



Manufacturers of Solid Carbide Cutting Tools

- MILLING
- HOLE MAKING
- THREAD MILL
- TINY TOOLS
- CUSTOMISED



About us...

***Paal Precision Tools** is established to cater our valuable customer With our 10 years of core expertise in designing and manufacturing of critical tool.*

*We, **Paal**, are dedicated to provide Innovative, Reliable and High-performance Solutions for **Cutting Tool** that meet the most demanding standards for Industry.*

Our Team of Experienced Engineers and Technicians is committed for delivering Highest Quality Products which consistently exceed expectations, building a reputation for precision, reliability, and excellence.

*We, **Paal**, being Specialized in the **Tool Design for the Most Critical Application**, offering Customized Solutions to the unique needs of our **Customer** across all industries includes Automotive, Medical, Pump, Valve, Engineering, Aerospace to Heavy Manufacturing.*

*We, **Paal** Gaining our Customer Trust by supplying Tool of Highest Standard of Precision and Functionality, THROUGH, Stringent Quality Assurance Process of Tool design and Manufacturing and Inspection.*

*We, **Paal** understand the Challenges of each Industry and the Importance of TOOLS, that help US to deliver right product to our Customer which will help them to remain sustainable in competitive market with supply of best finish product.*

*We, **Paal** continue to evolve, we remain committed for Innovation, Continuous improvement.*

*We, **Paal**, ensure the Best Materials, Advanced Technology, and Cost-Effective Solutions, for our sourced manufacturing network.*

Vision...

*We, **Paal**, want to be globally recognized Supplier in high-performance solid carbide Cutting Tools with Pioneering Innovations that set new benchmarks for Precision and Productivity.*

*We, **Paal**, will established state of art facility of manufacturing to produce all critical tool, by 2028*

Mission...

Optimizing your machine time (PAAL) is our mission.

Our mission is to design, manufacture, and deliver superior solid carbide cutting tools that exceed industry standards. We are committed to leveraging advanced technology, continuous improvement, and the expertise of our dedicated team to provide customers with innovative solutions that enhance their productivity, reduce costs, and ensure exceptional quality.

Core Values...

Precision: *We believe First time Right, At the core of everything we do, from engineering and manufacturing to customer communication.*

Innovation: *We relentlessly pursue new ideas, materials, and technologies to stay at the forefront of the industry and deliver cutting-edge solutions.*

Uncompromising Quality: *We are committed to the highest standards of quality in our products, processes, and people. Our tools are built to perform and to last.*

Customer Partnership: *We succeed when our customers succeed. We work collaboratively to understand their needs and provide solutions and support that create real value.*

Integrity: *We conduct our business with honesty, transparency, and respect for our employees, customers, and partners.*

Excellence: *We strive for excellence in every aspect of our business, fostering a culture of continuous improvement and a passion for winning.*

1

Aerospace



2

Surgical



3

Renewable Energy



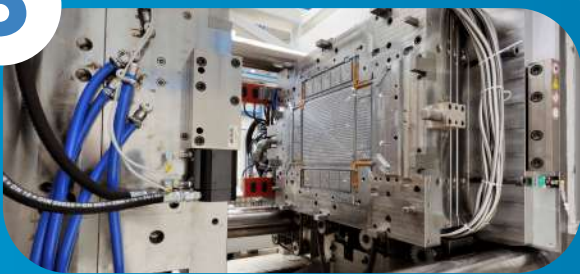
4

Automobiles



5

Die & Moulding



6

Foundry



7

Mechanical Engineering



8

Marine





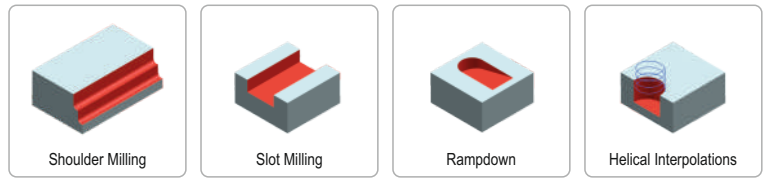
MILLING TOOLS



General Purpose 2 Flute 30° Helix Center Cutting Short, Medium and Extra Long Length Solid Carbide Endmills

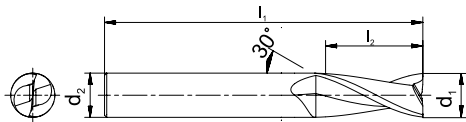
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	•	Aluminum and Other Non-Ferrous Metal
S		
H		



Highlights:

- ~ Shank meets DIN 6535 specifications for secure and consistent tool holding.
- ~ High-performance carbide material ensures long service life at an excellent cost-benefit ratio.
- ~ Radial relief design improves edge strength and contributes to superior surface finishes.
- ~ Facilitates easy regrinding, minimizing reconditioning time and expense.
- ~ Center-cutting geometry enables direct entry machining like ramping and plunging.



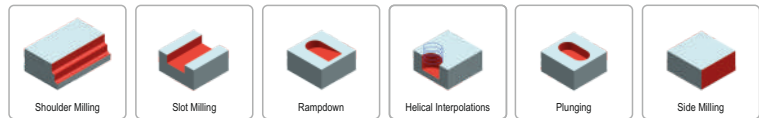
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	α °	Flutes	Shank Type	Coating
PESR20339	3	3		39	10					2	HA Cylindrical	TIALN
PESR20451	4	4		51	14					2	HA Cylindrical	TIALN
PESR20551	5	5		51	16					2	HA Cylindrical	TIALN
PESR20663	6	6		63	19					2	HA Cylindrical	TIALN
PESR20863	8	8		63	22					2	HA Cylindrical	TIALN
PESR21070	10	10		70	25					2	HA Cylindrical	TIALN
PESR21275	12	12		75	25					2	HA Cylindrical	TIALN
PESR21480	14	14		80	30					2	HA Cylindrical	TIALN
PESR21680	16	16		80	32					2	HA Cylindrical	TIALN
PESR21880	18	18		100	40					2	HA Cylindrical	TIALN
PESR220100	20	20		100	40					2	HA Cylindrical	TIALN
PESM20357	3	3		57	19					2	HA Cylindrical	TIALN
PESM20457	4	4		57	19					2	HA Cylindrical	TIALN
PESM20563	5	5		63	25					2	HA Cylindrical	TIALN
PESM20676	6	6		76	28					2	HA Cylindrical	TIALN
PESM20876	8	8		76	29					2	HA Cylindrical	TIALN
PESM21076	10	10		76	32					2	HA Cylindrical	TIALN
PESM212100	12	12		100	51					2	HA Cylindrical	TIALN
PESM214125	14	14		125	55					2	HA Cylindrical	TIALN
PESM216125	16	16		125	55					2	HA Cylindrical	TIALN
PESM218125	18	18		125	55					2	HA Cylindrical	TIALN
PESM220125	20	20		125	55					2	HA Cylindrical	TIALN
PESL20375	3	3		75	25					2	HA Cylindrical	TIALN
PESL20475	4	4		75	25					2	HA Cylindrical	TIALN
PESL20575	5	5		75	28					2	HA Cylindrical	TIALN
PESL206100	6	6		100	40					2	HA Cylindrical	TIALN
PESL208100	8	8		100	40					2	HA Cylindrical	TIALN
PESL210100	10	10		100	45					2	HA Cylindrical	TIALN
PESL212150	12	12		150	60					2	HA Cylindrical	TIALN
PESL214150	14	14		150	75					2	HA Cylindrical	TIALN
PESL216150	16	16		150	75					2	HA Cylindrical	TIALN
PESL218150	18	18		150	75					2	HA Cylindrical	TIALN
PESL220150	20	20		150	75					2	HA Cylindrical	TIALN

General Purpose 4 Flute 30° Helix Center Cutting Short, Medium and Extra Long Length Solid Carbide Endmills

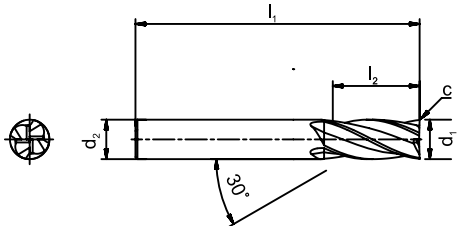
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Parallel shank meets DIN 6528 specifications for secure and consistent tool holding.
- ~ High-performance carbide material ensures long service life at an excellent cost-benefit ratio.
- ~ Radial relief design improves edge strength and contributes to superior surface finishes.
- ~ Facilitates easy regrinding, minimizing reconditioning time and expense.
- ~ Center-cutting geometry enables direct entry machining like ramping and plunging.



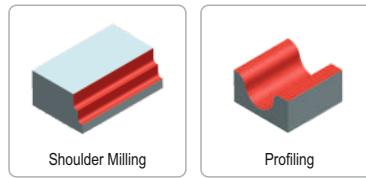
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PESR40339	3	3		39	10			0.06		4	HA Cylindrical	TIALN
PESR40451	4	4		51	14			0.08		4	HA Cylindrical	TIALN
PESR40551	5	5		51	16			0.1		4	HA Cylindrical	TIALN
PESR40663	6	6		63	19			0.12		4	HA Cylindrical	TIALN
PESR40863	8	8		63	22			0.16		4	HA Cylindrical	TIALN
PESR41070	10	10		70	25			0.2		4	HA Cylindrical	TIALN
PESR41275	12	12		75	25			0.24		4	HA Cylindrical	TIALN
PESR41480	14	14		80	30			0.28		4	HA Cylindrical	TIALN
PESR41680	16	16		80	32			0.32		4	HA Cylindrical	TIALN
PESR41880	18	18		100	40			0.36		4	HA Cylindrical	TIALN
PESR420100	20	20		100	40			0.4		4	HA Cylindrical	TIALN
PESM40357	3	3		57	19			0.06		4	HA Cylindrical	TIALN
PESM40457	4	4		57	19			0.08		4	HA Cylindrical	TIALN
PESM40563	5	5		63	25			0.1		4	HA Cylindrical	TIALN
PESM40676	6	6		76	28			0.12		4	HA Cylindrical	TIALN
PESM40876	8	8		76	29			0.16		4	HA Cylindrical	TIALN
PESM41076	10	10		76	32			0.2		4	HA Cylindrical	TIALN
PESM412100	12	12		100	51			0.24		4	HA Cylindrical	TIALN
PESM414125	14	14		125	55			0.28		4	HA Cylindrical	TIALN
PESM416125	16	16		125	55			0.32		4	HA Cylindrical	TIALN
PESM418125	18	18		125	55			0.36		4	HA Cylindrical	TIALN
PESM420125	20	20		125	55			0.4		4	HA Cylindrical	TIALN
PESL40375	3	3		75	25			0.06		4	HA Cylindrical	TIALN
PESL40475	4	4		75	25			0.08		4	HA Cylindrical	TIALN
PESL40575	5	5		75	28			0.1		4	HA Cylindrical	TIALN
PESL406100	6	6		100	40			0.12		4	HA Cylindrical	TIALN
PESL408100	8	8		100	40			0.16		4	HA Cylindrical	TIALN
PESL410100	10	10		100	45			0.2		4	HA Cylindrical	TIALN
PESL412150	12	12		150	60			0.24		4	HA Cylindrical	TIALN
PESL414150	14	14		150	75			0.28		4	HA Cylindrical	TIALN
PESL416150	16	16		150	75			0.32		4	HA Cylindrical	TIALN
PESL418150	18	18		150	75			0.36		4	HA Cylindrical	TIALN
PESL420150	20	20		150	75			0.4		4	HA Cylindrical	TIALN

General Purpose 2 Flute 30° Helix Center Cutting Short, Medium, and Extra Long Length Solid Carbide Ballnose

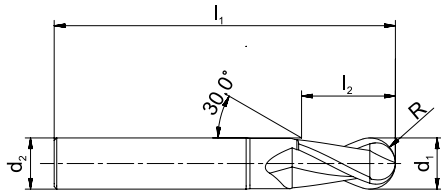
• Optimal

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	•	Aluminum and Other Non-Ferrous Metal
S		
H		



Highlights:

- ~ Shank meets DIN 6535 specifications for secure and consistent tool holding.
- ~ High-performance carbide material ensures long service life at an excellent cost-benefit ratio.
- ~ Radial relief design improves edge strength and contributes to superior surface finishes.
- ~ Facilitates easy regrinding, minimizing reconditioning time and expense.
- ~ Center-cutting geometry enables direct entry machining like ramping and plunging.



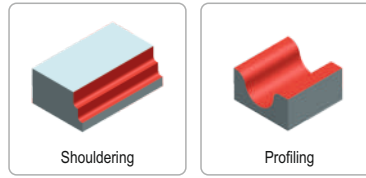
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	α °	Flutes	Shank Type	Coating
PEBR20339	3	3		39	10		1.5			2	HA Cylindrical	TIALN
PEBR20451	4	4		51	14		2			2	HA Cylindrical	TIALN
PEBR20551	5	5		51	16		2.5			2	HA Cylindrical	TIALN
PEBR20663	6	6		63	19		3			2	HA Cylindrical	TIALN
PEBR20863	8	8		63	22		4			2	HA Cylindrical	TIALN
PEBR21070	10	10		70	25		5			2	HA Cylindrical	TIALN
PEBR21275	12	12		75	25		6			2	HA Cylindrical	TIALN
PEBR21480	14	14		80	30		7			2	HA Cylindrical	TIALN
PEBR21680	16	16		80	32		8			2	HA Cylindrical	TIALN
PEBR21880	18	18		100	40		9			2	HA Cylindrical	TIALN
PEBR220100	20	20		100	40		10			2	HA Cylindrical	TIALN
PEBM20357	3	3		57	19		1.5			2	HA Cylindrical	TIALN
PEBM20457	4	4		57	19		2			2	HA Cylindrical	TIALN
PEBM20563	5	5		63	25		2.5			2	HA Cylindrical	TIALN
PEBM20676	6	6		76	28		3			2	HA Cylindrical	TIALN
PEBM20876	8	8		76	29		4			2	HA Cylindrical	TIALN
PEBM21076	10	10		76	32		5			2	HA Cylindrical	TIALN
PEBM212100	12	12		100	51		6			2	HA Cylindrical	TIALN
PEBM214125	14	14		125	55		7			2	HA Cylindrical	TIALN
PEBM216125	16	16		125	55		8			2	HA Cylindrical	TIALN
PEBM218125	18	18		125	55		9			2	HA Cylindrical	TIALN
PEBM220125	20	20		125	55		10			2	HA Cylindrical	TIALN
PEBL20375	3	3		75	25		1.5			2	HA Cylindrical	TIALN
PEBL20475	4	4		75	25		2			2	HA Cylindrical	TIALN
PEBL20575	5	5		75	28		2.5			2	HA Cylindrical	TIALN
PEBL206100	6	6		100	40		3			2	HA Cylindrical	TIALN
PEBL208100	8	8		100	40		4			2	HA Cylindrical	TIALN
PEBL210100	10	10		100	45		5			2	HA Cylindrical	TIALN
PEBL212150	12	12		150	60		6			2	HA Cylindrical	TIALN
PEBL214150	14	14		150	75		7			2	HA Cylindrical	TIALN
PEBL216150	16	16		150	75		8			2	HA Cylindrical	TIALN
PEBL218150	18	18		150	75		9			2	HA Cylindrical	TIALN
PEBL220150	20	20		150	75		10			2	HA Cylindrical	TIALN

General Purpose 4 Flute 30° Helix Center Cutting Short, Medium, and Extra Long Length Solid Carbide Ballnose

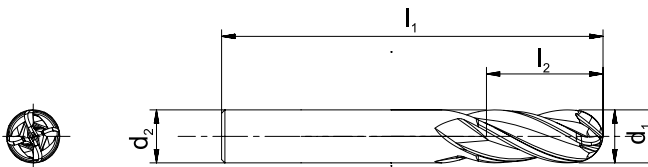
● Optimal ○ Secondary

P	●	Steel
M	●	Stainless Steel
K	●	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S		
H		



Highlights:

- ~ Shank meets DIN 6535 specifications for secure and consistent tool holding.
- ~ High-performance carbide material ensures long service life at an excellent cost-benefit ratio.
- ~ Radial relief design improves edge strength and contributes to superior surface finishes.
- ~ Facilitates easy regrinding, minimizing reconditioning time and expense.
- ~ Center-cutting geometry enables direct entry machining like ramping and plunging.



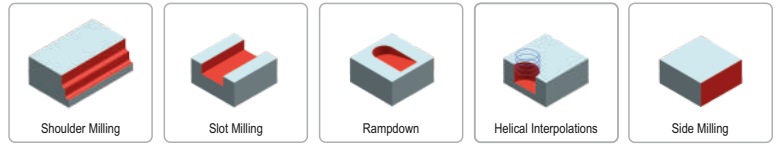
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	α °	Flutes	Shank Type	Coating
PEBR40339	3	3		39	10		1.5			4	HA Cylindrical	TIALN
PEBR40451	4	4		51	14		2			4	HA Cylindrical	TIALN
PEBR40551	5	5		51	16		2.5			4	HA Cylindrical	TIALN
PEBR40663	6	6		63	19		3			4	HA Cylindrical	TIALN
PEBR40863	8	8		63	22		4			4	HA Cylindrical	TIALN
PEBR41070	10	10		70	25		5			4	HA Cylindrical	TIALN
PEBR41275	12	12		75	25		6			4	HA Cylindrical	TIALN
PEBR41480	14	14		80	30		7			4	HA Cylindrical	TIALN
PEBR41680	16	16		80	32		8			4	HA Cylindrical	TIALN
PEBR41880	18	18		100	40		9			4	HA Cylindrical	TIALN
PEBR420100	20	20		100	40		10			4	HA Cylindrical	TIALN
PEBM40357	3	3		57	19		1.5			4	HA Cylindrical	TIALN
PEBM40457	4	4		57	19		2			4	HA Cylindrical	TIALN
PEBM40563	5	5		63	25		2.5			4	HA Cylindrical	TIALN
PEBM40676	6	6		76	28		3			4	HA Cylindrical	TIALN
PEBM40876	8	8		76	29		4			4	HA Cylindrical	TIALN
PEBM41076	10	10		76	32		5			4	HA Cylindrical	TIALN
PEBM412100	12	12		100	51		6			4	HA Cylindrical	TIALN
PEBM414125	14	14		125	55		7			4	HA Cylindrical	TIALN
PEBM416125	16	16		125	55		8			4	HA Cylindrical	TIALN
PEBM418125	18	18		125	55		9			4	HA Cylindrical	TIALN
PEBM420125	20	20		125	55		10			4	HA Cylindrical	TIALN
PEBL40375	3	3		75	25		1.5			4	HA Cylindrical	TIALN
PEBL40475	4	4		75	25		2			4	HA Cylindrical	TIALN
PEBL40575	5	5		75	28		2.5			4	HA Cylindrical	TIALN
PEBL406100	6	6		100	40		3			4	HA Cylindrical	TIALN
PEBL408100	8	8		100	40		4			4	HA Cylindrical	TIALN
PEBL410100	10	10		100	45		5			4	HA Cylindrical	TIALN
PEBL412150	12	12		150	60		6			4	HA Cylindrical	TIALN
PEBL414150	14	14		150	75		7			4	HA Cylindrical	TIALN
PEBL416150	16	16		150	75		8			4	HA Cylindrical	TIALN
PEBL418150	18	18		150	75		9			4	HA Cylindrical	TIALN
PEBL420150	20	20		150	75		10			4	HA Cylindrical	TIALN

2 Flute 30° Helix Center Cutting Short, Medium Length Solid Carbide Corner Radius Endmill

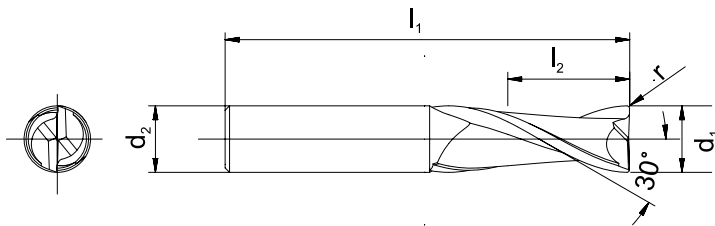
● Optimal ○ Secondary

P	●	Steel
M	●	Stainless Steel
K	●	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ 2-flute configuration and a 30° helix angle for optimized chip evacuation and cutting stability.
- ~ Offered in corner radius, enabling smoother load conversion during milling and enhancing tool durability.
- ~ Made from submicron grain carbide for increased toughness and wear resistance.
- ~ PVD-coated grade supports medium to high cutting speeds, reducing friction and extending tool life.



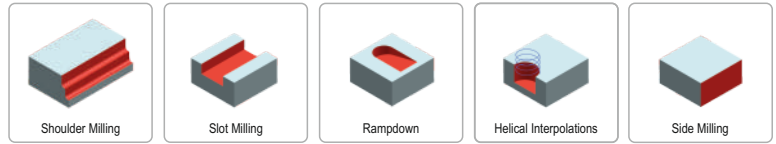
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PECR20339R05	3	3		39	10		0.5			2	HA Cylindrical	TIALN
PECR20339R1	3	3		39	10		1			2	HA Cylindrical	TIALN
PECR20450R05	4	4		50	14		0.5			2	HA Cylindrical	TIALN
PECR20450R1	4	4		50	14		1			2	HA Cylindrical	TIALN
PECR20550R05	5	5		50	16		0.5			2	HA Cylindrical	TIALN
PECR20550R1	5	5		50	16		1			2	HA Cylindrical	TIALN
PECR20663R05	6	6		63	19		0.5			2	HA Cylindrical	TIALN
PECR20663R1	6	6		63	19		1			2	HA Cylindrical	TIALN
PECR20663R15	6	6		63	19		1.5			2	HA Cylindrical	TIALN
PECR20863R05	8	8		63	22		0.5			2	HA Cylindrical	TIALN
PECR20863R1	8	8		63	22		1			2	HA Cylindrical	TIALN
PECR20863R2	8	8		63	22		2			2	HA Cylindrical	TIALN
PECR21070R05	10	10		70	25		0.5			2	HA Cylindrical	TIALN
PECR21070R1	10	10		70	25		1			2	HA Cylindrical	TIALN
PECR21070R2	10	10		70	25		2			2	HA Cylindrical	TIALN
PECR21070R25	10	10		70	25		2.5			2	HA Cylindrical	TIALN
PECR21275R05	12	12		75	30		0.5			2	HA Cylindrical	TIALN
PECR21275R1	12	12		75	30		1			2	HA Cylindrical	TIALN
PECR21275R2	12	12		75	30		2			2	HA Cylindrical	TIALN
PECR21275R3	12	12		75	30		3			2	HA Cylindrical	TIALN
PECR21680R1	16	16		80	32		1			2	HA Cylindrical	TIALN
PECR21680R2	16	16		80	32		2			2	HA Cylindrical	TIALN
PECR21680R3	16	16		80	32		3			2	HA Cylindrical	TIALN
PECR21680R4	16	16		80	32		4			2	HA Cylindrical	TIALN
PECR220100R1	20	20		100	40		1			2	HA Cylindrical	TIALN
PECR220100R2	20	20		100	40		2			2	HA Cylindrical	TIALN
PECR220100R3	20	20		100	40		3			2	HA Cylindrical	TIALN
PECR220100R4	20	20		100	40		4			2	HA Cylindrical	TIALN

4 Flute 30° Helix Center Cutting Short, Medium Length Solid Carbide Corner Radius Endmill

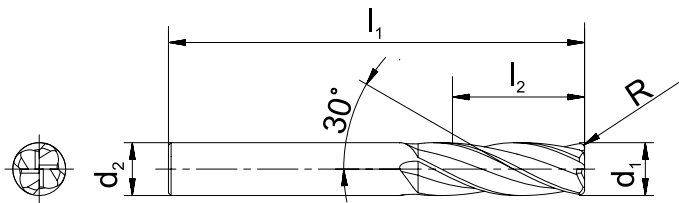
● Optimal ○ Secondary

P	●	Steel
M	●	Stainless Steel
K	●	Grey Cast Iron, Malleable and Spheroidal Iron
N	●	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	●	Hardened Steel and Chilled cast Iron



Highlights:

- ~ 4-flute configuration and a 30° helix angle for optimized chip evacuation and cutting stability.
- ~ Offered in corner radius, enabling smoother load conversion during milling and enhancing tool durability.
- ~ Made from submicron grain carbide for increased toughness and wear resistance.
- ~ PVD-coated grade supports medium to high cutting speeds, reducing friction and extending tool life.



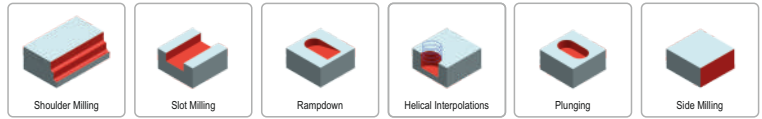
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PECR40339R05	3	3		39	10		0.5			4	HA Cylindrical	TIALN
PECR40339R1	3	3		39	10		1			4	HA Cylindrical	TIALN
PECR40450R05	4	4		50	14		0.5			4	HA Cylindrical	TIALN
PECR40450R1	4	4		50	14		1			4	HA Cylindrical	TIALN
PECR40550R05	5	5		50	16		0.5			4	HA Cylindrical	TIALN
PECR40550R1	5	5		50	16		1			4	HA Cylindrical	TIALN
PECR40663R05	6	6		63	19		0.5			4	HA Cylindrical	TIALN
PECR40663R1	6	6		63	19		1			4	HA Cylindrical	TIALN
PECR40663R15	6	6		63	19		1.5			4	HA Cylindrical	TIALN
PECR40863R05	8	8		63	22		0.5			4	HA Cylindrical	TIALN
PECR40863R1	8	8		63	22		1			4	HA Cylindrical	TIALN
PECR40863R2	8	8		63	22		2			4	HA Cylindrical	TIALN
PECR41070R05	10	10		70	25		0.5			4	HA Cylindrical	TIALN
PECR41070R1	10	10		70	25		1			4	HA Cylindrical	TIALN
PECR41070R2	10	10		70	25		2			4	HA Cylindrical	TIALN
PECR41070R25	10	10		70	25		2.5			4	HA Cylindrical	TIALN
PECR41275R05	12	12		75	30		0.5			4	HA Cylindrical	TIALN
PECR41275R1	12	12		75	30		1			4	HA Cylindrical	TIALN
PECR41275R2	12	12		75	30		2			4	HA Cylindrical	TIALN
PECR41275R3	12	12		75	30		3			4	HA Cylindrical	TIALN
PECR41680R1	16	16		80	32		1			4	HA Cylindrical	TIALN
PECR41680R2	16	16		80	32		2			4	HA Cylindrical	TIALN
PECR41680R3	16	16		80	32		3			4	HA Cylindrical	TIALN
PECR41680R4	16	16		80	32		4			4	HA Cylindrical	TIALN
PECR420100R1	20	20		100	40		1			4	HA Cylindrical	TIALN
PECR420100R2	20	20		100	40		2			4	HA Cylindrical	TIALN
PECR420100R3	20	20		100	40		3			4	HA Cylindrical	TIALN
PECR420100R4	20	20		100	40		4			4	HA Cylindrical	TIALN

Solid Carbide 3 Flute Endmills with Different Helix, Variable Pitch and Relieved Neck

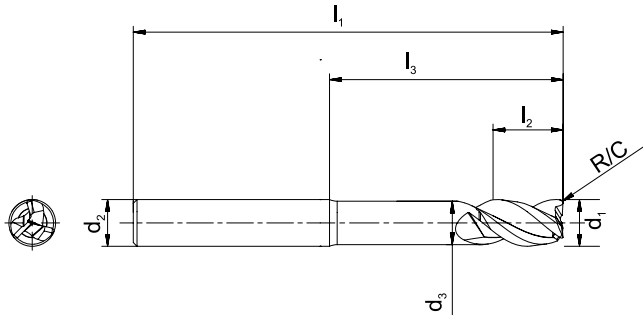
• Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Durable solid carbide construction for extended tool life.
- ~ Eccentric relief geometry that boosts cutting edge stability and ensures high-quality surface finishes.
- ~ Easy regrounding for reduced maintenance and reconditioning expenses.
- ~ Center-cutting capability ideal for plunging and ramping operations, maximizing machining versatility.



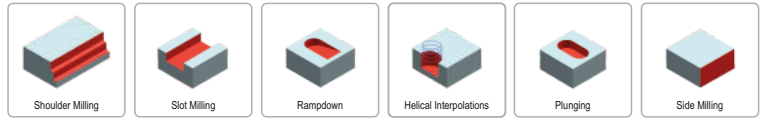
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PESR30363	3	6	2.8	63	8	16		0.06		3	HA Cylindrical	Uncoated
PESR30463	4	6	3.8	63	10	18		0.08		3	HA Cylindrical	Uncoated
PESR30563	5	6	4.8	63	10	18		0.1		3	HA Cylindrical	Uncoated
PESR30663	6	6	5.7	63	12	20		0.12		3	HA Cylindrical	Uncoated
PESR30863	8	8	7.7	63	22	30		0.16		3	HA Cylindrical	Uncoated
PESR31070	10	10	9.7	70	22	30		0.2		3	HA Cylindrical	Uncoated
PESR31275	12	12	11.5	75	25	33		0.24		3	HA Cylindrical	Uncoated
PESR31480	14	14	13.5	80	30	42		0.28		3	HA Cylindrical	Uncoated
PESR31680	16	16	15.5	80	32	42		0.32		3	HA Cylindrical	Uncoated
PESR318100	18	18	17.5	100	40	52		0.36		3	HA Cylindrical	Uncoated
PESR320100	20	20	19.5	100	40	52		0.4		3	HA Cylindrical	Uncoated
PESM30563	5	6	4.8	63	15	19		0.05		3	HA Cylindrical	Uncoated
PESM30675	6	6	5.7	75	18	28		0.06		3	HA Cylindrical	Uncoated
PESM30875	8	8	7.7	75	24	38		0.08		3	HA Cylindrical	Uncoated
PESM310100	10	10	9.5	100	30	38		0.1		3	HA Cylindrical	Uncoated
PESM312100	12	12	11.5	100	36	46		0.12		3	HA Cylindrical	Uncoated
PESM316125	16	16	15.5	125	48	58		0.16		3	HA Cylindrical	Uncoated
PESM320125	20	20	19.5	125	60	74		0.2		3	HA Cylindrical	Uncoated

4 Flute High Helix Endmill Heli Finish XR

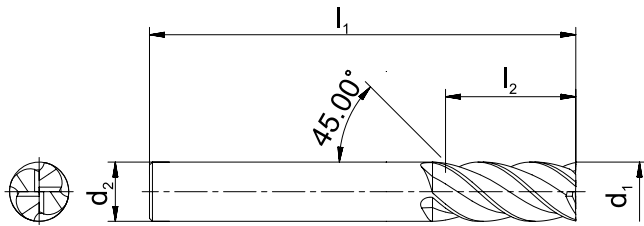
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Eccentric relief reduces vibration & friction.
- ~ 45° helix improves chip flow & surface finish.
- ~ High MRR on steel, stainless, cast iron & high-temp alloys.
- ~ Smooth, stable, and efficient cutting.



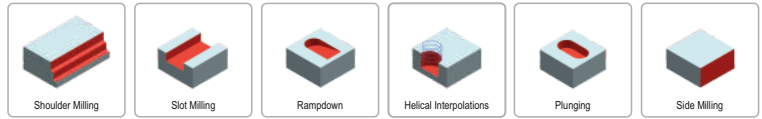
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PHFXRR40551	5	5		51	16			0.1		4	HA Cylindrical	TIALN
PHFXRR40663	6	6		63	19			0.12		4	HA Cylindrical	TIALN
PHFXRR40863	8	8		63	22			0.16		4	HA Cylindrical	TIALN
PHFXRR41070	10	10		70	25			0.2		4	HA Cylindrical	TIALN
PHFXRR41275	12	12		75	25			0.24		4	HA Cylindrical	TIALN
PHFXRR41480	14	14		80	30			0.28		4	HA Cylindrical	TIALN
PHFXRR41680	16	16		80	32			0.32		4	HA Cylindrical	TIALN
PHFXRR41880	18	18		100	40			0.36		4	HA Cylindrical	TIALN
PHFXRR420100	20	20		100	40			0.4		4	HA Cylindrical	TIALN

6 Flute High Helix Endmill Heli Finish XR

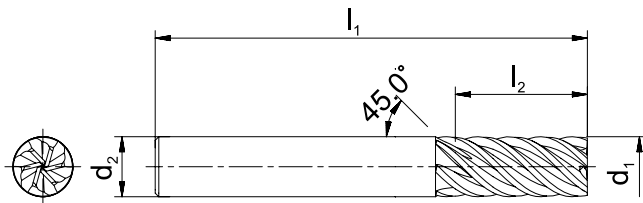
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Eccentric relief reduces vibration & friction.
- ~ 45° helix improves chip flow & surface finish.
- ~ High MRR on steel, stainless, cast iron & high-temp alloys.
- ~ Smooth, stable, and efficient cutting.



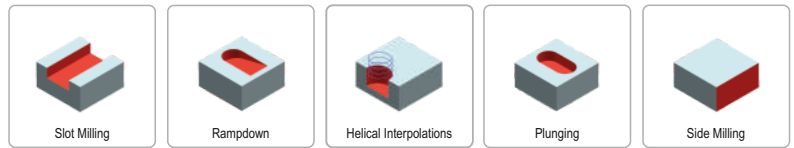
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PHFXRR60663	6	6		63	19					6	HA Cylindrical	TIALN
PHFXRR60863	8	8		63	22					6	HA Cylindrical	TIALN
PHFXRR61070	10	10		70	25					6	HA Cylindrical	TIALN
PHFXRR61275	12	12		75	25					6	HA Cylindrical	TIALN
PHFXRR61680	16	16		80	32					6	HA Cylindrical	TIALN
PHFXRR620100	20	20		100	38					6	HA Cylindrical	TIALN

4 Flute High Performance Roughing Endmill

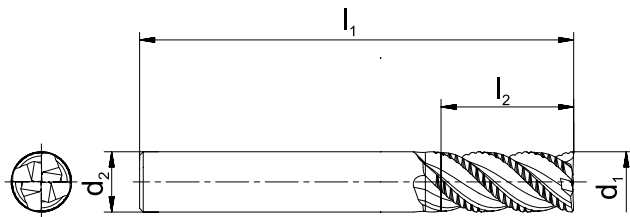
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Dual-action design: Rough and semi-finish with one tool—streamline your workflow.
- ~ From bulk removal to near-net finish—this tool does it all.
- ~ Reduce tool changes, boost uptime—maximize shop efficiency with 4-flute versatility.



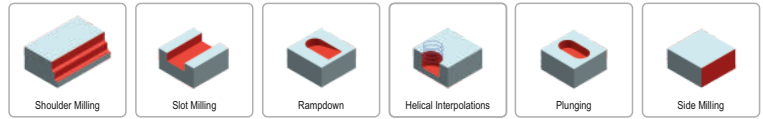
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PRSER40551	5	5		51	16			0.1		4	HA Cylindrical	TIALN
PRSER40663	6	6		63	19			0.12		4	HA Cylindrical	TIALN
PRSER40863	8	8		63	22			0.16		4	HA Cylindrical	TIALN
PRSER41070	10	10		70	25			0.2		4	HA Cylindrical	TIALN
PRSER41275	12	12		75	25			0.24		4	HA Cylindrical	TIALN
PRSER41480	14	14		80	30			0.28		4	HA Cylindrical	TIALN
PRSER41680	16	16		80	32			0.32		4	HA Cylindrical	TIALN
PRSER41880	18	18		100	40			0.36		4	HA Cylindrical	TIALN
PRSER420100	20	20		100	40			0.4		4	HA Cylindrical	TIALN

High Performance Solid Carbide Endmill with 35° Helix Available in Short, Medium and Extra Long Lengths - HCX Endmill

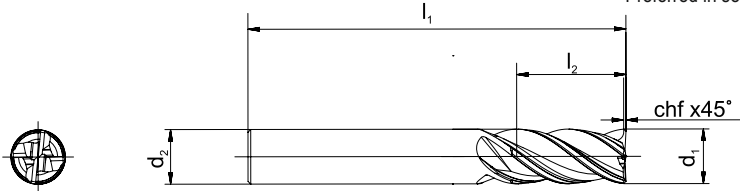
• Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ 4-flute geometry with a 35° helix angle for efficient cutting and smooth chip evacuation.
- ~ Unequal flute spacing to minimize vibration and optimize tool life.
- ~ Multilayer TiN/TiAlN coating enabling reliable performance at medium to high cutting speeds.
- ~ Ideal for machining steels, stainless steels, and cast iron with reduced wear and enhanced cutting stability.
- ~ Suited for operations such as side milling, shoulder milling, helical milling, pocketing, slotting and ramping.
- ~ Preferred in sectors like general engineering, medical, transportation, and energy manufacturing.

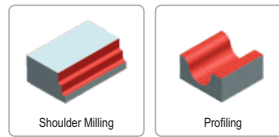


Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PHCXESR40339	3	3		39	10			0.06		4	HA Cylindrical	TiN/TiAlN
PHCXESR40451	4	4		51	14			0.08		4	HA Cylindrical	TiN/TiAlN
PHCXESR40551	5	5		51	16			0.1		4	HA Cylindrical	TiN/TiAlN
PHCXESR40663	6	6		63	19			0.12		4	HA Cylindrical	TiN/TiAlN
PHCXESR40863	8	8		63	22			0.16		4	HA Cylindrical	TiN/TiAlN
PHCXESR41070	10	10		70	25			0.2		4	HA Cylindrical	TiN/TiAlN
PHCXESR41275	12	12		75	25			0.24		4	HA Cylindrical	TiN/TiAlN
PHCXESR41480	14	14		80	30			0.28		4	HA Cylindrical	TiN/TiAlN
PHCXESR41680	16	16		80	32			0.32		4	HA Cylindrical	TiN/TiAlN
PHCXESR41880	18	18		100	40			0.36		4	HA Cylindrical	TiN/TiAlN
PHCXESR420100	20	20		100	40			0.4		4	HA Cylindrical	TiN/TiAlN
PHCXESM40357	3	3		57	19			0.06		4	HA Cylindrical	TiN/TiAlN
PHCXESM40457	4	4		57	19			0.08		4	HA Cylindrical	TiN/TiAlN
PHCXESM40563	5	5		63	25			0.1		4	HA Cylindrical	TiN/TiAlN
PHCXESM40676	6	6		76	28			0.12		4	HA Cylindrical	TiN/TiAlN
PHCXESM40876	8	8		76	29			0.16		4	HA Cylindrical	TiN/TiAlN
PHCXESM41076	10	10		76	32			0.2		4	HA Cylindrical	TiN/TiAlN
PHCXESM412100	12	12		100	51			0.24		4	HA Cylindrical	TiN/TiAlN
PHCXESM414125	14	14		125	55			0.28		4	HA Cylindrical	TiN/TiAlN
PHCXESM416125	16	16		125	55			0.32		4	HA Cylindrical	TiN/TiAlN
PHCXESM418125	18	18		125	55			0.36		4	HA Cylindrical	TiN/TiAlN
PHCXESM420125	20	20		125	55			0.4		4	HA Cylindrical	TiN/TiAlN
PHCXESL40375	3	3		75	25			0.06		4	HA Cylindrical	TiN/TiAlN
PHCXESL40475	4	4		75	25			0.08		4	HA Cylindrical	TiN/TiAlN
PHCXESL40575	5	5		75	28			0.1		4	HA Cylindrical	TiN/TiAlN
PHCXESL406100	6	6		100	40			0.12		4	HA Cylindrical	TiN/TiAlN
PHCXESL408100	8	8		100	40			0.16		4	HA Cylindrical	TiN/TiAlN
PHCXESL410100	10	10		100	45			0.2		4	HA Cylindrical	TiN/TiAlN
PHCXESL412150	12	12		150	60			0.24		4	HA Cylindrical	TiN/TiAlN
PHCXESL414150	14	14		150	75			0.28		4	HA Cylindrical	TiN/TiAlN
PHCXESL416150	16	16		150	75			0.32		4	HA Cylindrical	TiN/TiAlN
PHCXESL418150	18	18		150	75			0.36		4	HA Cylindrical	TiN/TiAlN
PHCXESL420150	20	20		150	75			0.4		4	HA Cylindrical	TiN/TiAlN

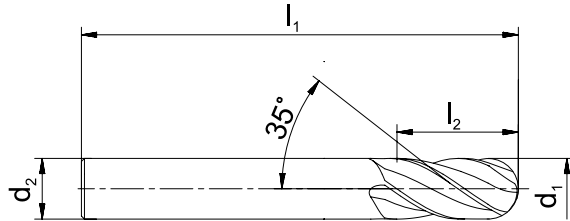
● Optimal ○ Secondary

P	●	Steel
M	●	Stainless Steel
K	●	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	●	Special, Super and Itanium Alloys
H	●	Hardened Steel and Chilled cast Iron



Highlights:

- ~ 4-flute geometry with a 35° helix angle for efficient cutting and smooth chip evacuation.
- ~ Unequal flute spacing to minimize vibration and optimize tool life.
- ~ Multilayer TiN/TiAlN coating enabling reliable performance at medium to high cutting speeds.
- ~ Ideal for machining steels, stainless steels, and cast iron with reduced wear and enhanced cutting stability.
- ~ Suited for operations such as side milling, shoulder milling, helical milling, pocketing, slotting and ramping.
- ~ Preferred in sectors like general engineering, medical, transportation, and energy manufacturing.

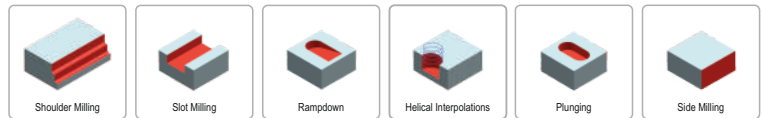


Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL L1 (mm)	CL L2 (mm)	Reach Length L3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PHCXBR40339	3	3		39	10					4	HA Cylindrical	TiN/TiAlN
PHCXBR40451	4	4		51	14					4	HA Cylindrical	TiN/TiAlN
PHCXBR40551	5	5		51	16					4	HA Cylindrical	TiN/TiAlN
PHCXBR40663	6	6		63	19					4	HA Cylindrical	TiN/TiAlN
PHCXBR40863	8	8		63	22					4	HA Cylindrical	TiN/TiAlN
PHCXBR41070	10	10		70	25					4	HA Cylindrical	TiN/TiAlN
PHCXBR41275	12	12		75	25					4	HA Cylindrical	TiN/TiAlN
PHCXBR41480	14	14		80	30					4	HA Cylindrical	TiN/TiAlN
PHCXBR41680	16	16		80	32					4	HA Cylindrical	TiN/TiAlN
PHCXBR41880	18	18		100	40					4	HA Cylindrical	TiN/TiAlN
PHCXBR420100	20	20		100	40					4	HA Cylindrical	TiN/TiAlN
PHCXBM40357	3	3		57	19					4	HA Cylindrical	TiN/TiAlN
PHCXBM40457	4	4		57	19					4	HA Cylindrical	TiN/TiAlN
PHCXBM40563	5	5		63	25					4	HA Cylindrical	TiN/TiAlN
PHCXBM40676	6	6		76	28					4	HA Cylindrical	TiN/TiAlN
PHCXBM40876	8	8		76	29					4	HA Cylindrical	TiN/TiAlN
PHCXBM41076	10	10		76	32					4	HA Cylindrical	TiN/TiAlN
PHCXBM412100	12	12		100	51					4	HA Cylindrical	TiN/TiAlN
PHCXBM414125	14	14		125	55					4	HA Cylindrical	TiN/TiAlN
PHCXBM416125	16	16		125	55					4	HA Cylindrical	TiN/TiAlN
PHCXBM418125	18	18		125	55					4	HA Cylindrical	TiN/TiAlN
PHCXBM420125	20	20		125	55					4	HA Cylindrical	TiN/TiAlN
PHCXBL40375	3	3		75	25					4	HA Cylindrical	TiN/TiAlN
PHCXBL40475	4	4		75	25					4	HA Cylindrical	TiN/TiAlN
PHCXBL40575	5	5		75	28					4	HA Cylindrical	TiN/TiAlN
PHCXBL406100	6	6		100	40					4	HA Cylindrical	TiN/TiAlN
PHCXBL408100	8	8		100	40					4	HA Cylindrical	TiN/TiAlN
PHCXBL410100	10	10		100	45					4	HA Cylindrical	TiN/TiAlN
PHCXBL412150	12	12		150	60					4	HA Cylindrical	TiN/TiAlN
PHCXBL414150	14	14		150	75					4	HA Cylindrical	TiN/TiAlN
PHCXBL416150	16	16		150	75					4	HA Cylindrical	TiN/TiAlN
PHCXBL418150	18	18		150	75					4	HA Cylindrical	TiN/TiAlN
PHCXBL420150	20	20		150	75					4	HA Cylindrical	TiN/TiAlN

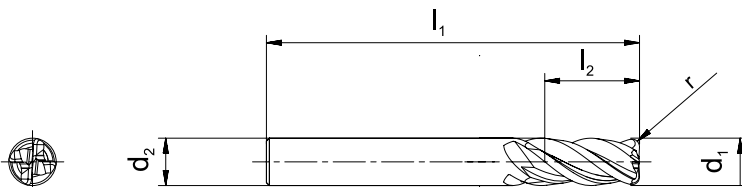
● Optimal ○ Secondary

P	●	Steel
M	●	Stainless Steel
K	●	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	●	Special, Super and Itanium Alloys
H	●	Hardened Steel and Chilled cast Iron



Highlights:

- ~ 4-flute geometry with a 35° helix angle for efficient cutting and smooth chip evacuation.
- ~ Unequal flute spacing to minimize vibration and optimize tool life.
- ~ Multilayer TiN/TiAlN coating enabling reliable performance at medium to high cutting speeds.
- ~ Ideal for machining steels, stainless steels, and cast iron with reduced wear and enhanced cutting stability.
- ~ Suited for operations such as side milling, shoulder milling, helical milling, pocketing, slotting and ramping.
- ~ Preferred in sectors like general engineering, medical, transportation, and energy manufacturing.



Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PHCXECR40339	3	3		39	10		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR40451	4	4		51	14		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR40551	5	5		51	16		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR40663	6	6		63	19		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR40863	8	8		63	22		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR41070	10	10		70	25		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR41275	12	12		75	25		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR41480	14	14		80	30		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR41680	16	16		80	32		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR41880	18	18		100	40		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECR420100	20	20		100	40		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM40357	3	3		57	19		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM40457	4	4		57	19		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM40563	5	5		63	25		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM40676	6	6		76	28		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM40876	8	8		76	29		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM41076	10	10		76	32		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM412100	12	12		100	51		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM414125	14	14		125	55		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM416125	16	16		125	55		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM418125	18	18		125	55		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECM420125	20	20		125	55		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL40375	3	3		75	25		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL40475	4	4		75	25		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL40575	5	5		75	28		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL406100	6	6		100	40		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL408100	8	8		100	40		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL410100	10	10		100	45		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL412150	12	12		150	60		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL414150	14	14		150	75		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL416150	16	16		150	75		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL418150	18	18		150	75		0.5			4	HA Cylindrical	TiN/TiAlN
PHCXECL420150	20	20		150	75		0.5			4	HA Cylindrical	TiN/TiAlN

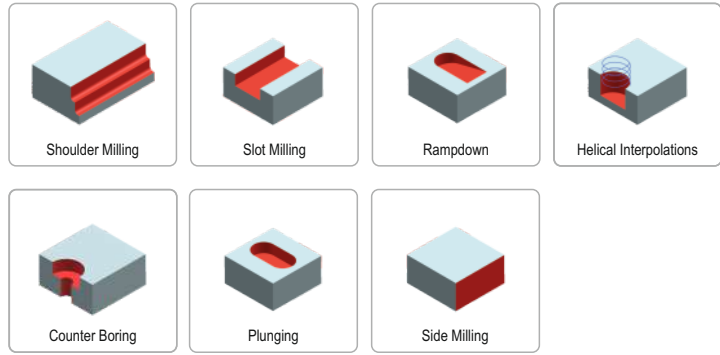
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PHCXECR40339	3	3		39	10		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR40451	4	4		51	14		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR40551	5	5		51	16		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR40663	6	6		63	19		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR40863	8	8		63	22		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR41070	10	10		70	25		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR41275	12	12		75	25		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR41480	14	14		80	30		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR41680	16	16		80	32		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR41880	18	18		100	40		1			4	HA Cylindrical	TiN/TiAlN
PHCXECR420100	20	20		100	40		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM40357	3	3		57	19		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM40457	4	4		57	19		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM40563	5	5		63	25		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM40676	6	6		76	28		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM40876	8	8		76	29		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM41076	10	10		76	32		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM412100	12	12		100	51		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM414125	14	14		125	55		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM416125	16	16		125	55		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM418125	18	18		125	55		1			4	HA Cylindrical	TiN/TiAlN
PHCXECM420125	20	20		125	55		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL40375	3	3		75	25		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL40475	4	4		75	25		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL40575	5	5		75	28		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL406100	6	6		100	40		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL408100	8	8		100	40		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL410100	10	10		100	45		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL412150	12	12		150	60		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL414150	14	14		150	75		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL416150	16	16		150	75		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL418150	18	18		150	75		1			4	HA Cylindrical	TiN/TiAlN
PHCXECL420150	20	20		150	75		1			4	HA Cylindrical	TiN/TiAlN

High Performance 4 Flute Endmill Featuring Variable Helix Geometry and TiSiN Coatings - TCX Endmill

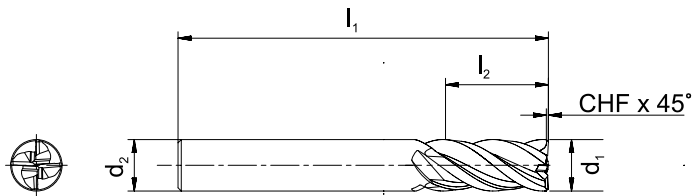
• Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Advanced Geometry: Asymmetric flute design with variable helix (36° & 38° & 37°) and pitch for reduced vibration and longer tool life.
- ~ Premium Coating: Multilayer Tisinos for superior wear resistance on steels, stainless steels and cast iron.
- ~ Versatile Applications: Ideal for shoulder, side, helical milling, slotting, ramping & pocketing.
- ~ High Productivity: Designed for roughing and finishing with large chip gullets for efficient evacuation.
- ~ Industry Focus: Perfect for general engineering, transport, energy & medical sectors.



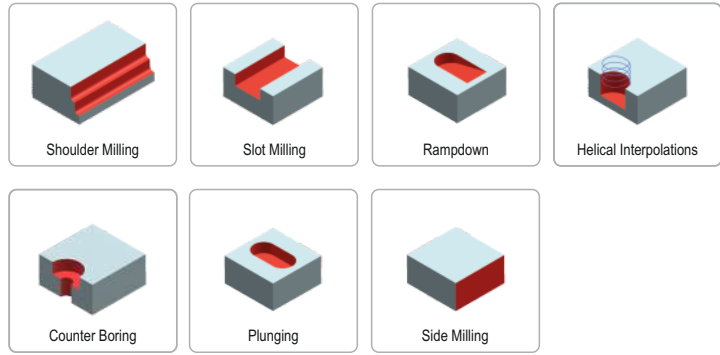
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PTCXESR40551	5	5		51	16			0.1		4	HA Cylindrical	TiSiXN
PTCXESR40663	6	6		63	19			0.12		4	HA Cylindrical	TiSiXN
PTCXESR40863	8	8		63	22			0.16		4	HA Cylindrical	TiSiXN
PTCXESR41070	10	10		70	25			0.2		4	HA Cylindrical	TiSiXN
PTCXESR41275	12	12		75	25			0.24		4	HA Cylindrical	TiSiXN
PTCXESR41480	14	14		80	30			0.28		4	HA Cylindrical	TiSiXN
PTCXESR41680	16	16		80	32			0.32		4	HA Cylindrical	TiSiXN
PTCXESR41880	18	18		100	40			0.36		4	HA Cylindrical	TiSiXN
PTCXESR420100	20	20		100	40			0.4		4	HA Cylindrical	TiSiXN

High Performance 4 Flute Corner Radius Endmill Featuring Variable Helix Geometry and TiSiN Coatings

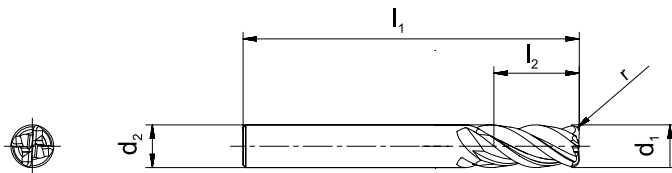
• Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Advanced Geometry: Asymmetric flute design with variable helix (36° & 38° & 37°) and pitch for reduced vibration and longer tool life.
- ~ Premium Coating: Multilayer Tisinos for superior wear resistance on steels, stainless steels and cast iron.
- ~ Versatile Applications: Ideal for shoulder, side, helical milling, slotting, ramping & pocketing.
- ~ High Productivity: Designed for roughing and finishing with large chip gullets for efficient evacuation.
- ~ Industry Focus: Perfect for general engineering, transport, energy & medical sectors.



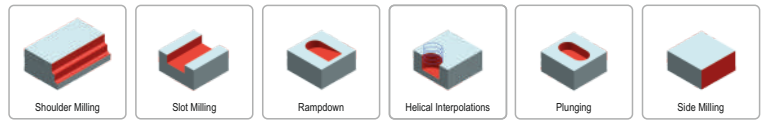
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	CL l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PTCXECR40551	5	5		51	16		0.5			4	HA Cylindrical	TiSiXN
PTCXECR40663	6	6		63	19		0.5			4	HA Cylindrical	TiSiXN
PTCXECR40863	8	8		63	22		0.5			4	HA Cylindrical	TiSiXN
PTCXECR41070	10	10		70	25		1.0			4	HA Cylindrical	TiSiXN
PTCXECR41275	12	12		75	25		1.0			4	HA Cylindrical	TiSiXN
PTCXECR41480	14	14		80	30		1.0			4	HA Cylindrical	TiSiXN
PTCXECR41680	16	16		80	32		1.0			4	HA Cylindrical	TiSiXN
PTCXECR41880	18	18		100	40		1.0			4	HA Cylindrical	TiSiXN
PTCXECR420100	20	20		100	40		1.0			4	HA Cylindrical	TiSiXN

Single Flute Solid Carbide Endmill with 30° Helix

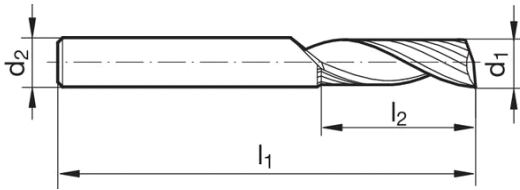
- Optimal ○ Secondary

P	Steel
M	Stainless Steel
K	Grey Cast Iron, Malleable and Spheroidal Iron
N	Aluminum and Other Non-Ferrous Metal
S	Special, Super and Itanium Alloys
H	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Precision-ground solid carbide for durability and rigidity.
- ~ Single flute design ensures optimal chip evacuation.
- ~ 30° helix angle enhances cutting smoothness and feed rates.
- ~ Uncoated finish ideal for soft materials like aluminum, plastics, and composites.



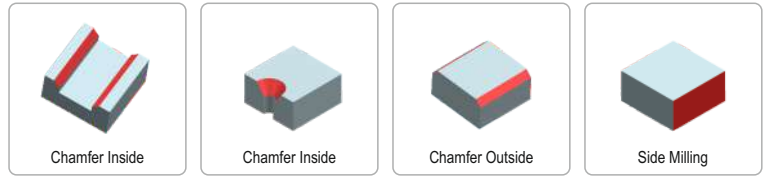
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	LOC l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PSL10363	3	6		63	6					1	HA Cylindrical	Uncoated
PSL10463	4	6		63	6					1	HA Cylindrical	Uncoated
PSL10563	5	6		63	8					1	HA Cylindrical	Uncoated
PSL10676	6	6		76	10					1	HA Cylindrical	Uncoated
PSL10776	7	6		76	10					1	HA Cylindrical	Uncoated
PSL10976	9	8		76	12					1	HA Cylindrical	Uncoated
PSL11176	11	10		76	14					1	HA Cylindrical	Uncoated
PSL111101	11	10		101	14					1	HA Cylindrical	Uncoated
PSL11376	13	12		76	16					1	HA Cylindrical	Uncoated
PSL113101	13	12		101	16					1	HA Cylindrical	Uncoated
PSL11576	15	14		76	18					1	HA Cylindrical	Uncoated
PSL115101	15	14		101	18					1	HA Cylindrical	Uncoated
PSL11775	17	16		75	20					1	HA Cylindrical	Uncoated
PSL117101	17	16		101	20					1	HA Cylindrical	Uncoated

2 Flute Drill Mill Chamfer Cutter

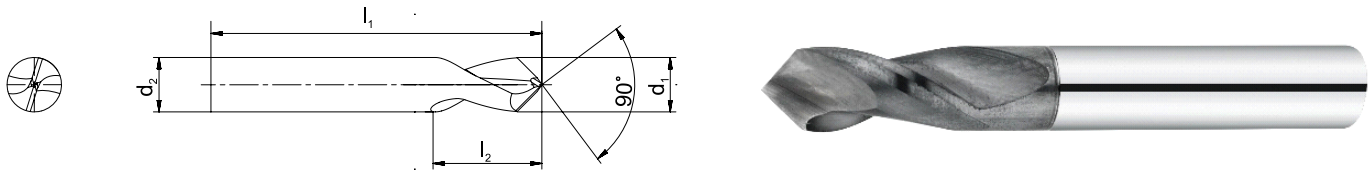
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	•	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Two-flute solid carbide drillmill chamfer cutter for precision chamfering, countersinking, and spot drilling in non-ferrous materials.
- ~ 2-flute cutter engineered for clean chamfers, accurate countersinks, and reliable spot drilling.
- ~ Solid carbide tool with dual-flute geometry—ideal for multi-function milling and hole preparation.



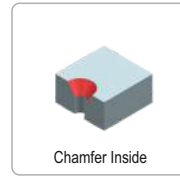
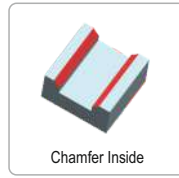
Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	LOC l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PDMCT20351	3	6		51	6				90°	2	HA Cylindrical	TiALN
PDMCT20451	4	6		51	8				90°	2	HA Cylindrical	TiALN
PDMCT20551	5	6		51	10				90°	2	HA Cylindrical	TiALN
PDMCT20663	6	6		63	12				90°	2	HA Cylindrical	TiALN
PDMCT20863	8	8		63	16				90°	2	HA Cylindrical	TiALN
PDMCT21070	10	10		70	20				90°	2	HA Cylindrical	TiALN
PDMCT21276	12	12		76	22				90°	2	HA Cylindrical	TiALN
PDMCT21480	14	14		80	25				90°	2	HA Cylindrical	TiALN
PDMCT21680	16	16		80	28				90°	2	HA Cylindrical	TiALN

4 Flute Solid Carbide Chamfer Cutter

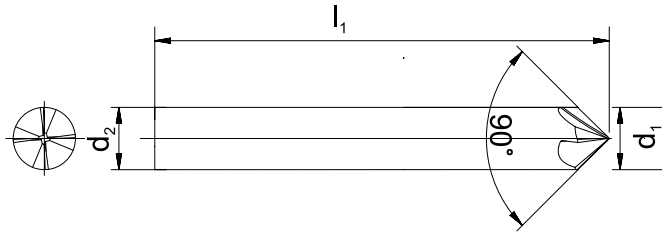
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	•	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H		Hardened Steel and Chilled cast Iron



Highlights:

- ~ Straight Flute Geometry: Provides rigid cutting action with minimal deflection—ideal for consistent chamfer profiles.
- ~ Single-Purpose Design: Optimized solely for chamfering tasks, ensuring superior edge break and surface finish.
- ~ Solid Carbide Body: Delivers high wear resistance and tool life, even in demanding materials.



Product Specification

CODE No.	Dia. d1 e8 (mm)	Shank Dia. d2 h6 (mm)	Neck Dia. d3 (mm)	OAL l1 (mm)	LOC l2 (mm)	Reach Length l3 (mm)	Corner Radius (mm)	Corner Chanfer (mm)	β °	Flutes	Shank Type	Coating
PPCHF40339	3	6		51					90°	4	HA Cylindrical	TiALN
PCHF40451	4	6		51					90°	4	HA Cylindrical	TiALN
PCHF40551	5	6		51					90°	4	HA Cylindrical	TiALN
PCHF40663	6	6		63					90°	4	HA Cylindrical	TiALN
PCHF40863	8	8		63					90°	4	HA Cylindrical	TiALN
PCHF401070	10	10		70					90°	4	HA Cylindrical	TiALN
PCHF401275	12	12		76					90°	4	HA Cylindrical	TiALN
PCHF401480	14	14		80					90°	4	HA Cylindrical	TiALN
PCHF401680	16	16		80					90°	4	HA Cylindrical	TiALN
PCHF4018101	18	18		101					90°	4	HA Cylindrical	TiALN
PCHF4020101	20	20		101					90°	4	HA Cylindrical	TiALN

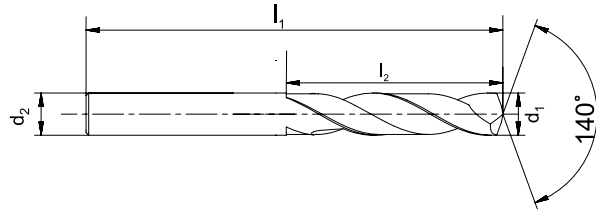


HOLE MAKING TOOLS



- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Universal Geometry: Suitable for a wide range of materials including steel, cast iron, aluminum.
- ~ Solid Carbide Construction: High hardness and wear resistance for long tool life.
- ~ Straight Shank Design: Compatible with standard tool holders.
- ~ Precision Ground Flutes: Smooth chip evacuation and consistent hole quality.
- ~ Margin Width: Approx 0.1- 0.2 mm for stable guidance.

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PSCD30325	3	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33125	3.1	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33225	3.2	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33325	3.3	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33425	3.4	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33525	3.5	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33625	3.6	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33725	3.7	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33825	3.8	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD33925	3.9	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD30425	4	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34125	4.1	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34225	4.2	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34325	4.3	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34425	4.4	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34525	4.5	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34625	4.6	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34725	4.7	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34825	4.8	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD34925	4.9	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD30525	5	6	63	25	140°	2	HA Cylindrical	TiALN
PSCD35135	5.1	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35235	5.2	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35335	5.3	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35435	5.4	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35535	5.5	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35635	5.6	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35735	5.7	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35835	5.8	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD35935	5.9	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD30635	6	6	76	35	140°	2	HA Cylindrical	TiALN
PSCD36135	6.1	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36235	6.2	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36335	6.3	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36435	6.4	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36535	6.5	8	79	35	140°	2	HA Cylindrical	TiALN

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PSCD36635	6.6	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36735	6.7	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36835	6.8	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD36935	6.9	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD30735	7	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37135	7.1	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37235	7.2	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37335	7.3	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37435	7.4	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37535	7.5	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37635	7.6	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37735	7.7	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37835	7.8	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD37935	7.9	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD30835	8	8	79	35	140°	2	HA Cylindrical	TiALN
PSCD38145	8.1	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38245	8.2	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38345	8.3	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38445	8.4	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38545	8.5	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38645	8.6	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38745	8.7	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38845	8.8	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD38945	8.9	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD30945	9	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD39545	9.5	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD39845	9.8	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD31045	10	10	89	45	140°	2	HA Cylindrical	TiALN
PSCD310255	10.2	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD310455	10.4	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD310555	10.5	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD310855	10.8	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD31155	11	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD311555	11.5	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD311855	11.8	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD31255	12	12	101	55	140°	2	HA Cylindrical	TiALN
PSCD312560	12.5	14	110	60	140°	2	HA Cylindrical	TiALN
PSCD312860	12.8	14	110	60	140°	2	HA Cylindrical	TiALN
PSCD31360	13	14	110	60	140°	2	HA Cylindrical	TiALN
PSCD313560	13.5	14	110	60	140°	2	HA Cylindrical	TiALN
PSCD31460	14	14	110	60	140°	2	HA Cylindrical	TiALN
PSCD314565	14.5	16	115	65	140°	2	HA Cylindrical	TiALN
PSCD31565	15	16	115	65	140°	2	HA Cylindrical	TiALN
PSCD315365	15.3	16	115	65	140°	2	HA Cylindrical	TiALN
PSCD315565	15.5	16	115	65	140°	2	HA Cylindrical	TiALN
PSCD31665	16	16	115	65	140°	2	HA Cylindrical	TiALN
PSCD316573	16.5	18	123	73	140°	2	HA Cylindrical	TiALN
PSCD31773	17	18	123	73	140°	2	HA Cylindrical	TiALN
PSCD317573	17.5	18	123	73	140°	2	HA Cylindrical	TiALN
PSCD31873	18	18	123	73	140°	2	HA Cylindrical	TiALN
PSCD318579	18.5	20	131	79	140°	2	HA Cylindrical	TiALN
PSCD31979	19	20	131	79	140°	2	HA Cylindrical	TiALN
PSCD319579	19.5	20	131	79	140°	2	HA Cylindrical	TiALN
PSCD32079	20	20	131	79	140°	2	HA Cylindrical	TiALN

Solid Carbide Drill for Multiple Materials - 5XD

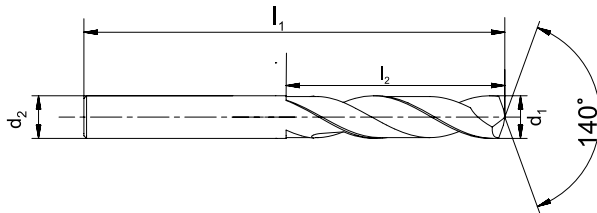
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Titanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Universal Geometry: Suitable for a wide range of materials including steel, cast iron, aluminum.
- ~ Solid Carbide Construction: High hardness and wear resistance for long tool life.
- ~ Straight Shank Design: Compatible with standard tool holders.
- ~ Precision Ground Flutes: Smooth chip evacuation and consistent hole quality.
- ~ Margin Width: Approx. 0.1–0.2 mm for stable guidance.



Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PSCD53035	3	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53135	3.1	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53235	3.2	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53335	3.3	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53435	3.4	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53535	3.5	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53635	3.6	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53735	3.7	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53835	3.8	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD53935	3.9	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD54035	4	6	74	35	140°	2	HA Cylindrical	TiALN
PSCD54140	4.1	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54240	4.2	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54340	4.3	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54440	4.4	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54540	4.5	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54640	4.6	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54740	4.7	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54840	4.8	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD54940	4.9	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD55040	5	6	80	40	140°	2	HA Cylindrical	TiALN
PSCD55145	5.1	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55245	5.2	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55345	5.3	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55445	5.4	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55545	5.5	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55645	5.6	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55745	5.7	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55845	5.8	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD55945	5.9	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD56045	6	6	82	45	140°	2	HA Cylindrical	TiALN
PSCD56150	6.1	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56250	6.2	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56350	6.3	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56450	6.4	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56550	6.5	8	91	50	140°	2	HA Cylindrical	TiALN

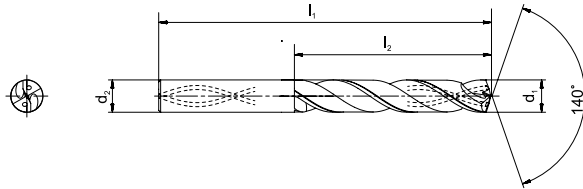
Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PSCD56650	6.6	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56750	6.7	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56850	6.8	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD56950	6.9	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57050	7	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57150	7.1	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57250	7.2	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57350	7.3	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57450	7.4	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57550	7.5	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57650	7.6	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57750	7.7	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57850	7.8	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD57950	7.9	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD58050	8	8	91	50	140°	2	HA Cylindrical	TiALN
PSCD58155	8.1	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58255	8.2	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58355	8.3	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58455	8.4	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58555	8.5	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58655	8.6	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58755	8.7	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58855	8.8	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD58955	8.9	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD59055	9	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD59555	9.5	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD59855	9.8	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD510055	10	10	103	55	140°	2	HA Cylindrical	TiALN
PSCD510275	10.2	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD510475	10.4	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD510575	10.5	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD510875	10.8	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD511075	11	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD511575	11.5	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD511875	11.8	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD512075	12	12	120	75	140°	2	HA Cylindrical	TiALN
PSCD512580	12.5	14	125	80	140°	2	HA Cylindrical	TiALN
PSCD512880	12.8	14	125	80	140°	2	HA Cylindrical	TiALN
PSCD513080	13	14	125	80	140°	2	HA Cylindrical	TiALN
PSCD513580	13.5	14	125	80	140°	2	HA Cylindrical	TiALN
PSCD514080	14	14	125	80	140°	2	HA Cylindrical	TiALN
PSCD514585	14.5	16	135	85	140°	2	HA Cylindrical	TiALN
PSCD515085	15	16	135	85	140°	2	HA Cylindrical	TiALN
PSCD515385	15.3	16	135	85	140°	2	HA Cylindrical	TiALN
PSCD515585	15.5	16	135	85	140°	2	HA Cylindrical	TiALN
PSCD516085	16	16	135	85	140°	2	HA Cylindrical	TiALN
PSCD516593	16.5	18	143	93	140°	2	HA Cylindrical	TiALN
PSCD517093	17	18	143	93	140°	2	HA Cylindrical	TiALN
PSCD517593	17.5	18	143	93	140°	2	HA Cylindrical	TiALN
PSCD518093	18	18	143	93	140°	2	HA Cylindrical	TiALN
PSCD5185101	18.5	20	153	101	140°	2	HA Cylindrical	TiALN
PSCD5190101	19	20	153	101	140°	2	HA Cylindrical	TiALN
PSCD5195101	19.5	20	153	101	140°	2	HA Cylindrical	TiALN
PSCD5200101	20	20	153	101	140°	2	HA Cylindrical	TiALN

Solid Carbide Through Coolant Drill for Multiple Materials - 3XD

- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Internal coolant channels reduce heat and extend tool life.
- ~ Ideal for deep-hole drilling in tough materials like stainless steel and titanium.
- ~ Ensures smooth chip evacuation and superior hole quality.
- ~ Supports faster feed rates with minimal wear and vibration.

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PTCSCD30325	3	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33125	3.1	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33225	3.2	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33325	3.3	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33425	3.4	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33525	3.5	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33625	3.6	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33725	3.7	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33825	3.8	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD33925	3.9	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD30425	4	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34125	4.1	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34225	4.2	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34325	4.3	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34425	4.4	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34525	4.5	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34625	4.6	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34725	4.7	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34825	4.8	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD34925	4.9	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD30525	5	6	63	25	140°	2	HA Cylindrical	TiAlN
PTCSCD35135	5.1	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35235	5.2	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35335	5.3	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35435	5.4	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35535	5.5	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35635	5.6	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35735	5.7	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35835	5.8	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD35935	5.9	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD30635	6	6	76	35	140°	2	HA Cylindrical	TiAlN
PTCSCD36135	6.1	8	79	35	140°	2	HA Cylindrical	TiAlN
PTCSCD36235	6.2	8	79	35	140°	2	HA Cylindrical	TiAlN
PTCSCD36335	6.3	8	79	35	140°	2	HA Cylindrical	TiAlN
PTCSCD36435	6.4	8	79	35	140°	2	HA Cylindrical	TiAlN
PTCSCD36535	6.5	8	79	35	140°	2	HA Cylindrical	TiAlN

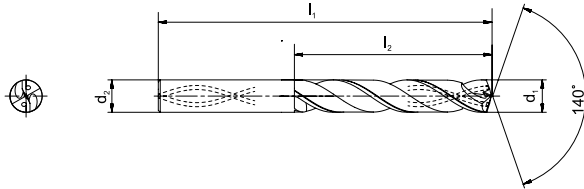
Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PTCSCD36635	6.6	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD36735	6.7	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD36835	6.8	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD36935	6.9	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37035	7	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37135	7.1	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37235	7.2	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37335	7.3	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37435	7.4	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37535	7.5	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37635	7.6	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37735	7.7	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37835	7.8	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD37935	7.9	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD38035	8	8	79	35	140°	2	HA Cylindrical	TiALN
PTCSCD38145	8.1	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38245	8.2	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38345	8.3	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38445	8.4	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38545	8.5	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38645	8.6	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38745	8.7	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38845	8.8	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD38945	8.9	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD39045	9	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD39545	9.5	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD39845	9.8	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD31045	10	10	89	45	140°	2	HA Cylindrical	TiALN
PTCSCD310255	10.2	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD310455	10.4	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD310555	10.5	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD310855	10.8	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD31155	11	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD311555	11.5	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD311855	11.8	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD31255	12	12	101	55	140°	2	HA Cylindrical	TiALN
PTCSCD312560	12.5	14	110	60	140°	2	HA Cylindrical	TiALN
PTCSCD312860	12.8	14	110	60	140°	2	HA Cylindrical	TiALN
PTCSCD31360	13	14	110	60	140°	2	HA Cylindrical	TiALN
PTCSCD313560	13.5	14	110	60	140°	2	HA Cylindrical	TiALN
PTCSCD31460	14	14	110	60	140°	2	HA Cylindrical	TiALN
PTCSCD314565	14.5	16	115	65	140°	2	HA Cylindrical	TiALN
PTCSCD31565	15	16	115	65	140°	2	HA Cylindrical	TiALN
PTCSCD315365	15.3	16	115	65	140°	2	HA Cylindrical	TiALN
PTCSCD315565	15.5	16	115	65	140°	2	HA Cylindrical	TiALN
PTCSCD31665	16	16	115	65	140°	2	HA Cylindrical	TiALN
PTCSCD316573	16.5	18	123	73	140°	2	HA Cylindrical	TiALN
PTCSCD31773	17	18	123	73	140°	2	HA Cylindrical	TiALN
PTCSCD317573	17.5	18	123	73	140°	2	HA Cylindrical	TiALN
PTCSCD31873	18	18	123	73	140°	2	HA Cylindrical	TiALN
PTCSCD318579	18.5	20	131	79	140°	2	HA Cylindrical	TiALN
PTCSCD31979	19	20	131	79	140°	2	HA Cylindrical	TiALN
PTCSCD319579	19.5	20	131	79	140°	2	HA Cylindrical	TiALN
PTCSCD32079	20	20	131	79	140°	2	HA Cylindrical	TiALN

Solid Carbide Through Coolant Drill for Multiple Materials - 5XD

- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Titanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Internal coolant channels reduce heat and extend tool life.
- ~ Ideal for deep-hole drilling in tough materials like stainless steel and titanium.
- ~ Ensures smooth chip evacuation and superior hole quality.
- ~ Supports faster feed rates with minimal wear and vibration.

Product Specification

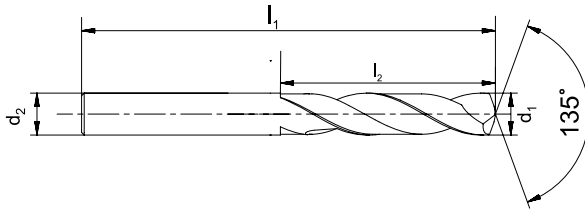
CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PTCSCD53035	3	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53135	3.1	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53235	3.2	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53335	3.3	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53435	3.4	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53535	3.5	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53635	3.6	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53735	3.7	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53835	3.8	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD53935	3.9	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD54035	4	6	74	35	140°	2	HA Cylindrical	TiAlN
PTCSCD54140	4.1	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54240	4.2	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54340	4.3	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54440	4.4	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54540	4.5	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54640	4.6	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54740	4.7	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54840	4.8	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD54940	4.9	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD55040	5	6	80	40	140°	2	HA Cylindrical	TiAlN
PTCSCD55145	5.1	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55245	5.2	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55345	5.3	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55445	5.4	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55545	5.5	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55645	5.6	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55745	5.7	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55845	5.8	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD55945	5.9	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD56045	6	6	82	45	140°	2	HA Cylindrical	TiAlN
PTCSCD56150	6.1	8	91	50	140°	2	HA Cylindrical	TiAlN
PTCSCD56250	6.2	8	91	50	140°	2	HA Cylindrical	TiAlN
PTCSCD56350	6.3	8	91	50	140°	2	HA Cylindrical	TiAlN
PTCSCD56450	6.4	8	91	50	140°	2	HA Cylindrical	TiAlN
PTCSCD56550	6.5	8	91	50	140°	2	HA Cylindrical	TiAlN

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PTCSCD56650	6.6	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD56750	6.7	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD56850	6.8	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD56950	6.9	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57050	7	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57150	7.1	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57250	7.2	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57350	7.3	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57450	7.4	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57550	7.5	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57650	7.6	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57750	7.7	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57850	7.8	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD57950	7.9	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD58050	8	8	91	50	140°	2	HA Cylindrical	TiALN
PTCSCD58155	8.1	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58255	8.2	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58355	8.3	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58455	8.4	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58555	8.5	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58655	8.6	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58755	8.7	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58855	8.8	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD58955	8.9	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD59055	9	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD59555	9.5	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD59855	9.8	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD510055	10	10	103	55	140°	2	HA Cylindrical	TiALN
PTCSCD510275	10.2	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD510475	10.4	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD510575	10.5	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD510875	10.8	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD511075	11	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD511575	11.5	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD511875	11.8	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD512075	12	12	120	75	140°	2	HA Cylindrical	TiALN
PTCSCD512580	12.5	14	125	80	140°	2	HA Cylindrical	TiALN
PTCSCD512880	12.8	14	125	80	140°	2	HA Cylindrical	TiALN
PTCSCD513080	13	14	125	80	140°	2	HA Cylindrical	TiALN
PTCSCD513580	13.5	14	125	80	140°	2	HA Cylindrical	TiALN
PTCSCD514080	14	14	125	80	140°	2	HA Cylindrical	TiALN
PTCSCD514585	14.5	16	135	85	140°	2	HA Cylindrical	TiALN
PTCSCD515085	15	16	135	85	140°	2	HA Cylindrical	TiALN
PTCSCD515385	15.3	16	135	85	140°	2	HA Cylindrical	TiALN
PTCSCD515585	15.5	16	135	85	140°	2	HA Cylindrical	TiALN
PTCSCD516085	16	16	135	85	140°	2	HA Cylindrical	TiALN
PTCSCD516593	16.5	18	143	93	140°	2	HA Cylindrical	TiALN
PTCSCD517093	17	18	143	93	140°	2	HA Cylindrical	TiALN
PTCSCD517593	17.5	18	143	93	140°	2	HA Cylindrical	TiALN
PTCSCD518093	18	18	143	93	140°	2	HA Cylindrical	TiALN
PTCSCD5185101	18.5	20	153	101	140°	2	HA Cylindrical	TiALN
PTCSCD5190101	19	20	153	101	140°	2	HA Cylindrical	TiALN
PTCSCD5195101	19.5	20	153	101	140°	2	HA Cylindrical	TiALN
PTCSCD5200101	20	20	153	101	140°	2	HA Cylindrical	TiALN

- Optimal ○ Secondary

P •	Steel
M •	Stainless Steel
K •	Grey Cast Iron, Malleable and Spheroidal Iron
N ○	Aluminum and Other Non-Ferrous Metal
S •	Special, Super and Itanium Alloys
H •	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Made from solid carbide or cobalt alloys, ideal for tough materials like stainless steel, titanium and cast iron.
- ~ TiSiXN coatings reduce friction, dissipate heat, and extend tool life.
- ~ Features like 135° split points and serrated flutes improve penetration, reduce walking, and enhance chip evacuation.
- ~ S-type end face reduces thrust force and keeps the drill firmly on target.

Product Specification

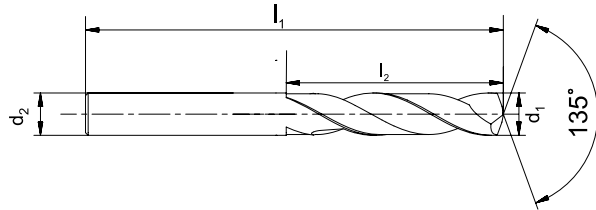
CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PHPSCD30325	3	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33125	3.1	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33225	3.2	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33325	3.3	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33425	3.4	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33525	3.5	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33625	3.6	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33725	3.7	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33825	3.8	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD33925	3.9	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD30425	4	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34125	4.1	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34225	4.2	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34325	4.3	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34425	4.4	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34525	4.5	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34625	4.6	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34725	4.7	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34825	4.8	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD34925	4.9	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD30525	5	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPSCD35135	5.1	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35235	5.2	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35335	5.3	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35435	5.4	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35535	5.5	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35635	5.6	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35735	5.7	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35835	5.8	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD35935	5.9	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD30635	6	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36135	6.1	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36235	6.2	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36335	6.3	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36435	6.4	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36535	6.5	8	79	35	135°	2	HA Cylindrical	TiSiXN

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PHPSCD36635	6.6	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36735	6.7	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36835	6.8	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD36935	6.9	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37035	7	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37135	7.1	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37235	7.2	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37335	7.3	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37435	7.4	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37535	7.5	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37635	7.6	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37735	7.7	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37835	7.8	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD37935	7.9	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD38035	8	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPSCD38145	8.1	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38245	8.2	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38345	8.3	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38445	8.4	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38545	8.5	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38645	8.6	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38745	8.7	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38845	8.8	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD38945	8.9	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD39045	9	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD39545	9.5	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD39845	9.8	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD31045	10	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPSCD310255	10.2	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD310455	10.4	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD310555	10.5	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD310855	10.8	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD31155	11	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD311555	11.5	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD311855	11.8	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD31255	12	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPSCD312560	12.5	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPSCD312860	12.8	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPSCD31360	13	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPSCD313560	13.5	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPSCD31460	14	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPSCD314565	14.5	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPSCD31565	15	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPSCD315365	15.3	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPSCD315565	15.5	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPSCD31665	16	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPSCD316573	16.5	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPSCD31773	17	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPSCD317573	17.5	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPSCD31873	18	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPSCD318579	18.5	20	131	79	135°	2	HA Cylindrical	TiSiXN
PHPSCD31979	19	20	131	79	135°	2	HA Cylindrical	TiSiXN
PHPSCD319579	19.5	20	131	79	135°	2	HA Cylindrical	TiSiXN
PHPSCD32079	20	20	131	79	135°	2	HA Cylindrical	TiSiXN

- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	•	Special, Super and Itanium Alloys
H	•	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Made from solid carbide or cobalt alloys, ideal for tough materials like stainless steel, titanium and cast iron.
- ~ TiSiXN coatings reduce friction, dissipate heat, and extend tool life.
- ~ Features like 135° split points and serrated flutes improve penetration, reduce walking, and enhance chip evacuation.
- ~ S-type end face reduces thrust force and keeps the drill firmly on target.
- ~ Internal coolant channels reduce heat and extend tool life.



Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PHPTCSCD30325	3	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33125	3.1	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33225	3.2	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33325	3.3	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33425	3.4	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33525	3.5	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33625	3.6	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33725	3.7	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33825	3.8	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD33925	3.9	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD30425	4	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34125	4.1	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34225	4.2	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34325	4.3	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34425	4.4	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34525	4.5	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34625	4.6	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34725	4.7	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34825	4.8	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD34925	4.9	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD30525	5	6	63	25	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35135	5.1	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35235	5.2	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35335	5.3	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35435	5.4	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35535	5.5	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35635	5.6	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35735	5.7	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35835	5.8	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD35935	5.9	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD30635	6	6	76	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36135	6.1	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36235	6.2	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36335	6.3	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36435	6.4	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36535	6.5	8	79	35	135°	2	HA Cylindrical	TiSiXN

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PHPTCSCD36635	6.6	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36735	6.7	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36835	6.8	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD36935	6.9	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37035	7	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37135	7.1	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37235	7.2	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37335	7.3	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37435	7.4	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37535	7.5	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37635	7.6	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37735	7.7	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37835	7.8	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD37935	7.9	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38035	8	8	79	35	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38145	8.1	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38245	8.2	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38345	8.3	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38445	8.4	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38545	8.5	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38645	8.6	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38745	8.7	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38845	8.8	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD38945	8.9	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD39045	9	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD39545	9.5	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD39845	9.8	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31045	10	10	89	45	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD310255	10.2	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD310455	10.4	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD310555	10.5	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD310855	10.8	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31155	11	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD311555	11.5	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD311855	11.8	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31255	12	12	101	55	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD312560	12.5	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD312860	12.8	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31360	13	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD313560	13.5	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31460	14	14	110	60	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD314565	14.5	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31565	15	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD315365	15.3	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD315565	15.5	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31665	16	16	115	65	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD316573	16.5	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31773	17	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD317573	17.5	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31873	18	18	123	73	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD318579	18.5	20	131	79	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD31979	19	20	131	79	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD319579	19.5	20	131	79	135°	2	HA Cylindrical	TiSiXN
PHPTCSCD32079	20	20	131	79	135°	2	HA Cylindrical	TiSiXN

3 Flute Solid Carbide Through Coolant Drill - 3XD

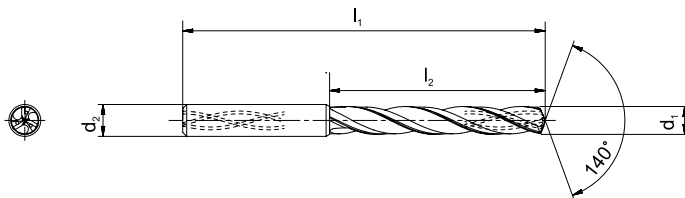
- Optimal ○ Secondary

P •	Steel
M ○	Stainless Steel
K •	Grey Cast Iron, Malleable and Spheroidal Iron
N •	Aluminum and Other Non-Ferrous Metal
S ○	Special, Super and Titanium Alloys
H ○	Hardened Steel and Chilled cast Iron



Highlights:

~ Three-flute layout enhances tool rigidity and reduces vibration during high-speed drilling. Internal coolant flow keeps the cutting edge cool, improving hole accuracy and surface finish. R-gash geometry breaks chips into compact shapes for smoother evacuation and reduced clogging.



Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL L1 (mm)	LOC L2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PTC3FSCD30425	4	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34125	4.1	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34225	4.2	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34325	4.3	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34425	4.4	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34525	4.5	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34625	4.6	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34725	4.7	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34825	4.8	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD34925	4.9	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD30525	5	6	63	25	140°	3	HA Cylindrical	TiALN
PTC3FSCD35135	5.1	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35235	5.2	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35335	5.3	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35435	5.4	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35535	5.5	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35635	5.6	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35735	5.7	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35835	5.8	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD35935	5.9	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD30635	6	6	76	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36135	6.1	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36235	6.2	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36335	6.3	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36435	6.4	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36535	6.5	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36635	6.6	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36735	6.7	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36835	6.8	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD36935	6.9	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD30735	7	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37135	7.1	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37235	7.2	8	79	35	140°	3	HA Cylindrical	TiALN

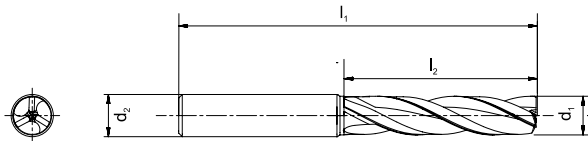
Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PTC3FSCD37335	7.3	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37435	7.4	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37535	7.5	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37635	7.6	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37735	7.7	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37835	7.8	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD37935	7.9	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD38035	8	8	79	35	140°	3	HA Cylindrical	TiALN
PTC3FSCD38145	8.1	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38245	8.2	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38345	8.3	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38445	8.4	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38545	8.5	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38645	8.6	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38745	8.7	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38845	8.8	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD38945	8.9	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD39045	9	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD39545	9.5	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD39845	9.8	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD31045	10	10	89	45	140°	3	HA Cylindrical	TiALN
PTC3FSCD310255	10.2	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD310455	10.4	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD310555	10.5	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD310855	10.8	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD31155	11	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD311555	11.5	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD311855	11.8	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD31255	12	12	101	55	140°	3	HA Cylindrical	TiALN
PTC3FSCD312560	12.5	14	110	60	140°	3	HA Cylindrical	TiALN
PTC3FSCD312860	12.8	14	110	60	140°	3	HA Cylindrical	TiALN
PTC3FSCD31360	13	14	110	60	140°	3	HA Cylindrical	TiALN
PTC3FSCD313560	13.5	14	110	60	140°	3	HA Cylindrical	TiALN
PTC3FSCD31460	14	14	110	60	140°	3	HA Cylindrical	TiALN
PTC3FSCD314565	14.5	16	115	65	140°	3	HA Cylindrical	TiALN
PTC3FSCD31565	15	16	115	65	140°	3	HA Cylindrical	TiALN
PTC3FSCD315365	15.3	16	115	65	140°	3	HA Cylindrical	TiALN
PTC3FSCD315565	15.5	16	115	65	140°	3	HA Cylindrical	TiALN
PTC3FSCD31665	16	16	115	65	140°	3	HA Cylindrical	TiALN

3 Flute Flute Solid Carbide Drill - 3XD

- Optimal ○ Secondary

P •	Steel
M ○	Stainless Steel
K •	Grey Cast Iron, Malleable and Spheroidal Iron
N •	Aluminum and Other Non-Ferrous Metal
S ○	Special, Super and Itanium Alloys
H ○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Substrate: Manufactured from ultra-fine grain solid carbide for high rigidity and wear resistance across a broad material spectrum, including steel, cast iron, and non-ferrous alloys.
- ~ Margin Geometry: Eliminates peripheral margins to reduce drag; facilitates lower heat generation and enhances surface finish while extending tool life under high-speed machining conditions.
- ~ Center Gashing Structure: Optimized for micro-diameter applications, this gashing ensures consistent chip evacuation from the web area, minimizing buildup and improving stability during deep-hole drilling.
- ~ Continuous Cutting Edge: Straight, uninterrupted lip design prevents stress concentration points, thus suppressing premature edge breakdown and wear propagation.
- ~ Force Equalization Profile: Balanced flute and edge geometry dissipates axial and radial cutting loads uniformly, reducing notch formation and enhancing tool integrity in demanding operations.

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL L1 (mm)	LOC L2 (mm)	Point Angle °	Flutes	Shank Type	Coating
P3FSCD30425	4	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34125	4.1	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34225	4.2	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34325	4.3	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34425	4.4	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34525	4.5	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34625	4.6	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34725	4.7	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34825	4.8	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD34925	4.9	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD30525	5	6	63	25	180°	3	HA Cylindrical	TiALN
P3FSCD35135	5.1	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35235	5.2	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35335	5.3	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35435	5.4	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35535	5.5	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35635	5.6	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35735	5.7	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35835	5.8	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD35935	5.9	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD30635	6	6	76	35	180°	3	HA Cylindrical	TiALN
P3FSCD36135	6.1	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36235	6.2	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36335	6.3	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36435	6.4	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36535	6.5	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36635	6.6	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36735	6.7	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36835	6.8	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD36935	6.9	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD30735	7	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37135	7.1	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37235	7.2	8	79	35	180°	3	HA Cylindrical	TiALN

Product Specification

CODE No.	Dia. d1 m7 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
P3FSCD37335	7.3	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37435	7.4	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37535	7.5	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37635	7.6	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37735	7.7	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37835	7.8	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD37935	7.9	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD38035	8	8	79	35	180°	3	HA Cylindrical	TiALN
P3FSCD38145	8.1	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38245	8.2	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38345	8.3	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38445	8.4	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38545	8.5	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38645	8.6	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38745	8.7	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38845	8.8	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD38945	8.9	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD39045	9	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD39545	9.5	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD39845	9.8	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD31045	10	10	89	45	180°	3	HA Cylindrical	TiALN
P3FSCD310255	10.2	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD310455	10.4	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD310555	10.5	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD310855	10.8	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD31155	11	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD311555	11.5	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD311855	11.8	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD31255	12	12	101	55	180°	3	HA Cylindrical	TiALN
P3FSCD312560	12.5	14	110	60	180°	3	HA Cylindrical	TiALN
P3FSCD312860	12.8	14	110	60	180°	3	HA Cylindrical	TiALN
P3FSCD31360	13	14	110	60	180°	3	HA Cylindrical	TiALN
P3FSCD313560	13.5	14	110	60	180°	3	HA Cylindrical	TiALN
P3FSCD31460	14	14	110	60	180°	3	HA Cylindrical	TiALN
P3FSCD314565	14.5	16	115	65	180°	3	HA Cylindrical	TiALN
P3FSCD31565	15	16	115	65	180°	3	HA Cylindrical	TiALN
P3FSCD315365	15.3	16	115	65	180°	3	HA Cylindrical	TiALN
P3FSCD315565	15.5	16	115	65	180°	3	HA Cylindrical	TiALN
P3FSCD31665	16	16	115	65	180°	3	HA Cylindrical	TiALN

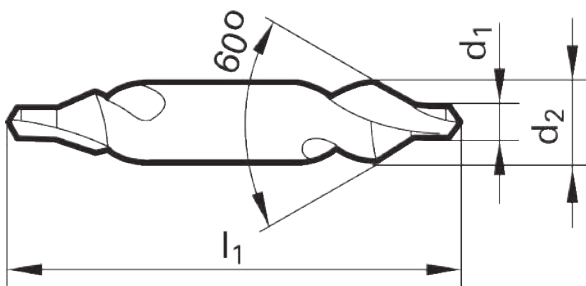
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	•	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Titanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Provides precise centering for accurate hole positioning and reduced drill walking.
- ~ Solid carbide body ensures excellent rigidity and wear resistance in tough materials.
- ~ Maintains sharp cutting edges even at high speeds and temperatures.
- ~ Ideal for pre-drilling operations in CNC machining, metalworking, and aerospace components.



Product Specification

CODE No.	Dia. d1 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PCD10050	1	3.15	50	1.6	120°	2	HA Cylindrical	TiALN
PCD16063	1.6	4	63	2.4	120°	2	HA Cylindrical	TiALN
PCD20063	2	5	63	2.9	120°	2	HA Cylindrical	TiALN
PCD25063	2.5	6.3	63	3.6	120°	2	HA Cylindrical	TiALN
PCD31563	3.15	8	63	4.4	120°	2	HA Cylindrical	TiALN
PCD40070	4	10	70	5.6	120°	2	HA Cylindrical	TiALN
PCD50075	5	12.5	75	6.9	120°	2	HA Cylindrical	TiALN
PCD63080	6.3	16	80	8.6	120°	2	HA Cylindrical	TiALN
PCD80080	8	20	80	10.1	120°	2	HA Cylindrical	TiALN

4 & 6 Flute Solid Carbide Reamer

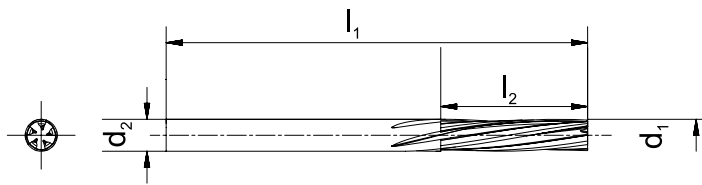
- Optimal ○ Secondary

P	•	Steel
M	•	Stainless Steel
K	•	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Solid carbide construction offers high rigidity and wear resistance for tight-tolerance reaming.
- ~ Available in 4-flute and 6-flute designs for optimized surface finish and smoother cutting.
- ~ 4-flute style ideal for general-purpose reaming with balanced chip flow.
- ~ 6-flute style provides enhanced stability and reduced vibration in high-speed operations.
- ~ Chamfered cutting edges reduce entry force and improve dimensional accuracy.



Product Specification

CODE No.	Dia. d1 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Point Angle °	Flutes	Shank Type	Coating
PRM43016	3	6	63	16		4	HA Cylindrical	TiALN
PRM44025	4	6	63	25		4	HA Cylindrical	TiALN
PRM45025	5	6	63	25		4	HA Cylindrical	TiALN
PRM46025	6	6	63	25		4	HA Cylindrical	TiALN
PRM67029	7	8	80	29		6	HA Cylindrical	TiALN
PRM68029	8	8	80	29		6	HA Cylindrical	TiALN
PRM69032	9	10	80	32		6	HA Cylindrical	TiALN
PRM610038	10	10	100	38		6	HA Cylindrical	TiALN
PRM611038	11	12	100	38		6	HA Cylindrical	TiALN
PRM612038	12	12	100	38		6	HA Cylindrical	TiALN
PRM613045	13	14	100	45		6	HA Cylindrical	TiALN
PRM614045	14	14	100	45		6	HA Cylindrical	TiALN
PRM615050	15	16	100	50		6	HA Cylindrical	TiALN
PRM616050	16	16	100	50		6	HA Cylindrical	TiALN

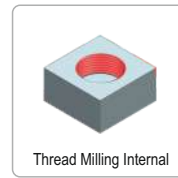
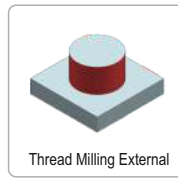


THREAD MILL TOOLS



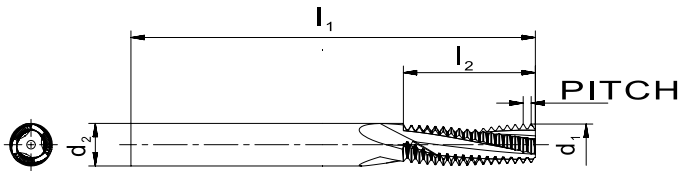
- Optimal ○ Secondary

P	○	Steel
M	○	Stainless Steel
K	○	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Precision threading for internal and external applications.
- ~ ISO-compliant, wear-resistant and CNC-ready.
- ~ Built for speed, accuracy, and long tool life.



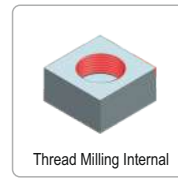
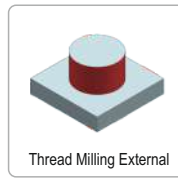
Product Specification

CODE No.		Pitch (mm)	Dia. d1 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Thread Angle °	Flutes	Shank Type	Coating
PTM3M305S	M3 x 0.5	0.5	2.4	4	50	8	60°	3	HA Cylindrical	TiALN
PTM3M407S	M4 x 0.7	0.7	3.15	4	50	8	60°	3	HA Cylindrical	TiALN
PTM3M508S	M5 x 0.8	0.8	3.9	4	50	8	60°	3	HA Cylindrical	TiALN
PTM3M610S	M6 x 1.0	1.0	4.8	6	63	12	60°	3	HA Cylindrical	TiALN
PTM3M8125S	M8 x 1.25	1.25	6.5	8	63	15	60°	3	HA Cylindrical	TiALN
PTM3M1015S	M10 x 1.50	1.50	8.2	10	70	20	60°	3	HA Cylindrical	TiALN
PTM4M12175S	M12 x 1.75	1.75	9.9	10	70	25	60°	4	HA Cylindrical	TiALN
PTM4M1420S	M14 x 2	2	11.6	12	75	26	60°	4	HA Cylindrical	TiALN
PTM4M1620S	M16 x 2	2	13.6	14	80	28	60°	4	HA Cylindrical	TiALN
PTM4M2025S	M20 x 2.5	2.5	14.8	16	80	30	60°	4	HA Cylindrical	TiALN

Solid Carbide Threadmill for an External or Internal NPT Threads

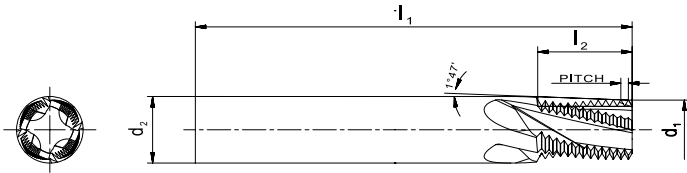
- Optimal ○ Secondary

P	○	Steel
M	○	Stainless Steel
K	○	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Designed for smooth and accurate tapered pipe threading.
- ~ Delivers consistent performance and reliable sealing in critical applications.
- ~ A trusted solution for precision, durability and ease of use.



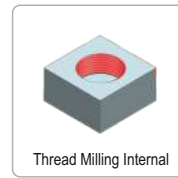
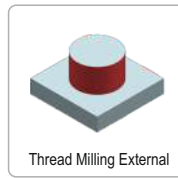
Product Specification

CODE No.		Pitch (mm)	Dia. d1 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Thread Angle °	Flutes	Shank Type	Coating
PNPT3270663	1/16" x 27	0.94	5.3	6	63	9	60°	3	HA Cylindrical	TiALN
PNPT3270863	1/8" x 27	0.94	7.5	8	63	10	60°	3	HA Cylindrical	TiALN
PNPT3181070	1/4" x 18	1.411	9.06	10	70	15	60°	3	HA Cylindrical	TiALN
PNPT4181275	3/8" x 18	1.411	11.06	12	75	15	60°	3	HA Cylindrical	TiALN
PNPT4141680	1/2", 3/4" x 14	1.814	14.13	16	80	30	60°	3	HA Cylindrical	TiALN
PNPT411520100	1", 1 1/4", 1 1/2", 2" x 11.5	2.208	18.63	20	100	22	60°	3	HA Cylindrical	TiALN
PNPT40820100	2 1/2", 3/8"	3.175	18	20	100	32	60°	4	HA Cylindrical	TiALN

Solid Carbide Threadmill for an External or Internal BSP Threads

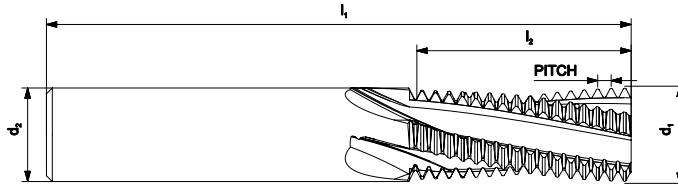
- Optimal ○ Secondary

P	○	Steel
M	○	Stainless Steel
K	○	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Suitable for BSPP and BSPT thread profiles.
- ~ Exceptional wear resistance and tool life.
- ~ Enhances chip evacuation and thermal control.
- ~ Ideal for high-precision machining environments.

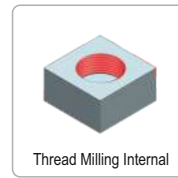
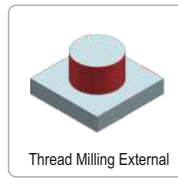


Product Specification

CODE No.		Pitch (mm)	Dia. d1 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Thread Angle °	Flutes	Shank Type	Coating
PBSP3280663	11/16" x 28 , 1/8" x 28	0.907	5.75	6	63	12	55°	3	HA Cylindrical	TiALN
PBSP3280863	1/8" x 28	0.907	7.8	8	63	20	55°	3	HA Cylindrical	TiALN
PBSP4191275	1/4" x 19 , 3/8" x 19	1.33	10.5	10	75	25	55°	4	HA Cylindrical	TiALN
PBSP4191480	3/8" x 19	1.33	13.5	12	80	30	55°	4	HA Cylindrical	TiALN
PBSP5141680	1/2", 3/4" x 14	1.81	15.75	16	80	35	55°	5	HA Cylindrical	TiALN
PBSP5112010	1", 1 1/2", 2 , 2 1/2" x 11	2.309	19.75	20	100	40	55°	5	HA Cylindrical	TiALN
PBSP3220663	5/16" x 22 BSF	1.154	5.75	6	63	18	55°	5	HA Cylindrical	TiALN

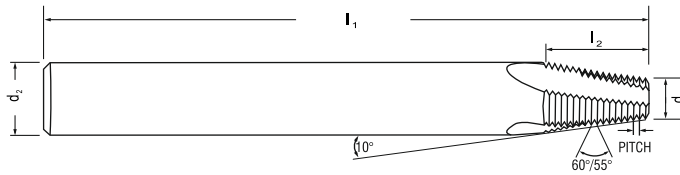
- Optimal ○ Secondary

P	○	Steel
M	○	Stainless Steel
K	○	Grey Cast Iron, Malleable and Spheroidal Iron
N	○	Aluminum and Other Non-Ferrous Metal
S	○	Special, Super and Itanium Alloys
H	○	Hardened Steel and Chilled cast Iron



Highlights:

- ~ Designed for precise taper threading in surgical implants and bone plates.
- ~ Delivers clean cuts in titanium and stainless steel with minimal vibration.
- ~ Reliable performance for critical medical applications.

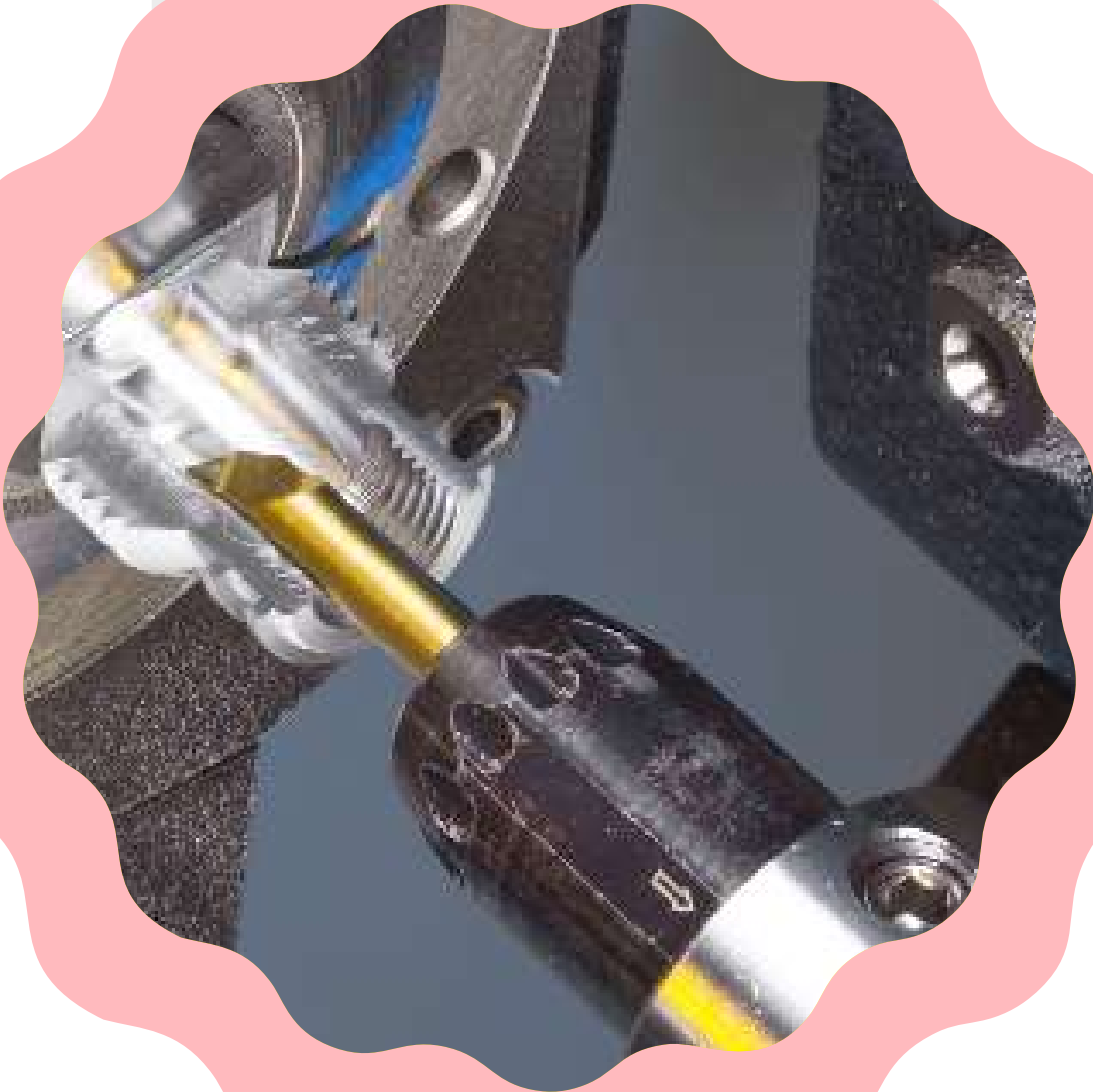


Product Specification

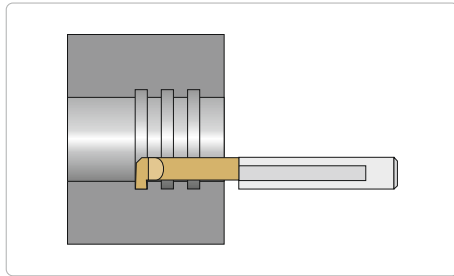
CODE No.	Total Taper Angle °	Pitch (mm)	Dia. d1 (mm)	Shank Dia. d2 h6 (mm)	OAL l1 (mm)	LOC l2 (mm)	Thread Angle °	Flutes	Shank Type	Coating
PTM303150655	20"	0.3	1.5	6	63	4	55°	3	HA Cylindrical	TiALN
PTM304250655	20"	0.4	2.5	6	63	10	55°	3	HA Cylindrical	TiALN
PTM304320660	20"	0.4	3.2	6	63	8	60°	3	HA Cylindrical	TiALN
PTM305290655	20"	0.5	2.9	6	63	9	55°	3	HA Cylindrical	TiALN
PTM305290660	20"	0.5	2.9	6	63	9	60°	3	HA Cylindrical	TiALN
PTM306380660	20"	0.6	3.8	6	63	6.5	60°	3	HA Cylindrical	TiALN



TINY TOOLS

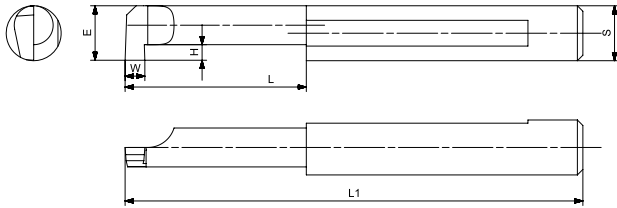


Grooving Tool Application



Highlights:

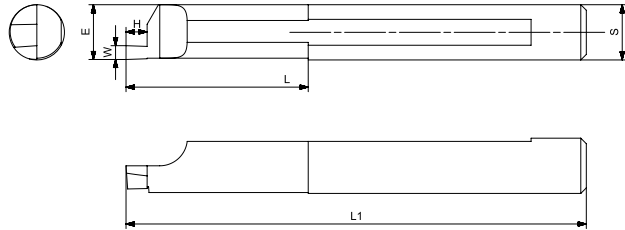
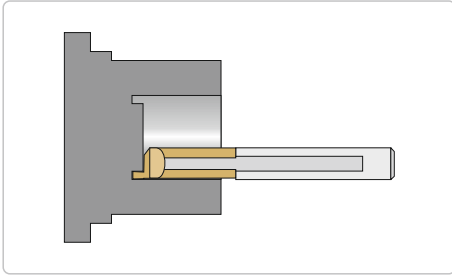
- ~ Order example: S/C PGR E2.7 S3 W0.7 H0.6 L10
- ~ For L.H. bars specify PGL instead of PGR



Product Specification

CODE No.	E	S	Width W	Height H	L	L1
S/C PGR E2.7 S3 W0.7 H0.6 L10	2.7	3	0.7	0.6	10	39
S/C PGR E3.7 S4 W0.5 H0.5 L10	3.7	4	0.5	0.5	10	50
S/C PGR E3.7 S4 W0.7 H0.6 L10	3.7	4	0.7	0.6	10	50
S/C PGR E3.7 S4 W1.0 H1.0 L10	3.7	4	1	1	10	50
S/C PGR E3.7 S4 W1.0 H1.0 L15	3.7	4	1	1	15	50
S/C PGR E3.7 S4 W1.5 H1.0 L10	3.7	4	1.5	1	10	50
S/C PGR E4.8 S5 W1.0 H1.2 L15	4.8	5	1	1.2	15	50
S/C PGR E4.8 S5 W1.0 H1.2 L22	4.8	5	1	1.2	22	50
S/C PGR E4.8 S5 W1.5 H1.2 L15	4.8	5	1.5	1.2	15	50
S/C PGR E4.8 S5 W1.5 H1.2 L22	4.8	5	1.5	1.2	22	50
S/C PGR E4.8 S5 W2.0 H1.2 L15	4.8	5	2	1.2	15	50
S/C PGR E4.8 S5 W2.0 H1.2 L22	4.8	5	2	1.2	22	50
S/C PGR E5.8 S6 W1.0 H1.4 L15	5.8	6	1	1.4	15	63
S/C PGR E5.8 S6 W1.0 H1.4 L22	5.8	6	1	1.4	22	63
S/C PGR E5.8 S6 W1.5 H1.4 L15	5.8	6	1.5	1.4	15	63
S/C PGR E5.8 S6 W1.5 H1.4 L22	5.8	6	1.5	1.4	22	63
S/C PGR E5.8 S6 W2.0 H1.4 L15	5.8	6	2	1.4	15	63
S/C PGR E5.8 S6 W2.0 H1.4 L22	5.8	6	2	1.4	22	63
S/C PGR E5.8 S6 W1.0 H1.8 L17	5.8	6	1	1.8	17	63
S/C PGR E5.8 S6 W1.5 H1.8 L17	5.8	6	1.5	1.8	17	63
S/C PGR E5.8 S6 W2.0 H1.8 L17	5.8	6	2	1.8	17	63
S/C PGR E6.8 S7 W1.0 H2.5 L15	6.8	7	1	2.5	15	63
S/C PGR E6.8 S7 W1.0 H2.5 L22	6.8	7	1	2.5	22	63
S/C PGR E6.8 S7 W1.0 H2.5 L30	6.8	7	1	2.5	30	63
S/C PGR E6.8 S7 W1.5 H2.5 L15	6.8	7	1.5	2.5	15	63
S/C PGR E6.8 S7 W1.5 H2.5 L22	6.8	7	1.5	2.5	22	63
S/C PGR E6.8 S7 W1.5 H2.5 L30	6.8	7	1.5	2.5	30	63
S/C PGR E6.8 S7 W2.0 H2.5 L15	6.8	7	2	2.5	15	63
S/C PGR E6.8 S7 W2.0 H2.5 L22	6.8	7	2	2.5	22	63
S/C PGR E6.8 S7 W2.0 H2.5 L30	6.8	7	2	2.5	30	63
S/C PGR E7.8 S8 W1.0 H1.7 L22	7.8	8	1	1.7	22	63
S/C PGR E7.8 S8 W1.5 H1.7 L22	7.8	8	1.5	1.7	22	63
S/C PGR E7.8 S8 W2.0 H2.6 L22	7.8	8	2	2.6	22	63

Grooving Tool Application



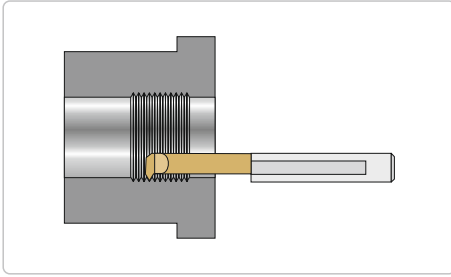
Highlights:

- ~ Order example: S/C PFR E4 S4 W0.75 H1.2 L15
- ~ For L.H. bars specify PFL instead of PFR

Product Specification

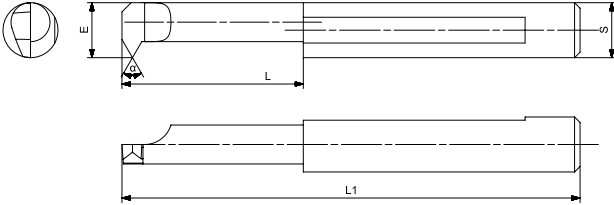
CODE No.	E	S	Width W	Height H	L	L1
S/C PFR E4 S4 W0.75 H1.2 L15	4	4	0.75	1.2	15	50
S/C PFR E4 S4 W1.0 H1.5 L15	4	4	1	1.5	15	50
S/C PFR E4 S4 W1.5 H2.8 L15	4	4	1.5	2.8	15	50
S/C PFR E5 S5 W0.75 H1.2 L22	5	5	0.75	1.2	22	50
S/C PFR E5 S5 W1.0 H1.5 L22	5	5	1	1.5	22	50
S/C PFR E5 S5 W1.5 H2.5 L22	5	5	1.5	2.5	22	50
S/C PFR E5 S5 W2.0 H3.8 L22	5	5	2	3.8	22	50
S/C PFR E6 S6 W1.0 H1.5 L22	6	6	1	1.5	22	63
S/C PFR E6 S6 W1.5 H2.5 L22	6	6	1.5	2.5	22	63
S/C PFR E6 S6 W2.0 H3.0 L22	6	6	2	3	22	63
S/C PFR E6 S6 W2.5 H4.8 L22	6	6	2.5	4.8	22	63
S/C PFR E6 S6 W3.0 H6.0 L22	6	6	3	6	22	63
S/C PFR E8 S8 W2.5 H3.5 L22	8	8	2.5	3.5	22	63

Grooving Tool Application



Highlights:

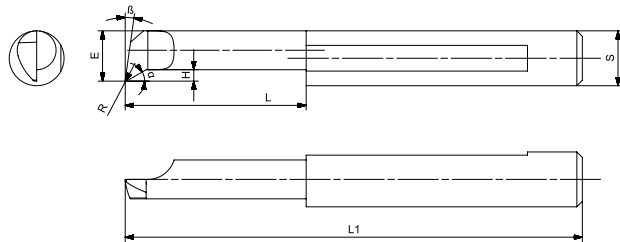
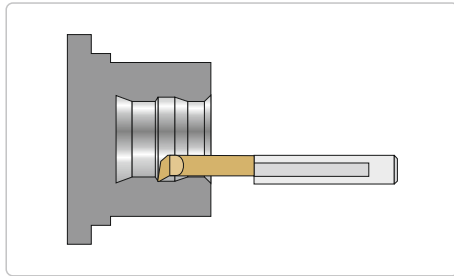
- ~ Order example: S/C PTR E2.9 S3 P0510 L15 α55
- ~ For L.H. bars specify PTL instead of PTR



Product Specification

CODE No.	E	S	α °	Pitch Range	L	L1
S/C PTR E2.9 S3 P0510 L15 α55°	2.9	3	55°	0.5-1.0	15	39
S/C PTR E3.8 S4 P0510 L15 α55°	3.8	4	55°	0.5-1.0	15	50
S/C PTR E4.8 S5 P05125 L15 α55°	4.8	5	55°	0.5-1.25	15	50
S/C PTR E4.8 S5 P05125 L22 α55°	4.8	5	55°	0.5-1.25	22	50
S/C PTR E5.6 S6 P0515 L15 α55°	5.6	6	55°	0.5-1.5	15	63
S/C PTR E5.6 S6 P0515 L22 α55°	5.6	6	55°	0.5-1.5	22	63
S/C PTR E2.9 S3 P0710 L15 α60°	2.9	3	60°	0.7-1.0	15	39
S/C PTR E3.8 S4 P0810 L15 α60°	3.8	4	60°	0.8-1.0	15	50
S/C PTR E4.8 S5 P10125 L15 α60°	4.8	5	60°	1.0-1.25	15	50
S/C PTR E4.8 S5 P10125 L22 α60°	4.8	5	60°	1.0-1.25	22	50
S/C PTR E5.6 S6 P1015 L15 α60°	5.6	6	60°	1.0-1.5	15	63
S/C PTR E5.6 S6 P1015 L22 α60°	5.6	6	60°	1.0-1.5	22	63
S/C PTR E7.6 S8 P1020 L22 α60°	7.6	8	60°	1.0-2.0	22	63
S/C PTR E2.5 S3 L10 M3X0.5	2.5	3	60°	0.5	10	39
S/C PTR E2.9 S3 L15 M4X0.5	2.9	3	60°	0.5	15	39
S/C PTR E2.9 S3 L15 M4X0.7	2.9	3	60°	0.7	15	39
S/C PTR E2.9 S3 L15 M4X0.75	2.9	3	60°	0.75	15	39
S/C PTR E3.8 S4 L15 M5X0.5	3.8	4	60°	0.5	15	50
S/C PTR E3.8 S4 L15 M5X0.75	3.8	4	60°	0.75	15	50
S/C PTR E3.8 S4 L15 M5X0.8	3.8	4	60°	0.8	15	50
S/C PTR E4.7 S5 L15 M6X1.0	4.7	5	60°	1	15	50
S/C PTR E5.8 S6 L15 M8X1.25	5.8	6	60°	1.25	15	63

Grooving Tool Application



Highlights:

- ~ Order example: S/C PBR E2.8 S3 R0.05 H0.7 L10
- ~ For L.H. bars specify PBL instead of PBR

Product Specification

CODE No.	E	S	Radius R	Height H	α °	β	L	L1
S/C PBR E2.8 S3 R0.05 H0.7 L10	2.8	3	0.05	0.7	22°	8°	10	50
S/C PBR E2.8 S3 R0.05 H0.7 L15	2.8	3	0.05	0.7	22°	8°	15	50
S/C PBR E2.8 S3 R0.1 H0.7 L15	2.8	3	0.1	0.7	22°	8°	15	50
S/C PBR E2.8 S3 R0.1 H0.7 L22	2.8	3	0.1	0.7	22°	8°	22	50
S/C PBR E2.8 S3 R0.2 H0.7 L10	2.8	3	0.2	0.7	22°	8°	10	50
S/C PBR E2.8 S3 R0.2 H0.7 L15	2.8	3	0.2	0.7	22°	8°	15	50
S/C PBR E2.8 S3 R0.2 H0.7 L22	2.8	3	0.2	0.7	22°	8°	22	50
S/C PBR E3.7 S4 R0.1 H0.8 L10	3.7	4	0.1	0.8	22°	8°	10	50
S/C PBR E3.7 S4 R0.1 H0.8 L15	3.7	4	0.1	0.8	22°	8°	15	50
S/C PBR E3.7 S4 R0.1 H0.8 L22	3.7	4	0.1	0.8	22°	8°	22	50
S/C PBR E3.7 S4 R0.2 H0.8 L10	3.7	4	0.2	0.8	22°	8°	10	50
S/C PBR E3.7 S4 R0.2 H0.8 L15	3.7	4	0.2	0.8	22°	8°	15	50
S/C PBR E3.7 S4 R0.2 H0.8 L22	3.7	4	0.2	0.8	22°	8°	22	50
S/C PBR E4.6 S5 R0.1 H1.2 L22	4.6	5	0.1	1.2	22°	8°	22	50
S/C PBR E4.6 S5 R0.1 H1.2 L30	4.6	5	0.1	1.2	22°	8°	30	50
S/C PBR E4.6 S5 R0.2 H1.2 L10	4.6	5	0.2	1.2	22°	8°	10	50
S/C PBR E4.6 S5 R0.2 H1.2 L15	4.6	5	0.2	1.2	22°	8°	15	50
S/C PBR E4.6 S5 R0.2 H1.2 L22	4.6	5	0.2	1.2	22°	8°	22	50
S/C PBR E4.6 S5 R0.2 H1.2 L30	4.6	5	0.2	1.2	22°	8°	30	50
S/C PBR E5.8 S6 R0.2 H1.4 L15	5.8	6	0.2	1.4	22°	8°	15	63
S/C PBR E5.8 S6 R0.2 H1.4 L22	5.8	6	0.2	1.4	22°	8°	22	63
S/C PBR E5.8 S6 R0.2 H1.4 L30	5.8	6	0.2	1.4	22°	8°	30	63
S/C PBR E6.8 S7 R0.2 H1.5 L22	6.8	7	0.2	1.5	22°	8°	22	63
S/C PBR E6.8 S7 R0.2 H1.5 L30	6.8	7	0.2	1.5	22°	8°	30	63
S/C PBR E6.8 S7 R0.2 H1.5 L35	6.8	7	0.2	1.5	22°	8°	35	63
S/C PBR E7.8 S8 R0.2 H1.6 L15	7.8	8	0.2	1.6	22°	8°	15	63
S/C PBR E7.8 S8 R0.2 H1.6 L22	7.8	8	0.2	1.6	22°	8°	22	63
S/C PBR E7.8 S8 R0.2 H1.6 L35	7.8	8	0.2	1.6	22°	8°	35	63
S/C PBR E9.8 S10 R0.2 H2.0 L35	9.8	10	0.2	2	22°	8°	35	70



CUSTOMIZED TOOLS



Profiles Chamfer Cutters



Profiles Concave Radius Endmills



Profiles Corner Rounding Endmills



Profiles Dovetail Cutters



Profiles Drill Endmills



Profiles Engraving Cutters



Profiles Slitting Cutter



Profiles Engraving Cutters



Spherical Ball Cutter



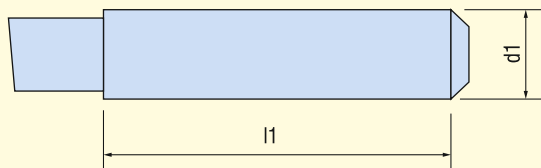
Step Drill



T Slot Cutter



HA Plain



HB, with Drive Flute

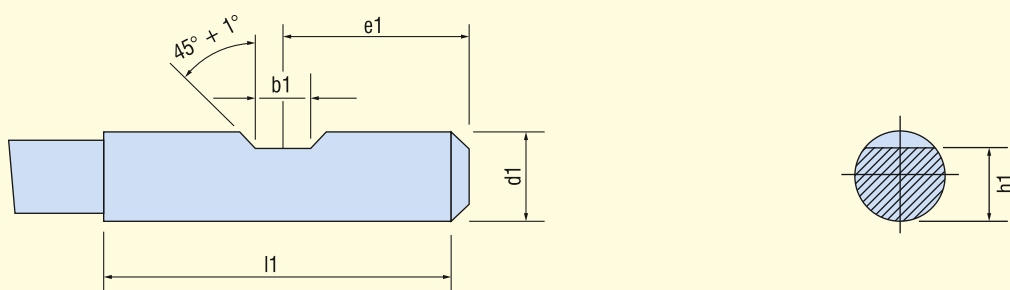


Fig. 1

d1 = for Drills ø 6 - 20 mm

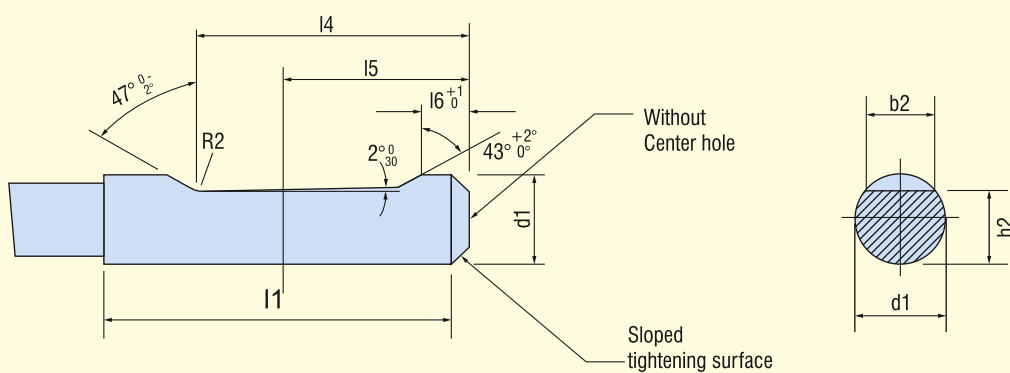
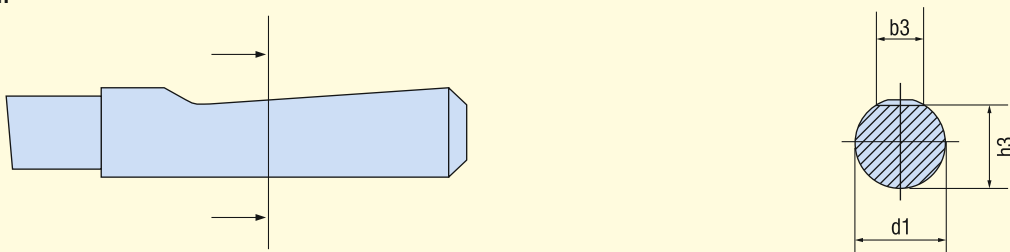


Fig. 2

d1 = for Drills ø 25 - 32 mm



Dimensions in mm

d1 h6	l1 0 +2
3	28
4	28
5	28
6	36
8	36
10	40
12	45
14	45
16	48
18	48
20	50
25	56

Dimensions in mm

d1 h6	b1 0 / +0.05	e1 0 / -1	h1 h11	l1 0 / +2
6	4.2	18	5.1	36
8	5.5	18	6.9	36
10	7	20	8.5	40
12	8	22.5	10.4	45
14	8	22.5	12.7	45
16	10	24	14.2	48
18	10	24	16.2	48
20	11	25	18.2	50

Dimensions in mm

d1 h6	b2 0	b3	h2 h11	h3	l1 0 / +2	l4 0 / -1	l5 nom, size	r2 min.
6	4.3		5.1		36	25	18	1.2
8	5.5		6.9		36	25	18	1.2
10	7.1		8.5		40	28	20	1.2
12	8.2		10.4		45	33	22.5	1.2
14	8.1		12.7		45	33	22.5	1.2
16	10.1		14.2		48	36	24	1.6
18	10.8		16.2		48	36	24	1.6
20	11.4	9.3	18.2		50	38	25	1.6
25	13.6	9.9	23		56	44	32	1.6
32	15.5		30		60	48	35	1.6

Calculation for Cutting Speed, Spindle Speed and Feed

Cutting Speed	$V_c = \frac{\pi \times D \times n}{1000}$
Spindle Speed	$n = \frac{V_c \times 1000}{\pi \times D}$
Feed per Tooth	$f_z = \frac{V_f}{n \times z}$
Feed per Minute	$V_f = f_z \times z \times n$
Feed per Revolution	$V_c = f_z \times z$

	z = No. of Teeth
mm	D = Milling Cutter Diameter
rpm	n = Spindle Speed
m/min	Vc = Cutting Speed
mm/min	Vf = Feed per Minute
mm	Fz = Feed per Tooth

Endmill

Cutting Speed	$V_c = \frac{\pi \times D \times n}{1000}$ mt / min
Table Feed	$V_f = f_z \times z \times n$ mm / min

Cutting Speed (Vc) Table

Material Group	HRC	Vc
Cast Iron, Aluminum, Brass, Copper	28-32	60-70
High Carbon Steel, EN-9, EN-21	38-42	50-60
Tool Steel, P20, Die Steel, OHNS, EN-31, Stainless Steel	55-60	35-45

Table Feed (Fz) Chart

Dia of Endmill	Fz (Feed per Tooth)
ø1 - ø2	0.008 - 0.010
ø2 - ø3	0.010 - 0.012
ø3 - ø4	0.012 - 0.015
ø4 - ø6	0.015 - 0.025
ø6 - ø8	0.025 - 0.035
ø8 - ø10	0.035 - 0.050
ø10 - ø12	0.050 - 0.060
ø12 - ø16	0.060 - 0.070
ø16 - ø20	0.070 - 0.080
ø20 - ø25	0.080 - 0.100

Drill

Cutting Speed	$V_c = \frac{\pi \times D \times n}{1000}$	mt / min
Table Feed	$V_f = n \times f$	mm / min

Cutting Speed (Vc) Table

Material Group	HRC	Vc
Cast Iron, Aluminum, Brass, Mild Steel	25-28	80-90
EN Series	30-35	70-80
High - Hardened Steel, Stainless Steel	55-60	20-30

Feed per Revolution (F) Chart

Dia of Drill	Fz (Feed per Tooth)
ø2 - ø4	0.020 - 0.030
ø4 - ø6	0.030 - 0.050
ø6 - ø8	0.060 - 0.080
ø8 - ø10	0.080 - 0.100
ø10 - ø12	0.100 - 0.120
ø12 - ø16	0.120 - 0.150

Reamer

Cutting Speed	$V_c = \frac{\pi \times D \times n}{1000}$ mt / min
Feed per Minute	$V_f = f_z \times z \times n$ mm / min

Cutting Speed (Vc) Table

Material Group	Vc
Cast Iron, Aluminum, Copper	50-60
Mild Steel, EN-8	40-50
High - Hardened Steel, Stainless Steel	25-40

Feed per Revolution (F) Chart

Dia of Drill	Fz (Feed per Tooth)
ø2 - ø4	0.060 - 0.100
ø4 - ø6	0.100 - 0.120
ø6 - ø8	0.120 - 0.150
ø8 - ø10	0.150 - 0.180
ø10 - ø12	0.180 - 0.200
ø12 - ø16	0.200 - 0.250
ø16 - ø20	0.250 - 0.400

Failure	Cause		Solution
Excessive Wear	Cutting Conditions	• Cutting Speed is to fast	• Decrease cutting speed and feed rate
	Tool Shape	• Feed rate is too fast	• Change to an appropriate flank relief angle
	Tool Material	• The flank relief angle is to small • Insufficient wear resistance	• Select a substrate with more wear resistance • Use a coated tool
Chipping	Cutting Conditions	• Feed rate is too fast	• Decrease cutting speed
	Machine Area	• Cutting depth is too deep • Tool overhang is too long • Work clamps are weak • Tool is not firmly attached	• Reduce depth of cut • Adjust tool overhang for correct length • Clamp the work place firmly • Make sure the tool is seated in the chuck properly
Tool Fracture	Cutting Conditions	• Feed rate is too fast	• Decrease cutting speed
	Tool Shape	• Cutting depth is too deep • Tool overhang is too long • Cutting edge is too long • Web thickness is too small	• Reduce depth of cut • Reduce tool overhang as much as possible • Select a tool with a shorter cutting edge • Change to more appropriate web thickness
Shoulder Deflection	Cutting Conditions	• Feed rate is too fast	• Decrease cutting speed
	Tool Shape	• Cutting depth is too deep • Tool overhang is too long • Cutting on the down-cut • Helix angle is large • Web thickness is to thin	• Reduce depth of cut • Adjust tool overhang for correct length • Change directions to up-cut • Use a tool with a smaller helix angle • Use a tool with the appropriate web thickness
Unsatisfactory Machined Surface Finish	Cutting Conditions	• Feed rate is too fast • Packing of chips	• Decrease cutting speed • Use air blow • Use an insert with a larger relief pocket
Chattering	Cutting Conditions	• Cutting Speed is too fast	• Decrease cutting speed
	Tool Shape Machine Area	• Cutting on the up-cut • Tool overhang is too long • Rake angle is large • Work clamps are weak • Tool is not firmly attached	• Change directions to down-cut • Adjust tool overhang for correct length • Use a tool with an appropriate rake angle • Clamp the work piece firmly • Make sure the tool is sealed in the chuck properly
Packing of Chips	Cutting Conditions	• Feed rate is too fast	• Decrease cutting speed
	Tool Shape	• Cutting depth is to deep • Too many teeth • Packing of chips	• Reduce depth of cut • Reduce number of teeth • Use air blow

Failure	Cause	Solution
Broken or twisted tangs	• Bad fit between shank and socket	• Ensure the shank and socket are clean and free from damage
Splitting of the web	• Feed too high • Insufficient initial clearance • Excessive web thinning • Heavy impact at point drill	• Reduce feed to optimum rate • Re-grind to correct specification • Re-grind to correct specification • Avoid impact at the point of drill. take care with taper shank drills when inserting / ejecting them from a spindle
Worn Outer Corners	• Excessive speed	• Reduce speed to optimum - may be able to increase feed
Broken Outer Corners	• Unstable component set up	• Reduce movement in the component
Chipped Cutting Lips	• Excessive initial clearance	• Re-grind to correct specification
Breakage at Flute Run Out	• Choking of flutes • Drill Slipping	• Adopt a peck / series drilling concept • Ensure the drill is held securely in the chuck and spindle
Spiral Finish in Hole	• Insufficient feed • Bad positional accuracy	• Increase feed • Use a spot drill before drilling
Hole Size too Large	• Incorrect point geometry • Ineffective swarf clearance	• Check point geometry in re-grinding section • Adjust speed, feed and peck length to achieve more manageable swarf

Failure	Cause	Solution
Broken or twisted tangs	• Incorrect fit between shank & socket	• Ensure the shank and socket are clean and free from damage
Rapid Tool Wear	• Insufficient stock to remove	• Increase the amount of stock to be removed
Oversize Hole	• Excessive lip height variation • Displacement in the machine spindle • Defects on the tool holder • Tool shank is damaged • Ovality of the tool • Asymmetric bevel lead angle • Too high feed or cutting speed	• Re-grind to correct specification • Repair and rectify spindle displacement • Replace tool holder • Replace or re-grind the shank • Replace or re-grinding the tool • Re-grind to correct specification • Adjust cutting conditions in accordance with catalogue or product selector
Undersize Hole	• Insufficient stock to remove • Too much heat generated while reaming. The hole widens and shrinks • The too diameter is worn & is undersize • Too low feed or cutting speed • Pre-drilled hole is too small	• Increase the amount of stock to be removed • Increase coolant flow • Re-grind to correct specification • Adjust cutting conditions in accordance with the dorrner Product selector • Decrease the amount of stock to be removed
Oval & Conical Holes	• Displacement in the machine spindle • Misalignment between tool and hole • Asymmetric bevel lead angle	• Repair and rectify spindle displacement • Use a bridge reamer • Re-grind to correct specification

[illegible]

Nominal Hole Sizes (mm)																				
Over	3	6	10	18	30	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355
Inc.	6	10	18	30	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355	400
Micrometer																				
J6	5	5	6	8	10		13		16		18		22		25		29			
	-3	-4	-5	-5	-6		-6		-6		-7		-7		-7		-7			
J7	6	8	10	12	14		18		22		26		30		36		39			
	-6	-7	-8	-9	-11		-12		-13		-14		-16		-16		-18			
J8	10	12	15	20	24		28		34		41		47		55		60			
	-8	-10	-12	-13	-15		-18		-20		-22		-25		-26		-29			
JS6	4	+4.5	+5.5	+6.5	8		+9.5		11		+12.5		+14.5		16		18			
	-4	-4.5	-5.5	-6.5	-8		-9.5		-11		-12.5		-14.5		-16		-18			
JS7	6	+7.5	9	+10.5	+12.5		15		+17.5		20		23		26		+28.5			
	-6	-7.5	-9	-10.5	-12.5		-15		-17.5		-20		-23		-26		-28.5			
JS8	9	11	+13.5	+16.5	+19.5		23		27		+31.5		36		+40.5		+44.5			
	-9	-11	-13.5	-16.5	-19.5		-23		-27		-31.5		-36		-40.5		-44.5			
K6	2	2	2	2	3		4		4		4		5		5		7			
	-6	-7	-9	-11	-13		-15		-18		-21		-24		-27		-29			
K7	3	5	6	6	7		9		10		12		13		16		17			
	-9	-10	-12	-15	-18		-21		-25		-28		-33		-36		-40			
K8	5	6	8	10	12		14		16		20		22		25		28			
	-13	-16	-19	-23	-27		-32		-38		-43		-50		-56		-61			
M6	-1	-3	-4	-4	-4		-5		-6		-8		-8		-9		-10			
	-9	-12	-15	-17	-20		-24		-28		-33		-37		-41		-46			
M7	0	0	0	0	0		0		0		0		0		0		0			
	-12	-15	-18	-21	-25		-30		-35		-40		-46		-52		-57			
M8	2	1	2	4	5		5		6		8		9		9		11			
	-16	-21	-25	-29	-34		-41		-48		-55		-63		-72		-78			
N6	-5	-7	-9	-11	-12		-14		-16		-20		-22		-25		-26			
	-13	-16	-20	-24	-28		-33		-38		-45		-51		-57		-62			
N7	-4	-4	-5	-7	-8		-9		-10		-12		-14		-14		-16			
	-6	-19	-23	-28	-33		-39		-45		-52		-60		-66		-73			
N8	-2	-3	-3	-3	-3		-4		-4		-4		-5		-5		-5			
	-20	-25	-30	-36	-42		-50		-58		-67		-77		-86		-94			
P6	-9	-12	-15	-18	-21		-26		-30		-36		-41		-47		-51			
	-17	-21	-26	-31	-37		-45		-52		-61		-70		-79		-87			
P7	-8	-9	-11	-14	-17		-21		-24		-28		-33		-36		-41			
	-20	-24	-29	-35	-42		-51		-59		-68		-79		-88		-98			
P8	-12	-15	-18	-22	-26		-32		-37		-43		-50		-56		-62			
	-30	-37	-45	-55	-65		-78		-91		-106		-122		-137		-151			
R6	-12	-16	-20	-24	-29		-35	-37	-44	-47	-56	-58	-61	-68	-71	-75	-85	-89	-97	-103
	-20	-25	-31	-37	-45		-54	-56	-66	-69	-81	-83	-86	-97	-100	-104	-117	-121	-133	-139
R7	-11	-13	-16	-20	-25		-30	-32	-38	-41	-48	-50	-53	-60	-63	-67	-74	-78	-87	-93
	-23	-28	-34	-41	-50		-60	-32	-73	-76	-88	-90	-93	-106	-109	-133	-126	-130	-144	-150



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