

SOLID CARBIDE TOOLS

YOUR TOOLING SOLUTIONS PARTNER

» ABOUT US

Tools County Pvt. Ltd. is a Global Technology Partner with a clear mission : to become the leading provider of Tooling Solutions, Advanced Materials and Materials Processing.

Tools County Pvt. Ltd. Incorporated a manufacturer of high precision engineered custom, standard & modified standard cutting tools. TCPL works with the following cutting tool materials : high-speed steel, solid carbide, & carbide-tipped, as well as P.C.D.

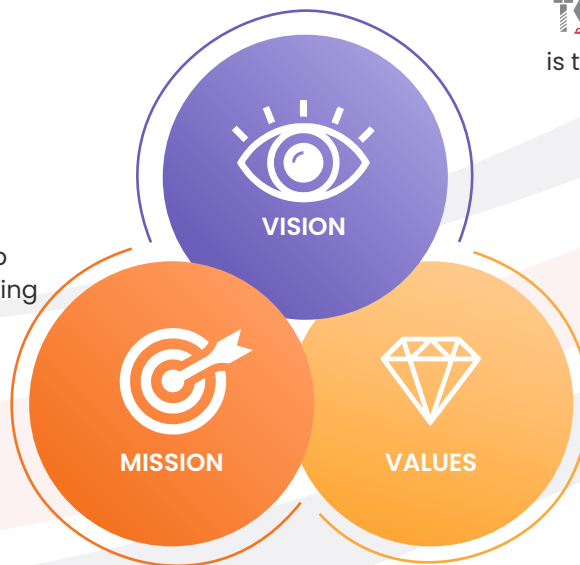
TCPL, specializes in custom carbide step drills and form tools, in addition to offering a standard line of variable fluted end mills, we offer laser etching, coatings, and re-grinding services TCPL differentiates itself in the marketplace by maintaining the utmost quality standards, the latest in manufacturing technology and unbeatable customer service.

We offer the best delivery times in the industry and we also offer the ability to design and build tools from your piece part drawings, so that we provide the best value for your specific application. TCPL services customers in the automotive, defense, aerospace, hydraulics, & medical device sectors.



» MISSION, VISION & VALUES

To explore new business & help the existing business by providing the best possible solution.



When it comes to the tools

TCPL
Let's Go Tools
is the best

- Quality
- Customer Centric Approach
- Value for Money
- Grahak Deo Bhava

Regular Endmills - Ballnose.....

High Performance Endmill-
Ballnose.....

Premium Hard Series Endmill-
Ballnose

Extra Long Endmills - Ballnose.....

Aluminium Series Endmills-
Ballnose.....

Finishing Endmills.....

Roughing Endmills.....

Exotic Series - Stainless Steel.....

Exotic Series - Super Alloys

Long Neck Series Endmills-
Ballnose.....

Solid Carbide HP Drills

NC Spotting Drills

Solid Carbide Reamers.....

Solid Carbide Chamfer Cutters.....

Solid Carbide Centre Drills

Solid Carbide Corner Rounding
Cutters

Solid Carbide Dove-
Tail Cutters.....

Solid Carbide Threadmills.....

Threadmill Mini Series

Solid Carbide Tapered Endmills.....

CARBIDE GRADE

MG Micro Grain **FG** Fine Grain **UFG** Ultra Fine Grain



COATING

ALTiN Altin **LATUMA** Latuma
HARD CUT Hardcut **ALTCrn** Alcrona



NO. OF FLUTES

2 Flutes **4 Flutes**
3 Flutes **6 Flutes**



COMPONENT MATERIAL HARDNESS

HRC 45 HRC 45 Steel **HRC 55** HRC 55 Tool Steel
HRC 65 HRC 65 Hardened the Steel



CORNER FORM

Corner Radius **Corner Protect**
Sharp Edge



HELIX ANGLE

Helix Angle 30° **Helix Angle 45°**
Helix Angle 35° **Helix Angle 33°-37° Variable Helix**



Tolerance

Square End Mills (mm)

Flute Dia.	Dia. Tolerance
1.0	0 ~ -0.015
1.5	0 ~ -0.015
2.0	0 ~ -0.015
2.5	0 ~ -0.015
3.0	0 ~ -0.015
4.0	0 ~ -0.015
5.0	0 ~ -0.015
6.0	0 ~ -0.015
8.0	0 ~ -0.020
10.0	0 ~ -0.020
12.0	0 ~ -0.020
16.0	0 ~ -0.020
20.0	0 ~ -0.020

Ball Nose End Mills (mm)

Flute Dia.	R Tolerance
R0.5	± 0.01
R1	± 0.01
R1.5	± 0.01
R2	± 0.01
R2.5	± 0.01
R3	± 0.01
R4	± 0.01
R5	± 0.01
R6	± 0.01
R8	± 0.02
R10	± 0.02

Corner Radius End Mills (mm)

Flute Dia.	R Tolerance
1.0	± 0.01
2.0	± 0.01
3.0	± 0.01
4.0	± 0.01
6.0	± 0.01
8.0	± 0.01
10.0	± 0.01
12.0	± 0.01
16.0	± 0.015

Shank (mm)

Shank Dia. (h6)	Shank Tolerance
∅ 3	0 ~ -0.08
∅ 4	0 ~ -0.08
∅ 6	0 ~ -0.08
∅ 8	0 ~ -0.09
∅ 10	0 ~ -0.09
∅ 12	0 ~ -0.11
∅ 16	0 ~ -0.11
∅ 20	0 ~ -0.13

Recommended Cutting Instructions

1. In order to enhance processing efficiency and extend life of cutters, please use the balanced chucks with high rigidity & high accuracy.
2. Make overhang enough for processing. If it's necessary to extend the milling cutter, please be sure to reduce spindle speed and feed speed.
3. If there's abnormal sound or vibration during processing, please adjust cutting data to prevent cutters from being influenced or broken.
4. Please choose correct cutting oil to maximize efficiency.
5. The result of cutting data depends on working materials, machines, work clips, programming and etc. Cutting data are for reference. You may increase cutting data starting from 10% to 40%.



ENDMILL-BALLNOSE SERIES

Steel | Hardened Steels | Stainless Steel | Castings



Solid Carbide 2 Flute EndMill



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
R-JDEM2F02	2	6	50	4
R-JDEM2F03	3	8	50	3
R-JDEM2F04	4	12	50	4
R-JDEM2F05	5	15	50	5
R-JDEM2F06	6	18	50	6
R-JDEM2F08	8	21	63	8
R-JDEM2F10	10	26	75	10
R-JDEM2F12	12	30	75	12
R-JDEM2F16	16	40	100	16
R-JDEM2F20	20	45	100	20

Solid Carbide 2 Flute BallNose



Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
R-JDBN2F02	1	6	50	4
R-JDBN2F03	1.5	6	50	4
R-JDBN2F04	2	8	50	4
R-JDBN2F05	2.5	10	50	6
R-JDBN2F06	3	12	50	6
R-JDBN2F08	3.5	14	60	8
R-JDBN2F10	4	20	60	8
R-JDBN2F12	6	24	75	12
R-JDBN2F16	8	32	100	16
R-JDBN2F20	10	10	100	20

Application

★ First Choice ● Good ○ OK

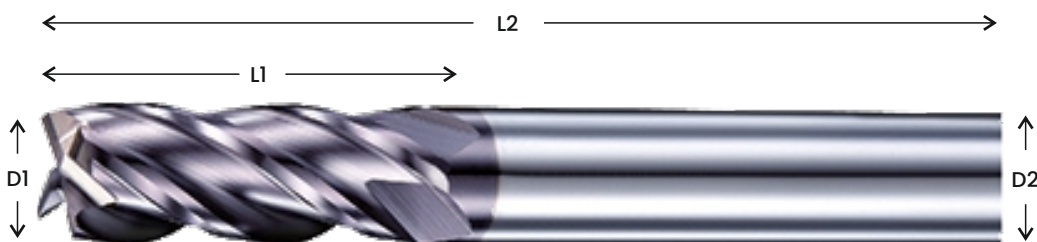
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	○					
HP Series	●	●	★		○	○		
PH Series			★	★	○	○	○	
Aluminium Series	○				○			★

* Special Diameters/Lengths Available As Per Request

Solid Carbide 4 Flute EndMill - 45 HRC



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
R-JDEM4F02	2	6	50	4
R-JDEM4F03	3	8	50	3
R-JDEM4F04	4	12	50	4
R-JDEM4F04L	4	20	80	4
R-JDEM4F05	5	15	50	5
R-JDEM4F05L	5	20	80	5
R-PEM4F06	6	18	50	6
R-JDEM4F06L	6	22	80	6
R-JDEM4F06XL	6	30	100	6
R-JDEM4F08	8	21	63	8
R-JDEM4F08L	8	28	80	8
R-JDEM4F08XL	8	35	100	8
R-JDEM4F10	10	26	75	10
R-JDEM4F10L	10	35	100	10
R-JDEM4F12L	12	30	75	12
R-JDEM4F12	12	38	100	12
R-JDEM4F16	16	40	100	16
R-JDEM4F20	20	45	100	20



Application

★ First Choice ● Good ◎ OK

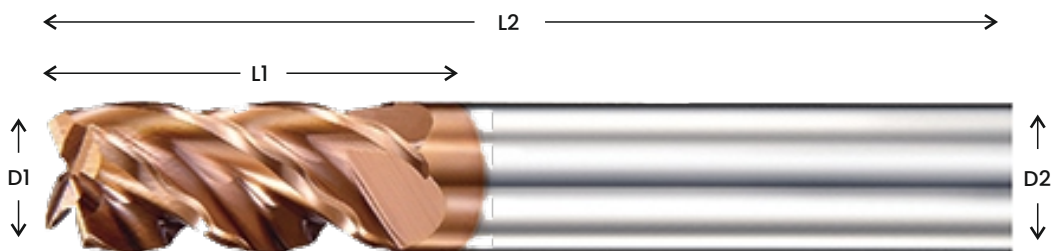
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	◎					
HP Series	●	●	★		◎	◎		
PH Series			★	★	◎	◎	◎	
Aluminium Series	◎				◎			★

* Special Diameters/Lengths Available As Per Request

Solid Carbide 4 Flute EndMill - 55 HRC



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
HP-JDEM4F02	2	6	50	4
HP-JDEM4F03	3	8	50	3
HP-JDEM4F04	4	12	50	4
HP-JDEM4F04L	4	20	80	4
HP-JDEM4F05	5	15	50	5
HP-JDEM4F05L	5	20	80	5
HP-JDEM4F06	6	18	50	6
HP-JDEM4F06L	6	22	80	6
HP-JDEM4F06XL	6	30	100	6
HP-JDEM4F08	8	21	63	8
HP-JDEM4F08L	8	28	80	8
HP-JDEM4F08XL	8	35	100	8
HP-JDEM4F10	10	26	75	10
HP-JDEM4F10L	10	35	100	10
HP-JDEM4F12L	12	30	75	12
HP-JDEM4F12	12	38	100	12
HP-JDEM4F16	16	40	100	16
HP-JDEM4F20	20	45	100	20



Application

★ First Choice ● Good ◎ OK

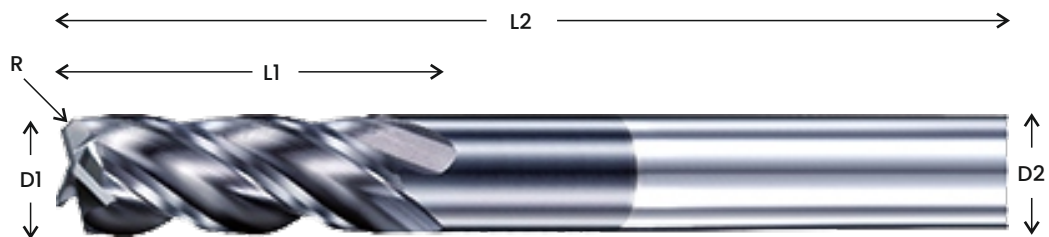
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	◎					
HP Series	●	●	★		◎	◎		
PH Series			★	★	◎	◎	◎	
Aluminium Series	◎				◎			★

* Special Diameters/Lengths Available As Per Request

Solid Carbide 4 Flute CR EndMill - 45 HRC



Description	DIA	CR	FL	OAL	SHK
	D1	R	L1	L2	D2
R-JDEMCR00202	2	0.2	4	50	4
R-JDEMCR00503	3	0.5	6	50	4
R-JDEMCR00504	4	0.5	8	50	4
R-JDEMCR0104	4	1	8	50	4
R-JDEMCR00506	6	0.5	12	50	6
R-JDEMCR0106	6	1	12	50	6
R-JDEMCR0106L	6	1	18	75	6
R-JDEMCR00508	8	0.5	16	60	8
R-JDEMCR0108	8	1	16	60	8
R-JDEMCR0108L	8	1	20	80	8
R-JDEMCR00510	10	0.5	20	75	10
R-JDEMCR0110	10	1	20	75	10
R-JDEMCR0110L	10	1	28	100	10
R-JDEMCR0112	12	1	24	75	12
R-JDEMCR0212	12	2	24	75	12
R-JDEMCR0212L	12	2	30	100	12
R-JDEMCR0116	16	1	32	100	16
R-JDEMCR0216	16	2	32	100	16



Application

★ First Choice ● Good ○ OK

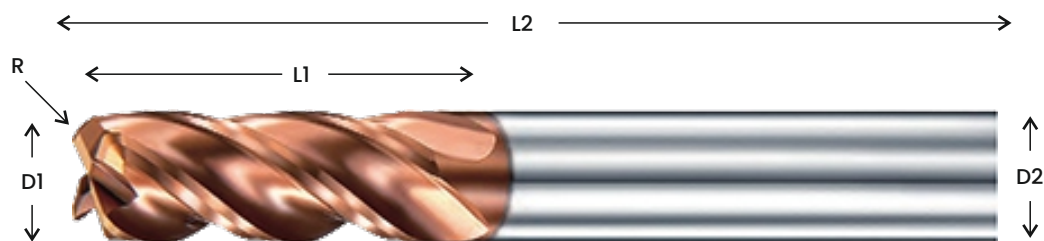
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	○					
HP Series	●	●	★		○	○		
PH Series			★	★	○	○	○	
Aluminium Series	○				○			★

* Special Diameters/Lengths Available As Per Request

Solid Carbide 4 Flute CR EndMill - 55 HRC



Description	DIA	CR	FL	OAL	SHK
	D1	R	L1	L2	D2
HP-JDEMCR00202	2	0.2	4	50	4
HP-JDEMCR00503	3	0.5	6	50	4
HP-JDEMCR00504	4	0.5	8	50	4
HP-JDEMCR0104	4	1	8	50	4
HP-JDEMCR00506	6	0.5	12	50	6
HP-JDEMCR0106	6	1	12	50	6
HP-JDEMCR0106L	6	1	18	75	6
HP-JDEMCR00508	8	0.5	16	60	8
HP-JDEMCR0108	8	1	16	60	8
HP-JDEMCR0108L	8	1	20	80	8
HP-JDEMCR00510	10	0.5	20	75	10
HP-JDEMCR0110	10	1	20	75	10
HP-JDEMCR0110L	10	1	28	100	10
HP-JDEMCR0112	12	1	24	75	12
HP-JDEMCR0212	12	2	24	75	12
HP-JDEMCR0212L	12	2	30	100	12
HP-JDEMCR0116	16	1	32	100	16
HP-JDEMCR0216	16	2	32	100	16



Application

★ First Choice ● Good ○ OK

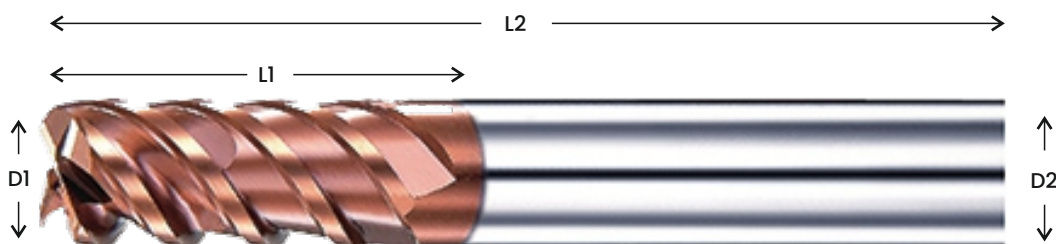
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	○					
HP Series	●	●	★		○	○		
PH Series			★	★	○	○	○	
Aluminium Series	○				○			★

* Special Diameters/Lengths Available As Per Request

Solid Carbide 4 Flute EndMill - 65 HRC



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
PH-JDEM4F02	2	6	50	4
PH-JDEM4F03	3	8	50	3
PH-JDEM4F04	4	12	50	4
PH-JDEM4F04L	4	20	80	4
PH-JDEM4F05	5	15	50	5
PH-JDEM4F05L	5	20	80	5
PH-JDEM4F06	6	18	50	6
PH-JDEM4F06L	6	22	80	6
PH-JDEM4F06XL	6	30	100	6
PH-JDEM4F08	8	21	63	8
PH-JDEM4F08L	8	28	80	8
PH-JDEM4F08XL	8	35	100	8
PH-JDEM4F10	10	26	75	10
PH-JDEM4F10L	10	35	100	10
PH-JDEM4F12L	12	30	75	12
PH-JDEM4F12	12	38	100	12
PH-JDEM4F16	16	40	100	16
PH-JDEM4F20	20	45	100	20



Application

★ First Choice ● Good ◎ OK

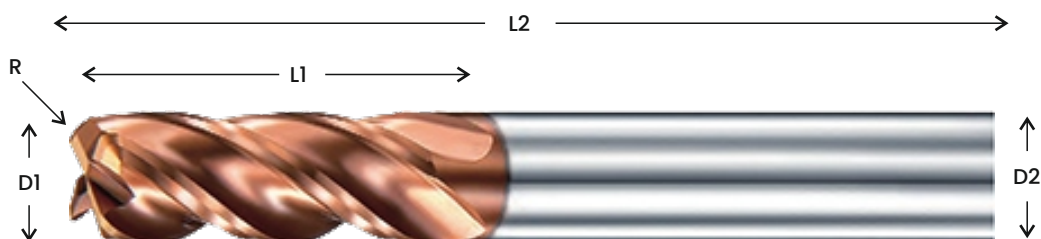
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	◎					
HP Series	●	●	★		◎	◎		
PH Series			★	★	◎	◎	◎	
Aluminium Series	◎				◎			★

* Special Diameters/Lengths Available As Per Request

Solid Carbide 4 Flute CR EndMill - 65 HRC



Description	DIA	CR	FL	OAL	SHK
	D1	R	L1	L2	D2
PH-JDEMCR00202	2	0.2	4	50	4
PH-JDEMCR00503	3	0.5	6	50	4
PH-JDEMCR00504	4	0.5	8	50	4
PH-JDEMCR0104	4	1	8	50	4
PH-JDEMCR00506	6	0.5	12	50	6
PH-JDEMCR0106	6	1	12	50	6
PH-JDEMCR0106L	6	1	18	75	6
PH-JDEMCR00508	8	0.5	16	60	8
PH-JDEMCR0108	8	1	16	60	8
PH-JDEMCR0108L	8	1	20	80	8
PH-JDEMCR00510	10	0.5	20	75	10
PH-JDEMCR0110	10	1	20	75	10
PH-JDEMCR0110L	10	1	28	100	10
PH-JDEMCR0112	12	1	24	75	12
PH-JDEMCR0212	12	2	24	75	12
PH-JDEMCR0212L	12	2	30	100	12
PH-JDEMCR0116	16	1	32	100	16
PH-JDEMCR0216	16	2	32	100	16

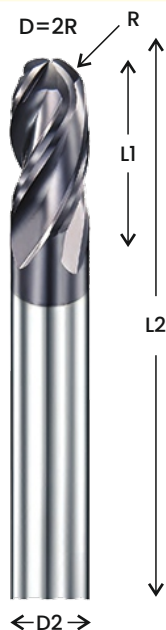


Application

★ First Choice ● Good ○ OK

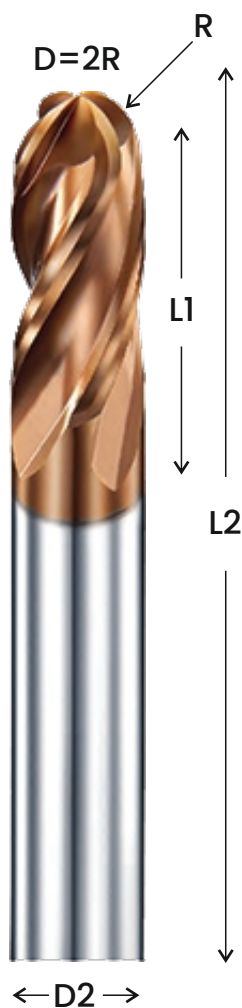
	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	○					
HP Series	●	●	★		○	○		
PH Series			★	★	○	○	○	
Aluminium Series	○				○			★

* Special Diameters/Lengths Available As Per Request



Solid Carbide 4 Flute BallNose - 45 HRC

Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
R-JDBN4F02	1	6	50	4
R-JDBN4F03	1.5	6	50	4
R-JDBN4F04	2	12	50	4
R-JDBN4F05	2.5	15	50	5
R-JDBN4F06	3	18	50	6
R-JDBN4F08	4	21	63	8
R-JDBN4F10	5	26	75	10
R-JDBN4F12	6	30	75	12
R-JDBN4F16	8	40	100	16



High Performance 4 Flute BallNose - 55 HRC

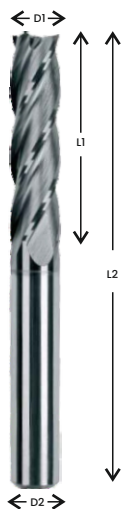
Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
HP-JDBN4F02	1	6	50	4
HP-JDBN4F03	1.5	6	50	4
HP-JDBN4F04	2	12	50	4
HP-JDBN4F05	2.5	15	50	5
HP-JDBN4F06	3	18	50	6
HP-JDBN4F08	4	21	63	8
HP-JDBN4F10	5	26	75	10
HP-JDBN4F12	6	30	75	12
HP-JDBN4F16	8	40	100	16

Premium Hard 4 Flute BallNose - 65 HRC

Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
PH-JDBN4F02	1	6	50	4
PH-JDBN4F03	1.5	6	50	4
PH-JDBN4F04	2	12	50	4
PH-JDBN4F05	2.5	15	50	5
PH-JDBN4F06	3	18	50	6
PH-JDBN4F08	4	21	63	8
PH-JDBN4F10	5	26	75	10
PH-JDBN4F12	6	30	75	12
PH-JDBN4F16	8	40	100	16

* Special Diameters/Lengths Available As Per Request

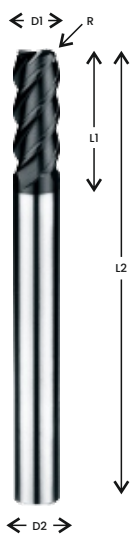
Solid Carbide XL EndMill - 55 HRC



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
HP-JDXLEM4F06	6	32	150	6
HP-JDXLEM4F08	8	35	150	8
HP-JDXLEM4F10	10	38	150	10
HP-JDXLEM4F12	12	40	150	12
HP-JDXLEM4F14	14	40	150	14
HP-JDXLEM4F16	16	50	150	16
HP-JDXLEM4F20	20	50	150	20

* Coating Of HARD Silicon Nitride - For 65 HRC

Solid Carbide XL CR EndMill - 55 HRC



Description	DIA	CR	FL	OAL	SHK
	D1	R	L1	L2	D2
HP-JDXLCR0106	6	1	32	150	6
HP-JDXLCR0108	8	1	35	150	8
HP-JDXLCR0110	10	1	38	150	10
HP-JDXLCR0112	12	1	40	150	12
HP-JDXLCR0212	12	2	40	150	12
HP-JDXLCR0116	16	1	50	150	16
HP-JDXLCR0216	16	2	50	150	16

* Coating Of HARD Silicon Nitride - For 65 HRC

Application

★ First Choice ● Good ◎ OK

	Carbon steel, Alloy steel	Pre-Harden Steel			Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	◎					
HP Series	●	●	★		◎	◎		
PH Series			★	★	◎	◎	◎	
Aluminium Series	◎				◎		★	

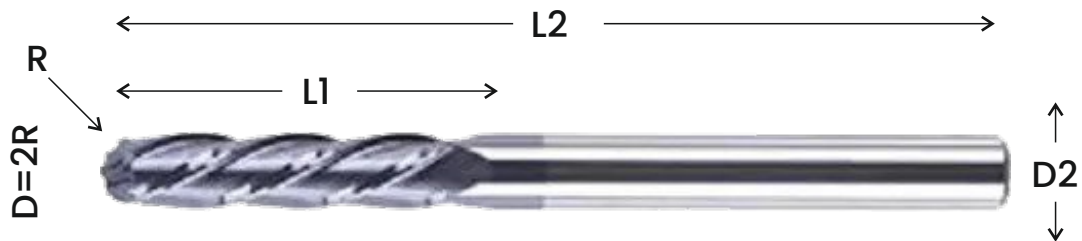
* Special Diameters/Lengths Available As Per Request

Solid Carbide XL BallNose



Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
HP-JDXLBN06	3	32	150	6
HP-JDXLBN08	4	35	150	8
HP-JDXLBN10	5	38	150	10
HP-JDXLBN12	6	40	150	12
HP-JDXLBN16	8	40	150	16
HP-JDXLBN20	10	50	150	20

- XL Series is available in various lengths, 180/200/250/300mm as well
- XL Series available in UFG grade and Premium Hard Series based on application
- XL Series are recommended to be clamped in HydroGrip/Powerchuck/Shrink Fit Holders
- XL Series intermediate diameter available as per request

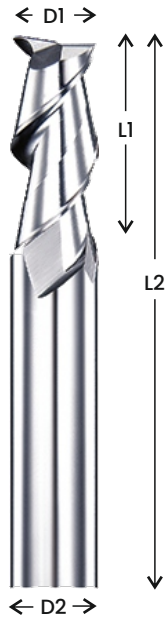


Application

★ First Choice ● Good ◎ OK

	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	◎					
HP Series	●	●	★		◎	◎		
PH Series			★	★	◎	◎	◎	
Aluminium Series	◎				◎			★

* Special Diameters/Lengths Available As Per Request



MG/
FG

2F/3F/4F

40°-45°

DLC

Solid Carbide Aluminium EndMill 2F/3F/4F/5F

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDALEM02	2	6	50	3
JDALEM03	3	10	50	4
JDALEM04	4	12	50	6
JDALEM05	5	16	50	6
JDALEM06	6	18	50	6
JDALEM08	8	20	60	8
JDALEM10	10	25	75	10
JDALEM12	12	30	75	12
JDALEM16	16	40	100	16
JDALEM20	20	45	100	20

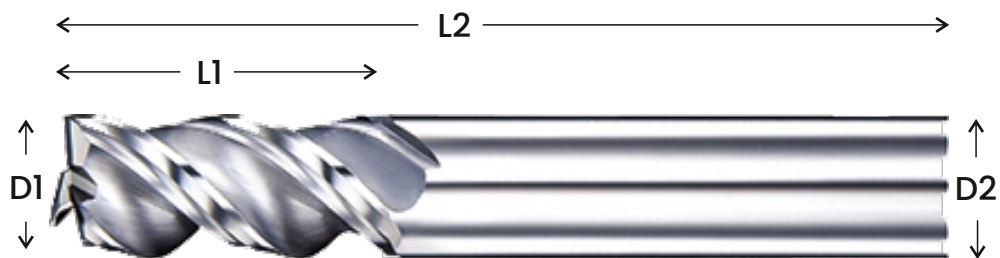
- Special diameters/length available as per request
- Please specify No. of teeth/flute - Z=2/3/4/5
- Coating for above Aluminium cutters - as per request

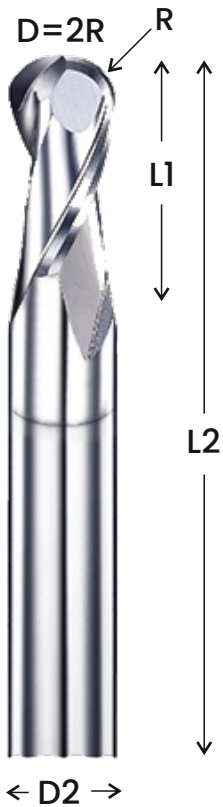
**Solid Carbide Aluminium Endmill
2F/3F/4F/5F --- XL Series**



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDALEM03XL	3	25	75	3
JDALEM04XL	4	25	75	4
JDALEM05XL	5	25	75	5
JDALEM06XL	6	25	75	6
JDALEM08XL	8	25	75	8
JDALEM010XL	10	38	100	10
JDALEM012XL	12	50	100	12
JDALEM014XL	14	75	150	14
JDALEM016XL	16	75	150	16
JDALEM018XL	18	75	150	18
JDALEM020XL	20	75	150	20
JDALEM025XL	25	75	150	25

- Special diameters/length available as per request
- Please specify No. of teeth/flute - Z=2/3/4/5
- Coating for above Aluminium cutters - as per request





MG/FG

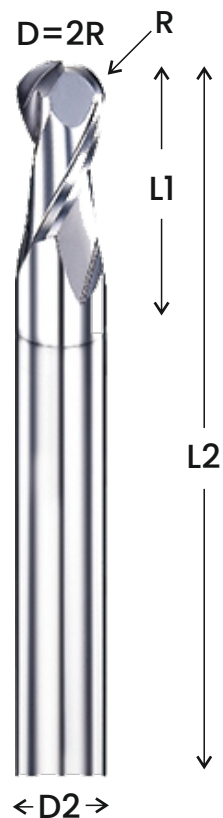
2F/3F/4F

40°

DLC

Solid Carbide Aluminium Ball Nose Cutters 2F/3F/4F

Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
JDALBN01	0.5	2	50	4
JDALBN02	1	4	50	4
JDALBN03	1.5	6	50	3
JDALBN04	2	8	50	4
JDALBN06	3	12	50	6
JDALBN08	4	16	60	8
JDALBN010	5	20	75	10
JDALBN012	6	24	75	12
JDALBN016	8	32	100	16
JDALBN018	9	38	100	18
JDALBN020	10	38	100	20
JDALBN025	12.5	38	100	25



MG/FG

2F/3F/4F

35°

DLC

Solid Carbide Aluminium Ball Nose Cutters 2F/3F/4F --- XL Series

Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
JDALBN03XL	1.5	25	75	3
JDALBN04XL	2	25	75	4
JDALBN05XL	2.5	25	75	5
JDALBN06XL	3	25	75	6
JDALBN08XL	4	25	75	8
JDALBN010XL	5	38	100	10
JDALBN012XL	6	50	100	12
JDALBN012XL	6	75	150	12
JDALBN014XL	7	75	150	14
JDALBN016XL	8	75	150	16
JDALBN018XL	9	75	150	18
JDALBN020XL	10	75	150	20
JDALBN025XL	12.5	75	150	25

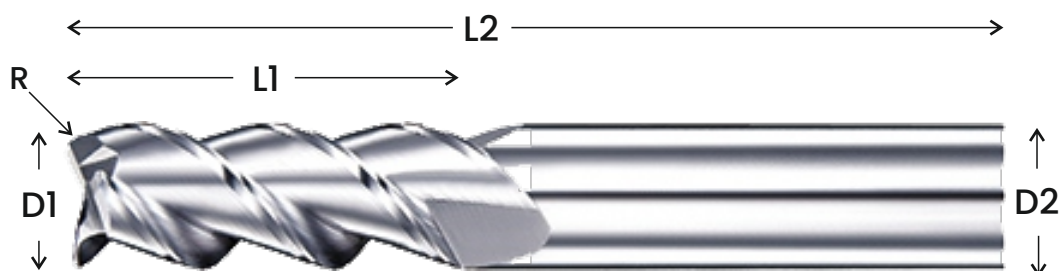
- Special diameters/length available as per request
- Please specify No. of teeth/flute - Z=2/3/4/5
- Coating for above Aluminium cutters - as per request

Corner Radius Aluminium Cutters 2F/3F/4F/5F



Description	Radius	FL	OAL	SHK	SHK
	R	L1	L2	D2	D2
JDALCR0506	6	0.5	15	50	6
JDALCR0106	6	1	15	50	6
JDALCR0508	8	0.5	20	60	8
JDALCR0108	8	1	20	60	8
JDALCR0208	8	2	20	60	8
JDALCR0510	10	0.5	25	75	10
JDALCR0110	10	1	25	75	10
JDALCR0210	10	2	25	75	10
JDALCR0512	12	0.5	30	75	12
JDALCR0112	12	1	30	75	12
JDALCR0212	12	2	30	75	12
JDALCR0312	12	3	30	75	12
JDALCR0516	16	0.5	45	100	16
JDALCR0116	16	1	45	100	16
JDALCR0216	16	2	45	100	16
JDALCR0316	20	3	45	100	16
JDALCR0520	20	0.5	45	100	20
JDALCR0120	20	1	45	100	20
JDALCR0220	20	2	45	100	20
JDALCR0320	20	3	45	100	20

- Special diameters/length available as per request
- Please specify No. of teeth/flute - Z=2/3/4/5
- CR available as per request - 0.2 R to 5 R
- Coating for above Aluminium cutters - as per request

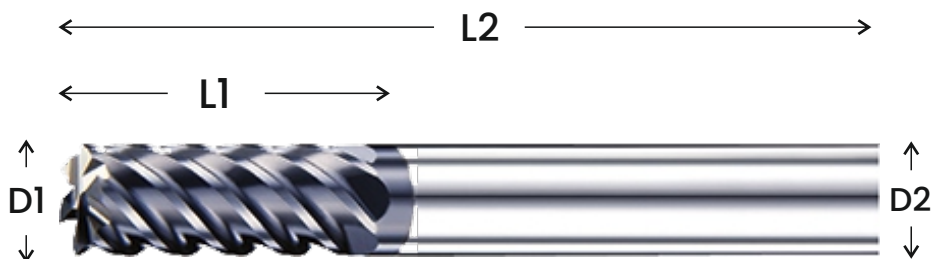


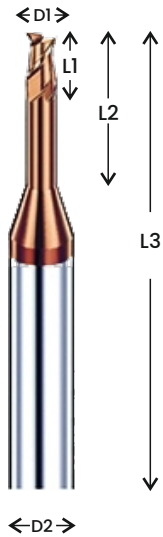
Solid Carbide Finishing EndMill



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDEM6F06	6	25	75	6
JDEM6F08	8	30	75	8
JDEM6F010	10	42	100	10
JDEM6F012	12	48	100	12
JDEM6F016	16	50	100	16
JDEM6F016 L	16	75	150	16
JDEM6F020	20	50	100	20
JDEM6F020 L	20	75	150	20
JDEM6F025	25	50	100	25
JDEM6F025 L	25	80	150	25

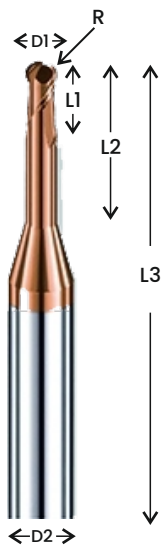
- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC
- Recommended to use Hydrogrip/Power-chuck clamping for best results





Solid Carbide Long Neck EndMill - 2 Flutes

Description	DIA	FL	WL	OAL	SHK
	D1	L1	L2	L3	D2
JDLNEM02L2	2	3	8/10/12/14/16	50	4
JDLNEM025L2	2.5	4	8/10/12/14/16	50	4
JDLNEM03L2	3	4.5	8/10/12/16/20	50	6
JDLNEM035L2	3.5	6	12/16/20/25/30/35	60/75	6
JDLNEM04L2	4	6	12/16/20/25/30/35	60/75	6



Solid Carbide Long Neck BN - 2 Flutes

Description	DIA	CR	FL	WL	OAL	SHK
	D1	R	L1	L2	L3	D2
JDLNBN02	2	1	3	8/10/12/14/16	50	4
JDLNBN02.5	2.5	1.25	4	8/12/16/20	50	4
JDLNBN03	3	1.5	4.5	10/12/16/20/25	75	6
JDLNBN04	4	2	6	12/16/20/25/30	75	6

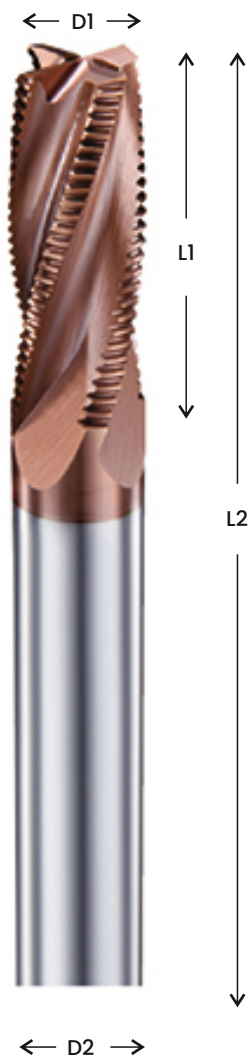
- Please specify WL as per above chart during ordering
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC
- CR long neck cutters available as per request

Solid Carbide - Coated

MATERIAL GROUP	TIN	TICN	TIALN	HARDNESS	SURFACE SPEED METERS/ MIN	FEED (mm/TOOTH) END MILL DIAMETER									
						3mm	4mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm	25mm
Aluminium Low <8% Silicon	3	1	2	-	max	0.02	0.03	0.04	0.06	0.07	0.10	0.15	0.15	0.20	0.20
Aluminium High >8% Silicon	3	1	2	-	200-600	0.02	0.02	0.03	0.05	0.06	0.10	0.10	0.10	0.15	0.15
Brass & Bronze	1	2	3	-	80-365	0.02	0.02	0.03	0.04	0.05	0.07	0.08	0.09	0.10	0.10
Copper & Copper Alloys	1	2	3	-	130-330	0.03	0.04	0.04	0.05	0.06	0.07	0.09	0.09	0.10	0.10
Cast Iron (Soft)	3	1	2	120-200	100-225	0.03	0.03	0.04	0.05	0.06	0.07	0.07	0.08	0.09	0.10
Cast Iron (Hard)	3	1	2	210-320	60-120	0.02	0.03	0.03	0.04	0.05	0.05	0.05	0.06	0.08	0.10
Low Carbon Steels	3	1	2	100-200	100-240	0.02	0.03	0.03	0.05	0.05	0.06	0.07	0.08	0.08	0.10
Medium Carbon Steels	3	2	1	175-425	60-100	0.15	0.02	0.04	0.04	0.04	0.05	0.05	0.06	0.10	0.10
Hardened Steels	3	2	1	45Rc-60Rc	30-60	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06
Tool Steel	1	2	3	100-250	30-100	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.06	0.08
Stainless Steel Soft (300 series)	3	2	1	<275	60-120	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.08
Stainless Steel Hard (400 series)	1	2	3	<275	90-180	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.06	0.07	0.08
Stainless Steel (PH)	2	3	1	<325	80-175	0.02	0.02	0.03	0.05	0.05	0.06	0.06	0.07	0.07	0.08
Titanium (Soft)	3	2	1	110-275	60-105	0.01	0.02	0.02	0.04	0.04	0.05	0.05	0.06	0.06	0.07
Titanium (Hard)	3	2	1	300-440	30-60	0.01	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08
High Nickel Steels	3	2	1	-	45-75	0.01	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.08	0.10
Hi-Temperature Alloys	3	2	1	-	15-35	0.01	0.02	0.02	0.02	0.03	0.04	0.04	0.05	0.06	0.07

Solid Carbide - Uncoated

MATERIAL GROUP	SURFACE SPEED METERS/ MIN	HARDNESS	FEED (mm/TOOTH) END MILL DIAMETER									
			3mm	4mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm	25mm
Aluminium Low <8% Silicon	max Avail.	-	0.013	0.025	0.035	0.050	0.070	0.080	0.100	0.120	0.150	0.200
Aluminium High >8% Silicon	200-400	-	0.013	0.025	0.030	0.040	0.060	0.070	0.080	0.100	0.120	0.150
Brass & Bronze	70-120	-	0.025	0.030	0.040	0.050	0.060	0.070	0.075	0.090	0.100	0.130
Copper & Copper Alloys	120-250	-	0.025	0.030	0.040	0.050	0.060	0.070	0.075	0.090	0.100	0.150
Cast Iron (Soft)	100-225	120-200	0.025	0.030	0.040	0.050	0.060	0.070	0.075	0.120	0.150	0.020
Cast Iron (Hard)	30-90	120-200	0.010	0.140	0.017	0.020	0.030	0.040	0.050	0.060	0.075	0.100
Magnesium & Magnesium Alloys	300-460	-	0.025	0.030	0.040	0.050	0.070	0.080	0.100	0.130	0.150	0.250
Plastics-Glass Filled	100-185	-	0.038	0.045	0.055	0.076	0.090	0.095	0.100	0.130	0.150	0.300
Plastics	240-490	-	0.038	0.050	0.070	0.080	0.110	0.130	0.150	0.200	0.250	0.380
Low Carbon Steels	70-125	-	0.013	0.017	0.020	0.025	0.040	0.060	0.075	0.100	0.150	0.180
Medium Carbon Steels	3-90	275-425	0.015	0.020	0.030	0.040	0.043	0.047	0.050	0.075	0.100	0.150
Hardness Steel	9-30	48-52	0.005	0.007	0.010	0.013	0.017	0.020	0.025	0.035	0.050	0.075
Stainless Steel Soft (300 Series)	60-125	135-275	0.013	0.017	0.020	0.025	0.035	0.040	0.050	0.075	0.100	0.150
Stainless Steel Soft (400 Series)	18-80	135-275	0.005	0.007	0.010	0.013	0.017	0.020	0.025	0.050	0.075	0.130
Titanium (Soft)	15-125	-	0.013	0.017	0.020	0.025	0.030	0.040	0.050	0.075	0.100	0.150
Titanium (Hard)	15-60	-	0.007	0.100	0.012	0.015	0.020	0.022	0.025	0.035	0.050	0.100
High Nickel Steels	60-80	-	0.013	0.017	0.020	0.025	0.031	0.040	0.050	0.060	0.076	0.100
Hi-Temperature Alloys	8-30	-	0.010	0.014	0.017	0.020	0.022	0.023	0.025	0.030	0.035	0.050



Solid Carbide 4 Flute Rougher EndMill - 55 HRC

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
PH-JDREM4F06	6	18	50	6
PH-JDREM4F06L	6	22	80	6
PH-JDREM4F06XL	6	30	100	6
PH-JDREM4F08	8	21	63	8
PH-JDREM4F08L	8	28	80	8
PH-JDREM4F08XL	8	35	100	8
PH-JDREM4F10	10	26	75	10
PH-JDREM4F10L	10	35	100	10
PH-JDREM4F12L	12	30	75	12
PH-JDREM4F12	12	38	100	12
PH-JDREM4F16	16	40	100	16
PH-JDREM4F20	20	45	100	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC
- Recommended to use Hydrogrip/Power-chuck clamping for best results

Application

★ First Choice ● Good ◎ OK

	Carbon steel, Alloy steel	Pre-Harden Steel	High-hardened		Stainless Steel	Titanium Alloy	Nickel/Inconel Alloy	Copper / Aluminum alloy
		~45HRC	~55HRC	~65HRC				
Regular Series	★	★	◎					
HP Series	●	●	★		◎	◎		
PH Series			★	★	◎	◎	◎	
Aluminium Series	◎				◎			★

* Special Diameters/Lengths Available As Per Request



EXOTIC SERIES

- Tools for Stainless Steel
- Tools for Titanium & Nickel
- Tools for Super-Alloys

Solid Carbide Endmills for Exotic Materials

Description	DIA	FL	OAL	SHK	Corner Chamfer Width
ITEM NO.	D1	L1	L2	D2	C
EX-JDEM4F04	4	8	50	6	0.2
EX-JDEM4F05	5	10	50	6	0.25
EX-JDEM4F06	6	12	50	6	0.3
EX-JDEM4F08	8	19	60	8	0.4
EX-JDEM4F10	10	23	75	10	0.5
EX-JDEM4F12	12	27	75	12	0.6
EX-JDEM4F16	16	32	100	16	0.8
EX-JDEM4F20	20	40	100	20	1



Solid Carbide Endmills-XL Series for Exotic Materials

Description	DIA	FL	OAL	SHK	Corner Chamfer Width
ITEM NO.	D1	L1	L2	D2	C
EX-JDEM4F04L	4	13	75	6	0.2
EX-JDEM4F05L	5	16	75	6	0.25
EX-JDEM4F06L	6	21	75	6	0.3
EX-JDEM4F08L	8	31	100	8	0.4
EX-JDEM4F10L	10	37	100	10	0.5
EX-JDEM4F12L	12	44	100	12	0.6
EX-JDEM4F16L	16	53	150	16	0.8
EX-JDEM4F20L	20	62	150	20	1

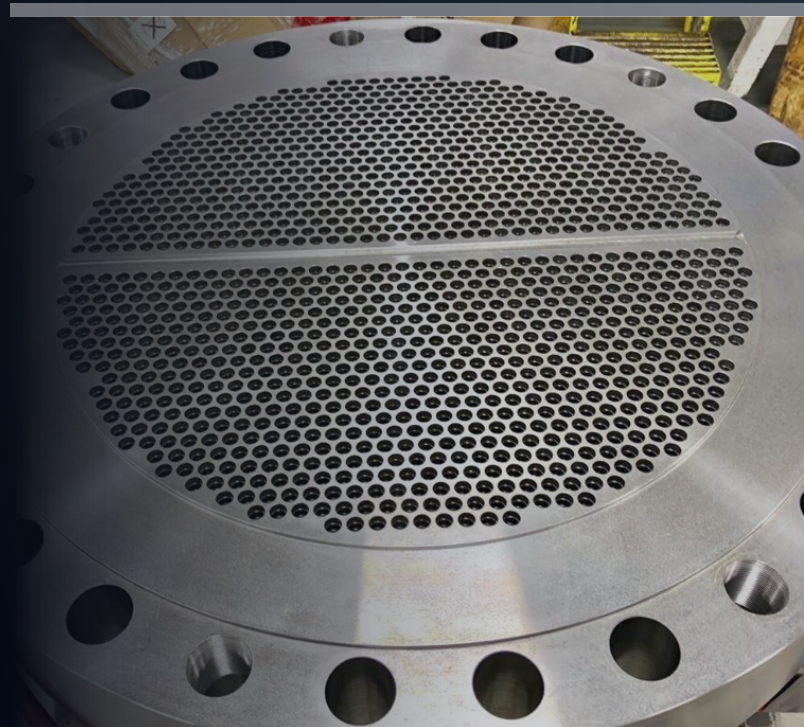


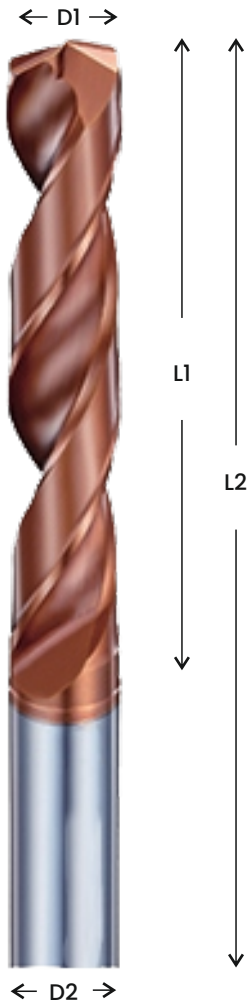
- Suitable for Nickel, Titanium, Inconel Alloy/super alloys
- Please refer machinability chart for VC/Feed
- Corner chamfer provided for EDGE strength



HIGH PERFORMANCE DRILL SERIES

Steel > Forgings > Stainless Steel > Castings





**DIN
6537**

SHK
h6

m7

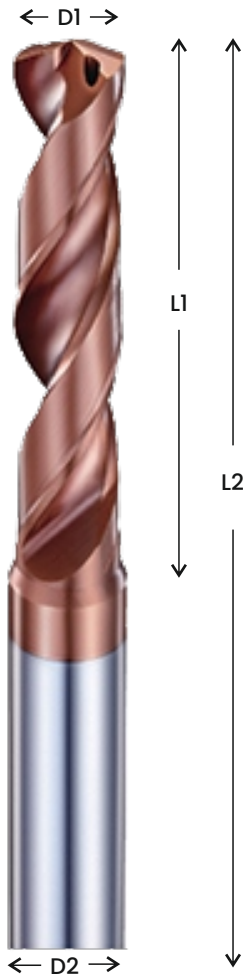
140°

30°

Solid Carbide 3.5D Drill

Description	DIA	FL	OAL	SHK
	D1 m7	L1	L2	D2 h6
JDRD2F03	3	20	60	6
JDRD2F04	4	24	66	6
JDRD2F05	5	28	66	6
JDRD2F06	6	28	66	6
JDRD2F07	7	34	79	8
JDRD2F08	8	41	79	10
JDRD2F09	9	47	89	10
JDRD2F10	10	47	89	10
JDRD2F11	11	55	102	12
JDRD2F12	12	55	102	12
JDRD2F13	13	60	107	14
JDRD2F14	14	60	107	14
JDRD2F15	15	65	115	16
JDRD2F16	16	65	115	16
JDRD2F17	17	73	123	18
JDRD2F18	18	73	123	18
JDRD2F19	19	79	131	20
JDRD2F20	20	79	131	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



**DIN
6537**

**SHK
h6**

m7

140°

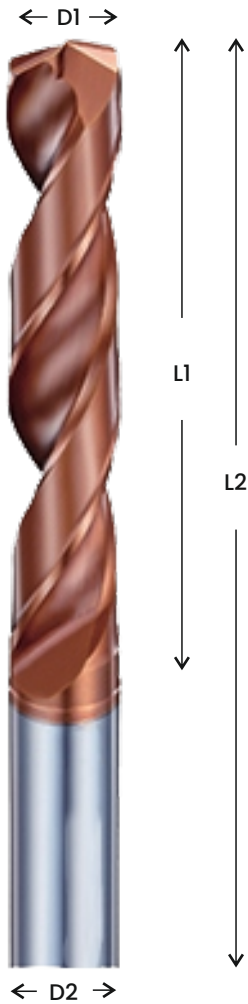
30°

8-20 Bar

Solid Carbide 3.5D Through Coolant Drill

Description	DIA	FL	OAL	SHK
	D1 m7	L1	L2	D2 h6
JDTCD2F03	3	20	60	6
JDTCD2F04	4	24	66	6
JDTCD2F05	5	28	66	6
JDTCD2F06	6	28	66	6
JDTCD2F07	7	34	79	8
JDTCD2F08	8	41	79	10
JDTCD2F09	9	47	89	10
JDTCD2F10	10	47	89	10
JDTCD2F11	11	55	102	12
JDTCD2F12	12	55	102	12
JDTCD2F13	13	60	107	14
JDTCD2F14	14	60	107	14
JDTCD2F15	15	65	115	16
JDTCD2F16	16	65	115	16
JDTCD2F17	17	73	123	18
JDTCD2F18	18	73	123	18
JDTCD2F19	19	79	131	20
JDTCD2F20	20	79	131	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



**DIN
6537**

SHK
h6

m7

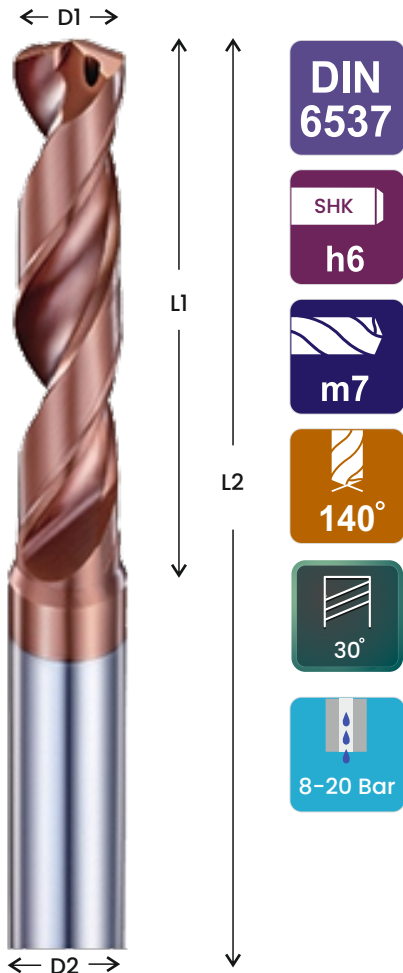
140°

30°

Solid Carbide 5D Drill

Description	DIA	FL	OAL	SHK
	D1 m7	L1	L2	D2 h6
JDRD2F03	3	28	66	6
JDRD2F04	4	36	74	6
JDRD2F05	5	44	82	6
JDRD2F06	6	44	82	6
JDRD2F07	7	53	91	8
JDRD2F08	8	53	91	10
JDRD2F09	9	61	103	10
JDRD2F10	10	61	103	10
JDRD2F11	11	71	118	12
JDRD2F12	12	71	118	12
JDRD2F13	13	77	124	14
JDRD2F14	14	77	124	14
JDRD2F15	15	83	133	16
JDRD2F16	16	83	133	16
JDRD2F17	17	93	143	18
JDRD2F18	18	93	143	18
JDRD2F19	19	101	153	20
JDRD2F20	20	101	153	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



Solid Carbide 5D Through Coolant Drill

Description	DIA	FL	OAL	SHK
	D1 m7	L1	L2	D2 h6
JDTCD2F03	3	28	66	6
JDTCD2F04	4	36	74	6
JDTCD2F05	5	44	82	6
JDTCD2F06	6	44	82	6
JDTCD2F07	7	53	91	8
JDTCD2F08	8	53	91	10
JDTCD2F09	9	61	103	10
JDTCD2F10	10	61	103	10
JDTCD2F11	11	71	118	12
JDTCD2F12	12	71	118	12
JDTCD2F13	13	77	124	14
JDTCD2F14	14	77	124	14
JDTCD2F15	15	83	133	16
JDTCD2F16	16	83	133	16
JDTCD2F17	17	93	143	18
JDTCD2F18	18	93	143	18
JDTCD2F19	19	101	153	20
JDTCD2F20	20	101	153	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



**DIN
6537**

**SHK
h6**

m7

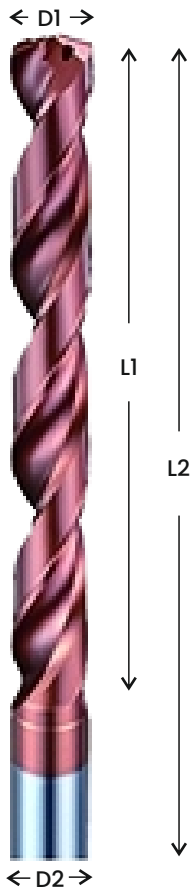
140°

30°

Solid Carbide Drill 8D

Description	DIA	FL	OAL	SHK
	D1 m7	L1	L2	D2 h6
JDRD2F04	4	45	85	6
JDRD2F05	5	57	95	6
JDRD2F06	6	57	95	6
JDRD2F07	7	66	106	8
JDRD2F08	8	76	114	8
JDRD2F09	9	95	139	10
JDRD2F10	10	95	139	10
JDRD2F11	11	114	162	12
JDRD2F12	12	114	162	12
JDRD2F13	13	133	178	14
JDRD2F14	14	133	178	14
JDRD2F15	15	152	203	16
JDRD2F16	16	152	203	16
JDRD2F17	17	171	223	18
JDRD2F18	18	171	223	18
JDRD2F19	19	190	243	20
JDRD2F20	20	190	243	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



**DIN
6537**

SHK
h6

m7

140°

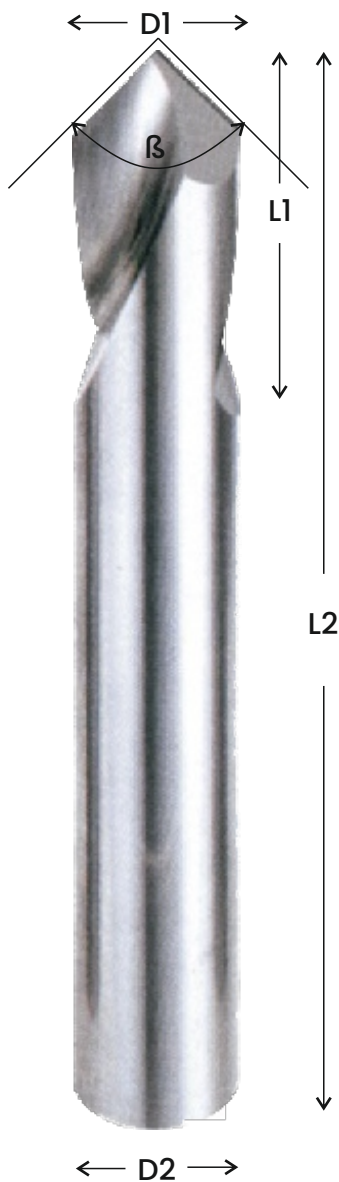
30°

8-20 Bar

Solid Carbide Drill 8D Through Coolant

Description	DIA	FL	OAL	SHK
	D1 m7	L1	L2	D2 h6
JDTCD2F04	4	45	85	6
JDTCD2F05	5	57	95	6
JDTCD2F06	6	57	95	6
JDTCD2F07	7	66	106	8
JDTCD2F08	8	76	114	8
JDTCD2F09	9	95	139	10
JDTCD2F10	10	95	139	10
JDTCD2F11	11	114	162	12
JDTCD2F12	12	114	162	12
JDTCD2F13	13	133	178	14
JDTCD2F14	14	133	178	14
JDTCD2F15	15	152	203	16
JDTCD2F16	16	152	203	16
JDTCD2F17	17	171	223	18
JDTCD2F18	18	171	223	18
JDTCD2F19	19	190	243	20
JDTCD2F20	20	190	243	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



NC SPOT Drill 90°

MG

90°
β

HRC
40

Finishing
& Semi
Finishing

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDSD2F03-90°	3	6	50	3
JDSD2F04-90°	4	8	50	4
JDSD2F06-90°	6	12	60	6
JDSD2F08-90°	8	16	62	8
JDSD2F10-90°	10	20	75	10
JDSD2F12-90°	12	24	75	12
JDSD2F16-90°	16	30	100	16
JDSD2F20-90°	20	30	100	20

NC SPOT Drill 120°

MG

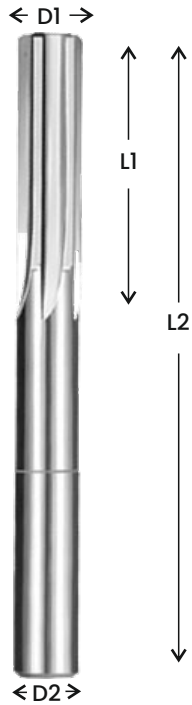
120°
β

HRC
40

Finishing
& Semi
Finishing

Description	Radius	FL	OAL	SHK
	R	L1	L2	D2
JDSD2F03-120°	3	6	50	3
JDSD2F04-120°	4	8	50	4
JDSD2F06-120°	6	12	60	6
JDSD2F08-120°	8	16	62	8
JDSD2F10-120°	10	20	75	10
JDSD2F12-120°	12	24	75	12
JDSD2F16-120°	16	30	100	16
JDSD2F20-120°	20	30	100	20

- Special intermediate diameters to suit component Drg available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS SUPER ALLOYS/ALUMINIUM - ETC



Standard Straight Flute Reamer



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDREA4F03	3 (+0.002)	31	60	4
JDREA4F04	4(+0.002)	42	75	4
JDREA4F05	5(+0.002)	51	86	5
JDREA4F06	6(+0.003)	56	93	6
JDREA6F07	7(+0.003)	68	109	6
JDREA6F08	8(+0.003)	74	117	8
JDREA6F09	9(+0.004)	80	125	9
JDREA6F10	10(+0.005)	86	125	10
JDREA6F12	12(+0.0005)	104	151	12
JDREA6F14	14(+0.006)	106	155	14
JDREA6F16	16(+0.006)	110	160	16

- Intermediate Diameters/Length available as per component size & requirement
- Recommended to use HydroGrip Holders for run out accuracies
- Stock Recommendation of 0.25–0.3mm on Diameter
- Hole Mills recommended / Available to suit for Pre Reaming
- Other ISO tolerance reamers available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS/SUPER ALLOYS/ALUMINIUM - ETC

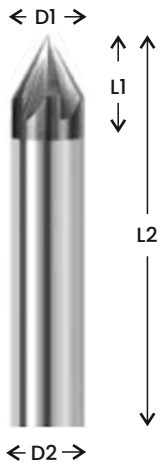


Left Hand Helix Reamer



Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDREA4F03	3 (+0.002)	31	60	4
JDREA4F04	4 (+0.002)	42	75	4
JDREA4F05	5 (+0.002)	51	86	5
JDREA4F06	6 (+0.003)	56	93	6
JDREA4F07	7 (+0.003)	68	109	6
JDREA4F08	8 (+0.003)	74	117	8
JDREA4F09	9 (+0.004)	80	125	9
JDREA4F10	10 (+0.005)	86	125	10
JDREA4F12	12 (+0.0005)	104	151	12
JDREA4F14	14 (+0.006)	106	155	14
JDREA4F16	16 (+0.006)	110	160	16

- Intermediate Diameters/Length available as per component size & requirement
- Recommended to use HydroGrip Holders for run out accuracies
- Stock Recommendation of 0.25-0.3mm on Diameter
- Hole Mills recommended / Available to suit for Pre Reaming
- Other ISO tolerance reamers available as per request
- Please specify component material during ordering - STEEL/FORGING/HARD STEEL/SS/SUPER ALLOYS/ALUMINIUM - ETC



MG

60°
ℓ

HRC
55/65

Finishing
& Semi
Finishing

ALTiN

Chamfer Cutter 60°

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDCHF04-60°	4	8	65	4
JDCHF06-60°	6	12	75	6
JDCHF08-60°	8	15	75	8
JDCHF10-60°	10	15	80	10
JDCHF12-60°	12	15	80	12
JDCHF16-60°	16	20	100	16
JDCHF20-60°	20	20	100	20



MG

90°
ℓ

HRC
55/65

Finishing
& Semi
Finishing

ALTiN

Chamfer Cutter 90°

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDCHF04-90°	4	8	65	4
JDCHF06-90°	6	12	75	6
JDCHF08-90°	8	15	75	8
JDCHF10-90°	10	15	80	10
JDCHF12-90°	12	15	80	12
JDCHF16-90°	16	20	100	16
JDCHF20-90°	20	20	100	20



MG

60°/90°

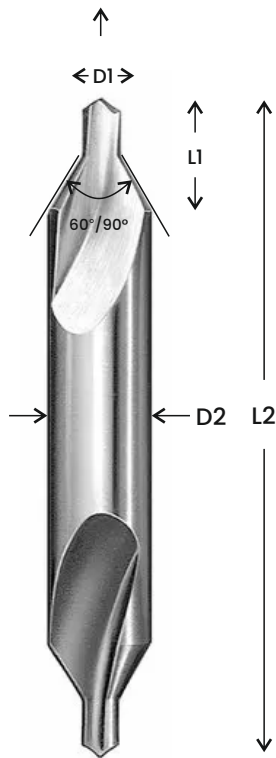
HRC
55/65

ALTiN

Double Chamfer Cutter 90°

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDDCHF08-90°	8	TO SUIT	TO SUIT	8
JDDCHF10-90°	10	TO SUIT	TO SUIT	10
JDDCHF12-90°	12	TO SUIT	TO SUIT	12
JDDCHF14-90°	16	TO SUIT	TO SUIT	16
JDDCHF16-90°	20	TO SUIT	TO SUIT	20

- Special diameters/length available as per request
- Please specify No. of teeth/flute - Z=2/3/4



Solid Carbide Centre Drill 60°

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDCD02060	2	2.5	50	5
JDCD025060	2.5	3.1	50	6
JDCD0315060	3.15	3.9	50	8
JDCD04060	4	5	50	10
JDCD05060	5	6.3	80	12
JDCD060060	6	6.5	80	12

Solid Carbide Centre Drill 90°

Description	DIA	FL	OAL	SHK
	D1	L1	L2	D2
JDCD02090	2	2.5	50	5
JDCD025090	2.5	3.1	50	6
JDCD0315090	3.15	3.9	50	8
JDCD04090	4	5	50	10
JDCD05090	5	6.3	80	12
JDCD060090	6	6.5	80	12

• Special diameters/length/angle - available as per request



Solid Carbide Corner Rounding Cutter

Description	Corner Radius	OAL	SHK
	R1	L2	D2
JDCR0104	0.5	50	4
JDCR0204	1	50	4
JDCR0306	1.5	50	6
JDCR0406	2	50	6
JDCR0508	2.5	60	8
JDCR0608	3	60	8
JDCR0812	4	75	12
JDCR1016	5	100	16
JDCR1216	6	100	16

• Special diameters/length/radius - available as per request



Solid Carbide Dove Tail Cutters

Description	DIA	α°	L1	L2	d1	OAL(L)	D	Flutes
JDDT4F06	6	90°	1.5	6	3	50	6	4
JDDT4F08	8	90°	2	8	4	60	8	4
JDDT4F10	10	90°	2.5	10	5	75	10	4
JDDT4F12	12	90°	3	12	6	75	12	4
JDDT4F14	14	90°	3.5	14	7	80	14	4
JDDT4F16	16	90°	4	16	8	80	16	4
JDDT4F18	18	90°	4.5	18	9	100	18	4
JDDT4F20	20	90°	5	20	10	100	20	4

1. We can manufacture DoveTail Cutters up to 25mm and 32mm as well.
2. For Diameters 40mm and above we provide insert type solutions.
3. The Neck Dia d1 & neck length can be according to your requirements as well.
4. Various Including angle can be made to suit.
5. Coatings suitable for Steel, Hard Steel, Stainless Steel, Titanium and Nickel based alloys.

REGULAR DRILL (CUTTING CONDITION)

WORK MATERIAL	MILD STEELS SS		CARBON STEELS S50C-HB200		ALLOY STEELS SCM<HRC30		PREHARDEN STEELS SKD,HPM-HRC45		CAST IRON FC			
V. C.	50-120M/MIN.		50-120M/MIN.		50-100M/MIN.		15-30M/MM		50-100M/MM			
DRILL DIMETER	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)
3.0	9,000	0.08-0.12	8,000	0.06-0.09	6,900	0.06-0.09	2,100	0.05-0.07	8,000	0.04-0.06		
4.0	6,800	0.10-0.16	6,000	0.08-0.12	5,200	0.08-0.12	1,600	0.06-0.09	6,000	0.06-0.08		
5.0	5,400	0.13-0.20	4,800	0.10-0.15	4,200	0.10-0.15	1,300	0.08-0.11	4,800	0.07-0.11		
6.0	4,500	0.15-0.24	4,000	0.12-0.18	3,500	0.12-0.18	1,100	0.09-0.14	4,000	0.08-0.12		
8.0	3,400	0.20-0.32	3,000	0.16-0.24	2,600	0.16-0.24	800	0.12-0.18	3,000	0.11-0.17		
10.0	2,700	0.25-0.40	2,400	0.20-0.30	2,100	0.20-0.30	650	0.17-0.21	2,400	0.14-.021		
12.0	2,200	0.30-0.47	2,000	0.24-0.35	1,750	0.24-0.35	550	0.19-0.24	2,000	0.17-.025		
14.0	1,950	0.35-0.53	1,700	0.28-0.40	1,500	0.28-0.40	450	0.23-0.28	1,700	0.20-0.28		
16.0	1,700	0.40-0.58	1,500	0.32-0.44	1,300	0.32-0.44	400	0.24-0.31	1,500	0.22-0.30		
20.0	1,350	0.50-0.67	1,200	0.40-0.52	1,050	0.40-0.52	320	0.30-0.40	1,200	0.28-0.36		

1. This cutting condition applies to use water soluble fluids.
2. Recommend the hole having a depth up to 3 times its diameter
3. Select cutting condition according to the rigidity of machine of work clamp state.
4. When attaching a drill, use a clean and flawless collet, keet the drill deglection within 0.02mm

THROUGHT COOLENT DRILL (CUTTING CONDITION)

WORK MATERIAL	MILD STEELS SS		CARBON STEELS S50C-HB200		ALLOY STEELS SCM<HRC30		PREHARDEN STEELS SKD,HPM-HRC45		CAST IRON FC			
V. C.	50-120M/MIN.		50-120M/MIN.		50-100M/MIN.		15-30M/MM		50-100M/MM			
DRILL DIMETER	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)	SPEED (MIN)	FEED (MM/REV)
3.0	12,000	0.08-0.12	12,500	0.06-0.09	8,000	0.06-0.09	3,600	0.05-0.07	9,000	0.04-0.06		
4.0	9,500	0.10-0.16	10,000	0.08-0.12	6,000	0.08-0.12	3,000	0.06-0.09	7,000	0.06-0.08		
5.0	7,600	0.13-0.20	8,000	0.10-0.15	5,000	0.10-0.15	2,500	0.08-0.11	6,800	0.07-0.11		
6.0	6,400	0.15-0.24	6,700	0.12-0.18	4,000	0.12-0.18	2,200	0.09-0.14	5,000	0.08-0.12		
8.0	4,800	0.20-0.32	5,200	0.16-0.24	3,200	0.16-0.24	1,600	0.12-0.18	4,000	0.11-0.17		
10.0	3,800	0.25-0.40	4,200	0.20-0.30	2,500	0.20-0.30	1,300	0.17-0.21	3,400	0.14-.021		
12.0	3,200	0.30-0.47	3,400	0.24-0.35	2,200	0.24-0.35	1,100	0.19-0.24	3,000	0.17-.025		
14.0	2,700	0.35-0.53	2,900	0.28-0.40	1,500	0.28-0.40	1,000	0.23-0.28	2,700	0.20-0.28		
16.0	2,100	0.40-0.58	2,250	0.32-0.44	1,300	0.32-0.44	800	0.24-0.31	2,500	0.22-0.30		
20.0	1,800	0.50-0.67	2,000	0.40-0.52	1,200	0.40-0.52	700	0.30-0.40	2,200	0.28-0.36		

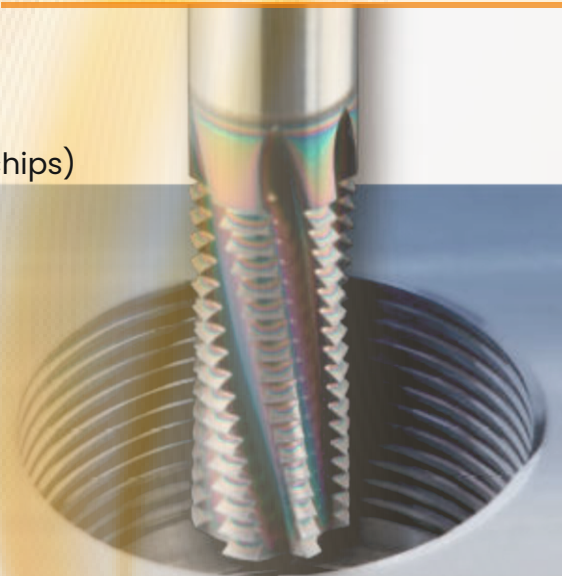
1. This cutting condition applies to use water soluble fluids.
2. Recommend the hole having a depth up to 3 times its diameter
3. Select cutting condition according to the rigidity of machine of work clamp state.
4. When attaching a drill, use a clean and flawless collet, keet the drill deglection within 0.01mm

THREAD-MILL SERIES

Threading with maximum confidence, depth, versatility and economy. J D Cutting Tools offers variety of solid carbide thread milling solutions like the Metric/UN/NPT/BSP/BSPT full thread profile carbide thread mills & miniature size thread mills.

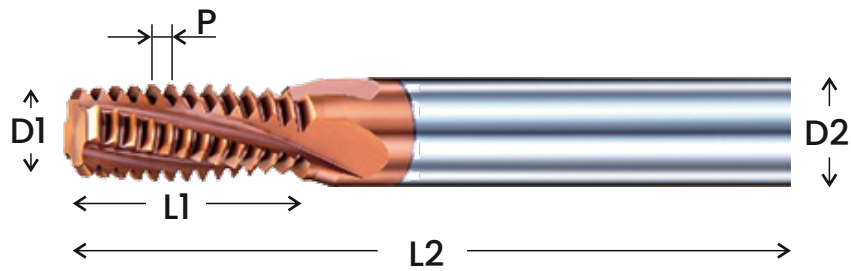
THREAD MILLING TECHNOLOGY ADVANTAGES

- Produce threads with excellent form, finish, and dimensional accuracy Easy machining of difficult materials
- Eliminate the possibilities and consequences of tap breakage
- Achieve full-bottom threading and precise thread depth control Optimum positional accuracy
- Pitch diameter can be controlled by CNC offset
- One tool for right-hand and left-hand threads
- One tool for internal & external threading
- One tool for through or blind holes
- Produces small controllable chips (no clogging of chips)
- Less cutting pressure for thin walled parts



THREADMILL SERIES

Same Tool For Internal-External Thread

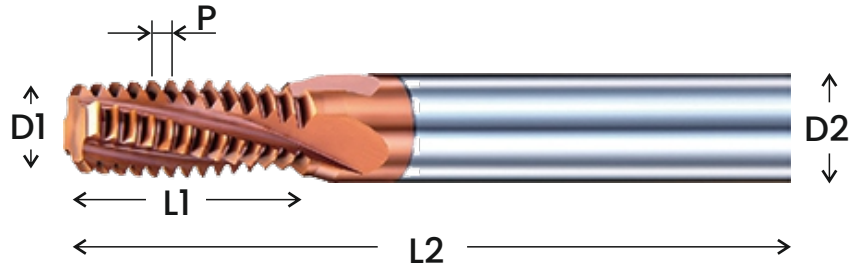


Solid Carbide Threadmills ISO Metric Series

Description	Pitch	M coarse	M Fine	D1	D2	Flutes	L1	L2
JDTM06022-0.5P	0.5	M3	M4	2.2	6	3	5.3	58
JDTM06038-0.5P	0.5		M5	3.8	6	3	10.3	58
JDTM06053-0.5PL	0.5		M6,M8	5.3	6	4	10.3	58
JDTM06031-0.7P	0.7	M4		3.1	6	3	7.4	58
JDTM06045-0.75P	0.75		M6,M8	4.5	6	3	10.1	58
JDTM0605-0.75P	0.75		M6,M8	5	6	3	13.1	58
JDTM06036-0.8P	0.8	M5		3.6	6	3	9.2	58
JDTM0604-0.8P	0.8	M5		4	6	3	13.2	58
JDTM0604-1.0P	1	M6	M8	4	6	3	10.5	58
JDTM0604-1.0P	1	M6	M8	4	6	3	14.5	58
JDTM0606-1.0P	1		M9	6	6	3	12.5	58
JDTM0808-1.0P	1		M10	8	8	4	16.5	64
JDTM0605-1.25P	1.25	M8	M10	5	6	3	14.4	58
JDTM0605-1.25P	1.25	M8	M10	5	6	3	19.4	58
JDTM0807-1.5P	1.5	M10	M12	7	8	3	17.3	64
JDTM0807-1.5P	1.5	M10	M12	7	8	3	24.8	76
JDTM010010-1.5P	1.5		M14	10	10	4	21.8	73
JDTM012012-1.5P	1.5		M14	12	12	4	29.3	84
JDTM014014-1.5P	1.5		M16,M18	14	14	4	32.3	84
JDTM016016-1.5P	1.5		M20	16	16	6	33.8	105
JDTM0808-1.75P	1.75	M12		8	8	3	20.1	64
JDTM0808-1.75P	1.75	M12		8	8	3	28.9	76
JDTM010010-2.0P	2	M14	M17	10	10	3	27	73
JDTM010010-2.0P	2	M14	M17	10	10	3	39	105
JDTM012012-2.0P	2	M16	M18,M20	12	12	4	27	84
JDTM0128014-2.0P	2	M16	M18,M20	12.8	14	4	39	105
JDTM020020-2.0P	2		M26	20	20	6	41	105
JDTM014014-2.5P	2.5	M18,M20		14	14	4	33.8	84
JDTM014014-2.5P	2.5	M18,M20		14	14	4	48.8	105
JDTM016016-3.0P	3	M24	M28	16	16	3	40.5	105
JDTM016016-3.0PL	3	M24	M28	16	16	3	58.5	120
JDTM020020-3.0P	3	M27	M28,M30	20	20	4	43.5	105

THREADMILL SERIES

Same Tool For Internal-External Thread

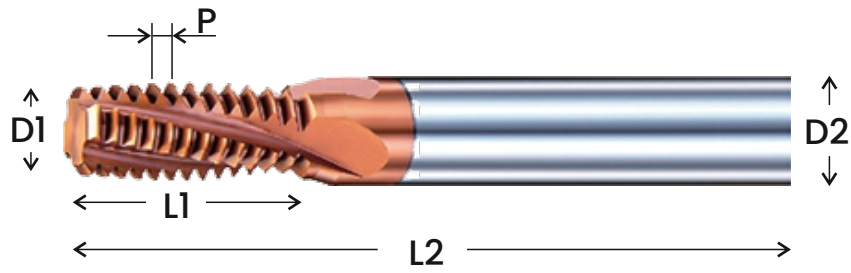


Solid Carbide ThreadMills UN Series

Description	Pitch TPI	UNC	UNF	UNEF	D1	D2	Flutes	L1	L2
JDTM06025-40P	40	5			2.5	6	3	6	58
JDTM06032-32P	32	8	10	12	3.2	6	3	6.8	58
JDTM0604-28P	28		1/4		4	6	3	11.3	58
JDTM06052-28P	28		1/4		5.2	6	3	15	58
JDTM0606-28P	28			7/16-1/2	6	6	3	14.1	58
JDTM0605-24P	24		5/16		5	6	3	14.3	58
JDTM0807-24P	24		3/8	9/16-5/8	7	8	3	20.6	64
JDTM06045-20P	20	1/4			4.5	6	3	12.1	58
JDTM0807-20P	20		7/16-1/2		7	8	3	21	64
JDTM012012-20P	20			3/4 - 1	12	12	5	27.3	84
JDTM0605-18P	18	5/16			5	6	3	14.8	58
JDTM0606-18P	18	5/16			6	6	3	20.5	58
JDTM010010-18P	18		9/16-5/8	11/8-15/8	10	10	4	26.1	73
JDTM0606-16P	16	3/8			6	6	3	16.7	58
JDTM08074-16P	16	3/8			7.4	8	3	24.6	64
JDTM012012-16P	16		3/4		12	12	4	31	84
JDTM0807-14P	14	7/16			7	8	3	20.9	64
JDTM010085-14P	14	7/16			8.5	10	3	28.1	73
JDTM016015-14P	14		7/8		15	16	5	37.2	105
JDTM0808-13P	13	1/2			8	8	3	22.5	64
JDTM010098-13P	13	1/2			9.8	10	4	32.2	73
JDTM010010-2P	12	9/16			10	10	3	26.5	73
JDTM0120116-12P	12	9/16			11.6	12	4	37	84
JDTM016016-12.0P	12		1-1 1/2		16	16	5	41.3	105
JDTM010010-11P	11	5/8			16	10	3	28.9	73
JDTM012	10	5/8			12	12	4	38.1	84
JDTM012	10	3/4			12	12	3	34.3	84
JDTM016	10	3/4			14.7	16	5	49.5	105
JDTM016	9	7/8			15	16	3	38.1	105
JDTM016016-8.0P	8	1			16	16	3	42.9	105
JDTM016020-7.0P	7	11/8 - 11/4			20	20	4	45.3	105

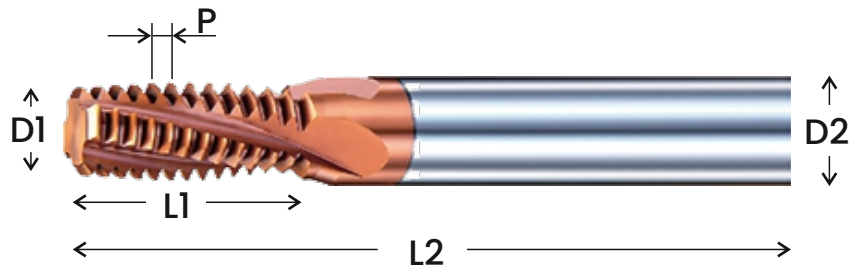
THREADMILL SERIES

Same Tool For Internal-External Thread



G 55 DEG BSF, BSP

Description	Pitch (TPI)	Standard	D1	D2	Flutes	L1	L2
JDTM0606-28P	28	G1/16-G1/8	6	6	3	9.5	58
JDTM0808-19P	19	G1/4-3/8	8	8	3	14	64
JDTM012012-14P	14	G1/2-7/8	12	12	4	19	84
JDTM012012-14PL	14	G1/2-7/8	12	12	4	26.3	84
JDTM012012-11P	11	G>-1	12	12	3	24.2	84
JDTM016016-11P	11	G>-1	16	16	4	38.1	105
JDTM020020-11P	11	G>-1	20	20	5	47.3	105

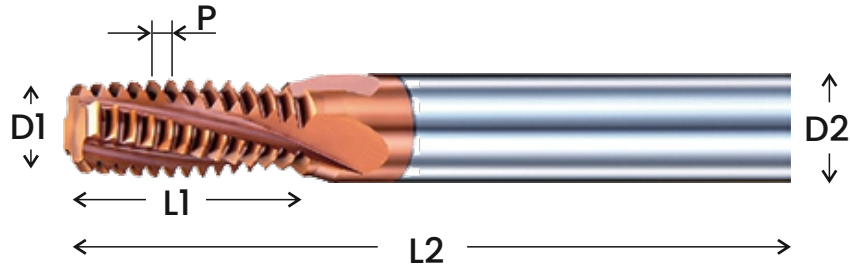


BSPT

Description	Pitch (TPI)	Standard	D1	D2	Flutes	L1	L2
JDTM0606-28BSPT	28	RC1/16-1/8	6	6	3	9.5	58
JDTM0808-19BSPT	19	RC1/4-3/8	8	8	3	14	64
JDTM012012-14BSPT	14	RC1/2-7/8	12	12	4	19.1	84
JDTM016016-11BSPT	11	RC1-2	16	12	4	28.9	105

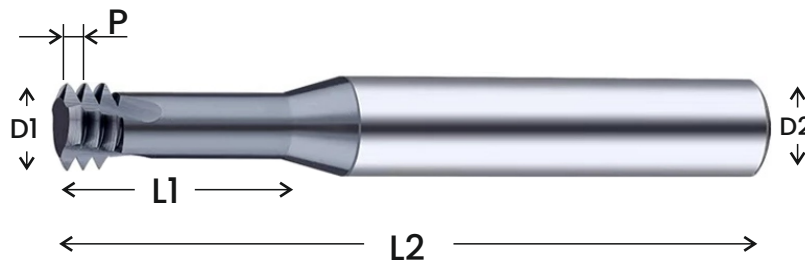
THREADMILL SERIES

Same Tool For Internal-External Thread



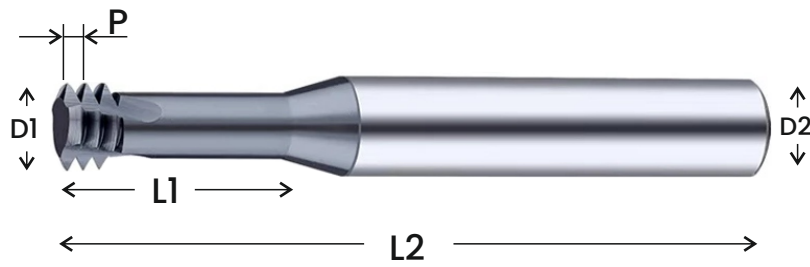
NPT

Description	Pitch (TPI)	Standard	D1	D2	Flutes	L1	L2
JDTM0606-27NPT	27	1/16-1/8	6	6	3	9.9	58
JDTM0808-18NPT	18	1/4-3/8	8	8	3	14.8	64
JDTM012012-14NPT	14	1/2-3/4	12	12	4	20.9	84
JDTM012012-11.5NPT	11.5	1-2	16	16	4	27.6	105
JDTM012012-8NPT	8	$\geq 2\ 1/2$	20	20	4	39.7	105



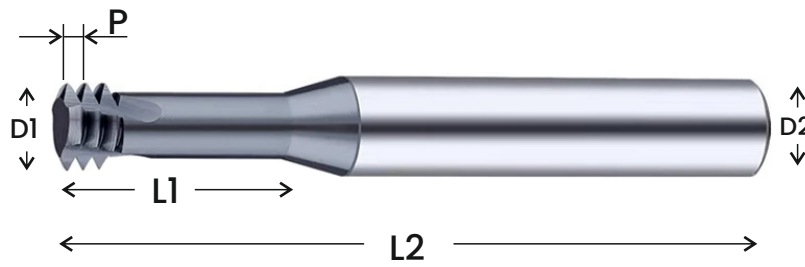
Solid Carbide Mini Long Neck Threadmill ISO Metric Series (Internal)

Description	Pitch	M coarse	M fine	D1	D2	Flutes	L1	L2
MINI-JDTM0602-5-0.45P	0.45	M2.5		1.95	6	3	5.5	58
MINI-JDTM0602-5L-0.45P	0.45	M2.5		1.95	6	3	5.5	105
MINI-JDTM0602-7-0.45P	0.45	M2.5		1.95	6	3	7.5	58
MINI-JDTM0602-8L-0.45P	0.45	M2.5		1.95	6	3	8	105
MINI-JDTM0602-10-0.45P	0.45	M2.5		1.95	3	3	10.5	39
MINI-JDTM06024-6-0.5P	0.5	M3		2.37	6	3	6.5	58
MINI-JDTM06024-6L-0.5P	0.5	M3		2.37	6	3	6.5	105
MINI-JDTM06024-9-0.5P	0.5	M3		2.37	6	3	9.5	58
MINI-JDTM06024-9L-0.5P	0.5	M3		2.37	6	3	9.5	105
MINI-JDTM03024-12-0.5P	0.5	M3		2.4	3	3	12.5	39
MINI-JDTM03024-15-0.5P	0.5	M3		2.4	3	3	15.5	39
MINI-JDTM06034-8-0.5P	0.5		M4,M5	3.4	6	4	8.5	58
MINI-JDTM06034-12-0.5P	0.5		M4,M5	3.4	6	4	12.5	58
MINI-JDTM06054-20-0.5P	0.5		M6,M7	5.35	6	4	20	58
MINI-JDTM06028-7-0.6P	0.6	M3.5		2.75	6	3	7.5	58
MINI-JDTM06028-10-0.6P	0.6	M3.5		2.75	6	3	10.5	58
MINI-JDTM06031-9-0.7P	0.7	M4		3.1	6	3	9	58
MINI-JDTM06031-12-0.7P	0.7	M4		3.1	6	3	12.5	58
MINI-JDTM06031-12L-0.7P	0.7	M4		3.1	6	3	12.5	105
MINI-JDTM06031-16-0.7P	0.7	M4		3.1	6	3	16.7	58
MINI-JDTM06034-9-0.75P	0.75	M4.5	M5	3.4	6	3	9.8	58
MINI-JDTM06049-12-0.75P	0.75		M6	4.9	6	4	12.8	58
MINI-JDTM0808-25-0.75P	0.75		M10,M12	8	8	4	25	64
MINI-JDTM06038-12-0.8P	0.8	M5		3.8	6	3	12.5	58
MINI-JDTM06038-16-0.8P	0.8	M5		3.8	6	3	16	58
MINI-JDTM06038-16L-0.8P	0.8	M5		3.8	6	3	16	105
MINI-JDTM0604-20-0.8P	0.8	M5		4	6	3	20.8	58
MINI-JDTM06047-14-1P	1	M6	M8	4.65	6	3	14	58
MINI-JDTM06047-20-1P	1	M6	M8	4.65	6	3	20	58
MINI-JDTM06047-20-1P	1	M6	M8	4.65	6	3	20	105
MINI-JDTM06035-15L-24UN	1	M6	M8	4.8	6	3	25	58



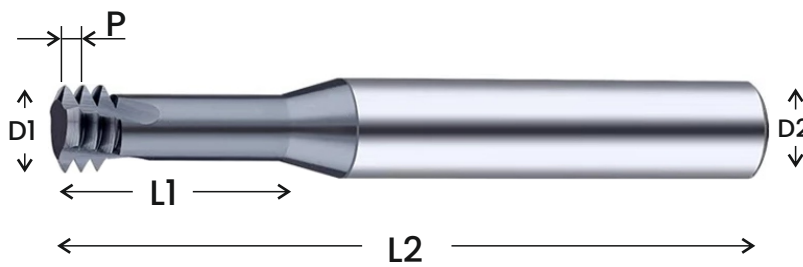
Solid Carbide Mini Long Neck Threadmill ISO Metric Series (Internal)

Description	Pitch	M coarse	M fine	D1	D2	Flutes	L1	L2
MINI-JDTM0808-31-1P	1		M10,M12	8	8	4	31	64
MINI-JDTM0606-18-1.25P	1.25	M8	M10,M12	6	6	3	18	58
MINI-JDTM0606-24-1.25P	1.25	M8	M10,M12	6	6	3	24	58
MINI-JDTM0606-24L-1.25P	1.25	M8	M10,M12	6	6	3	24	105
MINI-JDTM08064-33-1.25P	1.25	M8	M10,M12	6.4	8	3	33.5	64
MINI-JDTM08078-23-1.5P	1.5	M10	M14,M16	7.8	8	3	23	64
MINI-JDTM08078-31-1.5P	1.5	M10	M14,M16	7.8	8	3	31.5	64
MINI-JDTM08078-31L-1.5P	1.5	M10	M14,M16	7.8	8	3	31.5	105
MINI-JDTM0808-41-1.5P	1.5	M10	M14,M16	8	8	3	41.5	76
MINI-JDTM1009-26-1.75P	1.75	M12		9	10	3	26	73
MINI-JDTM1009-37-1.75P	1.75	M12		9	10	3	37.8	73
MINI-JDTM1010-30-2P	2	M14	M17	10	10	4	30	73
MINI-JDTM12118-35-2P	2	M16	M18,M20	11.8	12	4	35	84
MINI-JDTM12118-50-2P	2	M16	M18,M20	11.8	12	4	50	105
MINI-JDTM1615-43-2P	2.5	M20		15	16	5	43	105



Solid Carbide Mini Long Neck Threadmill UN Series (Internal)

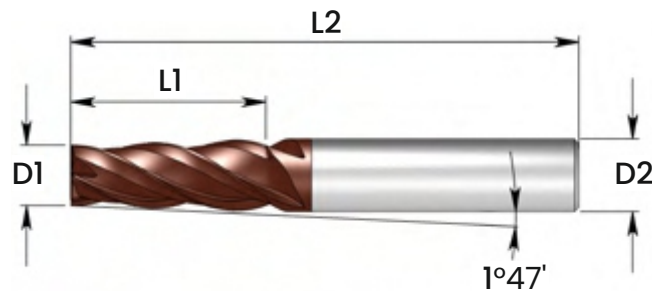
Description	Pitch (TPI)	UNC	UNF	D1	D2	Flutes	L1	L2
MINI-PJDM06021-6-40UN	40	4		2.1	6	3	6.3	58
MINI-PJDM06021-6L-40UN	40	4		2.1	6	3	6.3	105
MINI-PJDM03021-8-40UN	40	4		2.1	3	3	8	39
MINI-PJDM06021-8-40UN	40	4		2.1	6	3	8	58
MINI-PJDM06021-8L-40UN	40	4		2.1	6	3	8	105
MINI-PJDM03021-12-40UN	40	4		2.1	3	3	12	39
MINI-PJDM06024-7-40UN	40	5	6	2.45	6	3	7	58
MINI-PJDM06024-9-40UN	40	5	6	2.45	6	3	9.6	58
MINI-PJDM06033-9-36UN	36		8	3.3	6	3	9	58
MINI-PJDM06025-7-32UN	32	6		2.55	6	3	7.1	58
MINI-PJDM06025-7L-32UN	32	6		2.55	6	3	7.1	105
MINI-PJDM03025-10-32UN	32	6		2.55	3	3	10.5	39
MINI-PJDM06025-10-32UN	32	6		2.55	6	3	10.5	58
MINI-PJDM06025-10L-32UN	32	6		2.55	6	3	10.5	105
MINI-PJDM03025-14-32UN	32	6		2.55	3	3	14.8	39
MINI-PJDM06032-9-32UN	32	8		3.2	6	3	9.5	58
MINI-PJDM06032-9L-32UN	32	8		3.2	6	3	9.5	105
MINI-PJDM06032-12-32UN	32	8		3.2	6	3	12.5	58
MINI-PJDM06032-12L-32UN	32	8		3.2	6	3	12.5	105
MINI-PJDM06032-17-32UN	32	8		3.2	6	3	17.5	58
MINI-PJDM06037-10-32UN	32		10	3.7	6	3	10.5	58
MINI-PJDM06037-15-32UN	32		10	3.7	6	3	15	58
MINI-PJDM06037-15L-32UN	32		10	3.7	6	3	15	105
MINI-PJDM06037-20-32UN	32		10	3.7	6	3	20	58
MINI-PJDM06042-11-28UN	28		12	4.2	6	3	11	58
MINI-PJDM0605-14-28UN	28		1/4	5	6	3	14.5	58
MINI-PJDM0605-19-28UN	28		1/4	5	6	3	19	58
MINI-PJDM0605-19L-28UN	28		1/4	5	6	3	19	105
MINI-PJDM06035-10-24UN	24	10,12		3.5	6	3	10.6	58
MINI-PJDM06035-15-24UN	24	10,12		3.5	6	3	15.5	58



Solid Carbide Mini Long Neck Threadmill UN Series (Internal)

Description	Pitch (TPI)	UNC	UNF	D1	D2	Flutes	L1	L2
MINI-PJDM06035-15L-24UN	24	10,12		3.5	6	3	15.5	105
MINI-PJDM08066-17-24UN	24		5/16,3/8	6.6	8	3	17	64
MINI-PJDM08066-24-24UN	24		5/16,3/8	6.6	8	3	24	64
MINI-PJDM06047-14-20UN	20	1/4		4.75	6	3	14	58
MINI-PJDM06047-14L-20UN	20	1/4		4.75	6	3	14	105
MINI-PJDM06047-19-20UN	20	1/4		4.75	6	3	19	58
MINI-PJDM06047-19L-20UN	20	1/4		4.75	6	3	19	105
MINI-PJDM0808-25-20UN	20		7/16	8	8	3	25	64
MINI-PJDM0808-34-20UN	20		7/16	8	8	3	34.6	64
MINI-PJDM0606-17-18UN	18	5/16		6	6	3	17	58
MINI-PJDM0606-23-18UN	18	5/16		6	6	3	23	58
MINI-PJDM1212-35-18UN	18		5/8	12	12	4	35	84
MINI-PJDM1212-49-18UN	18		5/8	12	12	4	49	105
MINI-PJDM08067-22-16UN	16	3/8		6.7	8	3	22	64
MINI-PJDM08067-30-16UN	16	3/8		6.7	8	3	30.2	64
MINI-PJDM08077-25-14UN	14	7/16		7.7	8	3	25	64
MINI-PJDM08077-35-14UN	14	7/16		7.7	8	3	35.2	64
MINI-PJDM10092-27-13UN	13	1/2		9.2	10	3	27.5	73
MINI-PJDM10092-40-13UN	13	1/2		9.2	10	3	40.1	73
MINI-PJDM12105-31-12UN	12	9/16		10.5	12	3	31.5	84
MINI-PJDM12105-45-12UN	12	9/16		10.5	12	3	45	105
MINI-PJDM12114-34-11UN	11	5/8		11.4	12	3	34.5	84
MINI-PJDM12114-50-11UN	11	5/8		11.4	12	3	50	105
MINI-PJDM16144-41-10UN	10	3/4		14.4	16	4	41.5	105
MINI-PJDM16144-59-10UN	10	3/4		14.4	16	4	59.7	105

Solid carbide tapered end mills are used for milling preparation of conical threads before the thread milling operation.

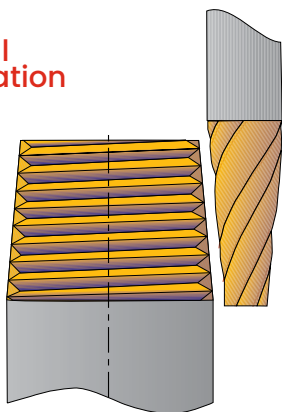


Description	D2	D1	L1	L2	No. of Flutes	Size
JDTEM4F-D06-12	6	5.2	12	58	4	NPT 1/16" - 1/8" NPTF 1/16" - 1/8" BSPT 1/16" - 1/8"
JDTEM4F-D10-24	10	8.5	24	73	4	NPT 1/4" - 1" NPTF 1/4" - 1" BSPT 1/4" - 1"
JDTEM4F-D12-32	12	10	32	84	4	NPT 1/4" - 3" NPTF 1/4" - 3" BSPT 1/4" - 3"

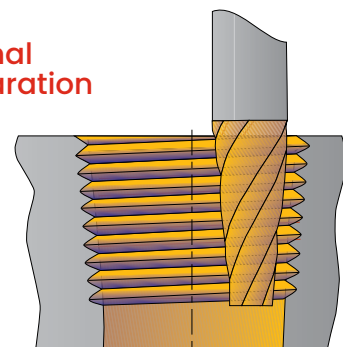
Advantages :

- » Increases the tool life of Threadmill cutters.
- » Equal & uniform load along the cutting edge of the Threadmill cutters.
- » Shorter machining time during Threadmilling operation, due to the tapered preparation.
- » Same tool for internal and external preparation.

External Preparation



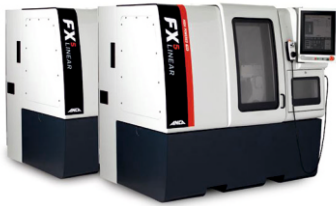
Internal Preparation





Ecogrind LX5 Machine :

- The best choice for a wide variety of tools.
- Dedicated to the manufacturing and regrinding of round tools in one setup
- Designed with well balanced & optimum axes configuration, superior rigidity & adequate power
- Ensures high productivity & impeccable precision.
- User friendly – with versatile CNC controller combined with menu driven software
- Over 100 installations



ANCA FX5 Linear :

The FX5 Linear offers automation and the versatility of more options, to meet the needs of increased productivity. The FX5 Linear has a wheel spindle power of 12 kW and also has an automatic 2 station wheel changer for an increased range of wheels and tool types. With the optional automatic headstock clamping, it can provide unmanned operation and the flexibility to handle small volumes and mixed batches of tools.



Grindstar w4+ :

The FX5 Linear offers automation and the versatility of more options, to meet the needs of increased productivity. The FX5 Linear has a wheel spindle power of 12 kW and also has an automatic 2 station wheel changer for an increased range of wheels and tool types. With the optional automatic headstock clamping, it can provide unmanned operation and the flexibility to handle small volumes and mixed batches of tools.

The w4+ is designed especially for profile & standard carbide tools to meet the standards of tool production & tool re-sharpening in small batch quantities.



EzeeGrind Plus Machine :

Suitable for resharpener of standard round tools, taps, S & F cutters. All Linear axes ball screws are directly coupled to AC servomotors. Cast iron base. Profsim & e-Gris menu driven software modules.



Walter Machine :

The FX5 Linear offers automation and the versatility of more options, to meet the needs of increased productivity. The FX5 Linear has a wheel spindle power of 12 kW and also has an automatic 2 station wheel changer for an increased range of wheels and tool types. With the optional automatic headstock clamping, it can provide unmanned operation and the flexibility to handle small volumes and mixed batches of tools.



Micromatic Cylindrical Grinding Machine :

A Hydraulic Cylindrical grinding machine for External, Internal or Face grinding of large or heavy components in small to medium Production batches. Highly precise & available with many optional accessories to grind large variety of components. The machine is available in only External, only Internal or Universal configurations in automatic version only.



Centerless Grinder :

Obtaining consistent and quality results from the Centerless Grinding Process, need knowledge of the basic fundamental. Most application difficulties associated with Centerless Grinding arise from a confusion of the basics. This is why knowing how the Centerless Process works and how to use it get most of it in your shop.



AGILE Laser Marking Machine

Laser Marking Machine Our range of Laser Marking Machine are permanent accurate faster and flexible method of marking It can mark Logo Alpha numeric Serial number Bar code 2D matrix code Image etc Fiber Laser Marking can be useful for various industries like Automobile Jewellery Surgical Tooling Electrical Electronic Kitchenware Hardware Bath fitting Giftware etc Laser Marking Machine comes with 10 20 40 W Laser Power amp options of marking area of 100 x 100 mm 150 x 150 mm



Cone Grinding Machine :

We have carved a niche amongst the most trusted names in this business and are engaged in offering wide assortment of Cone Type Grinding Machine to our customers. Our offered product is highly acknowledged by customers for its long service life, smooth functioning, optimum result and many other features. Cone Type Grinding Machine is available at pocket friendly price.



EDM Spark Erosion Machine :

Spark Erosion, also known as electrical discharge machining, is a manufacturing process which creates a specific shape using electrical discharges (sparks). Spark erosion removes material from a piece with current discharges between two electrodes that are separated by a dielectric liquid that is subject to voltage.



Micromatic Cylindrical Grinding Machine :

A Hydraulic Cylindrical grinding machine for External, Internal or Face grinding of small components in small to medium Production



Optical Profile Projector :

Profile projector is widely used for complex shape stampings, gears, cams, threads and comparing the measured contour model. It's easy to use and highly efficient. It is a commonly used measurement of optical instruments.

Thus, profile projector is widely used in major machinery manufacturing including aviation, aerospace industry, watches and clocks, electronics, instrumentation industry, research institutes and detection metering stations at all levels and etc.



Profile Projector Grinder :

Next-generation machine equipped with a digital projector, inheriting the goodness of the conventional projector and creating new value



SIPCON Optical Profile Projector :

In simple optical systems, the image on the profile projector screen is both upside down and reversed. For symmetrical parts, this system is best suited as there is no difference in both the horizontal and the vertical mirror images.



**Siperoni
STP Magis 400 :**



The SPERONI STP MAGIS tool presetters and measuring systems have revolutionized the value of tool measurement. The innovative MAGIS SIMPLE VISION control delivers all of the needed measuring features and functions in a user-friendly, clean, and trouble-free single-screen user interface with unmatched ergonomic solutions.

The result - is better parts, longer tool life, and less spindle downtime.



Tool in Machine :

A machine tool is a machine for handling or machining metal or other rigid materials, usually by cutting, boring, grinding, shearing, or other forms of deformations. Machine tools employ some sort of tool that does the cutting or shaping.

Calculation For Cutting Speed, Spindle Speed & Feed

$$\text{Cutting Speed (Vc)} = \frac{\pi \times D \times N}{100}$$

$$\text{Spindle Speed (n)} = \text{Vc} \div \pi \div D \times 1,000$$

$$\text{Feed (Vf)} = n \times fz \times Z$$

$$\text{Feed Per Tooth (fz)} = \frac{\text{Vf}}{n \times Z}$$

Vc = Cutting Speed (m/min)

π = 3.14 The Circular Constant

D = Diameter (mm)

n = Spindle Speed (min^{-1})

Vf = Feed (mm/min)









fz = Feed per Tooh (mm/tooth)

Z = Number of Flutes

ap = Axial Depth of Cut

ae = Radial Depth of Cut (mm)

Selection of Number of Flute

	2-Flutes	3-Flutes	4-Flutes	6-Flutes
Slotting				
Side Milling				

Generally 2-flutes & 3-flutes are selected for slotting because of the larger chip pocket. 4-flutes & 6-flutes are recommended for side milling as no promble of chip disposal.

Feed Per Tooth (fz)

Feed Per Tooth is an important element for efficient machining which should be determined by parameters such as tool diameter, type, work material, cutting machine, rigidity of tool holder, machining configuration, accuracy & cutting depth.

Diameter (mm)	Feed Per Tooth (mm/tooth)	
	2-Flutes	4-Flutes
1	0.001 ~ 0.005	
6	0.02 ~ 0.04	0.01 ~ 0.03
10	0.04 ~ 0.08	0.03 ~ 0.06
20	0.08 ~ 0.12	0.06 ~ 0.1

Troubleshooting For Metal Cutting Operation

Symptoms Of Troubles	Cause	Solution
Chattering	Excessive Spindle Speed Excessive Feed Excessive Long Of Effective Length Or Overhang Of End Mill Work Piece Is Not Firmly Clamped Wear Of Cutting Edge Progressed Excessive Chucking Runout	Reduce Spindle Speed / RPM Reduce Feed Adjust Effective Length And Overhang As Short As Possible Clamped Work Piece Firmly Use New End Mill Or Regrind Adjust Chucking Runout
Breakage Of End Mill	Excessive Depth Of Cut Chips Clogged Excessive Feed Per Tooth Wear Of Cutting Edge Progressed	Reduce Depth Of Cut Adjust Coolant Nozzie To Right Direction To Dispose Chips Reduce Feed Per Tooth Use New End Mill Or Regrind
Chipping Of Cutting Edge	Excessive Depth Of Cut Excessive Feed Work Piece Is Not Firmly Clamped Excessive Spindle Speed Excessive Long Of Effective Length Or Overhang Of End Mill Wear Of Cutting Edge Progressed Bullt Up Edge/excessive Cooling	Reduce Depth Of Cut Reduce Feed Clamped Work Piece Firmly Reduce Spindle Speed Adjust Effective Length And Overhang As Short As Possible Use New End Mill Or Regrind Choose Appropriate Coating Use Air Blow Or Oil Mist
Abnormal Wear	Excessive Spindle Speed Tool Low Feed	Reduce Spindle Speed / RPM Increase Feed
Clogging & Depositing	Chips Are Not Well Disposed Excessive Feed Excessive Depth Of Cut Inappropriate Number Of Flute Wear Of Cutting Edge Progressed	Adjust Coolant Nozzie To Right Direction To Dispose Chips Reduce Feed Reduce Depth Of Cut Use Fewer Flutes End Mill Use New End Mill Or Regrind
Deflection Of End Mill	Excessive Feed Excessive Depth Of Cut Excessive Long Of Effective Length Or Overhang Of End Mill Large Helix Angle Of Flutes	Reduce Feed Reduce Depth Of Cut Adjust Effective Length And Overhang As Short As Possible Use Smaller Helix Angle
Burr On Finished Surface	Wear Of Cutting Edge Progressed Small Helix Angle Of Flutes Excessive Depth Of Cut	Use new end mill or regrind Use smaller helix angle Reduce depth of cut
Poor Surface Roughness	Wear Of Cutting Edge Progressed Chips Bite Excessive Feed Excessive Long Of Effective Length Or Overhang Of End Mill Too Low Spindle Speed Stock Removals Vary For Finishing Excessive Chucking Runout	Use New End Mill Or Regrind Use Coolant To Remove Chips Reduce Feed Adjust Effective Length And Overhang As Short As Possible Increase Spindle Speed Improve Semi-finishing Process Adjust Tool Runout
Poor Machining Accuracy	Inconsistent Thermal Extension Of Spindle Stock Removals Vary For Finishing Excessive Feed Excessive Chucking Runout	Warm up spindle by idling before starting operation Improve semi-finishing process Reduce feed Adjust Tool runout



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🏷 GST No. 27AAJCT2792GIZZ