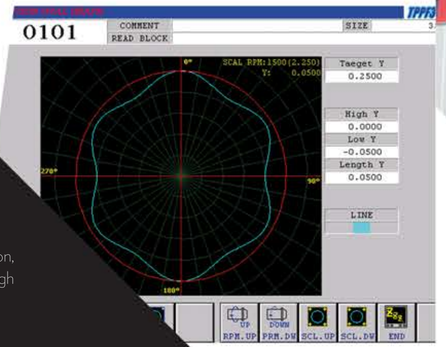
SPECIALFEATURES

NON-CIRCULAR TURNING

With our Takisawa piston lathe we are able to turn elliptical shaped pistons with very high precisions of a µm. Our lathe has no backlash, which enables a precision with zero tolerance involving axis movement reversals during cutting. This makes it possible to turn non-circular on purpose with the required measurements.



COATING

VHM developed a special coating for the inside of the piston, which improves quality for high rpm engines operating at high temperatures and load. The usage of our coating is to;

- Reduce micro welding
- Lower friction on the pin
- Prevent piston pin bore galling
- Provide a verry good thermal conductor

Right with coating

Mitutoyo Roundtest 1500

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VHM®

BILLET PISTONS

FOR 2-STROKE RACE ENGINES

Specially developed for high performance and longevity

GENERAL INFORMATION

BACKGROUND STORY

VHM is originated from and located in the Netherlands as a special racing products company. We have already more than 30 years of experience in designing and producing 2-stroke engines and products for the high-end race segment. Our expertise stems from the powersports motocross, roadrace and karting. In 2009 we started a new project within our company to develop and manufacture our own billet pistons. At this moment, we have established a firm market for our special developed VHM pistons.

VISION

Our vision is to deliver high performance and longevity VHM pistons for 2-stroke race engines. Through our experience and continuous testing we are able to create a high quality and high performance piston for our customers.

ORDER

Currently we have a wide range of special developed VHM pistons for motocross, roadrace and karting, all in inventory. A complete order list of these VHM pistons is available at our website www.vhm.eu. Orders can be send to info@vhm.nl.


Mitutoyo Euro M574


3D piston model

WHY CHOOSE VHM PISTONS?

VHM pistons have several advantages for you:

- High performance
- Longevity and minimal loss of performance during lifetime
- Supporting technical advice
- Fast delivery due to a high stock

This is achieved by:

- High strength billet material
- Non-circular piston profile
- Manufacturing with high precisions of a µm
- Inside piston coating to prevent piston pin bore galling and providing a very good thermal conductor

PRODUCTION PROCESS

The entire production process of VHM pistons is taken care off within our company, from designing 3D models to a complete special piston set. Our continuous process of ideas, testing and manufacturing consists of the following six steps:

1 It starts with ideas from testing in our Dyno Room and on track.

2 Then 3D parts of the piston are made. After the 3D model, a 2D drawing will be made with its specific tolerances. Then the measurements of the piston will be programmed for the CNC machines.

3 CNC manufacturing of the billet piston, through turning and milling. For milling, we use an Akira Seiki CNC machine. For turning, we use the newest Takisawa piston lathe.

4 Measuring and quality control for the pistons. For measuring the non-circular profile of the piston, we use a Mitutoyo Roundtest 1500.

5 Finishing by adding serial numbers and assembling the piston pin.

6 Delivery of the billet piston as a complete set, including piston pin, clips and piston ring.


Takisawa TPS 3500 II

Akira Seiki RMV 250 RT

TEST AND LABORATORY EQUIPMENT

OVERVIEW

VHM owns several test- and laboratory equipment, specially for the development of pistons. Among these are a hardness tester, microscope, a high-temperature chamber furnace from Nabertherm, Mitutoyo Roundtest 1500, Superflow SF-60, low pressure pneumatic flowmeter type DB and a fully equiped Dyno room.

MATERIAL SELECTION

At the beginning of the development, we tested several material structures. Eventually we came up with our own mixture of materials to manufacture the best pistons.

DYNO ROOM

VHM has a soundproof dyno room with 2 dynamometers from VHM-Dynostar, running in a fully vented environment. One dynamometer is used for an isolated engine, the other is used to attach and test a complete bike. The hardware in the Dyno room has been developed according to our own ideas and completed with the software from Dynostar.

Superflow SF-60