



Thread tapping technology
All-in-One

Product overview

September 2011

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Machines & product-groups	2
Process-controlled-production	3
Software & functions	4
Options-Overview	5
Accessories & functions	6 - 14

Conditions	General delivery conditions of microtap GmbH
Pricing €	excludes sales tax, packing, shipping, and handling
Payment terms	payment in advance
Warranty	12 months
Delivery time	approximately 4 - 8 weeks after order
Installation and training	additional
Alterations	additional

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Thread tapping units Machines



microtap – megatap – jobtap

G2 Thread capacity

(DIN13, sheet 34 / 1,2 x D)

Torque range Mz
Spindle speed range
Thread depth / stroke max.
Software special

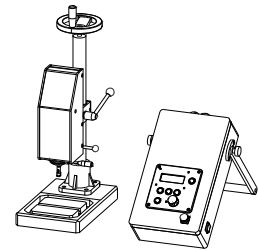
Spindle B6/ER8

M0,5 - M2 X5CrNi189 / 1.4435
M0,5 - M2 9sMn28 / 1.0715
M0,5 - M3 AlCuMgPb / 3.1645

2 - 65 Ncm
150 - 1000 RPM
40 / 53 mm

- Tapping torque display min/max. Mz
- Lubrication pulse control
- Chip clearance function
- Automatic Start / QS and SZ - control
- 50 programmable data memories

Tap adapter chuck holder system holder
system complete with 5 adapters (1,0 to 3,0 mm)



G5 Thread capacity

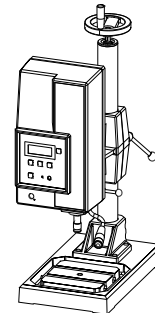
(DIN13, sheet 34 / 1,2 x D)

Torque range Mz
Spindle speed range
Thread depth / maximum stroke
Spindle B10/ 00

M1 - M4 X5CrNi189 / 1.4435
M1 - M5 9sMn28 / 1.0715
M1 - M6 AlCuMgPb / 3.1645

5 - 220 Ncm
250 - 2200 RPM
45 / 65 mm

Quick change system SWS0 & 5 inserts
DIN371/ M0,8-1,8/ M2-2,6 /M3/ M4/ M4,5-6



G8 Thread capacity

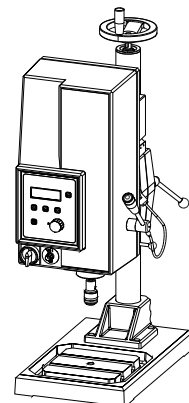
(DIN13, sheet 34 / 1,2 x D)

Torque range Mz
Spindle speed range
Thread depth / maximum stroke
Spindle B12 / 01

M2,5 - M8 X5CrNi189 / 1.4435
M2,5 - M10 9sMn28 / 1.0715
M2,5 - M12 AlCuMgPb / 3.1645

50 - 700 Ncm / from 470 Ncm max. 2060 min-1
300 - 3000 RPM
75 / 85 mm

Quick change system SWS1 & 6 inserts
DIN371/ M2/ M3/ M4 /M4,5-6/ M8/ M10



G14 Thread capacity

(DIN13, sheet 34 / 1,2 x D)

Torque range Mz
Spindle speed range
Thread depth / maximum stroke
Spindle B12 / 01

M3,5 - M12 X5CrNi189 / 1.4435
M3,5 - M14 9sMn28 / 1.0715
M3,5 - M16 AlCuMgPb / 3.1645

120 - 1680 Ncm / ab 1128 Ncm max. 858 min-1
125 - 1250 min-1
75 / 85 mm

Quick change system SWS2
incl. 7 inserts DIN 371M3-M10 /DIN 374/376 M4,5-14

G16 Thread capacity

(DIN13, sheet 34 / 1,2 x D)

Torque range Mz
Spindle speed range
Thread depth / maximum stroke
Spindle B12 / 03

M4 - M14 X5CrNi189 / 1.4435
M4 - M18 9sMn28 / 1.0715
M4 - M20 AlCuMgPb / 3.1645

150 - 2100 Ncm / from 1430 Ncm max. 690 min-1
100 - 1000 RPM
75 / 85 mm

Quick change system SWS3 & 9 Inserts (SWS2 G14)
DIN371/ M4/ M4,5-6/ M8/ M10/ M12/ M14/ M16/ M18/ M20

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Overview Thread Tapping Units

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Thread tapping technology

Production- & laboratory units

Tool machine for "process-controlled-production" and Laboratory Applications with PC-acquisition, screening and analysis software **WinPCA3** and interfaces RS232 and 8 bit I/O

labtap - G8

Application

Tapping-Torque-Testsystem with comparison-measurements and certified motor & electronic system

Thread capacity
DIN13, sheet 34 / 1,2 x D
Torque range Mz
Spindle speed range
Colour / paint finish
Software

M3 - M8 X5CrNi189 / 1.4435
M3 - M10 9sMn28 / 1.0715
50 - 700 Ncm / from 470 Ncm max. 2060 min-1
300 – 3000 RPM
RAL 1015 bright ivory

WinPCA3

- Program for thread tapping and forming
- Program for thread inserts (Ensat/Kato/Helicoil)
- Program for screw setting & secondary hole (similar reaming)
- Program for continuous motor running routines
- **PC-screening and analysis software** for comparative value observation (evaluation) with allocated storage of definable series of measurements plus new analyzer for individual analysis incl. flexible differentiations of various single- and series of measurement results

$$\text{Average (ave)} = \sum_{i=0}^{n-1} x_i / n \quad / \quad \text{sDev} = \sqrt{\sum_{i=0}^{n-1} [x_i - \text{ave}]^2 / n}$$

Meanvale / Arithmetic method

The expression is called arithmetic methods of n sizes a_1, a_2, \dots, a_n

$$\chi_A = \frac{a_1 + a_2 + \dots + a_n}{n} = \frac{1}{n} \sum_{k=1}^n a_k$$

For two sizes a and b emerges

$$\chi_A = \frac{a + b}{2}$$

Spindle B12 / 01

Quick change system SWS1 & 6 Inserts

DIN371/ M2/ M3/ M4/ M4,5-6/ M8/ M

Alternativ: **SZS** Collet system / ER 8/ 11/ 16/ 20



Test bars / Test-tools
Delivery / Training
www.microtap.de

On request / separate data sheet
After agreement / on request
<http://www.tapping-torque-test.com/>

info@microtap.de
labtap ProductOverview

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Thread tapping technology

Machine software & functions

Assignment

Machine Types / Stainless Steel

G2 / M0,5 – M2

G5 / M1 – M4

G8 / M2,5 – M8

G14 / M3 – M12

G16 / M4 – M14

microtap / megatap

for very small threads

for small threads

Units with

interfaces incl.

quality-protocol

jobtap

-

jobshop

machines

without scrap

and breakage

labtap

Laboratory-
& automation

controlled unit

Incl. statistics

through Gauss

Machine Software / Functions

Language selector GB/F/NL/B/DK/S/I/D

Metric / Inch selector for tap and depth of cut

Ncm Torque control setting, minimum – maximum

Fast, normal and slow return speeds

Motor rotation right or left-hand thread

Auto start with position depth control, with ZAPtap

Cutting force start sensor, only with ZAPtap option

User data storage for 40 different parameters

Single and total thread / part counter

Variable chip clearance function

Lubricant control with pulse and timed flow

Further production features

Program for thread cutting and forming

Program for thread inserts / Ensart / Helicoil / Kato

Program for screw setting & secondary hole (similar reaming)

Continuous motor running for counter-sinking

Serial interface

RS232 / V24 interface

QND SW for quality printer and documentation

WinPCA3 "Screening and analysis" software

Customer specific special software for automation

Parallel interface

I/O port / parallel interface with four isolated outputs

Control software for one 24 Volt DC Valve (I/O)

microtap / megatap

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jobtap

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labtap

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+ = included / € = option / - = not available

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Software-Functions & Production features

Thread tapping technology Accessories

Overview

This is an overview of accessories for the different tapping machines. The functions of the accessories are explained on separate data sheets

Accessories / product groups

	microtap / megatap	jobtap	labtap
ZAP controlled pneumatic feeding system	+ not micG2	+ not micG2	+ not micG2
MMS minimum quantity lubrication unit	+	+	+
DSK double-spindle head adapter	+	+	+
MLM magnetic machine light	+	+	+
LSM spindle motor air seal	+	+	+
SVH column upgrade -- manual	+	+	+
SVE column height adjustment -- electrical	+	+	+
HVS horizontal reach adjustment	only G5/G8	only G5/G8	only G5/G8
SWS quick change tool holder system	+	+	+
SWE quick change tool inserts	+	+	+
SZS optional - fixed collet holder system	+	+	+
SSB security key	only G8/G14/G16	only G8/G14/G16	only G8/G14/G16
MPT integrated manual positioning X-Y-table	+	without interface	+
APT controlled positioning X-Y-table	+	+	-
MTA mechanical depth system	+	+	+
ASL audible signal light	+	-	+
QND serial printer for quality reports	+	-	+
WinPCA3 Data acquisition "screening" software	+	-	+

+ = available / - = not available

... the tap protector —

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AllInOne-Options-ProductOverview

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Thread tapping technology

Spindle feeding system

ZAP

pneumatic **Z-Axis** spindle feeding system

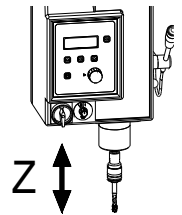
Start functions

AutoStart:

- auto start control function
- cutting force sense to start
- part location tolerance setting (Δ Delta-SZ)

Mounting
Air pressure
Air connection

at microtap or authorized agency
2-8 bar
Hose4 / 6 mm / without service unit 4/6 mm



Free Floating Spindle

Drive unit is in hover situation

- mechanical counter-balance compensation
- low axiale power
- im Betrieb mit **ZAP** wird der Zustellzylinder nach Anschnitt des Werkzeuges automatisch zurueckgesetzt

No lead screw / guidance cartridges

- production of thread independently of rise
- low wear
- no costs and time for changing leadscrew
- no pitch faults through mechanical play
- no broken tap, specially during changing in, the backward running

Control of the ingate strength

- in Z-direction incl. FZ- broached-power
- FZ & SZ- distance-controll (Δ Delta-SZ)

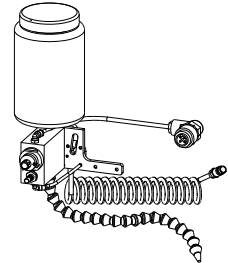


Minimum lubricant coolant systems

MMS

Machine software
fluid amount
fluid bottle
connection
operating pressure
air connection

Minimum – quantity– lubrication unit
solenoid valve 24 volt, pulse and time
controlled by machine software
manually adjustable
1 Liter
24V/2W to tapping machine
4-8 bar
Hose 4/6 mm
Quick clutch (Ø = 12 mm)



MMS-I

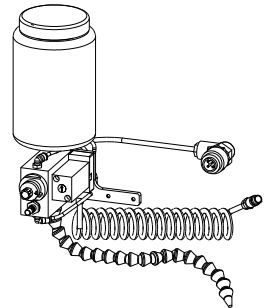
Advantage of pulse control

Controlling
connection
operating pressure
air connection

Pulse control for MMS (adjustable)

several lubricant pulse during one working
process.
Avoidance from tear off the lubricant film in
depth wholes. vermieden.

Controlled by tapping machine
24V/2W to tapping machine
4-8 bar
Hose 4/6 mm
Quick clutch (Ø = 12 mm)



MMS-A

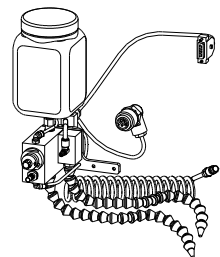
Advantage of blow out pulse

Control
connection
operating pressure
air connection

**Blow out pulse for MMS
(adjustable)**

Removing from dust and chips

solenoid valve 24 volt, pulse controlled by
machine software
24V/2W to tapping machine
4-8 bar
Hose 4/6 mm
Quick clutch (Ø = 12 mm)





Thread tapping technology

Integrated Manual X-Y-Positioning Table

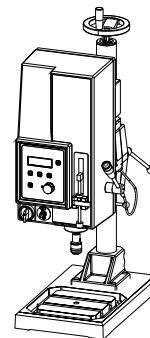
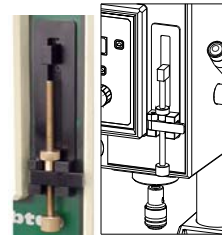
MPT

Application	matrixtap integratad manual positioning table with four croos tables
Recommendation	electro-magnetic locks and integrated control of tapping units working only with automatic spindle feed system ZAP
Table size Range	250 x 600 mm with 8 mm T-nut 180 x 400 mm with microtap II 200 x 400 mm with megatap II / labtap and integrated in our TTTsystem
Maximum work load	50 kg
Connection	230 Volt
Adjustable holding Control	2 clamps / 1 locator I/O-interface



MTA

	mechanical depth stop for use with fixed collet system SZS
Function	mechanical depth stop for an accurate depth within 0,1mm repeatability 0,05
Application	the spindle runs in the programmed direction, right or left
Drilling capacity	in addition to tapping it is possible to use the machine for counter sinking and low production drilling
Area	approximately 2 – 4 mm with square
Recommended	depends on material and application technical advice and evaluation
Mounting	only at microtap GmbH



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Thread tapping technology

Double spindle heads

DSK twintap

Thread sizes
Variable distance
Tool holder
Torque capacity

Double-spindle head / DSK-11/63

adjustable double-spindle head with variable spindle centers for tapping machines

microtap II-G5 / labtap G5 / jobtap G5

M1 – M3 St37-2 / 9sMn28
11 – 63 mm
collet S1502
Mz – max. 110 Ncm per spindle

Thread sizes
Variable distance
Tool holder
Torque capacity

Double-spindle head / DSK-16/90

adjustable double-spindle head with variable spindle centres for tapping machines

megatap II-G8 / labtap G8 / jobtap G8

M2 – M5 St37-2 / 9sMn28
16 – 90 mm
Collet ER 11
Mz – max. 350 Ncm each spindle

Elongation sleeve

through an extending sleeve it is possible to produce two different threads with different pitches or thread sizes

Counter-balance

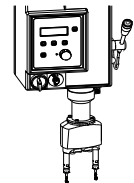
weight compensation for the single and double-spindle is lever controlled

Change over

the thread tapping machines are quickly changed to a two spindle application

Adaptation
Accessories

flange and coupling
2 collets with instep keys



MMS – 2

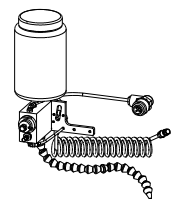
Machine software

Double-Spindel-Lubricant-System

MMS-2 - lubrication fluid dispenser with two nozzles
solenoid valve 24 volt, pulse controlled by machine software
manually adjustable

Fluid amount
Fluid bottle
Connection
Operating pressure
Air connection

1 litre
24V/2W to thread tapping machine
4-6 bar
4/6 mm



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DSK & MMS-2 - Doublespindel



Thread tapping technology

QND printtap

Production document printer

Output	Production document printer / QND Document printer and control software through tapping machine software records parameter set with parameter name from memory – single and total thread counter – with good / bad counter – maximum torque
Error correction	manual counter correcting after accounting for the bad parts
Operation	Total overview and/or documentation of every cut
Mounting Control	when it is needed RS232

Documentation-examples

AutoSave	Documentation of all pertinent parameters: microtap II – G5 / Thread M2 / stainless steel DATE: <i>10th October 2008</i> T= 4 mm N= 2200RPM Mz max = 45 Ncm PROG: THREAD FORMING Mz min = 15 Ncm PARTS TOTAL = 75 THREADS / PART = 2 PARTS GOOD = 73 / BAD = FAULT THREAD = 2 DEPTH NOT REACHED = 2 NAME: <i>microtap</i>
AutoSaveALL	documents every single cut: <i>CUT : Mz-max 18 Ncm</i> <i>CUT : Mz-max 18 Ncm</i> <i>CUT : Mz-max 20 Ncm</i> <i>ERROR: Depth not achieved T= 3.6 mm CUT : Mz-max 18 Ncm</i> <i>ERROR: Depth not reached T= 3.7 mm</i> <i>CUT : Mz-max 20 Ncm</i> <i>CUT : Mz-max 19 Ncm</i> <i>... etc.</i>

Detailed product information

Conditions	see separate product data sheets
Price €	General delivery conditions of microtap GmbH
Payment	excludes sales tax, packing, shipping, and handling
Warranty	Net 30 days
Delivery time	12 months
Alterations	approximately 4 weeks after order
	additional

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QND - Production document printer



Thread tapping technology

Quick- and collet systems

SZS

Sizes
Versions
Special accessories

Collet system / **SZS**
ER 8/ 11/ 16/ 20
with and without square / on request
adapter from SWS – quick change system to
SZS – collet system available



SWS

Holder
Inserts
Qualities

Quick change systems / **SWS0/ 1/ 2/ 3**
complete including holder and Inserts
SFM-00/ 01 /03 / true running
tolerance 0,05 mm
Quick change inserts / **SWE**
to hold cutting tools
Quick tool change / Compensates for part
alignment

SWS0

Quick change system complete with 5 inserts
DIN371/ M0,8-1,8/ M2-2,6/ M3/ M4/ M4,5-6

SWS1

Quick change system complete with 6 inserts
DIN371/ M2/ M3/ M4/ M4,5-6/ M8/ M10

SWS2

Quick change system complete with 7 inserts
DIN371/374/376 M3/ M4/ M4,5-6/ M8/ M10/ M12/
M14

SWS3

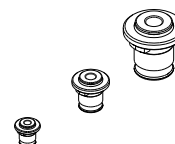
Quick change system complete with 9 inserts
DIN371/ M4/ M4,5-6/ M8/ M10/ M12/ M14/ M16/ M18
/ M20



SWE

Sizes
Inserts
True running tolerance
Quality
Delivery
Special sizes / details

Quick change inserts / **SWE**
SWE-00/ 01/ 03
Metric / ISO / UNF – UNC
0,05 mm, only with selected inserts
of microtap
Quick tool change / self-aligning
most sizes available from stock.
on request (see data sheet **SWE**)



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SZS & SWS & SWE - QuickChange System

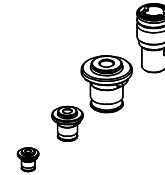
Overview SWS & SWE

Quick change systems and inserts



microtap II & megatap II / labtap / jobtap

SWS & SWE	Quick change systems SWS0/1/2/3
Inserts standards	metrique / ISO / UNF-UNC
Accuracy	0,05 mm, only at selected inserts of microtap
Quality	quick change
Delivery	on request 2-4 weeks special sizes on request
Collet system	on request



Price overview inserts and holder						
Insert Size Ø / □	Tap DIN 371	Tap DIN 374/376	Quick change systems and available inserts / type (Price in EURO)			
			SWS0 5 inserts Size 00 220,00	SWS1 6 inserts Size 01 250,00	SWS2 7 inserts Size 01 280,00	SWS3 9 inserts Size 03 400,00
2,5/2,1	M 1 - 1,8	M 3,5	34,00	40,00*	40,00*	
2,8/2,1	M 2 - 2,6	M 4	34,00	40,00	40,00	
3,5/2,7	M 3	M 4,5 – 5	34,00	40,00	40,00	
4,0/3,0	M 3,5		34,00	40,00	40,00	
4,5/3,4	M 4	M 6	34,00	40,00	40,00	65,00*
5,5/4,3		M 7	34,00	40,00	40,00	
6,0/4,9	M 4,5 - 6	M 8	34,00	40,00	40,00	50,00
7,0/5,5	M 7	M 9 - 10	34,00	40,00	40,00	50,00
8,0/6,2	M 8	M 11	62,00*	40,00	40,00	50,00
9,0/7,0	M 9	M 12		40,00	40,00	50,00
10,0/8,0	M 10		62,00*	40,00	40,00	50,00
11,0/9,0		M 14		40,00	40,00	50,00
12,0/9,0		M 16		45,00*	45,00*	50,00
14,0/11,0		M 18				50,00
16,0/12,0		M 20				50,00
18,0/14,5		M 22 - 26				50,00
20,0/16,0		M27				70,00*
22,0/18,0		M 29 - 32				70,00*
Quick change holder						
SFM 00	B10	DIN 238	110,00			
SFM 01	B12 (B10)	DIN 238		120,00	120,00	
SFM 03	B12	DIN 238				180,00
* Special sizes			Bold printed articles are included in SWS			

SWS Collet-holder-sices.doc

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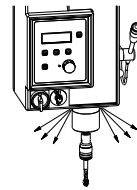
Thread tapping technology

Accessories

LSM

Recommended for
Mounting
Air pressure and connector
System

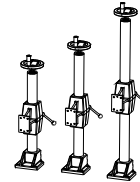
air seal for spindle motor / **LSM**
air seal for spindle motor to protect against
dust and oil mist
- operation of compressed air under
spindle
chip and oil spray rejection
- abrasive material
- corrosive environment
such as welding
- vaporized fluids
easily assembled
4-8 bar - 4/6 mm
standard & gear special system



SHV

Sizes / height
Mounting

column upgrade to different heights /
SHV
600mm / 750mm / 1000mm
easily assembly and exchange



SVE

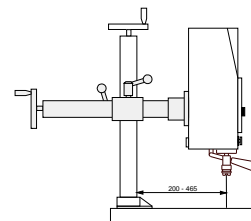
Connection
Control
Mounting

electrical column high adjustment
SVE recommended for 1000mm columns
230 Volt external
cable remote control
to standard columns

HVS

Maximum weight
Maximum adjustment
Mounting
Recommended

horizontal adjustment /
HVS
only for G5 / G8
25 kg
465 mm
on standard columns
load analysis



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LSM & SHV & SVE & HVS - ProductOverview



Thread tapping technology

Accessories

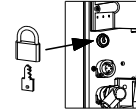
SSB keytap

Quality
Recommended
Mounting
Application

key switch to lock touch screen /
SSB

to protect the parameter set from
changes and from manipulation of
counted parts

order before delivery
only at microtap
to secure machine operator from
changing parameters



ASL signaltap

Quality
Signal beep
Connection

signal light / **ASL**
with electronic interface
a quality error switches on the signal light and tone.
the light flashes and beeps switches off after 2-3 seconds
I/O interface

MLM spottap

Connection
Light

Machine light / **MLM**
with magnetic base
230 Volt external
Halogen 12 V/ 20 W

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SSB & ASL & MLM - ProductOverview