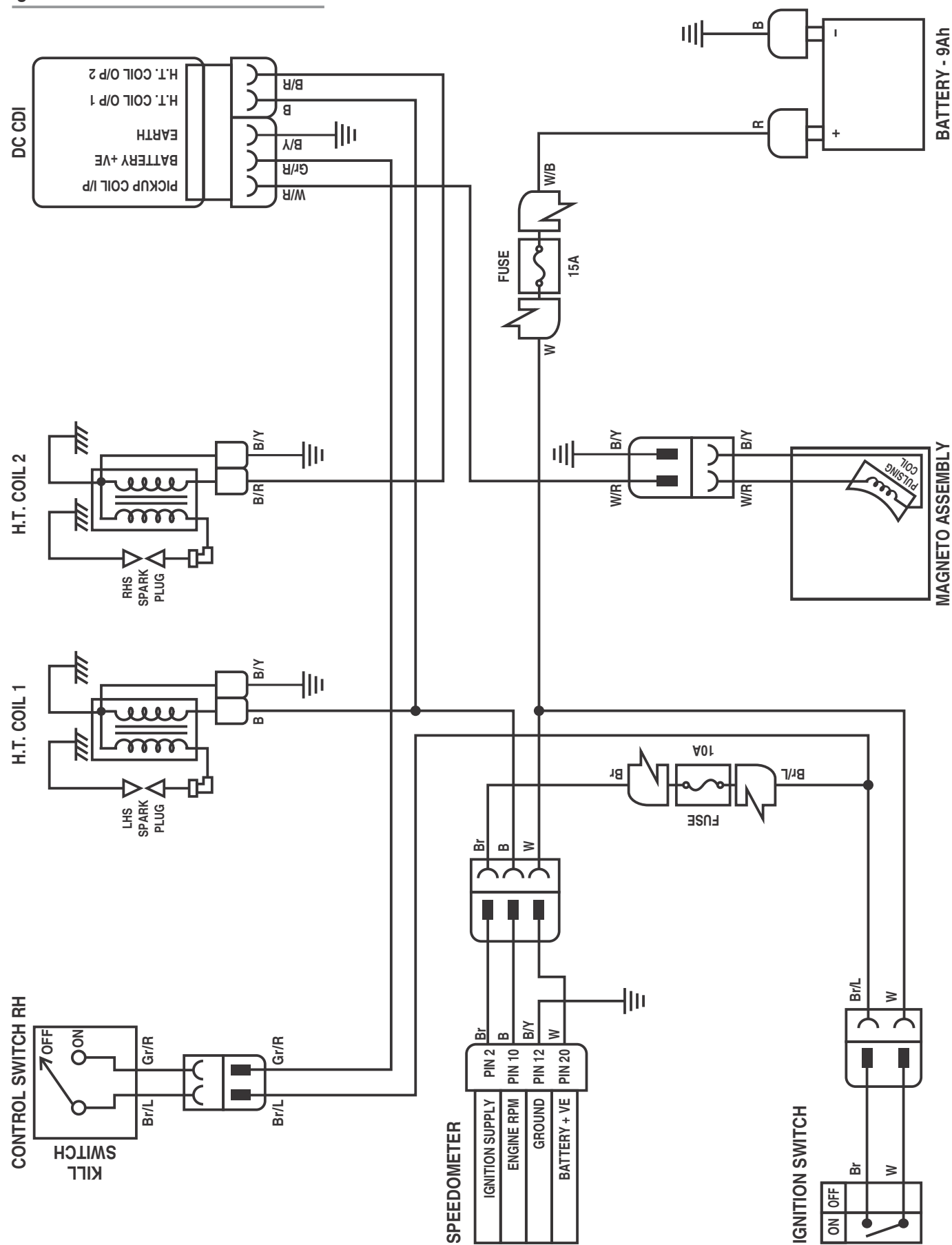


S. N.	Description	Qty.
1	Canister	1
2	Spring Band Clamp 9 x 8.4	5
3	Tube T Connector To Canister	1
4	Spring Band Clamp 11.5 X 8.4	4
5	Connector For Breather And Vapor Tube	1
6	Tube Tank To T Connector	1
7	Tube Condensate Fuel Drain	1
8	Spring Band Clamp 13 x 12	2
9	Plug Fuel Drain	1

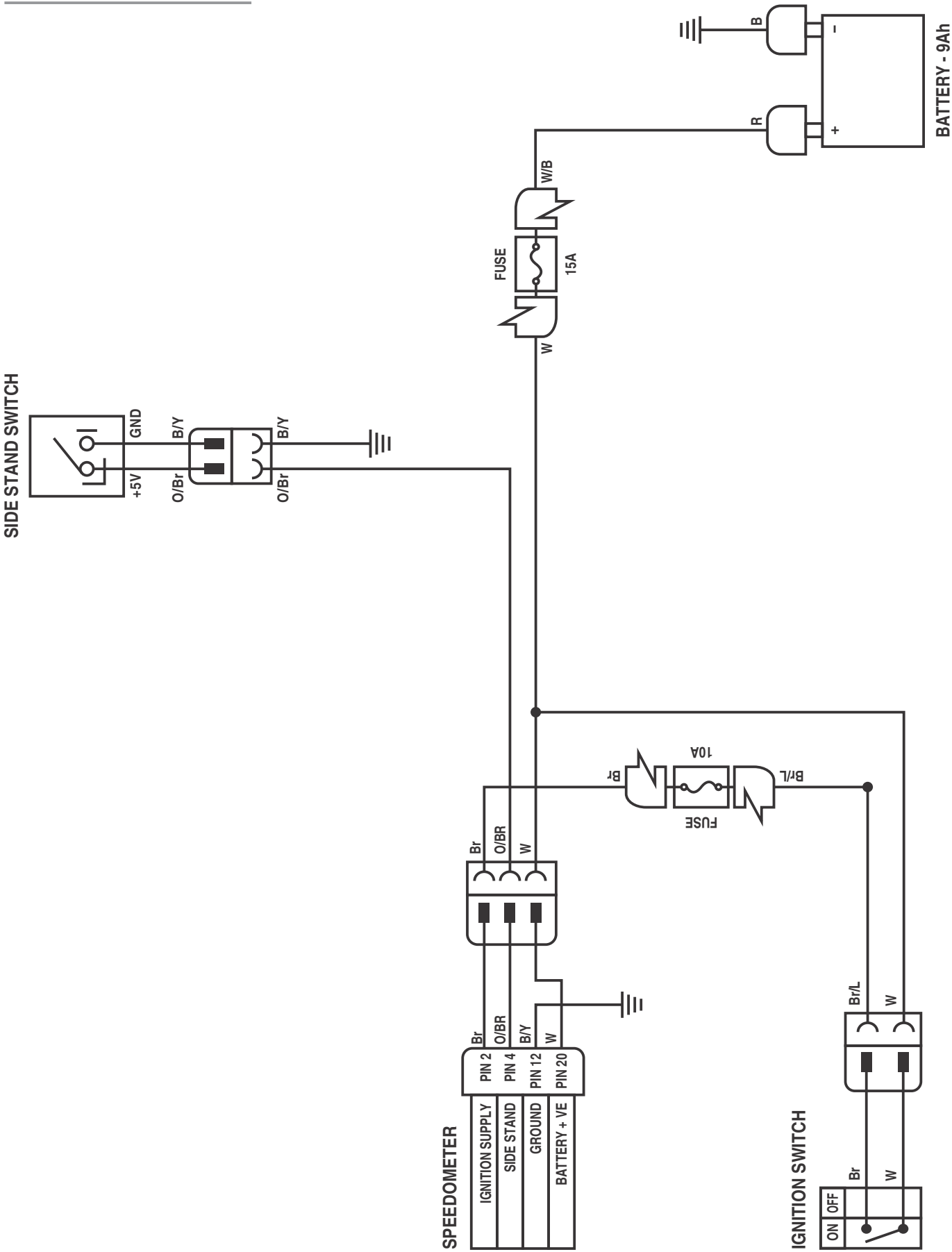
S. N.	Description	Qty.
10	Tube Canister Drain	1
11	Clamp - Canister Breather	1
12	Tube Canister Breather	1
13	Spring Band Clamp 15 x 10	1
14	Tube Canister To Connector	1
15	Connector Tube EVAP	2
16	Tube Connector To Purge Valve	1
17	Grommet Purge Valve	1
18	Valve Purge	1
19	Tube Purge Valve To Carburetor	1



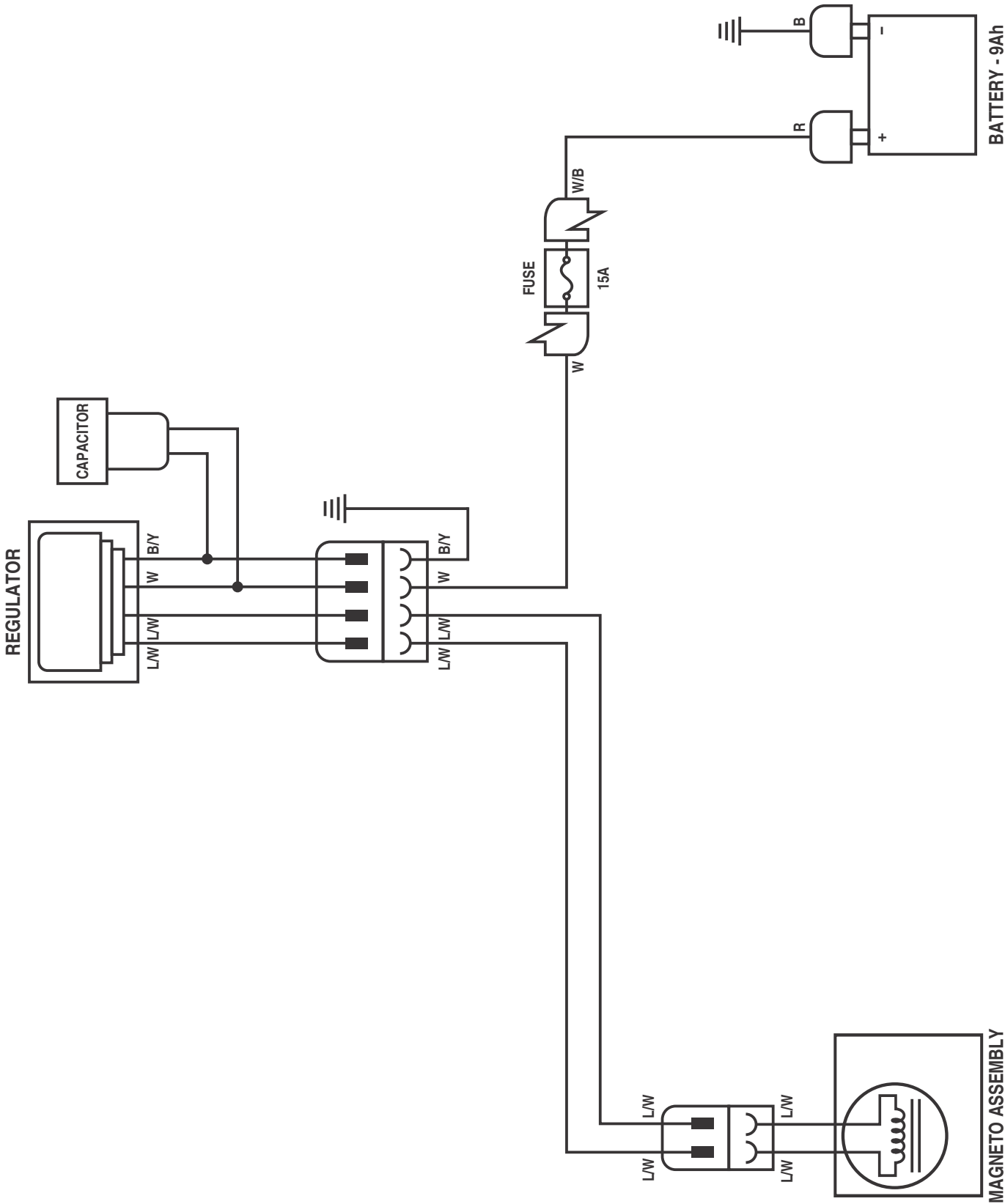
Ignition Circuit + Tachometer Circuit



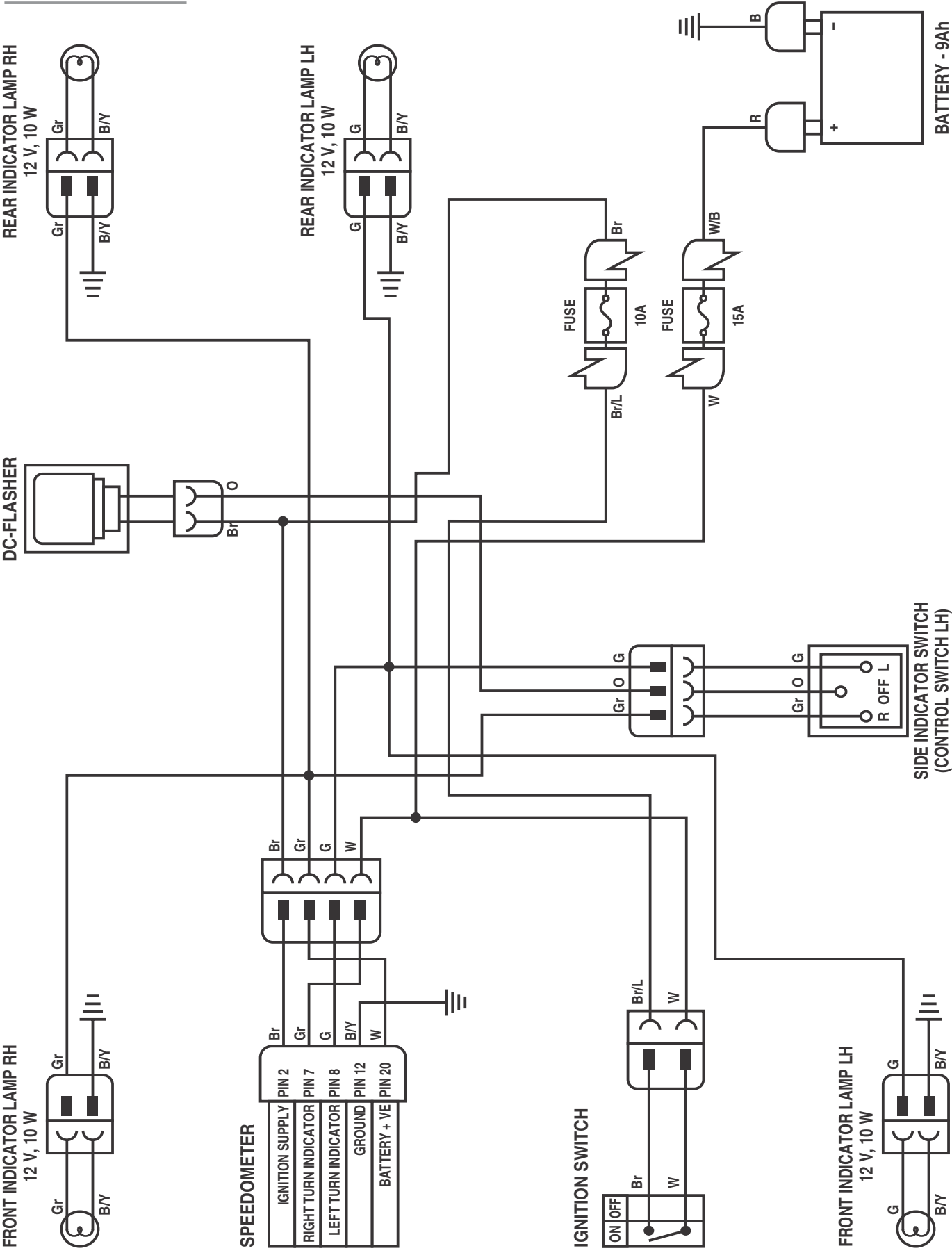
Side Stand Indication Circuit



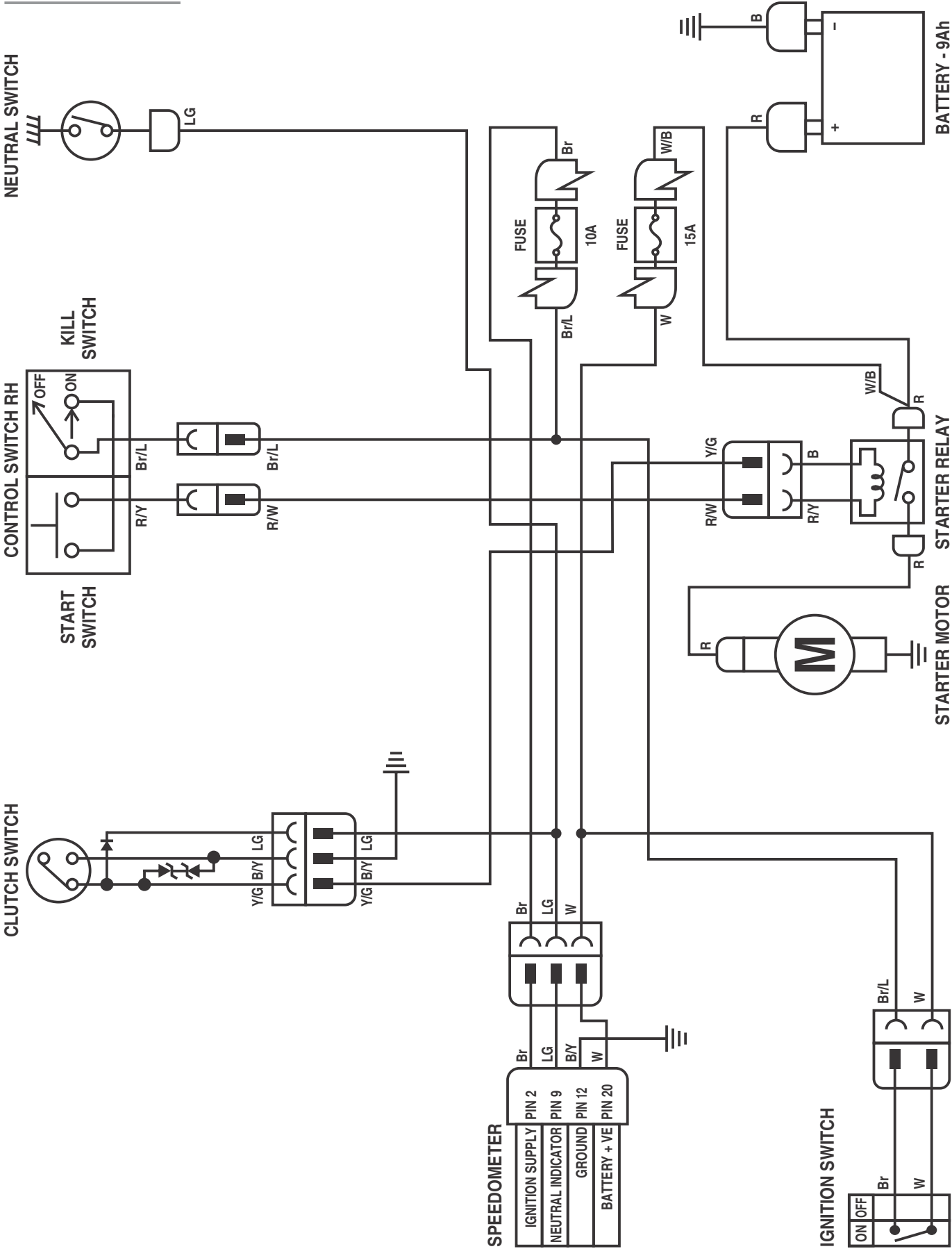
Battery Charging Circuit



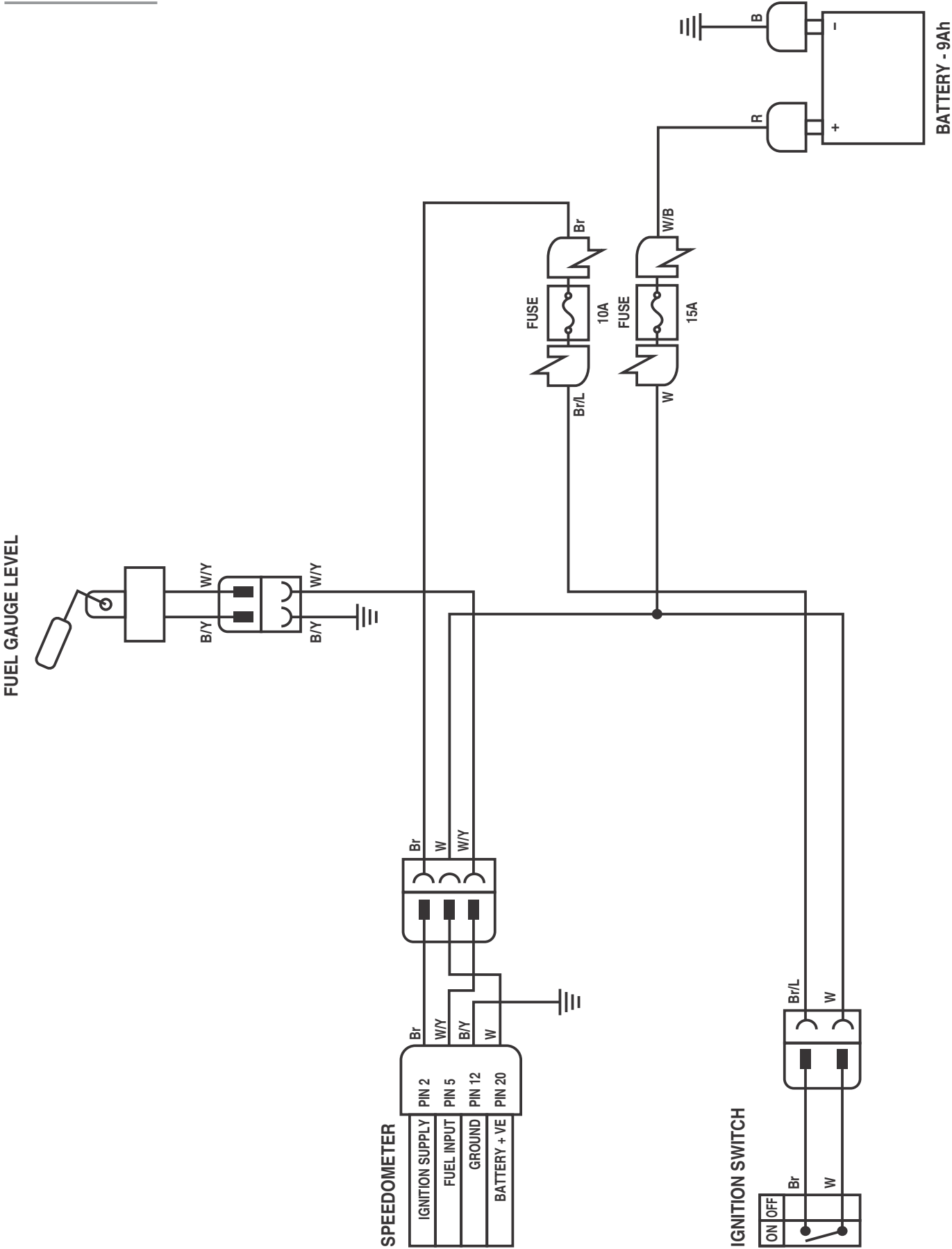
Side Indicator Circuit



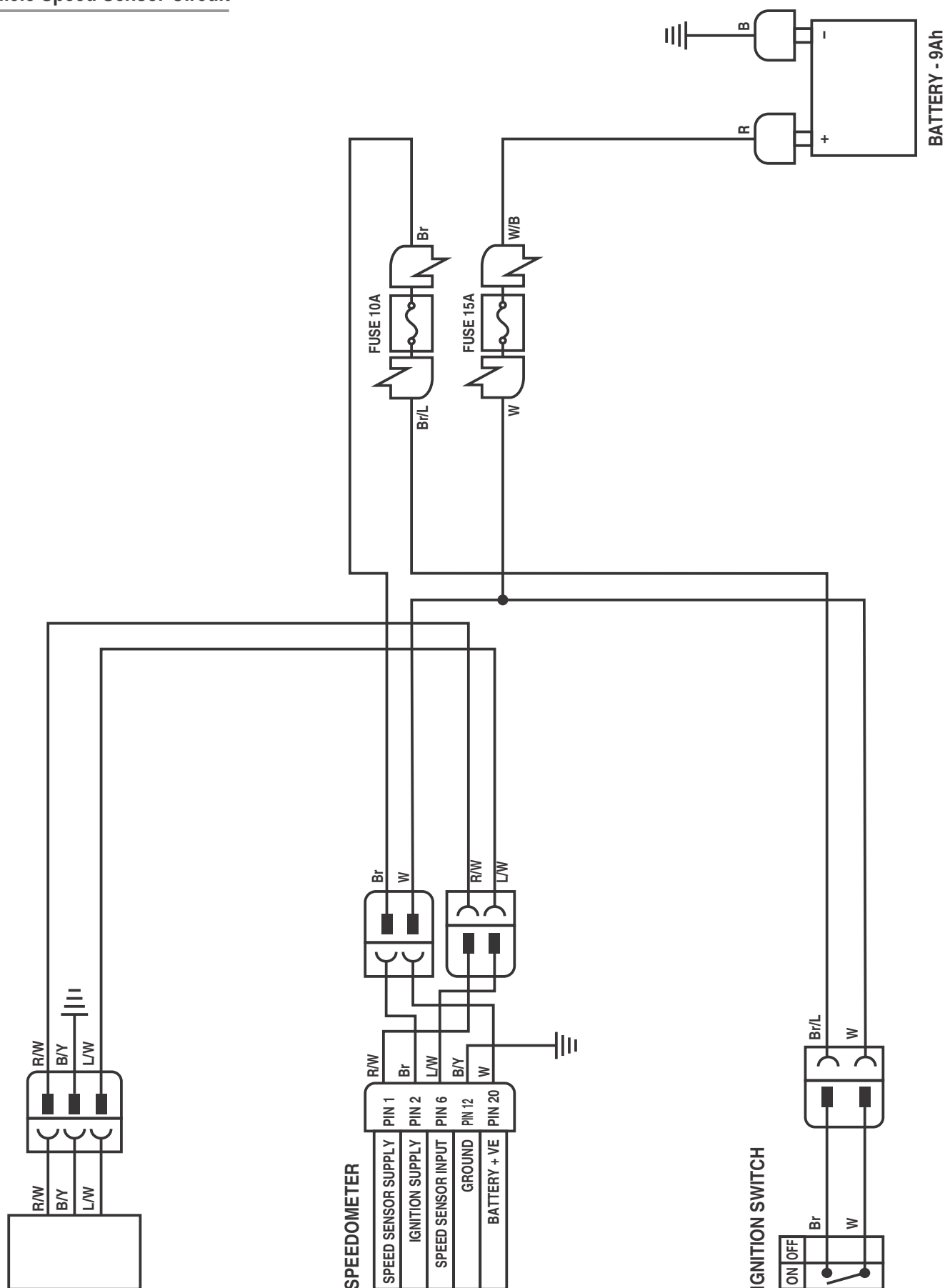
Starter Motor Circuit



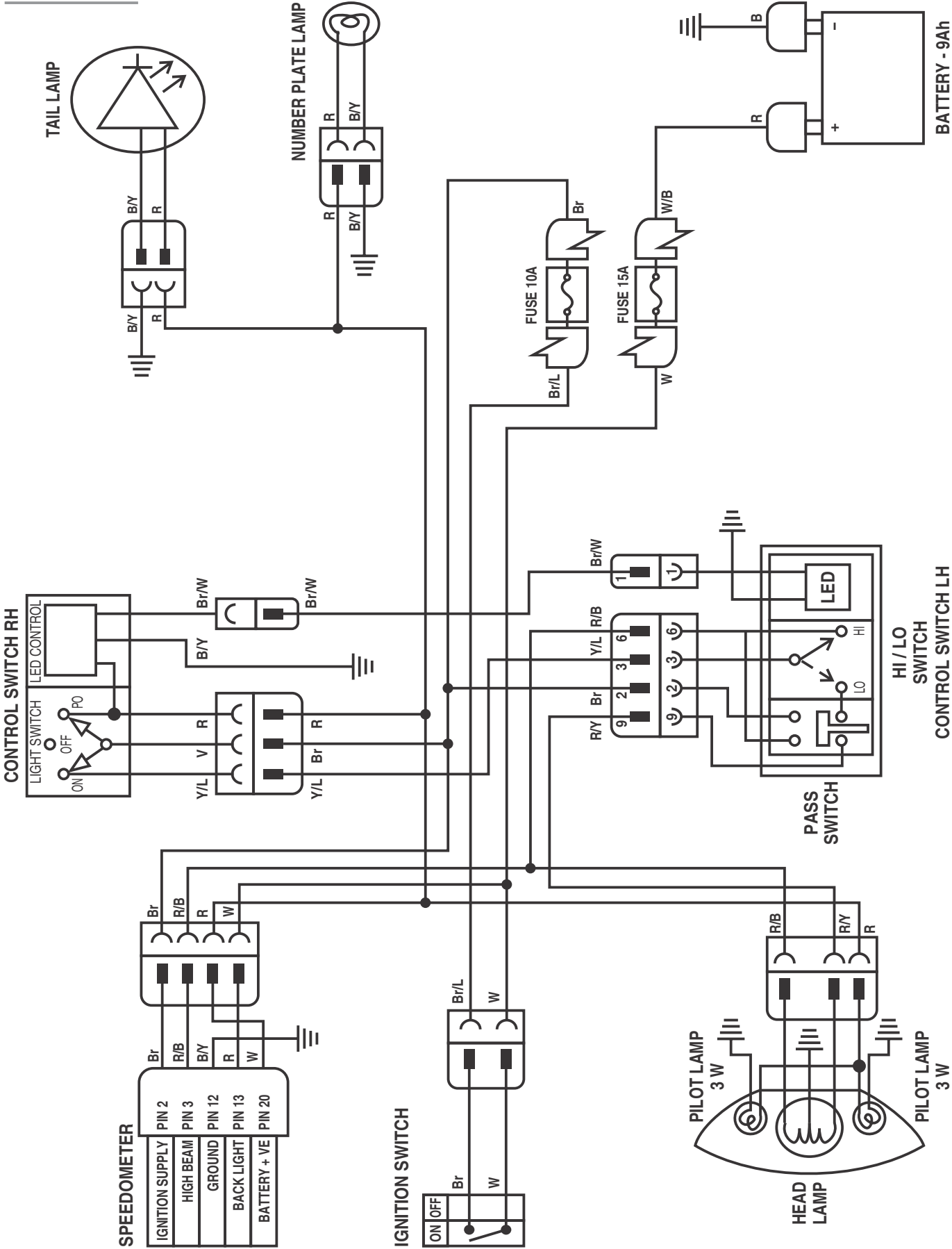
Fuel Meter Circuit



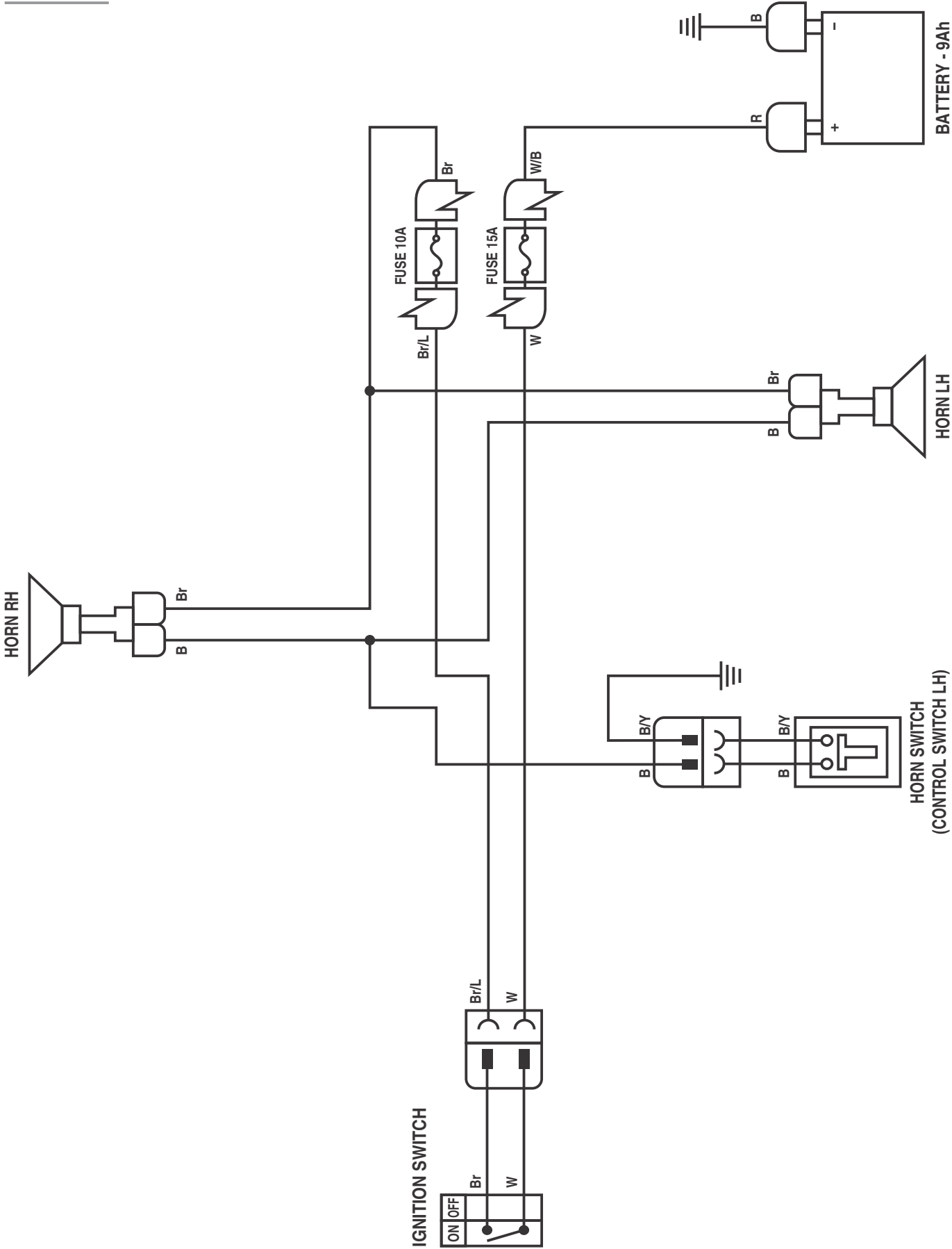
VEHICLE SPEED SENSOR



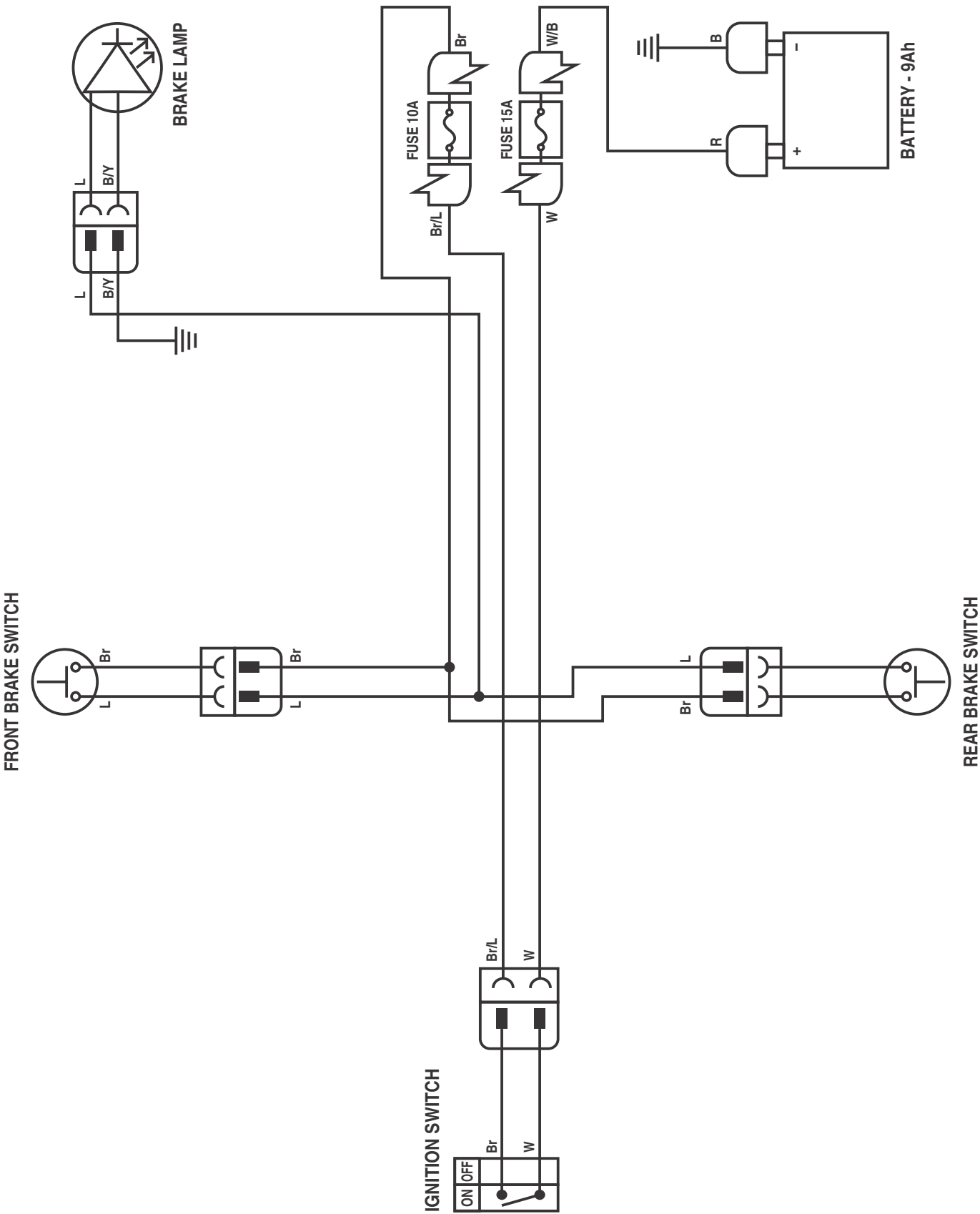
Lighting Circuit



Horn Circuit



Brake Lamp Circuit



Supplementary Service Station Manual Pulsar 135 UG + BS IV

- Technical Specifications
- Revised Periodic Maintenance & Lubrication Chart
- Revised PDI Check Sheet
- Part Identification
- Electrical Circuit Diagrams



Engine & Transmission :-	
Parameter	Specification
Type	4 stroke DTS-I, Single cylinder 4 valve, Natural air cooled.
Bore	54.0 mm
Stroke	58.8 mm
Displacement	134.60 cc
Max.Net Power	13.5 PS @ 9000 RPM
Max. Net Torque	11.4 Nm @ 7500 RPM
Ignition system	DC
Spark plugs Qty	2 Nos
Spark plug gap	0.7~0.8 mm
Lubrication	Wet sump, Forced.
Transmission	5 speed constant mesh.
Gear shifting pattern	1 down 4 up
Engine Oil Details :-	
Grade	SAE 20W50 API 'SL' or JASO 'MA'
Drain & Refill	1000 ml
Overhaul	1100 ml




Chassis & Body :-	
Parameter	Specification
Frame Type	Double cradle
Suspension	Front : Telescopic suspension
	Rear : Twin suspension with nitrox
Brakes	Front : Hydraulic operated disc brakes
	Rear : Mech. expanding drum brake
Tyres	Front : 2.75 X 17", 41 P
	Rear : 100/90 X 17", 55 P
Tyre Pressure	Front : 1.75 Kg/Cm ² (24.9 PSI)
	Rear (Solo) : 2.00 Kg/Cm ² (28.4 PSI)
	Rear (Pillion) : 2.25 Kg/Cm ² (32 PSI)
Fuel tank capacity :-	
Full	8.0 Liters
Reserve	2.5 Liters
Usable Reserve	1.6 Liters
Fork Oil Details :-	
Grade	SAE 10W20
Quantity / leg	140 ml



Dimensions :-	
Parameter	Specification
Length	1995 mm
Width	765 mm
Height	1075 mm
Wheel Base	1325 mm
Ground Clearance	165 mm
Vehicle Kerb Weight	122 kg.
Vehicle Gross Weight	252 kg.
Electricals :-	
System	12V DC
Battery	12V 5Ah, Flooded
Head Lamp	35/35W
Pilot lamp	5W (2 nos.)
Tail / Stop Lamp	LED
Side indicator Lamp	Bulb 10W
Neutral	LED Green
Reserve Indicator	LCD
Turn Signal Indicator	LED Green
Hi-Beam Indicator	LED Blue
Speedometer Illumination	LED
Fuel Gauge	LCD bar display
Horn	12V DC 2A



Carburetor Specification :-

Parameter	Specification	Photograph
Make	UCAL	
CO% - With SAI	< 1 %	
Idling RPM - With SAI	1350 – 1450 RPM	
CO% - Without SAI	4.5 % - 5.5 %	
Idling RPM - Without SAI	1300 – 1400 RPM	
Choke	Manual	

REVISED PERIODIC MAINTENANCE & LUBRICATION CHART



Sr No	PM Check Point	Recommended Frequency								Remark
		Service	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500	4500	9500	14500	19500	24500	29500	
			~	~	~	~	~	~	~	
			750	5000	10000	15000	20000	25000	30000	
1	Servicing with water wash		✓	✓	✓	✓	✓	✓	✓	Ensure to prevent water entry in Petrol tank, Silencer & electrical parts. Use caustic free detergent for washing.
2	Engine oil (Bajaj DTSi 10000 oil) & engine oil filter*	C,R	R	Top Up	R	Top Up	R	Top Up	R	"BGO DTS-i 10W30 for 100cc models. BGO DTS-i 20W50 for models above 125cc. "
3	Oil strainer, Body centrifugal filter**	CL	CL		CL		CL		CL	Oil Strainer Cleaning at the time of oil Change Clean body centrifugal filter at 750 Km & at 20K-Platina & Pulsar
4	Starter Clutch (Dry Type)**	L		L	L	L	L	L	L	Use recommended molycote grease
5	Spark plug	CL,A,R			CL,A		CL,A		R	
6	Air Cleaner Element *** & Cover "O" Ring	CL,R	CL	CL	CL	R	CL	CL	R	Foam & Paper as applicable. O ring check at every service & Replace if cut/damaged
7	In line paper filter or Fuel cock paper filter	R				R			R	
8	Fuel cock sediment bowl cleaning	CL				CL			CL	
9	Carburetor rubber duct	C,R					C,R			Check & replace if required
10	Fuel pipe	C,R	C	C	C	R	C	C	R	
11	Valve tappet clearance	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
12	Non-Sealed drive chain cleaning & lubrication	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	<ul style="list-style-type: none"> • During 1st free service : Use lint free cloth for cleaning & SAE 90 oil for lubrication without removing from vehicle. (If chain is excessively dirty, then chain has to be removed, cleaned using diesel & lubricated using molten IOC servo compound chain grease.) • During all other services: Remove, clean using diesel & lubricated using molten IOC servo compound chain grease.
13	Sealed drive chain cleaning & lubrication	CL,L,A		CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	<ul style="list-style-type: none"> • During regular service use OKS spray for chain cleaning, without removing chain from vehicle. • If chain is excessively dirty, then chain has to be cleaned by removing from vehicle. (Customer to apply OKS chain lube spray at every 500 Kms)
14	Engine air breather tube	C	C	C	C	C	C	C	C	Replace if damaged
15	Silencer drain hole cleaning	CL		CL	CL	CL	CL	CL	CL	
16	Silencer tail pipe cleaning **	CL		CL	CL	CL	CL	CL	CL	
17	Brake lining or pad wear & lubricate brake cam & pivot pin** Check pad wear indicator	C,L,R	C	C,L,R	C,L,R	R	C,L,R	C,L,R	R	Replace brake shoe/pads at every 15,000 kms



REVISED PERIODIC MAINTENANCE & LUBRICATION CHART

Sr No	PM Check Point	Recommended Frequency								Remark
		Service	1st	2nd	3rd	4th	5th	6th	7th	
			500	4500	9500	14500	19500	24500	29500	
		Kms	~	~	~	~	~	~	~	
			750	5000	10000	15000	20000	25000	30000	
18	Brake fluid level ** - top up / replace	C,A,R				C,A			R	Use recommended brake fluid (DOT3 / DOT4)
19	Disc brake assembly--check functionality, leakage or any other damage	C			C		C		C	Replace if damaged
20	All cables & rear brake pedal - free play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
21	Battery electrolyte level , specific gravity	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	Not applicable for VRLA batteries
22	Wiring harness & battery connection - routing, tie bands & clamps tightness	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	
23	Ignition switch barrel cleaning & handle bar control switches contacts cleaning	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	Use recommended Wd40 spray
24	Steering play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
25	Steering stem bearing *** & cap steering bearing (Plastic)**	C,CL, L,R			C,CL, L,R		C,CL, L,R		C,CL, L,R	Check & replace if damaged. Use HP Lithon RR3 grease for lubrication
26	Main stand & side stand pin **	CL,L			CL,L		CL,L		CL,L	Use recommended AP grease
27	Swing arm pivot pin (For non silent bush)**	L		L	L	L	L	L	L	Not applicable in case of needle roller bearing
28	All fasteners tightness	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
29	Engine foundation silent bushes **	C				C			C	Replace if damaged
30	General lubrication - clutch lever, front brake lever, kick lever	L	L	L	L	L	L	L	L	Use recommended AP grease
31	Idle speed / CO%	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
32	Coolant level in expansion tank**	C,A	C,A	C,A	C,A	C,A	C,A	C,A	R	Use recommended 'Ready to Use coolant'. Replace at every 30000 Kms or 2 years (Whichever occurs earlier)
33	Coolant hose damage / clamps / leakage **	C		C	C	C	C	C	C	Check & replace if required
34	Radiator fins **	C		C	C	C	C	C	C	Check & replace if required
35	Spoke tightening ** - Front & Rear	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
36	Front fork dust seal area & inner pipe cleaning**	CL		CL	CL	CL	CL	CL	CL	Applicable for front fork with rubber bellow
37	SAI system / EVAP hoses - Check functionality, leakage or any other damage**	C, R	C, R	C, R	C, R	C, R	C, R	C, R	C, R	Replace if cut / damaged
38	Pillion foot rest hinge lubrication**	L	L	L	L	L	L	L	L	Use RR 3 Grease
39	EVAP Y connector drain tube **	CL	CL	CL	CL	CL	CL	CL	CL	

* It is strongly recommended to use only Bajaj genuine oil, in case of any other engine oil of same specification is used the would be every 5000 kms.

** As applicable to model.

*** more frequent cleaning is required while driving in dusty environment.

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

Note :- Periodic parts / lubricants as per periodic maintenance & Lubrication chart are mandatory & the same is chargeable to customer.



PDI Check sheet Common for all models (Torque Values given for Pulsar 135 BS IV)

Dealer's Name		Dealer's code	
Model		City	
Frame No		Date of PDI	
Engine No		PDI done by	

1. Check points before starting of the vehicle

Check & correct the below check points before starting the vehicle

To Check	Check for	✓ If Ok	
		X If Not Ok	
Engine oil	Oil level between lower & upper mark / Top up if required		
Fuel tank / Pipes	No leakage / Correct fitment		
Mirror	Fitment & adjustment to ensure clear rear view		
Coolant	Coolant level between MIN & MAX mark, top up if required in cold condition		
	Ensure no leakage		
Lock Operation	Steering cum Ignition lock, Seat lock, LH side cover lock, Petrol tank cap lock		
Battery	Terminal voltage 12.4 V D.C for MF battery & 12.8 V DC for VRLA Battery using battery tester		
	Tightness of battery terminals / cables / Petroleum Jelly application		
Tyre Pressure	Front : 1.75 Kg/Cm ² (24.9 PSI)		
	Rear (with Pillion) : 2.25 Kg / cm ² (32 PSI)		
Brakes	Front : Brake lever free play 4 ~ 5 mm (For drum brake only)		
	Rear : Brake pedal free play 20 – 30 mm		
Clutch / throttle cable	Free play 2 ~3 mm		
Drive chain	Slackness 25 - 30 mm		
	Equal marking of chain adjusters on both side		
	No touching to chain case		



Fasteners (Check torque) Recommended torque wrench to be used for applying torque on nut - bolts as mentioned in PDI check sheet using reference torque chart given in Annexure 4. However if any major parts are required to be removed (Except side cover & seat) for accessibility of torque wrench, in those cases the tightness can be ensured using open end / ring spanner / box type spanner as applicable without removing those major parts	Engine foundation bolts	
	Front mounting bolts : 2.0 ~ 2.2 Kg.m (19.6 ~ 21.6 N.m)	
	Rear mounting bolts : 3.0 ~ 3.2 Kg.m (29.4 ~ 31.4 N.m)	
	Front axle nut : 4.0 ~ 5.0 Kg.m (39.2 ~ 49.1 N.m)	
	Rear axle nut : 9.0 ~ 10.0 Kg.m (88.3 ~ 98.1 N.m)	
	Swing arm shaft nut : 8.0 ~ 10.0 Kg.m (78.5 ~ 98.1 N.m)	
	RSA Mounting nut Top : 2.8 ~ 3.2 Kg.m (27.5 ~ 31.4 N.m) Bottom : 3.5 ~ 4.0 Kg.m (34.3 ~ 39.2 N.m)	
	Front fork top bolts : 3.0 ~ 3.2 Kg.m (29.4 ~ 31.4 N.m)	
	Front fork under bracket bolts : 2.5 ~ 3.0 Kg.m (24.5 ~ 29.4 N.m)	

2. Check points during / after starting the vehicle

Check & correct the below check points during / after starting the vehicle

Switch operation	RH & LH control switch, ignition switch, clutch switch & brake switch (Front & Rear)	
Horn	Ensure no distorted sound	
All Bulbs working	Headlight, Tail / Stop lamp, Side indicators, Speedo bulbs, Number plate lamp,	
Speedometer	Working of speedometer, Odometer, Trip meter, Fuel gauge , Clock	
	Working of all signal indicators icons (Neutral, Turn signal, High beam, Clock, Low battery indicator, Service reminder & Bajaj Logo)	
Headlamps	Focus confirmation	

3. Check points during Test ride

Check & correct the below check points during Test ride

Gear shifting	Smooth operation	
Drive-ability	Throttle response	
	Brake effectiveness - Front & Rear	




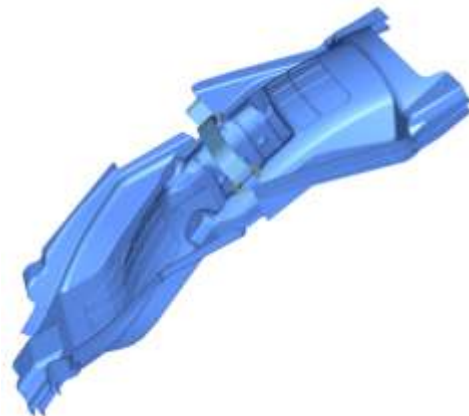
REVISED PRE-DELIVERY INSPECTION CHECKLIST





Engine noise	No abnormal noise	
Front fork / steering	Smooth working by pumping movement & smooth operation (No play / No Sticky movement)	
Oil / Coolant leakages	Specify source of leakages	
4. Idling RPM / CO%		
Check & correct the below check points in engine warm condition		
Idling RPM	Check in warm up condition at 60° (SAI connected 1350 – 1450 RPM & SAI disconnected 1300 – 1400 RPM)	
CO % Check	CO Check in engine warm condition at idling RPM (SAI connected < 1% & SAI disconnected 4.5 % – 5.5 %)	
5. Visual inspection for dent, scratches, rust ...		
6. Clean the vehicle thoroughly before delivery to customer.		


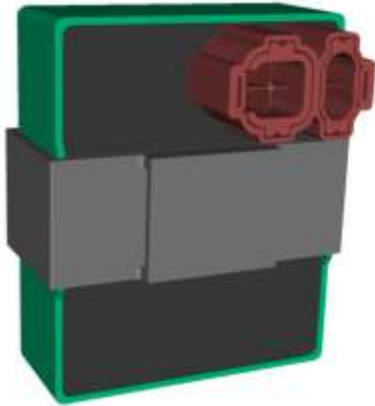
Note :- If performance related issue is observed in vehicle, then carry out Idling RPM & CO% Check activity.

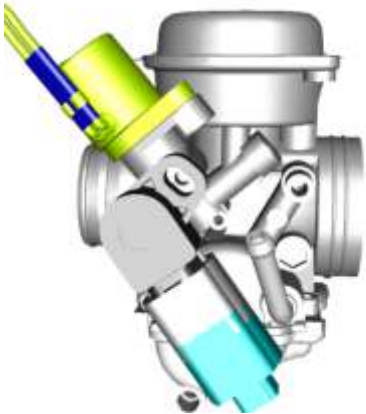



Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Rear Fender	Rear Fender EVAP
Part No	JD181003	JD181412
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 135 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 135
Identification	Visual	Visual

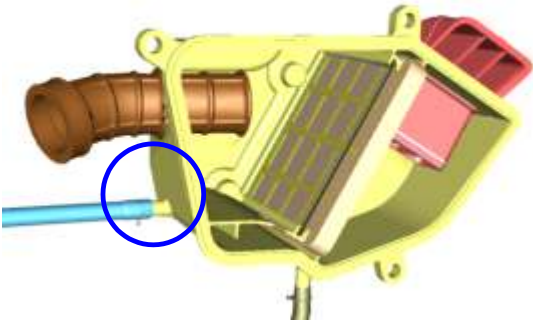
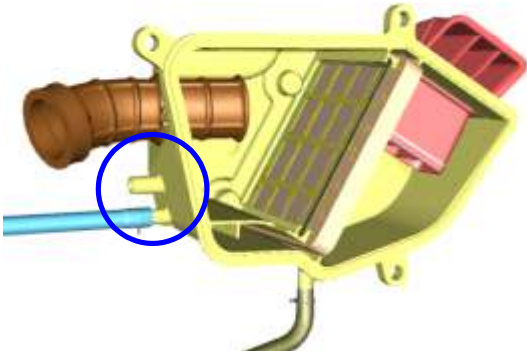
Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Petrol Tank Cap	Petrol Tank Cap
Part No	JD171600	JD171603
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 135 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 135
Identification	Visual	Visual

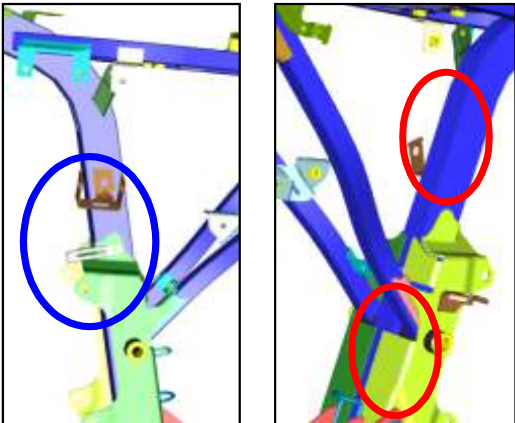
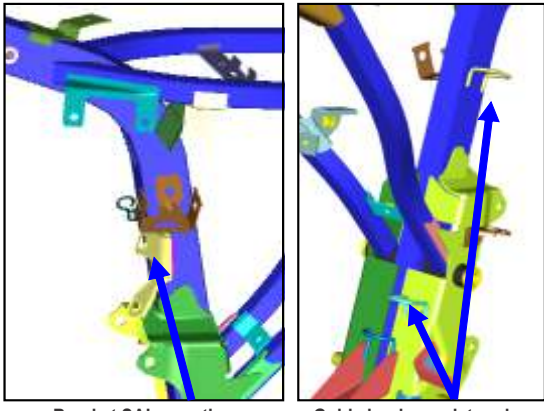


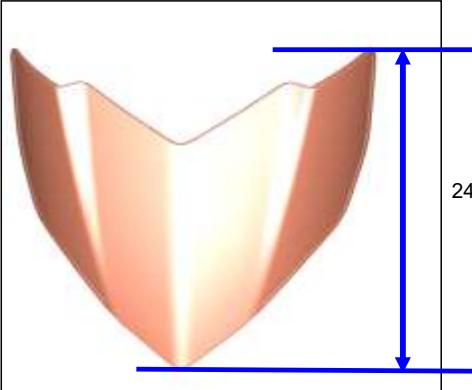
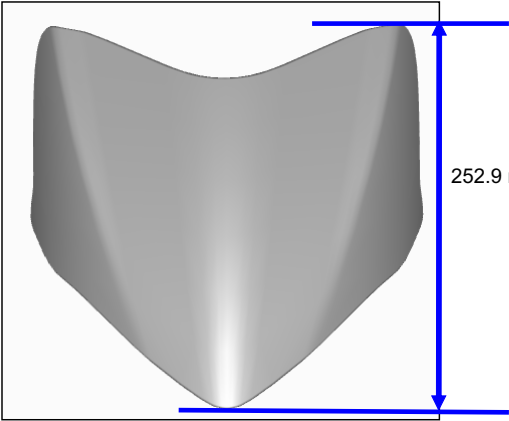
Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	CDI	CDI
Part No	JE351200	JE351246
Description	<ul style="list-style-type: none"> • 3 Nos couplers 	<ul style="list-style-type: none"> • 2 Nos couplers
Identification	Visual	Visual



Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Carburetor Assembly	Carburetor Assembly
Part No	JE581230	JE581251
Description	<ul style="list-style-type: none"> • Without evaporated fuel supply pipe • With Auto choke • With TPS 	<ul style="list-style-type: none"> • With evaporated fuel supply pipe • With Manual Choke • Without TPS
Identification	Visual	Visual



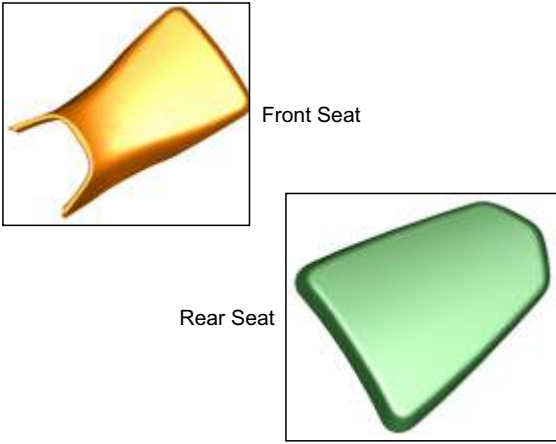
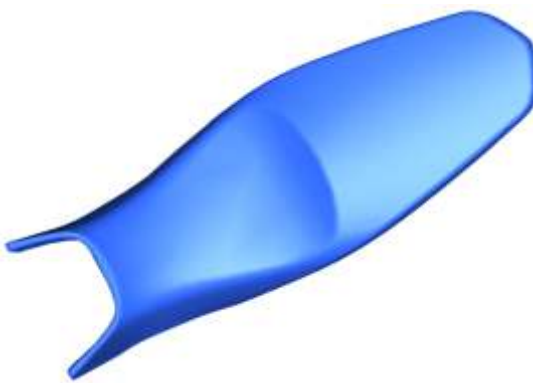
Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Air Filter Assembly	Air Filter Assembly
Part No	JE581005	JE581028
Description	<ul style="list-style-type: none"> Without fresh air supply provision TO SAI unit 	<ul style="list-style-type: none"> With fresh air supply provision TO SAI unit
Identification	Visual	Visual

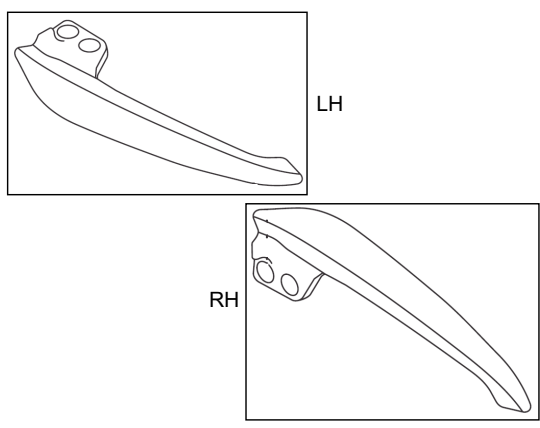

Model	Pulsar 135	Pulsar 135 BS IV
Photograph		 <p>Bracket SAI mounting Guide hooks canister pipe</p>
Part Name	Frame	Frame
Part No	JD111001	JD111070
Description	<ul style="list-style-type: none"> Without provision of bracket for SAI unit mounting Without Provision of hooks for Canister pipe routing 	<ul style="list-style-type: none"> With provision of bracket for SAI unit mounting With Provision of hooks for Canister pipe routing
Identification	Visual	Visual

Model	Pulsar 135	Pulsar 135 BS IV
Photograph	 <p>240.8 mm</p>	 <p>252.9 mm</p>
Part Name	Wind Shield	Wind Shield
Part No	JD181210	JD181240
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 135 BS IV • Height is 240.8 mm 	<ul style="list-style-type: none"> • Profile is different than Pulsar 135 • Height is 252.9 mm
Identification	Visual	Visual



Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Speedometer Assembly	Speedometer Assembly
Part No	JD402404	JD402405
Description	<ul style="list-style-type: none"> • Speedometer artwork is different than Pulsar 135 BS IV 	<ul style="list-style-type: none"> • Speedometer artwork is different than Pulsar 135
Identification	Visual	Visual

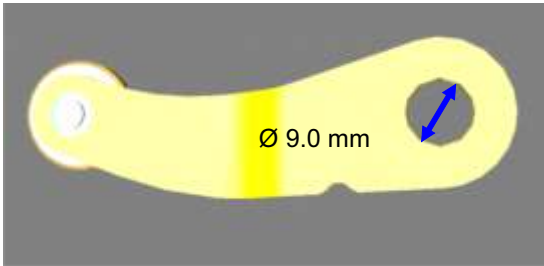
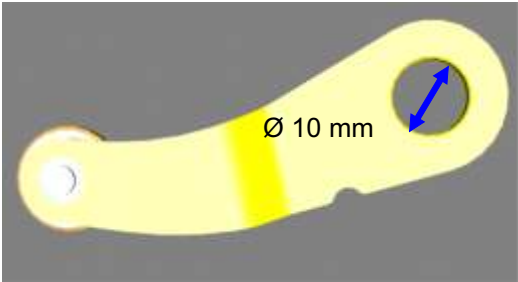


Model	Pulsar 135	Pulsar 135 BS IV
Photograph	 <p>Front Seat</p> <p>Rear Seat</p>	
Part Name	Seat Assembly	Seat Assembly
Part No	Front – JD191012, Rear – JD191003	JD191018
Description	<ul style="list-style-type: none"> • Split type seat 	<ul style="list-style-type: none"> • One piece seat
Identification	Visual	Visual



Model	Pulsar 135	Pulsar 135 BS IV
Photograph	 <p>LH</p> <p>RH</p>	
Part Name	Grab Handle	Grab Handle
Part No	LH – JD231408, RH – JD231409	JD231413
Description	<ul style="list-style-type: none"> • Split type 	<ul style="list-style-type: none"> • One piece
Identification	Visual	Visual


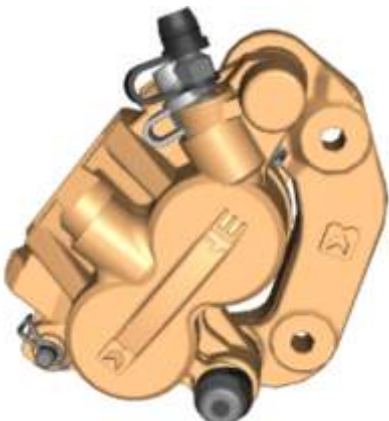


Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Lever – Gear Change	Lever – Gear Change
Part No	JD561414	JD561421
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 135 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 135
Identification	Visual	Visual

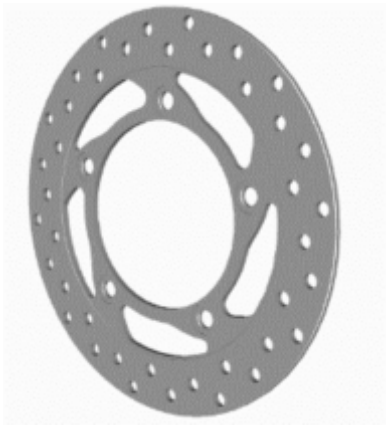
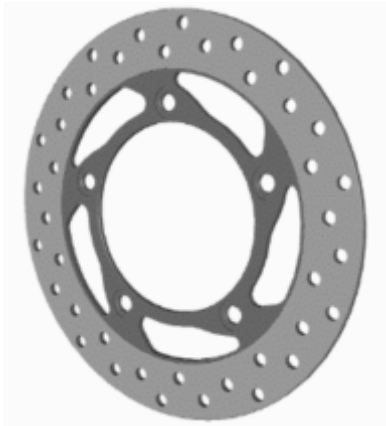
Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Inhibitor	Inhibitor
Part No	JD561203	PA561209
Description	<ul style="list-style-type: none"> • Inner diameter is 9.0 mm 	<ul style="list-style-type: none"> • Inner diameter is 10 mm
Identification	Visual	Visual



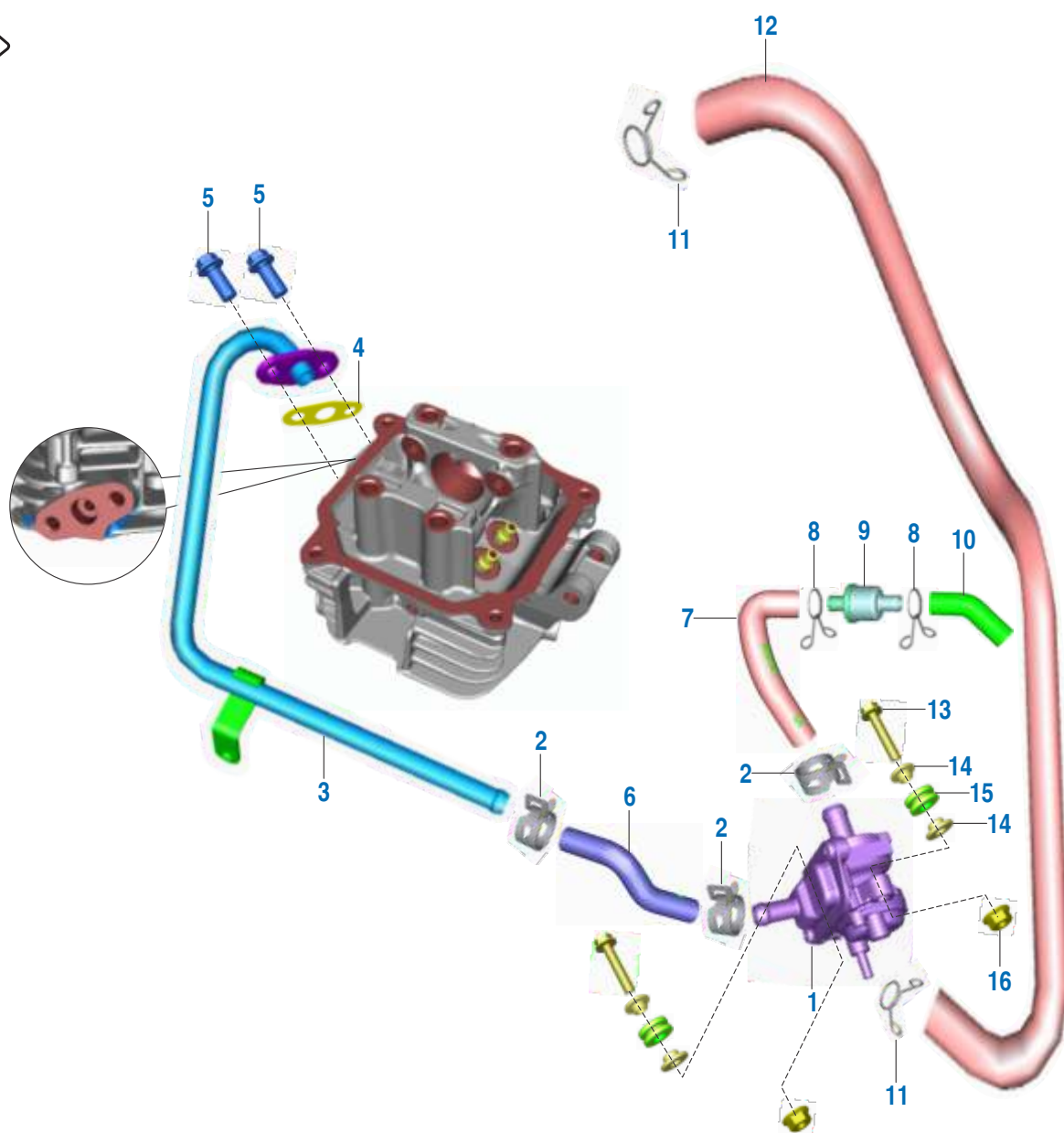
Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Shield Muffler	Shield Muffler
Part No	JD591026	JE591195
Description	• With plating	• Black in color
Identification	Visual	Visual

Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Caliper Assembly	Caliper Assembly
Part No	JD131813	JF131806
Description	• Black in color & Split type	• Brass Gold Color & Integral type
Identification	Visual	Visual



Model	Pulsar 135	Pulsar 135 BS IV
Photograph		
Part Name	Brake Disc	Brake Disc
Part No	JD131810	JD131816
Description	• Silver Color	• Black Color
Identification	Visual	Visual

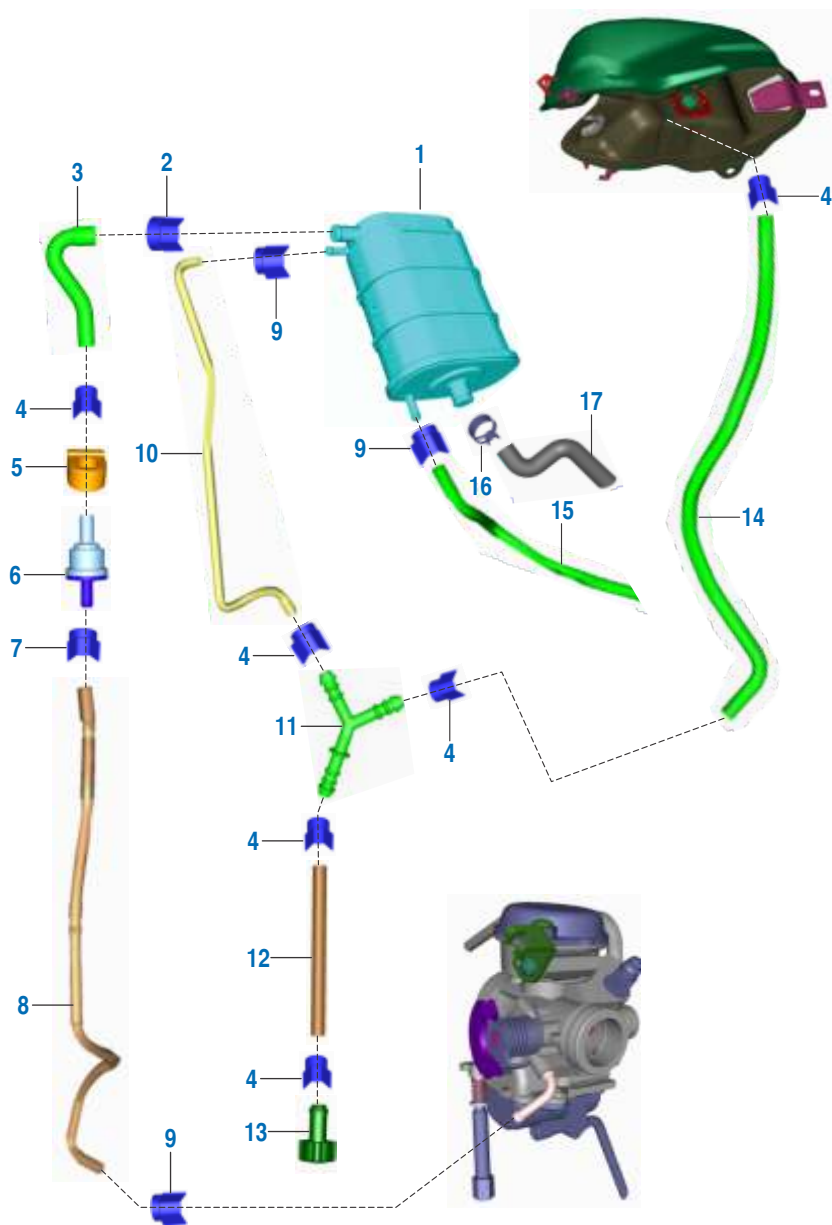




S. N.	Description
1	Unit SAI
2	Band Clip SAI Hose Outlet Tube
3	Tube Outlet SAI
4	Gasket Sai Flange
5	Bolt Flanged Small
6	Hose Connector SAI
7	Hose Intake Silencer Unit To SAI
8	CLAMP

S. N.	Description
9	Silencer For SAI
10	Hose Pipe A/F To Silencer Unit
11	Clamp
12	Hose Pipe Intake Manifold
13	Bolt Flanged
14	Sleeve SAI Unit
15	Grommet SAI Unit
16	Nut Hex Flanged



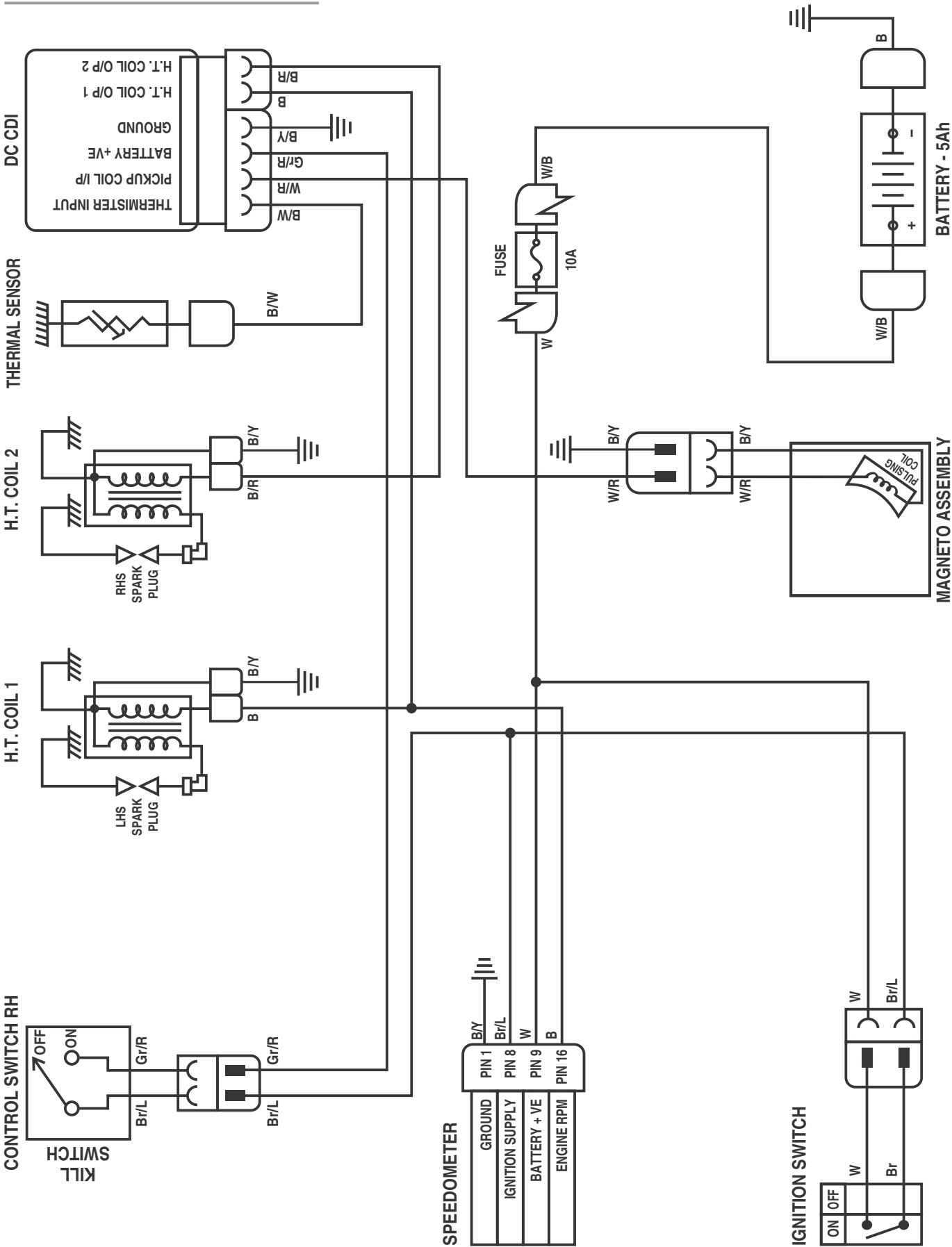


S. N.	Description
1	Canister
2	Spring Band Clamp 15 x 10
3	Tube Canister To Purge Valve
4	Spring Band Clamp 13 x 12
5	Grommet Purge Valve
6	Valve Purge
7	Spring Band Clamp 11.5 X 8.4
8	Tube Purge Valve To Carburetor
9	Spring Band Clamp 9 x 8.4

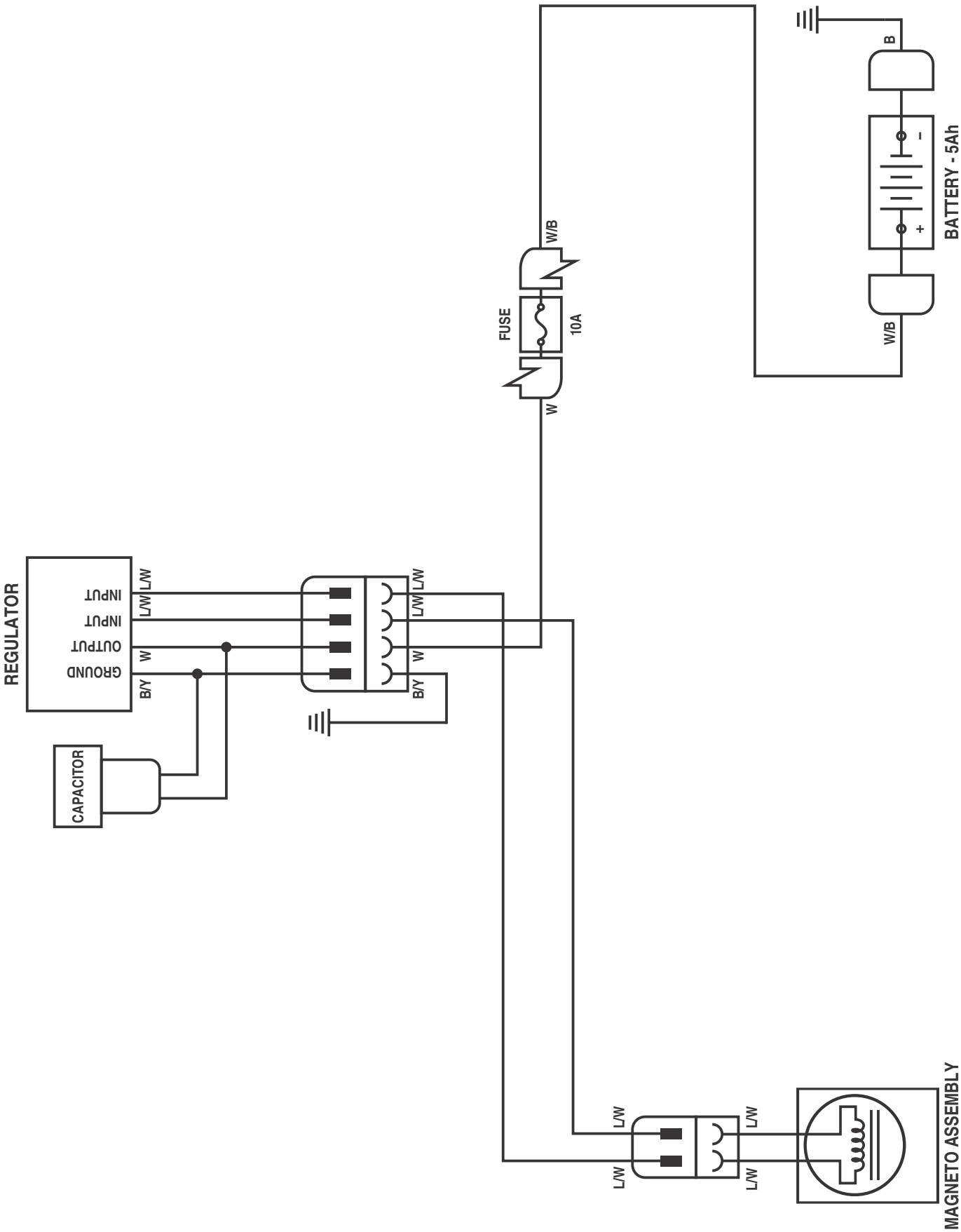
S. N.	Description
10	Tube Y Connector To Canister
11	Connector Y Shape
12	Tube Drain
13	Plug Fuel Drain
14	Tube Tank To Y Connector
15	Tube Canister Drain
16	Clamp - Canister Breather
17	Tube Canister Breather



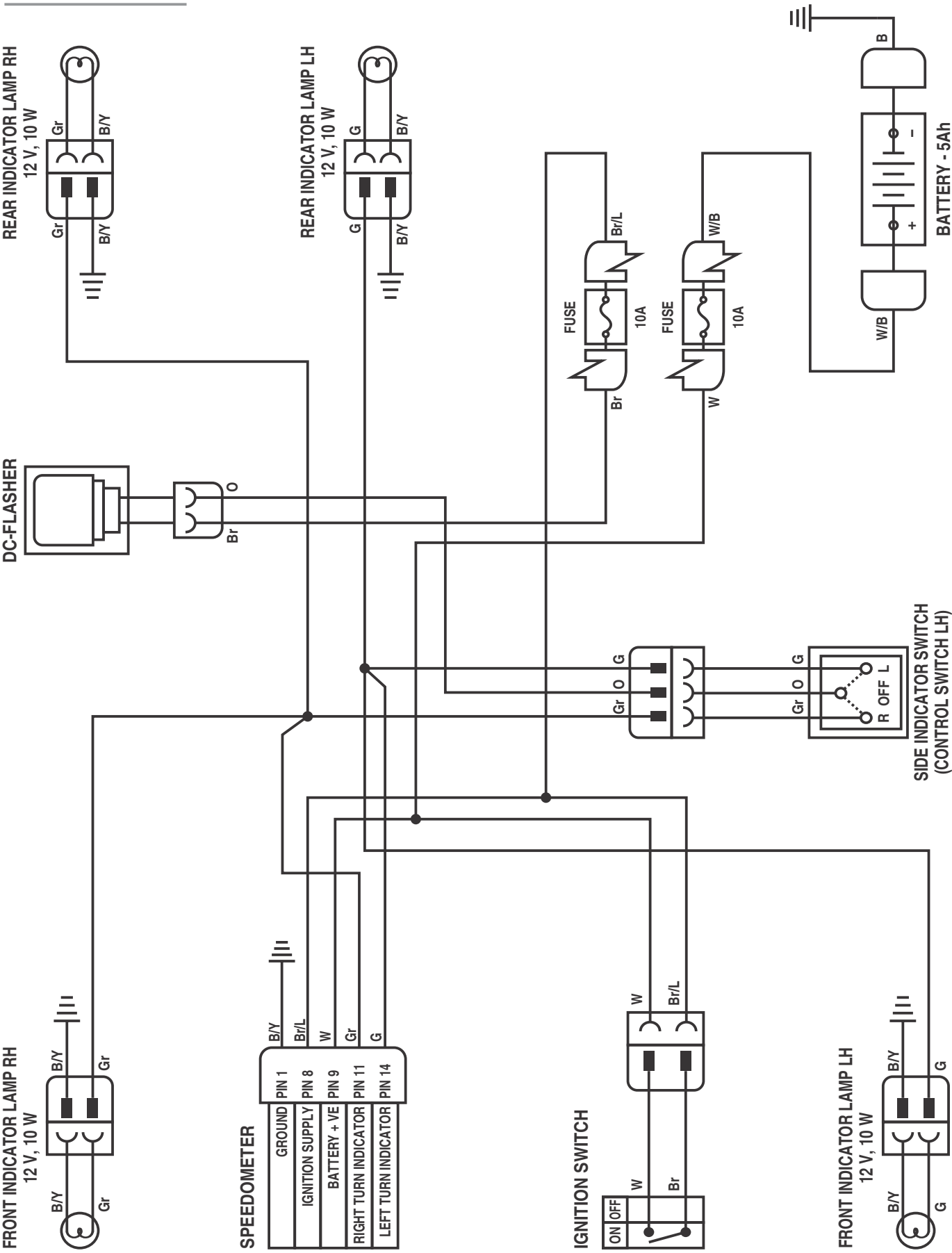
Ignition Circuit + Tachometer Circuit



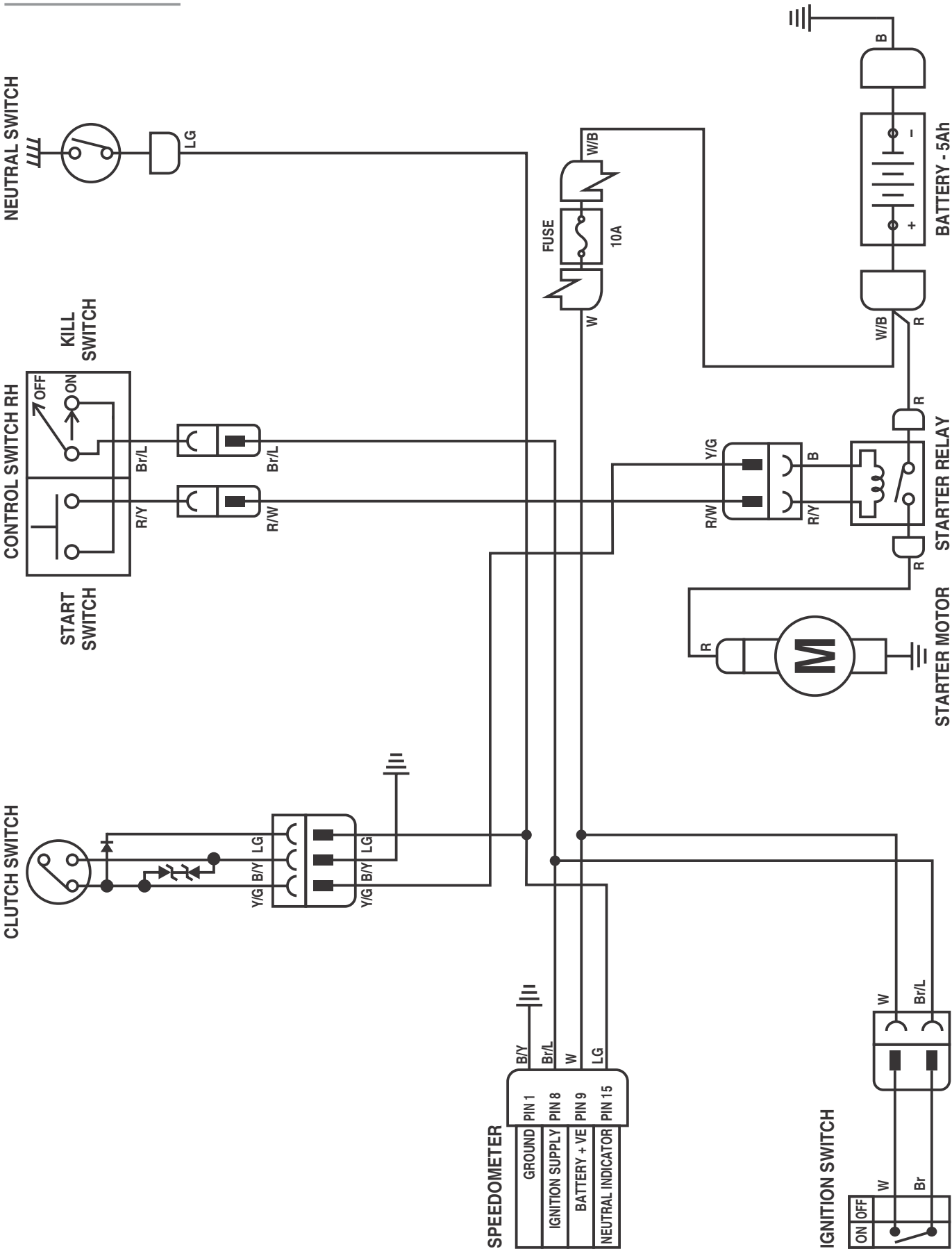
Battery Charging Circuit



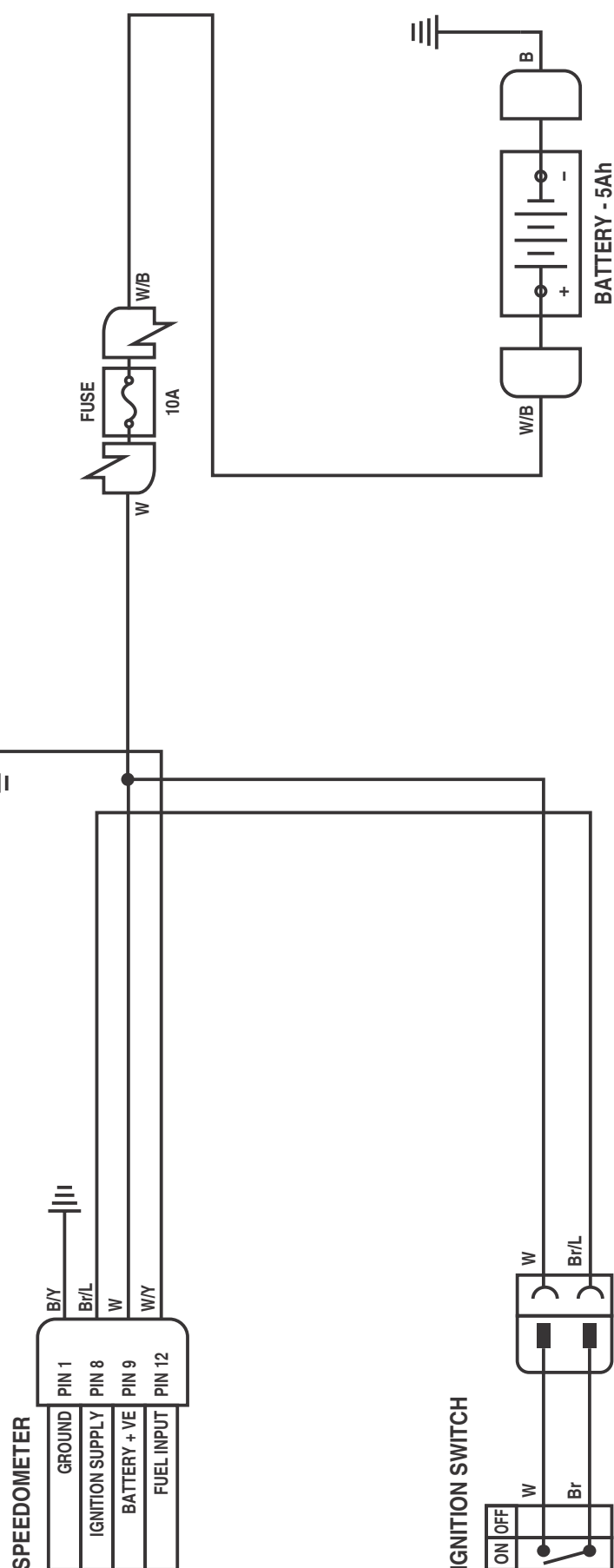
Side Indicator Circuit



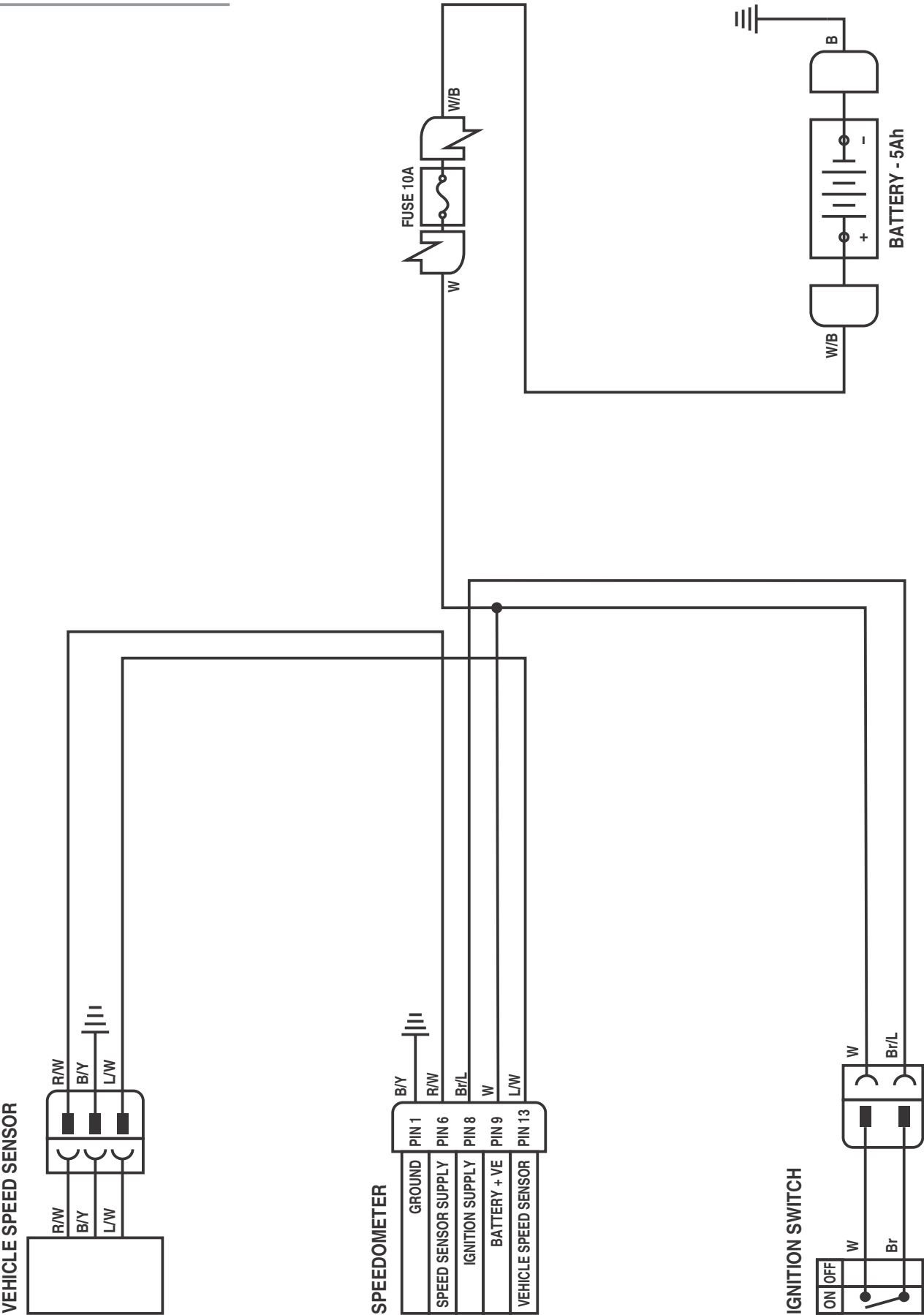
Starter Motor Circuit



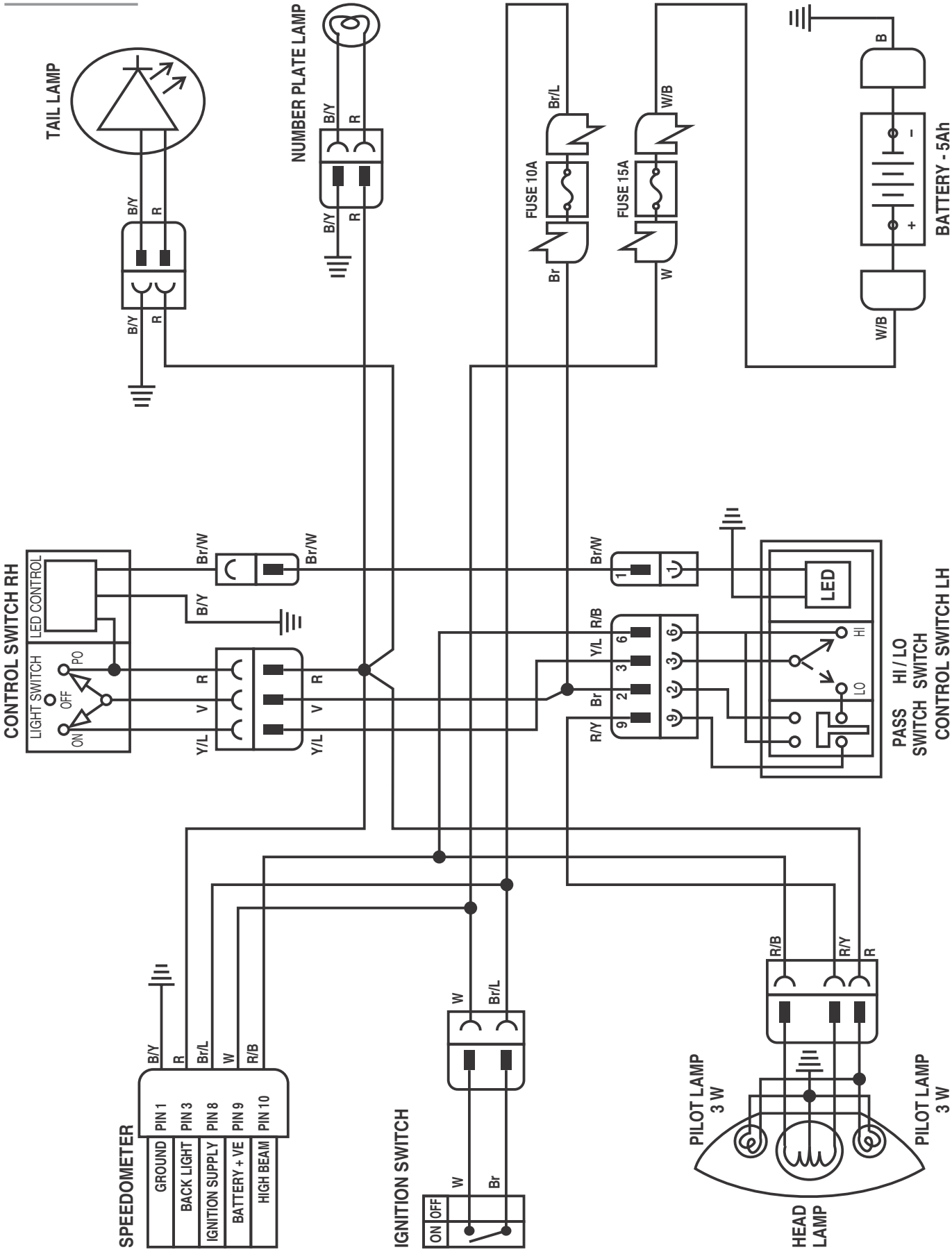
FUEL GAUGE LEVEL



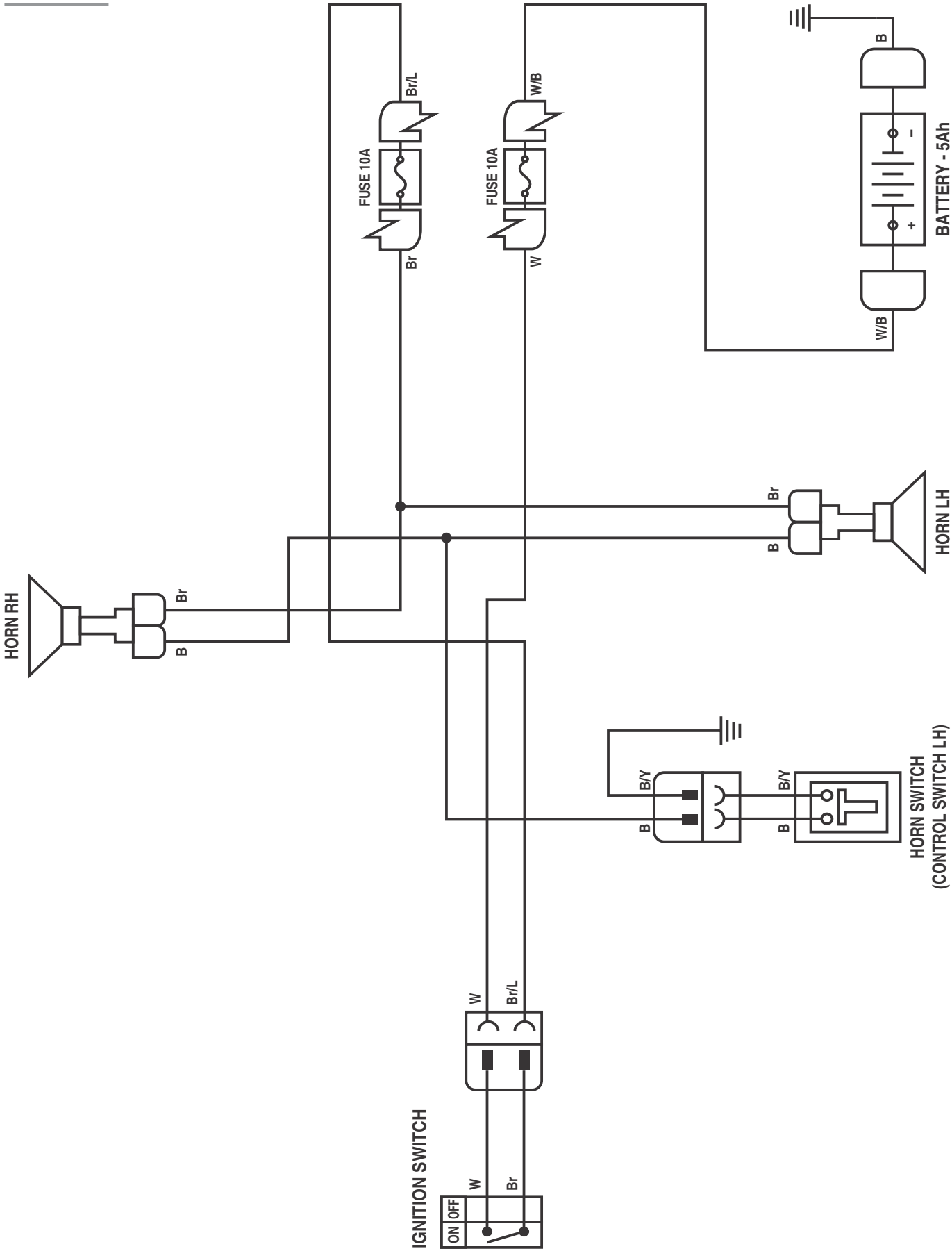
Vehicle Speed Sensor Circuit



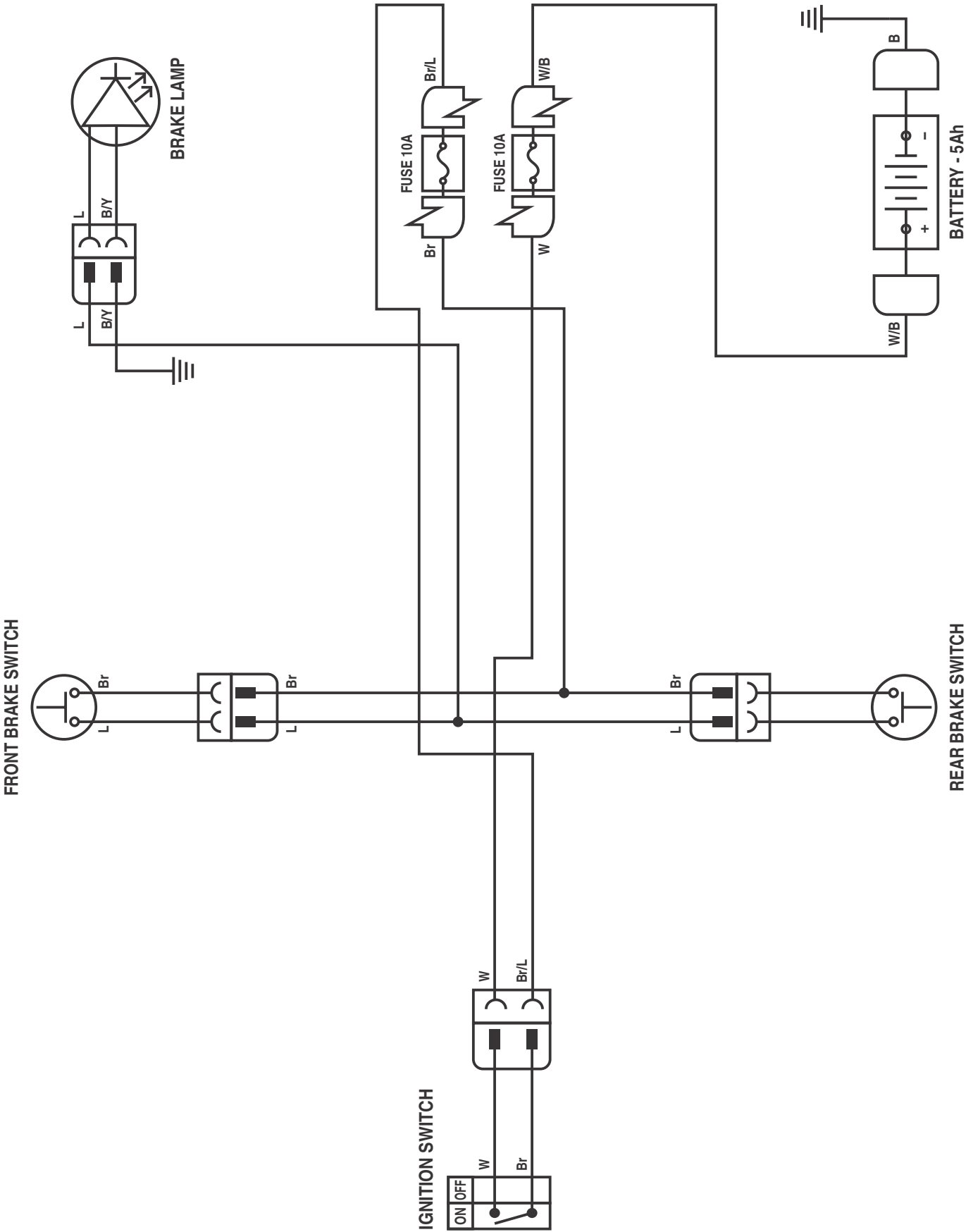
Lighting Circuit



Horn Circuit



Brake Lamp Circuit



Supplementary Service Station Manual Pulsar 220 UG + BS IV

- Technical Specifications
- Revised Periodic Maintenance & Lubrication Chart
- Revised PDI Check Sheet
- Part Identification
- Electrical Circuit Diagrams

Engine & Transmission :-	
Parameter	Specification
Type	4 Stroke, Oil cooled
Bore	67.00 mm
Stroke	62.4 mm
Displacement	220 cc
Max. Net Power	20.93 PS at 8500 RPM
Max. Net Torque	18.55 Nm at 7000 RPM
Ignition system	DC
Spark plugs Qty	2 Nos
Spark plug gap	0.7 ~ 0.8 mm
Lubrication	Wet sump, Forced.
Transmission	5 speed constant mesh.
Gear shifting pattern	1 down 4 up
Engine Oil Details :-	
Grade	SAE 20W50 API 'SL'
Drain & Refill	1150 ml
Overhaul	1300 ml




Chassis & Body :-	
Parameter	Specification
Frame Type	Double cradle
Suspension	Front : Telescopic suspension
	Rear : Twin suspension with nitrox
Brakes	Front : Hydraulic operated disc brakes
	Rear : Hydraulic operated disc brakes
Tyres	Front : 90/90 x 17, 49P, Tubeless
	Rear : 120/80 x 17, 61P, Tubeless
Tyre Pressure	Front : 2.00 Kg/Cm ² (28.4 PSI)
	Rear (Solo) : 2.10 Kg/Cm ² (30 PSI)
	Rear (Pillion) : 2.25 Kg/Cm ² (32 PSI)
Fuel tank capacity :-	
Full	15.0 Liters
Reserve	3.2 Liters
Usable Reserve	2.0 Liters
Fork Oil Details :-	
Grade	SAE 10W20
Quantity / leg	320 ml



Dimensions :-	
Parameter	Specification
Length	2035 mm
Width	750 mm
Height	1165 mm
Wheel Base	1350 mm
Ground Clearance	165 mm
Vehicle Kerb Weight	155 kg
Vehicle Gross Weight	285 kg
Electricals :-	
System	12V DC
Battery	12 V - 9 Ah
Head Lamp	55W (Low Beam) & 55W (High Beam)
Pilot lamp	5W (2 nos.)
Tail / Stop Lamp	LED
Side indicator Lamp	10W (4 nos)
Neutral	LED
Hi-Beam Indicator	LED
Turn Signal Indicator	LED
Side Stand Indicator	LED
Speedometer	LCD Display
Rear No. Plate lamp	5W
Horn	12V DC (2 Nos.)



Carburetor Specification :-

Parameter	Specification	Photograph
Make	UCAL	
CO% - With SAI	< 1 %	
Idling RPM - With SAI	1350 – 1450 RPM	
CO% - Without SAI	4.5 % - 5.5 %	
Idling RPM - Without SAI	1300 – 1400 RPM	
Choke	Manual	

REVISED PERIODIC MAINTENANCE & LUBRICATION CHART



Sr No	PM Check Point	Recommended Frequency								Remark
		Service	1st	2nd	3rd	4th	5th	6th	7th	
		Kms	500	4500	9500	14500	19500	24500	29500	
			~	~	~	~	~	~	~	
			750	5000	10000	15000	20000	25000	30000	
1	Servicing with water wash		✓	✓	✓	✓	✓	✓	✓	Ensure to prevent water entry in Petrol tank, Silencer & electrical parts. Use caustic free detergent for washing.
2	Engine oil (Bajaj DTSi 10000 oil) & engine oil filter*	C,R	R	Top Up	R	Top Up	R	Top Up	R	"BGO DTS-i 10W30 for 100cc models. BGO DTS-i 20W50 for models above 125cc. "
3	Oil strainer, Body centrifugal filter**	CL	CL		CL		CL		CL	Oil Strainer Cleaning at the time of oil Change Clean body centrifugal filter at 750 Km & at 20K-Platina & Pulsar
4	Starter Clutch (Dry Type)**	L		L	L	L	L	L	L	Use recommended molycote grease
5	Spark plug	CL,A,R			CL,A		CL,A		R	
6	Air Cleaner Element *** & Cover "O" Ring	CL,R	CL	CL	CL	R	CL	CL	R	Foam & Paper as applicable. O ring check at every service & Replace if cut/damaged
7	In line paper filter or Fuel cock paper filter	R				R			R	
8	Fuel cock sediment bowl cleaning	CL				CL			CL	
9	Carburetor rubber duct	C,R					C,R			Check & replace if required
10	Fuel pipe	C,R	C	C	C	R	C	C	R	
11	Valve tappet clearance	C,A			C,A		C,A		C,A	
12	Non-Sealed drive chain cleaning & lubrication	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	<ul style="list-style-type: none"> • During 1st free service : Use lint free cloth for cleaning & SAE 90 oil for lubrication without removing from vehicle. (If chain is excessively dirty, then chain has to be removed, cleaned using diesel & lubricated using molten IOC servo compound chain grease.) • During all other services: Remove, clean using diesel & lubricated using molten IOC servo compound chain grease.
13	Sealed drive chain cleaning & lubrication	CL,L,A		CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	CL,L,A	<ul style="list-style-type: none"> • During regular service use OKS spray for chain cleaning, without removing chain from vehicle. • If chain is excessively dirty, then chain has to be cleaned by removing from vehicle. (Customer to apply OKS chain lube spray at every 500 Kms)
14	Engine air breather tube	C	C	C	C	C	C	C	C	Replace if damaged
15	Silencer drain hole cleaning	CL		CL	CL	CL	CL	CL	CL	
16	Silencer tail pipe cleaning **	CL		CL	CL	CL	CL	CL	CL	
17	Brake lining or pad wear & lubricate brake cam & pivot pin** Check pad wear indicator	C,L,R	C	C,L,R	C,L,R	R	C,L,R	C,L,R	R	Replace brake shoe/pads at every 15,000 kms



REVISED PERIODIC MAINTENANCE & LUBRICATION CHART

Sr No	PM Check Point	Recommended Frequency								Remark
		Service	1st	2nd	3rd	4th	5th	6th	7th	
			500	4500	9500	14500	19500	24500	29500	
		Kms	~	~	~	~	~	~	~	
			750	5000	10000	15000	20000	25000	30000	
18	Brake fluid level ** - top up / replace	C,A,R				C,A			R	Use recommended brake fluid (DOT3 / DOT4)
19	Disc brake assembly--check functionality, leakage or any other damage	C			C		C		C	Replace if damaged
20	All cables & rear brake pedal - free play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
21	Battery electrolyte level , specific gravity	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	Not applicable for VRLA batteries
22	Wiring harness & battery connection - routing, tie bands & clamps tightness	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	C,A,T	
23	Ignition switch barrel cleaning & handle bar control switches contacts cleaning	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	C,CL	Use recommended Wd40 spray
24	Steering play	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
25	Steering stem bearing *** & cap steering bearing (Plastic)**	C,CL, L,R			C,CL, L,R		C,CL, L,R		C,CL, L,R	Check & replace if damaged. Use HP Lithon RR3 grease for lubrication
26	Main stand & side stand pin **	CL,L			CL,L		CL,L		CL,L	Use recommended AP grease
27	Swing arm pivot pin (For non silent bush)**	L		L	L	L	L	L	L	Not applicable in case of needle roller bearing
28	All fasteners tightness	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
29	Engine foundation silent bushes **	C				C			C	Replace if damaged
30	General lubrication - clutch lever, front brake lever, kick lever	L	L	L	L	L	L	L	L	Use recommended AP grease
31	Idle speed / CO%	C,A	C,A	C,A	C,A	C,A	C,A	C,A	C,A	
32	Coolant level in expansion tank**	C,A	C,A	C,A	C,A	C,A	C,A	C,A	R	Use recommended 'Ready to Use coolant'. Replace at every 30000 Kms or 2 years (Whichever occurs earlier)
33	Coolant hose damage / clamps / leakage **	C		C	C	C	C	C	C	Check & replace if required
34	Radiator fins **	C		C	C	C	C	C	C	Check & replace if required
35	Spoke tightening ** - Front & Rear	C,T	C,T	C,T	C,T	C,T	C,T	C,T	C,T	
36	Front fork dust seal area & inner pipe cleaning**	CL		CL	CL	CL	CL	CL	CL	Applicable for front fork with rubber bellow
37	SAI system / EVAP hoses - Check functionality, leakage or any other damage**	C, R	C, R	C, R	C, R	C, R	C, R	C, R	C, R	Replace if cut / damaged
38	Pillion foot rest hinge lubrication**	L	L	L	L	L	L	L	L	Use RR 3 Grease
39	EVAP Y connector drain tube **	CL	CL	CL	CL	CL	CL	CL	CL	

* It is strongly recommended to use only Bajaj genuine oil, in case of any other engine oil of same specification is used the would be every 5000 kms.

** As applicable to model.

*** more frequent cleaning is required while driving in dusty environment.

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

Note :- Periodic parts / lubricants as per periodic maintenance & Lubrication chart are mandatory & the same is chargeable to customer.



PDI Check sheet Common for all models (Torque Values given for Pulsar 220 BS IV)

Dealer's Name		Dealer's code	
Model		City	
Frame No		Date of PDI	
Engine No		PDI done by	

1. Check points before starting of the vehicle

Check & correct the below check points before starting the vehicle

To Check	Check for	✓ If Ok	
		X If Not Ok	
Engine oil	Oil level between lower & upper mark / Top up if required		
Fuel tank / Pipes	No leakage / Correct fitment		
Mirror	Fitment & adjustment to ensure clear rear view		
Coolant	Coolant level between MIN & MAX mark, top up if required in cold condition		
	Ensure no leakage		
Lock Operation	Steering cum Ignition lock, Seat lock, LH side cover lock, Petrol tank cap lock		
Battery	Terminal voltage 12.4 V D.C for MF battery & 12.8 V DC for VRLA Battery using battery tester		
	Tightness of battery terminals / cables / Petroleum Jelly application		
Tyre Pressure	Front : 2.00 Kg / Cm ² (28.4 PSI)		
	Rear (with Pillion) : 2.25 Kg / Cm ² (32 PSI)		
Brakes	Front : Brake lever free play 4 ~ 5 mm (For drum brake only)		
	Rear : Brake pedal free play (For drum brake only)		
Clutch / throttle cable	Free play 2 ~ 3 mm		
Drive chain	Slackness 20 ~ 25 mm		
	Equal marking of chain adjusters on both side		
	No touching to chain case		



Fasteners (Check torque) Recommended torque wrench to be used for applying torque on nut - bolts as mentioned in PDI check sheet using reference torque chart given in Annexure 4. However if any major parts are required to be removed (Except side cover & seat) for accessibility of torque wrench, in those cases the tightness can be ensured using open end / ring spanner / box type spanner as applicable without removing those major parts	Engine foundation bolts	
	Front mounting bolts : 1.8 ~ 2.2 Kg.m (17.7 ~ 21.6 N.m)	
	Rear mounting bolts : 1.8 ~ 2.2 Kg.m (17.7 ~ 21.6 N.m)	
	Front axle nut : 8.0 – 10.0 Kg.m (78.5 – 98.1 N.m)	
	Rear axle nut : 8.0 – 10.0 Kg.m (78.5 – 98.1 N.m)	
	Swing arm shaft nut : 8.0 – 10.0 Kg.m (78.5 – 98.1 N.m)	
	RSA Mounting nut Top / Bottom : 3.2 – 3.5 Kg.m (31.4 – 34.3 N.m)	
	Front fork top bolts : 2.0 – 2.2 Kg.m (19.6 – 21.6 N.m)	
	Front fork under bracket bolts : 3.0 – 3.2 Kg.m (29.4 – 31.4 N.m)	
	LH / RH Stay 2.2 - 2.5 Kg.m (21.6 – 24.5 N.m)	
2. Check points during / after starting the vehicle		
Check & correct the below check points during / after starting the vehicle		
Switch operation	RH & LH control switch, ignition switch, clutch switch & brake switch (Front & Rear)	
Horn	Ensure no distorted sound	
All Bulbs working	Headlight, Tail / Stop lamp, Side indicators, Speedo bulbs, Number plate lamp,	
Speedometer	Working of speedometer, Odometer, Trip meter, Fuel gauge , Clock	
	Working of all signal indicators icons (Neutral, Turn signal, High beam, Clock, Low battery indicator, Service reminder & Bajaj Logo)	
Headlamps	Focus confirmation	
3. Check points during Test ride		
Check & correct the below check points during Test ride		
Gear shifting	Smooth operation	
Drive-ability	Throttle response	
	Brake effectiveness - Front & Rear	



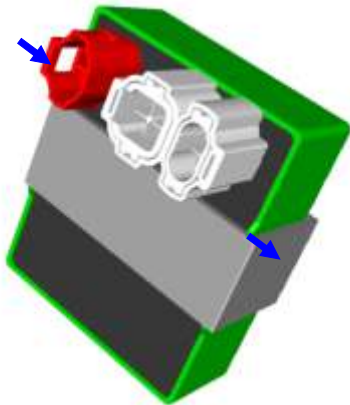
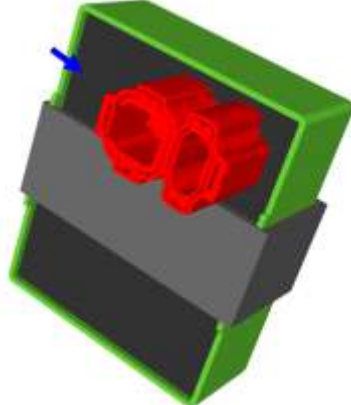
REVISED PRE-DELIVERY INSPECTION CHECKLIST



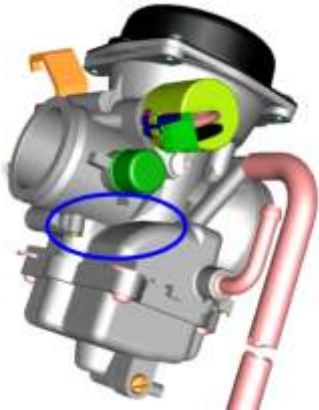

Engine noise	No abnormal noise	
Front fork / steering	Smooth working by pumping movement & smooth operation (No play / No Sticky movement)	
Oil / Coolant leakages	Specify source of leakages	
4. Idling RPM / CO%		
Check & correct the below check points in engine warm condition		
Idling RPM	Check in warm up condition at 60° (SAI connected 1350 – 1450 RPM & SAI disconnected 1300 – 1400 RPM)	
CO % Check	CO Check in engine warm condition at idling RPM (SAI connected < 1% & SAI disconnected 4.5 % – 5.5 %)	
5. Visual inspection for dent, scratches, rust ...		
6. Clean the vehicle thoroughly before delivery to customer.		

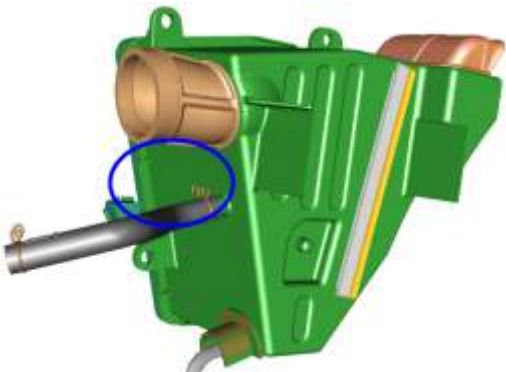
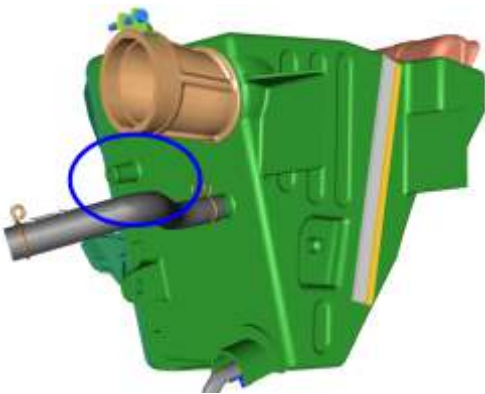
Note :- If performance related issue is observed in vehicle, then carry out Idling RPM & CO% Check activity.



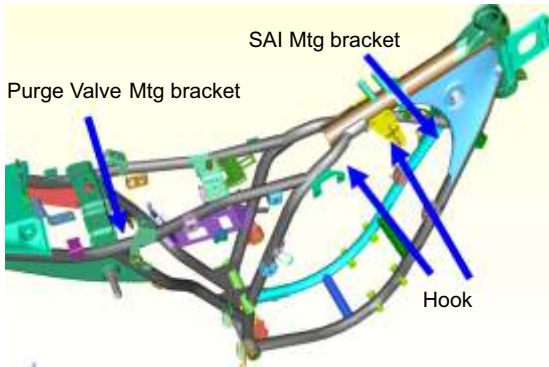
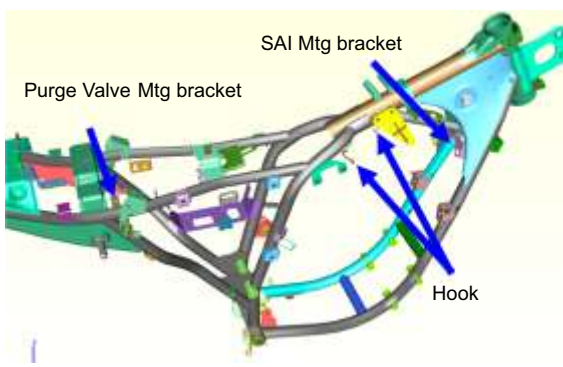
Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	CDI	CDI
Part No	DK111072	DK111081
Description	<ul style="list-style-type: none"> • With 2 Pole coupler • Part No "DK111072" embossed on housing 	<ul style="list-style-type: none"> • Without 2 Pole coupler • Part No "DK111081" embossed on housing
Identification	Visual	Visual



Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Speedometer Assembly	Speedometer Assembly
Part No	DK191035	DK191039
Description	<ul style="list-style-type: none"> • Dial graphics & LCD Artwork different than Pulsar 220 UG 	<ul style="list-style-type: none"> • Dial graphics & LCD Artwork different than Pulsar 220
Identification	Visual	Visual

Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Carburetor Assembly	Carburetor Assembly
Part No	JC120024	DK121092
Description	<ul style="list-style-type: none"> • Without provision for supply of evaporated fuel • With Auto Choke 	<ul style="list-style-type: none"> • With provision for supply of evaporated fuel • With Manual Choke
Identification	Visual	Visual



Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Air Filter Assembly	Air Filter Assembly
Part No	DK121038	DK121086
Description	<ul style="list-style-type: none"> • Without provision for supply of fresh air to SAI 	<ul style="list-style-type: none"> • With provision for supply of fresh air to SAI
Identification	Visual	Visual







Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Frame Assembly	Frame Assembly
Part No	JC161050	DK161409
Description	<ul style="list-style-type: none"> • Without SAI unit mounting bracket • Without bracket purge valve mounting • Without hooks for SAI hose routing 	<ul style="list-style-type: none"> • With SAI unit mounting bracket • With bracket purge valve mounting • With hooks for SAI hose routing
Identification	Visual	Visual

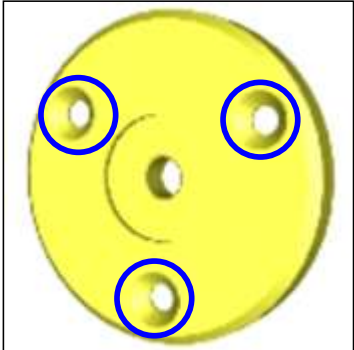

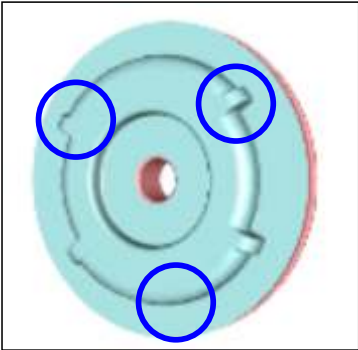

Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Guide Gear Shift	Guide Gear Shift
Part No	DK101361	DH102189
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 220
Identification	Visual	Visual







Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Gear Change Drum	Gear Change Drum
Part No	DK101732	DH102192
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 220
Identification	Visual	Visual


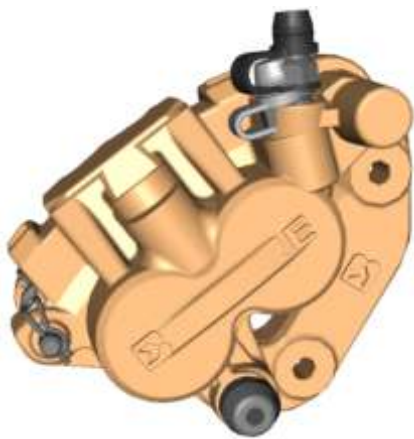
Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Cap petrol Tank	Cap petrol Tank
Part No	DK141014	JY171601
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 BS IV 	<ul style="list-style-type: none"> • Profile is different than Pulsar 220
Identification	Visual	Visual

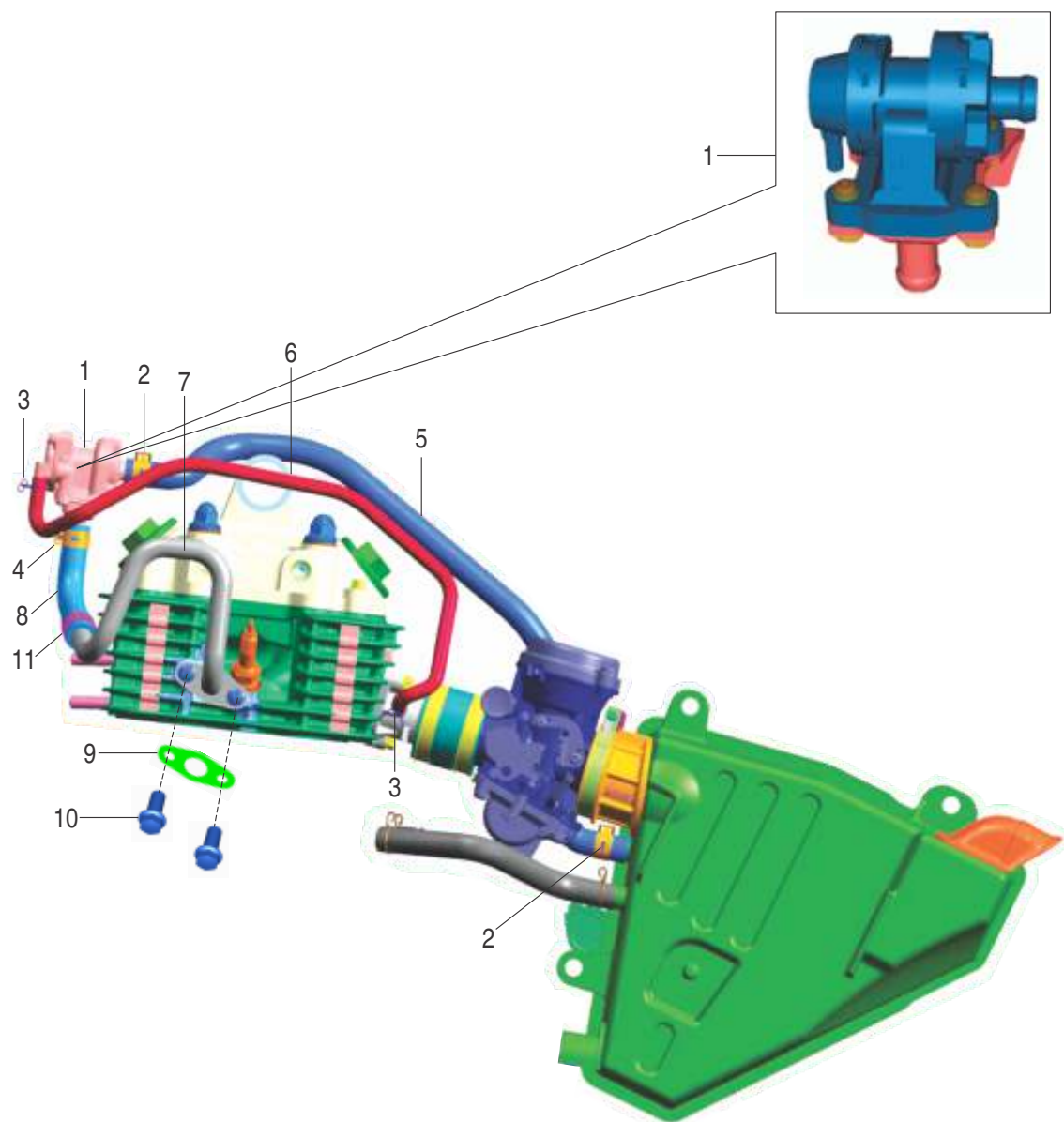
Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Body Centrifugal Oil Filter	Body Centrifugal Oil Filter
Part No	DH101064	DH102151
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 BS IV • With mounting holes for cover fitment 	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 • Without mounting holes for cover fitment
Identification	Visual	Visual

Model	Pulsar 220	Pulsar 220 BS IV
Photograph	 	 
Part Name	Cover Centrifugal Filter	Cover Centrifugal Filter
Part No	DH101065	DH102152
Description	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 BS IV • Without Slot • With mounting holes 	<ul style="list-style-type: none"> • Profile is different than Pulsar 220 • With Slot • Without mounting holes
Identification	Visual	Visual



Model	Pulsar 220	Pulsar 220 BS IV
Photograph	<div>Front</div>  <div>Rear</div> 	<div>Front</div>  <div>Rear</div> 
Part Name	Brake Disc	Brake Disc
Part No	Front – DK151027, Rear – DK151024	Front – DK151096, Rear – DK151097
Description	• Without Black color	• Black color disc
Identification	Visual	Visual

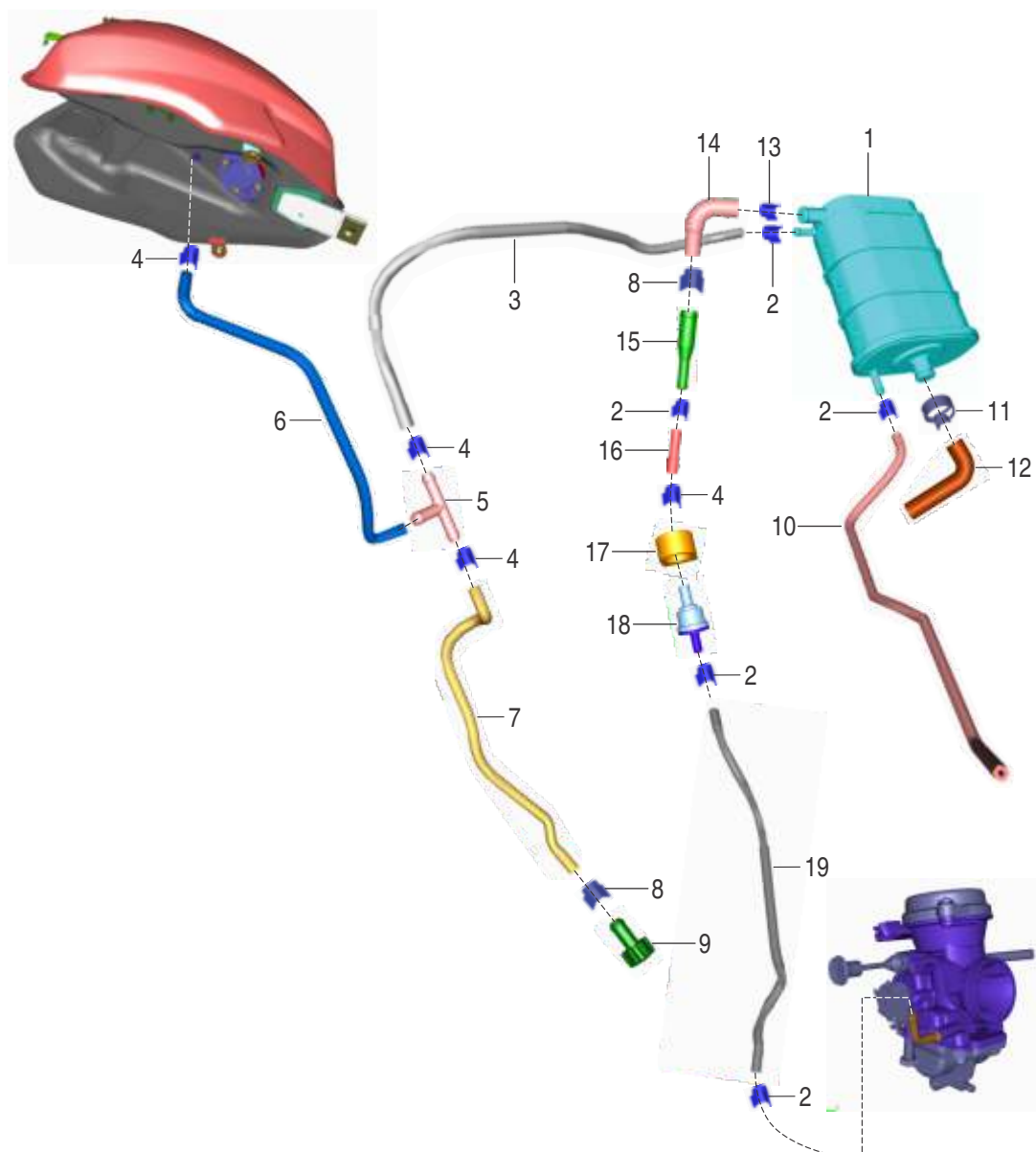
Model	Pulsar 220	Pulsar 220 BS IV
Photograph		
Part Name	Caliper Assembly - Front	Caliper Assembly - Front
Part No	DK151054	JF131806
Description	• Gold color & Split type	• Brass Gold color & Integral type
Identification	Visual	Visual



Sr. No.	Description
1	SAI Unit
2	Clamp SAI Pipe
3	Clamp
4	Clamp Hose SAI
5	Tube SAI Air Filter
6	Hose SAI Unit To Manifold

Sr. No.	Description
7	Metal Pipe With Flange SAI
8	Hose SAI Unit To Metal Pipe
9	Gasket Metal Pipe With Flange SAI
10	Flanged Bolt
11	Band Clip SAI Hose Outlet Tube



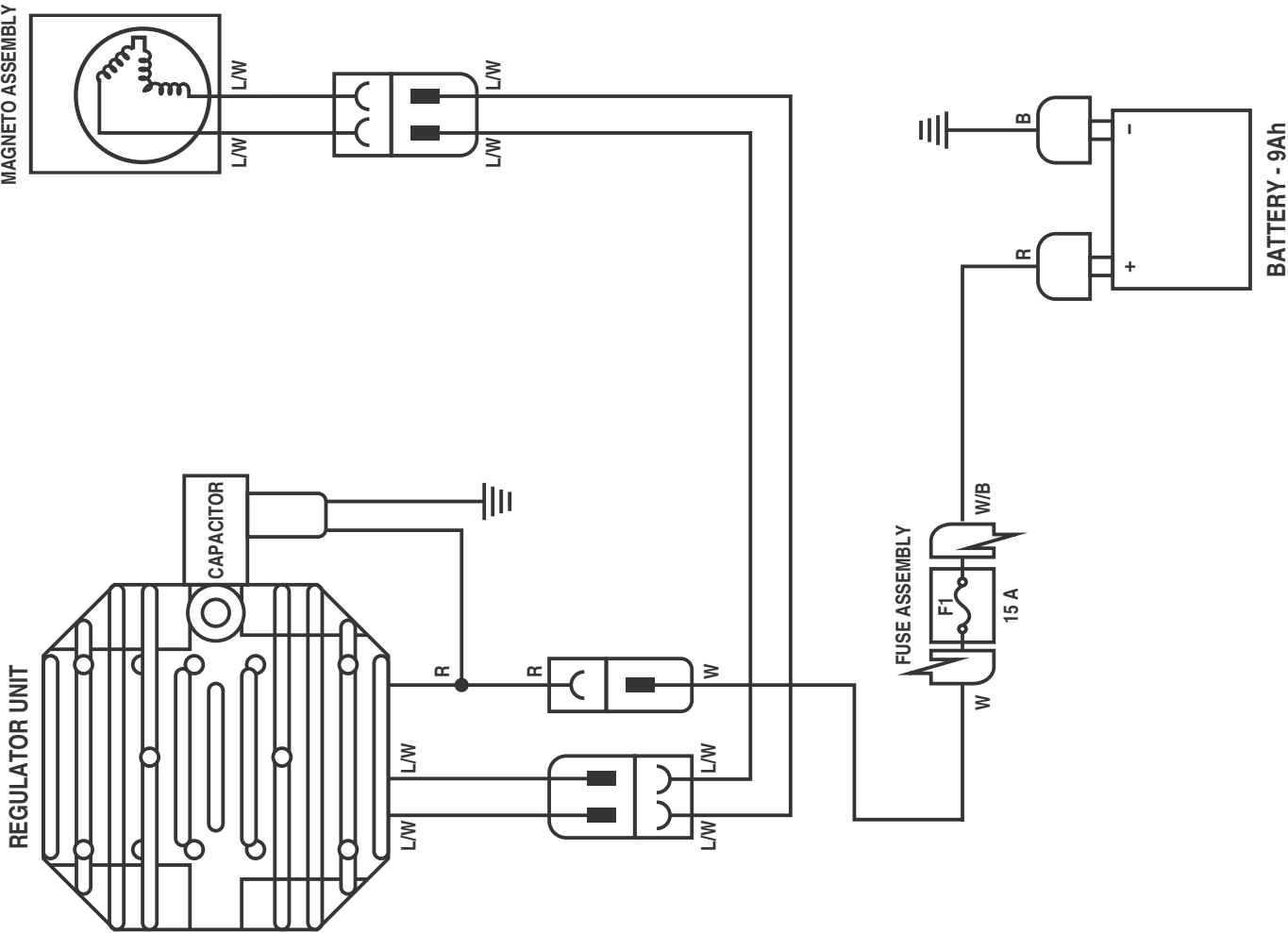


Sr. No.	Description
1	Canister
2	Spring Band Clamp 9 x 8.4
3	Tube T Connector To Canister
4	Spring Band Clamp 11.5 X 8.4
5	Connector For Breather And Vapor Tube
6	Tube Tank To T Connector
7	Tube Condensate Fuel Drain
8	Spring Band Clamp 13 x 12
9	Plug Fuel Drain
10	Tube Canister Drain

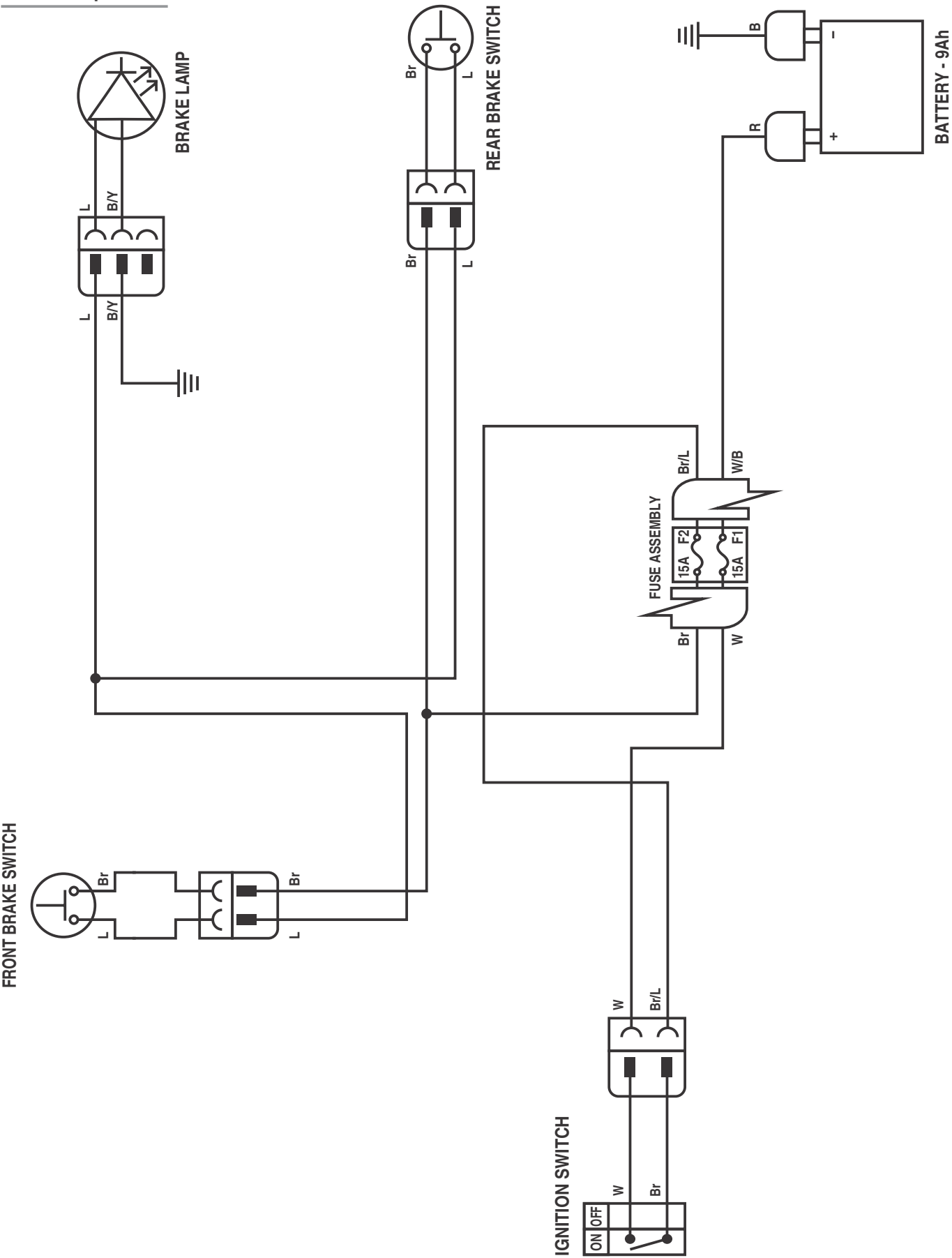
Sr. No.	Description
11	Clamp - Canister Breather
12	Tube Canister Breather
13	Spring Band Clamp 15 x 10
14	Tube Canister To Connector
15	Connector Tube EVAP
16	Tube Connector To Purge Valve
17	Grommet Purge Valve
18	Valve Purge
19	Tube Purge Valve To Carburetor



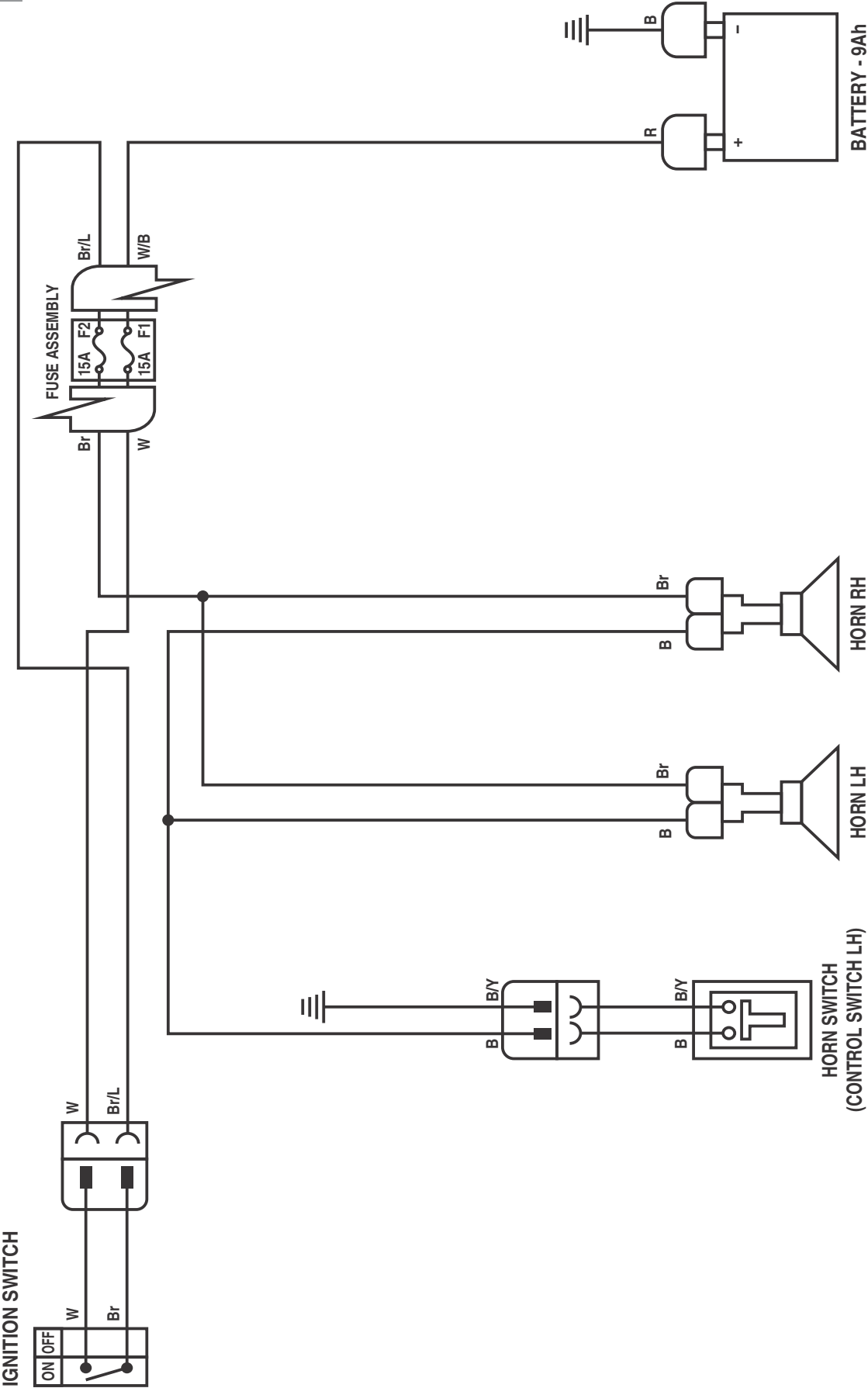
Battery Charging Circuit



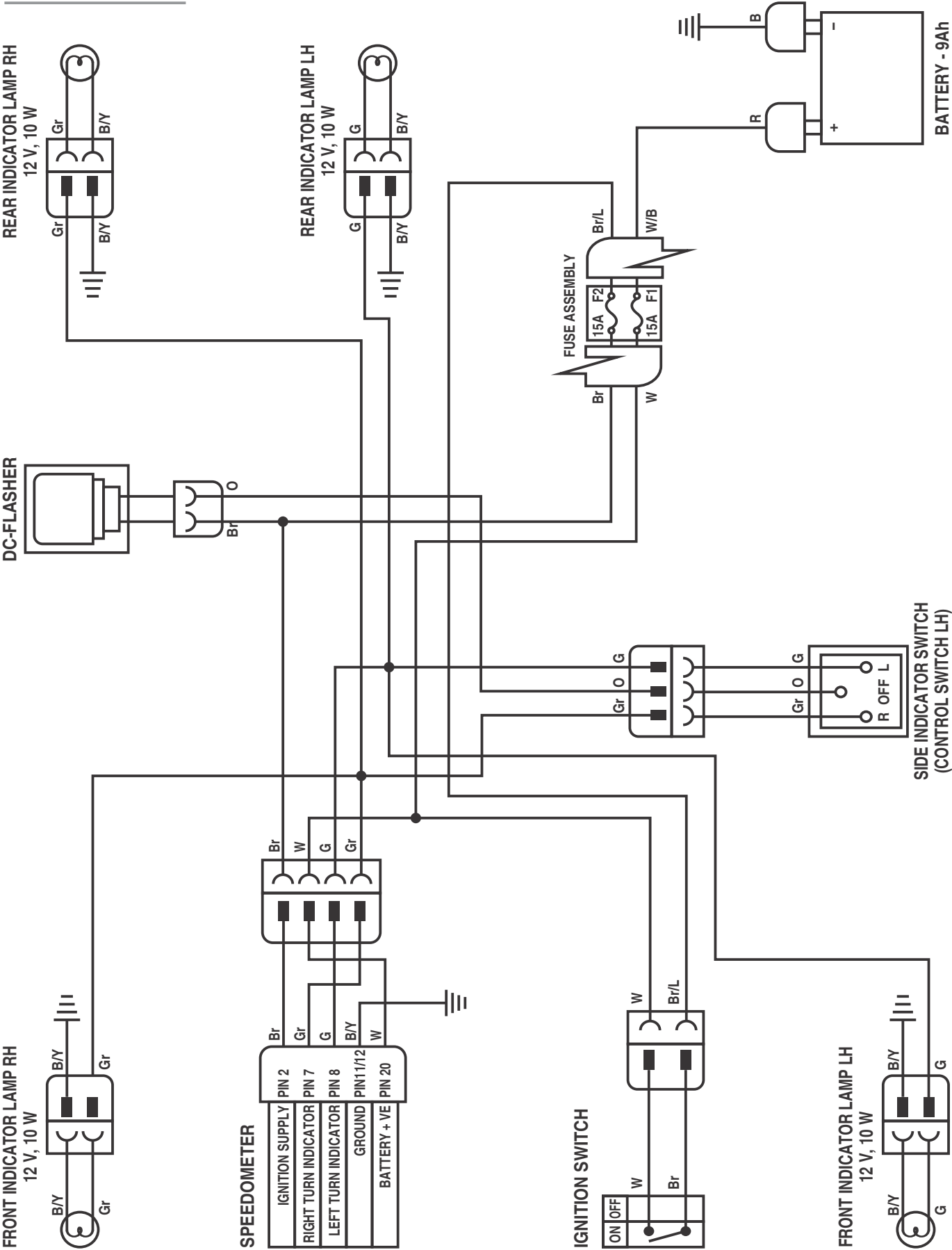
Brake Lamp Circuit



Horn Circuit

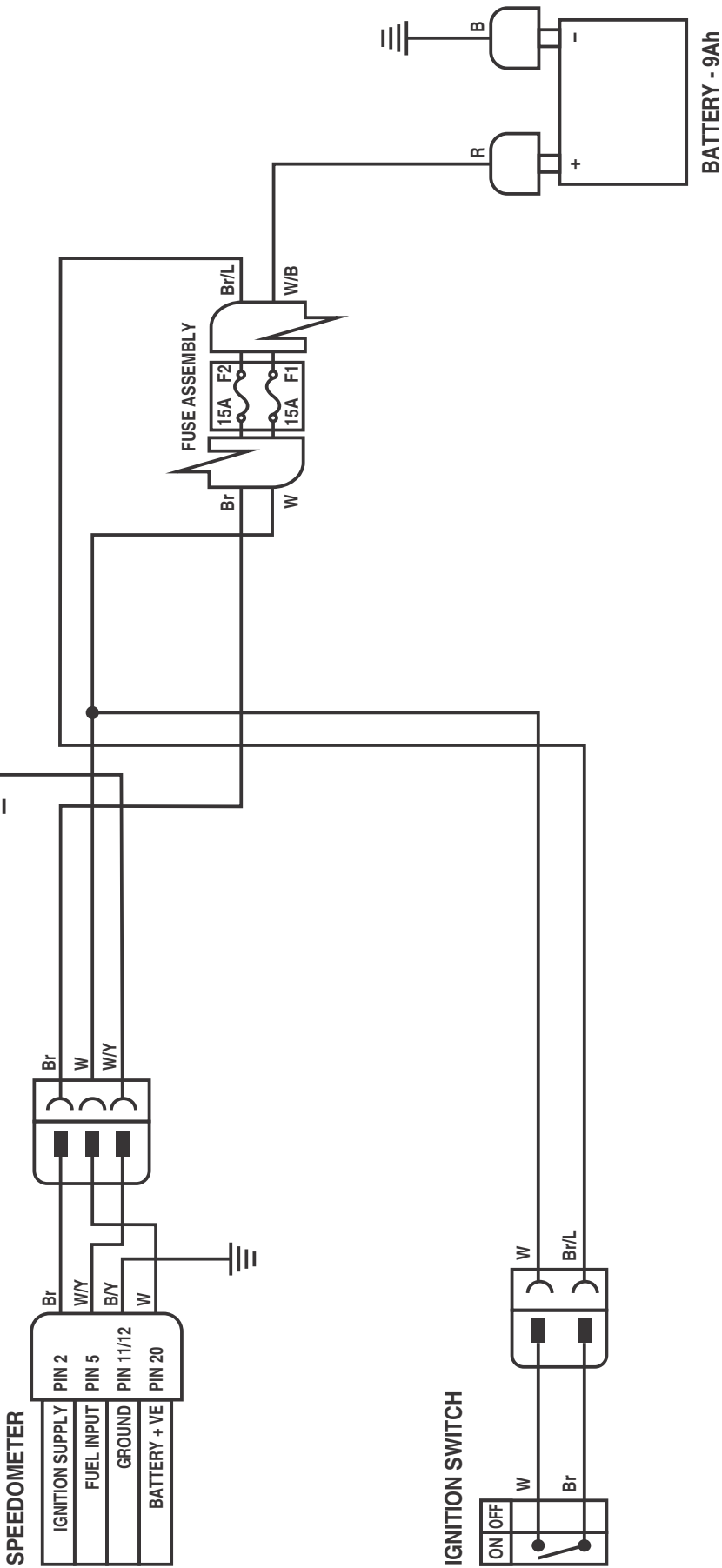


Side Indicator Circuit

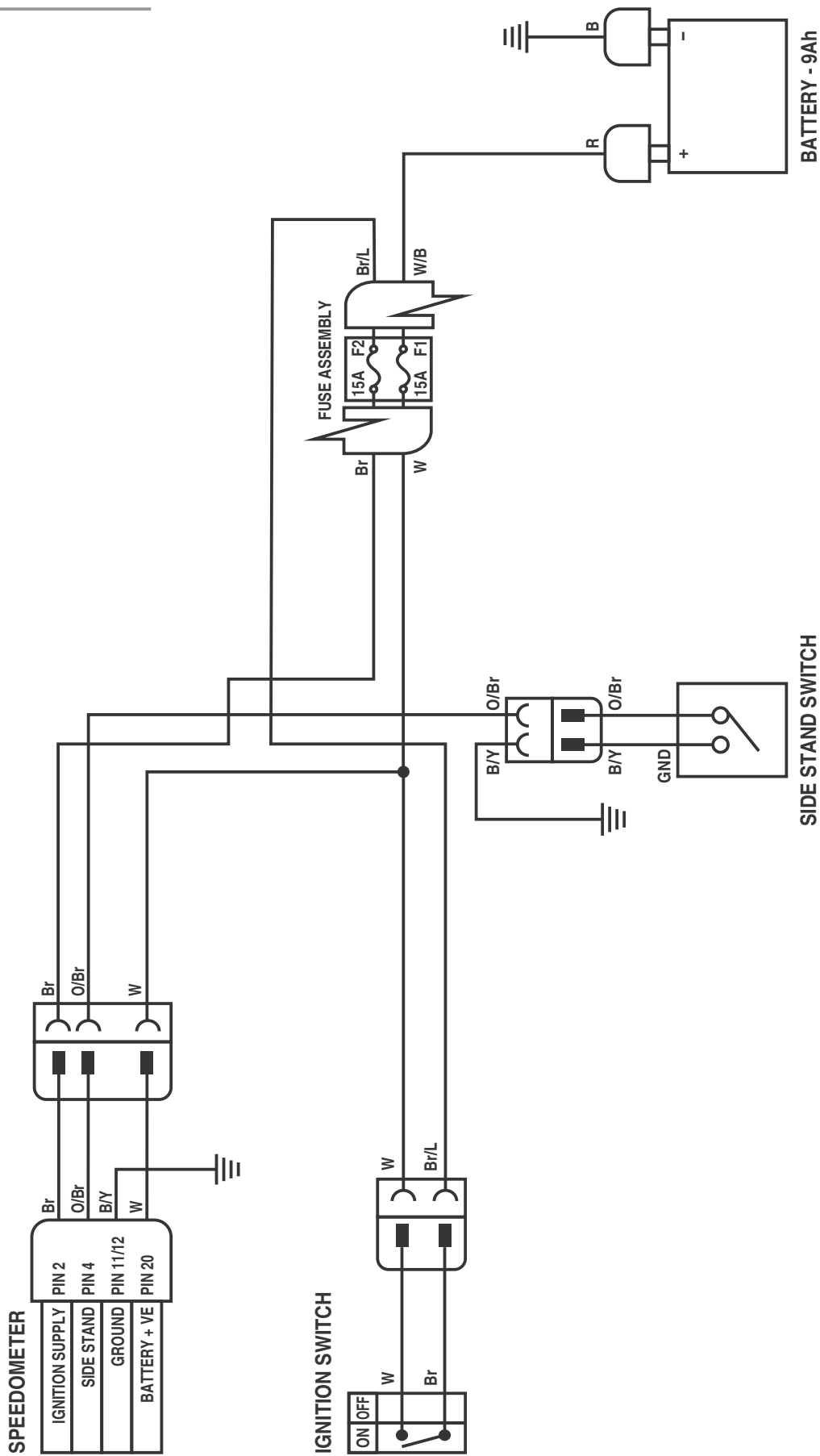


Fuel Meter Circuit

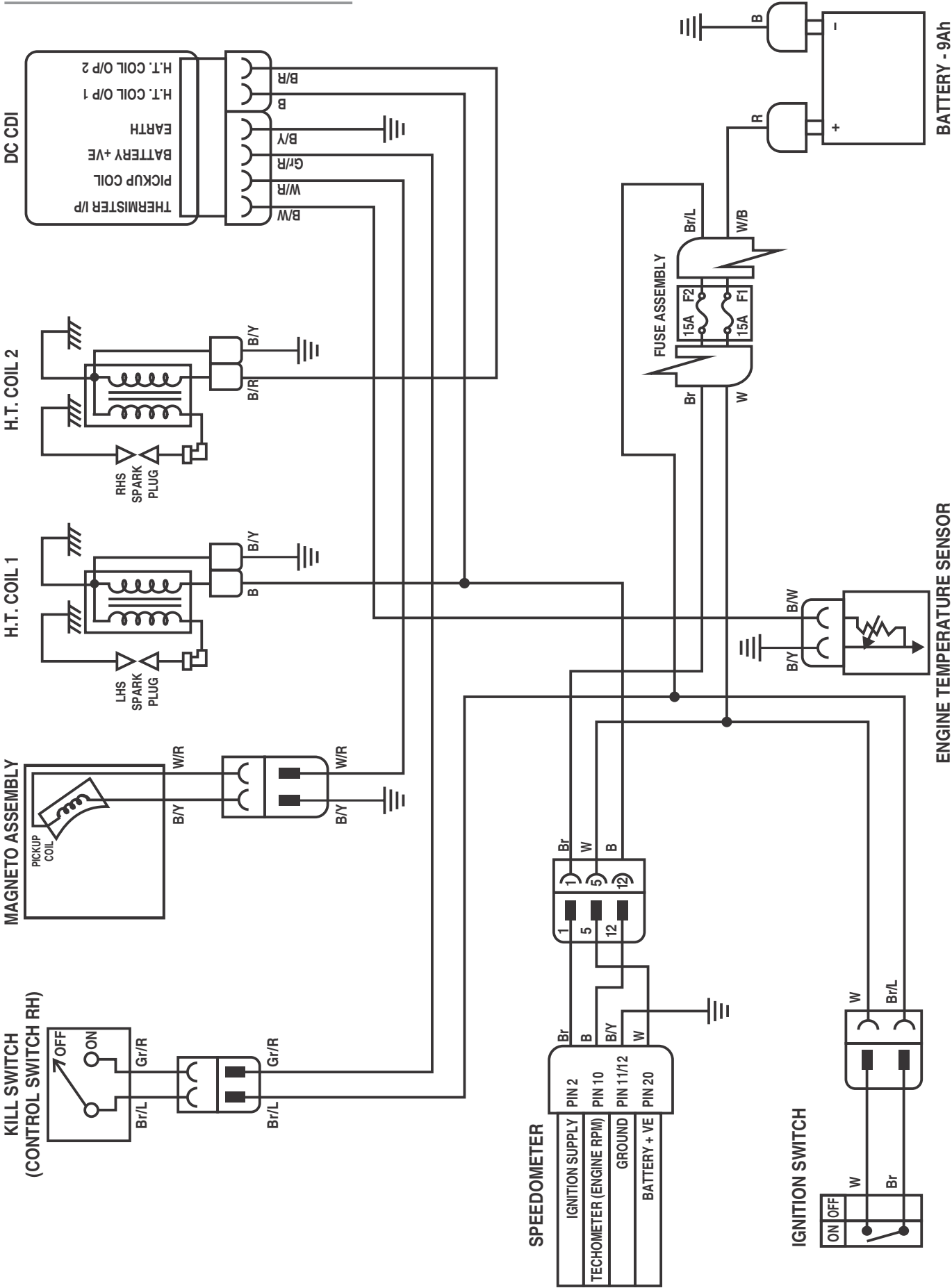
FUEL LEVEL GUAGE

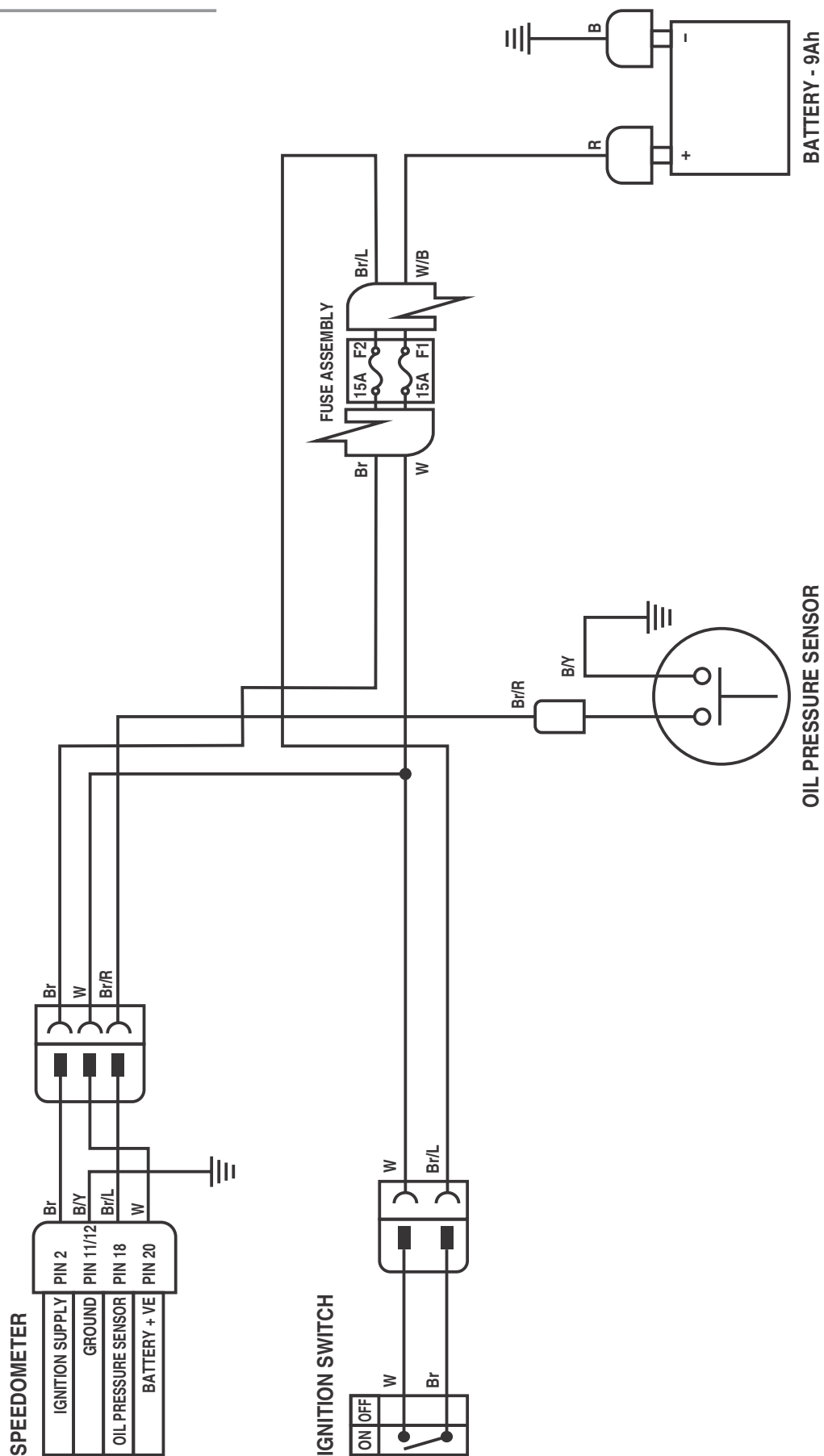


Side Stand Indication Circuit

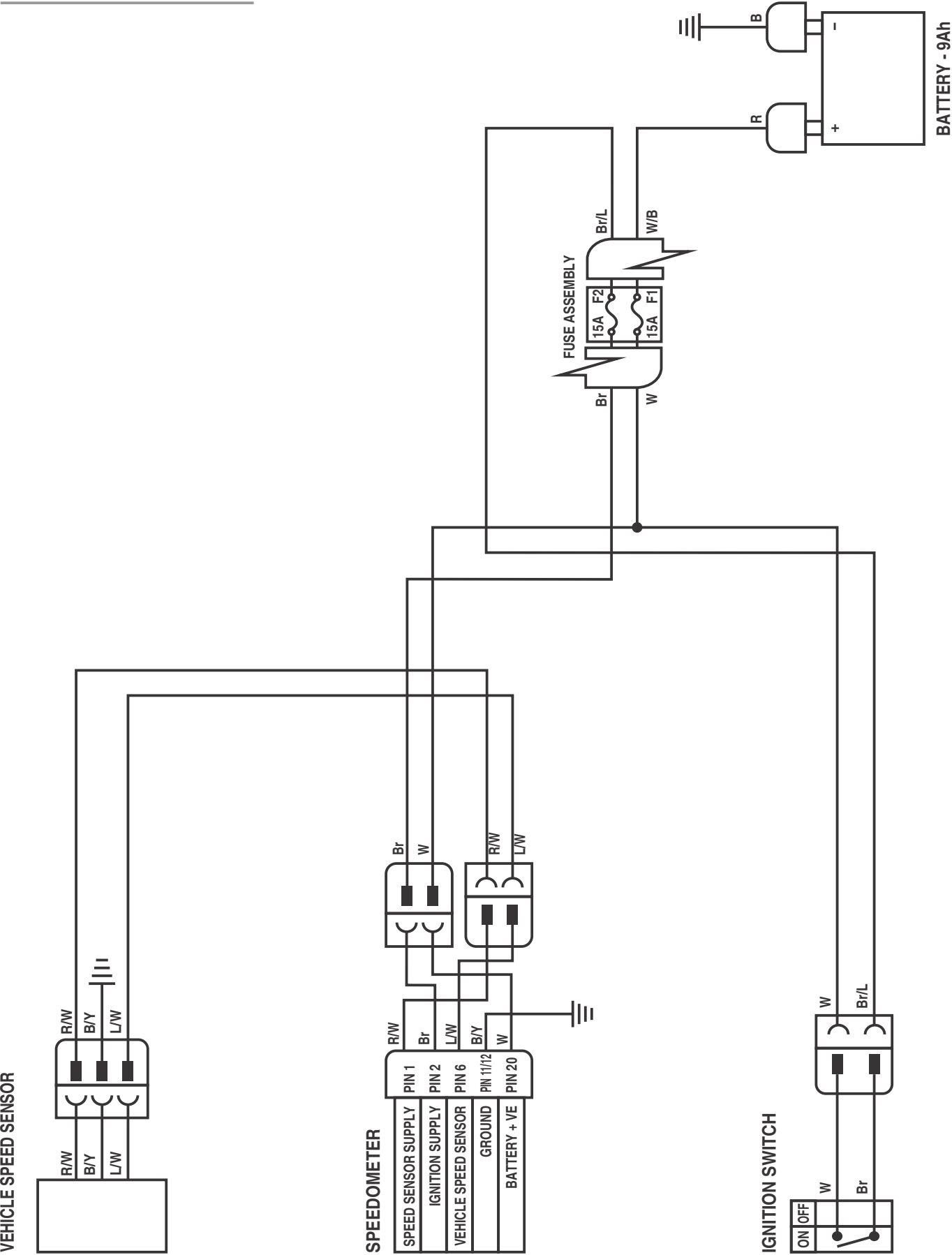


Ignition Circuit & Engine RPM Indication

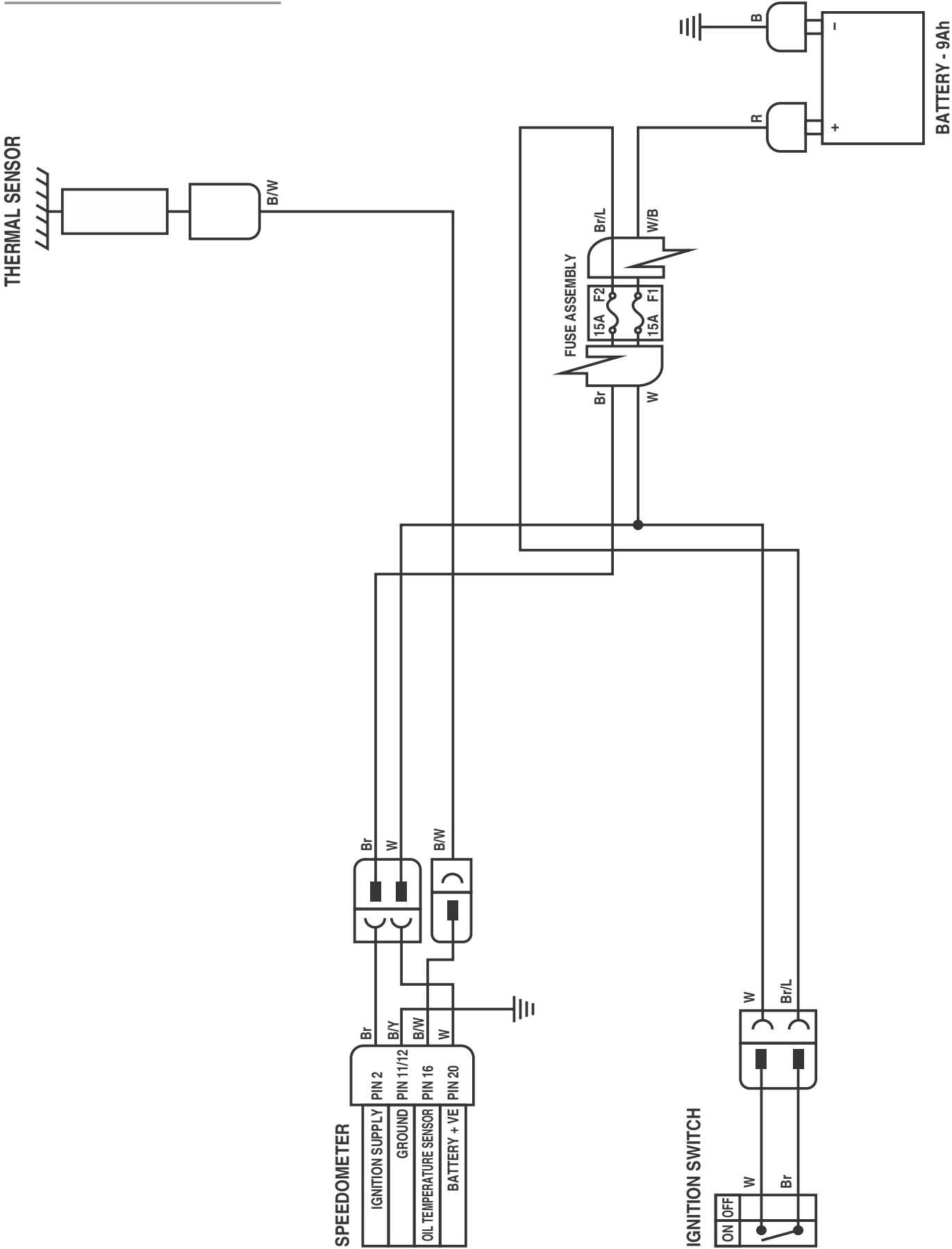




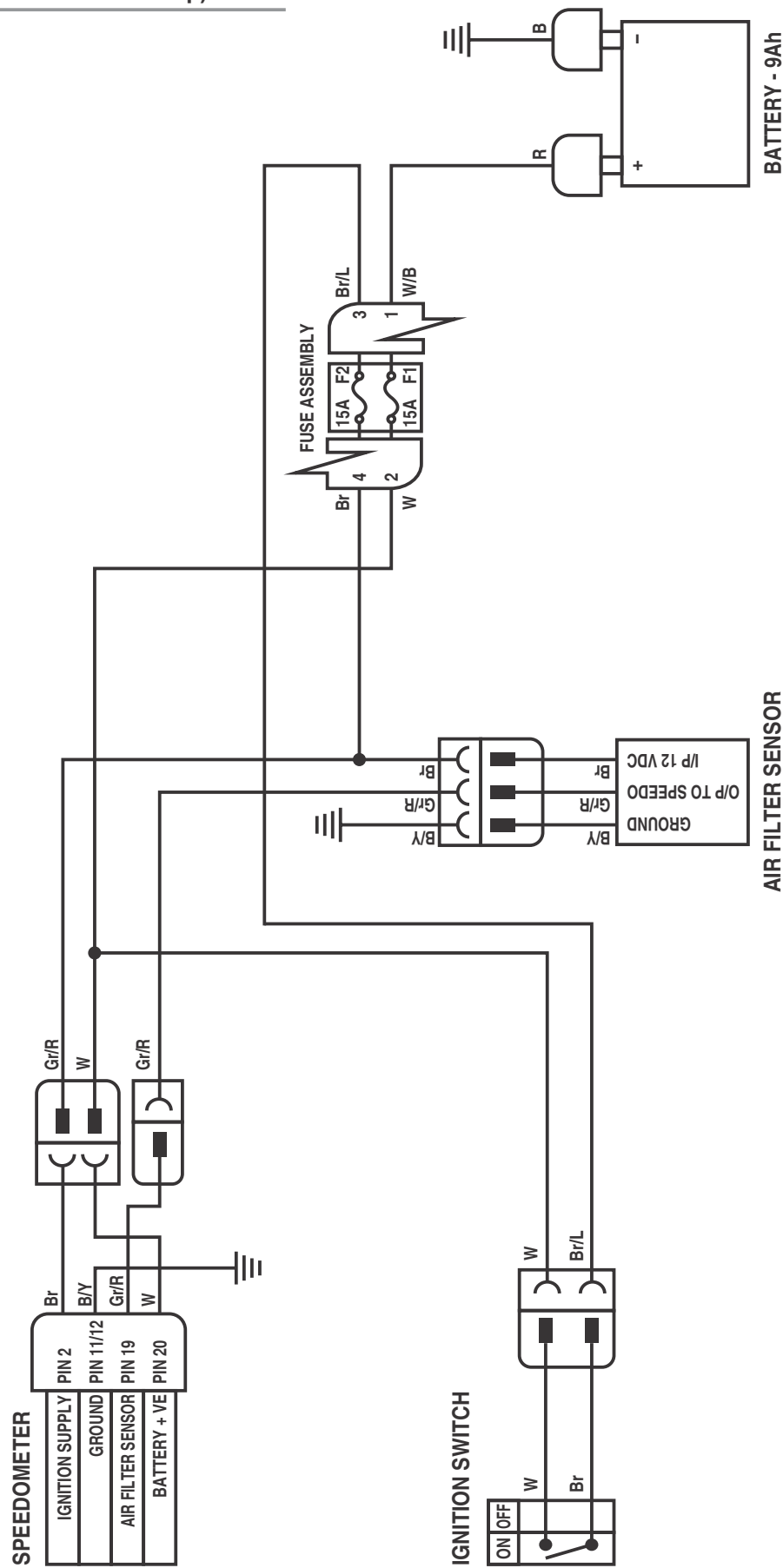
Vehicle Speed Sensor Circuit

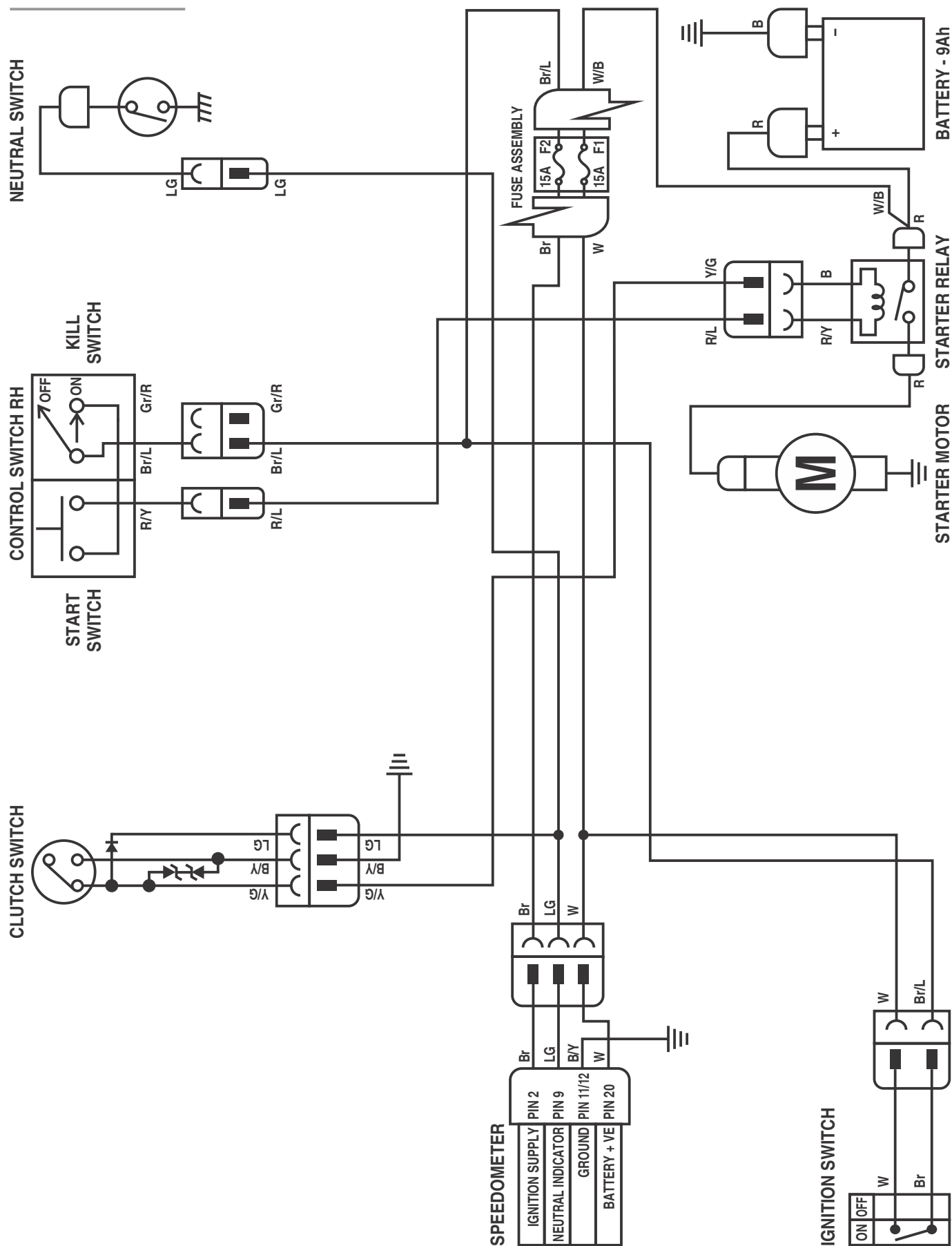


High Oil Temp Indication Circuit



Low Air Pressure Indication (Air Filter Choked Up) Circuit





The diagram illustrates the electrical system for a motorcycle, showing the following components and their connections:

- BATTERY - 9Ah**: The main power source, connected to the fuse assembly and the control switch LH.
- FUSE ASSEMBLY**: Contains two 15A fuses (F1 and F2) and a 15A fuse (F3). It is connected to the battery and the control switch LH.
- SPEEDOMETER**: A digital display unit with pins for Ignition Supply, High Beam, Ground, Back Light, and Battery + VE. It is connected to the ignition switch and the control switch RH.
- IGNITION SWITCH**: A switch that controls the ignition system. It is connected to the battery and the control switch RH.
- CONTROL SWITCH RH**: A switch that controls the right-hand side of the motorcycle. It is connected to the battery and the control switch LH.
- CONTROL SWITCH LH**: A switch that controls the left-hand side of the motorcycle. It is connected to the battery and the control switch RH.
- HEAD LAMP**: A 3W lamp that provides the main illumination. It is connected to the battery and the control switch LH.
- TAIL LAMP**: A 3W lamp that provides rear illumination. It is connected to the battery and the control switch LH.
- NUMBER PLATE LAMP**: A 3W lamp that illuminates the number plate. It is connected to the battery and the control switch LH.
- PASS SWITCH**: A switch that controls the pass function. It is connected to the battery and the control switch LH.

The diagram uses various colored wires to represent different circuits: Br (Brown), W (White), R (Red), Y/L (Yellow/Light Blue), V (Violet), B/Y (Blue/Yellow), R/B (Red/Black), W/B (White/Black), and B (Black). The connections are shown as lines between the components, with labels indicating the wire colors and the specific pins or terminals involved.

pulsar **175-1**

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