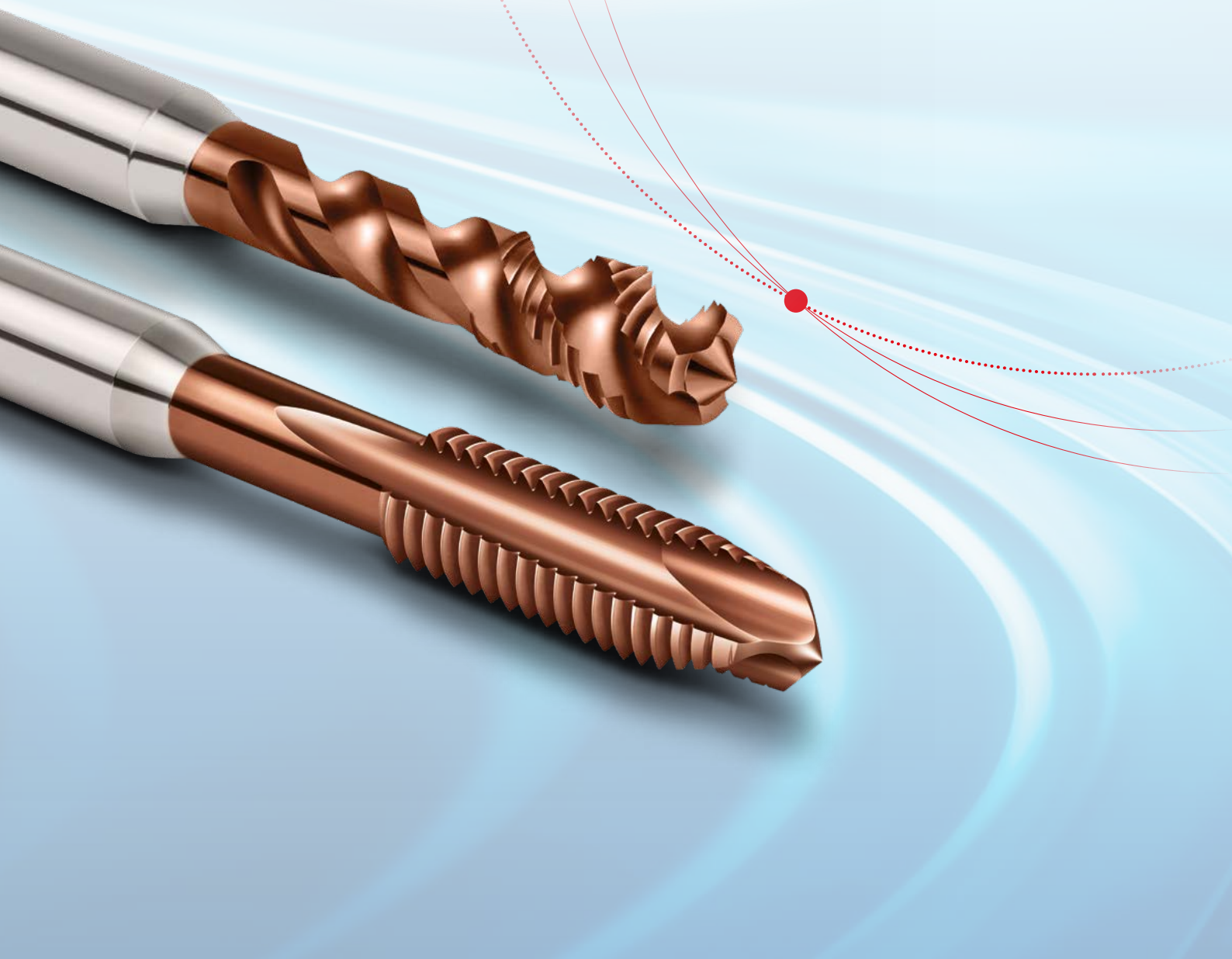
passion
for precision

fraisa

Xtap – one tap for everything

Innovative universality
with outstanding properties



Xtap – Six-axis grinding technology opens up new geometry horizons for maximum universality

With the **Xtap**, FRAISA is launching a fundamentally new design of universal tap that's based on state-of-the-art grinding technology. The **Xtap** has been specially developed for use in CNC machines for tapping threads in through and blind holes.

As a universal tool for thread tapping, the **Xtap** combines maximum process reliability with maximum universality. This wide range of material applicability reduces the number of tools required and at the same time offers you the benefit of increased efficiency.

The combination of proven FRAISA technologies like the stable cutting geometry and innovative features such as the newly designed chip space geometry guarantees reliable application in the thread-cutting process.

Thanks to the innovative coating known as **FRAISA-AlCrTiN**, steels, stainless steels, and also acid-resistant steels can be machined with maximum process reliability.

The capabilities of the **Xtap** are demonstrated by its applicability in a wide variety of materials. In addition to high process reliability, superior results can also be achieved in terms of thread quality.

As well as developing the tool, our engineers also examined the process behavior of the **Xtap** very closely. Extensive tests were performed to determine exact application data, which can be found in the catalog. Maximum process reliability and a long tool life are the outcome, which in turn results directly in increased cost-effectiveness.

Xtap – the perfectly coordinated system for maximum performance, tool life, and process reliability when tapping threads.

The advantages:

Ideal cost-performance ratio

- High performance (+20%), long tool life (+30%)

Two versions

- Through hole and blind hole
- Diameters from M2 to M24

Wide range of material applications

- For replacing existing tools and as a solution for new applications
- Maximum performance thanks to the perfect combination of tool type and cutting data

Universal geometry

- Optimized chip-space and cutting-edge geometries guarantee ideal chip flow even with different materials and cutting parameters
- Perfectly defined and coordinated cutting edge rounding guarantees process reliability

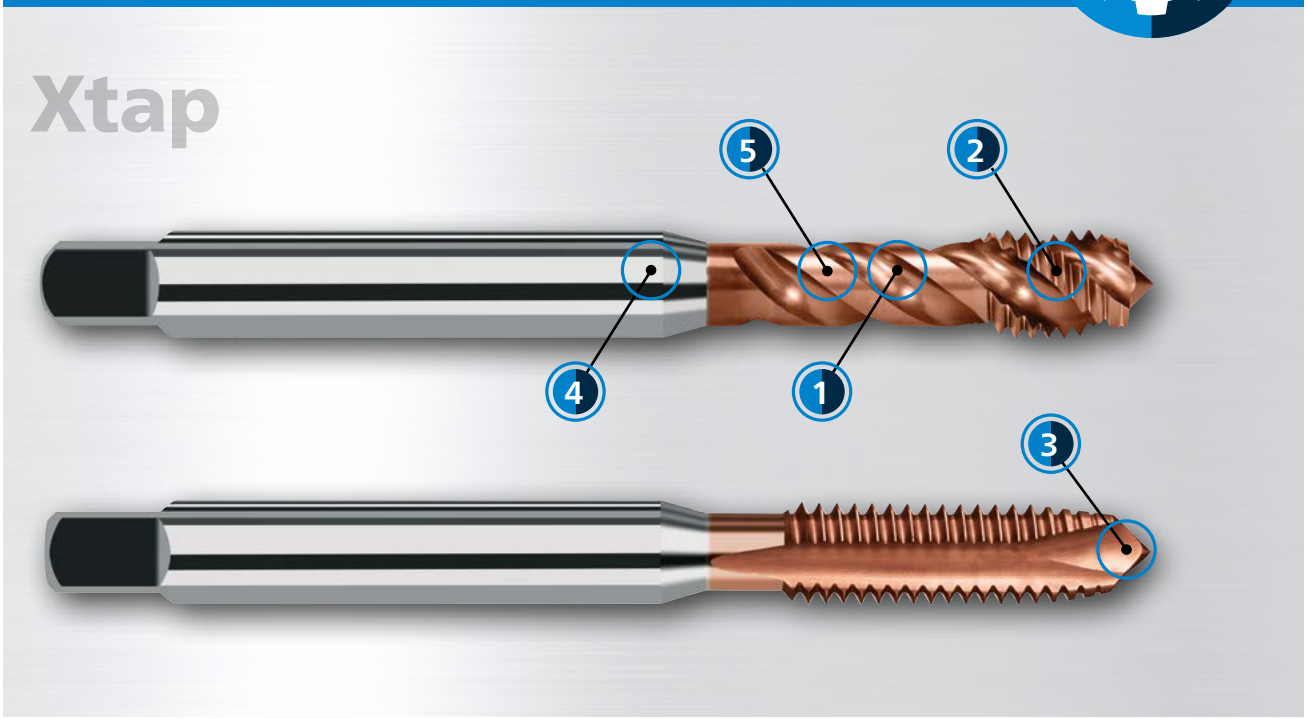
Productivity

- Cost efficiency thanks to universal application
- Reduced tool costs thanks to the wide range of applications
- Catalog cutting data for a wide range of applications in various materials

The technologies of the universal tap Xtap

Geometry, substrate, and coating – all elements of the new tap are tuned to provide high performance levels and the greatest possible degree of universality. By coordinating the individual technologies to create a holistic system, we have succeeded in making the **Xtap** a truly high-performance tool.

The technologies



1 Optimized chip space geometry
- Dependable chip flow and chip formation

2 Defined microgeometry
- Cutting edge rounded as a function of the dimensions

3 Optimized spiral point
- Reduced forces during thread tapping

4 HSS-PM/F cutting material
- High wear resistance with optimum rigidity

5 FRAISA-AlCrTiN
- Wear-resistant thanks to high coating hardness as well as reduced process temperature owing to smooth surfaces

The combination of individual features – such as a perfectly coordinated HSS-PM/F, optimized geometry parameters like the flute and spiral point, defined rounding of the cutting edge, and innovative **FRAISA-AlCrTiN** hard coating – results in a unique tool design.

Tips:

The **Xtap** thread tap covers metric threads (M) and has been designed for tapping threads in through and blind holes.

This tool family has undergone further development work targeting its use specifically in CNC machines. The main applications of the universal **Xtap** taps are in steel materials as well as stainless and acid-resistant steel materials. We recommend that you use the taps in synchronous collet chuck holders in order to obtain optimum performance.

Innovation and technology: new quality standards for high-performance thread tapping

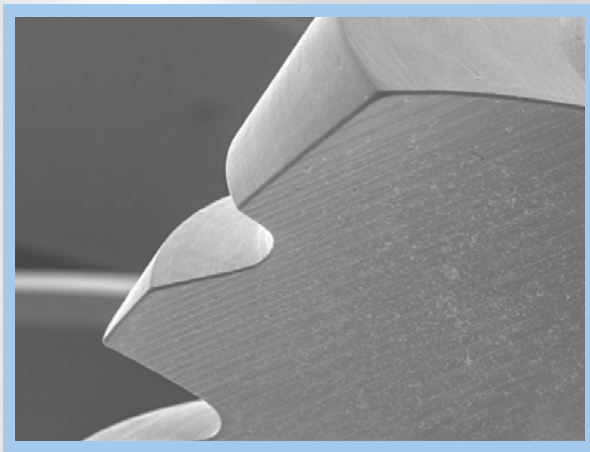
Maximum productivity

Thread tapping is all about thread quality, process reliability, and productivity.
The high performance level of the new **Xtap** thread tap is the sum of its technological features.

Redefined cutting edge rounding

The cutting edge, which is rounded as a function of the dimensions, reinforces the cutting wedge and increases process reliability and reproducibility in the process. The robust cutting edge, with sufficient reserves, ensures universal use in various materials. Wear is ensured to increase at a constant rate even under unfavorable conditions.

Cutting edge rounding



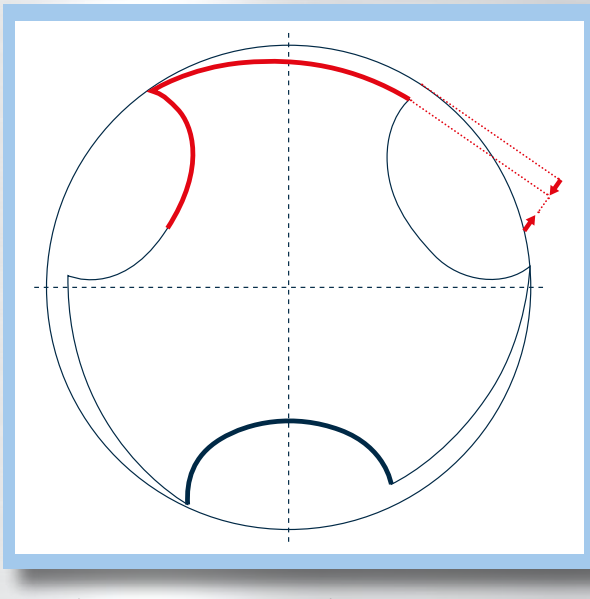
Redesigned cutting edge geometry

The perfected flute form is crucial to universal use in various materials. The optimized cutting wedge also sets new standards in wear behavior. The result: greater productivity and cost efficiency in thread tapping.

A new magnitude of process reliability

In difficult machining situations, the level of process reliability decreases in various materials. Even small deviations in the material, environment, or strategy can provoke a tool breakage. The new coating **FRAISA-AlCrTiN** plays a big role in increasing process reliability.

Cutting edge geometry



Rm < 850	Rm 850-1100	Inox Stainless		P

Excellent thread quality thanks to the new coating FRAISA-AlCrTiN

The revolutionary, wear-resistant coating **FRAISA-AlCrTiN** results in a significantly longer tool life when tapping threads in high-quality components than is the case with standard coatings. Additionally, the very smooth and hard coating and its excellent adhesion properties ensure ideal wear resistance. The level of efficiency is appreciable from the increase in tool life and the reduction in tool costs. The high degree of universality, the reduced number of tool changes, and the smaller number of variants all boost productivity.

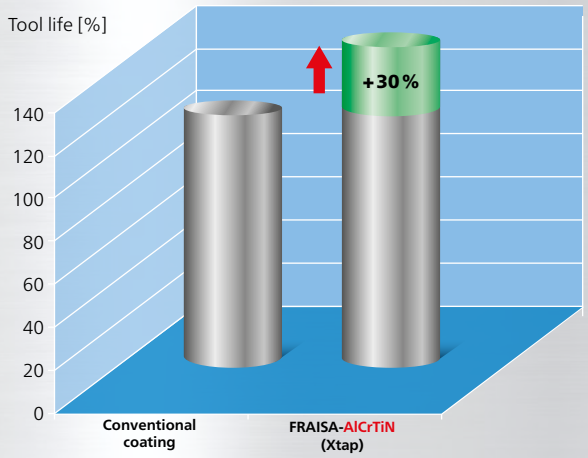
The FRAISA-AlCrTiN coating with its outstanding properties offers some impressive benefits:

- ☑ **Longer tool life**
- ☑ **Reliable machining**
- ☑ **Reduced tool costs**

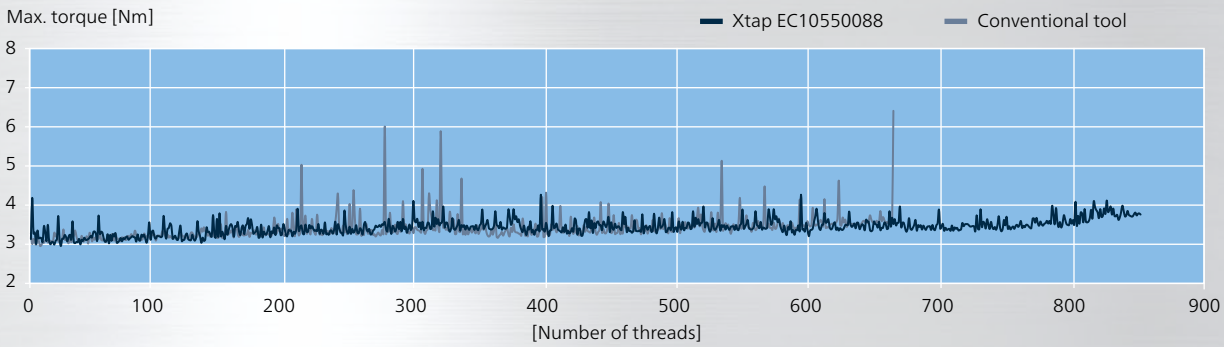
Application data: Xtap vs. conventional tool

Xtap M6	EC10550088
Process	Synchronous blind hole tapping
Material, Rm	40CrMnNiMo8-6-4/1.2738, 1100 N/mm²
Thread	M6
Thread depth	2xd (12 mm)
Cutting speed	v_c 12 m/min
Speed n	635 rpm
Cooling lubricant	6% emulsion

Coating: Xtap vs. conventional tool

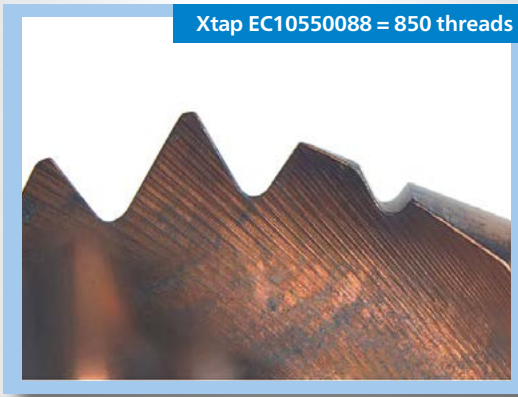


Max. torque: Xtap vs. conventional tool



Tool wear: Xtap vs. conventional tool

Xtap EC10550088 = 850 threads



Conventional tool = 660 threads

Taps Xtap

P

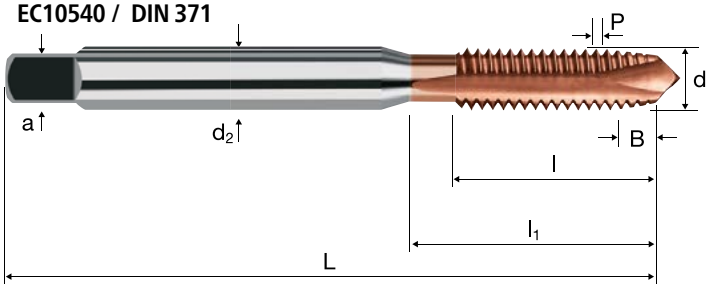
M | ISO 2 (6H)

60° | HSS PM/F

DIN 371/376

X · P Form B

EC10540 / DIN 371



EC10541 / DIN 376

Rm < 850 | **Rm 850-1100** | Inox Stainless

[6]

Example: **Order-N°.** Article-N°. **EC10540** ø-Code **034**

Ø Code	d	P	L	l	l_1	d_2	a			AlCrTiN EC10540
034	M 2	0.40	45	9.00	-	2.8	2.1	2	1.60	●
040	M 2.5	0.45	50	11.00	-	2.8	2.1	2	2.05	●
044	M 3	0.50	56	12.00	18.0	3.5	2.7	3	2.50	●
058	M 4	0.70	63	13.00	21.0	4.5	3.4	3	3.30	●
084	M 5	0.80	70	15.00	25.0	6.0	4.9	3	4.20	●
088	M 6	1.00	80	17.00	30.0	6.0	4.9	3	5.00	●
160	M 8	1.25	90	20.00	35.0	8.0	6.2	3	6.80	●
174	M 10	1.50	100	22.00	39.0	10.0	8.0	3	8.50	●

Example: **Order-N°.** Article-N°. **EC10541** ø-Code **240**

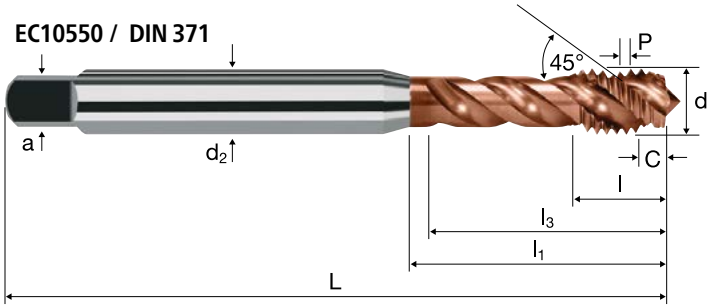
Ø Code	d	P	L	l	l_1	d_2	a			AlCrTiN EC10541
240	M 12	1.75	110	24.00	40.0	9.0	7.0	3	10.20	●
244	M 14	2.00	110	26.00	40.0	11.0	9.0	3	12.00	●
246	M 16	2.00	110	27.00	40.0	12.0	9.0	3	14.00	●
312	M 18	2.50	125	30.00	45.0	14.0	11.0	4	15.50	●
314	M 20	2.50	140	32.00	50.0	16.0	12.0	4	17.50	●
316	M 22	2.50	140	32.00	50.0	18.0	14.5	4	19.50	●
320	M 24	3.00	160	34.00	60.0	18.0	14.5	4	21.00	●

Taps Xtap

P

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form C

EC10550 / DIN 371



EC10551 / DIN 376

Rm < 850	Rm 850-1100						Inox Stainless		

Example: **Order-N°.** Article-N°. **EC10550** ø-Code **034**

Ø Code	d	P	L	l	l_1	l_3	d_2	a				AlCrTiN EC10550
034	M 2	0.40	45	8.00	12.5	10.5	2.8	2.1	3	1.60		●
040	M 2.5	0.45	50	9.00	15.0	13.0	2.8	2.1	3	2.05		●
044	M 3	0.50	56	4.00	18.0	16.0	3.5	2.7	3	2.50		●
058	M 4	0.70	63	5.60	21.0	19.0	4.5	3.4	3	3.30		●
084	M 5	0.80	70	6.40	25.0	23.0	6.0	4.9	3	4.20		●
088	M 6	1.00	80	8.00	30.0	28.0	6.0	4.9	3	5.00		●
160	M 8	1.25	90	10.00	35.0	33.0	8.0	6.2	3	6.80		●
173	M 10	1.50	100	12.00	39.0	37.0	10.0	8.0	3	8.50		●
174	M 10	1.50	100	12.00	39.0	37.0	10.0	8.0	4	8.50		●

Example: **Order-N°.** Article-N°. **EC10551** ø-Code **240**

Ø Code	d	P	L	l	l_1	l_3	d_2	a				AlCrTiN EC10551
240	M 12	1.75	110	14.00	50.0	48.0	9.0	7.0	4	10.20		●
244	M 14	2.00	110	16.00	58.0	56.0	11.0	9.0	4	12.00		●
246	M 16	2.00	110	16.00	58.0	56.0	12.0	9.0	4	14.00		●
312	M 18	2.50	125	20.00	65.0	63.0	14.0	11.0	4	15.50		●
314	M 20	2.50	140	20.00	72.0	70.0	16.0	12.0	4	17.50		●
316	M 22	2.50	140	20.00	72.0	70.0	18.0	14.5	5	19.50		●
320	M 24	3.00	160	24.00	74.0	72.0	18.0	14.5	5	21.00		●

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