

TAPMATIC

Thread cutting

Unlimited possibilities



For synchronized
thread cutting on
CNC machines

SynchroFlex

SFT models

Increase Taplife by 150%



Reversing tapping
attachments
for CNC machines

RDT models

Cycle times reduced



Thread cutting
on manual machines

...X models

For manual applications

SNAP-LOC



Cutting fluids



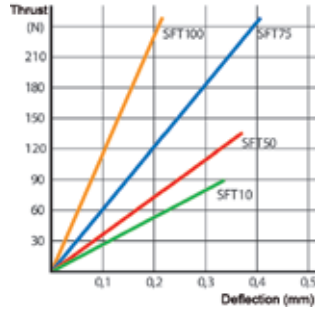
SFT SynchroFlex - Tapping Attachment

General Information

On today's CNC machining centres, spindle rotation can be synchronised with the spindle feed (Rigid Tapping). However, experience shows that small errors in synchronisation can occur. These differences are minimal, but lead to increased tool wear.

SFT Synchroflex - Tapping Attachment

By using the SynchroFlex tap holder with axial and radial movement, any difference in feed and spindle speed are compensated. The patented micro compensator (Flexor) cushions the differences, reducing pressure on the tap. A max. 0.5 mm deflection is constant throughout the life of the tapping unit, therefore enhancing tap life and quality of the thread.



Case History:

Application:

Thread cutting on a horizontal machining centre with Fanuc control, rigid tapping.

Material: 42CrMo4V steel, heat treated to 650 N/mm²

Tap size:

M8 x 1, metric fine

Thread: M8 x 1, 10 mm deep, through hole

Speed: 500 RPM, **Coolant:** oil emulsion 6%

Results:

tap held in collet chuck: the tap needed to be replaced after 1'000 components completed

Improvement:

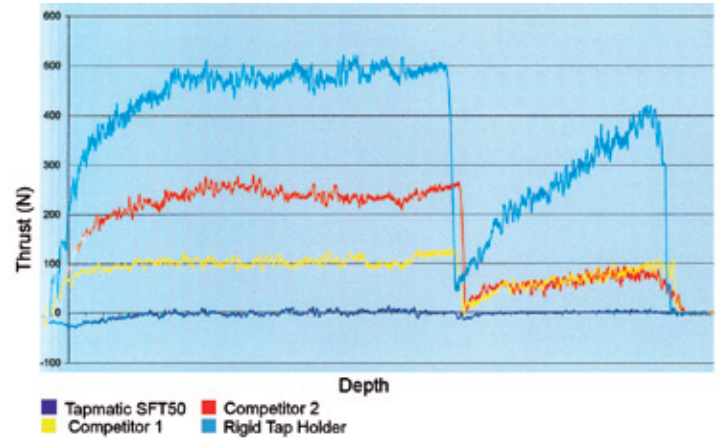
with the new TAPMATIC SFT50 chuck, tap life has been increased to between 2'400 and 2'900 components tapped before the tap needed to be changed.

Advantage:

Besides cost savings (increase of tap life by **150%**), is confidence that all holes have been tapped during an unmanned shift.

Independent test by a tap manufacturer

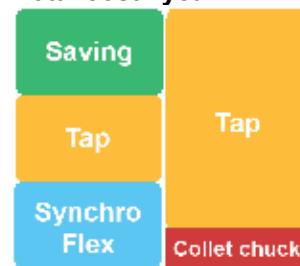
Thrust test 1:10 holes, M6 R45-AL, 2 Flute tap (3xD), AL7075 at 1000 RPM. The graph illustrates the final hole tapped by each tap driver.



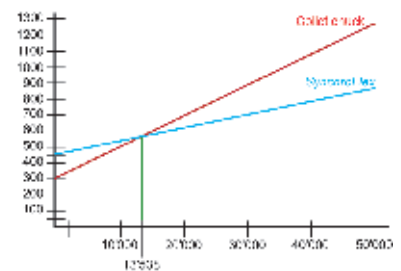
Evaluation of economic efficiency

Costs	SYNCHROFLEX chuck	Collet chucks without compensation
number of threads / year	50000	50000
number of threads / tap	2400	1000
number of taps / year	21	50
price / tap in €	19	19
tap costs in € / year	396	950
chuck costs in € (approx)	450	300
total costs in € / year	846	1250
cost reduction in € / year	404	

Total cost / year



Break Even Point



Results

- Increase of tap life 100% or more
- Investment in a Synchroflex tap holder can be recovered in a matter of a few weeks
- Less downtime (increase of production capacity)
- Better thread quality
- increased process reliability due to less tap breakage

Conclusion

By using SynchroFlex chucks quality threads and economics manufacture are guaranteed.

RDT / RDT-IC Tapping Attachment

General Information

Thread cutting is the only machining operation which requires a change of direction for the return of the tool.

This can be laborious, it also causes wear and is a costly procedure for any machine.

RDT / RDT-IC Tapping Attachment

RDT and RDT-IC reversing tapping attachments are specially designed for fastest thread manufacturing on CNC machining centres. They also eliminate reversal related machine wear and tear and reduce energy consumption. The patented ball drive with integrated planet gear for automatic reversal creates an almost constant cutting speed and eliminates the need to start the machine spindle twice per thread. By using the RDT tapping attachments the cycle time is reduced and the life of the tap is increased. The IC-version allows coolant to flow directly through the tapping head.

Case History:

Application:

Thread cutting on a horizontal machining centre Fritz Werner TC800 with internal cooling.

Material: GG20

Tap:

M6 standard thread HSS with TIN-AL coating

Thread:

M6 standard thread, 9 mm deep, tapping drill \varnothing 5.05 and 12.5 mm deep

Speed:

rigid tapping with spindle reversal, programmed speed 1'200 RPM (\varnothing RPM reached: 513)

Results:

cycle time of 6 min 34 sec for 68 threads

Change:

using a TAPMATIC tapping attachment RDT-IC50 with ER16 spindle, programmed speed 1'800 RPM

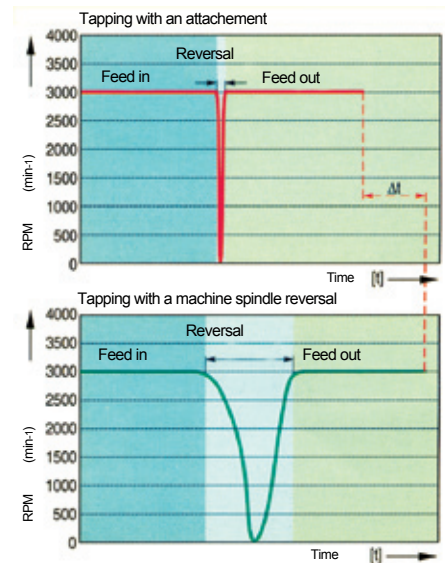
Improvement:

cycle time reduced to 3 min 22 sec for 68 threads, tap life tripled.

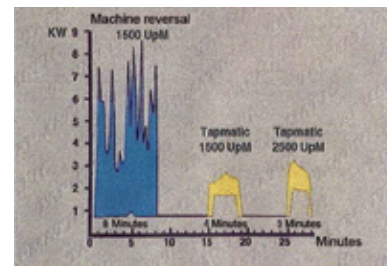
Advantage:

Besides reducing the cycle time, tap life was considerably increased

Constant speed tapping- the secret of longer tap life



Power consumption for 144 threads M8



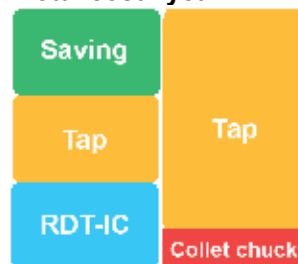
Energy cost saving of 75%

Not only is the shorter cycle time of importance, but also the constant spindle direction. By changing the direction (decelerating and accelerating) of the spindle, higher spikes of power are needed, which can be prevented by constant spindle rotation.

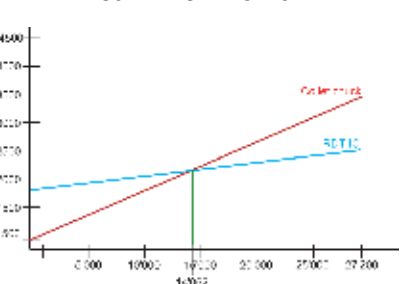
Evaluation of economic efficiency

Costs	Tapping attachment RDT-IC	Collet chuck with compensation
number of threads / part	68	68
number of parts	400	400
cycle time per part / min	3.36	6.56
cycle time in hours	22.4	43.7
machine hourly rate in €	70	70
number of taps	22	65
tap costs in €	275	813
production costs in €	1'568	3'061
chuck costs in € (approx.)	1'500	450
total costs in €	3'343	4'324
cost reduction in €	981	

Total cost / year



Break Even Point



Results

- Reduction of cycle time by 50%
- Increase of production capacity
- Tap life tripled
- Less machine wear (no spindle reversals)
- Roughly 75% energy savings by constant speed tapping

Conclusion

With the use of tapping attachments, the cycle time is less, which also increases productivity. Additionally, machine repair / downtime is reduced, also tap and energy costs.


Order information



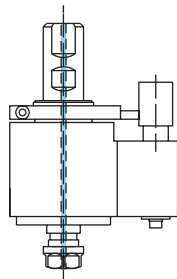
Order information
 SYNCHROFLEX chucks SFT10 are delivered with standard nut, SFT50, SFT75 and SFT100 chucks come with IC-nuts for sealing gaskets.

Internal coolant (IC) and minimum quantity lubrication (MMS)
 For coolant through the spindle applications we recommend our balanced coolant system. Coolant pressure up to 80 bar can be used, the high pressure coolant has no influence on the axial compensation. Please specify by adding "S" to the end of the part numbers shown before. Minimum quantity lubrication through the tool is also available. Please specify by adding "M" to the part number.

All SYNCHROFLEX tap holders can be supplied alternatively as QC. (Add QC to the order code)

Models	Capacity in steel	Collets	Order Code	Straight Shank Ø mm	A mm	B mm	Order Code	Shank	A mm	B mm	Order Code	Shank	A mm	B mm	Order Code	Shrink	D mm	Quick Change																		
SFT10	M2 – M5	ER11	43102511	25	51	19												Quick Change Chuck																		
SFT50	M4 – M12	ER20	43502520	25	63	34	4350H5020 4350H6320 4350H10020	HSK50A HSK63A HSK100A	102 102 109	34	4350H63L20	HSK63A	34	4350H63S ..	HSK63A			 <table border="1"> <thead> <tr> <th>Order Code</th> <th>Model</th> <th>Collets</th> </tr> </thead> <tbody> <tr> <td>8208216</td> <td>SFT50</td> <td>ER16</td> </tr> <tr> <td>8208220</td> <td>SFT75</td> <td>ER20</td> </tr> <tr> <td colspan="3">Version S</td> </tr> <tr> <td>8208216S</td> <td>SFT50</td> <td>ER16</td> </tr> <tr> <td>8208220S</td> <td>SFT75</td> <td>ER20</td> </tr> </tbody> </table>	Order Code	Model	Collets	8208216	SFT50	ER16	8208220	SFT75	ER20	Version S			8208216S	SFT50	ER16	8208220S	SFT75	ER20
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SFT100	M18 – M30	ER40	431002540	25	112	63	43100H6340 43100H10040	HSK63A HSK100A	151 158	63																										

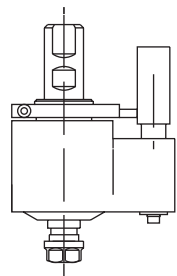
RDT-IC model



Model	Order Code	Capacity in steel	Straight Shank S mm	Collets	Max. RPM
RDTIC25	40252511	M2,5 – M6	25	ER11	3500
RDTIC50	40502520	M4,5 – M12	25	ER20	2500
RDTIC85	40852525	M10 – M20	25	ER25	1500
RDTIC85	40852532	M12 – M22	25	ER32	1200
RDTIC100	401002540	M14 – M25	25	ER40	1000

special version on request

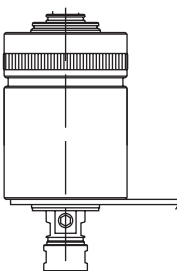
RDT model



Model	Order Code	Capacity in steel	Straight Shank S mm	Collets	Max. RPM
RDT15	3915258	M1 – M3	25	ER8	5000
RDT25	39252511	M2,5 – M6	25	ER11	3500
RDT50	39502516	M4,5 – M12	25	ER16	2300
RDT85	39852525	M10 – M20	25	ER25	1500
RDT85	39852532	M12 – M22	25	ER32	1200
RDT100	391002540	M14 – M25	25	ER40	1000

special version on request

...X model



Model	Order Code	Capacity in steel	Mounts S		Collets	Max. RPM
			Taper mounts	Thread. mounts		
100XB	16101	M0,5 – M2	JT1		117XB	2000
30X	10312	M1,4 – M7	B12		J116, J117	2000
	10316		B16			
	10333		JT33			
	10331			5/16" – 24		
	10337			3/8" – 24		
50X	10350	M3 – M12		1/2" – 20	J421, J422	1500
	10362			5/8" – 16		
	10516		B16			
	10533		JT33			
	10537			3/8" – 24		
70X	10550	M5 – M18		1/2" – 20	J443, J440	1200
	10562			5/8" – 16		
	10575			3/4" – 16		
	10718		B18			
	10703		JT3			
90X	10750	M10 – M30		1/2" – 20	J461, J462	600
	10762			5/8" – 16		
	10775			3/4" – 16		
	10787			7/8" – 20		
	10904		JT4			
10915		1.1/2" – 18				

Sold through: