

WIDIA Tri-Element

Opacity: 100%
Mode: Multiply

WIDIA Tri-Element bleeds off the left edge at the center point of the inverted triangles.

WIDIA Tri-Element: A triangle pointing in the upward direction must appear directly above the inverted white triangle in the WIDIA BrandBar.

3.5X

2.5X

2.5X

NEW PRODUCTS

WIDIA Tri-Element aligns with the center of the inverted white triangle in the WIDIA BrandBar.

Helvetica Neue LT Pro 47 Light Condensed
Size: 60 Leading: 62
Kerning: Optical Tracking: -20
Case: ALL CAPS or Sentence case

2.5X



WIDIA BrandBar

X = Height of Box

Our latest Metalcutting Innovations are designed to provide longer tool life, and increased application versatility.

For more information about the latest products and services from WIDIA, please contact your Authorized WIDIA Distributor, or visit widia.com.

High-Performance Solid Carbide Taps

- High-performance to surpass competitive taps.
- More production from a single tool.
- Available in various specifications.



High-Performance HSS-E-P Taps

- Enhanced design for reliable thread in different materials.
- More resistant to wear.
- Better performance in difficult-to-machine materials.



Helvetica Neue LT Pro 57 Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 13
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

Helvetica Neue LT Pro 77 Bold Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p3

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p4 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

VariTap

- Ideal for customers who have a variety of materials to machine.
- Manufactured for long and consistent performance.
- Geometry designed for a variety of materials including stainless steels, ductile iron, and cast aluminum.
- Unique spiral point geometry provides low tapping torque while pushing chips ahead of the tap in through holes.



Synchro Plus™ Holders

- New line of Synchro Plus holders minimizes axial forces resulting in longer cutting tool life; see pages B6–B9.





WIDIA Tri-Element
Opacity: 100%
Mode: Multiply

Helvetica Neue LT Pro 47 Light Condensed
Size: 60 Leading: 62
Kerning: Optical Tracking: Per Letter
Case: Product Name Specific
Justification: Right

Copy and Paste "TM" for exact settings

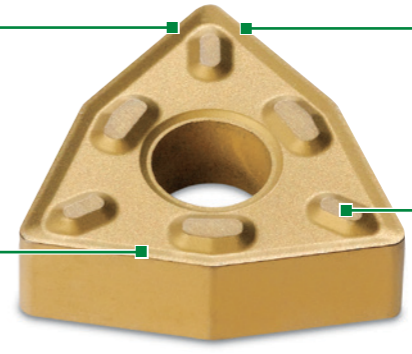
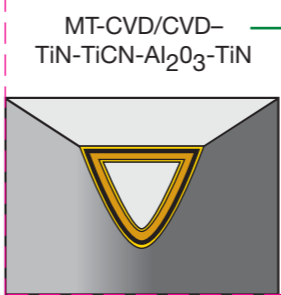
variTurn™

2.5X

Post-coat treatment
• Improves edge toughness.
• Wide range of applications.

Improved edge toughness
• Provides smooth outer surface to reduce forces, friction, and workpiece sticking.

Post-coat grinding
• Provides secure seating surface.



The Gold Standard for Value
WIDIA™ VariTurn

WIDIA VariTurn is the cost-effective line of inserts from the brand you already know and trust for quality. Each insert is 100% manufactured by WIDIA to outperform the competition. The versatility for those operators that need an insert to last tomorrow and need an insert to be used for up to 80% of all turning applications.

- Engineered to optimize performance
- Gold coating on every insert.
- Proven grade technologies.

Helvetica Neue LT Pro 47 Light Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 77 Bold Condensed
Size: 26 Leading: 28
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 57 Condensed
Size: 12 Leading: 15
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9



Getting the Most from

WIDIA VariTurn products make it simple to get the most out of your inserts, and your money. Every insert is gold, which exposes the insert's value and makes it easy to detect when an insert is ready for replacement and protecting the workpiece. Also, in most applications, a single insert can take on any number of tasks, thus reducing your inventory. WIDIA VariTurn products are also reliable enough to cut steel, stainless steel, cast iron, and high-temperature alloys, enabling quick changes in workpiece materials without the need to swap inserts, saving time and money.

Helvetica Neue LT Pro 77 Bold Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 1p6 Space After: 0p9

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 13
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

WIDIA VariTurn Options

This versatile line offers a simple geometry selection system. eight grades, and eight geometries, including negative rake geometries, cover 80% of all general turning applications.

Helvetica Neue LT Pro 77 Bold Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 1p6 Space After: 0p9

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 13
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

WIDIA Tri-Element

Opacity: 100%
Mode: Multiply

Copy and Paste "TM"
for exact settings

VariTurn™

Helvetica Neue LT Pro 47 Light Condensed
Size: 60 Leading: 62
Kerning: Optical Tracking: Per Letter
Case: Product Name Specific
Justification: Right

2.5X

X

2X

2X

WIDIA VariTurn is the gold standard for turning inserts from the brand you already know and trust for quality.

Each insert is 100% manufactured by WIDIA. VariTurn offers the versatility for those operators that already know and trust for quality. You need an insert to get the job done. A focused portfolio of inserts is used for up to 80% of all turning applications.

- Engineered to optimize performance
- Gold coating on every insert.
- Proven grade technologies.

Helvetica Neue LT Pro 57 Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

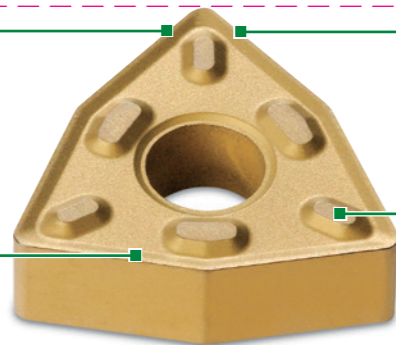
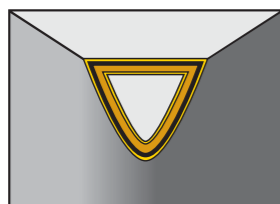
Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 13
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

Post-coat treatment

- Improves edge toughness.
- Wide range of applications.

MT-CVD/CVD-
TiN-TiCN-Al₂O₃-TiN



Improved edge toughness

- Provides smooth outer surface to reduce forces, friction, and workpiece sticking.

Post-coat grinding

- Provides secure seating surface.

The Gold Standard for Variable Rake WIDIA™ VariTurn

Getting the Most

WIDIA VariTurn products make turning easier on your tool and your money. Every insert is gold, which exposes wear as the tool continues to be used. This makes it easy to detect when an insert is ready to be changed — maximizing the product's value and protecting the workpiece. WIDIA VariTurn inserts can be used in most applications, a single insert can last up to 80% longer than standard inserts, thus reducing your inventory. WIDIA VariTurn inserts are available in steel, stainless steel, cast iron, and high-temperature alloys, enabling quick changes in workpiece materials without the need to swap inserts, saving time and money.

WIDIA VariTurn Options

This versatile line offers a simple geometry selection system, eight grades, and eight geometries, including negative rake and square inserts cover 80% of all general turning applications.

Helvetica Neue LT Pro 47 Light Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 77 Bold Condensed
Size: 26 Leading: 28
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 77 Bold Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 1p6 Space After: 0p9

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 13
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

Helvetica Neue LT Pro 77 Bold Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 1p6 Space After: 0p9

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 13
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

WIDIA Tri-Element

Opacity: 80%
Mode: Multiply

WIDIA™ Victory™ Sho
specially engineered to achieve excellent surface
quality as well as higher material removal rates in
shoulder milling applications.

Helvetica Neue LT Pro 57 Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

Helvetica Neue LT Pro 47 Light Condensed
Size: 24 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 77 Bold Condensed
Size: 32 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0



**Double-Sided Shoulder
VSM490-15**

2.5X

3.5X

2.5X

2.5X

X

2X

2X

The VSM490 series, with its
(stepping down) with outstan
materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing applications.

Helvetica Neue LT Pro 57 Condensed
Size: 12 Leading: 15
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

- Double-sided strong insert with
- High positive geometry for lower
- Superior wall and surface finish

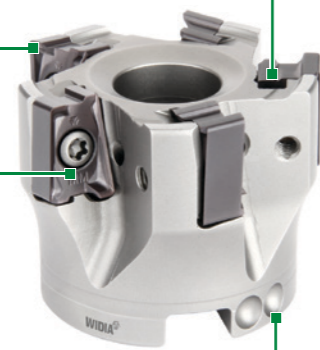
Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

State-of-the-art stepping down
capabilities due to its ultimate
design concept.

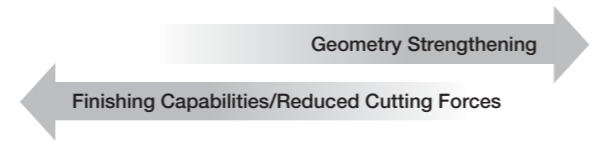
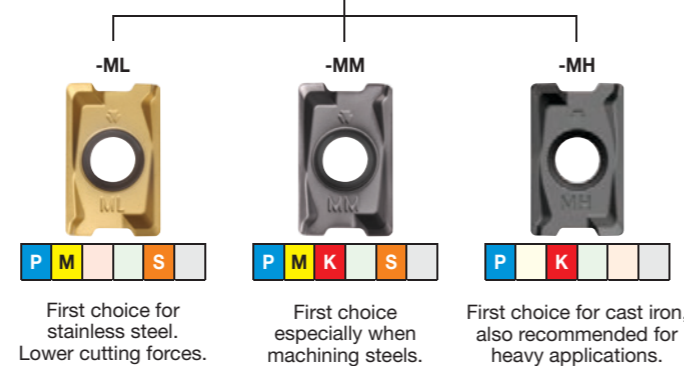
Multiple corner
nose radii available.

Up to .59" (15mm)
depth-of-cut
capabilities.

Cutter bodies with effective
internal coolant supply.



Three geometries
for all material groups
in shoulder milling applications.



90° Shoulder Mills



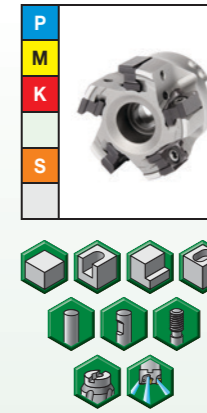
VSM490™-15

Max depth of cut: .590"

Lead angle: 0°
Indexes per insert: 4
Diameter: 1-6"

Pages: XX, XX-XX

Step ID: 100041474



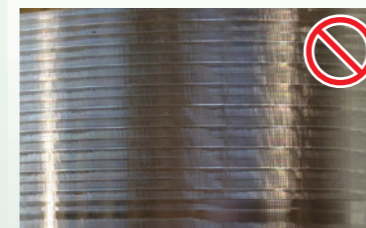
Step ID: 10004919

VSM490™-15 • Unbeatable Performance in Shoulder Milling

- "Stepless" solution.
- No mismatch when machining walls in different steps.

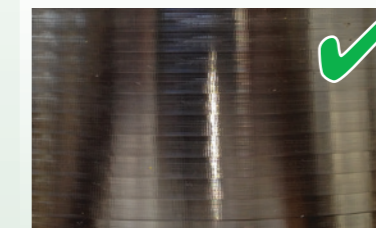
Innovative cutting geometry
provides superior wall
and surface finish.

Competitor Tool • Wall Quality

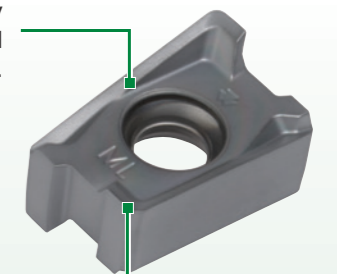


Traditional tools are designed to
achieve a 90° wall, but exhibit poor
performance when machining walls
in multiple passes.

VSM490-15 • Wall Quality



VSM490-15 minimizes the marks left.
By increasing wall quality and avoiding
a second tool, productivity increases
significantly.



Integrated wiper facet for
excellent floor finishing.

Indexable Milling



WIDIA Tri-Element

Opacity: 80%
Mode: Multiply

WIDIA™ Victory™ Sho
specially engineered to achieve excellent surface
quality as well as higher material removal rates in
shoulder milling applications.

Helvetica Neue LT Pro 57 Condensed
Size: 16 Leading: 19
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p9

Helvetica Neue LT Pro 77 Bold Condensed
Size: 32 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0



VSM490-1

2.5X

3.5X

2.5X

2.5X

X

2X

2X

The VSM490 series, with its
(stepping down) with outstan applied in multiple passes
materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing applications.

Helvetica Neue LT Pro 57 Condensed
Size: 12 Leading: 15
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

- Double-sided strong insert with
- High positive geometry for lower
- Superior wall and surface finish

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

2.5X

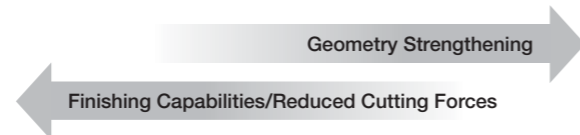
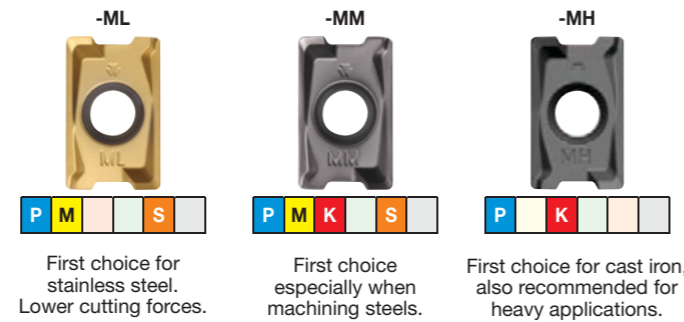
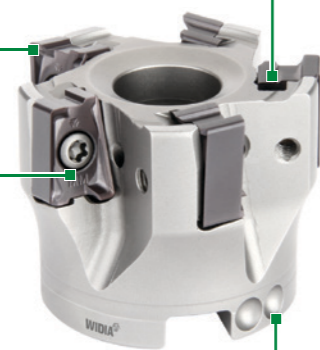
State-of-the-art stepping down
capabilities due to its ultimate
design concept.

Three geometries
for all material groups
in shoulder milling applications.

Multiple corner
nose radii available.

Up to .59" (15mm)
depth-of-cut
capabilities.

Cutter bodies with effective
internal coolant supply.



90° Shoulder Mills



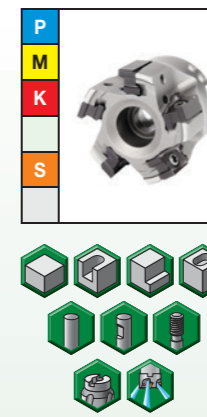
VSM490™-15

Max depth of cut: .590"

Lead angle: 0°
Indexes per insert: 4
Diameter: 1-6"

Pages: XX, XX-XX

Step ID: 100041474

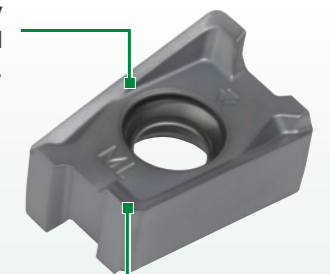


Step ID: 10004919

VSM490™-15 • Unbeatable Performance in Shoulder Milling

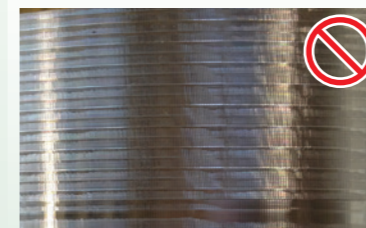
- "Stepless" solution.
- No mismatch when machining walls in different steps.

Innovative cutting geometry
provides superior wall
and surface finish.



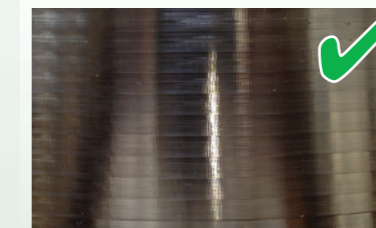
Integrated wiper facet for
excellent floor finishing.

Competitor Tool • Wall Quality



Traditional tools are designed to
achieve a 90° wall, but exhibit poor
performance when machining walls
in multiple passes.

VSM490-15 • Wall Quality



VSM490-15 minimizes the marks left.
By increasing wall quality and avoiding
a second tool, productivity increases
significantly.



WIDIA Tri-Element

Opacity: 100%
Mode: Multiply

3.5X

2.5X

Double-Sided Shoulder VSM490-15

2.5X

Helvetica Neue LT Pro 47 Light Condensed
Size: 24 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 77 Bold Condensed
Size: 32 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

X

2X

2X

WIDIA™ Victory™ Shoulder Milling (VSM) Series is specially engineered to achieve excellent surface quality as well as high productivity in shoulder milling applications.

Helvetica Neue LT Pro 57 Condensed
Size: 12 Leading: 15
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

The VSM490 series, with its double-sided strong insert, is applied in multiple passes (stepping down) with outstanding results. VSM490-15 is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing applications.

- Double-sided strong insert with high positive geometry for lower cutting forces.
- Superior wall and surface finish.

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

2.5X

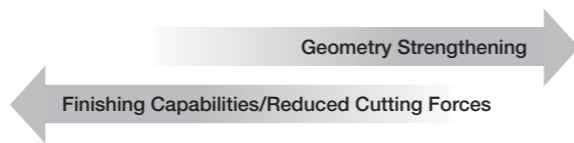
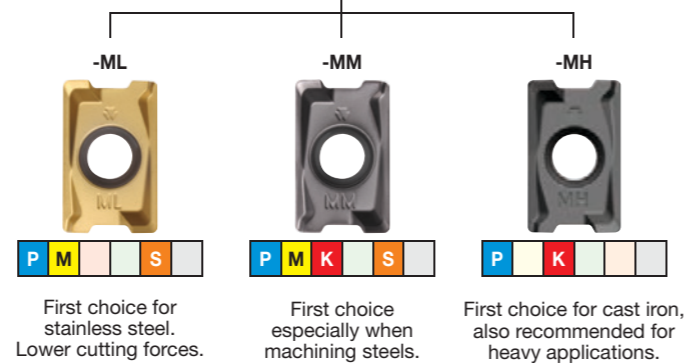
State-of-the-art stepping down capabilities due to its ultimate design concept.

Multiple corner nose radii available.

Up to .59" (15mm) depth-of-cut capabilities.

Cutter bodies with effective internal coolant supply.

Three geometries for all material groups in shoulder milling applications.



90° Shoulder Mills



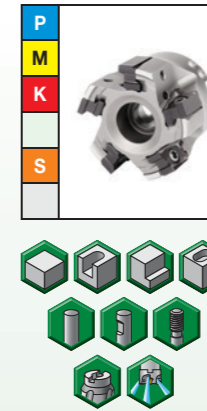
VSM490™-15

Max depth of cut: .590"

Lead angle: 0°
Indexes per insert: 4
Diameter: 1-6"

Pages: XX, XX-XX

Step ID: 100041474

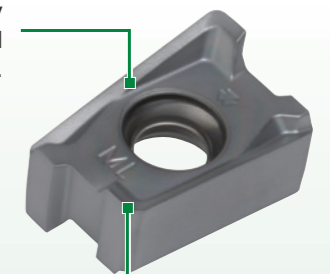


Step ID: 10004919

VSM490™-15 • Unbeatable Performance in Shoulder Milling

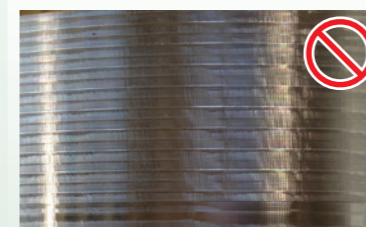
- “Stepless” solution.
- No mismatch when machining walls in different steps.

Innovative cutting geometry provides superior wall and surface finish.



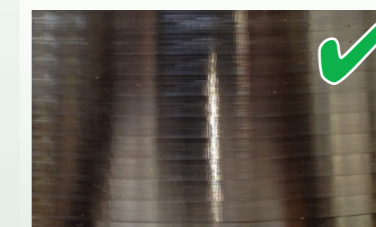
Integrated wiper facet for excellent floor finishing.

Competitor Tool • Wall Quality



Traditional tools are designed to achieve a 90° wall, but exhibit poor performance when machining walls in multiple passes.

VSM490-15 • Wall Quality



VSM490-15 minimizes the marks left. By increasing wall quality and avoiding a second tool, productivity increases significantly.



WIDIA Tri-Element

Opacity: 80%
Mode: Multiply



VSM490-15

Helvetica Neue LT Pro 77 Bold Condensed
Size: 32 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

3.5X

2.5X

2.5X

X

2X

2X

WIDIA™ Victory™ Shoulder Milling (VSM) Series is specially engineered to achieve excellent surface quality as well as high productivity in shoulder milling applications.

Helvetica Neue LT Pro 57 Condensed
Size: 12 Leading: 15
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

The VSM490 series, with its double-sided strong insert with high positive geometry for low cutting forces, is applied in multiple passes (stepping down) with outstanding results. VSM490-15 is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing applications.

- Double-sided strong insert with high positive geometry for low cutting forces
- High positive geometry for low cutting forces
- Superior wall and surface finish

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

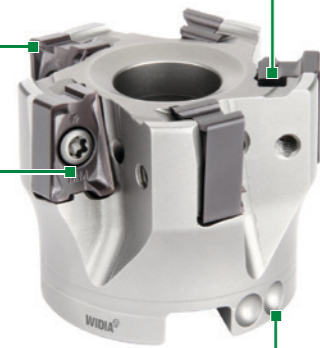
2.5X

State-of-the-art stepping down capabilities due to its ultimate design concept.

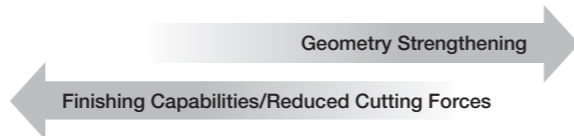
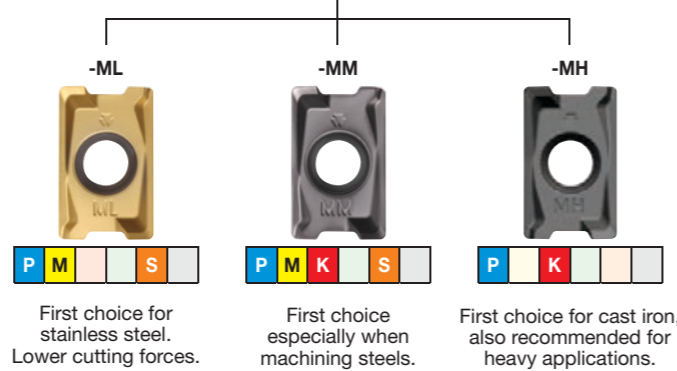
Multiple corner nose radii available.

Up to .59" (15mm) depth-of-cut capabilities.

Cutter bodies with effective internal coolant supply.



Three geometries for all material groups in shoulder milling applications.



90° Shoulder Mills



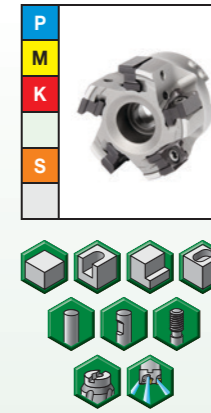
VSM490™-15

Max depth of cut: .590"

Lead angle: 0°
Indexes per insert: 4
Diameter: 1-6"

Pages: XX, XX-XX

Step ID: 100041474

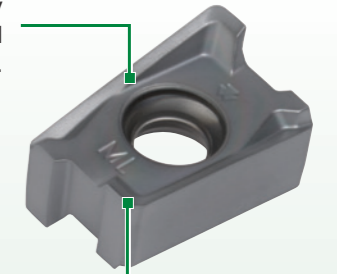


Step ID: 10004919

VSM490™-15 • Unbeatable Performance in Shoulder Milling

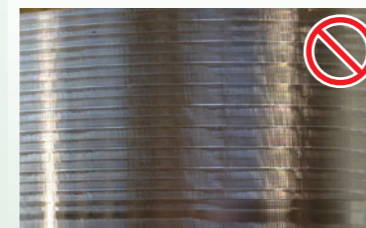
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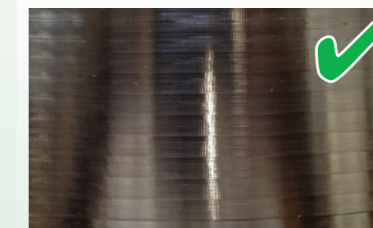
Integrated wiper facet for excellent floor finishing.

Competitor Tool • Wall Quality



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VSM490-15 • Wall Quality

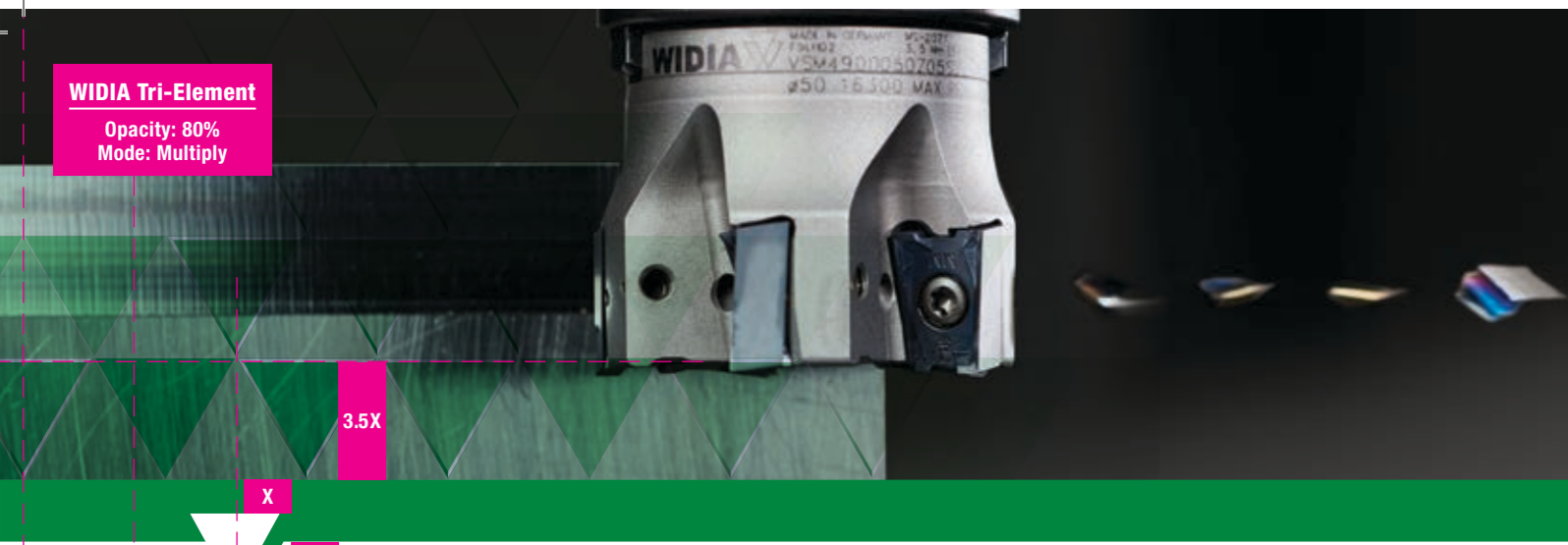


VSM490-15 minimizes the marks left. By increasing wall quality and avoiding a second tool, productivity increases significantly.



WIDIA Tri-Element

Opacity: 80%
Mode: Multiply



3.5X

X

2X

2X

Double-Sided Shoulder VSM490-15

Helvetica Neue LT Pro 47 Light Condensed
Size: 24 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 77 Bold Condensed
Size: 32 Leading: 32
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p0

Helvetica Neue LT Pro 57 Condensed
Size: 12 Leading: 15
Kerning: Optical Tracking: 0
Space Before: 0p0 Space After: 0p7

Helvetica Neue LT Pro 57 Condensed
Size: 10 Leading: 12
Kerning: Optical Tracking: 0
Space Before: 0p2 Space After: 0p0
Left Indent: 0p9 First Line Indent: -0p9

WIDIA™ Victory™ Shoulder Milling (VSM) Series is specially engineered to achieve excellent surface quality as well as high productivity in shoulder milling applications. The VSM490 series, with its double-sided strong insert with high positive geometry for low cutting forces, is applied in multiple passes (stepping down) with outstanding results. VSM490 is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing applications.

- Double-sided strong insert with high positive geometry for low cutting forces
- Superior wall and surface finish

State-of-the-art stepping down capabilities due to its ultimate design concept.

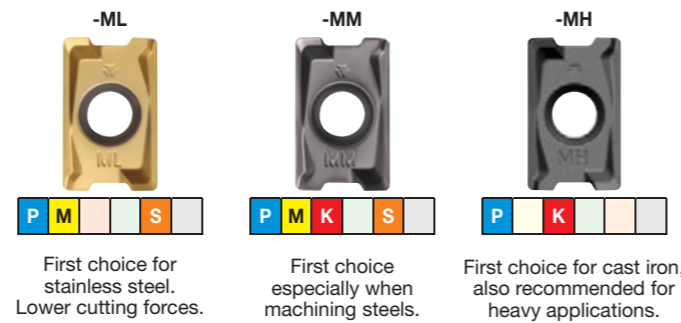
Multiple corner nose radii available.

Up to .59" (15mm) depth-of-cut capabilities.

Cutter bodies with effective internal coolant supply.



Three geometries for all material groups in shoulder milling applications.



Finishing Capabilities/Reduced Cutting Forces

Geometry Strengthening



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A170



90° Shoulder Mills



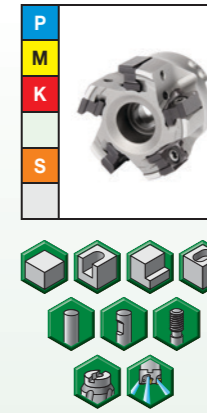
VSM490™-15

Max depth of cut: .590"

Lead angle: 0°
Indexes per insert: 4
Diameter: 1-6"

Pages: XX, XX-XX

Step ID: 100041474

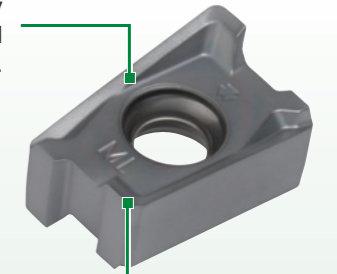


Step ID: 100044919

VSM490™-15 • Unbeatable Performance in Shoulder Milling

- "Stepless" solution.
- No mismatch when machining walls in different steps.

Innovative cutting geometry provides superior wall and surface finish.



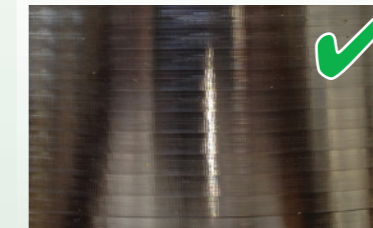
Integrated wiper facet for excellent floor finishing.

Competitor Tool • Wall Quality



Traditional tools are designed to achieve a 90° wall, but exhibit poor performance when machining walls in multiple passes.

VSM490-15 • Wall Quality



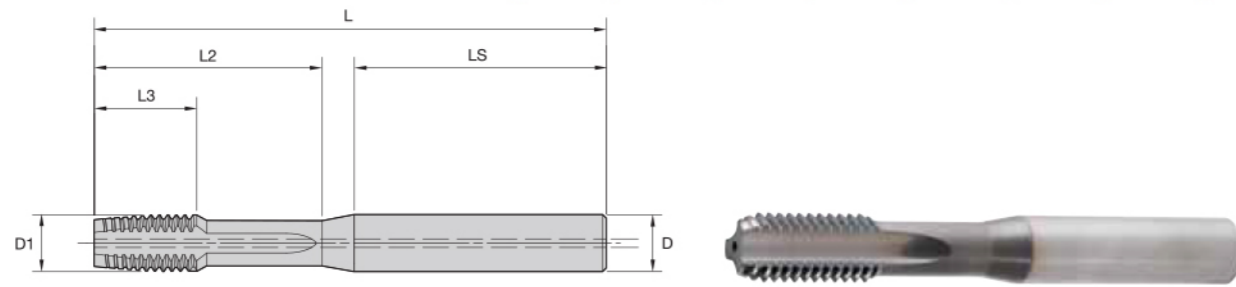
VSM490-15 minimizes the marks left. By increasing wall quality and avoiding a second tool, productivity increases significantly.



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A171

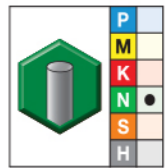
• GN1515 TiN + CrC/C for aluminum



- first choice
- alternate choice

Shank Tolerance	
D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011

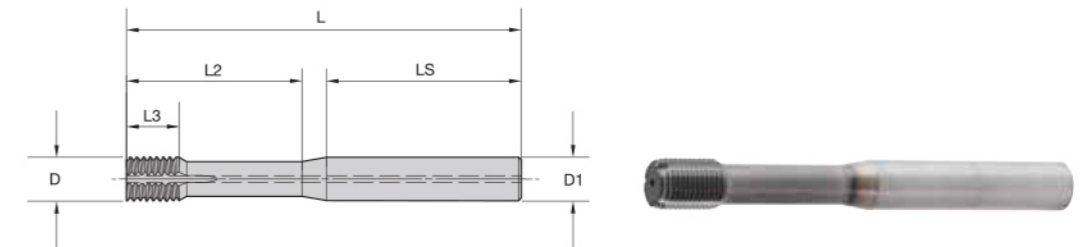
■ GX47 • Form E Bottoming Chamfer • Through Coolant M6 and Larger • Metric



GN1515	D1 size	metric dimensions					D	number of flutes	class of fit
		L	L3	L2	LS				
12866	M6 X 1	70	12	24	42	6,0	3	6HX	
12867	M8 X 1,25	80	15	32	43	8,0	3	6HX	
12869	M10 X 1	90	18	40	44	10,0	3	6HX	
12868	M10 X 1,5	90	18	40	44	10,0	3	6HX	
12872	M12 X 1,5	100	21	48	46	12,0	3	6HX	
12870	M12 X 1,75	100	21	48	46	12,0	3	6HX	
12874	M14 X 1,5	110	24	56	52	12,0	4	6HX	
12873	M14 X 2	110	24	56	52	12,0	4	6HX	
12876	M16 X 1,5	110	24	64	44	14,0	4	6HX	
12875	M16 X 2	110	24	64	44	14,0	4	6HX	

NOTE: Proprietary technology.

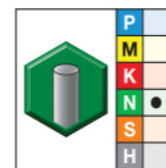
• GN1515 TiN + CrC/C for aluminum



- first choice
- alternate choice

Shank Tolerance	
D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011

■ GX49 • Form E Bottoming Entry Taper • Through Coolant M6 and Larger • Metric



GN1515	D1 size	metric dimensions					D	number of lube grooves	class of fit
		L	L3	L2	LS				
12906	M4 X 0,7	60	6	16	36	6,0	2	6HX	
12907	M5 X 0,8	60	7	20	34	6,0	2	6HX	
12908	M6 X 1	70	8	24	42	6,0	2	6HX	
12909	M8 X 1,25	80	10	32	43	8,0	2	6HX	
12912	M10 X 1	90	12	40	44	10,0	3	6HX	
12911	M10 X 1,5	90	12	40	44	10,0	3	6HX	
12915	M12 X 1,5	100	14	48	46	12,0	3	6HX	
12914	M12 X 1,75	100	14	48	46	12,0	3	6HX	

NOTE: Proprietary technology.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.