

**Mechanical Design:**

Well defined lines highlight the compact design of the machine. The two-colour paint finish provides for an attractive, modern appearance. The integrated U-profile at the machine base provides for stability, and allows operating personnel to assume a natural, ergonomic stance.

The Top-Cut represents the latest state of the art and fulfils CE machinery guideline requirements.

**Performance / Economy:**

- Favourable price-performance relationship.
- Simple, easy operation thanks to well defined, compact machine concept.
- Mechanical controls combined with electrical monitoring guarantee uniform high quality for end products.
- Minimal downtime thanks to quick tooling change-over.
- Metric and imperial, as well as left and right handed threads are no problem.
- Quick travel and minimum standstill times result in maximised productivity.
- Possibility of a "ghost shift operation" due to the advanced electronics and torquemeter.
- No servicing is required thanks to oil-bath lubrication for all mechanical components.
- Mechanical and electrical safety devices ensure ideal protection for the operator and the machine.

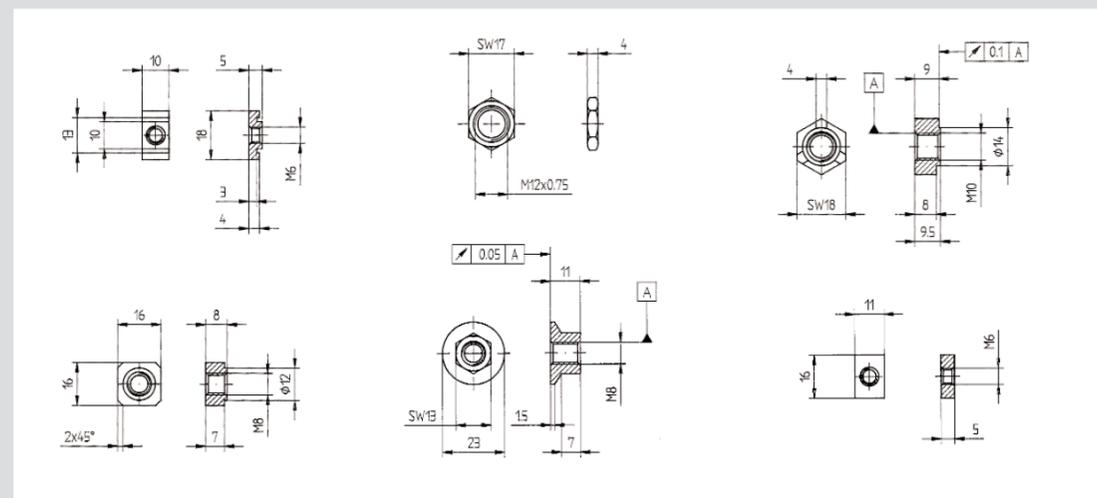
**AUTOMATIC NUT TAPPING MACHINE**

**TOP-CUT**



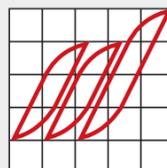
**TOP-CUT**

Machine	TOP-CUT 10 D	TOP-CUT 16 D	TOP-CUT 33 D
Thread dimension	M5 - M10	M5 - M16	M16 - M33
Number of spindles	2	2	2
Max. outside diameter of parts	25 mm	32 mm	60 mm
Max. width across flats (standard nuts)	22 mm	27 mm	50 mm
Power of spindle motor	4 kW	9,7 kW	13,2 kW
Speed range	400 - 5000 rpm	400 - 5000 rpm	200 - 1600 rpm
Machine control system	Mechanical/PLC	Mechanical/PLC	Mechanical/PLC
Max. output (square/hex nuts)	19700 pcs/h	19700 pcs/h	5950 pcs/h
Max. output (flange nuts)	11090 pcs/h	11090 pcs/h	3530 pcs/h
Max. output (round nuts)	8800 pcs/h	8800 pcs/h	3530 pcs/h
Coolant volume	160 litres	270 litres	380 litres
Weight	1600 kg	2700 kg	4600 kg
Dimensions (LxWxH) mm	1495x1010x2019	1800x1330x2425	2100x1520x2585
Subject to technical modification			

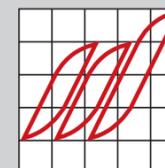


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## TOP-CUT

The great demand by our customers for machines that offer a favourable price-performance relationship has resulted in the development of our "TOP-CUT" automatic nut tapping machine.

The machine functions in accordance with the overtravel principal (bent shank) and it provides for high throughput at a low

purchase price. The implementation of mechanical controls with electrical monitoring assures uniform high quality for manufactured parts. Simple operation and quick tooling change-overs reduce downtime to a minimum in daily production. The drum type feed unit has been integrated into the head stock assembly in order to keep the machine as compact and reliable as possible.

### Applications:

The Top-Cut is suited for highly efficient thread tapping for standard, flange and round nuts as well as special parts. Blanks can be either turned, stamped or headed.

Standard nuts are held in an inverted vee guide for tapping, whereas a carriage with mechanically actuated clamping is used for flange nuts. A carriage is also used for round nuts and special nuts, although here, pressure is applied pneumatically. Electrical proximity switches monitor the clamping motion.



Working area with flange nut carriage

### Operation:

Simple design allows for easy and safe machine operation. The working area, which is illuminated from inside, is laid out in a clear fashion and is easily accessible. There are no troublesome corners or edges which collect chips and contaminants.

Simple tooling design reduces change-over time to a minimum. After the cam housing doors have been opened, all of the cams



Cam housing with feed system

and drive elements are visible and can be replaced or adjusted without the use of special tools. Work operations can be followed in detail thanks to the protective doors with their large viewing window and electric locking mechanism.

### Function:

Blanks are sorted by the drum feed unit and are fed via the feed chute down into a plunger or a clamping jaw, properly positioned for tapping. If blanks should become jammed during sorting, an adjustable mechanical clutch is disengaged and the jam is cleared.

### Standard Nuts:

Standard nuts are accurately positioned and advanced to the tap by means of a plunger. The nuts are fed into a precision ground vee guide during the tapping operation and are secured against turning. After the thread is almost completely tapped, the plunger returns to home position.

### Flange and round nuts:

Flange and round nuts drop from the chute into a mechanically actuated clamping jaw which is mounted on a carriage. The nuts are axially clamped and secured radially against turning. The carriage is then advanced to the tap. As soon as the tapping operation is complete, the clamp is opened mechanically, the nut is discharged and the carriage returns to home position.

Plunger or carriage advance is controlled by a cam and is dependent upon spindle speed and thread pitch. Advance speed thus always precisely corresponds to threading requirements, and damaging axial forces at the thread flanks are avoided. This results in the highest quality threads.

The steep progression at the cam flanks for rapid advance and reverse travel results in high level throughput rates. To ensure that machine and tooling are effectively protected against damage, should collision occur, the advance mechanism moves back out of the way and the machine is shut down immediately. Ample feeding of blanks is monitored by proximity switches. If the feed of blanks is interrupted, the machine is stopped and the signal lamp lights up.

A precisely adjustable torquemeter, for switching off the machine in case of dull tools is also available. With this feature, maximum tool life is ensured and increased productivity becomes available via unmanned operation. A "ghost shift operation" becomes more of a reality in today's cost conscious marketplace.



Cam drive with interchangeable pullers

### Drive System:

There is a broad range of possible speeds thanks to the infinitely adjustable spindle drive. This means that it is always possible to select the ideal tapping speed for large or small threads.

Advance travel is driven directly by the tapping spindle. This means that cycle time has a fixed relationship to spindle speed. An easily interchangeable gear set allows for the implementation of any desired step down ratio. For example, a ratio of 1:52 for flange nuts which must be clamped during the entire tapping operation, or a ratio of 1:33 for standard nuts, which need only be fed to the vee guide.

Advance travel can be controlled by a push-button for inching operation, which greatly simplifies machine set-up. The advance mechanism can also be stopped immediately if collision should occur, if the feed of blanks is interrupted or if the emergency stop button is activated.

### Coolant / Chip Discharge:

The large coolant tank in the bottom part of the machine base provides for a uniform, low coolant temperature even with multiple shift operation.

A magnetic drum installed into the front of the machine base separates the chips generated in the tapping operation. The almost completely dry chips are automatically discharged from the machine through a chute when this magnetic drum is fitted. The completed nuts are discharged at the other side in an almost oil-free condition into a container.