



Better Cutter, Better Work

# Cutting Tool (IV)

## Drill Bits / Taps & Dies

High Performance Quality For Industrial Applications



## Introduction

TEC-SPIRAL, with state-of-the-art technology, manufactures a full range of top-quality Tungsten Carbide Burrs, Step Drills, HSS/carbide drill bits, Cutters, Countersinks, taps and dies in China.

With the spirit of continual innovation and unceasing improvement, we are able to provide not only various international standard products, but also customized ones.

We have strict quality control managing system with ISO9001-2008 certification granted by LRQA . We never stop the pursuit of constant improvement.

By using high quality HSS/carbide raw materials and advanced CNC machines, we are manufacturing first class cutters in a modern plant. With a remarkable manufacturing ability and an abundance of inventory, we can meet customers' various demands in very short time.

Our staff members all bear in mind the importance of customer satisfaction. Advanced technology, consistent quality and a quick response are the keys to our customer satisfaction.

We are a leading pioneer in the field of all kinds of drills, cutters and all kinds of polishing abrasives in China. 100% of our products are supplied to industrial markets. Our high credit and maintenance professional quality products are widely used in the global industrial fields of aviation, shipbuilding, railway construction, automotive industry, machine engineering, heavy industry, mold making, etc.











We are providing the best service solutions for applications on metal and nonmetal. Our passion, to fulfill our customers' needs and to enthusiastically face each new challenge, stems from our desire to build and maintain strong and long-term relationships with our customers.

TEC-SPIRAL not only represents products but also technical creating spirit and professional service. TEC-SPIRAL will be at your side anywhere and anytime!

**We warmly welcome your visit and cooperation with TEC-SPIRAL!**

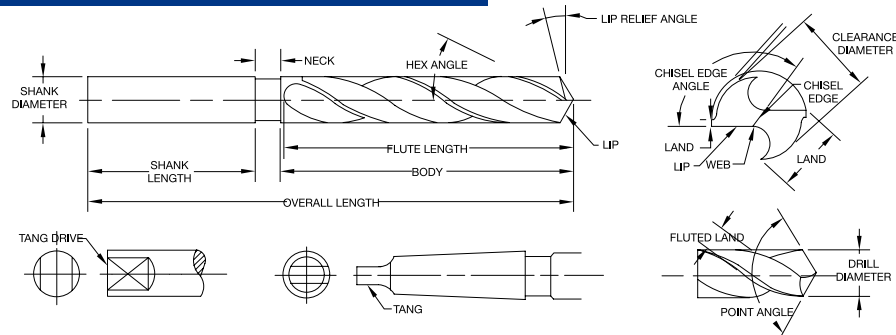


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## Drill Definitions



\*The overall length and flute length are measured to the corner of the outer lip.

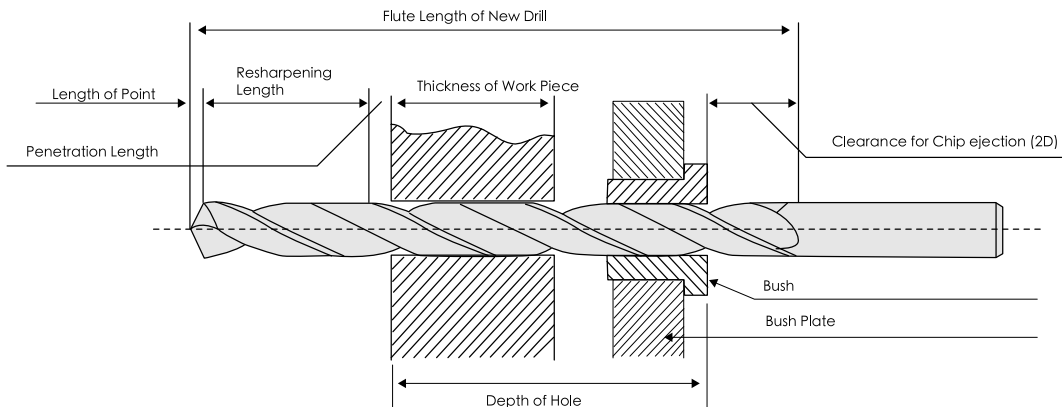
## Point Cuts

<p><b>Helical Point Normal Ground DIN1412</b>  <b>Applications:</b> for all normal drilling work in steel, non-ferrous metal and plastic. The point angle depends on the ease with which the materials can be cut.  <b>Advantages:</b> powerful main cut, resistant to impact and lateral forces. Simple manual grinding possible.  <b>Disadvantages:</b> broad cutting edge requires considerable pressure.</p>	
<p><b>Split Point In Accordance With DIN 1412 C</b>  <b>Applications:</b> for drills with very strong cores, for particularly tough, hard materials and for deep-hole drills.  <b>Advantages:</b> good centring, little pressure required. Chip distribution improves chip removal.  <b>Disadvantages:</b> perfect grinding only possible by machine.</p>	

## Resharpener

Worn cutting edges make tasks more difficult and time-consuming and can cause costly accidents, including damage to workpiece or even injury. Maintaining the cutting surfaces by resharpener the drill bits will ensure clean, consistent work. For most operations, suitable resharpener length can be calculated by using the following formula:

$$\text{Resharpener Length} = \text{Flute length} - \text{Depth of Hole} - \text{Drill Diameter} - \text{Penetration Length}$$



## Type of Drill Bits & Application

Type	Feature	Application
<b>HSS Straight Shank Jobber Drills</b> 	For general purpose use.	Wide variety of ferrous and non-ferrous metals, timber and plastic
<b>HSS Long Length Twist Drills</b> 	For general purpose drilling where a longer than jobber length drill is required	Alloy steels, carbon steels, cast iron, hardened alloy steels and stainless steels
<b>HSS Parabolic Long Length Twist Drills</b> 	Excellent chipbreaking point on long chipped material.	non-alloy and alloy steels
<b>HSS Stub Length Twist Drills</b> 	Ideal for shallow holes including sheet metal and drilling out broken studs. Higher accuracy due to shorter length.	a wide range of thin-walled material (inc. carbon/alloy steel, stainless, cast iron, titanium&aluminium)
<b>HSS Double End Drills</b> 	For general purpose applications. Drills twice as many holes as a single end drill bits	For assembly work in thin-walled materials such as sheet steels, flat steels and profile steels
<b>HSS Left Hand Twist Drills</b> 	Left-hand helix for counterclockwise drilling and broken screw removal. Ideal for use with screw extractors.	High tensile strength materials
<b>HSS Subland Drills</b> 	For the efficient production of clearance holes and screw head angles. The cutting speed is governed by the larger diameter but the feed must suit the smaller.	Ferrous and non-ferrous metals, timber and plastic
<b>Solid Carbide Twist Drills</b> 	Manufactured from high quality micrograin carbide, ensuring toughness on a wide range of applications. Capable of machining up to 5 x diameter in one pass.	Steels, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy and light metal and abrasive plastic
<b>Carbide Tipped Twist Drills</b> 	YG6x /YG8 carbide tip & W9hss/alloy steel shank. Offers increased penetration rate and greatly extended tool life(compared with hss jobber drill).	Cast iron, alloy steel
<b>HSS Morse Taper Shank Drills</b> 	For heavy-duty jobs using a drill press or a lathe. The taper design allows for quick and convenient change of drill bits. Fit all standard morse tape spindles.	Steels, cast steels, grey cast iron, malleable cast iron, nickel brass and graphite
<b>Carbide Tipped Twist Drills with Taper Shank</b> 	YG6x /YG8 carbide tip & W9hss/alloy steel shank. Offers increased penetration rate and greatly extended tool life(compared with hss jobber drill). Fit all standard morse tape spindles.	Cast iron, alloy steel

### Type of Drill Bits & Application

Type	Feature	Application
<b>HSS Reduced Shank Drills</b> 	Reduced shank diameter enables drill to be used in standard 1/2in. capacity chuck. For general purpose light duty work.	steels, cast iron, nickel brass, and graphite
<b>HSS Impact Hex Shank Drill Bits</b> 	1/4" hex shank for easy coupling into a impact drill, cordless screwdriver, etc. Perfect for small project around the house or office.	drywall, wood, plastic and thin metal
<b>HSS-E Spot Weld Drills</b> 	Precision drilling for hard hand-drill applications. Burr-free milling of welding spots and thin-walled work pieces without centering.	sheet steel, sheet brass, sheet aluminium, sheet zinc, sheet copper, plastic sheets
<b>Solid Carbide NC Spotting Drills</b> 	With acute starting abilities for close tolerance hole location. For countersinking and chamfering of tapping holes in one operation. Only suitable for shallow depth drilling.	ferrous and non-ferrous metals
<b>HSS Saw Drills</b> 	with sharp side cutting teeth	wood, metal and plastic

For longer tool life and better chip removal ability, different coatings are available for different material processing.

Coating	Feature	Photo
<b>Black Finish</b>	General purpose coating for HSS drill bits	
<b>Black Flute &amp; Bright Body</b>	General purpose coating for HSS drill bits	
<b>Black Flute &amp; Golden Body</b>	General purpose coating for HSS drill bits	
<b>Amber Color</b>	Regular coating for HSS-E jobber drills, easy to distinguish from HSS ones.for shallow depth drilling.	
<b>TiN</b>	General purpose coating, high cost-effective, makes the cutter longer tool life.	
<b>TiAlN</b>	High performance coating with a high degree of hardness, high wear resistance and low heat conductivity. Recommended for solid carbide drill bits.	

### Recommendation For The Use Of Drill Bits

Work Material		Cutting Speed M/Min	D(mm)													Drill Mat'l	
Material	Tensile Strength N/mm2		1	2	3	4	5	6	7	8	9	10	12	16	20		
General Structural Steel	SS34, SS41	300-500	32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
	SS50	500-800	25	8000	4000	2650	2000	1600	1330	1140	1000	880	660	500	400	400	HSS
Fast Cut Steel	SUM21, SUM22L	360-550	32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
	SUM32	600-850	25	8000	4000	2650	2000	1600	1330	1140	1000	880	660	500	400	400	HSS
Spring Steel	SUP3, SUP10	HB240-330	4	1280 ~	640 ~	420 ~	320 ~	160 ~	210 ~	180 ~	160 ~	140 ~	130 ~	105 ~	80 ~	65 ~	HSS Co
	SUP12		3200	1600	1070	800	640	530	460	400	360	320	270	200	160	160	HSS Co
Carbon Steel	S10C-S20C	340-600	32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
	S25C-S45C	600-800	20	6400	3200	2120	1600	1280	1060	910	800	710	640	530	400	320	320
Alloy Steel	SCr415 SCr420	500-800	16	5000	2500	1700	1250	1020	850	730	630	570	510	430	320	260	HSS
	SCr435 SCr440		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS
Bearing Steel	SCM440	600-900	16	5000	2500	1700	1250	1020	850	730	630	570	510	430	320	260	HSS
	SCM430 SCM445		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS
Alloy Steel	SNCM420	900-1200	10	3200	1600	1070	800	640	530	460	400	360	320	270	200	160	HSS Co
	SNCM439		0.013	0.025	0.038	0.05	0.05	0.06	0.07	0.08	0.09	0.1	0.1	0.125	0.16	0.16	HSS Co
Bearing Steel	SUJ1, SUJ2, SUJ3	750-850	16	5000	2500	1700	1250	1020	850	730	630	570	510	430	320	260	HSS Co
			0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS Co
Alloy Steel	SKD11 SKD12	800-1000	10	3200	1600	1070	800	640	530	460	400	360	320	270	200	160	HSS Co
	SKD4 SKD6		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS Co
High Speed Tool Steel	SKD2 SKS3 SKT5	700-850	16	5000	2500	1700	1250	1020	850	730	630	570	510	430	320	260	HSS Co
	SKD61 SKD62		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS Co
High Speed Tool Steel	SKS7 SKS21	900-150	10	3200	1600	1070	800	640	530	460	400	360	320	270	200	160	HSS Co
	SKS41 SKS42		0.013	0.025	0.038	0.05	0.05	0.06	0.07	0.08	0.09	0.1	0.1	0.125	0.16	0.16	HSS Co
Stainless Steel	SKH51 SKH55	500-900	12	3800	1900	1270	960	760	630	540	480	420	380	320	210	190	HSS Co
	SKH57		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS Co
Heat Resistant Steel	SUS410, SUS405	500-750	10	3200	1600	1070	800	640	530	460	400	360	320	270	200	160	HSS Co
	SUS420, SUS430		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS Co
Heat Resistant Steel	SUS430F	500-750	10	3200	1600	1070	800	640	530	460	400	360	320	270	200	160	HSS Co
	SUS303, SUS304		0.016	0.032	0.038	0.063	0.063	0.075	0.088	0.1	0.113	0.125	0.125	0.16	0.2	0.2	HSS Co
Heat Resistant Steel	SUS316	500-800	6	1920	960	640	480	380	320	270	240	210	190	160	120	95	HSS Co
	SUH660		0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.1	0.125	0.16	0.16	HSS Co

## Recommendation For The Use Of Drill Bits

Work Material			D(mm)													Drill Mat'l
Material	Tensile Strength N/mm2	Cutting Speed M/Min	1	2	3	4	5	6	7	8	9	10	12	16	20	
Grey Cast Iron FC15, FC20	HB180-240	32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
			0.025	0.05	0.075	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.25	0.315		
FC30	HB240-300	20	6400	3200	2120	1600	1280	1000	800	710	640	530	400	320	HSS	
			0.025	0.05	0.075	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.25	0.315		
Ductile Cast Iron FCD45, FCD60	HB160-240	25	8000	4000	2650	2000	1600	1330	1140	1000	880	800	660	500	400	HSS
			0.025	0.05	0.075	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.25	0.315		
Titanium & Titanium Alloy Ti99.5-99.8 TiA15 SnZr5 TiA15V4, TiCu2	350-800	10	3200	1600	1070	800	640	530	460	400	360	320	270	200	160	HSS Co
			0.025	0.05	0.075	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.25	0.315		
			1600	800	540	400	320	270	230	200	180	160	130	100	80	
Pure Aluminum A1050T, A2024P AlMg	40-450	80	25600	12800	8500	6400	5100	4250	3660	3200	2840	2560	2130	1600	1280	HSS
			0.032	0.038	0.063	0.125	0.125	0.16	0.175	0.2	0.225	0.25	0.25	0.315	0.4	
Aluminum Alloy ADC10 ADC1, ADC3 ADC12	170-280 180-300	63 50	20000	10000	6700	5000	4000	3300	2800	2500	2200	2000	1670	1250	1000	HSS
			0.032	0.038	0.063	0.125	0.125	0.16	0.175	0.2	0.225	0.25	0.25	0.315	0.4	
			16000	8000	5300	4000	3200	2670	2290	2000	1780	1600	1330	1000	800	
Copper DCu, C1220P	220-370	32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
			0.025	0.05	0.075	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.2	0.25	0.315	
Brass YBSC3, C2710P C2400P	280-550	32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
			0.025	0.05	0.075	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.2	0.25	0.31	
Bronze CuNi115Si, CuNi3Si C715P(T) C7060P(T) CuA15, CuA18	250-800 300-500 300-550	25 20 32	8000	4000	2650	2000	1600	1330	1140	1000	880	800	660	500	400	HSS
			0.02	0.04	0.06	0.08	0.08	0.096	0.112	0.125	0.144	0.16	0.16	0.2	0.25	
			6400	3200	2120	1600	1280	1060	910	800	710	640	530	400	320	
C6161P(B) C6191B C5210P	400-650 250-350	15 32	10200	5100	3400	2550	2050	1700	1450	1280	1130	1020	850	640	510	HSS
			0.02	0.04	0.06	0.08	0.08	0.096	0.112	0.125	0.144	0.16	0.16	0.2	0.25	
			4800	2400	1600	1200	960	800	690	600	530	480	400	300	240	
G-CuSn10Zn G-CuSn7Zn1Pb	250-350	20	6400	3200	2120	1600	1280	1060	910	800	710	640	530	400	320	HSS Co
			0.02	0.04	0.06	0.08	0.08	0.096	0.112	0.125	0.144	0.16	0.16	0.2	0.25	

- ◆ Rotation speed: TiN drill x1.2~1.5, super hard drill x1.5~2.0
- ◆ Feed: for TiN drill use same data listed in the above table, Carbide drill x 0.6 ~ 0.8.
- ◆ For deep hole drilling (over 3D), feed should be reduced by 10~20%.  
In case of over 10D, feed should be reduced by 30%.
- ◆ Above data is for reference only. Data may be modified according to actual cutting condition.

### Safety Appliances :



Safety Glasses



Safety Facial Mask



Safety Earflap



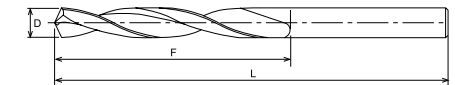
Safety Gloves

## Metric HSS Jobber Drills, DIN338 Standard

- ◆ Right hand spiral flute Material: HSS, HSS-E.
- ◆ Drill points: 118°/135°.
- ◆ DIN1412C split point for more accurate centering (from dia. 3.0mm)
- ◆ Surface finish: bright finish, black oxide, TiN coated, black flute&golden shank, black flute&white shank, amber color
- ◆ For general purpose use. Wide variety of ferrous and non-ferrous metals, timber and plastic



### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber	Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
0.5	0.0197	6	22	14AA-0107A	14AA-0107B	9.5	0.374	81	125	14AA-0130A	14AA-0130B
1	0.0394	12	34	14AA-0108A	14AA-0108B	10	0.3937	87	133	14AA-0131A	14AA-0131B
1.5	0.0591	18	40	14AA-0109A	14AA-0109B	10.2	0.4016	87	133	14AA-0132A	14AA-0132B
2	0.0787	24	49	14AA-0110A	14AA-0110B	10.5	0.4134	87	133	14AA-0133A	14AA-0133B
2.5	0.0984	30	57	14AA-0111A	14AA-0111B	11	0.4331	94	142	14AA-0134A	14AA-0134B
3	0.1181	33	61	14AA-0112A	14AA-0112B	11.5	0.4528	94	142	14AA-0135A	14AA-0135B
3.2	0.1260	36	65	14AA-0113A	14AA-0113B	12	0.4724	101	151	14AA-0136A	14AA-0136B
3.5	0.1378	39	70	14AA-0114A	14AA-0114B	12.5	0.4921	101	151	14AA-0137A	14AA-0137B
4	0.1575	43	75	14AA-0115A	14AA-0115B	13	0.5118	101	151	14AA-0138A	14AA-0138B
4.2	0.1654	43	75	14AA-0116A	14AA-0116B	13.5	0.5315	108	160	14AA-0139A	14AA-0139B
4.5	0.1772	47	80	14AA-0117A	14AA-0117B	14	0.5512	108	160	14AA-0140A	14AA-0140B
4.8	0.189	52	86	14AA-0118A	14AA-0118B	14.5	0.5709	114	169	14AA-0141A	14AA-0141B
5	0.1969	52	86	14AA-0119A	14AA-0119B	15	0.5906	114	169	14AA-0142A	14AA-0142B
5.2	0.2047	52	86	14AA-0120A	14AA-0120B	15.5	0.6102	120	178	14AA-0143A	14AA-0143B
5.5	0.2165	57	93	14AA-0121A	14AA-0121B	16	0.6299	120	178	14AA-0144A	14AA-0144B
6	0.2362	57	93	14AA-0122A	14AA-0122B	16.5	0.6496	125	184	14AA-0145A	14AA-0145B
6.5	0.2559	63	101	14AA-0123A	14AA-0123B	17	0.6693	125	184	14AA-0146A	14AA-0146B
6.8	0.2677	69	109	14AA-0124A	14AA-0124B	17.5	0.6890	130	191	14AA-0147A	14AA-0147B
7	0.2756	69	109	14AA-0125A	14AA-0125B	18	0.7087	130	191	14AA-0148A	14AA-0148B
7.5	0.2953	69	109	14AA-0126A	14AA-0126B	18.5	0.7283	135	198	14AA-0149A	14AA-0149B
8	0.315	75	117	14AA-0127A	14AA-0127B	19	0.7480	135	198	14AA-0150A	14AA-0150B
8.5	0.3346	75	117	14AA-0128A	14AA-0128B	19.5	0.7677	140	205	14AA-0151A	14AA-0151B
9	0.3543	81	125	14AA-0129A	14AA-0129B	20	0.7874	140	205	14AA-0152A	14AA-0152B

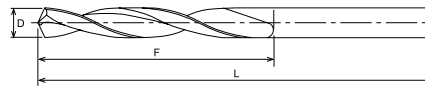
135° / / Black / Black & Gloden / Black & Bright / TiN are available according to requirements.



### Imperial HSS Jobber Drills, ASME/ANSI B94.11M Standard

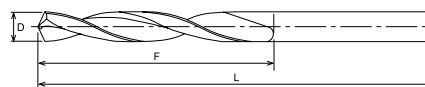
- ◆ Right hand spiral flute Material: HSS, HSS-E.
- ◆ Drill points: 118°/135°.
- ◆ DIN1412C split point for more accurate centering (from dia. 1/8")
- ◆ Surface finish: bright finish, black oxide, TiN coated, black flute&golden shank, black flute&white shank, amber color
- ◆ For general purpose use. Wide variety of ferrous and non-ferrous metals, timber and plastic

#### Fractional size



Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
1/64	0.0156	3/16"	3/4"	14AA-0153A	14AA-0153B
1/32	0.0312	1/2"	1-3/8"	14AA-0154A	14AA-0154B
3/64	0.0469	3/4"	1-3/4"	14AA-0155A	14AA-0155B
1/16"	0.0625	7/8"	1-7/8"	14AA-0156A	14AA-0156B
5/64	0.0781	1	2	14AA-0157A	14AA-0157B
3/32	0.0938	1-1/4"	2-1/4"	14AA-0158A	14AA-0158B
7/64	0.1094	1-1/2"	2-5/8"	14AA-0159A	14AA-0159B
1/8"	0.125	1-5/8"	2-3/4"	14AA-0160A	14AA-0160B
9/64	0.1406	1-3/4"	2-7/8"	14AA-0161A	14AA-0161B
5/32	0.1562	2	3-1/8"	14AA-0162A	14AA-0162B
11/64	0.1719	2-1/8"	3-1/4"	14AA-0163A	14AA-0163B
3/16"	0.1875	2-5/16"	3-1/2"	14AA-0164A	14AA-0164B
13/64	0.2031	2-7/16"	3-5/8"	14AA-0165A	14AA-0165B
7/32	0.2188	2-1/2"	3-3/4"	14AA-0166A	14AA-0166B
15/64	0.2344	2-5/8"	3-7/8"	14AA-0167A	14AA-0167B
1/4"	0.25	2-3/4"	4	14AA-0168A	14AA-0168B

#### Number Size

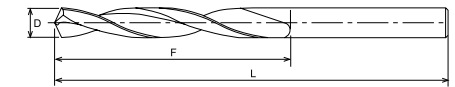


Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
#1	0.228	2-5/8"	3-7/8"	14AA-0001A	14AA-0001B
#2	0.221	2-5/8"	3-7/8"	14AA-0002A	14AA-0002B
#3	0.213	2-1/2"	3-3/4"	14AA-0003A	14AA-0003B
#4	0.209	2-1/2"	3-3/4"	14AA-0004A	14AA-0004B
#5	0.2055	2-1/2"	3-3/4"	14AA-0005A	14AA-0005B
#6	0.204	2-1/2"	3-3/4"	14AA-0006A	14AA-0006B
#7	0.201	2-7/16"	3-5/8"	14AA-0007A	14AA-0007B
#8	0.199	2-7/16"	3-5/8"	14AA-0008A	14AA-0008B
#9	0.196	2-7/16"	3-5/8"	14AA-0009A	14AA-0009B
#10	0.1935	2-7/16"	3-5/8"	14AA-0010A	14AA-0010B

### Imperial HSS Jobber Drills, ASME/ANSI B94.11M Standard

- ◆ Right hand spiral flute Material: HSS, HSS-E.
- ◆ Drill points: 118°/135°.
- ◆ DIN1412C split point for more accurate centering
- ◆ Surface finish: bright finish, black oxide, TiN coated, black flute&golden shank, black flute&white shank, amber color
- ◆ Recommended for mild steel and general grades of stainless steel

#### Number Size



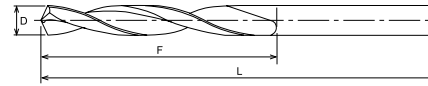
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
#21	0.159	2-1/8"	3-1/4"	14AA-0021A	14AA-0021B
#22	0.157	2	3-1/8"	14AA-0022A	14AA-0022B
#23	0.154	2	3-1/8"	14AA-0023A	14AA-0023B
#24	0.152	2	3-1/8"	14AA-0024A	14AA-0024B
#25	0.1495	1-7/8"	3	14AA-0025A	14AA-0025B
#26	0.147	1-7/8"	3	14AA-0026A	14AA-0026B
#27	0.144	1-7/8"	3	14AA-0027A	14AA-0027B
#28	0.1405	1-3/4"	2-7/8"	14AA-0028A	14AA-0028B
#29	0.136	1-3/4"	2-7/8"	14AA-0029A	14AA-0029B
#30	0.1285	1-5/8"	2-3/4"	14AA-0030A	14AA-0030B
#31	0.12	1-5/8"	2-3/4"	14AA-0031A	14AA-0031B
#32	0.116	1-5/8"	2-3/4"	14AA-0032A	14AA-0032B
#33	0.113	1-1/2"	2-5/8"	14AA-0033A	14AA-0033B
#34	0.111	1-1/2"	2-5/8"	14AA-0034A	14AA-0034B
#35	0.11	1-1/2"	2-5/8"	14AA-0035A	14AA-0035B
#36	0.1065	1-7/16"	2-1/2"	14AA-0036A	14AA-0036B
#37	0.104	1-7/16"	2-1/2"	14AA-0037A	14AA-0037B
#38	0.1015	1-7/16"	2-1/2"	14AA-0038A	14AA-0038B
#39	0.0995	1-3/8"	2-3/8"	14AA-0039A	14AA-0039B
#40	0.098	1-3/8"	2-3/8"	14AA-0040A	14AA-0040B
#41	0.096	1-3/8"	2-3/8"	14AA-0041A	14AA-0041B
#42	0.0935	1-1/4"	2-1/4"	14AA-0042A	14AA-0042B
#43	0.089	1-1/4"	2-1/4"	14AA-0043A	14AA-0043B
#44	0.086	1-1/8"	2-1/8"	14AA-0044A	14AA-0044B
#45	0.082	1-1/8"	2-1/8"	14AA-0045A	14AA-0045B
#46	0.081	1-1/8"	2-1/8"	14AA-0046A	14AA-0046B
#47	0.0785	1	2	14AA-0047A	14AA-0047B
#48	0.076	1	2	14AA-0048A	14AA-0048B
#49	0.073	1	2	14AA-0049A	14AA-0049B
#50	0.07	1	2	14AA-0050A	14AA-0050B

Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
#51	0.067	1	2	14AA-0051A	14AA-0051B
#52	0.0635	7/8"	1-7/8"	14AA-0052A	14AA-0052B
#53	0.0595	7/8"	1-7/8"	14AA-0053A	14AA-0053B
#54	0.055	7/8"	1-7/8"	14AA-0054A	14AA-0054B
#55	0.052	7/8"	1-7/8"	14AA-0055A	14AA-0055B
#56	0.0465	3/4"	1-3/4"	14AA-0056A	14AA-0056B
#57	0.043	3/4"	1-3/4"	14AA-0057A	14AA-0057B
#58	0.042	11/16"	1-5/8"	14AA-0058A	14AA-0058B
#59	0.041	11/16"	1-5/8"	14AA-0059A	14AA-0059B
#60	0.04	11/16"	1-5/8"	14AA-0060A	14AA-0060B
#61	0.039	11/16"	1-5/8"	14AA-0061A	14AA-0061B
#62	0.038	5/8"	1-1/2"	14AA-0062A	14AA-0062B
#63	0.037	5/8"	1-1/2"	14AA-0063A	14AA-0063B
#64	0.036	5/8"	1-1/2"	14AA-0064A	14AA-0064B
#65	0.035	5/8"	1-1/2"	14AA-0065A	14AA-0065B
#66	0.033	1/2"	1-3/8"	14AA-0066A	14AA-0066B
#67	0.032	1/2"	1-3/8"	14AA-0067A	14AA-0067B
#68	0.031	1/2"	1-3/8"	14AA-0068A	14AA-0068B
#69	0.0292	1/2"	1-3/8"	14AA-0069A	14AA-0069B
#70	0.028	3/8"	1-1/4"	14AA-0070A	14AA-0070B
#71	0.026	3/8"	1-1/4"	14AA-0071A	14AA-0071B
#72	0.025	5/16"	1-1/8"	14AA-0072A	14AA-0072B
#73	0.024	5/16"	1-1/8"	14AA-0073A	14AA-0073B
#74	0.0225	1/4"	1	14AA-0074A	14AA-0074B
#75	0.021	1/4"	1	14AA-0075A	14AA-0075B
#76	0.02	3/16"	7/8"	14AA-0076A	14AA-0076B
#77	0.018	3/16"	7/8"	14AA-0077A	14AA-0077B
#78	0.016	3/16"	7/8"	14AA-0078A	14AA-0078B
#79	0.0145	1/8"	3/4"	14AA-0079A	14AA-0079B
#80	0.0135	1/8"	3/4"	14AA-0080A	14AA-0080B

are available according to requirements.

Continued... ..

Letter size



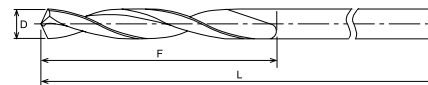
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
A	0.234	2-5/8"	3-7/8"	14AA-081AA	14AA-081AB
B	0.238	2-3/4"	4	14AA-082BA	14AA-082BB
C	0.242	2-3/4"	4	14AA-083CA	14AA-083CB
D	0.246	2-3/4"	4	14AA-084DA	14AA-084DB
E	0.25	2-3/4"	4	14AA-085EA	14AA-085EB
F	0.257	2-7/8"	4-1/8"	14AA-086FA	14AA-086FB
G	0.261	2-7/8"	4-1/8"	14AA-087GA	14AA-087GB
H	0.266	2-7/8"	4-1/8"	14AA-088HA	14AA-088HB
I	0.272	2-7/8"	4-1/8"	14AA-089IA	14AA-089IB
J	0.277	2-7/8"	4-1/8"	14AA-090JA	14AA-090JB
K	0.281	2-15/16"	4-1/4"	14AA-091KA	14AA-091KB
L	0.29	2-15/16"	4-1/4"	14AA-092LA	14AA-092LB
M	0.295	3-1/16"	4-3/8"	14AA-093MA	14AA-093MB

Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
N	0.302	3-1/16"	4-3/8"	14AA-094NA	14AA-094NB
O	0.316	3-3/16"	4-1/2"	14AA-095OA	14AA-095OB
P	0.323	3-5/16"	4-5/8"	14AA-096PA	14AA-096PB
Q	0.332	3-7/16"	4-3/4"	14AA-097QA	14AA-097QB
R	0.339	3-7/16"	4-3/4"	14AA-098RA	14AA-098RB
S	0.348	3-1/2"	4-7/8"	14AA-099SA	14AA-099SB
T	0.358	3-1/2"	4-7/8"	14AA-100TA	14AA-100TB
U	0.368	3-5/8"	5	14AA-101UA	14AA-101UB
V	0.377	3-5/8"	5	14AA-102VA	14AA-102VB
W	0.386	3-3/4"	5-1/8"	14AA-103WA	14AA-103WB
X	0.397	3-3/4"	5-1/8"	14AA-104XA	14AA-104XB
Y	0.404	3-7/8"	5-1/4"	14AA-105YA	14AA-105YB
Z	0.413	3-7/8"	5-1/4"	14AA-106ZA	14AA-106ZB

Metric HSS Long Length Twist Drills, DIN340 Standard

- ◆ General purpose long reach drills to DIN340
- ◆ Right hand spiral flute Material: HSS, HSS-E., Drill points: 118°/135°
- ◆ DIN1412C split point for more accurate centering (from dia. 3.0mm)
- ◆ Surface finish: bright finish, black oxide, TiN coated
- ◆ Recommended for cast steel, grey cast iron, malleable cast iron, nickel brass and graphite

Metric



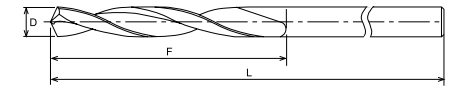
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
1	0.0394	33	56	14AA-0185A	14AA-0185B
1.5	0.0591	45	70	14AA-0186A	14AA-0186B
2	0.0787	56	85	14AA-0187A	14AA-0187B
2.5	0.0984	62	95	14AA-0188A	14AA-0188B
3	0.1181	66	100	14AA-0189A	14AA-0189B
3.2	0.126	69	106	14AA-0190A	14AA-0190B
3.5	0.1378	73	112	14AA-0191A	14AA-0191B
4	0.1575	78	119	14AA-0192A	14AA-0192B
4.2	0.1654	78	119	14AA-0193A	14AA-0193B
4.5	0.1772	82	126	14AA-0194A	14AA-0194B
4.8	0.189	87	132	14AA-0195A	14AA-0195B
5	0.1969	87	132	14AA-0196A	14AA-0196B
5.5	0.2165	91	139	14AA-0197A	14AA-0197B
6	0.2362	91	139	14AA-0198A	14AA-0198B
6.5	0.2559	97	148	14AA-0199A	14AA-0199B

Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
6.8	0.2677	102	156	14AA-0200A	14AA-0200B
7	0.2756	102	156	14AA-0201A	14AA-0201B
7.5	0.2953	102	156	14AA-0202A	14AA-0202B
8	0.315	109	165	14AA-0203A	14AA-0203B
8.5	0.3346	109	165	14AA-0204A	14AA-0204B
9	0.3543	115	175	14AA-0205A	14AA-0205B
9.5	0.374	115	175	14AA-0206A	14AA-0206B
10	0.3937	121	184	14AA-0207A	14AA-0207B
10.2	0.4016	121	184	14AA-0208A	14AA-0208B
10.5	0.4134	121	184	14AA-0209A	14AA-0209B
11	0.4331	128	195	14AA-0210A	14AA-0210B
11.5	0.4528	128	195	14AA-0211A	14AA-0211B
12	0.4724	134	205	14AA-0212A	14AA-0212B
12.5	0.4921	134	205	14AA-0213A	14AA-0213B
13	0.5118	134	205	14AA-0214A	14AA-0214B

Metric HSS Parabolic Long Length Twist Drills, DIN340 Standard

- ◆ HSS Long Series Parabolic Drills to DIN340
- ◆ Right hand spiral flute Material: HSS, HSS-E., Drill points: 130°
- ◆ DIN1412C split point for more accurate centering (from dia. 3.0mm)
- ◆ Surface finish: bright finish, black oxide, TiN coated
- ◆ High resistance to non-alloy and alloy steels.
- ◆ Excellent chipbreaking point on long chipped material.

Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
3.00	0.1339	66.0	100.0	14AA-0215A	14AA-0215B
3.20	0.1417	69.0	106.0	14AA-0216A	14AA-0216B
3.50	0.1535	73.0	112.0	14AA-0217A	14AA-0217B
4.00	0.1654	78.0	119.0	14AA-0218A	14AA-0218B
4.20	0.1772	78.0	119.0	14AA-0219A	14AA-0219B
4.50	0.189	82.0	126.0	14AA-0220A	14AA-0220B
4.80	0.1969	87.0	132.0	14AA-0221A	14AA-0221B
5.00	0.2165	87.0	132.0	14AA-0222A	14AA-0222B
5.50	0.2362	91.0	139.0	14AA-0223A	14AA-0223B
6.00	0.2559	91.0	139.0	14AA-0224A	14AA-0224B
6.50	0.2756	97.0	148.0	14AA-0225A	14AA-0225B
7.00	0.2953	102.0	156.0	14AA-0226A	14AA-0226B

Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
7.50	0.315	102.0	156.0	14AA-0227A	14AA-0227B
8.00	0.3346	109.0	165.0	14AA-0228A	14AA-0228B
8.50	0.3543	109.0	165.0	14AA-0229A	14AA-0229B
9.00	0.374	115.0	175.0	14AA-0230A	14AA-0230B
9.50	0.3937	115.0	175.0	14AA-0231A	14AA-0231B
10.00	0.4016	121.0	184.0	14AA-0232A	14AA-0232B
10.50	0.4134	121.0	184.0	14AA-0233A	14AA-0233B
11.00	0.4331	128.0	195.0	14AA-0234A	14AA-0234B
11.50	0.4528	128.0	195.0	14AA-0235A	14AA-0235B
12.00	0.4724	134.0	205.0	14AA-0236A	14AA-0236B
12.50	0.4921	134.0	205.0	14AA-0237A	14AA-0237B
13.00	0.5118	134.0	205.0	14AA-0238A	14AA-0238B

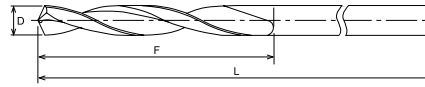
Black / TiN are available according to requirements.

### Imperial HSS Long Length Twist Drills, ASME/ANSI B94.11M Standard

- ◆ Right hand spiral flute Material: HSS, HSS-E.
- ◆ Drill points: 118°/135°
- ◆ DIN1412C split point for more accurate centering (from dia. 1/8")
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Recommended for cast steel, grey cast iron, malleable cast iron, nickel brass and graphite



#### Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber	Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
3/64	0.0469	1-1/8"	2-1/4"	14AA-0239A	14AA-0239B	9/32	0.2812	3-7/8"	6-1/4"	14AA-0254A	14AA-0254B
1/16"	0.0625	1-3/4"	3"	14AA-0240A	14AA-0240B	19/64	0.2969	4"	6-3/8"	14AA-0255A	14AA-0255B
5/64	0.0781	2"	3-3/4"	14AA-0241A	14AA-0241B	5/16"	0.3125	4"	6-3/8"	14AA-0256A	14AA-0256B
3/32	0.0938	2-1/4"	4-1/4"	14AA-0242A	14AA-0242B	21/64	0.3281	4-1/8"	6-1/2"	14AA-0257A	14AA-0257B
7/64	0.1094	2-1/4"	4-5/8"	14AA-0243A	14AA-0243B	11/32	0.3438	4-1/8"	6-1/2"	14AA-0258A	14AA-0258B
1/8"	0.125	2-3/4"	5-1/8"	14AA-0244A	14AA-0244B	23/64	0.3594	4-1/4"	6-3/4"	14AA-0259A	14AA-0259B
9/64	0.1406	3"	5-3/8"	14AA-0245A	14AA-0245B	3/8"	0.375	4-1/4"	6-3/4"	14AA-0260A	14AA-0260B
5/32	0.1562	3"	5-3/8"	14AA-0246A	14AA-0246B	25/64	0.3906	4-3/8"	7"	14AA-0261A	14AA-0261B
11/64	0.1719	3-3/8"	5-3/4"	14AA-0247A	14AA-0247B	13/32	0.4062	4-3/8"	7"	14AA-0262A	14AA-0262B
3/16"	0.1875	3-3/8"	5-3/4"	14AA-0248A	14AA-0248B	27/64	0.4219	4-5/8"	7-1/4"	14AA-0263A	14AA-0263B
13/64	0.2031	3-5/8"	6"	14AA-0249A	14AA-0249B	7/16"	0.4375	4-5/8"	7-1/4"	14AA-0264A	14AA-0264B
7/32	0.2188	3-5/8"	6"	14AA-0250A	14AA-0250B	29/64	0.4531	4-3/4"	7-1/2"	14AA-0265A	14AA-0265B
15/64	0.2344	3-3/4"	6-1/8"	14AA-0251A	14AA-0251B	15/32	0.4688	4-3/4"	7-1/2"	14AA-0266A	14AA-0266B
1/4"	0.25	3-3/4"	6-1/8"	14AA-0252A	14AA-0252B	31/64	0.4844	4-3/4"	7-3/4"	14AA-0267A	14AA-0267B
17/64	0.2656	3-7/8"	6-1/4"	14AA-0253A	14AA-0253B	1/2"	0.5	4-3/4"	7-3/4"	14AA-0268A	14AA-0268B

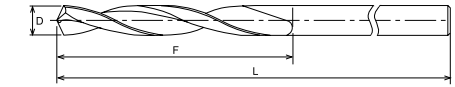
are available according to requirements.

### Imperial HSS Extra Long Length Twist Drills, ASME/ANSI B94.11M Standard

- ◆ Right hand spiral flute Material: HSS, HSS-E.
- ◆ Drill points: 118°/135°
- ◆ DIN1412C split point for more accurate centering (from dia. 1/8")
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Recommended for cast steel, grey cast iron, malleable cast iron, nickel brass and graphite



#### Imperial



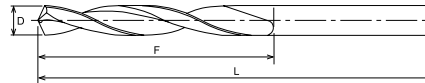
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber	Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
3/64	0.0469	3/4"	6"	14AA-0269A	14AA-0269B	3/64	0.0469	3/4"	12"	14AA-0300A	14AA-0300B
1/16"	0.0625	7/8"	6"	14AA-0270A	14AA-0270B	1/16"	0.0625	7/8"	12"	14AA-0301A	14AA-0301B
5/64	0.0781	1"	6"	14AA-0271A	14AA-0271B	5/64	0.0781	1"	12"	14AA-0302A	14AA-0302B
3/32	0.0938	1-1/4"	6"	14AA-0272A	14AA-0272B	3/32	0.0938	1-1/4"	12"	14AA-0303A	14AA-0303B
7/64	0.1094	1-1/2"	6"	14AA-0273A	14AA-0273B	7/64	0.1094	1-1/2"	12"	14AA-0304A	14AA-0304B
1/8"	0.125	1-5/8"	6"	14AA-0274A	14AA-0274B	1/8"	0.125	1-5/8"	12"	14AA-0305A	14AA-0305B
9/64	0.1406	1-3/4"	6"	14AA-0275A	14AA-0275B	9/64	0.1406	1-3/4"	12"	14AA-0306A	14AA-0306B
5/32	0.1562	2"	6"	14AA-0276A	14AA-0276B	5/32	0.1562	2"	12"	14AA-0307A	14AA-0307B
11/64	0.1719	2-1/8"	6"	14AA-0277A	14AA-0277B	11/64	0.1719	2-1/8"	12"	14AA-0308A	14AA-0308B
3/16"	0.1875	2-5/16"	6"	14AA-0278A	14AA-0278B	3/16"	0.1875	2-5/16"	12"	14AA-0309A	14AA-0309B
13/64	0.2031	2-7/16"	6"	14AA-0279A	14AA-0279B	13/64	0.2031	2-7/16"	12"	14AA-0310A	14AA-0310B
7/32	0.2188	2-1/2"	6"	14AA-0280A	14AA-0280B	7/32	0.2188	2-1/2"	12"	14AA-0311A	14AA-0311B
15/64	0.2344	2-5/8"	6"	14AA-0281A	14AA-0281B	15/64	0.2344	2-5/8"	12"	14AA-0312A	14AA-0312B
1/4"	0.25	2-3/4"	6"	14AA-0282A	14AA-0282B	1/4"	0.25	2-3/4"	12"	14AA-0313A	14AA-0313B
17/64	0.2656	2-7/8"	6"	14AA-0283A	14AA-0283B	17/64	0.2656	2-7/8"	12"	14AA-0314A	14AA-0314B
9/32	0.2812	2-15/16"	6"	14AA-0284A	14AA-0284B	9/32	0.2812	2-15/16"	12"	14AA-0315A	14AA-0315B
19/64	0.2969	3-1/16"	6"	14AA-0285A	14AA-0285B	19/64	0.2969	3-1/16"	12"	14AA-0316A	14AA-0316B
5/16"	0.3125	3-3/16"	6"	14AA-0286A	14AA-0286B	5/16"	0.3125	3-3/16"	12"	14AA-0317A	14AA-0317B
21/64	0.3281	3-5/16"	6"	14AA-0287A	14AA-0287B	21/64	0.3281	3-5/16"	12"	14AA-0318A	14AA-0318B
11/32	0.3438	3-7/16"	6"	14AA-0288A	14AA-0288B	11/32	0.3438	3-7/16"	12"	14AA-0319A	14AA-0319B
23/64	0.3594	3-1/2"	6"	14AA-0289A	14AA-0289B	23/64	0.3594	3-1/2"	12"	14AA-0320A	14AA-0320B
3/8"	0.375	3-5/8"	6"	14AA-0290A	14AA-0290B	3/8"	0.375	3-5/8"	12"	14AA-0321A	14AA-0321B
25/64	0.3906	3-3/4"	6"	14AA-0291A	14AA-0291B	25/64	0.3906	3-3/4"	12"	14AA-0322A	14AA-0322B
13/32	0.4062	3-7/8"	6"	14AA-0292A	14AA-0292B	13/32	0.4062	3-7/8"	12"	14AA-0323A	14AA-0323B
27/64	0.4219	3-15/16"	6"	14AA-0293A	14AA-0293B	27/64	0.4219	3-15/16"	12"	14AA-0324A	14AA-0324B
7/16"	0.4375	4-1/16"	6"	14AA-0294A	14AA-0294B	7/16"	0.4375	4-1/16"	12"	14AA-0325A	14AA-0325B
29/64	0.4531	4-3/16"	6"	14AA-0295A	14AA-0295B	29/64	0.4531	4-3/16"	12"	14AA-0326A	14AA-0326B
15/32	0.4688	4-5/16"	6"	14AA-0296A	14AA-0296B	15/32	0.4688	4-5/16"	12"	14AA-0327A	14AA-0327B
31/64	0.4844	4-3/8"	6"	14AA-0297A	14AA-0297B	31/64	0.4844	4-3/8"	12"	14AA-0328A	14AA-0328B
1/2"	0.5	4-1/2"	6"	14AA-0298A	14AA-0298B	1/2"	0.5	4-1/2"	12"	14AA-0329A	14AA-0329B

are available according to requirements.



### Metric HSS Stub Length Twist Drills, DIN1897 Standard

- ◆ HSS general purpose short drills to DIN1897
- ◆ Right hand spiral flute Material: HSS, HSS-E., Drill points: 118°/135°
- ◆ DIN1412C split point for more accurate centering (from dia. 3.0mm)
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Suitable for drilling a wide range of thin-walled material (inc carbon/alloy steel, stainless, cast iron, titanium&aluminium)



#### Metric



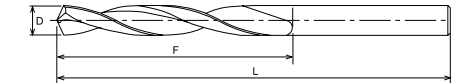
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
1	0.0394	6	26	14AA-0330A	14AA-0330B
2	0.0787	12	38	14AA-0331A	14AA-0331B
2.5	0.0984	14	43	14AA-0332A	14AA-0332B
3	0.1181	16	46	14AA-0333A	14AA-0333B
3.2	0.126	18	49	14AA-0334A	14AA-0334B
3.5	0.1378	20	52	14AA-0335A	14AA-0335B
4	0.1575	22	55	14AA-0336A	14AA-0336B
4.2	0.1654	22	55	14AA-0337A	14AA-0337B
4.5	0.1772	24	58	14AA-0338A	14AA-0338B
4.8	0.189	26	62	14AA-0339A	14AA-0339B
5	0.1969	26	62	14AA-0340A	14AA-0340B
5.5	0.2165	28	66	14AA-0341A	14AA-0341B
6	0.2362	28	66	14AA-0342A	14AA-0342B
6.5	0.2559	31	70	14AA-0343A	14AA-0343B
6.8	0.2677	34	74	14AA-0344A	14AA-0344B

Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright	Order No. HSS-E Amber
7	0.2756	34	74	14AA-0345A	14AA-0345B
7.5	0.2953	37	79	14AA-0346A	14AA-0346B
8	0.315	37	79	14AA-0347A	14AA-0347B
8.5	0.3346	37	79	14AA-0348A	14AA-0348B
9	0.3543	40	84	14AA-0349A	14AA-0349B
9.5	0.374	40	84	14AA-0350A	14AA-0350B
10	0.3937	43	89	14AA-0351A	14AA-0351B
10.2	0.4016	43	89	14AA-0352A	14AA-0352B
10.5	0.4134	43	89	14AA-0353A	14AA-0353B
11	0.4331	47	95	14AA-0354A	14AA-0354B
11.5	0.4528	47	95	14AA-0355A	14AA-0355B
12	0.4724	51	102	14AA-0356A	14AA-0356B
12.5	0.4921	51	102	14AA-0357A	14AA-0357B
13	0.5118	51	102	14AA-0358A	14AA-0358B

135° / / Black / TiN are available according to requirements.

### Imperial HSS Screw Machine Length Twist Drills, ASME/ANSI B94.11M Standard

- ◆ Right hand spiral flute Material: HSS, HSS-E., Drill points: 118°/135°
- ◆ DIN1412C split point for more accurate centering (from dia. 1/8")
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Suitable for drilling a wide range of thin-walled material (inc carbon/alloy steel, stainless, cast iron, titanium&aluminium)



#### Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
3/64	0.0469	1/2"	1-3/8"	14AA-0359A	14AA-0359B
1/16"	0.0625	5/8"	1-5/8"	14AA-0360A	14AA-0360B
5/64	0.0781	11/16"	1-11/16"	14AA-0361A	14AA-0361B
3/32	0.0938	3/4"	1-3/4"	14AA-0362A	14AA-0362B
7/64	0.1094	13/16"	1-13/16"	14AA-0363A	14AA-0363B
1/8"	0.125	7/8"	1-7/8"	14AA-0364A	14AA-0364B
9/64	0.1406	15/16"	1-15/16"	14AA-0365A	14AA-0365B
5/32	0.1562	1"	2-1/16"	14AA-0366A	14AA-0366B
11/64	0.1719	1-1/16"	2-1/8"	14AA-0367A	14AA-0367B
3/16"	0.1875	1-1/8"	2-3/16"	14AA-0368A	14AA-0368B
13/64	0.2031	1-3/16"	2-1/4"	14AA-0369A	14AA-0369B
7/32	0.2188	1-1/4"	2-3/8"	14AA-0370A	14AA-0370B
15/64	0.2344	1-5/16"	2-7/16"	14AA-0371A	14AA-0371B
1/4"	0.25	1-3/8"	2-1/2"	14AA-0372A	14AA-0372B
17/64	0.2656	1-7/16"	2-5/8"	14AA-0373A	14AA-0373B

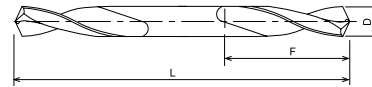
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright	Order No. HSS-E Amber
9/32	0.2812	1-1/2"	2-11/16"	14AA-0374A	14AA-0374B
19/64	0.2969	1-9/16"	2-3/4"	14AA-0375A	14AA-0375B
5/16"	0.3125	1-5/8"	2-13/16"	14AA-0376A	14AA-0376B
21/64	0.3281	1-11/16"	2-15/16"	14AA-0377A	14AA-0377B
11/32	0.3438	1-11/16"	3"	14AA-0378A	14AA-0378B
23/64	0.3594	1-3/4"	3-1/16"	14AA-0379A	14AA-0379B
3/8"	0.375	1-13/16"	3-1/8"	14AA-0380A	14AA-0380B
25/64	0.3906	1-7/8"	3-1/4"	14AA-0381A	14AA-0381B
13/32	0.4062	1-15/16"	3-5/16"	14AA-0382A	14AA-0382B
27/64	0.4219	2"	3-3/8"	14AA-0383A	14AA-0383B
7/16"	0.4375	2-1/16"	3-7/16"	14AA-0384A	14AA-0384B
29/64	0.4531	2-1/8"	3-9/16"	14AA-0385A	14AA-0385B
15/32	0.4688	2-1/8"	3-5/8"	14AA-0386A	14AA-0386B
31/64	0.4844	2-3/16"	3-11/16"	14AA-0387A	14AA-0387B
1/2"	0.5	2-1/4"	3-3/4"	14AA-0388A	14AA-0388B

135° / / Black / TiN are available according to requirements.

### HSS Doube End Twist Drills

- ◆ Extra short and stable standard drill. Shorter than DIN 1897.
- ◆ For general purpose applications
- ◆ Drills twice as many holes as a single end drill bits
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ For assembly work in thin-walled materials such as sheet steels, flat steels and profile steels

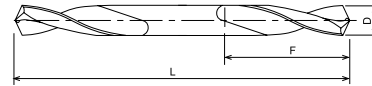
#### Metric



Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
2.50	10.0	43.0	14AZ-00001
2.80	11.0	46.0	14AZ-00002
3.00	11.0	46.0	14AZ-00003
3.10	11.0	49.0	14AZ-00004
3.20	11.0	49.0	14AZ-00005
3.25	11.0	49.0	14AZ-00006
3.30	11.0	49.0	14AZ-00007
3.40	14.0	52.0	14AZ-00008
3.50	14.0	52.0	14AZ-00009
4.00	14.0	55.0	14AZ-00010
4.10	14.0	55.0	14AZ-00011

Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
4.20	14.0	55.0	14AZ-00012
4.30	58.0	58.0	14AZ-00013
4.50	17.0	58.0	14AZ-00014
4.80	17.0	62.0	14AZ-00015
4.90	17.0	62.0	14AZ-00016
5.00	17.0	62.0	14AZ-00017
5.10	17.0	62.0	14AZ-00018
5.20	17.0	62.0	14AZ-00019
5.50	20.0	66.0	14AZ-00020
6.00	20.0	66.0	14AZ-00021
6.50	20.0	70.0	14AZ-00022

#### Imperial



Diameter	Flute Length	Overall Length	Order No. HSS Bright
3/32"	9/16"	1-3/4"	14AZ-00023
7/64"	5/8"	1-15/16"	14AZ-00024
1/8"	5/8"	1-15/16"	14AZ-00025
9/64"	5/8"	2"	14AZ-00026

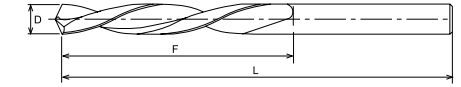
Diameter	Flute Length	Overall Length	Order No. HSS Bright
5/32"	5/8"	2-1/8"	14AZ-00027
3/16"	5/8"	2-5/16"	14AZ-00028
7/32"	3/4"	2-9/16"	14AZ-00029
1/4"	13/16"	2-5/8"	14AZ-00030

HSS-E / 135° / Fully Ground / Black / TiN are available according to requirements.

### Metric HSS Left Hand Twist Drills, DIN338 Standard

- ◆ For super abrasive resistance in tough metals
- ◆ Heavy duty spiral flute design produces faster chip ejection
- ◆ 135-degree split point reduces feed pressure for easier penetration without work hardening
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Shorter cutting lips reduce torque for drilling in high tensile strength materials. Ideal for use with screw extractors

#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
1	0.0394	12	34	14AZ-00031
1.5	0.0591	18	40	14AZ-00032
2	0.0787	24	49	14AZ-00033
2.5	0.0984	30	57	14AZ-00034
3	0.1181	33	61	14AZ-00035
3.2	0.1260	36	65	14AZ-00036
3.5	0.1378	39	70	14AZ-00037
4	0.1575	43	75	14AZ-00038
4.2	0.1654	43	75	14AZ-00039
4.5	0.1772	47	80	14AZ-00040
4.8	0.189	52	86	14AZ-00041
5	0.1969	52	86	14AZ-00042
5.2	0.2047	52	86	14AZ-00043
5.5	0.2165	57	93	14AZ-00044
6	0.2362	57	93	14AZ-00045
6.5	0.2559	63	101	14AZ-00046

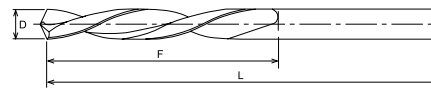
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
6.8	0.2677	69	109	14AZ-00047
7	0.2756	69	109	14AZ-00048
7.5	0.2953	69	109	14AZ-00049
8	0.315	75	117	14AZ-00050
8.5	0.3346	75	117	14AZ-00051
9	0.3543	81	125	14AZ-00052
9.5	0.374	81	125	14AZ-00053
10	0.3937	87	133	14AZ-00054
10.2	0.4016	87	133	14AZ-00055
10.5	0.4134	87	133	14AZ-00056
11	0.4331	94	142	14AZ-00057
11.5	0.4528	94	142	14AZ-00058
12	0.4724	101	151	14AZ-00059
12.5	0.4921	101	151	14AZ-00060
13	0.5118	101	151	14AZ-00061

HSS-E / Black / TiN are available according to requirements.

### Imperial HSS Left Hand Twist Drills, ASME/ANSI B94.11M Standard

- ◆ For super abrasive resistance in tough metals
- ◆ Heavy duty spiral flute design produces faster chip ejection
- ◆ 135-degree split point reduces feed pressure for easier penetration without work hardening
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Shorter cutting lips reduce torque for drilling in high tensile strength materials. Ideal for use with screw extractors

#### Imperial



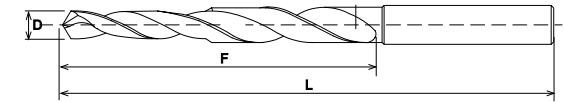
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright
1/64	0.0156	3/16"	3/4"	14AZ-00062
1/32	0.0312	1/2"	1-3/8"	14AZ-00063
3/64	0.0469	3/4"	1-3/4"	14AZ-00064
1/16"	0.0625	7/8"	1-7/8"	14AZ-00065
5/64	0.0781	1	2	14AZ-00066
3/32	0.0938	1-1/4"	2-1/4"	14AZ-00067
7/64	0.1094	1-1/2"	2-5/8"	14AZ-00068
1/8"	0.125	1-5/8"	2-3/4"	14AZ-00069
9/64	0.1406	1-3/4"	2-7/8"	14AZ-00070
5/32	0.1562	2	3-1/8"	14AZ-00071
11/64	0.1719	2-1/8"	3-1/4"	14AZ-00072
3/16"	0.1875	2-5/16"	3-1/2"	14AZ-00073
13/64	0.2031	2-7/16"	3-5/8"	14AZ-00074
7/32	0.2188	2-1/2"	3-3/4"	14AZ-00075
15/64	0.2344	2-5/8"	3-7/8"	14AZ-00076
1/4"	0.25	2-3/4"	4	14AZ-00077

Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. HSS Bright
17/64	0.2656	2-7/8"	4-1/8"	14AZ-00078
9/32	0.2812	2-15/16	4-1/4"	14AZ-00079
19/64	0.2969	3-1/16"	4-3/8"	14AZ-00080
5/16"	0.3125	3-3/16"	4-1/2"	14AZ-00081
21/64	0.3281	3-5/16"	4-5/8"	14AZ-00082
11/32	0.3438	3-7/16"	4-3/4"	14AZ-00083
23/64	0.3594	3-1/2"	4-7/8"	14AZ-00084
3/8"	0.375	3-5/8"	5	14AZ-00085
25/64	0.3906	3-3/4"	5-1/8"	14AZ-00086
13/32	0.4062	3-7/8"	5-1/4"	14AZ-00087
27/64	0.4219	3-15/16	5-3/8"	14AZ-00088
7/16"	0.4375	4-1/16"	5-1/2"	14AZ-00089
29/64	0.4531	4-3/16"	5-5/8"	14AZ-00090
15/32	0.4688	4-5/16"	5-3/4"	14AZ-00091
31/64	0.4844	4-3/8"	5-7/8"	14AZ-00092
1/2"	0.5	4-1/2"	6	14AZ-00093

HSS-E / Black / TiN are available according to requirements.

### HSS Subland Twist Drills, DIN8374 Standard

- ◆ Subland Drills to DIN8374, Fine tolerance
- ◆ Drill point: 118°, Step angle: 90°
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Standard drill for the efficient production of clearance holes to DIN EN 20 273 and screw head angles of 90



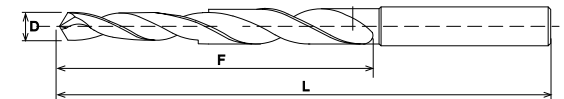
Thread Size	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
M 3	57.00	93.00	14AK-0001
M 4	75.00	117.00	14AK-0002
M 5	87.00	133.00	14AK-0003

Thread Size	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
M 6	94.00	142.00	14AK-0004
M 8	114.00	169.00	14AK-0005
M 10	135.00	198.00	14AK-0006

HSS-E / 135° / Black / TiN are available according to requirements.

### HSS Subland Twist Drills, DIN8376 Standard

- ◆ Subland Drills to DIN8376, Medium tolerance
- ◆ Drill point: 118°, Step angle: 180°
- ◆ Material: HSS, HSS-E. Surface finish: bright finish, black oxide, TiN coated
- ◆ Standard drill for the efficient production of clearance holes to DIN EN 20 273 and screw head angles of 180



Thread Size	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
M 3	57.0	93.0	14AK-0007
M 4	75.0	117.0	14AK-0008
M 5	87.0	133.0	14AK-0009

Thread Size	Flute Length (mm)	Overall Length (mm)	Order No. HSS Bright
M 6	94.0	142.0	14AK-0010
M 8	114.0	169.0	14AK-0011
M 10	135.0	198.0	14AK-0012

HSS-E / 135° / Black / TiN are available according to requirements.

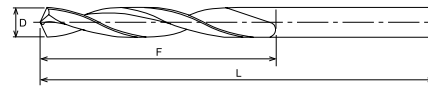


### Solid Carbide Jobber Drills

- ◆ Right hand spiral flute, Drill points: 118°, Surface finish: bright finish, TiAlN coated
- ◆ Manufactured from high quality micrograin carbide, ensuring toughness on a wide range of applications
- ◆ For drilling steels, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy and light metal and abrasive plastic
- ◆ Capable of machining up to 5 x diameter in one pass



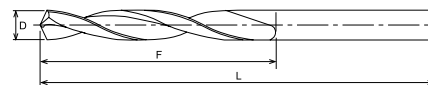
#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Bright	Order No. TiAlN Coated
0.5	0.0197	6	22	14AA-0389A	14AA-0389B
1	0.0394	12	34	14AA-0390A	14AA-0390B
1.5	0.0591	18	40	14AA-0391A	14AA-0391B
2	0.0787	24	49	14AA-0392A	14AA-0392B
2.5	0.0984	30	57	14AA-0393A	14AA-0393B
3	0.1181	33	61	14AA-0394A	14AA-0394B
3.2	0.1260	36	65	14AA-0395A	14AA-0395B
3.5	0.1378	39	70	14AA-0396A	14AA-0396B
4	0.1575	43	75	14AA-0397A	14AA-0397B
4.2	0.1654	43	75	14AA-0398A	14AA-0398B
4.5	0.1772	47	80	14AA-0399A	14AA-0399B
4.8	0.189	52	86	14AA-0400A	14AA-0400B
5	0.1969	52	86	14AA-0401A	14AA-0401B
5.2	0.2047	52	86	14AA-0402A	14AA-0402B
5.5	0.2165	57	93	14AA-0403A	14AA-0403B
6	0.2362	57	93	14AA-0404A	14AA-0404B

Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Bright	Order No. TiAlN Coated
6.5	0.2559	63	101	14AA-0405A	14AA-0405B
6.8	0.2677	69	109	14AA-0406A	14AA-0406B
7	0.2756	69	109	14AA-0407A	14AA-0407B
7.5	0.2953	69	109	14AA-0408A	14AA-0408B
8	0.315	75	117	14AA-0409A	14AA-0409B
8.5	0.3346	75	117	14AA-0410A	14AA-0410B
9	0.3543	81	125	14AA-0411A	14AA-0411B
9.5	0.374	81	125	14AA-0412A	14AA-0412B
10	0.3937	87	133	14AA-0413A	14AA-0413B
10.2	0.4016	87	133	14AA-0414A	14AA-0414B
10.5	0.4134	87	133	14AA-0415A	14AA-0415B
11	0.4331	94	142	14AA-0416A	14AA-0416B
11.5	0.4528	94	142	14AA-0417A	14AA-0417B
12	0.4724	101	151	14AA-0418A	14AA-0418B
12.5	0.4921	101	151	14AA-0419A	14AA-0419B
13	0.5118	101	151	14AA-0420A	14AA-0420B

#### Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. Bright	Order No. TiAlN Coated
3/16"	0.1875	2-5/16"	3-1/2"	14AA-0421A	14AA-0421B
13/64	0.2031	2-7/16"	3-5/8"	14AA-0422A	14AA-0422B
7/32	0.2188	2-1/2"	3-3/4"	14AA-0423A	14AA-0423B
15/64	0.2308	2-5/8"	3-7/8"	14AA-0424A	14AA-0424B
1/4"	0.25	2-3/4"	4	14AA-0425A	14AA-0425B
17/64	0.2656	2-7/8"	4-1/8"	14AA-0426A	14AA-0426B
9/32	0.2813	2-15/16"	4-1/4"	14AA-0427A	14AA-0427B
19/64	0.2969	3-1/16"	4-3/8"	14AA-0428A	14AA-0428B
5/16"	0.3125	3-1/16"	4-1/2"	14AA-0429A	14AA-0429B
21/64	0.3281	3-5/16"	4-5/8"	14AA-0430A	14AA-0430B
11/32	0.3438	3-7/16"	4-7/8"	14AA-0431A	14AA-0431B

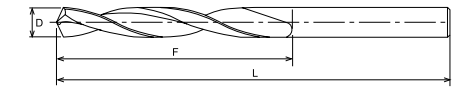
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. Bright	Order No. TiAlN Coated
23/64	0.3594	3-1/2"	4-7/8"	14AA-0432A	14AA-0432B
3/8"	0.375	3-5/8"	5	14AA-0433A	14AA-0433B
25/64	0.3906	3-3/4"	5-1/8"	14AA-0434A	14AA-0434B
13/32	0.4063	3-7/8"	5-1/4"	14AA-0435A	14AA-0435B
27/64	0.4219	3-15/16"	5-3/8"	14AA-0436A	14AA-0436B
7/16"	0.4375	4-1/16"	5-1/2"	14AA-0437A	14AA-0437B
29/64	0.4531	4-3/16"	5-5/8"	14AA-0438A	14AA-0438B
15/32	0.4688	4-5/16"	5-3/4"	14AA-0439A	14AA-0439B
31/64	0.4844	4-3/8"	5-7/8"	14AA-0440A	14AA-0440B
1/2"	0.5	4-1/2"	6	14AA-0441A	14AA-0441B
11/32	0.3438	3-7/16"	4-7/8"	14AA-0431A	14AA-0431B

### Metric Solid Carbide Stub Length Twist Drills, DIN6539 Standard

- ◆ Right hand spiral flute, Drill points: 118°, Surface finish: bright finish, TiAlN coated
- ◆ For drilling into steels, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy and light metal and abrasive plastic



#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Bright	Order No. TiAlN Coated
3	0.1181	16	46	14AA-0442A	14AA-0442B
3.5	0.1378	20	52	14AA-0443A	14AA-0443B
4	0.1575	22	55	14AA-0444A	14AA-0444B
4.5	0.1772	24	58	14AA-0445A	14AA-0445B
5	0.1969	26	62	14AA-0446A	14AA-0446B
5.5	0.2165	28	66	14AA-0447A	14AA-0447B
6	0.2362	28	66	14AA-0448A	14AA-0448B
6.5	0.2559	31	70	14AA-0449A	14AA-0449B
7	0.2756	34	74	14AA-0450A	14AA-0450B
7.5	0.2953	34	74	14AA-0451A	14AA-0451B
8	0.3150	37	79	14AA-0452A	14AA-0452B
8.5	0.3346	37	79	14AA-0453A	14AA-0453B
9	0.3543	40	84	14AA-0454A	14AA-0454B
9.5	0.3740	40	84	14AA-0455A	14AA-0455B
10	0.3937	43	89	14AA-0456A	14AA-0456B
10.5	0.4134	43	89	14AA-0457A	14AA-0457B
11	0.4331	47	95	14AA-0458A	14AA-0458B
11.5	0.4528	47	95	14AA-0459A	14AA-0459B

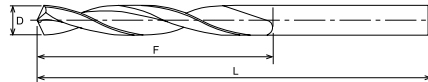
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Bright	Order No. TiAlN Coated
12	0.4724	51	102	14AA-0460A	14AA-0460B
12.5	0.4921	51	102	14AA-0461A	14AA-0461B
13	0.5118	51	102	14AA-0462A	14AA-0462B
13.5	0.5315	54	107	14AA-0463A	14AA-0463B
14	0.5512	54	107	14AA-0464A	14AA-0464B
14.5	0.5709	56	111	14AA-0465A	14AA-0465B
15	0.5906	56	111	14AA-0466A	14AA-0466B
15.5	0.6102	58	115	14AA-0467A	14AA-0467B
16	0.6299	58	115	14AA-0468A	14AA-0468B
16.5	0.6496	60	119	14AA-0469A	14AA-0469B
17	0.6693	60	119	14AA-0470A	14AA-0470B
17.5	0.6890	62	123	14AA-0471A	14AA-0471B
18	0.7087	62	123	14AA-0472A	14AA-0472B
18.5	0.7283	64	127	14AA-0473A	14AA-0473B
19	0.7480	64	127	14AA-0474A	14AA-0474B
19.5	0.7677	66	131	14AA-0475A	14AA-0475B
20	0.7874	66	131	14AA-0476A	14AA-0476B

### Imperial Solid Carbide Screw Machine Length Twist Drills, ASME/ANSI B94.11M Standard

- ◆ Right hand spiral flute . Drill points: 135°, Surface finish: bright finish, TiAlN coated
- ◆ For drilling into steels, cast steels, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy and light metal and abrasive plastic



#### Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. Bright	Order No. TiAlN Coated
1/8"	0.125	7/8"	1-7/8"	14AA-0477A	14AA-0477B
9/64	0.1406	15/16	1-15/16	14AA-0478A	14AA-0478B
5/32	0.1563	1	2-1/16"	14AA-0479A	14AA-0479B
11/64	0.1719	1-1/16"	2-1/8"	14AA-0480A	14AA-0480B
3/16"	0.1875	1-1/8"	2-3/16"	14AA-0481A	14AA-0481B
13/64	0.2031	1-3/16"	2-1/4"	14AA-0482A	14AA-0482B
7/32	0.2188	1-1/4"	2-3/8"	14AA-0483A	14AA-0483B
15/64	0.2308	1-5/16"	2-7/16"	14AA-0484A	14AA-0484B
1/4"	0.25	1-3/8"	2-1/2"	14AA-0485A	14AA-0485B
17/64	0.2656	1-7/16"	25/8"	14AA-0486A	14AA-0486B
9/32	0.2813	1-1/2"	2-11/16"	14AA-0487A	14AA-0487B
19/64	0.2969	1-9/16"	2-3/4"	14AA-0488A	14AA-0488B
5/16"	0.3125	1-5/8"	2-13/16	14AA-0489A	14AA-0489B

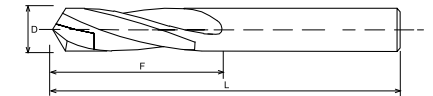
Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. Bright	Order No. TiAlN Coated
21/64	0.3281	1-11/16"	2-15/16	14AA-0490A	14AA-0490B
11/32	0.3438	1-11/16"	3	14AA-0491A	14AA-0491B
23/64	0.3594	1-3/4"	3-1/16"	14AA-0492A	14AA-0492B
3/8"	0.375	1-13/16	3-1/8"	14AA-0493A	14AA-0493B
25/64	0.3906	1-7/8"	3-1/4"	14AA-0494A	14AA-0494B
13/32	0.4063	1-15/16	3-5/16"	14AA-0495A	14AA-0495B
27/64	0.4219	2	3-3/8"	14AA-0496A	14AA-0496B
7/16"	0.4375	2-1/16"	3-7/16"	14AA-0497A	14AA-0497B
29/64	0.4531	2-1/8"	3-9/16"	14AA-0498A	14AA-0498B
15/32	0.4688	2-1/8"	3-5/8"	14AA-0499A	14AA-0499B
31/64	0.4844	2-3/16"	3-11/16"	14AA-0500A	14AA-0500B
1/2"	0.5	2-1/4"	3-3/4"	14AA-0501A	14AA-0501B

### Metric Carbide Tipped Twist Drills, DIN8037 Standard

- ◆ Carbide Tipped Jobber Drills to DIN8037
- ◆ Material: YG6X /YG8 carbide tip; W9HSS/alloy steel shank
- ◆ For general applications. Offers increased penetration rate and greatly extended tool life(compared with HSS jobber drill)
- ◆ Recommended for cast iron, alloy steel



#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Alloy Body	Order No. HSS Body
3.00	0.1181	20.0	50.0	14AA-0502A	14AA-0502B
3.20	0.1260	25.0	56.0	14AA-0503A	14AA-0503B
3.50	0.1378	25.0	56.0	14AA-0504A	14AA-0504B
4.00	0.1575	25.0	56.0	14AA-0505A	14AA-0505B
4.50	0.1772	28.0	63.0	14AA-0506A	14AA-0506B
5.00	0.1969	28.0	63.0	14AA-0507A	14AA-0507B
5.50	0.2165	32.0	71.0	14AA-0508A	14AA-0508B
6.00	0.2362	32.0	71.0	14AA-0509A	14AA-0509B
6.50	0.2559	32.0	71.0	14AA-0510A	14AA-0510B
7.00	0.2756	40.0	80.0	14AA-0511A	14AA-0511B
7.50	0.2953	40.0	80.0	14AA-0512A	14AA-0512B

Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Alloy Body	Order No. HSS Body
8.00	0.3150	40.0	80.0	14AA-0513A	14AA-0513B
8.50	0.3346	50.0	90.0	14AA-0514A	14AA-0514B
9.00	0.3543	50.0	90.0	14AA-0515A	14AA-0515B
9.50	0.3740	50.0	90.0	14AA-0516A	14AA-0516B
10.00	0.3937	56.0	100.0	14AA-0517A	14AA-0517B
10.50	0.4134	56.0	100.0	14AA-0518A	14AA-0518B
11.00	0.4331	56.0	100.0	14AA-0519A	14AA-0519B
11.50	0.4528	63.0	112.0	14AA-0520A	14AA-0520B
12.00	0.4724	63.0	112.0	14AA-0521A	14AA-0521B
12.50	0.4921	63.0	112.0	14AA-0522A	14AA-0522B
13.00	0.5118	63.0	112.0	14AA-0523A	14AA-0523B

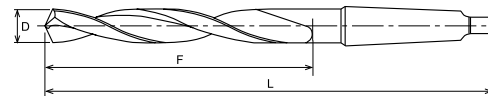
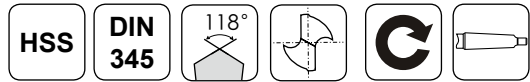
are available according to requirements.

### Metric HSS Morse Taper Shank Drills, DIN345 Standard

- ◆ Designed for heavy-duty jobs using a drill press or a lathe. The taper design allows for quick and convenient change of drill bits. Fit all standard morse tape spindles
- ◆ Surface finish: black oxide
- ◆ For steels, cast steels, grey cast iron, malleable cast iron, nickel brass and graphite



#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Taper shank No.	Order No. Black
5	0.1969	52	133	1	14AB-00001
5.5	0.2165	57	138	1	14AB-00002
6	0.2362	57	138	1	14AB-00003
6.5	0.2559	63	144	1	14AB-00004
7	0.2756	69	150	1	14AB-00005
7.5	0.2953	69	150	1	14AB-00006
8	0.315	75	156	1	14AB-00007
8.5	0.3346	75	156	1	14AB-00008
9	0.3543	81	162	1	14AB-00009
9.5	0.374	81	162	1	14AB-00010
10	0.3937	87	168	1	14AB-00011
10.5	0.4134	87	168	1	14AB-00012
11	0.4331	94	175	1	14AB-00013
11.5	0.4528	94	175	1	14AB-00014
12	0.4724	101	182	1	14AB-00015
12.5	0.4921	101	182	1	14AB-00016
13	0.5118	101	182	1	14AB-00017
13.5	0.5315	108	189	1	14AB-00018
14	0.5512	108	189	1	14AB-00019
14.5	0.5709	114	212	2	14AB-00020
15	0.5906	114	212	2	14AB-00021
15.5	0.6102	120	218	2	14AB-00022
16	0.6299	120	218	2	14AB-00023
16.5	0.6496	125	223	2	14AB-00024
17	0.6693	125	223	2	14AB-00025
17.5	0.689	130	228	2	14AB-00026
18	0.7087	130	228	2	14AB-00027
18.5	0.7283	135	233	2	14AB-00028
19	0.748	135	233	2	14AB-00029
19.5	0.7677	140	238	2	14AB-00030
20	0.7874	140	238	2	14AB-00031
20.5	0.8071	145	243	2	14AB-00032
21	0.8268	145	243	2	14AB-00033
21.5	0.8465	150	248	2	14AB-00034
22	0.8661	150	248	2	14AB-00035

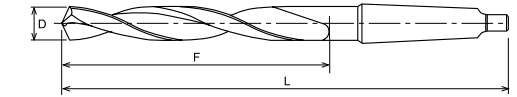
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Taper shank No.	Order No. Black
22.5	0.8858	155	253	2	14AB-00036
23	0.9055	155	253	2	14AB-00037
23.5	0.9252	155	276	3	14AB-00038
24	0.9449	160	281	3	14AB-00039
24.5	0.9646	160	281	3	14AB-00040
25	0.9843	160	281	3	14AB-00041
25.5	1.0039	165	286	3	14AB-00042
26	1.0236	165	286	3	14AB-00043
26.5	1.0433	165	286	3	14AB-00044
27	1.063	170	291	3	14AB-00045
27.5	1.0827	170	291	3	14AB-00046
28	1.1024	170	291	3	14AB-00047
28.5	1.122	175	296	3	14AB-00048
29	1.1417	175	296	3	14AB-00049
29.5	1.1614	175	296	3	14AB-00050
30	1.1811	175	296	3	14AB-00051
30.5	1.2008	180	301	3	14AB-00052
31	1.2205	180	301	3	14AB-00053
31.5	1.2402	180	301	3	14AB-00054
32	1.2598	185	334	4	14AB-00055
32.5	1.2795	185	334	4	14AB-00056
33	1.2992	185	334	4	14AB-00057
33.5	1.3189	185	334	4	14AB-00058
34	1.3386	190	339	4	14AB-00059
34.5	1.3583	190	339	4	14AB-00060
35	1.378	190	339	4	14AB-00061
35.5	1.3976	190	339	4	14AB-00062
36	1.4173	195	344	4	14AB-00063
36.5	1.437	195	344	4	14AB-00064
37	1.4567	195	344	4	14AB-00065
37.5	1.4764	195	344	4	14AB-00066
38	1.4961	200	349	4	14AB-00067
39	1.5354	200	349	4	14AB-00068
40	1.5748	200	349	4	14AB-00069
41	1.6142	205	354	4	14AB-00070

Continued... ..

#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Taper shank No.	Order No. Black
42	1.6535	205	354	4	14AB-00071
43	1.6929	210	359	4	14AB-00072
44	1.7323	210	359	4	14AB-00073
45	1.7717	210	359	4	14AB-00074
47	1.8504	215	364	4	14AB-00075
48	1.8898	220	369	4	14AB-00076
49	1.9291	220	369	4	14AB-00077
50	1.9685	220	369	4	14AB-00078
51	2.0079	225	412	5	14AB-00079



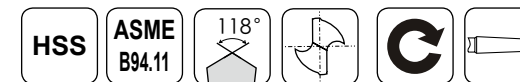
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Taper shank No.	Order No. Black
52	2.0472	225	412	5	14AB-00080
53	2.0866	225	412	5	14AB-00081
54	2.126	230	417	5	14AB-00082
55	2.1654	230	417	5	14AB-00083
56	2.2047	230	417	5	14AB-00084
57	2.2441	235	422	5	14AB-00085
58	2.2835	235	422	5	14AB-00086
59	2.3137	235	422	5	14AB-00087
60	2.3622	235	422	5	14AB-00088

### Imperial HSS Morse Taper Shank Drills, ASME/ANSI B94.11M Standard

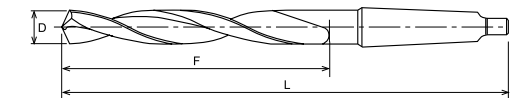
- ◆ Designed for heavy-duty jobs using a drill press or a lathe. The taper design allows for quick and convenient change of drill bits. Fit all standard morse tape spindles
- ◆ Surface finish: black oxide
- ◆ For steels, cast steels, grey cast iron, malleable cast iron, nickel brass and graphite



#### Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Taper shank No.	Order No. Black
1/4"	0.25	2-7/8"	6-1/8"	1	14AB-00089
17/64	0.2656	3	6-1/4"	1	14AB-00090
9/32	0.2812	3	6-1/4"	1	14AB-00091
19/64	0.2969	3-1/8"	6-3/8"	1	14AB-00092
5/16"	0.3125	3-1/8"	6-3/8"	1	14AB-00093
21/64	0.3281	3-1/4"	6-1/2"	1	14AB-00094
11/32	0.3438	3-1/4"	6-1/2"	1	14AB-00095
23/64	0.3594	3-1/2"	6-3/4"	1	14AB-00096
3/8"	0.375	3-1/2"	6-3/4"	1	14AB-00097
25/64	0.3906	3-5/8"	7	1	14AB-00098
13/32	0.4062	3-5/8"	7	1	14AB-00099
27/64	0.4219	3-7/8"	7-1/4"	1	14AB-00100
7/16"	0.4375	3-7/8"	7-1/4"	1	14AB-00101
29/64	0.4531	4-1/8"	7-1/2"	1	14AB-00102
15/32	0.4688	4-1/8"	7-1/2"	1	14AB-00103
31/64	0.4844	4-3/8"	8-1/4"	2	14AB-00104
1/2"	0.5	4-3/8"	8-1/4"	2	14AB-00105

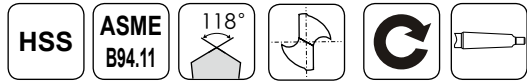


Diameter	Dec. Equiv.	Flute Length	Overall Length	Taper shank No.	Order No. Black
33/64	0.5156	4-5/8"	8-1/2"	2	14AB-00106
17/32	0.5312	4-5/8"	8-1/2"	2	14AB-00107
35/64	0.5469	4-7/8"	8-3/4"	2	14AB-00108
9/16"	0.5625	4-7/8"	8-3/4"	2	14AB-00109
37/64	0.5781	4-7/8"	8-3/4"	2	14AB-00110
19/32	0.5938	4-7/8"	8-3/4"	2	14AB-00111
39/64	0.6094	4-7/8"	8-3/4"	2	14AB-00112
5/8"	0.625	4-7/8"	8-3/4"	2	14AB-00113
41/64	0.6406	5-1/8"	9	2	14AB-00114
21/32	0.6563	5-1/8"	9	2	14AB-00115
43/64	0.6719	5-3/8"	9-1/4"	2	14AB-00116
11/16"	0.6875	5-3/8"	9-1/4"	2	14AB-00117
45/64	0.7031	5-5/8"	9-1/2"	2	14AB-00118
23/32	0.7188	5-5/8"	9-1/2"	2	14AB-00119
47/64	0.7344	5-7/8"	9-3/4"	2	14AB-00120
3/4"	0.75	5-7/8"	9-3/4"	2	14AB-00121
49/64	0.7656	6	9-7/8"	2	14AB-00122

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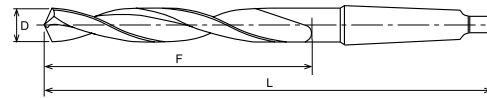


Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Taper Shank No.	Order No. Black
25/32	0.7813	6	9-7/8"	2	14AB-00123
51/64	0.7969	6-1/8"	10-3/4"	3	14AB-00124
13/16	0.8125	6-1/8"	10-3/4"	3	14AB-00125
53/64	0.8281	6-1/8"	10-3/4"	3	14AB-00126
27/32	0.8438	6-1/8"	10-3/4"	3	14AB-00127
55/64	0.8594	6-1/8"	10-3/4"	3	14AB-00128
7/8"	0.875	6-1/8"	10-3/4"	3	14AB-00129
57/64	0.8906	6-1/8"	10-3/4"	3	14AB-00130
29/32	0.9062	6-1/8"	10-3/4"	3	14AB-00131
59/64	0.9219	6-1/8"	10-3/4"	3	14AB-00132
15/16	0.9375	6-1/8"	10-3/4"	3	14AB-00133
61/64	0.9531	6-3/8"	11	3	14AB-00134
31/32	0.9688	6-3/8"	11	3	14AB-00135
63/64	0.9844	6-3/8"	11	3	14AB-00136
1	1	6-3/8"	11	3	14AB-00137
1-1/64	1.0156	6-1/2"	11-1/8"	3	14AB-00138
1-1/32	1.0313	6-1/2"	11-1/8"	3	14AB-00139
1-3/64	1.0469	6-5/8"	11-1/4"	3	14AB-00140
1-1/16"	1.0625	6-5/8"	11-1/4"	3	14AB-00141
1-5/64	1.0781	6-7/8"	12-1/2"	4	14AB-00142
1-3/32	1.0938	6-7/8"	12-1/2"	4	14AB-00143
1-7/64	1.1094	7-1/8"	12-3/4"	4	14AB-00144
1-1/8"	1.125	7-1/8"	12-3/4"	4	14AB-00145
1-9/64	1.1406	7-1/4"	12-7/8"	4	14AB-00146
1-5/32	1.1562	7-1/4"	12-7/8"	4	14AB-00147
1-11/64"	1.1719	7-3/8"	13	4	14AB-00148
1-3/16"	1.1875	7-3/8"	13	4	14AB-00149
1-13/64	1.2031	7-1/2"	13-1/8"	4	14AB-00150
1-7/32	1.2188	7-1/2"	13-1/8"	4	14AB-00151
1-15/64	1.2344	7-7/8"	13-1/2"	4	14AB-00152
1-1/4"	1.25	7-7/8"	13-1/2"	4	14AB-00153
1-17/64	1.2656	8-1/2"	14-1/8"	4	14AB-00154
1-9/32	1.2813	8-1/2"	14-1/8"	4	14AB-00155
1-19/64	1.2969	8-5/8"	14-1/4"	4	14AB-00156
1-5/16"	1.3125	8-5/8"	14-1/4"	4	14AB-00157
1-21/64	1.3281	8-3/4"	14-3/8"	4	14AB-00158
1-11/32	1.3438	8-3/4"	14-3/8"	4	14AB-00159

are available according to requirements.



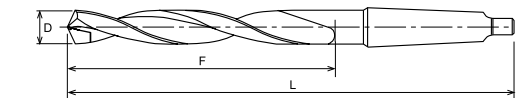
Diameter	Dec. Equiv.	Flute Length	Overall Length	Taper Shank No.	Order No. Black
1-23/64	1.3594	8-7/8"	14-1/2"	4	14AB-00160
1-3/8"	1.375	8-7/8"	14-1/2"	4	14AB-00161
1-25/64	1.3906	9	14-5/8"	4	14AB-00162
1-13/32	1.4063	9	14-5/8"	4	14AB-00163
1-27/64	1.4219	9-1/8"	14-3/4"	4	14AB-00164
1-7/16"	1.4375	9-1/8"	14-3/4"	4	14AB-00165
1-29/64	1.4531	9-1/4"	14-7/8"	4	14AB-00166
1-15/32	1.4688	9-1/4"	14-7/8"	4	14AB-00167
1-31/64	1.4844	9-3/8"	15	4	14AB-00168
1-1/2"	1.5	9-3/8"	15	4	14AB-00169
1-17/32	1.5312	9-3/8"	16-3/8"	5	14AB-00170
1-9/16"	1.5625	9-5/8"	16-3/8"	5	14AB-00171
1-19/32	1.5938	9-7/8"	16-7/8"	5	14AB-00172
1-5/8"	1.625	10	17	5	14AB-00173
1-21/32	1.6562	10-1/8"	17-1/8"	5	14AB-00174
1-11/16"	1.6875	10-1/8"	17-1/8"	5	14AB-00175
1-23/32	1.7188	10-1/8"	17-1/8"	5	14AB-00176
1-3/4"	1.75	10-1/8"	17-1/8"	5	14AB-00177
1-25/32	1.7812	10-1/8"	17-1/8"	5	14AB-00178
1-13/16	1.8125	10-1/8"	17-1/8"	5	14AB-00179
1-27/32	1.8438	10-1/8"	17-1/8"	5	14AB-00180
1-7/8"	1.875	10-3/8"	17-3/8"	5	14AB-00181
1-29/32	1.9062	10-3/8"	17-3/8"	5	14AB-00182
1-15/16	1.9375	10-3/8"	17-3/8"	5	14AB-00183
1-31/32	1.9688	10-3/8"	17-3/8"	5	14AB-00184
2	2	10-3/8"	17-3/8"	5	14AB-00185
2-1/32	2.0312	10-3/8"	17-3/8"	5	14AB-00186
2-1/16"	2.0625	10-1/4"	17-3/8"	5	14AB-00187
2-3/32	2.0938	10-1/4"	17-3/8"	5	14AB-00188
2-1/8"	2.125	10-1/4"	17-3/8"	5	14AB-00189
2-5/32	2.1562	10-1/4"	17-3/8"	5	14AB-00190
2-3/16"	2.1875	10-1/4"	17-3/8"	5	14AB-00191
2-7/32	2.2188	10-1/8"	17-3/8"	5	14AB-00192
2-1/4"	2.25	10-1/8"	17-3/8"	5	14AB-00193
2-5/16"	2.3125	10-1/8"	17-3/8"	5	14AB-00194
2-3/8"	2.375	10-1/8"	17-3/8"	5	14AB-00195

Carbide Tipped Twist Drills With Taper Shank, DIN8041 Standard

- ◆ Carbide Tipped Jobber Drills to DIN8041
- ◆ Material:YG6X /YG8 carbide tip; W9HSS/alloy steel shank
- ◆ For general applications. Offers increased penetration rate and greatly extended tool life(compared with HSS jobber drill)
- ◆ Recommended for cast iron, alloy steel
- ◆ Fit all standard morse tape spindles



Metric



Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Morse Taper No.	Order No. Alloy Body	Order No. HSS Body
8.00	45	135	1	14AB-0196A	14AB-0196B
8.50	45	135	1	14AB-0197A	14AB-0197B
9.00	45	135	1	14AB-0198A	14AB-0198B
9.50	50	140	1	14AB-0199A	14AB-0199B
10.00	50	140	1	14AB-0200A	14AB-0200B
10.20	50	140	1	14AB-0201A	14AB-0201B
10.50	50	140	1	14AB-0202A	14AB-0202B
11.00	50	140	1	14AB-0203A	14AB-0203B
11.50	56	146	1	14AB-0204A	14AB-0204B
12.00	56	146	1	14AB-0205A	14AB-0205B
12.50	56	146	1	14AB-0206A	14AB-0206B
13.00	56	146	1	14AB-0207A	14AB-0207B
13.50	63	168	2	14AB-0208A	14AB-0208B
14.00	63	168	2	14AB-0209A	14AB-0209B
14.50	63	168	2	14AB-0210A	14AB-0210B
15.00	63	168	2	14AB-0211A	14AB-0211B
15.50	70	175	2	14AB-0212A	14AB-0212B
16.00	70	175	2	14AB-0213A	14AB-0213B
16.50	70	175	2	14AB-0214A	14AB-0214B

Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Morse Taper No.	Order No. Alloy Body	Order No. HSS Body
17.00	70	175	2	14AB-0215A	14AB-0215B
17.50	80	185	2	14AB-0216A	14AB-0216B
18.00	80	185	2	14AB-0217A	14AB-0217B
18.50	80	185	2	14AB-0218A	14AB-0218B
19.00	80	185	2	14AB-0219A	14AB-0219B
19.50	90	215	3	14AB-0220A	14AB-0220B
20.00	90	215	3	14AB-0221A	14AB-0221B
21.00	90	215	3	14AB-0222A	14AB-0222B
22.00	90	215	3	14AB-0223A	14AB-0223B
23.00	100	225	3	14AB-0224A	14AB-0224B
24.00	100	225	3	14AB-0225A	14AB-0225B
25.00	100	225	3	14AB-0226A	14AB-0226B
26.00	110	260	4	14AB-0227A	14AB-0227B
27.00	110	260	4	14AB-0228A	14AB-0228B
28.00	110	260	4	14AB-0229A	14AB-0229B
29.00	125	275	4	14AB-0230A	14AB-0230B
30.00	125	275	4	14AB-0231A	14AB-0231B
31.00	125	275	4	14AB-0232A	14AB-0232B
32.00	125	275	4	14AB-0233A	14AB-0233B

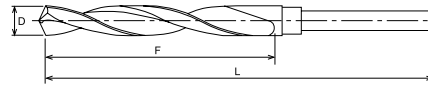
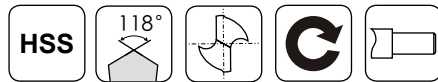
are available according to requirements.

### Metric HSS Reduced Shank Drills

- ◆ HSS reduced shank drills to works standard
- ◆ Surface finish: bright finish, black oxide, black & golden, black flute & bright shank
- ◆ Drill point: 118°. Reduced shank diameter enables drill to be used in standard 1/2in capacity chuck.
- ◆ Suitable for general purpose light duty work. For drilling steels, cast iron, nickel brass, and graphite



#### Metric



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Black
14	0.5512	76	150	14AJ-00001
15	0.5906	76	150	14AJ-00002
16	0.6299	76	150	14AJ-00003
17	0.6693	76	150	14AJ-00004
18	0.7087	76	150	14AJ-00005
19	0.748	76	150	14AJ-00006
20	0.7874	76	150	14AJ-00007
21	0.8268	76	150	14AJ-00008

Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Black
22	0.8661	76	150	14AJ-00009
24	0.9449	76	150	14AJ-00010
26	1.0236	76	150	14AJ-00011
27	1.063	76	150	14AJ-00012
28	1.1024	76	150	14AJ-00013
29	1.1417	76	150	14AJ-00014
30	1.1811	76	150	14AJ-00015
31	1.2205	76	150	14AJ-00016

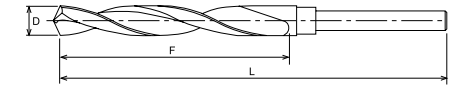
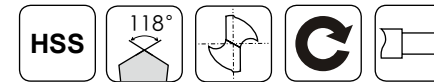
are available according to requirements.

### Imperial HSS Reduced Shank Drills

- ◆ HSS reduced shank drills to works standard
- ◆ Surface finish: bright finish, black oxide, black & golden, black flute & bright shank
- ◆ Drill point: 118°. Reduced shank diameter enables drill to be used in standard 1/2in capacity chuck.
- ◆ Suitable for general purpose light duty work. For drilling steels, cast iron, nickel brass, and graphite



#### Imperial



Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. Black
33/64	0.5156	3"	6"	14AJ-00017
17/32	0.5312	3"	6"	14AJ-00018
35/64	0.5469	3"	6"	14AJ-00019
9/16"	0.5625	3"	6"	14AJ-00020
37/64	0.5781	3"	6"	14AJ-00021
19/32	0.5938	3"	6"	14AJ-00022
39/64	0.6094	3"	6"	14AJ-00023
5/8"	0.625	3"	6"	14AJ-00024
41/64	0.6406	3"	6"	14AJ-00025
21/32	0.6562	3"	6"	14AJ-00026
43/64	0.6719	3"	6"	14AJ-00027
11/16"	0.6875	3"	6"	14AJ-00028
45/64	0.7031	3"	6"	14AJ-00029
23/32	0.7188	3"	6"	14AJ-00030
47/64	0.7344	3"	6"	14AJ-00031
3/4"	0.75	3"	6"	14AJ-00032
49/64	0.7656	3"	6"	14AJ-00033
25/32	0.7812	3"	6"	14AJ-00034
51/64	0.7969	3"	6"	14AJ-00035
13/16	0.8125	3"	6"	14AJ-00036
53/64	0.8281	3"	6"	14AJ-00037
27/32	0.8438	3"	6"	14AJ-00038
55/64	0.8594	3"	6"	14AJ-00039
7/8"	0.875	3"	6"	14AJ-00040
57/64	0.8906	3"	6"	14AJ-00041
29/32	0.9062	3"	6"	14AJ-00042
59/64	0.9219	3"	6"	14AJ-00043
15/16	0.9375	3"	6"	14AJ-00044

Diameter	Dec. Equiv.	Flute Length	Overall Length	Order No. Black
6"1/6"4	0.9531	3"	6"	14AJ-00045
31/32	0.96"88	3"	6"	14AJ-00046"
6"3/6"4	0.9844	3"	6"	14AJ-00047
1	1	3"	6"	14AJ-00048
1-1/6"4	1.0156"	3"	6"	14AJ-00049
1-1/32	1.0312	3"	6"	14AJ-00050
1-3/6"4	1.046"9	3"	6"	14AJ-00051
1-1/16""	1.06"25	3"	6"	14AJ-00052
1-5/6"4	1.0781	3"	6"	14AJ-00053
1-3/32	1.0938	3"	6"	14AJ-00054
1-7/6"4	1.1094	3"	6"	14AJ-00055
1-1/8"	1.125	3"	6"	14AJ-00056"
1-9/6"4	1.1406"	3"	6"	14AJ-00057
1-5/32	1.156"2	3"	6"	14AJ-00058
1-11/6"4	1.1719	3"	6"	14AJ-00059
1-3/16""	1.1875	3"	6"	14AJ-0006"0
1-13/6"4	1.2031	3"	6"	14AJ-0006"1
1-7/32	1.2188	3"	6"	14AJ-0006"2
1-15/6"4	1.2344	3"	6"	14AJ-0006"3
1-1/4"	1.25	3"	6"	14AJ-0006"4
1-9/32	1.2812	3"	6"	14AJ-0006"5
1-5/16""	1.3125	3"	6"	14AJ-0006"6"
1-11/32	1.3438	3"	6"	14AJ-0006"7
1-3/8"	1.375	3"	6"	14AJ-0006"8
1-13/32	1.406"2	3"	6"	14AJ-0006"9
1-7/16""	1.4375	3"	6"	14AJ-00070
1-15/32	1.46"88	3"	6"	14AJ-00071
1-1/2"	1.5	3"	6"	14AJ-00072

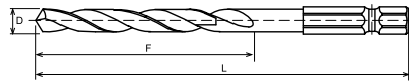
are available according to requirements.

### Impact HSS Hex Shank Drill Bits

- ◆ 1/4" hex shank for easy coupling into a impact drill, cordless screwdriver, etc
- ◆ Great for drilling drywall, wood, plastic and thin metal, perfect for small project around the house or office
- ◆ Surface finish: bright finish, black oxide, TiN coated



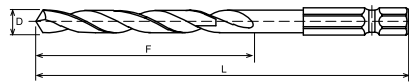
#### Metric



Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Shank Diameter (mm)	Order No. Bright
2	14	49	6.35	14AF-00001
3	26	61	6.35	14AF-00002
4	40	75	6.35	14AF-00003
5	51	86	6.35	14AF-00004
6	57	93	6.35	14AF-00005
7	69	109	6.35	14AF-00006

Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Shank Diameter (mm)	Order No. Bright
8	75	117	6.35	14AF-00007
9	81	125	6.35	14AF-00008
10	87	133	6.35	14AF-00009
11	94	142	6.35	14AF-00010
12	101	151	6.35	14AF-00011
13	101	151	6.35	14AF-00012

#### Imperial



Diameter	Flute Length (mm)	Overall Length	Shank Diameter	Order No. Bright
1/16	12	1-7/8"	1/4"	14AF-00013
3/32	20	2-1/4"	1/4"	14AF-00014
1/8	33	2-3/4"	1/4"	14AF-00015
9/64	36	2-7/8"	1/4"	14AF-00016
5/32	42	3-1/8"	1/4"	14AF-00017

Diameter	Flute Length (mm)	Overall Length	Shank Diameter	Order No. Bright
3/16	52	3-1/2"	1/4"	14AF-00018
7/32	58	3-3/4"	1/4"	14AF-00019
1/4	65	4"	1/4"	14AF-00020
5/16	83	2004-1-2	1/4"	14AF-00021
3/8	95	5"	1/4"	14AF-00022

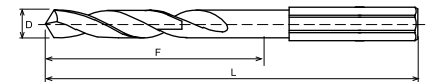
135° / 118° / Black / TiN are available according to requirements.

### Impact HSS Hex Shank Stubby Drill Bits

- ◆ 1/4" hex shank for easy coupling into a impact drill, cordless screwdriver, etc
- ◆ Great for drilling drywall, wood, plastic and thin metal, perfect for small project around the house or office
- ◆ Surface finish: bright finish, black oxide



#### Metric



Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Shank Diameter (mm)	Order No. Bright
1	7	32	6.35	14AF-00023
1.5	10	34	6.35	14AF-00024
2	12	36	6.35	14AF-00025
2.5	14	38	6.35	14AF-00026
3	16	38	6.35	14AF-00027
3.5	18	44	6.35	14AF-00028
4	20	44	6.35	14AF-00029
4.2	26	46	6.35	14AF-00030
4.5	26	46	6.35	14AF-00031
5	26	50	6.35	14AF-00032
5.5	30	50	6.35	14AF-00033
6	30	50	6.35	14AF-00034
6.5	32	50	6.35	14AF-00035

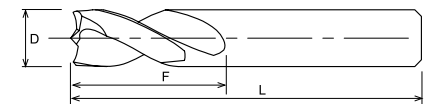
Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Shank Diameter (mm)	Order No. Bright
7.5	32	50	6.35	14AF-00036
8	33	51	6.35	14AF-00037
8.5	33	51	6.35	14AF-00038
9	33	53	6.35	14AF-00039
9.5	38	53	6.35	14AF-00040
10	38	54	6.35	14AF-00041
10.2	38	54	6.35	14AF-00042
10.5	44	54	6.35	14AF-00043
11	44	60	6.35	14AF-00044
12	44	60	6.35	14AF-00045
12.5	44	60	6.35	14AF-00046
13	44	60	6.35	14AF-00047

### HSS-E Spot Weld Drills

- ◆ Precision drilling for hard hand-drill applications
- ◆ Burr-free milling of welding spots and thin-walled work pieces without centering
- ◆ Material: HSS-E
- ◆ For sheet steel, sheet brass, sheet aluminium, shet zinc, sheet copper, plastic sheets



#### Metric



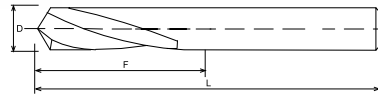
Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Order No. Bright
6.00	26.00	66.0	14AZ-00094
8.00	26.00	80.0	14AZ-00095

Diameter (mm)	Flute Length (mm)	Overall Length (mm)	Order No. Bright
10.00	28.00	88.0	14AZ-00096



### Solid Carbide NC Spotting Drills

- ◆ Drill point 90°. With acute starting abilities for close tolerance hole location.
- ◆ For countersinking and chamfering of tapping holes in one operation.
- ◆ Only suitable for shallow depth drilling.
- ◆ Surface finish: bright finish, TiAlN coated



Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Bright	Order No. TiAlN Coated
5	5	10	62	14AZ-0097A	14AZ-0097B
6	6	15	66	14AZ-0098A	14AZ-0098B
8	8	17	79	14AZ-0099A	14AZ-0099B
10	10	20	89	14AZ-0100A	14AZ-0100B

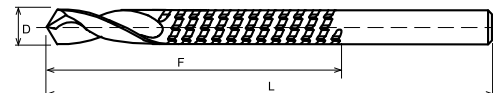
Diameter (mm)	Dec. Equiv.	Flute Length (mm)	Overall Length (mm)	Order No. Bright	Order No. TiAlN Coated
12	12	25	102	14AZ-0101A	14AZ-0101B
16	16	35	115	14AZ-0102A	14AZ-0102B
20	20	40	130	14AZ-0103A	14AZ-0103B
25	25	60	150	14AZ-0104A	14AZ-0104B

### HSS Saw Drills

- ◆ Fully ground, with sharp side cutting teeth
- ◆ Suitable for wood, metal and plastic
- ◆ Surface finish: bright, TiN coated



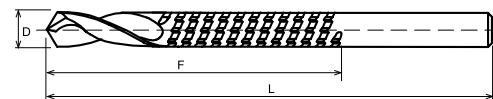
#### Metric



Diameter (mm)	Overall Length (mm)	Order No. Bright	Order No. TiN Coated
3.00	61.00	14AZ-0105A	14AZ-0105B
4.00	75.00	14AZ-0106A	14AZ-0106B
5.00	86.00	14AZ-0107A	14AZ-0107B

Diameter (mm)	Overall Length (mm)	Order No. Bright	Order No. TiN Coated
6.00	90.00	14AZ-0108A	14AZ-0108B
6.50	95.00	14AZ-0109A	14AZ-0109B
8.00	94.00	14AZ-0110A	14AZ-0110B

#### Imperial



Diameter	Overall Length	Order No. Bright	Order No. TiN Coated
1/8"	2-7/16"	14AZ-0111A	14AZ-0111B
5/43"	3"	14AZ-0112A	14AZ-0112B
3/16"	3-7/16"	14AZ-0113A	14AZ-0113B

Diameter	Overall Length	Order No. Bright	Order No. TiN Coated
7/32"	3-5/8"	14AZ-0114A	14AZ-0114B
1/4"	3-13/16"	14AZ-0115A	14AZ-0115B
5/16"	3-3/4"	14AZ-0116A	14AZ-0116B

### HSS Jobber Drill Bit Set, Dual Color Metal Box Packing

- ◆ Dual color metal box with stand packing protects cutting edges and convenient for picking and storage



Pcs Per Set	Contents	Standard	Order No. HSS Black & Golden
13-PC HSS Jobber Drill Bit Set	1.5-2-2.5-3-3.2-3.5-4-4.5-4.8-5-5.5-6-6.5mm	DIN338 Standard	27AA-00045
25-PC HSS Jobber Drill Bit Set	1-1.5-2-2.5-3-3.5-4-4.5-5-5.5-6-6.5-7-7.5-8-8.5-9-9.5-10-10.5-11-11.5-12-12.5-13mm	DIN338 Standard	27AA-00046
13-PC HSS Jobber Drill Bit Set	1/4", 15/64", 7/32", 13/64", 3/16", 11/64", 5/32", 9/64", 1/8", 7/64", 3/32", 5/64", 1/16"	ASME/ANSI B94.11M Standard	27AA-00047
21-PC HSS Jobber Drill Bit Set	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8"	ASME/ANSI B94.11M Standard	27AA-00048
29-PC HSS Jobber Drill Bit Set	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8", 25/64", 13/32", 27/64", 7/16", 29/64", 15/32", 31/64", 1/2"	ASME/ANSI B94.11M Standard	27AA-00049

HSS-E / 135° / FULLY GROUND / Black / Bright / Black & Bright / TiN are available according to requirements.

Other drill bit sets are available according to requirements.

### HSS Jobber Drill Bit Set, Normal Metal Box Packing

- ◆ Metal box with stand packing protects cutting edges and convenient for picking and storage



Pcs Per Set	Contents	Standard	Order No. HSS Black & Golden
13-PC HSS Jobber Drill Bit Set	1.5-2-2.5-3-3.2-3.5-4-4.5-4.8-5-5.5-6-6.5mm	DIN338 Standard	27AA-00050
19-PC HSS Jobber Drill Bit Set	1-1.5-2-2.5-3-3.5-4-4.5-5-5.5-6-6.5-7-7.5-8-8.5-9-9.5-10mm	DIN338 Standard	27AA-00051
25-PC HSS Jobber Drill Bit Set	1-1.5-2-2.5-3-3.5-4-4.5-5-5.5-6-6.5-7-7.5-8-8.5-9-9.5-10-10.5-11-11.5-12-12.5-13mm	DIN338 Standard	27AA-00052
13-PC HSS Jobber Drill Bit Set	1/4", 15/64", 7/32", 13/64", 3/16", 11/64", 5/32", 9/64", 1/8", 7/64", 3/32", 5/64", 1/16"	ASME/ANSI B94.11M Standard	27AA-00053
21-PC HSS Jobber Drill Bit Set	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8"	ASME/ANSI B94.11M Standard	27AA-00054
29-PC HSS Jobber Drill Bit Set	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8", 25/64", 13/32", 27/64", 7/16", 29/64", 15/32", 31/64", 1/2"	ASME/ANSI B94.11M Standard	27AA-00055
8PC Imperial HSS Reduced Shank Drill Set	9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1"		27AA-00056

HSS-E / 135° / [Flute Icon] / Black / Bright / Black & Bright / TIN are available according to requirements. Other drill bit sets are available according to requirements.

### HSS Jobber Drill Bit Set, Plastic Box Packing

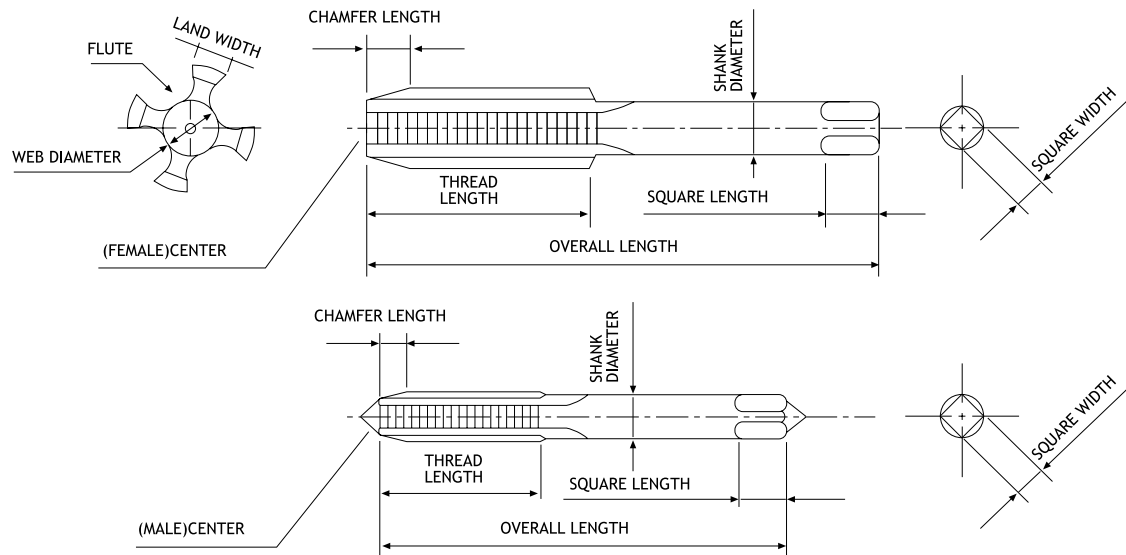
- ◆ Plastic box with stand packing protects cutting edges and convenient for picking and storage



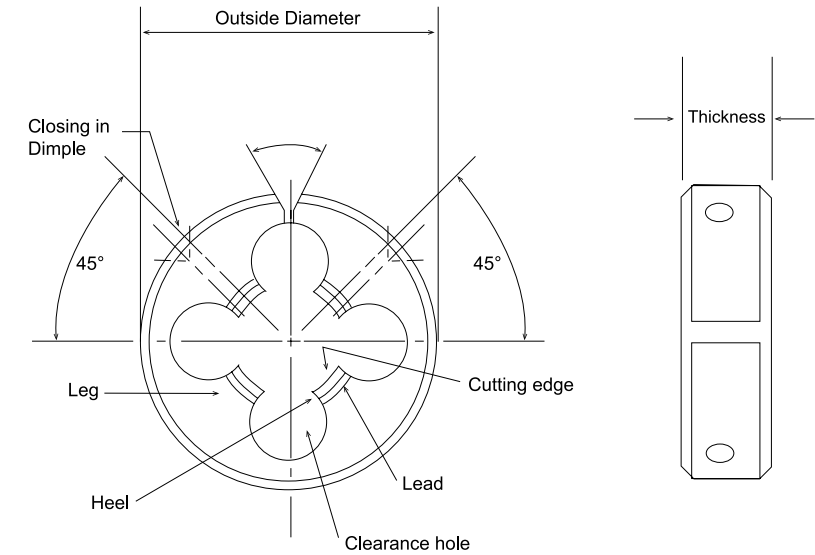
Pcs Per Set	Contents	Standard	Order No. HSS Black & Golden
13-PC HSS Jobber Drill Bit Set	1.5-2-2.5-3-3.2-3.5-4-4.5-4.8-5-5.5-6-6.5mm	DIN338 Standard	27AA-00057
19-PC HSS Jobber Drill Bit Set	1-1.5-2-2.5-3-3.5-4-4.5-5-5.5-6-6.5-7-7.5-8-8.5-9-9.5-10mm	DIN338 Standard	27AA-00058
25-PC HSS Jobber Drill Bit Set	1-1.5-2-2.5-3-3.5-4-4.5-5-5.5-6-6.5-7-7.5-8-8.5-9-9.5-10-10.5-11-11.5-12-12.5-13mm	DIN338 Standard	27AA-00059
13-PC HSS Jobber Drill Bit Set	1/4", 15/64", 7/32", 13/64", 3/16", 11/64", 5/32", 9/64", 1/8", 7/64", 3/32", 5/64", 1/16"	ASME/ANSI B94.11M Standard	27AA-00060
21-PC HSS Jobber Drill Bit Set	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8"	ASME/ANSI B94.11M Standard	27AA-00061
29-PC HSS Jobber Drill Bit Set	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8", 25/64", 13/32", 27/64", 7/16", 29/64", 15/32", 31/64", 1/2"	ASME/ANSI B94.11M Standard	27AA-00062

HSS-E / 135° / [Flute Icon] / Black / Bright / Black & Bright / TIN are available according to requirements. Other drill bit sets are available according to requirements.





### Tap Definitions






### Die Definitions



### Type Of Taps & Features

Type	Feature	Application
 Straight Flute Taps(Hand Taps)	<ul style="list-style-type: none"> <li>◆ Straight flute</li> <li>◆ Strong cutting edges</li> <li>◆ Applicable for various cutting conditions</li> <li>◆ Easy to re-grind</li> </ul>	<ul style="list-style-type: none"> <li>◆ For both through &amp; blind holes (short thread depth only)</li> <li>◆ Materials where chips come out in powder form</li> <li>◆ Hard material</li> </ul>
 Spiral Point Taps	<ul style="list-style-type: none"> <li>◆ Spiral point(Chip Drive)</li> <li>◆ Pushes chips forward with low cutting torque</li> <li>◆ Shallow and unique flute form provides strong structure</li> <li>◆ Good cutting action</li> </ul>	<ul style="list-style-type: none"> <li>◆ For through holes</li> <li>◆ Materials where chips come out continuously in coil shape</li> <li>◆ High speed tapping</li> </ul>
 Spiral Flute Taps	<ul style="list-style-type: none"> <li>◆ Spiral flute Material: HSS, HSS-E.</li> <li>◆ Chips flow out against tapping direction (ejected from holes)</li> <li>◆ Lower tapping torque and applicable for tapping to the bottom of holes</li> <li>◆ Good cutting action</li> </ul>	<ul style="list-style-type: none"> <li>◆ For blind holes</li> <li>◆ Materials where chips come out continuously in coil shape</li> </ul>
 Fluteless Taps(Forming Taps)	<ul style="list-style-type: none"> <li>◆ Fluteless</li> <li>◆ Taps do not produce chips</li> <li>◆ Precise uniformity of tapped thread limit</li> <li>◆ Excellent rigidity</li> </ul>	<ul style="list-style-type: none"> <li>◆ For both through &amp; blind holes</li> <li>◆ Materials with Formability</li> </ul>

### Type Of Die & Features

Type	Feature
 Normal Round Die	<ul style="list-style-type: none"> <li>◆ General Purpose</li> <li>◆ Used for threading studs, bolts and rods or similar applications</li> </ul>
 Adjustable Round Split Die	<ul style="list-style-type: none"> <li>◆ General Purpose</li> <li>◆ Used for threading studs, bolts and rods or similar applications that require external threads</li> </ul>
 Hex Die Nut	<ul style="list-style-type: none"> <li>◆ Ideal for rethreading damaged or rusty threads, Used for repair work</li> </ul>



### Thread Types

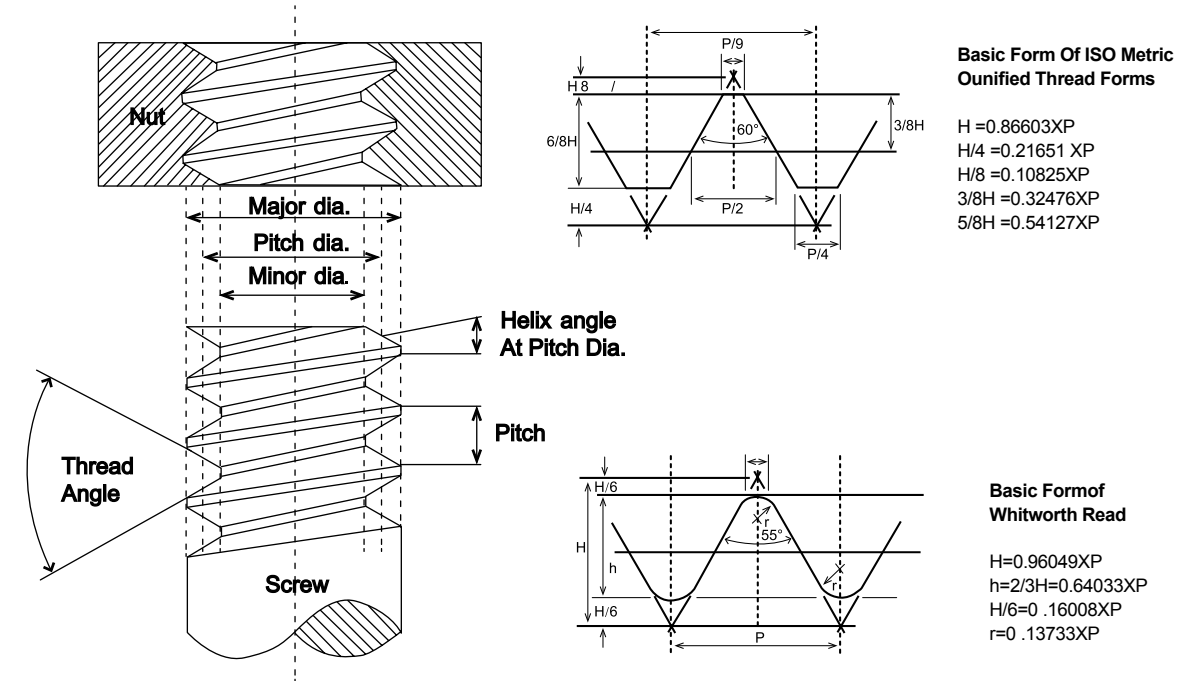
ISO, Flank Angle 60°			
<b>M</b>	Metric ISO-thread	<b>MF</b>	Metric ISO-fine thread
		<b>PG</b>	Conduit pipe thread

American Thread in inches, Flank Angle 60°			
<b>UNC</b>	Unified National Coarse	<b>UNF</b>	Unified National Fine
		<b>NPT</b>	National Taper Pipe
<b>NPS</b>	National Standard straight pipe		

British Thread in inches, Flank Angle 55°			
<b>BSW</b>	British standard whitworth coarse	<b>BSF</b>	British standard Fine
		<b>BSP</b>	British standard pipe
<b>BSPT</b>	British standard pipe taper		

Normal Icon			
	Taper, Through & Blind Hole		Through & Blind Hole
			Through Hole Tapping
	Blind Hole Tapping		Right Hand Cutting
			Left Hand Cutting
	Square Shank		Hand Use

### Component Elements



### Tolerance Class

Tolerance class, Tap			Tolerance, Internal thread (Nut)					Application
ISO	DIN	ANSI BS						
ISO 1	4H	3B	4H	5H				Fit without allowance
ISO 2	6H	2B	4G	5G	6H			Normal fit
ISO 3	6G	1B			6G	7H	8H	Fit with large allowance
-	7G	-				7G	8G	Loose fit for following treatment or coating

## Hand Taps

Coarse Pitch (Contain 3pcs/set)		Fine Pitch (Contain 2pcs/set)	
<b>TAPER</b>		<b>TAPER</b>	
<b>SECOND</b>		<b>BOTTOM</b>	
<b>BOTTOM</b>			

For longer tool life and better chip removal ability, different coatings are available for different material processing.

<b>TiN</b>		
General purpose coating, high cost-effective, makes the cutter tool longer life. Provides cutter surface with higher degree of hardness and high temperature stability meanwhile lower friction coefficient. Suitable for processing steel and cast iron.		
<b>TiAlN</b>		
High performance coating with a high degree of hardness, high wear resistance and low heat conductivity. Good chemical stability and oxidation resistance and wear resistance. Suitable for processing heat resisting alloys, high-alloy steel, stainless steel, Titanium alloys and NiCo alloys		
<b>TiCN</b>		
Higher hardness and wear resistance than TiN coating. Good flexibility and shock resistance, high temperature stability, Suitable for processing alloyed steels, stainless steel and wear resisting casting iron.		

## Recommendation For The Use Of Taps

Work Material		( M / MIN ) Cutting Speed				Lubricants			
		Spiral Flute Tap	Spiral Point Tap	Solid Carbide Tap	Forming Tap	Emulsion	Water Soluble	Semi-dry	Dry
Low Carbon Steels	C 0.25% 以下	8 ~ 13	15 ~ 25		8 ~ 13	◎	○	△	△
Mild Carbon Steels	C 0.25~0.45%	7 ~ 20	10 ~ 15		7 ~ 10	◎	○	△	△
High Carbon Steels	C 0.45% 以上	6 ~ 9	8 ~ 13		5 ~ 8	◎	○	△	△
Alloy Steels	SCM	7 ~ 12	10 ~ 15		5 ~ 8	◎	△	△	△
Prehardened Steels	25~45HRC	3 ~ 5	4 ~ 6			◎	△	-	-
		4 ~ 8	6 ~ 10						
Stainless Steel	SUS	5 ~ 8	8 ~ 13		5 ~ 10	◎	○	-	-
Stainless Steel	SUS630.SUS63	3 ~ 5	4 ~ 6			◎	-	-	-
Tools Steels	SKD	6 ~ 9	7 ~ 10			◎	-	-	-
Cast Steels	SC	6 ~ 11	10 ~ 15			◎	○	-	-
Cast Iron	FC			10 ~ 20		◎	○	○	○
Ductile Cast Iron	FCD	7 ~ 12	10 ~ 20	10 ~ 20		◎	○	○	-
Copper	Cu	6 ~ 11	7 ~ 12	10 ~ 20	7 ~ 12	○	○	-	-
Brass/Brass Cast	Bs. BsC	10 ~ 20	15 ~ 25	15 ~ 25	7 ~ 12	○	○	○	○
Phosphoric Bronze /Phosphoric Bronze Cast	PB. PBC	6 ~ 11	10 ~ 20	10 ~ 20	7 ~ 12	○	○	-	-
Deformed Aluminum	AL	10 ~ 20	10 ~ 25	10 ~ 20	10 ~ 20	◎	○	△	-
Aluminum Alloy Cast	AC. ADC	10 ~ 15	15 ~ 20	10 ~ 20	10 ~ 15	◎	○	△	-
Magnesium Alloy	MC	7 ~ 12	10 ~ 15	10 ~ 20		◎	○	○	-
Zinc Cast	ZDC	7 ~ 12	10 ~ 15	10 ~ 20	7 ~ 12	◎	○	△	-
Thermo Setting Plastic				15 ~ 25		-	○	○	○
Thermo Plastic		10 ~ 15	10 ~ 20	10 ~ 20		-	○	○	○

◎ Most suitable ○ Suitable △ Usable — Non-usable

## Cutting Speeds Conversion for Taps

Tap Sizes	Surface Feet per Minute																	
	5'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
	Revolutions per Minute																	
<b>UNC/UNFTaps</b>																		
No.2	212	424	637	888	1110	1333	1777	2221	2665	3109	3554	3999	4442	4886	5330	5774	6218	6662
No.3	191	382	573	772	964	1157	1543	1929	2315	2701	3086	3472	3858	4244	4629	5015	5401	5787
No.4	174	347	521	682	853	1023	1364	1705	2046	2387	2728	3069	3411	3751	4092	4434	4775	5116
<b>No.5</b>	147	294	441	611	764	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
No.6	136	273	409	553	691	829	1106	1382	1659	1935	2212	2488	2766	3042	3318	3595	3871	4148
No.8	119	239	358	466	583	699	932	1165	1398	1631	1864	2097	2330	2563	2796	3029	3262	3495
No.10	101	201	302	402	502	603	804	1005	1205	1406	1607	1808	2009	2210	2411	2612	2813	3014
No.12	87	174	260	354	442	531	707	884	1061	1238	1415	1592	1769	1945	2122	2300	2476	2653
<b>1/4</b>	76	153	229	306	382	458	611	764	917	1070	1222	1375	1528	1681	1833	1986	2139	2292
5/16	62	123	185	245	306	367	489	611	733	856	978	1100	1222	1345	1467	1589	1711	1833
3/8	50	101	151	204	255	305	407	509	611	713	815	917	1019	1120	1222	1324	1426	1528
7/16	43	87	130	175	219	262	349	437	524	611	698	786	873	960	1048	1135	1222	1310
<b>1/2</b>	38	76	115	153	191	229	305	382	458	535	611	688	764	840	917	993	1070	1146
9/16	34	68	102	137	172	206	274	342	410	478	547	616	683	752	820	888	956	1020
5/8	32	64	96	122	153	183	244	306	367	428	489	550	611	672	733	794	856	917
11/16	28	55	83	111	138	167	222	278	333	389	444	500	556	611	667	722	778	833
3/4	25	51	76	102	128	153	203	255	305	357	407	458	509	560	611	662	713	764
7/8	22	43	65	87	109	131	175	218	262	306	350	392	437	480	524	568	611	655
1	19	38	57	76	96	115	153	191	230	268	305	344	382	420	458	497	535	573
<b>1 1/8</b>	17	34	51	68	84	102	136	170	204	238	272	306	340	373	407	441	475	509
1 1/4	15	31	46	61	76	92	122	153	183	214	244	275	305	336	367	397	428	458
1 3/8	14	28	42	56	69	83	111	139	167	194	222	250	278	306	333	361	389	417
1 1/2	13	25	38	51	63	76	102	127	153	178	204	229	255	280	305	331	356	382
<b>Metric Taps</b>																		
M2.0	242	484	725	967	1209	1451	1934	2418	2901	3385	3868	4352	4835	5319	5803	6286	6770	7253
M3.0	162	324	486	647	809	971	1295	1619	1942	2266	2590	2914	3237	3561	3885	4208	4532	4856
M3.5	138	277	415	554	692	830	1107	1384	1661	1938	2214	2491	2768	3045	3322	3599	3875	4152
<b>M4.0</b>	122	243	365	487	608	730	973	1217	1460	1703	1946	2190	2433	2676	2920	3163	3406	3650
M5.0	97	194	291	388	485	582	776	970	1163	1357	1551	1745	1939	2133	2327	2521	2715	2909
M6.0	81	162	243	324	405	486	647	809	971	1133	1295	1457	1619	1781	1942	2104	2266	2428
M7.0	69	138	208	277	346	415	554	692	830	969	1107	1246	1384	1522	1661	1799	1938	2076
M8.0	61	121	182	243	303	364	485	606	728	849	970	1091	1213	1334	1455	1577	1698	1819
M10.0	48	97	145	194	242	291	388	485	582	679	776	873	970	1067	1163	1260	1357	1454
M12.0	40	81	121	162	202	243	324	405	486	567	647	728	809	890	971	1052	1133	1214
M14.0	35	69	104	139	173	208	277	347	416	485	555	624	693	763	832	901	971	1040
M16.0	30	61	91	121	152	182	243	303	364	424	485	546	606	667	728	788	849	910
M18.0	27	54	81	108	135	162	216	269	323	377	431	485	539	593	647	700	754	808
M20.0	24	49	73	97	121	146	194	243	291	340	388	437	485	534	582	631	680	728
M22.0	22	44	66	88	110	132	176	221	265	309	353	397	441	485	529	573	618	662
M24.0	20	40	61	81	101	121	162	202	243	283	323	364	404	445	485	526	566	606
M27.0	18	36	54	72	90	108	144	180	216	252	287	323	359	395	431	467	503	539
M30.0	16	32	49	65	81	97	129	162	194	226	259	291	323	356	388	420	453	485

## Tapping Drill Formula

◆ The correct size of drill to give the desired percentage of thread can be calculated by using the following formula:

Thread Type	Formula	Example
<b>Metric (ISO)</b>	Drill Size = Nom. Tap Dia. in mm – Pitch	M10 x 1.5 = 8.50mm drill
<b>Unified Form Threads (inch calculation)</b>	Drill Size = Nom. Tap Dia. – $\frac{1.30}{TPI} \times \% \text{ of thread depth}$	1/4 UNC 75% thread required: Drill Size = $.250 - \frac{1.30}{20} \times \frac{75}{100} = .250 - .049$ Therefore Drill Size = .201 Nearest Standard Drill = 5.1mm = .2007 inch
<b>Whitworth Form Threads (inch calculation)</b>	Drill Size = Nom. Tap Dia. – $\frac{1.28}{TPI} \times \% \text{ of thread depth}$	3/8 BSW 75% thread required: Drill Size = $.3750 - \frac{1.28}{16} \times \frac{75}{100} = .3750 - .06$ Therefore Drill Size = .315 Nearest Standard Drill = 8.0mm = .315 inch

## Operation Caution

The success of any tapping operation depends on a number of factors, all of which effect the quality of the finished product.

1. Select the correct design of tap for the component material and type of hole, i.e. through or blind, from the Application Material Groups chart.
2. Ensure the component is securely clamped - lateral movement may cause tap breakage or poor quality threads.
3. Select the correct size of drill from the tapping drill charts (see pages 76 - 79). The correct sizes of drill are also shown in the tap pages of the catalogue. Remember the drill sizes for fluteless taps are different. Always ensure that work hardening of the component material is kept to a minimum, see stainless steel part in General Information section.
4. Select the correct cutting speed as shown in the Visual Index in the Catalogue and in the Product Selector.
5. Use appropriate cutting fluid for correct application.
6. In NC applications ensure that the feed value chosen for the program is correct. When using a tapping attachment, 95% to 97% of the pitch is recommended to allow the tap to generate its own pitch.
7. Where possible, hold the tap in a good quality torque limiting tapping attachment, which ensures free axial movement of the tap and presents it squarely to the hole. It also protects the tap from breakage if accidentally 'bottomed' in a blind hole.
8. Ensure smooth entry of the tap into the hole, as an uneven feed may cause 'bell mouting'.

### Safety Appliances:



Safety Glasses



Safety Facial Mask



Safety Earflap

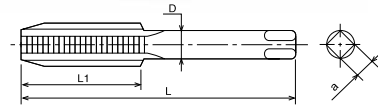


Safety Gloves



### Machine Taps, Metric Thread, ISO529 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric

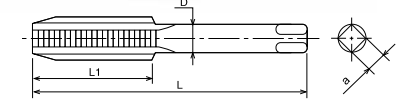


Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M3	0.5	48	11	3.15	2.5	5	14NA-0001A	14NA-0001B	14NA-0001C
M3.5	0.6	50	13	3.55	2.8	5	14NA-0002A	14NA-0002B	14NA-0002C
M4	0.7	53	13	4	3.15	6	14NA-0003A	14NA-0003B	14NA-0003C
M4.5	0.75	53	13	4.5	3.55	6	14NA-0004A	14NA-0004B	14NA-0004C
M5	0.8	58	16	5	4	6	14NA-0005A	14NA-0005B	14NA-0005C
M6	1	66	19	6.3	5	8	14NA-0006A	14NA-0006B	14NA-0006C
M7	1	66	19	7.1	5.6	7	14NA-0007A	14NA-0007B	14NA-0007C
M8	1.25	72	22	8	6.3	8	14NA-0008A	14NA-0008B	14NA-0008C
M9	1.25	70	22	9	7.1	8	14NA-0009A	14NA-0009B	14NA-0009C
M10	1.5	80	24	10	8	9	14NA-0010A	14NA-0010B	14NA-0010C
M11	1.5	85	25	8	6.3	9	14NA-0011A	14NA-0011B	14NA-0011C
M12	1.75	89	29	9	7.1	10	14NA-0012A	14NA-0012B	14NA-0012C
M14	2	95	30	11.2	9	12	14NA-0013A	14NA-0013B	14NA-0013C
M16	2	102	32	12.5	10	13	14NA-0014A	14NA-0014B	14NA-0014C
M18	2.5	112	37	14	11.2	14	14NA-0015A	14NA-0015B	14NA-0015C
M20	2.5	112	37	14	11.2	14	14NA-0016A	14NA-0016B	14NA-0016C
M22	2.5	118	38	16	12.5	16	14NA-0017A	14NA-0017B	14NA-0017C
M24	3	130	45	18	14	18	14NA-0018A	14NA-0018B	14NA-0018C
M27	3	135	45	20	16	20	14NA-0019A	14NA-0019B	14NA-0019C
M30	3.5	138	48	20	16	20	14NA-0020A	14NA-0020B	14NA-0020C
M33	3.5	151	51	22.4	18	22	14NA-0021A	14NA-0021B	14NA-0021C
M36	4	162	57	25	20	24	14NA-0022A	14NA-0022B	14NA-0022C
M39	4	170	60	28	22.4	26	14NA-0023A	14NA-0023B	14NA-0023C
M42	4.5	170	60	28	22.4	26	14NA-0024A	14NA-0024B	14NA-0024C
M45	4.5	187	67	31.5	25	28	14NA-0025A	14NA-0025B	14NA-0025C
M48	5	187	67	31.5	25	28	14NA-0026A	14NA-0026B	14NA-0026C
M52	5	200	70	35.5	28	31	14NA-0027A	14NA-0027B	14NA-0027C
M56	5.5	200	70	35.5	28	31	14NA-0028A	14NA-0028B	14NA-0028C
M60	5.5	221	76	40	31.5	34	14NA-0029A	14NA-0029B	14NA-0029C
M64	6	224	79	40	31.5	34	14NA-0030A	14NA-0030B	14NA-0030C
M68	6	234	79	45	35.5	38	14NA-0031A	14NA-0031B	14NA-0031C

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, Metric Fine Thread, ISO529 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



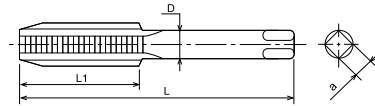
#### Metric Fine



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M3	0.35	48	11	3.15	2.5	5	14NA-0032A	14NA-0032B	14NA-0032C
M4	0.5	53	13	4	3.15	6	14NA-0033A	14NA-0033B	14NA-0033C
M4.5	0.5	53	13	4.5	3.55	6	14NA-0034A	14NA-0034B	14NA-0034C
M5	0.5	58	16	5	4	6	14NA-0035A	14NA-0035B	14NA-0035C
M5	0.75	58	16	5	4	6	14NA-0036A	14NA-0036B	14NA-0036C
M5.5	0.5	62	17	5.6	4.5	6	14NA-0037A	14NA-0037B	14NA-0037C
M6	0.75	66	19	6.3	5	8	14NA-0038A	14NA-0038B	14NA-0038C
M7	0.75	66	19	7.1	5.6	7	14NA-0039A	14NA-0039B	14NA-0039C
M8	0.75	69	19	8	6.3	8	14NA-0040A	14NA-0040B	14NA-0040C
M8	1	69	19	8	6.3	8	14NA-0041A	14NA-0041B	14NA-0041C
M9	0.75	69	19	9	7.1	8	14NA-0042A	14NA-0042B	14NA-0042C
M9	1	69	19	9	7.1	8	14NA-0043A	14NA-0043B	14NA-0043C
M10	0.75	76	20	10	8	9	14NA-0044A	14NA-0044B	14NA-0044C
M10	1	76	20	10	8	9	14NA-0045A	14NA-0045B	14NA-0045C
M10	1.25	76	20	10	8	9	14NA-0046A	14NA-0046B	14NA-0046C
M11	1	82	22	8	6.3	9	14NA-0047A	14NA-0047B	14NA-0047C
M11	1.25	82	22	8	6.3	9	14NA-0048A	14NA-0048B	14NA-0048C
M12	1	84	24	9	7.1	10	14NA-0049A	14NA-0049B	14NA-0049C
M12	1.25	84	24	9	7.1	10	14NA-0050A	14NA-0050B	14NA-0050C
M12	1.5	89	29	9	7.1	10	14NA-0051A	14NA-0051B	14NA-0051C
M14	1	90	25	11.2	9	12	14NA-0052A	14NA-0052B	14NA-0052C
M14	1.25	90	25	11.2	9	12	14NA-0053A	14NA-0053B	14NA-0053C
M14	1.5	95	30	11.2	9	12	14NA-0054A	14NA-0054B	14NA-0054C
M15	1	95	30	11.2	9	12	14NA-0055A	14NA-0055B	14NA-0055C
M15	1.5	95	30	11.2	9	12	14NA-0056A	14NA-0056B	14NA-0056C
M16	1	95	25	12.5	10	13	14NA-0057A	14NA-0057B	14NA-0057C
M16	1.5	102	32	12.5	10	13	14NA-0058A	14NA-0058B	14NA-0058C
M17	1.5	102	32	12.5	10	13	14NA-0059A	14NA-0059B	14NA-0059C
M18	1	104	29	14	11.2	14	14NA-0060A	14NA-0060B	14NA-0060C
M18	1.25	104	29	14	11.2	14	14NA-0061A	14NA-0061B	14NA-0061C
M18	1.5	104	29	14	11.2	14	14NA-0062A	14NA-0062B	14NA-0062C
M18	2	112	37	14	11.2	14	14NA-0063A	14NA-0063B	14NA-0063C
M20	1	104	29	14	11.2	14	14NA-0064A	14NA-0064B	14NA-0064C
M20	1.5	104	29	14	11.2	14	14NA-0065A	14NA-0065B	14NA-0065C
M20	2	112	37	14	11.2	14	14NA-0066A	14NA-0066B	14NA-0066C

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**Metric Fine**



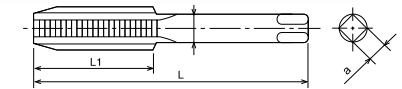
Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M22	1	113	33	16	12.5	16	14NA-0067A	14NA-0067B	14NA-0067C
M22	1.5	113	33	16	12.5	16	14NA-0068A	14NA-0068B	14NA-0068C
M22	2	118	38	16	12.5	16	14NA-0069A	14NA-0069B	14NA-0069C
M24	1	120	35	18	14	18	14NA-0070A	14NA-0070B	14NA-0070C
M24	1.5	120	35	18	14	18	14NA-0071A	14NA-0071B	14NA-0071C
M24	2	120	35	20	14	18	14NA-0072A	14NA-0072B	14NA-0072C
M25	1	120	35	20	14	18	14NA-0073A	14NA-0073B	14NA-0073C
M25	1.5	120	35	20	14	18	14NA-0074A	14NA-0074B	14NA-0074C
M25	2	120	35	20	14	18	14NA-0075A	14NA-0075B	14NA-0075C
M27	1.5	127	37	20	16	20	14NA-0076A	14NA-0076B	14NA-0076C
M27	2	127	37	20	16	20	14NA-0077A	14NA-0077B	14NA-0077C
M28	1.5	127	37	20	16	20	14NA-0078A	14NA-0078B	14NA-0078C
M28	2	127	37	20	16	20	14NA-0079A	14NA-0079B	14NA-0079C
M30	1	127	37	20	16	20	14NA-0080A	14NA-0080B	14NA-0080C
M30	1.5	127	37	20	16	20	14NA-0081A	14NA-0081B	14NA-0081C
M30	2	127	37	20	16	20	14NA-0082A	14NA-0082B	14NA-0082C
M30	3	138	48	20	16	20	14NA-0083A	14NA-0083B	14NA-0083C
M32	1.5	137	37	22.4	18	22	14NA-0084A	14NA-0084B	14NA-0084C
M32	2	137	37	22.4	18	22	14NA-0085A	14NA-0085B	14NA-0085C
M33	1.5	137	37	22.4	18	22	14NA-0086A	14NA-0086B	14NA-0086C
M33	2	137	37	22.4	18	22	14NA-0087A	14NA-0087B	14NA-0087C
M35	3	151	51	22.4	20	24	14NA-0088A	14NA-0088B	14NA-0088C
M36	1.5	144	39	25	20	24	14NA-0089A	14NA-0089B	14NA-0089C
M36	2	144	39	25	20	24	14NA-0090A	14NA-0090B	14NA-0090C
M36	3	144	39	25	20	24	14NA-0091A	14NA-0091B	14NA-0091C
M38	1.5	162	57	25	22.4	26	14NA-0092A	14NA-0092B	14NA-0092C
M38	2	149	39	28	22.4	26	14NA-0093A	14NA-0093B	14NA-0093C
M39	1.5	149	39	28	22.4	26	14NA-0094A	14NA-0094B	14NA-0094C
M39	2	149	39	28	22.4	26	14NA-0095A	14NA-0095B	14NA-0095C
M39	3	170	60	28	22.4	26	14NA-0096A	14NA-0096B	14NA-0096C
M40	2	149	39	28	22.4	26	14NA-0097A	14NA-0097B	14NA-0097C
M40	3	170	60	28	22.4	26	14NA-0098A	14NA-0098B	14NA-0098C
M42	1.5	149	39	28	22.4	26	14NA-0099A	14NA-0099B	14NA-0099C
M42	2	149	39	28	22.4	26	14NA-0100A	14NA-0100B	14NA-0100C
M42	3	170	60	28	22.4	26	14NA-0101A	14NA-0101B	14NA-0101C
M42	4	170	60	28	22.4	26	14NA-0102A	14NA-0102B	14NA-0102C
M45	1.5	165	45	31.5	25	28	14NA-0103A	14NA-0103B	14NA-0103C
M45	2	165	45	31.5	25	28	14NA-0104A	14NA-0104B	14NA-0104C
M45	3	187	67	31.5	25	28	14NA-0105A	14NA-0105B	14NA-0105C
M48	1.5	165	45	31.5	25	28	14NA-0106A	14NA-0106B	14NA-0106C
M48	2	165	45	31.5	25	28	14NA-0107A	14NA-0107B	14NA-0107C
M48	3	187	67	31.5	25	28	14NA-0108A	14NA-0108B	14NA-0108C
M48	4	187	67	31.5	25	28	14NA-0109A	14NA-0109B	14NA-0109C
M50	3	187	67	31.5	25	28	14NA-0110A	14NA-0110B	14NA-0110C
M52	2	175	45	35.5	28	31	14NA-0111A	14NA-0111B	14NA-0111C
M52	3	200	70	35.5	28	31	14NA-0112A	14NA-0112B	14NA-0112C
M52	4	200	70	35.5	28	31	14NA-0113A	14NA-0113B	14NA-0113C

**Machine Taps, UNC Thread, ISO529 Standard**

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



**UNC**



UNC Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
No. 4	40	48	11	3.15	2.5	5	14NA-0114A	14NA-0114B	14NA-0114C
No. 5	40	48	11	3.15	2.5	5	14NA-0115A	14NA-0115B	14NA-0115C
No. 6	32	50	13	3.55	2.8	5	14NA-0116A	14NA-0116B	14NA-0116C
No. 8	32	53	13	4.5	3.55	6	14NA-0117A	14NA-0117B	14NA-0117C
No. 10	24	58	16	5	4	7	14NA-0118A	14NA-0118B	14NA-0118C
No. 12	24	62	17	5.6	4.5	7	14NA-0119A	14NA-0119B	14NA-0119C
1/4"	20	66	19	6.3	5	8	14NA-0120A	14NA-0120B	14NA-0120C
5/16"	18	72	22	8	6.3	9	14NA-0121A	14NA-0121B	14NA-0121C
3/8"	16	80	24	10	8	11	14NA-0122A	14NA-0122B	14NA-0122C
7/16"	14	85	25	8	6.3	9	14NA-0123A	14NA-0123B	14NA-0123C
1/2"	13	89	29	9	7.1	10	14NA-0124A	14NA-0124B	14NA-0124C
9/16"	12	95	30	11.2	9	12	14NA-0125A	14NA-0125B	14NA-0125C
5/8"	11	102	32	12.5	10	13	14NA-0126A	14NA-0126B	14NA-0126C
3/4"	10	112	37	14	11.2	14	14NA-0127A	14NA-0127B	14NA-0127C
7/8"	9	118	38	16	12.5	16	14NA-0128A	14NA-0128B	14NA-0128C
1"	8	130	45	18	14	18	14NA-0129A	14NA-0129B	14NA-0129C
1-1/8"	7	138	48	20	16	20	14NA-0130A	14NA-0130B	14NA-0130C
1-1/4"	7	151	51	22.4	18	22	14NA-0131A	14NA-0131B	14NA-0131C
1-3/8"	6	162	57	25	20	24	14NA-0132A	14NA-0132B	14NA-0132C
1-1/2"	6	170	60	28	22.4	26	14NA-0133A	14NA-0133B	14NA-0133C
1-3/4"	5	187	67	31.5	25	28	14NA-0134A	14NA-0134B	14NA-0134C
2"	4.5	200	70	35.5	28	31	14NA-0135A	14NA-0135B	14NA-0135C

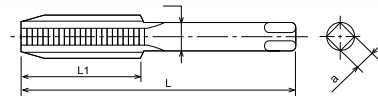
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, UNF Thread, ISO529 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### UNF



UNF Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
No. 4	48	48	11	3.15	2.5	5	14NA-0136A	14NA-0136B	14NA-0136C
No. 5	44	48	11	3.15	2.5	5	14NA-0137A	14NA-0137B	14NA-0137C
No. 6	40	50	13	3.55	2.8	5	14NA-0138A	14NA-0138B	14NA-0138C
No. 8	36	53	13	4.5	3.55	6	14NA-0139A	14NA-0139B	14NA-0139C
No. 10	32	58	16	5	4	7	14NA-0140A	14NA-0140B	14NA-0140C
No. 12	28	62	17	5.6	4.5	7	14NA-0141A	14NA-0141B	14NA-0141C
1/4"	28	66	19	6.3	5	8	14NA-0142A	14NA-0142B	14NA-0142C
5/16"	24	72	22	8	6.3	9	14NA-0143A	14NA-0143B	14NA-0143C
3/8"	24	80	24	10	8	11	14NA-0144A	14NA-0144B	14NA-0144C
7/16"	20	85	25	8	6.3	9	14NA-0145A	14NA-0145B	14NA-0145C
1/2"	20	89	29	9	7.1	10	14NA-0146A	14NA-0146B	14NA-0146C
9/16"	18	95	30	11.2	9	12	14NA-0147A	14NA-0147B	14NA-0147C
5/8"	18	102	32	12.5	10	13	14NA-0148A	14NA-0148B	14NA-0148C
3/4"	16	112	37	14	11.2	14	14NA-0149A	14NA-0149B	14NA-0149C
7/8"	14	118	38	16	12.5	16	14NA-0150A	14NA-0150B	14NA-0150C
1"	12	130	45	18	14	18	14NA-0151A	14NA-0151B	14NA-0151C
1-1/8"	12	138	48	20	16	20	14NA-0152A	14NA-0152B	14NA-0152C
1-1/4"	12	151	51	22.4	18	22	14NA-0153A	14NA-0153B	14NA-0153C
1-3/8"	12	162	57	25	20	24	14NA-0154A	14NA-0154B	14NA-0154C
1-1/2"	12	170	60	28	22.4	26	14NA-0155A	14NA-0155B	14NA-0155C

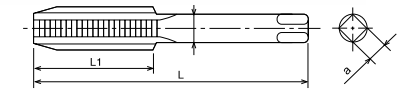
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, BSW Thread, ISO529 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### BSW



BSW Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
1/8"	40	48	11	3.15	2.5	5	14NA-0156A	14NA-0156B	14NA-0156C
5/32"	32	53	13	4	3.2	7	14NA-0157A	14NA-0157B	14NA-0157C
3/16"	24	58	16	5	4	7	14NA-0158A	14NA-0158B	14NA-0158C
1/4"	20	66	19	6.3	5	8	14NA-0159A	14NA-0159B	14NA-0159C
5/16"	18	72	22	8	6.3	9	14NA-0160A	14NA-0160B	14NA-0160C
3/8"	16	80	24	10	8	11	14NA-0161A	14NA-0161B	14NA-0161C
7/16"	14	85	25	8	6.3	9	14NA-0162A	14NA-0162B	14NA-0162C
1/2"	12	89	29	9	7.1	10	14NA-0163A	14NA-0163B	14NA-0163C
9/16"	12	95	30	11.2	9	12	14NA-0164A	14NA-0164B	14NA-0164C
5/8"	11	102	32	12.5	10	13	14NA-0165A	14NA-0165B	14NA-0165C
3/4"	10	112	37	14	11.2	14	14NA-0166A	14NA-0166B	14NA-0166C
7/8"	9	118	38	16	12.5	16	14NA-0167A	14NA-0167B	14NA-0167C
1"	8	130	45	18	14	18	14NA-0168A	14NA-0168B	14NA-0168C
1-1/8"	7	138	48	20	16	20	14NA-0169A	14NA-0169B	14NA-0169C
1-1/4"	7	151	51	22.4	18	22	14NA-0170A	14NA-0170B	14NA-0170C
1-3/8"	6	162	57	25	20	24	14NA-0171A	14NA-0171B	14NA-0171C
1-1/2"	6	170	60	28	22.4	26	14NA-0172A	14NA-0172B	14NA-0172C
1-3/4"	5	187	67	31.5	25	28	14NA-0173A	14NA-0173B	14NA-0173C
2"	4.5	200	70	35.5	28	31	14NA-0174A	14NA-0174B	14NA-0174C

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

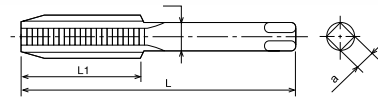


### Machine Taps, BSF Thread, ISO529 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### BSF



BSF Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
3/16"	32	58	16	5	4	7	14NA-0175A	14NA-0175B	14NA-0175C
7/32"	28	62	17	5.6	4.5	7	14NA-0176A	14NA-0176B	14NA-0176C
1/4"	26	66	19	6.3	5	8	14NA-0177A	14NA-0177B	14NA-0177C
9/32"	26	66	19	7.1	5.6	8	14NA-0178A	14NA-0178B	14NA-0178C
5/16"	22	72	22	8	6.3	9	14NA-0179A	14NA-0179B	14NA-0179C
3/8"	20	80	24	10	8	11	14NA-0180A	14NA-0180B	14NA-0180C
7/16"	18	85	25	8	6.3	9	14NA-0181A	14NA-0181B	14NA-0181C
1/2"	16	89	29	9	7.1	10	14NA-0182A	14NA-0182B	14NA-0182C
9/16"	16	95	30	11.2	9	12	14NA-0183A	14NA-0183B	14NA-0183C
5/8"	14	102	32	12.5	10	13	14NA-0184A	14NA-0184B	14NA-0184C
11/16"	14	112	37	14	11.2	14	14NA-0185A	14NA-0185B	14NA-0185C
3/4"	12	112	37	14	11.2	14	14NA-0186A	14NA-0186B	14NA-0186C
7/8"	11	118	38	16	12.5	16	14NA-0187A	14NA-0187B	14NA-0187C
1"	10	130	45	18	14	18	14NA-0188A	14NA-0188B	14NA-0188C
1-1/8"	9	138	48	20	16	20	14NA-0189A	14NA-0189B	14NA-0189C
1-1/4"	9	151	51	22.4	18	22	14NA-0190A	14NA-0190B	14NA-0190C
1-3/8"	8	162	57	25	20	24	14NA-0191A	14NA-0191B	14NA-0191C
1-1/2"	8	170	60	28	22.4	26	14NA-0192A	14NA-0192B	14NA-0192C
1-5/8"	8	170	60	28	22.4	26	14NA-0193A	14NA-0193B	14NA-0193C
1-3/4"	7	187	67	31.5	25	28	14NA-0194A	14NA-0194B	14NA-0194C
2"	7	200	70	35.5	28	31	14NA-0195A	14NA-0195B	14NA-0195C

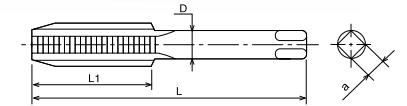
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, Metric Coarse Thread, DIN371 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M3	0.5	56	11	3.5	2.7	14NC-0001A	14NC-0001B	14NC-0001C
M3.5	0.6	56	13	4	3	14NC-0002A	14NC-0002B	14NC-0002C
M4	0.7	63	13	4.5	3.4	14NC-0003A	14NC-0003B	14NC-0003C
M4.5	0.75	70	16	6	4.9	14NC-0004A	14NC-0004B	14NC-0004C
M5	0.8	70	16	6	4.9	14NC-0005A	14NC-0005B	14NC-0005C
M6	1	80	19	6	4.9	14NC-0006A	14NC-0006B	14NC-0006C
M7	1	80	19	7	5.5	14NC-0007A	14NC-0007B	14NC-0007C
M8	1.25	90	22	8	6.2	14NC-0008A	14NC-0008B	14NC-0008C
M9	1.25	90	22	9	7	14NC-0009A	14NC-0009B	14NC-0009C
M10	1.5	100	24	10	8	14NC-0010A	14NC-0010B	14NC-0010C

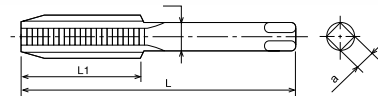
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, Metric Fine Thread, DIN374 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric Fine



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M3	0.35	56	9	2.2	1.85	14NC-0011A	14NC-0011B	14NC-0011C
M3.5	0.35	56	10	2.5	2.1	14NC-0012A	14NC-0012B	14NC-0012C
M4	0.5	63	10	2.8	2.1	14NC-0013A	14NC-0013B	14NC-0013C
M5	0.5	70	12	3.5	2.7	14NC-0014A	14NC-0014B	14NC-0014C
M6	0.75	80	14	4.5	3.4	14NC-0015A	14NC-0015B	14NC-0015C
M8	0.75	80	19	6	4.9	14NC-0016A	14NC-0016B	14NC-0016C
M8	1	90	22	6	4.9	14NC-0017A	14NC-0017B	14NC-0017C
M9	1	90	22	7	5.5	14NC-0018A	14NC-0018B	14NC-0018C
M10	1	90	20	7	5.5	14NC-0019A	14NC-0019B	14NC-0019C
M10	1.25	100	24	7	5.5	14NC-0020A	14NC-0020B	14NC-0020C
M12	1	100	22	9	7	14NC-0021A	14NC-0021B	14NC-0021C
M12	1.25	100	22	9	7	14NC-0022A	14NC-0022B	14NC-0022C
M12	1.5	100	22	9	7	14NC-0023A	14NC-0023B	14NC-0023C
M14	1.25	100	22	11	9	14NC-0024A	14NC-0024B	14NC-0024C
M14	1.5	100	22	11	9	14NC-0025A	14NC-0025B	14NC-0025C
M16	1	100	22	12	9	14NC-0026A	14NC-0026B	14NC-0026C
M16	1.5	100	22	12	9	14NC-0027A	14NC-0027B	14NC-0027C
M18	1.5	110	25	14	11	14NC-0028A	14NC-0028B	14NC-0028C
M18	2	125	34	14	11	14NC-0029A	14NC-0029B	14NC-0029C
M20	1.5	125	25	16	12	14NC-0030A	14NC-0030B	14NC-0030C
M20	2	125	34	16	12	14NC-0031A	14NC-0031B	14NC-0031C
M22	1.5	125	25	18	14.5	14NC-0032A	14NC-0032B	14NC-0032C
M22	2	140	34	18	14.5	14NC-0033A	14NC-0033B	14NC-0033C
M24	1.5	140	28	18	14.5	14NC-0034A	14NC-0034B	14NC-0034C
M24	2	140	28	18	14.5	14NC-0035A	14NC-0035B	14NC-0035C
M26	1.5	140	28	18	14.5	14NC-0036A	14NC-0036B	14NC-0036C
M27	1.5	140	28	20	16	14NC-0037A	14NC-0037B	14NC-0037C
M27	2	140	28	20	16	14NC-0038A	14NC-0038B	14NC-0038C
M28	1.5	140	28	20	16	14NC-0039A	14NC-0039B	14NC-0039C
M30	1.5	150	28	22	18	14NC-0040A	14NC-0040B	14NC-0040C
M30	2	150	28	22	18	14NC-0041A	14NC-0041B	14NC-0041C
M32	1.5	150	28	22	18	14NC-0042A	14NC-0042B	14NC-0042C

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

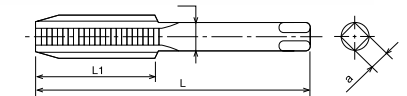
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### Machine Taps, Metric Fine Thread, DIN374 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric Fine



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M33	1.50(2)	160	30	25	20	14NC-0043A	14NC-0043B	14NC-0043C
M34	1.5	170	30	28	22	14NC-0044A	14NC-0044B	14NC-0044C
M35	1.5	170	30	28	22	14NC-0045A	14NC-0045B	14NC-0045C
M36	1.50(2)	170	30	28	22	14NC-0046A	14NC-0046B	14NC-0046C
M38	1.5	170	30	28	22	14NC-0047A	14NC-0047B	14NC-0047C
M40	1.5	170	30	32	24	14NC-0048A	14NC-0048B	14NC-0048C
M42	1.50(2)	170	30	32	24	14NC-0049A	14NC-0049B	14NC-0049C
M42	3	200	60	32	24	14NC-0050A	14NC-0050B	14NC-0050C
M45	1.50(2)	180	32	36	29	14NC-0051A	14NC-0051B	14NC-0051C
M48	1.50(2)	190	32	36	29	14NC-0052A	14NC-0052B	14NC-0052C
M50	1.50(2)	190	32	36	29	14NC-0053A	14NC-0053B	14NC-0053C
M52	1.50(2)	190	32	40	32	14NC-0054A	14NC-0054B	14NC-0054C

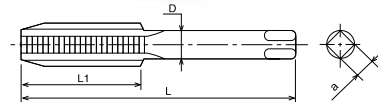
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, Metric Coarse Thread, DIN376 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M 3	0.5	56	11	2,2	-	14NC-0055A	14NC-0055B	14NC-0055C
M 3	0.6	56	11	2,2	-	14NC-0056A	14NC-0056B	14NC-0056C
M 3.5	0.6	56	13	2,5	2.1	14NC-0057A	14NC-0057B	14NC-0057C
M 4	0.7	63	13	2,8	2.1	14NC-0058A	14NC-0058B	14NC-0058C
M 4.5	0.75	70	16	3,5	2.7	14NC-0059A	14NC-0059B	14NC-0059C
M 5	0.8	70	16	3,5	2.7	14NC-0060A	14NC-0060B	14NC-0060C
M 6	1	80	19	4,5	3.4	14NC-0061A	14NC-0061B	14NC-0061C
M 7	1	80	19	5,5	4.3	14NC-0062A	14NC-0062B	14NC-0062C
M 8	1.25	90	22	6	4.9	14NC-0063A	14NC-0063B	14NC-0063C
M 9	1.25	90	22	7	5.5	14NC-0064A	14NC-0064B	14NC-0064C
M 10	1.5	100	24	7	5.5	14NC-0065A	14NC-0065B	14NC-0065C
M 12	1.75	110	29	9	7	14NC-0066A	14NC-0066B	14NC-0066C
M 14	2	110	30	11	9	14NC-0067A	14NC-0067B	14NC-0067C
M 16	2	110	32	12	9	14NC-0068A	14NC-0068B	14NC-0068C
M 18	2.5	125	34	14	11	14NC-0069A	14NC-0069B	14NC-0069C
M 20	2.5	140	34	16	12	14NC-0070A	14NC-0070B	14NC-0070C
M 22	2.5	140	34	18	14.5	14NC-0071A	14NC-0071B	14NC-0071C
M 24	3	160	38	18	14.5	14NC-0072A	14NC-0072B	14NC-0072C
M 27	3	160	38	20	16	14NC-0073A	14NC-0073B	14NC-0073C
M 30	3.5	180	45	22	18	14NC-0074A	14NC-0074B	14NC-0074C

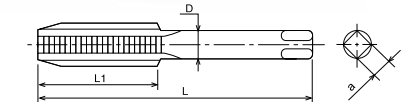
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, UNC Thread

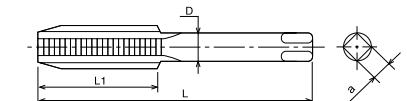
- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### UNC



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
2#	56	50	9	2.8	2.1	14NC-0075A	14NC-0075B	14NC-0075C
3#	48	50	9	2.8	2.1	14NC-0076A	14NC-0076B	14NC-0076C
4#	40	56	11	3.5	2.7	14NC-0077A	14NC-0077B	14NC-0077C
5# (1/8)	40	56	11	3.5	2.7	14NC-0078A	14NC-0078B	14NC-0078C
6#	32	56	13	4	3	14NC-0079A	14NC-0079B	14NC-0079C
8# (5/32)	32	63	13	4.5	3.4	14NC-0080A	14NC-0080B	14NC-0080C
10# (3/16)	24	70	16	5.5	4.3	14NC-0081A	14NC-0081B	14NC-0081C
12# (7/32)	24	80	17	6	4.9	14NC-0082A	14NC-0082B	14NC-0082C
1/4"	20	80	19	7	5.5	14NC-0083A	14NC-0083B	14NC-0083C
5/16"	18	90	22	8	6.2	14NC-0084A	14NC-0084B	14NC-0084C
3/8"	16	100	22	9	7	14NC-0085A	14NC-0085B	14NC-0085C



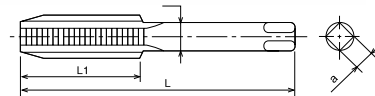
Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
5# (1/8)	40	56	11	2.2	-	14NC-0086A	14NC-0086B	14NC-0086C
6#	32	56	13	2.5	2.1	14NC-0087A	14NC-0087B	14NC-0087C
8# (5/32)	32	63	13	2.8	2.1	14NC-0088A	14NC-0088B	14NC-0088C
10# (3/16)	24	70	16	3.5	2.7	14NC-0089A	14NC-0089B	14NC-0089C
12# (7/32)	24	80	17	4	3	14NC-0090A	14NC-0090B	14NC-0090C
1/4"	20	80	19	4.5	3.4	14NC-0091A	14NC-0091B	14NC-0091C
5/16"	18	90	22	6	4.9	14NC-0092A	14NC-0092B	14NC-0092C
3/8"	16	100	22	7	5.5	14NC-0093A	14NC-0093B	14NC-0093C
7/16"	14	100	24	8	6.2	14NC-0094A	14NC-0094B	14NC-0094C
1/2"	13	110	29	9	7	14NC-0095A	14NC-0095B	14NC-0095C
9/16"	12	110	30	11	9	14NC-0096A	14NC-0096B	14NC-0096C
5/8"	11	110	32	12	9	14NC-0097A	14NC-0097B	14NC-0097C
3/4"	10	125	34	14	11	14NC-0098A	14NC-0098B	14NC-0098C
7/8"	9	140	34	18	14.5	14NC-0099A	14NC-0099B	14NC-0099C
1"	8	160	38	20	16	14NC-0100A	14NC-0100B	14NC-0100C
1-1/8"	7	180	45	22	18	14NC-0101A	14NC-0101B	14NC-0101C
1-1/4"	7	180	50	25	20	14NC-0102A	14NC-0102B	14NC-0102C

### Machine Taps, UNF Thread

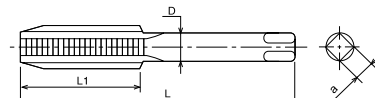
- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### UNF



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
2#	64	50	9	2.8	2.1	14NC-0103A	14NC-0103B	14NC-0103C
3#	56	50	9	2.8	2.1	14NC-0104A	14NC-0104B	14NC-0104C
4#	48	56	11	3.5	2.7	14NC-0105A	14NC-0105B	14NC-0105C
5# (1/8)	44	56	11	3.5	2.7	14NC-0106A	14NC-0106B	14NC-0106C
6#	40	56	13	4	3	14NC-0107A	14NC-0107B	14NC-0107C
8# (5/32)	36	63	13	4.5	3.4	14NC-0108A	14NC-0108B	14NC-0108C
10# (3/16)	32	70	16	5.5	4.3	14NC-0109A	14NC-0109B	14NC-0109C
12# (7/32)	28	80	17	6	4.9	14NC-0110A	14NC-0110B	14NC-0110C
1/4"	28	80	19	7	5.5	14NC-0111A	14NC-0111B	14NC-0111C
5/16"	24	90	22	8	6.2	14NC-0112A	14NC-0112B	14NC-0112C
3/8"	24	100	22	9	7	14NC-0113A	14NC-0113B	14NC-0113C



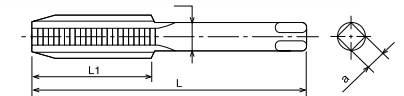
Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
5# (1/8)	44	56	11	2.2	-	14NC-0114A	14NC-0114B	14NC-0114C
6#	40	56	13	2.5	2.1	14NC-0115A	14NC-0115B	14NC-0115C
8# (5/32)	36	63	13	2.8	2.1	14NC-0116A	14NC-0116B	14NC-0116C
10# (3/16)	32	70	16	3.5	2.7	14NC-0117A	14NC-0117B	14NC-0117C
12# (7/32)	28	80	17	4	3	14NC-0118A	14NC-0118B	14NC-0118C
1/4"	28	80	19	4.5	3.4	14NC-0119A	14NC-0119B	14NC-0119C
5/16"	24	90	22	6	4.9	14NC-0120A	14NC-0120B	14NC-0120C
3/8"	24	100	22	7	5.5	14NC-0121A	14NC-0121B	14NC-0121C
7/16"	20	100	24	8	6.2	14NC-0122A	14NC-0122B	14NC-0122C
1/2"	20	110	29	9	7	14NC-0123A	14NC-0123B	14NC-0123C
9/16"	18	110	30	11	9	14NC-0124A	14NC-0124B	14NC-0124C
5/8"	18	110	32	12	9	14NC-0125A	14NC-0125B	14NC-0125C
3/4"	16	125	34	14	11	14NC-0126A	14NC-0126B	14NC-0126C
7/8"	14	140	34	18	14.5	14NC-0127A	14NC-0127B	14NC-0127C
1"	12	160	38	20	16	14NC-0128A	14NC-0128B	14NC-0128C
1-1/8"	12	180	45	22	18	14NC-0129A	14NC-0129B	14NC-0129C
1-1/4"	12	180	50	25	20	14NC-0130A	14NC-0130B	14NC-0130C

### Machine Taps, BSW Thread

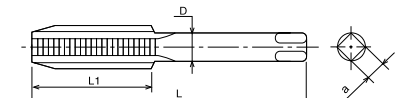
- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### BSW



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
3/32	48	50	9	2.8	2.1	14NC-0131A	14NC-0131B	14NC-0131C
1/8"	40	56	11	3.5	2.7	14NC-0132A	14NC-0132B	14NC-0132C
5/32	32	63	13	4.5	3.4	14NC-0133A	14NC-0133B	14NC-0133C
3/16"	24	70	16	5.5	4.3	14NC-0134A	14NC-0134B	14NC-0134C
7/32	24	80	17	6	4.9	14NC-0135A	14NC-0135B	14NC-0135C
1/4"	20	80	19	7	5.5	14NC-0136A	14NC-0136B	14NC-0136C
5/16"	18	90	22	8	6.2	14NC-0137A	14NC-0137B	14NC-0137C
3/8"	16	100	22	9	7	14NC-0138A	14NC-0138B	14NC-0138C



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
1/4"	20	80	19	4.5	3.4	14NC-0139A	14NC-0139B	14NC-0139C
5/16"	18	90	22	6	4.9	14NC-0140A	14NC-0140B	14NC-0140C
3/8"	16	100	22	7	5.5	14NC-0141A	14NC-0141B	14NC-0141C
7/16"	14	100	24	8	6.2	14NC-0142A	14NC-0142B	14NC-0142C
1/2"	12	110	29	9	7	14NC-0143A	14NC-0143B	14NC-0143C
9/16"	12	110	30	11	9	14NC-0144A	14NC-0144B	14NC-0144C
5/8"	11	110	32	12	9	14NC-0145A	14NC-0145B	14NC-0145C
3/4"	10	125	34	14	11	14NC-0146A	14NC-0146B	14NC-0146C
7/8"	9	140	34	18	14.5	14NC-0147A	14NC-0147B	14NC-0147C
1"	8	160	38	20	16	14NC-0148A	14NC-0148B	14NC-0148C
1.1/8"	7	180	45	22	18	14NC-0149A	14NC-0149B	14NC-0149C
1.1/4"	7	180	50	25	20	14NC-0150A	14NC-0150B	14NC-0150C

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

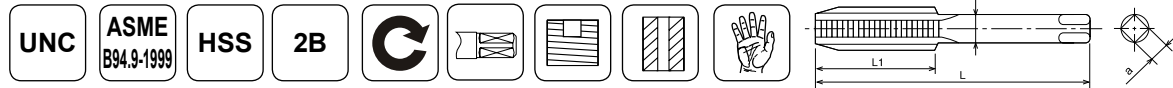


### Machine Taps, UNC Thread, ASME/ANSI B94.9 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### UNC



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
5#	40	49.3	16	3.58	2.79	14NB-0001A	14NB-0001B	14NB-0001C
6#	32	50.8	17.5	3.58	2.79	14NB-0002A	14NB-0002B	14NB-0002C
8#	32	54.1	19.1	4.27	3.33	14NB-0003A	14NB-0003B	14NB-0003C
10#	24	60.5	21.6	4.93	3.86	14NB-0004A	14NB-0004B	14NB-0004C
12#	24	60.5	23.9	5.59	4.19	14NB-0005A	14NB-0005B	14NB-0005C
1/4"	20	63.5	25.4	6.48	4.85	14NB-0006A	14NB-0006B	14NB-0006C
5/16"	18	69.1	28.7	8.08	6.05	14NB-0007A	14NB-0007B	14NB-0007C
3/8"	16	74.7	31.8	9.68	7.26	14NB-0008A	14NB-0008B	14NB-0008C
7/16"	14	80.3	36.6	8.2	6.15	14NB-0009A	14NB-0009B	14NB-0009C
1/2"	13	85.9	42.2	9.32	6.99	14NB-0010A	14NB-0010B	14NB-0010C
9/16"	12	91.2	42.2	10.9	8.18	14NB-0011A	14NB-0011B	14NB-0011C
5/8"	11	96.8	46	12.19	9.14	14NB-0012A	14NB-0012B	14NB-0012C
3/4"	10	108	50.8	14.99	11.23	14NB-0013A	14NB-0013B	14NB-0013C
7/8"	9	119.1	56.4	17.7	13.28	14NB-0014A	14NB-0014B	14NB-0014C
1"	8	130.3	63.5	20.32	15.24	14NB-0015A	14NB-0015B	14NB-0015C
1-1/8"	7	138.2	65	22.76	17.07	14NB-0016A	14NB-0016B	14NB-0016C
1-1/4"	7	146.1	65	25.93	19.46	14NB-0017A	14NB-0017B	14NB-0017C
1-3/8"	6	153.9	76.2	28.14	21.11	14NB-0018A	14NB-0018B	14NB-0018C
1-1/2"	6	162.1	76.2	31.32	23.5	14NB-0019A	14NB-0019B	14NB-0019C

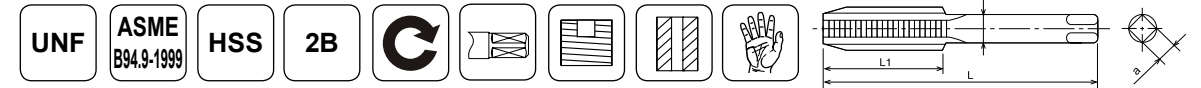
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, UNF Thread, ASME/ANSI B94.9 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### UNF



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
5#	44	49.3	16	3.58	2.79	14NB-0020A	14NB-0020B	14NB-0020C
6#	40	50.8	17.5	3.58	2.79	14NB-0021A	14NB-0021B	14NB-0021C
8#	36	54.1	19.1	4.27	3.33	14NB-0022A	14NB-0022B	14NB-0022C
10#	32	60.5	21.6	4.93	3.86	14NB-0023A	14NB-0023B	14NB-0023C
12#	28	60.5	23.9	5.59	4.19	14NB-0024A	14NB-0024B	14NB-0024C
1/4"	28	63.5	25.4	6.48	4.85	14NB-0025A	14NB-0025B	14NB-0025C
5/16"	24	69.1	28.7	8.08	6.05	14NB-0026A	14NB-0026B	14NB-0026C
3/8"	24	74.7	31.8	9.68	7.26	14NB-0027A	14NB-0027B	14NB-0027C
7/16"	20	80.3	36.6	8.2	6.15	14NB-0028A	14NB-0028B	14NB-0028C
1/2"	20	85.9	42.2	9.32	6.99	14NB-0029A	14NB-0029B	14NB-0029C
9/16"	18	91.2	42.2	10.9	8.18	14NB-0030A	14NB-0030B	14NB-0030C
5/8"	18	96.8	46	12.19	9.14	14NB-0031A	14NB-0031B	14NB-0031C
3/4"	16	108	50.8	14.99	11.23	14NB-0032A	14NB-0032B	14NB-0032C
7/8"	14	119.1	56.4	17.7	13.28	14NB-0033A	14NB-0033B	14NB-0033C
1"	12	130.3	63.5	20.32	15.24	14NB-0034A	14NB-0034B	14NB-0034C
1-1/8"	12	138.2	65	22.76	17.07	14NB-0035A	14NB-0035B	14NB-0035C
1-1/4"	12	146.1	65	25.93	19.46	14NB-0036A	14NB-0036B	14NB-0036C
1-3/8"	12	153.9	76.2	28.14	21.11	14NB-0037A	14NB-0037B	14NB-0037C
1-1/2"	12	162.1	76.2	31.32	23.5	14NB-0038A	14NB-0038B	14NB-0038C

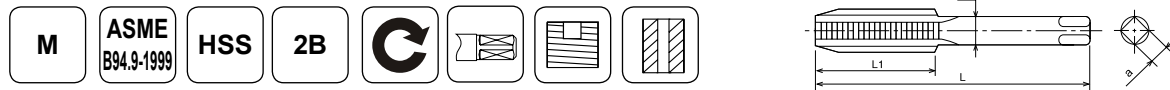
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, Metric Thread, ASME/ANSI B94.9 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M3	0.5	49.3	16	3.58	2.79	14NB-0039A	14NB-0039B	14NB-0039C
M3.5	0.6	50.8	17.5	3.58	2.79	14NB-0040A	14NB-0040B	14NB-0040C
M4	0.7	54.1	19.1	4.27	3.33	14NB-0041A	14NB-0041B	14NB-0041C
M4.5	0.75	60.5	22.4	4.93	3.86	14NB-0042A	14NB-0042B	14NB-0042C
M5	0.8	60.5	22.4	4.93	3.86	14NB-0043A	14NB-0043B	14NB-0043C
M6	1	63.5	25.4	6.48	4.85	14NB-0044A	14NB-0044B	14NB-0044C
M7	1	69.1	28.7	8.08	6.05	14NB-0045A	14NB-0045B	14NB-0045C
M8	1.25	69.1	28.7	8.08	6.05	14NB-0046A	14NB-0046B	14NB-0046C
M10	1.5	74.7	31.8	9.68	7.26	14NB-0047A	14NB-0047B	14NB-0047C
M12	1.75	85.9	42.2	9.32	6.99	14NB-0048A	14NB-0048B	14NB-0048C
M14	2	91.2	42.2	10.9	8.18	14NB-0049A	14NB-0049B	14NB-0049C
M16	2	96.8	46	12.19	9.14	14NB-0050A	14NB-0050B	14NB-0050C
M18	2.5	102.4	46	13.77	10.31	14NB-0051A	14NB-0051B	14NB-0051C
M20	2.5	113.5	50.8	16.56	12.42	14NB-0052A	14NB-0052B	14NB-0052C
M22	2.5	119.1	56.4	17.7	13.28	14NB-0053A	14NB-0053B	14NB-0053C
M24	3	124.7	56.4	19.3	14.48	14NB-0054A	14NB-0054B	14NB-0054C
M27	3	130.3	63.5	22.76	17.07	14NB-0055A	14NB-0055B	14NB-0055C
M30	3.5	138.2	65	25.93	19.46	14NB-0056A	14NB-0056B	14NB-0056C
M33	3.5	146.1	65	28.14	21.11	14NB-0057A	14NB-0057B	14NB-0057C
M36	4	153.9	76.2	31.32	23.5	14NB-0058A	14NB-0058B	14NB-0058C
M39	4	169.9	81	33.15	24.87	14NB-0059A	14NB-0059B	14NB-0059C
M42	4.5	177.8	81	36.32	27.23	14NB-0060A	14NB-0060B	14NB-0060C
M48	5	193.8	90.4	41.76	31.32	14NB-0061A	14NB-0061B	14NB-0061C

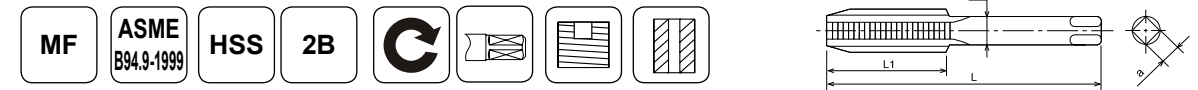
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Machine Taps, Metric Fine Thread, ASME/ANSI B94.9 Standard

- ◆ For machine use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric Fine

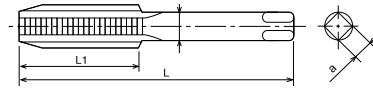


Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Straight Flute	Code No. Spiral Point	Code No. Spiral flute
M3	0.35	49.3	16	3.58	2.79	14NB-0062A	14NB-0062B	14NB-0062C
M3.5	0.35	50.8	17.5	3.58	2.79	14NB-0063A	14NB-0063B	14NB-0063C
M4	0.5	54.1	19.1	4.27	3.33	14NB-0064A	14NB-0064B	14NB-0064C
M5	0.75	60.5	22.4	4.93	3.86	14NB-0065A	14NB-0065B	14NB-0065C
M6	0.75	63.5	25.4	6.48	4.85	14NB-0066A	14NB-0066B	14NB-0066C
M7	0.75	69.1	28.7	8.08	6.05	14NB-0067A	14NB-0067B	14NB-0067C
M8	1	69.1	28.7	8.08	6.05	14NB-0068A	14NB-0068B	14NB-0068C
M10	1.25	74.7	31.8	9.68	7.26	14NB-0069A	14NB-0069B	14NB-0069C
M10	1	74.7	31.8	9.68	7.26	14NB-0070A	14NB-0070B	14NB-0070C
M12	1.5	85.9	42.2	9.32	6.99	14NB-0071A	14NB-0071B	14NB-0071C
M12	1.25	85.9	42.2	9.32	6.99	14NB-0072A	14NB-0072B	14NB-0072C
M14	1.5	91.2	42.2	10.9	8.18	14NB-0073A	14NB-0073B	14NB-0073C
M14	1.25	91.2	42.2	10.9	8.18	14NB-0074A	14NB-0074B	14NB-0074C
M16	1.5	96.8	46	12.19	9.14	14NB-0075A	14NB-0075B	14NB-0075C
M18	1.5	102.4	46	13.77	10.31	14NB-0076A	14NB-0076B	14NB-0076C
M18	1	102.4	46	13.77	10.31	14NB-0077A	14NB-0077B	14NB-0077C
M20	2	113.5	50.8	16.56	12.42	14NB-0078A	14NB-0078B	14NB-0078C
M22	2	119.1	56.4	17.7	13.28	14NB-0079A	14NB-0079B	14NB-0079C
M24	2	124.7	56.4	19.3	14.48	14NB-0080A	14NB-0080B	14NB-0080C
M25	2	130.3	63.5	20.32	15.24	14NB-0081A	14NB-0081B	14NB-0081C
M25	1.5	130.3	63.5	20.32	15.24	14NB-0082A	14NB-0082B	14NB-0082C
M27	2	130.3	63.5	22.76	17.07	14NB-0083A	14NB-0083B	14NB-0083C
M30	3	138.2	65	25.93	19.46	14NB-0084A	14NB-0084B	14NB-0084C
M33	3	146.1	65	28.14	21.11	14NB-0085A	14NB-0085B	14NB-0085C
M36	3	153.9	76.2	31.32	23.5	14NB-0086A	14NB-0086B	14NB-0086C
M39	3	169.9	81	33.15	24.87	14NB-0087A	14NB-0087B	14NB-0087C
M42	4	177.8	81	36.32	27.23	14NB-0088A	14NB-0088B	14NB-0088C
M48	4	193.8	90.4	41.76	31.32	14NB-0089A	14NB-0089B	14NB-0089C

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, Metric Thread, ISO529 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric

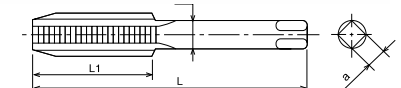


Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
M3	0.5	48	11	3.15	2.5	5	14NA-000A1	14NA-000B1	14NA-000C1	14NA-000D1
M3.5	0.6	50	13	3.55	2.8	5	14NA-000A2	14NA-000B2	14NA-000C2	14NA-000D2
M4	0.7	53	13	4	3.15	6	14NA-000A3	14NA-000B3	14NA-000C3	14NA-000D3
M4.5	0.75	53	13	4.5	3.55	6	14NA-000A4	14NA-000B4	14NA-000C4	14NA-000D4
M5	0.8	58	16	5	4	6	14NA-000A5	14NA-000B5	14NA-000C5	14NA-000D5
M6	1	66	19	6.3	5	8	14NA-000A6	14NA-000B6	14NA-000C6	14NA-000D6
M7	1	66	19	7.1	5.6	7	14NA-000A7	14NA-000B7	14NA-000C7	14NA-000D7
M8	1.25	72	22	8	6.3	8	14NA-000A8	14NA-000B8	14NA-000C8	14NA-000D8
M9	1.25	70	22	9	7.1	8	14NA-000A9	14NA-000B9	14NA-000C9	14NA-000D9
M10	1.5	80	24	10	8	9	14NA-000A10	14NA-000B10	14NA-000C10	14NA-000D10
M11	1.5	85	25	8	6.3	9	14NA-000A11	14NA-000B11	14NA-000C11	14NA-000D11
M12	1.75	89	29	9	7.1	10	14NA-000A12	14NA-000B12	14NA-000C12	14NA-000D12
M14	2	95	30	11.2	9	12	14NA-000A13	14NA-000B13	14NA-000C13	14NA-000D13
M16	2	102	32	12.5	10	13	14NA-000A14	14NA-000B14	14NA-000C14	14NA-000D14
M18	2.5	112	37	14	11.2	14	14NA-000A15	14NA-000B15	14NA-000C15	14NA-000D15
M20	2.5	112	37	14	11.2	14	14NA-000A16	14NA-000B16	14NA-000C16	14NA-000D16
M22	2.5	118	38	16	12.5	16	14NA-000A17	14NA-000B17	14NA-000C17	14NA-000D17
M24	3	130	45	18	14	18	14NA-000A18	14NA-000B18	14NA-000C18	14NA-000D18
M27	3	135	45	20	16	20	14NA-000A19	14NA-000B19	14NA-000C19	14NA-000D19
M30	3.5	138	48	20	16	20	14NA-000A20	14NA-000B20	14NA-000C20	14NA-000D20
M33	3.5	151	51	22.4	18	22	14NA-000A21	14NA-000B21	14NA-000C21	14NA-000D21
M36	4	162	57	25	20	24	14NA-000A22	14NA-000B22	14NA-000C22	14NA-000D22
M39	4	170	60	28	22.4	26	14NA-000A23	14NA-000B23	14NA-000C23	14NA-000D23
M42	4.5	170	60	28	22.4	26	14NA-000A24	14NA-000B24	14NA-000C24	14NA-000D24
M45	4.5	187	67	31.5	25	28	14NA-000A25	14NA-000B25	14NA-000C25	14NA-000D25
M48	5	187	67	31.5	25	28	14NA-000A26	14NA-000B26	14NA-000C26	14NA-000D26
M52	5	200	70	35.5	28	31	14NA-000A27	14NA-000B27	14NA-000C27	14NA-000D27
M56	5.5	200	70	35.5	28	31	14NA-000A28	14NA-000B28	14NA-000C28	14NA-000D28
M60	5.5	221	76	40	31.5	34	14NA-000A29	14NA-000B29	14NA-000C29	14NA-000D29
M64	6	224	79	40	31.5	34	14NA-000A30	14NA-000B30	14NA-000C30	14NA-000D30
M68	6	234	79	45	35.5	38	14NA-000A31	14NA-000B31	14NA-000C31	14NA-000D31

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, Metric Fine Thread, ISO529 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### Metric Fine

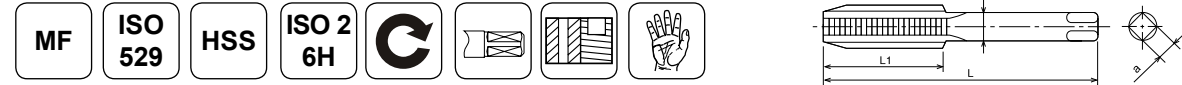


Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
M3	0.35	48	11	3.15	2.5	5	14NA-00A32	14NA-00B32	14NA-00C32	14NA-00D32
M4	0.5	53	13	4	3.15	6	14NA-00A33	14NA-00B33	14NA-00C33	14NA-00D33
M4.5	0.5	53	13	4.5	3.55	6	14NA-00A34	14NA-00B34	14NA-00C34	14NA-00D34
M5	0.5	58	16	5	4	6	14NA-00A35	14NA-00B35	14NA-00C35	14NA-00D35
M5	0.75	58	16	5	4	6	14NA-00A36	14NA-00B36	14NA-00C36	14NA-00D36
M5.5	0.5	62	17	5.6	4.5	6	14NA-00A37	14NA-00B37	14NA-00C37	14NA-00D37
M6	0.75	66	19	6.3	5	8	14NA-00A38	14NA-00B38	14NA-00C38	14NA-00D38
M7	0.75	66	19	7.1	5.6	7	14NA-00A39	14NA-00B39	14NA-00C39	14NA-00D39
M8	0.75	69	19	8	6.3	8	14NA-00A40	14NA-00B40	14NA-00C40	14NA-00D40
M8	1	69	19	8	6.3	8	14NA-00A41	14NA-00B41	14NA-00C41	14NA-00D41
M9	0.75	69	19	9	7.1	8	14NA-00A42	14NA-00B42	14NA-00C42	14NA-00D42
M9	1	69	19	9	7.1	8	14NA-00A43	14NA-00B43	14NA-00C43	14NA-00D43
M10	0.75	76	20	10	8	9	14NA-00A44	14NA-00B44	14NA-00C44	14NA-00D44
M10	1	76	20	10	8	9	14NA-00A45	14NA-00B45	14NA-00C45	14NA-00D45
M10	1.25	76	20	10	8	9	14NA-00A46	14NA-00B46	14NA-00C46	14NA-00D46
M11	1	82	22	8	6.3	9	14NA-00A47	14NA-00B47	14NA-00C47	14NA-00D47
M11	1.25	82	22	8	6.3	9	14NA-00A48	14NA-00B48	14NA-00C48	14NA-00D48
M12	1	84	24	9	7.1	10	14NA-00A49	14NA-00B49	14NA-00C49	14NA-00D49
M12	1.25	84	24	9	7.1	10	14NA-00A50	14NA-00B50	14NA-00C50	14NA-00D50
M12	1.5	89	29	9	7.1	10	14NA-00A51	14NA-00B51	14NA-00C51	14NA-00D51
M14	1	90	25	11.2	9	12	14NA-00A52	14NA-00B52	14NA-00C52	14NA-00D52
M14	1.25	90	25	11.2	9	12	14NA-00A53	14NA-00B53	14NA-00C53	14NA-00D53
M14	1.5	95	30	11.2	9	12	14NA-00A54	14NA-00B54	14NA-00C54	14NA-00D54
M15	1	95	30	11.2	9	12	14NA-00A55	14NA-00B55	14NA-00C55	14NA-00D55
M15	1.5	95	30	11.2	9	12	14NA-00A56	14NA-00B56	14NA-00C56	14NA-00D56
M16	1	95	25	12.5	10	13	14NA-00A57	14NA-00B57	14NA-00C57	14NA-00D57
M16	1.5	102	32	12.5	10	13	14NA-00A58	14NA-00B58	14NA-00C58	14NA-00D58
M17	1.5	102	32	12.5	10	13	14NA-00A59	14NA-00B59	14NA-00C59	14NA-00D59
M18	1	104	29	14	11.2	14	14NA-00A60	14NA-00B60	14NA-00C60	14NA-00D60
M18	1.25	104	29	14	11.2	14	14NA-00A61	14NA-00B61	14NA-00C61	14NA-00D61
M18	1.5	104	29	14	11.2	14	14NA-00A62	14NA-00B62	14NA-00C62	14NA-00D62
M18	2	112	37	14	11.2	14	14NA-00A63	14NA-00B63	14NA-00C63	14NA-00D63
M20	1	104	29	14	11.2	14	14NA-00A64	14NA-00B64	14NA-00C64	14NA-00D64
M20	1.5	104	29	14	11.2	14	14NA-00A65	14NA-00B65	14NA-00C65	14NA-00D65
M20	2	112	37	14	11.2	14	14NA-00A66	14NA-00B66	14NA-00C66	14NA-00D66

Continued... ..



**Metric Fine**



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
M22	1	113	33	16	12.5	16	14NA-00A67	14NA-00B67	14NA-00C67	14NA-00D67
M22	1.5	113	33	16	12.5	16	14NA-00A68	14NA-00B68	14NA-00C68	14NA-00D68
M22	2	118	38	16	12.5	16	14NA-00A69	14NA-00B69	14NA-00C69	14NA-00D69
M24	1	120	35	18	14	18	14NA-00A70	14NA-00B70	14NA-00C70	14NA-00D70
M24	1.5	120	35	18	14	18	14NA-00A71	14NA-00B71	14NA-00C71	14NA-00D71
M24	2	120	35	20	14	18	14NA-00A72	14NA-00B72	14NA-00C72	14NA-00D72
M25	1	120	35	20	14	18	14NA-00A73	14NA-00B73	14NA-00C73	14NA-00D73
M25	1.5	120	35	20	14	18	14NA-00A74	14NA-00B74	14NA-00C74	14NA-00D74
M25	2	120	35	20	14	18	14NA-00A75	14NA-00B75	14NA-00C75	14NA-00D75
M27	1.5	127	37	20	16	20	14NA-00A76	14NA-00B76	14NA-00C76	14NA-00D76
M27	2	127	37	20	16	20	14NA-00A77	14NA-00B77	14NA-00C77	14NA-00D77
M28	1.5	127	37	20	16	20	14NA-00A78	14NA-00B78	14NA-00C78	14NA-00D78
M28	2	127	37	20	16	20	14NA-00A79	14NA-00B79	14NA-00C79	14NA-00D79
M30	1	127	37	20	16	20	14NA-00A80	14NA-00B80	14NA-00C80	14NA-00D80
M30	1.5	127	37	20	16	20	14NA-00A81	14NA-00B81	14NA-00C81	14NA-00D81
M30	2	127	37	20	16	20	14NA-00A82	14NA-00B82	14NA-00C82	14NA-00D82
M30	3	138	48	20	16	20	14NA-00A83	14NA-00B83	14NA-00C83	14NA-00D83
M32	1.5	137	37	22.4	18	22	14NA-00A84	14NA-00B84	14NA-00C84	14NA-00D84
M32	2	137	37	22.4	18	22	14NA-00A85	14NA-00B85	14NA-00C85	14NA-00D85
M33	1.5	137	37	22.4	18	22	14NA-00A86	14NA-00B86	14NA-00C86	14NA-00D86
M33	2	137	37	22.4	18	22	14NA-00A87	14NA-00B87	14NA-00C87	14NA-00D87
M35	3	151	51	22.4	20	24	14NA-00A88	14NA-00B88	14NA-00C88	14NA-00D88
M36	1.5	144	39	25	20	24	14NA-00A89	14NA-00B89	14NA-00C89	14NA-00D89
M36	2	144	39	25	20	24	14NA-00A90	14NA-00B90	14NA-00C90	14NA-00D90
M36	3	144	39	25	20	24	14NA-00A91	14NA-00B91	14NA-00C91	14NA-00D91
M38	1.5	162	57	25	22.4	26	14NA-00A92	14NA-00B92	14NA-00C92	14NA-00D92
M38	2	149	39	28	22.4	26	14NA-00A93	14NA-00B93	14NA-00C93	14NA-00D93
M39	1.5	149	39	28	22.4	26	14NA-00A94	14NA-00B94	14NA-00C94	14NA-00D94
M39	2	149	39	28	22.4	26	14NA-00A95	14NA-00B95	14NA-00C95	14NA-00D95
M39	3	170	60	28	22.4	26	14NA-00A96	14NA-00B96	14NA-00C96	14NA-00D96
M40	2	149	39	28	22.4	26	14NA-00A97	14NA-00B97	14NA-00C97	14NA-00D97
M40	3	170	60	28	22.4	26	14NA-00A98	14NA-00B98	14NA-00C98	14NA-00D98
M42	1.5	149	39	28	22.4	26	14NA-00A99	14NA-00B99	14NA-00C99	14NA-00D99
M42	2	149	39	28	22.4	26	14NA-0A100	14NA-0B100	14NA-0C100	14NA-0D100
M42	3	170	60	28	22.4	26	14NA-0A101	14NA-0B101	14NA-0C101	14NA-0D101
M42	4	170	60	28	22.4	26	14NA-0A102	14NA-0B102	14NA-0C102	14NA-0D102
M45	1.5	165	45	31.5	25	28	14NA-0A103	14NA-0B103	14NA-0C103	14NA-0D103
M45	2	165	45	31.5	25	28	14NA-0A104	14NA-0B104	14NA-0C104	14NA-0D104
M45	3	187	67	31.5	25	28	14NA-0A105	14NA-0B105	14NA-0C105	14NA-0D105
M48	1.5	165	45	31.5	25	28	14NA-0A106	14NA-0B106	14NA-0C106	14NA-0D106
M48	2	165	45	31.5	25	28	14NA-0A107	14NA-0B107	14NA-0C107	14NA-0D107
M48	3	187	67	31.5	25	28	14NA-0A108	14NA-0B108	14NA-0C108	14NA-0D108
M48	4	187	67	31.5	25	28	14NA-0A109	14NA-0B109	14NA-0C109	14NA-0D109
M50	3	187	67	31.5	25	28	14NA-0A110	14NA-0B110	14NA-0C110	14NA-0D110
M52	2	175	45	35.5	28	31	14NA-0A111	14NA-0B111	14NA-0C111	14NA-0D111
M52	3	200	70	35.5	28	31	14NA-0A112	14NA-0B112	14NA-0C112	14NA-0D112
M52	4	200	70	35.5	28	31	14NA-0A113	14NA-0B113	14NA-0C113	14NA-0D113

**Hand Taps, Metric Thread, DIN352 Standard**

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



**Metric**



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
M 2	0.4	36	8	2.8	2.1	14Nc-00A30	14Nc-00B30	14Nc-00C30	14Nc-00D30
M 2.2	0.45	36	9	2.8	2.1	14Nc-00A31	14Nc-00B31	14Nc-00C31	14Nc-00D31
M 2.3	0.4	36	9	2.8	2.1	14Nc-00A32	14Nc-00B32	14Nc-00C32	14Nc-00D32
M 2.5	0.45	40	9	2.8	2.1	14Nc-00A33	14Nc-00B33	14Nc-00C33	14Nc-00D33
M 2.6	0.45	40	9	2.8	2.1	14Nc-00A34	14Nc-00B34	14Nc-00C34	14Nc-00D34
M 3	0.5	40	11	3.5	2.7	14Nc-00A35	14Nc-00B35	14Nc-00C35	14Nc-00D35
M 3	0.6	40	11	3.5	2.7	14Nc-00A36	14Nc-00B36	14Nc-00C36	14Nc-00D36
M 3.5	0.6	45	13	4	3	14Nc-00A37	14Nc-00B37	14Nc-00C37	14Nc-00D37
M 4	0.7	45	13	4.5	3.4	14Nc-00A38	14Nc-00B38	14Nc-00C38	14Nc-00D38
M 4.5	0.75	50	16	6	4.9	14Nc-00A39	14Nc-00B39	14Nc-00C39	14Nc-00D39
M 5	0.8	50	16	6	4.9	14Nc-00A40	14Nc-00B40	14Nc-00C40	14Nc-00D40
M 6	1	50	19	6	4.9	14Nc-00A41	14Nc-00B41	14Nc-00C41	14Nc-00D41
M 7	1	50	19	6	4.9	14Nc-00A42	14Nc-00B42	14Nc-00C42	14Nc-00D42
M 8	1.25	56	22	6	4.9	14Nc-00A43	14Nc-00B43	14Nc-00C43	14Nc-00D43
M 9	1.25	63	22	7	5.5	14Nc-00A44	14Nc-00B44	14Nc-00C44	14Nc-00D44
M 10	1.5	70	24	7	5.5	14Nc-00A45	14Nc-00B45	14Nc-00C45	14Nc-00D45
M 12	1.75	75	29	9	7	14Nc-00A46	14Nc-00B46	14Nc-00C46	14Nc-00D46
M 14	2	80	30	11	9	14Nc-00A47	14Nc-00B47	14Nc-00C47	14Nc-00D47
M 16	2	80	32	12	9	14Nc-00A48	14Nc-00B48	14Nc-00C48	14Nc-00D48
M 18	2.5	95	40	14	11	14Nc-00A49	14Nc-00B49	14Nc-00C49	14Nc-00D49
M 20	2.5	95	40	16	12	14Nc-00A50	14Nc-00B50	14Nc-00C50	14Nc-00D50
M 22	2.5	100	40	18	15	14Nc-00A51	14Nc-00B51	14Nc-00C51	14Nc-00D51
M 24	3	110	50	18	15	14Nc-00A52	14Nc-00B52	14Nc-00C52	14Nc-00D52
M 27	3	110	50	20	16	14Nc-00A53	14Nc-00B53	14Nc-00C53	14Nc-00D53
M 30	3.5	132	56	22	18	14Nc-00A54	14Nc-00B54	14Nc-00C54	14Nc-00D54

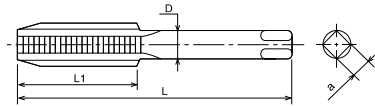
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, Metric Fine Thread, DIN2181 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 2pcs/set



#### Metric Fine



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square size (mm)	Code No. Taper Tap	Code No. Bottom Tap	Code No. Tap Set
M 3	0.35	40	9	3.5	2.7	14NC-000A1	14NC-000C1	14NC-000D1
M 3,5	0.35	45	10	4	3	14NC-000A2	14NC-000C2	14NC-000D2
M 4	0.5	45	10	4.5	3.4	14NC-000A3	14NC-000C3	14NC-000D3
M 5	0.5	50	12	6	4.9	14NC-000A4	14NC-000C4	14NC-000D4
M 6	0.75	50	14	6	4.9	14NC-000A5	14NC-000C5	14NC-000D5
M 8	0.75	50	19	6	4.9	14NC-000A6	14NC-000C6	14NC-000D6
M 8	1	56	22	6	4.9	14NC-000A7	14NC-000C7	14NC-000D7
M 9	1	63	22	7	5.5	14NC-000A8	14NC-000C8	14NC-000D8
M 10	1	63	20	7	5.5	14NC-000A9	14NC-000C9	14NC-000D9
M 10	1.25	70	24	7	5.5	14NC-000A10	14NC-000C10	14NC-000D10
M 12	1	70	22	9	7	14NC-000A11	14NC-000C11	14NC-000D11
M 12	1.25	70	22	9	7	14NC-000A12	14NC-000C12	14NC-000D12
M 12	1.5	70	22	9	7	14NC-000A13	14NC-000C13	14NC-000D13
M 14	1.25	70	22	11	9	14NC-000A14	14NC-000C14	14NC-000D14
M 14	1.5	70	22	11	9	14NC-000A15	14NC-000C15	14NC-000D15
M 16	1	70	22	12	9	14NC-000A16	14NC-000C16	14NC-000D16
M 16	1.5	70	22	12	9	14NC-000A17	14NC-000C17	14NC-000D17
M 18	1.5	80	22	14	11	14NC-000A18	14NC-000C18	14NC-000D18
M 18	2	80	22	14	11	14NC-000A19	14NC-000C19	14NC-000D19
M 20	1.5	80	22	16	12	14NC-000A20	14NC-000C20	14NC-000D20
M 20	2	80	22	16	12	14NC-000A21	14NC-000C21	14NC-000D21
M 22	1.5	80	22	18	14.5	14NC-000A22	14NC-000C22	14NC-000D22
M 22	2	80	22	18	14.5	14NC-000A23	14NC-000C23	14NC-000D23
M 24	1.5	90	22	18	14.5	14NC-000A24	14NC-000C24	14NC-000D24
M 24	2	90	22	18	14.5	14NC-000A25	14NC-000C25	14NC-000D25
M 26	1.5	90	22	18	14.5	14NC-000A26	14NC-000C26	14NC-000D26
M 27	1.5	90	22	20	16	14NC-000A27	14NC-000C27	14NC-000D27
M 28	1.5	90	22	20	16	14NC-000A28	14NC-000C28	14NC-000D28
M 30	1.5	90	22	22	18	14NC-000A29	14NC-000C29	14NC-000D29

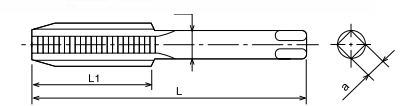
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, UNC Thread, DIN352 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



#### UNC



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
2#	56	36	9	2.8	2.1	14NC-00A55	14NC-00B55	14NC-00C55	14NC-00D55
3# (3/32)	48	36	9	2.8	2.1	14NC-00A56	14NC-00B56	14NC-00C56	14NC-00D56
4#	40	40	11	3.5	2.7	14NC-00A57	14NC-00B57	14NC-00C57	14NC-00D57
5# (1/8)	40	40	11	3.5	2.7	14NC-00A58	14NC-00B58	14NC-00C58	14NC-00D58
6#	32	45	13	4	3	14NC-00A59	14NC-00B59	14NC-00C59	14NC-00D59
8# (5/32)	32	45	13	4.5	3.4	14NC-00A60	14NC-00B60	14NC-00C60	14NC-00D60
10# (3/16)	24	50	16	5.5	4.3	14NC-00A61	14NC-00B61	14NC-00C61	14NC-00D61
12# (7/32)	24	50	17	6	4.9	14NC-00A62	14NC-00B62	14NC-00C62	14NC-00D62
1/4"	20	56	19	6	4.9	14NC-00A63	14NC-00B63	14NC-00C63	14NC-00D63
5/16"	18	63	22	6	4.9	14NC-00A64	14NC-00B64	14NC-00C64	14NC-00D64
3/8"	16	70	22	7	5.5	14NC-00A65	14NC-00B65	14NC-00C65	14NC-00D65
7/16"	14	75	24	8	6.2	14NC-00A66	14NC-00B66	14NC-00C66	14NC-00D66
1/2"	13	80	29	9	7	14NC-00A67	14NC-00B67	14NC-00C67	14NC-00D67
9/16"	12	80	30	11	9	14NC-00A68	14NC-00B68	14NC-00C68	14NC-00D68
5/8"	11	90	32	12	9	14NC-00A69	14NC-00B69	14NC-00C69	14NC-00D69
3/4"	10	105	40	14	11	14NC-00A70	14NC-00B70	14NC-00C70	14NC-00D70
7/8"	9	110	40	18	14.5	14NC-00A71	14NC-00B71	14NC-00C71	14NC-00D71
1"	8	110	50	20	16	14NC-00A72	14NC-00B72	14NC-00C72	14NC-00D72
1-1/8"	7	132	56	22	18	14NC-00A73	14NC-00B73	14NC-00C73	14NC-00D73
1-1/4"	7	132	56	25	20	14NC-00A74	14NC-00B74	14NC-00C74	14NC-00D74

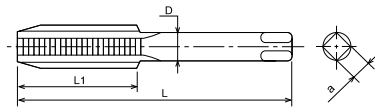
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, UNF Thread, DIN2181 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 2pcs/set



#### UNF



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square size (mm)	Code No. Taper Tap	Code No. Bottom Tap	Code No. Tap Set
2#	64	36	9	2.8	2.1	14NC-00A75	14NC-00C75	14NC-00D75
3# (3/32)	56	36	9	2.8	2.1	14NC-00A76	14NC-00C76	14NC-00D76
4#	48	40	11	3.5	2.7	14NC-00A77	14NC-00C77	14NC-00D77
5# (1/8)	44	40	11	3.5	2.7	14NC-00A78	14NC-00C78	14NC-00D78
6#	40	45	13	4	3	14NC-00A79	14NC-00C79	14NC-00D79
8# (5/32)	36	45	13	4.5	3.4	14NC-00A80	14NC-00C80	14NC-00D80
10# (3/16)	32	50	16	5.5	4.3	14NC-00A81	14NC-00C81	14NC-00D81
12# (7/32)	28	50	17	6	4.9	14NC-00A82	14NC-00C82	14NC-00D82
1/4"	28	56	19	6	4.9	14NC-00A83	14NC-00C83	14NC-00D83
5/16"	24	63	22	6	4.9	14NC-00A84	14NC-00C84	14NC-00D84
3/8"	24	70	22	7	5.5	14NC-00A85	14NC-00C85	14NC-00D85
7/16"	20	75	24	8	6.2	14NC-00A86	14NC-00C86	14NC-00D86
1/2"	20	80	29	9	7	14NC-00A87	14NC-00C87	14NC-00D87
9/16"	18	80	30	11	9	14NC-00A88	14NC-00C88	14NC-00D88
5/8"	18	90	32	12	9	14NC-00A89	14NC-00C89	14NC-00D89
3/4"	16	105	40	14	11	14NC-00A90	14NC-00C90	14NC-00D90
7/8"	14	110	40	18	14.5	14NC-00A91	14NC-00C91	14NC-00D91
1"	12	110	50	20	16	14NC-00A92	14NC-00C92	14NC-00D92
1-1/8"	12	132	56	22	18	14NC-00A93	14NC-00C93	14NC-00D93
1-1/4"	12	132	56	25	20	14NC-00A94	14NC-00C94	14NC-00D94

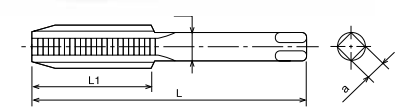
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, BSW Thread, DIN352 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



#### BSW

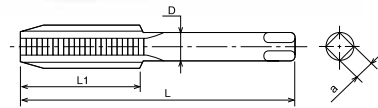


Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
3/32	48	36	9	2.8	2.1	14NC-00A95	14NC-00B95	14NC-00C95	14NC-00D95
1/8"	40	40	11	3.5	2.7	14NC-00A96	14NC-00B96	14NC-00C96	14NC-00D96
5/32	32	45	13	4.5	3.4	14NC-00A97	14NC-00B97	14NC-00C97	14NC-00D97
3/16"	24	50	16	5.5	4.3	14NC-00A98	14NC-00B98	14NC-00C98	14NC-00D98
7/32	24	50	17	6	4.9	14NC-00A99	14NC-00B99	14NC-00C99	14NC-00D99
1/4"	20	56	19	6	4.9	14NC-0A100	14NC-0B100	14NC-0C100	14NC-0D100
5/16"	18	63	22	6	4.9	14NC-0A101	14NC-0B101	14NC-0C101	14NC-0D101
3/8"	16	70	22	7	5.5	14NC-0A102	14NC-0B102	14NC-0C102	14NC-0D102
7/16"	14	75	24	8	6.2	14NC-0A103	14NC-0B103	14NC-0C103	14NC-0D103
1/2"	12	80	29	9	7	14NC-0A104	14NC-0B104	14NC-0C104	14NC-0D104
9/16"	12	80	30	11	9	14NC-0A105	14NC-0B105	14NC-0C105	14NC-0D105
5/8"	11	90	32	12	9	14NC-0A106	14NC-0B106	14NC-0C106	14NC-0D106
3/4"	10	105	40	14	11	14NC-0A107	14NC-0B107	14NC-0C107	14NC-0D107
7/8"	9	110	40	18	14.5	14NC-0A108	14NC-0B108	14NC-0C108	14NC-0D108
1"	8	110	50	20	16	14NC-0A109	14NC-0B109	14NC-0C109	14NC-0D109
1-1/8"	7	132	56	22	18	14NC-0A110	14NC-0B110	14NC-0C110	14NC-0D110
1-1/4"	7	132	56	25	20	14NC-0A111	14NC-0B111	14NC-0C111	14NC-0D111

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, UNC Thread, ASME/ANSI B94.9 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



#### UNC

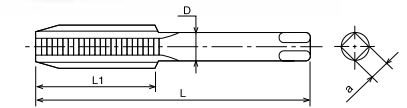
UNC ASME B94.9-1999 HSS 2B

Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
5#	40	49.3	16	3.58	2.79	14NB-000A1	14NB-000B1	14NB-000C1	14NB-000D1
6#	32	50.8	17.5	3.58	2.79	14NB-000A2	14NB-000B2	14NB-000C2	14NB-000D2
8#	32	54.1	19.1	4.27	3.33	14NB-000A3	14NB-000B3	14NB-000C3	14NB-000D3
10#	24	60.5	21.6	4.93	3.86	14NB-000A4	14NB-000B4	14NB-000C4	14NB-000D4
12#	24	60.5	23.9	5.59	4.19	14NB-000A5	14NB-000B5	14NB-000C5	14NB-000D5
1/4"	20	63.5	25.4	6.48	4.85	14NB-000A6	14NB-000B6	14NB-000C6	14NB-000D6
5/16"	18	69.1	28.7	8.08	6.05	14NB-000A7	14NB-000B7	14NB-000C7	14NB-000D7
3/8"	16	74.7	31.8	9.68	7.26	14NB-000A8	14NB-000B8	14NB-000C8	14NB-000D8
7/16"	14	80.3	36.6	8.2	6.15	14NB-000A9	14NB-000B9	14NB-000C9	14NB-000D9
1/2"	13	85.9	42.2	9.32	6.99	14NB-00A10	14NB-00B10	14NB-00C10	14NB-00D10
9/16"	12	91.2	42.2	10.9	8.18	14NB-00A11	14NB-00B11	14NB-00C11	14NB-00D11
5/8"	11	96.8	46	12.19	9.14	14NB-00A12	14NB-00B12	14NB-00C12	14NB-00D12
3/4"	10	108	50.8	14.99	11.23	14NB-00A13	14NB-00B13	14NB-00C13	14NB-00D13
7/8"	9	119.1	56.4	17.7	13.28	14NB-00A14	14NB-00B14	14NB-00C14	14NB-00D14
1"	8	130.3	63.5	20.32	15.24	14NB-00A15	14NB-00B15	14NB-00C15	14NB-00D15
1-1/8"	7	138.2	65	22.76	17.07	14NB-00A16	14NB-00B16	14NB-00C16	14NB-00D16
1-1/4"	7	146.1	65	25.93	19.46	14NB-00A17	14NB-00B17	14NB-00C17	14NB-00D17
1-3/8"	6	153.9	76.2	28.14	21.11	14NB-00A18	14NB-00B18	14NB-00C18	14NB-00D18
1-1/2"	6	162.1	76.2	31.32	23.5	14NB-00A19	14NB-00B19	14NB-00C19	14NB-00D19

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, UNF Thread, ASME/ANSI B94.9 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



#### UNF

UNF ASME B94.9-1999 HSS 2B

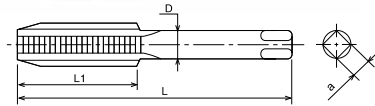
Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
5#	44	49.3	16	3.58	2.79	14NB-00A20	14NB-00B20	14NB-00C20	14NB-00D20
6#	40	50.8	17.5	3.58	2.79	14NB-00A21	14NB-00B21	14NB-00C21	14NB-00D21
8#	36	54.1	19.1	4.27	3.33	14NB-00A22	14NB-00B22	14NB-00C22	14NB-00D22
10#	32	60.5	21.6	4.93	3.86	14NB-00A23	14NB-00B23	14NB-00C23	14NB-00D23
12#	28	60.5	23.9	5.59	4.19	14NB-00A24	14NB-00B24	14NB-00C24	14NB-00D24
1/4"	28	63.5	25.4	6.48	4.85	14NB-00A25	14NB-00B25	14NB-00C25	14NB-00D25
5/16"	24	69.1	28.7	8.08	6.05	14NB-00A26	14NB-00B26	14NB-00C26	14NB-00D26
3/8"	24	74.7	31.8	9.68	7.26	14NB-00A27	14NB-00B27	14NB-00C27	14NB-00D27
7/16"	20	80.3	36.6	8.2	6.15	14NB-00A28	14NB-00B28	14NB-00C28	14NB-00D28
1/2"	20	85.9	42.2	9.32	6.99	14NB-00A29	14NB-00B29	14NB-00C29	14NB-00D29
9/16"	18	91.2	42.2	10.9	8.18	14NB-00A30	14NB-00B30	14NB-00C30	14NB-00D30
5/8"	18	96.8	46	12.19	9.14	14NB-00A31	14NB-00B31	14NB-00C31	14NB-00D31
3/4"	16	108	50.8	14.99	11.23	14NB-00A32	14NB-00B32	14NB-00C32	14NB-00D32
7/8"	14	119.1	56.4	17.7	13.28	14NB-00A33	14NB-00B33	14NB-00C33	14NB-00D33
1"	12	130.3	63.5	20.32	15.24	14NB-00A34	14NB-00B34	14NB-00C34	14NB-00D34
1-1/8"	12	138.2	65	22.76	17.07	14NB-00A35	14NB-00B35	14NB-00C35	14NB-00D35
1-1/4"	12	146.1	65	25.93	19.46	14NB-00A36	14NB-00B36	14NB-00C36	14NB-00D36
1-3/8"	12	153.9	76.2	28.14	21.11	14NB-00A37	14NB-00B37	14NB-00C37	14NB-00D37
1-1/2"	12	162.1	76.2	31.32	23.5	14NB-00A38	14NB-00B38	14NB-00C38	14NB-00D38

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.



### Hand Taps, Metric Thread, ASME/ANSI B94.9 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



#### Metric

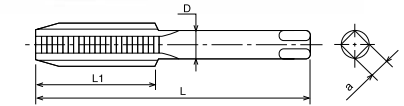


Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
M3	0.5	49.3	16	3.58	2.79	14NB-00A39	14NB-00B39	14NB-00C39	14NB-00D39
M3.5	0.6	50.8	17.5	3.58	2.79	14NB-00A40	14NB-00B40	14NB-00C40	14NB-00D40
M4	0.7	54.1	19.1	4.27	3.33	14NB-00A41	14NB-00B41	14NB-00C41	14NB-00D41
M4.5	0.75	60.5	22.4	4.93	3.86	14NB-00A42	14NB-00B42	14NB-00C42	14NB-00D42
M5	0.8	60.5	22.4	4.93	3.86	14NB-00A43	14NB-00B43	14NB-00C43	14NB-00D43
M6	1	63.5	25.4	6.48	4.85	14NB-00A44	14NB-00B44	14NB-00C44	14NB-00D44
M7	1	69.1	28.7	8.08	6.05	14NB-00A45	14NB-00B45	14NB-00C45	14NB-00D45
M8	1.25	69.1	28.7	8.08	6.05	14NB-00A46	14NB-00B46	14NB-00C46	14NB-00D46
M10	1.5	74.7	31.8	9.68	7.26	14NB-00A47	14NB-00B47	14NB-00C47	14NB-00D47
M12	1.75	85.9	42.2	9.32	6.99	14NB-00A48	14NB-00B48	14NB-00C48	14NB-00D48
M14	2	91.2	42.2	10.9	8.18	14NB-00A49	14NB-00B49	14NB-00C49	14NB-00D49
M16	2	96.8	46	12.19	9.14	14NB-00A50	14NB-00B50	14NB-00C50	14NB-00D50
M18	2.5	102.4	46	13.77	10.31	14NB-00A51	14NB-00B51	14NB-00C51	14NB-00D51
M20	2.5	113.5	50.8	16.56	12.42	14NB-00A52	14NB-00B52	14NB-00C52	14NB-00D52
M22	2.5	119.1	56.4	17.7	13.28	14NB-00A53	14NB-00B53	14NB-00C53	14NB-00D53
M24	3	124.7	56.4	19.3	14.48	14NB-00A54	14NB-00B54	14NB-00C54	14NB-00D54
M27	3	130.3	63.5	22.76	17.07	14NB-00A55	14NB-00B55	14NB-00C55	14NB-00D55
M30	3.5	138.2	65	25.93	19.46	14NB-00A56	14NB-00B56	14NB-00C56	14NB-00D56
M33	3.5	146.1	65	28.14	21.11	14NB-00A57	14NB-00B57	14NB-00C57	14NB-00D57
M36	4	153.9	76.2	31.32	23.5	14NB-00A58	14NB-00B58	14NB-00C58	14NB-00D58
M39	4	169.9	81	33.15	24.87	14NB-00A59	14NB-00B59	14NB-00C59	14NB-00D59
M42	4.5	177.8	81	36.32	27.23	14NB-00A60	14NB-00B60	14NB-00C60	14NB-00D60
M48	5	193.8	90.4	41.76	31.32	14NB-00A61	14NB-00B61	14NB-00C61	14NB-00D61

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hand Taps, Metric Fine Thread, ASME/ANSI B94.9 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 3pcs/set



#### Metric Fine



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap	Code No. Bottom Tap	Code No. Tap Set
M3	0.35	49.3	16	3.58	2.79	14NB-00A62	14NB-00B62	14NB-00C62	14NB-00D62
M3.5	0.35	50.8	17.5	3.58	2.79	14NB-00A63	14NB-00B63	14NB-00C63	14NB-00D63
M4	0.5	54.1	19.1	4.27	3.33	14NB-00A64	14NB-00B64	14NB-00C64	14NB-00D64
M5	0.75	60.5	22.4	4.93	3.86	14NB-00A65	14NB-00B65	14NB-00C65	14NB-00D65
M6	0.75	63.5	25.4	6.48	4.85	14NB-00A66	14NB-00B66	14NB-00C66	14NB-00D66
M7	0.75	69.1	28.7	8.08	6.05	14NB-00A67	14NB-00B67	14NB-00C67	14NB-00D67
M8	1	69.1	28.7	8.08	6.05	14NB-00A68	14NB-00B68	14NB-00C68	14NB-00D68
M10	1.25	74.7	31.8	9.68	7.26	14NB-00A69	14NB-00B69	14NB-00C69	14NB-00D69
M10	1	74.7	31.8	9.68	7.26	14NB-00A70	14NB-00B70	14NB-00C70	14NB-00D70
M12	1.5	85.9	42.2	9.32	6.99	14NB-00A71	14NB-00B71	14NB-00C71	14NB-00D71
M12	1.25	85.9	42.2	9.32	6.99	14NB-00A72	14NB-00B72	14NB-00C72	14NB-00D72
M14	1.5	91.2	42.2	10.9	8.18	14NB-00A73	14NB-00B73	14NB-00C73	14NB-00D73
M14	1.25	91.2	42.2	10.9	8.18	14NB-00A74	14NB-00B74	14NB-00C74	14NB-00D74
M16	1.5	96.8	46	12.19	9.14	14NB-00A75	14NB-00B75	14NB-00C75	14NB-00D75
M18	1.5	102.4	46	13.77	10.31	14NB-00A76	14NB-00B76	14NB-00C76	14NB-00D76
M18	1	102.4	46	13.77	10.31	14NB-00A77	14NB-00B77	14NB-00C77	14NB-00D77
M20	2	113.5	50.8	16.56	12.42	14NB-00A78	14NB-00B78	14NB-00C78	14NB-00D78
M22	2	119.1	56.4	17.7	13.28	14NB-00A79	14NB-00B79	14NB-00C79	14NB-00D79
M24	2	124.7	56.4	19.3	14.48	14NB-00A80	14NB-00B80	14NB-00C80	14NB-00D80
M25	2	130.3	63.5	20.32	15.24	14NB-00A81	14NB-00B81	14NB-00C81	14NB-00D81
M25	1.5	130.3	63.5	20.32	15.24	14NB-00A82	14NB-00B82	14NB-00C82	14NB-00D82
M27	2	130.3	63.5	22.76	17.07	14NB-00A83	14NB-00B83	14NB-00C83	14NB-00D83
M30	3	138.2	65	25.93	19.46	14NB-00A84	14NB-00B84	14NB-00C84	14NB-00D84
M33	3	146.1	65	28.14	21.11	14NB-00A85	14NB-00B85	14NB-00C85	14NB-00D85
M36	3	153.9	76.2	31.32	23.5	14NB-00A86	14NB-00B86	14NB-00C86	14NB-00D86
M39	3	169.9	81	33.15	24.87	14NB-00A87	14NB-00B87	14NB-00C87	14NB-00D87
M42	4	177.8	81	36.32	27.23	14NB-00A88	14NB-00B88	14NB-00C88	14NB-00D88
M48	4	193.8	90.4	41.76	31.32	14NB-00A89	14NB-00B89	14NB-00C89	14NB-00D89

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Paralled Pipe Taps, Whit-worth(G) Thread, ISO2284 Standard

- ◆ For hand use
- ◆ For through holes or blind holes, for tapping pipe fittings
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### BSP

BSP ISO 2284 HSS ISO 2 6H

Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute
1/16"	28	52	14	5.6	4.5	7	14NA-0C114
1/8"	28	59	15	8	6.3	9	14NA-0C115
1/4"	19	67	19	10	8	11	14NA-0C116
3/8"	19	75	21	12.5	10	13	14NA-0C117
1/2"	14	87	26	16	12.5	16	14NA-0C118
5/8"	14	91	26	18	14	18	14NA-0C119
3/4"	14	96	28	20	16	20	14NA-0C120
7/8"	14	102	29	22.4	18	22	14NA-0C121
1"	11	109	33	25	20	24	14NA-0C122
1-1/4"	11	119	36	31.5	25	28	14NA-0C123
1-1/2"	11	125	37	35.5	28	31	14NA-0C124
1-3/4"	11	132	39	35.5	28	31	14NA-0C125
2"	11	140	41	40	31.5	34	14NA-0C126



#### BSPT

BSPT ISO 2284 HSS ISO 2 6H

Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute
1/16"	28	52	14	5.6	4.5	7	14NA-0C127
1/8"	28	59	15	8	6.3	9	14NA-0C128
1/4"	19	67	19	10	8	11	14NA-0C129
3/8"	19	75	21	12.5	10	13	14NA-0C130
1/2"	14	87	26	16	12.5	16	14NA-0C131
5/8"	14	91	26	18	14	18	14NA-0C132
3/4"	14	96	28	20	16	20	14NA-0C133
7/8"	14	102	29	22.4	18	22	14NA-0C134
1"	11	109	33	25	20	24	14NA-0C135
1-1/4"	11	119	36	31.5	25	28	14NA-0C136
1-1/2"	11	125	37	35.5	28	31	14NA-0C137
1-3/4"	11	132	39	35.5	28	31	14NA-0C138
2"	11	140	41	40	31.5	34	14NA-0C139

### National Taper Pipe Taps, ISO2284 Standard

- ◆ For hand use
- ◆ For through holes or blind holes, for tapping pipe fittings
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### NPT

NPT ISO 2284 HSS ISO 2 6H

Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No. Straight Flute
1/16"	27	52	14	5.6	4.5	7	14NA-0C151
1/8"	27	59	15	8	6.3	9	14NA-0C152
1/4"	18	67	19	10	8	11	14NA-0C153
3/8"	18	75	21	12.5	10	13	14NA-0C154
1/2"	14	87	26	16	12.5	16	14NA-0C155
3/4"	14	96	28	20	16	20	14NA-0C156
1"	11.5	109	33	25	20	24	14NA-0C157
1-1/4"	11.5	119	36	31.5	25	28	14NA-0C158
1-1/2"	11.5	125	37	35.5	28	31	14NA-0C159
1-3/4"	11.5	132	39	35.5	28	31	14NA-0C160
2"	11.5	140	41	40	31.5	34	14NA-0C161

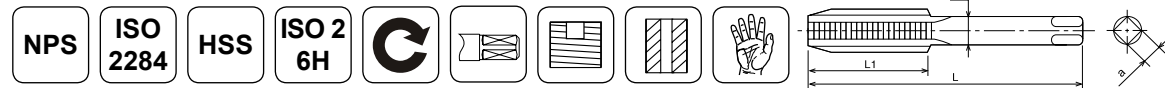
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### National Paralled Pipe Taps, Straight Flute, ISO2284 Standard

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### NPS



BSPT Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Code No.
1/16"	27	52	14	5.6	4.5	7	14NA-0C140
1/8"	27	59	15	8	6.3	9	14NA-0C141
1/4"	18	67	19	10	8	11	14NA-0C142
3/8"	18	75	21	12.5	10	13	14NA-0C143
1/2"	14	87	26	16	12.5	16	14NA-0C144
3/4"	14	96	28	20	16	20	14NA-0C145
1"	11.5	109	33	25	20	24	14NA-0C146
1-1/4"	11.5	119	36	31.5	25	28	14NA-0C147
1-1/2"	11.5	125	37	35.5	28	31	14NA-0C148
1-3/4"	11.5	132	39	35.5	28	31	14NA-0C149
2"	11.5	140	41	40	31.5	34	14NA-0C150

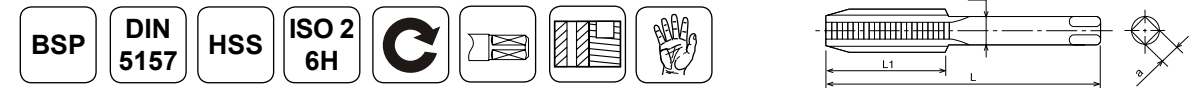
HSS-E / Alloy Steel / TiCN / TiAIN / TIN are available according to requirements.

### Pipe Taps, BSP Thread

- ◆ For hand use
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.
- ◆ Contain 2pcs/set



#### BSP



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap
1/8"	28	63	18	7	5.5	14NC-0A112	14NC-0B112
1/4"	19	70	20	11	9	14NC-0A113	14NC-0B113
3/8"	19	70	20	12	9	14NC-0A114	14NC-0B114
1/2"	14	80	22	16	12	14NC-0A115	14NC-0B115
5/8"	14	80	22	18	14.5	14NC-0A116	14NC-0B116
3/4"	14	90	22	20	16	14NC-0A117	14NC-0B117
7/8"	14	90	22	22	18	14NC-0A118	14NC-0B118
1	11	100	25	25	20	14NC-0A119	14NC-0B119
1.1/4	11	125	32	32	24	14NC-0A120	14NC-0B120
1.1/2	11	140	32	36	29	14NC-0A121	14NC-0B121
1.3/4	11	140	32	40	32	14NC-0A122	14NC-0B122
2	11	160	36	45	35	14NC-0A123	14NC-0B123



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Code No. Taper Tap	Code No. Plug Tap
1/8"	28	90	16	7	5.5	14NC-0A124	14NC-0B124
1/4"	19	100	20	11	9	14NC-0A125	14NC-0B125
3/8"	19	100	22	12	9	14NC-0A126	14NC-0B126
1/2"	14	125	25	16	12	14NC-0A127	14NC-0B127
5/8"	14	125	25	18	14.5	14NC-0A128	14NC-0B128
3/4"	14	140	28	20	16	14NC-0A129	14NC-0B129
7/8"	14	150	28	22	18	14NC-0A130	14NC-0B130
1"	11	160	30	25	20	14NC-0A131	14NC-0B131
1.1/8	11	170	30	28	22	14NC-0A132	14NC-0B132
1.1/4	11	170	30	32	24	14NC-0A133	14NC-0B133
1.3/8	11	180	32	36	29	14NC-0A134	14NC-0B134
1.1/2	11	190	32	36	29	14NC-0A135	14NC-0B135
1.3/4	11	200	32	40	32	14NC-0A136	14NC-0B136
2"	11	220	40	45	35	14NC-0A137	14NC-0B137

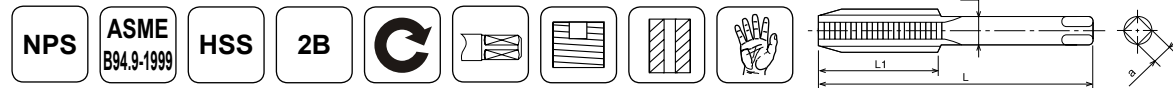
HSS-E / Alloy Steel / TiCN / TiAIN / TIN are available according to requirements.

### Pipe Taps, NPS Thread, ASME/ANSI B94.9 Standard

- ◆ For hand use
- ◆ For through holes or blind holes, for straight pipe fittings
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### NPS



Size	Pitch	Overall Length	Flute Length	Shank Diameter	Square size	Code No.
1/16	27	54.1	17.5	7.9	5.9	14NB-00C90
1/8	27	54.1	19.1	7.9	5.9	14NB-00C91
1/8	27	54.1	19.1	11.1	8.3	14NB-00C92
1/4	18	62	26.9	14.3	10.7	14NB-00C93
3/8	18	65	26.9	17.8	13.5	14NB-00C94
1/2	14	79.5	35.1	17.5	14.6	14NB-00C95
3/4	14	82.6	35.1	23	17.2	14NB-00C96
1"	11-1/2"	95.3	44.5	28.6	21.4	14NB-00C97
1 1/4	11-1/2"	101.6	44.5	33.3	25	14NB-00C98
1 1/2	11-1/2"	108	44.5	38.1	28.6	14NB-00C99
2"	11-1/2"	108	44.5	47.6	35.7	14NB-0C100
2 1/2	8	139.7	65	57.2	42.8	14NB-0C101
3"	8	152.4	66.8	66.7	50	14NB-0C102

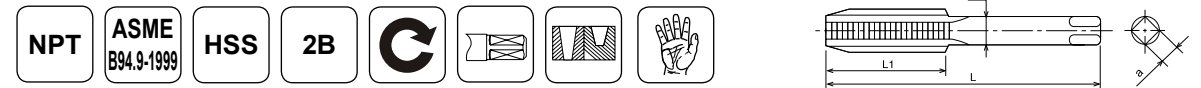
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Pipe Taps, NPT Thread, ASME/ANSI B94.9 Standard

- ◆ For manual and machine
- ◆ For through holes or blind holes
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.



#### NPT



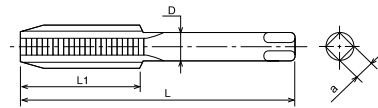
Size	Pitch	Overall Length	Flute Length	Shank Diameter	Square size	Code No.
1/16	27	54.1	17.5	7.9	5.9	14NB-0C103
1/8	27	54.1	19.1	7.9	5.9	14NB-0C104
1/8	27	54.1	19.1	11.1	8.3	14NB-0C105
1/4	18	62	26.9	14.3	10.7	14NB-0C106
3/8	18	65	26.9	17.8	13.5	14NB-0C107
1/2	14	79.5	35.1	17.5	14.6	14NB-0C108
3/4	14	82.6	35.1	23	17.2	14NB-0C109
1"	11 1/2	95.3	44.5	28.6	21.4	14NB-0C110
1 1/4	11 1/2	101.6	44.5	33.3	25	14NB-0C111
1 1/2	11 1/2	108	44.5	38.1	28.6	14NB-0C112
2"	11 1/2	108	44.5	47.6	35.7	14NB-0C113
2 1/2	8	139.7	65	57.2	42.8	14NB-0C114
3"	8	152.4	66.8	66.7	50	14NB-0C115

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.



### Machine Taps, Solid Carbide, DIN371 Standard

- ◆ For through and blind hole in short chipping material such as cast iron, alloy steel, etc
- ◆ Micro grain carbide base with TIALN top coating allow the taps to be operated at high speeds, leading to higher productivity and longer tool life compared with HSS taps

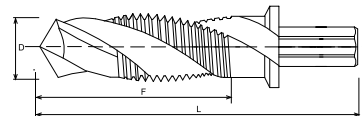


Size	Pitch	Flute Length (mm)	Overall Length (mm)	Order No.
M3	0.5	11	46	14NC-00165
M4	0.7	13	52	14NC-00166
M5	0.8	16	60	14NC-00167
M6	1.0	19	62	14NC-00168
M8	1.25	22	70	14NC-00169
M8	1.0	22	70	14NC-00170
M10	1.5	24	75	14NC-00171
M10	1.25	24	75	14NC-00172
M10	1.0	24	75	14NC-00173

Size	Pitch	Flute Length (mm)	Overall Length (mm)	Order No.
M12	1.75	29	80	14NC-00174
M12	1.5	29	80	14NC-00175
M12	1.25	29	80	14NC-00176
M12	1.0	29	80	14NC-00177
M14	2.0	29	88	14NC-00178
M14	1.5	29	88	14NC-00179
M16	2.0	29	95	14NC-00180
M16	1.5	29	95	14NC-00181

### Single Pass Combination Drill And Taps

- ◆ Spiral flute Material: HSS, HSS-E.
- ◆ Combined Drilling and tapping function
- ◆ Used for casting iron, bronze, low/medium carbon tool steel, mold steel, Aluminum/magnesium alloy steel, etc.

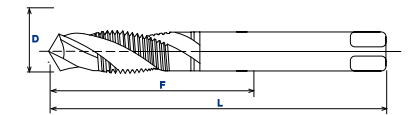


Size	Pitch	Flute Length (mm)	Overall Length (mm)	Order No.
M3	2.5	6	36	14NE-00008
M4	3.3	8	39	14NE-00009
M5	4.2	9	41	14NE-00010

Size	Pitch	Flute Length (mm)	Overall Length (mm)	Order No.
M6	5.0	11	44	14NE-00011
M8	6.8	14	49	14NE-00012
M10	8.5	17	52	14NE-00013

### Combined Tap And Drills

- ◆ Spiral flute Material: HSS, HSS-E.
- ◆ For drilling and tapping holes in one operation.



Size	Pitch	Flute Length (mm)	Overall Length (mm)	Order No.
M3	2.5	10	56	14NE-00001
M4	3.3	12	65	14NE-00002
M5	4.2	15	69	14NE-00003
M6	5	18	84	14NE-00004

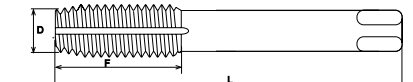
Size	Pitch	Flute Length (mm)	Overall Length (mm)	Order No.
M8	6.8	21	96	14NE-00005
M10	8.5	22	108	14NE-00006
M12	10.2	29	113	14NE-00007

### Fluteless Taps (Forming Taps), ISO529 Standard

- ◆ Fluteless
- ◆ Taps do not produce chips
- ◆ Precise uniformity of tapped thread limit
- ◆ Excellent rigidity
- ◆ For both through & blind holes
- ◆ Materials with Formability



#### UNC



Size	Pitch	Flute Length (inch)	Overall Length (inch)	Order No.
No. 4	40	1-7/8"	9/16"	14NF-00001
No. 5	40	1-15/16"	5/8"	14NF-00002
No. 6	32	2"	11/16"	14NF-00003
No. 8	32	2-1/8"	3/4"	14NF-00004
NO. 10	24	2-3/8"	7/8"	14NF-00005
No. 12	24	2-3/8"	15/16"	14NF-00006
1/4"	20	2-1/2"	1"	14NF-00007

Size	Pitch	Flute Length (inch)	Overall Length (inch)	Order No.
5/16"	18	2-23/32"	1-1/8"	14NF-00008
3/8"	16	2-15/16"	1-1/4"	14NF-00009
7/16"	14	3-5/32"	1-7/16"	14NF-00010
1/2"	13	3-3/8"	1-21/32"	14NF-00011
9/16"	12	3-19/32"	1-21/32"	14NF-00012
5/8"	11	3-13/16"	1-13/16"	14NF-00013
3/4"	10	4-1/4"	2"	14NF-00014

### Fluteless Taps (Forming Taps), ISO529 Standard

- ◆ Fluteless
- ◆ Taps do not produce chips
- ◆ Precise uniformity of tapped thread limit
- ◆ Excellent rigidity
- ◆ For both through & blind holes
- ◆ Materials with Formability



#### UNF



Size	Pitch	Flute Length (inch)	Overall Length (inch)	Order No.	Size	Pitch	Flute Length (inch)	Overall Length (inch)	Order No.
No. 4	48	1-7/8"	9/16"	14NF-00015	5/16"	24	2-23/32"	1-1/8"	14NF-00022
No. 5	48	1-15/16"	5/8"	14NF-00016	3/8"	24	2-15/16"	1-1/4"	14NF-00023
No. 6	40	2"	11/16"	14NF-00017	7/16"	20	3-5/32"	1-7/16"	14NF-00024
No. 8	36	2-1/8"	3/4"	14NF-00018	1/2"	20	3-3/8"	1-21/32"	14NF-00025
NO. 10	32	2-3/8"	7/8"	14NF-00019	9/16"	18	3-19/32"	1-21/32"	14NF-00026
No. 12	28	2-3/8"	15/16"	14NF-00020	5/8"	18	3-13/16"	1-13/16"	14NF-00027
1/4"	28	2-1/2"	1"	14NF-00021	3/4"	16	4-1/4"	2"	14NF-00028

#### Metric



Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Order No.
M3	0.5	48	14.5	3.15	2.5	5	14NF-00029
M3.5	0.6	50	16.5	3.55	2.8	5	14NF-00030
M4	0.7	53	17	4	3.15	6	14NF-00031
M4.5	0.75	53	17	4.5	3.55	6	14NF-00032
M5	0.8	58	19	5	4	6	14NF-00033
M6	1	66	19	6.3	5	8	14NF-00034
M7	1	66	19	7.1	5.6	7	14NF-00035
M8	1.25	72	22	8	6.3	8	14NF-00036
M9	1.25	70	22	9	7.1	8	14NF-00037
M10	1.5	80	24	10	8	9	14NF-00038
M11	1.5	85	25	8	6.3	9	14NF-00039
M12	1.75	89	29	9	7.1	10	14NF-00040
M14	2	95	30	11.2	9	12	14NF-00041
M16	2	102	32	12.5	10	13	14NF-00042
M18	2.5	112	37	14	11.2	14	14NF-00043
M20	2.5	112	37	14	11.2	14	14NF-00044
M22	2.5	118	38	16	12.5	16	14NF-00045
M24	3	130	45	18	14	18	14NF-00046
M27	3	135	45	20	16	20	14NF-00047

#### Metric Fine



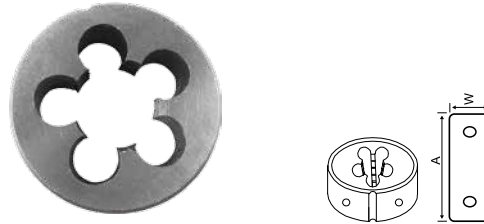
Size	Pitch	Overall Length (mm)	Flute Length (mm)	Shank Diameter (mm)	Square Size (mm)	Square Length (mm)	Order No.
M3	0.35	48	14.5	3.15	2.5	5	14NF-00048
M4	0.5	53	17	4	3.15	6	14NF-00049
M4.5	0.5	53	17	4.5	3.55	6	14NF-00050
M5	0.5	58	16	5	4	6	14NF-00051
M5	0.75	58	17	5	4	6	14NF-00052
M5.5	0.5	62	17	5.6	4.5	6	14NF-00053
M6	0.75	66	19	6.3	5	8	14NF-00054
M7	0.75	66	19	7.1	5.6	7	14NF-00055
M8	0.75	69	19	8	6.3	8	14NF-00056
M8	1	69	19	8	6.3	8	14NF-00057
M9	0.75	69	19	9	7.1	8	14NF-00058
M9	1	69	19	9	7.1	8	14NF-00059
M10	0.75	76	20	10	8	9	14NF-00060
M10	1	76	20	10	8	9	14NF-00061
M10	1.25	76	20	10	8	9	14NF-00062
M11	1	82	22	8	6.3	9	14NF-00063
M11	1.25	82	22	8	6.3	9	14NF-00064
M12	1	84	24	9	7.1	10	14NF-00065
M12	1.25	84	24	9	7.1	10	14NF-00066
M12	1.5	89	29	9	7.1	10	14NF-00067
M14	1	90	25	11.2	9	12	14NF-00068
M14	1.25	90	25	11.2	9	12	14NF-00069
M14	1.5	95	30	11.2	9	12	14NF-00070
M15	1	95	30	11.2	9	12	14NF-00071
M15	1.5	95	30	11.2	9	12	14NF-00072
M16	1	95	25	12.5	10	13	14NF-00073
M16	1.5	102	32	12.5	10	13	14NF-00074
M17	1.5	102	32	12.5	10	13	14NF-00075
M18	1	104	29	14	11.2	14	14NF-00076
M18	1.25	104	29	14	11.2	14	14NF-00077
M18	1.5	104	29	14	11.2	14	14NF-00078
M18	2	112	37	14	11.2	14	14NF-00079
M20	1	104	29	14	11.2	14	14NF-00080
M20	1.5	104	29	14	11.2	14	14NF-00081
M20	2	112	37	14	11.2	14	14NF-00082
M22	1	113	33	16	12.5	16	14NF-00083
M22	1.5	113	33	16	12.5	16	14NF-00084
M22	2	118	38	16	12.5	16	14NF-00085
M24	1	120	35	18	14	18	14NF-00086
M24	1.5	120	35	18	14	18	14NF-00087
M24	2	120	35	20	14	18	14NF-00088
M25	1	120	35	20	14	18	14NF-00089
M25	1.5	120	35	20	14	18	14NF-00090
M25	2	120	35	20	14	18	14NF-00091
M27	1.5	127	37	20	16	20	14NF-00092
M27	2	127	37	20	16	20	14NF-00093

### Circular Die, DIN223 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### Metric

M DIN 223 HSS 6G



Size	Pitch	Diameter	Thickness	Order No.
M1	0.25	16	5	14OA-00001
M1.1	0.25	16	5	14OA-00002
M1.2	0.25	16	5	14OA-00003
M1.4	0.3	16	5	14OA-00004
M1.6	0.35	16	5	14OA-00005
M1.7	0.35	16	5	14OA-00006
M1.8	0.35	16	5	14OA-00007
M1.9	0.35	16	5	14OA-00008
M2	0.4	16	5	14OA-00009
M2.2	0.45	16	5	14OA-00010
M2.3	0.45	16	5	14OA-00011
M2.5	0.45	16	5	14OA-00012
M2.6	0.45	16	5	14OA-00013
M3	0.5	20	5	14OA-00014
M3.5	0.6	20	5	14OA-00015
M4	0.7	20	5	14OA-00016
M4.5	0.75	20	7	14OA-00017
M5	0.8	20	7	14OA-00018
M6	1	20	7	14OA-00019
M7	1	20	7	14OA-00020

Size	Pitch	Diameter	Thickness	Order No.
M8	1.25	25	9	14OA-00021
M9	1.25	25	9	14OA-00022
M10	1.5	30	11	14OA-00023
M11	1.5	30	11	14OA-00024
M12	1.75	38	14	14OA-00025
M14	2	38	14	14OA-00026
M16	2	45	18	14OA-00027
M18	2.5	45	18	14OA-00028
M20	2.5	45	18	14OA-00029
M22	2.5	55	22	14OA-00030
M24	3	55	22	14OA-00031
M27	3	65	25	14OA-00032
M30	3.5	65	25	14OA-00033
M33	3.5	65	25	14OA-00034
M36	4	65	25	14OA-00035
M39	4	75	30	14OA-00036
M42	4.5	75	30	14OA-00037
M45	4.5	90	36	14OA-00038
M48	5	90	36	14OA-00039

#### Metric Fine

MF DIN 223 HSS 6G

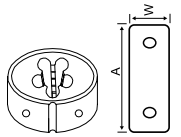
Size	Pitch	Diameter	Thickness	Order No.
M2	0.25	16	5	14OA-00040
M2.2	0.25	16	5	14OA-00041
M2.3	0.25	16	5	14OA-00042
M2.5	0.25	16	5	14OA-00043
M2.6	0.25	16	5	14OA-00044
M2.6	0.35	16	5	14OA-00045
M3	0.35	20	5	14OA-00046
M3.5	0.35	20	5	14OA-00047
M4	0.35	20	5	14OA-00048
M4	0.5	20	5	14OA-00049

Size	Pitch	Diameter	Thickness	Order No.
M5	0.5	20	5	14OA-00050
M5	0.75	20	7	14OA-00051
M6	0.5	20	5	14OA-00052
M6	0.75	20	7	14OA-00053
M7	0.75	25	9	14OA-00054
M8	0.5	25	9	14OA-00055
M8	0.75	25	9	14OA-00056
M8	1	25	9	14OA-00057
M9	0.75	25	9	14OA-00058
M9	1	25	9	14OA-00059

Continued... ..

#### Metric Fine

MF DIN 223 HSS 6G



Size	Pitch	Diameter	Thickness	Order No.
M10	0.5	30	11	14OA-00060
M10	0.75	30	11	14OA-00061
M10	1	30	11	14OA-00062
M10	1.25	30	11	14OA-00063
M11	1	30	11	14OA-00064
M12	0.75	38	10	14OA-00065
M12	1	38	10	14OA-00066
M12	1.25	38	10	14OA-00067
M12	1.5	38	10	14OA-00068
M13	1	38	10	14OA-00069
M13	1.5	38	10	14OA-00070
M14	0.75	38	10	14OA-00071
M14	1	38	10	14OA-00072
M14	1.25	38	10	14OA-00073
M14	1.5	38	10	14OA-00074
M15	1	38	10	14OA-00075
M15	1.5	38	10	14OA-00076
M16	1	45	14	14OA-00077
M16	1.5	45	14	14OA-00078
M18	1	45	14	14OA-00079
M18	1.5	45	14	14OA-00080
M18	2	45	14	14OA-00081
M20	1	45	14	14OA-00082
M20	1.5	45	14	14OA-00083
M20	2	45	14	14OA-00084
M22	1	55	16	14OA-00085
M22	1.5	55	16	14OA-00086
M22	2	55	16	14OA-00087
M24	1	55	16	14OA-00088
M24	1.5	55	16	14OA-00089
M24	2	55	16	14OA-00090
M25	1	55	16	14OA-00091
M25	1.5	55	16	14OA-00092
M26	1.5	55	16	14OA-00093

Size	Pitch	Diameter	Thickness	Order No.
M27	1.5	65	18	14OA-00094
M27	2	65	18	14OA-00095
M28	1	65	18	14OA-00096
M28	1.5	65	18	14OA-00097
M28	2	65	18	14OA-00098
M30	1	65	18	14OA-00099
M30	1.5	65	18	14OA-00100
M30	2	65	18	14OA-00101
M32	1.5	65	18	14OA-00102
M32	2	65	18	14OA-00103
M33	1.5	65	18	14OA-00104
M33	2	65	18	14OA-00105
M34	1.5	65	18	14OA-00106
M35	1.5	65	18	14OA-00107
M36	1.5	65	18	14OA-00108
M36	2	65	18	14OA-00109
M36	3	65	25	14OA-00110
M38	1.5	75	20	14OA-00111
M39	1.5	75	20	14OA-00112
M39	2	75	20	14OA-00113
M39	3	75	20	14OA-00114
M40	1.5	75	20	14OA-00115
M40	2	75	20	14OA-00116
M40	3	75	20	14OA-00117
M42	1.5	75	20	14OA-00118
M42	2	75	20	14OA-00119
M42	3	75	20	14OA-00120
M44	1.5	90	22	14OA-00121
M45	1.5	90	22	14OA-00122
M45	2	90	22	14OA-00123
M45	3	90	22	14OA-00124
M48	1.5	90	22	14OA-00125
M48	2	90	22	14OA-00126
M48	3	90	22	14OA-00127

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Circular Die, DIN223 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### BSW

BSW DIN 223 HSS 6G

Size	Pitch	Diameter	Thickness	Order No.
1/8"	40	20	5	14OA-00128
3/16"	24	20	7	14OA-00129
1/4"	20	25	9	14OA-00130
5/16"	18	25	9	14OA-00131
3/8"	16	30	11	14OA-00132
7/16"	14	30	11	14OA-00133
1/2"	12	38	14	14OA-00134
5/8"	11	45	18	14OA-00135
11/16"	11.1/2	45	18	14OA-00136

#### BSF

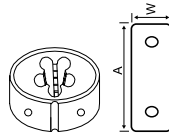
BSF DIN 223 HSS 6G

Size	Pitch	Diameter	Thickness	Order No.
3/16"	32	20	7	14OA-00146
1/4"	26	25	9	14OA-00147
3/8"	20	30	11	14OA-00148
1/2"	16	38	10	14OA-00149
9/16"	16	38	10	14OA-00150
5/8"	14	45	14	14OA-00151
11/16"	14	45	14	14OA-00152
3/4"	12	45	14	14OA-00153

#### BSP

BSP DIN 223 HSS 6G

Size	Pitch	Diameter	Thickness	Order No.
1/8"	28	30	11	14OA-00207
1/4"	19	38	10	14OA-00208
3/8"	19	45	14	14OA-00209
1/2"	14	45	14	14OA-00210
5/8"	14	55	16	14OA-00211
3/4"	14	65	18	14OA-00212
7/8"	14	65	18	14OA-00213



Size	Pitch	Diameter	Thickness	Order No.
3/4"	10	45	18	14OA-00137
7/8"	9	55	22	14OA-00138
1"	8	55	22	14OA-00139
1.1/8"	7	65	25	14OA-00140
1.1/4"	7	65	25	14OA-00141
1.3/8"	6	65	25	14OA-00142
1.1/2"	6	75	30	14OA-00143
1.3/4"	5	90	36	14OA-00144
2"	4-1/2"	90	36	14OA-00145

Size	Pitch	Diameter	Thickness	Order No.
7/8"	11.1/2	55	22	14OA-00154
1"	10	55	22	14OA-00155
1.1/8"	9	65	25	14OA-00156
1.1/4"	9	65	25	14OA-00157
1.3/8"	8	65	25	14OA-00158
1.1/2"	8	75	30	14OA-00159
1.3/4"	7	90	36	14OA-00160
2"	7	90	36	14OA-00161

Size	Pitch	Diameter	Thickness	Order No.
1"	11	65	18	14OA-00214
1.1/8"	11	75	20	14OA-00215
1.1/4"	11	75	20	14OA-00216
1.3/8"	11	90	22	14OA-00217
1.1/2"	11	90	22	14OA-00218
1.3/4"	11	90	22	14OA-00219
2"	11	105	22	14OA-00220

### Circular Die, DIN223 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### UNC

UNC DIN 223 HSS 6G

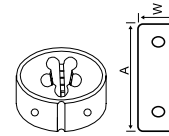
Size	Pitch	Diameter	Thickness	Order No.
No. 2	56	16	5	14OA-00162
NO.3	48	16	5	14OA-00163
No.4	40	20	5	14OA-00164
No. 5	40	20	5	14OA-00165
No. 6	32	20	7	14OA-00166
No.8	32	20	7	14OA-00167
No. 10	24	20	7	14OA-00168
NO. 12	24	20	7	14OA-00169
1/4"	20	20	7	14OA-00170
5/16"	18	20	9	14OA-00171
3/8"	16	30	11	14OA-00172
7/16"	14	30	11	14OA-00173

#### UNF

UNF DIN 223 HSS 6G

Size	Pitch	Diameter	Thickness	Order No.
No. 2	64	16	5	14OA-00186
NO.3	56	16	5	14OA-00187
No.4	48	20	5	14OA-00188
No. 5	44	20	5	14OA-00189
No. 6	40	20	7	14OA-00190
No.8	36	20	7	14OA-00191
No. 10	32	20	7	14OA-00192
NO. 12	28	20	7	14OA-00193
1/4"	28	20	7	14OA-00194
5/16"	24	20	9	14OA-00195
3/8"	24	30	11	14OA-00196

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.



Size	Pitch	Diameter	Thickness	Order No.
1/2"	13	38	14	14OA-00174
9/16"	12	38	14	14OA-00175
5/8"	11	45	18	14OA-00176
3/4"	10	45	18	14OA-00177
7/8"	9	55	22	14OA-00178
1"	8	55	22	14OA-00179
1-1/8"	7	65	25	14OA-00180
1-1/4"	7	65	25	14OA-00181
1-3/8"	6	65	25	14OA-00182
1-1/2"	6	75	30	14OA-00183
1-3/4"	5	90	36	14OA-00184
2"	4-1/2"	90	36	14OA-00185

Size	Pitch	Diameter	Thickness	Order No.
7/16"	20	30	11	14OA-00197
1/2"	20	38	10	14OA-00198
9/16"	18	38	10	14OA-00199
5/8"	18	45	14	14OA-00200
3/4"	16	45	14	14OA-00201
7/8"	14	55	16	14OA-00202
1"	12	55	16	14OA-00203
1-1/8"	7	65	18	14OA-00204
1-1/4"	7	65	18	14OA-00205
1-3/8"	6	65	18	14OA-00206
1-1/2"	6	75	20	14OA-00207



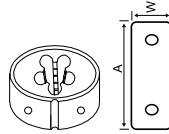
### Circular Die, ISO2568 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### Metric

M ISO 2568 HSS 6G

Size	Pitch	Diameter	Thickness	Order No.
M1	0.25	16	5	14OA-00230
M1.1	0.25	16	5	14OA-00231
M1.2	0.25	16	5	14OA-00232
M1.4	0.3	16	5	14OA-00233
M1.6	0.35	16	5	14OA-00234
M1.7	0.35	16	5	14OA-00235
M1.8	0.35	16	5	14OA-00236
M1.9	0.35	16	5	14OA-00237
M2	0.4	16	5	14OA-00238
M2.2	0.45	16	5	14OA-00239
M2.3	0.45	16	5	14OA-00240
M2.5	0.45	16	5	14OA-00241
M2.6	0.45	16	5	14OA-00242
M3	0.5	20	5	14OA-00243
M3.5	0.6	20	5	14OA-00244
M4	0.7	20	5	14OA-00245
M4.5	0.75	20	7	14OA-00246
M5	0.8	20	7	14OA-00247
M6	1	20	7	14OA-00248
M7	1	20	7	14OA-00249



Size	Pitch	Diameter	Thickness	Order No.
M8	1.25	25	9	14OA-00250
M9	1.25	25	9	14OA-00251
M10	1.5	30	11	14OA-00252
M11	1.5	30	11	14OA-00253
M12	1.75	38	14	14OA-00254
M14	2	38	14	14OA-00255
M16	2	45	18	14OA-00256
M18	2.5	45	18	14OA-00257
M20	2.5	45	18	14OA-00258
M22	2.5	55	22	14OA-00259
M24	3	55	22	14OA-00260
M27	3	65	25	14OA-00261
M30	3.5	65	25	14OA-00262
M33	3.5	65	25	14OA-00263
M36	4	65	25	14OA-00264
M39	4	75	30	14OA-00265
M42	4.5	75	30	14OA-00266
M45	4.5	90	36	14OA-00267
M48	5	90	36	14OA-00268

#### Metric Fine

MF ISO 2568 HSS 6G

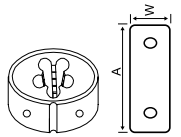
Size	Pitch	Diameter	Thickness	Order No.
M2	0.25	16	5	14OA-00269
M2.2	0.25	16	5	14OA-00270
M2.3	0.25	16	5	14OA-00271
M2.5	0.25	16	5	14OA-00272
M2.6	0.25	16	5	14OA-00273
M2.6	0.35	16	5	14OA-00274
M3	0.35	20	5	14OA-00275
M3.5	0.35	20	5	14OA-00276

Size	Pitch	Diameter	Thickness	Order No.
M4	0.35	20	5	14OA-00277
M4	0.5	20	5	14OA-00278
M5	0.5	20	5	14OA-00279
M5	0.75	20	7	14OA-00280
M6	0.5	20	5	14OA-00281
M6	0.75	20	7	14OA-00282
M7	0.75	25	9	14OA-00283
M8	0.5	25	9	14OA-00284

Continued... ..

#### Metric Fine

MF ISO 2568 HSS 6G



Size	Pitch	Diameter	Thickness	Order No.
M8	0.75	25	9	14OA-00285
M8	1	25	9	14OA-00286
M9	0.75	25	9	14OA-00287
M9	1	25	9	14OA-00288
M10	0.5	30	11	14OA-00289
M10	0.75	30	11	14OA-00290
M10	1	30	11	14OA-00291
M10	1.25	30	11	14OA-00292
M11	1	30	11	14OA-00293
M12	0.75	38	10	14OA-00294
M12	1	38	10	14OA-00295
M12	1.25	38	10	14OA-00296
M12	1.5	38	10	14OA-00297
M13	1	38	10	14OA-00298
M13	1.5	38	10	14OA-00299
M14	0.75	38	10	14OA-00300
M14	1	38	10	14OA-00301
M14	1.25	38	10	14OA-00302
M14	1.5	38	10	14OA-00303
M15	1	38	10	14OA-00304
M15	1.5	38	10	14OA-00305
M16	1	45	14	14OA-00306
M16	1.5	45	14	14OA-00307
M18	1	45	14	14OA-00308
M18	1.5	45	14	14OA-00309
M18	2	45	14	14OA-00310
M20	1	45	14	14OA-00311
M20	1.5	45	14	14OA-00312
M20	2	45	14	14OA-00313
M22	1	55	16	14OA-00314
M22	1.5	55	16	14OA-00315
M22	2	55	16	14OA-00316
M24	1	55	16	14OA-00317
M24	1.5	55	16	14OA-00318
M24	2	55	16	14OA-00319
M25	1	55	16	14OA-00320

Size	Pitch	Diameter	Thickness	Order No.
M25	1.5	55	16	14OA-00321
M26	1.5	55	16	14OA-00322
M27	1.5	65	18	14OA-00323
M27	2	65	18	14OA-00324
M28	1	65	18	14OA-00325
M28	1.5	65	18	14OA-00326
M28	2	65	18	14OA-00327
M30	1	65	18	14OA-00328
M30	1.5	65	18	14OA-00329
M30	2	65	18	14OA-00330
M32	1.5	65	18	14OA-00331
M32	2	65	18	14OA-00332
M33	1.5	65	18	14OA-00333
M33	2	65	18	14OA-00334
M34	1.5	65	18	14OA-00335
M35	1.5	65	18	14OA-00336
M36	1.5	65	18	14OA-00337
M36	2	65	18	14OA-00338
M36	3	65	25	14OA-00339
M38	1.5	75	20	14OA-00340
M39	1.5	75	20	14OA-00341
M39	2	75	20	14OA-00342
M39	3	75	20	14OA-00343
M40	1.5	75	20	14OA-00344
M40	2	75	20	14OA-00345
M40	3	75	20	14OA-00346
M42	1.5	75	20	14OA-00347
M42	2	75	20	14OA-00348
M42	3	75	20	14OA-00349
M44	1.5	90	22	14OA-00350
M45	1.5	90	22	14OA-00351
M45	2	90	22	14OA-00352
M45	3	90	22	14OA-00353
M48	1.5	90	22	14OA-00354
M48	2	90	22	14OA-00355
M48	3	90	22	14OA-00356

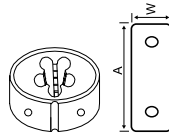
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Circular Die, ISO2568 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### UNC

UNC ISO 2568 HSS 6G

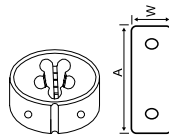


Size	Pitch	Diameter	Thickness	Order No.
No. 2	56	16	5	14OA-00357
NO.3	48	16	5	14OA-00358
No.4	40	20	5	14OA-00359
No. 5	40	20	5	14OA-00360
No. 6	32	20	7	14OA-00361
No.8	32	20	7	14OA-00362
No. 10	24	20	7	14OA-00363
NO. 12	24	20	7	14OA-00364
1/4"	20	20	7	14OA-00365
5/16"	18	20	9	14OA-00366
3/8"	16	30	11	14OA-00367
7/16"	14	30	11	14OA-00368

Size	Pitch	Diameter	Thickness	Order No.
1/2"	13	38	14	14OA-00369
9/16"	12	38	14	14OA-00370
5/8"	11	45	18	14OA-00371
3/4"	10	45	18	14OA-00372
7/8"	9	55	22	14OA-00373
1"	8	55	22	14OA-00374
1-1/8"	7	65	25	14OA-00375
1-1/4"	7	65	25	14OA-00376
1-3/8"	6	65	25	14OA-00377
1-1/2"	6	75	30	14OA-00378
1-3/4"	5	90	36	14OA-00379
2"	4-1/2"	90	36	14OA-00380

#### UNF

UNF ISO 2568 HSS 6G



Size	Pitch	Diameter	Thickness	Order No.
No. 2	64	16	5	14OA-00381
NO.3	56	16	5	14OA-00382
No.4	48	20	5	14OA-00383
No. 5	44	20	5	14OA-00384
No. 6	40	20	5	14OA-00385
No.8	36	20	7	14OA-00386
No. 10	32	20	7	14OA-00387
NO. 12	28	20	7	14OA-00388
1/4"	28	20	7	14OA-00389
5/16"	24	25	9	14OA-00390
3/8"	24	30	11	14OA-00391

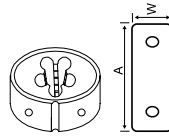
Size	Pitch	Diameter	Thickness	Order No.
7/16"	20	30	11	14OA-00392
1/2"	20	38	10	14OA-00393
9/16"	18	38	10	14OA-00394
5/8"	18	45	14	14OA-00395
3/4"	16	45	14	14OA-00396
7/8"	14	55	16	14OA-00397
1"	12	55	16	14OA-00398
1-1/8"	12	65	18	14OA-00399
1-1/4"	12	65	18	14OA-00400
1-3/8"	12	65	18	14OA-00401
1-1/2"	12	75	20	14OA-00402

### Circular Die, ISO2568 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### BSP

BSP ISO 4231 HSS 6G

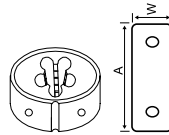


Size	Pitch	Diameter	Thickness	Order No.
1/8"	28	30	11	14OA-00403
1/4"	19	38	10	14OA-00404
3/8"	19	45	14	14OA-00405
1/2"	14	45	14	14OA-00406
5/8"	14	55	16	14OA-00407
3/4"	14	65	18	14OA-00408
7/8"	14	65	18	14OA-00409

Size	Pitch	Diameter	Thickness	Order No.
1"	11	65	18	14OA-00410
1.1/8	11	75	20	14OA-00411
1.1/4	11	75	20	14OA-00412
1.3/8	11	90	22	14OA-00413
1.1/2	11	90	22	14OA-00414
1.3/4	11	90	22	14OA-00415
2"	11	105	22	14OA-00416

#### BSP

BSP ISO 4230 HSS 6G



Size	Pitch	Diameter	Thickness	Order No.
1/8"	28	30	11	14OA-00417
1/4"	19	38	14	14OA-00418
3/8"	19	45	18	14OA-00419
1/2"	14	45	18	14OA-00420
5/8"	14	55	22	14OA-00421
3/4"	14	65	25	14OA-00422

Size	Pitch	Diameter	Thickness	Order No.
7/8"	14	65	25	14OA-00423
1"	11	65	25	14OA-00424
1.1/4	11	75	30	14OA-00425
1.1/2	11	90	36	14OA-00426
2"	11	105	36	14OA-00427

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

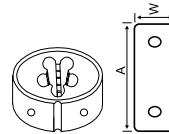
### Circular Die, ASME/ANSI B94.9 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

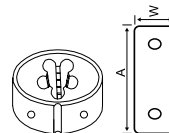
#### Metric

**M** ASME B94.9-1999 HSS 6G

Size	Pitch	Diameter	Order No.
M1.6	0.35	13/16"	140A-00428
M1.6	0.35	1"	140A-00429
M1.8	0.35	13/16"	140A-00430
M1.8	0.35	1"	140A-00431
M1.9	0.35	13/16"	140A-00432
M1.9	0.35	1"	140A-00433
M10	1.5	1"	140A-00434
M10	1.5	1-1/2"	140A-00435
M11	1.5	1"	140A-00436
M11	1.5	1-1/2"	140A-00437
M12	1.75	1"	140A-00438
M12	1.75	1-1/2"	140A-00439
M14	2	1-1/2"	140A-00440
M16	2	1-1/2"	140A-00441
M16	2	2"	140A-00442
M18	2.5	1-1/2"	140A-00443
M18	2.5	2"	140A-00444
M2	0.4	13/16"	140A-00445
M2	0.4	1"	140A-00446
M2.2	0.45	13/16"	140A-00447
M2.2	0.45	1"	140A-00448
M2.3	0.45	13/16"	140A-00449
M2.3	0.45	1"	140A-00450
M2.5	0.45	13/16"	140A-00451
M2.5	0.45	1"	140A-00452
M2.6	0.45	13/16"	140A-00453
M2.6	0.45	1"	140A-00454
M20	2.5	1-1/2"	140A-00455



Size	Pitch	Diameter	Order No.
M20	2.5	2"	140A-00456
M22	2.5	2"	140A-00457
M24	3	2"	140A-00458
M24	3	2-1/2"	140A-00459
M27	3	2-1/2"	140A-00460
M3	0.5	13/16"	140A-00461
M3	0.5	1"	140A-00462
M3.5	0.6	13/16"	140A-00463
M3.5	0.6	1"	140A-00464
M30	3.5	2-1/2"	140A-00465
M30	3.5	2-1/2"	140A-00466
M33	3.5	2-1/2"	140A-00467
M36	4	2-1/2"	140A-00468
M36	4	3"	140A-00469
M39	4	3"	140A-00470
M4	0.7	13/16"	140A-00471
M4	0.7	1"	140A-00472
M4.5	0.75	13/16"	140A-00473
M4.5	0.75	1"	140A-00474
M5	0.8	13/16"	140A-00475
M5	0.8	1"	140A-00476
M6	1	13/16"	140A-00477
M6	1	1"	140A-00478
M7	1	1"	140A-00479
M8	1.25	1"	140A-00480
M9	1.25	1"	140A-00481
M9	1.25	1-1/2"	140A-00482



#### Metric Fine

**MF** ASME B94.9-1999 HSS 6G

Size	Pitch	Diameter	Order No.
M10	0.5	1"	140A-00483
M10	0.75	1"	140A-00484
M10	1	1"	140A-00485
M10	1.25	1"	140A-00486

Size	Pitch	Diameter	Order No.
M10	0.5	1-1/2"	140A-00487
M10	0.75	1-1/2"	140A-00488
M10	1	1-1/2"	140A-00489
M10	1.25	1-1/2"	140A-00490

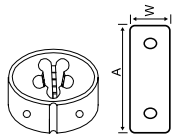
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#### Metric Fine

**MF** ASME B94.9-1999 HSS 6G

Size	Pitch	Diameter	Order No.
M11	1	1"	140A-00491
M11	1	1-1/2"	140A-00492
M12	0.75	1"	140A-00493
M12	1	1"	140A-00494
M12	1.25	1"	140A-00495
M12	1.5	1"	140A-00496
M12	0.75	1-1/2"	140A-00497
M12	1	1-1/2"	140A-00498
M12	1.25	1-1/2"	140A-00499
M12	1.5	1-1/2"	140A-00500
M14	0.75	1-1/2"	140A-00501
M14	1	1-1/2"	140A-00502
M14	1.25	1-1/2"	140A-00503
M14	1.5	1-1/2"	140A-00504
M14	0.75	1-1/2"	140A-00505
M14	1	1-1/2"	140A-00506
M14	1.25	1-1/2"	140A-00507
M14	1.5	1-1/2"	140A-00508
M15	1	1-1/2"	140A-00509
M15	1.5	1-1/2"	140A-00510
M15	1	2"	140A-00511
M15	1.5	2"	140A-00512
M16	1	1-1/2"	140A-00513
M16	1.5	1-1/2"	140A-00514
M16	1	2"	140A-00515
M16	1.5	2"	140A-00516
M18	1	1-1/2"	140A-00517
M18	1.5	1-1/2"	140A-00518
M18	2	1-1/2"	140A-00519
M18	1	2"	140A-00520
M18	1.5	2"	140A-00521
M18	2	2"	140A-00522
M2	0.25	13/16"	140A-00523
M2	0.25	1"	140A-00524
M2.2	0.25	13/16"	140A-00525
M2.2	0.25	1"	140A-00526
M2.3	0.25	13/16"	140A-00527
M2.3	0.25	1"	140A-00528
M2.5	0.25	13/16"	140A-00529
M2.5	0.25	1"	140A-00530
M2.6	0.25	13/16"	140A-00531
M2.6	0.35	13/16"	140A-00532
M2.6	0.25	1"	140A-00533
M2.6	0.35	1"	140A-00534
M20	1	1-1/2"	140A-00535
M20	1.5	1-1/2"	140A-00536

Size	Pitch	Diameter	Order No.
M20	2	1-1/2"	140A-00537
M20	1	2"	140A-00538
M20	1.5	2"	140A-00539
M20	2	2"	140A-00540
M22	1	2"	140A-00541
M22	1.5	2"	140A-00542
M22	2	2"	140A-00543
M24	1	2"	140A-00544
M24	1.5	2"	140A-00545
M24	2	2"	140A-00546
M24	1	2-1/2"	140A-00547
M24	1.5	2-1/2"	140A-00548
M24	2	2-1/2"	140A-00549
M27	1.5	2-1/2"	140A-00550
M27	2	2-1/2"	140A-00551
M28	1	2-1/2"	140A-00552
M28	1.5	2-1/2"	140A-00553
M28	2	2-1/2"	140A-00554
M3	0.35	13/16"	140A-00555
M3	0.35	1"	140A-00556
M3.5	0.35	13/16"	140A-00557
M3.5	0.35	1"	140A-00558
M30	1	2-1/2"	140A-00559
M30	1.5	2-1/2"	140A-00560
M30	2	2-1/2"	140A-00561
M4	0.35	13/16"	140A-00562
M4	0.5	13/16"	140A-00563
M4	0.35	1"	140A-00564
M4	0.5	1"	140A-00565
M5	0.5	13/16"	140A-00566
M5	0.75	13/16"	140A-00567
M5	0.5	1"	140A-00568
M5	0.75	1"	140A-00569
M6	0.5	13/16"	140A-00570
M6	0.5	1"	140A-00572
M6	0.75	1"	140A-00573
M7	0.75	1"	140A-00574
M8	0.5	1"	140A-00575
M8	0.75	1"	140A-00576
M8	1	1"	140A-00577
M9	0.75	1"	140A-00578
M9	1	1"	140A-00579
M9	0.75	1-1/2"	140A-00580
M9	1	1-1/2"	140A-00581



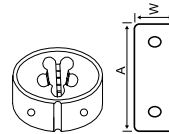
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Circular Die, ASME/ANSI B94.9 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### UNC

UNC ASME B94.9-1999 HSS 6G



Size	Pitch	Diameter	Order No.
No. 2	56	13/16"	14OA-00582
No. 2	56	1"	14OA-00583
NO.3	48	13/16"	14OA-00584
NO.3	48	1"	14OA-00585
No.4	40	13/16"	14OA-00586
No.4	40	1"	14OA-00587
No. 5	40	13/16"	14OA-00588
No. 5	40	1"	14OA-00589
No. 6	32	13/16"	14OA-00590
No. 6	32	1"	14OA-00591
No.8	32	13/16"	14OA-00592
No.8	32	1"	14OA-00593
NO. 12	24	13/16"	14OA-00594
NO. 12	24	1"	14OA-00595
No. 10	24	13/16"	14OA-00596
No. 10	24	1"	14OA-00597
1/4"	20	13/16"	14OA-00598
1/4"	20	1"	14OA-00599
1/4"	20	2"	14OA-00600
5/16"	18	13/16"	14OA-00601
5/16"	18	1"	14OA-00602
5/16"	18	2"	14OA-00603
3/8"	16	1"	14OA-00604
3/8"	16	1-1/2"	14OA-00605
3/8"	16	2"	14OA-00606

Size	Pitch	Diameter	Order No.
7/16"	14	1"	14OA-00607
7/16"	14	1-1/2"	14OA-00608
7/16"	14	2"	14OA-00609
1/2"	13	1"	14OA-00610
1/2"	13	1-1/2"	14OA-00611
1/2"	13	2"	14OA-00612
9/16"	12	1-1/2"	14OA-00613
9/16"	12	2"	14OA-00614
5/8"	11	1-1/2"	14OA-00615
5/8"	11	2"	14OA-00616
3/4"	10	1-1/2"	14OA-00617
3/4"	10	2"	14OA-00618
7/8"	9	2"	14OA-00619
1"	8	2"	14OA-00620
1"	8	2"	14OA-00621
1-1/8"	7	2-1/2"	14OA-00622
1-1/8"	7	3"	14OA-00623
1-1/4"	7	2-1/2"	14OA-00624
1-1/4"	7	3"	14OA-00625
1-3/8"	6	2-1/2"	14OA-00626
1-3/8"	6	3"	14OA-00627
1-1/2"	6	2-1/2"	14OA-00628
1-1/2"	6	3"	14OA-00629
1-3/4"	5	3"	14OA-00630
2"	4-1/2"	3"	14OA-00631

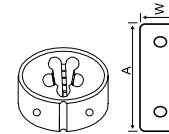
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Circular Die, ASME/ANSI B94.9 Standard

- ◆ General purpose
- ◆ Used for threading studs, bolts and rods or similar applications

#### UNF

UNF ASME B94.9-1999 HSS 6G



Size	Pitch	Diameter	Order No.
No. 2	64	13/16"	14OA-00632
No. 2	64	1"	14OA-00633
NO.3	56	13/16"	14OA-00634
NO.3	56	1"	14OA-00635
No.4	48	13/16"	14OA-00636
No.4	48	1"	14OA-00637
No. 5	44	13/16"	14OA-00638
No. 5	44	1"	14OA-00639
No. 6	40	13/16"	14OA-00640
No. 6	40	1"	14OA-00641
No.8	36	13/16"	14OA-00642
No.8	36	1"	14OA-00643
NO. 12	32	13/16"	14OA-00644
NO. 12	32	1"	14OA-00645
No. 10	28	13/16"	14OA-00646
No. 10	28	1"	14OA-00647
1/4"	28	13/16"	14OA-00648
1/4"	28	1"	14OA-00649
1/4"	28	2"	14OA-00650
5/16"	24	13/16"	14OA-00651
5/16"	24	1"	14OA-00652
5/16"	24	2"	14OA-00653
3/8"	24	1"	14OA-00654
3/8"	24	1-1/2"	14OA-00655

Size	Pitch	Diameter	Order No.
3/8"	24	2"	14OA-00656
7/16"	20	1"	14OA-00657
7/16"	20	1-1/2"	14OA-00658
7/16"	20	2"	14OA-00659
1/2"	20	1"	14OA-00660
1/2"	20	1-1/2"	14OA-00661
1/2"	20	2"	14OA-00662
9/16"	18	1-1/2"	14OA-00663
9/16"	18	2"	14OA-00664
5/8"	18	1-1/2"	14OA-00665
5/8"	18	2"	14OA-00666
3/4"	16	1-1/2"	14OA-00667
3/4"	16	2"	14OA-00668
7/8"	14	2"	14OA-00669
1"	12	2"	14OA-00670
1"	12	2"	14OA-00671
1-1/8"	12	2-1/2"	14OA-00672
1-1/8"	12	3"	14OA-00673
1-1/4"	12	2-1/2"	14OA-00674
1-1/4"	12	3"	14OA-00675
1-3/8"	12	2-1/2"	14OA-00676
1-3/8"	12	3"	14OA-00677
1-1/2"	12	2-1/2"	14OA-00678

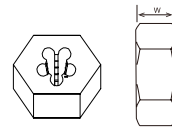
HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.



### Hex Die Nut, DIN382 Standard

◆ Ideal for rethreading damaged or rusty threads. Used for repair work

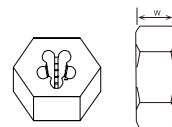
#### Metric



Size	Pitch	Diameter	Thickness	Order No.
M3	0.5	19	5	14OB-00001
M4	0.7	19	5	14OB-00002
M5	0.8	19	7	14OB-00003
M6	1	19	7	14OB-00004
M7	1	22	9	14OB-00005
M8	1.25	22	9	14OB-00006
M9	1.25	22	9	14OB-00007
M10	1.5	27	11	14OB-00008
M11	1.5	27	11	14OB-00009
M12	1.75	36	14	14OB-00010

Size	Pitch	Diameter	Thickness	Order No.
M14	2	36	14	14OB-00011
M16	2	41	18	14OB-00012
M18	2.5	41	18	14OB-00013
M20	2.5	41	18	14OB-00014
M22	2.5	50	22	14OB-00015
M24	3	50	22	14OB-00016
M27	3	60	25	14OB-00017
M30	3.5	60	25	14OB-00018
M33	3.5	60	25	14OB-00019
M36	4	60	25	14OB-00020

#### Metric Fine



Size	Pitch	Diameter	Thickness	Order No.
M3	0.35	19	5	14OB-00021
M4	0.5	19	5	14OB-00022
M6	0.75	19	7	14OB-00023
M8	0.75	22	9	14OB-00024
M8	1	22	9	14OB-00025
M10	0.75	27	11	14OB-00026
M10	1	27	11	14OB-00027
M10	1.25	27	11	14OB-00028
M12	1	36	10	14OB-00029
M12	1.25	36	10	14OB-00030
M12	1.5	36	10	14OB-00031
M14	1	36	10	14OB-00032
M14	1.25	36	10	14OB-00033
M14	1.5	36	10	14OB-00034
M16	1	41	14	14OB-00035
M16	1.5	41	14	14OB-00036

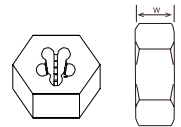
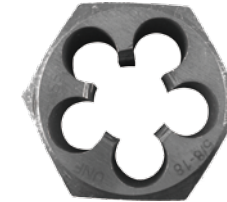
Size	Pitch	Diameter	Thickness	Order No.
M18	1	41	14	14OB-00037
M18	1.5	41	14	14OB-00038
M18	2	41	14	14OB-00039
M20	1	41	14	14OB-00040
M20	1.5	41	14	14OB-00041
M20	2	41	14	14OB-00042
M22	1	50	16	14OB-00043
M22	1.5	50	16	14OB-00044
M24	1.5	50	16	14OB-00045
M24	2	50	16	14OB-00046
M25	1.5	50	16	14OB-00047
M27	1.5	60	18	14OB-00048
M30	1.5	60	18	14OB-00049
M32	1.5	60	18	14OB-00050
M33	1.5	60	18	14OB-00051
M36	1.5	60	18	14OB-00052

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### Hex Die Nut, DIN382 Standard

◆ Ideal for rethreading damaged or rusty threads. Used for repair work

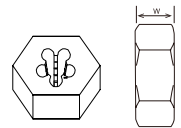
#### BSW



Size	Pitch	Diameter	Thickness	Order No.
1/8"	40	19	5	14OB-00053
3/16"	24	19	7	14OB-00054
1/4"	20	19	7	14OB-00055
5/16"	18	22	9	14OB-00056
3/8"	16	27	11	14OB-00057
7/16"	14	27	11	14OB-00058
1/2"	12	36	14	14OB-00059
9/16"	12	36	14	14OB-00060
5/8"	11	41	18	14OB-00061

Size	Pitch	Diameter	Thickness	Order No.
3/4"	10	41	18	14OB-00062
7/8"	9	50	22	14OB-00063
1"	8	50	22	14OB-00064
1.1/8"	7	60	25	14OB-00065
1.1/4"	7	60	25	14OB-00066
1.3/8"	6	60	25	14OB-00067
1.1/2"	6	70	30	14OB-00068
1.3/4"	5	85	36	14OB-00069
2"	4.1/2	85	36	14OB-00070

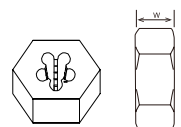
#### BSF



Size	Pitch	Diameter	Thickness	Order No.
1/4"	26	19	7	14OB-00071
5/16"	22	22	9	14OB-00072
3/8"	20	27	11	14OB-00073
7/16"	18	27	11	14OB-00074
1/2"	16	36	14	14OB-00075
9/16"	16	36	14	14OB-00076
5/8"	14	41	18	14OB-00077

Size	Pitch	Diameter	Thickness	Order No.
3/4"	12	41	18	14OB-00078
7/8"	11	50	22	14OB-00079
1"	10	50	22	14OB-00080
1.1/8"	9	60	25	14OB-00081
1.1/4"	9	60	25	14OB-00082
1.1/2"	8	70	30	14OB-00083
2"	7	85	36	14OB-00084

#### BSP



Size	Pitch	Diameter	Thickness	Order No.
1/8"	28	36	10	14OB-00111
1/4"	19	36	10	14OB-00112
3/8"	19	41	14	14OB-00113
1/2"	14	41	14	14OB-00114
5/8"	14	50	16	14OB-00115
3/4"	14	60	18	14OB-00116
7/8"	14	60	18	14OB-00117

Size	Pitch	Diameter	Thickness	Order No.
1"	11	60	18	14OB-00118
1.1/8"	11	70	20	14OB-00119
1.1/4"	11	70	20	14OB-00120
1.3/8"	11	85	22	14OB-00121
1.1/2"	11	85	22	14OB-00122
1.3/4"	11	100	22	14OB-00123
2"	11	100	22	14OB-00124

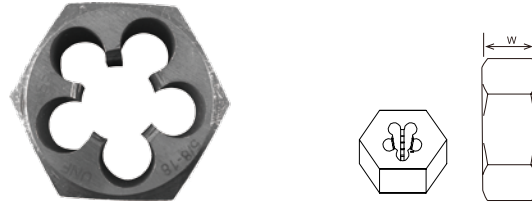
### Hex Die Nut, DIN382 Standard

◆ Ideal for rethreading damaged or rusty threads. Used for repair work

#### UNC



Size	Pitch	Diameter	Thickness	Order No.
1/4"	20	19	7	14OB-00085
5/16"	18	22	9	14OB-00086
3/8"	16	27	11	14OB-00087
7/16"	14	27	11	14OB-00088
1/2"	13	36	14	14OB-00089
9/16"	12	36	14	14OB-00090
5/8"	11	41	18	14OB-00091



Size	Pitch	Diameter	Thickness	Order No.
3/4"	10	41	18	14OB-00092
7/8"	9	50	22	14OB-00093
1"	8	50	22	14OB-00094
1.1/8"	7	60	25	14OB-00095
1.1/4"	7	60	25	14OB-00096
1.1/2"	6	70	30	14OB-00097

#### UNF



Size	Pitch	Diameter	Thickness	Order No.
1/4"	28	19	7	14OB-00098
5/16"	24	22	9	14OB-00099
3/8"	24	27	11	14OB-00100
7/16"	20	27	11	14OB-00101
1/2"	20	36	14	14OB-00102
9/16"	18	36	14	14OB-00103
5/8"	18	41	18	14OB-00104

Size	Pitch	Diameter	Thickness	Order No.
3/4"	16	41	18	14OB-00105
7/8"	14	50	22	14OB-00106
1"	12	50	22	14OB-00107
1.1/8"	12	60	25	14OB-00108
1.1/4"	12	60	25	14OB-00109
1.1/2"	12	70	30	14OB-00110

HSS-E / Alloy Steel / TiCN / TiAIN / TiN are available according to requirements.

### Accessories

#### Tap Wrenches, All Metal

- ◆ With all steel, hardened and tempered bodies, solid construction
- ◆ Straight handle design provides greater leverage



Square Size	Order No.
M1-M6(1/16"-1/4")	17CL-00001
M4-M12(3/16"-1/2")	17CL-00002

Square Size	Order No.
M5-M20(1/4"-3/4")	17CL-00003
M9-M27(3/8"-1")	17CL-00004

#### Tap Wrenches, Zinc Alloy Steel

- ◆ Tap size to DIN1814
- ◆ Ideal for thread cutting in inaccessible places



Square Size	Nominal Size	Order No.
M1 - M8	No.0	17CL-00009
M1 - M10	No.1	17CL-00010
M1 - M12	No.1-1/2	17CL-00011
M4 - M12	No.2	17CL-00012
M5 - M20	No.3	17CL-00013

Square Size	Nominal Size	Order No.
M9 - M27	No.4	17CL-00014
M13 - M32	No.5	17CL-00015
M18 - M42	No.6	17CL-00016
M25 - M52	No.7	17CL-00017

#### Die Stocks, All Metal

- ◆ All steel drop forged solid construction for long life with knurled handles for extra grip.
- ◆ The three screw design easily locks die into position and maintains alignment for accurate threading resulting in clean, straight threads.
- ◆ Designed to hold a range of different sizes of round split-adjustable dies



Outside Diameter	Length (mm)	Order No.
20mm(13/16")	150	17CP-00001
25mm(1")	210	17CP-00002
33mm(1-5/16")	280	17CP-00003

Outside Diameter	Length	Order No.
38mm(1-1/2")	320MM	17CP-00004
50mm(2")	425MM	17CP-00005

### Die Stocks, Zinc Alloy Steel

- ◆ Zinc Alloy steel
- ◆ Designed to hold a range of different sizes of round split-adjustable dies



Die Size	O.D. (mm)	Thickness (mm)	Order No.	Die Size	O.D. (mm)	Thickness (mm)	Order No.
M1 - M2.6	16	5	17CP-00006	M12 - M14	38	38	17CP-00011
M3 - M4	20	5	17CP-00007	M16 - M20	45	45	17CP-00012
M5 - M6	20	7	17CP-00008	M22 - M24	55	55	17CP-00013
M7 - M9	25	9	17CP-00009	M27 - M36	65	65	17CP-00014
M10 - M11	30	11	17CP-00010				

### Ratchet Tap Wrenches

- ◆ Manufactured from hardened and tempered steel
- ◆ Switchable between forward and reverse couple with the multi positional sliding T bar.
- ◆ Ideal for use in confined spaced.



For Tap Size	Overall Length (mm)	Order No.	
<b>Standard Type</b>			
M3 - M10	1/8" - 3/8"	85	17CL-00017
M5 - M12	7/32" - 1/2"	100	17CL-00018
<b>Long Type</b>			
M3 - M10	1/8" - 3/8"	250	17CL-00019
M5 - M12	7/32" - 1/2"	300	17CL-00020

### Bar type Tap Wrenches

- ◆ Ductile steel body with a knurled locking nut ensuring no loss of grip during use.



Square size	length	Order No.	Square size	length	Order No.
1.5-5.0	105MM	17CL-00014	2.5-9.0	220MM	17CL-00016
2.0-7.2	156MM	17CL-00015			

### 7-Pc Spiral Point HSS Machine Tap Set

- ◆ DIN371 Standard

M	DIN 371	HSS	ISO 2 6H			
Contents		Order No. Plastic Box	Order No. Metal Box			
M3, M4, M5, M6, M8, M10, M12		27AO-0001B	27AO-0002B			



### 7-Pc Spiral flute HSS Machine Tap Set

- ◆ DIN371 Standard

M	DIN 371	HSS	ISO 2 6H			
Contents		Order No. Plastic Box	Order No. Metal Box			
M3, M4, M5, M6, M8, M10, M12		27AO-0001C	27AO-0002C			



### 7-Pc Straight Flute HSS Machine Tap Set

- ◆ DIN371 Standard

M	DIN 371	HSS	ISO 2 6H			
Contents		Order No. Plastic Box	Order No. Metal Box			
M3, M4, M5, M6, M8, M10, M12		27AO-0001A	27AO-0002A			



HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### 14-Pc HSS Drill & Tap Set in Plastic Box

- ◆ Taps: DIN371 Standard
- ◆ Drills: DIN338 Standard



Contents	Order No. HSS
M3, M4, M5, M6, M8, M10, M12 2.5, 3.3, 4.2, 5.0, 6.8, 8.5, 10.2(mm)	27AO-00003



### 22-Pc HSS Tap Set in Metal Box

- ◆ DIN352 Standard



Contents	Order No. HSS
M3, M4, M5, M6, M8, M10, M12 M3-M12	27AO-00004

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.



### 32-Pc Tap & Die Set

- ◆ DIN352 Standard



Contents	Size	Order No. HSS
7Pc Dies	3×0.5,4×0.7,5×0.8,6×1,8×1.25,10×1.5,12×1.75	27AP-00001
7Pc Taper Taps	3×0.5,4×0.7,5×0.8,6×1,8×1.25,10×1.5,12×1.75	
7Pc Plug Taps	3×0.5,4×0.7,5×0.8,6×1,8×1.25,10×1.5,12×1.75	
7Pc Bottoming Taps	3×0.5,4×0.7,5×0.8,6×1,8×1.25,10×1.5,12×1.75	
Tap Wrench	M3-M12	
Die Wrench	25mm O/D	
Screwdriver	Flat 6mm	
Screw Pitch Gauge	0.4~0.6mm	

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.



### 32-Pc UNC Tap & Die Set

- ◆ Taps: DIN352 Standard
- ◆ Dies: DIN223 Standard



Contents	Size	Order No. HSS
7Pc Dies	1/8", 5/32", 3/16", 1/4", 5/16", 3/8", 1/2"	27AP-00002
7Pc Taper Taps	1/8", 5/32", 3/16", 1/4", 5/16", 3/8", 1/2"	
7Pc Plug Taps	1/8", 5/32", 3/16", 1/4", 5/16", 3/8", 1/2"	
7Pc Bottoming Taps	1/8", 5/32", 3/16", 1/4", 5/16", 3/8", 1/2"	
Tap Wrench	No.1-1/2	
Die Wrench	1"	
Screwdriver	Flat 6mm	
Screw Pitch Gauge	SAE 12-40TPI	

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.

### 54-Pc Tap & Die Set in Metal Box

- ◆ DIN352 Standard



Contents	Size	Order No. HSS
11Pc Dies	M3, M4, M5, M6, M8, M10, M12, M14, M16, M18, M20	27AP-00003
33Pc Taps(Set of 3)	M3, M4, M5, M6, M8, M10, M12, M14, M16, M18, M20	
6Pc Die Stock	20×5, 20×7, 25×9, 30×11, 38×14, 45×18	
2Pc Tap Wrench	M1-M10, M5-M20,	
1Pc Screwdriver	Flat 6mm	
1Pc Metric Screw Pitch Gauge	0.4~0.6mm	

HSS-E / Alloy Steel / TiCN / TiAlN / TiN are available according to requirements.