micro**tap**

Thread tapping technology

All-in-One

Product overview

September	2008

Conditions	The terms of German "General delivery conditions for products and services of the electrical industries" are valid for all deliveries. Excludes sales tax, packing, shipping, and handling
Pricing €	net 30 days
Payment terms	payment in advance / on request
Warranty	6 months
Delivery time	approximately 4 - 8 weeks after order
Installation and training	additional
Alterations	additional

microtap **GmbH**
Rotwandweg 4
D - 82024 Taufkirchen / Munich - Germany
Tel +49-89-6128051 / Fax +49-89-6127488
http://www.microtap.de/

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info@microtap.de
AllinOne-ProductOverview.doc

microtap ▼

Thread tapping units
Machines

microtap **– mega**tap **– job**tap

G2 **Thread capacity**
(DIN13, sheet 34 / 1,2 x D)

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

Torque range Mz — 2 - 65 Ncm

Spindle speed range — 150 - 1000 RPM

Thread depth / stroke max. — 40 / 53 mm

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

Spindle B6/ER8 — Tap adapter chuck holder system holder system complete with 5 adapters (1,0 mm to 3,0 mm)
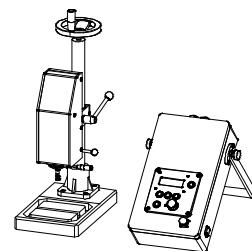
G5 **Thread capacity**
(DIN13, sheet 34 / 1,2 x D)

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

Torque range Mz — 5 - 220 Ncm

Spindle speed range — 250 - 2200 RPM

Thread depth / maximum stroke — 45 / 65 mm

Spindle B10/ 00 — Quick change system SWS0 & 5 inserts DIN371/ M0,8-1,8/ M2-2,6 /M3/ M4/ M4,5-6
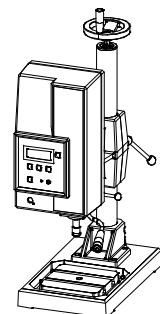
G8 **Thread capacity**
(DIN13, sheet 34 / 1,2 x D)

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

Torque range Mz — 50 - 700 Ncm /from 470 Ncm max. 2060 min-1

Spindle speed range — 300 – 3000 RPM

Thread depth / maximum stroke — 75 / 85 mm

Spindle B12 / 01 — Quick change system SWS1 & 6 inserts DIN371/ M2/ M3/ M4 /M4,5-6/ M8/ M10
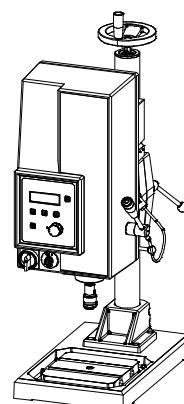
G14 **Thread capacity**
(DIN13, sheet 34 / 1,2 x D)

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

Torque range Mz — 120 - 1680 Ncm / ab 1128 Ncm max. 858 min-1

Spindle speed range — 125 - 1250 min-1

Thread depth / maximum stroke — 75 / 85 mm

Spindle B12 / 02 — Quick change system SWS2 incl. 7 inserts DIN 371M3-M10 /DIN 374/376 M4,5-M14

G16 **Thread capacity**
(DIN13, sheet 34 / 1,2 x D)

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

Torque range Mz — 150 - 2100 Ncm / from 1430 Ncm max. 690 min-1

Spindle speed range — 100 - 1000 RPM

Thread depth / maximum stroke — 75 / 85 mm

Spindle B12 / 03 — Quick change system SWS3 & 9 Inserts (SWS2 G14) DIN371/ M4/ M4,5-6/ M8/ M10/ M12/ M14/ M16/ M18/ M20

microtap

Thread tapping technology

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Production- & laboratory units

Tool machine for "process-controlled-production"
and Laboratory Applications with acquisition PC-Software
WinPCA and interfaces RS232 and 8 bit I/O

labtap II – G8

Application	Tapping-system with comparison-measurements with certified motor & electronic system
Thread capacity DIN13, sheet 34 / 1,2 x D	M2,5 - M8 X5CrNi189 / 1.4435 M2,5 - M10 9sMn28 / 1.0715
Torque range Mz	50 - 700 Ncm / from 470 Ncm max. 2060 min-1
Spindle speed range	300 – 3000 RPM
Colour / paint finish	RAL 1015 bright ivory
Software	**-** 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
WinPCA	- PC-Control- and data acquisition software for comparison with automatic storage of all data and statistics based on torque readings

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

Meanvale / Arithmetic method
The expression is called arithmetic methods of n sizes

$$a_1, a_2 \cdots\cdots, a_n$$

$$\boldsymbol{c}_A = \frac{a_1 + a_2 + \cdots\cdots + a_n}{n} = \frac{1}{n} \sum_{k=1}^{n} a_k$$

For two sizes a and b emerges

$$\boldsymbol{c}_A = \frac{a + b}{2}$$
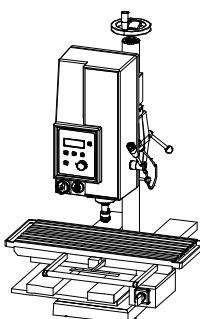
Spindle B12 / 01	Quick change system SWS1 & 6 Inserts DIN371/ M2/ M3/ M4/ M4,5-6/ M8/ M
Testing material	On request / separate data sheet
Delivery / Training	After agreement / on request
www.microtap.de	/Produkte/labtapDaten.htm

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Thread tapping technology
All-in-One

Machine software & functions

Assignment

Machine Types / Stainless Steel	**micro**tap / **mega**tap	**job**tap	**lab**tap
G2 / M0,5 – M2	for very small threads	-	Laboratory-
G5 / M1 – M4	for small threads	jobshop	& automation
G8 / M2,5 – M8	Units with	machines	controlled unit
G14 / M3 – M12	interfaces incl.	without scrap	Incl. statistics
G16 / M4 – M14	quality-protocol	and breakage	through Gauss

Machine Software / Functions	**micro**tap / **mega**tap	**job**tap	**lab**tap
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 option	+	+	+
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 / Titanium chip function	+	+	+
Lubricant control with pulse and timed flow	+	+	+
Further production features			
Program for thread cutting and forming	+	+	+
Program for thread inserts / Ensat / Helicoil / Kato	+	-	+
Program for screw setting & secondary hole (similar reaming)	+	-	+
Continuous motor running for counter-sinking	+	-	+
Serial interface			
RS232 / V24 interface	+	-	+
Printtap **QND** Software for quality printer / RS232	€	-	€
WinPCA - Data acquisition software / RS232	€	-	+
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)	+	-	+

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

Software-Functions & Production features

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microtap

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	**micro**tap / **mega**tap	**job**tap	**lab**tap
ZAP controlled pneumatic feeding system	+	+	+
MMS minimum quantity lubrication unit	+	+	+
DSK twintap double-spindle head adapter	+	+	+
MLM spottap magnetic machine light	+	+	+
LSM cleantap spindle motor air seal	+	+	+
SVH heighttap column upgrade -- manual	+	+	+
SVE column height adjustment -- electrical	+	+	+
HVS horitap horizontal reach adjustment	only G5/G8	only G5/G8	only G5/G8
SWS standard-set quick change tool holder system	+	+	+
SWE standard quick change tool inserts	+	+	+
SZS optional fixed collet holder system	+	+	+
SSB keytap security key	only G8/G14/G16	only G8/G14/G16	only G8/G14/G16
MPT matrixtap manual positioning table	+	without interface	+
APT XY-autotap controlled positioning table	+	+	-
MTA mechanical depth system	+	+	+
ASL signaltap audible signal light	+	-	+
QND printtap serial printer for quality reports	+	-	+
WinPCA Data acquisition software / RS232	+	-	+

+ = available / **-** = not available

… the tap protector —

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microtap

Thread tapping technology

Accessories

ZAP Spindle feeding system

pneumatic **Z-Axis** spindle feeding system / **ZAP**

Start functions	AutoStart**:** **-** auto start control function - cutting force sense to start - part location tolerance setting (ΔDelta-SZ)
Mounting Air pressure Air connection	at microtap or authorized agency 2-8 bar Hose4 / 6 mm / without service unit 4/6 mm

Z ↕
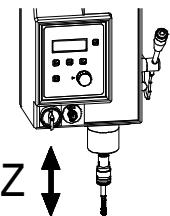
Free Floating Spindle

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

tip ▼

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

micro tap

Accessories

MMS Minimum-Lubricant-Coolant units

Minimum – quantity– lubrication unit
solenoid valve 24 volt, pulse and time

Machine software | controlled by machine software
manually adjustable

fluid amount	1 Liter
fluid bottle	24V/2W to tapping machine
connection	4-8 bar
operating pressure	Hose 4/6 mm
air connection	Quick clutch (Ø = 12 mm)

MMS-I

Pulse control for MMS (adjustable)
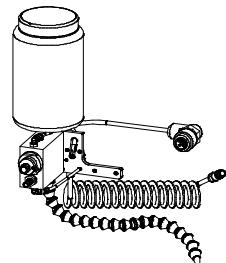
Advantage of pulse control | several lubricant pulse during one working process.
Avoidance from tear off the lubricant film in depth wholes. vermieden.

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

MMS-A

Blow out pulse for MMS
(adjustable)
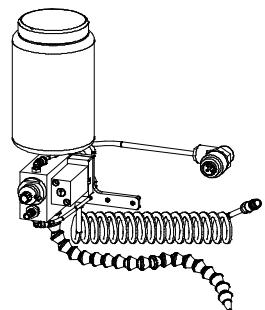
Advantage of blow out pulse | Removing from dust and chips

Control | solenoid valve 24 volt, pulse controlled by machine software

connection	24V/2W to tapping machine
operating pressure	4-8 bar
air connection	Hose 4/6 mm
	Quick clutch (Ø = 12 mm)

microtap

▼

# Accessories

DSK twintap

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

Thread sizes	11 – 63 mm
Variable distance	collet S1502
Tool holder	Mz – max. 110 Ncm per spindle
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
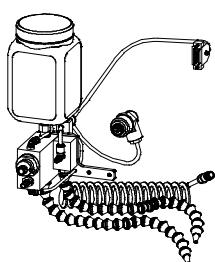
	16 – 90 mm
Thread sizes	Collet ER 11
Variable distance	Mz – max. 350 Ncm each spindle
Tool holder	
Torque capacity	through an extending sleeve it is possible to produce two different threads with different
Elongation sleeve	pitches or thread sizes
	weight compensation for the single and double-spindle is lever controlled
Counter-balance	the thread tapping machines are quickly changed to a two spindle application
Change over	
	flange and coupling
	2 collets with instep keys
Adaptation	
Accessories	
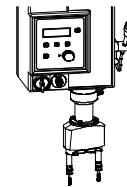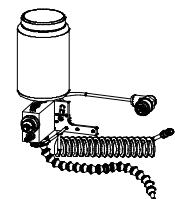
MMS – 2

Double-Spindel-Lubricant-System
MMS-2 - lubrication fluid dispenser
with two nozzles
solenoid valve 24 volt, pulse controlled

|	
Machine software	by machine software
	manually adjustable
Fluid amount	1 litre
Fluid bottle	24V/2W to thread tapping machine
Connection	4-6 bar
Operating pressure	4/6 mm
Air connection	

microtap

Thread tapping technology

Accessories

QND printtap

	Production document printer **/ QND**
	Document printer and control software
	through tapping machine software
Output	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	when it is needed
Control	RS232

Documentation-examples

AutoSave	Documentation of all pertinent parameters:

*micro*tap *II – G5 /* Thread M2 / stainless steel

DATE: *10th October 2004*

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:

AutoSaveALL	documents every single cut:

CUT : Mz-max 18 Ncm
CUT : Mz-max 18 Ncm
CUT : Mz-max 20 Ncm
*ERROR: Depth not achieved T= **3.6** mm CUT : Mz-max 18 Ncm*
*ERROR: Depth not reached T= **3.7** mm*
CUT : Mz-max 20 Ncm
CUT : Mz-max 19 Ncm
... etc.

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

microtap **GmbH,** Rotwandweg 4
D - 82024 Taufkirchen / Munich - Germany
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Thread tapping technology

microtap

Accessories

SZS

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

SWS

Quick change systems **/ SWS**0/ 1/ 2/ 3
complete including holder and Inserts
Holder | **SFM-**00/ 01 /03 / true running tolerance 0,05 mm
Inserts | Quick change inserts **/ SWE** to hold cutting tools
Qualities | 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
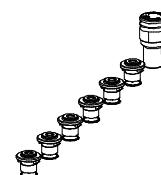
SWS3 | Quick change system complete with 9 inserts
DIN371/ M4/ M4,5-6/ M8/ M10/ M12/ M14/ M16/ M18 / M20

SWE

Quick change inserts / **SWE**
Sizes | **SWE**-00/ 01/ 03
Inserts | Metric / ISO / UNF – UNC
True running tolerance | 0,05 mm, only with selected inserts of microtap
Quality | Quick tool change / self-aligning
Delivery | most sizes available from stock.
Special sizes / details | on request (see data sheet **SWE**)
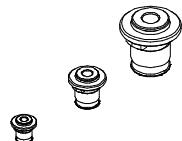
Overview SWS & SWE

Quick change systems and inserts

microtap II & **mega**tap II / **lab**tap / **job**tap

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
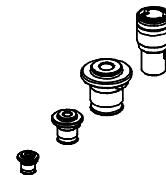
Price overview inserts and holder

Insert Size ∅ / ?	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**		

microtap

Accessories

LSM

air seal for spindle motor / LSM
air seal for spindle motor to protect against
dust and oil mist

|	
Recommended for	- operation of compressed air under spindle
	chip and oil spray rejection
	– abrasive material
	– corrosive environment
	such as welding
	– vaporized fluids
Mounting	easily assembled
Air pressure and connector	4-8 bar - 4/6 mm
System	standard & gear special system
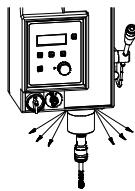
SHV

column upgrade to different heights / SHV

Sizes / height	600mm / 750mm / 1000mm
Mounting	easily assembly and exchange
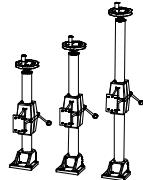
SVE

electrical column high adjustment
SVE recommended for 1000mm columns

Connection	230 Volt external
Control	cable remote control
Mounting	to standard columns

HVS

**horizontal adjustment /
HVS**

Maximum weight	only for G5 / G8
Maximum adjustment	25 kg
Mounting	465 mm
Recommended	on standard columns
	load analysis

LSM & SHV & SVE & HVS - ProductOverview

microtap

Thread tapping technology

Accessories

SSB **key**tap

key switch to lock touch screen **/ SSB**

Quality | to protect the parameter set from changes and from manipulation of counted parts
order before delivery
Recommended | only at microtap
Mounting | to secure machine operator from
Application | changing parameters
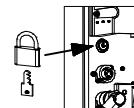
ASL **signal**tap

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

Connection

MLM **spot**tap

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

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Thread tapping technology

Accessories

MPT

matrix**tap**

|	
	Manual positioning table **/ MPT** with roller guides
Application	electro-magnetic locks and integrated control of tapping units
Recommendation	automatic spindle feed system **ZAP**
Table size	250 x 600 mm with 8 mm T-nut
Range	180 x 400 mm with microtap II
	200 x 400 mm with megatap II / labtap II
Maximum work load	50 kg
Connection	230 Volt
Adjustable holding	2 clamps / 1 locator
Control	I/O-interface

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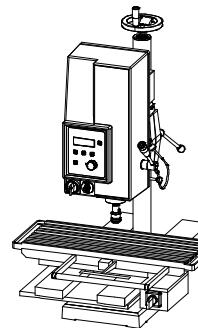
|	
	Mechanical depth stop **/ MTA** for use with fixed collet system
Function	mechanical depth stop for an accurate depth within 0,1mm repeatability 0,05 the spindle runs in the programmed direction, right or left
Application	in addition to tapping it is possible to use the machine for counter sinking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

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