

# PLANETARY SYSTEM

Compression resistance, for internal combustion engines, is one of the main factors that determine their efficiency; therefore the valves and their seats become fundamental elements and their wear is the cause of the lower performance of the engine.

**A CORRECT REVISION OPERATION MUST RESTORE THE SHAPE AND SYMMETRY AND THEREFORE THE ORIGINAL CONDITIONS OF COUPLING BETWEEN VALVE AND SEAT AND ELIMINATE THE DISRUPTED STRESS, THUS GUARANTEEING THE SEAL DURING THE PROGRESSIVE WEAR OF THE PARTS. FOR THIS THE CONDITIONS OF:**

## FORM

**CIRCULARITY:** The seat must be perfectly circular

**FLATNESS:** perfect correspondence of all points of the contact surface

**ANGULARITY:** the coupling angle must be respected

## SYMMETRY

**CONCENTRICITY:** of the seat of the axis of its guide

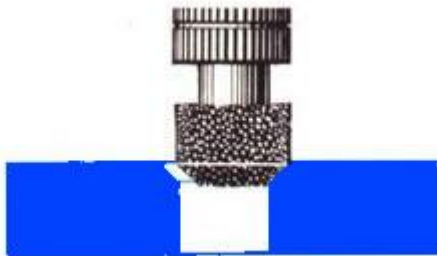
**PERPENDICULARITY:** perfect correspondence of all points of the contact surface

## COUPLING

**precision:** between seat and valve in compliance with the prescribed tolerances and the original taper

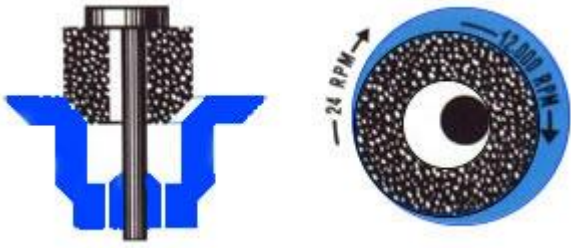
**To simplify and solve these operations in the best possible way, PEG has patented a grinding machine operating according to a PLANETARY SYSTEM: A SET OF THREE GRINDING MOVEMENTS, CONTEMPORARY AND COMBINED, REFERRED TO A SINGLE AXIS (pilot pin / valve guide) which ensures the correct alignment of the system .**

## ROTARY MOVEMENT



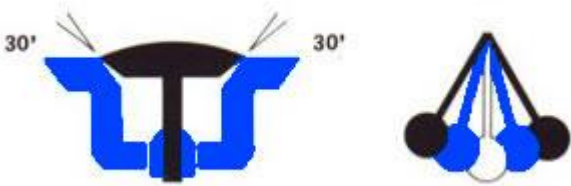
The surface to be ground is smoothed by a wheel that turns on itself at high speed but which works tangentially.

## ORBITAL MOVEMENT



At the same time as the rotary motion, the whole system performs an eccentric movement. The grinding wheel then touches all the points of the valve seat.

## PENDULAR MOVEMENT



The pendulum motion automatically creates angular convergence between valve and valve seat, as in a new engine.

The operating unit of this system is built with the utmost technical rigor in every component, so as to reduce to a minimum the errors deriving from the indispensable coupling play of the parts. The eccentric shaft, passing through the crankshaft, built with a fixed eccentricity, ground in its supports and precisely bored in the coupling hole for the pilot pin. The rotating masses are carefully balanced and preloaded to avoid axial and radial play of the bearings.

The series of gears with globoidal screws is housed in the upper part of the machine and ending with the micrometric pass advancement register.

The wheel spindle is ground.

An accurate control and testing verify and ensure that each operating unit meets the concentricity and symmetry criteria for which it was designed.

To cover the entire range of existing engines, the overhaul system consists of a complete series of devices in order to satisfy the most diverse needs.

Each device is equipped with a vast series of self-centering pilots and grinding wheels with the appropriate device for their diamond grinding. A metal container completes and encloses each single system.

**PEG GRINDING MACHINES OPERATE IN SUCH MANNER THAT AT THE END OF THE WORK IT IS NOT NECESSARY, Rather, IT IS COUNTERPRODUCTIVE, TO GRIND.**