

ISO-identificatietabel freeswisselplaten (Milling Insert ISO Identification Table)

Insert Shape			Clearance angle			Insert type			
Symbol	Insert Shape	Angle	Symbol	Insert Shape	Angle	Symbol	Relief Angle	Symbol	Shape
C		80°	A		85°	A	3°	G	30°
D		55°	B		82°	B	5°	N	0°
E		75°	K		55°	C	7°	P*	11°
F		50°	H		120°	D	15°	O	Other clearance angle with specific description
V		35°	O		135°	E	20°		
R		-	P		108°	F	25°		
S		90°	L		90°				
T		60°	M		86°				
W		80°							

Thickness	
Symbol	mm
02	S = 2,38
03	S = 3,18
T3	S = 3,97
04	S = 4,76
05	S = 5,56
06	S = 6,35
07	S = 7,94
09	S = 9,52

Corner geometry with wiper flat	
Entering angle	Clearance angle on wiper flat
A 45°	A 3°
D 60°	B 5°
E 75°	C 7°
F 85°	D 15°
P 90°	E 20°
Z - Others	F 25°
1. Major cutting edge	G 30°
2. Chamfered corner	N 0°
3. Wiper flat	P 11°
4. Side cutting edge	Z - Others

Radius	
Symbol	Entering angle
02	r = 0,2 mm
04	r = 0,4 mm
08	r = 0,8 mm
12	r = 1,2 mm
16	r = 1,6 mm
20	r = 2,0 mm
24	r = 2,4 mm

MO - Round insert (metric)
OO - Round insert (inch)

Tolerances		
Symbol	m	IC (mm)
A	± 0.005	± 0.025
F	± 0.005	± 0.013
C	± 0.013	± 0.025
H	± 0.013	± 0.013
E	± 0.025	± 0.025
G	± 0.025	± 0.025
J	± 0.005	± 0,05 - ± 0,13*
K	± 0.013	± 0,05 - ± 0,13*
L	± 0.025	± 0,05 - ± 0,13*
M	± 0,08 ~ ± 0,18*	± 0,05 - ± 0,13*
N	± 0,08 ~ ± 0,18*	± 0,05 - ± 0,13*
U	± 0,13 ~ ± 0,38*	± 0,08 - ± 0,25*

Tolerance of Nose Height (m-Class)				
M	S	T	C	D
6,35				
9,525				
12,7				
15,875				
19,05				
25,4				

Tolerance class for dimension IC						
IC	S	T	C	D	V	R
6,35						
9,525						
12,7						
15,875						
19,05						
25,4						

Insert size						
Symbol and cutting edge length (mm)	C	D	R	S	T	V
3,97					06 (6,9)	
4,76					08 (8,2)	
5,0			05 (5,0)			
5,56					09 (9,6)	09 (9,7)
6,0			06 (6,0)			03 (3,6)
6,35	06 (6,4)	07 (7,7)		06 (6,35)	11 (11,0)	11 (11,1)
7,94	08 (8,0)			07 (7,94)		05 (5,4)
8,0				08 (8,0)		
9,525	09 (9,7)	11 (11,6)		09 (9,525)	16 (16,5)	16 (16,6)
10				11 (10,0)		
12				12 (12,0)		
12,7	12 (12,0)	15 (15,0)	12 (12,7)	12 (12,7)	22 (22,0)	08 (8,7)
15,875	16 (16,1)	19 (19,4)	15 (15,875)	15 (15,875)	27 (27,5)	10 (10,9)
16			16 (16,0)			
19,05	19 (19,3)		19 (19,05)	19 (19,05)	33 (33,0)	
20				20 (20,0)		
25				25 (25,0)		
25,4				25 (25,4)	25 (25,4)	
31,75				31 (31,75)	31 (31,75)	
32				32 (32,0)		

Cutting edge condition	
Symbol	Shape
F	Sharp
E	Rounded
T	Chamfered
S	Rounded and chamfered

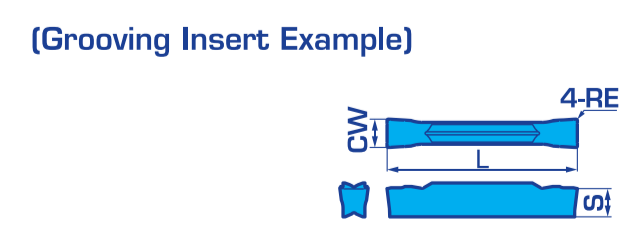
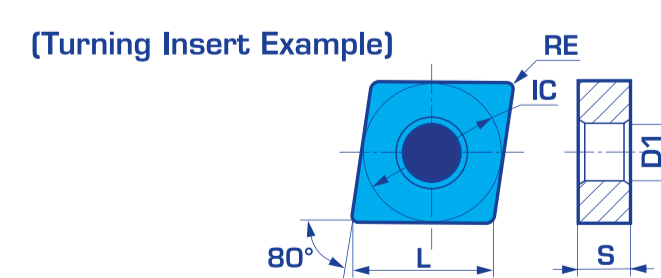
Feed direction	
Symbol	Shape
R	Right hand
N	Neutral
L	Left hand

Dimensionele symbolen voldoen aan ISO13399

De volgende tabel toont ISO13399-conforme dimensionele symbolen. Inhoud die overeenkomt met de voorbeeldsymbolen/notaties wordt hieronder weergegeven. Diagrammen van gereedschapsvormen en voorraadgrafieken maken gebruik van de symbolen en voorbeeldnotaties uit de onderstaande tabel.

(1) Inserts (For Turning / For Milling)

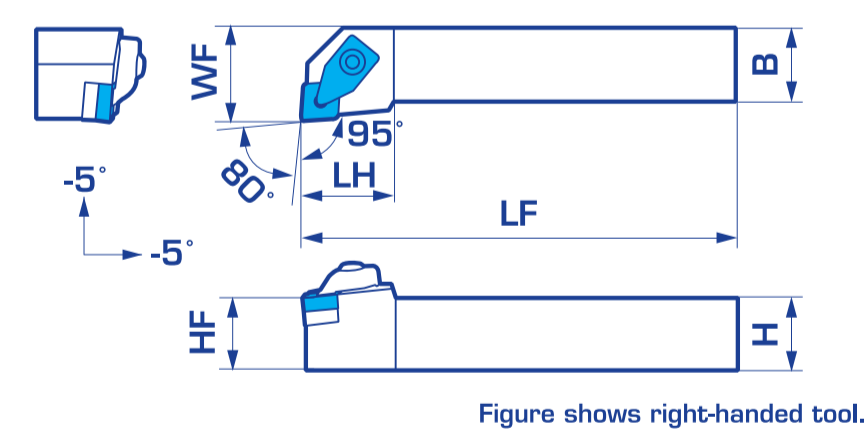
Symbol	Description
AN	Clearance angle major
APMX	Depth of cut maximum
BS	Wiper edge length
CDX	Cutting depth maximum
CHW	Corner chamfer width
CW	Cutting width
D1	Fixing hole diameter
DMIN	Minimum bore diameter
IC	Inscribed circle diameter
INSL	Insert length
L	Cutting edge length
PDX	Profile distance ex
PDY	Profile distance ey
PNA	Profile included angle
RE	Corner radius
RER	Right side corner radius
REL	Left side corner radius
S	Insert thickness
W1	Insert width
WF	Functional width



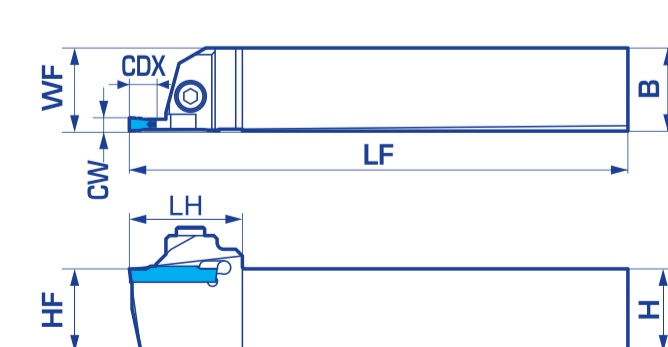
(2) Tool Holders For Turning

Symbol	Description
APMX	Depth of cut maximum
B	Shank width
BD	Body diameter
COX	Cutting depth maximum
CRKS	Connection retention knob thread size
DC	Cutting diameter
DCB	Connection bore diameter
OCON	Connection diameter
DCSFMS	Contact surface diameter machine side
DMIN	Minimum bore diameter
DMM	Shank diameter
DN	Neck diameter
GAMF	Rake angle radial
GAMP	Rake angle axial
H	Shank height
HBH	Head bottom offset height
HBKL	Head back offset length
HBKW	Head back offset width
HBL	Head bottom offset length
HF	Functional height
KDP	Groove depth
KWW	Keyway width
LF	Functional length
LH	Head length
LHD	Head length
LS	Shank length
LSCX	Clamping length maximum
LU	Usable length
LUX	Usable length maximum
WF	Functional width

(External Holder Example)



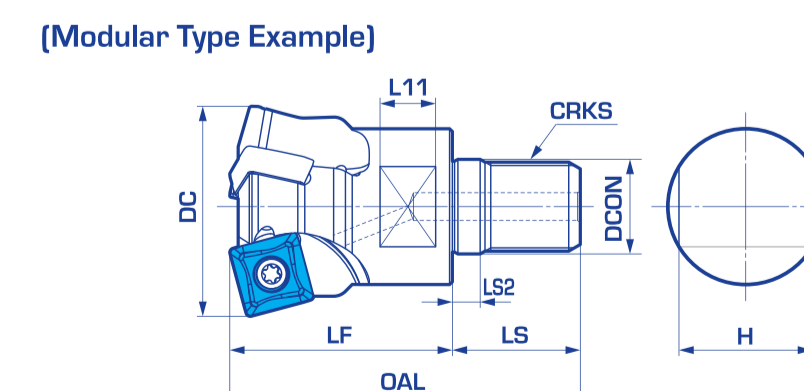
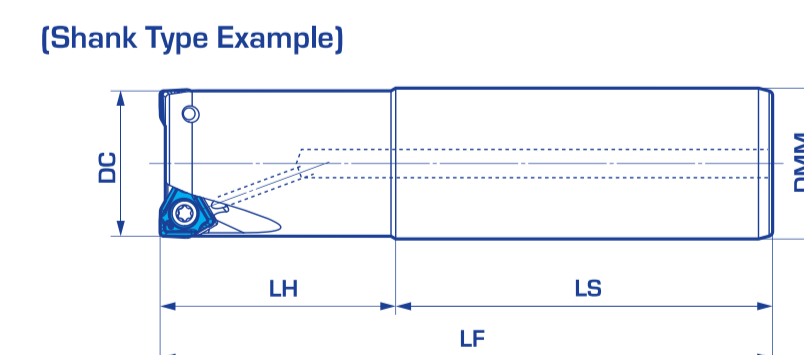
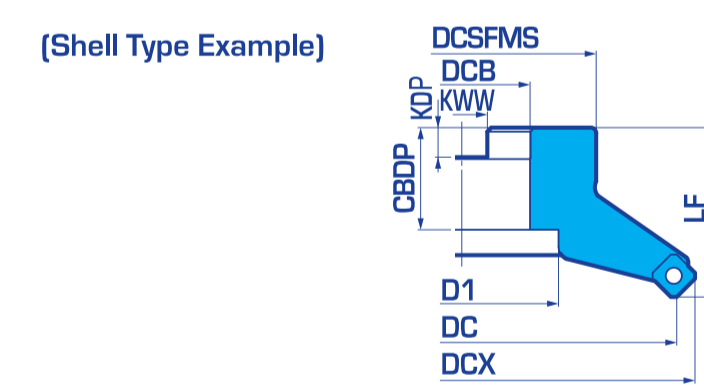
(Grooving Tool Holder Example)



Notes: The symbols in the above table are compliant with ISO13399 and do not include symbols unique to our company. As symbols under review are not included, these may change over time.

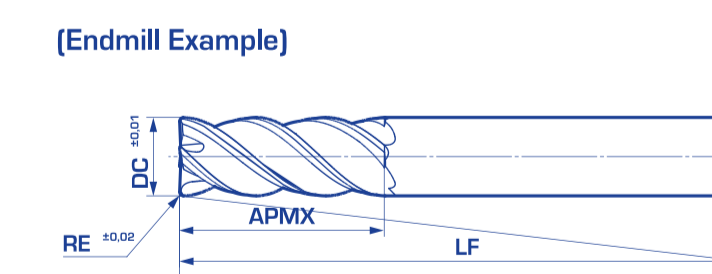
(3) Cutters / Indexable Endmills

Symbol	Description
APMX	Depth Of Cut Maximum
BO	Body Diameter
BOX	Body Diameter Maximum
CBDP	Connection Bore Depth
CRKS	Connection Retention Knob Thread Size
cw	Cutting Width
DBC	Connection Bore Diameter
DC	Cutting Diameter
DCB	Clamping Diameter: Nominal on Workpiece Side
OCON	Connection Diameter
DCSFMS	Contact Surface Diameter Machine Side
DCX	Cutting Diameter Maximum
DMM	Shank Diameter
DN	Neck Diameter
H	Shank Height
KDP	Groove Depth
KWW	Keyway Width
LBX	Body Length Maximum
LF	Functional Length
LH	Head Length
LS	Shank Length
LU	Usable Length
OAL	Overall Length
RMPX	Maximum Ramping Angle
THUB	Hub Thickness



(4) Endmills

Symbol	Description
APMX	Depth Of Cut Maximum
CHW	Corner Chamfer Width
DC	Cutting Diameter
DMM	Shank Diameter
DN	Neck Diameter
LF	Functional Length
LFS	Functional Length Secondary
LU	Usable Length
RE	Corner Radius



(5) Drills / Reamers

Symbol	Description
BD	Body Diameter
BOX	Body Diameter Maximum
CW	Cutting Width
DC	Cutting Diameter
DCB	Clamping Diameter: Nominal on Workpiece Side
OCON	Connection Diameter
DCSFMS	Contact Surface Diameter Machine Side
DF	Flange Diameter
DMM	Shank Diameter
LBX	Body Length Maximum
LCF	Length Chip Flute
LF	Functional Length
LFA	A Dimension On Lf
LFS	Functional Length Secondary
LH	Head Length
LPR	Protruding Length
LS	Shank Length
LU	Usable Length
LUX	Usable Length Maximum
OAL	Overall Length
PL	Point Length
WBTHK	Web Thickness

(Drill Example)

