Design, Develop & Manufacturer of

Carbide Tools

BREEZE
TOOLS PVT LTD

Most Economical Solutions
with
High Performance
for
Die and Mould Industry

Breeze Tools Pvt Ltd is an Indian cutting tools manufacturer for Die and mould application in solid carbide with professional experience in designing, development and manufacturing.

Superior manufacturing technologies possess the biggest competitive advantage of a manufacturer, which, it claims, insistent customer's satisfaction.

The company uses high-grade carbide rods only imported from Germany and US, as well as very high end advanced CNC 5, 6, 7 -axis grinding machines from Australia, Germany and Switzerland in production. We are state-of-the-art manufacturing facility as well as coating technologies in technical JV with Ceme Con Germany.

VISION

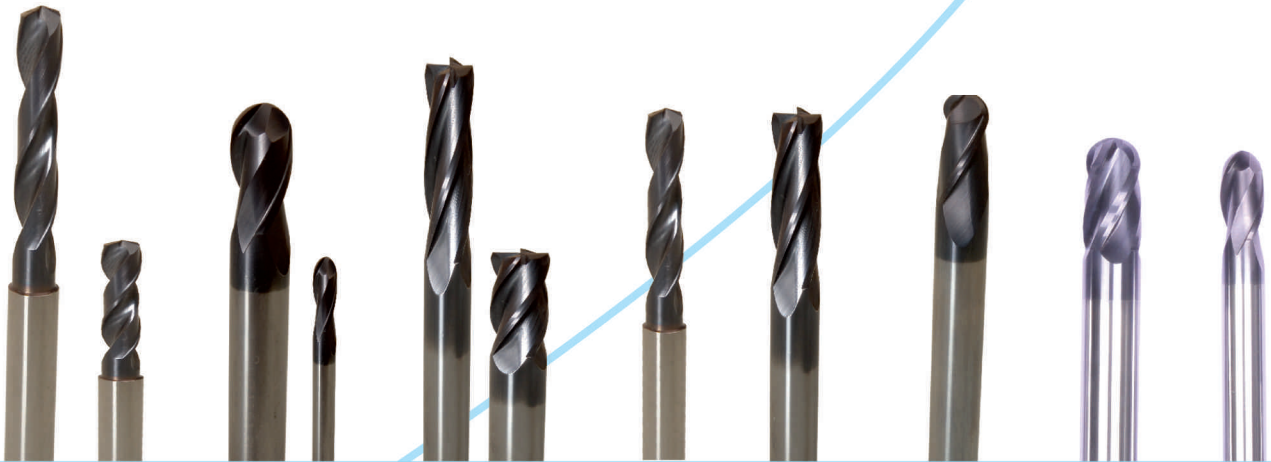
To become a preferred cutting tools solution provider in solid carbide globally by satisfying customer need and requirements especially in Die and mould industries.

MISSION

Our business mission is to design, develop and manufacture high productive and economical solution for drills and end mills in solid carbide tools to support die and mould industry globally.

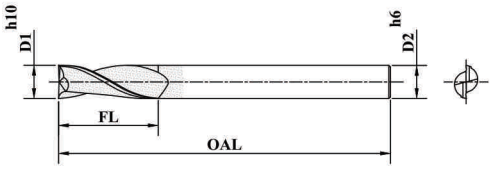
We are at Breeze Tools Committed to customer satisfaction, cost competitive prices and timely services;

Breeze Tools Pvt. Ltd. is the group company of Accusharp Cutting Tools Pvt. Ltd who has successfully proven its product solutions to all over India across different Industry.



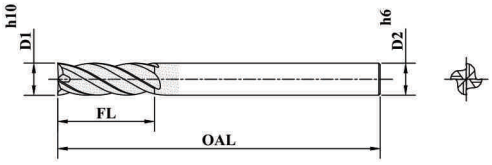
2 FLUTE FLAT END MILL STD

ITEM	D1	FL	OAL	Shank Dia D2	Z	
BT-FEMSC2F-D01- □	1	3	40	4	2	
BT-FEMSC2F-D02- □	2	8	40	4	2	
BT-FEMSC2F-D04- □	4	14	50	4	2	
BT-FEMSC2F-D06- □	6	20	50	6	2	
BT-FEMSC2F-D08- □	8	26	70	8	2	
BT-FEMSC2F-D10- □	10	32	70	10	2	
BT-FEMSC2F-D12- □	12	38	75	12	2	
BT-FEMSC2F-D14- □	14	40	80	14	2	
BT-FEMSC2F-D16- □	16	42	100	16	2	



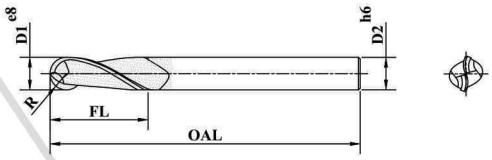
4 FLUTE FLAT END MILL STD

ITEM	D1	FL	OAL	Shank Dia D2	Z	
BT-FEMSC4F-D04- □	4	14	50	4	4	
BT-FEMSC4F-D06- □	6	20	50	6	4	
BT-FEMSC4F-D08- □	8	26	70	8	4	
BT-FEMSC4F-D10- □	10	32	70	10	4	
BT-FEMSC4F-D12- □	12	38	75	12	4	
BT-FEMSC4F-D14- □	14	40	80	14	4	
BT-FEMSC4F-D16- □	16	42	100	16	4	



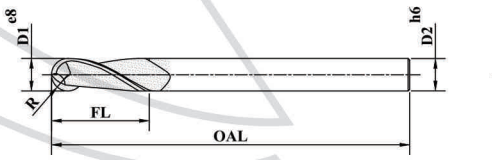
2 FLUTE BALL NOSE STD

ITEM	D1	FL	OAL	Shank Dia D2	Z	Radius
BT-BEMSC2F-D01 S- □	1	3	40	4	2	0.5
BT-BEMSC2F-D02 S- □	2	4	40	4	2	1
BT-BEMSC2F-D04 S- □	4	8	50	4	2	2
BT-BEMSC2F-D06 S- □	6	10	50	6	2	3
BT-BEMSC2F-D08 S- □	8	12	70	8	2	4
BT-BEMSC2F-D10 S- □	10	14	70	10	2	5
BT-BEMSC2F-D12 S- □	12	16	75	12	2	6
BT-BEMSC2F-D14 S- □	14	18	80	14	2	7
BT-BEMSC2F-D16 S- □	16	22	80	16	2	8



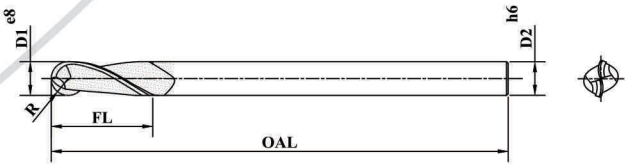
2 FLUTE BALL NOSE LONG

ITEM	D1	FL	OAL	Shank Dia D2	Z	Radius
BT-BEMSC2F-D01 L- □	1	3	60	4	2	0.5
BT-BEMSC2F-D02 L- □	2	4	60	4	2	1
BT-BEMSC2F-D04 L- □	4	8	60	4	2	2
BT-BEMSC2F-D06 L- □	6	10	75	6	2	3
BT-BEMSC2F-D08 L- □	8	12	75	8	2	4
BT-BEMSC2F-D10 L- □	10	14	75	10	2	5
BT-BEMSC2F-D12 L- □	12	16	100	12	2	6
BT-BEMSC2F-D14 L- □	14	18	100	14	2	7
BT-BEMSC2F-D16 L- □	16	22	100	16	2	8



2 FLUTE BALL NOSE EXTRA LONG

ITEM	D1	FL	OAL	Shank Dia D2	Z	Radius
BT-BEMSC2F-D01 EL- □	1	3	80	4	2	0.5
BT-BEMSC2F-D02 EL- □	2	4	80	4	2	1
BT-BEMSC2F-D04 EL- □	4	8	80	4	2	2
BT-BEMSC2F-D06 EL- □	6	10	100	6	2	3
BT-BEMSC2F-D08 EL- □	8	12	100	8	2	4
BT-BEMSC2F-D10 EL- □	10	14	100	10	2	5
BT-BEMSC2F-D12 EL- □	12	16	125	12	2	6
BT-BEMSC2F-D14 EL- □	14	18	125	14	2	7
BT-BEMSC2F-D16 EL- □	16	22	125	16	2	8



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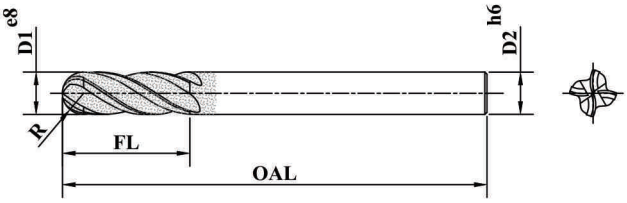
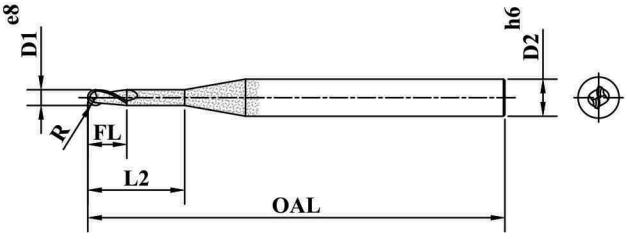
4 FLUTE BALL NOSE STD

ITEM	D1	FL		OAL	Shank Dia D2	Z	Radius
BT-BEMSC4F-D04 S- □	4	8		60	4	4	2
BT-BEMSC4F-D06 S- □	6	10		75	6	4	3
BT-BEMSC4F-D08 S- □	8	12		75	8	4	4
BT-BEMSC4F-D10 S- □	10	14		75	10	4	5
BT-BEMSC4F-D12 S- □	12	16		100	12	4	6
BT-BEMSC4F-D14 S- □	14	18		100	14	4	7
BT-BEMSC4F-D16 S- □	16	22		100	16	4	8



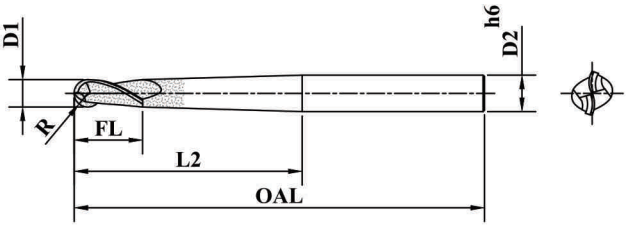
2 FLUTE MINIATURE

ITEM	D1	FL	L2	OAL	Shank Dia D2	Z	Radius
BT-MBEMSC2F-D02 S- □	2	3	16	75	4	2	1
BT-MBEMSC2F-D03 S- □	3	5	20	75	4	2	1.5
BT-MBEMSC2F-D04 S- □	4	6	20	75	6	2	2
BT-MBEMSC2F-D06 S- □	6	10	30	100	8	2	3
BT-MBEMSC2F-D08 S- □	8	12	30	100	10	2	4
BT-MBEMSC2F-D10 S- □	10	14	40	100	12	2	5



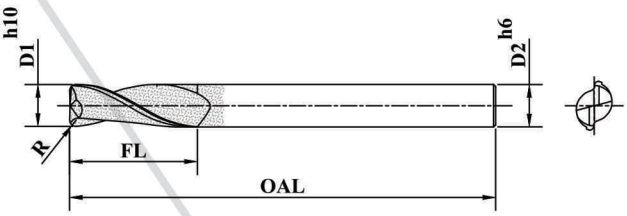
2 FLUTE TAPER NECK

ITEM	D1	FL	L2	OAL	Shank Dia D2	Z	Radius
BT-TBEMSC2F-D02 S- □	2	3	30	75	4	2	1
BT-TBEMSC2F-D03 S- □	3	5	30	75	4	2	1.5
BT-TBEMSC2F-D04 S- □	4	6	30	75	6	2	2
BT-TBEMSC2F-D06 S- □	6	10	60	100	8	2	3
BT-TBEMSC2F-D08 S- □	8	12	60	100	10	2	4
BT-TBEMSC2F-D10 S- □	10	14	60	100	12	2	5



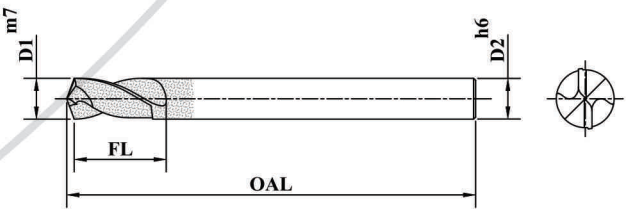
2 FLUTE BULL NOSE

ITEM	D1	FL	OAL	Shank Dia D2	Z	Radius
BT-BNEMSC2F-D04 R1- □	4	6	75	4	2	1
BT-BNEMSC2F-D06 R1- □	6	10	100	6	2	1
BT-BNEMSC2F-D06 R2- □	6	10	100	6	2	2
BT-BNEMSC2F-D08 R1- □	8	12	100	8	2	1
BT-BNEMSC2F-D08 R2- □	8	12	100	8	2	2
BT-BNEMSC2F-D08 R3- □	8	12	100	8	2	3
BT-BNEMSC2F-D10 R1- □	10	14	100	10	2	1
BT-BNEMSC2F-D10 R2- □	10	14	100	10	2	2
BT-BNEMSC2F-D10 R3- □	10	14	100	10	2	3
BT-BNEMSC2F-D12 R2- □	12	14	100	12	2	2
BT-BNEMSC2F-D14 R3- □	14	18	100	14	2	3
BT-BNEMSC2F-D16 R3- □	16	20	100	16	2	3



DRILL STD NTC (L/D -3)

ITEM	D1	FL	OAL	Shank Dia D2	Z	Tap Size
BT-SCD-01.60-L/D 3- □	1.60	6	54	4	2	M2x0.4
BT-SCD-02.05-L/D 3- □	2.05	8	54	4	2	M2.5x0.45
BT-SCD-02.50-L/D 3- □	2.50	10	60	4	2	M3x.05
BT-SCD-02.90-L/D 3- □	2.90	12	60	4	2	M3.5x0.6
BT-SCD-03.30-L/D 3- □	3.30	12	60	4	2	M4x0.7
BT-SCD-04.20-L/D 3- □	4.20	15	60	6	2	M5x0.8
BT-SCD-05.00-L/D 3- □	5.00	18	70	6	2	M6x1
BT-SCD-06.80-L/D 3- □	6.80	23	70	8	2	M8x1.25
BT-SCD-07.00-L/D 3- □	7.00	24	70	8	2	M8x1
BT-SCD-08.50-L/D 3- □	8.50	29	75	10	2	M10x1.5
BT-SCD-08.80-L/D 3- □	8.80	29	75	10	2	M10x1.25
BT-SCD-10.20-L/D 3- □	10.20	34	80	12	2	M12x1.75
BT-SCD-10.80-L/D 3- □	10.80	35	80	12	2	M12x1.25
BT-SCD-12.00-L/D 3- □	12.00	41	90	12	2	M14x2
BT-SCD-12.50-L/D 3- □	12.50	43	90	14	2	M14x1.5
BT-SCD-14.00-L/D 3- □	14.00	47	90	14	2	M16x2
BT-SCD-14.50-L/D 3- □	14.50	49	100	16	2	M16x1.5
BT-SCD-15.50-L/D 3- □	15.50	52	100	16	2	M18x2.5
BT-SCD-16.50-L/D 3- □	16.50	55	100	18	2	M18x1.5



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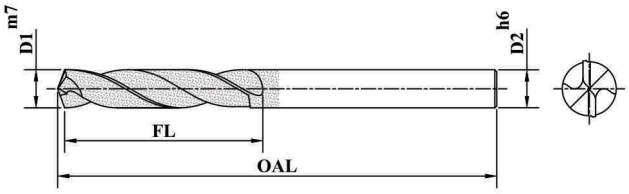
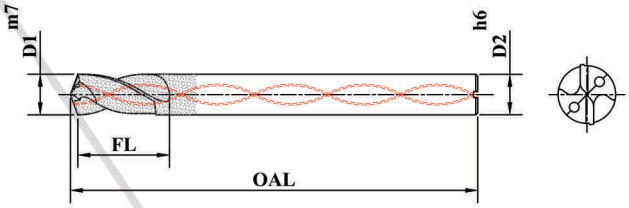
DRILL STD NTC (L/D -5)

ITEM	D1	FL	OAL	Shank Dia D2	Z	Tap Size
BT-SCD-01.60-L/D 5- □	1.60	10	60	4	2	M2x0.4
BT-SCD-02.05-L/D 5- □	2.05	12	60	4	2	M2.5x0.45
BT-SCD-02.50-L/D 5- □	2.50	15	60	4	2	M3x.05
BT-SCD-02.90-L/D 5- □	2.90	17	60	4	2	M3.5x0.6
BT-SCD-03.30-L/D 5- □	3.30	19	70	4	2	M4x0.7
BT-SCD-04.20-L/D 5- □	4.20	23	70	6	2	M5x0.8
BT-SCD-05.00-L/D 5- □	5.00	27	70	6	2	M6x1
BT-SCD-06.80-L/D 5- □	6.80	37	80	8	2	M8x1.25
BT-SCD-07.00-L/D 5- □	7.00	38	80	8	2	M8x1
BT-SCD-08.50-L/D 5- □	8.50	46	90	10	2	M10x1.5
BT-SCD-08.80-L/D 5- □	8.80	47	90	10	2	M10x1.25
BT-SCD-10.20-L/D 5- □	10.20	54	100	12	2	M12x1.75
BT-SCD-10.80-L/D 5- □	10.80	57	100	12	2	M12x1.25
BT-SCD-12.00-L/D 5- □	12.00	65	110	12	2	M14x2
BT-SCD-12.50-L/D 5- □	12.50	68	110	14	2	M14x1.5
BT-SCD-14.00-L/D 5- □	14.00	75	110	14	2	M16x2
BT-SCD-14.50-L/D 5- □	14.50	78	130	16	2	M16x1.5
BT-SCD-15.50-L/D 5- □	15.50	83	130	16	2	M18x2.5
BT-SCD-16.50-L/D 5- □	16.50	88	130	18	2	M18x1.5



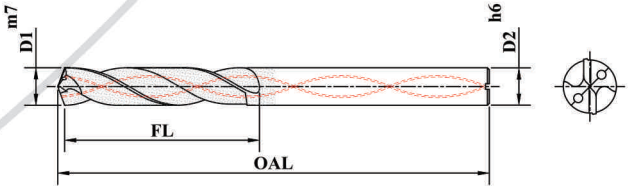
DRILL STD TC (L/D -3)

ITEM	D1	FL	OAL	Shank Dia D2	Z	Tap Size
BT-SCDTC-03.30-L/D 3- □	3.30	12	60	4	2	M4x0.7
BT-SCDTC-04.20-L/D 3- □	4.20	15	60	6	2	M5x0.8
BT-SCDTC-05.00-L/D 3- □	5.00	18	70	6	2	M6x1
BT-SCDTC-06.80-L/D 3- □	6.80	23	70	8	2	M8x1.25
BT-SCDTC-07.00-L/D 3- □	7.00	24	70	8	2	M8x1
BT-SCDTC-08.50-L/D 3- □	8.50	29	75	10	2	M10x1.5
BT-SCDTC-08.80-L/D 3- □	8.80	29	75	10	2	M10x1.25
BT-SCDTC-10.20-L/D 3- □	10.20	34	80	12	2	M12x1.75
BT-SCDTC-10.80-L/D 3- □	10.80	35	80	12	2	M12x1.25
BT-SCDTC-12.00-L/D 3- □	12.00	41	90	12	2	M14x2
BT-SCDTC-12.50-L/D 3- □	12.50	43	90	14	2	M14x1.5
BT-SCDTC-14.00-L/D 3- □	14.00	47	90	14	2	M16x2
BT-SCDTC-14.50-L/D 3- □	14.50	49	100	16	2	M16x1.5
BT-SCDTC-15.50-L/D 3- □	15.50	52	100	16	2	M18x2.5
BT-SCDTC-16.50-L/D 3- □	16.50	55	100	18	2	M18x1.5



DRILL STD TC (L/D -5)

ITEM	D1	FL	OAL	Shank Dia D2	Z	Tap Size
BT-SCDTC-03.30-L/D 5- □	3.30	19	70	4	2	M4x0.7
BT-SCDTC-04.20-L/D 5- □	4.20	23	70	6	2	M5x0.8
BT-SCDTC-05.00-L/D 5- □	5.00	27	70	6	2	M6x1
BT-SCDTC-06.80-L/D 5- □	6.80	37	80	8	2	M8x1.25
BT-SCDTC-07.00-L/D 5- □	7.00	38	80	8	2	M8x1
BT-SCDTC-08.50-L/D 5- □	8.50	46	90	10	2	M10x1.5
BT-SCDTC-08.80-L/D 5- □	8.80	47	90	10	2	M10x1.25
BT-SCDTC-10.20-L/D 5- □	10.20	54	100	12	2	M12x1.75
BT-SCDTC-10.80-L/D 5- □	10.80	57	100	12	2	M12x1.25
BT-SCDTC-12.00-L/D 5- □	12.00	65	110	12	2	M14x2
BT-SCDTC-12.50-L/D 5- □	12.50	68	110	14	2	M14x1.5
BT-SCDTC-14.00-L/D 5- □	14.00	75	110	14	2	M16x2
BT-SCDTC-14.50-L/D 5- □	14.50	78	130	16	2	M16x1.5
BT-SCDTC-15.50-L/D 5- □	15.50	83	130	16	2	M18x2.5
BT-SCDTC-16.50-L/D 5- □	16.50	88	130	18	2	M18x1.5



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Cutting Tools for Die and Mould

Die and Mould work, demands high performance and accuracy tooling, So Breeze's products specifically used for hard milling and high speed machining (HSM) from roughing to high accuracy finishing tools.

Breeze's cutting tool program now focusing on total die and mould which includes radius milling cutters, ball nose, flat end mills that are perfectly adapted with 20 years of knowledge based on applications, geometries, carbide grades and coatings to satisfy above demands and provide optimal machining results.

Features that satisfy the highest accuracy demands and tool life:

- Outside diameter and radius are ground in one pass.
- Radius point geometry with constant helix-radius correction.
- Reduced neck ground for collision reduction with protruding edges.
- Solid Micro-Grain Carbide End Mills for Maximum Cost Performance.
- HSN^2 Coating for improved lubrication and high hardness.
- Special cutting edge design provides high rigidity.
- Flute design promotes efficient chip evacuation.
- High accuracy eliminates benching and rework for mould makers.

Applications :

- Ideally suited for Hardened steel.
- Also works in: Carbon Steel, Alloy Steel, Die Steel and Hardened Steel 35-50 HRC.
- Use in combination with High Speed Machining Techniques to optimize performance.

Coating Recommended
For above 45 HRC Hardness - Coating used is HSN^2 – used is H
For below 45 HRC Hardness - Coating used is TINALOX -SN^2 – used is T
For Aluminum - Uncoated

How to Order Tool
Eg – Catalogue code is BT-FEMSC2F-D01
While ordering use -
BT-FEMSC2F-D01 - H for HSN^2
BT-FEMSC2F-D01 - T for TINALOX -Sn^2
BT-FEMSC2f-D01-N for Aluminum



Formulas for Parameters calculations :

Cutting speed v_c (m/min)

$$v_c = \frac{D_T \times \pi \times n}{1000}$$

Spindle speed (rpm)

$$n = \frac{v_c \times 1000}{\pi \times D_T}$$

Table Feed (mm/min)

$$v_f = f_n \times n$$

Feed per Rev (mm/ rev)

$$F_n = f_z \times Z$$

Machining time T_c (min)

$$T_c = \frac{l_m}{v_f}$$

Chip removal rate (Cm^2/Min)

$$Q = \frac{a_e \times a_p \times v_f}{1000}$$

Parameter	Meaning	Metric unit
v_c	Cutting speed	m/min
D_T	Dia of tool	mm
n	Spindle speed	rpm
f_n	Feed	mm/rev
v_f	Table speed	mm/min
T_c	Machining time	min
l_m	Machining length	mm
Q	Chip volume	cm2/min
a_e	Width of cut	mm
a_p	Depth of cut	mm
f_z	Feed per tooth	mm
z	No. of effective teeth	

CemeCon The Tool Coating Germany is the world largest coating center for coating tools.

Coating materials for best machining results for die and Moulds

Hard Machining

Hard machining - a hard nut? Not if you have the right tools to crack it.

Economical hard machining beyond 50 HRC requires established process know-how, machine tool, cutting tool, tool holder and cutting process must be optimally fine-tuned to each other. The coating is of particular importance in this complex process.

HSN^2

With the new HSN^2, we have developed a Supernitride for hard machining which makes this ideal coating a reality. This was possible due to embedding special layer components.

At the same time, with our sputter process you are entirely free to choose the chemical element. We have installed exactly those components into the hard machining layer HSN2 that decisively improve the layer performance in hard machining. Additionally, this layer is extremely smooth and droplet-free, thereby ensuring optimum heat transmission due to improved chip removal.

TINALOX Sn2

TINALOr SW is a coating material from the successful supernitride generation. Supernitrides are coatings, which thanks to it's nanocomposite structure, exhibit high degree of hardness as well as maximum durability. Just like all CemeCon PVD coatings, they are also produced using sputter technology and are therefore extremely smooth. TINALOX"' SN2 can be described as a multi range coating, as it successfully covers a wide range of applications from steel processing to the processing of stainless steels and cast iron processing. Accurately constructed coating material is very suitable for machining processes stretching from finishing up to medium-range.

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TOOLS PVT LTD

BREEZE TOOLS PVT. LTD.
Corporate Office : W - 235, J Block, MIDC, Bhosari, Pune 411026, MAHARASHTRA, INDIA
Ph. : +91 8308815615 • Email : marketing@breezetools.co.in
Web : **www.breezetools.co.in**