



ISO 513 PURCHASING GUIDE

11/2022

“Reliable screw threads” is
YAMAWA’s theme



 Think threads with
YAMAWA

ISO 513 Purchasing Guide

The ISO 513 Purchasing Guide presents only a selection of the typologies and sizes (M3÷M24) of the most commonly used taps. Please always refer to Yamawa European Catalogue YEU21 for a view of the complete range.

SELECT THE MOST SUITABLE TOOL DEPENDING ON MATERIAL TO BE MACHINED (ISO 513 CLASSIFICATION)



SELECT THE TAP SERIES

Select the most suitable "TAP SERIES" according to the user's needs (small or large batches, more or less modern machinery, focus either on the cost or performances of the tool).

Z PRO Series

High performance solution for various kinds of workpiece materials and applications. Z-Pro series represent the outstanding result of almost 100 years of expertise in combining high quality raw materials and coatings with innovative cutting geometries. Suitable for medium or large batches, designed for high performance on modern machine, long tool life (focus on cost/thread).



HAND TAPS Series

Products designed for hand and drilling machine application (HT hand sets and I series).



GENERAL PURPOSE Series

The ideal solution for small batches on various kind of workpiece materials.



MULTI PURPOSE Series

High performance solution for various kind of work-piece materials. Suitable for those users looking for performance (tool life, speed), reliability and flexibility.



MATERIAL SPECIFIC Series

In this product family, each cutting geometry is designed to deliver the best performance (tool life and reliability) on a specific workpiece material.



HIGH SPEED Series

In this product family, specific geometries, substrates and coatings allow long tool life even at Fast and Ultra Fast speed. Suitable for those customers looking for cost saving through cycle-time reduction.



CHOOSE YOUR TOOL AMONG A WIDE RANGE OF SOLUTIONS

MATERIAL SUBSTRATE

<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">HSS-E</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> ZHTGPMPMS </div>	<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">HSS-Co</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> ZMSHS </div>	<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">HSS-P</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> ZMS </div>	<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">HF CARBIDE</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> MSHS </div>
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SURFACE TREATMENT

<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">OX</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> ZGPMS </div>	<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">NI</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> ZMS </div>	<div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">COATING</div> <div style="display: flex; justify-content: space-around; font-size: 8px; margin-top: 5px;"> ZGPMPHS </div>
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FLUTE TYPE

<p>SP</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="font-size: 8px; margin-right: 5px;">Z</div> <div style="font-size: 8px; margin-right: 5px;">GP</div> <div style="font-size: 8px; margin-right: 5px;">MP</div> <div style="font-size: 8px; margin-right: 5px;">MS</div> <div style="font-size: 8px;">HS</div> </div>	<p>LHSP</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="font-size: 8px; margin-right: 5px;">MP</div> <div style="font-size: 8px; margin-right: 5px;">MS</div> <div style="font-size: 8px;">HS</div> </div>
<p>LOSP</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="font-size: 8px; margin-right: 5px;">MS</div> <div style="font-size: 8px;">HS</div> </div>	<p>ST</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="font-size: 8px; margin-right: 5px;">Z</div> <div style="font-size: 8px; margin-right: 5px;">HT</div> <div style="font-size: 8px; margin-right: 5px;">MS</div> <div style="font-size: 8px;">HS</div> </div>
<p>PO</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="font-size: 8px; margin-right: 5px;">Z</div> <div style="font-size: 8px; margin-right: 5px;">GP</div> <div style="font-size: 8px;">MS</div> </div>	<p>ROLL</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="font-size: 8px; margin-right: 5px;">Z</div> <div style="font-size: 8px; margin-right: 5px;">GP</div> <div style="font-size: 8px;">MP</div> </div>

CUTTING GEOMETRY

Con-eccentric thread relief

t=margin width
s=thread relief

Z

HT

GP

MP

MS

Eccentric thread relief

s=thread relief

SYNCHRO









Z

MS

HS


ISO P ISO M ISO K ISO N ISO S ISO H

 Z-PRO

VUSP	VUSP E(1.5P)	VIPO	HVSP	MHSP	MHSL	MHRZ
HSS-P COATING	HSS-P COATING	HSS-P COATING	HSS-E OX	HSS-Co COATING	HSS-Co COATING	HSS-Co COATING
						
						
						

TCTR (tolerance)
THCHT (chamfer)

ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)
2.5P	1.5P	5P	2.5P	2.5P	5P-7P	2P-4P
80	82	210	88	92	194	350
M	M	M	M	M	M	M
DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371

BORED HOLE AND DRILL SIZE				
Cutting		Forming		
Drill Ø (mm)	Hole Ø (mm)	Max Ø (mm)	Min Ø (mm)	M
2.50	2.56	2.83	2.76	3x0.5
3.30	3.38	3.75	3.66	4x0.7
4.20	4.28	4.70	4.60	5x0.8
5.00	5.09	5.61	5.50	6x1
6.80	6.85	7.52	7.38	8x1.25
8.50	8.60	9.41	9.26	10x1.5

				M	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376
10.30	10.36	11.30	11.13	12x1.75	€ 77,55 3101101088	€ 77,55 3103101088	€ 75,88 3102101088	€ 41,34 SG012PSEEXJ	€ 77,27 SG012PBOCLJ	€ 81,38 LG012PBFCL5	€ 124,52 RG012PBOCTB
12.00	12.12	13.19	13.00	14x2	€ 93,62 3101101100	€ 93,62 3103101100	€ 93,62 3102101100	€ 56,71 SG014QSEEXJ	€ 111,49 SG014QBOCLJ		
14.00	14.12	15.19	15.00	16x2	€ 131,01 3101101114	€ 131,01 3103101114	€ 131,01 3102101114	€ 72,01 SG016QSEEXJ	€ 143,16 SG016QBOCLJ		
15.50	15.63			18x2.5				€ 94,05 SG018RTEEXJ			
17.50	17.63			20x2.5				€ 116,03 SG020RTEEXJ			
19.50	19.63			22x2.5				€ 148,33 SG022RTEEXJ			
21.00	21.13			24x3				€ 185,64 SG024STEEXJ			

















MATERIALS		HARDNESS	Vc (m/min)								
P1	Free cutting steel and structural steel	< 500 N/mm ²	★ 10÷25	★ 10÷25	★ 10÷30	★ 3÷8					
P2	Carbon steel and low alloy steel	500 ÷ 700 N/mm ²	★ 10÷25	★ 10÷25	★ 10÷30	★ 3÷8	★ 10÷30	★ 10÷30	★ 10÷30	★ 10÷30	★ 10÷30
P3	Medium alloy steel and heat treated steel	600 ÷ 800 N/mm ²	★ 10÷25	★ 10÷25	★ 10÷30	★ 3÷8	★ 10÷25	★ 10÷25	★ 10÷25	★ 10÷30	★ 10÷30
P4	High alloy steel	800 ÷ 1000 N/mm ²	★ 10÷20	★ 10÷20	★ 10÷25	☆ 3÷8	★ 10÷20	★ 10÷20	★ 10÷20	★ 10÷30	★ 10÷30
P5	Tool steel	900 ÷ 1200 N/mm ²					☆ 10÷15	☆ 10÷15			
P6	High tensile strength steel	900 ÷ 1200 N/mm ²									
P7	Ferritic - Martensitic stainless steel		★ 5÷15	★ 5÷15	★ 5÷15	★ 3÷8			☆ 10÷20		
P8	PH stainless steel										

★ 1st choice ☆ suitable

OTHER TYPES AVAILABLE							
M	81	83	211	89	93	195	351
MF	81	83	211	89	93	195	351
UNC/UNF				90			
G(BSP)							

HT Hand Taps	GP General Purpose					MP Multi Purpose			MS Material Specific			
6110	SP	SP-BLF V	PO	PO V	R-DV	AU+SP	AU+SL	HP+RZ HP-RZ	PH-SP	PM-SP	PM-PO	
HSS-E	HSS-E	HSS-E COATING	HSS-E	HSS-E COATING	HSS-E COATING	HSS-E COATING	HSS-E COATING	HSS-P COATING	HSS-E OX	HSS-P	HSS-P	
					Forming	Version Up	Version Up	Forming	≤35 HRC	≤45 HRC	≤45 HRC	
ISO2(6H)	ISO2(6H)	ISO2(6H)	ISO2(6H)	ISO2(6H)	ISO2X(6HX)	ISO2(6H)	ISO2X(6HX)	ISO2X(6HX)	ISO2(6H)	ISO2X(6HX)	ISO2X(6HX)	
V-M-F	2.5P	2.5P	5P	5P	2P	2.5P	5P	2P	3P	2.75P	5.5P	
498	94	112	212	220	354	120	196	358	124	126	222	
DIN 352	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	
€ 34,85 61103.05	€ 19,53 SD3.0GANEB	€ 29,54 96473.0TI	€ 18,96 PD3.0GANEB	€ 26,69 96303.0TI	€ 39,56 93533.0BTI	€ 45,37 SE3.0GANEV	€ 45,37 LE3.0GBNEV	€ 57,45 RE3.0GBFPTB	€ 27,20 SD3.0GAEEEX	€ 28,92 SD3.0GBDPB	€ 25,23 PD3.0GBDPB	
€ 34,85 61104.05	€ 19,53 SD4.0IANEB	€ 30,08 96474.0TI	€ 18,96 PD4.0IANEB	€ 27,24 96304.0TI	€ 40,11 93534.0BTI	€ 47,32 SE4.0IANEV	€ 47,32 LE4.0IBNEV	€ 61,79 RE4.0IBFPTB	€ 27,20 SD4.0IAEEEX	€ 28,92 SD4.0IBDPB	€ 25,23 PD4.0IBDPB	
€ 35,90 61105.05	€ 20,09 SD5.0KANEB	€ 30,83 96475.0TI	€ 19,59 PD5.0KANEB	€ 27,98 96305.0TI	€ 41,46 93535.0BTI	€ 47,62 SE5.0KANEV	€ 47,62 LE5.0KBNEV	€ 66,29 RE5.0KBFPTB	€ 28,00 SD5.0KAEEEX	€ 29,40 SD5.0KBDPB	€ 26,25 PD5.0KBDPB	
€ 36,75 61106.05	€ 20,09 SD6.0MANEB	€ 30,83 96476.0TI	€ 19,59 PD6.0MANEB	€ 27,98 96306.0TI	€ 41,46 93536.0BTI	€ 47,62 SE6.0MANEV	€ 47,62 LE6.0MBNEV	€ 66,29 RE6.0MBFPTB	€ 28,00 SD6.0MAEEEX	€ 29,62 SD6.0MBDPB	€ 26,25 PD6.0MBDPB	
€ 43,65 61108.05	€ 24,31 SD8.0NANEB	€ 36,61 96478.0TI	€ 23,70 PD8.0NANEB	€ 33,42 96308.0TI	€ 49,52 93538.0BTI	€ 50,06 SE8.0NANEV	€ 50,04 LE8.0NBNEV	€ 82,32 RE8.0NBFPPTB	€ 34,07 SD8.0NAEEEX	€ 35,27 SD8.0NBDPB	€ 31,06 PD8.0NBDPB	
€ 55,35 61100105	€ 28,98 SD0100ANEB	€ 44,63 9647010TI	€ 28,46 PD0100ANEB	€ 40,66 9630010TI	€ 55,98 9353010BTI	€ 60,85 SE0100ANEV	€ 60,85 LE0100BNEV	€ 93,86 RE0100BFPPTB	€ 40,91 SD0100AEEEX	€ 42,09 SD0100BDPB	€ 42,43 PD0100BDPB	
DIN 352	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	
€ 69,00 61100125	€ 38,39 SG012PANEB	€ 56,78 9747012TI	€ 37,46 PG012PANEB	€ 52,97 9730012TI	€ 72,39 9353012BTI	€ 79,34 SH012PANEB	€ 79,34 LH012PBNEV	€ 120,22 RG012PBFPPTB	€ 53,29 SG012PAEEEX	€ 49,59 SG012PBDPB	€ 48,44 PG012PBDPB	
€ 87,80 61100145	€ 46,25 SG014QANEB	€ 70,52 9747014TI	€ 45,25 PG014QANEB	€ 63,67 9730014TI	€ 91,31 9353014BTI	€ 100,79 SH014QANEB	€ 100,79 LH014QBNEV	€ 166,57 RG014QBFPPTB	€ 63,98 SG014QAEEEX	€ 59,62 SG014QBDPB	€ 58,30 PG014QBDPB	
€ 109,25 61100165	€ 58,61 SG016QANEB	€ 85,31 9747016TI	€ 57,12 PG016QANEB	€ 79,61 9730016TI	€ 115,46 9353016BTI	€ 141,08 SH016QANEB	€ 141,08 LH016QBNEV	€ 157,23 RG016QBFPPTB	€ 80,85 SG016QAEEEX	€ 75,27 SG016QBDPB	€ 73,46 PG016QBDPB	
€ 147,50 61100185	€ 77,63 SG018RANEB	€ 110,96 9747018TI	€ 72,27 PG018RANEB	€ 99,81 9730018TI	€ 175,53 9353018BTI	€ 175,53 SH018RANEB	€ 175,53 LH018RBNEV	€ 109,64 RG018RAEEEX	€ 109,64 SG018RAEEEX	€ 94,23 SG018RBDPB	€ 91,86 PG018RBDPB	
€ 166,30 61100205	€ 87,68 SG020RANEB	€ 128,12 9747020TI	€ 85,69 PG020RANEB	€ 119,88 9730020TI	€ 227,29 9353020BTI	€ 227,29 SH020RANEB	€ 227,29 LH020RBNEV	€ 123,97 RG020RAEEEX	€ 123,97 SG020RAEEEX	€ 111,09 SG020RBDPB	€ 108,44 PG020RBDPB	
	€ 111,77 SG022RANEB	€ 158,38 9747022TI	€ 104,09 PG022RANEB	€ 142,45 9730022TI				€ 157,92 RG022RAEEEX	€ 157,92 SG022RAEEEX	€ 135,12 SG022RBDPB	€ 131,81 PG022RBDPB	
€ 236,65 61100245	€ 120,26 SG024SANEB	€ 184,84 9747024TI	€ 117,39 PG024SANEB	€ 173,54 9730024TI				€ 169,84 RG024SAEEEX	€ 169,84 SG024SAEEEX	€ 153,08 SG024SBDPB	€ 149,28 PG024SBDPB	
Vc (m/min)												
★	☆ 5÷10	★ 10÷20	☆ 5÷10	★ 10÷20	★ 10÷20	★ 10÷20	★ 10÷20	★ 15÷30				
★	★ 5÷10	★ 10÷20	★ 5÷10	★ 10÷20	★ 10÷20	★ 10÷20	★ 10÷20	★ 15÷30				
★	☆ 5÷10	★ 10÷20	☆ 5÷10	★ 10÷20		★ 10÷20	★ 10÷20	★ 15÷25	☆ 5÷10	☆ 2÷10	★ 2÷10	
☆	☆ 5÷8	★ 10÷15	☆ 5÷8	★ 10÷15		★ 10÷20	★ 10÷20	★ 15÷25	★ 2÷7	★ 2÷7	★ 2÷7	
									★ ≤5	★ 2÷7	★ 2÷7	
		☆ 6÷12		☆ 6÷12	☆ 8÷12	★ 5÷12	★ 5÷12	★ 10÷25		★ 2÷5	★ 2÷5	
499	95	113	213	221	355	121	197	359	125	127	223	
	96	115 (SP V)	214	221		121	197	359	125	127	223	
	97		215									
502 (6412)	98	115 (SP V)	216	221	355	84 (AUSP)			125			

ISO P ISO M ISO K ISO N ISO S ISO H

MS Material Specific				HS High Speed		
SP-VA	PO-VA	ZEN-B	ZEN-P	HFIHS	HFISP	HDISL
HSS-E OX	HSS-E OX	HSS-P OX	HSS-P NX	HSS-Co COATING	HSS-Co COATING	HSS-Co COATING
						
						
						

TCTR (tolerance)
THCHT (chamfer)

BORED HOLE AND DRILL SIZE				M	132	226	142	230	147	148	203
Drill Ø (mm)	Hole Ø (mm)	Max Ø (mm)	Forming Min Ø (mm)		DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371
2.50	2.56	2.83	2.76	3x0.5	€ 21,22 SD3.0GAGEX	€ 20,67 PD3.0GBGEX	€ 41,76 SD3.0GBJPX	€ 41,97 PD3.0GBJPW			
3.30	3.38	3.75	3.66	4x0.7	€ 21,22 SD4.0IAGEX	€ 20,67 PD4.0IBGEX	€ 41,76 SD4.0IBJPX	€ 41,97 PD4.0IBJPW			
4.20	4.28	4.70	4.60	5x0.8	€ 21,88 SD5.0KAGEX	€ 21,51 PDS.0KBGEX	€ 43,18 SD5.0KBJPX	€ 43,18 PDS.0KBJPW			
5.00	5.09	5.61	5.50	6x1	€ 22,09 SD6.0MAGEX	€ 21,72 PD6.0MBGEX	€ 43,18 SD6.0MBJPX	€ 43,18 PD6.0MBJPW	€ 59,51 SY6.0MBEDTZ	€ 57,30 SY6.0MBEDTHZ	€ 59,51 LY6.0MBEDTLZ
6.80	6.85	7.52	7.38	8x1.25	€ 26,71 SD8.0NAGEX	€ 26,02 PD8.0NBGEX	€ 53,93 SD8.0NBJPX	€ 53,93 PD8.0NBJPW	€ 77,39 SY8.0NBEDTZ	€ 77,39 SY8.0NBEDTHZ	€ 77,39 LY8.0NBEDTLZ
8.50	8.60	9.41	9.26	10x1.5	€ 31,95 SD10.0OAGEX	€ 31,14 PD10.0OBGEX	€ 64,85 SD10.0OJPX	€ 63,98 PD10.0OJPW	€ 97,91 SY10.0OEDTZ	€ 97,91 SY10.0OEDTHZ	€ 97,91 LY10.0OEDTLZ
				M	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376
10.30	10.36	11.30	11.13	12x1.75	€ 41,13 SG012PAGEX	€ 40,19 PG012PBGEX	€ 84,19 SG012PBJPX	€ 84,19 PG012PBJPW	€ 135,86 SY012PBEDTZ	€ 135,86 SY012PBEDTHZ	€ 135,86 LY012PBEDTLZ
12.00	12.12	13.19	13.00	14x2	€ 49,42 SG014QAGEX	€ 48,36 PG014QBGEX	€ 106,29 SG014QBJPX	€ 106,29 PG014QBJPW	€ 189,67 OHFBZ010	€ 196,27 OHFBZ006	€ 196,27 TCYLZ004
14.00	14.12	15.19	15.00	16x2	€ 62,47 SG016QAGEX	€ 60,90 PG016QBGEX	€ 128,45 SG016QBJPX	€ 134,49 PG016QBJPW	€ 246,53 OHFBZ011	€ 255,31 OFFBZ004	€ 255,31 SFYLZ005
15.50	15.63			18x2.5	€ 78,13 SG018RAGEX	€ 76,19 PG018RBGEX	€ 170,23 SG018RBJPX				
17.50	17.63			20x2.5	€ 92,17 SG020RAGEX	€ 89,99 PG020RBGEX	€ 201,43 SG020RBJPX	€ 201,43 PG020RBJPW			€ 530,24 UJYLZ004
19.50	19.63			22x2.5	€ 112,08 SG022RAGEX	€ 109,33 PG022RBGEX					
21.00	21.13			24x3	€ 127,00 SG024SAGEX	€ 123,87 PG024SBGEX	€ 263,56 SG024SBJPX	€ 276,18 PG024SBJPW			
MATERIALS				HARDNESS	Vc (m/min)						
P1	Free cutting steel and structural steel			< 500 N/mm ²		★ ≤10			★ 20÷50	★ 20÷50	★ 20÷50
P2	Carbon steel and low alloy steel			500 ÷ 700 N/mm ²	★ ≤10	★ ≤10			★ 20÷50	★ 20÷50	★ 20÷50
P3	Medium alloy steel and heat treated steel			600 ÷ 800 N/mm ²	★ ≤10	★ ≤10	★ 5÷15	★ 5÷15	★ 20÷30	★ 20÷30	★ 20÷30
P4	High alloy steel			800 ÷ 1000 N/mm ²	☆ ≤10	☆ ≤10	★ 5÷15	★ 5÷15	★ 20÷30	★ 20÷30	★ 20÷30
P5	Tool steel			900 ÷ 1200 N/mm ²			☆ 5÷10	☆ 5÷10	☆ 15÷25	☆ 15÷25	☆ 15÷25
P6	High tensile strength steel			900 ÷ 1200 N/mm ²							
P7	Ferritic - Martensitic stainless steel				★ ≤10	★ ≤10	★ 5÷15	★ 5÷15	☆ 15÷30	☆ 15÷30	☆ 15÷30
P8	PH stainless steel						★ 4÷8	★ 4÷8			

★ 1st choice ☆ suitable

OTHER TYPES AVAILABLE						
M	133	227	142	230	147	203
MF	133	227	143	231	147	203
UNC/UNF	134	227	143	231		
G(BSP)	135	228				

STAINLESS STEEL

ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
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Z-PRO				GP General Purpose	MP Multi Purpose	
VUSP	VUSP E(1.5P)	VUPO	HVSP	SP-BLF V	PO V	AU+SP
HSS-P COATING	HSS-P COATING	HSS-P COATING	HSS-E OX	HSS-E COATING	HSS-E COATING	HSS-E COATING

TCTR (tolerance)
THCHT (chamfer)

BORED HOLE AND DRILL SIZE				M	80	82	210	88	112	220	120						
Cutting Drill Ø (mm)	Hole Ø (mm)	Forming Max Ø (mm)	Min Ø (mm)		DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371						
2.50	2.56	2.83	2.76	3x0.5	€ 42,33 3101101035	€ 42,33 3103101035	€ 41,03 3102101035		€ 29,54 96473.0TI	€ 26,69 96303.0TI	€ 45,37 SE3.0GANEV						
3.30	3.38	3.75	3.66	4x0.7	€ 44,13 3101101042	€ 44,13 3103101042	€ 42,78 3102101042		€ 30,08 96474.0TI	€ 27,24 96304.0TI	€ 47,32 SE4.0IANEV						
4.20	4.28	4.70	4.60	5x0.8	€ 44,43 3101101049	€ 44,43 3103101049	€ 43,07 3102101049		€ 30,83 96475.0TI	€ 27,98 96305.0TI	€ 47,62 SE5.0KANEV						
5.00	5.09	5.61	5.50	6x1	€ 44,43 3101101055	€ 44,43 3103101055	€ 43,07 3102101055		€ 30,83 96476.0TI	€ 27,98 96306.0TI	€ 47,62 SE6.0MANEV						
6.80	6.85	7.52	7.38	8x1.25	€ 45,45 3101101064	€ 45,45 3103101064	€ 44,48 3102101064		€ 36,61 96478.0TI	€ 33,42 96308.0TI	€ 50,06 SE8.0NANEV						
8.50	8.60	9.41	9.26	10x1.5	€ 59,50 3101101078	€ 59,50 3103101078	€ 58,23 3102101078		€ 44,63 9647010TI	€ 40,66 9630010TI	€ 60,85 SE0100ANEV						
				M	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376						
10.30	10.36	11.30	11.13	12x1.75	€ 77,55 3101101088	€ 77,55 3103101088	€ 75,88 3102101088	€ 41,34 SG012PSEEXJ	€ 56,78 9747012TI	€ 52,97 9730012TI	€ 79,34 SH012PANEV						
12.00	12.12	13.19	13.00	14x2	€ 93,62 3101101100	€ 93,62 3103101100	€ 93,62 3102101100	€ 56,71 SG014QSEEXJ	€ 70,52 9747014TI	€ 63,67 9730014TI	€ 100,79 SH014QANEV						
14.00	14.12	15.19	15.00	16x2	€ 131,01 3101101114	€ 131,01 3103101114	€ 131,01 3102101114	€ 72,01 SG016QSEEXJ	€ 85,31 9747016TI	€ 79,61 9730016TI	€ 141,08 SH016QANEV						
15.50	15.63			18x2.5				€ 94,05 SG018RTEEXJ	€ 110,96 9747018TI	€ 99,81 9730018TI	€ 175,53 SH018RANEV						
17.50	17.63			20x2.5				€ 116,03 SG020RTEEXJ	€ 128,12 9747020TI	€ 119,88 9730020TI	€ 227,29 SH020RANEV						
19.50	19.63			22x2.5				€ 148,33 SG022RTEEXJ	€ 158,38 9747022TI	€ 142,45 9730022TI							
21.00	21.13			24x3				€ 185,64 SG024STEEEXJ	€ 184,84 9747024TI	€ 173,54 9730024TI							
MATERIALS				HARDNESS	Vc (m/min)												
M1	Austenitic stainless steel (good machinability)			★	5÷15	★	5÷15	★	5÷15	★	3÷8	☆	6÷12	☆	6÷12	★	5÷12
M2	Austenitic stainless steel (medium machinability) and Duplex			☆	5÷10	☆	5÷10	☆	5÷10	★	3÷8			☆	5÷10	★	5÷10
M3	Super austenitic stainless steel and super Duplex																
OTHER TYPES AVAILABLE																	
M					81	83	211	89	113	221	121						
MF					81	83	211	89	115 (SP V)	221	121						
UNC/UNF								90									
G(BSP)									115 (SP V)	221	84 (AUSP)						

★ 1st choice ☆ suitable

MP Multi Purpose		MS Material Specific						
AU+SL	HP+RZ HP-RZ	SP+VA	SP-VA	SU2-SP	SL+VA	PO-VA	ZEN-B	ZEN-P
HSS-E COATING	HSS-P COATING	HSS-E OX	HSS-E OX	HSS-E OX	HSS-E OX	HSS-E OX	HSS-P OX	HSS-P NX
								
Version Up	Version Up	Rullare	Version Up			Version Up		
								
								
ISO2X(6HX)	ISO2X(6HX)	ISO2(6H)	ISO2(6H)	ISO2(6H)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)
5P	2P	2.5P	2.5P	2.5P	5P	4.5P	3P	4.5P
196	358	130	132	138	199	226	142	230
DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371
€ 45,37 LE3.0GBNEV	€ 57,45 RE3.0GBFPTB	€ 23,44 SE3.0GAGEX	€ 21,22 SD3.0GAGEX	€ 25,21 SD3.0GAGEXJ	€ 23,44 LE3.0GBGEX	€ 20,67 PD3.0GBGEX	€ 41,76 SD3.0GBJPX	€ 41,97 PD3.0GBJPW
€ 47,32 LE4.0IBNEV	€ 61,79 RE4.0IBFPTB	€ 23,71 SE4.0IAGEX	€ 21,22 SD4.0IAGEX	€ 25,21 SD4.0IAGEXJ	€ 23,71 LE4.0IBGEX	€ 20,67 PD4.0IBGEX	€ 41,76 SD4.0IBJPX	€ 41,97 PD4.0IBJPW
€ 47,62 LE5.0KBNEV	€ 66,29 RE5.0KBFPPTB	€ 24,10 SE5.0KAGEX	€ 21,88 SD5.0KAGEX	€ 26,21 SD5.0KAGEXJ	€ 24,10 LE5.0KBGEX	€ 21,51 PD5.0KBGEX	€ 43,18 SD5.0KBJPX	€ 43,18 PD5.0KBJPW
€ 47,62 LE6.0MBNEV	€ 66,29 RE6.0MBFPPTB	€ 24,28 SE6.0MAGEX	€ 22,09 SD6.0MAGEX	€ 26,21 SD6.0MAGEXJ	€ 24,28 LZ6.0MBGEX	€ 21,72 PD6.0MBGEX	€ 43,18 SD6.0MBJPX	€ 43,18 PD6.0MBJPW
€ 50,04 LE8.0NBNEV	€ 82,32 RE8.0NBFPTB	€ 29,25 SE8.0NAGEX	€ 26,71 SD8.0NAGEX	€ 32,36 SD8.0NAGEXJ	€ 29,25 LZ8.0NBGEX	€ 26,02 PD8.0NBGEX	€ 53,93 SD8.0NBJPX	€ 53,93 PD8.0NBJPW
€ 60,85 LE0100BNEV	€ 93,86 RD0100BFPTB	€ 34,93 SZ0100AGEX	€ 31,95 SD0100AGEX	€ 38,67 SD0100AGEXJ	€ 34,93 LZ0100BGEX	€ 31,14 PD0100BGEX	€ 64,85 SD0100BJPX	€ 63,98 PD0100BJPW
DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376
€ 79,34 LH012PBNEV	€ 120,22 RG012PBFPTB	€ 46,67 SZ012PAGEX	€ 41,13 SG012PAGEX	€ 48,37 SG012PAGEXJ	€ 46,67 LZ012PBGEX	€ 40,19 PG012PBGEX	€ 84,19 SG012PBJPX	€ 84,19 PG012PBJPW
€ 100,79 LH014QBNEV	€ 166,57 RG014QBFPTB		€ 49,42 SG014QAGEX	€ 60,93 SG014QAGEXJ		€ 48,36 PG014QBGEX	€ 106,29 SG014QBJPX	€ 106,29 PG014QBJPW
€ 141,08 LH016QBNEV	€ 157,23 RG016QBFPTB		€ 62,47 SG016QAGEX	€ 73,30 SG016QAGEXJ		€ 60,90 PG016QBGEX	€ 128,45 SG016QBJPX	€ 134,49 PG016QBJPW
€ 175,53 LH018RBNEV			€ 78,13 SG018RAGEX	€ 99,11 SG018RAGEXJ		€ 76,19 PG018RBGEX	€ 170,23 SG018RBJPX	€ 170,23 PG018RBJPW
€ 227,29 LH020RBNEV			€ 92,17 SG020RAGEX	€ 111,67 SG020RAGEXJ		€ 89,99 PG020RBGEX	€ 201,43 SG020RBJPX	€ 201,43 PG020RBJPW
			€ 112,08 SG022RAGEX	€ 142,26 SG022RAGEXJ		€ 109,33 PG022RBGEX		
			€ 127,00 SG024SAGEX	€ 153,90 SG024SAGEXJ		€ 123,87 PG024SBGEX	€ 263,56 SG024SBJPX	€ 276,18 PG024SBJPW
★ 5÷12	★ 10÷25	★ ≤10	★ ≤10	☆ 5÷15	★ 5÷15	★ ≤10	★ 5÷15	★ 5÷15
★ 5÷10	★ 10÷25			★ 5÷15	☆ 5÷10	☆ ≤10	★ 5÷15	★ 5÷15
				★ 5÷12			★ 4÷8	★ 4÷8
197	359	131	133	139	199	227	142	230
197	359		133			227	143	231
			134			227	143	231
			135	139		228		

CAST IRON

ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
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Z-PRO			HT Hand Taps	MS Material Specific	HS High Speed	
GGST	GGST CH	GGST CH E(1.5P)	6110	GG-HT	CT FC	HFISP
HSS-E COATING	HSS-E COATING	HSS-E COATING	HSS-E	HSS-E NI	HF CARBIDE	HSS-Co COATING

TCTR (tolerance)
THCHT (chamfer)










ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2(6H)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)
2.5P	2.5P	1.5P	V-M-F	2.5P	2.5P	2.5P

BORED HOLE AND DRILL SIZE				M	264	266	268	498	278	394	148
Drill Ø (mm)	Cutting Hole Ø (mm)	Forming Max Ø (mm)	Forming Min Ø (mm)								
2.50	2.56			3x0.5	€ 29,57 3104101035			€ 34,85 61103.05	€ 20,48 TD3.0GBAENC	€ 149,81 36263.0	
3.30	3.38			4x0.7	€ 30,07 3104101042			€ 34,85 61104.05	€ 20,48 TD4.0IBAENC	€ 158,27 36264.0	
4.20	4.28			5x0.8	€ 30,95 3104101049			€ 35,90 61105.05	€ 21,31 TD5.0KBAENC	€ 165,78 36265.0	
5.00	5.09			6x1	€ 30,95 3104101055	€ 44,24 3205101055	€ 44,24 3206101055	€ 36,75 61106.05	€ 21,31 TD6.0MBAENC	€ 179,01 36266.0	€ 57,30 SY6.0MBEDTHZ
6.80	6.85			8x1.25	€ 37,87 3104101064	€ 53,49 3205101064	€ 53,49 3206101064	€ 43,65 61108.05	€ 25,78 TD8.0NBAENC	€ 232,70 36268.0	€ 77,39 SY8.0NBEDTHZ
8.50	8.60			10x1.5	€ 43,72 3104101078	€ 62,35 3205101078	€ 62,35 3206101078	€ 55,35 61100105	€ 30,85 TD10.0BAENC	€ 289,22 3626010	€ 97,91 SY10.0BEDTHZ
				M	DIN 371	DIN 371	DIN 371	DIN 352	DIN 371	DIN 371	DIN 371
10.30	10.36			12x1.75	€ 58,42 3104101088	€ 79,26 3205101088	€ 82,34 3206101088	€ 69,00 61100125	€ 39,81 TG012PBAENC	€ 373,05 3726012	€ 135,86 SY012PBEDTHZ
12.00	12.12			14x2	€ 72,78 3104101100	€ 99,30 3205101100		€ 87,80 61100145	€ 50,14 TG014QBAENC	€ 377,78 3726014	€ 196,27 OHFBZ006
14.00	14.12			16x2	€ 87,65 3104101114	€ 119,56 3205101114		€ 109,25 61100165	€ 60,34 TG016QBAENC	€ 459,72 3726016	€ 255,31 OFFBZ004
15.50	15.63			18x2.5	€ 109,32 3104101128	€ 155,27 3205101128		€ 147,50 61100185	€ 79,13 TG018RBAENC		
17.50	17.63			20x2.5	€ 126,47 3104101141	€ 184,96 3205101141		€ 166,30 61100205	€ 89,15 TG020RBAENC		
19.50	19.63			22x2.5	€ 154,88 3104101156				€ 113,44 TG022RBAENC		
21.00	21.13			24x3	€ 190,39 3104101167			€ 236,65 61100245	€ 128,53 TG024SBAENC		
				M	DIN 376	DIN 376	DIN 376	DIN 352	DIN 376	DIN 376	DIN 376

MATERIALS		HARDNESS	Vc (m/min)							
K1	Grey cast iron	150 ÷ 250 HB	★ 5÷20	★ 10÷30	★ 10÷30	☆	★ 5÷10	★ 5÷15	★ 20÷40	
K2	Nodular cast iron	150 ÷ 350 HB	★ 5÷20	★ 10÷30	★ 10÷30	☆	★ 5÷10	★ 5÷15	★ 20÷40	
K3	Austenitic cast iron	120 ÷ 260 HB	★ ≤10	★ ≤15	★ ≤15		★ ≤5	☆ ≤10		
K4	ADI cast iron	250 ÷ 500 HB	☆ ≤10	☆ ≤10	☆ ≤10		☆ ≤5	☆ ≤8		

★ 1st choice ☆ suitable

OTHER TYPES AVAILABLE							
M	265	267	269	499	279	395	148
MF	265	267	269		279		148
UNC/UNF							
G(BSP)	265			502 (6412)	279	395	

HS High Speed		
HDISL	HFICT-B	HFICT-P
HSS-Co COATING	HF CARBIDE COATING	HF CARBIDE COATING
		
		
		
ISO2X(6HX)	P Class	P class
5P	2.5P	4P
203	422	423
DIN 371	JIS	JIS
€ 59,51 LY6.0MBEDTLZ	€ 303,58 HFICTBR6.0M	€ 303,58 HFICTPR6.0M
€ 77,39 LY8.0NBEDTLZ	€ 390,71 HFICTBR8.0N	€ 390,71 HFICTPR8.0N
€ 97,91 LY0100BEDTLZ	€ 542,50 HFICTBR0100	€ 542,50 HFICTPR0100
DIN 376	JIS	JIS
€ 135,86 LY012PBEDTLZ	€ 711,35 HFICTBR012P	€ 711,35 HFICTPR012P
€ 196,27 TCYLZ004		
€ 255,31 SFYLZ005		
€ 530,24 UJYLZ004		
Vc (m/min)		
★ 20÷40	★ 25÷50	★ 25÷50
★ 20÷40	★ 25÷50	★ 25÷50
203	422	423
203	422	423

NON FERROUS MATERIALS

ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
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Z-PRO				HT Hand Taps	GP General Purpose	
VUSP	VUSP E(1.5P)	VIUPO	MHRZ	6110	SP	SP-BLF V
HSS-P COATING	HSS-P COATING	HSS-P COATING	HSS-Co COATING	HSS-E	HSS-E	HSS-E COATING
			Forming			

TCTR (tolerance)
THCHT (chamfer)

BORED HOLE AND DRILL SIZE				M	Z-PRO										
Cutting		Forming			80	82	210	350	498	94	112				
Drill Ø (mm)	Hole Ø (mm)	Max Ø (mm)	Min Ø (mm)		DIN 371	DIN 371	DIN 371	DIN 371	DIN 352	DIN 371	DIN 371				
2.50	2.56	2.83	2.76	3x0.5	€ 42,33 3101101035	€ 42,33 3103101035	€ 41,03 3102101035		€ 34,85 61103.05	€ 19,53 SD3.0GANEB	€ 29,54 96473.0TI				
3.30	3.38	3.75	3.66	4x0.7	€ 44,13 3101101042	€ 44,13 3103101042	€ 42,78 3102101042		€ 34,85 61104.05	€ 19,53 SD4.0IANEB	€ 30,08 96474.0TI				
4.20	4.28	4.70	4.60	5x0.8	€ 44,43 3101101049	€ 44,43 3103101049	€ 43,07 3102101049		€ 35,90 61105.05	€ 20,09 SD5.0KANEB	€ 30,83 96475.0TI				
5.00	5.09	5.61	5.50	6x1	€ 44,43 3101101055	€ 44,43 3103101055	€ 43,07 3102101055	€ 68,96 RD6.0MBOCTB	€ 36,75 61106.05	€ 20,09 SD6.0MANEB	€ 30,83 96476.0TI				
6.80	6.85	7.52	7.38	8x1.25	€ 45,45 3101101064	€ 45,45 3103101064	€ 44,48 3102101064	€ 81,02 RD8.0NBOCTB	€ 43,65 61108.05	€ 24,31 SD8.0NANEB	€ 36,61 96478.0TI				
8.50	8.60	9.41	9.26	10x1.5	€ 59,50 3101101078	€ 59,50 3103101078	€ 58,23 3102101078	€ 94,38 RD10.0BOCTB	€ 55,35 61100.05	€ 28,98 SD10.0QANEB	€ 44,63 96470.0TI				
				M	DIN 376	DIN 376	DIN 376	DIN 376	DIN 352	DIN 376	DIN 376				
10.30	10.36	11.30	11.13	12x1.75	€ 77,55 3101101088	€ 77,55 3103101088	€ 75,88 3102101088	€ 124,52 RG012PBOCTB	€ 69,00 61100.12S	€ 38,39 SG012PANEB	€ 56,78 97470.12TI				
12.00	12.12	13.19	13.00	14x2	€ 93,62 3101101100	€ 93,62 3103101100	€ 93,62 3102101100		€ 87,80 61100.14S	€ 46,25 SG014QANEB	€ 70,52 97470.14TI				
14.00	14.12	15.19	15.00	16x2	€ 131,01 3101101114	€ 131,01 3103101114	€ 131,01 3102101114		€ 109,25 61100.16S	€ 58,61 SG016QANEB	€ 85,31 97470.16TI				
15.50	15.63			18x2.5					€ 147,50 61100.18S	€ 77,63 SG018RANEB	€ 110,96 97470.18TI				
17.50	17.63			20x2.5					€ 166,30 61100.20S	€ 87,68 SG020RANEB	€ 128,12 97470.20TI				
19.50	19.63			22x2.5						€ 111,77 SG022RANEB	€ 158,38 97470.22TI				
21.00	21.13			24x3					€ 236,65 61100.24S	€ 120,26 SG024SANEB	€ 184,84 97470.24TI				
MATERIALS				HARDNESS	Vc (m/min)										
N1	Aluminium alloys ≤ 12% Si			★	10÷30	★	10÷30	★	10÷40	☆	10÷30	☆	5÷10	☆	10÷20
N2	Aluminium alloy > 12% Si and Aluminium-Magnesium			★	10÷30	★	10÷30	★	10÷40	☆	10÷30	☆	5÷10	☆	10÷20
N3	Copper alloy			☆	10÷25	☆	10÷25	☆	10÷25	☆		☆	5÷10	☆	10÷20
N4	Brass alloy and Bronze alloy			☆	10÷20	☆	10÷20	☆	10÷20	☆		☆	5÷10	☆	10÷20

★ 1st choice ☆ suitable

OTHER TYPES AVAILABLE

M	81	83	211	351	499	95	113
MF	81	83	211	351		96	115 (SP V)
UNC/UNF						97	
G(BSP)					502 (6412)	98	115 (SP V)

GP General Purpose			MP Multi Purpose			MS Material Specific			HS High Speed		
PO	PO V	R-D V	AU+SP	AU+SL	HP+RZ HP-RZ	AL+SP AL-SP	LA-HT	CT-LA	HFAHS	HFASP	HDISL
HSS-E	HSS-E COATING	HSS-E COATING	HSS-E COATING	HSS-E COATING	HSS-P COATING	HSS-E NI	HSS-E NI	HF CARBIDE	HSS-Co COATING	HSS-Co COATING	HSS-Co COATING
		 Forming	 Version Up	 Version Up	 Forming						
ISO2(6H)	ISO2(6H)	ISO2X(6HX)	ISO2(6H)	ISO2X(6HX)	ISO2X(6HX)	ISO2(6H)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)	ISO2X(6HX)
5P	5P	2P	2.5P	5P	2P	2.5P	5P	3P	2.5P	2.5P	5P
212	220	354	120	196	358	140	284	396	149	150	203
DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371	DIN 371
€ 18,96 PD3.0GANEV	€ 26,69 96303.0TI	€ 39,56 93533.0BTI	€ 45,37 SE3.0GANEV	€ 45,37 LE3.0GBNEV	€ 57,45 RE3.0GBFPTB	€ 23,33 SE3.0GALEN	€ 22,80 TD3.0GBLEN5	€ 149,81 TD3.0GBLWB3			
€ 18,96 PD4.0IANEV	€ 27,24 96304.0TI	€ 40,11 93534.0BTI	€ 47,32 SE4.0IANEV	€ 47,32 LE4.0IBNEV	€ 61,79 RE4.0IBFPTB	€ 23,33 SE4.0IALEN	€ 22,80 TD4.0IBLEN5	€ 158,27 TD4.0IBLWB3			
€ 19,59 PD5.0KANEV	€ 27,98 96305.0TI	€ 41,46 93535.0BTI	€ 47,62 SE5.0KANEV	€ 47,62 LE5.0KBNEV	€ 66,29 RE5.0KBFPTB	€ 24,04 SE5.0KALEN	€ 23,50 TD5.0KBLEN5	€ 165,78 TD5.0KBLWB3			
€ 19,59 PD6.0MANEV	€ 27,98 96306.0TI	€ 41,46 93536.0BTI	€ 47,62 SE6.0MANEV	€ 47,62 LE6.0MBNEV	€ 66,29 RE6.0MBFPTB	€ 24,04 SE6.0MALEN	€ 23,50 TD6.0MBLEN5	€ 179,01 TD6.0MBLWB3	€ 59,51 SY6.0MBLDTZ	€ 59,51 SY6.0MBLDTHZ	€ 59,51 LY6.0MBEDTLZ
€ 23,70 PD8.0NANEV	€ 33,42 96308.0TI	€ 49,52 93538.0BTI	€ 50,06 SE8.0NANEV	€ 50,04 LE8.0NBNEV	€ 82,32 RE8.0NBFPPTB	€ 28,86 SE8.0NALEN	€ 29,54 TD8.0NBLEN5	€ 232,70 TD8.0KBLWB3	€ 77,39 SY8.0NBBLDTZ	€ 77,39 SY8.0NBBLDTHZ	€ 77,39 LY8.0NBEDTLZ
€ 28,46 PD0100ANEV	€ 40,66 9630010TI	€ 55,98 9353010BTI	€ 60,85 SE0100ANEV	€ 60,85 LE0100BNEV	€ 93,86 RE0100BFPPTB	€ 34,52 SE0100ALEN	€ 35,66 TD0100BLEN5	€ 289,22 TD0100BBLWB3	€ 97,91 SY0100BBLDTZ	€ 97,91 SY0100BBLDTHZ	€ 97,91 LY0100BEDTLZ
DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376	DIN 376
€ 37,46 PG012PANEV	€ 52,97 9730012TI	€ 72,39 9353012BTI	€ 79,34 SH012PANEV	€ 79,34 LH012PBNEV	€ 120,22 RG012PBFPPTB	€ 49,25 SG012PALEN	€ 47,21 TG012PBLEN5	€ 373,05 TG012PBLWB3	€ 135,86 SY012PBLDTZ	€ 135,86 SY012PBLDTHZ	€ 135,86 LY012PBEDTLZ
€ 45,25 PG014QANEV	€ 63,67 9730014TI	€ 91,31 9353014BTI	€ 100,79 SH014QANEV	€ 100,79 LH014QBNEV	€ 166,57 RG014QBFPPTB	€ 59,97 SG014QALEN	€ 56,93 TG014QBLEN5				€ 196,27 TCYLZ004
€ 57,12 PG016QANEV	€ 79,61 9730016TI	€ 115,46 9353016BTI	€ 141,08 SH016QANEV	€ 141,08 LH016QBNEV	€ 157,23 RG016QBFPPTB	€ 75,84 SG016QALEN	€ 72,04 TG016QBLEN5				€ 255,31 SFYLZ005
€ 72,27 PG018RANEV	€ 99,81 9730018TI		€ 175,53 SH018RANEV	€ 175,53 LH018RBNEV							
€ 85,69 PG020RANEV	€ 119,88 9730020TI		€ 227,29 SH020RANEV	€ 227,29 LH020RBNEV							€ 530,24 UJYLZ004
€ 104,09 PG022RANEV	€ 142,45 9730022TI										
€ 117,39 PG024SANEV	€ 173,54 9730024TI										
Vc (m/min)											
☆ 5÷10	☆ 10÷20	☆ 10÷20	★ 20÷30	★ 20÷30	☆ 10÷45	★ 10÷25	★ 5÷15	★ 10÷20	★ 30÷100	★ 30÷100	★ 30÷100
☆ 5÷10	☆ 10÷20	☆ 10÷20	★ 20÷30	★ 20÷30	☆ 10÷45	★ 10÷25	★ 5÷15	★ 10÷20	★ 30÷100	★ 30÷100	★ 30÷100
☆ 5÷10	☆ 10÷20	☆ 10÷20	☆ 10÷20	☆ 15÷25		★ 10÷25	★ 5÷10				
☆ 5÷10	☆ 10÷20	☆ 10÷20	☆ 10÷20	☆ 15÷25		★ 10÷25	★ 5÷10	★ 10÷20	☆ 30÷60	☆ 30÷60	☆ 30÷60
213	221	355	121	197	359	141	285	397	149	151	203
214	221		121	197	359					151	203
215											
216	221	355	84 (AUSP)								

HEAT RESISTANT SUPER ALLOYS

ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
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MS Material Specific							
ZEN-B		ZEN-P		ZET-B	ZET-P		
HSS-P	OX	HSS-P	NX	HSS-P	NI		
HRSA (Ni)		HRSA (Ni)		HRSA (Ti)	HRSA (Ti)		
ISO2X(6HX)		ISO2X(6HX)		ISO2X(6HX)	ISO2X(6HX)		
3P		4.5P		3P	5P		
TCTR (tolerance)		TCTR (tolerance)		TCTR (tolerance)	TCTR (tolerance)		
THCHT (chamfer)		THCHT (chamfer)		THCHT (chamfer)	THCHT (chamfer)		
142		230		144	200		
M		M		M	M		
DIN 371		DIN 371		DIN 371	DIN 371		
€ 41,76 SD3.0GBJPX		€ 41,97 PD3.0GBJPW		€ 43,79 SD3.0GBIPN	€ 43,79 LD3.0GBIPN		
€ 41,76 SD4.0IBJPX		€ 41,97 PD4.0IBJPW		€ 41,76 SD4.0IBIPN	€ 43,79 LD4.0IBIPN		
€ 43,18 SD5.0KBJPX		€ 43,18 PD5.0KBJPW		€ 43,18 SD5.0KBIPN	€ 45,22 LD5.0KBIPN		
€ 43,18 SD6.0MBJPX		€ 43,18 PD6.0MBJPW		€ 43,18 SD6.0MBIPN	€ 43,18 LD6.0MBIPN		
€ 53,93 SD8.0NBJPX		€ 53,93 PD8.0NBJPW		€ 53,93 SD8.0NBIPN	€ 53,93 LD8.0NBIPN		
€ 64,85 SD0100BJPX		€ 63,98 PD0100BJPW		€ 64,85 SD0100BIPN	€ 68,07 LD0100BIPN		
M		M		M	M		
DIN 376		DIN 376		DIN 376	DIN 376		
€ 84,19 SG012PBJPX		€ 84,19 PG012PBJPW		€ 84,19 SG012PBIPN	€ 84,98 LG012PBIPN		
€ 106,29 SG014QBJPX		€ 106,29 PG014QBJPW		€ 101,48 SG014QBIPN	€ 107,29 LG014QBIPN		
€ 128,45 SG016QBJPX		€ 134,49 PG016QBJPW		€ 128,45 SG016QBIPN	€ 135,76 LG016QBIPN		
€ 170,23 SG018RBJPX		€ 170,23 PG018RBJPW		€ 170,23 SG018RBIPN			
€ 201,43 SG020RBJPX		€ 201,43 PG020RBJPW		€ 192,27 SG020RBIPN			
22x2.5							
€ 263,56 SG024SBJPX		€ 276,18 PG024SBJPW		€ 263,56 SG024SBIPN			
MATERIALS				HARDNESS		Vc (m/min)	
S1	Heat resistant super alloys (HRSA) Ni base (good machinability)			< 25 HRC	★ 5÷10	★ 5÷10	☆ 5÷10
S2	Heat resistant super alloys (HRSA) Ni base (medium machinability)			25 ÷ 35 HRC	★ 5÷10	★ 5÷10	☆ 5÷10
S3	Heat resistant super alloys (HRSA) Ni base (low machinability)			35 ÷ 45 HRC		☆ 3÷6	★ 3÷6
S5	High Titanium base alloy (medium machinability)					★ 5÷10	★ 5÷10
OTHER TYPES AVAILABLE							
M				142	230	144	201
MF				143	231	145	201
UNC/UNF				143	231	145	
G(BSP)							

BORED HOLE AND DRILL SIZE				M	DIN 371	DIN 371	DIN 371	DIN 371
Cutting		Forming						
Drill Ø (mm)	Hole Ø (mm)	Max Ø (mm)	Min Ø (mm)					
2.50	2.56			3x0.5	€ 41,76 SD3.0GBJPX	€ 41,97 PD3.0GBJPW	€ 43,79 SD3.0GBIPN	€ 43,79 LD3.0GBIPN
3.30	3.38			4x0.7	€ 41,76 SD4.0IBJPX	€ 41,97 PD4.0IBJPW	€ 41,76 SD4.0IBIPN	€ 43,79 LD4.0IBIPN
4.20	4.28			5x0.8	€ 43,18 SD5.0KBJPX	€ 43,18 PD5.0KBJPW	€ 43,18 SD5.0KBIPN	€ 45,22 LD5.0KBIPN
5.00	5.09			6x1	€ 43,18 SD6.0MBJPX	€ 43,18 PD6.0MBJPW	€ 43,18 SD6.0MBIPN	€ 43,18 LD6.0MBIPN
6.80	6.85			8x1.25	€ 53,93 SD8.0NBJPX	€ 53,93 PD8.0NBJPW	€ 53,93 SD8.0NBIPN	€ 53,93 LD8.0NBIPN
8.50	8.60			10x1.5	€ 64,85 SD0100BJPX	€ 63,98 PD0100BJPW	€ 64,85 SD0100BIPN	€ 68,07 LD0100BIPN

10.30	10.36			12x1.75	€ 84,19 SG012PBJPX	€ 84,19 PG012PBJPW	€ 84,19 SG012PBIPN	€ 84,98 LG012PBIPN
12.00	12.12			14x2	€ 106,29 SG014QBJPX	€ 106,29 PG014QBJPW	€ 101,48 SG014QBIPN	€ 107,29 LG014QBIPN
14.00	14.12			16x2	€ 128,45 SG016QBJPX	€ 134,49 PG016QBJPW	€ 128,45 SG016QBIPN	€ 135,76 LG016QBIPN
15.50	15.63			18x2.5	€ 170,23 SG018RBJPX	€ 170,23 PG018RBJPW	€ 170,23 SG018RBIPN	
17.50	17.63			20x2.5	€ 201,43 SG020RBJPX	€ 201,43 PG020RBJPW	€ 192,27 SG020RBIPN	
19.50	19.63			22x2.5				
21.00	21.13			24x3	€ 263,56 SG024SBJPX	€ 276,18 PG024SBJPW	€ 263,56 SG024SBIPN	

MATERIALS				HARDNESS		Vc (m/min)	
S1	Heat resistant super alloys (HRSA) Ni base (good machinability)			< 25 HRC	★ 5÷10	★ 5÷10	☆ 5÷10
S2	Heat resistant super alloys (HRSA) Ni base (medium machinability)			25 ÷ 35 HRC	★ 5÷10	★ 5÷10	☆ 5÷10
S3	Heat resistant super alloys (HRSA) Ni base (low machinability)			35 ÷ 45 HRC		☆ 3÷6	★ 3÷6
S5	High Titanium base alloy (medium machinability)					★ 5÷10	★ 5÷10

★ 1st choice ☆ suitable

HARDENED MATERIALS

ISO P	ISO M	ISO K	ISO N	ISO S	ISO H
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MS Material Specific

UH-CT

HF CARBIDE COATING



ISO2X(6HX)

5P

TCTR (tolerance)
THCHT (chamfer)

BORED HOLE AND DRILL SIZE				M	400
Cutting		Forming			
Drill Ø (mm)	Hole Ø (mm)	Max Ø (mm)	Min Ø (mm)		
2.56	2.6			3x0.5	€ 198,97 TD3.0GBBWAS
3.4	3.42			4x0.7	€ 210,12 TD4.0IBBWAS
4.3	4.33			5x0.8	€ 221,46 TD5.0KBBWAS
5.1	5.15			6x1	€ 239,67 TD6.0MBBWAS
6.9	6.91			8x1.25	€ 267,49 TD8.0NBWAS
8.6	8.65			10x1.5	€ 315,99 TD10.0BBWAS
				M	DIN 376
10.4	10.42			12x1.75	€ 416,07 TG012PBBWAS
12.1	12.15			14x2	€ 593,51 TG014QBBWAS
14.1	14.15			16x2	€ 718,79 TG016QBBWAS
15.6	15.65			18x2.5	€ 847,85 TG018RBBWAS
17.6	17.65			20x2.5	€ 979,74 TG020RBBWAS
19.50	19.63			22x2.5	
21.00	21.13			24x3	
MATERIALS				HARDNESS	Vc (m/min)
H1	Hardened steel			45 ÷ 55 HRC	★ ≤5
H2	Hardened steel			55 ÷ 63 HRC	★ ≤5

★ 1st choice ☆ suitable

OTHER TYPES AVAILABLE	
M	401
MF	
UNC/UNF	
G(BSP)	



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