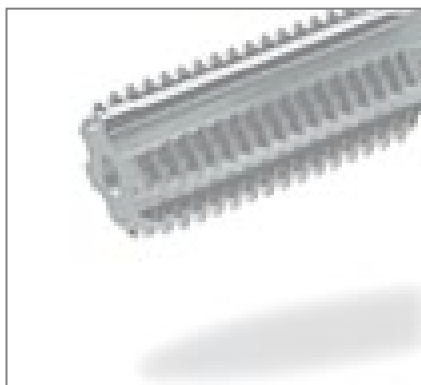
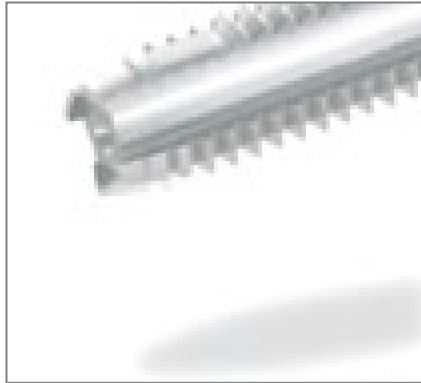
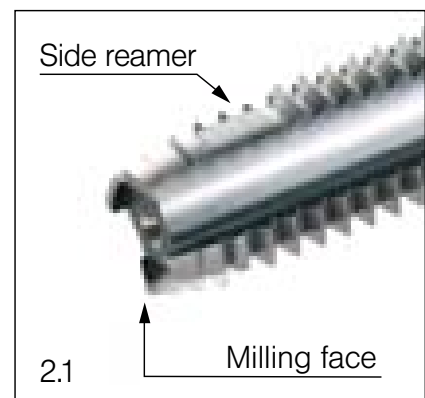
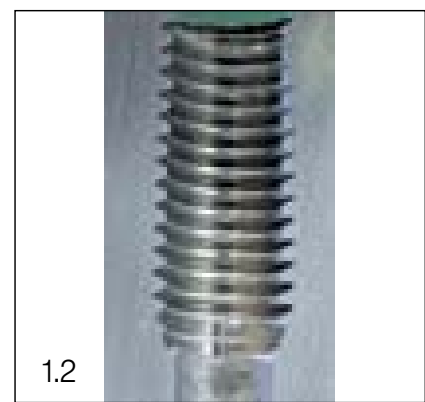
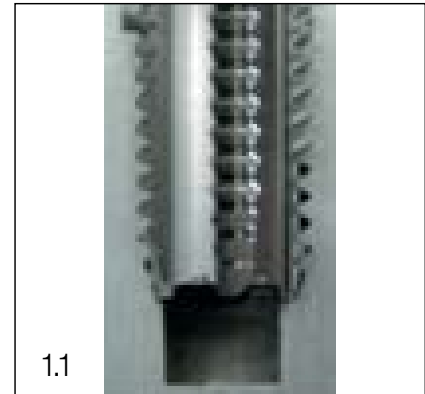


TANOI
MULTI-FUNCTION-TAPS

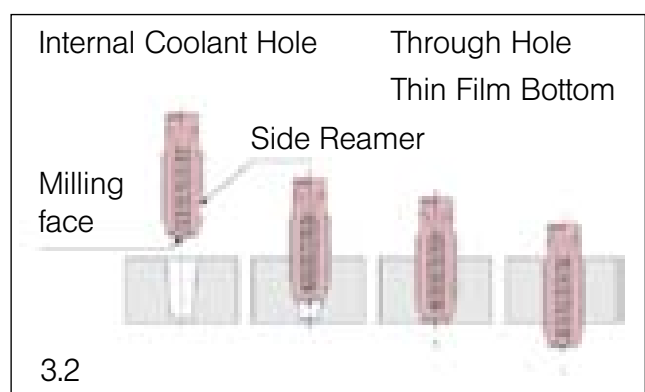
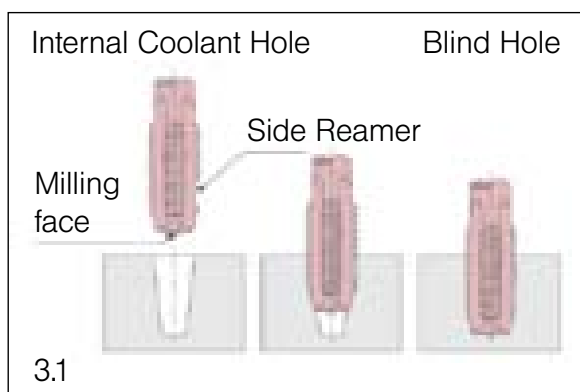


Technical Features

- MLT Taps are designed for working die cast parts such as motor housings, carburator housings, and the like.
- They combine three functions into one single operation (Pictures 1.1/1.2) :
 1. Removing the cast surface from the die cast hole.
 2. Tapping the thread.
 3. Reaming the minor diameter of the thread to the required one.
- To achieve this the cutting section of the MLT tap has been combined with a special drilling/milling face and a side reamer (Picture 2.1).
- MLT Taps can be used in blind holes and through holes. In through holes with thin film bottoms, these bottoms are removed by MLT taps creating a clean, burr-less exit of the hole.
- From size M6 on MLT Taps are designed with internal cooling.



MLT-Taps are patented:
 Japan patent no. 3457178
 US patent no. 6499920
 Europa patent no. 0953396



Application

- SL-Taflets require special consideration when choosing the drill hole diameters depending on the degree of thread engagement SL-Taflets can only remove the thread crest if a minimum of thread engagement is reached.
- Therefore the drill hole diameter should be chosen to be at least 95% of thread engagement. This ensures full removal of the thread seams by the side reamer. Please refer to the table 3.1 to choose the appropriate drill hole diameter.
- It is possible to choose lower thread engagements than 95%. In such a case some thread seams may remain on the threads crest because they are lower than the internal diameter of the required thread. However, choosing low thread engagements reduces tapping torque and increases tool life.
- Choosing thread engagements above 95% increases cutting torque but also creates better compacted threads making the produced thread stronger.

Size	Pitch	Reamer diameter D_i	Hole diameter [mm] by % of thread engagement			
			105%	100%	95%	90%
M2	0.40	1.62	1.76	1.77	1.78	1.80
M2.2	0.45	1.77	1.93	1.94	1.96	1.97
M2.5	0.45	2.07	2.23	2.24	2.26	2.27
M2.6	0.45	2.17	2.33	2.34	2.36	2.37
M3	0.50	2.53	2.70	2.72	2.73	2.74
M3.5	0.60	2.93	3.14	3.16	3.18	3.19
M4	0.70	3.34	3.58	3.60	3.62	3.64
M5	0.80	4.24	4.52	4.55	4.57	4.59
M6	1.00	5.05	5.40	5.43	5.46	5.49
M8	1.25	6.82	7.26	7.29	7.33	7.36
M10	1.50	8.58	9.11	9.15	9.19	9.23

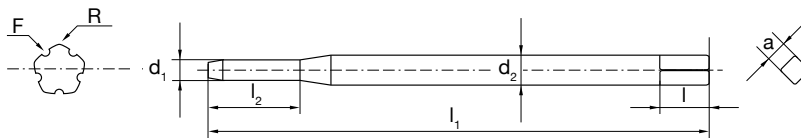
Table 3.1



ALU	ALU Si <10%
ALU Si >10%	CU

M	60° P	FORM C 2-3 -xP	TiCN HSSE V3	

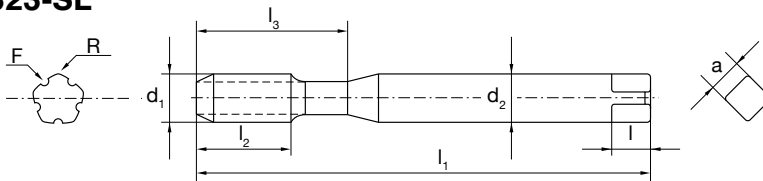
1.153.323-SL



5HX	TANOI
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d ₁	P	l ₁	l ₂	l ₃	d ₂	l	a	R / F	Code	€
M2	0.40	45	8	10	2.8	5	2.1	3 / 4	810.065	81.40
M2.2	0.45	45	9	11	2.8	5	2.1	3 / 4	810.070	81.40
M2.5	0.45	50	9	12.5	2.8	5	2.1	3 / 4	810.080	78.20
M2.6	0.45	50	9	12.5	2.8	5	2.1	3 / 4	810.085	76.70

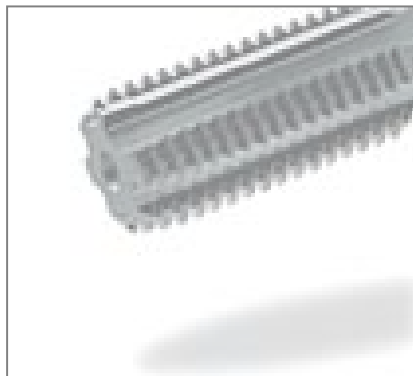
1.153.323-SL



6HX	DIN 2174
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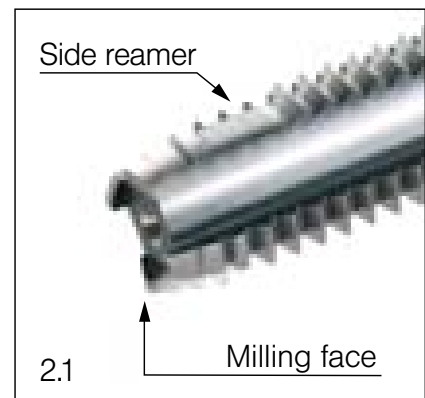
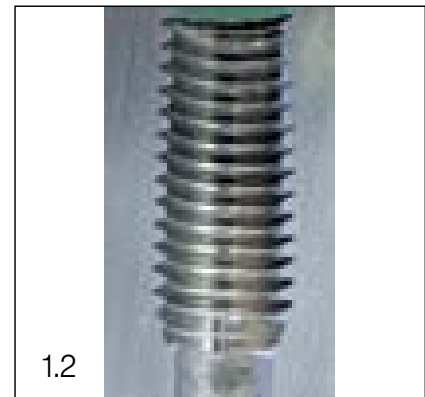
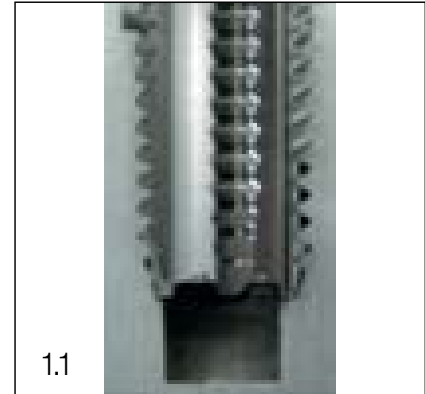
M3	0.50	56	11	18	3.5	6	2.7	3 / 4	810.090	76.70
M3.5	0.60	56	12	20	4.0	6	3.0	3 / 4	810.095	79.80
M4	0.70	63	13	21	4.5	6	3.4	3 / 4	810.100	83.50
M5	0.80	70	16	25	6.0	8	4.9	3 / 4	810.110	103.00
M6	1.00	80	19	30	6.0	8	4.9	3 / 4	810.115	106.00
M8	1.25	90	22	35	8.0	9	6.2	5 / 6	810.125	110.00
M10	1.50	100	24	39	10.0	11	8.0	5 / 6	810.135	158.00

- SL-Taflets are available in standard sizes from M2 to M10. Upon request sizes up to M20 are possible. The side reamer can be made to manufacture different minor diameters of internal threads.

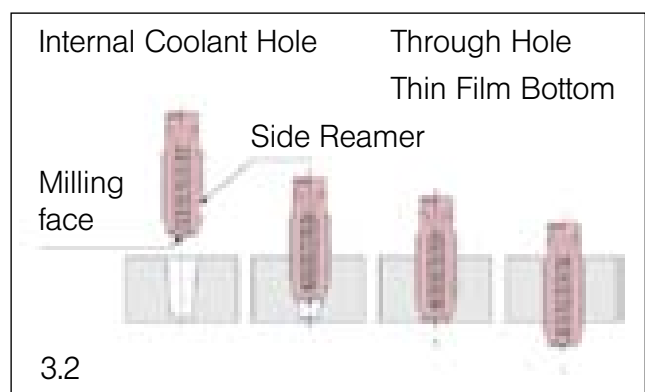
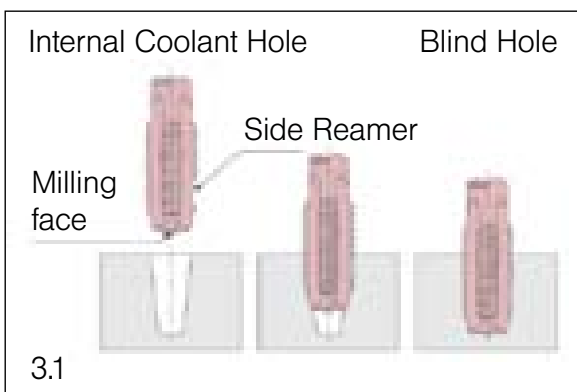


Technical Features

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MLT-Taps are patented:
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 US patent no. 6499920
 Europa patent no. 0953396





ALU	ALU Si <10%
ALU Si >10%	CU SHORT
ZDC	GG/G CAST

M	60° -P-	FORM C -2-3 -xP	0°	TiCN HSSE V3	SYNCHRO
			THIN FILM	OIL	EMULSION

1.113.923 MLT

6HX

DIN 371

d ₁	P	d _i	l ₁	l ₂	l ₃	d ₂	l	a	z	Code	€
M4	0.70	3.30	63	13	21	4.5	6	3.4	3	951.095	133.00
M5	0.80	4.20	70	16	25	6.0	8	4.9	3	951.120	111.00
• M6	1.00	5.00	80	19	30	6.0	8	4.9	3	951.130	123.00

1.113.923 MLT

6HX

DIN 376

d ₁	P	d _i	l ₁	l ₂	l ₃	d ₂	l	a	z	Code	€
• M8	1.25	6.75	90	13	35	8.0	9	6.2	4	951.155	135.00
• M10	1.50	8.50	100	15	39	10.0	11	8.0	4	951.185	152.00

d_i = diameter of reamer / core.

• With internal cooling.



ALU	ALU Si <10%
ALU Si >10%	CU SHORT
ZDC	GG/G CAST

M	60°	FORM C -2-3 -xP	15°	TiCN HSSE V3	SYNCHRO
			THIN FILM	OIL	EMULSION

1.114.923 MLT

6HX

d ₁	P	d _i	l ₁	l ₂	l ₃	d ₂	l	a	z	Code	€
M4	0.70	3.30	63	13	21	4.5	6	3.4	3	953.095	118.00
M5	0.80	4.20	70	16	25	6.0	8	4.9	3	953.120	130.00
• M6	1.00	5.00	80	19	30	6.0	8	4.9	3	953.130	145.00

1.114.923 MLT

6HX

d ₁	P	d _i	l ₁	l ₂	l ₃	d ₂	l	a	z	Code	€
• M8	1.25	6.75	90	22	35	8.0	9	6.2	4	953.155	160.00
• M10	1.50	8.50	100	24	39	10.0	11	8.0	4	953.185	179.00

d_i = diameter of reamer / core.

• With internal cooling.



ALU	ALU Si <10%
ALU Si >10%	CU SHORT
ZDC	GG/G CAST

M	60° P	FORM C 2-3 xP	0°	MG CARBIDE	SYNCHRO
			THIN FILM	OIL	EMULSION

1.113.980 MLT

6HX DIN 371

d ₁	P	d _i	l ₁	l ₂	l ₃	d ₂	l	a	z	Code	€
M4	0.70	3.30	63	13	21	4.5	6	3.4	3	952.095	352.00
M5	0.80	4.20	70	16	25	6.0	8	4.9	3	952.120	372.00
• M6	1.00	5.00	80	19	30	6.0	8	4.9	3	952.130	397.00

1.113.980 MLT

6HX DIN 376

d ₁	P	d _i	l ₁	l ₂	l ₃	d ₂	l	a	z	Code	€
• M8	1.25	6.75	90	22	35	8.0	9	6.2	4	952.155	505.00
• M10	1.50	8.50	100	24	39	10.0	11	8.0	4	952.185	721.00

d_i = diameter of reamer / core.

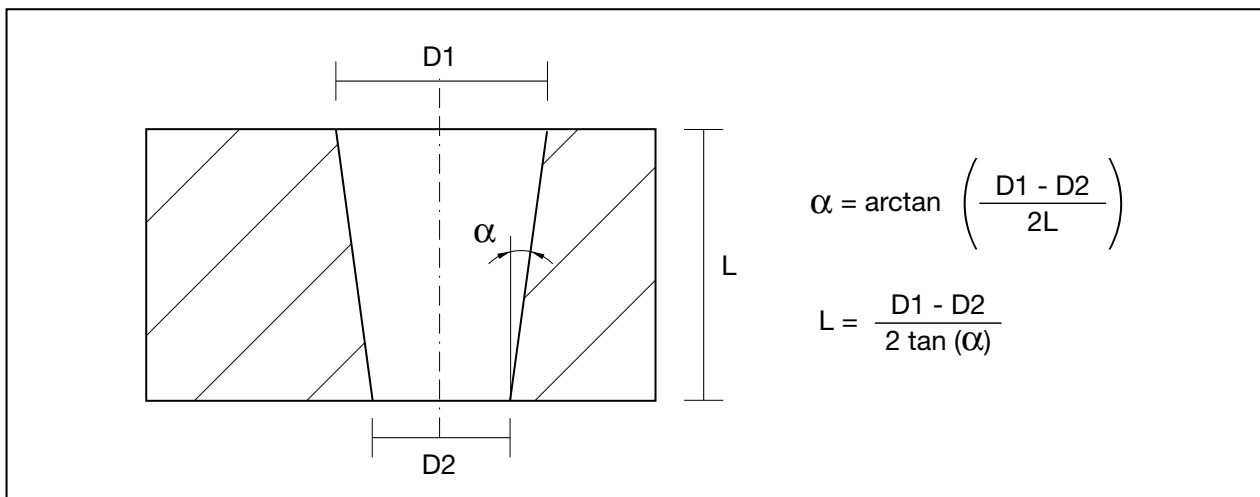
• With internal cooling.

Advantages in Production

- The operations, drilling, chamfering and tapping are combined into one tool. This reduces production time, tool cost and reduces overall production cost.
- The combination of mill, reamer and tap creates best cutting conditions for the tapping process and avoids problems with cast surfaces since these are completely removed.
- As the hole is created in one operation with the tapping, deformations and location errors in molded holes are corrected in the process.
- The side reamer reduces the thread crests to the required internal diameter of the thread. This guarantees perfect concentricity of the hole and the thread.

Application

- All MLT taps should be used with synchronized tapping spindles only.
- Rigid tool holders without compensation should be used.
- Because MLT taps generate more chips than conventional taps internal cooling is recommended. From size M6 all MLT taps feature centre cooling through the shank. For smaller sizes the TANOI „Side-Through-System“ is strongly recommended for cooling.
- The molded holes need to meet the minimum requirements for use of MLT taps.
 - The diameter of the hole at the entry should be according to the normal drill diameter for cutting taps. This is approximately the nominal diameter minus the pitch. For a tap M6 the hole's diameter should therefore be 5.0 mm.
 - The minimum diameter of the hole should be 0.6 x the nominal diameter of the thread. For a tap M6 it should therefore be 0.6 x 6 mm = 3.6 mm.
 - From these two values the incline of the molded hole may be calculated as shown in the picture below.



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