



SALES

 sales@belz.cc

 0086 - 411 - 86530360

TECHNICAL

 info@belz.cc

 0086 - 411 - 86530360

ADD: NO.16-1, 3rd Shuangming Road DTD Park, Dalian, China

BELZ INC.

BELZ



www.belz.cc
2025



BELZ INC.



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2025

Company profile

Founded in 1918 in Sutz, Switzerland, Belz has evolved nearly a century to become a leading powerhouse in manufacturing first-class taps and drill bits.

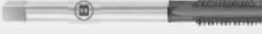
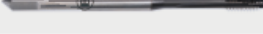
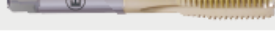
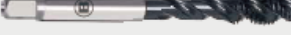
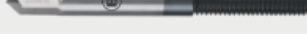
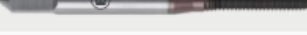
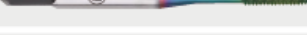
In 2014, the company was integrated into YunDa International and relocated to Dalian, China. With YunDa's continuous investment in R&D and equipments, Belz entered a new stage of development. It now offers increasingly optimized round tool solutions with enhanced product and service capabilities for global users.

Global Layout





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ILLUSTRATION

DIN

R Line	DR-G-SFT	General Purpose & Stable Working Conditions SFT -HSSE
	DR-G-POT	General Purpose & Stable Working Conditions POT -HSSE
	DR-G-STT	General Purpose & Stable Working Conditions STT -HSSE
E Line	DE-G-SFT	High Efficiency & Stable Working Conditions SFT -HSSE
	DE-G-POT	High Efficiency & Stable Working Conditions POT -HSSE
	DE-G-STT	High Efficiency & Stable Working Conditions STT -HSSE
P Line	DP-G-SFT	High Performance & General Purpose SFT - HSS PM
	DP-G-POT	High Performance & General Purpose POT - HSS PM
	DP-G-STT	High Performance & General Purpose STT - HSS PM
	DP-G-NRT	High Performance & General Purpose NRT - HSS PM

JIS

R Line	JR-GX-SFT	General Purpose & Unstable Working Conditions SFT - HSSE
	JR-GX-POT	General Purpose & Unstable Working Conditions POT - HSSE
	JR-GZ--SFT	General Purpose & Stable/ Unstable Working Conditions SFT - HSSE
	JR-GZ-POT	General Purpose & Stable / Unstable Working Conditions POT - HSSE
	JR-GZ-STT	General Purpose & Stable / Unstable Working Conditions STT - HSSE
E Line	JE-G-SFT	High Efficiency & Stable Working Conditions SFT -HSSE
	JE-G-POT	High Efficiency & Stable Working Conditions POT - HSSE
P Line	JP-G-SFT	High Performance & General Purpose SFT -HSS PM
	JP-G-POT	High Performance & General Purpose POT - HSS PM
	JP-G-STT	High Performance for cast iron STT - HSS PM
	JP-P-NRT	High Performance for steel NRT - HSS PM
	JP-M-NRT	High Performance for stainless steel NRT - HSS PM
	JP-N-NRT	High Performance for non ferrous alloysteel NRT - HSSPM

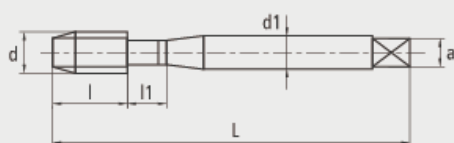
S Line	DS...	Special & Carbide
	JS...	

Stock

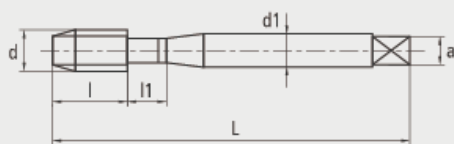
• Available ○ Production to order

Performance

• Excellent ○ Good

DIN R Line**SFT****General Purpose &
Stable Working Conditions****HSS-E****HSS-E****HSS-E****Norm****DIN 371****DIN 374****DIN 376****Coating****Nitriding****Nitriding****Nitriding****C/2.5****C/2.5****C/2.5**

L	l	l1	DIN371		DIN374		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
45	8		2.8	2.1					M2	0.4	6H	1.6	825690 ●		
50	9		2.8	2.1					M2.5	0.45	6H	2.05	825828 ●		
56	6	11	3.5	2.7					M3	0.5	6H	2.5	825925 ●		
63	7.5	13	4.5	3.4					M4	0.5	6H	3.5	884875 ●		
63	7.5	13	4.5	3.4					M4	0.7	6H	3.3	826034 ●		
70	7.5	16	6	4.9					M5	0.5	6H	4.5	884883 ●		
70	9	16	6	4.9					M5	0.8	6H	4.2	826085 ●		
80	8	18	6	4.9					M6	0.75	6H	5.25	884891 ●		
80	11	18	6	4.9					M6	1	6H	5	826123 ●		
80	10	21	8	6.2					M8	0.75	6H	7.25	884905 ●		
90	10	21	8	6.2					M8	1	6H	7	884913 ●		
90	13	21	8	6.2					M8	1.25	6H	6.8	826212 ●		
90	12	22	10	8					M10	0.75	6H	9.25	884921 ●		
90	12	22	10	8					M10	1	6H	9	884948 ●		
100	14		10	8					M10	1.25	6H	8.8	812352 ●		
100	16	22	10	8					M10	1.5	6H	8.5	826247 ●		
100	14				9	7			M12	1	6H	11		884956 ●	
100	14				9	7			M12	1.25	6H	10.8		884964 ●	
100	14				9	7			M12	1.5	6H	10.5		884972 ●	
110	18						9	7	M12	1.75	6H	10.2			826298 ●
100	16				11	9			M14	1	6H	13		884980 ○	
100	20				11	9			M14	1.5	6H	12.5		884999 ●	
110	20						11	9	M14	2	6H	12			854852 ●
100	16				12	9			M16	1	6H	15		885006 ●	
100	20				12	9			M16	1.5	6H	14.5		885014 ●	
110	20						12	9	M16	2	6H	14			854860 ●
110	25				14	11			M18	1.5	6H	16.5		885030 ●	
110	25				14	11			M18	2	6H	16		884888 ●	
125	22						14	11	M18	2.5	6H	15.5			854879 ●

DIN R Line SFT | General Purpose & Stable Working Conditions


HSS-E



HSS-E



HSS-E



Norm

DIN 371

DIN 374

DIN 376

Coating

Nitriding

Nitriding

Nitriding



C/2.5

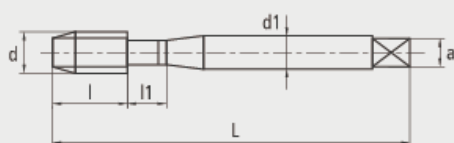
C/2.5

C/2.5

L	l	l1	DIN371		DIN374		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
125	25		d1	a	d1	a	d1	a	M20	1.5	6H	18.5		884786 ●	
140	25						16	12	M20	2.5	6H	17.5			854887 ●
125	17				18	14.5			M22	1.5	6H	20.5		884787 ●	
140	25						18	14.5	M22	2.5	6H	19.5			854895 ●
140	20				18	14.5			M24	1.5	6H	22.5		884788 ○	
140	20				18	14.5			M24	2	6H	22		884789 ●	
160	28						18	14.5	M24	3	6H	21			854909 ●

* For Carbon Steel, Alloy Steel, Stainless Steel, and Non-ferrous Alloys with a hardness of HRC 20-32.

P	M	K	N	S	H
●	●	-	○	-	-

DIN R Line | **POT** | General Purpose & Stable Working Conditions


HSS-E



HSS-E



HSS-E



Norm

DIN 371

DIN 374

DIN 376

Coating

Nitriding

Nitriding

Nitriding

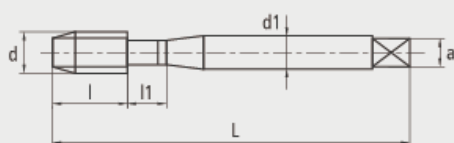


C/4

C/4

C/4

L	l	l1	DIN371		DIN374		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
45	8		2.8	2.1					M2	0.4	6H	1.6	893564 ●		
50	9		2.8	2.1					M2.5	0.45	6H	2.05	893556 ●		
56	11	7	3.5	2.7					M3	0.5	6H	2.5	893572 ●		
63	10	8	4.5	3.4					M4	0.5	6H	3.5	811870 ●		
63	13	8	4.5	3.4					M4	0.7	6H	3.3	893580 ●		
70	12	11	6	4.9					M5	0.5	6H	4.5	811871 ●		
70	16	9	6	4.9					M5	0.8	6H	4.2	893599 ●		
80	14	11	6	4.9					M6	0.75	6H	5.25	811872 ●		
80	19	11	6	4.9					M6	1	6H	5	893602 ●		
80	18	13	8	6.2					M8	0.75	6H	7.25	811873 ●		
90	22	13	8	6.2					M8	1	6H	7	811874 ●		
90	22	13	8	6.2					M8	1.25	6H	6.8	893610 ●		
90	20	15	10	8					M10	0.75	6H	9.25	811875 ●		
90	20	15	10	8					M10	1	6H	9	811876 ●		
100	24	15	10	8					M10	1.25	6H	8.8	812350 ●		
100	24	15	10	8					M10	1.5	6H	8.5	893629 ●		
100	22				9	7			M12	1	6H	11		811877 ●	
100	22				9	7			M12	1.25	6H	10.8		811879 ●	
100	22				9	7			M12	1.5	6H	10.5		811880 ●	
110	29						9	7	M12	1.75	6H	10.2			893637 ●
100	22				11	9			M14	1	6H	13		811881 ○	
100	22				11	9			M14	1.5	6H	12.5		811882 ●	
110	30						11	9	M14	2	6H	12			893645 ●
100	22				12	9			M16	1	6H	15		811883 ●	
100	22				12	9			M16	1.5	6H	14.5		811884 ●	
110	32						12	9	M16	2	6H	14			893653 ●
110	25				14	11			M18	1.5	6H	16.5		811887 ●	
110	25				14	11			M18	2	6H	16		811900 ●	
125	34						14	11	M18	2.5	6H	15.5			893661 ●

DIN R Line | **POT** | General Purpose & Stable Working Conditions


HSS-E



HSS-E



HSS-E



Norm

DIN 371

DIN 374

DIN 376

Coating

Nitriding

Nitriding

Nitriding



C/4

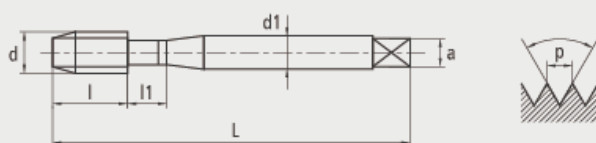
C/4

C/4

L	l	l1	DIN371		DIN374		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
125	25		d1	a	d1	a	d1	a	M20	1.5	6H	18.5		811889 ●	
140	34						16	12	M20	2.5	6H	17.5			893688 ●
125	25				18	14.5			M22	1.5	6H	20.5		811901 ●	
140	34						18	14.5	M22	2.5	6H	19.5			893696 ●
140	28				18	14.5			M24	1.5	6H	22.5		811903 ○	
140	28				18	14.5			M24	2	6H	22		811902 ●	
160	38						18	14.5	M24	3	6H	21			893718 ●

* For Carbon Steel, Alloy Steel, Stainless Steel, and Non-ferrous Alloys with a hardness of HRC 20-32.

P	M	K	N	S	H
●	●	-	○	-	-

DIN R Line STT | General Purpose & Stable Working Conditions


HSS-E



HSS-E



HSS-E



Norm

DIN 371

DIN 374

DIN 376

Coating

AlTiN

AlTiN

AlTiN



C/2.5

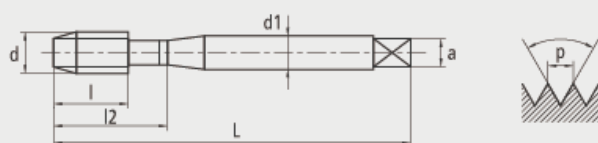
C/2.5

C/2.5

L	l	l1	DIN371		DIN374		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
45	8		2.8	2.1					M2	0.4	6H	1.6	871374 ●		
50	9		2.8	2.1					M2.5	0.45	6H	2.05	871382 ●		
56	11	7	3.5	2.7					M3	0.5	6H	2.5	837257 ●		
63	13	8	4.5	3.4					M4	0.7	6H	3.3	837273 ●		
70	16	9	6	4.9					M5	0.8	6H	4.2	837281 ●		
80	19	11	6	4.9					M6	1	6H	5	856715 ●		
90	22	13	8	6.2					M8	1.25	6H	6.8	837303 ●		
100	24	15	10	8					M10	1.5	6H	8.5	837311 ●		
110	29						9	7	M12	1.75	6H	10.2			856723 ●
110	32						12	9	M16	2	6H	14			852159 ●
140	34						16	12	M20	2.5	6H	17.5			852175 ●
90	22				6	4.9			M8	1	6H	7		866704 ●	
90	20				7	5.5			M10	1	6H	9		866705 ●	
100	24				7	5.5			M10	1.25	6H	9.75		884484 ●	
100	22				9	7			M12	1	6H	11		866706 ○	
100	22				9	7			M12	1.25	6H	10.75		861212 ●	
100	22				9	7			M12	1.5	6H	10.5		866707 ●	
100	22				11	9			M14	1.5	6H	12.5		866708 ●	
100	22				12	9			M16	1.5	6H	14.5		866709 ●	
110	25				14	11			M18	1.5	6H	16.5		866710 ○	
125	25				16	12			M20	1.5	6H	18.5		866711 ●	
125	25				16	12			M22	1.5	6H	20.5		866812 ●	
140	28				16	12			M24	1.5	6H	22.5		866814 ●	
140	28				16	12			M24	2	6H	22		866813 ●	

* Steel, Alloy Steel and Cast Iron HRC 20 to 32 ; High hard material HRC 28-38, blind hole

P	M	K	N	S	H
○	-	●	-	-	-

DIN E Line**SFT****High Efficiency &
Stable Working Conditions****Norm****Coating**

L	l	l2	DIN371		DIN376		d	p	Limit	
56	10	18	3.5	2.7			M3	0.5	6H	2.5
63	8.4	21	4.5	3.4			M4	0.7	6H	3.3
70	9.6	25	6	4.9			M5	0.8	6H	4.2
80	12	30	6	4.9			M6	1	6H	5
90	15	35	8	6.2			M8	1	6HX	7
90	15	35	8	6.2			M8	1.25	6H	6.8
100	18	39	10	8			M10	1	6HX	9
100	18	39	10	8			M10	1.25	6HX	8.8
100	18	39	10	8			M10	1.5	6H	8.5
110	18	-			9	7	M12	1.25	6HX	10.8
110	18	-			9	7	M12	1.5	6HX	10.5
110	18	-			9	7	M12	1.75	6H	10.3
110	20	-			11	9	M14	1.5	6HX	12.5
110	20	-			11	9	M14	2	6HX	12
110	20	-			12	9	M16	1.5	6HX	14.5
110	20	-			12	9	M16	2	6HX	14
125	25	-			14	11	M18	1.5	6HX	16.5
125	25	-			14	11	M18	2.5	6HX	15.5
140	25	-			16	12	M20	1.5	6HX	18.5
140	25	-			16	12	M20	2.5	6HX	17.5

* Vc: 10 -15m/min

* Steel, Alloy Steel and Cast Iron ; HRC 20 to 32

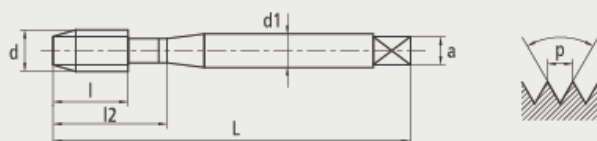
P	M	K	N	S	H
●	-	○	-	-	-

HSS-E**DIN371****AlCrN****C/2.5P****Art.Stock**

245811 ●
245812 ●
245813 ●
245814 ●
245815 ●
245816 ●
245817 ●
245818 ●
245819 ●

HSS-E**DIN376****AlCrN****C/2.5P****Art.Stock**

245820 ●
245821 ●
245822 ●
245823 ●
245824 ●
245825 ●
245826 ●
245827 ●
245828 ●
245829 ●
245830 ●

DIN E Line**POT****High Efficiency &
Stable Working Conditions****HSS-E****HSS-E****Norm****DIN371****DIN376****Coating****AlCrN****AlCrN****C/5P****C/5P**

L	l	l2	DIN371		DIN376		d	p	Limit	
			d1	a	d1	a				
56	10	18	3.5	2.7			M3	0.5	6HX	2.5
63	13	21	4.5	3.4			M4	0.7	6HX	3.3
70	16	25	6	4.9			M5	0.8	6HX	4.2
80	18	30	6	4.9			M6	1	6HX	5
90	20	35	8	6.2			M8	1	6HX	7
90	20	35	8	6.2			M8	1.25	6HX	6.8
100	20	39	10	8			M10	1	6HX	9
100	20	39	10	8			M10	1.25	6HX	8.8
100	20	39	10	8			M10	1.5	6HX	8.5
110	25	-			9	7	M12	1.25	6HX	10.8
110	25	-			9	7	M12	1.5	6HX	10.5
110	25	-			9	7	M12	1.75	6HX	10.3
110	25	-			11	9	M14	1.5	6HX	12.5
110	25	-			11	9	M14	2	6HX	12
110	25	-			12	9	M16	1.5	6HX	14.5
110	25	-			12	9	M16	2	6HX	14
125	25	-			14	11	M18	1.5	6HX	16.5
125	25	-			14	11	M18	2.5	6HX	15.5
140	28	-			16	12	M20	1.5	6HX	18.5
140	28	-			16	12	M20	2.5	6HX	17.5

Art.Stock**Art.Stock**

255811 ●

255812 ●

255813 ●

255814 ●

255815 ●

255816 ●

255817 ●

255818 ●

255819 ●

255820 ●

255821 ●

255822 ●

255823 ●

255824 ●

255825 ●

255826 ●

255827 ●

255828 ●

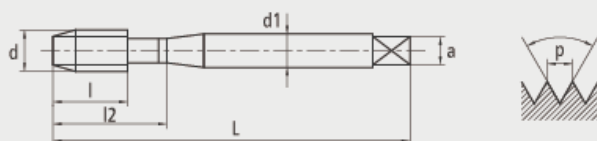
255829 ●

255830 ●

* Vc: 10 -20m/min

* Steel, Alloy Steel and Cast Iron ; HRC 20 to 32

P	M	K	N	S	H
●	-	○	-	-	-

DIN E Line**STT****High Efficiency &
Stable Working Conditions****Norm****Coating**

L	l	l2	DIN371		DIN376		d	p	Limit	
56	10	18	3.5	2.7			M3	0.5	6HX	2.5
63	13	21	4.5	3.4			M4	0.7	6HX	3.3
70	16	25	6	4.9			M5	0.8	6HX	4.2
80	18	30	6	4.9			M6	1	6HX	5
90	20	35	8	6.2			M8	1	6HX	7
90	20	35	8	6.2			M8	1.25	6HX	6.8
100	20	39	10	8			M10	1	6HX	9
100	20	39	10	8			M10	1.25	6HX	8.8
100	20	39	10	8			M10	1.5	6HX	8.5
110	25	-			9	7	M12	1.25	6HX	10.8
110	25	-			9	7	M12	1.5	6HX	10.5
110	25	-			9	7	M12	1.75	6HX	10.3
110	25	-			11	9	M14	1.5	6HX	12.5
110	25	-			11	9	M14	2	6HX	12
110	25	-			12	9	M16	1.5	6HX	14.5
110	25	-			12	9	M16	2	6HX	14
125	25	-			14	11	M18	1.5	6HX	16.5
125	25	-			14	11	M18	2.5	6HX	15.5
140	28	-			16	12	M20	1.5	6HX	18.5
140	28	-			16	12	M20	2.5	6HX	17.5

HSS-E**DIN371****AlCrN****C/2.5P****Art.Stock**

265811 ○
265812 ○
265813 ○
265814 ●
265815 ○
265816 ●
265817 ○
265818 ○
265819 ●

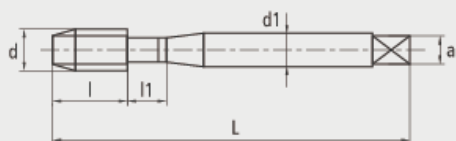
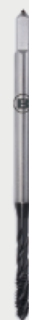
HSS-E**DIN376****AlCrN****C/2.5P****Art.Stock**

265820 ○
265821 ○
265822 ●
265823 ○
265824 ●
265825 ○
265826 ●
265827 ○
265828 ●
265829 ○
265830 ●

* Cast Iron Vc: 20 -30m/min ; Steel Vc: 10-15m/min

* Steel, Alloy Steel and Cast Iron HRC 20 to 32 ; High hard material HRC 28-38, blind hole

P	M	K	N	S	H
○	-	⊕	-	-	-

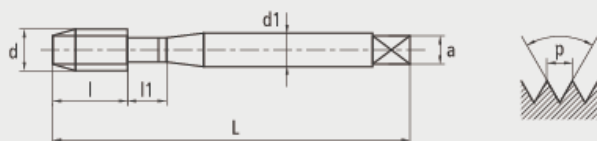
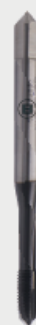
DIN P Line**SFT****High Performance &
General Purpose****HSS-PM****HSS-PM****HSS-E****Norm****DIN371****DIN371****DIN376****Coating****TiCN+DLC****TiCN+DLC****TiCN+DLC****C/2.5****C/2.5T****C/2.5**

L	l	l1	DIN371		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
56	7	11	3.5	3.4			M3	0.5	6HX	2.5	275832 ●		
63	9	12	4.5	3.4			M4	0.7	6HX	3.3	275811 ●		
70	10	15	6	4.9			M5	0.8	6HX	4.2	275812 ●		
80	10	20	6	4.9			M6	1	6HX	5	275813 ●		
80	10	20	7	5.5			M7	1	6HX	6	275814 ○		
90	13	22	8	6.2			M8	1	6HX	7		275815 ●	
90	13	22	8	6.2			M8	1.25	6HX	6.8		275816 ●	
100	15	24	10	8			M10	1	6HX	9		275817 ●	
100	15	24	10	8			M10	1.25	6HX	8.8		275818 ●	
100	15	24	10	8			M10	1.5	6HX	8.5		275819 ●	
110	17	32			9	7	M12	1	6HX	11			275820 ●
110	17	32			9	7	M12	1.25	6HX	10.8			275821 ●
110	17	32			9	7	M12	1.5	6HX	10.5			275822 ●
110	17	32			9	7	M12	1.75	6HX	10.3			275823 ●
110	20	33			11	9	M14	1	6HX	13			275824 ○
110	20	33			11	9	M14	1.25	6HX	12.75			275825 ●
110	20	33			11	9	M14	1.5	6HX	12.5			275826 ●
110	20	33			11	9	M14	2	6HX	12			275827 ●
110	20	34			12	9	M16	1	6HX	15			275828 ○
110	20	34			12	9	M16	1.25	6HX	14.75			275829 ●
110	20	34			12	9	M16	1.5	6HX	14.5			275830 ●
110	20	34			12	9	M16	2	6HX	14			275831 ●

* Multi-layered coating provide excellent wear resistance.

* For Carbon Steel, Alloy Steel with a hardness of 35 HRC or lower, Stainless Steel, and Non-ferrous Alloys.

P	M	K	N	S	H
●	○	-	○	-	-

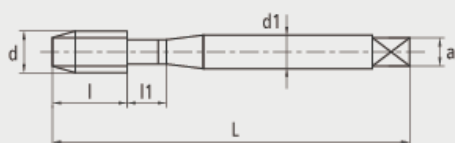
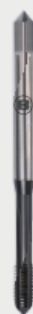
DIN P Line**POT** | High Performance & General Purpose**HSS-PM****HSS-PM****HSS-PM****Norm****DIN371****DIN371****DIN376****Coating****TiCN+DLC****TiCN+DLC****TiCN+DLC****C/5****C/5****C/5**

L	l	l1	DIN371		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
56	7	11	3.5	3.4			M3	0.5	6HX	2.5	285832 ●		
63	9	12	4.5	3.4			M4	0.7	6HX	3.3	285811 ●		
70	10	15	6	4.9			M5	0.8	6HX	4.2	285812 ●		
80	10	20	6	4.9			M6	1	6HX	5	285813 ●		
80	10	20	7	5.5			M7	1	6HX	6	285814 ○		
90	13	22	8	6.2			M8	1	6HX	7		285815 ●	
90	13	22	8	6.2			M8	1.25	6HX	6.8		285816 ●	
100	15	24	10	8			M10	1	6HX	9		285817 ○	
100	15	24	10	8			M10	1.25	6HX	8.8		285818 ●	
100	15	24	10	8			M10	1.5	6HX	8.5		285819 ●	
110	17	32			9	7	M12	1	6HX	11			285820 ○
110	17	32			9	7	M12	1.25	6HX	10.8			285821 ●
110	17	32			9	7	M12	1.5	6HX	10.5			285822 ●
110	17	32			9	7	M12	1.75	6HX	10.3			285823 ●
110	20	33			11	9	M14	1	6HX	13			285824 ○
110	20	33			11	9	M14	1.25	6HX	12.75			285825 ○
110	20	33			11	9	M14	1.5	6HX	12.5			285826 ●
110	20	33			11	9	M14	2	6HX	12			285827 ●
110	20	34			12	9	M16	1	6HX	15			285828 ○
110	20	34			12	9	M16	1.25	6HX	14.75			285829 ○
110	20	34			12	9	M16	1.5	6HX	14.5			285830 ●
110	20	34			12	9	M16	2	6HX	14			285831 ●

* Multi-layered coating provide excellent wear resistance.

* For Carbon Steel, Alloy Steel with a hardness of 35 HRC or lower, Stainless Steel, and Non-ferrous Alloys.

P	M	K	N	S	H
●	○	-	○	-	-

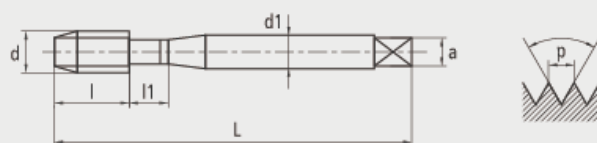
DIN P Line**STT****High Performance &
General Purpose****HSS-PM****HSS-PM****HSS-PM****Norm****DIN371****DIN371****DIN376****Coating****TiCN+DLC****TiCN+DLC****TiCN+DLC****C/3****C/3****C/3**

L	l	l1	DIN371		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
			d1	a	d1	a							
56	7	11	3.5	3.4			M3	0.5	6HX	2.5	295831 ●		
63	9	12	4.5	3.4			M4	0.7	6HX	3.3	295832 ●		
70	10	15	6	4.9			M5	0.8	6HX	4.2	295811 ●		
80	10	20	6	4.9			M6	1	6HX	5	295812 ●		
80	10	20	7	5.5			M7	1	6HX	6	295813 ○		
90	13	22	8	6.2			M8	1	6HX	7		295814 ●	
90	13	22	8	6.2			M8	1.25	6HX	6.8		295815 ●	
100	15	24	10	8			M10	1	6HX	9		295816 ○	
100	15	24	10	8	9	7	M10	1.25	6HX	8.8		295817 ●	
100	15	24	10	8	9	7	M10	1.5	6HX	8.5		295818 ●	
110	17	32			9	7	M12	1	6HX	11			295819 ○
110	17	32			9	7	M12	1.25	6HX	10.8			295820 ●
110	17	32			11	9	M12	1.5	6HX	10.5			295821 ●
110	17	32			11	9	M12	1.75	6HX	10.3			295822 ●
110	20	33			11	9	M14	1	6HX	13			295823 ○
110	20	33			11	9	M14	1.25	6HX	12.75			295824 ○
110	20	33			12	9	M14	1.5	6HX	12.5			295825 ●
110	20	33			12	9	M14	2	6HX	12			295826 ●
110	20	34			12	9	M16	1	6HX	15			295827 ○
110	20	34			12	9	M16	1.25	6HX	14.75			295828 ○
110	20	34					M16	1.5	6HX	14.5			295829 ●
110	20	34					M16	2	6HX	14			295830 ●

* Multi-layered coating provide excellent wear resistance.

* For Gray Cast Iron and Ductile Iron, with high processing accuracy, ideal for large-scale continuous production.

P	M	K	N	S	H
-	-	⊕	-	-	-

DIN P Line NRT | High Performance & General Purpose


Norm

Coating



L	l	l1	DIN371		DIN376		d	p	Limit	
45	6	7	2.8	2.1			M2	0.4	6HX	1.78-1.82
50	7	8	2.8	2.1			M2.5	0.45	6HX	2.25-2.29
56	7	11	3.5	2.7			M3	0.5	6HX	2.76-2.81
63	9	12	4.5	3.4			M4	0.7	6HX	3.65-3.7
70	10	15	6	4.9			M5	0.8	6HX	4.59-4.66
80	10	20	6	4.9			M6	1	6HX	5.48-5.57
80	10	20	7	5.5			M7	1	6HX	6.48-6.57
90	13	22	8	6.2			M8	1	6HX	7.45-7.51
90	13	22	8	6.2			M8	1.25	6HX	7.34-7.41
100	15	24	10	8			M10	1	6HX	9.45-9.52
100	15	24	10	8			M10	1.25	6HX	9.31-9.38
100	15	24	10	8			M10	1.5	6HX	9.18-9.28
110	17	32	9	7			M12	1	6HX	11.46-11.52
110	17	32			9	7	M12	1.25	6HX	11.31-11.38
110	17	32			9	7	M12	1.5	6HX	11.16-11.22
110	17	32			9	7	M12	1.75	6HX	11.05-11.15
110	20	33			11	9	M14	1	6HX	13.5-13.55
110	20	33			11	9	M14	1.25	6HX	13.38-13.4
110	20	33			11	9	M14	1.5	6HX	13.16-13.22
110	20	33			11	9	M14	2	6HX	12.92-13.04
110	20	34			12	9	M16	1	6HX	15.5-15.58
110	20	34			12	9	M16	1.25	6HX	15.37-15.45

HSS-PM



DIN371

TiCN+DLC

C/2.5

Art.Stock

305811 ○

305812 ○

305813 ○

305814 ●

305815 ●

305816 ●

305817 ○

HSS-PM



DIN371

TiCN+DLC

C/2.5

Art.Stock

305818 ●

305819 ●

305820 ●

305821 ●

305822 ●

305823 ●

HSS-PM



DIN376

TiCN+DLC

C/2.5

Art.Stock

305824 ●

305825 ●

305826 ●

305827 ●

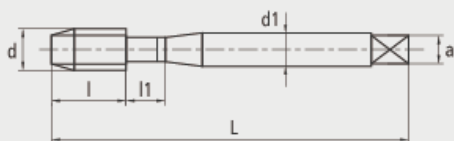
305828 ●

305829 ●

305830 ●

305831 ●

305832 ●

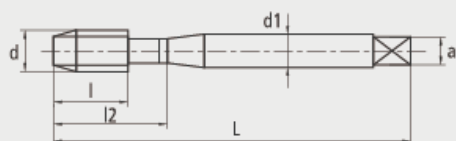
DIN P Line**NRT****High Performance &
General Purpose****HSS-PM****HSS-PM****HSS-PM****Norm****DIN371****DIN371****DIN376****Coating****TiCN+DLC****TiCN+DLC****TiCN+DLC****C/2.5****C/2.5****C/2.5**

L	l	l1	DIN371		DIN376		d	p	Limit		Art.Stock	Art.Stock	Art.Stock
			d1	a	d1	a							
110	20	34			12	9	M16	1.5	6HX	15.16-15.22			305833 ●
110	20	34			12	9	M16	2	6HX	14.92-15.04			305834 ●
125	25	36			14	11	M18	1.5	6HX	17.17-17.23			305835 ○
125	25	36			14	11	M18	2	6HX	17-17.15			305836 ○
125	25	36			14	11	M18	2.5	6HX	16.63-16.78			305837 ○
140	25	44			16	12	M20	1.5	6HX	19.17-19.23			305838 ○
140	25	44			16	12	M20	2	6HX	19-19.5			305839 ○
140	25	44			16	12	M20	2.5	6HX	18.63-18.78			305840 ○
140	25	44			18	14.5	M22	1.5	6HX	21.22-21.33			305841 ○
140	25	44			18	14.5	M22	2	6HX	21-21.5			305842 ○
140	25	44			18	14.5	M22	2.5	6HX	20.63-20.78			305843 ○
160	30	48			18	14.5	M24	2	6HX	23-23.5			305844 ○
160	30	48			18	14.5	M24	2.5	6HX	22.75-22.8			305845 ○
160	30	48			18	14.5	M24	3	6HX	22.36-22.53			305846 ○
160	30	48			20	16	M27	2	6HX	26-26.5			305847 ○
160	30	48			20	16	M27	2.5	6HX	25.75-25.8			305848 ○
160	30	48			20	16	M27	3	6HX	23.75-24.25			305849 ○
180	35	53			22	18	M30	2	6HX	29-29.5			305850 ○
180	35	53			22	18	M30	2.5	6HX	28.75-28.9			305851 ○
180	35	53			22	18	M30	3	6HX	28.5-28.6			305852 ○
180	35	53			22	18	M30	3.5	6HX	28.07-28.25			305853 ○

* Multi-layered coating provide excellent wear resistance.

* For Carbon Steel, Alloy Steel with a hardness of 35 HRC or lower, Stainless Steel, and Non-ferrous Alloys.

P	M	K	N	S	H
●	○	-	○	-	-

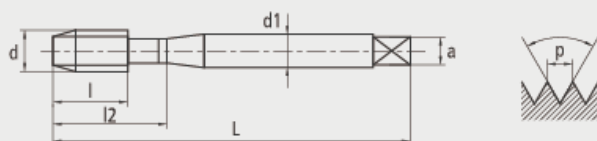
JIS R Line**SFT****General Purpose &
Unstable Working Conditions****Norm****Coating****HSS-E****JIS****CrN+X****C/2.5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6H	2.5
52	8.4	20	5	4	M4	0.7	6H	3.3
60	9.6	24	5.5	4.5	M5	0.8	6H	4.2
62	12	29	6	4.5	M6	1	6H	5
70	15	37	6.2	5	M8	1	6HX	7
70	15	37	6.2	5	M8	1.25	6H	6.8
75	18	41	7	5.5	M10	1	6HX	9
75	18	41	7	5.5	M10	1.25	6HX	8.8
75	18	41	7	5.5	M10	1.5	6H	8.5
82	18	48	8.5	6.5	M12	1.25	6HX	10.8
82	18	48	8.5	6.5	M12	1.5	6HX	10.5
82	18	48	8.5	6.5	M12	1.75	6H	10.3

★ Vc: 3-10m/min

★ For Carbon Steel, Alloy Steel, Cast Iron, Stainless Steel, and Non-ferrous Alloys with a hardness of HRC 20-25.

P	M	K	N	S	H
☉	○	○	○	-	-

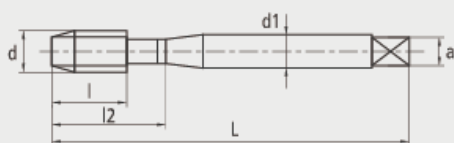
JIS R Line**POT****General Purpose &
Unstable Working Conditions****HSS-E****Norm****JIS****Coating****CrN+X****C/5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6H	2.5
52	12	20	5	4	M4	0.7	6H	3.3
60	14	24	5.5	4.5	M5	0.8	6H	4.2
62	16	29	6	4.5	M6	1	6H	5
70	21	37	6.2	5	M8	1	6HX	7
70	21	37	6.2	5	M8	1.25	6H	6.8
75	23	41	7	5.5	M10	1	6HX	9
75	23	41	7	5.5	M10	1.25	6HX	8.8
75	23	41	7	5.5	M10	1.5	6H	8.5
82	24	48	8.5	6.5	M12	1.25	6HX	10.8
82	24	48	8.5	6.5	M12	1.5	6HX	10.5
82	24	48	8.5	6.5	M12	1.75	6H	10.3

* Vc: 3-10m/min

* For Carbon Steel, Alloy Steel, Cast Iron, Stainless Steel, and Non-ferrous Alloys with a hardness of HRC 20-25.

P	M	K	N	S	H
⊙	○	○	○	-	-

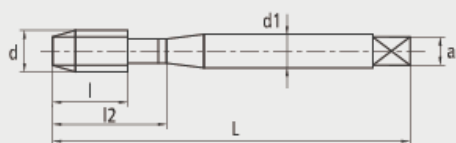
JIS R Line**SFT****General Purpose &
Stable/ Unstable Working Conditions****Norm****Coating****HSS-E****JIS****ZrN****C/2.5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6H	2.5
52	8.4	20	5	4	M4	0.7	6H	3.3
60	9.6	24	5.5	4.5	M5	0.8	6H	4.2
62	12	29	6	4.5	M6	1	6H	5
70	15	37	6.2	5	M8	1	6HX	7
70	15	37	6.2	5	M8	1.25	6H	6.8
75	18	41	7	5.5	M10	1	6HX	9
75	18	41	7	5.5	M10	1.25	6HX	8.8
75	18	41	7	5.5	M10	1.5	6H	8.5
82	18	48	8.5	6.5	M12	1.25	6HX	10.8
82	18	48	8.5	6.5	M12	1.5	6HX	10.5
82	18	48	8.5	6.5	M12	1.75	6H	10.3
88	20	48	10.5	8	M14	1.5	6HX	12.5
88	20	48	10.5	8	M14	2	6HX	12
95	20	52	12.5	10	M16	1.5	6HX	14.5
95	20	52	12.5	10	M16	2	6HX	14
100	25	55	14	11	M18	1.5	6HX	16.6
100	25	55	14	11	M18	2.5	6HX	15.5
105	25	58	15	12	M20	1.5	6HX	18.5
105	25	58	15	12	M20	2.5	6HX	17.5

★ Vc: 5 - 10m/min

★ For Carbon Steel, Alloy Steel, Stainless Steel, and Cast Iron with a hardness of HRC 20-32.

P	M	K	N	S	H
●	○	○	-	-	-

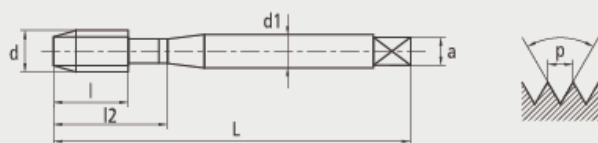
JIS R Line**POT | General Purpose &
Stable/ Unstable Working Conditions****Norm****Coating****HSS-E****JIS****ZrN****C/5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6H	2.5
52	12	20	5	4	M4	0.7	6H	3.3
60	14	24	5.5	4.5	M5	0.8	6H	4.2
62	16	29	6	4.5	M6	1	6H	5
70	21	37	6.2	5	M8	1	6HX	7
70	21	37	6.2	5	M8	1.25	6H	6.8
75	23	41	7	5.5	M10	1	6HX	9
75	23	41	7	5.5	M10	1.25	6HX	8.8
75	23	41	7	5.5	M10	1.5	6H	8.5
82	24	48	8.5	6.5	M12	1.25	6HX	10.8
82	24	48	8.5	6.5	M12	1.5	6HX	10.5
82	24	48	8.5	6.5	M12	1.75	6H	10.3
88	24	48	10.5	8	M14	1.5	6HX	12.5
88	24	48	10.5	8	M14	2	6HX	12
95	24	52	12.5	10	M16	1.5	6HX	14.5
95	24	52	12.5	10	M16	2	6HX	14
100	24	55	14	11	M18	1.5	6HX	16.6
100	24	55	14	11	M18	2.5	6HX	15.5
105	26	58	15	12	M20	1.5	6HX	18.5
105	26	58	15	12	M20	2.5	6HX	17.5

* Vc: 5 - 15m/min

* For Carbon Steel, Alloy Steel, Stainless Steel, and Cast Iron with a hardness of HRC 20-32.

P	M	K	N	S	H
●	○	○	-	-	-

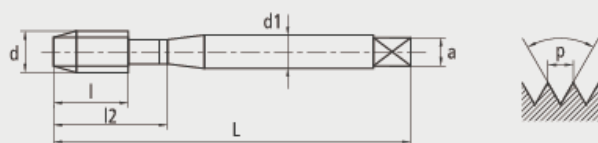
JIS R Line**STT****General Purpose &
Stable/ Unstable Working Conditions****Norm****Coating****HSS-E****JIS****ZrN****C/1.5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6HX	2.5
52	12	20	5	4	M4	0.7	6HX	3.3
60	14	24	5.5	4.5	M5	0.8	6HX	4.2
62	16	29	6	4.5	M6	1	6HX	5
70	21	37	6.2	5	M8	1	6HX	7
70	21	37	6.2	5	M8	1.25	6HX	6.8
75	23	41	7	5.5	M10	1	6HX	9
75	23	41	7	5.5	M10	1.25	6HX	8.8
75	23	41	7	5.5	M10	1.5	6HX	8.5
82	24	48	8.5	6.5	M12	1.25	6HX	10.8
82	24	48	8.5	6.5	M12	1.5	6HX	10.5
82	24	48	8.5	6.5	M12	1.75	6HX	10.3
88	24	48	10.5	8	M14	1.5	6HX	12.5
88	24	48	10.5	8	M14	2	6HX	12
95	24	52	12.5	10	M16	1.5	6HX	14.5
95	24	52	12.5	10	M16	2	6HX	14
100	24	55	14	11	M18	1.5	6HX	16.6
100	24	55	14	11	M18	2.5	6HX	15.5
105	26	58	15	12	M20	1.5	6HX	18.5
105	26	58	15	12	M20	2.5	6HX	17.5

★ Cast Iron Vc: 15-25m/min ; Steel Vc: 5-8m/min

★ Steel, Alloy Steel and Cast Iron HRC 20 to 32 ; High hard material HRC 28-38, blind hole

P	M	K	N	S	H
○	-	⊙	-	-	-

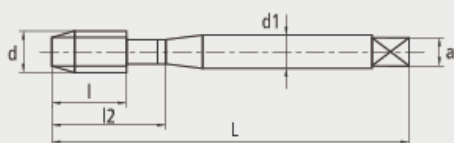
JIS E Line**SFT****High Efficiency &
Stable Working Conditions****HSS-E****Norm****JIS****Coating****AlCrN****C/2.5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6H	2.5
52	8.4	20	5	4	M4	0.7	6H	3.3
60	9.6	24	5.5	4.5	M5	0.8	6H	4.2
62	12	29	6	4.5	M6	1	6H	5
70	15	37	6.2	5	M8	1	6HX	7
70	15	37	6.2	5	M8	1.25	6H	6.8
75	18	41	7	5.5	M10	1	6HX	9
75	18	41	7	5.5	M10	1.25	6HX	8.8
75	18	41	7	5.5	M10	1.5	6H	8.5
82	18	48	8.5	6.5	M12	1.25	6HX	10.8
82	18	48	8.5	6.5	M12	1.5	6HX	10.5
82	18	48	8.5	6.5	M12	1.75	6H	10.3
88	20	48	10.5	8	M14	1.5	6HX	12.5
88	20	48	10.5	8	M14	2	6HX	12
95	20	52	12.5	10	M16	1.5	6HX	14.5
95	20	52	12.5	10	M16	2	6HX	14
100	25	55	14	11	M18	1.5	6HX	16.6
100	25	55	14	11	M18	2.5	6HX	15.5
105	25	58	15	12	M20	1.5	6HX	18.5
105	25	58	15	12	M20	2.5	6HX	17.5

★ Vc: 10 -15m/min

★ Steel, Alloy Steel and Cast Iron , HRC 20 to 32

P	M	K	N	S	H
⊙	-	○	-	-	-

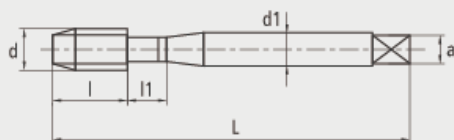
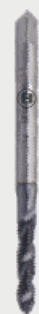
JIS E Line**POT****High Efficiency &
Stable Working Conditions****HSS-E****Norm****JIS****Coating****AlCrN****C/5P****Art.Stock**

L	l	l2	d1	a	d	p	Limit	
46	10	19	4	3.2	M3	0.5	6H	2.5
52	12	20	5	4	M4	0.7	6H	3.3
60	14	24	5.5	4.5	M5	0.8	6H	4.2
62	16	29	6	4.5	M6	1	6H	5
70	21	37	6.2	5	M8	1	6HX	7
70	21	37	6.2	5	M8	1.25	6H	6.8
75	23	41	7	5.5	M10	1	6HX	9
75	23	41	7	5.5	M10	1.25	6HX	8.8
75	23	41	7	5.5	M10	1.5	6H	8.5
82	24	48	8.5	6.5	M12	1.25	6HX	10.8
82	24	48	8.5	6.5	M12	1.5	6HX	10.5
82	24	48	8.5	6.5	M12	1.75	6H	10.3
88	24	48	10.5	8	M14	1.5	6HX	12.5
88	24	48	10.5	8	M14	2	6HX	12
95	24	52	12.5	10	M16	1.5	6HX	14.5
95	24	52	12.5	10	M16	2	6HX	14
100	24	55	14	11	M18	1.5	6HX	16.6
100	24	55	14	11	M18	2.5	6HX	15.5
105	26	58	15	12	M20	1.5	6HX	18.5
105	26	58	15	12	M20	2.5	6HX	17.5

* Vc: 10 -20m/min

* Steel, Alloy Steel and Cast Iron , HRC 20 to 32

P	M	K	N	S	H
☉	-	○	-	-	-

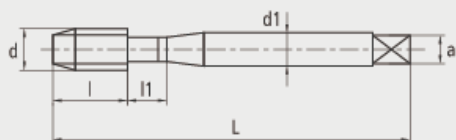
JIS P Line**SFT****High Performance &
General Purpose****HSS-PM****HSS-PM****HSS-PM****HSS-PM****Norm****JIS****JIS****JIS****JIS****Coating****TiCN****TiCN****TiCN****TiCN****C/1.5****C/2.5****C/2.5****C/2.5**

L	l	l1	d1	a	d	p	Limit		Art.Stock	Art.Stock	Art.Stock	Art.Stock
37	4.5	-	3	2.5	M1	0.25	OH1	0.75	585811 ●			
37	4.5	-	3	2.5	M1.2	0.25	OH1	0.95	585812 ●			
37	6.5	-	3	2.5	M1.4	0.3	OH1	1.1	585813 ●			
37	8	-	3	2.5	M1.6	0.35	OH2	1.25	585814 ●			
45	11	-	3	2.5	M2	0.4	OH2	1.6		585815 ●		
45	12	-	3	2.5	M2.5	0.45	OH2	2.1		585816 ●		
50	5	13	4	3.2	M3	0.5	OH2	2.5			585817 ●	
50	6	13	4	3.2	M3.5	0.6	OH2	2.9			585818 ●	
57	9	11	5	4	M4	0.7	OH2	3.3			585819 ●	
66	8	17	5.5	4.5	M5	0.8	OH2	4.2			585820 ●	
69	12	12	6	4.5	M6	1	OH2	5			585821 ●	
78	13	10	6.2	5	M7	1	OH3	6			585822 ●	
70	13	23	6.2	5	M8	1	OH3	7				585823 ●
70	13	23	6.2	5	M8	1.25	OH3	6.8				585824 ●
75	13	30	7	5.5	M10	1	OH3	9				585825 ●
75	13	30	7	5.5	M10	1.25	OH3	8.8				585826 ●
75	15	28	7	5.5	M10	1.5	OH4	8.5				585827 ●
82	13	29	8.5	6.5	M12	1	OH3	11				585828 ○
82	13	29	8.5	6.5	M12	1.25	OH4	10.8				585829 ●
82	17	25	8.5	6.5	M12	1.5	OH4	10.5				585830 ●
82	17	25	8.5	6.5	M12	1.75	OH4	10.3				585831 ●
88	20	31	10.5	8	M14	1	OH3	13				585832 ○
88	20	31	10.5	8	M14	1.25	OH4	12.75				585833 ●
88	20	31	10.5	8	M14	1.5	OH4	12.5				585834 ●
88	20	31	10.5	8	M14	2	OH5	12				585835 ●
95	20	32	12.5	10	M16	1	OH3	15				585836 ○
95	20	32	12.5	10	M16	1.25	OH4	14.75				585837 ●
95	20	32	12.5	10	M16	1.5	OH4	14.5				585838 ●
95	20	32	12.5	10	M16	2	OH5	14				585839 ●

★ TiCN coating provides excellent wear resistance and smooth chip removal

★ For Carbon Steel, Alloy Steel with a hardness of below 30 HRC, Stainless Steel, Cast Iron, and Non-ferrous Alloys.

P	M	K	N	S	H
●	○	○	○	-	-

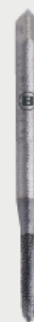
JIS P Line**POT****High Performance &
General Purpose****Norm****Coating**

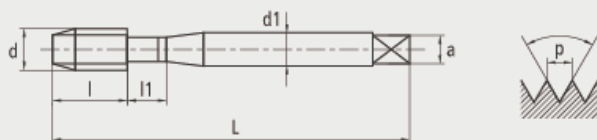
L	l	l1	d1	a	d	p	Limit		Art.Stock	Art.Stock	Art.Stock
37	4.5	-	3	2.5	M1	0.25	OH1	0.75	595811 ●		
37	5.5	-	3	2.5	M1.2	0.25	OH1	0.95	595812 ●		
37	9	-	3	2.5	M1.4	0.3	OH1	1.1	595813 ●		
37	8	-	3	2.5	M1.6	0.35	OH2	1.25	595814 ●		
45	11	-	3	2.5	M2	0.4	OH2	1.6	595815 ●		
45	12	-	3	2.5	M2.5	0.45	OH2	2.1	595816 ●		
50	12	7	4	3.2	M3	0.5	OH2	2.5		595817 ●	
50	13	7	4	3.2	M3.5	0.6	OH2	2.9		595818 ●	
57	14	7	5	4	M4	0.7	OH2	3.3		595819 ●	
66	16	9	5.5	4.5	M5	0.8	OH2	4.2		595820 ●	
69	19.5	9.5	6	4.5	M6	1	OH2	5		595821 ●	
78	13	10	6.2	5	M7	1	OH3	6		595822 ○	
70	22	15	6.2	5	M8	1	OH3	7			595823 ●
70	22	15	6.2	5	M8	1.25	OH3	6.8			595824 ●
75	24	19	7	5	M10	1	OH3	9			595825 ○
75	24	19	7	5	M10	1.25	OH3	8.8			595826 ●
75	24	19	7	5	M10	1.5	OH4	8.5			595827 ●
82	29	17	8.5	6.5	M12	1	OH3	11			595828 ○
82	29	17	8.5	6.5	M12	1.25	OH4	10.8			595829 ●
82	29	17	8.5	6.5	M12	1.5	OH4	10.5			595830 ●
82	29	17	8.5	6.5	M12	1.75	OH4	10.3			595831 ●
88	20	31	10.5	8	M14	1	OH3	13			595832 ○
88	20	31	10.5	8	M14	1.25	OH4	12.75			595833 ●
88	20	31	10.5	8	M14	1.5	OH4	12.5			595834 ●
88	20	31	10.5	8	M14	2	OH5	12			595835 ●
95	20	32	12.5	10	M16	1	OH3	15			595836 ○
95	20	32	12.5	10	M16	1.25	OH4	14.75			595837 ●
95	20	32	12.5	10	M16	1.5	OH4	14.5			595838 ●
95	20	32	12.5	10	M16	2	OH5	14			595839 ●

* TiCN coating provides excellent wear resistance and smooth chip removal

* For Carbon Steel, Alloy Steel with a hardness of below 30 HRC, Stainless Steel, Cast Iron, and Non-ferrous Alloys.

P	M	K	N	S	H
●	○	○	○	-	-

HSS-PM**HSS-PM****HSS-PM****JIS****TiCN****C/5****Art.Stock****JIS****TiCN****C/5****Art.Stock****JIS****TiCN****C/5****Art.Stock**

JIS P Line STT | High Performance for cast iron


Norm

Coating



L	l	l1	d1	a	d	p	Limit	
66	16	9	5.5	3.2	M3	0.5	OH3	2.5
66	16	9	5.5	4	M4	0.7	OH3	3.3
66	16	9	5.5	4.5	M5	0.8	OH3	4.2
69	19.5	9.5	6	4.5	M6	1	OH3	5
78	13	10	6.2	5	M7	1	OH3	6
70	22	15	6.2	5	M8	1	OH4	7
70	22	15	6.2	5	M8	1.25	OH4	6.8
75	24	19	7	5.5	M10	1	OH5	9
75	24	19	7	5.5	M10	1.25	OH4	8.8
75	24	19	7	5.5	M10	1.5	OH4	8.5
82	29	17	8.5	6.5	M12	1	OH5	11
82	29	17	8.5	6.5	M12	1.25	OH5	10.8
82	29	17	8.5	6.5	M12	1.5	OH5	10.5
82	29	17	8.5	6.5	M12	1.75	OH4	10.3
88	20	31	10.5	8	M14	1	OH6	13
88	20	31	10.5	8	M14	1.25	OH5	12.75
88	20	31	10.5	8	M14	1.5	OH5	12.5
88	20	31	10.5	8	M14	2	OH4	12
90	20	32	12.5	10	M16	1	OH6	15
90	20	32	12.5	10	M16	1.25	OH5	14.75
90	20	32	12.5	10	M16	1.5	OH5	14.5
90	20	32	12.5	10	M16	2	OH4	14

HSS-PM



JIS

AlTiN(Si)

C/3

Art.Stock

605831 ○
605832 ○
605811 ○
605812 ○
605813 ○

HSS-PM



JIS

AlTiN(Si)

C/3

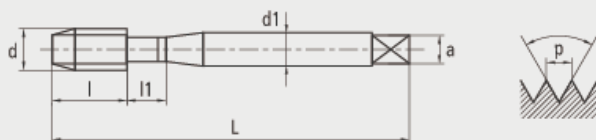
Art.Stock

605814 ○
605815 ○
605816 ○
605817 ○
605818 ○
605819 ○
605820 ○
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605822 ○
605823 ○
605824 ○
605825 ○
605826 ○
605827 ○
605828 ○
605829 ○
605830 ○

* AlTiN(Si) coating provides excellent wear resistance

* For Gray Cast Iron and Ductile Iron, with high processing accuracy, ideal for large-scale continuous production.

P	M	K	N	S	H
-	-	⊕	-	-	-

JIS P Line | **NRT** | High Performance for steel


Norm

Coating



L	l	l1	d1	a	d	p	Limit	
31	3	-	3	2.5	M1	0.2	RH4	0.9-0.92
31	3.5	-	3	2.5	M1	0.25	RH4	0.9-0.92
31	3	-	3	2.5	M1.2	0.2	RH4	1.1-1.15
31	3.5	-	3	2.5	M1.2	0.25	RH4	1.1-1.12
36	3	-	3	2.5	M1.4	0.2	RH4	1.3-1.32
36	6.5	-	3	2.5	M1.4	0.3	RH4	1.27-1.29
36	3	-	3	2.5	M1.6	0.2	RH4	1.5-1.52
35.5	8	-	3	2.5	M1.6	0.35	RH4	1.44-1.48
35.5	8	-	3	2.5	M1.7	0.35	RH4	1.54-1.58
43.5	4	-	3	2.5	M2	0.25	RH4	1.87-1.9
43.5	10	-	3	2.5	M2	0.4	RH5	1.81-1.85
43.5	10	-	3	2.5	M2.3	0.3	RH5	2.11-2.15
43.5	13	-	3	2.5	M2.5	0.45	RH5	2.28-2.33
43.5	13	-	3	2.5	M2.6	0.45	RH5	2.38-2.43
48	6	8	4	3.2	M3	0.35	RH4	2.82-2.87
48	16	-	4	3.2	M3	0.5	RH7	2.76-2.81
48	16	-	4	3.2	M3.5	0.6	RH7	3.2-3.26
55	8	8	5	4	M4	0.5	RH7	3.75-3.78
55	18	-	5	4	M4	0.7	RH7	3.65-3.7
64	8	8	5.5	4.5	M5	0.5	RH7	4.75-4.8
63.5	20	-	5.5	4.5	M5	0.8	RH7	4.59-4.66
66	12	12	6	4.5	M6	0.5	RH7	5.75-5.8

HSS-PM



JIS

TICN-AL

C/2

Art.Stock

615811 ○

615812 ●

615813 ○

615814 ●

615815 ○

615816 ●

615817 ○

615818 ●

615819 ●

615820 ○

615821 ●

615822 ●

615823 ●

615824 ●

615826 ●

615827 ●

615829 ●

615831 ●

HSS-PM



JIS

TICN-AL

C/2

Art.Stock

615825 ○

615828 ○

615830 ○

615832 ○

HSS-PM



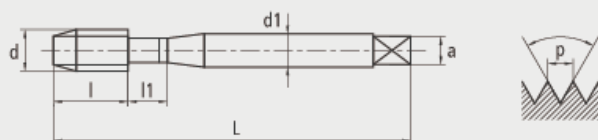
JIS

TICN-AL

C/2

Art.Stock

JIS P Line NRT | High Performance for steel



HSS-PM



HSS-PM



HSS-PM



Norm

JIS

JIS

JIS

Coating

TICN-AL

TICN-AL

TICN-AL



C/2

C/2

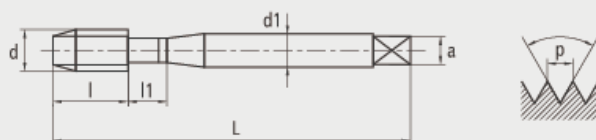
C/2

L	l	l1	d1	a	d	p	Limit		Art.Stock	Art.Stock	Art.Stock
66	12	12	6	4.5	M6	0.75	RH7	5.62-5.70		615833 ○	
66.5	27	-	6	4.5	M6	1	RH7	5.48-5.57	615834 ●		
70	13	10	6.2	5	M7	1	RH7	6.48-5.57			615835 ●
70	13	23	6.2	5	M8	0.75	RH7	7.62-7.71			615836 ○
70	13	23	6.2	5	M8	1	RH7	7.48-7.57			615837 ●
70	13	23	6.2	5	M8	1.25	RH7	7.34-7.41			615838 ●
75	13	30	7	5.5	M10	0.75	RH7	9.62-9.71			615839 ○
75	13	30	7	5.5	M10	1	RH7	9.48-9.57			615840 ●
75	13	30	7	5.5	M10	1.25	RH7	9.34-9.41			615841 ●
75	15	28	7	5.5	M10	1.5	RH8	9.18-8.28			615842 ●
82	13	29	8.5	6.5	M12	1	RH7	11.48-11.57			615843 ●
82	13	29	8.5	6.5	M12	1.25	RH7	11.34-11.41			615844 ●
82	17	25	8.5	6.5	M12	1.5	RH8	11.18-11.28			615845 ●
82	17	25	8.5	6.5	M12	1.75	RH9	11.05-11.15			615846 ●
88	20	31	10.5	8	M14	1	RH7	13.5-13.55			615847 ●
88	20	31	10.5	8	M14	1.25	RH7	13.37-13.42			615848 ●
88	20	31	10.5	8	M14	1.5	RH8	13.21-13.3			615849 ●
88	20	31	10.5	8	M14	2	RH10	12.92-13.04			615850 ●
95	20	32	12.5	10	M16	1	RH7	15.5-15.58			615851 ●
95	20	32	12.5	10	M16	1.25	RH7	15.37-15.45			615852 ●
95	20	32	12.5	10	M16	1.5	RH8	15.21-15.35			615853 ●
95	20	32	12.5	10	M16	2	RH10	14.92-15.04			615854 ●

* TICN-AL provides excellent wear resistance

* For Carbon Steel and Alloy Steel with a hardness of below 30 HRC.

P	M	K	N	S	H
●	-	-	-	-	-

JIS P Line NRT | High Performance for stainless steel


HSS-PM



HSS-PM



HSS-PM



Norm

JIS

JIS

JIS

Coating

TiN(Si)

TiN(Si)

TiN(Si)



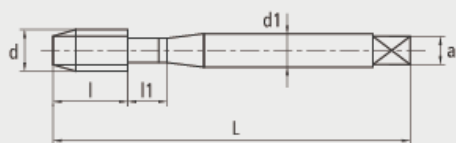
C/2

C/2

C/2

L	l	l1	d1	a	d	p	Limit		Art.Stock	Art.Stock	Art.Stock
31	3	-	3	2.5	M1	0.2	RH4	0.9-0.92	625811 ○		
31	3.5	-	3	2.5	M1	0.25	RH4	0.9-0.92	625812 ●		
31	3	-	3	2.5	M1.2	0.2	RH4	1.1-1.15	625813 ○		
31	3.5	-	3	2.5	M1.2	0.25	RH4	1.1-1.12	625814 ●		
36	3	-	3	2.5	M1.4	0.2	RH4	1.3-1.32	625815 ○		
36	6.5	-	3	2.5	M1.4	0.3	RH4	1.27-1.29	625816 ●		
36	3	-	3	2.5	M1.6	0.2	RH4	1.5-1.52	625817 ○		
35.5	8	-	3	2.5	M1.6	0.35	RH4	1.44-1.48	625818 ●		
35.5	8	-	3	2.5	M1.7	0.35	RH4	1.54-1.58	625819 ●		
43.5	4	-	3	2.5	M2	0.25	RH4	1.87-1.9	625820 ○		
43.5	10	-	3	2.5	M2	0.4	RH5	1.81-1.85	625821 ●		
43.5	10	-	3	2.5	M2.3	0.3	RH5	2.11-2.15	625822 ○		
43.5	13	-	3	2.5	M2.5	0.45	RH5	2.28-2.33	625823 ●		
43.5	13	-	3	2.5	M2.6	0.45	RH5	2.38-2.43	625824 ●		
48	6	8	4	3.2	M3	0.35	RH4	2.82-2.87		625825 ○	
48	16	-	4	3.2	M3	0.5	RH7	2.76-2.81	625826 ●		
48	16	-	4	3.2	M3.5	0.6	RH7	3.2-3.26	625827 ●		
55	8	8	5	4	M4	0.5	RH7	3.75-3.78		625828 ○	
55	18	-	5	4	M4	0.7	RH7	3.65-3.7	625829 ●		
64	8	8	5.5	4.5	M5	0.5	RH7	4.75-4.8		625830 ○	
63.5	20	-	5.5	4.5	M5	0.8	RH7	4.59-4.66	625831 ●		
66	12	12	6	4.5	M6	0.5	RH7	5.75-5.8		625832 ○	

JIS P Line NRT | High Performance for stainless steel



HSS-PM



HSS-PM



HSS-PM



Norm

JIS

JIS

JIS

Coating

TiN(Si)

TiN(Si)

TiN(Si)



C/2

C/2

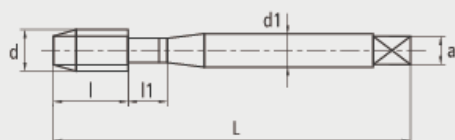
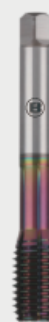
C/2

L	l	l1	d1	a	d	p	Limit		Art.Stock	Art.Stock	Art.Stock
66	12	12	6	4.5	M6	0.75	RH7	5.62-5.70		625833 ○	
66.5	27	-	6	4.5	M6	1	RH7	5.48-5.57	625834 ●		
70	13	10	6.2	5	M7	1	RH7	6.48-5.57			625835 ●
70	13	23	6.2	5	M8	0.75	RH7	7.62-7.71			625836 ○
70	13	23	6.2	5	M8	1	RH7	7.48-7.57			625837 ●
70	13	23	6.2	5	M8	1.25	RH7	7.34-7.41			625838 ●
75	13	30	7	5.5	M10	0.75	RH7	9.62-9.71			625839 ○
75	13	30	7	5.5	M10	1	RH7	9.48-9.57			625840 ●
75	13	30	7	5.5	M10	1.25	RH7	9.34-9.41			625841 ●
75	15	28	7	5.5	M10	1.5	RH8	9.18-8.28			625842 ●
82	13	29	8.5	6.5	M12	1	RH7	11.48-11.57			625843 ●
82	13	29	8.5	6.5	M12	1.25	RH7	11.34-11.41			625844 ●
82	17	25	8.5	6.5	M12	1.5	RH8	11.18-11.28			625845 ●
82	17	25	8.5	6.5	M12	1.75	RH9	11.05-11.15			625846 ●
88	20	31	10.5	8	M14	1	RH7	13.5-13.55			625847 ●
88	20	31	10.5	8	M14	1.25	RH7	13.37-13.42			625848 ●
88	20	31	10.5	8	M14	1.5	RH8	13.21-13.3			625849 ●
88	20	31	10.5	8	M14	2	RH10	12.92-13.04			625850 ●
95	20	32	12.5	10	M16	1	RH7	15.5-15.58			625851 ●
95	20	32	12.5	10	M16	1.25	RH7	15.37-15.45			625852 ●
95	20	32	12.5	10	M16	1.5	RH8	15.21-15.35			625853 ●
95	20	32	12.5	10	M16	2	RH10	14.92-15.04			625854 ●

★ TiN(Si) coating is designed for challenging machining of stainless steel, offering excellent machining characteristics and outstanding wear resistance.

★ For Stainless Steel, including the 200 series and 300 series.

P	M	K	N	S	H
-	●	-	-	-	-

JIS P Line**NRT****High Performance
for non ferrous alloy steel****Norm****Coating****HSS-PM****HSS-PM****HSS-PM****JIS****DLC****C/2****Art.Stock****JIS****DLC****C/2****Art.Stock****JIS****DLC****C/2****Art.Stock**

L	l	l1	d1	a	d	p	Limit	
31	3	-	3	2.5	M1	0.2	RH4	0.9-0.92
31	3.5	-	3	2.5	M1	0.25	RH4	0.9-0.92
31	3	-	3	2.5	M1.2	0.2	RH4	1.1-1.15
31	3.5	-	3	2.5	M1.2	0.25	RH4	1.1-1.12
36	3	-	3	2.5	M1.4	0.2	RH4	1.3-1.32
36	6.5	-	3	2.5	M1.4	0.3	RH4	1.27-1.29
36	3	-	3	2.5	M1.6	0.2	RH4	1.5-1.52
35.5	8	-	3	2.5	M1.6	0.35	RH4	1.44-1.48
35.5	8	-	3	2.5	M1.7	0.35	RH4	1.54-1.58
43.5	4	-	3	2.5	M2	0.25	RH4	1.87-1.9
43.5	10	-	3	2.5	M2	0.4	RH5	1.81-1.85
43.5	10	-	3	2.5	M2.3	0.3	RH5	2.11-2.15
43.5	13	-	3	2.5	M2.5	0.45	RH5	2.28-2.33
43.5	13	-	3	2.5	M2.6	0.45	RH5	2.38-2.43
48	6	8	4	3.2	M3	0.35	RH4	2.82-2.87
48	16	-	4	3.2	M3	0.5	RH7	2.76-2.81
48	16	-	4	3.2	M3.5	0.6	RH7	3.2-3.26
55	8	8	5	4	M4	0.5	RH7	3.75-3.78
55	18	-	5	4	M4	0.7	RH7	3.65-3.7
64	8	8	5.5	4.5	M5	0.5	RH7	4.75-4.8
63.5	20	-	5.5	4.5	M5	0.8	RH7	4.59-4.66
66	12	12	6	4.5	M6	0.5	RH7	5.75-5.8

635811 ○

635812 ●

635813 ○

635814 ●

635815 ○

635816 ●

635817 ○

635818 ●

635819 ●

635820 ○

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635824 ○

635825 ○

635826 ●

635827 ●

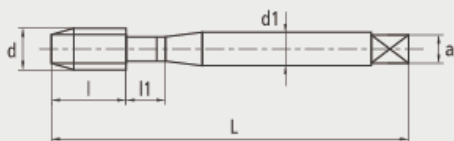
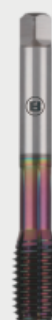
635828 ○

635829 ●

635830 ○

635831 ●

635832 ○

JIS P Line**NRT****High Performance
for non ferrous alloysteel****HSS-PM****HSS-PM****HSS-PM****Norm****JIS****JIS****JIS****Coating****DLC****DLC****DLC****C/2****C/2****C/2**

L	l	l1	d1	a	d	p	Limit	
66	12	12	6	4.5	M6	0.75	RH7	5.62-5.70
66.5	27	-	6	4.5	M6	1	RH7	5.48-5.57
70	13	10	6.2	5	M7	1	RH7	6.48-5.57
70	13	23	6.2	5	M8	0.75	RH7	7.62-7.71
70	13	23	6.2	5	M8	1	RH7	7.48-7.57
70	13	23	6.2	5	M8	1.25	RH7	7.34-7.41
75	13	30	7	5.5	M10	0.75	RH7	9.62-9.71
75	13	30	7	5.5	M10	1	RH7	9.48-9.57
75	13	30	7	5.5	M10	1.25	RH7	9.34-9.41
75	15	28	7	5.5	M10	1.5	RH8	9.18-8.28
82	13	29	8.5	6.5	M12	1	RH7	11.48-11.57
82	13	29	8.5	6.5	M12	1.25	RH7	11.34-11.41
82	17	25	8.5	6.5	M12	1.5	RH8	11.18-11.28
82	17	25	8.5	6.5	M12	1.75	RH9	11.05-11.15
88	20	31	10.5	8	M14	1	RH7	13.5-13.55
88	20	31	10.5	8	M14	1.25	RH7	13.37-13.42
88	20	31	10.5	8	M14	1.5	RH8	13.21-13.3
88	20	31	10.5	8	M14	2	RH10	12.92-13.04
95	20	32	12.5	10	M16	1	RH7	15.5-15.58
95	20	32	12.5	10	M16	1.25	RH7	15.37-15.45
95	20	32	12.5	10	M16	1.5	RH8	15.21-15.35
95	20	32	12.5	10	M16	2	RH10	14.92-15.04

Art.Stock**Art.Stock****Art.Stock**

635834 ●

635833 ○

635835 ○

635836 ○

635837 ●

635838 ●

635839 ○

635840 ●

635841 ●

635842 ●

635843 ●

635844 ●

635845 ●

635846 ●

635847 ●

635848 ●

635849 ●

635850 ●

635851 ●

635852 ●

635853 ●

635854 ●

* DLC coating offers excellent wear resistance and minimizes chip adhesion.

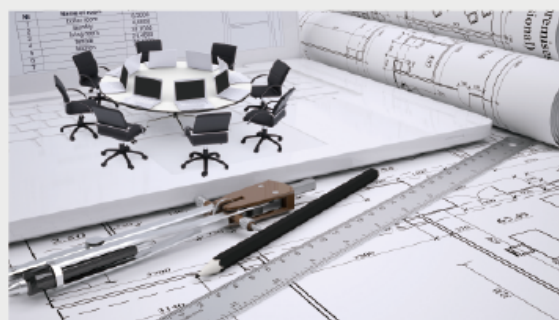
* For processing non-ferrous metals, including ADC, AC, ZDC, MC, Cu, BSC and others.

P	M	K	N	S	H
-	-	-	⊗	-	-

Requirements
Communication

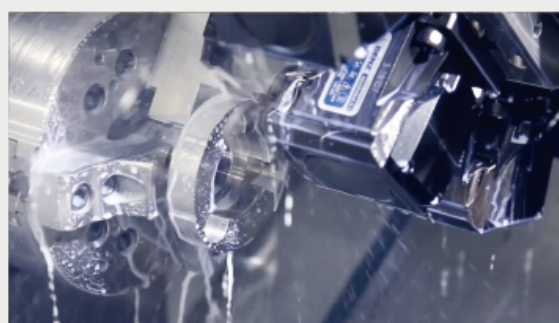


1



Solution
Confirmation

2



Samples
Test

3



On-site
Technical Service

4



Solution
Improving

5



Meet
Requirements

6



Constant
Optimization

7



1.Available for all kinds of metal cutting tools

Our customized special tool service covers all ranges of metal cutting tools such as drilling, milling, turning. Therefore in this service, customers come up with machining requirements and we are responsible for the ideal results.



2.Provide total machining solutions

Based on customer's machining conditions, workpiece materials and specific needs, we solve machining problems by one-stop service from providing total machining solutions made to achieve excellent machining effect to designing and manufacturing whole set of cutting tools.



3.Constant optimization and improvement

We do our best to constantly help customers improving and optimizing machining process, reducing costs, raising productivity and competitiveness.

In order to provide customized solution, we require some more detailed information as follows:

Drawing of the workpiece

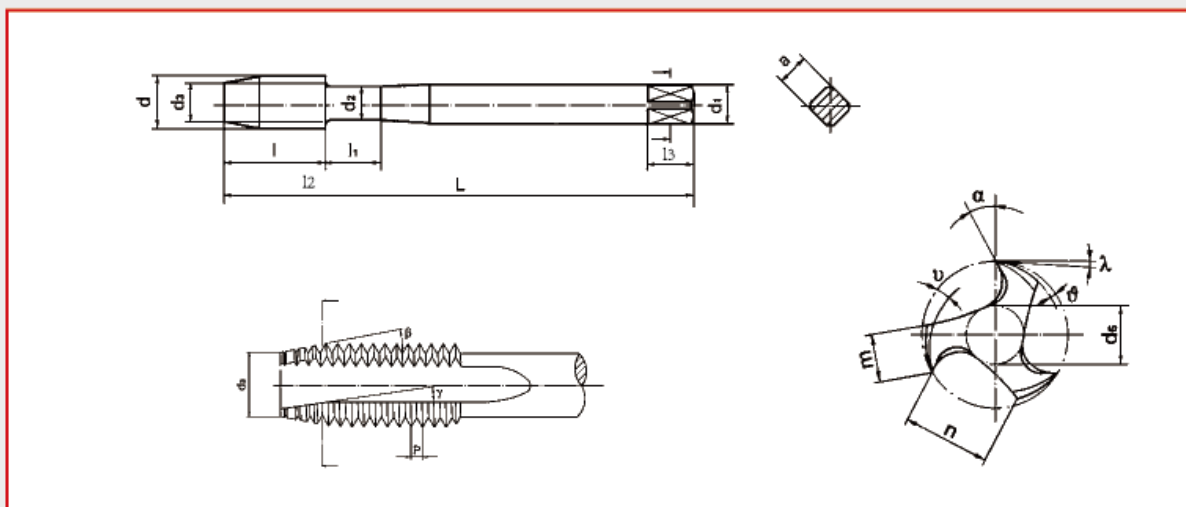
Material of the Workpiece

Clamping Situation

Machine Data

Purchasing Requirement

Symboles



Taps

Structural dimensions:

L = total length
l = thread length
l1 = neck length
l2 = length of thread & neck
l3 = square length
a = square

d1 = shank diameter
d2 = neck diameter
m = web thickness
n = pitch of thread

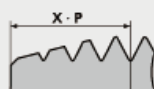
Thread:

d = nominal diameter
d3 = chamfer diameter
d6 = épaisseur de l'âme
P = pas

Geometry:

a = chip angle
b = angel of chamfer
g = angle of spiral point
J = radial relief of thread
l = radial relief angle of thread
u = relief angle of chamfer

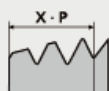
Chamfer form



X 3,5 – 5

Form(e) B

Chamfer form for taps as per DIN. The length of the chamfer is between 3,5 and 5 threads.



X 2 – 3

Form(e) C

Chamfer form for taps as per DIN. The length of the chamfer is between 2 and 3 threads.



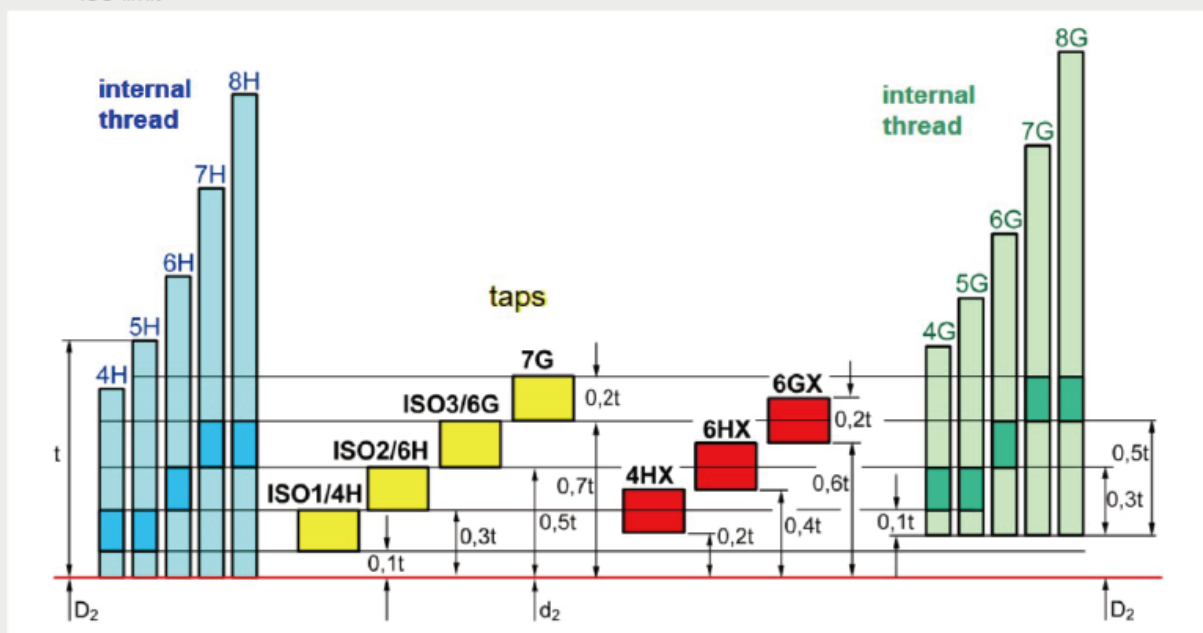
X 1,5 – 2

Form(e) E

Chamfer form for taps as per DIN. The length of the chamfer is between 1,5 and 2 threads.

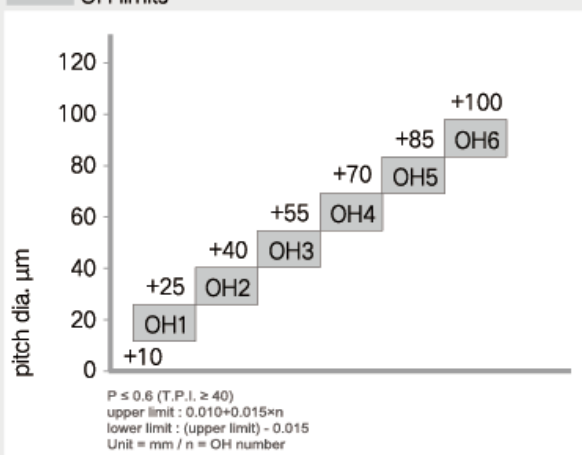
Tolerance of Cutting Tap Thread

ISO limit



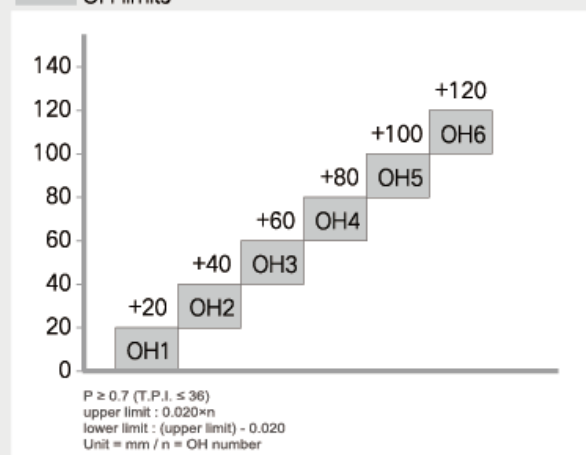
Pitch ≤ 0.6

OH limits



Pitch ≤ 0.7

OH limits



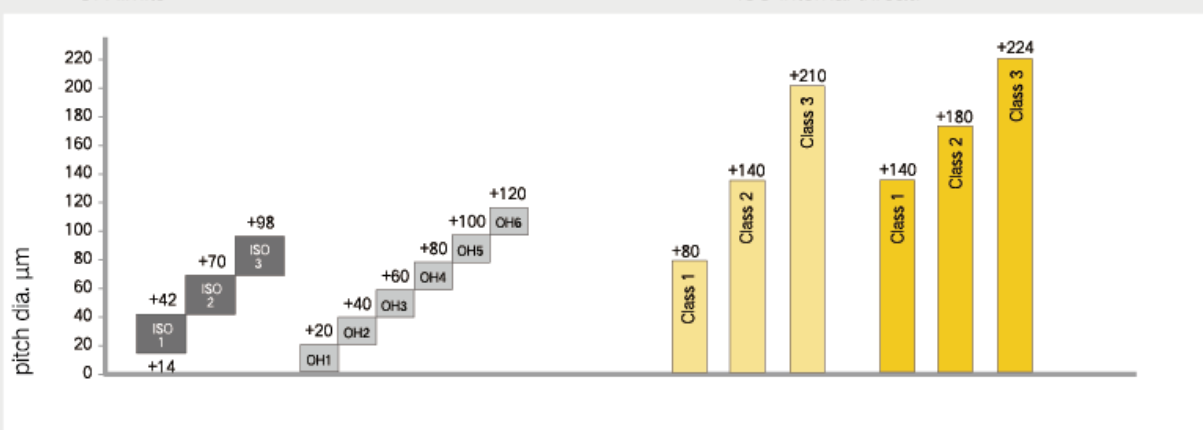
Example M10 (x 1.5)

■ ISO limits

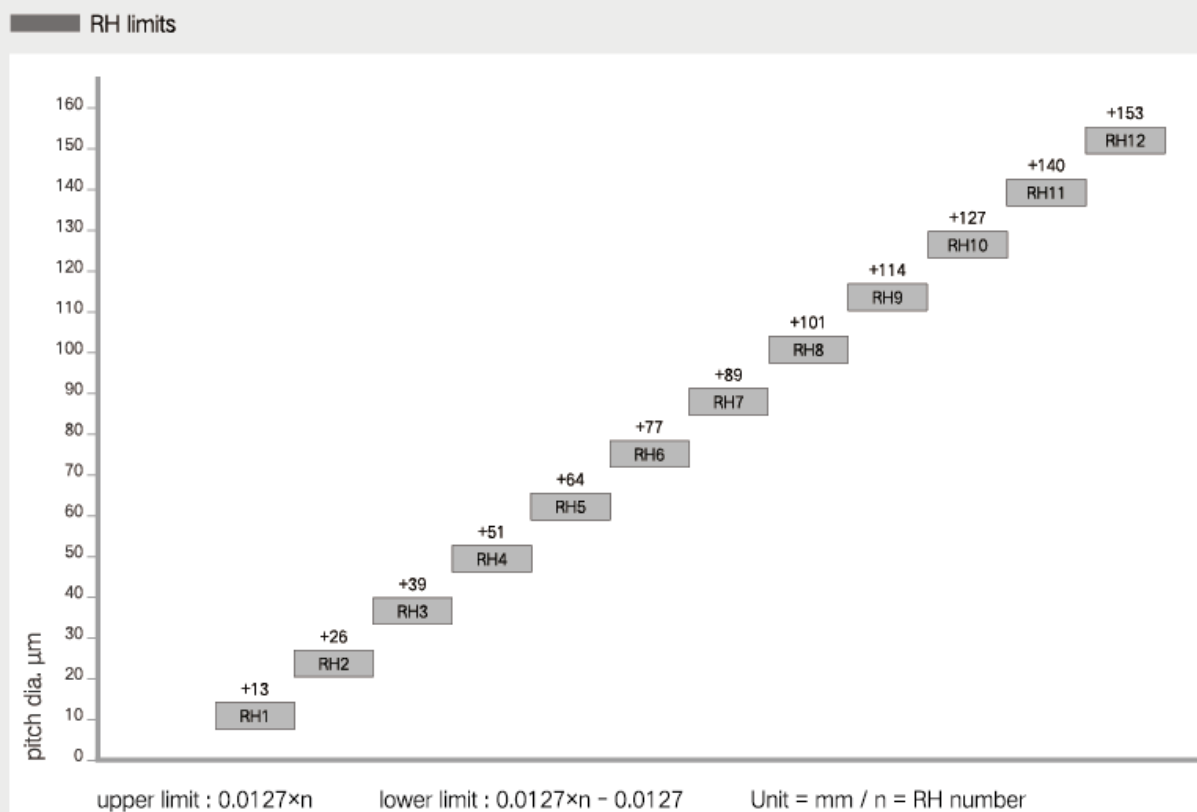
OH limits

■ JIS internal thread

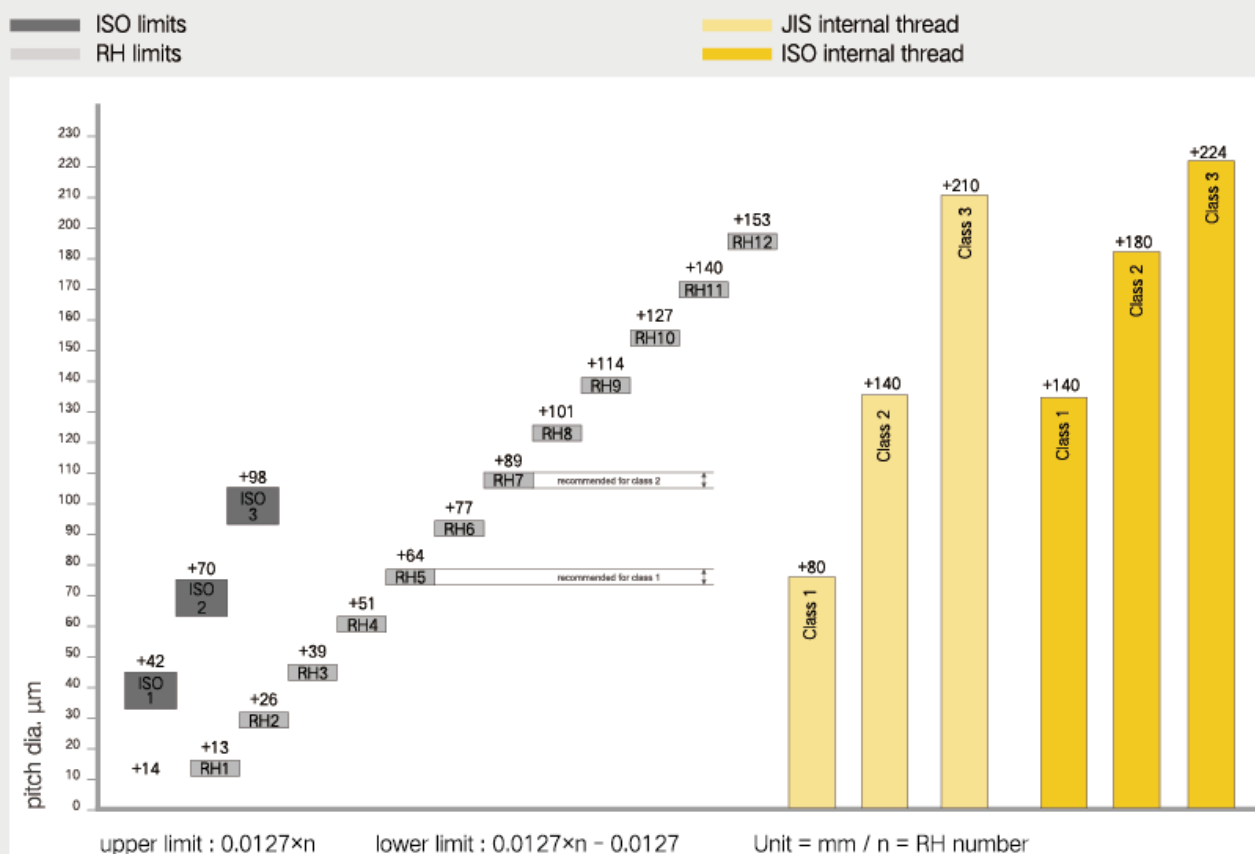
ISO internal thread



RH limits for forming taps



Example M10 (x 1.5)



Process optimization

Problem	Causes	Solutions
Oversize thread	Improper selection of tap Angle or position error Countersink is missing Core hole drill too small Tap is damaged or has cold welding Cutting speed too high or too low Machine spindle or compensation chuck do not function axially Chip packing in tap flutes Tap has the wrong tolerance class Tap has been reground	Select a suitable tap as per application chart Correct alignment of tap and drilled hole Provide the core hole, before cutting the thread, with a countersink 90° Choose the core hole as per chart, for hard materials aim for the upper tolerance limit Use a new tap, evaluate coolant being used, possibly use a tap with surface treatment Choose the correct speed as per chart, according to the working material Check the function of the spindle and the compensation chuck, if possible use a smaller machine Avoid chip packing in the flutes or under the work piece Use a gauge and a tap with the same tolerance class Tap has the wrong geometry or a burred edge. Regrind the tool, possibly choose a new tap
Undersize thread	Working piece thin walled and/or material with high expansion Wrong choice of tap (geometry not adapted) Tap has the wrong tolerance class Axial pitch error	Use a tap with a higher tolerance class respectively with oversize Select a suitable tap as per application chart Use a gauge and a tap with the same tolerance class See under «axial pitch error»
Axial pitch error	Wrong choice of tap (geometry not adapted) The countersink is missing The cutting force is too high (feed) The cutting force is too low (feed) Spindle and feed are not synchronised	Use a tap with a higher tolerance class respectively with oversize Provide the core hole, before cutting the thread, with a countersink 90° With a manual feed reduce the pressure, use a compensation chuck/tap holder. Verify the adjusted feed on the machine, possibly reduce the feed (only possible with a compensation chuck) Verify the adjusted feed on the machine. With manual feed increase the pressure The adjustment of the machine is not correct. Use a compensation chuck. Verify the machine settings
Widening in a curve	Wrong choice of tap (geometry not adapted) Angle or position error Countersink is missing The cutting force is too high (feed) The cutting force is too low (feed) Tap has been reground Machine spindle and compensation chuck do not function axially	Select a suitable tap as per application chart Correct alignment of tap and drilled hole Provide the core hole, before cutting the thread, with a countersink 90° With a manual feed reduce the pressure, use a compensation chuck/tap holder. Verify the adjusted feed on the machine, possibly reduce the feed (only possible with a compensation chuck) Verify the adjusted feed on the machine. With manual feed increase the pressure Tap has the wrong geometry or a burred edge. Regrind the tool again, eventually choose a new tap Check the function of the spindle and the compensation chuck, if possible use a smaller machine

Problem	Causes	Solutions
Rough thread surface	Wrong choice of tap (geometry not adapted) Dull tap Tap is damaged or has cold welding Insufficient lubrication Chip packing in tap flutes Cutting speed too high or too low Core drill too small Tap has been reground	Select a suitable tap as per application chart Use a new tap Use a new tap, evaluate coolant being used, possibly use a tap with surface treatment Improve the lubrication, if possible use cutting oil Avoid chip packing in the flutes or under the work piece Choose the correct speed as per chart, please also consider the working material Choose the core hole as per chart, for hard materials aim for the upper tolerance limit Tap has the wrong geometry or a burred edge. Regrind the tool again, possibly choose a new tap.
Tool life too short	Wrong choice of tap (geometry not adapted) Cutting speed too high or too low The working material is abrasive (grey cast iron, aluminium/cast alloy with Si, plastic with glass fibres reinforced etc.) Insufficient lubrication Work-hardened surface of the core hole, due to blunt or not unsuitable drills	Select a suitable tap as per application chart Choose the correct speed as per chart, please also consider the working material Use a tap with surface treatment Improve the lubrication, if possible use cutting oil Use sharp and suitable drills. For hard materials avoid the use of carbide drills
Tap breakage	Wrong choice of tap (geometry not adapted) Taps bottoming in the hole Angle or position error Countersink is missing Core hole drill too small Dull tap Working piece thin walled and/or material with high expansion Chip packing in tap flutes Tap has been reground	Select a suitable tap as per application chart Verify the adjustment of the thread length, consider the chamfer length and possibly the centre point. Avoid the use of a safety clutch on a machine with forced feed Correct alignment of tap and drilled hole Provide the core hole, before cutting the thread, with a countersink 90° Choose the core hole as per chart, for hard materials aim for the upper tolerance limit Use a new tap During the return the tap is gripped by the work piece. Use a tap with a higher relief. If possible use a special execution Avoid chip packing in the flutes or under the working piece Use a new tap
Breakage of chamfer and/or guiding teeth	Wrong choice of tap (geometry not adapted) Chip packing in tap flutes Core hole drill too small Dull tap Taps bottoming in the hole Angle or positional error Material too hard	Select a suitable tap as per application chart Avoid chip packing in the flutes or under the working piece. Blind holes being tapped in a recessed hole can cause the breakage of individual teeth on the upper part of the tap Choose the core hole as per chart, for hard materials aim for the upper tolerance limit Use a new tap Verify the adjustment of the thread length, consider the chamfer length and possibly the centre point. Avoid the use of a safety clutch on a machine with forced feed Choose the core hole as per chart, for hard materials aim for the upper tolerance limit Use a tap with more flutes, or use a set of taps