



CYLINDER KIT

CVF II SY51EM CONVERSION FOR PIAGGIO VESPA 125 T5

To its fervent admirers who happen to own a Vespa V5 scooter, Malossi can offer a wide range of components for uprating their machine; a complete conversion of great value and exceptional performance that can also be purchased as separate units.

Components:

1. Cylinder kit - item 31 5102
2. Fuel system with reed valve and carburetor - item **16 10901 PHBH 30**
Direct-intake fuel system with carburetor - item **16 10807 PHBH 30**
3. Gear set:
Pair of gears 23/64 teeth - item **67 3730**
Pair of gears 23/64 teeth - item **67 5235**

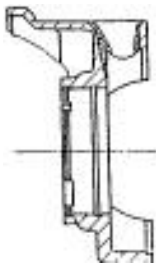
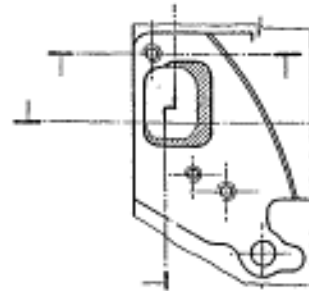
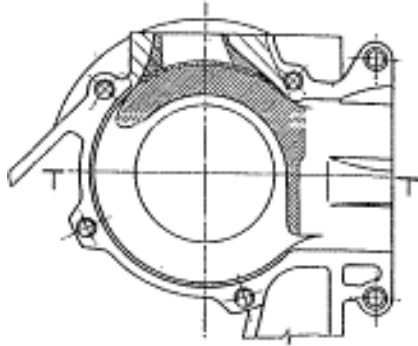
Table of performance at various levels of application

<i>CYLINDER KIT</i> 31 5102		
<i>Rating</i> 15 CV		<i>Max Speed</i> 105 Km/h
<i>Fuel System</i> 16 10901	<i>and</i>	<i>Gear Set</i> 67 3730
<i>Rating</i> 20 CV		<i>Max Speed</i> 130 km/h
<i>Fuel System</i> 16 10901	<i>and</i>	<i>Gear Set</i> 67 3730
<i>Rating</i> 16 CV		<i>Max Speed</i> 115 km/h

The gears are set for one person aboard and with conversion suitably adjusted.

Having assessed the range of components and it deciding to fit the conversion that has the fuel system with reed valve, in order to obtain the improved performance described, it is necessary to strip the engine completely in order to replace the gears and carry out the alterations to the crankcase illustrated hereafter,



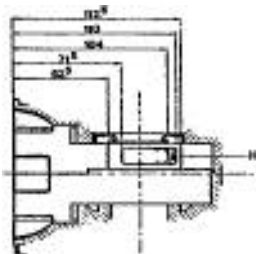


Such modifications serve the purpose of eliminating the control *at* the distribution regulated by the drive shaft as preset by the manufacturer. Since it would constitute a notable impediment to providing a fuel supply of to the conversion with reed valve. The carbon-fiber reed valve forming part of the fuel system represents the real strong point of the conversion; it makes the machine

extremely quick and smooth in its delivery of power, right tram the lowest running speeds. eliminates fuel waste and facilitates ignition.

If on the other hand one prefers to keep the original fuel system or system Item 16 10807 PHBH 30 with intake controlled by the drive shaft, in order to optimize the performance of the kit, it is recommended That the intake be modified on the crankcase and original drive shaft as per drawings below in such a way as to obtain a diagram of] 10-in opening before TDC and 72 in closing after 100.

SPECIFICATIONS



- Cylinder kit, bore 65 mm; compression ratio 1:11.
- Cylinder manufactured using primary silicon-aluminum alloy with CVF 5-port timing system; barrel with coating of nickel and silicon carbide.
- CVF II compact, extra-light piston system with silent profile and self-lubricating coating.
- Chromed piston rings in SIO cast-iron with semi-trapezoidal cross section.

For correct fitting of the conversion please contact a specialized garage capable of carrying out the following instructions to the letter. Particular attention should be paid to points 1-2-3-4-5-6-7-8-9-10-11 - 12-13.

ASSEMBLY INSTRUCTIONS

1. Disassembly

Before stripping, carefully wash the engine and the engine-compartment bodywork; remove the old cylinder unit and carefully clean the crankcase on the cylinder block. Wash all conversion components with petrol and dry using compressed air, taking particular care that the ports of the new cylinder are free from any foreign bodies. In conclusion, use engine oil to lubricate connecting rod, small-end bearing and cylinder barrel (after carefully checking their condition and replacing if necessary)

2. Fitting the Piston

Having checked that your cage is in perfect condition, place in the small end. Insert one of the piston-pin clips in its seat ensuring that it is securely positioned.

Place the piston with the arrow on the crown pointing to the exhaust port of your cylinder; insert the piston pin by hand and push it in, without forcing, if necessary using a special tool. Fit the last piston-pin clip securely into its seat.

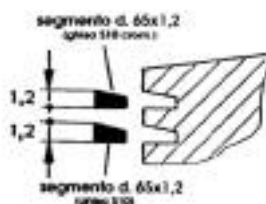
For this piston use only the supplied piston-pin clips or ask your dealer for the Malossi piston-pin set.

3. Insertion of cylinder and alignment of piston

Fit the base gaskets and slide the piston, without rings, into the cylinder checking that it enters fully without rubbing into the crankcase seat whilst maintaining a minimum of play; if this is not the case, check the reason for any impediment and remove. Tighten the cylinder fixing bolts to the cylinder block, insert spacers in place of the head and check the correct alignment at the piston in the barrel using a feeler gauge. Should the upper part of the piston tend to rest on one side of the cylinder, remove the latter and straighten the rod by inserting a dowel in the hole of the piston pin and gently levering. Refit and check if the problem persists. Repeat the various operations until obtaining perfect alignment between cylinder barrel and piston.

4. Piston rings

Remove the cylinder and fit two two semi-trapezoidal piston rings following the instructions given in the assembly diagram below.



5. Cylinder

Make the ends of the piston ring meet at the dowel on the piston and without forcing slide the piston into the cylinder right down to the block.



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6. Head

The original head should be used as not to increase the compression ratio. If perfect performance not being obtained; slightly round off the angle between crankcase and cross section of the combustion chamber using emery cloth or a scraper.

7. Original fuel system

If keeping the original fuel system. It must be upgraded in accordance with the latest PIAGGIO settings. Replace the maximum jet with one of 120-mm diameter that is included in the kit.

8. Clutch

Check that the clutch plates are in perfect condition. If necessary replacing them with a set of new ones.

9. Ignition

Spark advance angle; maintain the original one (of between 14-16° before TDC) Warning: if increasing the compression ratio of the conversion it will be necessary to reduce considerably the spark advance angle.

10. Spark plug

Nippondenso W 24 ES-U or W 27 ES-U for demanding use (or plugs with equivalent thermal degrees).

11. LUBRICANT

VERSIONS WITH MIXER AND ORIGINAL CARBURETTOR

Check that the separate oil pump is in perfect condition.

VERSIONS WITHOUT MIXER OR WITH PHBH CARBURETTOR

Use a mixture to which 3% oil has been added.

12. RUNNING-IN

For the first 500 Km (300 miles) do not exceed 70 kph (45 mph) and avoid uphill climbs. Between 500 and 1,000 Km (300 and 600 miles) avoid continuous operation at full throttle.

After 1000 km (600 miles) the engine has completed the first phase of bedding and it run in accordance with our instructions it will begin to demonstrate its full capabilities.

13. MAINTENANCE

Every 3000 km (1800 miles) check the piston rings for wear using a feeler gauge. Should clearance exceed 8/10mm they should be replaced in order to avoid irreversible damage to the cylinder unit. In addition decoke head and crown of piston, exhaust port and silencer.

14. GENERAL WARNINGS

Never seek maximum performance from the engine until it has fully warmed up.





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The maximum jets fitted to the MALOSSİ cylinder kit have an average setting and it is therefore advisable to increase it by 5-8 points for temperatures below 5 C and reduce by 3-8 points for temperatures exceeding 30 C and altitudes exceeding 1200m a.s.l.

15. GUARANTEE

The kit components are guaranteed free from manufacturing defects. Allegedly defective parts can only be returned to us (carriage free) subject to our written approval. The guarantee does not cover piston seizure. We accept no liability for accidents or damage resulting from improper use of our products since they are designed and constructed for racing purposes; the type of use is intended to push the engine to its absolute limit and sooner or later this is bound to create problems as are suffered by all engines that compete on racing circuits.

In conclusion, we take this opportunity to congratulate you on having chosen Malossi products and wish you many hours of pleasure.

N.B. Use on a public highway means that the machine must once again be type tested.

