

The new RP6D combined rolling machine with washer loader

Thread rolling machines for screw bolt making, washer assembly and special machines

Since 1979 TLM has been operating on the market for the construction of machines for threading screws and bolts, for chamfering or for screw tips, for assembling washers and screws, of special machines for making deformations on screws, and more. We design and produce dedicated machines in line with the customer specifications, in Europe and throughout the world. We have a wide range of standard and special machines, capable of rolling wooden screws, hardened details and special screws, for application in a vast array of sectors, from construction to automotive and domestic appliances. The robustness and solidity of TLM machines, as well as their simplicity of adjustment, has determined their



popularity among our clientele, making them suitable for use in the production of hardened details, used in particular in the automotive sector. Over the years, TLM machines have been perfected both in terms of technology and production capacity. However, we have not limited ourselves to perfecting our own machines.

Our constant commitment to research and technological innovation inspires us to introduce new developments and prototypes onto the market. Our latest creations include: a micro-thread rolling machine for the threading of screws for jewelry, glasses and small metal parts, a quality control machine, an automatic loading systems and elevators for long parts.

Flat dies threading machines - RP

To thread from diameter of 1 to a diameter of 30 with the possibility of tool height of up to 300 mm. Divided into:

- Micro thread rolling machine RP3
- Single feeding machines with one punch
- Dual feeding with two punches and a separator unit
- Combined feeding with 3 punches

TLM 2 or 3 punch feeding machines are purely mechanical and this prevents any phase shifts between them and the kinematics of the machine.

Micro thread rolling machine

With single feeder for threading micro screws with fixed tilting tool holder and micrometric adjustments rolling machine slide and feeder slide assembled on precision roller blocks.



Dual punch threading machines

Controlled by two slides.

These are defined as dual feeding machines obtained by means of a combination of 2 slides and 1 separator unit with the following functions:

- the separator unit, which closes and supports the screw column,
- the 1st slide, called the **positioner**, brings the screw to the starting position,
- the 2nd slide, called the **feeder**, feeds the screw parallel to the rolling dies.

This system prevents overlapping of rivet shanks.



1 punch machines

Single feeder machines have a feeder punch fixed to the punch holder, in turn installed on the single feeder runner whose kinematics and movement make the punch push and feed the screw between the combs for rolling. The feeder runner slides on crossed roller guides.



Other models with one punch

RP4

Standard tool sizes (mm)
58x66 h 32 Th.20

RP6

Standard tool sizes (mm)
85x95 h 42/62 Th.25

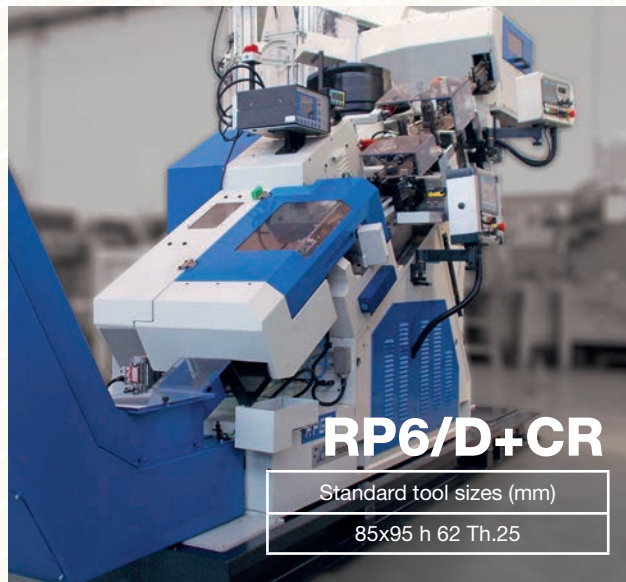
Other two-punch models

RP8/S

Standard tool sizes (mm)
115x130 h 54/62 Th.35

RP8/LD

Standard tool sizes (mm)
150x170 h 54/62 Th.30



Three-punch machines

Obtained by means of 3 punches controlled by 3 slides.

Combined feeding obtained by means of a combination of 3 runners with the following functions:

- the 1st slide, called the **separator**, separates the screw to be fed from the screw column,
- the 2nd slide, called the **positioner**, brings the screw to the starting position,
- the 3rd slide, called the **feeder**, feeds the screw parallel to the dies.

This system prevents overlapping of long screw shanks.

RP27



RP27

Standard tool sizes (mm)

381x406 h 168/220 Th.56

Other three-punch models

RP12

Standard tool sizes (mm)

190x216 h 80/100/110/120 Th.36,5

RP16

Standard tool sizes 228,6x254

h 120/130/160/180 Th.42,86

RP20

Standard tool sizes (mm)

279x305 h 140/180/200 Th.38

Combined machines – modular or multifunction

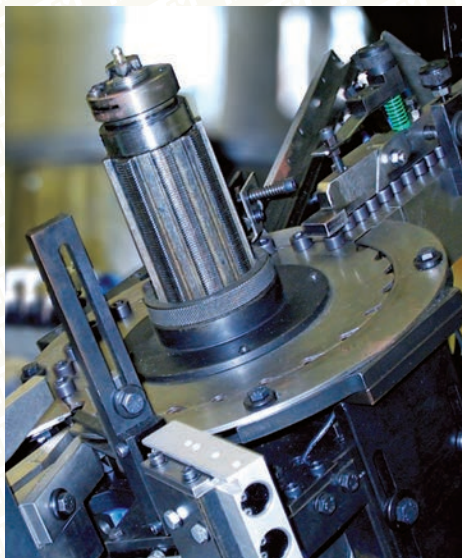
Machines obtained from the combination of different modules, allowing for example the implementation of pointing, washer loading and final screw threading in a single step without having to load and unload parts to be worked, since all processing takes place in tandem. This allows user customers to perform further processing

simultaneously to threading/rolling operations. Reducing production times increases the profit margin on the final product. Different module combinations are available according to the processing to be obtained on the final product. Each module is bypassable so as to exclude any unnecessary processing.

Single and double washer loader

TLM washer loader is the only one that allows a size change in 15 minutes. It also guarantees the lack of screws without washers, in the production.

- Washer loader configurable with carousels with diameter from: 150 mm – 200 mm – 300 mm.
- For the assembly of washers diameters from 10 to 56 mm.



RP8/LD+CR

Standard tool sizes (mm)

150x170 h 62/80 Th.30



RP8LD with roller block slide in combination with special bushing loader. Bushing loading and rolling up to diameter 16 mm.

Other models of combined machines – modular and multifunction

RP8LD+SM2

Standard tool sizes (mm)

150x170 h 54/62 Th.30

RP10LD+CR

Standard tool sizes (mm)

150x170 h 80/100 Th.35

RP12 MF

multifunction with SM3 pointing machine and RS12 rotary unit

RP10 LD/CR/SM3

with bushing loader CR and SM3 pointing machine

Standard tool sizes (mm)

150x170 h 80/100 Th.35

Other models
of combined,
modular
or multifunction
machines

RP12/CR

Standard tool sizes 190,5x215,9

h 100/110/120 Th.36,5

RP16/CR

Standard tool sizes 228,6x254

h 120/130/160/180 Th.42,86

RP20/CR

Standard tool sizes (mm)

279x305 h 140/180/200 Th.38



Roller and segment rotary threading machines - RS

Roller and segment rotary threading machines use different kinematics and fit different tools from flat die machines. To deform pieces, they use a central spindle, on which 1 threading roller and 1 segment

are assembled on the tool holder. The screw to be threaded is fed between them by means of a feeder slide.

Screw+washer or screw+bushing coupling systems

TLM washer/bushing loading machines are automatic assembly systems composed of 150/200/300 mm diameter carousels to allow for loading of micro-washers up to a washer diameter of 60 mm. The mechanics of these units are managed electronically via PLC with logics which ensures the total absence of production waste.



RS12

Standard tool sizes (mm)

roll Ø127 sector Ø280

RS6/2C

Standard tool sizes (mm)

roll Ø40 sector Ø120

RS8

Standard tool sizes (mm)

roll Ø127 sector Ø241,3

RS16

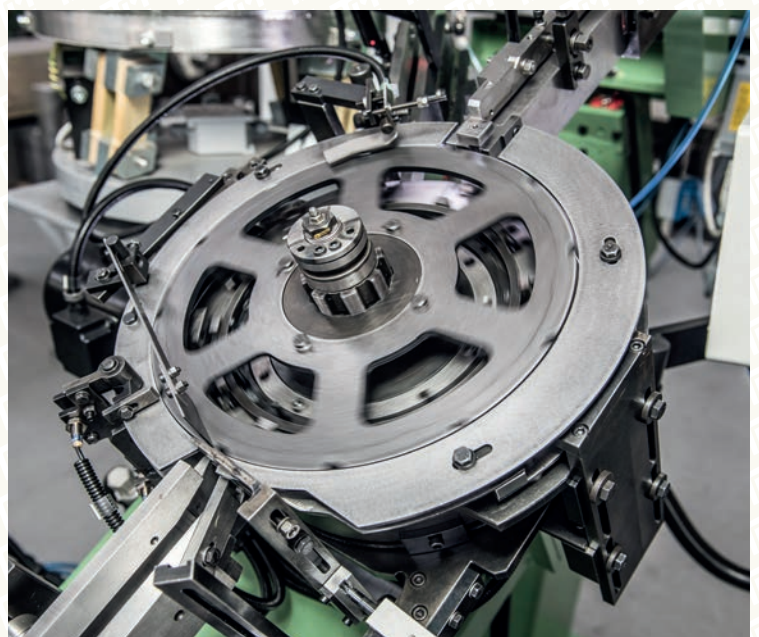
Standard tool sizes (mm)

roll Ø127 sector Ø340

RS20

Standard tool sizes (mm)

roll Ø127 sector Ø340



Bushing Loader

Carousel for bushings, diameter 200 and 300 mm. Possibility to load customized bushings.

Chamfering machines for points and special pieces production

The chamfering machines can work at the highest production speeds with a careful fastening of the workpieces to prevent its rotation during the working. The machine can be delivered separately or coupled with a rolling machine and it is assembled before it to spare many

passages of the screw. Possibility of producing screws with length 250/300mm on SM3 to SM5 pointing machines by means of use of optional equipment and automated motorisations.

Optional configurable equipment on SM:

- Mandrel and obtained component position display and memorisation
- piece scrap when drilling is not successful
- arrangement of pressure control instrument installation



Sorting carousel for long parts with checks for cracks and crooked parts

Sorting carousel, suitable for insertion in the production line for assembling washer screws and threaded screws, and able to carry out crack checks on hexagons, flanges and stems; check for crooked parts, with the possibility to scrap the faulty part.

Parts without flaws go directly to the rolling section.

The insertion of the carousel in the production line permits a reduction of production scraps at the end of the line, avoiding subsequent work on parts with flaws, or parts that need straightening.

The checks are carried out with the aid of special sensors, positioned outside the carousel.

The carousel is assembled on a powered column, to be inserted at the right height between the loading and rolling sections.



Vertical elevators/loading systems

Flighted load lifts with adjustment for long screws



Bar ascent speed can be adjusted via Inverter, motorised adjustment system with variable air speed.
Double vibrator linear selection system with min. screw diameter 8 mm, max. 16 mm, min. length 50 mm, max. length 300/350 mm.

This unit is powered via a vibrating channel whose stop and start are excited by the sensor fitted on the lift's vibrating hopper.
The vibrating channel can be supplied by TLM or purchased directly from a specialised supplier.

Tipping load systems for screws up to 120 mm and for washers

