



The A Brand

The Tooling Master Class



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.





A-Taps

4 A-Tap Index

6 AT-1

8 A-CSF & A-CHT

10 A-SFT

12 A-POT

14 A-PIPE

A-Drills

16 A-Drill Index

18 ADO-TRS (3D & 5D)

20 ADF, ADF-LS & ADFO

22 AD (2D & 4D)

24 ADO (3-50D)

26 ADO-MICRO

28 ADO-SUS (3D, 5D & 8D)

30 AD-LDS (4D)

A-End Mills

32 A-End Mill Index

34 AE-VMS

36 AE-VML

38 AE-H

The A Brand *The Tooling Master Class*

A-TAP 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. You will experience a level of quality, reliability and satisfaction that can only be delivered by the A Brand tooling master class.

Advanced performance A-Taps are engineered to meet the highest demands and expectations in a wide range of applications.

A-TAP



A Brand® AT-1 *Advanced Performance One Pass Thread Mill*



A Brand® A-CSF *Advanced Performance Carbide Coolant-Through Taps*



A Brand® A-CHT *Advanced Performance Carbide Coolant-Through Taps*



A Brand® A-SFT *Advanced Performance Spiral Flute Taps*



A Brand® A-POT *Advanced Performance Spiral Point Taps*



A Brand® A-PIPE *Advanced Performance Pipe Taps*



A Brand® AT-1

Advanced Performance One Pass Thread Mill



A Brand® AT-1

OSG's newest threadmill, the A Brand® 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. Along with OSG's patented EgiAs coating, it also has unequal spacing/variable lead flute which reduces vibration for better thread quality.



Features & Benefits

- **OSG's EgiAs coating** for exceptional wear resistance and longer tool life.
- **Right-hand cut and left-hand helix geometry** to prevent bending/deflection.
- **Unequal spacing/variable lead flute** for reduced vibration.

List Numbers

Size Range

16620 - A Brand® AT-1 (Inch)	1/4"-1"
16625 - A Brand® AT-1 (Metric)	M6-M24
16630 - A Brand® AT-1 (NPT)	1/16"-2"
16631 - A Brand® AT-1 (NPTF)	1/16"-2"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	
M	Stainless Steels : 300	<input checked="" type="checkbox"/>
M	Stainless Steels : 400	<input type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input checked="" type="checkbox"/>
N	Aluminum : Casting	<input checked="" type="checkbox"/>
S	Nickel Alloy : Inconel	
S	Titanium : 6AL4V (30HRC)	
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

good best

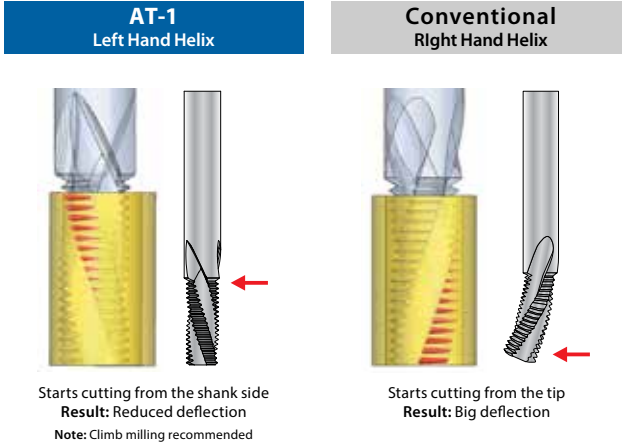
For more information scan the QR code to the right and visit: <https://www.osgtool.com/at-1>



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.



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	



A Brand® A-CSF & A-CHT

Advanced Performance Carbide Coolant-Through Taps



A Brand® A-CSF & A-CHT

The A Brand® A-CSF and A-CHT offer an ultra-fine grain carbide substrate and a unique flute geometry which excels in cast iron and non-ferrous materials. The special coolant hole design allows 1.3 times more coolant flow to help aid in chip evacuation and cooling at the cutting edge to extend tool life.



Features & Benefits

- **Large oil hole** for excellent coolant flow.
- **Ultra-fine grain carbide** for high wear resistance and toughness.

List Numbers

16600 - A Brand® A-CSF (Metric)
16605 - A Brand® A-CSF (Inch)
16610 - A Brand® A-CHT (Metric)
16615 - A Brand® A-CHT (Inch)

Size Range

M5-M12
1/4"-1/2"
M5-M12
No. 12-1/2"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	
P	Medium Carbon Steel : 1035, 1045	
P	High Carbon Steel : 1065	
P	Alloy Steels : 4140, 4340	
P	Die Steels	
M	Stainless Steels : 300	
M	Stainless Steels : 400	
M	Stainless Steels : 17-4PH	
K	Cast Iron	<input type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	
S	Titanium : 6AL4V (30HRC)	
H	Hardened Steels : ~35 HRC	
H	Hardened Steels : 35-45 HRC	
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

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For more information scan the QR code to the right and visit: osgtool.com/a-csf



A Brand® A-CSF & A-CHT

Advanced Performance Carbide Coolant-Through Taps

Large Coolant Hole

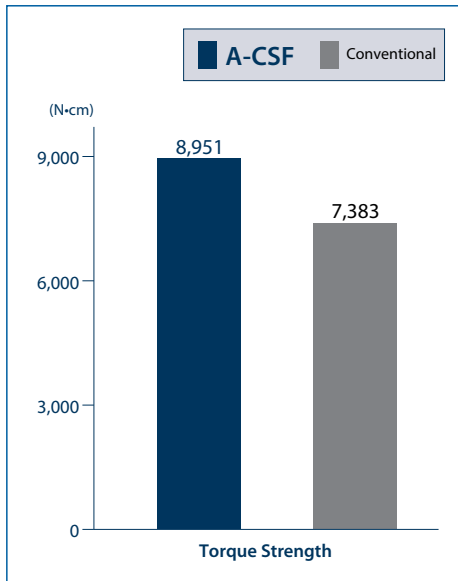
1.3 Times More Coolant Flow



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

A Brand® A-SFT

Advanced Performance Spiral Flute Taps



A Brand® A-SFT

The A Brand® A-SFT is an all-purpose tap series designed to excel in a wide variety of materials. Now available in DIN length, long shank, and coolant-through; the opportunities are endless. Made from powdered metal HSS and featuring OSG's proprietary V coating to achieve excellent wear resistance. A-SFT, with a unique variable helix flute design, reduces cutting forces and encourages stable chip evacuation.



Features & Benefits

- **OSG's proprietary V coating** for prolonged tool life.
- **Powder metallurgy HSS** for increased wear resistance.
- **Sharp cutting edge** to stabilize chip shape.
- **Variable helix flute** to accelerate and control chip evacuation.

List Numbers

Size Range

16500 - A Brand® A-SFT (Metric)	M1.4-M56
16505 - A Brand® A-SFT (Inch)	No. 4-2"
16520 - A Brand® A-LT-SFT (Metric, Long Shank)	M3-M24
16525 - A Brand® A-LT-SFT (Inch, Long Shank)	No. 4-1"
16540 - A Brand® A-OIL-SFT (Metric, Coolant-Through)	M6-M56
16545 - A Brand® A-OIL-SFT (Inch, Coolant-Through)	1/4"-2"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input type="checkbox"/>
P	High Carbon Steel : 1065	<input type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input type="checkbox"/>
P	Die Steels	<input type="checkbox"/>
M	Stainless Steels : 300	<input type="checkbox"/>
M	Stainless Steels : 400	<input type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input type="checkbox"/>

good best

For more information scan the QR code to the right and visit: osgtool.com/a-sft



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

Large Hole Threading

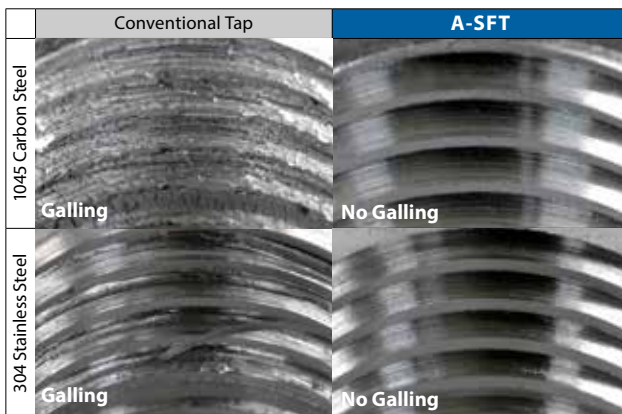
1045 Carbon Steel and 304 Stainless Steel

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.)



A Brand® A-POT

Advanced Performance Spiral Point Taps

A Brand® A-POT

The A Brand® A-POT is an all-purpose tap series designed to excel in a wide variety of materials. Now available in DIN length, long shank, and coolant-through the opportunities are endless. Made from powdered metal HSS and featuring OSG's patented V coating to achieve excellent wear resistance. The A-POT series has unique geometry that enables greater chip control to produce tightly compacted and controlled chips for easy evacuation from the hole.



Features & Benefits

- **OSG's proprietary V coating** to improve wear resistance and extend tool life.
- **Powder metallurgy HSS** for increased wear resistance.
- **Sharp cutting edge** that stabilizes chip shape.

List Numbers

Size Range

16510 - A Brand® A-POT (Metric)	M1.4-M24
16515 - A Brand® A-POT (Inch)	No.2-1"
16530 - A Brand® A-LT-POT (Metric, Long Shank)	M3-M24
16535 - A Brand® A-LT-POT (Inch, Long Shank)	No. 4-1"
16550 - A Brand® A-OIL-POT (Metric, Coolant-Through)	M6-M24
16555 - A Brand® A-OIL-POT (Inch, Coolant-Through)	1/4"-1"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input type="checkbox"/>
M	Stainless Steels : 300	<input checked="" type="checkbox"/>
M	Stainless Steels : 400	<input checked="" type="checkbox"/>
M	Stainless Steels : 17-4PH	<input checked="" type="checkbox"/>
K	Cast Iron	<input type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input type="checkbox"/>

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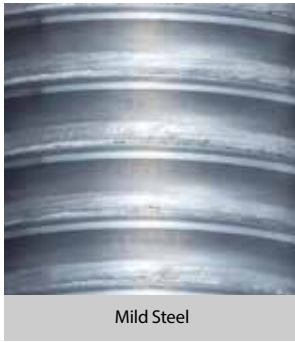
For more information scan the QR code to the right and visit: osgtool.com/a-pot



WWW.OSGTOOL.COM

Superior Threads

No Galling of the Work Material



Mild Steel



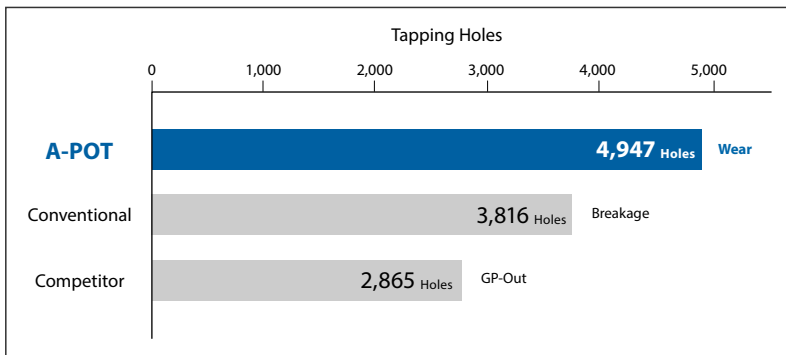
Stainless Steel

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)		



A Brand® A-PIPE

Advanced Performance Pipe Taps



A Brand® A-Pipe

The A Brand® A-Pipe Tap is OSG's newest addition to the A Brand line up. With an expansive size offering, the new A-Pipe Tap has enhanced cutting geometry with proprietary V Coating for extended tool life that performs exceptionally in a wide range of materials.



Features & Benefits

- **OSG's proprietary V coating** for prolonged tool life.
- **HSSE material** for increased wear resistance.
- **Enhanced cutting geometry** for improved performance in a wide range of materials.

List Numbers

Size Range

16570 - A Brand® A-NPT (Inch)	1/16"-1"
16575 - A Brand® A-LT-NPT (Inch, Long Shank)	1/16"-1"
16580 - A Brand® A-BSPP (Inch)	1/8"-1"
16585 - A Brand® A-BSPT (Inch)	1/8"-1"
16590 - A Brand® A-NPS (Inch)	1/16"-1"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input type="checkbox"/>
M	Stainless Steels : 300	<input type="checkbox"/>
M	Stainless Steels : 400	<input type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input checked="" type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input type="checkbox"/>

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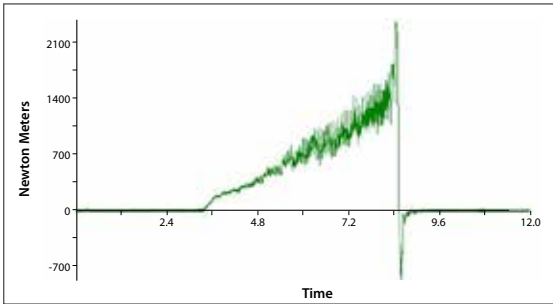
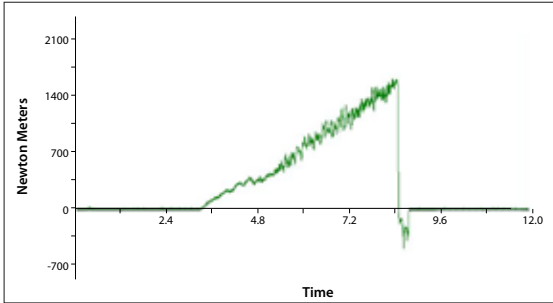
For more information scan the QR code to the right and visit: osgtool.com/apipe



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.



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	



The A Brand *The Tooling Master Class*

A-DRILL 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. You will experience a level of quality, reliability and satisfaction that can only be delivered by the A Brand tooling master class.

Advance performance A-Drills are engineered for increased productivity in a wide variety of materials.

A-DRILL



A Brand® ADO-TRS (3D & 5D) *Advanced Performance High Feed 3-Flute Carbide Drills*



A Brand® ADF (2D & 3D) *Advanced Performance Flat Drills*



A Brand® AD (2D & 4D) *Advanced Performance Carbide Drills*



A Brand® ADO (3-50D) *Advanced Performance Coolant-Through Carbide Drills*



A Brand® ADO-MICRO (2D, 5D, 12D, 20D, 30D) *Advanced Performance Carbide Micro Drills*



A Brand® ADO-SUS (3D, 5D & 8D) *Advanced Performance Coolant-Through Carbide Drills*



A Brand® AD-LDS (4D) *Advanced Performance Spot Drills*



A Brand® ADO-TRS

Advanced Performance High Feed 3-Flute Carbide Drills



A Brand® ADO-TRS

The A Brand® ADO-TRS drill with its advanced performance 3-flute geometry, allows for reduced vibration, higher feed rates, improved chip evacuation, decreased work hardening, and stable drilling. The end result is up to 3X faster than 2-flute drills and up to 3X longer life.



Features & Benefits

- **OSG's EgiAs nano multilayered coating** delivers exceptional wear resistance and toughness.
- **Patented flute geometry** breaks steel chips into small, manageable pieces for easy evacuation.
- **The 120°, equally spaced, margins** of the 3-flute design allows for more stable, vibration-free, hole processing while increasing hole quality and tolerance.

List Numbers

6600 - A Brand® ADO-TRS (3D)
6610 - A Brand® ADO-TRS (5D)

Size Range

3mm-20mm, 1/8"-3/4"
3mm-20mm, 1/8"-3/4"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	
M	Stainless Steels : 400	<input checked="" type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

good best

For more information scan the QR code to the right and visit: osgtool.com/ado-trs



3-Flute vs 2-Flute

The 3 Advantages of a 3-Flute Design

High Feed Rate:

OSG's ADO-TRS drills have a specially shaped flute (PAT.P.) that breaks steel chips into small, manageable pieces for easy evacuation. This allows for increased feed rates up to 1.5 to 2 times faster than 2-fluted drills.

High Precision:

The 120° equal spacing margins of the 3-flute design allows for more stable, vibration-free hole processing, thereby increasing hole quality and tolerance.

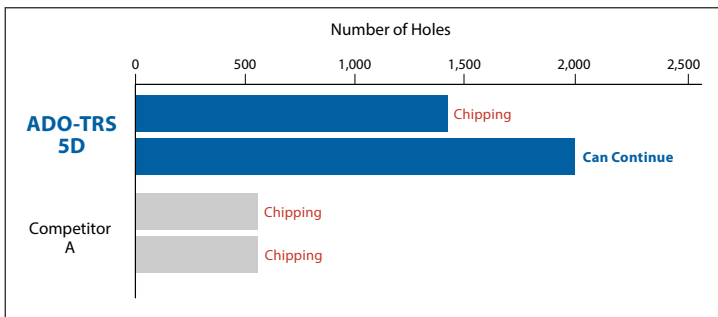
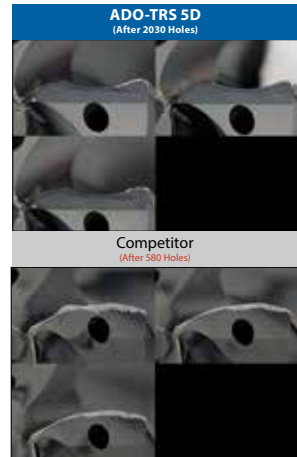
Reduced Work Hardening:

The amount of work hardening and depth of work hardening have a tendency to be proportional to the feed per revolution. When compared to conventional 2-flute drills with the same feed per revolution, the 3-flute design has proven to decrease work hardening.

Tool Life in Cast Iron

Gray Cast Iron

Tool	ADO-TRS 5D	Competitor A
Drill Size	Ø8.5mm	
Work Material	Gray Cast Iron	
Cutting Speed	230 SFM (2,625 RPM)	
Feed Rate	44.6 IPM (0.017 IPR)	
Depth of Hole	43 mm	
Coolant	Water Soluble	
Machine	Vertical Machining Center	



A Brand[®] ADF

The A Brand[®] ADF flat bottom drill enables one-step drilling to simplify machining time and tool management. Now offered in coolant-through and long shank, this drill is suitable for a wide variety of drilling applications including cross holes, inclined surfaces, counter boring in curved surfaces, eccentric holes, thin plates, etc.



Features & Benefits

- **OSG's proprietary EgiAs coating** suppresses friction with the high wear resistance layer to help prevent breakage.
- **Unique end cut geometry** reduces cutting forces to enable more stable and precise drilling.
- **Wide flute geometry** allows smooth chip evacuation.

List Numbers

Size Range

- 5700 - A Brand[®] ADF (2D) 0.2mm-20mm, 1/64"-3/4"
 5705 - A Brand[®] ADF-LS (2D, Long Shank) 3mm-20mm, 1/8"-3/4"
 5720 - A Brand[®] ADFO (3D, Coolant-Through) 3mm-20mm, 1/8"-3/4"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	<input type="checkbox"/>
M	Stainless Steels : 400	<input type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	
S	Titanium : 6AL4V (30HRC)	
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

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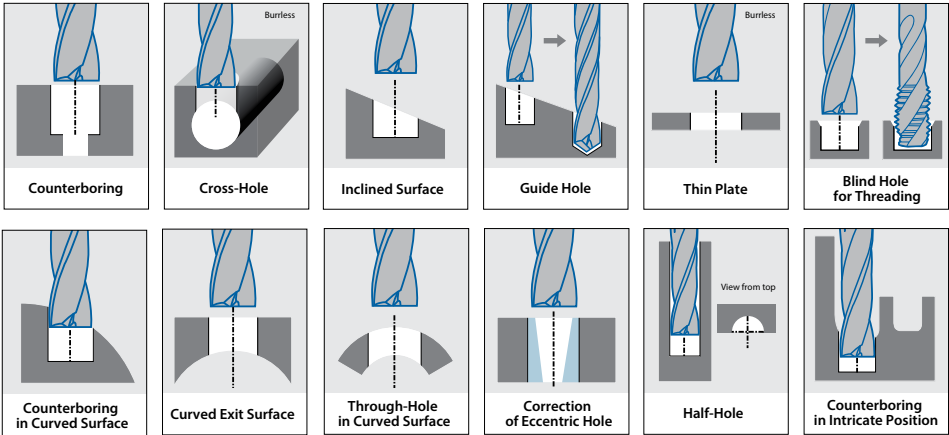
For more information scan the QR code to the right and visit: osgtool.com/adf



Multi-Purpose Flat Drills

The ADFO and ADF are Suitable for a Wide Variety of Applications


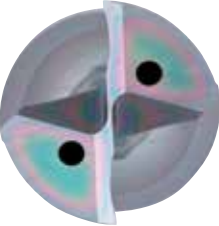
The ADFO & ADF drills are capable of drilling in numerous applications such as inclined surfaces, curved surfaces, flat-bottom holes and more.



Application Guide

Exceptional Wear Resistance & Toughness

Constructed with extreme toughness, high wear and heat resistance characteristics to ensure stable and consistent tool life. Suppresses friction with the wear resistance layer; prevents breakage with the nano periodical layer.

ADF 2D & ADF-LS 2D	ADFO 3D
 <ul style="list-style-type: none"> • General purpose • Suitable up to 2D • Suitable for a wide variety of applications 	 <ul style="list-style-type: none"> • Up to 3D Drilling • Suitable for stainless steel applications

When machining stainless steel, the ADFO breaks chips into small, manageable pieces



ADFO 3D



Competitor

A Brand® AD

Advanced Performance Carbide Drills



A Brand® AD

The A Brand® AD drill series is OSG's premium line of solid carbide high performance drills. New wavy point edge form creates sharp cutting action for reduced thrust forces, while our proprietary EgiAs coating provides drastically higher hardness and heat resistance, enabling higher drilling speeds and incredible tool life.



Features & Benefits

- **OSG's proprietary EgiAs coating** provides higher coating oxidation temperatures and hardness which dramatically improves wear resistance.
- **Ultra-fine micrograin carbide** for more wear resistance and better coating adhesion properties for longer tool life.
- **Wavy form cutting edge design** for sharper cutting action reduces thrust forces and produces smaller chips for easy hole processing.

List Numbers

6300 - A Brand® AD (2D)
6310 - A Brand® AD (4D)

Size Range

2mm-20mm, 1/8"-3/4"
2mm-20mm, 1/8"-3/4"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input type="checkbox"/>
P	Die Steels	<input type="checkbox"/>
M	Stainless Steels : 300	
M	Stainless Steels : 400	
M	Stainless Steels : 17-4PH	
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	
N	Aluminum : Casting	
S	Nickel Alloy : Inconel	
S	Titanium : 6AL4V (30HRC)	
H	Hardened Steels : ~35 HRC	<input type="checkbox"/>
H	Hardened Steels : 35-45 HRC	
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

good best

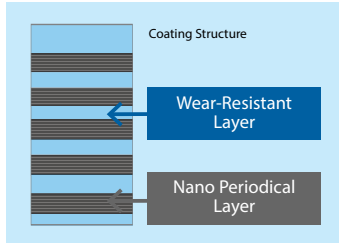
For more information scan the QR code to the right and visit: osgtool.com/ad



EgiAs Coating

Exceptional Wear Resistance & Toughness

Constructed with extreme toughness, high wear and heat resistance characteristics to ensure stable and consistent tool life. Suppresses friction with the wear resistance layer; prevents breakage with the nano periodical layer.



Coating Color	Coating Structure	Hardness (Hv)	Oxidation Temperature (°C)	Heat Resistance	Adhesion Strength	Wear Resistance	Welding Resistance	Toughness
Iridescent Color	Periodic Nano-layer and wear resistance layer	3,200	1,100	☐	☐	☐	☐	☐

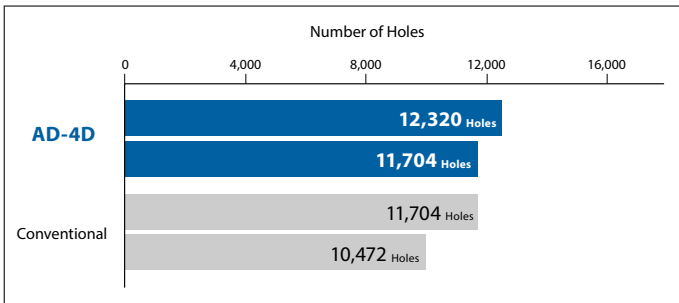
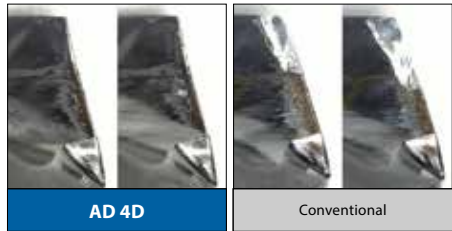
Durability

Durability and Tool Life in 1050 Steel

EgiAs coating provides superior protection against friction, resulting in longer tool life and more holes per tool.

Tool	AD 4D	Conventional
Drill Size	Ø6	
Work Material	1050 Carbon Steel	
Cutting Speed	328 SFM (5,285 RPM)	
Feed Rate	37 IPM (0.007 IPR)	
Depth of Hole	18 mm (Blind)	
Coolant	Water Soluble (External)	
Machine	Vertical Machining Center	

Tool Wear



A Brand® ADO

Advanced Performance Coolant-Through Carbide Drills



A Brand® ADO

The A Brand® ADO drill series is OSG's premium line of carbide coolant-through high performance drills, designed to drill in a variety of steels up to 50X diameter without pecking. New point geometry reduces thrust forces, while our proprietary EgiAs coating provides drastically higher hardness and heat resistance, enabling higher drilling speeds and incredible tool life.



Features & Benefits

- **OSG's proprietary EgiAs coating** provides higher oxidation temperature and hardness improving wear resistance.
- **Wavy form cutting edge design (3D-8D)** reduces thrust forces and produces smaller chips for easy evacuation.
- **Internal coolant holes** reduces heat and improves chip evacuation for increased tool life and faster drilling speeds.

List Numbers

6500 - A Brand® ADO (3D)
 6510 - A Brand® ADO (5D)
 6520 - A Brand® ADO (8D)
 6530 - A Brand® ADO (10D)
 6535 - A Brand® ADO (15D)
 6540 - A Brand® ADO (20D)
 6550 - A Brand® ADO (30D)
 6560 - A Brand® ADO (40D)
 6570 - A Brand® ADO (50D)

Size Range

2mm-20mm, 3/32"-3/4"
 2mm-20mm, 3/32"-3/4"
 2mm-15.88mm, 3/32"-5/8"
 2mm-14.29mm, 3/32"-9/16"
 3mm-14.29mm, 1/8"-9/16"
 3mm-14.29mm, 1/8"-9/16"
 3mm-14.29mm, 1/8"-9/16"
 3mm-10mm, 1/8"-3/8"
 3mm-8mm, 1/8"-5/16"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	<input type="checkbox"/>
M	Stainless Steels : 400	<input type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input type="checkbox"/>

good best

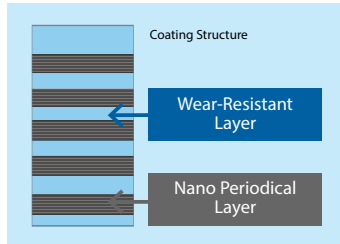
For more information scan the QR code to the right and visit: osgtool.com/ado



EgiAs Coating

Exceptional Wear Resistance & Toughness

Constructed with extreme toughness, high wear and heat resistance characteristics to ensure stable and consistent tool life. Suppresses friction with the wear resistance layer; prevents breakage with the nano periodical layer.



Coating Color	Coating Structure	Hardness (Hv)	Oxidation Temperature (°C)	Heat Resistance	Adhesion Strength	Wear Resistance	Welding Resistance	Toughness
Iridescent Color	Periodic Nano-layer and wear resistance layer	3,200	1,100	☐	☐	☐	☐	☐

Two Point Forms Based on Length

Wavy Point Form (3D-8D) or Straight Point Form (10D-50D)

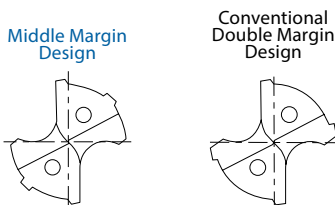
Wavy point form improves the sharpness of the cutting edge at various areas where the cutting force fluctuates with the cutting speed, thereby achieving low thrust, stable torque, and longer tool life.

Straight point form offers superior point strength with low cutting forces for long drills even with long overhang length.

Middle Margin Design (8D & Up)

More Stability than Conventional Double Margin Designs

Unlike the conventional double margin, the second margin has been placed in the center of the peripheral land. This has shortened the time from the start of engagement to the four-point restraint by the double margin. Furthermore, it has improved stability during intermittent cutting such as cross-drilling or when penetrating an angled surface.



A Brand® ADO-MICRO

Advanced Performance Carbide Micro Drills

A Brand® ADO-MICRO

ADO-MICRO's unique oil holes and flute geometry enable stable and high efficiency processing in small diameter deep-hole applications. Large oil holes and the hollow shank design allows greater coolant flow volume for smooth chip evacuation. The extended flute enables chips to be discharged from the tip of the flute to the extended flute with enhanced evacuation capability.



Features & Benefits

- **Unique flute geometry** that enables outstanding chip evacuation performance.
- **Large oil holes and hollow shank design** to allow greater coolant flow volume.
- **Double margin configuration** that supports the straightness stability of the tool.

List Numbers

Size Range

6501 - A Brand® ADO-MICRO (2D)	0.7mm-2mm
6502 - A Brand® ADO-MICRO (5D)	0.7mm-2mm
6503 - A Brand® ADO-MICRO (12D)	1mm-2mm
6504 - A Brand® ADO-MICRO (20D)	1mm-2mm
6505 - A Brand® ADO-MICRO (30D)	1mm-2mm

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	<input checked="" type="checkbox"/>
M	Stainless Steels : 400	<input checked="" type="checkbox"/>
M	Stainless Steels : 17-4PH	<input checked="" type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input type="checkbox"/>

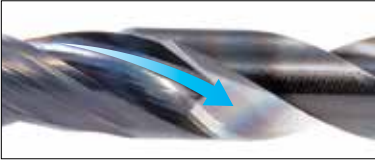
good best

For more information scan the QR code to the right and visit: osgtool.com/ado-micro



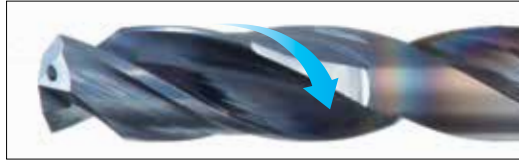
Flute Structure

Stable Performance in Small Diameter Deep-Hole Applications



Extended Flute

Chips are discharged from the tip of the flute to the extended flute with enhanced evacuation capability.



Removed End of Margin

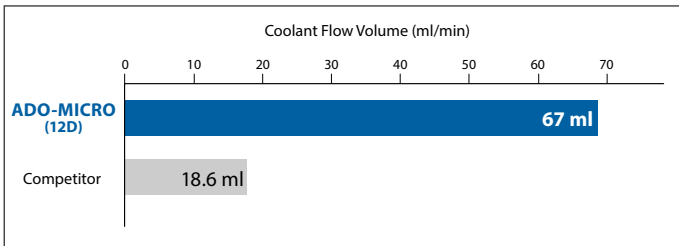
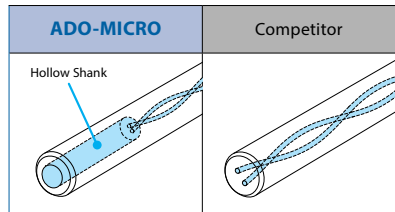
Capability to smoothly discharge “micro sludges” that can be easily accumulated around the outer periphery of the tool, which is a key cause of abrupt tool breakage.

Increased Coolant Flow

A Hollow Shank Design More than Triples the Coolant Flow

Greater coolant flow volume achieved by the hollow shank design to enable smooth chip evacuation.

Tool	ADO-MICRO (12D)	Competitor
Size	Ø1.5	
Shank Style	Hollow	Solid
Coolant	Water-Soluble (Internal)	
Coolant Pressure	1.5Mpa	
Time	60 Seconds	



A Brand® ADO-SUS

Advanced Performance Coolant-Through Carbide Drills



A Brand® ADO-SUS

The A Brand® ADO-SUS drills are one of OSG's premium lines of carbide, coolant-through, advanced performance drills, designed to drill in stainless steel and titanium. New "Mega Cooler™" coolant hole shape improves coolant flow by 33%, aids in better chip evacuation and less cutting heat generation.



Features & Benefits

- **OSG's patented WXL® coating** dramatically improves wear resistance.
- **Sharp Cutting Edge** reduces work hardening, leading to longer tool life.
- **Mega Cooler™ coolant hole** improves coolant flow, chip evacuation and heat generation.

List Numbers

5200 - A Brand® ADO-SUS (3D)
 5210 - A Brand® ADO-SUS (5D)
 5220 - A Brand® ADO-SUS (8D)

Size Range

2mm-20mm, 3/32"-3/4"
 2mm-20mm, 3/32"-3/4"
 2mm-12.7mm, 3/32"-1/2"

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input type="checkbox"/>
P	Die Steels	
M	Stainless Steels : 300	<input checked="" type="checkbox"/>
M	Stainless Steels : 400	<input checked="" type="checkbox"/>
M	Stainless Steels : 17-4PH	<input checked="" type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	
S	Titanium : 6AL4V (30HRC)	<input checked="" type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input type="checkbox"/>
H	Hardened Steels : 35-45 HRC	
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

good best

For more information scan the QR code to the right and visit: osgtool.com/ado-sus



Why Use A Brand® ADO-SUS?

The Solution to your Stainless Steel and Titanium Troubles

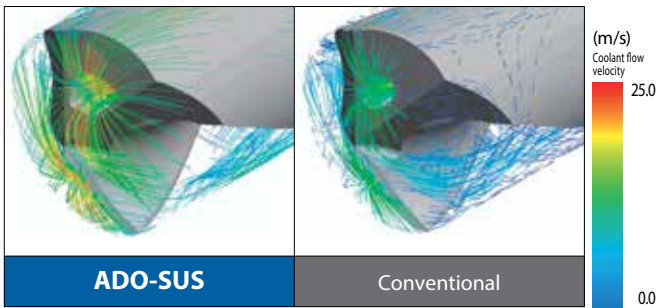
OSG's A Brand® ADO-SUS has specifically addressed many common issues that occur when machining stainless steels and titanium alloys such as work hardening, elongated chips, low thermal conductivity and welding on the tool.

With a patent pending cutting edge, new flute geometry, WXL® coating and the newly designed Mega Cooler™ coolant hole, the ADO-SUS has a solution for all of your stainless steel and titanium troubles.

Mega Cooler™ Coolant Hole

Exceptional Coolant Delivery

Improved coolant delivery at the cutting edge suppresses heat buildup and improves chip evacuation, thereby increasing tool life and enabling faster drilling speeds. The Mega Cooler™ coolant hole is only available on sizes 6mm and over.

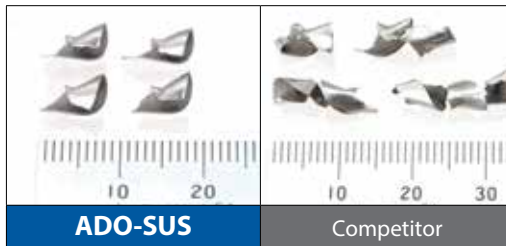


Analysis of coolant flow with spindle speed of 2,200 RPM

New Flute Geometry

Producing Manageable Chips

The A Brand® ADO-SUS features a cutting geometry specifically designed for producing compact cutting chips.



A Brand® AD-LDS

Advanced Performance Spot Drills

A Brand® AD-LDS

The A Brand® AD-LDS increases processing speed for both centering and countersinking. Constructed with extreme toughness, high wear and heat resistance characteristics to ensure stable and consistent tool life.



Features & Benefits

- **OSG's proprietary EgiAs coating** suppresses friction with the wear resistance layer and prevents breakage.
- **Unique Cutting Geometry** for superior sharpness and high chipping resistance.

List Numbers

5190 - A Brand® AD-LDS (4D)

Size Range

3mm-25mm

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	
M	Stainless Steels : 400	
M	Stainless Steels : 17-4PH	
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 50-70 HRC	

good best

For more information scan the QR code to the right and visit: osgtool.com/ad-lds

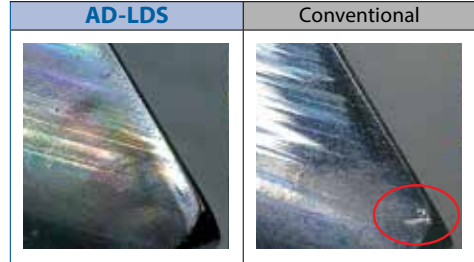


EgiAs Coating

Exceptional Wear Resistance & Toughness

Constructed with extreme toughness, high wear resistance characteristics to ensure stable and consistent tool life.

Tool	AD-LDS	Conventional
Drill Size	Ø12x90°	
Work Material	Carbon Steel	
Cutting Speed	164 SFM (1,326 RPM)	
Feed Rate	9.4 IPM (0.007 IPR)	
Coolant	Water-Soluble	
Machine	Horizontal Machining Center	



Selection Chart for Spot Drills

Classifying Spot Drill by Point Angle

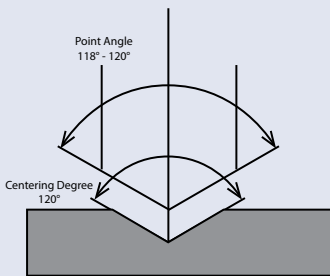
Spot drills can perform both centering and chamfering. Centering improves drilling precision. Chamfering prevents burrs on the end face during tapping and removes burrs that may occur during drilling.

Point Angle 90°

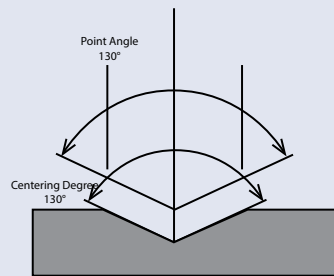
for 45° chamfering, for both centering and chamfering.

Point Angle 120° & 130°

for centering before drilling.



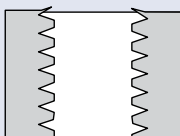
Centering 120°



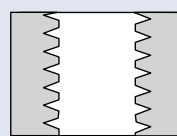
Centering 130°

Point Angle 60°

for chamfering 60° when tapping with form tap. When a form tap is used, and the entrance to the hole is not chamfered, burring is likely to occur. It is recommended to use a spot drill with a 60° chamfer to prevent burring.



Burring



Chamfered 60°

The A Brand *The Tooling Master Class*

A-END MILL 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. You will experience a level of quality, reliability and satisfaction that can only be delivered by the A Brand tooling master class.

Advanced performance A-End Mills are optimized for the most challenging applications.

A-END MILL



A Brand® AE-VMS *Advanced Performance Anti-Vibration Carbide End Mills*



A Brand® AE-VML *Advanced Performance Carbide End Mills for High Efficiency Side Milling*



A Brand® AE-H *Advanced Performance Carbide End Mills with DUOREY Coating*



A Brand® AE-VMS

Advanced Performance Anti-Vibration Carbide End Mills

A Brand® AE-VMS

The AE-VMS end mills bring you the new standard for milling. Variable lead geometry suppresses vibration and enables stable and high efficiency milling. Along with its substrate of micrograin carbide, it also comes with OSG's newest multi-layer DUARISE coating for superior surface quality. With a full offering including square, corner radius, and long reach, it is sure to cover all your needs.



Features & Benefits

- **OSG's DUARISE coating** provides excellent lubricity, superior friction-resistance and high oxidation temperature. Multi-layered construction minimizes thermal cracks.
- **New flute form**, with high tool rigidity and excellent chip evacuation properties, enables stable milling and the suppression of burrs.
- **Positive rake angle** reduces cutting forces.

List Numbers

8200 - A Brand® AE-VMS (Inch)	5/64"-1"
8205 - A Brand® AE-VMS (Metric)	3mm-25mm
8210 - A Brand® AE-CR-VMS (Inch, Corner Radius)	3/16"-1"
8215 - A Brand® AE-CR-VMS (Metric, Corner Radius)	3mm-12mm
8220 - A Brand® AE-LN-CR-VMS (Inch, CR, Long Neck)	1/4"-1"
8206 - A Brand® AE-VMSS (Metric)	3mm-12mm
8230 - A Brand® AE-LN-VMSS (Inch, Long Neck)	1/4"-1"
8235 - A Brand® AE-LN-VMSS (Metric, Long Neck)	6mm-12mm

Size Range

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	<input checked="" type="checkbox"/>
M	Stainless Steels : 400	<input checked="" type="checkbox"/>
M	Stainless Steels : 17-4PH	<input checked="" type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input type="checkbox"/>
H	Hardened Steels : 45-50 HRC	
H	Hardened Steels : 50-70 HRC	

good best

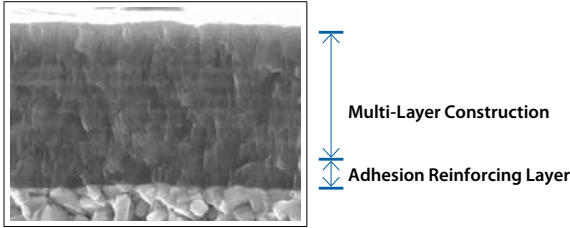
For more information scan the QR code to the right and visit: osgtool.com/ae-vms



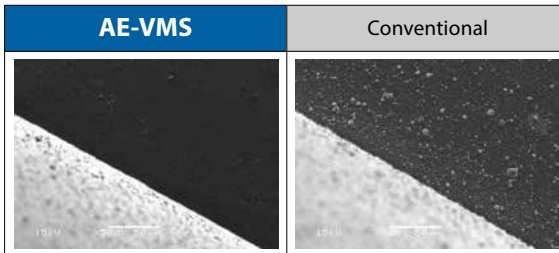
Duarise Coating

Superior Surface Quality

OSG's Duarise coating provides excellent lubricity, superior friction-resistance, and high oxidation temperature. Multi-layer construction minimizes the thermal cracks that often occur when using water-soluble oil.



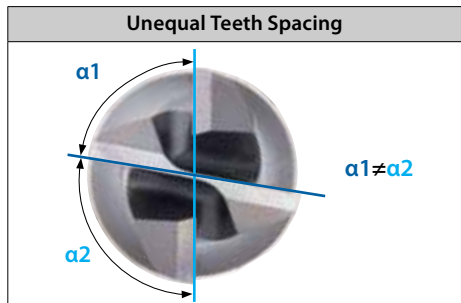
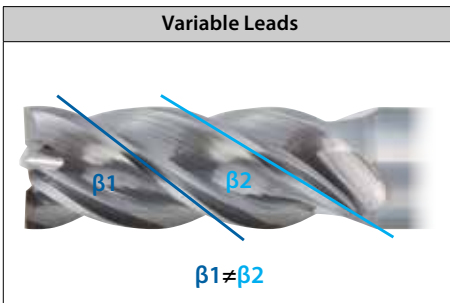
Duarise Coating Provides Excellent Surface Finish



Vibration Suppression

Stable, High Efficiency Milling

Unequal spacing of teeth and variable-lead geometry enables stable and high efficiency milling.



A Brand® AE-VML

Advanced Performance Carbide End Mills for High Efficiency Side Milling



A Brand® AE-VML

The AE-VML carbide end mill series brings you the new standard for side milling. High-speed side milling is made possible by the large core design where the thickness of the core changes from the cutting edge to the shank for improved tool rigidity and prevention of machining surface tilting. The combination of variable lead, unequal spaced teeth and microrelief geometry contributes to stable and high efficiency milling performance. The new chipbreaker creates small chips that can be easily evacuated to enable continuous machine operation in high chip removal side milling, trochoidal milling and pocket milling.



Features & Benefits

- **OSG's DUARISE coating** provides excellent lubricity, superior friction-resistance and high oxidation temperature. Multi-layered construction minimizes thermal cracks.
- **Tapered core**, greatly improves tool rigidity to prevent the machining surface from tilting.
- **Chipbreaker** creates small and compact chips to enable undistruptive machining operations.

List Numbers

- 8201 - A Brand® AE-VML (Inch)
- 8207 - A Brand® AE-VML (Metric)
- 8202 - A Brand® AE-NIK-VML (Inch, Nick)
- 8208 - A Brand® AE-NIK-VML (Metric, Nick)

Size Range

- 1/4"-1/2"
- 6mm-12mm
- 1/4"-1/2"
- 6mm-12mm

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	<input checked="" type="checkbox"/>
M	Stainless Steels : 400	<input checked="" type="checkbox"/>
M	Stainless Steels : 17-4PH	<input checked="" type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input type="checkbox"/>

good best

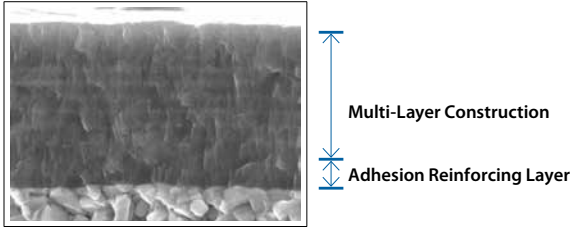
For more information scan the QR code to the right and visit: osgtool.com/ae-vml



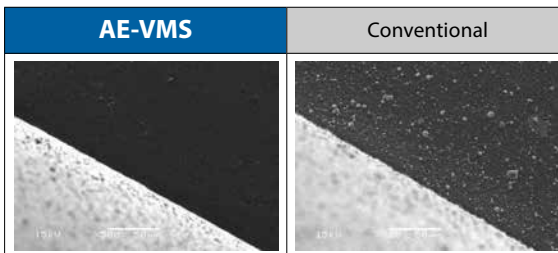
Duarise Coating

Superior Surface Quality

OSG's Duarise coating provides excellent lubricity, superior friction-resistance, and high oxidation temperature. Multi-layer construction minimizes the thermal cracks that often occur when using water-soluble oil.



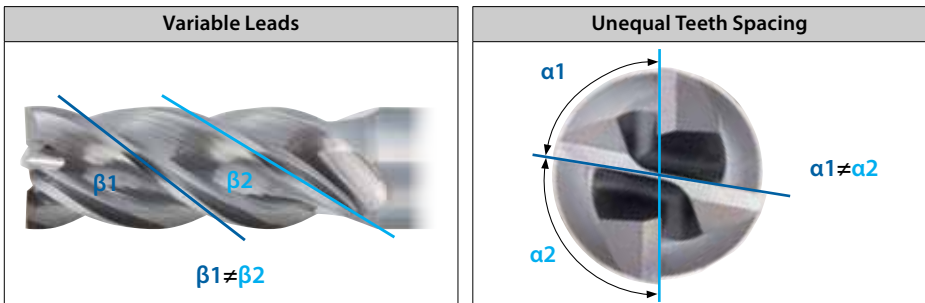
Duarise Coating Provides Excellent Surface Finish



Vibration Suppression

Stable, High Efficiency Milling

Unequal spacing of teeth and variable-lead geometry enables stable and high efficiency milling.



A Brand® AE-H

Advanced Performance Carbide End Mills with DUOREY Coating



A Brand® AE-H

Carbide ball end mills for high -precision finishing of high-hardness steel with emphasis on machined surface accuracy. The new DUOREY coating enables longer tool life in high-hardness steel and is high chipping resistant in work materials exceeding 60 HRC.

CARBIDE	DUOREY	R ± 0.003 R<0.25	R ± 0.005 0.25<-R	R ± 0.005 R<1.5	R ± 0.007 1.5<-R<3	R ± 0.01 3<-R	R ± 0.005	25°	30°	40°
SHANK	SHRINK									
h4	FIT									

Features & Benefits

- **OSG's DUOREY coating** enables superior heat resistance and high toughness optimized for high-hardness steel milling.
- **Thickening of the center core** to prevent deformation of the ball tip and improve control of chipping.
- **Superior ball R precision** +/- 0.005mm.
- **Superior shank accuracy** can support h4 tolerance (0/-0.004mm).

List Numbers

Size Range

8410 - A Brand® AE-BD-H (Inch)	1/32"-1/2"
8510 - A Brand® AE-BD-H (Metric)	0.2mm-12mm
8590 - A Brand® AE-LNBD-H (Metric)	0.1mm-6mm
8430 - A Brand® AE-BM-H (Inch)	1/8"-1/2"
8530 - A Brand® AE-BM-H (Metric)	1mm-12mm

ISO	Work Material	Recommended
P	Low Carbon Steel : 1010, 1018	<input checked="" type="checkbox"/>
P	Medium Carbon Steel : 1035, 1045	<input checked="" type="checkbox"/>
P	High Carbon Steel : 1065	<input checked="" type="checkbox"/>
P	Alloy Steels : 4140, 4340	<input checked="" type="checkbox"/>
P	Die Steels	<input checked="" type="checkbox"/>
M	Stainless Steels : 300	<input type="checkbox"/>
M	Stainless Steels : 400	<input type="checkbox"/>
M	Stainless Steels : 17-4PH	<input type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Aluminum : 6061, 7075	<input type="checkbox"/>
N	Aluminum : Casting	<input type="checkbox"/>
S	Nickel Alloy : Inconel	<input type="checkbox"/>
S	Titanium : 6AL4V (30HRC)	<input type="checkbox"/>
H	Hardened Steels : ~35 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 35-45 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 45-50 HRC	<input checked="" type="checkbox"/>
H	Hardened Steels : 50-70 HRC	<input checked="" type="checkbox"/>

good best

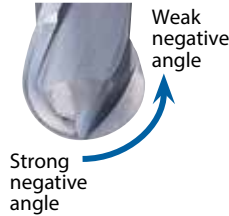
For more information scan the QR code to the right and visit: osgtool.com/ae-h



Variable Negative Spiral Gash

AE-BD-H

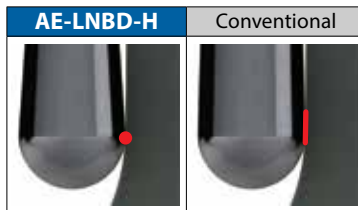
Controls chipping with a larger negative angle at the tip of the cutting edge, while securing cutting quality by making the negative angle weaker near the outer periphery, chipping resistance is enhanced in combination with the weaker helix angle specification.



Teardrop-Shaped Outer Periphery

AE-LNBD-H

Strong back taper geometry enables milling by point, which prevents chattering and chirping, resulting in improvement of surface accuracy.

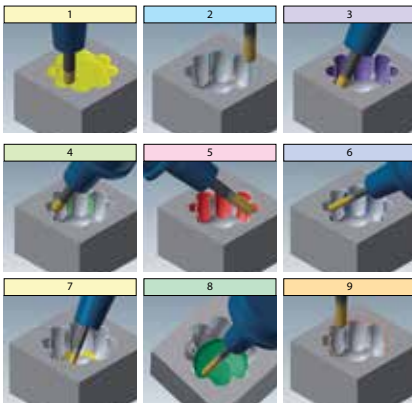


3 Styles for a Wide Range of Milling Applications

AE-H Features 3 Styles to Cover a Wide Range of Applications

Work Material	YXR3 (60HRC)
Machine	5-Axis Machining Center
Main Spindle	HSK63

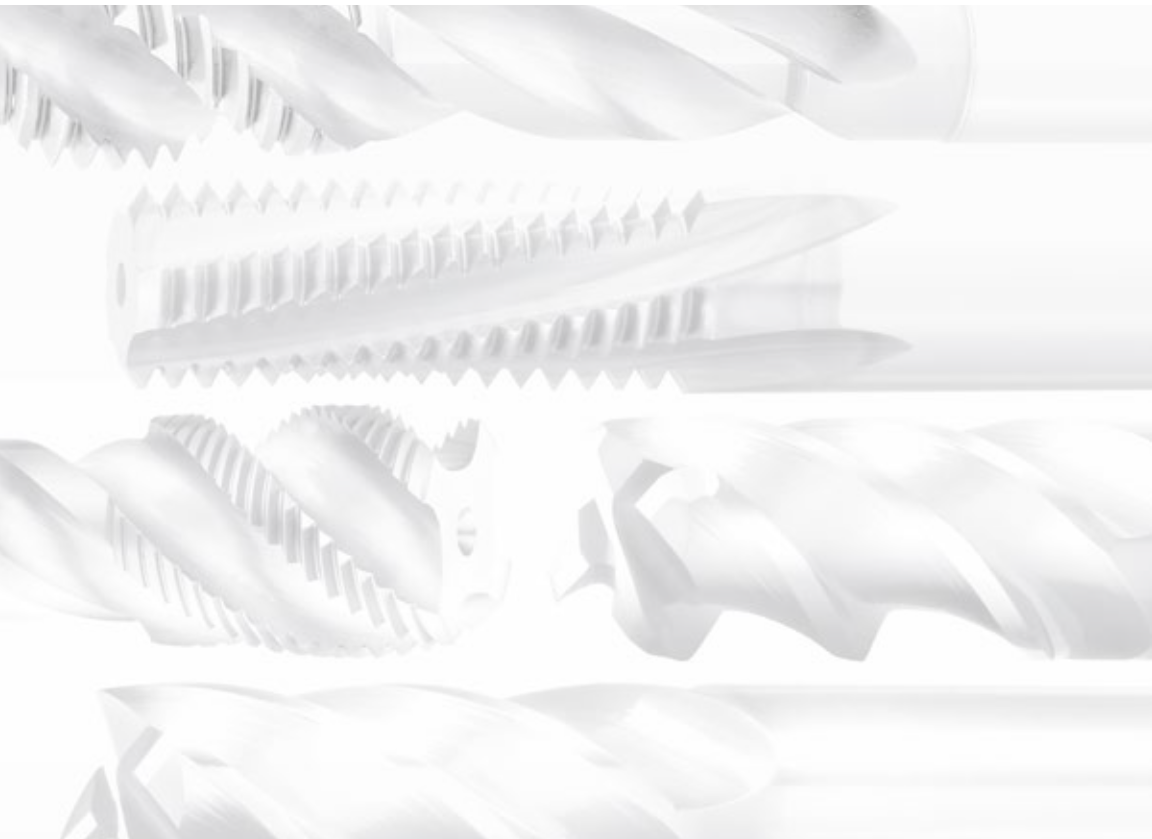
Coolant	MQL
Max RPM	25,000min ⁻¹
Holder	Shrink Fit



Process	Milling Part	Milling Method	Milling Process	Tool
1	Overall	3-axis contouring line	High-efficiency roughing	AE-BM-H R5
2	Chamfer	3-axis contouring line	Semi-roughing	
3	Groove	5-axis profiling	Semi-roughing	
4	Ridge	5-axis turn milling	Roughing/Semi-roughing	AE-BD-H R5x30
5	Groove	5-axis profiling	High-precision finishing	
6	Ridge	5-axis profiling	High-precision finishing	AE-LNBD-H R3x40x6
7	Middle bottom	5-axis turn milling	High-precision finishing	
8	Bottom	5-axis turn milling	High-precision finishing	
9	Chamfer	3-axis contouring line	High-precision finishing	AE-BD-H R5x30



shaping your dreams



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