PROVISIONAL TRAINING NOTES

PULSAR DTS-i

SERVICE TRAINING CENTRE

bajaj auto ltd.

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THE SALIENT FEATURES : PULSAR DTS-i

Pulsar *DTS-i,* sports many way ahead technological features that are engineered to achieve greater performance.

In fact this next generation 'Definitely Male' bike is packed further enhanced Performance, Style, Comfort and Safety features.

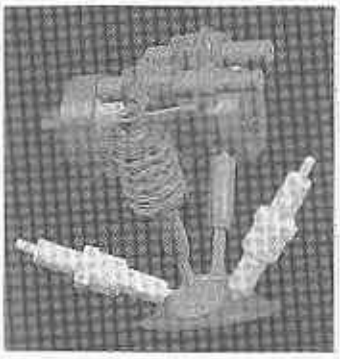
Performance:

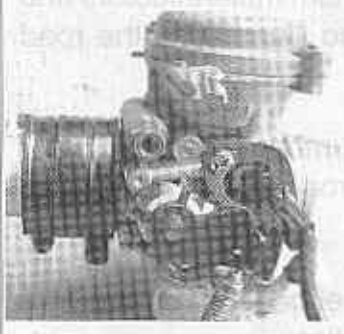
Pulsar DTS-i delivers out class performance in its class of vehicles. The performance characteristics are -

High Power	180 cc = 16.01 Ps (11.77 kW) at 8000 rpm 150 cc = 13.02 Ps (9.57 kW) at 8500 rpm
Greater Torque	180 cc = 14.72 N-m at 6500 rpm 150 cc = 11.68 N-m at 6500 rpm
Max. Speed	180 cc = 127 Kmph 150 cc = 120 Kmph

World's first bike (in smaller size) to have "Digital Twin Spark Ignition" system.

The engine has two spark plugs and the ignition timing is digitally controlled that improvises combustion process, which leads to low emissions, better fuel efficiency and minimizes knocking drastically.





"Digital Twin Spark Ignition" is supported with 'TRICS'

This is Third generation 'TRICS'. It alters the ignition timing as per the engine needs at various throttle positions for consistent power delivery. The other benefits of 'TRICS' are –

- Superior cold starting ability that enables the engine to wake up instantly even in the chilled morning.
- Makes engine High Knock resistant at any throttle position.

Style:

The Pulsar DTS-i crowns Futuristic unique Headlamp fairing with Twin pilot lamp that matches with the character of the bike - ***DEFINITELTY MALE***

New age Stylish Headlamp fairing gives a fresh look and superb appeal.

Satin finished Handle bar that gives aluminum surface looks, adds glory to aesthetics.

Comfort & Convenient:

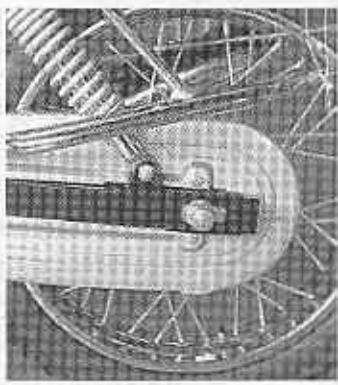
'Toe' operated gearshift mechanism for effective operation that is appropriate with this Sprint and sporty nature bike.

The rider footrest and pillion rider footrest have been reinforced on comfort aspect to minimize vibrations substantially.

Rear Shock Absorber with Tripple Rate spring improves dampening characteristics.

Swing arm with box type section enhances torsional rigidity of the bike.

The new seat contours and the appropriate saddle position gives improved seating posture which increases ride comfort even in longest ride.



Safety :

New Radical clear lens headlamp with Opto-prism multireflectors and halogen bulb not only add-on in style but also illuminates the road brighter in the darkest nights.

The multireflector tail lamp along with Rear Number plate illuminator enable visibility from distance to others on the road that ensures safer night riding.

Bigger & wider front fork with increased wheel base gives the bike better road holding and balancing characteristics.

The engine is safe guarded efficiently from mechanical destructions at higher engine rpm by a engine rpm limiter which is placed in microprocessor based CDI unit.

TECHNICAL SPECIFICATIONS

ENGINE & TRANSMISSION:

Type	:	Four stroke, Natural air cooled.
No. of cylinders	:	One.
Bore	:	57.00 mm for PULSAR150 63.50 mm. for PULSAR180
Stroke	:	56.4 mm. for PULSAR150. 56.4 mm. for PULSAR180
Engine displacement	:	143.91 cc. for PULSAR150. 178.6 cc. for PULSAR180.
Compression ratio	:	9.5 $\pm$ 0.5 : 1
Idling Speed	:	1300 $\pm$100 rpm.
Maximum net power	:	
For Pulsar 150		13.02 PS (9.57 kw) at 8500 rpm
For Pulsar 180		16.01 PS (11.77 kw) at 8000 rpm
Maximum net torque	:	
For Pulsar 150		11.68 Nm at 6500 rpm
For Pulsar 180		14.72 Nm at 6500 rpm
Ignition system	:	Microprocessor controlled Digital CDI
Ignition Timing	:	
For PULSAR150	:	10° BTDC at 1500 r/min.
	:	28° BTDC at 3500 r/min.
For PULSAR180	:	10° BTDC at 1500 r/min.
	:	28° BTDC at 3500 r/min.
Fuel	:	Unleaded petrol.
Carburettor		Side draught,
For PULSAR150	:	UCAL-MIKUNI BS26
For PULSAR180	:	UCAL-MIKUNI BS29
Spark Plug	:	2 Nos. Champion RG4HC(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	:	10.54 : 1 (26/24)
5th Gear	:	8.98 : 1 (24/26)
Final Drive Ratio	:	2.8 : 1 (42/15)

CHASSIS AND BODY:

Frame type : Double cradle type.

Suspension:

Front : Telescopic (Stroke - 120 mm.)

Rear : Trailing arm with coaxial hydraulic shock absorbers and coil springs.

Brakes:

Front :Hydraulically operated disc brake.

Rear : Mechanical expanding shoe & drum type

Tyres :	PULSAR150	PULSAR180
Front	: 2.75 x 18, 42P	2.75 x18, 42 P
Rear	: 3.00 x 18, 4/6PR	100/90 x 18, 56P

Tyre pressure :

Front : 2.00 kg/cm² (28Psi)

Rear :2.25 kg/cm² (32 Psi)

(Solo)

Pillion :2.50 kg/cm² (36 Psi)

Rims	: Pulsar 150	Pulsar 180
Front	: 1.60 x 18	Front : 1.60 x 18
Rear	: 1.85 x 18	Rear : 2.5 x 18

Fuel tank capacity : 18 litres. (2.0 Litres of reserve)

CONTROLS:

Steering	:	Handle bar
Accelerator	:	Twist grip type on right hand of handle bar
Gears	:	Left foot pedal operated
Clutch	:	Lever operated on left side of handle bar
Brakes	:	Front : Lever operated on right side of handle bar Rear : Pedal operated by right foot.

ELECTRICALS:

System	:	12 Volts (A.C. + D.C.)
Battery	:	12V 2.5Ah (For vehicles without Electric start) 12V 9Ah (For vehicles with Electric start.)
Head lamp	:	35/35 W - HS1 (For 150 & 180 ES) 35/35 W (For 150 KS)
Pilot lamp(150/180 ES)	:	2 Nos. 5W each
Pilot lamp(150 KS)	:	1 No. 4 W
Tail/stop number plate lamp	:	5 /21 W
Turn signal lamp	:	10 W
Turn signal pilot lamp	:	1.4 W
Side stand indicator lamp	:	1.4 W
Hi beam indicator lamp	:	1.4 W
Neutral indicator lamp	:	1.4 W
Speedometer lamp	:	3.0 W (3 Nos)
Rear No. plate Lamp	:	4 W
Horn	:	12 V DC, Qty. 1 for Pulsar 150 Qty. 2 for Pulsar 180

DIMENSIONS :	PULSAR150	PULSAR180
Length	: 2000 mm.	2000 mm.
Width	: 790 mm.	750 mm.
Height	: 1056 mm.	1065 mm.
Wheel base	: 1320 mm.	1320 mm.
Turning circle dia.	: 2010mm min.	2070 mm. min
Ground Clearance	: 155 mm.	155mm

WEIGHTS :	PULSAR 150	PULSAR 180
Vehicle kerb weight	: 134 Kg.	139 Kg.
Max. total weight	: 264 Kg.	269 Kg.

PERFORMANCE:

Maximum speed	:
For Pulsar 150	120 km/h with single rider(68 kg)
For Pulsar 180	127 km/h with single rider(68 kg)
Climbing ability	: 25 % (14^0) for PULSAR 150
	28 % (16^0) for PULSAR 180

NOTES:

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

COMPARISON OF PULSAR DTS-i WITH COMPETITORS PRODUCT

Sr. No.	Description	Kinetic GF 170	TVS - Fierro F2	Hero Honda Karizma	Hero Honda CBZ	Pulsar 150 CC DTS-i	Pulsar 180 CC DTS-i	Pulsar DTS-i Advantages
1. -	Price	52000 (approx)	50,581	86,367	62,982	--		
Engine and Transmission:								
2.	Type	4 Stroke, Air Cooled	4 Stroke, Air Cooled	4 Stroke, Air Cooled	4 Stroke, Air Cooled	4 Stroke, Air Cooled	4 Stroke, Air Cooled	1st company to introduce vertical engine concept in 4 Stroke Japnies M/Cs latter followed by others.
3.	Displacement	165CC	147.5 CC	223 CC	156.8 CC	143.91 CC	178.6 CC	
4.	Bore X Stroke	60 X 58.4 mm	57 X 57.8 mm	65.5 X 66.2 mm	63.5 X 49.5 mm	57 X 56.4 mm	63.5 X 56.4 mm	
5.	Compression Ratio	9.3 :1	9.4 : 1	9.0 : 1	8.5 : 1	9.5 $\pm$ 0.5 : 1	9.5 $\pm$ 0.5 : 1	Higher comparison ratio for better thermal efficiency.
6.	Valve Transmission	4 valves, SOHC	2 Valves, SOHC	2 Valves, OHC	2 Valves, SOHC	2 scrapper valves, SOHC	2 scrapper , valves, SOHC	Scraper type valves for better self cleaning properties during carbon build up.
7.	Max. net power	14.8 PS at 8000 rpm	12.17 PS at 7000 rpm.	16.99 PS at 7000 rpm.	12.8 PS at 8000 rpm	13 PS (9.87 kW) at 8500 rpm	16 PS (11.77kW) at 8000 rpm	Technologically superior and bigger power pack engine now runs with 2 spark plugs controlled by a digital Ignition system for more efficient combustion and delivers terrific power and pick-up.
8.	Max. Net Torque	4.22 Nm at 6000 rpm	10.5 Nm at 6500 rpm	8.35 Nm at 6000 rpm	12.3 Nm at 6500 rpm	11.68 Nm at 6500 rpm	14.72 Nm at 6500 rpm	The only sports sprints bike on Indian roads which . can achieve 0 to 90 Kmph in just seconds. (180 CC)
9.	Starting	Kick	Kick	Electric and Kick	Kick/Electric	Electric and Kick Kick	Electric and Kick	Most convenient and effortless self start with unique advantage of starting the vehicle even in gear
10.	Transmission	5 Speed	4 Speed	5 Speed	5 Speed	5 Speed	5 Speed	5 Speed transmission for optimum utilisation of power.
11.	Spark Plug	Single spark Ignition	Single spark Ignition	Single spark Ignition	Single spark Ignition	Dual spark Ignition	Dual spark Ignition	Worlds first engine (smaller CC class) to have Twin spark plug configuration which enhances combustion process to deliver max power output, better emission control & better fuel economy.

Chassis:

Sr. No.	Description	Kinetic GF 170	TVS - Fierro F2	Hero Honda Karizma	Hero Honda CBZ	Pulsar 150 CC DTS-i DTS-i	Pulsar 180 CC	Pulsar DTS-i Advantages
12.	Frame	Dual cradle	Double down tube cradle	Single down tube	Single down tube	Double down tube cradle.	Double down tube cradle	Holds the engine like baby in a cradle perfectly.
13.	Rubber engine foundation	Not Avl.	Not Avl.	Not Avl.	Not Avl.	Available	Available	First to have Rubber foundations for engine which reduces the harshness.
14.	Front tyre size	2.75 X 18	2.75 X18	2.75 X 18	2.75 X 18	2.75 X 18, 42 P	2.75 X 18, 42 P	Only MRF which is the best in India.
15.	Rear tyre size	100/90 X 18	90/90 X 18	100/90 X 18	100 / 90 X 18	3.00 X 18,4/6 PR	100/90X18,56P	Wider rear tyre for good stability and road grip adds riding pleasure.
16.	Front brake	220 mm	240 mm	276 mm disc	240 mm disc	240 mm disc	240 mm disc	Brembo design disc brake which gives the best progressive & linear braking for safe stopping.
17.	Rear brake	130 mm	130 mm	130 mm	130 mm	130 mm	130 mm	
18.	Front suspension	Telescopic Forks	Ceriani type telescope shock	Telescopic Forks	Telescopic Forks	Telescopic Forks	WiderTelescopic Forks	
19.	Rear suspension	Swing arm with 5 stage adj. shock	Swing arm with 5 stage adj. Shock	Swing arm with 5 stage adj. shock	Swing arm with 5 stage adj. shock	Swing arm with twin 5 stage adj. Shock with Triple ratingcoil spring.	Swing arm with 5 stage adj. Shock with Triple rate coil spring.	Rider experiences a pleasent & bump free ride with excellent biking stability in all terrians.
20.	Trailing arm with greasing nipple	Not Avl.	Not Avl.	Not Avl.	Not Avl.	Available	Available	Effective lubrication ensures optimum performance and less maintenance.

Dimensions:

21.	Wheel base	1292 mm	1270 mm	1355 mm	1330 mm	1320 mm	1320 mm	Longer wheel base ensures better stability and good road holding grip.
22.	Length	1968 mm	2020 mm	2125 mm	2090 mm	2000 mm	2000 mm	
23.	Width	763 mm	750 mm	755 mm	755 mm	790 mm	750 mm	
24.	Height	1073 mm	1110 mm	1160 mm	1115 mm	1056 mm	1065 mm	
25.	Kerb weight	135 kg	126 kg	150 kg	135 kg	134 kg	139 kg	Heavier in its class - helps in road holding.
26.	Fuel tank capacity	13.7 lit.	13 lit.	15 lit.	13 lit.	18 lit.	18 lit.	Larger capacity fuel tank takes you longer distance at a stretch. (No tensions for frequent refills.)

Sr. No.	Description	Kinetic GF 170	TVS - Fierro F2	Hero Honda Karizma	Hero Honda CBZ	Pulsar 150 CC DTS-i DTS-i	Pulsar 180 CC	Pulsar DTS-i Advantages
* Performance:								
27.	Acceleration (0 to 90 kmph)	14.05 Sec	16.50 Sec	11.09 Sec	17 Sec	16.14 Sec	10.84 Sec	Excellent combination of terrific power and blasting pick up.
28.	Top speed	115.43 kmph	110.77kmph	124.5 kmph	112.20 kmph	118.00 kmph	128.9kmph	Fastest bike on the Indian road.
29.	Braking (60 - 0 kmph)	27.37 mtrs. in 3.19 sec.	24.0 mtrs. in 3.1 sec.	19.48 mtrs.in 2.12 sec.	23.2 mtrs.in 2.1 sec.	19.13 mtrs. in 3.40 sec.	19.13 mtrs. in 3.40 sec.	Better braking efficiency than any other bike.
30.	Fuel efficiency	Best=68 kmpl Worst = 52 kmpl City = 60 kmpl	Best = 69 kmpl Worst = 54 kmpl City = 60 kmpl	Best = 54 kmpl Worst = 28 kmpl City = 40 kmpl	Best = 53 kmpl Worst = 42 kmpl City = 48 kmpl	Best =70.2 kmpl Worst =44.1 kmpl City = 60 kmpl	Best = 63 kmpl Worst = 34 kmpl City = 42 kmpl	Equipped with CV Carburettor for consistency of precise fuel delivery, crisp throttle response and thus minimises emission also.

* Performance data judged and then published by renowned Automobile periodical "Overdrive" Sept. 03 issue.

FAQs on 'Pulsar DTS-i'

What is the difference between regular 'Pulsar' and 'Pulsar DTS-i'?

OR

Is it just an up gradation of regular 'Pulsar'?

The 'Pulsar DTS-i' is a next generation bike of Pulsar variants and not just an up graded model. This new breed has many obvious and hidden superior & innovative technological features.

These innovative features are contributing to Style, Performance, Comfort and Safety to a great extent. The majo features are -

- Unique and aggressive Headlamp fairing with twin pilot lamps that matches to the character of the bike.
- Extended wheel base for better road holding characteristics
- Strengthened frame and stiffer / stronger rectangular cross-sectioned swing arm for razor sharp handling traits
- Double Spark Plugs for better combustion process.
- Digital Twin Map Ignition System for accurate ignition timing. And RPM limiter as well.
- Third generation "Throttle Responsive Ignition Control System" - (TRICS)
- Optimized engine performance to provide excellent drivability.

So, it is a new bike in itself. We can say it is a movement similar to, from **Santro** to **Santro -Xing** in car segment

Can we up grade regular 'Pulsar' to 'Pulsar DTS-i'?

No. It cannot be achieved. If you do, then it is not up gradation, it becomes replacement. Because, the vehicle is totally tailored in the area of Engine geometry, Frame dimensions & strength, entire Front & Rear Suspension, the Ignition System, the Fairing etc.

Can we at least fit this new Headlamp fairing on regular 'Pulsar'?

No. That is also not possible. Because, the complete front fork assembly has been enhanced dimensionally and the triple clamp association of handle Bar & front fork, the fitment of this new Headlamp fairing is not possible on the regular Pulsar.

What are the performance specifications of 'Pulsar DTS-i' as compared to regular 'Pulsar'?

The comparative performance features between 'Pulsar DTS-i' (180) and 'Pulsar' are-

Performance	Pulsar 150		Pulsar 180	
	DTS-i	Regular	DTS-i	Regular
Power	13.02 Ps	12 Ps	16.01 Ps	15 Ps
Torque	11.68 Nm	10.8 Nm	14.72 Nm	13.20 N-m
Max. Speed	120	100	127	107

What is 'DTS-i' stands for?

'DTS-i' stands for "Digital Twin Spark Ignition" System.

What is "Digital Twin Spark Ignition" System? And what are its advantages?

In "Digital Twin Spark Ignition" system, engine has twin spark plugs (two spark plugs) and the ignition timing is digitally mapped on the microprocessor chip provided in the CDI unit.

The advantages of this system are -

- The microprocessor memory chip manages accurate ignition timing at all level of engine load & speed with respect to engine rpm. This optimizes power and lead to better derivability.
- The twin spark plugs introduce spark simultaneously in the combustion chamber and improvises combustion process, which leads to low emissions, better fuel efficiency and minimizes knocking drastically.
- DTS-i has enabled Pulsar motorcycle to achieve stringent '2005 Emission Norms' without Secondary Air Induction device and Catalytic Converter

How one can come to know that both the Spark Plugs are functioning simultaneously?

OR

How one can come to know that one of the Spark Plug is not functioning simultaneously?

OR

What are the possible symptoms if one of the Spark Plug is not functioning?

There is totally remote chance of being not functioning of one of the Spark Plug with this digitally managed Ignition System unless & until there is an independent failure of the spark plug or respective Ignition coil.

However, one cannot immediately notice any physical or sensible symptoms for not functioning of one of the spark plug.

In case one of the spark plug is not functioning, then it may effect on performance of the engine like drivability, fuel efficiency and emissions.

During services one has to always ensure cleaning & proper functioning of both the spark plugs, which is a normal procedure in all the vehicles.

What is third generation "Throttle Responsive Ignition Control System" (TRICS)?

It is similar to the TRICS on 'Caliber-115' but with positive mounting arrangement. Here the TPS unit is mounted directly on the carburetor at butterfly valve spindle.

As the TPS operating cable is absent it eliminates the maintenance care process of cable play adjustments, thus it is always positively sync with throttle movement.

The First generation TRICS was introduced on Legend Scooter, which was Opto-coupler type and was mounted on Handle Bar. The Second one on Caliber 115 motorcycle was Magnetic with Reed Switch mounted near to carburetor. This is the Third generation one (Magnetic type) mounted directly on the carburetor.

The function of TRICS is trigger to 1st and 2nd Ignition Map for complete combustion of air-fuel mixture at different throttle positions to deliver optimum and consistent power and performance.

The benefits of TRICS are -

- Superior cold starting ability that enables the engine to wake up instantly even in the chilled morning.
- Makes engine High Knock resistant at high throttle position.

What is RPM limiter and why it is provided?

RPM limiter is a device, which is in-built in the digital CDI unit to curtail sparks to spark plugs at higher RPM, thereby limiting of rising of engine RPM beyond safer zone.

This is to protect engine components from mechanical destruction due to high revolutions.

Is 'Pulsar DTS-i' a foreign collaborated vehicle?

No. It is indigenously designed and developed by Bajaj Auto R & D engineers.

Why the Pulsar name, and why not some different name?

It is next breed of Pulsar family bike, like what we have 'Caliber 115' in 'Caliber' family bikes. And of course it is also a 'Definitely Male' bike. Hence the same name.

Why the Gearshift operation in 'Pulsar DTS-i' is only 'toe' operated and not both 'toe' & 'heel' operated like regular Pulsar?

The 'Pulsar DTS-i' the sprint bike is most powerful, fastest and quickest bike. To go with this speedy & sporty characteristics of the bike, toe operated gearshift lever is provided.

We are well aware that toe operating is more comfortable, quicker and effective as compare to heel operating one. And also it is more appropriate to Sports bike.

What is the advantage of rectangular cross sectional Swing Arm?

The rectangular cross section is more resistive to twists as compared to round tubes. The 'Pulsar DTS-i' being high-speed motorcycle, such design is an added advantage to ride it in adverse conditions as well.

Being so powerful, fast and quick, how 'Pulsar DTS-i' will be able to deliver good mileage?

It is like this. The features like...

- Twin Spark Plugs >>> that introduces spark on both side simultaneously in the combustion chamber has improved combustion process and air-fuel mixture is burnt to complete extent.
- Digitally managed Ignition System >>> introduces spark accurately with respect to engine rpm. This enables consistent power delivery and lead to better derivability.
- Twin Ignition Map with TRICS >>> alters the Ignition timing depending upon different engine speed and load. This ensures optimum utilization of air fuel mixture.

All these will be lead to better fuel efficiency. However, this needs attention in riding. If it is stretched to its speed & sprint characteristics, mileage will go down. On the other hand, if it is handled like economy bikes definitely it will yield better mileage.

PRE-DELIVERY INSPECTION CHECK LIST **PULSAR DTSi** MOTORCYCLE

Frame No. D | | V- | B | | - | | | | | |

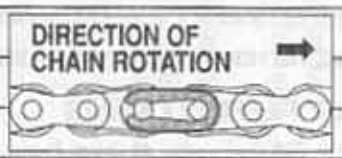
Engine No. D | | G- | B | | - | | | | | |

Dealer's Name _____ *Dealer's Code* _____

Date of PDI _____ *PDI done by* _____

Please insure that following checks are carried out during PDI before delivery of vehicle.

TO CHECK	CHECK FOR		OBSERVATIONS / REMARKS
ENGINE :			
Engine oil	Oil level. Top up if required		Use SAE 20W50 (for 180) & SAE 20W40 (for 150) of API 'SG' + JASO MA grade
	Oil leakage if any		
Idling Speed (Warm up)	Check / adjust if required (1200 to 1400 rpm)		
Kick operation	Smooth Operation		
Fasteners (Check torque)	Engine mounting (2.2 kgm.)		
	Oil drain plug (1.8 kgm.)		
FUEL SYSTEM :			
Fuel Tank / Pipes	Leakages / Fitment		
Fuel Tap	Smooth operation		Carburettor breather pipe to be routed in Chassis main pipe.
Carburettor	Leakages, Fitment - Orientation and angle		
FRAME :			
A) WHEELS			
Tyre Pressure	Front - 1.75 kg/cm^2		
	Rear - 2.0 kg/cm^2 (Solo), 2.25 kg/cm^2 (Double)		
Rim runout (With tyre)	Radial - (0.8 mm or less) Axial - (1.0 mm or less)		
Spokes	Check & tighten if required		
Drive chain	Slackness (15-20 mm)		
	Lubrication (SAE 90)		
	Check chain lock position		
B) CONTROLS			
Brakes	Front brake fluid level / Top up (DOT 3)		
	Rear brake pedal free play (25-30 mm)		
Clutch	Lever free play (2-3 mm) and Smooth operation		
Throttle	Grip free play (2-3 mm) and Smooth operation		
Choke	Free play (2-3 mm) and Smooth operation		
C) SUSPENSION			
Front fork	Smooth operation, Oil leakage		
Rear shock absorber	Proper notch setting # Preload setting : 1" notch		Same on bothside
Steering	Smooth operation (Loose or tight)		
D) LOCK OPERATION	Steering and Ignition, Fuel tank, Seat lock, Side cover RH & LH		



TO CHECK	CHECK FOR		OBSERVATIONS / REMARKS
E) FASTENERS	Check split pin of Front and Rear axle nut.		
(Check torque)	Rear shock mounting nut (3.5 kgm.)		
	Front fork top triple clamp allen bolts (1.8 to 2.0 kgm.)		
ELECTRICAL			
A) BATTERY	Electrolyte level / Specific gravity		
	Charging, Connect -ve terminal and apply petroleum jelly.		
	Routing of Breather pipe, Fuse		
B) ALL BULBS WORKING	Head light, Pilot, Tail / Stop, Side indicator, Speedometer, Indicator lamps and Rear no. plate lamp.		
C) SWITCH OPERATION	LH & RH control switch, Ignition switch		
	Brake switch (Front & Rear) / Side stand, Clutch switch		
D) STARTER MOTOR	Proper working / Engagement (Use choke for cold start).		Open throttle 1/8th turn while cranking.
TEST DRIVE (2-3 km)			
A) STARTING*	Cold start & Warm start		
	Idling Speed (warm condition) (1200-1400 rpm.)		
B) DRIVIABILITY	Throttle response		
	Gear shifting / Clutch operation		
	Brakes (Front & Rear)		
	Speedometer, Odometer, Trip meter & Tachometer working		
C) CO % CHECK	CO should be 2% in warm condition.		
D) CLEANING	Wash & Clean vehicle properly.		

* IMPORTANT :

BEFORE STARTING, PLEASE ENSURE FOLLOWING

- *Check the fitment of TPS switch and Magnet.*
- *Max. gap between Magnet and Switch to be 2.5 mm*
- *Check for working of the TPS and its working, using multimeter etc.*
- *Press and Confirm that both the Spark Plug caps have been fitted correctly.*
- *Confirm tightness and correct fitment of primary leads to both the H.T. Coils.*

AFTER STARTING, PLEASE ENSURE FOLLOWING

- *Confirm that both the Spark Plugs are firing by using a Timing gun or Stroboscope with the Engine idling.*

Any other defects

Look for any external damages in transit : Please Check, Record & Rectify.

Signature _____

PERIODIC MAINTENANCE CHART

SR. NO.	Operation / Frequency		Which ever comes first ↓	⊛ RECOMMENDED ODOMETER READING kms				
				Initial			Subsequent	
				750	2,500	5,000	Every 5,000	Every 10,000
1.	Servicing			●	●	●	●	
2.	Idle speed / CO %	C , A		●			●	
3.	Engine oil ℙ	R	6 months	●	●	●	**Every 2,500 km**	
4.	Oil Strainer/Cenrifugal oil filter ◆	Cl				●	●	●
5.	Valve clearance	A		●		●	●	
6.	Air cleaner element ℙ	Cl		●		●	●	
7.	Air cleaner element ◆	R						●
8.	Carburettor	C , A	2 Years		●	●	●	
9.	Fuel system leakages	C , R		●	●	●	●	
10.	Fuel pipes ◆	R	4 Years					
11.	Spark plugs / gaps	Cl / A		●		●	●	
12.	Spark plugs	R	2 Years					●
13.	Battery electrolyte level	C, A	15 days	●	●	●	●	
14.	Brake light switch	C, A		●	●	●	●	
15.	Clutch play	A		●	●	●	●	
16.	Throttle grip play	A		●			●	
17.	Rear brake pedal play	A		●	●	●	●	
18.	Brake lining or pad wear ◆	C,R				●	●	
19.	Brake fluid level/top up	C	mogth	●	●	●	●	
20.	Brake fluid change	R	1 Year				**Every 10,000 km**	
21.	Engine Silent Block	C, R					**Every 25, 000 km**	
22.	Steering Play	C, A		●	●	●	●	
23.	All fasteners tightness	T		●	●	●		●
24.	Tyre tread wear	C, R				●	●	
25.	General lubrication	L		●	●	●	●	
26.	Steering stem bearing ◆	L	2 Years					
27.	Wheel bearings	L	1 Year					●
28.	Master cylinder cup & dust seal	R	4 Years					
29.	Caliper piston seal & dust seal	R	4 Years					
30.	Front Fork	C,CL						●
31.	Front fork oil	R					**Every 10,000 km**	
32	Spoke tightness & rim runout	C,A		●	●	●	●	
33	Front brake hose ◆	R	2 Years					
34.	Rear shock absorber ◆	C, R						●
35.	Drive chain wear◆Remove	C,R				●	●	
36.	Drive chain	L		**Every 500 Km.**				
37.	Drive chain slack	A		**Every 1,000 Km.**				
38.	Swing Arm	L				●	●	

●: Indicates operation to be performed.

◆ : Replace if found damaged or worn out

⊛ : For higher odometer readings, repeat at frequency interval estabilised here.

ℙ : More frequent cleaning may be requied when driving in dusty condition.

A - Adjust, Cl - Clean, C - Check, L - Lubricate, T - Tighten, R - Replace.

Digital Twin Spark ignition (DTS – i)

Pulsar DTs – i 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 same Heat range (Champion RG4HC) and have similar electrode gaps. These also spark simultaneously. 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 Digital C.D.I 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 ignition timing for Part throttle loads and Full throttle loads, there are separate ignition maps stored in the memory of the C.D.I. These are activated depending on the throttle opening and engine speed. The Digital C.D.I. has a 8 bit Microprocessor which handles all these inputs and gives out the required & correct Spark advance.

3. To enable switching the required ignition maps, a magnetically operated reed switch is incorporated on the carburettor throttle shaft and carburettor body. This is known as TRICS-III. Throttle Responsive Ignition Control System-IIIrd generation. The Ist generation was on Legend scooter (mounted on handlebar), the IInd generation was on Caliber115 (mounted near the carburettor) and the IIIrd generation is mounted on the Carburettor itself on the Pulsar D.T.S.i.

4. These engines are capable of revving very high, quite easily. To keep them mechanically safe, a engine rpm limiter has been incorporated in the Digital C.D.I. This curtails the sparks to the spark plugs thereby limiting the engine rpm and thus keeps the engine from mechanically safe.

5. This engine has been extensively tuned for more Power & Torque.

6. The D.T.S.i. technology has enabled the Pulsar to meet 2005 norms without any Secondary Air Injection devices, Hot Tubes or Catalytic converters.

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 is essential.
- Following symptoms may indicate as malfunctioning of **Reed Switch Assly** as one of the cause.

Symptom	Cause	Remedy
Sudden drop in mileage and power lack in mid range rpm	**The ignition systems is working only in 2nd map due to reed switch is stuck in open circuit.**	**Replacement of Reed Switch Assly.**

Note: Engine knocking cannot happen because - The logic in the in the C.D.I. has been programmed such that if there is a failure of the Reed Switch due to any reason, the C.D.I. switches over to the 2nd Map (lowerAdvance) . The engine will then only run in the 2nd map. Hence Engine knock cannot occure due to this reason

Customer Education tips:

- 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 up too much (due to too high throtlle opening)
- Whenever there is a sudden subtantial drop in mileage, customer should report to Bajaj Service Centres

CO % CHECKING & TUNE UP (To ensure better mileage)

Check following before CO% checking / Tune up

- Air filter connections , Intake Manifold, Duct fitment.
- Spark plug gap (0.6 to 0.7 mm)
- All pipes & connections of fuel system for any cracks, leakage, plucking, pinching & loose connections.
- Ensure Tappet clearance Inlet = 0.05 mm
  Exhaust = 0.1 mm .
- Ensure compression pressure inside the cylinder (6 to 10 kg/cm^2).
- Check the ignition timing (10° BTDC at 1500 rpm & 28° BTDC at 3500 rpm)

CO% checking & Carburettor VC screw setting

- Start & warm up the engine.
- The oil tempreature should be above 50°C. this can be achieved by running vehicle in top gear at the speed of minimum 40Kmph for 5 - 6 Kms.
- Adjust the engine speed to 1300 ± 100 rpm with Idling adjsut s crew of Carburettor.
- Adjust the CO with the VC screw. It should be between 1.75 to 2.25 %.
- Confirm the engine speed whether it is within 1300 ± 100 rpm or not. When setting Idle CO%, Idle rpm and VCS have to be adjusted together to achive 2% CO and 1300 ± 100 engine rpm.

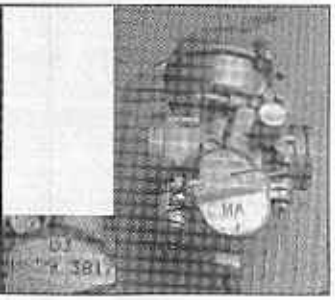
CARBURETTOR :

Specifications :

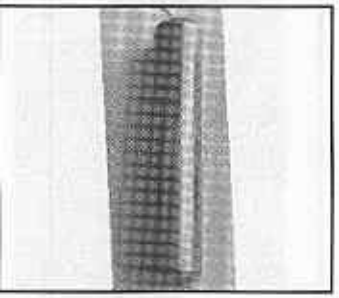
Item	Pulsar150	Pulsar180
Make and Type	Ucal-Mikuni BS26 C V Type	Ucal-Mikuni BS29 C V Type
Idling Speed	1300 ±100	1300 ±100
VC Screw setting	2.5 ±2 turns out	2.5 ±2 turns out
Main Jet	107.5	112.5
Jet needle mark	4CHL10	4DHL42
Jet needle clip position	2 from top	2 from top
Pilot Jet	12.5	17.5
Starter jet	Fixed type	Fixed type
Throttle valve	Fixed type	Fixed type

PARTS IDENTIFICATION

PULSAR 180

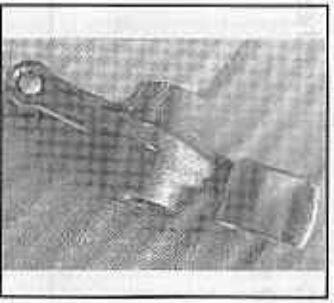


Part Name	Carburettor Assembly
Part No.	DJ 1210 08
Description	Without provision of Reed switch
Identification Mark	'DJ' is embossed on carburettor body.

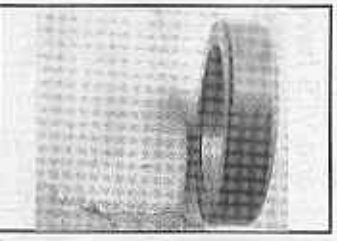


Part Name	Rocker Pin Inlet
Part No.	
Description	Short in length
Identification Mark	Length is 47.85 mm.

Part Name	Rocker Pin Exhaust
Part No.	
Description	Short in length.
Identification Mark	Length is 47.85 mm.

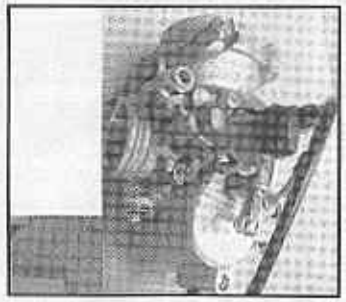


Part Name	Rocker Arm
Part No.	
Description	Both sides are equal.
Identification Mark	No hole for lubrication

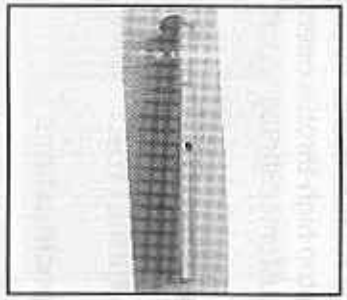


Part Name	Collar Timing Chain
Part No.	
Description	Provides support to Timing chain sprocket
Identification Mark	Width is 4.60 mm.

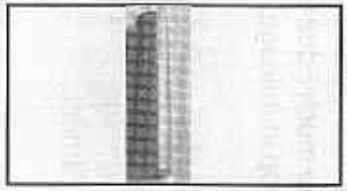
PULSAR 180 DTSi



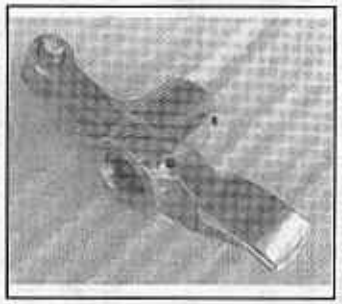
Part Name	Carburettor Assembly
Part No.	DD 1010 11
Description	With Reed switch mounted on carburettor body
Identification Mark	'DJ-U' is embossed on carburettor body.



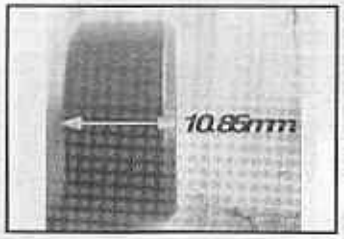
Part Name	Rocker Pin Inlet
Part No.	
Description	More in length & step type
Identification Mark	Length is 68.50 mm.



Part Name	Rocker Pin Exhaust
Part No.	
Description	More in length.
Identification Mark	Length is 52.50 mm.

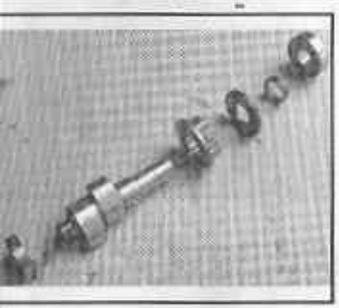


Part Name	Rocker Arm
Part No.	
Description	One side of boss is longer.
Identification Mark	2 holes for lubrication



Part Name	Collar Timing Chain
Part No.	
Description	Provides support to Timing chain sprocket
Identification Mark	Width is 10.85 mm.

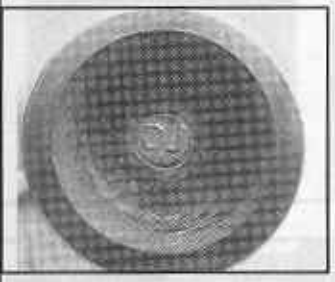
PULSAR 180



Part Name	Cam Shaft Assembly
Part No.	28 1011 95
Description	Bearings are smaller in size.
Identification Mark	Bigger brg. No. 6202 & Smaller brg. No. 6001, Collar having cut mark

Part Name	Cylinder Head
Part No.	DJ 1010 06
Description	Combustion chamber is smaller in size.
Identification Mark	Combustion chamber has one hole for spark plug

Part Name	Collates
Part No.	
Description	Holding the valve in retainers spring
Identification Mark	Width is 8.19 mm.

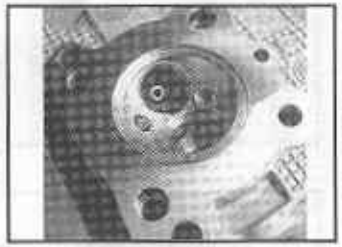


Part Name	Valve Intake
Part No.	DJ 1010 10
Description	Valve head dia. = 26.2 mm. Valve length is less (81.91 mm).
Identification Mark	DJ or K2 mark is embossed on valve head.

Part Name	Valve Exhaust
Part No.	DJ 1010 11
Description	Valve head dia. = 29.9 mm). Valve length is less (82.2 mm).
Identification Mark	DJ or K2 mark is embossed on valve head.

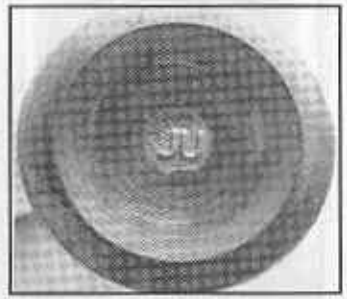
PULSAR DTS-i

Part Name	Cam Shaft Assembly
Part No.	
Description	Bearings are bigger in size.
Identification Mark	Bigger brg. No. 6302 & Smaller brg. No. 6002/C3, Collar having step type



Part Name	Cylinder Head
Part No.	
Description	Combustion chamber is bigger in size
Identification Mark	Combustion chamber has two holes for spark plugs

Part Name	Collates
Part No.	
Description	Holding the valve in retainers spring
Identification Mark	Width is 6.3 mm.



Part Name	Valve Intake
Part No.	
Description	Valve head dia. = 26.02 mm. Valve length is more (88.51 mm).
Identification Mark	JU mark is embossed on valve head.

Part Name	Valve Exhaust
Part No.	
Description	Valve head dia. = 30.01 mm. Valve length is more (89.3 mm).
Identification Mark	JU mark is embossed on valve head.

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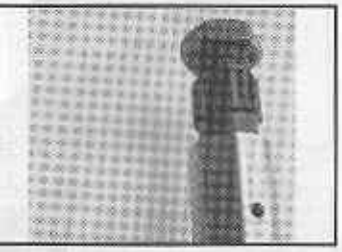
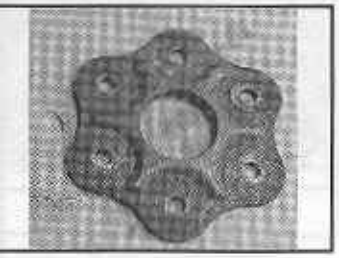
Part Name	Cylinder Complete
Part No.	DJ 1010 02
Description	Bore size is 63.5 mm.
Identification Mark	178.6 cc mark is embossed on casting and Fins are thicker.

Part Name	Piston
Part No.	DJ 1010 14
Description	Piston crown slightly dome type in shape.
Identification Mark	There is no mark embossed on piston crown.

Part Name	Rotor Asseembly
Part No.	DJ 1110 02
Description	Pick up coil sensor is more in length.
Identification Mark	Pick up coil sensor projection length is 25.12 mm.

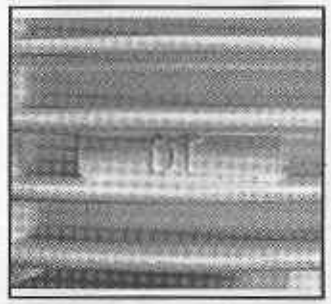


Part Name	Input Shaft
Part No.	
Description	Having regular threads and hex nut fitment.
Identification Mark	Regular (Right hand) thread.



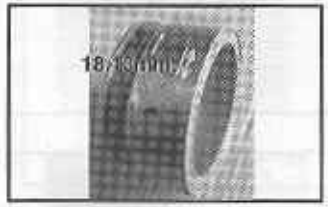
Part Name	Thrust Plate for Clutch
Part No.	
Description	Holds clutch bearing and plunger.
Identification Mark	Sheet metal.

PULSAR DTS-i

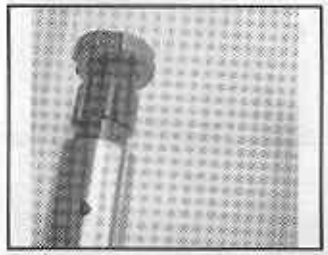


Part Name	Cylinder Complete
Part No.	
Description	Bore size is 63.5 mm.
Identification Mark	DT mark on casting and Fins are thicker.

Part Name	Piston
Part No.	
Description	Piston crown is flat in shape.
Identification Mark	DJU mark is embossed on piston crown.



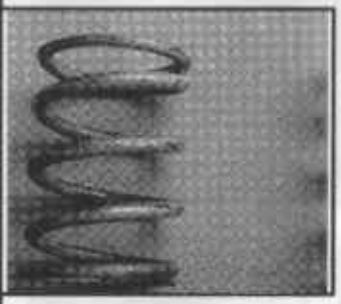
Part Name	Rotor Assembly
Part No.	
Description	Pick up coil sensor is less in length.
Identification Mark	Pick up coil sensor projection length is 18.13 mm.



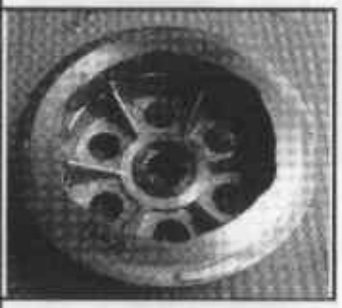
Part Name	Input Shaft
Part No.	
Description	Having left hand threads and special nut fitment.
Identification Mark	Left hand threads.

Part Name	Thrust Plate for Clutch
Part No.	
Description	Holds clutch bearing and plunger.
Identification Mark	Aluminium with in-built collar for bearing seat.

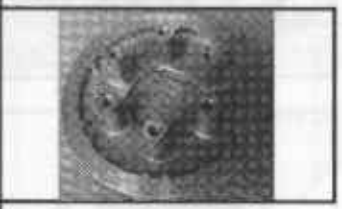
PULSAR 180



Part Name	Clutch Spring
Part No.	DJ 1010 02
Description	Height is more.
Identification Mark	Height is 33.5 mm. and marked with Yellow oil paint

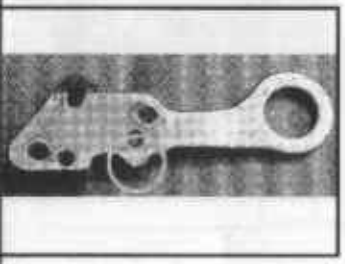


Part Name	Clutch Hub
Part No.	DJ 1010 27
Description	Holds friction plates and pressure plates.
Identification Mark	No casted collar with cup is provided on splined end.



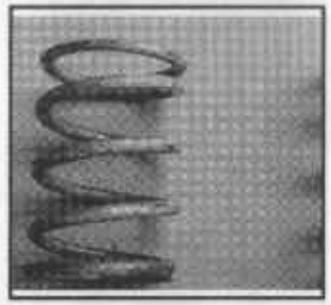
Part Name	Wheel Clutch
Part No.	
Description	Holds the clutch springs and hub.
Identification Mark	No cut marks on legs of clutch wheel.

Part Name	Clutch Housing
Part No.	DJ 1010 24
Description	Holds the complete clutch assembly.
Identification Mark	No slot on clutch housing.

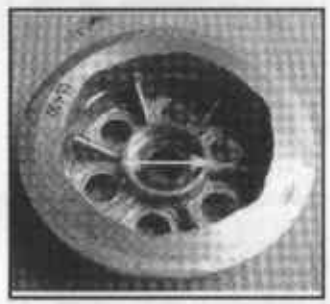


Part Name	Gear Change Lever
Part No.	
Description	For shifting the gear change drum.
Identification Mark	U shape mark on gear change lever which holds spring.

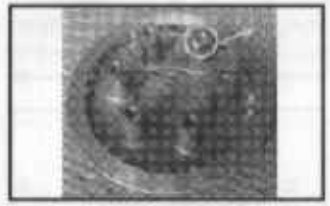
PULSAR DTS-i



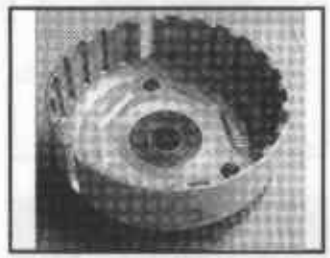
Part Name	Clutch Spring
Part No.	
Description	Height is less.
Identification Mark	Height is 30.4 mm & marked with Yellow oil paint



Part Name	Clutch Hub
Part No.	
Description	Holds friction plates and pressure plates.
Identification Mark	Casted collar with cup is provided on splined end.



Part Name	Wheel Clutch
Part No.	
Description	Holds the clutch springs
Identification Mark	Cut marks on legs of clutch wheel.



Part Name	Clutch Housing
Part No.	
Description	Holds the complete clutch assembly.
Identification Mark	3 slots are provided on clutch housing.

Part Name	Gear Change Lever
Part No.	
Description	For shifting the gear change drum.
Identification Mark	Cut mark on gear change lever which holds spring.

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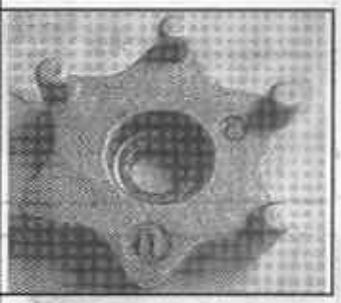
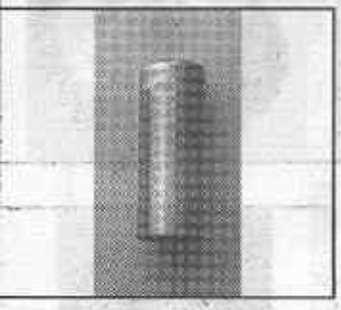
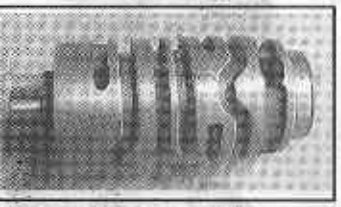


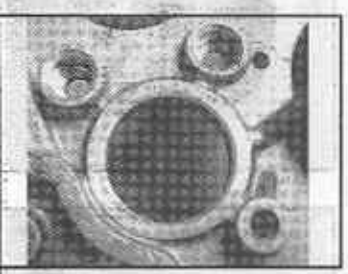
Part Name	Guide gear shift
Part No.	DJ 1010 02
Description	Guide gear having 4 pins but collor height is 1.85 mm.
Identification Mark	4 pins, rough surface finish and smaller in size.



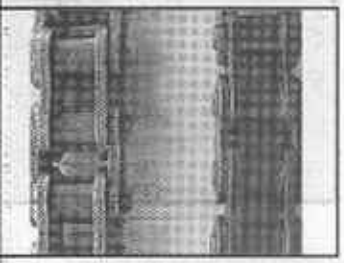
Part Name	Guide gear pin
Part No.	
Description	To hold gear guide in drum.
Identification Mark	Diameter is 2.92 mm.



Part Name	Drum change
Part No.	
Description	For shifting gears
Identification Mark	More in length.



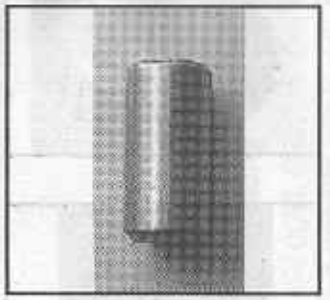
Part Name	Crankcase clutch side
Part No.	DJ 1010 24
Description	Bearing not provided at gear changer drum
Identification Mark	No hole for bearing stopper.



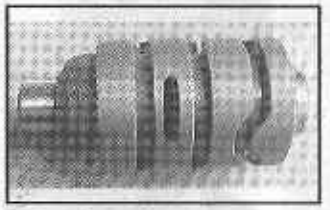
Part Name	Drive Chain
Part No.	DJ 1510 11
Description	Chain is short in length.
Identification Mark	Chain links 114.

PULSAR DTS-i

Part Name	Guide Gear Shift
Part No.	
Description	Guide gear having 4 pins but collar height is 7.22 mm.
Identification Mark	4 pins, Polished surface finished and bigger in size.

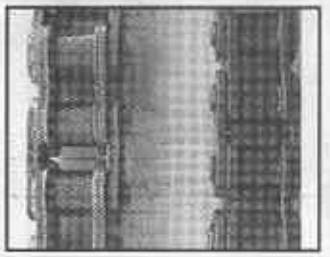


Part Name	Guide Gear Pin
Part No.	
Description	To hold gear guide in drum.
Identification Mark	Diameter is 3.96 mm.



Part Name	Drum Gear Change
Part No.	
Description	For shifting gears.
Identification Mark	Short in length.

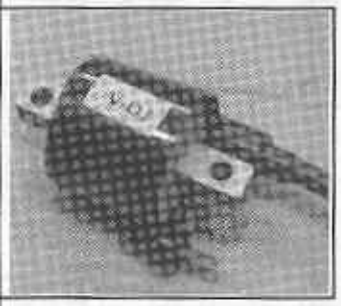
Part Name	Crankcase Clutch Side
Part No.	
Description	Bearing provided at gear change drum.
Identification Mark	Provision of hole for bearing stopper.



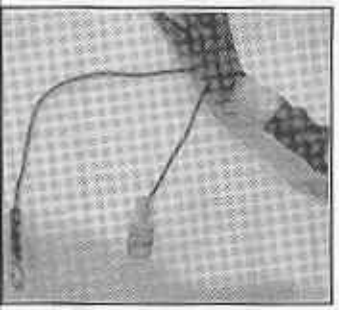
Part Name	Drive Chain
Part No.	
Description	Chain is more in length.
Identification Mark	Chain links 122.

PULSAR 180

Part Name	CDI
Part No.	DJ 1110 03
Description	Coupler is Brown in colour.
Identification Mark	Single input coupler.



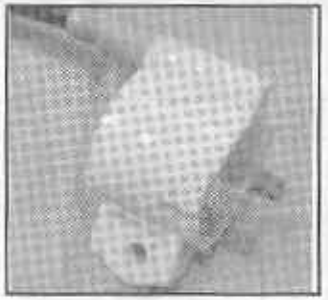
Part Name	High Tension Coil
Part No.	DJ 1110 05
Description	It is having only 1 input terminal.
Identification Mark	DJ sticker fitted on body.



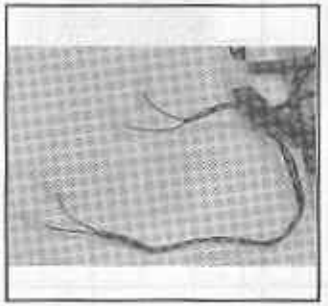
Part Name	Wiring Harness
Part No.	DJ 2010 13 (For 150 and 180 Electric Start)
Description	Harness.
Identification Mark	Single H.T. coil input terminal.

PULSAR DTS-i

Part Name	CDI
Part No.	
Description	Coupler is Brown in colour.
Identification Mark	Double input brown coupler.



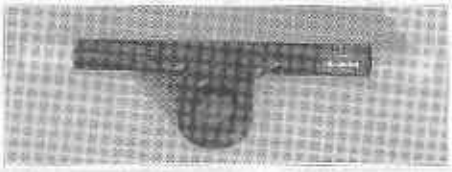
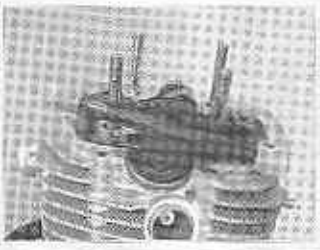
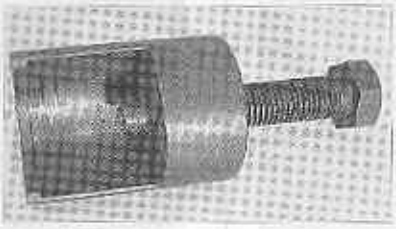
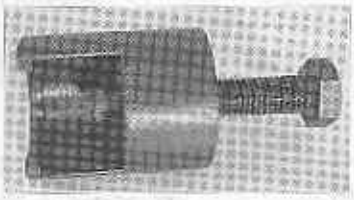
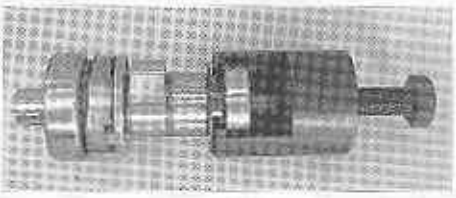
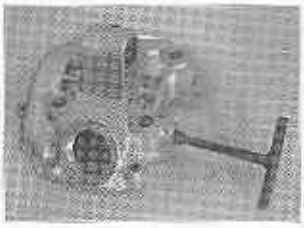
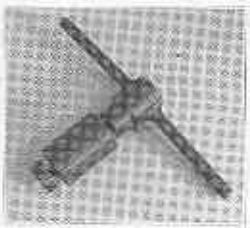
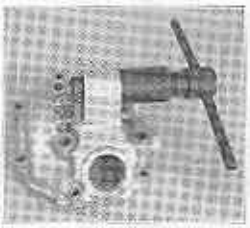
Part Name	High Tension Coil
Part No.	
Description	It is having only 2 input terminals
Identification Mark	Off White in colour.



Part Name	Wiring Harness
Part No.	
Description	
Identification Mark	2 H.T. coil input terminals.

DETAILS OF EXCLUSIVE SPECIAL TOOLS – PULSAR DTS-i

For carrying out repairs / overhauls, we have developed 5 new Special Tools for Pulsar DTS-i. Rest of the Special Tools required are of our existing Pulsar model. Please refer Special tool section of Service Station Manual of Pulsar for more details.

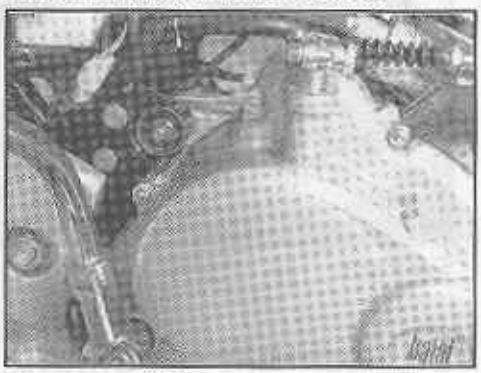
Tool No. & Description	Tool	Application
3710DH36 **Sprocket Catcher** For holding sprocket during removal / refitting of Cam sprocket allen bolt.		
3710DH32 **camshaft big bearing puller** To remove bearing (Decompres sion assly side) of camshaft.		
3710DH31 **Camshaft small bearing puller** To remove small bearing of camshaft.		
3710DH35 **Rocker pin Remover** To remove rocker pin from cylinder head.		
3710DH33 **Cylinder cover bush puller** To remove silent bush from cylinder head.		

TIGHTENING TORQUES (ENGINE) - PULSAR DTS-i

CYL. HEAD BKT. MTG. BOLTS

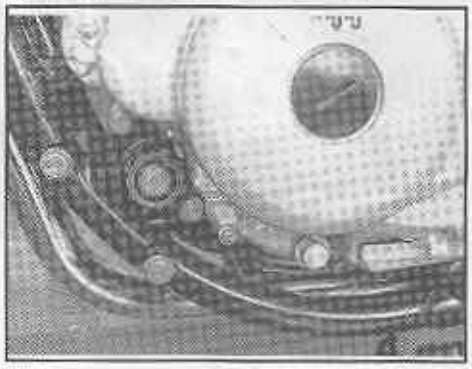
M8 - 2.2 kgm. M10 -

ENGINE MOUNTING BOLTS



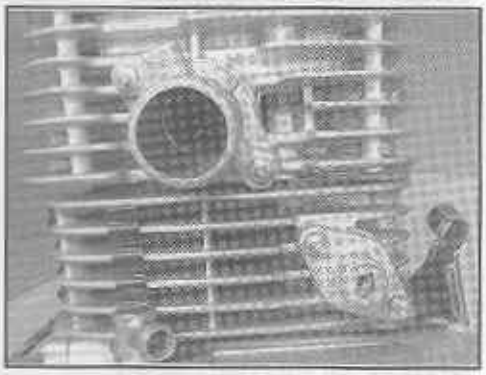
M8 - 2.2 kgm. M10 -

ENGINE MOUNTING NUTS



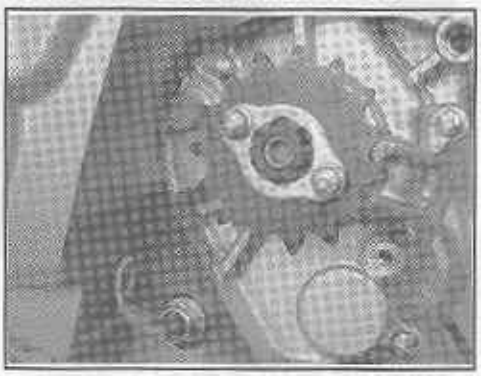
M8 - 2.2 kgm. M10 -

CHAIN TENSIONER MTG. BOLTS



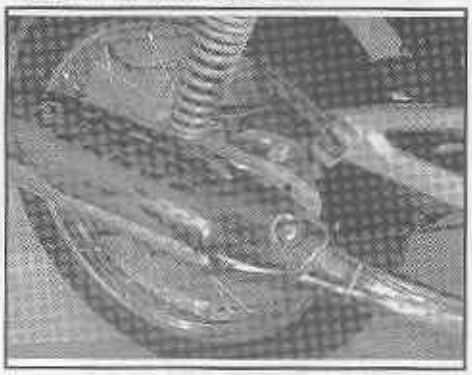
1.1 kgm.

OUTPUT SPROCKET BOLTS



1.1 kgm.

SILENCER MTG. BOLT

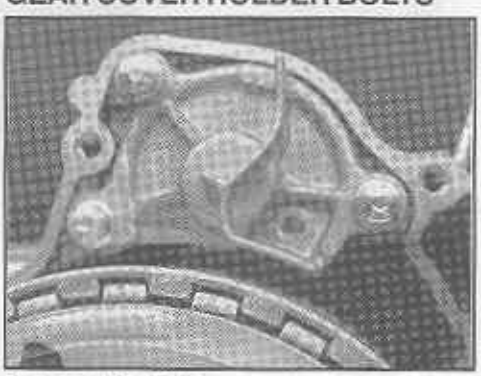


3.5 to 4.0 kgm.

SILENCER MTG. NUTS

1.4 to 1.9 kgm.

GEAR COVER HOLDER BOLTS



1.0 to 1.1 kgm.

CRANKCASE JOINING BOLT

1.2 kgm.

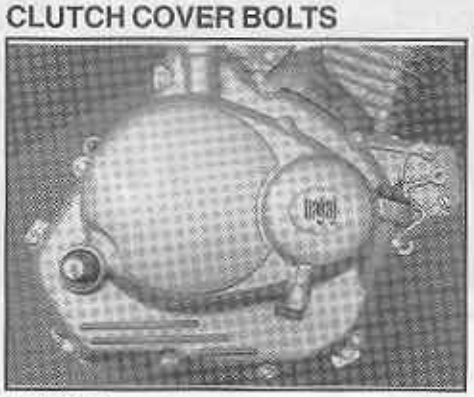
CRANKCASE JOINING BOLTS

1.1 kgm.

CRANKCASE JOINING BOLT

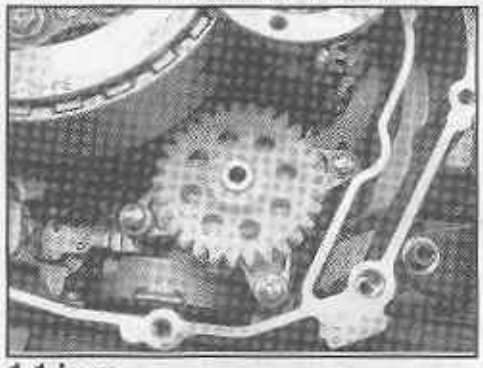
1.1 kgm.

CLUTCH COVER BOLTS



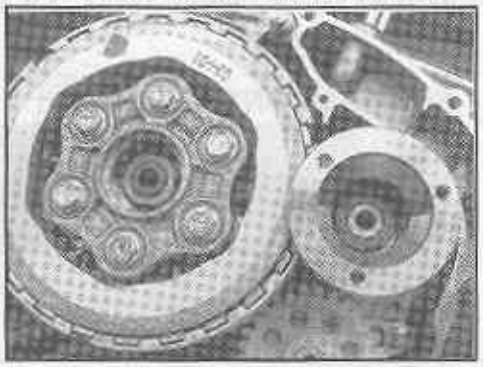
1.1 kgm.

OIL PUMP MOUNTING BOLTS



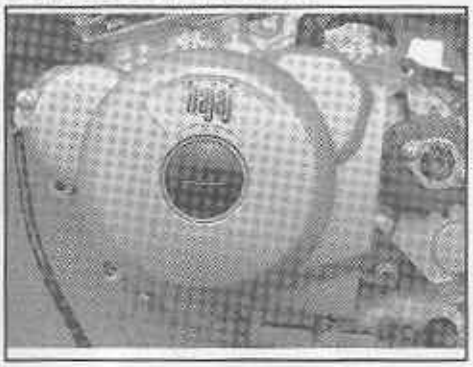
1.1 kgm.

CENTRIFUGAL OIL FILTER NUT



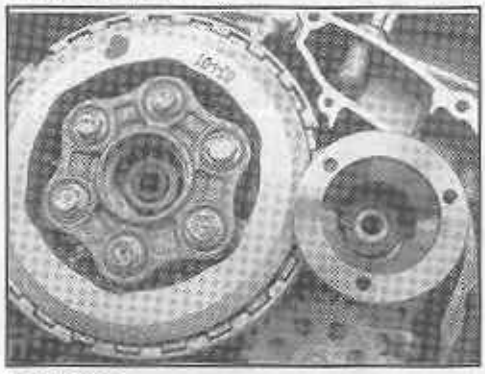
5.5 kgm.

ROTOR COVER BOLTS



1.1 kgm.

CLUTCH NUT

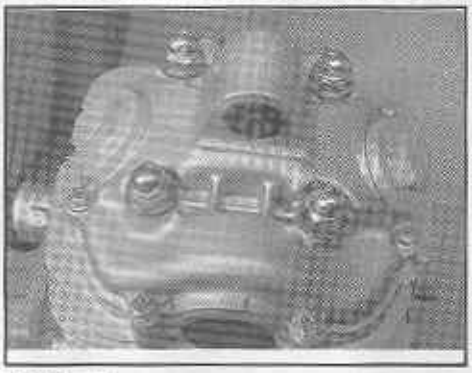


5.0 kgm.

CYLINDER HEAD COVER NUTS

3.5 kgm.

CYLINDER HEAD COVER BOLTS

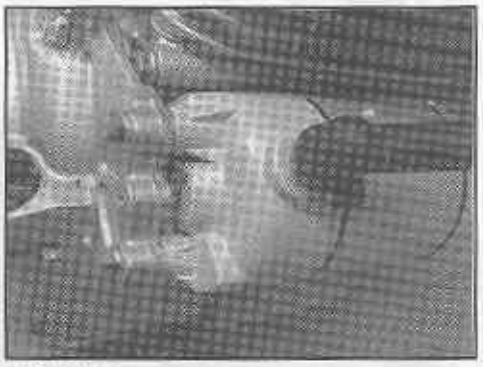


1.0 kgm.

CAMSHAFT SPROCKET BOLT

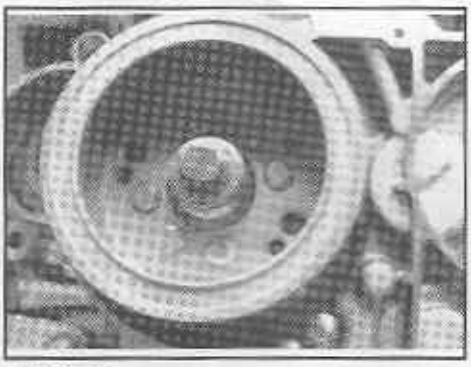
1.4 kgm.

STARTER MOTOR BOLTS



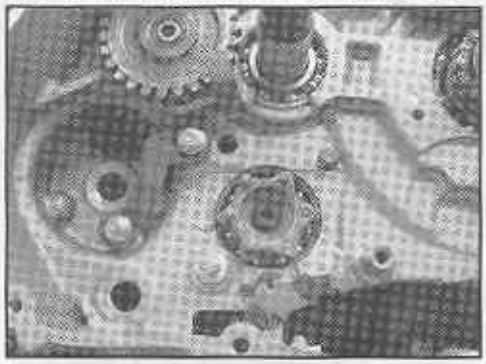
1.1 kgm.

ROTOR MOUNTING BOLT



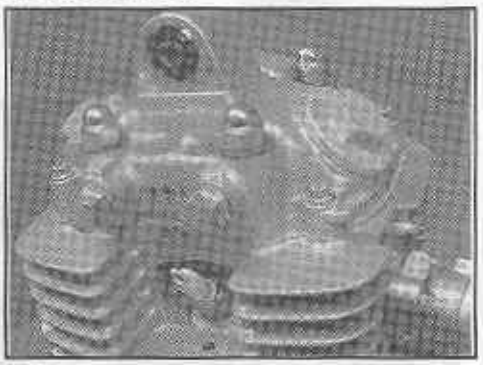
4.5 kgm.

IDLER GEAR BKT. HOLDER BOLTS



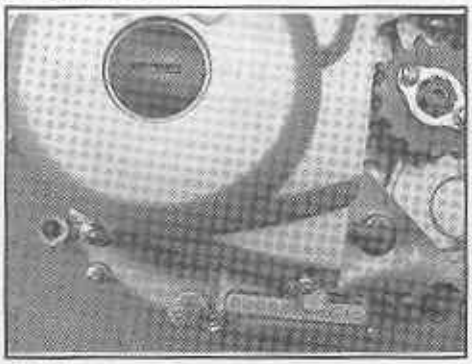
1.0 to 1.1 kgm.

SPARK PLUG



1.4 kgm.

DRAIN BOLT



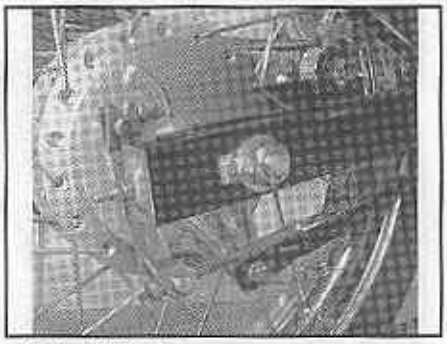
2.5 kgm.

TIGHTENING TORQUES (CHASSIS) - PULSAR DTS-i

FRONT AXLE NUT

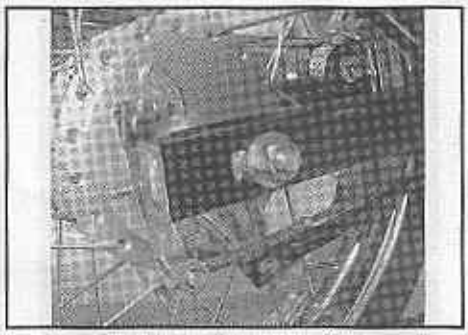
4.0 to 5.0 kgm.

REAR AXLE NUT



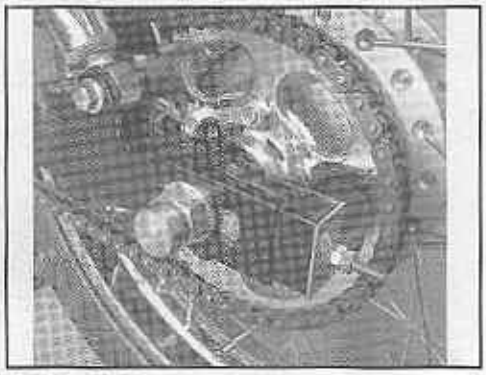
8.0 to 10.0 kgm.

TORQUE ROD NUT



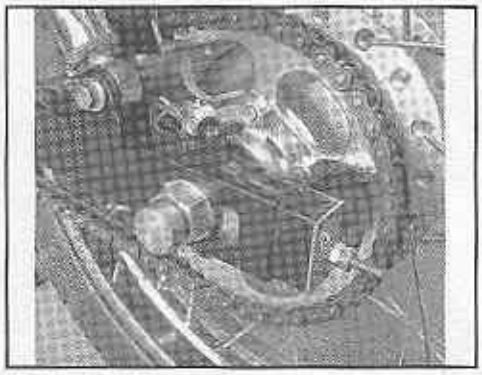
3.0 to 4.0 kgm.

SLEEVE NUT



7.0 to 8.0 kgm.

REAR SPROCKET MTG. NUT



1.8 to 2.5 kgm.

HANDLE BAR HOLDER BOLTS

2.0 to 2.2 kgm.

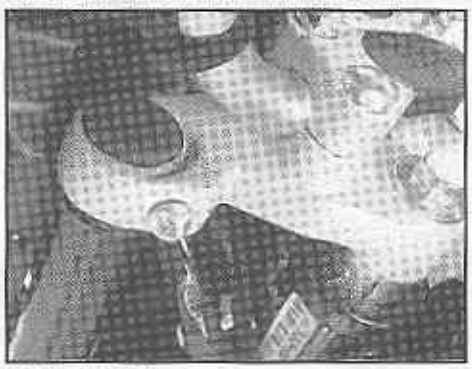
STEERING TOP BOLT

3.5 kgm.

STG. STEM NUT (SLOTTED)

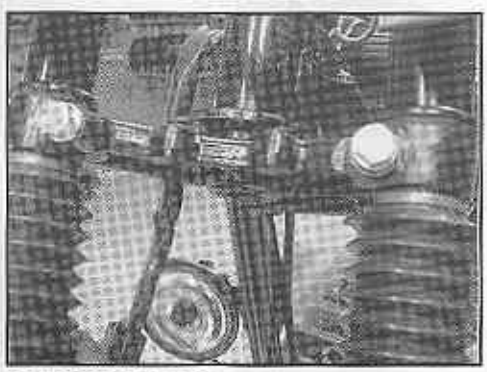
0.5 kgm.

UPPER CLAMP ALLEN BOLT



1.8 to 2.0 kgm.

FRONT FORK TOP BOLTS



2.5 to 3.5 kgm.

R.S.A. MOUNTING NUTS

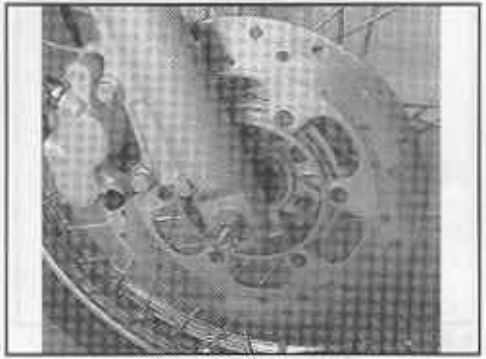
3.5 to 4.0 kgm.

SWING ARM PIVOT NUT

8.0 to 10.0 kgm.

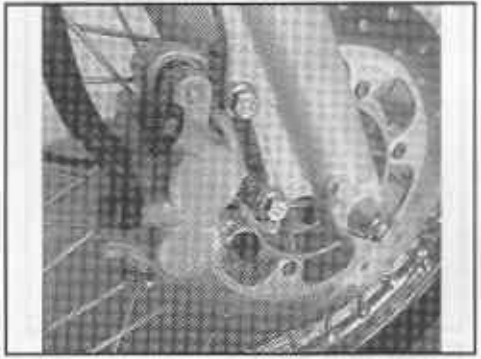
TIGHTENING TORQUES (CHASSIS) - PULSAR DTS-i

CALIPER INSTALL BOLTS



2.2 to 2.8 kgm.

DISC BOTTOM ALLEN BOLTS



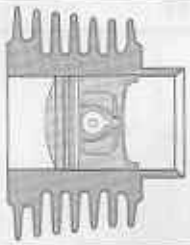
0.9 to 1.1 kgm.

OIL BOLT - DISC BRAKE

2.2 TO 2.8 Kgm

SERVICE DATA (ENGINE) - PULSAR DTS-i

PISTON/CYL. CLEARANCE

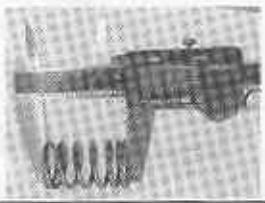


Standard :	0.012-0.030
Service Limit	: —

ROCKER ARM SHAFT DIA.

Standard	: 11.98-11.99
Service Limit	: 11.96

VALVE SPRING FREE LENGTH



	Ex.	In.
Standard	: 35.43	35.43
Service Limit	: 35.30	35.30

ROCKER ARM INSIDE DIAMETER

Standard	:12.00 to 12.018
Service Limit	: 12.05

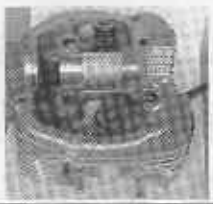
SHIFT FORK GUIDE PIN DIA.

Standard	: 5.9-6.0
Service Limit	: 5.8

CLUTCH SPRING FREE LTH.

Standard	: 41.50
Service Limit	: 39.70

CYLINDER HEAD WARP



Service Limit	: 0.05

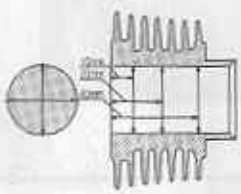
SHIFT DRUM GROOVE WIDTH

Standard	: 6.05-6.20
Service Limit	: 6.3

CAM SHAFT CHAIN LTH. 20 LINKS

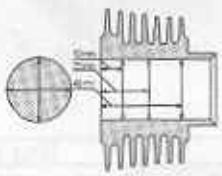
Standard :	127.00 to 127.30
Service Limit :	128.9

CYLINDER INSIDE DIA.- 150



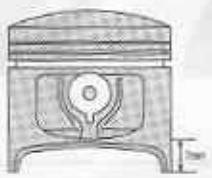
Group A :	57.00 to 57.008
Group B :	57.008 to 57.015

CYL. INSIDE DIA.- 180



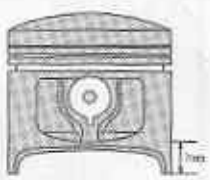
Group A :	63.50 to 63.508
Group B :	63.508 to 63.515

PISTON DIA. - 150



Standard	56.978-56.988
Service Limit	56.988-56.998

PISTON DIA. - 180



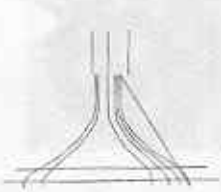
Standard	63.478 - 63.488
Service Limit	63.488 - 63.498

VALVE STEM DIAMETER

Standard : Ex. 4.45-4.47 In. 4.475-4.490

Service Limit : Ex. 4.44 In. 4.46

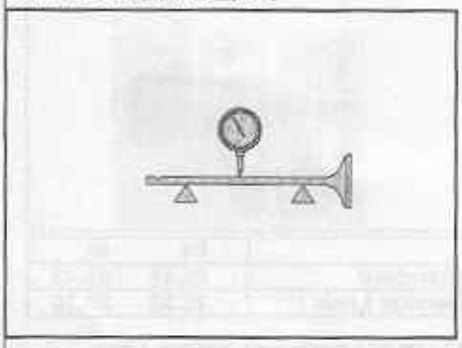
VALVE HEAD THICKNESS



Standard	Ex. 1.15-1.45 In. 0.85-1.15
Service Limit	Ex. 0.5 In. 0.5

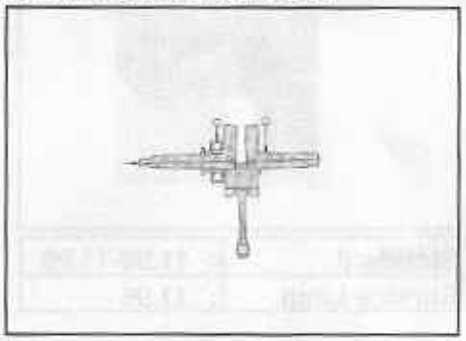
SERVICE DATA (ENGINE) - PULSAR DTS-i

VALVE STEM BEND



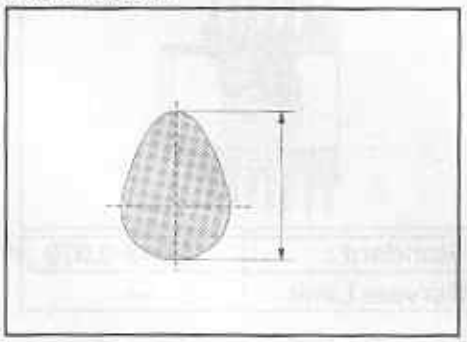
Standard	TIR 0.01
Service Limit	TIR 0.03

CRANK SHAFT RUN OUT



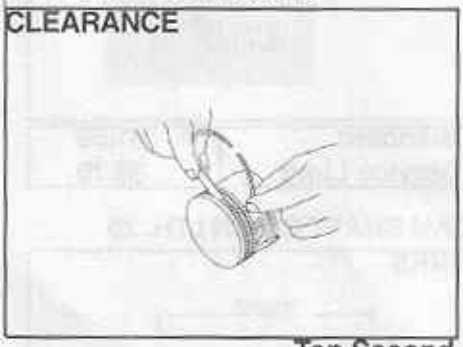
Standard	0.02 Max	
Service Limit	0.05	

CAM HEIGHT



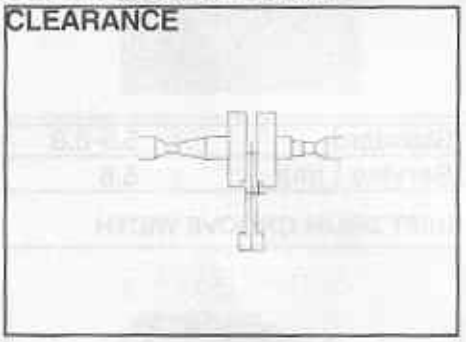
	In	Ex.
Standard	30.8	31.4
Service Limit	30.5	31.0

PISTON RING/GROOVE CLEARANCE



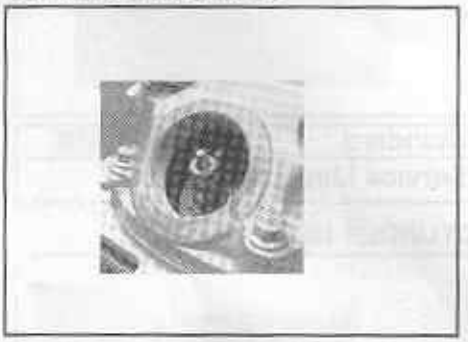
	Top	Second
Standard	0.02-0.06	0.01-0.05
Service Limit	0.16	0.15

CONROD BIG END AXIAL CLEARANCE



Standard	0.1-0.35
Service Limit	0.45

VALVE CLEARANCE

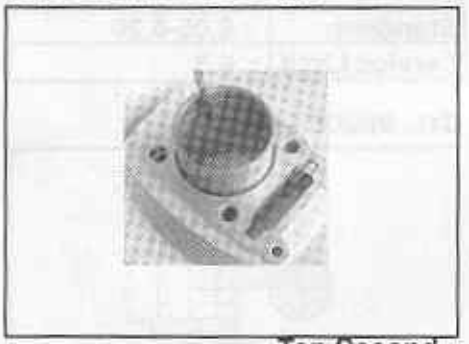


Standard	Ex. 0.05
Service Limit	Inlet 0.05

COMPRESSION PRESSURE

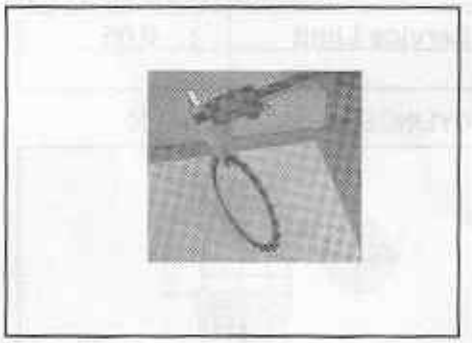
Standard	12.0-14.0 kg/cm2
Service Limit	9.1-14.0 kg/cm2

PISTON RING END GAP



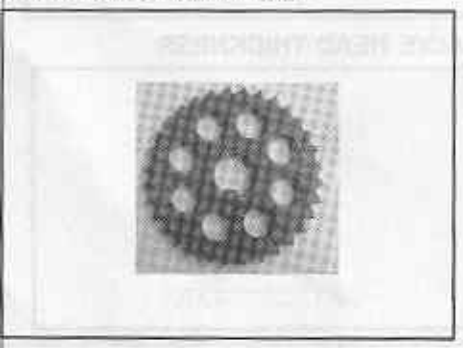
	Top	Second
Standard	0.15-0.30	0.30-0.45
Service Limit	0.55	0.75

FRICTION PLATE THICK.



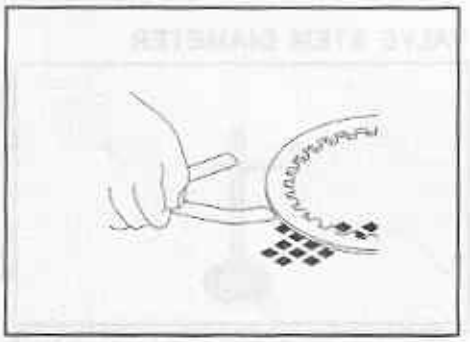
Standard	2.9-3.1
Service Limit	2.75

CAM SPROCKET DIA.



Standard	61.48-61.36
Service Limit	61.30-

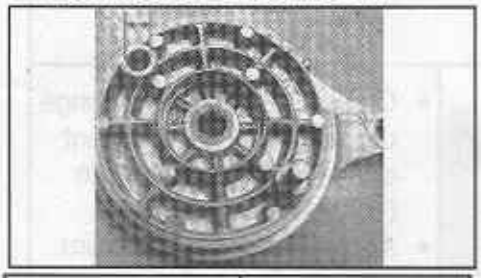
PRESSURE PLATE WARP



Standard	0.2
Service Limit	0.3

SERVICE DATA (CHASSIS) - PULSAR DTS-i

BR. CAMSHAFT HOLE DIA.

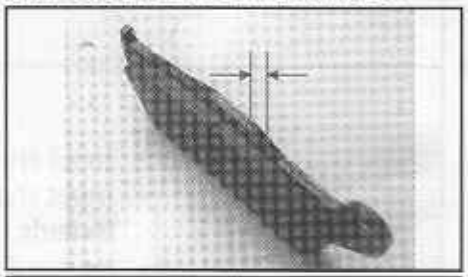


Standard	12.00-12.03
Service Limit	12.15

BRAKE CAMSHAFT DIA.

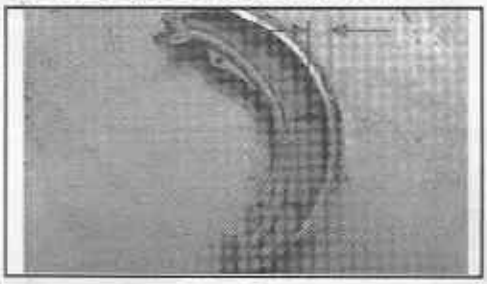
Standard	11.95-11.98
Service Limit	11.88

FR. BRAKE PAD THICKNESS



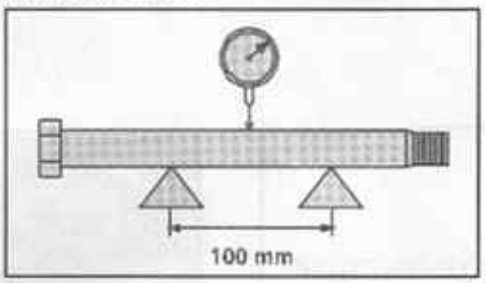
Standard	7.4
Service Limit	3.8

BRAKE SHOE LINING THICKNESS



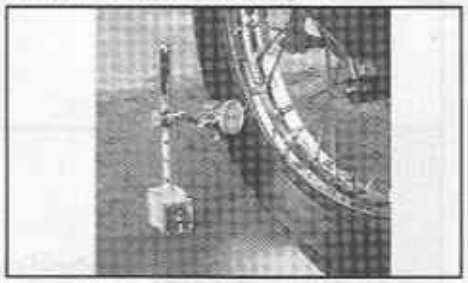
Standard	3.85-4.15
Service Limit	2.0

AXLE RUN OUT



Standard	0.1 or less
Service Limit	0.2

AXIAL WHEEL RUN OUT

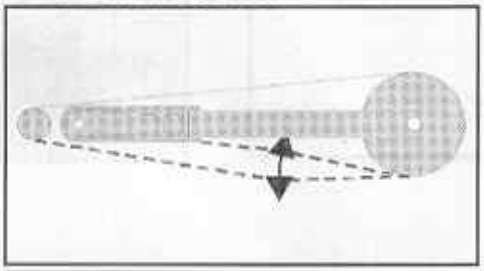


Standard	1.0 or less
Service Limit	2.0

RADIAL WHEEL RUN OUT

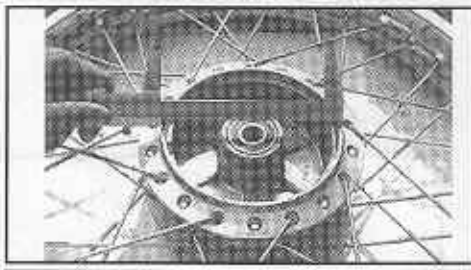
Standard	0.8 or less
Service Limit	2.0

DRIVE CHAIN SLACK



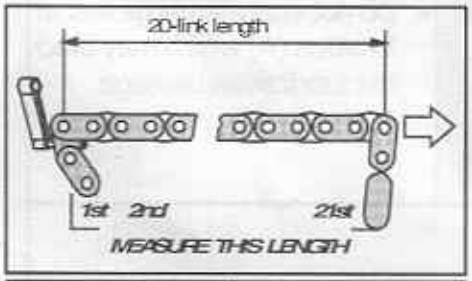
Standard	15 to 20
Service Limit	25 - 40

BRAKE DRUM INSIDE DIAMETER



Standard	1.30-130.16
Service Limit	130.75

DRIVE CHAIN LENGTH



Standard	254-254.6
Service Limit	259

REAR TYRE TREAD DEPTH (150)

Standard	6.7
Service Limit	1.5

REAR TYRE TREAD DEPTH (180)

Standard	6.8
Service Limit	1.5

FRONT TYRE TREAD DEPTH

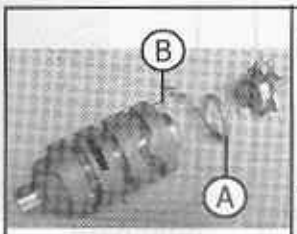
Standard	5.0
Service Limit	1.0

REAR SPROCKET WARP

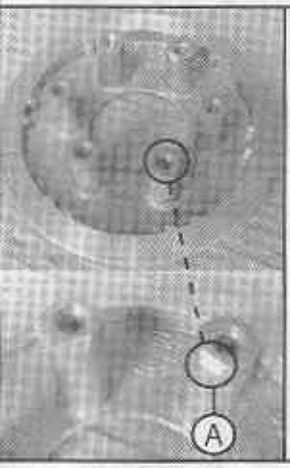
Standard	0.4 or less
Service Limit	0.5

IMPORTANT ASSEMBLY TIPS

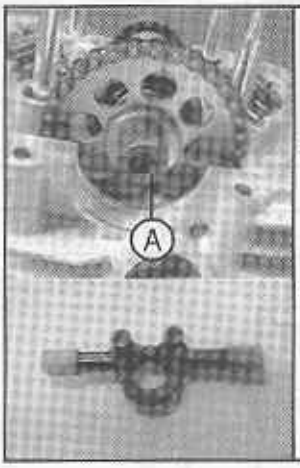
- Input shaft has special nut.
- Input shaft has Left hand threads.
- No need of applying Loctite 243
- Inputshaft has same Belville washer as primary gear.



- On assembling gear change drum assly ensure fitment of spacer (A) & roller pin (B) diameter = 3.2 mm.
- Apply Loctite 638 on drum change allen bolt.

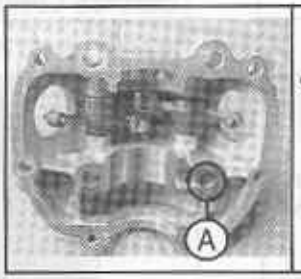


- Wheel clutch is having cut marks (A) which is a relief for the Cast Spring Holder improvement.

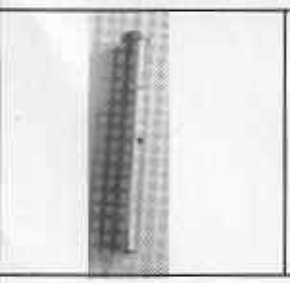


- Secure the cam chain sprocket in the tool given below firmly & then tighten the sprocket allen bolt (A).
- Ensure that the O mark on Washer always faces outwards when tightening the Allen Bolt.

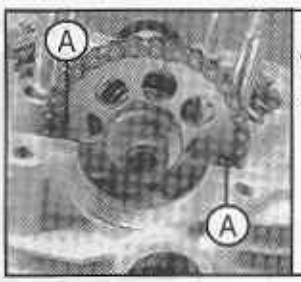
- Remove the allen head grub screw before removing the sleeve spark plug.
- Before fitting the sleeve spark plug apply thin layer of molybdenum disulphide grease on the entry chamfers for the O rings.



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



- Inlet Rocker arm shaft is longer in length and is having hole for lubrication.



Valve timing

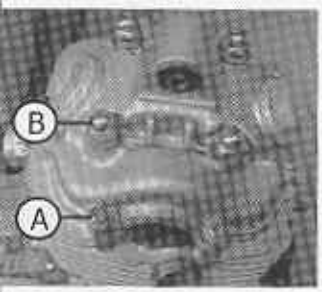
- Ensure the sprocket marks (A) are aligned horizontally with cylinder head top machined face and the Piston is at TDC.

TOP END SERVICEABILITY

Remove

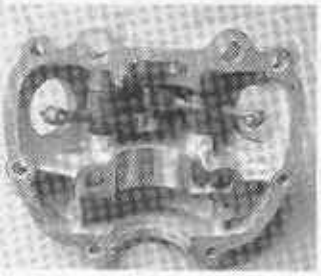
1. Pull out the cover on the spark plug cap and the spark plug cap itself.
2. Using a appropriate socket, loosen and remove the spark plug.
3. Loosen and unscrew the allen head grub screw of the sleeve spark plug.
4. Wrap a piece of cloth around the protruding edge of the sleeve spark plug and using a plier, pull out the sleeve.
5 There are 2 'O' rings fitted in the cylinder head, one on the cam chain wall and the other near the spark plug threading.
6 Using a thin, sharp pointed tool pierce the 'O' rings and remove them.

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

- The chain tensioner assly.
- Intake Manifold.
- 2 bolts with gasket (16 Nos. size - Magneto side) for Rocker Arm shafts.
- Tappet caps
- Cylinder head securing top cover 6 bolts (A).
- Cylinder head securing top cover 4 Domed Nuts with Copper plated Steel washers (B).



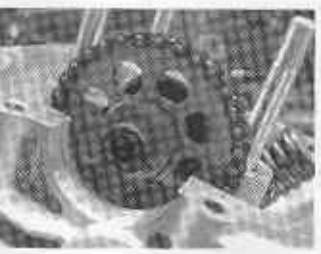
- Using special tool

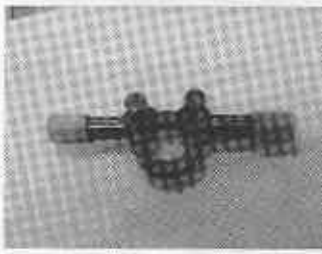
Remove

- Exhaust & Inlet Rocker shafts with Rocker arm & 3 washers. (2 plain washers on either side & wave washer Bend washer in centre)
- Dowels

Remove

- Cap for sprocket





- Use special tool to hold sprocket & loosen allen bolt.

Remove

- Allen bolt
- Spacer
- Collar
- Cam shaft assly.

Remove

- Cylinder head assly.
- Dowels
- Gasket cylinder head
- Holding timing chain pull up the block
- Piston pin circlip & piston pin
- Piston assly
- Block gasket
- Dowels

TOP END ASSEMBLING

Fit

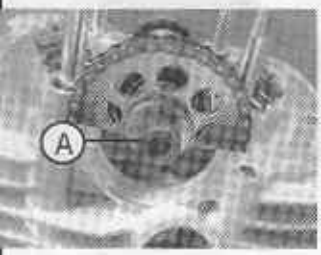
- Dowels
- Block Base gasket.
- Piston assly slide piston pin & lock it with wire clip.
- Holding timing chain upright and slide cylinder block onto Piston assly and Studs.
- Dowels & cylinder head gasket.

Fit

- Cylinder head assly. holding timing chain up right.

Fit

- Slide in the sprocket cam chain.
- Cam shaft assly. along with collar.

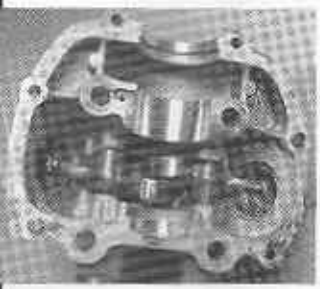


Fit

- Align the crankshaft TDC to Camshaft TDC.
- Sprocket allen bolt (A) with Spacer

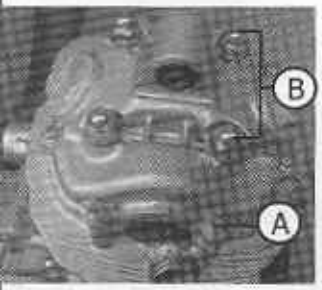
Note: Use special tool to hold the sprocket.

- Apply thin layer of 3 bond liquid gasket .
- Fit the rubber cap



Fit

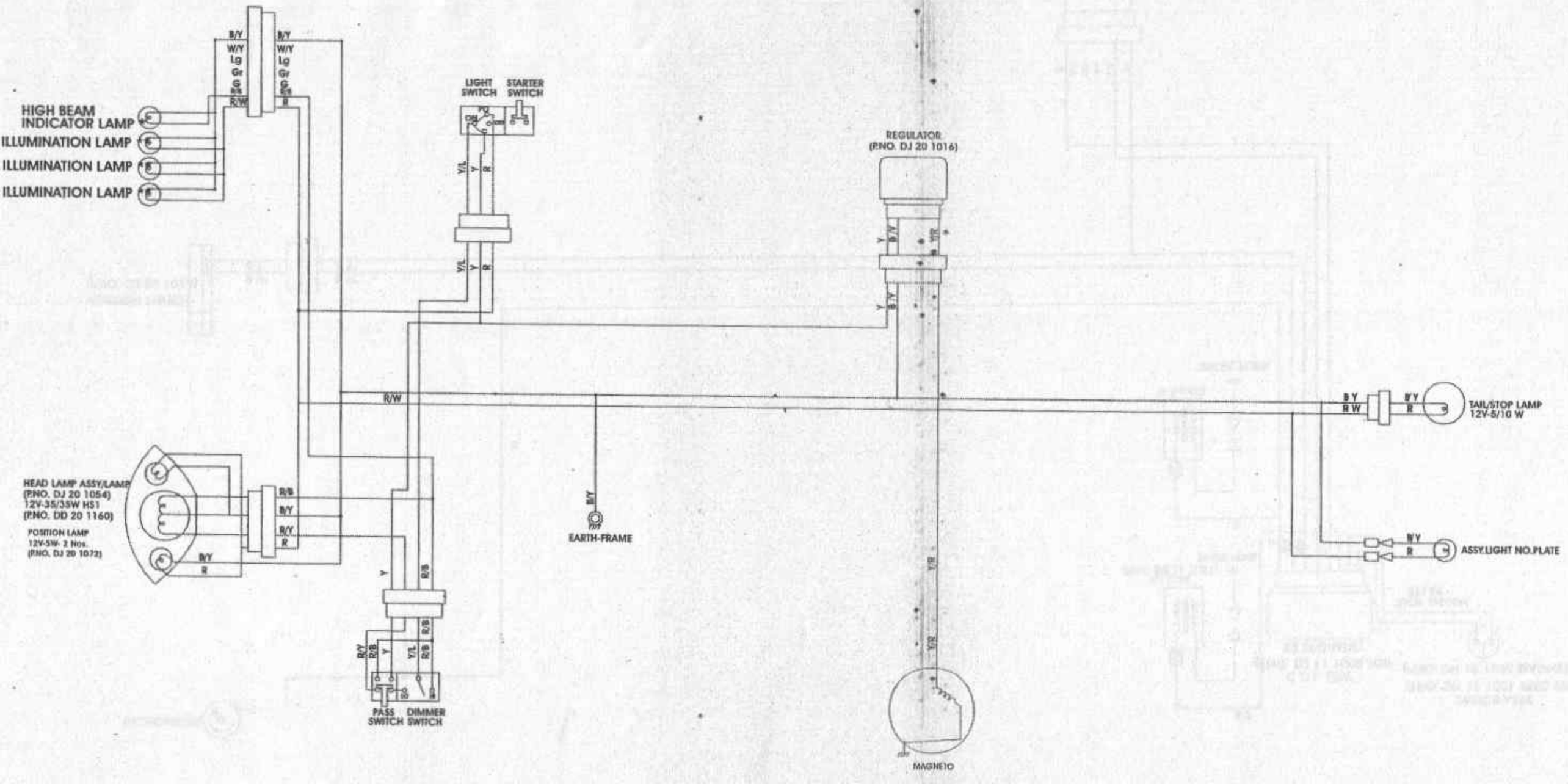
- Inlet & Exhaust Rocker arms and shaft pins at respective locations with set of shims.
- 2 Bolts with washer.



- Top cover 4 Domed Nuts with copper plated steel washers (B)
- Top cover mounting 4 + 2 Bolts (A).

Ensure
Adjust the value clearance as per specifications.
Inlet Tappet clearance = 0.05 mm
Exhaust Tappet clearance = 0.1 mm

AC LIGHTING CIRCUIT



IGNITION CIRCUIT