

A large, detailed image of industrial machinery, specifically a circular component with a black outer ring and a silver inner section. The inner section shows complex internal parts, including gears and a central shaft. A red diagonal line and a white diagonal line cross the image. The background is white.

escomatic **by ESCO SA**

the evolution
created for
the revolution
of production



escomatic_official



escomatic_official



escomatic

THE ESCOMATIC CONCEPT

Unlike conventional lathes, escomatic lathes are based on a unique concept. The material, which is coil stock, does not rotate. The cutting tools are mounted onto the tool head which rotates around the material to produce the components. This concept equally is streamlined for the manufacturing of medium and large volumes of turned parts, working from a coil contributes to the extremely high performance and cost savings achieved with escomatic machines.

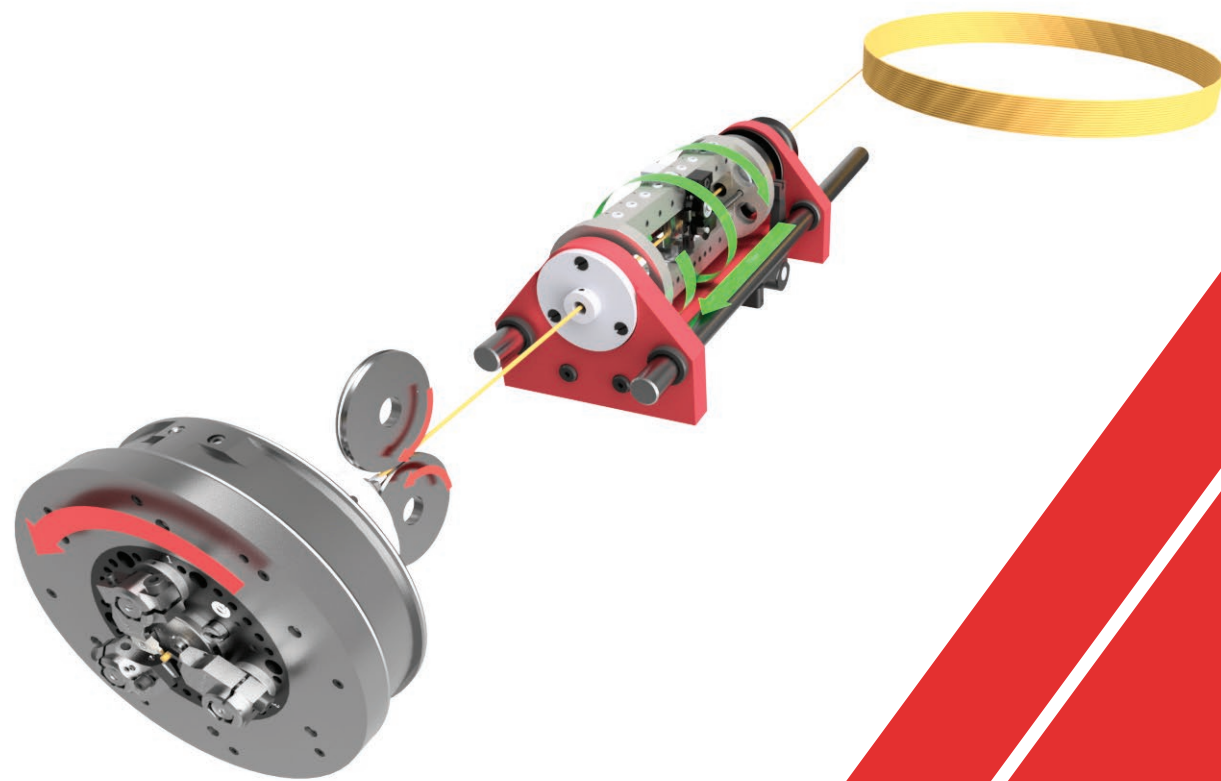


TABLE OF CONTENTS

4

The ESCO company

6

USP – The escomatic
concept advantages

8

Toolhead navigator:
your guide to
precision

9

escomatic machine
guide

10

**escomatic
D Range**

12 | D 2-3
14 | D 5-6
16 | D 5-6 ULTRA
18 | D 5-6 TWIN

20

**escomatic
New Mach Range**

22 | NM 6 S/SPM
24 | NM 6-8 FLEXI
26 | NM 6 TWIN

28

Competence
center

30

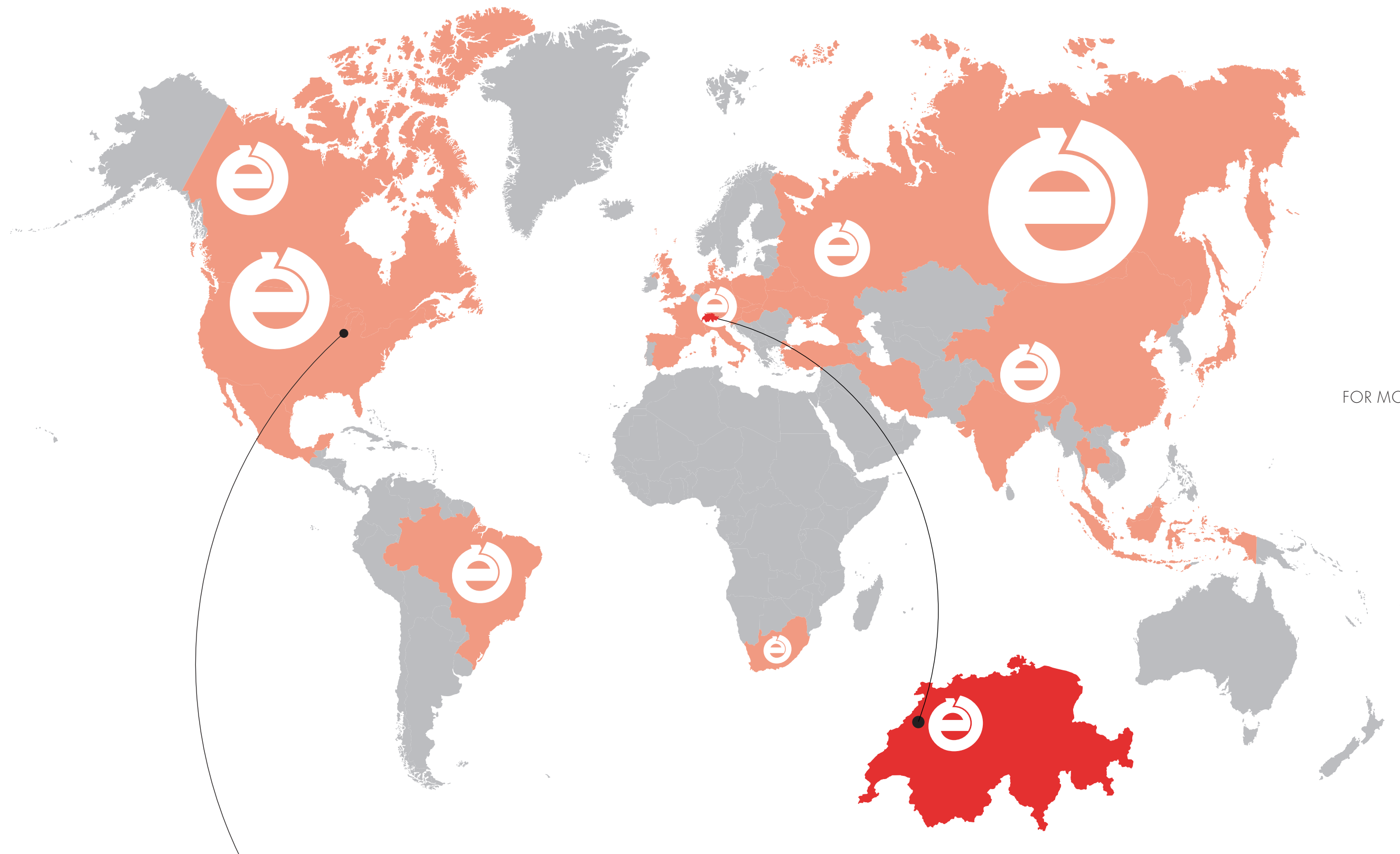
Know-How and
expertise

32

Tools services

33

Glossary



SCAN ME
FOR MORE INFORMATION!



ESCO USA Inc. was founded in 2023 to serve the American, Canadian, Brazilian and Mexican markets. Located in Wheeling, near Chicago, Illinois, it represents our center of technical excellence. Offering our customers the opportunity to view our machines and carry out tests, it is the ideal meeting place for our customers on the American continent.



Since 1950, ESCO SA has been designing and manufacturing automatic and CNC lathes for machining small-diameter parts ranging from 0.3 to 8 mm, using either coil-fed or bar-fed material. Through a network of agents and distributors specially trained in escomatic products, the company is represented in more than 20 countries.

ROTATING TOOLHEAD
VERY SHORT CYCLE TIMES

COIL FROM 0.3 TO 8 MM
HIGHEST PRODUCTIVITY



ECONOMY
CONTINUOUS 24H PRODUCTION

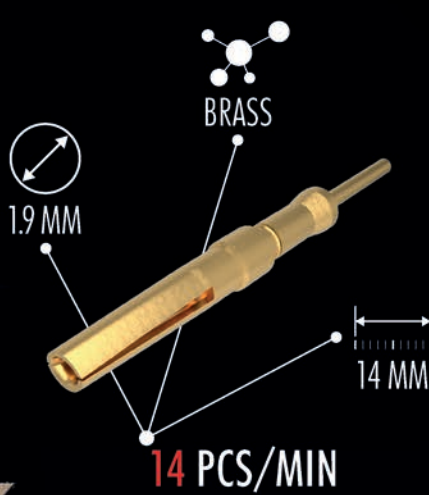
Profiling material



No lost time due to the bar loading

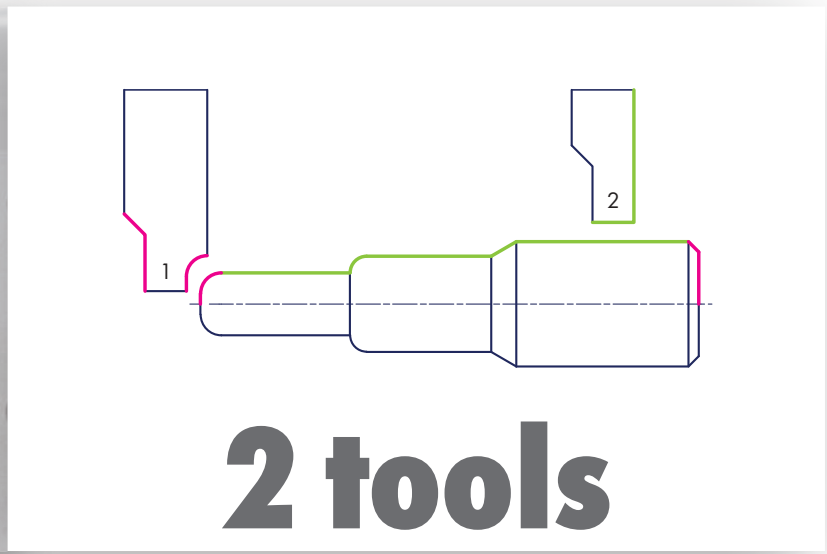
Very short cycle times

Simply to use

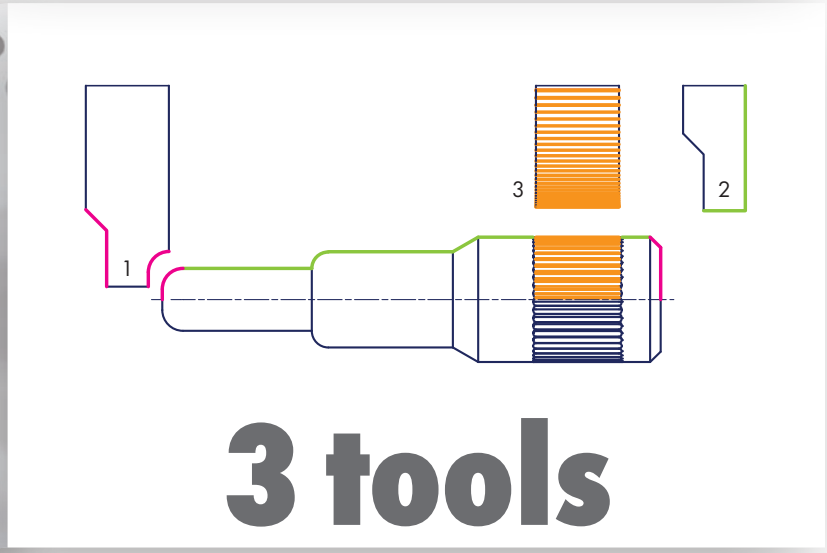


the evolution
created for
the revolution
of production

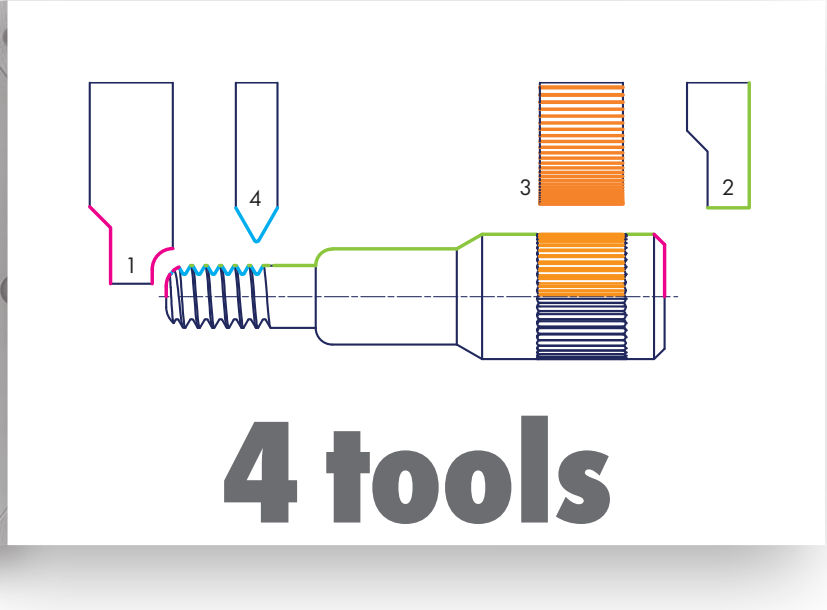
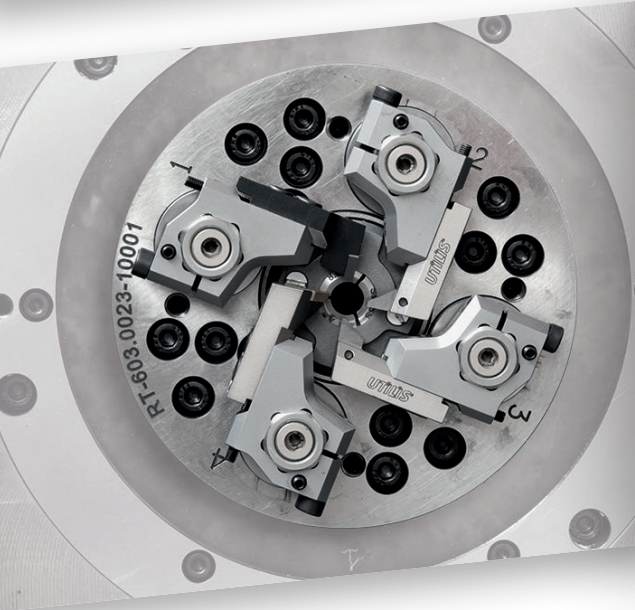
Welcome to the escomatic machine guide: the key to revolutionizing your production. Here you'll find the basic information you need to maximize your efficiency and profitability. Make the best choice between flexibility or production optimization, and transform your business!



2 tools



3 tools



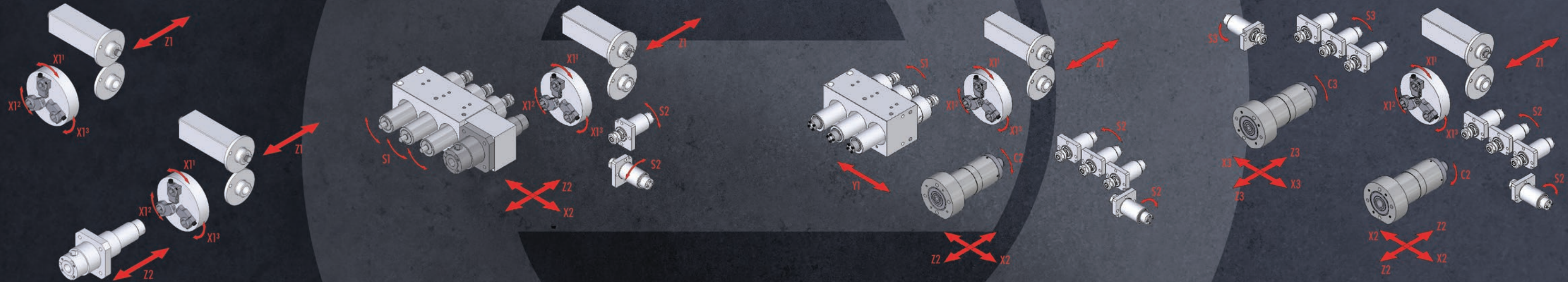
4 tools

Max. diameter	Number of tools Turning	Number of tools Front operation	Counter-operation	Counter-operation Parts socket	Number of tools Counter-operation	Machine
4	2	×	×	Counter collet or Counter collets unit mobile	×	D2/D2 PM
	3	×	×		×	D3/D3 PM
	2	3	Option	Counter collet	2	D5
	3					D6
	2	3 (1)	✓	C-axis	3+1	D5 ULTRA
	3		✓			D6 ULTRA
	2	×	✓		2x 3+1	D5 TWIN
	3	×	✓			D6 TWIN
6	4	×	×	Counter collet or Counter collets unit mobile	×	NM6 S/SPM
		3 (1)	✓	C-axis	4 (2)	NM6 FLEXI
		×	✓		2x 4 (2)	NM6 TWIN
8		3 (1)	✓		4 (2)	NM8 FLEXI

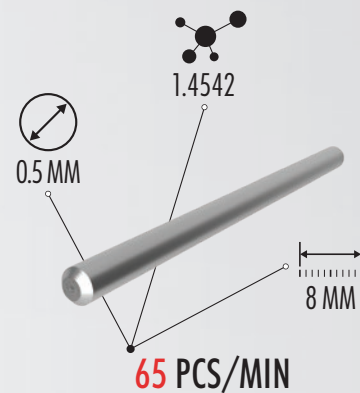
Since ESCO SA was founded, D-type turning machines have been an integral part of our portfolio. With 6 generations of machines, this proven technology has evolved in harmony with our customers' needs, with both technical and connected services. Designed for coil stock from 0.3 to 4 mm, equipped with Beckhoff CNC and using a conversational language and touch screen. The intuitive Pegasus

user friendly interface makes our turning machines accessible to all operators. The rotating toolhead can reach up to 12'000 ^{rpm}, with tool indexing in just 250 milliseconds, ensuring efficient production of up to 80 parts per minute. Our range includes 12 different variants, offering versatility from 2 to 11 axes and up to 13 tools, to meet individual production and budget requirements.

ESCOMATIC D-RANGE EVOLUTION, FLEXIBILITY, PRODUCTIVITY



D2



ø mm



TOOLHEAD D2



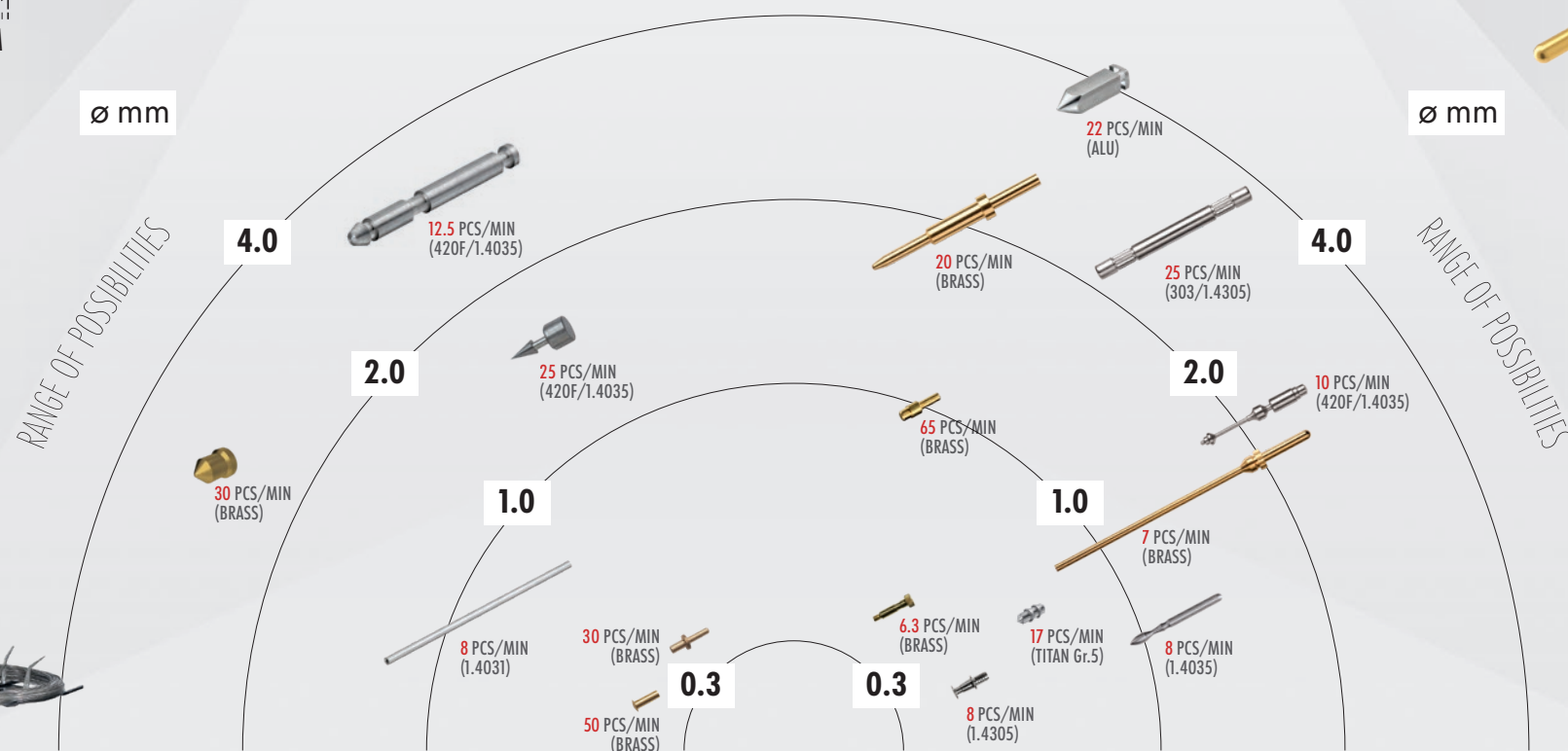
TOOLHEAD D3

TECHNICAL DATA

Max. material diameter	4 mm
Max. workpiece length	80 mm
Number of cutting tools (simultaneous)	2 (D5) / 3 (D6)
Max. tool head speed	12'000 rpm
Counter collet	1
Counter spindle with C-axis (option)	×
Counter spindle / C-axis speed	×
Max. number of front machining operations	×
Max. number of back machining operations	×
Max. speed of powered tools	×
Number of axis	2 / 3 (PM)
Numerical control	ESCO oem

Modifications reserved

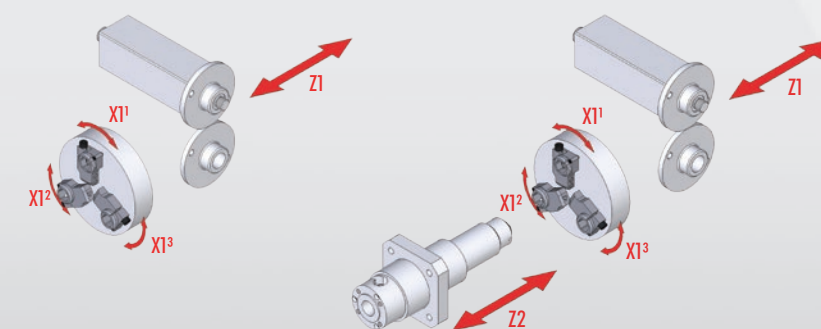
RANGE OF POSSIBILITIES



RANGE OF POSSIBILITIES

For simple workpieces, these rotating toolheads offer the possibility of using 2 or 3 tools, enabling various operations such as turning, threading and knurling. No frontal operations can be performed on this machine.

CINEMATICS



The material is clamped between a set of grooved rollers and their rotation controls the feeding (Z1 axis) which move it through a ESCO guide bushing. The material is then turned by the rotating toolhead using 2 or 3 tools (application driven). Once the part has been cut off, it is evacuated through the fixed counter-collet. The PM option allows the counter-collet to move in a Z direction

to facilitate the production of parts machined at both ends (Z2) as well as simple parts that need to be ejected from the front of the collet.

D3



ø mm

D5



Ø mm

RANGE OF POSSIBILITIES

4.0

2.0

1.0

0.3

0.3

1.0

2.0

4.0

Ø mm

RANGE OF POSSIBILITIES



TOOLHEAD D5



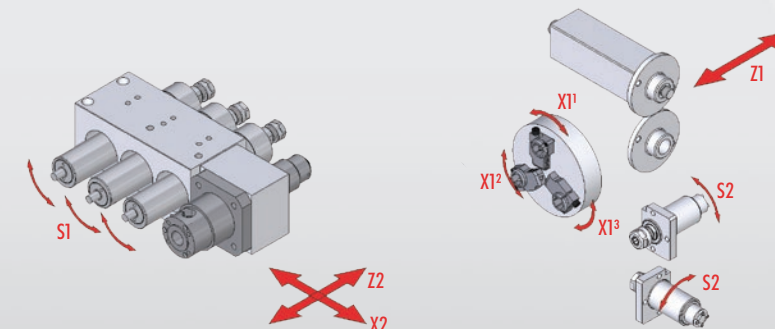
TOOLHEAD D6

TECHNICAL DATA

Max. material diameter	4 mm
Max. workpiece length	80 mm
Number of cutting tools (simultaneous)	2 (D5) / 3 (D6)
Max. tool head speed	12'000 rpm
Counter collet	1
Counter spindle with C-axis (option)	×
Counter spindle / C-axis speed	×
Max. number of front machining operations	3
Max. number of back machining operations	3
Max. speed of powered tools	18'000 rpm
Number of axis	5
Numerical control	ESCO oem

Modifications reserved

CINEMATICS

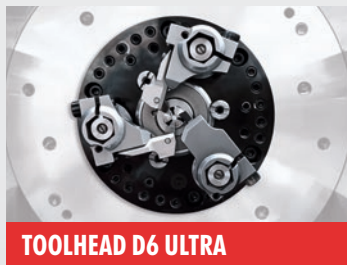
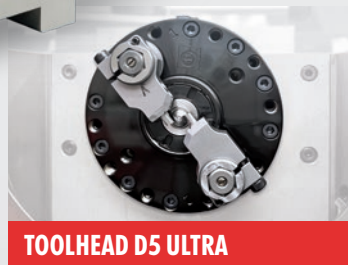
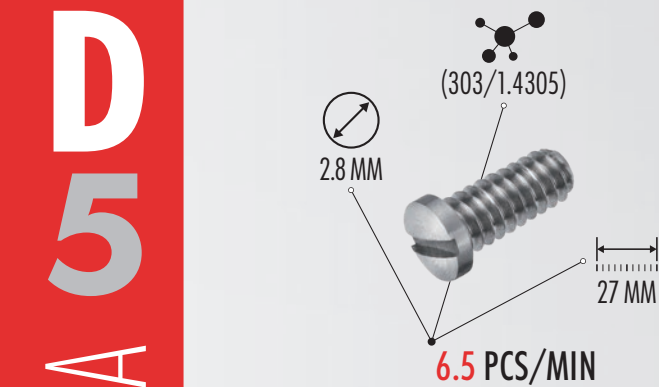


The material is clamped between a set of grooved rollers and their rotation controls the feeding (Z1 axis) which move it through a ESCO guide bush. The material is then turned by the rotating toolhead comprising 2 or 3 tools (application driven). The 3 S1 spindles enable drilling/tapping operations on the front of the part. During parting, the part is transferred to the Z2/X2 mobile counter-collet

for ejection. The DUAL option adds an axial rotating and a transversal rotating spindle S2 for backworking operations on the rear part of the part before ejection.

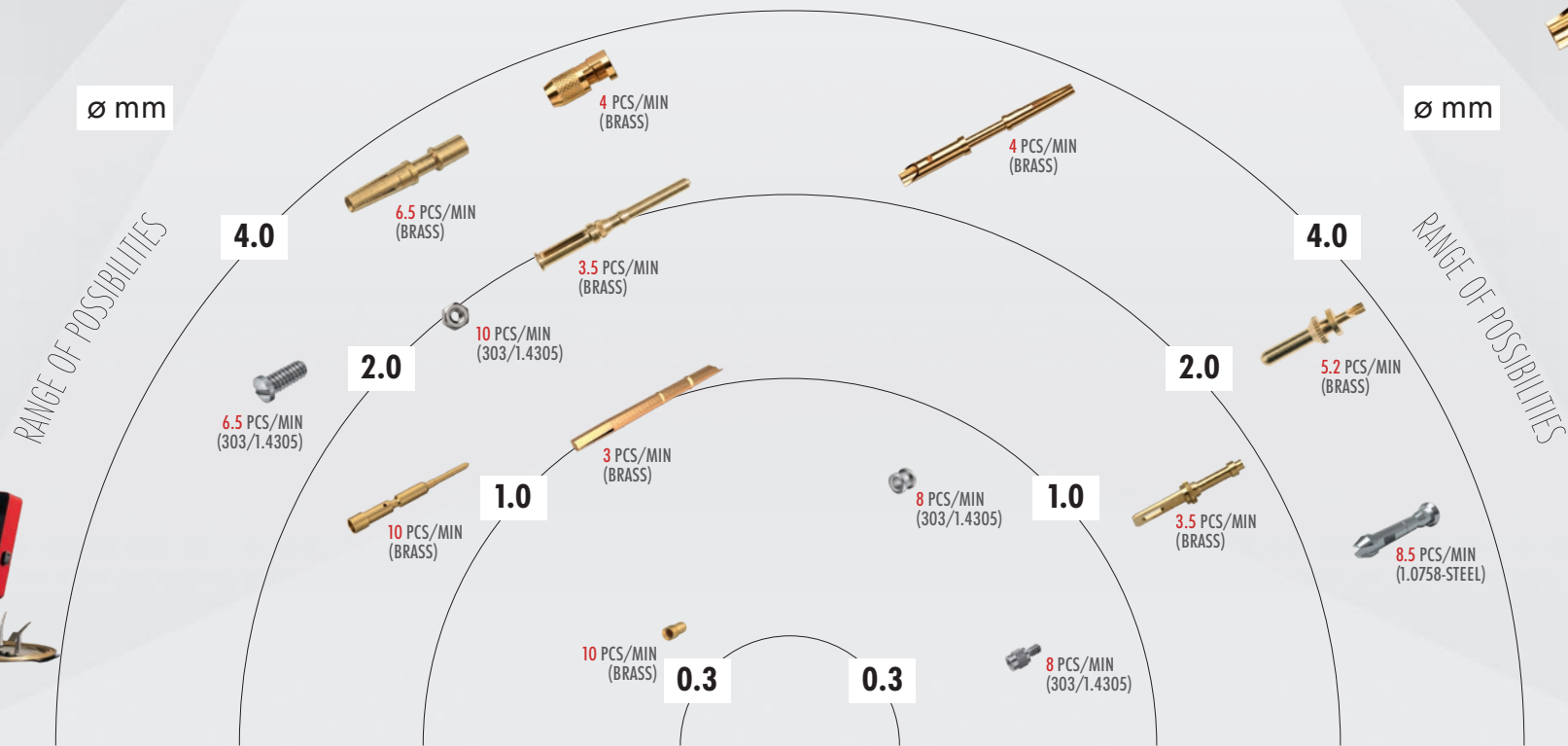
D6

ULTRA 5 D



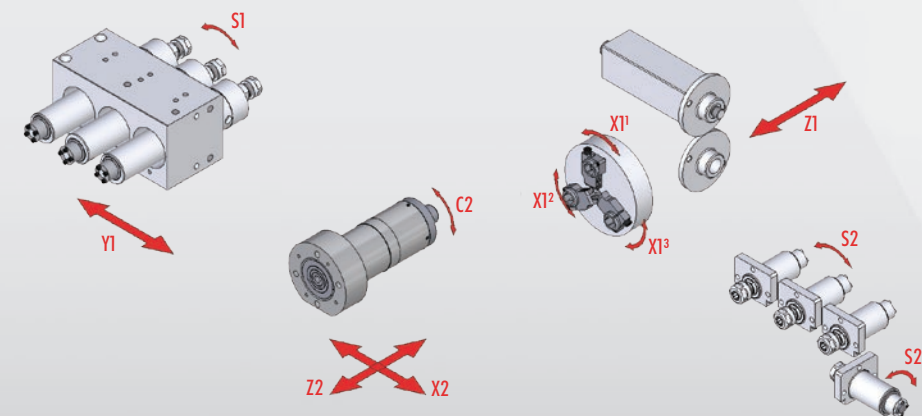
TECHNICAL DATA	
Max. material diameter	4 mm
Max. workpiece lenght	80 mm
Number of cutting tools (simultaneous)	2 (D5) / 3 (D6)
Max. tool head speed	12'000 rpm
Counter collet	×
Counter spindle with C-axis (option)	1
Counter spindle / C-axis speed	10'000 rpm
Max. number of front machining operations	3
Max. number of back machining operations	4
Max. speed of powered tools	18'000 rpm
Number of axis	8
Numerical control	ESCO oem

Modifications reserved



For complex parts, these rotating toolheads offer the option of using 2 or 3 tools, enabling you to perform various operations such as turning, threading, knurling, as well as drilling/tapping and face milling with up to 4 tools. In counter-operation, with the ability to use up to 4 tools, you can perform turning, drilling, milling and polygoning operations.

CINEMATICS



The material is clamped between a set of grooved rollers and their rotation controls the feeding (Z1 axis) which move it through a ESCO guide bush or similar, available on the market. The material is then turned by the rotating toolhead using 2 or 3 tools (application driven). The 3 S1 spindles enable milling and/or drilling/tapping operations on the front of the part. During parting, the

part is transferred to the C2 mobile counter-spindle. The 4 S2 spindles enable milling, drilling, tapping or polygon turning operations on the rear end of the part. The part is finally ejected by the counter-spindle. Turning and machining operations (X1/Z1/Y1/S2) can run in parallel with secondary operations (C2/X2/Z2/S3).

ULTRA 6 D



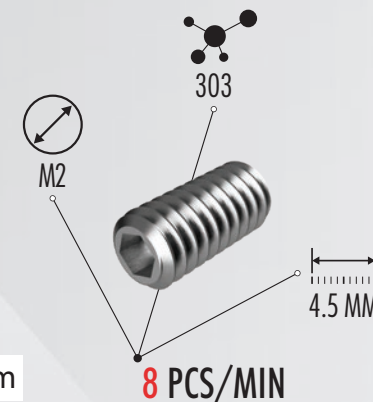
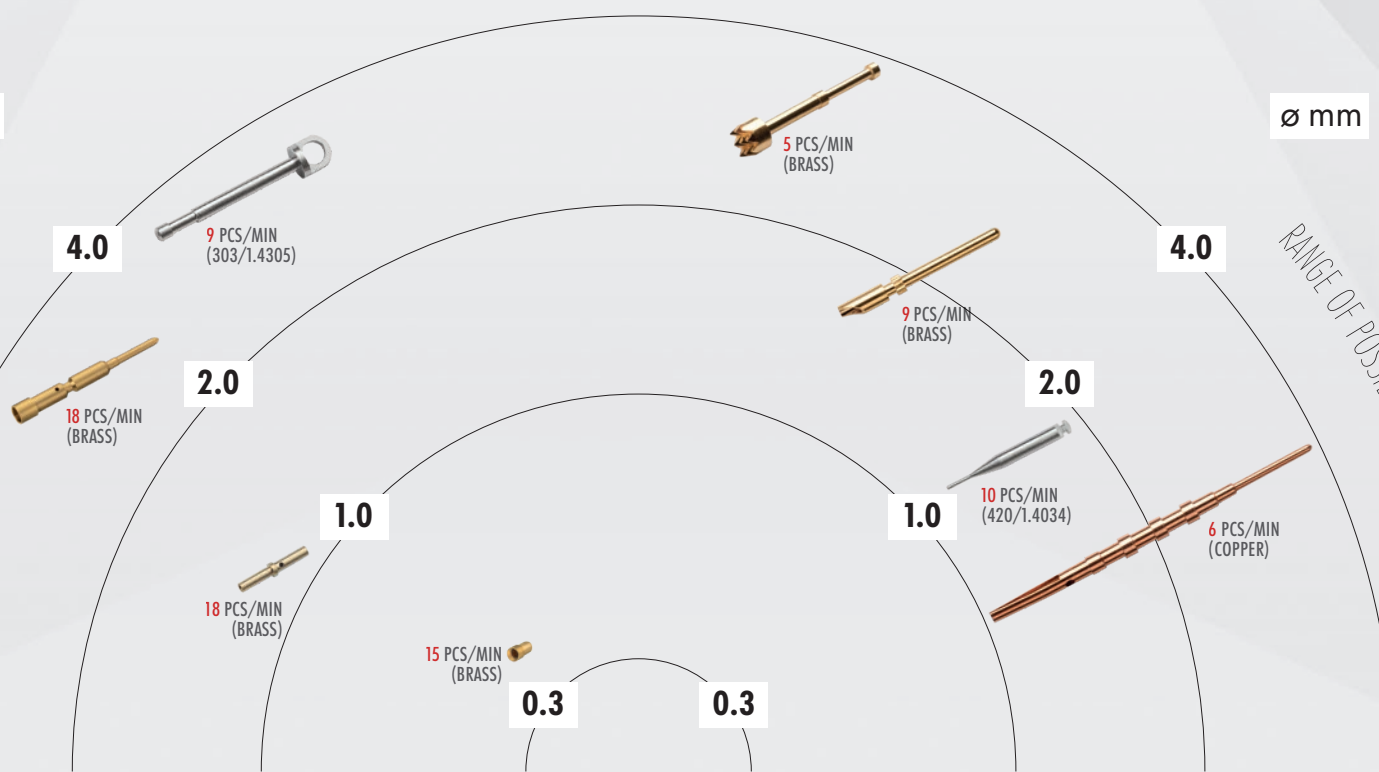
D5

TWIN



Ø mm

RANGE OF POSSIBILITIES



Ø mm

RANGE OF POSSIBILITIES



TOOLHEAD D5 TWIN



TOOLHEAD D6 TWIN

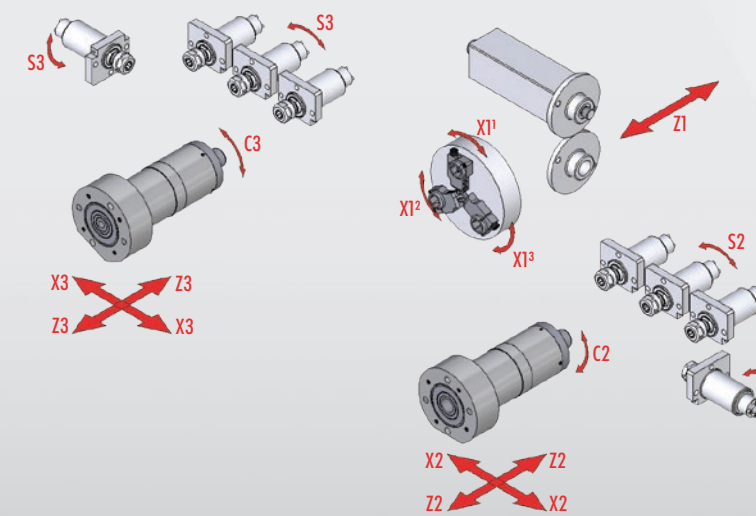
TECHNICAL DATA

Max. material diameter	4 mm
Max. workpiece length	80 mm
Number of cutting tools (simultaneous)	2 (D5) / 3 (D6)
Max. tool head speed	12'000 rpm
Counter collet	×
Counter spindle with C-axis (option)	2
Counter spindle / C-axis speed	10'000 rpm
Max. number of front machining operations	×
Max. number of back machining operations	4
Max. speed of powered tools	18'000 rpm
Number of axis	10
Numerical control	ESCO oem

Modifications reserved

CINEMATICS

These rotating toolheads offer the possibility of using 2 or 3 tools, enabling you to carry out various operations such as turning, chasing and knurling. In counter-operation, with the ability to use up to 4 tools, you can carry out turning, drilling, milling and polygon turning operations. There are no operations on the front of the part.



The material is clamped between a set of grooved rollers and their rotation controls the feeding (Z1 axis) which move it through a ESCO guide bush or similar, available on the market. The material is then turned by the rotating toolhead using 2 or 3 tools (application driven). During parting, the part is transferred to the C2 mobile counter-spindle or the C3 mobile counter-spindle, depending

on availability. The 4 spindles S2 and S3 enable milling, drilling, tapping or polygon turning operations on the rear end of the part. The part is finally ejected by its respective counter-spindle. Turning operations (X1/Z1) can run in parallel with backworking operations (C2/X2/Z2/S2) and backworking operations (C3/X3/Z3/S3).

Since 2015, NM-type machines have been developed, demonstrating their reliability while adapting to customer requirements and technical advances. They are capable of machining materials from 1.0 to 6.5 mm. The Fanuc Oi-TFP control makes them easy to use. With a toolhead equipped with four tools in rotation capable of speeds of up to 10'000 rpm – optionally extendable to 12'000 rpm – and rapid tool indexing, these

machines offer high performance. They are available in a range of configurations – from 2 to 12 axes, with up to twenty-eight tools – and offer a variety of options such as front machining, clamping or counter-spindle devices, as well as the many options of backworking and secondary operations. These features make these machines the most versatile option to meet individual production needs and budgets.

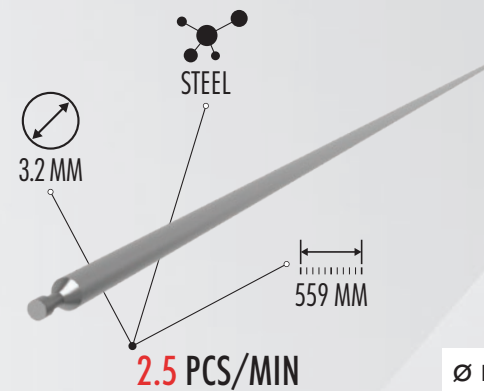
ESCOMATIC NEW MACH RANGE SPEED, FLEXIBILITY, VERSATILITY



NM

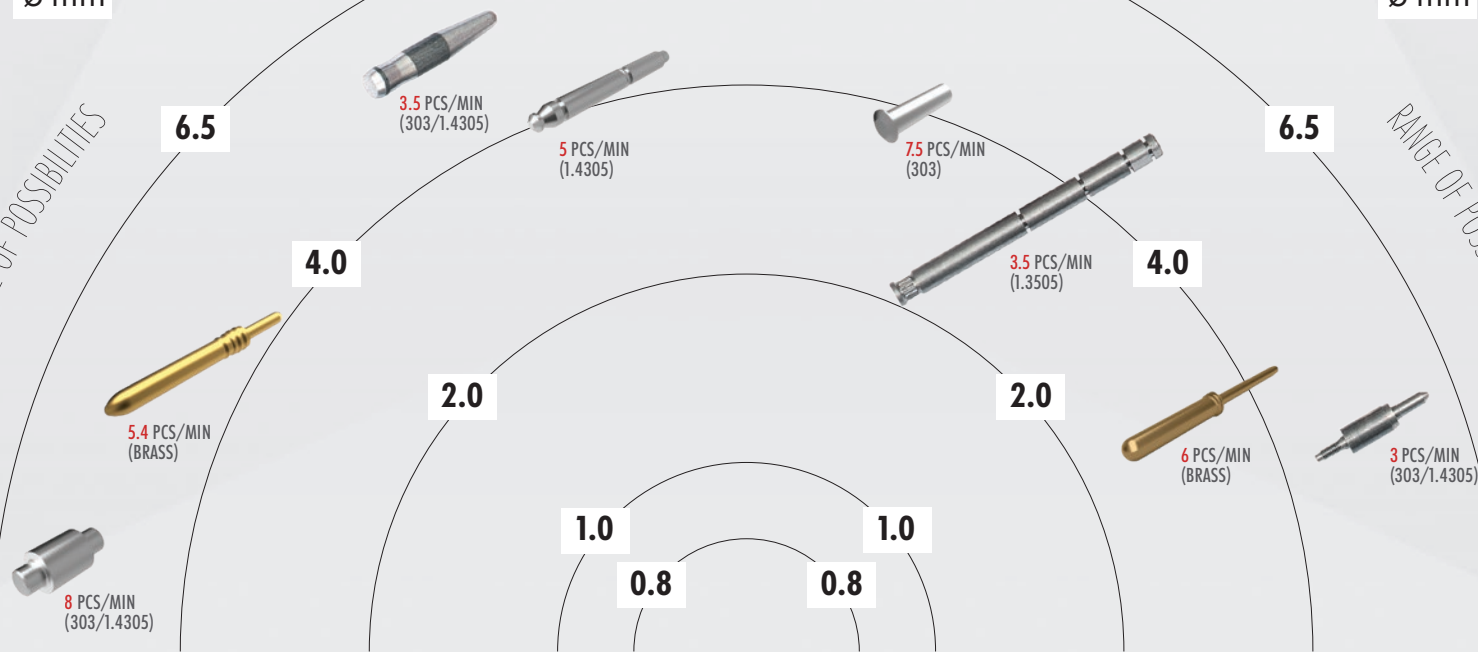
6

S/SPM



Ø mm

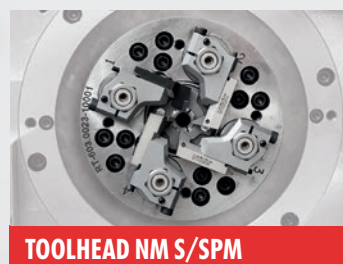
RANGE OF POSSIBILITIES



Ø mm



RANGE OF POSSIBILITIES



TECHNICAL DATA

Max. material diameter	6.5 mm	8.2 mm
Max. workpiece length	150 mm	150 mm
Number of cutting tools (simultaneous)	4	4 (2 simultaneously)
Max. tool head speed	NM6: 10'000 rpm (12'000 rpm optional)	NM8: 8'000 rpm
Counter collet	1	1
Counter spindle with C-axis (option)	×	×
Counter spindle / C-axis speed	×	×
Max. number of front machining operations	×	×
Max. number of back machining operations	×	×
Max. speed of powered tools	×	×
Number of axis	2 / 4 (SPM)	2 / 4 (SPM)
Numerical control	Fanuc Oi-TFP	Fanuc Oi-TFP

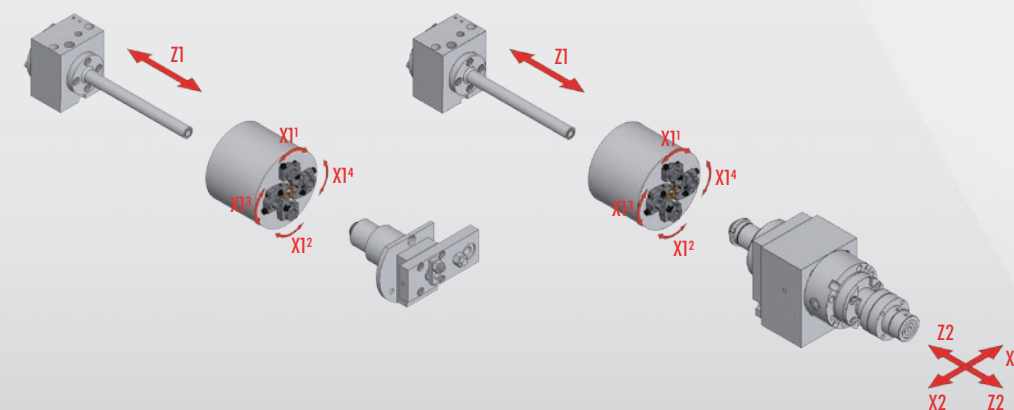
Modifications reserved

NM

8

S/SPM

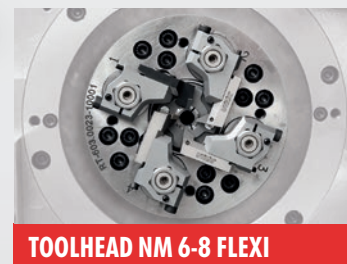
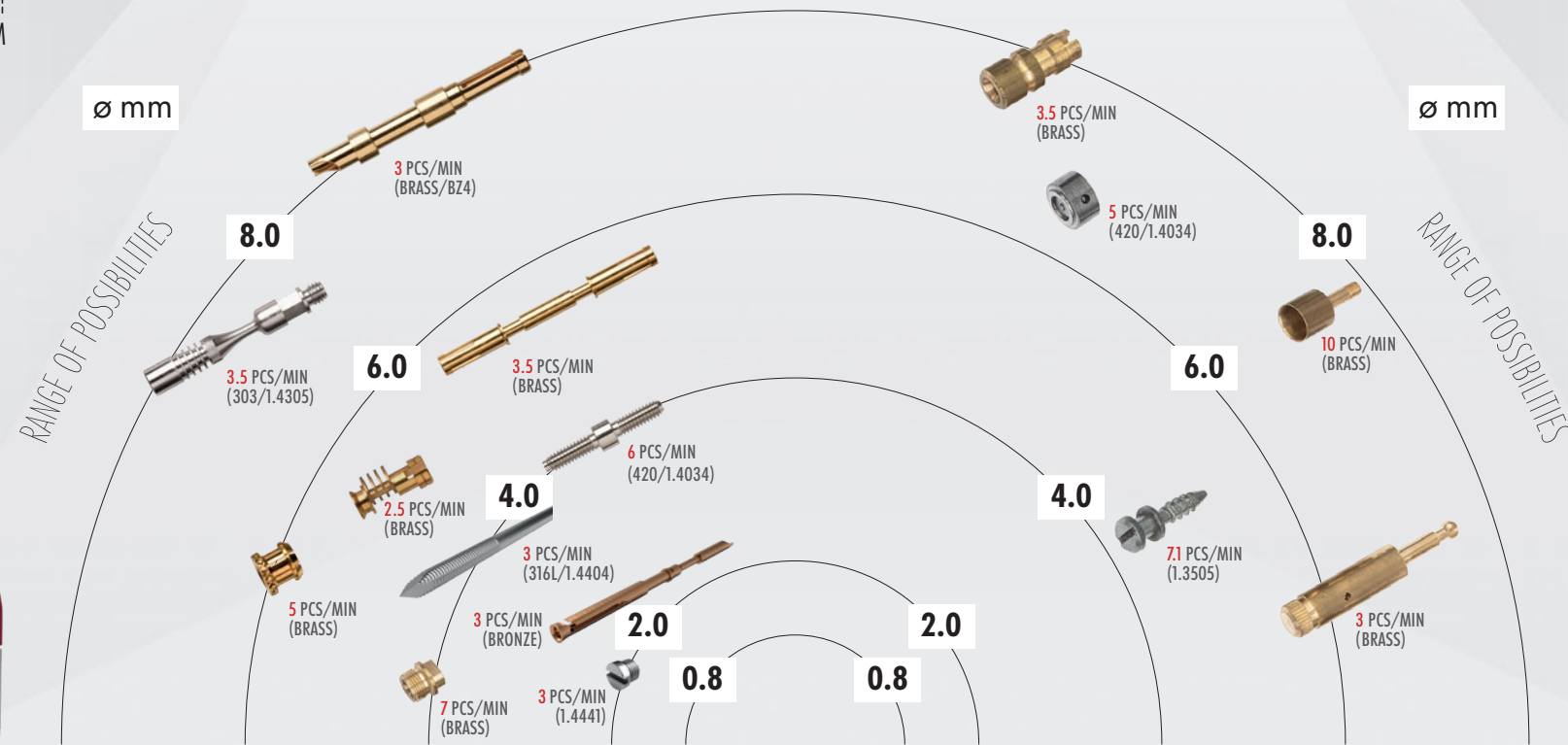
CINEMATICS



The material is fed using a Z1 mobile collet, which moves the material through an ESCO guide bush or similar, available on the market. The collet holds the material during cutting and feeding. The material is then turned using the toolhead with 4 tools (X11-X14). When the part is cut off, it is evacuated through the counter-collet. The PM option allows the mobile counter collet to move in Z2

and X2 to facilitate the production of parts machined at both ends, as well as simple parts that need to be ejected from the front of the collet.

NM 6 FLEXI



TECHNICAL DATA

Max. material diameter	6.5 mm	8.2 mm
Max. workpiece length	150 mm	150 mm
Number of cutting tools (simultaneous)	4	4 (2 simultaneously)
Max. tool head speed	NM6: 10'000 rpm (12'000 rpm optional)	NM8: 8'000 rpm
Counter collet	×	×
Counter spindle with C-axis (option)	1	1
Counter spindle / C-axis speed	10'000 rpm	10'000 rpm
Max. number of front machining operations	4	4
Max. number of back machining operations	6	6
Max. speed of powered tools	15'000 rpm	15'000 rpm
Number of axis	7	8
Numerical control	Fanuc Oi-TFP	Fanuc Oi-TFP

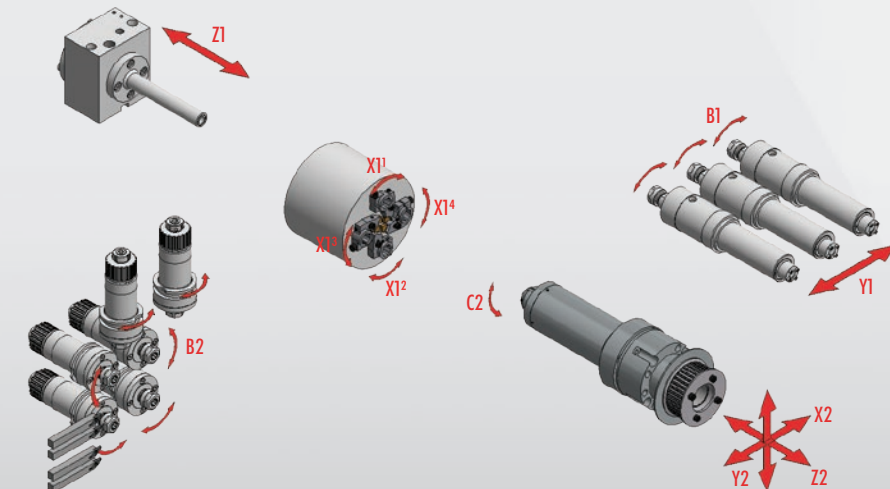
Modifications reserved

NM 8 FLEXI



For complex workpieces, the rotating toolhead offers the option of using 4 tools, enabling you to perform various operations such as turning, threading, knurling, drilling/tapping and face milling with up to 4 tools on the front fixture. In counter-operation, with the ability to use up to 6 driven tools, you can carry out turning, drilling, deburring, milling and polygoning operations.

CINEMATICS

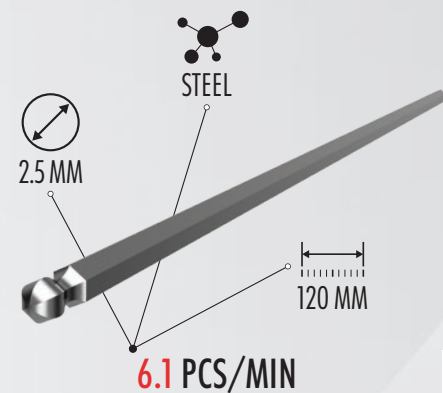


The material is fed using a Z1 mobile collets, which moves the material through an ESCO guide bush or similar, available on the market. The material is then turned with a toolhead with 4 tools (X11-X14). The 3 B1 spindles allow milling and/or drilling/tapping operations on the front of the part. During parting, the workpiece is transferred to the mobile C2 counter-spindle. The 6 spindles B2 allow

milling, drilling, tapping or polygon turning operations on the rear part of the part. The part is finally ejected by the counter-spindle. Turning and front machining operations (X1/Z1/S2) can be carried out in parallel with secondary operations (C2/X2/Y2/S3).

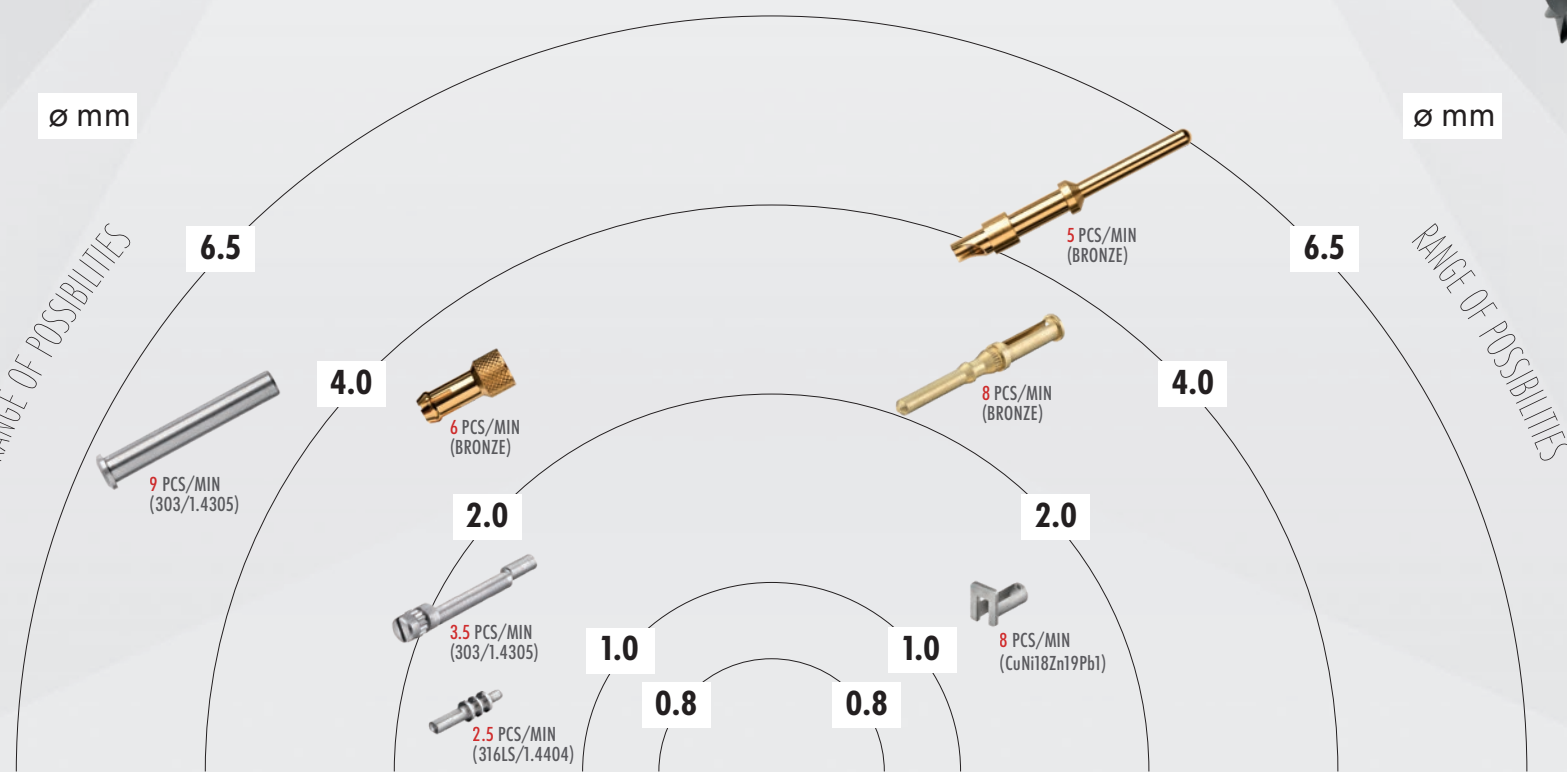
NM6

TWIN



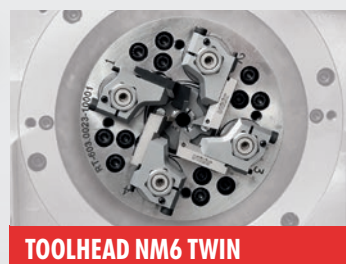
Ø mm

RANGE OF POSSIBILITIES



Ø mm

RANGE OF POSSIBILITIES

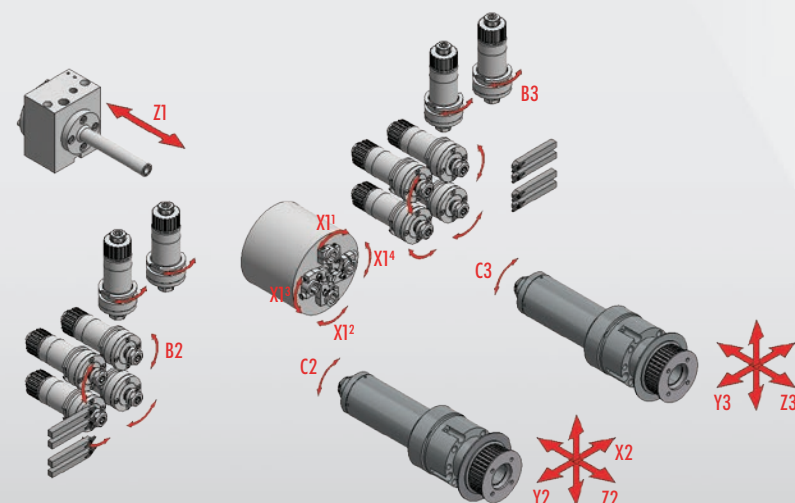


TECHNICAL DATA

Max. material diameter	6.5 mm
Max. workpiece length	150 mm
Number of cutting tools (simultaneous)	4
Max. tool head speed	10'000 rpm (12'000 rpm optional)
Counter collet	×
Counter spindle with C-axis (option)	2
Counter spindle / C-axis speed	10'000 rpm
Max. number of front machining operations	×
Max. number of back machining operations	6+6
Max. speed of powered tools	15'000 rpm
Number of axis	10
Numerical control	Fanuc 31i-B

Modifications reserved

CINEMATICS



The material is fed using a Z1 mobile collet, which moves the material through an ESCO guide bush or similar, available on the market. The material is then turned using a toolhead with 4 tools (X11-X14). After cutting, the workpiece is transferred to the C2 mobile counter-spindle or the C3 mobile counter-spindle, depending on availability. 6 spindles, S2 and S3, are used for milling, drilling,

tapping or polygon turning operations on the rear part of the workpiece. The part is finally evacuated by its respective counter-spindle. Turning operations (X1/Z1) can run in parallel with reworking operations (C2/X2/Y2/S2) and reworking operations (C3/X3/Y3/S3).

NM6

TWIN

WE ARE PART OF YOUR VALUE CHAIN

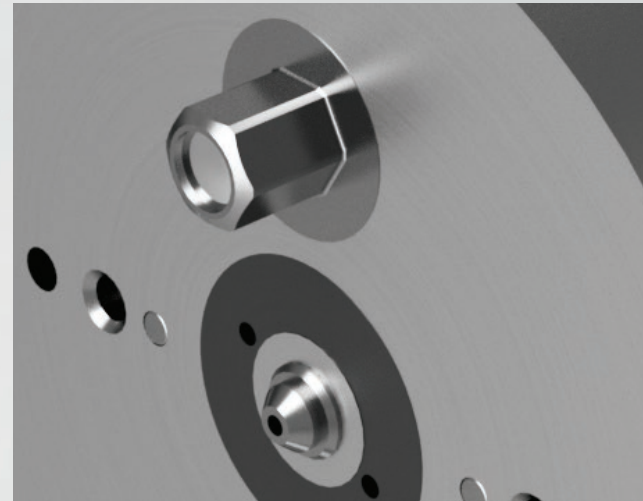


KNOW-HOW AND EXPERTISE: THE ESCO GUARANTEE

We put the technical expertise of our various departments at your disposal to renovate and upgrade your machinery. Take advantage of an overhaul carried out by the original manufacturer, guaranteeing perfect workmanship, backed up by our commercial warranty to ensure your complete satisfaction.

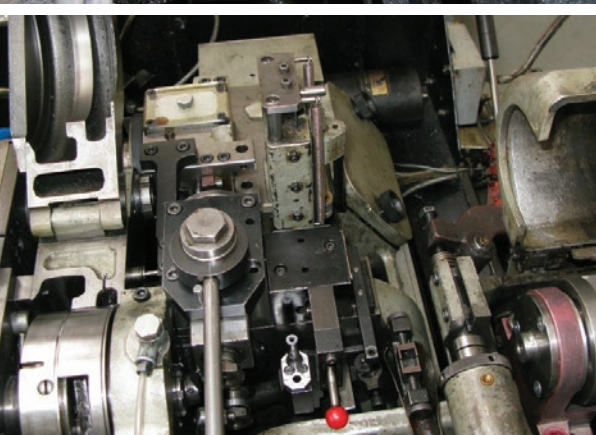
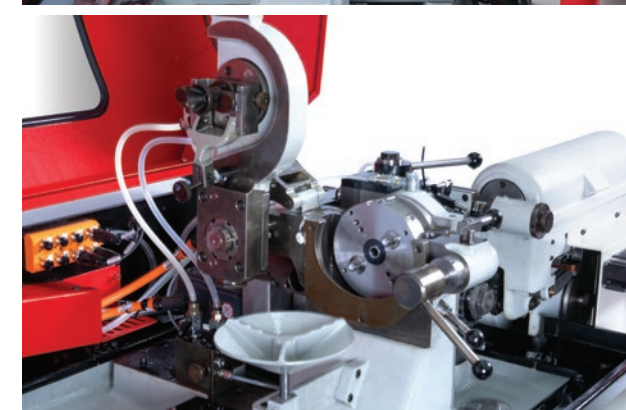
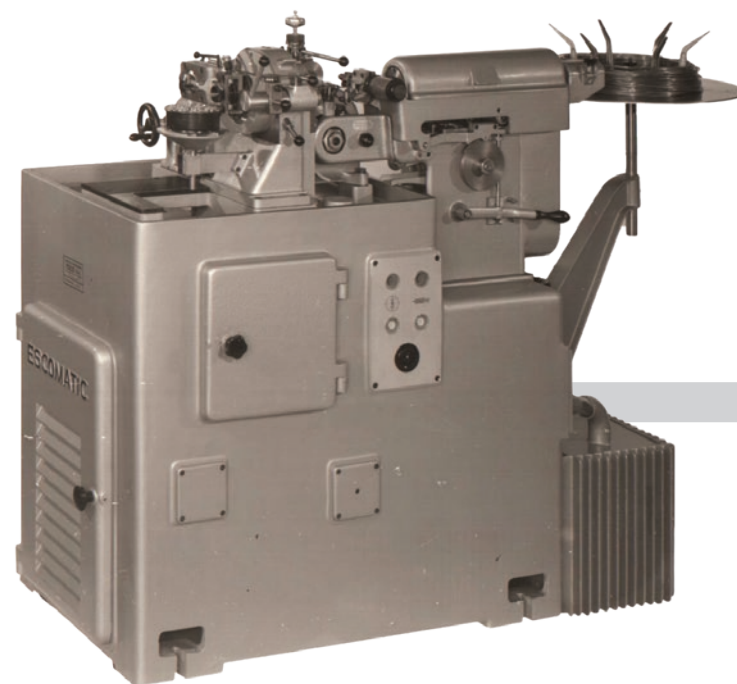
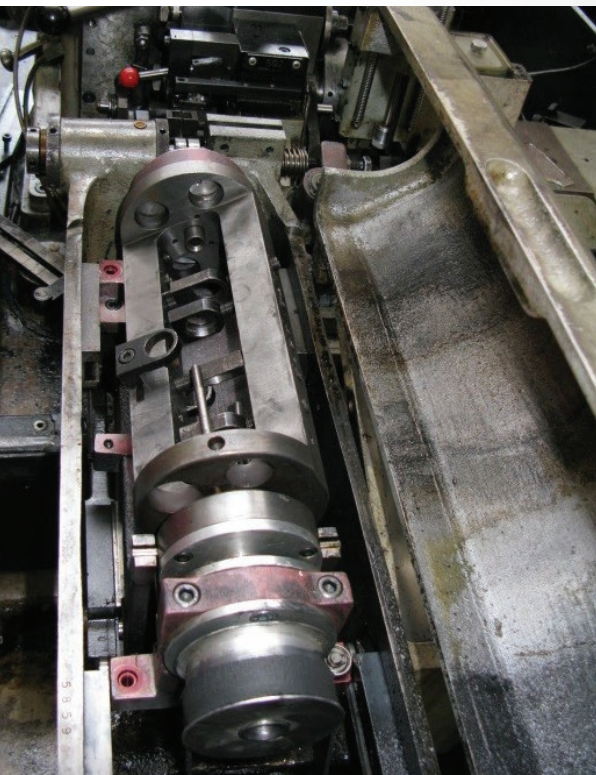
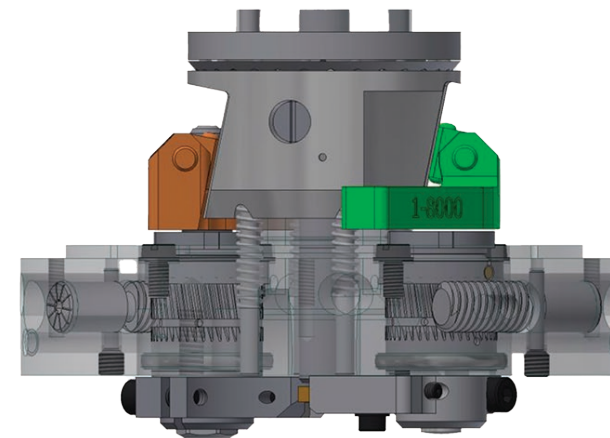
Toolhead revision

Regular maintenance and upgrading of **escomatic** toolhead is essential to maintain optimum performance and uninterrupted production. Our qualified maintenance team encourages you to schedule this preventive overhaul to detect potential faults. It also offers the opportunity to modernise and improve your efficiency with the various rotating toolhead and spindles upgrade programmes to benefit from the latest technological advances.



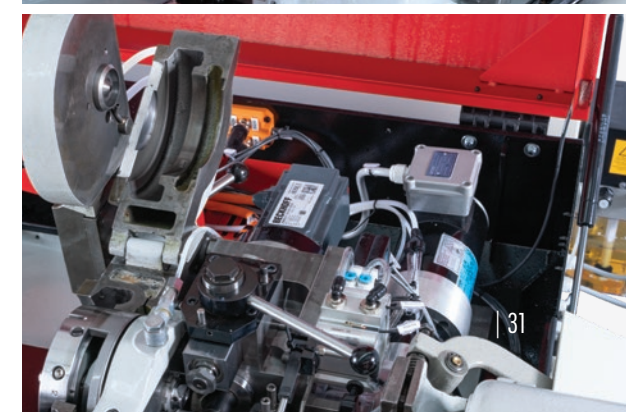
Double positive (cam-type machines)

The modified D2-R-M2540-R6P rotating toolhead incorporates a control sleeve and control levers working in thrust for both tools. In this way, the plunge of tool number 2 is safer and more reliable over time. This is independent of the speed of rotation of the toolhead through mechanical control.



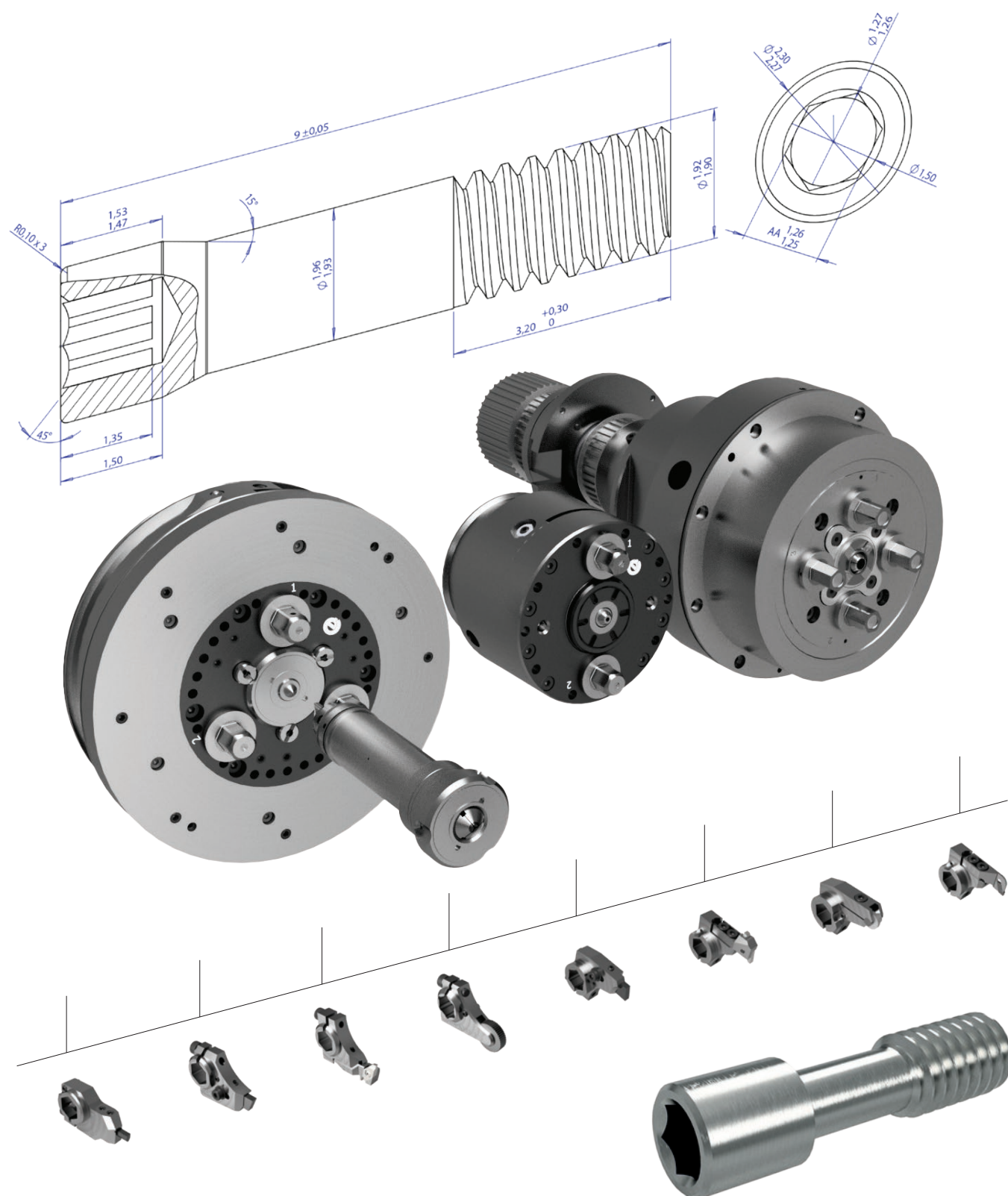
We upgrade your escomatic D2-CAM and turn it into CNC D2 with the same digital control as the current escomatic D2 CNC version. Dismantling all parts, complete cleaning, revision of all mechanical elements: straightener, feed, toolhead, counter collet. Complete replacement of

the electric cabinet, removal of the gearbox and installation of the CNC management system, toolhead revision and adaptation to CNC (remains at 8'000 rpm), new paint (option).



TOOLS SERVICES – A DIVISION OF ESCO GROUP

Are you looking for a supplier who can deliver all your escomatic tooling requirements without having to contact several companies? Our division Tooling Services will supply all the necessary tooling and will deliver them to you ready for use. Your advantage: a single order, a single contact, your complete tooling package at a specific date and satisfaction guarantee.



GLOSSARY

Counter-spindle



Designed to hold and rotate a machined workpiece away from the rotating toolhead. It acts as a clamping and support device for the workpiece, enabling the machine to perform machining operations on the rear and several sides of the workpiece.

Fixed counter-clamp



A fixed clamp is a device used to hold a workpiece during machining. It ensures that the workpiece is held precisely during cutting, thus guaranteeing the quality and precision of the parts manufactured.

Dispenser/Reel



Device used to unwind a flexible material, such as a wire. It is designed to facilitate the use, storage and handling of the torch by keeping them organised. Reels can vary in size and complexity, from simple manual reels to more sophisticated motorised devices.

Feed Rollers



It's our z-axis that allows us to feed the material through the barrel.

DUAL



DUAL rear and side machining device for back-operation work.

DUF



Front end machining device (DUF) for machining with a guide bush.

Toolhead



The rotating toolhead on an escomatic machine refers to an essential part of its mechanism that enables different types of machining operations to be carried out on a workpiece. It can include several tools, for example cutting, turning or knurling tools. The rotating head can change tools to enable different operations to be carried out without having to stop, which improves the efficiency and precision of part manufacture.

Feed collet



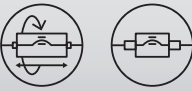
Like on a sliding headstock, the feed collet is our z-axis which allows us to feed the material through the guide bush.

Quill Fixed/Rotating



The quill is a front, axial or vertical tool support, which can be either fixed or, more often, rotating, and which therefore drives the tools.

GLOSSARY

Straightening 	Straightening the material involves correcting the deformations caused by the spiral shape of the coil. ESCO machines are primarily designed to work with coil material. The material must therefore be straightened before machining to ensure that the parts produced are straight. The straightener is of the rotating type.
Coil 	The material is a wire wound in a spiral.
Straightening bushes (4x) 	The escomatic rotary straightening system is a device used to align and straighten small metal materials in a rotating manner, using two pairs of straightening barrels positioned on either side of a the rotary central bush.
The rotary central bush (1x) 	A movable bushes is an adjustable mechanical element that acts as a central reference point for straightening the material. Thanks to its eccentric rotary movement, it ensures precise alignment and uniform straightening of the material guided through the system.



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