

# TAPPING SOLUTIONS



 **pronic**  
In-die solutions

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

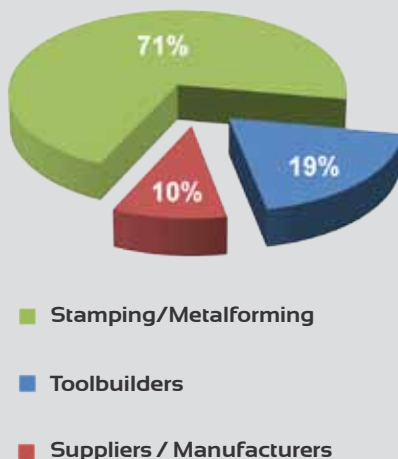


The world market leader  
of tapping solutions for the  
metalforming industry

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.

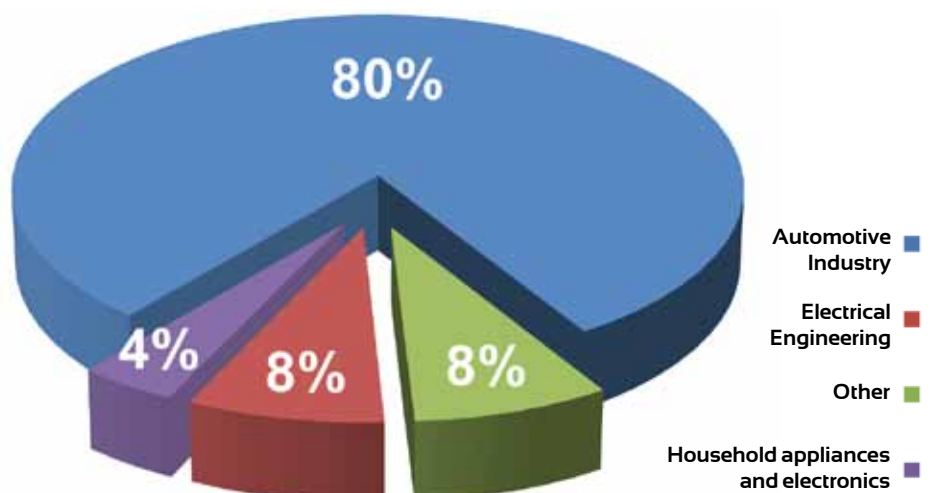
Since every tapping project is unique, PRONIC's goal is **to provide the best possible approach to your application**. Our goals are **to lower your production costs and also the investment costs** for the life of your application.

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.

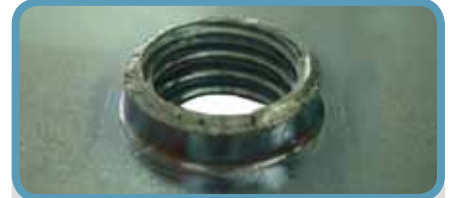
Extruding the metal for the tapped hole provides mechanical and economical advantages in comparison to other processes :

	PRONIC extruding tapped holes	Crimped Nut	Welded Nut
	<ul style="list-style-type: none"> <li>• High tensile strength</li> <li>• Low cost for medium and high production</li> <li>• No loose pieces</li> <li>• Mainly used with thin sheet metal parts</li> </ul>	<ul style="list-style-type: none"> <li>• Mainly used with thin sheet metal parts</li> </ul>	<ul style="list-style-type: none"> <li>• Good tensile strength</li> <li>• For low production</li> </ul>
	<ul style="list-style-type: none"> <li>• Requires more progressions in the die</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of the nut</li> <li>• Requires special and expensive feed-equipment</li> <li>• Low tensile strength</li> <li>• Corrosion of the surface area around the nut</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of the nut</li> <li>• Requires special and expensive feed-equipment</li> <li>• Welding requires a slow, separate work step</li> <li>• Corrosion of surface area around the nut</li> </ul>
Rating	★★★★★	★★★★☆	★★★★☆

### Tapped extrusions are a favorite!

	On the press	Secondary operation tapping
	<ul style="list-style-type: none"> <li>• The press produces ready and complete parts</li> <li>• PRONIC tapping units can be used for a long time and can be shared between dies</li> </ul>	<ul style="list-style-type: none"> <li>• Is applicable for small volumes</li> </ul>
	<ul style="list-style-type: none"> <li>• The tapping units sometimes require additional die pitches</li> </ul>	<ul style="list-style-type: none"> <li>• Hourly wage for setters and for the equipment</li> <li>• The machine is dedicated to tapping = it might be used for additional tapping</li> <li>• Low efficiency (part storage, material handling, refixturing, etc.)</li> </ul>
Rating	★★★★★	★★★★☆

### Examples of extruded tapped holes with technical specifications:



**M8 x 1,25 thread**  
 • DC04 - Thickness: 2,5 mm  
 • Thread depth: 6,5 mm  
**Torque test: 20 N.m**

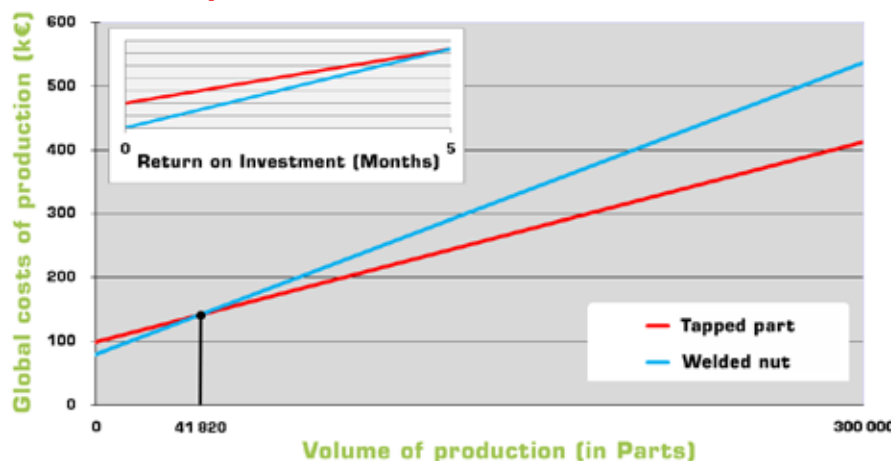


**M10 x 1,50 thread**  
 • S420MC - Thickness: 3 mm  
 • Thread depth: 6,5 mm  
**Torque test: 75 N.m**



**M12 x 1,50 thread**  
 • Medium-carbon Steel - Thickness: 3 mm  
 • Thread depth: 19 mm  
**Pull test: >95 000 N**

### Example of the return of investment

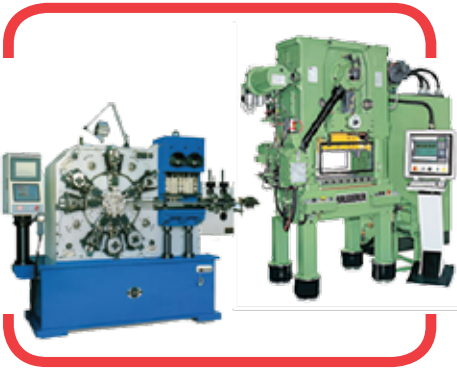


# APPLICATION FOR ... PARTS IN THE ELECTRO-TECHNICAL ENGINEERING INDUSTRY

## Custom solutions for high-speed tapping



## Custom solutions for tight-space environments



EMRSV-IB

## CLASSIFICATION OF PARTS

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

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:

- Presses 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, the entire tapping concept is integrated into a single, harmonious tapping unit). Options include:

- **MIB** unit, for single hole tapping, which offers convenience when there is limited space.
- **Planetary-gear** unit of the **B** or **B+** type, for small center distances.
- Servo-driven unit of the **EMRS-IB** or **EMRS-IB** type (e.g. for multi-slide applications).
- ...



MIB



BS+2B



## APPLICATION EXAMPLES

**PRONIC tapping solution**  
= guarantee of  
optimization of your  
production resources

### 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:**

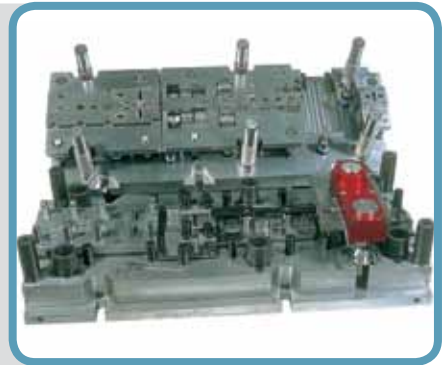
- 2 x M3,5 x 0,60 - Soft Steel - 2.00 mm tapping depth
- Center Distance between holes = 39,5 mm
- Efficiency: 80 parts/min

**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
- 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](http://www.pronic.com)**

## APPLICATION FOR ...

## PARTS IN THE AUTOMOTIVE INDUSTRY

Effective and  
Cost-Saving Solutions for  
automotive parts



### CLASSIFICATION OF PARTS

Parts with a high volume of production in the automotive industry. These 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

The following complex devices programs may be used for the automotive industry after prior adaptation to your parameters:

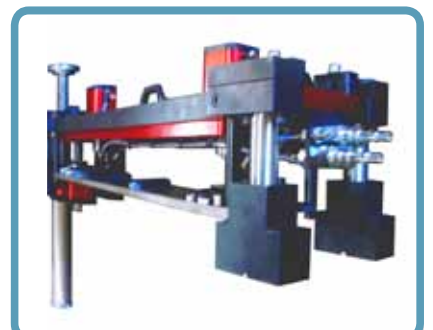
- **MID** single tap unit, standard, simple and easy to use.
- **TK** multi tap unit, offers flexibility and modular construction.
- **TKxE** servo-driven unit, modular with integrated pressure pad for total reliability.
- ...



MID



TKN-1208E



TKS-2225M

## APPLICATION EXAMPLES

PRONIC tapping solution =  
guarantee of  
optimization of your  
production resources

### Example 1

**Application:**

- 1 x M6 x 1,00 - Steel DC04 - 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 integrated micro-lubrication nozzle



### 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 MIDH horizontal single tap mechanical unit

**Specific characteristics:**

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



### Example 3

**Application:**

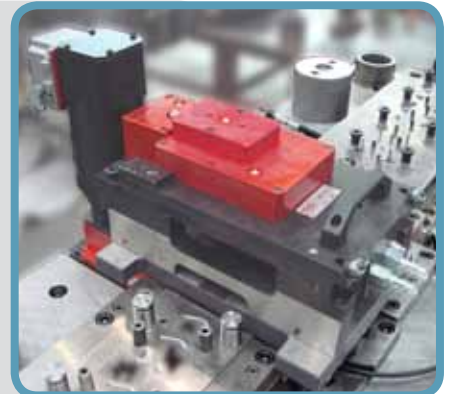
- 2 x M8 x 1,25 - Steel DD11 - H = 7,50 mm
- Speed: 40 SPM

**Proposed solution:**

- EMRFV100-2D servo-driven tapping 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](http://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 steps 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, and
- 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

### 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:**

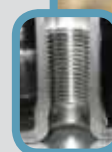
- 1 x M12 x 1,50 - Steel DC04 - H = 24,00 mm at end of a blind hole
- Press 1 100T with stroke = 500mm
- Speed: 18 SPM

**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](http://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** in which it is possible to **add several functions** such as 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



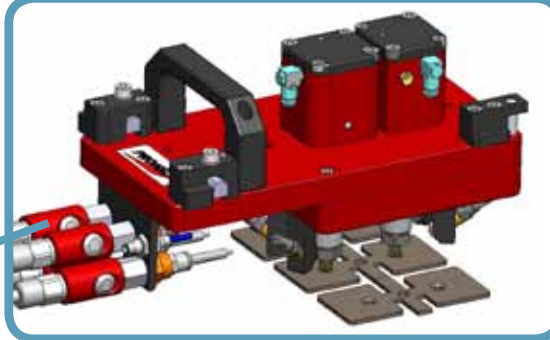
TKS - Vertical strip following and strip guiding



TKD - Quick approach and strip guiding



Mechanical motorization



Tapping head with cartridges and integrated lub nozzles

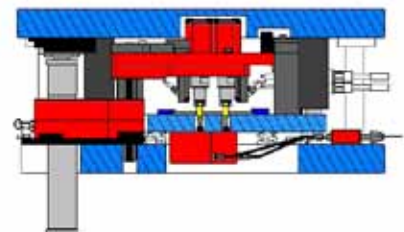
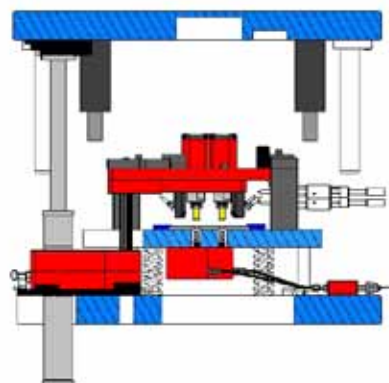
Servo-driven motorization



## 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 - MOUNTED ON PRESSURE PAD



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!

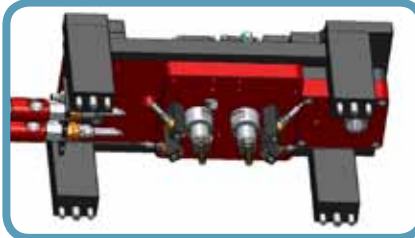
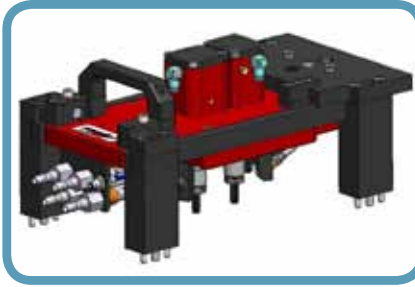
Depending on your tool configuration (strip lift, stripper travel, tapping direction) and your requirements, we will recommend the most appropriated and optimized mounting for your application.

CONTACT-US!

## TKN - BASIC

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 un-clutch 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.



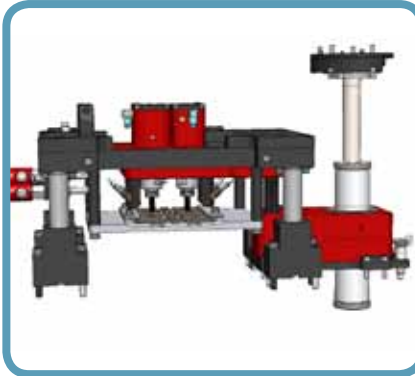
### TKN - Advantages:

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

## TKS - ESSENTIAL

The **strip following function** (pressure pad) enables the tapping head 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:

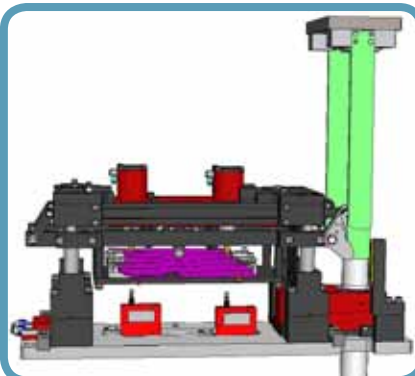
TKN advantages, plus:

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

## TKD - ULTIMATE

In case of a complex application (very large or complex strip), the **"rapid approach"**, driven by a cam, brings 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:

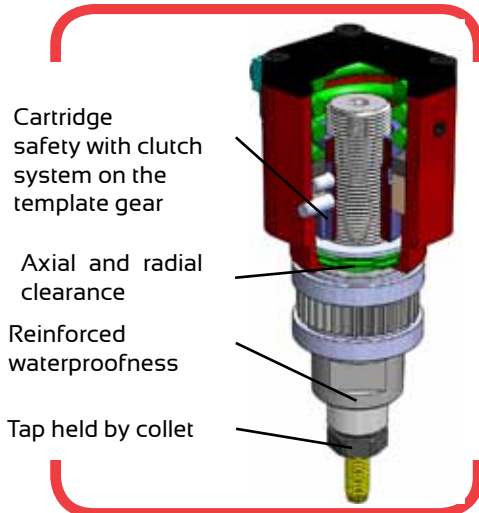
- Quick approach of the tap.
- Strip piloting and clamping (option).
- Increased performances.

## A SYNCHRONIZED TAP DRIVING...

## IS A GOOD QUALITY TAPPING

Every tapping solution recommended by PRONIC uses a 100% mechanically guided tap system.

### Synchronized tapping: Guarantee of high-quality threads

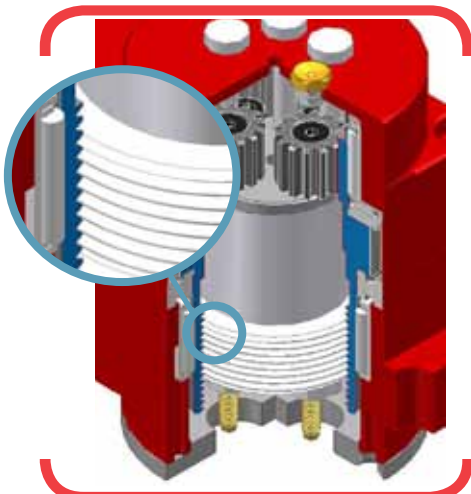


### Benefits of both technologies:

Tap movement is managed throughout the whole tapping 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.

Vertical guidance by key or spline ensures better control of operating clearances and guarantee better performance.

**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 clutches again automatically at the end of press cycle with the tap back in its original 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 that:

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

### PLANETARY GEAR TECHNOLOGY

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

The planetary gear can support one or multiple spindles at the same time. The synchronic movement of the spindles' rotation and translation of the planetary gear is generated by a specific gear.

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	Planetary 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 spindles	from 1 to ...	from 1 to 6

\* Depends on tap dimension



# A SUITABLE POWER TRANSMISSION... OFFERS INCREASED PERFORMANCE

In order to meet the needs of all kinds of applications and get to obtain the best performance, PRONIC offers you two solutions to apply the necessary power to make thread.

## MECHANICAL MOTORIZATION

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

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

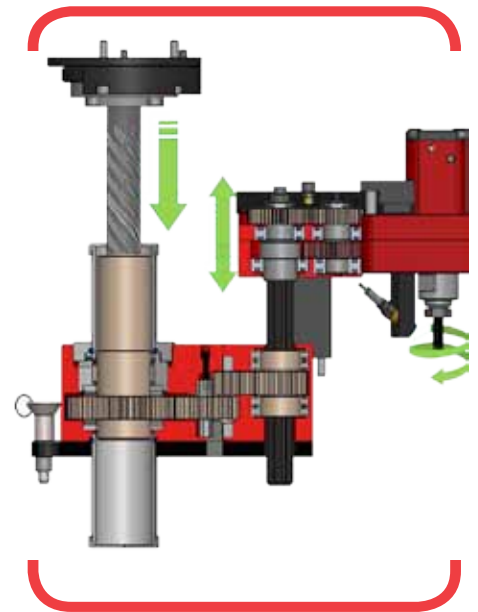
This configuration enables you to **make a simple and economic tool**.

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

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

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

### Tapping to the rythm of your press



## SERVO-DRIVEN MOTORIZATION

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,**
- **is capable of piloting up to 4 motors,**
- **manages all of the PRONIC peripheral items** as well as sensors and actuators (cylinders ) of the tapping station,
- **manages electrically the torque of the motor,** and
- **guarantees that 100% of the parts are tapped** if the controller is associated with a tap detection system.

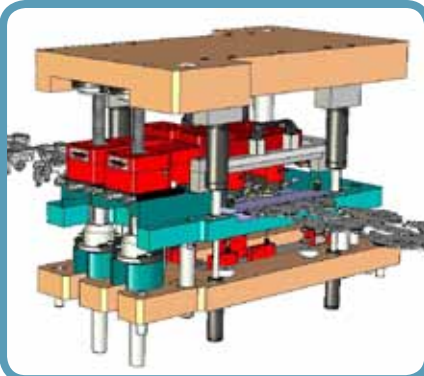
With its independance from the press stroke, this solution is particularly interesting for **applications with long press strokes or, alternately, applications with very short press strokes**.

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 for PRONIC in-line machines or as stand alone machines.

### Tapping independently from the rythm of your press



PRONIC takes care  
of everything  
with Turnkey tapping



Custom solutions  
for tapping aimed at the  
optimization of your tools



### WHY CHOOSING A TAPPING STATION ?

PRONIC can recommend complete machines for your tapping operation built in accordance to your specifications and production 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 STATIONS

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

- **"Cassette" type (Pic 1):** a plug-and-play solution where we deliver the complete tapping module/cassette that easily slides into your die. This type of construction has a top and bottom basic plate with pillars and offers a complete tapping station, making it a perfect option retrofitting an existing die.
- **"Solid Mounting and/or Reverse Mounting" type (Pic 2)** (tapping from bottom to top): This option is used in transfer dies, for example.
- **"Pressure Pad" type (Pic 3):** we deliver the tapping station, which must be integrated into the toolings. Top and bottom plates are not provided in this option.

PRONIC designs and builds the complete tapping station in close cooperation with the builder of the tool and the customer's design office.

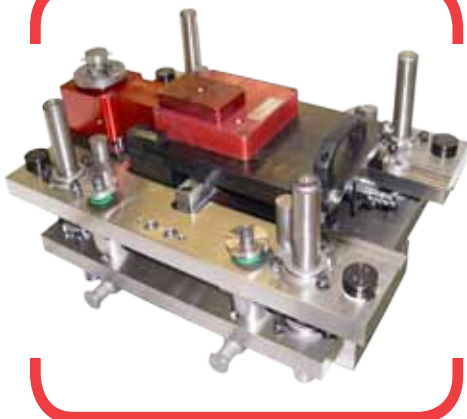
All functions and elements necessary for the process of tapping are "on board" for the PRONIC slide subunit tapping module: it is ready for **"turnkey"** operation.

### 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

### 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:**

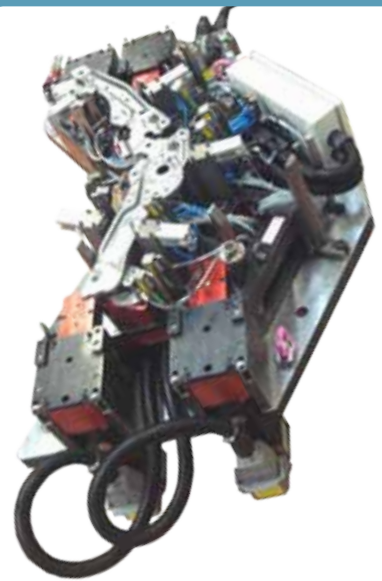
- 4 x M10 x 1,50 - H = 5,40 mm
- 1 x M8 x 1,25 & 5 x M6 x 1,00 - H = 4,60 mm
- High Tensile Steel S420MC
- 3 axis transfer press
- Speed: 20 SPM

**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



### Example 3

**Application:**

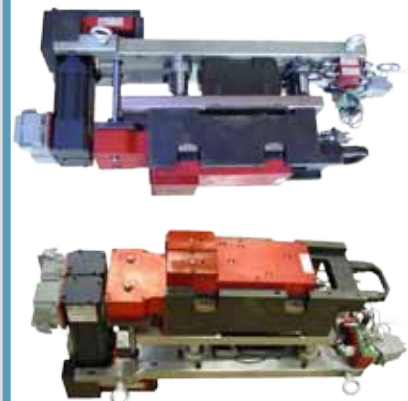
- 4 x M8 x 1,25 - High Tensile Steel C40 - H = 5,70 mm
- Fine Blanking press
- Speed: 36 spm

**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

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

### 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 intensity of the tapping process, the amount of oil and the spraying pulse frequency can each be adjusted.

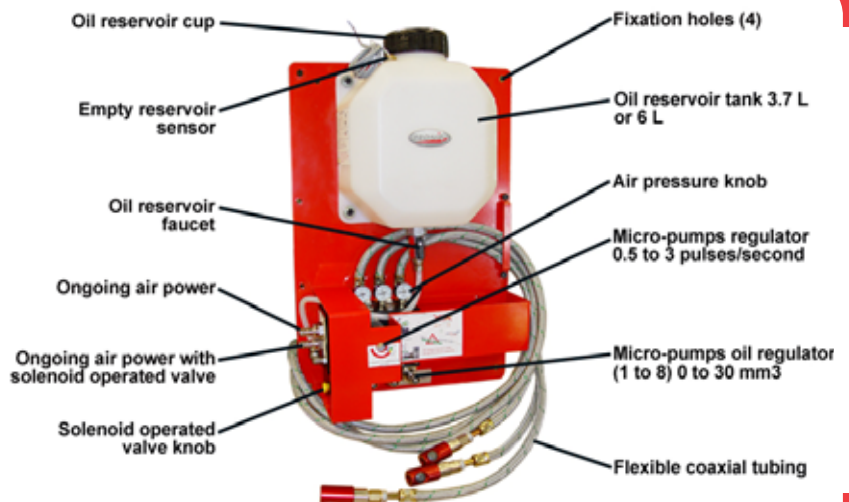
Oil consumption is so light that an expensive recovery is unnecessary.

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

### FORMING TAP

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





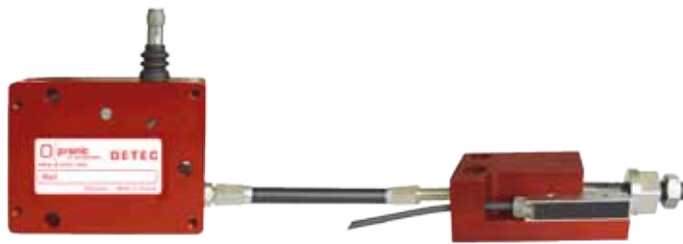
## DETEC TAP SENSOR

PRONIC peace of mind

DETEC completes the PRONIC tapping solution by ensuring **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.

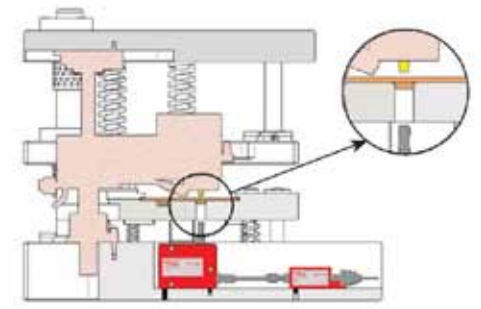


### Principle:

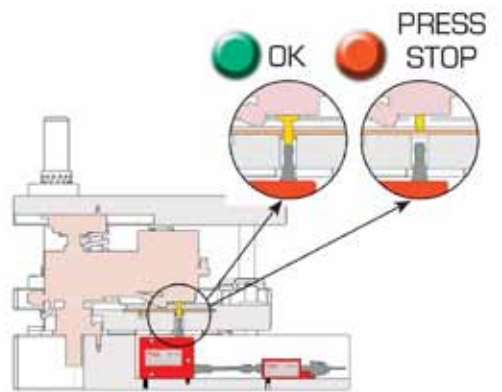
Despite the fact that the structure of DETEC is fully mechanical, it is able to sense the smallest physical movements at the bottom of the tap stroke.

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.

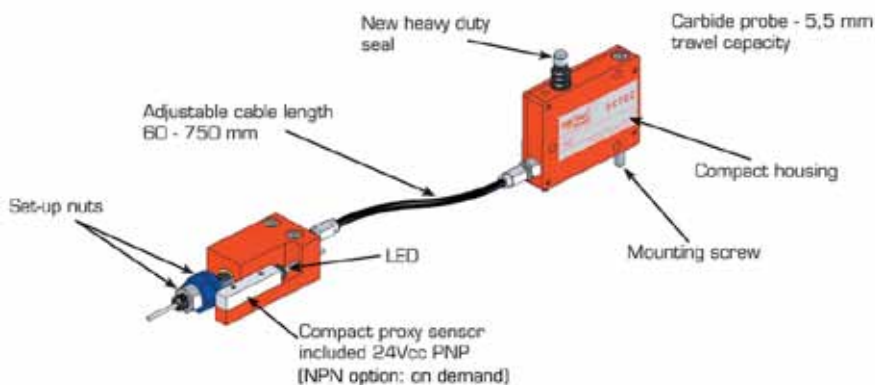
The proximity switch is connected to the press. If the tap does not penetrate the part and depress the tap sensor, the press will stop immediately.



Top Dead Center



Bottom Dead Center



For more technical details visit our website: [www.pronic.com](http://www.pronic.com)

## 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.

PRONIC offers you the most complete service of the tapping industry from design to start-up

### 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 may 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.

These instructions describe the design steps, one by one, about 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. ...).

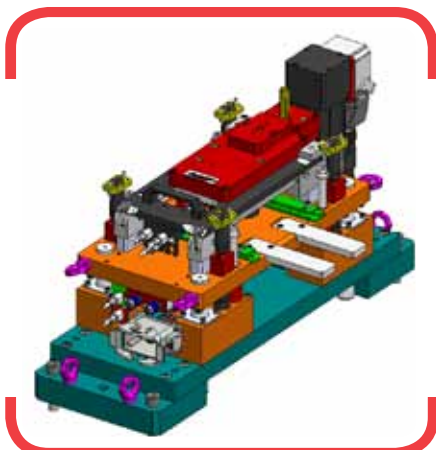
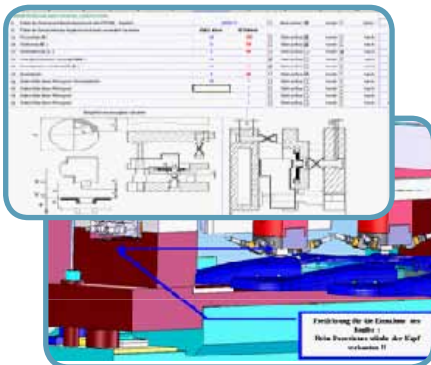
This control of the drawings or CAD data gives you the certainty of smooth operation of the tapping unit from the very first press stroke.

### 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 of designing the whole tapping station for your die for you.

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

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



## ASSISTANCE IN STARTING-UP YOUR DIE

**Start-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. **Our technician will actively work for you by:**

- **giving theoretical training** concerning the functions of the tapping unit and the value of each parameter,
- **giving 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, and
- **monitoring 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:

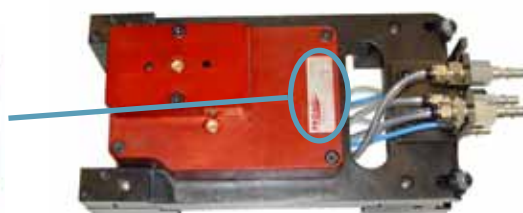
- **Online service** during 5 working days a week.
- **Repairs** with the shortest time of return delivery.
- **Periodic maintenance** of your PRONIC units for the optimum efficiency and operation of your tapping unit generally with return delivery in just one week.
- **Maintenance training** for your 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:

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

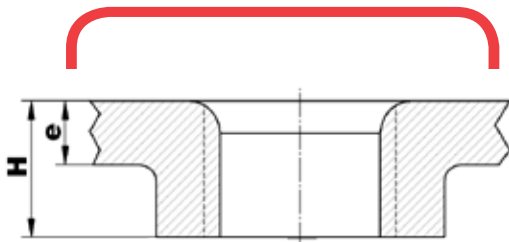
Our team is  
at your service!  
We do everything which is  
needed for your PRONIC  
tapping unit



# 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@pronix.com](mailto:infos@pronix.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 values. 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).

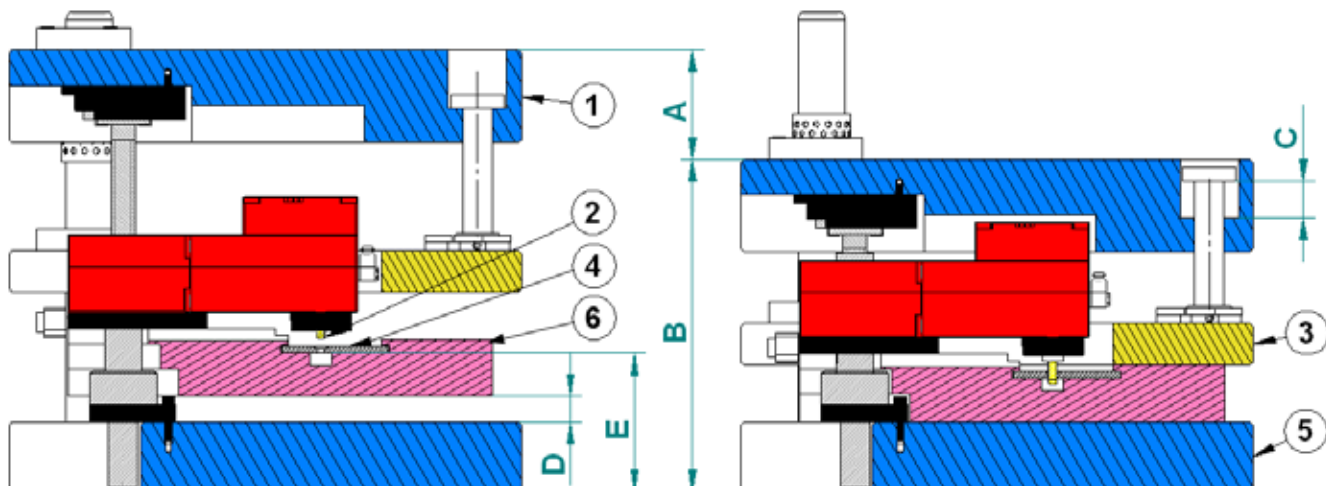
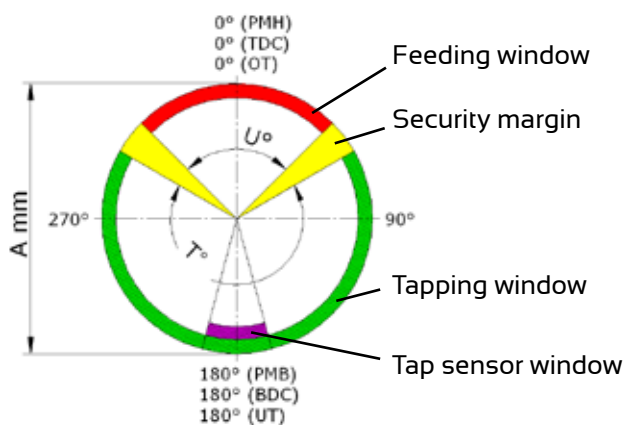
**PART PRINT OR STRIP LAYOUT :** with these drawings we are able to cope with the specific characteristics of your tools when defining the tapping solution.

**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 and indicate that to us. 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 par 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: .....°

## IN-DIE SOLUTIONS...

## ... ARE ALSO OUR BUSHING INSERTION SYSTEMS

Whatever is your needs in-die, we are at your service.



Based on its experience of in-die solutions, PRONIC has developed a complete system for in-die bushings insertion.

The insertion heads are solid mounted on the lower shoe, therefore no continuous movement is applied on the different parts involved.

Being independent from the kinematics of the die, each inserting head can be shared from die to die.

The installation is done in a few minutes with the quick installation kit and the quick connections for both power (electrical, pneumatic and bushing).

A trolley connected with the press is feeding the insertion head through vibrating bowls and blowpipe.

Several references and dimensions of bushings can be inserted simultaneously with a speed up to 50 bushings per minute per head.

PRONIC guarantees 100% well inserted bushings with its dedicated bushing sensor system.

### Why using inserted bushing ?

- Reduction of noise
- Reduction of squeaks
- Guide moving parts (bearing)
- Vibrations reduction

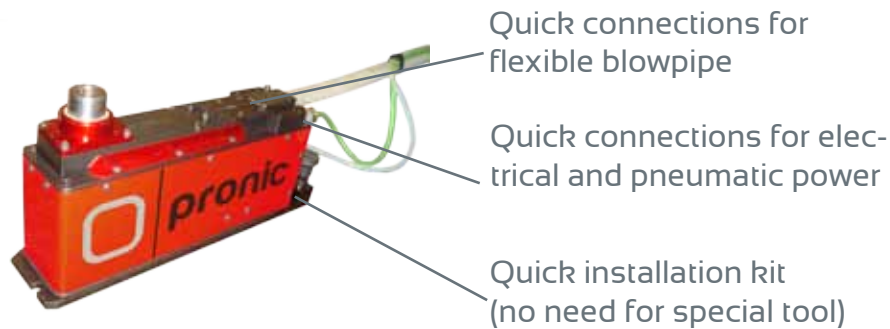
### Where Can you find inserted bushing ?

- Automotive seats
- Door hinge
- Opening knuckle
- Pedals
- other moving systems

### SYSTEM OVERVIEW



## MAIN FEATURES:



### Heads are mounted fixed on the lower shoe

- No shock nor vibration
- No movement
- Simplified insertion station design

Color Touch screen to manage the system

Hoppers

Quick connections for flexible blowpipe



- Same Ø insertion head could be shared between several tools
- Reduced investments and standardization of production units (security)

- Head shared from one die to another.
- Any bushing from Ø8 to Ø20 mm.
- Up to 50 bushings per minute per head.
- Solid mounted (on the lower shoe), therefore highly reliable.
- Easy integration in the die tool.
- Quick installation kit: no need for special tools and quick connection for all plugs.
- Feeding of bushings from trolley to head by flexible blow pipe.
- Compact design: Heads are 95 mm width.
- Guarantee of 100% bushing insertion with dedicated sensor.

## VOUS BENEFICIEZ EGALEMENT DU SERVICE PRONIC :

Choosing a bushing insertion system from PRONIC means that you have chosen the highest possible performance during each step of your project:

- Assistance to define the most appropriate solution
- Assistance during die design
- Assistance in order to optimize the concept
- Assistance in starting-up your die
- After-sales service

Sensor to guarantee 100% inserted bushing



## 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



#### PRONIC INC

2152 Washtenaw Avenue  
MI-48197 YPSILANTI USA  
Tél. : (734) 480-9200  
Fax : (734) 480-9300  
e-mail : [proninc@proninc.com](mailto:proninc@proninc.com)

(• = PRONIC distributors)

#### PRONIC S.A.S.

170, Rue des Techniques  
F - 74970 MARNIGNIER CEDEX  
Tél. : +33 450 89 49 49  
Fax : +33 450 89 49 50  
e-mail : [infos@proninc.com](mailto:infos@proninc.com)

Your Local distributor:

Pictures and Text non contractuels

***For In-Die Solutions,  
Think PRONIC!***