

## Porównanie wydechów tuningowych do Vespy SF

## Cipiór

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W lipcowym numerze Scooteringu zamieszczone zostały testy wydechów do SmallFrame. Patrząc na porównanie dochodzę do wniosku, że najdroższe nie zawsze jest najlepsze.

# Exhaust Testing

## Smoking with Smallframe Vespas

After the Lambretta exhaust test of last month we thought that in fairness to both camps that this issue we'd bring you something similar, but for the Smallframe range of Vespa scooters instead. For those with an Innocenti passion however we should reassure that we'll be back with the results based around a TS1 engine soon...

### The plan

With the popularity of the Smallframe range growing, new and improved tuning kits (like the Sei Gorni MIL, which looks like a baby RB22 kit by all accounts) are emerging in the shops alongside the 'kings' of the cylinder kit market, the Polini 133cc and the Malossi 136cc. A number of new names have appeared offering exhausts for these cute little Vespa's too and, as part of their research for a forthcoming Vespa catalogue, Scooter Center Köln have done a bit of testing and offered to share the results with Scootering readers.

For a test scooter, their Vespa expert Alex built a Malossi-kitted Vespa Primavera engine with the idea that not too much expert work was involved so that everyone – except those with ten thumbs – could achieve these results as well. Maybe next time we'll see what happens when alterations of the basic layout are made, eg different port timings, long stroke crankshaft, but for now it's all pretty straightforward.

The barrel and piston remained unaltered, so no porting at this stage, and with a 0.8mm base

gasket the kit had a transfer timing of 125° and exhaust timing of 181°. The squish clearance was set to 1.9mm with the standard Malossi head. The ignition timing was fixed and adjusted to 18°. The carb was a Bgm PWK 28mm items, fitted with a main jet of 140 for the Hammerzombie. The setting was altered for each exhaust.

The testing procedure followed the usual format. First the warming up of the engine, through the gears, have a look at the jetting and then do some runs in the third gear.

### Standard Piaggio ET3

#### Name of exhaust:

Type: Banana

Cost: €59, approx £39

Availability: SCK

Frame mods: None

First impression: OEM

quality. You shouldn't have to say much more, at least you didn't up until recently. Nowadays, however, some Piaggio parts originating in India are of dubious quality.

Fitment: Okay, no problems with this one. Not really a surprise.

Conclusion: As a standard exhaust box it does its job well, at a reasonable price and it doesn't look too boring either, but is obviously not the first choice for a pimped engine.

Power: 11.8hp/6525 rpm

Torque: 13.1Nm / 6076 rpm



### Hammerzombie

#### Name of exhaust:

Type: Curly

Cost: €329, approx £219

Availability: SCK

Frame mods: A replica of an old Norrie Kerr NFK exhaust, handmade quality provides a nice touch of the early racing days. Very solid built quality.

Fitment: Very good, no problems at all. Everything seemed to be rock solid.

Conclusion: All round exhaust that works very well. Good performance and also very well suited for touring.

Power: 16.0hp/8387 rpm

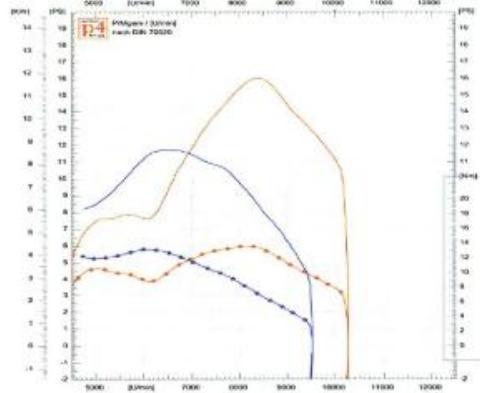
Torque: 13.6Nm / 8112 rpm



### The Graphs

The graphs depicted here abouts reveal both the power and torque achieved by each exhaust when fitted to the sample engine.

In each graph the constant amongst them all, and therefore the one against which all readings are compared, is that of the Hammerzombie (the red line). As such, below here are the two exhausts with readings shown on the first graph, the Hammerzombie and the standard Piaggio item.



### Polini Evolution

Type: Curly

Cost: €249, approx £166

Availability: SCK

Frame mods: No LHS toolbox possible.

**First impression:** The top looking quality you expect from a manufacturer like Polini.

**Fitment:** The shape of the exhaust tube is not very cleverly angled so it sits too close to the rear damper. The standard type exhaust clamp is used which makes it a nightmare to fit. All other racing pipes were delivered with a clamp that goes around the swingarm of the engine casings.

**Conclusion:** Not very well fitting and a poor power output compared to the price makes this exhaust anything but our first choice.

**Power:** 13.6 PS/8830 rpm

**Torque:** 11.4 Nm/8146 rpm



### Polini (LHS)

Name of exhaust:

Type: Curly

Cost: €85, approx £57

Availability: SCK

Frame mods: No LHS toolbox possible.

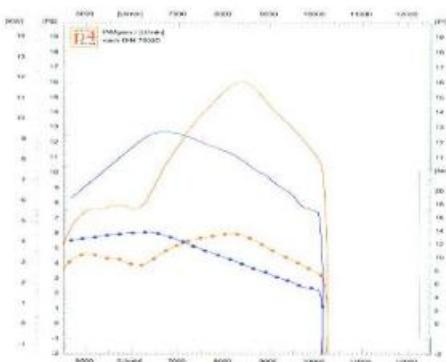
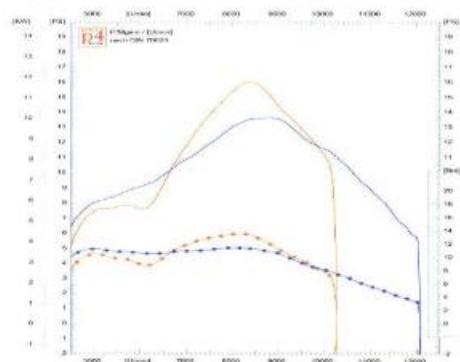
**First impression:** As Polini Evo.

**Fitment:** Not as bad as the Polini Evo but it's still a snug fit. However, if you are prepared to take your time and bend a little bit here and a little bit there, everything will work in the end.

**Conclusion:** Simple exhaust with a power to price ratio that suggests value for money.

**Power:** 12.7 hp/6659 rpm

**Torque:** 13.8 Nm/6288 rpm



### Scooter & Service

Type: Curly

Cost: €150, approx £300

Availability: Scooter and Service, [www.scooter-and-service.de](http://www.scooter-and-service.de)

Frame mods: No LHS toolbox possible.

First impression: Very high quality.

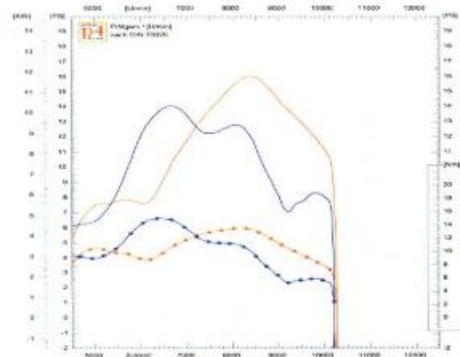
The finish gives the impression a welding robot has been reborn inside the body of some kind of human organism!

Fitment: Very easy fit. Everything well detailed and it seems it was tested a thousand times. Great!

Conclusion: The port timings of the test engine used and those which are required for this exhaust don't appear to be the best match. With enlarged port timings this should prove to be a very impressive high performance exhaust.

Power: 14.1 hp/6663 rpm

Torque: 15.1 Nm/6459 rpm



### PM Tuning PM40

Type: Curly

Cost: From £199.95 + VAT, [www.pmtuning.co.uk](http://www.pmtuning.co.uk)

Availability: PM Tuning, [www.pmtuning.com](http://www.pmtuning.com)

Frame mods: No LHS toolbox possible.

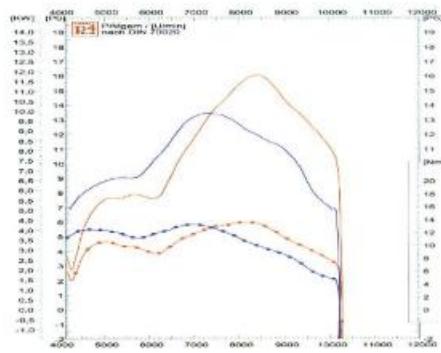
First impression: The high price is reflected in a superb looking exhaust box.

Fitment: Again not a big issue to fit this one. Everything went as it should.

Conclusion: Another very good touring exhaust, but again not first choice for racing engines.

Power: 13.4 hp/7383 rpm

Torque: 13.3 Nm/6942 rpm



### VSP

Type: Curly

Cost: €279, approx £253

Availability: SCK

Frame mods: No LHS toolbox possible.

First impression: Very good quality, nicely welded and everything seems to be spot on.

Fitment: Easy with no problems.

Conclusion: Very similar to the PM40. Nearly the same power delivery and band, so also a good tourer.

Power: 13.4 hp / 7382 rpm

Torque: 13.2 Nm / 6942 rpm



### VSP Race

Type: Curly

Cost: €379, approx £253

Availability: SCK

Frame mods: No LHS toolbox possible.

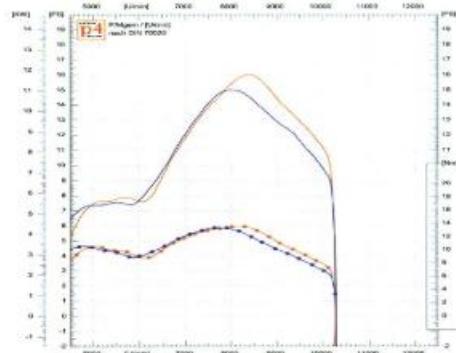
First impression: Same as the VSP, lovely.

Fitment: Same as the VSP, nice!

Conclusion: Like the Scooter & Service exhaust, it would be interesting to test the VSP Race on an engine with better suited port timings. On this engine it performs as a great tourer.

Power: 15.0 hp / 7999 rpm

Torque: 13.4 Nm / 7725 rpm



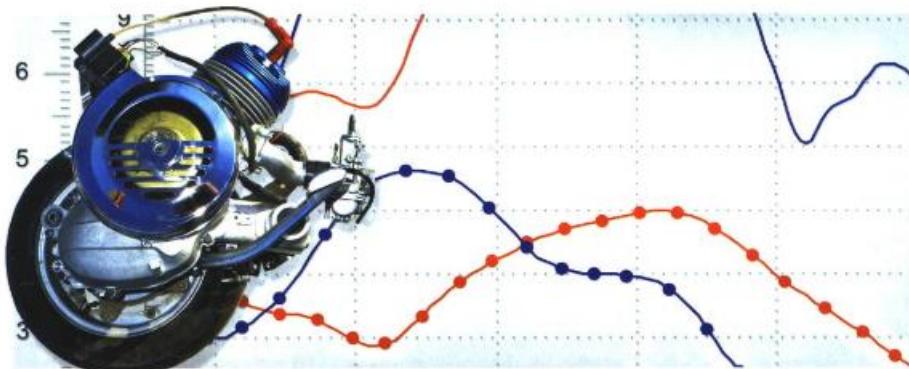
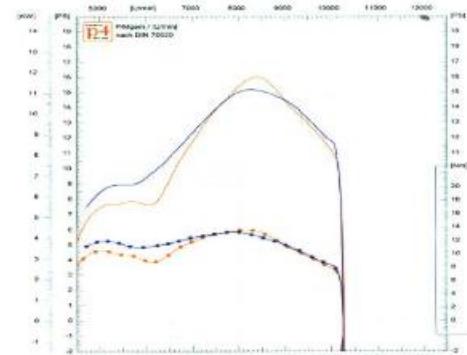
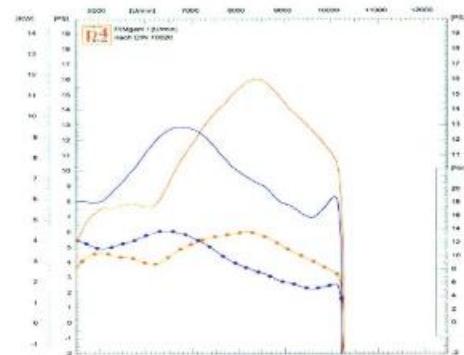
## Zadra

**Type:** Curly  
**Cost:** €396, from [www.zadraengine.it](http://www.zadraengine.it)  
**Availability:** SCK  
**Frame mods:** No LHS toolbox possible.  
**First impression:** Another nice looking exhaust box.  
**Fitment:** Good looking, well made, but was a pig to fit. Same problems as with the Polini Evo box, but worse! Maybe we got a prototype exhaust?  
**Conclusion:** Same problems as the Polini Evolution exhaust, but a very nice Moto X sound and a cool look.  
**Power:** 12.9 PS/6765 rpm  
**Torque:** 13.7 Nm/6390 rpm



## Simonini down & forward

**Type:** Down & forward  
**Cost:** €149, approx £99  
**Availability:** SCK  
**Frame mods:** None.  
**First impression:** Not the best looking exhaust in the world, but also not the most expensive one either.  
**Fitment:** Same problem again, the exhaust tube sits too close to the rear shocker. Additionally, the muffler hits the floorboard and every time you kick-start the scooter you must be careful not to kick the muffler afterwards.  
**Conclusion:** Performance-wise a very interesting exhaust. Sadly, not the best fit in the world, but the price could help swing your mind.  
**Power:** 15.2 PS/8267 rpm  
**Torque:** 13.2 Nm/7824 rpm



## What do ya say?

As with the Lambretta exhaust test last month (you did read that, didn't you?), while there is an overall winner with regards to power output, what you fit to your scooter will depend on your budget, riding requirements, any modifications you're prepared to make to fit it and of course which you like the look of the most too!

Money is a decider too, with the top four in the power stakes ranging from around £99 to £300, and the best nestling in at around £250. What I find most interesting however is that the Hammerzombie takes the laurels with 16hp and a respectable amount of torque too at 13.8Nm, yet it is a replica of an old

NK exhaust. And when I say a replica, I mean an original NK was sent to Europe where it was dissected, examined and a new exhaust fabricated. If it ain't broke, then don't fix it...

Andy

■ Many thanks to Scooter Center Köln, and in particular Philipp for supplying all of the information for this article, and in English too! You can contact Scooter Center Köln by phone on +49 (0) 238 307430 or visit [www.scooter-center.com](http://www.scooter-center.com) where you will find many of these exhaust pipes for sale.