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Contents

Identification	1
Salient Features	2
Technical Specifications	4
FAQ's	6
PDI Checklist	10
PDI SOP	12
Periodic Maintenance and Lubrication Chart	14
Periodic Service SOP	15
Service Wise Part Kit	18
Scheduled Maintenance	20
Standard Checking Procedure	30
Special Tools	34
Carburettor and Fuel System	39
Digital Twin Spark Ignition System	48
Important Points to Remember	50
Removal of Engine from Frame	53
Dismantling Engine	56
Dismantling Engine Sub Assembly	65
Parts Inspection Parameters	71
Service Data - Engine/Frame	75
Parts Identification	79
Tightening Torque - Engine/Chassis	102
Assembling Engine	105
Dismantling Front Fork	121
Front Disc Brake	124
Maintenance Electricals	129
Main Electrical Diagram & Individual Circuit Diagrams	138
DTS-i Trouble Shooting	145

Pulsar DTS-i UG-III-180cc Training Notes

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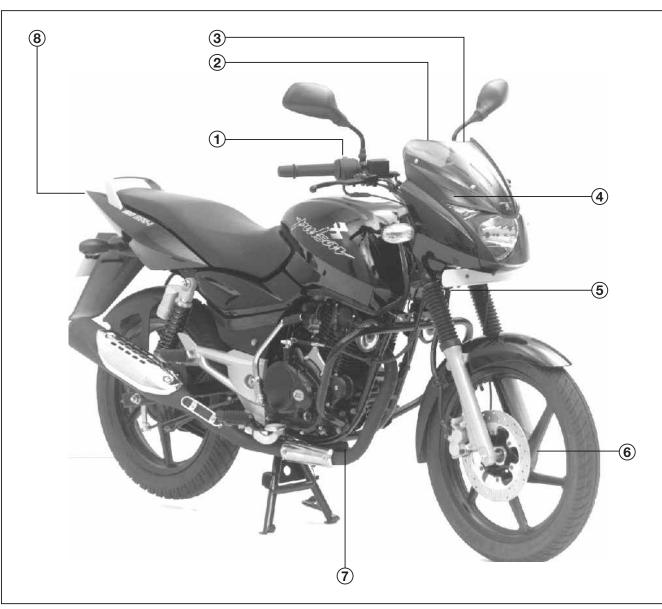


The Engine and Frame serial numbers are used to register the vehicles. They are the only means of identifying your particular vehicle from the other of the same model and type. These serial numbers may be needed by your dealer when ordering the parts. In the event of theft, the investigating authorities will require both these numbers in addition to the model, type and any special features of your vehicle that can help identifications.



pulsarus

Location of Parts



- 1. Control Switch RH
- 2. LCD Speedo Console
- 3. Control Switch LH
- 4. Body Control Unit (Placed inside Head Light fairing)
- 5. Hall Sensor for Indicator
- 6. Vehicle Speed Sensor
- 7. Exhaus**TEC**
- 8. Tail Light LED display







Style:

Performance:

provide better torque

- **Stylish fairing** and head lamp assembly with owleye
- A new black mask that separates headlamp from parking lights adds to aesthetics.

Refined engine power delivery by optimization of Exhaus TEC

New clutch & revamped gear shifting mechanism that gives

& New Bigger twin foam filter with an optimized intake system to

Solution Optimized valve timing and Roller rocker with NR bearing for

LED tail lamp that consumes negligible power & require zero

All sensor type electrical switches that enables switches to

function for the life of the bike. Absolutely no maintenance in

location and revised ignition timing with intelligent CDI

smooth, positive, virtually friction-free gear shift feel

Stainless steel silencer that overcomes rusting problem

friction reduction that improves drivability.

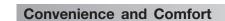
& Clear lens indicator with amber bulbs.

absence of mechanical contacts.

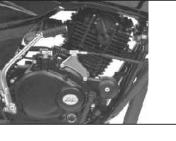
- New age, sharp and attractive 2 Row Tail lamp with LED lights
- New seat cowl to match stylish LED tail lamp.
- Louver type LH & RH covers with wire mesh gives sturdy look.
- Ergonomically designed self-letting switches

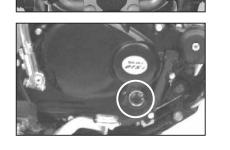






- LCD Speedo Console with digital fuel gauge (12 level indicator)
- bigital speed display, odometer and two trip meter with resetting
- & Self-canceling indicators After completion of turn, the indicator will be switched off automatically.
- Engine oil level window for easy to monitor level.
- & Maintenance free battery once a year electrolyte top up.
- in addition to Fuel gauge, Reserve indicator bulb is provided that glows continuously till the petrol filled to main level.
- Self check provision for Tachometer for its functioning





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Safety:

- able Day night mode of Speedo console
- The turn Indicator, neutral, high beam, and side stand Indicator bulb glow brightly in the day for clarity, and Intensity reduces during night to reduce irritance to the rider's eye
- High RPM warning lamp when engine reaches to 9000 RPM automatically Red LED bulb starts blinking. This enables the rider to control the speed to avoid damages if any that may take place to engine components.
- Engine cut-off at 10000 RPM Spark gets cut-off at 10000 RPM to bring down the engines RPM for safety.
- LED illumination for tell-tale icons on electrical switches that glows in the night for positive access of individual functions.





Technical Specifications



Engine and Transmiss	sion		
Туре		:	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		:	12.15 kW (16.51 Ps) at 8000 rpm.
Max. net torque		:	15.22 Nm at 6000 rpm.
Ignition System		:	Microprocessor controlled digital C.D.I.
Ignition Timing		:	10° BTDC at 1500 rpm.
		:	28° BTDC at 3500 rpm.
Fuel		:	Unleaded petrol
Carburettor		:	UCAI-MIKUNI BS29, Side Drought, CV Type.
Spark Plug		:	2 Nos. Champion RG4HC, Bosch UR3DC (Resistive)
Spark Plug Gap		:	0.7 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	:	26.93 : 1 (36/13)
	2nd gear	:	18.31 : 1 (32/17)
	3rd gear	:	13.43 : 1 (29/21)
	4th gear 5th gear	:	10.54 : 1 (26/24) 8.98 : 1 (24/26)
Final drive ratio		:	2.80 : 1 (43/15)
CHASSIS & BODY			
Frame Type		:	Double cradle.
Suspension	Front	:	Telescopic front fork with DU bush (Stroke 135mm)
	Rear	:	Trailing arm with coaxial hydraulic cum gas filled adjustable shock absorbers, and triple rate coil springs.
Brakes	Front	:	Mechanically expanding shoe and drum type. 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 (24.5 Psi)
	Rear Solo	:	2.00 kg/cm² (28.0 Psi)
	Rear Pillion	:	2.25 kg/cm² (32.0 Psi)
Rims (Alloy Wheels)	Front	:	1.60 x 17 2.15 x 17
	Rear	:	2.10 X 11



What are the special features of 'PULSAR DTS-i 180 UG III '? OR

What is so special in this 'PULSAR DTS-i 180 UG III '?

- Pulsar UGIII is next version of Pulsar breed. It is loaded with lots of unique & contemporary features and that distinguishes the Pulsar not only in the category of Power, Performance & Style but also for Comfort, Convenience & Safety from the competition.
- Apart from refining the power delivery, it is loaded with the features that are meant for cars. So, here is the Comfort, Convenience & Safety of the 4 wheels (cars) available on 2 wheels.

The major changes / features are

Enhanced Performance

- Refined engine power delivery by optimization of ExhausTEC location, bigger & twin Air Filter element, optimized valve timing, reduced engine friction etc.
- Stainless steel silencer that lasts long & overcomes rusting.
- All sensor type electrical switches that function for the life of the bike. Absolutely no maintenance in absence of mechanical contacts.

♠ Enhanced Style

- Stylish fairing & Headlamp assembly with owl eye, new black mask to separate headlamp from parking lights
- New age, sharp & attractive 2 Row Tail lamp with LED lights
- Louver type LH & RH covers with wire mesh gives sturdy look.
- Ergonomically designed self-letting switches
- Absolutely no maintenance in absence of mechanical contacts.

♣ Enhanced Comfort & Convenience

- Loaded with Digital Technology like LCD Speed/Odo display, digital fuel meter, Digital trip meter that enables to count two trips.
- Car like self canceling indicator switches that keeps rider free from switching off the indicators after turn.
- Apart from digital fuel meter, warning light for low fuel level is provided.
- Self check provision for tachometer to ensure proper functioning.
- Oil level inspection window that indicates oils level at a glance.

Enhanced Safety

- Engine cut-off at 10000 RPM Spark gets cut-off at 10000 RPM
- High RPM warning lamp when engine reaches to 9000 RPM automatically Red LED bulb starts blinking.
- Day night mode of Speedo console, LED illumination for tell-tale icons on electrical switches that glows in the night for positive access.

How does the digital Speedo work?

Front wheel of the bike has a sensor & magnet unit. The sensor counts no. of pulses w.r.t. wheel rotation & logically calculates number of wheel rotation & gives input to the display unit in the speedo console and the LCD display indicates accurate speed, odo reading & trip meter readings.

Fuel Tank Capacity : 15 liters Full : 3.2 liters Reserve : 2.0 liters Usable reserve **CONTROLS** : Handle Bar Steering Accelerator : Twist grip type on RH side of handle bar Gears : Left foot pedal operated Clutch : Lever operated on LH side of handle bar **Brakes** Front: Lever operated on RH side of handle bar : Pedal operated by right foot **ELECTRICALS** : 12 V (AC+DC) System Battery 12V 9Ah 35/35 W-HS1 Head Lamp : 5W - 2 Nos. Pilot Lamp : LED Tail/Stop lamp Turn signal lamp : 10 W (2 Nos.) : LED Turn signal pilot lamp Side stand indicator lamp : LED Hi beam indicator lamp : LED Neutral indicator lamp : LED Speedometer lamp : LED display Rear number plate lamp : 5 W Horn : 12V DC **DIMENSIONS** Length : 1990 mm. Width 750 mm. Height 1090 mm. Wheel base 1320 mm. Turning circle radius 2180 mm. (Minimum) Ground clearance 165 mm. (Minimum) **WEIGHTS** Vehicle kerb weight : 143 kg. Gross vehicle weight : 273 Kg. **PERFORMANCE** Maximum speed : 125 km/h with single rider (68kg) Climbing ability : 28% (16° Maximum)

Notes:

- Values given babove 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.

What are the advantages / Benefits of the digital speedometer apart from giving accurate reading?

- This system is totally contact less & no mechanical transmission of drive from wheel to speedometer is available. Thus this system is totally maintenance free & lasts for the life of the bike.
- How the digital fuel indicator meter works? OR How one can understand the available fuel level in the fuel tank? OR How to read the graphical bar of the fuel meter?
- Graphic bar with 12-segment display is provided in the speedo console for indicating fuel level in the tank. If the all the 12 segments of a bar graph are 'ON', that indicates that the fuel tank is full.
- As the float gauge in the tank starts lowering down due fuel level coming down, the segments of the bar graph starts diminishing with corresponding drop in fuel level.
- When the petrol level comes down to below four liters, all the segments of the bar will vanish.
- Apart from LCD graph bar, a red warning light also has been provided in the console that glows continuously when the petrol level falls down to reserve. And it will be 'ON' till petrol is filled above reserve level.
- When the digital fuel meter is available, why the red warning light is provided?
- While the LCD graphical bar segments indicates the petrol level in the fuel tank, the red warning light continuously reminds the rider to fill the petrol.
- Why two trip meter reading option is given? How is it useful?
- It is just to enable the rider to count reading for two different trips unlike only single trip in case of conventional type.
- It is like this on selecting 'Trip1' its will indicate the distance covered in first trip that is set for. In continuation, on selecting 'Trip2', it will indicate the distance covered in the second trip. Then if one wants to know the cumulative distance covered in first & second trip, it can be found in 'Trip1' mode. For this one has to just press/select 'Trip1' mode.
- This is an added advantage taken from digital technology!
- What do Self-canceling Indicators switches means?
- In conventional type of switches, the rider has to manually depress or turn knob of indicator switch for putting 'OFF' the indicator bulbs. In case of this Self-canceling' switches the indicator goes off automatically after the rider takes a turn & brings the handle bar straight. This feature is similar to cars. That means, rider do not have to press or turn the switch to cancel the indicators.
- What if one switches ON the indicator and do not physically take a turn? Will it work in such situation?
- P Yes. Of course. When the rider selects a right or left turn indicator, but changes his mind and physically do not take a turn, the indicators turn 'OFF' automatically after pre-set time. For this a timer function is incorporated in the system. And the timing for this timer is set around 80 seconds.

What does non-contact Handlebar switches mean?

- The control switches on both sides of the handlebar are conventional to look at, in terms of switch operations & knob position etc. But the key & distinguishing difference is the principle of functioning that means these switches do not function on the basis of physical contact for ON & OFF. These are on non-contact sensor based.
- This feature will have any wear and tear & hence its life would be more than the life of the bike. These are absolutely maintenance free as far as wear & tear is concerned.
- The other feature, in these switches is the Illumination of the tell-tale icons that is lit up with LEDs inside the switch body. This gives the icons a pleasant bluish white glow that can be seen in the night clearly & coolly.

The tail lamp assembly seems to be too special. What is so in that?

Yes. The tail lamp is unique on this vehicle and no other competitor's vehicle has this feature. It consists of 16 (8) nos. of LED bulbs with bi-filaments.

The specialties of LED bulbs are

- Consume very low current
- Glow brightly
- Last far long
- Totally maintenance free
- So, the LED tail lamp apart from delivering fantastic performance, it adds to aesthetics.

What is this bi-filament bulb?

Bi-filament bulb means these LED bulbs have two filaments in each bulb. One filament of lower wattage for parking lights & another for brake lighting, which is of little higher

If so much so electrical /electronic appliances are loaded, it may affect on Battery?

- Absolutely not. In fact, all the bulbs & backlit bulbs in the Speedo console (except Head Lamp bulb & pilot bulbs) are of LED type. Few of them works on AC & few are on DC i.e. battery. So there is hardly any drain on the battery as compared to conventional type of bulbs.
- Moreover, the Battery of this new Pulsar 180 is special & maintenance free.

What is this maintenance free Battery?

- The battery is new development in DC system on two wheelers (in fact, such batteries are introduced in cars earlier than bikes) it is different than the conventional one in the material composition it is made up of. The main features of this new battery are
 - Electrolyte level checking is required at every one year instead of every fortnight
 - The unique vent mechanism that do not allow loss of electrolyte
 - No drainpipe unlike in conventional type battery. So no chances of spillage of electrolyte.
- So, in all it is almost maintenance free battery. Moreover, the LED bulbs, & disable function of cranking after 3 successive self starts attempts, will further only enhance the life of the battery.

Pulsar DTS-i UG-III-180cc Training Notes



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♦ What is that disabling of cranking after 3 successive attempts?

- A protective device has been incorporated in the system that allows rider to attempt self-start option (pressing of self-start button) for starting only three times at times. After third attempt the battery power supply gets cut-off to the self-starter motor, thus avoid rider from further cranking of engine by self-start.
- This is mainly to protect the battery from over draining by excess attempts of pressing of self-start button to start the engine.
- P However, one can again use the self-start option after 15 seconds after third attempt.
- How come so many features are managed accurately & what is the guarantee of no malfunctioning of these features?
- It is needless to say that the digital technology that works with sensors & chips works accurately. To control all the functions of these electronics features, an intelligent device has been installed in the electrical system. This is called BCU (Body Control Unit)
- What exactly is BCU (Body Control Unit)? How it controls all these functioning?
- BCU (Body Control Unit) is a device that integrates & controls major of all electrical / electronic functions on the vehicle. It is an intelligent device that works on microchip base.
- In the eventuality of electrical overloads or short circuits, the built in intelligent protection circuit takes the control of the situation & prevent future damages on other electronic parts. For example:- During night, suppose one of the Head light filament blows OFF then there is a possibility of an accident due to sudden darkness.. To rescue, here the BSU plays an important role. It switches over the Headlight to the other beam automatically without manual shifting of any switches.
- It also checks & inspects the fused circuit religiously for any corrections and thus riders' safety is ensured.
- Are these type of product features available in Pulsar150cc also?
- Presently not. But as in all sphere of life, technology also proliferates. When that happens you may find similar features in Pulsar 150cc also.
- Can one alter the current Pulsar model & incorporate these features?
- No. It is not possible. Physically lot of changes are there that are not easily accommodated in the existing Pulsar.

Pre Delivery Inspection Checklist



SI.	Check Points for PDI	Check	PDI done by BAL/ Service Engg.	PDI Done by Dealer
1	LOCK OPERATION			
	STEERING LOCK NOT WORKING/JAM			
	SIDE COVER LOCK NOT WORKING			
2	PAINT FINISH - OVER FLOW (Samples / photogr	raphs)		
3	FUEL TANK DEFECTS			
	LEAKAGE			
	BLISTERS			
	RUSTY			
	OTHERS (Specify)			
4	FUEL COCK OPERATION - HARD / LEAKAGE			
5	FRONT / REAR WHEEL OFFSET			
6	WHEEL			
	FR. WHEEL TYRE -Free rotation.			
	FRONT WHEEL RUNOUT (SPECIFY)			
	REAR WHEEL RUN OUT (SPECIFY)			
7	SILENCER -BAFFLE NOISE			
8	SWITCHES			
	RH switch operations			
	LH Switch operations			
	IGNITION SWITCH SHORT			
9	LIGHTS:-			
	Side indicator blinking.			
	HEAD LIGHT			
	TAIL/BRAKE LED			
10	HORN :- DISTORTED/WEAK SOUND(DO NOT SI	ET)		
11	Speedo:			
	SPEEDO NOT SENSING.			
	SPEEDO Needle flickering.			
	Tripmeter - 1/2 working -Resetting			
	Odometer working			
	Auto - Calibration of RPM meter			
	Fuel level indication			
	Reserve indication (by red lamp)			
	Red lamp blinking after crossing Engine RPM 900			
	Auto-switch off of Ind lamps(H bar straight for > 2 se	c)		
	Head light / tail light illumination after 3 seconds			
	LED functioning - Speedounit - Both side indication Side stand, Neutral, Hi beam, RES ind lamp	on,		

Pulsar DTS-i UG-III-180cc Training Notes



SI.	Check Points for PDI	Check	PDI done by BAL/ Service Engg.	PDI Done by Dealer
12	FLAT SPOT (GIVE CO %)			
13	DRIVE CHAIN slack (mention amont of play)			
14	BRAKE OPERATION - FRONT/REAR			
	FRONT BRAKE			
	REAR BRAKE EFFECTIVENESS			
	BRAKE LIGHT REMAINING ON CONTINUOUSLY.			
15	GAP AT THE REED SWITCH AND MAGNETO.			
	CHECK POINTS FOR PDI			
16	LOOSE PARTS			
	KICK BOSS BOLT			
	ENGINE MOUNTING BOLT			
17	ENGINE NOISE			
	TAPPET NOISE			
	CHAIN TENSIONER / TIMING CHAIN			
18	ENGINE OIL LEAKAGE			
	DRAIN BOLT			
	MAGNETO COVER			
	CRANKCASE JOINT			
	OIL FILLING PLUG			
	OHC COVER			
	TAPPET COVER			
	BENJO BOLT			
	CHAIN TENSIONER 'O' RING			
	OIL LEVEL INDICATOR WINDOW			
	OIL FILTER COVER			
19	CLUTCH OPERATION			
	HARD			
	CLUTCH JUDDERING			
20	PLATING DEFECTS			
	HANDLE BAR			
21	ENGINE OPENING DURING PDI (If any)			
	(Give engine no & reason for engine opening)			
22	FRAME OPENING DURING PDI (If any)			
	(Give chassis no & reason for chassis opening)			
23	OTHER DEFECTS:			
	MINOR ADJUSTMENTS			
24	TRANSIT DAMAGES (Send photographs)			

[✓] Marked if the ok observed

PDI SOP



Sr. No.	Description	Position	SMM	GP Tools	Special Tools	PNR & its Attachment	Consumables	M & T / Service Shop Equipments
1	Identify & Park Vehicle on Work Bay		0.80					Lifter Bay
2	Remove the Thermocol and additional packing if any. Study PDI card and Work content.		0.50					
3	Open Petrol tank cap & pour petrol		0.50	Measuring Jar, Funnel			Petrol, Waste Cloth	
4	Check for smooth operation of fuel cock lever		0.10					
5	Check & top up engine oil level, if required.	RH	0.30					
6	Check clutch cable operation & Adjust if required.	RH	0.10	12-13 OE Spanner				
7	Check front brakes for efficient working & Adjust if required.	Front / RH	0.10	12-13 Ring Spanner				Air Gun
8	Check and correct tyre inflation pressure - Front Wheel	Front	0.20	Pencil Type Pressure Gauge				Analogous/Digital type Pressure gauge, Air filling Valve
9	Check Battery voltage, fill / top-up electrolyte, apply petroleum jelly, connect terminals properly.	LH	0.60	Screw Driver, Distilled water Filler, 10mm 'T' Spanner			Cloth, Fine Polish Paper, Petroleum Jelly, Distilled Water	Hydrometer, Battery Charger, Battery Tester
10	Inspect Rear Shock Absorber setting & correct if necessary.	RH/LH	0.10					
11	Check Rear brakes for efficient working & adjust if required.	Rear	0.10	14-15 No. O.E. Spanner				Cloth, Graphite Grease, Fine Polish Paper
12	Check and Correct tyre inflation pressure - Rear Wheel.	Rear	0.20	Pencil Type Pressure Gauge				Analogous/Digital Type Pressure Gauge, Air Filling Valve
13	Lubricate chain and Check / Adjust chain slackness if required.	LH	0.40	20-22, 24-27 Ring Spanner, 10-11 No. OE Spanner, Torque Wrench, Socket Set, Oil Can			Cloth, SAE 90 Oil	Air gun
14	Check Choke lever operation	LH	0.05	10-11 No. OE Spanner				
15	Check Accelerator cable free play	LH	0.05	8 & 10 No. OE Spanner				
16	Check & Adjust TPS	LH	0.10	10-11 No. OE Spanner				
17	Check gear shifter lever operation	LH	0.05	8 No. 'T' Spanner				
18	Check & Adjust steering and Handle bar for free movement.	RH / Front	0.20	12-13, 16-17 Ring Spanner				Fork Spanner
19	Check front mudguard alignment wrt Front Wheel	Front	0.05					



Sr. No.	Description	Position	SMM	GP Tools	Special Tools	PNR & its Attachment	Consumables	M & T / Service Shop Equipments
20	Check all important nut bolts for torque and tightness, • Handle bar mounting bolt • Stem lower & upper bracket bolts • Stem of bolts • Front axle nut • Cylinder head nuts • Engine foundation bolts • Trailing arm bolts • Silencer cover shield bolts • Both LH/RH engine mtg. bolts	LH/RH	4.00	12-13, 14-15, 16-17, 20-22 Ring Spanner, 22 mm Box Spanner with Handle Ratchet		Pistol Grip PNR		
21	Check the following and lubricate if necessary Rear brake lever Rear brake pedal / cam Pillion foot rest Center stand Side stand Kick lever boss Clutch lever	RH/LH FRONT REAR	1.00	Oil Can			SAE 20W40 Oil	
22	OE accessories fitment - Mirrors RH & LH	LH/RH	1.15	17mm OE Spanner				
23	OE accessories fitment - Leg guard	LH/RH	3.25	10-12 No. OE Spanner and 12 No. Box Spanner		Pistol Grip PNR		
24	Start vehicle, Check operation of electrical like- Head light, Tail light, Brake light, Side stand indicator, Horn, Speedometer, Odometer, Side indicators, Parking and Pass light working.	LH/RH	0.35					
25	Check Idling and CO%.	LH/RH	0.60	Small Screw driver				CO-HC Analyzer; Tachometer, Proper Exhaust Sealing Arrangement of Silencer
26	Trip meter working	LH/RH	0.10					
27	Check all locks for proper operation	LH/RH	0.50					
28	Test drive the vehicle, check digital speedometer working. Study the job card and verify work done. Take vehicle out and park.		1.30					
29	Clean/Wash the veh. before delivery		1.00					
	Total SMM		17.75					
30	Repair for any other defects seen or observed during test drive.							

Periodic Maintenance & Lubrication Chart



			Whic	→ heyer		RECO	MMEN	IDED F	REQUENCY
Sr.	Operation			s first I		In	itial		Subsequent
No.			0.0	Kms.	750	2,500	5,000	7,500	Every 2,500km
			OR	Days	30~45	105~120	195~210	285~300	Every 90 days
1.	Servicing			•	•	•	•	•	•
2.	Idle speed / CO%	C,A			•	•	•	•	•
3.	Valve tappet clearance	А					•		Every 5000 kms
4.	Engine oil (SAE 20W50 of API SG+JASO MA)	R			•		•		Every 5000 kms
5.	Oil strainer / Centrifugal filter	CL							Every 10000 kms
6.	Air cleaner element V	CL			•	•	•	•	•
7.	Air cleaner element	R							Every 10000 kms
8.	Carburettor	CL,A			•	•	•	•	•
9.	Fuel system leakages	C,R			•	•	•	•	•
10.	Fuel pipes	R							Every Year
11.	Spark plug / gap	CL,A			•	•	•	•	•
12.	Spark plugs (2 Nos.)	R							Every 10000 kms
13.	Battery electrolyte level	C,A			•	•	•	•	Every Year
14.	Brake light switch	C,A			•	•	•	•	•
15.	Clutch play	C,A			•	•	•	•	•
16.	Throttle play	C,A			•	•	•	•	•
17.	Rear brake pedal play	C,A			•	•	•	•	•
18.	Brake lining or pad wear	C,R			•	•	•	•	•
19.	Brake fluid level / top up	С	1 M	onth	•	•	•	•	•
20.	Brake fluid change	R							Every 10,000 kms.
21.	Steering play	C,A			•	•	•	•	•
22.	All fasteners tightness	C,T			•	•	•	•	•
23.	Engine mounting silent blocks	R							Every 20,000 kms.
24.	Tyre tread wear	C,R				•	•	•	•
25.	General lubrication	L			•	•	•	•	•
26.	Steering stem bearing	L,R	1)	/ear					Every 10000kms
27.	Wheel bearing	C,L	1)	/ear					Every 10000kms
28.	Master cylinder cup and Dust seal	R							Every 2 years
29.	Caliper piston seal and Dust seal	R							Every 2 years
30.	Swing arm pivot pin	L					•		Every 5000kms.
31.	Front fork	C,L			•		•		•
32.	Front fork oil	R							Every 10000kms
33.	Front brake hose	C,R	2 y	ears					-
34.	Rr. Shock Absorber- Check gas pressure 7.0+0.5 Kg/cm²								Every 10000kms
35.	Drive chain	L					E	very 500	
36.	Drive chain slack	А			•		Ev	ery 250	0 kms.
37.	Drive chain wear / Remove & Lubricate	C,R					•		Every 5000kms.
38.	Engine compression pressure	C							Every 10000kms
39.	Cylinder head de-carbonising & valve lapping	CL							Every 30000kms
40.	Valve oil seals	R							Every 30000kms

• : Indicates operation to be performed.

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 $\,\star\,$: More frequent cleaning may be required when driving in dusty condition.

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

A - Adjust L - Lubricate

CL - Clean T - Tighten

C - Check R - Replace

Expected Output in 480 Minutes / Man / 27 Vehicles



Sr. No.	Description	LH/RH Side	SMM	GP Tools	Special Tools	PNR	Consumables	M & T / Service Shop Equipments
1	Wash vehicle thoroughly.	Both		To be done by washing boy				
2	Identify the Vehicle		0.30					
3	Bring vehicle & position on bay		0.50					
4	Raise the lift		0.30					
5	Start veh. & Warm up. Remove RH/LH side covers, Seat, Petrol Tank & keep properly.	LH/RH	0.70	12-13 No. Ring Spanner, 12mm Socket		Pistol Grip PNR		
6	Drain Engine Oil	LH	1.30	16mm Socket, Extension, Tommy & Plastic Tray			Cloth	Oil Draining Equipment
7	Clean Air filter. (Replace - if necessary)	RH	3.00	8mm 'T' Spanner			Cloth, 20W40 Oil, Diesel, Air Filter Element	Filter Cleaning Stand, Air Gun
8	Drain Carburetor. (Overhaul - if required)	LH	1.30	Phillips Screw Driver, Screw Driver, 10mm Nylon Brush, Plastic Tray, 10-11 & 14-15mm OE Spanner	Float Gauge		Cloth, Diesel	Air gun
9	Check Accelerator and adjust	LH	0.40	8-9, 10-11 OE spanner				
10	Clean, Check & Adjust (Replace - if necessary)	LH	2.40	Spark Plug Spanner, Plug Cleaner, Wire Brush	Filler Gauge 0.01~1mm		Cloth, Fine Polish Paper, Spark Plug	Spark Plug Cleaner and Tester, Air Gun
11	Check & Adjust tappet clearance. (if required) During 4th Servicing or after 5000 Km whichever is later.	LH		8-9 No. Ring Spanner, 24-27 OE Spanner, 14 mm Box Spanner with Handle Ratchet, Spark Plug Spanner	Filler Gauge 0.01~1mm Tappet Holder		Cloth	
12	Check Side bolts of Front fork Engine foundation bolts Side stand RSA top and bottom nuts	LH/RH	0.60	14-15, 16-17, 20-22 Ring Spanner, 12 mm Box Spanner with Handle Ratchet, 12-13 No. OE Spanner		Pistol Grip PNR		
13	Adjust chain slackness & Lubricate. Remove and Clean, If required.	LH / Rear	3.90	10mm 'T' Spanner, 20-22, 24-27 Ring Spanner, 10-11 OE Spanner			Cloth, SAE 90 Oil	Air gun
14	Check/ Adjust	Rear	0.50	20-22, 24-27 Ring Spanner, 10-11, 14-15 OE Spanner			Cloth, Graphite Grease, Fine Polish Paper	Air Gun

Sr. No.	Description	LH/RH Side	SMM	GP Tools	Special Tools	PNR	Consumables	M & T / Service Shop Equipments
15	Check & Adjust Rear tyre air pressure.	Rear	0.40	Pencil Type Pressure Gauge				Analogous / Digital Type Pressure Gauge, Air Filling Valve
16	Check Battery, Top-up distilled water. Clean terminals & apply petroleum jelly. Route cables properly and fit terminal caps properly. Recharge battery if required.	LH	1.80	Screw Driver, Distilled Water Filler, 10mm 'T' Spanner			Cloth, Fine Polish Paper, Petroleum Jelly Distilled Water	Hydrometer, Battery Charger, Battery Tester
17	Clean oil strainer. (Replace - if required) After 1 Year or 10000 Km whichever is later.	RH		8 No. Box Spanner, 12-13 OE Spanner, 12-13 Ring Spanner, 8mm 'T' Spanner. Plastic Tray, Phillips Screw Driver		Pistol Grip PNR	Diesel, cloth, Clutch Cover Gasket, Oil Strainer	
18	Check clutch and Adjust.	RH	0.30	12-13 OE Spanner, Small Screw Driver				
19	Fill engine oil.	RH	1.35	6" Combination Pliers, Measuring Jar 1Liter, Funnel			Cloth, Oil 20W50 of API SG + JASO MA grade	Oil Dispenser
20	Clean, Check & Adjust RH spark plug.	RH	2.40	Spark Plug Spanner, Plug Cleaner, Wire Brush	Filler Gauge 0.01~1mm		Cloth, Fine Polish Paper, Spark Plug	Spark Plug Cleaner and Tester, Air Gun
21	Check and Top-up brake fluid level.	Front	1.00	Phillips Screw Driver			Cloth, Oil Dot-4	
22	Check/ Adjust	Front	0.50	12-13 Ring Spanner, 5 & 10 mm Allen Key			Cloth, Fine Polish Paper	Air Gun
23	Check & Adjust front tyre air pressure.	Front	0.40	Pencil Type Pressure Gauge				Analogous / Digital Type Pressure Gauge, Air filling Valve
24	Check and Adjust steering.	Front	0.80	16-17 No. Ring Spanner	Fork Spanner			
25	Check Engine foundation bolts Front axle nut Side bolts of Front fork Handle bar bolts RSA top and bottom nuts Swing arm axle nut Silencer protective cover screws / bolts Rear view mirror	RH	1.30	10-11, 12-13, 14-15, 16-17, 20-22 No. Ring Spanner, 22 mm Box Spanner with Handle Ratchet		Pistol Grip PNR		



		1			1	I	T	
Sr. No.	Description	LH/RH Side	SMM	GP Tools	Special Tools	PNR	Consumables	M & T / Service Shop Equipments
26	Lubricate Clutch lever Rear Brake pedal Rear Brake Cam Pillion Foot Rest Center Stand Side Stand Kick lever boss pin	LH/RH	0.80	Oil Can			20W40 Oil, Graphite Grease, Cloth	Grease Gun
27	Refit RH, LH side covers, Seat, Petrol tank	LH/RH	0.50	12-13 No. Ring Spanner, 12mm Socket		Pistol Grip PNR		
28	Check and Clean fuel line & Clean petrol tank. (Replace fuel pipe - if required)	LH	0.50					Air Gun
29	Check all Meters for proper functioning & Correct, if reqd.	Front	0.50					
30	Start vehicle, Check & Adjust the following.	RH						
	Head light.	Front		Screw Driver				
	Tail light.	Rear						
	Brake light.	RH/Rear	nt Phillips Screw Driver					
	Horn	Front						
	Speedo, Pass, Parking light	Front		OGIOW BIIVOI				
	Side Indicators - Front & Rear	Both						
30	Tune Engine & Carburetor.	LH	2.00	Small Screw Driver				CO-HC Analyzer, Tachometer, Proper Exhaust Sealing Arrangement of Silencer
31	Study Job Card. Verify work.		1.00					
32	Lower the Lift		0.30					
33	Take vehicle out and park		0.50					
	Sub Total		32.50					
34	Carry out any additional work as indicated by the Customer or as required.		10.00					
	Total SMM		42.50					
	Expected Production / 480	minute	s / Mai	n / 11		•		
35	Test Ride of the Vehicle if required and park.		1.5	To be Carried out by Expert				
36	Clean the vehicle at the time of delivery.		1	Will be done by Delivery boy				
				•			•	•

PNR = Pneumatic Nut Runner

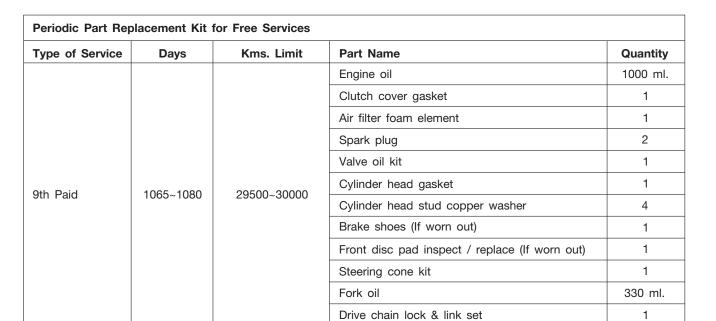
Service Wise Part Kit



Periodic Part Re	Periodic Part Replacement Kit for Free Services								
Type of Service	Days	Kms. Limit	Part Name	Quantity					
dat Francis	00.45	500, 750	Engine oil	1000 ml.					
1st Free	30~45	500~750	Clutch cover gasket	1					
2nd Free	105~120	2000~2500	NIL	NIL					
3rd Free	195~210	4500~5000	Engine oil	1000 ml.					
1st Paid	285~300	7000~7500	NIL	NIL					
			Engine oil	1000 ml.					
			Clutch cover gasket	1					
			Air filter foam element	1					
			Spark plug	2					
			Fork oil	330 ml.					
2nd Paid	375~390	9500~10000	Drive chain lock & link set	1					
			Brake shoes (if worn out)	1					
			Starter clutch bush	1					
			Fork oil seal	2					
			Cylinder head gasket (If required)	1					
			Front disc pad inspect / replace (If worn out)	1					
3rd Paid	465~480	12000~12500	NIL	NIL					
			Engine oil	1000 ml.					
4th Free	555~570	14500~15000	Drive chain lock & link set	1					
			Steering cone kit	1					
4th Paid	615~630	17000~17500	NIL	NIL					
			Engine oil	1000 ml.					
			Clutch cover gasket	1					
			Air filter foam element	1					
			Spark plug	2					
5th Paid	705~720	19500~20000	Brake shoes (if worn out)	1					
Stil Faid	703~720	19300~20000	Front disc pad inspect / replace (If worn out)	1					
			Fork oil	330 ml.					
			Clutch plate	1					
			Rear brake damper	1					
			Drive chain lock & link set	1					
6th Paid	795~810	22000~22500	NIL	NIL					
7th Paid	885~900	24500~25000	Carburettor insulator	1					
rui Faiu	005~300	24000~20000	Chain sprocket kit	1					
8th Paid	975~990	27000~27500	NIL	NIL					







Use always Genuine Bajaj Auto parts & recommended lubricants. (Engine oil: SAE 20W50 API 'SG' + JASO 'MA' grade)

Notes:			



Cleaning

The vehicle must be cleaned periodically using pressurized water. Before cleaning the vehicle cover the important parts like Ignition switch, Silencer Tail end, CDI unit, H.T. coil with plastic bags. Don't apply the jet of water directly on electrical parts such as Switches, Ignition unit, Coils etc. otherwise they may get damaged.

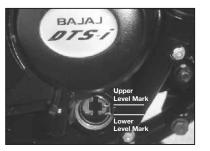
Brushing with kerosene and wiping dry with clean rag is advisable for external cleaning of the engine. All painted surfaces should be washed with water. Do not use kerosene or hard detergent soap on painted surfaces as it damages the paint and turns it dull.

After washing, dry the vehicle with compressed air and carry out the lubrication as recommended

Caution : Water may enter on the brake liners during washing & brake slippage may occur. Ensure that brake liners are dry before driving the vehicle.

Periodic Maintenance

Periodic maintenance (in accordance with the periodic maintenance chart) of a vehicle is most important to prolong vehicle life, trouble free running and ensure your safety while driving.

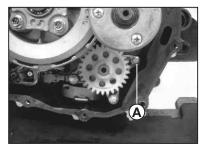


Engine Oil Level Checking

- Park the vehicle on level surface on center stand to check the oil level.
- Inspect the oil level through oil inspection window
- It should be in between upper and lower mark
- Top up if required

Recommended Oil Gra	ade and Qty
Grade	SAE 20W50 of API 'SG' + JASO 'MA'
Quantity	Drain & Refill 1000 ml. Engine Overhaul 1100 ml.

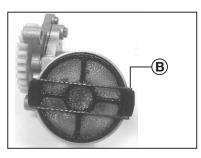
Note: It is most vital to adhere to recommended frequency of oil change for the purpose of long life of critical engine components for details refer Periodic Maintenance Chart.



Oil Strainer Cleaning

Remove:

- Drain engine oil.
- Clutch cover
- Oil pump mounting bolts (A) (3 Nos.)
- Pump with strainer.
- Clip (B) and take out 'Oil Strainer' from oil pump.







Remove:

- Clean oil strainer with Kerosene / Diesel blow compressed air and
- Replace oil strainer if found damaged.



Centrifugal Oil Filter Cleaning:

Remove:

- · Centrifugal oil filter cover mounting screws (C) 3 Nos.
- The cover with gasket
- Replace gasket if damaged
- Clean centrifugal oil filter using Nylon brush/kerosene or Diesel



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Air Filter

Air Cleaner Element Removal

Remove:

• RH side panel by unlocking it with key

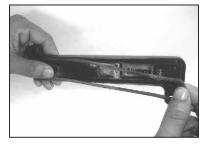


Remove:

- 2 bolts (A).
- Air filter cover (B).



- Air filter element assembly along with catrej
- Seperate foam filter from the catrej



Note:

- No need of removing flame arrestor
- White colour filter portion towards carburettor side
- Ensure beading placed properly when fitting cover

Air Filter Cleaning

Clean Air filter element adhering to standard SOP



1st Stage: Clean with Kerosene



3rd Stage: Dip into Engine Oil (20W40)



Squeeze



Squeeze and Remove **Excess Oil**



2nd Stage: Clean with Kerosene Again



Dry with Cotton Cloth



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Blow Low Pressure Compressed Air

Air Filter Element Cleaning and Inspection

Note: In dusty areas, the element should be cleaned more frequently than the recommended interval.

After riding through rain or on muddy roads, the element should be cleaned immediately.

Since repeated cleaning opens the pores of the foam element replace it with a new one in accordance with the Periodic Maintenance Chart. Also if there is a brakage in the element material or any other damage to the element replace the element with a new one.

Warning: Clean the element in a well-ventilated area, and make sure that there are no sparks or flames anywhere near the working area. Because of the danger of highly flammable liquid, do not use gasoline/petrol or a low-flash point solvent to clean the element.





Spark Plug

Recommended Spark Plug	Champion RG4HC / Bosch UR3DC
Electrode Gap	0.7 ~ 0.8 mm
Replace Spark Plug	After every 10000 Kms.



Battery - 12V - 9 Ah

- · Battery is located inside LH cover
- Check the electrolyte level in each cell and ensure that the level is between the upper and lower level lines.
- Remove the battery filler caps and fill with distilled water until the electrolyte level in each cell reaches the upper level line if required.

Note: Add only distilled water to the battery. Tap water is not a substitute for distilled water and will shorten the life of the battery.

• Apply petroleum jelly on to the terminals



Front Brake Fluid Level

- Front brake fluid master cylinder reservior is located near RH switch on handle bar.
- To check oil level, park the vehicle on Main / Center stand with handle bar in straight position.
- Always ensure that brake fluid level is above 'MIN' mark given on inspection window.
- Use only DOT-3 or DOT-4 brake fluid (from sealed container) to top up if required.

Note: It is advisable that brake fluid should be replenished **once** in a year.



Rear Shock Absorber

The rear shock absorbers can be adjusted to one of five positions to suit riding conditions. Using special tool adjust the required position you desire. They can be left soft for average road riding condition but should be adjusted harder for rough road condition.

Shock Absorbers adjusted either too soft or too hard adversely affect riding comfort and stability.

To adjust the Rear Shock Absorbers

Turn the adjusting sleeve on each shock absorber to the desired position. The higher the adjuster sleeve is positioned, the stronger the spring tension, and the harder the ride.

Check to see that both sleeves are turned to the same relative position.



Position	1	2	3	4	5
Spring Action		St	ronger —	→	

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 2nd notch



Nitrox Air Filling

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/cm2 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/cm2 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.



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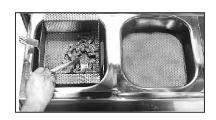
Drive Chain Slack / Lubrication

- Set the motorcycle upon its center stand.
- Rotate the rear wheel to find the position where the chain is tightest & measure the vertical movement midway between the sprockets.
- If the drive chain is too tight or too loose, adjust it so that the chain slack will be within the standard value.
- Check drive chain slackness at every 1000 kms.

Drive Chain Slackness: 25 ~ 30 mm

Service Limit 35 ~ 45 mm





Drive Chain Cleaning / Lubrication

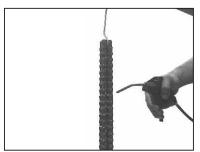
1st Stage:

Clean with Kerosene

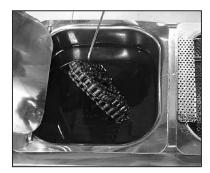


2nd Stage:

Clean with Cleaner Kerosene again



Blow Compressed Air



3rd Stage:

Dip into SAE 90 Oil



Soak into SAE 90 Oil



Final Stage:

Hook Chain for dripping of excess oil



Tyre Air Pressure

• Keep appropriate tyre pressure as mentioned below to increase life of this tyre and for better fuel consumption.

Front	1.75 Kg/cm² (25 PSI)
Rear - with Solo	2.00 Kg/cm ² (28 PSI)
Rear - with Pillion	2.25 Kg/cm² (32 PSI)

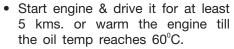


Checking Procedures

Important Adjustments and

Idling Speed Adjustment

Whenever the idling adjustment is disturbed follow the procedure given below for setting proper engine idling.





- Connect the probe of CO analyser. Set the CO between 1.75 ~ 2.25% by adjusting volume control screw.
- Then set the engine idling r.p.m. by rotating the idle adjustment screw clockwise or anticlockwise by hand.
- For the precise adjustment of idling speed, use of tachometer is recommended.
- Rotate the throttle a few times to make sure that the idling speed does not change. Readjust if necessary.
- Do not attempt to compensate for faults in other systems by adjusting the idle speed.

Idling Sped: 1400 + 100 rpm





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Tappet Clearance Setting

- Ensure that the engine is cold.
- 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.
- · Holding tappet screw firmly with special tool loosen the tappet screw nut.
- Put the feeler gauge, measure and adjust the clearance.
- · Lock the nut holding screw with special tool after getting desired
- 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

Special Tools: Feeler Gauge - 69 7502 51

: Valve Adjusting Screw Holder - 37 1031 53

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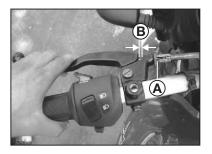


Ignition Timing Inspection

• Connect cable of stroboscope to one of the H. T. Coil carrying current to spark plug.

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- Start the engine.
- Aim the stroboscope light at Magneto cover glass window.
 - At idling speed the 'F' marked line on the rotor coincide with the line mark on magneto side c'case. (10° BTDC @ 1500 rpm).
 - As the engine rpm is increased the 'A' marked on the rotor coincide with the line mark on magneto side c'case. (28° BTDC @ 3500 rpm).
 - This indicates the advance timing is functioning correctly.
 - Remember the 'T' marked line is a reference line for TDC position of the piston and is not for Ignition timing.



Clutch Lever Free Play Adjustment

- Slide the dust cover at lever yoke end.
- Check that the clutch cable outer end is fully seated in the adjuster.
- Turn the adjuster (A) until the proper amount of free play can be obtained.
- Tighten the lock nut (B) against the adjuster. If the clutch free play cannot be adjusted with the adjuster at the handle bar end, use the adjuster at the lower ends of the clutch cable situated on clutch cover.
- Loosen the 2 lock nuts (C) on clutch cable bracket and adjust threading in the adjuster provided on the clutch cover. Tighten both the lock nuts on clutch cable bracket by holding one nut and tightening the other, after the required free play.

Clutch Lever Free Play: 2 ~ 3 mm



Accelerator Free Play Adjustment

- Turn the adjuster (A) until the proper amount of free play can be obtained.
- Tighten the lock nut (B) against the adjuster.
- If the accelerator free play can not be adjusted with the adjuster at the handle bar end, use the adjuster at the lower ends of the Accelerator cable situated on carburettor.
- Loosen the 2 lock nuts (C) on accelerator cable bracket end adjust by adjuster (D) provided on the cable.
- Tighten both the lock nuts on bracket by holding one nut and tightening the other, after ensuring the required free play.

Accelerator Grip Free Play: 2 ~ 3 mm



Reed Switch Setting and Checking

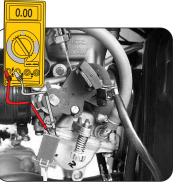
Check throttle lever movement by rotating it with hand. It should not be sticky in operation and should return back it self on releasing. bracket Multimeter should show continuity.

- 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

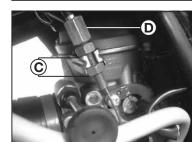
- Keep throttle at zero position.
- On connecting multimeter to Reed Switch coupler it should show continuity.



 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.



Pulsar DTS-i UG-III-180cc Training Notes





Front Brake Free Play Adjustment

There is no need for free play adjustment, since the pistons in caliper assembly will move towards the pads and take new positions in order to automatically compensate for pad wear. The free play will be approximately $2 \sim 3$ mm.

Front Brake Lever Play: 2 ~ 3 mm.



Rear Brake Pedal Adjustment

Check the rear brake pedal play as stated below. If it is more or less than the standard, adjust the rear brake.

- Depress the rear brake pedal lightly by hand. This is free play.
- If the rear brake pedal free play is incorrect, adjusting the rear brake shoe adjuster nut (A).
- Operate the pedal (B) for few times to see that it returns to its rest position immediately upon release.
- Rotate rear wheels to check for brake drag.
- Check braking effectiveness.
- If there is any doubt as to the conditions of the brake, check the brake parts for wear or damage.
- Turn the adjuster until the rear brake pedal have the correct amount of play.

Rear Brake Pedal Play: 25 ~ 30 mm.



Rear Brake Pedal Position Adjustment

To suit rider foot comfort / operating style the angle of the rear brake pedal can be adjusted by loosening the lock nut (A) and adjusting the bolt (B).

Ensure free play by turning the adjuster clockwise or anticlockwise to achieve specified free play. Fix the rubber sleeve on the bolt.

Note: After pedal position adjustment, it is necessary to set the free play.



Rear Brake Light Switch Adjustment

When either the front or rear brake is applied, the brake light glows on. The front brake light switch requires no adjustment but the rear brake light switch should be adjusted in accordance with the periodic maintenance chart

Inspection:

- Turn on the ignition switch. The brake light should go on wheel the front brake is applied.
- If it does not, then inspect the front brake light switch.
- Check the operation of the rear brake light switch by depressing the brake pedal. The brake light should glow after about 15 mm of pedal travel.
- If it does not, adjust the rear brake light switch.

Adjustment:

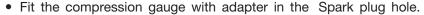
• Adjust the rear brake light switch (A) by rotating the switch nut to create adequate tension in spring to operate the switch.



Compression Pressure Testing

- For testing the compression pressure first warm up the engine.
- Remove the spark plug. LH side.

Caution: Disconnect H. T. lead cable from second spark plug i.e. RH side.



- Open the throttle fully then kick 5 times instantaneously.
- Note the reading in the compression gauge.
- Release the pressure by pressing the release valve on hose pipe.
- Take average of 3 such readings for noting actual compression pressure.
- Confirm the compression pressure is between 6 to 10 Kg/cm²

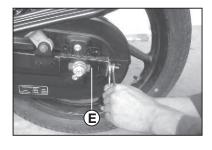


- If the compression pressure is found below lower limit than specified, put few drops of engine oil through the spark plug hole and again check compression pressure.
- If you find considerable increase this time, then cause for the low compression pressure lies in Cylinder / Piston assembly.
- If compression pressure remains the same, then the cause for low compression pressure lies in Cylinder / Head assembly.

Caution: If wet compression is done, remove second spark plug and clean thoroughly to avoid oil fouling before fitment.



F) A



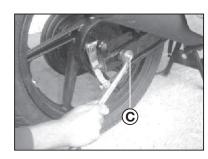
Chain Slack Adjustment:

- Set the motorcycle upon its centre stand.
- Rotate the rear wheel to find the position where the chain is tightest and measure the vertical movement midway between the sprockets.
- If the drive chain is too tight or too loose, adjust it so that the chain slack will be within the standard value i.e. 25-30 mm.
- Loosen the rear torque link nut (A) & rear brake adjusting nut (F).
- Loosen the left and right chain adjuster lock nuts (B).
- Loosen the axle nut (C).
- Loosen the bearing carrier nut (D).
- If the chain is too tight, back out the left & right chain adjusting nuts evenly & kick the wheel forward until the chain is too loose.
- Turn both chain adjusting nuts evenly until the drive chain has the correct amount of slack. To keep the chain and wheel properly aligned, the notch (E) on the left chain adjuster should align with the same swing arm mark that the right chain adjuster notch (E) aligns with.

Warning: Misalignment of the wheel will result in abnormal wear, and may result in unsafe riding condition.

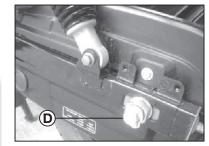
Pulsar DTS-i UG-III-180cc Training Notes





- Tighten both chain adjuster lock nuts.
- Tighten the sleeve nuts securely.

Warning : Tighten the bearing carrier nut before tightening the axle nut. If the nut tightening order is reversed, the rear axle will not be securely mounted on the swing arm. This may cause misalingment of the wheels and result in loss of control.



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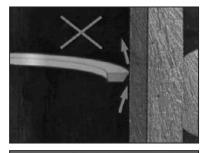




• Center the brake panel assembly in the brake drum. This is done by tightening the axle nut lightly, spinning the wheel, and depressing the brake pedal forcefully. The partially tightened axle nut allows the brake panel assembly to center itself within the brake drum.

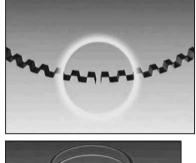
- Tighten the Axle Nut
- Tighten the torque link nut
- Fix the snap ring
- Adjust the correct brake play

Note: This procedure can prevent a soft or spongy feeling brake.



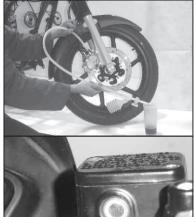
Piston Ring Fitment:

- Piston rings must always be fitted with respect to exhaust mark on the
- First place the bottom oil rail ring with end gap 28° towards left of the exhaust mark in the last groove.
- Place oil expander ring with butting end downward and end gap facing opposite to the exhaust mark.
- Now fit top oil rail ring on the expander ring with end gap 30° towards right of the exhaust mark.
- Fit the second piston ring with 'Top 2' mark facing upward and end gap facing opposite to the exhaust mark.
- Finally fit the first ring with 'Top 1' mark upward and end gap facing towards the exhaust mark.
- Remember fitment of 2nd ring upside down may lead to passing of oil above the piston and ultimately leading to smoky exhaust.













Air Bleeding of Disc Brake System:

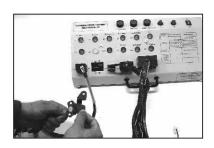
- For air bleeding from front Hydraulic brake system first top up the master cylinder with hydraulic oil.
- Operate the brake lever slowly in order to get filled the oil in the circuit.
- Connect transparent tube to the bleeder screw at caliper
- Operate the brake lever and keeping in pressed position loosens the bleeder screw so that some oil escapes with the air bubbles.
- Keep on operating the brake lever till the air bubble escape out completely through bleeder screw, and top up the master cylinder if required.
- Once the air escapes out from the hose pipe the brake lever meets resistance, which indicates completion of air bleeding
- After completing the bleeding, top up the master cylinder up to the maximum level mark.

Nitrox Air Filling

- Remove the Phillips head screw & small 'O' ring fitted on air valve of Nitrox RSA.
- Fix the guide to canister of Nitrox shocker in such a way that guide hole is concentric with air filling valve.
- Insert the Nitrox air filling pumps needle end into the guide & carefully pierce the rubber pin fitted inside the air valve of Nitrox RSA.
- Note the pressure indicated by pressure gauge of Nitrox air pump. Refill the pressure.
- Once the pressure reaches upto 7.5 Kg/cm², take out the needle slowly from canister.
- Fit the Phillips head screw & small 'O' ring fitted on air valve of Nitrox RSA.

Power Up the Jig

The Jig should carry out a self test, where first all Red LED; glow sequentially and then all Green LED; flash twice.



Manual Testing

- Connect wiring harness to C1 connector.
- Through this harness the following testing can be carried out :
 - Vehicle sensor speed.
- Hall sensor.
- Starter relay.



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LCD Speedo Console Test

- Connect wiring harness number 2 to C2 connector.
- After connecting speedo console wait unitl console LCD goes blank.
- Now press speedo console test switch to start the test.
- Observe for working of speedo console till test ends.

Body Control Unit (BCU) Test

- Connect wiring harness number 3 to C3, C4 and C5 connectors respectively.
- Press the BCU test switch.
- At the end of complete test, Green colour glowing of 'Result' LED indicates BCU test passed.
- At the end of complete test, Red glowing of 'Result' LED indicates BCU test failed at respective Red indications.

Details of Exclusive Special Tool

Special Tools

For carrying out repairs / overhauls, 1 new special tools for Pulsar DTS-i UG III have been developed. Rest of the special tools required remains the same which were earlier required for Pulsar and Pulsar DTSi

Engine



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.



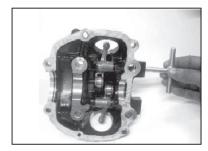


Rocker Pin Remover

Drawing No.: 37 10DH 35

Application:

To remove rocker pin from cylinder head.



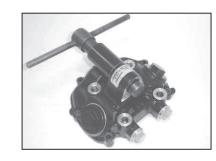


Silent Bush Puller

Drawing No.: 37 10DH 33

Application:

To remove silent bush from cylinder head cover.



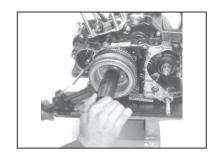


Rotor Puller with Butt Pin

Drawing No.: 37 10DJ 32

Application:

Used to pull out the rotor from crankshaft assembly.



pulsarous-i

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 25.9 \pm 0.1 mm



Dia. = 25.9+0.1

Piston Ring Holder

Drawing No.: 37 10DJ 30

Application:

Used for compressing the piston rings when assembly piston in the cylinder block.



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 bearing from crankcase LH.



Bearing Puller

Drawing No.: 37 10DJ 77

Application:

Used to pull out the bearing for body balancer from crankcase LH.

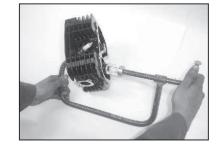


Adaptor & Valve Spring compressor

Adaptor - Drawing No.: 37 10DJ 78 Valve Spring Compressor - Drawing No.: 37 1031 07

Application:

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

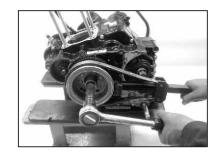


Rotor Holder

Drawing No.: H6 0721 00

Application:

To hold rotor while loosening bolt.

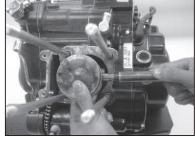


Drift

Drawing No.: 74 9309 89

Application:

To remove piston pin.



Thrust plate aligner/holder

Drawing No.: T-1011168

Application:

To align the clutch hub concentricity w.r.to clutch wheel, clutch housing and thrust plate









Crankshaft Bearing Extractor

Drawing No.: 37 1001 14

Application:

To remove bearing from crankshaft



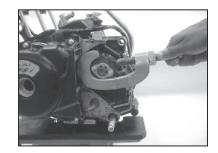
pulsarms-i

Output Sprocket Holder

Drawing No.: 37 1030 53

Application:

To hold the output sprocket while removing sprocket bolt





Bearing Driver Set

Drawing No.: 37 1030 61

Application:

Common bearing driver set for fitting and removing bearings from crankcase.





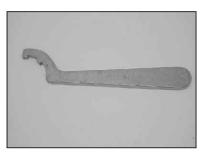
Fork oil seal fitment punch

Drawing No.: 37 0040 03

Application:

To fit fork oil seal on outer pipe





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Rear Shock absorber adjuster

Drawing No.: 37 00DH 14

Application:

For adjusting the notch position of RSA to achieve hard or soft rear suspension



Drawing No.: 74 9310 15

Application:

Used for removing front fork inner tube from outer tube.









Carburettor

Specifications:

Item	Pulsar 180cc
Make and Type	Ucal-Mikuni BS29
Identification No.	DJ - U3
Idling Speed	1400 <u>+</u> 100
VC Screw setting	2.5 <u>+</u> 2 turns out
Main Jet	117.5
Jet needle mark	4DHL42
Needle jet mark	922MP-1
Jet needle clip position	2nd from top
Pilot Jet	17.5
Starter jet	Fixed type
Throttle valve	Fixed type
Chock Lever	2 stage with push pull type mechanism

Notes:			



Fuel Tank

- Turn the fuel tap to the off position.
- Disconnect the fuel pipe connections from the petrol cock.
- Disconnect the fuel indicator wiring harness connection.



Remove:

• Side cover LH and RH by unlocking it with key.

Note: To remove the side covers LH and RH, unlock with the key then hold the front end of the cover and pull the front end out then pull the cover in forward direction to remove it from the lug.



- Pull the cable from the cover LH to unlock the seat lock
- Seat assembly

Note: To remove the seat assembly hold the seat assembly and lift it from the rear end and pull it back.



Remove:

- 1 bolt (A).
- Fuel gauge wiring connection.
- Drain pipe connection.
- Fuel pipe connection.
- Fuel tank assembly

Note: To remove the fuel tank assembly from the chassis lift the fuel tank assembly by holding it at the rear end and pull it back.



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Fuel Tank Inspection

Remove the hoses from the fuel tank, and open the tank cap. Check to see if the breather pipe and water drain pipe in the tank for clogging. If they are clogged, remove the tank and drain it, and then blow pipes free with compressed air.

Fuel Tank Cleaning

Warning: Clean the tank in well ventilated area, and take care that there are no smokes or flame anywhere near the working area. Because of the danger of highly flammable liquids, do not use gasoline or lowflash point solvents to clean the tank.





- Remove the fuel tank and drain it.
- Pour some high-flash point solvent into the fuel tank and shake the tank to remove dirt and fuel deposits.
- Pour the solvent out of the tank.
- Dry the tank and the fuel tap with compresses air.
- Install the fuel tank.



Note: While installing the fuel tank on chassis make sure that the dampers (A) on petrol tank are mounted on the chassis.



Fuel Tank Cap Dismantling

To unlock the Fuel tank cap, insert the key in the key slot and turn it anticlockwise direction and lift open the tank cap.

Now remove the anti theft screw and then remove the allen bolts (A) and remove the fuel tank cap assembly from the fuel tank. Fitting is the reverse procedure of dismantling. But take care that the vent hole is free from any foreign particles that may clog the hole. To lock the fuel tank cap, just press the cap without key.



Fuel Cock Removal

Remove:

- 2 bolts (A)
- Fuel cock assembly from the fuel tank.



Note

- · Always loosen the bowl of the fuel cock on vehicle itself
- Check the fuel cock strainer for any breaks or deterioration.
- If the fuel cock strainer have any breaks or are deteriorated, they may allow dirt to reach the carburettor, causing poor running. Replace the strainer.



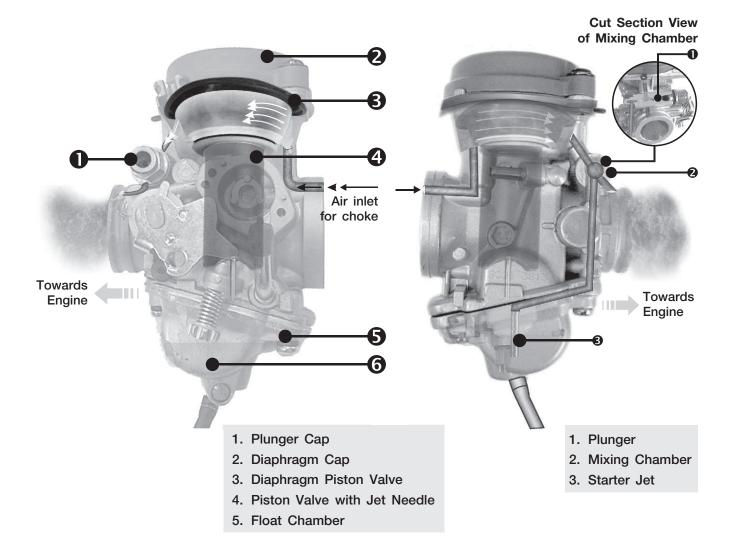
- Clean the fuel cock strainer in a high-flash point solvent.
- Pour high flash point solvent through the cock in all lever positions.
- Dry the tank and the fuel cock with compressed air.
- Install the cock in the tank.



- Bowl
- Strainer
- Gasket
- Selector Body
- 2 hole subber seal

Notes :		

Starter Circuit: Constant Velocity Carburettor



Function

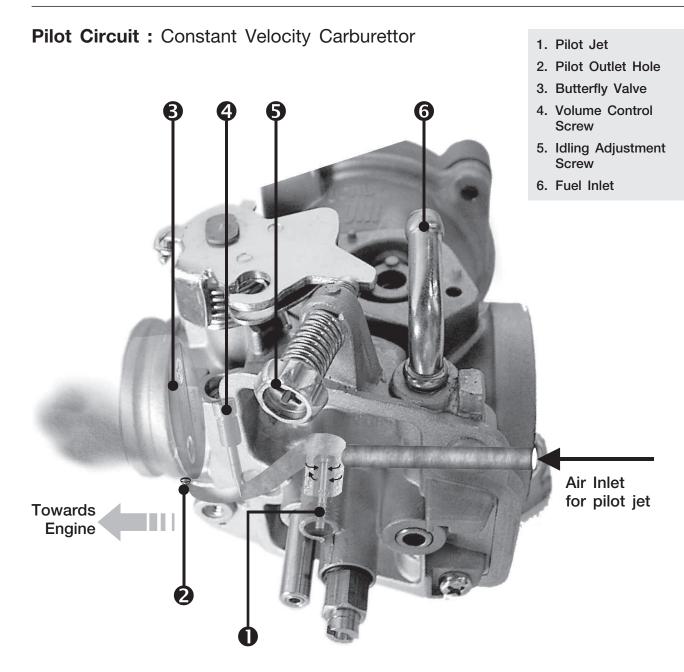
The function of starter circuit is to provide rich air fuel mixture on starting / cold starting. At cold engine condition the air is dense also the engine parts are cold enough this does not allow the petrol to vaporize properly this leads to starting trouble.

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 mainfold.

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.



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

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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.

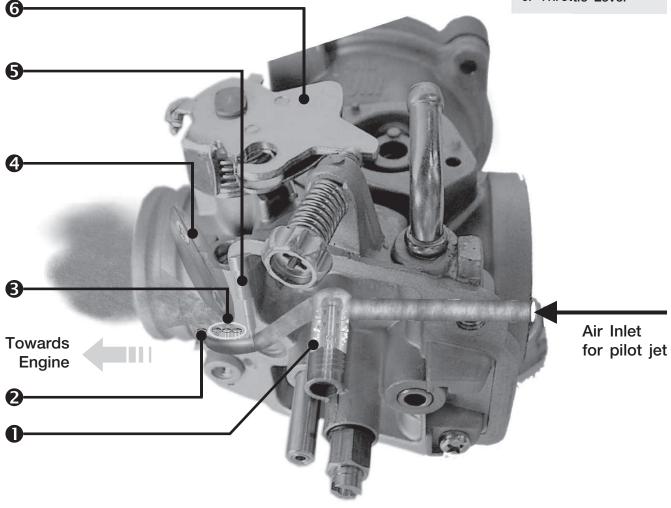
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Progression Circuit: Constant Velocity Carburettor

- 1. Pilot Jet
- 2. Pilot Outlet Hole
- 3. Bypass / Progression Holes

pulsar 1115-1

- 4. Butterfly Valve
- 5. Volume Control Screw
- 6. Throttle Lever



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.

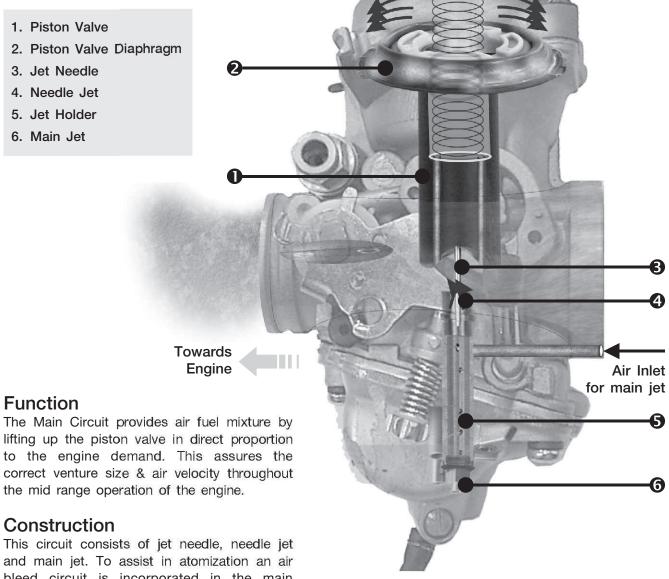
Working

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

Main Circuit: Constant Velocity Carburettor



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



Function

lifting up the piston valve in direct proportion to the engine demand. This assures the correct venture 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 venture 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.

Do'N

Handling



Use appropriate screw drivers.

Dowth



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

Cleaning



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



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

Maintenance



Ensure

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



Float is in good condition.



Replace

- Jets
- Worn out jet.

- Worn out tip.

sticky.

- Incorrect size jet.



- Punctured, Squeezed and distorted float.



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



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



- Needle worn out at taper portion.

- If spring loaded pin is



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



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

Overhaul carburettor at every 10,000 kms. and insepct the parts.

Pulsar DTSi is the first bike in the world (In small cc engine) to have twin spark ignition system.







- 1. The most obvious feature is the Twin Spark Plug configuration of the Engine. The cylinder head has 2 spark plugs one on either side. The spark plugs are of the smae Heat range (Champion RG4HC/Bosh UR3DC (Resistive) and have similar electrode gaps. These also spark simultaneuosly, This has been done to improve the combustion process by reducing the time of combustion. The end results are low emissions, good fuel economy and good driveability
- 2. To enable the sparking of the 2 spark plugs, a intelligent CDI capable of handling this was developed. Further more, the ignition timing has been optimised to give the best output from engine (10° BTDC @ 1500 rpm, 28° BTDC @ 3500 rpm), To enable optimum igntion timing for part throttle loads and full throttle loads, there are separate igntion maps stored in the memory of the CDI. These are activated depending on the throttle opening and engine speed. The Digital CDI has a bit Microprocessor which handles all these inputs and gives out the required and correct spark advance. The intelligent CDI can be easily indentified by 2 green dots marked on CDI case.
- 3. To enable switching the required igntion maps, a magnetically operated need switch is incorporated on the carburettor throttle shaft and carburettor body. This is known as TRICS. Throttle Responsive Igntion Control System.
- 4. These engines are capable of of reviving very high, quite easily. To keep them mechanically safe, a engine rpm limiter has been incorporated in the Digital CDI. This curtails the sparks to the spark plugs thereby limiting the engine rpm Max upto 9000 and thus keeps the engine mechanically safe. There are 2 spark plugs. LH spark plug fires at 350 rpm and then continues to give spark till at 9000 rpm of engine. The spark is cut off from LH plug 9000 rpm to protect engine from excessively high
 - RH spark plug gives spark at 750 rpm and then continues to give till 6000 rpm of engine. If engine rpm exceeds 6000 rpm then RH plug is cut off. This is done to reduce combustion noise created in engine.
- 5. This engine has been extensively tuned for more Power and Torque.
- 6. The DTSi technology has enabled the Pulsar to meet 2006 norms without any Secondary air injection devices.

Troubleshooting:

- · Malfunctioning of the Reed switch assly will not harm the engine, neither it will give any physical indicators like starting trouble or misfiring.
 - However checking of proper functioning of Reed Switch Assly at PDI and at every service
- Following symptoms may indicate as malfunctioning of Reed Switch Assly as one of the cause.

Symptom	Cause	Remedy
	The igntion systems is working only in 2nd map due to reed switch is stuck in open circuit	





- While starting the engine in any case throttle should not be rotated more. Even if this happens, engine will start, but the engine rpm will shoot uo too much (due to too high throttle opening)
- Whenever there is a sudden subtantial drop in mileage, customer should report to Bajaj Auto's Authorised Service Centres.

CO % Checking and Tune Up (To ensure betten mileage) :

Check following before CO % checking / Tune up -

- Air filter connections, intake manifold, insulator fitment, connecting tube fitment.
- Spark Plug gap (0.7 to 0.8 mm)
- All pipes and connections of fuel system for any cracks, leakage, plucking, pinching and loose connections.
- Ensure Tappet Clearance :

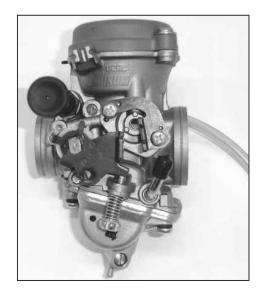
Inlet: 0.05 mm Exhaust: 0.1 mm

- Ensure compression pressure inside the cylinder (6 to 10 Kg/cm²)
- Check the ignition timing (10° BTDC at 1500 rpm and 28° BTDC at 3500 rpm)

CO % checking and carburettor VC screw setting

- Start and warm up the engine
- The oil temperature should be above 60° C. This can be achieved by running vehicle in top gear at the speed of minimum 40 Kmph for 5 ~ 6 Kms.
- Adjust the engine speed to 1400 ± 100 rpm with idling adjustment screw of carburettor.
- Adjust the CO with the VC screw. It should be in between 1.75 to 2.25 %
- Confirm the engine speed whether it is within 1400 ± 100 rpm or not. When setting Idle CO %, idle rpm and VCS have to be adjusted together to achieve 2 % CO and 1400 ± 100 engine rpm.

Item

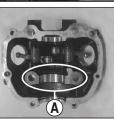


Item	i disai 10000
Make	Ucal-Mikuni BS 26
Identification No	DJ - U3
Туре	CV Type
Idling Speed	1400 <u>+</u> 100
VC Screw Setting	2.5 <u>+</u> 2 turns out
Main Jet	117.5
Jet needle mark	4DHL42
Needle jet mark	922MP-1
Jet needle clip position	2 from top
Pilot Jet	17.5
Starter Jet	Fixed type
Throttle valve	Fixed type
Chock lever	2 stage with push pull type mechanism

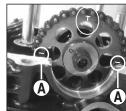
Pulsar 180cc



- Remove the 'Allen Head Grub Screw' before removing the 'Sleeve Spark Plug'.
- Before fitting the 'Sleeve Spark Plug' apply thin layer of molybdenum disulphite grease on the entry chamfers for the 'O' rings for smooth sliding inside.



• Do not apply liquid gasket at location (A) which may block the lubrication passage.



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 special tool firmly and then tighten the sprocket allen bolt (A).
- Ensure that the 'O' mark on washer always faces outwards when tightening the allen bolt.



• 'Inlet Rocker Arm Shaft' is longer in length.



- Rocker arm has 20 Rollers inside the outer cage.
- Doesn't have inner cage.
- Take utmost care while dismantling. Rollers should not fall inside engine.
- Apply grease for fixing needle rollers inside rocker arm.



• While removing / refitting of piston pin circlip, cover the crankcase chamber with clean cotton cloth to avoid falling of circlip inside the engine.



• Blow pressurised air to oil passages in reverse direction to that of oil flow.

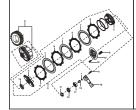
Pulsar DTS-i UG-III-180cc Training Notes





Ensure

• While assembling hub clutch place plain washer first and then place belleville washer. Concave face should be upwards i.e. toward technician.



- After placing Belleville, fit clutch plate with 48 friction material cubs (A) with more I.D.
- 4 Nos. of clutch plates with 36 friction 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 washer tapered I.D. it should be placed on tapped 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.



- Shifter fork is having a roller. These roller are one side tappered inner dia.
- Taper portion of roller should face towards fork gear shift.



• Ensure damper rubber fitment on magneto side guide plate.



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



• Load the assly balancer idler gear with 2 teeths from either side using the special tool.



- Take the 'Assembly Balancer Idler Gear' along with Thrust Washer which is preloaded and is held in special tool, Slide down the special tool with 'Gear' to engage the bottom half of the 'Assembly Balalncer 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'.



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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 the special tool gently.
- Fit 2 dowels and Assly Balancer Idler Gear Cover
- Ensure perfect marking of gear marks with respect to crankcase mark.





Removal of Engine from Frame:

Remove:

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

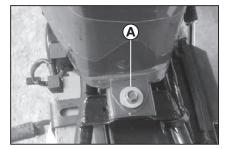


- · Seat assembly by pulling the cable for seat lock release located on RH side.
- Disconnect the negative terminal of the battery.
- Disconnect the wiring harness socket for fuel level Indicator.
- Fuel pipe connections and moisture drain pipe from fuel tank.
- Disconnect stator plate harness
- · Disconnect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



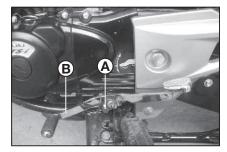
- Drain bolt (A) and drain out the oil from engine.
- Refit the drain bolt with gasket & tighten it.

Recommended Oil Gra	ade and Qty
Grade	SAE 20W50 of API 'SG' + JASO 'MA'
Quantity	Drain & Refill 1000 ml. Engine Overhaul 1100 ml.



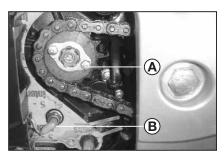
Remove:

- Bolt (A)
- · Petrol tank assembly.



Remove:

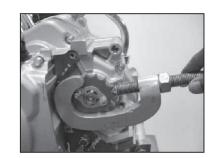
- Bolts (A)
- Gear shift pedal bolt (B)
- Drive sprocket cover LH.



Using Special Tool: Sprocket Holder - 37 1030 53

Remove:

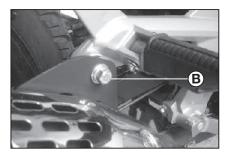
- Bolts (A)
- Plate drive sprocket
- Drive sprocket along with the chain.
- Neutral switch coupler (B).



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:

• PCV pipe from breather



- Disconnect the reed switch coupler.
- Spark plug cap LH



- · 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:

 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).





pulsarors-i





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

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



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 and remove the spark plug RH
- Loosen and unscrew the allen head grub screw of the sleeve spark plug



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)

Note: Remove these only if the 'O' ring protrusim in the bore is non-existant (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



Remove:

- Both tappet caps
- Magneto cover cap seal and rotate crankshaft to get piston at TDC.
- Ensure both tappets are at free state (i.e. at the end of compression stroke)

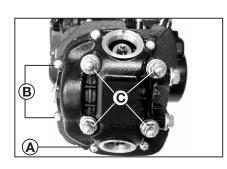


Remove:

- 2 dummy plug
- 2 gaskets

Pulsar DTS-i UG-III-180cc Training Notes

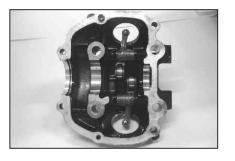




Remove:

- 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



Using Special Tool : Sprocket Catcher - 3710 DH 36

Using Sp. Tool : Sprocket Catcher - 3710 DH 36

Remove:

- Allen bolt
- Spacer
- · Cam sprocket
- Collar
- Cam shaft assly



pulsarnis-i

Sprcoket Catcher

 $\mbox{\bf Note}:\mbox{\rm Hold}$ 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:

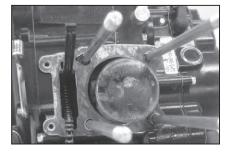
- Non tensioner side chain guide
- · Cylinder block assembly



Remove:

• Piston pin lock LH & RH side

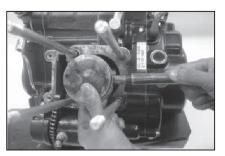
Note: Place a piece of clean cloth above hallow portion of crankcase to arrest piston pin circlip if it falls during fitment.



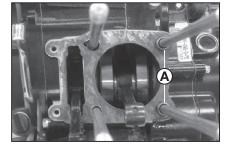
Using Special Tool : Drift 74 9309 89

Remove:

- Remove piston pin
- Piston assembly



Caution: 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)

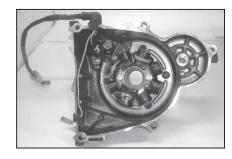
Note: Tie the cam chain firmly using soft copper wire/thread firmly to avoid slipping down into crankcase.



Engine LH (Magneto Side):

Remove:

• 5 bolts (A)



Dealer Development Center

Remove:

Cover magneto.



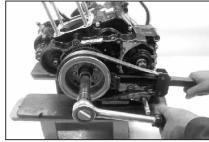


Using Special Tool: Rotor Holder - H6 0721 00

Hold the rotor assembly

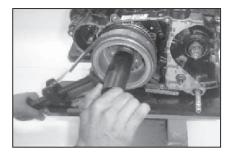
Remove:

- Rotor bolt (A)
- Washer



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

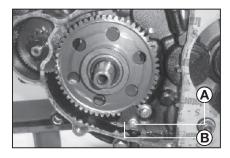
- Rotor assembly
- · Woodruff key.





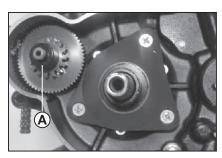
Note: Holding the gear complete starter clutch rotate the rotor and pull it out in Anticlockwise direction to prevent rollers and springs coming out. Rotor puller has left hand threads.

- 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



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Remove:

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

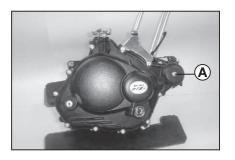
Caution: Ensure that the woodruff key of rotor is removed prior to the removal of guide starter assembly. The lips of magneto oil seal housed in guide starter assembly will get damaged if not done so.



Engine RH: (Clutch Side)

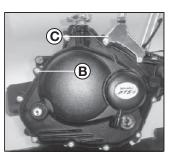
Remove:

- Kick starter bolt
- Kick starter



Remove:

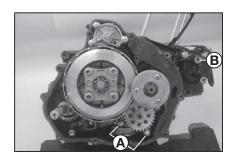
- 1 screw (A)
- Starter motor cover



Remove

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



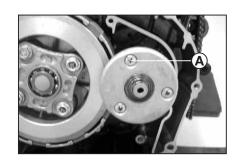
Remove:

- 3 bolts (A)
- Oil pump assembly
- 2 Dowels
- Clutch cover gasket
- Starter Motor (B)

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.

Pulsar DTS-i UG-III-180cc Training Notes



Using Special Tool: Primary Gear Holder 37 10DJ 28 Remove:

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



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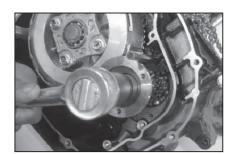
Warning: These parts may be hot, if removed from a hot engine. Use

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 Special Tool: Special Nut Puller 37 10DJ43 Primary Gear Holder 3710 DJ28 Remove:

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



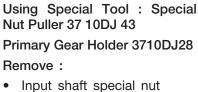


Remove:

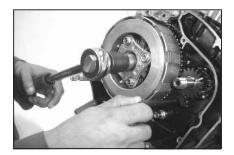
· Bearing with plunger



Dia. = 25.9+0.1



- 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



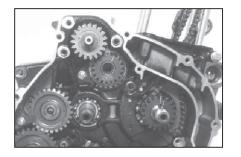
- 3 Assly balancer Idler gear cover bolts (A)
- Cover
- Washer
- 2 Dowel



Remove:

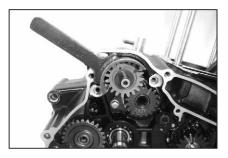
Clutch housing

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



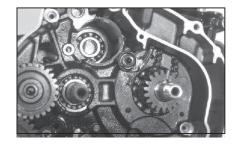
Remove:

- Assly Bal. idler gear
- 2 Washer



Remove:

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



Remove:

- Primary gear
- Square key

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

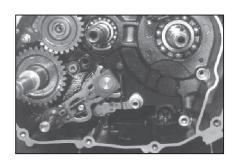


Dealer Development Center

Remove:

- Cam chain
- · Cam chain sprocket
- Parallel Pin





Remove:

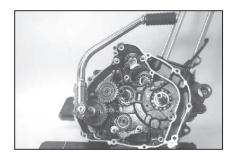
• Gear change lever



Remove:

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

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



Using Kick starter lever

Remove:

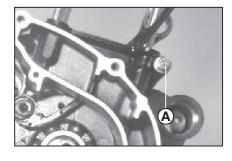
- Washer
- Kick shaft assly comp

Note : Rotate the kick starter lever in Anticlockwise direction for removing the kick shaft assly.



Remove:

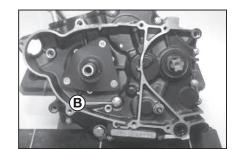
- Bolt (A)
- Locking Plate
- Kick idler gear



Engine Central Part:

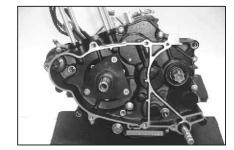
Remove:

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



Remove:

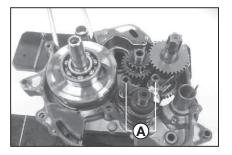
• Bolt (B) on LH side crankcase (Magneto side)



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.



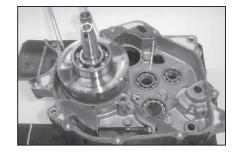
Remove:

- Kick spring
- 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

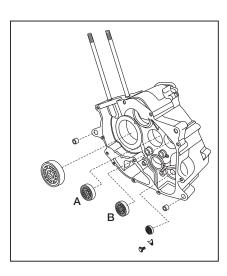
• The entire gear box assembly together



Remove:

- Crankcase gasket
- 2 dowels
- Crankshaft assly

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Dismantling of Oil Seals and Bearings:

Crankcase Clutch Side: **Using Special Tool:** Bearing Driver set - 37 1030 61 Remove:

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

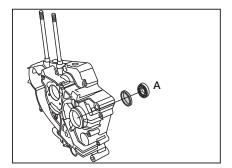


Using Special Tool: Bearing **Extractor - 37 10DJ 77**

Remove:

• Bearing (B) for output shaft assembly from crankcase RH





Crankcase Magneto Side:

Remove:

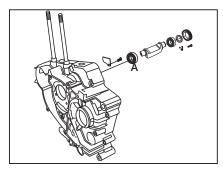
Oil seal

Using Special Tool: Bearing **Extractor - 37 10DJ 77**

Remove:

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



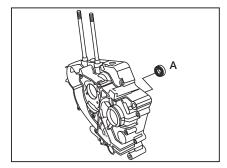


Using Special Tool: Bearing **Extractor - 37 10DJ 77**

Remove:

• Bearing (A) for body balancer gear bearing from crankcase





Using Special Tool: Bearing **Extractor - 37 10DJ 76**

Remove:

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



Remove:

Bolt (A)

Bearing stopper

Using Special Tool: Bearing **Driver Set - 37 10BA 61**

Remove:

· Bearing for gear drum from RH crankcase

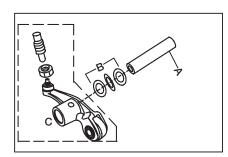


Dismantling of Subassemblies:

Magneto Cover

Remove:

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

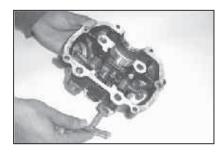


Cylinder Head Cover

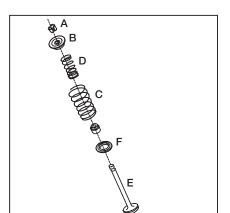
Using Sp. Tool Rocker Pin remover 37 10DH 35

Remove:

- Rocker shaft (A)
- Rocker arm
- · Set of washers (1 wave and 2 plane) (B)
- Rollers 20 nos. (C)



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



Dealer Development Center

Top End:

Cylinder Head

Using Sp. Tool Valve Spring Compressor 37 1031 07 & Adapter 37 10DJ 78

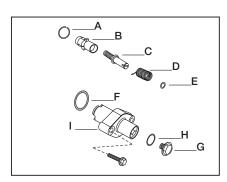
Remove:

- 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.



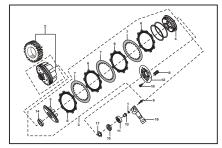




Chain Tensioner Assembly

Remove:

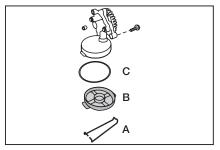
- Circlip (A) from the body (I)
- Cap (B) along with screw internal and screw external (C)
- Spring (D)
- Thrust washer (E)
- 'O' ring (F)
- Bolt (G) and 'O' ring (H)



Clutch Assembly

Remove:

- 4 bolts (A)
- Holder clutch (B)
- 4 springs (C)
- Clutch center (D)
- Plain washer
- Bellivellie washer
- Disc clutch friction (E) (Qty. 6 for 180cc / Qty. 5 for 150 cc)
- Plate clutch (F)
- Plate clutch pressure (G) (Wheel clutch)
- Clutch housing
- Thrust washer conical from inner ID



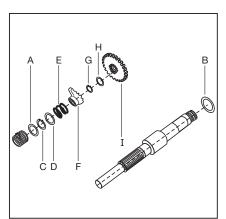
Oil Pump

Remove:

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



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Kick Shaft Assembly

Remove:

- Thrust washer (A)
- Washer thrust (B)
- Circlip (C) & thrust washer (D)
- Spring kick starter ratchet (E)
- Ratchet kick starter (F)
- Circlip (G)
- Washer (H)
- Pinion complete kick starter (I)



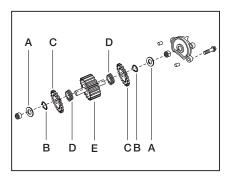


Bearing Removal from Assly Balancer Idler Gear Cover and Crankcase RH

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.

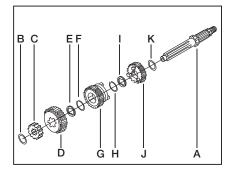


Gear Complete Starter Counter Assembly

- 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)

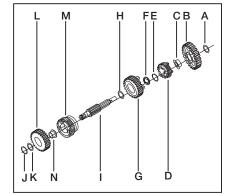
Remove:

• 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.



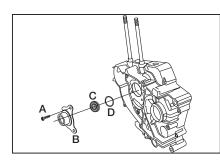
Dealer Development Center

Output Shaft Assembly

- There are no integral gears on output shaft.
- Remove thrust washer (A) and slide off the gear1st 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)



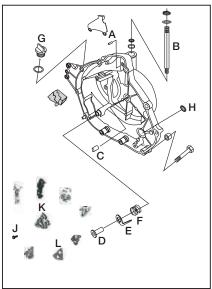




Crankcase Magneto Side

Remove:

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

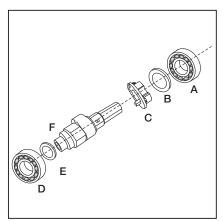


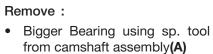
Clutch Cover

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)
- Oil seal kick shaft (H)
- Wire clip (I)
- Oil inspection window
- Flanged bolt (8 Nos.) (J)
- Set of damper (K)
- Set of plate (L)
- Grommet (M)







- Collar de-comp (B)
- Decompression unit (C)
- Small Bearing (E)
- Lock washer (D)
- Parallel pin (F)



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/Bosh UR3DC (Resistive)

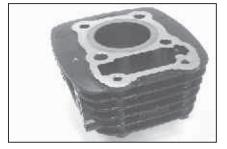
pulsarus

- Gap between electrodes 0.7 to 0.8 mm
- Electrode condition No errosion
- Colour at the electrodes tip Brownish
- Threads of reach portion Ok / No damage



Cylinder Head:

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



Cylinder Block :

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



Piston:

- 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



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.
- Piton ring identification mark
- Top Ring: TOP 1, Second Ring: TOP 2



Crankshaft:

Big end axial/radial play
Runout
As per Service data.
Threading condition
Coh / No damages.
Ok / No damages.
Ok / No damages.
Free rotation / Jam
Con-rod
No bending / twisting

• Square slot key way for primary gear



Crankcase:

Oil passage

Mating surface : Smooth / No scratches.

• No Cracks, damages, breakage.

 Bearing seat, oil seal seat & proper pressing / positioning of oil seals, needle roller, ball bearings freely rotating

: No blockage.

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



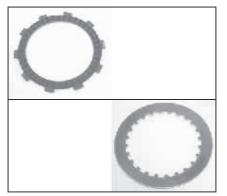
Bearings:

Axial playRadial playOk / 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

• Steel plates planishing

• Conical face machining for spacer clutch



Dealer Development Center

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

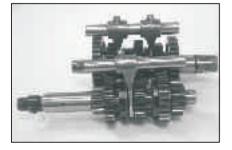






Clutch Hub / Clutch Wheel:

- 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



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.
- Choke Operation Smooth (Push and pull type)

100

Guide Kick:

- No presence of any burr & flashes
- Face to face fitment on Crankcase after tightening.
- Application of loctite 638 to securing allen bolts



Dealer Development Center

Camshaft:

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

pulsarms-i

Compression Pressure



Std. Limit	6.0 ~ 10.0 Kg/cm ²
Serv. Limit	5.0 ~ 10.0 Kg/cm ²

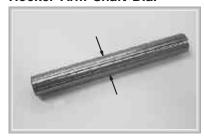
Valve Clearance



	Inlet	Exhaust
Std. Limit	0.05	0.10
Serv. Limit	0.05	0.15

Rocker Arm Shaft Dia.

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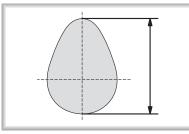
Std. Limit	7.994 ~ 8.0
Serv. Limit	7.98

Cam Sprocket Diameter



Std. Limit	61.48 ~ 61.36
Serv. Limit	61.30

Cam Height



	Inlet	Exhaust
Std. Limit	31.0	30.4
Serv. Limit	30.8	30.2

Valve Spring Free Length



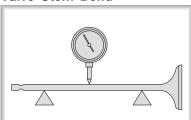
	Inner	Outer
Std. Limit	39.10	43.6
Serv. Limit	39.00	42.6

Valve Stem Diameter



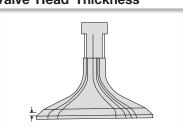
	Inlet	Exhaust
Std. Limit	4.48	4.46
Serv. Limit	4.40	4.41

Valve Stem Bend



Std. Limit	TIR 0.01
Serv. Limit	TIR 0.03

Valve Head Thickness



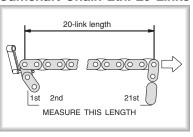
	Inlet	Exhaust
Std. Limit	0.5	8.0
Serv. Limit	0.3	0.6

Cylinder Head Warp



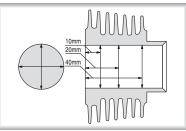
Serv. Limit	0.05
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Camshaft Chain Lth. 20 Links



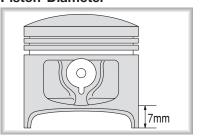
Std. Limit	127.00 ~ 127.20
Serv. Limit	128.0

Cylinder Inside Diameter



Std. Limit	63.50 ~ 63.508
Serv. Limit	63.508 ~ 63.515

Piston Diameter

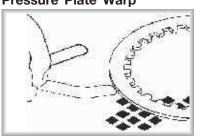


Std. Limit	63.478 ~ 63.488
Serv. Limit	63.488 ~ 63.498



	TOP	SECOND
Std. Limit	0.15~0.30	0.30~0.45
Serv. Limit	0.55	0.70

Pressure Plate Warp



Std. Limit	0.2
Serv. Limit	0.3

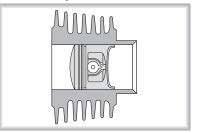
Crankshaft Run Out



Std. Limit	0.02 Max.
Serv. Limit	0.05

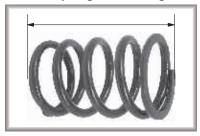
Dealer Development Center

Piston / Cylinder Clearance



Std. Limit	0.012 ~ 0.030
Serv. Limit	_

Clutch Spring Free Length



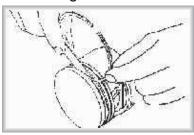
Std. Limit	30.0
Serv. Limit	29.0

Shift Fork Guide Pin Dia.



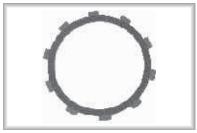
Std. Limit	4.4
Serv. Limit	4.2

Piston Ring / Groove Clearn.



	TOP	SECOND
Std. Limit	0.02~0.06	0.01~0.05
Serv. Limit	0.16	0.15

Friction Plate Thickness



Std. Limit	2.9 ~ 3.1
Serv. Limit	2.75

Shift Drum Groove Width



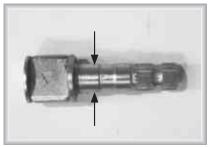
Std. Limit	7.15
Serv. Limit	7.0

Brake Panel Cam Hole Dia.



Std. Limit	12.00 ~ 12.03
Serv. Limit	12.15

Brake Cam Diameter



Std. Limit	11.95 ~ 11.98
Serv. Limit	11.88

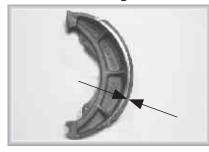
Front Brake Pad Thickness

pulsar 115-1



Std. Limit	7.4
Serv. Limit	3.8

Brake Shoe Lining Thickness



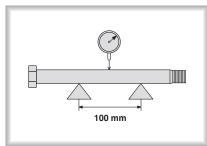
Serv. Limit	2.0	_
Std. Limit	3.85 ~ 4.15	

Brake Drum Inside Diameter



Std. Limit	130 .0 ~ 130.16
Serv. Limit	130.75

Axle Run Out



Std. Limit	TIR 0.1 or Less
Serv. Limit	TIR 0.2

Axial Wheel Run Out



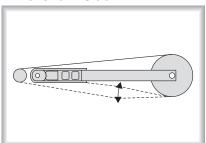
Std. Limit	TIR 1.0 or Less
Serv. Limit	TIR 2.0

Radial Wheel Run Out



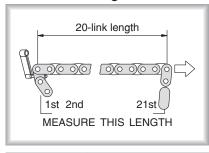
Std. Limit	TIR 0.8 or Less
Serv. Limit	TIR 2.0

Drive Chain Slack



Std. Limit	25 ~ 35
Serv. Limit	40 ~ 50

Drive Chain Length



Std. Limit	254.0 ~ 254.6
Serv. Limit	259.0

Rear Sprocket Warp



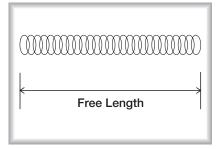
Std. Limit	0.4 or Less
Serv. Limit	0.5

Tyre Tread Depth



Std. Limit	Front: 5.0 Rear: 6.8
Serv. Limit	Front: 1.0 Rear: 1.5

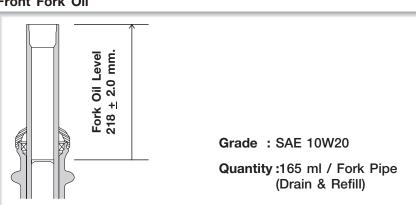
Front Fork Spring Free Length



Std. Limit	398.50
Serv. Limit	391.00

Dealer Development Center

Front Fork Oil



Notes:		

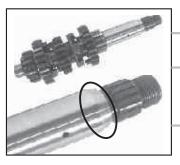




Parts Identification - Engine

UG-III

pulsarus



Part Name	Shaft Input Transmission
Part No.	DK 1011 25
Description	Better clamping of clutch assly is ensured on Input Shaft for effective torque transmission with this new clutch mechanism.
Identification Mark	Taper provided on shaft near clutch mounting end.



Part Name	Guide Gear Shift
Part No.	DK 1011 58
Description	Guide Gear with 6 pins is meshed with gear change lever & transmits reciprocating motion into rotary motion & thus rotates drum change.
Identification Mark	Guide Gear is having 6 pins.



Part Name	Fork Gear Shift (Input & Output)
Part No.	Input : DK 1011 33 Output : DK 1011 34
Description	The roller in fork gear shift roll in the drum profile smoothly as & when drum rotates & guides to transmit To & Fro motion to fork gear shift for matching respective gears.
Identification Mark	• Pin diameter is 4.4 mm • 'U' mark on fork shift.



Part Name	Gear Drum Change Assembly
Part No.	DK 1011 32
Description	It has a wide profile (groove) for smooth rolling of fork gear shift roller in drum profile for smooth shifting of gear.
Identification Mark	Profile width is 7.15 mm. It has a square window parallel to neutral stopper locater.



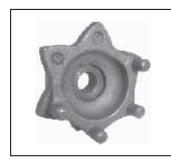
	Part Name	Lever Comp Gear Shift
	Part No.	DH 1017 05
	Description	Lever comp. gear shift is meshed with guide gear shift constantly. Thus helps in transmitting reciprocating motion to guide gear.
	Identification Mark	Selector lever operates radially. Selector lever is short in length.

Parts Identification - Engine

UG-I



	Part Name	Shaft Input Transmission
	Part No.	DH 1015 19
	Description	Effective clamping of clutch assembly is ensured of Input Shaft by using guide plate clutch in between shaft & clutch assembly.
	Identification Mark	No Taper provided on shaft near clutch mounting end.



Part Name	Guide Gear Shift
Part No.	DJ 1011 48
Description	Guide Gear with 4 pins is meshed with gear change lever & transmits reciprocating motion into rotary motion & thus rotates drum change.
Identification Mark	Guide Gear is having 4 pins.



Part Name	Fork Gear Shift (Input & Output)	
Part No.	DH 1011 30 - Input DH 1011 32 - Output	
Description	The fork gear shift pin slides in the drum profile as & when drum rotates & guides to transmit To & Fro motion to fork gear shift for matching respective gear.	
Identification Mark	Pin dia. = 5 mm. I/P shaft fork mark = S 32. O/P shaft fork mark = S 95 & S 92 respectively.	



Part Na	ıme	Gear Drum Change Assembly
Part No).	DJ 1011 46
Descrip	tion	It has a wide profile (groove) for smooth sliding of fork gear shift pin in drum profile for shifting of gears.
Identific	cation Mark	Profile width is 5 mm. It has a odd shape window parallel to neutral stopper locater.



Dealer Development Center

Part Name	Lever Comp Gear Shift
Part No.	DH 1011 34
Description	Lever comp. gear shift is meshed with guide gear shift constantly. Thus helps in transmitting reciprocating motion to guide gear.
Identification Mark	Selector lever operates To & Fro. Selector lever is more in length.

Parts Identification - Engine

UG-III

pulsarms-i



Part Name	Clutch Cover
Part No.	DJ 1012 41
Description	It houses the entrire clutch side assemblies.
Identification Mark	Clutch cover has Engine oil inspection window.



Part Name	Holder Clutch (Thrust Plate)
Part No.	DK 1010 78
Description	Holder clutch holds the clutch bearing & plunger.
Identification Mark	Holder clutch has 4 holes for mounting.



Part Name	Clutch Spring
Part No.	DH 1017 43
Description	Clutch spring helps smooth engaging & disengaging the clutch mechanism.
Identification Mark	Clutch spring height is 30.8 mm.



Part Name	Clutch Center
Part No.	DK 1010 01
Description	Clutch center holds the set of clutch plate & pressure plate.
Identification Mark	Step for spacer is provided. Clutch center height is 26 mm.



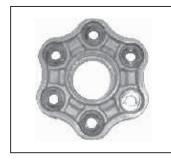
	Part Name	Clutch Wheel
	Part No.	DK 1011 63
	Description	Clutch wheel holds the set of clutch plate & pressure plate.
	Identification Mark	Clutch wheel has 4 legs for mounting clutch springs.

Parts Identification - Engine

UG-II



Part Name	Clutch Cover
Part No.	DH 1011 49
Description	It houses the entire clutch side assemblies.
Identification Mark	Clutch cover does not have Engine oil inspection window.



Part Name	Holder Clutch (Thrust Plate)
Part No.	DH 1014 84
Description	Holder clutch holds the clutch bearing & plunger.
Identification Mark	Holder clutch has 6 holes for mounting.



Part Name	Clutch Spring
Part No.	DH 1014 83
Description	Clutch spring helps smooth engaging & disengaging the clutch mechanism.
Identification Mark	Clutch spring height is 29.3 mm.



Clutch Center
DJ 1011 79
Clutch center holds the set of clutch plate & pressure plate.
No step for guide plate provided. Clutch center height is 30 mm.



Dealer Development Center

Part Name	Clutch Wheel
Part No.	DH 1013 44
Description	Clutch wheel holds the set of clutch plate & pressure plate.
Identification Mark	Clutch wheel has 6 legs for mounting clutch springs.

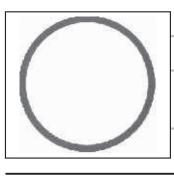


Dealer Development Center

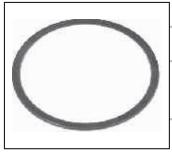


Parts Identification - Engine

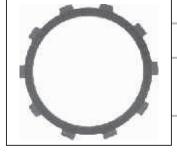
UG-III



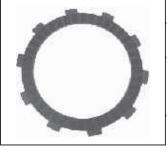
Part Name	Clutch Plain Washer
Part No.	39 2161 11
Description	New part added for preventing clutch judder.
Identification Mark	Plain washer with no Identification Mark.



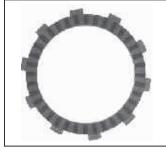
Part Name	Clutch Belleville Washer
Part No.	39 2167 12
Description	New part added for preventing clutch judder.
Identification Mark	Clutch Belleville Washer is concave in shape.



Part Name	Disc Clutch Friction Plate
Part No.	DK 1011 49
Description	Clutch plate ID is smaller than regular clutch plate because to accommodate the plain washer & wave washer of anti judder mechanism. This plate is fitted facing the clutch hub side.
Identification Mark	 Internal diameter is 109.5 mm. Friction material cubs are 48 nos.



Part Name	Clutch Plate Pressure
Part No.	DK 1011 63
Description	New part added. This plate is fitted facing the clutch wheel side.
Identification Mark	Friction material cubs = 40 nos. Clutch plate appears to be in Brownish colour.



Part Name	Clutch Plate (4 Nos.)
Part No.	DK 1011 51
Description	New part added. 4 clutch plates of same specifications are sandwiched in between LH & RH clutch plates for torque transmission.
Identification Mark	Friction material cubs 36 nos. Clutch plate appears to be in Greenish colour.

Parts Identification - Engine

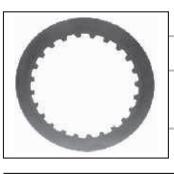
UG-II

	Part Name	NA
	Part No.	NA
	Description	NA
	Identification Mark	NA
	Part Name	NA
	Part No.	NA
	Description	NA
	Identification Mark	NA
	Part Name	NA
	Part No.	NA
	Description	NA
	Identification Mark	NA
- Andrews	Part Name	Clutch Plate Pressure (6 Clutch Plates)
	Part No.	DH 1013 44
()	Description	Total 6 clutch plates of same specifications are housed in clutch assembly for torque transmission.
	Identification Mark	All clutch plates are Brown in colour.
	Part Name	NA
	Part No.	NA
	Description	NA
	Identification Mark	NA

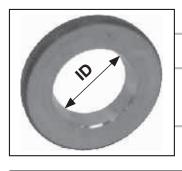
Parts Identification - Engine

UG-III

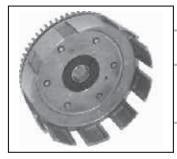
pulsarms-i



Part Name	Plate Clutch (Pressure Plate)
Part No.	DK 1011 63
Description	Pressure plate are housed in between clutch plates.
Identification Mark	Pressure plate is more wide. Pressure plate width = 17 mm.



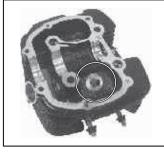
Part Name	Spacer
Part No.	DK 1011 26
Description	New part added for adding is better face clamping of clutch assembly on Input Shaft.
Identification Mark	Internal diameter (ID) is in conical shape.



Part Name	Clutch Housing
Part No.	DK 1010 74
Description	Clutch housing holds the entire clutch assembly & the slots helps for effective lubrication.
Identification Mark	Slots provided in clutch housing.



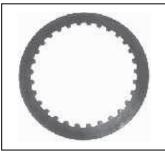
Part Name	Head Cover
Part No.	Cylinder head cover is a part of Cylinder Head Comp
Description	Head cover houses the complete OHC system.
Identification Mark	'U' mark embossed in casting.



Part Name	Cylinder Head Comp
Part No.	DJ 1012 69
Description	Cylinder head comp houses the complete OHC system with valve train.
Identification Mark	'DJ' mark along with 'U' mark embossed in casting. Valve springs fitment groove is deep.

Parts Identification - Engine

UG-I



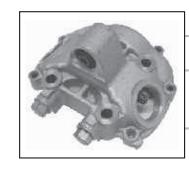
Part Name	Plate Clutch (Pressure Plate)
Part No.	DH 1015 57
Description	Pressure plate are housed in between clutch plates.
Identification Mark	Pressure plate is not wide as compared with regular Width = 14 mm.



Part Name	Guide Plate Clutch
Part No.	DH 1013 74
Description	Guide plate clutch helps in better clamping of clutch assly. on Input shaft.
Identification Mark	Guide Plate clutch has a stainless steel finish with internal splines.



Part Name	Clutch Housing
Part No.	DH 1015 58
Description	Clutch housing holds the entire clutch assembly.
Identification Mark	No slots in clutch housing.



Part Name	Head Cover
Part No.	Cylinder head cover is a part of Cylinder Head Comp
Description	Head cover houses the complete OHC system.
Identification Mark	'DJ' mark embossed in casting.

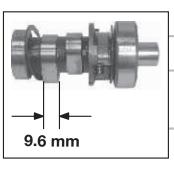


Part Name	Cylinder Head Comp
Part No.	DH 1016 00
Description	Cylinder head comp houses the complete OHC system with valve train.
Identification Mark	'DJ' mark embossed in casting. Valve springs fitment groove is not deep.

Parts Identification - Engine

UG-III

pulsarms-i



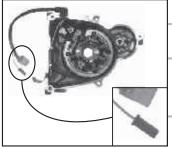
Part Name	Camshaft Assembly
Part No.	DH 1017 03
Description	Camshaft assly is housed in between cylinder head cover & cyl. head comp. It drives the entire valve train assly as per enhanced valve timing.
Identification Mark	Cam (track) width is less. Track width = 9.6 mm.



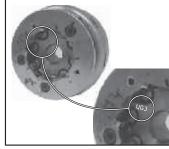
Part Name	Valve Spring Outer
Part No.	DH 1017 30
Description	Valve spring helps in smooth closing of valves without any noise as per enhanced valve timing.
Identification Mark	It is more in length. Length = 43.6 mm. Spring is marked with White oil paint.



Part Name	Valve Spring Inner
Part No.	DH 1017 31
Description	Valve spring helps in smooth closing of valves without any noise as per enhanced valve timing.
Identification Mark	It is more in length. Length = 39.1 mm. Spring is marked with White oil paint.



-	Part Name	Stator Plate
	Part No.	DJ 1110 21
	Description	All Electrical coils like Pick-up, Exciter, Lighting, Battery charging coils with enhanced ignition timing values are fitted on this plate.
	Identification Mark	Stator plate harness neutral coupler is having square shape.



	Part Name	Magneto Assembly (Rotor)
	Part No.	DJ 1110 20
2	Description	Magneto assembly rotor is having analog ignition timing for initial starting for avoiding back kicking.
	Identification Mark	UG-3 mark embossed on the body viewed from tail side.

Parts Identification - Engine

UG-II

1	
12.6	de mm

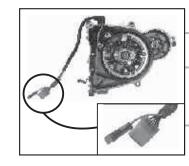
1	Part Name	Camshaft Assembly
	Part No.	DH 1016 17
	Description	Camshaft assly is housed in between cylinder head cover & cyl. head comp. It drives the entire valve train assly.
	Identification Mark	Cam (track) width is more. Track width = 12.6 mm.



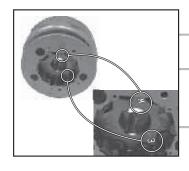
Part Name	Valve Spring Outer
Part No.	DS 1011 11
Description	Valve spring helps in smooth closing of valves without any noise.
Identification Mark	It is short in length. Length = 42 mm. Spring is marked with Blue oil paint.



Part Name	Valve Spring Inner
Part No.	DS 1011 10
Description	Valve spring helps in smooth closing of valves without any noise.
Identification Mark	It is short in length. Length = 38 mm. Spring is marked with Blue oil paint.



Part Name	Stator Plate
Part No.	DJ 1110 04
Description	All Electrical coils like Pick-up, Exciter, Lighting, Battery charging coils are fitted on this plate.
Identification Mark	Stator plate harness neutral coupler is having bullet type terminal.



Part Name	Magneto Assembly (Rotor)
Part No.	DJ 1110 57
Description	Magneto assly rotor is having only Digital Ignition Timing.
Identification Mark	'E' & 'M' mark embossed on the body viewed from tail side.

Dealer Development Center



Parts Identification - Engine UG-III



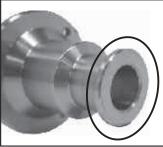
Part Name	Centrifugal Oil Filter
Part No.	DH 1010 64
Description	The centrifugal oil filter body wall thickness has been increased by reducing the internal diameter for getting better strength.
Identification Mark	The centrifugal oil filter has a cut mark on tail end.

Parts Identification



Parts Identification - Engine

UG-II

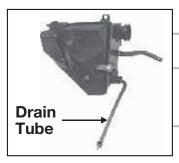


Dealer Development Center

	Part Name	Centrifugal Oil Filter
\setminus	Part No.	DH 1010 64
$\Big)\Big[$	Description	The centrifugal oil filter body internal diameter is more as compared to UG-III filter.
	Identification Mark	The centrifugal oil filter does not have cut mark on tail end.

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Part Name	Carburettor Assembly
Part No.	DJ 1012 32
Description	With enhanced valve timing & to achieve better engine performance the carburettor assembly is retuned.
Identification Mark	On RH side of Carburettor body BS-29, DJ-U3 mark is embossed.



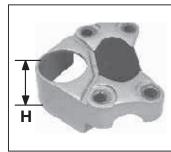
Part Name	Air Filter Assembly
Part No.	DJ 1210 40
Description	The new large volume air filter with fine & corse filter foam is incorporated to provide torque on demand with optimised intake system.
Identification Mark	Drain tube is provided on bottom side to discharge the condensed engine oil.



Part Name	Silencer Assembly
Part No.	DJ 1012 43
Description	The silencer has been further optimised to match the changes done incorporating the new camshaft & air filter assembly.
Identification Mark	Flanged bolt on ExhausTEC is facing on LH side.



	Part Name	Head Light Assembly
ľ	Part No.	DJ 2011 32
	Description	The parking lamps are projected out with a new aggressive look & together with the mask that gives a real 'Phantom' look. H/L facing has been lowered to give balanced looks.
	Identification Mark	Parking lamps are projected out. Provision for mask fitment.



1	Part Name	Handle Holder Assembly
	Part No.	DH 1810 53
	Description	Handle holder assembly height has been increased to accommodate new speedo console.
	Identification Mark	Height of handle holder is more i.e. 31.5 mm.

Parts Identification - Chassis

110 11



	Part Name	Carburettor Assembly
	Part No.	DJ 1210 20
	Description	To meet the requirement of UG-II engine specifications the carburettor is tuned.
3	Identification Mark	On RH side of Carburettor body BS-29, DJ-U2 mark is embossed.



Part Name	Air Filter Assembly
Part No.	DJ 1211 05
Description	A large volume air filter is introduced to provide torque on demand with optimised intake system.
Identification Mark	No drain tube is provided on bottom side to discharge the condensed eng. oil.



Part Name	Silencer Assembly
Part No.	DJ 1011 61
Description	The silencer has been optimised to meet the performance of Pulsar UG-II with ExhausTEC introduction.
Identification Mark	Flanged bolt on ExhausTEC for measuring CO% is facing perpendicular to steering.



Part Name	Head Light Assembly
Part No.	DJ 2011 04
Description	The parking lamps are in line with the head light body line.
Identification Mark	Parking lamps are inline with head light body. No provision for mask fitment.



Dealer Development Center

Part Name	Handle Holder Assembly
Part No.	DJ 1810 38
Description	Handle holder assembly height is been designed low to accommodate twin pod speedo console.
Identification Mark	Height of handle holder is less i.e. 18.5 mm.

pulsarms-i

UG-III

	Part Name	Holder Fork Upper
	Part No.	DH 1810 56
	Description	Holder fork upper cover clamps the fork pipes & handle holder.
	Identification Mark	No bracket for holding speedo console.



Part Name	Brace Fender
Part No.	DH 1613 04
Description	Brace fender gives reinforcement to mud guard & also guides the wire / hose going to wheel sensor & caliper assembly respectively.
Identification Mark	2 nos. of brackets provided for a) Speedometer wire. b) For disc brake hose.



Part Name	Front Number I	Plate Bracket
Part No.	DH 1612 92	
Description		er plate bracket holds the number fitment 3 point mounting is given.
Identification	• 3 holes for m	ounting on lower 'T'.

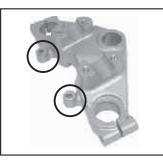


Part Name	Speedometer Assembly
Part No.	DJ 2011 44
Description	Easy to read digital speedometer displaying speed in kmph, odometer displaying distance covered & trip meter displaying distance covered per trip with resetting facility.
Identification Mark	Digital speedometer with analogue type tachometer.



Part Name	Wheel Sensor Unit
Part No.	DK 1011 63
Description	New part added. It is a sensor sensing the vehicle speed and is a non contact type wheel sensor.
Identification Mark	NIL

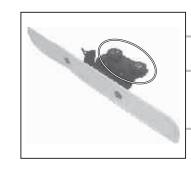
Parts Identification - Chassis



	Part Name	Holder Fork Upper
	Part No.	DJ 1810 17
	Description	Holder fork upper cover clamps the fork pipes, handle holder & twin pod speedometer assembly.
	Identification Mark	To mount the twin pod speedo console there is a bracket provided.



Part Name	Brace Fender
Part No.	DH 1612 58
Description	Brace fender gives reinforcement to mud guard & also guides the brake hose going towards caliper assembly.
Identification Mark	No bracket provided for disc brake hose / speedo cable.



Part Name	Front Number Plate Bracket
Part No.	DJ 1811 11
Description	The front number plate bracket holds the number plate & is mounted with 2 point mounting.
Identification Mark	• 2 holes for mounting on lower 'T'.



Part Name	Speedometer Assembly
Part No.	DJ 1910 48
Description	Twin pod analogue type speedometer displaying vehicle speed, engine rpm, odometer & trip meter. With trip meter adjustment facility.
Identification Mark	Twin pod analogue type speedometer.



Dealer Development Center

Part Name	Case Meter
Part No.	DJ 1510 57
Description	Case meter assly houses the speedometer worm gear & the pinion gear assly to drive speedometer.
Identification Mark	Provision for mounting pinion gear & speedometer gear.

pulsarms-i

UG-III



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Part Name	Control Switch LH
Part No.	DH 2010 48
Description	The switches operate without any physical contact & thus has no wear & tear of parts. Also these have illumination of tell-tale icons through LED's which glows Bluish-White during night driving.
Identification Mark	Coupler colour is White.

UG-III



Part Name	Control Switch RH
Part No.	DH 2010 49
Description	The switches operate without any physical contact & thus has no wear & tear of parts. Also these have illumination of tell-tale icons through LED's which glows Bluish-White during night driving.
Identification Mark	Provision of engine kill switch.



Part Name	Battery
Part No.	DJ 2011 25
Description	A low maintenance battery with a unique vent mechanism that allows only gas / vapours to escape & not the electrolyte. Hence electrolyte level inspection interval is less.
Identification Mark	Battery top side mould has orange colour. Battery has vent valve on RH side.



Part Name	CDI Unit
Part No.	DJ 1110 23
Description	For easy kick starting the ignition timing has been optimised by introducing analogue signaling to CDI unit till 3000 rpm & thereafter digital signaling.
Identification Mark	Two green colour dot marks on CDI unit.



,	Part Name	Side Stand Switch
	Part No.	DH 2010 55
	Description	Side stand switch assembly coupler mounting position shifted hence cable is longer in length.
	Identification Mark	Side stand switch cable length is more.

Parts Identification - Chassis

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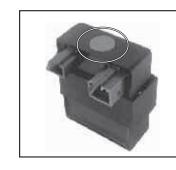
Part Name	Control Switch LH
Part No.	DJ 2010 24
Description	These are conventional switches & operate on physical make & brake mechanism causing more wear & tear of parts.
Identification Mark	Coupler colour is Red.



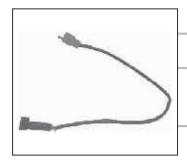
Part Name	Control Switch RH
Part No.	DJ 2010 12
Description	These are conventional switches & operate on physical make & brake type mechanism causing more wear & tear of parts.
Identification Mark	No engine kill switch available.



Part Name	Battery
Part No.	DJ 2010 36
Description	Conventional type of battery with overflow tube mechanism. Electrolyte level inspection interval is more as compared to low maintenance battery.
Identification Mark	Battery top side mould has black colour. Battery have a vent plug on RH side.



Part Name	CDI Unit
Part No.	DJ 1110 17
Description	CDI unit has only digital signaling.
Identification Mark	One green colour dot marks on CDI unit.

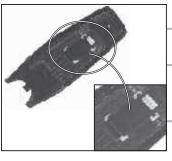


Part Name	Side Stand Switch
Part No.	DJ 2011 05
Description	NIL
Identification Mark	Side stand switch cable length is less.

UG-III



Part Name	Side Stand Magnet
Part No.	
Description	NIL
Identification Mark	Side stand magnet body has green passivation.



Part Name	Seat Assembly
Part No.	DJ 2110 03
Description	For proper locking & proper fitment of tool kit the seat assembly is redesigned.
Identification Mark	No rib at tool kit mounting area. Seat locking stud is located at extreme tail end.



Part Name	Seat Lock Assembly
Part No.	DJ 2110 06
Description	Since seat lock is shifted to tail end of the seat.
Identification Mark	Seat lock cable length is more



Part Name	Gear Change Pedal
Part No.	DJ 1011 49
Description	The gear change pedal has more curved shape for proper placing of foot & to avoid foot fouling with step holder.
Identification Mark	Gear pedal has more curved shape.

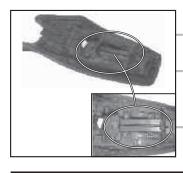


	Part Name	Holder RH Step & LH Step
	Part No.	DJ 1612 57 & DJ 1612 56
	Description	Holder step provided for resting pillion rider's foot.
	Identification Mark	Additional projected step is provided for better aesthetic look.

Parts Identification - Chassis



Part Name	Side Stand Magnet
Part No.	
Description	NIL
Identification Mark	Side stand magnet body is black in colour.



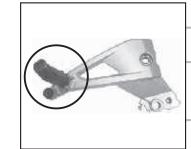
Part Name	Seat Assembly
Part No.	DJ 2110 01
Description	NIL
Identification Mark	Rib at tool kit mounting area. Seat locking stud is located in central part of seat assly.



Part Name	Seat Lock Assembly
Part No.	DH 1610 46
Description	The seat lock is located at center of the seat.
Identification Mark	Seat lock cable length is short as compared to UG-III cable.



Part Name	Gear Change Pedal
Part No.	DH 1011 49
Description	NIL
Identification Mark	Gear pedal has less curved shape.



Dealer Development Center

Part Name	Holder RH Step & LH Step
Part No.	DJ 1611 12 & DJ 1611 11
Description	Holder step provided for resting pillion rider's foot.
Identification Mark	No additional projected step is provided.



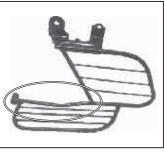


UG-III

pulsarms-i



Part Name	Rear Fender
Part No.	DJ 1612 54
Description	The rear fender is located below the rider seat for arresting dust / dirt & water splashing on.
Identification Mark	On rear fender a step is provided at rear end RH side.



7	Part Name	Saree Guard
ŀ	Part No.	DH 1612 94
	Description	Saree guard is mounted on chassis as a safety feature for arresting the possibility of saree getting entangled into rear wheel while riding the bike.
	Identification Mark	Saree guard has a less curve shape near ladies foot step as compared to UG-II. Saree guard mounting allen bolt is short in length.

Parts Identification - Chassis

UG-II



	Part Name	Rear Fender
	Part No.	DJ 1610 51
	Description	The rear fender is located below the rider seat for arresting dust / dirt & washer splashing on.
	Identification Mark	On rear fender no step is provided.



Dealer Development Center

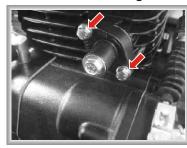
	Part Name	Saree Guard
	Part No.	DJ 1612 15
	Description	Saree guard is mounted on chassis as a safety feature for arresting the possibility of saree getting entangled into rear wheel while riding the bike.
	Identification Mark	Saree guard has more curve shape near ladies foot step as compared with Pulsar UG-III. Saree guard mounting allen bolt is more in length.

Cyl. Head Bkt. Mtg. Bolts



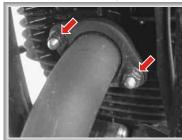
M8: 2.2 Kg.n

Chain Tensioner Mtg. Bolts



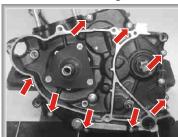
1.1 Kg.m

Silencer Mounting Nuts



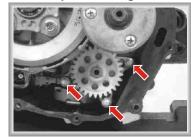
1.4 ~ 1.9 Kg.m

Crankcase Joining Bolts



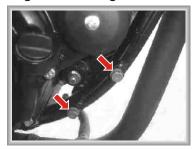
1.1 Kg.m (Loctite 243)

Oil Pump Mounting Bolts



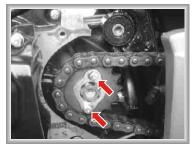
1.1 Kg.m (Loctite 243)

Engine Mounting Bolts



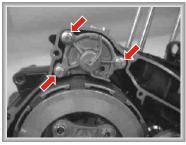
M8: 2.2 Kg.m M10: 2.4 Kg.m

Output Sprocket Bolts



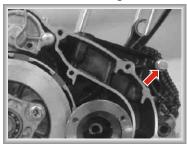
1.1 Kg.m (Loctite 243)

Balancer Gear Cover Bolts



1.0 ~ 1.1 Kg.m (Loctite 243)

Crankcase Joining Bolt



1.1 Kg.m (Loctite 243)

Centrifugal Oil Filter Nut



5.5 Kg.m

Engine Mounting Nuts



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

Silencer Mounting Bolt



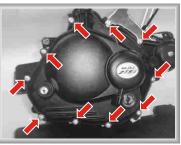
3.5 ~ 4.0 Kg.m

Crankcase Joining Bolt



1.2 Kg.m (Loctite 243)

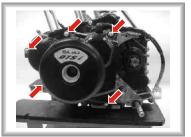
Clutch Cover Bolts



1.1 Kg.m

Rotor Cover Bolts

Pulsar DTS-i UG-III-180cc Training Notes



1.1 Kg.m

Clutch Nut (LH Threads)



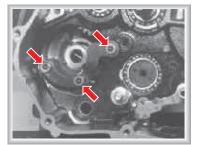
5.0 Kg.m

Camshaft Sprocket Allen Bolt



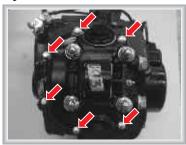
1.4 Kg.m (Loctite 243)

Kick Guide Allen Bolts



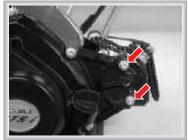
1.2 Kg.m

Cylinder Head Cover Bolts



3.5 Kg.m

Starter Motor Mounting Bolts



1.1 Kg.m

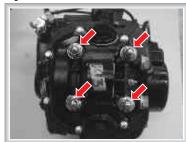
Spark Plugs (2 Nos.)



1.4 Kg.m

Cylinder Head Cover Nuts

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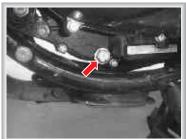
1.0 ~ 1.5 Kg.m

Rotor Mounting Bolt



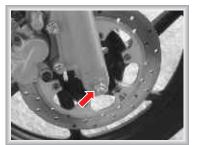
4.5 Kg.m

Drain Bolt



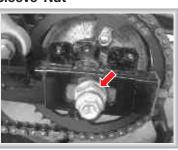
2.5 Kg.m

Front Axle Nut



4.0 ~ 5.0 Kg.m

Sleeve Nut



7.0 ~ 8.0 Kg.m

Steering Top Cap Bolt



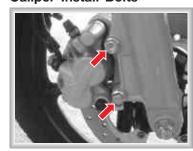
3.5 Kg.m

Lower Clamp Bolt



2.5 ~ 3.5 Kg.m

Caliper Install Bolts



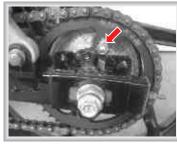
2.2 ~ 2.8 Kg.m

Rear Axle Nut



8.0 ~ 10.0 Kg.m

Rear Sprocket Mtg. Nut



1.8 ~ 2.5 Kg.m (Loctite 243)

Stg. Stem Nut (slotted)



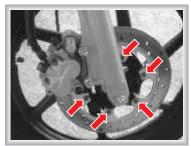
0.5 Kg.m

RSA Mounting Dome Nut



3.5 ~ 4.0 Kg.m

Brake Disc Allen Bolts



0.9 ~ 1.1 (Loctite 243)

Torque Rod Nut



3.0 ~ 4.0 Kg.m

Handle Bar Holder Bolts



2.0 ~ 2.2 Kg.m

Upper Clamp Allen Bolt



1.8 ~ 2.0 Kg.m

Swing Arm Pivot Nut



8.0 ~ 10.0 Kg.m

Banjo Bolt Caliper



2.2 ~ 2.8 Kg.m



Fitting of Oil Seals and Bearings:

Crankcase RH (Clutch Side)
Use Bearing Driver set (P. No. 37 1030 61)

Bearing for 'Input Shaft Assembly'



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

Fit:

• Bearing for 'Output Shaft Assembly'



Crankcase LH (Magneto Side)

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

Fit

Bearing for 'Output Shaft'



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

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. Shield of brg. must be on crankcase side/protruding lug side.



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

Fit:

• Bearing for 'Body Balancer gear Assembly'



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

π.

- 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

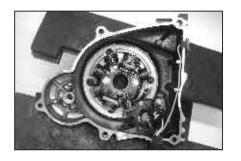
Fit:

Oil seal for 'Kick Shaft Assembly'



Fit:

• Oil seal for 'Clutch Lever' on 'Clutch Cover'

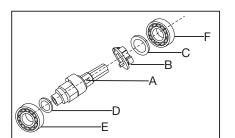


Assembly of Sub assemblies:

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'



Dealer Development Center

Camshaft Assembly

Fit:

- Parallel Pin (A)
- De-compression Mechanism (B)
- 'Washer' (C)
- Washer (D)



Using Arbour Press

Fit:

- 'Bigger Bearing' (E)
- 'Small Bearing' (F)

Note: Apply thin layer of oil on sliding surfaces of parts for smooth fitting.

pulsarms-i



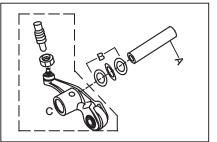
Head Cover

Fit:

- Roller rocker arm
- Tappet Screw
- Tappet Nut
- 20 Rollers in cage outer

Note

- There are 2 cages in roller rocker arm each cage holds 20 rollers
- Inner cage in Absent
- Multipurpose grease is to be applied in outer cage to hold the roller firmly while assembling

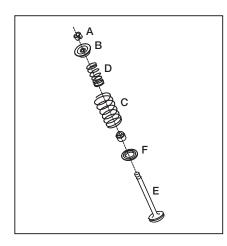


Assembling Head Cover

Fit:

- Roller Rocker Arm
- · Set of Plan and Wave Washer
- Rocker arm shaft
- Gaskets
- Dummy Plugs

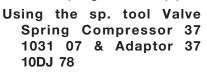
Note: Repeat the same procedure for fitment of other roller rocker arm



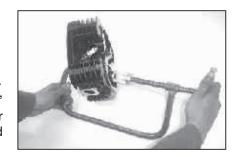
Cylinder Head

Fit:

- Valve steam seals
- Slide the 'Valve' from below.
- Place the 'Valve Springs' (C&D) (Inner and outer closed coiled ends placed at the bottom side)
- Valve Spring Retainer' (B)



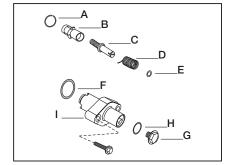
- Press the valve springs
- Fit the cotter valves (A) & release the special tool





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

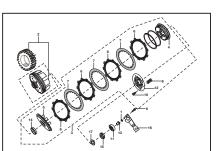
Note: Ensure that there is no valve leakage. If required pour the petrol in intake and Exhaust manifold and observe leakage at valve head.



Chain Tensioner Assembly

Fit:

- 'O' ring (F) in the body (I)
- 'Thrust Washer' (E)
- 'Spring' (D)
- 'Cap' (B) along with 'Screw Internal' and 'Screw External' (C) (Keep the 'Spring' and 'Screw Terminal' fully compressed inside)
- 'Circlip' (A)



Clutch Assembly

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

Fit:

- 'Plain Washer' in 'Clutch Center' / 'Clutch Hub'
- · 'Bellivelli 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'

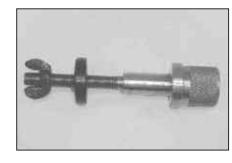


Using Special Tool T1011168

Align the clutch assly into the clutch housing.

Fit:

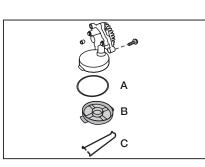
- 'Spacer'
- 'Clutch Assly'



Note:

- Ensure concentrity of 'Thrust Plate' w.r.to 'Clutch Wheel', 'Clutch Center', 'Clutch Housing'. Using Special Tool -
- The Special Tool can also helps in preventing the cracking / Bending of 'Thrust Plate' while removing and refilling the thrust plate.

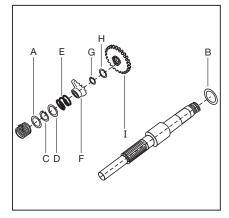
Pulsar DTS-i UG-III-180cc Training Notes



Oil Pump

Fit:

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



Kick Shaft Assembly

Fit:

- 'Pinion Complete Kick Starter' (I)
- 'Washer' (H)
- 'Circlip' (G)
- 'Ratchet Kick Starter' (F)

Note: Match the dot mark of 'Ratchet Kick Start' with respect to 'Spindle Kick Start Assembly' and then slide 'Ratchet Kick Starter' (F) on 'Spindle Kick Start'

- 'Spring Kick Starter Ratchet' (E)
- 'Washer Thrust' (D)
- 'Circlip' (C)
- 'Washer Thrust' (B)
- 'Thrust Washer' (A)

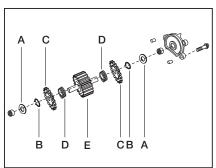


Assembly Balancer Idler Gear Bearing Using Bearing Driver set (P. No.: 37 1030 61)

Fit

• Needle roller bearings in crankcase RH and Cover

Note : Apply oil on bearing OD before pressing bearings for smooth bearing



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' & the other end of spring should butt against the lug on 'Scissor Gear'



Loading the assembly Balancer Idler Gear

Using Special Tool - Balancer Gear Holder 37 10DJ 63

- Slide the 'Assembly Balancer Idler Gear' in special tool (A)
- Rotate the 'Scissor Gear' anticlockwise till the lug contacts the torsion spring.
- Using a marker, mark the 'Balancer Idler Gear' and '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'.

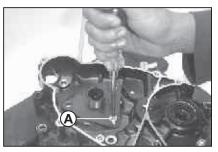
Note: Keep this Assembly balancer idler gear in loaded condition with special tool.



Gear Complete Starter Counter Assembly Using Arbour Press

Fit:

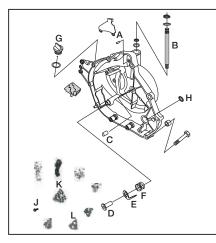
'Needle Roller Bearing'



Crankcase LH (Magneto Side)

Fit:

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



Dealer Development Center

Clutch Cover

Fit:

- Kick shaft oil seal (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

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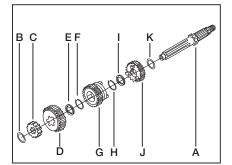


- External lever
- 'Bolt'
- Spring joint 'A' (F)
- 'Plunger Plate' (E)
- 'Plunger oil (D)
- · 2 'Dowel Pins'
- 'Grommet (M)
- Oil feeler plug (G)

Apply loctite 243 to all damper fitment bolts.

 $\mbox{\bf Note}$: Ensure fitment of set of dampers and plate before fitting the above.

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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)



Fit: from LH side of shaft

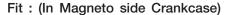
- Gear 5th driven (M)
- Bush (N) with shoulder ring
- Gear 2nd driven (L)
- washer (K)
- Circlip (J)

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
- Gear1st driven (B)
- Thrust washer (A)

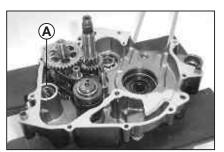
Engine Assembling

Engine Central Part



- · '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'
- 'Kick Spring' (A)
- 2 Dowels
- · 'Gasket'



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:

Crankshaft

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



Fit:

- Crankcase RH
- Bolts (LH & RH Side)



Clutch Side

Fit:

- 'Parallel Pin'.
- · 'Sprocket Cam Drive'
- 'Cam Chain'

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

Pulsar DTS-i UG-III-180cc Training Notes

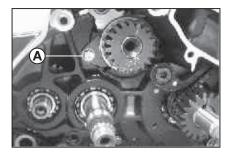


Fit:

- 'Square Key
- · 'Primary Gear'.

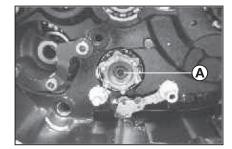
Note: Ensure fitment of 2 'Plain Washers' on either side of 'Kick Shaft Assembly'.

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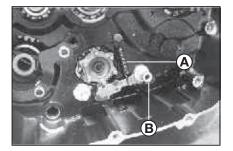
Fit :

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



Fit:

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



Fit:

• 'Spring' (A)

Note:

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



Fit:

'Gear change lever assly'



Fit:

- · 'Gear kick Idler'
- Stoppe
- Stopper bolt (A) (Use loctite 243)

Note: Ensure loctite 638 on 'Kick Guide' allen bolts, if removed



Fit:

- Washer
- · 'Kick Shaft Assembly'
- Washer

Note:

- 1. Ensure fitment of 2 'Plain Washers' on either side of 'Kick Shaft Assembly'
- 2. Refer Skill tip for fitment procedure on page no....



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 assly mark w.r.t crankcase mark



Fit:

Clutch housing

Note:

- Ensure perfect matching of gear alignment marks w.r.to crankcase marks.
- 2. Refer the skill tips section for understanding procedure for gear alignment marks given on page no 52.



Fit:

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



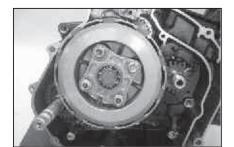
Using Special Tool - Primary gear holder 37 10DJ 28 & Special Nut 37 10DJ 43

Fit:

- 'Spacer'.
- 'Clutch Assembly Complete'
- 'Washer'
- 'Special Nut'







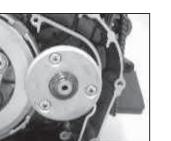
Fit:

· 'Bearing with plunger'.



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

- 'Centrifugal Oil Filter'.
- Washer
- 'Special Nut'.



Using Special tool: Primary gear holder 37 10DJ 28
Fit:

...

- · 'Gasket'
- 3 screws
- Cover



pulsarnis-i



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 effeciency.



Fit:

- 'Clutch Cover'
- 10 'Bolts'
- · 'Bracket clutch cable'
- 'Starter Motor Cap'
- 'Screw'
- · 'Kick starter lever'

Note: When assembling the 'Clutch Cover' always remember that the entry of 'Kick Shaft' into the 'Clutch Cover' is the tightest as the tolerances are tightly controlled. One should concentrate on aligning the kick shaft bore and kick shaft first, rather than concentrating on the possibility of the plunger falling down. When working on vehicle It is advisable to loosen the 'RH Rider Footrest' which helps in the above and helps also in loosening and tightening of the 2 M6 bolts partially masked by the 'Footrest'.



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 starter counter gear.

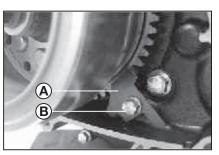


Fit:

- 'Woodruff key'
- 'Magnet along with gear starter clutch'.

Note:

- Always apply a thin layer of grease to the roller bearing of gear starter clutch.
- Add few drops of oil on OD of gear starter clutch for lubrication.



Fit :

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





Using Special Tool: Rotor Holder H6 0721 00

Fit:

- 'Washer'
- 'Bolt'



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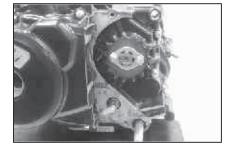
Fit:

- '2 Dowel'
- · 'Gasket'



Fit:

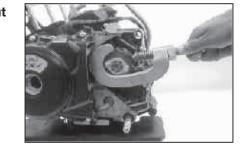
- · 'Magneto Cover'
- 5 'Bolts'
- Neutral switch coupler



Using Special Tool: Output sprocket holder 37 1030 53

Fit:

- 'Bush'.
- · 'Sprocket'.
- 'Plate drive Sprocket'.
- 2 'Bolts' (Use loctite 243).





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 their is chance of ring snap falling down while fitment.



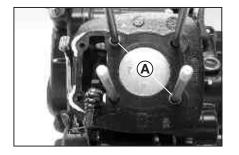
Using Special Tool: Piston Ring Holder 37 10DJ 30

Fit:

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



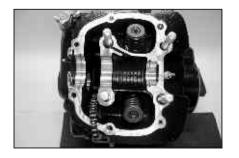
Note: Apply thin layer of oil in cylinder bore and piston assly when sliding inside for ease in fitment.



Fit:

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

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



- 'Cylinder Head Assly'.
- 2 Dowels



- 'Spark Plug Sleeve'.
- 'Grub Screw'.
- 'Spark Plug'

Note: Before fitting the sleeve spark plug apply thin layer of molybdenum disulphide 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'



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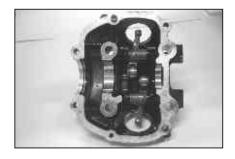
Note:

- Ensure the sprocket marks 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.



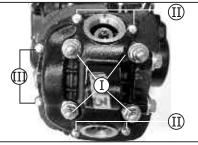
Fit:

- · '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

IInd: 4 Long bolts of Head CoverIIIrd: 2 Longest bolts of Head cover

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



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



Adjust:

• Check and adjust the tappet clearance

Inlet Valve: 0.05 mm

Exhaust Valve: 0.1 mm





Note: Always ensure that the piston is at the end of compression stroke and 'T' is seen from 'Timing Inspection Window' at generator cover. When adjusting tappet clearance.

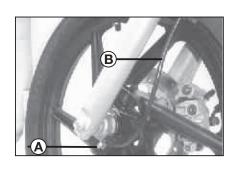


Dealer Development Center

Fit:

- Tappet cap with 'O' ring
- · Cap magneto cover

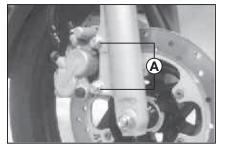




Remove:

• Speedometer sensor cable from wheel (A) and from fender

Skill Tip: Keep it aside safely



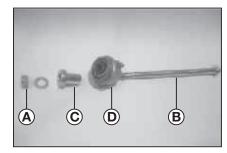
· Caliper assembly front mounting bolt (A)

Skill Tip: Place wedge between pads. Remove front brake lever.



Remove:

- Front axle self locking nut(A)
- Front axle (B)
- Distance piece (C)
- Wheel sensor (D)
- Pull out front wheel assly



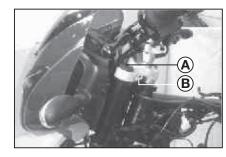
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Remove:

- 2 allen bolts (A) (on either side)
- Front mudguard assembly

Skill Tip: Painted parts should be handled with utmost care to avoid scratches

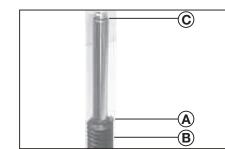


- Rubber grommet (A)
- 2 Allen bolts (B)



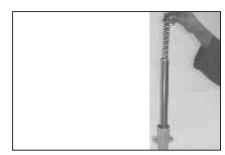
Remove:

- Loosen bolt (C)
- · Pull down fork leg assembly by slowly rotating it
- Similarly carry out the same procedure to take out other side



Remove:

- Bellow clamp (A)
- Bellow (B)
- Bolt fork (C) from the top of front fork assembly along with the 'O'



Remove:

- Seat fork spring (8 Allen bolt)
- Spacer tube
- Washer
- Spring
- Fork oil in a container
- The dust seal and the snap ring over the oil seal

Recommended Oil Capacity per fork tube

Approx 145 + 2.5 ml. (Drain and refill)

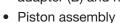


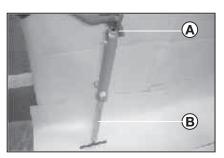
Using Special Tool: Fork for Cylinder Holder Handle -37 1830 06 & Adapter for Fork

- 37 1830 11

Remove:

• Allen screw that is located at bottom with the help of allen key (A) by holding the fork piston with the help of a adapter (B) and holder

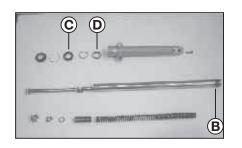




Using Special Tool: Front Fork Tube Extractor - 74 9310 15 Remove:

- The inner tube assembly will not come itself because of two DU bushes fitted. One bush is fitted on inner tube and other bush is fitted in outer tube.
- Fit the front fork tube on the vehicle by assembling the special tool (A) and lock it at number plate mounting screw.
- Rotate the special tool handle to seperate the inner tube from outer tube as shown in the fig.

- Fit the fork tube without touching head light fairing
- Rotate special tool without hitting number plate.



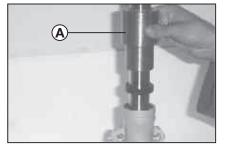
Remove:

- Inner tube (B) of front fork with DU bush
- Oil seal (C) for outer tube
- Guide bush washer (D)
- Spacer
- Bushing

Pulsar DTS-i UG-III-180cc Training Notes Dealer Development Center Dealer Development Center Pulsar DTS-i UG-III-180cc Training Notes









• Place Fork cylinder set in the inner tube, cylinder base & place it in outer tube. Hold the piston with the help of special tool.

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- Bolt it from lower side of outer tube with Allen key.
- Guide bush, washer
- Oil seal using special tool (A)
- Snap Ring
- Dust seal
- · Spring and fill oil.
- · Seat fork spring and Collar fork.
- Bol

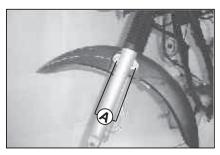
Similarly carry out the same procedure to assemble the other fork.

Skill Tip: The Part Name & No written on oil seal should face up side i.e. towards technician while fitting.



Fit:

- · Slide the front fork assly in the fork holder
- Allen bolts
- Bolt fork at the top end
 Similarly carry out the same procedure for fitment of the other shock absorber.



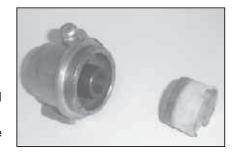
Fit:

- Front fender
- 2 Allen bolts (A) (2 on either side)



Fit:

- Front wheel assembly.
- Front axle (A)
- Tighten self lock nut
- Calliper assembly and tighten 2 bolts
- Speedometer sensor cable connection.



Caution: Don't apply excess grease or any other lubricant on the wheel sensor case.



Feed aperature Compensation operature Secondary seal Brake Lever Piston Compensation Compensation Chamber Primary seal Spring

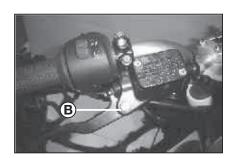
Master Cylinder Dismantling and Assembling

Dismantling:

Master Cylinder

Working:

• Remove front brake switch and its connection (A)



Remove front brake lever by removing the nut and pivot bolt (B)

When the brake lever is in idle condition, there is no pressure inside

the cylinder. The feed & compensation aperture are open & connect

When the brake lever is operated, the push rod pushes the piston inside the cylinder. A small quantity of fluid returns from pressure

chamber to reservoir before primary seal completely blocks the feed

aperture. Once this condition is achieved, any force exerted on the

When the brake lever is released, the piston is pressed back quickly

by the return spring to its idle position. Due to this, a vacuum is generated in the pressure chamber & the fluid in the compensation chamber flows to pressure chamber through the primary seal, the

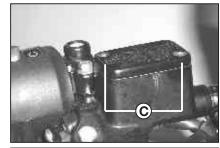
external edges of which flex approximately to allow fluid to pass to pressure chamber. After return of the master cyl. piston, the caliper

retracts (after some relative time delay). This causes the fluid in the pressure chamber to return to the reservoir through feed aperture.

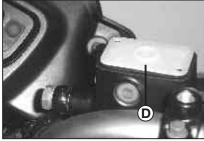
the pressure chamber & compensation chamber to reservoir.

lever is transformed into pressure in the brake circuit.

• The push rod boot (One end of the boot is held in a groove in the push rod and its other (larger) end is held in a groove in the cylinder body).

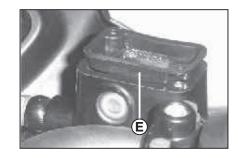






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- Nylon Cap (D)
- Rubber diaphragm (E)

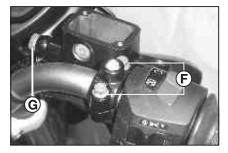


Pulsar DTS-i UG-III-180cc Training Notes





 Brake fluid from the reservoir with the help of syringe/syphon pump



- Master cylinder along with hose assembly from handle bar by removing the 2 flanged 8 bolts (F) on the clamp.
- Brake hose from master cylinder outer by removing banjo bolt (G)
- Wipe out clearly the outer surface of master cylinder.

Skill Tip:

 Ensure that there should not be any spillage of brake fluid on painted parts

Safety Tip:

• Take care of your eyes while working with brake fluid.



- Hold the master cylinder in a soft jaw vice.
- Remove circlip with the help of a plier, by pressing the piston slightly inside the bore, with a nylon or wooden rod.
- Take out the piston assembly along with the Return spring by pulling it out.

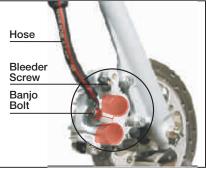
If transparent window in the cylinder body for level indication needs replacement (due to damage, etc.) proceed as follows:-

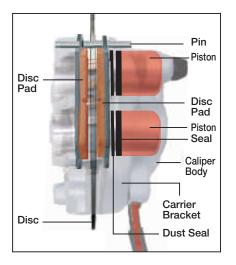
- · Remove Lock Ring on the window with screw driver
- · Remove window and 'O' ring.

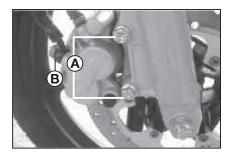


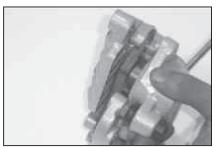
- Never allow mineral oil to come in contact with seal or other rubber parts of disc brake, since it will cause damage to these parts.
- Free play at the end of the lever is provided to ensure that in the free condition, the piston does not remain in the pushed condition, This ensures that there is no pressure in the system when the brake is not applied.











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Caliper Assembly

Working:

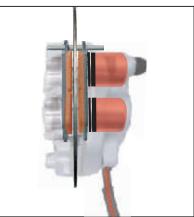
In the brake released condition, the brake fluid inside the caliper is at atmospheric pressure and the disc rotates freely as the pads do not press against it.

When the brake lever is operated, the pressure generated in the hydraulic circuit acts on the caliper pistons. The caliper in turn push the friction pad on the side of the caliper body against the rotating disc. The friction pad on the other side of the disc also presses against the disc due to reaction force on caliper body. Thus both the friction pads press against the disc, thereby generating braking torque.

When the lever is released, the pressure in the hydraulic circuit return to atmospheric level. The friction pads return to idle position due to return of the caliper pistons which is due to the spring action of the seals.

When the pads wear, the pistons move further towards the Disc during brake application, but after release of pressure they retract only to the extent allowed by the spring action of the seal. The pistons therefore take up new positions in idle condition, and thus provide automatic adjustment to compensate for pad wear. Due to this reason, there is no need for free play adjustment in the Brake Lever in Master Cylinder.





Dismantling of Caliper

Dismantling the Assembly

- Remove caliper mounting bolts (A)
- Remove banjo bolt (B)
- Remove caliper from fork

Removal of Pads:

- Remove the pad retaining body's Allen bolt
- Remove the pads
- · Remove the pad spring from the caliper body with a screw driver

Piston and Piston Seal Removal:

- Wipe out cleanly, the outer surface of the caliper.
- Remove LH pad retaining case by removing allen bolts
- Put a wooden wedge in between the piston and caliper.
- Blow compressed air into cylinder through benzo bolt hole where the brake hose was fitted, with the air pressure, the piston will be pushed out of cylinder.







Warning: Do not apply high pressure compressed air, which will cause the piston to jump out of the cylinder. The piston should be taken out gradually with moderately compressed air. Care to be taken not to damage the sealing surface of the inlet port while applying air pressure.

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- Do not place your finger in front of the piston while applying compressed air to push it out.
- Remove piston seal using a thin part like a thickness gauge, etc.

Caution: Be careful not to damage inside (bore side) of the cylinder.

Skill Tip: While assembling use loctite paste 243 on allen bolt for mounting LH pad retainer case.

· Assemble the caliper assly in reverse order of dismantling



Air Bleeding of Disc Brake System:

- For air bleeding from front Hydraulic brake system first top up the master cylinder with hydraulic oil.
- Operate the brake lever slowly in order to get filled the oil in the circuit.
- Connect transparent tube to the bleeder screw at caliper or syphon pump
- Operate the brake lever and keeping in pressed position loosens the bleeder screw so that some oil escapes with the air bubbles.
- Keep on operating the brake lever till the air bubble escape out completely through bleeder screw, and top up the master cylinder if required.
- Once the air escapes out from the hose pipe the brake lever meets resistance, which indicates completion of air bleeding
- After completing the bleeding, top up the master cylinder up to the maximum level mark.
- Also syphon pump can be used for air bleeding

Brake Fluid for Disc Brakes

Always use only recommended brake fluid from sealed container to ensure durability of the system. Never reuse brake fluid removed from a system.

Important points on 2 wheeler disc brake system :

- 1. Since front disc brake is more powerful than drum brake, apply front and rear brake together gradually. Avoid braking during turning.
- 2. Use only DOT 3 or DOT 4 brake fluid from a sealed container from recommended makes.
- 3. Do not apply mineral oil for cleaning any brake parts. Use only brake fluid for cleaning the seals.
- 4. Do not apply mineral based grease on bore, pistons and seals of master cylinder and caliper. Apply only recommended assembly fluid.
- 5. Do not use cotton cloth to wipe cylinder bore, fibres of cloth will remain in cylinder bore surface.
- 6. Ensure dust free condition during assembly.
- 7. Do not polish friction disc with sand paper, as hard particles deposited in the lining may damage steel disc.
- 8. While filling the reservoir after bleeding, ensure that drops or splashes do not remain on the painted surface or plastic surface, since brake fluid is corrosive.

Inspection and Maintenance Frequency

Check Points



	1 7
Brake Fluid Level / Leakage	Inspect during every service every 2500 Km refil up to uppe limit (till step on the inner side o the reservoir) if level is low.

Frequency

Replace brake fluid every two years. (In severe operating conditions, replace in a year.)



Brake Lever Operation Inspect during every service/every 2500 Km



Brake Pads

Inspect during every 2500 Km thereafter for wear and condition of linings.



Brake Disc Inspect during every 5000 Km. and every 2500 Km thereafter.

Check for excessive scoring marks on friction surface of disc, and run out.



Master Cylinder & Caliper Inspect every 5000 Km for leakage.



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Brake Hose Inspect for leakage & damage during every service / every 2500

Km.

Battery

Technical Specification:

Type & Capacity	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 above 10°C
Initial charging duration	10 ~ 15 hrs
Initial charging current	0.9 to 1 Amp



Initial Charging Procedure

- 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 below10°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.

Checking the Specific Gravity

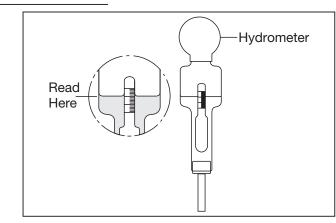
The charge condition of the individual cell can be checked by measuring Sp. gravity of electrolyte in that cell. The specific gravity of electrolyte can be checked by using Hydrometer having small diameter spout.

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 inside the box provided on floor board. Fasten the battery firmly with bracket & allied fasteners.

- c. Connect cables to the positive and negative terminals properly. Reverse connections will damage the charging system permanently.
- d. Always connect the "negative (earthling) terminal" at last.
- e. Clean the 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 once in a year. In case battery in discharged and needs to be charged using battery changed procedure is as follows:

- Remove battery from vehicle
- Clean battery throughly

- Remove vent plug strip
- Top up level with distilled water in between Min and Max. level
- Connect battery to charge and 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.
- Voltage should be 12.5 volts and 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 changer.
- Fit vent plug strip firmly.
- · Connect battery on to vehicle.
- Apply petroleum jelly on to the 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.
- 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

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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.

Switches:

a. Front Brake Light Switch Inspection:

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

	Brown	Blue
Lever Pressed	•	•
Lever Released	•	•

b. Rear Brake Light Timing Inspection:

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

	Brown	Blue
Pedal Pressed	•	•
Pedal Released	•	•

c. Fuel Level Indicator:

- i. For knowing then quantity of fuel inside the fuel tank at a glance, is provided on Speedo consle. The fuel gauge works on the principle of 'variable resistance'. The fuel gauge works on D.C supply.
- ii. For checking the resistance across the sender and across the gauge, make the connections verify the readings, make the connections verify the readings as tabulated below

Connection	Tank (Float)	Resistance
White / Yellow Meter	Full (Highest position)	4 - 10
Black / Yellow	Empty (Lowest position)	95~105

d. Neutral Switch:

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

	Brown	Blue
'ON' (Vehicle in neutral)	•	•
'OFF' (Vehicle in gear)	•	•

e. Ignition Switch:

	Brown	White	Black / White	Black / Yellow
'OFF'	•	•	•	•
'ON'	•	•	•	•

g. Stator Plate Coils Inspection:

- i. Disconnect stator plate coupler
- ii. Set multimeter on ohm range. (Ohm Meter)

• Pickup Coil Resistance :

Range	Connections		Reading
2 K	Meter +ve	Meter -ve	200 <u>+</u> 22
2 N	White/Red	Black/Yellow	ohm

• Excitor Coil :

Range	Meter +ve	Meter -ve	Reading
200	Red	Black/Yellow	14 <u>+</u> 1.4

• Battery Charging Coil:

Range	Meter +ve	Meter -ve	Reading
200	Blue/White	Blue/White	1.3 <u>+</u> 0.13

• Lighting Coil:

Range	Meter +ve	Meter -ve	Reading
200	Yellow/Red	Black/Yellow	0.7 <u>+</u> 0.07



CDI Unit and H. T. Coil Inspection:

- CDI unit can be checked using OK H.T. coil on Electronic Test jig
- Similarly H.T. Coil can be checked using OK CDI unit on electronic Test jig

H.T. Coils: (Inspection Using Multimeter)

- Measure the primary winding resistance as follows
- Connect the hand tester between the coil terminals.
- Measure the secondary winding resistance as follows
- Remove the plug cap by turning it counter clockwise.
- Connect the tester between the spark plug leads.
- Measure primary winding resistance.
- Measure secondary winding resistance.
- · If the valve does not match as per, replace the coil.

Primary Winding	0.40 to 0.49 Ohms
Secondary Winding	4.23 to 5.17 K Ohms

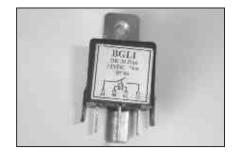
- If the meter reads as specified, the ignition coil windings are probably good. However, if the ignition system still does not perform as it should after all other components have been checked test replace the coil with one known.
- Visually inspect the secondary winding lead.
- If it shows any damage, replace the coil.



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.



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Relay (Inspection Using Multimeter):

Coil Resistance	Meter +ve	Meter -ve	Reading
X 200 Ohm	Brown	Green/White	55+5.5 Ohm

· Also this relay can be checked on electronic Test jig.

Rectifier & Regulator Assembly:

AC Voltage Measurement:

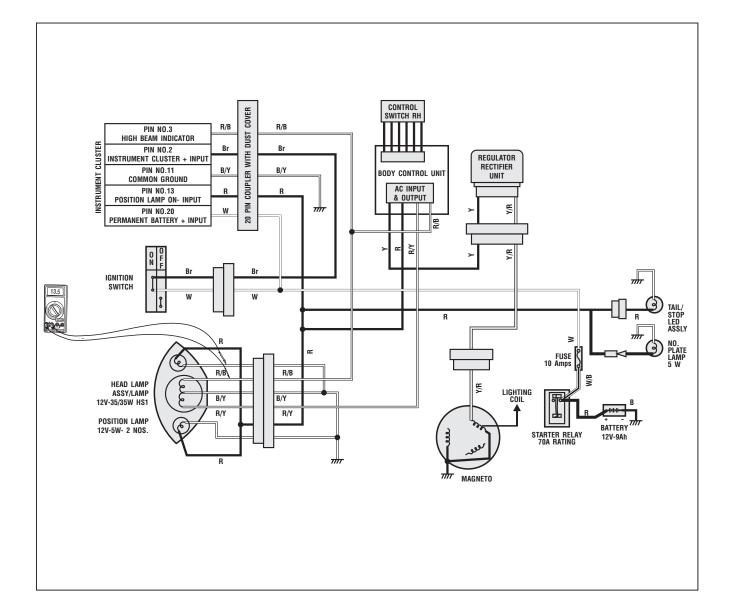
To measure AC voltage, open the headlight housing. Start the engine and set it at 4000+25 RPM. Ensure that the headlight, tail light, Speedometer light are 'ON' and the dipper switch is at 'Hi beam' position.

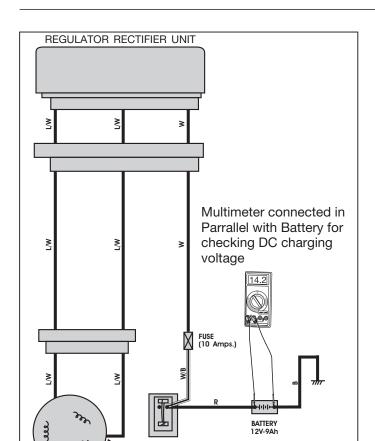
Connect AC voltmeter in parallel across the AC circuit load by connecting the +ve meter lead to red/black lead from the dipper switch and the -ve meter lead to ground.

Measure AC lighting voltage at 4000±25 RPM. The voltage should be 13.5±0.5 V. Stop the engine. Disconnect the meter leads. Reassemble the headlight housing.

Meter Range	Specification at 4000±25 RPM		
AC 2o Volt	13.7 <u>+</u> 0.3 V		

AC Lighting Circuit:

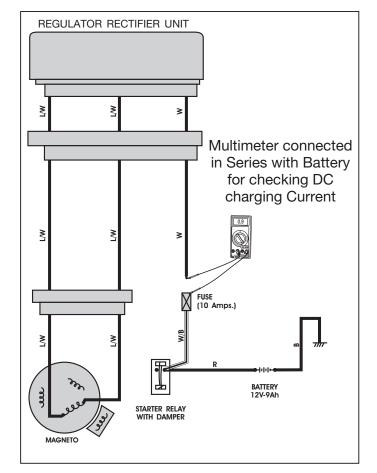




DC Charging Voltage Measurement: (Use fully charged battery while measuring)

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 4000±25 RPM
DC 20 Volt	14 ~ 15 V



Battery DC Charging current: (Use fully charged battery while 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 2 A max stop the engine and disconnect meter leads. Connect the RR unit and battery

Meter Range	Connection		Specification
	Meter +ve White/Black terminal of R/R	Meter -ve Battery (+) lead (White)	2 A max at 4000+25 RPM

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MAGNETO



Speedometer/Tachometer 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 testing mechanism.
- A red LED indicator showing low fuel level inside the fuel tank.
 And also indicates a flashing signal when engine RPM exceeds above 9000 RPM. Thus ensuring safety of rider and engine.
- Digital Displays for
 - Odometer
 - Trip meter (Unique facility of resting the trip meter 1 & 2 respectively)
 - Fuel level indicator
- A row of indication LED displaying functioning of
 - Neutral Light
 - High beam
 - Turn signal
 - Side stand ON

with a unique Day-Night mode functioning feature for riders convenience and safety.

Note : The speedometer console has a unique builtin memory logic function which stores all the data like distance covered etc. in its memory even if DC supply is disconnected.



Vehicle Speed Sensor

 Non Contact Wheel Sensor: In LCD speedo console there are no physical moving parts as sensing of wheel speed is through a Non Contact hall effect Sensor.

The hall sensor is a electronic switch which operates due to magnetic field. The sensor has 3 wires supply, earth and output whenever during rotations of wheel magnet passes through sensor. A signal is given to speedometer through a wire to speedometer which displays speed of vehicle in km/hr.



Tail 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 they consume very less power. i.e LED consumes 3W power against 21 W power of a conventional brake lamp. When you operate light control switch to glow but intensity will be very low. As soon as you operate brake switch the brightness of LED increases to size 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.

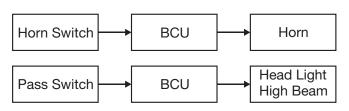
Back-lit, Non-contact Handlebar switches:
 The control switches on both sides of the handlebar are conventional to look as, in terms of switch positioning. The main features of these are

Operation is based on non-contact

- Switching is done without physical contact
- There is no wear and tear
- Life would be equal to that of the bike itself.
- The operational force required for the switches has been kept as low as possible to give a light feel and reduce fatigue for the rider.

Working of Switches: These are non-contact type switches, so instead of contact set it consists of hall sensor and magnet combination.

Whenever any handlebar switches is pressed the hall sensor gets operated and its output signal is gives to a BCU (Body Control Unit) and BCU further calculates and gives precise signal to the respective unit for functioning. e.g.



• Self Indicator Switch: In the conventional type of switches the rider has to manually depress the Turn Indicator knob or return the Turn indicator knob to its non-signalling position.

In UG III there is no separate press to off buttons for cancelling side indicator signal. This feature is achieved by providing a self cancelling hall sensor and magnet fitted on steering column assembly.

This cancellation signal is processed through BCU and then side indicators are switched off. The self cancelling feature automatically turns of the indicator of the indicator under 3 conditions.

- The first indication is when after the turn has been completed and the handlebar comes to a straight ahead position, the indicators switch off by themselves.
- The second condition is when the rider has selected a right or left turn but not physically done the turn and is continuing to go straight ahead and may be unaware of the enabled turn signal too. A timer function gets enabled which switches off the indicators after a pre-set time.
- The third condition is when the rider has selected for eg. a left turn, but changes his

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mind and wants to continue straight ahead. The rider has only to re-select the opposite side indicator again to cancel the previously selected indication. (There is no depress to cancel function)

The other feature which has been incorporated in the switches is the illumination of the tell-tale icons. The illumination is backlit by LED's which again are long-life and have a pleasant bluish-white glow to them. All the icons like the turn indicators, low beam, high beam, horn, starter etc. glow when the Parking or Headlight switches are put ON.

Checking of switches on handle bar: As like in conventional switches, since switch is not having any electrical contact, We can't check the switch functioning (Continuity) by multimeter. But it can be checked on electronic test jig.

• Clutch Switch: The clutch switch has 3 wires and it has contact configration of

This vehicle is not having interlock relay Instead its working is taken care of by clutch

		Light Green	Yellow/Green	Black/Yellow
	OFF Clutch Lever Released	•	•	•
	ON Clutch Lever Released	•	•	•

- Body Control Unit (BCU): This is a sealed Electric Control Unit located inside head light assly.
 - In case of overload or short circuit, BCU has a short circuit/overload prevention facility.
 - This vehicle does not have a flasher. The flasher operation is carried out by BCU only.
 - In case of failure of one of the filaments of head lamp. The BCU will automatically changeover to IInd filament. This is provided for safety rider during night driving conditions.
 - If customer operated starter switch contunuously 3 times in a go for 4 th cranking BCU will disable cranking operation and next cranking would be possible after 20 second only. This feature is added which gives better battery life.

Maintenance:

 Ensure no direct high pressure water water is applied on Speedo console and wheel sensor.

- Speedo console should not be kept inverted
- Ensure there are no scratches/breakage on console cover
- Don't open rubber pins located on back side of speedo under any under any circumstances.
- Ensure speedo console and harness mating coupler is always covered by rubber cover.
- Handle wheel sensor carefully while working on front brake drum relating problems.
- Ensure sensor cable is intact.

Notes:

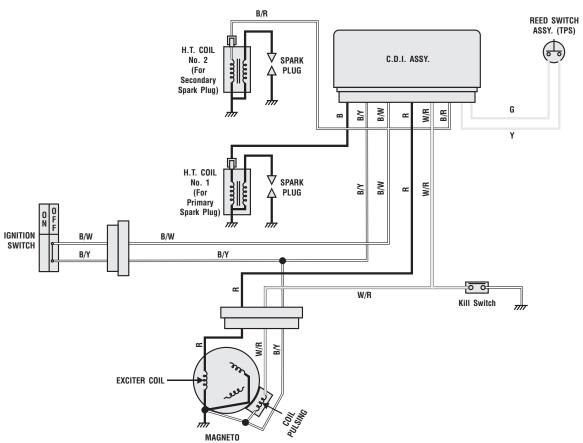
- Do not apply in grease or lubricant in between the rotating parts.
- Do not open control switches and don't apply any grease or lubricant.

-		

Main Electrical Wiring Diagram

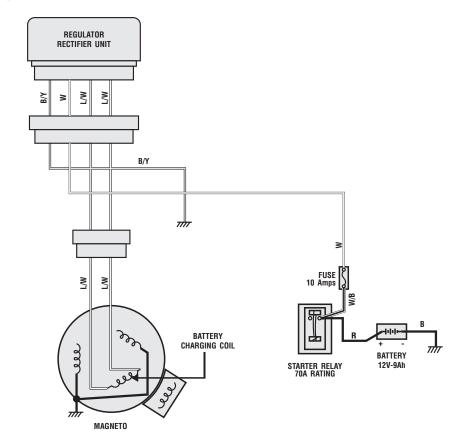
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Ignition Circuit:

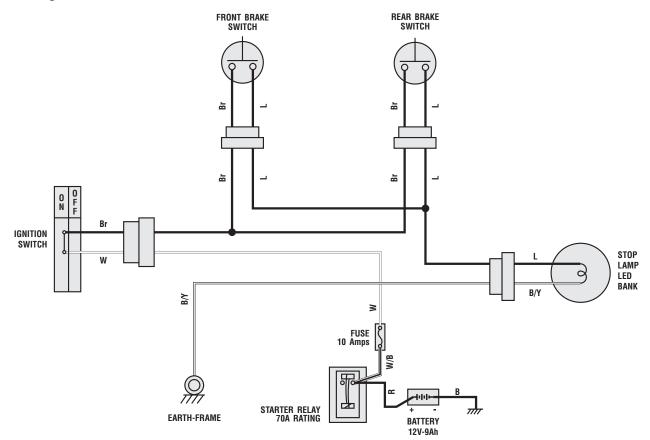


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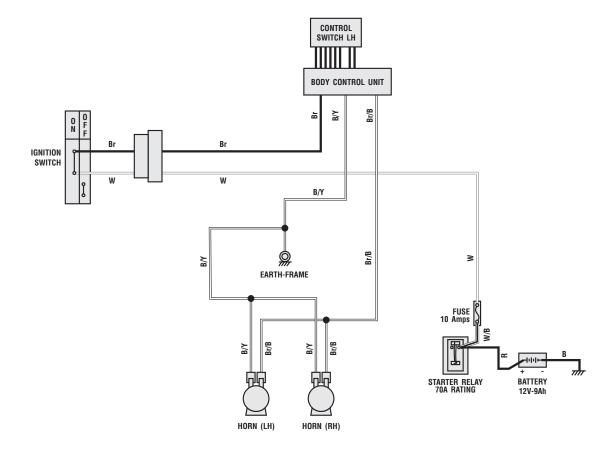
Battery Charging Circuit:



Brake Light Circuit:

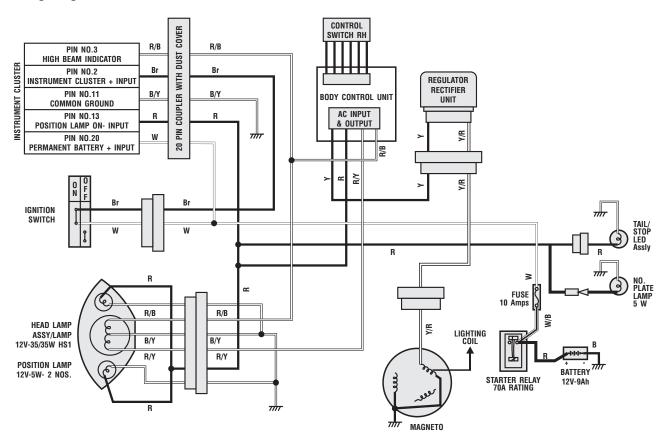


Horn Circuit:

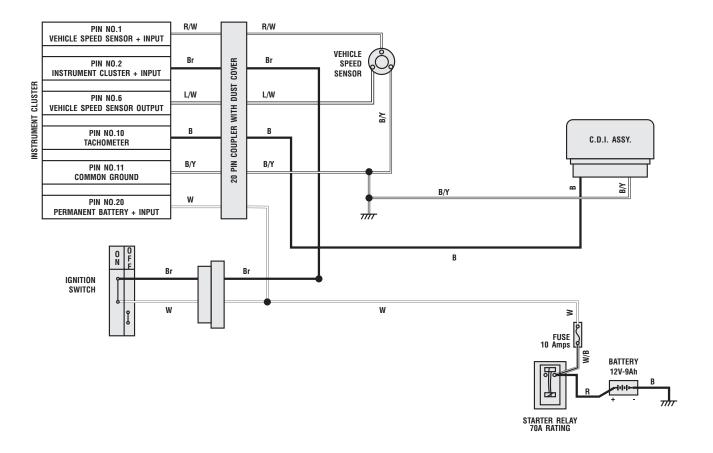


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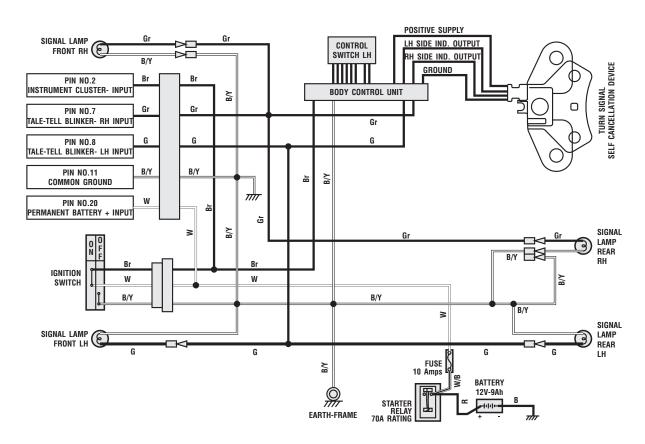
AC Lighting Circuit:



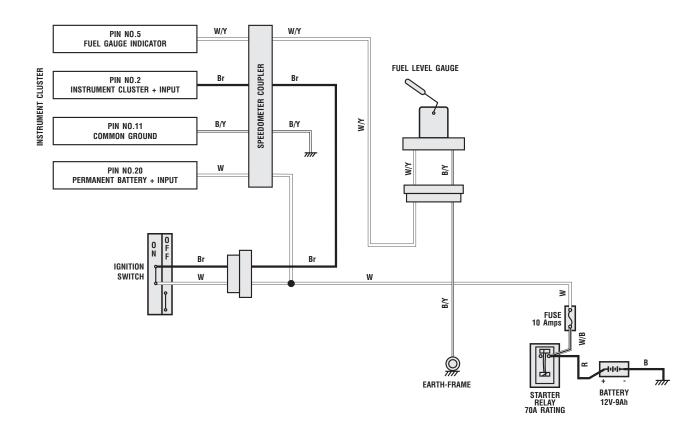
Speedometer and Tachometer Circuit:



Side Indicator Circuit:



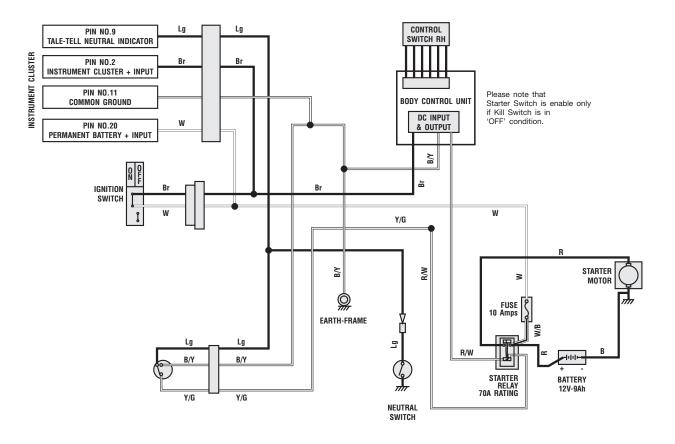
Fuel Indicator Circuit:



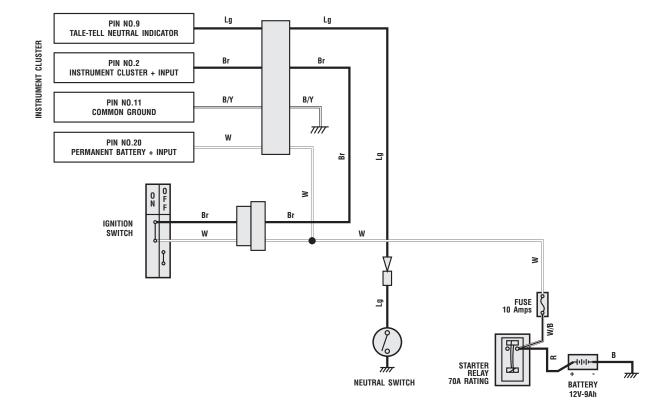
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Stator Motor Circuit:

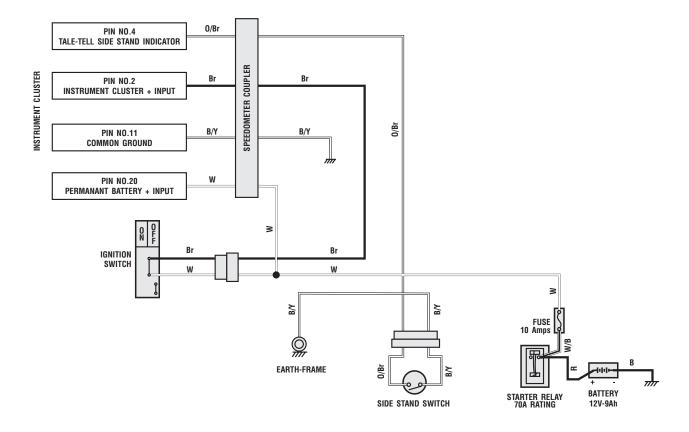


Neutral Light Circuit:

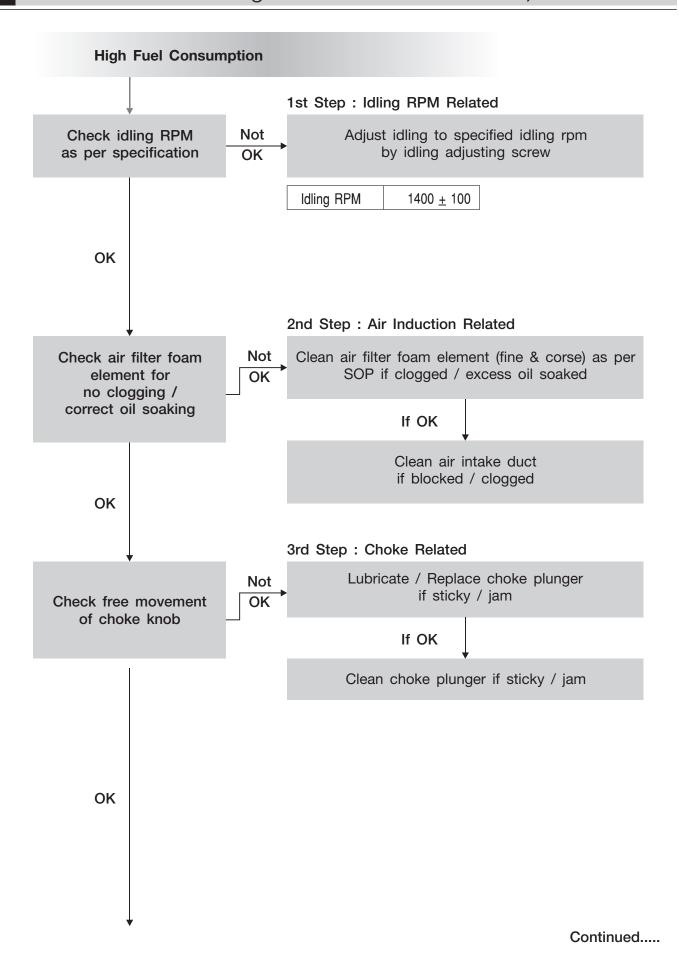


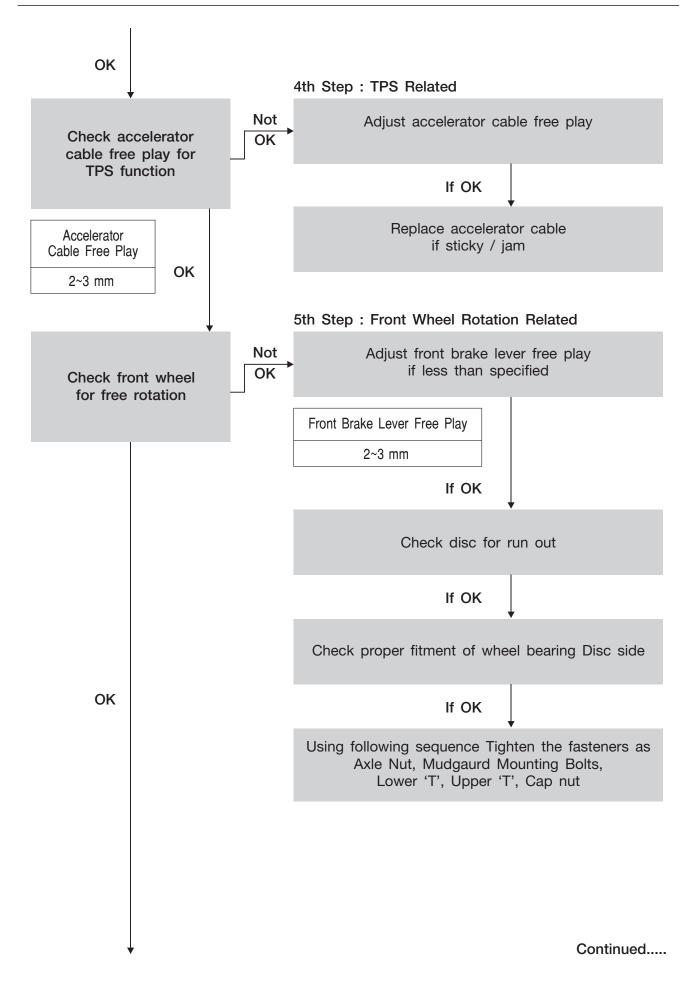
Side Stand Indication Circuit:

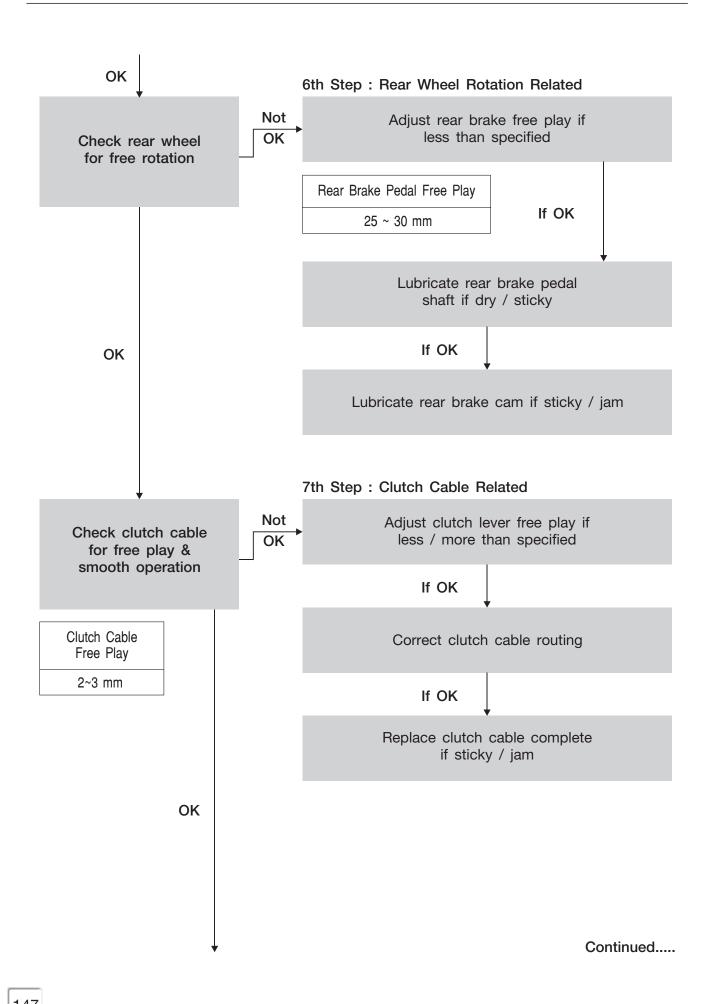
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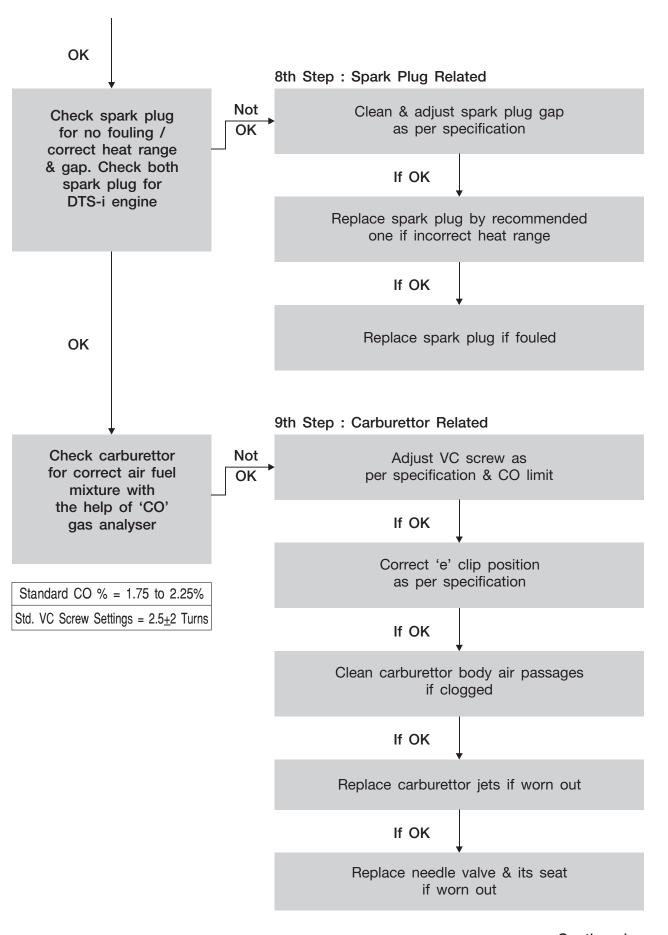


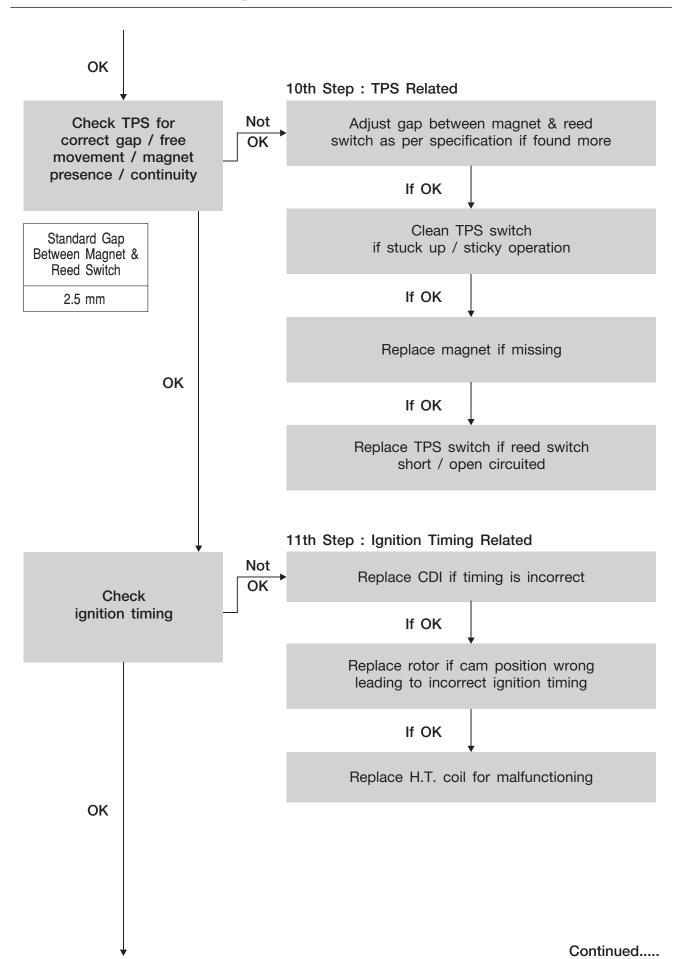
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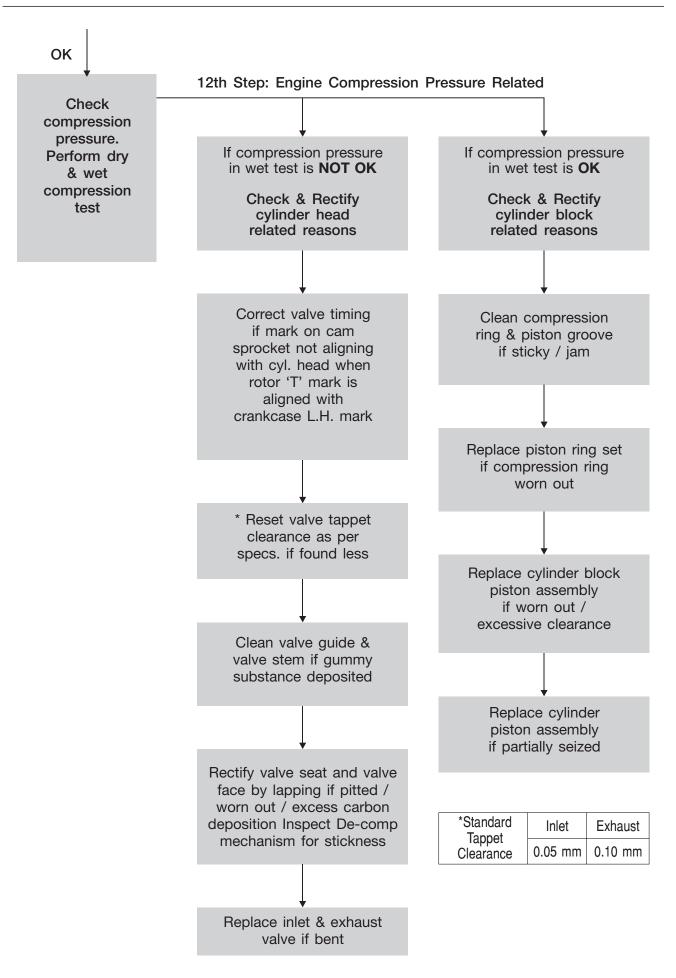




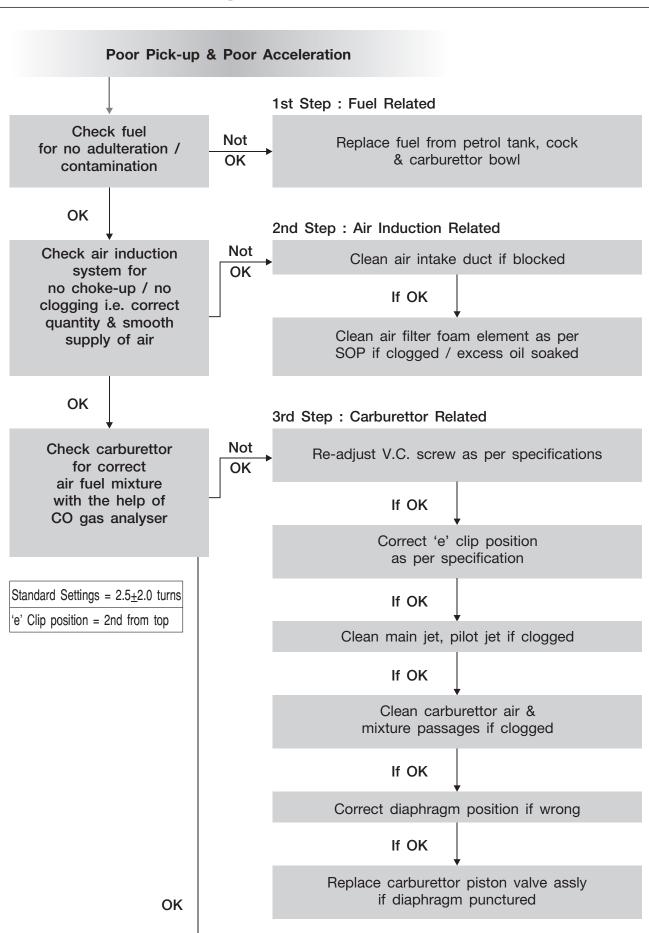


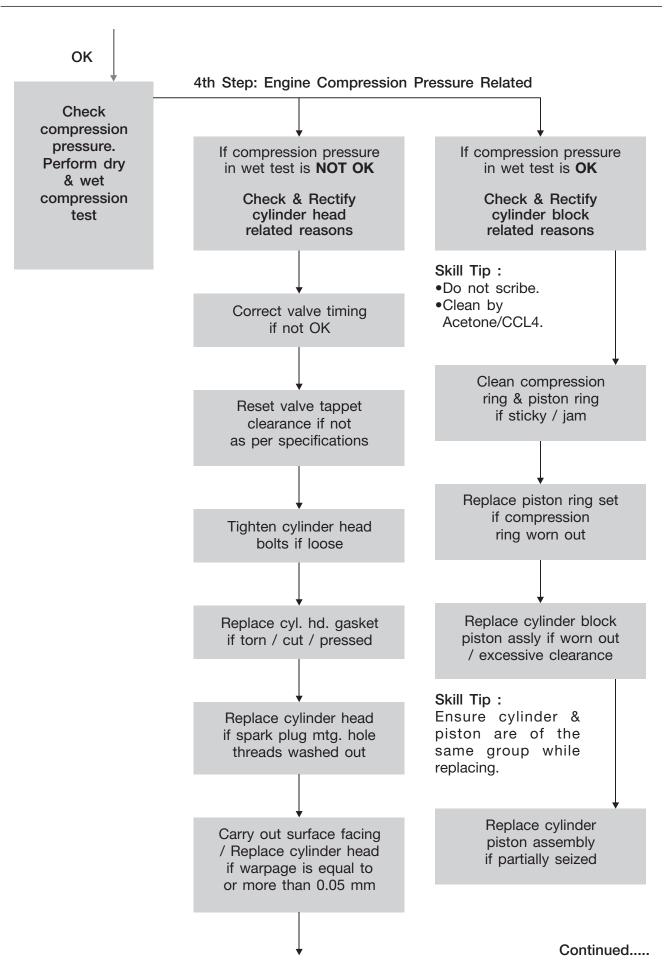






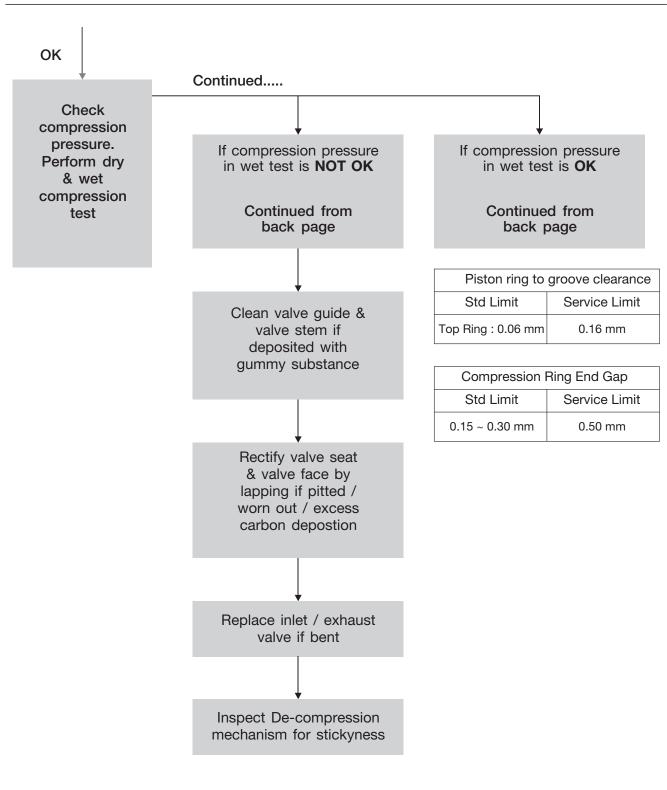
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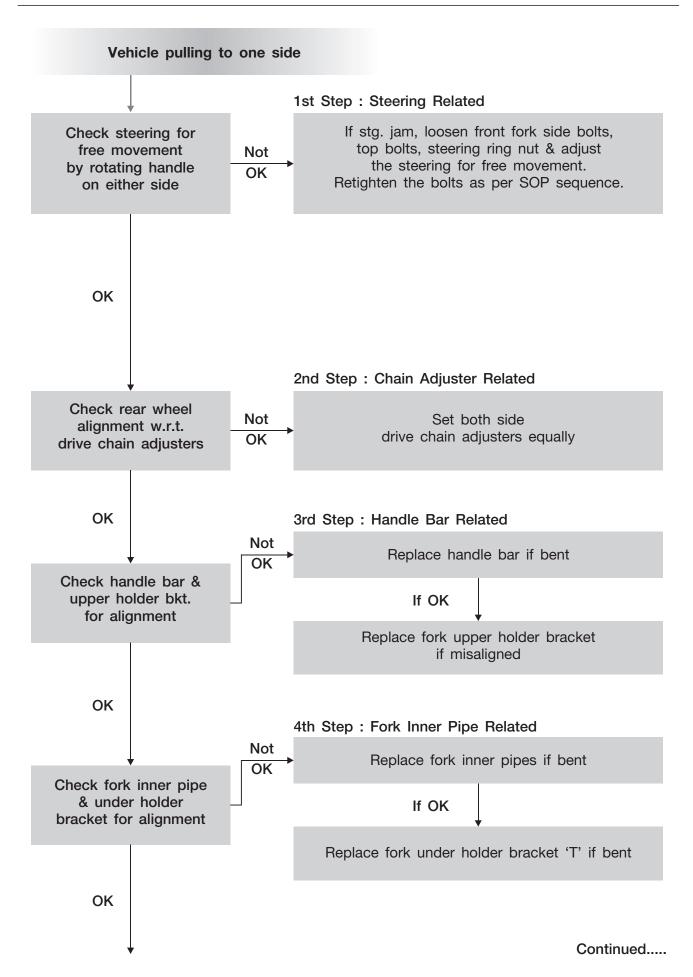
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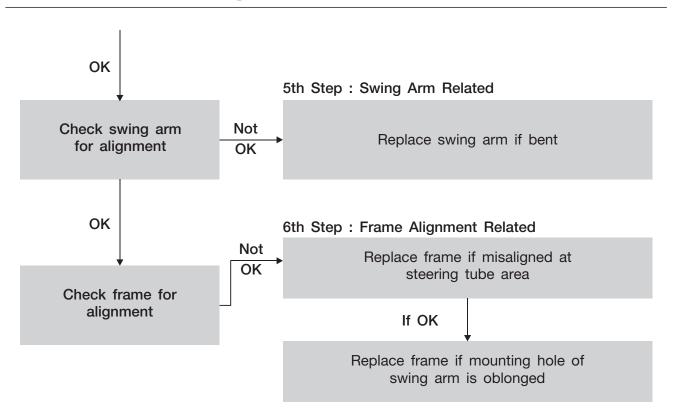


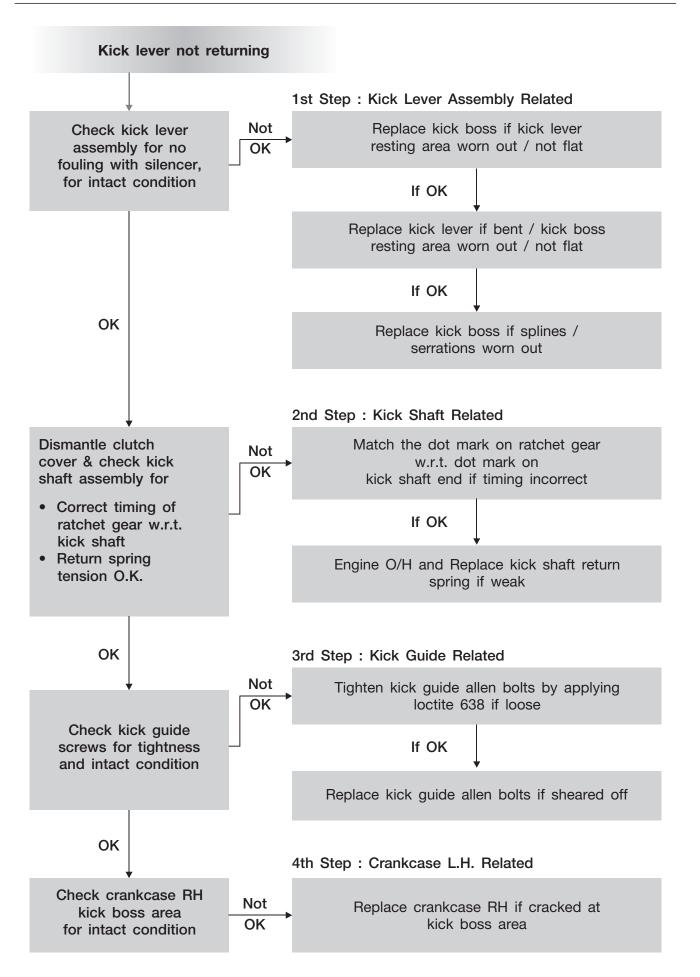
Piston Standard Diameter		
'A' Group	'B' Group	
63.478~63.488	63.488~63.498	

Cylinder Stand	Cylinder Standard Diameter	
'A' Group	'B' Group	
63.50~63.508	63.508~63.515	

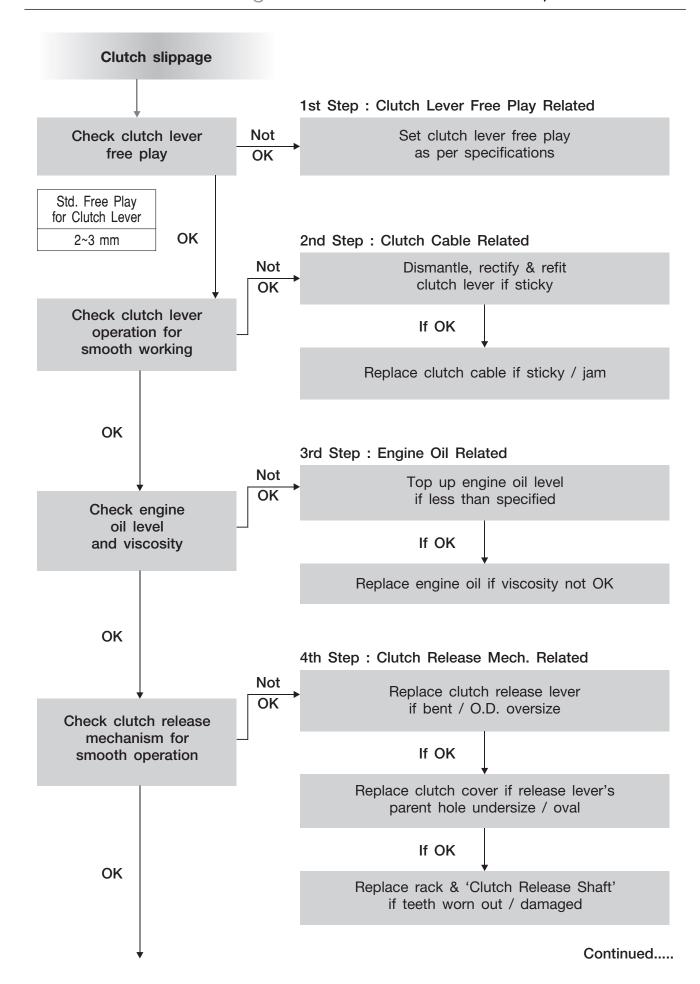


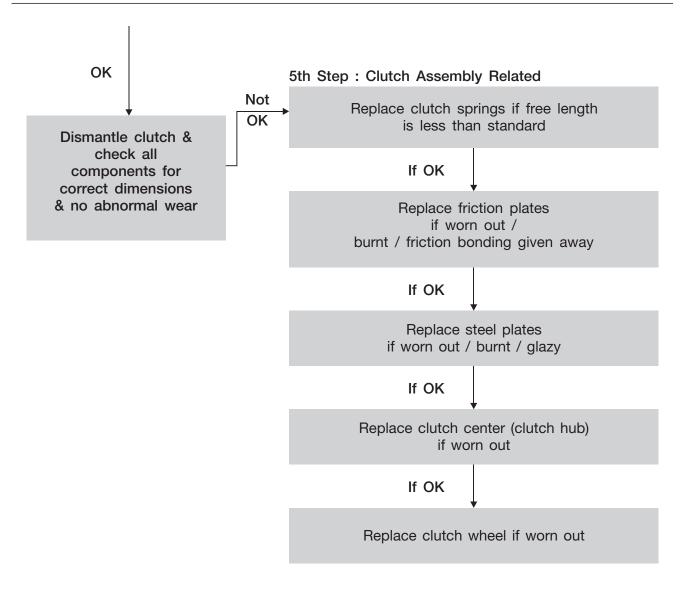






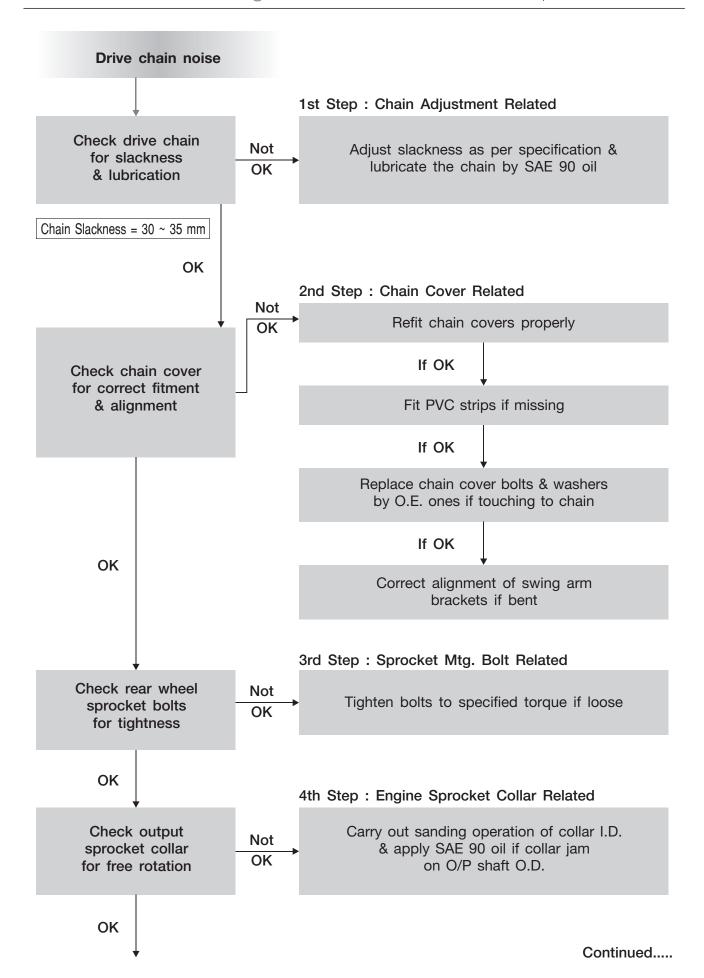


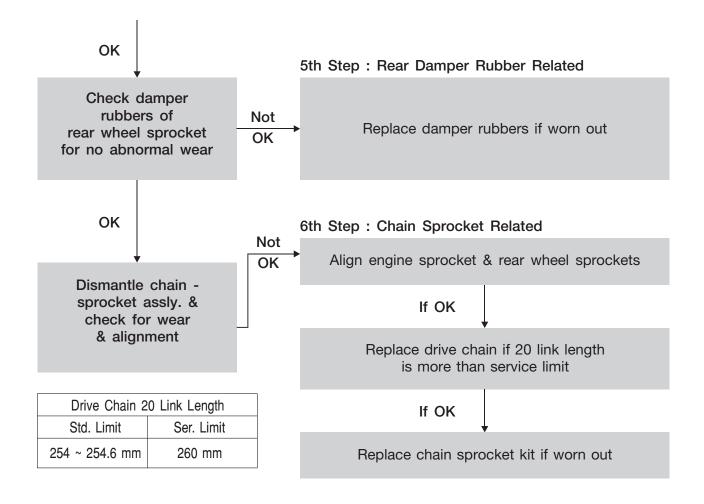




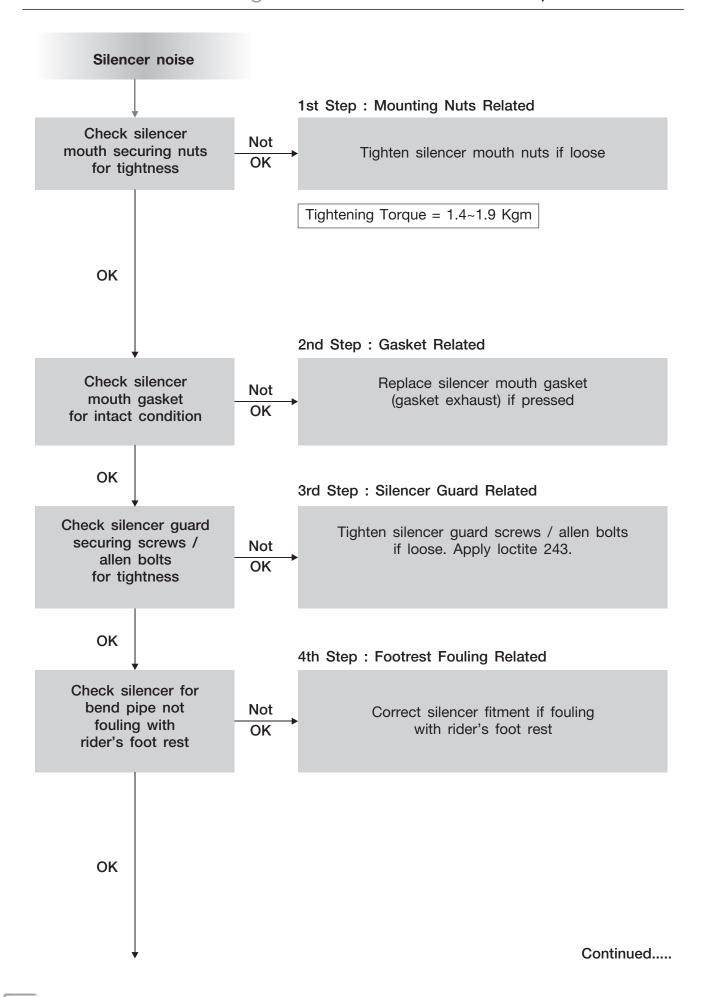
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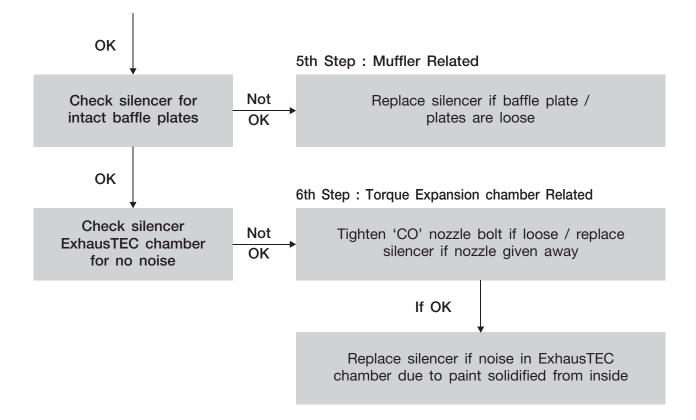


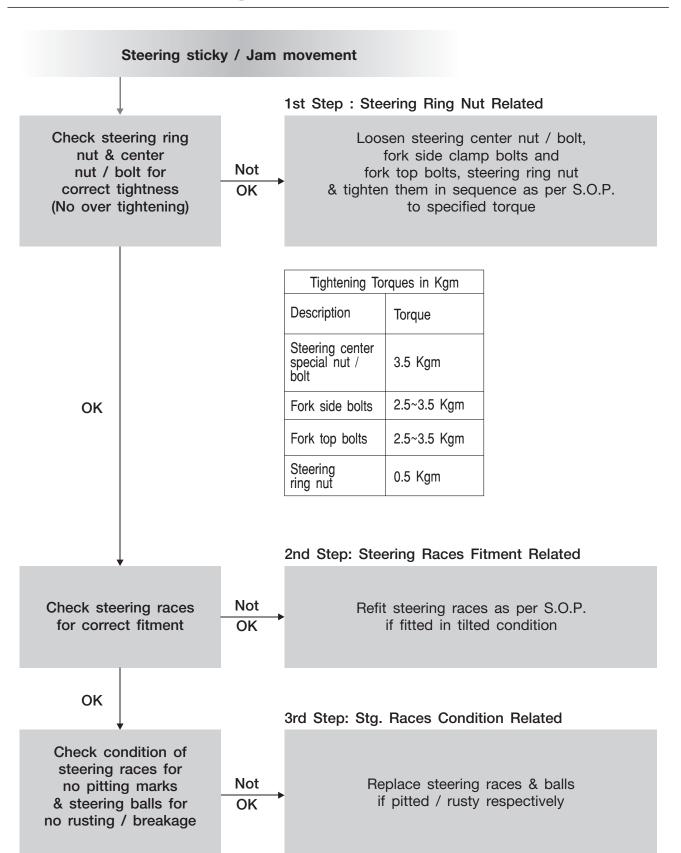




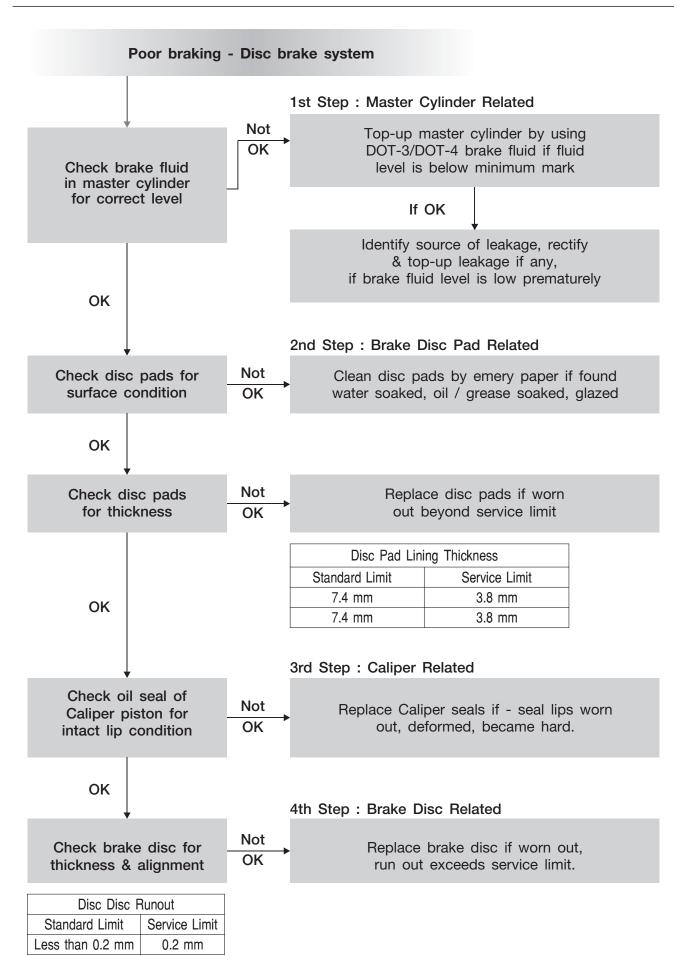




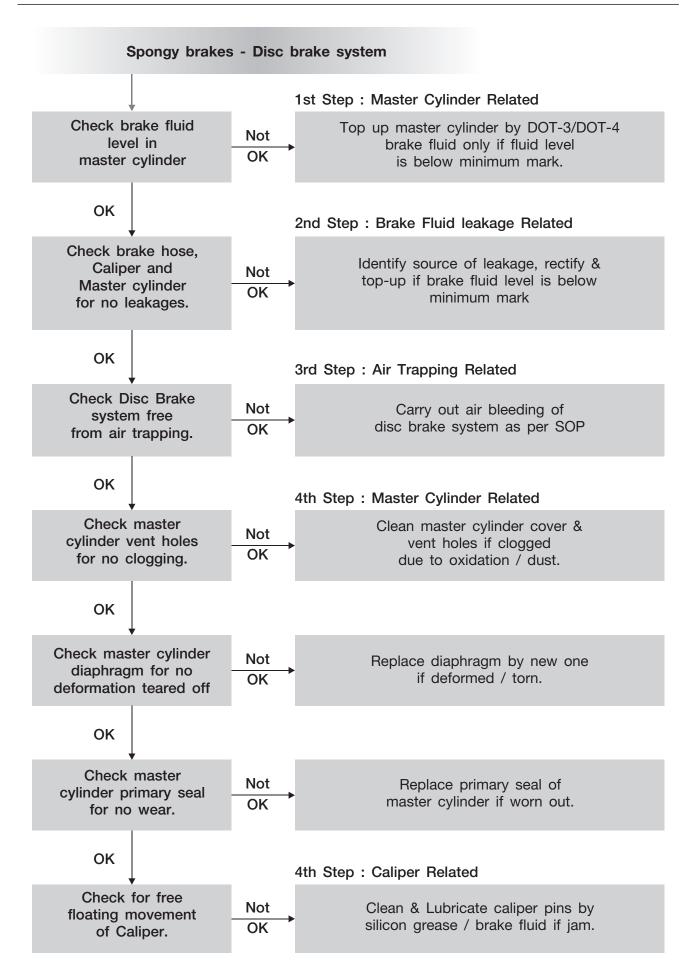




Note: Lubricate steering races and balls by Servo Gem RR-3 grease at every 10,000 Kms.









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