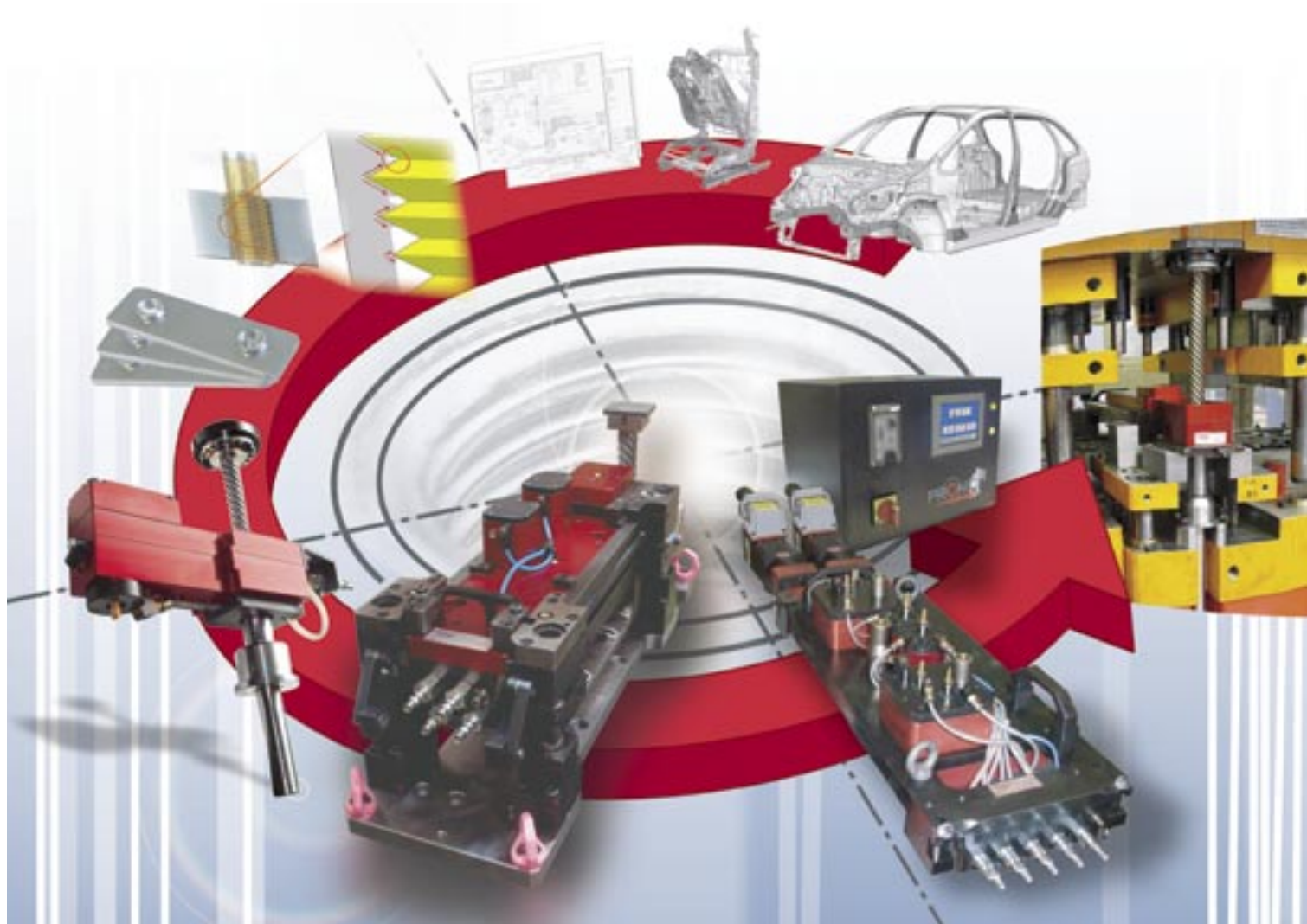


TAPPING SOLUTIONS

In-Die, In-Line or Stand alone



WE ARE THE MARKET LEADER AT YOUR SERVICE... ... BECAUSE YOUR PROJECTS DESERVE THE BEST SOLUTIONS!

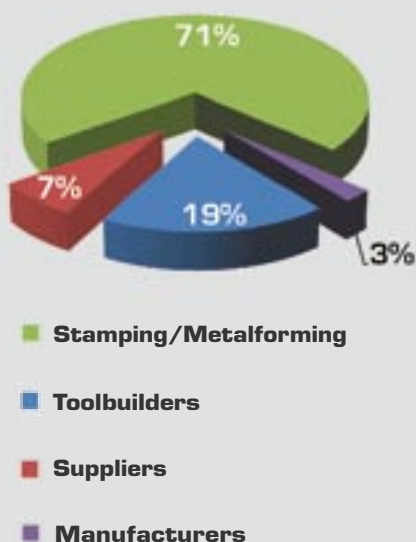


The world market leader of tapping solutions for the metalforming industry

The provider of solutions for:

- Progressive dies
- Transfer dies
- Fine blanking dies
- Multi slide application
- Stand alone tapping machine

Our customers activities:



PRONIC AND TAPPING

Since its creation in 1989, Pronic has developed the savoir-faire/know-how that has made it recognized in over 40 countries. Pronic has become a world-leader for tapping solutions in each type of sheet metal.

PRONIC's solutions for tapping are currently used in many different manufacturing sectors including:

- **Automotive** (safety belts anchors, door latch and hinge components, seat brackets, window clips, accessory mountings, door impact beams and motor endcaps, ...)
- **Electrical** (terminals, housings, ...)
- **Appliances** (access lids, doors and hinges, leveling-pads and attachment parts, ...)

PRONIC's solutions for tapping include modules for: **in-die tapping**, as well as **in-line tapping** or if necessary, **off-line tapping machines** to use away from the press.

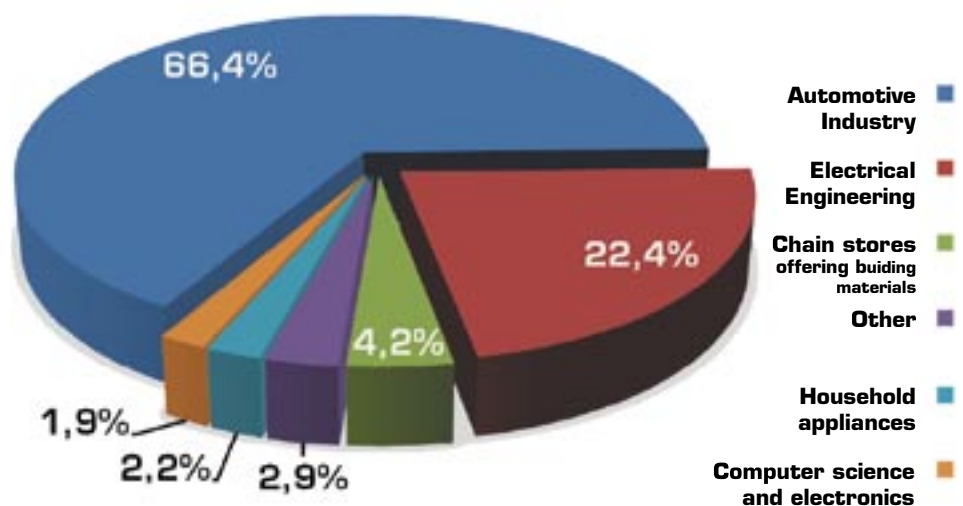
Since every tapping project is unique, PRONIC's goal is **to provide the best possible approach to your application**. Our goals are **to lower your production costs and also the investment costs** for the life of your application.

PRONIC can offer simple **tapping processes** by offering unique approaches. Our PRONIC team of experts is at your service and can help you choose the best-possible solution. We can also design the integration of this tapping process and will be happy to answer all of your tapping questions.

Our team is composed of:

- 30% engineers
- 30% draftsmen/designers
- 30% sales and customer-support technicians
- 10% clerks

OUR INDUSTRY



IN-DIE TAPPING...

... THE SOURCE OF SAVINGS FOR YOUR FASTENING POINTS

FASTENING POINT

Fastening points, thanks to the processing of sheet metal, can be produced in many different ways.

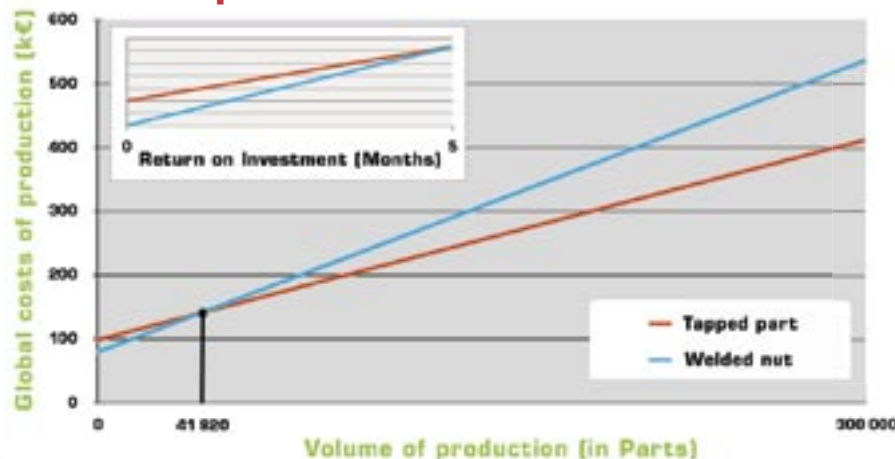
Extruding the metal for the tapped hole provides mechanical and economical advantages in comparison to other processes:

	Extruding tapped holes	Crimped Nut	Welded Nut
😊	- High tensile strength - Low cost for medium and high production - No loose pieces	Mainly used with thin sheet metal parts	- Good tensile strength - For low production
😞	Requires more progressions in the die	- Cost of the nut - Requires special and expensive feed-equipment - Low tensile strength - Corrosion of the surface area around the nut	- Cost of the nut - Requires special and expensive feed-equipment - Welding requires a slow, separate work step - Corrosion of surface area around the nut
Rating	★★★★★	★★★★☆	★★★★☆

Tapped extrusions are a favorite!

	On the press	Secondary operation tapping
😊	- The press produces ready and complete parts - PRONIC tapping units can be used for a long time and can be shared between Dies	Is applicable for small volumes
😞	The tapping units sometimes require additional Die pitches	- Hourly wage for setters and for the equipment - The machine is dedicated to tapping = it might be used for additional tapping - Low efficiency (part storage, material handling, refixturing, etc.)
Rating	★★★★★	★★★★☆

Example of the return of investment



Examples of extruded tapped holes with technical specifications:



M8 x 1,25 thread

- DCO4 - Thickness: 2,5 mm
- Thread depth: 6,5 mm

Torque test: 20 N.m



M10 x 1,50 thread

- S420MC - Thickness: 3 mm
- Thread depth: 6,5 mm

Torque test: 75 N.m



M12 x 1,50 thread

- Medium-carbon Steel - Thickness: 3 mm
- Thread depth: 19 mm

Pull test: >95 000 N



APPLICATION FOR PARTS IN THE ELECTRO-TECHNICAL ENGINEERING INDUSTRY

Electrical parts:
Custom solutions for
high-speed tapping



Customs solutions for
tight-space environments



EMRSV-1B

CLASSIFICATION OF PARTS

Electric parts are mostly produced by stamping dies and multi-slide press.

Common features of this branch of industry are:

- Malleable materials: copper, soft steel, brass
- Small part dimensions
- High production volumes
- Long project lives

Typical applications of this industry are:

- Terminal blocks
- Terminals
- Power outlets
- ...

CHARACTERISTICS OF ELECTRICAL APPLICATIONS

Fastening points of these parts also have a lot in common:

- Small thread depths (material thickness or simple extrusions)
- Various dimensions, from M2 to M6
- Small distance center between holes

The tools must therefore comply with certain requirements:

- Press with low tonnages (low closed assembled height, small stroke)
- **High volume production** (requires high reliability of the process, quick changeover and maintenance)
- Very high efficiency

CUSTOM TECHNICAL SOLUTIONS

For this unique small-component environment, we can recommend General Tapping Solutions to optimize the specific parts needs (in some cases, entire tapping concept is integrated into a single, harmonious tapping unit, with the environment guaranteed:

- **M1B** unit, for single hole tapping. this offers convenience when there is limited space
- Single-cartridge unit of the **B** or **B+** type, for small center distances
- Servo-driven unit of the **EMRS-1B** or **EMRS-1B** type (e.g. for various bending machines)
- ...



M1B



BS+2B

APPLICATION EXAMPLES

PRONIC tapping solution = guarantee of optimization of your production resources (costs reduction)

Example 1

Application:

- 1 x M3 x 0,50 - Copper - 1.50 mm tapping depth
- Drainage Press (highly shielded environment)
- Efficiency: 165 Spm - 200,000 parts/month

Proposed solution:

- **M1B** Single tap mechanical unit

Specific characteristics:

- 1 integrated micro-lubrication nozzle
- 1 «DETEC» tap sensor



Example 2

Application:

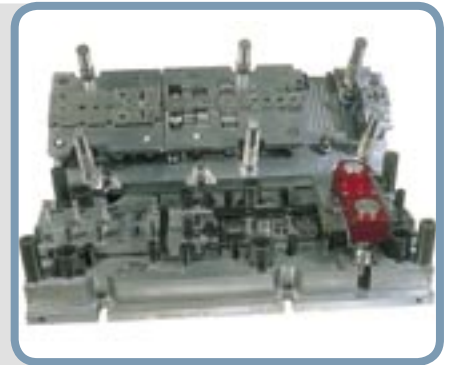
- 2 x M3,5 x 0,60 - Soft Steel - 2.00 mm tapping depth
- Center Distance between holes = 39,5 mm
- Efficiency: 80 parts/min

Proposed solution:

- **B+2B** planetary-gear, multi-spindle tapping unit

Specific characteristics:

- 1 remote micro lubricator per tap



Example 3

Application:

- 2 x M4 x 0,70 - CuZn37 - 3.10 mm tapping depth
- Minimum press efficiency 160 strokes/min
- 2 part-levels with different center distances

Proposed solution:

- **EMRV-2B** tapping unit with adjustable spindle center distances

Specific characteristics:

- Technology with adjustable center distance allows to emboss the tapping of 2 references Inline tapping with double tool for feeding (2 x 80 parts/min)
- «DETEC» tap sensor provided
- 1 integrated micro-lubrication nozzle per tap



AND MORE...

Although most applications involve progressive dies, there are other approaches to produce parts for the electric industry:

- Transfer dies
- Various fine blanking dies
- Tapping machines

In each case, we can offer you a tapping unit or the complete, turnkey solution, as a tapping station module or automatic tapping machine.

For more technical details visit our website: www.pronic.com

APPLICATION FOR ...

... PARTS IN THE AUTOMOTIVE INDUSTRY

**Automotive parts:
effective and
cost-saving solutions**



CLASSIFICATION OF PARTS

Parts with a high volume of production in the automotive industry. Those parts, made from metal coil, are mainly produced with progressive or transfer dies.

Common properties are:

- Parts made of soft or mild steel as well as of stainless steel
- small to medium extrusion (few stations needed for tools)
- High production speed

Main applications for this industry are:

- Parts for hinges, door latches
- Parts for car seats
- Fastening points for accessories
- Fastening of the car exhaust system
- ...



CHARACTERISTICS OF AUTOMOTIVE APPLICATION

Fastening points of those parts require the following average technical properties:

- Weak to medium strength for pull and torque test
- Variable sizes from M5 to M8, with **small or equal to the diameter thread depths**

The tools are subject to special conditions:

- Press of medium tonnages, which allow for stroke between 100 and 300mm
- Increased efficiency within the range from 30 to 80 strokes/min

CUSTOM TECHNICAL SOLUTIONS

Our complex devices program may be used for automotive industry after prior adaptation to your parameters.

- **M1D** single tap unit, standard, simple and easy to use
- **TK** multi tap unit, offers flexibility and modular construction
- **TKxE** servo-driven unit, modular with integrated pressure pad for total reliability
- ...



M1D



TKN-1208E



TKS-2225M

APPLICATION EXAMPLES

PRONIC tapping solution = guarantee of optimization of your production resources (costs reduction)

Example 1

Application:

- 1 x M6 x 1,00 - Steel DCO4 - H = 5,60 mm
- Transfer Press 250T
- Tapping angle: 20°
- Speed: 35 SPM

Proposed solution:

- **MSxD-1B** single tap mechanical unit

Specific characteristics:

- Design of the tapping unit with consideration for the transfer arm movement
- Detachable head with tap tilted at 20°
- «DETEC» tap sensor provided
- 1 micro-lubrication nozzle integrated



Example 2

Application:

- 2 x M6 x 1,00 - High Tensile Steel S355 MC - H = 6,00 mm
- Press 630T
- Progressive die with tapping done after bending of the part
- Speed: 40 SPM

Proposed solution:

- 2 x **M1DH** horizontal single tap mechanical unit

Specific characteristics:

- Horizontal tapping
- Pressure pad mounting for tapping cycle optimization
- 1 integrated micro-lubrication nozzle



Example 3

Application:

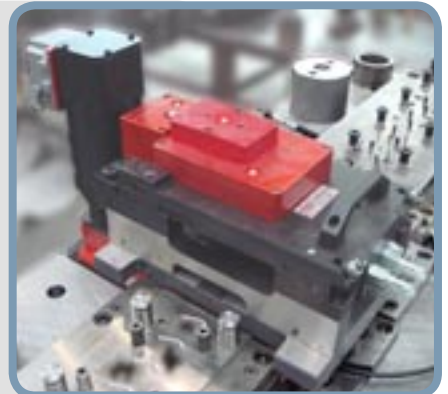
- 2 x M8 x 1,25 - Steel DD11 - H = 7,50 mm
- Speed: 40 SPM

Proposed solution:

- **EMRFV100-2D** electromechanical unit

Specific characteristics:

- Pressure pad mounting for tapping cycle optimization
- «DETEC» tap sensor provided
- 2 integrated micro-lubrication nozzles per tap



AND MORE...

Although most applications involve progressive dies, there are other approaches to produce parts for the automotive industry:

- Transfer dies
- Fine blanking dies

In each case, we can offer you a tapping unit or the complete, turnkey solution, as a tapping station module or automotive tapping machine.

For more technical details visit our website: www.pronic.com

APPLICATION FOR SAFETY PARTS IN THE AUTOMOTIVE INDUSTRY

High strength automotive parts:
enhanced custom tapping solutions for even more difficult conditions



CLASSIFICATION OF PARTS

High strength parts or «Safety Parts» for automotive industry. Used material is much less deformable. The material deformability becomes more critical.

Common types of applications are:

- High tensile Material (most parts of the “Safety” type are made of high strength steel)
- Material needs more die step to be formed (Material hardening is more common)
- The thickness of material is much higher

Main application for this type of industry is:

- Engine parts
- Safety belts assembly components
- Fastening elements for the shock absorbers or drives
- All safety parts
- ...

CHARACTERISTICS OF AUTOMOTIVE APPLICATION

Fastening points of these parts require much closer compliance with the technical properties:

- Higher torque and pull out requirements
- Variable sizes from M8 to M12, with **thread depths bigger than the diameter**

The tools are subject to special conditions:

- High tonnages presses (400T and more) with stroke often larger than 300mm
- Still high efficiency in the area from 20 to 35 Strokes/min

CUSTOM TECHNICAL SOLUTIONS

The tapping solutions for this harsh environment must be tough and reliable:

- **TK** type unit for multi tapping with more drives
- **TKxE** servo-driven unit with multiple motorization
- use of **torque reducer** with the mechanical units (in order to minimize the press stroke required for tapping)
- ...



MRxD2-8PIE



EMRFV2-6D - M400



TKD-2225M

APPLICATION EXAMPLES

PRONIC tapping solution = guarantee of optimization of your production resources (costs reduction)

Example 1

Application:

- 6 x M8 x 1,25 - High Tensile Steel S355MC - H = 7,00 mm
- Press stroke = 600 mm
- Speed: 25 SPM

Proposed solution:

- **EMRFV2-6D** multi tap servo-driven unit

Specific characteristics:

- Pressure pad mounting for tapping cycle optimization
- Guiding plate for the strip movement
- Servo drive mounted upside down to match with the die environment
- 2 integrated micro-lubrication nozzles per tap



Example 2

Application:

- 1 x M45 x 1,50 - Steel DC01 - H = 11,00 mm
- Transfer Press 1 000T with stroke = 200 mm
- Speed: 10 SPM

Proposed solution:

- **EMRV-1E** single tap servo-driven unit

Specific characteristics:

- Part centering integrated onto the tapping head
- Pressure pad mounting designed with room for the transfer arm
- Integrated sensor for tap stroke
- 4 integrated micro-lubrication nozzles per tap



Example 3

Application:

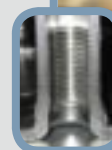
- 1 x M12 x 1,50 - Steel DC04 - H = 24,00 mm at end of a blind hole
- Press 1 100T with stroke = 500mm
- Speed: 18 SPM

Proposed solution:

- **MxD-1D** single tap mechanical unit

Specific characteristics:

- Tapping from bottom to top
- Pressure pad mounting with 12mm **quick approach system** to optimize the tapping cycle
- Integrated sensor for tap stroke
- 4 integrated micro-lubrication nozzles per tap



For more technical details visit our website: www.pronic.com

TK, A RANGE OF ...

...MODULAR, TURNKEY AND CUSTOM MADE TAPPING UNITS

TK - PHILOSOPHY

In order to meet your needs, we have designed a range of tapping units based on **a tapping head** on which it is possible **to add several functions** (vertical strip following, quick approach, strip guiding and strip piloting).

Each function can be used with **a mechanical or a servo-driven motorization**.

TKN - The essential



TKS - Vertical strip following and strip guiding



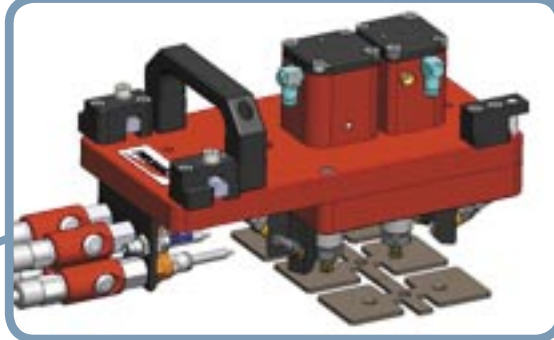
TKD - Quick approach and strip guiding



Mechanical motorization



Servo-driven motorization

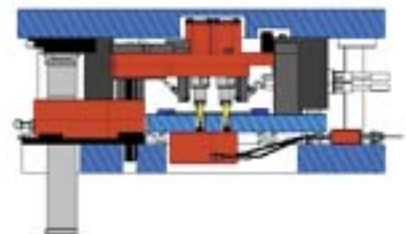
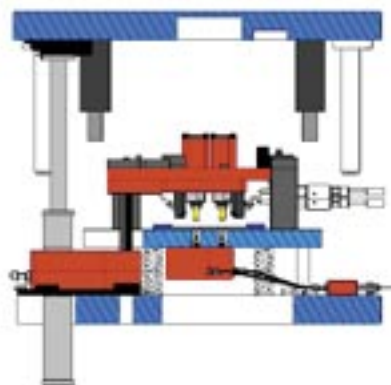


Tapping head with cartridges and integrated lub nozzles

TK - Advantages:

- **Best compromise between production speed and tap life.**
- **Beginning of tapping just after the strip feeding.**
- **Tapping even when the strip moves down.**
- **Tapping independant from the stripper travel.**

TK - MOUNTING ON MOBILE SUPPORT



In order **to get the best compromise between production speed and tap life** in progressive tools, we recommend mounting the tapping unit on a pressure pad.

This is **the most common** type of mounting because **it offers the best performance**.

More than twenty other mounting possibilities are available!

Depending on your tool configuration (strip lift, stripper travel, tapping direction) and your requirements, we will recommend the most appropriated and optimized mounting for your application.

CONTACT-US !

- 10 -

TKN - THE ESSENTIAL

The «TKN» tapping units replace the «Mx» tapping units.
The tapping station is made by the toolmaker.

- **Lightened head:** easy handling.
- **Cartridge with a system that can unclutch the template gear:** safe tapping.
- **Built-in tap lubrication:** improved tap life.
- **Quick installation kit:** tap change in few minutes, easy access for maintenance.
- **Adjustable gearbox:** optimized performance, and press stroke adaptability.



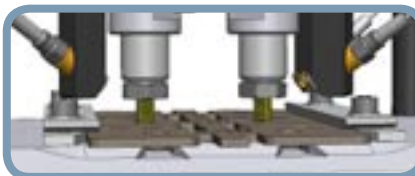
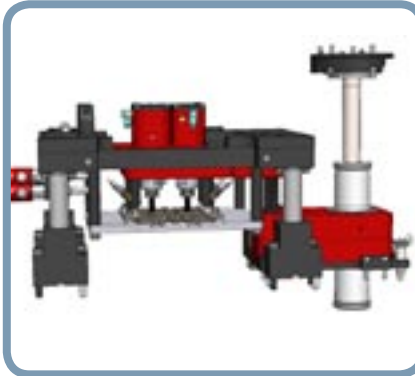
TKN - Advantages:

- Secured system.
- Optimized tap life.
- User friendly.
- Optimized performance.
- Economical solution.

TKS - VERTICAL STRIP FOLLOW AND STRIP GUIDING

The **strip following function** (pressure pad) enables to follow the **vertical movement of the strip** while reducing the room taken by the tapping station.

- **Pressure pad integrated to the tapping unit:** Simplification of the work of the toolmaker and the designer. Simpler, shorter dies.
- **Strip following function:** Integration of the pressure pad function to the quick installation kit of the tapping unit. Simplified, more compact tapping station.
- **Strip guiding function:** No unplanned movement of the strip at the tapping stage. The strip moves without any problem.



TKS - Advantages:

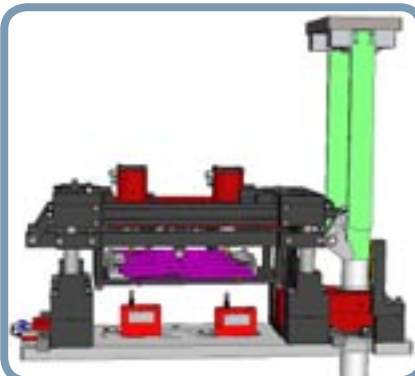
TKN advantages, plus:

- Strip following function (pressure pad).
- Strip guiding function.
- Simpler and more compact tapping station.

TKD - QUICK APPROACH AND STRIP GUIDING

In case of a **complex application** (very large or complex strip), the **rapid approach driven by a came** enables to bring the tapping head to the strip just after the end of the strip feeding.

- **Pressure pad integrated to the tapping unit:** Simplification of the work of the toolmaker and the designer.
- **Quick approach:** Optimized tap travel. Kinematics perfectly optimized.
- **Piloting (option):** Positioning and clamping of the strip before the beginning of the tapping operation in order to avoid foreign stress on the tap.



TKD - Advantages:

TKS advantages, plus:

- Quick approach of the tap.
- Strip piloting and clamping (option).
- Increased performances.

A SYNCHRONIZED TAP DRIVING... ... IS A GOOD QUALITY TAPPING

All solutions concerning tapping solutions recommended by PRONIC use 100% mechanical guidance of the tap.

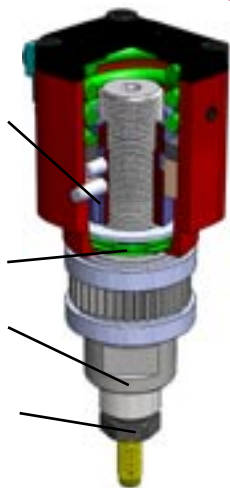
Synchronized tapping: Guarantee of high quality threads

Cartridge safety
with clutch
system on the
template gear

Axial and radial
clearance

Strengthened
waterproofness

Tap held by collet

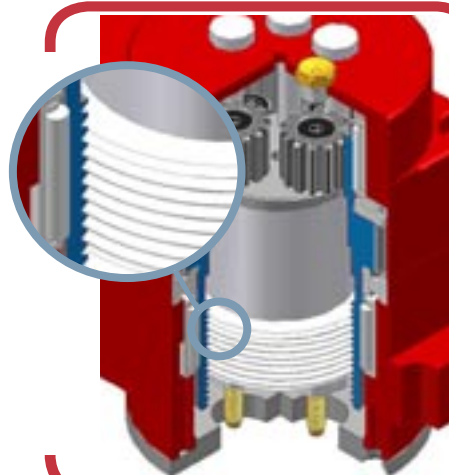


Benefits of both technologies:

Tap movement is managed
throughout the whole tap-
ping operation:

- Secured tapping
- Endurance and reliability

Sturdiness for high performance



CARTRIDGE TECHNOLOGY

Most PRONIC tapping units use this system consisting of a tapped **template gear** and a threaded **tap holder**. This assembly is called a cartridge.

These two components have exactly the **same thread pitch as the tap**. When the cartridge moves by one pitch, it drives the tap to move one pitch. Therefore we can talk about **synchronized driving of the tap**: it is a current control over the position of the tap throughout the whole tapping cycle.

The cartridge is secured:

- In case of overload or when there is no hole to tap, **the template gear unclutches** to prevent tap breakage.
- The template gear is then re-clutched automatically at the end of press cycle, at the correct position.
- The cartridge is designed with an **axial and radial clearance** to **absorb unwanted strip movements**.
- The **waterproofness** of the cartridge has been reinforced for a longer life.

Thanks to this system we can guarantee you that:

- process of forming the threads is 100% accurate and reliable
- 100% of the parts is thread-formed (see also the description of the DETECv2 system under "PRONIC accessories")

TEMPLATE GEAR TECHNOLOGY

In some cases we choose to offer a solution with a guided tap system, which is based on our **patented template gear technology**.

The template gear can support one or multiple spindles at the same time.

The synchronic movement of spindles rotation and translation of the template gear is done by the gears.

This combination creates perfectly **synchronic screw motion**.

This technology has the **same advantages as the cartridge technology**, and at the same time enables tapping with **smaller distance centers**, as well as **fine thread pitches**. It is also recommended for high speed stamping.

Tap driving technology	Cartridge	Template gear
Tap dimension	from M3 to M30	from M0,6 to M10
Minimal thread pitch	0,50	0,15
Minimal center distance	from 32,5mm*	from 10mm*
Number of spindle	from 1 to ...	from 1 to 6

* Depends on tap dimension

A SUITABLE POWER TRANSMISSION... ... OFFERS INCREASED PERFORMANCE

In order to answer all kind of application and get the best performance, PRONIC offers you two solutions to apply the necessary power to make thread.

MECHANICAL MOTORIZATION

The transmission, **fastened on the lower shoe** and **lubricated by bath of oil**, transforms the linear motion of the press ram into a rotation movement inside the tapping head.

The transmission is **equipped with a grooved shaft** which allows the tapping head to follow the vertical movement of the strip.

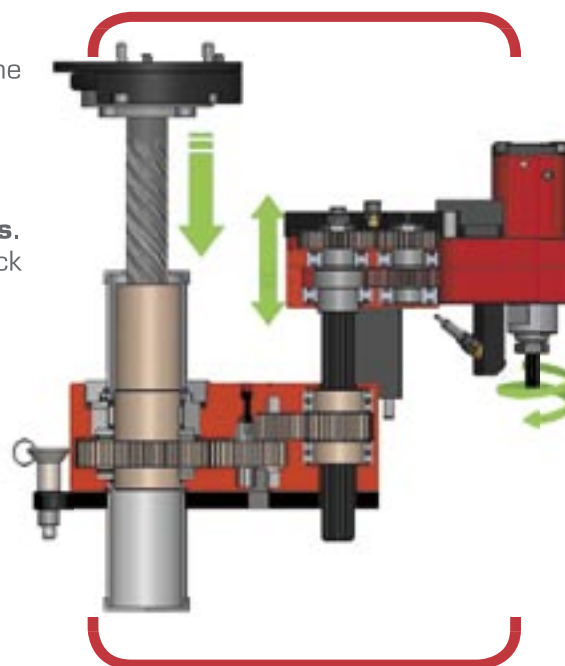
This configuration enables to **make a simple and economic tool**.

These **transmissions** are universal and **can be used in several tools**. The quick installation kit delivered with the transmission allows for quick die change and facilitate maintenance.

The position of the transmission is locked with an indexing pin.

	Ø16 Transmission	Ø25 Transmission
Max Press stroke	until 300 mm	until 500 mm
Max Strip lift	until 45 mm	until 90 mm

Tapping to the rythm
of your press



SERVO-DRIVEN MOTORIZATION

Tapping independently
from the rythm of
your press

The PRONIC servo-driven tapping units (offered since 1994) are made with most components used on the mechanical units.

Here, the mechanical motorization is simply replaced by a **high dynamics servomotor** which is **piloted by our PRONIC PRC M400 controller, with color touch screen**, that:

- Enables a **single connection to the press**
- Enables to pilot **up to 4 motors**
- Enables to **manage all of the PRONIC peripheral items** as well as sensors and actuators (cylinders...) of the tapping station
- **Manages electrically the torque of the motor**
- Guarantees that **100% of the parts are tapped** if the controller is associated with a tap detection system.

With its independance from the press stroke, this solution is particularly interesting for **applications with long press stroke or, on the contrary, with very short press stroke**.

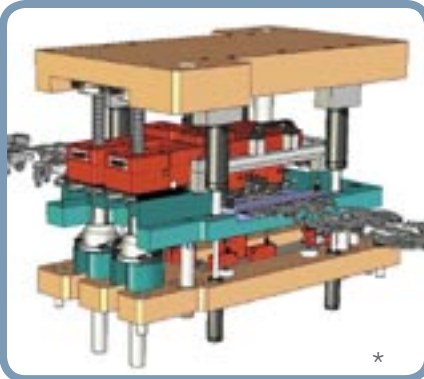
These units are **particularly adapted** to work with **transfer dies, fine-blanking and multi slide applications**. You can also find them as module base equipment of PRONIC in-line machines or stand alone machines.



TURNKEY SOLUTIONS...

... THE CUSTOM TAPPING STATIONS

Turnkey tapping:
PRONIC takes care of everything



Custom solutions for
tapping aimed at the
optimization of your tools



WHY CHOOSING A TAPPING STATION ?

PRONIC can recommend complete machines for tapping operation built, in accordance with your application, your experience and your requirements.

In doing so, we take the **responsibility for the application functions regarding the tapping process**, and offer you a **turnkey** solution optimizing the production capability as well as its efficiency.

In this way, you take full advantage of PRONIC's experience and reduce the time needed for designing and building the tool, and at the same time you can count on receiving the most effective solution.

DIFFERENT TYPES OF TAPPING STATION

After reviewing the configuration and size of your machine/die and your specifications, PRONIC can recommend an appropriate tapping-module:

- **"Cassette"** type: there is a recess made in the existing tooling, we deliver the complete tapping module/cassette, which easily slides into this recess.
This type of construction has a top and bottom basic plate with pillars and offers a complete tapping station.
- **"Pressure pad ***"** type: we deliver the tapping station, which must be integrated into the toolings.
Top and bottom plates are not provided in this option.
- or for **"solid mounting and/or reverse mounting **"** (tapping from bottom to top). This option is used in transfer dies, for example.

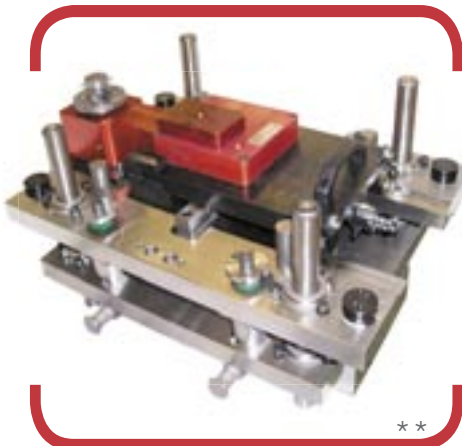
PRONIC designs and builds the complete tapping station in close cooperation with the builder of the tool and the customer's design office. All functions and elements necessary for the process of tapping are "on board" for the PRONIC slide subunit tapping module: it is ready for **"turnkey"** operation.

ENVIRONMENT OF THE APPLICATIONS

Our tapping units work mainly on progressive dies and transfer dies.

Today we are also able to offer custom-built modules, for such applications in **fine-blanking, multi-slide or stand alone applications**.

Our complete product line of tapping units may be used to meet the design requirements of your tooling (for placement, required safety functions, etc.).



APPLICATION EXAMPLES

PRONIC Tapping Solutions:
the guarantee of optimization of your
production resources
(costs reduction)

Example 1

Application:

- 6 x M5 x 0,80 - High Tensile Steel H240LA - H = 5,00 mm
- Transfer Press - 2 axis - 200T
- Die already running without in-de tapping = little space available
- Speed: 35 SPM

Proposed solution:

- Tapping station with **EMRSx-6B** servo-driven tapping unit

Specific characteristics:

- Solid mounting on lower shoe
- Stripper including clamping/piloting function before beginning of tapping
- Part sensor and tap sensor included onto the stripper
- Optimized design of the tapping unit to fit in the little space available and to avoid the transfer arms
- 1 integrated micro-lubrication nozzle per tap



Example 2

Application:

- 4 x M10 x 1,50 - H = 5,40 mm
- 1 x M8 x 1,25 & 5 x M6 x 1,00 - H = 4,60 mm
- High Tensile Steel S420MC
- 3 axis transfer press
- Speed: 20 SPM

Proposed solution:

- Tapping station with **EMRVx4-10D** servo-driven tapping unit

Specific characteristics:

- Solid mounting on lower shoe, tapping from bottom to top
- Tap detection by Laser sensor
- Both cartridge and template gear technologies embedded
- Clamping of the part before tapping done by air cylinder
- 1 or 2 integrated micro-lubrication nozzles per tap



Exemple 3

Application:

- 4 x M8 x 1,25 - High Tensile Steel C40 - H = 5,70 mm

Fine Blanking press

- Speed: 36 spm

Proposed solution:

- Tapping station with **EMRFVx2-4D** servo-driven tapping unit

Specific characteristics:

- Reversed bottom-to-top pressure pad mounting synchronized with the press kinematics
- Strip guidance integrated
- DETEC tap sensor integrated
- 2 integrated micro-lubrication nozzles per tap



PRONIC ACCESSORIES LINE...

... GUARANTEES THE QUALITY OF TAPPING

Reduction of oil consumption and increased life for tap Micro lube without mist!



MICRO-LUBRICATION SYSTEM

Because the lifetime of the tap depends on the effectiveness of its lubrication, PRONIC developed the **micro-lubrication system specifically to coordinate the tapping process**.

The system is compact, environmentally friendly, efficient and guarantees a significant savings due to metered application of the tap lubricant.

Principle:

Micro pumps push the oil into the nozzles, where the air flow turns the oil into micro droplets which are sprayed directly onto the surface of the tap.

Depending on the severity of the tapping process, the amount of oil and the spraying pulse frequency can each be adjusted.

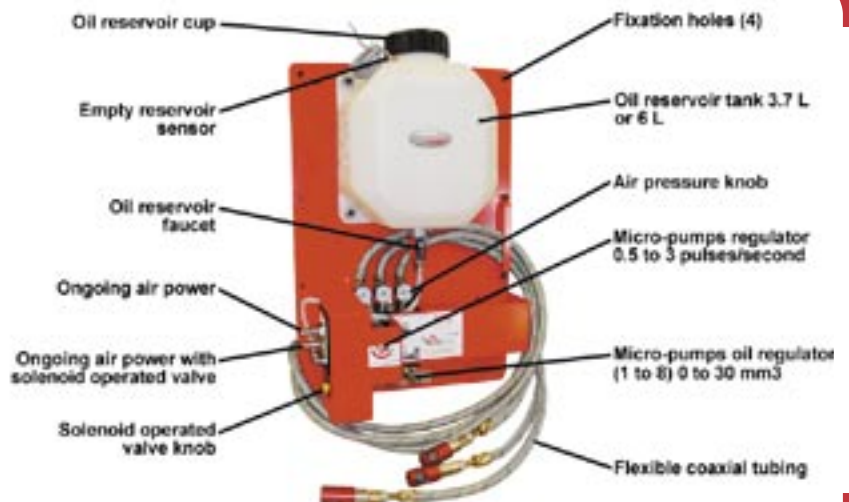
Oil consumption is so light that an expensive recovery is unnecessary.

PRONIC micro lubrication system is composed of pump modules which can be expanded for upgrade as necessary.

You select the number of points for lubrication and the size of the the lubricant reservoir that you prefer (3,7l or 6l reservoirs are available).

The system is available in 8 variations: with 1 to 3 micro pumps for the 3,7 l reservoir, or from 1 to 8 micro pumps with the 6l reservoir. 3 or 5m long hoses are available for connection to the tapping head.

Connect directly onto every tapping head with quick fitting.



Standard dimensions in stock, ready to use taps with PRONIC units



«BASS» FORMING TAP

In addition to the tapping units, PRONIC offers high efficiency taps which are in **compliance with manufacturing specifications**, and ready for immediate use with PRONIC tapping unit.

The usual Standard metric (DIN) taps are in stock.

Should you have any questions about the special dimensions or other tap standards, please do not hesitate to contact us.

DETEC TAP SENSOR

**Guarantee of
100% tapped parts**

DETEC completes PRONIC tapping solution by ensuring a **total control of the tapping process during your production.**

Simplifying your die design, this highly reliable device can easily be integrated in your future dies and/or your existing ones.

DETEC monitors closely the accuracy of your tapping operation, eliminating the need to sort your parts out because of broken taps, a pre-hole too small, or a miss feed.

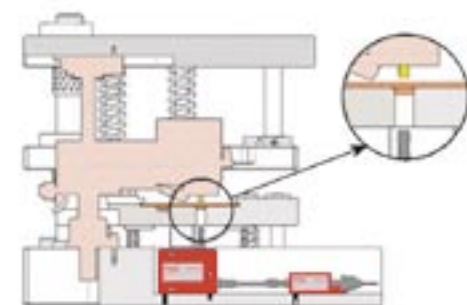


Principle:

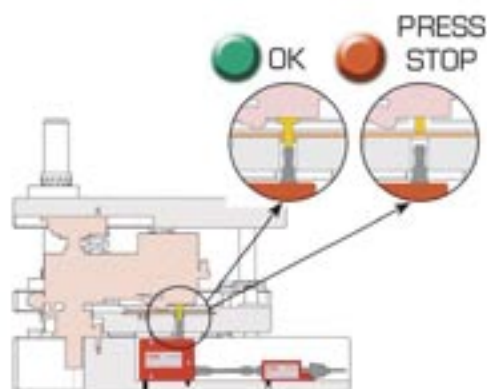
Despite the fact that the structure of DETEC is fully mechanical, it is able to sense the smallest physical movements at the bottom of the tap stroke.

To begin, the mechanical signal is transferred through a shielded cable to the adjusting nut on the receptor, fastened outside the tool where it activates the proximity switch.

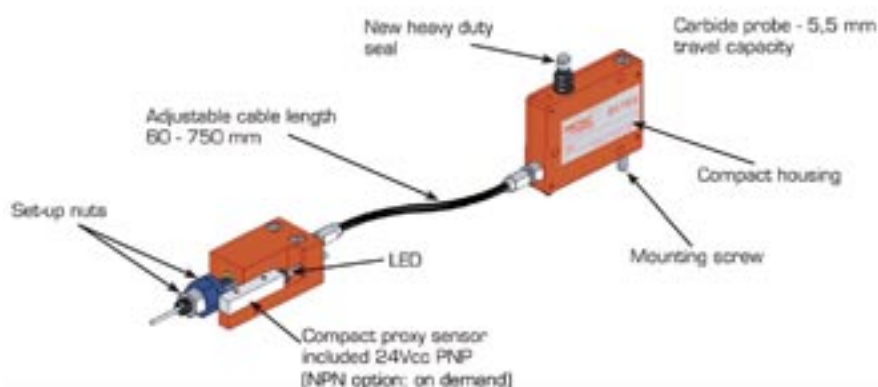
The proximity switch is connected to the press. If the tap does not penetrate the part and depress the tap sensor, the press will stop immediately.



Top Dead Center



Bottom Dead Center



For more technical details visit our website: www.pronic.com

TURN KEY SOLUTIONS...

... AUTOMATED TAPPING MACHINE

No more part output limit!

The solution when tapping cannot be done in-die

For several years PRONIC has been offering application-specific tapping machines for **high volume production and/or high speed stamping**.

The benefits of these solutions are:

- no restrictions in size of tap dimension
- no restrictions in the number of threaded holes
- no restrictions in efficiency; tapping is not the limiting production factor any longer
- possibility to process most of the partial references on the same machine

Tapping is executed by a **PRONIC servo-driven unit**, which is equipped with one or multiple taps depending on the part and production requirements.

In order to **guarantee the quality of tapping**, all PRONIC machines are equipped with:

- **micro lubrication system**, which are also used with unit in the die
- **Tap-breakeage system, as well as torque monitoring**

Thanks to these, you are guaranteed that all parts which leave our machine are really tapped.

PRONIC machines are equipped with a **user interface - intuitive touch screen** for the purposes of managing the work and production settings .

Our machines are compliant with **valid standards and specifications** and are delivered with **CE Certificate**.

The machine adjusts to your production: it is possible to tap additional part features on the same machine, thanks to quick and easy placement of the specific parameters for establishing features and required tapping heads.

IN-LINE TAPPING MACHINE For large production volumes

To answer the need for cost and process reduction, PRONIC created machines for in-line tapping.

Loading of the machine is fully automatic and directly connected to the output of the press.

The parts may be transferred in different ways:

- in one course from tool production
- the parts stay on the conveyor belt and in this case the final station and/or escapement is installed on the machine

The cycle is fully automated from the conveyor belt to the tapped part.

Finished parts leave the tapping machine.

STAND ALONE TAPPING MACHINE with semi automatic loading of parts

PRONIC offers tapping machines with semi automatic loading using the same concept as in-line tapping.

Loading of the parts is executed by the semi automatic supply system (vibrating conveyor, conveyor belt for loading, magazine ...) which will be loaded by the person operating the machine.

The machine cares for the transfer of parts by itself. As well as in the case of the in-line machine, part delivery is guaranteed by different type of transport systems:

- indexing-table system
- conveyor belt- transport system
- pick-and-place system or other

SECONDARY OPERATION TAPPING MACHINE with manual loading and unloading of parts

Tapping Machines, for secondary operations using manual loading and unloading of the parts are ideal for the **low production volumes** and for parts with many threads.

The parts are manually loaded into the machine by the operator who then initiates the tapping operation.

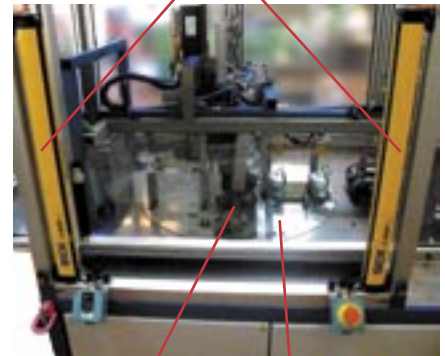
One or multiple threads tapping, all combinations are possible.

Our secondary operation machines **comply with all the safety standards** and include a two-handed release mechanism as well as a safety light curtain.

These machines also use micro lubrication systems, as well as tap sensor torque monitoring. **This allows us to guarantee you quality threads and no defective goods.**

**PRONIC SOLUTION
for large production
volumes, in a situation
when the machine
cannot operate in-line
with the press**

Safety for user via laser
curtain



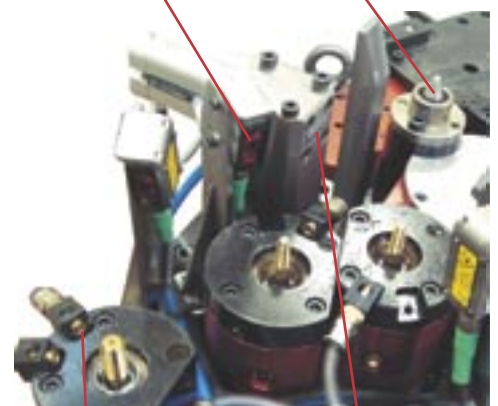
rotating table

Manual loading

**For small production
volumes PRONIC
offers standard and
economical machines**

Tap stroke detection

Partial part positioning



Micro Lubrication

Partial part clamping



PRONIC PHILOSOPHY...

... A COMPLETE SERVICE FOR THE TAPPING

Choosing a PRONIC tapping solution means that you have chosen the highest possible insurance during each step of your project.

From design to start-up:

PRONIC offers you the most complete service of the tapping industry

ASSISTANCE TO DEFINE THE MOST PROPER SOLUTION

Whether you already have experience with tapping or not, it is necessary **to find a concept appropriately matched to your requirements.**

Our technical sales staff is at your service to help you create a specification that takes into account all of your parameters, so that we can offer you a **"custom" solution.**

Depending on the complexity of your project we can offer you on-site improvement of your idea for work surroundings (tools, press, work style, etc. ...)



ASSISTANCE DURING DIE DESIGN

When you purchase one of our products, **we will send you 3D and 2D drawings of the developed solution.**

To help with integrating our tapping units with your tools, we will give you **instructions regarding the concept**, which will be a help and a guide for the engineering office from rough draft to final commissioning.

This instruction describes the design steps, one by one, on how to easily integrate the tapping unit into the tools.

After the manufacture of the tapping station, **we also recommend that we double-check your installation one more time** (to insure collision control, shape, mounting, meeting the requirements of the prescribed mounting, station kinematics check-up, etc. ...).

This control of the drawings or CAD data gives you the certainty of **smooth operation of the tapping unit from the very first press stroke.**

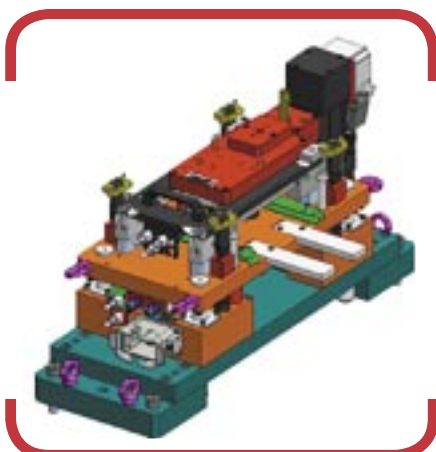


ASSISTANCE IN ORDER TO OPTIMIZE THE CONCEPT

In order to relieve you of the engineering design of your tapping function, **PRONIC also offers you the option to have us design the whole tapping station for your die.**

We are able to design the configuration of toolings, tapping stations, etc., and to optimize set-ups and efficiencies for you. In this way, you use PRONIC's experience and shorten the timing of your project, and also have the guarantee of receiving the most efficient solution.

All functions and component parts needed for the process of tapping are "on board" of the module created by PRONIC.



ASSISTANCE IN STARTING-UP YOUR DIE

Starting-up of a new tool is a **critical phase**.

That is why we offer you the option to have us **train your staff to use and maintain our products**.

For several years, PRONIC has been a nationally recognized training center.

If requested, a PRONIC technician can be present during start-up of the tool in order to obtain the best progress of the new process. **He will actively work for you by giving:**

- **theoretical training** concerning the functions of the tapping unit and the value of each parameter
- **practical training** of the allocated staff for general maintenance and use of the equipment at your Company
- **mounting the unit to the tools** by comparing the real parameters with the values defined by PRONIC
- **use of production** until the efficiency recommended by PRONIC is obtained

Exchange of know-how in order to provide carefree tapping



AFTER-SALES ASSISTANCE

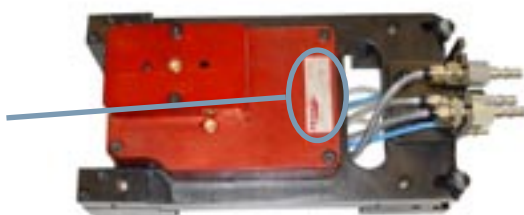
PRONIC wishes to remain your partner also when it comes to the future security of your applications.

In order to do so we offer you the following service:

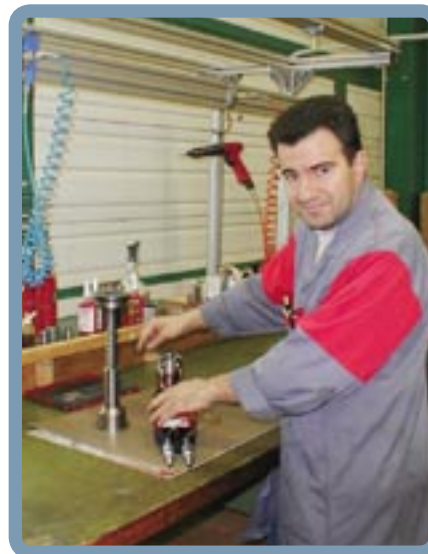
- **Online service** during 5 working days a week
- **Repairs** with the shortest time of return delivery
- **Fee for maintaining** your PRONIC units, for the optimum efficiency and operation of your tapping unit, with the guarantee of the return delivery during just one week
- **Maintenance training** for your staff by our assembly department at PRONIC's headquarters

Use, maintenance and repairs are coordinated by means of the serial number of our units.

If you have service questions after your purchase, you will only need to note the number on the ID badge of the head of the tapping unit and give it to us:



Our team is at your service!
We do everything which is needed for your PRONIC tapping unit

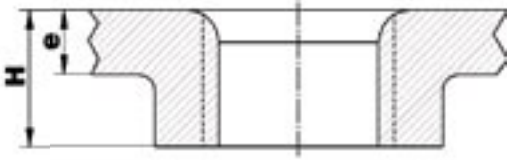


We are then able to provide you with matching spare-parts in the shortest possible time.

QUOTE INQUIRY...

... FOR YOUR TAPPING APPLICATION

Please fill in this questionnaire using the following comments and the sketch and send it to the email address: infos@pronic.com



Example:
Tap dimension: M10 x 1,50
Tap Tolerance: 6H

EXTRUSION DIMENSIONS:

H - Height to tap
e - Strip thickness

DIE PARAMETERS:

A - Press stroke
B - Shut height
C - Stripper travel
D - Strip lift
E - Strip running height

DIE ELEMENTS:

1 - Upper shoe
2 - Tap
3 - Stripper
4 - Strip
5 - Lower shoe
6 - Pressure pad

PART PARAMETERS

DIMENSION OF THE TAP : These are necessary value. Please indicate the diameter, thread pitch and tap standard specification.

TAPPING DEPTH : This dimension is necessary to identify the tapping solution (minimal press stroke required and reachable press speed).

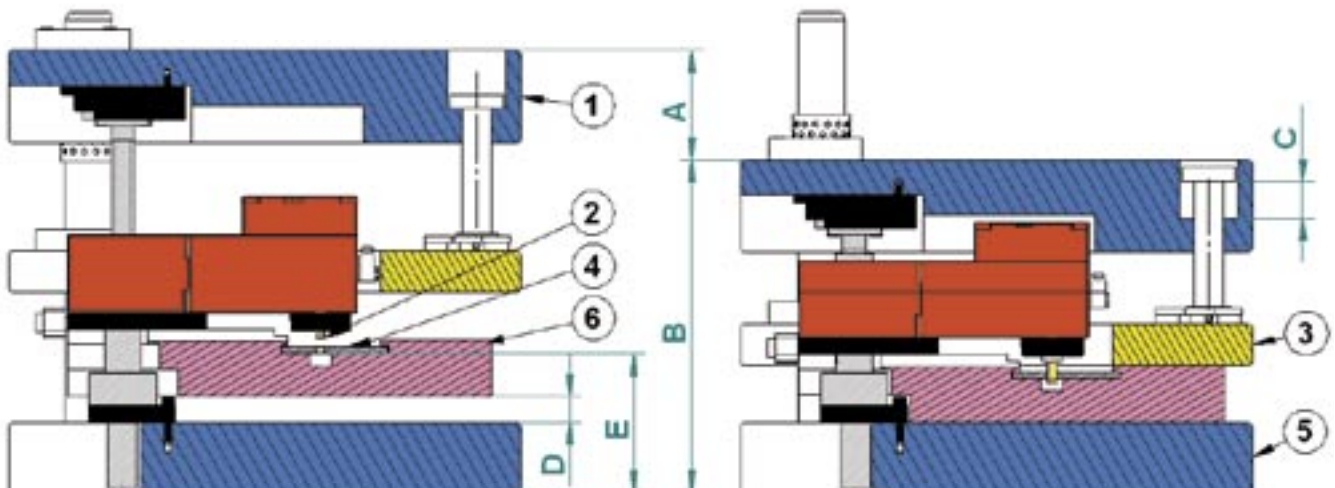
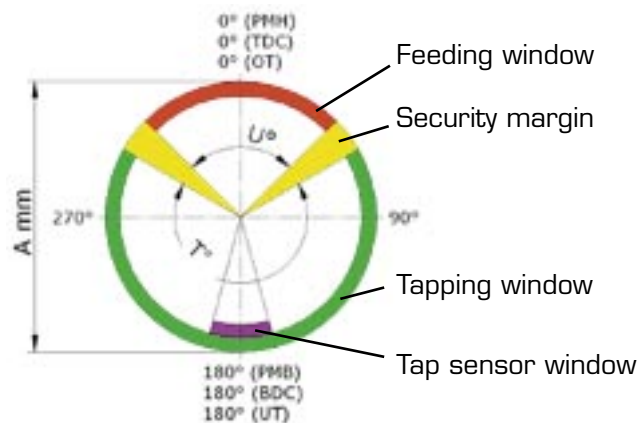
PART PRINT OR STRIP LAYOUT : with these drawings we are able to cope with the specific characteristics of your tools when defining the tapping solution.

TAPPING TOLERANCE: please indicate if it is known to you (6H/6G/2B).

Notice: Permissible border deviation influences the diameters of the hole under the thread.

DIE PARAMETERS

In order to ensure the best results for your application, the exact and complete values received from you are extremely important. If you do not know the values please indicate an approximate value. These can be updated later, as they become known.



Date of inquiry:.....

CUSTOMER DATA *

Company:.....

Address:.....

Zip code:..... City:.....

Telephone:.....

Fax:.....

Contact:.....

Department:.....

E-mail:.....

***For new contact only**

ACTIVITY:

- ☐ Manufacturer
☐ OEM
☐ Stamper
☐ Toolmaker
☐ Designer

PART PARAMETERS

- Project / Part name:.....

- Number of parts out after one press stroke:.....

Please send us the partial drawing. If you do not have such a drawing, please fill in the following data:

- Number of holes to tap per part:

- Tapping Dimension:.....

- Height to tap (H):.....

- Tolerance of tapping:.....

MATERIAL:

- ☐ Soft / Mild steel
☐ High Strength Steel
☐ Stainless Steel
☐ Brass / Copper
☐ Other

Specification:

Material Thickness (e):

DIE PARAMETERS

(see sketch on the left)	Value	Range from xx mm to xx mm
A - Press Stroke	mm	From mm to mm
B - Shut Height	mm	From mm to mm
C - Stripper Travel	mm	From mm to mm
D - Strip Lift	mm	From mm to mm
E - Strip running height	mm	From mm to mm
Die Pitch	mm	

Estimated Speed: SPM

Monthly production:.....

TYPE OF DIE:

Type:

- ☐ Progressive die
☐ Transfer die
☐ Fine blanking
☐ Multi-slides
☐ Other:

TYPE OF PRESS:

Type:

- ☐ Mechanical
☐ Hydraulic
☐ Knee press
☐ Other:

TYPE OF FEEDING:

Type:

- ☐ Mechanical
☐ Servomotor
☐ Pneumatic
☐ Transfer

Feeding window:

Begin at:°

End at:°

PRONIC, THE EFFICIENCY OF A NETWORK

For all your projects and applications **across Europe and around the world** there is always a PRONIC expert who speaks your language to provide you the best service.

Feel free to contact us for any request.

CONTACT PRONIC



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Fax : (734) 480-9300
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Your Local distributor:

