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Threading's types and components

The term “**threading**” refers to temporary connections that can be very easily disassembled. **Threadings'** parts are usually held together by either sheer friction or physical obstacles.

Threading is a kind of mechanical construction used to create a helical structure out of two elements, which is called “**thread**”.

Threads are built either on the outer side of cylindrical and conical elements (screws) or on the inner side of components (nuts). Then, screws and nuts are screwed together.

Threaded components can be used for two main purposes:

- In the mechanical industry (*liaison function*), for immobilizing and temporarily fixing two elements together.
- In the hydraulic industry (*transmission function*), for building more complex and elaborate structures for flows of fluids and gases.

Threading makes use of many components whose dimensions may vary according to the reference standard. The main ones are:

- Helix: it is the curve generated by a point P travelling in circular and axial motion on the lateral surface of a cylinder
- Profile and profile shape: intersection between the thread and a semi-plane originating from the thread's axis. Its shape can vary and it can be triangular, trapezoidal, sawtooth, round.
- Crest: part that connects the two flanks of a thread
- Root: part that connects the flanks of two consecutive threads
- Pitch: distance between two homologous points of the profile

How do you create a thread?

Threads can be created by means of different methods. The most widespread rely on lathes with single head utensils, taps and dies, rolling by means of plates or rolls, multiple cylindrical and conical milling machines.

The main types of threading are **ISO metric screw thread**, **Whitworth thread**, **GAS thread**, **GAS NPT**, trapezoid, sawtooth. In the next article **GAS and GAS NPT threading** – used in the hydraulic sector –and their dimensional differences will be analysed.