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Email: sales@duramill.ca
Tel: (905) 738-8665 | Fax: (905) 738-4862
www.duramill.ca

21 Bradwick Drive, Units 2-3, Concord ON L4K 1K6

Vol 2

OSG's A Brand® Tap Lineup

A-TAPS

A-NPT • A-LT-NPT • A-BSPP • A-BSPT • A-NPS • AT-1 • A-CSF • A-CHT • A-SFT
A-OIL-SFT • A-LT-SFT • A-POT • A-OIL-POT • A-LT-POT

The A Brand

A-Taps *Taps Designed with A Brand Values in Mind*

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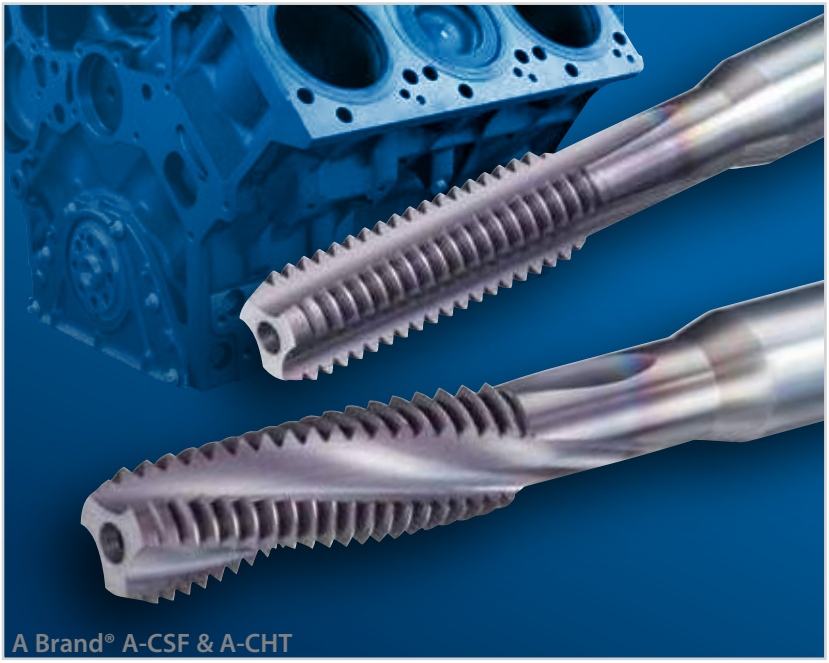
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A Brand® A-SFT & A-POT

A Brand® A-SFT

A Brand® A-SFT

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A Brand® AT-1

A Brand® A-SFT

The A Brand Story

The joy of delivering new values

The A Brand represents a new evolution in cutting tool technology. With a commitment to only the best, the A Brand emanates innovations essential for shaping the future of global manufacturing. The A Brand is not only a premium tooling brand, it also represents the quality assurance OSG guarantees to each and every customer. The A Brand is composed of OSG's latest high performance threading, drilling and milling tool innovations. Developed with attention to the finest details, manufacturers will experience the level of quality, reliability and satisfaction that can only be delivered by the A Brand tooling master class.

Advanced tool qualities have been incorporated into the A Brand products, including a versatility that enables a wide range of processing in different work materials, an excellent capability to perform difficult processing tasks, and high efficiency that leads to shortened production time and cost savings. Expectations have risen that the A Brand will bring innovations into the manufacturing field, and pass on OSG's technologies from today to the future. To better understand the concept of the A Brand, interviews were conducted with OSG experts who have devoted their manufacturing careers to the development of A Brand products. They spoke enthusiastically about how their passions underpinned the development process.

The Tooling Master Class

Innovations for shaping the future of global manufacturing

The A Brand *The Tooling Master Class*

LINE-UP

The A Brand is not only a premium tooling brand, it also represents the quality assurance OSG guarantees to each and every customer.

To better accommodate evolving manufacturing needs, the A Brand offering has been expanded. Whether you are looking for better tools or need assistance in choosing the right tool, give one of the A Brand products a try. You will experience a level of quality, reliability and satisfaction that can only be delivered by the A Brand tooling master class.

A-DRILL

A Brand® ADO-TRS 3D & 5D

A Brand® ADF • ADFO • ADFL

A Brand® ADO 3-30D

A Brand® AD 2D & 4D

A Brand® ADO-SUS 3D, 5D & 8D

A Brand® AD-LDS

A-TAP

A Brand® AT-1

A Brand® A-CSF

A Brand® A-CHT

A Brand® A-SFT • A-OIL-SFT • A-LT-SFT

A Brand® A-POT • A-OIL-POT • A-LT-POT

A Brand® A-NPT • A-LT-NPT • A-BSPP • A-BSPT • A-NPS

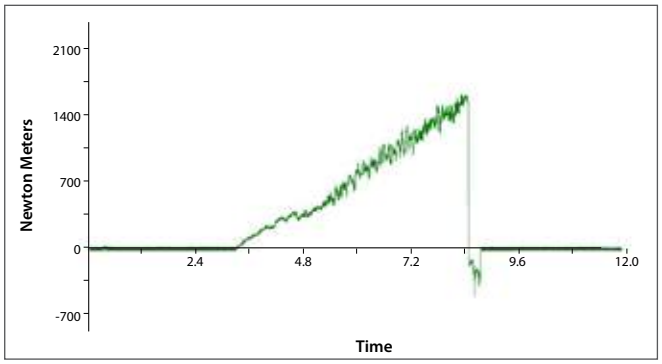
A-END MILL

A Brand® AE-VMS

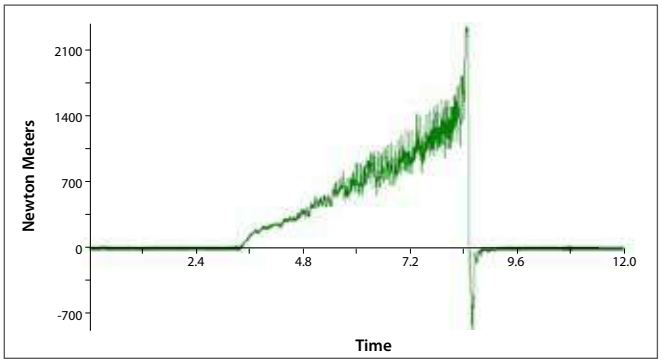
Stabilized Cutting Torque

Comparison

The A Brand® A-NPT tap demonstrates more consistent torque while producing threads than the competitor, resulting in better tool life and thread quality.



A-NPT



Competitor

Interrupted Thread
for reduced cutting torque

Variable Lead Flute
accelerates chip evacuation

Enhanced Cutting Geometry
to eliminate galling

V Coating
for exceptional wear resistance

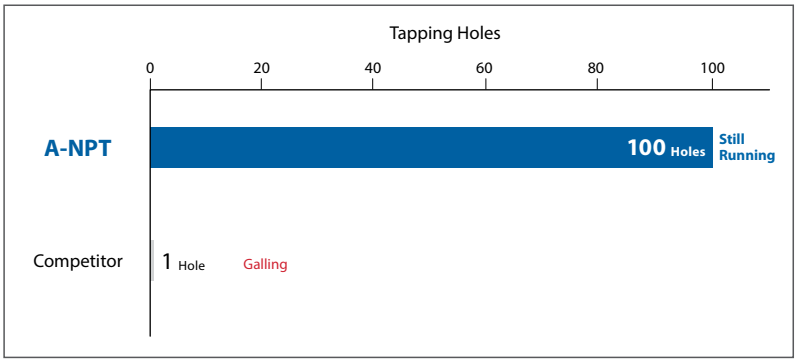
HSSE Substrate
for high wear resistance and toughness

Processing with Taper Pipe Taps

A36 Steel

The A-Pipe taps are able to achieve stable performance beyond 100 holes while the competitor's tool failed to successfully process a single hole.

Tool	A-NPT	Competitor
Tool Size	PT 1/8-28 2.5P	
Work Material	A36 Steel	
Pre-Drilled Hole	Ø0.32" x 0.62" (Through)	
Gage Plane	0.51"	
Cutting Speed	23 SFM (272 RPM)	
Coolant	Water-soluble Chlorine-Free (10%)	
Machine	Horizontal Machining Center	



A-NPT

Competitor

Minimal Wear in Multiple Materials

A36 Steel • Cast Iron • 304 Stainless Steel

The A-NPT showed minimal wear and can continue to be used even after successfully tapping 100 holes in various work materials.

Tool	A-NPT		
Tool Size	PT 1/8-28 2.5P		
Work Material	A36 Steel	Cast Iron	304 Stainless Steel
Pre-Drilled Hole	Ø0.32" x 0.62" (Through)		
Gage Plane	0.51"		
Cutting Speed	16 SFM (190 RPM)		
Coolant	Water-soluble Chlorine-Free (10%)		
Machine	Vertical Machining Center		

A36 Steel

Cast Iron

304 Stainless Steel

List 16570

NEW | HSSE | V | 40°

A-NPT, Interrupted

Units: Inch

Size	Number of Flutes	EDP Number NPT V	Overall Length L	Length of Cut Lc	Neck Length Ln	Shank Diameter d	Square Width k	Square Length lk
1/16 - 27	3	1657001008	3.543	0.689	1.417	0.313	0.234	0.374
1/8 - 27 (Sm. Shk)		1657002008		0.752	1.457			
1/8 - 27 (Lg. Shk)		1657003008				0.438	0.328	
1/4 - 18		1657004008	3.937	1.063	1.929	0.563	0.421	0.437
3/8 - 18	4	1657005008			1.969	0.700	0.531	0.500
1/2 - 14		1657006008	4.921	1.374	2.362	0.688	0.515	0.626
3/4 - 14		1657007008	5.511		2.913	0.906	0.679	0.689
1 - 11,1/2		1657008008	6.299	1.752	3.150	1.125	0.843	0.811

Packed: 1 pc.
Available in V coating only.

ATP

Work Material

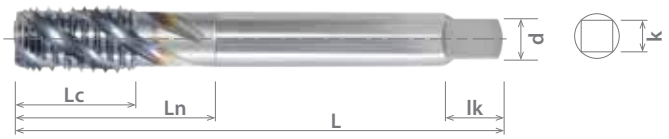
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16570	best	best	best	best	good	good	good		good		best		good	best			
SFM	5-35	5-35	5-35	5-20	5-20	5-20	5-20		5-20		5-35		5-10	5-20			

good best

List 16575

NEW | HSSE | V | 40°

A-LT-NPT, Long Shank, NPT, Interrupted



Units: Inch

Size	Number of Flutes	EDP Number NPT V	Overall Length L	Length of Cut Lc	Neck Length Ln	Shank Diameter d	Square Width k	Square Length lk
1/16 - 27	3	1657501008	4.000	0.689	1.614	0.313	0.234	0.374
		1657502008	6.000		2.402			
1/8 - 27 (Sm. Shk)		1657503008	4.000	0.752	1.614			
		1657504008	6.000		2.402			
1/8 - 27 (Lg. Shk)		1657505008	4.000		1.614	0.438	0.328	
		1657506008	6.000		2.402			
1/4 - 18		1657507008	4.000	1.063	1.929	0.563	0.421	0.437
		1657508008	6.000		2.402			
3/8 - 18	4	1657509008	4.000		1.969	0.700	0.531	0.500
		1657510008	6.000		2.402			
1/2 - 14		1657511008	4.000	1.374	2.362	0.688	0.515	0.626
		1657512008	6.000		2.402			
3/4 - 14		1657513008	4.000		2.504	0.906	0.679	0.689
		1657514008	6.000		2.913			
1 - 11,1/2		1657515008	4.000	1.752	2.504	1.125	0.843	0.811
		1657516008	6.000		3.150			

Packed: 1 pc.
Available in V coating only.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16575	best	best	best	best	good	good	good		good		best		good	best			
SFM	5-35	5-35	5-35	5-20	5-20	5-20	5-20		5-20		5-35		5-10	5-20			

good best

List 16590

NEW | HSSE | V | 40°

A-NPS

Units: Inch

Size	Number of Flutes	EDP Number	Overall Length	Length of Cut	Neck Length	Shank Diameter	Square Width	Square Length
		NPS						
		V	L	Lc	Ln	d	k	lk
1/16 - 27	3	1659001008	3.543	0.551	1.417	0.313	0.234	0.374
1/8 - 27 (Sm. Shk)		1659002008			1.457			
1/8 - 27 (Lg. Shk)		1659003008				0.438	0.328	
1/4 - 18		1659004008	3.937	0.748	1.929	0.563	0.421	0.437
3/8 - 18	4	1659005008		0.827	1.969	0.700	0.531	0.500
1/2 - 14		1659006008	4.921	1.024	2.362	0.688	0.515	0.626
3/4 - 14		1659007008	5.511	1.102	2.913	0.906	0.679	0.689
1 - 11,1/2		1659008008	6.299	1.299	3.150	1.125	0.843	0.811

Packed: 1 pc.
Available in V coating only.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16590	best	best	best	best	good	good	good		good		best		good	best			
SFM	5-35	5-35	5-35	5-20	5-20	5-20	5-20		5-20		5-35		5-10	5-20			

good best

List 16585

NEW | HSSE | V | 40°

A-BSPT, Interrupted Thread

Units: Inch

Size	Number of Flutes	EDP Number	Overall Length	Length of Cut	Neck Length	Shank Diameter	Square Width	Square Length
		NPT						
		V	L	Lc	Ln	d	k	lk
1/8 - 28	3	1658501008	3.543	0.591	1.457	0.313	0.234	0.374
1/4 - 19		1658502008	3.937	0.748	1.929	0.563	0.421	0.437
3/8 - 19	4	1658503008		0.827	1.969	0.700	0.531	0.500
1/2 - 14		1658504008	4.921	1.024	2.362	0.688	0.515	0.626
3/4 - 14		1658505008	5.511	1.102	2.913	0.906	0.679	0.689
1 - 11		1658506008	6.299	1.299	3.150	1.125	0.843	0.811

Packed: 1 pc.
Available in V coating only.

ATP

Work Material

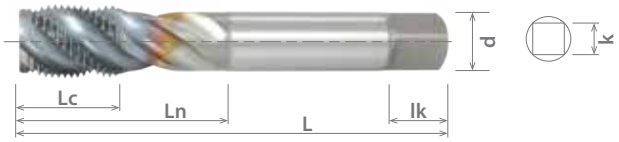
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16585	best	best	best	best	good	good	good		good		best		good	best			
SFM	5-35	5-35	5-35	5-20	5-20	5-20	5-20		5-20		5-35		5-10	5-20			

good best

List 16580

NEW | HSSE | V | 40°

A-BSPP



Units: Inch

Size	Number of Flutes	EDP Number NPT V	Overall Length L	Length of Cut Lc	Neck Length Ln	Shank Diameter d	Square Width k	Square Length lk
1/8 - 28	3	1658001008	3.543	0.591	1.457	0.313	0.234	0.374
1/4 - 19		1658002008	3.937	0.748	1.929	0.563	0.421	0.437
3/8 - 19	4	1658003008		0.827	1.969	0.700	0.531	0.500
1/2 - 14		1658004008	4.921	1.024	2.362	0.688	0.515	0.626
3/4 - 14		1658005008	5.511	1.102	2.913	0.906	0.679	0.689
1 - 11		1658006008	6.299	1.299	3.150	1.125	0.843	0.811

Packed: 1 pc.
Available in V coating only.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16580	best	best	best	best	good	good	good		good		best		good	best			
SFM	5-35	5-35	5-35	5-20	5-20	5-20	5-20		5-20		5-35		5-10	5-20			

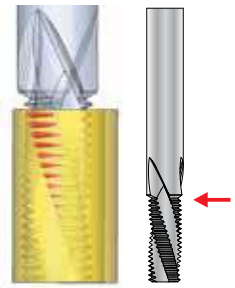
good best

1-Pass Cutting

Left Hand Helix Reduces Deflection for 1-Pass Cutting

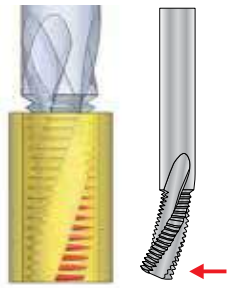
The AT-1 is designed with a left hand helix and starts cutting from the shank side, reducing deflection, preventing bending, thus allowing for 1-pass cutting and reducing overall cutting time.

AT-1
Left Hand Helix



Starts cutting from the shank side
Result: Reduced deflection
Note: Climb milling recommended

Conventional
Right Hand Helix



Starts cutting from the tip
Result: Big deflection

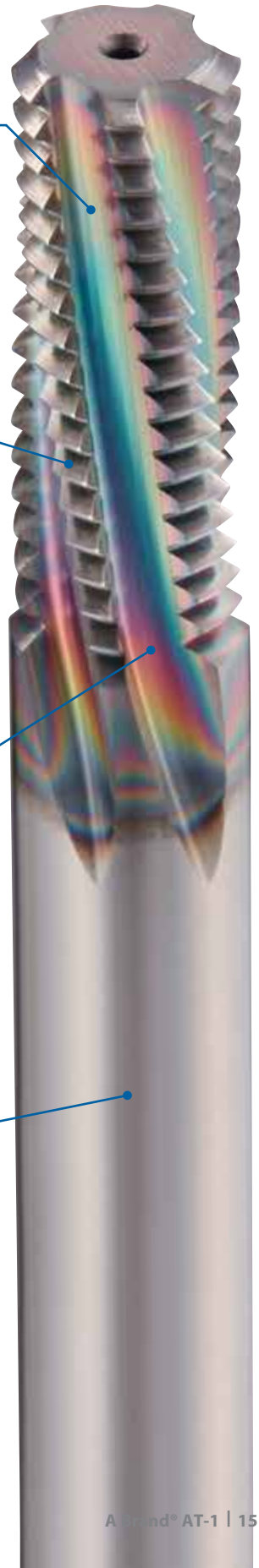
Superior Internal Threads

Superior Threads Made in Just 1-Pass

Tool	AT-1 (List 16620)	Conventional
Size	Ø19.7mm • 54mm Length of Cut	
Thread Size	M24 x 3	
Work Material	304 Stainless Steel	
Tapping Depth	45mm (full depth)	
Cutting Speed	131 SFM (646 RPM)	
Feed	5.9 IPM (0.0016 IPT)	
Number of Passes	1	2
Coolant	Water-Soluble	
Machine	Horizontal Machining Center	

AT-1
1-Pass

Conventional
2-Pass



Unequal Spacing/ Variable Lead Flute
for reduced vibration

Right-Hand Cut & Left-Hand Helix Geometry
increases tool stability

EgiAs Coating
for exceptional wear resistance

Ultra-Fine Grain Carbide
for high wear resistance and toughness

Effects of Left-Hand Helix

Alloy Steel (4140)

The AT-1 threadmill is designed with a left-hand helix for a small pitch diameter difference between the hole entry and the bottom of the hole, allowing a delay in gauge-out failure. Longer tool life can be achieved with elimination of "zero cutting" for correcting bending.

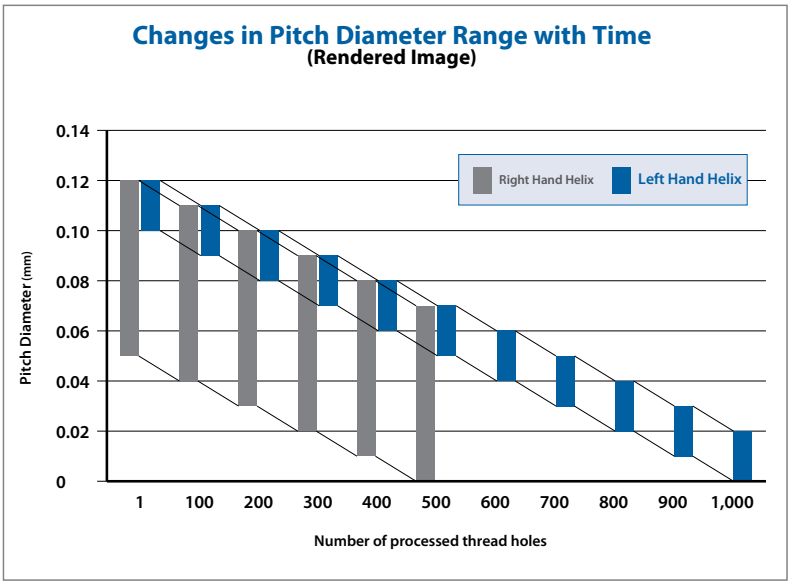
Tool	AT-1 (List 16620)	Conventional
Size	Ø7.7mm • 22mm Length of Cut	
Thread Size	M10 x 1	
Work Material	4140 Alloy Steel	
Tapping Depth	15mm (Blind)	
Cutting Speed	328 SFM (4,136 RPM)	
Feed	15 IPM (0.0009 IPT)	
Number of Passes	1	
Coolant	Water-Soluble	
Machine	Vertical Machining Center	

Right & Left-Hand Helix Comparison
Internal Thread Pitch Dia. at Initial Cutting Stage

Unit: mm

	Hole Entry	Inner Hole Area	Dia. Difference
Right-Hand Helix	+0.120 ~ +0.140	+0.040 ~ +0.060	0.060 ~ 0.100
Left-Hand Helix	+0.120 ~ +0.140	+0.120 ~ +0.140	**0 ~ 0.020**

Pitch Diameter Measurement Method: Step Gauge

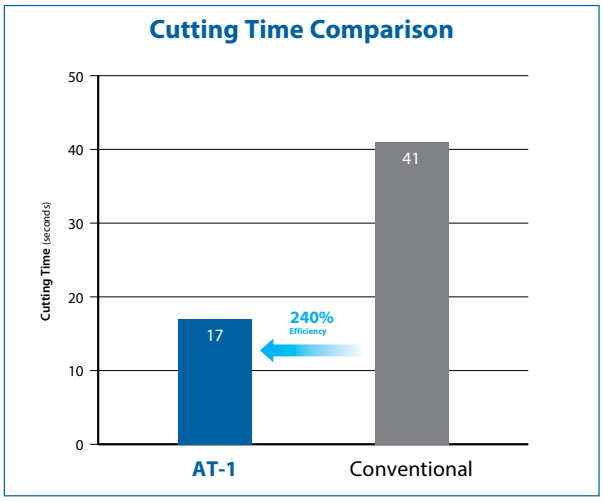


Twice as Fast as Conventional Threadmills

304 Stainless Steel

When processing the same number of thread holes, the AT-1 completed the job in less than half the time of the conventional tool.

Tool	AT-1 (List 16620)	Conventional
Size	Ø9.7mm • 27mm Length of Cut	
Thread Size	M12 x 1.5	
Work Material	304 Stainless Steel	
Tapping Depth	22.5 mm (Through Hole)	
Cutting Speed	328 SFM (3,283 RPM)	393 SFM (4,021 RPM)
Feed	0.49 IPM (0.0004 IPT)	1.65 IPM (0.0004 IPT)
Number of Passes	1	2
Coolant	Water-Soluble	
Machine	Vertical Machining Center	

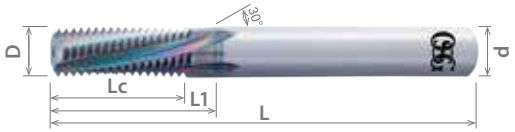


List 16625

SPEED FEED P21 | CARBIDE | EgiAs | 11° | SHANK h6

AT-1, Helical Flute

Type 1



Type 2

Units: Inch

Size	Threads Per Inch	Cutter Diameter	Overall Length	Length of Cut	Neck Length	Shank Diameter	No. of Flutes	Type	EDP Number
		D	L	Lc	L1	d			EgiAs
1/4	20	0.179	3.000	0.600	0.700	1/4	4	1	1662500017
	28			0.607	0.680				1662500117
	32			0.563	0.625				1662500217
5/16	18	0.224		0.778	0.889				1662500317
	24			0.750	0.833				1662500417
	32			0.688	0.750				1662500517
3/8	16	0.264	3.500	0.875	1.000	5/16			1662500617
	24				0.958				1662500717
	32			0.813	0.875				1662500817
7/16	14	0.303		1.071	-			2	1662500917
	20			1.000	-				1662501017
	28			0.964	-				1662501117
1/2	13	0.343		1.154	1.308	3/8	5	1	1662501217
	20			1.100	1.200				1662501317
	28			1.107	1.178				1662501417
9/16	12	0.382	5.000	1.333	1.500	1/2			1662501517
	18			1.278	1.389				1662501617
	24			1.250	1.333				1662501717
5/8	11	0.421		1.454	1.636				1662501817
	18			1.389	1.500				1662501917
	24			1.374	1.458				1662502017
3/4	10	0.461		1.700	1.900				1662502117
	16			1.626	1.750				1662502217
	20			1.600	1.700				1662502317
7/8	9	0.539	5.500	2.000	2.222	5/8			1662502417
	14			1.928	2.071				1662502517
	20			1.850	1.950				1662502617
1	8	0.736	6.000	2.250	2.500	3/4	6		1662502717
	12			2.167	2.334				1662502817
	20			2.100	2.200				1662502917

Packed: 1 pc.
Available in EgiAs coating only.
For internal threads only.

ATP

For more information on thread mill applications, including ThreadPro software, visit: www.osgtool.com/ThreadPro.

ThreadPro

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16625	◎	◎	◎	◎		◎	○	○	◎	◎	◎			◎	◎		

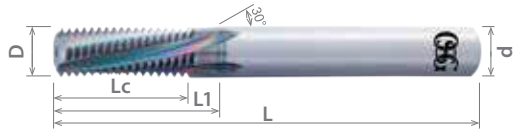
○ good ◎ best

List 16620

SPEED FEED P21 | CARBIDE | EgiAs | 11° | SHANK h6

AT-1, Helical Flute

Type 1



Type 2

Units: mm

Size	Pitch	Cutter Diameter	Overall Length	Length of Cut	Neck Length	Shank Diameter	No. of Flutes	Type	EDP Number
		D	L	Lc	L1	d			EgiAs
M6	1.00	4.50	75.00	14.00	16.00	6.00	4	1	8331001
	0.75			13.50					8331000
M8	1.25	5.70	75.00	18.75	-			2	8331004
	1.00			18.00	-				8331003
M10	1.50	7.70	85.00	24.00	-	8.00			8331007
	1.25			22.50	-				8331006
	1.00			22.00	-				8331005
M12	1.75	9.70	100.00	28.00	-	10.00	5		8331011
	1.50			27.00	-				8331010
	1.25			27.50	-				8331009
	1.00			26.00	-				8331008
M14	2.00	9.70	100.00	32.00	-				8331016
	1.50	10.70	120.00	31.50	34.50	12.00		1	8331015
M16	2.00	11.70		36.00	-			2	8331019
	1.50	13.70	135.00		39.00	16.00		1	8331018
M18	2.50	11.70	120.00	42.50	-	12.00		2	8331020
M20	2.50	13.70	135.00	45.00	50.00	16.00		1	8331022
	1.50	15.70		43.50	-			2	8331021
M24	3.00	19.70	150.00	54.00	-	20.00	6		8331025
	2.00			52.00	-				8331024

Packed: 1 pc.
Available in EgiAs coating only.
For internal threads only.

ATP

For more information on thread mill applications, including ThreadPro software, visit: www.osgtool.com/ThreadPro.

ThreadPro

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16620	◎	◎	◎	◎		◎	○	○	◎	◎	◎			◎	◎		

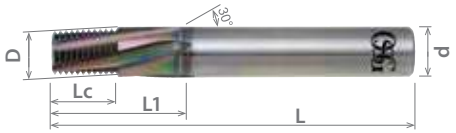
○ good ◎ best

List 16630

SPEED FEED	CARBIDE	EgiAs	11°	SHANK
P21				h6

AT-1, NPT

Type 3



Type 4

Units: Inch

Size	Threads Per Inch	Cutter Diameter	Overall Length	Length of Cut	Neck Length	Shank Diameter	No. of Flutes	Type	EDP Number
		D	L	Lc	L1	d			EgiAs
1/16 or 1/8	27	0.223	3.000	0.407	0.480	1/4	4	3	1663000017
1/8		0.302	3.500		-	5/16		4	1663000117
1/4 or 3/8	18	0.381		0.611	0.720	1/2	5	3	1663000217
3/8		0.461							1663000317
1/2 or 3/4	14	0.617	4.000	0.786	-	5/8		4	1663000417
1 thru 2	11-1/2	0.737		0.957	-	3/4	6		1663000517

Packed: 1 pc.
Available in EgiAs coating only.
For internal and external threads.

ATP

For more information on thread mill applications, including ThreadPro software, visit: www.osgtool.com/ThreadPro.

ThreadPro

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16630	◎	◎	◎	◎		◎	○	○	◎	◎	◎			◎	◎		

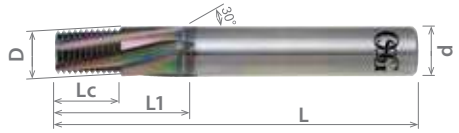
○ good ◎ best

List 16631

SPEED FEED	CARBIDE	EgiAs	11°	SHANK
P21				h6

AT-1, NPTF

Type 3



Type 4

Units: Inch

Size	Threads Per Inch	Cutter Diameter	Overall Length	Length of Cut	Neck Length	Shank Diameter	No. of Flutes	Type	EDP Number
		D	L	Lc	L1	d			EgiAs
1/16 or 1/8	27	0.223	3.000	0.407	0.480	1/4	4	3	1663100017
1/8		0.302	3.500		-	5/16		4	1663100117
1/4 or 3/8	18	0.381		0.611	0.720	1/2	5	3	1663100217
3/8		0.459							1663100317
1/2 or 3/4	14	0.617	4.000	0.786	-	5/8		4	1663100417
1 thru 2	11-1/2	0.737		0.957	-	3/4	6		1663100517

Packed: 1 pc.
Available in EgiAs coating only.
For internal and external threads.

ATP

For more information on thread mill applications, including ThreadPro software, visit: www.osgtool.com/ThreadPro.

ThreadPro

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16631	▢	▢	▢	▢		▢	○	○	▢	▢	▢			▢	▢		

○ good ▢ best

List 16620/16625 - A Brand® AT-1: Inch/Metric
List 16630/16631 - A Brand® AT-1: NPT/NPTF

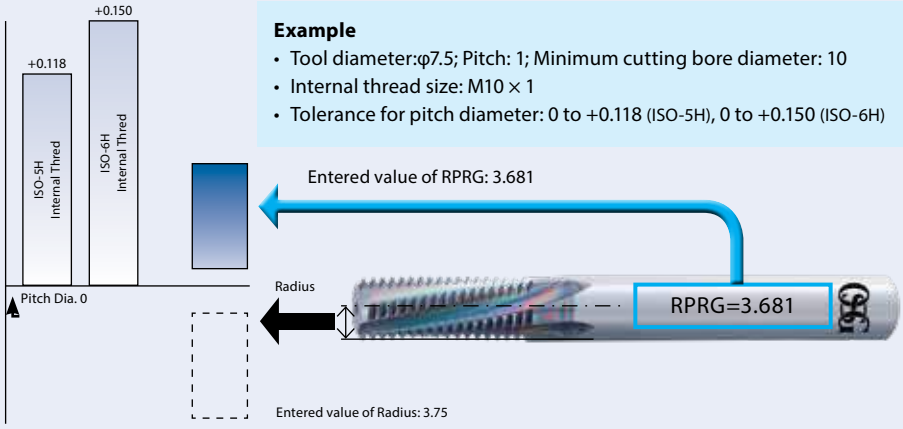
Work Material		Cutting Speed SFM	Feed Rate (in/t)
Low Carbon Steel	~C0.25%	260 - 790	0.0004 - 0.002
Medium Carbon Steel	C0.25%~0.45%	260 - 790	0.0004 - 0.002
High Carbon Steel	C0.45%~	260 - 790	0.0004 - 0.002
Alloy Steel	SCM	200 - 650	0.0004 - 0.002
Hardened Steel	25-45 HRC	260 - 650	0.0004 - 0.002
	45-55 HRC	-	-
	50-60 HRC	-	-
Stainless Steel	SUS	200 - 790	0.0004 - 0.002
Tool Steel	SKD	-	-
Cast Steel	SC	200 - 790	0.0004 - 0.002
Cast Iron	FC	260 - 790	0.0004 - 0.002
Ductile Cast Iron	FCD	200 - 790	0.0004 - 0.002
Copper	Cu	260 - 790	0.001 - 0.004
Brass	Bs	260 - 790	0.001 - 0.004
Brass Casting	BsC	260 - 790	0.001 - 0.004
Bronze	PB	260 - 790	0.001 - 0.004
Aluminum	Al	260 - 790	0.001 - 0.004
Aluminum Alloy Casting	AD, ADC	330 - 1000	0.002 - 0.008
Magnesium Alloy Casting	MC	330 - 1000	0.002 - 0.008
Zinc Alloy Casting	ZDC	330 - 1000	0.002 - 0.008
Titanium Alloy	Ti-6Al-4V	-	-
Nickel Alloy	Inconel	-	-
Thermosetting Plastic	-	260 - 650	0.001 - 0.004
Thermo Plastic	-	260 - 650	0.001 - 0.004

1. The indicated speeds and feeds are for water-soluble coolant.
2. Water-soluble coolant is not suitable for threading magnesium alloy.
3. Please adjust the cutting conditions depending on the rigidity of the machine, tool holders, and workpiece clamping.
4. If the threading length is long, or when machining a large-pitch thread, reduce the feed rate and take multiple passes.
5. If a machined parallel internal thread is tapered and prevents the go-gauge from going through, add a zero cut/spring pass.

Radius Offset (RPRG)

RPRG is the reference value of tool radius offset.

Conventionally, the tool radius was entered during setup as a parameter of the NC system, which was corrected by checking the thread with a gauge. However, it has become possible to reduce the checking and correction simply by entering the RPRG value indicated on the tool shank.



Example

- Tool diameter:φ7.5; Pitch: 1; Minimum cutting bore diameter: 10
- Internal thread size: M10 × 1
- Tolerance for pitch diameter: 0 to +0.118 (ISO-5H), 0 to +0.150 (ISO-6H)

NOTES:

1. RPRG are reference values. Determine optimal values after trial cutting as values depend on machining environment.
2. RPRG values are optimally established to achieve ISO:5H (formerly Grade 1) internal thread limits for metric threads and ANSI:3B internal thread limits for unified threads. RPRG values established for taper pipes (R/Rc) are effective when using the thread milling NC code generator software ThreadPro available on our website.
3. For diameters of thread mills, RPRG values are calculated based on the minimum cutting bore diameter (the minimum cutting internal thread size of the tool diameter). To cut other diameters, it is necessary to use a smaller value than RPRG.

ThreadPro (Thread Milling NC Code Generator Software)

www.osgtool.com/threadpro

- Available in 12 different languages
- Supports 8 NC programming languages
- Incorporates RPRG* value to further simplify process

* RPRG = reference value of tool radius offset

ThreadPro

Powered by AUTODESK

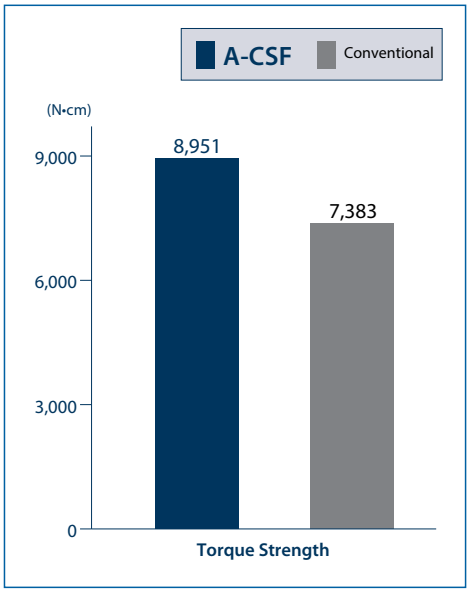
Larger Coolant Hole

1.3 Times More Coolant Flow

Ideal for Cast Iron

Rigid Design Prevents Tool Breakage

Tool	A-CSF
Size	M10 x 1.5
Drill Hole Size	Ø 8.5 x 20mm (Blind)
Work Material	Pearlitic Cast Iron
Tapping Depth	15mm (1.5xD)
Cutting Speed	40 SFM (640 RPM)
Coolant	Water-Soluble (Internal)
Machine	Vertical Machining Center (Synchronized)



*Cutting Torque 650N•cm

Larger Oil Hole Design
for excellent coolant flow

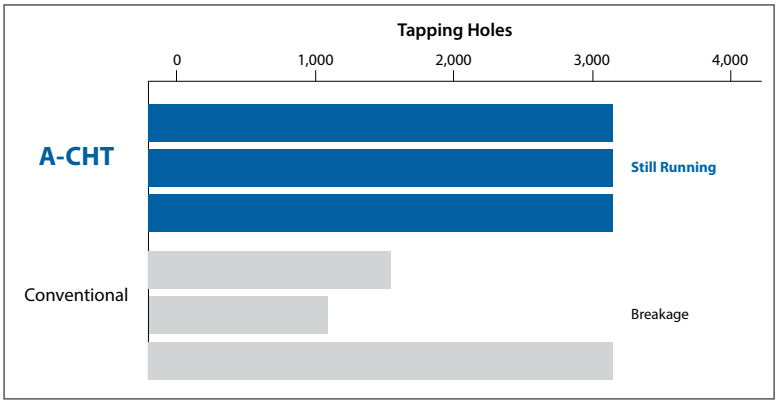
Bright
for greater performance in non-ferrous materials.

Ultra-Fine Grain Carbide
for high wear resistance and toughness

Stable and Consistent Performance

Stable Machining in Ductile Cast Iron

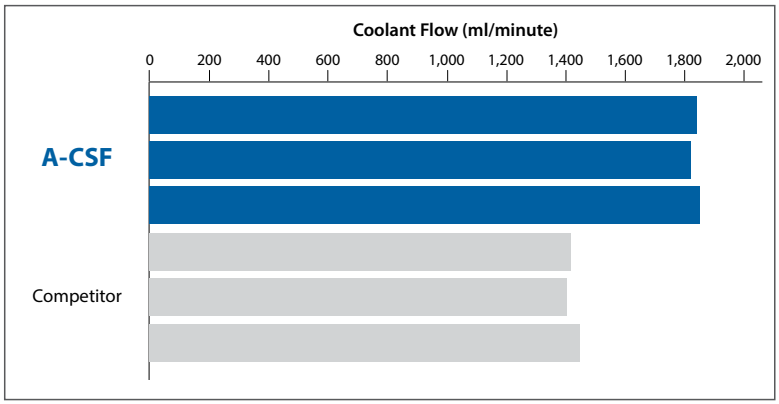
Tool	A-CHT	Conventional
Size	ØM6 x 1	
Drill Hole Size	Ø5mm x 15mm (Blind)	
Work Material	Ductile Cast Iron	
Tapping Depth	12mm (2xD)	
Cutting Speed	100 SFM (1,600 RPM)	
Coolant	Water Soluble Chlorine-Free (10%) (Internal)	
Machine	Horizontal Machining Center (Synchronized)	



Exceptional Coolant Flow

Coolant Flow Amount by Time

Tool	A-CSF	Competitor
Size	ØM6 x 1	
Spindle Speed	61 SFM (1,000 RPM)	
Coolant	Water Soluble Chlorine-Free (10%)	
Coolant Pressure	1 MPa	
Time Run	60 Seconds	



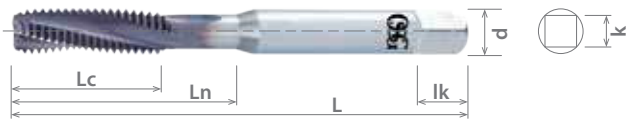
A-CSF

Competitor

List 16605

CARBIDE | BR | 15°

A-CSF, Coolant - Through, DIN Overall Length, Modified Bottom (2.5P), Bottom (1.5P)



Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number		DIN Overall Length	Thread Length	Neck Length	Shank Dia.	Square Width	Square Length
			Bottom (1.5P)	Mod Bottom (2.5P)						
			Bright	Bright	L	Lc	Ln	d	k	lk
1/4 - 20 UNC	H5	3	1660500100	1660500000	3.140	0.598	1.181	0.255	0.191	0.313
1/4 - 28 UNF	H4		1660500300	1660500200						
5/16 - 18 UNC	H5		1660500500	1660500400	3.540	0.665	1.377	0.318	0.238	0.375
3/8 - 16 UNC			1660500700	1660500600	3.930	0.751		0.381	0.286	0.438
7/16 - 14 UNC			1660500900	1660500800		0.858	-	0.322	0.242	0.406
1/2 - 13 UNC			1660501100	1660501000	4.330	0.921	-	0.367	0.275	0.438

Packed: 1 pc.
EDP's listed above are stocked standard, other coatings available upon request.
Specify treatment at time of order.
Note: Reduce SFM 50% - 70% while using external coolant.

ATP

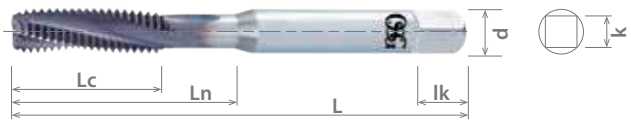
Work Material																	
	P					M			K	N		S		H			
List No.	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16605									best	best	best						
SFM									15-50	30-330	30-330						

good best

List 16600

CARBIDE | BR | 15°

A-CSF, Coolant - Through, DIN Overall Length, Modified Bottom (2.5P), Bottom (1.5P)



Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number		DIN Overall Length	Thread Length	Neck Length	Shank Dia.	Square Width	Square Length
			Bottom (1.5P)	Mod Bottom (2.5P)						
			Bright	Bright	L	Lc	Ln	d	k	lk
M5 x 0.8	D4	3	1660000000	1660000100	70.00	10.00	25.00	4.928	3.86	6.4
M6 x 1.0	D5		1660000200	1660000300	80.00	12.00	31.00	6.477	4.85	7.9
M8 x 1.25			1660000400	1660000500	90.00	15.00	35.00	8.077	6.05	9.5
M10 x 1.5	D6		1660000600	1660000700	100.00	18.00	39.00	9.677	7.26	11.1
M10 x 1.25	D5		1660000800	1660000900						
M12 x 1.75	D6		1660001000	1660001100	110.00	21.00	-	9.322	6.98	

Packed: 1 pc.
EDP's listed above are stocked standard, other coatings available upon request.
Specify treatment at time of order.
Note: Reduce SFM 50% - 70% while using external coolant.

ATP

Work Material																	
	P					M			K	N		S		H			
List No.	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16600									◎	◎	◎						
SFM									15-50	30-330	30-330						

○ good ◎ best

List 16615

CARBIDE BR

A-CHT, Coolant-Through, DIN Overall Length, Bottom (1.5P)

Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Bottom (1.5P) Bright	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
12 - 24 UNC	H3	3	1661500200	3.150	0.500	0.945	0.220	0.165	0.281
12 - 28 UNF			1661500300						
1/4 - 20 UNC	H5		1661500400		0.598	1.181	0.255	0.191	0.313
1/4 - 28 UNF	H4		1661500500						
5/16 - 18 UNC	H5	4	1661500600	3.543	0.665	1.378	0.318	0.238	0.375
5/16 - 24 UNF	H4		1661500700						
3/8 - 16 UNC	H5		1661500800	3.937	0.752		0.381	0.286	0.438
3/8 - 24 UNF	H4		1661500900	3.543					
7/16 - 14 UNC	H5		1661501000	3.937	0.858	-	0.323	0.242	0.406
7/16 - 20 UNF			1661501100						
1/2 - 13 UNC			1661501200	4.331	0.921		0.367	0.275	0.438
1/2 - 20 UNF			1661501300	3.937					

Packed: 1 pc.
EDP's listed above are stocked standard, other coatings available upon request.
Specify treatment at time of order.
Note: Reduce SFM 50% - 70% while using external coolant.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16615									best	best	best						
SFM									15-50	30-330	30-330						

good best

List 16610

CARBIDE BR

A-CHT, Coolant-Through, DIN Overall Length, Bottom (1.5P)

Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Bottom (1.5P) Bright	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M5 x 0.8	D4	3	1661000000	70.00	10.00	25.00	4.93	3.86	6.35
M6 x 1.0	D5		1661000100	80.00	12.00	31.00	6.48	4.85	7.92
M8 x 1.25		4	1661000200	90.00	15.00	35.00	8.08	6.05	9.52
M10 x 1.5	D6		1661000300	100.00	18.00	39.00	9.68	7.26	11.11
M10 x 1.25	D5		1661000400						
M12 x 1.75	D6		1661000500	110.00	21.00	-	9.32	6.98	
M12 x 1.5			1661000600	100.00					
M12 x 1.25			1661000700						

Packed: 1 pc.
EDP's listed above are stocked standard, other coatings available upon request.
Specify treatment at time of order.
Note: Reduce SFM 50% - 70% while using external coolant.

ATP

Work Material																	
	P					M			K	N		S		H			
List No.	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16610									◎	◎	◎						
SFM									15-50	30-330	30-330						

○ good ◎ best

Chip Evacuation

Excellent Chip Evacuation in Various Materials

Most tapping troubles are caused by unstable chip evacuation. The A-Tap series resolves such troubles and is applicable to a wide range of work materials and cutting conditions.

Conventional Tap

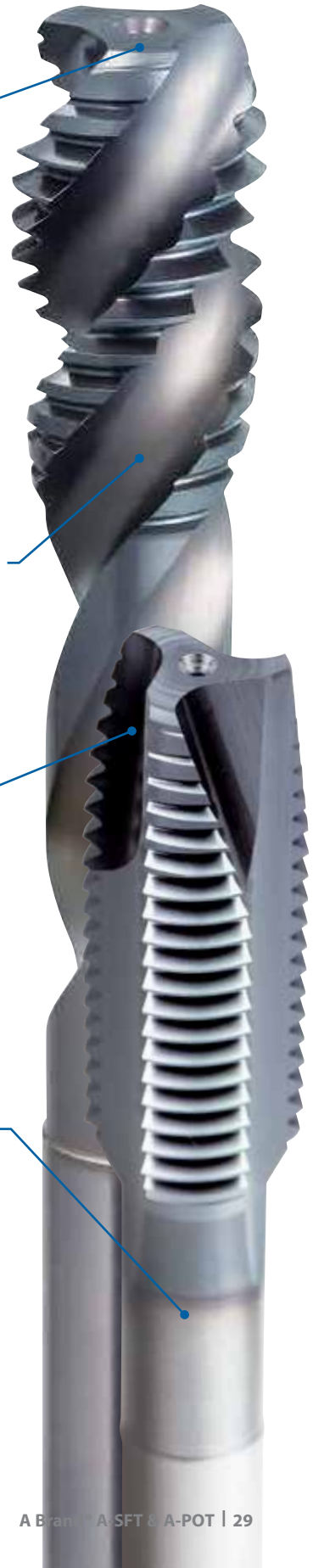
A-SFT

Superior Threads

No Galling of the Work Material

Mild Steel

Stainless Steel



Sharp Cutting Edge
stabilizes chip shape

Variable Lead Flute
accelerates chip evacuation

V Coating
for high wear resistance

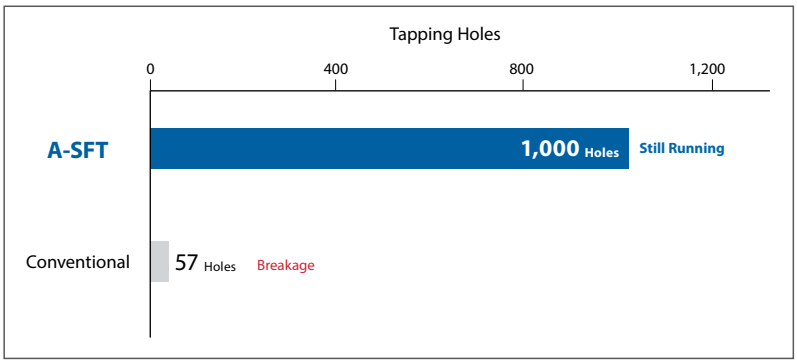
Powder Metallurgy HSS
for high wear resistance and toughness

Deep Hole Tapping in Stainless Steel

304 Stainless Steel

The A-SFT is capable of achieving superior results in stainless steel with water-soluble coolant. Capable of continuing after 1,000 holes while the competitor tool broke after tapping just 57 holes.

Tool	A-SFT	Conventional
Drill Size	ØM8 x 1.25 (2.5P Chamfer)	
Work Material	304 Stainless Steel	
Pre-Drilled Hole	Ø6.8mm x 22mm (Blind)	
Tapping Depth	16mm (2D)	
Cutting Speed	33 SFM (398 RPM)	
Coolant	Water-soluble Chlorine-Free (10%)	
Machine	Vertical Machining Center (Synchronized)	



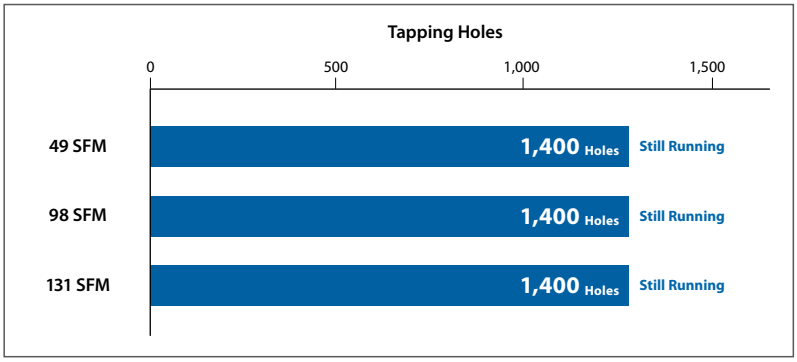
Cutting Edge after Tapping 1,000 Holes

Cutting Speed and Performance Stability

1045 Carbon Steel

The A-SFT maintained stable cutting when tapping at 49, 98 and 131 SFM in carbon steel.

Tool	A-SFT	Conventional
Drill Size	ØM8 x 1.25 (2.5P Chamfer)	
Work Material	304 Stainless Steel	
Pre-Drilled Hole	Ø6.8mm x 22mm (Blind)	
Tapping Depth	16mm (2D)	
Cutting Speed	33 SFM (398 RPM)	
Coolant	Water-soluble Chlorine-Free (10%)	
Machine	Vertical Machining Center (Synchronized)	



Chips Generated at 131 SFM

A-SFT

Conventional Tap

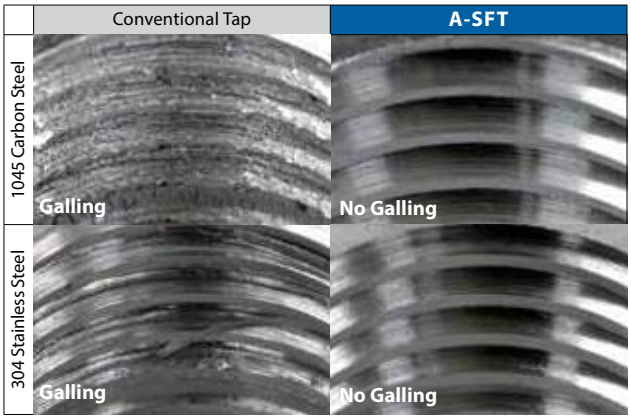
Large Hole Threading

1045 Carbon Steel and 304 Stainless Steel

The use of water-soluble coolant is possible even in difficult to machine materials such as carbon steels and stainless steels, which could not be achieved with conventional taps.

Tool	A-SFT	Conventional
Drill Size	ØM36 x 4	
Work Material	1045 Carbon Steel 304 Stainless Steel	
Pre-Drilled Hole	Ø32mm x 70mm (Blind)	
Tapping Depth	54mm (1.5D)	
Cutting Speed	23 SFM (62 RPM)	
Coolant	Water-soluble Chlorine-Free (20%)	
Machine	Horizontal Machining Center	

Visual Reference of Internal Threads.
(Results may vary based on machining conditions.)

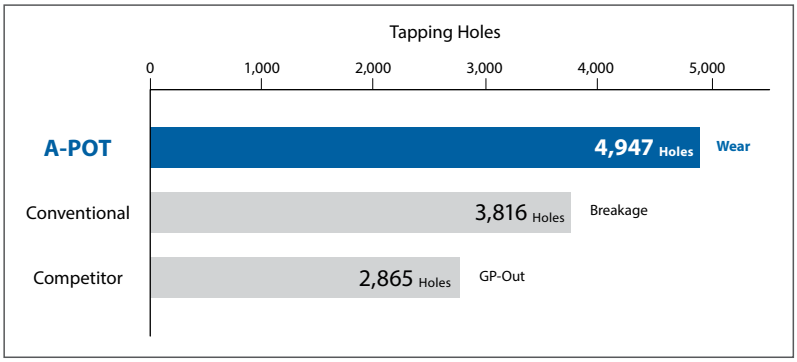


Maximize the Performance of Your Machine

Carbon Steel (1045)

The A-POT greatly outperformed the competitor and conventional taps.

Tool	A-POT	Conventional	Competitor
Drill Size	ØM8 x 1.25		
Work Material	1050 Steel		
Pre-Drilled Hole	Ø6.8mm x 16mm (Through)		
Tapping Depth	16mm (2D)		
Cutting Speed	98 SFM (1,190 RPM)		
Coolant	Water-soluble Chlorine-Free (10%)		
Machine	Horizontal Machining Center (Synchronized)		

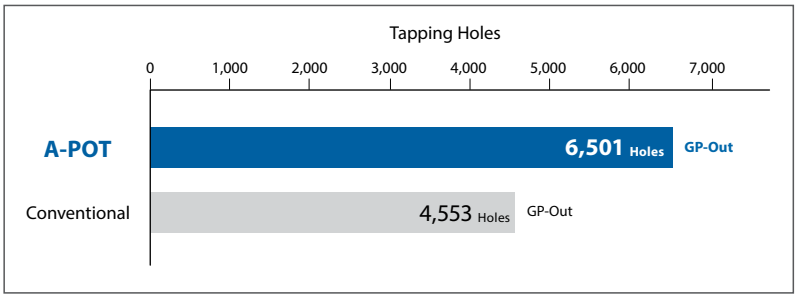


High Speed Machining

Carbon Steel (1045)

The A-POT achieved 1.5 times the durability compared to conventional taps.

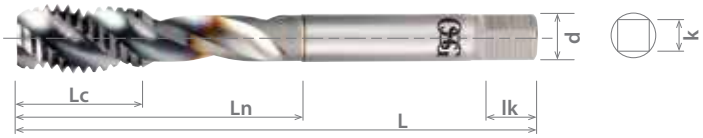
Tool	A-POT	Conventional
Drill Size	ØM8 x 1.25	
Work Material	1045 Steel	
Pre-Drilled Hole	Ø6.8mm x 16mm (Through)	
Tapping Depth	16mm (2D)	
Cutting Speed	164 SFM (1,990 RPM)	
Coolant	Water-soluble Chlorine-Free (10%)	
Machine	Vertical Machining Center (Synchronized)	



List 16505

VC10 | V | Var.°

A-SFT, DIN Overall Length, Modified Bottom (2P-3P), Bottom (1.5P-2P)



Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number		DIN Overall Length	Thread Length	Neck Length	Shank Dia.	Square Width	Square Length
			Bottom (1.5P)	Mod Bottom (2.5P)						
			V	V	L	Lc	Ln	d	k	lk
4 - 40 UNC	H2	2	1650508908	1650500108	2.205	0.196	0.704	0.141	0.110	0.188
4 - 48 UNF			1650509008	1650500208						
5 - 40 UNC			1650509108	1650500308		0.200	0.708			
5 - 44 UNF			1650509208	1650500408						
6-32 UNC		3	1650509308	1650513108		0.248	0.783			
	H3		1650509408	-						
	H2	2	-	1650500608						
	H3		1650513208	1650500508						
6 - 40 UNF	H2	3	1650509508	-						
		2	-	1650500708						
8 - 32 UNC		3	1650509608	-	2.480	0.251	0.826	0.168	0.131	0.250
	H3		1650509708	-						
	H2	2	-	1650500908						
	H3		-	1650500808						
8 - 36 UNF	H2	3	1650509808	-						
		2	-	1650501008						
10 - 24 UNC	H3	3	1650509908	-	2.756	0.326	0.976	0.194	0.152	
		2	-	1650501108						
10 - 32 UNF	H2	3	1650510008	-			1.059			
	H3		1650510108	-						
	H2	2	-	1650501308			0.976			
	H3		-	1650501208						
12 - 24 UNC		3	1650510208	-	3.150	0.330	1.177	0.220	0.165	0.281
		2	-	1650501408						
12 - 28 UNF		3	1650510308	-						
		2	-	1650501508						
12 - 32 UNEF		3	1650510408	-						
		2	-	1650505608						
1/4 - 20 UNC		3	1650510608	-		0.397		0.255	0.191	0.313
	H5		1650510708	-						
	H3	2	-	1650501708						
	H5		-	1650501608						
1/4 - 28 UNF	H3	3	1650510908	-						
	H4		1650510808	-						
	H3	2	-	1650501908						
	H4		-	1650501808						
1/4 - 32 UNEF	H3		1650510508	1650505708						
		3	1650511008	-						
5/16 - 18 UNC			1650511108	1650502108	3.543	0.444	1.377	0.318	0.238	0.375
	H5		1650511208	1650502008						
5/16 - 24 UNF	H3		1650511308	1650502308						
	H4		1650511408	1650502208						
5/16 - 32 UNEF	H3		1650511508	1650505808	3.150					
3/8 - 16 UNC			1650511608	1650502508	3.937	0.500	1.535	0.310	0.286	0.438
	H5		1650511708	1650502408						
3/8 - 24 UNF	H3		1650511808	1650502708	3.543		1.377			
	H4		1650511908	1650502608						
3/8 - 32 UNEF			1650512008	-						
	H3		-	1650505908						
7/16 - 14 UNC	H3		1650512108	1650502908	3.937	0.570	1.712	0.323	0.242	0.406
	H5		1650512208	1650502808						
7/16 - 20 UNF	H3		1650512308	1650503108						
	H5		1650512408	1650503008						
7/16 - 28 UNEF	H4		1650512508	1650506008	3.543					

Packed: 1 pc.
Available V coating only.

ATP

List 16505 (Continued)

VC10 | V | Var.°

A-SFT, DIN Overall Length, Modified Bottom (2P-3P), Bottom (1.5P-2P)

Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Bottom (1.5P) V	EDP Number Mod Bottom (2.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
1/2 - 13 UNC	H3	3	1650512608	1650503308	4.331	0.614	1.933	0.367	0.275	0.438
	H5		1650512708	1650503208						
1/2 - 20 UNF	H3		1650512808	1650503508	3.937					
	H5		1650512908	1650503408						
1/2 - 28 UNEF	H4		1650513008	1650506108						
9/16 - 12 UNC	H3		-	1650503708	4.331	0.665	1.972	0.429	0.322	0.500
	H5		-	1650503608						
9/16 - 18 UNF	H3		-	1650503908	3.937					
	H5		-	1650503808						
9/16 - 24 UNEF	H4		-	1650506208						
5/8-11 UNC	H3		-	1650504108	4.331	0.728	2.125	0.480	0.360	0.563
	H5		-	1650504008						
5/8 - 18 UNF	H3		-	1650504308	3.937					
	H5		-	1650504208						
5/8 - 24 UNEF	H4		-	1650506308						
11/16 - 24 UNEF		4	-	1650506408	4.331	0.909	2.165	0.542	0.406	0.625
3/4 - 10 UNC	H3		-	1650504508	4.921	1.000	2.433	0.590	0.442	0.688
	H5		-	1650504408						
3/4 - 16 UNF	H3		-	1650504708	4.331					
	H5		-	1650504608						
3/4 - 20 UNEF			-	1650506508						
13/16 - 20 UNEF			-	1650506608	4.921			0.652	0.489	
7/8 - 9 UNC	H4		-	1650504908	5.512	1.110	2.653	0.697	0.523	0.750
	H6		-	1650504808						
7/8 - 14 UNF	H4		-	1650505108	4.921					
	H6		-	1650505008						
7/8 - 20 UNEF	H5		-	1650506708						
15/16 - 20 UNEF			-	1650506808	5.512		2.692	0.760	0.570	
1 - 8 UNC	H4		-	1650505308	6.299	1.251	3.011	0.800	0.600	0.813
	H6		-	1650505208						
	H8		-	1650507008						
1 - 12 UNF	H6		-	1650505408	5.512					
	H4		-	1650505508	6.299					
1 - 14 UNS	H6		-	1650513308	5.512					
1 - 20 UNEF	H5		-	1650506908						
1,1/8 - 7 UNC	H9		-	1650507108	7.087	0.944	3.818	0.896	0.672	0.875
1,1/8 - 8 UN			-	1650507208		0.826				
1,1/8 - 12 UNF	H8		-	1650507308	5.906		3.070			
1,1/4 - 7 UNC	H10		-	1650507408	7.087	0.944	3.937	1.021	0.766	1.000
1,1/4 - 8 UN	H9		-	1650507508		0.826				
1,1/4 - 12 UNF	H8		-	1650507608	5.906	0.826	3.070	1.021	0.766	1.000
1,3/8 - 6 UNC	H10		-	1650507708	7.874	1.102	4.527	1.108	0.831	1.063
1,3/8 - 8 UN	H9		-	1650507808		0.826				
1,3/8 - 12 UNF	H8		-	1650507908	6.693		3.582			
1,1/2 - 6 UNC	H10		-	1650508008	7.874	1.102	4.527	1.233	0.925	1.125
1,1/2 - 8 UN	H9		-	1650508108		0.826				
1,1/2 - 12 UNF	H8		-	1650508208	6.693		3.582			
1,5/8 - 8 UN	H10		-	1650508308	7.874		4.330	1.305	0.979	
1,3/4 - 5 UNC	H11		-	1650508408	8.661	1.299	4.724	1.430	1.072	1.250
1,3/4 - 8 UN	H10		-	1650508508	7.874	0.826	3.976			
1,7/8 - 8 UN			-	1650508608	8.858		4.921	1.519	1.139	
2 - 4,1/2 UNC	H12		-	1650508708	9.843	1.456	5.511	1.644	1.233	1.375
2 - 8 UN	H10		-	1650508808	8.858	0.826	4.803			

Packed: 1 pc.
Available V coating only.

ATP

Work Material

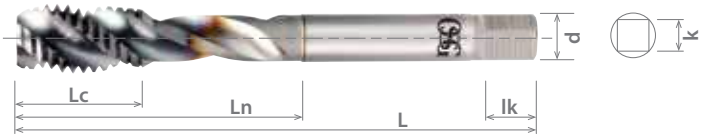
List No.	P Carbon Steels Low 1010 1018	P Carbon Steels Med. 1035 1045	P Carbon Steels High 1065	P Alloy Steels 4140 4340	P Die Steels	M Stainless Steels 300	M Stainless Steels 400	M Stainless Steels 17-4 PH	K Cast Iron	N Aluminum 6061 7075	N Aluminum Casting	S Nickel Alloy Inconel	S Titanium 6Al4V (30 HRC)	H Hardened Steels ~35 HRC	H Hardened Steels 35-45 HRC	H Hardened Steels 45-50 HRC	H Hardened Steels 50-70 HRC
16505	◎	◎	◎	◎	○	◎	◎	◎	○	○	○			◎			
SFM	80-120	80-120	80-120	35-50	20-40	15-35	15-35	15-25	50-80	70-120	70-120			30-55			

○ good ◎ best

List 16500

VC10 | V | Var.°

A-SFT, DIN Overall Length, Modified Bottom (2P-3P), Bottom (1.5P-2P)



Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number		DIN Overall Length	Thread Length	Neck Length	Shank Dia.	Square Width	Square Length
			Bottom (1.5P)	Mod Bottom (2.5P)						
			V	V	L	Lc	Ln	d	k	lk
M1.4 x 0.3	D2	2	-	1650003008	40.00	6.00	11.50	3.581	2.79	4.80
M1.6 x 0.35	D3		-	1650003108		7.00	13.60			
M1.7 x 0.35			-	1650003208		8.00	13.40			
M2 x 0.4			-	1650003408	45.00	3.30	10.00			
M2 x 0.25	D2		-	1650003308						
M2.2 x 0.45	D3		-	1650003608			11.00			
M2.2 x 0.25	D2		-	1650003508						
M2.3 x 0.4	D3		-	1650003708		3.20	11.90			
M2.5 x 0.45			-	1650003908	50.00	3.70	13.00			
M2.5 x 0.35			-	1650003808						
M2.6 x 0.45			-	1650004008						
M3 x 0.5		3	1650009808	1650000108	56.00	4.00	18.00			
M3 x 0.35	D2		1650009708	-						
	D3		-	1650004108						
M3.5 x 0.6			1650010008	1650004308		4.80	20.00			
M3.5 x 0.35			1650009908	1650004208						
M4 x 0.7	D4		1650010208	1650000308	63.00	5.60	20.90	4.267	3.33	6.40
M4 x 0.5	D3		1650010108	1650000208						
M4.5 x 0.75	D4		1650010408	1650004508	70.00	6.10	24.90	4.928	3.86	
M4.5 x 0.5	D3		1650010308	1650004408						
M5 x 0.8	D4		1650010608	1650000508		6.40	25.10			
M5 x 0.5	D3		1650010508	1650000408						
M5.5 x 0.5			1650010708	1650004608	80.00	7.30	30.10	5.588	4.19	7.10
M6 x 1.0	D5		1650011008	1650000808		8.00	29.90	6.477	4.85	7.90
M6 x 0.75	D4		1650010908	1650000708						
M6 x 0.5	D3		1650010808	1650000608						
M7 x 1.0	D5		1650011208	1650004808			30.00	8.077	6.05	9.50
M7 x 0.75	D4		1650011108	1650004708						
M8 x 1.25	D5		1650011508	1650001008	90.00	10.00	35.00			
M8 x 1.0			1650011408	1650000908						
M8 x 0.75	D4		1650011308	1650004908	80.00	8.00	33.00			
M9 x 1.25	D5		1650011808	1650005208	90.00	10.00	35.00	9.677	7.26	11.10
M9 x 1.0			1650011708	1650005108						
M9 x 0.75	D4		1650011608	1650005008		8.00				
M10 x 1.5	D6		1650012208	1650001308	100.00	12.00	39.00			
M10 x 1.25	D5		1650012108	1650001208						
M10 x 1.0			1650012008	1650001108	90.00	10.00	35.00			
M10 X 0.75	D4		1650011908	1650005308						
M11 x 1.5	D6	3	1650012608	1650005608	100.00	12.00	43.50	8.204	6.15	10.30
M11 x 1.25	D5		1650012508	-						
M11 X 1.0			1650012408	1650005508	90.00					
M11 x 0.75	D4		1650012308	1650005408		8.00				
M12 x 1.75	D6		1650013008	1650001708	110.00	14.00	49.10	9.322	6.98	11.10
M12 x 1.5			1650012908	1650001608	100.00					
M12 x 1.25			1650012808	1650001508		12.00				
M12 x 1.0	D5		1650012708	1650001408						
M14 x 2.0	D7		-	1650001908	110.00	16.00	50.10	10.897	8.18	12.70
M14 x 1.5	D6		-	1650001808	100.00					
M14 x 1.25			-	1650005808		12.00				
M14 x 1.0	D5		-	1650005708						
M15 x 1.25	D6		-	1650013208			54.00	12.192	9.14	14.30
M15 X 1.5			-	1650006008		16.00				
M15 x 2	D7		-	1650013108	110.00					
M15 x 1.0	D5		-	1650005908	100.00	12.00				
M16 x 2.0	D7		-	1650002108	110.00	16.00				
M16 x 1.25	D6		-	1650013308	100.00	12.00				
M16 x 1.5			-	1650002008		16.00				
M16 x 1.0	D5		-	1650006108		12.00				

Packed: 1 pc.
Available V coating only.

ATP

List 16500 (Continued)

VC10 | V | Var.°

A-SFT, DIN Overall Length, Modified Bottom (2P-3P), Bottom (1.5P-2P)

Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number		DIN Overall Length	Thread Length	Neck Length	Shank Dia.	Square Width	Square Length
			Bottom (1.5P)	Mod Bottom (2.5P)						
			V	V	L	Lc	Ln	d	k	lk
M17 x 1.5	D6		-	1650006208	100.00	16.00	55.00	13.767	10.31	15.90
M17 x 1.25			-	1650013408		12.00				
M17 x 1.0	D5		-	1650006308					9.31	14.90
M18 x 2.5	D7	4	-	1650002308	125.00	25.00			10.31	15.90
M18 x 2.0			-	1650006508						
M18 x 1.5	D6		-	1650002208	110.00	16.00				
M18 x 1.25			-	1650013508						
M18 x 1.0	D5		-	1650006408	100.00					
M20 x 2.5	D7		-	1650002508	140.00	25.00	61.80	16.561	12.42	17.50
M20 x 2.0			-	1650006708						
M20 x 1.5	D6		-	1650002408	125.00	16.00				
M20 x 1.0	D5		-	1650006608						
M22 x 2.5	D7		-	1650002708	140.00	25.00	67.40	17.704	13.28	19.10
M22 x 2.0			-	1650006908						
M22 x 1.5	D6		-	1650002608	125.00	16.00				
M22 x 1.0	D5		-	1650006808						
M24 x 3.0	D8		-	1650002908	160.00	30.00	68.40	19.304	14.48	
M24 x 2.0	D7		-	1650007108	140.00					
M24 x 1.5	D6		-	1650002808		16.00				
M24 x 1.0	D5		-	1650007008						
M27 x 3.0	D10		-	1650007408	160.00	36.00	80.00	22.758	17.07	22.20
M27 x 2.0	D8		-	1650007308	140.00	24.00	60.00			
M27 x 1.5	D8		-	1650007208						
M30 x 3.5	D11		-	1650007708	180.00	42.00	100.00	25.933	19.46	25.40
M30 x 2.0	D9		-	1650007608	150.00	36.00	70.00			
M30 x 1.5	D8		-	1650007508						
M33 x 3.5	D11		-	1650008008	180.00	42.00	95.00	28.143	21.11	27.00
M33 x 2.0	D9		-	1650007908	160.00	36.00	75.00			
M33 x 1.5	D8		-	1650007808						
M36 x 4.0	D11	4	-	1650008408	200.00	48.00	115.00	31.318	23.50	28.60
M36 X 3.0	D10		-	1650008308		36.00				
M36 x 2.0	D9		-	1650008208	170.00		85.00			
M36 x 1.5	D8		-	1650008108						
M39 x 4.0	D11		-	1650008508	200.00	48.00	110.00	33.147	24.87	
M42 x 3.0	D10		-	1650008808			100.00	36.322	27.23	31.80
M42 x 2.0	D9		-	1650008708	170.00		70.00			
M42 x 4.5	D12		-	1650008908	200.00	54.00	100.00			
M42 x 1.5	D8		-	1650008608	170.00	48.00	70.00			
M45 x 4.5	D12		-	1650009108	220.00	54.00	120.00	38.583	28.93	
M45 x 3.0	D10		-	1650009008	200.00	48.00	100.00			
M48 x 5.0	D13		-	1650009508	250.00	60.00	140.00	41.758	31.32	34.90
M48 x 3.0	D11		-	1650009408	225.00	48.00	115.00			
M48 x 2.0	D9		-	1650009308	190.00		80.00			
M48 x 1.5	D8		-	1650009208						
M56 x 5.5	D14		-	1650009608	250.00	66.00	130.00	48.108	36.07	36.50

Packed: 1 pc.
Available V coating only.

ATP

Work Material

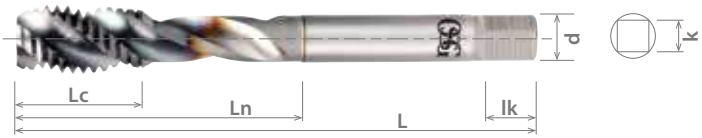
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16500	◎	◎	◎	◎	○	◎	◎	◎	○	○	○			◎			
SFM	80-120	80-120	80-120	35-50	20-40	15-35	15-35	15-25	50-80	70-120	70-120			30-55			

○ good ◎ best

List 16545

VC10 | V | Var.°

A-OIL-SFT, Coolant-Through, DIN Overall Length, Modified Bottom (2.5P)



Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Mod Bottom (2.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
1/4 - 20 UNC	H5	3	1654500108	3.150	0.402	1.181	0.255	0.191	0.313
1/4 - 28 UNF	H4		1654500208		0.402	1.181			
5/16 - 18 UNC	H5		1654500308	3.543	0.445	1.378	0.318	0.238	0.375
5/16 - 24 UNF	H4		1654500408		0.445	1.378			
3/8 - 16 UNC	H5		1654500508	3.937	0.500	1.535	0.381	0.286	0.438
3/8 - 24 UNF	H4		1654500608	3.543	0.500	1.378			
7/16 - 14 UNC	H5		1654500708	3.937	0.571	1.713	0.323	0.242	0.406
7/16 - 20 UNF			1654500808		0.571	1.713			
1/2 - 13 UNC			1654500908	4.331	0.614	1.933	0.367	0.275	0.438
1/2 - 20 UNF			1654501008	3.937	0.614	1.933			
9/16 - 12 UNC			1654501108	4.331	0.665	1.972	0.429	0.322	0.500
9/16 - 18 UNF			1654501208	3.937	0.665	1.972			
5/8 - 11 UNC			1654501308	4.331	0.728	2.126	0.480	0.360	0.563
5/8 - 18 UNF			1654501408	3.937	0.728	2.126			
3/4 - 10 UNC		4	1654501508	4.921	1.000	2.433	0.590	0.442	0.688
3/4 - 16 UNF			1654501608	4.331	1.000	2.433			
7/8 - 9 UNC	H6		1654501708	5.512	1.110	2.654	0.697	0.523	0.750
7/8 - 14 UNF			1654501808	4.921	1.110	2.654			
1 - 8 UNC			1654501908	6.299	1.252	3.012	0.800	0.600	0.813
	H8		1654502008		1.252	3.012			
1 - 12 UNF	H6		1654502108	5.512	1.252	3.012			
1,1/8 - 7 UNC	H9		1654502208	7.087	1.732	3.819	0.896	0.672	0.875
1,1/8 - 8 UN			1654502308		1.496	3.819			
1,1/8 - 12 UNF	H8		1654502408	5.906	1.496	3.071			
1,1/4 - 7 UNC	H10		1654502508	7.087	1.732	3.937	1.021	0.766	1.000
1,1/4 - 8 UN	H9		1654502608		1.496	3.937			
1,1/4-12 UNF	H8		1654502708	5.906	1.496	3.071			
1,3/8 - 6 UNC	H10		1654502808	7.874	2.008	4.528	1.108	0.831	1.063
1,3/8 - 8 UN	H9		1654502908		1.496	4.528			
1,3/8 - 12 UNF	H8		1654503008	6.693	1.496	3.583			
1,1/2 - 6 UNC	H10		1654503108	7.874	2.008	4.528	1.233	0.925	1.125
1,1/2 - 8 UN	H9		1654503208		1.496	4.528			
1,1/2 - 12 UNF	H8		1654503308	6.693	1.496	3.583			
1,5/8 - 8 UN	H10		1654503408	7.874	1.496	4.331	1.305	0.979	
1,3/4 - 5 UNC	H11		1654503508	8.661	2.402	4.724	1.430	1.072	1.250
1,3/4 - 8 UN	H10		1654503608	7.874	2.008	3.976			
1,7/8 - 8 UN			1654503708	8.858	2.008	4.921	1.519	1.139	
2 - 4,1/2 UNC	H12		1654503808	9.843	2.677	5.512	1.644	1.233	1.375
2 - 8 UN	H10		1654503908	8.858	2.008	4.803			

Packed: 1 pc.
Available V coating only.

ATP

Work Material

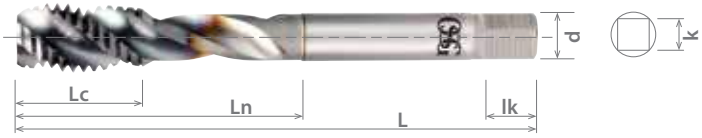
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16545	best	best	best	best	good	best	best	best	good	good	good			best			
SFM	100-200	100-200	100-200	50-100	40-80	25-70	25-70	25-50	60-150	90-220	90-220			50-100			

good best

List 16540

VC10 | V | Var.°

A-OIL-SFT, Coolant-Through, DIN Overall Length, Modified Bottom (2.5P)



Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Mod Bottom (2.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M6 x 1.0	D5	3	1654000208	80.00	8.00	30.00	6.48	4.85	7.90
M6 x 0.75	D4		1654000108						
M7 x 1.0	D5		1654000308	90.00	10.00	35.00	8.08	6.05	9.50
M8 x 1.25			1654000608						
M8 x 1.0			1654000508						
M8 X 0.75	D4		1654000408	80.00	8.00	33.00			
M9 x 1.25	D5		1654000708	90.00	10.00	35.00	9.68	7.26	11.10
M10 x 1.5	D6		1654001008	100.00	12.00	39.00			
M10 x 1.25	D5		1654000908						
M10 x 1.0			1654000808	90.00	10.00	35.00			
M11 x 1.5	D6		1654001108	100.00	12.00	43.50	8.20	6.15	10.30
M12 x 1.75			1654001508	110.00	14.00	49.10	9.32	6.98	11.10
M12 x 1.5			1654001408	100.00					
M12 x 1.25			1654001308		12.00				
M12 x 1.0	D5		1654001208						
M14 x 2.0	D7		1654001708	110.00	16.00	50.10	10.90	8.18	12.70
M14 x 1.5	D6		1654001608	100.00					
M15 x 1.5			1654001808			54.00	12.19	9.14	14.30
M16 x 2.0	D7		1654002008	110.00					
M16 x 1.5	D6		1654001908	100.00					
M17 x 1.5			1654002108			55.00	13.77	10.31	15.90
M18 x 2.5	D7	4	1654002308	125.00	25.00				
M18 x 1.5	D6		1654002208	110.00	16.00				
M20 x 2.5	D7		1654002508	140.00	25.00	61.80	16.56	12.42	17.50
M20 x 1.5	D6		1654002408	125.00	16.00				
M22 x 2.5	D7		1654002808	140.00	25.00	67.40	17.70	13.28	19.10
M22 x 2.0			1654002708						
M22 x 1.5	D6		1654002608	125.00	16.00				
M24 x 3.0	D8		1654003108	160.00	30.00	68.40	19.30	14.48	
M24 x 2.0	D7		1654003008	140.00					
M24 x 1.5	D6		1654002908		16.00				
M27 x 3.0	D10		1654003208	160.00	36.00	80.00	22.76	17.07	22.20
M30 x 3.5	D11		1654003308	180.00	42.00	100.00	25.93	19.46	25.40
M33 x 3.5			1654003408			95.00	28.14	21.11	27.00
M36 x 4.0			1654003508	200.00	48.00	115.00	31.32	23.50	28.60
M39 x 4.0			1654003608			110.00	33.15	24.87	
M42 x 4.5	D12		1654003708		54.00	100.00	36.32	27.23	31.80
M45 x 4.5			1654003808	220.00		120.00	38.58	28.93	
M48 x 5.0	D13		1654003908	250.00	60.00	140.00	41.76	31.32	34.90
M56 x 5.5	D14		1654004008		66.00	130.00	48.11	36.07	36.50

Packed: 1 pc.
Available V coating only.

ATP

Work Material

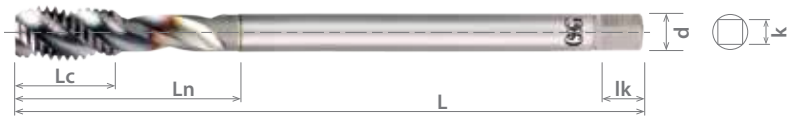
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16540	◎	◎	◎	◎	○	◎	◎	◎	○	○	○			◎			
SFM	100-200	100-200	100-200	50-100	40-80	25-70	25-70	25-50	60-150	90-220	90-220			50-100			

○ good ◎ best

List 16525

VC10 | V | Var.°

A-LT-SFT, Long Shank, Modified Bottom (2.5P)



Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Mod Bottom (2.5P) V	Long Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
4 - 40 UNC	H2	2	1652505608	3.150	0.197	0.705	0.141	0.110	0.188
4 - 48 UNF			1652505708						
5 - 40 UNC			1652500308	3.937	0.201	0.709			
5 - 44 UNF			1652505908						
6 - 32 UNC	H3		1652500608	4.724	0.248	0.783			
6 - 40 UNF	H2		1652500708	3.937					
8 - 32 UNC	H3		1652500908	4.724	0.252	0.827	0.168	0.131	0.250
8 - 36 UNF	H2		1652501008	3.937					
10 - 24 UNC	H3		1652501108	4.921	0.327	0.976	0.194	0.152	
10 - 32 UNF			1652501308	5.906					
12 - 24 UNC			1652501408	4.921	0.331	1.177	0.220	0.165	0.281
12 - 28 UNF			1652501508						
1/4 - 20 UNC	H5		1652501708	5.906	0.398		0.255	0.191	0.313
1/4 - 28 UNF	H4		1652501908						
5/16 - 18 UNC	H5	3	1652502108		0.445	1.378	0.318	0.238	0.375
5/16 - 24 UNF	H4		1652502308						
3/8 - 16 UNC	H5		1652502508		0.500	1.535	0.381	0.286	0.438
3/8 - 24 UNF	H4		1652502708			1.378			
7/16 - 14 UNC	H5		1652502908		0.571	2.362	0.323	0.242	0.406
7/16 - 20 UNF			1652503108						
1/2 - 13 UNC			1652503308	7.087	0.614	2.835	0.367	0.275	0.438
1/2 - 20 UNF			1652503508						
9/16 - 12 UNC			1652503708		0.665		0.429	0.322	0.500
9/16 - 18 UNF			1652503908						
5/8 - 11 UNC			1652504108		0.728		0.480	0.360	0.563
5/8 - 18 UNF			1652504308						
3/4 - 10 UNC		4	1652504508	7.874	1.000	3.150	0.590	0.442	0.688
3/4 - 16 UNF			1652504708						
7/8 - 9 UNC	H6		1652504908		1.110		0.697	0.523	0.750
7/8 - 14 UNF			1652505108						
1 - 8 UNC			1652505308		1.252	3.465	0.800	0.600	0.813
1 - 12 UNF			1652505508						

Packed: 1 pc.
Available V coating only.

ATP

Work Material

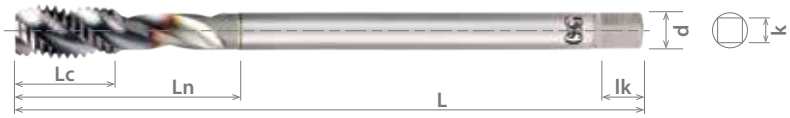
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16525	best	best	best	best	good	best	best	best	good	good	good			best			
SFM	80-120	80-120	80-120	35-50	20-40	15-35	15-35	15-25	50-80	70-120	70-120			30-55			

good best

List 16520

VC10 | V | Var.°

A-LT-SFT, Long Shank, Modified Bottom (2.5P)



Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Mod Bottom (2.5P) V	Long Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M3 x 0.5	D3	3	1652001308	100.00	4.10	18.10	3.58	2.79	4.80
M3 x 0.35			1652001208						
M3.5 x 0.6			1652001508		4.80	20.00			
M3.5 x 0.35			1652001408						
M4 x 0.7	D4		1652001708		5.60	21.00	4.27	3.33	6.40
M4 x 0.5	D3		1652001608						
M4.5 x 0.75	D4		1652001908		6.10	25.10	4.93	3.86	
M4.5 x 0.5	D3		1652001808						
M5 x 0.8	D4		1652002108	125.00	6.40	25.00			
M5 x 0.5	D3		1652002008						
M5.5 x 0.5			1652002208		7.30	30.10	5.59	4.19	7.10
M6 x 1.0	D5		1652002708	150.00	8.00	30.00	6.48	4.85	7.90
M6 x 0.75	D4		1652002508						
M6 x 0.5	D3		1652002308	125.00					
M8 x 1.25	D5		1652003708	150.00	10.00	35.00	8.08	6.05	9.50
M8 x 1.0			1652003508						
M8 x 0.75	D4		1652003308		8.00	33.00			
M10 x 1.5	D6		1652005108		12.00	39.00	9.68	7.26	11.10
M10 x 1.25	D5		1652004908						
M10 x 1.0			1652004708		10.00	35.00			
M10 x 0.75	D4		1652004508						
M12 x 1.75	D6		1652006708	180.00	14.00	72.00	9.32	6.98	
M12 x 1.5			1652006508						
M12 x 1.25			1652006308		12.00				
M12 x 1.0	D5		1652006108						
M14 x 2	D7		1652007108	150.00	16.00	60.00	10.90	8.18	12.70
M14 x 1.5	D6		1652007008						
M14 x 1.25			1652006908		12.00				
M14 x 1.0	D5		1652006808						
M15 x 1.5	D6		1652007308	160.00	16.00	64.00	12.19	9.14	14.30
M15 x 1.0	D5		1652007208		12.00				
M16 x 2.0	D7		1652007708	180.00	16.00	72.00			
M16 x 1.5	D6		1652007508	160.00		64.00			
M16 x 1.0	D5		1652007408		12.00				
M18 x 2.5	D7	4	1652008308	180.00	25.00	72.00	13.77	10.31	15.90
M18 x 2.0			1652008208						
M18 x 1.5	D6		1652008108		16.00				
M18 x 1.0	D5		1652008008						
M20 x 2.5	D7		1652008708	200.00	25.00	80.00	16.56	12.42	17.50
M20 x 2.0			1652008608						
M20 x 1.5	D6		1652008508		16.00				
M20 x 1.0	D5		1652008408						
M22 x 2.5	D7		1652009108		25.00		17.70	13.28	19.10
M22 x 2.0			1652009008						
M22 x 1.5	D6		1652008908		16.00				
M22 x 1.0	D5		1652008808						
M24 x 3.0	D8		1652009508		30.00	83.00	19.30	14.48	
M24 x 2.0	D7		1652009408						
M24 x 1.5	D6		1652009308		16.00				
M24 x 1.0	D5		1652009208						

Packed: 1 pc.
Available V coating only.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16520	◎	◎	◎	◎	○	◎	◎	◎	○	○	○			◎			
SFM	80-120	80-120	80-120	35-50	20-40	15-35	15-35	15-25	50-80	70-120	70-120			30-55			

○ good ◎ best

List 16515

VC10 V

A-POT, DIN Overall Length, Plug (3.5P-4.5P)

Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
2 - 56 UNC	H2	2	1651505608	1.772	0.437	0.476	0.141	0.110	0.188
2 - 64 UNF			1651505708						
3 - 48 UNC			1651505808	1.969	0.500	0.539			
3 - 56 UNF			1651505908						
4 - 40 UNC			1651500108	2.205	0.295	0.704			
4 - 48 UNF			1651500208						
5 - 40 UNC		3	1651500308		0.299	0.708			
5 - 44 UNF			1651500408						
6 - 32 UNC			1651500608		0.370	0.783			
	H3		1651500508						
6 - 40 UNF	H2		1651500708						
8 - 32 UNC			1651500908	2.480	0.374	0.826	0.168	0.131	0.250
	H3		1651500808						
8 - 36 UNF	H2		1651501008						
10 - 24 UNC	H3		1651501108	2.756	0.492	0.976	0.194	0.152	
10 - 32 UNF	H2		1651501308						
	H3		1651501208						
12 - 24 UNC			1651501408	3.150	0.496	1.177	0.220	0.165	0.281
12 - 28 UNF			1651501508						
12 - 32 UNEF			1651506008						
1/4 - 20 UNC			1651501708		0.594		0.255	0.191	0.313
	H5		1651501608						
1/4 - 28 UNF	H3		1651501908		0.590	1.173			
	H4		1651501808						
1/4 - 32 UNEF	H3		1651506108		0.586	1.169			
5/16 - 18 UNC			1651502108	3.543	0.665	1.377	0.318	0.238	0.375
	H5		1651502008						
5/16 - 24 UNF	H3		1651502308		0.661	1.374			
	H4		1651502208						
5/16 - 32 UNEF	H3		1651506208	3.150	0.653	1.366			
3/8 - 16 UNC			1651502508	3.937	0.751	1.535	0.381	0.286	0.438
	H5		1651502408						
3/8 - 24 UNF	H3		1651502708	3.543		1.377	0.381		
	H4		1651502608						
3/8 - 32 UNEF	H3		1651506308		0.744	1.370			
7/16 - 14 UNC			1651502908	3.937	0.858	1.291	0.323	0.242	0.406
	H5		1651502808						
7/16 - 20 UNF	H3		1651503108						
	H5		1651503008						
7/16 - 28 UNEF	H4	3	1651506408	3.543					
1/2 - 13 UNC	H3		1651503308	4.331	0.921	1.354	0.367	0.275	0.438
	H5		1651503208						
1/2 - 20 UNF	H3		1651503508	3.937					
	H5		1651503408						
1/2 - 28 UNEF	H4		1651506508						
9/16 - 12 UNC	H3		1651503708	4.331	1.000	1.472	0.429	0.322	0.500
	H5		1651503608						
9/16 - 18 UNF	H3		1651503908	3.937					
	H5		1651503808						
9/16 - 24 UNEF	H4		1651506608						
5/8 - 11 UNC	H3		1651504108	4.331	1.090	1.562	0.480	0.360	0.563
	H5		1651504008						
5/8 - 18 UNF	H3		1651504308	3.937					
	H5		1651504208						
5/8 - 24 UNEF	H4		1651506708						

Packed: 1 pc.
Available V coating only.

ATP

List 16515 (Continued)

VC10 | V

A-POT, DIN Overall Length, Plug (3.5P-4.5P)

Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
11/16 - 24 UNEF	H4	3	1651506808	4.331	1.200	1.712	0.542	0.406	0.625
3/4 - 10 UNC	H3		1651504508	4.921			0.590	0.442	0.688
	H5		1651504408						
3/4 - 16 UNF	H3		1651504708	4.331					
	H5		1651504608						
3/4 - 20 UNEF			1651506908						
13/16 - 20 UNEF			1651507008	4.921			0.652	0.489	
7/8 - 9 UNC	H4		1651504908	5.512	1.334	1.885	0.697	0.523	0.750
	H6		1651504808						
7/8 - 14 UNF	H4		1651505108	4.921					
	H6		1651505008						
7/8 - 20 UNEF	H5		1651507108						
15/16 - 20 UNEF			1651507208	5.512	1.500	2.090	0.760	0.570	0.750
1 - 8 UNC	H4		1651505308	6.299			0.800	0.600	0.813
	H6		1651505208						
1 - 12 UNF	H4		1651505508	5.512					
	H6		1651505408						
1 - 14 UNS			1651507408						
1 - 20 UNEF	H5		1651507308						

Packed: 1 pc.
Available V coating only.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High														
	1010 1018	1035 1045	1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16515	◎	◎	◎	◎	○	◎	◎	◎	○	○	○			◎			
SFM	80-120	80-120	80-120	40-65	35-55	25-75	25-60	25-60	60-100	70-120	70-120			40-65			

○ good ◎ best

List 16510

VC10 V

A-POT, DIN Overall Length, Plug (3.5P-4.5P)

Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M1.4 x 0.3	D2	2	1651003008	40.00	7.90	8.90	3.58	2.79	4.80
M1.6 x 0.35	D3		1651003108						
M1.7 x 0.35			1651003208		9.50	10.50			
M2 x 0.4			1651003408	45.00	11.10	12.10			
M2 x 0.25	D2		1651003308						
M2.2 x 0.45	D3		1651003608						
M2.2 x 0.25	D2		1651003508						
M2.3 x 0.4	D3		1651003708						
M2.5 x 0.45			1651003908	50.00	12.80	13.80			
M2.5 x 0.35			1651003808						
M2.6 x 0.45			1651004008						
M3 x 0.5		3	1651000108	56.00	6.10	18.10			
M3 x 0.35			1651004108						
M3.5 x 0.6			1651004308		7.20	19.80			
M3.5 x 0.35			1651004208						
M4 x 0.7	D4		1651000308	63.00	8.40	21.00	4.27	3.33	6.40
M4 x 0.5	D3		1651000208						
M4.5 x 0.75	D4		1651004508	70.00	9.10	24.80	4.93	3.86	
M4.5 x 0.5	D3		1651004408						
M5 x 0.8	D4		1651000508						
M5 x 0.5	D3		1651000408						
M5.5 x 0.5			1651004608	80.00	10.80	29.70	5.59	4.19	7.10
M6 x 1.0	D5		1651000808		12.00		6.48	4.85	7.90
M6 x 0.75	D4		1651000708						
M6 x 0.5	D3		1651000608						
M7 x 1.0	D5		1651004808		12.10		8.08	6.05	9.50
M7 x 0.75	D4		1651004708						
M8 x 1.25	D5		1651001008	90.00	15.40	34.80			
M8 x 1.0			1651000908						
M8 x 0.75	D4		1651004908	80.00		30.00			
M9 x 1.25	D5		1651005208	90.00		34.70	9.68	7.26	11.10
M9 x 1.0			1651005108		14.00				
M9 x 0.75	D4		1651005008						
M10 x 1.5	D6		1651001308	100.00	18.00	38.90			
M10 x 1.25	D5		1651001208		17.00				
M10 x 1.0			1651001108	90.00	18.00	34.80			
M10 x 0.75	D4		1651005308		17.00				
M11 x 1.5	D6		1651005608	100.00	18.00	29.00	8.20	6.15	10.30
M11 x 1.0	D5		1651005508	90.00					
M11 x 0.75	D4	3	1651005408						
M12 x 1.75	D6		1651001708	110.00	21.00	32.00	9.32	6.98	11.10
M12 x 1.5			1651001608	100.00					
M12 x 1.25			1651001508						
M12 x 1.0	D5		1651001408						
M14 x 2.0	D7		1651001908	110.00	24.00	36.00	10.90	8.18	12.70
M14 x 1.5	D6	4	1651001808	100.00					
M14 x 1.25			1651005808						
M14 x 1.0	D5		1651005708						
M15 x 2.0	D7	3	1651007208	110.00			12.19	9.14	14.30
M15 x 1.5	D6	4	1651006008	100.00					
M15 x 1.25			1651007308						
M15 x 1.0	D5		1651005908						
M16 x 2.0	D7	3	1651002108	110.00					
M16 x 1.5	D6	4	1651002008	100.00					
M16 x 1.25			1651007408						
M16 x 1.0	D5		1651006108						

Packed: 1 pc.
Available V coating only.

ATP

List 16510 (Continued)

VC10 V

A-POT, DIN Overall Length, Plug (3.5P-4.5P)

Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M17 x 1.5	D6	4	1651006308	100.00	24.00	36.00	13.77	10.31	15.90
M17 x 1.25			1651007508						
M17 x 1.0	D5		1651006208						
M18 x 2.5	D7	3	1651002308	125.00	30.00	43.00			
M18 x 2.0		4	1651006508						
M18 x 1.25	D6		1651007608	110.00					
M18 x 1.5			1651002208						
M18 x 1.0	D5		1651006408						
M20 x 2.5	D7	3	1651002508	140.00		44.00	16.56	12.42	17.50
M20 x 2.0		4	1651006708						
M20 x 1.5	D6		1651002408	125.00					
M20 x 1.0	D5		1651006608						
M22 x 2.5	D7	3	1651002708	140.00			17.70	13.28	19.10
M22 x 2.0		4	1651006908						
M22 x 1.5	D6		1651002608	125.00					
M22 x 1.0	D5		1651006808						
M24 x 3.0	D8	3	1651002908	160.00	36.00	51.00	19.30	14.48	
M24 x 2.0	D7	4	1651007108	140.00					
M24 x 1.5	D6		1651002808						
M24 x 1.0	D5		1651007008						

Packed: 1 pc.
Available V coating only.

ATP

Work Material																	
	P					M			K	N		S		H			
List No.	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16510	best	best	best	best	good	best	best	best	good	good	good			best			
SFM	80-120	80-120	80-120	40-65	35-55	25-75	25-60	25-60	60-100	70-120	70-120			40-65			

good best

List 16555

VC10 V

A-OIL-POT, Coolant-Through, DIN Overall Length, Plug (3.5P-4.5P)

Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
1/4 - 20 UNC	H5	3	1655500108	3.15	0.598	1.181	0.255	0.191	0.313
1/4 - 28 UNF	H4		1655500208						
5/16 - 18 UNC	H5		1655500308	3.543	0.665	1.377	0.318	0.238	0.375
5/16 - 24 UNF	H4		1655500408						
3/8 - 16 UNC	H5		1655500508	3.937	0.751	1.535	0.381	0.286	0.438
3/8 - 24 UNF	H4		1655500608	3.543		1.377			
7/16 - 14 UNC	H5		1655500708	3.937	0.858	1.291	0.323	0.242	0.406
7/16 - 20 UNF			1655500808						
1/2 - 13 UNC			1655500908	4.331	0.921	1.354	0.367	0.275	0.438
1/2 - 20 UNF			1655501008	3.937					
9/16 - 12 UNC			1655501108	4.331	1.000	1.472	0.429	0.322	0.500
9/16 - 18 UNF			1655501208	3.937					
5/8 - 11 UNC			1655501308	4.331	1.090	1.562	0.480	0.360	0.563
5/8 - 18 UNF			1655501408	3.937					
3/4 - 10 UNC			1655501508	4.921	1.200	1.712	0.590	0.442	0.688
3/4 - 16 UNF			1655501608	4.331					
7/8 - 9 UNC	H6		1655501708	5.512	1.334	1.885	0.697	0.523	0.750
7/8 - 14 UNF			1655501808	4.921					
1 - 8 UNC			1655501908	6.299	1.500	2.090	0.800	0.600	0.813
1 - 12 UNF			1655502008	5.512					

Packed: 1 pc.
Available V coating only.

ATP

Work Material

List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16555	best	best	best	best	good	best	best	best	good	good	good			best			
SFM	100-200	100-200	100-200	50-120	45-110	40-120	40-120	40-100	80-160	90-220	90-220			60-120			

good best

List 16550

VC10 V

A-OIL-POT, Coolant-Through, DIN Overall Length, Plug (3.5P-4.5P)

Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	DIN Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M6 x 1.0	D5	3	1655000208	80.00	12.00	30.00	6.48	4.85	7.90
M6 x 0.75	D4		1655000108						
M7 x 1.0	D5		1655000308				8.08	6.05	9.50
M8 x 1.25			1655000608	90.00	15.00	35.00			
M8 x 1.0			1655000508						
M8 x 0.75	D4		1655000408	80.00		30.00			
M9 x 1.25	D5		1655000708	90.00		35.00	9.68	7.26	11.10
M10 x 1.5	D6		1655001008	100.00	18.00	39.00			
M10 x 1.25	D5		1655000908						
M10 x 1.0			1655000808	90.00		35.00			
M11 x 1.5			1655001108	100.00		29.00	8.20	6.15	10.30
M12 x 1.75	D6		1655001508	110.00	21.00	32.00	9.32	6.98	11.10
M12 x 1.5			1655001408	100.00					
M12 x 1.25			1655001308						
M12 x 1.0	D5		1655001208						
M14 x 2.0	D7		1655001708	110.00	24.00	36.00	10.90	8.18	12.70
M14 x 1.5	D6	4	1655001608	100.00					
M15 x 1.5			1655001808				12.19	9.14	14.30
M16 x 2.0	D7	3	1655002008	110.00					
M16 x 1.5	D6	4	1655001908	100.00					
M17 x 1.5			1655002108				13.77	10.31	15.90
M18 x 2.5	D7	3	1655002308	125.00	30.00	43.00			
M18 x 1.5	D6	4	1655002208	110.00					
M20 x 2.5	D7	3	1655002508	140.00		44.00	16.56	12.42	17.50
M20 x 1.5	D6	4	1655002408	125.00					
M22 x 2.5	D7	3	1655002808	140.00			17.70	13.28	19.10
M22 x 2.0		4	1655002708						
M22 x 1.5	D6		1655002608	125.00					
M24 x 3.0	D8	3	1655003108	160.00	36.00	51.00	19.30	14.48	
M24 x 2.0	D7	4	1655003008	140.00					
M24 x 1.5	D6		1655002908						

Packed: 1 pc.
Available V coating only.

ATP

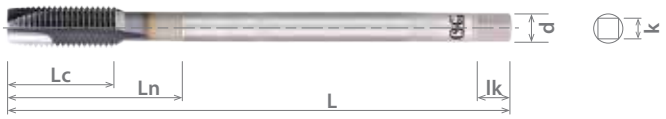
Work Material																	
	P					M			K	N		S		H			
List No.	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16550	◎	◎	◎	◎	○	◎	◎	◎	○	○	○			◎			
SFM	100-200	100-200	100-200	50-120	45-110	40-120	40-120	40-100	80-160	90-220	90-220			60-120			

○ good ◎ best

List 16535

VC10 | V

A-LT-POT, Long Shank, Plug (3.5P-4.5P)



Units: Inch

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	Long Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
4 - 40 UNC	H2	2	1653506008	3.149	0.342	0.751	0.140	0.109	0.188
4 - 48 UNF			1653506108						
5 - 40 UNC		3	1653500708	3.937	0.350	0.759			
5 - 44 UNF			1653506308						
6 - 32 UNC	H3		1653501008	4.724	0.429	0.842			
6 - 40 UNF	H2		1653501108	3.937	0.433	0.846			
8 - 32 UNC	H3		1653501308	4.724	0.444	0.897	0.167	0.131	0.251
8 - 36 UNF	H2		1653501408	3.937					
10 - 24 UNC	H3		1653501508	4.921	0.574	1.059	0.194	0.151	
10 - 32 UNF			1653501708	5.906	0.582	1.066			
12 - 24 UNC			1653501808	4.921	0.590	1.271	0.220	0.164	0.279
12 - 28 UNF			1653501908						
1/4 - 20 UNC	H5		1653502108	5.906	0.704	1.366	0.255	0.190	0.287
1/4 - 28 UNF	H4		1653502308						
5/16 - 18 UNC	H5		1653502508		0.803	1.633	0.317	0.238	0.342
5/16 - 24 UNF	H4		1653502708						
3/8 - 16 UNC	H5		1653502908		0.917	1.897	0.380	0.285	0.397
3/8 - 24 UNF	H4		1653503108		0.929				
7/16 - 14 UNC	H5		1653503308		0.858	2.362	0.322	0.242	0.405
7/16 - 20 UNF			1653503508						
1/2 - 13 UNC			1653503708	7.087	0.921	2.834	0.367	0.274	0.437
1/2 - 20 UNF			1653503908						
9/16 - 12 UNC			1653504108		1.000		0.429	0.322	0.500
9/16 - 18 UNF			1653504308						
5/8 - 11 UNC			1653504508		1.090		0.480	0.359	0.562
5/8 - 18 UNF			1653504708						
3/4 - 10 UNC			1653504908	7.874	1.200	3.149	0.590	0.442	0.688
3/4 - 16 UNF			1653505108						
7/8 - 9 UNC	H6		1653505308		1.334		0.697	0.522	0.751
7/8 - 14 UNF			1653505508						
1 - 8 UNC			1653505708				0.800	0.600	0.811
1 - 12 UNF			1653505908						

Packed: 1 pc.
Available V coating only.

ATP

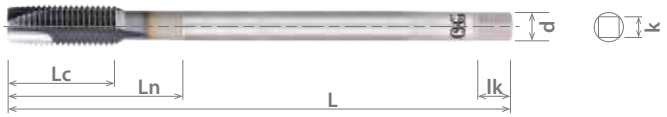
Work Material																	
	P					M			K	N		S		H			
List No.	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16535	best	best	best	best	good	best	best	best	good	good	good			best			
SFM	80-120	80-120	80-120	40-65	35-55	25-75	25-60	25-60	60-100	70-120	70-120			40-65			

good best

List 16530

VC10 V

A-LT-POT, Long Shank, Plug (3.5P-4.5P)



Units: mm

Tap Size	Thread Limit	No. of Flutes	EDP Number Plug (3.5P - 4.5P) V	Long Overall Length L	Thread Length Lc	Neck Length Ln	Shank Dia. d	Square Width k	Square Length lk
M3 x 0.5	D3	3	1653001308	100.00	6.00	20.00	3.58	2.79	4.80
M3 x 0.35			1653001208						
M3.5 x 0.6			1653001508		7.00	23.00			
M3.5 x 0.35			1653001408						
M4 x 0.7	D4		1653001708		8.00	27.00	4.26	3.32	6.40
M4 x 0.5	D3		1653001608						
M4.5 x 0.75	D4		1653001908		9.00	30.00	4.92	3.86	
M4.5 x 0.5			1653001808						
M5 x 0.8			1653002108	125.00		32.90			
M5 x 0.5	D3		1653002008						
M5.5 x 0.5			1653002208		10.00	35.90	5.58	4.19	7.10
M6 x 1.0	D5		1653002708	150.00	11.00	40.00	6.47	4.85	7.80
M6 x 0.75	D4		1653002508						
M6 x 0.5	D3		1653002308	125.00					
M8 x 1.25	D5		1653003708	150.00	15.00	51.90	8.07	6.04	9.40
M8 x 1.0			1653003508						
M8 x 0.75	D4		1653003308						
M10 x 1.5	D6		1653005108		18.00	59.90	9.67	7.26	11.00
M10 x 1.25	D5		1653004908						
M10 x 1.0			1653004708						
M10 x 0.75	D4		1653004508						
M12 x 1.75	D6		1653006708	180.00	21.00	72.00	9.32	6.98	
M12 x 1.5			1653006508						
M12 x 1.25			1653006308						
M12 x 1.0	D5		1653006108						
M14 x 2.0	D7		1653007108	150.00	24.00	59.90	10.89	8.17	12.70
M14 x 1.5	D6	4	1653007008						
M14 x 1.25			1653006908						
M14 x 1.0	D5		1653006808						
M15 x 1.5	D6		1653007308	160.00		64.00	12.19	9.14	14.30
M15 x 1.0	D5		1653007208						
M16 x 2.0	D7	3	1653007708			72.00			
M16 x 1.5	D6		1653007508			64.00			
M16 x 1.0	D4		1653007408						
M18 x 2.5	D7		1653008308	180.00		72.00	13.76	10.31	15.90
M18 x 2.0		4	1653008208						
M18 x 1.5	D6		1653008108						
M18 x 1.0	D5		1653008008						
M20 x 2.5	D7	3	1653008708	200.00		80.00	16.56	12.42	17.50
M20 x 2.0		4	1653008608						
M20 x 1.5	D6		1653008508						
M20 x 1.0	D5		1653008408						
M22 x 2.5	D7	3	1653009108				17.70	13.28	19.10
M22 x 2.0		4	1653009008						
M22 x 1.5	D6		1653008908						
M22 x 1.0	D5		1653008808						
M24 x 3.0	D8	3	1653009508		35.00		19.30	14.47	
M24 x 2.0	D7	4	1653009408						
M24 x 1.5	D6		1653009308						
M24 x 1.0	D5		1653009208						

Packed: 1 pc.
Available V coating only.

ATP

Work Material																	
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
List No.	Low 1010 1018	Med. 1035 1045	High 1065	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
16530	best	best	best	best	good	best	best	best	good	good	good			best			
SFM	80-120	80-120	80-120	40-65	35-55	25-75	25-60	25-60	60-100	70-120	70-120			40-65			

good best

shaping your dreams

Safe use of cutting tools

- Use safety cover, safety glasses and safety shoes during operation.
- Do not touch cutting edges with bare hands.
- Do not touch cutting chips with bare hands. Chips will be hot after cutting.
- Stop cutting when the tool becomes dull.
- Stop cutting operation immediately if you hear any abnormal cutting sounds.
- Do not modify tools.
- Please use appropriate tools for the operation. Check dimensions to ensure proper selection.

TEXAS
(National Headquarters)

1945 W. Walnut Hill Ln.
Irving, TX 75038, USA
Toll Free: 800-837-2223
Fax: 800-837-3334

ILLINOIS

676 East Fullerton Avenue
Glendale Heights, IL 60139, USA
Toll Free: 800-837-2223
Fax: 800-837-3334

CALIFORNIA

1921 Miraloma Ave. Suite B
Placentia, CA 92870, USA
Toll Free: 800-837-2223
Fax: 714-528-9209

OHIO

3611 Socialville Foster Rd.
Ste 102
Mason, OH 45040, USA
Phone: 513-755-3360
Fax: 513-755-3362

GEORGIA

5324 Highway 85 Ste 100
Forest Park, GA 30297, USA
Toll Free: 800-837-2223
Fax: 800-837-3334

CANADA

538 King Forest Court
Burlington, ON L7P 5C1, Canada
Toll Free: 800-263-4861
Fax: 905-632-8466

MEXICO

Avenida Central No. 186
Col. Nueva Industrial Vallejo
07700 Ciudad de Mexico, D.F.,
Mexico
Phone: (52) 55-51-19-3363
Fax: (52) 55-51-19-3370

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