



A BRAND[®] ADO-TRS

Advanced Performance High Feed 3-Flute Carbide Drills

The Fastest and Most Productive Drill in the World!

PRIMARY TARGETS

- 2-Fluted Drills in Steels & Cast Irons
- Customers Who Have the Need for Speed!

SOLUTIONS

- Increased Productivity, Hole Quality and Overall shop **CAPACITY!**
- Eliminate Reaming Operations

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WHAT OUR CUSTOMERS SEE

- ***A 30-50% Reduction in Cycle Time!***

HOW DOES IT WORK?

3-Flute Design

- Higher Feed Rates than 2-Flute Drills
- High Accuracy Holes
- Reduces Work Hardening

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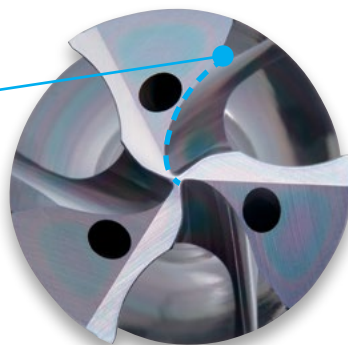


R Gash Geometry

- Lower Cutting Resistance
- Outstanding Chip Management



S50C
Work Material



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"

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 3 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.

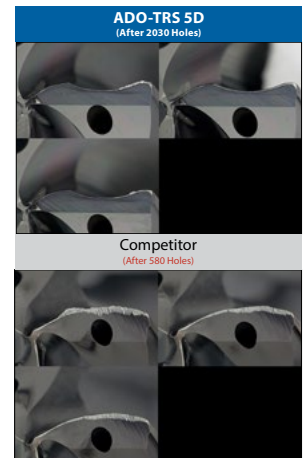
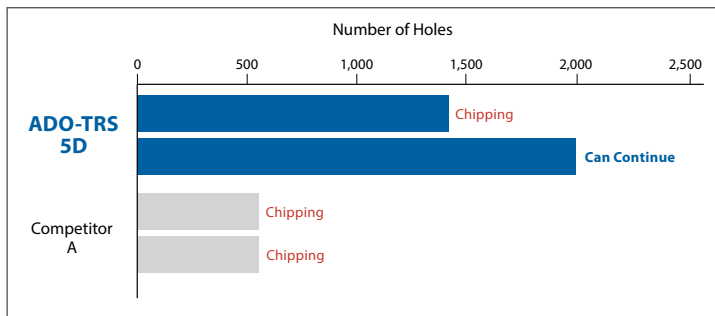
Reduced Work Hardening:

The amount of work hardening and depth of work hardening have a tendency to be proportional to the feed per revolution. Compared to 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	



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A BRAND[®] ADO

Advanced Performance Drills for Ferrous & Non-Ferrous Materials

Drill in a variety of steels up to 50xD without pecking

PRIMARY TARGETS

- Single Drill Series to Cover a WIDE Range of Materials
- Shops Looking to Consolidate Drill Inventory & Types
- Customers reviewing increased performance and tool life for drilling operations

SOLUTIONS

- Tool Life Increase & Increased Efficiencies
- Standardize Shop Drill Inventory with Single Series

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WHAT OUR CUSTOMERS SEE

- ***WOW! I have seen 40% more tool life with the ADO versus your previous product, at the same cost! Thank you OSG!***

HOW DOES IT WORK?

Optimized Drill Specification for Every Depth

- 2D, 3D, 4D, 5D, 8D: Wavy Point w/ Wide Chip Room to Enhance Chip Shape & Evacuation
- 8D, 10D, 15D, 20D, 25D, 30D: Middle Margin for Deep Hole Stability
- 40D, 50D (**NEW!**): New Drill Design Specifications for Ultra Deep-Hole Applications

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EgiAs Coating

- New Coating Technology Provides Wear Resistance & Toughness
- Specialized Coating for Drilling Operations



A Brand® ADO

Advanced Performance Drills for Ferrous & Non-Ferrous Materials

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)

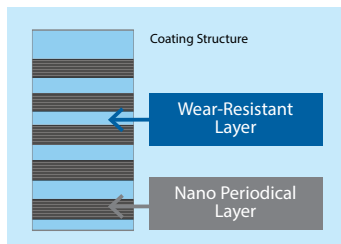
Size Range

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"

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)

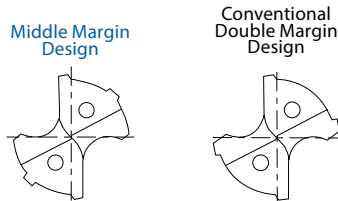
Wavy point form improves the sharpness of the cutting edge at various areas where the cutting force fluctuates with the cutting speed, thereby achieving low thrust, stable torque, and longer tool life.

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

Middle Margin Design (8D-30D)

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.



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A BRAND® ADO-MICRO

Advanced Performance Small Diameter Coolant-Fed Carbide Drills

Efficient processing in small diameter deep-hole applications

PRIMARY TARGETS

- Small Diameter Drilling in Difficult to Machine Materials Where Coolant is Necessary
- Small Diameter Deep Hole Applications with High Accuracy
- Hole Diameters from 0.7-2.0mm

SOLUTIONS

- Eliminates Premature Breakage Issues
- Long Predictable Tool Life in Difficult to Machine Materials Can Be Achieved

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WHAT OUR CUSTOMERS SEE

- ***We saved \$250K by incorporating this drill into production! OSG TRIPLED the tool life in Titanium!***

HOW DOES IT WORK?

Drill Design Enables Excellent Chip Evacuation

- Unique Flute Form Creating Consistent Chip Shape for Easy Evacuation
- Large Coolant Holes with Hollow Shank Allows Greater Coolant Volume
- Double Margin Supports Holes Straightness & Accuracy

Ichada Coating

- New SUPER SMOOTH Coating Technology to Reduce Friction between Tool and Work Material

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A Brand® ADO-MICRO

Advanced Performance Small Diameter Coolant-Through Carbide 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

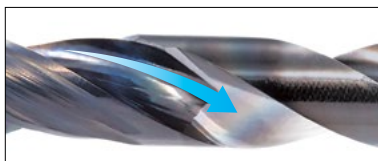
6501 - A Brand® ADO-MICRO (2D)
 6502 - A Brand® ADO-MICRO (5D)
 6503 - A Brand® ADO-MICRO (12D)
 6504 - A Brand® ADO-MICRO (20D)
 6505 - A Brand® ADO-MICRO (30D)

Size Range

0.7mm-2mm
 0.7mm-2mm
 1mm-2mm
 1mm-2mm
 1mm-2mm

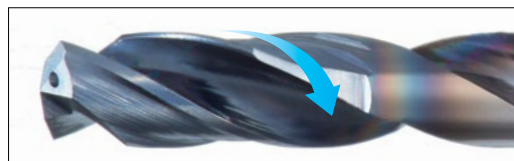
Flute Structure

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

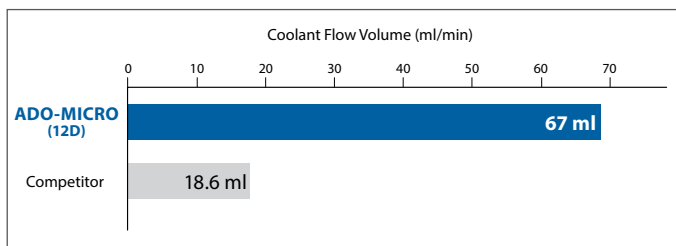
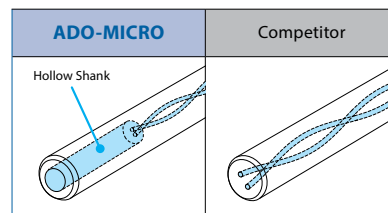
Capability to smoothly discharge "micro sludges" that can be easily accumulated around the outer periphery of the tool, which is a key cause of abrupt tool breakage.

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	



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A BRAND® ADO-SUS

Advanced Performance Coolant-Fed Carbide Drills for Stainless Steel

Performance Drill for Gummy Materials!

PRIMARY TARGETS

- Stainless & Titanium Applications
- Customers Struggling with Chip Shape/Evacuation
- Customers Seeking Cycle Time Improvements

SOLUTIONS

- Excellent Chip Shape & Long Tool Life!
- A Single Drill to Cover Several Materials
Such as Steel, Stainless Steel, Cast Iron and more!

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WHAT OUR CUSTOMERS SEE

- Huge Difference in Chip Shape ***It Breaks Gummy Chips!***
- Significant Tool Life Increase!

HOW DOES IT WORK?

MEGA Cooler

- Increases Volume & Coolant Velocity
by ***30% Over Conventional***

Special Flute Form

- Compresses & Compacts Chips

WXL Coating

- High Wear Resistance / Low Coefficient of Friction

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A Brand® ADO-SUS

Advanced Performance Coolant-Fed Carbide Drills for Stainless Steel

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"

Why Use A Brand® ADO-SUS?

The Solution to your Stainless Steel and Titanium Troubles

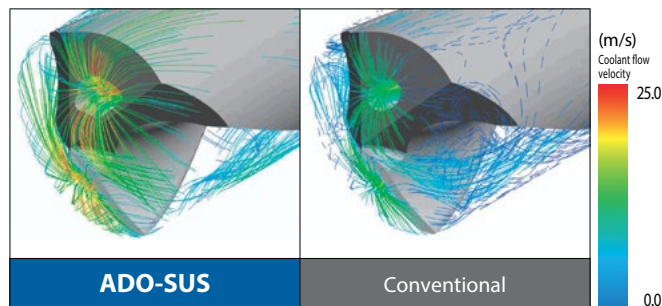
OSG's A Brand® ADO-SUS has specifically addressed many common issues that occur when machining stainless steels and titanium alloys such as work hardening, elongated chips, low thermal conductivity and welding on the tool.

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.

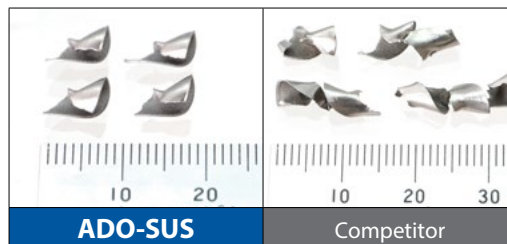


Analysis of coolant flow with spindle speed of 2,200 RPM

New Flute Geometry

Producing Manageable Chips

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



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A BRAND® ADF

Advanced Performance Carbide Flat Drills for Various Applications

High Performance Flat Bottom Drill!

PRIMARY TARGETS

- Counterbores & Non-Flat Surfaces, Angled Drilling, Odd/Unique Drilling Applications

SOLUTIONS

- A Versatile Drill for All Kinds of Drilling Situations Such as: Cross Holes, Inclined & Curved Surfaces, Thin Plates, Curved Exit, Etc.

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WHAT OUR CUSTOMERS SEE

- A **Highly Versatile Drill** with Minimal Exit Burrs
- Able to Drill **Accurately** in Various Surface Applications

HOW DOES IT WORK?

180° Flat Bottom Point

- Stable Hole Entry and Exit On Any Type of Surface

Wide Flute Form

- Excellent and Smooth Chip Evacuation

Coolant-Through Option

- Ideal for Stainless Steel Applications

Unique End Cut Geometry

- Reduces Cutting Forces to Enable Stable Machining

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A Brand® ADF

Advanced Performance Carbide Flat Drills for Various Applications

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

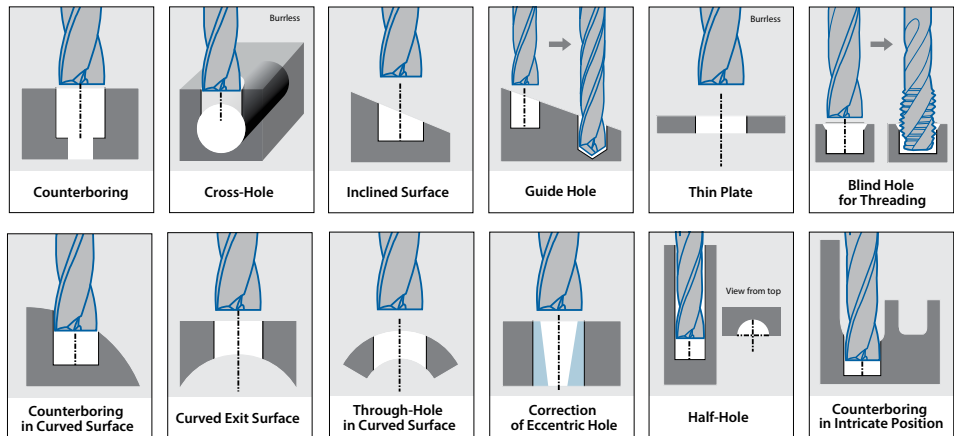
5700 - A Brand® ADF (2D)	0.2mm-20mm, 1/64"-3/4"
5705 - A Brand® ADF-LS (2D, LS)	3mm-20mm, 1/8"-3/4"
5720 - A Brand® ADFO (3D, Coolant)	3mm-20mm, 1/8"-3/4"

Size Range

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.




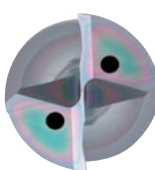
Application Guide

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.



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

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

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A BRAND® AD-LDS

Advanced Performance Carbide Spot Drill

Increases Processing Speed for Centering & Countersinking

PRIMARY TARGETS

- Customers who Center Drill and/or Countersink looking to increase speed and tool life

SOLUTIONS

- Reduction of Chipping on Cutting Edge in Wide Range of Materials

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WHAT OUR CUSTOMERS SEE

- *We went from purchasing 20pcs a month of those cheap brands to one OSG!*

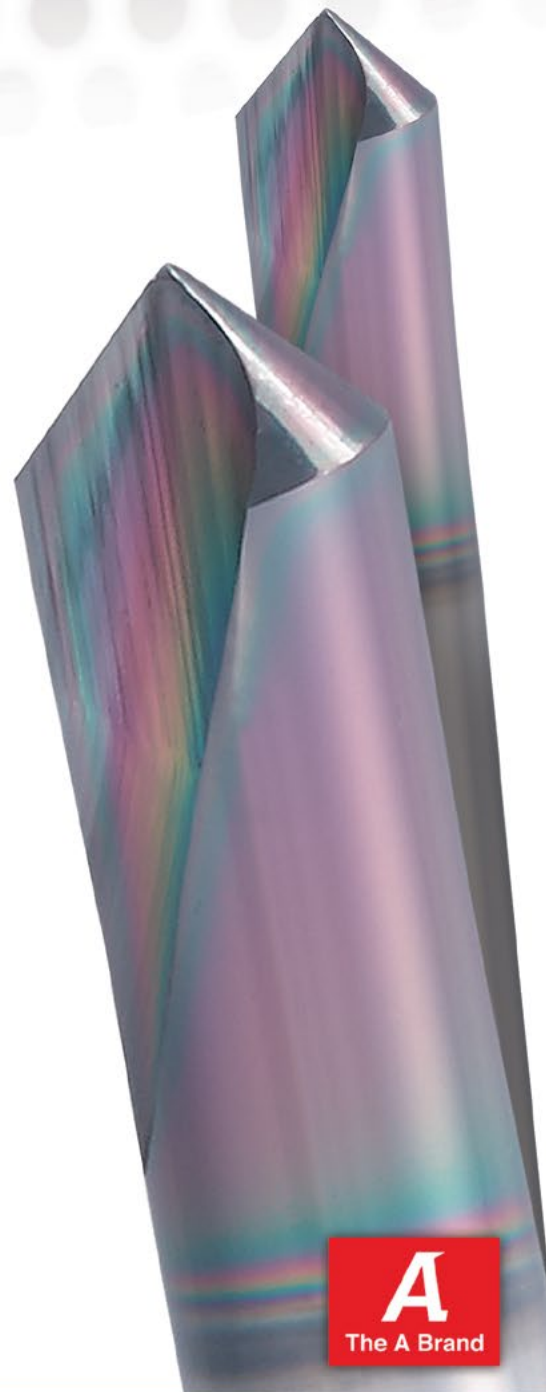
HOW DOES IT WORK?

Geometry, Sharpness and Chipping Resistance Carbide

- Great Attributes Equals Great Tool

EgiAs Coating

- New Coating Technology Provides Wear Resistance & Toughness
- Specialized Coating for Drilling Operations



A Brand® AD-LDS

Advanced Performance Carbide Spot Drill

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

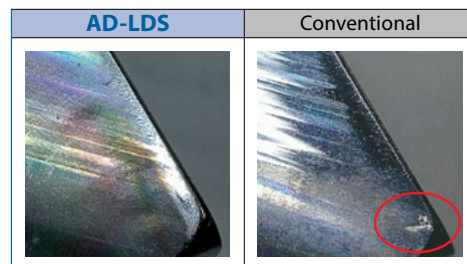
3mm-25mm

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	



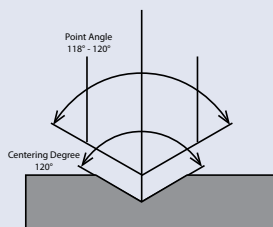
Selection Chart for Spot Drills

Classifying Spot Drill by Point Angle

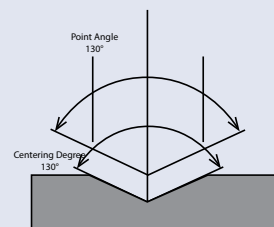
Spot drills can perform both centering and chamfering. Centering improves drilling precision. Chamfering prevents burrs on the end face during tapping and removes burrs that may occur during drilling.

Point Angle 90°
for 45° chamfering, for both centering and chamfering.

Point Angle 120° & 130°
for centering before drilling.

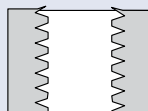


Centering 120°

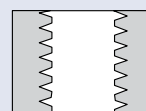


Centering 130°

Point Angle 60°
for chamfering 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°



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A BRAND® AT-1

Advanced Performance One Pass Thread Mill

The World's Only Single Pass Thread Mill!

PRIMARY TARGETS

- Thread Milling Customers Looking to **Reduce Cycle Time by 50%!**

SOLUTIONS

- A Single Pass Option to Cut Cycle Time!
- Working in Tandem with the Trifecta (The AT-1 along with OSG's thread milling software Thread Pro and the DCT a Diameter Correction Tool for easy and consistent setups)

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WHAT OUR CUSTOMERS SEE

- **Three Passes to a Single Pass!** What a Difference!
- Setup Time **Reduced by 50%!**

HOW DOES IT WORK?

Unique Helix Geometry

- Eliminates Cutting Deflection for Straight Threads

Variable Geometry

- Reduces Chatter and Increases Tool Life

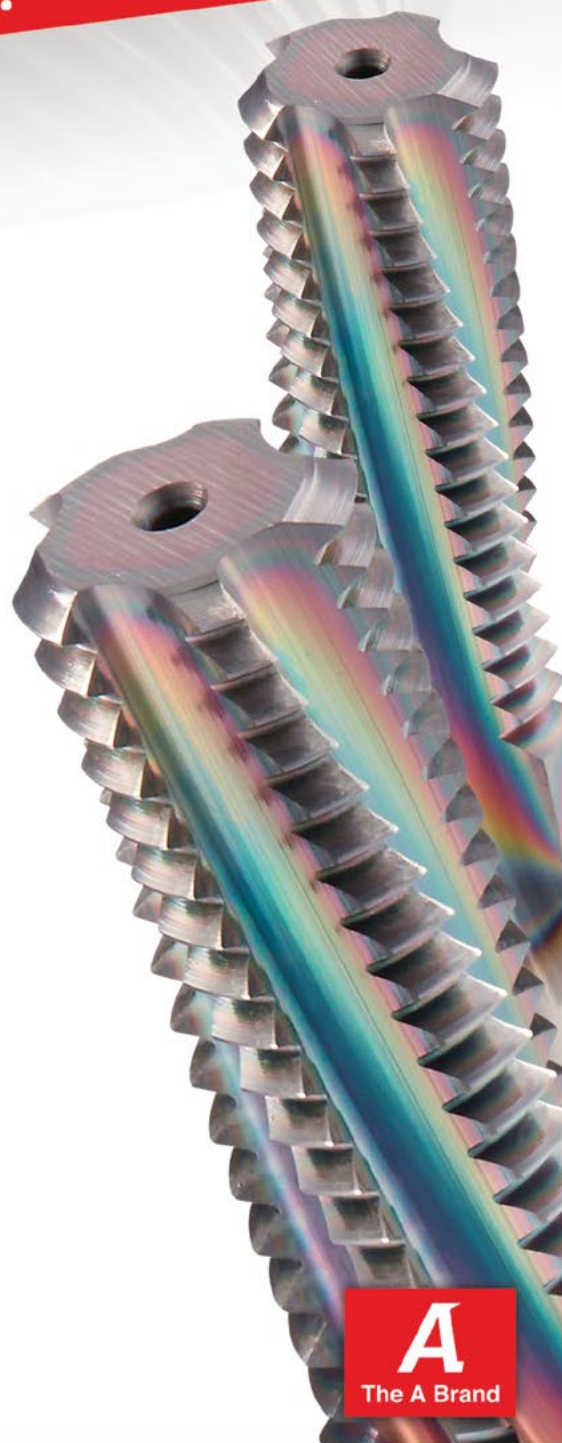
EgiAs Coating

- For Exceptional Wear Resistance

OSG's Trifecta

- AT-1 + Thread Pro + DCT = Low Setup Times

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A Brand® AT-1

Advanced Performance One Pass Thread Mill

A Brand® AT-1

OSG's newest thread mill, 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

16620 - A Brand® AT-1 (Inch)
 16625 - A Brand® AT-1 (Metric)
 16630 - A Brand® AT-1 (NPT)
 16631 - A Brand® AT-1 (NPTF)

Size Range

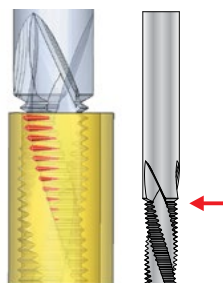
1/4"-1"
 M6-M24
 1/16"-2"
 1/16"-2"

1-Pass Cutting

Left Hand Helix Reduces Deflection for 1-Pass Cutting

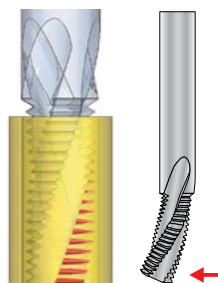
The AT-1 is designed with a left hand helix and starts cutting from the shank side, reducing deflection, preventing bending, thus allowing for 1-pass cutting and reducing overall cutting time.

AT-1 Left Hand Helix



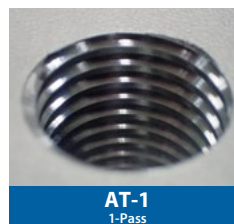
Starts cutting from the shank side
Result: Reduced deflection
 Note: Climb milling recommended

Conventional Right Hand Helix

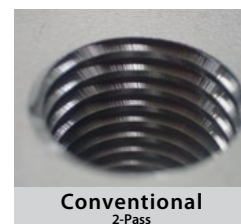


Starts cutting from the tip
Result: Big deflection

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



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OSG Canada, Ltd. : 905-632-8032 • OSG Royco (Mexico) : (52) 477 478-02-00



A BRAND® AT-2

Advanced Performance Thread Mill for High-Hardness Steels

One Tool - Two Processes!

PRIMARY TARGETS

- Customers threading high hardened materials
- Customers looking for thread processing efficiency

SOLUTIONS

- Combining Drilling & Threading Simultaneously, Great Cycle Savings Can be Achieved
- By Eliminating Drilling and Tapping Operations, Tool Breakage in Hole can be Eliminated, Thus Eliminating Tool Removal Processes

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WHAT OUR CUSTOMERS SEE

- ***I Cannot Believe My Eyes!***

HOW DOES IT WORK?

End Cutting Geometry w/ Roughing Teeth

- Helical Drilling while Rough Cutting the Thread Form Suppresses Bending of the Tool with Load

Left Hand Cutting

- Tool specification enables climb cutting which prolongs tool life

DUROREY Coating

- New SUPER Coating Technology Provides Superior Heat Resistance and High Toughness, Optimized for High Hardened Materials

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in Action!



A Brand® AT-2

Advanced Performance End-Cutting Thread Mill for High-Hardness Steels

A Brand® AT-2

The OSG A Brand AT-2 Thread mills with end-cutting edge for high hardness steels is ideal for highly difficult high hardness steel applications. The risk of sudden tool breakage can be minimized by breaking chips into small and manageable pieces and evacuating them smoothly. Since no pilot hole is required, process integration and the risk of breakage can be avoided.



Features & Benefits

- **OSG's DUOREY coating** enables superior heat resistance and high toughness optimized for high-hardness steel milling!
- **Special cutting edge shape** controls tool deflection.
- **Left-hand cut configuration** enables climb milling to prolong tool life.
- **Added roughing teeth** to distribute the load.
- **No pilot hole is required** Helical drilling + threading can be done simultaneously.

List Numbers

16645 - A Brand® AT-2 (Inch)
16640 - A Brand® AT-2 (Metric)

Size Range

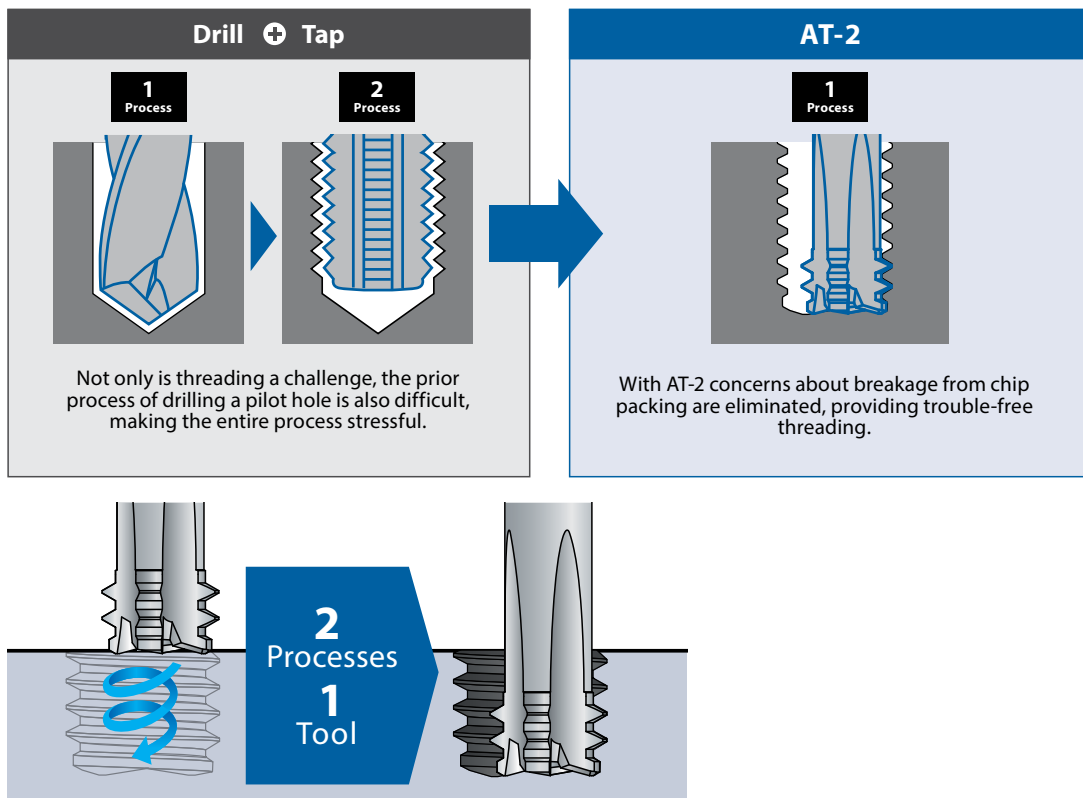
#8-1/2"
M3-M12

2 Processes with 1 Tool

Helical Drilling & Threading Done Simultaneously!

Helical drilling and threading are performed simultaneously, which reduces the risk of potential machining problems in the processing of high hardness steels.

The risk of sudden tool breakage is minimized as the chips are broken into small, manageable pieces and evacuated smoothly. Since no pilot hole is required, AT-2 integrates two processes while avoiding part scrap.



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THREADING

A BRAND® A-SFT & A-POT

Any Material, Any Application, Any Time!

The World's Best Tap Series!

PRIMARY TARGETS

- Customers Who Want **One Tap to Do it ALL!**
- Customers Looking for Chip Control and High Quality Threads

SOLUTIONS

- Solves Tapping Issues like Chip Evacuation, Tap Breakage, Etc.
- Operates at Higher SFM's to Reduce Cycle Times!

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WHAT OUR CUSTOMERS SEE

- Highest Quality Tap Chips They've Ever Seen!
- Just Hit Cycle Start... and it Just Works!

HOW DOES IT WORK?

Variable Lead Helix

- Directs Chips Away from the Hole Efficiently

Powder Metal Substrate + TiCN Coating

- High Wear Resistance

Very Comprehensive Offering

- Many Stocked Sizes in Inch & Metric, Multiple Lengths and Coolant-Through

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PTSolutions

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A Brand® A-SFT & A-POT

Advanced Performance Spiral Flute and Spiral Point 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

16500 - A Brand® A-SFT (Metric)
 16505 - A Brand® A-SFT (Inch)
 16520 - A Brand® A-LT-SFT (Metric, Long Shank)
 16525 - A Brand® A-LT-SFT (Inch, Long Shank)
 16540 - A Brand® A-OIL-SFT (Metric, Coolant)
 16545 - A Brand® A-OIL-SFT (Inch, Coolant)

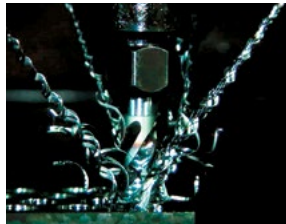
Size Range

M1.4-M56
 No. 4-2"
 M3-M24
 No. 4-1"
 M6-M56
 1/4"-2"

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

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

16510 - A Brand® A-POT (Metric)
 16515 - A Brand® A-POT (Inch)
 16530 - A Brand® A-LT-POT (Metric, Long Shank)
 16535 - A Brand® A-LT-POT (Inch, Long Shank)
 16550 - A Brand® A-OIL-POT (Metric, Coolant)
 16555 - A Brand® A-OIL-POT (Inch, Coolant)

Size Range

M1.4-M24
 No.2-1"
 M3-M24
 No. 4-1"
 M6-M24
 1/4"-1"

Superior Threads

No Galling of the Work Material



Mild Steel



Stainless Steel



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THREADING

A BRAND® A-PIPE

Advanced Performance Pipe Taps

Designed to work a wide variety of materials!

PRIMARY TARGETS

- Customers Pipe Threading from Production to Job Shop
- Customers who Suffer from Pipe Threading Troubles
- Customers who Pipe Thread in Multiple Materials

SOLUTIONS

- Stable Tapping with Long Tool Life is Achievable

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WHAT OUR CUSTOMERS SEE

- *I have been tapping pipe threads for 20 years and this tapered pipe tap is the smoothest I have ever seen.*

HOW DOES IT WORK?

Variable Lead Flute Geometry

- Flute Shape Creates Mangable Chips for Easy Evacuation

Interrupted Threads

- Tapered Pipe Series Design Offers Interrupted Thread to Reduce Tapping Torque

Wide Range of Pipe Thread Specifications and Extended Length Available

- NPT, NPT-Long Shank, NPS, BSPT, BSPP



A

The A Brand

PTSolutions

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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

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

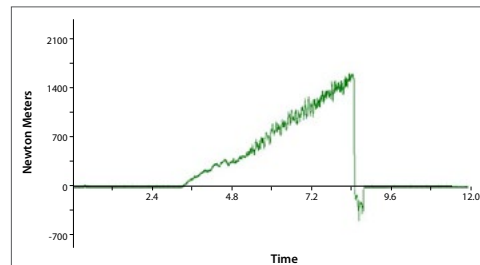
Size Range

1/16"-1"
 1/16"-1"
 1/8"-1"
 1/8"-1"
 1/16"-1"

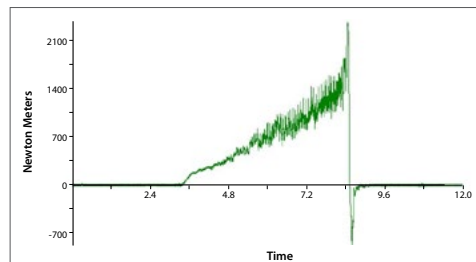
Stabilized Cutting Torque

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

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



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A BRAND® AE-VM

Advanced Performance Anti-Vibration Carbide End Mills

Chatter-Free End Mills for High Machining Productivity

PRIMARY TARGETS

- Reduces Vibration During Roughing and Finishing Operations
- Burr Free Machining & Long Wall Machining

SOLUTIONS

- Produces Burr Free Parts at High Efficiencies
- **One Shot Wall Finishing** with High Accuracy and Efficiency

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WHAT OUR CUSTOMERS SEE

- MRR Doubled Using this Tool!
- Chatter & Vibration were ELIMINATED!

HOW DOES IT WORK?

Variable & Sharp Geometry

- Reduction of Chatter and Good Chip Formation

Micro-Relief on Cutting Edge

- Add Stability for Long Wall Applications

Nicked Edge Option

- Breaks Chips into Manageable Shapes

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Watch it
in Action!



A Brand® AE-VM

Advanced Performance Anti-Vibration Carbide End Mills

A Brand® AE-VM

The AE-VM 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)
8205 - A Brand® AE-VMS (Metric)
8210 - A Brand® AE-CR-VMS (Inch, CR)
8215 - A Brand® AE-CR-VMS (Metric, CR)
8220 - A Brand® AE-LN-CR-VMS (Inch, CR, LN)
8206 - A Brand® AE-VMSS (Metric)
8230 - A Brand® AE-LN-VMSS (Inch, LN)
8235 - A Brand® AE-LN-VMSS (Metric, LN)
8201 - A Brand® AE-VML (Inch)
8207 - A Brand® AE-VML (Metric)
8202 - A Brand® AE-NIK-VML (Inch, Nicked)
8208 - A Brand® AE-NIK-VML (Metric, Nicked)

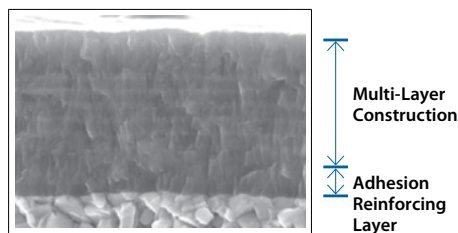
Size Range

5/64"-1"
3mm-25mm
3/16"-1"
3mm-12mm
1/4"-1"
3mm-12mm
1/4"-1"
6mm-12mm
1/4"-1/2"
6mm-12mm
1/4"-1/2"
6mm-12mm

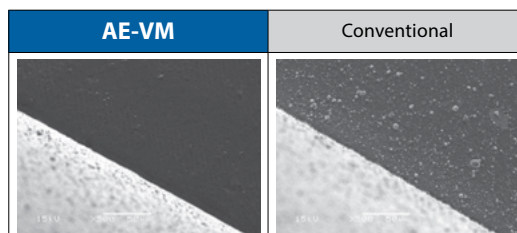
DUARISE Coating

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.



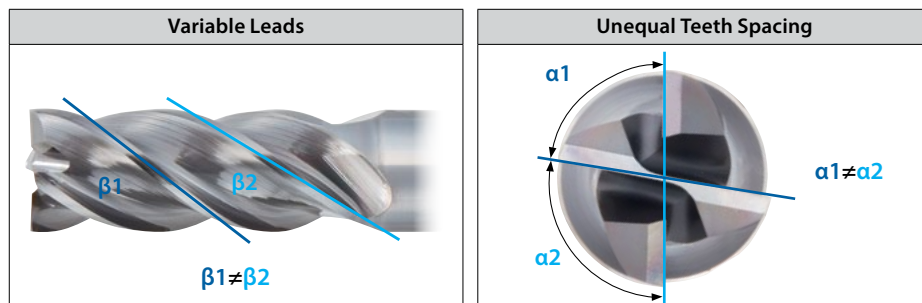
DUARISE Coating Provides Excellent Surface Finish



Vibration Suppression

Stable, High Efficiency Milling

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



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A BRAND® AE-H

Advanced Performance Carbide End Mills for Hardened Steels

High Precision Machining of High Hardened Steels

PRIMARY TARGETS

- Die Mold Shops Machining Hard Materials that Need Long Tool Life
- Hard Steel Applications (*Over 55HRC*)

SOLUTIONS

- Offers High Precision and Long Reliable Tool Life
- Best Choice Ball End Mill for Hardened Material Applications

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it Online!



WHAT OUR CUSTOMERS SEE

- These Tools *Doubled My Tool Life in Hardened Steel!*
- Reduced My Bench Time Significantly!

HOW DOES IT WORK?

Durable Geometry

- Tools Have Special Geometry to Maximize Life

DUROREY Coating

- Extremely Hard and Wear Resistant Coating

Three Styles for Various Applications

- 4-Flute Regular Length
- 2-Flute Regular Length
- 2-Flute Long Neck

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Watch it
in Action!



A Brand® AE-H

Advanced Performance Carbide End Mills for Hardened Steels

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 h4	SHRINK FIT
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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

8410 - A Brand® AE-BD-H (Inch)
8510 - A Brand® AE-BD-H (Metric)
8590 - A Brand® AE-LNBD-H (Metric)
8430 - A Brand® AE-BM-H (Inch)
8530 - A Brand® AE-BM-H (Metric)

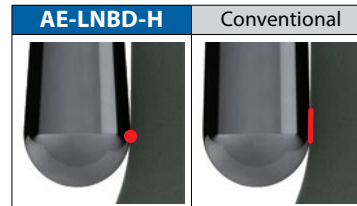
Size Range

1/32"-1/2"
0.2mm-12mm
0.1mm-6mm
1/8"-1/2"
1mm-12mm

Teardrop-Shaped Outer Periphery

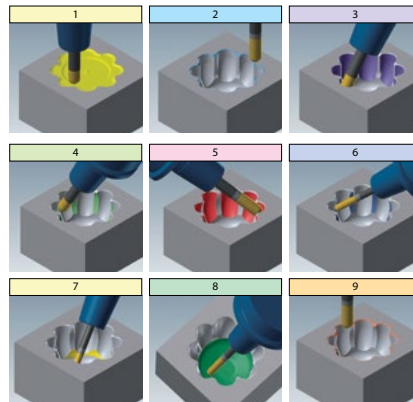
AE-LNBD-H

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



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	
5	Groove	5-axis profiling	High-precision finishing	AE-BD-H R5x30
6	Ridge	5-axis profiling	High-precision finishing	
7	Middle bottom	5-axis turn milling	High-precision finishing	AE-LNBD-H R3x40x6
8	Bottom	5-axis turn milling	High-precision finishing	
9	Chamfer	3-axis contouring line	High-precision finishing	AE-BD-H R5x30

Work Material	YXR3 (60HRC)
Machine	5-Axis Machining Center
Main Spindle	HSK63
Coolant	MQL
Max RPM	25,000min ⁻¹
Holder	Shrink Fit



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HY-PRO[®] CARB VGM

High Performance Variable Geometry End Mills

Designed for Dynamic Milling in Steel and Stainless Steel

PRIMARY TARGETS

- Customers looking for the next generation tool for Dynamic Milling / HEM (High Efficiency Milling)
- Shops who cut difficult to machine alloys
- Customers desiring consistent milling tool life

SOLUTIONS

- Dynamic Milling
- 5, 6 & 7 Flute Count Offerings

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WHAT OUR CUSTOMERS SEE

- "The VGM series is the real deal end mill. We **doubled our tool life** and the cost is cheaper than our current tool!"

HOW DOES IT WORK?

Variable Index

- Proven geometry to reduce vibrations

Unique Flute Geometry

- The flute shape creates excellent chip shape for easy evacuation

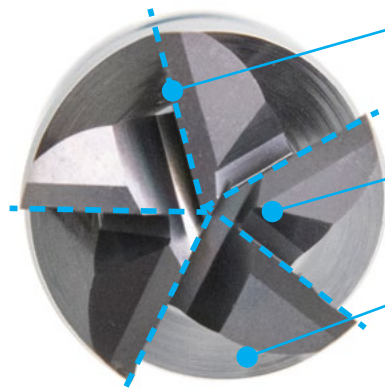
EXO Coating

- OSG's EXO coating is a proprietary TiAlN coating that provides excellent wear resistance in the toughest materials and conditions



HY-PRO® CARB VGM Series

High Performance Variable Geometry End Mills



Variable Index

Reduces vibration during machining.

Unique Flute Geometry

Maintains excellent cutting edge sharpness and tool rigidity.

EXO Coating

Provides longer tool life through exceptional wear and heat resistance.

Variable Index & Unique Flute Geometry

Reduces Vibration and Chatter & Promotes Smooth, Stable Cutting w/Low Cutting Forces

Variable Index:

Unequal flute spacing reduces vibration during machining by altering the timing of each flute engaging in the workpiece.



Unique Flute Geometry:

Sharp rake angle, high helix and adjusted core diameter maintain excellent cutting edge sharpness and tool rigidity to promote smooth, stable cutting with low cutting force.

EXO Coating

Provides Long Tool Life

OSG's proprietary multi-layer coating provides longer tool life through higher wear and heat resistance than conventional TiAlN coatings.

Series	Coating	Type	Hardness (HV)	Thickness (μm)	Coefficient of Friction	Oxidation Temp (C)
VGx		TiAlN	2,800	3	0.3	800
VGM		TiAlN Multilayer	2,800	3	0.3	850

VGM Series Comprehensive Offering

5-, 6-, and 7-Flute Lineups

OSG's VGM offering features 5-, 6-, and 7-flute lineups, and is available with multiple Lengths of Cut, with both Square End and Corner Radius variations.

Name	No. of Flutes	End Cut Type	Reduced Neck	LOC	Neck Length	Total # of EDPs
VGM-5	5	SQ & CR	N/A	1.25 to 6xD	-	277
VGM-5-LN	5	SQ & CR	Yes	1.25xD	3 to 10xD	211
VGM-6	6	SQ & CR	N/A	1.25 to 6xD	-	186
VGM-7	7	SQ & CR	N/A	1.25 to 6xD	-	110

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