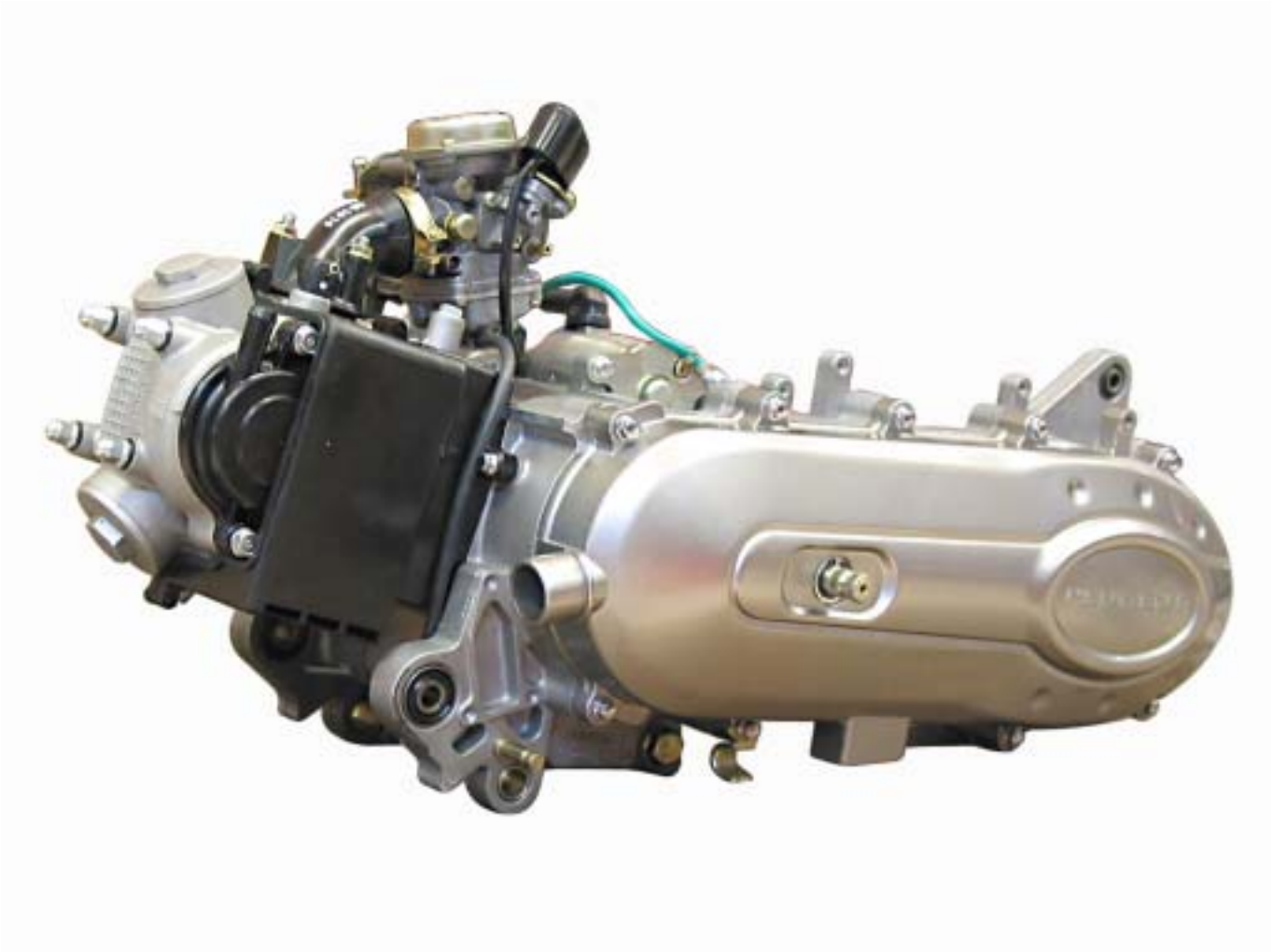
Sales division
Technical network leadership

TECHNICAL TRAINING



50CC 4-STROKE ENGINE
2 VALVES

P/N MOT50SYM.001.03/2009.GB

TABLE OF CONTENTS

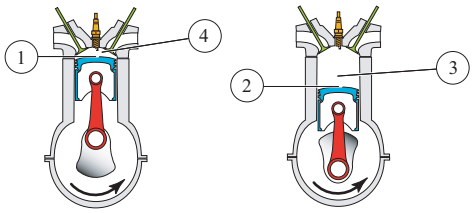
CHARACTERISTICS

	50 cc
Make	P152QMI-A
Type	4-stroke single-cylinder. 2 valves per cylinder with chain driven overhead camshaft
Cooling	By a circulation of forced air by means of a turbine on the flywheel magneto
Bore x stroke	37 x 46 mm
Cubic capacity	49.5 cm3
Max. power output	2.8 kW at 8000 rpm
Max. torque rating	3.5 Nm at 6500 rpm
Lubrication	Trochoid pump driven by a gear set from the crankshaft
Transmission	By 2 variable pulleys and V-type belt
Clutch	Centrifugal automatic
Exhaust	Catalytic
Spark plug	NGK CR 7HSA
Magneto flywheel	70 W
Fuel supply	Carburettor Keihin NVC18(c/d)
Standards	Euro3

Capacities

Crankcase	0.7 l
Relay box	0.1 l

HOW A 4 STROKE ENGINE WORKS

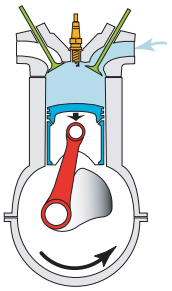


1. TDC: Top dead centre
2. BDC: Bottom dead centre
3. V : Volume between the TDC and the BDC
4. v : Volume on top of the piston when it is at its TDC

(V+v)/v : Compression ratio. It is the ratio of the initial volume (V+v) to the final volume (v).

4 stroke cycle

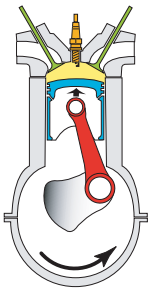
1st revolutio



1st stroke, Intake

When the piston goes down, it creates a vacuum pressure (TDC-BDC) which suctions the air and petrol mixture into the cylinder through the intake valve.

The intake valve is open.



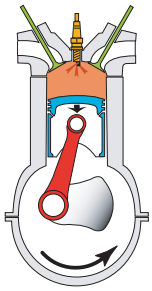
2nd stroke, Compression

The piston goes up and compresses the air and petrol mixture (BDC-TDC) until it fills only the compression chamber.

The intake valve is closed.

The exhaust valve is closed.

2nd revolutio

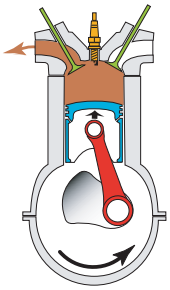


3rd stroke, Explosion (expansion)

The spark plug lights up the compressed air and petrol mixture. The heat expands the gases which violently pushes the piston downwards (TDC-BDC).

The intake valve is closed.

The exhaust valve is closed.



4th stroke, Exhaust

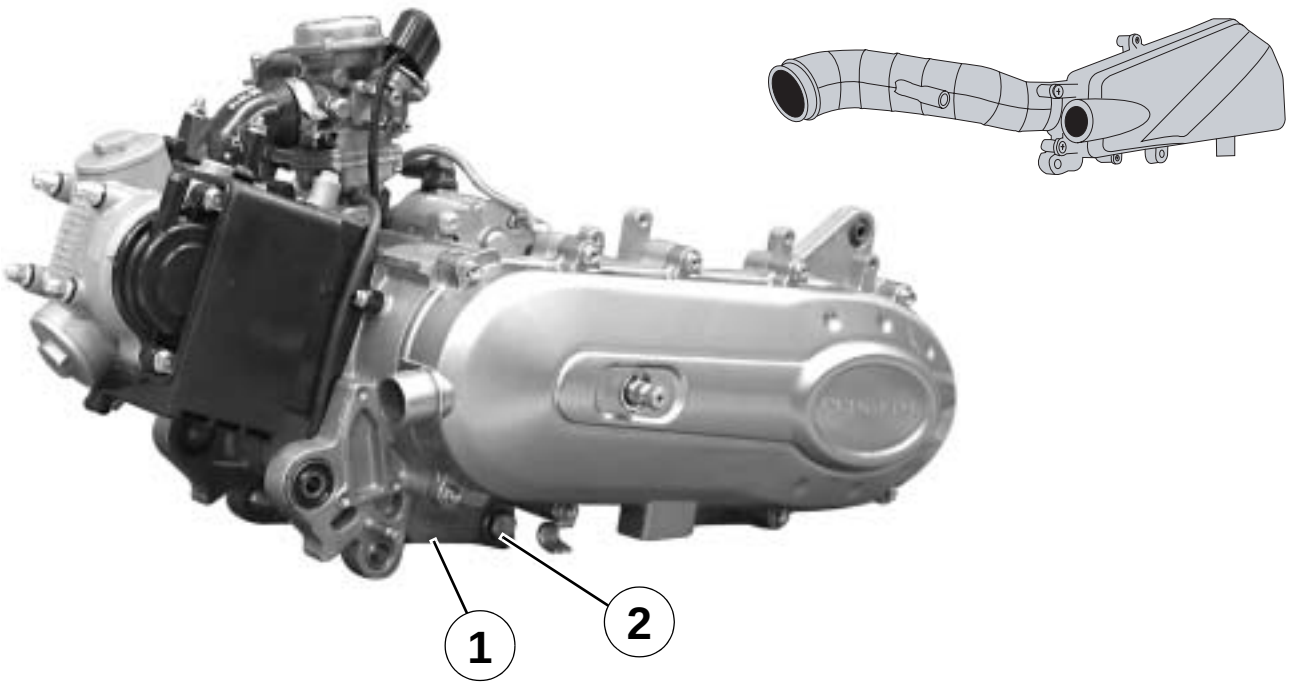
When the piston goes up, it expels the burnt gases through the exhaust valve.

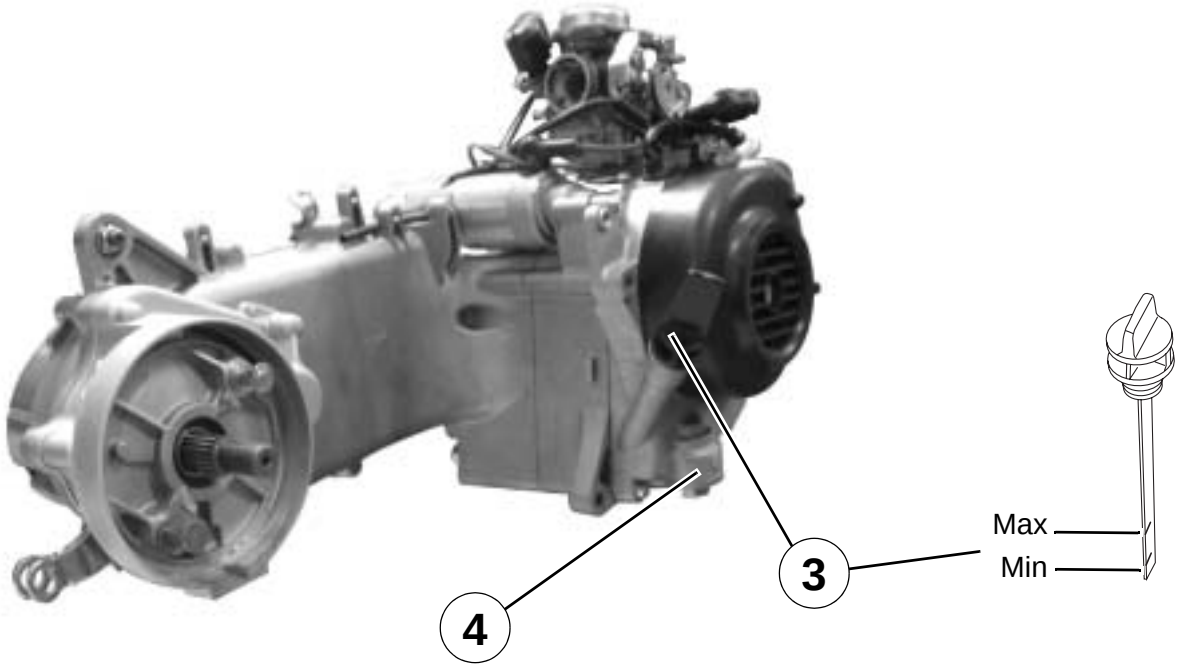
The engine is ready again to perform a new cycle.

The exhaust valve is open.

ENGINE

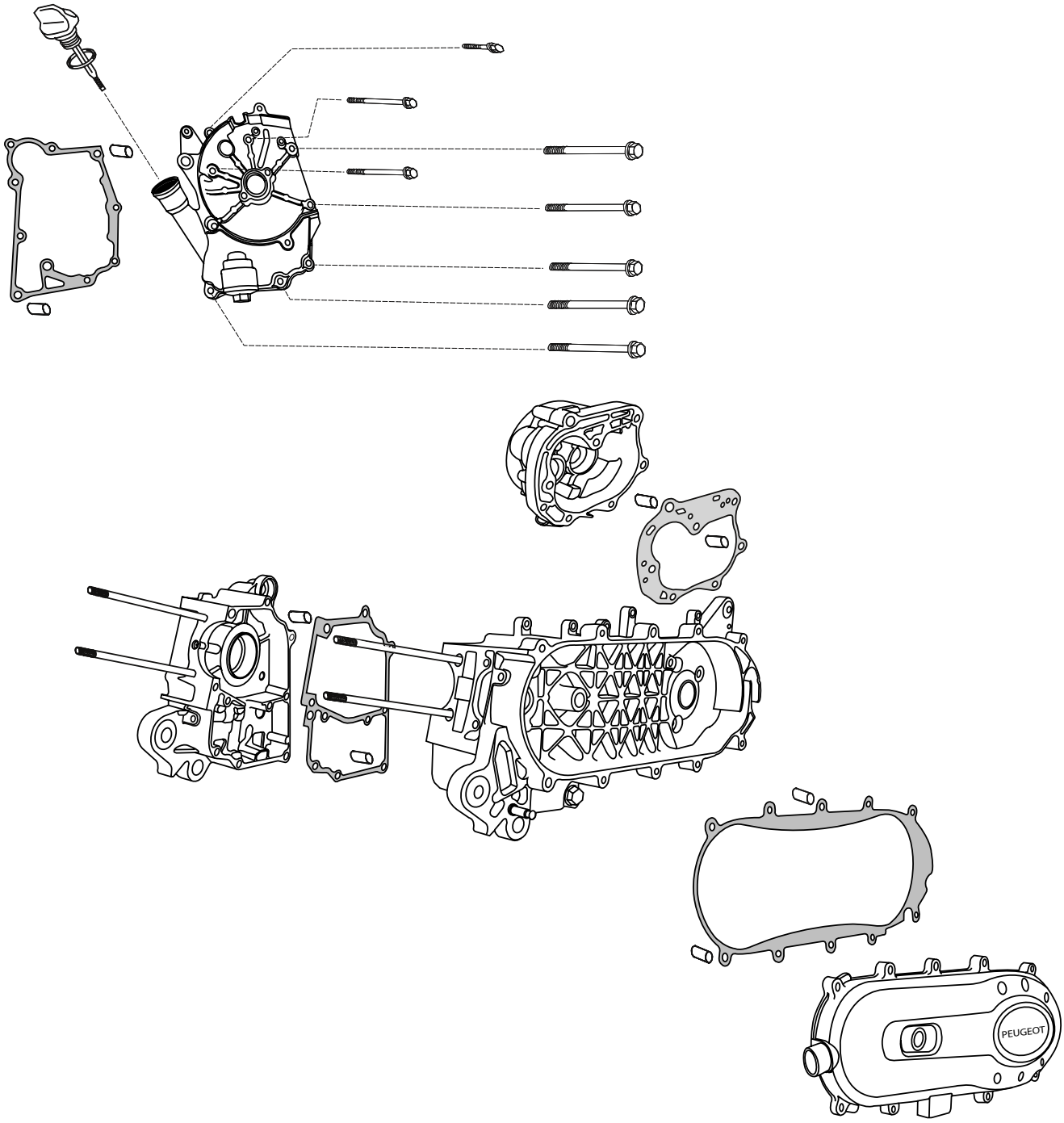
4 stroke, 50cc engine with pulsed air cooled horizontal cylinder.
2 valves per cylinder with chain driven overhead camshaft.





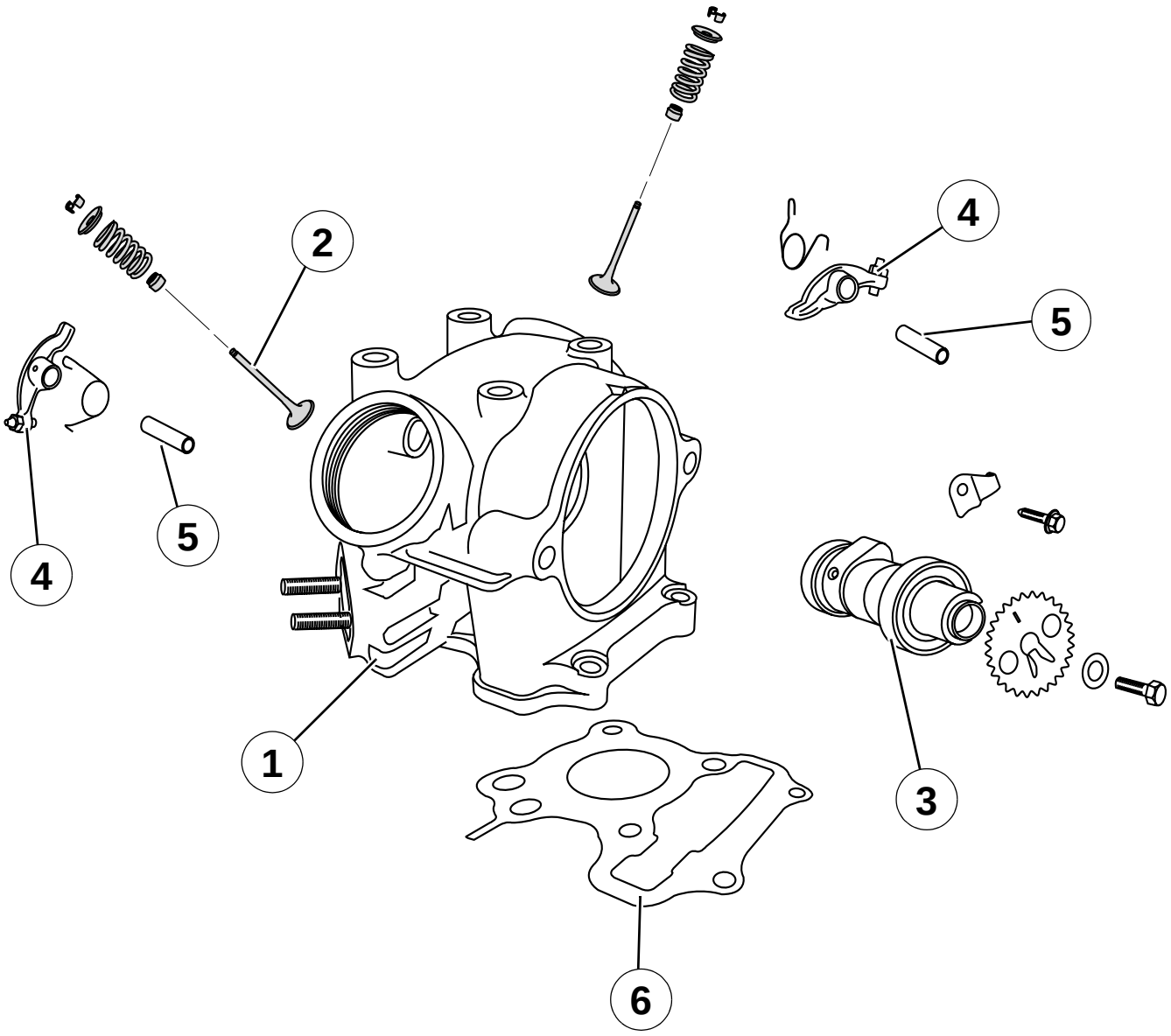
1. Engine number
2. Filler cap
3. Oil level indicator (Oil level inspection with the cap/gauge. Gauge cap unscrewed)
4. Screen

■ Crankcase



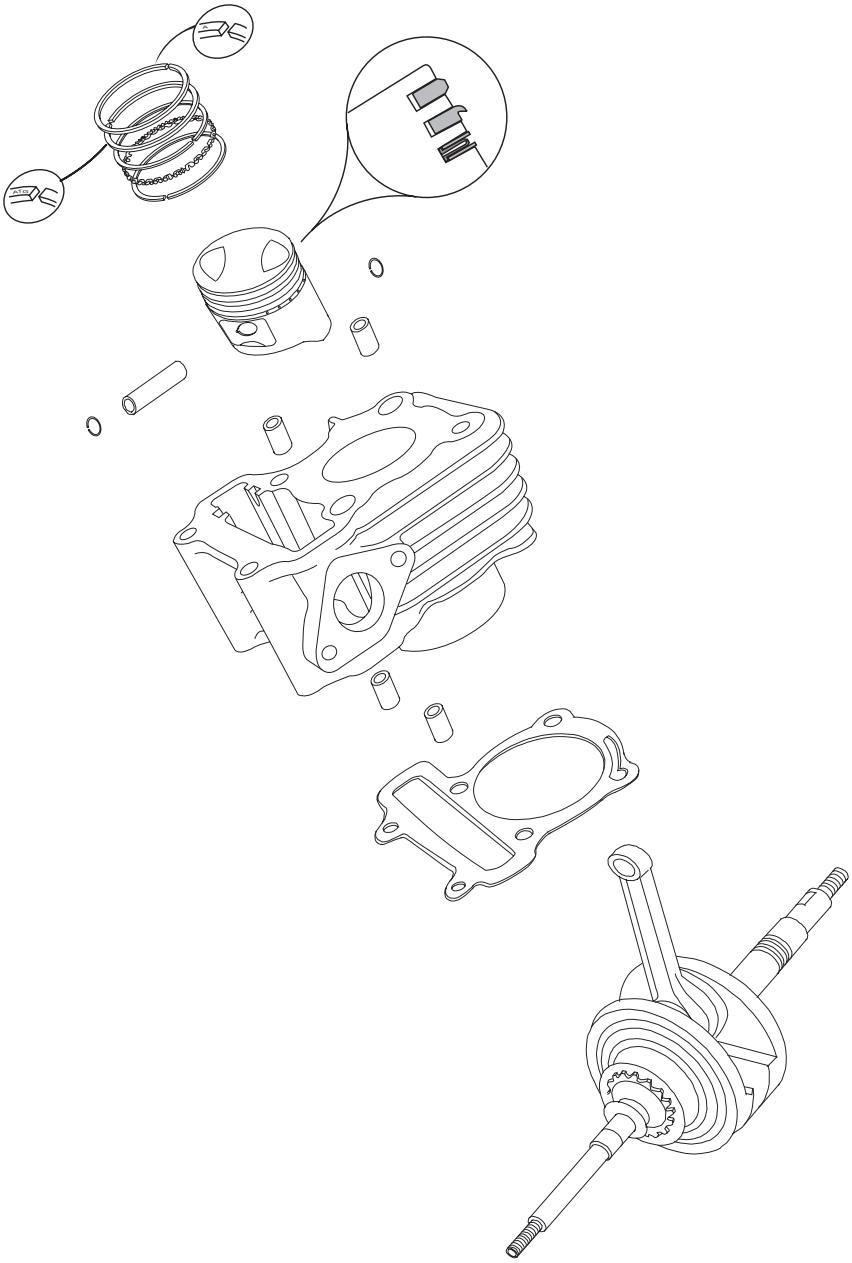
Cast aluminium alloy engine crankcase.
Aluminium alloy transmission cover fitted with the starter system.

■ Cylinder head



1. Light alloy cylinder head
2. Valve. (Valve clearances: 0.05 mm at the intake. 0.10 mm at the exhaust)
3. Camshaft
4. Rockers
5. Rocker shafts
6. Cylinder head gasket

■ Cylinder/piston



Piston:

In light allow and featuring a dome head design, and equipped with three piston rings:

- Top compression ring.
- Middle compression ring.
- Bottom oil control ring.

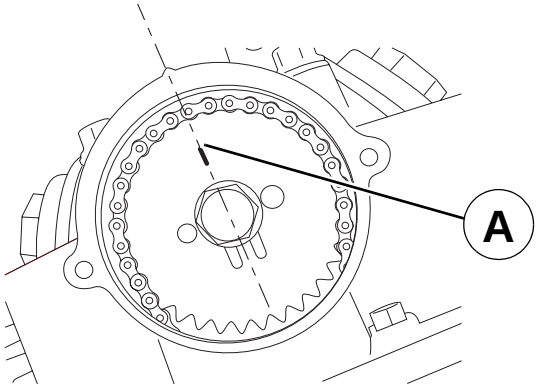
Cylinder:

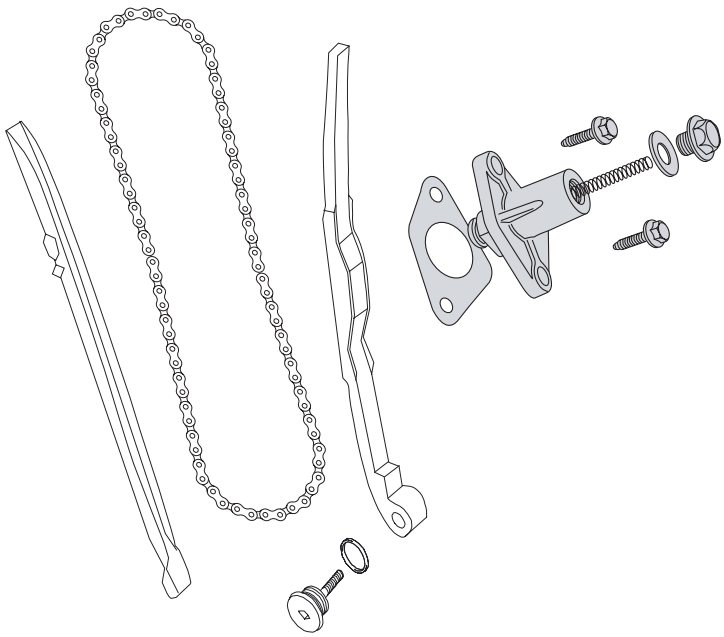
- Aluminium with Nicazil treatment and paper cylinder base gasket.

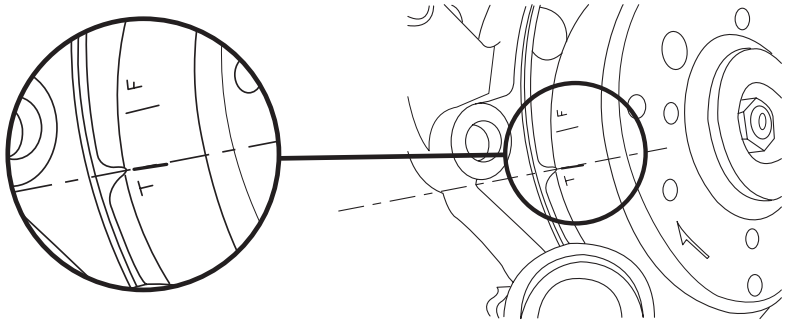
Conrod and crankshaft assembly:

- Installed on two bearings.

■ Distribution

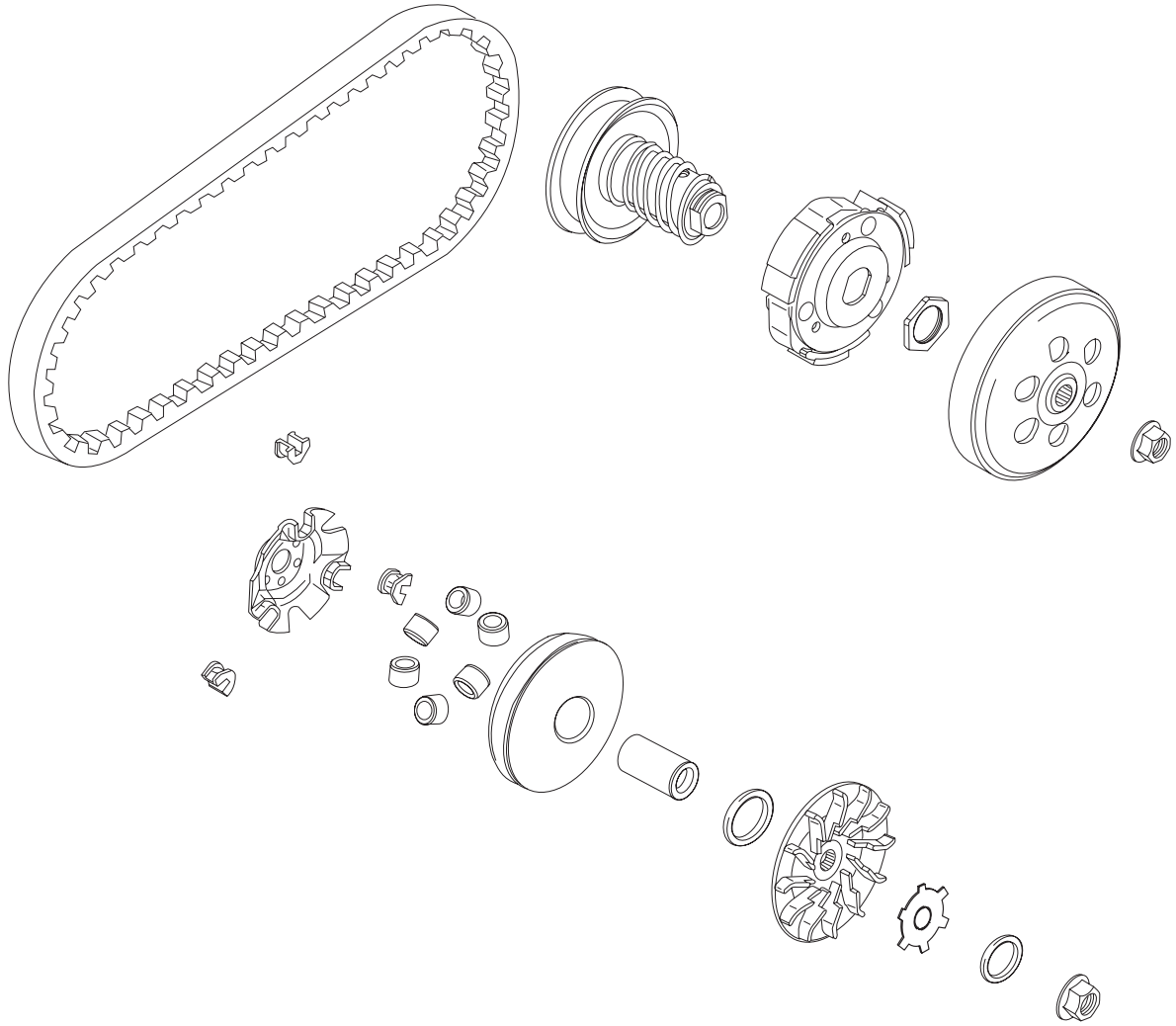






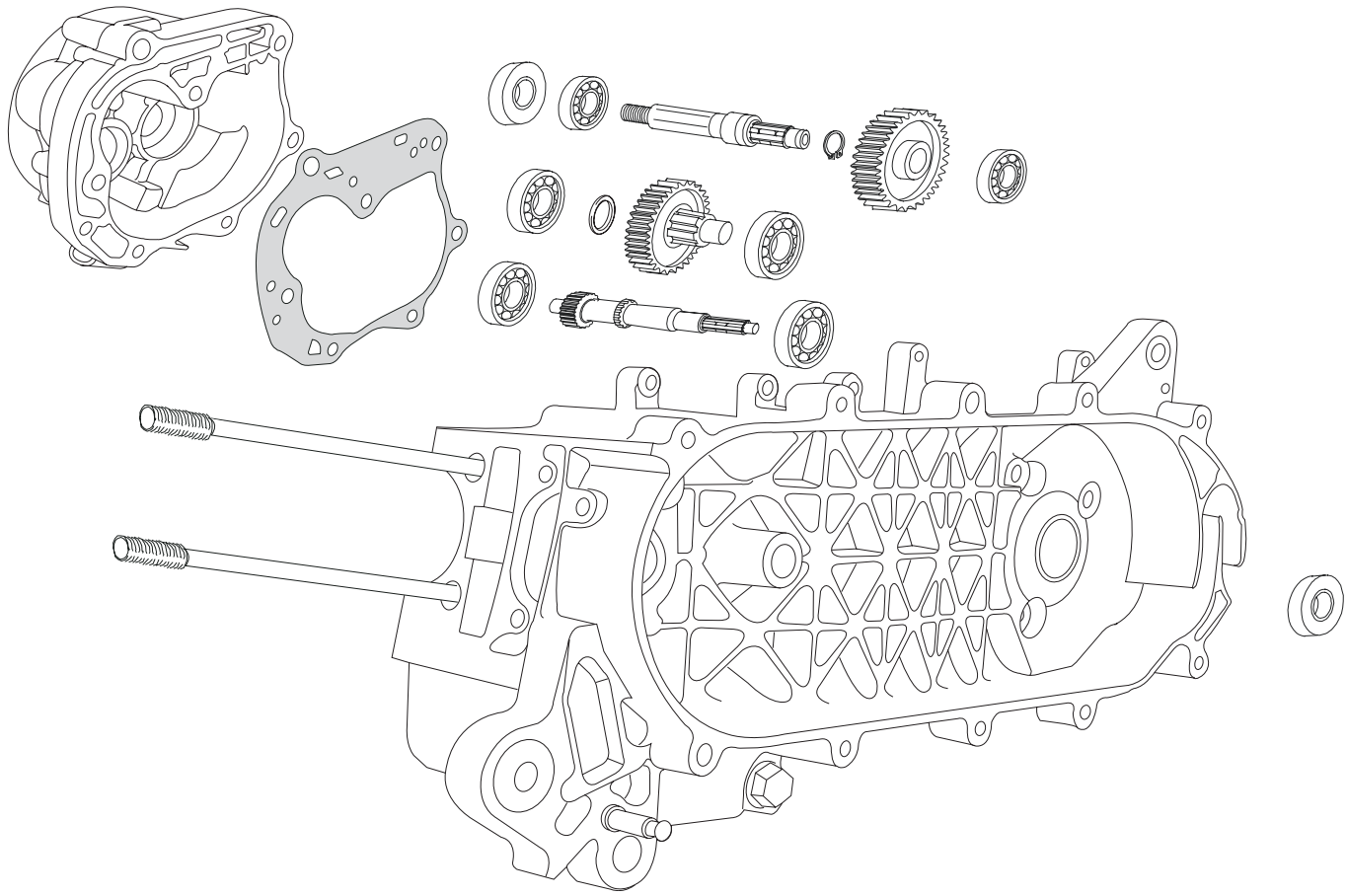
Single overhead camshaft driven by a noiseless chain from the crankshaft.
Automatic chain tensioner.
T: TDC
F: Ignition timing
Note: Timing mark on the camshaft gear (A).

■ Transmission



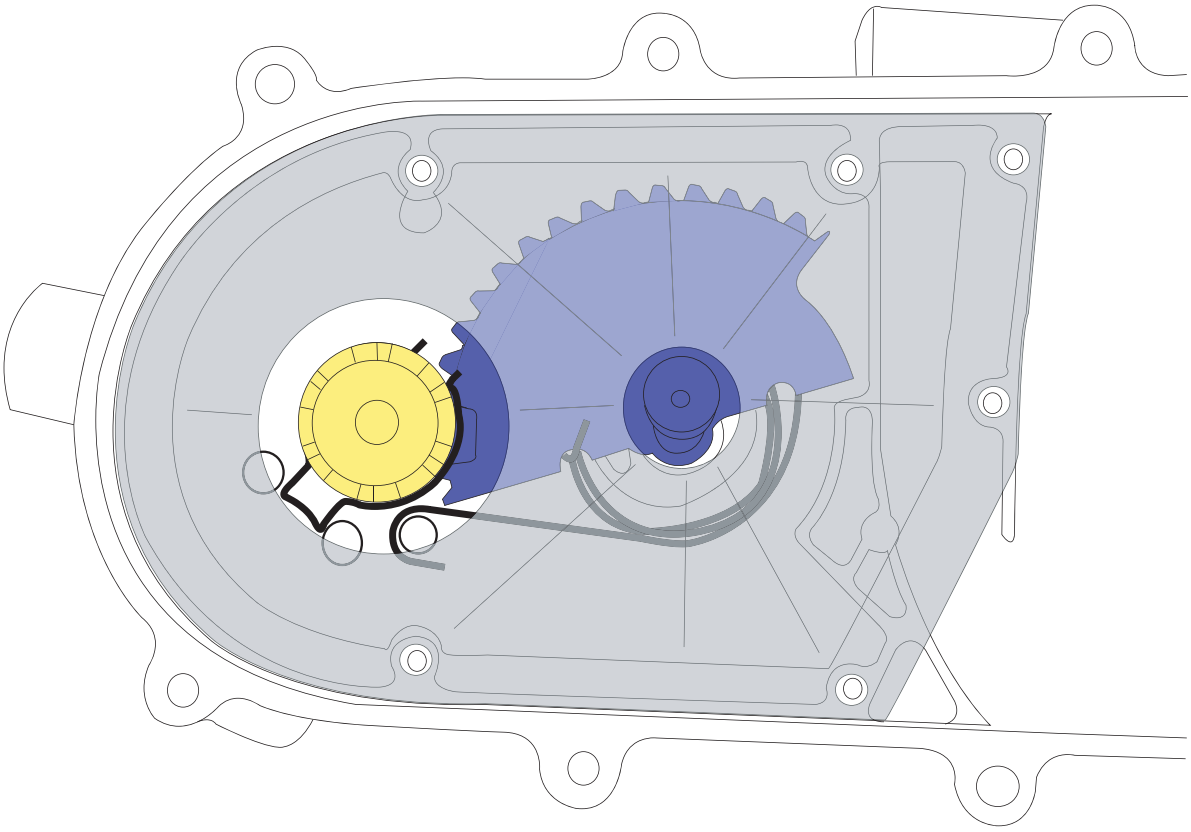
Fixed flange of the pulley equipped with cooling fins to cool the belt.
Driven/centrifugal 3 block lined clutch pulley mounted on the end of the relay box input shaft.

■ Relay box



By shaft and pinions. Double set of pinions.
1st gear teeth set: Helical.
2nd gear teeth set: Helical.
Note: Low helix angle teeth.

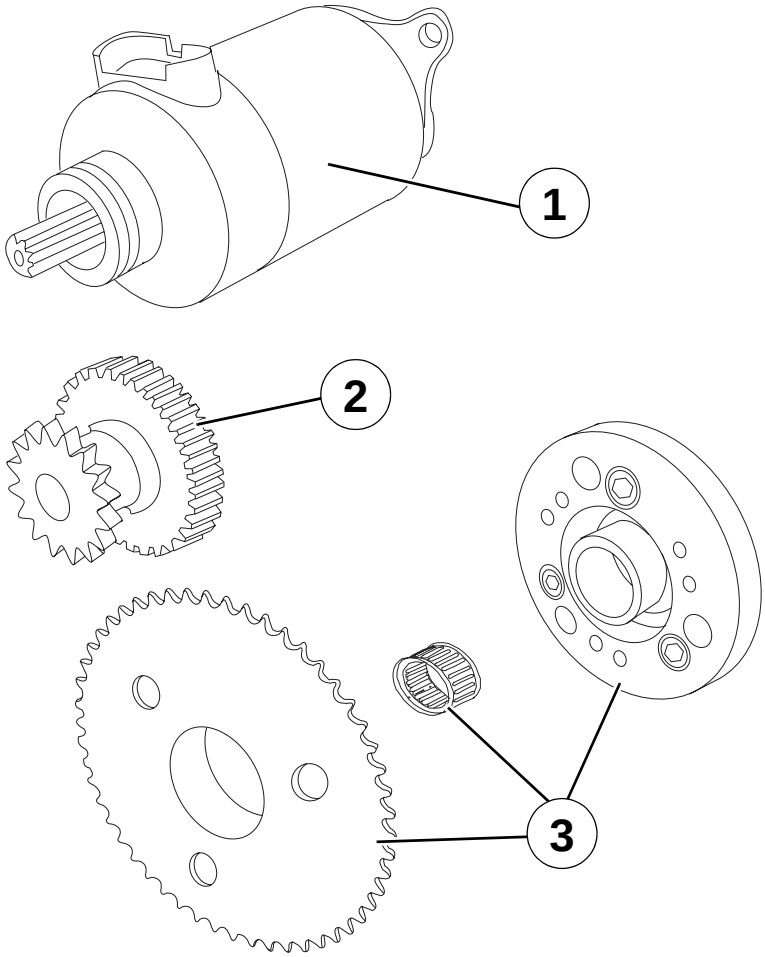
■ Starter system



Composition:

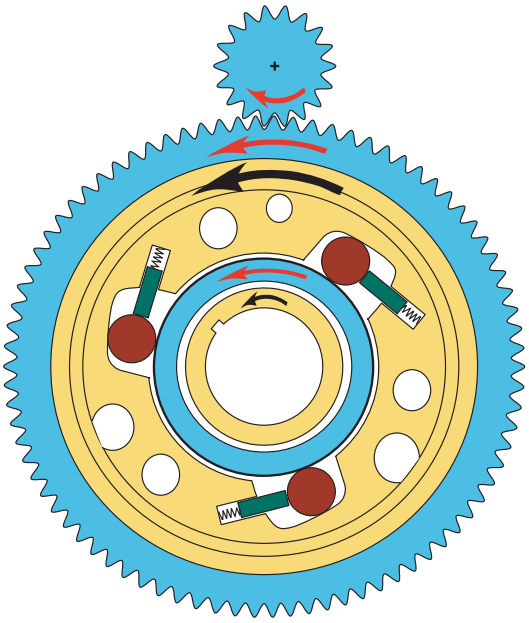
- Kick lever boss
- Kick starter gear sector shaft
- Return spring

■ Starter motor

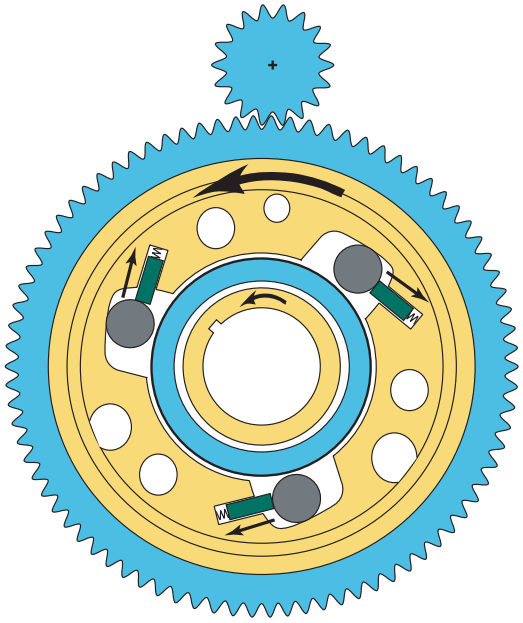


1. Starter motor
2. Idler gear
3. Freewheel

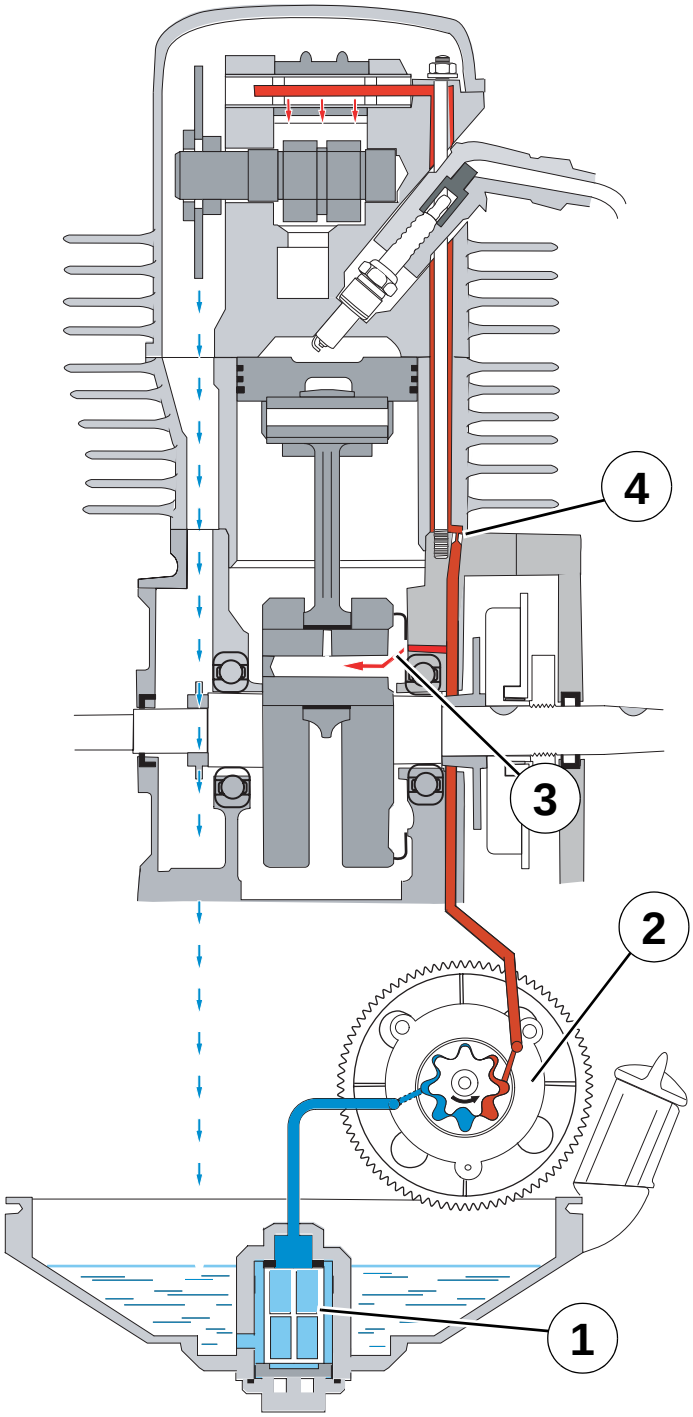
Actuated by the starter motor



The engine is running



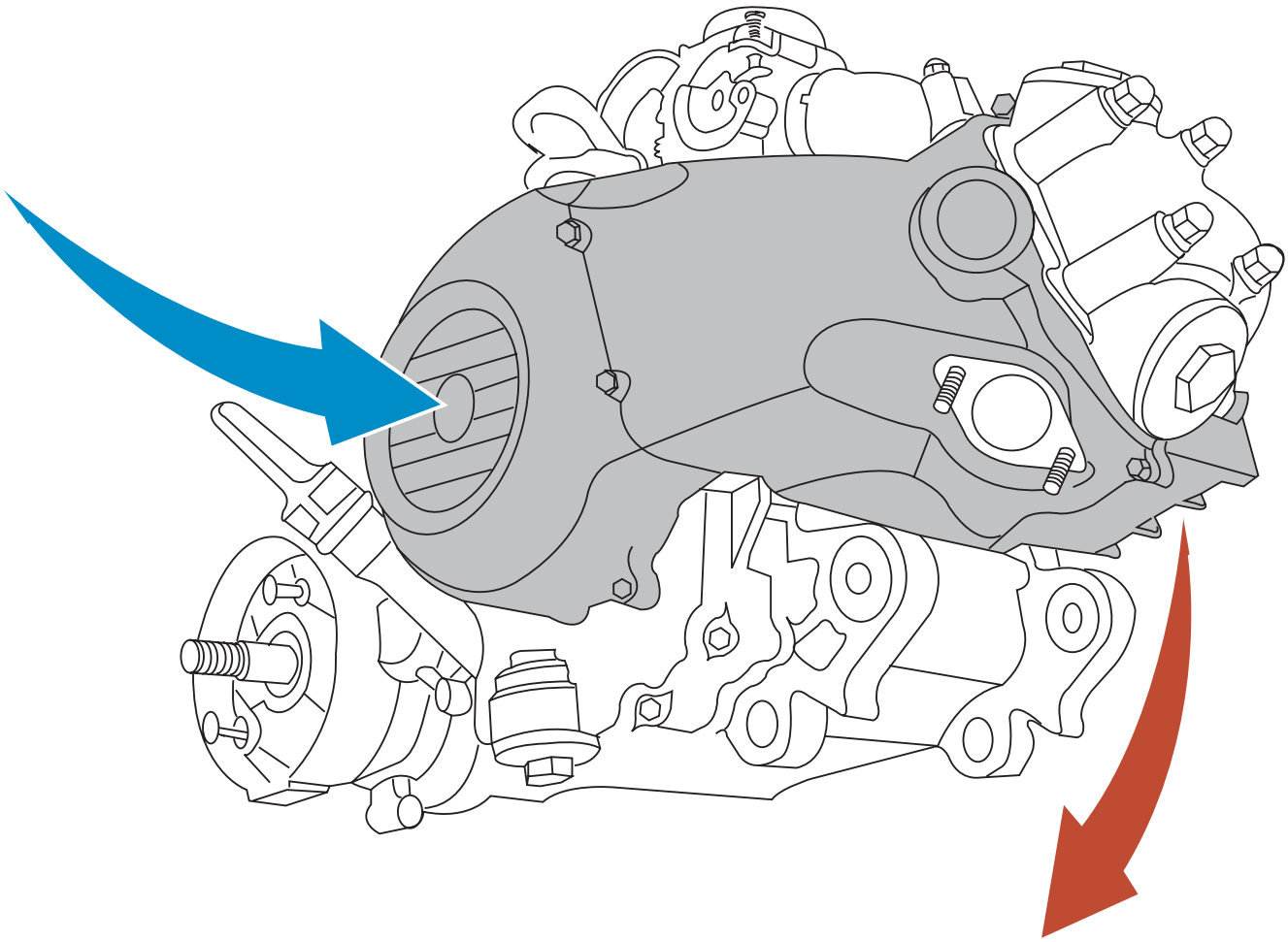
■ Lubrication system



1. Screen
2. Oil pump
3. Bearing lubrication
4. Jet

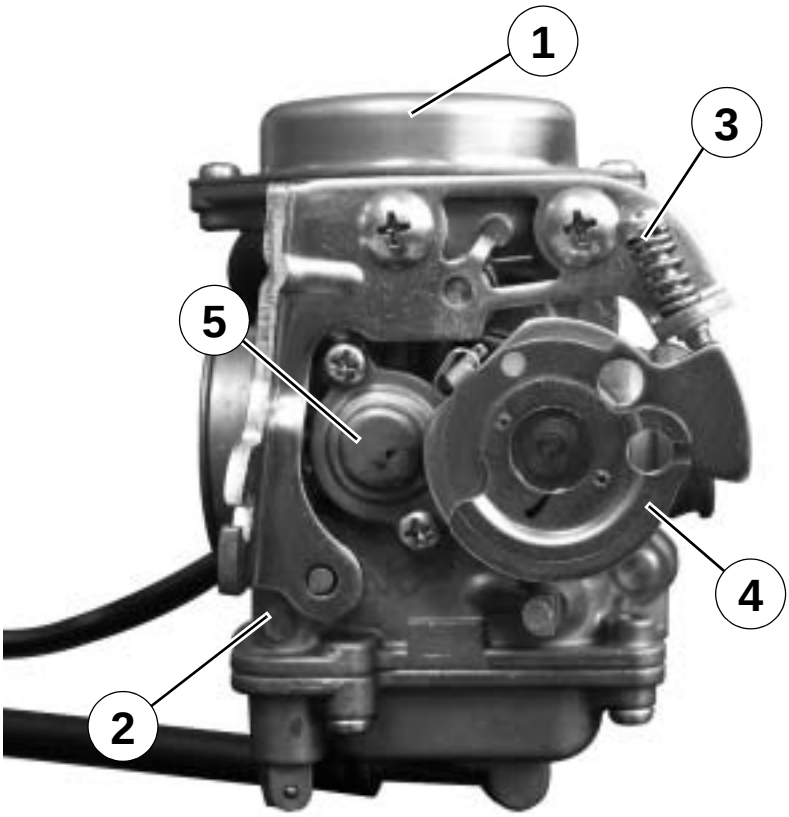
Pressurised wet sump lubrication.
Trochoid pump driven by a gear set from the crankshaft.
0.7 l capacity.

■ Cooling system

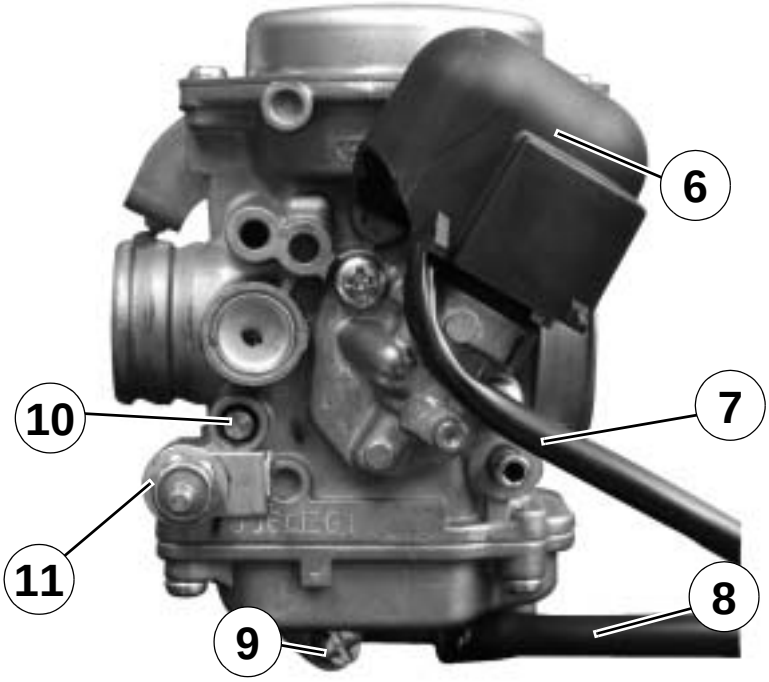


By a circulation of forced air by means of a turbine on the flywheel magneto.

■ Carburettor



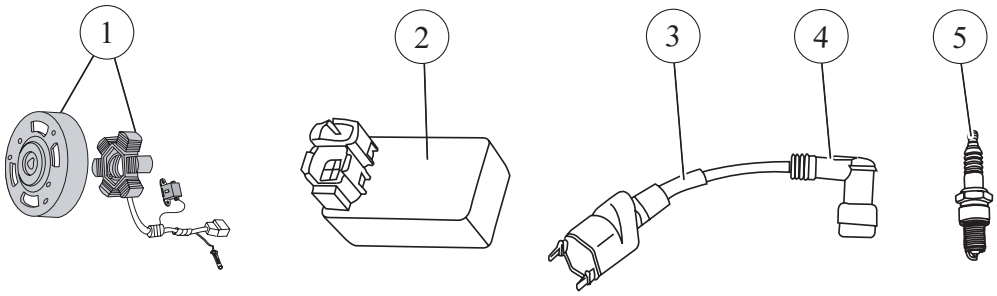
1. Diaphragm
2. Pick-up pump
3. Idle screw
4. Throttle valve control
5. Deceleration enrichment device



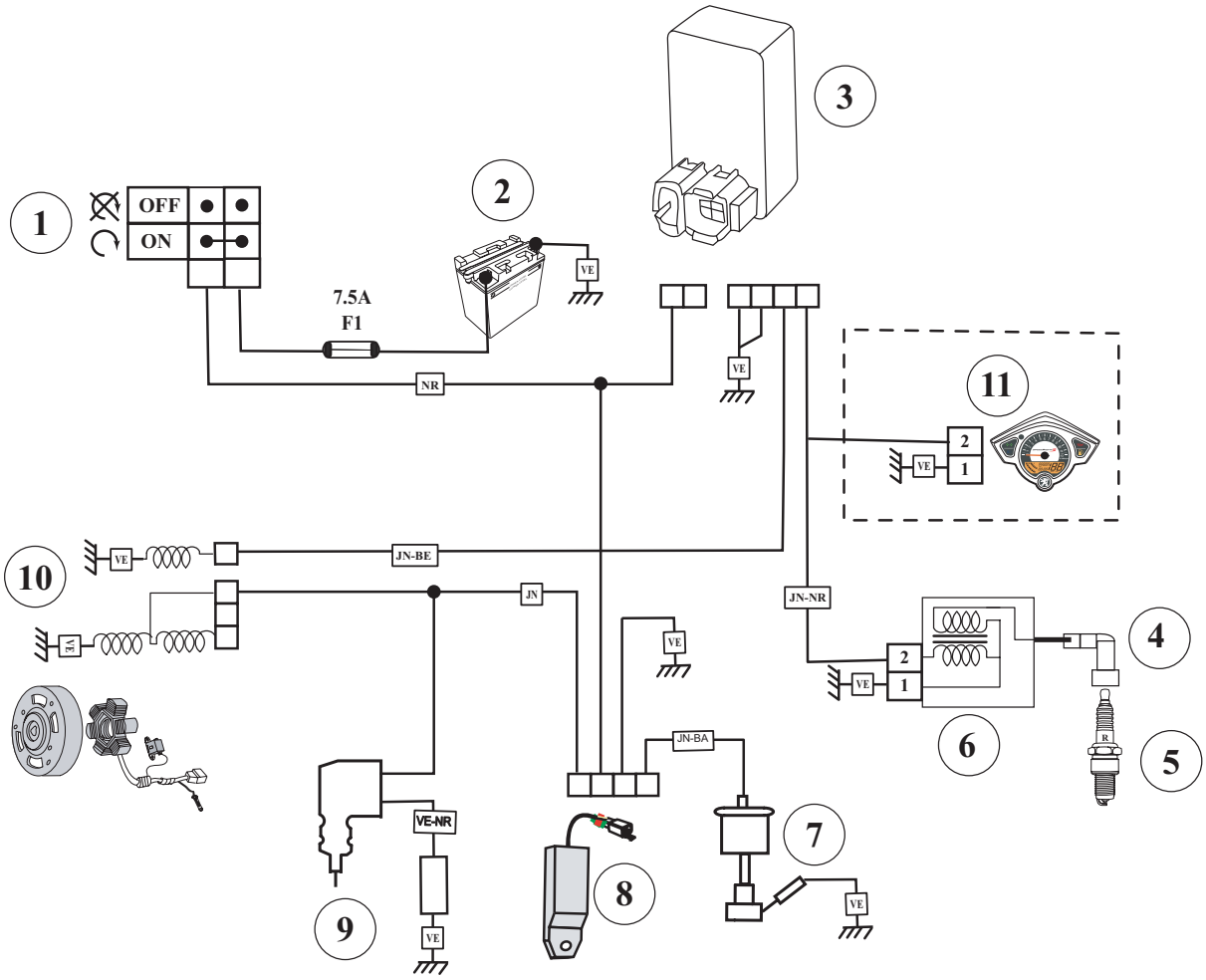
6. Choke
7. Fuel inlet
8. Chamber drain circuit (water or impurities)
9. Chamber drain screw
10. Mixture screw
11. Resistor warming carburator

■ Ignition system

Capacitor discharge ignition (CDI):



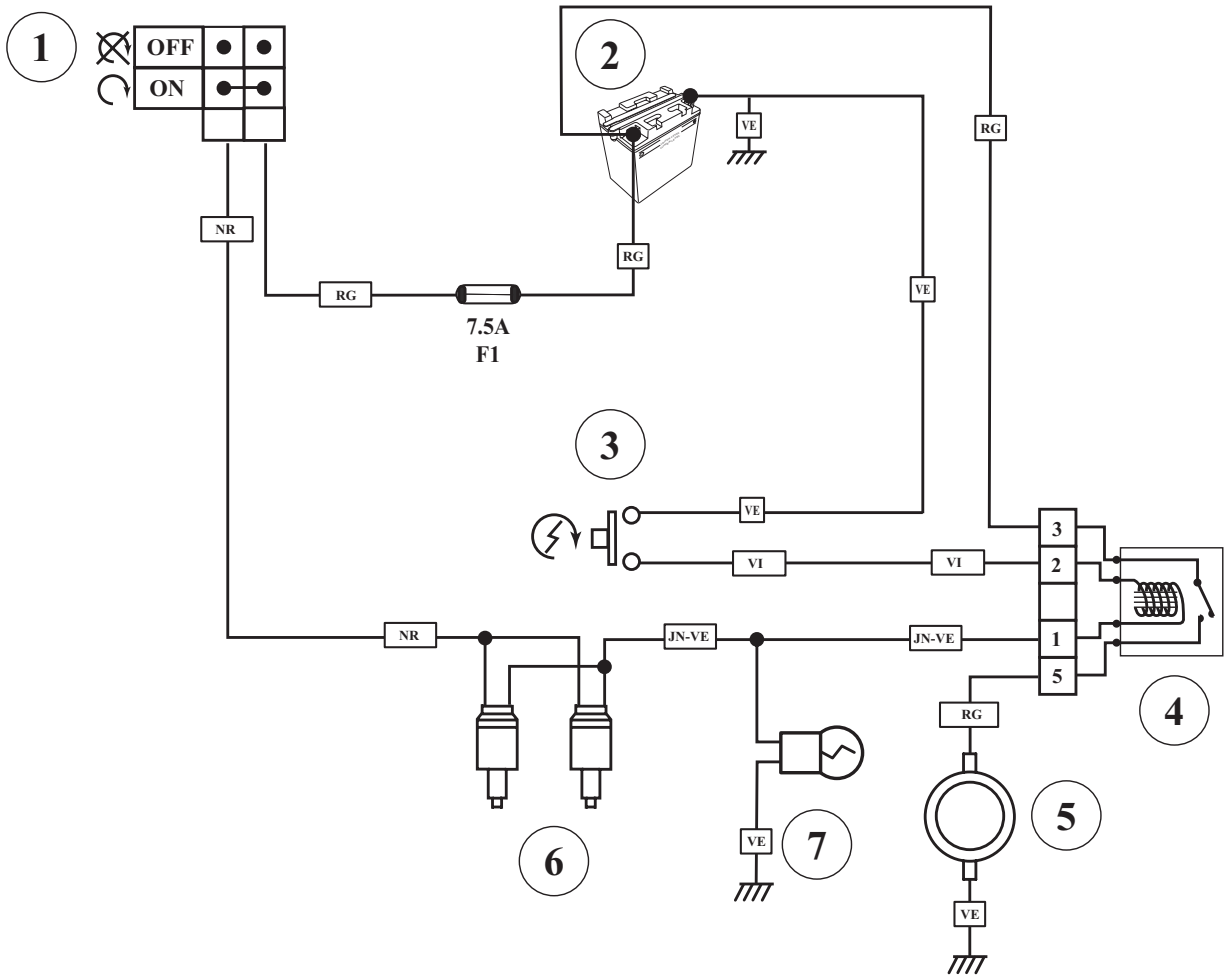
1. Magneto flywheel
2. CDI unit
3. HT coil
4. Spark plug socket
5. Spark plug



1. Ignition switch
2. Battery
3. CDI unit
4. Spark plug socket
5. Spark plug
6. HT coil
7. Carburetor heater
8. Temperature control unit
9. Automatic starter
10. Magneto flywheel
11. Revolution counter (SPEEDFIGHT 3)

■ Starting circuit

Schematic diagram of the starting circuit.

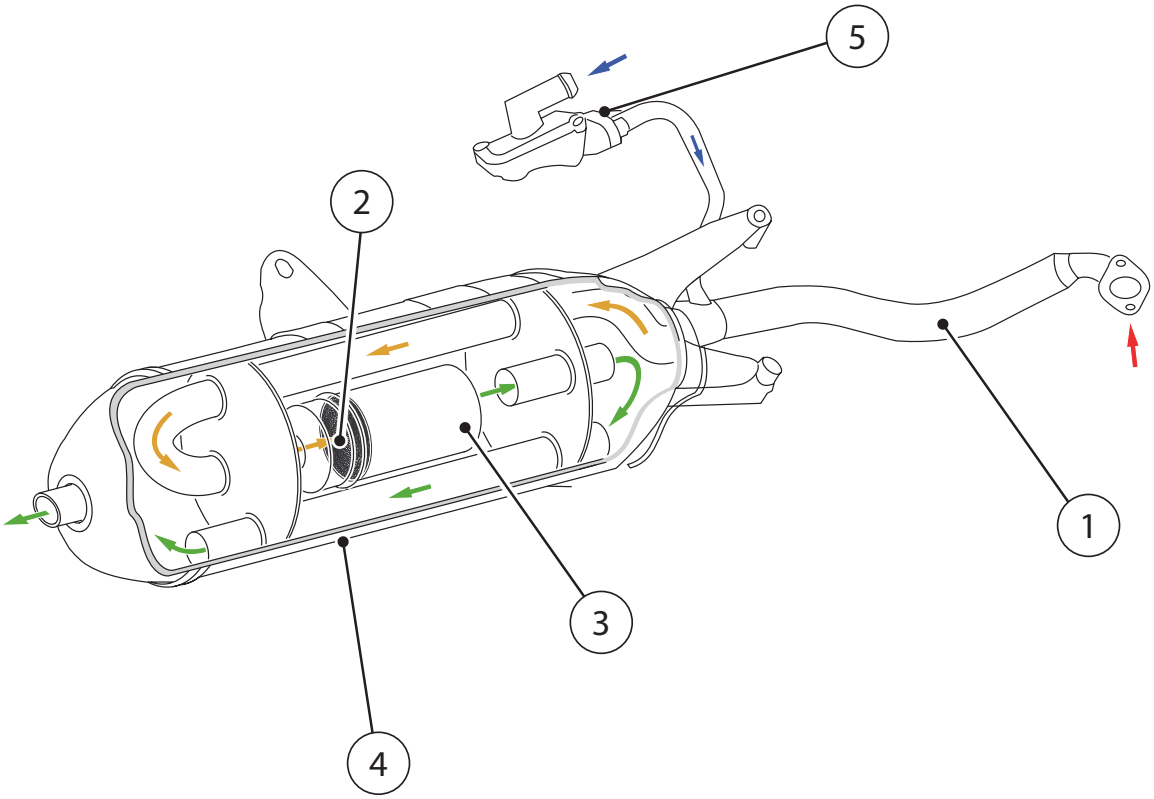


1. Ignition switch
2. Battery
3. Starter motor switch
4. Starter motor relay
5. Starter motor
6. Stop light switch
7. Brake light

The starter motor is powered by the battery which must be charged enough in order to activate it. The starter motor is the most power consuming component of the vehicle. The fact of using a starter motor often on a vehicle which is not frequently ridden will discharge the battery completely.

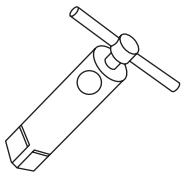
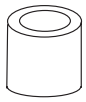
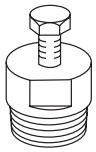
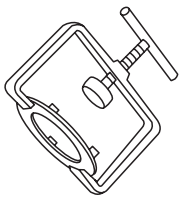
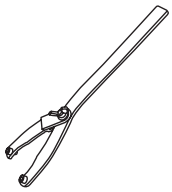
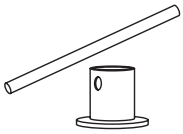
To start, you have to actuate the brake switches (6) at the same time as the stater switch (3) in order to power the starter motor relay (4).

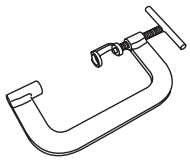
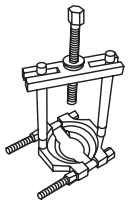
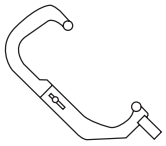
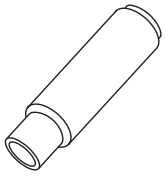
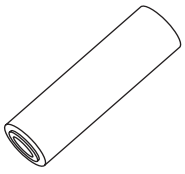
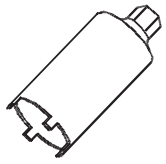
■ Exhaust

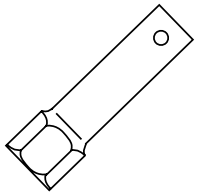


1. Exhaust pipe
2. Catalyser cone
3. Catalytic block
4. Heat insulation
5. Pulsair reed valve

SPECIAL TOOLS

	Tool N°	Designation	Used with
	64765	Engine mount	755982
	68007	Protective end-piece small model	750806
	750806	Flywheel puller	68007
	752127	Clutch compression tool	752361
	752237	Adjustable pin wrench	68007
	752361	39 mm pipe wrench	752127

	Tool N°	Designation	Used with
	754035	Valve lifter	
	755585	Bearing extractor tool	
	755982	Engine mount Engine mount adapter	64765
	756668	Seal piston	
	757990	Seal piston	
	800673	Freewheel nut tool	

	766062	Spark plug spanner					

(*) New or modified tool

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Peugeot Motocycles is constantly improving its vehicles. It therefore reserves the right to remove, modify or add any reference mentioned in this manual.

DC/APV 07/2009 (non contractual pictures)

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