

FIXED-TURNING.

the **Ineluctable Evolution**

NEWEN

Before
PLUNGING
and the carbide form tool



x24



Drawing 1
Chatter Marks



x17



Drawing 2
Undulations

Now
FIXED-TURNING®
and the single point tool



x34



Drawing 3
Geometrical precision

The lapping of powder metal valve seats, or of some cast iron valve seats, brings about unavoidable chatter marks. Chatter marks are very harmful to a valve since gases escape through them while the valve is shut.

The machined valve seat will consequently deform rapidly and its seal will never be adequate. Chatter marks result from carbide form tool scraping a large surface of a material with a grainy structure made of different materials (such as powder metals, nodular cast iron...).

Traditional valve seats machined with the lapping technique (form tools), all present, undulations measuring hundredths of millimeters that are the direct result of irregular cutting efforts on a 360 degree rotation. The results of changing cutting efforts transmit irregular forces on machine spindles that will flex more or less depending on the machine and will yield irregular shapes. This phenomenon, well known by operators of manual machines, is compensated for, when large visible defects appear, with quick and forceful pressure on the spindle command.

The above results in considerable spindle efforts and, while it can help smooth out small defects, it can in no way rectify the geometry.

These undulations, inherent to the very principle of machining by lapping, have unquestionable consequences on valve sealing and require further lapping of each valve on its valve seat to obtain an acceptable seal. Valve lapping, so far accepted out of necessity by engine builders and their customers, has long been banished by engine manufacturers and anyone seeking the minimum quality required by current engine generations.

Machining by interpolation, **FIXED-TURNING®**, definitely eliminates all defects shown on Drawings 1 and 2.

Micro-chatter marks and undulations are virtually impossible to generate. Single point machining does not allow the formation of such defects. One only needs to consider machining on a lathe to convince oneself.

Machining with a turning tool traveling on two interpolated axes generates a circular micro-groove, perfectly round. The depth of the groove and the interval between 2 grooves is controlled by the numerical control of the machine, yielding the finest achievable surface finishes.

Much like cutting efforts, reduced considerably (300 times and more), surface finish defects are reduced to levels that rank **FIXED-TURNING®** at the very top of quality scales defined by leading OEMs.

Contour-**BB**™
**MONEY MAKER
OF THE YEAR**

Perfect
valve seat geometry
each and every time.
No Lapping, Ever!



**CHATTER FREE,
GUARANTEED!**

Do You **REALLY** Know
How Much You are Spending
to Perform a Valve Seat Job?



The new high productivity CNC seat & guide equipment from **NEWEN** reduces overall costs 35% to 55%! Plus, maximize your cylinder head flow...

Ask yourself the following question: "**Should I put FIXED-TURNING® in my shop to:**

- replace my existing seat & guide machine(s), tools and tooling with one single performing machine
- increase my customer base, volume (from motorcycle to diesel, to high performance)
- get contracts that I could never pretend to otherwise
- increase my shop turn-over at all levels of operations
- increase my labor margins and profits
- increase my sales of after-market parts
- belong, for the long term, to the professional league of engine rebuilders."

YES I DO!

All the **FIXED-TURNING®** for **55 Dollars** a day!



FIXED-TURNING®, a **REPLACEMENT TECHNOLOGY**, developer of growth, the common denominator of progressive engine rebuilders. **Long live engine rebuilding...**

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