



Vol 1

EXOCARB® AERO UVX

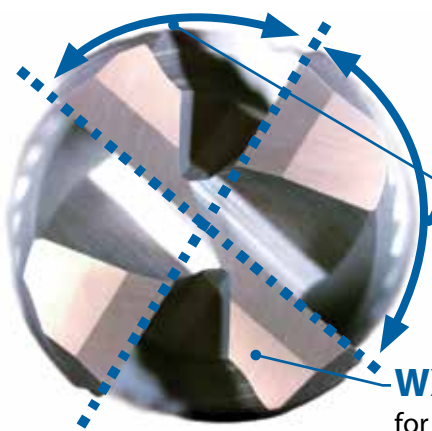
Silent Rougher

AERO UVX-SRL • AERO UVX-SRH



EXOCARB® AERO UVX SILENT ROUGHER

Features & Benefits



Unequal Index
for vibration control.

WXL Coating
for exceptional wear resistance.

Unequal Serrations on Cutting Edge
for low cutting resistance.

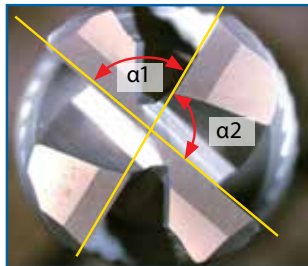
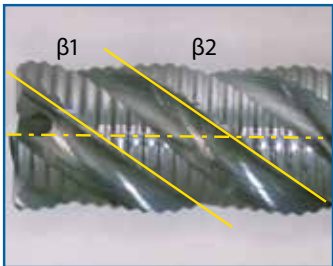
Variable Helix
for reduced vibration.



Significant Vibration Reduction

An Unequal Index and Variable Helix

The Silent Rougher's Unequal Index and Variable Helix combine to provide a significant reduction in vibration while machining.



Low Cutting Resistance

Unequal Serrations on the Cutting Edge

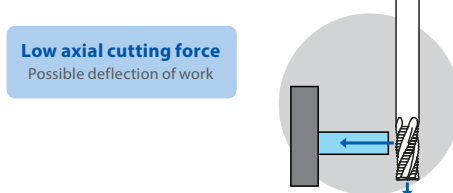
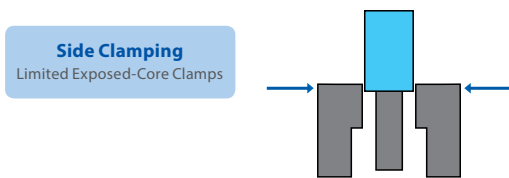
Unequally configured serrations of the cutting edge significantly reduces cutting resistance.



Reducing Vertical Cutting Forces

A Low Helix Design for Preventing Vertical Cutting Forces

The Silent Rougher's low helix design helps to reduce the vertical cutting forces when machining.



The Silent Rougher Series

A Variety of Roughers Available for Various Cutting Environments.

Carbide Silent Roughing End Mill

SI-WC-RESF

High Helix Type
(SRH)



Low Helix Type
(SRL)



HSS Silent Roughing End Mill

SI-WH-RESF

HSS
(Japan Stock Only)



OSG PHOENIX®
Exchangeable Head
End Mill Roughing Type



PXNH
High Helix Type



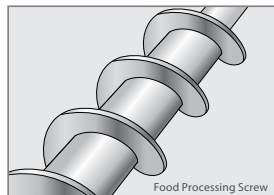
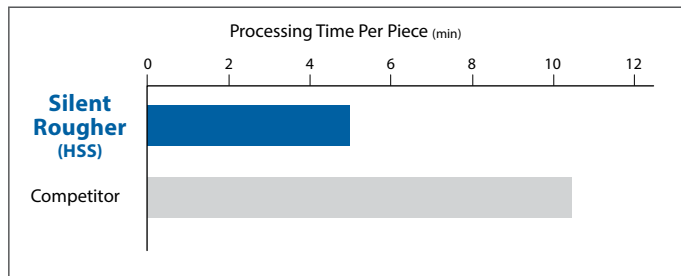
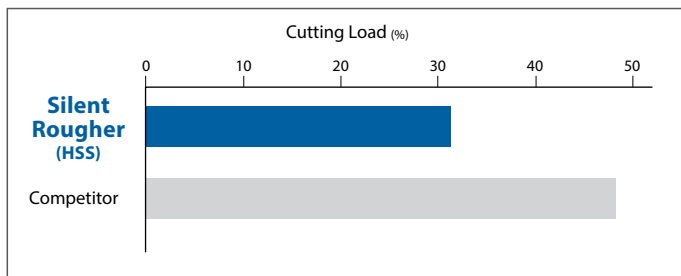
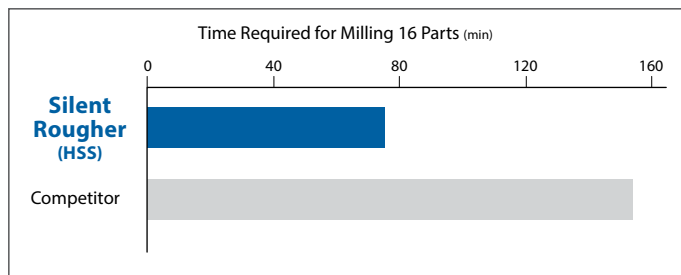
PXNL
Low Helix Type

High Machining Efficiency

Low Cutting Load Enables Longer Tool Life and High Efficiency in Stainless Steel (SUS304)

When machining stainless steel, the high-speed steel Silent Rougher demonstrated high efficiency and reduced the overall time to machine by half.

Tool	Silent Rougher (HSS - Special)	Competitor
Drill Size	Ø16	
Work Material	Stainless Steel (SUS304)	
Cutting Speed	132 SFM (800 RPM)	66 SFM (400 RPM)
Feed Rate	13.6 IPM (0.0042 IPT)	7.5 IPM (0.0047 IPT)
Depth of Cut	Aa = 8.6mm	
Coolant	Water Soluble	
Machine	Vertical Machining Center	
Cutting Load	31%	45%



EXOCARB® AERO UVX SILENT ROUGHER

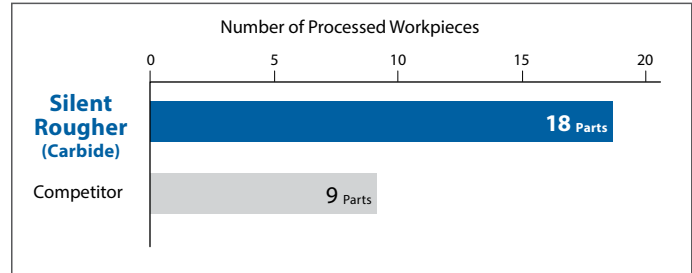
Unequal Index, Variable Helix, Exotic Materials

Longer Tool Life

Double the Tool Life Compared to the Competitor in Stainless Steel (SS400)

The EXOCARB® AERO UVX Silent Rougher was able to complete twice as many parts as the competitor.

Tool	Silent Rougher (Carbide - High Helix)	Competitor
Tool Size	Ø10	
Work Material	Structural Steel (SS400)	
Cutting Speed	526 SFM (5,100 RPM)	
Feed Rate	47 IPM (0.0023 IPT)	
Milling Method	Side Milling	
Depth of Cut	$a_a = 10\text{mm}$ (1D); $a_r = 5\text{mm}$ (0.5D)	
Coolant	Air Blow	
Machine	Vertical Machining Center	

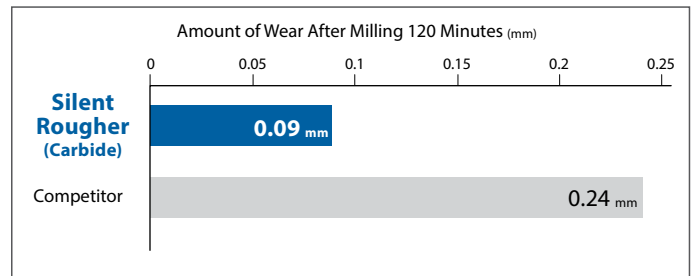


Reduced Tool Wear

Reduced Tool Wear Compared to the Competitor in Stainless Steel (SS400)

Tool wear was reduced to less than half of the competitor's product.

Tool	Silent Rougher (Carbide - Low Helix)	Competitor
Tool Size	Ø10	
Work Material	Structural Steel (SS400)	
Cutting Speed	526 SFM (5,100 RPM)	
Feed Rate	47.2 IPM (0.0023 IPT)	
Milling Method	Side Milling	
Depth of Cut	$a_a = 10\text{mm}$ (1D); $a_r = 5\text{mm}$ (0.5D)	
Coolant	Air Blow	
Machine	Vertical Machining Center	



EXOCARB® AERO UVX SILENT ROUGHER

Unequal Index, Variable Helix, Exotic Materials

List 3815

4 Flute, Low Helix, Corner Chamfer

SPEED FEED P8	CARBIDE	WXL	Var.°	SHANK h6
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Milling Diameter Tolerance	
D ≤ 3/8	+0 / -0.002"
D > 1/2	+0 / -0.003"



EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
	D	C	L	Lc	d
38150111	1/4	0.020	2-1/2	1/2	1/4
38150911	5/16	0.020	3	5/8	5/16
38151711	3/8	0.020	3	3/4	3/8
38152511	1/2	0.020	3-1/2	1	1/2
38153311	5/8	0.030	4	1-1/4	5/8
38154111	3/4	0.030	4-1/4	1-1/2	3/4
38154911	1	0.030	5	2	1

Packed: 1 pc.
Available WXL® coating only.



List 3820

4 Flute, High Helix, Corner Chamfer

SPEED FEED P8	CARBIDE	WXL	Var.°	SHANK h6
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Milling Diameter Tolerance	
D ≤ 3/8	+0 / -0.002"
D > 1/2	+0 / -0.003"



EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
	D	C	L	Lc	d
38200211	1/4	0.020	2-1/2	1/2	1/4
38201011	5/16	0.020	3	5/8	5/16
38201811	3/8	0.020	3	3/4	3/8
38202611	1/2	0.020	3-1/2	1	1/2
38203411	5/8	0.030	4	1-1/4	5/8
38204211	3/4	0.030	4-1/4	1-1/2	3/4
38205011	1	0.030	5	2	1

Packed: 1 pc.
Available WXL® coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
3815	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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good best



EXOCARB® AERO UVX SILENT ROUGHER

Unequal Index, Variable Helix, Exotic Materials

List 3915

4 Flute, Low Helix, Corner Chamfer

SPEED FEED P8	CARBIDE	WXL	Var.°	SHANK h6
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Milling Diameter Tolerance	
D≤12	+0 / -0.05mm
D>12	+0 / -0.06mm



EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
	D	C	L	Lc	d
3017406	6	0.5	60	13	6
3017408	8	0.5	80	19	8
3017410	10	0.5	80	22	10
3017412	12	0.5	80	26	12
39150811	14	0.6	85	26	14
39151211	16	0.6	100	32	16
39151611	18	0.6	100	32	18
39152011	20	0.6	105	38	20
39152411	25	0.6	120	45	25

Packed: 1 pc.
Available WXL® coating only.



List 3920

4 Flute, High Helix, Corner Chamfer

SPEED FEED P8	CARBIDE	WXL	Var.°	SHANK h6
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Milling Diameter Tolerance	
D≤12	+0 / -0.05mm
D>12	+0 / -0.06mm



EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
	D	C	L	Lc	d
3017456	6	0.5	60	13	6
3017458	8	0.5	80	19	8
3017460	10	0.5	80	22	10
3017462	12	0.5	80	26	12
39200911	14	0.6	85	26	14
39201311	16	0.6	100	32	16
39201711	18	0.6	100	32	18
39202111	20	0.6	105	38	20
39202511	25	0.6	120	45	25

Packed: 1 pc.
Available WXL® coating only.



List No.	Work Material																	
	P						M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
3915	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3920	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

☐ good ☑ best



EXOCARB® AERO UVX SILENT ROUGHER

Unequal Index, Variable Helix, Exotic Materials

List 3825

Long Neck, 4 Flute, Low Helix, Corner Chamfer

SPEED FEED P8	CARBIDE	WXL	Var.°	SHANK h6
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Milling Diameter Tolerance	
D ≤ 3/8	+0 / -0.002"
D > 1/2	+0 / -0.003"



EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	C	L	Lc	L1	d2	d
38250511	1/4	0.020	2-1/2	1/2	1-1/4	0.2382	1/4
38251311	5/16	0.020	3	5/8	1-3/8	0.3007	5/16
38252111	3/8	0.020	3	3/4	1-1/2	0.3632	3/8
38252911	1/2	0.020	3-1/2	1	1-3/4	0.4882	1/2
38253711	5/8	0.030	4	1-1/4	2	0.6053	5/8
38254511	3/4	0.030	4-1/4	1-1/2	2-1/4	0.7264	3/4
38255311	1	0.030	5	2	2-3/4	0.9685	1

Packed: 1 pc.
Available WXL® coating only.



List 3830

Long Neck, 4 Flute, High Helix, Corner Chamfer

SPEED FEED P8	CARBIDE	WXL	Var.°	SHANK h6
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Milling Diameter Tolerance	
D ≤ 3/8	+0 / -0.002"
D > 1/2	+0 / -0.003"



EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	C	L	Lc	L1	d2	d
38300611	1/4	0.020	2-1/2	1/2	1-1/4	0.2382	1/4
38301411	5/16	0.020	3	5/8	1-3/8	0.3007	5/16
38302211	3/8	0.020	3	3/4	1-1/2	0.3632	3/8
38303011	1/2	0.020	3-1/2	1	1-3/4	0.4882	1/2
38303811	5/8	0.030	4	1-1/4	2	0.6053	5/8
38304611	3/4	0.030	4-1/4	1-1/2	2-1/4	0.7264	3/4
38305411	1	0.030	5	2	2-3/4	0.9685	1

Packed: 1 pc.
Available WXL® coating only.



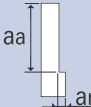
List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
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good best



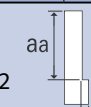
List 3815, 3820, 3915, 3920, 3825, 3830

Side Milling

Hardness				Up to 30 HRC		Up to 45 HRC							
Work Material		Cast Iron		Mild Steels Carbon Steels		Alloy Steels Tool Steels		Hardened Steel Pre-hardened Steel		Stainless Steel 304		Titanium Alloy Ti-6AL-4V	
Depth of Cut		$a_a \leq 1.5D$ $a_r \leq 0.3D$ 											
Mill Dia.		Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
-	6	4,770	24.0	6,370	27.9	4,770	15.7	4,240	12.9	3,710	11.4	2,650	7.0
1/4	-	4,510	26.8	6,020	34.6	4,510	18.1	4,005	15.2	3,500	13.9	2,510	8.2
5/16	-	3,610	36.1	4,825	38.4	3,610	21.4	3,210	18.6	2,810	15.1	2,010	9.3
-	8	3,580	37.0	4,770	42.9	3,580	24.0	3,180	20.1	2,790	17.7	1,990	10.6
3/8	-	3,005	37.3	4,015	43.1	3,005	24.3	2,670	20.1	2,340	17.7	1,670	10.6
-	10	2,860	37.4	3,820	43.3	2,860	24.4	2,550	20.1	2,230	17.7	1,590	10.6
-	12	2,390	33.8	3,180	38.9	2,390	22.0	2,120	18.1	1,860	16.1	1,330	9.8
1/2	-	2,250	33.5	3,010	38.6	2,250	21.8	2,005	18.0	1,750	15.9	1,260	9.7
-	14	2,045	33.2	2,730	38.3	2,045	21.6	1,820	17.9	1,560	15.7	1,140	9.6
5/8	-	1,800	32.8	2,410	38.0	1,800	21.4	1,610	17.8	1,400	15.5	1,010	9.5
-	16	1,790	32.2	2,390	37.7	1,790	21.2	1,590	17.7	1,390	15.3	990	9.4
-	18	1,590	31.4	2,130	36.9	1,590	21.0	1,420	17.3	1,240	14.9	890	9.1
3/4	-	1,500	30.9	2,010	36.1	1,500	19.8	1,340	16.9	1,170	14.5	840	8.8
-	20	1,430	30.3	1,910	35.0	1,430	19.6	1,280	16.5	1,110	14.1	800	8.6
-	25	1,145	25.6	1,530	28.8	1,145	16.8	1,020	15.3	890	13.3	640	7.7
1	-	1,127	25.2	1,505	28.2	1,127	16.3	1,000	15.0	875	12.8	630	7.4

1. Use a rigid and precise machine and holder.
2. Please adjust the speed and feed when cutting depth is large or when machines with low rigidity are used.
3. Please use a suitable fluid with high smoke retardant properties.
4. During Dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and to eliminate chip packing.

Slotting

Hardness				Up to 30 HRC		Up to 45 HRC							
Work Material		Cast Iron		Mild Steels Carbon Steels		Alloy Steels Tool Steels		Hardened Steel Pre-hardened Steel		Stainless Steel 304		Titanium Alloy Ti-6AL-4V	
Depth of Cut		$a_a \leq 1D$ $a_r \text{ Max} = 0.472$ 											
Mill Dia.		Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
-	6	3,710	16.9	5,840	22.8	4,240	12.5	3,710	10.2	3,180	8.6	2,120	5.1
1/4	-	3,500	17.4	5,520	23.4	4,005	12.8	3,500	10.6	3,010	8.9	2,005	5.2
5/16	-	2,805	17.9	4,420	24.7	3,210	13.4	2,805	10.9	2,415	9.4	1,605	5.4
-	8	2,790	18.5	4,380	25.5	3,180	13.7	2,790	11.4	2,390	9.8	1,590	5.5
3/8	-	2,340	19.4	3,680	26.5	2,670	14.3	2,340	11.8	2,010	10.2	1,335	5.7
-	10	2,230	20.0	3,500	27.5	2,550	14.9	2,230	12.2	1,910	10.6	1,270	5.9
-	12	1,860	18.5	2,920	25.1	2,120	13.7	1,860	11.4	1,590	9.4	1,060	5.5
1/2	-	1,750	18.4	2,760	25.0	2,005	13.6	1,750	11.3	1,505	9.4	1,000	5.5
-	14	1,590	18.3	2,505	24.9	1,820	13.5	1,590	11.2	1,370	9.4	910	5.5
5/8	-	1,400	18.2	2,210	24.8	1,600	13.4	1,400	11.1	1,205	9.4	805	5.5
-	16	1,390	18.1	2,190	24.8	1,590	13.3	1,390	11.0	1,190	9.4	800	5.5
-	18	1,240	17.9	1,950	24.5	1,415	13.2	1,240	10.8	1,065	9.2	710	5.4
3/4	-	1,170	17.6	1,840	24.3	1,335	13.0	1,170	10.7	1,005	9.1	670	5.2
-	20	1,110	17.3	1,750	24.0	1,270	12.9	1,110	10.6	950	9.0	640	5.1
-	25	890	16.8	1,400	23.3	1,020	12.1	890	9.8	765	8.2	510	4.7
1	-	875	16.6	1,380	22.6	1,000	11.7	875	9.6	755	7.9	500	4.6

1. Use a rigid and precise machine and holder.
2. Please adjust the speed and feed when cutting depth is large or when machines with low rigidity are used.
3. Please use a suitable fluid with high smoke retardant properties.
4. During Dry (no fluid) milling, please use air blow to remove disposable chips from the milling area and to eliminate chip packing.

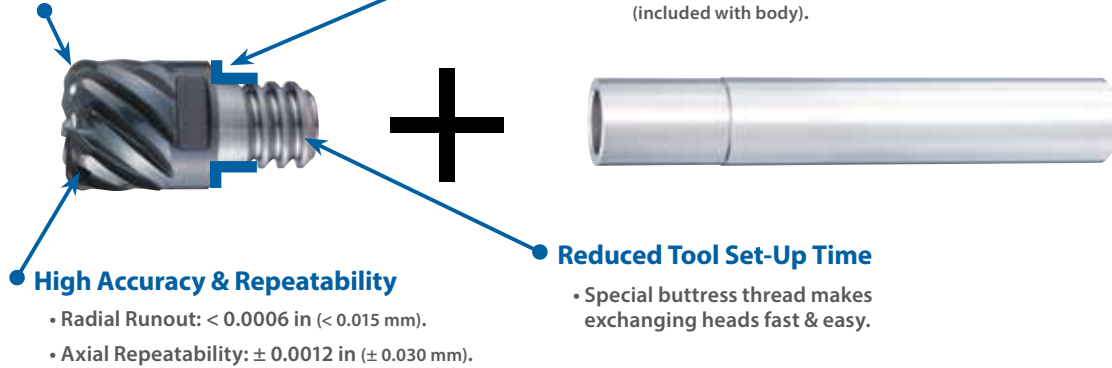


Solid Tool Technology

- Features OSG's proven cutting geometries & coatings to achieve excellent performance in a variety of applications & materials.

Highly Rigid Clamping

- 2-Face Contact (End Face & Taper).
- Tightening by special spanner wrench (included with body).



High Accuracy & Repeatability

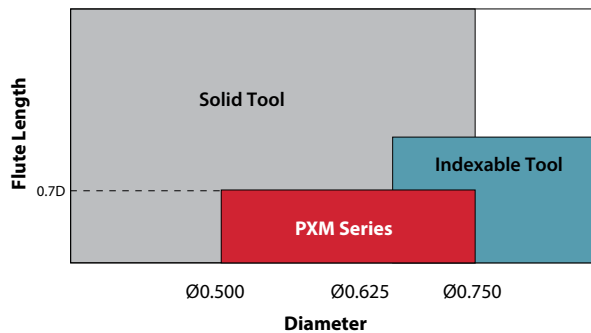
- Radial Runout: < 0.0006 in (< 0.015 mm).
- Axial Repeatability: ± 0.0012 in (± 0.030 mm).

Reduced Tool Set-Up Time

- Special buttress thread makes exchanging heads fast & easy.

Complete Milling Offering

PXM Series as Compared to Solid and Indexable Tool Offerings



Compared to solid tools	PXM offers similar productivity & precision, increased flexibility and greater cost savings than solid tools at larger diameters.
Compared to indexable tools	PXM offers increased productivity and higher precision than indexable tools at smaller diameters.

PXM Series Overview

Choosing the Right Style for Your Application

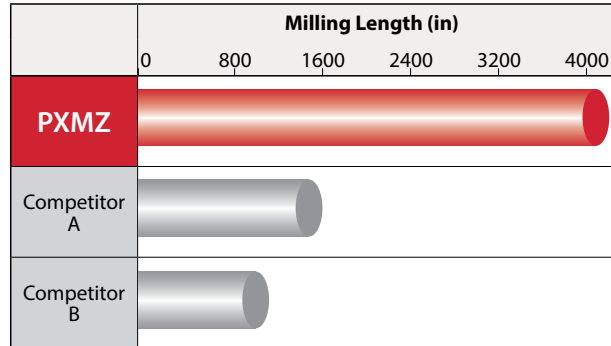
Style	Geometry	Application
PXSE	Variable index, Four flutes, Square type & Corner Radius type	All-purpose end mills, suitable for efficient machining in a variety of applications and materials.
PXVC	Variable index & helix, Four flutes, Square type & Corner Radius type	All-purpose end mills, suitable for efficient & stable machining with long overhangs.
PXSM	Variable index, Multiple flutes, Square type & Corner Radius type	All-purpose end mills, suitable for efficient finish machining in a variety of applications and materials.
PXNL	Variable index & helix, Low Helix, Four flutes, Roughing type	"Silent" Roughing end mills, suitable for rough machining in a wide range of materials with excellent tool life.
PXNH	Variable index & helix, High Helix, Four flutes, Roughing type	"Silent" Roughing end mills, suitable for rough machining in a wide range of materials & cutting conditions.
PXRE	Straight flute, Multiple flutes, Corner Radius type	Corner radius end mills, suitable for efficient machining of high hardness materials.
PXDR-P	Three flutes, Corner Radius type	All-purpose corner radius end mills, suitable for efficient & stable machining with long overhangs.
PXDR-N	Three flutes, Corner Radius type	Heavy-duty corner radius end mills, suitable for profile milling with long tool life.
PXBE-P	Three flutes, Ball type	All-purpose ball nose end mills, suitable for efficient & stable machining with long overhangs.
PXBE-N	Three flutes, Ball type	Heavy-duty ball nose end mills, suitable for profile milling with long tool life.
PXBM	Multiple flutes, Ball Type	Ball nose end mills, suitable for semi-finish and finish machining operations.

Stable Machining and Long Tool Life

Variable Lead Enables Stable Machining and Long Tool Life - 1050 Steel

More than twice the durability of the competitors' products.

Tool	PXMZ-C20SS20-S120	Competitor
Head (Grade)	PXNL200C20-04C006 (XP3225)	Indexable
Size	Ø20mm (4 Flutes)	Ø20mm (6 Flutes)
Work Material	1050 Steel	
Cutting Speed	393 SFM (1910 RPM)	
Feed	30.08 IPM (0.004 ipt)	30.08 IPM (0.026 ipt)
Milling Method	Side Milling	
Depth of Cut	Aa = 0.394 in, Ar = 0.236 in	
Coolant	Air	
Machine	Vertical Machining Center	

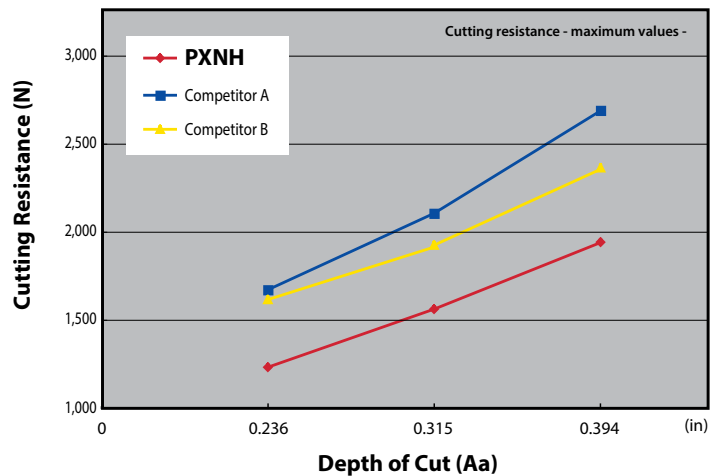


Low-Resistance Machining

The Variable Lead Enables Low-Resistance Machining - 1050 Steel

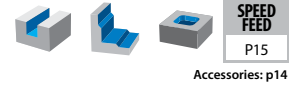
Cutting resistance can be reduced by more than 20% from the competitors' products.

Tool	PXMZC20SS20-S120	Competitor
Head (Grade)	PXNH200C20-04C006 (XP3225)	Indexable
Size	Ø20mm (4 Flutes)	Ø20mm (6 Flutes)
Work Material	1050 Steel	
Cutting Speed	328 SFM (1590 RPM)	
Feed	17.72 IPM (0.003 ipt)	17.72 IPM (0.002 ipt)
Milling Method	Slotting	
Depth of Cut	Aa = 0.236 in, 0.315 in, 0.394 in	
Coolant	Air	
Machine	Vertical Machining Center	

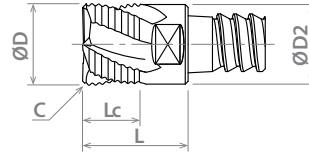


List 78PXNL

PXNL Exchangeable Heads (inch & metric) - 4 Flute, Roughing, Low Helix



Accessories: p14



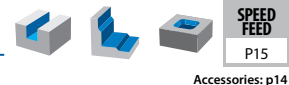
EDP No.	Type	Designation	Head Dia.		Corner Chamfer		Length of Cut		Overall Length		Flange Dia.		Helix Angle	Grade
			D		C		Lc		L		D2			
			(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)		
52303000	PXNL	PXNL0500AC12-04C020	-	0.500	-	0.020	-	0.350	-	0.598	-	0.488	19° / 21°	XP3225
52303001		PXNL0625AC16-04C025	-	0.625	-	0.025	-	0.438	-	0.732	-	0.613	19° / 21°	XP3225
52303002		PXNL0750AC20-04C025	-	0.750	-	0.025	-	0.525	-	0.807	-	0.736	19° / 21°	XP3225
52303003		PXNL1000AC25-04C025	-	1.000	-	0.025	-	0.700	-	1.098	-	0.960	19° / 21°	XP3225
7830401		PXNL120C12-04C005	12	-	0.5	-	8.4	-	14.4	-	11.7	-	19° / 21°	XP3225
7830402		PXNL160C16-04C006	16	-	0.6	-	11.2	-	18.7	-	15.7	-	19° / 21°	XP3225
7830403		PXNL200C20-04C006	20	-	0.6	-	14.0	-	21.5	-	19.6	-	19° / 21°	XP3225
7830404		PXNL250C25-04C006	25	-	0.6	-	17.5	-	27.5	-	24.0	-	19° / 21°	XP3225

Packed: 1 pc.

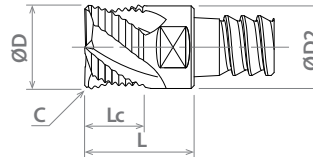


List 78PXNH

PXNH Exchangeable Heads (inch & metric) - 4 Flute, Roughing, High Helix



Accessories: p14



EDP No.	Type	Designation	Head Dia.		Corner Chamfer		Length of Cut		Overall Length		Flange Dia.		Helix Angle	Grade
			D		C		Lc		L		D2			
			(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)		
52304000	PXNH	PXNH0500AC12-04C020	-	0.500	-	0.020	-	0.350	-	0.598	-	0.488	40° / 42°	XP3225
52304001		PXNH0625AC16-04C025	-	0.625	-	0.025	-	0.438	-	0.732	-	0.613	40° / 42°	XP3225
52304002		PXNH0750AC20-04C025	-	0.750	-	0.025	-	0.525	-	0.807	-	0.736	40° / 42°	XP3225
52304003		PXNH1000AC25-04C025	-	1.000	-	0.025	-	0.700	-	1.098	-	0.960	40° / 42°	XP3225
7830451		PXNH120C12-04C005	12	-	0.5	-	8.4	-	14.4	-	11.7	-	40° / 42°	XP3225
7830452		PXNH160C16-04C006	16	-	0.6	-	11.2	-	18.7	-	15.7	-	40° / 42°	XP3225
7830453		PXNH200C20-04C006	20	-	0.6	-	14.0	-	21.5	-	19.6	-	40° / 42°	XP3225
7830454		PXNH250C25-04C006	25	-	0.6	-	17.5	-	27.5	-	24.0	-	40° / 42°	XP3225

Packed: 1 pc.



List 52300

PXM SA/TPA (inch)



Straight Shank

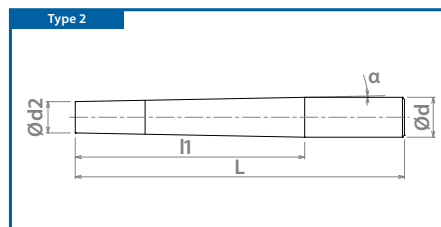
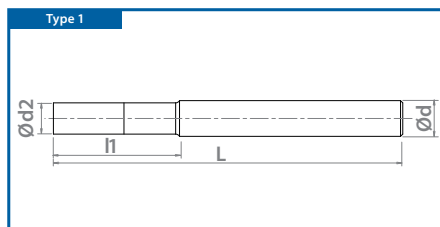


Tapered Shank

EDP No.	Body Type	Designation	Type	Neck Dia. (inch)	Shank Dia. (inch)	Taper	Overall Length (inch)	Neck Length (inch)	Applicable Head (inch)
				d2	d	α°	L	l1	
52300000	Cylindrical Shank Steel	PXMZ-C12SA0500-S400	1	0.488	0.500	-	4.000	0.750	0.500
52300001		PXMZ-C12TPA0750-S600	2	0.488	0.750	5°	6.000	1.500	
52300002		PXMZ-C16SA0625-S400	1	0.613	0.625	-	4.000	1.000	0.625
52300003		PXMZ-C16TPA1000-S650	2	0.613	1.000	5°	6.500	2.200	
52300004		PXMZ-C20SA0750-S500	1	0.736	0.750	-	5.000	1.250	0.750
52300005		PXMZ-C20TPA1250-S700	2	0.736	1.250	5°	7.000	2.900	
52300006	PXMZ-C25SA1000-S550	1	0.960	1.000	-	5.500	1.500	1.000	
52300007	Cylindrical Shank Carbide	PXMZ-C12SA0500-S300CS	1	0.488	0.500	-	3.000	1.000	0.500
52300008		PXMZ-C12SA0500-L400CS	1	0.488	0.500	-	4.000	1.750	
52300009		PXMZ-C12SA0500-L450CS	1	0.488	0.500	-	4.500	2.500	
52300010		PXMZ-C12TPA0625-LL550CS	2	0.488	0.625	1.2°	5.500	3.250	0.625
52300011		PXMZ-C16SA0625-S350CS	1	0.613	0.625	-	3.500	1.500	
52300012		PXMZ-C16SA0625-L550CS	1	0.613	0.625	-	5.500	2.500	
52300013		PXMZ-C16SA0625-L600CS	1	0.613	0.625	-	6.000	3.250	0.750
52300014		PXMZ-C16TPA0750-LL650CS	2	0.613	0.750	1°	6.500	4.500	
52300015		PXMZ-C20SA0750-S350CS	1	0.736	0.750	-	3.500	1.500	
52300016		PXMZ-C20SA0750-L600CS	1	0.736	0.750	-	6.000	3.000	0.750
52300017		PXMZ-C20SA0750-L700CS	1	0.736	0.750	-	7.000	4.250	
52300018		PXMZ-C20TPA1000-LL800CS	2	0.736	1.000	1.5°	8.000	5.500	
52300019	PXMZ-C25SA1000-L800CS	1	0.960	1.000	-	8.000	3.750	1.000	

Packed: 1 pc.

Note: Wrench included with body.



List 78018

PXM SS/TP (Metric)



Straight Shank

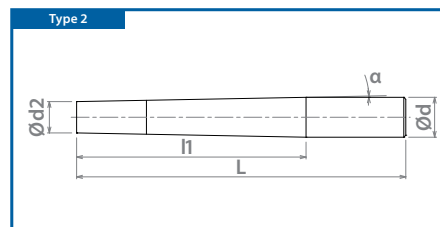
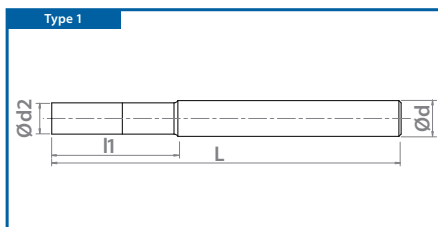


Tapered Shank

EDP No.	Body Type	Designation	Type	Neck Dia. (mm)	Shank Dia. (mm)	Taper	Overall Length (mm)	Neck Length (mm)	Applicable Head (mm)
				d2	d	α°	L	l1	
48174001	Cylindrical Shank Steel	PXMZ-C12SS12-S100	1	11.7	12	-	100	19.0	12
48174002		PXMZ-C12TP20-S145	2	11.7	20	5°	145	47.4	
48174003		PXMZ-C16SS16-S100	1	15.7	16	-	100	23.4	16
48174004		PXMZ-C16TP25-S155	2	15.7	25	5°	155	53.1	
48174005		PXMZ-C20SS20-S120	1	19.6	20	-	120	28.8	20
48174006		PXMZ-C20TP32-S170	2	19.6	32	5°	170	70.8	
48174007		PXMZ-C25SS25-S140	1	24.0	25	-	140	36.0	25
48174008	Cylindrical Shank Carbide	PXMZ-C12SS12-S075CS	1	11.7	12	-	75	25.0	12
48174009		PXMZ-C12SS12-L100CS	1	11.7	12	-	100	46.3	
48174010		PXMZ-C12SS12-L115CS	1	11.7	12	-	115	65.0	
48174011		PXMZ-C12TP16-LL135CS	2	11.7	16	1.5°	135	85.0	16
48174012		PXMZ-C16SS16-S090CS	1	15.7	16	-	90	40.0	
48174013		PXMZ-C16SS16-L130CS	1	15.7	16	-	130	62.0	
48174014		PXMZ-C16SS16-L135CS	1	15.7	16	-	135	85.0	20
48174015		PXMZ-C16TP20-LL165CS	2	15.7	20	1.5°	165	115.0	
48174016		PXMZ-C20SS20-S090CS	1	19.6	20	-	90	40.0	
48174017		PXMZ-C20SS20-L150CS	1	19.6	20	-	150	79.3	20
48174018		PXMZ-C20SS20-L180CS	1	19.6	20	-	180	110.0	
48174019		PXMZ-C20TP25-LL200CS	2	19.6	25	1.5°	200	140.0	
48174020		PXMZ-C25SS25-L200CS	1	24.0	25	-	200	98.0	25

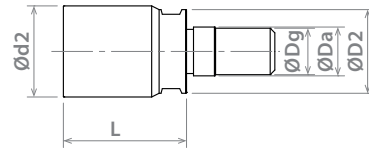
Packed: 1 pc.

Note: Wrench included with body.



List 52300

PXM SF Joint (Inch)



EDP No.	Body Type	Designation	Neck Dia. (Inch)	Pilot Dia. (Inch)	Thread Dia. (mm)	Flange Dia. (Inch)	Overall Length (Inch)	Spanner Wrench	Applicable Head (inch)
			d2	Da	Dg	D2	L		
52300020	PXMJ (Joint)	PXMJ-AC12SF06	0.488	0.256	M6	0.433	0.709	PXMP8-10	0.500
52300021		PXMJ-AC16SF08	0.613	0.335	M8	0.571	0.858	PXMP13-16	0.625
52300022		PXMJ-AC20SF10	0.736	0.413	M10	0.707	1.043	PXMP13-16	0.750
52300023		PXMJ-AC25SF12	0.960	0.492	M12	0.905	1.338	PXMP21	1.000

Packed: 1 pc.

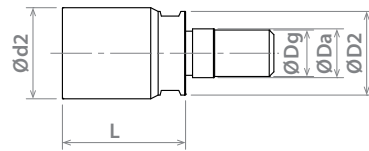
Note: Wrench included with body.

Note: PXM heads can be mounted to PHOENIX® SF Arbors by attaching the PXM SF Joint.



List 78018

PXM SF Joint (Metric)

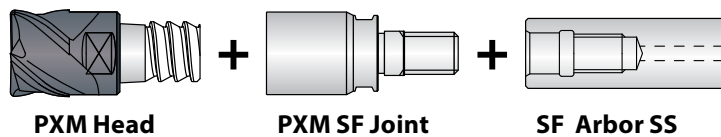


EDP No.	Body Type	Designation	Neck Dia. (mm)	Pilot Dia. (mm)	Thread Dia. (mm)	Flange Dia. (mm)	Overall Length (mm)	Spanner Wrench	Applicable Head
			d2	Da	Dg	D2	L		
7801893	PXMJ (Joint)	PXMJ-C12SF06	11.7	6.5	M6	11.0	18.0	PXMP8-10	12
7801894		PXMJ-C16SF08	15.7	8.5	M8	14.5	21.8	PXMP13-16	16
7801895		PXMJ-C20SF10	19.6	10.5	M10	18.0	26.5	PXMP13-16	20
7801896		PXMJ-C25SF12	24.0	12.5	M12	23.0	34.0	PXMP21	25

Packed: 1 pc.

Note: Wrench included with body.

Note: PXM heads can be mounted to PHOENIX® SF Arbors by attaching the PXM SF Joint.



PXM Head

PXM SF Joint

SF Arbor SS

List 7808H

PXM Accessories

Appearance	EDP No.	Designation	Applicable Head		Recommended Tightening
			(inch)	(mm)	
Spanner Wrench	7801890	PXMP8-10	0.500	12	12.0 Nm
	7801891	PXMP13-16	0.625	16	30.0 Nm
	7801892	PXMP21	1.000	25	60.0 Nm

Packed: Wrench = 1 pc.



Cutting Conditions (PXNL & PXNH)

Side milling

Work Material		Cast Iron		Carbon Steels		Alloy Steels		Hardened Steels Pre-hardened Steels		Stainless Steels	
Depth of Cut		Aa=0.5Dc • Ar=0.3Dc				Aa=0.5Dc • Ar=0.2Dc					
Mill Dia.		Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)
(in)	(mm)										
-	12	2390	23.62	3180	27.56	2650	17.32	2390	11.42	2120	9.06
1/2	-	2255	22.32	3000	26.10	2500	16.25	2255	10.82	2000	8.60
5/8	-	1800	24.48	2400	28.56	2000	17.80	1800	11.88	1600	9.44
-	16	1790	24.41	2390	28.35	1990	17.72	1790	11.81	1590	9.45
3/4	-	1500	27.30	2000	31.40	1670	19.87	1500	12.75	1335	10.28
-	20	1430	25.98	1910	29.92	1590	18.90	1430	12.20	1270	9.84
-	25	890	17.72	1270	22.05	1020	13.38	890	8.66	760	6.69
1	-	875	17.41	1250	21.75	1000	13.10	875	8.49	745	6.56

- Cutting conditions shown above are for side milling with $L/D \leq 3.5xD$.
- Adjust/reduce the cutting conditions when the overhang length is longer than $3.5xD$.
- For side milling with PXMC Extra-Short Collet, increase Speed by 20-80% and Feed by 20-100%.
- For side milling with PXMC Short Collet, increase Speed by 30-50% and Feed by 10-80%.

Slotting

Work Material		Cast Iron		Carbon Steels		Alloy Steels		Hardened Steels Pre-hardened Steels		Stainless Steels	
Depth of Cut		Aa=0.5Dc									
Mill Dia.		Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)	Speed (RPM)	Feed (in/min)
(in)	(mm)										
-	12	1860	11.81	2650	14.57	2120	8.66	1860	5.51	1590	4.33
1/2	-	1750	11.03	2505	13.78	2000	8.20	1750	5.08	1500	4.05
5/8	-	1400	12.74	2005	15.84	1600	9.44	1400	5.88	1200	4.80
-	16	1390	12.60	1990	15.75	1590	9.45	1390	5.91	1190	4.72
3/4	-	1165	14.91	1670	18.54	1335	11.21	1165	6.99	1000	5.40
-	20	1110	14.17	1590	17.72	1270	10.63	1110	6.69	950	5.12
-	25	760	11.02	1150	14.57	890	8.27	760	5.12	640	3.94
1	-	745	10.80	1130	14.35	875	8.14	745	4.99	630	3.84

- Cutting conditions shown above are for slotting with $L/D \leq 3.5xD$.
- Adjust/reduce the cutting conditions when the overhang length is longer than $3.5xD$.
- For slotting with PXMC Extra-Short Collet, increase Speed by 20-80% and Feed by 50-250%.
- For slotting with PXMC Short Collet, increase Speed by 20-50% and Feed by 30-200%.



shaping your dreams

 **Safe use of cutting tools**

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

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