

PATENTED

DYNAMIC LEVERLESS



**DYNAMIC
LEVER
LESS**

WHAT IS IT?

DYNAMIC LEVERLESS is a new and revolutionary device for the removal and mounting of tyres.

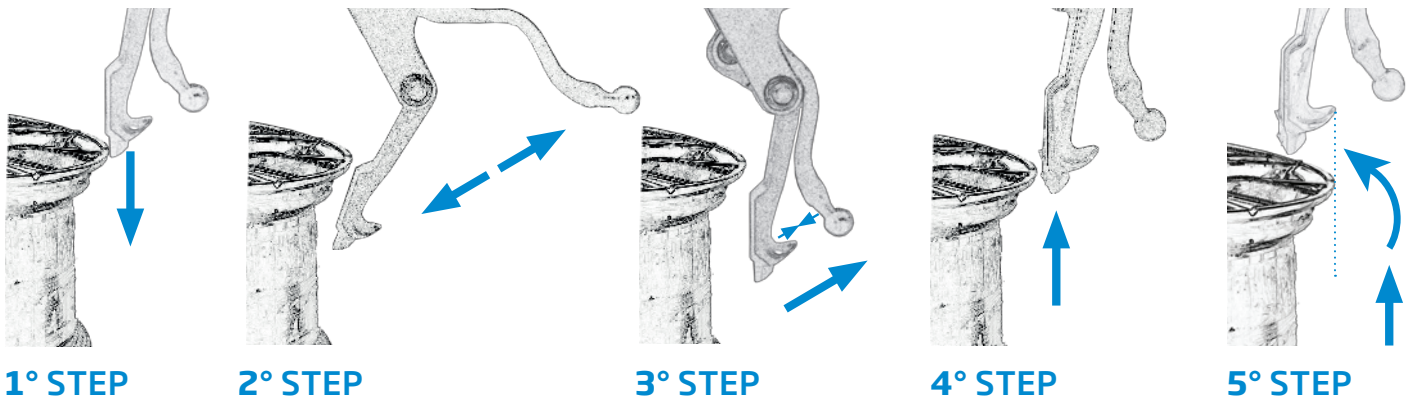
It operates differently from similar devices and guarantees stress-free operation on the tyre and without any contact with the rim. This is possible because the bead is rotated in such a way as to reduce the forces involved. This guarantees great ease of use even with "difficult" wheels, low profile tyres or with particularly hard beads.

WHY THIS INVENTION?

The automatic systems for mounting / removing the tyre from the rim, used up to now, are nothing more than the simple simulation of a manual lever. In most cases, it is necessary to exert intense forces, so that the hook interposed between the rim and the tyre can extract (during removal) or insert (during assembly) the bead from / on the edge of the rim. In this way, the risk of touching the rim by scratching it is very high, as well as damaging the tyre by cutting it. All these systems, called "Leverless", operate "by forcing".

This new system, on the other hand, works on rims and tyres in a more delicate and safe way.

HOW DOES IT WORK?

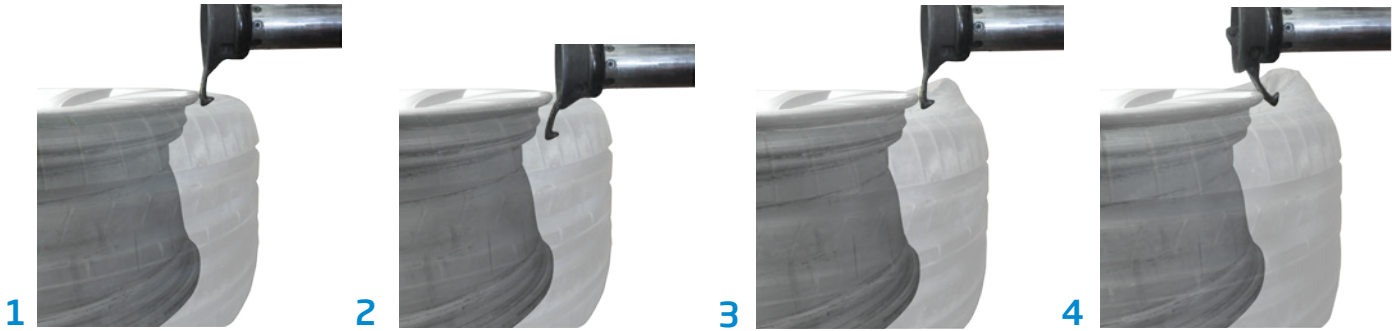


- 1 The gripper device moves downwards in a direction parallel to the axis of the spindle
- 2 The two grippers open thanks to a mechanism that allows the front lever to engage the bead to start the removal operation
- 3 Once the bead is engaged, the device closes to keep it firmly and prevent it from slipping, and at the same time it starts to move away radially from the rim edge
- 4 The further advancement of the grippers from bottom to top, flush with the rim edge, brings the bead to an ideal position for tyre removal
- 5 The subsequent combination of the two movements, upwards and towards the centre of the rim, completely zeroing the space between the bead and the edge of the rim

For assembly, simply position the lower part of the front lever flush with the rim edge, then using the rear lever to keep the bead guided until it enters the rim seat.

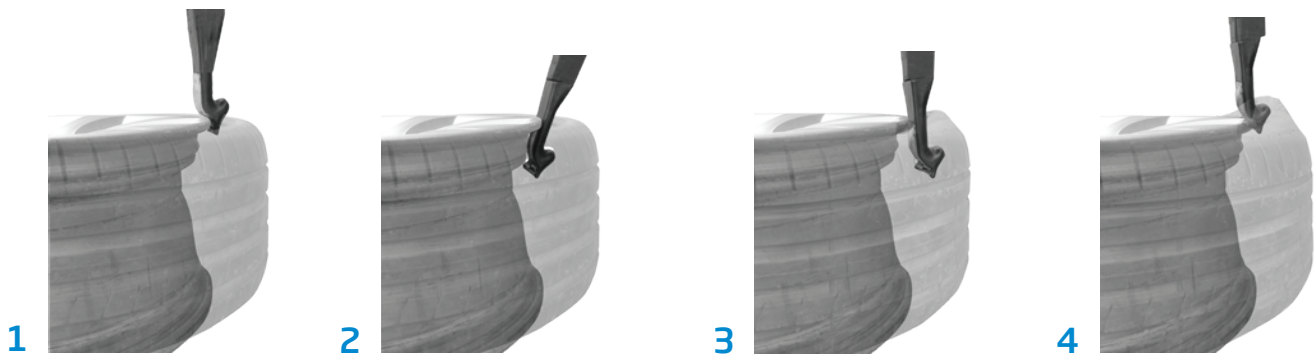
TRADITIONAL SYSTEM A

Example of automatic lever that lifts the bead: the system simulates the manual movement that is carried out with the traditional lever; during the extraction phase (phases 3-4), **it necessarily leans against the rim** to load the tyre bead, inevitably imparting a force to lift it above the edge. The tool always remains interposed between the bead and the edge of the rim, never zeroing the space between them.



TRADITIONAL SYSTEM B

Example of a lever moved by the bead: this system uses the force exerted by the bead on the tool to facilitate its movement; therefore, it necessarily rests on the tyre to receive its force and subsequently **touching also the rim**. The movement of the tool, therefore, is not controllable and correct operation depends on the degree of rigidity of the tyre, or on the conditions and type of the tyre. Often the tyre slips from the tool, forcing to repeat the sequence with the help of a hand lever tool.



WHAT ARE THE BENEFITS?

- Optimal and safe hooking of the tyre bead for the entire duration of the operations, without the risk of slipping
- Total control of the tool position in each phase
- The radial movement of the tool, right from the initial stages, allows always working away from the rim, guaranteeing real **CONTACT FREE** conditions
- The total zeroing of the distance between rim and tyre eliminates any risk of damaging them
- Reduction of time and effort