

# MH SERIES

Outstanding performances on carbon steels and alloy steels of medium hardness.

· MHSP - MHSL - MHRZ ·

**Z-PRO**  
*Ultimate Machine Tap Series*



**MHSP**



**MHSL**



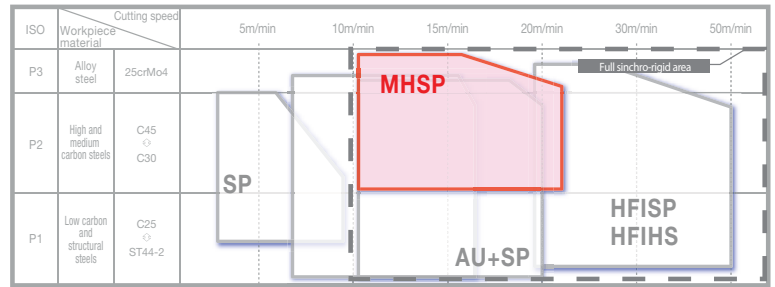
**MHRZ**

# MHSP



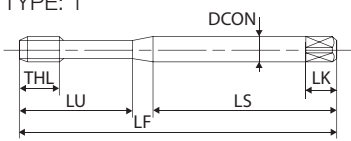
## For medium hardness steels, blind holes

- Longer tool life thanks to HSS-Co (high wear resistance) substrate and to the special coating.
- The BLF design allows smooth chip ejection and avoids cutting edge chipping.

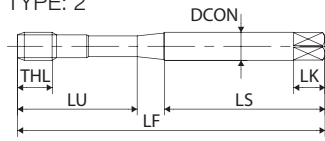


## Dimensions and sizes

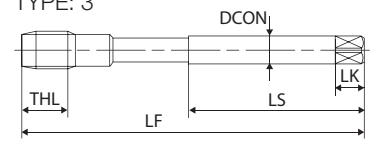
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TYPE: 2



TYPE: 3

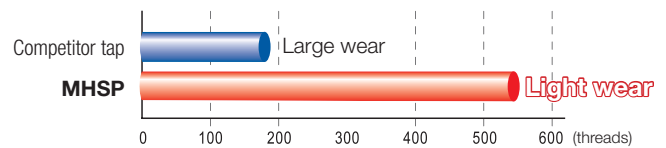


Size	TCTR (Tolerance)	Code	THCHT (Chamfer)	LF (mm)	THL (mm)	LU (mm)	LS (mm)	DCON (mm)	K (mm)	LK (mm)	NOF (No. of flutes)	Type
<b>M</b>												
M8X1.25	ISO2X(6HX)	SD8.0NBOCLJ	2.5P	90	19	-	47	8	6.2	9	3	1
M10X1.5	ISO2X(6HX)	SD010OBOCLJ	2.5P	100	23	-	52	10	8	11	3	1
M12X1.75	ISO2X(6HX)	SG012PBOCLJ	2.5P	110	26	-	56	9	7	10	4	2
M14X2	ISO2X(6HX)	SG014QBOCLJ	2.5P	110	26	-	56	11	9	12	4	2
M16X2	ISO2X(6HX)	SG016QBOCLJ	2.5P	110	26	-	56	12	9	12	4	2
<b>MF</b>												
M10X1.25	ISO2X(6HX)	SM010NBOCLJ	2.5P	100	23	-	51	7	5.5	8	3	3
M10X1	ISO2X(6HX)	SM010MBOCLJ	2.5P	90	19	-	46	7	5.5	8	3	3
M12X1.5	ISO2X(6HX)	SM012OBOCLJ	2.5P	100	21	-	51	9	7	10	4	3
M12X1.25	ISO2X(6HX)	SM012NBOCLJ	2.5P	100	21	-	51	9	7	10	4	3
M14X1.5	ISO2X(6HX)	SM014OBOCLJ	2.5P	100	21	-	51	11	9	12	4	3
M16X1.5	ISO2X(6HX)	SM016OBOCLJ	2.5P	100	21	-	51	12	9	12	4	3

## Process data

Workpiece material	42CrMo4 35HRC
Thread length	12 mm
Cutting speed	15 m/min
Machine	Vertical machining Center
Tapping fluid	Water soluble

Light wear after 550 threads with MHSP

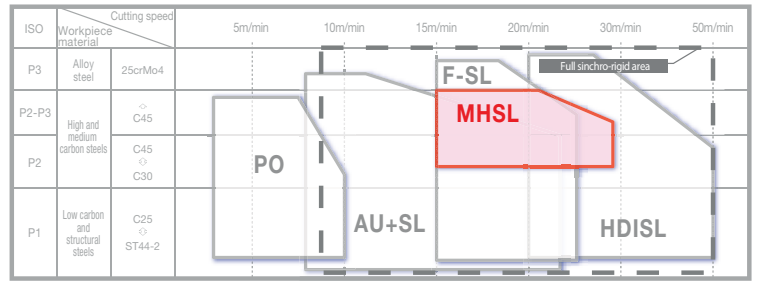


# MHSL



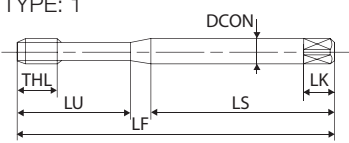
## For medium hardness steels, through holes

- Longer tool life thanks to high carbon HSS (high wear resistance) and to the special coating.
- The special design of the cutting edge produces a smooth chip ejection
- MHSL produces threads with an excellent surface finishing thanks to the specific design of the cutting edge

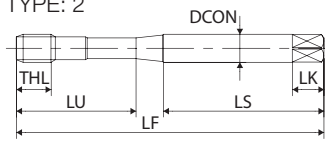


## Dimensions and sizes

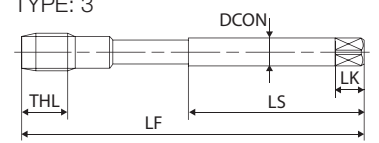
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TYPE: 2



TYPE: 3



Size	TCTR (Tolerance)	Code	THCHT (Chamfer)	LF (mm)	THL (mm)	LU (mm)	LS (mm)	DCON (mm)	K (mm)	LK (mm)	NOF (No. of flutes)	Type
<b>M</b>												
M6X1	ISO2X(6HX)	LD6.0MBFCL5	5P	80	15	30	45	6	4.9	8	3	1
M8X1.25	ISO2X(6HX)	LD8.0NBFL5	5P	90	19	35	47	8	6.2	9	3	2
M10X1.5	ISO2X(6HX)	LD010OBFCL5	5P	100	23	39	52	10	8	11	3	2
M12X1.75	ISO2X(6HX)	LG012PBFCL5	5P	110	26	-	56	9	7	10	4	3
<b>MF</b>												
M10X1.25	ISO2X(6HX)	LM010NBFL5	5P	100	23	-	51	7	5.5	8	3	3
M12X1.5	ISO2X(6HX)	LM012OBFCL5	5P	100	21	-	51	9	7	10	4	3
M12X1.25	ISO2X(6HX)	LM012NBFL7	7P	100	21	-	51	9	7	10	4	3
M14X1.5	ISO2X(6HX)	LM014OBFCL7	7P	100	21	-	51	11	9	12	4	3
M16X1.5	ISO2X(6HX)	LM016OBFCL7	7P	100	21	-	51	12	9	12	4	3

## Process data

### M12x1.25

Workpiece material	C53 (25HRC)
Thread length	13 mm
Cutting speed	30 m/min
Machine	Machining center
Tapping fluid	Water soluble

### Geometry of holes



To improve the chip ejection, MHSL flute geometry is designed to increase the chip removal rate

### Wear after 1239 threads



### Thread finishing

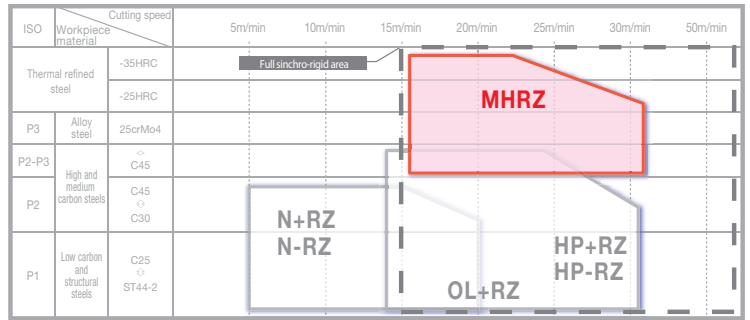


# MHRZ



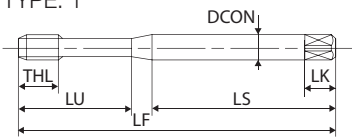
## Roll taps for medium hardness steels

- Very low cutting torque, due to Yamawa proprietary design.
- Longer tool life thanks to HSS-Co (high wear resistance) and to the special coating.
- High performance and consistent life on steels ~35 HRC.
- Reliable process even with water soluble tapping fluid.

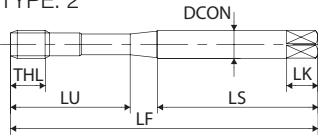


## Dimensions and sizes

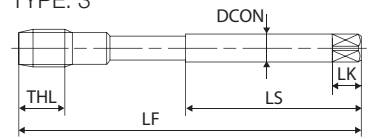
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TYPE: 2



TYPE: 3



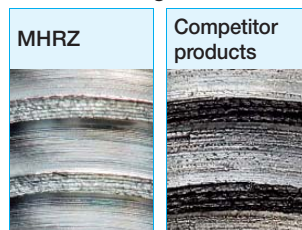
Size	TCTR (Tolerance)	Code	THCHT (Chamfer)	LF (mm)	THL (mm)	LU (mm)	LS (mm)	DCON (mm)	K (mm)	LK (mm)	NOF (No. of flutes)	Type
<b>M</b>												
M6X1	ISO2X(6HX)	RD6.0MBOCTP	4P	80	11	30	45	6	4.9	8	5(5)	1
M6X1	ISO2X(6HX)	RD6.0MBOCTB	2P	80	11	30	45	6	4.9	8	5(5)	1
M8X1.25	ISO2X(6HX)	RD8.0NBOCTP	4P	90	12	35	47	8	6.2	9	6(6)	2
M8X1.25	ISO2X(6HX)	RD8.0NBOCTB	2P	90	12	35	47	8	6.2	9	6(6)	2
M10X1.5	ISO2X(6HX)	RD10.0OBOCTP	4P	100	13	39	52	10	8	11	8(8)	2
M10X1.5	ISO2X(6HX)	RD10.0OBOCTB	2P	100	13	39	52	10	8	11	8(8)	2
M12X1.75	ISO2X(6HX)	RG012PBOCTP	4P	110	15	-	56	9	7	10	8(8)	3
M12X1.75	ISO2X(6HX)	RG012PBOCTB	2P	110	15	-	56	9	7	10	8(8)	3
<b>MF</b>												
M10X1.25	ISO2X(6HX)	RM010NBOCTP	4P	100	13	-	51	7	5.5	8	8(8)	3
M10X1.25	ISO2X(6HX)	RM010NBOCTB	2P	100	13	-	51	7	5.5	8	8(8)	3
M12X1.5	ISO2X(6HX)	RM012OBOCTP	4P	100	15	-	51	9	7	10	8(8)	3
M12X1.5	ISO2X(6HX)	RM012OBOCTB	2P	100	15	-	51	9	7	10	8(8)	3
M12X1.25	ISO2X(6HX)	RM012NBOCTP	4P	100	15	-	51	9	7	10	8(8)	3
M12X1.25	ISO2X(6HX)	RM012NBOCTB	2P	100	15	-	51	9	7	10	8(8)	3
M14X1.5	ISO2X(6HX)	RM014OBOCTP	4P	100	14	-	51	11	9	12	8(8)	3
M14X1.5	ISO2X(6HX)	RM014OBOCTB	2P	100	14	-	51	11	9	12	8(8)	3
M16X1.5	ISO2X(6HX)	RM016OBOCTP	4P	100	18	-	51	12	9	12	8(8)	3
M16X1.5	ISO2X(6HX)	RM016OBOCTB	2P	100	18	-	51	12	9	12	8(8)	3
M18X1.5	ISO2X(6HX)	RM018OBOCTP	4P	110	20	-	56	14	11	14	8(8)	3
M18X1.5	ISO2X(6HX)	RM018OBOCTB	2P	110	20	-	56	14	11	14	8(8)	3
M20X1.5	ISO2X(6HX)	RM020OBOCTP	4P	125	20	-	64	16	12	15	8(8)	3
M20X1.5	ISO2X(6HX)	RM020OBOCTB	2P	125	20	-	64	16	12	15	8(8)	3

## Process data

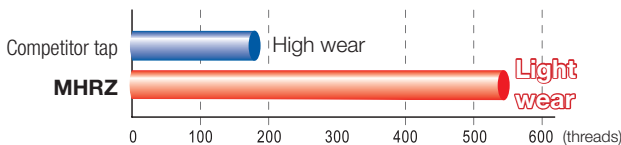
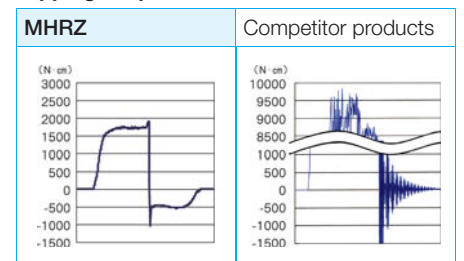
M12x1.25

Workpiece material	42CrMo4 (thermal refined)/35HRC
Cutting speed	20 m/min
Bored hole	φ11.3 mm
Thread length	18 mm (through hole)
Machine	Machining center (synchro)
Water soluble	Emulsione
No. of threads	800 threads (still running)

MHRZ finishing



Tapping torque



Think threads with  
**YAMAWA**

**TERASKONTTORI**  
K-D GROUP

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